

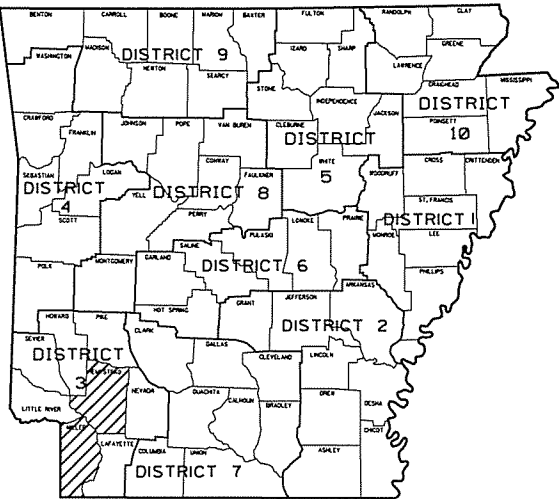
"A FULLY CONTROLLED ACCESS FACILITY"
ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
CONSTRUCTION PLANS

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. BB0303	1	231

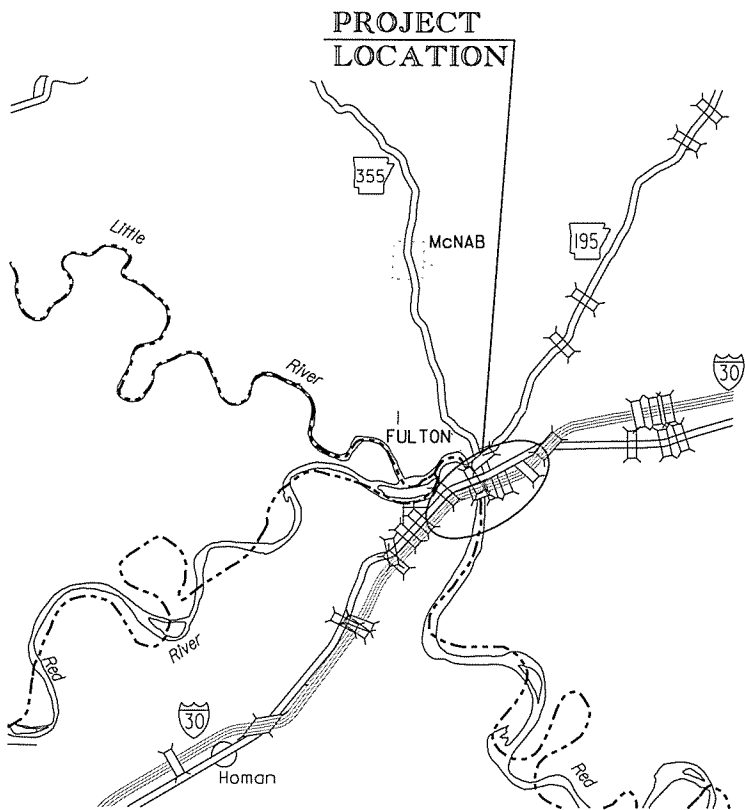
2 RED RIVER-EAST & WEST (F)

RED RIVER-
EAST & WEST (F)

MILLER & HEMPSTEAD COUNTIES
ROUTE 30 SECTION 11 & 12
FEDERAL AID PROJECT BIM-NHPP-PEN-B30-0(203)
JOB BB0303



ARKANSAS HIGHWAY DISTRICT 3



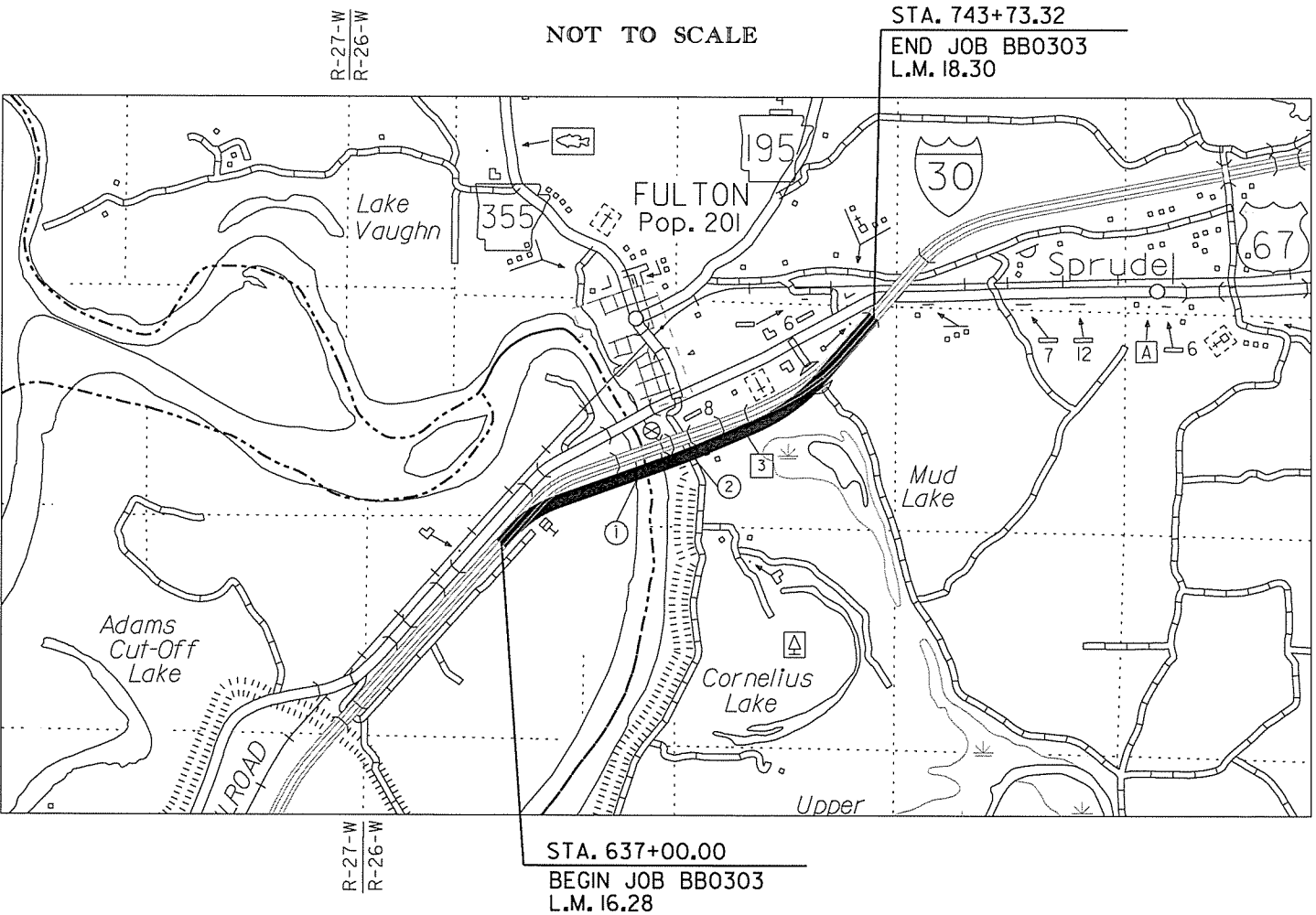
VICINITY MAP

BRIDGE CONSTRUCTION DATA

- ① STA. 663+68.91 BRIDGE END
BRIDGE NO. 07335 OVER RED RIVER
440'-0" CONT. COMP. PLATE GIRDER
UNIT (100'-120'-120'-100')
860'-0" CONT. COMP. PLATE GIRDER
UNIT (190'-240'-240'-190')
86'-0" CLEAR ROADWAY
1303'-9 1/16" BRIDGE LENGTH
STA. 676+72.73 BRIDGE END
- ② STA. 680+07.42 BRIDGE END
BRIDGE NO. 07336 OVER CO. RD. 176
140'-0" CONT. COMP. W-BEAM UNIT (40'-60'-40')
86'-0" CLEAR ROADWAY
141'-0" BRIDGE LENGTH
STA. 681+48.42 BRIDGE END

STRUCTURES OVER 20'-0" SPAN

- ③ STA. 695+73.32 IN PLACE
DBL. 8'X6'X246' R.C. BOX CULVERT
42° RT. FWD. SKEW
WITH 3:1 WINGS LT. AND RT.
REMOVE 35' RT. & EXTEND 94' RT.
WITH 3:1 WINGS RT.
Q50 = 489 CFS DA = 347.3 ACRES
SPAN = 25.34'



DESIGN TRAFFIC DATA

DESIGN YEAR ----- 2035
2015 ADT ----- 33,330
2035 ADT ----- 40,670
2035 DHV ----- 4,474
DIRECTIONAL DISTRIBUTION ----- 0.60
TRUCKS ----- 50%
DESIGN SPEED ----- 70 MPH



5-6-15

BEGINNING OF PROJECT	MID POINT OF PROJECT	END OF PROJECT
LATITUDE N 33° 36' 06"	LATITUDE N 33° 36' 28"	LATITUDE N 33° 36' 59"
LONGITUDE W 93° 49' 22"	LONGITUDE W 93° 48' 25"	LONGITUDE W 93° 47' 36"

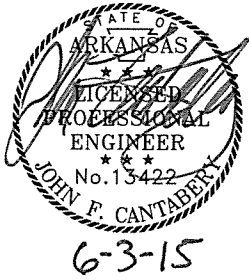
LENGTH OF PROJECT COMPUTED ALONG C.L. MEDIAN		
GROSS LENGTH OF PROJECT	10673.32 FEET OR	2.021 MILES
NET LENGTH OF ROADWAY	9203.16 FEET OR	1.743 MILES
NET LENGTH OF BRIDGES	1470.16 FEET OR	0.278 MILES
NET LENGTH OF PROJECT	10673.32 FEET OR	2.021 MILES

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REVISED DATE:

INDEX OF SHEETS (BOX 1 OF 3)				
SHEET NO.	TITLE	BRIDGE NO.	DRAWING NO.	DATE
1	TITLE SHEET			
2 - 3	INDEX OF SHEETS, GOVERNING SPECIFICATIONS, AND GENERAL NOTES			
4 - 8	TYPICAL SECTIONS OF IMPROVEMENT			
9 - 15C	SPECIAL DETAILS			
16 - 32	TEMPORARY EROSION CONTROL DETAILS			
33 - 48	MAINTENANCE OF TRAFFIC DETAILS			
49 - 50	PERMANENT PAVEMENT MARKING DETAILS			
51 - 52	SIGN PLACEMENT SHEETS			
53	SIGNING QUANTITIES			
54	SOIL BORING LOGS			
55 - 60	QUANTITIES			
61	SCHEDULE OF BRIDGE QUANTITIES	07335, 07336	56371	
62 - 63	SUMMARY OF QUANTITIES AND REVISIONS			
64 - 68	SURVEY CONTROL DETAILS			
69 - 75	PLAN AND PROFILE SHEETS			
76	MAINTENANCE OF TRAFFIC PROFILES			
77	CULVERT DIAGRAM			
78	LAYOUT OF BRIDGE OVER RED RIVER (SHEET 1 OF 4)	7335	56372	
79	LAYOUT OF BRIDGE OVER RED RIVER (SHEET 2 OF 4)	7335	56373	
80	LAYOUT OF BRIDGE OVER RED RIVER (SHEET 3 OF 4)	7335	56374	
81	LAYOUT OF BRIDGE OVER RED RIVER (SHEET 4 OF 4)	7335	56375	
82	DETAILS OF END BENT NO. 1 (SHEET 1 OF 3)	7335	56376	
83	DETAILS OF END BENT NO. 1 (SHEET 2 OF 3)	7335	56377	
84	DETAILS OF END BENT NO. 1 (SHEET 3 OF 3)	7335	56378	
85	DETAILS OF END BENT NO. 9 (SHEET 1 OF 3)	7335	56379	
86	DETAILS OF END BENT NO. 9 (SHEET 2 OF 3)	7335	56380	
87	DETAILS OF END BENT NO. 9 (SHEET 3 OF 3)	7335	56381	
88	DETAILS OF INTERMEDIATE BENT NOS. 2 - 4 (SHEET 1 OF 3)	7335	56382	
89	DETAILS OF INTERMEDIATE BENT NOS. 2 - 4 (SHEET 2 OF 3)	7335	56383	
90	DETAILS OF INTERMEDIATE BENT NOS. 2 - 4 (SHEET 3 OF 3)	7335	56384	
91	DETAILS OF INTERMEDIATE BENT NO. 5 (SHEET 1 OF 3)	7335	56385	
92	DETAILS OF INTERMEDIATE BENT NO. 5 (SHEET 2 OF 3)	7335	56386	
93	DETAILS OF INTERMEDIATE BENT NO. 5 (SHEET 3 OF 3)	7335	56387	
94	DETAILS OF INTERMEDIATE BENT NOS. 6 - 8 (SHEET 1 OF 3)	7335	56388	
95	DETAILS OF INTERMEDIATE BENT NOS. 6 - 8 (SHEET 2 OF 3)	7335	56389	
96	DETAILS OF INTERMEDIATE BENT NOS. 6 - 8 (SHEET 3 OF 3)	7335	56390	
97	DETAILS OF 440'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 1 OF 11)	7335	56391	
98	DETAILS OF 440'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 2 OF 11)	7335	56392	
99	DETAILS OF 440'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 3 OF 11)	7335	56393	
100	DETAILS OF 440'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 4 OF 11)	7335	56394	
101	DETAILS OF 440'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 5 OF 11)	7335	56395	
102	DETAILS OF 440'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 6 OF 11)	7335	56396	
103	DETAILS OF 440'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 7 OF 11)	7335	56397	
104	DETAILS OF 440'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 8 OF 11)	7335	56398	
105	DETAILS OF 440'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 9 OF 11)	7335	56399	
106	DETAILS OF 440'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 10 OF 11)	7335	56400	
107	DETAILS OF 440'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 11 OF 11)	7335	56401	
108	DETAILS OF 860'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 1 OF 14)	7335	56402	
109	DETAILS OF 860'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 2 OF 14)	7335	56403	
110	DETAILS OF 860'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 3 OF 14)	7335	56404	
111	DETAILS OF 860'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 4 OF 14)	7335	56405	
112	DETAILS OF 860'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 5 OF 14)	7335	56406	
113	DETAILS OF 860'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 6 OF 14)	7335	56407	
114	DETAILS OF 860'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 7 OF 14)	7335	56408	
115	DETAILS OF 860'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 8 OF 14)	7335	56409	
116	DETAILS OF 860'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 9 OF 14)	7335	56410	
117	DETAILS OF 860'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 10 OF 14)	7335	56411	
118	DETAILS OF 860'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 11 OF 14)	7335	56412	
119	DETAILS OF 860'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 12 OF 14)	7335	56413	
120	DETAILS OF 860'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 13 OF 14)	7335	56414	
121	DETAILS OF 860'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 14 OF 14)	7335	56415	
122	DETAILS OF FINGER JOINT (SHEET 1 OF 2)	7335	56416	
123	DETAILS OF FINGER JOINT (SHEET 2 OF 2)	7335	56417	
124	DETAILS OF ELASTOMERIC BEARINGS (SHEET 1 OF 2)	7335	56418	
125	DETAILS OF ELASTOMERIC BEARINGS (SHEET 2 OF 2)	7335	56419	
126	LAYOUT OF BRIDGE OVER CO. RD. 176 (SHEET 1 OF 2)	7336	56420	
127	LAYOUT OF BRIDGE OVER CO. RD. 176 (SHEET 2 OF 2)	7336	56421	
128	DETAILS OF END BENT NO. 1	7336	56422	
129	DETAILS OF END BENT NO. 4	7336	56423	
130	DETAILS OF INTERMEDIATE BENT NOS. 2 & 3	7336	56424	

INDEX OF SHEETS (BOX 2 OF 3)				
SHEET NO.	TITLE	BRIDGE NO.	DRAWING NO.	DATE
131	DETAILS OF 140'-0" CONTINUOUS COMPOSITE W-BEAM UNIT (SHEET 1 OF 11)	7336	56425	
132	DETAILS OF 140'-0" CONTINUOUS COMPOSITE W-BEAM UNIT (SHEET 2 OF 11)	7336	56426	
133	DETAILS OF 140'-0" CONTINUOUS COMPOSITE W-BEAM UNIT (SHEET 3 OF 11)	7336	56427	
134	DETAILS OF 140'-0" CONTINUOUS COMPOSITE W-BEAM UNIT (SHEET 4 OF 11)	7336	56428	
135	DETAILS OF 140'-0" CONTINUOUS COMPOSITE W-BEAM UNIT (SHEET 5 OF 11)	7336	56429	
136	DETAILS OF 140'-0" CONTINUOUS COMPOSITE W-BEAM UNIT (SHEET 6 OF 11)	7336	56430	
137	DETAILS OF 140'-0" CONTINUOUS COMPOSITE W-BEAM UNIT (SHEET 7 OF 11)	7336	56431	
138	DETAILS OF 140'-0" CONTINUOUS COMPOSITE W-BEAM UNIT (SHEET 8 OF 11)	7336	56432	
139	DETAILS OF 140'-0" CONTINUOUS COMPOSITE W-BEAM UNIT (SHEET 9 OF 11)	7336	56433	
140	DETAILS OF 140'-0" CONTINUOUS COMPOSITE W-BEAM UNIT (SHEET 10 OF 11)	7336	56434	
141	DETAILS OF 140'-0" CONTINUOUS COMPOSITE W-BEAM UNIT (SHEET 11 OF 11)	7336	56435	
142	DETAILS OF TYPE SPECIAL 1 APPROACH GUTTERS	7336	56436	
143	DETAILS OF TYPE SPECIAL 2 APPROACH GUTTERS	7336	56437	
144	DETAILS OF TYPE SPECIAL 3 APPROACH GUTTERS	7336	56438	
145	DETAILS OF TYPE SPECIAL 4 APPROACH GUTTERS	7336	56439	
146	DETAILS OF TYPE SPECIAL 5 APPROACH GUTTERS	7336	56440	
147	DETAILS OF MSE RETAINING WALL (SHEET 1 OF 2)	7335	56441	
148	DETAILS OF MSE RETAINING WALL (SHEET 2 OF 2)	7335	56442	
149	STANDARD DETAILS FOR EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS		55000	2/27/14
150	STANDARD DETAILS FOR DUMPED RIPRAP AND FILTER BLANKET AND COMPUTING EXCAVATION FOR STRUCTURES		55001	2/27/14
151	STANDARD DETAILS FOR CONCRETE RIPRAP		55002	2/27/14
152	STANDARD DETAILS FOR PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS		55005	2/27/14
153	STANDARD DETAILS FOR TYPE D BRIDGE NAME PLATE		55010	1/14/15
154	STANDARD DETAILS FOR STEEL H-PILES AND PILE ENCASEMENTS		55020	2/27/14
155	STANDARD DETAILS FOR CONCRETE PILES		55022	2/27/14
156	STANDARD DETAILS FOR TYPE C APPROACH GUTTERS		55030C	2/27/14
157	STANDARD DETAILS FOR TYPE C1 APPROACH SLAB		55040C1	2/27/14
158	CONCRETE DITCH PAVING		CDP-1	11/17/10
159	TRANSVERSE & LONGITUDINAL JOINTS FOR CONCRETE PAVEMENT (NON-REINFORCED)		CPTJ-6A	05/25/06
160	FLARED END SECTION		FES-1	10/18/96
161	FLARED END SECTION		FES-2	10/18/96
162	DETAILS OF DROP INLETS & JUNCTION BOXES		FPC-9	11/16/01
163	DETAILS OF DROP INLETS		FPC-9D	08/22/02
164	DETAILS OF DROP INLETS AND JUNCTION BOX (TYPE ST)		FPC-9S	07/26/12
165	GUARD RAIL DETAILS		GR-8	07/14/10
166	GUARD RAIL DETAILS		GR-8A	07/14/10
167	GUARD RAIL DETAILS		GR-9	04/17/08
168	GUARD RAIL DETAILS		GR-9A	04/17/08
169	GUARD RAIL DETAILS		GR-10	07/14/10
170	GUARD RAIL DETAILS		GR-10A	07/14/10
171	GUARD RAIL DETAILS		GRT-1	07/14/10
172	PRECAST CONCRETE BOX CULVERTS		PBC-1	01/28/15
173	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING		PCC-1	02/27/14
174	PAVEMENT MARKING DETAILS		PM-1	09/12/13
175	PERMANENT PAVEMENT MARKING ON ACCESS CONTROLLED ROADWAYS		PM-2	09/12/13
176	DETAILS OF PIPE UNDERDRAIN		PU-1	04/10/03
177	REINFORCED CONCRETE BOX CULVERT DETAILS		RCB-1	07/26/12
178	EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS		RCB-2	11/20/03
179	METHOD OF EXTENDING EXSTING R.C. BOX CULVERTS		RCB-3	10/12/95
180	TABLES AND METHOD OF SUPERELEVATION FOR ONE-WAY TRAFFIC		SE-1	01/09/87
181	STANDARD HIGHWAY SIGNS AND SUPPORT ASSEMBLIES		SHS-1	09/12/13
182	U-CHANNEL POST ASSEMBLIES		SHS-2	02/27/14
183	DETAIL OF BREAKAWAY SIGN SUPPORTS FOR GUIDE SIGNS		SHS-3	09/12/13
184	DETAIL OF BREAKAWAY SIGN SUPPORTS FOR STANDARD SIGNS		SHS-4	09/12/13
185	DETAILS OF GUIDE SIGN PANELS		SHS-5	09/12/13
186	MOUNTING DETAILS FOR DEMOUNTABLE LEGEND ON GUIDE SIGNS		SHS-6	09/12/13
187	DETAIL OF OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS		SHS-7	09/12/13
187A	REINFORCED CONCRETE RETAINING WALL (WITHOUT LIVE LOAD SURCHARGE)		SI-2	02/27/14
188	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION		TC-1	12/15/11
189	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION		TC-2	09/12/13
190	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION		TC-3	10/15/09
INDEX OF SHEETS CONTINUED ON NEXT SHEET				

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
06-03-15				6	ARK.			
				JOB NO.		BB0303	2	231
				2 INDEX OF SHEETS				



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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
05-29-15				6	ARK.			
						JOB NO.	BB0303	3 231
2 INDEX OF SHEETS, GOV. SPECS., & GEN. NOTES								

INDEX OF SHEETS (BOX 3 OF 3)

SHEET NO.	TITLE	DRAWING NO.	DATE
191	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	TC-4	2/27/14
192	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	TC-5	10/15/09
193	TEMPORARY EROSION CONTROL DEVICES	TEC-1	12/15/11
194	TEMPORARY EROSION CONTROL DEVICES	TEC-2	6/2/94
195	TEMPORARY EROSION CONTROL DEVICES	TEC-3	11/3/94
196	TEMPORARY EROSION CONTROL DEVICES	TEC-4	7/26/12
197	DETAILS OF STANDARD TURNOUT FOR ENTRANCE & EXIT RAMPS (NON-REINFORCED)	TR-1A	8/22/02
198	WIRE FENCE TYPE A AND B	WF-1	8/22/02
199	WIRE FENCE WATER GAPS	WF-2	4/20/79
200	WIRE FENCE TYPE C AND D	WF-4	8/22/02
201	DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS	R-100X-X1	10/10/62
202	DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS	R-200X-X2	1/14/63
203	DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS 45° SKEW	W-X453-1	5/10/66
204	DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS 45° SKEW	R-245X-1	8/12/64
205 - 231	CROSS SECTIONS		

NOTE:

CROSS SECTIONS NOT NORMALLY INCLUDED IN PLANS SOLD TO PROSPECTIVE BIDDERS, BUT MAY BE HAD UPON REQUEST.

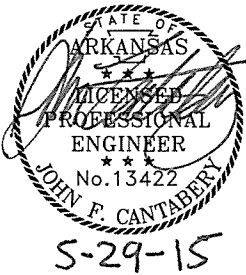
GENERAL NOTES:

- GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
- ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
- 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 OWNERS UNLESS OTHERWISE PROVIDED.
- ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
- 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.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FENCE TO CONTROL LIVESTOCK IN AREAS WHERE PASTURES ARE SEVERED. WIRE FENCE MAY BE CONSTRUCTED INITIALLY, OR IN LIEU THEREOF, THE CONTRACTOR AT HIS OWN EXPENSE, MAY ELECT TO PROVIDE TEMPORARY FENCING SUITABLE TO CONTAIN LIVESTOCK.
- THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. AFTER SAWING, THE PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN. ANY DAMAGE OF THE ASPHALT PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENT REMOVED SHALL BE PAID FOR UNDER PAY ITEM 210 - EXCAVATION AND EMBANKMENT, UNLESS OTHERWISE NOTED.
- THIS PROJECT IS COVERED UNDER A SECTION 404 NATIONWIDE 14 PERMIT. REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS, EDITION OF 2014, FOR PERMIT REQUIREMENTS.

GOVERNING SPECIFICATIONS

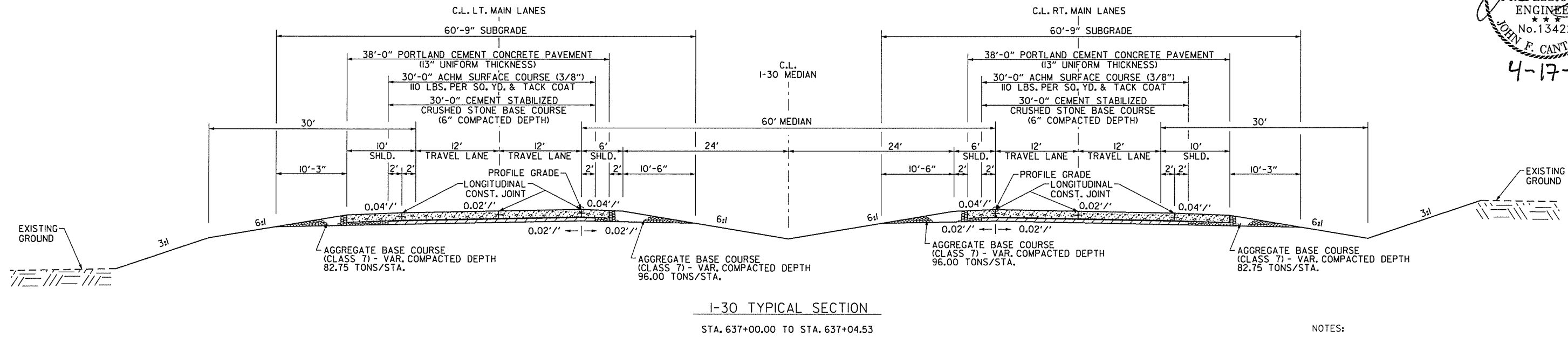
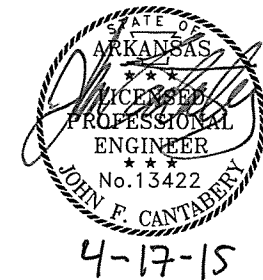
ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2014, AND THE FOLLOWING SPECIAL PROVISIONS AND SUPPLEMENTAL SPECIFICATIONS.

NUMBER	TITLE
ERRATA	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FWHA-1273	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FWHA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FWHA-1273	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FWHA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FWHA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FWHA-1273	SUPPLEMENT - TRAINING PROGRAM - JOB BB0303
FWHA-1273	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FWHA-1273	SUPPLEMENT - WAGE RATE DETERMINATION
108-1	LIQUIDATED DAMAGES
410-1	CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
604-1	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
620-1	MULCH COVER
JOB BB0303	AUTOMATED WORK ZONE INFORMATION SYSTEM
JOB BB0303	BIDDING REQUIREMENTS AND CONDITIONS
JOB BB0303	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB BB0303	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB BB0303	CHANNEL POST SIGN SUPPORT
JOB BB0303	CONCRETE BARRIER WALL
JOB BB0303	CONCRETE DITCH PAVING
JOB BB0303	CONCRETE RETAINING WALL
JOB BB0303	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB BB0303	CONTRACTOR PROVIDED CULTURAL RESOURCES CLEARANCE FOR OFF-SITE LOCATIONS
JOB BB0303	COORDINATION OF WORK
JOB BB0303	DETAILS FOR BOATER SAFETY
JOB BB0303	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB BB0303	DRILLED SHAFT FOUNDATIONS
JOB BB0303	EMPLOYMENT REPORTING
JOB BB0303	EXCAVATION AND EMBANKMENT
JOB BB0303	EXTENSION FOR PIPE CULVERTS
JOB BB0303	FOUNDATION IMPROVEMENT - AGGREGATE PIER
JOB BB0303	FURNISH AND OPERATION OF MOBILE SPEED NOTIFICATION SYSTEM
JOB BB0303	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB BB0303	GRADE HPS70W STRUCTURAL STEEL
JOB BB0303	HIGH PERFORMANCE PAVEMENT MARKING
JOB BB0303	MAINTENANCE OF TRAFFIC
JOB BB0303	MANDATORY ELECTRONIC CONTRACT
JOB BB0303	MODULAR GLARE SHIELD
JOB BB0303	NESTING SITES OF MIGRATORY BIRDS
JOB BB0303	NONDESTRUCTIVE TESTING OF DRILLED SHAFTS
JOB BB0303	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORT
JOB BB0303	PARTNERING REQUIREMENTS
JOB BB0303	PRE-BID ON SITE INVESTIGATION OF SOIL CONDITIONS
JOB BB0303	PROSECUTION AND PROGRESS
JOB BB0303	PROSECUTION OF WORK - AWIS
JOB BB0303	REMOVAL AND DISPOSAL OF GUARDRAIL
JOB BB0303	REMOVAL AND DISPOSAL OF PLOWABLE PAVEMENT MARKER
JOB BB0303	REMOVAL AND DISPOSAL OF PORTLAND CEMENT CONCRETE PAVEMENT GRINDING RESIDUE
JOB BB0303	REQUIREMENTS OF U.S. COAST GUARD PERMIT
JOB BB0303	RESTRAINING CONDITIONS
JOB BB0303	RETAINING WALLS
JOB BB0303	SECTION 404 NATIONWIDE 14 PERMIT REQUIREMENTS
JOB BB0303	SEQUENCE OF CONSTRUCTION
JOB BB0303	SHORING
JOB BB0303	SHORING FOR CULVERTS
JOB BB0303	SIGN PANEL MATERIALS AND FABRICATION
JOB BB0303	SITE USE (A+C METHOD)
JOB BB0303	SOIL STABILIZATION
JOB BB0303	SPECIAL SAFETY REQUIREMENTS FOR BRIDGES
JOB BB0303	SPLICING REINFORCING STEEL
JOB BB0303	STORM WATER POLLUTION PREVENTION PLAN
JOB BB0303	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB BB0303	TEMPORARY PORTABLE RUMBLE STRIPS
JOB BB0303	TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
JOB BB0303	TRIANGULAR SILT DIKE
JOB BB0303	UTILITY ADJUSTMENTS
JOB BB0303	VALUE ENGINEERING
JOB BB0303	VERY EARLY STRENGTH CONCRETE
JOB BB0303	WARM MIX ASPHALT
JOB BB0303	WELLHEAD PROTECTION
JOB BB0303	WIRE ROPE SAFETY FENCE (WRSF) SPECIFICATIONS

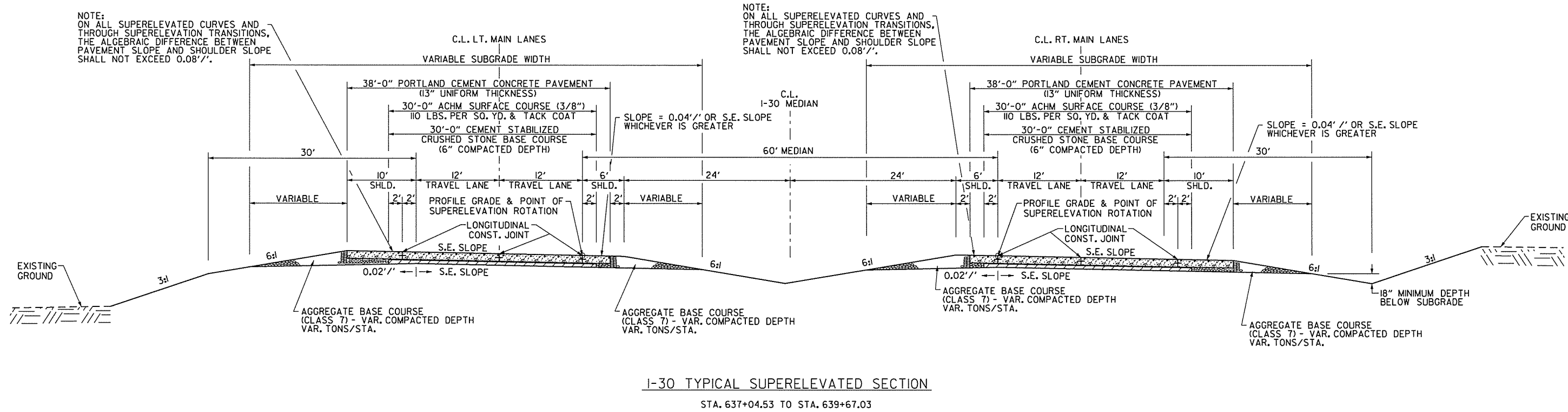


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO.	BB0303	4
								231

2 TYPICAL SECTIONS OF IMPROVEMENT



- NOTES:
1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.
 2. THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET THE TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

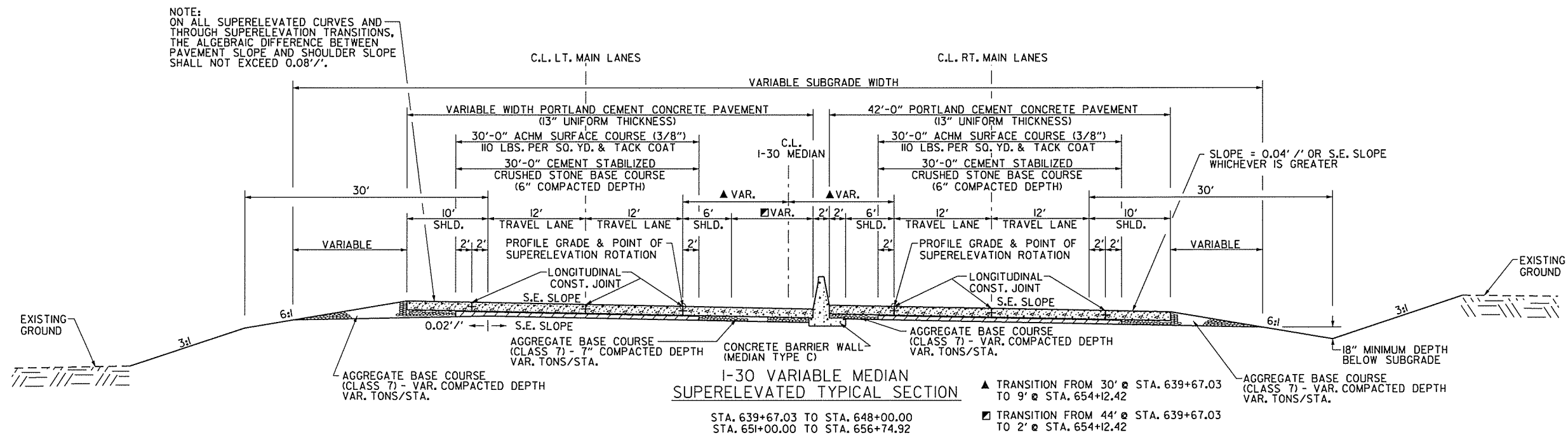
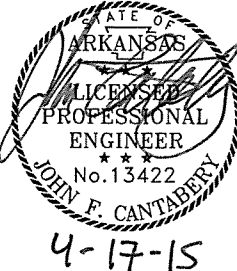


NOTE:
ON ALL SUPERELEVATED CURVES AND THROUGH SUPERELEVATION TRANSITIONS, THE ALGEBRAIC DIFFERENCE BETWEEN PAVEMENT SLOPE AND SHOULDER SLOPE SHALL NOT EXCEED 0.08'/'.

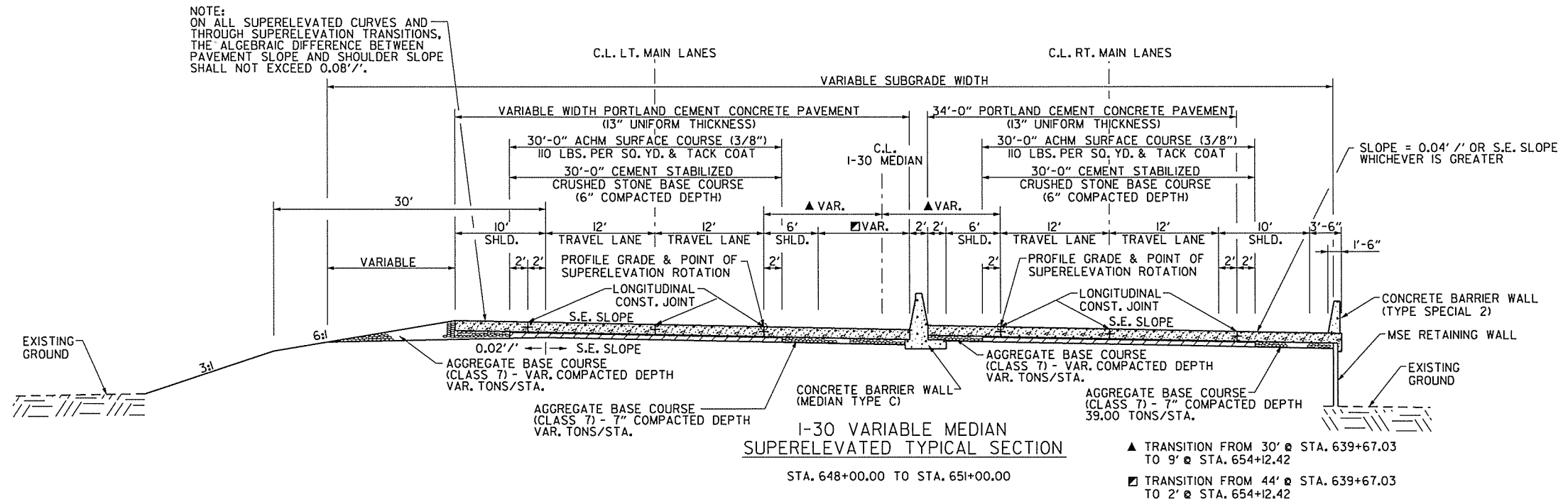
NOTE:
ON ALL SUPERELEVATED CURVES AND THROUGH SUPERELEVATION TRANSITIONS, THE ALGEBRAIC DIFFERENCE BETWEEN PAVEMENT SLOPE AND SHOULDER SLOPE SHALL NOT EXCEED 0.08'/'.

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.	BB0303		5	231

2 TYPICAL SECTIONS OF IMPROVEMENT

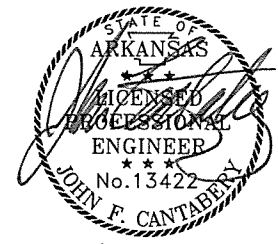


- NOTES:
1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.
 2. THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET THE TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

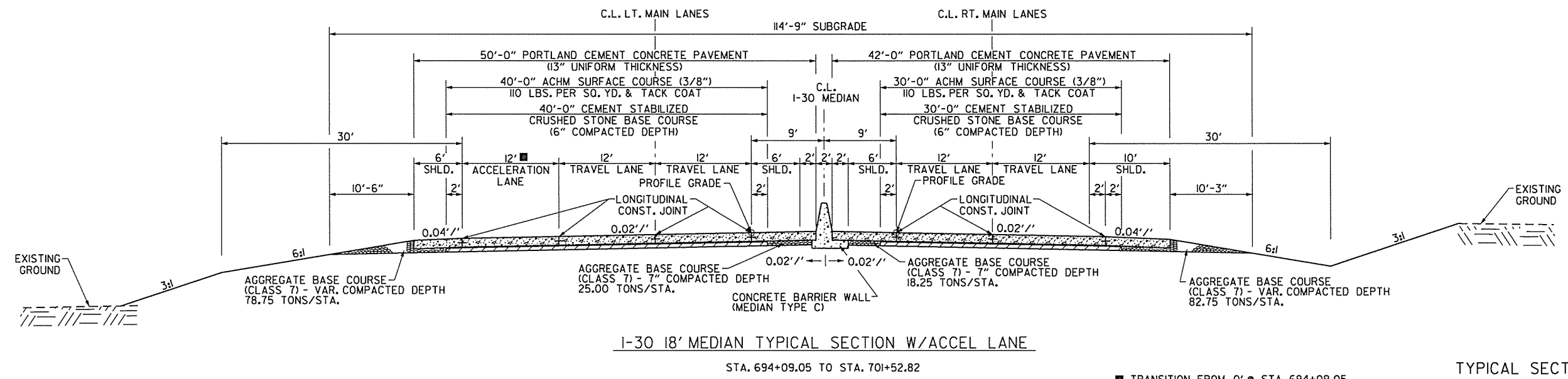
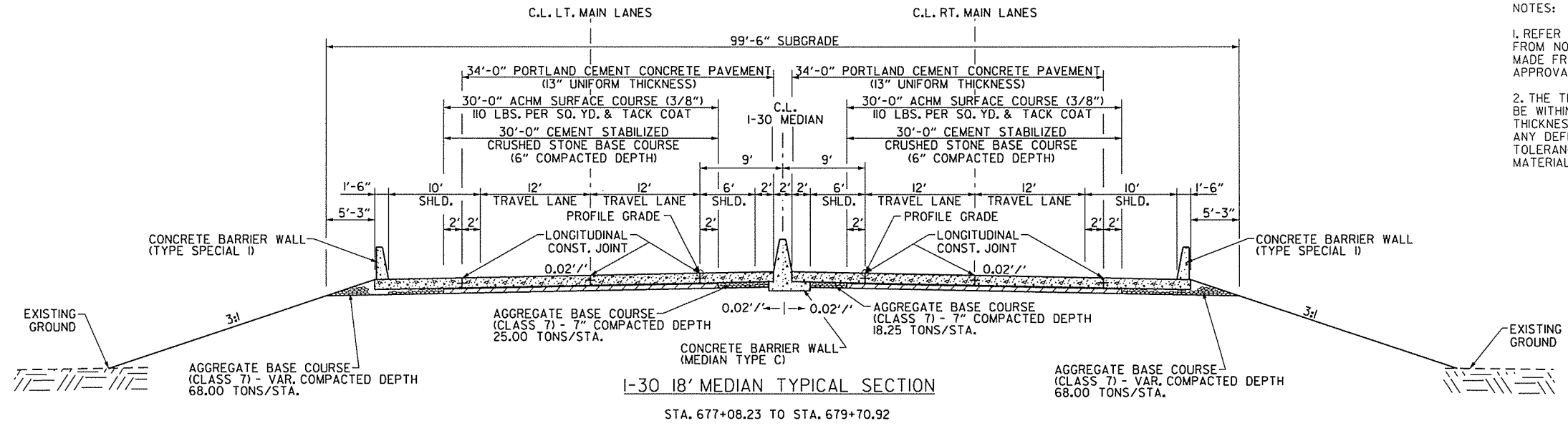
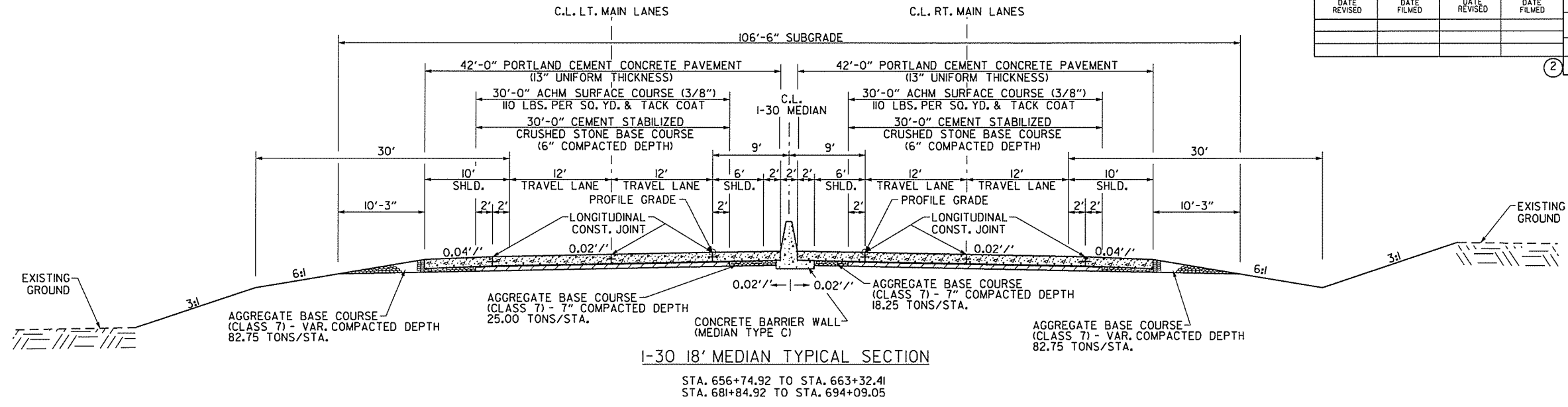


TYPICAL SECTIONS OF IMPROVEMENT

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. BB0303	6	231
(2) TYPICAL SECTIONS OF IMPROVEMENT								



4-17-15



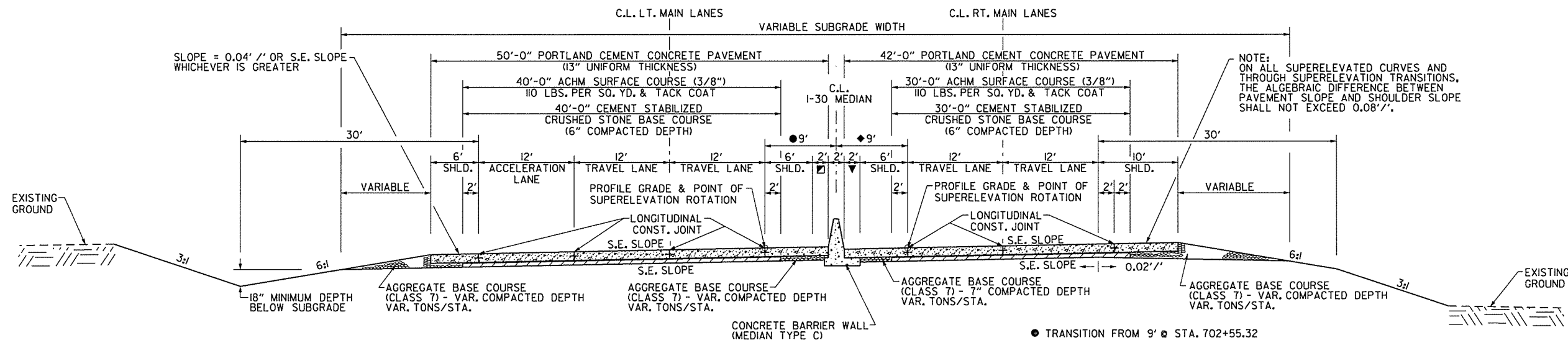
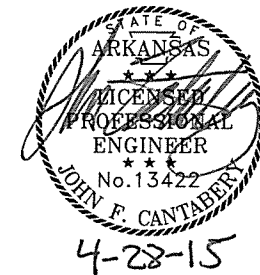
- NOTES:
1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.
 2. THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET THE TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

■ TRANSITION FROM 0' @ STA. 694+09.05 TO 12' @ STA. 697+09.05

TYPICAL SECTIONS OF IMPROVEMENT

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.		BB0303	7	231

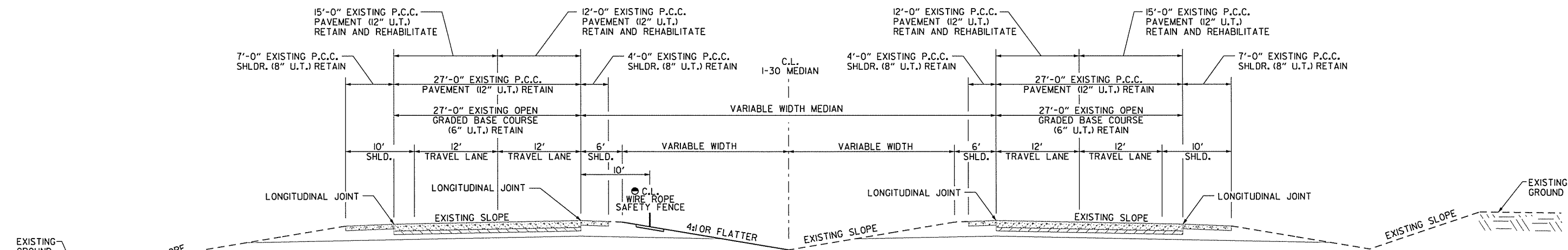
② TYPICAL SECTIONS OF IMPROVEMENT



1-30 18' MEDIAN SUPERELEVATED
TYPICAL SECTION W/ACCEL LANE

STA. 701+52.82 TO STA. 704+15.32

- TRANSITION FROM 9' @ STA. 702+55.32 TO 8.94' @ STA. 704+15.32
- ◆ TRANSITION FROM 9' @ STA. 702+55.32 TO 6.74' @ STA. 704+15.32
- TRANSITION FROM 2' @ STA. 702+55.32 TO 1.94' @ STA. 704+15.32
- ▼ TRANSITION FROM 2' @ STA. 702+55.32 TO 0.74' @ STA. 704+15.32



1-30 P.C.C. PAVEMENT REHABILITATION TYPICAL SECTION

STA. 704+15.32 TO STA. 743+50.31

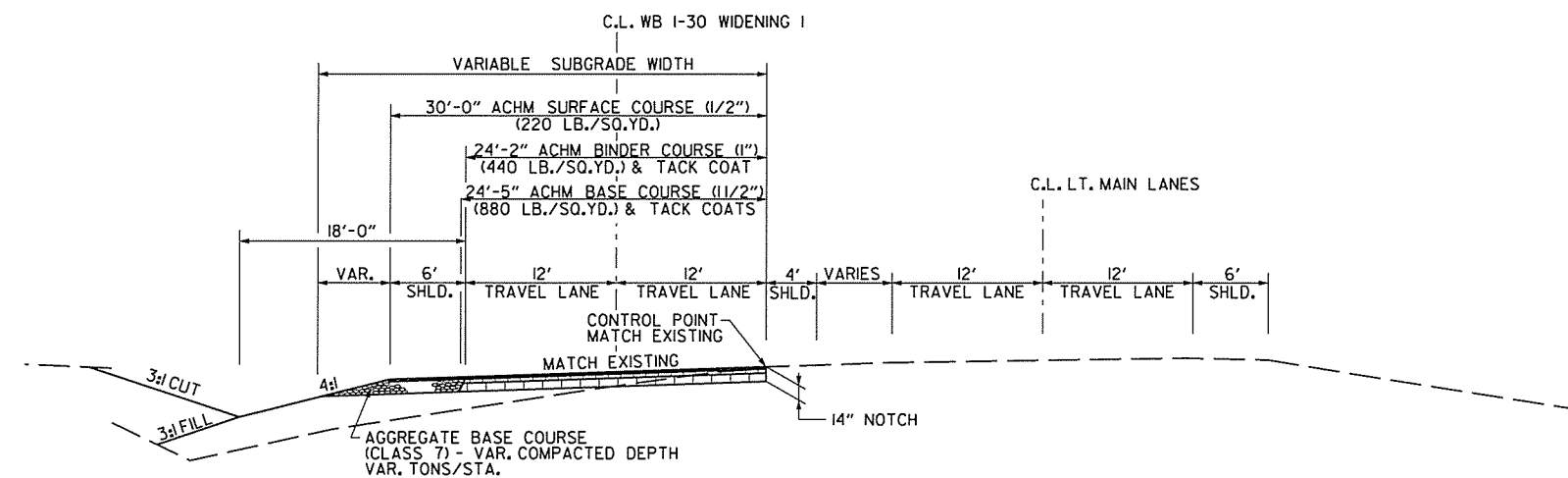
- WIRE ROPE SAFETY FENCE FROM STA. 726+64.46 TO STA. 743+50.31

- NOTES:
1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.
 2. THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET THE TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

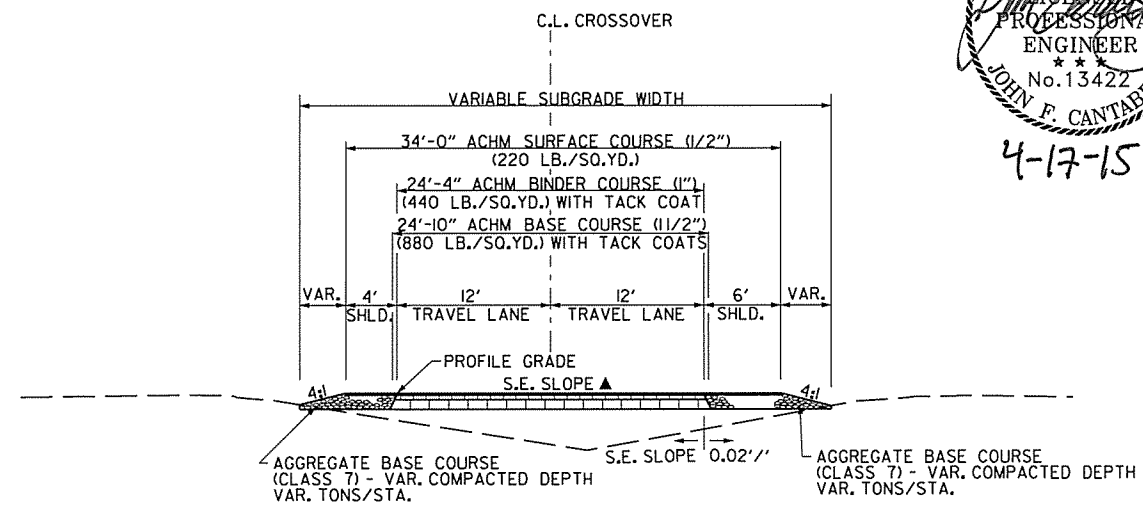
TYPICAL SECTIONS OF IMPROVEMENT

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.	BBO303	8
								231

2 TYPICAL SECTIONS OF IMPROVEMENT

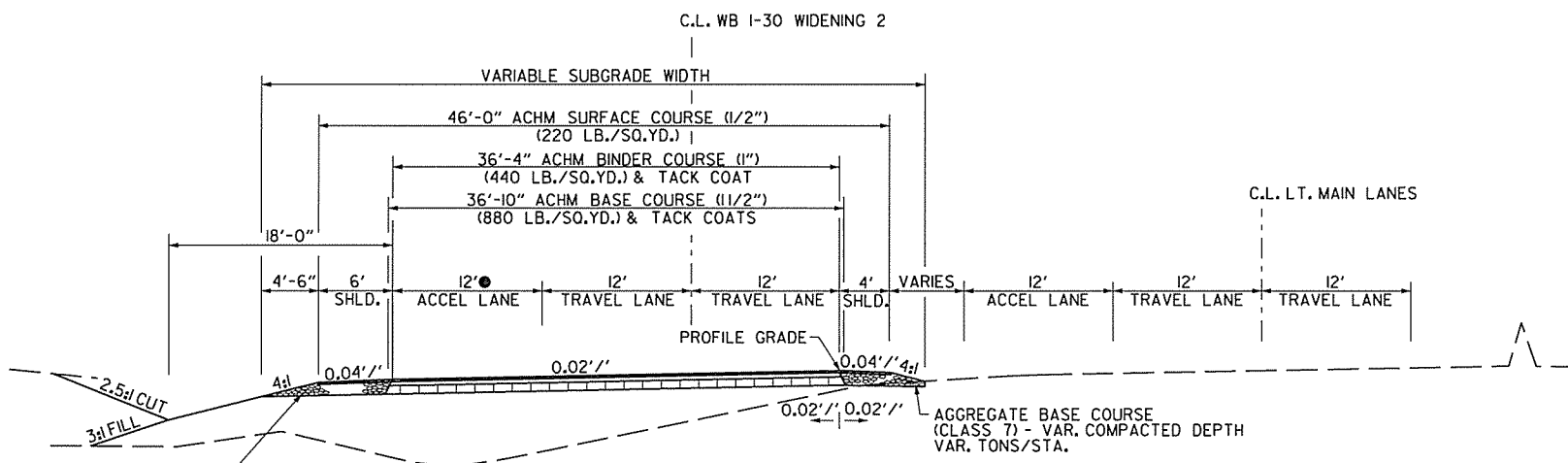


WB I-30 TEMPORARY WIDENING 1 TYPICAL SECTION



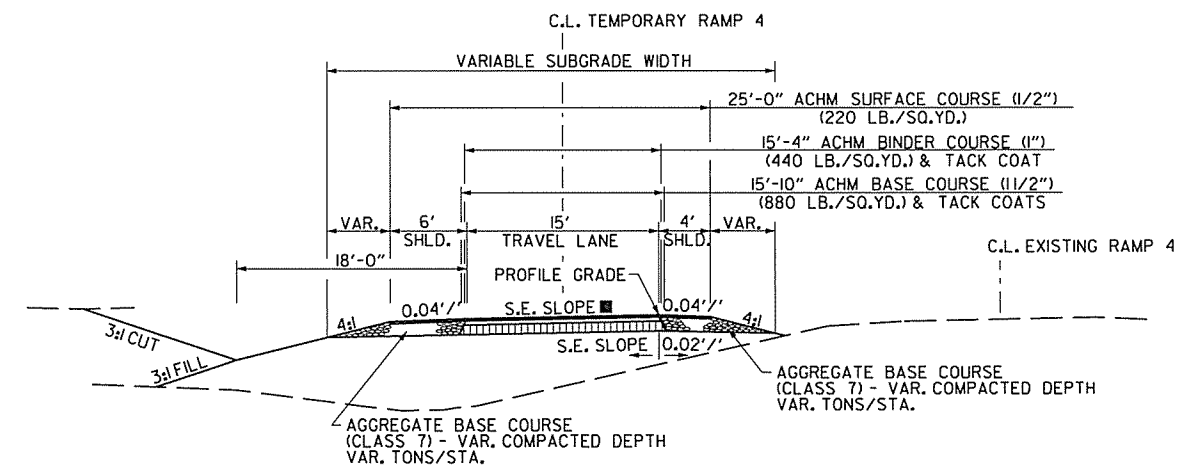
EB I-30 CROSSOVER 1 & 2 TYPICAL SECTION

▲ TRANSITION SLOPE FROM
-0.02'/' AT CROSSOVER 1 STA. 635+94.72 TO
+0.02'/' AT CROSSOVER 1 STA. 637+97.84
MATCH SUPERELEVATION OF MAIN LANE CURVES FOR CROSSOVER 2



WB I-30 TEMPORARY WIDENING 2 TYPICAL SECTION

● TRANSITION FROM 0' @ STA. 696+78.73
TO 12' @ STA. 699+78.73



TEMPORARY RAMP 4

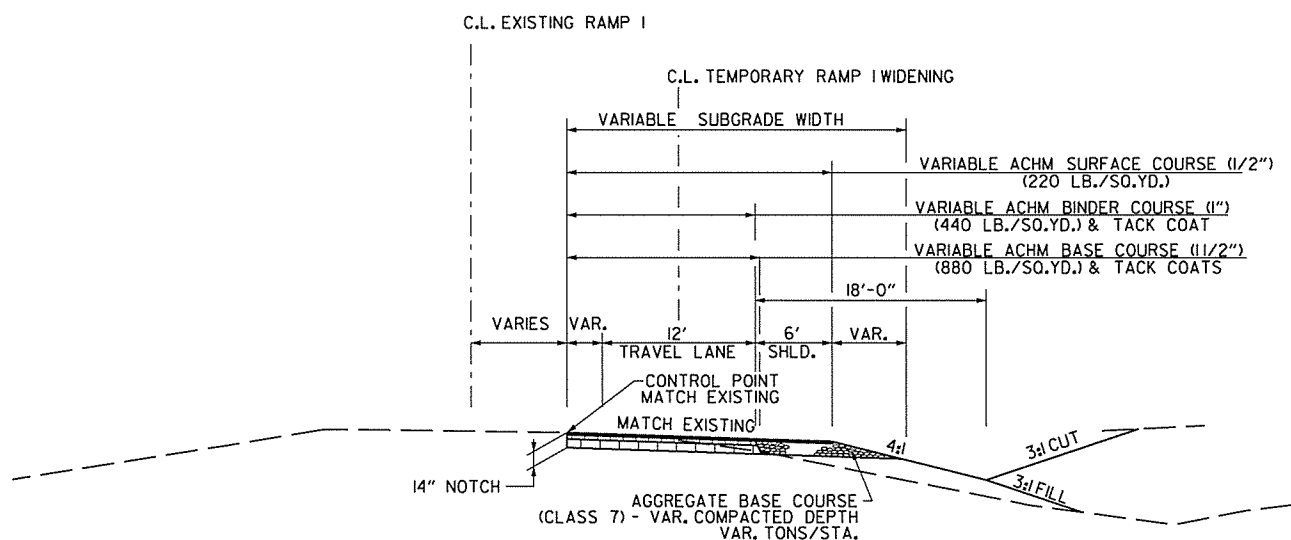
(SHOWN IN DIRECTION OF STATIONING)

■ TRANSITION SLOPE FROM
-0.02'/' AT STA. 706+79.49 TO
-0.068'/' AT STA. 708+66.19

- NOTES:
1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.
 2. THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. AFTER SAWING, THE PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN. ANY DAMAGE TO THE ASPHALT PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

TYPICAL SECTIONS OF IMPROVEMENT

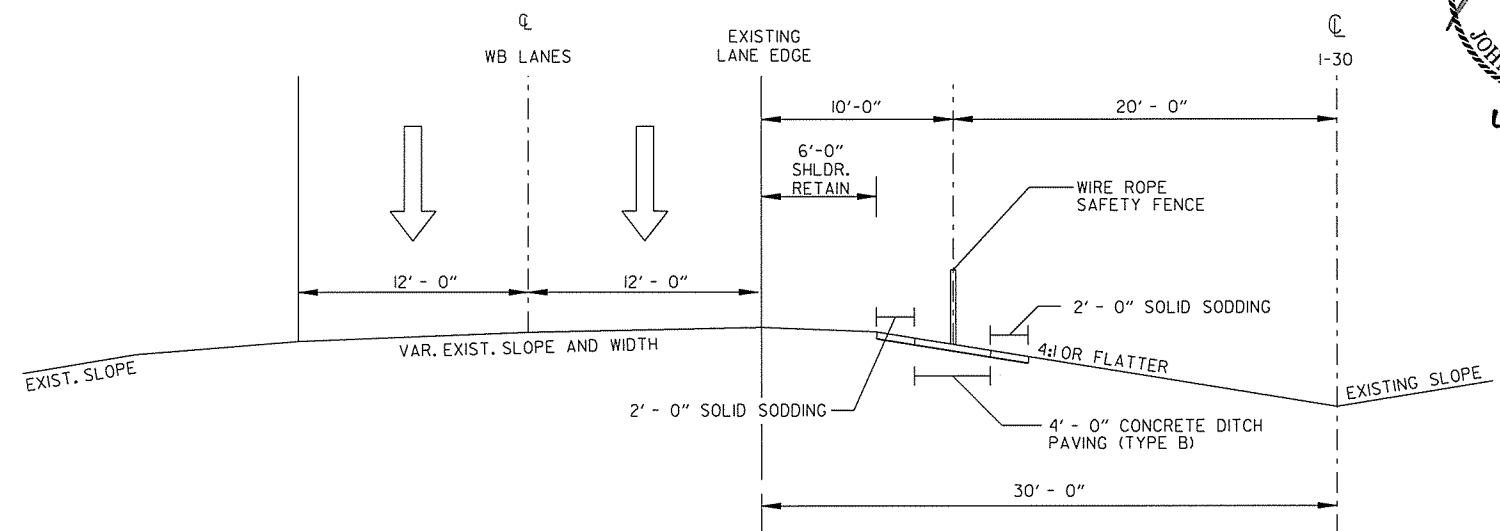
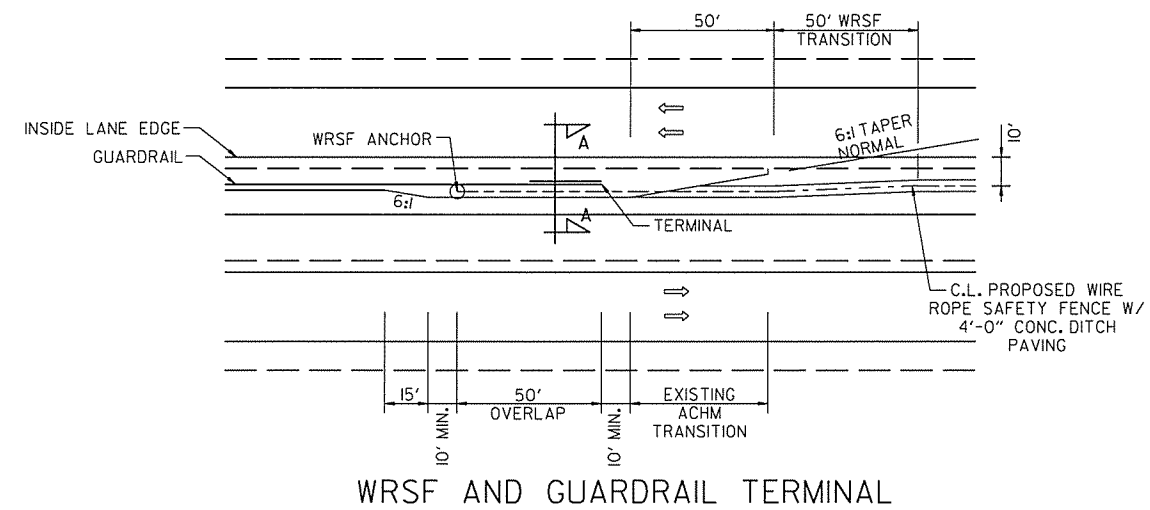
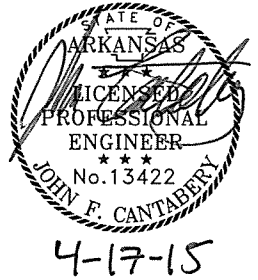
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REVISED DATE:



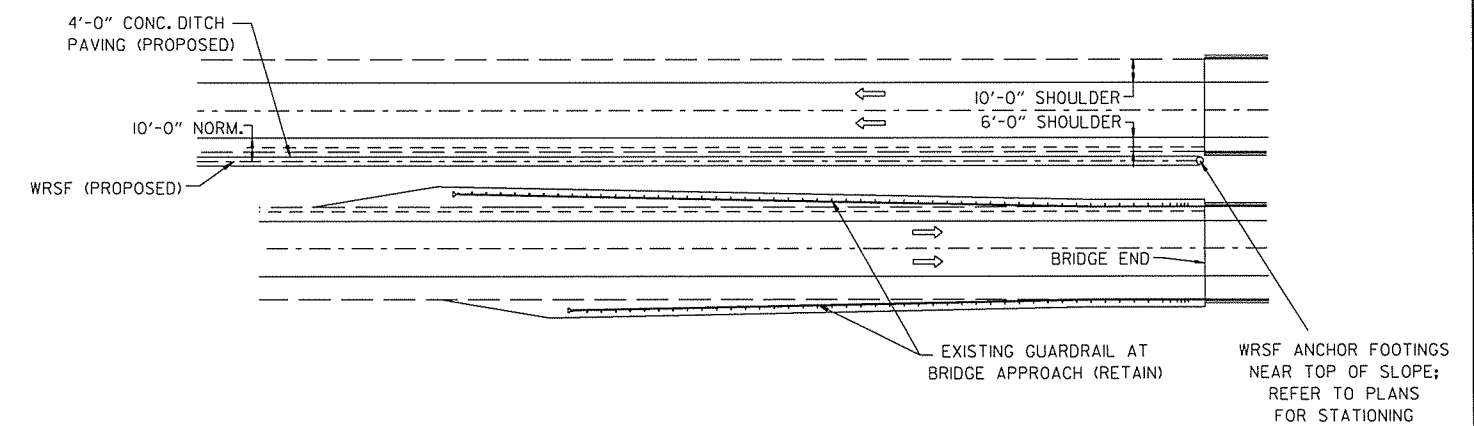
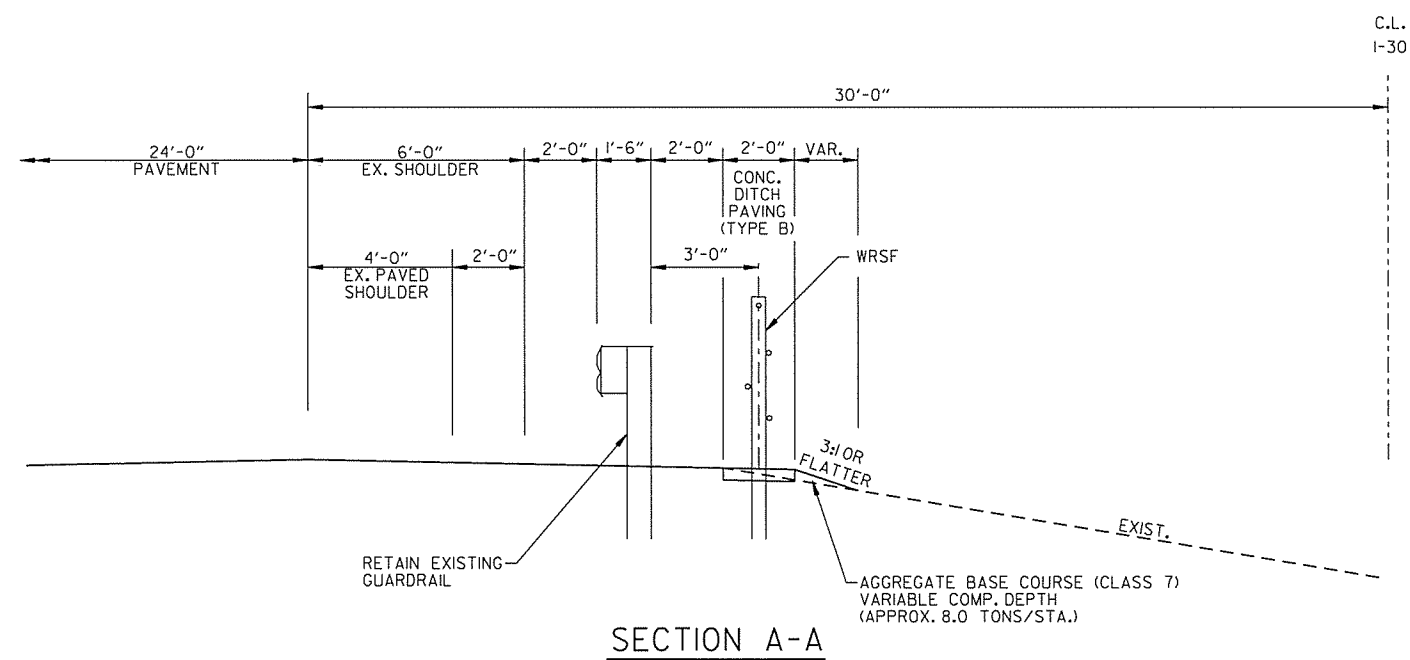
TEMPORARY RAMP 1 WIDENING TYPICAL SECTION

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RO. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0303	9	231

2 SPECIAL DETAILS



TYPICAL WIRE ROPE SAFETY FENCE INSTALLATION DETAILS



DETAIL OF WIRE ROPE SAFETY FENCE AT EXISTING BRIDGE END

SPECIAL DETAILS

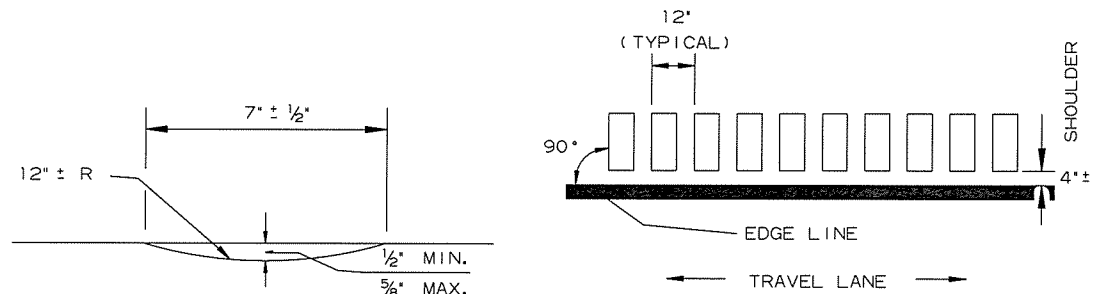
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO.	BB0303	10 231

2 SPECIAL DETAILS

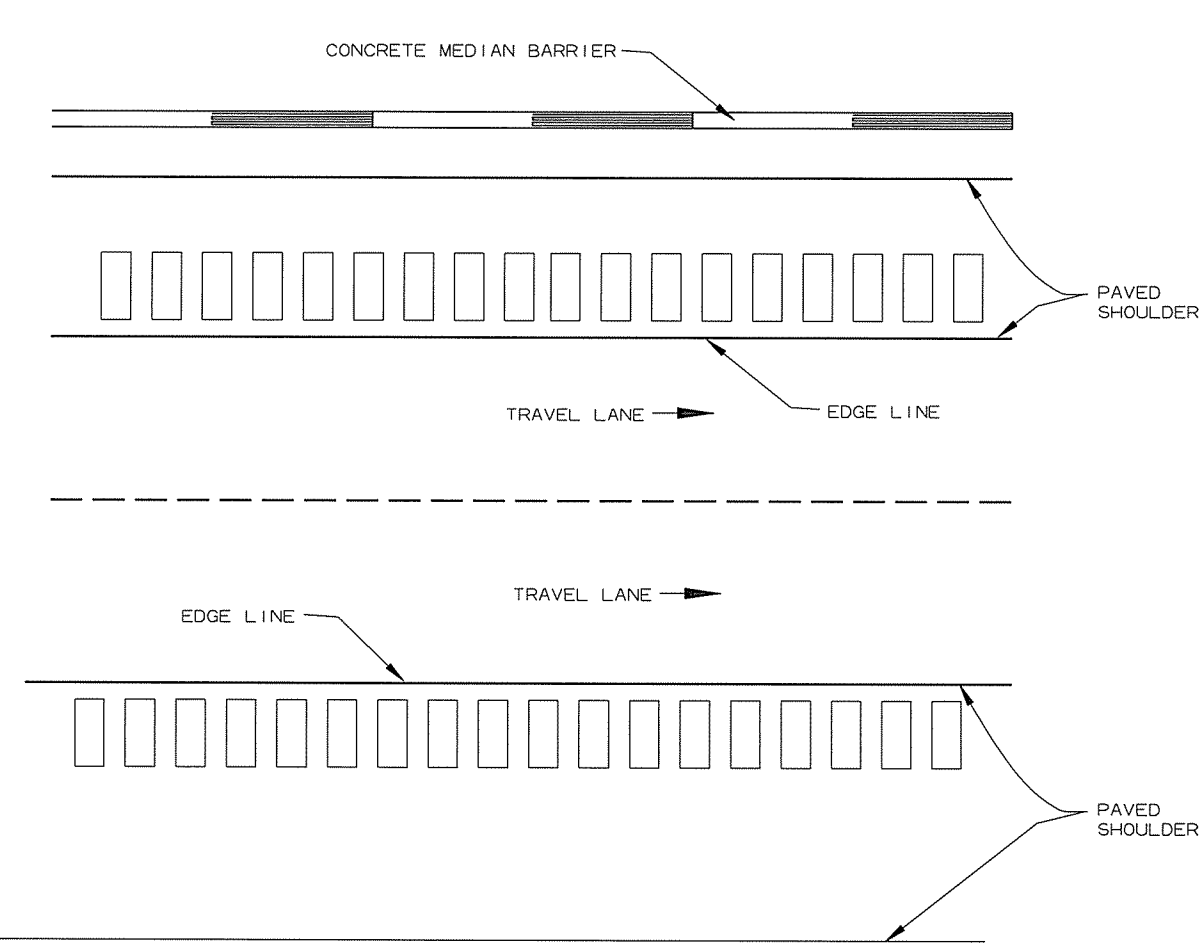


4-27-15



SECTION A-A

LOCATION PLAN OF RUMBLE STRIPS
LEFT OR RIGHT SHOULDER



PLAN

SECTION B-B

PLAN VIEW

DETAILS OF RUMBLE STRIPS

- NOTES:
1. ALIGNMENT OF RUMBLE STRIPS SHALL GENERALLY BE STRAIGHT AND OFFSET APPROXIMATELY 4" FROM THE OUTER EDGE OF THE EDGE LINE. THIS OFFSET MAY BE ADJUSTED TO ACCOMMODATE VARIATIONS IN THE EDGE LINE AS WELL AS TO AVOID EXISTING LONGITUDINAL JOINTS.
 2. THE 1/2" DEPTH SHALL GENERALLY APPLY FOR THE ENTIRE 16" LENGTH. SOME VARIATION TO SUIT SHOULDER SLOPE BREAKS MAY BE NECESSARY.
 3. RUMBLE STRIPS SHALL NOT BE INSTALLED ON BRIDGE DECKS, APPROACH SLABS, OR ACROSS TRANSVERSE JOINTS OF CONCRETE SHOULDERS.

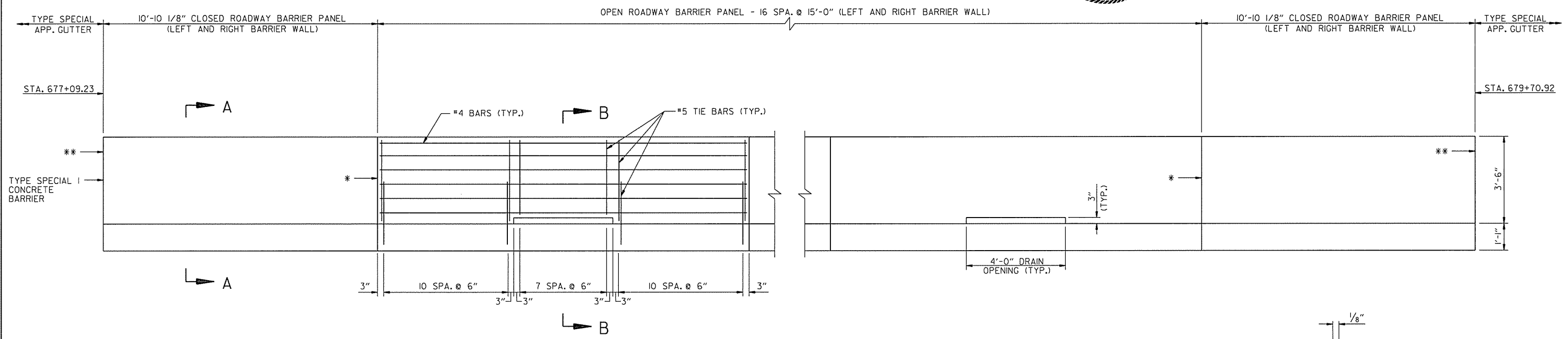
SPECIAL DETAILS



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.	BB0303	12
								231

2 SPECIAL DETAILS

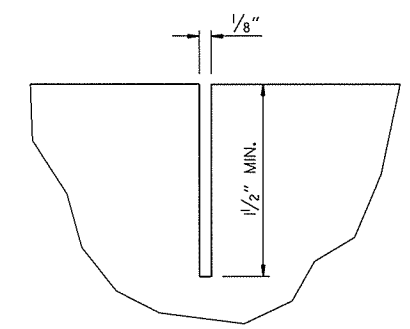
4-17-15



* TRANSVERSE CONTRACTION JOINT IN SHOULDER SHALL MATCH THE LOCATION OF THE BARRIER JOINT.

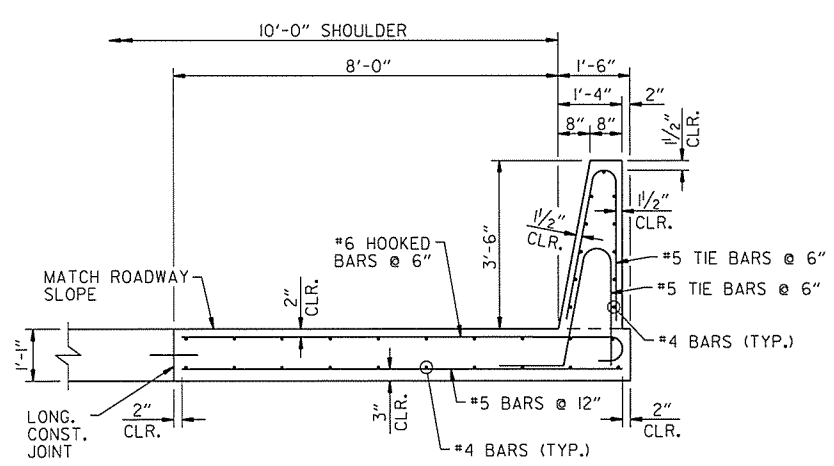
CONCRETE BARRIER WALL (TYPE SPECIAL I) DETAILS

** 1/2" JOINT FILLER AASHTO M53 TYPE I AS PER SUBSECTION 501.02(h)(1) WITH 1/2"x1" TYPE 3 OR 4 JOINT SEALER PER SUBSECTION 501.02(h)(2). PAYMENT WILL NOT BE MADE DIRECTLY BUT WILL BE CONSIDERED SUBSIDIARY TO OTHER PAY ITEMS.

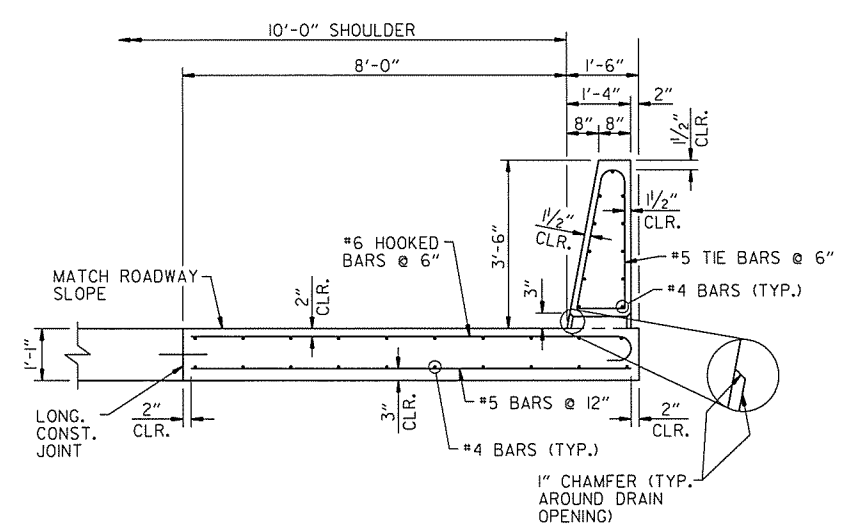


CONTRACTION JOINT DETAIL

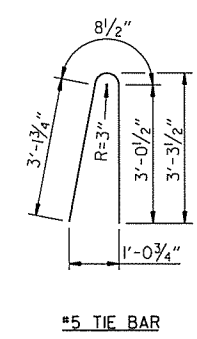
- NOTES FOR BARRIER
1. ALL EXPOSED EDGES SHALL HAVE 3/4" CHAMFERS.
 2. CONTRACTION JOINTS SHALL BE CONSTRUCTED AT 15'-0" MAXIMUM SPACING IN TOP AND SIDES AND SHALL BE FORMED IN FRESH CONCRETE.
 3. ALL REINFORCING GRADE 60
 4. ALL CONCRETE CLASS S(AE)



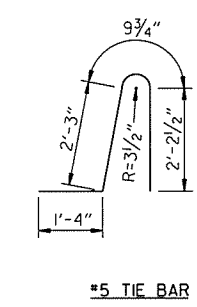
SECTION A-A



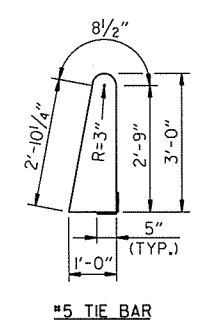
SECTION B-B



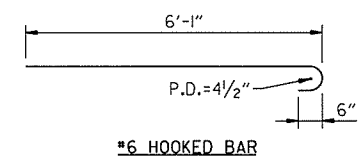
#5 TIE BAR



#5 TIE BAR



#5 TIE BAR

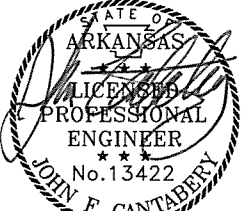


#6 HOOKED BAR

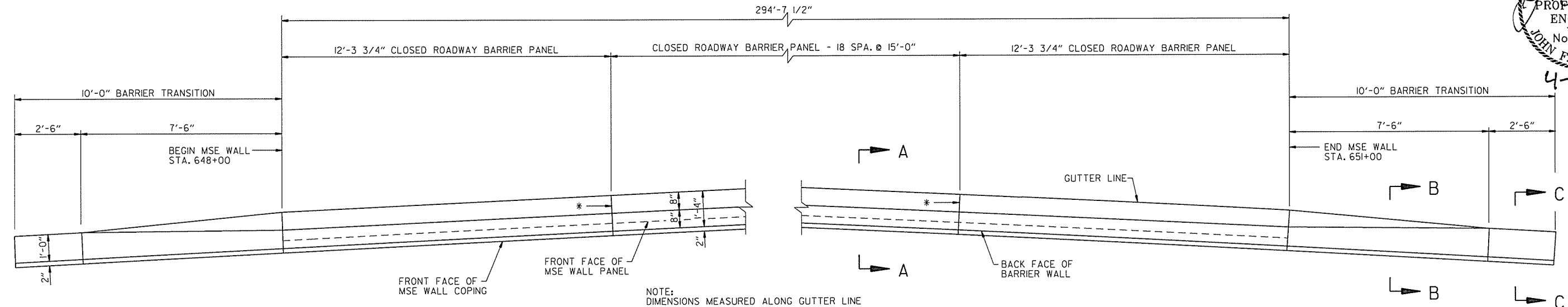
SPECIAL DETAILS

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.		BB0303	13	231

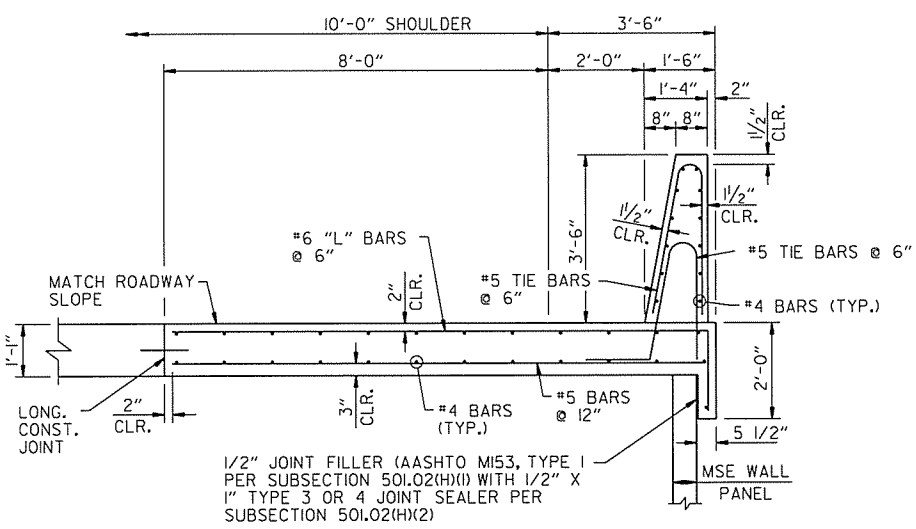
2 SPECIAL DETAILS



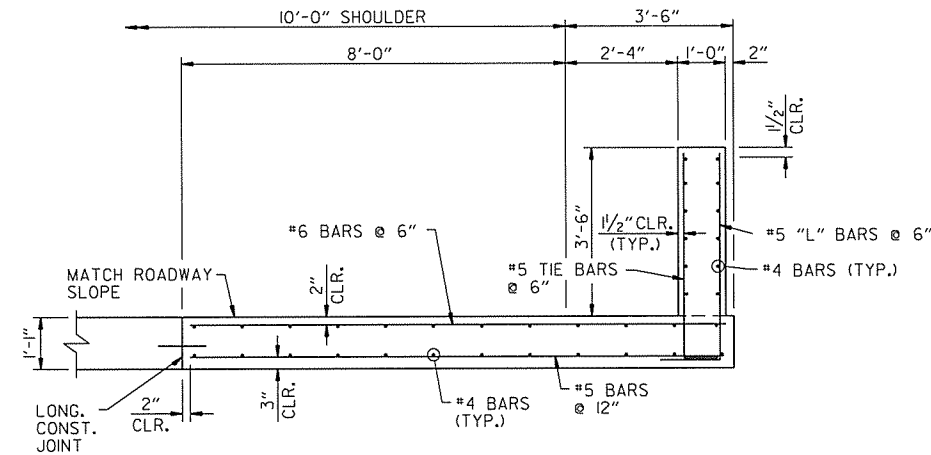
4-17-15



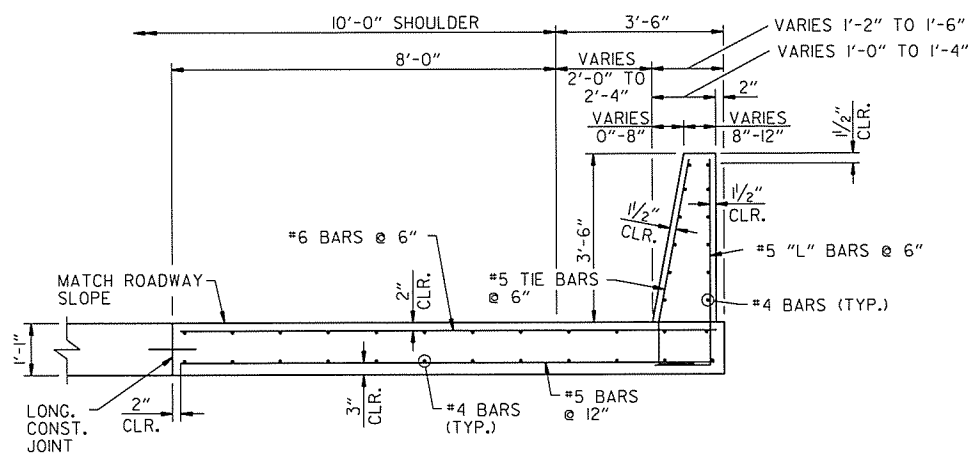
CONCRETE BARRIER WALL (TYPE SPECIAL 2) - PLAN



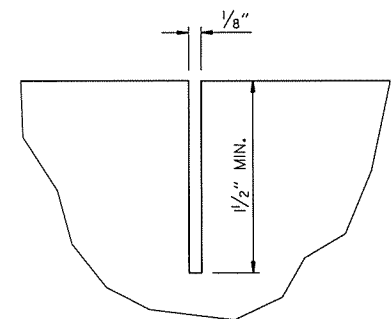
SECTION A-A



SECTION C-C

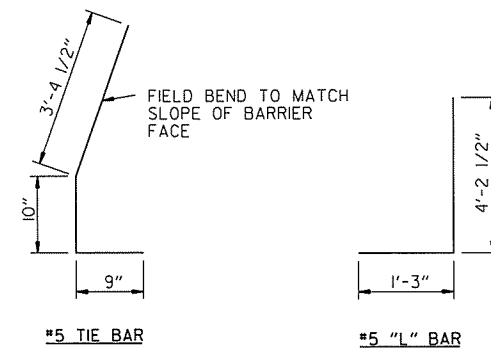
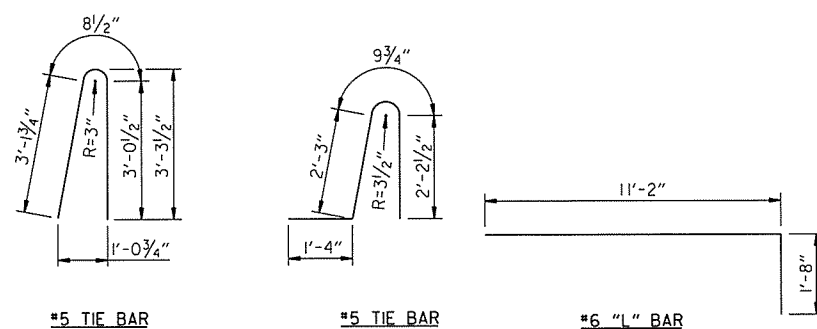


SECTION B-B



CONTRACTION JOINT DETAIL

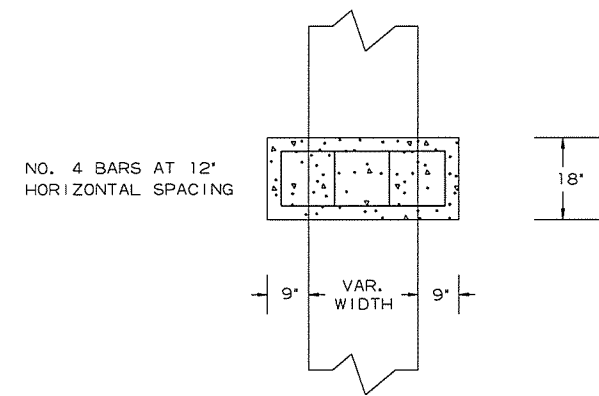
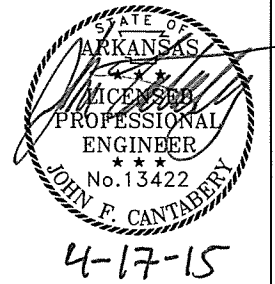
- NOTES FOR BARRIER
1. ALL EXPOSED EDGES SHALL HAVE $\frac{3}{4}$ " CHAMFERS.
 2. CONTRACTION JOINTS SHALL BE CONSTRUCTED AT 15'-0" MAXIMUM SPACING IN TOP AND SIDES AND SHALL BE FORMED IN FRESH CONCRETE.
 3. ALL REINFORCING GRADE 60
 4. ALL CONCRETE CLASS (SAC)



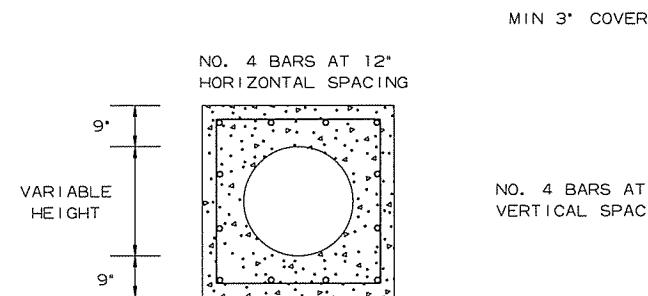
SPECIAL DETAILS

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.	BB0303	14
								231

2 SPECIAL DETAILS



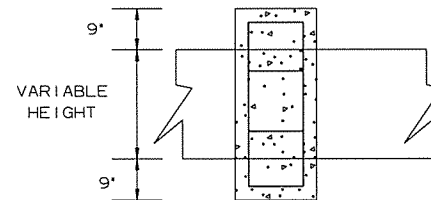
TOP VIEW



FRONT VIEW

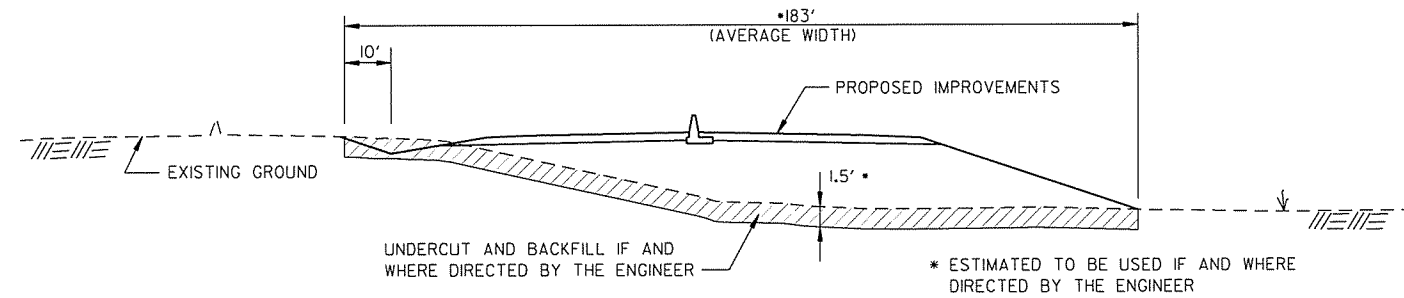
MIN 3" COVER

NO. 4 BARS AT 12" VERTICAL SPACING

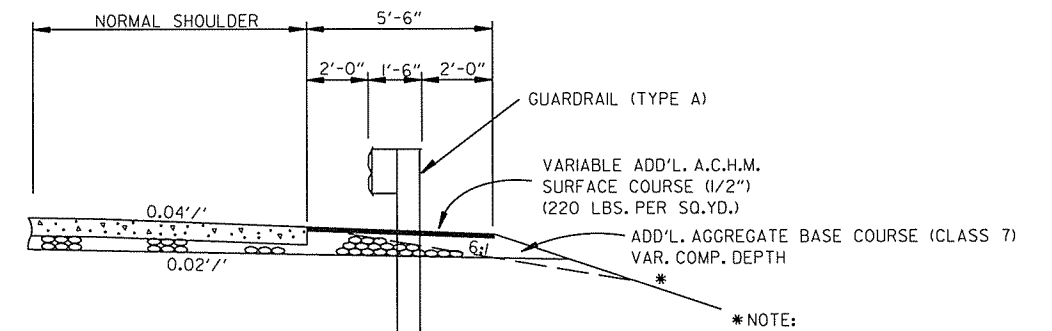


SIDE VIEW

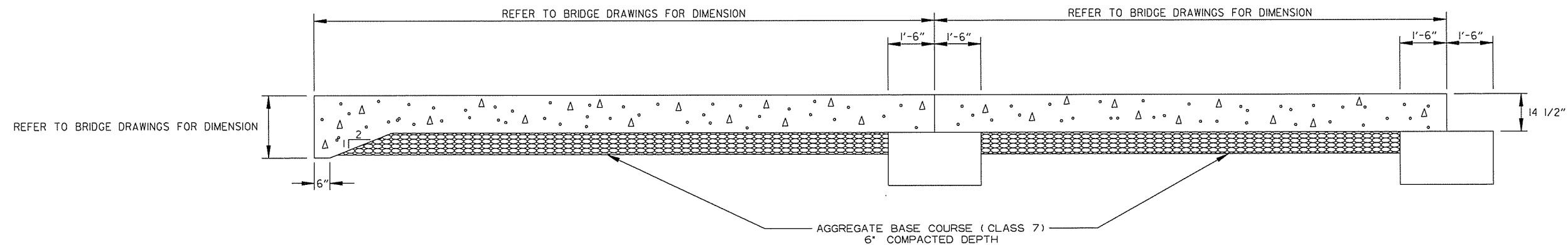
PIPE EXTENSION
REINFORCED CONCRETE COLLAR DETAIL



DETAIL FOR UNDERCUT

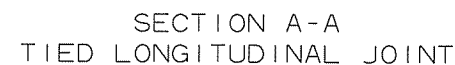


WIDENING FOR GUARDRAIL

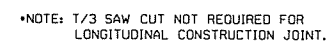
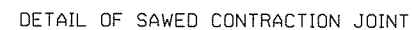


SECTION OF APPROACH SLAB

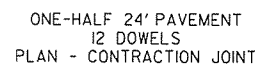
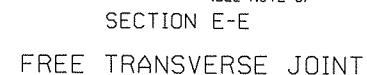
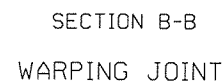
SPECIAL DETAILS



PLAN OF PAVEMENT REPAIR (PARTIAL SLABS)

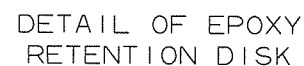


DETAIL OF SAWED
TIED LONGITUDINAL JOINT
AND WARPING JOINT



NOTE: FOR 20" PAVEMENT USE 20 DOWELS @ 12" CTRS. WITH 6" SPACING FROM C.L. AND EDGE OF SLAB TO FIRST BAR. FOR 15" PAVEMENT USE 15 DOWELS @ 12" CTRS. WITH 6" SPACING FROM C.L. AND EDGE OF SLAB TO FIRST BAR. FOR 26" PAVEMENT USE 26 DOWELS @ 12" CTRS. WITH 6" SPACING FROM C.L. AND EDGE OF SLAB TO FIRST BAR. FOR PAVEMENT WIDTHS OTHER THAN THOSE SHOWN ABOVE, USE DOWELS AT 12" CTRS. WITH 6" MAX. SPACING FROM C.L. TO FIRST BAR. DISTANCE FROM EDGE OF SLAB TO FIRST BAR SHALL BE ADJUSTED TO MAINTAIN 12" DOWEL BAR SPACING

CONTRACTION JOINT DETAILS



NOTE: EPOXY RETENTION DISK SHALL BE SLIPPED TIGHTLY OVER TIE BARS AND FIRMLY AGAINST THE SLAB FACE AFTER INSERTING TIE BAR AND EPOXY INTO HOLE

JOINT CONFIGURATION FOR
TYPE 3 OR 4 JOINT SEALANT

JOINT WIDTH	SEALANT THICKNESS ①	BACKER ROD DIAMETER	BACKER ROD PLACEMENT DEPTH ②
INCHES			
1/4	1/4	3/8	1/2
3/8	1/4	1/2	1/2
1/2	1/4	5/8	1/2

JOINT CONFIGURATION FOR
TYPE 5 OR 7 JOINT SEALANT

JOINT WIDTH	SEALANT THICKNESS ①	BACKER ROD DIAMETER	BACKER ROD PLACEMENT DEPTH ②
INCHES			
1/4	1/2	3/8	3/4
3/8	3/4	1/2	1

NOTES FOR PAVEMENT REPAIR

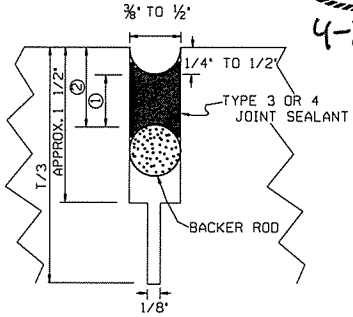
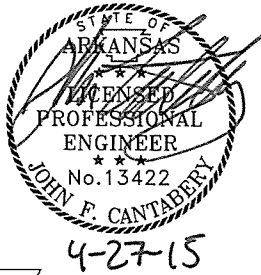
1. EXACT SIZE AND LOCATION OF AREA TO BE REPAIRED SHALL BE DETERMINED BY THE ENGINEER. ALL PATCHES SHALL EXTEND ACROSS THE FULL WIDTH OF THE SLAB AS SHOWN IN THESE DETAILS.
2. THE FINAL SURFACE FINISH FOR PATCHES SHALL MATCH THAT OF THE EXISTING PAVEMENT.
3. WHEN AREA TO BE REPAIRED INCLUDES AN EXISTING JOINT, THE JOINT SHALL BE RECONSTRUCTED TO THE CONFIGURATION SHOWN IN THESE DETAILS.
4. ALL REPAIRED AREAS SHALL BE REINFORCED WITH MESH FABRIC AS SHOWN. DEPTH OF MESH PLACEMENT SHALL HAVE A TOLERANCE OF +1 INCH. MESH FABRIC SHALL BE 12 x 12 - W4 x W4 WELDED WIRE FABRIC (MINIMUM WIRE SIZE). LAPS SHALL BE MINIMUM 6" IN EACH DIRECTION.
5. FORMS FOR PAVEMENT REPAIR SHALL BE METAL UNLESS OTHERWISE APPROVED BY THE ENGINEER.
6. CLOSED CELL POLYETHYLENE FOAM SHALL BE SECURED TO SAWED FACE OF EXISTING P.C.C. PAVEMENT WITH ADHESIVE OR ADHESIVE TAPE AS APPROVED BY THE ENGINEER AND TRIMMED FLUSH WITH TOP OF EXISTING SLAB TO PREVENT DISPLACEMENT WHEN THE PATCH IS BEING PLACED.
7. WHEN THE PATCH IS PLACED OVER GRANULAR BASE, REMOVE ANY LOOSE BASE MATERIAL, COMPACT REMAINING BASE AS NECESSARY AND PLACE PATCH. WHEN PATCH IS PLACED OVER TREATED BASE, REMOVE ANY LOOSE BASE MATERIAL AND PLACE PATCH.
8. 1/4" THICK COMPRESSIBLE MATERIAL SHALL BE ATTACHED TO THE ENDS OF DOWEL BARS AT ALL FREE TRANSVERSE JOINTS (SEE SECTION E-E). THE MATERIAL SHALL BE THE SAME DIAMETER AS THE DOWEL BAR. A PLASTIC CAP OR OTHER TYPE OF DEVICE MAY BE USED WITH THE APPROVAL OF THE ENGINEER.
9. DOWEL BARS SHALL BE PLACED IN ACCORDANCE WITH THE DIMENSIONS SHOWN. A TOLERANCE OF PLUS OR MINUS 1" WILL BE ALLOWED FOR VERTICAL AND LATERAL PLACEMENT AND A TOLERANCE OF PLUS OR MINUS 1/4" WILL BE ALLOWED FOR THE TILT AND SKEW.

DETAILS OF PORTLAND CEMENT CONCRETE PAVEMENT PATCHING (MAIN LANES)

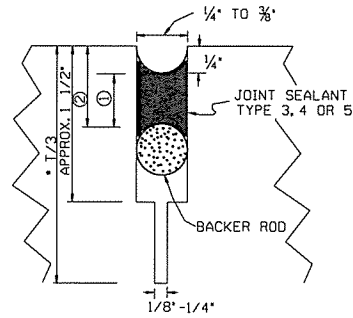
SPECIAL DETAILS

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.	BB0303		15B	231

2 SPECIAL DETAILS

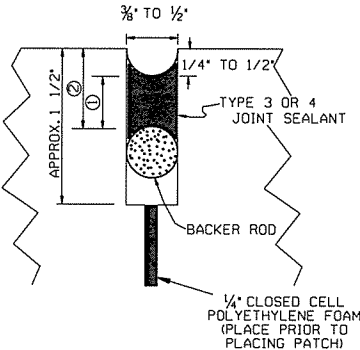


DETAIL OF SAWED CONTRACTION JOINT



*NOTE: T/3 SAW CUT NOT REQUIRED FOR LONGITUDINAL CONSTRUCTION JOINT.

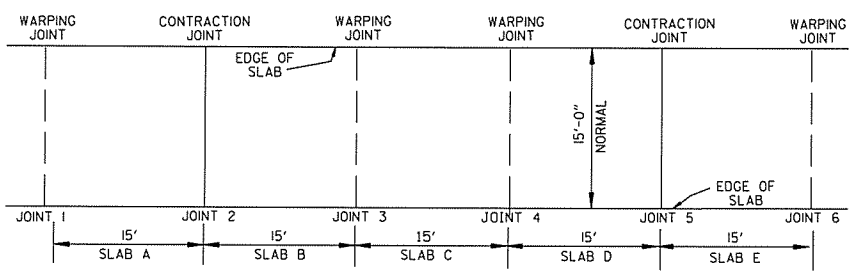
DETAIL OF SAWED FREE WARPING JOINT



DETAIL OF SAWED FREE TRANSVERSE JOINT

NOTES FOR PAVEMENT REPAIR

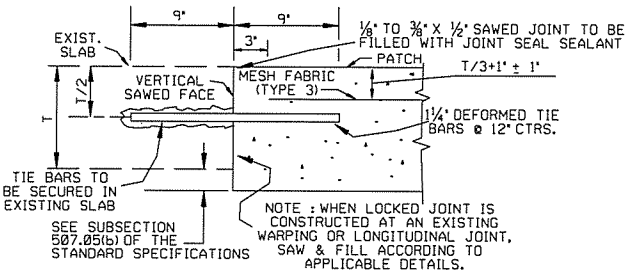
1. EXACT SIZE AND LOCATION OF AREA TO BE REPAIRED SHALL BE DETERMINED BY THE ENGINEER. ALL PATCHES SHALL EXTEND ACROSS THE FULL WIDTH OF THE SLAB AS SHOWN IN THESE DETAILS.
2. THE FINAL SURFACE FINISH FOR PATCHES SHALL MATCH THAT OF THE EXISTING PAVEMENT.
3. WHEN AREA TO BE REPAIRED INCLUDES AN EXISTING JOINT, THE JOINT SHALL BE RECONSTRUCTED TO THE CONFIGURATION SHOWN IN THESE DETAILS.
4. ALL REPAIRED AREAS SHALL BE REINFORCED WITH MESH FABRIC AS SHOWN. DEPTH OF MESH PLACEMENT SHALL HAVE A TOLERANCE OF +1 INCH. MESH FABRIC SHALL BE 12" X 12" - W4 X W4 WELDED WIRE FABRIC (MINIMUM WIRE SIZE). LAPS SHALL BE MINIMUM 6" IN EACH DIRECTION. MINIMUM COVER AT EDGES SHALL BE 2".
5. FORMS FOR PAVEMENT REPAIR SHALL BE METAL UNLESS OTHERWISE APPROVED BY THE ENGINEER.
6. CLOSED CELL POLYETHYLENE FOAM SHALL BE SECURED TO SAWED FACE OF EXISTING P.C.C. PAVEMENT WITH ADHESIVE OR ADHESIVE TAPE AS APPROVED BY THE ENGINEER AND TRIMMED FLUSH WITH TOP OF EXISTING SLAB TO PREVENT DISPLACEMENT WHEN THE PATCH IS BEING PLACED.
7. WHEN THE PATCH IS PLACED OVER GRANULAR BASE, REMOVE ANY LOOSE BASE MATERIAL, COMPACT REMAINING BASE AS NECESSARY AND PLACE PATCH. WHEN PATCH IS PLACED OVER TREATED BASE, REMOVE ANY LOOSE BASE MATERIAL AND PLACE PATCH.
8. 1/4" THICK COMPRESSIBLE MATERIAL SHALL BE ATTACHED TO THE ENDS OF DOWEL BARS AT ALL FREE TRANSVERSE JOINTS (SEE SECTION E-E). THE MATERIAL SHALL BE THE SAME DIAMETER AS THE DOWEL BAR. A PLASTIC CAP OR OTHER TYPE OF DEVICE MAY BE USED WITH THE APPROVAL OF THE ENGINEER.
9. DOWEL BARS SHALL BE PLACED IN ACCORDANCE WITH THE DIMENSIONS SHOWN. A TOLERANCE OF PLUS OR MINUS ONE INCH WILL BE ALLOWED FOR VERTICAL AND LATERAL PLACEMENT AND A TOLERANCE OF PLUS OR MINUS 1/4" WILL BE ALLOWED FOR THE TILT AND SKEW.



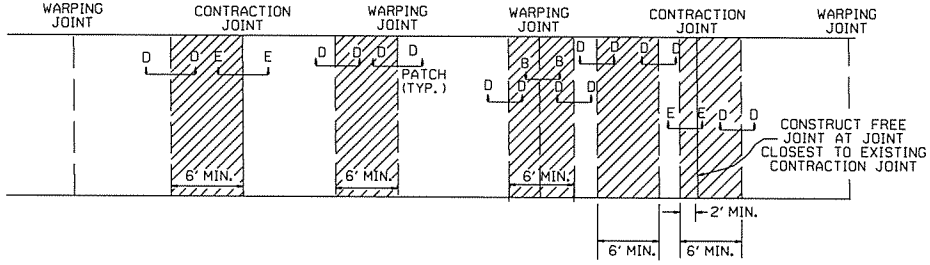
PLAN OF PAVEMENT REPAIR (FULL SLABS)

TYPICAL SLAB REPLACEMENT EXAMPLES

SLAB(S) TO BE RECONSTRUCTED	TYPE OF JOINT TO BE CONSTRUCTED					
	JOINT 1	JOINT 2	JOINT 3	JOINT 4	JOINT 5	JOINT 6
A OR D	LOCKED	FREE		LOCKED	FREE	
B OR E		FREE		LOCKED	FREE	LOCKED
A & B OR D & E	LOCKED	CONTRACTION	LOCKED	LOCKED	CONTRACTION	LOCKED
B & C		FREE	WARPING	WARPING	WARPING	
B, C & D		FREE	LOCKED	LOCKED	FREE	
C						



SECTION D-D



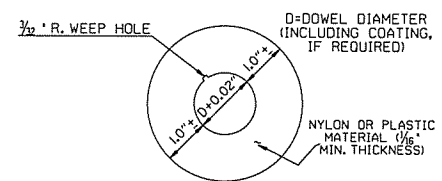
PLAN OF PAVEMENT REPAIR (PARTIAL SLABS)

JOINT CONFIGURATION FOR TYPE 3 OR 4 JOINT SEALANT

JOINT WIDTH	SEALANT THICKNESS ①	BACKER ROD DIAMETER	BACKER ROD PLACEMENT DEPTH ②
INCHES			
1/4	1/4	3/8	1/2
3/8	1/4	1/2	1/2
1/2	1/4	5/8	1/2

JOINT CONFIGURATION FOR TYPE 5 JOINT SEALANT

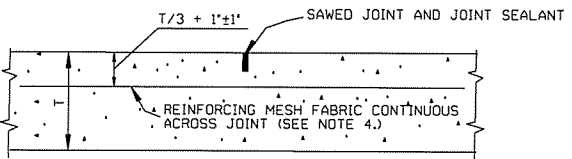
JOINT WIDTH	SEALANT THICKNESS ①	BACKER ROD DIAMETER	BACKER ROD PLACEMENT DEPTH ②
INCHES			
1/4	1/2	3/8	3/4
3/8	3/4	1/2	1



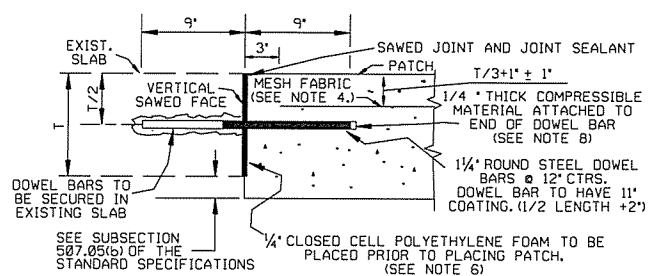
DETAIL OF EPOXY RETENTION DISK

NOTE: EPOXY RETENTION DISK SHALL BE SLIPPED TIGHTLY OVER TIE BARS AND FIRMLY AGAINST THE SLAB FACE AFTER INSERTING TIE BAR AND EPOXY INTO HOLE

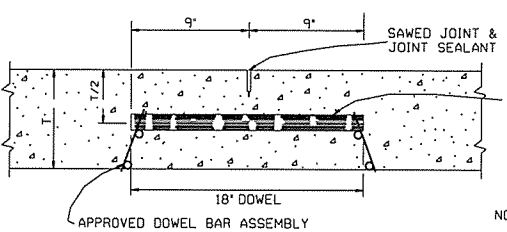
DETAILS OF PORTLAND CEMENT CONCRETE PAVEMENT PATCHING (RAMPS)



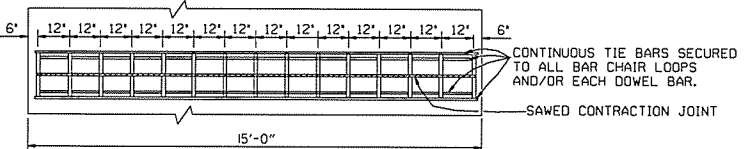
SECTION B-B WARPING JOINT



SECTION E-E FREE TRANSVERSE JOINT



SECTION C-C



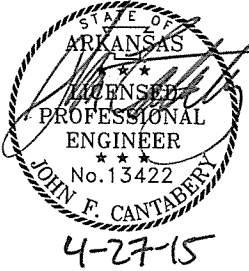
15' PAVEMENT 15 DOWELS PLAN - CONTRACTION JOINT

NOTE: FOR 15' PAVEMENT USE 15 DOWELS @ 12" CTRS. WITH 6" SPACING FROM C.L. AND EDGE OF SLAB TO FIRST BAR. FOR PAVEMENT WIDTHS OTHER THAN THOSE SHOWN ABOVE, USE DOWELS AT 12" CTRS. WITH 6" MAX. SPACING FROM C.L. TO FIRST BAR. DISTANCE FROM EDGE OF SLAB TO FIRST BAR SHALL BE ADJUSTED TO MAINTAIN 12" DOWEL BAR SPACING

CONTRACTION JOINT 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.		BB0303	15C	231

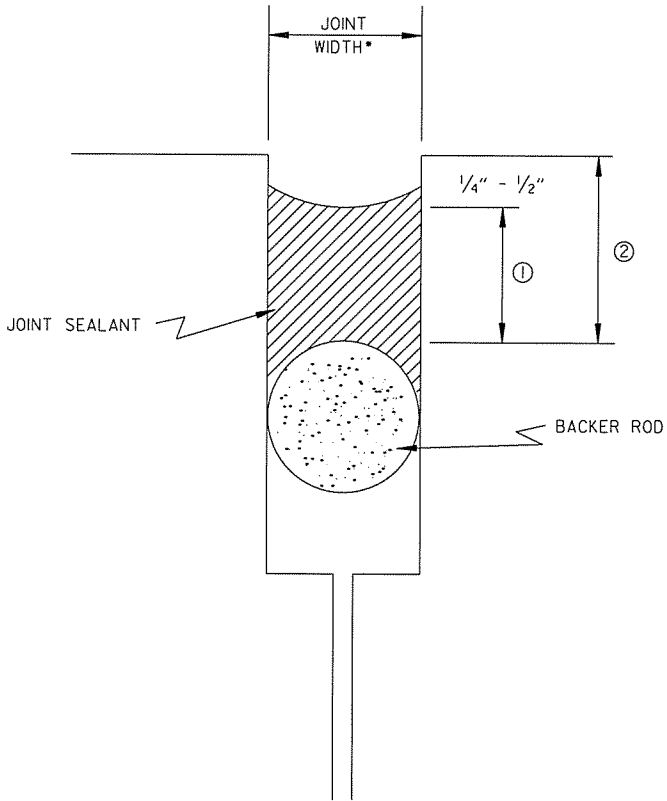
2 SPECIAL DETAILS



JOINT CONFIGURATION FOR
TYPE 3 & 4 JOINT SEALANT

JOINT WIDTH	SEALANT THICKNESS ①	BACKER ROD DIAMETER	BACKER ROD PLACEMENT DEPTH ②
INCHES			
1/4	1/4	3/8	1/2
3/8	1/4	1/2	1/2
1/2	1/4	5/8	1/2
5/8	5/16	3/4	9/16
3/4	3/8	7/8	7/8
7/8	7/16	1	11/16
1	1/2	1 1/4	3/4
1 TO 1 1/2	1/2	1 1/4 +	3/4

NOTE: JOINTS GREATER THAN 1 1/2" IN WIDTH SHALL BE SEALED
WITH TYPE 5 JOINT SEALANT.

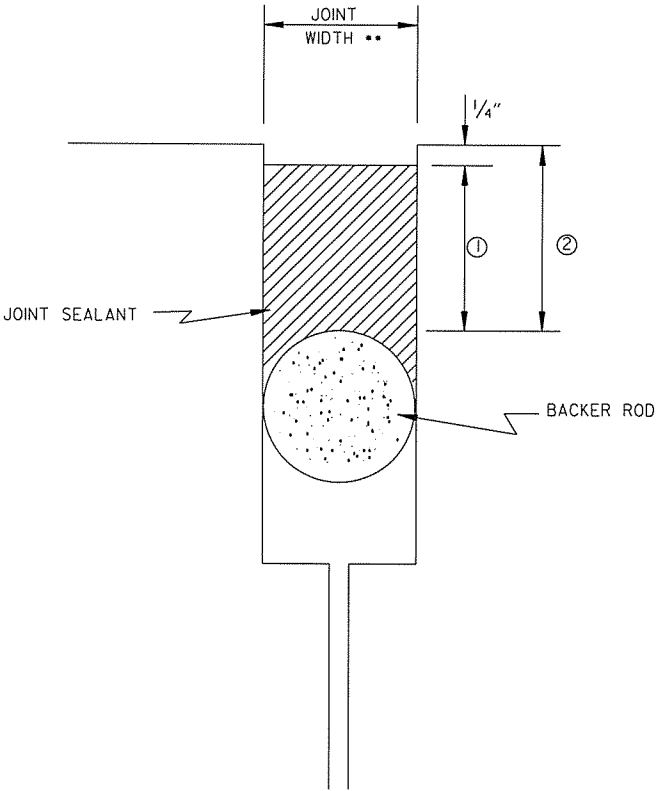


DETAILS OF TYPE A OR TYPE B
JOINT REHABILITATION

- CONTRACTION JOINTS SHALL BE SAWED
TO MIN. WIDTH OF 3/8".
- WARPING & LONGITUDINAL JOINTS SHALL
BE SAWED TO MIN. WIDTH OF EXISTING
WIDTH + 1/8" (1/16" ON EACH SIDE).

JOINT CONFIGURATION FOR
TYPE 5 JOINT SEALANT

JOINT WIDTH	APPROX. WIDTH TO DEPTH RATIO	SEALANT THICKNESS ①	BACKER ROD DIAMETER	BACKER ROD PLACEMENT DEPTH ②
INCHES		INCHES		
1/4	1:2	1/2	3/8	3/4
3/8		3/4	1/2	1
1/2		1	5/8	1 1/4
5/8		1 1/4	3/4	1 1/2
3/4	1:1.75	1 3/8	7/8	1 5/8
7/8		1 1/2	1	1 3/4
1	1:1.6	1 5/8	1 1/4	1 7/8
1 TO 3		1 5/8 +	1 1/4 +	1 7/8 +



- WARPING & LONGITUDINAL JOINTS SHALL
BE SAWED TO MIN. WIDTH OF EXISTING
WIDTH + 1/8" (1/16" ON EACH SIDE).

NOTE:

FOR JOINTS WIDER THAN 1 1/2", THE
CONTRACTOR SHALL HAVE THE OPTION
OF COMPLETELY FILLING THE JOINT
IN LIEU OF USING A BACKER ROD.

REFER TO SECTION 509 OF THE
STANDARD SPECIFICATIONS FOR
ADDITIONAL INFORMATION.

DETAILS OF TYPE B
JOINT REHABILITATION

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.		BB0303	17	231

② TEMPORARY EROSION CONTROL DETAILS

LEGEND

(E-II) = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE CONSTRUCTION STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS DIRECTED BY THE ENGINEER.

PERMANENT
CONSTRUCTION
EASEMENT

SILT FENCE	(E-II)	LIN. FT.
STA. 676+65 TO 680+00	LT. & RT.	650

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PERMANENT
CONSTRUCTION
EASEMENT

SILT FENCE	(E-II)	LIN. FT.
STA. 680+00 TO 680+40	RT. & LT.	270
STA. 681+20 TO 695+00	LT. & RT.	1560

TEMPORARY EROSION
CONTROL DETAILS
CLEARING AND GRUBBING STAGE

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REVISED DATE:

LEGEND

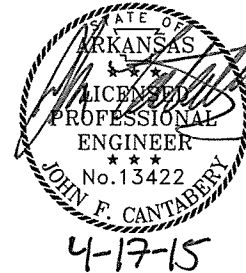
(E-II) = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE CONSTRUCTION STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS DIRECTED BY THE ENGINEER.

SILT FENCE

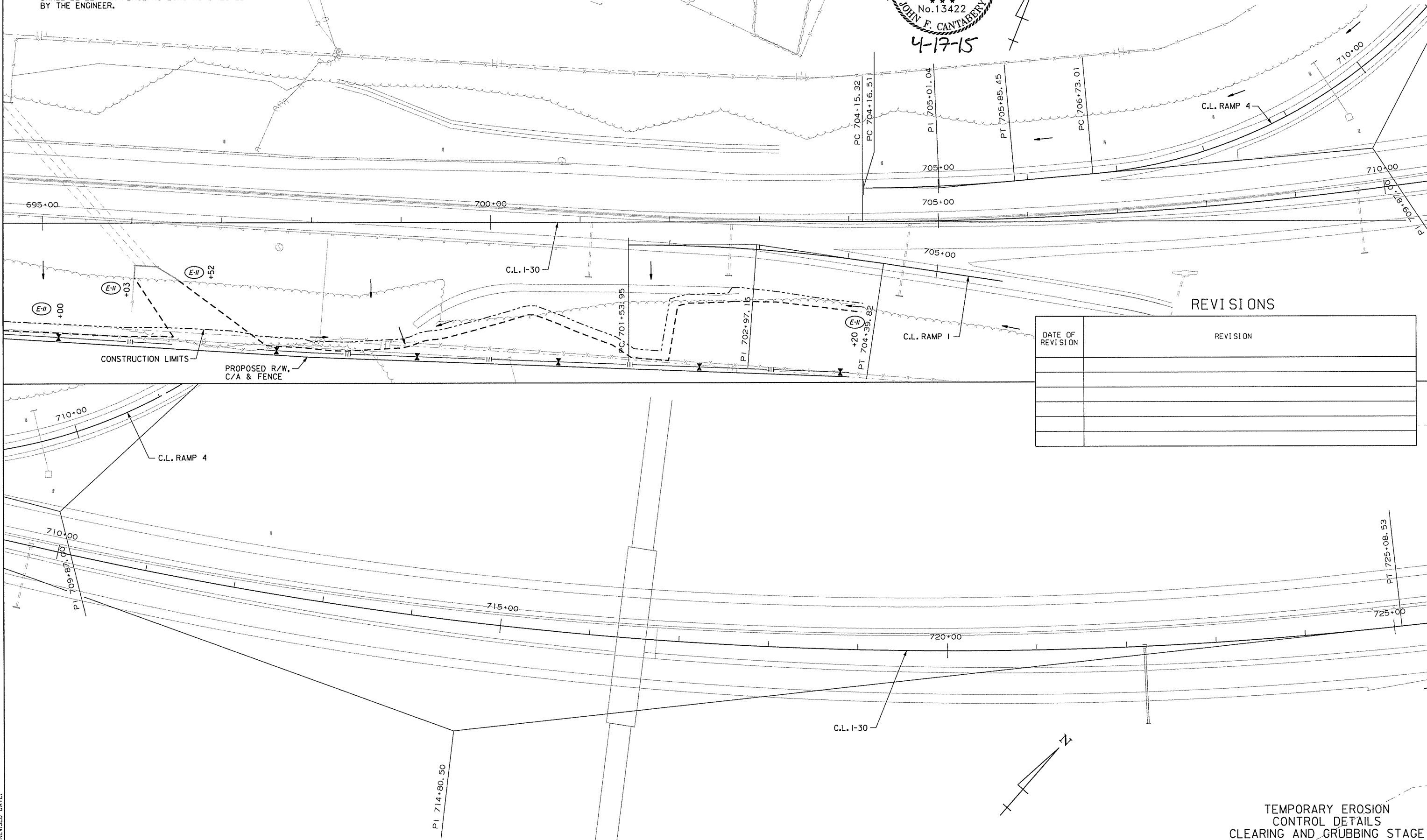
STA. 695+00 TO 696+03
STA. 696+52 TO 704+20

(E-II) LIN. FT.
RT. 232
RT. 857



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.	BB0303		18	231

2 TEMPORARY EROSION CONTROL DETAILS



REVISIONS

DATE OF REVISION	REVISION

TEMPORARY EROSION
CONTROL DETAILS
CLEARING AND GRUBBING STAGE

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WORKSPACE: AHTD
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REVISED DATE:

- LEGEND**
-  = DROP INLET SILT FENCE
 -  = SAND BAG DITCH CHECK
 -  = ROCK DITCH CHECK
 -  = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE CONSTRUCTION STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS DIRECTED BY THE ENGINEER.

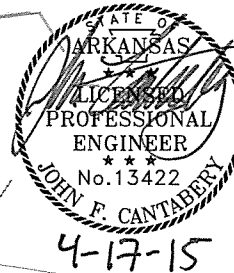
ROCK DITCH CHECK		INSTALLATION
STA. 639+00 TO 646+00	LT.	3
SAND BAG DITCH CHECK		INSTALLATION
STA. 633+00 TO 639+00	LT.	1
STA. 639+00 TO 646+00	LT.	2
STA. 635+00	MEDIAN	1

DROP INLET SILT FENCE		LIN. FT.
STA. 639+00	MEDIAN	20
STA. 649+50	LT.	20

SILT FENCE		LIN. FT.
STA. 637+00 TO 638+80	RT.	RETAIN
STA. 642+00 TO 650+00	RT.	RETAIN

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.		BB0303	20	231

2 TEMPORARY EROSION CONTROL DETAILS



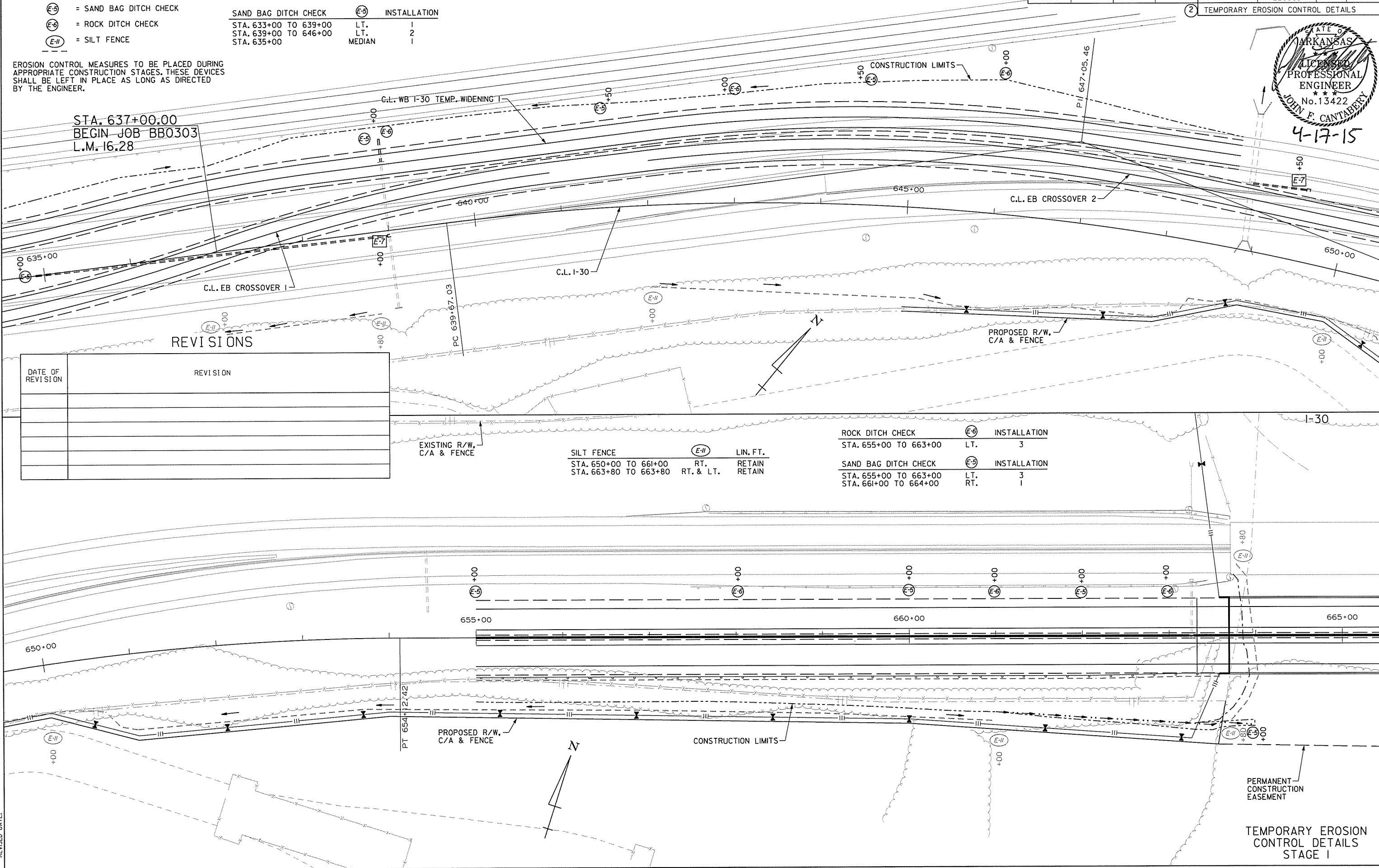
STA. 637+00.00
BEGIN JOB BB0303
L.M. 16.28

REVISIONS

DATE OF REVISION	REVISION

SILT FENCE		LIN. FT.
STA. 650+00 TO 661+00	RT.	RETAIN
STA. 663+80 TO 663+80	RT. & LT.	RETAIN

ROCK DITCH CHECK		INSTALLATION
STA. 655+00 TO 663+00	LT.	3
SAND BAG DITCH CHECK		INSTALLATION
STA. 655+00 TO 663+00	LT.	3
STA. 661+00 TO 664+00	RT.	1



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REVISD DATE:

LEGEND

-  = DROP INLET SILT FENCE
 = SAND BAG DITCH CHECK
 = ROCK DITCH CHECK
 = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE CONSTRUCTION STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS DIRECTED BY THE ENGINEER.

SILT FENCE
STA. 676+65 TO 680+00 LT. & RT. RETAIN

PERMANENT
CONSTRUCTION
EASEMENT

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.		BB0303	21	231
				②	TEMPORARY EROSION CONTROL DETAILS			



4-17-15

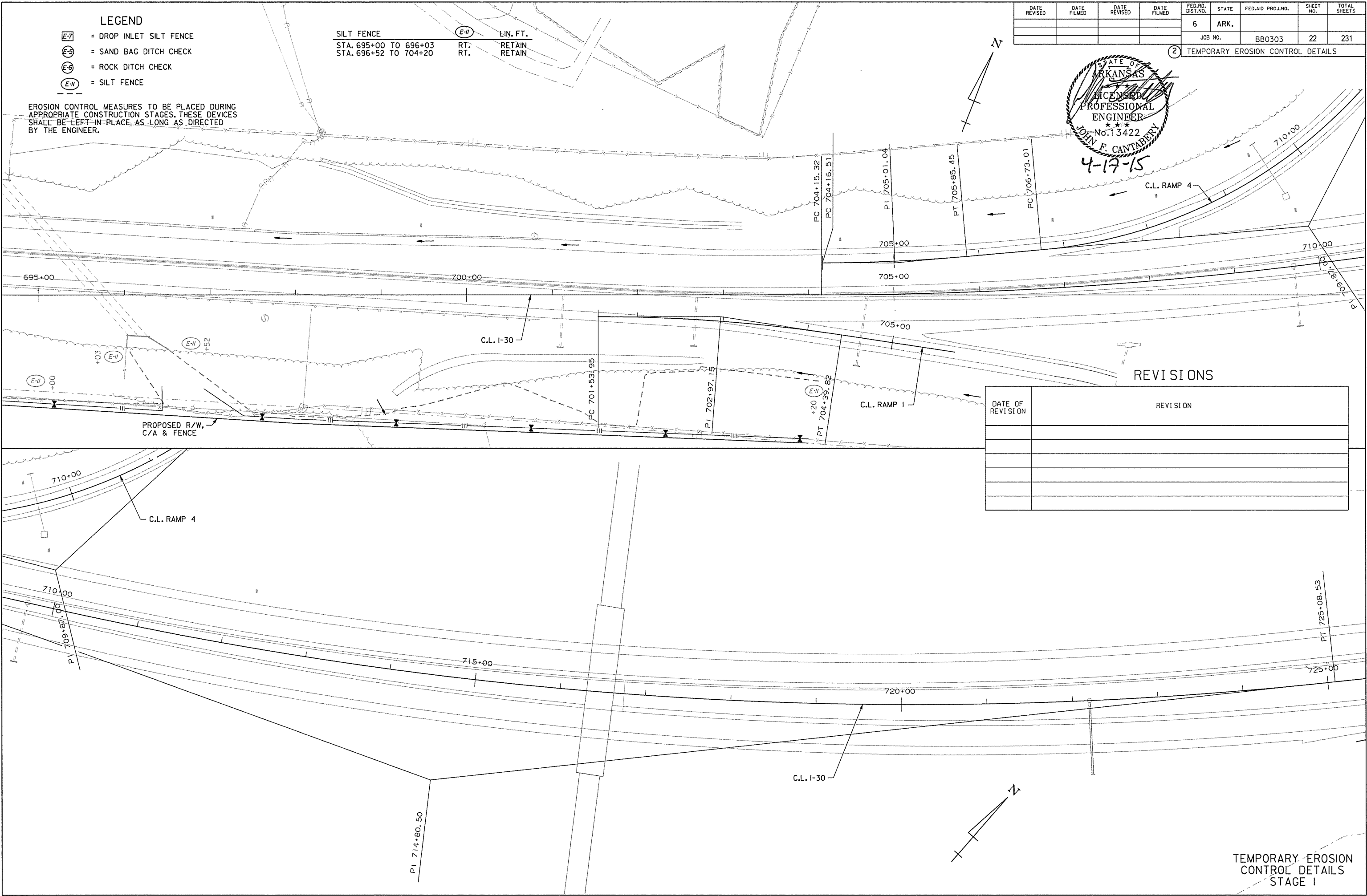
REVISIONS

DATE OF REVISION	REVISION

SILT FENCE
STA. 680+00 TO 680+40 RT. & LT. RETAIN
STA. 681+20 TO 684+95 LT. & RT. RETAIN
STA. 686+00 TO 695+00 RT. RETAIN

SAND BAG DITCH CHECK
STA. 682+00 TO 686+00 LT. I
STA. 685+00 TO 686+00 RT. I

TEMPORARY EROSION
CONTROL DETAILS
STAGE I



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REVISED DATE:

- LEGEND**
-  = DROP INLET SILT FENCE
 -  = SAND BAG DITCH CHECK
 -  = ROCK DITCH CHECK
 -  = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE CONSTRUCTION STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS DIRECTED BY THE ENGINEER.

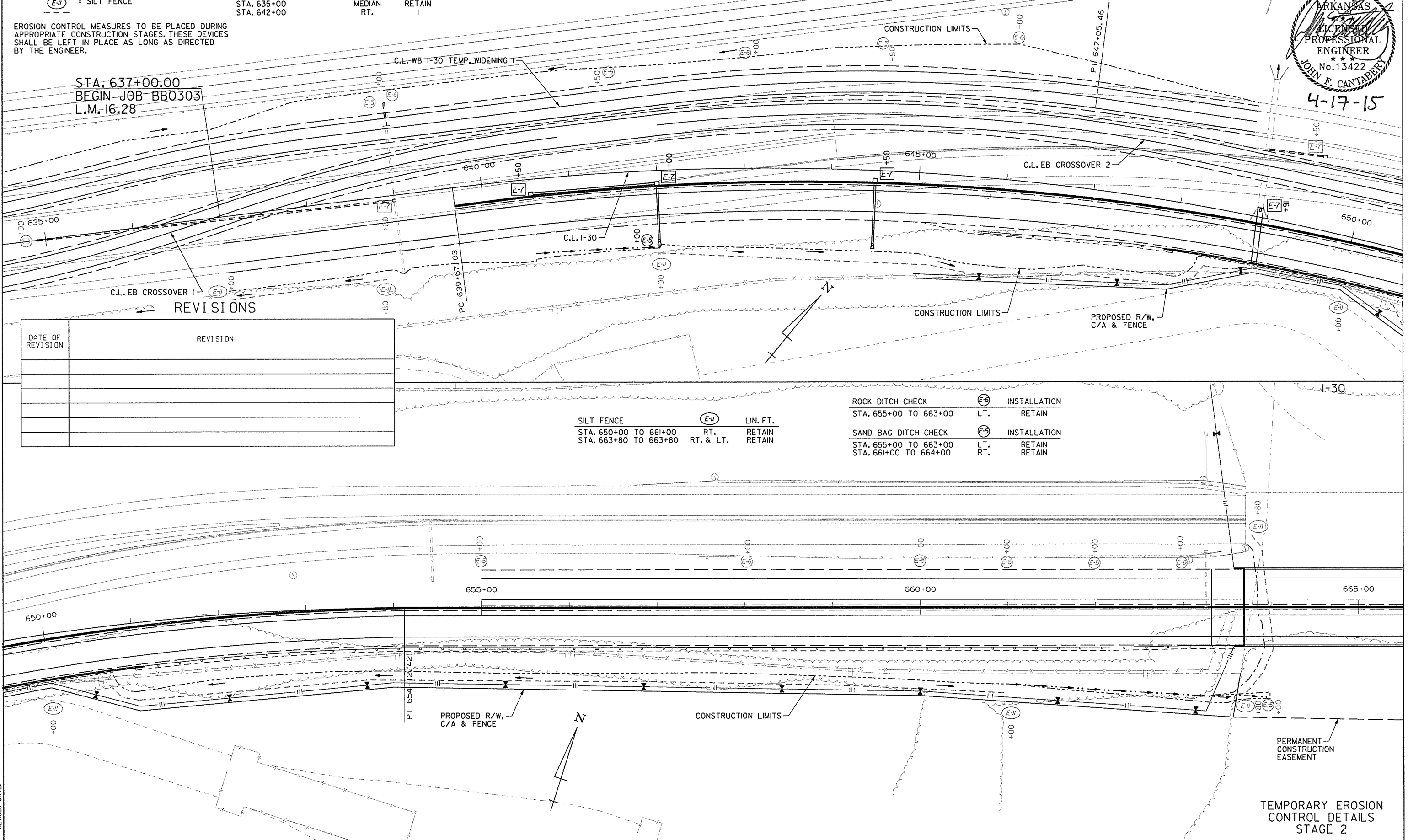
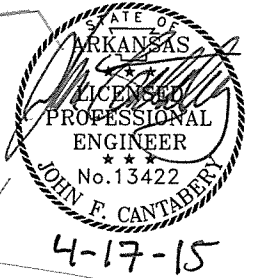
ROCK DITCH CHECK		INSTALLATION
STA. 639+00 TO 646+00	LT.	RETAIN
SAND BAG DITCH CHECK		INSTALLATION
STA. 633+00 TO 639+00	LT.	RETAIN
STA. 639+00 TO 646+00	LT.	RETAIN
STA. 635+00	LT.	RETAIN
STA. 642+00	RT.	RETAIN

DROP INLET SILT FENCE		LIN. FT.
STA. 639+00	MEDIAN	RETAIN
STA. 649+50	LT.	RETAIN
STA. 640+50	MEDIAN	20
STA. 642+00	MEDIAN	20
STA. 644+50	MEDIAN	20
STA. 648+91	MEDIAN	20

SILT FENCE		LIN. FT.
STA. 637+00 TO 638+80	RT.	RETAIN
STA. 642+00 TO 650+00	RT.	RETAIN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		23	231
				JOB NO.	BB0303			231

2 TEMPORARY EROSION CONTROL DETAILS



DATE OF REVISION	REVISION

ROCK DITCH CHECK		INSTALLATION
STA. 655+00 TO 663+00	LT.	RETAIN
SAND BAG DITCH CHECK		INSTALLATION
STA. 655+00 TO 663+00	LT.	RETAIN
STA. 661+00 TO 664+00	RT.	RETAIN
SILT FENCE		LIN. FT.
STA. 650+00 TO 661+00	RT.	RETAIN
STA. 663+80 TO 663+80	RT. & LT.	RETAIN

TEMPORARY EROSION CONTROL DETAILS
STAGE 2

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REVISD DATE:

LEGEND

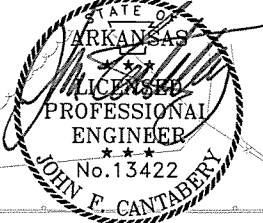
-  = DROP INLET SILT FENCE
-  = SAND BAG DITCH CHECK
-  = ROCK DITCH CHECK
-  = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE CONSTRUCTION STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS DIRECTED BY THE ENGINEER.

PERMANENT
CONSTRUCTION
EASEMENT

SILT FENCE  LIN. FT.
STA. 676+65 TO 680+00 LT. & RT. RETAIN

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.		BB0303	24	231
				② TEMPORARY EROSION CONTROL DETAILS				



4-17-15

REVISIONS

DATE OF REVISION	REVISION

PERMANENT
CONSTRUCTION
EASEMENT

SILT FENCE  LIN. FT.
STA. 680+00 TO 680+40 RT. & LT. RETAIN
STA. 681+20 TO 684+95 LT. & RT. RETAIN

EXISTING R/W,
C/A & FENCE

ROCK DITCH CHECK  INSTALLATION
STA. 684+95 TO 695+00 RT. 1
STA. 687+00 TO 695+00 LT. 1

SAND BAG DITCH CHECK  INSTALLATION
STA. 682+00 TO 686+00 LT. RETAIN 1
STA. 684+95 TO 695+00 RT. 1
STA. 687+00 TO 695+00 LT. 3

TEMPORARY EROSION
CONTROL DETAILS
STAGE 2

LEGEND

-  = DROP INLET SILT FENCE
-  = SAND BAG DITCH CHECK
-  = ROCK DITCH CHECK
-  = SILT FENCE

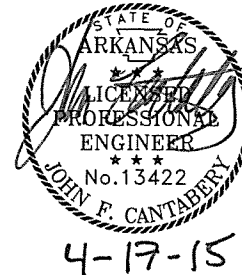
EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE CONSTRUCTION STAGES. THESE DEVICES SHALL BE LEFT IN-PLACE AS LONG AS DIRECTED BY THE ENGINEER.

SILT FENCE	RT.	LT.	LIN. FT.
STA. 702+70 TO 704+20	RT.		RETAIN 600
STA. 694+00 TO 700+00	LT.		

SAND BAG DITCH CHECK	RT.	LT.	INSTALLATION
STA. 700+00 TO 708+00	RT.		4
STA. 699+10 TO 705+00	LT.		5

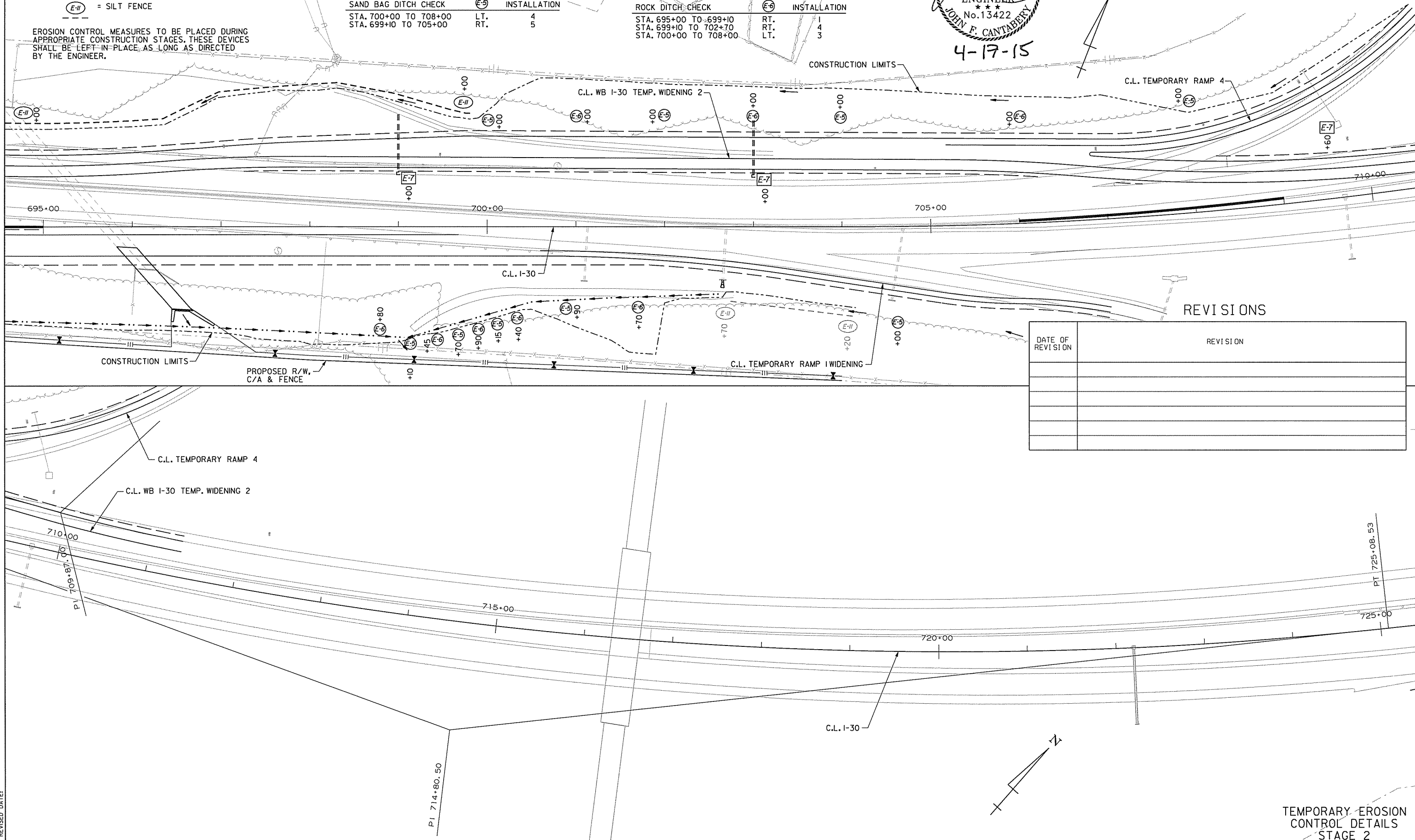
DROP INLET SILT FENCE	RT.	LT.	LIN. FT.
STA. 699+00	RT.		20
STA. 703+00	LT.		20
STA. 709+60	LT.		20

ROCK DITCH CHECK	RT.	LT.	INSTALLATION
STA. 695+00 TO 699+10	RT.		1
STA. 699+10 TO 702+70	RT.		4
STA. 700+00 TO 708+00	LT.		3



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		25	231
				JOB NO.	BB0303			

2 TEMPORARY EROSION CONTROL DETAILS



REVISIONS

DATE OF REVISION	REVISION

TEMPORARY EROSION CONTROL DETAILS
STAGE 2

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WORKSPACE: AHTD
\\GLTDCON\IT\Projects\2011\01705 - Red River Bridge Replacement\Drawings\100-EC-S3-01.dgn
REVISED DATE:

LEGEND

- E-7** = DROP INLET SILT FENCE
- E-5** = SAND BAG DITCH CHECK
- E-6** = ROCK DITCH CHECK
- E-11** = SILT FENCE

ROCK DITCH CHECK

STA. 639+00 TO 646+00
STA. 642+00 TO 649+50

E-6

INSTALLATION

LT. RETAIN
LT. RETAIN
LT. RETAIN
LT. RETAIN
RT. RETAIN
RT. RETAIN
LT. RETAIN
LT. RETAIN

DROP INLET SILT FENCE

E-7

LIN. FT.

STA. 637+00
STA. 639+00
STA. 640+50
STA. 642+00
STA. 644+50
STA. 649+50

MEDIAN
MEDIAN
MEDIAN
MEDIAN
MEDIAN
MEDIAN

20
20
RETAIN
RETAIN
RETAIN
20

SILT FENCE

E-11

LIN. FT.

STA. 637+00 TO 638+80
STA. 642+00 TO 650+00

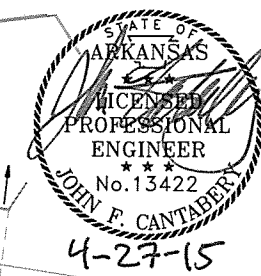
RT. RETAIN
RT. RETAIN

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.		BB0303	26	231

TEMPORARY EROSION CONTROL DETAILS

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE CONSTRUCTION STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS DIRECTED BY THE ENGINEER.



STA. 637+00.00
BEGIN JOB BB0303
L.M. 16.28

REVISIONS

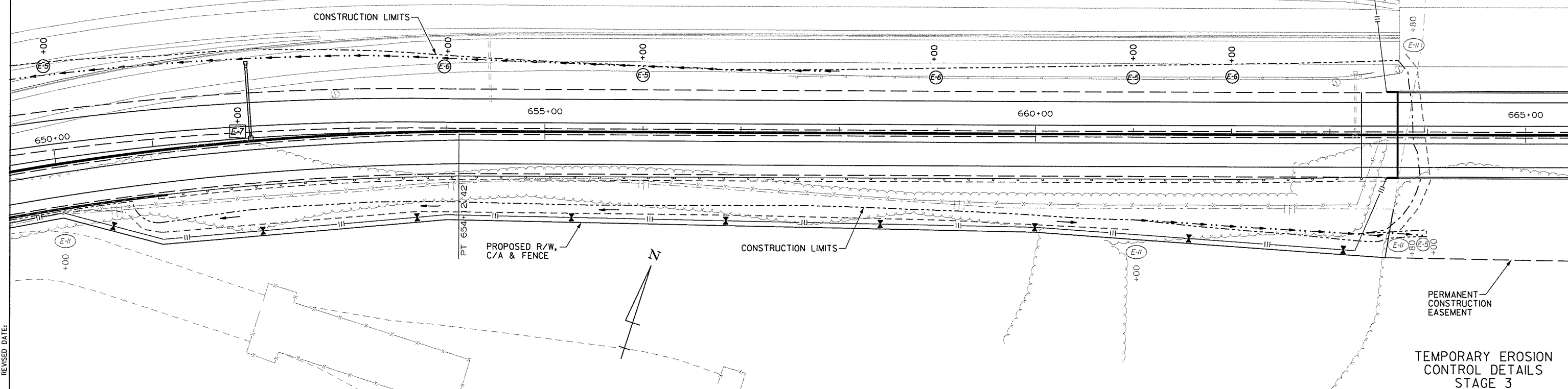
DATE OF REVISION	REVISION

DROP INLET SILT FENCE **E-7** LIN. FT.
STA. 652+00 MEDIAN 20

SILT FENCE **E-11** LIN. FT.
STA. 650+00 TO 661+00 RT. RETAIN
STA. 663+80 TO 663+80 RT. & LT. RETAIN

ROCK DITCH CHECK **E-6** INSTALLATION
STA. 650+00 TO 662+00 LT. 3

SAND BAG DITCH CHECK **E-5** INSTALLATION
STA. 661+00 TO 664+00 RT. RETAIN
STA. 650+00 TO 662+00 LT. 3



TEMPORARY EROSION CONTROL DETAILS STAGE 3

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WORKSPACE: AHTD
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REVISED DATE:

- LEGEND**
-  = DROP INLET SILT FENCE
 -  = SAND BAG DITCH CHECK
 -  = ROCK DITCH CHECK
 -  = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE CONSTRUCTION STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS DIRECTED BY THE ENGINEER.

PERMANENT
CONSTRUCTION
EASEMENT

SILT FENCE  LIN. FT.
STA. 676+65 TO 680+00 LT. & RT. RETAIN

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.	BB0303		27	231

2 TEMPORARY EROSION CONTROL DETAILS



4-17-15

665+00

670+00

675+00

680+00

C.L. I-30

REVISIONS

DATE OF REVISION	REVISION

PERMANENT
CONSTRUCTION
EASEMENT

EXISTING R/W,
C/A & FENCE

SILT FENCE  LIN. FT.
STA. 680+00 TO 680+40 RT. & LT. RETAIN
STA. 681+20 TO 684+95 LT. & RT. RETAIN

CONSTRUCTION LIMITS

680+00

685+00

690+00

695+00

C.L. I-30

CONSTRUCTION LIMITS

+95

ROCK DITCH CHECK  INSTALLATION
STA. 684+95 TO 695+00 RT. RETAIN
STA. 683+00 TO 695+00 LT. 3

SAND BAG DITCH CHECK  INSTALLATION
STA. 684+95 TO 695+00 RT. RETAIN
STA. 683+00 TO 695+00 LT. 3

PROPOSED R/W,
C/A & FENCE

DROP INLET SILT FENCE  LIN. FT.
STA. 691+00 LT. 20

TEMPORARY EROSION
CONTROL DETAILS
STAGE 3

4/16/2015 3:37:04 PM
WORKSPACE: AHTD
L:\2010\10705 - Red River Bridge Replacement\Drawings\130-EC-S3.03.dgn
REVISOR: CCGervasi

LEGEND

-  = DROP INLET SILT FENCE
 = SAND BAG DITCH CHECK
 = ROCK DITCH CHECK
 = SILT FENCE

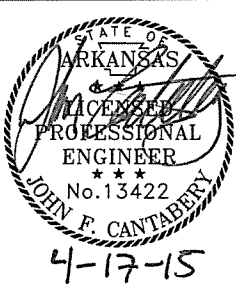
EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE CONSTRUCTION STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS DIRECTED BY THE ENGINEER.

SILT FENCE		LIN. FT.
STA. 702+70 TO 704+20	RT.	RETAIN
STA. 694+00 TO 700+00	LT.	RETAIN

SAND BAG DITCH CHECK		INSTALLATION
STA. 700+00 TO 708+00	LT.	RETAIN
STA. 699+10 TO 705+00	RT.	RETAIN

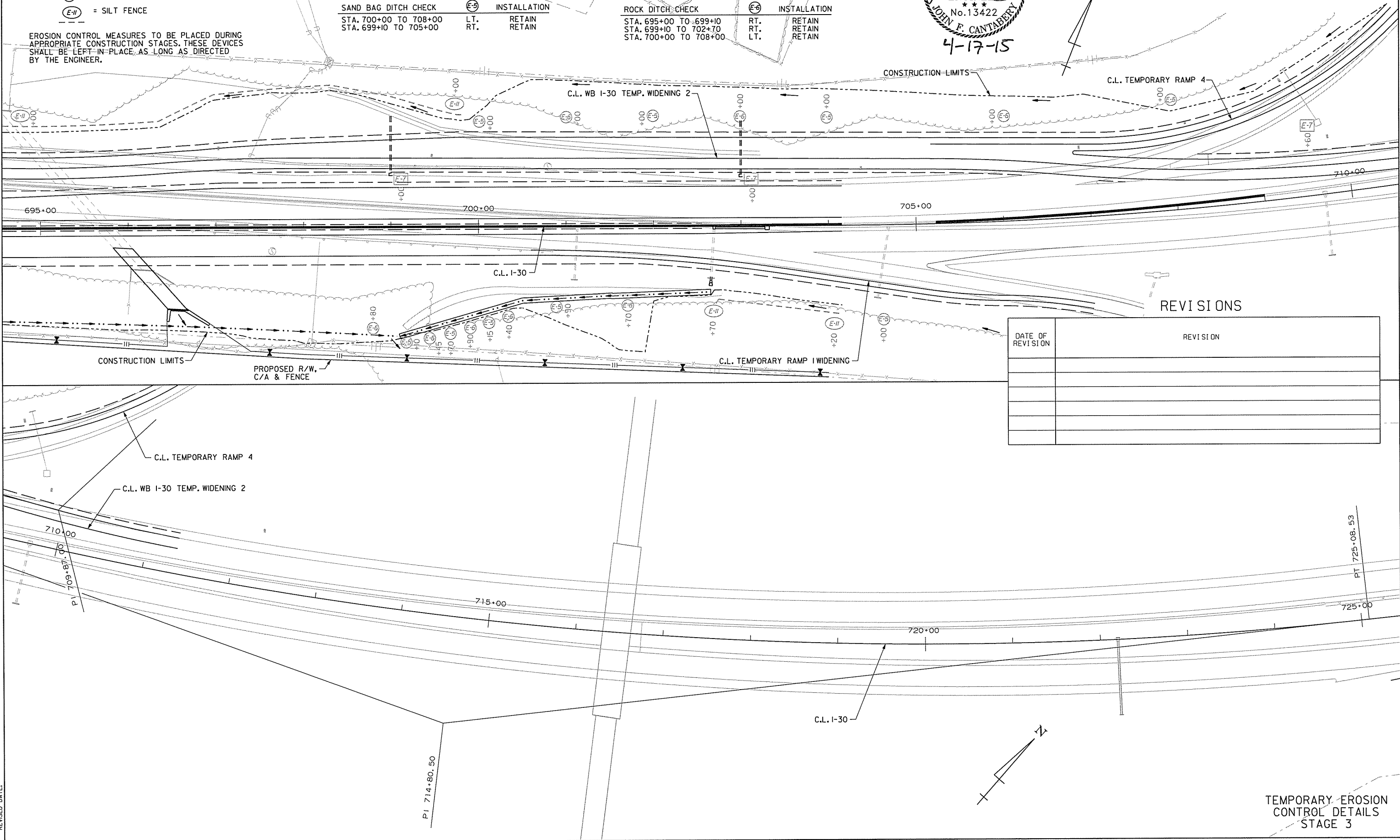
DROP INLET SILT FENCE		LIN. FT.
STA. 699+00	LT.	RETAIN
STA. 703+00	LT.	RETAIN
STA. 709+60	LT.	RETAIN

ROCK DITCH CHECK		INSTALLATION
STA. 695+00 TO 699+10	RT.	RETAIN
STA. 699+10 TO 702+70	RT.	RETAIN
STA. 700+00 TO 708+00	LT.	RETAIN



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.	BB0303		28	231

2 TEMPORARY EROSION CONTROL DETAILS



TEMPORARY EROSION CONTROL DETAILS
STAGE 3

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WORKSPACE: AHTD
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REVISED DATE:

LEGEND

- E-7** = DROP INLET SILT FENCE
E-5 = SAND BAG DITCH CHECK
E-6 = ROCK DITCH CHECK
E-11 = SILT FENCE

ROCK DITCH CHECK	INSTALLATION
STA. 639+00 TO 646+00	LT. RETAIN
STA. 642+00 TO 649+50	LT. RETAIN
SAND BAG DITCH CHECK	INSTALLATION
STA. 633+00 TO 639+00	LT. RETAIN
STA. 639+00 TO 646+00	LT. RETAIN
STA. 642+00	RT. RETAIN
STA. 642+00 TO 649+50	LT. RETAIN

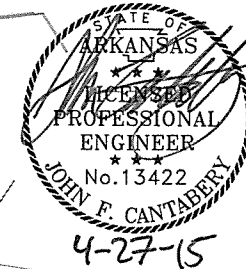
DROP INLET SILT FENCE	LIN. FT.
STA. 637+00	MEDIAN RETAIN
STA. 639+00	MEDIAN RETAIN
STA. 640+50	MEDIAN RETAIN
STA. 642+00	MEDIAN RETAIN
STA. 644+50	MEDIAN RETAIN
STA. 649+50	MEDIAN RETAIN

SILT FENCE	LIN. FT.
STA. 637+00 TO 638+80	RT. RETAIN
STA. 642+00 TO 650+00	RT. RETAIN

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.		BB0303	29	231

2 TEMPORARY EROSION CONTROL DETAILS

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE CONSTRUCTION STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS DIRECTED BY THE ENGINEER.



STA. 637+00.00
BEGIN JOB BB0303
L.M. 16.28

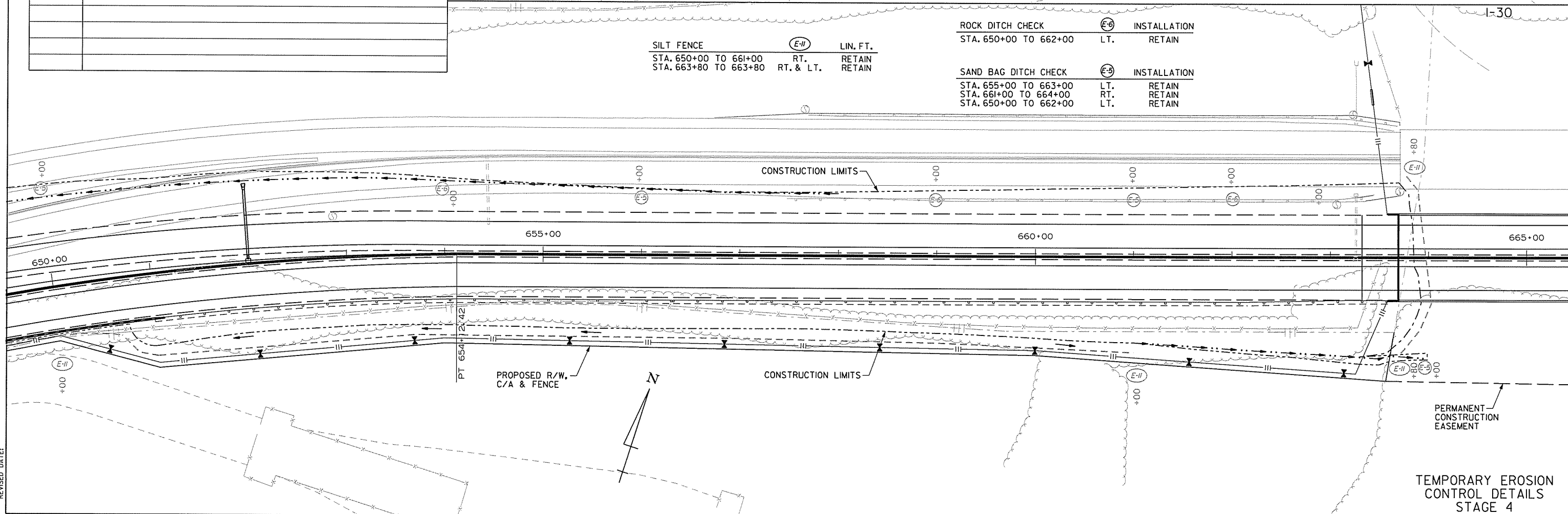
REVISIONS

DATE OF REVISION	REVISION

SILT FENCE	LIN. FT.
STA. 650+00 TO 661+00	RT. RETAIN
STA. 663+80 TO 663+80	RT. & LT. RETAIN

ROCK DITCH CHECK	INSTALLATION
STA. 650+00 TO 662+00	LT. RETAIN

SAND BAG DITCH CHECK	INSTALLATION
STA. 655+00 TO 663+00	LT. RETAIN
STA. 661+00 TO 664+00	RT. RETAIN
STA. 650+00 TO 662+00	LT. RETAIN



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WORKSPACE: AHTD - Red River Bridge Replacement
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REVISED DATE:

- LEGEND**
-  = DROP INLET SILT FENCE
 -  = SAND BAG DITCH CHECK
 -  = ROCK DITCH CHECK
 -  = SILT FENCE

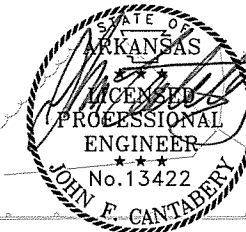
EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE CONSTRUCTION STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS DIRECTED BY THE ENGINEER.

PERMANENT
CONSTRUCTION
EASEMENT

SILT FENCE  LIN. FT.
STA. 676+65 TO 680+00 LT. & RT. RETAIN

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.		BB0303	30	231

② TEMPORARY EROSION CONTROL DETAILS



4-17-15

665+00

670+00

675+00

680+00

C.L. I-30

REVISIONS

DATE OF REVISION	REVISION

PERMANENT
CONSTRUCTION
EASEMENT

CONSTRUCTION LIMITS

PROPOSED R/W,
C/A & FENCE

EXISTING R/W,
C/A & FENCE

SILT FENCE  LIN. FT.
STA. 680+00 TO 680+40 RT. & LT. RETAIN
STA. 681+20 TO 684+95 LT. & RT. RETAIN

CONSTRUCTION LIMITS

685+00

690+00

695+00

C.L. I-30

CONSTRUCTION LIMITS

ROCK DITCH CHECK  INSTALLATION
STA. 684+95 TO 695+00 RT. RETAIN
STA. 683+00 TO 695+00 LT. RETAIN

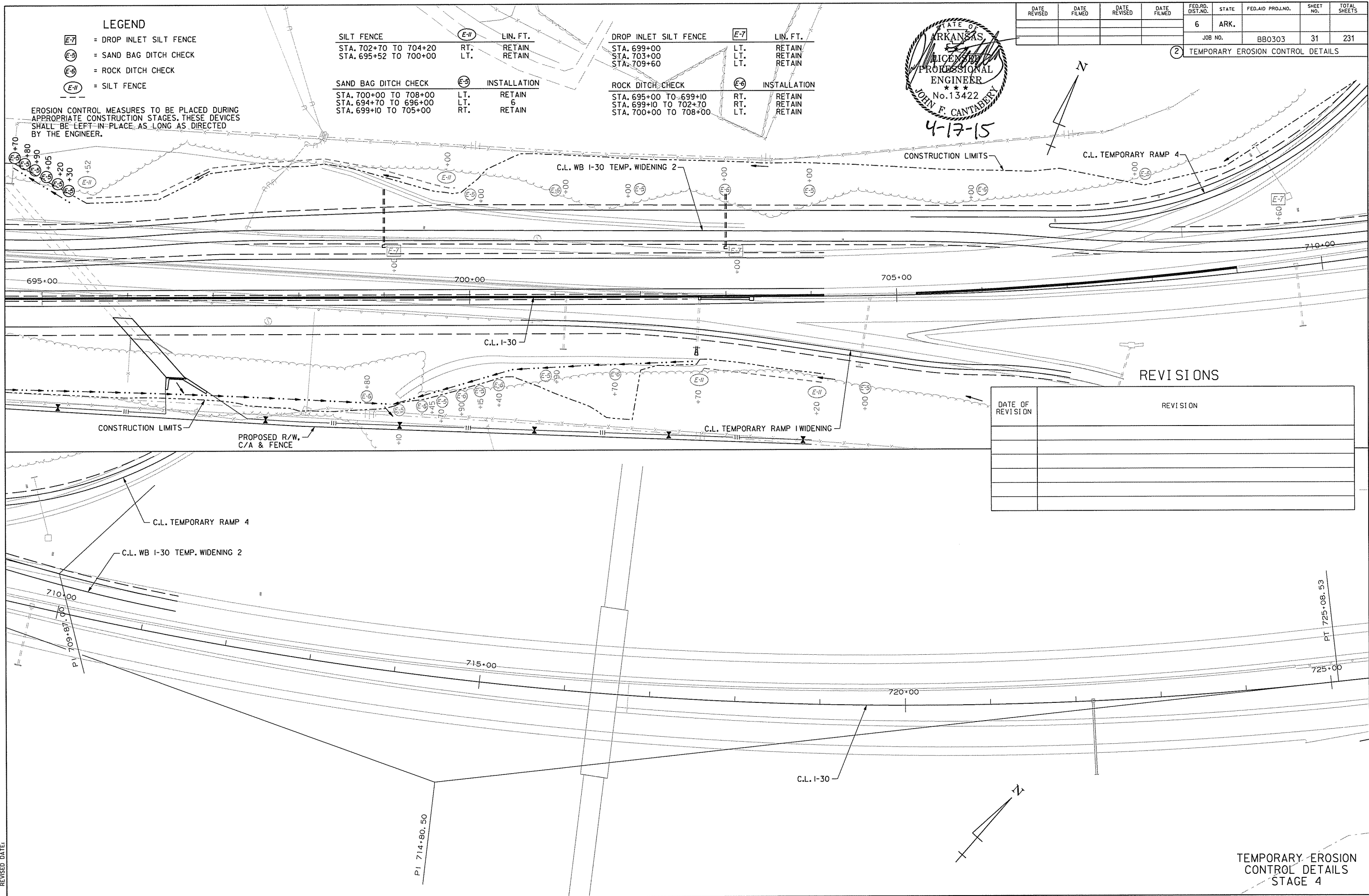
SAND BAG DITCH CHECK  INSTALLATION
STA. 684+95 TO 695+00 RT. RETAIN
STA. 683+00 TO 695+00 LT. RETAIN
STA. 693+00 TO 694+20 6

PROPOSED R/W,
C/A & FENCE

DROP INLET SILT FENCE  LIN. FT.
STA. 691+00 LT. RETAIN

TEMPORARY EROSION
CONTROL DETAILS
STAGE 4

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WORKSPACE: AHTD
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REVISED DATE:



LEGEND

- [E-7] = DROP INLET SILT FENCE
- [E-5] = SAND BAG DITCH CHECK
- [E-6] = ROCK DITCH CHECK
- [E-11] = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE CONSTRUCTION STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS DIRECTED BY THE ENGINEER.

STA. 726+64.46
BEGIN WRSF

C.L. RAMP 3

PC 729+46.95

PI 730+59.58

PT 731+71.95

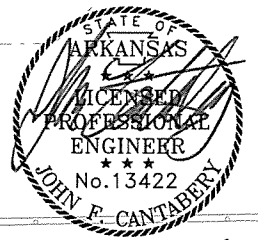
730+00

730+00

SAND BAG DITCH CHECK [E-5] EACH
STA. 727+00 TO 740+00 MEDIAN 5

DROP INLET SILT FENCE [E-7] LIN. FT.
STA. 726+72 MEDIAN 20
STA. 731+20 MEDIAN 20
STA. 733+80 MEDIAN 20
STA. 738+78 MEDIAN 20

2 TEMPORARY EROSION CONTROL DETAILS



REVISIONS

DATE OF REVISION	REVISION

EXISTING R/W,
C/A & FENCE

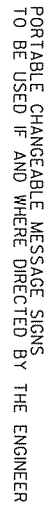
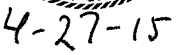
SAND BAG DITCH CHECK [E-5] EACH
STA. 741+00 TO 743+00 MEDIAN 2

STA. 743+50.31
END WRSF
STA. 743+73.32
END JOB BB0303
L.M. 18.30

C.L. I-30

TEMPORARY EROSION
CONTROL DETAILS
STAGE 4

② MAINTENANCE OF TRAFFIC DETAILS



ADVANCE SIGNS AT BEGINNING AND END OF JOB
ALL STAGES

PROPOSED CONSTRUCTION

160' BARRIER WALL TAPER

120' STRIPING TAPER

PRECAST CONCRETE BARRIER

(4) OM-3R

TEMPORARY IMPACT ATTENUATOR

EX. 10' SHOULDER EDGE

EX. 4" CONTINUOUS YELLOW

4" DASHED WHITE

EX. 4' SHOULDER EDGE

4" CONTINUOUS WHITE

C.L. 1-30 MEDIAN

12' 12' 22' 24' 12' 12'

(1) RSP-1
(48" x 30")

SHOULDER
CLOSED

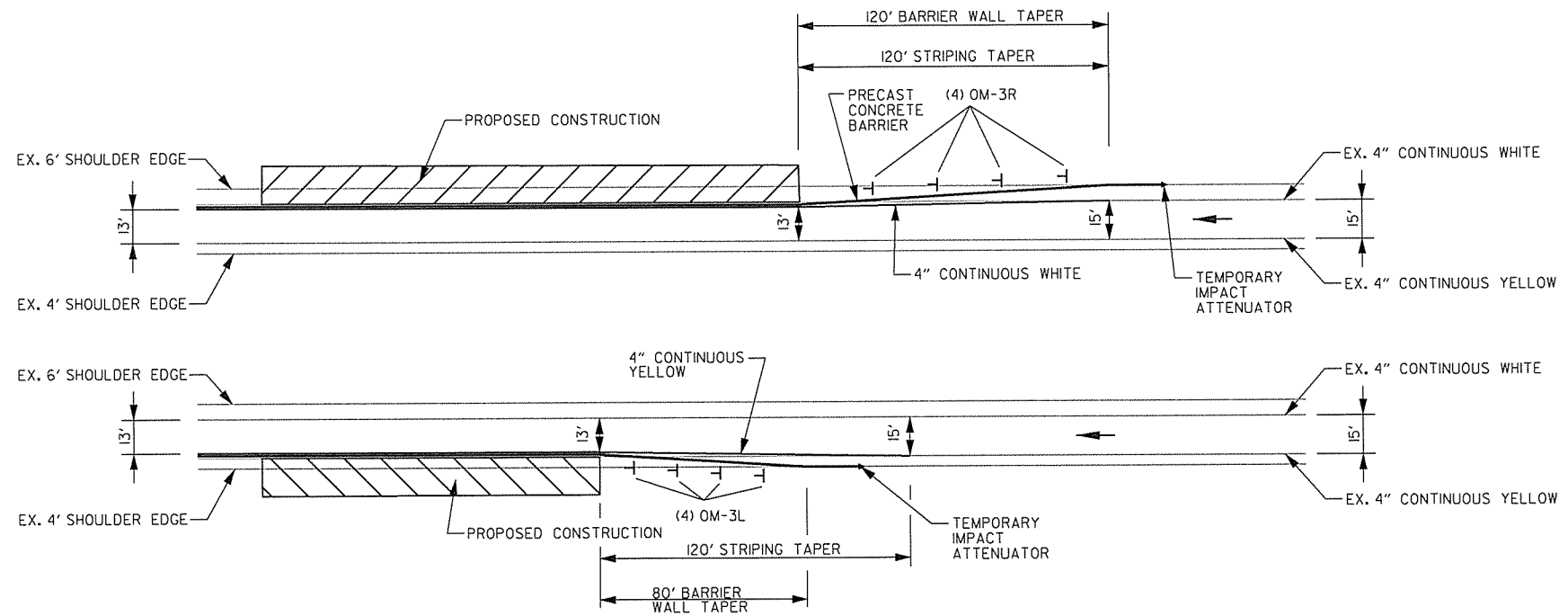
100'

(2) W5-1
(48" x 48")

ROAD
NARROWS

500'

ADVANCE WARNING SIGNS FOR LANE SHIFT



MAINTENANCE OF TRAFFIC DETAILS

LANE SHIFTS

STAGE 1 CONSTRUCTION SEQUENCE NOTES:

- 1) MAINTAIN TRAFFIC ON EXISTING LANES.
- 2) INSTALL ADVANCE WARNING SIGNS AS SHOWN ON ADVANCE WARNING SIGNS DETAIL.
- 3) CONSTRUCT PROPOSED I-30 BRIDGE AND APPROACHES (STA. 655+00 TO STA. 686+00) PRIOR TO ITEMS 4 & 5.
- 4) PLACE CONSTRUCTION PAVEMENT MARKINGS AND FURNISH AND INSTALL PRECAST CONCRETE BARRIER ALONG I-30 FOR THE WESTBOUND I-30 TEMPORARY WIDENING 1, CONSTRUCT WESTBOUND I-30 TEMPORARY WIDENING 1, PLACE CONSTRUCTION PAVEMENT MARKINGS ON WESTBOUND I-30 TEMPORARY WIDENING 1 PRIOR TO OPENING TO TRAFFIC IN STAGE 2.
- 5) PLACE CONSTRUCTION PAVEMENT MARKINGS AND RELOCATE PRECAST CONCRETE BARRIER ALONG WESTBOUND I-30 FOR EB CROSSOVER 1 AND EB CROSSOVER 2, FURNISH AND INSTALL PRECAST CONCRETE BARRIER ALONG EASTBOUND I-30 AND CONSTRUCT EB CROSSOVER 1 AND EB CROSSOVER 2, PLACE CONSTRUCTION PAVEMENT MARKINGS ON EB CROSSOVER 1 AND EB CROSSOVER 2 PRIOR TO OPENING TO TRAFFIC IN STAGE 2.

NOTE: STAGE 1(5) SHALL NOT BEGIN UNTIL STAGE 1(4) IS COMPLETE AND OPEN TO TRAFFIC.

STAGE 1 - REMOVABLE CONSTRUCTION PAVEMENT MARKINGS

I-30 WB LANES STA. 631+40 TO STA. 649+90
CENTERLINE AND LT. & RT. EDGE LINES = 2,313 L.F.
WB I-30 TEMP. WIDENING 1 STA. 632+61.97 TO STA. 636+50
CENTERLINE, LT. & RT. EDGE LINE = 873 L.F.

STAGE 1 - CONSTRUCTION PAVEMENT MARKINGS

WB I-30 TEMP. WIDENING 1 STA. 636+50 TO STA. 649+00.12
CENTERLINE, LT. & RT. EDGE LINE = 2,813 L.F.

STAGE 1A - REMOVABLE CONSTRUCTION PAVEMENT MARKINGS

I-30 WB LANES STA. 635+10 TO STA. 648+20
CENTERLINE, LT. & RT. EDGE LINES = 2,948 L.F.

I-30 EB LANES STA. 631+80 TO STA. 652+30
CENTERLINE AND LT. & RT. EDGE LINE = 2,563 L.F.

EB CROSSOVER 1 STA. 632+94.03 TO STA. 636+00
CENTERLINE, LT. & RT. EDGE LINE = 688 L.F.

STAGE 1A - CONSTRUCTION PAVEMENT MARKINGS

EB CROSSOVER 1 TO END OF EB CROSSOVER 2 STA. 636+00 TO STA. 651+25.07
CENTERLINE, LT. & RT. EDGE LINE = 3432 L.F.

C.L. WB I-30 TEMP. WIDENING 1
P.I. = 636+41.60
Δ = 7°40'20" RT.
D = 03°00'00"
T = 128.06'
L = 255.74'
P.R.C. = 635+13.54
P.T. = 637+69.28

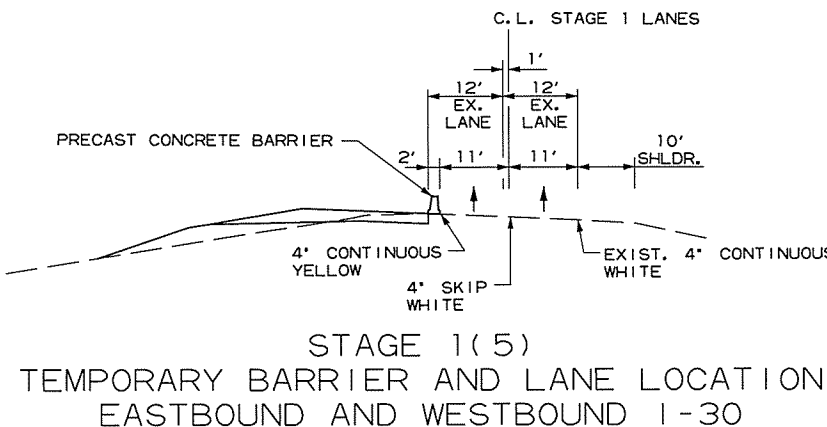
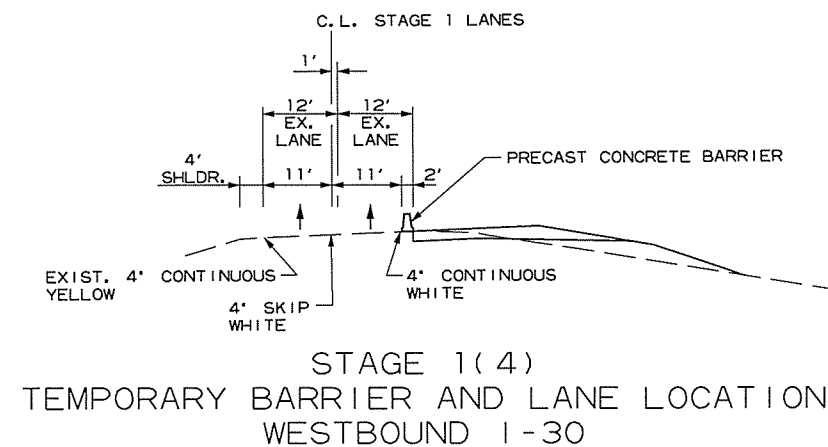
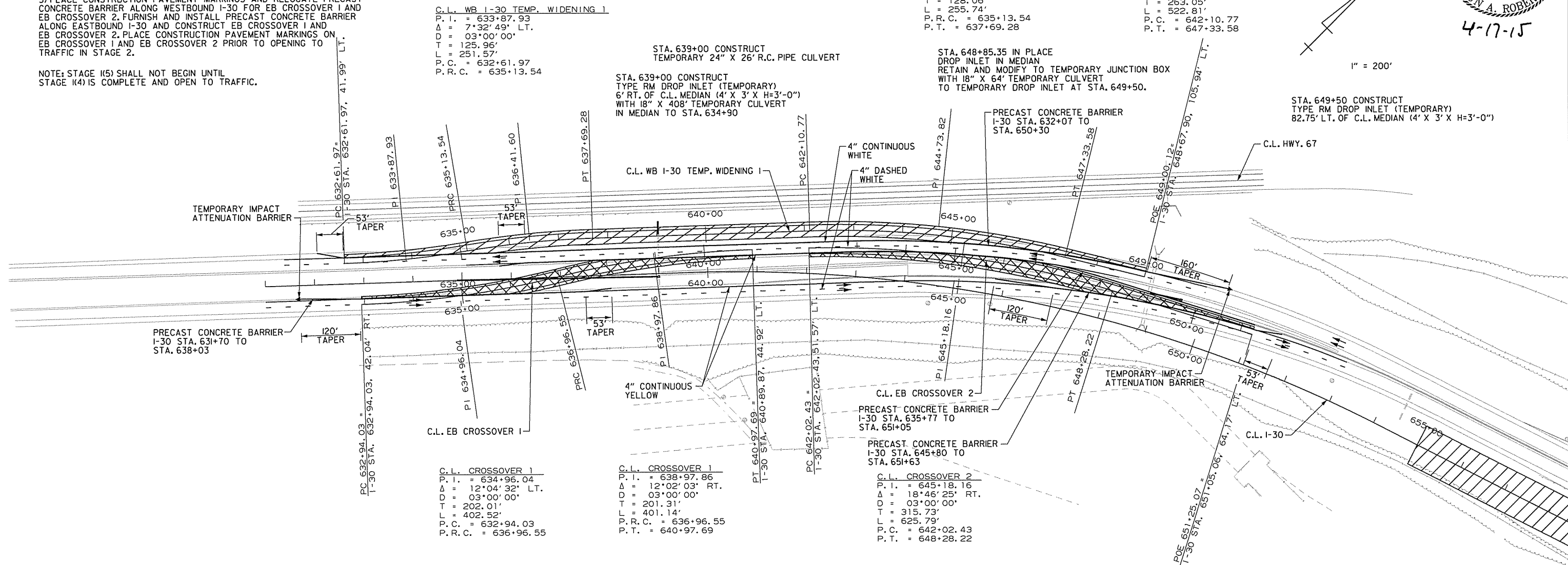
C.L. WB I-30 TEMP. WIDENING 1
P.I. = 644+73.82
Δ = 15°41'03" RT.
D = 03°00'00"
T = 263.05'
L = 522.81'
P.C. = 642+10.77
P.T. = 647+33.58

STA. 639+00 CONSTRUCT
TEMPORARY 24" X 26" R.C. PIPE CULVERT

STA. 639+00 CONSTRUCT
TYPE RM DROP INLET (TEMPORARY)
6' RT. OF C.L. MEDIAN (4' X 3' X H=3'-0")
WITH 18" X 408' TEMPORARY CULVERT
IN MEDIAN TO STA. 634+90

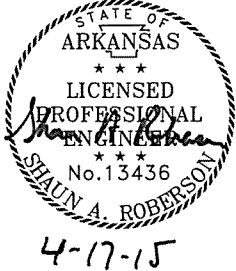
STA. 648+85.35 IN PLACE
DROP INLET IN MEDIAN
RETAIN AND MODIFY TO TEMPORARY JUNCTION BOX
WITH 18" X 64' TEMPORARY CULVERT
TO TEMPORARY DROP INLET AT STA. 649+50.

STA. 649+50 CONSTRUCT
TYPE RM DROP INLET (TEMPORARY)
82.75' LT. OF C.L. MEDIAN (4' X 3' X H=3'-0")



- STAGE 1(4) CONSTRUCTION
- STAGE 1(5) CONSTRUCTION
- STAGE 1 TRAFFIC
- TEMPORARY IMPACT ATTENUATION BARRIER

MAINTENANCE OF TRAFFIC DETAILS
STAGE 1



STAGE I CONSTRUCTION SEQUENCE NOTES:

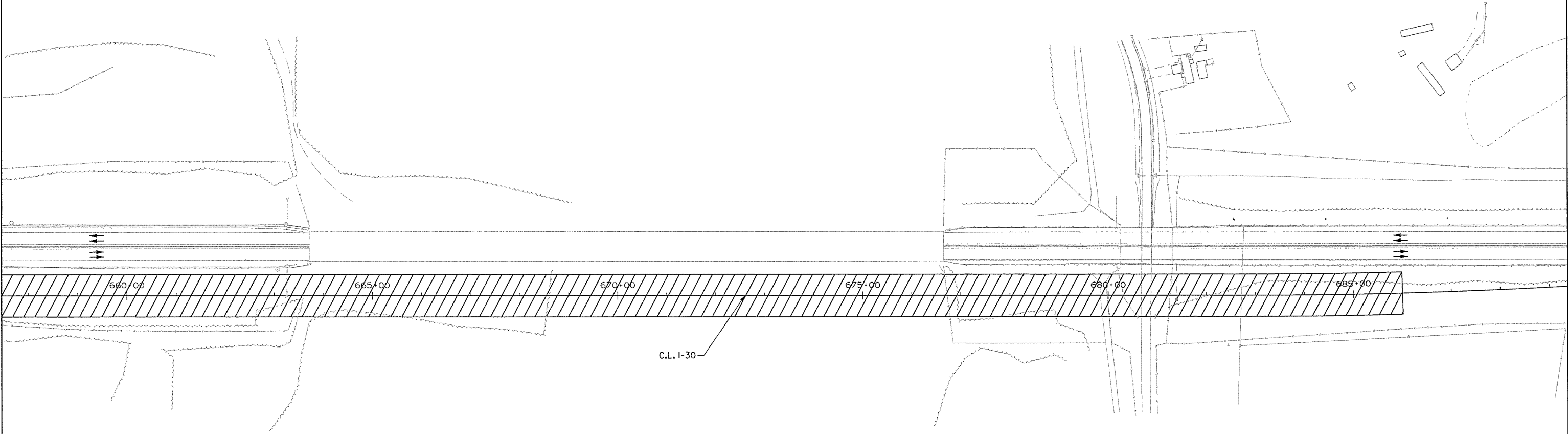
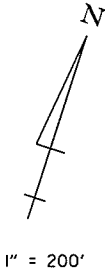
- 1) MAINTAIN TRAFFIC ON EXISTING LANES.
2) CONSTRUCT PROPOSED I-30 BRIDGES AND APPROACHES (STA. 655+00 TO STA. 686+00).

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. BB0303	37	231

2 MAINTENANCE OF TRAFFIC DETAILS



4-17-15

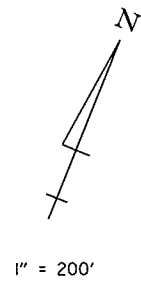


-  STAGE I CONSTRUCTION
 STAGE I TRAFFIC

MAINTENANCE OF TRAFFIC DETAILS
STAGE I

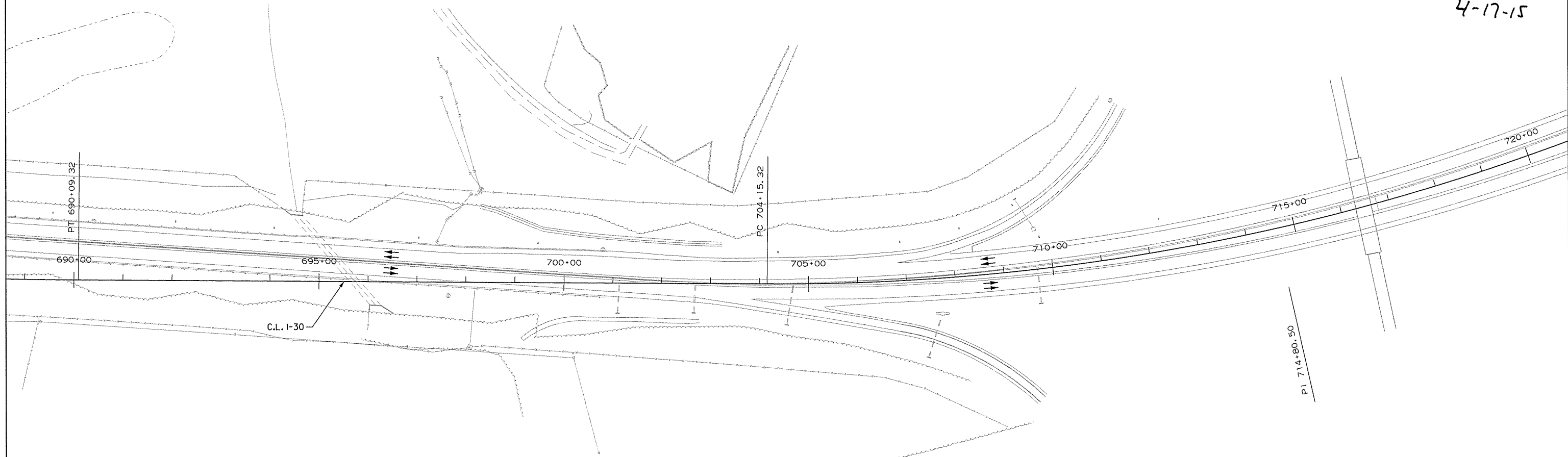
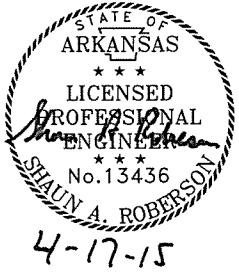
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STAGE I CONSTRUCTION SEQUENCE NOTES:
1) MAINTAIN TRAFFIC ON EXISTING LANES.



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.		BB0303	38	231

2 MAINTENANCE OF TRAFFIC DETAILS

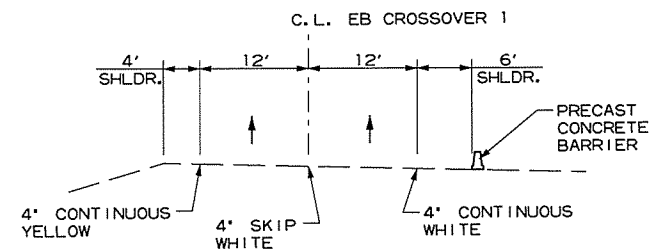


⇔ STAGE I TRAFFIC

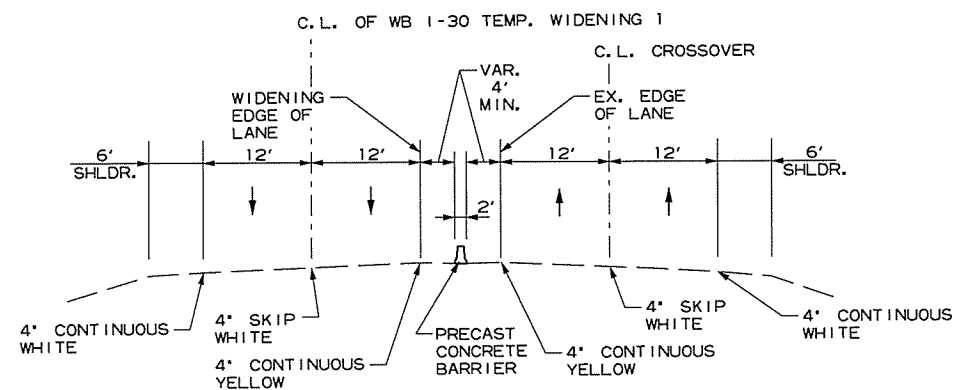
MAINTENANCE OF TRAFFIC DETAILS
STAGE I

STAGE 2 CONSTRUCTION SEQUENCE NOTES:

- 1) RELOCATE PRECAST CONCRETE BARRIER FOR EB CROSSOVER 1, EB CROSSOVER 2, AND I-30 WIDENING 1 AS SHOWN.
- 2) MOVE I-30 EASTBOUND TRAFFIC TO EB CROSSOVER 1 AND EB CROSSOVER 2. MOVE WESTBOUND TRAFFIC TO WB I-30 TEMP. WIDENING 1.
- 3) CONSTRUCT PROPOSED I-30 EASTBOUND LANES AS SHOWN.
- 4) TEMPORARILY RELOCATE BARRIER WALL FROM STA. 632+40 TO STA. 637+55 ALONG EB CROSSOVER 1 WHILE CONSTRUCTING I-30 EB LANES 100' TRANSITION AND MAINTAIN AT LEAST 11' LANES.
- 5) PLACE PAVEMENT MARKINGS ON I-30 EASTBOUND LANES PRIOR TO OPENING TO TRAFFIC IN STAGE 3.

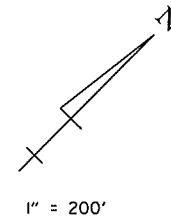


STAGE 2
TEMPORARY BARRIER
EB CROSSOVER 1



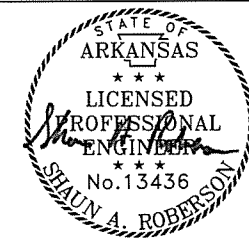
STAGE 2
TEMPORARY BARRIER SEPARATING
WB WIDENING 1 AND CROSSOVERS

STA. 648+91 CONSTRUCT
TEMPORARY TYPE TM D.I.
ON TOP OF BOX
8' LT. OF C.L. MEDIAN (3' X 2'6" X H=0'-6")

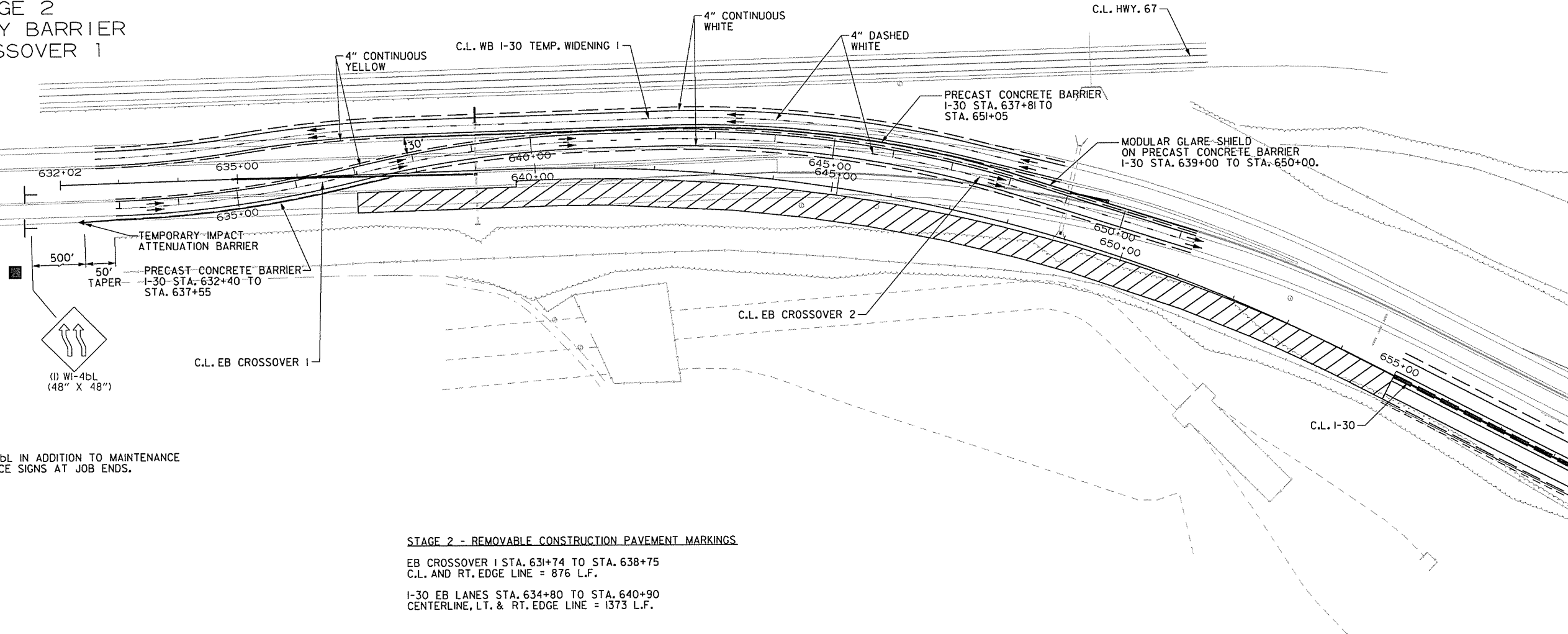


1" = 200'

② MAINTENANCE OF TRAFFIC DETAILS



4-17-15



STAGE 2 - REMOVABLE CONSTRUCTION PAVEMENT MARKINGS

EB CROSSOVER 1 STA. 631+74 TO STA. 638+75
C.L. AND RT. EDGE LINE = 876 L.F.

I-30 EB LANES STA. 634+80 TO STA. 640+90
CENTERLINE, LT. & RT. EDGE LINE = 1373 L.F.

- STAGE 2 CONSTRUCTION
- STAGE 2 TRAFFIC
- TEMPORARY IMPACT ATTENUATION BARRIER

MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

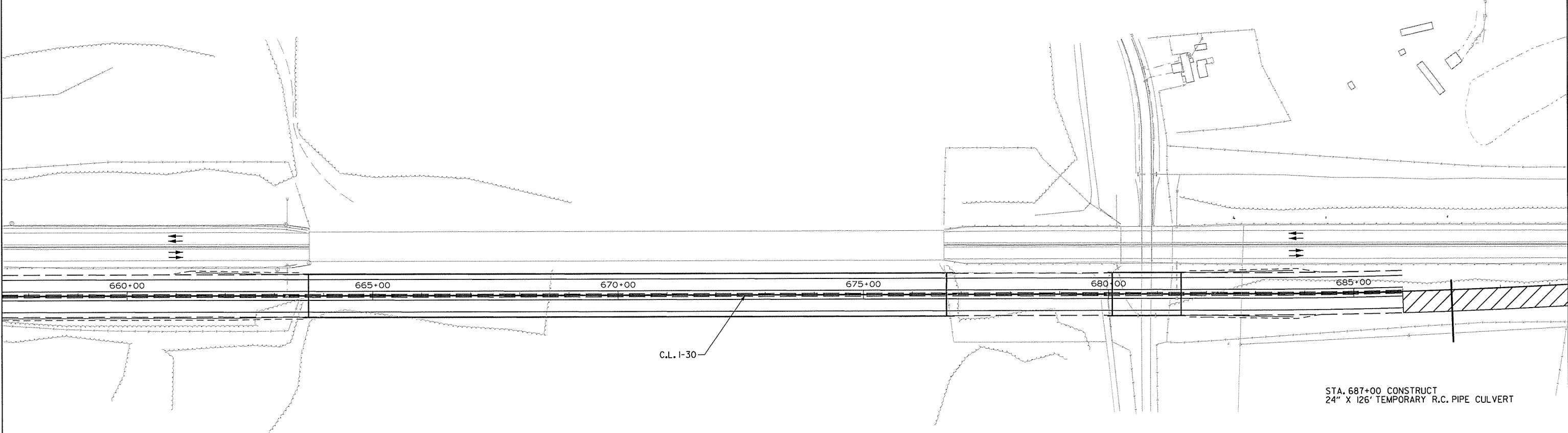
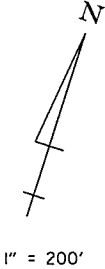
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STAGE 2 CONSTRUCTION SEQUENCE NOTES:
1) MAINTAIN TRAFFIC ON EXISTING LANES.
2) CONSTRUCT PROPOSED I-30 EASTBOUND LANES AS SHOWN.

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. BB0303	40	231
② MAINTENANCE OF TRAFFIC DETAILS								



4-17-15



STAGE 2 CONSTRUCTION
STAGE 2 TRAFFIC

MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

STAGE 2 CONSTRUCTION SEQUENCE NOTES:

- 1) MAINTAIN TRAFFIC ON EXISTING LANES.
- 2) PLACE CONSTRUCTION PAVEMENT MARKINGS AND FURNISH AND INSTALL PRECAST CONCRETE BARRIER ALONG I-30 AND RAMPS AS SHOWN.
- 3) CONSTRUCT PROPOSED I-30 EASTBOUND LANES AS SHOWN. CONSTRUCT WB I-30 TEMP. WIDENING 2 FROM STA. 693+78.73 TO STA. 707+14.88, TEMPORARY RAMP 4, AND TEMPORARY RAMP WIDENING.
- 4) RELOCATE CONCRETE BARRIER WALL TO INSIDE EDGE OF RAMP 4 AND ALONG I-30 FROM STA. 706+70 TO STA. 713+00. CONSTRUCT WB I-30 TEMP. WIDENING 2 FROM STA. 707+70.73 TO STA. 711+29.96.
- 5) PLACE PAVEMENT MARKINGS ON I-30 EASTBOUND LANES, I-30 TEMP. WIDENING 2, TEMPORARY RAMP 4, AND TEMPORARY RAMP WIDENING PRIOR TO OPENING TO TRAFFIC IN STAGE 3.

NOTE: TEMPORARY RAMP 4 OUTSIDE WIDENING AND WB I-30 TEMP. WIDENING 2 TO THE WEST OF RAMP 4 MUST BE COMPLETE BEFORE RELOCATING BARRIER TO INSIDE EDGE OF RAMP 4 AND OUTSIDE EDGE OF WESTBOUND LANES AS SHOWN IN STAGE 2(4).

C.L. WB I-30 TEMP. WIDENING 2
P.I. = 695+08.62
Δ = 07°46'53" LT.
D = 03°00'00"
T = 129.89'
L = 259.38'
P.C. = 693+78.73
P.R.C. = 696+38.11

PRECAST CONCRETE BARRIER
I-30 STA. 693+17 TO
TEMPORARY RAMP 4 STA. 712+20

STAGE 2 - REMOVABLE CONSTRUCTION PAVEMENT MARKINGS

I-30 WB LANES STA. 704+15 TO STA. 712+60
CENTERLINES AND LT. EDGE LINE = 877 L.F.

I-30 EB LANES STA. 696+80 TO STA. 704+00
CENTERLINE = 180 L.F.

I-30 EB LANES STA. 696+80 TO TEMP. RAMP WIDENING STA. 708+28
RT. EDGE LINE = 1148 L.F.

RAMP 4 STA. 704+15 TO STA. 712+20
LT. EDGE LINE = 805 L.F.

RAMP 4 STA. 706+54 TO STA. 709+40
RT. EDGE LINE = 286 L.F.

C.L. WB I-30 TEMP. WIDENING 2
P.I. = 697+14.25
Δ = 04°33'57" RT.
D = 03°00'00"
T = 76.14'
L = 152.20'
P.R.C. = 696+38.11
P.T. = 697+90.31

STA. 699+00 CONSTRUCT
TYPE RM DROP INLET (TEMPORARY)
60' LT. OF C.L. MEDIAN (4' X 3' X H=5'0")
WITH 18" X 65" TEMP. CULVERT OUTLET ON LT.
MOVE D.I. TO 55.39' LT. DURING STAGE 3 CONST.
AND EXTEND TEMP. CULVERT 5' RT.

STA. 703+00 CONSTRUCT
TYPE RM DROP INLET (TEMPORARY)
57.2' LT. OF C.L. MEDIAN (4' X 3' X H=3'0")
WITH 18" X 60" TEMP. CULVERT OUTLET ON LT.

STAGE 2 - REMOVABLE CONSTRUCTION PAVEMENT MARKINGS

WB I-30 TEMP. WIDENING 2 STA. 693+78.73 TO STA. 696+90
CENTERLINE, LT. & RT. EDGE LINES = 700 L.F.

WB I-30 TEMP. WIDENING 2 STA. 706+50 TO STA. 711+29.96
CENTERLINE, LT. & RT. EDGE LINES = 1080 L.F.

EB I-30 LANES STA. 693+80 TO STA. 712+90
CENTERLINE AND LT. EDGE LINE = 2,388 L.F.

TEMPORARY RAMP 4 STA. 706+81 TO STA. 710+90
LT. & RT. EDGE LINES = 818 L.F.

C.L. WB I-30 TEMP. WIDENING 2
P.I. = 705+93.57
Δ = 04°36'24" RT.
D = 03°00'00"
T = 76.82'
L = 153.56'
P.C. = 705+16.75
P.R.C. = 706+70.31

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.		BB0303	41	231

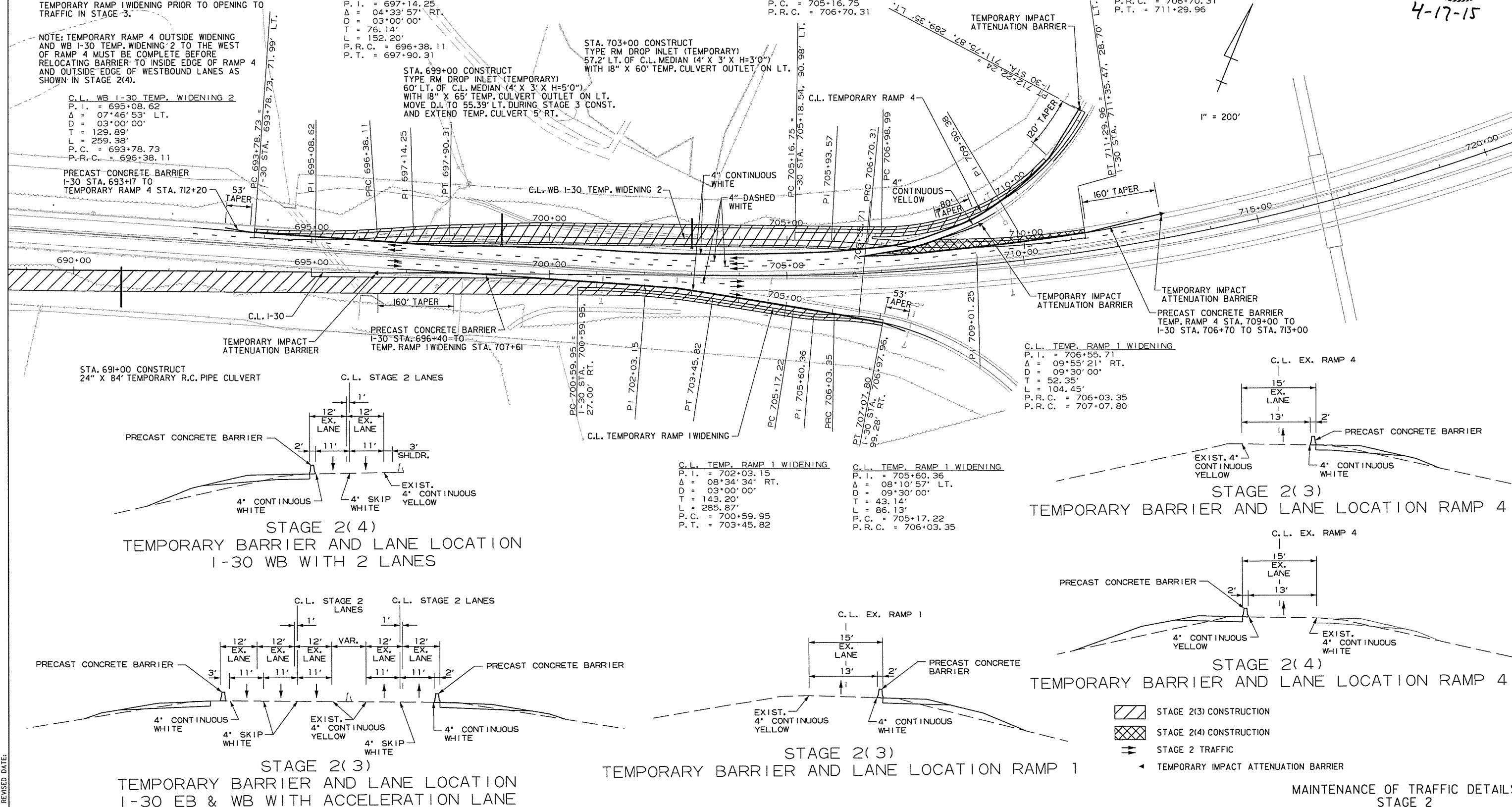
2 MAINTENANCE OF TRAFFIC DETAILS

STAGE 2 - CONSTRUCTION PAVEMENT MARKINGS

I-30 WB LANES STA. 692+50 TO STA. 704+15
CENTERLINES AND LT. EDGE LINE = 1546 L.F.

WB I-30 TEMP. WIDENING 2 STA. 696+90 TO STA. 706+50
CENTERLINES, LT. AND RT. EDGE LINES = 2,328 L.F.

C.L. WB I-30 TEMP. WIDENING 2
P.I. = 709+01.25
Δ = 13°47'22" LT.
D = 03°00'00"
T = 230.94'
L = 459.65'
P.R.C. = 706+70.31
P.T. = 711+29.96



STAGE 2(4)
TEMPORARY BARRIER AND LANE LOCATION
I-30 WB WITH 2 LANES

STAGE 2(3)
TEMPORARY BARRIER AND LANE LOCATION
I-30 EB & WB WITH ACCELERATION LANE

STAGE 2(3)
TEMPORARY BARRIER AND LANE LOCATION RAMP 1

STAGE 2(3)
TEMPORARY BARRIER AND LANE LOCATION RAMP 4

STAGE 2(4)
TEMPORARY BARRIER AND LANE LOCATION RAMP 4

- STAGE 2(3) CONSTRUCTION
- STAGE 2(4) CONSTRUCTION
- STAGE 2 TRAFFIC
- TEMPORARY IMPACT ATTENUATION BARRIER

MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

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REVISED DATE:

STAGE 3 CONSTRUCTION SEQUENCE NOTES:

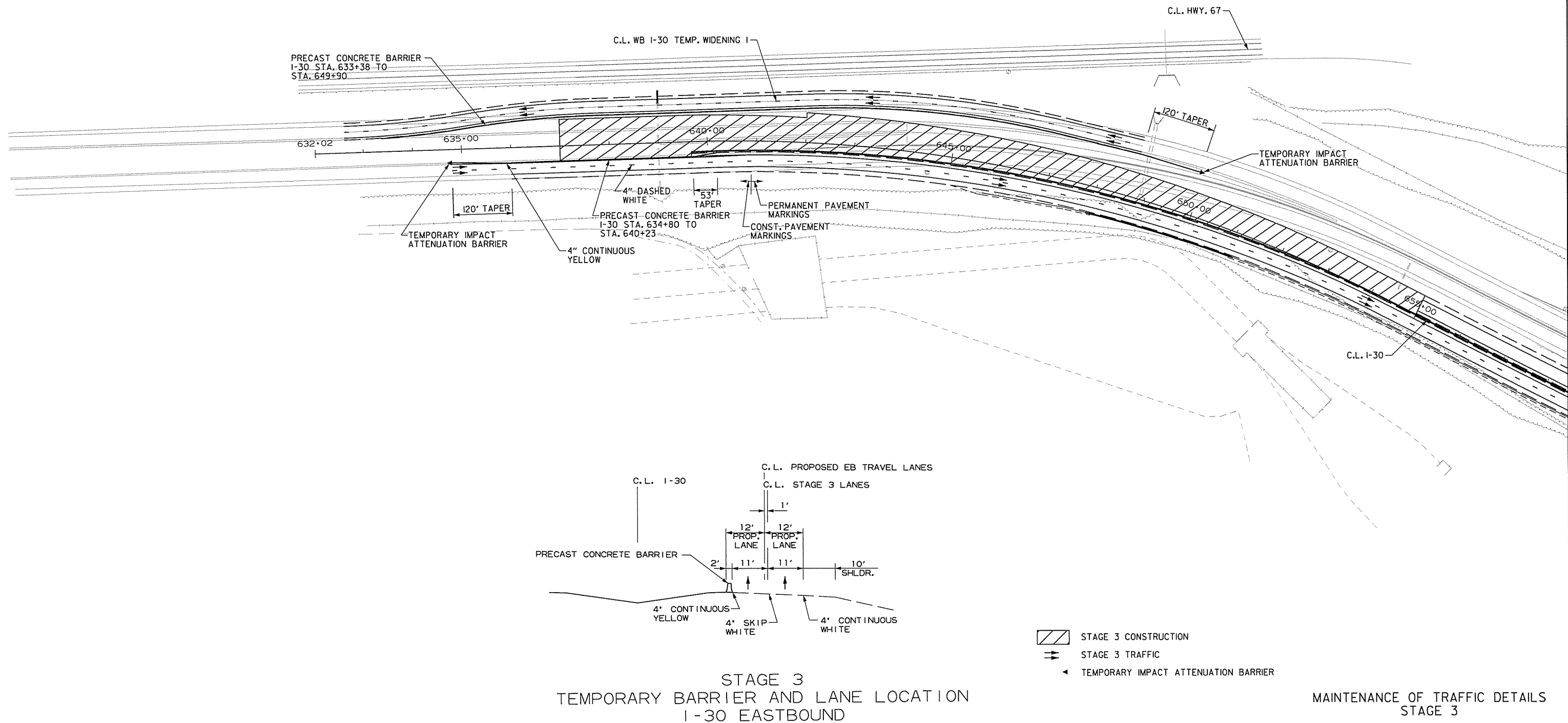
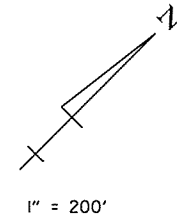
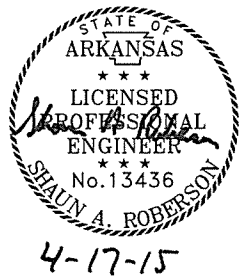
- 1) RELOCATE PRECAST CONCRETE BARRIER ALONG I-30 EASTBOUND LANES AS SHOWN.
- 2) MAINTAIN WESTBOUND TRAFFIC ON WB I-30 TEMP. WIDENING I. MOVE EASTBOUND TRAFFIC TO PROPOSED I-30 EASTBOUND LANES.
- 3) CONSTRUCT PROPOSED I-30 LANES AS SHOWN.
- 4) RELOCATE BARRIER WALL ALONG WB I-30 TEMP. WIDENING I FROM STA. 633+80 TO STA. 637+00 WHILE BUILDING WB LANES 100' TRANSITION AND MAINTAIN AT LEAST 11' LANES.
- 5) FINISH CONSTRUCTION OF EB LANES INSIDE SHOULDER IN AREA OF 100' TRANSITION FROM STA. 636+00 TO STA. 637+00.

STAGE 3 - REMOVABLE CONSTRUCTION PAVEMENT MARKINGS.

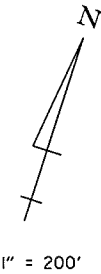
WB I-30 TEMP. WIDENING I STA. 632+61.97 TO STA. 638+20
CENTERLINE & RT. EDGE LINE = 698 L.F.

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.	BB0303	42
								231

2 MAINTENANCE OF TRAFFIC DETAILS



STAGE 3 CONSTRUCTION SEQUENCE NOTES:
1) MAINTAIN WESTBOUND TRAFFIC ON EXISTING WESTBOUND LANES.
MOVE EASTBOUND TRAFFIC TO PROPOSED EASTBOUND LANES.
2) CONSTRUCT PROPOSED I-30 LANES AS SHOWN.

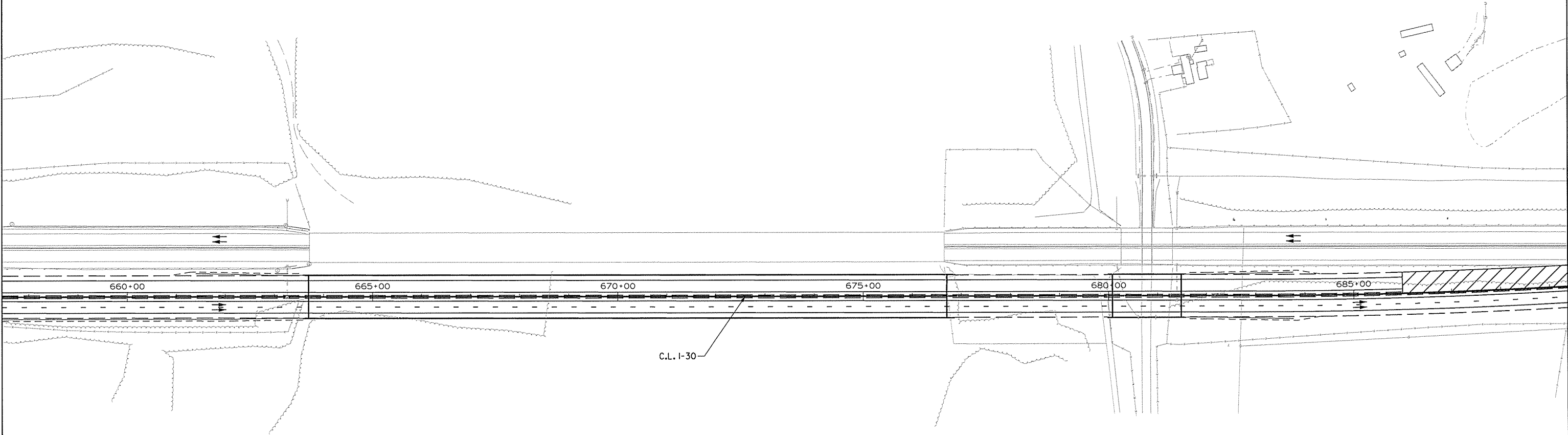


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. BB0303	43	231

2 MAINTENANCE OF TRAFFIC DETAILS



4-17-15



 STAGE 3 CONSTRUCTION
 STAGE 3 TRAFFIC

MAINTENANCE OF TRAFFIC DETAILS
STAGE 3

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STAGE 3 CONSTRUCTION SEQUENCE NOTES:

- 1) MOVE EASTBOUND TRAFFIC TO PROPOSED I-30 EASTBOUND LANES. MOVE WESTBOUND TRAFFIC TO WB I-30 TEMP. WIDENING 2 AND TEMPORARY RAMP 4.
- 2) CONSTRUCT PROPOSED I-30 LANES AS SHOWN. CONSTRUCT EB CROSSOVER 3 AND EB CROSSOVER 4.
- 3) LEAVE A GAP IN THE PROPOSED CONCRETE BARRIER WALL FROM STA. 695+00 TO STA. 700+70. CONSTRUCT 2' WIDE GAP FOR CONCRETE BARRIER WALL WITH FULL DEPTH PAVEMENT.
- 4) REMOVE THE EXISTING MEDIAN CONCRETE BARRIER WALL FROM STA. 705+15 TO STA. 709+00.
- 5) PLACE PAVEMENT MARKINGS ON I-30, EB CROSSOVER 3, AND EB CROSSOVER 4 PRIOR TO OPENING TRAFFIC IN STAGE 4.

STAGE 3 - REMOVABLE CONSTRUCTION PAVEMENT MARKINGS

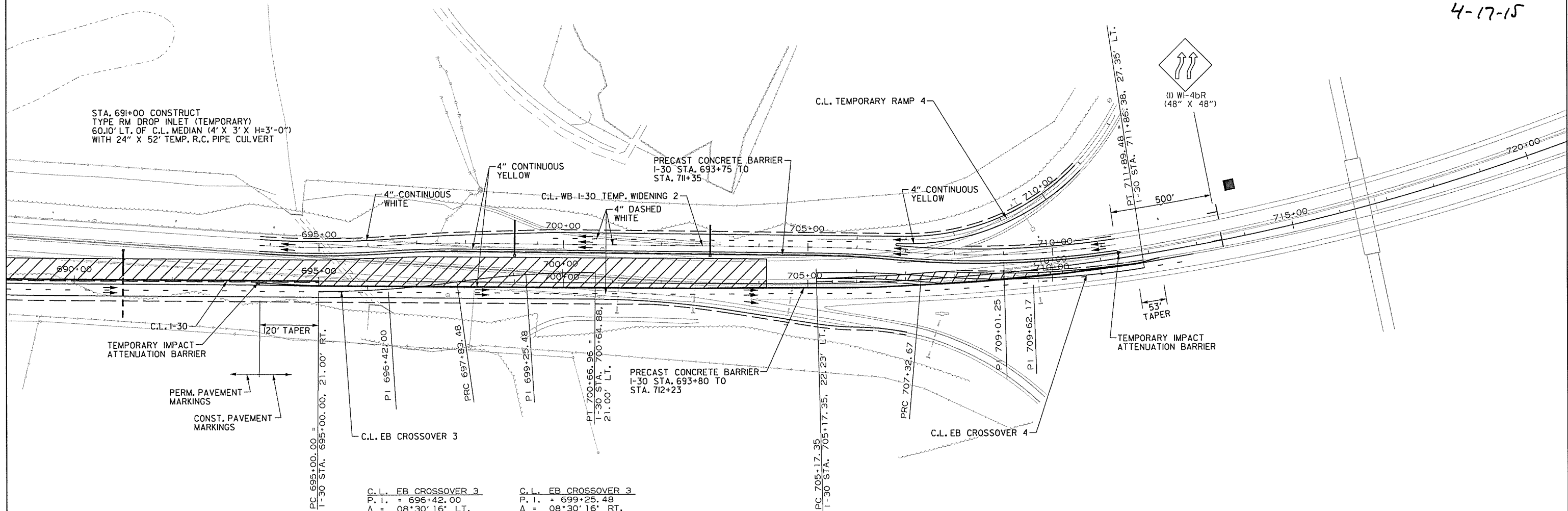
EB CROSSOVER 3 TO END OF EB CROSSOVER 4 STA. 695+00 TO STA. 711+89.48
CENTERLINE, LT. & RT. EDGE LINES = 3802 L.F.
I-30 EB LANES TO END OF TEMP. RAMP 1 WIDENING STA. 697+15 TO STA. 707+08
LT. & RT. EDGE LINES = 1986 L.F.

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.	BB0303	44
								231

② MAINTENANCE OF TRAFFIC DETAILS



4-17-15

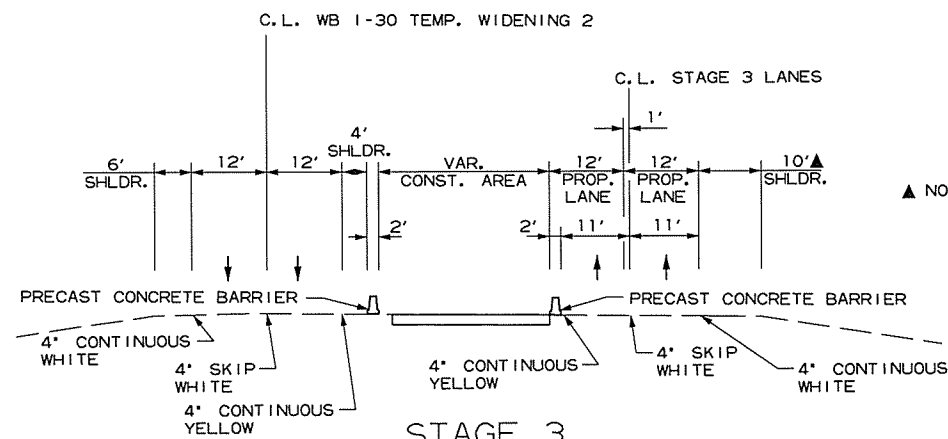


C.L. EB CROSSOVER 3
P. I. = 696+42.00
Δ = 08°30'16" LT.
D = 03°00'00"
T = 142.00'
L = 283.48'
P. C. = 695+00.00
P. R. C. = 697+83.48

C.L. EB CROSSOVER 3
P. I. = 699+25.48
Δ = 08°30'16" RT.
D = 03°00'00"
T = 142.00'
L = 283.48'
P. R. C. = 697+83.48
P. T. = 700+66.96

C.L. EB CROSSOVER 4
P. I. = 706+25.12
Δ = 06°27'34" RT.
D = 03°00'00"
T = 107.77'
L = 215.32'
P. C. = 705+17.35
P. R. C. = 707+32.67

C.L. EB CROSSOVER 4
P. I. = 709+62.17
Δ = 13°42'16" LT.
D = 03°00'00"
T = 229.50'
L = 456.82'
P. R. C. = 707+32.67
P. T. = 711+89.48



▲ NOTE: SHOULDER MAY BE REDUCED TO 8' FOR FINAL PAVING OPERATIONS.

- STAGE 3 CONSTRUCTION
- STAGE 3 TRAFFIC
- TEMPORARY IMPACT ATTENUATION BARRIER

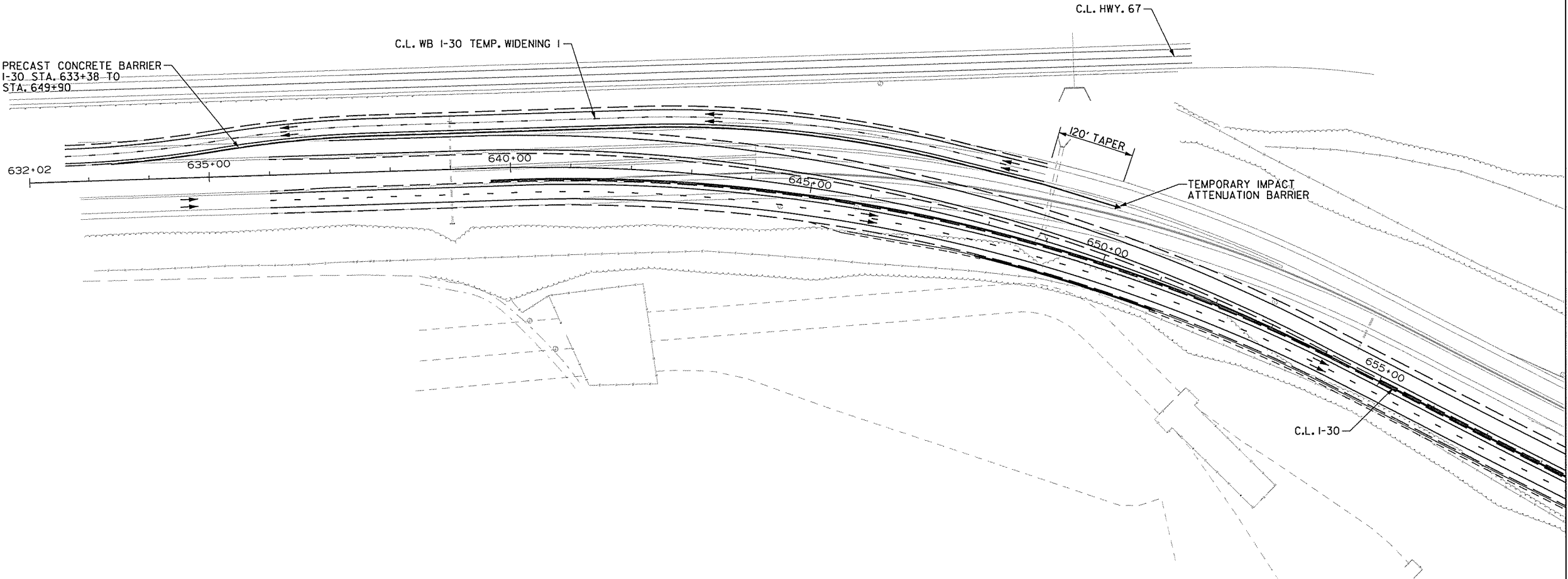
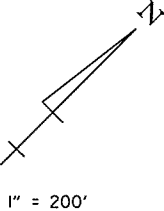
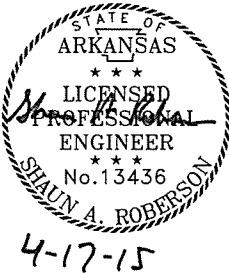
MAINTENANCE OF TRAFFIC DETAILS
STAGE 3

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				6	ARK.			
						JOB NO.	BB0303	45
								231

STAGE 4 CONSTRUCTION SEQUENCE NOTES:

- 1) MAINTAIN WESTBOUND TRAFFIC ON I-30 TEMP. WIDENING I AND EASTBOUND TRAFFIC ON PROPOSED I-30 EASTBOUND LANES.
- 2) UPON COMPLETION OF I-30 MAIN LANES PAVEMENT, MOVE WESTBOUND TRAFFIC TO PROPOSED WB I-30 LANES. OBLITERATE I-30 TEMPORARY WIDENING I AND FINISH CONSTRUCTION OF WB LANES EMBANKMENT AND SHOULDER, RELOCATE CONCRETE BARRIER WALL ALONG WB LANES OUTSIDE SHOULDER FROM STA. 635+47 TO STA. 643+60 WHEN CONSTRUCTING I-30 WB LANES OUTSIDE SHOULDER.

2) MAINTENANCE OF TRAFFIC DETAILS



- STAGE 4 CONSTRUCTION
- STAGE 4 TRAFFIC
- TEMPORARY IMPACT ATTENUATION BARRIER

MAINTENANCE OF TRAFFIC DETAILS
STAGE 4

STAGE 4 CONSTRUCTION SEQUENCE NOTES:

1) MAINTAIN WESTBOUND TRAFFIC ON EXISTING WESTBOUND LANES AND EASTBOUND TRAFFIC ON PROPOSED EASTBOUND LANES.

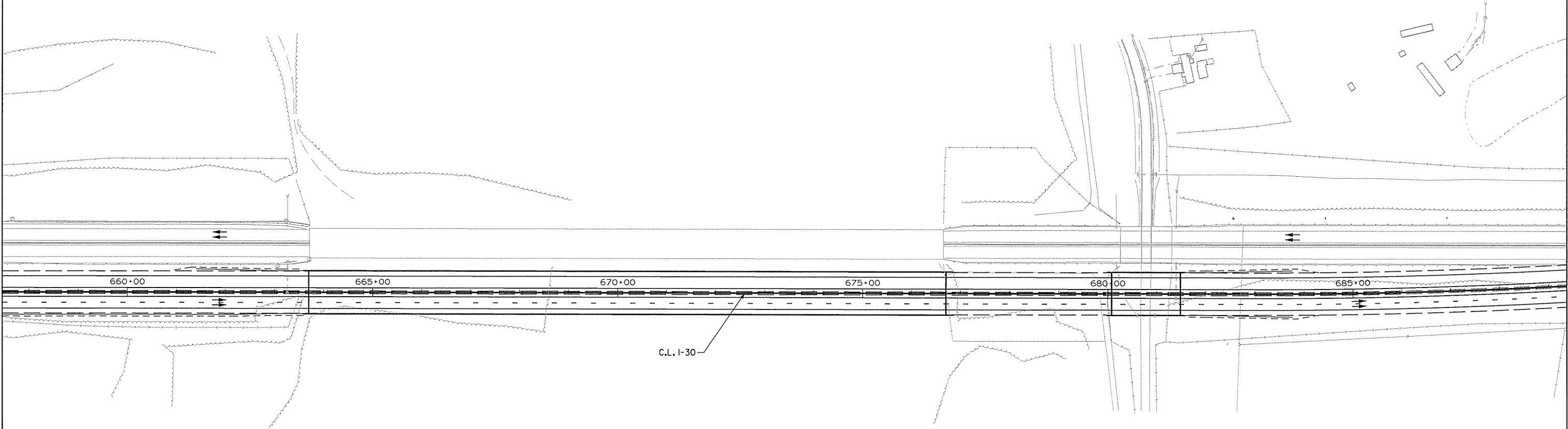
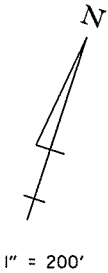
2) UPON COMPLETION OF I-30 MAIN LANES PAVEMENT, MOVE WESTBOUND TRAFFIC TO PROPOSED WESTBOUND I-30 LANES.

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				6	ARK.			
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2 MAINTENANCE OF TRAFFIC DETAILS



4-17-15

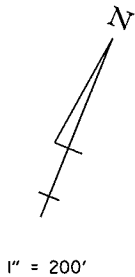


STAGE 4 TRAFFIC

MAINTENANCE OF TRAFFIC DETAILS
STAGE 4

STAGE 1 CONSTRUCTION SEQUENCE NOTES:

- 1) MAINTAIN TRAFFIC ON EXISTING LANES.
2) CONSTRUCT WRSF IN MEDIAN UTILIZING TRAFFIC CONTROL DEVICES SHOWN ON MAINTENANCE OF TRAFFIC LANE CLOSURE DETAIL SHEET.

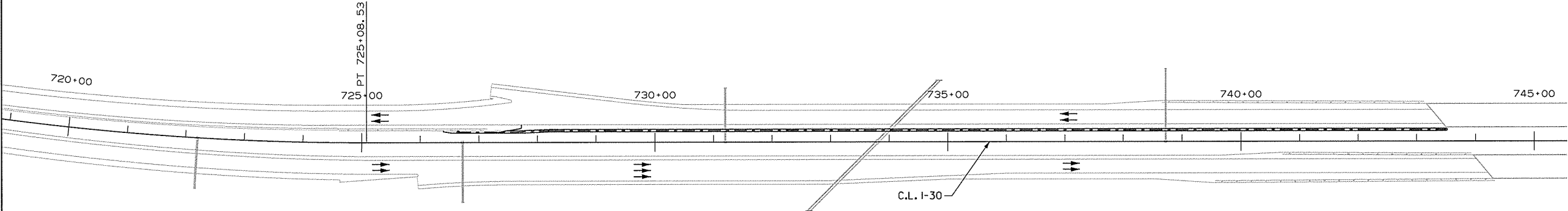


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				6	ARK.			
				JOB NO.			BB0303	48
								231

2 MAINTENANCE OF TRAFFIC DETAILS



4-17-15



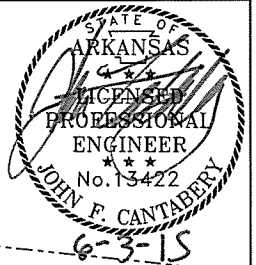
⇒ STAGE 4 TRAFFIC

MAINTENANCE OF TRAFFIC DETAILS
STAGE 4

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				JOB NO.		8B0303	49	231

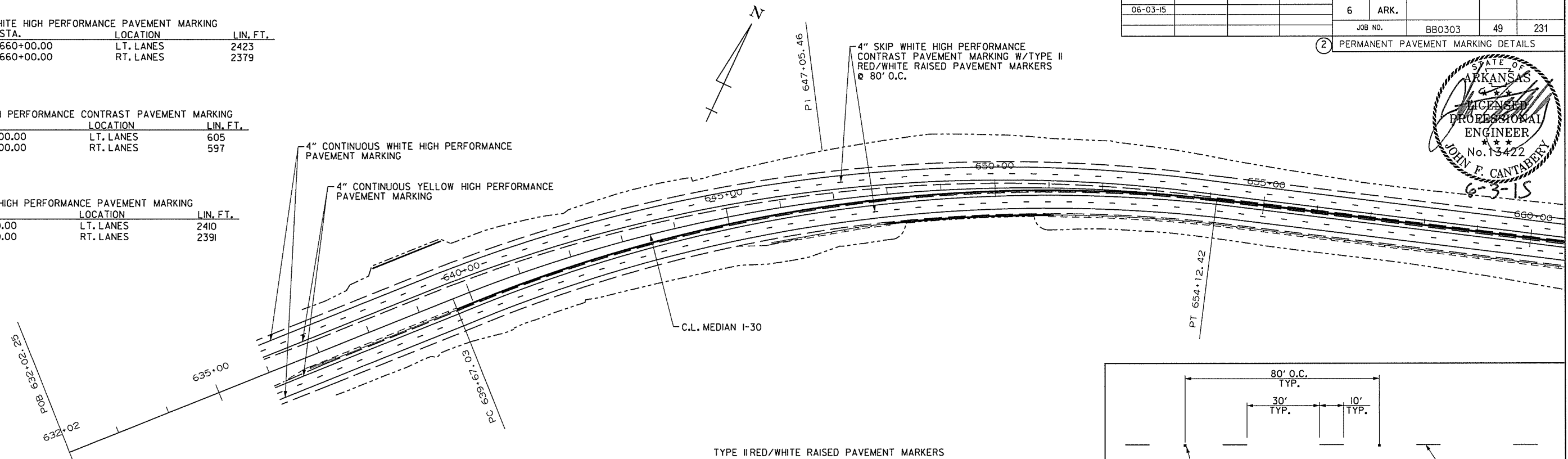
② PERMANENT PAVEMENT MARKING DETAILS



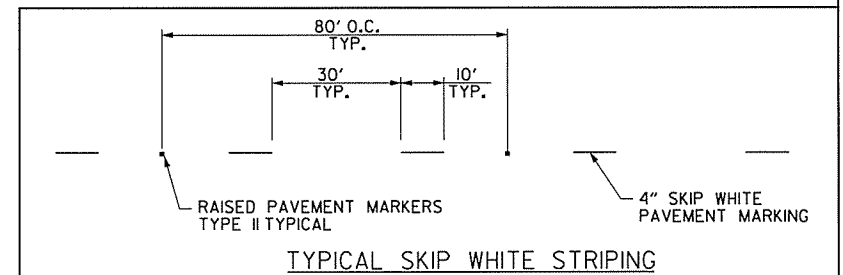
4" WHITE HIGH PERFORMANCE PAVEMENT MARKING			
STA.	STA.	LOCATION	LIN. FT.
636+00.00	660+00.00	LT. LANES	2423
636+00.00	660+00.00	RT. LANES	2379

4" SKIP WHITE HIGH PERFORMANCE CONTRAST PAVEMENT MARKING			
STA.	STA.	LOCATION	LIN. FT.
636+00.00	660+00.00	LT. LANES	605
636+00.00	660+00.00	RT. LANES	597

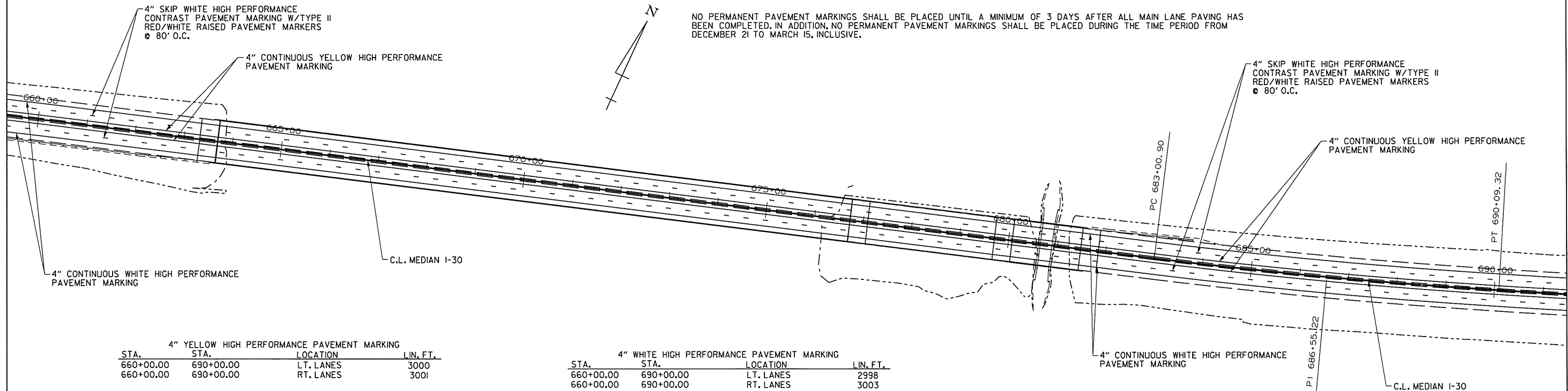
4" YELLOW HIGH PERFORMANCE PAVEMENT MARKING			
STA.	STA.	LOCATION	LIN. FT.
636+00.00	660+00.00	LT. LANES	2410
636+00.00	660+00.00	RT. LANES	2391



TYPE II RED/WHITE RAISED PAVEMENT MARKERS			
STA.	STA.	LOCATION	EACH
636+00.00	660+00.00	LT. LANES	31
636+00.00	660+00.00	RT. LANES	30



NO PERMANENT PAVEMENT MARKINGS SHALL BE PLACED UNTIL A MINIMUM OF 3 DAYS AFTER ALL MAIN LANE PAVING HAS BEEN COMPLETED. IN ADDITION, NO PERMANENT PAVEMENT MARKINGS SHALL BE PLACED DURING THE TIME PERIOD FROM DECEMBER 21 TO MARCH 15, INCLUSIVE.



4" YELLOW HIGH PERFORMANCE PAVEMENT MARKING			
STA.	STA.	LOCATION	LIN. FT.
660+00.00	690+00.00	LT. LANES	3000
660+00.00	690+00.00	RT. LANES	3001

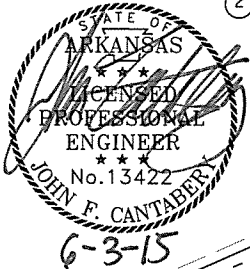
4" WHITE HIGH PERFORMANCE PAVEMENT MARKING			
STA.	STA.	LOCATION	LIN. FT.
660+00.00	690+00.00	LT. LANES	2998
660+00.00	690+00.00	RT. LANES	3003

4" SKIP WHITE HIGH PERFORMANCE CONTRAST PAVEMENT MARKING			
STA.	STA.	LOCATION	LIN. FT.
660+00.00	690+00.00	LT. LANES	750
660+00.00	690+00.00	RT. LANES	751

TYPE II RED/WHITE RAISED PAVEMENT MARKERS			
STA.	STA.	LOCATION	EACH
660+00.00	690+00.00	LT. LANES	38
660+00.00	690+00.00	RT. LANES	38

PERMANENT PAVEMENT MARKING DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
06-03-15				6	ARK.			
				JOB NO.		BB0303	50	231
				PERMANENT PAVEMENT MARKING DETAILS				



STA.	STA.	LOCATION	LIN. FT.
700+58.27	706+41.47	LT. LANES	148

STA.	STA.	LOCATION	LIN. FT.
690+00.00	720+00.00	LT. LANES	3090
690+00.00	720+00.00	RT. LANES	3006

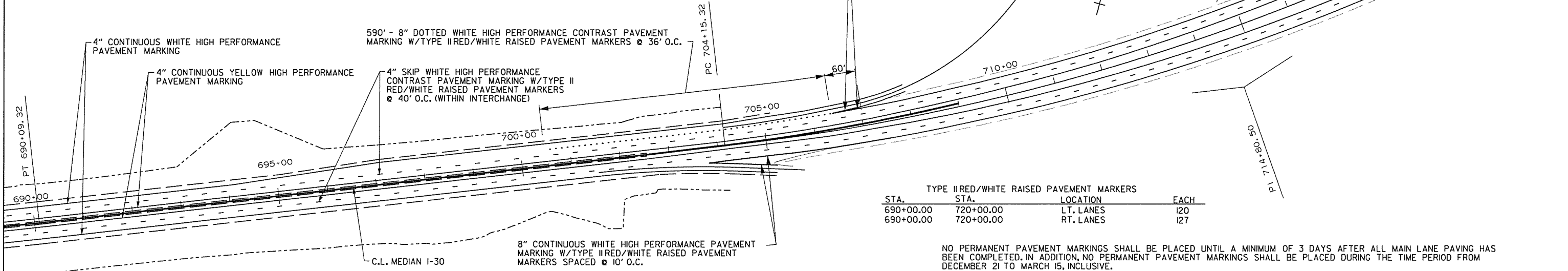
STA.	STA.	LOCATION	LIN. FT.
706+41.47	707+01.95	LT. LANES	120
703+79.00	707+51.77	RT. LANES	516

STA.	STA.	LOCATION	LIN. FT.
690+00.00	720+00.00	LT. LANES	3078
690+00.00	720+00.00	RT. LANES	2768

STA.	STA.	LOCATION	LIN. FT.
690+00.00	720+00.00	LT. LANES	748
690+00.00	720+00.00	RT. LANES	750

NOTE: SEE PM-2 FOR STANDARD ENTRANCE
AND EXIT RAMP PAVEMENT MARKINGS.

8" CONTINUOUS WHITE HIGH PERFORMANCE PAVEMENT
MARKING W/TYPE II RED/WHITE RAISED PAVEMENT
MARKERS SPACED @ 10' O.C.



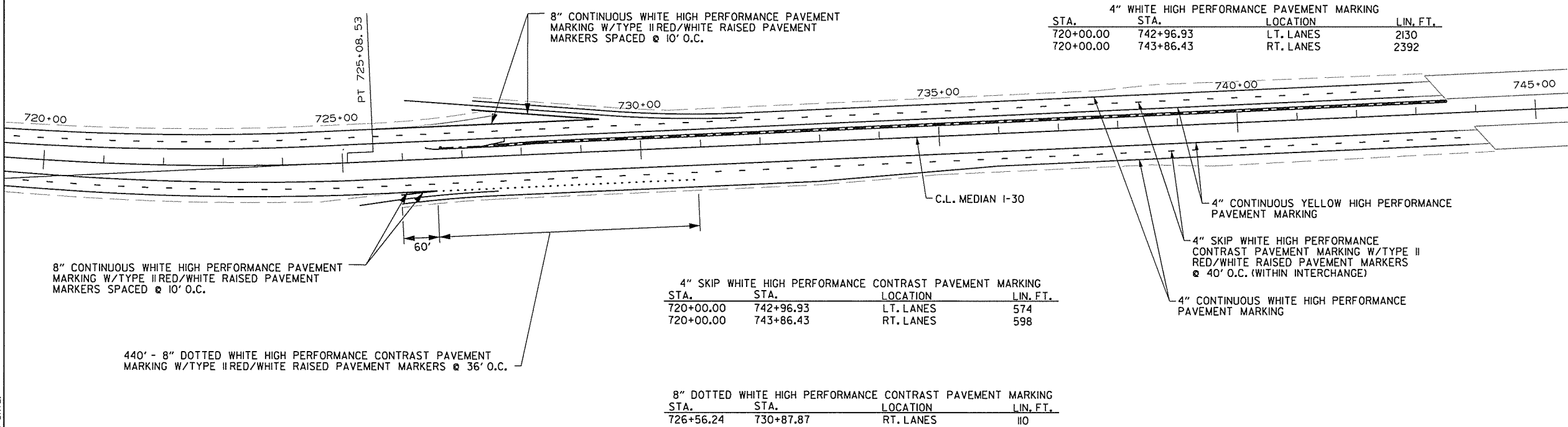
STA.	STA.	LOCATION	EACH
690+00.00	720+00.00	LT. LANES	120
690+00.00	720+00.00	RT. LANES	127

NO PERMANENT PAVEMENT MARKINGS SHALL BE PLACED UNTIL A MINIMUM OF 3 DAYS AFTER ALL MAIN LANE PAVING HAS
BEEN COMPLETED. IN ADDITION, NO PERMANENT PAVEMENT MARKINGS SHALL BE PLACED DURING THE TIME PERIOD FROM
DECEMBER 21 TO MARCH 15, INCLUSIVE.

STA.	STA.	LOCATION	LIN. FT.
720+00.00	743+05.79	LT. LANES	2303
720+00.00	743+67.60	RT. LANES	2371

STA.	STA.	LOCATION	EACH
720+00.00	742+96.93	LT. LANES	117
720+00.00	743+86.43	RT. LANES	97

STA.	STA.	LOCATION	LIN. FT.
725+57.14	729+32.15	LT. LANES	590
725+94.24	726+56.24	RT. LANES	120



STA.	STA.	LOCATION	LIN. FT.
720+00.00	742+96.93	LT. LANES	2130
720+00.00	743+86.43	RT. LANES	2392

STA.	STA.	LOCATION	LIN. FT.
720+00.00	742+96.93	LT. LANES	574
720+00.00	743+86.43	RT. LANES	598

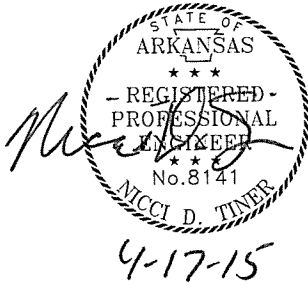
STA.	STA.	LOCATION	LIN. FT.
726+56.24	730+87.87	RT. LANES	110

PERMANENT PAVEMENT MARKING DETAILS

MAIN LANES SIGNING QUANTITIES
ROADSIDE MOUNTED I-BEAM SIGN SUPPORTS

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.		BB0303	53	231

2 SIGNING QUANTITIES



SIGN NO./ LOCATION	STRUCTURE	SIGN			BREAKAWAY SIGN SUPPORT										EXIT NUMBER PANEL	
	TYPE	GUIDE SIGN			STEEL SECT. A-572		SIGN POST LENGTH		STUB POST		FOOTINGS			SIGN POST AND STUB	LEGEND	TYPE
							H-1	H-2	H-1	H-2	DIA.	DEPTH	EMBED.			A
		SQ. FT.	BEAM	LBS												LIN FT
		G-2	FT.	FT.	SQ. FT.	BEAM	LBS	LIN FT	LIN FT	LIN FT	POUND	SQ. FT.				
LG-030-46-STA645+78EB	1	18.00	6.00	108.00	W8	18	16.11	18.64	6.00	6.00	3	8.5	5.67	841.39		
GM-030-46-STA648+62EB	1	8.50	6.00	51.00	W8	18	15.79	16.64	5.00	5.00	2.5	7	4.67	763.63	18	20.00
GM-030-46-STA657+67WB	1	6.50	2.50	16.25	W6	9	11.78	12.43	3.00	3.00	1.5	4	2.67	271.83		
GM-030-46-STA663+04EB	1	3.00	2.50	7.50	W6	9	11.67	11.97	2.66	2.66	1.5	3.5	2.33	260.70		
GM-030-46-STA663+19WB	1	5.00	1.50	7.50	W6	9	10.73	11.23	2.66	2.66	1.5	3.5	2.33	245.58		
GM-030-29-STA677+21EB	1	7.00	1.50	10.50	W6	9	10.8	11.5	2.66	2.66	1.5	3.5	2.33	248.64		
GM-030-29-STA677+21WB	1	3.00	2.50	7.50	W6	9	11.67	11.97	2.66	2.66	1.5	3.5	2.33	260.70		
GM-030-29-STA701+42EB	1	12.50	4.00	50.00	W8	18	13.48	14.73	5.00	5.00	2.5	7	4.67	687.67	18	20.00
EX-030-29-STA704+34EB	1	6.50	5.00	32.50	W6	9	11.73	11.84	3.33	3.33	1.5	4.5	3.00	272.07		
TOTALS:	9			290.75										3852.21		40.00

NOTE:
BREAKAWAY SIGN SUPPORT TOTAL IS CALCULATED BY TAKING THE LENGTH OF
H-1, H-2, AND EACH STUB POST AND MULTIPLYING BY THE BEAM WEIGHT (LBS).

MAIN LANES SIGNING QUANTITIES
SQUARE TUBE POSTS

CODE LETTER THIS SHEET	SQUARE TUBE POST ASSEMBLIES	
	G-1	G2-1
	EACH	EACH
SS-030-46-STA644+54EB		1
SS-030-29-STA689+98WB	1	
SS-030-29-STA696+50WB	1	
SS-030-29-STA700+77WB		1
SS-030-46-STA703+77EB	1	
TOTALS:	3	2

STANDARD SIGN QUANTITIES
U-CHANNEL POSTS

CODE LETTER THIS SHEET	U-CHANNEL POST ASSEMBLIES
	U-1
	EACH
SS-030-46-STA663+69EB	1
SS-030-29-STA676+71WB	1
TOTAL:	2

STANDARD ROADSIDE SIGNS

SHEET ALUMINUM 0.100" THICKNESS (5 SF OR LESS)					
SIGN NO.	SIZE OF SIGN	UNIT AREA (SQ. FT.)	QUANTITY REQUIRED	TOTAL SIGN AREA (SQ. FT.)	LEGEND/BACKGROUND
M1-1	24" x 12"	2.00	1	2.00	WHITE/BLUE
M3-4	24" x 24"	4.00	1	4.00	WHITE/BLUE
OM-3R	12" x 36"	3.00	2	6.00	BLACK/YELLOW
TOTAL 0.100" THICKNESS:				12.00	

SHEET ALUMINUM 0.125" THICKNESS (GREATER THAN 5 SF)					
SIGN NO.	SIZE OF SIGN	UNIT AREA (SQ. FT.)	QUANTITY REQUIRED	TOTAL SIGN AREA (SQ. FT.)	LEGEND/BACKGROUND
R2-1	48" x 60"	20.00	1	20.00	BLACK/WHITE
W8-13	48" x 48"	16.00	2	32.00	BLACK/YELLOW
W13-2	48" x 60"	20.00	1	20.00	BLACK/YELLOW
TOTAL 0.125" THICKNESS:				72.00	

SUMMARY OF QUANTITIES

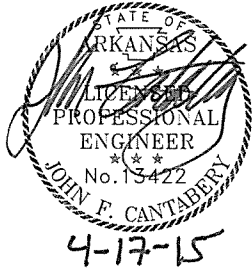
ITEM NUMBER	ITEM	TOTAL	UNIT
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G-1)	3	EACH
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G2-1)	2	EACH
SP & 725	GUIDE SIGN-ROADSIDE MOUNTED (DEMOUNTABLE LEGEND)	291	SQ. FT.
SP & 726	STANDARD SIGN	84	SQ. FT.
SP & 727	EXIT NUMBER PANEL (TYPE A)	40	SQ. FT.
SP & 729	CHANNEL POST SIGN SUPPORT (TYPE U-1)	2	EACH
730	BREAKAWAY SIGN SUPPORT (TYPE G-2)	3852	POUND

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WORKSPACE: AHTD
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REVISED DATE:

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.		BB0303	54	231

2

SOIL BORING LOGS



SOIL BORING LOG									
BORING or TEST PIT NO.	APPROX. STATION	SAMPLE DEPTH (ft)	WATER CONTENT (%)	ATTERBERG LIMITS			PERCENT PASSING #200, %	UNIFIED CLASS.	AASHTO CLASS.
				LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX			
1	663+69, 45' RT	4.5-5.5	10	NON-PLASTIC			78	ML	A-4
1	663+69, 45' RT	24-25	3	----	----	----	2	SP	A-3
1	663+69, 45' RT	34-35	24	----	----	----	1	SP	A-3
1	663+69, 45' RT	39-40	21	----	----	----	2	SP	A-3
1	663+69, 45' RT	49-50	26	----	----	----	5	SP-SM	A-3
1	663+69, 45' RT	63.5-64	22	69	27	42	95	CH	A-7-6
2	664+70, 30 RT	6.5-7.5	8	NON-PLASTIC			9	SP-SM	A-3
2	664+70, 30 RT	29-30	22	----	----	----	4	SP	A-3
2	664+70, 30 RT	39-40	10	----	----	----	8	SW-SM	A-1-a
2	664+70, 30 RT	49-49.5	22	68	24	44	90	CH	A-7-6
3	665+90, 40 LT	9-10	12	----	----	----	31	SP	A-2-4
3	665+90, 40 LT	29-30	18	----	----	----	3	SP	A-3
3	665+90, 40 LT	48.5-49	23	64	25	39	99	CH	A-7-6
4	667+10, 40' RT	2.5-3.5	22	----	----	----	72	ML	A-4
4	667+10, 40' RT	9-10	2	----	----	----	5	SP-SM	A-3
4	667+10, 40' RT	19-20	22	----	----	----	4	SP	A-3
4	667+10, 40' RT	34-35	22	----	----	----	4	SP	A-3
4	667+10, 40' RT	49-49.5	23	64	27	37	97	CH	A-7-6
5	668+10, 40' LT	4-5	13	NON-PLASTIC			48	SM	A-4
5	668+10, 40' LT	14-15	2	----	----	----	2	SP	A-3
5	668+10, 40' LT	24-25	19	----	----	----	5	SP-SM	A-3
5	668+10, 40' LT	34-35	20	----	----	----	4	SP	A-3
5	668+10, 40' LT	43.5-44	24	65	27	38	98	CH	A-7-6
6	670+05, 25' RT	0-1.5	21	----	----	----	7	SP-SM	A-3
6	670+05, 25' RT	11-12	29	NON-PLASTIC			2	SP	A-3
6	670+05, 25' RT	20.5-21.5	22	68	28	40	99	CH	A-7-6
6	670+05, 25' RT	35.5-36	25	66	26	40	98	CH	A-7-6
6	670+05, 25' RT	60.5-61	22	65	22	43	99	CH	A-7-6
6	670+05, 25' RT	85.5-86	22	73	27	46	99	CH	A-7-6
7	672+55, 35' LT	0-1.5	27	----	----	----	12	SP-SM	A-2-4
7	672+55, 35' LT	19-19.5	23	68	27	41	99	CH	A-7-6
7	672+55, 35' LT	29.5-30	23	68	28	40	99	CH	A-7-6
7	672+55, 35' LT	39-39.5	19	61	22	39	97	CH	A-7-6
7	672+55, 35' LT	64-64.5	24	68	28	40	99	CH	A-7-6
7	672+55, 35' LT	74-74.5	26	72	28	44	99	CH	A-7-6
8	674+76, 36' RT	4.5-5.5	5	NON-PLASTIC			37	SM	A-4
8	674+76, 36' RT	14-15	43	NON-PLASTIC			51	ML	A-4
8	674+76, 36' RT	24-25	19	NON-PLASTIC			8	SP-SM	A-3
8	674+76, 36' RT	38.5-39	22	61	23	38	96	CH	A-7-6
8	674+76, 36' RT	43.5-44.5	26	38	18	20	53	CL	A-6
8	674+76, 36' RT	53.5-54	25	71	26	45	99	CH	A-7-6
9	676+91, 57' LT	4.5-5.5	20	24	20	4	93	CL-ML	A-4
9	676+91, 57' LT	9-10	24	43	15	28	96	CL	A-7-6
9	676+91, 57' LT	19-20	27	55	19	36	99	CH	A-7-6
9	676+91, 57' LT	24-25	16	27	21	6	93	CL-ML	A-4
9	676+91, 57' LT	34-35	20	NON-PLASTIC			84	ML	A-4
9	676+91, 57' LT	58.5-59.5	24	----	----	----	5	SP-SM	A-3
9	676+91, 57' LT	78.5-79	28	63	24	39	90	CH	A-7-6

SOIL BORING LOG									
BORING or TEST PIT NO.	APPROX. STATION	SAMPLE DEPTH (ft)	WATER CONTENT (%)	ATTERBERG LIMITS			PERCENT PASSING #200, %	UNIFIED CLASS.	AASHTO CLASS.
				LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX			
10	679+94, 35' RT	6.5-7.5	7	NON-PLASTIC			50	ML	A-4
10	679+94, 35' RT	14-15	25	47	18	29	96	CL	A-7-6
10	679+94, 35' RT	29-30	24	NON-PLASTIC			26	SM	A-2-4
10	679+94, 35' RT	64-65	26	75	30	45	97	CH	A-7-5
11	680+90, 10' LT	2.5-3.5	17	46	17	29	98	CL	A-7-6
11	680+90, 10' LT	6.5-7.5	20	32	18	14	89	CL	A-6
11	680+90, 10' LT	14-15	3	----	----	----	6	SP-SM	A-3
11	680+90, 10' LT	39-40	26	----	----	----	6	SP-SM	A-3
11	680+90, 10' LT	54-54.5	31	76	29	47	84	CH	A-7-6
12	657+65, CL	0.5-1.5	9	NON-PLASTIC			88	ML	A-4
13	651+75, 5' LT.	2.5-3.5	22	36	18	18	98	CL	A-6
14	645+75, 25' RT.	0.5-1.5	17	22	19	3	81	ML	A-4
14	645+75, 25' RT.	4-5	36	48	19	29	100	CL	A-7-6
15	689+10, 25' RT.	0.5-1.5	22	43	17	26	87	CL	A-7-6
15	689+10, 25' RT.	2-3	22	51	22	29	93	CH	A-7-6
15	689+10, 25' RT.	0.5-5	22	55	22	33	96	CH	A-7-6
16	695+80, 35' RT.	0.5-1.5	22	47	18	29	90	CL	A-7-6
16	695+80, 35' RT.	1.5-2.5	24	----	----	----	----	CL	A-7-7
16	695+80, 35' RT.	3-4	26	46	15	31	96	CL	A-7-6
16	695+80, 35' RT.	4.5-5.5	27	53	19	34	98	CH	A-7-6
16	695+80, 35' RT.	6.5-7.5	22	52	19	33	100	CH	A-7-6
16A	695+80, 50' RT.	0.5-1.5	23	33	15	18	90	CL	A-6
16A	695+80, 50' RT.	4.5-5.5	25	NON-PLASTIC			62	ML	A-4
16A	695+80, 50' RT.	6.5-7.5	16	NON-PLASTIC			65	ML	A-4
16A	695+80, 50' RT.	2-6	15	NON-PLASTIC			63	ML	A-4
17	648+30, 50' RT.	0.5-1.5	24	NON-PLASTIC			60	ML	A-4
17	648+30, 50' RT.	2.5-3.5	33	69	26	43	100	CH	A-7-6
17	648+30, 50' RT.	5-6	29	34	19	15	99	CL	A-6
17	648+30, 50' RT.	8-9	29	47	19	28	100	CL	A-7-6
18	650+35, 50' RT.	0.5-1.5	19	25	19	6	88	CL-ML	A-4
18	650+35, 50' RT.	2-3	22	NON-PLASTIC			67	ML	A-4
18	650+35, 50' RT.	3.5-4.5	23	43	18	25	99	CL	A-7-6
18	650+35, 50' RT.	5.5-6.5	24	25	22	3	94	ML	A-4
18	650+35, 50' RT.	0.5-4.5	20	22	21	1	90	ML	A-4
19	648+50, 40' RT	2.5-3.5	19	NON-PLASTIC			78	ML	A-4
19	648+50, 40' RT	9-10	33	58	22	36	99	CH	A-7-6
20	650+20, 40' RT	4-5	21	----	----	----	81	ML	A-4
20	650+20, 40' RT	9-9.5	27	42	18	24	100	CL	A-7-6
20	650+20, 40' RT	19-20	12	----	----	----	41	SM	A-4

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMIT SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

SOIL BORING LOGS

J:\Contabery 6/3/2015 12:55:06 PM
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
05-II-15				6	ARK.			
06-03-15								
				JOB NO.		BB0303	55	231
				QUANTITIES				

2

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS									
DESCRIPTION	ENTIRE JOB	REMOVAL OF PERMANENT PAVEMENT MARKINGS	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS	HIGH PERFORMANCE PAVEMENT MARKING		HIGH PERFORMANCE CONTRAST PAVEMENT MARKING	
					TYPE II	4"		8"	
					(WHITE/RED) EACH	WHITE	YELLOW	WHITE	WHITE
	LIN. FT. - EACH	LIN. FT.	LIN. FT.	LIN. FT.		LIN. FT.		LIN. FT.	LIN. FT.
REMOVAL OF PERMANENT PAVEMENT MARKINGS	17105	17105							
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	26402		26402						
CONSTRUCTION PAVEMENT MARKINGS	10119			10119					
RAISED PAVEMENT MARKERS (TYPE II)	598				598				
HIGH PERFORMANCE PAVEMENT MARKING WHITE (4")	21171					21171			
HIGH PERFORMANCE PAVEMENT MARKING WHITE (8")	1346							1346	
HIGH PERFORMANCE PAVEMENT MARKING YELLOW (4")	21572						21572		
HIGH PERFORMANCE CONTRAST PAVEMENT MARKING WHITE (4")	5373							5373	
HIGH PERFORMANCE CONTRAST PAVEMENT MARKING WHITE (8")	258								258
TOTALS:		17105	26402	10119	598	21171	21572	1346	5373

NOTE: THIS IS A HIGH TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2014 EDITION.

NOTE: NO PERMANENT PAVEMENT MARKINGS SHALL BE PLACED UNTIL A MINIMUM OF 3 DAYS AFTER ALL MAIN LANE PAVING HAS BEEN COMPLETED. IN ADDITION,
NO PERMANENT PAVEMENT MARKINGS SHALL BE PLACED DURING THE TIME PERIOD FROM DECEMBER 21 TO MARCH 15, INCLUSIVE.

CONCRETE BARRIER WALL					
STATION	STATION	LOCATION	MEDIAN TYPE C	TYPE SPECIAL 1	TYPE SPECIAL 2
			L.F.	L.F.	L.F.
639+67.03	663+32.41	I-30 MEDIAN	2365		
647+90.00	651+10.00	I-30 MEDIAN			315
677+09.23	679+70.92	I-30 MEDIAN	262		
677+09.23	679+70.92	I-30 MEDIAN		523	
681+84.42	705+15.32	I-30 MEDIAN	2331		
705+15.32	709+00.00	I-30 MEDIAN	385		
TOTALS:			5343	523	315

4" PIPE UNDERDRAINS		
LOCATION	4" PIPE UNDERDRAINS	UNDERDRAIN OUTLET PROTECTORS
	LIN. FT.	EACH
ENTIRE PROJECT *	500	5

* QUANTITIES ESTIMATED. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS. PIPE UNDERDRAINS SHALL BE CONNECTED TO DROP INLETS AND GROUTED IN PLACE WHERE DIRECTED BY THE ENGINEER. PAYMENT FOR CONNECTING TO DROP INLETS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR 4" PIPE UNDERDRAINS.

AUTOMATED WORK ZONE INFORMATION SYSTEM							
LOCATION	* AWIS MOBILIZATION	* AWIS OPERATION	* DEVICE RELOCATION	FURNISH AND INSTALL			
				* CLOSED CIRCUIT TELEVISION SYSTEM	* PUBLIC NOTIFICATION SYSTEM	* VARIABLE MESSAGE SIGN	* VEHICLE DETECTION SYSTEM
				EACH			
ENTIRE PROJECT	1.00	33	10	2	2	4	36
TOTALS:	1.00	33	10	2	2	4	36

* QUANTITIES ARE ESTIMATED. REFER TO SECTION 104.03 OF THE STANDARD SPECIFICATIONS.
REFER TO "AUTOMATED WORK ZONE INFORMATION SYSTEM" SPECIAL PROVISION.

THE DEVICES NEEDED FOR THE AWIS SYSTEM ARE ESTIMATED BASED ON THE FOLLOWING CRITERIA:
VDS - 1/2 MILE SPACING FOR 6 MILES WEST OF BB0303 AND 6 MILES EAST OF BB0305 (PROJECT END LM 22.37). 1 MILE SPACING WITHIN THE WORK ZONE.
VMS - ONE IN ADVANCE OF EACH OF THE FOLLOWING:
EASTBOUND - MANDEVILLE (EXIT 7), FULTON (EXIT 12)
WESTBOUND - HOPE (EXIT 30), HOPE (EXIT 31)
PNS - ONE AT THE MANDEVILLE EXIT AND ONE AT THE HOPE EXIT.
CCTV - ONE EACH AT THE BEGINNING OF BB0303 AND ONE AT THE END OF BB0305.

ADVANCE WARNING SIGNS AND DEVICES																			
SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	STAGE 3	STAGE 4	MAX. NUMBER	TOTAL REQUIRED	ADVANCE WARNING ARROW PANEL	PORTABLE CHANGEABLE MESSAGE SIGN	TRAFFIC DRUMS	TEMP. IMP. ATT. BAR.	TEMP. IMP. ATT. BAR. (RELOC.)	TEMP. IMP. ATT. BAR. (REPAIR)	TEMP. PORT. RUMBLE STRIPS	MODULAR GLARE SHIELD	FURNISH AND INSTALL PRECAST CONC. BAR.	RELOCATING PRECAST CONC. BARRIER	MOBILE SPEED NOTIFICATION SYSTEM
		IN.	LIN. FT. - EACH				REQ'D.	SQ. FT.	DAY	WEEK	EACH	EACH	EACH	EACH	EACH	L.F.	L.F.	L.F.	EACH
G20-1	ROAD WORK NEXT 2.1 MILES	60" X 24"	2	2	2	2	2	20.00											
G20-2	END ROAD WORK	48" X 24"	8	8		8	8	64.00											
OM-3L	OBJECT MARKER	12" X 36"	4	12	16	12	16	48.00											
OM-3R	OBJECT MARKER	12" X 36"	4	16		4	16	48.00											
RSP-1	SHOULDER CLOSED	48" X 30"	2	4	4	4	4	40.00											
R2-1	SPEED LIMIT 60 MPH	48" X 60"	6	6	6	6	6	120.00											
R2-1	SPEED LIMIT 70 MPH	48" X 60"	6	6	6	6	6	120.00											
R2-5A	REDUCED SPEED AHEAD	48" X 60"	6	6	6	6	6	120.00											
R4-1	DO NOT PASS	48" X 60"	4	4	4	4	4	80.00											
R55-1	FINES DOUBLE IN WORK ZONES	36" X 60"	4	4	4	4	4	60.00											
SPECIAL	BOATER SAFETY DETAIL A	60" X 36"	3	3	3	3	3	45.00											
SPECIAL	BOATER SAFETY DETAIL B	60" X 36"	3	3	3	3	3	45.00											
SPECIAL	MERGE NOW	48" X 48"	1	1	1	1	1	16.00											
SPECIAL	RUMBLE STRIPS AHEAD	48" X 48"	2	2	2	2	2	32.00											
W1-4bL	TWO LANE CURVE LEFT	48" X 48"		2		2	2	32.00											
W1-4bR	TWO LANE CURVE RIGHT	48" X 48"			2	2	2	32.00											
W1-6	DIRECTIONAL ARROW	60" X 30"	6	6	6	6	6	75.00											
W4-2	LANE ENDS (SYMBOL)	48" X 48"	2	2	2	2	2	32.00											
W5-1	ROAD NARROWS	48" X 48"	4	8	8	8	8	128.00											
W20-1	ROAD WORK AHEAD	48" X 48"	6	6	6	6	6	96.00											
W20-1	ROAD WORK 1500 FT.	48" X 48"	4	4	4	4	4	64.00											
W20-1	ROAD WORK 1/2 MILE	48" X 48"	4	4	4	4	4	64.00											
W20-1	ROAD WORK 1 MILE	48" X 48"	4	4	4	4	4	64.00											
W20-5	RIGHT LANE CLOSED 1 MILE	48" X 48"	2	2	2	2	2	32.00											
W20-5	RIGHT LANE CLOSED 1/2 MILE	48" X 48"	2	2	2	2	2	32.00											
W20-5	RIGHT LANE CLOSED 1500 FT.	48" X 48"	2	2	2	2	2	32.00											
	TRAFFIC DRUMS		246	246	246	246	246				246								
	TEMPORARY IMPACT ATTENUATION BARRIER		2	3			5					5							
	TEMPORARY IMPACT ATTENUATION BARRIER (RELOCATION)			2	4	4	10						10						
	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)		2	5	4	4	15							15					
	TEMPORARY PORTABLE RUMBLE STRIPS		12	12	12	12	12								12				
	FURN. AND INST. PRECAST CONC. BARRIER		2744	2119	935	0	5798										5798		
	RELOCATING PRECAST CON. BARRIER		1823	4119	5183	740	11865											11865	
	MODULAR GLARE SHIELD			1100			1100									1100			
	MOBILE SPEED NOTIFICATION SYSTEM		2	2	2	2	2												2
	ADVANCE WARNING ARROW PANEL		1	1	1	1	1		110										
	PORTABLE CHANGEABLE MESSAGE SIGN		6	6	6	6	6			780									
TOTALS:								1541.00	110	780	246	5	10	15	12	1100	5798	11865	2

NOTE: THIS IS A HIGH VOLUME ROAD AS DEFINED IN SECTION 604.03 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2014.

* QUANTITY ESTIMATED. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

QUANTITIES

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WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
06-03-15				6	ARK.			
				JOB NO.		BB0303	56	231
				2	QUANTITIES			

BENCH MARK CAPS		
STATION	LOCATION	EACH
648+98.00	BOX CULVERT, RT. OF MAIN LANES	1
663+75.00	SW CORNER OF RED RIVER BRIDGE	1
663+75.00	NW CORNER OF RED RIVER BRIDGE	1
676+66.00	SE CORNER OF RED RIVER BRIDGE	1
676+66.00	NE CORNER OF RED RIVER BRIDGE	1
680+10.00	SE CORNER OF COUNTY ROAD 176 BRIDGE	1
681+46.00	NE CORNER OF COUNTY ROAD 176 BRIDGE	1
696+50.00	BOX CULVERT, RT. OF MAIN LANES	1
TOTAL:		8

NOTE: SHOWN FOR INFORMATION ONLY. BENCH MARKS SHALL BE FURNISHED AND PLACED BY STATE FORCES.

CONCRETE DITCH PAVING							
STATION	STATION	LOCATION	LENGTH FEET	CONCRETE DITCH PAVING (TYPE B)		SOLID SODDING SQ. YD.	WATER M.G.
				"W"	SQ. YD.		
693+00.00	694+20.00	I-30 LT. OF MAIN LANES	150	6	100	66.6	0.8
694+67.00	696+00.00	I-30 LT. OF MAIN LANES	157	6	105	69.7	0.9
699+10.00	702+65.00	I-30 RT. OF MAIN LANES	355	6	237	157.8	2.0
*ENTIRE PROJECT					200	200.0	2.5
TOTALS:					642	494.1	6.2

BASIS OF ESTIMATE:
WATER = 12.6 GALS. PER SQ. YD. SOLID SODDING

*QUANTITY ESTIMATED. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

GRINDING PORTLAND CEMENT CONCRETE PAVEMENT					
STATION	STATION	LOCATION	LENGTH	WIDTH	GRINDING PORTLAND CEMENT CONCRETE PAVEMENT
			FEET	FEET	SQ. YD.
705+15.32	707+09.05	I-30 LT. LANES	193.73	VAR.	849
705+15.32	725+94.41	I-30 RT. LANES	2079.09	27	6237
707+09.05	727+19.43	I-30 LT. LANES	2010.38	27	6031
725+94.41	735+96.34	I-30 RT. LANES	1001.93	VAR.	3849
727+19.43	731+71.95	I-30 LT. LANES	452.52	VAR.	1977
731+71.95	742+96.93	I-30 LT. LANES	1124.98	27	3375
735+96.34	743+86.43	I-30 RT. LANES	790.09	27	2370
TOTAL:					24688

NOTE: THE REMOVAL AND DISPOSAL OF PLOWABLE PAVEMENT MARKERS WILL NOT BE PAID FOR DIRECTLY, BUT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR "GRINDING PORTLAND CEMENT CONCRETE PAVEMENT."

APPROACH GUTTERS									
STATION	STATION	LOCATION	APPROACH GUTTERS (TYPE C)	APPROACH GUTTERS (TYPE SPECIAL 1)	APPROACH GUTTERS (TYPE SPECIAL 2)	APPROACH GUTTERS (TYPE SPECIAL 3)	APPROACH GUTTERS (TYPE SPECIAL 4)	APPROACH GUTTERS (TYPE SPECIAL 5)	REINFORCING STEEL - ROADWAY (GR. 60)
			CU. YD.	CU. YD.	CU. YD.	CU. YD.	CU. YD.	CU. YD.	
663+32.41	663+68.91	I-30	18.10						995
663+32.41	663+68.91	I-30	18.10						995
663+32.41	663+68.91	I-30		35.71					3351
676+72.73	677+09.23	I-30					19.85		3053
676+72.73	677+09.23	I-30					19.85		3053
676+72.73	677+09.23	I-30			36.00				3379
679+70.92	680+07.42	I-30						21.66	3427
679+70.92	680+07.42	I-30						21.66	3427
679+70.92	680+07.42	I-30				35.71			3351
681+48.42	681+84.92	I-30	18.10						995
681+48.42	681+84.92	I-30	18.10						995
681+48.42	681+84.92	I-30				35.71			3351
TOTALS:			72.40	35.71	36.00	71.42	39.70	43.32	30372

PORTLAND CEMENT CONCRETE PAVEMENT PATCHING						
STATION	STATION	LOCATION	LENGTH	REM. & DISP. CONC. P.VMT.	P.C.C.P. PATCHING (12" U.T.)	P.C.C.P. PATCHING (13" U.T.)
			FEET	SQ. YD.	SQ. YD.	SQ. YD.
632+62	636+00	I-30 LT. LANES LT. SHOULDER (MOT STAGE 1)	338	376	376	
632+94	636+00	I-30 RT. LANES LT. SHOULDER (MOT STAGE 1)	306	136	136	
705+15	709+00	I-30 MEDIAN AT EB CROSSOVER 4 (MOT STAGE 3)	385	556	556	
705+15	743+73	I-30 LT. LANES	3858	125	125	
705+15	743+73	I-30 RT. LANES	3858	164	164	
* ENTIRE PROJECT				500	200	300
TOTALS:				1857	1557	300

*QUANTITIES ESTIMATED. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

EARTHWORK							
LOCATION	UNCLASSIFIED EXCAVATION			COMPACTED EMBANKMENT			
	UNDERCUT	TYPICAL	TOTAL	TYPICAL	*ADDITIONAL	SM-1	TOTAL
	CU. YD.						
I-30 MAIN LANES - STAGE 1		2017	2017	95748			95748
I-30 MAIN LANES - STAGE 2		10907	10907	73438			73438
I-30 MAIN LANES - STAGE 3		13361	13361	10880			10880
I-30 MAIN LANES - STAGE 4		14927	14927	430			430
COUNTY ROAD 176		41	41	13			13
**ENTIRE PROJECT	5000		5000		5000	1000	6000
TOTALS:	5000	41253	46253	180509	5000	1000	186509

EARTHWORK NOTES:

- ESTIMATES FOR QUANTITIES OF EXCAVATION AND EMBANKMENT ARE TAKEN DIRECTLY FROM THE CROSS SECTIONS, DETAILED IN ACCORDANCE WITH THE PLANS.
- ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENT REMOVED SHALL BE PAID FOR UNDER PAY ITEM 210 - EXCAVATION AND EMBANKMENT, UNLESS OTHERWISE NOTED.

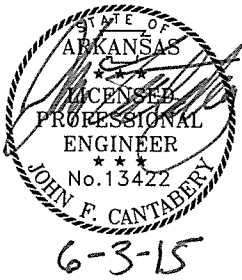
* INCLUDES 5000 CU. YDS. OF COMPACTED EMBANKMENT USED FOR BACKFILL OF UNDERCUT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

** QUANTITY ESTIMATED. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

CLEARING AND GRUBBING				
STATION	STATION	LOCATION	CLEARING	GRUBBING
			STA.	
636+00.00	669+31.00	I-30	33	33
674+58.00	705+15.32	I-30	31	31
TOTALS:			64	64

APPROACH SLABS				
STATION	STATION	LOCATION	APPROACH SLAB (TYPE C1)	REINFORCING STEEL RDWY. (GR. 60)
			CU. YD.	POUND
663+32.41	663+68.91	I-30	49.15	5775
663+32.41	663+68.91	I-30	49.15	5775
676+72.73	677+09.23	I-30	49.15	5775
676+72.73	677+09.23	I-30	49.15	5775
679+70.92	680+07.42	I-30	49.15	5775
679+70.92	680+07.42	I-30	49.15	5775
681+48.42	681+84.92	I-30	49.15	5775
681+48.42	681+84.92	I-30	49.15	5775
TOTALS:			393.20	46200

QUANTITIES



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.		BB0303	57	231
				(2)	QUANTITIES			

TEMPORARY EROSION CONTROL ITEMS												
STATION	STATION	SAND BAG DITCH CHECK (E-5)	ROCK DITCH CHECK (E-6)	DROP INLET SILT FENCE (E-7)	SILT FENCE (E-11)	SEDIMENT BASIN (E-14)	TRIANGULAR SILT DIKE	OBLITERATION OF SEDIMENT BASIN	SEDIMENT REMOVAL AND DISPOSAL	TEMPORARY SEEDING	MULCH COVER	WATER
		BAG	CU. YD.	L.F.	L.F.	CU. YD.	L.F.	CU. YD.	CU. YD.	ACRE	ACRE	M.G.
CLEARING AND GRUBBING												
I-30 MAIN LANES												
637+00	638+80				180							
642+00	648+82				727							
649+02	650+00				89							
650+00	663+80				1369							
663+80	663+80				240							
676+65	680+00				650							
680+00	680+40				270							
681+20	695+00				1560							
695+00	696+03				232							
696+52	704+20				857							
STAGE 1												
I-30 MAIN LANES												
633+00	639+00	44		20								
639+00	646+00	44	9									
649+50				20								
655+00	664+00	88	9									
682+00	686+00	44										
STAGE 2												
I-30 MAIN LANES												
640+50				20								
642+00		22		20								
644+50				20								
648+91				20								
684+95	695+00	88	6									
694+00	709+60	198	24	60	600							
STAGE 3												
I-30 MAIN LANES												
637+00	649+50	22	3	60								
650+00	662+00	66	9	20								
683+00	695+00	66	9	20								
STAGE 4												
I-30 MAIN LANES												
693+00	694+20	132										
694+70	696+00	132										
726+72				20								
727+00	740+00	110		60								
741+00	743+00	44										
* ENTIRE PROJECT					200	100	200	100	100	16.55	16.55	337.6
TOTALS:		1100	69	360	6974	100	200	100	100	16.55	16.55	337.6

* QUANTITIES ESTIMATED. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.
SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.
BASIS OF ESTIMATE:
SAND BAG DITCH CHECKS = 22 BAGS / LOCATION
ROCK DITCH CHECKS = 3 CU. YD. / LOCATION
WATER = 20.4 M.G. PER ACRE TEMPORARY SEEDING

TEMPORARY EROSION CONTROL DEVICES SHOWN ABOVE AND ON THE PLANS SHALL BE INSTALLED IN SUCH A SEQUENCE AS TO DETER EROSION AND SEDIMENTATION OF U.S. WATERWAYS AS EXPLAINED BY THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT.

FENCING				
STATION	STATION	LOCATION	WIRE FENCE (TYPE A)	16' GATE
			L.F.	EACH
644+99.91	663+57.92	I-30 - RT.	1895	1
663+28.80	663+57.92	I-30 - LT.	230	
676+69.04	676+86.21	I-30 - LT.	255	
676+86.21	679+97.84	I-30 - RT.	535	1
679+97.84	680+01.91	I-30 - LT.	255	1
681+18.91	681+58.00	I-30 - LT.	260	
681+18.99	696+45.85	I-30 - RT.	1645	1
696+94.75	704+00.19	I-30 - RT.	715	1
TOTALS:			5790	5

PERMANENT EROSION CONTROL ITEMS					
LOCATION	LIME	SEEDING	MULCH COVER	SECOND SEEDING	WATER
	TON	ACRE			M.G.
I-30 LT. OF MAIN LANES	18.26	9.13	9.13	9.13	931.3
I-30 RT. OF MAIN LANES	14.84	7.42	7.42	7.42	756.8
TOTALS:	33.10	16.55	16.55	16.55	1688.1

BASIS OF ESTIMATE:
LIME = 2 TONS PER ACRE SEEDING
WATER = 102.0 M.G.PER ACRE SEEDING

GUARDRAIL						
STATION	STATION	LOCATION	GUARDRAIL (TYPE A)	TERMINAL ANCHOR POSTS (TYPE 1)	GUARDRAIL TERMINAL (TYPE 2)	THRIE BEAM GUARDRAIL TERMINAL
			L.F.	EACH	EACH	EACH
636+73.88	639+67.63	I30 RT. LANES - LT.	225		1	1
645+71.85	647+90.60	I30 RT. LANES - RT.	150		1	1
651+09.40	663+58.52	I30 RT. LANES - RT.	1212			2
681+57.40	683+76.15	I30 LT. LANES - LT.	150		1	1
716+09.65	716+28.40	I30 LT. LANES - RT.				1
716+69.81	716+88.56	I30 LT. LANES - LT.				1
724+59.95	724+78.70	I30 LT. LANES - LT.				1
9+25.00	10+75.00	COUNTY ROAD 176 - RT.	150	2		
9+25.00	10+75.00	COUNTY ROAD 176 - LT.	150	2		
TOTALS:			2037	4	3	8

WIRE ROPE SAFETY FENCE									
STATION	STATION	LOCATION	WIRE ROPE SAFETY FENCE	WRSF ANCHOR*	CONCRETE DITCH PAVING			SOLID SODDING	WATER
			L.F.	EACH	LENGTH	"W"	SQ. YD.	SQ. YD.	
726+64	743+50	I-30 MEDIAN	1686	2	1636	4	727	727.1	9.2
726+64	727+14	I-30 MEDIAN			50	2	11	11.1	0.1
TOTALS:			1686	2			738	738.2	9.3

*THIS ITEM SHOWN FOR INFORMATION ONLY

BASIS OF ESTIMATE:
WATER = 12.6 GALS. PER SQ. YD. SOLID SODDING

QUANTITIES

4/17/2015 11:26:54 AM
soroberson
WORKSPACE: AHTD
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REVISED DATE:

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.		BB0303	58	231
				QUANTITIES				

2

REMOVAL AND DISPOSAL OF STRUCTURES													
STATION	STATION	LOCATION	APPROACH GUTTERS	APPROACH SLABS	CURB	CONCRETE DITCH PAVING	CONCRETE MEDIAN BARRIER	*CONCRETE PAVEMENT	DROP INLETS	FENCE	GUARDRAIL	PIPE CULVERTS	SIGNS
			EACH	EACH	L.F.	SQ. YD.	L.F.	SQ. YD.	EACH	L.F.	L.F.	EACH	EACH
663+20.94	663+45.04	RT. OF EX. I-30 EB LANES			25								
657+47.00	663+72.00	RT. OF EX. I-30 EB LANES									625		
657+67.00	663+72.00	LT. OF EX. I-30 WB LANES									605		
676+65.00	680+25.00	RT. OF EX. I-30 EB LANES									360		
676+65.00	680+25.00	LT. OF EX. I-30 WB LANES									360		
681+30.00	700+90.00	LT. OF EX. I-30 WB LANES									1960		
681+30.00	700+85.00	RT. OF EX. I-30 EB LANES									1955		
699+16.00	702+65.00	I-30 MAIN LANES - RT.				349							
639+00.00		EX. I-30 MEDIAN							1				
639+00.00		I-30 MAIN LANES - LT.											
702+69.27		I-30 MAIN LANES - RT.											
702+69.27		I-30 MAIN LANES - RT.							1				
702+69.27		I-30 MAIN LANES - RT.										1	
644+05.97	663+71.50	EX. I-30 MEDIAN					1992						
676+65.53	680+25.45	EX. I-30 MEDIAN					360						
681+30.70	705+15.32	EX. I-30 MEDIAN					2382						
705+15.32	709+00.00	EX. I-30 MEDIAN					385						
644+54.00		I-30 MAIN LANES - RT.											1
645+78.00		I-30 MAIN LANES - RT.											1
649+50.00		EX. I-30 MEDIAN							1				
652+87.00		I-30 MAIN LANES - LT.											1
657+67.00		I-30 MAIN LANES - LT.											1
663+04.00		I-30 MAIN LANES - LT.											1
663+23.00		I-30 MAIN LANES - LT.											1
663+69.00		I-30 MAIN LANES - LT.											1
676+71.00		I-30 MAIN LANES - LT.											1
690+40.00		I-30 MAIN LANES - LT.											1
691+00.00		I-30 MAIN LANES - LT.							1				
697+64.00		I-30 MAIN LANES - RT.											1
699+00.00		I-30 MAIN LANES - LT.							1				
700+77.00		I-30 MAIN LANES - LT.											1
701+42.00		I-30 MAIN LANES - RT.											1
703+00.00		I-30 MAIN LANES - LT.											
703+77.00		I-30 MAIN LANES - RT.											1
704+34.00		I-30 MAIN LANES - RT.											1
663+71.26		I-30 MAIN LANES	2										
676+65.53		I-30 MAIN LANES	2										
680+25.45		I-30 MAIN LANES	2										
681+30.70		I-30 MAIN LANES	2										
663+71.26		I-30 MAIN LANES		1									
676+65.53		I-30 MAIN LANES		1									
680+25.45		I-30 MAIN LANES		1									
681+30.70		I-30 MAIN LANES		1									
636+00.00	663+71.26	I-30 MAIN LANES						25868					
676+65.34	680+25.45	I-30 MAIN LANES						2898					
681+30.70	705+15.32	I-30 MAIN LANES						22133					
645+00.00	663+52.00	I-30 MAIN LANES - RT.								1966			
663+28.00	663+75.00	I-30 MAIN LANES - LT.								149			
676+65.00	680+25.00	I-30 MAIN LANES - LT. & RT.								704			
676+68.00	680+25.00	I-30 MAIN LANES - LT.								587			
681+30.00	695+00.00	I-30 MAIN LANES - RT.								1539			
681+20.00	681+31.00	I-30 MAIN LANES - LT.								105			
695+00.00	704+00.00	I-30 MAIN LANES - RT.								902			
TOTALS:			8	4	25	349	5119	50899	5	5952	5865	1	14

* PAYMENT FOR REMOVAL AND DISPOSAL OF PLOWABLE PAVEMENT MARKERS SHALL BE INCLUDED IN PAYMENT FOR REMOVAL AND DISPOSAL OF CONCRETE PAVEMENT.

RETAINING WALL						
STATION	STATION	LOCATION	RETAINING WALL	CONCRETE RETAINING WALL	SELECT GRANULAR BACKFILL	AGGREGATE PIERS
			SQ. FT.	SQ. FT.	CU. YD.	EACH
638+50.00	639+85.00	I-30 MAIN LANES - LT.		675		
648+00.00	651+00.00	I-30 MAIN LANES - RT.	4424		4538	183
TOTALS:			4424	675	4538	183

SELECTED PIPE BEDDING	
LOCATION	SELECTED BEDDING
	CU. YD.
ENTIRE PROJECT *	100

* QUANTITY ESTIMATED. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

RUMBLE STRIPS IN PORTLAND CEMENT CONCRETE SHOULDERS			
STATION	STATION	LOCATION	RUMBLE STRIPS IN PORTLAND CEMENT CONCRETE SHOULDERS
			L.F.
636+00.00	663+32.41	I-30 - LT. OF LT. MAIN LANES	2732
636+00.00	663+32.41	I-30 - RT. OF LT. MAIN LANES	2732
636+00.00	663+32.41	I-30 - LT. OF RT. MAIN LANES	2732
636+00.00	663+32.41	I-30 - RT. OF RT. MAIN LANES	2732
677+09.23	679+70.92	I-30 - LT. OF LT. MAIN LANES	262
677+09.23	679+70.92	I-30 - RT. OF LT. MAIN LANES	262
677+09.23	679+70.92	I-30 - LT. OF RT. MAIN LANES	262
677+09.23	679+70.92	I-30 - RT. OF RT. MAIN LANES	262
681+84.92	705+15.32	I-30 - LT. OF LT. MAIN LANES	2330
681+84.92	705+15.32	I-30 - RT. OF LT. MAIN LANES	2330
681+84.92	705+15.32	I-30 - LT. OF RT. MAIN LANES	2330
681+84.92	705+14.02	I-30 - RT. OF RT. MAIN LANES	2330
TOTAL:			21296

SOIL STABILIZATION	
LOCATION	TON
ENTIRE PROJECT *	100

*QUANTITY ESTIMATED. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

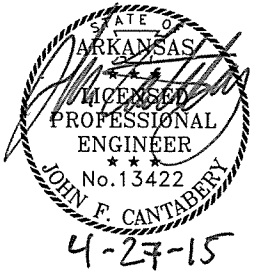
QUANTITIES



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WORKSPACE: AHID
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REVISED DATE:

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.		BB0303	59	231

② QUANTITIES



STRUCTURES																						
STATION	LOCATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERTS	TEMPORARY CULVERT		FLARED END SECTIONS FOR R.C. PIPE CULVERTS	DROP INLETS					JUNCTION BOXES	R.C. BOX CULVERT			UNCL. EX. FOR STRUCTURES - ROADWAY	SOLID SODDING	WATER	STANDARD DRAWINGS			
			CLASS III	18 IN.	24 IN.	24 IN.	ADJUSTED TO GRADE	MODIFYING DROP INLETS	(TYPE RM)	(TYPE ST)	(TYPE TM)	(TYPE ST)	DIMENSIONS							CLASS S CONCRETE - ROADWAY	REINFORCING STEEL - ROADWAY (GR. 60)	
			24 IN.										LENGTH	SPAN	HEIGHT							
			LIN. FEET																			EACH
637+00.00	I-30	CONSTRUCT DROP INLET IN MEDIAN WITH R.C. PIPE TO EXIST. DROP INLET	198					1				EACH				CU. YD.	LB.	CU. YD.	SQ. YD.	M.G.	FPC-9D, PCC-1	
639+00.00	I-30	CONSTRUCT TEMPORARY PIPE CULVERT			26																PCC-1	
639+00.00	I-30	CONSTRUCT TEMPORARY DROP INLET WITH TEMPORARY PIPE CULVERT IN MEDIAN		408				1													FPC-9D, PCC-1	
639+00.00	I-30	EXTEND R.C. PIPE WITH F.E.S. LT.	16			1													8	0.1	FES-1, FES-2, PCC-1	
639+00.00	I-30	MODIFY TO GRADE DROP INLET IN MEDIAN					1															
640+55.00	I-30	CONSTRUCT DROP INLET WITH R.C. PIPE TO DROP INLET	140																		FPC-9S, PCC-1	
642+00.00	I-30	CONSTRUCT DROP INLET WITH R.C. PIPE OUTLET WITH F.E.S. RT.	62			1				1									8	0.1	FES-1, FES-2, FPC-9S, PCC-1	
644+50.00	I-30	CONSTRUCT DROP INLET WITH R.C. PIPE OUTLET WITH F.E.S. RT.	70			1				1									8	0.1	FES-1, FES-2, FPC-9S, PCC-1	
648+85.35	I-30	MODIFY DROP INLET TO TEMPORARY JUNCTION BOX WITH TEMPORARY PIPE CULVERT IN MEDIAN		64				1				1									FPC-9S, PCC-1	
648+85.35	I-30	CONSTRUCT DROP INLET ON TOP OF EXIST. BOX																			FPC-9D	
648+91.00	I-30	CONSTRUCT TEMPORARY DROP INLET ON TOP OF BOX																			FPC-9D	
648+91.44	I-30	EXTEND 6' X 4' R.C. BOX CULVERT RT.						1				1										
649+50.00	I-30	CONSTRUCT TEMPORARY DROP INLET								1				66	6	4	31.15	3911.71	13.74	2	0.1	RCB-1, RCB-2, RCB-3, R-100X-X1
649+50.00	I-30	CONSTRUCT DROP INLET WITH R.C. PIPE TO BOX CULVERT	53																		FPC-9D	
652+00.00	I-30	CONSTRUCT DROP INLET WITH R.C. PIPE OUTLET WITH F.E.S. LT.	70			1				1											FPC-9S, PCC-1	
687+00.00	I-30	CONSTRUCT TEMPORARY R.C. PIPE CULVERT	126																8	0.1	FES-1, FES-2, FPC-9S, PCC-1	
691+00.00	I-30	CONSTRUCT TEMPORARY DROP INLET WITH TEMPORARY R.C. PIPE CULVERT	52					1													PCC-1	
691+00.00	I-31	CONSTRUCT TEMPORARY R.C. PIPE CULVERT	84																		FPC-9D, PCC-1	
695+73.32	I-30	EXTEND DOUBLE 8' X 6' R.C. BOX CULVERT RT. WITH WINGS RT.												94	8	6	150.38	17775.43	68.79	16	0.2	PCC-1
699+00.00	I-30	CONSTRUCT TEMPORARY DROP INLET WITH TEMPORARY PIPE CULVERT		65				1													RCB-1, RCB-2, RCB-3, W-X453-1, R-245X-1, R-200X-X2	
699+00.00	I-30	EXTEND TEMPORARY CULVERT RT.		5																	FPC-9D, PCC-1	
702+69.27	I-30	EXTEND R.C. PIPE CULVERT RT. WITH F.E.S. RT.	6			1															PCC-1	
703+00.00	I-30	CONSTRUCT TEMPORARY DROP INLET WITH TEMPORARY PIPE CULVERT		60				1				1									FES-1, FES-2, FPC-9S, PCC-1	
703+30.00	I-30	CONSTRUCT DROP INLET WITH R.C. PIPE TO JUNCTION BOX WEST	57							1											FPC-9D, PCC-1	
		TOTALS:	934	602	26	5	1	2	6	6	2	2	160	14	10	181.53	21687.14	82.53	58	0.8		

BASIS OF ESTIMATE:
WATER = 12.6 GALS. PER SQ. YD. SOLID SODDING

NOTES:
FOR R.C. PIPE CULVERT INSTALLATIONS, USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.
FOR C.M. PIPE CULVERT INSTALLATIONS, USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

QUANTITIES

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REVISED DATE:

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.		BB0303	60	231
				②	QUANTITIES			

2

BASE & SURFACING																						
STATION	STATION	LOCATION	LENGTH	PORTLAND CEMENT CONCRETE PAVEMENT (13" UNIFORM THICKNESS)		ACHM SURFACE COURSE (3/8") (PG 64-22)				ACHM SURFACE COURSE (1/2") (PG 64-22)				CEMENT STABILIZED CRUSHED STONE BASE COURSE (6" COMPACTED DEPTH)				AGGREGATE BASE COURSE (CLASS 7)		TACK COAT		
				AVG. WIDTH	SQUARE YARDS	AVG. WIDTH	SQUARE YARDS	LBS. PER SQ. YD.	TON	AVG. WIDTH	SQUARE YARDS	LBS. PER SQ. YD.	TON	AVG. WIDTH	PROCESSING CEMENT STABILIZED CRUSHED STONE BASE COURSE	AGGREGATE IN CEMENT STABILIZED CRUSHED STONE BASE COURSE	CEMENT IN CEMENT STABILIZED CRUSHED STONE BASE COURSE	TONS PER STA.	TON	TOTAL WIDTH	SQUARE YARDS	0.03 G/SY
			FEET	FEET		FEET				FEET				FEET	SQUARE YARDS	TON	TON			FEET		GAL.
636+00.00	637+04.53	I-30 MAIN LANES	104.53	76.00	882.70	60.00	696.87	110	38.33					60.00	696.87	229.27	14.63	357.50	373.69	60.00	696.87	20.91
637+04.53	639+67.03	I-30 MAIN LANES	262.50	76.00	2216.67	60.00	1750.00	110	96.25					60.00	1750.00	575.75	36.75	VAR.	1275.00	60.00	1750.00	52.50
639+67.03	648+00.00	I-30 MAIN LANES	832.97	113.90	10541.70	60.00	5553.13	110	305.42					60.00	5553.13	1826.98	116.62	VAR.	4488.00	60.00	5553.13	166.59
648+00.00	651+00.00	I-30 MAIN LANES	300.00	89.44	2981.33	60.00	2000.00	110	110.00					60.00	2000.00	658.00	42.00	VAR.	1081.00	60.00	2000.00	60.00
651+00.00	654+12.42	I-30 MAIN LANES	312.42	88.54	3073.52	60.00	2082.80	110	114.55					60.00	2082.80	685.24	43.74	VAR.	1291.00	60.00	2082.80	62.48
654+12.42	656+74.92	I-30 MAIN LANES	262.50	84.00	2450.00	60.00	1750.00	110	96.25					60.00	1750.00	575.75	36.75	VAR.	773.00	60.00	1750.00	52.50
656+74.92	663+32.41	I-30 MAIN LANES	657.49	84.00	6136.57	60.00	4383.27	110	241.08					60.00	4383.27	1442.10	92.05	208.75	1372.51	60.00	4383.27	131.50
677+09.23	679+70.92	I-30 MAIN LANES	261.69	68.00	1977.21	60.00	1744.60	110	95.95					60.00	1744.60	573.97	36.64	179.25	469.08	60.00	1744.60	52.34
681+84.92	694+09.05	I-30 MAIN LANES	1224.13	84.00	11425.21	60.00	8160.87	110	448.85					60.00	8160.87	2684.93	171.38	208.75	2555.37	60.00	8160.87	244.83
694+09.05	697+09.05	I-30 MAIN LANES	300.00	88.00	2933.33	65.00	2166.67	110	119.17					65.00	2166.67	712.84	45.50	204.75	614.25	65.00	2166.67	65.00
697+09.05	701+52.82	I-30 MAIN LANES	443.77	92.00	4536.32	70.00	3451.54	110	189.83					70.00	3451.54	1135.56	72.48	204.75	908.62	70.00	3451.54	103.55
701+52.82	705+15.32	I-30 MAIN LANES	362.50	VAR.	4064.33	VAR.	3223.11	110	177.27					VAR.	3223.11	1060.41	67.69	VAR.	928.00	VAR.	3223.11	96.69
		I-30 MAIN LANES APPROACH SLABS																VAR.	408.02			
636+17.15	639+67.03	I-30 GUARDRAIL - LT. OF RT. MAIN LANES	349.88							VAR.	204.13	220	22.45					VAR.	202.00			
645+04.35	648+00.00	I-30 GUARDRAIL - RT. OF RT. MAIN LANES	295.65							VAR.	242.19	220	26.64					VAR.	78.00			
651+00.00	663+58.52	I-30 GUARDRAIL - RT. OF RT. MAIN LANES	1258.52							VAR.	824.92	220	90.74					VAR.	330.00			
681+57.40	684+31.31	I-30 GUARDRAIL - LT. OF LT. MAIN LANES	273.91							VAR.	162.25	220	17.85					VAR.	72.00			
8+65.79	11+29.57	CR 176 GUARDRAIL - LT.	263.78							VAR.	154.25	220	16.97					VAR.	61.00			
8+74.48	11+36.52	CR 176 GUARDRAIL - RT.	262.04							VAR.	152.20	220	16.74					VAR.	61.00			
TOTALS:					53218.89		36962.86		2032.95		1739.94		191.39		36962.86	12160.80	776.23		17341.54		36962.86	1108.89

BASIS OF ESTIMATE:

ACHM SURFACE COURSE (3/8") : 5.2% ASPHALT BINDER (PG 64-22), 94.8% MINERAL AGGREGATE, N_{MAX}=115 FOR PG 64-22

ACHM SURFACE COURSE (1/2") : 5.2% ASPHALT BINDER (PG 64-22), 94.8% MINERAL AGGREGATE, N_{MAX}=115 FOR PG 64-22

CEMENT STABILIZED CRUSHED STONE BASE COURSE: 6.0% CEMENT, 94.0% AGGREGATE

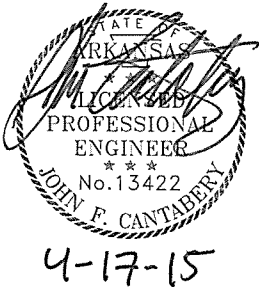
BASE & SURFACING - TEMPORARY PAVING																				
STATION	STATION	LOCATION	LENGTH	ACHM SURFACE COURSE (1/2") (PG 76-22)				ACHM BINDER COURSE (1") (PG 76-22)				ACHM BASE COURSE (1 1/2") (PG 76-22)				AGGREGATE BASE COURSE (CLASS 7)		TACK COAT		
				AVG. WIDTH FEET	SQUARE YARDS	LBS. PER SQ. YD.	TON	AVG. WIDTH FEET	SQUARE YARDS	LBS. PER SQ. YD.	TON	AVG. WIDTH FEET	SQUARE YARDS	LBS. PER SQ. YD.	TON	TONS PER STATION	TON	TOTAL WIDTH FEET	SQUARE YARDS	0.03 G/SY
632+61.92	637+69.28	I-30 WB TEMPORARY WIDENING 1	507.36	VAR.	1167.11	220	128.38	VAR.	838.11	440	184.38	VAR.	851.44	880	374.63	VAR.	417.90	VAR.	2540.99	76.23
637+69.28	642+10.77	I-30 WB TEMPORARY WIDENING 1	441.49	30.00	1471.63	220	161.88	24.17	1185.65	440	260.84	24.42	1197.91	880	527.08	VAR.	300.30	73.01	3581.47	107.44
642+10.77	647+33.58	I-30 WB TEMPORARY WIDENING 1	522.81	VAR.	1680.67	220	184.87	VAR.	1235.33	440	271.77	VAR.	1254.89	880	552.15	VAR.	325.50	VAR.	3745.11	112.35
693+78.73	697+90.31	I-30 WB TEMPORARY WIDENING 2	411.58	VAR.	911.11	220	100.22	VAR.	608.56	440	133.88	VAR.	621.22	880	273.34	VAR.	283.50	VAR.	1851.00	55.53
697+90.31	705+16.75	I-30 WB TEMPORARY WIDENING 2	726.44	46.00	3712.92	220	408.42	36.33	2932.40	440	645.13	36.83	2972.75	880	1308.01	VAR.	699.30	109.99	8877.90	266.34
705+16.75	711+29.96	I-30 WB TEMPORARY WIDENING 2	613.21	VAR.	1493.88	220	164.33	VAR.	1071.56	440	235.74	VAR.	1091.61	880	480.31	VAR.	319.20	VAR.	3254.78	97.64
632+94.03	640+90.65	I-30 EB Crossover 1	796.62	VAR.	1628.44	220	179.13	VAR.	1100.36	440	242.08	VAR.	1130.25	880	497.31	VAR.	515.00	VAR.	3360.86	100.83
642+03.29	651+04.36	I-30 EB Crossover 2	901.07	VAR.	1922.79	220	211.51	VAR.	1466.15	440	322.55	VAR.	1491.88	880	656.43	VAR.	506.00	VAR.	4449.91	133.50
701+83.10	706+96.25	RAMP 1 TEMPORARY WIDENING	513.15	VAR.	877.56	220	96.53	VAR.	555.00	440	122.10	VAR.	567.54	880	249.72	VAR.	266.00	VAR.	1690.08	50.70
706+83.52	710+74.13	RAMP 4 TEMPORARY WIDENING	390.61	VAR.	725.66	220	79.82	VAR.	464.85	440	102.27	VAR.	476.76	880	209.77	VAR.	235.00	VAR.	1418.37	42.55
TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER							100.00				100.00				100.00		100.00			25.00
TOTALS:					15591.77		1815.09		11457.97		2620.74		11656.25		5228.75		3967.70		34770.47	1068.11

BASIS OF ESTIMATE:

ACHM SURFACE COURSE (1/2") : 5.2% ASPHALT BINDER (PG 76-22), 94.8% MINERAL AGGREGATE, N_{MAX}=205 FOR PG 76-22

ACHM BINDER COURSE (1") : 4.4% ASPHALT BINDER (PG 76-22), 95.6% MINERAL AGGREGATE, N_{MAX}=205 FOR PG 76-22

ACHM BASE COURSE (1 1/2") : 4.0% ASPHALT BINDER (PG 76-22), 96.0% MINERAL AGGREGATE, N_{MAX}=205 FOR PG 76-22



QUANTITIES

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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
5-29-15				6	ARK.			
				JOB NO.		BB0303	61	231
				07335, 07336		QUANTITIES		56371

SCHEDULE OF BRIDGE QUANTITIES FOR JOB BB0303																	
BRIDGE NO. CODE NO.	NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NO.	205	801	802	802	803	SP & 804	804	805	805	805	805	807	SP & 807	807
			ITEM	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO..)	UNCLASSIFIED EXCAVATION FOR STRUCTURES - BRIDGE	CLASS S CONCRETE - BRIDGE	CLASS S(AE) CONCRETE - BRIDGE	CLASS I PROTECTIVE SURFACE TREATMENT	REINFORCING STEEL - BRIDGE (GRADE 60)	EPOXY COATED REINFORCING STEEL (GRADE 60)	STEEL PILING (HP12X53)	STEEL PILING (HP14X73)	CONCRETE PILING (18" SQUARE) ①	TEST PILE (18" SQUARE) ①	STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50W)	STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. HPS 70W)	STRUCTURAL STEEL IN BEAM SPANS (M270, GR. 50W)
			UNIT	LUMP SUM	CUBIC YARD	CUBIC YARD	CUBIC YARD	GALLON	POUND	POUND	LINEAR FOOT	LINEAR FOOT	LINEAR FOOT	LINEAR FOOT	POUND	POUND	POUND
07335 X071	RED RIVER	BENT NO. 1				73.20		0.4	11,625			1,105			1,866		
		BENT NO. 2			471	260.91			47,496			2,496					
		BENT NO. 3			545	266.50			49,086			2,544					
		BENT NO. 4			516	273.94			51,206			2,544					
		BENT NO. 5				410.53			120,396								
		BENT NO. 6				558.50			124,192								
		BENT NO. 7				564.83			125,949								
		BENT NO. 8				494.60			110,268								
		BENT NO. 9				151.69		0.6	19,352			1,554			19,204		
		440'-0" CONT. COMP. PLATE GIRDER UNIT					1,239.49	97.7		308,545					1,077,957		
		860'-0" CONT. COMP. PLATE GIRDER UNIT					2,446.61	191.0		622,795					3,384,963	271,190	
		EXISTING BRIDGE NO. 03981 (SITE NO. 1)	I														
		TOTAL FOR BRIDGE NO. 07335			I		1,532	3,054.70	3,686.10	289.7	659,570	931,340		10,243		-	4,483,990
07336 X271	CO. RD. 176	BENT NO. 1				35.10		0.2	3,250	534	704						608
		BENT NO. 2				38.04			3,360	720			605				608
		BENT NO. 3				38.04			3,360	720			550	65			608
		BENT NO. 4				35.02		0.2	3,250	534	715						608
		140'-0" CONT. COMP. W-BEAM UNIT					463.40	31.3		108,642							△-190,888
		EXISTING BRIDGE NO. 03982 (SITE NO. 2)	I														
		TOTAL FOR BRIDGE NO. 07336			I			146.20	463.40	31.7	13,220	111,150	1,419		1,155	65	
TOTAL FOR JOB NO. BB0303					1,532	3,200.90	4,149.50	321.4	672,790	1,042,490	1,419	10,243	1,155	65	4,483,990	271,190	△-201,320

234,078

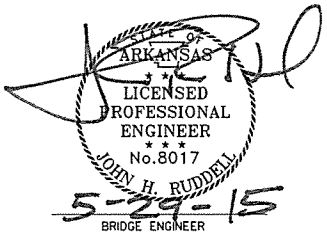
236,510

236,510

△ Structural Steel Quantities Revised,
JHR 5-29-15

SCHEDULE OF BRIDGE QUANTITIES FOR JOB BB0303													
BRIDGE NO. CODE NO.	NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NO.	808	809	812	816	816	816	SP JOB BB0303	SP JOB BB0303	SP JOB BB0303	SP JOB BB0303
			ITEM	ELASTOMERIC BEARINGS	ARMORED JOINT WITH NEOPRENE STRIP SEAL	BRIDGE NAME PLATE (TYPE D)	FILTER BLANKET	DUMPED RIPRAP	CONCRETE RIPRAP	DRILLED SHAFT (120" DIA.)	PERMANENT STEEL CASING (126" DIA.)	CROSSHOLE SONIC LOGGING (120" DIA.)	CORING DRILLED SHAFT
			UNIT	CUBIC INCH	LINEAR FOOT	EACH	SQ. YARD	CUBIC YARD	CUBIC YARD	LINEAR FOOT	LINEAR FOOT	EACH	LINEAR FOOT
07335 X071	RED RIVER	BENT NO. 1		8,730.0			346	173					
		BENT NO. 2		5,528.3									
		BENT NO. 3		5,528.3									
		BENT NO. 4		5,528.3									
		BENT NO. 5		39,726.1						266	134	3	50
		BENT NO. 6		8,424.0						324	92	3	50
		BENT NO. 7		8,424.0						320	103	3	50
		BENT NO. 8		8,424.0						320	181	3	50
		BENT NO. 9		30,996.0			1,435	718					
		440'-0" CONT. COMP. PLATE GIRDER UNIT			88	1							
		860'-0" CONT. COMP. PLATE GIRDER UNIT											
		EXISTING BRIDGE NO. 03981 (SITE NO. 1)											
TOTAL FOR BRIDGE NO. 07335		121,309.0	88	1	1,781	891		1,230	510	12	200		
07336 X271	CO. RD. 176	BENT NO. 1						79					
		BENT NO. 2											
		BENT NO. 3											
		BENT NO. 4						78					
		140'-0" CONT. COMP. W-BEAM UNIT			1								
		EXISTING BRIDGE NO. 03982 (SITE NO. 2)											
TOTAL FOR BRIDGE NO. 07336				1		157							
TOTAL FOR JOB NO. BB0303		121,309.0	88	2	1,781	891	157	1,230	510	12	200		

① Piles shall be prestressed and conform to Std. Dwg. 55022.



SCHEDULE OF BRIDGE QUANTITIES
RED RIVER - EAST & WEST (F)
MILLER & HEMPSTEAD COUNTIES
ROUTE 30 SEC. 11 & 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: AUG. 2014 FILENAME: BB0303_0.DGN
CHECKED BY: DRG DATE: OCT. 2014 SCALE:
DESIGNED BY: MRA DATE: AUG. 2014
BRIDGE NO. 07335, 07336 DRAWING NO. 56371

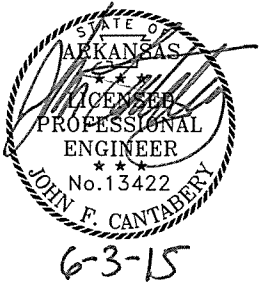
SUMMARY OF QUANTITIES (BOX 1 OF 2)

ITEM NUMBER	ITEM	PEN-B30-0(203) QUANTITY	BIM-NHPP-B30-0(203) QUANTITY	TOTAL QUANTITY	UNIT
201	CLEARING		64	64	STA.
201	GRUBBING		64	64	STA.
202	REMOVAL AND DISPOSAL OF APPROACH SLABS		4	4	EACH
202	REMOVAL AND DISPOSAL OF CONCRETE GUTTERS		8	8	EACH
202	REMOVAL AND DISPOSAL OF CONCRETE DITCH PAVING		349	349	SQ. YD.
202	REMOVAL AND DISPOSAL OF CONCRETE MEDIAN BARRIER		5119	5119	L.F.
202	REMOVAL AND DISPOSAL OF CONCRETE PAVEMENT		50899	50899	SQ. YD.
202	REMOVAL AND DISPOSAL OF CURB		25	25	L.F.
202	REMOVAL AND DISPOSAL OF DROP INLETS		5	5	EACH
202	REMOVAL AND DISPOSAL OF FENCE		5952	5952	L.F.
SP & 202	REMOVAL AND DISPOSAL OF GUARDRAIL		5865	5865	L.F.
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS		1	1	EACH
202	REMOVAL AND DISPOSAL OF SIGNS		14	14	EACH
210	UNCLASSIFIED EXCAVATION		46253	46253	CU. YD.
SP & 210	COMPACTED EMBANKMENT		186509	186509	CU. YD.
SP & 210	SOIL STABILIZATION		100	100	TON
303	AGGREGATE BASE COURSE (CLASS 7)		21309	21309	TON
308	AGGREGATE IN CEMENT STABILIZED CRUSHED STONE BASE COURSE		12161	12161	TON
308	CEMENT IN CEMENT STABILIZED CRUSHED STONE BASE COURSE		776	776	TON
308	PROCESSING CEMENT STABILIZED CRUSHED STONE BASE COURSE		36963	36963	SQ. YD.
401	TACK COAT		2177	2177	GAL
SP & 405	MINERAL AGGREGATE IN ACHM BASE COURSE (1 1/2")		5020	5020	TON
SP & 405	ASPHALT BINDER (PG 76-22) IN ACHM BASE COURSE (1 1/2")		209	209	TON
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")		2506	2506	TON
SP, SS, & 406	ASPHALT BINDER (PG 76-22) IN ACHM BINDER COURSE (1")		115	115	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (3/8")		1927	1927	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (3/8")		106	106	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")		1902	1902	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")		10	10	TON
SP, SS, & 407	ASPHALT BINDER (PG 76-22) IN ACHM SURFACE COURSE (1/2")		94	94	TON
501	PORTLAND CEMENT CONCRETE PAVEMENT (13" UNIFORM THICKNESS)		53219	53219	SQ. YD.
504	APPROACH SLABS		393.20	393.20	CU. YD.
504	APPROACH GUTTERS		298.55	298.55	CU. YD.
SP & 507	PORTLAND CEMENT CONCRETE PAVEMENT PATCHING (12" UNIFORM THICKNESS)		1557	1557	SQ. YD.
SP & 507	PORTLAND CEMENT CONCRETE PAVEMENT PATCHING (13" UNIFORM THICKNESS)		1857	1857	SQ. YD.
507	REMOVAL AND DISPOSAL OF CONCRETE PAVEMENT FOR PATCHING		24688	24688	SQ. YD.
SP & 510	GRINDING PORTLAND CEMENT CONCRETE PAVEMENT		1.00	1.00	L.S.
601	MOBILIZATION		1	1	EACH
SP & 602	FURNISHING FIELD OFFICE		1	1	EACH
602	FURNISHING FIELD LABORATORY		1.00	1.00	L.S.
SP & 603	MAINTENANCE OF TRAFFIC		602	602	L.F.
603	18" TEMPORARY CULVERT		26	26	L.F.
603	24" TEMPORARY CULVERT		1.00	1.00	L.S.
603	TRAFFIC CONTROL SUPERVISOR		1541	1541	SQ. FT.
SS & 604	SIGNS		246	246	EACH
SS & 604	TRAFFIC DRUMS		5798	5798	L.F.
604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER		11865	11865	L.F.
604	RELOCATING PRECAST CONCRETE BARRIER		26402	26402	L.F.
604	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS		17105	17105	L.F.
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS		780	780	WEEK
SP & 604	PORTABLE CHANGEABLE MESSAGE SIGN		110	110	DAY
604	ADVANCE WARNING ARROW PANEL		2	2	EACH
SP	MOBILE SPEED NOTIFICATION SYSTEM		12	12	EACH
SP	TEMPORARY PORTABLE RUMBLE STRIPS		1100	1100	L.F.
SP	MODULAR GLARE SHIELD		10119	10119	L.F.
604	CONSTRUCTION PAVEMENT MARKINGS		642	642	SQ. YD.
SP & 605	CONCRETE DITCH PAVING (TYPE B)	738	934	934	L.F.
606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		5	5	EACH
606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		100	100	CU. YD.
606	SELECTED PIPE BEDDING		6	6	EACH
609	DROP INLETS (TYPE RM)		6	6	EACH
609	DROP INLETS (TYPE ST)		6	6	EACH
609	DROP INLETS (TYPE TM)		2	2	EACH
609	JUNCTION BOXES (TYPE ST)		2	2	EACH
610	DROP INLETS ADJUSTED TO GRADE		1	1	EACH
611	UNDERDRAIN OUTLET PROTECTORS		5	5	EACH
611	4" PIPE UNDERDRAINS		500	500	L.F.
617	GUARDRAIL (TYPE A)		2037	2037	L.F.
617	TERMINAL ANCHOR POSTS (TYPE 1)		4	4	EACH
617	GUARDRAIL TERMINAL (TYPE 2)		3	3	EACH
617	THRIE BEAM GUARDRAIL TERMINAL		8	8	EACH
SP	WIRE ROPE SAFETY FENCE	1686		1686	L.F.
619	WIRE FENCE (TYPE A)		5790	5790	L.F.
619	16" STEEL GATES		5	5	EACH
619	16" ALUMINUM GATES		5	5	EACH
620	LIME		33	33	TON
620	SEEDING		16.55	16.55	ACRE
SS & 620	MULCH COVER		33.10	33.10	ACRE
620	WATER	9.3	2032.7	2042.0	M.G.
621	TEMPORARY SEEDING		16.55	16.55	ACRE
621	SILT FENCE		6974	6974	L.F.
621	SAND BAG DITCH CHECKS		1100	1100	BAG
621	DROP INLET SILT FENCE		360	360	L.F.
621	SEDIMENT BASIN		100	100	CU. YD.
621	OBLITERATION OF SEDIMENT BASIN		100	100	CU. YD.
621	SEDIMENT REMOVAL AND DISPOSAL		69	69	CU. YD.
621	ROCK DITCH CHECKS		200	200	L.F.
SP & 621	TRIANGULAR SILT DIKE		16.55	16.55	ACRE
623	SECOND SEEDING APPLICATION	738	552	1290	SQ. YD.
624	SOLID SODDING		5343	5343	L.F.
631	CONCRETE BARRIER WALL (MEDIAN TYPE C)		523	523	L.F.
SP & 631	CONCRETE BARRIER WALL (TYPE SPECIAL 1)		315	315	L.F.
SP & 631	CONCRETE BARRIER WALL (TYPE SPECIAL 2)		1.00	1.00	L.S.
635	ROADWAY CONSTRUCTION CONTROL		2	2	EACH
640	MODIFYING DROP INLETS		21296	21296	L.F.
642	RUMBLE STRIPS IN PORTLAND CEMENT CONCRETE SHOULDERS				

* DENOTES ALTERNATE BID ITEMS.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
06-03-15				6	ARK.			
				JOB NO.		BB0303	62	231
SUMMARY OF QUANTITIES								

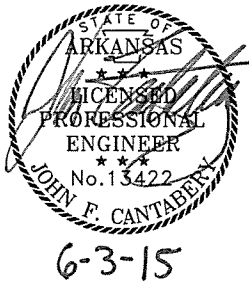
SUMMARY OF QUANTITIES



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
05-11-15				6	ARK.			
05-29-15								
06-03-15				JOB NO.		BB0303	63	231

2

SUMMARY OF QUANTITIES & REVISIONS



SUMMARY OF QUANTITIES (BOX 2 OF 2)

ITEM NUMBER	ITEM	PEN-B30-0(203) QUANTITY	BIM-NHPP-B30-0(203) QUANTITY	TOTAL QUANTITY	UNIT
SP & 719	INVERTED PROFILE THERMOPLASTIC PAVEMENT MARKING WHITE (4")		21171	21171	L.F.
SP	HIGH PERFORMANCE MARKING TAPE WHITE (4")		21171	21171	L.F.
SP & 719	INVERTED PROFILE THERMOPLASTIC PAVEMENT MARKING WHITE (8")		1346	1346	L.F.
SP	HIGH PERFORMANCE MARKING TAPE WHITE (8")		1346	1346	L.F.
SP & 719	INVERTED PROFILE THERMOPLASTIC PAVEMENT MARKING YELLOW (4")		21572	21572	L.F.
SP	HIGH PERFORMANCE MARKING TAPE YELLOW (4")		21572	21572	L.F.
SP & 719	INVERTED PROFILE THERMOPLASTIC CONTRAST PAVEMENT MARKING WHITE (4")		5373	5373	L.F.
SP	HIGH PERFORMANCE CONTRAST MARKING TAPE WHITE (4")		5373	5373	L.F.
SP & 719	INVERTED PROFILE THERMOPLASTIC CONTRAST PAVEMENT MARKING WHITE (8")		258	258	L.F.
SP	HIGH PERFORMANCE CONTRAST MARKING TAPE WHITE (8")		258	258	L.F.
721	RAISED PAVEMENT MARKERS (TYPE II)		598	598	EACH
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G-1)		3	3	EACH
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G2-1)		2	2	EACH
SP & 725	GUIDE SIGN-ROADSIDE MOUNTED (DEMOUNTABLE LEGEND)		291	291	SQ. FT.
SP & 726	STANDARD SIGN		84	84	SQ. FT.
SP & 727	EXIT NUMBER PANEL (TYPE A)		40	40	SQ. FT.
SP & 729	CHANNEL POST SIGN SUPPORT (TYPE U-1)		2	2	EACH
730	BREAKAWAY SIGN SUPPORT (TYPE G-2)		3852	3852	LB.
731	TEMPORARY IMPACT ATTENUATION BARRIER		5	5	EACH
731	TEMPORARY IMPACT ATTENUATION BARRIER (RELOCATION)		10	10	EACH
731	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)		15	15	EACH
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY		83	83	CU. YD.
802	CLASS S CONCRETE-ROADWAY		181.53	181.53	CU. YD.
804	REINFORCING STEEL-ROADWAY (GRADE 60)		98259	98259	LB.
SP	RETAINING WALL		4424	4424	SQ. FT.
SP	CONCRETE RETAINING WALL		675	675	SQ. FT.
SP	AGGREGATE PIER		183	183	EACH
SP	SELECT GRANULAR BACKFILL		4538	4538	CU. YD.
SP	AWIS MOBILIZATION		1.00	1.00	L.S.
SP	AWIS OPERATION		33	33	MONTH
SP	DEVICE RELOCATION		10	10	EACH
SP	FURNISH AND INSTALL CLOSED CIRCUIT TELEVISION SYSTEM		2	2	EACH
SP	FURNISH AND INSTALL PUBLIC NOTIFICATION SYSTEM		2	2	EACH
SP	FURNISH AND INSTALL VARIABLE MESSAGE SIGN		4	4	EACH
SP	FURNISH AND INSTALL VEHICLE DETECTION SYSTEM		36	36	EACH

STRUCTURES OVER 20' SPAN

205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)			1.00	1.00	L.S.
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 2)			1.00	1.00	L.S.
636	BRIDGE CONSTRUCTION CONTROL			1.00	1.00	L.S.
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE			1532	1532	CU. YD.
802	CLASS S CONCRETE-BRIDGE			3200.90	3200.90	CU. YD.
802	CLASS S(AE) CONCRETE-BRIDGE			4149.50	4149.50	CU. YD.
803	CLASS 1 PROTECTIVE SURFACE TREATMENT			321.4	321.4	GAL.
SP & 804	REINFORCING STEEL-BRIDGE (GRADE 60)			672790	672790	LB.
804	EPOXY COATED REINFORCING STEEL (GRADE 60)			1042490	1042490	LB.
805	STEEL PILING (HP 12X53)			1419	1419	L.F.
805	STEEL PILING (HP 14X73)			10243	10243	L.F.
805	CONCRETE PILING (18" SQUARE)			1155	1155	L.F.
805	TEST PILE (18" SQUARE)			65	65	L.F.
807	STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270-GR50W)			4483990	4483990	LB.
SP & 807	STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270-GRHP570W)			2711190	2711190	LB.
807	STRUCTURAL STEEL IN BEAM SPANS (M270-GR50W)			236510	236510	LB.
808	ELASTOMERIC BEARINGS			121309.0	121309.0	CU. IN.
809	ARMORED JOINT WITH NEOPRENE STRIP SEAL			88	88	L.F.
812	BRIDGE NAME PLATE (TYPE D)			2	2	EACH
816	FILTER BLANKET					
816	DUMPED RIPRAP			1781	1781	SQ. YD.
816	CONCRETE RIPRAP			891	891	CU. YD.
SP	DRILLED SHAFT (120" DIAMETER)			157	157	CU. YD.
SP	PERMANENT STEEL CASING (126" DIAMETER)			1230	1230	L.F.
SP	CROSSHOLE SONIC LOGGING (120" DIAMETER)			510	510	L.F.
SP	CORING DRILLED SHAFT			12	12	EACH
SP				200	200	L.F.

* DENOTES ALTERNATE BID ITEMS.

REVISIONS

[illegible]

SUMMARY OF QUANTITIES & REVISIONS

scribner 4/16/2015 4:02:11PM
WORKSPACE: AHTD
L:\20\1071705 - Red River Bridge Replacement\Drawings\1-30_SC_ALL.dgn
REVISED DATE:



4-17-15

MIDPOINT:
LAT: N 33-36-24
LONG: W 93-48-41

SURVEY CONTROL COORDINATES

Project Name: BB0303
Date: 3/28/2013
Coordinate System: ARKANSAS STATE PLANE - SOUTH ZONE BASED ON GPS CONTROL,
PROJECTED TO GROUND.
Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
1	1660411.0336	763927.1599	285.35	CTL	REBAR AND CAP*
2	1660098.5131	763189.8211	273.32	CTL	REBAR AND CAP
3	1659841.2438	762432.6922	266.95	CTL	REBAR AND CAP
4	1659595.0252	761672.4031	270.07	CTL	REBAR AND CAP
5	1659346.9275	760912.6211	276.39	CTL	REBAR AND CAP
6	1658919.1551	759597.0510	272.63	CTL	REBAR AND CAP
7	1658676.6067	758835.1108	260.47	CTL	REBAR AND CAP
8	1658355.2407	758106.0596	262.76	CTL	REBAR AND CAP
9	1657724.4992	757611.2992	259.83	CTL	REBAR AND CAP
10	1658253.9556	758165.7731	258.47	CTL	REBAR AND CAP
11	1658566.0472	758766.7891	258.99	CTL	REBAR AND CAP
12	1658799.9930	759528.2014	268.00	CTL	REBAR AND CAP
13	1659267.1688	760938.1068	276.50	CTL	REBAR AND CAP
14	1659500.3626	761703.5646	267.90	CTL	REBAR AND CAP
15	1659749.8954	762461.7434	265.90	CTL	REBAR AND CAP
16	1659998.6141	763222.2438	273.65	CTL	REBAR AND CAP
17	1660313.4088	763976.4565	285.97	CTL	REBAR AND CAP
100	1661326.7199	765076.3890	289.65	GPS	REBAR AND CAP
101	1662554.0987	766200.9537	305.23	GPS	REBAR AND CAP
102	1657728.3265	757350.1467	263.23	GPS	REBAR AND CAP
103	1656919.6655	756590.4677	263.77	GPS	REBAR AND CAP
991			269.030	BM	NGS DISC BM W 63 DL0954

*Note - Rebar and Cap - Standard - 5/8" Rebar with 2" Aluminum Cap
*STAMPED BB0303 AND CORRESPONDING POINT NUMBER
ALL DISTANCES ARE GROUND.
USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT.
A PROJECT CAF OF 0.999940683 HAS BEEN USED TO COMPUTE THE ABOVE GROUND COORDINATES.
THIS CAF IS INTENDED FOR USE WITHIN THE PROJECT LIMITS.
GRID DISTANCE = GROUND DISTANCE X CAF.
GRID COORDINATES ARE STORED UNDER FILE NAME SBB0303G1.CTL
HORIZONTAL DATUM: NAD 83 (1997)
VERTICAL DATUM: NAVD 88 POSITIONAL ACCURACY THIRD ORDER, UNLESS SPECIFIED OTHERWISE
AT A SPECIFIC POINT.
ELEVATIONS FOR PN 1-17 & 100-103 ESTABLISHED BY 3 WIRE LEVEL
RUNS USING NGS BENCHMARKS AND REQUIREMENTS.

BASIS OF BEARING:
ARKANSAS STATE PLANE GRID BEARINGS - 0302-SOUTH ZONE
DETERMINED FROM GPS CONTROL POINTS: 100-103
CONVERGENCE ANGLE: 1-00-50 LEFT AT PN:5
MID. PT. LT: N 33-36-24 LG: W 93-48-41
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

PN: 5
ARKANSAS STATE PLANE GRID COORDINATES SOUTH ZONE
XC: 760867.4860 YC: 1659248.5000

ALIGNMENT NAME: I-30				
POINT	STATION	TYPE	NORTHING	EASTING
8000	632+02.25	POB	1657170.9887	756999.4270
8001	639+67.03	PC	1657728.5414	757522.8986
8002	647+05.46	PI	1658266.8828	758028.3332
8003	654+12.42	PT	1658493.8175	758731.0253
8004	683+00.90	PC	1659381.5084	761479.7159
8005	686+55.22	PI	1659490.4000	761816.8932
8006	690+09.32	PT	1659619.9151	762146.6987
8007	704+15.32	PC	1660133.8434	763455.3990
8008	714+80.50	PI	1660523.1973	764446.8747
8009	725+08.53	PT	1661309.8549	765165.0600
8010	745+55.93	POE	1662821.8929	766545.4872

ALIGNMENT NAME: RAMP 1				
POINT	STATION	TYPE	NORTHING	EASTING
8020	701+53.95	PC	1660014.5703	763221.4365
8021	702+97.15	PI	1660066.9143	763354.7286
8022	704+39.82	PT	1660098.7962	763494.3360
8023	705+73.43	POE	1660128.5435	763624.5961

ALIGNMENT NAME: RAMP 2				
POINT	STATION	TYPE	NORTHING	EASTING
8030	725+24.55	POB	1661273.4846	765229.4072
8031	725+76.71	PC	1661315.1629	765260.7633
8032	726+67.43	PI	1661387.6597	765315.3054
8033	727+58.02	PT	1661454.6600	765376.4738

ALIGNMENT NAME: RAMP 3				
POINT	STATION	TYPE	NORTHING	EASTING
8040	726+04.55	POB	1661450.3132	765157.9081
8041	729+46.95	PC	1661674.2968	765416.8906
8042	730+59.58	PI	1661747.9740	765502.0804
8043	731+71.95	PT	1661831.1536	765578.0199

ALIGNMENT NAME: RAMP 4				
POINT	STATION	TYPE	NORTHING	EASTING
8050	704+16.51	PC	1660169.1247	763442.8121
8051	705+01.04	PI	1660200.0209	763521.4882
8052	705+85.45	PT	1660237.7467	763597.1273
8053	706+73.01	PC	1660276.8285	763675.4852
8054	709+87.00	PI	1660416.9666	763956.4580
8055	712+47.47	PT	1660729.2016	763989.5298

ALIGNMENT NAME: C.R. 176				
POINT	STATION	TYPE	NORTHING	EASTING
8056	8+41.47	POB	1659464.3996	761220.5842
8057	11+59.57	POE	1659160.6166	761314.9314

ALIGNMENT NAME: EB CROSSOVER 1				
POINT	STATION	TYPE	NORTHING	EASTING
8060	632+94.03	PC	1657209.1240	757092.8952
8061	634+96.04	PI	1657356.3540	757231.2054
8062	636+96.55	PRC	1657529.2607	757335.6547
8063	638+97.86	PI	1657701.5725	757439.7447
8064	640+97.69	PT	1657848.3952	757577.4735

ALIGNMENT NAME: EB CROSSOVER 2				
POINT	STATION	TYPE	NORTHING	EASTING
8065	642+02.43	PC	1657931.6129	757656.3167
8066	645+18.16	PI	1658159.7266	757874.5977
8067	648+28.22	PT	1658305.4543	758154.6796
8068	651+25.07	POE	1658442.4691	758418.0159

ALIGNMENT NAME: EB CROSSOVER 3				
POINT	STATION	TYPE	NORTHING	EASTING
8069	695+00.00	PC	1659779.7242	762611.0982
8070	696+42.00	PI	1659831.6295	762743.2732
8071	697+83.48	PRC	1659902.5108	762866.3188
8072	699+25.48	PI	1659973.3922	762989.3643
8073	700+66.96	PT	1660025.2975	763121.5393

ALIGNMENT NAME: EB CROSSOVER 4				
POINT	STATION	TYPE	NORTHING	EASTING
8074	705+17.35	PC	1660192.6996	763541.3603
8075	706+25.12	PI	1660235.5661	763640.2412
8076	707+32.67	PRC	1660267.0362	763743.3169
8077	709+62.17	PI	1660334.0521	763962.8178
8078	711+89.48	PT	1660451.1630	764160.1926

ALIGNMENT NAME: TEMPORARY RAMP 4				
POINT	STATION	TYPE	NORTHING	EASTING
8079	705+16.75	POB	1660256.5679	763515.8942
8080	706+98.99	PC	1660322.3631	763685.8443
8081	709+90.38	PI	1660427.5643	763957.5805
8082	712+22.24	PT	1660717.3329	763988.2727
8083	712+45.97	POE	1660740.9275	763990.7718

ALIGNMENT NAME: TEMPORARY RAMP 1 WIDENING				
POINT	STATION	TYPE	NORTHING	EASTING
8084	700+59.95	PC	1659978.8163	763134.4938
8085	702+03.15	PI	1660031.1602	763267.7859
8086	703+45.82	PT	1660063.0422	763407.3933
8087	705+17.22	PC	1660101.2024	763574.4925
8088	705+60.36	PI	1660110.8068	763616.5492
8089	706+03.35	PRC	1660126.2993	763656.8108
8090	706+55.71	PI	1660145.1012	763705.6728
8091	707+07.80	PT	1660155.2022	763757.0438

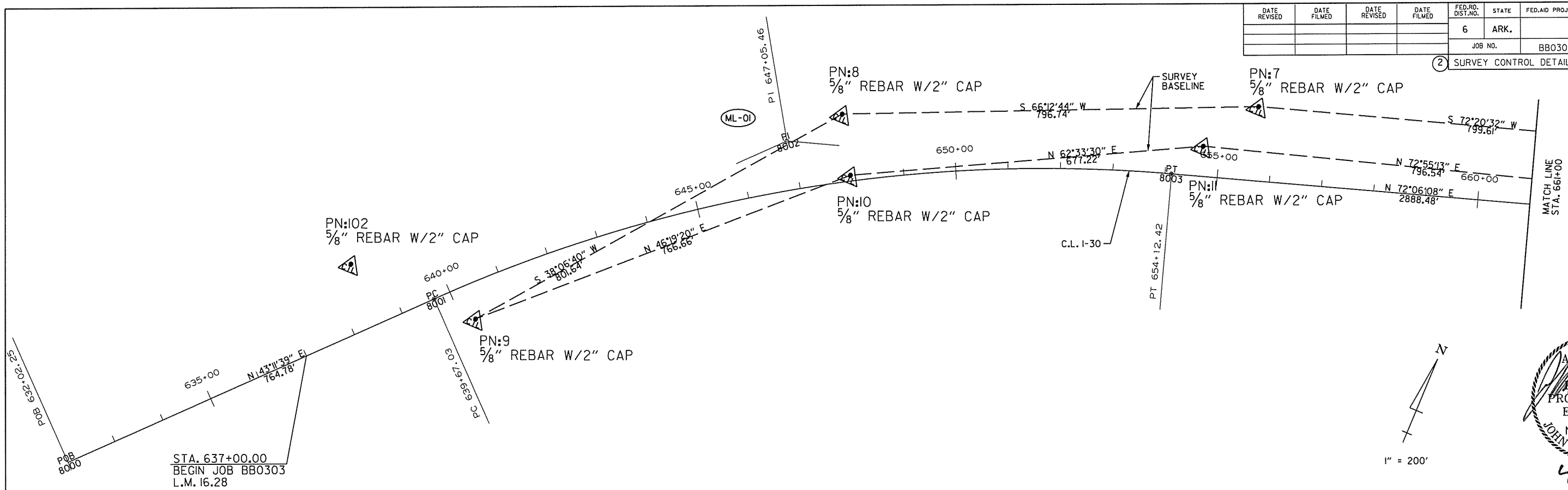
ALIGNMENT NAME: WB I-30 TEMP. WIDENING 1				
POINT	STATION	TYPE	NORTHING	EASTING
8092	632+61.97	PC	1657243.2616	757009.6911
8093	633+87.93	PI	1657335.2947	757095.6975
8094	635+13.54	PRC	1657437.8265	757168.8713
8095	636+41.60	PI	1657542.0645	757243.2628
8096	637+69.28	PT	1657635.4378	757330.9047
8097	642+10.77	PC	1657957.3470	757633.0546
8098	644+73.82	PI	1658149.1438	757813.0787
8099	647+33.58	PT	1658285.1324	758038.2494
8100	649+00.12	POE	1658371.2300	758180.8102

ALIGNMENT NAME: WB I-30 TEMP. WIDENING 2				
POINT	STATION	TYPE	NORTHING	EASTING
8101	693+78.73	PC	1659821.9529	762464.2269
8102	695+08.62	PI	1659861.9796	762587.7976
8103	696+38.11	PRC	1659918.3688	762704.8110
8104	697+14.25	PI	1659951.4227	762773.4015
8105	697+90.31	PT	1659978.9115	762844.4055
8106	705+16.75	PC	1660241.1808	763521.8512
8107	705+93.57	PI	1660268.9151	763593.4895
8108	706+70.31	PRC	1660290.8062	763667.1238
8109	709+01.25	PI	1660356.6173	763888.4902
8110	711+29.96	PT	1660473.2957	764087.7897

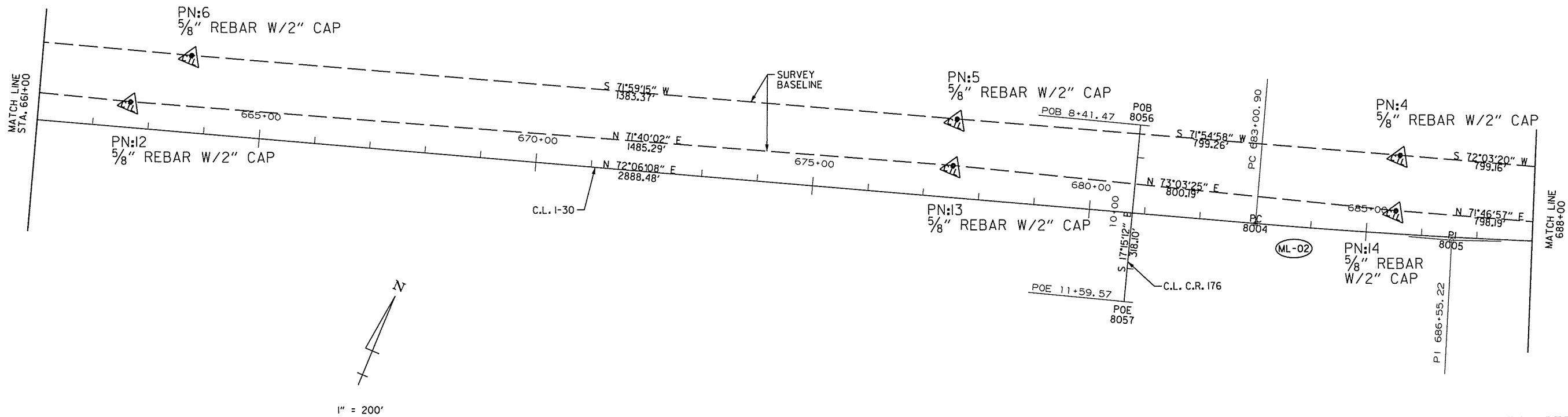
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				JOB NO.	BB0303		65	231

(2) SURVEY CONTROL DETAILS

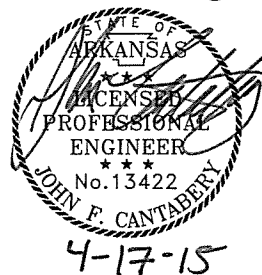
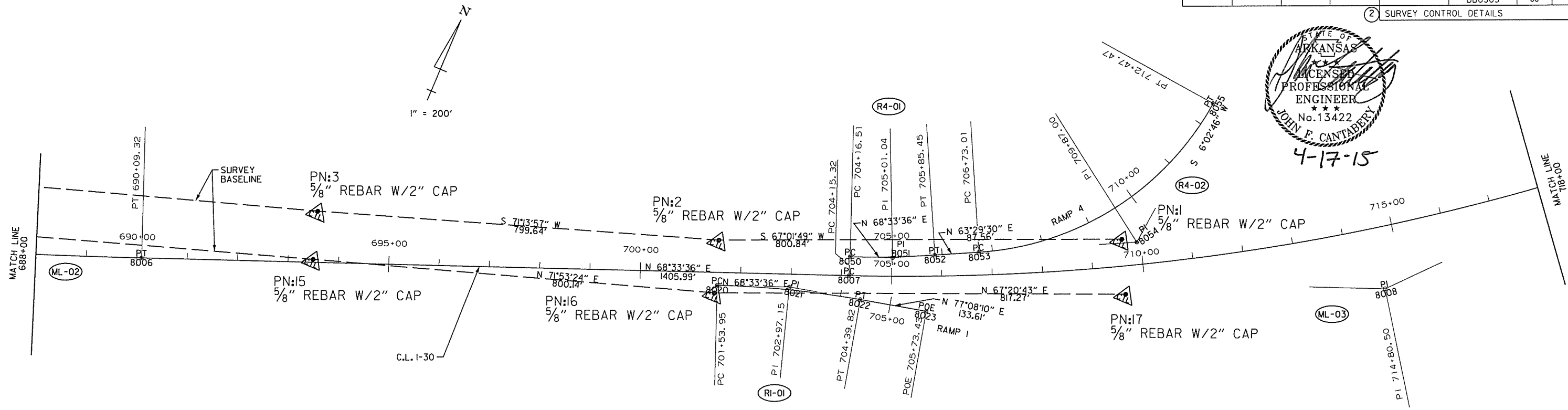


CURVE DATA										
CURVE	PC	PI	PT	Δ	D	TANGENT FEET	LENGTH FEET	e FT./FT.	Ls FEET	DESIGN SPEED
ML-01	639+67.03	647+05.46	654+12.42	28°54'28" RT.	2°00'00"	738.43'	1445.39'	0.07	350'	70 MPH
ML-02	683+00.90	686+55.22	690+09.32	3°32'32" LT.	0°30'00"	354.32'	708.42'	N/A	N/A	70 MPH

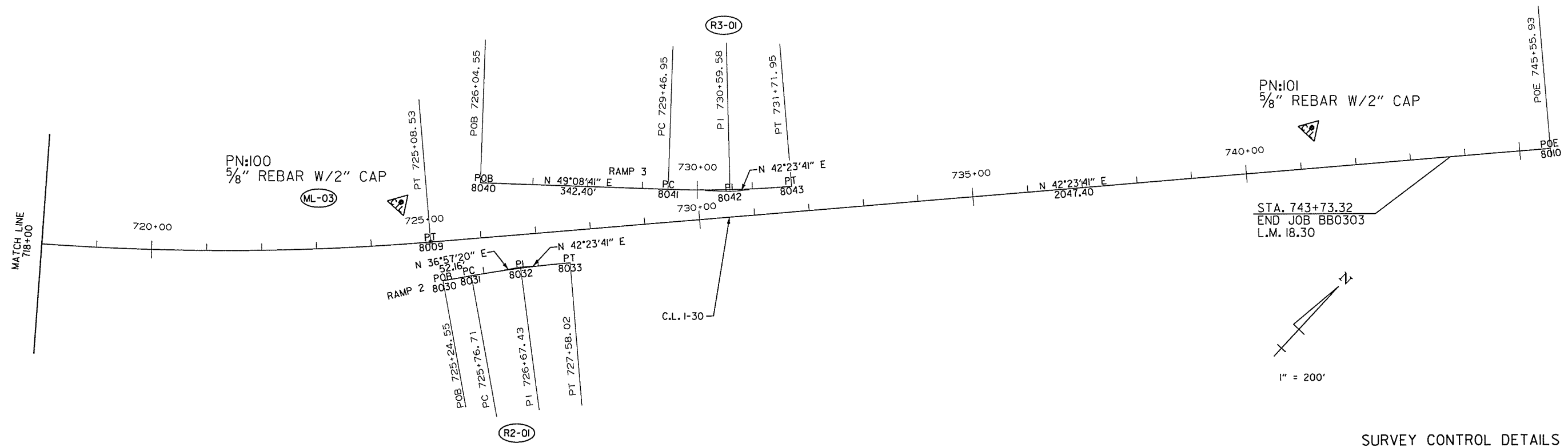


SURVEY CONTROL DETAILS

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				6	ARK.			
				JOB NO.		BB0303	66	231
② SURVEY CONTROL DETAILS								



CURVE DATA										
CURVE	PC	PI	PT	Δ	D	TANGENT FEET	LENGTH FEET	e FT./FT.	Ls FEET	DESIGN SPEED
ML-02	683+00.90	686+55.22	690+09.32	3°32'32" LT.	0°30'00"	354.32'	708.42'	N/A	N/A	70 MPH
ML-03	704+15.32	714+80.50	725+08.53	26°09'55" LT.	1°15'00"	1065.19'	2093.22'	MATCH EX.	350	70 MPH
R1-01	701+53.95	702+97.15	704+39.82	8°34'34" RT.	3°00'00"	143.20'	285.87'	N/A	N/A	50 MPH
R4-01	704+16.51	705+01.04	705+85.45	5°04'06" LT.	3°00'00"	84.53'	168.94'	MATCH EX.	300	40 MPH
R4-02	706+73.01	709+87.00	712+47.47	57°26'44" LT.	10°00'00"	313.98'	574.46'	MATCH EX.	MATCH EX.	40 MPH
R2-01	725+76.71	726+67.43	727+58.02	05°26'21" RT.	3°00'00"	90.72'	181.31'	MATCH EX.	MATCH EX.	50 MPH
R3-01	729+46.95	730+59.58	731+71.95	06°45'00" LT.	3°00'00"	112.63'	225.00'	N/A	N/A	50 MPH



SURVEY CONTROL DETAILS

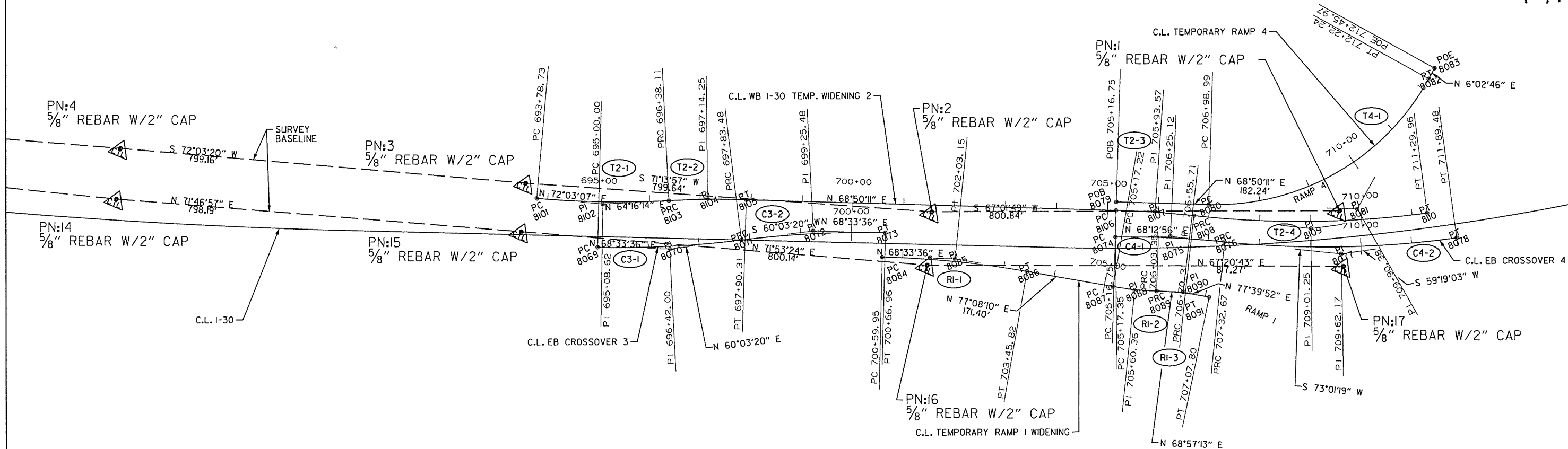
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				6	ARK.			
						JOB NO.	BB0303	68 231

2 SURVEY CONTROL DETAILS



4-17-15



CURVE DATA - MAINTENANCE OF TRAFFIC ALIGNMENTS										
CURVE	PC	PI	PT	Δ	D	TANGENT	LENGTH	e	Ls	DESIGN SPEED
						FEET	FEET	FT./FT.	FEET	
C3-1	695+00.00	696+42.00	697+83.48	8°30'16" LT.	3°00'00"	142.00'	283.48'	N/A	N/A	60 MPH
C3-2	697+83.48	699+25.48	700+66.96	8°30'16" RT.	3°00'00"	142.00'	283.48'	N/A	N/A	60 MPH
C4-1	705+17.35	706+25.12	707+32.67	6°27'34" RT.	3°00'00"	107.77'	215.32'	N/A	N/A	60 MPH
C4-2	707+32.67	709+62.17	711+89.48	13°42'16" LT.	3°00'00"	229.50'	456.82'	N/A	N/A	60 MPH
T4-1	706+98.99	709+90.38	712+22.24	62°47'25" LT.	12°00'00"	291.39'	523.25'	N/A	N/A	40 MPH
RI-1	700+59.95	702+03.15	703+45.82	8°34'34" RT.	3°00'00"	143.20'	285.87'	N/A	N/A	60 MPH
RI-2	705+17.22	705+60.36	706+03.35	8°10'57" LT.	9°30'00"	43.14'	86.13'	N/A	N/A	40 MPH
RI-3	706+03.35	706+55.71	707+07.80	9°55'21" RT.	9°30'00"	52.35'	104.45'	N/A	N/A	40 MPH
T2-1	693+78.73	695+08.62	696+38.11	7°46'53" LT.	3°00'00"	129.89'	259.38'	N/A	N/A	60 MPH
T2-2	696+38.11	697+14.25	697+90.31	4°33'57" RT.	3°00'00"	76.14'	152.20'	N/A	N/A	60 MPH
T2-3	705+16.75	705+93.57	706+70.31	4°36'24" RT.	3°00'00"	76.82'	153.56'	N/A	N/A	60 MPH
T2-4	706+70.31	709+01.25	711+29.96	13°47'22" LT.	3°00'00"	230.94'	459.65'	N/A	N/A	60 MPH

SURVEY CONTROL DETAILS

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED. NO. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0303	69	231
② PLAN AND PROFILE I-30								

STA. 637+00 CONSTRUCT
TYPE RM DROP INLET
IN MEDIAN (4' X 3' X H=3'-0")
WITH 24" X 198' R.C. PIPE TO
EXISTING DROP INLET AT STA. 639+00
(CLASS III) TYPE 3 BEDDING

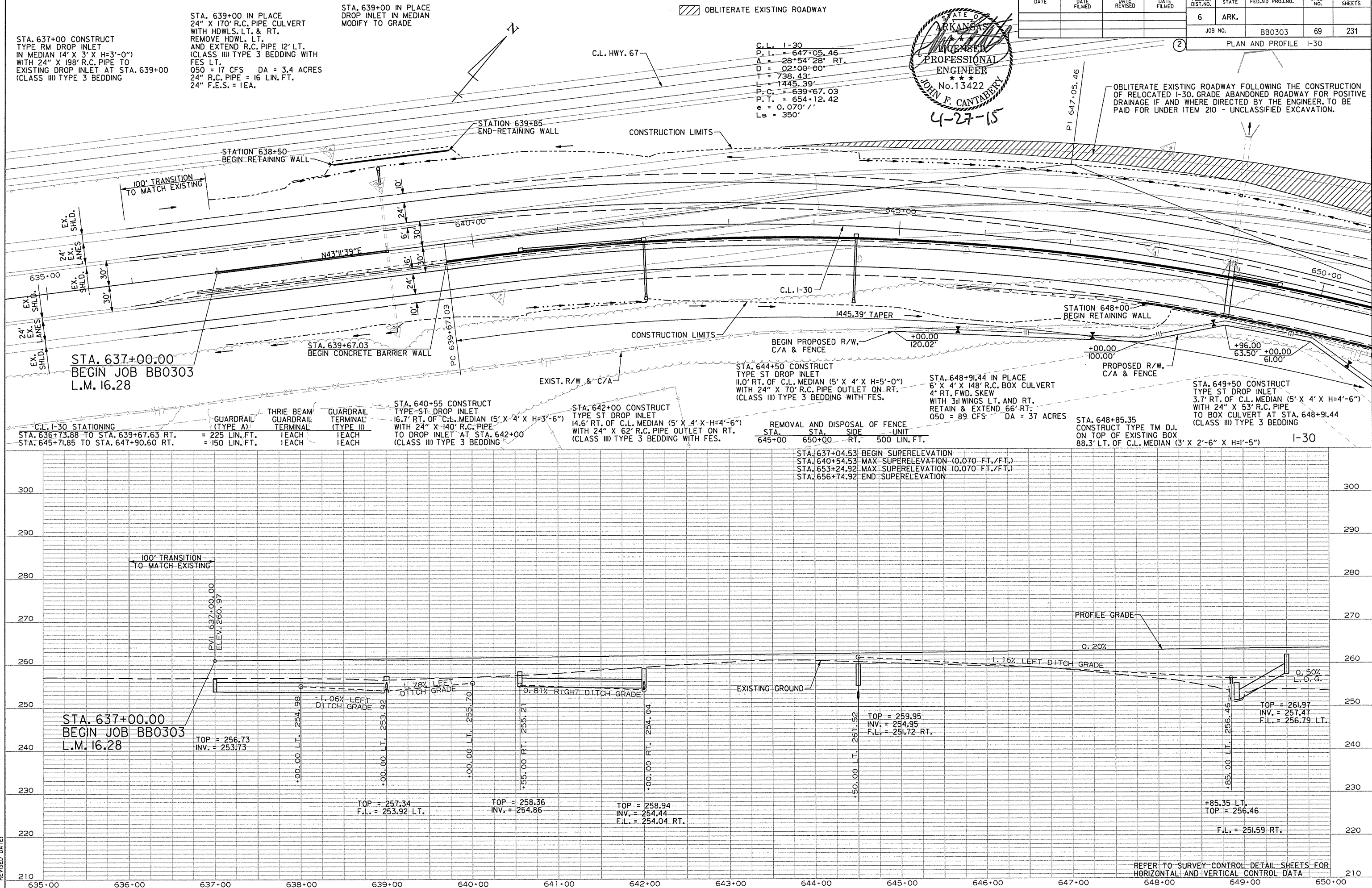
STA. 639+00 IN PLACE
24" X 170' R.C. PIPE CULVERT
WITH HDWLS. LT. & RT.
REMOVE HDWL. LT.
AND EXTEND R.C. PIPE 12' LT.
(CLASS III) TYPE 3 BEDDING WITH
FES LT.
050 = 17 CFS DA = 3.4 ACRES
24" R.C. PIPE = 16 LIN. FT.
24" F.E.S. = 1EA.

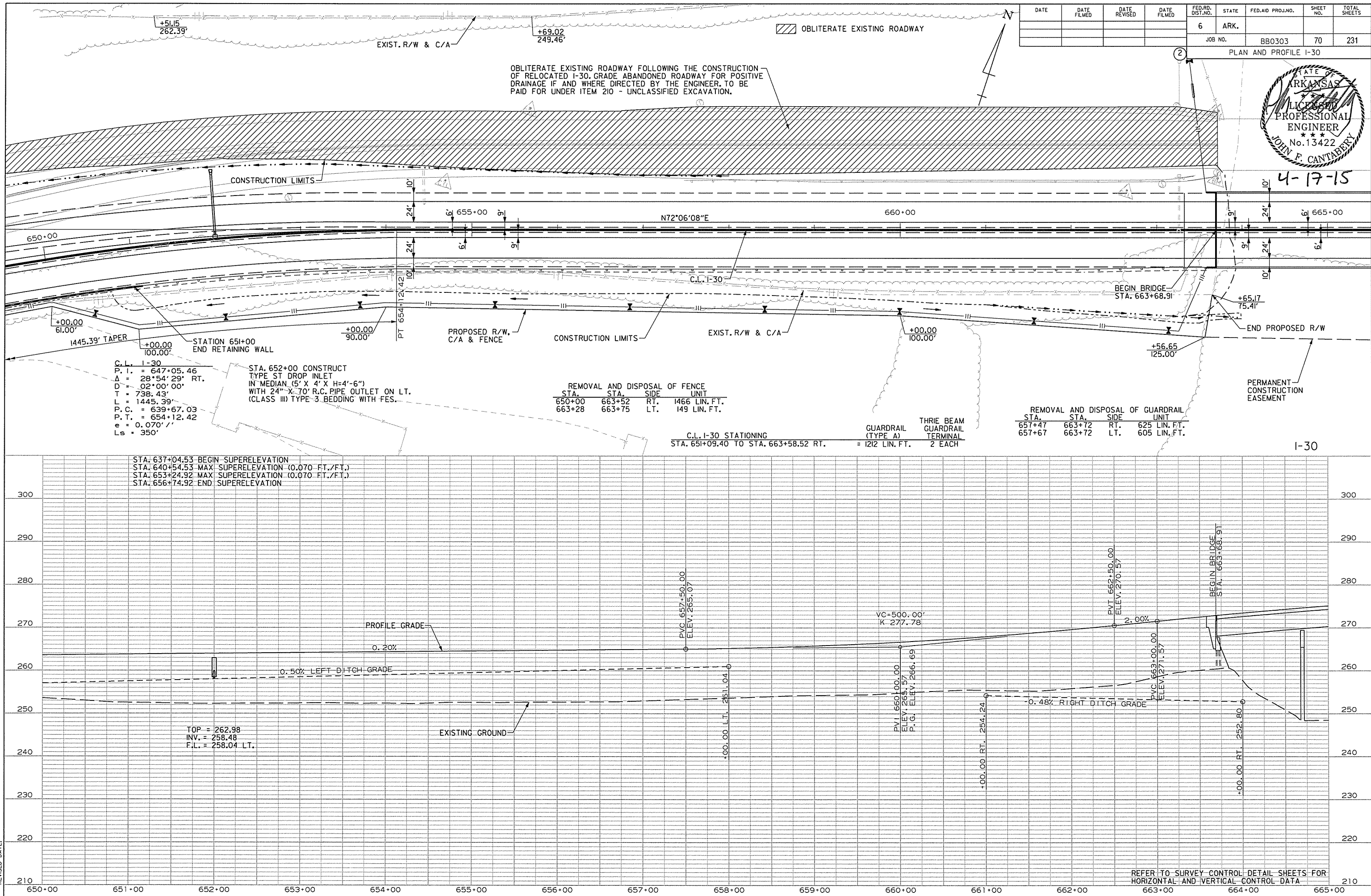
STA. 639+00 IN PLACE
DROP INLET IN MEDIAN
MODIFY TO GRADE

 OBLITERATE EXISTING ROADWAY

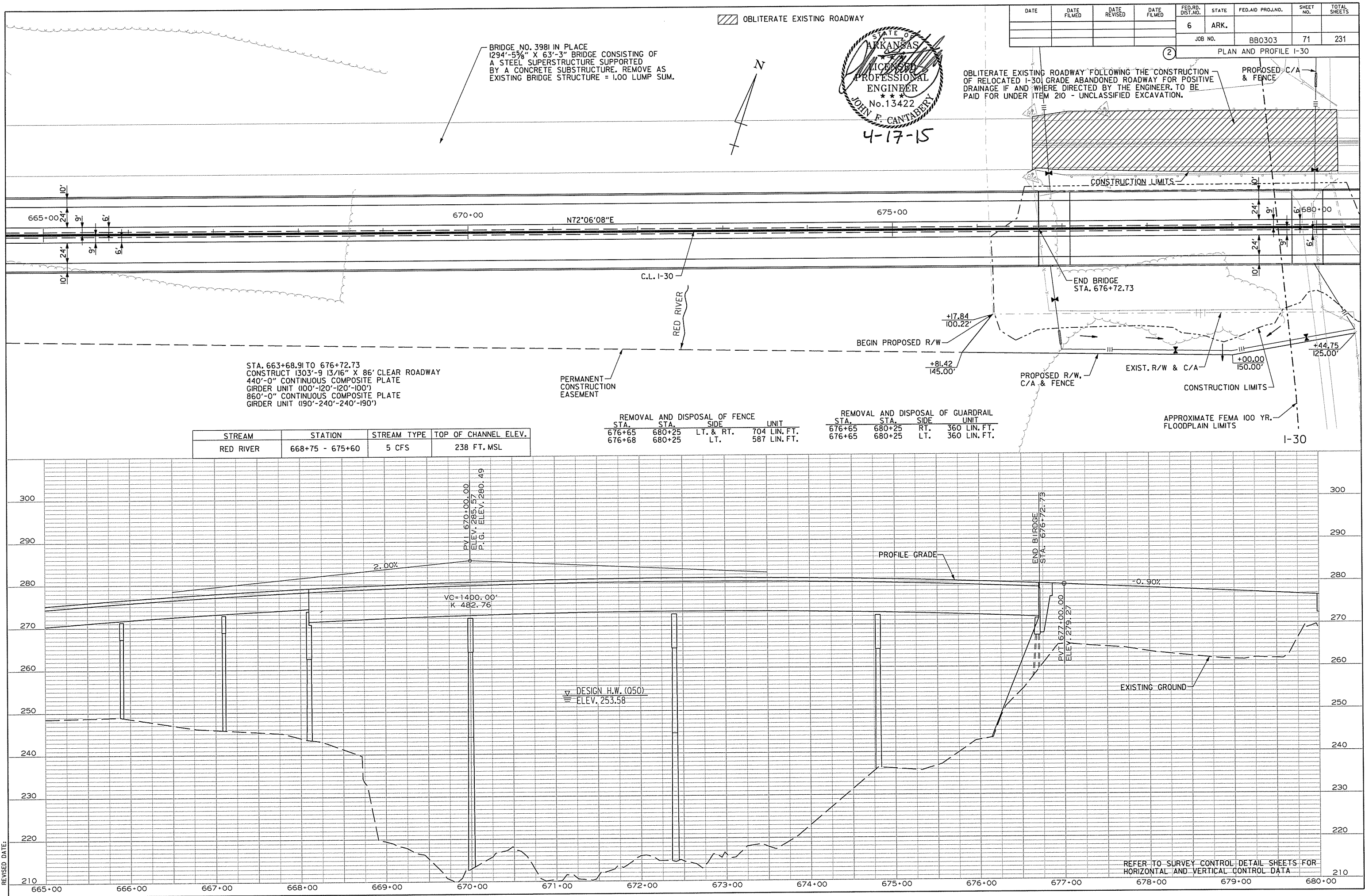
C.L. = 1-30
P.L. = 647°05.46
 Δ = 28°54'28" RT.
D = 02°00'00"
T = 738.43'
L = 1445.39'
P.C. = 639°67.03
P.T. = 654°12.42
e = 0.070' / '
Ls = 350'

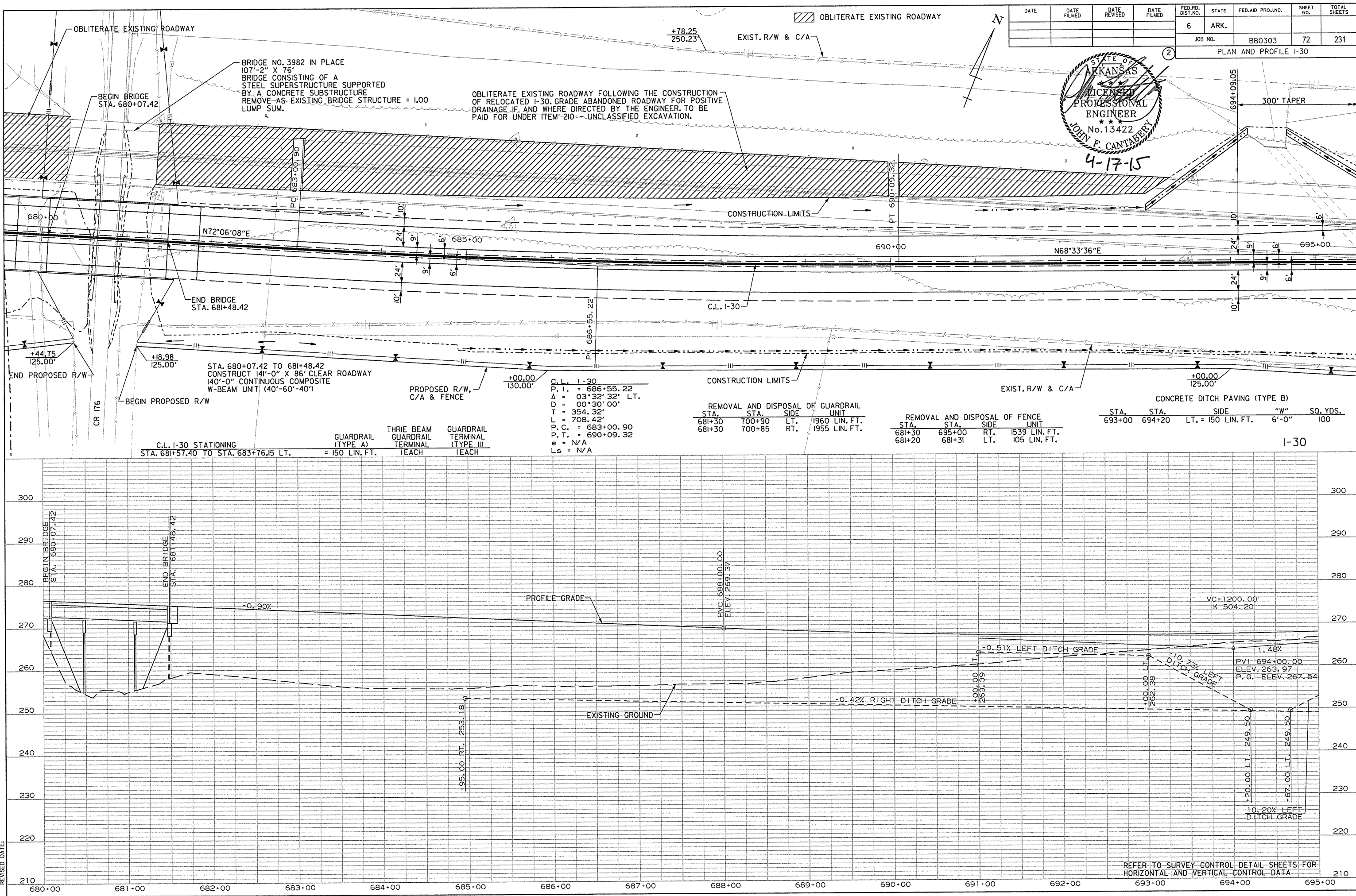
OBLITERATE EXISTING ROADWAY FOLLOWING THE CONSTRUCTION OF RELOCATED I-30. GRADE ABANDONED ROADWAY FOR POSITIVE DRAINAGE IF AND WHERE DIRECTED BY THE ENGINEER. TO BE PAID FOR UNDER ITEM 210 - UNCLASSIFIED EXCAVATION.



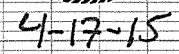


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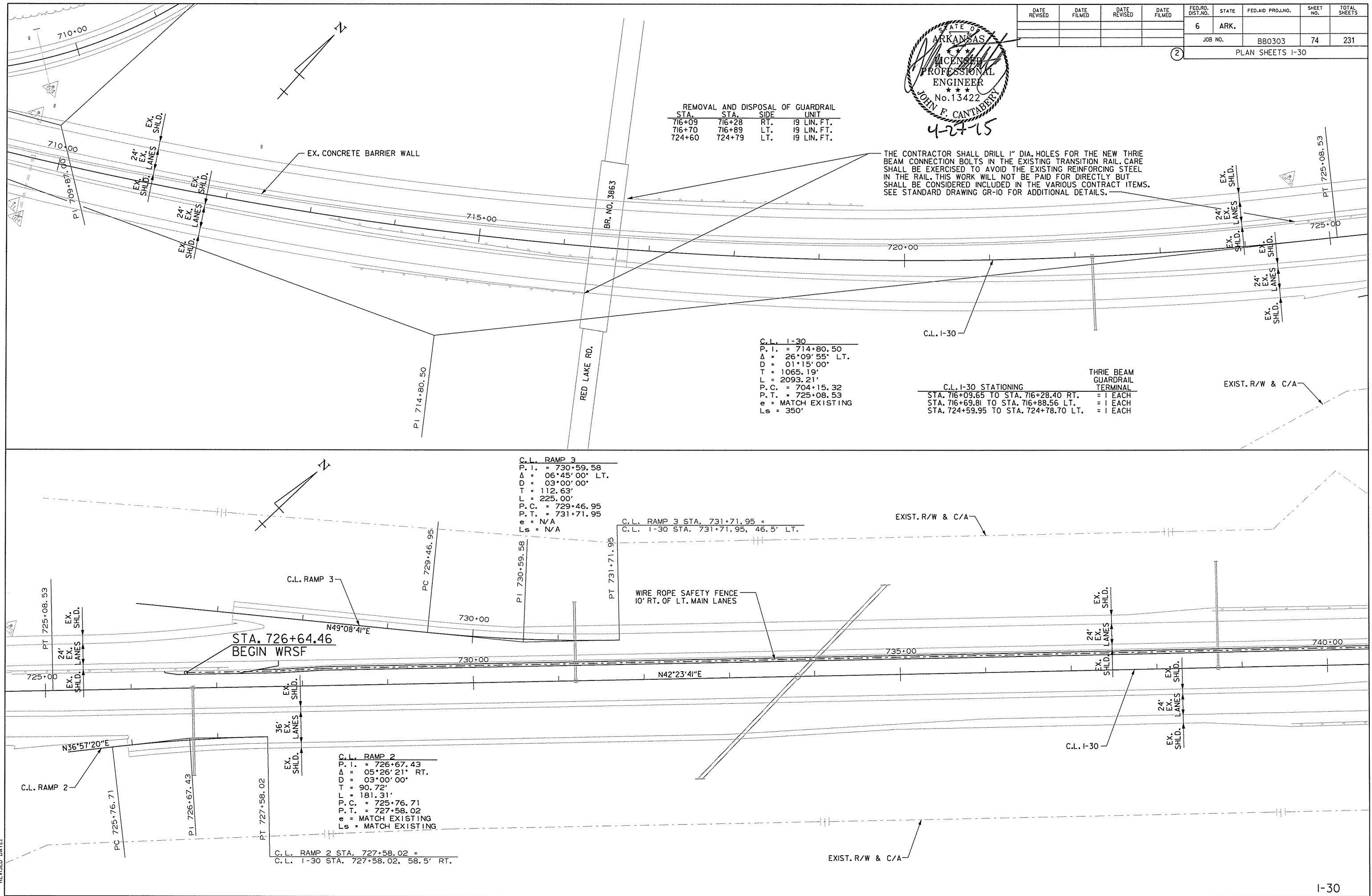


2	PLAN AND PROFILE I-30
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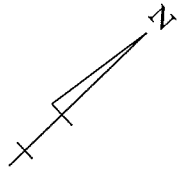
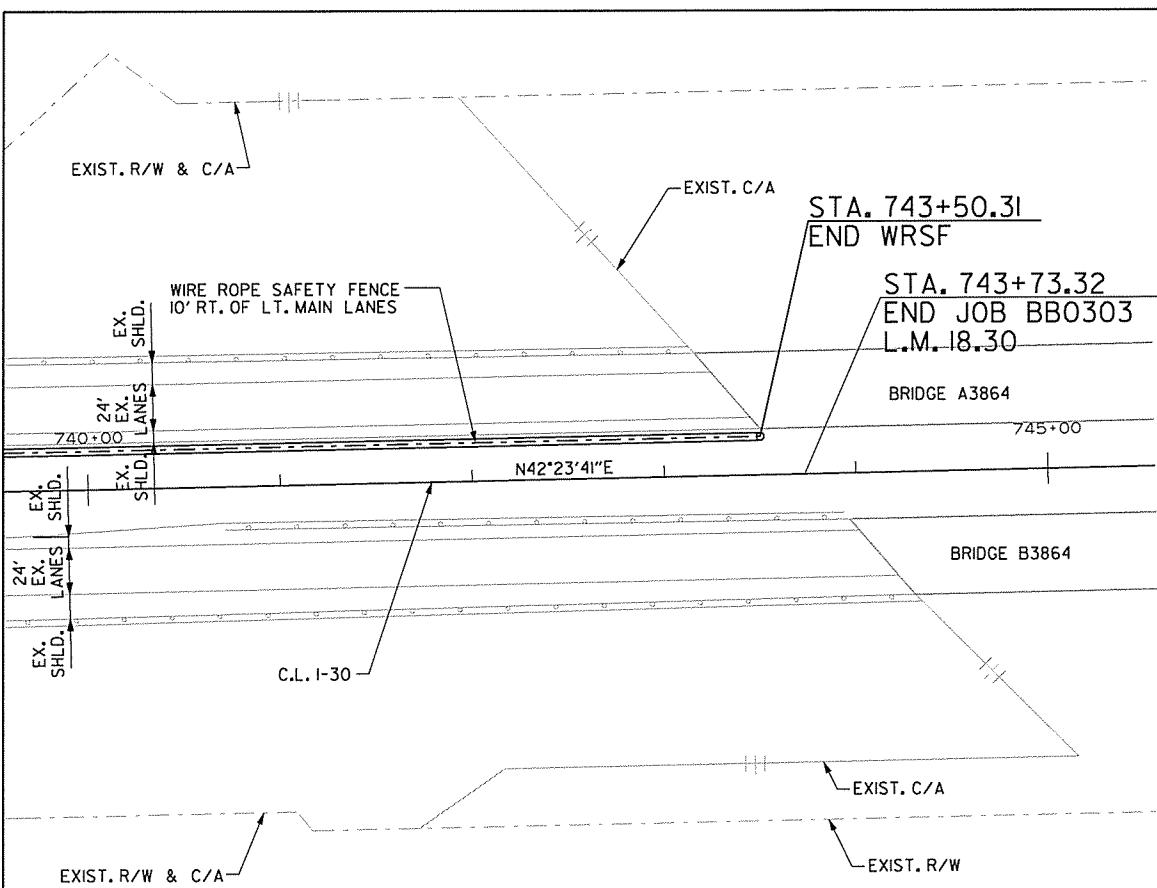
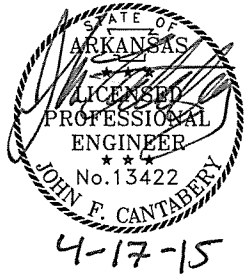
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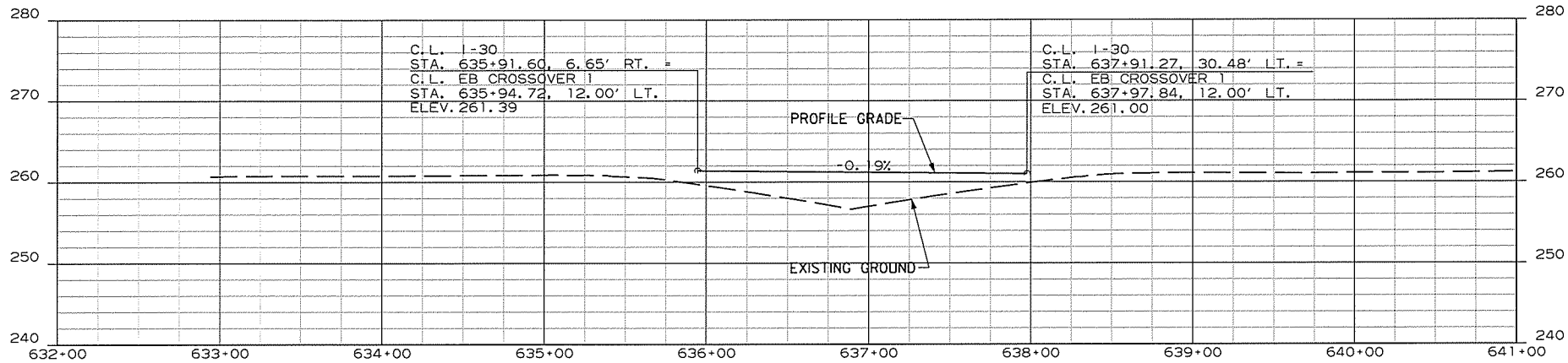
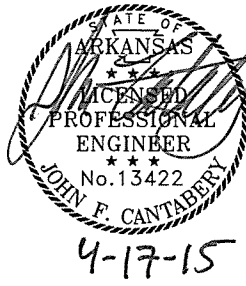


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								231
PLAN SHEETS 1-30								

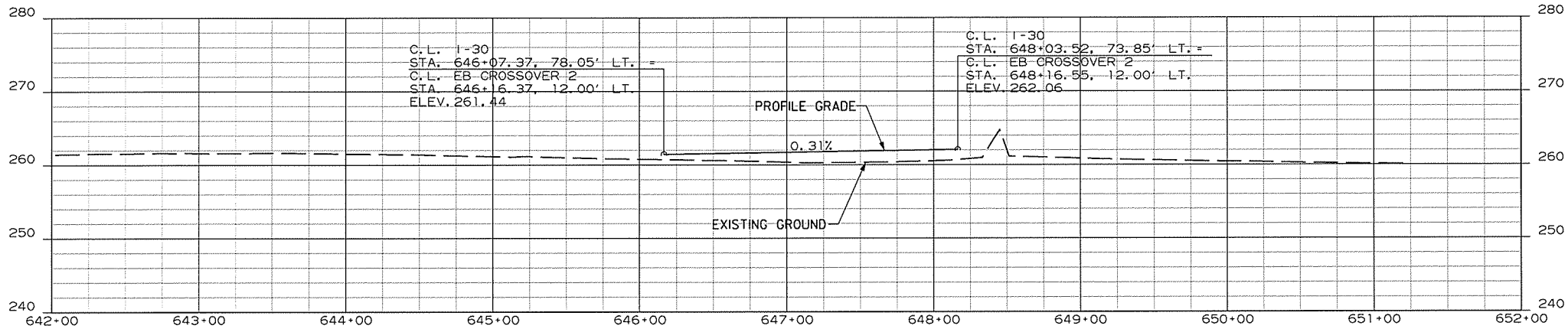
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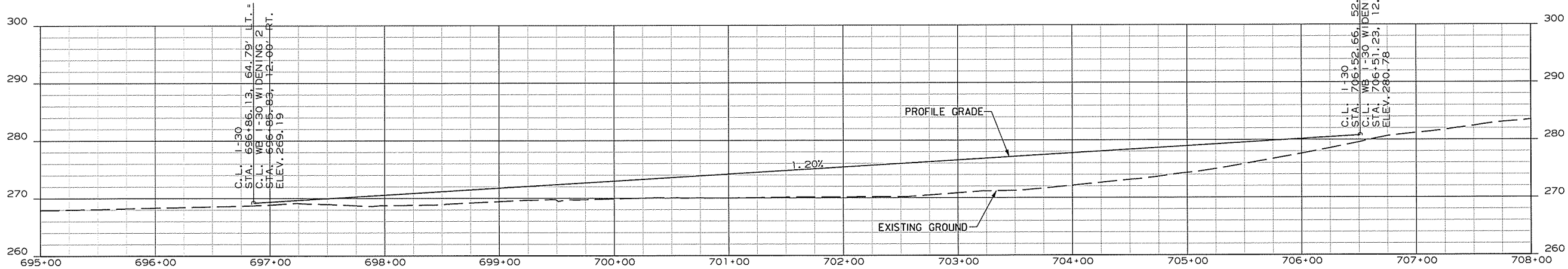
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								231
2 MAINTENANCE OF TRAFFIC PROFILES								



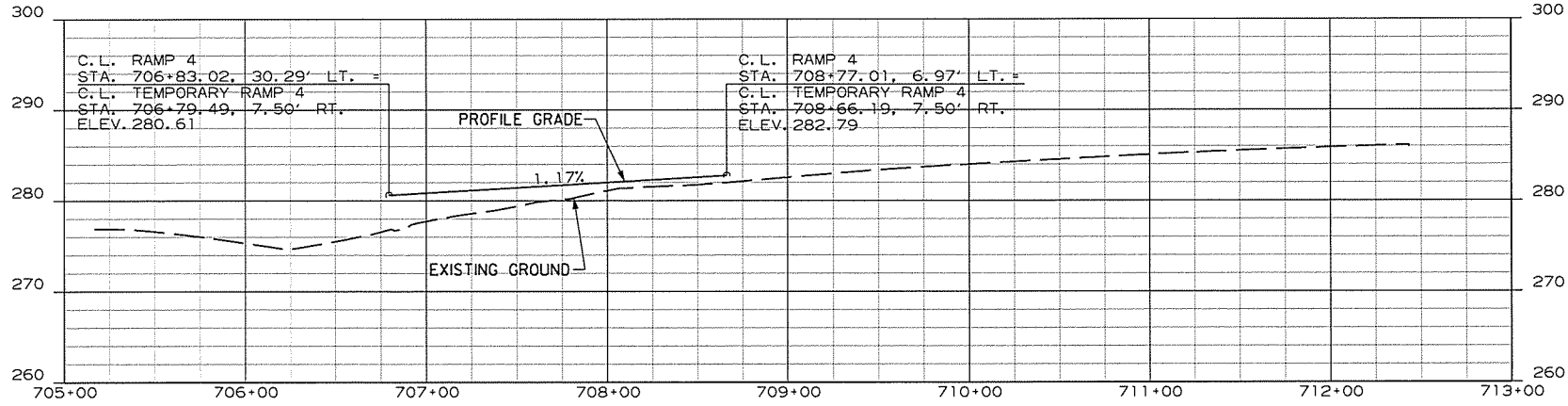
EB Crossover 1



EB Crossover 2



WB I-30 WIDENING 2



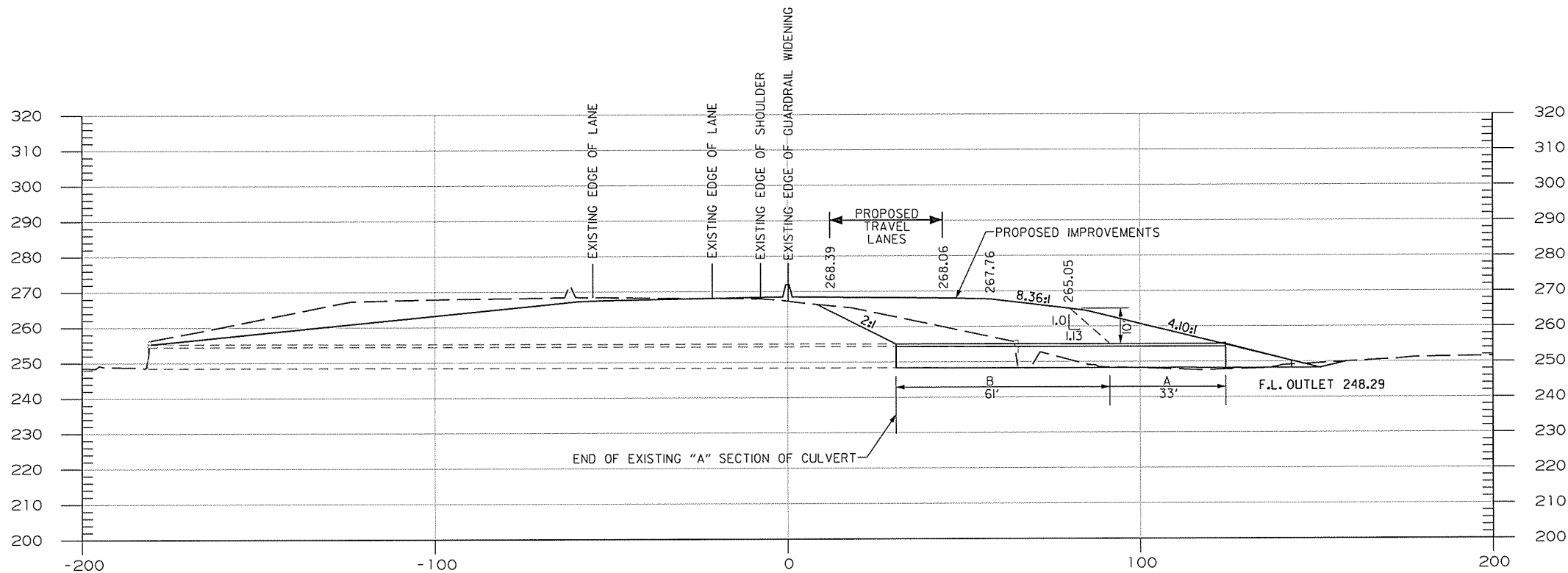
TEMPORARY RAMP 4

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								231

2 CULVERT DIAGRAM



4-17-15

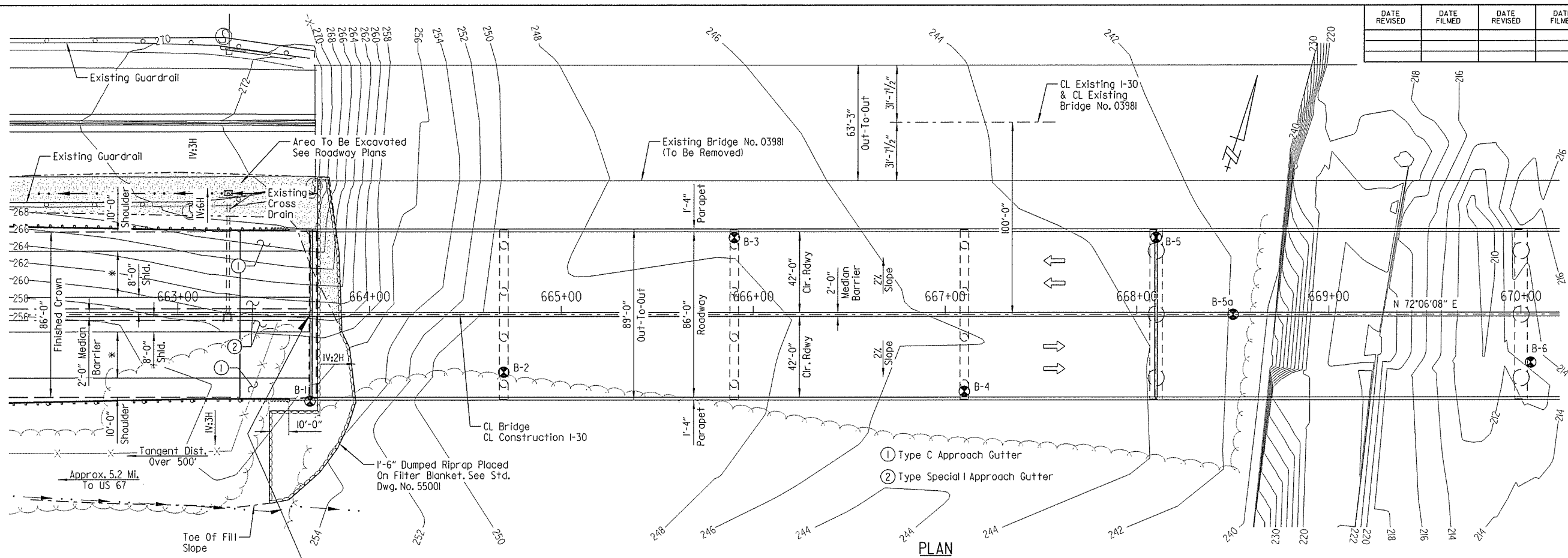


I-30 STA. 695+73.32 - CULVERT SECTION

IN PLACE DBL. 8' X 6' X 246' R.C. BOX CULVERT
42° RT. FWD. SKEW
WITH 3½ WINGS LT. & RT.
REMOVE 35' RT. AND EXTEND 94' RT.

CULVERT DIAGRAM

4/17/2015 10:42:30 AM
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\\GLTDC01\IT\Projects\2011\07705 - Red River Bridge Replacement\Drawings\BBB0303x1.Lldgn
REVISED DATE:



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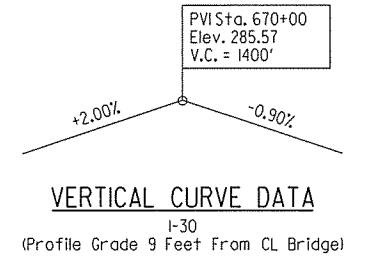
FOR R/W DATA AND GUARDRAIL DETAILS, SEE ROADWAY PLANS

Note:
Use Type C Approach Gutters (W = 10'-0") & Type Special I Approach Gutter At Begin Bridge. See Std. Dwg. No. 55030C & Dwg. No. 56436.

Use Type CI Approach Slab At Each End Of Bridge. See Std. Dwg. No. 55040CI.

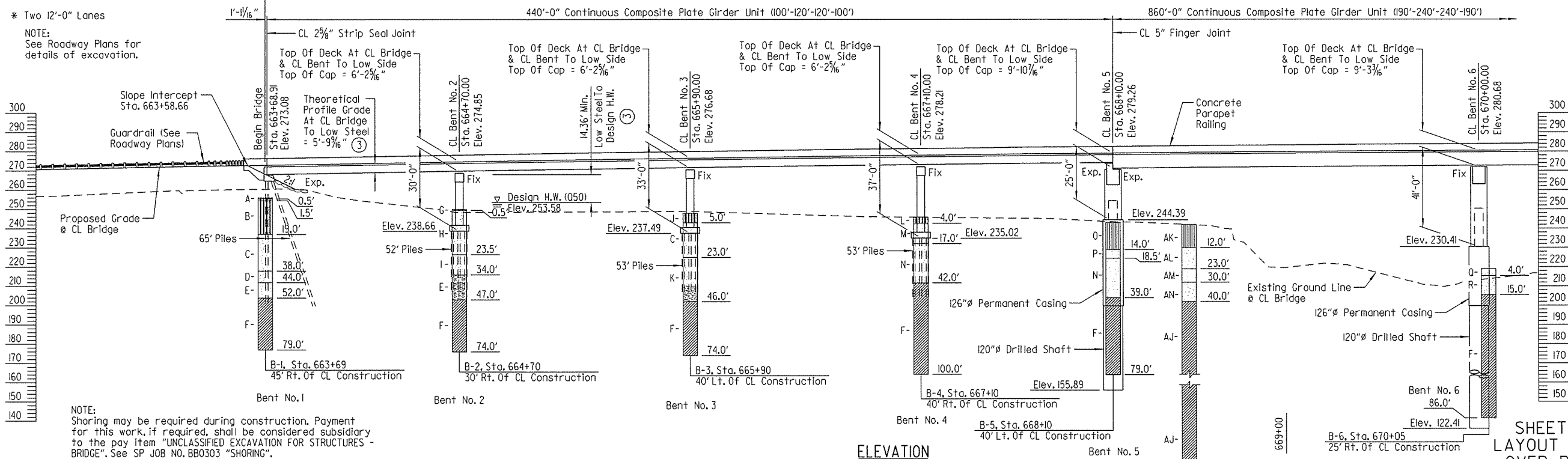
For "GENERAL NOTES", See Dwg. No. 56374.

For Boring Legend & "N" Values, See Dwg. No. 56374.



PLAN

Total Length Of Bridge = 1303'-9 3/8" "



NOTE:
See Sheet 3 of 4 Layout Of Bridge for "HYDRAULIC DATA".

NOTE:
Stations and elevations shown are along CL Bridge. Elevations shown are at Theoretical Profile Grade (See Sheet 3 of 4).

ELEVATION

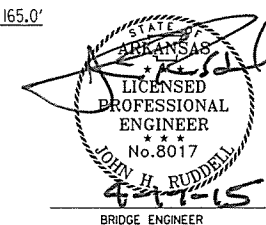
**SHEET 1 OF 4
LAYOUT OF BRIDGE
OVER RED RIVER**

**RED RIVER - EAST & WEST (F)
MILLER & HEMPSTEAD COUNTIES**

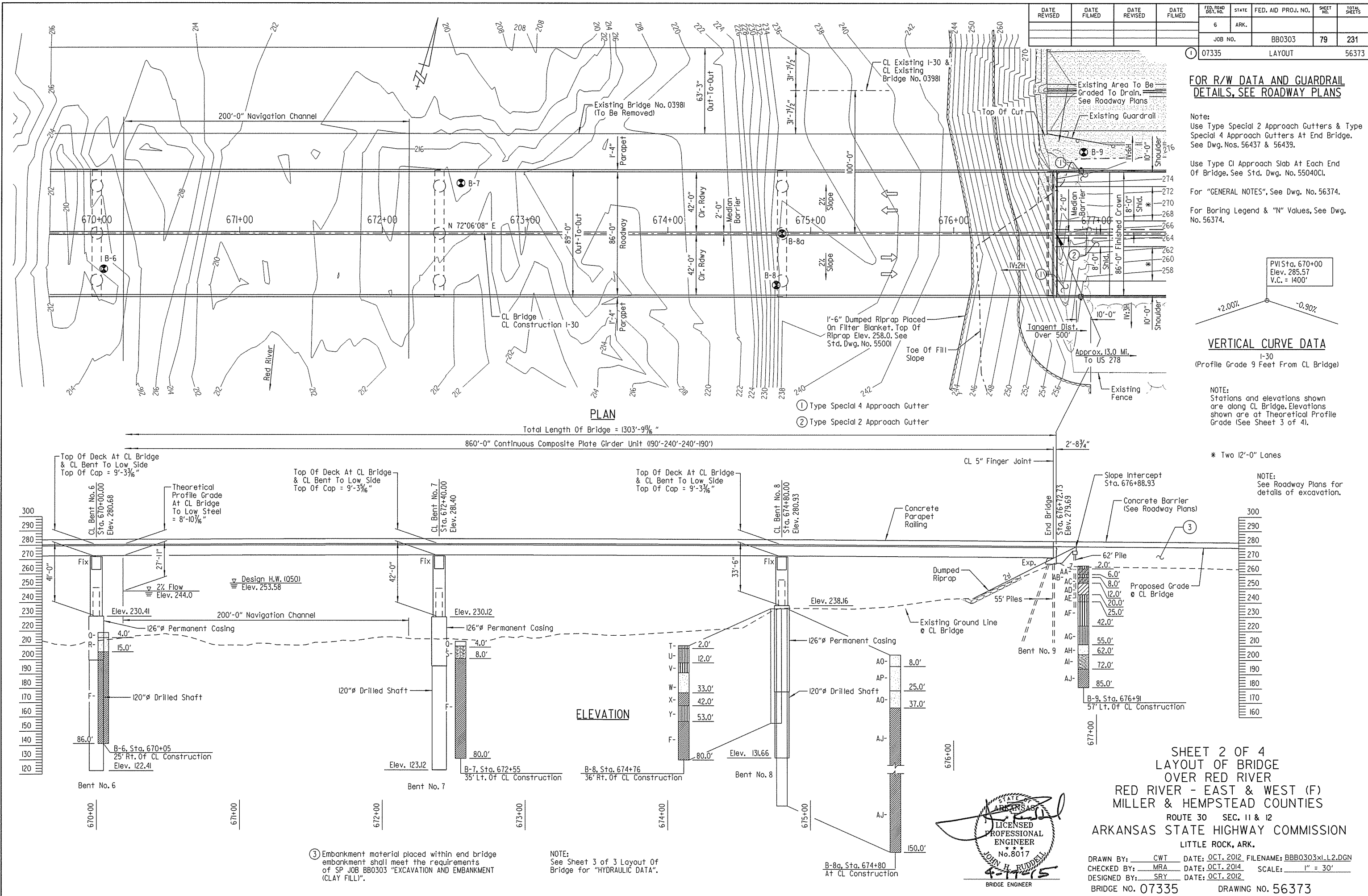
ROUTE 30 SEC. 11 & 12

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

DRAWN BY: CWT DATE: OCT. 2012 FILENAME: BBB0303x1.LLDGN
CHECKED BY: MRA DATE: OCT. 2014 SCALE: 1" = 30'
DESIGNED BY: SRY DATE: OCT. 2012
BRIDGE NO. 07335 DRAWING NO. 56372



4/17/2015 10:42:32 AM
WORKSPACE: AHTD Bridge
\\GLTDCO\N\ITProjects\2014\017705 - Red River Bridge Replacement\Drawings\BB0303x1.L2.dgn
REVISED DATE:



GENERAL NOTES

BENCH MARK: See Survey Control Detail Sheets

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications For Highway Construction (2014 Edition) with applicable Supplemental Specifications and Special Provisions. Unless otherwise noted in the plans, Section and Subsection refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications (2012 Edition) with current interim revisions.

LIVE LOADING: HL93 METHOD OF DESIGN: LRFD

SEISMIC PERFORMANCE ZONE: I SDI= 0.12, SITE CLASS = D

OPERATIONAL IMPORTANCE CATEGORY: ESSENTIAL

MATERIALS AND STRENGTHS:
Class (SAE) - Bridge Concrete (Superstructure) f'c = 4,000 psi
Class S - Bridge Concrete (Substructure) f'c = 3,500 psi
Reinforcing Steel (AASHTO M31 Or M322 Type A, GR. 60) fy = 60,000 psi
Structural Steel (AASHTO M270, GR. 50W) Fy = 50,000 psi
Structural Steel (AASHTO M270, GR. HPS 70W) Fy = 70,000 psi
Structural Steel (AASHTO M270, GR. 36) Fy = 36,000 psi

BORING LOGS: Boring Logs may be obtained from the Construction Contract Procurement Section of the Program Management Division.

STEEL PILING: Piling in Bents Nos. 1-5 and Bent No. 9 shall be HPI4x73 (Grade 50) and shall be driven to a minimum ultimate bearing capacity of 175 tons per pile for Bent 1, 154 tons per pile for Bent Nos. 2-4, and 150 tons per pile for Bent No. 9. Drive all piles in Bent No. 1 to a tip elevation of 240 or lower, Bent No. 9 to a tip elevation of 246 or lower and Bent Nos. 2-4 to a minimum of 20 feet below the bottom of the footing. All piling shall be driven with an approved air, steam or diesel hammer. Piling in end bents shall be driven after embankment to bottom of cap is in place.

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

DRIVING SYSTEM: The driving system approval and ultimate bearing capacity determination for piling shall be based on the requirements of Subsection 805.09(b) "METHOD B - WAVE EQUATION ANALYSIS (WEAP)." It is estimated that the minimum required rated energy of the hammer will be 49,000 foot pounds per blow will be required to obtain the ultimate bearing capacity at Bent Nos. 1, 2-4 and 9.

DRILLED SHAFTS: All drilled shafts shall be founded into medium hard bluish gray clay as detailed in borings. See Layouts for shaft tip elevations. No adjustment in plan tip elevation shall be made without prior approval from the Engineer. Methods of construction of the drilled shafts shall be in accordance with SP JOB NO. BB0303 "DRILLED SHAFT FOUNDATIONS".

PILE FOOTING: Bottom of footings shall be placed at elevations shown in the layout. Foundations for footings shall be prepared in accordance with Subsection 801.04 and backfilled in accordance with Subsection 801.08.

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

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

DETAIL DRAWINGS: DRAWING NO:

End Bents 56376-56381
Intermediate Bents 56382-56390
440' Cont. Comp. Plate Girder Unit 56391-56401
860' Cont. Comp. Plate Girder Unit 56402-56415
Finger Joint 56416 & 56417
Elastomeric Bearings 56418 & 56419
Type Special 1 Approach Gutters 56436
Type Special 2 Approach Gutters 56437
Type Special 4 Approach Gutters 56439
Type C Approach Gutters 55030C
Type C1 Approach Slab 55040C1
Steel Piling 55020

EXISTING BRIDGE: Existing Bridge No. 03981 is 63.25' wide and 1294.47' long and consists of 3 continuous units with steel girders and a concrete deck supported by a concrete substructure with spread footings. The existing bridge is located approximately 100' North of the proposed bridge.

REMOVAL AND SALVAGE: After the new bridge is open to traffic, existing Bridge No. 03981 shall be removed in accordance with Section 205. All material from the existing bridge shall become property of the Contractor. For additional information see SP JOB NO. BB0303 "DETAILS FOR BOATER SAFETY."

HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	DISCHARGE	* NORMAL WATER SURFACE ELEVATION	WATER SURFACE ELEVATION WITH BACKWATER
	YEARS	CFS	FEET	FEET
DESIGN	50	190,000	253.52	253.58
BASE	100	252,000	257.64	257.73
EXTREME	500	359,000	263.48	263.63
OVERTOPPING	>500	N/A	N/A	N/A

O100 Backwater Elevation for Existing Structure = 257.77 feet
Proposed Low Bridge Chord Elev. = 267.94 feet

Drainage Area = 52,336 square miles
Historical High Water Elev. = 262.30 feet (1945)

BORING LEGEND

- A - Loose dark reddish brown clayey silt
B - Loose reddish tan fine sandy silt
C - Medium dense light tan and reddish tan fine sand
D - Dense to very dense dark gray and brown fine to medium sand
E - Dense dark gray and brown fine sand, slightly silty with trace fine gravel
F - Hard bluish gray clay, calcareous
G - Loose reddish brown fine sandy silt, clayey with silty clay seams
H - Loose light tan and reddish tan fine sand, slightly silty
I - Medium dense dark gray and brown fine sand with trace silt
J - Loose to medium dense reddish tan fine sandy silt
K - Dense dark gray and brown fine to medium sand with trace fine gravel
L - Very loose reddish tan fine sandy silt with trace organics
M - Medium dense red fine sand, slightly silty with occasional silty clay pockets
N - Medium dense dark gray and brown fine to medium sand
O - Loose reddish tan silty fine sand
P - Dense light tan and reddish tan fine sand with trace decayed organics
Q - Loose light gray and light brown fine sand, slightly silty
R - Medium dense light brown and light gray fine to medium sand with trace fine gravel
S - Dense gray sandy fine to coarse gravel
T - Very loose to loose brown silty fine sand with organics, dry
U - Very loose to loose brown silty fine sand with fine sand seams
V - Very loose to loose brown fine sandy silt
W - Dense brownish gray and gray fine sand, slightly silty with a little fine to coarse gravel
X - Very stiff to hard dark gray clay
Y - Dense to very dense light gray silty fine sand with fine sandy clay seams and layers, calcareous
Z - Medium dense reddish tan fine sandy silt with some gravel (fill)
AA - Stiff reddish tan silty clay with fine sandy silt layers (fill)
AB - Loose tan fine sandy silt (fill)
AC - Stiff gray and tan silty clay with trace organics (fill)
AD - Stiff gray and reddish brown clay (fill)
AE - Very stiff reddish brown clayey silt
AF - Medium dense tan silt, slightly sandy with clay seams and pockets
AG - Dense tan and brown silty fine sand
AH - Dense to very dense brown fine sand, slightly silty
AI - Dense to very dense brown fine to coarse sand with some fine gravel
AJ - Very stiff to hard dark gray clay, calcareous
AK - Loose tan fine sandy silt
AL - Medium dense tan silty fine sand, damp
AM - Medium dense brown fine sand, slightly silty
AN - Loose brown, gray and tan medium to coarse sand w/clay pockets
AO - Loose reddish tan and tan silty fine sand w/ occasional fine sandy silt seams (fill)
AP - Medium dense reddish tan and tan silty fine sand
AQ - Dense tan fine sand, slightly silty

N VALUES

B-1, Sta. 663+69 at 45' Rt. Of

CL Construction

0.5-1.5, N=10
2.5-3.5, N=4
4.5-5.5, N=9
6.5-7.5, N=13
9.0-10.0, N=13
14.0-15.0, N=13
19.0-20.0, N=16
24.0-25.0, N=29
29.0-30.0, N=50/10"
34.0-35.0, N=33
39.0-40.0, N=50/9"
44.0-45.0, N=30
49.0-50.0, N=39
54.0-55.0, N=50/7"
59.0-60.0, N=50/7"
64.0-65.0, N=50/3"
69.0-70.0, N=50/4"
74.0-75.0, N=50/3"
78.5-79.0, N=50/3"

B-2, Sta. 664+70 at 30' Rt. Of

CL Construction

0.5-1.5, N=6
2.5-3.5, N=24
4.5-5.5, N=22
6.5-7.5, N=6
9.0-10.0, N=9
14.0-15.0, N=16
19.0-20.0, N=15
24.0-25.0, N=13
29.0-30.0, N=50
34.0-35.0, N=25
39.0-40.0, N=37
44.0-45.0, N=50/10"
49.0-50.0, N=50/8"
54.0-55.0, N=50/8"
59.0-60.0, N=50/8"
64.0-65.0, N=50/3"
69.0-70.0, N=50/3"
73.5-74.0, N=50/3"

B-3, Sta. 665+90 at 40' Lt. Of

CL Construction

0.5-1.5, N=10
2.5-3.5, N=16
4.5-5.5, N=16
6.5-7.5, N=38
9.0-10.0, N=18
14.0-15.0, N=17
19.0-20.0, N=27
24.0-25.0, N=30
29.0-30.0, N=35
34.0-35.0, N=50/10"
39.0-40.0, N=17
44.0-45.0, N=43
49.0-50.0, N=50/8"
54.0-55.0, N=50/7"
59.0-60.0, N=50/7"
64.0-65.0, N=50/3"
69.0-70.0, N=50/3"
73.5-74.0, N=50/3"

B-4, Sta. 667+10 at 40' Lt. Of

CL Construction

0.5-1.5, N=3
2.5-3.5, N=6
4.5-5.5, N=15
6.5-7.5, N=8
9.0-10.0, N=14
14.0-15.0, N=9
19.0-20.0, N=13
24.0-25.0, N=11
29.0-30.0, N=25
34.0-35.0, N=41
39.0-40.0, N=33
44.0-45.0, N=50/9"
49.0-50.0, N=50/8"
54.0-55.0, N=50/7"
59.0-60.0, N=50/7"
64.0-65.0, N=50/3"
69.0-70.0, N=50/3"
73.5-74.0, N=50/3"
79.5-80.0, N=50/2"
84.0-85.0, N=50/1"
89.0-90.0, N=50/1"
94.0-95.0, N=50/0"
99.0-100.0, N=50/0"

B-5, Sta. 668+10 at 40' Lt. Of

CL Construction

0.5-1.5, N=6
2.5-3.5, N=9
4.0-5.0, N=12
6.5-7.5, N=6
9.0-10.0, N=17
14.0-15.0, N=31
19.0-20.0, N=22
24.0-25.0, N=42
29.0-30.0, N=29
34.0-35.0, N=50/9"
39.0-40.0, N=50/8"
49.0-50.0, N=50/8"
54.0-55.0, N=50/7"
59.0-60.0, N=50/4"
64.0-65.0, N=50/4"
69.0-70.0, N=50/3"
74.0-75.0, N=50/3"
78.5-79.0, N=50/3"

B-5a, Sta. 668+50 at 40' Lt. Of

CL Construction

0.5-1.5, N=4
9.0-10.0, N=7
14.0-15.0, N=13
24.0-25.0, N=15
34.0-35.0, N=9
44.0-45.0, N=50/11"
54.0-55.0, N=50/9"
64.0-64.5, N=50/6"
74.0-74.75, N=50/7"
84.0-84.5, N=50/6"
94.0-94.5, N=50/5"
104.0-104.5, N=50/6"
114.0-114.5, N=50/5"
124.0-124.5, N=50/4"
134.0-134.75, N=50/7"
144.0-144.5, N=50/4"
154.0-154.5, N=50/4"
164.5-165.0, N=50/3"

B-6, Sta. 670+05 at 25' Rt. Of

CL Construction

6.0-7.0, N=17
11.0-12.0, N=16
15.0-16.0, N=75
25.5-26.0, N=85/6"
30.5-31.0, N=50/6"
35.5-36.0, N=80/6"
40.0-40.5, N=75/6"
45.0-45.5, N=80/6"
50.5-51.0, N=100/2"
55.0-55.5, N=100/3"
60.0-60.5, N=90/6"
65.0-65.5, N=85/6"
70.0-70.5, N=80/6"
75.0-75.5, N=85/6"
80.0-80.5, N=75/6"

B-7, Sta. 672+55 at 35' Lt. Of

CL Construction

9.0-10.0, N=100/6"
14.0-15.0, N=98/11"
25.0-30.0, N=55/6"
34.0-35.0, N=60/6"
44.0-45.0, N=100/4"
49.0-50.0, N=100/4"
54.0-55.0, N=100/4"
59.0-60.0, N=90/11"
69.0-70.0, N=85/6"
79.0-80.0, N=95/11"

B-8, Sta. 674+76 at 36' Rt. Of

CL Construction

0.5-1.5, N=4
2.5-3.5, N=8
4.5-5.5, N=8
6.5-7.5, N=9
9.0-10.0, N=16
14.0-15.0, N=4
19.0-20.0, N=4
24.0-25.0, N=36
29.0-30.0, N=42
34.0-35.0, N=50/7"
44.0-45.0, N=50/7"
49.0-50.0, N=50/6"
54.0-55.0, N=50/6"
59.0-60.0, N=50/5"
64.0-65.0, N=80/7"
69.0-70.0, N=70/6"
74.0-75.0, N=80/3"
79.0-80.0, N=100/3"

B-8a, Sta. 674+80 at 57' Lt. Of

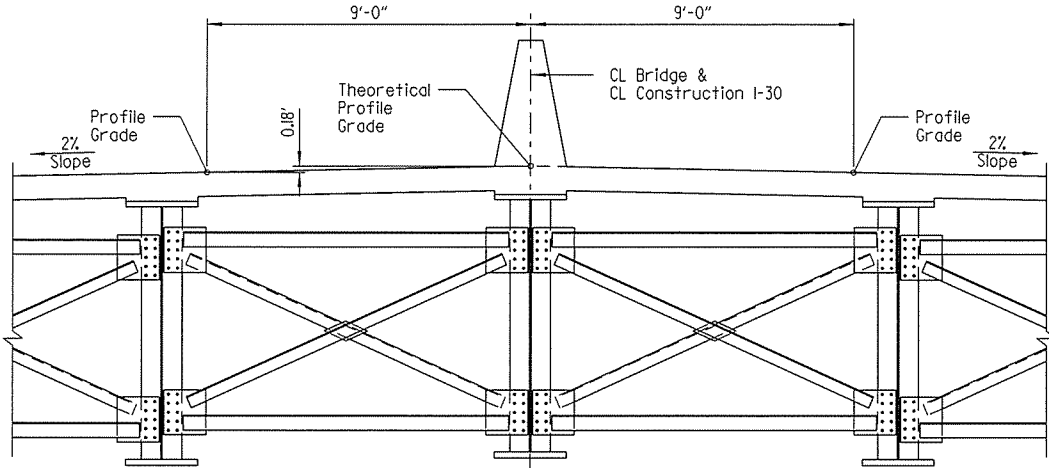
CL Construction

0.5-1.5, N=5
9.0-10.0, N=23
19.0-20.0, N=18
29.0-30.0, N=38
39.0-39.75, N=50/8"
49.0-49.75, N=50/9"
59.0-59.5, N=50/6"
69.0-69.5, N=50/6"
79.0-79.5, N=50/3"
89.0-89.5, N=50/4"
119.0-119.5, N=50/5"
129.0-129.5, N=50/3"
139.0-139.5, N=50/4"
149.5-150.0, N=50/3"

B-9, Sta. 676+91 at 57' Lt. Of

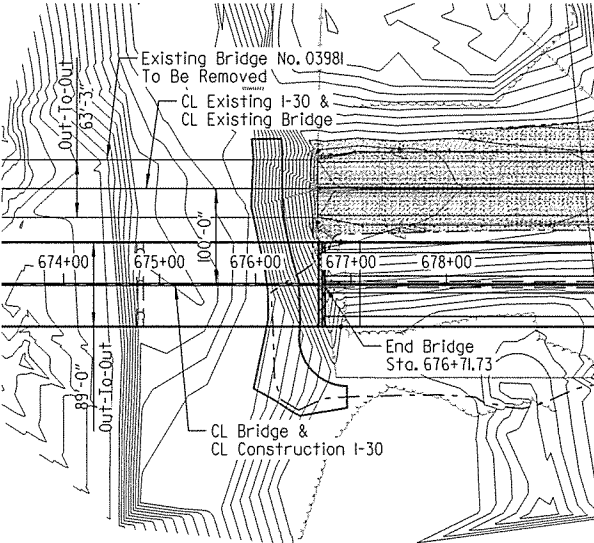
CL Construction

0.5-1.5, N=18
2.5-3.5, N=14
4.5-5.5, N=12
6.5-7.5, N=8
9.0-10.0, N=14
14.0-15.0, N=12
19.0-20.0, N=16
24.0-25.0, N=31
29.0-30.0, N=19
34.0-35.0, N=23
39.0-40.0, N=28
44.0-45.0, N=47
49.0-50.0, N=50/6"
54.0-55.0, N=50/5"
59.0-60.0, N=50/6"
64.0-65.0, N=50/5"
69.0-70.0, N=50/5"
74.0-75.0, N=50/4"
79.0-80.0, N=50/6"
84.5-85.0, N=50/5"



THEORETICAL PROFILE GRADE DETAIL

Scale: N.T.S.



LOCATION SKETCH

Construction Limits For End Bridge
Scale: 1" = 100'

SHEET 3 OF 4
LAYOUT OF BRIDGE
OVER RED RIVER
RED RIVER - EAST & WEST (F)
MILLER & HEMPSTEAD COUNTIES

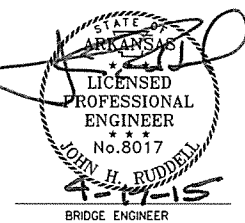
ROUTE 30 SEC. 11 & 12
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

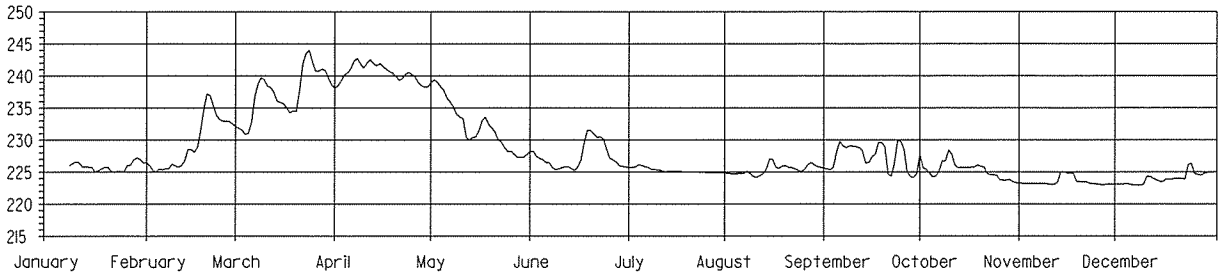
DRAWN BY: CWT DATE: OCT. 2012 FILENAME: BB0303x1.L3.DGN
CHECKED BY: DRG DATE: OCT. 2014 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: OCT. 2012

BRIDGE NO. 07335

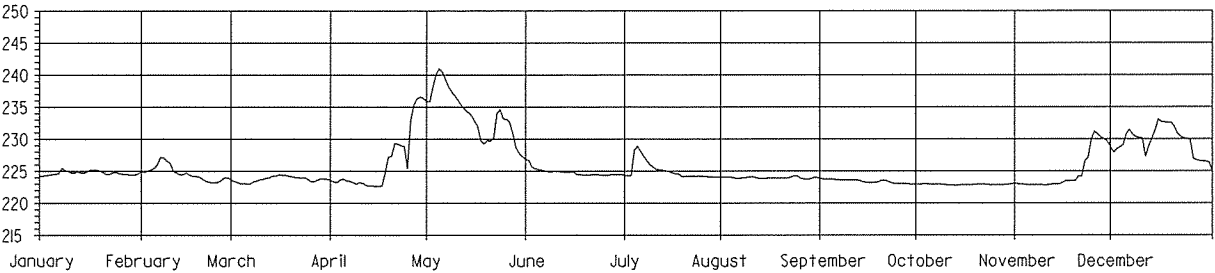
DRAWING NO. 56374



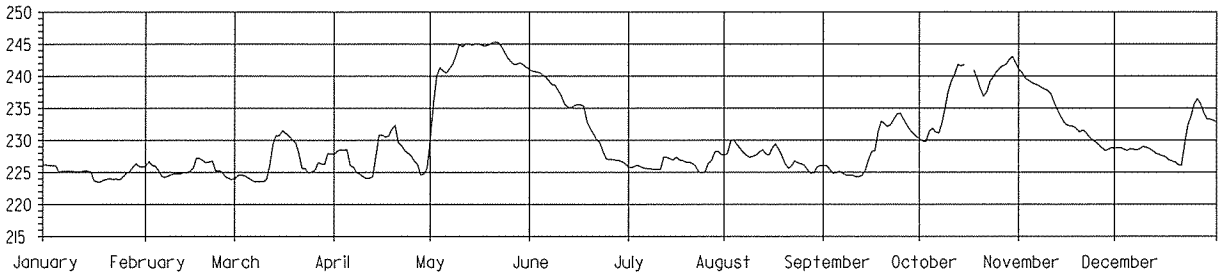
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0303	81	231
				07335	HYDROGRAPH			56375



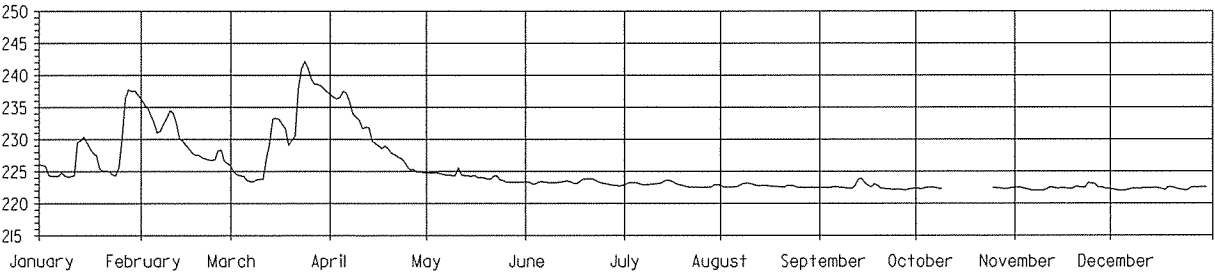
DAILY STAGES FOR JANUARY THRU DECEMBER 2008



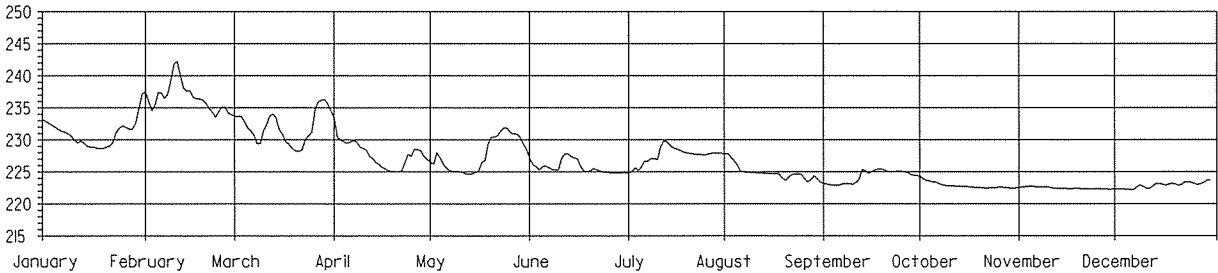
DAILY STAGES FOR JANUARY THRU DECEMBER 2011



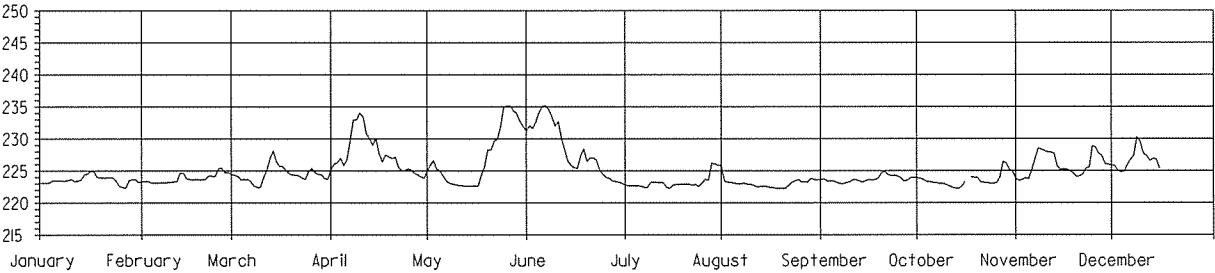
DAILY STAGES FOR JANUARY THRU DECEMBER 2009



DAILY STAGES FOR JANUARY THRU DECEMBER 2012



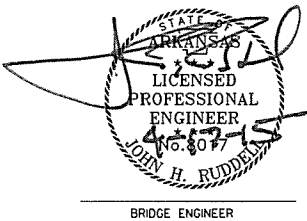
DAILY STAGES FOR JANUARY THRU DECEMBER 2010



DAILY STAGES FOR JANUARY THRU DECEMBER 2013

HYDROGRAPH

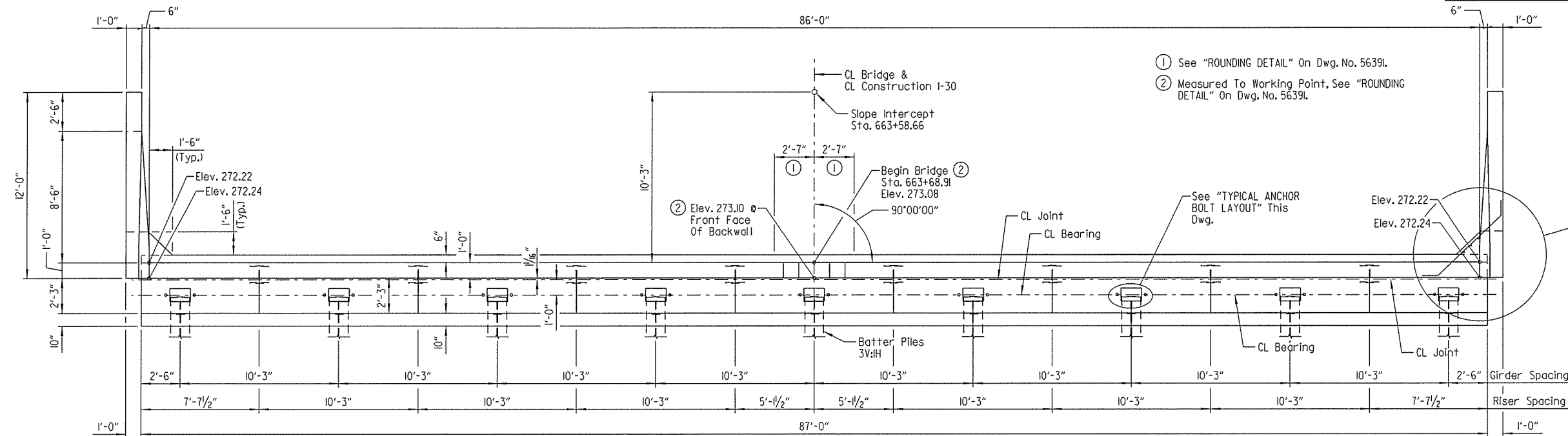
NOTE:
River stage hydrograph values are from the Red River at Fulton Gage.
Elevations shown are in feet, NGVD 29.
The data shown is for informational purposes only and its accuracy is neither guaranteed nor warranted. Broken lines in hydrograph signify missing data.



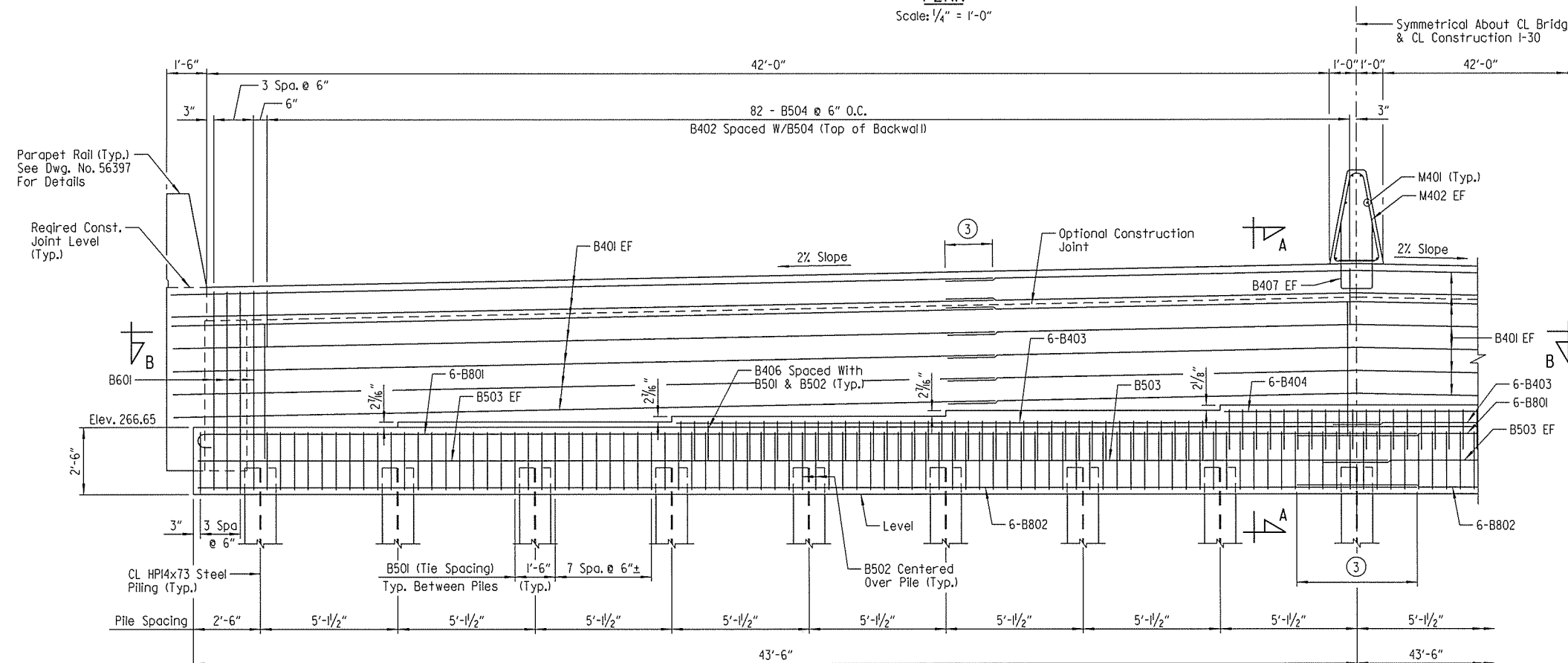
SHEET 4 OF 4
LAYOUT OF BRIDGE
OVER RED RIVER
RED RIVER - EAST & WEST (F)
MILLER & HEMPSTEAD COUNTIES
ROUTE 30 SEC. 11 & 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: HEW DATE: DEC. 2013 FILENAME: BB0303x1.L4.DGN
CHECKED BY: JHR DATE: AUG. 2014 SCALE: NONE
DESIGNED BY: SRY DATE: DEC. 2013
BRIDGE NO. 07335 DRAWING NO. 56375

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
					ARK.			
				JOB NO.		BB0303	82	231

6" 10" ① 07335 END BENT DETAILS 56376



PLAN
Scale: $\frac{1}{4}'' = 1'-0''$



PART ELEVATION

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

- ③ 1'-9" Lap - #4 Bars
2'-4" Lap - #5 Bars
4'-6" Lap - #8 Bars

LEGEND

EF = Each Face

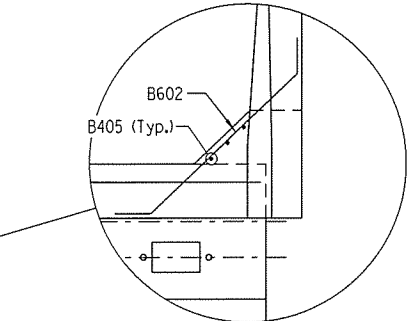
NOTES:

For "SECTION A-A" & "SECTION B-B", see Dwg. No. 56377.

For "BAR LIST" & "BAR BENDING DIAGRAM", see Dwg. No. 56377.

For details of elastomeric bearings, see Dwg. Nos. 56418 & 56419.

For details of wings and rails, see Dwg. Nos. 56377 & 56378.



GENERAL NOTES

All concrete shall be Class "S" and be poured in the dry. All exposed corners to be chamfered $\frac{3}{4}$ " unless otherwise noted.

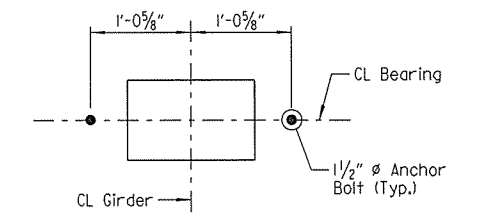
All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Gr. 60.

Structural steel in end bents shall be AASHTO M270, Gr. 50W and shall be paid for as "Structural Steel in Plate Girder Spans (AASHTO M270, Gr. 50W)".

If anchor bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

For additional information, see LAYOUT.

Class I Protective Surface Treatment shall be applied to the top of backwall, top and roadway face of parapet rail and median barrier.



TYPICAL ANCHOR BOLT LAYOUT

Scale: 1" = 1'-0"

SHEET 1 OF 3
DETAILS OF END BENT NO.1

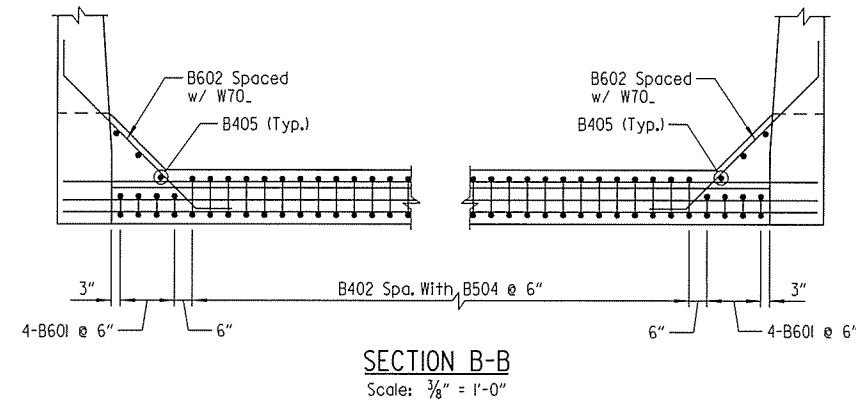
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2014 FILENAME: BBB0303xl-AI.DGN
CHECKED BY: MRA DATE: AUG. 2014 SCALE: AS SHOWN
DESIGNED BY: LIC DATE: JULY 2014

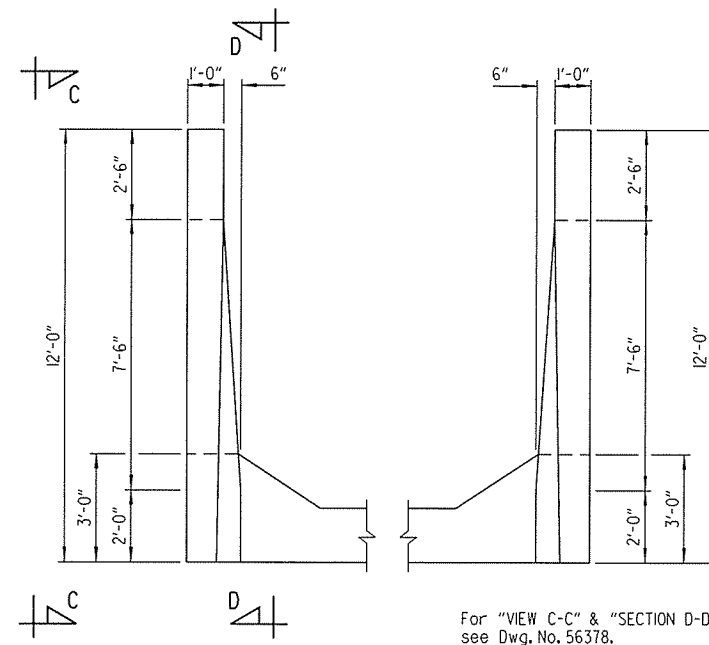
BRIDGE NO. 07335 DRAWING NO. 56376

4/17/2015 10:42:35 AM
Jeskinner
WORKSPACE: AHTD Bridge
\\GLTDCON\IT\Projects\2010\I017705 - Red River Bridge Replacement\Drawings\BEB0303\A1.dgn
REVISED DATE:

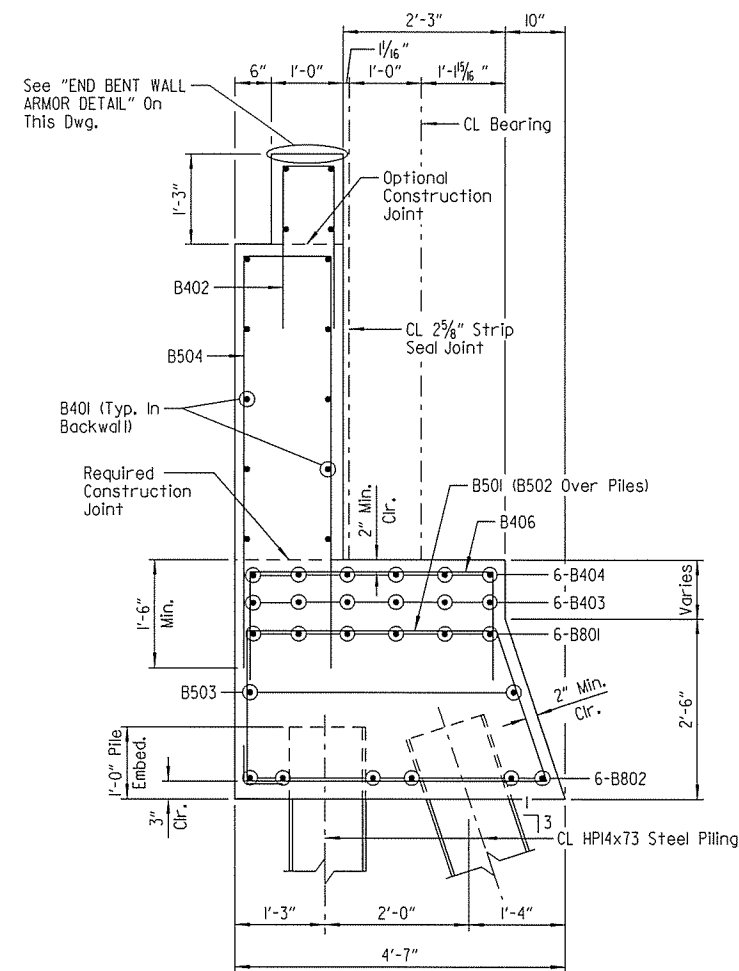
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0303	83	231
				(1)	07335 END BENT DETAILS			56377



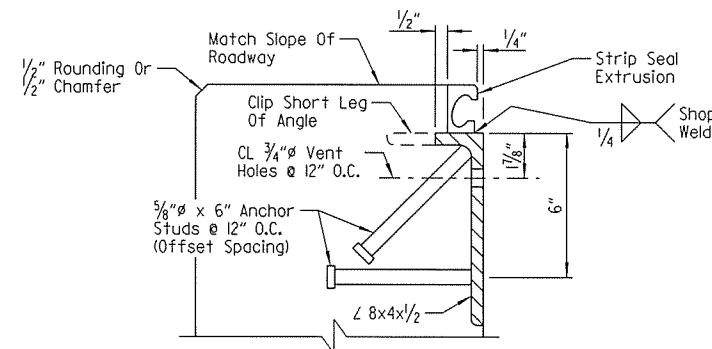
NOTE:
The backwall above the required construction joint shall not be poured until the girders are in place. Backwall may be placed prior to placing the adjacent concrete deck only if the optional backwall construction joint is used. No heavy construction equipment shall be allowed directly behind the backwall until the concrete for the span has been completed. See "DETAILS FOR BLOCKING EXPANSION JOINT DEVICE" on Dwg. No. 56399 for additional information.



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



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

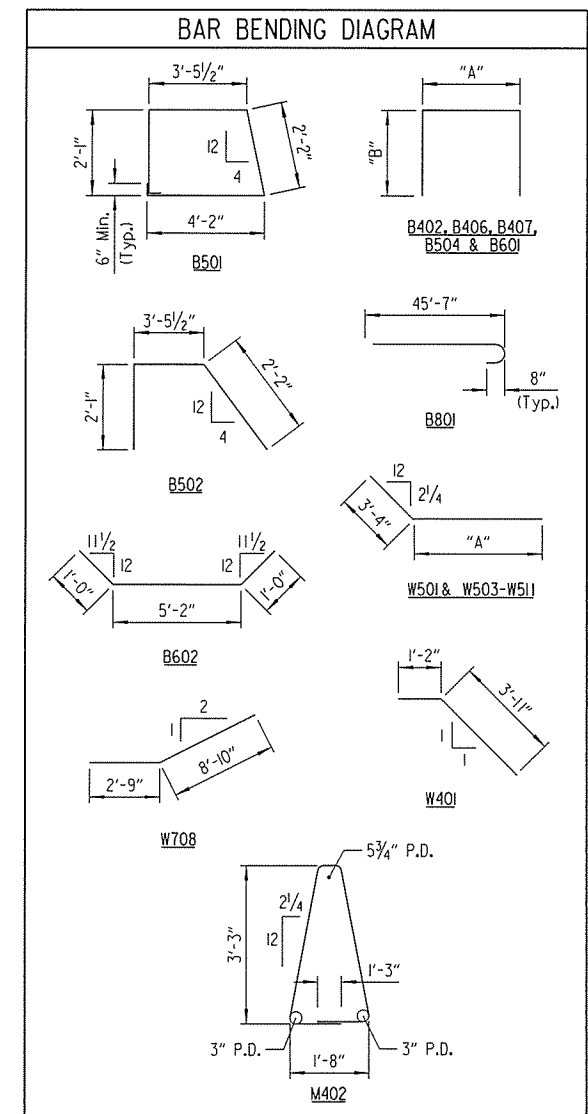


END BENT WALL ARMOR DETAIL
No Scale

NOTES:
Concrete shall be hand packed under joint armor.

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

BAR LIST					
MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
B401	42	30'-9"			Str.
B402	164	4'-8"	8"	2'-1"	2"
B403	12	26'-4"			Str.
B404	6	9'-11"			Str.
B405	6	5'-4"			Str.
B406	100	6'-3"	3'-5"	1'-5"	2"
B407	2	5'-10"	1'-2"	2'-5"	2"
B501	136	12'-4 1/2"			2 1/2"
B502	34	7'-6"			2 1/2"
B503	4	44'-6"			Str.
B504	164	12'-6"	1'-2"	5'-9"	2 1/2"
B601	8	14'-6"	8"	7'-1"	4 1/2"
B602	6	7'-2"			Str.
B801	12	46'-6"			6"
B802	12	45'-7"			Str.
M401	8	8"			Str.
M402	2	9'-7"			5 1/4", 3"
R401	24	11'-8"			Str.
R601	20	6'-8"			Str.
R602	6	5'-0"			Str.
W401	6	5'-1"			3"
W501	8	10'-2"	3'-4"		3 3/4"
W502	8	10'-2"			Str.
W503 To W511	2 Each	9'-11" To 6'-10"	6'-7" To 3'-6"		3 3/4"
W512 To W520	2 Each	9'-11" To 6'-10"			Str.
W701	28	11'-8"			Str.
W702	4	8'-7"			Str.
W703	4	7'-8"			Str.
W704	4	6'-8"			Str.
W705	4	5'-8"			Str.
W706	4	4'-9"			Str.
W707	4	3'-9"			Str.
W708	4	11'-7"			5 1/2"



NOTE:
Dimensions of bars are out-to-out.

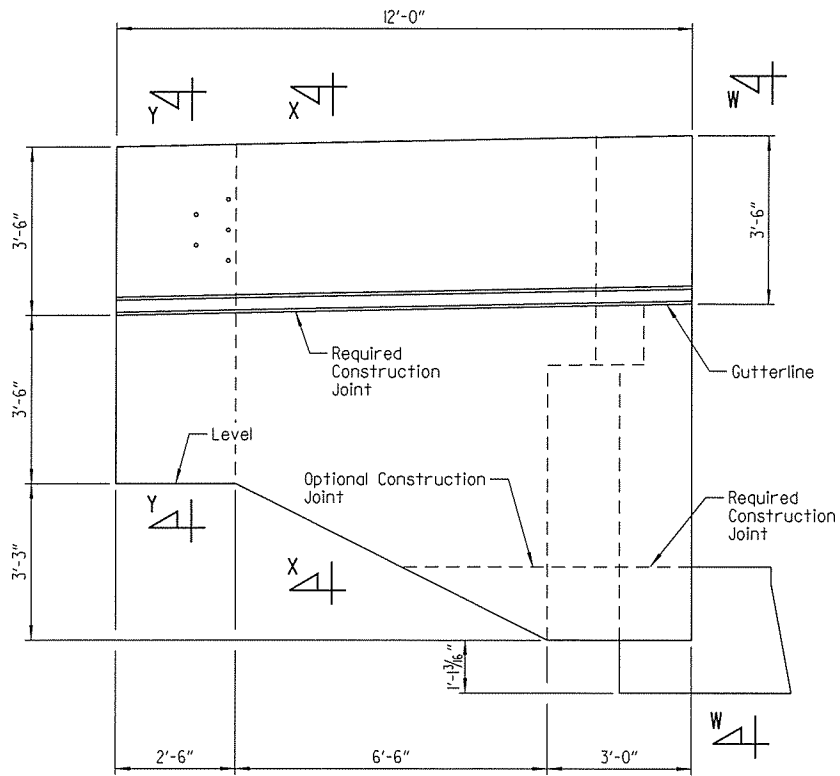
SHEET 2 OF 3
DETAILS OF END BENT NO. 1
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2014 FILENAME: BBB0303X1_A2.DGN
 CHECKED BY: MRA DATE: AUG. 2014 SCALE: AS SHOWN
 DESIGNED BY: WMM DATE: JULY 2014
 BRIDGE NO. 07335 DRAWING NO. 56377

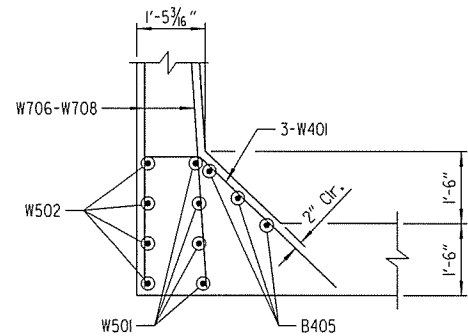
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WORKSPACE: AHTD Bridge
\\GLTDCON\Projects\2011010705 - Red River Bridge Replacement\Drawings\BBB0303x1_A2.dgn
REVISED DATE:

STATE OF ARKANSAS
 LICENSED PROFESSIONAL ENGINEER
 No. 8017
 JOHN H. RUDDELL
 4-14-15
 BRIDGE ENGINEER

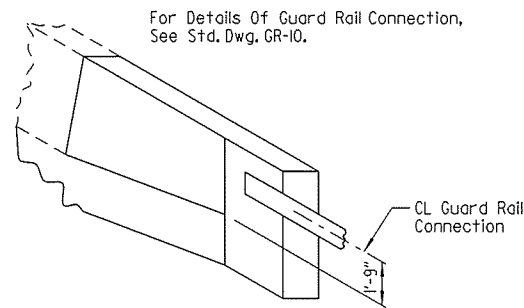
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0303	84	231
				07335		END BENT DETAILS		56378



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

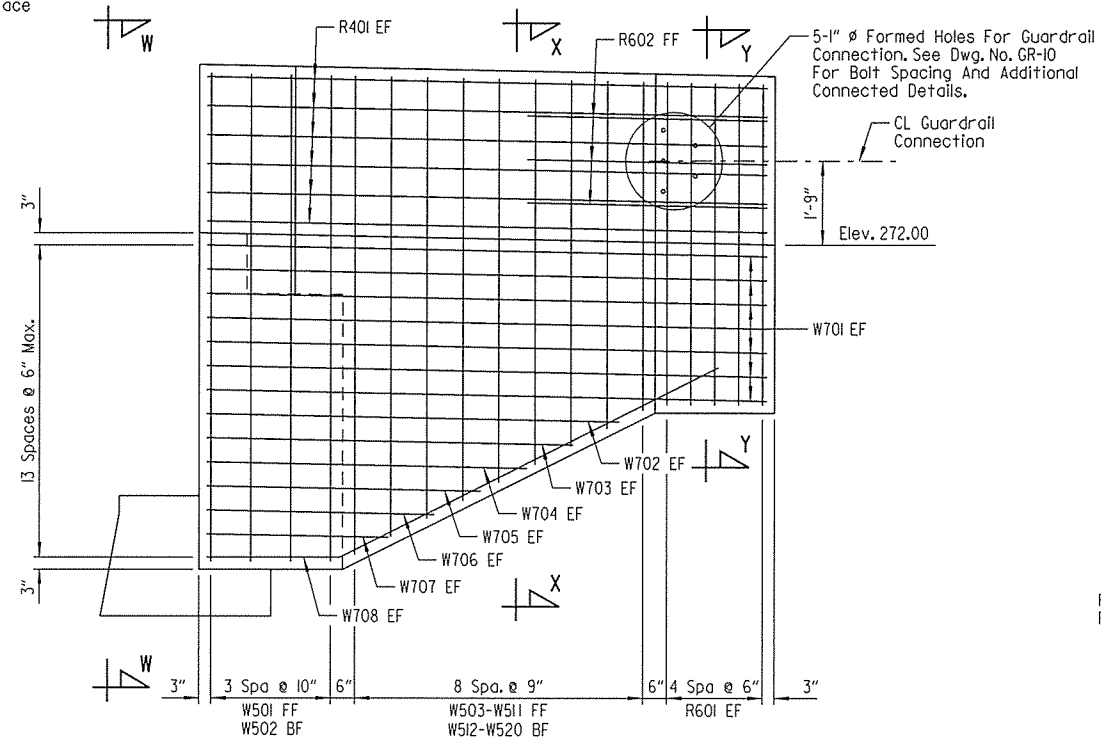


SECTION E-E
Scale: 1/2" = 1'-0"

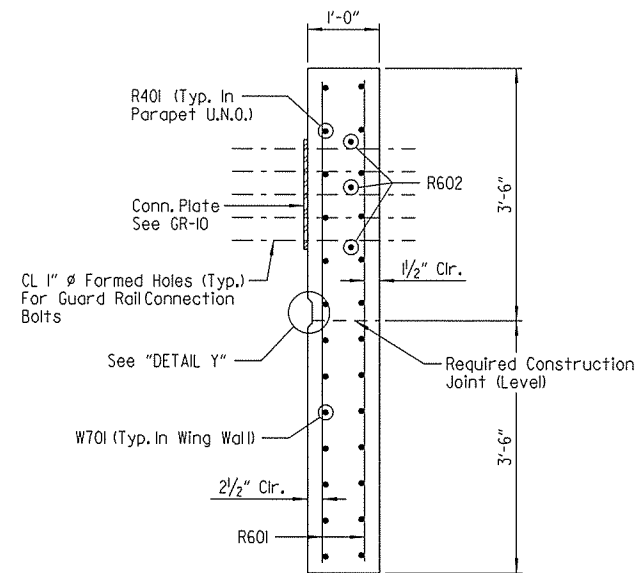


THREE DIMENSIONAL VIEW OF RAIL
Scale: None

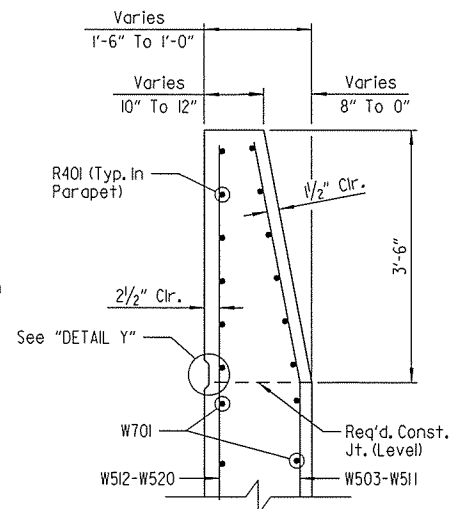
LEGEND
FF = Front Face
BF = Back Face
EF = Each Face



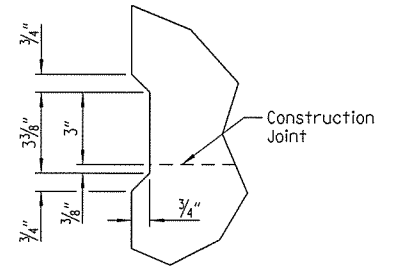
VIEW D-D
Scale: 1/2" = 1'-0"



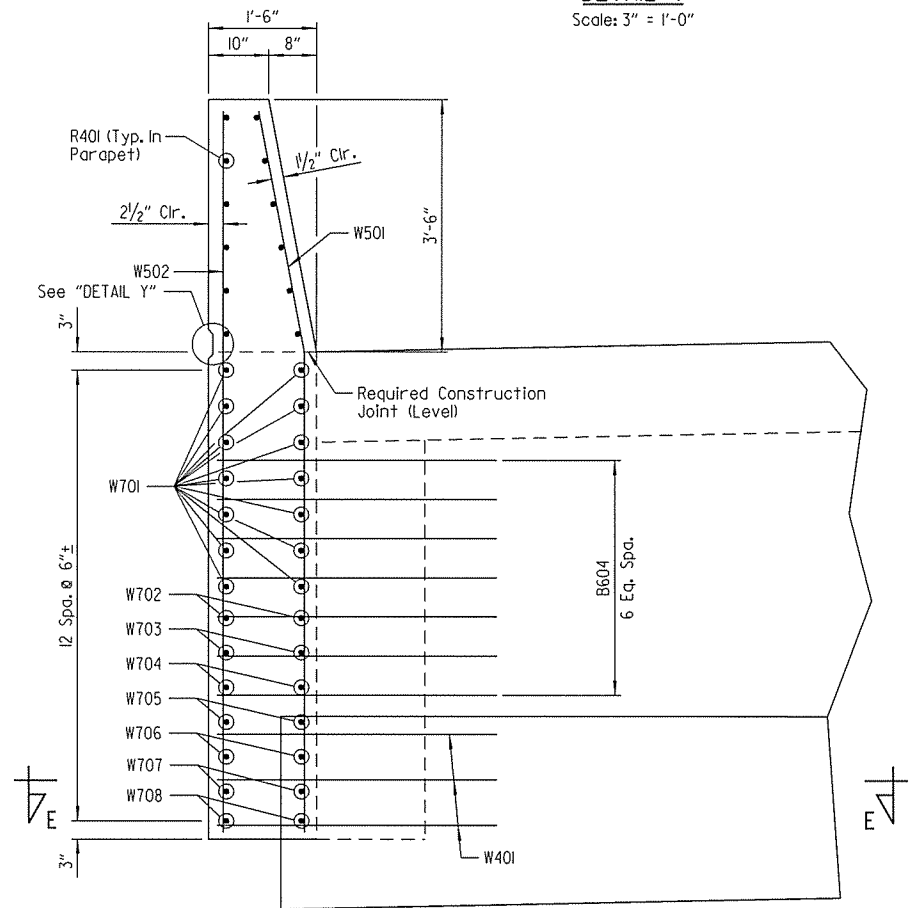
SECTION Y-Y
Scale: 3/4" = 1'-0"



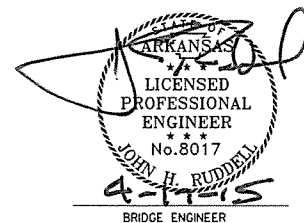
SECTION X-X
Scale: 3/4" = 1'-0"



DETAIL Y
Scale: 3" = 1'-0"



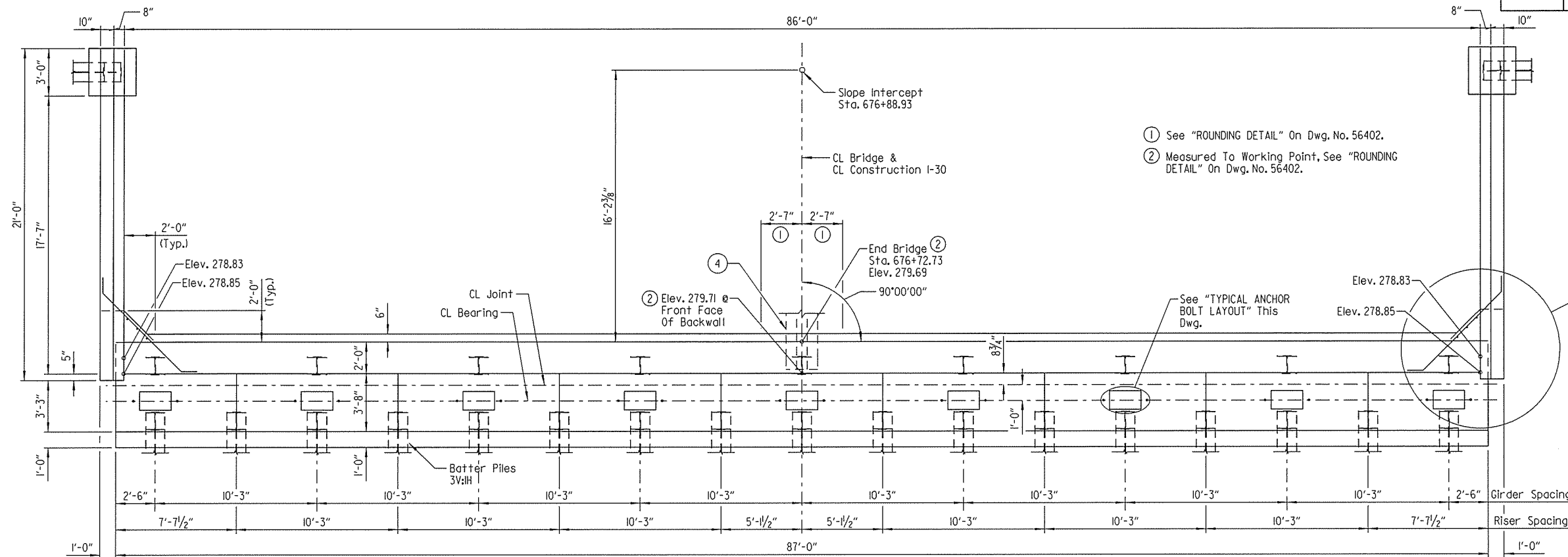
VIEW W-W
Scale: 3/4" = 1'-0"



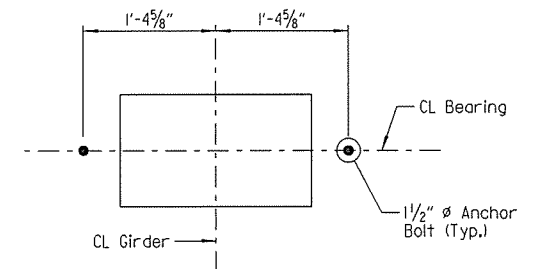
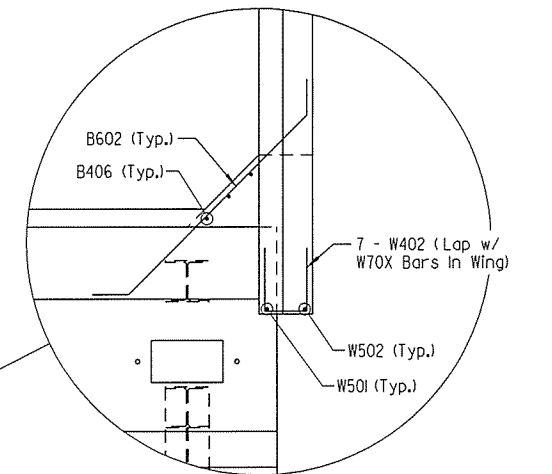
SHEET 3 OF 3
DETAILS OF END BENT NO. 1
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: HEW DATE: JULY 2014 FILENAME: BB0303xLA3.DGN
CHECKED BY: MRA DATE: AUG. 2014 SCALE: AS SHOWN
DESIGNED BY: WMM DATE: JULY 2014
BRIDGE NO. 07335 DRAWING NO. 56378

4/17/2015 10:42:38 AM
WORKSPACE: AHTD Bridge
\\CLITDC01\IT\Projects\2011\01705 - Red River Bridge Replacement\Drawings\BBB0303\A4.dgn
REVISED DATE:

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.	BB0303		85	231
				07335	END BENT DETAILS		56379	



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



TYPICAL ANCHOR BOLT LAYOUT
Scale: 1" = 1'-0"

GENERAL NOTES

All concrete shall be Class "S" and be poured in the dry. All exposed corners to be chamfered 3/4" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Gr. 60.

Structural steel in end bents shall be AASHTO M270, Gr. 50W and shall be paid for as "Structural Steel in Plate Girder Spans (AASHTO M270, Gr. 50W)".

If anchor bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

For additional information, see LAYOUT.

Class I Protective Surface Treatment shall be applied to the top of backwall and top and roadway face of parapet rail.

NOTES:

For "SECTION A-A" & "VIEW B-B", see Dwg. No. 56380.

For "BAR LIST" & "BAR BENDING DIAGRAM", see Dwg. No. 56380.

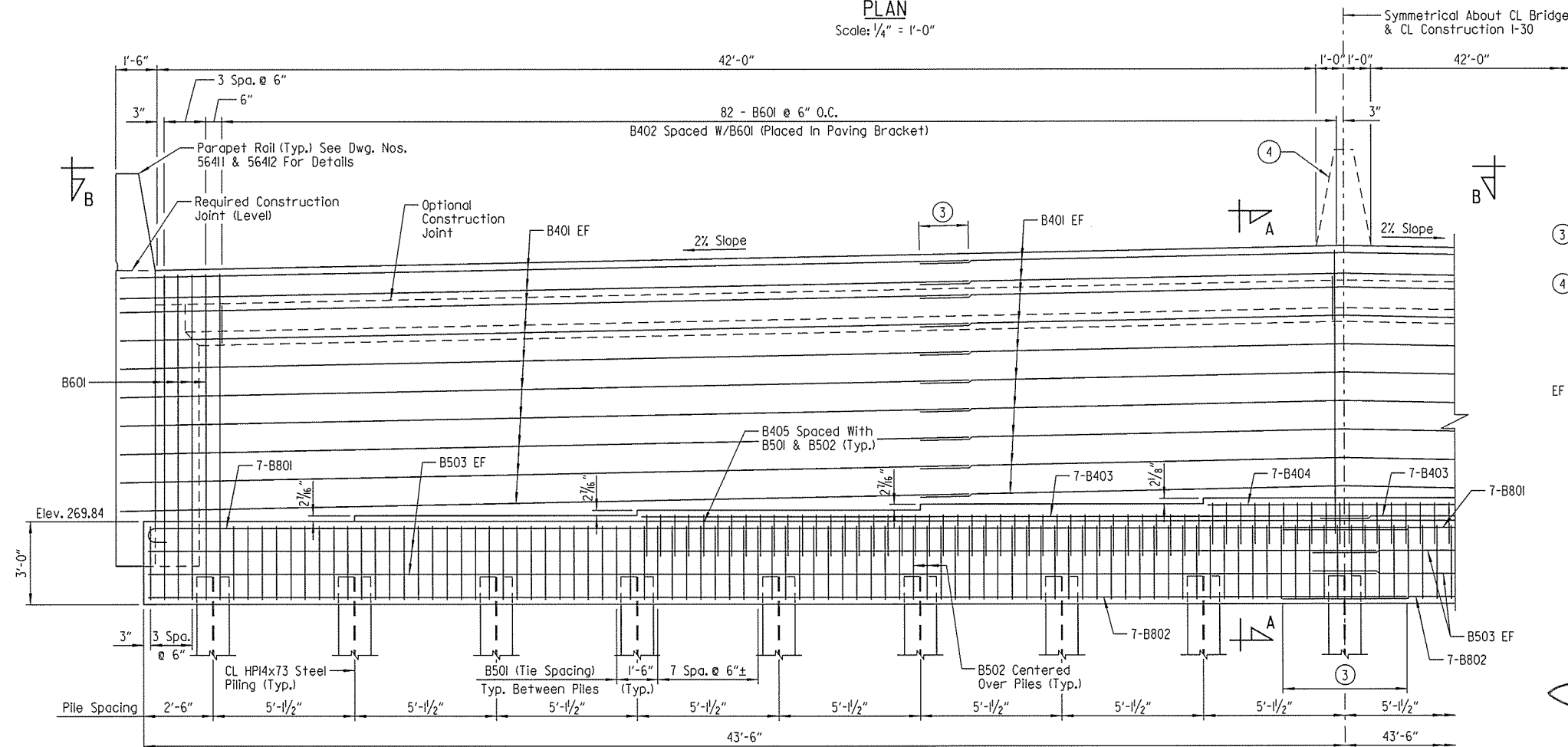
For details of elastomeric bearings, see Dwg. Nos. 56418 & 56419.

For details of wings and rails, see Dwg. Nos. 56380 & 56381.

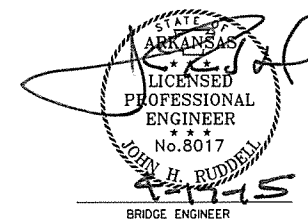
- ③ 1'-9" Lap - #4 Bars
2'-4" Lap - #5 Bars
4'-6" Lap - #8 Bars
④ Median Barrier on Approach
Gutter Type Special 2

LEGEND

EF = Each Face

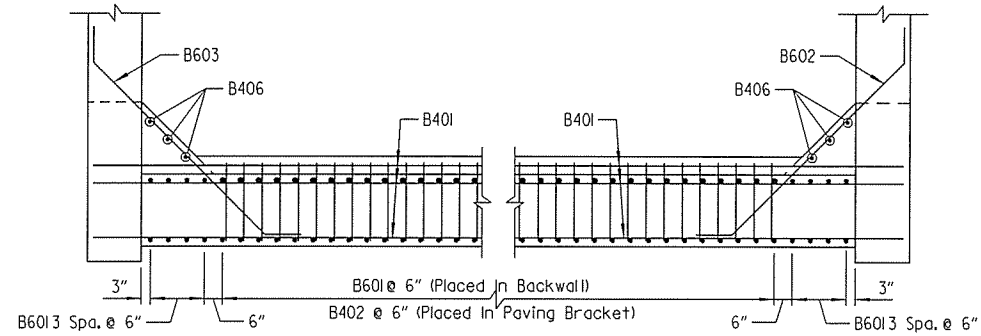


PART ELEVATION
Looking Forward
Scale: 3/8" = 1'-0"

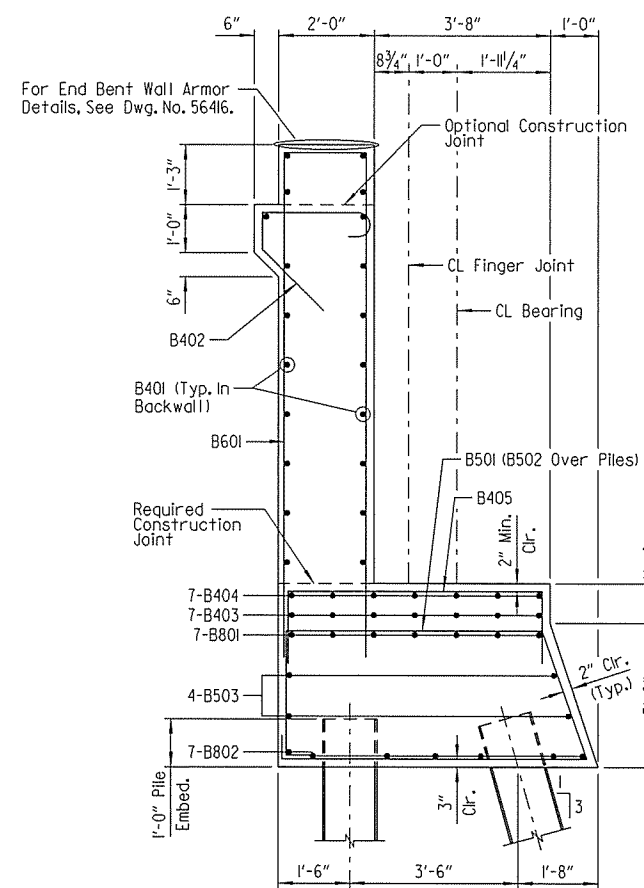


SHEET 1 OF 3
DETAILS OF END BENT NO. 9
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: HEW DATE: JULY 2014 FILENAME: BBB0303\A4.DGN
CHECKED BY: MRA DATE: AUG. 2014 SCALE: AS SHOWN
DESIGNED BY: LIC DATE: JULY 2014
BRIDGE NO. 07335 DRAWING NO. 56379

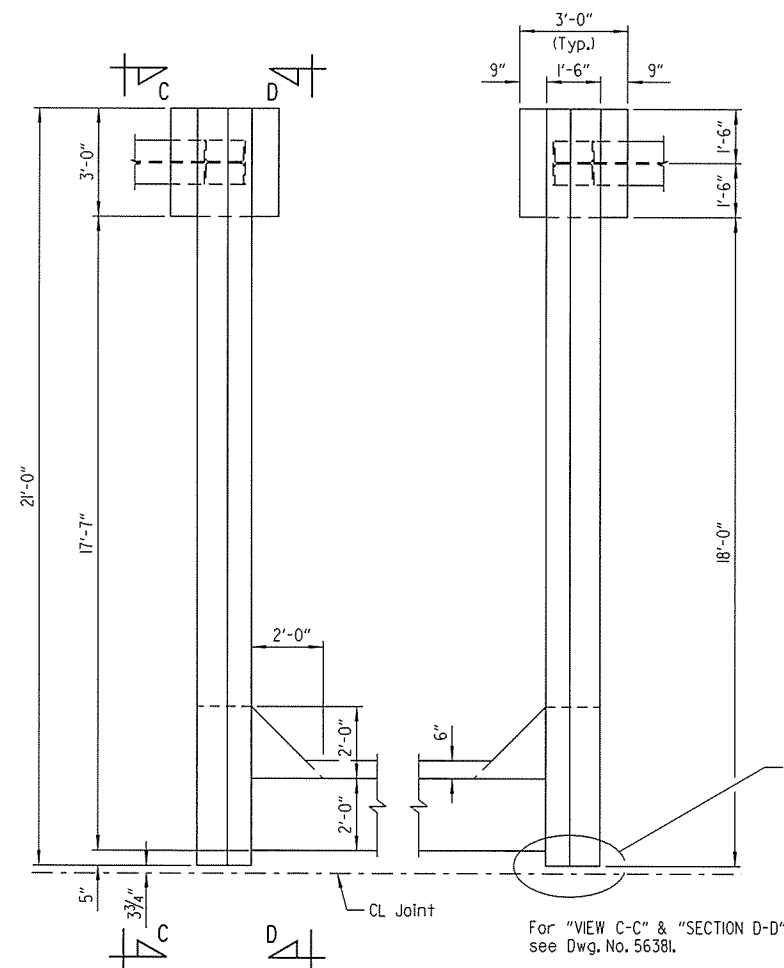
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				6	ARK.			
				JOB NO.		BB0303	86	231
				1	07335 END BENT DETAILS		56380	



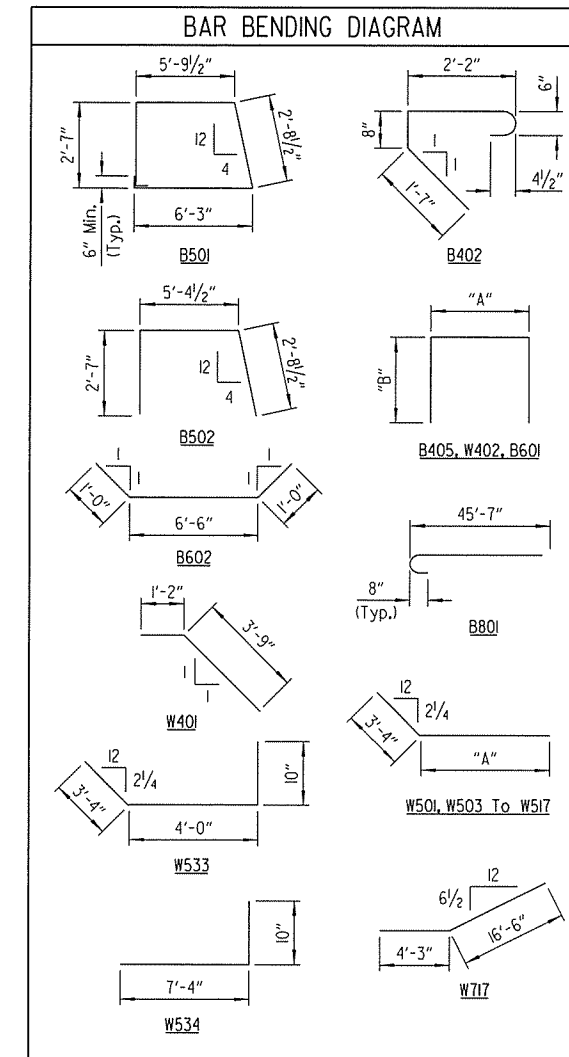
NOTE:
The backwall above the required construction joint shall not be poured until the girders are in place. Backwall may be placed prior to placing the adjacent concrete deck only if the optional backwall construction joint is used. No heavy construction equipment shall be allowed directly behind the backwall until the concrete for the span has been completed.



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



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



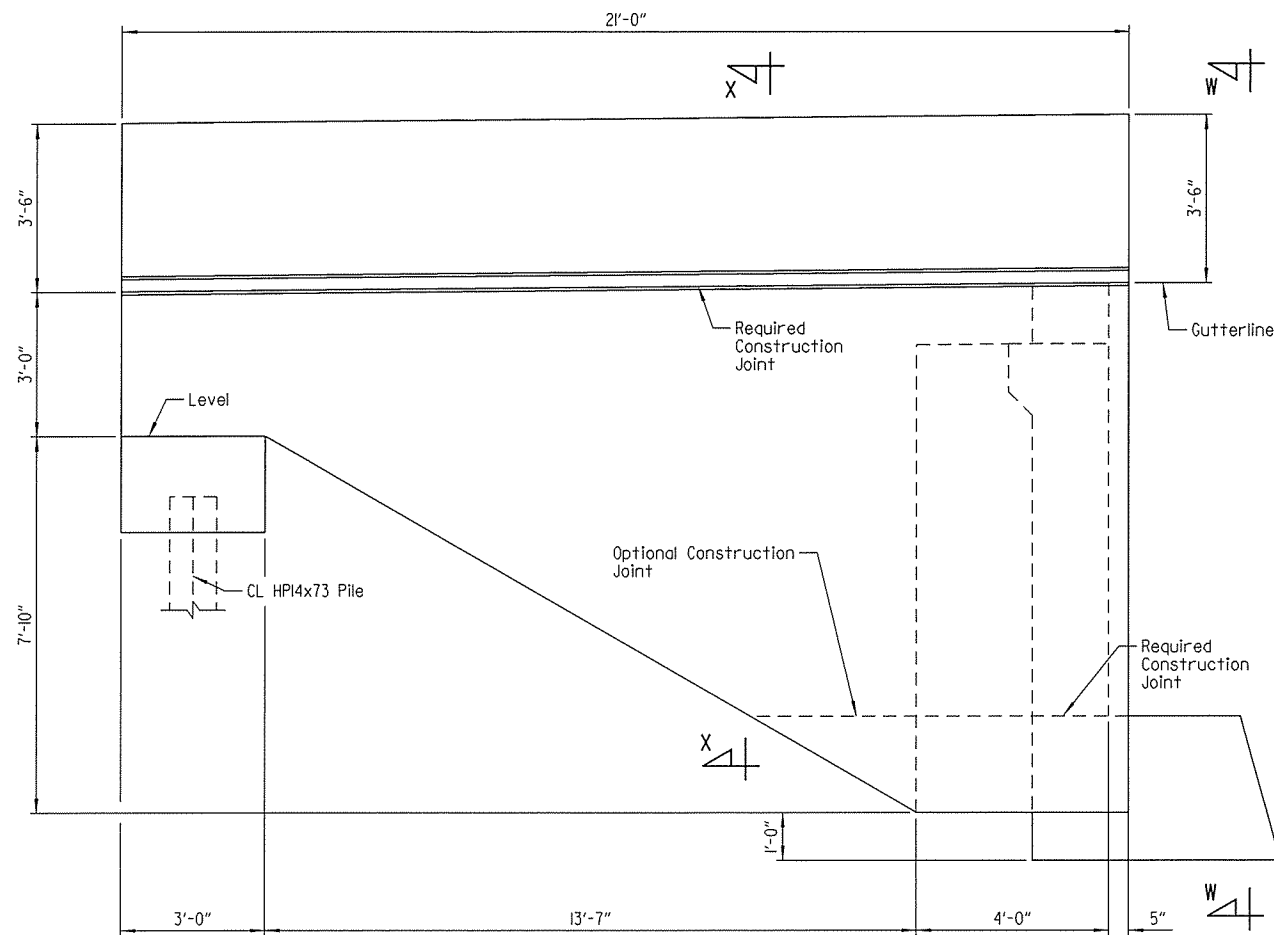
NOTE:
Dimensions of bars are out-to-out.

BAR LIST					
MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
B401	60	30'-9"			Str.
B402	164	4'-10"			3"
B403	14	26'-8"			Str.
B404	7	9'-11"			Str.
B405	100	8'-2"	5'-4"	1'-6"	2"
B406	6	9'-5"			Str.
B501	136	17'-4"			2½"
B502	34	10'-5½"			2½"
B503	8	44'-6"			Str.
B601	172	22'-4"	1'-8"	10'-6"	4½"
B602	12	8'-6"			4½"
B801	14	46'-6"			6"
B802	14	45'-7"			Str.
F601	24	2'-8"			Str.
R401	24	20'-8"			Str.
W401	8	4'-11"			2"
W402	14	5'-0"	1'-2"	2'-0"	2"
W501	8	14'-2"	10'-10"		3¾"
W502	8	14'-2"			Str.
W503	2	14'-2"	10'-10"		3¾"
W504 To W517	2 Each	13'-0" To 6'-3"	10'-7" To 2'-11"		3¾"
W518	2	14'-2"			Str.
W519 To W532	2 Each	13'-11" To 6'-3"			Str.
W533	12	8'-1"			3¾"
W534	12	8'-1"			3¾"
W701	24	20'-8"			Str.
W702 To W716	4 Each	17'-4" To 5'-3"			Str.
W717	4	20'-9"			5¼"

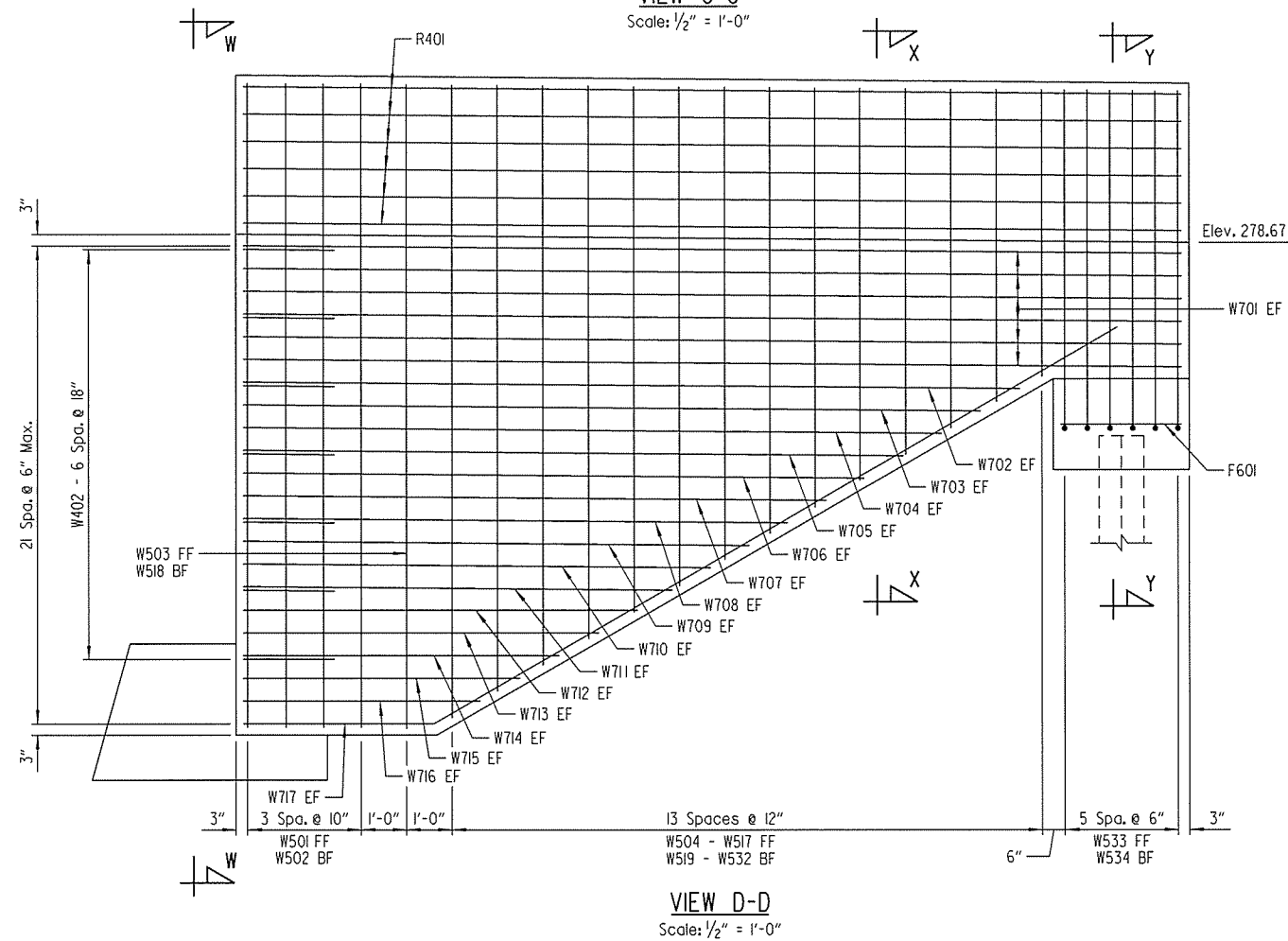
SHEET 2 OF 3
DETAILS OF END BENT NO. 9
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: HEW DATE: JULY 2014 FILENAME: BBB0303xI.A5.DGN
CHECKED BY: MRA DATE: AUG. 2014 SCALE: AS SHOWN
DESIGNED BY: LIC DATE: JULY 2014
BRIDGE NO. 07335 DRAWING NO. 56380

4/17/2015 10:42:38 AM
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 WORKSPACE: AHTD Bridge
 \\GLTDC\IT\Projects\2011\07705 - Red River Bridge Replacement\Drawings\6680303\A5.dgn
 REVISD DATE:

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REVISED DATE:



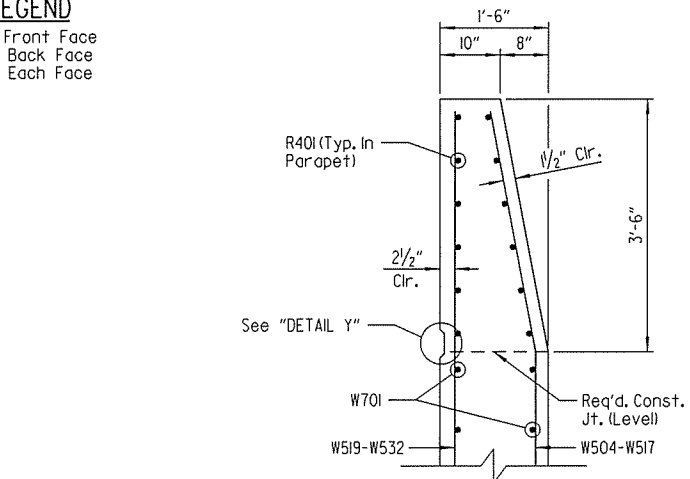
VIEW C-C
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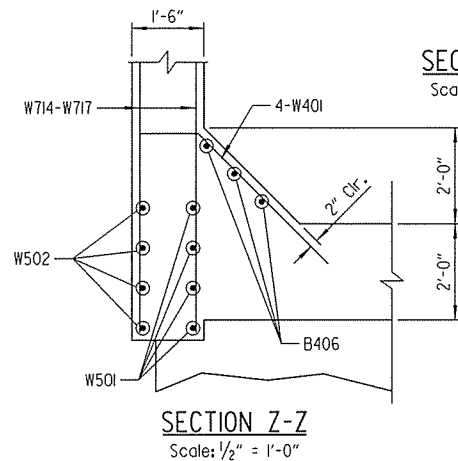
VIEW D-D
Scale: 1/2" = 1'-0"

LEGEND

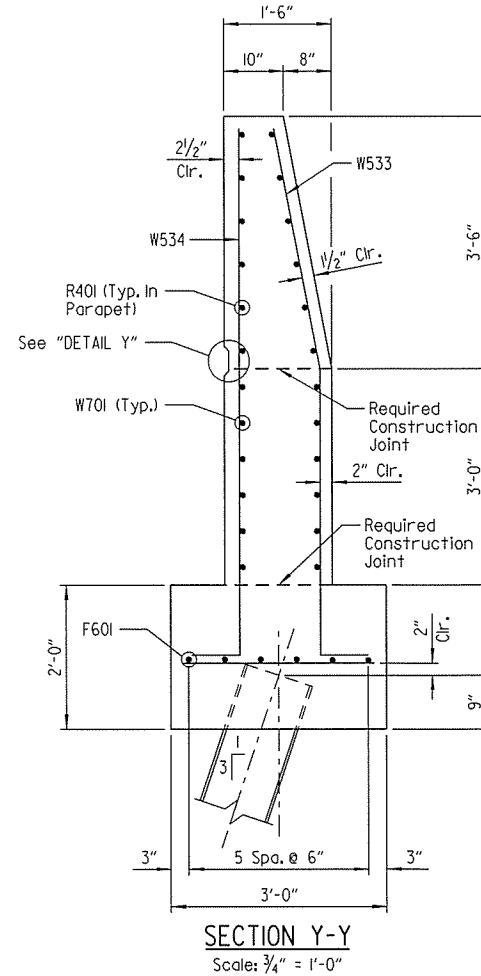
FF = Front Face
BF = Back Face
EF = Each Face



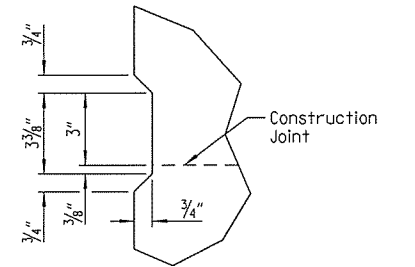
SECTION X-X
Scale: 3/4" = 1'-0"



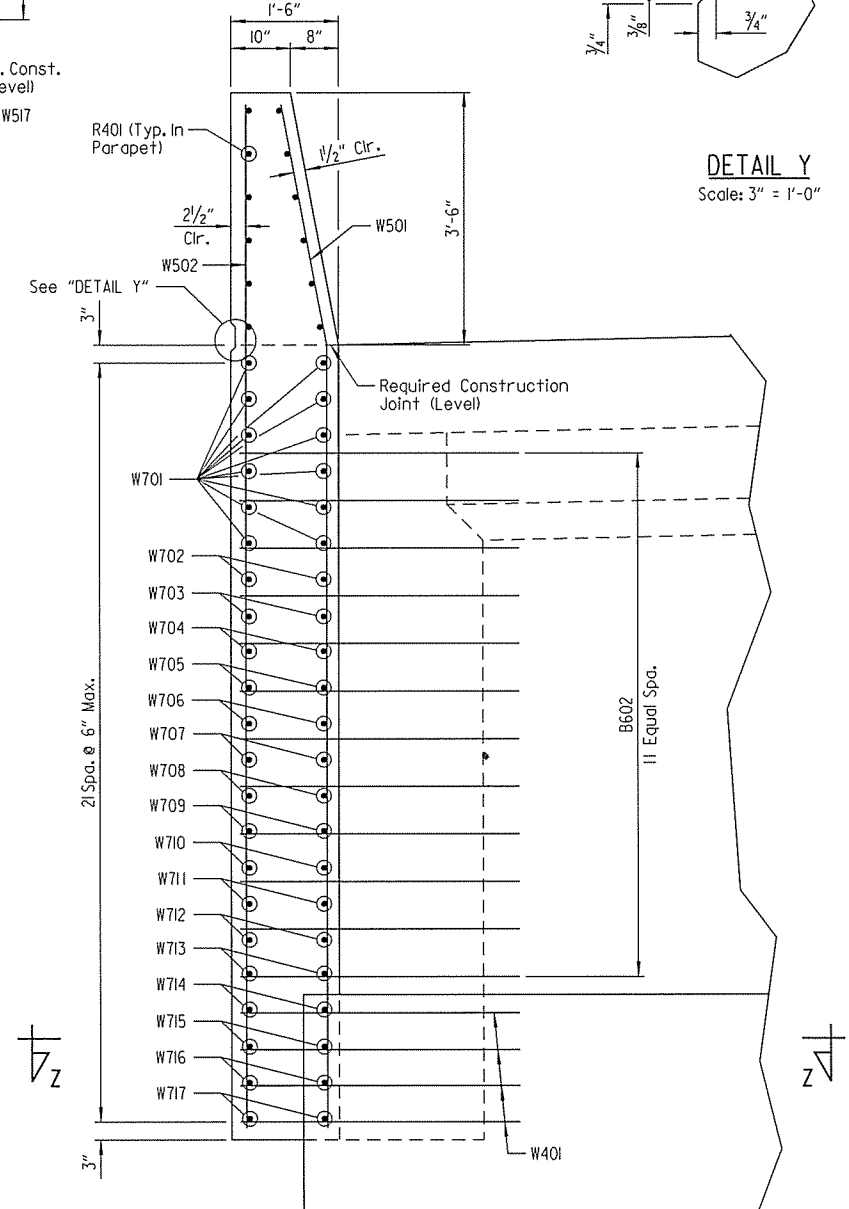
SECTION Z-Z
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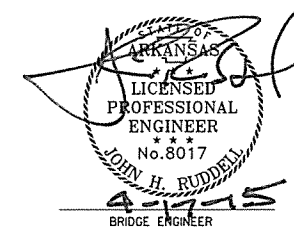
SECTION Y-Y
Scale: 3/4" = 1'-0"



DETAIL Y
Scale: 3" = 1'-0"



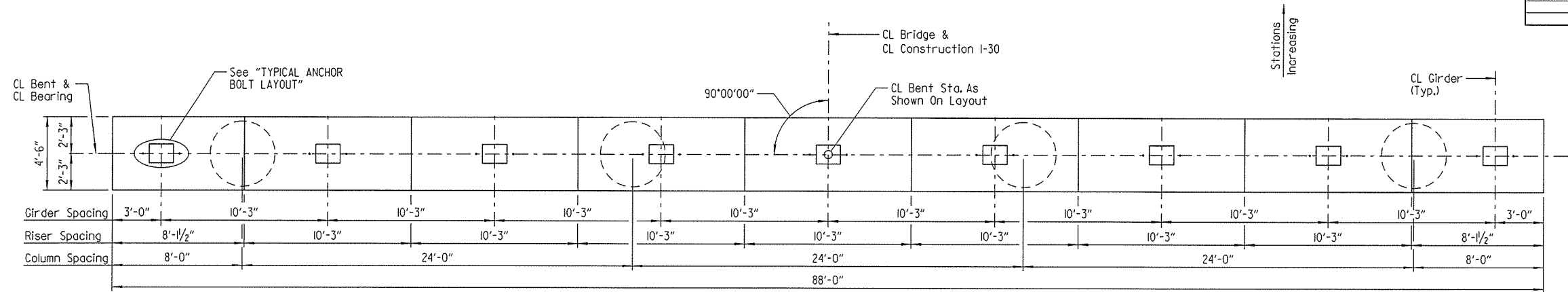
VIEW W-W
Scale: 3/4" = 1'-0"



SHEET 3 OF 3
DETAILS OF END BENT NO. 9
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: HEW DATE: JULY 2014 FILENAME: BBB0303x1_A6.DGN
CHECKED BY: MRA DATE: AUG. 2014 SCALE: AS SHOWN
DESIGNED BY: JLH DATE: JULY 2014
BRIDGE NO. 07335 DRAWING NO. 56381

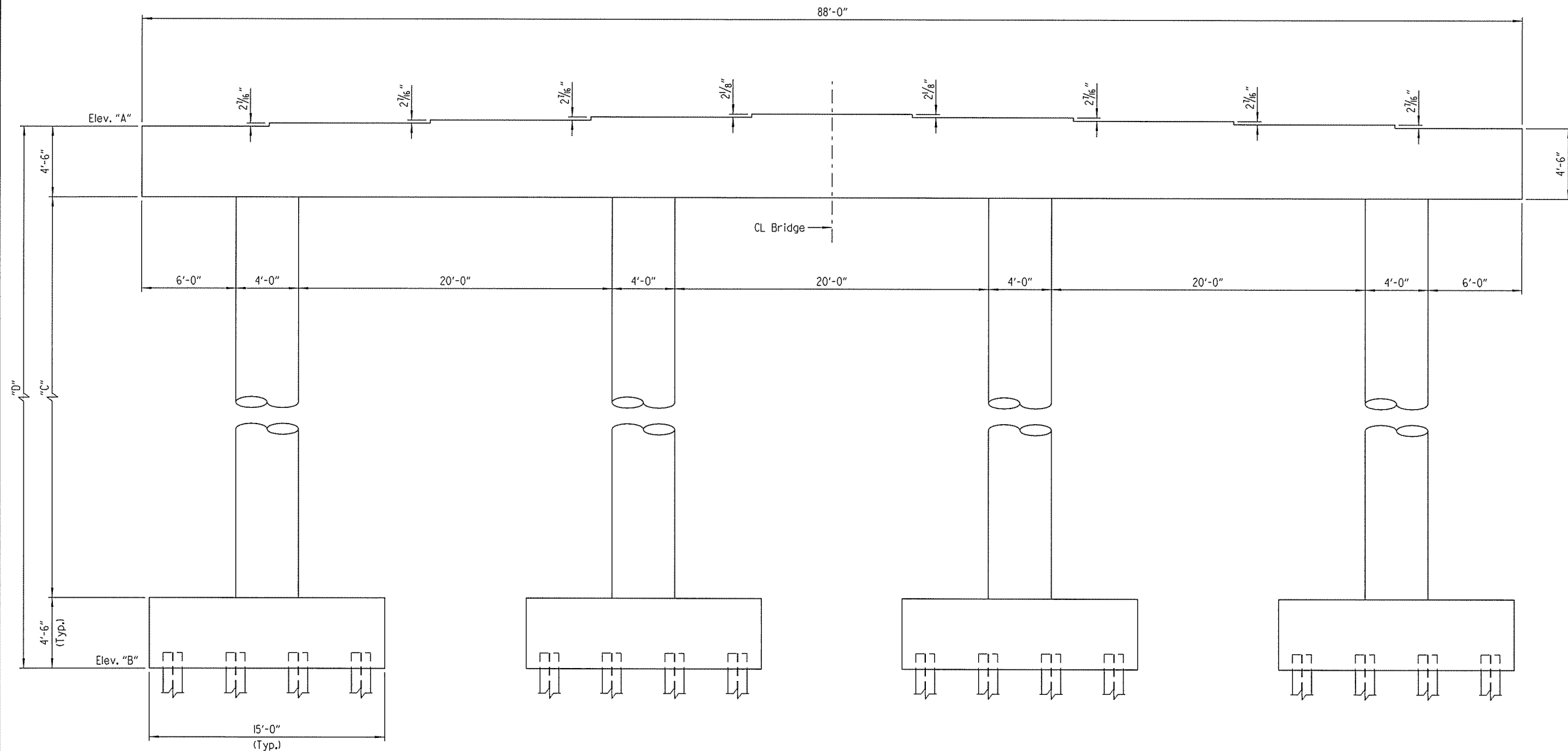
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WORKSPACE: AHTD Bridge
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REVISED DATE:

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.		BB0303	88	231
				07335	INT. BENT DETAILS			56382



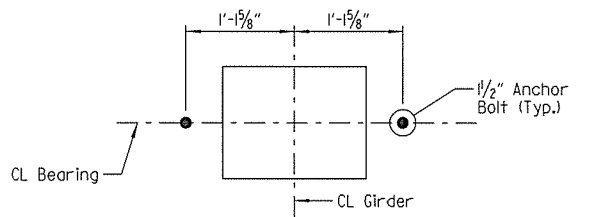
PLAN - BENT NOS. 2 - 4

(Looking Forward)
Scale: 1/4" = 1'-0"



ELEVATION - BENT NOS. 2 - 4

(Looking Forward)
Scale: 1/4" = 1'-0"



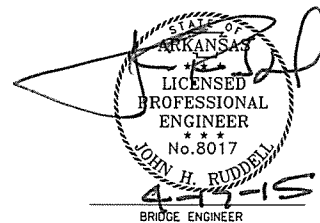
TYPICAL ANCHOR BOLT LAYOUT

(Bent Nos. 2-4)
Scale: 1" = 1'-0"

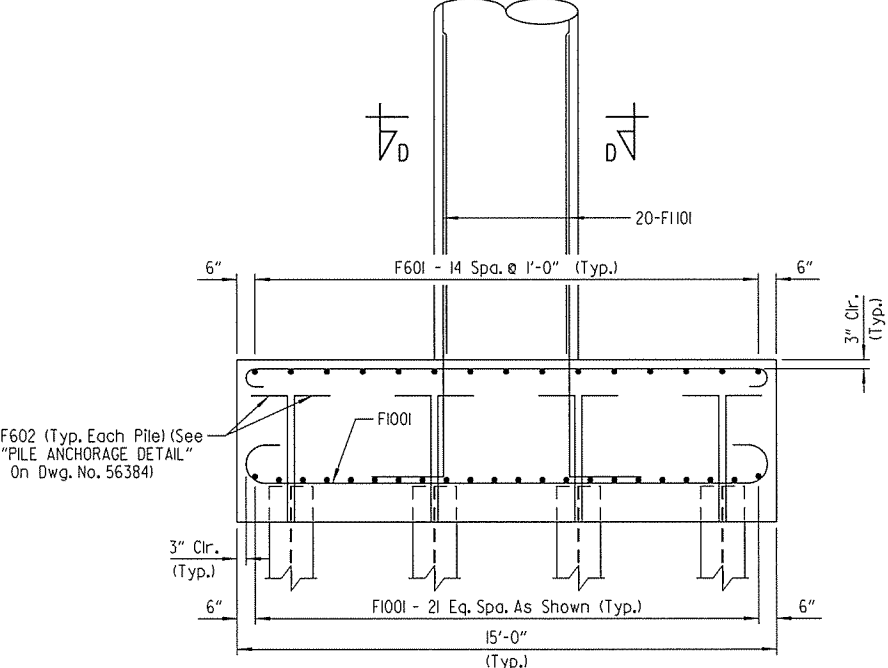
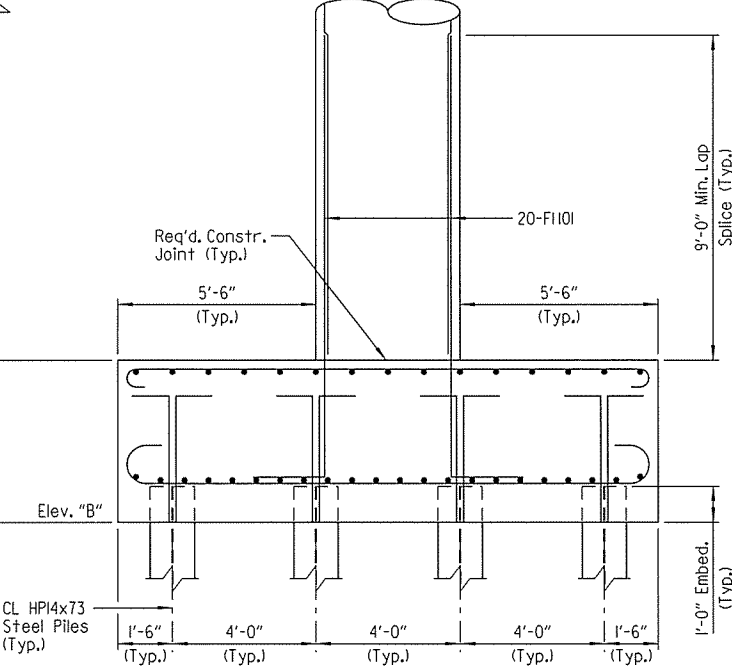
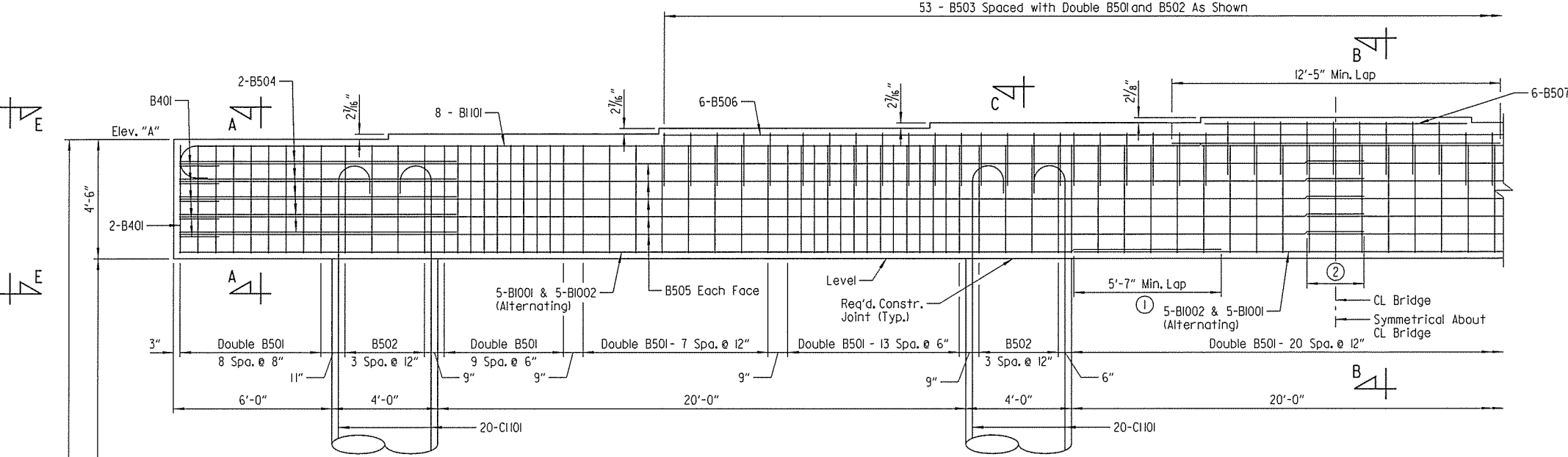
NOTE:
For details of elastomeric bearings,
see Dwg. Nos. 56418 & 56419.

NOTES:
For reinforcing details, see
Dwg. No. 56383.

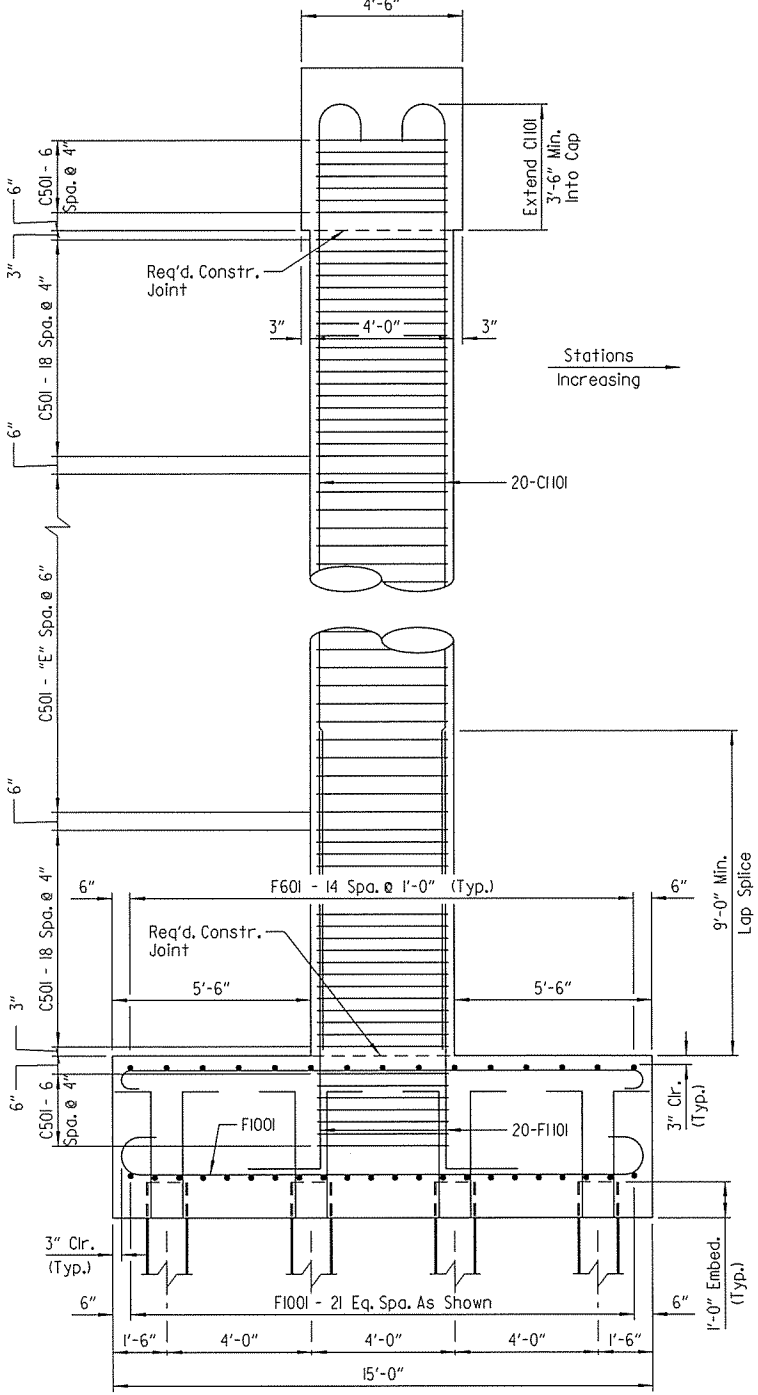
For variables "A", "B", "C"
and "D", see "TABLE OF
VARIABLES" on Dwg. No. 56383



SHEET 1 OF 3
DETAILS OF INTERMEDIATE
BENT NOS. 2-4
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: HEW DATE: JUNE 2014 FILENAME: BBB0303\1.BLDGN
CHECKED BY: AJK DATE: JULY 2014 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: MAY 2014
BRIDGE NO. 07335 DRAWING NO. 56382



PART ELEVATION - BENT NOS. 2 - 4
(Looking Forward)
Scale: 3/8" = 1'-0"

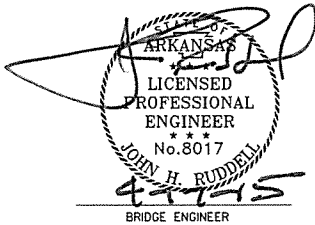


SECTION C-C
Scale: 3/8" = 1'-0"

TABLE OF VARIABLES					
BENT	"A"	"B"	"C"	"D"	"E"
2	268.66	238.66	21'-0"	30'-0"	15
3	270.49	237.49	24'-0"	33'-0"	21
4	272.02	235.02	28'-0"	37'-0"	29

- ① Lap splice bars immediately adjacent to the face of the left-center column and the right-center column and extend into center bay. Splices shall alternate on either side of center bay such that no two adjacent bars are spliced at the same location.
- ② 2'-2" Min. Lap (Typ.)

NOTES:
For "SECTION A-A", "SECTION B-B", "SECTION D-D" & "VIEW E-E", see Dwg. No. 56384.
For "BAR LIST-PER BENT", "BAR BENDING DIAGRAM" & "GENERAL NOTES", see Dwg. No. 56384.

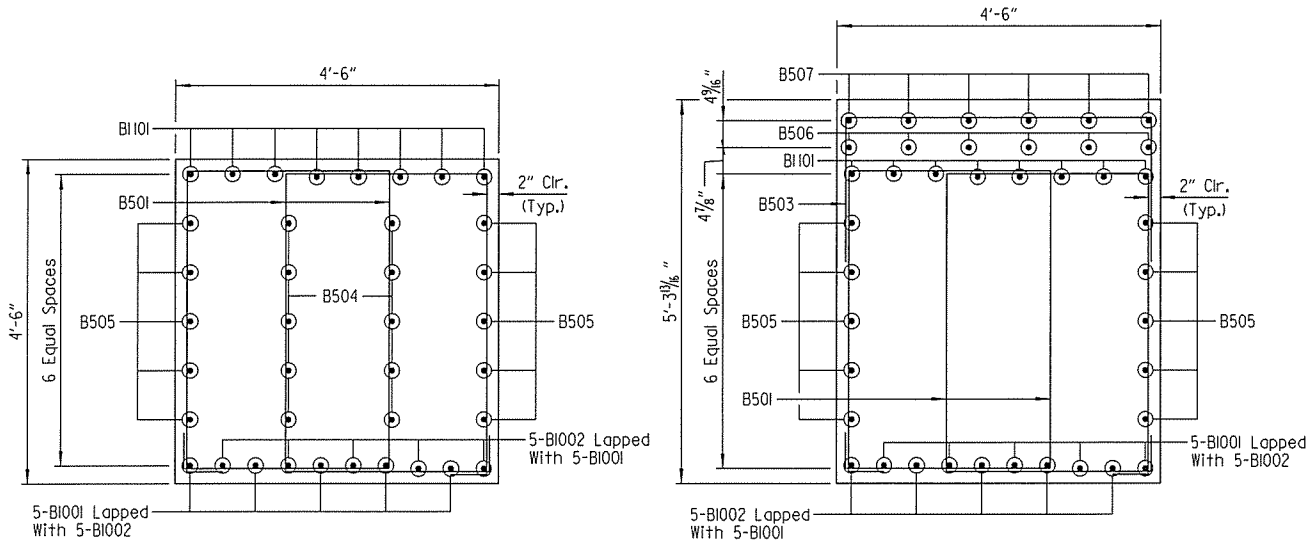


SHEET 2 OF 3
DETAILS OF INTERMEDIATE
BENT NOS. 2-4
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: HEW DATE: MAY 2014 FILENAME: BB0303xl.B2.DGN
CHECKED BY: AJK DATE: JULY 2014 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: MAY 2014
BRIDGE NO. 07335 DRAWING NO. 56383

4/17/2015 10:42:41 AM
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\\CLITDCON\IT\Projects\2014\1017705 - Red River Bridge Replacement\Drawings\BBB0303xl.B3.dgn
REVISED DATE:

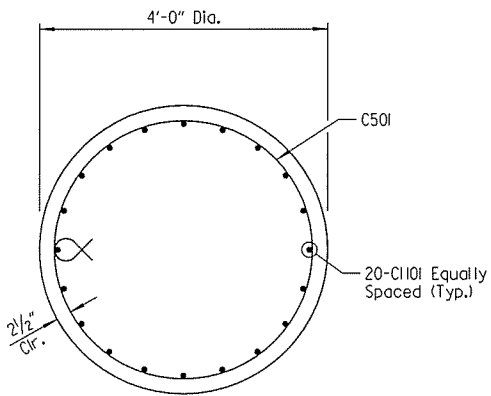
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	BB0303		90	231

07335 INT. BENT DETAILS 56384

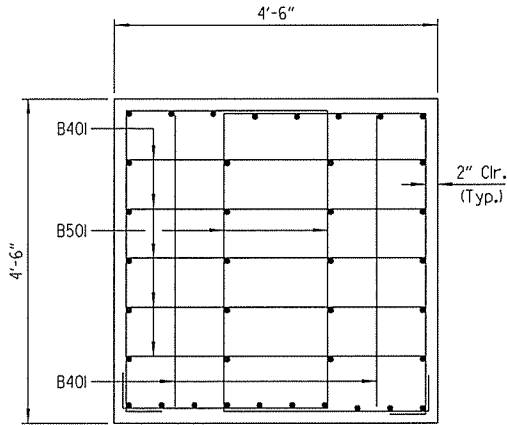


SECTION A-A
Scale: 3/4" = 1'-0"

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



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



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

GENERAL NOTES

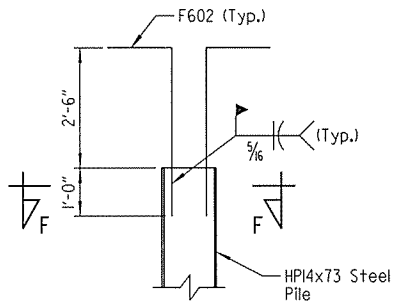
All concrete shall be Class "S" with a minimum 28-day compressive strength $f'_c = 3500$ psi. Concrete shall be poured in the dry and all exposed corners shall be chamfered 3/4" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60 (Yield Strength = 60,000 psi) except as noted otherwise.

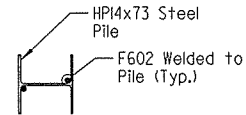
Reinforcing bars in top of cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see Layout.

- ① Bars F602 shall be weldable grade meeting the requirements of ASTM A706 Grade 60 and will be paid for as "REINFORCING STEEL - BRIDGE (GRADE 60)".



PILE ANCHORAGE DETAIL
No Scale

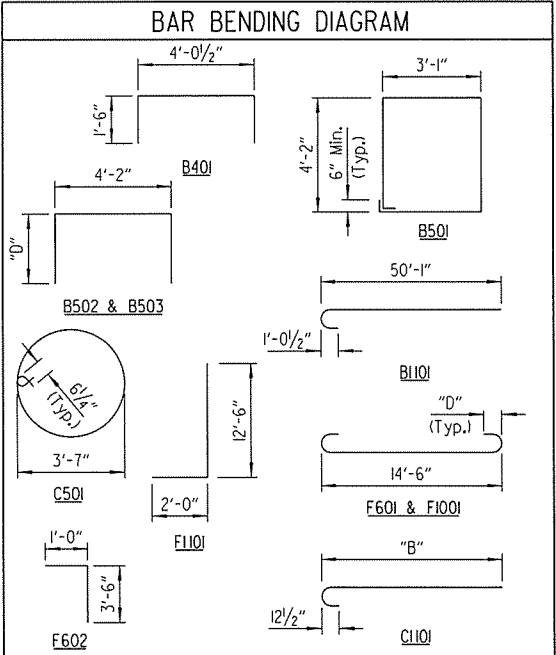


SECTION F-F
No Scale

TABLE OF VARIABLES			
Bent No.	"A"	"B"	"C"
2	272	24'-6"	26'-0"
3	296	27'-6"	29'-0"
4	328	31'-6"	33'-0"

BAR LIST - PER BENT				
MARK	NO. REQ'D	LENGTH	"D"	P.D.
B401	14	6'-10 1/2"		2"
B501	206	15'-0"		2 1/2"
B502	16	12'-3 1/2"	4'-2"	2 1/2"
B503	53	7'-11 1/2"	2'-0"	2 1/2"
B504	20	10'-10"		Str.
B505	20	44'-11"		Str.
B506	6	50'-11"		Str.
B507	6	9'-11"		Str.
B1001	10	39'-5"		Str.
B1002	10	53'-10"		Str.
B1101	16	51'-7"		11 1/4"
C501	"A"	12'-7"		3 3/4"
C1101	80	"C"		11 1/4"
F601	120	15'-7"	8"	4 1/2"
F602	96	4'-4"		4 1/2"
F1001	128	17'-4"	11 1/2"	10"
F1101	80	14'-2"		11 1/4"

NOTE: Number of bars shown is for one intermediate bent.

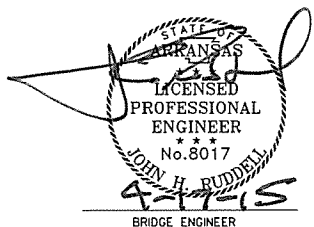


NOTE: Dimensions of bars are out-to-out.

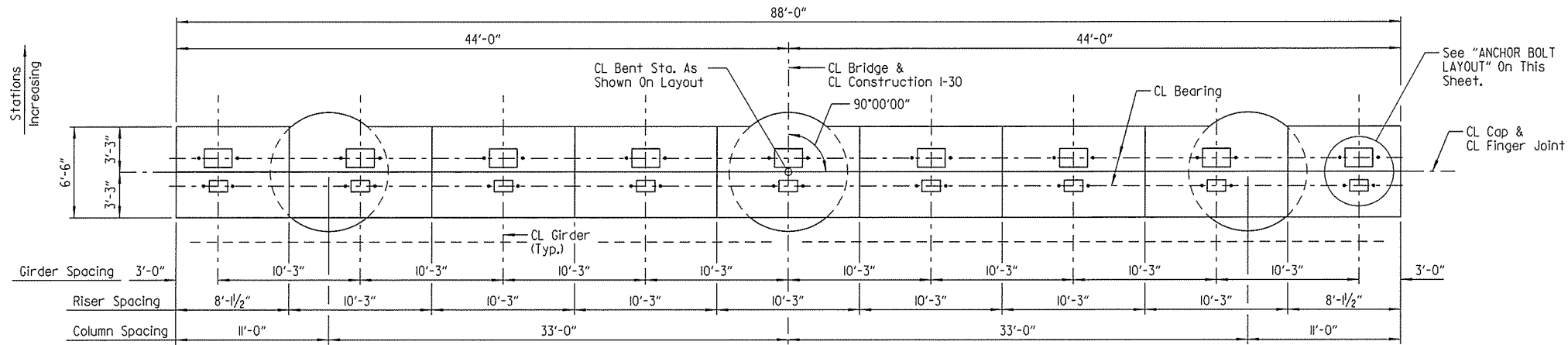
SHEET 3 OF 3
DETAILS OF INTERMEDIATE
BENT NOS. 2-4

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

DRAWN BY: CWT DATE: MAY 2014 FILENAME: BBB0303xl.B3.DGN
CHECKED BY: AJK DATE: JULY 2014 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: MAY 2014
BRIDGE NO. 07335 DRAWING NO. 56384

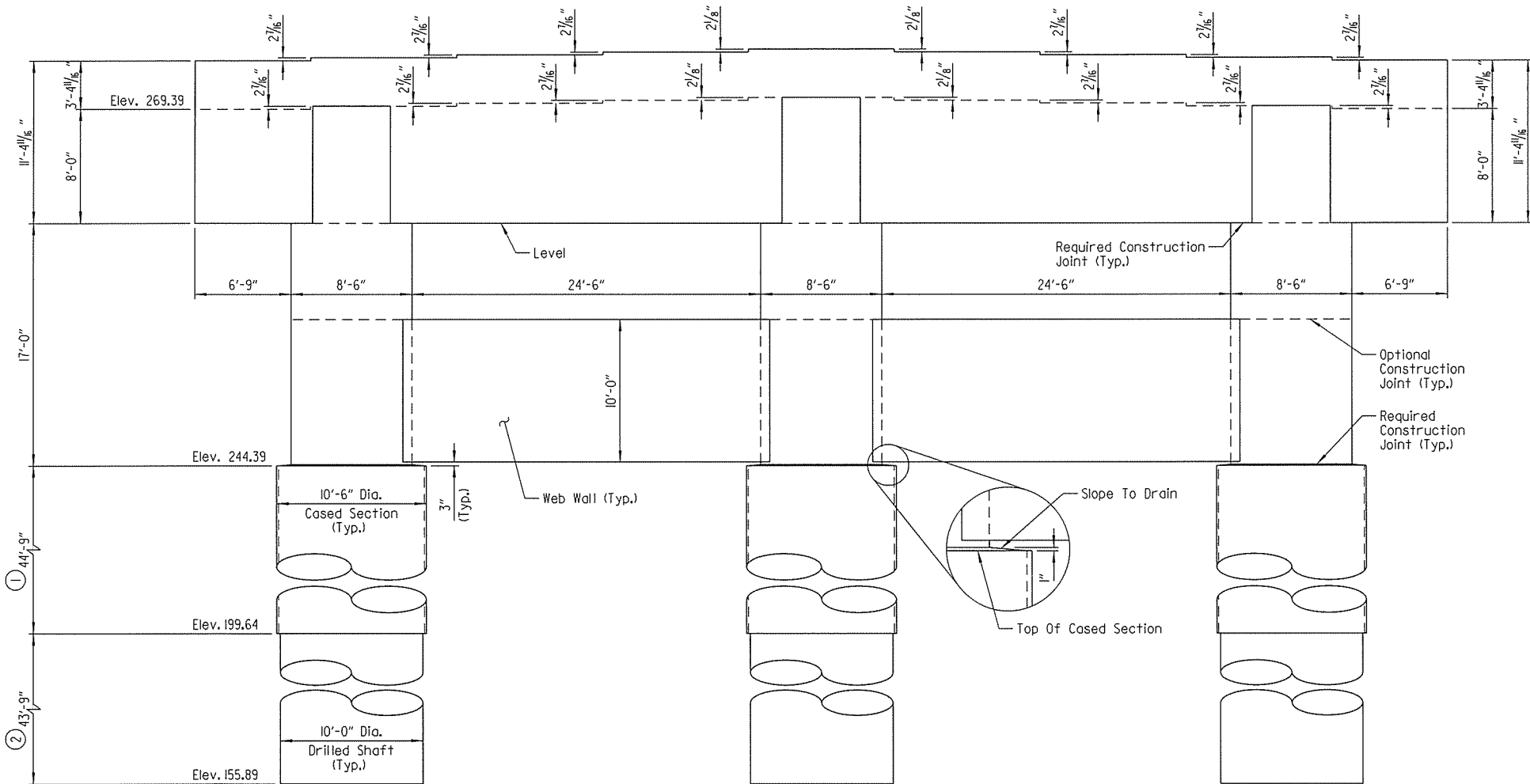


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0303	91	231
				07335		INT. BENTS		56385



PLAN - BENT NO. 5

Scale: 3/16" = 1'-0"

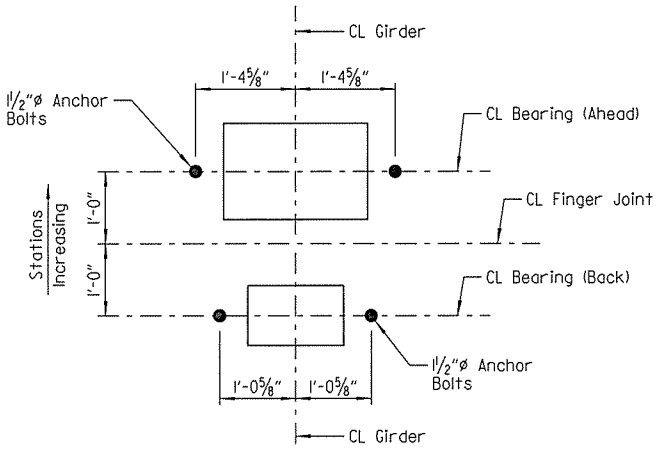


ELEVATION - BENT NO. 5

(Looking Forward)
Scale: 3/16" = 1'-0"

- Length of permanent casing shown is for estimating quantities only. Actual lengths are to be determined in the field. See SP JOB BB0303 "DRILLED SHAFT FOUNDATIONS".
- Minimum length required below bottom of permanent casing.

NOTE:
For details of elastomeric bearings, see Dwg. Nos. 56418 & 56419.



ANCHOR BOLT LAYOUT

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

GENERAL NOTES

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

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60 (Yield Strength = 60,000 psi) except as noted otherwise.

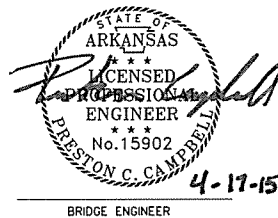
Reinforcing bars in top of cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

Concrete and reinforcing steel in drilled shafts will not be paid for directly but will be included in the unit price of "DRILLED SHAFT (120" Dia.)".

For construction methods, materials, measurement and payment of drilled shafts, see SP JOB BB0303 "DRILLED SHAFT FOUNDATIONS".

For additional information, see Layout.

NOTE:
For reinforcing details, see Dwg. No. 56387.

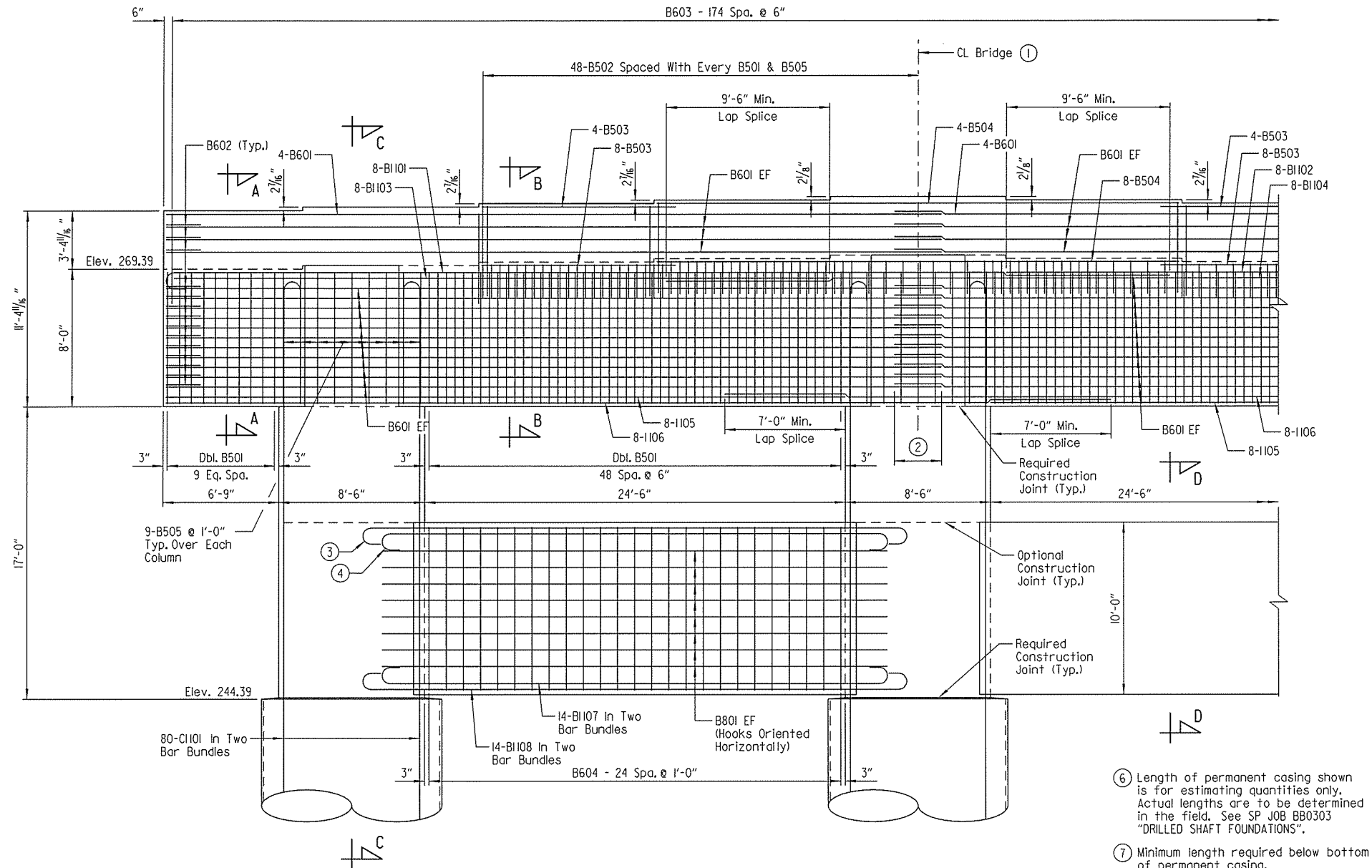


SHEET 1 OF 3
DETAILS OF INTERMEDIATE BENT NO. 5
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2014 FILENAME: BB0303XL.B4.DGN
CHECKED BY: MRA DATE: SEPT. 2014 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: JULY 2014
BRIDGE NO. 07335 DRAWING NO. 56385

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.		BB0303	92	231

07335 INT. BENTS 56386



PARTIAL ELEVATION - BENT NO. 5
(Looking Forward)
Scale: 1/4" = 1'-0"

- ① Placement of Bars B501 to B504 and B601 to B603 is symmetrical about CL Bridge.
- ② 2'-9" Min. Lap Splice
- ③ 14-B1108 In Two Bar Bundles
- ④ 14-B1107 In Two Bar Bundles

NOTES:
For "SECTION A-A", "SECTION B-B", "SECTION D-D", "SECTION E-E", "SECTION F-F" and "SECTION G-G", see Dwg. No. 56387.

For "BAR LIST" and "BAR BENDING DIAGRAM", see Dwg. No. 56387.

For "GENERAL NOTES", see Dwg. No. 56385.

MECHANICAL COUPLER & SPLICE NOTES

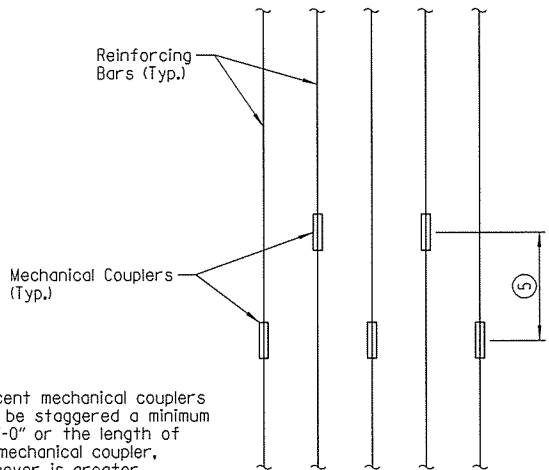
Contractor shall be required to use mechanical couplers to splice reinforcing bars whose lengths given in the bar lists on Dwg. Nos. 56387 & 56390 exceed 60'-0". The bars shall be assembled as shown in "BAR SPLICE DETAIL" or "BUNDLED BAR SPLICE DETAIL".

The Contractor may choose location of splices for convenience so long as no bar to be spliced is less than 5'-0" in length and no closer than 10'-0" from top of shaft. The Contractor shall not splice a single bar more than two times.

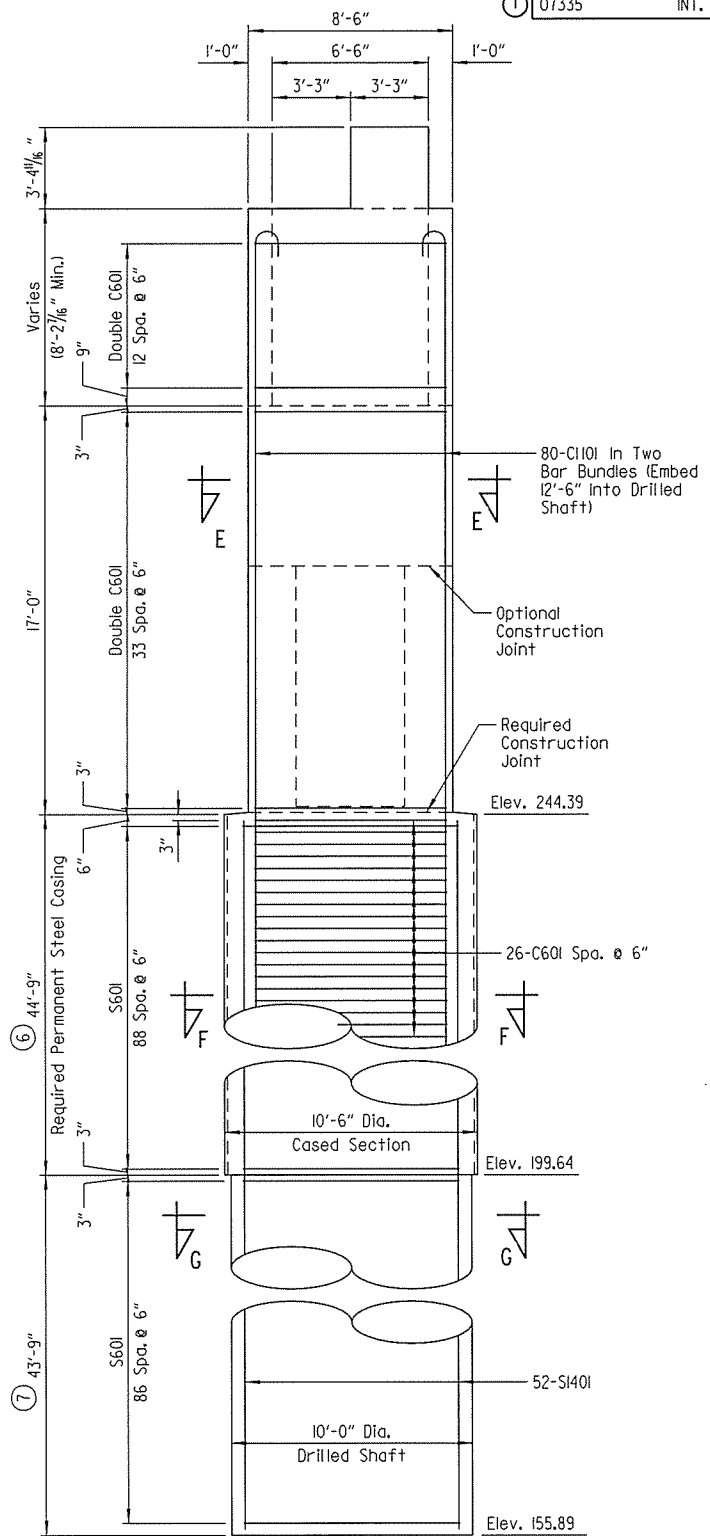
The Contractor may also elect to splice bars whose lengths are less than 60'-0" to provide ease of construction so long as the previously mentioned requirements are met.

Mechanical couplers shall conform to the requirements of SP JOB BB0303 "SPlicing REINFORCING STEEL", and shall maintain the clearances shown in "DRILLED SHAFT BAR SPLICE DETAIL". Not more than alternate bars shall be spliced at a given section. Payment for mechanical couplers shall be subsidiary to the Item "DRILLED SHAFT (120")" for splicing No. 14 bars. The couplers shall develop at least 125% of the specified yield strength of the bar.

- ⑤ Adjacent mechanical couplers shall be staggered a minimum of 3'-0" or the length of the mechanical coupler, whichever is greater.



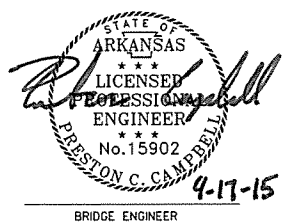
DRILLED SHAFT BAR SPLICE DETAIL
No Scale



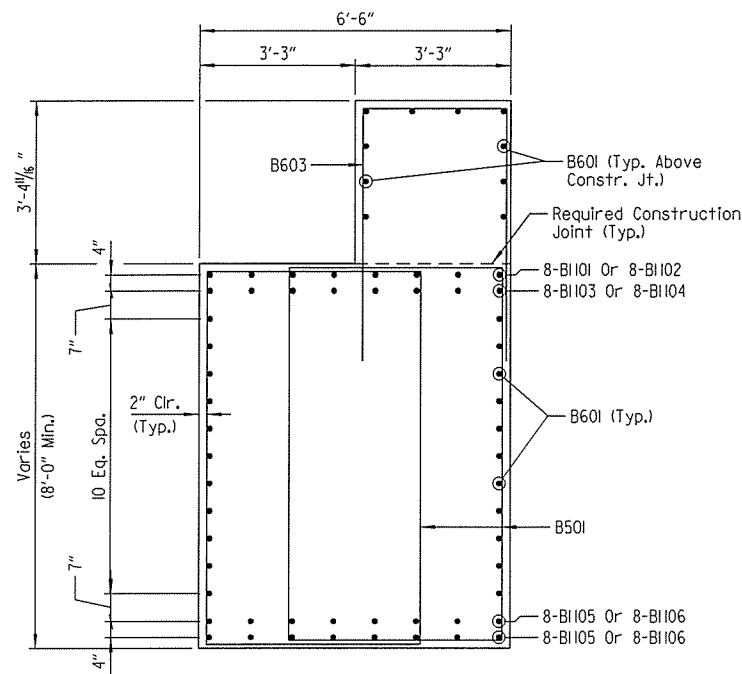
SECTION C-C
Scale: 1/4" = 1'-0"

SHEET 2 OF 3
DETAILS OF INTERMEDIATE BENT NO. 5
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

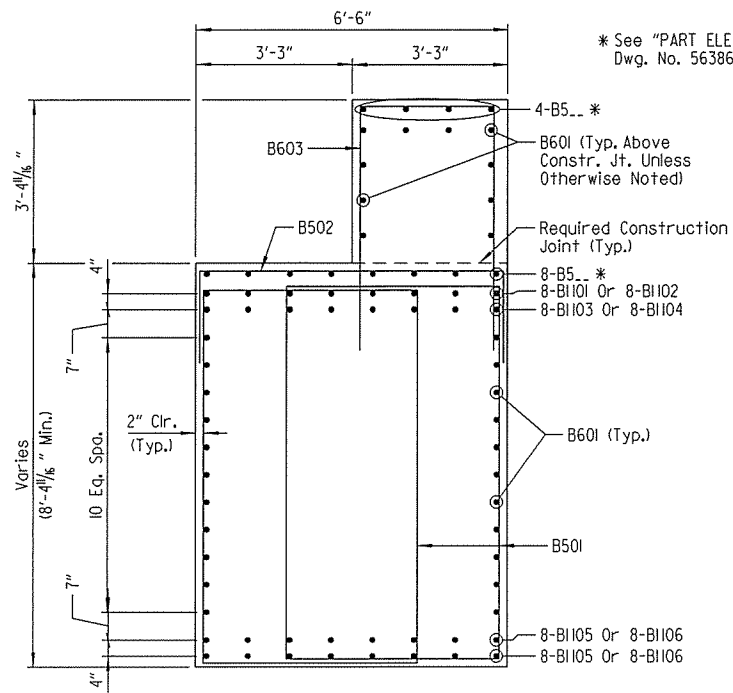
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CHECKED BY: MRA DATE: SEPT 2014 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: JULY 2014
BRIDGE NO. 07335 DRAWING NO. 56386



4/17/2015 10:42:43 AM
Jeskinner
WORKSPACE: AHTD Bridge
\\GLTDCON\ITP\Projects\2014\1017705 - Red River Bridge Replacement\Drawings\BB0303\B6.dgn
REVISED DATE:

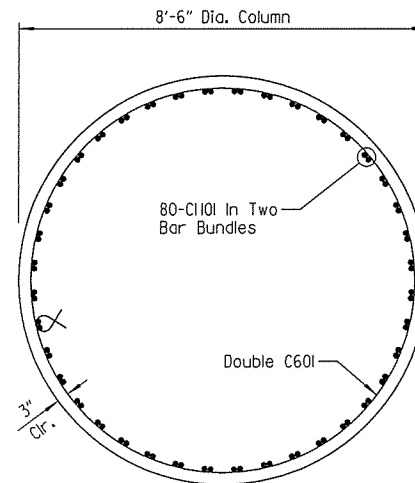


SECTION A-A
Scale: 1/2" = 1'-0"

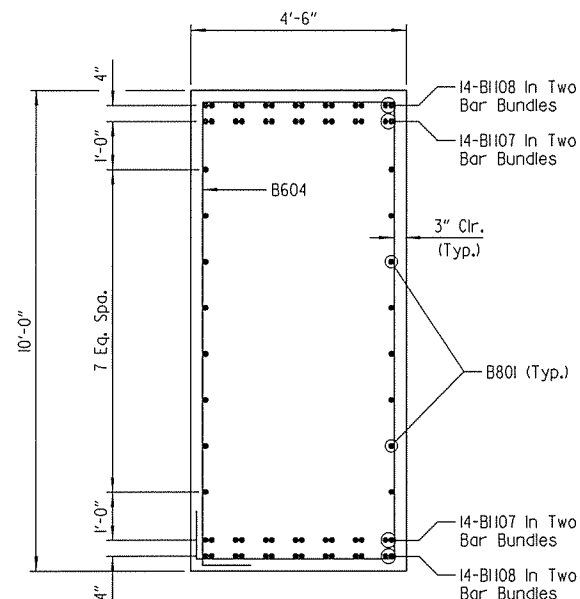


SECTION B-B
Scale: 1/2" = 1'-0"

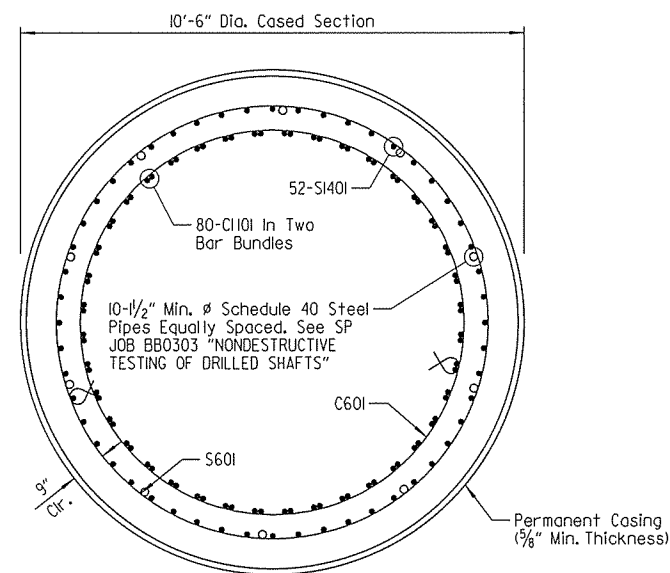
* See "PART ELEVATION - BENT NO. 5" on
Dwg. No. 56386 for correct bar mark.



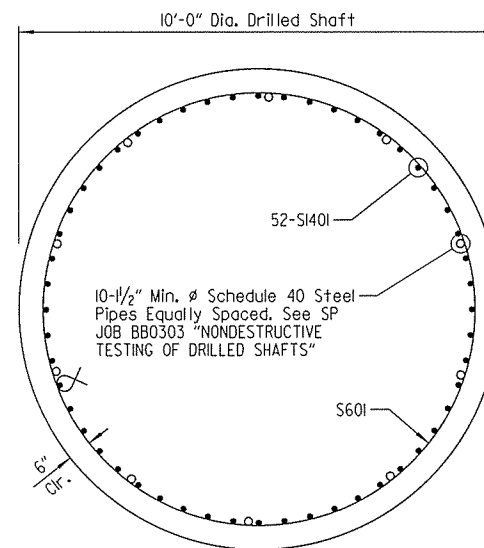
SECTION E-E
Scale: 1/2" = 1'-0"



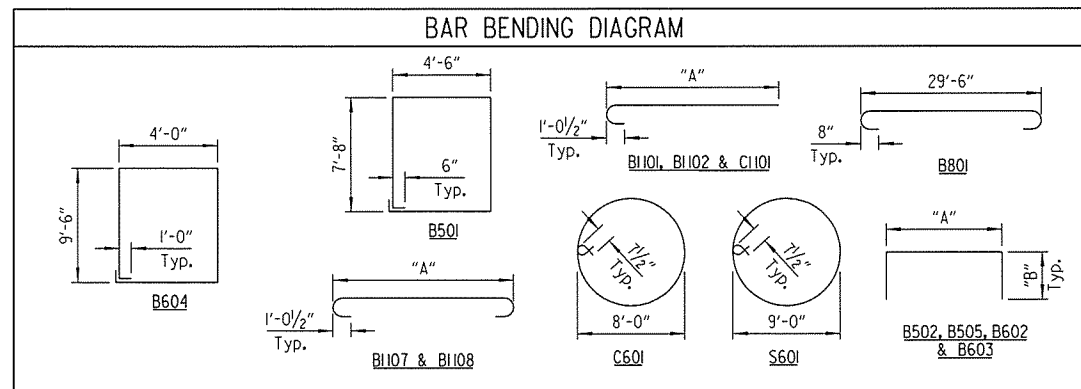
SECTION D-D
Scale: 1/2" = 1'-0"



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



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

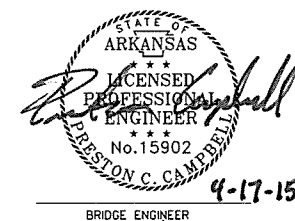


NOTE:
Dimensions of bars are out-to-out.

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.		BB0303	93	231
				07335		INT. BENTS		56387

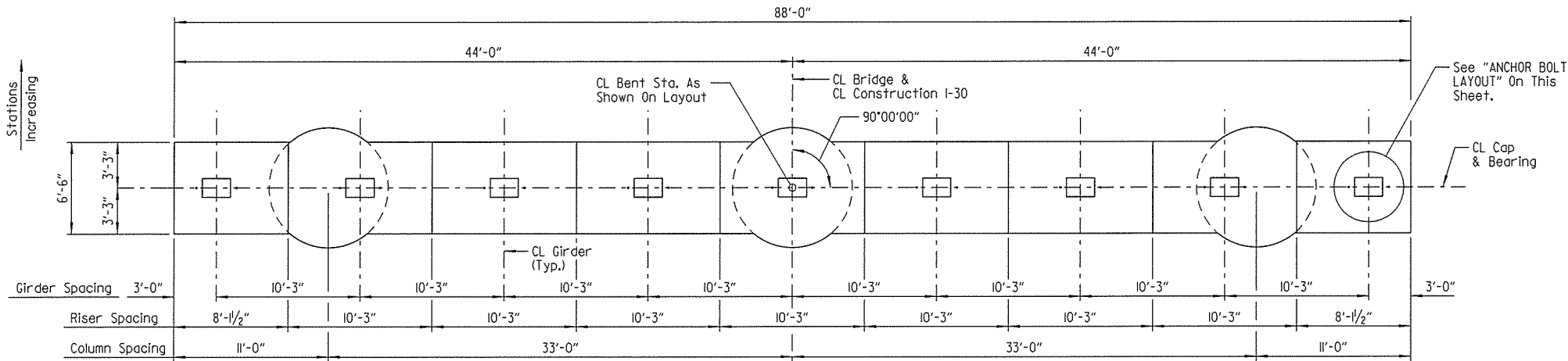
BAR LIST					
MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
B501	236	24'-10"			2 1/2"
B502	95	10'-0"	6'-2"	2'-0"	2 1/2"
B503	24	11'-4"			Str.
B504	12	30'-5"			Str.
B505	27	21'-4"	6'-2"	7'-8"	2 1/2"
B601	64	45'-3"			Str.
B602	28	9'-8 1/2"	6'-0 1/2"	2'-0"	4 1/2"
B603	175	13'-1"	2'-11"	5'-3"	4 1/2"
B604	25	28'-2"			4 1/2"
B801	32	31'-4"			6"
B1101	8	60'-0"	58'-6"		1 1/4"
B1102	8	40'-2"	38'-8"		1 1/4"
B1103	8	36'-6"			Str.
B1104	8	60'-0"			Str.
B1105	16	39'-7"			Str.
B1106	16	55'-1"			Str.
B1107	56	32'-4"	29'-4"		1 1/4"
B1108	56	35'-4"	32'-4"		1 1/4"
C601	360	26'-9"			4 1/2"
C1101	240	38'-6"	37'-0"		1 1/4"
S601	528	29'-10 1/2"			4 1/2"
S1401	156	88'-0"			Str.

- ① Non-Pay Item - Subsidiary to SP JOB BB0303 "DRILLED SHAFT FOUNDATION"
② Length exceeds 60'-0". See "DRILLED SHAFT BAR SPLICE DETAIL" on Dwg. No. 56386.



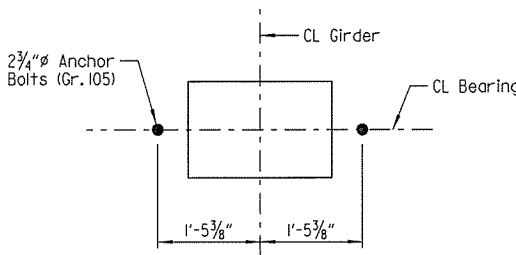
SHEET 3 OF 3
DETAILS OF INTERMEDIATE BENT NO. 5
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: HEW DATE: JULY 2014 FILENAME: BB0303\B6.DGN
CHECKED BY: MRA DATE: SEPT 2014 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: JULY 2014
BRIDGE NO. 07335 DRAWING NO. 56387

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.		BB0303	94	231
				07335		INT. BENTS		56388



PLAN - BENT NOS. 6-8
Scale: 3/8" = 1'-0"

NOTE:
For details of elastomeric bearings,
see Dwg. Nos. 56418 & 56419.



ANCHOR BOLT LAYOUT
Scale: 3/4" = 1'-0"

GENERAL NOTES

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

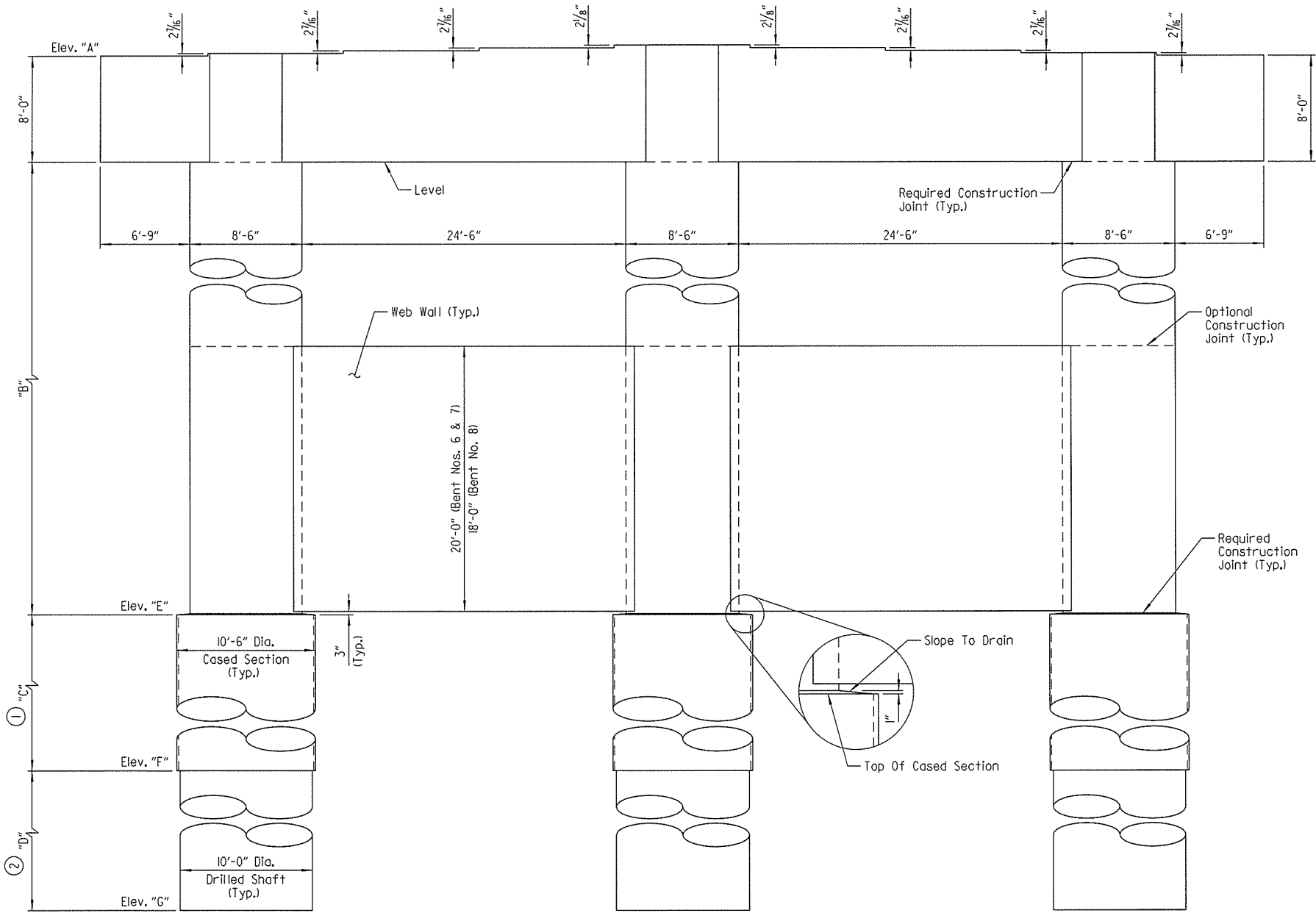
All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60 (Yield Strength = 60,000 psi) except as noted otherwise.

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

Concrete and reinforcing steel in drilled shafts will not be paid for directly but will be included in the unit price of "DRILLED SHAFT (20" Dia.)".

For construction methods, materials, measurement and payment of drilled shafts, see SP JOB BB0303 "DRILLED SHAFT FOUNDATIONS".

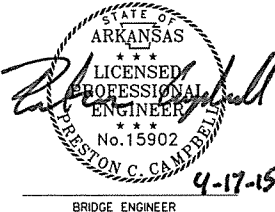
For additional information, see Layout.



ELEVATION - BENT NOS. 6-8
(Looking Forward)
Scale: 3/8" = 1'-0"

- ① Length of permanent casing shown is for estimating quantities only. Actual lengths are to be determined in the field. See SP JOB BB0303 "DRILLED SHAFT FOUNDATIONS".
- ② Minimum length required below bottom of permanent casing.

NOTE:
For reinforcing details, see Dwg. No. 56389.
For variables "A" thru "G", see "TABLE OF VARIABLES" on Dwg. No. 56389.

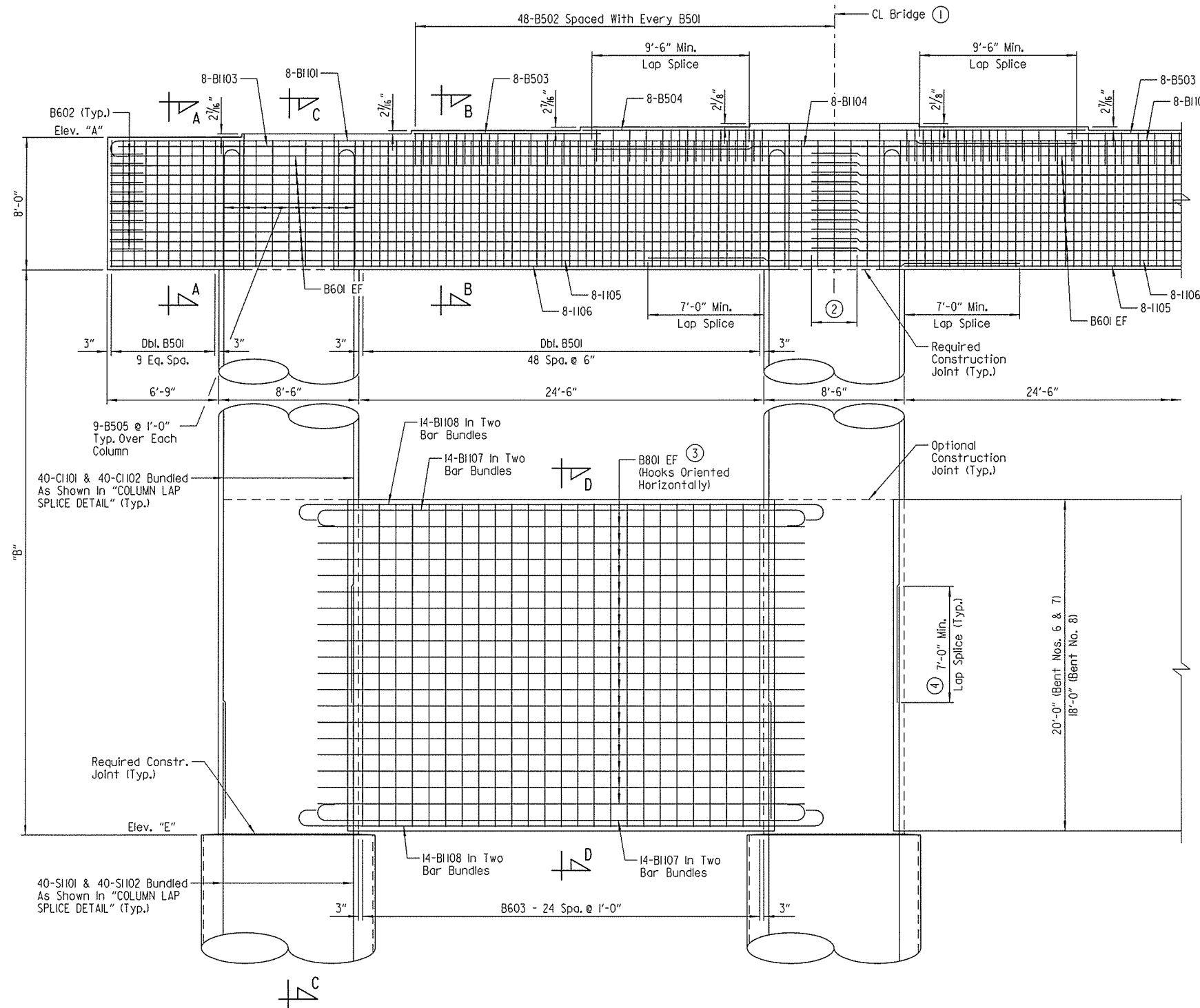


SHEET 1 OF 3
DETAILS OF INTERMEDIATE
BENT NOS. 6-8
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2014 FILENAME: BB0303x1.B7.DGN
CHECKED BY: MRA DATE: SEPT. 2014 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: JULY 2014
BRIDGE NO. 07335 DRAWING NO. 56388

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Jeskinen
WORKSPACE: AHTD Bridge
\\GLTDCON\ITP\Projects\2011\07705 - Red River Bridge Replacement\Drawings\BBB0303\1.BB.dgn
REVISED DATE:

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.	BB0303		95	231
				07335	INT. BENTS		56389	



PART ELEVATION - BENT NOS. 6-8
(Looking Forward)
Scale: 1/4" = 1'-0"

- ① Placement of Bars B501 to B504, B601 and B602 is symmetrical about CL Bridge.
- ② 2'-9" Min. Lap Splice
- ③ Number of bars shown is for Bent Nos. 6 & 7. See "SECTION D-D" On Dwg. No. 56390 for number of bar needed for Bent No. 8.
- ④ See "COLUMN LAP SPLICE DETAIL" this sheet.

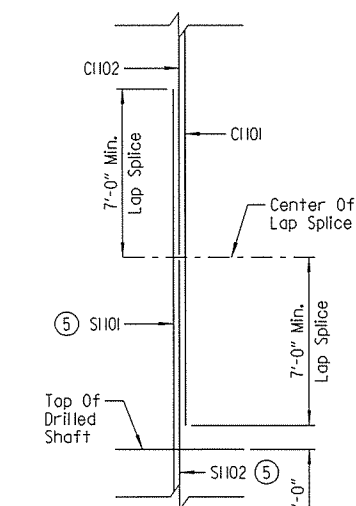
TABLE OF VARIABLES									
BENT	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"J"
6	271.41	33'-0"	30'-9"	77'-3"	230.41	199.66	122.41	65	153
7	272.12	34'-0"	34'-3"	72'-9"	230.12	195.87	123.12	67	144
8	271.66	25'-6"	60'-3"	46'-3"	238.16	177.91	131.66	50	91

NOTES:
For "SECTION A-A", "SECTION B-B", "SECTION D-D",
"SECTION E-E", "SECTION F-F" And "SECTION G-G",
see Dwg. No. 56390.

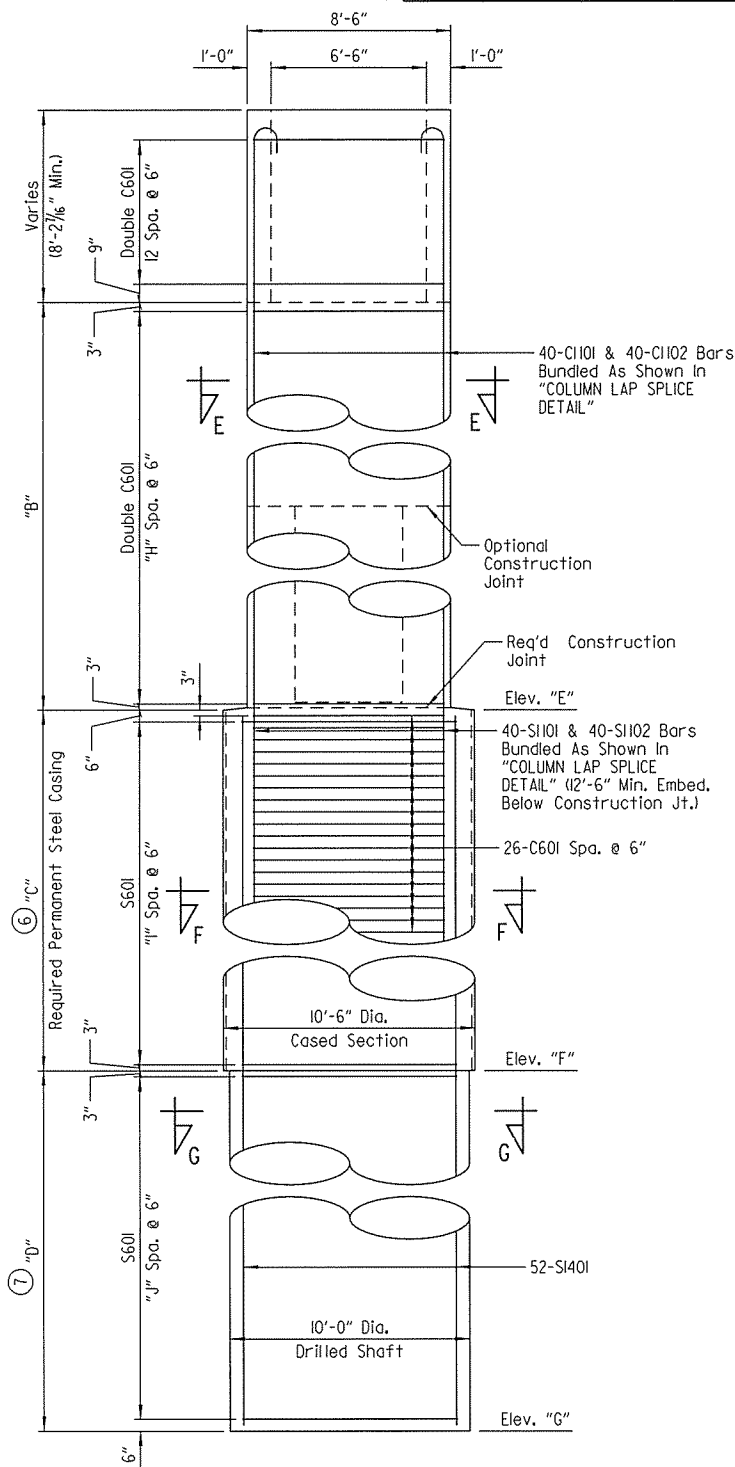
For "BAR LIST" and "BAR BENDING DIAGRAM",
see Dwg. No. 56390.

For "GENERAL NOTES", see Dwg. No. 56388.

- ⑤ Embed bars 12'-6" into drilled shaft.



COLUMN LAP SPLICE DETAIL
No Scale



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

SHEET 2 OF 3
DETAILS OF INTERMEDIATE
BENT NOS. 6-8
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

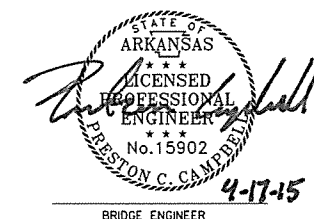
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2014 FILENAME: BBB0303\1.BB.DGN

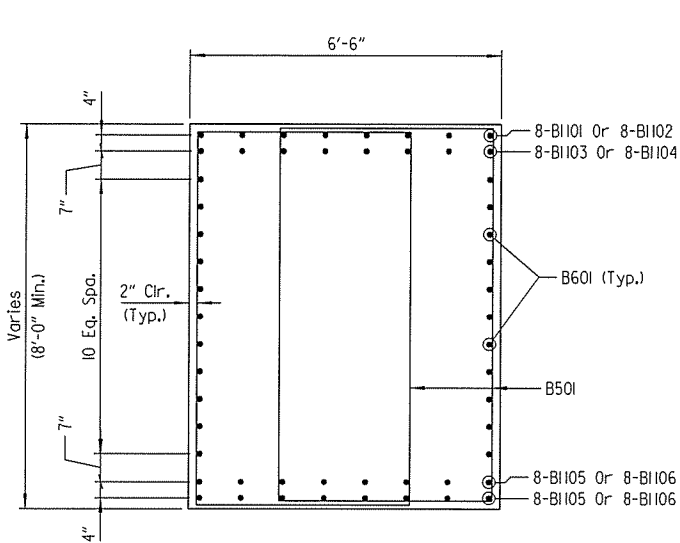
CHECKED BY: MRA DATE: SEPT. 2014 SCALE: AS SHOWN

DESIGNED BY: PCC DATE: JULY 2014

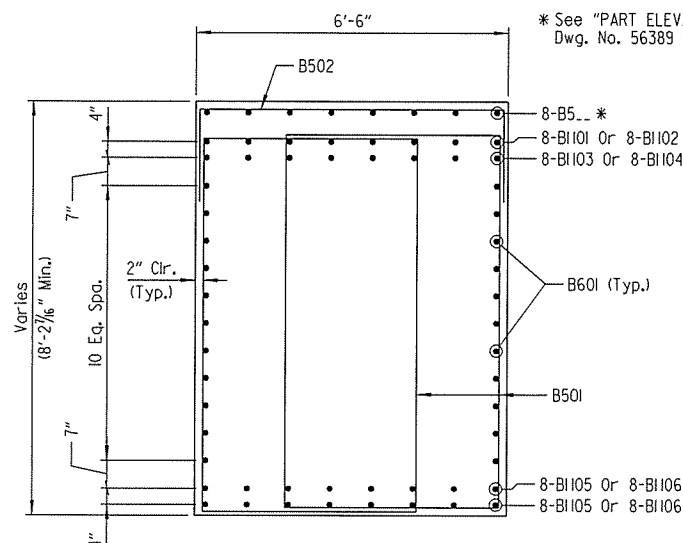
BRIDGE NO. 07335 DRAWING NO. 56389



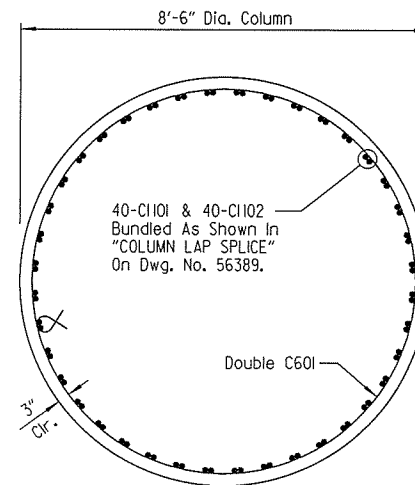
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WORKSPACE: AHTD Bridge
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REVISED DATE:



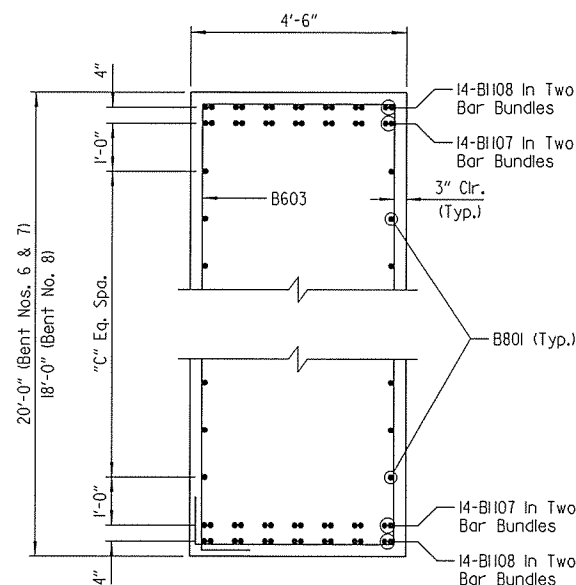
SECTION A-A
Scale: 1/2" = 1'-0"



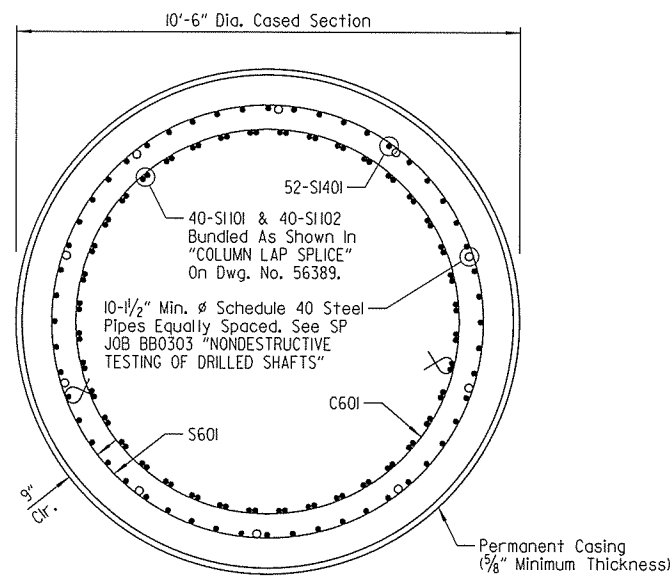
SECTION B-B
Scale: 1/2" = 1'-0"



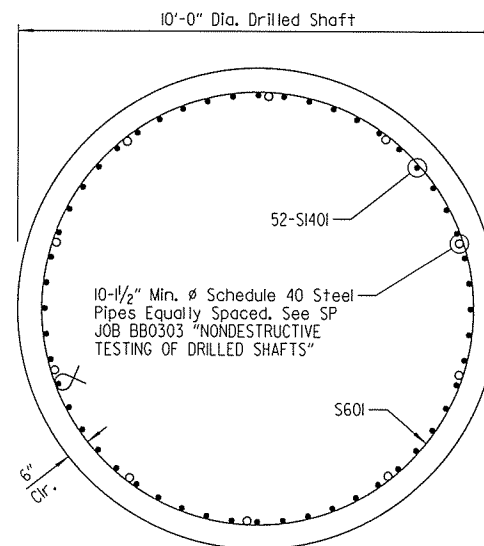
SECTION E-E
Scale: 1/2" = 1'-0"



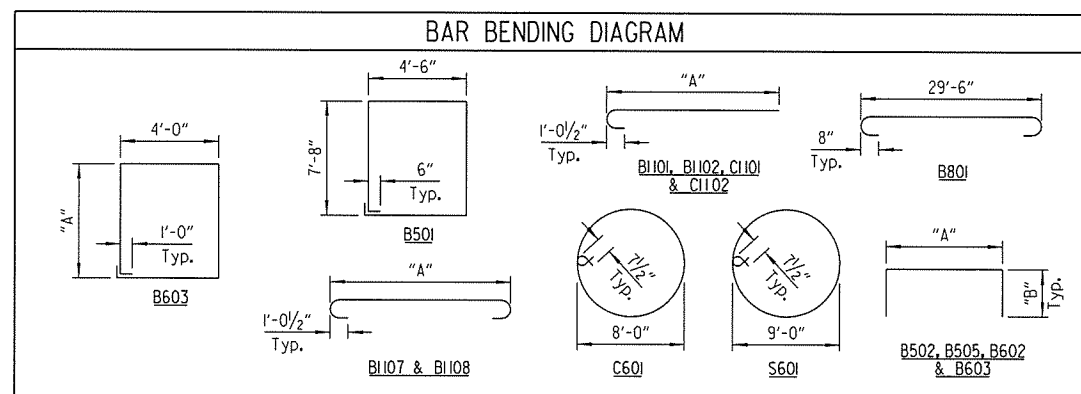
SECTION D-D
Scale: 1/2" = 1'-0"



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



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



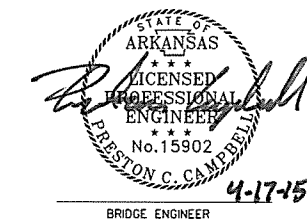
NOTE:
Dimensions of bars are out-to-out.

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.		BB0303	96	231
				07335		INT. BENTS		56390

BAR LIST - PER BENT					
MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
B501	236	24'-10"			2 1/2"
B502	95	10'-0"	6'-2"	2'-0"	2 1/2"
B503	16	11'-4"			Str.
B504	8	30'-5"			Str.
B601	44	45'-3"			Str.
B602	22	9'-8 1/2"	6'-0 1/2"	2'-0"	4 1/2"
B603	25	"D" + 1'-2"	"D"		4 1/2"
B801	"E"	31'-4"			6"
B1101	8	60'-0"	58'-6"		1 1/4"
B1102	8	40'-2"	38'-8"		1 1/4"
B1103	8	36'-6"			Str.
B1104	8	60'-0"			Str.
B1105	16	39'-7"			Str.
B1106	16	55'-1"			Str.
B1107	56	32'-4"	29'-4"		1 1/4"
B1108	56	35'-4"	32'-4"		1 1/4"
C601	"F"	26'-9"			4 1/2"
C1101	120	"G" + 1'-6"	"G"		1 1/4"
C1102	120	"H" + 1'-6"	"H"		1 1/4"
S601	"I"	29'-10 1/2"			4 1/2"
S1101	120	27'-6"			Str.
S1102	120	20'-6"			Str.
S1401	156	"J"			Str.

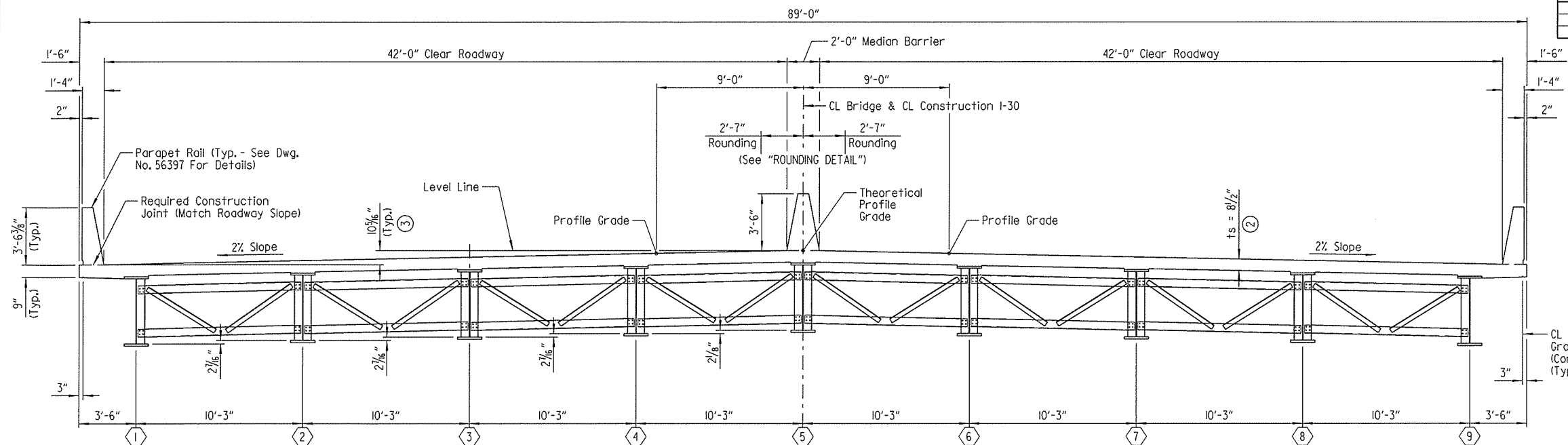
- ① Non-Pay Item - Subsidiary to SP JOB BB0303 "DRILLED SHAFT FOUNDATION"
② Length exceeds 60'-0". See "DRILLED SHAFT BAR SPLICE DETAIL" on Dwg. No. 56386.

TABLE OF VARIABLES								
BENT	"C"	"D"	"E"	"F"	"G"	"H"	"I"	"J"
6	17	19'-6"	72	552	39'-6"	32'-6"	645	107'-6"
7	17	19'-6"	72	564	40'-6"	33'-6"	639	106'-6"
8	15	17'-6"	64	462	32'-0"	25'-0"	636	106'-0"



SHEET 3 OF 3
DETAILS OF INTERMEDIATE
BENT NOS. 6-8
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: HEW DATE: JULY 2014 FILENAME: BBB0303\1.B9.DGN
CHECKED BY: MRA DATE: SEPT. 2014 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: JULY 2014
BRIDGE NO. 07335 DRAWING NO. 56390

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.		BB0303	97	231
				07335		440' UNIT		56391



- ① TOLERANCE:
Minus = $1/4$ "
Plus = Amount of slab thickening used to meet slab thickness tolerance - See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED".

TYPICAL ROADWAY SECTION

(Looking Forward)
Scale: $1/4$ " = 1'-0"

- ② See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED".
③ Measured to Working Point, see "ROUNDING DETAIL".
④ Placed as shown over intermediate supports. See "PART REINFORCING PLAN & POURING SEQUENCE" On Dwg. No. 56396.

NOTE: ts = Slab thickness as shown on "TYPICAL ROADWAY SECTION".

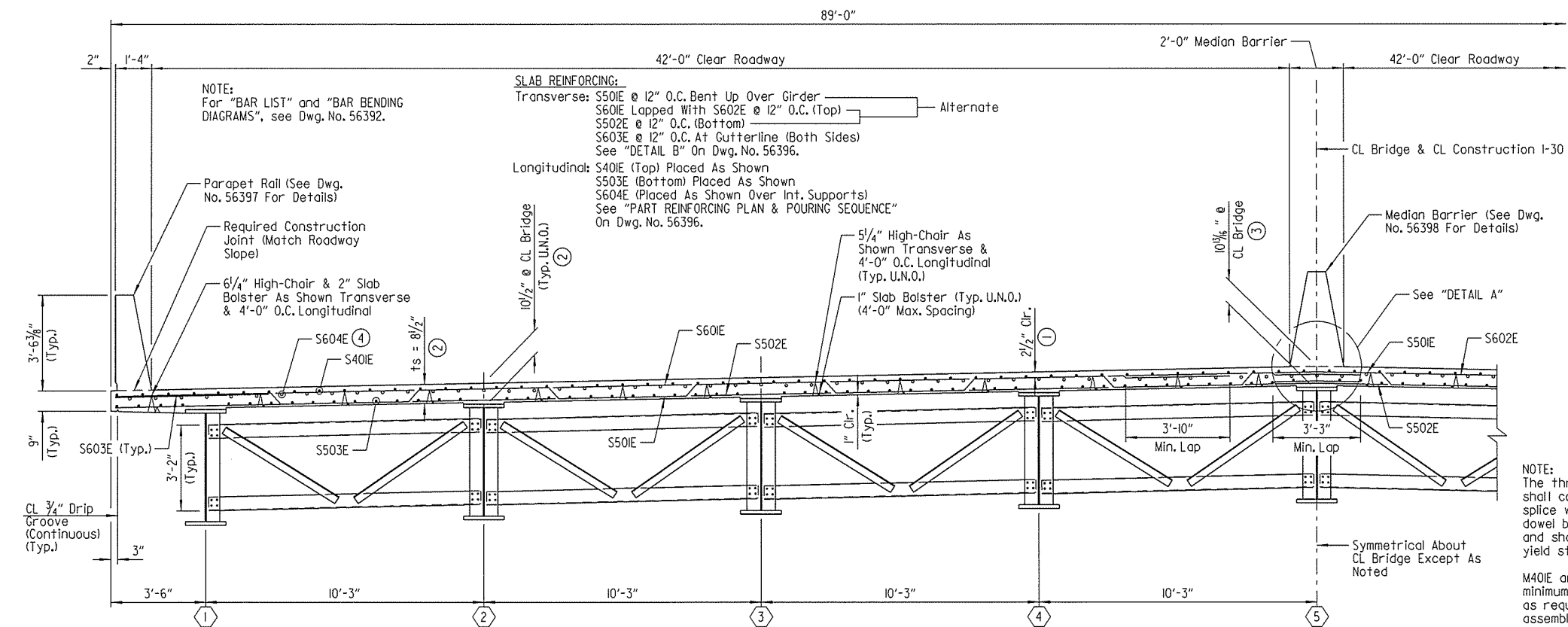
* Measured to bottom of top flange.
** Tolerance when removable deck forming is used is $+ 1/2$ " - $1/4$ ". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED

No Scale

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

Tolerances shown are applicable only when removable deck forming is used. See Std. Dwg. No. 55005 for tolerances when permanent steel bridge deck forms are used. Payment for "CLASS (S)AE CONCRETE-BRIDGE" shall be based on the use of removable deck forming.

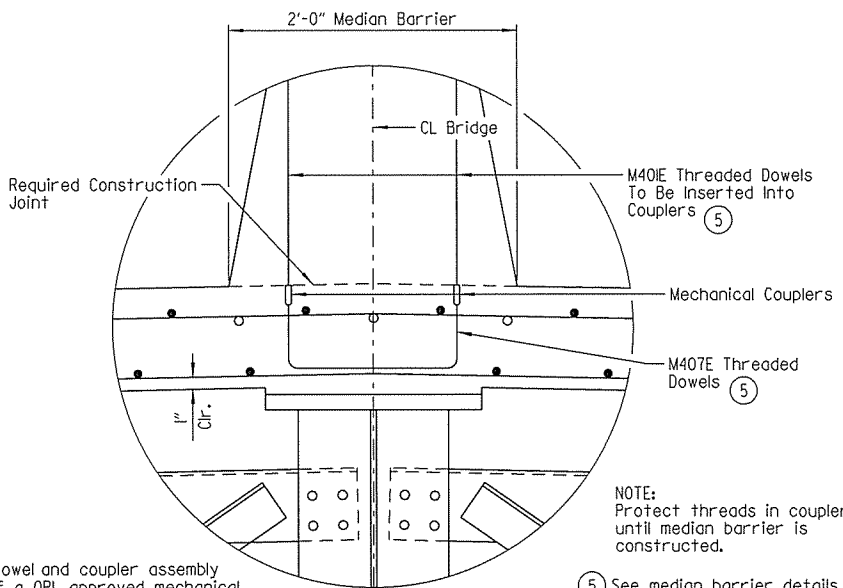


NOTE:
For "BAR LIST" and "BAR BENDING DIAGRAMS", see Dwg. No. 56392.

SLAB REINFORCING:
Transverse: S501E @ 12" O.C. Bent Up Over Girder
S601E Lapped With S602E @ 12" O.C. (Top)
S502E @ 12" O.C. (Bottom)
S603E @ 12" O.C. At Gutterline (Both Sides)
See "DETAIL B" On Dwg. No. 56396.
Longitudinal: S401E (Top) Placed As Shown
S503E (Bottom) Placed As Shown
S604E (Placed As Shown Over Int. Supports)
See "PART REINFORCING PLAN & POURING SEQUENCE" On Dwg. No. 56396.

NOTE:
The threaded dowel and coupler assembly shall consist of a QPL approved mechanical splice with protective cap and threaded dowel bars (M401E and M407E) as shown and shall develop at least 125% of the yield strength of the dowel bars.

M401E and M407E dowel bars shall be a minimum 60 ksi yield strength and threaded as required. Threaded dowel and coupler assembly, except mating surfaces, shall be epoxy coated in accordance with the requirements of Section 804.



DETAIL A

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

NOTE:
Protect threads in couplers until median barrier is constructed.

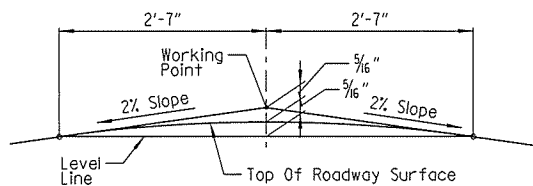
⑤ See median barrier details on Dwg. No. 56398 for spacing and positioning of M401E and M407E bars.

NOTE:
Class I Protective Surface Treatment shall be applied to the roadway surface and the roadway face and top of parapet rail and median barrier.

NOTE:
At the Contractor's option, one epoxy coated #5 bar in the top and one epoxy coated #5 bar in the bottom may be substituted for each bar S501E. Payment will be based on the weight of bar S501E.

LEGEND

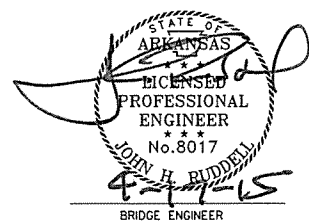
U.N.O. = Unless Noted Otherwise



ROUNDING DETAIL

No Scale

NOTE:
Working Point matches Theoretical Profile Grade.



SHEET 1 OF 11 DETAILS OF 440'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT

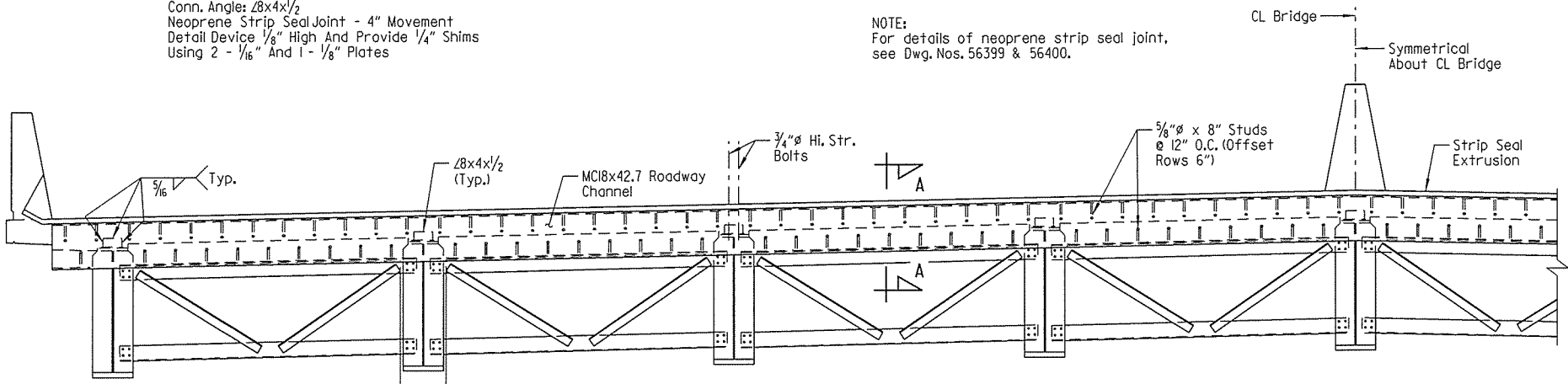
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JUNE 2014 FILENAME: BBB0303x1.SLDGN
CHECKED BY: SRY DATE: JUNE 2014 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: MAY 2014
BRIDGE NO. 07335 DRAWING NO. 56391

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.		BB0303	98	231
				07335		440' UNIT		56392

BENT 1- EXPANSION DEVICE:
Roadway Channel; MC18x42.7
Conn. Angle; 28x4x1/2
Neoprene Strip Seal Joint - 4" Movement
Detail Device 1/8" High And Provide 1/4" Shims
Using 2 - 1/16" And 1 - 1/8" Plates

NOTE:
For details of neoprene strip seal joint,
see Dwg. Nos. 56399 & 56400.

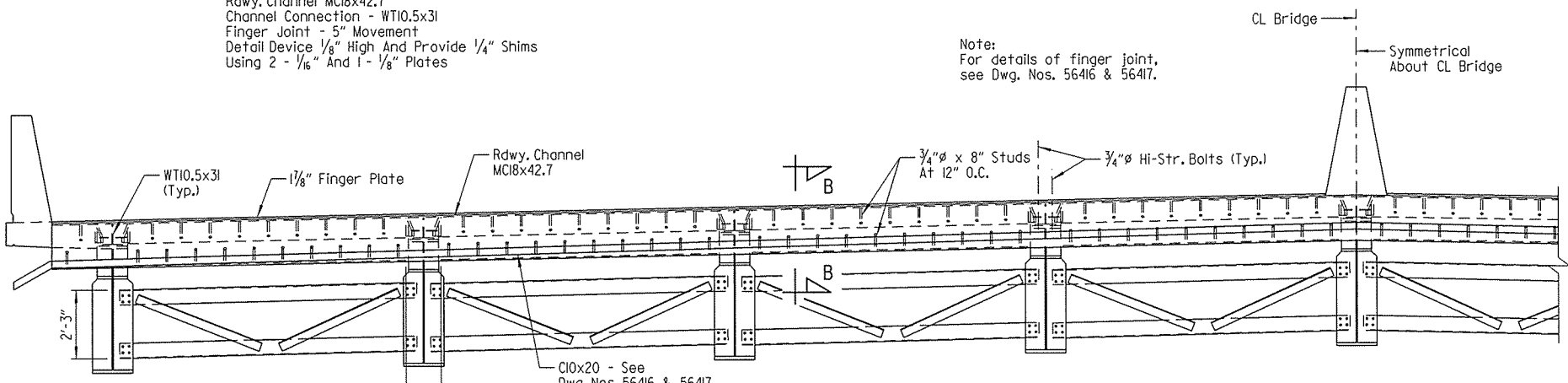


PART TYPICAL SECTION - THRU JOINT AT BENT NO. 1

(Looking Forward)
Scale: 3/8" = 1'-0"

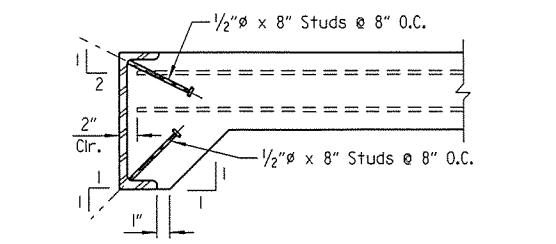
BENT 5 - EXPANSION DEVICE:
Rdwy. Channel MC18x42.7
Channel Connection - WT10.5x31
Finger Joint - 5" Movement
Detail Device 1/8" High And Provide 1/4" Shims
Using 2 - 1/16" And 1 - 1/8" Plates

Note:
For details of finger joint,
see Dwg. Nos. 56416 & 56417.



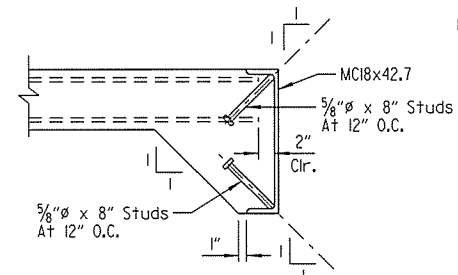
PART TYPICAL SECTION - THRU JOINT AT BENT NO. 5

(Looking Back)
Scale: 3/8" = 1'-0"



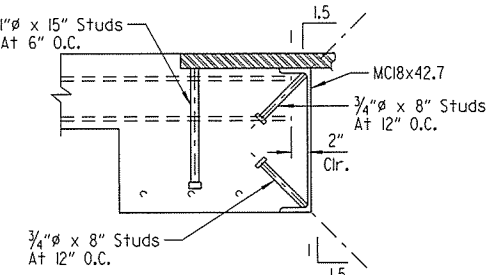
DETAIL OF ALTERNATE ANCHORS - BENT NO. 1

NOTE:
As an alternate to 5/8" studs, 1/2" x 8" studs
spaced as shown may be used at Bent 1. Use
weight of 5/8" stud as basis of measurement
of structural steel.



SECTION A-A

Scale: 1" = 1'-0"

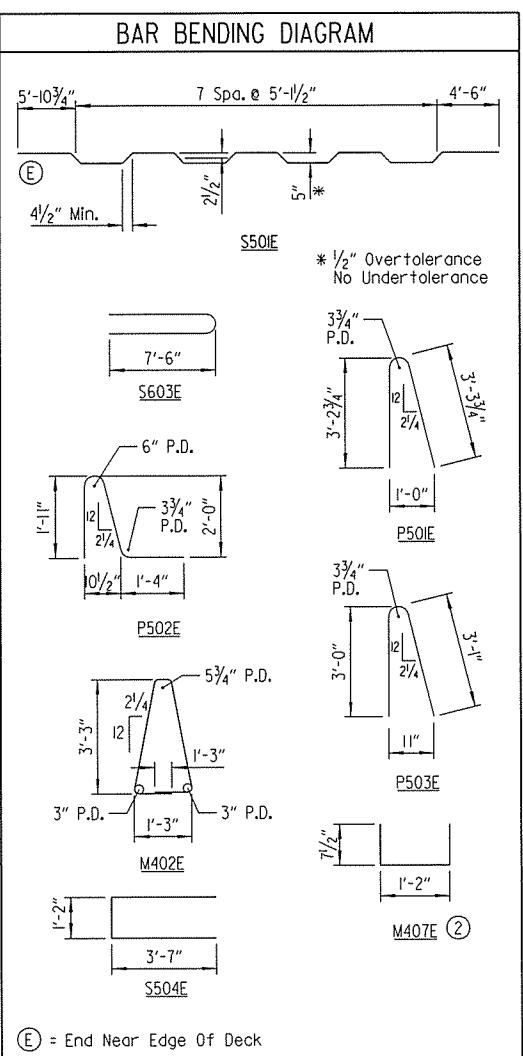


SECTION B-B

Scale: 1" = 1'-0"

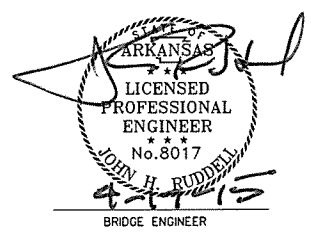
BAR LIST			
MARK	NO. REQ'D	LENGTH	P.D.
S40IE	1248	39'-0"	Str.
S50IE	876	47'-1"	3"
S502E	878	46'-0"	Str.
S503E	832	57'-9"	Str.
S504E	4	8'-2"	2 1/2"
S505E	24	9'-2"	Str.
S506E	6	2'-11"	Str.
S60IE	439	41'-2"	Str.
S602E	439	51'-5"	Str.
S603E	876	15'-3"	5 1/4" (1)
S604E	576	25'-3"	Str.
P40IE	72	30'-0"	Str.
P402E	272	14'-8"	Str.
P403E	72	31'-8"	Str.
P404E	100	13'-8"	Str.
P50IE	1408	6'-8"	3 3/4"
P502E	1408	5'-4"	3 3/4", 6"
P503E	352	6'-2 1/2"	3 3/4"
M40IE	1,760	1'-6"	Str.
M402E	880	9'-7"	5 1/4", 3"
M403E	36	13'-8"	Str.
M404E	104	14'-8"	Str.
M405E	24	30'-0"	Str.
M406E	24	31'-8"	Str.
M407E	880	2'-3"	2"
M408E	4	12'-8"	Str.

NOTES:
Dimensions of bars are out-to-out.
Bar designations ending with "E"
indicate epoxy coated bars.



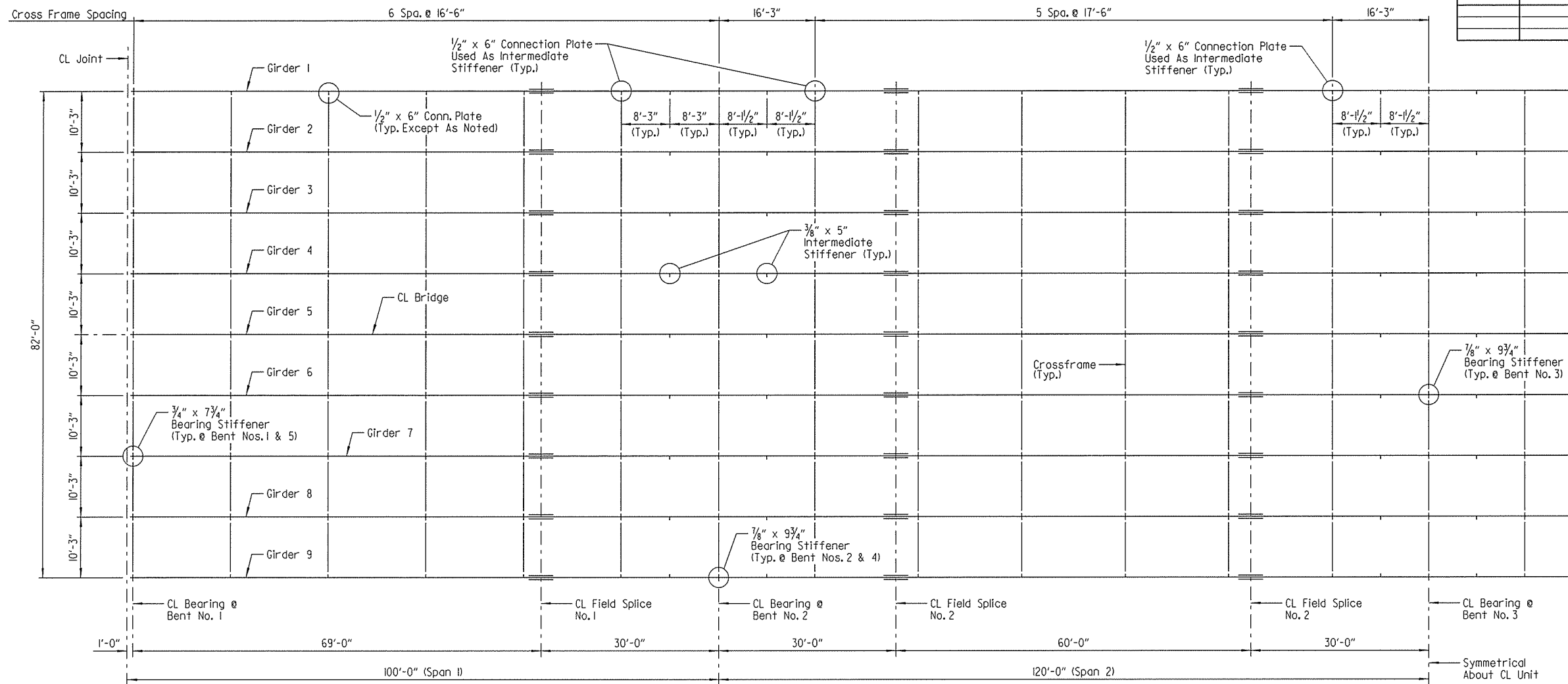
- (1) Non-typical pin diameter
- (2) Thread ends as necessary to accommodate mechanical couplers. Length of vertical legs includes the length of the mechanical coupler. The actual length of vertical leg engagement into the mechanical coupler shall be determined by the mechanical coupler manufacturer, and the length of the vertical legs shall be adjusted accordingly.

SHEET 2 OF 11
DETAILS OF 440'-0" CONTINUOUS
COMPOSITE PLATE GIRDER UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: HEW DATE: APR. 2014 FILENAME: BB0303x1.S2.DGN
CHECKED BY: SRY DATE: JUNE 2014 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: APR. 2014
BRIDGE NO. 07335 DRAWING NO. 56392



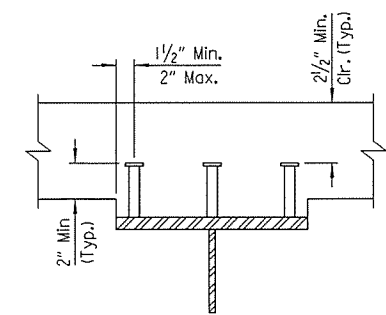
4/17/2015 10:42:46 AM
Leskinner, AHTD Bridge
\\GLTDCON\IT\Projects\2011\07705 - Red River Bridge Replacement\Drawings\BB0303x1.S2.dgn
REVISED DATE:

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.		BB0303	99	231
				07335		440' UNIT		56393



PART FRAMING PLAN
Scale: $\frac{1}{32}$ " = 1'-0"

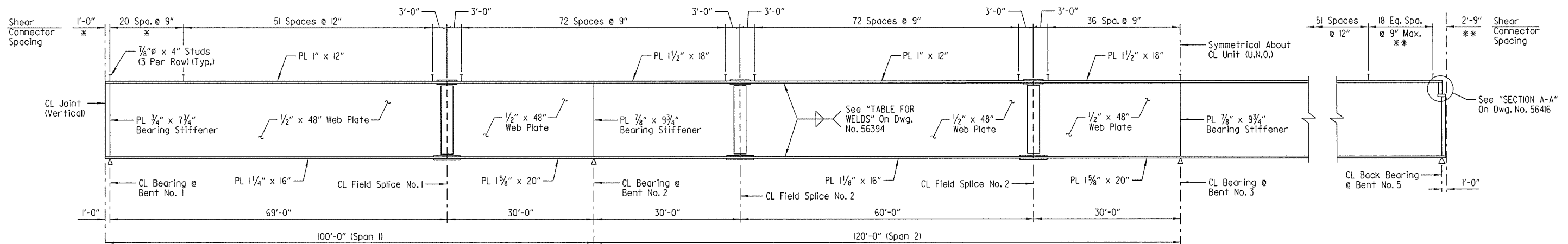
For "CROSSFRAME DETAIL", details of Bearing Stiffeners, Intermediate Stiffeners and Connection Plates, See Dwg. No. 56394.



Stud shear connectors shown shall be $\frac{1}{8}$ " ϕ x 4" long, granular flux filled, solid fluxed or equal, and automatically end welded to the flange in accordance with the recommendations of the Manufacturer. $\frac{3}{4}$ " ϕ studs may be used in place of the $\frac{1}{8}$ " ϕ studs shown, at the ratio of 1.361- $\frac{3}{4}$ " ϕ studs in place of one $\frac{1}{8}$ " ϕ stud. $\frac{1}{8}$ " ϕ studs will be used as basis for measurement of structural steel in shear connectors.

SHEAR CONNECTOR DETAIL
No Scale

LEGEND
U.N.O = Unless Noted Otherwise



GIRDER ELEVATION
No Scale

* Spacing for shear connectors near Bent No. 1
** Spacing for shear connectors near Bent No. 5

NOTE:
For "GENERAL NOTES", see Dwg. No. 5640L.



SHEET 3 OF 11
DETAILS OF 440'-0" CONTINUOUS
COMPOSITE PLATE GIRDER UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: HEW DATE: APR. 2014 FILENAME: BB0303X1.S3.DGN
CHECKED BY: SRY DATE: JULY 2014 SCALE: AS SHOWN
DESIGNED BY: JHR DATE: APR. 2014
BRIDGE NO. 07335 DRAWING NO. 56393

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.		BB0303	100	231
				07335		440' UNIT		56394

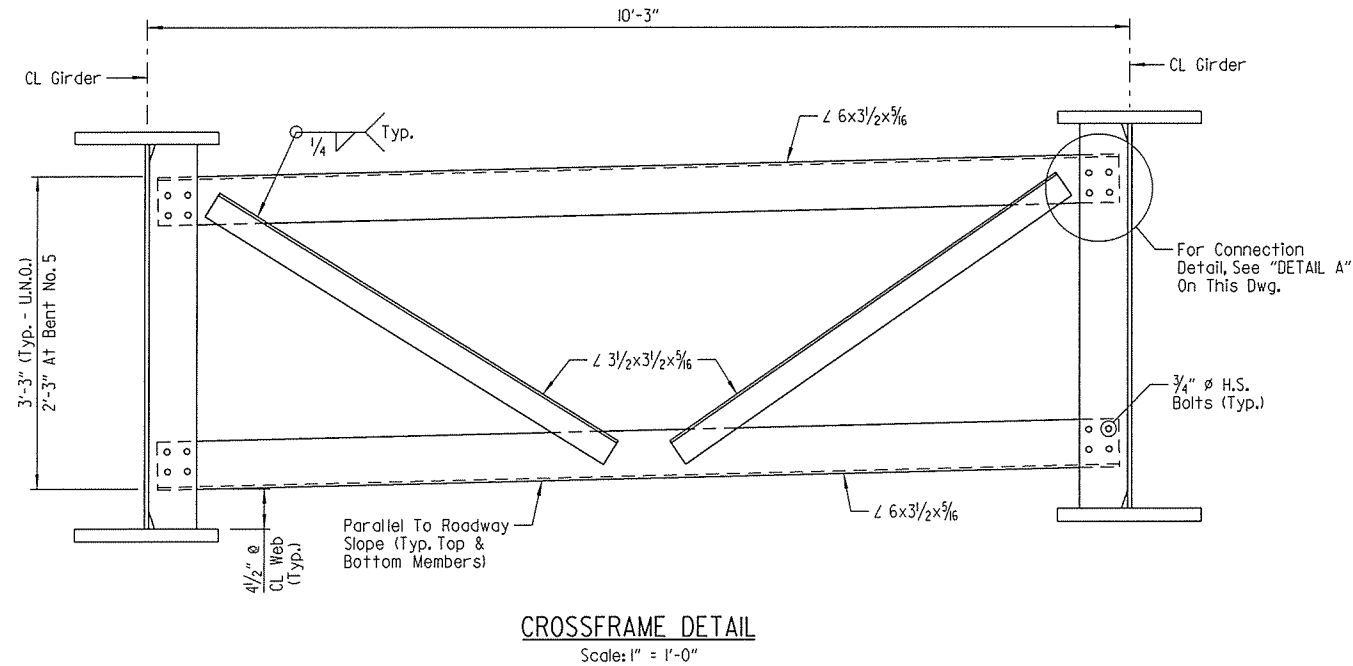
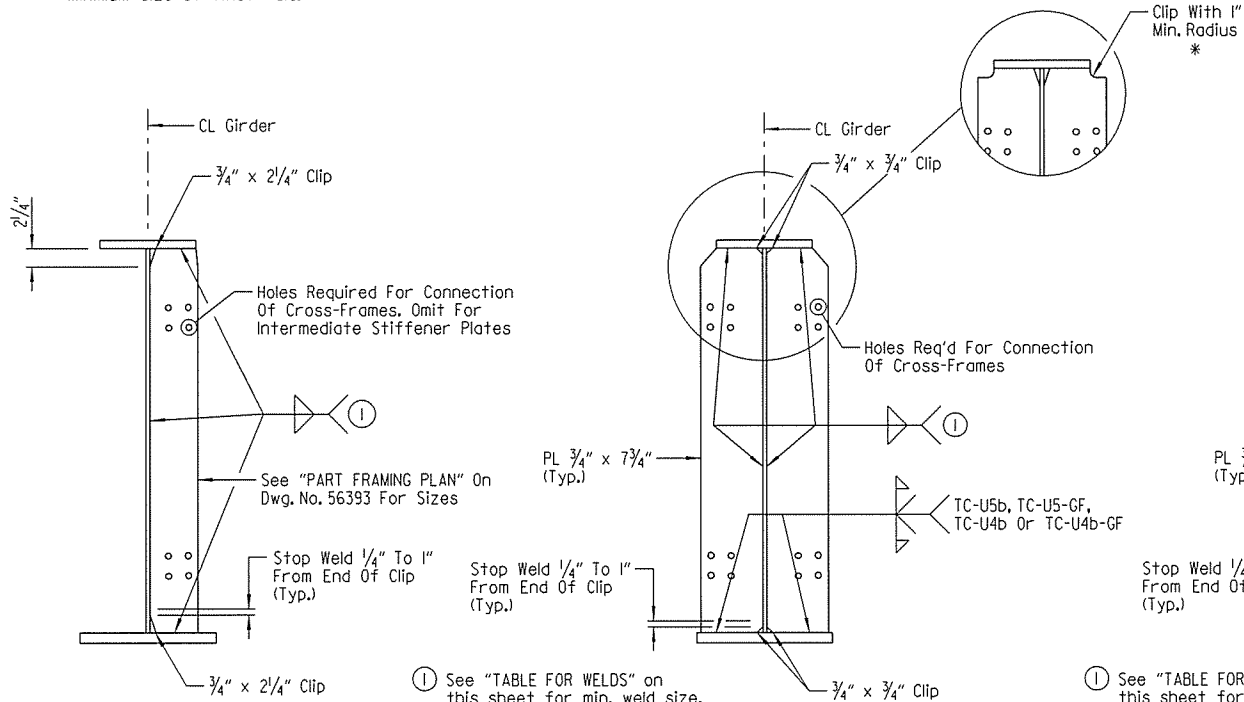


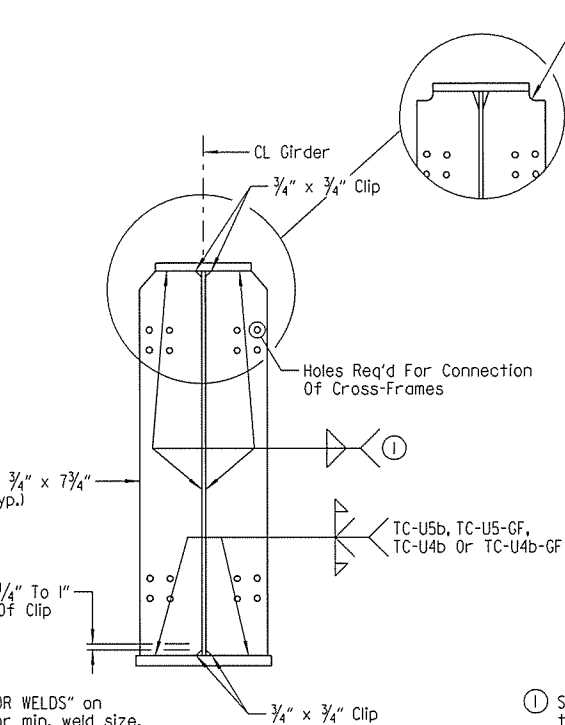
TABLE FOR WELDS		
Material Thickness Of Thicker Part Joined (Inches)	Minimum Size Of Fillet Weld (Inches)	Single Pass Weld Must Be Used
To 3/4" Inclusive	1/4"	
Over 3/4"	5/16"	

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

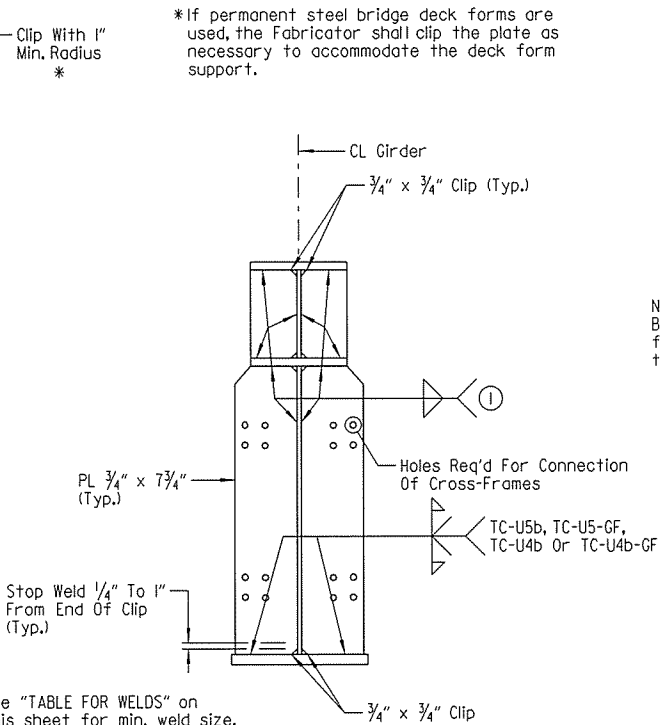
NOTES:
For "GENERAL NOTES", see Dwg. No. 56401.
For "TABLE OF DEAD LOAD DEFLECTIONS", see Dwg. No. 56395.
All structural steel, including girders, cross-frames, bearing stiffener plates, intermediate stiffeners and connection plates, shall be AASHTO M270, Gr. 50.



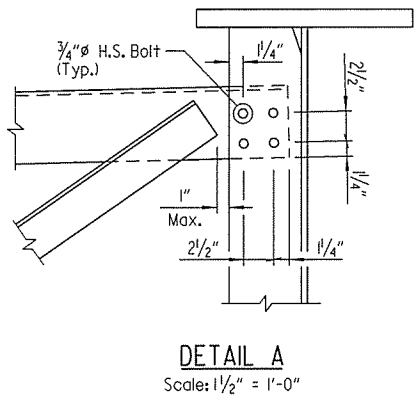
CROSS-FRAME CONNECTION &
INTERMEDIATE STIFFENER PLATE DETAIL
Scale: 1" = 1'-0"



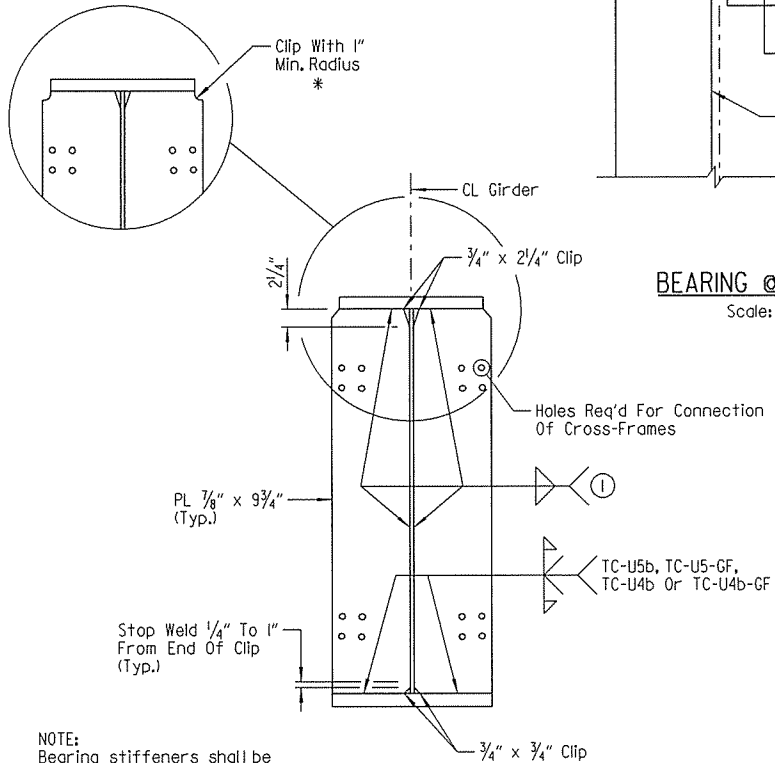
BEARING STIFFENER @ BENT NO. 1
Scale: 1" = 1'-0"



BEARING STIFFENER @ BENT NO. 5 BACK
Scale: 1" = 1'-0"

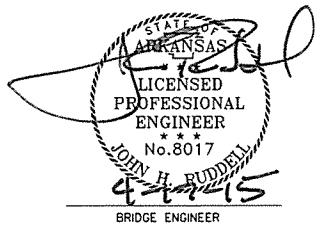


DETAIL A
Scale: 1 1/2" = 1'-0"



BEARING STIFFENER @ BENT NOS. 2, 3 & 4
Scale: 1" = 1'-0"

LEGEND
U.N.O. = Unless Noted Otherwise



SHEET 4 OF 11
DETAILS OF 440'-0" CONTINUOUS
COMPOSITE PLATE GIRDER UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: HEW DATE: JUNE 2014 FILENAME: BB0303X1.S4.DGN
CHECKED BY: SRY DATE: JULY 2014 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: JUNE 2014
BRIDGE NO. 07335 DRAWING NO. 56394

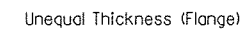
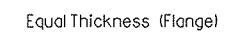
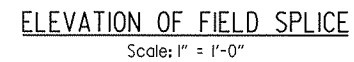
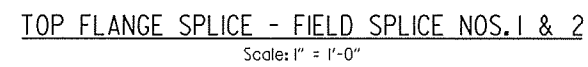
NOTES:

All field splice bolts shall be $\frac{1}{4}$ " ϕ H.S. bolts.

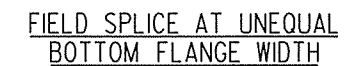
All holes for field splice bolts shall be $\frac{15}{16}$ " ϕ .

All field splice plates shall be AASHTO M270, Gr. 50W steel.

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



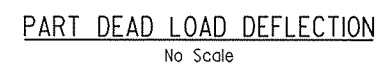
No Scale



No Scale

CL Unit 

NOTE:
Deflections shown are for Spans 1 & 2,
symmetrical about CL Unit.



No Scale

DRAWN BY: HEW DATE: JUNE 2014 FILENAME: BBB0303xi.S5.DGN
 CHECKED BY: SRY DATE: JULY 2014 SCALE: AS SHOWN
 DESIGNED BY: DRG DATE: JUNE 2014
 BRIDGE NO. 07335 DRAWING NO. 56395

4/17/2015 10:42:47 AM
 Job: AHTD Bridge
 Workspace: \\GLTCD\IT\Projects\201101705 - Red River Bridge Replacement\Drawings\8880303xl_S5.dgn
 Revised Date:

NOTE:
Pours with the same number may be placed simultaneously or separately.
All pours must be placed in the order shown. 48 hours shall elapse before 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 an adjacent pour. 72 hours shall elapse between the completion of the entire deck and the pouring of the parapet rail and median barrier. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer.

The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

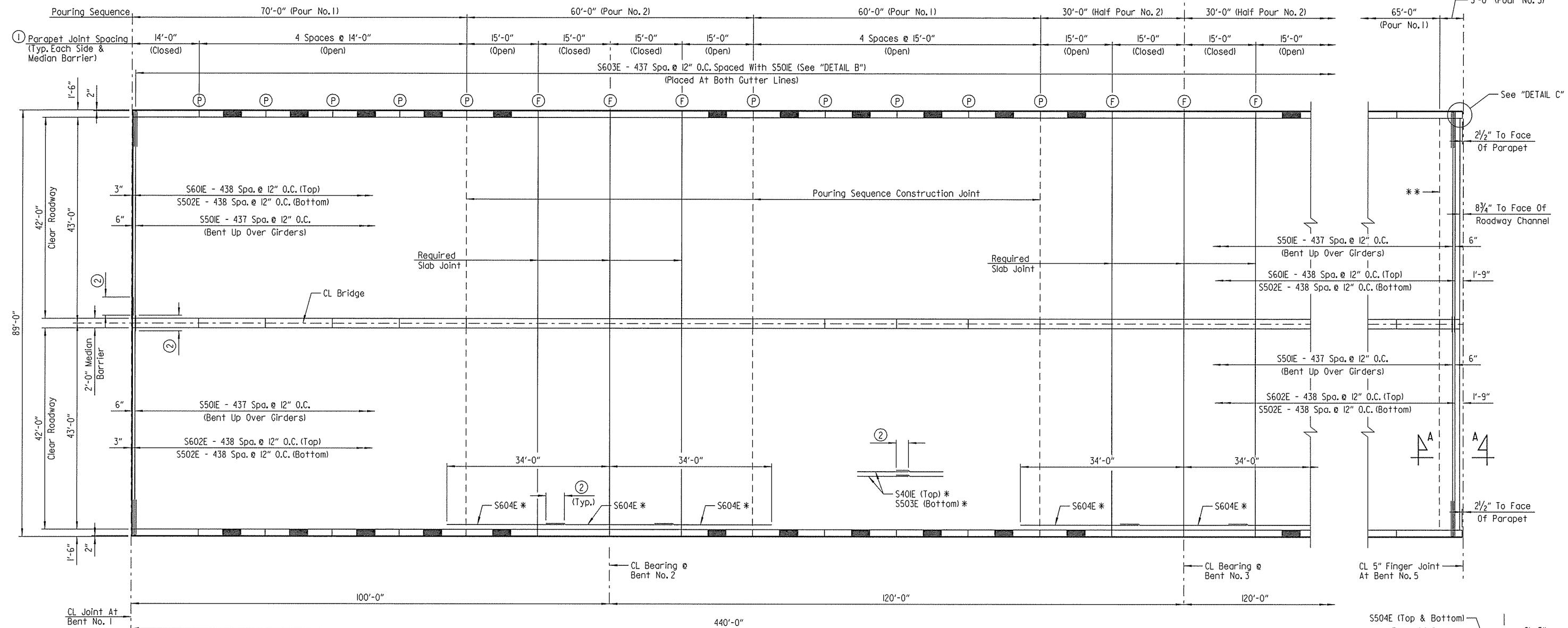
Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

* Refer to "PART TYPICAL ROADWAY SECTION" on Dwg. No. 5639I for placement.

** Pouring Sequence Construction Joint.
Closure Pour at the finger joint shall be made after all incremental pours on the unit have been placed. 48 hours shall elapse between the last incremental pour and the closure pour.

NOTE:
Required slab joints and pouring sequence joints shall align with the parapet open joints except for closure pour at the gutterline.

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.		BB0303	102	231
				07335		440' UNIT		56396

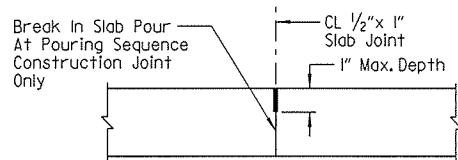


① Parapet joints designated with symbol (F) shall be stopped 4" from top of slab. All other parapet joints with symbol (P) shall be partial depth joints stopped 1'-6" from top of slab. Parapet joint designation shown is for the left parapet rail, median barrier and right parapet rail.

② #4 Bar = 2'-7" Min. Lap
#5 Bar = 3'-3" Min. Lap
#6 Bar = 3'-10" Min. Lap

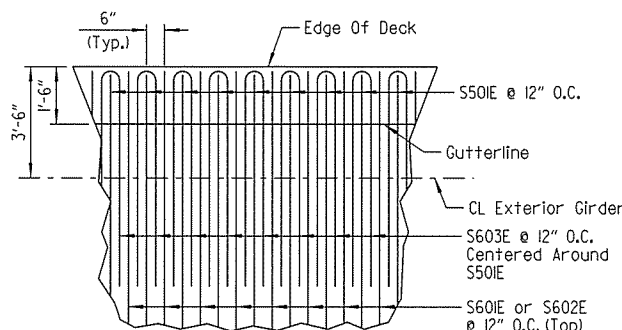
PART REINFORCING PLAN & POURING SEQUENCE

Scale: 3/32" = 1'-0"

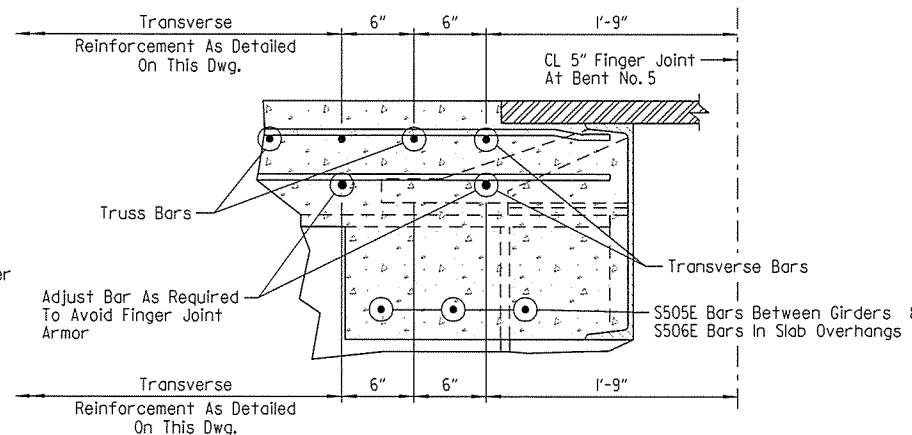


The 1/2" x 1" Poured Joint Sealer (Type 3 or 4) in slab shall conform to Subsection 501.02 (h) And 501.05 (j). Backer Rod filler will not be required. The Poured Joint Sealer shall be paid for as "CLASS SIAE/ CONCRETE-BRIDGE". Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations. The joint sealer shall extend across the deck from gutterline to gutterline.

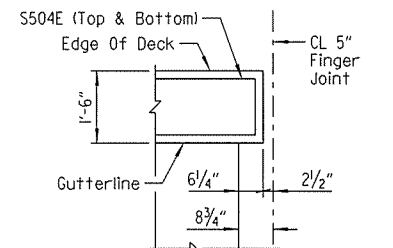
SLAB JOINT DETAIL
No Scale



DETAIL B
No Scale



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

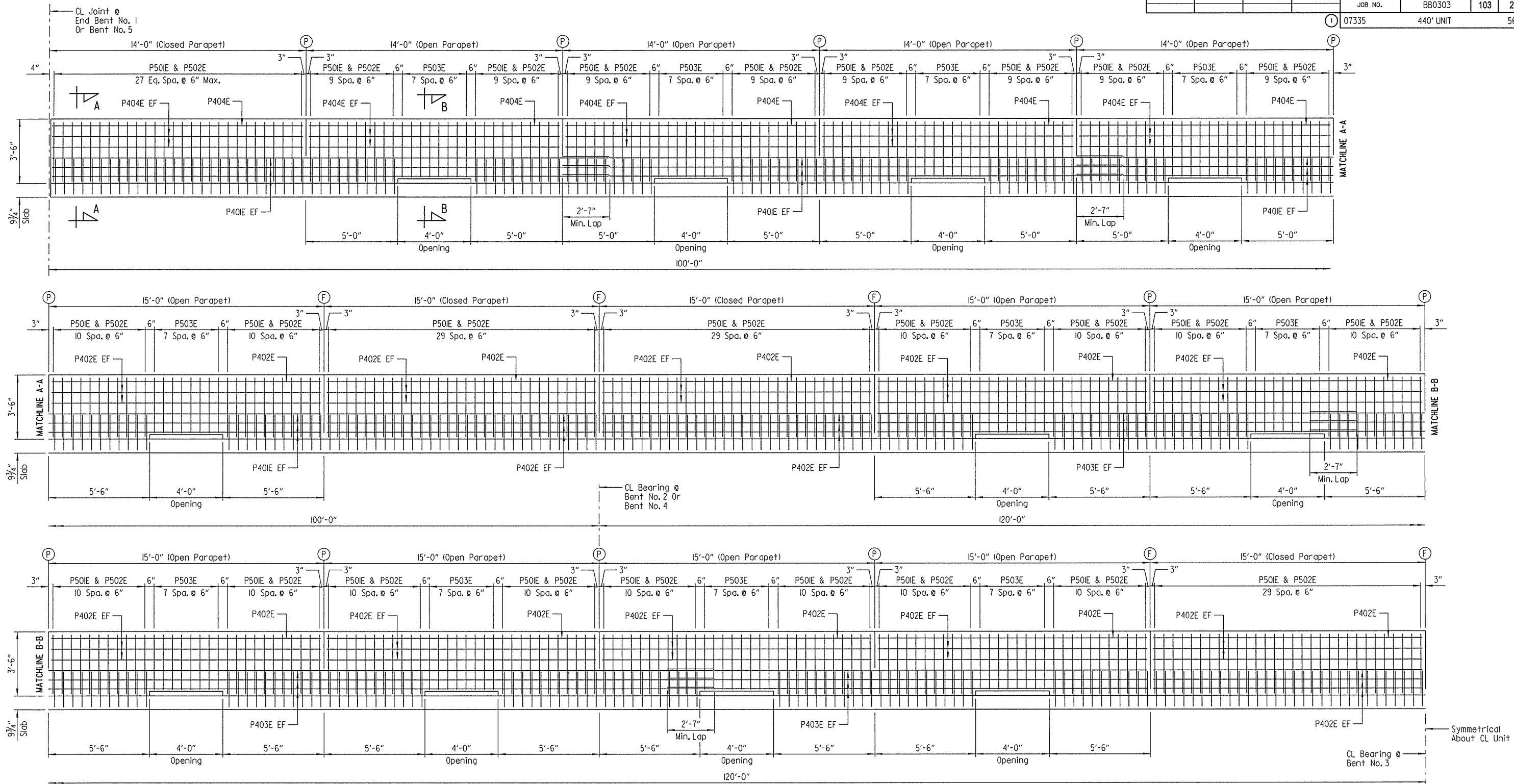


DETAIL C
Scale: 1/2" = 1'-0"

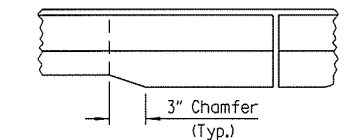
SHEET 6 OF 11
DETAILS OF 440'-0" CONTINUOUS
COMPOSITE PLATE GIRDER UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: HEW DATE: JUNE 2014 FILENAME: BBB0303x1.S6.DGN
CHECKED BY: SRY DATE: JUNE 2014 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: JUNE 2014
BRIDGE NO. 07335 DRAWING NO. 56396



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.		BB0303	103	231
				07335		440' UNIT		56397



LEFT PARAPET - PARTIAL ELEVATION
(Looking At Inside Face Of Parapet Rail)
(Right Parapet Symmetrical About CL Bridge)
No Scale



PLAN OF RAIL POST CHAMFER
(Typ. for Open Drain Panels Only)
No Scale

- (P) CL Partial-Depth Parapet Joint (1/4" to 1" Max.)
Stop 1'-6" from top of slab.
- (F) CL Full-Depth Parapet Joint (1/4" to 1" Max.)
Stop 4" from top of slab.

LEGEND
EF = Each Face

NOTES:
All dimensions shown are measured along gutterline.

For "BAR LIST" and "BAR BENDING DIAGRAM",
see Dwg. No. 56392.

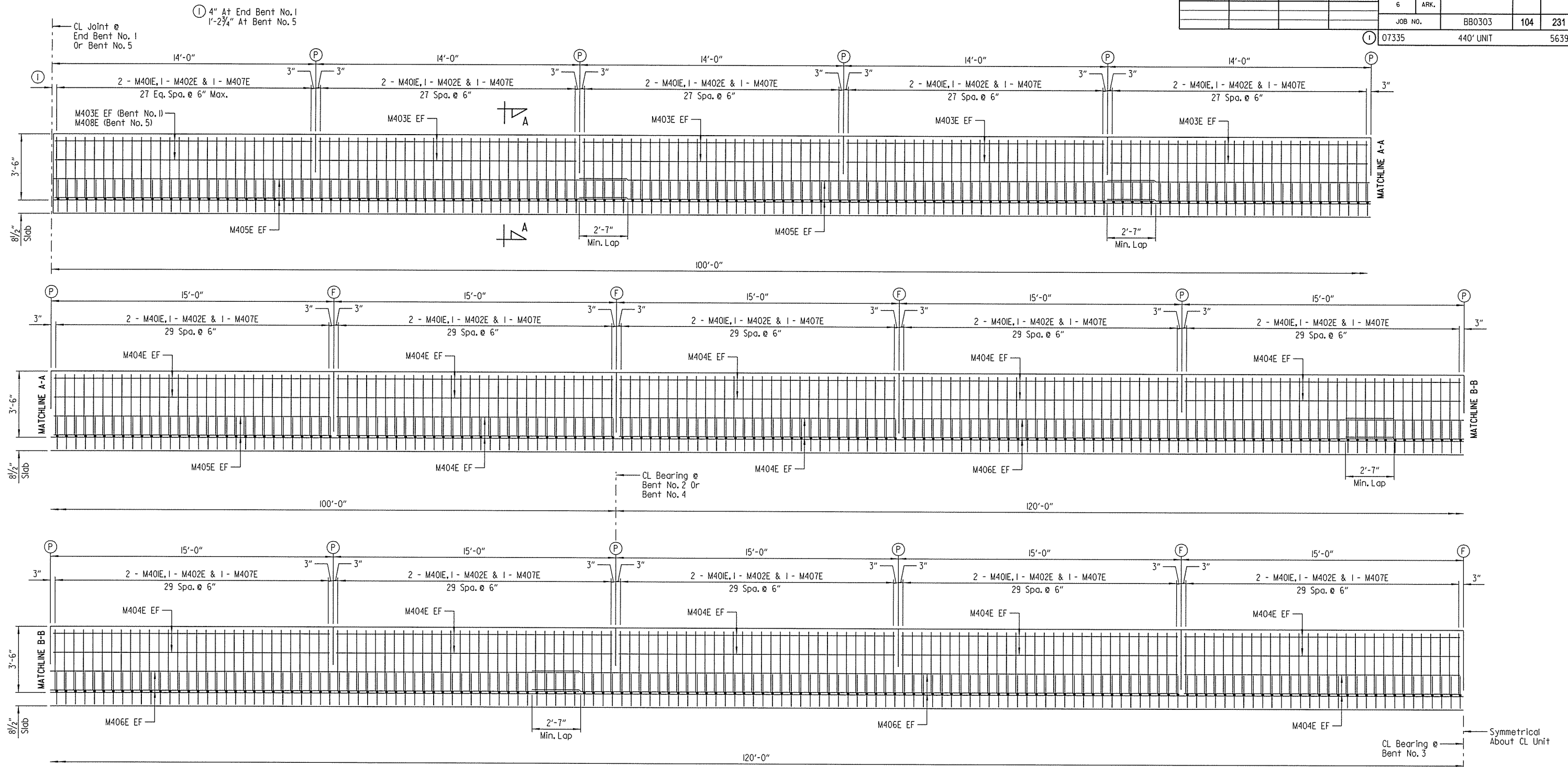
For "SECTION A-A" and "SECTION B-B",
see Dwg. No. 56401.



SHEET 7 OF 11
DETAILS OF 440'-0" CONTINUOUS
COMPOSITE PLATE GIRDER UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JUNE 2014 FILENAME: BB0303X1.S7.DGN
CHECKED BY: SRY DATE: JUNE 2014 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: JUNE 2014
BRIDGE NO. 07335 DRAWING NO. 56397

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.		BB0303	104	231
				07335		440' UNIT		56398

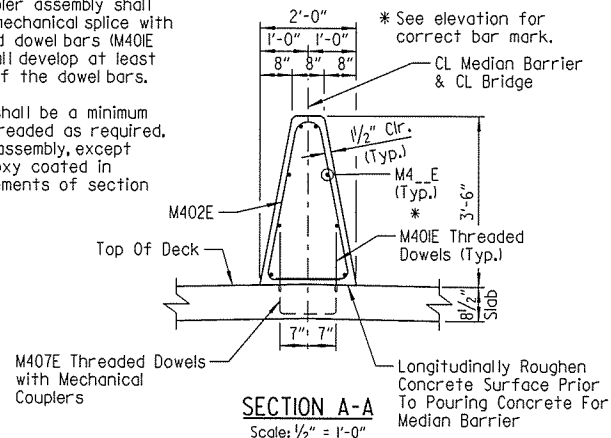


MEDIAN BARRIER - PARTIAL ELEVATION
(Looking At Right Face Of Median Barrier)
No Scale

NOTES:
The threaded dowel and coupler assembly shall consist of a OPL approved mechanical splice with protective cap and threaded dowel bars (M401E and M407E) as shown and shall develop at least 125% of the yield strength of the dowel bars.

M401E and M407E dowel bars shall be a minimum 60 ksi yield strength and threaded as required. Threaded dowel and coupler assembly, except mating surfaces, shall be epoxy coated in accordance with the requirements of section 804.

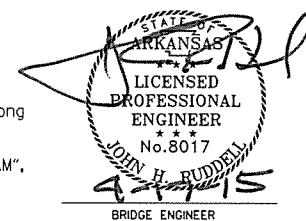
NOTE:
Protect threads in couplers until median barrier is constructed.



- (P) CL Partial-Depth Parapet Joint (1/4" to 1" Max.)
Stop 1'-6" from top of slab.
- (F) CL Full-Depth Parapet Joint (1/4" to 1" Max.)
Stop 4" from top of slab.

LEGEND
EF = Each Face

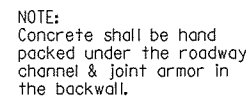
NOTES:
All dimensions shown are measured along gutterline.
For "BAR LIST" and "BAR BENDING DIAGRAM", see Dwg. No. 56392.



SHEET 8 OF 11
DETAILS OF 440'-0" CONTINUOUS
COMPOSITE PLATE GIRDER UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: JUNE 2014 FILENAME: BB0303x1_S8.DGN
CHECKED BY: SRY DATE: JUNE 2014 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: JUNE 2014
BRIDGE NO. 07335 DRAWING NO. 56398

①



DETAIL A
No Scale

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.

All structural steel, except for the steel extrusion for the strip seal, shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50W)". The steel extrusion and neoprene strip seal shall be paid for in accordance with Section 809.

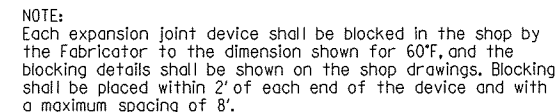
Slender plates shall be AASHTO M270-Gr. 36 and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, Gr. 50W)". The surfaces of the plates which will not be in contact with the concrete shall be cleaned and painted in accordance with Section 638, or as directed by the Engineer. Only one coat is required and shall be applied in the fabricator's shop. Painting shall not be paid for directly, but will be considered subsidiary to "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, Gr. 50W)".

Anchors will not be paid for directly but will be considered subsidiary to "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50W)".



※※ 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 of the lubricant-adhesive Manufacturer shall be observed.



EXPANSION DEVICE INSTALLATION AT BENT NO. 1:

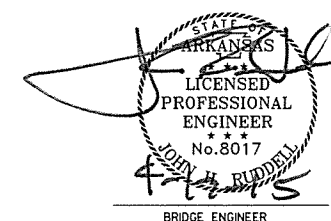
The Contractor may elect to install the expansion device using one of the following two alternatives.

- 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 girders erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed, and the opening adjusted for temperature and grade.
- 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 and grade.

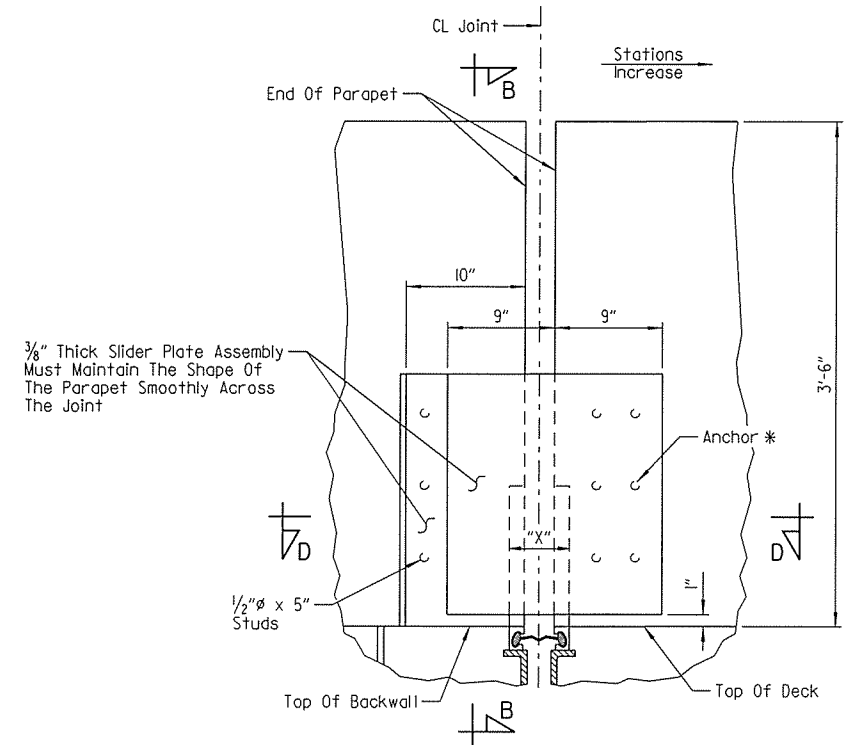
NOTE:
For additional strip seal joint details,
see Dwg. No. 56400.

SHEET 9 OF 11
DETAILS OF 440'-0" CONTINUOUS
COMPOSITE PLATE GIRDER UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JUNE 2014 FILENAME: BBB0303xL_S9.DGN
 CHECKED BY: SRY DATE: JULY 2014 SCALE: AS SHOWN
 DESIGNED BY: DRG DATE: JUNE 2014
 BRIDGE NO. 07335 DRAWING NO. 56399



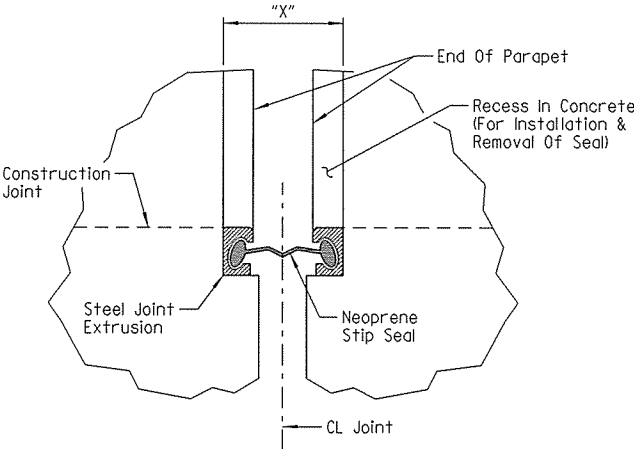
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0303	106	231
				① 07335		440' UNIT		56400



DETAIL OF NEOPRENE SEAL
AT GUTTERLINE

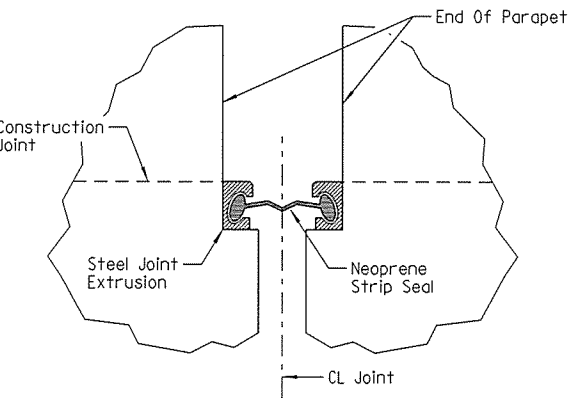
No Scale

NOTE:
Dimension "X" equals the width of the
recess in parapet at gutterline to
allow for removal or repair of joint.



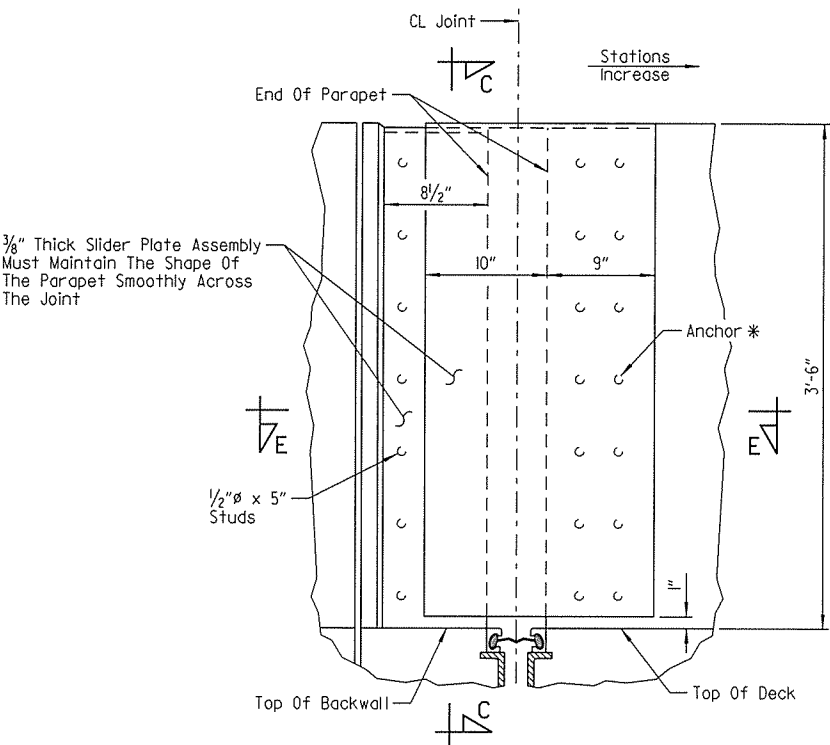
SECTION F-F

No Scale



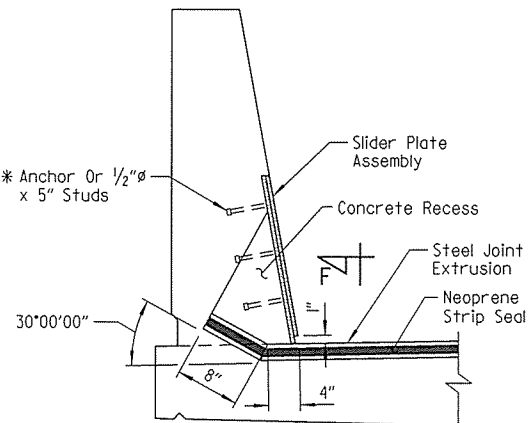
SECTION G-G

No Scale



DETAIL OF NEOPRENE SEAL
AT MEDIAN BARRIER

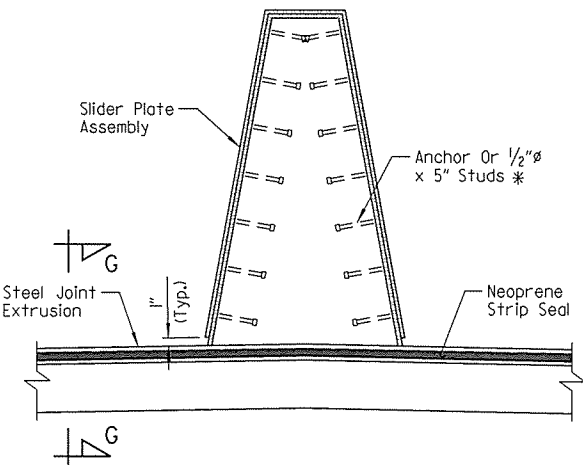
No Scale



SECTION B-B

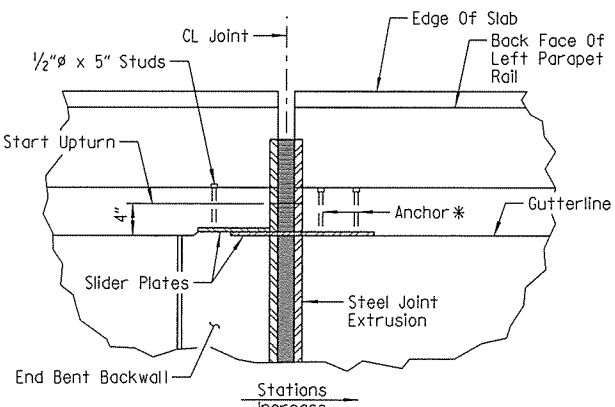
Scale: 1" = 1'-0"

* The method of anchor 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.



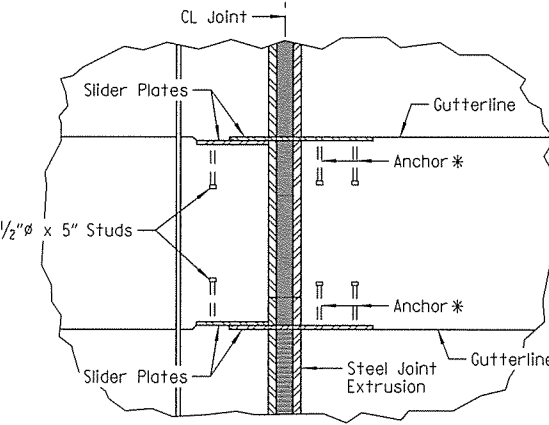
SECTION C-C

Scale: 1" = 1'-0"



SECTION D-D

Scale: 1" = 1'-0"

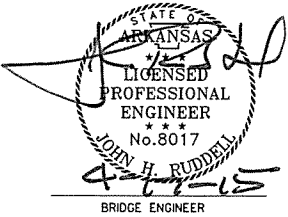


SECTION E-E

Scale: 1" = 1'-0"

SHEET 10 OF 11
DETAILS OF 440'-0" CONTINUOUS
COMPOSITE PLATE GIRDER UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JUNE 2014 FILENAME: BBB0303xl-SIO.DGN
CHECKED BY: SRY DATE: JULY 2014 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: JUNE 2014
BRIDGE NO. 07335 DRAWING NO. 56400



GENERAL NOTES

CONCRETE:

Concrete shall be poured in the dry and all exposed corners shall be chamfered 3/4" unless otherwise noted. All concrete shall be Class S(AE) Concrete. See Standard Drawing No. 55005 for f'c = 4,000 psi.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurements of Class S(AE) Concrete. See Standard Drawing No. 55005 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 the 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. Any railing pours made before the entire slab has been placed and cured must be approved by the Engineer.

REINFORCING STEEL:

All reinforcing steel shall conform to AASHTO M31 or M322, Type A, Grade 60. The reinforcing steel is to be accurately located in the forms and firmly held in place by steel wire supports, sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly, but will be considered subsidiary to the pay item "EPOXY COATED REINFORCING STEEL (GRADE 60)".

STRUCTURAL STEEL:

All structural steel shall be AASHTO M270, Gr. 50W and shall be paid for at the unit price per pound bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50W)". All structural steel shall be cleaned in accordance with Subsection 807.84 unless noted otherwise. Structural steel completely embedded in concrete may be AASHTO M270 Gr. 36 unless otherwise noted. See Dwg. No. 56418 for cleaning requirements of external load plates on elastomeric bearings.

Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on 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.

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

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

All girder webs, flanges of plate girders and splice plates are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in Subsection 807.05. This work and material will not be paid for directly but are considered as subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50W)".

Steel plates for main load carrying members (flange and web plates) and flange field splice plates shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses.

Girder webs may be made by shop splicing with a minimum length of 25'-0" for sections. Flange plates longer than 50'-0" may be made by shop splicing with a minimum length of 25'-0" for sections. Material specifications and locations of shop-welded splices, if any, shall be shown on the shop drawings. No additional payment for these welded splices will be made.

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 Subsection 807.26.

All girders shall be blocked in their true positions with webs horizontal in the shop as specified in Subsection 807.54 (b)(2). The camber, length of sections, distance between bearings and opening of joints shall be measured with the girders in their true positions and this information shall become a part of the permanent records of this job. The component parts shall be match marked in this assembly and these marks shall be shown on the erection diagram. All girder dimensions are based on a temperature of 60°F. A tolerance of +/- 1/4" is allowed for camber.

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

All connection plates and intermediate stiffeners shall be fabricated normal to the top flange and on the side of the girder web as indicated on the framing plan. No intermediate stiffeners are to be placed on the outside of the exterior girders except as noted. All bearing stiffeners shall be fabricated to be plumb in their final positions.

Crossframes shall be installed as girders are erected. All bolts in cross-frames and field splices shall be installed and tightened in accordance with Subsection 807.71 prior to pouring of the concrete deck.

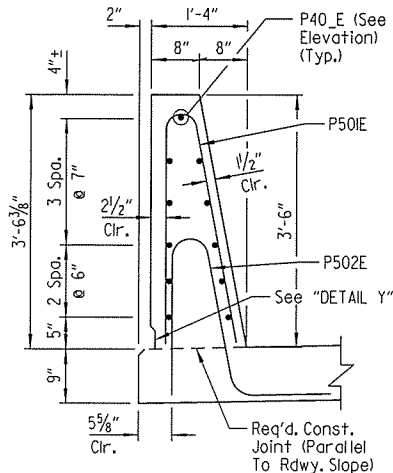
Field connections shall be bolted with high-strength bolts. Bolts shall be 3/4" diameter, except as noted, and open holes shall be 1 1/8", unless noted otherwise. Holes for 3/4" diameter bolts may be 1 1/8" diameter if a washer is supplied for use under both the nut and head of the bolt. Bolt spacing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

All contact surfaces between plates at field splices shall be free of oil, rust or scale before assembly.

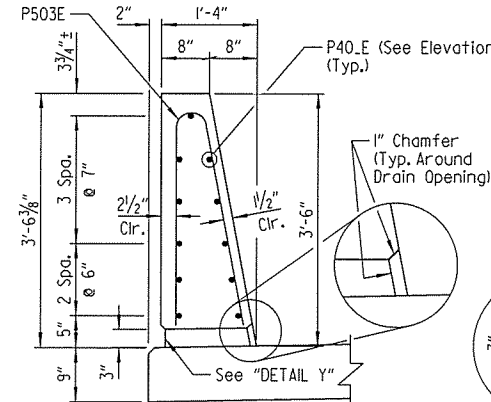
All stud shear connectors shall be granular flux filled, solid fluxed or equal and shall be automatically end welded in accordance with recommendations of the Manufacturer.

Bearings shall be firmly seated in accordance with Subsection 808.08. This work and material is to be considered subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50W)" and will not be paid for directly.

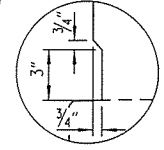
Anchor bolts shall be AASHTO designation M314 Gr. 55, including supplemental requirement S1, and shall be galvanized to conform to AASHTO M232, Class C or ASTM B695 Class 50. Anchor bolts will be paid for at the contract unit price bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50W)".



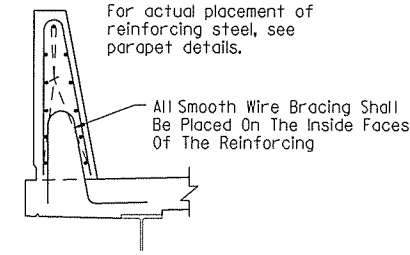
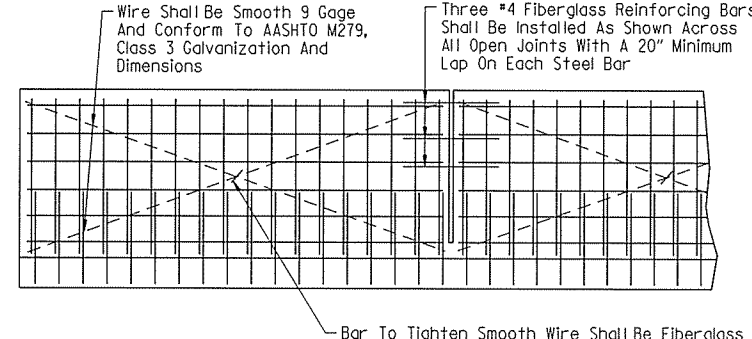
SECTION A-A
Scale: 3/4" = 1'-0"



SECTION B-B
(At Open Drains)
Scale: 3/4" = 1'-0"



DETAIL Y
No Scale

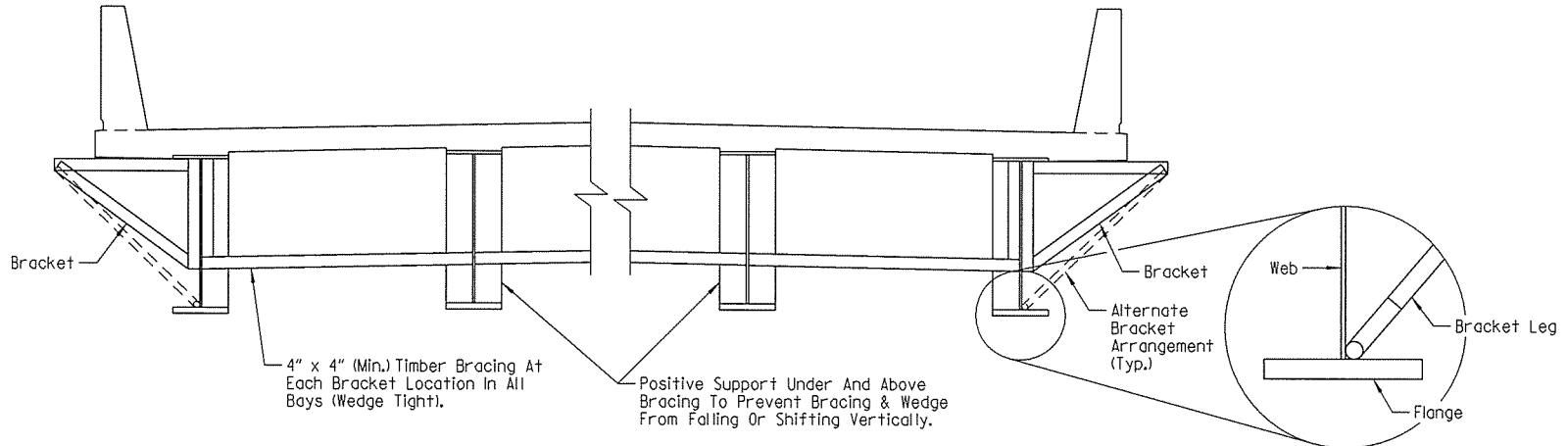


All panels shall be braced as shown to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of 1/4". To control cracking before sawing, all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

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.

DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL

No Scale

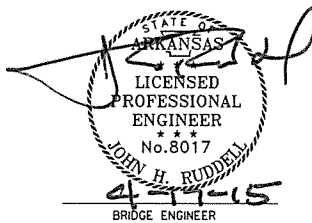


SCREED RAIL SUPPORT DETAIL

No Scale

NOTE:
If a transverse finishing machine is used, the rail shall be supported directly over the exterior girders, or as an alternate, the rail may be supported by the overhang brackets if the above strutting system is used. The strutting system may be omitted if 1/2" x 6" web stiffeners are welded to the insides of the exterior girders at the location of each bracket or if the alternate bracket shown above is used. The alternate bracket arrangement shall extend down to the junction of the web and bottom flange. The stiffeners shall conform to the details for cross-frame connection plates shown on Dwg. No. 56394. No direct payment will be made for brackets, timber bracing, supports, or welded stiffeners. Payment shall be subsidiary to "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50W)".

NOTE:
The bracket shall be installed in a manner that avoids any nicks or gouges in the flange, web and weld.

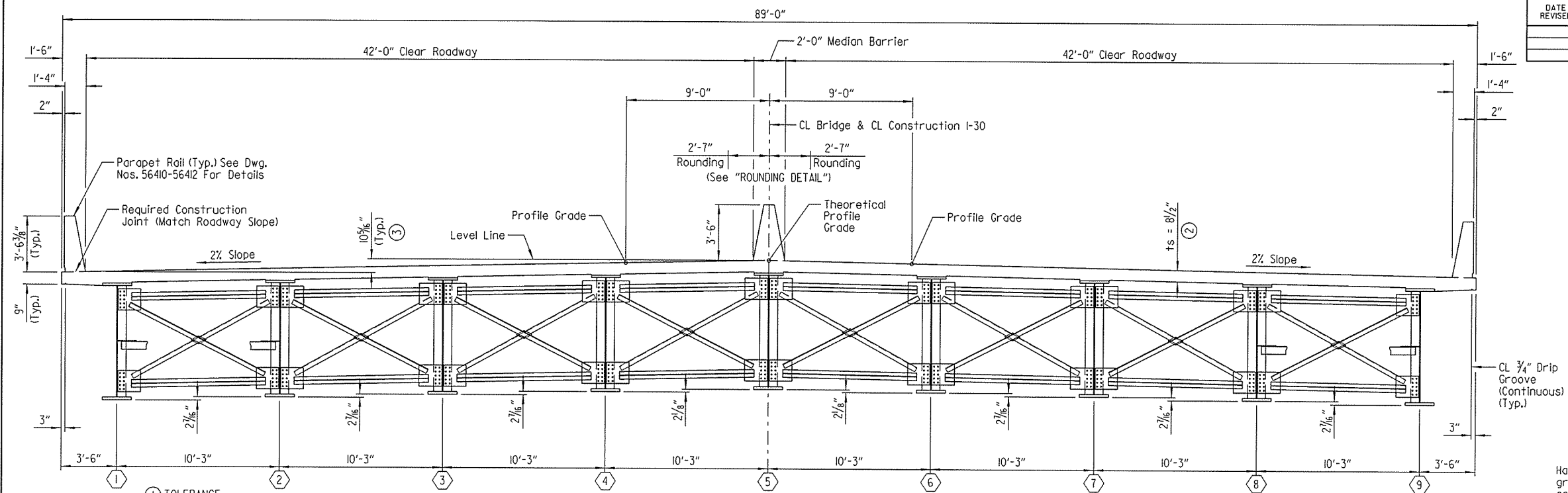


SHEET 11 OF 11
DETAILS OF 440'-0" CONTINUOUS
COMPOSITE PLATE GIRDER UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: APR. 2014 FILENAME: BBB0303x1-S11.DGN
CHECKED BY: SRY DATE: JULY 2014 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: APR. 2014
BRIDGE NO. 07335 DRAWING NO. 56401

4/17/2015 10:42:50 AM
JesKimer
WORKSPACE: AHTD Bridge
\\GLTDC01\IT\Projects\201\07705 - Red River Bridge Replacement\Drawings\BBB0303x1-S11.dgn
REVISED DATE:

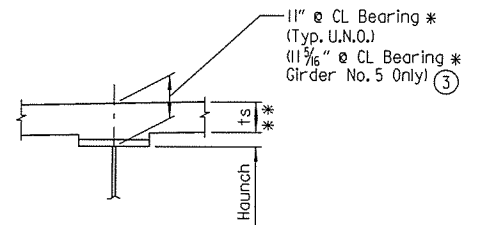
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0303	108	231
				07335		860' UNIT		56402



- ① TOLERANCE:
Minus = $\frac{1}{4}$ "
Plus = 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".

TYPICAL ROADWAY SECTION
(Looking Forward)
Scale: $\frac{1}{4}$ " = 1'-0"

- ③ Measured to Working Point, see "ROUNDING DETAIL".
- ④ Placed as shown over fixed bents. See "PART REINFORCING PLAN & POURING SEQUENCE" on Dwg. Nos. 56409 & 56410.
- ⑤ See "PART FRAMING PLAN" on Dwg. Nos. 56409 & 56410 for locations of construction lateral bracing. For construction lateral bracing details, see Dwg. No. 56406.



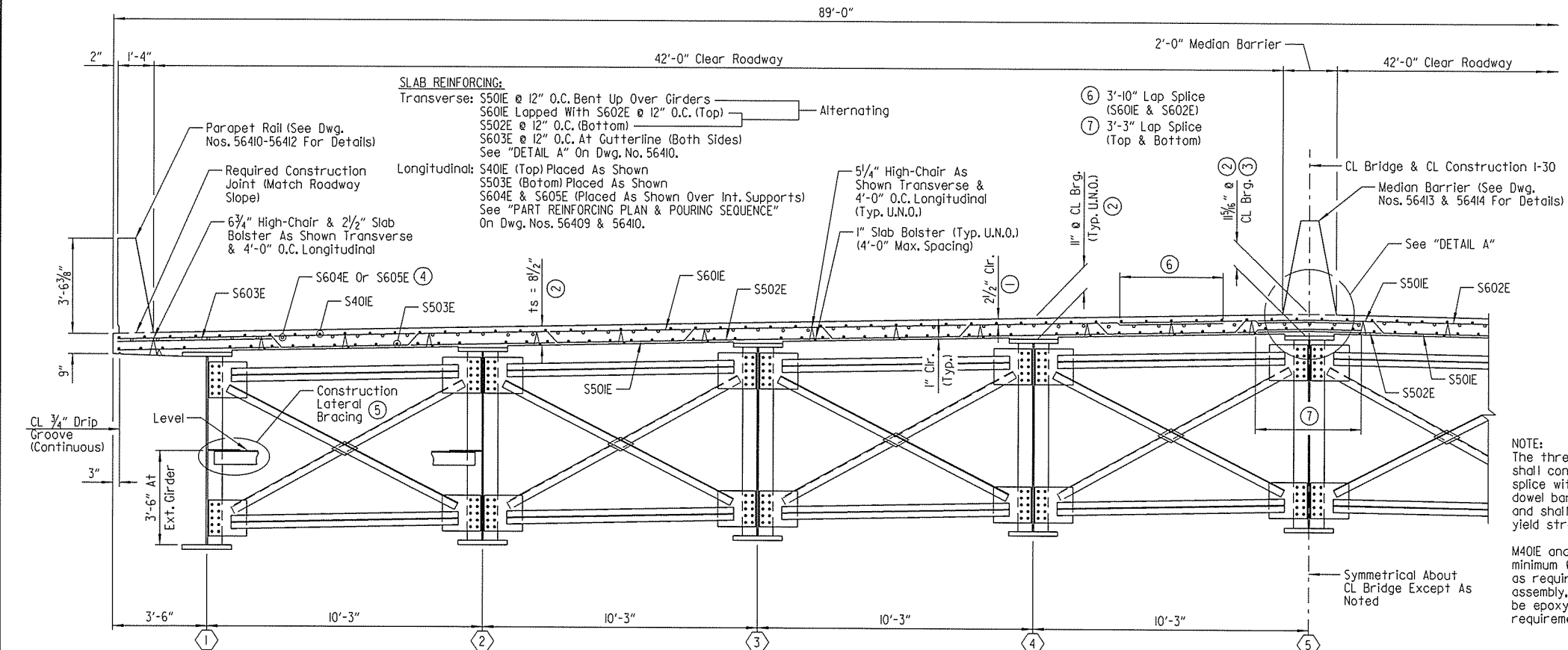
NOTE: ts = Slab thickness as shown on "TYPICAL ROADWAY SECTION".

- * Measured to bottom of top flange.
- ** Tolerance when removable deck forming is used is $\pm \frac{1}{2}$ " - $\frac{1}{4}$ ". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED
No Scale

Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance: Minimum - occurs when the top flange contacts the bottom reinforcing steel; Maximum - top flange thickness plus $\frac{2}{4}$ " No increase in concrete and structural steel quantities will be made to maintain tolerances.

Tolerances shown are applicable only when removable deck forming is used. See Std. Dwg. No. 55005 for tolerances when permanent steel bridge deck forms are used. Payment for "CLASS S(AE) CONCRETE-BRIDGE" shall be based on the use of removable deck forming.

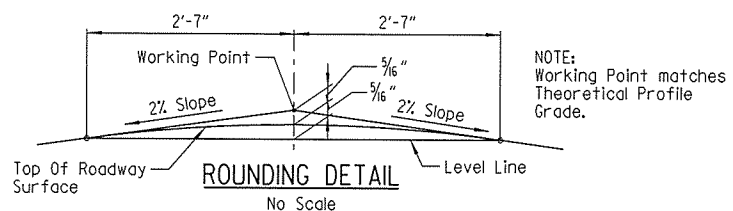


NOTE:
Class I Protective Surface Treatment shall be applied to the roadway surface and the roadway faces and tops of parapet rails and median barrier.

NOTE:
At the Contractor's option, one epoxy coated #5 bar in the top and one epoxy coated #5 bar in the bottom may be substituted for each bar S501E. Payment will be based on the weight of bar S501E.

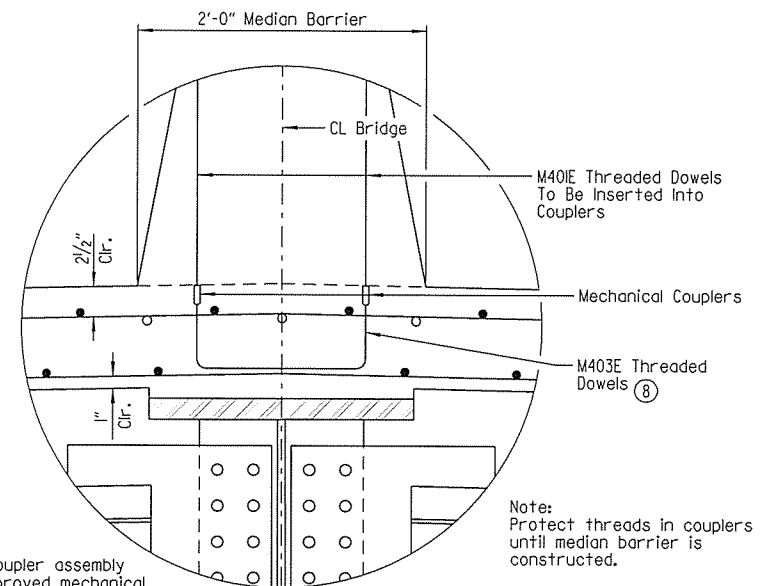
LEGEND
U.N.O. = Unless Noted Otherwise

NOTES:
For "TYPICAL SECTION THRU JOINT" and "BAR LIST", see Dwg. No. 56403.
For "GENERAL NOTES", see Dwg. No. 56415.



NOTE:
The threaded dowel and coupler assembly shall consist of a OPL approved mechanical splice with protective cap and threaded dowel bars (M401E and M403E) as shown and shall develop at least 125% of the yield strength of the dowel bars.

M401E and M403E dowel bars shall be a minimum 60 ksi yield strength and threaded as required. Threaded dowel and coupler assembly, except mating surfaces, shall be epoxy coated in accordance with the requirements of Section 804.



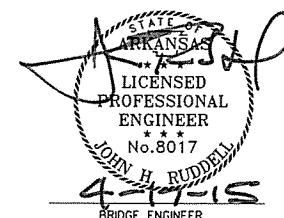
DETAIL A
Scale: $\frac{1}{2}$ " = 1'-0"

Note:
Protect threads in couplers until median barrier is constructed.

⑧ Space and orient M403E bars to align mechanical couplers with M401E bars. See median barrier details on Dwg. Nos. 56413 & 56414 for spacing and positioning of M401E bars.

SHEET 1 OF 14
DETAILS OF 860'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

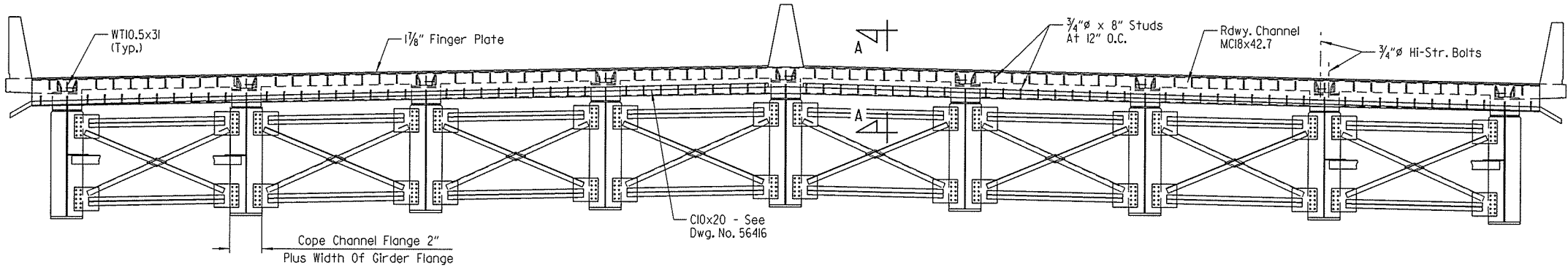
DRAWN BY: HEW DATE: APR. 2014 FILENAME: BBB0303x1.S12.DGN
CHECKED BY: JHR DATE: JULY 2014 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: APR. 2014
BRIDGE NO. 07335 DRAWING NO. 56402



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.		BB0303	109	231
				① 07335		860' UNIT		56403

EXPANSION DEVICE:
Rdwy. Channel MC18x42.7
Channel Connection - WT10.5x31
Finger Joint - 5" Movement
Detail Device 1/8" High And Provide 1/4" Shims
Using 2 - 1/16" And 1 - 1/8" Plates

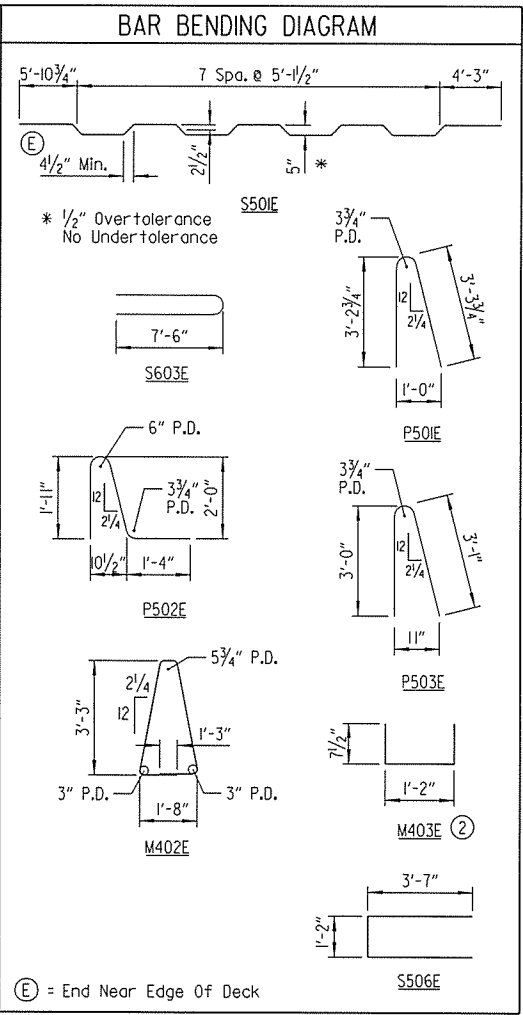
Note:
For details of finger joint,
see Dwg. Nos. 56416 & 56417.



TYPICAL SECTION THRU JOINT

(Looking Forward At Bent 5,
Looking Back At End Bent 9)
Scale: 1/4" = 1'-0"

BAR LIST			
MARK	NO. REQ'D	LENGTH	P.D.
S401E	2208	39'-10"	Str.
S501E	1714	47'-1"	3"
S502E	1712	46'-0"	Str.
S503E	1664	56'-8"	Str.
S504E	96	9'-2"	Str.
S505E	24	2'-11"	Str.
S506E	8	8'-2"	2 1/2"
S601E	858	41'-2"	Str.
S602E	858	51'-5"	Str.
S603E	1712	15'-3"	5 1/4" ①
S604E	570	46'-11"	Str.
S605E	285	60'-0"	Str.
P401E	120	32'-10"	Str.
P402E	324	17'-8"	Str.
P403E	144	30'-2"	Str.
P404E	20	16'-5"	Str.
P405E	140	16'-8"	Str.
P406E	160	16'-2"	Str.
P501E	2800	6'-8"	3 3/4"
P502E	2800	5'-4"	3 3/4", 6"
P503E	672	6'-2 1/2"	3 3/4"
M401E	3,436	1'-6"	Str.
M402E	1,718	9'-7"	5 3/4", 3"
M403E	1,718	2'-3"	2"
M404E	40	32'-10"	Str.
M405E	120	17'-8"	Str.
M406E	48	30'-2"	Str.
M407E	8	15'-11"	Str.
M408E	56	16'-8"	Str.
M409E	64	16'-2"	Str.



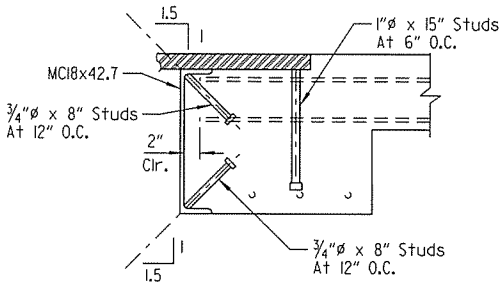
① = End Near Edge Of Deck

NOTES:
Dimensions of bars are out-to-out.

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

① Non-typical pin diameter

② Thread ends as necessary to accommodate
mechanical couplers. Length of vertical legs
includes the length of the mechanical coupler.
The actual length of vertical leg engagement
into the mechanical coupler shall be determined
by the mechanical coupler manufacturer, and the
length of the vertical legs shall be adjusted
accordingly.



SECTION A-A

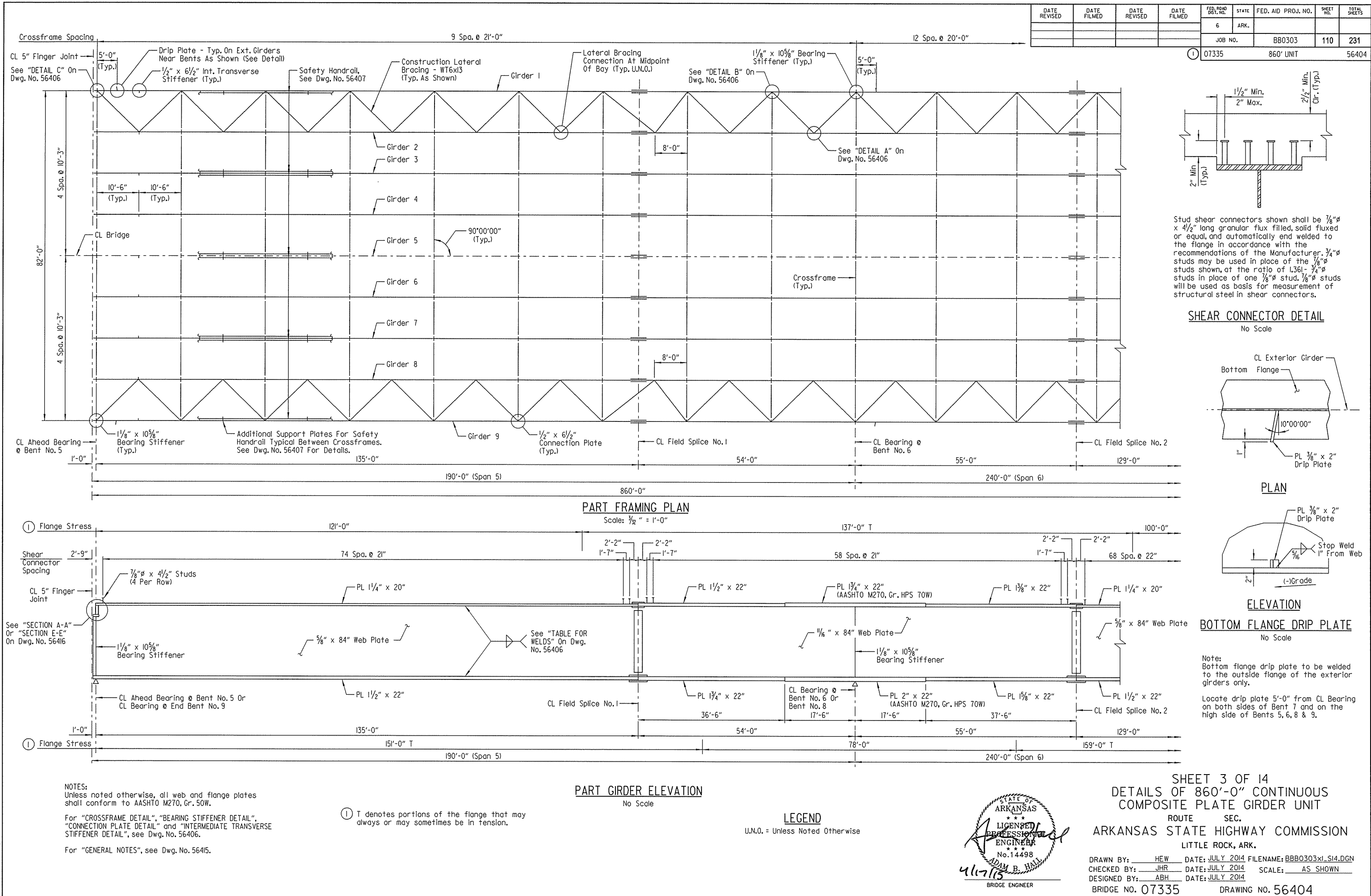
Scale: 1" = 1'-0"

SHEET 2 OF 14
DETAILS OF 860'-0" CONTINUOUS
COMPOSITE PLATE GIRDER UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

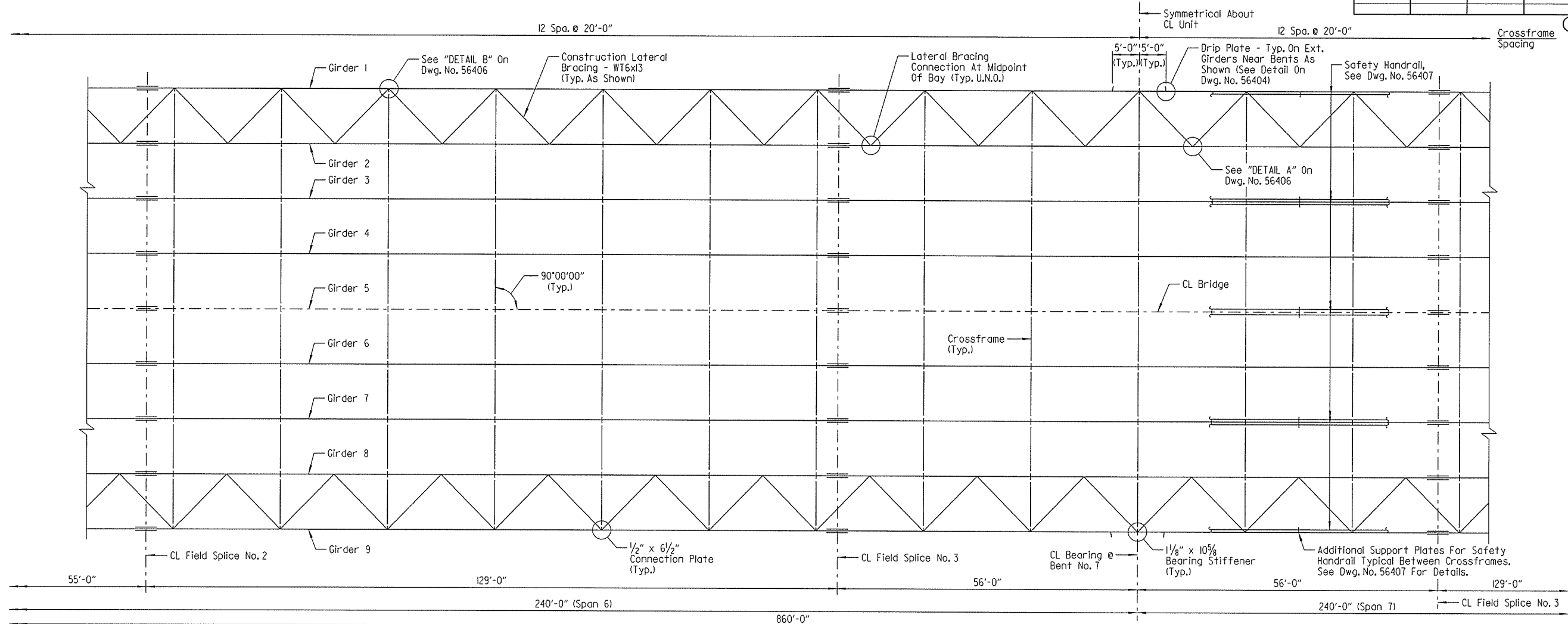
DRAWN BY: HEW DATE: APR. 2014 FILENAME: BBB0303xl_S13.DGN
CHECKED BY: MRA DATE: SEPT. 2014 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: APR. 2014
BRIDGE NO. 07335 DRAWING NO. 56403



4/17/2015 10:42:52 AM
WORKSPACE: AHTD Bridge
\\GLTDC01\IT\Projects\2011\07705 - Red River Bridge Replacement\Drawings\BBB0303x1_S14.dgn
REVISION DATE:

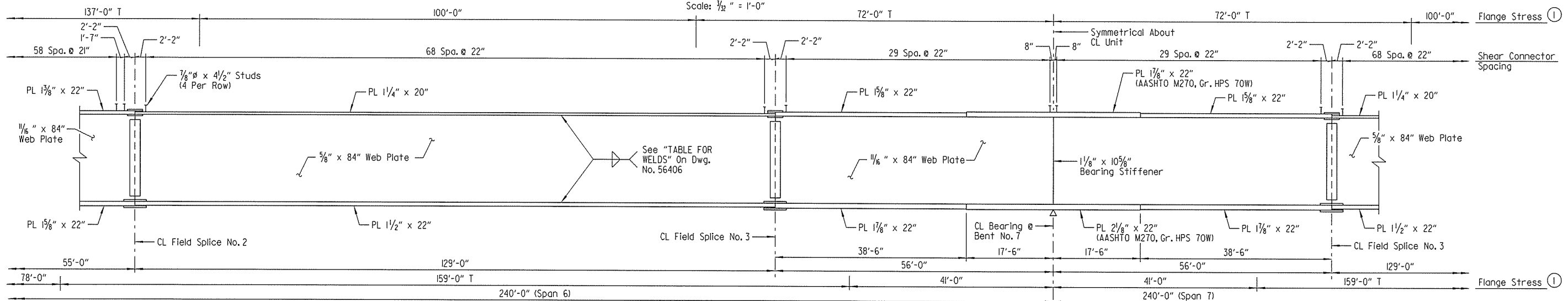


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0303	111	231
						860' UNIT		56405



PART FRAMING PLAN

Scale: $\frac{1}{32}'' = 1'-0''$



PART GIRDER ELEVATION

No Scale

NOTES:
Unless noted otherwise, all web and flange plates shall conform to AASHTO M270, Gr. 50W.

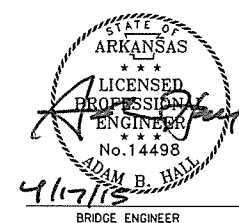
NOTES:
For "CROSSFRAME DETAIL", "BEARING STIFFENER DETAIL" and "CONNECTION PLATE DETAIL", see Dwg. No. 56406.

For "GENERAL NOTES", see Dwg. No. 56415.

(1) T denotes portions of the flange that may always or may sometimes be in tension.

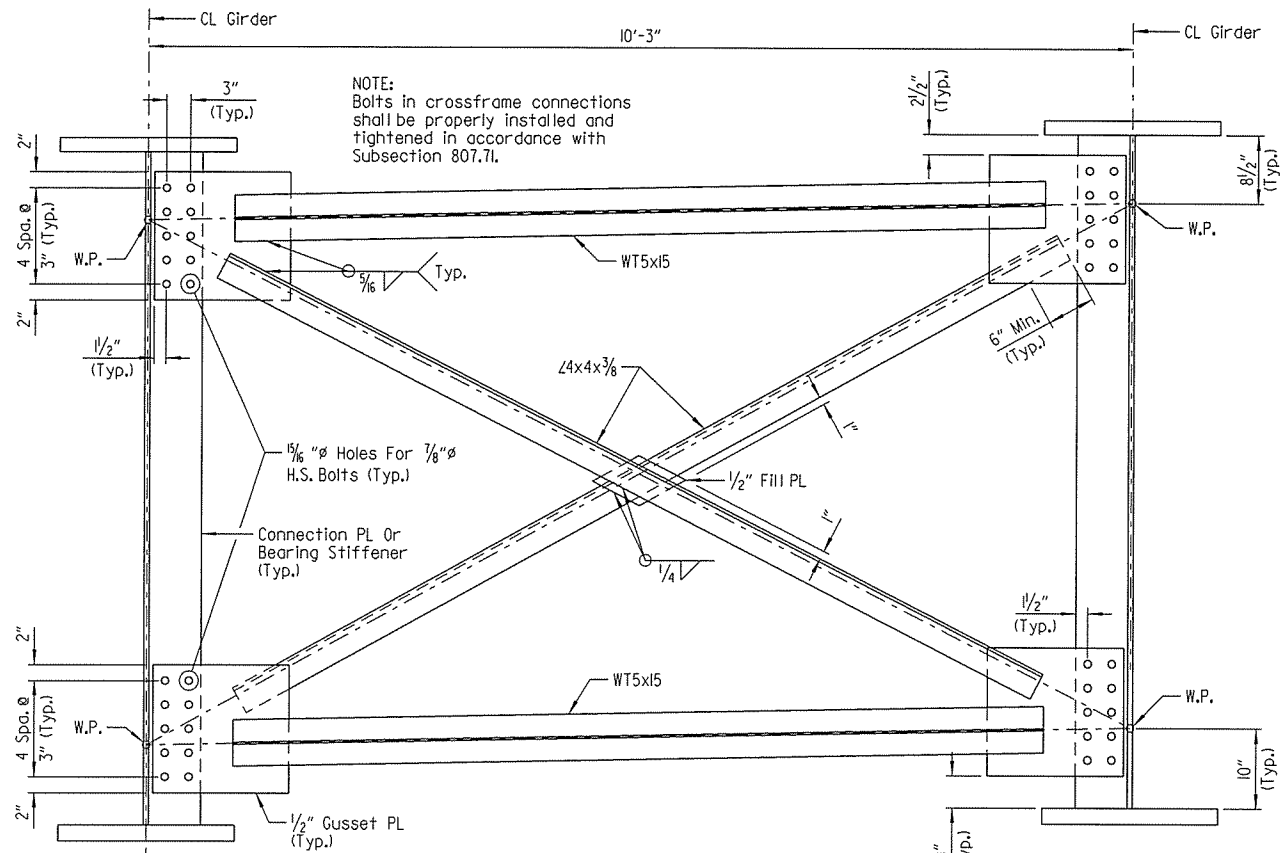
LEGEND

U.N.O. = Unless Noted Otherwise

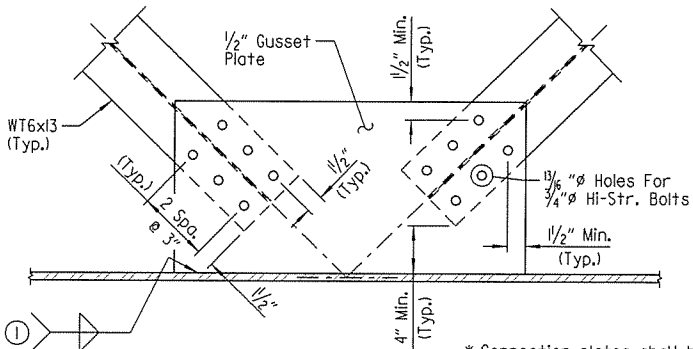


SHEET 4 OF 14
DETAILS OF 860'-0" CONTINUOUS
COMPOSITE PLATE GIRDER UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: HEW DATE: JULY 2014 FILENAME: BBB0303x1-S15.DGN
CHECKED BY: JHR DATE: JULY 2014 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: JULY 2014
BRIDGE NO. 07335 DRAWING NO. 56405

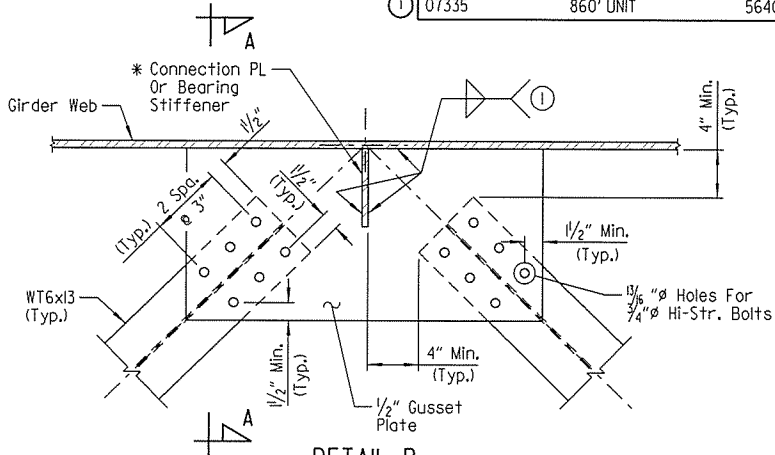
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0303	112	231
				07335		860' UNIT		56406



CROSSFRAME DETAIL
Scale: 1" = 1'-0"



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



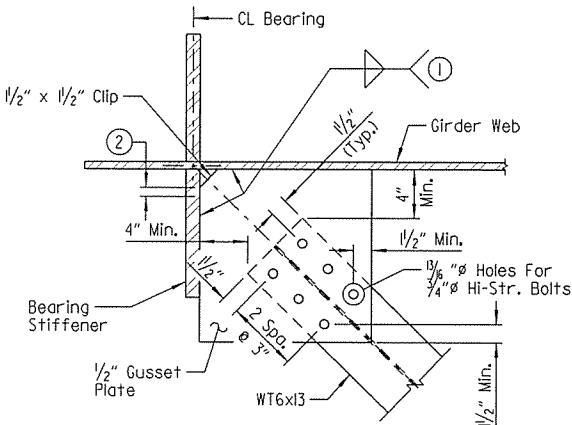
DETAIL B
Scale: 1/2" = 1'-0"

NOTES:
For "GENERAL NOTES", see Dwg. No. 56415.
All structural steel for crossframes, connection plates, intermediate transverse stiffeners and bearing stiffeners shall be AASHTO M270 Gr. 50W.

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

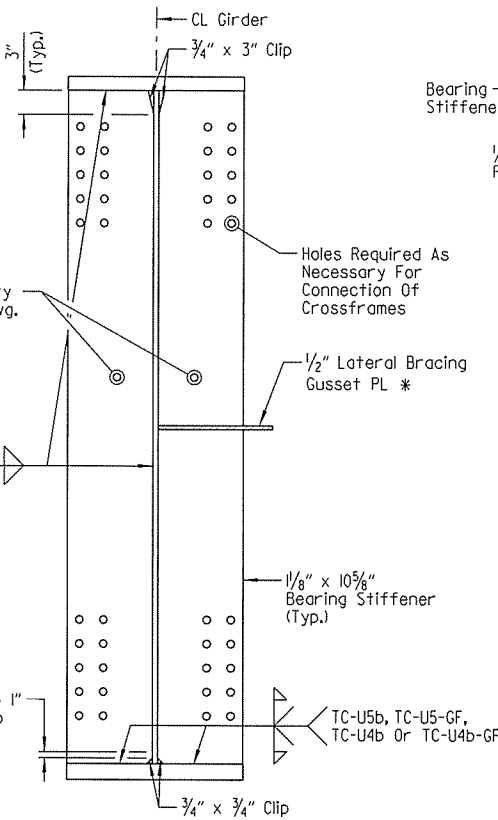
NOTE:
When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.

Note:
At the Contractor's option, 1/8" holes may be field drilled in one end of each WT6x13 member.

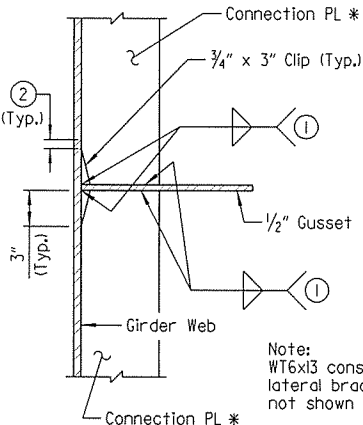


DETAIL C
Scale: 1/2" = 1'-0"

② Stop Weld 1/4" To 1" From End Of Clip



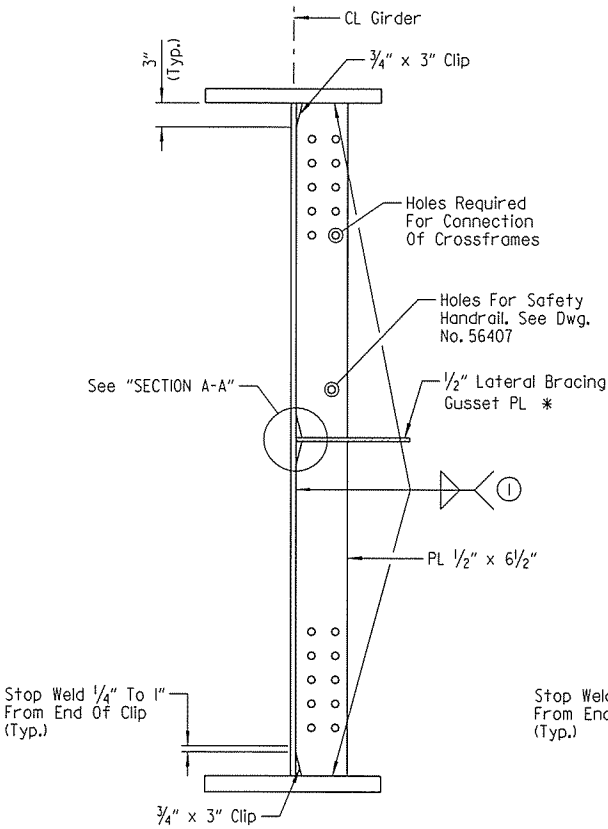
BEARING STIFFENER DETAIL
AT BENTS 6, 7 & 8
No Scale



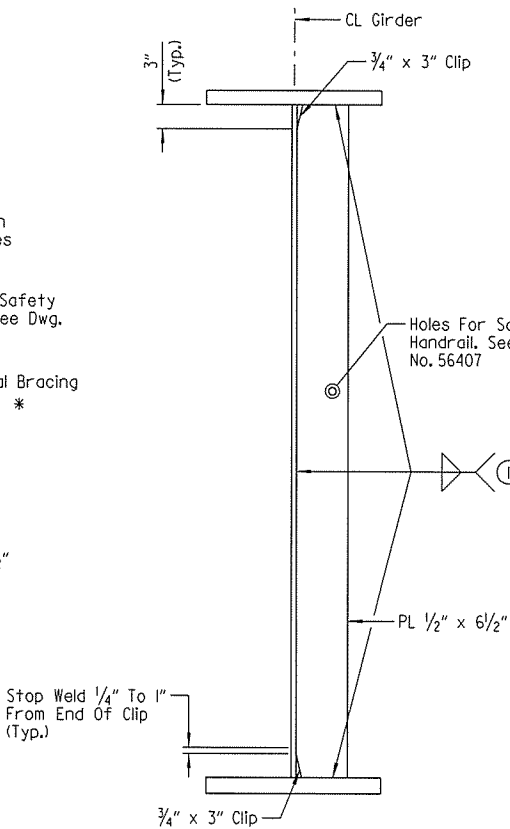
SECTION A-A
Scale: 1/2" = 1'-0"

Note:
WT6x13 construction lateral bracing member not shown for clarity.

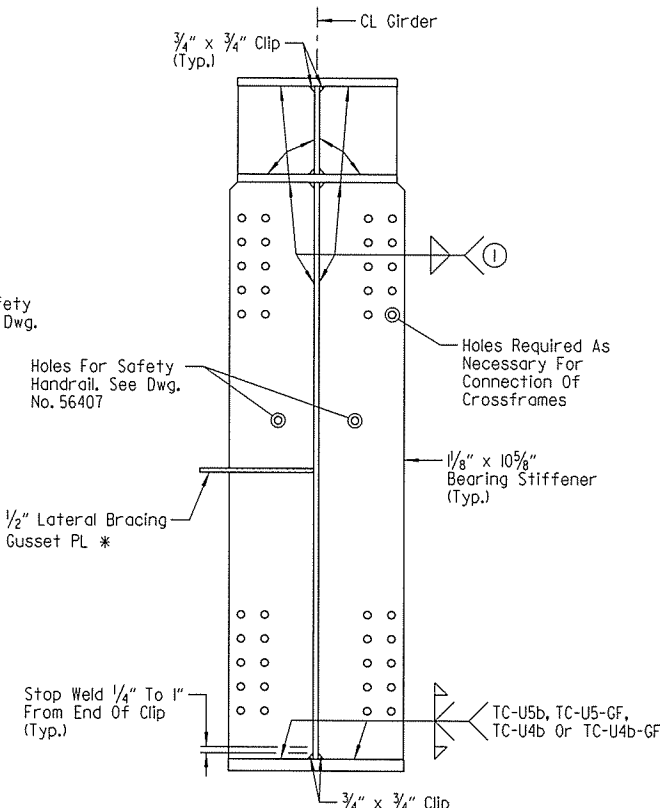
Note:
See "PART FRAMING PLAN" on Dwg. Nos. 56404 & 56405 for locations of construction lateral bracing.



CONNECTION PLATE DETAIL
No Scale



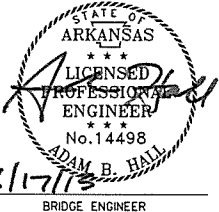
INTERMEDIATE TRANSVERSE
STIFFENER DETAIL
No Scale



BEARING STIFFENER DETAIL
AT BENT 5 AH. & BENT 9
No Scale

NOTE:
Bearing stiffeners shall be fabricated to be plumb in their final positions.

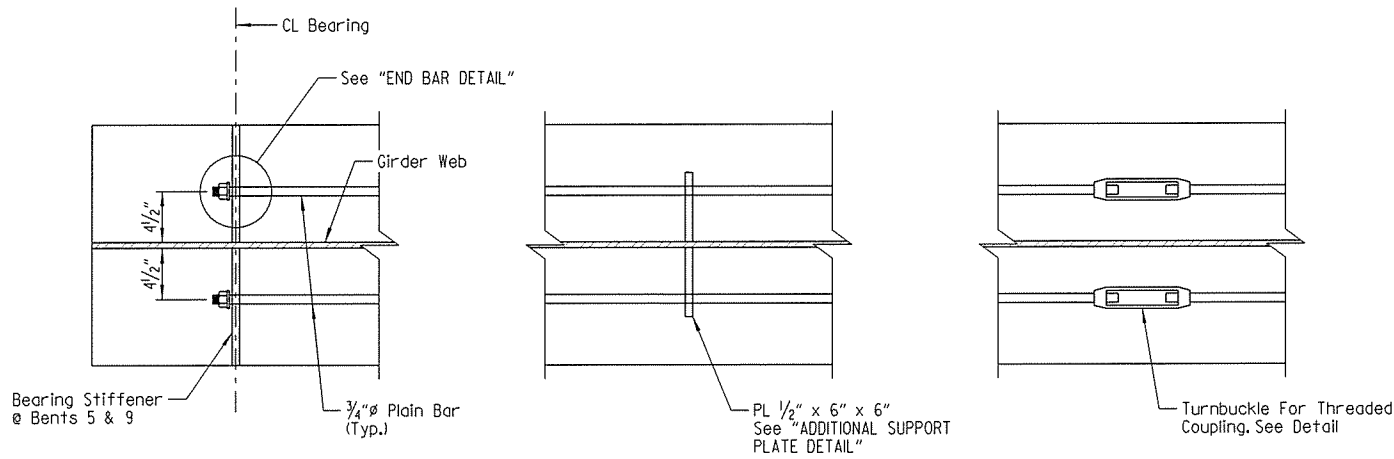
① See "TABLE FOR WELDS" for min. weld size.



SHEET 5 OF 14
DETAILS OF 860'-0" CONTINUOUS
COMPOSITE PLATE GIRDER UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ABH DATE: JULY 2014 FILENAME: BBB0303x1-S16.DGN
CHECKED BY: JHR DATE: 2014 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: JULY 2014
BRIDGE NO. 07335 DRAWING NO. 56406

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.		BB0303	113	231
				07335		860' UNIT		56407

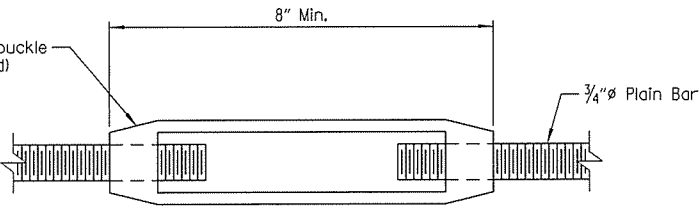


DETAILS OF FIELD ERECTED SAFETY HANDRAILS
Scale: $1\frac{1}{2}" = 1'-0"$

Unless noted otherwise, all structural steel in safety handrails shall conform to the requirements of AASHTO M270, GR. 36 and Section 807.

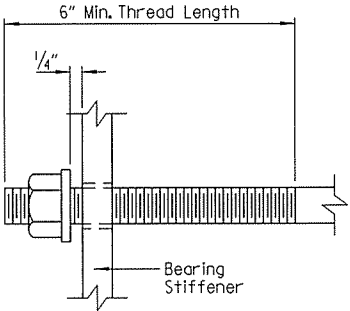
Structural steel, including $\frac{3}{4}"$ plain bar and support plates, shall be included in the 860' unit structural steel quantities. Turnbuckles shall not be paid for directly but shall be subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50W)".

The $\frac{3}{4}"$ plain bar, turnbuckles and accessories shall be galvanized according to AASHTO M232, Class C or ASTM B695, Class 50. All galvanizing will not be paid for directly, but will be subsidiary to the item of "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50W)".



TURNBUCKLE FOR THREADED COUPLING
No Scale
Turnbuckle to conform to ASTM F1145

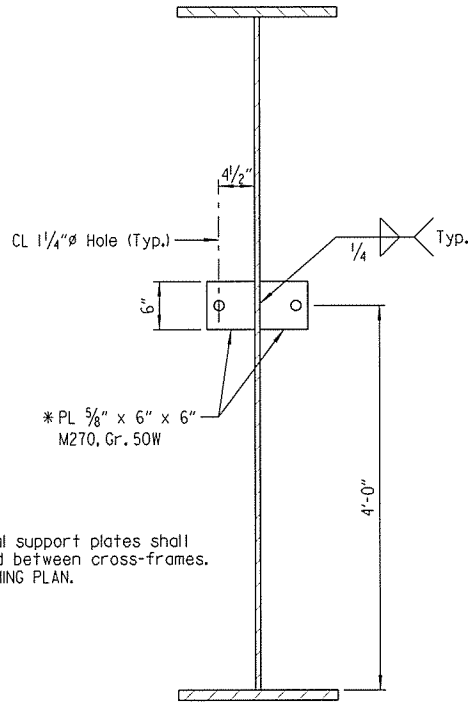
All safety handrails shall be $\frac{3}{4}"$ plain bars made continuous by using turnbuckle couplings.



END BAR DETAIL
No Scale

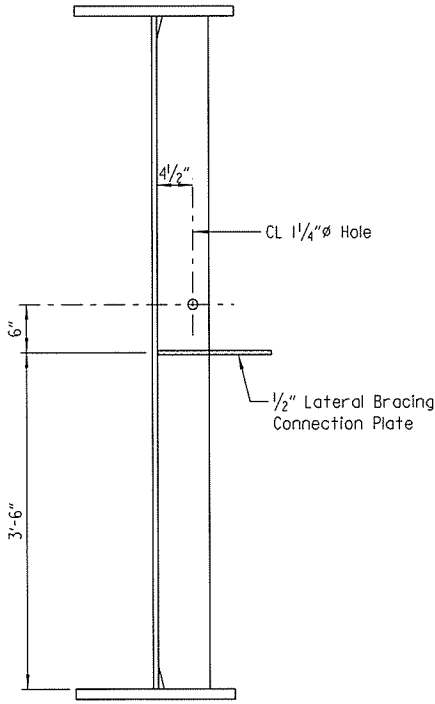
$\frac{3}{4}"$ heavy hex nut with standard washer. After gap width has been set, tack weld heavy hex nut to plain bar.

Gap width shall be set after slab has been poured.



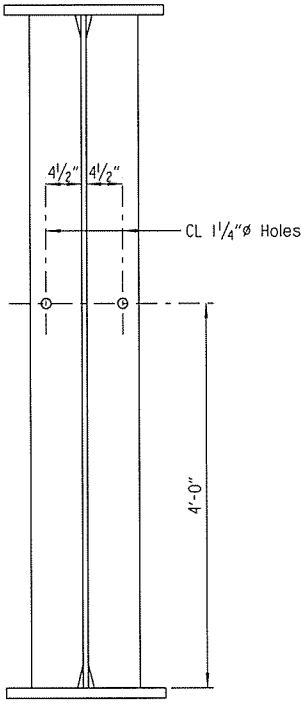
* Additional support plates shall be added between cross-frames. See FRAMING PLAN.

ADDITIONAL SUPPORT PLATE DETAIL
Scale: $1" = 1'-0"$



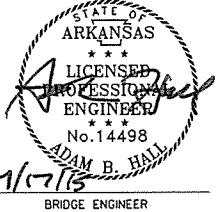
GIRDERS 1 & 9

HANDRAIL CONNECTIONS AT CROSSFRAME CONNECTION PLATES
Scale: $1" = 1'-0"$



GIRDERS 3, 5 & 7

NOTE: Handrail connection details at bearing stiffeners at Bents 6-8 are similar.



SHEET 6 OF 14
DETAILS OF 860'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ABH DATE: JULY 2014 FILENAME: BBB0303.XI.S17.DGN
CHECKED BY: JHR DATE: 2014 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: JULY 2014
BRIDGE NO. 07335 DRAWING NO. 56407

NOTE:
Pours with the same number may be placed simultaneously or separately.
All pours must be placed in the order shown. 48 hours shall elapse
before 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 an adjacent
pour. 72 hours shall elapse between the completion of the entire deck
and the pouring of the parapet rails and median barrier. Any railing
pours made before the entire slab unit has been placed must be approved
by the Engineer.

The Contractor must obtain approval from the Engineer for any
deviations from the pouring sequence shown.

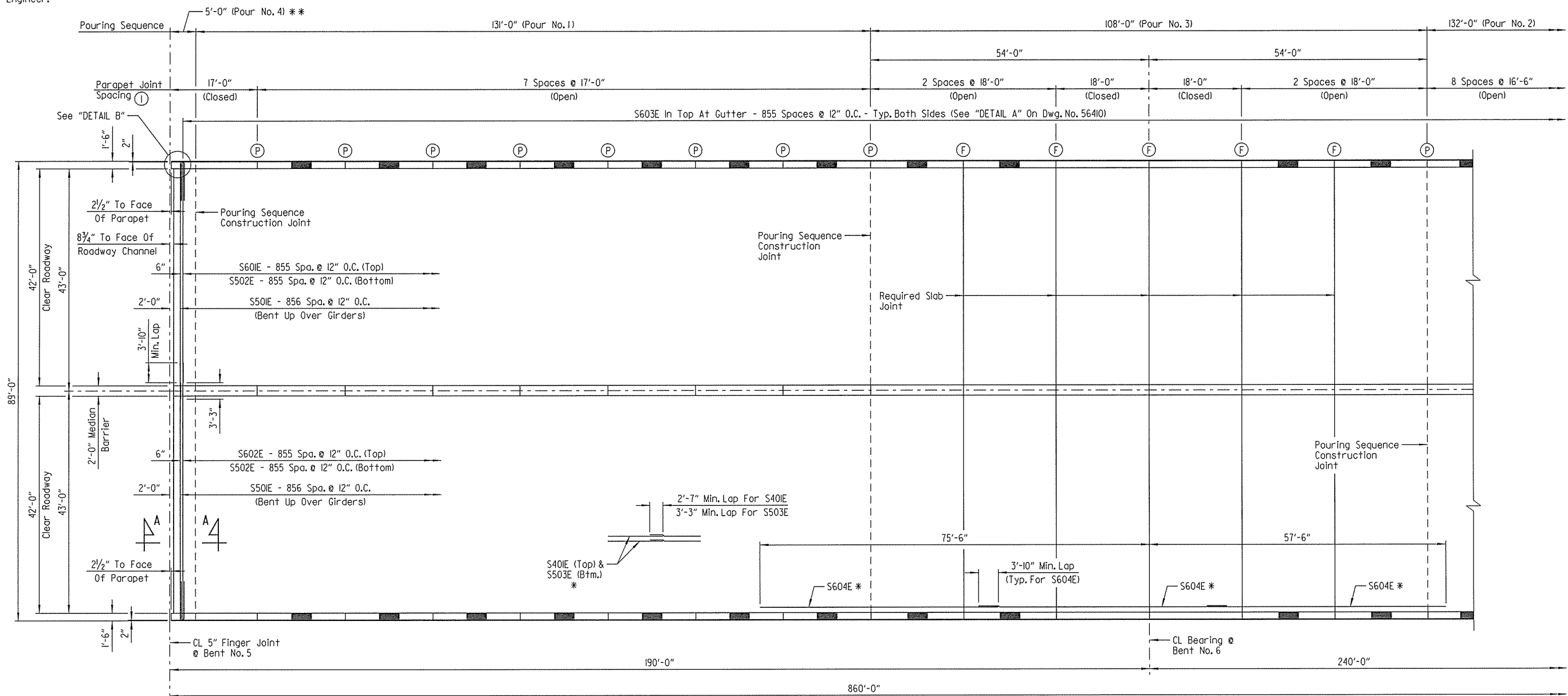
Concrete in bridge superstructure shall be consolidated for the
entire pour before any concrete has taken its initial set. This may
require the use of a retarding agent.

* Refer to "TYPICAL ROADWAY SECTION" on
Dwg. No. 56402 for placement.

** Closure Pours at the finger joints shall be
made after all incremental pours on the unit
have been placed. 48 hours shall elapse between
the last incremental pour and the closure pours.

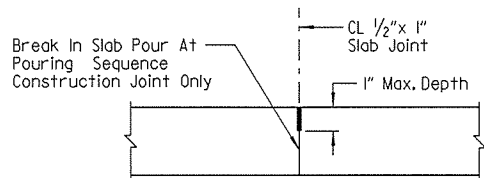
NOTE:
Required slab joints and pouring sequence
joints shall align with the parapet open
joints at the gutterlines.

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.		BB0303	115	231
				07335		860' UNIT		56409



PART REINFORCING PLAN & POURING SEQUENCE

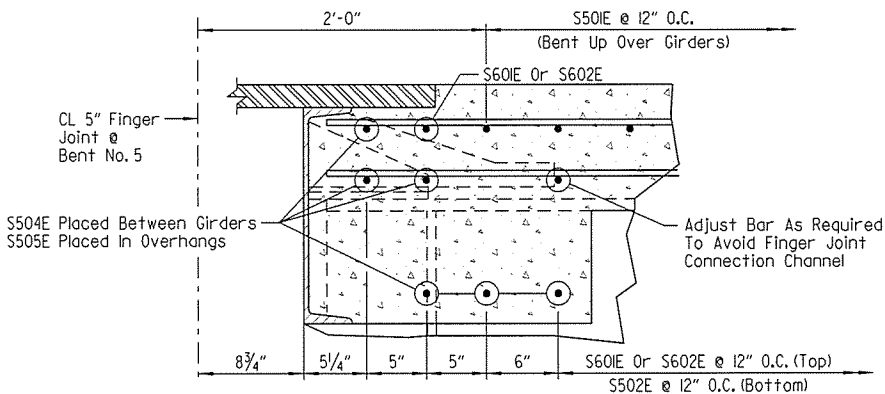
Scale: $\frac{3}{32}'' = 1'-0''$



The $\frac{1}{2}'' \times 1''$ Poured Joint Sealer (Type 3 or 4) in slab
shall conform to Subsection 501.02 (h) and 501.05 (j). Backer
Rod filler will not be required. The Poured Joint Sealer
shall be 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 and
median barrier are poured. If slab joints are to be sawed,
they shall be sawed as soon as the concrete has sufficiently
set to allow sawing of the joint without damage to the slab.
Slab joints shall be placed at all pouring sequence construction
joints and required slab joint locations. The joint sealer shall
extend across the deck from gutterline to gutterline.

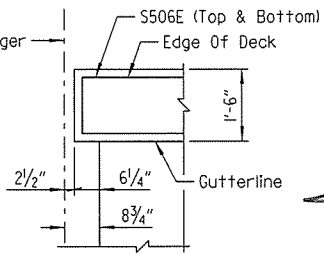
SLAB JOINT DETAIL

No Scale



SECTION A-A

Scale: $1\frac{1}{2}'' = 1'-0''$



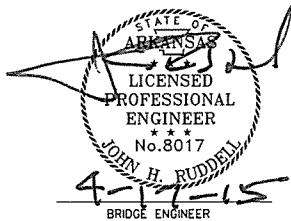
DETAIL B

Scale: $\frac{1}{2}'' = 1'-0''$

① Parapet joints designated with symbol (E) shall be stopped 4" from top
of slab. All other parapet joints with symbol (P) shall be partial depth
joints stopped 1'-6" from top of slab. Parapet joint designation shown
is for the left parapet rail, median barrier and right parapet rail. Parapet
panel type (closed or open) shown is for the left parapet rail and right
parapet rail.

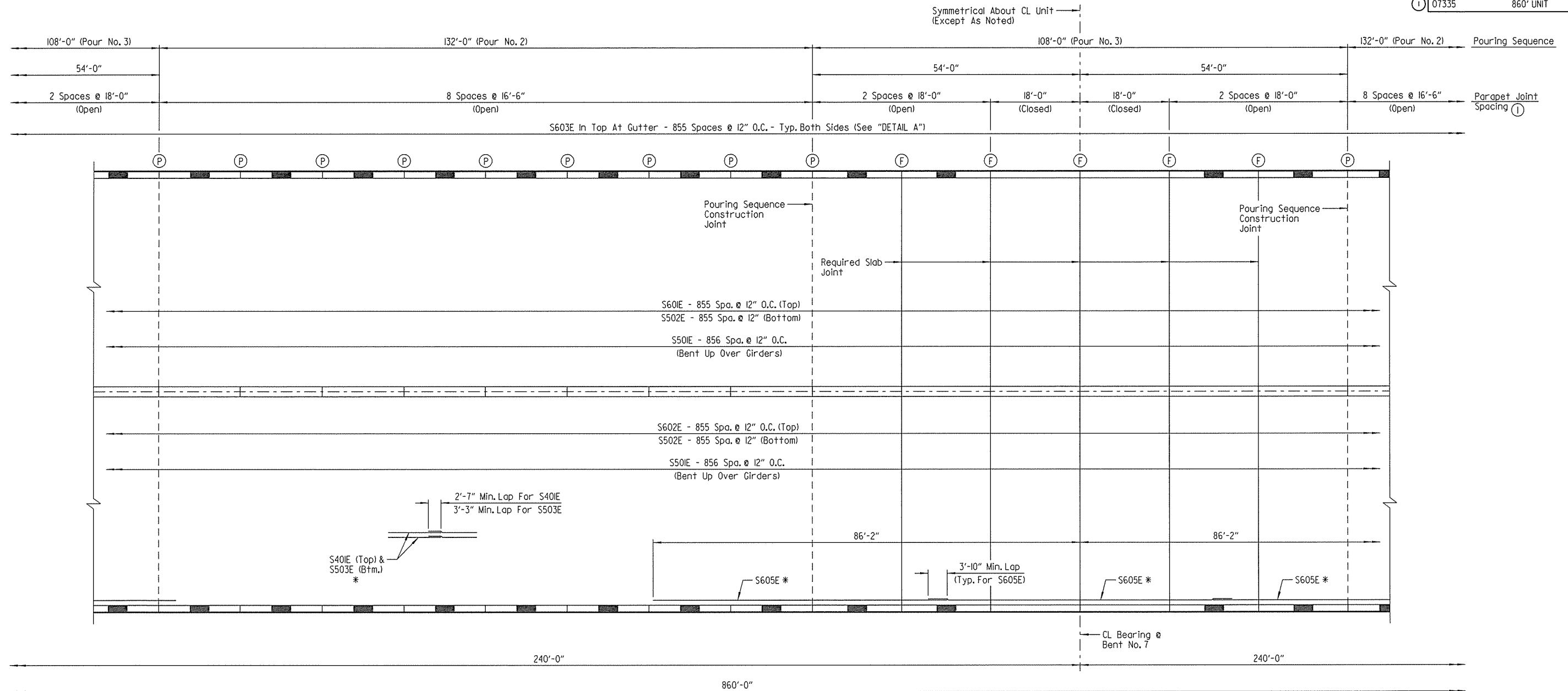
SHEET 8 OF 14
DETAILS OF 860'-0" CONTINUOUS
COMPOSITE PLATE GIRDER UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: APR. 2014 FILENAME: BB0303XL.S19.DGN
CHECKED BY: JHR DATE: JULY 2014 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: APR. 2014
BRIDGE NO. 07335 DRAWING NO. 56409



4/17/2015 10:43:03 AM
Jeskiner
WORKSPACE: AHTD Bridge
\\GLTIDCON\IT\Projects\2011\07705 - Red River Bridge Replacement\Drawings\BBB0303\1.S20.dgn
REVISED DATE:

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.		BB0303	116	231
				07335		860' UNIT		56410



PART REINFORCING PLAN & POURING SEQUENCE

Scale: $\frac{3}{32}$ " = 1'-0"

① Parapet joints designated with symbol (F) shall be stopped 4" from top of slab. All other parapet joints with symbol (P) shall be partial depth joints stopped 1'-6" from top of slab. Parapet joint designation shown is for the left parapet rail, median barrier and right parapet rail. Parapet panel type (closed or open) shown is for the left parapet rail and right parapet rail.

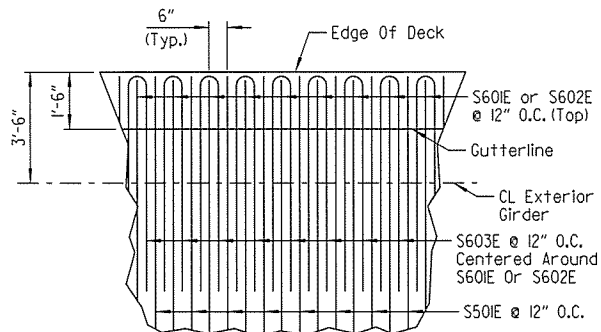
NOTE:
Required slab joints and pouring sequence joints shall align with the parapet open joints at the gutterlines.

NOTE:
Pours with the same number may be placed simultaneously or separately. All pours must be placed in the order shown. 48 hours shall elapse before 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 an adjacent pour. 72 hours shall elapse between the completion of the entire deck and the pouring of the parapet rails and median barrier. Any rolling pours made before the entire slab unit has been placed must be approved by the Engineer.

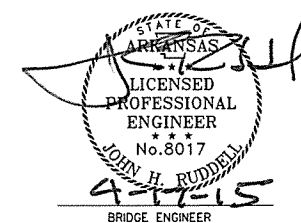
The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

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.

* Refer to "TYPICAL ROADWAY SECTION" on Dwg. No. 56402 for placement.



DETAIL A
No Scale

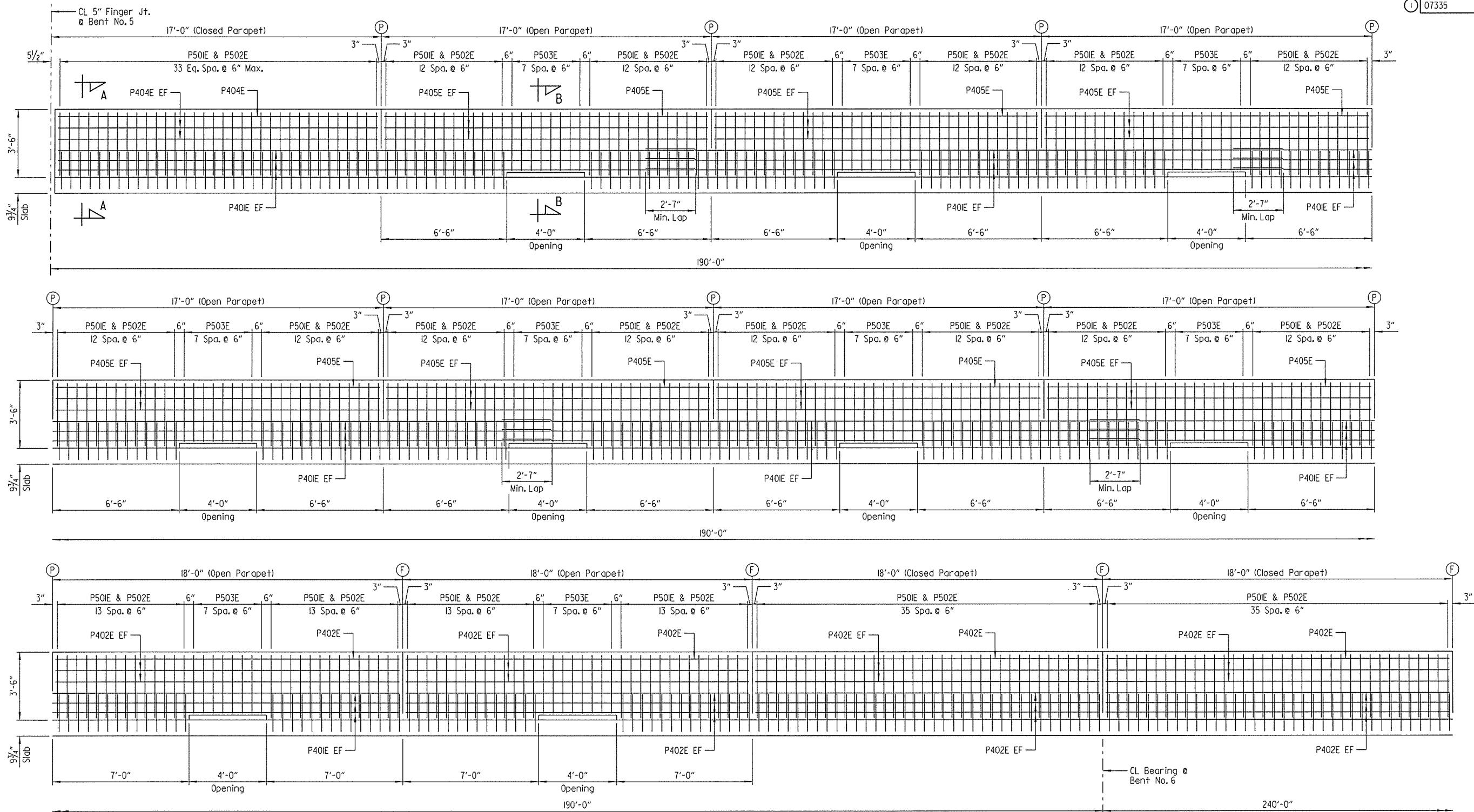


SHEET 9 OF 14
DETAILS OF 860'-0" CONTINUOUS
COMPOSITE PLATE GIRDER UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: APR. 2014 FILENAME: BBB0303\1.S20.DGN
CHECKED BY: JHR DATE: AUG. 2014 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: APR. 2014
BRIDGE NO. 07335 DRAWING NO. 56410

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.		BB0303	117	231

07335 860' UNIT 56411



LEFT PARAPET - PARTIAL ELEVATION
(Looking At Inside Face Of Parapet Rail)
(Right Parapet Symmetrical About CL Bridge)
Scale: $\frac{1}{8}" = 1'-0"$

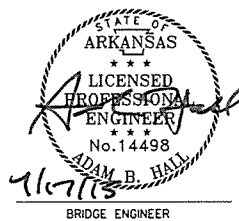
- (P) CL Partial-Depth Parapet Joint ($\frac{1}{4}"$ to 1" Max.).
Stop 1'-6" from top of slab.
- (F) CL Full-Depth Parapet Joint ($\frac{1}{4}"$ to 1" Max.).
Stop 4" from top of slab.

LEGEND
EF = Each Face

NOTES:
All dimensions shown are measured along gutterline.

For "BAR LIST" and "BAR BENDING DIAGRAM",
see Dwg. No. 56403.

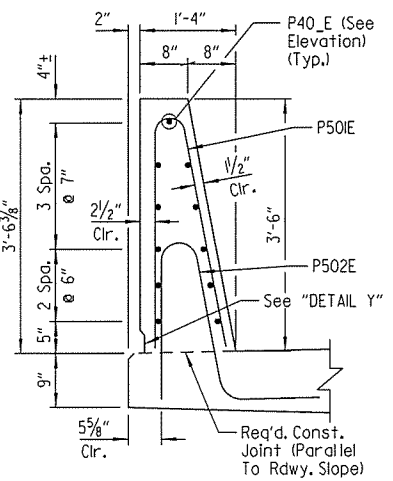
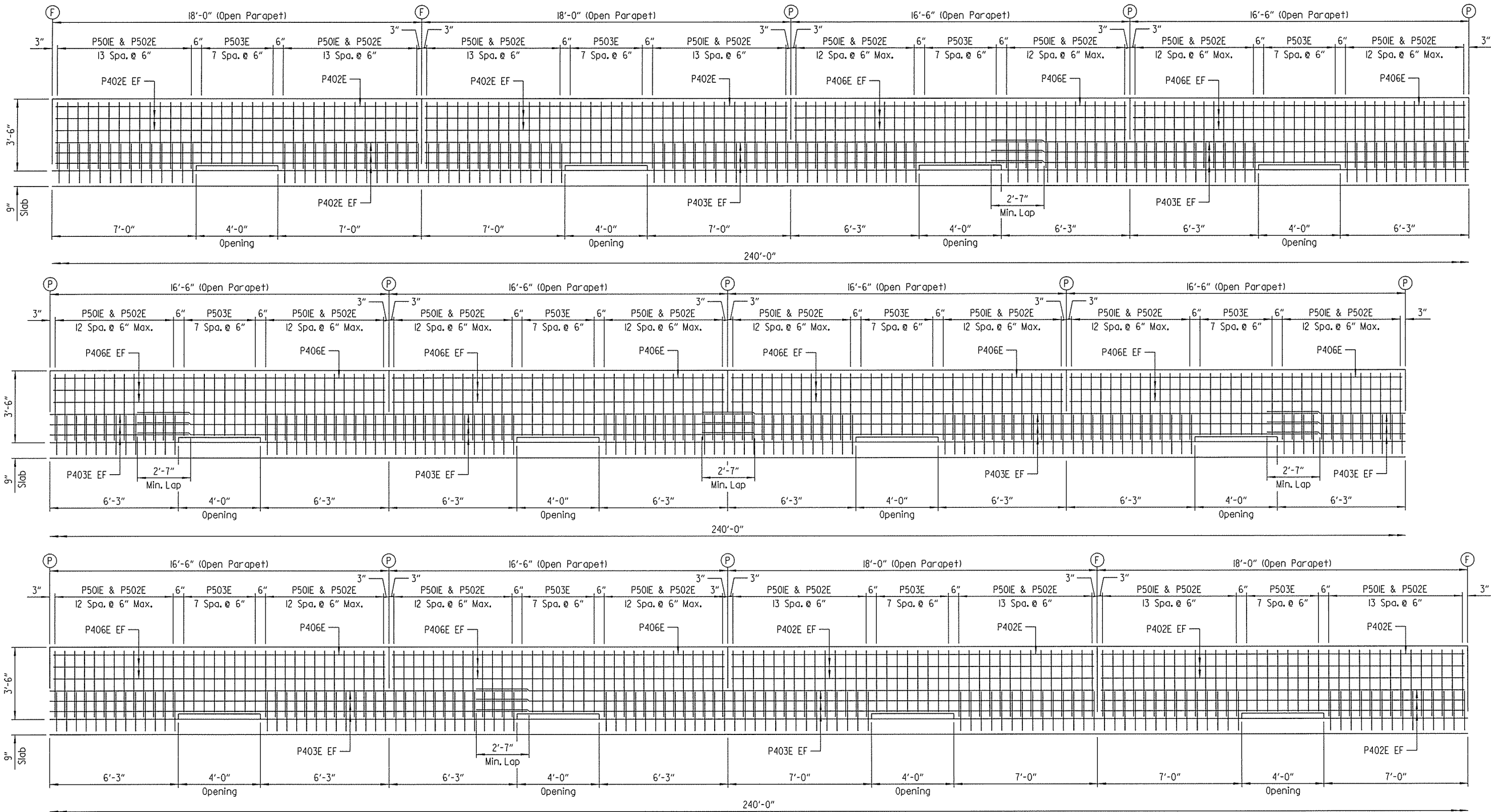
For "SECTION A-A" and "SECTION B-B",
see Dwg. No. 56412.



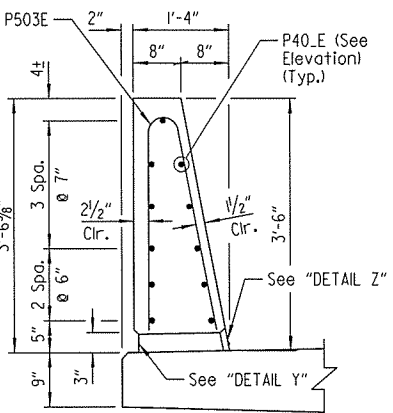
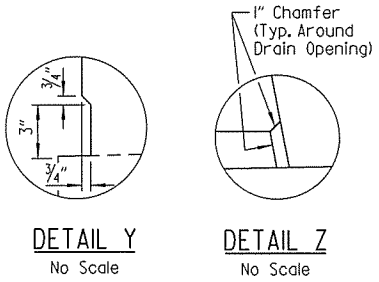
SHEET 10 OF 14
DETAILS OF 860'-0" CONTINUOUS
COMPOSITE PLATE GIRDER UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JUL. 2014 FILENAME: BB0303x1.S21.DGN
CHECKED BY: JHR DATE: AUG. 2014 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: JUL. 2014
BRIDGE NO. 07335 DRAWING NO. 56411

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.		BB0303	118	231
				07335		860' UNIT		56412



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



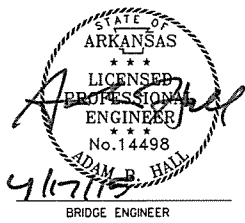
SECTION B-B
Scale: 3/4" = 1'-0"

LEFT PARAPET - PARTIAL ELEVATION
(Looking At Inside Face Of Parapet Rail)
(Right Parapet Symmetrical About CL Bridge)
Scale: 3/8" = 1'-0"

LEGEND
EF = Each Face

- (P) CL Partial-Depth Parapet Joint (1/4" to 1" Max.)
Stop 1'-6" from top of slab.
- (F) CL Full-Depth Parapet Joint (1/4" to 1" Max.)
Stop 4" from top of slab.

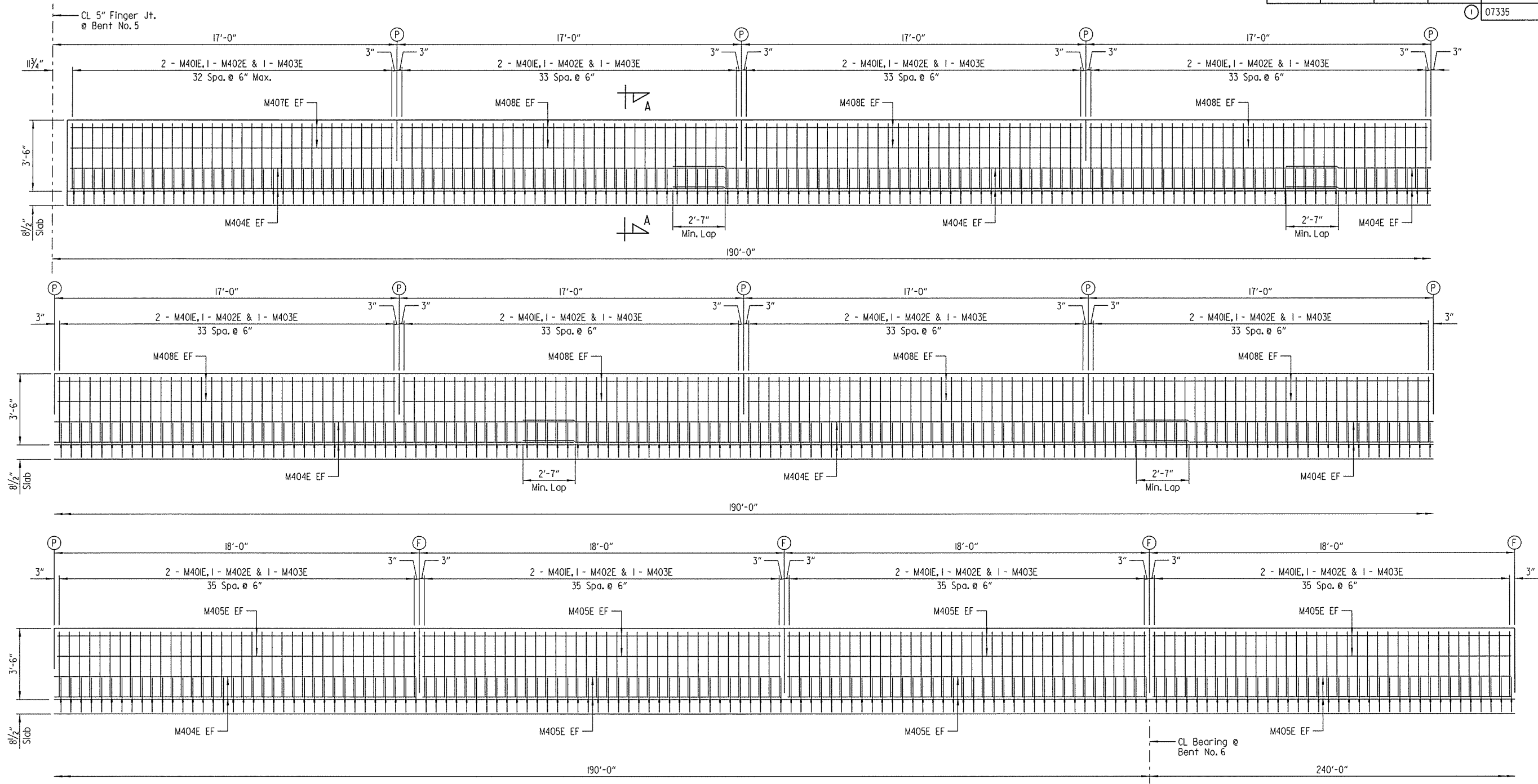
NOTES:
All dimensions shown are measured along gutterline.
For "BAR LIST" and "BAR BENDING DIAGRAM", see Dwg. No. 56403.



SHEET 11 OF 14
DETAILS OF 860'-0" CONTINUOUS
COMPOSITE PLATE GIRDER UNIT
ROUTE 860
SEC. 1
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: HEW DATE: JUL. 2014 FILENAME: BBB0303x1.S22.DGN
CHECKED BY: JHR DATE: AUG. 2014 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: JUL. 2014
BRIDGE NO. 07335 DRAWING NO. 56412

4/17/2015 10:43:04 AM
WORKSPACE: AHTD Bridge
\\GLTDCON\IT\Projects\2011\0705 - Red River Bridge Replacement\Drawings\BBB0303x1.S22.dgn
REVISOR: DATE:

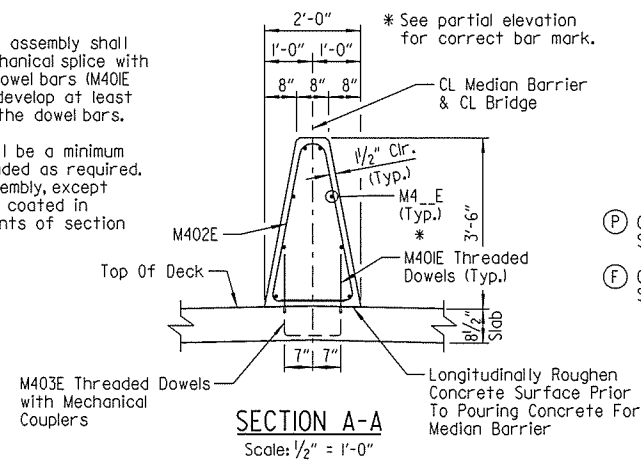
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0303	119	231
				07335		860' UNIT		56413



NOTES:
The threaded dowel and coupler assembly shall consist of a QPL approved mechanical splice with protective cap and threaded dowel bars (M401E and M403E) as shown and shall develop at least 125% of the yield strength of the dowel bars.

M401E and M403E dowel bars shall be a minimum 60 ksi yield strength and threaded as required. Threaded dowel and coupler assembly, except mating surfaces, shall be epoxy coated in accordance with the requirements of section 804.

NOTE:
Protect threads in couplers until median barrier is constructed.



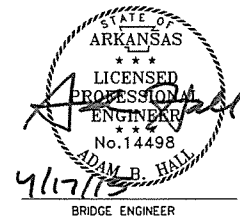
MEDIAN BARRIER - PARTIAL ELEVATION
(Looking At Right Face Of Median Barrier)
Scale: 3/8" = 1'-0"

- (P) CL Partial-Depth Parapet Joint (1/4" to 1" Max.)
Stop 1'-6" from top of slab.
- (F) CL Full-Depth Parapet Joint (1/4" to 1" Max.)
Stop 4" from top of slab.

LEGEND
EF = Each Face

NOTES:
All dimensions shown are measured along gutterline.

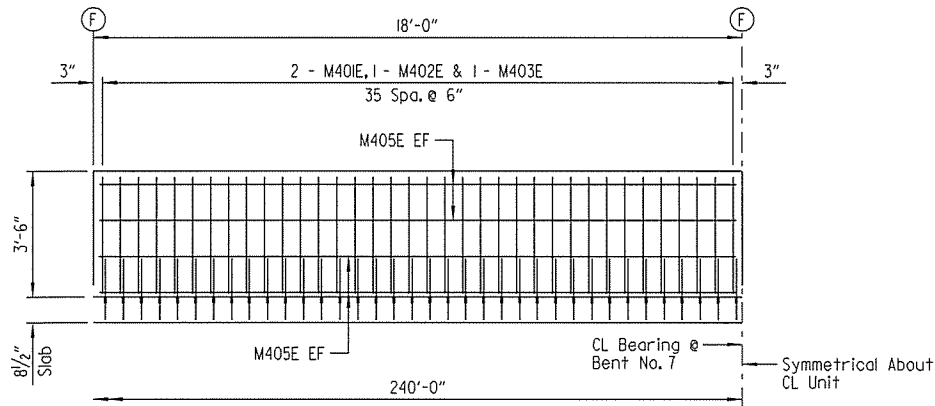
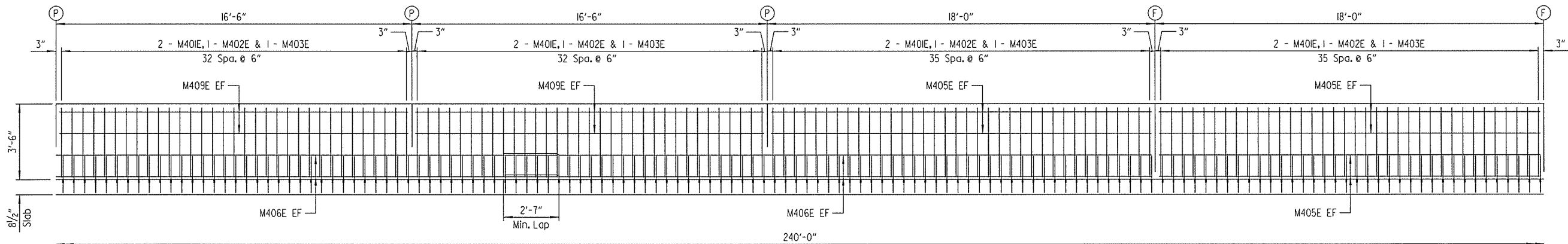
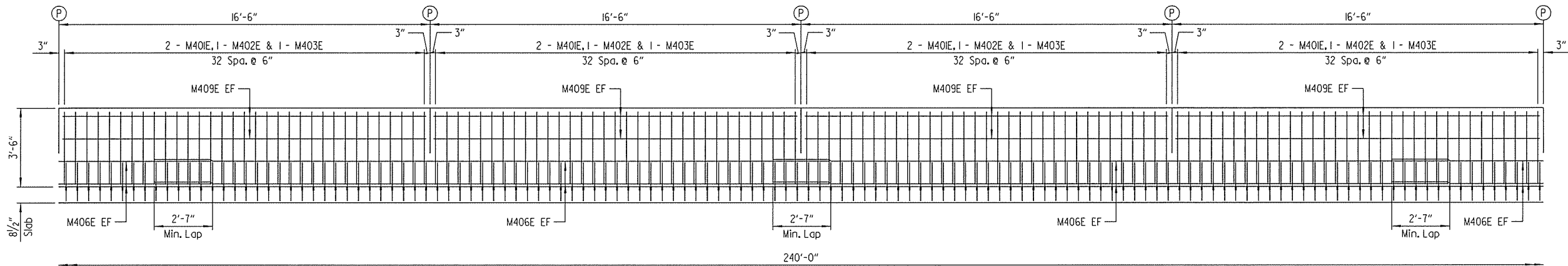
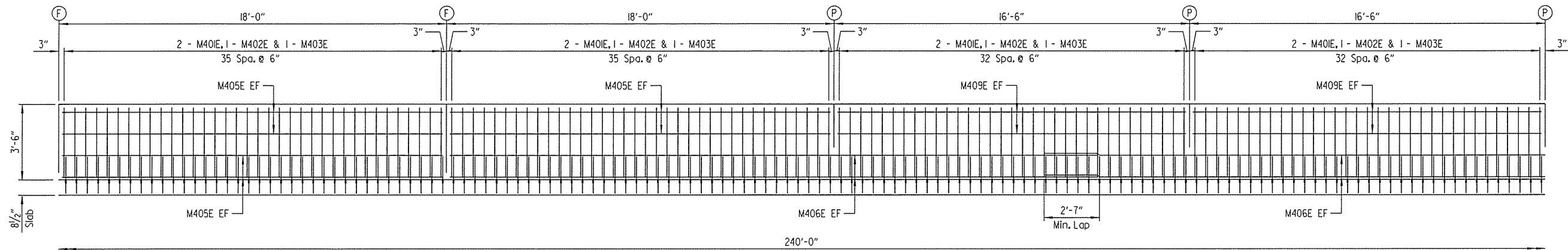
For "BAR LIST" and "BAR BENDING DIAGRAM", see Dwg. No. 56403.



SHEET 12 OF 14
DETAILS OF 860'-0" CONTINUOUS
COMPOSITE PLATE GIRDER UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JUL. 2014 FILENAME: BBB0303x1.S23.DGN
CHECKED BY: JHR DATE: AUG. 2014 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: JUL. 2014
BRIDGE NO. 07335 DRAWING NO. 56413

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.		BB0303	120	231
				07335		860' UNIT		56414



MEDIAN BARRIER - PARTIAL ELEVATION

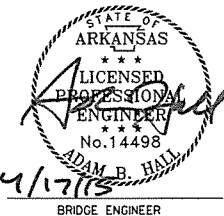
(Looking At Right Face Of Median Barrier)
Scale: $\frac{1}{8}'' = 1'-0''$

- (P) CL Partial-Depth Parapet Joint ($\frac{1}{4}''$ to 1" Max.)
Stop 1'-6" from top of slab.
- (F) CL Full-Depth Parapet Joint ($\frac{1}{4}''$ to 1" Max.)
Stop 4" from top of slab.

NOTES:
All dimensions shown are measured along
CL Bridge.

For "BAR LIST" and "BAR BENDING DIAGRAM",
see Dwg. No. 56403.

For "SECTION A-A", see Dwg. No. 56413.



SHEET 13 OF 14
DETAILS OF 860'-0" CONTINUOUS
COMPOSITE PLATE GIRDER UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JUL. 2014 FILENAME: BB0303xl.S24.DGN
CHECKED BY: JHR DATE: AUG. 2014 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: JUL. 2014
BRIDGE NO. 07335 DRAWING NO. 56414

GENERAL NOTES

CONCRETE:

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

The superstructure details shown are for use when removable deck forming is used and are the basis for measurements of Class S(AE) Concrete. See Standard Drawing No. 55005 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 the future dead load deflection due to the railing. A minimum of 72 hours shall elapse between completion of the bridge deck slab and the pouring of the parapet railing. Any railing pours made before the entire slab has been placed and cured must be approved by the Engineer.

REINFORCING STEEL:

All reinforcing steel shall be Grade 60 (Yield Strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports. The reinforcing steel is to be accurately located in the forms and firmly held in place by steel wire supports, sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly but will be considered subsidiary to the item "EPOXY COATED REINFORCING STEEL (GRADE 60)".

STRUCTURAL STEEL:

All structural steel shall be AASHTO M270, Gr. 50W unless noted otherwise and shall be paid for at the unit price per pound bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50W)". Flange plates noted on GIRDER ELEVATION as AASHTO M270, GR. HPS 70W, shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. HPS 70W)". All exposed surfaces shall be cleaned in accordance with Subsection 807.84 unless noted otherwise. Structural steel completely embedded in concrete may be AASHTO M270 Gr. 36 unless noted otherwise. See Drawing No. 56418 for cleaning requirements of external load plates on elastomeric bearings.

Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on 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.

Drawings show general features of design only. Shop drawings shall be prepared in accordance with Subsection 807.04, submitted and approved before fabrication is begun.

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

All girder webs, flanges of plate girders, and splice plates are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in Subsection 807.05. This work and material will not be paid for directly but will be considered as subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50W)" or "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. HPS 70W)".

Steel plates for main load carrying members (flange and web plates) and flange field splice plates shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses.

Girder webs may be made by shop splicing with a minimum length of 25'-0" for sections. Flange plates longer than 50'-0" may be made by shop splicing with a minimum length of 25'-0" for sections. Material specifications and locations of shop-welded splices, if any, shall be shown on the shop drawings. No additional payment for these welded splices will be made.

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 Subsection 807.26 and Special Provision Job BB0303 "GRADE HPSTOW STRUCTURAL STEEL".

All girders shall be blocked in their true positions with webs horizontal in the shop as specified in Subsection 807.54 (b)(2). The camber, length of sections, distance between bearings and openings of joints shall be measured with the girders in their true positions, and this information shall become a part of the permanent records of this job. The component parts shall be match marked in this assembly, and these marks shall be shown on the erection diagram. All girder dimensions are based on a temperature of 60°F. A tolerance of +/- 1/4" is allowed for camber.

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

All connection plates and intermediate transverse stiffeners shall be fabricated normal to the top flange and on the side of the girder web as indicated on the framing plan. No intermediate stiffeners are to be placed on the outside of the exterior girders except as noted. All bearing stiffeners shall be fabricated to be plumb in their final positions.

Crossframes shall be installed as girders are erected. Unless noted otherwise, all bolts in crossframes and field splices shall be installed and tightened in accordance with Subsection 807.71 prior to pouring of the concrete deck.

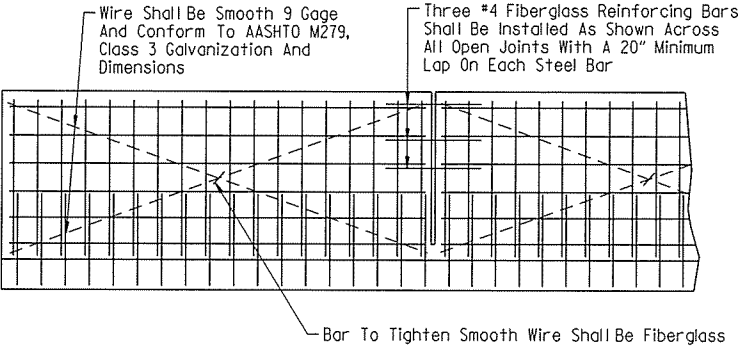
Field connections shall be bolted with high-strength bolts and shall be 3/4"Ø bolts unless otherwise noted. Open holes shall be 5/16"Ø unless otherwise noted. For connections other than field splices, holes for 1/8"Ø high-strength bolts may be 1/16"Ø if a washer is supplied for use under both the nut and head of the bolt. Bolts shall be placed with heads on the outside face of the exterior girder webs and on the bottom of the girder flanges.

All contact surfaces between plates at field splices shall be free of oil, rust or scale before assembly.

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

Bearings shall be firmly seated in accordance with Subsection 808.08. This work is to be considered subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50W)" and will not be paid for directly.

Anchor bolts shall be AASHTO designation M314 Gr. 55 or 105, including supplemental requirement SI, and shall be galvanized to conform to AASHTO M232, Class C or ASTM B695 Class 50. Anchor bolts will be paid for at the contract unit price bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50W)".

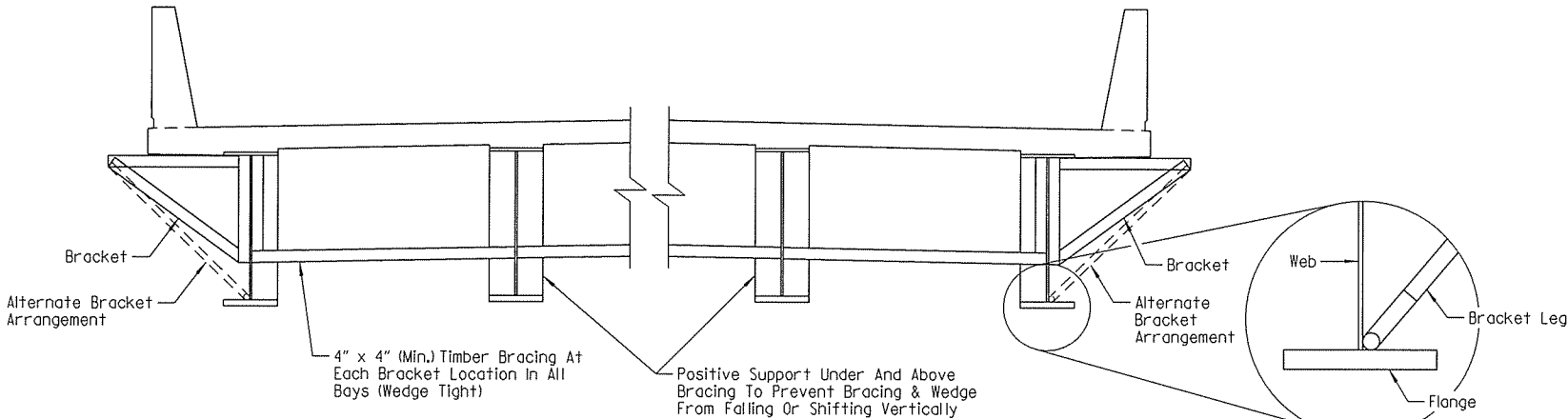


All panels shall be braced as shown to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of 1/4". To control cracking before sawing, all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

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.

DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL

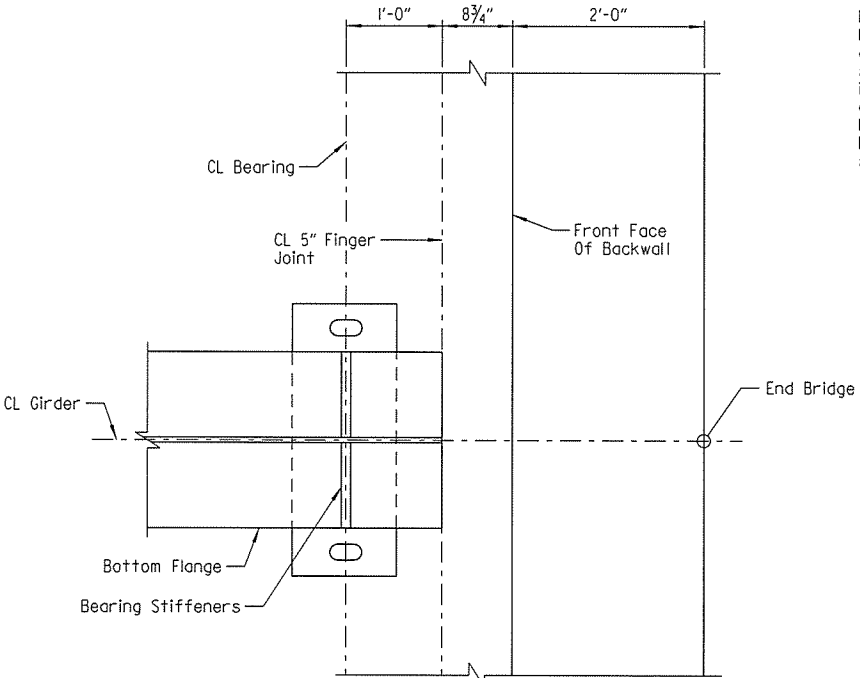
No Scale



SCREED RAIL SUPPORT DETAIL

No Scale

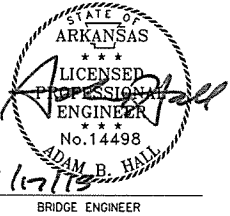
NOTE: The bracket shall be installed in a manner that avoids any nicks or gouges in the flange, web and weld.



BEARING AT END BENT NO. 9

Scale: 1" = 1'-0"

NOTE: If a transverse finishing machine is used, the rail shall be supported directly over the exterior girders, or as an alternate, the rail may be supported by the overhang brackets if the above strutting system is used. The strutting system may be omitted if 1/2" x 6 1/2" web stiffeners are welded to the insides of the exterior girders at the location of each bracket or if the alternate bracket shown above is used. The alternate bracket arrangement shall extend down to the junction of the web and bottom flange. The stiffeners shall conform to the details shown for "INTERMEDIATE TRANSVERSE STIFFENER DETAIL" on Dwg. No. 56406. No direct payment will be made for brackets, timber bracing, supports, or welded stiffeners. Payment shall be subsidiary to "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50W)".

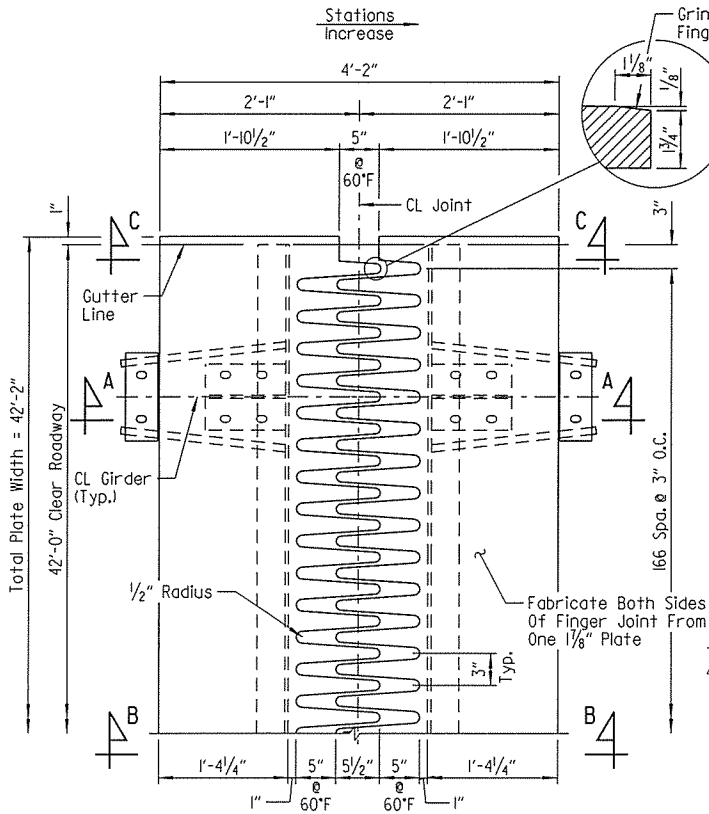


SHEET 14 OF 14
DETAILS OF 860'-0" CONTINUOUS
COMPOSITE PLATE GIRDER UNIT

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

DRAWN BY: ABH DATE: JULY 2014 FILENAME: BB0303x1.S25.dgn
CHECKED BY: JHR DATE: AUG. 2014 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: JULY 2014
BRIDGE NO. 07335 DRAWING NO. 56415

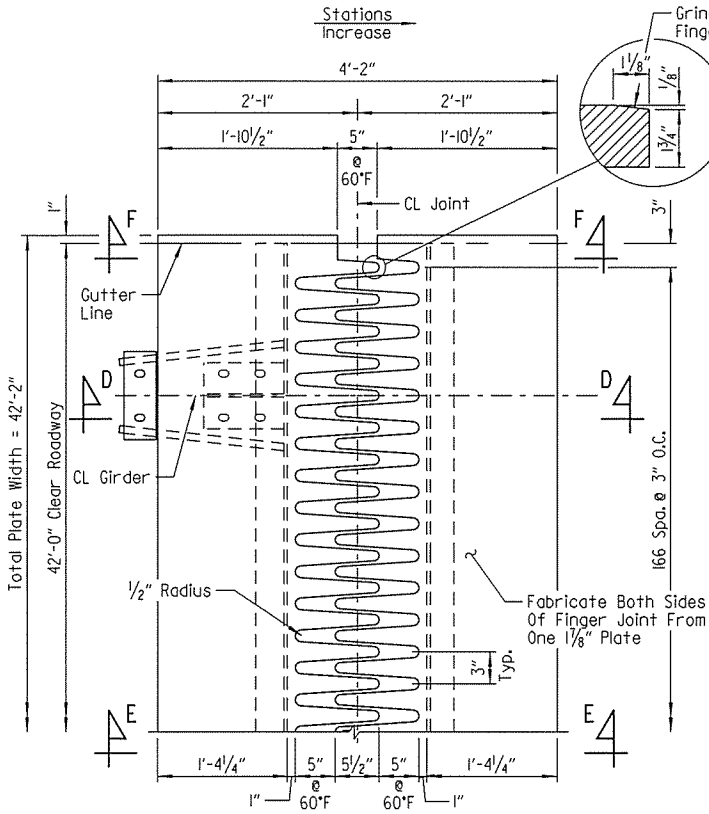
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	BB0303		122	231
				07335	FINGER JOINTS		56416	



EXPANSION PLATE DETAIL AT BENT 5

One Plate Shown; Two Required
(Symmetrical About CL Bridge)
Scale: 1" = 1'-0"

NOTE:
Top of expansion joints shall conform to the profile grade of the roadway surfaces.
Dimensions shown are at 60°F.

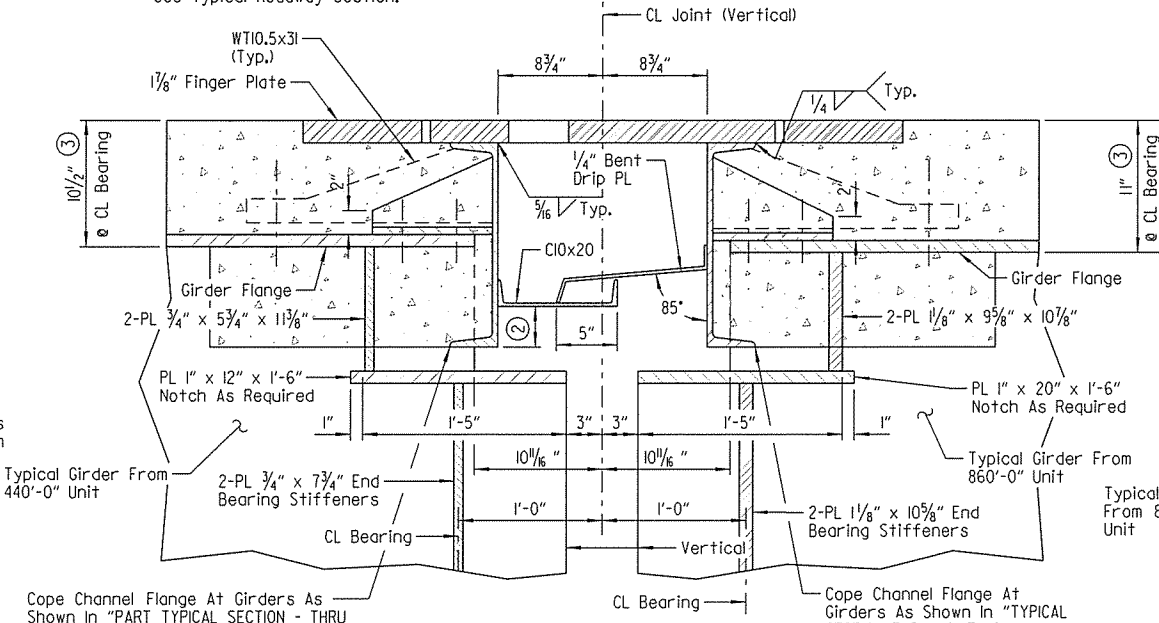


EXPANSION PLATE DETAIL AT END BENT 9

One Plate Shown; Two Required
(Symmetrical About CL Bridge)
Scale: 1" = 1'-0"

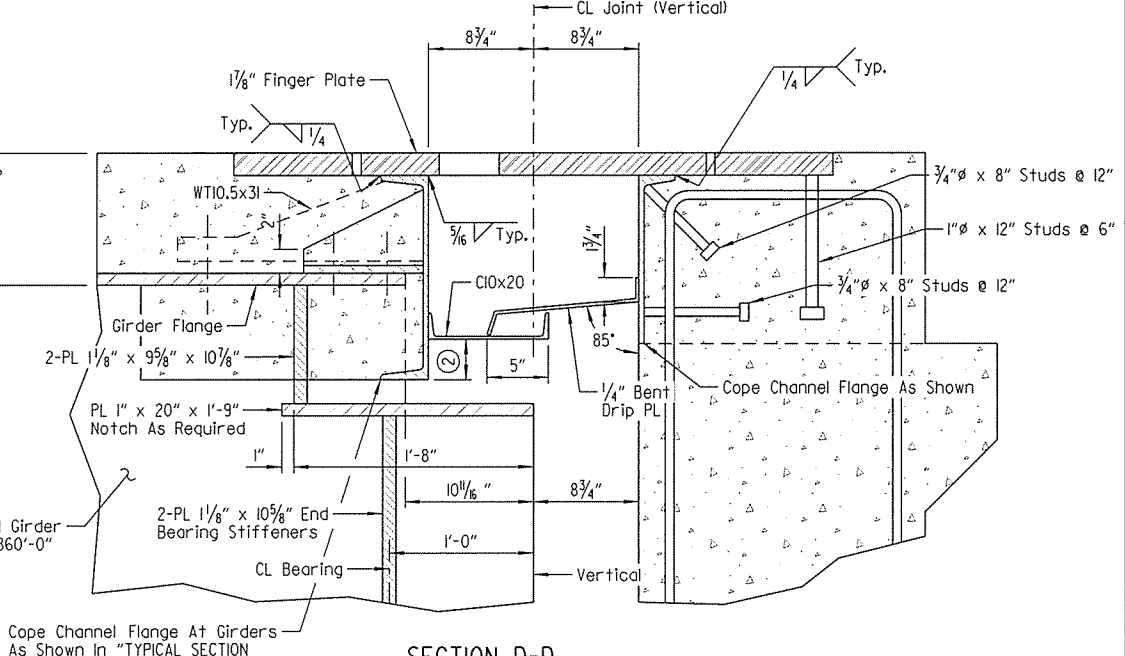
NOTE:
For "SECTION C-C", "SECTION F-F" and "GENERAL NOTES", see Dwg. No. 56417.

③ Dimension varies @ CL Bridge. See Typical Roadway Section.



SECTION A-A

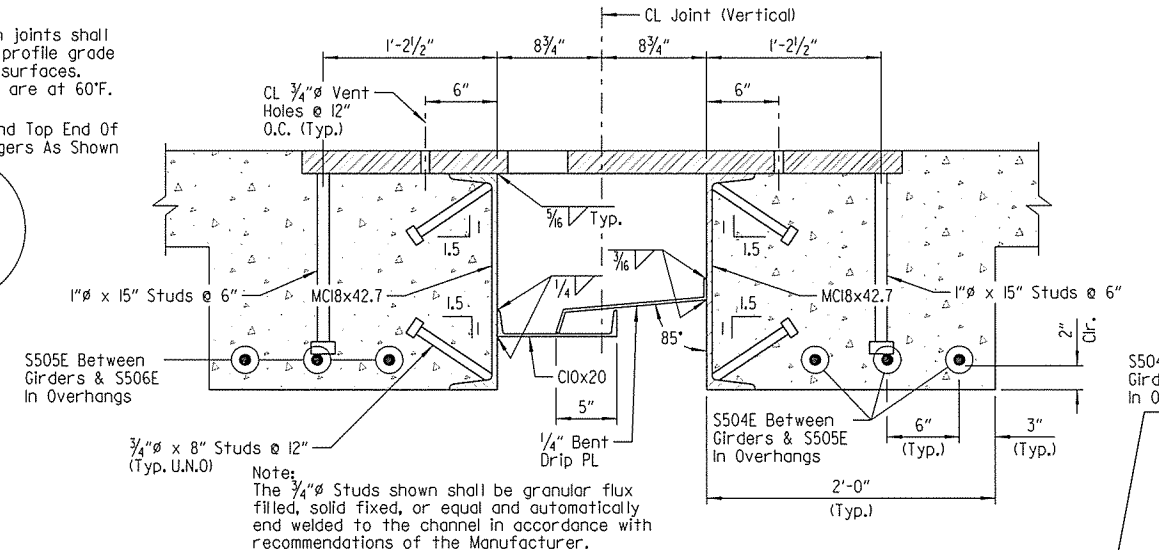
Scale: 1 1/2" = 1'-0"



SECTION D-D

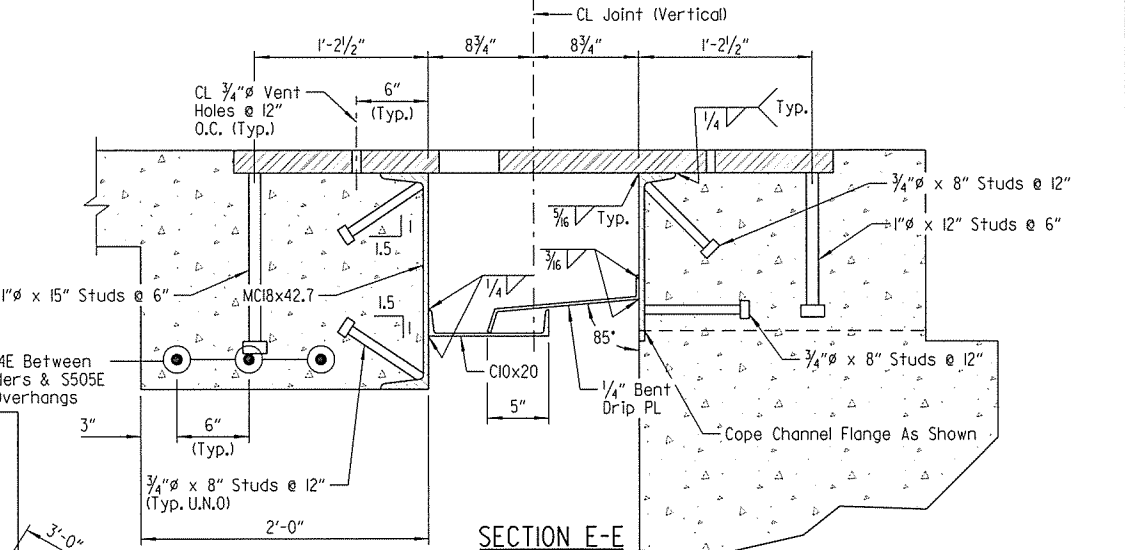
Scale: 1 1/2" = 1'-0"

② Varies - 1/2" At end of channel near gutter.



SECTION B-B

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



SECTION E-E

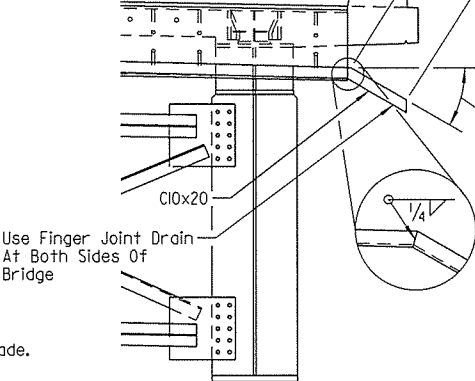
Scale: 1 1/2" = 1'-0"

NOTE:
Drip strip and channel shall be located on the expansion device to provide maximum slope for runoff.

Joint Width At 24 Hour Average Temperature Of:			
Location	40°F	60°F	80°F
BENT 5	6"	5"	4"
BENT 9	5 1/8"	5"	4 5/8"

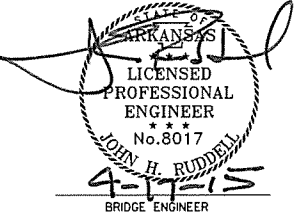
NOTE:
Finger joint shall be set and adjusted for grade before closure pours are made.

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



DRAIN DETAIL

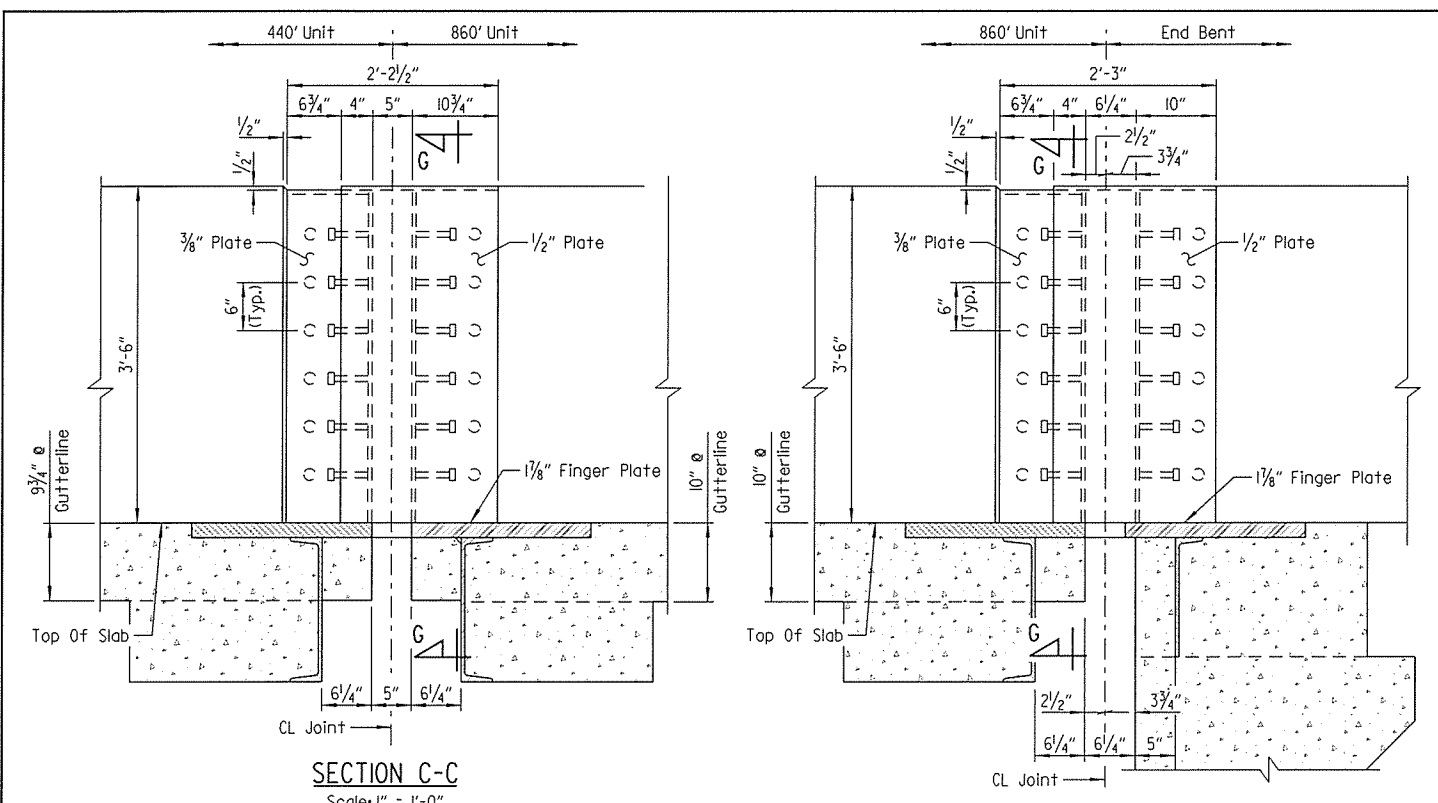
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SHEET 1 OF 2
DETAILS OF FINGER JOINT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2014 FILENAME: BBB0303x1.JLDGN
CHECKED BY: JHR DATE: AUG. 2014 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: JULY 2014
BRIDGE NO. 07335 DRAWING NO. 56416

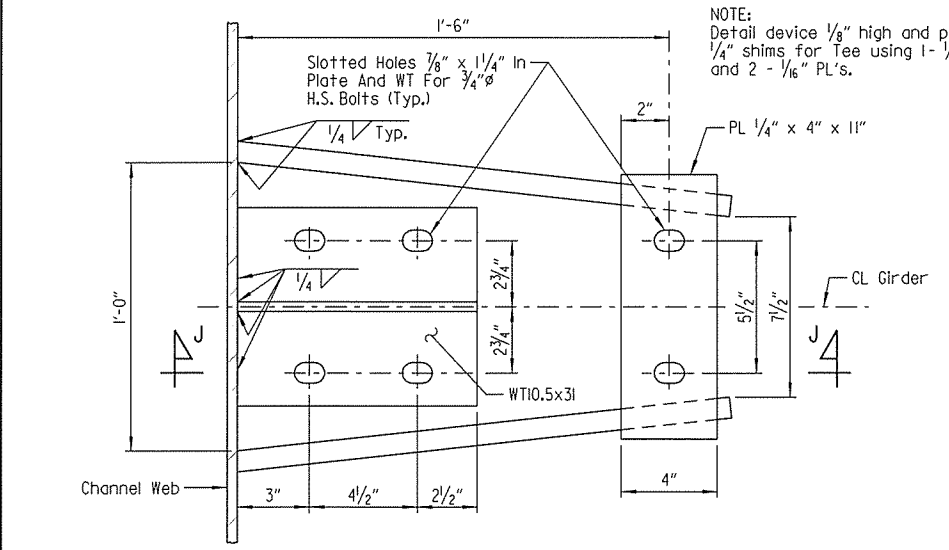
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WORKSPACE: 4HTD Bridge
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REVISION DATE:



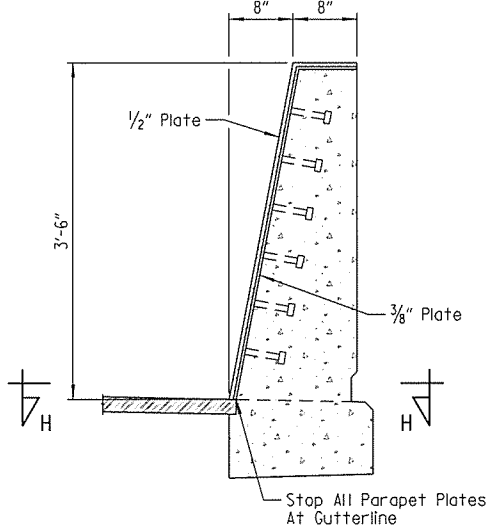
SECTION C-C
Scale: 1" = 1'-0"

SECTION F-F
Scale: 1" = 1'-0"

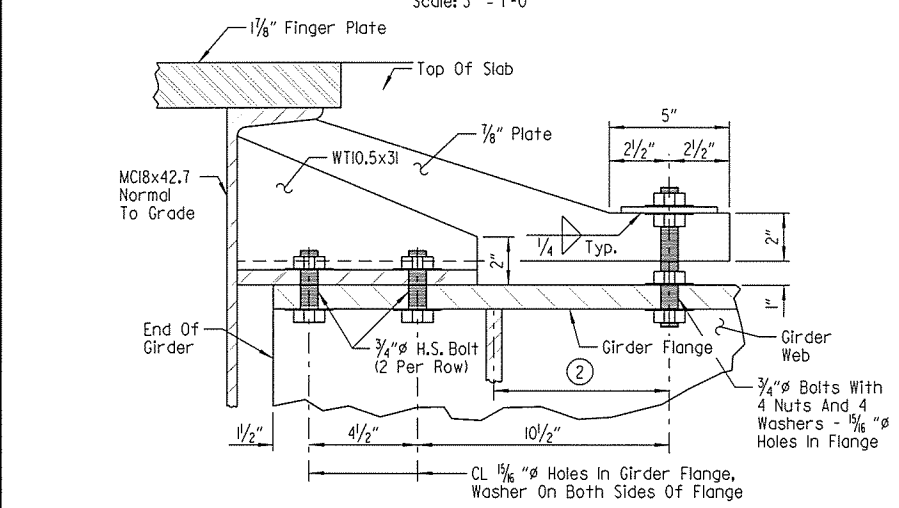
① Stop weld 1/4" to 1" from clip.



PLAN OF CONNECTION TO PLATE GIRDER
Scale: 3" = 1'-0"

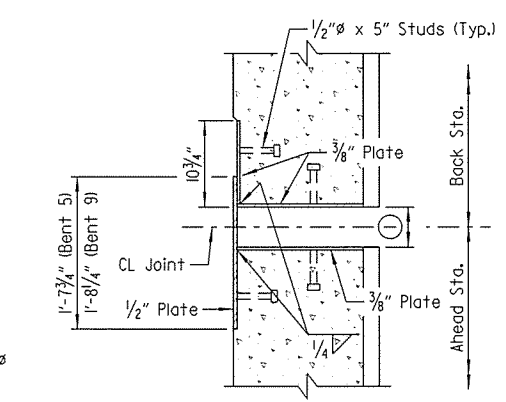


SECTION G-G
Scale: 1" = 1'-0"



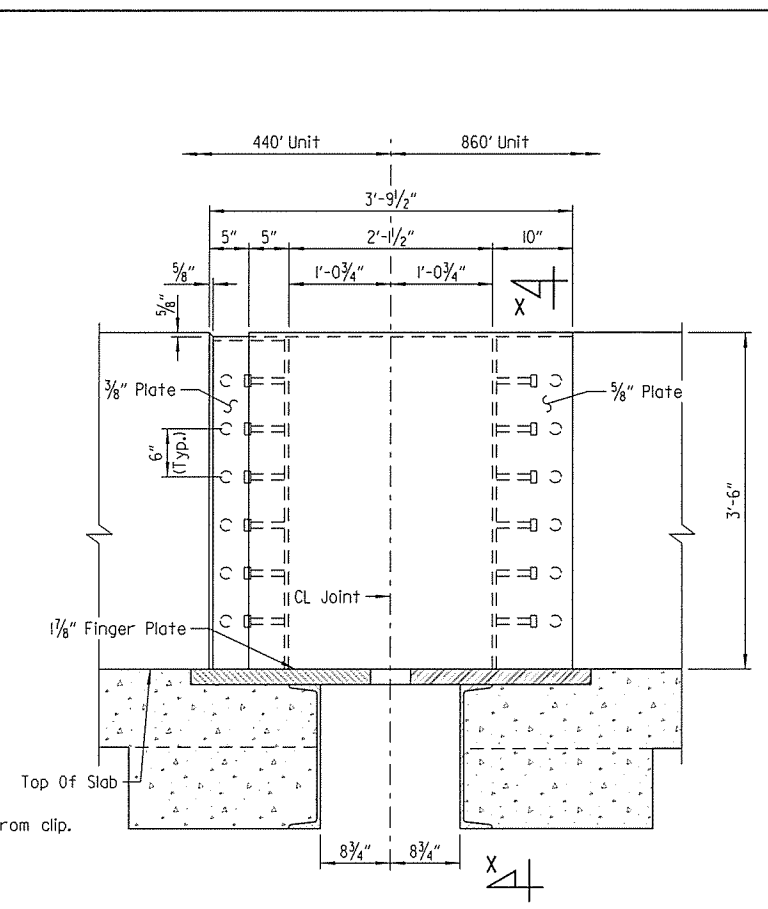
SECTION J-J
Scale: 3" = 1'-0"

② 7 3/4" (860' Unit)
7 9/16" (440' Unit)

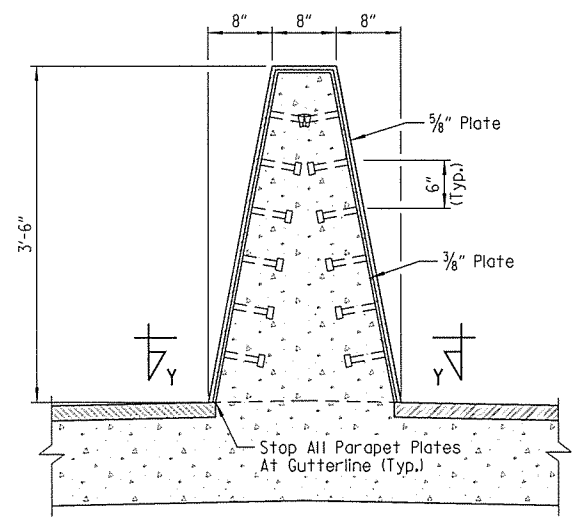


SECTION H-H
Scale: 1" = 1'-0"

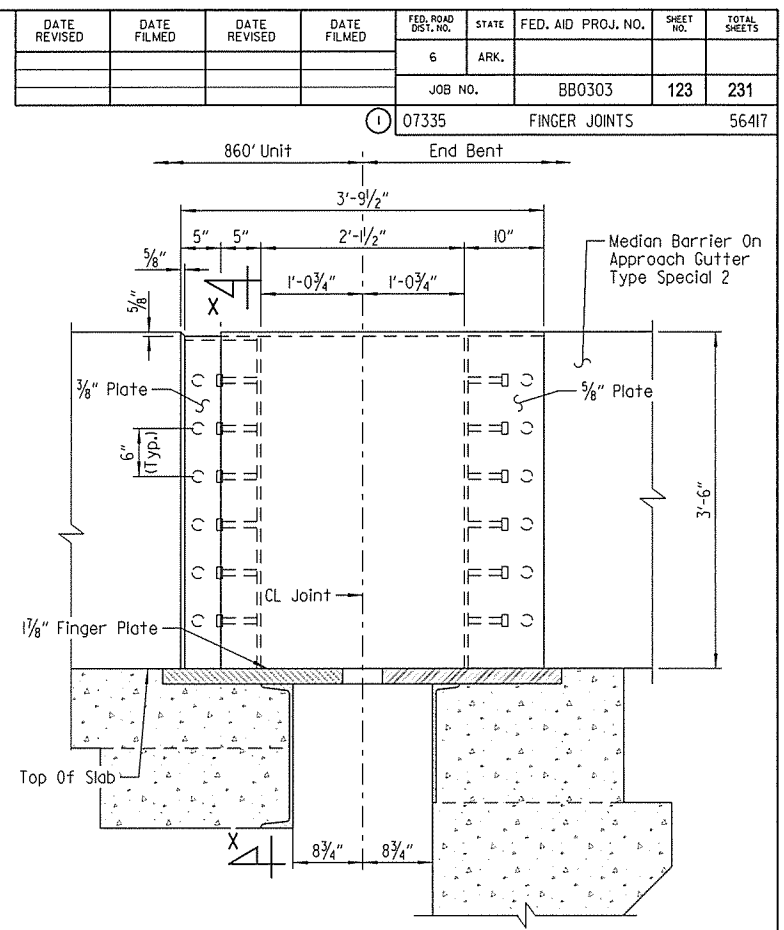
① 5" Ø 60°F (Bent 5)
6 1/4" Ø 60°F (Bent 9)



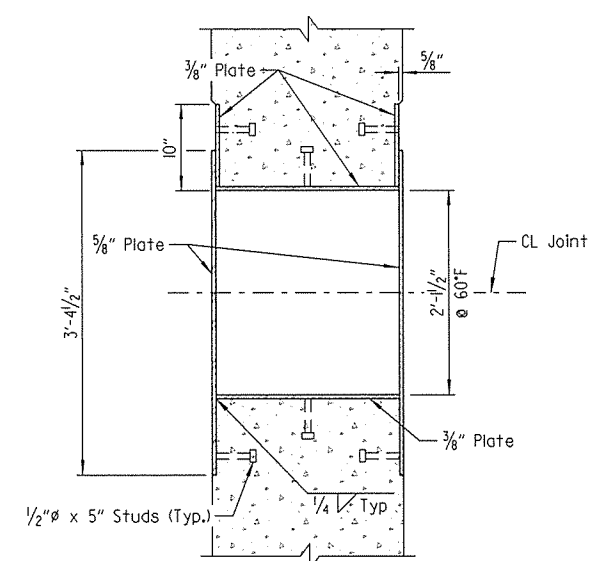
SLIDER PLATE DETAIL AT MEDIAN BARRIER - BENT 5
Scale: 1" = 1'-0"



SECTION X-X
Scale: 1" = 1'-0"



SLIDER PLATE DETAIL AT MEDIAN BARRIER - END BENT 9
Scale: 1" = 1'-0"



SECTION Y-Y
Scale: 1" = 1'-0"

GENERAL NOTES

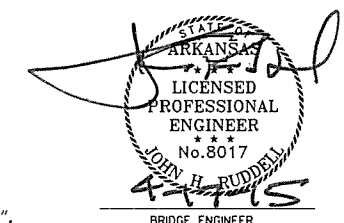
EXPANSION FINGER JOINT: The expansion device shall provide a movement of 5".

All structural steel in finger joints, except slider plates, shall be AASHTO M270, Grade 50W unless noted otherwise and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50W)".

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

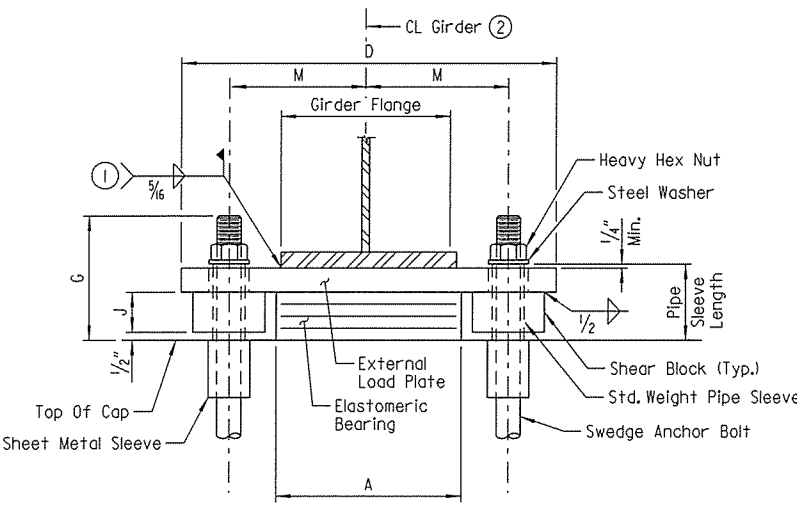
Parapet and median barrier slider plates shall be AASHTO M270, Gr. 36 and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50W)". The surfaces of the plates which will not be in contact with concrete shall be cleaned and painted in accordance with Section 638, or as directed by the Engineer. Only one coat is required and shall be applied in the fabricator's shop. Painting shall not be paid for directly, but will be considered subsidiary to "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50W)".

NOTE:
The 1/2" Ø studs shall be granular flux filled, solid fluxed, or equal and automatically end welded to the plates in accordance with recommendations of the Manufacturer.

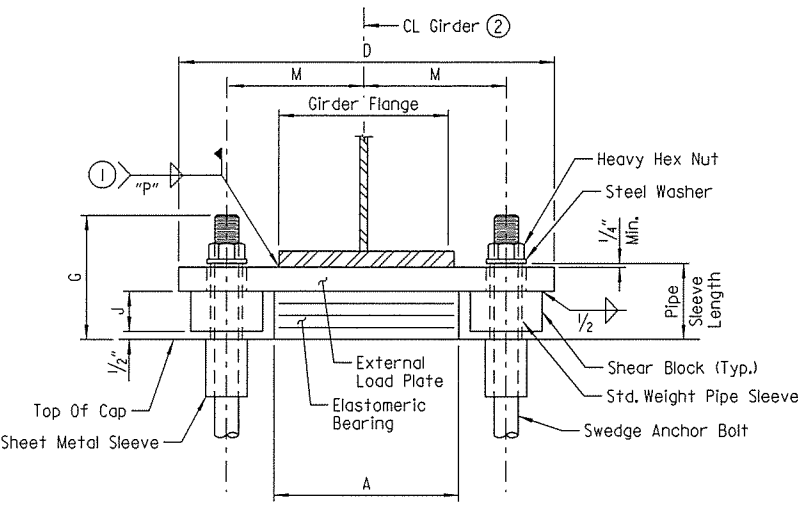


SHEET 2 OF 2
DETAILS OF FINGER JOINT
ROUTE 129 SEC. 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: HEW DATE: JULY 2014 FILENAME: BBB0303x1.dgn
CHECKED BY: JHR DATE: AUG. 2014 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: JULY 2014
BRIDGE NO. 07335 DRAWING NO. 56417

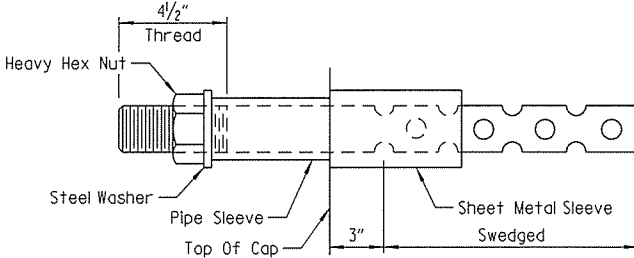
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0303	124	231
				07335	ELASTOMERIC BEARINGS			56418



FRONT VIEW - AT BENT NOS. 1, 5 AH., 5B & 9



FRONT VIEW - AT BENT NOS. 2-4 & 6-8



ANCHOR BOLT DETAIL

NOTE:
Anchor bolts may be cast in place or drilled and grouted into place. If anchor bolts are to be cast in place, the galvanized sheet metal sleeves will not be required.

If anchor bolts are to be drilled and grouted in place, the galvanized sheet metal sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of structural steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the masonry. Bolts placed in drilled holes shall be accurately set and fixed using a QPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized sheet metal sleeves will not be paid for directly but will be considered subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50W)".

GENERAL NOTES

Elastomeric bearings shall conform to Section 808 and shall be paid for at the unit price bid for "ELASTOMERIC BEARINGS."

External load plates and shear blocks shall conform to AASHTO M270, Grade 50W. Pipe sleeves shall be ASTM A500, Grade B, and shall be galvanized to conform to AASHTO M232, Class C or ASTM B695, Class 50.

External load plates (with shear blocks as applicable) 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(b) for painted steel and 807.84(e) for unpainted Grade 50W steel.

Anchor bolts, washers and nuts shall conform to Subsection 807.07. The anchor bolt grade of steel shall be as specified in the "TABLE OF FABRICATOR VARIABLES". Indentations shall be circular with rounded bottoms and staggered as shown in the details.

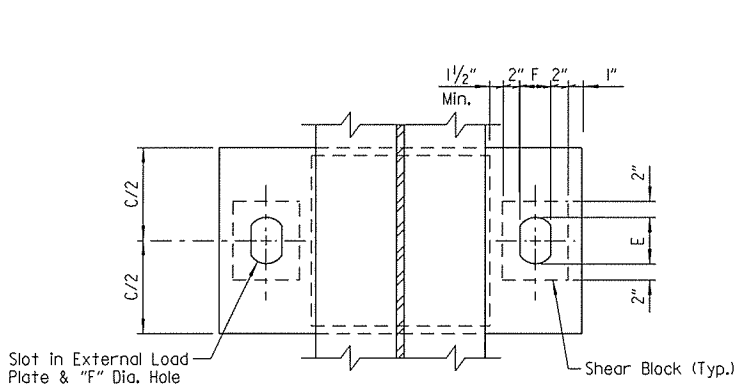
Pipe sleeves, anchor bolts, washers and nuts shall be paid for at the unit price bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50W)". External load plates and shear blocks will not be measured or paid for separately but will be included in the unit price bid for "ELASTOMERIC BEARINGS".

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.

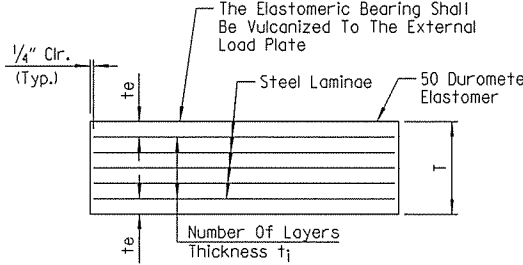
For TABLE OF FABRICATOR VARIABLES, see Dwg. No. 56419.

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

TABLE OF VARIABLES	
BENT NOS.	"P"
2-4	5/16"
6-8	1/2"



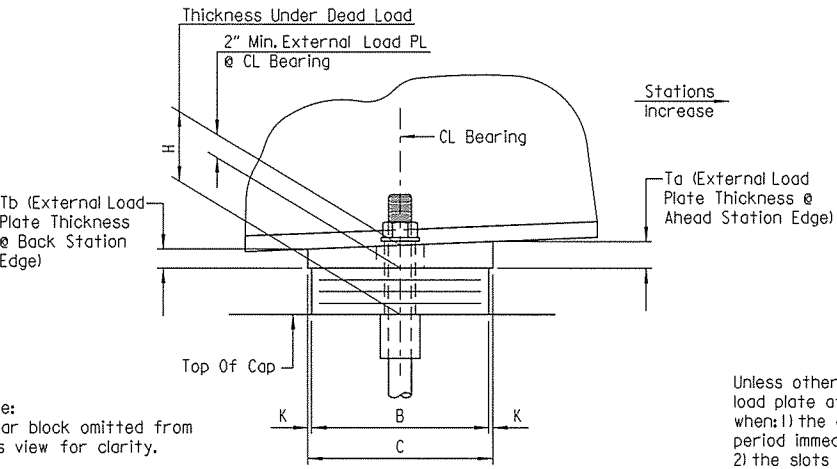
PLAN VIEW - AT BENT NOS. 1, 5 AH., 5B & 9



ELASTOMERIC BEARING

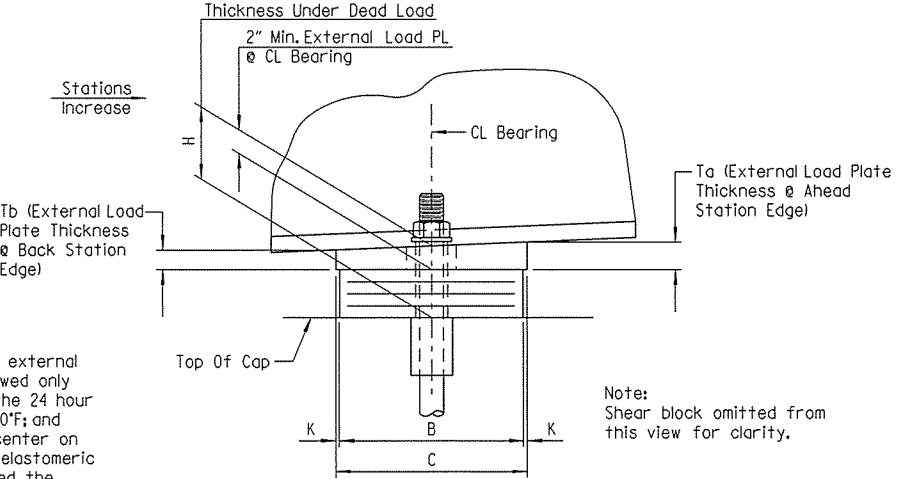
t_e = Thickness Of Elastomer Cover On Top And Bottom Of Pad
 t_1 = Thickness Of Elastomer Between Steel Laminiae
 N = Number Of Elastomer Layers Of Thickness t_1

Note:
The direction of bevel of the external load plate may not be accurately depicted with respect to T_a and T_b values shown in "TABLE OF FABRICATOR VARIABLES".

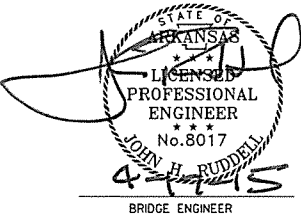


SIDE VIEW - AT BENT NOS. 1, 5 AH., 5B & 9

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



SIDE VIEW - AT BENT NOS. 2-4 & 6-8



SHEET 1 OF 2
DETAILS OF ELASTOMERIC BEARINGS
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

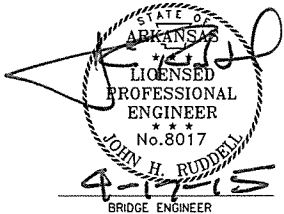
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CHECKED BY: AJK DATE: AUG. 2014 SCALE: AS SHOWN
DESIGNED BY: LIC DATE: JULY 2014
BRIDGE NO. 07335 DRAWING NO. 56418

jeskimmer 4/17/2015 10:43:07 AM
WORKSPACE: ARTD Bridge
\\GLITDCONLIT\Projects\2014\1017705 - Red River Bridge Replacement\Drawings\BBB0303x1.E2.dgn
REVISED DATE:

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.		BB0303	125	231
				① 07335	ELASTOMERIC BEARINGS			56419

TABLE OF FABRICATOR VARIABLES

							Elastomeric Pad							External Load Plate										Anchor Bolt				
Location		Bearing Type	No. Of Bearings Each Bent	* Maximum Design Load (Kips)	G	H	A	B	N	t _i	t _e	No. & Thickness Of Steel Laminæ	T	C	D	E	F	J	K	M	T _a	T _b	Anchor Bolt		Pipe Sleeve Size (Dia. x L)	Sheet Metal Sleeve Size (Dia. x L)	Steel Washer Size (O.D.)	
Bent No.	Beam Or Girder No.																						(Dia. x L)	Grade				
1	All	Exp.	9	160	10¾"	8"	16"	10"	9	½"	¼"	10 @ 12" Ga.	6⅛"	11	33½"	5½"	2¼"	5½"	½"	12⅝"	2.10	1.90	1½" x 30"	55	1½" x 8¼"	3 x 14	3	
2	All	Fixed	9	422	7⅞"	4⅜"	18"	14"	3	½"	¼"	4 @ 12" Ga.	2⅞"	15	35½"	2¼"	2¼"	2"	½"	13⅝"	2.12	1.88	1½" x 26"	55	1½" x 4⅝"	3 x 14	3	
3	All	Fixed	9	413	7⅞"	4⅜"	18"	14"	3	½"	¼"	4 @ 12" Ga.	2⅞"	15	35½"	2¼"	2¼"	2"	½"	13⅝"	2.10	1.90	1½" x 26"	55	1½" x 4⅝"	3 x 14	3	
4	All	Fixed	9	421	7⅞"	4⅜"	18"	14"	3	½"	¼"	4 @ 12" Ga.	2⅞"	15	35½"	2¼"	2¼"	2"	½"	13⅝"	2.09	1.91	1½" x 26"	55	1½" x 4⅝"	3 x 14	3	
5 Back	All	Exp.	9	160	10¾"	8"	16"	10"	9	½"	¼"	10 @ 12" Ga.	6⅛"	11	33½"	5½"	2¼"	5½"	½"	12⅝"	2.06	1.94	1½" x 30"	55	1½" x 8¼"	3 x 14	3	
5 Ahead	All	Exp.	9	225	14⅞"	12⅞"	24"	14"	16	½"	¼"	17 @ 12" Ga.	10¼"	15	41½"	8¾"	2¼"	9¾"	½"	16⅝"	2.07	1.93	1½" x 35"	55	1½" x 12⅞"	3 x 18	3	
6	All	Fixed	9	680	8⅝"	4⅜"	24"	16"	3	½"	¼"	4 @ 12" Ga.	2⅞"	19	44½"	3¾"	3¾"	2"	1½"	17⅞"	2.05	1.95	2¾" x 42"	105	3" x 4⅝"	5 x 18	5	
7	All	Fixed	9	696	8⅝"	4⅜"	24"	16"	3	½"	¼"	4 @ 12" Ga.	2⅞"	19	44½"	3¾"	3¾"	2"	1½"	17⅞"	2.01	1.99	2¾" x 42"	105	3" x 4⅝"	5 x 18	5	
8	All	Fixed	9	680	8⅝"	4⅜"	24"	16"	3	½"	¼"	4 @ 12" Ga.	2⅞"	19	44½"	3¾"	3¾"	2"	1½"	17⅞"	1.96	2.04	2¾" x 42"	105	3" x 4⅝"	5 x 18	5	
9	All	Exp.	9	225	14⅞"	12⅞"	24"	14"	16	½"	¼"	17 @ 12" Ga.	10¼"	15	41½"	8¾"	2¼"	9¾"	½"	16⅝"	1.94	2.06	1½" x 34"	55	1½" x 12⅞"	3 x 14	3	



SHEET 2 OF 2
DETAILS OF ELASTOMERIC BEARINGS
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: _____ HEW DATE: JULY 2014 FILENAME: BBB0303x1.E2.DGN
CHECKED BY: _____ AJK DATE: AUG. 2014 SCALE: _____ AS SHOWN
DESIGNED BY: _____ LIC DATE: JULY 2014
BRIDGE NO. 07335 DRAWING NO. 56419

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.		BB0303	126	231
				07336		LAYOUT		56420

FOR R/W DATA AND GUARDRAIL DETAILS, SEE ROADWAY PLANS

NOTE:
Use Type Special 3 Approach Gutters & Type
Special 5 Approach Gutters at Begin Bridge.
See Dwg. Nos. 56438 & 56440.

Use Type C Approach Gutters (W = 10'-0") & Type
Special 3 Approach Gutters at End Bridge. See
Std. Dwg. No. 55030C & Dwg. No. 56438.

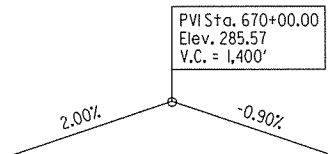
Use Type C1 Approach Slab at each end of bridge.
See Std. Dwg. No. 55040C1.

For "GENERAL NOTES", Boring Legend & "N" Values.
See Dwg. No. 56421.

HORIZONTAL CURVE DATA

CL I-30
PI = 686+55.22
 $\Delta = 03^{\circ}32'32''$ Lt.
D = 00'30'00"
T = 354.32'
L = 708.42'
R = 11,458.76'

NOTE:
Stations and elevations shown
are along CL Bridge. Elevations
shown are at Theoretical Profile
Grade (See Sheet 2 of 2).

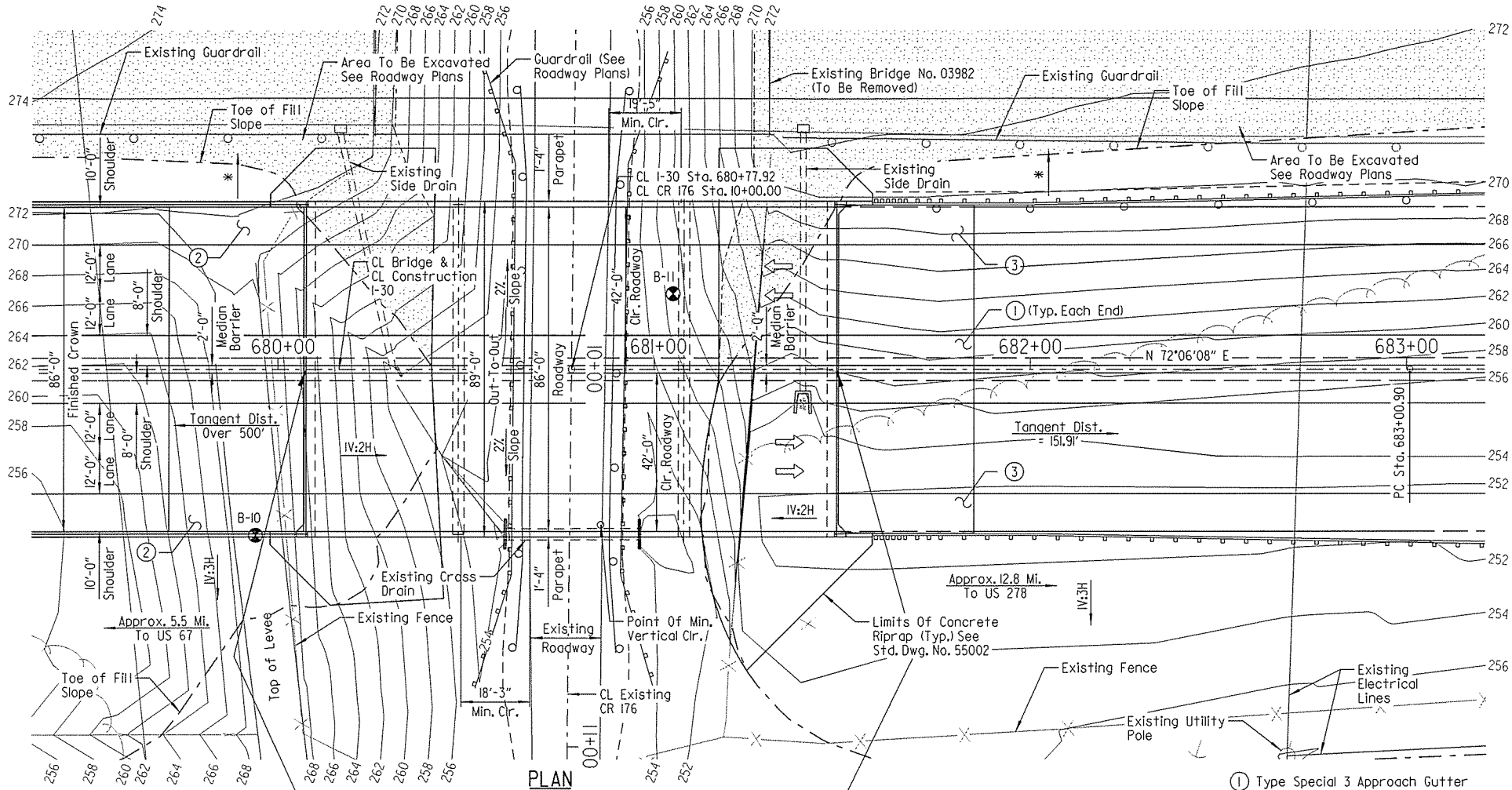
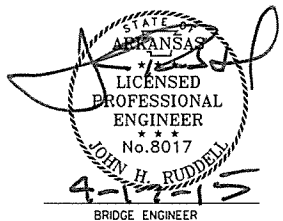


VERTICAL CURVE DATA

I-30
(Profile Grade 9 Feet From CL Bridge)

SHEET 1 OF 2
LAYOUT OF BRIDGE
OVER CO. RD. 176
RED RIVER - EAST & WEST (F)
MILLER & HEMPSTEAD COUNTIES
ROUTE 30 SEC. 11 & 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: NOV. 2012 FILENAME: BB0303x2.LI.DGN
CHECKED BY: RLW DATE: NOV. 2012 SCALE: 1" = 20'
DESIGNED BY: SRY DATE: NOV. 2012
BRIDGE NO. 07336 DRAWING NO. 56420

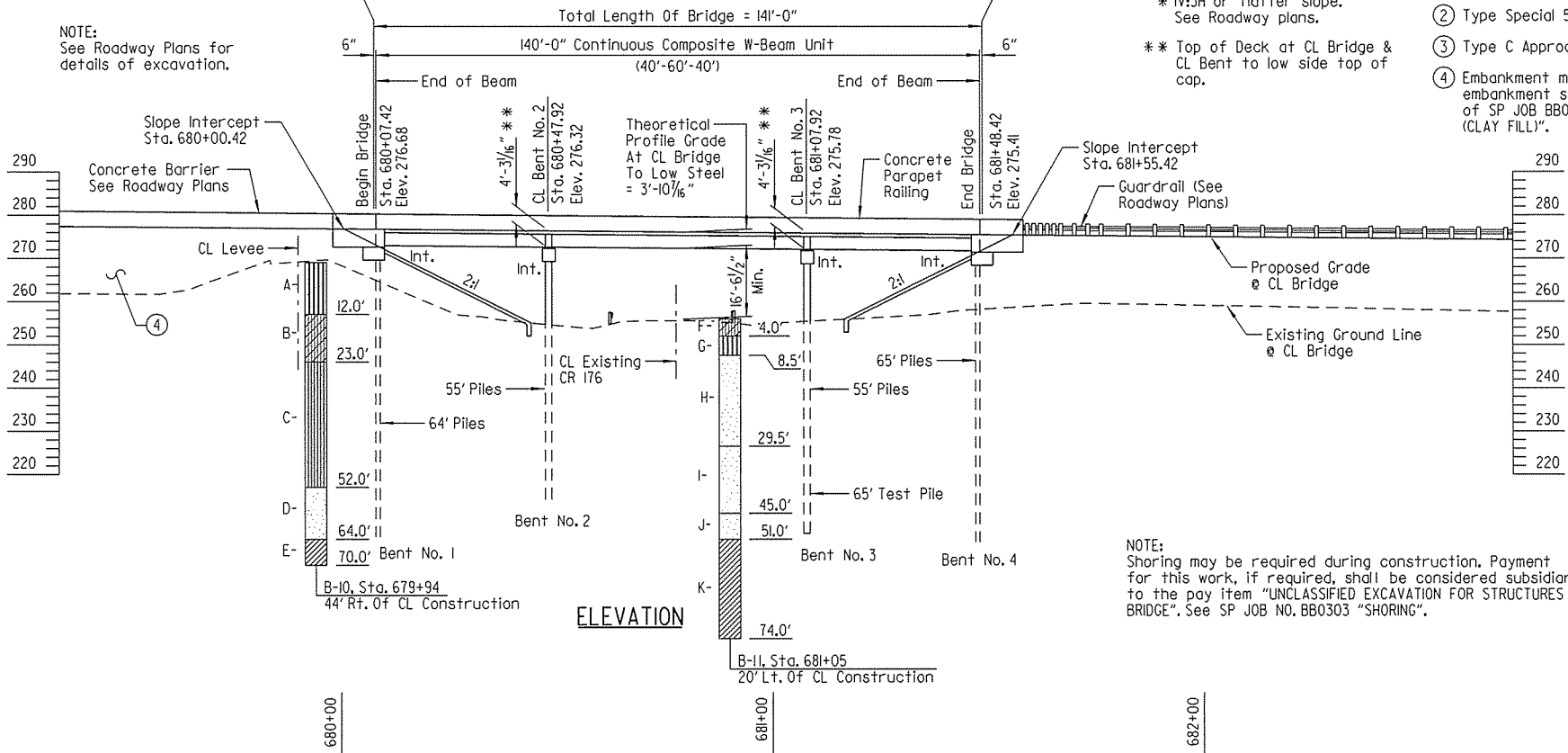


NOTE:
See Roadway Plans for
details of excavation.

* IV:3H or flatter slope.
See Roadway plans.

** Top of Deck at CL Bridge &
CL Bent to low side top of
cap.

- ① Type Special 3 Approach Gutter
- ② Type Special 5 Approach Gutter
- ③ Type C Approach Gutter
- ④ Embankment material placed within begin bridge
embankment shall meet the requirements
of SP JOB BB0303 "EXCAVATION AND EMBANKMENT
(CLAY FILL)".



NOTE:
Shoring may be required during construction. Payment
for this work, if required, shall be considered subsidiary
to the pay item "UNCLASSIFIED EXCAVATION FOR STRUCTURES -
BRIDGE". See SP JOB NO. BB0303 "SHORING".

4/17/2015 10:33:36 AM
WORKSPACE: AHTD Bridge
\\GLITDCO\IT\Projects\2011\1017705 - Red River Bridge Replacement\Drawings\BBB0303x2.L2.dgn
REVISED DATE:

GENERAL NOTES

BENCH MARK: See Survey Control Detail Sheets

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications For Highway Construction (2014 Edition) with applicable Supplemental Specifications and Special Provisions. Unless otherwise noted in the plans, Section and Subsection refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications (2012 Edition) with current interim revisions

LIVE LOADING: HL93

METHOD OF DESIGN: LRFD

SEISMIC PERFORMANCE ZONE: I

SDI = 0.12 , SITE CLASS = D

OPERATIONAL IMPORTANCE CATEGORY: ESSENTIAL

MATERIALS AND STRENGTHS:

Class S(AE) - Bridge Concrete (Superstructure)
Class S - Bridge Concrete (Substructure)
Reinforcing Steel (AASHTO M31 Or M322 Type A, GR. 60)
Structural Steel (AASHTO M270, GR. 50W)
Structural Steel (AASHTO M270, GR. 36)

f'c = 4,000 psi
f'c = 3,500 psi
fy = 60,000 psi
Fy = 50,000 psi
Fy = 36,000 psi

BORING LOGS: Boring Logs may be obtained from the Construction Contract Procurement Section of the Program Management Division.

STEEL PILING: Piling for Bent Nos. 1 and 4 shall be HPI2x53 steel piles and shall be driven to a minimum ultimate bearing capacity of 123 tons per pile. Piling shall have a minimum penetration of 20' below natural ground. Piling in end bents shall be driven after embankment to bottom of cap is in place.

CONCRETE PILING: Piling for Bent Nos. 2 and 3 shall be 18" diameter square prestressed concrete piles and shall be driven to a minimum ultimate bearing capacity of 230 tons per pile. Piling shall have a minimum penetration of 20' below natural ground. Drive one 65' test pile at Bent No. 3.

All piling shall be driven with an approved air, steam or diesel hammer. Length of piling shown are assumed for estimating quantities only. Actual lengths to be determined in the field. No payment will be made for cut-off or build-up.

DRIVING SYSTEM: The driving system approval and ultimate bearing capacity determination for piling shall be based on the requirements of Subsection 805.09(b) "METHOD B - WAVE EQUATION ANALYSIS (WEAP)." It is estimated that the minimum required rated energy of the hammer will be 49,000 foot pounds per blow will be required to obtain the ultimate bearing capacity at Bent Nos. 1-4.

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

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

DETAIL DRAWINGS:

DRAWING NO:

End Bents
Intermediate Bents
140' Cont. Comp. W-Beam Unit
Type Special 3 Approach Gutters
Type Special 5 Approach Gutters
Concrete Riprap
Steel Piling
Concrete Piling
Type C Approach Gutters
Type C1 Approach Slab

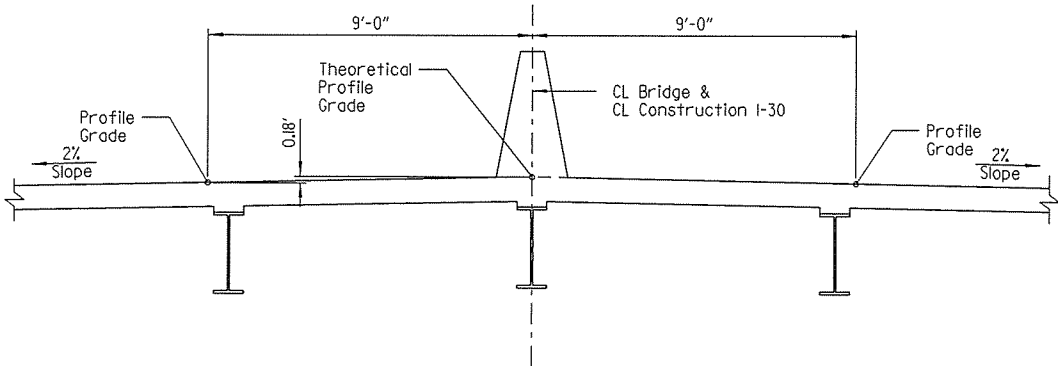
56422 & 56423
56424
56425-56435
56438
56440
55002
55020
55022
55030C
50040C1

EXISTING BRIDGE: Existing Bridge No. 03982 is 75.25' wide and 107.17' long and consists of 3 simple spans with steel beams and a concrete deck supported by a concrete pile bent substructure. The existing bridge is located approximately 100' North of the new bridge.

REMOVAL AND SALVAGE: After the new bridge is open to traffic, existing bridge No. 03982 shall be removed in accordance with Section 205. All material from the existing bridge shall become property of the Contractor.

BORING LEGEND

- A - Loose light brown fine sandy silt with silty fine sand pockets (fill)
- B - Firm to stiff tan silty clay
- C - Medium dense light brown silty fine sand
- D - Dense to very dense light brown fine to coarse sand with a little fine gravel
- E - Very stiff to hard dark gray clay, calcareous
- F - Stiff reddish brown silty clay with some fine sandy silt pockets (fill)
- G - Medium dense reddish tan silt, slightly sandy
- H - Medium dense light tan and reddish tan fine sand, slightly silty
- I - Medium dense dark gray and brown fine sand, slightly silty
- J - Dense dark gray and brown fine to coarse sand
- K - Hard bluish gray clay, calcareous with occasional silty fine sand partings

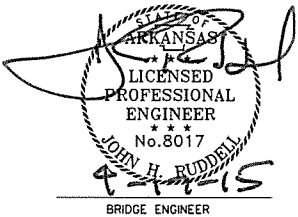


THEORETICAL PROFILE GRADE DETAIL

Scale: N.T.S.

N VALUES

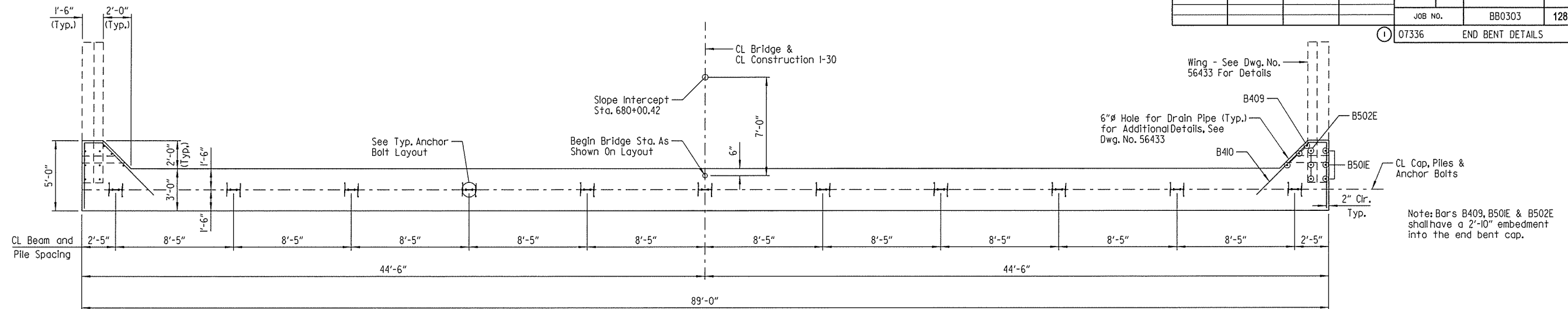
Sta. 679+94 at 44' Rt. Of CL Construction	Sta. 681+05 at 20' Lt. Of CL Construction
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2.5-3.5, N=6	2.5-3.5, N=20
4.5-5.5, N=4	4.5-5.5, N=17
6.5-7.5, N=4	6.5-7.5, N=11
9.0-10.0, N=5	9.0-10.0, N=18
14.0-15.0, N=10	14.0-15.0, N=18
19.0-20.0, N=13	19.0-20.0, N=36
24.0-25.0, N=28	24.0-25.0, N=32
29.0-30.0, N=34	29.0-30.0, N=16
34.0-35.0, N=45	34.0-35.0, N=50
39.0-40.0, N=51	39.0-40.0, N=44
44.0-45.0, N=50/6"	44.0-45.0, N=50
49.0-50.0, N=50/7"	49.0-50.0, N=46
54.0-55.0, N=50/8"	59.0-60.0, N=50/8"
59.0-60.0, N=50/7"	64.0-65.0, N=50/4"
64.0-65.0, N=50/8"	69.0-70.0, N=50/3"
69.0-70.0, N=50/6"	73.5-74.0, N=50/3"



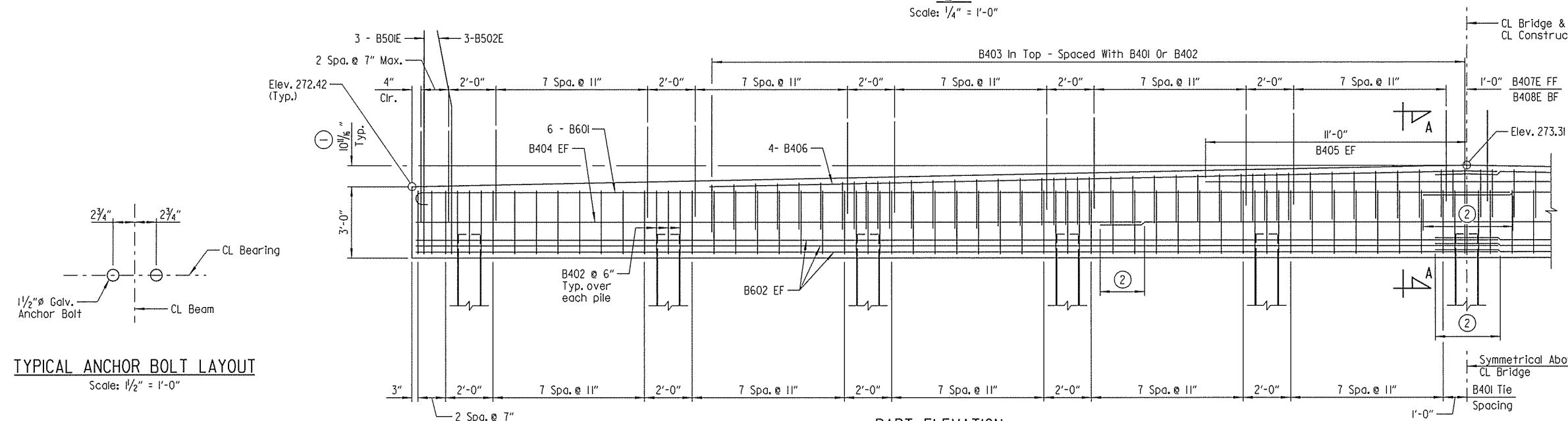
SHEET 2 OF 2
LAYOUT OF BRIDGE
OVER CO. RD. 176
RED RIVER - EAST & WEST (F)
MILLER & HEMPSTEAD COUNTIES
ROUTE 30 SEC. 11 & 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: RLW DATE: NOV. 2012 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: NOV. 2012
BRIDGE NO. 07336 DRAWING NO. 56421

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				6	ARK.			
				JOB NO.		BB0303	128	231
				(1) 07336		END BENT DETAILS		56422



PLAN
Scale: $\frac{1}{4}'' = 1'-0''$



- ① Low side of cap to top of cap at CL Bridge.
- ② 3'-8" Lap - #6 Bars - Top
2'-8" Lap - #6 Bars - Bottom
1'-9" Lap - #4 Bars

LEGEND

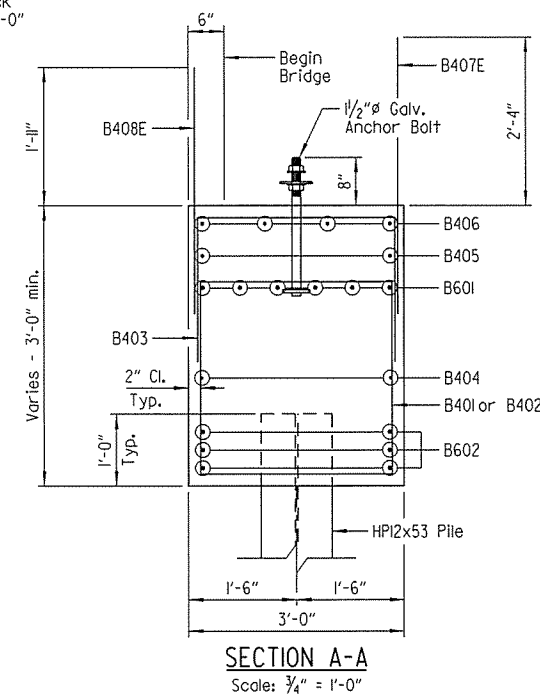
EF = Each Face
FF = Front Face
BF = Back Face

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

BAR LIST				BAR BENDING DIAGRAMS	
MARK	NO. REQ'D	LENGTH	P.D.		
B401	86	11'-0"	2"	 B401B402B403B404B405B406B407EB408EB409B410	
B402	33	7'-10"	2"		
B403	83	6'-6"	2"		
B404	6	30'-9"	Str.		
B405	2	22'-0"	Str.		
B406	8	33'-0"	Str.		
B407E	86	3'-10"	Str.		
B408E	86	3'-5"	Str.		
B409	6	4'-5"	Str.		
B410	8	11'-1"	2"		
B501E	6	9'-6"	Str.	 B501EB502EB601B602	
B502E	6	9'-6"	2 1/2"		
B601	12	46'-10"	4 1/2"		
B602	12	46'-2"	Str.		

NOTES:
Dimensions of bars are out-to-out.
Number of bars shown is for End Bent No. 1.
Bars designations ending with "E" indicate epoxy coated bars.

PART ELEVATION
Looking Back
Scale: $\frac{3}{8}" = 1'-0"$



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 $\frac{3}{4}$ " unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60 ($f_y = 60,000$ psi).

Granular backfill and pipe underdrain required behind cap,
see "SECTION AT END BENT" on Dwg. No. 56429.

For details of anchor bolts, see Dwg. No. 56427.

For additional information, see Layout.

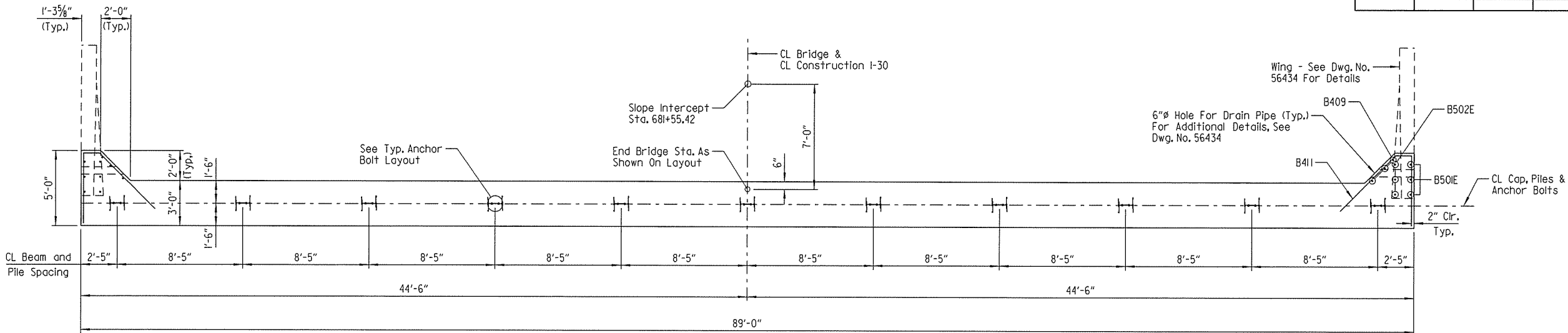
DETAILS OF END BENT NO.1

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

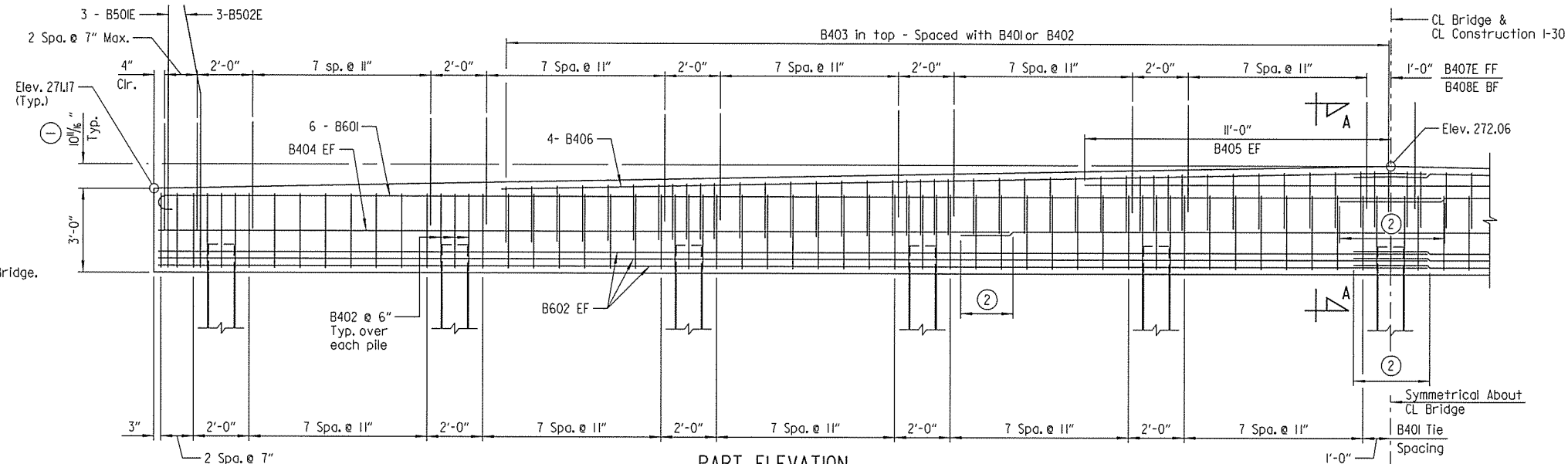
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DESIGNED BY: LIC DATE: MAY 2014
BRIDGE NO. 07336 DRAWING NO. 56422

4/17/2015 10:43:37 AM
 WORKSPACE: AHTD Bridge
 \\GLTDCON\IT\Projects\2011\017705 - Red River Bridge Replacement\Drawings\BBB0303x2_Aldgn

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.		BB0303	129	231
				07336		END BENT DETAILS		56423

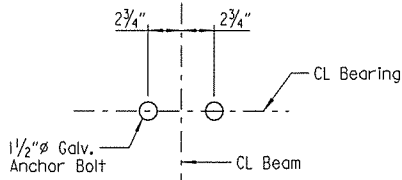


PLAN
Scale: 1/4" = 1'-0"



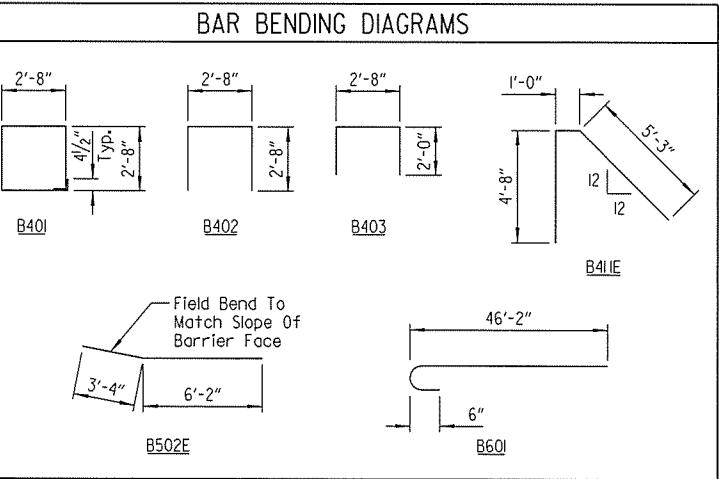
- ① Low side of cap to top of cap at CL Bridge.
② 3'-8" Lap - #6 Bars - Top
2'-8" Lap - #6 Bars - Bottom
1'-9" Lap - #4 Bars

LEGEND
EF = Each Face
FF = Front Face
BF = Back Face

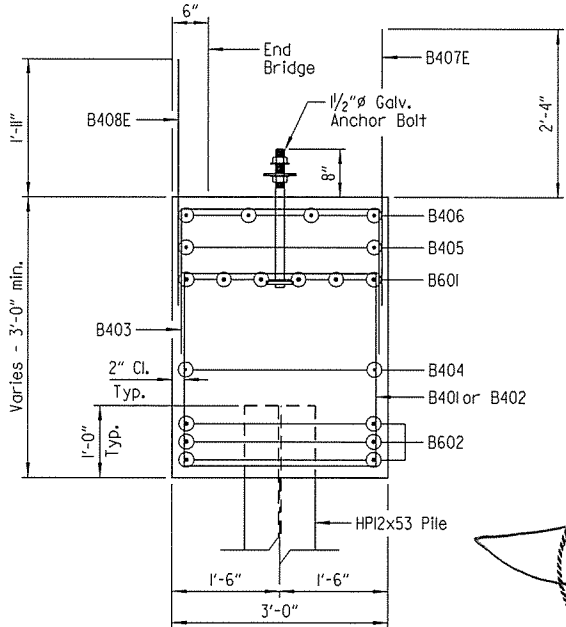


TYPICAL ANCHOR BOLT LAYOUT
Scale: 1/2" = 1'-0"

MARK	NO. REQ'D	LENGTH	P.D.
B40I	86	11'-0"	2"
B402	33	7'-10"	2"
B403	83	6'-6"	2"
B404	6	30'-9"	Str.
B405	2	22'-0"	Str.
B406	8	33'-0"	Str.
B407E	86	3'-10"	Str.
B408E	86	3'-5"	Str.
B409	6	4'-5"	Str.
B41I	8	10'-10"	2"
B50IE	6	9'-6"	Str.
B502E	6	9'-6"	2 1/2"
B60I	12	46'-10"	4 1/2"
B602	12	46'-2"	Str.



NOTES:
Dimensions of bars are out-to-out.
Number of bars shown is for End Bent No. 4.
Bars designations ending with "E" indicate epoxy coated bars.

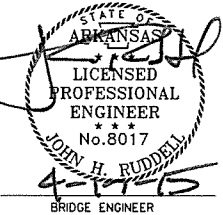


SECTION A-A
Scale: 3/4" = 1'-0"

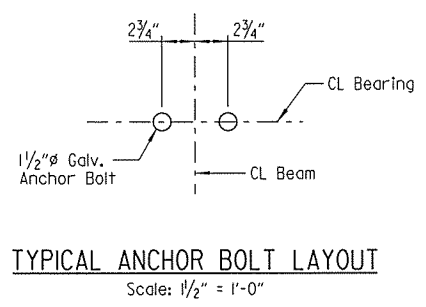
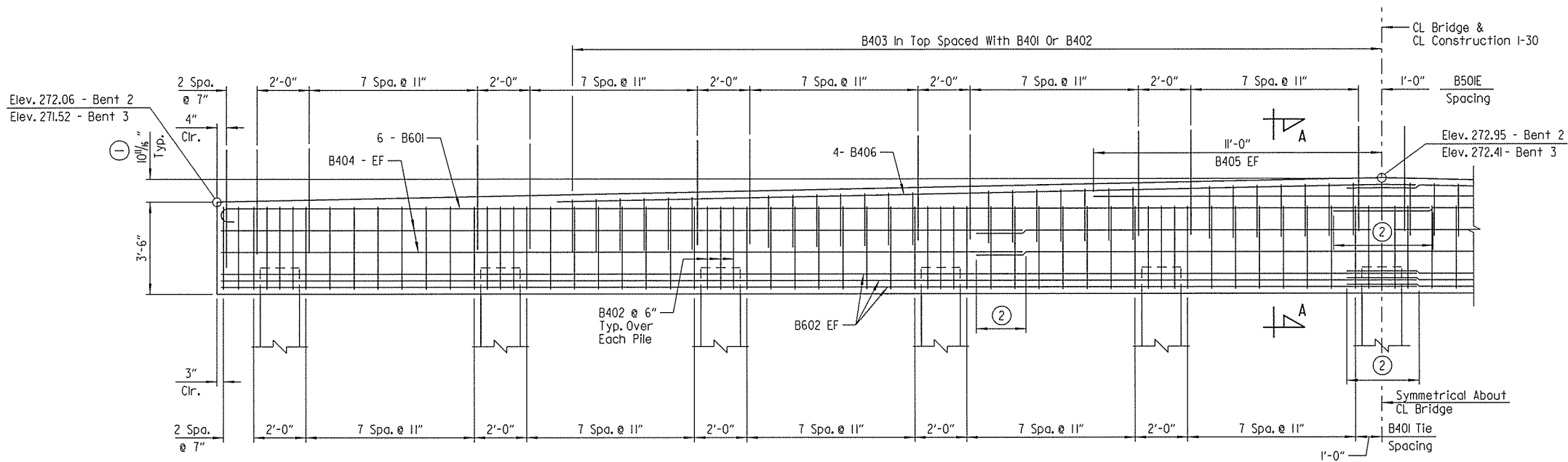
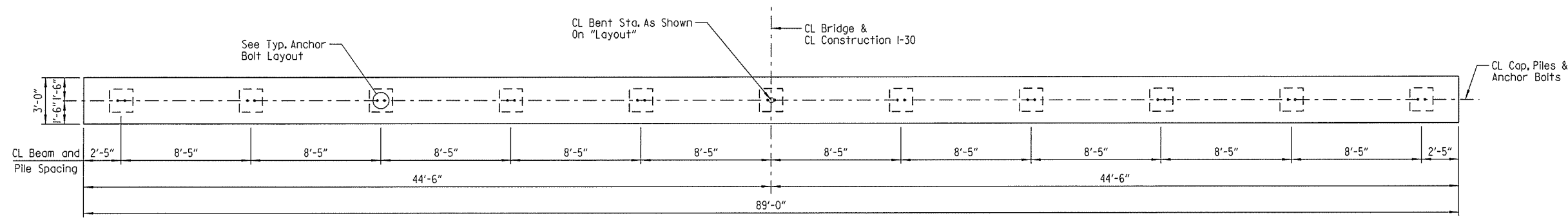
GENERAL NOTES:
All concrete shall be Class "S" with a minimum 28-day compressive strength f'c=3,500 psi. Concrete shall be poured in the dry and all exposed corners to be chamfered 3/4" unless otherwise noted.
All reinforcing steel shall conform to AASHTO M31or M322 Type A, Grade 60 (fy = 60,000 psi).
Granular backfill and pipe underdrain required behind cap, see "SECTION AT END BENT" on Dwg. No. 56429.
For details of anchor bolts, see Dwg. No. 56427.
For additional information, see Layout.

DETAILS OF END BENT NO. 4
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: LIC DATE: MAY 2014 FILENAME: BBB0303x2_A2.DGN
CHECKED BY: MRA DATE: JULY 2014 SCALE: AS SHOWN
DESIGNED BY: LIC DATE: MAY 2014
BRIDGE NO. 07336 DRAWING NO. 56423



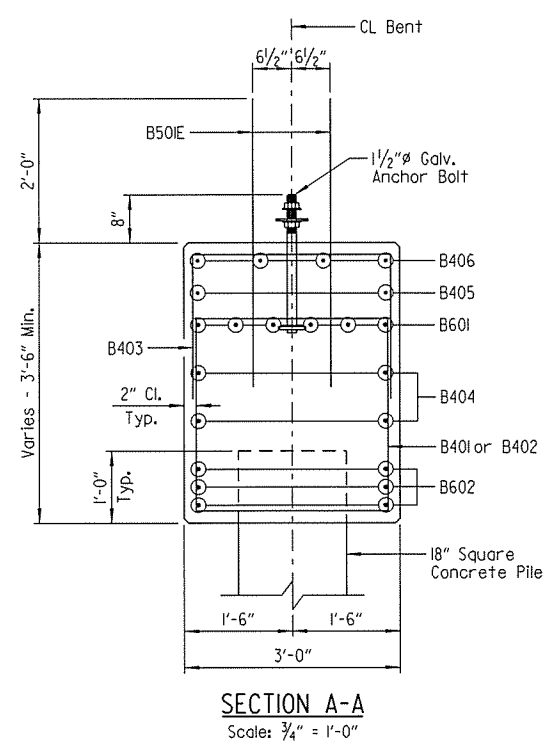
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0303	130	231
				07336		INT. BENT DETAILS		56424



- LEGEND**
- EF = Each Face
- ① Low side of cap to top of cap at CL Bridge.
- ② 3'-8" Lap - *6 Bars - top
2'-8" Lap - *6 Bars - bottom
1'-9" Lap - *4 Bars

BAR LIST - PER BENT				BAR BENDING DIAGRAMS	
MARK	NO. REQ'D	LENGTH	P.D.		
B401	86	12'-0"	2"		
B402	33	8'-10"	2"		
B403	83	6'-6"	2"		
B404	12	30'-9"	Str.		
B405	2	22'-0"	Str.		
B406	8	32'-5"	Str.		
B50IE	172	4'-0"	Str.		
B601	12	46'-10"	4 1/2"		
B602	12	45'-8"	Str.		

NOTES:
Dimensions of bars are out-to-out.
Number of bars shown is for one bent.
Bars ending with "E" indicate epoxy coated bars.



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 M322 Type A, Grade 60 ($f_y = 60,000$ psi).

For details of concrete piles, see Dwg. No. 56429.

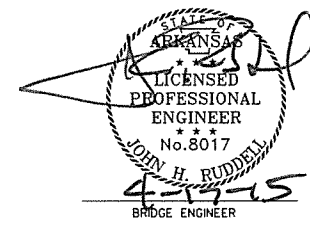
For details of anchor bolts, see Dwg. No. 56427.

For additional information, see Layout.

DETAILS OF INTERMEDIATE BENT NOS. 2 & 3

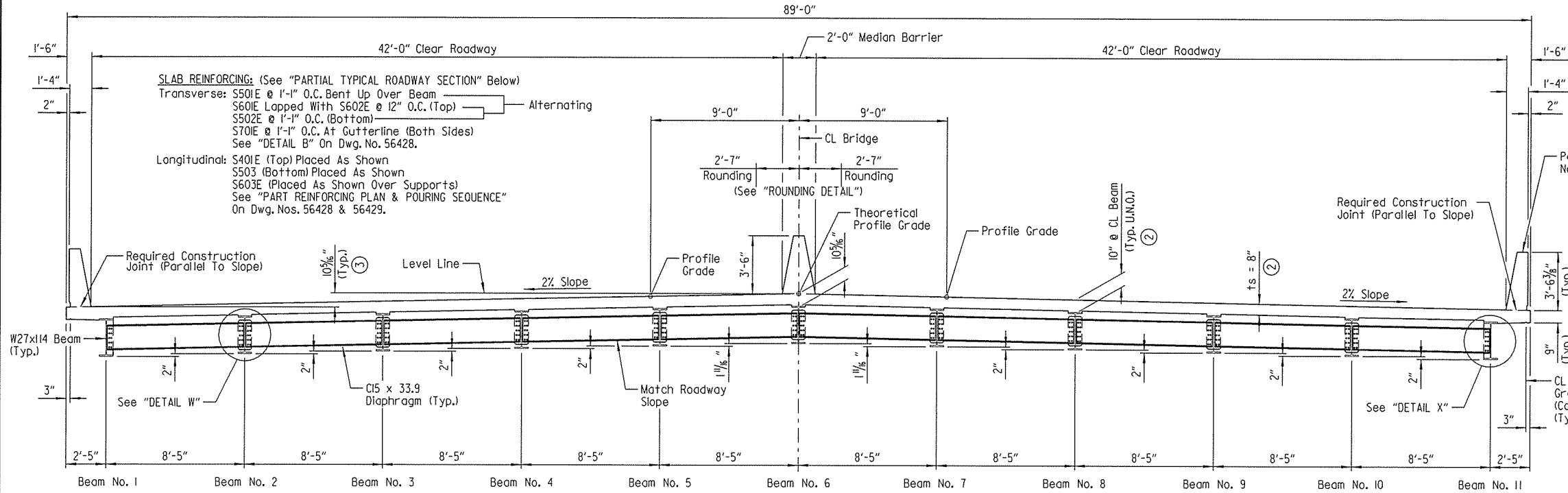
ROUTE 66
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: LIC DATE: MAY 2014 FILENAME: BBB0303x2-BI.DGN
CHECKED BY: MRA DATE: JULY 2014 SCALE: AS SHOWN
DESIGNED BY: LIC DATE: MAY 2014
BRIDGE NO. 07336 DRAWING NO. 56424

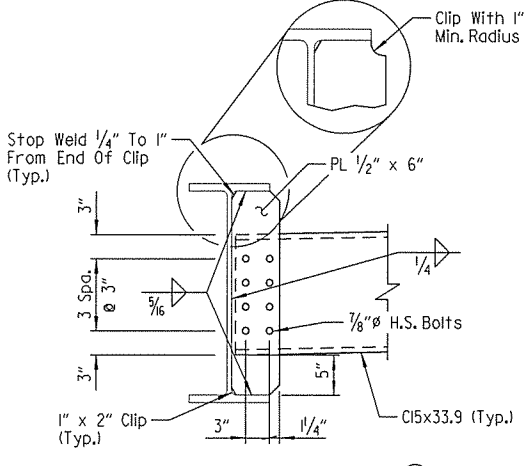


4/17/2015 10:33:39 AM
WORKSPACE: AHTD Bridge
\\GLITDCON\IT\Projects\2011\07705 - Red River Bridge Replacement\Drawings\BBB0303x2-BI.dgn
REVISED DATE:

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.		BB0303	131	231
				07336		140' UNIT		56425



TYPICAL ROADWAY SECTION
(Looking Forward)
Scale: 1/4" = 1'-0"

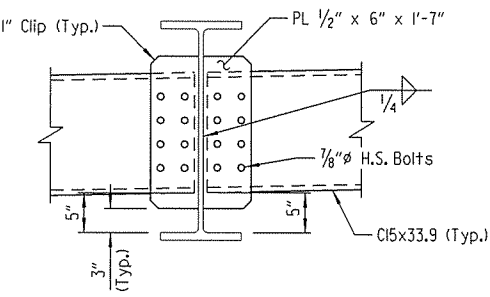


DETAIL X
Scale: 1" = 1'-0"

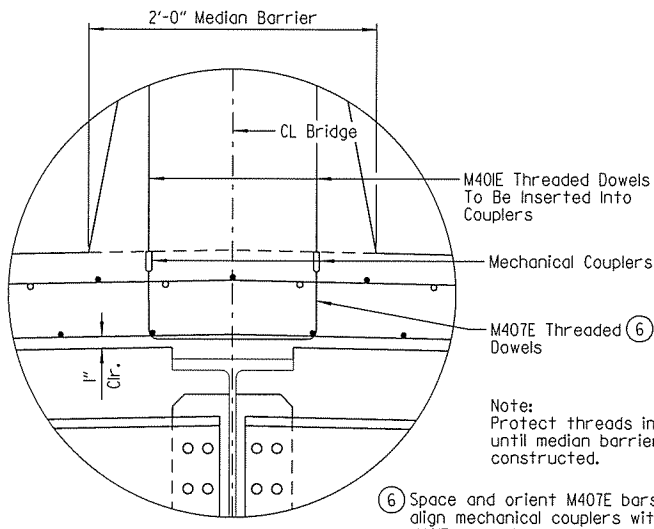
TABLE FOR WELDS		
Material Thickness Of Thicker Part Joined (Inches)	Minimum Size Of Fillet Weld (Inches)	Single Pass Weld Must Be Used
To 3/4" Inclusive	1/4"	
Over 3/4"	5/16"	

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

(5) If permanent steel bridge deck forms are used, the fabricator shall clip the plate as necessary to accommodate the deck form support.



DETAIL W
Scale: 1" = 1'-0"

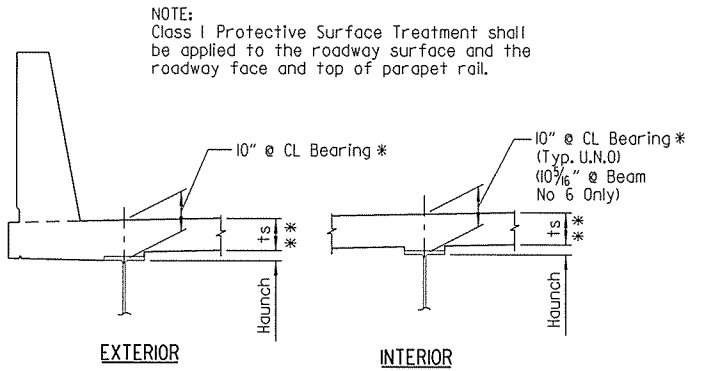


DETAIL A
Scale: 1 1/2" = 1'-0"

(6) Space and orient M407E bars to align mechanical couplers with M401E bars. See median barrier details on Dwg. No. 56432 for spacing and positioning of M401E bars.

NOTE: The threaded dowel and coupler assembly shall consist of a OPL approved mechanical splice with protective cap and threaded dowel bars (M401E and M407E) as shown and shall develop at least 125% of the yield strength of the dowel bars.

M401E and M407E dowel bars shall be a minimum 60 ksi yield strength and threaded as required. Threaded dowel and coupler assembly, except mating surfaces, shall be epoxy coated in accordance with the requirements of section 804.

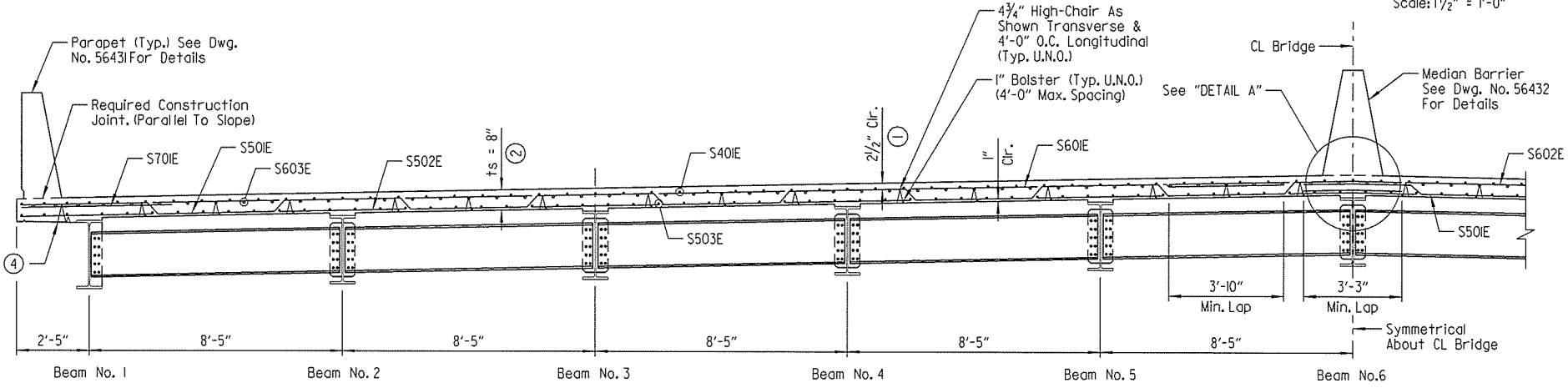


NOTE: ts = Slab thickness as shown on "TYPICAL ROADWAY SECTION".
* Measured to bottom of top flange.
** Tolerance when removable deck forming is used is + 1/2", - 1/4". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

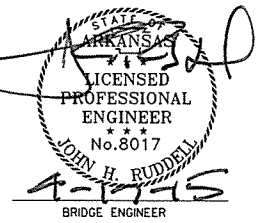
ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED

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

Tolerances shown are applicable only when removable deck forming is used. See Std. Dwg. No. 55005 for tolerances when permanent steel bridge deck forms are used. Payment for concrete shall be based on removable deck forming.



PARTIAL TYPICAL ROADWAY SECTION
(Looking Forward)
Scale: 3/8" = 1'-0"



SHEET 1 OF 11
DETAILS OF 140'-0" CONTINUOUS COMPOSITE W-BEAM UNIT

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

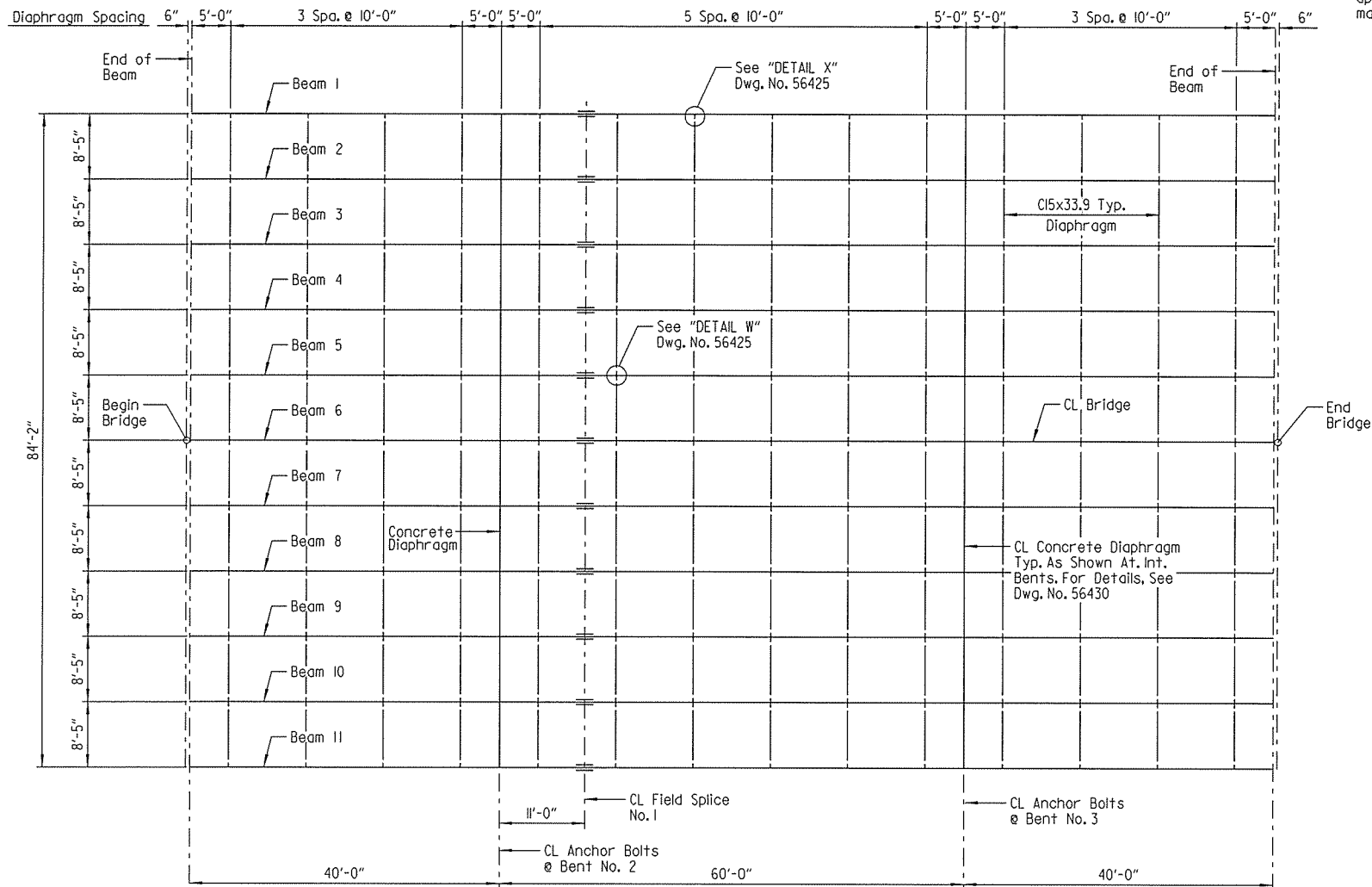
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CHECKED BY: MRA DATE: JULY 2014 SCALE: AS SHOWN
DESIGNED BY: JLH DATE: JUNE 2014
BRIDGE NO. 07336 DRAWING NO. 56425

4/17/2015 10:43:39 AM
WORKSPACE: AHTD Bridge
\\GLTDCV\IT\Projects\2011\07705 - Red River Bridge Replacement\Drawings\BB0303x2.Sldgn
REVISED DATE:

4/17/2015 10:33:40 AM
WORKSPACE: AHTD Bridge Replacement Drawings\BBB0303x2.S2.dgn
\\GLTDC01\IT\Projects\2011\017705 - Red River Bridge Replacement\Drawings\BBB0303x2.S2.dgn
REVISED DATE:

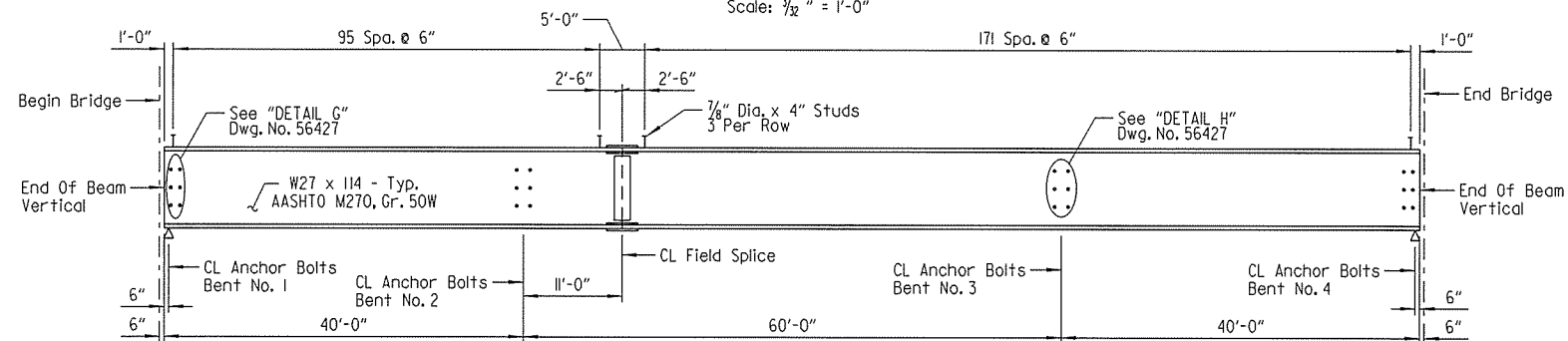
NOTE:
Bolted field splices may be eliminated or shop welded splices may be substituted with the approval of the Engineer. Payment will be made on basis of plan quantities.

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.	BB0303		132	231
				07336	140' UNIT		56426	



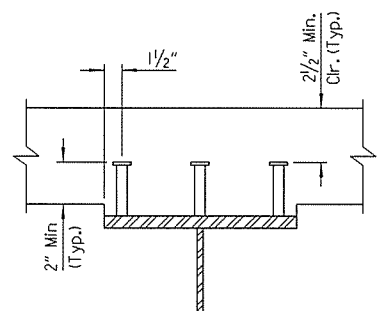
PART FRAMING PLAN

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



TYPICAL BEAM ELEVATION

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



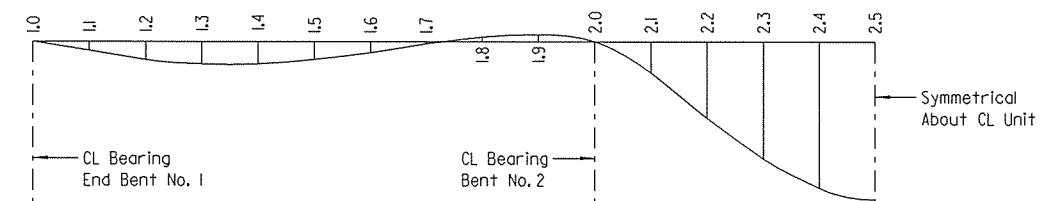
SHEAR CONNECTOR DETAIL

No Scale

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

TABLE OF DEAD LOAD DEFLECTIONS (Inches)						
Point Of Deflection	Beams 1 & 11			Beams 2-10		
	Wt. of Beam And Cross-Frame	Wt. of Beam Cross-Frames And Slab	Wt. of Beam Cross-Frames, Slab, Parapet And Median Barrier	Wt. of Beam And Cross-Frame	Wt. of Beam Cross-Frames And Slab	Wt. of Beam Cross-Frames, Slab, Parapet And Median Barrier
1.0	0.00	0.00	0.00	0.00	0.00	0.00
1.1	0.01	0.04	0.04	0.01	0.05	0.05
1.2	0.01	0.07	0.08	0.01	0.09	0.10
1.3	0.01	0.09	0.10	0.01	0.11	0.12
1.4	0.01	0.09	0.10	0.01	0.11	0.12
1.5	0.01	0.08	0.08	0.01	0.09	0.10
1.6	0.01	0.05	0.05	0.01	0.06	0.06
1.7	0.00	0.01	0.01	0.00	0.02	0.02
1.8	0.00	-0.02	-0.02	0.00	-0.02	-0.02
1.9	0.00	-0.03	-0.03	0.00	-0.03	-0.04
2.0	0.00	0.00	0.00	0.00	0.00	0.00
2.1	0.02	0.13	0.14	0.02	0.16	0.17
2.2	0.04	0.31	0.34	0.05	0.39	0.41
2.3	0.07	0.48	0.52	0.07	0.60	0.64
2.4	0.08	0.60	0.65	0.09	0.75	0.80
2.5	0.09	0.65	0.70	0.09	0.81	0.86

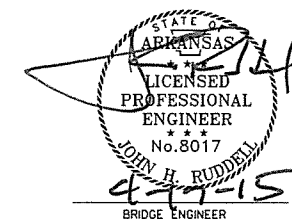
NOTE:
Deflections are symmetrical about CL Unit.



DEAD LOAD DEFLECTION

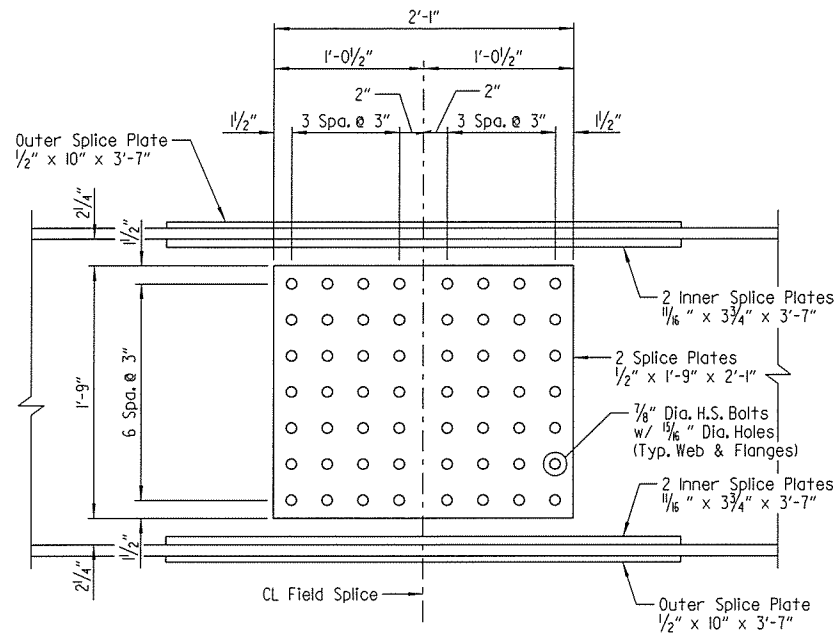
No Scale

NOTE:
Camber for dead load deflection plus vertical curve +/- $\frac{1}{4}$ " tolerance. Deflections shown are from a chord from centerline bearing to centerline bearing. Vertical curve corrections are not included. Negative sign (-) indicates point above chord.

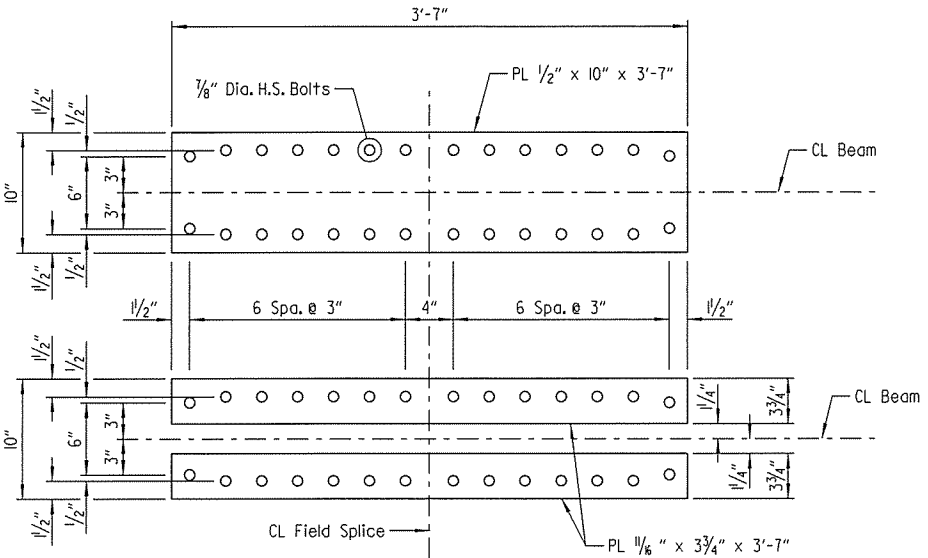


SHEET 2 OF 11
DETAILS OF 140'-0" CONTINUOUS
COMPOSITE W-BEAM UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: HEW DATE: MAY, 2014 FILENAME: BBB0303x2.S2.DGN
CHECKED BY: MRA DATE: JUNE, 2014 SCALE: AS SHOWN
DESIGNED BY: JLH DATE: MAY, 2014
BRIDGE NO. 07336 DRAWING NO. 56426

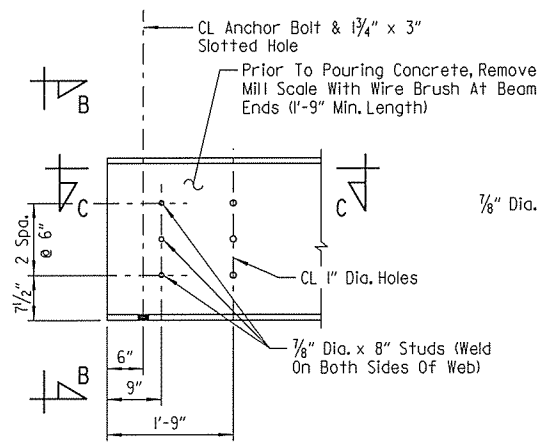
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				6	ARK.			
				JOB NO.		BB0303	133	231
				07336		140' UNIT		56427



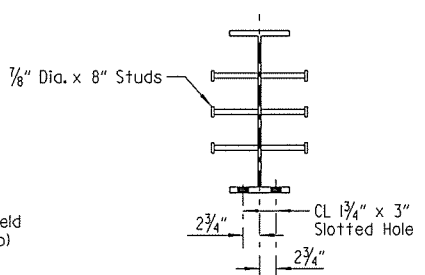
ELEVATION OF FIELD SPLICE
Scale: 1/2" = 1'-0"



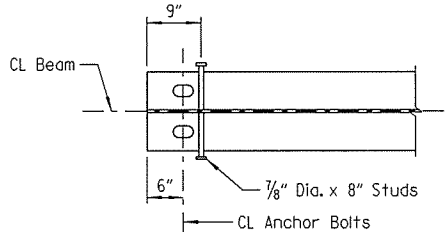
TOP & BOTTOM FLANGE SPLICE
Scale: 1/2" = 1'-0"



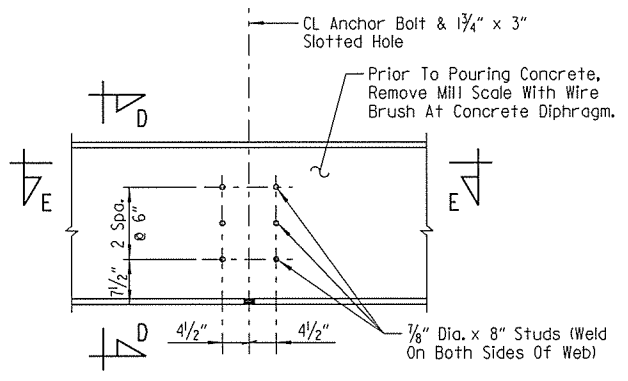
DETAIL G
Scale: 3/4" = 1'-0"



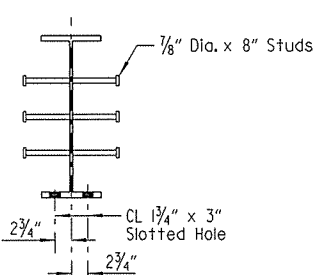
VIEW B-B
Scale: 3/4" = 1'-0"



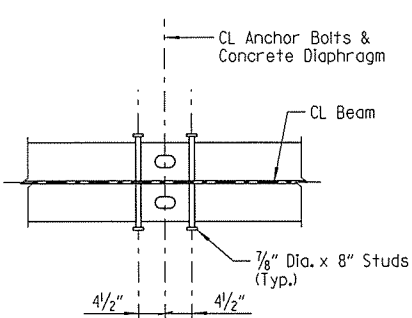
SECTION C-C
Scale: 3/4" = 1'-0"



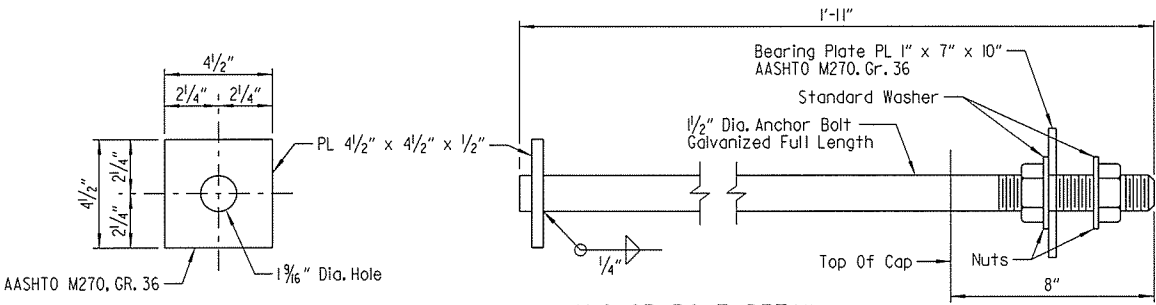
DETAIL H
Scale: 3/4" = 1'-0"



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



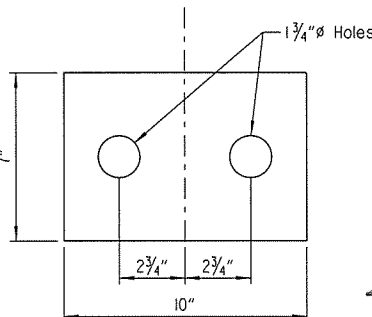
SECTION E-E
Scale: 3/4" = 1'-0"



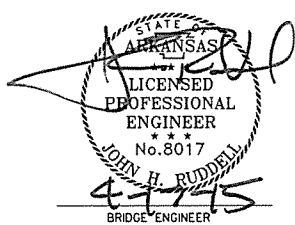
ANCHOR BOLT DETAIL
No Scale

Anchor bolts shall comply with AASHTO M314, Grade 55 with Supplementary Requirement S1 and galvanized according to Subsection 807.07. Nuts for bolts shall be as specified in Subsection 807.07. Plates, anchor bolts, nuts and washers shall be paid for at the unit price bid for "Structural Steel in Beam Spans (M270, Gr. 50W)".

Use lower nut and washer to adjust to grade. Snug tight top nut and washer after grade is adjusted.



BEARING PLATE DETAIL
No Scale



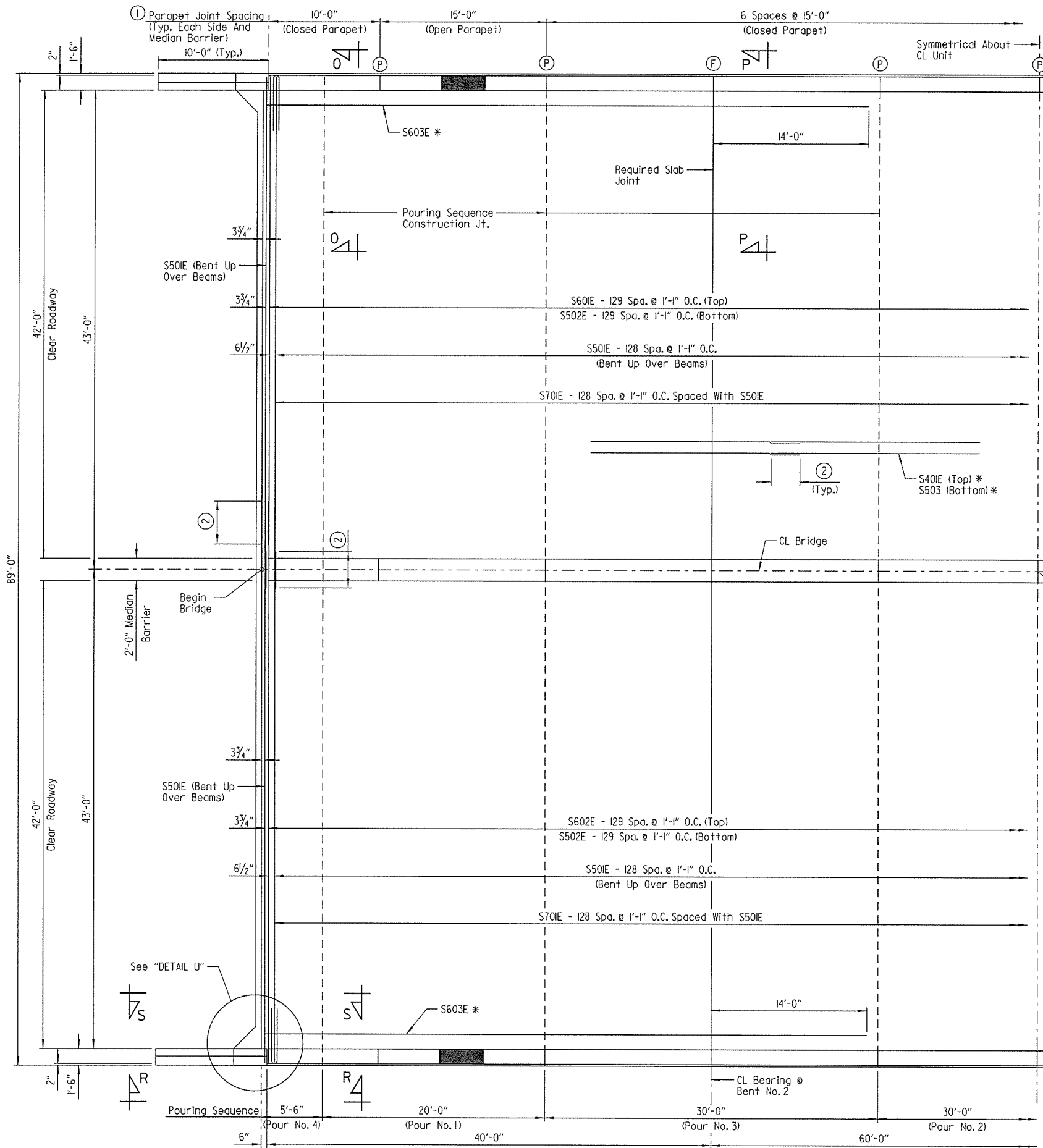
SHEET 3 OF 11
DETAILS OF 140'-0" CONTINUOUS
COMPOSITE W-BEAM UNIT

ROUTE 140' UNIT
SEC. 140' UNIT
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAY, 2014 FILENAME: BB0303x2_S3.DGN
CHECKED BY: MRA DATE: JUNE 2014 SCALE: AS SHOWN
DESIGNED BY: JLH DATE: MAY, 2014
BRIDGE NO. 07336 DRAWING NO. 56427

4/17/2015 10:13:41 AM
WORKSPACE: AHTD Bridge
\\CLITDC\CVLIT\Projects\2011\07705 - Red River Bridge Replacement\Drawings\BB0303x2_S3.dgn
REVISED DATE:

4/17/2015 10:34:41 AM
WORKSPACE: AHTD Bridge
\\GLITCON\IT\Projects\2011\07705 - Red River Bridge Replacement\Drawings\BBB0303x2_S4.dgn
REVISED DATE:



① Parapet joints designated with symbol (E) shall be stopped 4" from top of slab. All other parapet joints with symbol (P) shall be partial depth joints stopped 1'-6" from top of slab. Parapet joint designation shown is for both the left parapet rail, median barrier and right parapet rail.

PART REINFORCING PLAN & POURING SEQUENCE

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

* Refer to "PARTIAL TYPICAL ROADWAY SECTION" on Dwg. No. 56425 for placement.

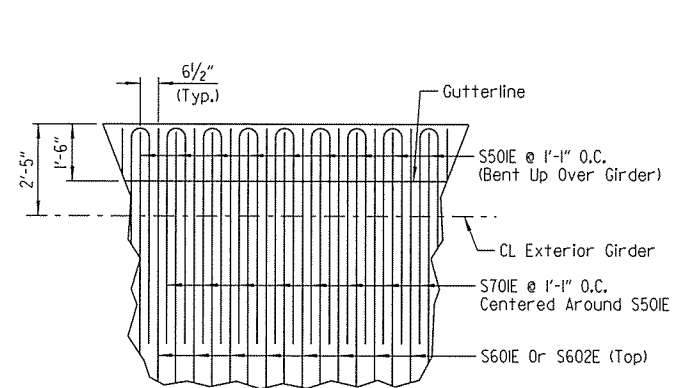
NOTE:
Required slab joints and pouring sequence joints shall align with the parapet open joints except for closure pour at the gutterline.

NOTE:
Pours with the same number may be placed simultaneously or separately. All pours must be placed in the order shown. 48 hours shall elapse before 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 an adjacent pour. 72 hours shall elapse between the completion of the entire deck and the pouring of the parapet and median barrier. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer.

The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

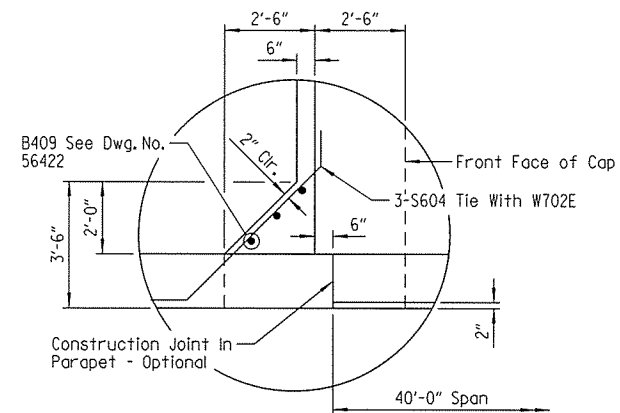
Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

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.		BB0303	134	231
						140' UNIT		56428



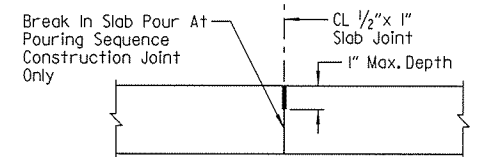
DETAIL B

No Scale



DETAIL U

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



SLAB JOINT DETAIL

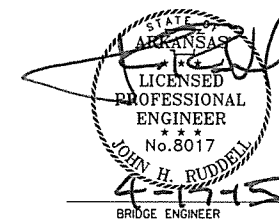
No Scale

NOTE:
See Dwg. No. 56431 for parapet reinforcing details.
For "SECTION 0-0", See Dwg. No. 56430.
For "SECTION P-P", See Dwg. No. 56430.
For "SECTION R-R", See Dwg. No. 56433.
For "SECTION S-S", See Dwg. No. 56433.

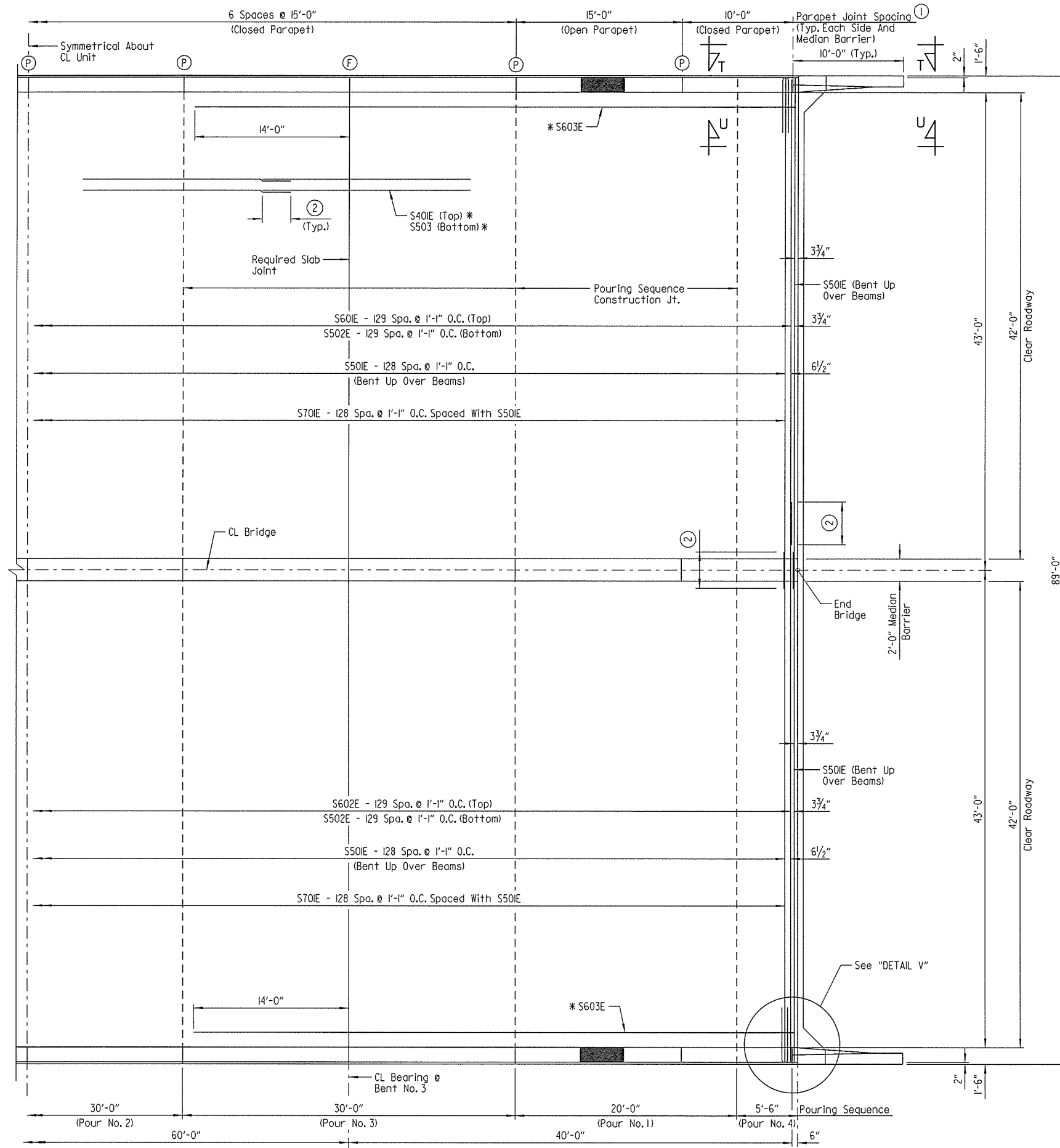
SHEET 4 OF 11 DETAILS OF 140'-0" CONTINUOUS COMPOSITE W-BEAM UNIT

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

DRAWN BY: HEW DATE: MAY, 2014 FILENAME: BBB0303x2_S4.DGN
CHECKED BY: MRA DATE: JULY 2014 SCALE: AS SHOWN
DESIGNED BY: JLH DATE: MAY, 2014
BRIDGE NO. 07336 DRAWING NO. 56428



4/17/2015 10:34:42 AM
WORKSPACE: AHTD Bridge
\\GLTDC01\IT\Projects\2011\07705 - Red River Bridge Replacement\Drawings\BBB0303x2-S5.dgn
REVISION DATE:

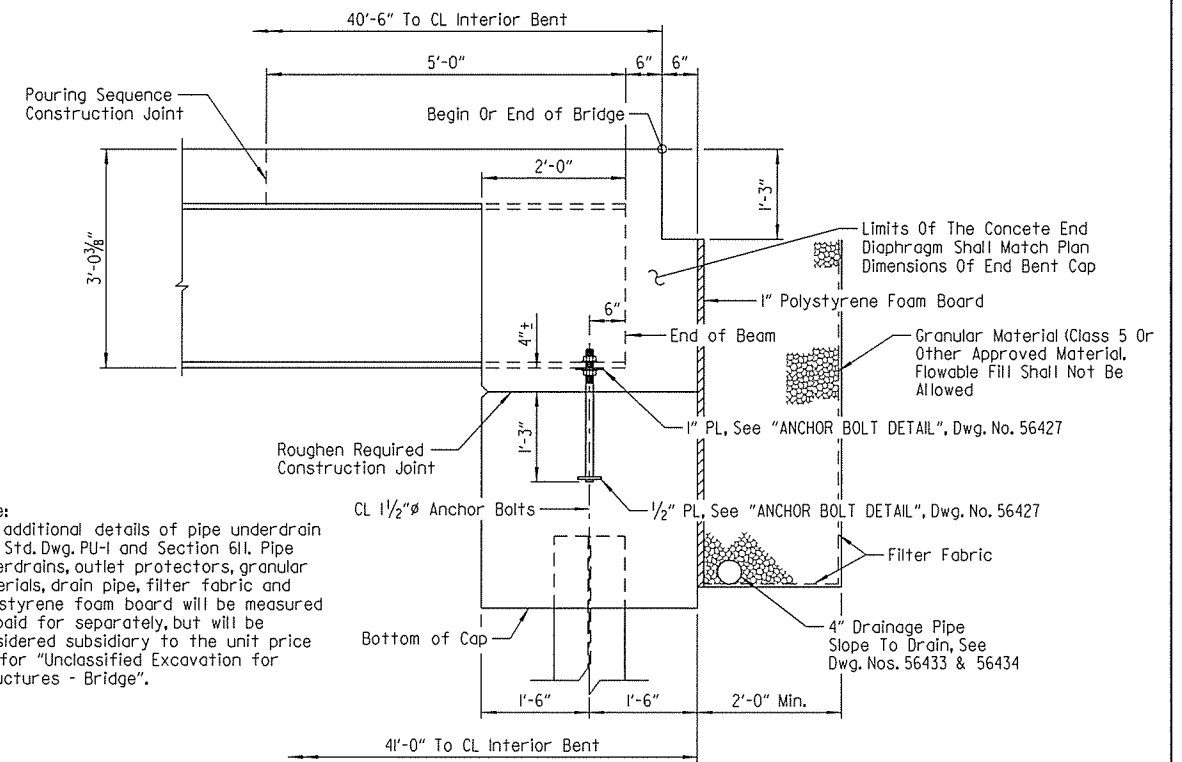


PART REINFORCING PLAN & POURING SEQUENCE
Scale: $\frac{3}{16}'' = 1'-0''$

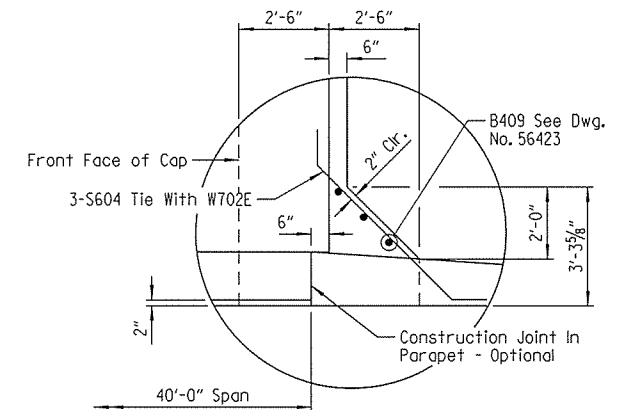
① Parapet joints designated with symbol (E) shall be stopped 4" from top of slab. All other parapet joints with symbol (P) shall be partial depth joints stopped 1'-6" from top of slab. Parapet joint designation shown is for both the left parapet rail, median barrier and right parapet rail.

NOTE:
Required slab joints and pouring sequence joints shall align with the parapet open joints except for closure pour at the gutterline.

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.		BB0303	135	231
				① 07336		140' UNIT		56429



SECTION AT END BENT
Scale: $\frac{3}{4}'' = 1'-0''$



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

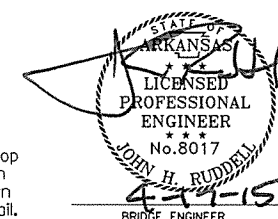
- ② *4 Bar = 2'-7" Min. Lap
*5 Bar = 3'-3" Min. Lap
*6 Bar = 3'-10" Min. Lap

NOTE:
See Dwg. No. 56431 for parapet reinforcing details.

For "SECTION T-T", See Dwg. No. 56434.

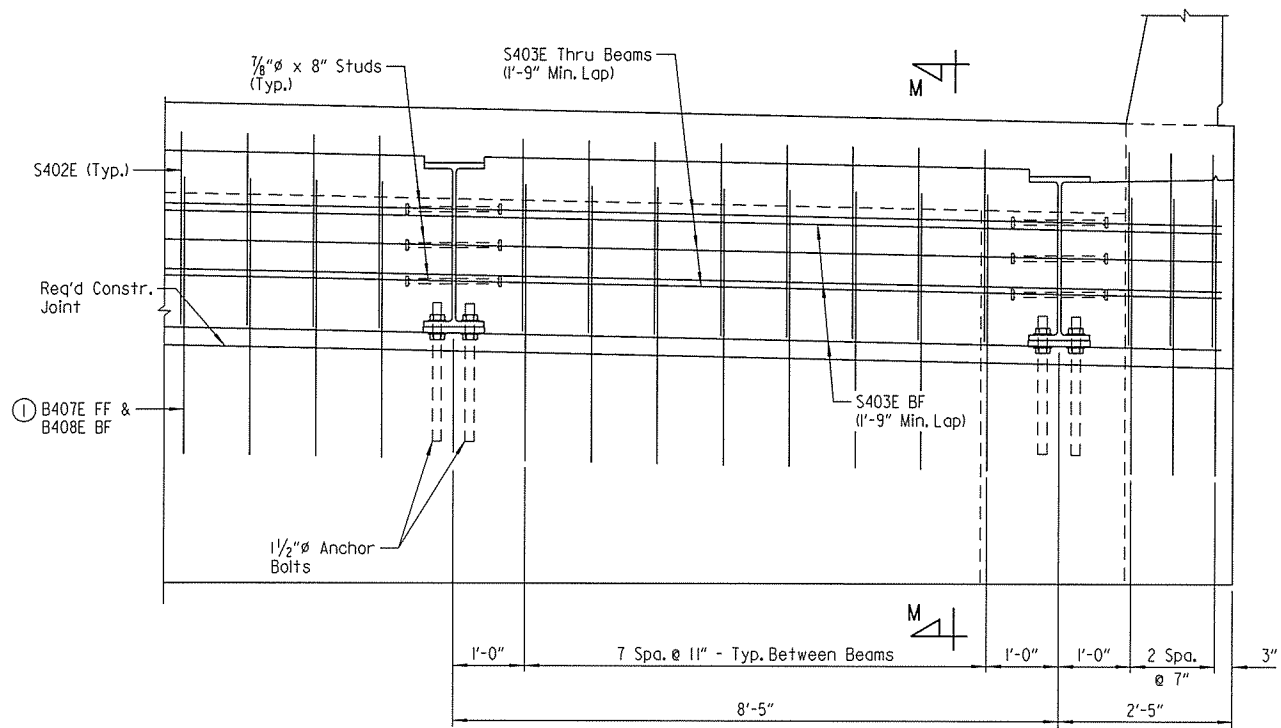
For "SECTION U-U", See Dwg. No. 56434.

* Refer to "PARTIAL TYPICAL ROADWAY SECTION" on Dwg. No. 56425 for placement.

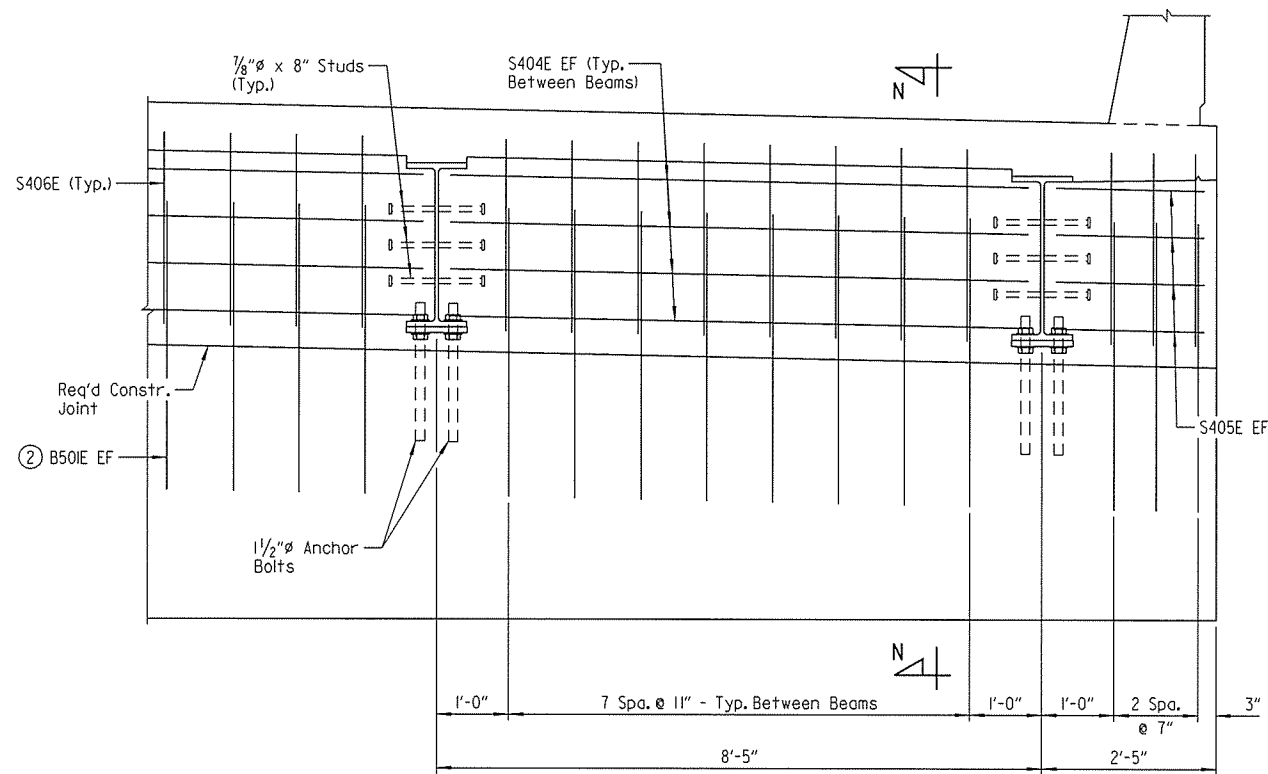


SHEET 5 OF 11
DETAILS OF 140'-0" CONTINUOUS
COMPOSITE W-BEAM UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: HEW DATE: MAY, 2014 FILENAME: BBB0303x2-S5.DGN
CHECKED BY: MRA DATE: JULY 2014 SCALE: AS SHOWN
DESIGNED BY: JLH DATE: MAY, 2014
BRIDGE NO. 07336 DRAWING NO. 56429

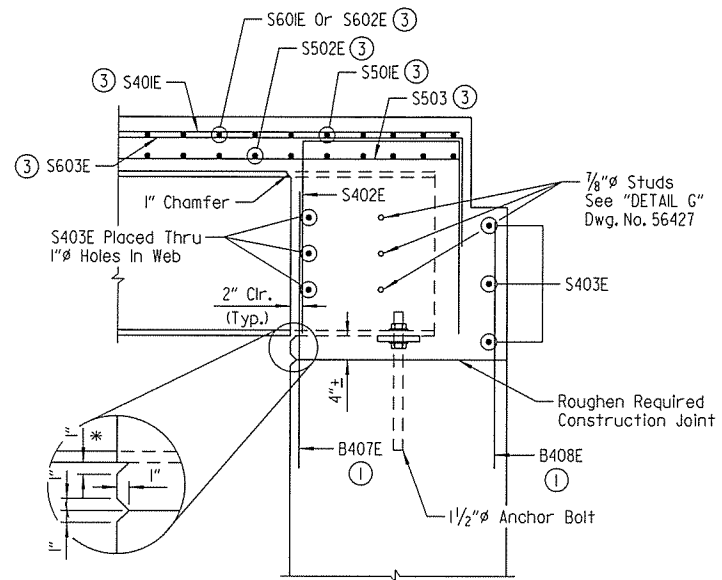
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				6	ARK.			
				JOB NO.		BB0303	136	231
				07336		140' UNIT		56430



SECTION O-O
(At End Bents)
Scale: 3/4" = 1'-0"



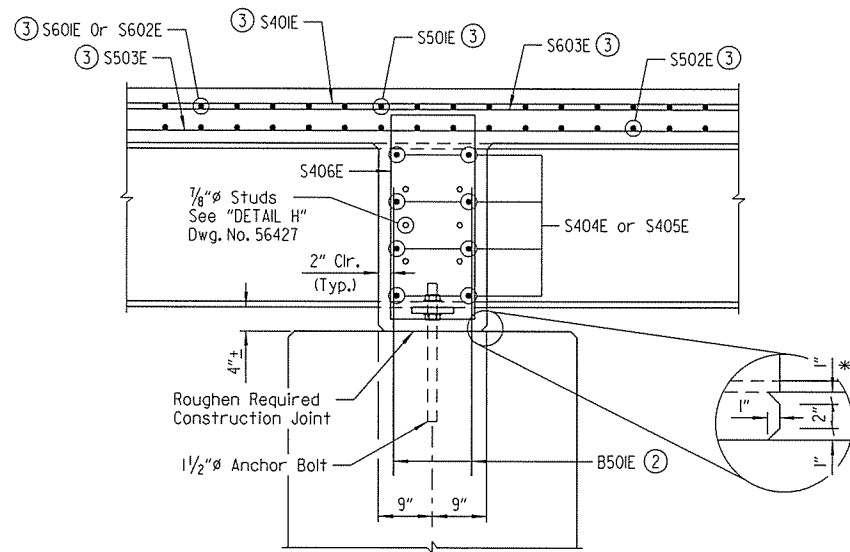
SECTION P-P
(At Int. Bents)
Scale: 3/4" = 1'-0"



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

Note:
Limits of concrete end diaphragm
shall match plan dimensions of end
bent cap.
* Chamfer beneath all beam flanges.

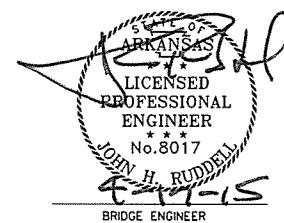
- ① See Dwg. Nos. 56422 & 56423 for reinforcing details and placement.
② See Dwg. No. 56424 for reinforcing details and placement.
③ See Dwg. Nos. 56428 & 56429 for reinforcing details and placement.



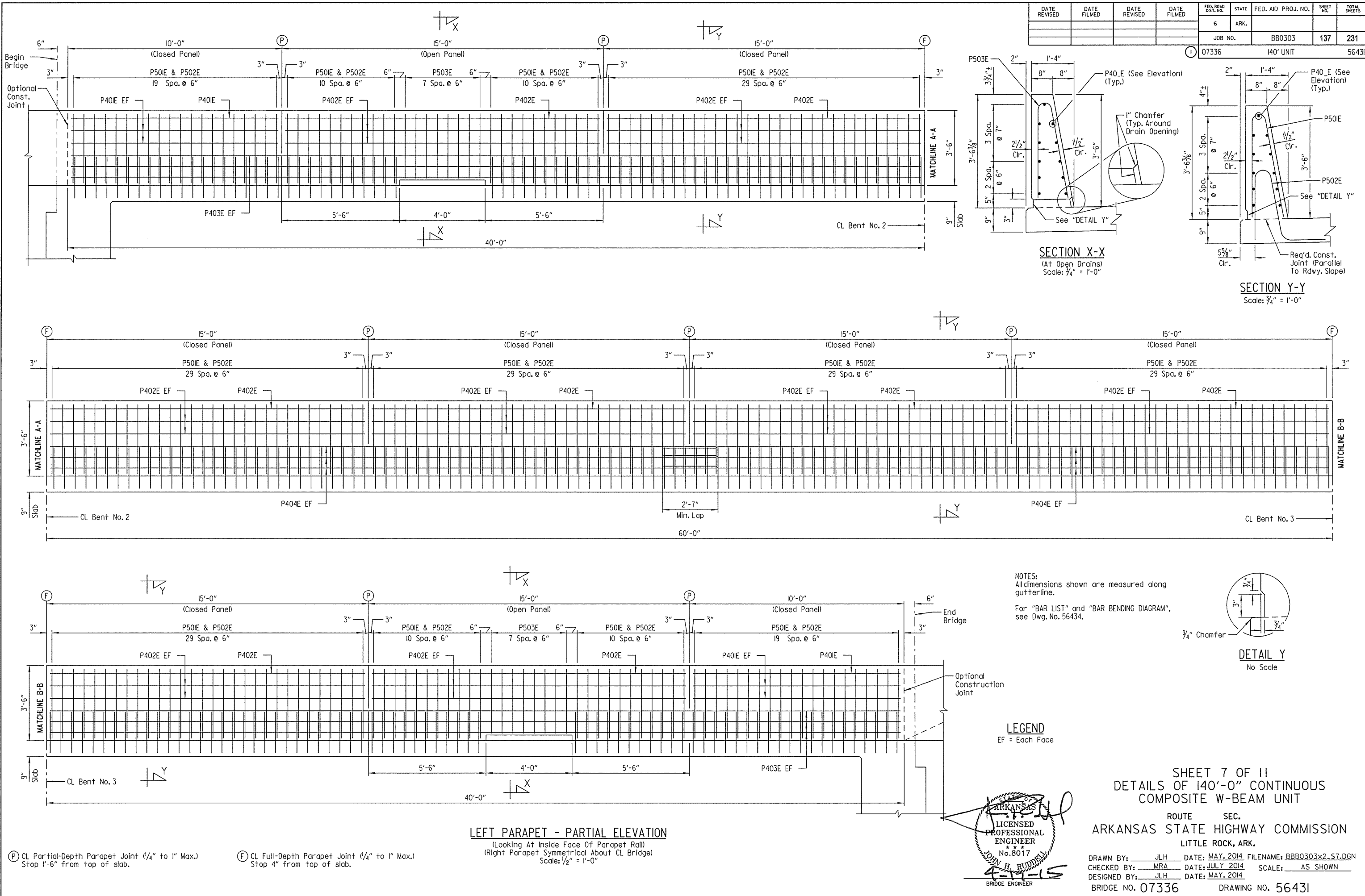
SECTION N-N
Scale: 3/4" = 1'-0"

LEGEND
EF = Each Face
FF = Front Face
BF = Back Face

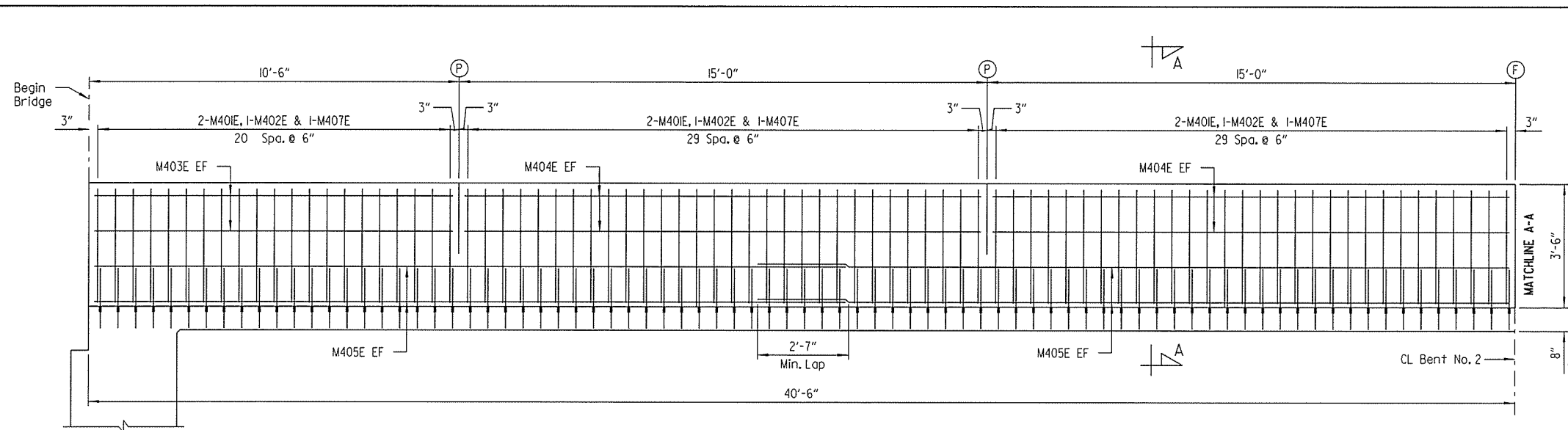
SHEET 6 OF 11
DETAILS OF 140'-0" CONTINUOUS
COMPOSITE W-BEAM UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: HEW DATE: MAY, 2014 FILENAME: BBB0303x2_S6.DGN
CHECKED BY: MRA DATE: JULY 2014 SCALE: AS SHOWN
DESIGNED BY: JLH DATE: MAY, 2014
BRIDGE NO. 07336 DRAWING NO. 56430



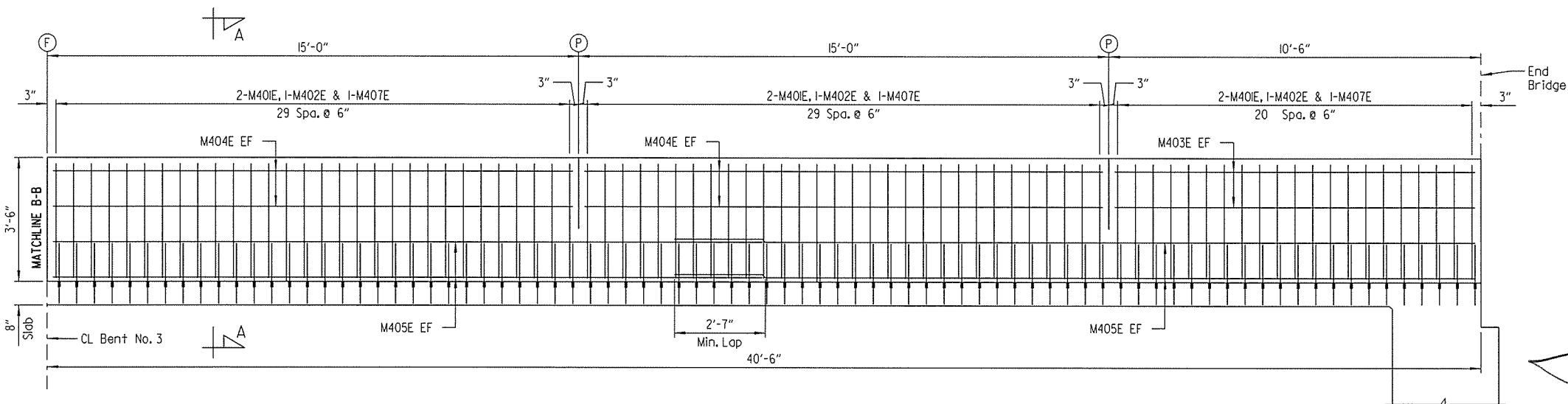
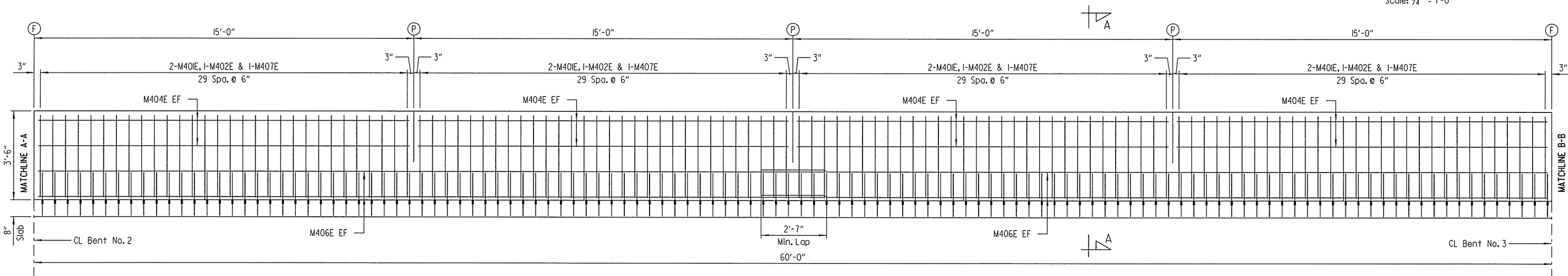
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WORKSPACE: AHTD Bridge
\\GLTDCO\IT\Projects\2010\07705 - Red River Bridge Replacement\Drawings\BB0303x2-S7.dgn
REVISED DATE:



4/17/2015 10:34:44 AM
WORKSPACE: AHTD Bridge
\\GLTDCO\IT\Projects\2011\07705 - Red River Bridge Replacement\Drawings\BBB0303x2-S8.dgn
REVISION DATE:



NOTES:
All dimensions shown are measured along gutterline.
For "BAR LIST" and "BAR BENDING DIAGRAM", see Dwg. No. 56434.



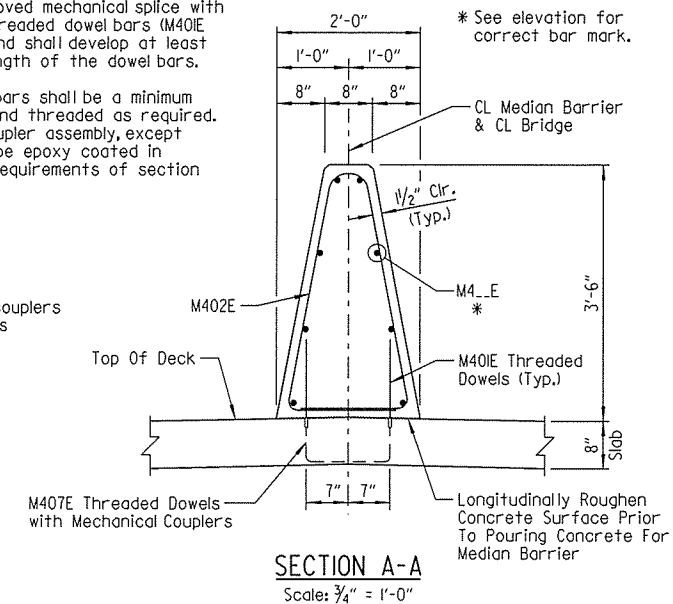
MEDIAN BARRIER - PARTIAL ELEVATION
(Looking At Right Face Of Median Barrier)
Scale: 1/2" = 1'-0"

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.		BB0303	138	231
				07336		140' UNIT		56432

NOTE:
The threaded dowel and coupler assembly shall consist of a QPL approved mechanical splice with protective cap and threaded dowel bars (M40IE and M407E) as shown and shall develop at least 125% of the yield strength of the dowel bars.

M40IE and M407E dowel bars shall be a minimum 60 ksi yield strength and threaded as required. Threaded dowel and coupler assembly, except mating surfaces, shall be epoxy coated in accordance with the requirements of section 804.

NOTE:
Protect threads in couplers until median barrier is constructed.

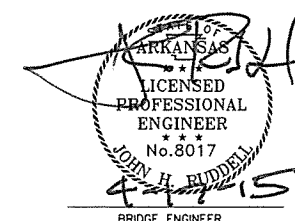


LEGEND
EF = Each Face

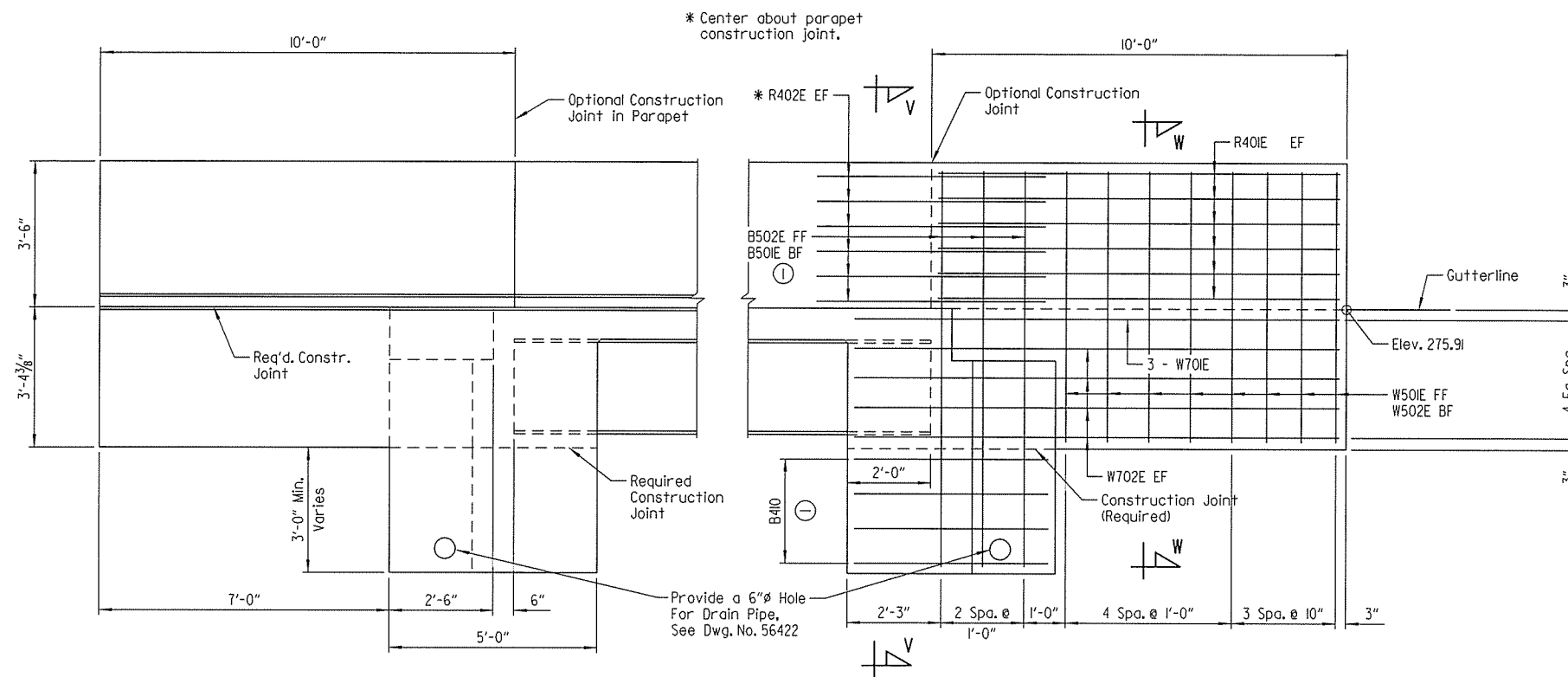
- (P) CL Partial-Depth Median Barrier Joint (1/4" to 1" Max.) Stop 1'-6" from top of slab.
(F) CL Full-Depth Median Barrier Joint (1/4" to 1" Max.) Stop 4" from top of slab.

SHEET 8 OF 11
DETAILS OF 140'-0" CONTINUOUS
COMPOSITE W-BEAM UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JLH DATE: MAY, 2014 FILENAME: BBB0303x2-S8.DGN
CHECKED BY: MRA DATE: JULY 2014 SCALE: AS SHOWN
DESIGNED BY: JLH DATE: MAY, 2014
BRIDGE NO. 07336 DRAWING NO. 56432

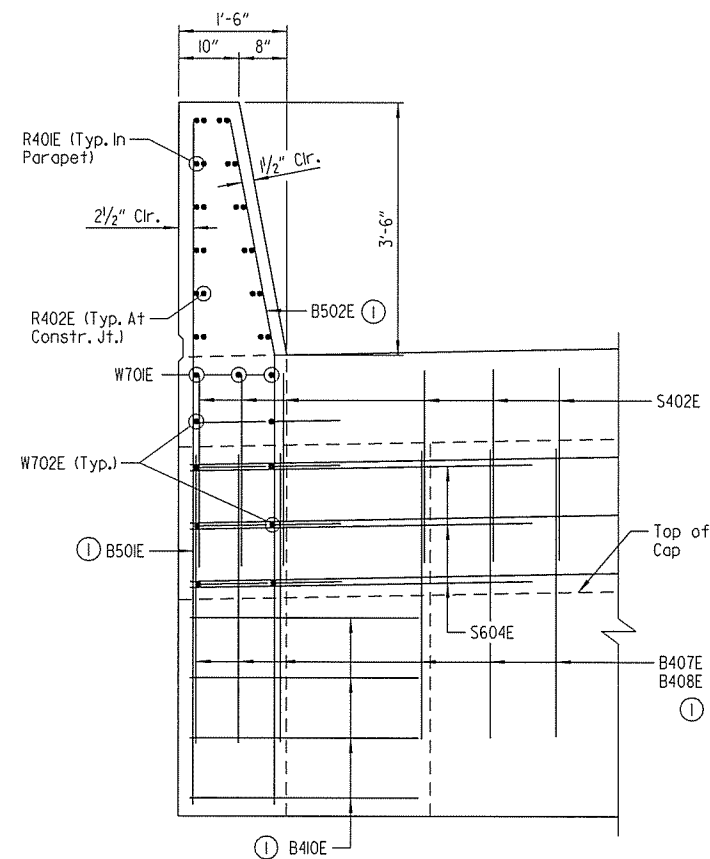


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0303	139	231
				① 07336	140' UNIT			56433

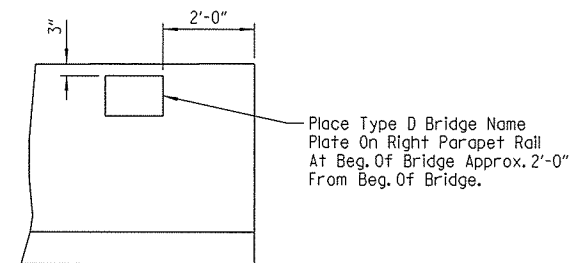


THREE DIMENSIONAL VIEW INTEGRAL BENT NO.1
No Scale

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



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



VIEW SHOWING LOCATION OF NAME PLATE
(Showing Inside Face Of Parapet)
Scale: $\frac{1}{2}$ " = 1'-0"

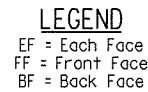
DETAIL Y
Scale: 3" = 1'-0"

SHEET 9 OF 11
DETAILS OF 140'-0" CONTINUOUS
COMPOSITE W-BEAM UNIT

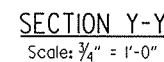
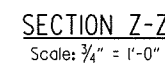
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAY, 2014 FILENAME: BBB0303x2_S9.DGN
CHECKED BY: MRA DATE: JULY 2014 SCALE: AS SHOWN
DESIGNED BY: JLH DATE: MAY, 2014

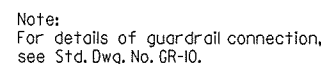
BRIDGE NO. 07336 DRAWING NO. 56433



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



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



THREE DIMENSIONAL VIEW INTEGRAL BENT NO. 4
No Scale

- ② Ends threaded for mechanical couplers. Length of vertical legs includes the length of the mechanical coupler. The actual length of vertical leg engagement into the mechanical coupler shall be determined by the mechanical coupler manufacturer, and the length of the vertical legs shall be adjusted accordingly.
- ③ One end threaded for Mechanical Coupler. Length of bar does not include any additional length for engagement into Mechanical Coupler. The actual length of bar engagement into the Mechanical Coupler shall be determined by the Mechanical Coupler Manufacturer, and the length of the bar shall be adjusted accordingly.

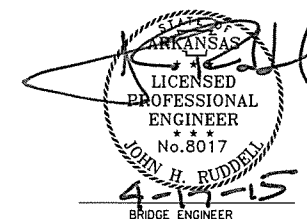
Ⓔ = End near edge of deck

SECTION 10 OF 11
DETAILS OF 140'-0" CONTINUOUS
COMPOSITE W-BEAM UNIT

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

DRAWN BY: HEW DATE: MAY, 2014 FILENAME: BBB0303x2_SIO.DGN
CHECKED BY: MRA DATE: JULY 2014 SCALE: AS SHOWN
DESIGNED BY: JLH DATE: MAY, 2014

BRIDGE NO. 07336 DRAWING NO. 56434



4/17/2015 10:13:46 AM
WORKSPACE: AHTD Bridge
\\GLTDCON\IT\Projects\2011\1017705 - Red River Bridge Replacement\Drawings\BBB0303x2_SII.dgn
REVISD DATE:

GENERAL NOTES:

STRUCTURAL STEEL:

All structural steel shall be AASHTO M270, Gr. 50W and shall be paid for at the unit price per pound bid for "Structural Steel In Beam Spans (M270, Gr.50W)". All exposed surfaces shall be cleaned in accordance with Subsection 807.84(e) unless otherwise noted. Grade 50W steel shall not be painted. Structural steel completely embedded in concrete may be AASHTO M270, Gr. 36 or Gr. 50 unless otherwise noted.

Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on 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.

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

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

All beams, including field splice plates, are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in Subsection 807.05. This work and material will not be paid for directly but are considered subsidiary to the item "Structural Steel in Beam Spans (M270, Gr. 50W)".

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

All 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 Subsection 807.26.

All beams shall be blocked in their true position with webs horizontal in the shop as specified in Subsection 807.54 (b)(2) of the Standard Specifications. The camber, length of sections, distance between bearings and opening of joints shall be measured with the girders in their true position and this information shall become a part of the permanent records of this job. The component parts shall be match marked in this assembly and these marks shall be shown on the erection diagram. All beam dimensions are based on a temperature of 60°F. A tolerance of +/- 1/4" is allowed for camber.

All Quality Control (Q. C.) testing is at the Contractor's expense.

All Connection Plates shall be fabricated normal to the top flange and on the side of the beam web as indicated on the framing plans.

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

Field connections shall be bolted with high-strength bolts and shall be 3/8" diameter bolts unless otherwise noted. Bolts shall be placed with heads on the outside face of the exterior beam webs and on the bottom of the beam flanges. Except at field splice, holes for 3/8" diameter high-strength bolts may be 1 1/16" diameter if a washer is supplied for use under both the nut and head of the bolt.

All contact surfaces between plates at field splices shall be free of paint, oil, rust or scale before assembly.

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

CONCRETE:

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

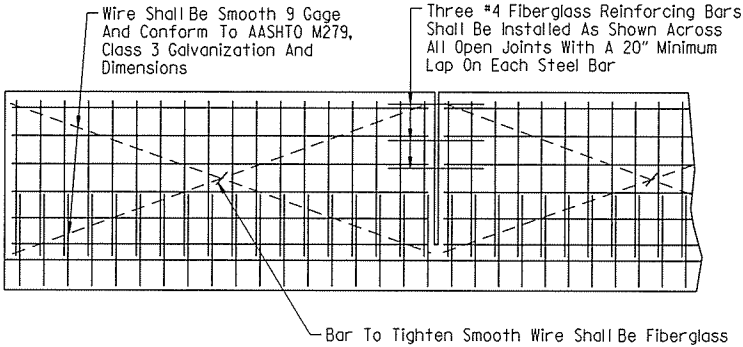
The superstructure details shown are for use when removable deck forming is used and are the basis for measurements of Class (S(AE)) Concrete. See Standard Drawing No. 55005 for allowable modifications and for tolerances when Permanent Steel Deck Forms are used.

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. A minimum of 72 hours shall elapse between completion of the slab and the pouring of the parapet railing. If a longitudinal strike-off is used, a vertical camber adjustment must be made in the strike-off to account for the future dead load deflection due to the parapet railing. A minimum of 72 hours shall elapse between completion of the slab and the pouring of the parapet railing. Any railing pours made before the entire slab has been placed and cured must be approved by the Engineer.

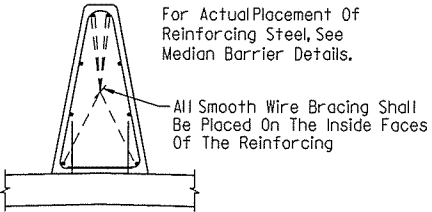
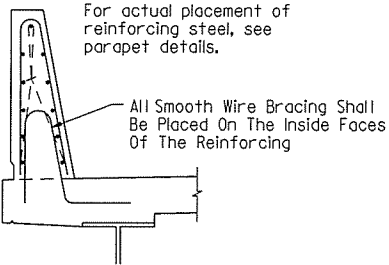
REINFORCING STEEL:

All reinforcing steel shall be Grade 60 (Yield Strength = 60,000 psi) conforming to AASHTO M31 or M322 Type A, with mill test reports. The reinforcing steel is to be accurately located in the forms and firmly held in place by steel wire supports, sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly but will be considered subsidiary to the item "EPOXY COATED REINFORCING STEEL (GRADE 60)".



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.

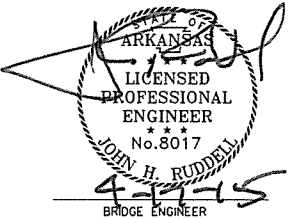
The extruded parapet shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and texture.



The extruded median barrier 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.

DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL

No Scale

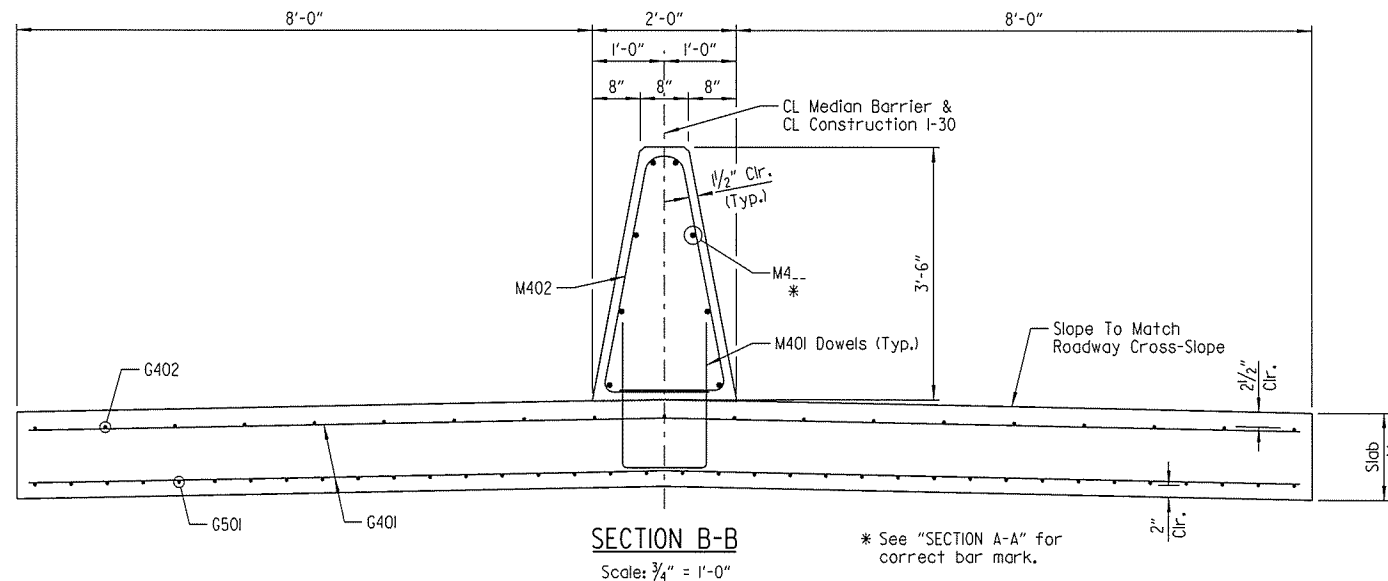
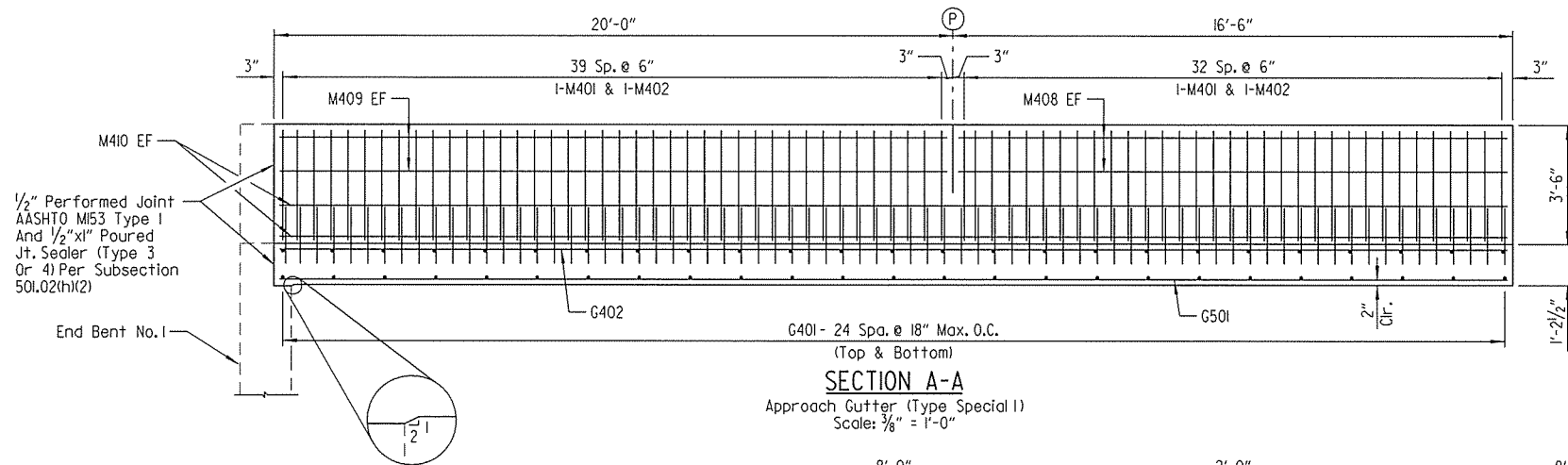
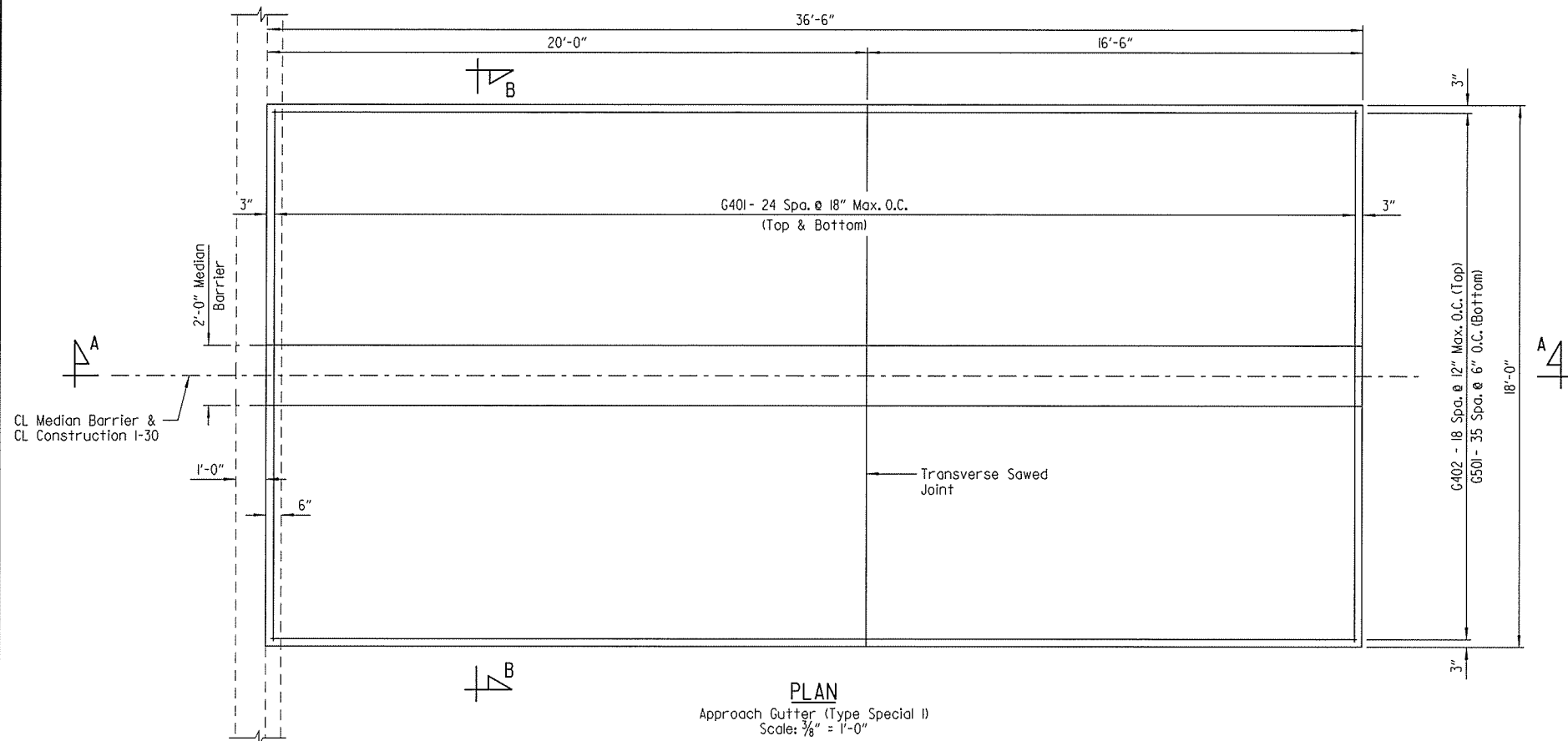


SHEET 11 OF 11
DETAILS OF 140'-0" CONTINUOUS
COMPOSITE W-BEAM UNIT

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

DRAWN BY: HEW DATE: MAY, 2014 FILENAME: BBB0303x2_SII.DGN
CHECKED BY: MRA DATE: JULY, 2014 SCALE: AS SHOWN
DESIGNED BY: JLH DATE: MAY, 2014
BRIDGE NO. 07336 DRAWING NO. 56435

4/17/2015 10:13:46 AM
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\\GLTDC01\IT\Projects\2011\017705 - Red River Bridge Replacement\Drawings\BBB0303_AGI.dgn
REVISIONS:
REVISED DATE:



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.		BB0303	142	231
				07336		APPROACH GUTTERS		56436

BAR LIST			
MARK	NO. REQ'D.	LENGTH	P.D.
G401	50	17'-8"	Str.
G402	19	36'-2"	Str.
G501	36	36'-2"	Str.
M401	73	5'-10"	2"
M402	73	9'-7"	5 3/4", 3"
M408	4	16'-2"	Str.
M409	4	19'-8"	Str.
M410	4	36'-2"	Str.

NOTES:
Dimensions of bars are out-to-out.

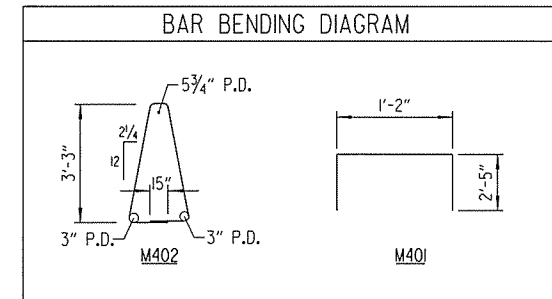


TABLE OF QUANTITIES FOR APPROACH SLAB (Including Median Barrier)

CLASS (SAE) CONCRETE	REINFORCING STEEL (Gr.60)
35.71	3351

GENERAL NOTES

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

Reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60 (fy = 60,000 psi).

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

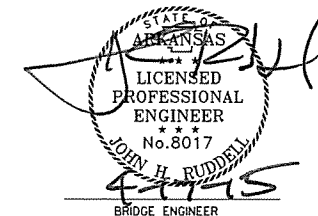
(P) CL Partial-Depth Median Barrier Joint (1/4" to 1" Max.) Stop 1'-6" from top of slab.

LEGEND

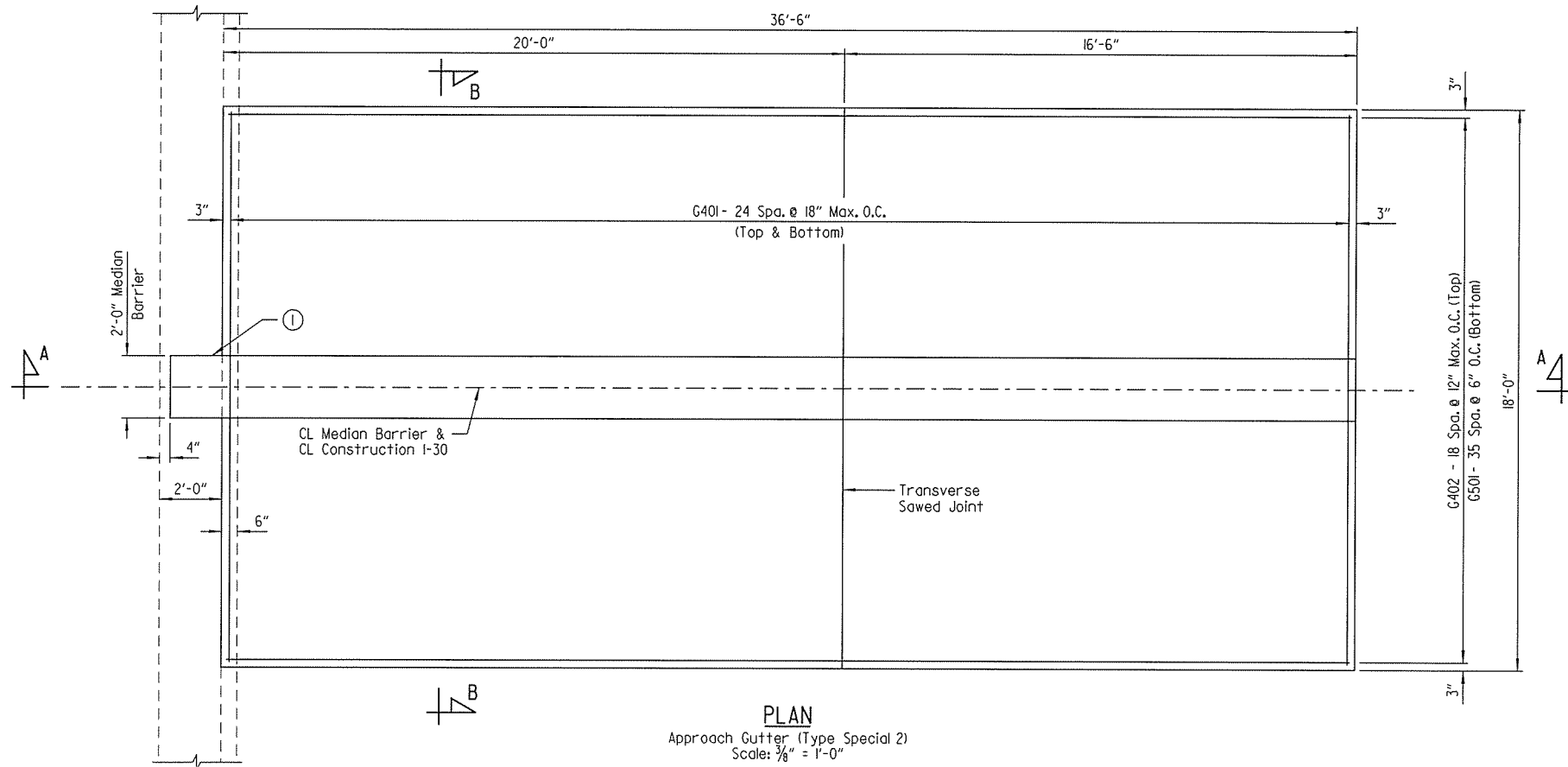
EF = Each Face

DETAILS OF TYPE SPECIAL I
APPROACH GUTTERS
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

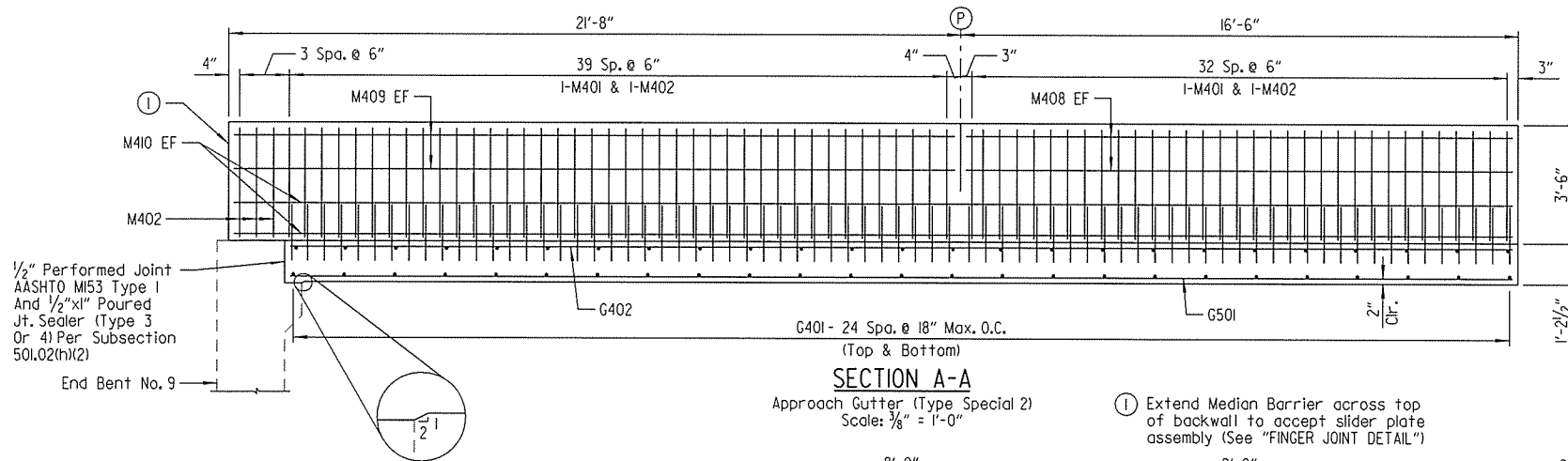
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CHECKED BY: MRA DATE: JULY 2014 SCALE: AS SHOWN
DESIGNED BY: LIC DATE: MAY, 2014
BRIDGE NO. 07336 DRAWING NO. 56436



4/17/2015 10:33:47 AM
WORKSPACE: AHTD Bridge
\\GLTDCON\IT\Projects\2011\017705 - Red River Bridge Replacement\Drawings\BB0303_AG2.dgn
REVISED DATE:

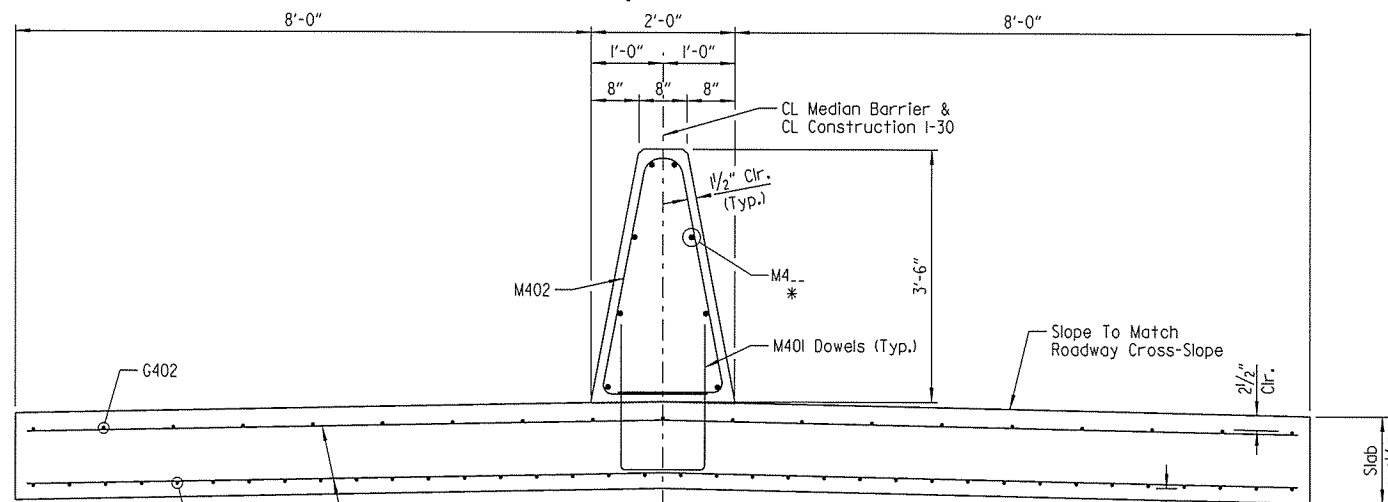


PLAN
Approach Gutter (Type Special 2)
Scale: $\frac{3}{8}$ " = 1'-0"



SECTION A-A
Approach Gutter (Type Special 2)
Scale: $\frac{3}{8}$ " = 1'-0"

① Extend Median Barrier across top of backwall to accept slider plate assembly (See "FINGER JOINT DETAIL")



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

* See "SECTION A-A" for correct bar mark.

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.		BB0303	143	231
				07336		APPROACH GUTTERS		56437

BAR LIST			
MARK	NO. REQ'D.	LENGTH	P.D.
G401	50	17'-8"	Str.
G402	19	36'-2"	Str.
G501	36	36'-2"	Str.
M401	73	5'-10"	2"
M402	76	9'-7"	5 3/4", 3"
M408	4	16'-2"	Str.
M409	4	21'-4"	Str.
M410	4	37'-10"	Str.

NOTES:
Dimensions of bars are out-to-out.

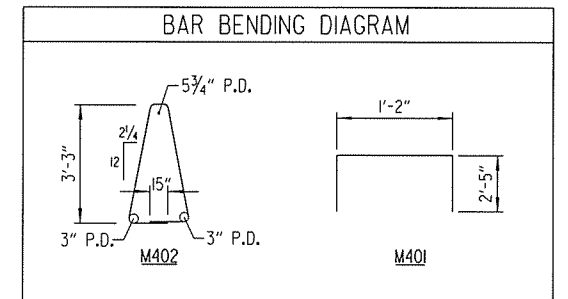


TABLE OF QUANTITIES
FOR APPROACH SLAB
(Including Median Barrier)

CLASS (SAE) CONCRETE	REINFORCING STEEL (Gr.60)
36.0	3379

GENERAL NOTES

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

Reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60 (fy = 60,000 psi).

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

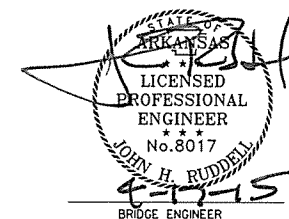
Ⓟ CL Partial-Depth Median Barrier Joint (1/4" to 1" Max.) Stop 1'-6" from top of slab.

LEGEND

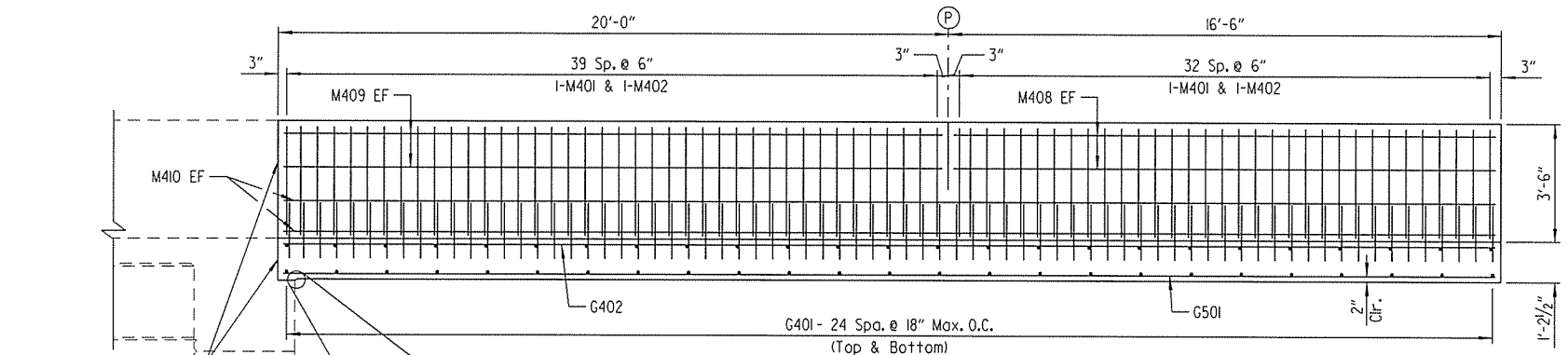
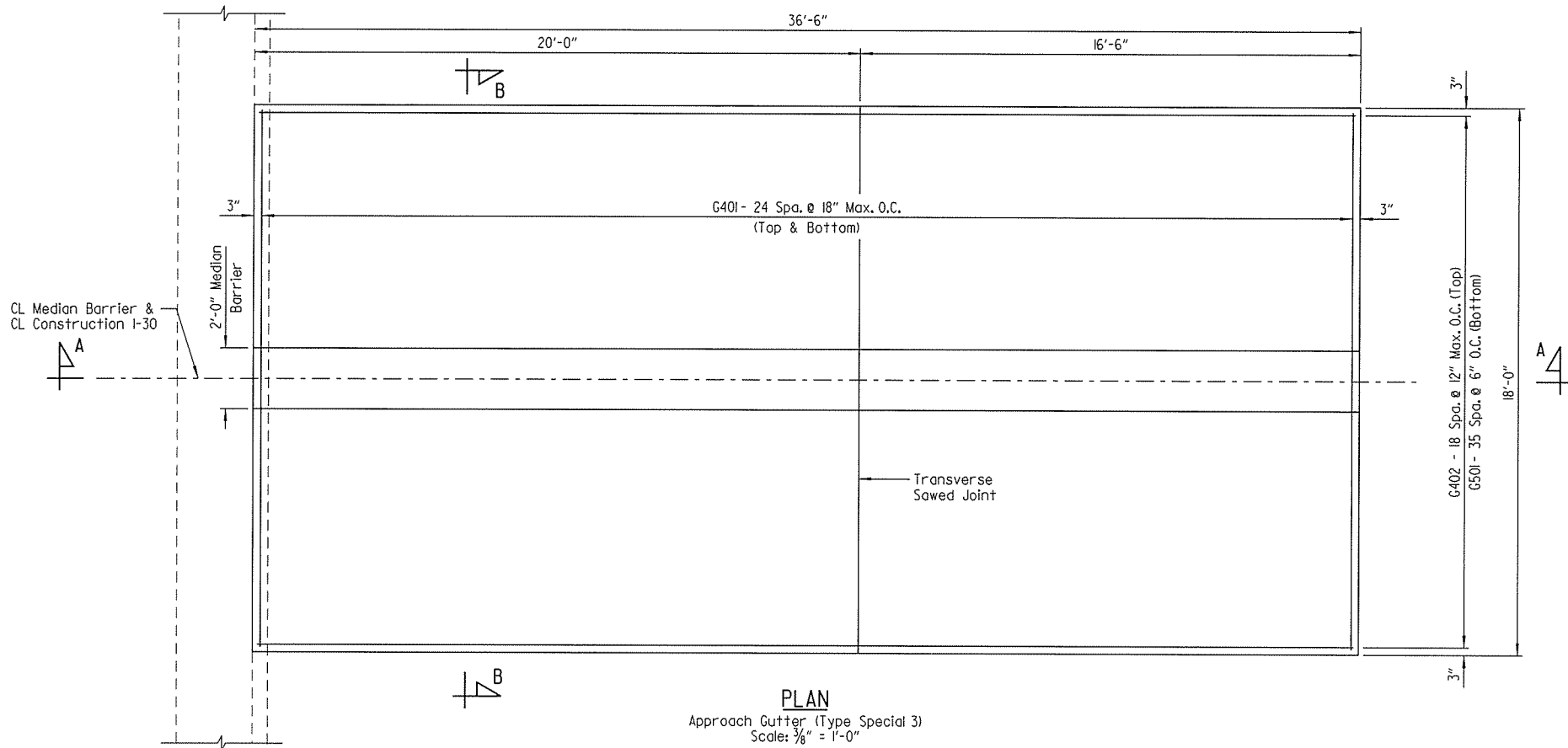
EF = Each Face

DETAILS OF TYPE SPECIAL 2
APPROACH GUTTERS
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

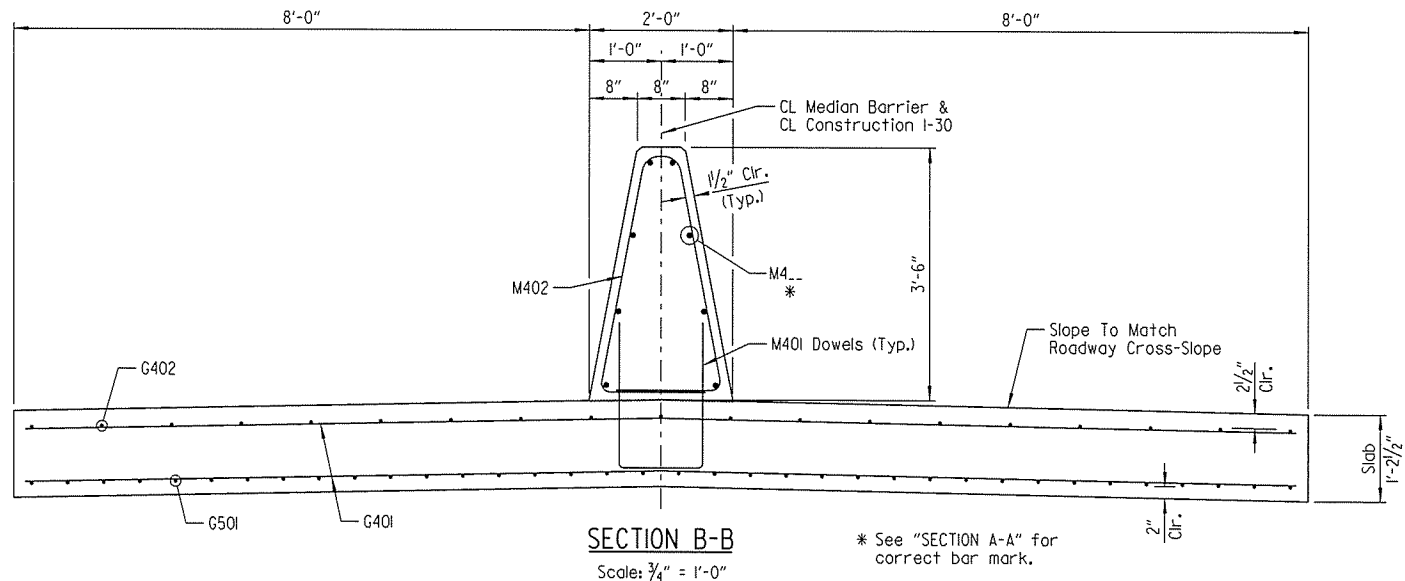
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CHECKED BY: MRA DATE: JULY 2014 SCALE: AS SHOWN
DESIGNED BY: LIC DATE: MAY, 2014
BRIDGE NO. 07336 DRAWING NO. 56437



4/17/2015 10:13:48 AM
WORKSPACE: AHTD Bridge
\\GLTDC01\IT\Projects\2014\07705 - Red River Bridge Replacement\Drawings\BBB0303_AG3.dgn
REVISED DATE:



1/2" Performed Joint
AASHTO M153 Type I
And 1/2"x1" Poured
Jt. Sealer (Type 3
Or 4) Per Subsection
501.02(h)(2)



* See "SECTION A-A" for correct bar mark.

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.		BB0303	144	231

07336 APPROACH GUTTERS 56438

BAR LIST			
MARK	NO. REQ'D.	LENGTH	P.D.
G401	50	17'-8"	Str.
G402	19	36'-2"	Str.
G501	36	36'-2"	Str.
M401	73	5'-10"	2"
M402	73	9'-7"	5 3/4", 3"
M408	4	16'-2"	Str.
M409	4	19'-8"	Str.
M410	4	36'-2"	Str.

NOTES:
Dimensions of bars are out-to-out.

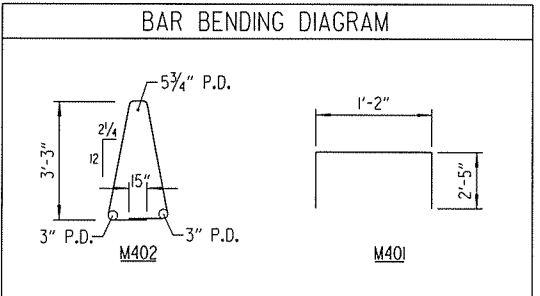


TABLE OF QUANTITIES
FOR APPROACH SLAB
(Including Median Barrier)

CLASS S(AE) CONCRETE	REINFORCING STEEL (Gr.60)
35.71	3351

GENERAL NOTES

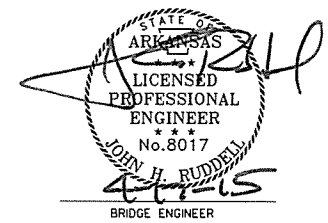
Concrete shall be Class S(AE) ($f'c = 4,000$ psi).
Reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60 ($f_y = 60,000$ psi).
Approach gutters will be measured and paid for in accordance with Section 504 of the Standard Specifications.
CL Partial-Depth Median Barrier Joint (1/4" to 1" Max.) Stop 1'-6" from top of slab.

LEGEND

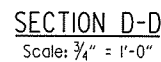
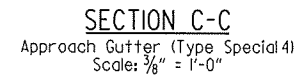
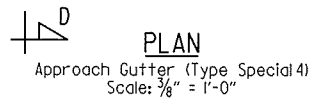
EF = Each Face

DETAILS OF TYPE SPECIAL 3
APPROACH GUTTERS
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

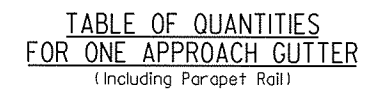
DRAWN BY: HEW DATE: MAY, 2014 FILENAME: BBB0303_AG3.DGN
CHECKED BY: MRA DATE: JULY 2014 SCALE: AS SHOWN
DESIGNED BY: LIC DATE: MAY, 2014
BRIDGE NO. 07336 DRAWING NO. 56438



07336	APPROACH GUTTERS	56439
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NOTES:
Dimensions of bars are out-to-out.

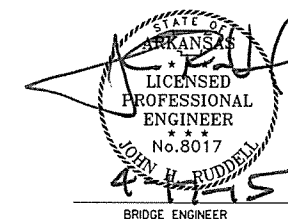


LEGEND
EF = Each Face

Concrete shall be Class S(AE) ($f'_c = 4,000$ psi).
Reinforcing steel shall conform to AASHTO M31
or M322 Type A, Grade 60 ($f_y = 60,000$ psi).

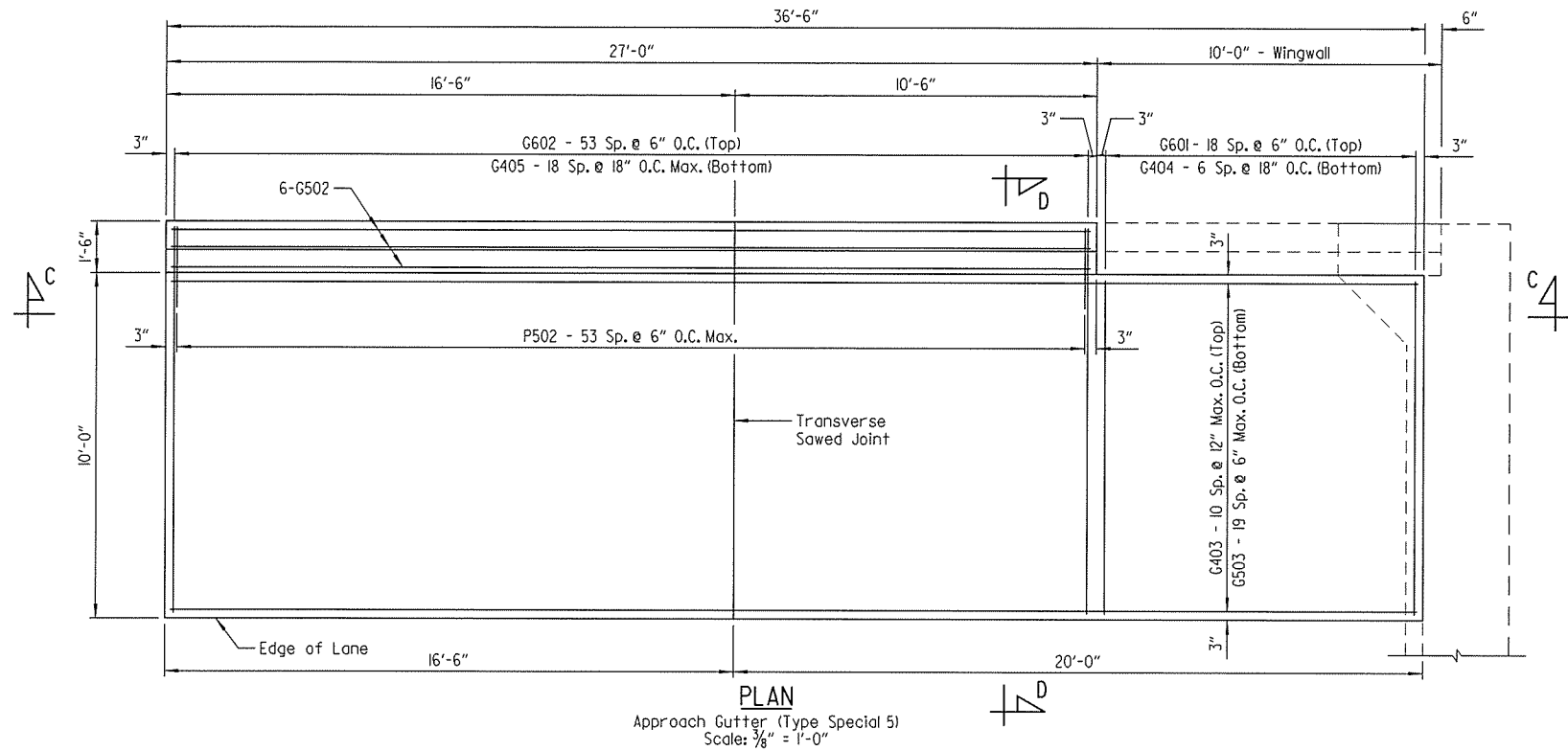
Approach gutters will be measured and paid for in accordance with Section 504 of the Standard Specifications.

DRAWN BY: HEW DATE: MAY, 2014 FILENAME: BBB0303_AG4.DGN
 CHECKED BY: MRA DATE: JULY 2014 SCALE: AS SHOWN
 DESIGNED BY: LIC DATE: MAY, 2014
 BRIDGE NO. 07336 DRAWING NO. 56439



4/17/2015 10:33:49 AM
WORKSPACE: AHTD Br-Ide
\\GLTDC01\IT\Projects\2014\1017705 - Red River Bridge Replacement\Drawings\BBB0303_AG5.dgn
REVISD DATE:

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.		BB0303	146	231
				07336		APPROACH GUTTERS		56440



BAR LIST - PER GUTTER			
MARK	NO. REQ'D.	LENGTH	P.D.
G403	11	36'-2"	Str.
G404	7	9'-8"	Str.
G405	19	11'-2"	Str.
G502	6	26'-8"	Str.
G503	20	36'-2"	Str.
G601	19	9'-8"	Str.
G602	54	11'-2"	Str.
P405	5	10'-2"	Str.
P406	5	16'-2"	Str.
P407	6	26'-8"	Str.
P501	54	6'-8"	3 3/4"
P502	54	5'-4"	3 3/4", 6"

NOTES:
Dimensions of bars are out-to-out.

GENERAL NOTES

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

Reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60 (fy = 60,000 psi).

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

Ⓟ CL Partial-Depth Parapet Joint (1/4" to 1" Max.) Stop 1'-6" from top of slab.

LEGEND

EF = Each Face

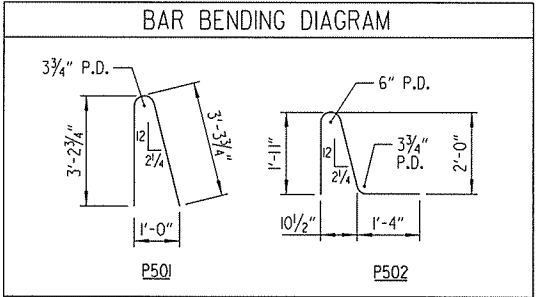
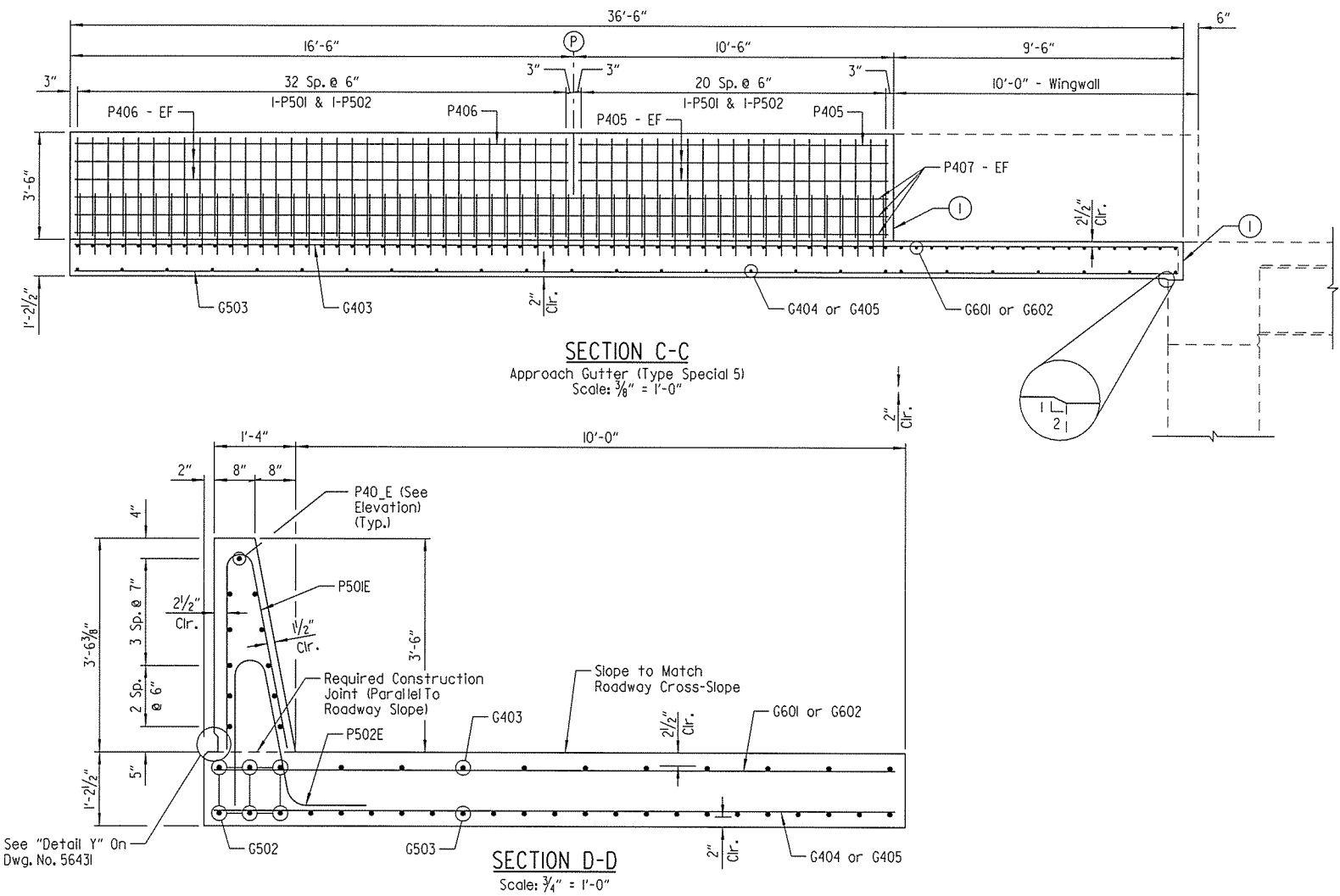


TABLE OF QUANTITIES FOR ONE APPROACH GUTTER (Including Parapet Rail)

CLASS S(AE) CONCRETE	REINFORCING STEEL (Gr.60)
21.66	3427

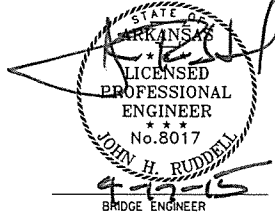
① 1/2" Performed Joint AASHTO M53 Type I And 1/2"xl" Poured Jt. Sealer (Type 3 Or 4) Per Subsection 501.02(h)(2)



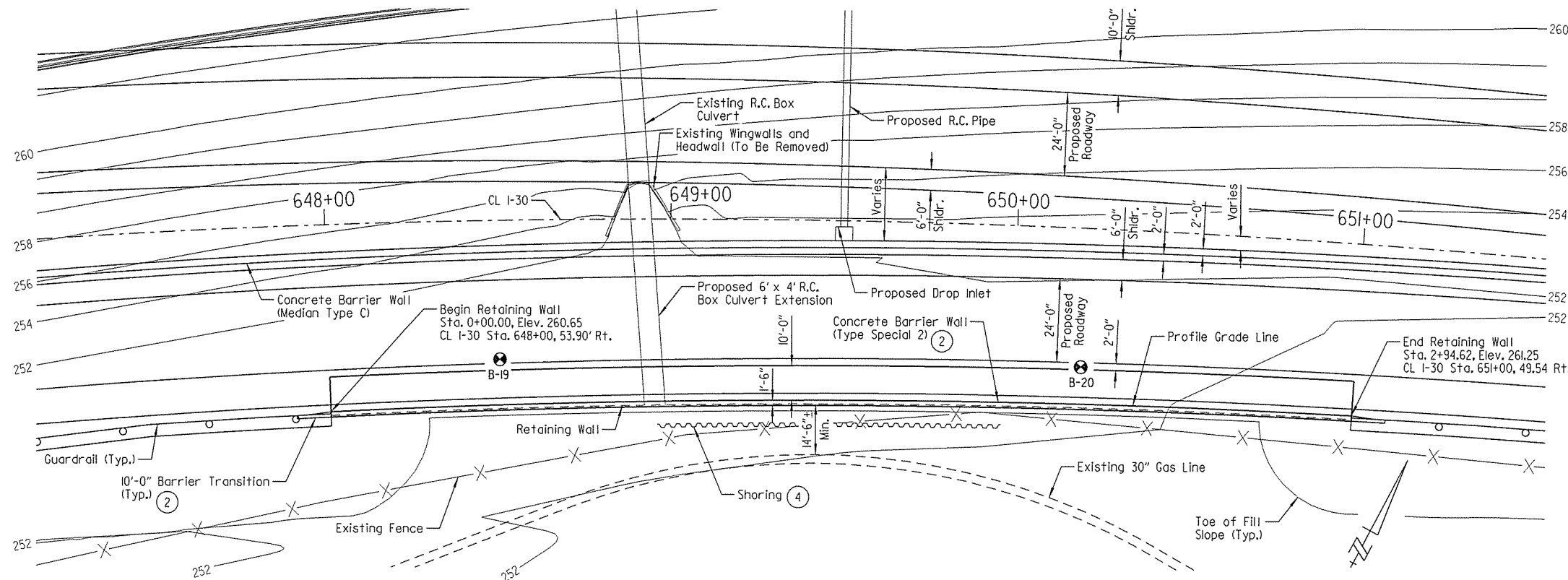
DETAILS OF TYPE SPECIAL 5 APPROACH GUTTERS

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

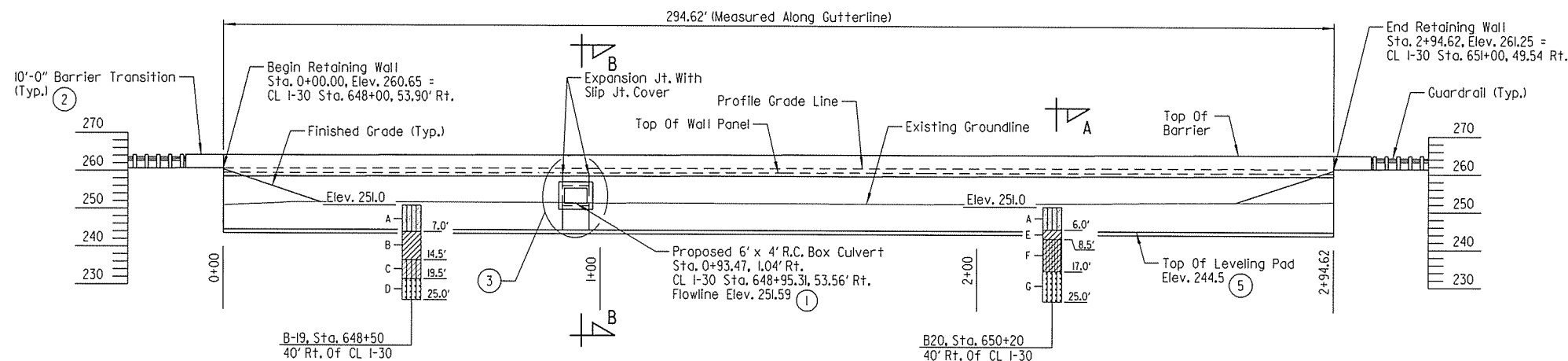
DRAWN BY: HEW DATE: MAY, 2014 FILENAME: BBB0303_AG5.DGN
CHECKED BY: MRA DATE: JULY 2014 SCALE: AS SHOWN
DESIGNED BY: LIC DATE: MAY, 2014
BRIDGE NO. 07336 DRAWING NO. 56440



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.		BB0303	147	231
				07335		RETAINING WALL DETAILS		56441



PLAN - MSE RETAINING WALL



ELEVATION - MSE RETAINING WALL

CL I-30 Station	Offset	Retaining Wall Station	Profile Grade Elevation	Existing Groundline Elevation
648+00.00	53.90 Rt.	0+00.00	260.65	250.93
648+20.00	53.61 Rt.	0+19.63	260.69	251.78
648+40.00	53.32 Rt.	0+39.26	260.73	251.77
648+60.00	53.03 Rt.	0+58.89	260.77	251.76
648+80.00	52.74 Rt.	0+78.52	260.81	251.75
649+00.00	52.45 Rt.	0+98.15	260.85	251.67
649+20.00	52.16 Rt.	1+17.79	260.89	251.70
649+40.00	51.87 Rt.	1+37.43	260.93	251.66
649+60.00	51.58 Rt.	1+57.07	260.97	251.62
649+80.00	51.29 Rt.	1+76.72	261.01	251.58
650+00.00	51.00 Rt.	1+96.36	261.05	251.63
650+20.00	50.70 Rt.	2+16.01	261.09	251.79
650+40.00	50.41 Rt.	2+35.66	261.13	251.95
650+60.00	50.12 Rt.	2+55.31	261.17	252.09
650+80.00	49.83 Rt.	2+74.96	261.21	252.21
651+00.00	49.54 Rt.	2+94.62	261.25	252.41

⑥ Dimensions based on variable offset due to taper in roadway alignment. The MSE Wall is therefore to be constructed within horizontal curvature with varying radius.

FOR R/W DATA, SEE
ROADWAY PLANS

HORIZONTAL CURVE DATA

CL I-30
PI = 647+05.46
Δ = 28°54'28" Rt.
D = 2'00'00"
T = 738.43'
L = 1445.39'
e = 0.070 Ft./Ft.
R = 350.00'

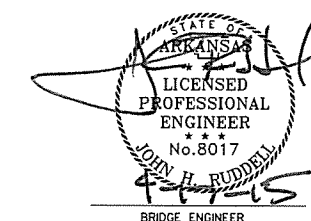
N VALUES

Sta. 648+50 Offset 40' Rt.	Sta. 650+20 Offset 40' Rt.
0.5-1.5, N=8	0.5-1.5, N=6
2.5-3.5, N=19	2.5-3.5, N=17
4.0-5.0, N=9	4.0-5.0, N=10
6.5-7.5, N=10	6.5-7.5, N=7
9.0-10.0, N=8	9.0-10.0, N=10
14.0-15.0, N=5	14.0-15.0, N=5
19.0-20.0, N=9	19.0-20.0, N=9
24.0-25.0, N=20	24.0-25.0, N=20

BORING LEGEND

A - Loose reddish tan fine sandy silt
B - Firm reddish brown clay
C - Soft reddish tan clayey silt, sandy
D - Loose tan silty fine sand, dry
E - Firm dark reddish brown clay w/silt partings
F - Firm dark reddish brown silty clay
G - Loose to medium dense reddish tan silty fine sand

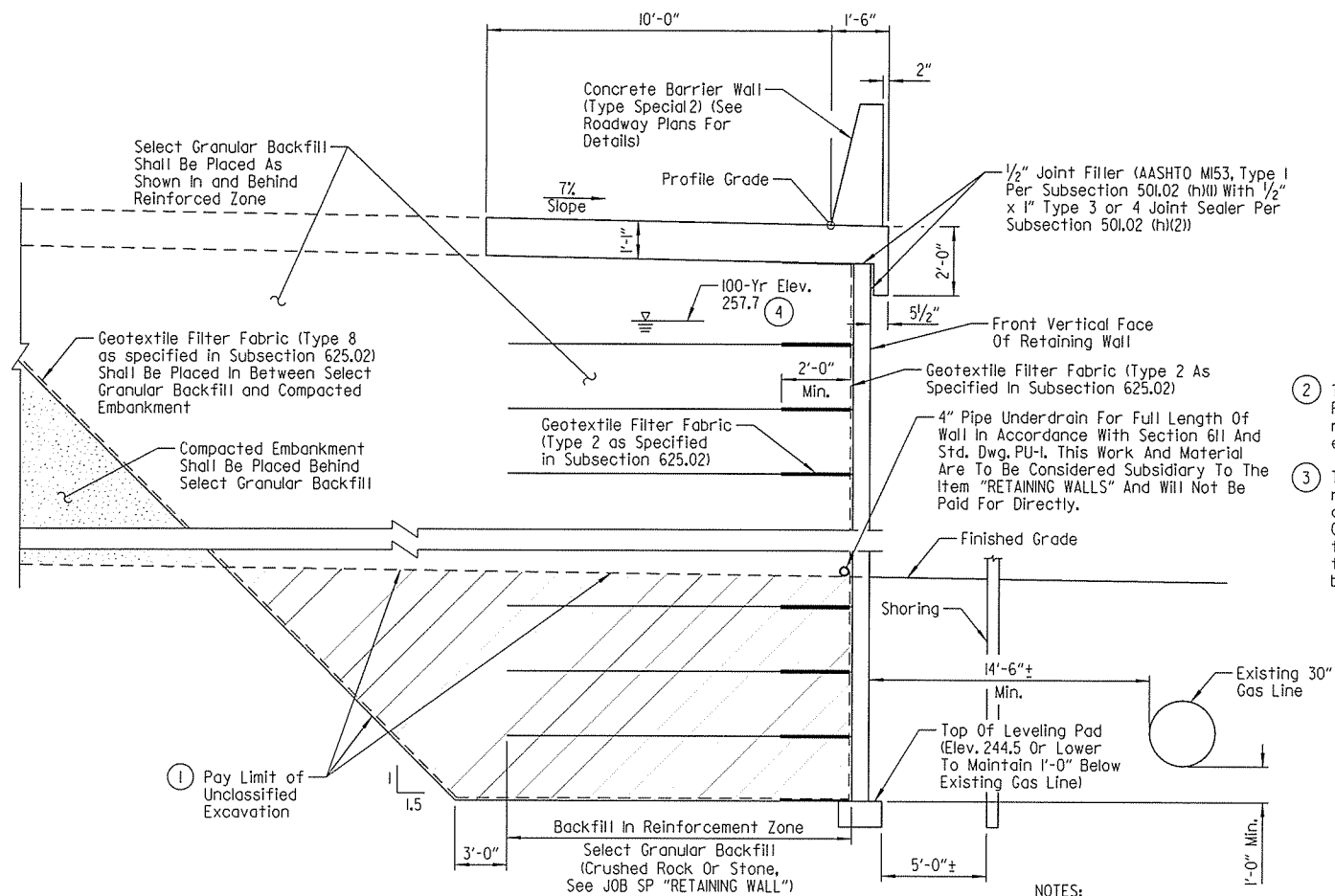
- ① Stations and offsets to box culvert headwall are measured to outside face of wall panel.
- ② See "SPECIAL DETAILS" in roadway plans for Concrete Barrier Wall (Type Special 2) details and 10'-0" Barrier Transition details.
- ③ For box culvert headwall details, see Dwg. No. 56442.
- ④ Shoring may be required during construction. Payment for this work, if required, shall be considered subsidiary to the pay item "UNCLASSIFIED EXCAVATION FOR STRUCTURES - BRIDGE". See SP JOB BB0303 "SHORING".
- ⑤ Top of Leveling Pad established to maintain 1'-0" below bottom of existing gas line.



SHEET 1 OF 2
DETAILS OF MSE RETAINING WALL
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: SEP. 2014 FILENAME: BB0303.WLDGN
CHECKED BY: JHR DATE: OCT. 2014 SCALE: 1" = 20'-0"
DESIGNED BY: DRG DATE: SEP. 2014
BRIDGE NO. 07335 DRAWING NO. 56441

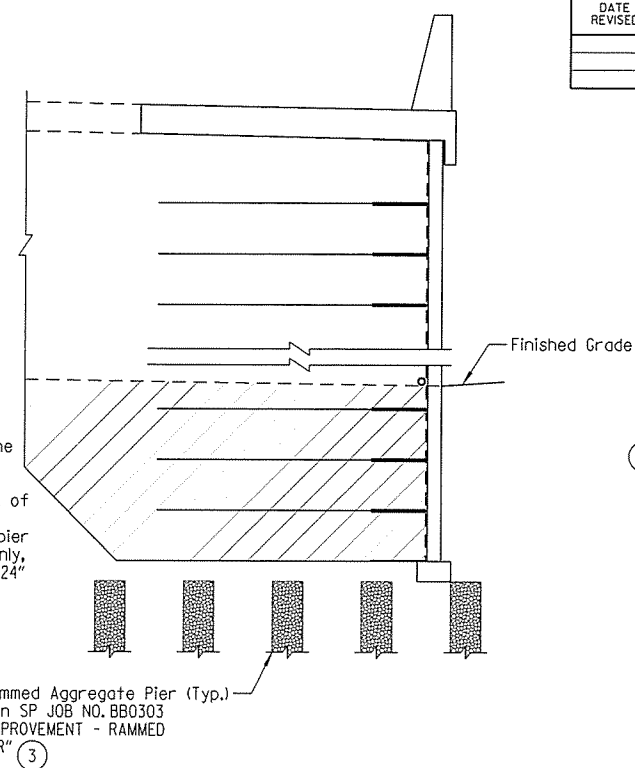
4/17/2015 10:15:51 AM
WORKSPACE: AHTD Bridge Replacement Drawings\BBB0303.W2.dgn
REVISED DATE:



SECTION A-A
No Scale

NOTE:
See "SECTION A-A" for details of concrete barrier wall, filter fabric, backfill and pay limits of unclassified excavation.

- ② The Contractor shall improve the MSE Retaining Wall foundation by way of rammed aggregate piers throughout the entire length of the wall.
- ③ The actual diameter, spacing and length of rammed aggregate piers shall be determined by the rammed aggregate pier Contractor. For estimating purposes only, the following can be used; diameter = 24" to 30", spacing = 4' to 5', length = 15' below leveling pad.

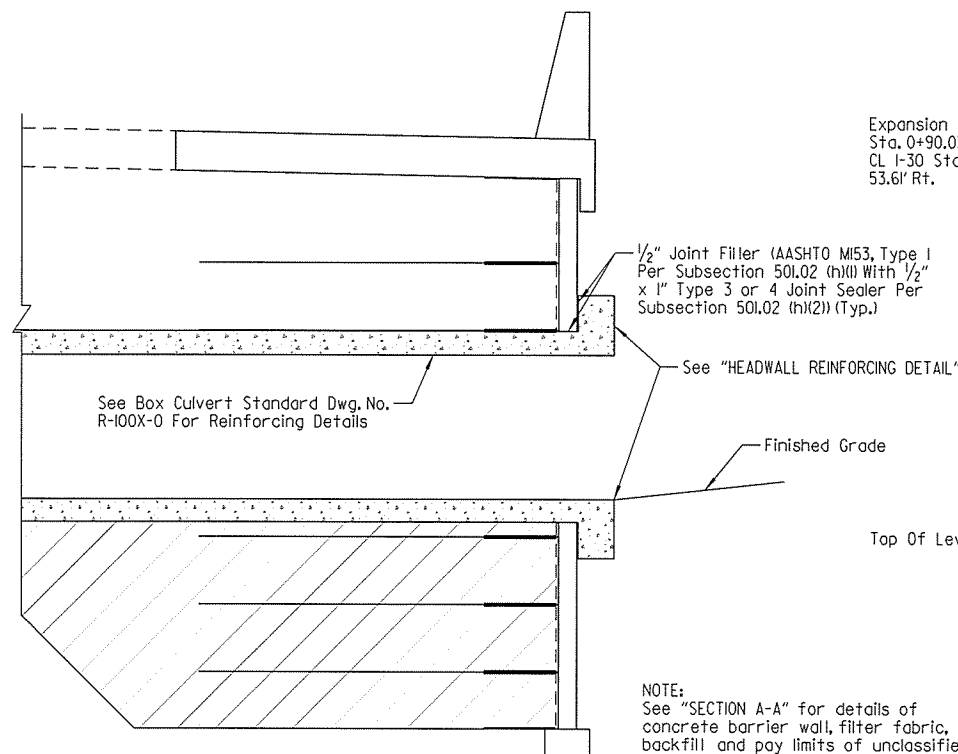


FOUNDATION IMPROVEMENT - RAMMED AGGREGATE PIERS ②
No Scale

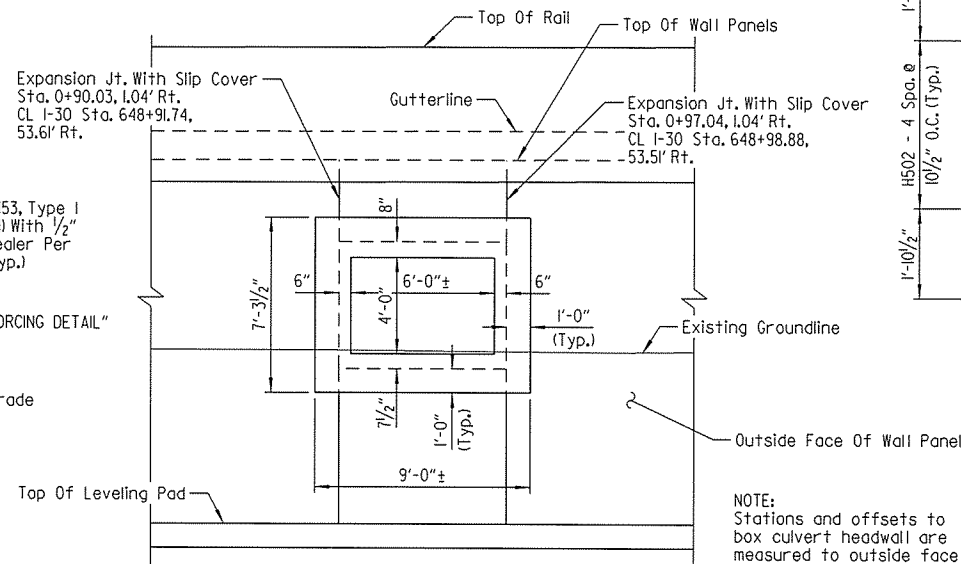
NOTES:
All backfill material within and behind the reinforcement zone shall be included in the price bid for "SELECT GRANULAR BACKFILL".

Select material required behind the backfilled zone of Select Granular Backfill shall be included in the price bid for "COMPACTED EMBANKMENT". See SP JOB NO. BBB0303 "RETAINING WALLS".

- ① Excavation required for reinforcing zone, leveling pad and placement of Compacted Embankment material will be paid for under the pay item "UNCLASSIFIED EXCAVATION". See SP JOB NO. BBB0303 "RETAINING WALLS".



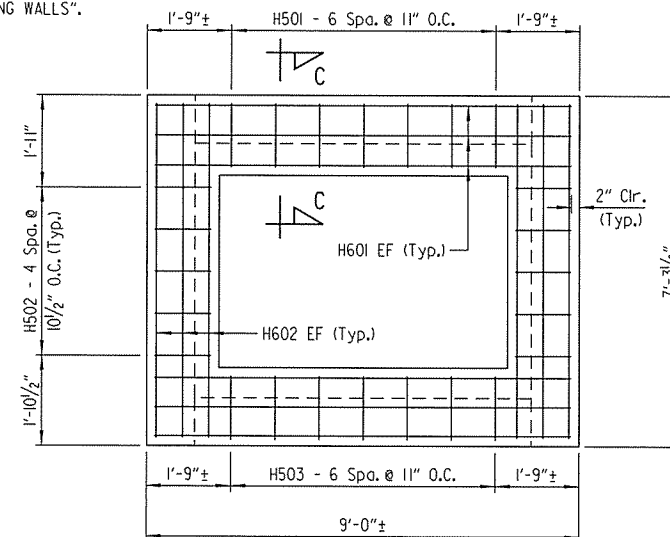
SECTION B-B - THRU BOX CULVERT
No Scale



BOX CULVERT INLET AT STA. 648+95.31 - ELEVATION
Scale: 1/4" = 1'-0"

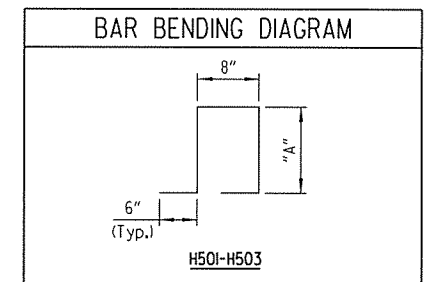
NOTE:
See "SECTION A-A" for details of concrete barrier wall, filter fabric, backfill and pay limits of unclassified excavation.

NOTE:
Stations and offsets to box culvert headwall are measured to outside face of wall panel.

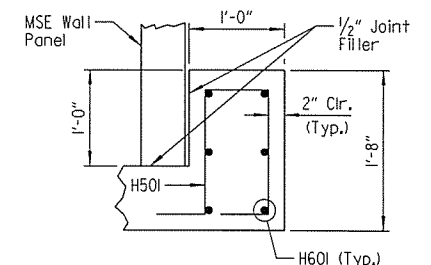


HEADWALL REINFORCING DETAIL
Scale: 1/2" = 1'-0"

BAR LIST - HEADWALL				
MARK	NO. REQ'D	LENGTH	"A"	P.D.
H501	7	3'-11"	1'-4"	2 1/2"
H502	10	3'-7"	1'-2"	2 1/2"
H503	7	3'-10"	1'-3 1/2"	2 1/2"
H601	12	8'-8"		Str.
H602	12	7'-0"		Str.



NOTE:
Dimensions of bars in "BAR BENDING DIAGRAM" are out-to-out.



SECTION C-C
Scale: 1" = 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.		BB0303	148	231
				① 07335		RETAINING WALL DETAILS		56442

GENERAL NOTES:

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 6th Edition (2012) with Current Interim Revisions

METHOD OF DESIGN: LRFD

SEISMIC PERFORMANCE ZONE: I SDI = 0.12 Site Class = D

BORING LOGS: Boring Logs, including laboratory results, may be obtained from Programs And Contracts Division.

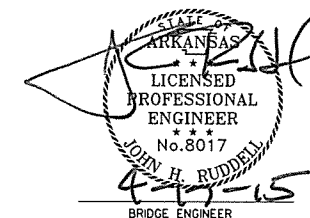
PIPE UNDERDRAIN: 4" pipe underdrain shall maintain a minimum slope of 1/8" per foot toward nearest outlet.

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

- ④ The retaining wall shall be designed for the 100 year design flood elevation of 257.7 on the fill side of the retaining wall with a differential head elevation of 3'-0" on the front face of the wall.

See SP JOB NO. BBB0414 "RETAINING WALLS" for additional information.

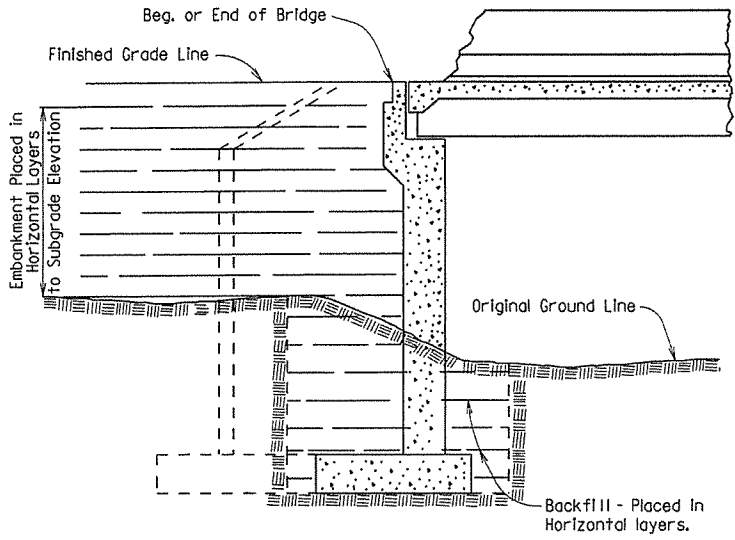
LEGEND
EF = Each Face



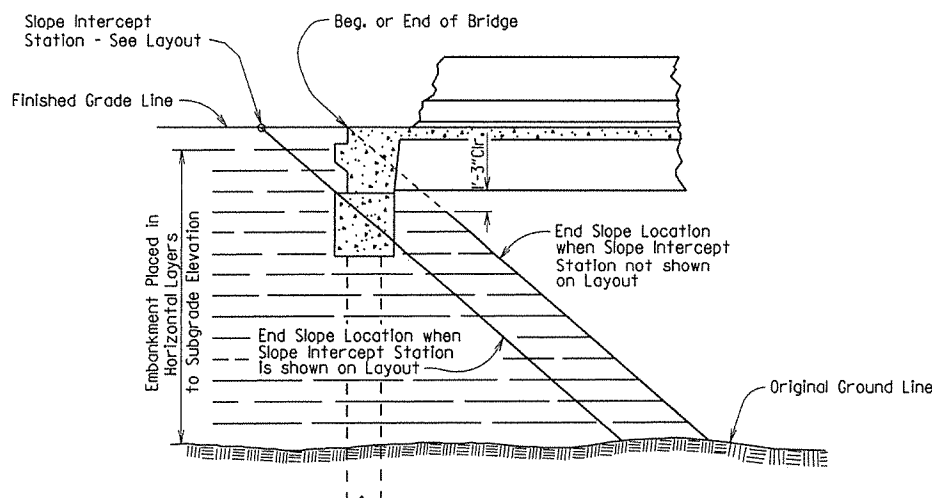
SHEET 2 OF 2
DETAILS OF MSE RETAINING WALL
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: SEP. 2014 FILENAME: BBB0303.W2.DGN
CHECKED BY: JHR DATE: OCT. 2014 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: SEP. 2014
BRIDGE NO. 07335 DRAWING NO. 56442

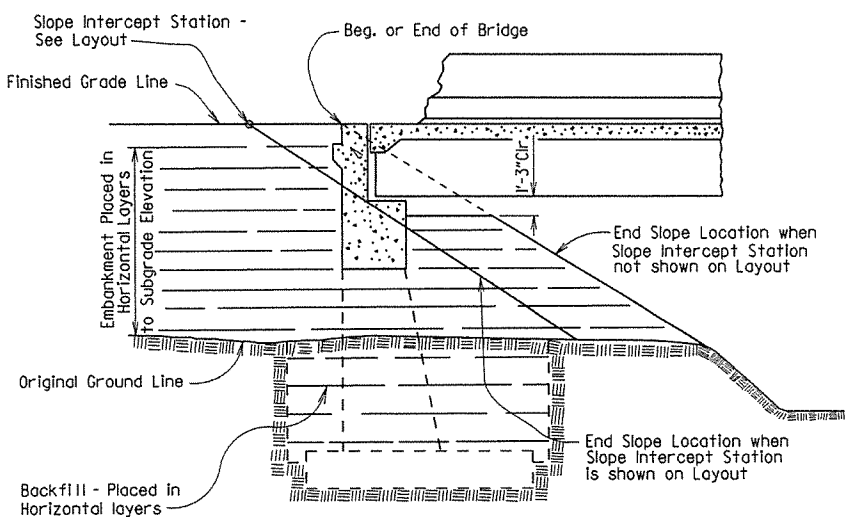
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		149	
				JOB NO.				
				① EMBANKMENT & BACKFILL		55000		



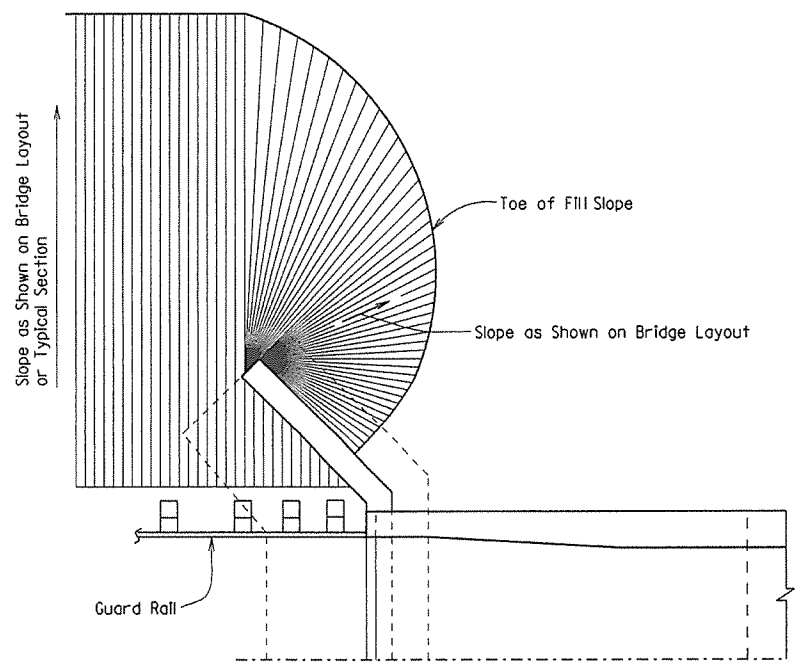
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL
AT VERTICAL WALL ABUTMENTS



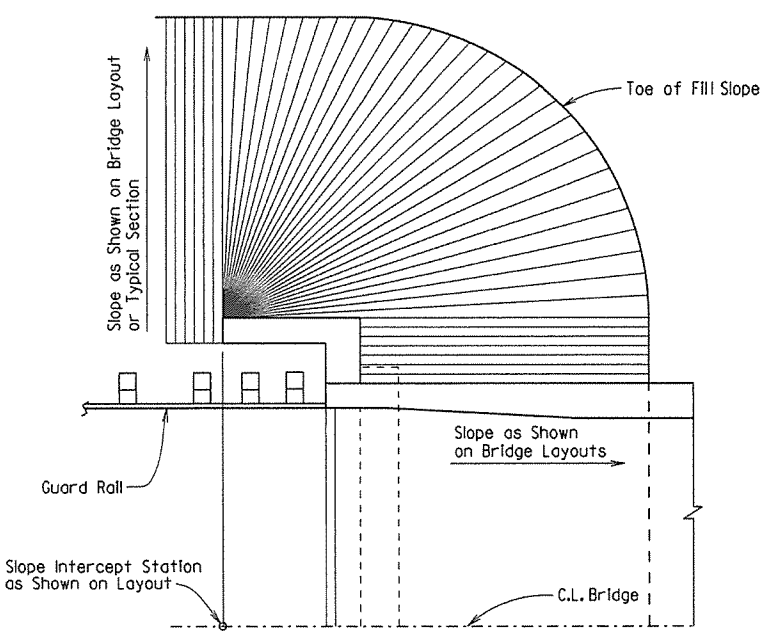
EMBANKMENT CONSTRUCTION AT SPILL-THROUGH
PILE END BENTS



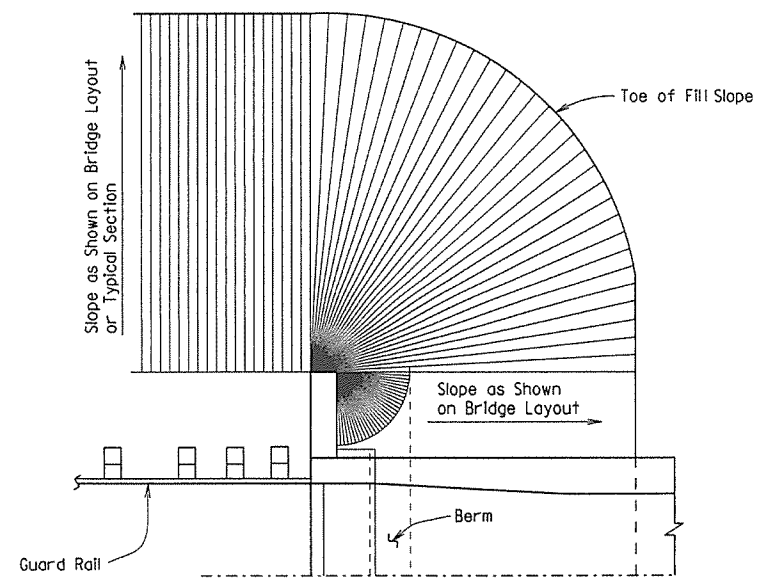
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL
AT SPILL-THROUGH END BENTS



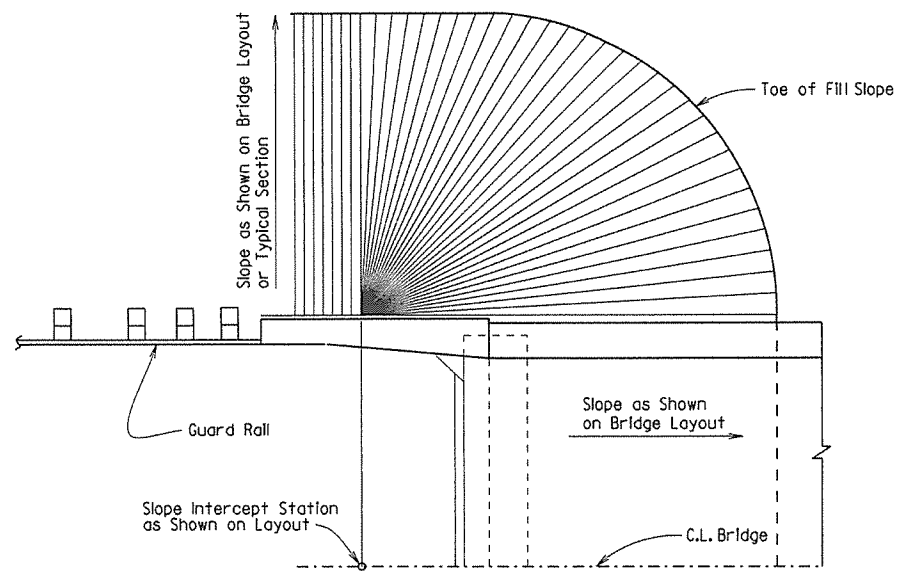
VERTICAL WALL ABUTMENTS



SPILL-THROUGH END BENTS WITH TURNBACK WING



SPILL-THROUGH END BENTS WITH STUB WING



SPILL-THROUGH END BENTS WITH TRANSITION WING

METHOD OF DETERMINING FILL SLOPE LOCATION AT BRIDGE ENDS

GENERAL NOTES

The Bridge End Embankment shall be defined as a section of embankment, not less than 20 feet long adjacent to the bridge end, together with the side slopes and slopes under the bridge end including around the end of wingwalls. Embankment adjacent to structures shall be constructed in 6 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 for construction requirements.

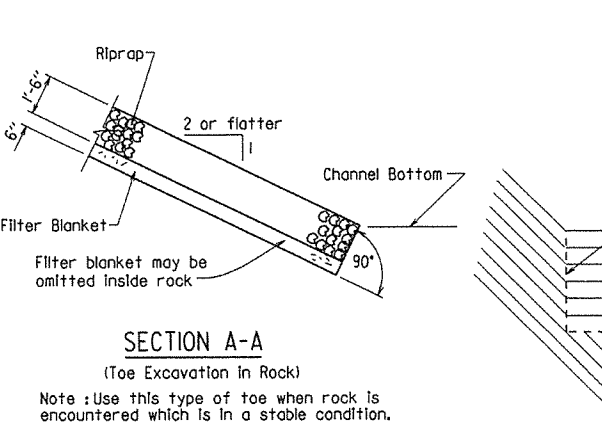
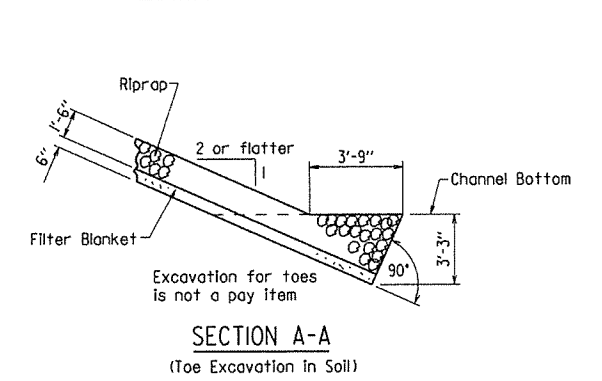
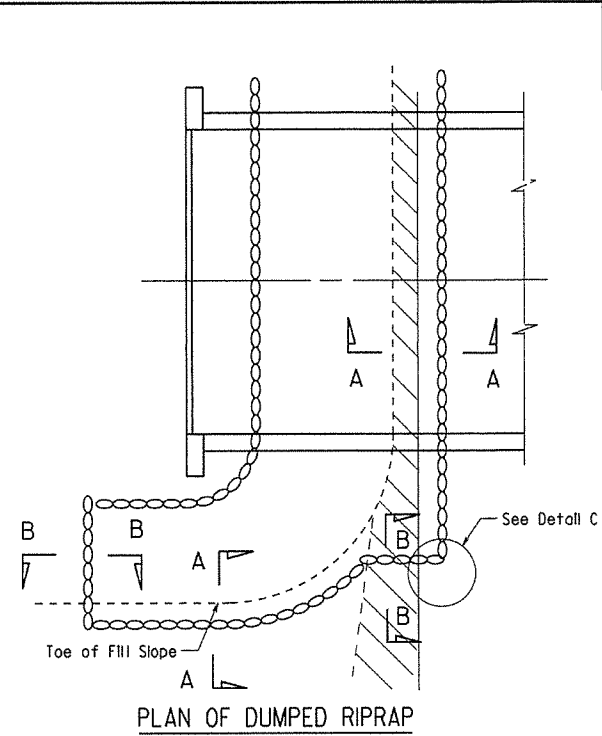
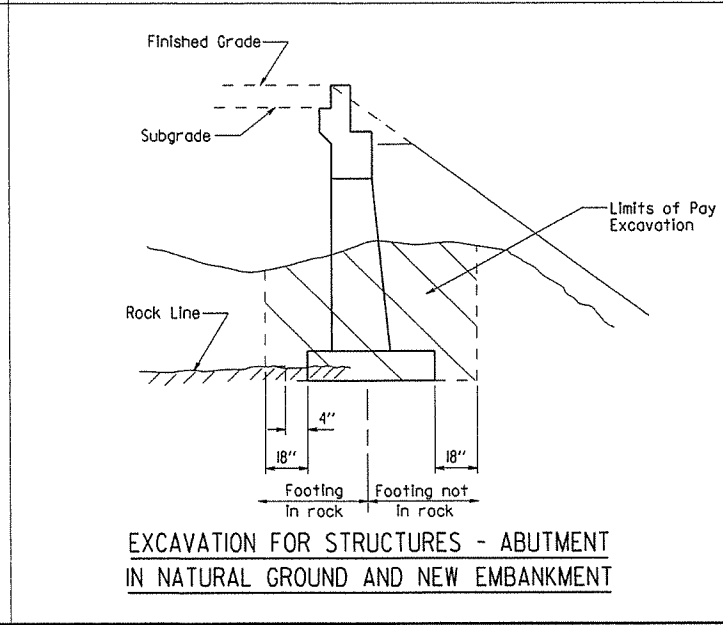
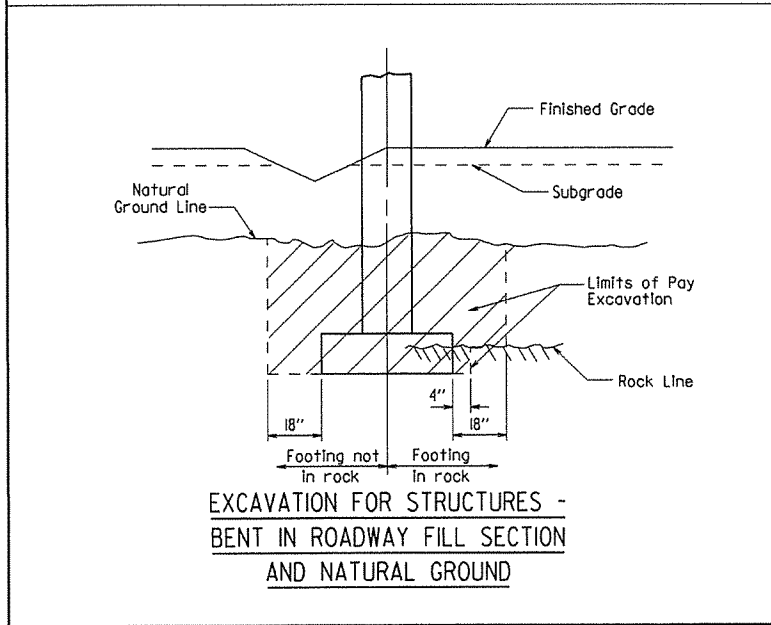
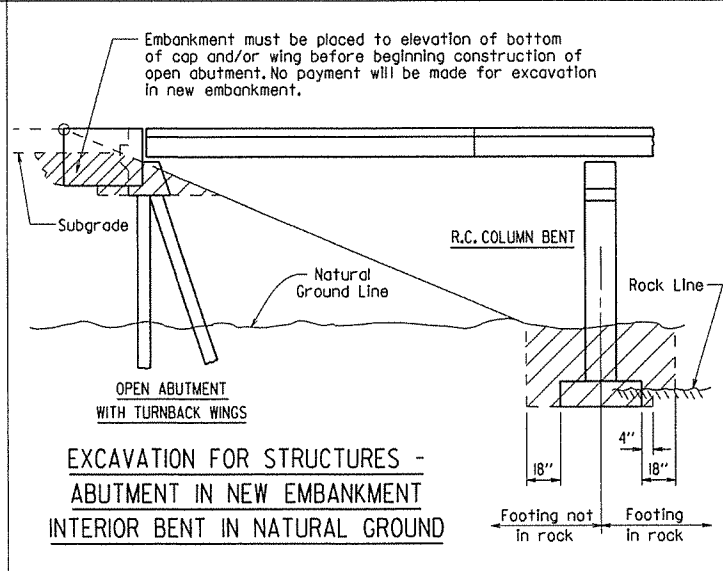
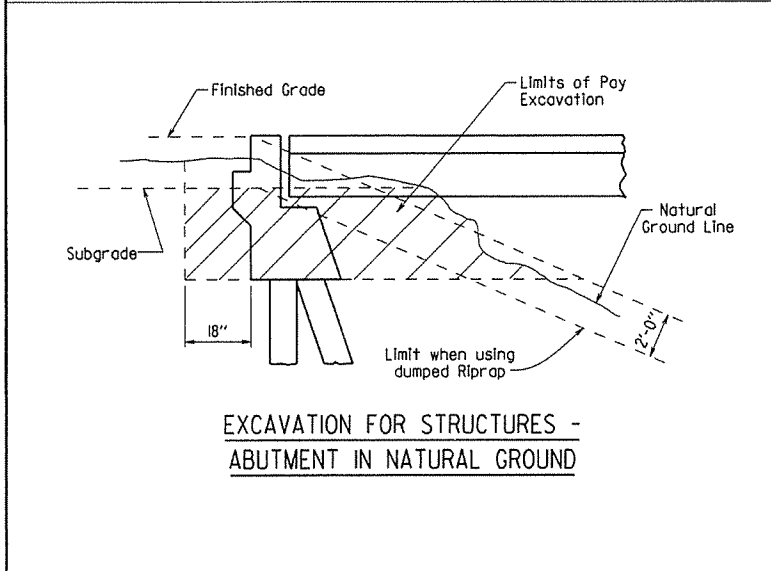
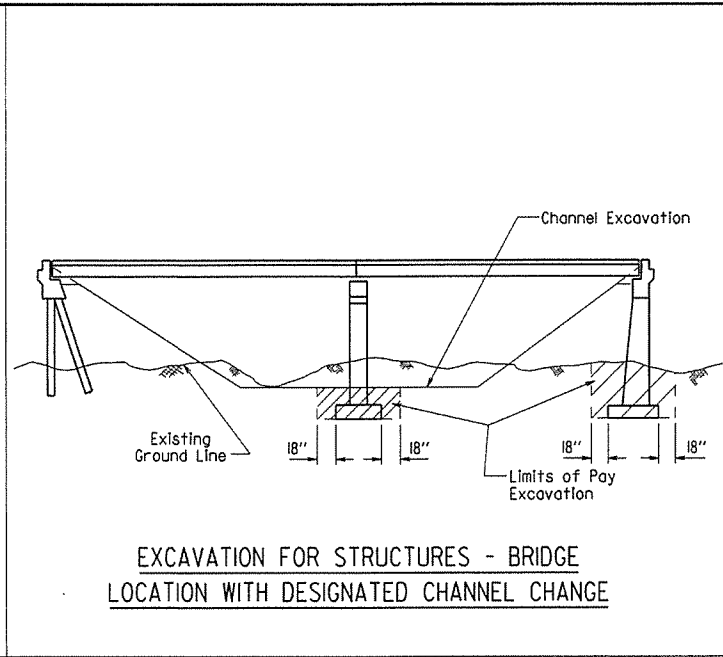
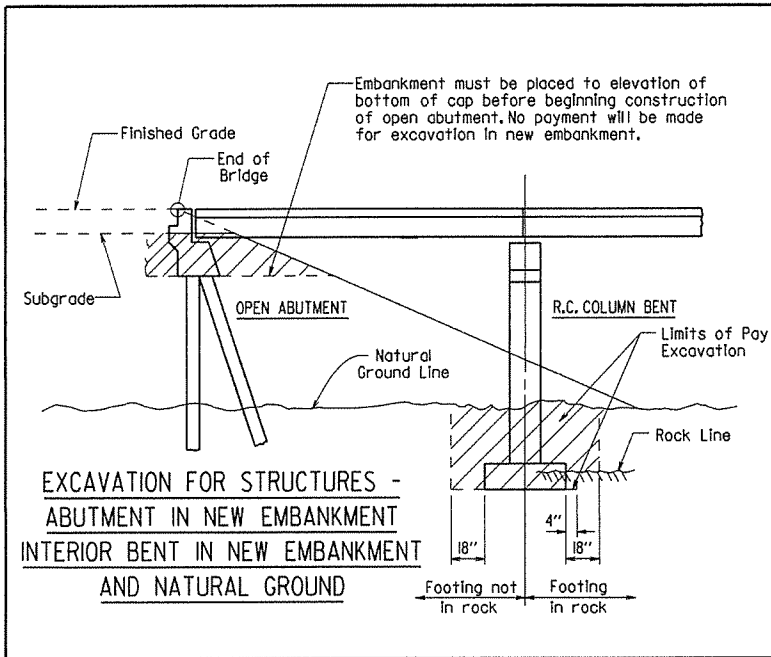
STANDARD DETAILS FOR
EMBANKMENT CONSTRUCTION AND
BACKFILL AT BRIDGE ENDS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55000.dgn
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE
DESIGNED BY: STD DATE: -

DRAWING NO. 55000



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.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		150	
				JOB NO.				

① RIPRAP & EXCAV. 55001

ELEVATION OF RIPRAP
BERME WITH RIPRAP

ELEVATION OF RIPRAP
BERME WITHOUT RIPRAP

SECTION B-B

OPEN ABUTMENT WITH
TURNBACK WINGS

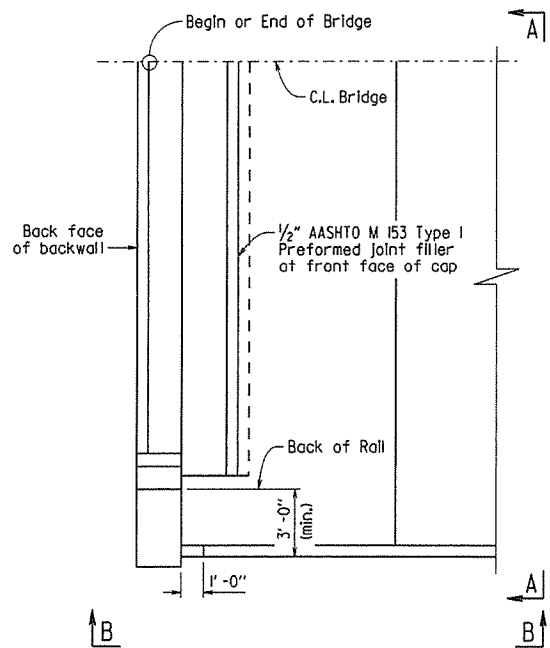
DETAIL C

STANDARD DETAILS FOR
DUMPED RIPRAP AND FILTER BLANKET
AND COMPUTING
EXCAVATION FOR STRUCTURES
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

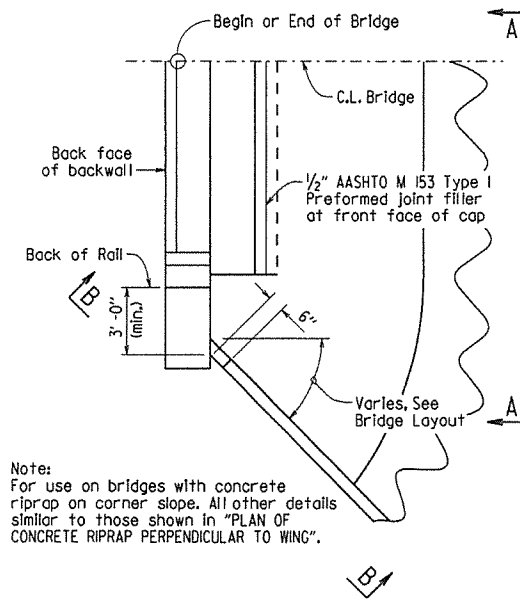
DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55001.dgn
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE
DESIGNED BY: STD. DATE: _____

DRAWING NO. 55001

Notes:
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.



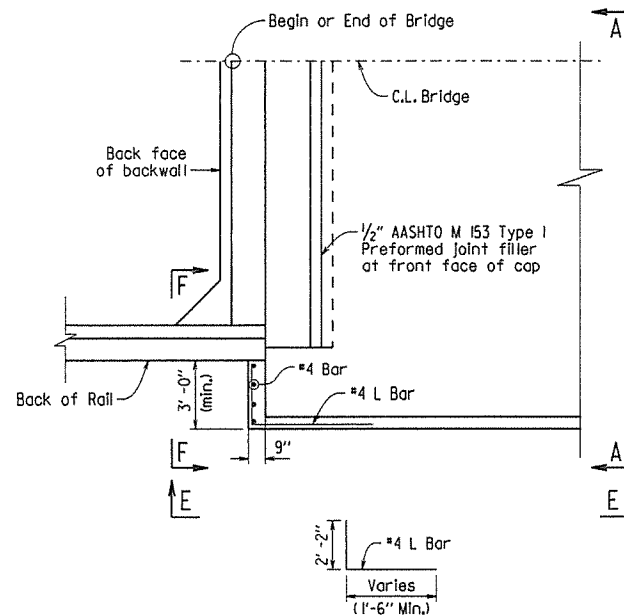
PLAN OF CONCRETE RIPRAP
PERPENDICULAR TO WING
1/4" = 1'-0"



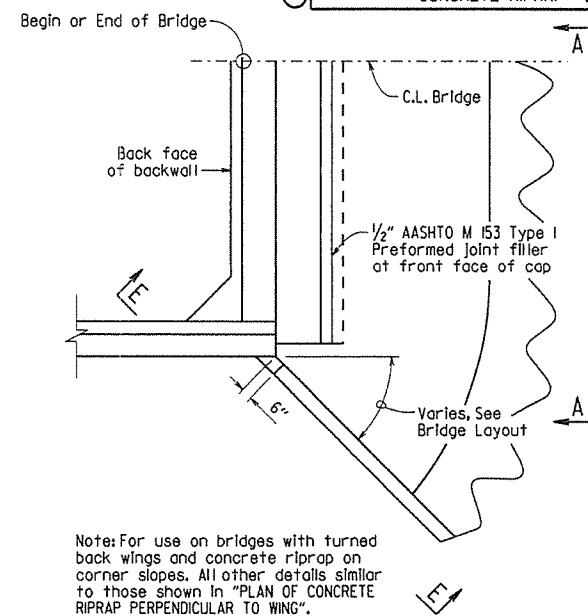
Note:
For use on bridges with concrete riprap on corner slope. All other details similar to those shown in "PLAN OF CONCRETE RIPRAP PERPENDICULAR TO WING".

PLAN OF CONCRETE RIPRAP
AT ANGLE TO WING
1/4" = 1'-0"

Note:
For use on bridges with turned back wings. All other details similar to those shown in "PLAN OF CONCRETE RIPRAP PERPENDICULAR TO WING".



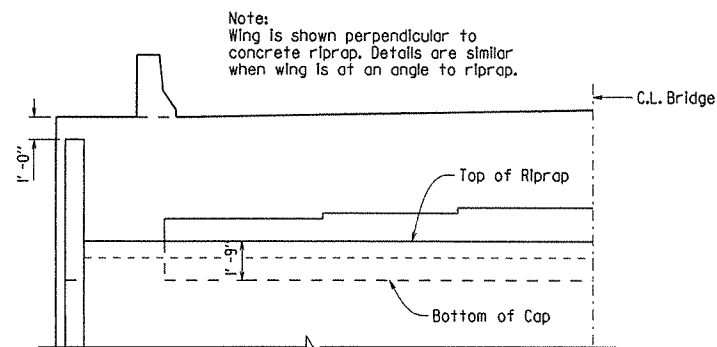
PLAN OF CONCRETE RIPRAP
PERPENDICULAR TO TURNED BACK WING
1/4" = 1'-0"



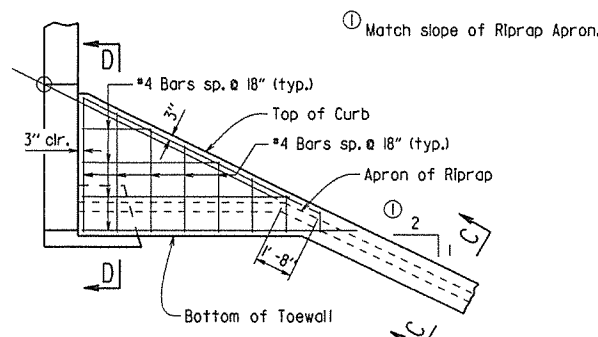
Note: For use on bridges with turned back wings and concrete riprap on corner slopes. All other details similar to those shown in "PLAN OF CONCRETE RIPRAP PERPENDICULAR TO WING".

PLAN OF CONCRETE RIPRAP
AT ANGLE FROM TURNED BACK WING
1/4" = 1'-0"

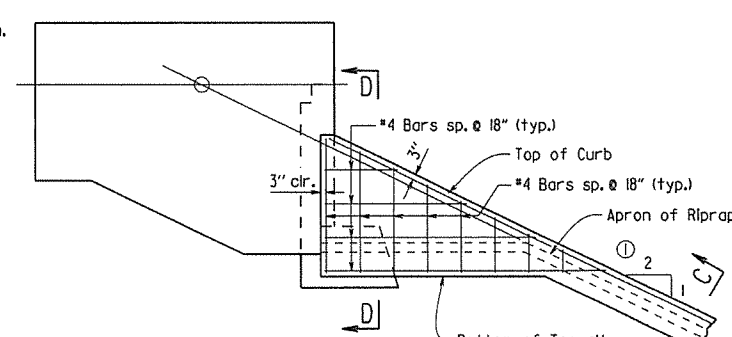
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		151	
				JOB NO.		CONCRETE RIPRAP 55002		



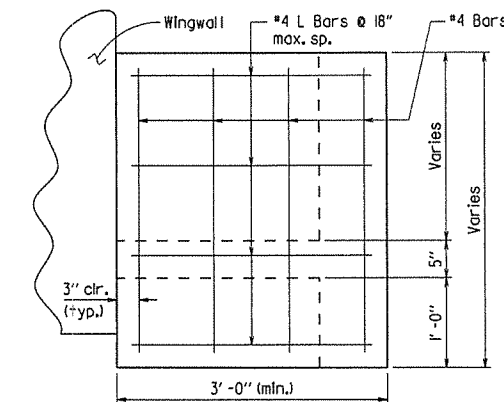
VIEW A-A
1/4" = 1'-0"



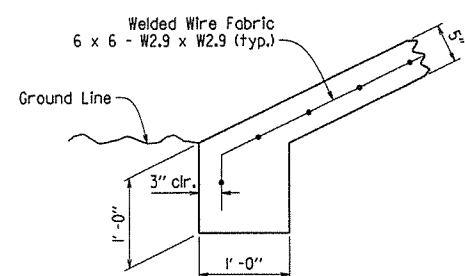
VIEW B-B
1/4" = 1'-0"



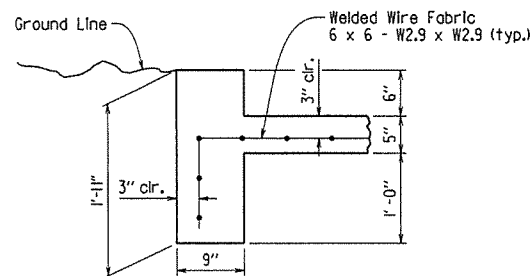
VIEW E-E
1/4" = 1'-0"



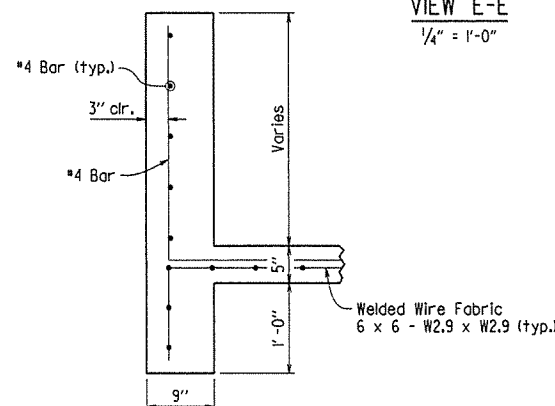
VIEW F-F
1" = 1'-0"



TOE OF CONCRETE RIPRAP
1" = 1'-0"



SECTION C-C
1" = 1'-0"



SECTION D-D
1" = 1'-0"

GENERAL NOTES

All concrete shall be Class A with a minimum compressive strength, $f'_c = 2,000$ psi.

Welded wire fabric shall conform to AASHTO M55 or M221.

STANDARD DETAILS FOR CONCRETE RIPRAP

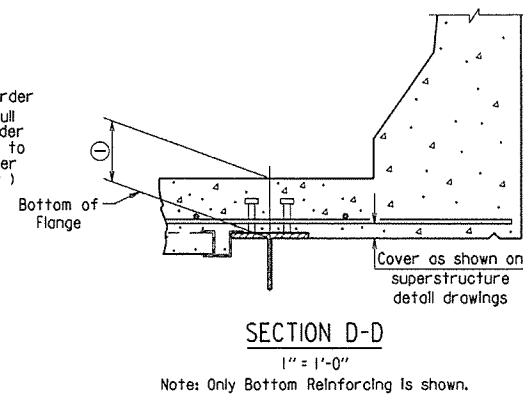
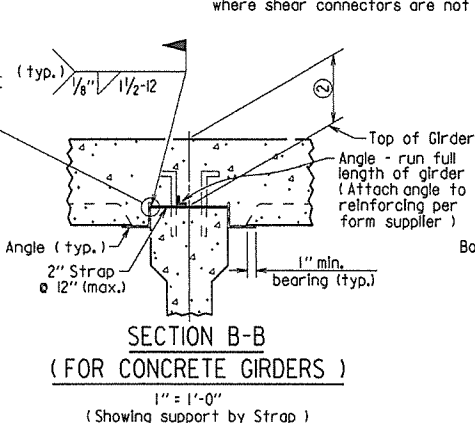
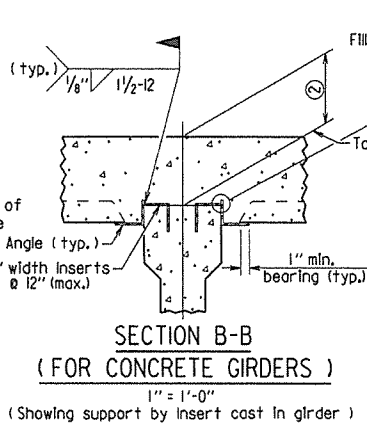
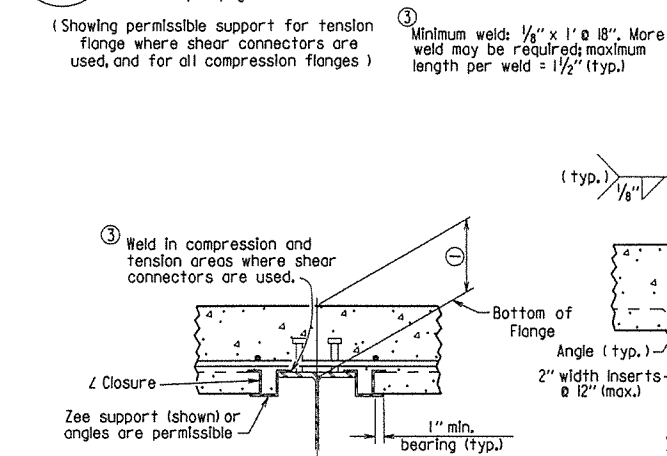
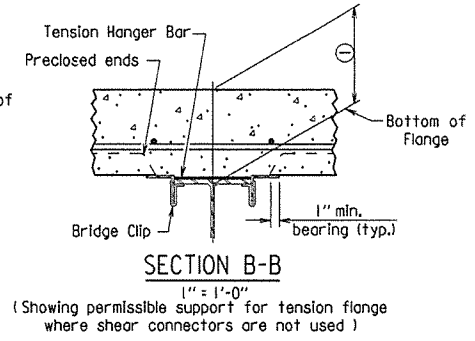
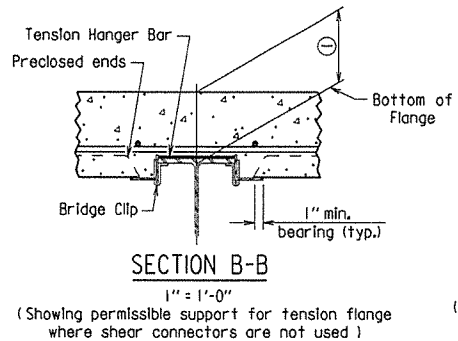
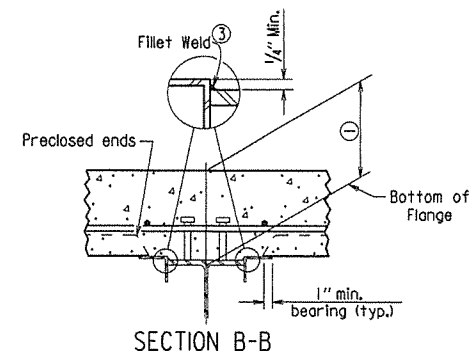
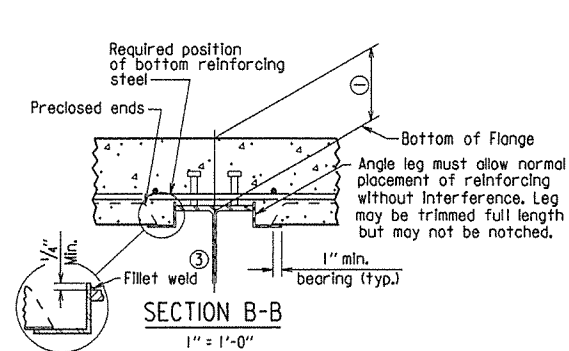
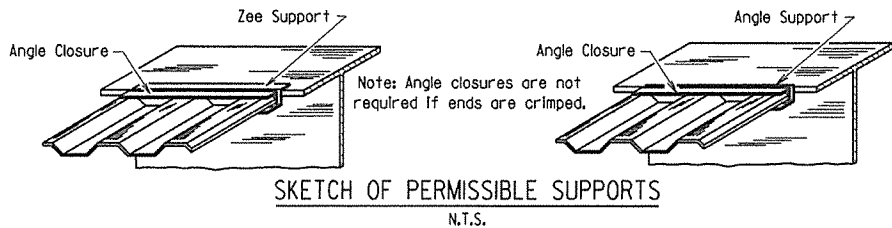
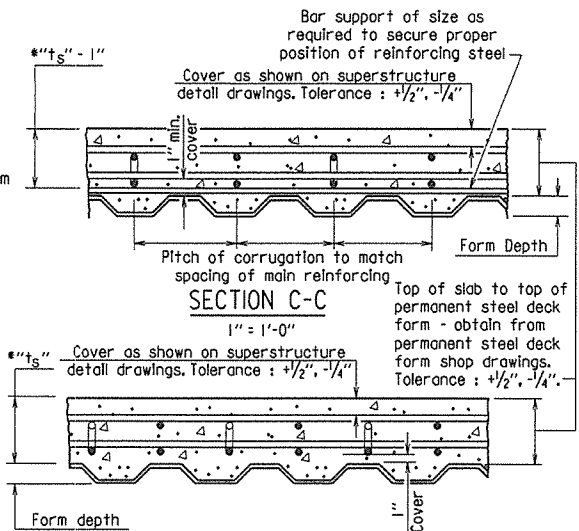
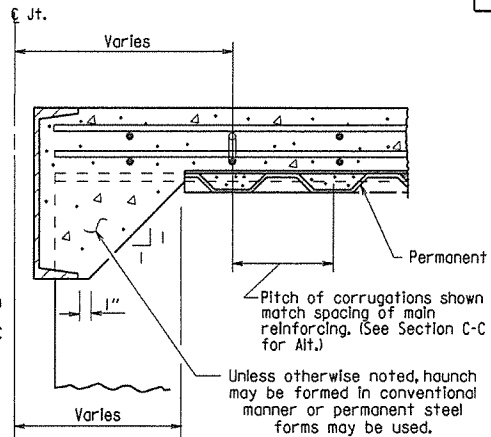
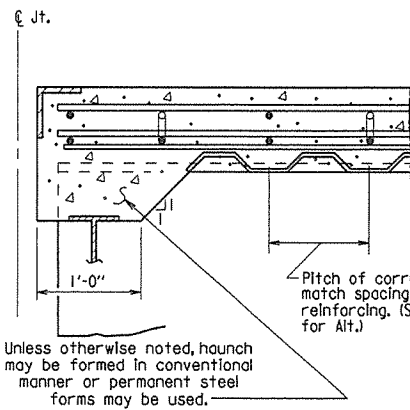
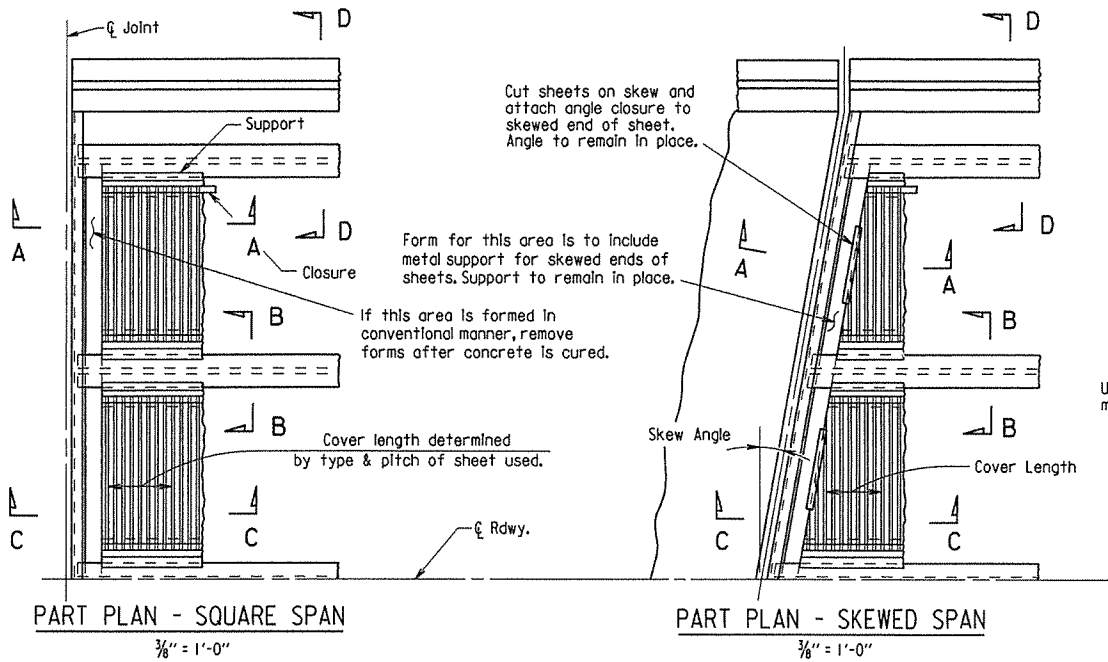
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: ACP DATE: 2/27/2014 FILENAME: b55002.dgn
CHECKED BY: BEF DATE: 2/27/2014 SCALE: AS SHOWN
DESIGNED BY: STD DATE: ---

DRAWING NO. 55002

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		152	
				JOB NO.				
				BRIDGE DECK FORMS		55005		



*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). Detailed plans, including detailed calculations and manufacturer's technical brochure, shall be submitted to and approved by the 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 Z supports to the flange must be approved by the 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 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.

Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition), with applicable Supplemental Specifications and Special Provisions.

STANDARD DETAILS FOR PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55005.dgn
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NONE
DESIGNED BY: STD. DATE:

DRAWING NO. 55005

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 + 1/4" + 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.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
12-1-14				6	ARK.		153	
1-14-15				JOB NO.				
TYPE D NAME PLATE								55010

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	

GENERAL NOTES

Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, (2014 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.

Body of plate shall be 1/4" thick and shall include four tapering cone lugs 3/8" to 5/8" 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.

Revised Chair and Vice Chair
Added New Commissioner

1-14-15 KDH Checked By: CRE

Revised Deputy Director/
Chief Engineer
Added Deputy Director/
Chief Operating Officer

12-1-14 KDH Checked By: CRE

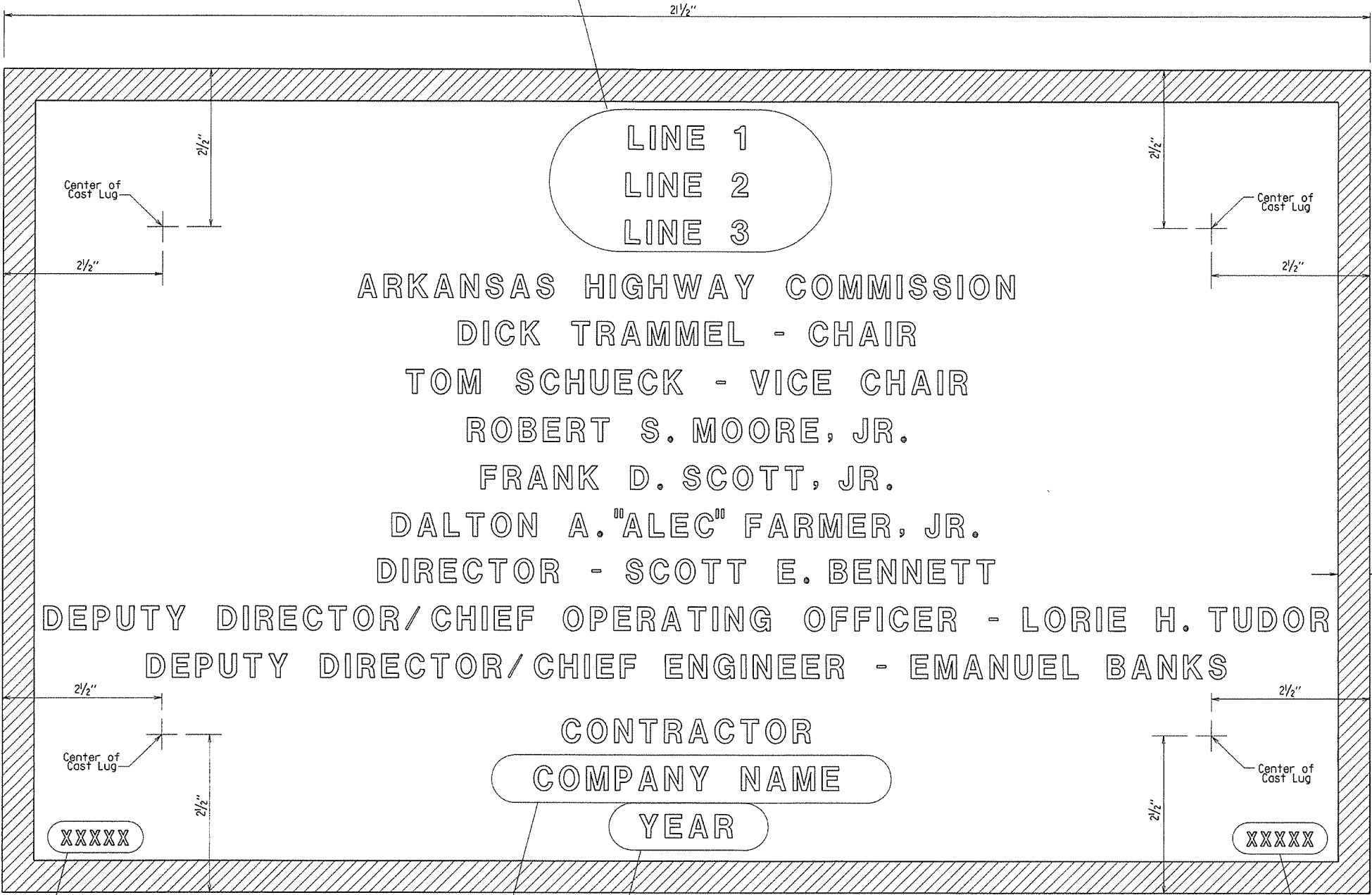
STANDARD DETAILS FOR
TYPE D BRIDGE NAME PLATE

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55010.dgn
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE
DESIGNED BY: STD. DATE: _____

DRAWING NO. 55010



TYPICAL BRIDGE NAME PLATE

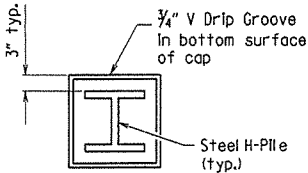
GENERAL NOTES FOR STEEL H-PILES:

Steel H-Piles shall conform to AASHTO M 270, Grade 36 or greater.

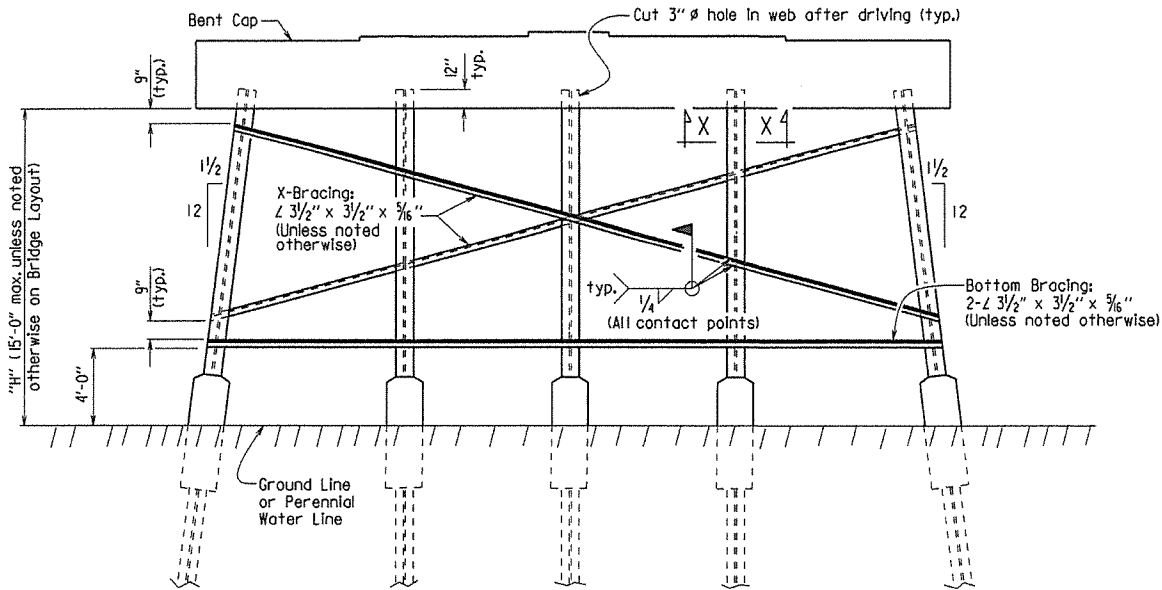
See Bridge Layout and Bent Details for pile size, estimated length, spacing, pile anchorage (if required) and for driving information.

Steel H-Piles that extend above the ground and are not protected by pile encasement shall be painted in accordance with Subsection 805.02.

Brackets, lugs, cap plates, pile tips, driving points, pile painting, splicing and welding shall not be paid for directly, but shall be considered subsidiary to the item "Steel Piling".



VIEW X-X



Notes:

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.

Unless noted otherwise, omit X-Bracing when "H" is less than 8 feet.

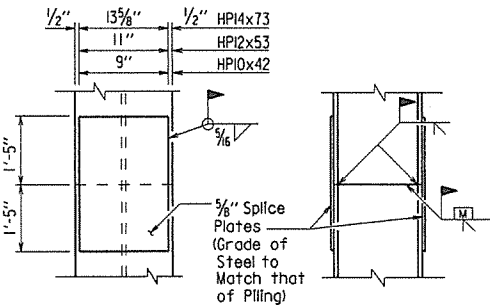
Omit X-Bracing and Bottom Bracing when "H" is 5 feet or less.

When required on the Bridge Layout sheet, pile encasements shall be constructed. See Notes and Details for H-Pile Encasements.

Omit all bracing (and V-groove in cap) when pile encasement is extended to bottom of bent cap.

TYPICAL DETAILS OF H-PILE TREESTLE INTERMEDIATE BENT

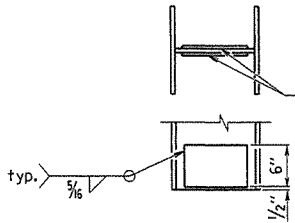
(Shown with Partial Height Encasement)



Note:

The Contractor may for his own convenience and at his own expense provide as many as three splices per pile. Minimum spacing between splices shall be 5 feet.

TYPICAL SPLICE DETAILS



REINFORCING DETAIL FOR STEEL H-PILE TIP

Notes:

Steel pile tip reinforcing not required when approved H-Pile driving points are used.

Steel pile tip reinforcing shall not be paid for directly, but shall be considered subsidiary to the item "Steel Piling".

HP14x73 - PL 1/2 inch x 6 inch x 11 inch
HP12x53 - PL 1/2 inch x 6 inch x 9 inch
HP10x42 - PL 1/2 inch x 6 inch x 7 inch

GENERAL NOTES FOR H-PILE ENCASEMENTS:

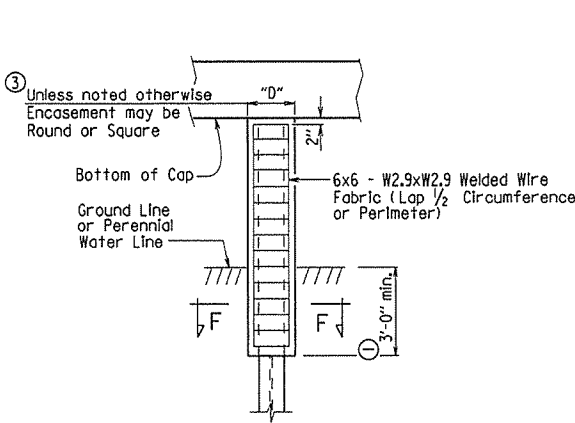
See Bridge Layout for additional notes and required location of pile encasements.

All concrete shall be Class S with a minimum 28-day compressive strength, f'c = 3,500 psi. If concrete cannot be placed in the dry, Seal Concrete may be used from top to bottom of encasement.

Reinforcing steel shall be Grade 60 conforming to AASHTO M 31 or M 322, Type A.

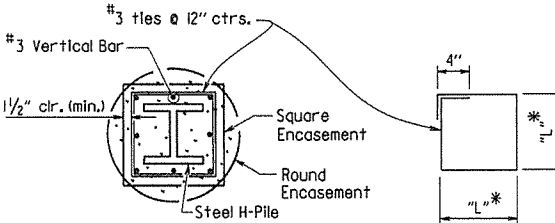
Welded Wire Fabric shall conform to AASHTO M 55 or M 22L Galvanized Corrugated Steel Pipe shall conform to AASHTO M 36 and M 218.

Concrete, welded wire fabric or reinforcing steel and galvanized pipe shall not be paid for directly, but shall be considered subsidiary to the item "Pile Encasement".



PILE ENCASEMENT DETAIL FOR STEEL H-PILES

(Shown with Encasement to Bottom of Cap)

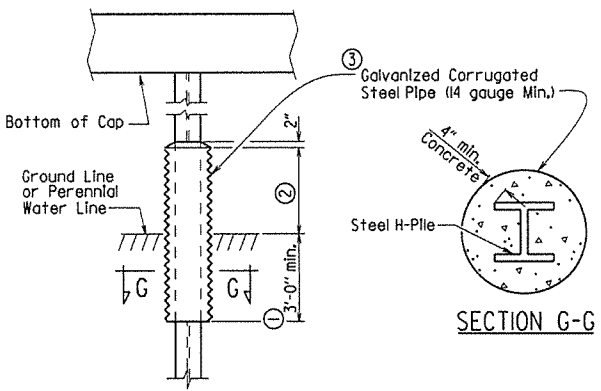


SECTION F-F

* Measured out-to-out of bar.

TABLE OF VARIABLES FOR PILE ENCASEMENT

Pile Size	"D"		"L"*
	Square Encmt.	Round Encmt.	
HP10x42	1'-7"	2'-0"	1'-4"
HP12x53	1'-8"	2'-2"	1'-5"
HP14x73	1'-11"	2'-6"	1'-8"



SECTION G-G

ALTERNATE PILE ENCASEMENT DETAIL FOR STEEL H-PILES

(Shown with Partial Height Encasement)

① Unless otherwise noted on Bridge Layout.

② 3'-0" minimum or as shown on Bridge Layout.

③ Encasement dimensions shall be sized to maintain a minimum concrete cover of 4" from the H-Pile. Reinforcement shall be sized to provide a minimum concrete cover of 1 1/2" and a minimum clearance of 1/4" from the pile.

④ Alternate pile encasement, when not extended to bottom of cap, shall have 2" concrete taper for water runoff as shown in the Partial Height Encasement detail.

⑤ Alternate pile encasement may not be allowed. See Bridge Layout.

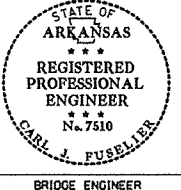
STANDARD DETAILS FOR STEEL H-PILES AND PILE ENCASEMENTS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

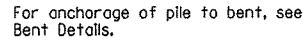
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DESIGNED BY: STD. DATE: —

DRAWING NO. 55020

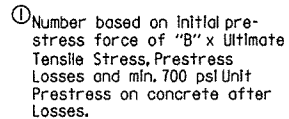


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MAXIMUM PICKUP LENGTHS "L"



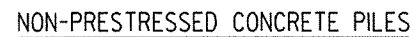
NOTE: Strand location shall be symmetrical about the axis of the pile with no more than one strand difference between any two adjacent sides. Circular spiral ties are required for odd number of strands.



"B" — 0.75 Low Relaxation
0.70 Stress-Relieved

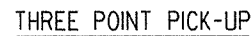
PRESTRESSED CONCRETE PILE PROPERTIES

⑤ See table "Prestressed Concrete Pile Properties" for actual number of strands per pile size.



Pile Size	No. Req'd.	Bar Size
16" Oct.	8	# 7
18" Oct.	8	# 7
④ 14" Sq.	8	# 7
16" Sq.	8	# 7
18" Sq.	8	# 8

④ 14" sq. piles to be used in Seismic Performance Zone I only.



③ The five additional turns of spiral reinforcing may be omitted for build-up without additional driving.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition) with applicable Supplemental Specifications and Special Provisions.

Unless otherwise noted, the Contractor may use prestressed piles or non-prestressed piles. Either type will be measured and paid for at the contract unit price bid for "Concrete Piling".

MANUFACTURE, TRANSPORTATION AND STORAGE: 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. See Section 802 "Concrete for Structures" for additional information.

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.

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 $\frac{1}{4}$ " per foot.

TOLERANCES: Pile ends shall be plane surfaces perpendicular to the longitudinal axis of pile with a maximum tolerance of $\frac{1}{8}$ " per foot transversely.

The maximum sweep (deviation from straightness measured from end to end of the pile, while not subject to bending forces) shall not exceed $\frac{1}{8}$ " in 10 feet.

BUILD-UPS: To provide for build-ups of piles where authorized by the Engineer, concrete shall be cut back to expose the reinforcing steel for a distance sufficient to provide a lap of 60 diameters of the reinforcing bars required for build-up. Reinforcing for build-ups shall be the reinforcing shown for non-prestressed piles.

INSTALLATION, MEASUREMENT AND PAYMENT: See Section 805 "Piling".

CONCRETE: Concrete in 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 and shall be cured for a minimum of 10 days.

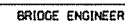
PRESTRESSING REINFORCING: Seven-wire stress-relieved or low relaxation strands shall conform to the general requirements of AASHTO M 203. Broken wires within individual strands will be permitted up to 2% of the total number of wires in each pile, providing that there is not more than one broken wire 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.

ADDITIONAL NOTES FOR NON-PRESTRESSED PILES ONLY:

All concrete shall be Class S(AE) and shall have a minimum compressive strength (f'_c) of 4,000 psi at 28 days.

All longitudinal reinforcing bars shall be deformed bars and shall conform to the requirements of Grade 60, AASHTO M31 or M322, Type A.

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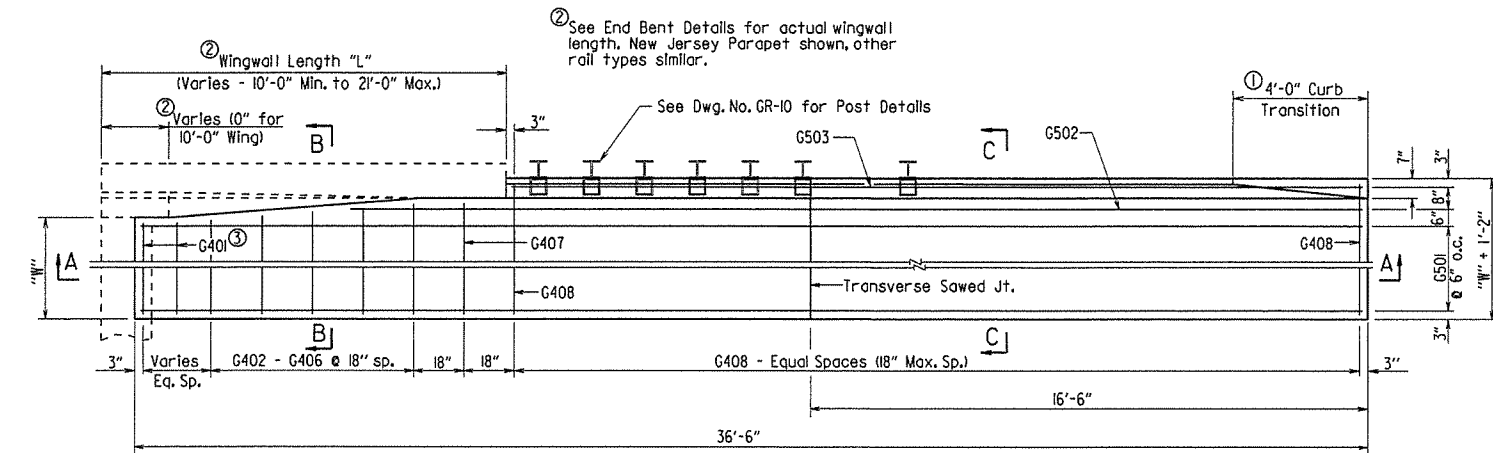
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

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CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE
DESIGNED BY: STD. DATE: —

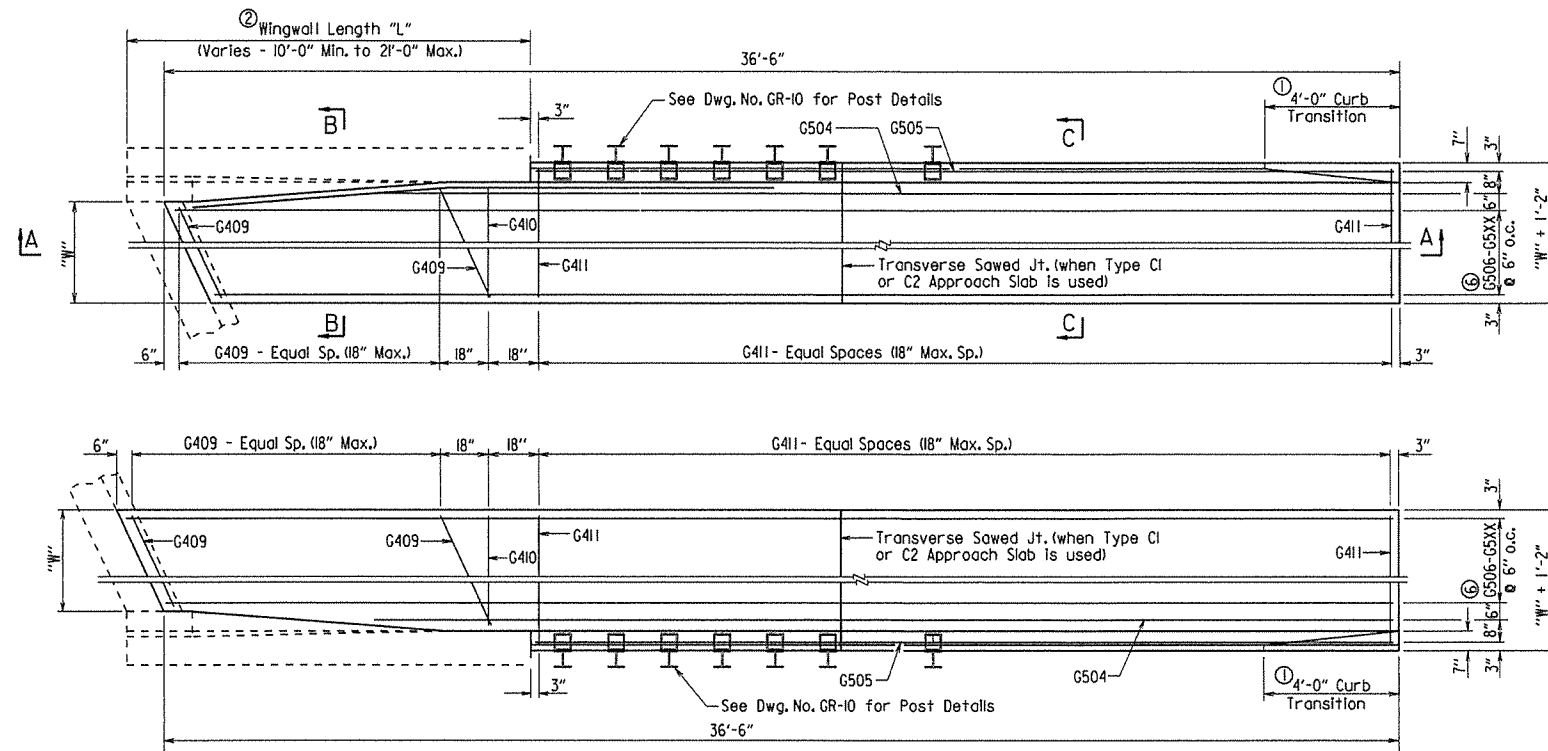
DRAWING NO. 55022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.				
							TYPE C GUTTERS	55030C

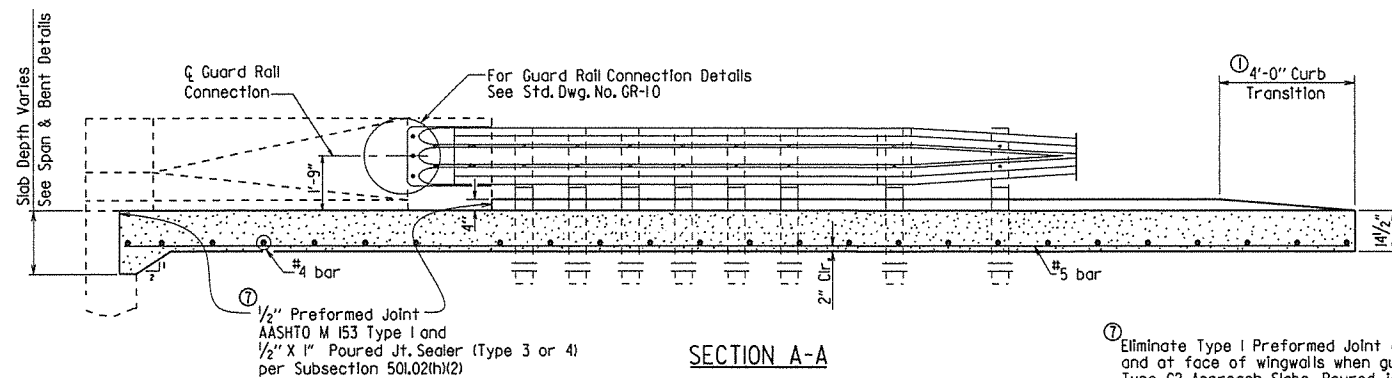


③ Provide G401 bars @ 18" max. spacing. Number of G401 bars vary with wingwall length. No G401 bars required for 10'-0" wingwalls.

HALF PLAN OF APPROACH GUTTERS FOR SQUARE BRIDGE



PLAN OF APPROACH GUTTERS FOR SKEWED BRIDGE



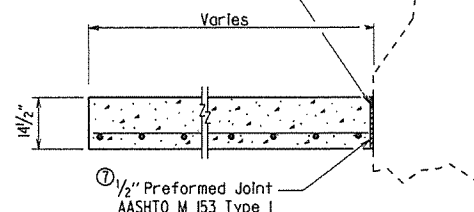
SECTION A-A

⑦ Eliminate Type I Preformed Joint at end bent backwall and at face of wingwalls when gutters used with Type C2 Approach Slabs. Poured joint sealer is required, however backer rod shall be eliminated.

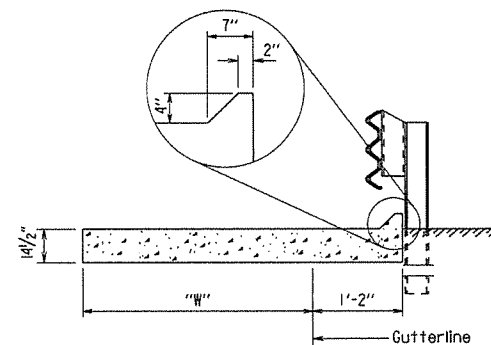
① Construct gutter curb with height-transition as shown. If drop inlet is not placed at end of gutter.

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

1/2" X 1" Poured Jt. Sealer (Type 3 or 4) per Subsection 501.02(h)(2)



SECTION B-B
N.T.S.



SECTION C-C
N.T.S.

BAR LIST FOR ONE
TYPE C GUTTER

Mark	No. Req'd. for Width "W"				Length
	4'-0"	6'-0"	8'-0"	10'-0"	
G401	④	④	④	④	"W" - 4"
G402-G406	1 each	1 each	1 each	1 each	"W"-3" to "W"+2"
G407	1	1	1	1	"W"+3"
G408	④	④	④	④	"W"+10"
G501	8	12	16	20	36'-2"
G502	1	1	1	1	(4'-11") - "L"
G503	1	1	1	1	(37'-2") - "L"
G409	④	④	④	④	⑤
G410	1	1	1	1	"W"+3"
G411	④	④	④	④	"W"+10"
G504	1	1	1	1	⑤
G505	1	1	1	1	⑤
G506-G5XX ⑥	1 each	1 each	1 each	1 each	⑤

④ No. Req'd. varies with Skew and Wingwall Length.

⑤ Bar Lengths vary with Skew and Wingwall Length.

⑥ G513 for "W" = 4'
G517 for "W" = 6'
G521 for "W" = 8'
G525 for "W" = 10'

QUANTITIES FOR ONE
SQUARE APPROACH GUTTER
(FOR INFORMATION ONLY)

"W" Width (ft.)	Reinforcing Steel (Lbs.)	Concrete (Cu. Yds.)
4	445	8.30
6	630	11.55
8	810	14.80
10	995	18.10

Quantities are based on "L" = 10'-0".

GENERAL NOTES

All concrete shall be Class S or Class STAE or mixture used for Portland Cement Concrete Pavement and shall be poured in the dry.

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

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

STANDARD DETAILS FOR TYPE C APPROACH GUTTERS

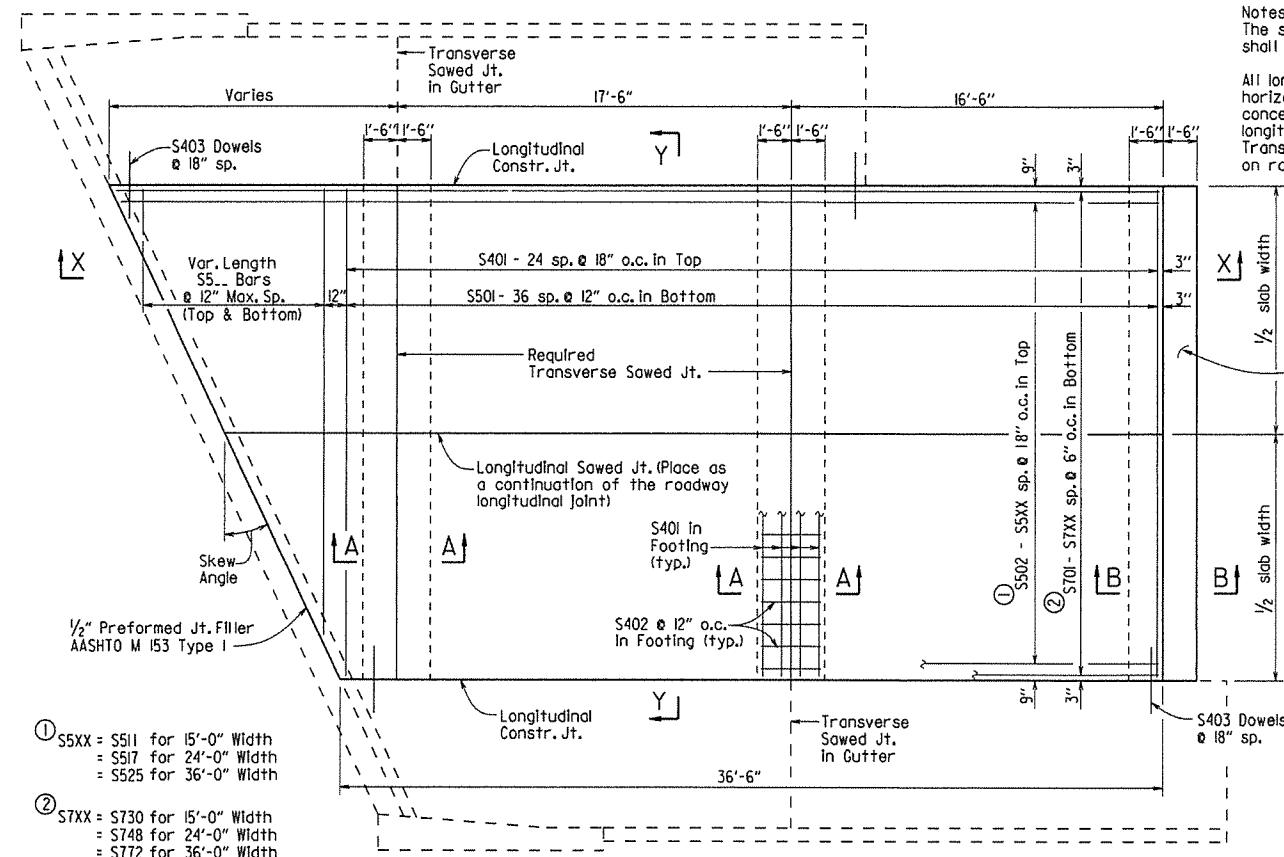
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: A.M.S. DATE: 2/27/2014 FILENAME: b55030c.dgn
CHECKED BY: K.W.Y. DATE: 2/27/2014 SCALE: 3/8" = 1'-0"
DESIGNED BY: STD. DATE: or As Shown

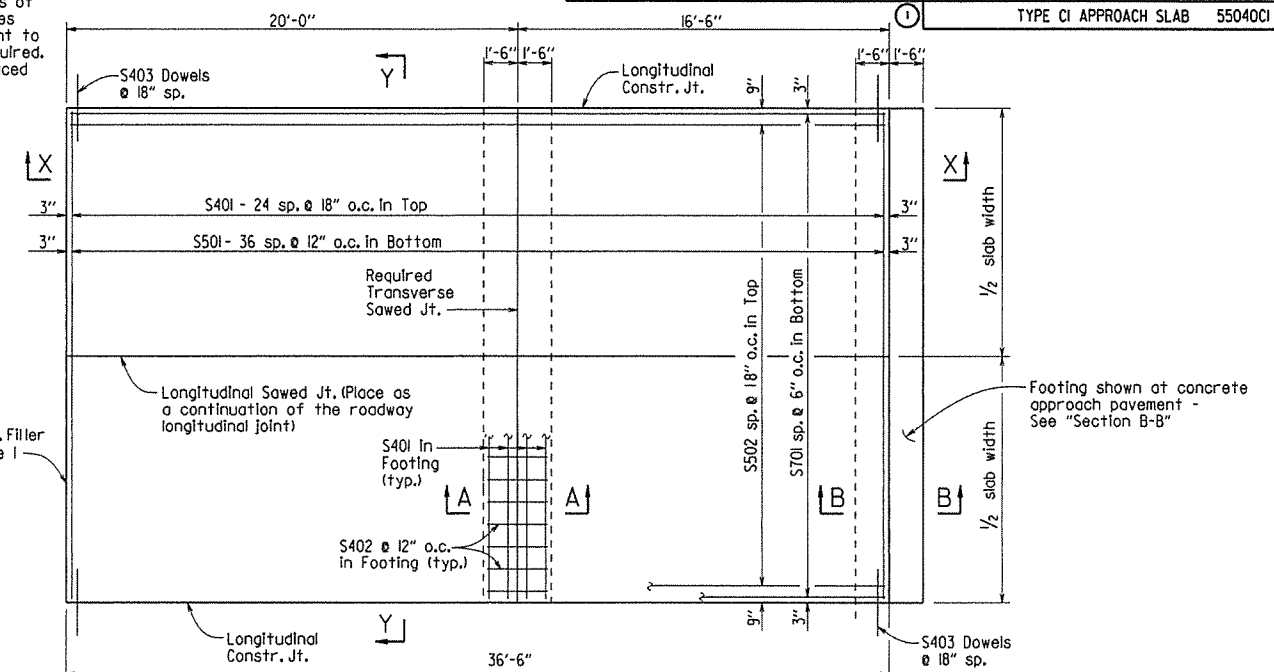
DRAWING NO. 55030C

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		157	
				JOB NO.				

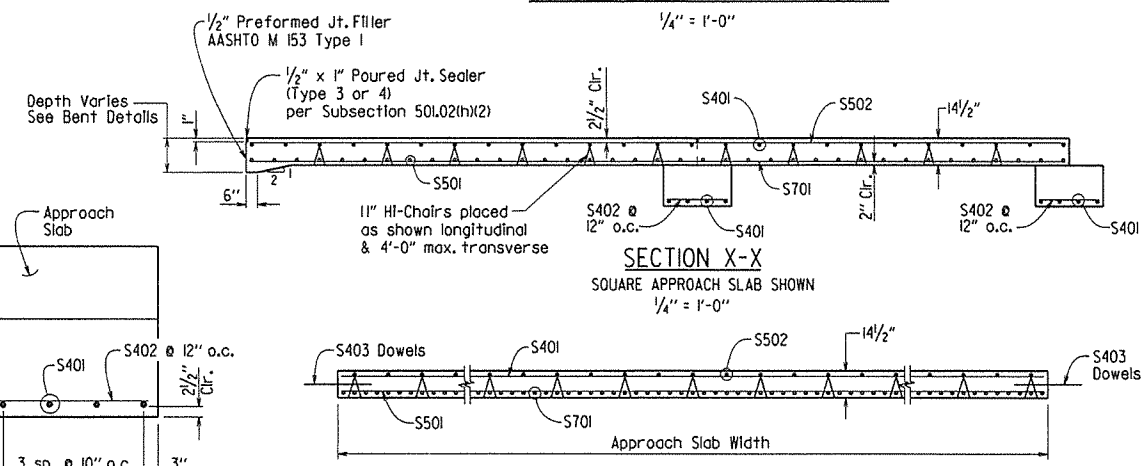


Notes:
The surface finish for Approach Slabs shall match that used on the bridge deck.

All longitudinal lines within the limits of horizontal curves shall be on curves concentric to C.L. Bridge. Adjustment to longitudinal bar lengths may be required. Transverse reinforcing shall be placed on radial lines to C.L. Bridge.



PLAN - SQUARE APPROACH SLAB



SECTION Y-Y

GENERAL NOTES

This drawing shall be used for Approach Slabs in Seismic Performance Zone I and for the maximum skew angles shown below:

15'-0" Slab Width:	Maximum Skew Angle = 50°
24'-0" Slab Width:	Maximum Skew Angle = 40°
36'-0" Slab Width:	Maximum Skew Angle = 30°

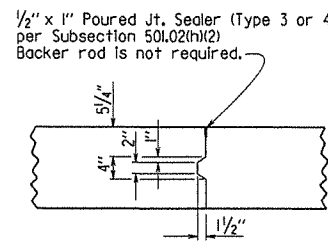
All concrete shall be Class S (AE) with a minimum 28 day compressive strength $f'_c = 4,000$ psi and shall be poured in the dry.

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

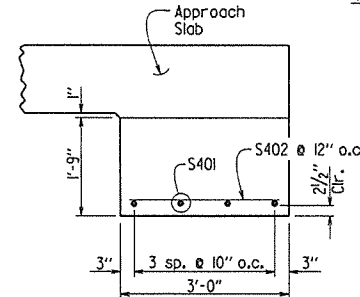
Approach Slabs will be measured and paid for in accordance with Section 504.

TABLE OF QUANTITIES FOR ONE
SQUARE APPROACH SLAB
(FOR INFORMATION ONLY)

Slab Width	Reinforcing Steel	Concrete
	(Lbs.)	(Cu. Yds.)
15'-0"	3640	30.75
24'-0"	5775	49.15
36'-0"	8620	73.75

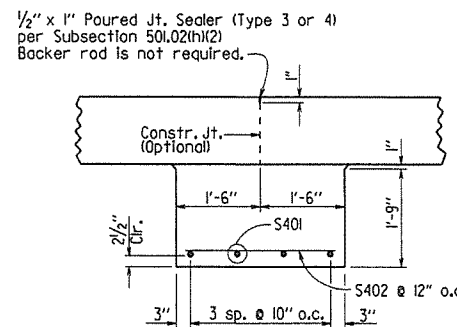


DETAILS OF LONGITUDINAL CONSTRUCTION JOINT

$$\frac{3}{4}'' = 1'-0''$$


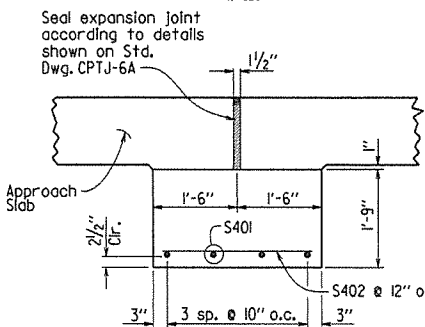
SECTION B-B

AT ASPHALT APPROACH PAVEMENT
N.T.S.



SECTION A-A

N.T.S.



SECTION B-B

AT CONCRETE APPROACH PAVEMENT
N.T.S.

BAR LIST (Square & Skewed Approach Slabs)					
		Square		Skewed	
	Mark	No. Req'd.	Length	No. Req'd.	Length
15'-0" Slab Width	S401	33	14'-8"	37	14'-8"
	S402	30	2'-8"	45	2'-8"
	S403	50	3'-0"	*	3'-0"
	S501	37	14'-8"	37	14'-8"
	S502	10	36'-2"	—	—
	S502 - S511	—	—	1 Ea.	36.1' + 0.75' (tan skew angle) to 36.1' + 14.25' (tan skew angle)
	S5... S701	—	—	2 Ea.	14.7' - 0.75'/(tan skew angle) to 2'-0" Min.
	S701	30	36'-2"	—	—
	S701 - S730	—	—	1 Ea.	36.1' + 0.25' (tan skew angle) to 36.1' + 14.75' (tan skew angle)
	S730	—	—	—	—
24'-0" Slab Width	S401	33	23'-8"	37	23'-8"
	S402	48	2'-8"	72	2'-8"
	S403	50	3'-0"	*	3'-0"
	S501	37	23'-8"	37	23'-8"
	S502	16	36'-2"	—	—
	S502 - S517	—	—	1 Ea.	36.1' + 0.75' (tan skew angle) to 36.1' + 23.25' (tan skew angle)
	S5... S701	—	—	2 Ea.	23.7' - 0.75'/(tan skew angle) to 2'-0" Min.
	S701	48	36'-2"	—	—
	S701 - S748	—	—	1 Ea.	36.1' + 0.25' (tan skew angle) to 36.1' + 23.75' (tan skew angle)
	S748	—	—	—	—
36'-0" Slab Width	S401	33	35'-8"	37	35'-8"
	S402	72	2'-8"	108	2'-8"
	S403	50	3'-0"	*	3'-0"
	S501	37	35'-8"	37	35'-8"
	S502	24	36'-2"	—	—
	S502 - S525	—	—	1 Ea.	36.1' + 0.75' (tan skew angle) to 36.1' + 35.25' (tan skew angle)
	S5... S701	—	—	2 Ea.	35.7' - 0.75'/(tan skew angle) to 2'-0" Min.
	S701	72	36'-2"	—	—
	S701 - S772	—	—	1 Ea.	36.1' + 0.25' (tan skew angle) to 36.1' + 35.75' (tan skew angle)
	S772	—	—	—	—

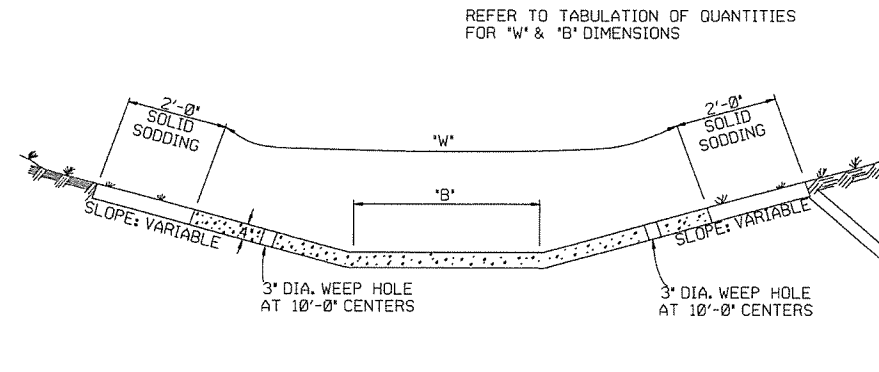
* Varies with skew angle

STANDARD DETAILS FOR
TYPE CI APPROACH SLAB
ARKANSAS STATE HIGHWAY COMMISSION

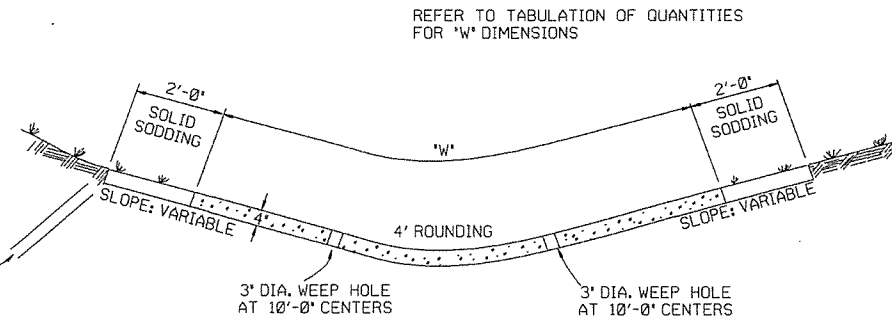
LITTLE ROCK, ARK.

DRAWN BY:	<u>A.M.S.</u>	DATE:	<u>2/27/2014</u>	FILENAME:	<u>b55040cl.dgn</u>
CHECKED BY:	<u>K.W.Y.</u>	DATE:	<u>2/27/2014</u>	SCALE:	<u>AS SHOWN</u>
DESIGNED BY:	<u>STD.</u>	DATE:	<u> </u>		

DRAWING NO. 55040CI



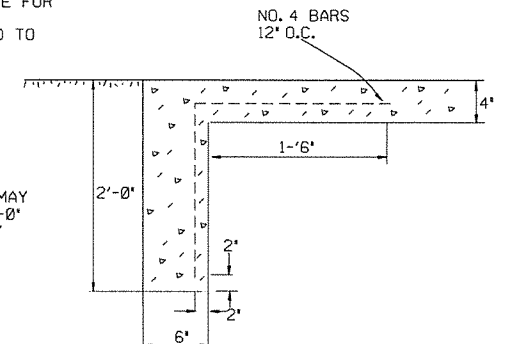
TYPE A



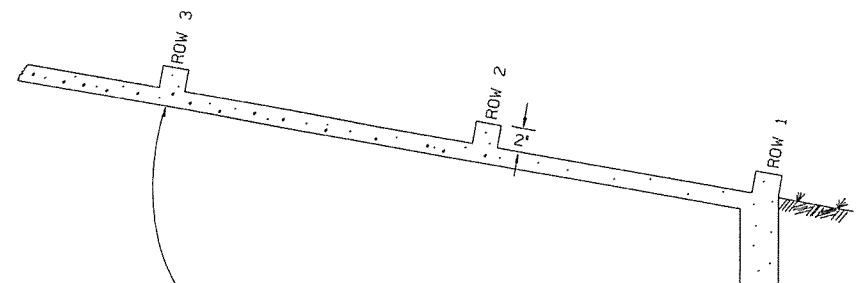
TYPE B

THE STEEL AND ADDITIONAL CONCRETE FOR THE WALLS SHALL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR 'CONCRETE DITCH PAVING.'

TOE WALL DEPTH MAY BE ALTERED TO 1'-0" WHEN DIRECTED BY THE ENGINEER IN ROCK EXCAVATION

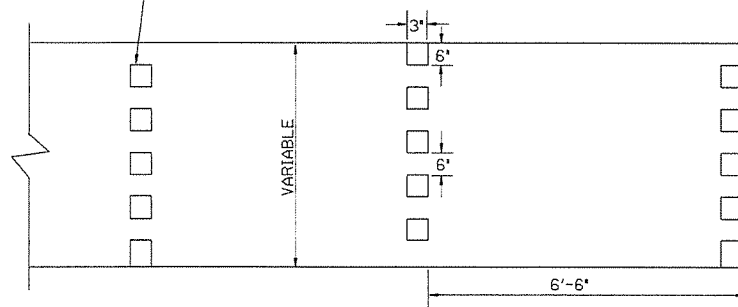


TOE WALL DETAIL FOR CONCRETE DITCH PAVING



NUMBER OF ELEMENTS PER ROW VARIES WITH WIDTH OF PAVING SPECIFIED

ENERGY DISSIPATORS TO BE USED FOR THE ENTIRE LENGTH OF DITCH WHEN SLOPE OF DITCH PAVING EXCEEDS 7%. THE DISSIPATORS WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR CONCRETE DITCH PAVING.



ENERGY DISSIPATORS
(NO SCALE)

GENERAL NOTES:

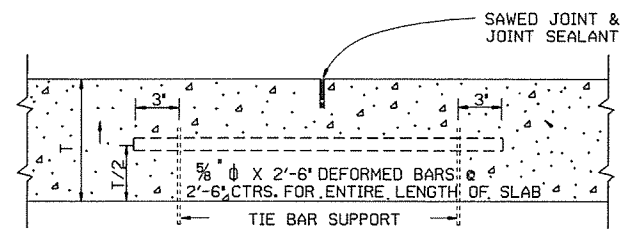
THE FULL WIDTH OF EACH SECTION SHALL BE POURED MONOLITHICALLY.

TOE WALLS TO BE CONSTRUCTED FULL WIDTH AT EACH END OF DITCH PAVING, AND POURED MONOLITHICALLY.

SOLID SOD ALONG DITCH PAVING TO BE PLACED WITHIN 14 DAYS OF DITCH PAVING CONSTRUCTION.

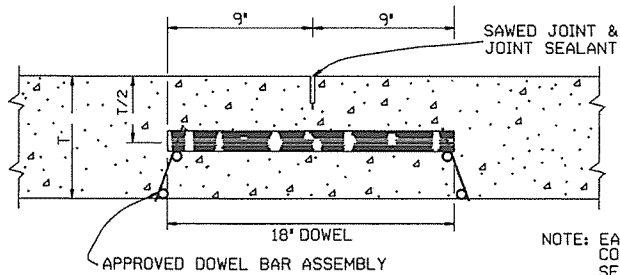
1' WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

ARKANSAS STATE HIGHWAY COMMISSION		
CONCRETE DITCH PAVING		
STANDARD DRAWING CDP-1		
11-17-10	ADDED GENERAL NOTE	
6-2-94	ADDED GENERAL NOTE ABOUT SOLID SODDING	
11-30-8	ELIMINATED MIN. ROWS OF ELEMENTS	111-30-89
7-15-88	REVISED DISSIPATOR NOTE	653-7-15-88
4-3-87	REVISED ENERGY DISSIPATOR	671-4-3-87
1-9-87	MODIFIED NOTE ON ENERGY DISS.	532-1-9-87
11-3-86	ADDED NOTE TO ENERGY DISS.	599-12-1-86
11-1-84	ENERGY DISSIPATOR DETAILS	508-11-1-84
11-1-84	ADDED	
11-1-84	EXCAVATION DETAILS ADDED	
10-2-72	TYPED A & B	
10-2-72	REVISED AND REDRAWN	508-10-2-72
DATE	REVISION	DATE FILM'D



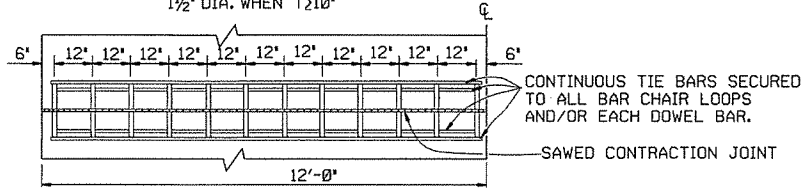
LONGITUDINAL JOINT

NOTE: THE TIE BAR SUPPORT SHOWN ABOVE MAY BE ELIMINATED IF OTHER APPROVED METHODS FOR PLACING AND SUPPORTING THE TIE BARS ARE PROVIDED.
TIE BARS SHALL BE 15' FROM TRANSVERSE JOINTS.



NOTE: EACH DOWEL TO BE COATED ACCORDING TO SECTION 502 OF THE STANDARD SPECIFICATIONS.

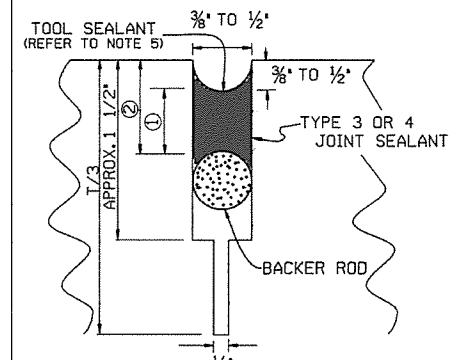
ROUND STEEL BAR DOWEL
1 1/4" DIA. WHEN T < 10"
1 1/2" DIA. WHEN T ≥ 10"



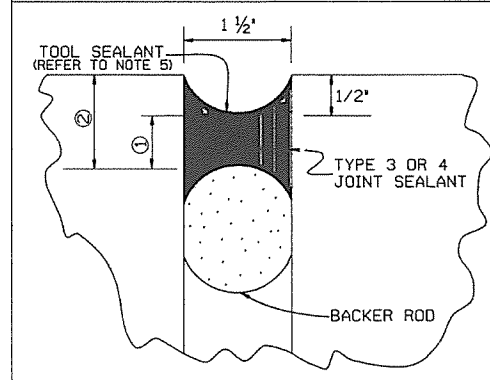
ONE-HALF 24' PAVEMENT
12 DOWELS
PLAN

NOTE: FOR 20' PAVEMENT USE 20 DOWELS @ 12' CTRS. WITH 6' SPACING FROM C.L. AND EDGE OF SLAB TO FIRST BAR. FOR 15' PAVEMENT USE 15 DOWELS @ 12' CTRS. WITH 6' SPACING FROM C.L. AND EDGE OF SLAB TO FIRST BAR. FOR 26' PAVEMENT USE 26 DOWELS @ 12' CTRS. WITH 6' SPACING FROM C.L. AND EDGE OF SLAB TO FIRST BAR. FOR PAVEMENT WIDTHS OTHER THAN THOSE SHOWN ABOVE, USE DOWELS AT 12' CTRS. WITH 6' MAX. SPACING FROM C.L. TO FIRST BAR. DISTANCE FROM EDGE OF SLAB TO FIRST BAR SHALL BE ADJUSTED TO MAINTAIN 12' DOWEL BAR SPACING

CONTRACTION JOINT DETAILS



DETAIL OF SAWED CONTRACTION JOINT



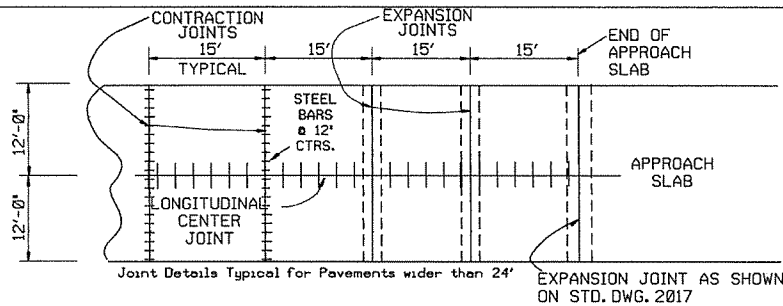
DETAIL OF EXPANSION JOINT

JOINT CONFIGURATION FOR
TYPE 3 OR 4 JOINT SEALANT

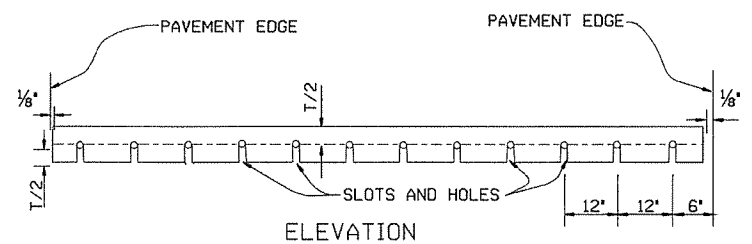
JOINT WIDTH	SEALANT THICKNESS ①	BACKER ROD DIAMETER	BACKER ROD PLACEMENT DEPTH ②
INCHES			
1/4	1/4	3/8	1/2
3/8	1/4	1/2	1/2
1/2	1/4	5/8	1/2
5/8	3/8	3/4	3/4
3/4	3/8	7/8	3/4
1 1/2	3/4	2	1 1/4

JOINT CONFIGURATION FOR
TYPE 5 JOINT SEALANT

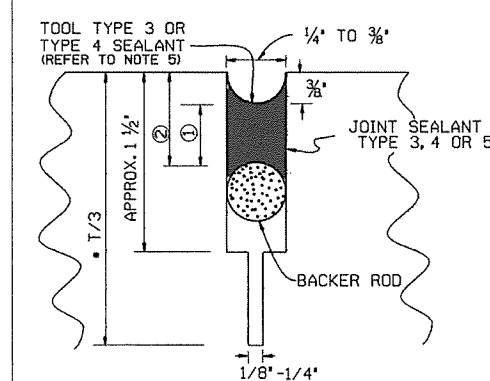
JOINT WIDTH	SEALANT THICKNESS ①	BACKER ROD DIAMETER	BACKER ROD PLACEMENT DEPTH ②
INCHES			
1/4	1/4	3/8	3/4
3/8	3/8	1/2	1



PLAN SHOWING EXPANSION JOINTS AT
BRIDGE APPROACH SLABS



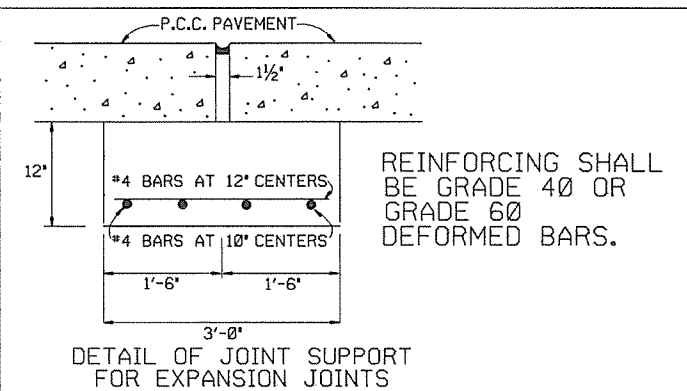
NOTE: ALL DOWEL BARS SHALL CONFORM TO THE DETAILS FOR CONTRACTION JOINTS.



*NOTE: T/3 SAW CUT NOT REQUIRED FOR LONGITUDINAL CONSTRUCTION JOINT.

DETAIL OF SAWED
LONGITUDINAL JOINT
AND LONGITUDINAL CONSTRUCTION JOINT

5-25-06	ADDED GENERAL NOTE 7	
10-9-03	REMOVED TIE BAR COATING & REVISED GENERAL NOTES	
11-16-01	ADDED TOOL SEALANT AND NOTE 5; REVISED NOTE 3	
4-26-96	REVISED CONTRACTION JOINT NOTE	
11- 3-94	ADDED NOTE RE: REINF. BARS	
4- 1-93	REVISED DOWEL BARS & GEN. NOTES	4- 1-93
10- 1-92	REVISED DOWEL SPACING	10- 1-92
8- 15-91	ADDED SPAC FOR CONTR JTS & DEL KEYWAY	
05-24-90	REVISED TIE BAR, DOWEL & JOINT SIZE	
01-25-90	ADDED EXPANSION JOINT	01-25-90
11-30-89	CHANGED T/4+1 TO T/3+1	11-30-89
03-23-89	ALTERED SAWED JOINT & ADDED NOTE 512-03-23-89	
07-15-88	REVISED AND REDRAWN	632-07-15-88
DATE	REVISION	DATE FILMED



REINFORCING SHALL BE GRADE 40 OR GRADE 60 DEFORMED BARS.

DETAIL OF JOINT SUPPORT
FOR EXPANSION JOINTS

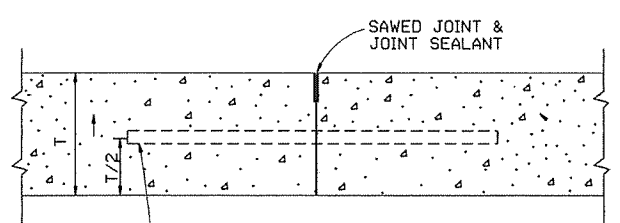
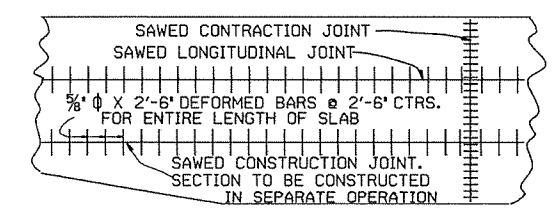
GENERAL NOTES

1. *T* DENOTES THICKNESS OF SLAB.
2. DOWEL BARS SHALL BE PLACED IN ACCORDANCE WITH THE DIMENSIONS SHOWN. A TOLERANCE OF PLUS OR MINUS ONE INCH WILL BE ALLOWED FOR THE VERTICAL AND LATERAL PLACEMENT AND A TOLERANCE OF PLUS OR MINUS 1/4" WILL BE ALLOWED FOR THE TILT AND SKEW. DOWEL BARS SHALL BE FIELD COATED FOR A MINIMUM DISTANCE OF 2' GREATER THAN HALF THE LENGTH OF THE BAR WITH AN APPROVED GREASE AS A BOND BREAKER JUST PRIOR TO PLACEMENT OF CONCRETE.
3. THE EXPANSION JOINT SUPPORT MAY BE CONSTRUCTED WITH CLASS 'A', 'S' OR PAVING CONCRETE. PAYMENT FOR THE JOINT SUPPORT SHALL BE FOR THE CONTRACT UNIT PRICE BID FOR THE CLASS OF CONCRETE SPECIFIED IN THE PLANS. PAYMENT FOR ALL OTHER WORK AND MATERIALS REQUIRED FOR THE CONSTRUCTION OF THE JOINT SUPPORT SHALL BE INCLUDED IN THE PRICE BID FOR THE ABOVE ITEMS.
4. CONTRACTION JOINTS SHALL BE CONSTRUCTED ON 15' CENTERS.
5. TOOLING NOT REQUIRED FOR SELF-LEVELING SILICONE.
6. UNLESS OTHERWISE SPECIFIED IN THE PLANS, CONCRETE SHOULDERS SHALL BE CONSTRUCTED ACCORDING TO THE DETAILS SHOWN HEREON. CONTRACTION JOINTS SHALL MATCH CONTRACTION JOINTS IN THE LANES.
7. TIE WIRES IN DOWEL BAR ASSEMBLIES SHALL NOT BE CUT PRIOR TO PLACEMENT OF PAVING CONCRETE.

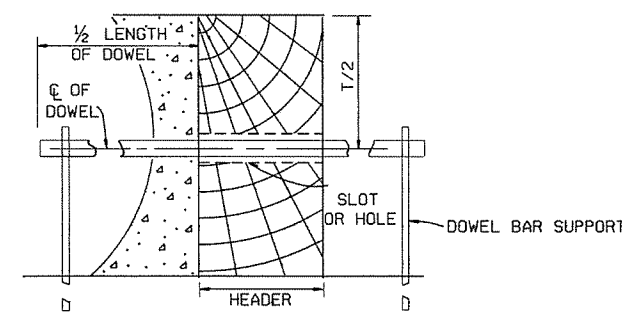
ARKANSAS STATE HIGHWAY COMMISSION

TRANSVERSE & LONGITUDINAL JOINTS
FOR CONCRETE PAVEMENT (NON-REINFORCED)

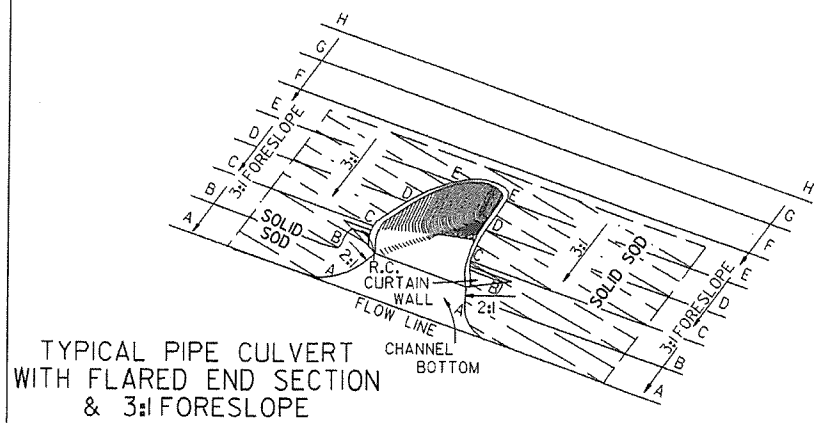
STANDARD DRAWING CPTJ - 6A



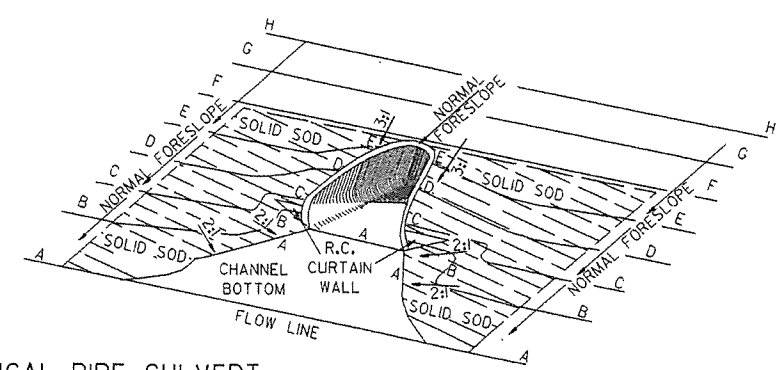
NOTE: TIE BARS SHALL BE 15' FROM TRANSVERSE JOINTS.
LONGITUDINAL CONSTRUCTION JOINT



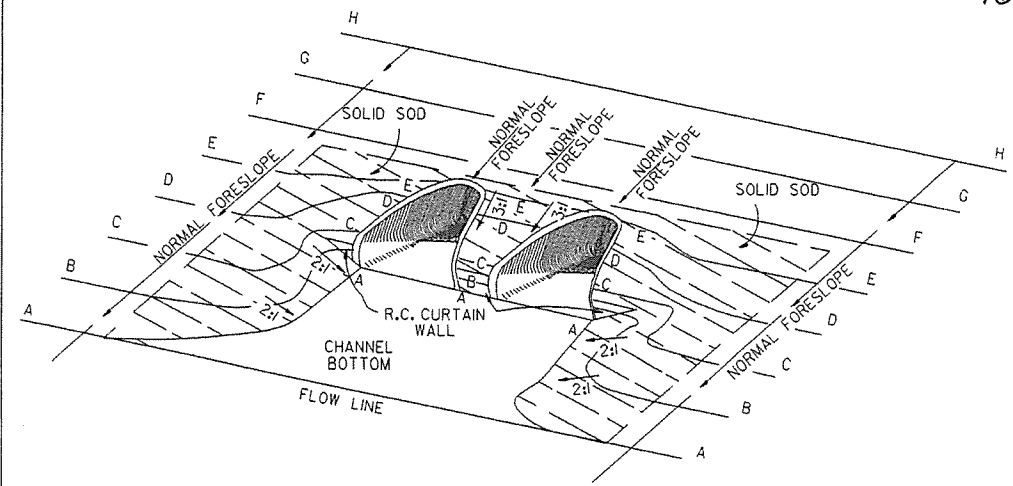
SECTION
TRANSVERSE
CONSTRUCTION JOINT



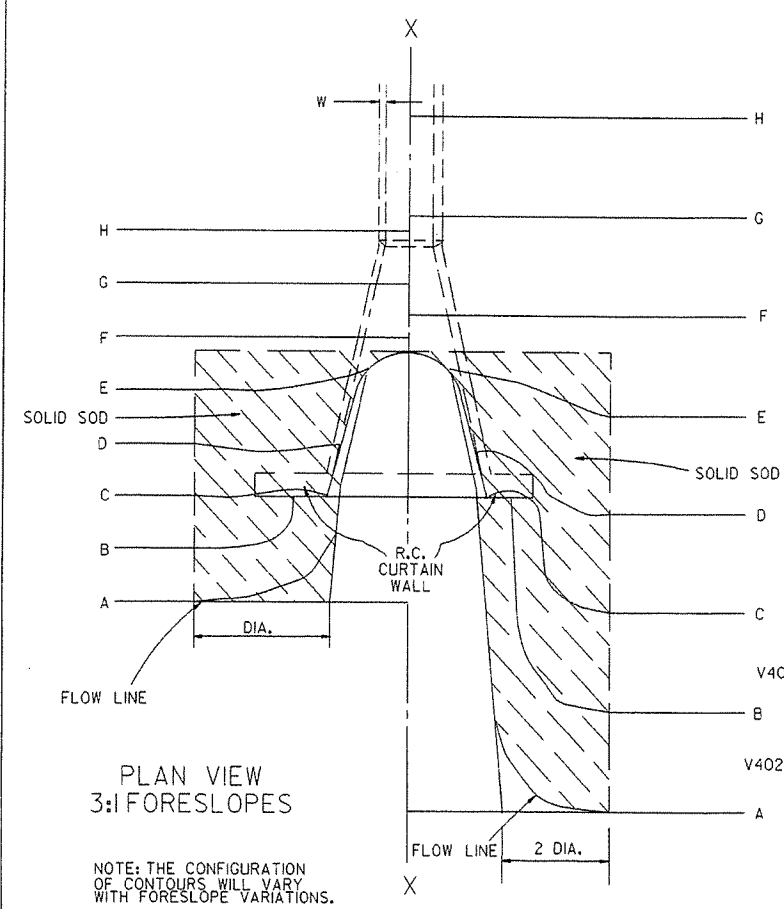
TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& 3:1 FORESLOPE



TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& FLATTENED ADJACENT SLOPES



TYPICAL MULTIPLE PIPE CULVERT
WITH FLARED END SECTIONS
& FLATTENED ADJACENT SLOPES



PLAN VIEW
3:1 FORESLOPES

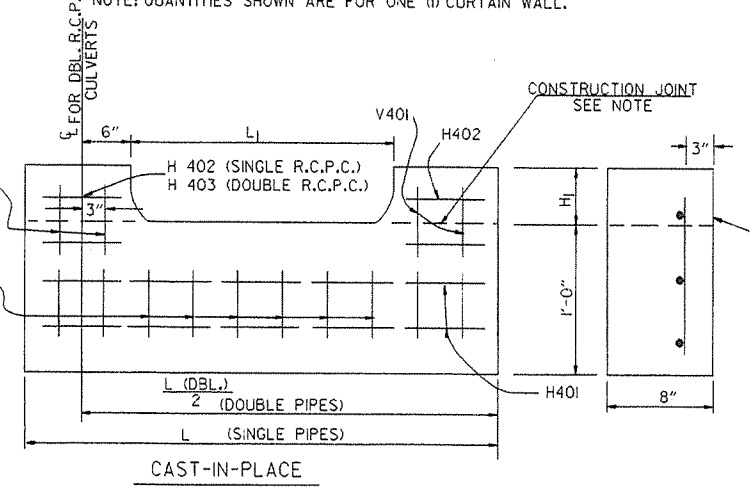
NOTE: THE CONFIGURATION
OF CONTOURS WILL VARY
WITH FORESLOPE VARIATIONS.

PLAN VIEW
FLATTENED FORESLOPES

R.C. CURTAIN WALL
DIMENSIONS & QUANTITIES

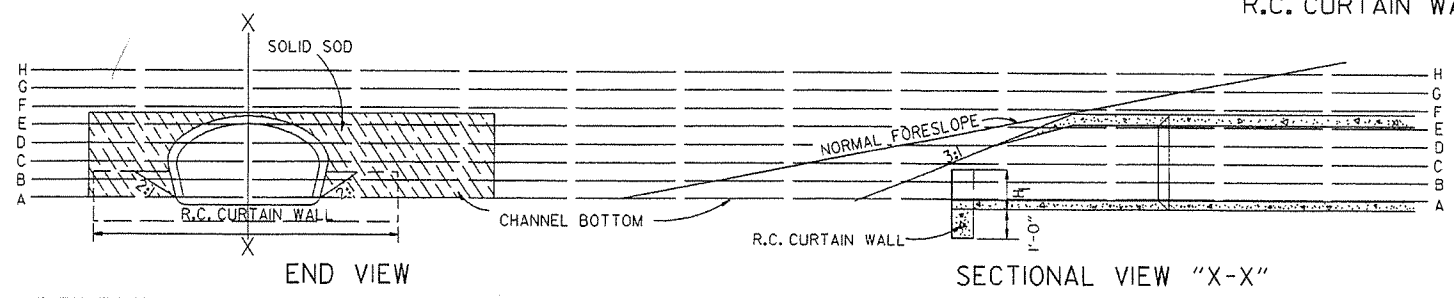
PIPE DIA.	H ₁	L ₁	L	L (DBL.) 2	SINGLE R.C.P.C.		DOUBLE R.C.P.C.	
					CONC.	REINF. STEEL	CONC.	REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	11 1/2"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0 1/2"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3 1/2"	5'-7"	11'-0"	9'-0"	0.45	39.0	0.67	59.0
36"	1'-7"	6'-8"	13'-0"	10'-6"	0.58	52.6	0.83	73.9
42"	2'-1 1/2"	7'-3"	15'-6"	12'-0"	0.82	77.1	1.10	100.7
48"	2'-5"	7'-10"	17'-0"	13'-0"	0.98	94.9	1.27	120.4
54"	2'-9 1/2"	8'-5"	18'-6"	14'-0"	1.16	115.8	1.47	143.7
60"	3'-4"	9'-0"	20'-6"	15'-6"	1.47	149.7	1.84	180.3
72"	4'-5"	10'-2"	25'-6"	18'-6"	2.31	232.6	2.73	271.0

NOTE: QUANTITIES SHOWN ARE FOR ONE (1) CURTAIN WALL.



NOTE: THE PORTION OF THE R.C. CURTAIN WALL BENEATH THE
FLARED END SECTION (LOWER 1'-0") SHALL BE PLACED
MONOLITHICALLY. THE FLARED END SECTION SHALL THEN
BE SET IN PLACE & THE REMAINING PORTIONS OF THE
R.C. CURTAIN WALL PLACED.

R.C. CURTAIN WALL DETAILS



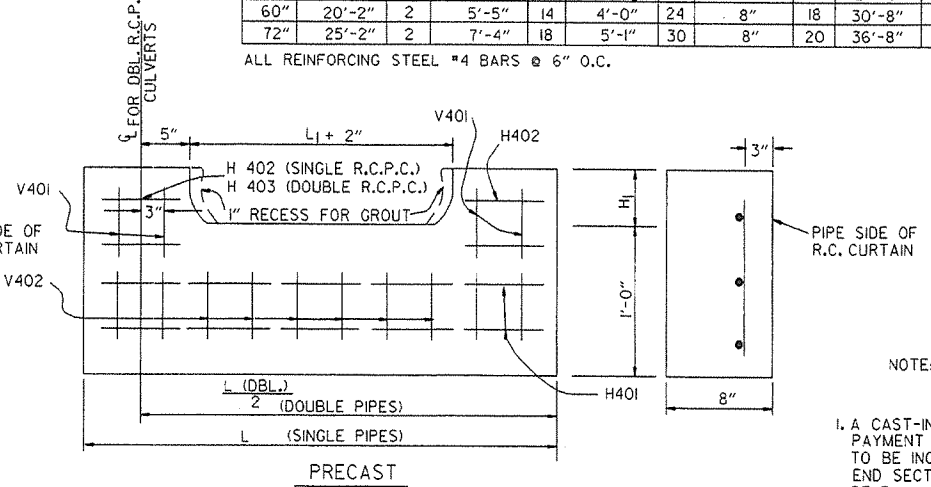
END VIEW

SECTIONAL VIEW "X-X"

REINFORCING STEEL SCHEDULE

PIPE DIA.	SINGLE R.C. PIPE CULVERT								DOUBLE R.C. PIPE CULVERT									
	H401		H402		V401		V402		H401		H402		H403		V401		V402	
	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.
18"	7'-8"	2	1'-11½"	4	1'-7½"	8	8"	8	12'-2"	2	1'-11½"	4	8"	2	1'-7½"	10	8"	14
24"	9'-2"	2	2'-2"	4	1'-8½"	10	8"	9	14'-8"	2	2'-2"	4	8"	2	1'-8½"	12	8"	18
30"	10'-8"	2	2'-4½"	4	1'-11½"	10	8"	12	17'-8"	2	2'-4½"	4	8"	2	1'-11½"	14	8"	22
36"	12'-8"	2	2'-10"	6	2'-3"	12	8"	14	20'-8"	2	2'-10"	6	8"	3	2'-3"	14	8"	28
42"	15'-2"	2	3'-9½"	8	2'-9½"	16	8"	15	23'-8"	2	3'-9½"	8	8"	4	2'-9½"	18	8"	30
48"	16'-8"	2	4'-3"	10	3'-1"	18	8"	16	25'-8"	2	4'-3"	10	8"	5	3'-1"	20	8"	32
54"	18'-2"	2	4'-8½"	12	3'-5½"	20	8"	17	27'-8"	2	4'-9"	12	8"	6	3'-5½"	22	8"	34
60"	20'-2"	2	5'-5"	14	4'-0"	24	8"	18	30'-8"	2	5'-5"	14	8"	7	4'-0"	26	8"	36
72"	25'-2"	2	7'-4"	18	5'-1"	30	8"	20	36'-8"	2	7'-4"	18	8"	9	5'-1"	33	8"	40

ALL REINFORCING STEEL #4 BARS @ 6" O.C.



NOTE: THE PRECAST CURTAIN WALL WILL BE SET AND BACKFILLED
WITH COMPACTED MATERIAL. THE FLARED END SECTION SHALL
THEN BE SET IN PLACE AND THE 1" RECESS FILLED WITH GROUT.
WHERE "L" EXCEEDS 11' THE CURTAIN WALL MAY BE CAST IN TWO (2)
OR MORE SECTIONS. THE METHOD OF JOINING THE SECTIONS FOR
INSTALLATION SHALL BE APPROVED BY THE ENGINEER.

SOLID SODDING

PIPE DIA.	SINGLE R.C.P.C.			DOUBLE R.C.P.C.		
	3:1	4:1	6:1	3:1	4:1	6:1
	SO. YDS.			SO. YDS.		
18"	5	7	12	6	8	13
24"	8	12	19	9	13	20
30"	13	18	29	14	19	30
36"	17	26	41	18	28	43
42"	23	35	55	25	37	57
48"	29	46	68	31	48	70
54"	35	57	85	37	59	87
60"	45	62	104	48	65	107
72"	64	92	156	67	95	159

NOTE: QUANTITIES SHOWN ABOVE ARE FOR ONE (1) END OF F.E.S.

- GENERAL NOTES
1. A CAST-IN-PLACE OR PRECAST CURTAIN WALL MAY BE USED. PAYMENT FOR THE CURTAIN WALL SHALL BE CONSIDERED TO BE INCLUDED IN THE UNIT PRICE BID EACH FOR FLARED END SECTIONS OF THE SEVERAL SIZES, WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS INCLUDING REINFORCING STEEL AND CONCRETE; FOR FORMS, MIXING AND PLACING; FOR EXCAVATION AND BACKFILL, AND FOR ALL LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.
 2. ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4".
 3. CONCRETE FOR CURTAIN WALL SHALL MEET THE REQUIREMENTS FOR CLASS A OR S CONCRETE AS PROVIDED IN SECTION 802 OF THE STANDARD SPECIFICATIONS OR FOR PAVING CONCRETE AS PROVIDED IN SECTION 501 OF THE STANDARD SPECIFICATIONS.
 4. WELDED WIRE MESH 3 x 3 W/10 x W/10 MAY BE USED IN LIEU OF REINFORCING BARS.

10-18-96	ADDED NOTE TO SOLID SODDING		10-18-96	ARKANSAS STATE HIGHWAY COMMISSION
10-12-95	CORRECTED SPELLING			
11-3-94	ADDED GENERAL NOTE NO. 4			
8-15-91	REV. CURTAIN WALL QUANT. STEEL SCH. & SOLID SOD QUANT.			
3-2-81	ALLOW PRECAST IN 2 OR MORE PIECES CHAMFER EDGES			
5-15-80	ADDED PRECAST WALL & GENERAL NOTES			
10-2-72	REVISED AND REDRAWN			
DATE	REVISION		FILMED	STANDARD DRAWING FES-1

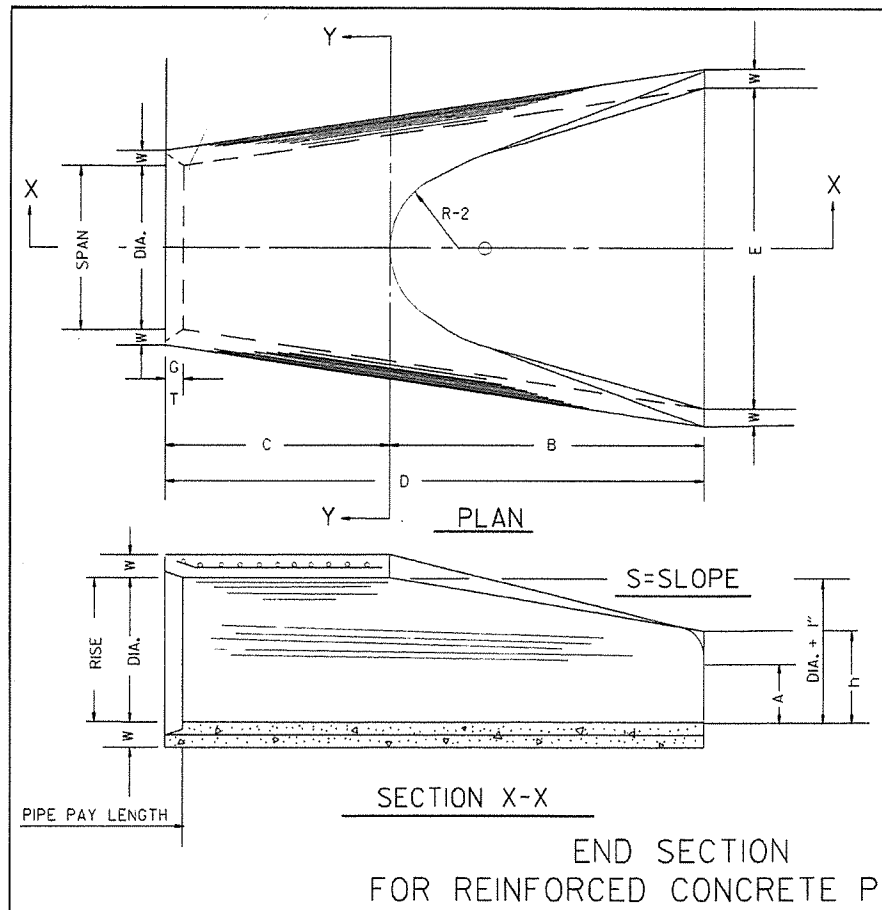
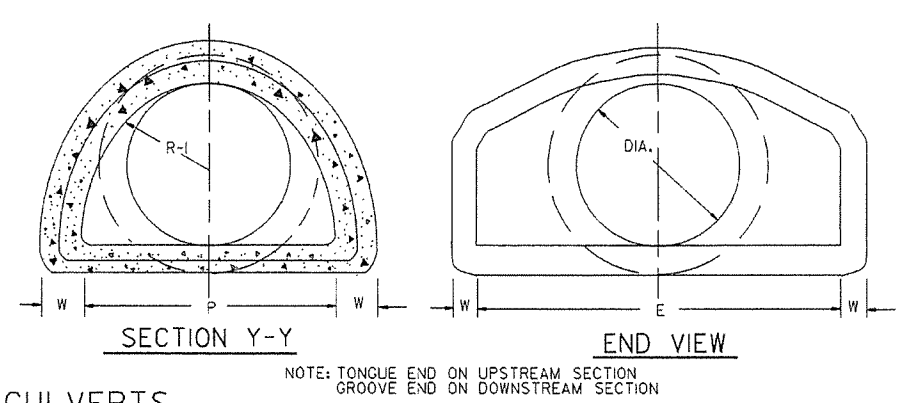


TABLE OF DIMENSIONS															
DIA.	WALL	A	B	C	D	E	S	DIA. + 1"	P	R-1	R-2	G-T	WT.	h	
18"	2 1/2"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3:1	19"	29"	15 1/2"	12"	2"	1000	1'-0 1/2"	
24"	3"	9 1/2"	3'-7 1/2"	2'-6"	6'-1 1/2"	4'-0"	3:1	25"	33 1/8"	16 1/8"	14"	2 1/2"	1600	1'-1 1/2"	
30"	3 1/2"	1'-0"	4'-6"	1'-7 3/4"	6'-1 3/4"	5'-0"	3:1	31"	37"	18 1/2"	15"	3 1/4"	1940	1'-4 5/8"	
36"	4"	1'-3"	5'-3"	2'-10 3/4"	8'-1 3/4"	6'-0"	3:1	37"	47 1/8"	24 5/8"	20"	3 1/2"	4100	1'-8"	
42"	4 1/2"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3:1	43"	53 7/8"	27 1/2"	22"	3 1/2"	5380	2'-2 1/2"	
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3:1	49"	56 1/2"	28 1/2"	22"	3 1/2"	6550	2'-6"	
54"	5 1/2"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3:1	55"	65 1/2"	33 1/8"	24"	4"	8750	2'-10 1/2"	
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3:1	61"	72 1/2"	36 1/8"	24"	4"	9270	3'-5"	
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3:1	73"	77 3/8"	38 5/8"	24"	5"	13250	4'-6"	

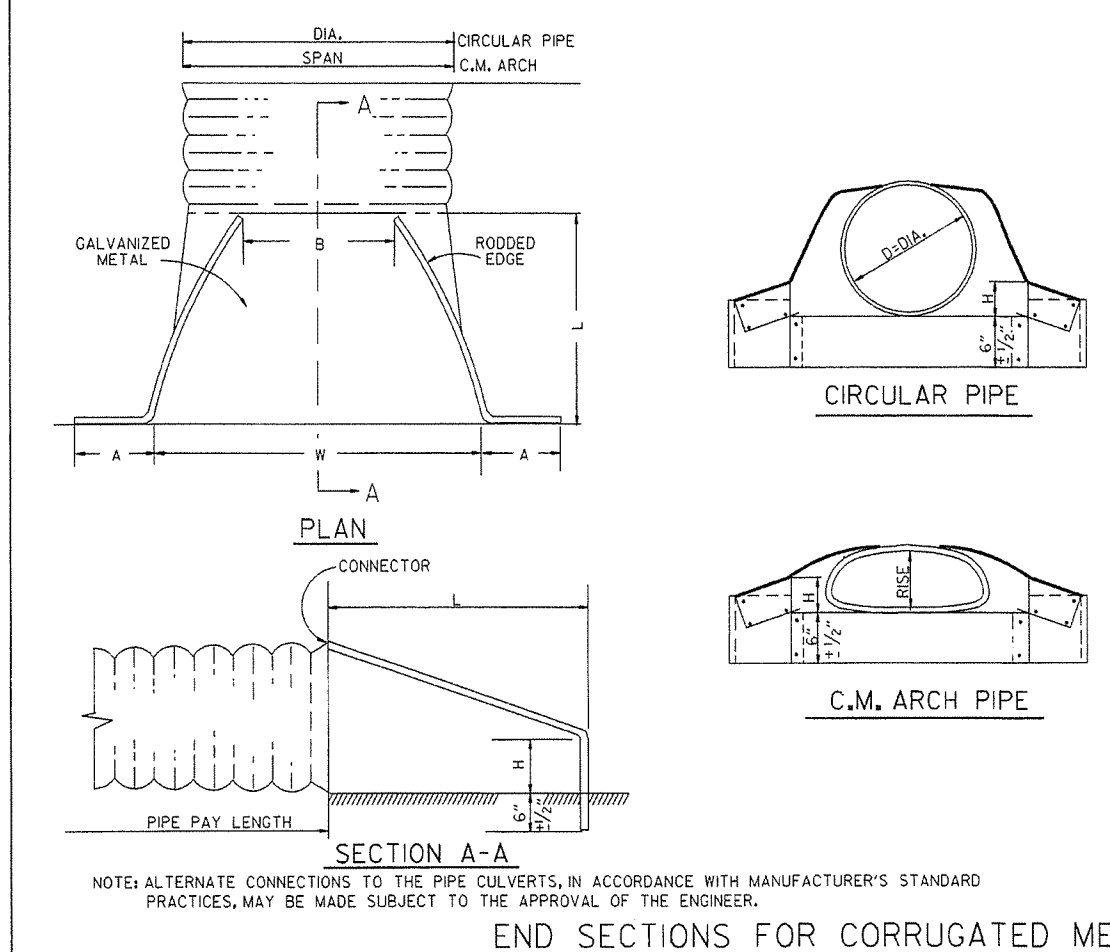
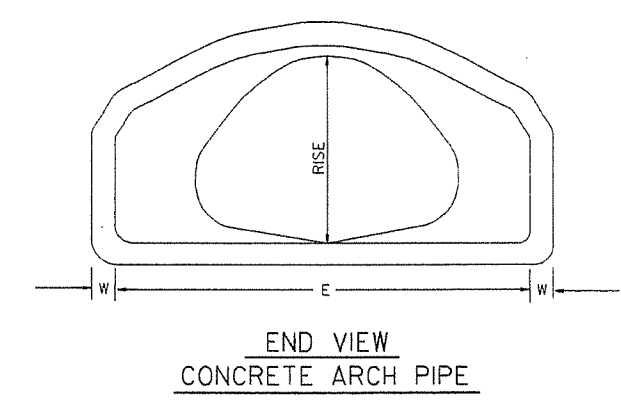


ARCH PIPE

EQUIV. DIA.	• SPAN		• RISE		W	A	B	C	D	E	P	R2	G-T	S
	AASHTO M 206	AHD NOMINAL	AASHTO M 206	AHD NOMINAL										
INCHES														
15	18	18	18	18	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1 1/2"	2 1/2:1
18	22	22	13 1/2	14	2 1/2"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32 1/8"	13"	2 1/2"	2 1/2:1
21	26	26	15 1/2	16	3"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34 1/8"	14"	2 1/2"	2 1/2:1
24	28 1/2	29	18	18	3 1/2"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36 1/8"	15"	2 1/2"	2 1/2:1
30	36 1/4	36	22 1/2	23	4"	10"	3'-1"	3'-0 1/2"	6'-1 1/2"	6'-0"	47 1/8"	20"	3"	2 1/2:1
36	43 3/4	44	26 3/8	27	4 1/2"	10 1/2"	4'-0"	2'-1 1/2"	6'-1 1/2"	6'-6"	54 1/8"	22"	3 1/2"	2 1/2:1
42	51 1/8	51	31 3/8	31	5"	11 1/2"	4'-7"	1'-10 1/4"	6'-5 1/4"	7'-2"	59 1/2"	23"	3 3/4"	2 1/2:1
48	58 1/2	59	36	36	5 1/2"	1'-3"	5'-3"	2'-10 3/4"	8'-1 3/4"	7'-10"	70 3/8"	24"	4 1/4"	2 1/2:1
54	65	65	40	40	6"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72 1/8"	24"	4 3/4"	2 1/4:1
60	73	73	45	45	6 1/2"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77 1/8"	24"	5"	2 1/4:1

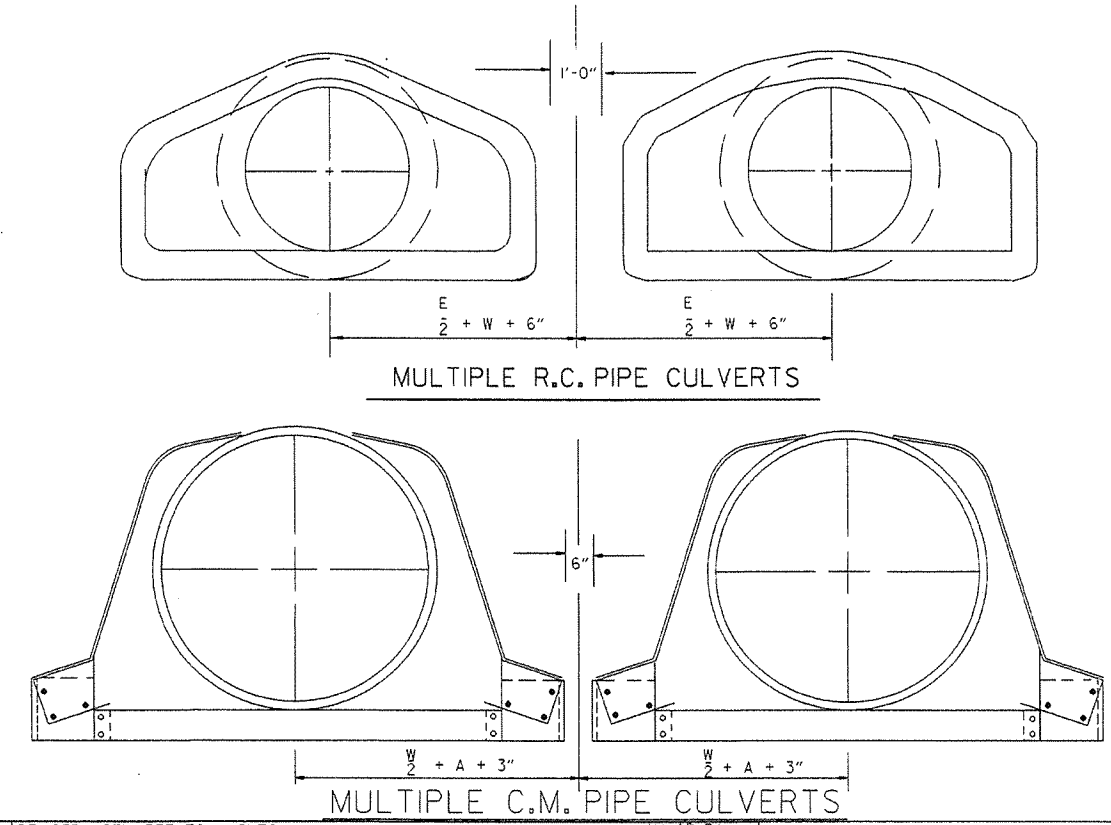
• THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.

* THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.



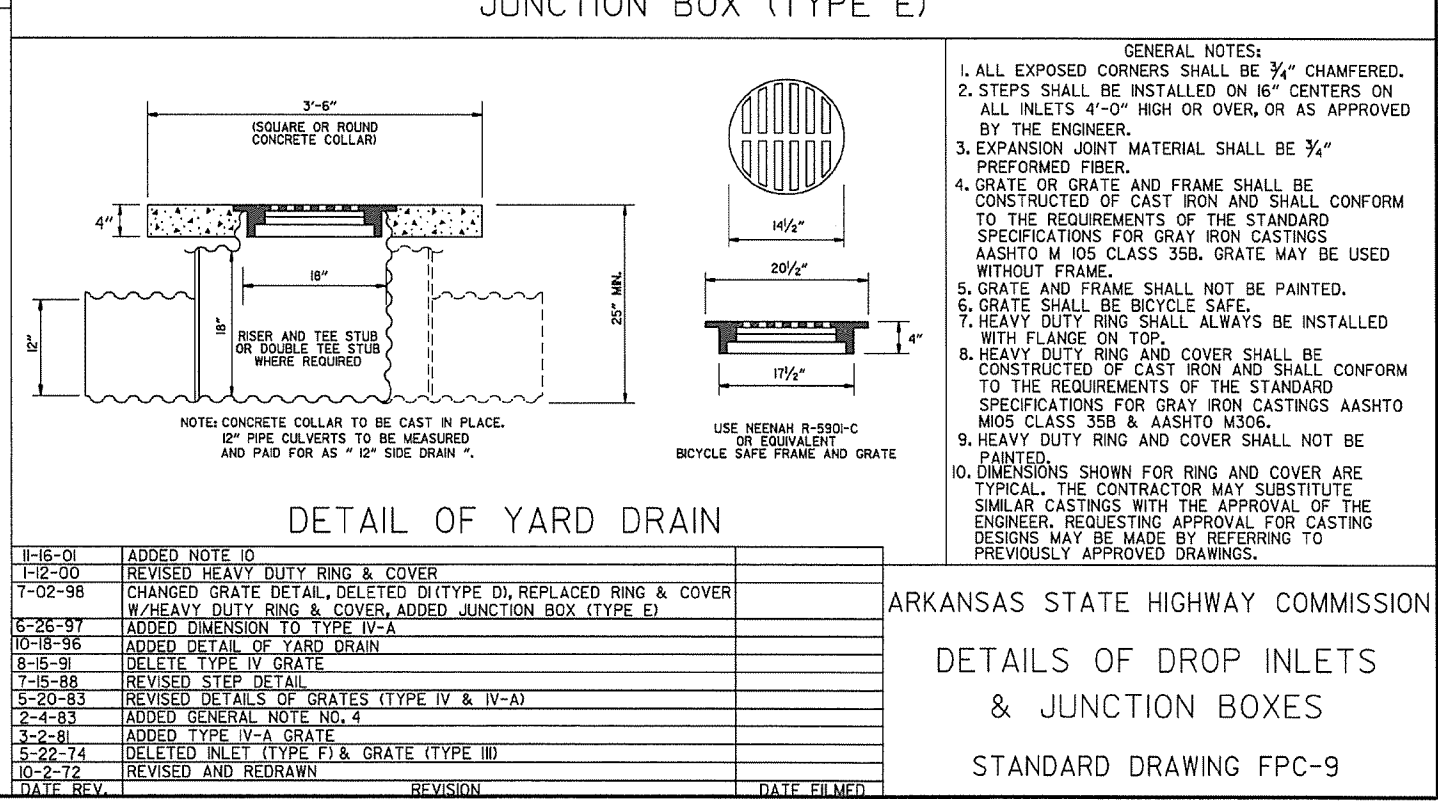
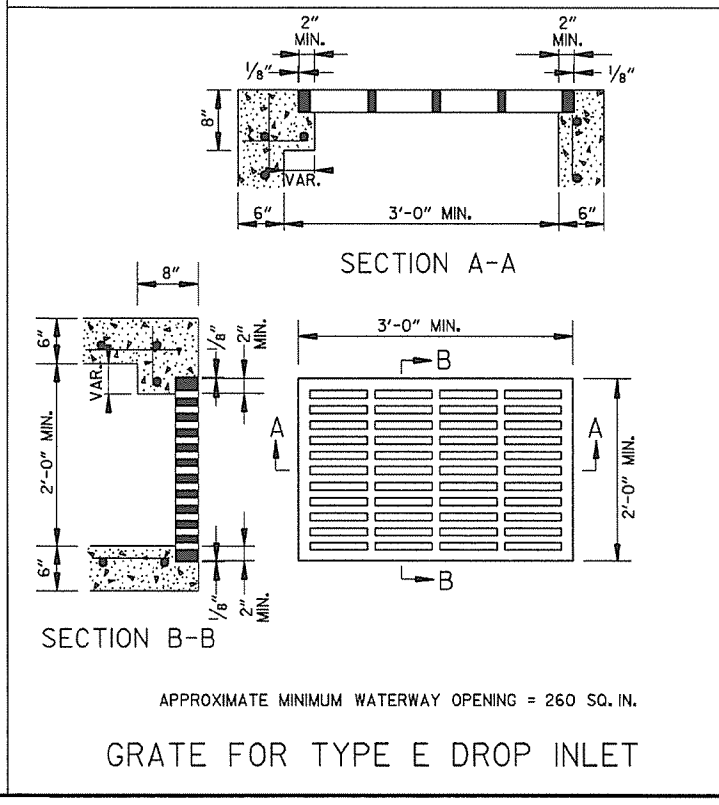
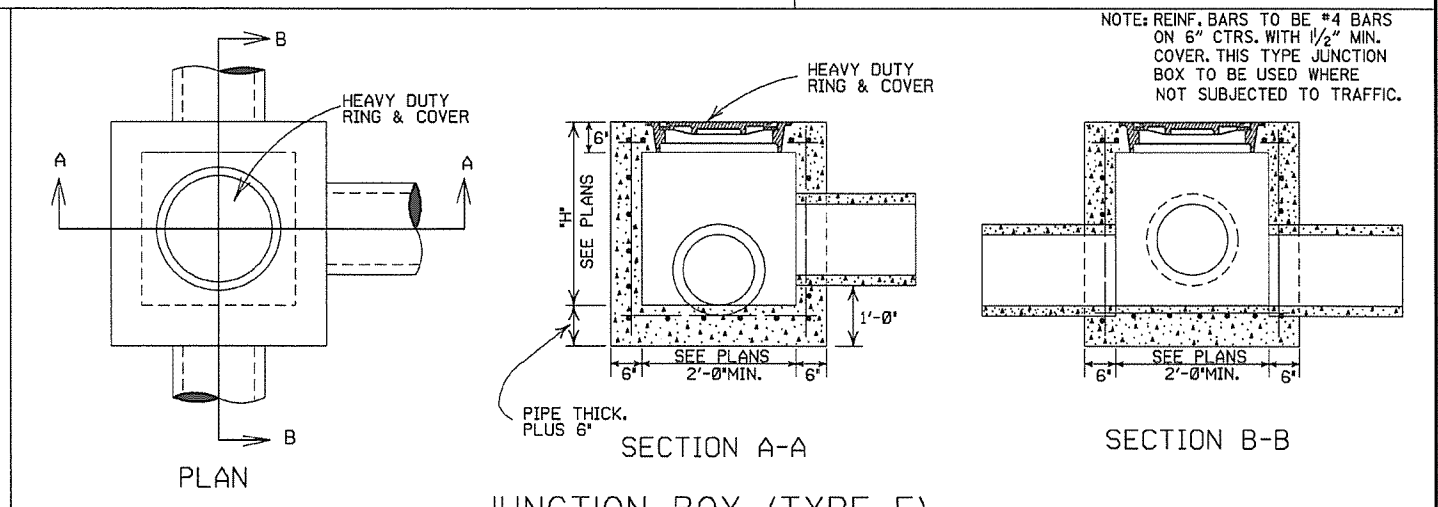
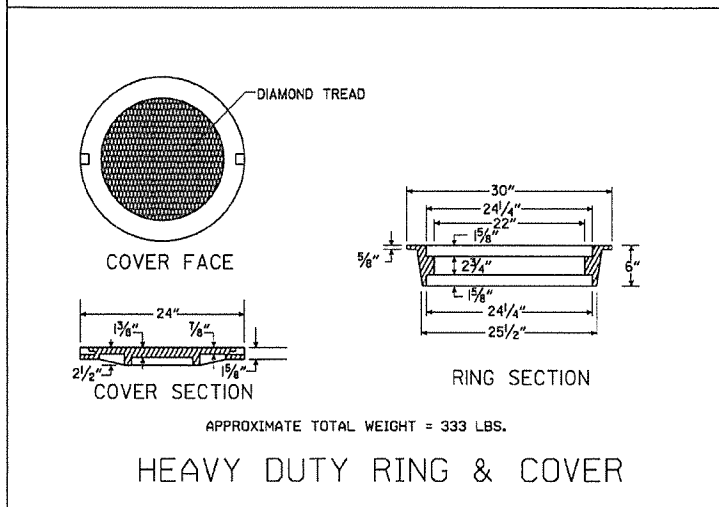
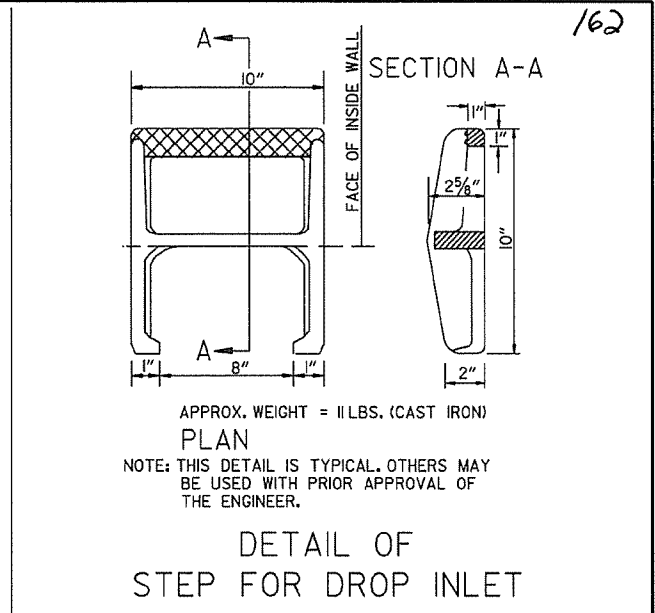
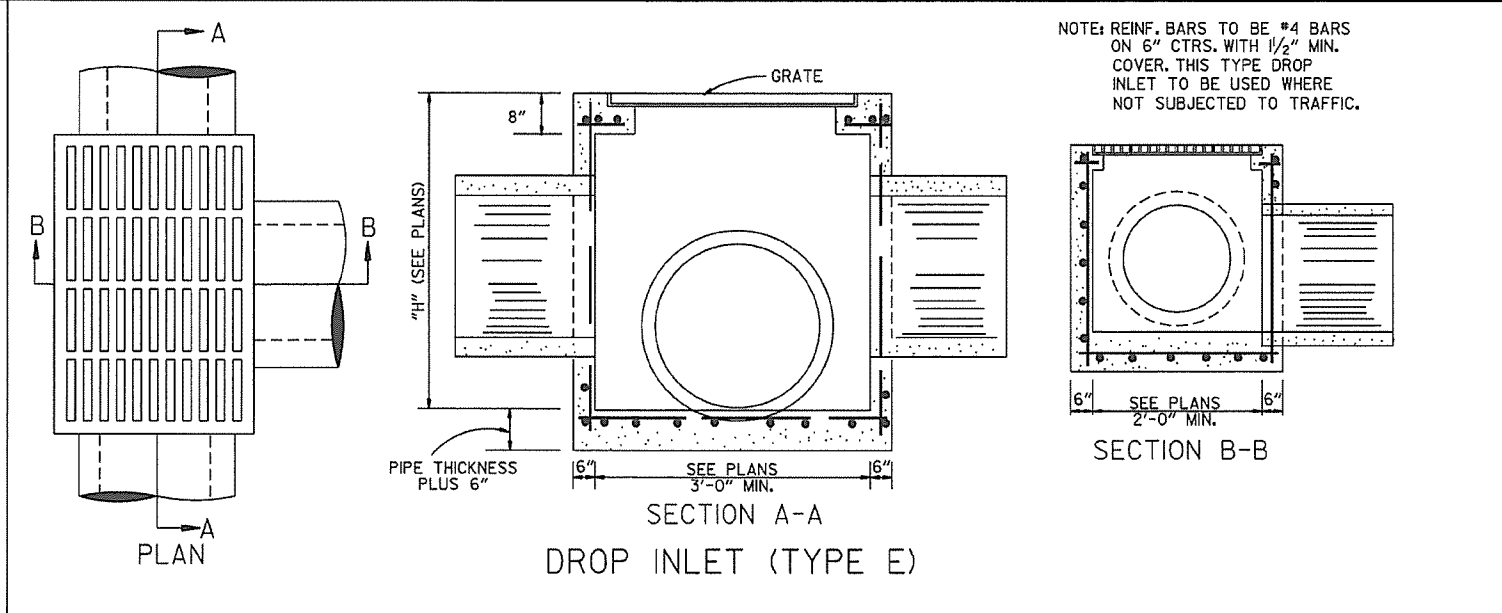
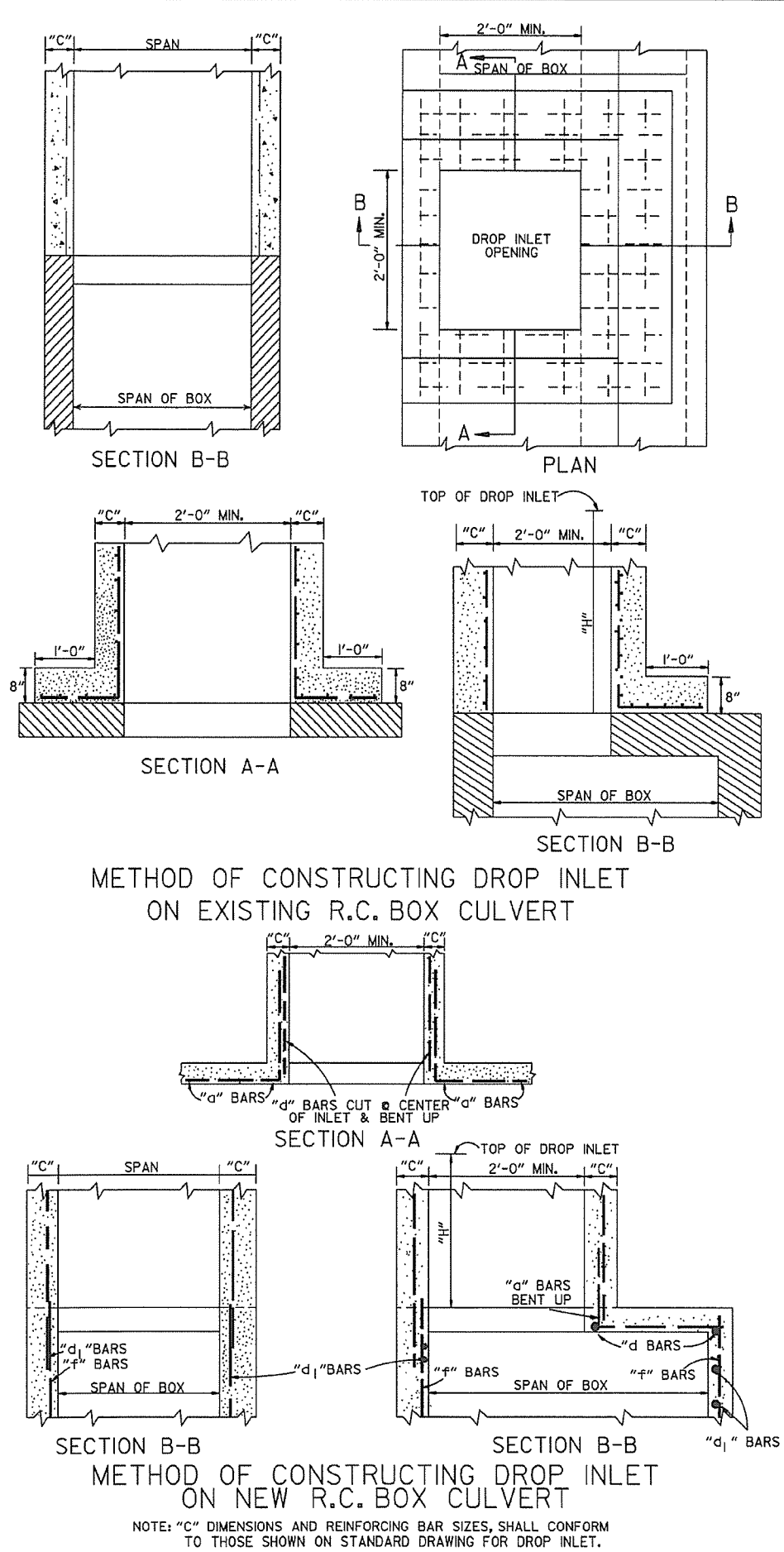
CIRCULAR PIPE									
D. DIA.	GAUGE	A	B. MAX.	H	L	W	S		
INCHES									
12	16	6	6	6	21	24	2 1/2:1		
15	16	7	8	6	26	30	2 1/2:1		
18	16	8	10	6	31	36	2 1/2:1		
21	16	9	12	6	36	42	2 1/2:1		
24	16	10	13	6	41	48	2 1/2:1		
30	14	12	16	8	51	60	2 1/2:1		
36	14	14	19	9	60	72	2 1/2:1		
42	12	16	22	11	69	84	2 1/2:1		
48	12	18	27	12	78	90	2 1/2:1		
54	12	18	30	12	84	102	2:1		
60	12	18	33	12	87	114	1 1/2:1		
66	12	18	36	12	87	120	1 1/2:1		
72	12	18	39	12	87	126	1 1/3:1		

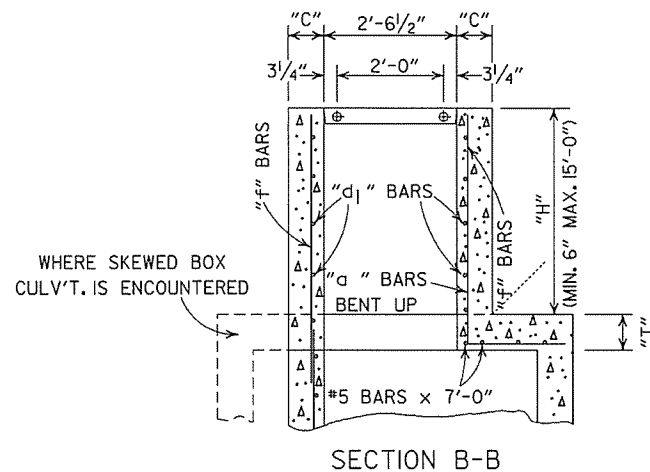
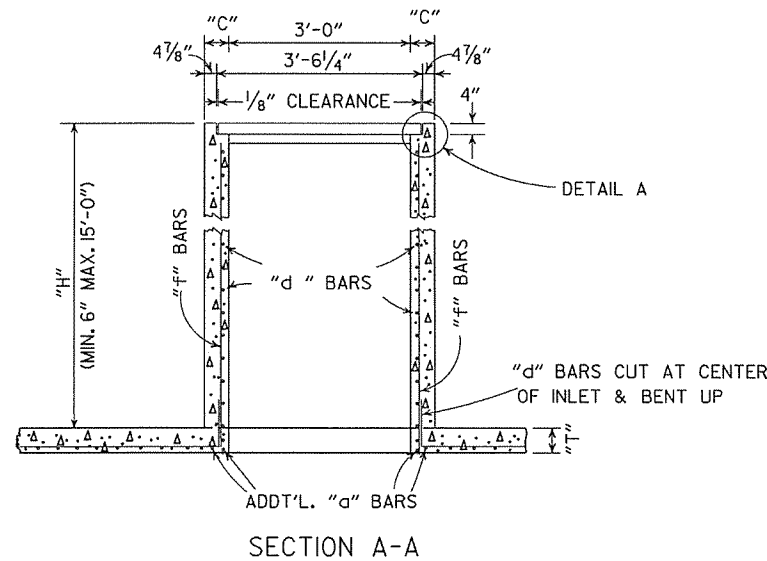
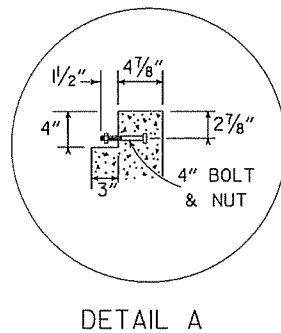
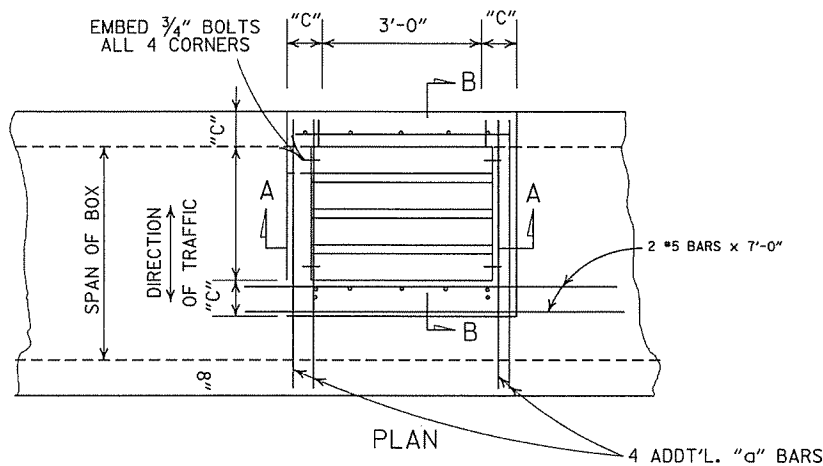
C.M. ARCH PIPE									
EQUIV. DIA.	SPAN	RISE	A	B. MAX.	H	L	W	S	GAUGE
INCHES									
15"	17	13	7	9	6	19	30	2 1/2:1	16
18"	21	15	7	10	6	23	36	2 1/2:1	16
21"	24	18	8	12	6	28	42	2 1/2:1	16
24"	28	20	9	14	6	32	48	2 1/2:1	16
30"	35	24	10	16	6	39	60	2 1/2:1	14
36"	42	29	12	18	8	46	75	2 1/2:1	14
42"	49	33	13	21	9	53	85	2 1/2:1	12
48"	57	38	18	26	12	63	90	2 1/2:1	12
54"	64	43	18	30	12	70	102	2 1/4:1	12
60"	71	47	18	33	12	77	114	2 1/4:1	12



10-18-96	REVISED ASTM REF. TO AASHTO	10-18-96	ARKANSAS STATE HIGHWAY COMMISSION
5-15-80	REVISED DISTANCE BETWEEN MULTIPLE R.C.P. F.E.S.	664-5-15-80	
7-14-78	C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES	752-7-14-78	
8-22-75	ADDED MULTIPLE PIPE CULVERTS	517-8-22-75	
12-5-74	REMOVED NOTE RE REINF. FOR R.C. F.E.S.	500-12-5-74	
5-24-73	CMP END SECTION, SHOW PIPE PAY LENGTH	627-5-24-73	
10-2-72	REVISED AND REDRAWN	760-10-2-72	
DATE	REVISION	FILED	

FLARED END SECTION
STANDARD DRAWING FES-2

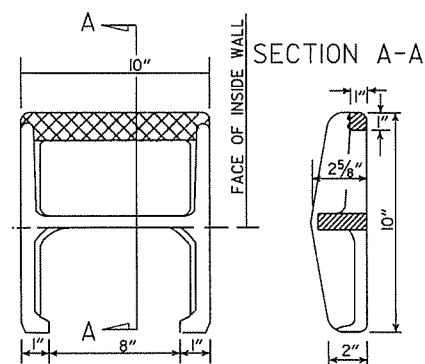
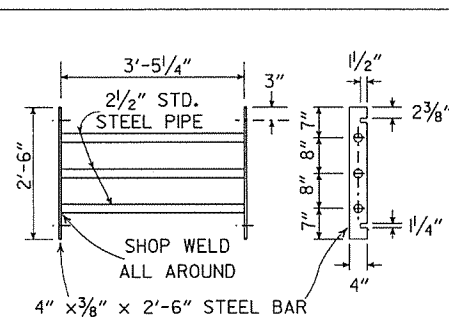




NOTE: ADD'L. REINF. STEEL TO BE INCLUDED IN UNIT PRICE BID PER TYPE "TM" D.I.

DIMENSIONS & REINF. BARS FOR D.I. TO BE THE SAME AS THOSE SHOWN ON APPLICABLE STD. BARREL DRAWING FOR R.C. BOX CULVERTS.

DROP INLET TYPE "TM" FOR REINFORCED CONC. BOX CULVERTS

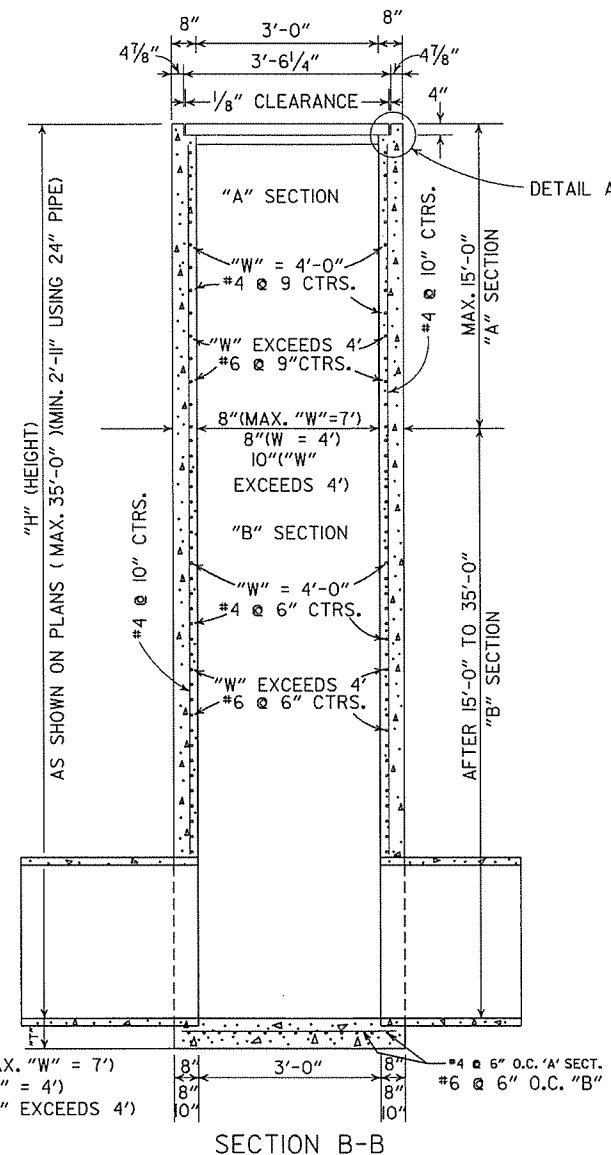


APPROX. WEIGHT = 11 LBS. (CAST IRON) PLAN

NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

DETAIL OF STEP FOR DROP INLET

- GENERAL NOTES:
1. STEEL PIPE FOR GRATES AND BOLTS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 807. BOLTS SHALL CONFORM TO ONE OF THE FOLLOWING: ASTM A193, GRADE B8 CLASS 10R 2, ASTM A307 OR AASHTO M 164.
 2. STEEL PIPE FOR GRATES SHALL BE "STANDARD WEIGHT" PIPE CONFORMING TO ASTM A53 NATIONAL STANDARD PIPE.
 3. BOLTS, NUTS, WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M 232 OR AASHTO M 298, CLASS 40 OR 50.
 4. ALL EXPOSED CORNERS TO HAVE 1/4" CHAMFER.
 5. ALL #4 AND #5 REINFORCING BARS TO HAVE 1/2" COVER. LARGER SIZES TO HAVE 2" COVER.
 6. THE COMPLETE PIPE GRATE SHALL BE PAINTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.



"A" SECT. (MAX. "W" = 7')
 "B" SECT. ("W" = 4')
 "C" SECT. ("W" EXCEEDS 4')

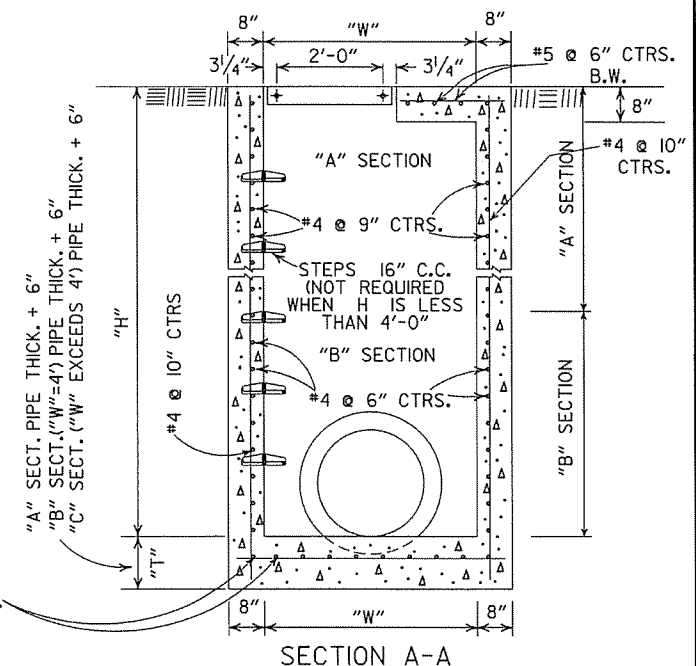
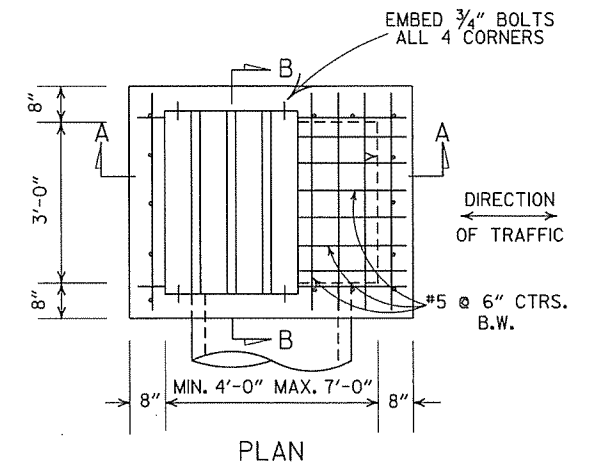
DROP INLET (TYPE RM)

8-22-02	ADDED & REVISED DIMENSION TO SECTION A-A	
1-12-00	CORRECTED DIMENSION ON SECTION B-B	
11-06-97	ADDED DIMENSION TO SECTION A-A	
10-18-96	REVISED ASTM REF. TO AASHTO AND ADDED NOTE TO TABLE OF "W" DIMENSIONS	
10-1-92	ADDED DIRECTION OF TRAFFIC	10-1-92
8-15-91	ADDED NOTE ABOUT PAINTING OF GRATE	8-15-91
11-30-89	ALTERED DETAIL A	11-30-89
7-15-88	REVISED STEP DETAIL, TM & RM D.I. & GRATE DETAIL	719-7-15-88
10-2-72	REVISED AND REDRAWN	542-10-2-72
REVISED		DATE FILMED

TABLE OF "W" DIMENSIONS

I.D. PIPE	SKEW OF CROSS DRAIN		
	STRAIGHT	30°	45°
24"	4'-0"	4'-0"	4'-0"
30"	4'-0"	4'-0"	4'-5"
36"	4'-0"	4'-3"	5'-3"
42"	4'-3"	4'-3"	6'-1"
48"	4'-10"	5'-7"	6'-11"

NOTE: DIMENSIONS SHOWN ABOVE ARE FOR PIPES INTERSECTING DROP INLET ON ONE SIDE ONLY. FOR SKEWED PIPES INTERSECTING BOTH SIDES OF DROP INLET, "W" WILL NEED TO BE INCREASED OR AXIS OF INTERSECTING PIPES WILL NEED TO BE SHIFTED.

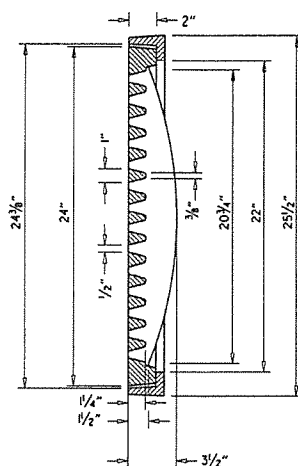
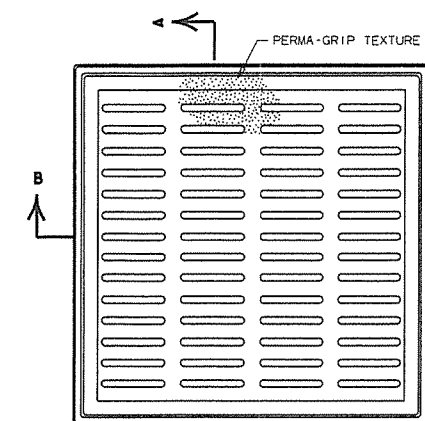


"A" SECT. PIPE THICK. + 6"
 "B" SECT. ("W" = 4') PIPE THICK. + 6"
 "C" SECT. ("W" EXCEEDS 4') PIPE THICK. + 6"

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS

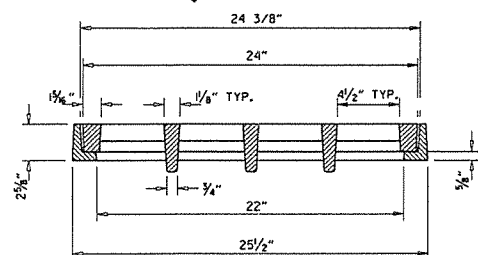
STANDARD DRAWING FPC-9D



SECTION A-A

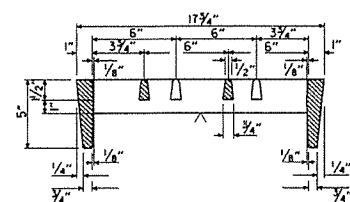
GENERAL NOTES (PEDESTRIAN GRATE & FRAME)

1. THE PEDESTRIAN GRATE SHALL BE ORIENTED IN THE TOP OF THE CAST IRON INLET AND THE OPENINGS ARE PERPENDICULAR TO THE PATH OF PEDESTRIAN TRAVEL.
2. THE PEDESTRIAN GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS OR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
3. THE GRATE AND FRAME SHALL NOT BE PAINTED.
4. THE GRATE AND FRAME SHALL BE INSTALLED IN THE DROP INLET IN THE ASSEMBLED POSITION.
5. THE APPROXIMATE WEIGHT OF THE GRATE AND FRAME SHALL BE 20 LBS.
6. THE MINIMUM WATERWAY OPENING SHALL BE 122 SQ. IN.

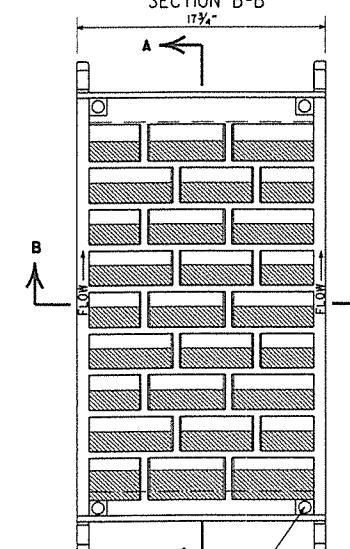
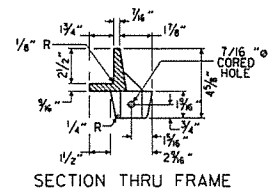


SECTION B-B

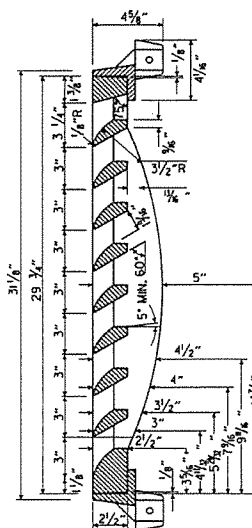
DETAILS OF PEDESTRIAN GRATE AND FRAME



SECTION B-B

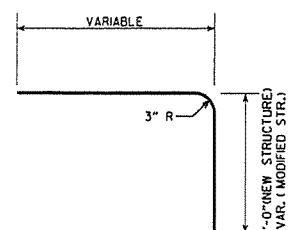


DETAILS OF RIBBED VANE GRATE AND FRAME

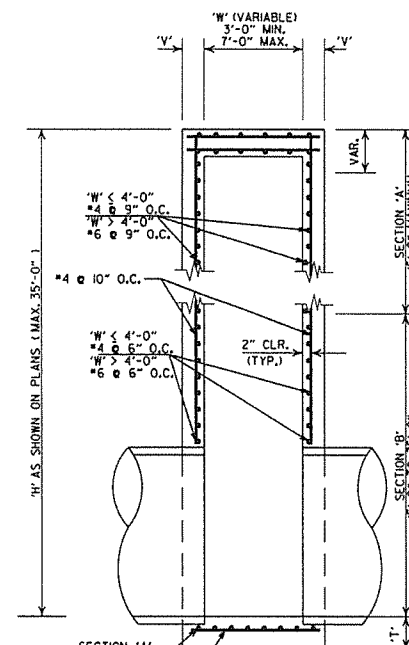


GENERAL NOTES (RIBBED VANE GRATE & FRAME)

1. RIBBED VANE GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
2. GRATE AND FRAME SHALL NOT BE PAINTED.
3. GRATE AND FRAME SHALL BE INSTALLED IN DROP INLET IN ASSEMBLED POSITION.
4. APPROXIMATE WEIGHT OF GRATE SHALL BE 170 LBS.

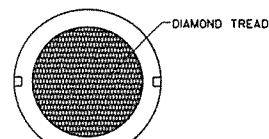


DETAIL OF BENT "b" BAR

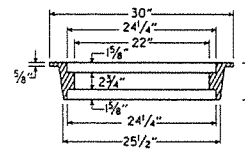
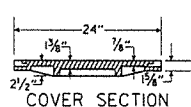


SECTION A-A

DETAILS OF DROP INLET
(TYPE ST)

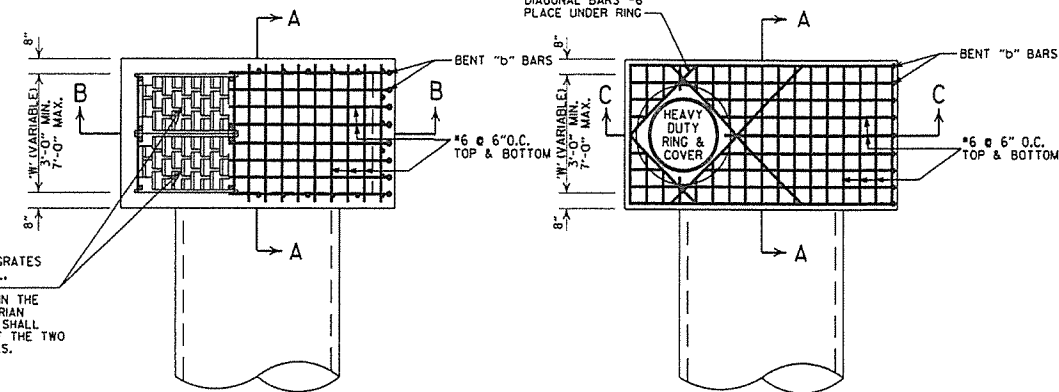


COVER FACE



RING SECTION
HEAVY DUTY
RING & COVER

APPROXIMATE TOTAL WEIGHT = 333 LBS



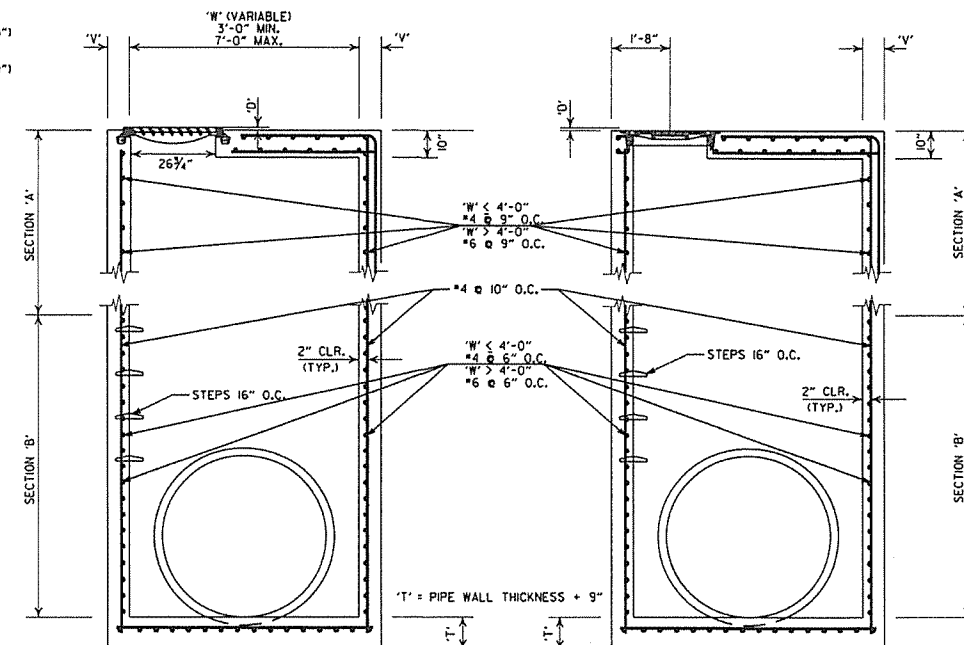
TWO RIBBED VANE GRATES
WITH FRAME NORMAL.

WHEN CALLED FOR IN THE
PLANS, ONE PEDESTRIAN
GRATE WITH FRAME SHALL
BE USED IN LIEU OF THE TWO
RIBBED VANE GRATES.

SECTION 'A'
'V' = 8"

SECTION 'B' (W≤4'-0")
'V' = 8"

SECTION 'B' (W>4'-0")
'V' = 10"



SECTION B-B

SECTION C-C

DETAILS OF JUNCTION BOX
(TYPE ST)

GENERAL NOTES (TYPE ST DROP INLET & JUNCTION BOX)

1. THE "D" DIMENSION SHALL MATCH THE FINAL LIFT OF AGWV SURFACE COURSE SHOWN IN THE PLANS WHEN ASPHALT PAVING SURROUNDS THE GRATE OR RING COVER, AND SHALL BE 0" AT OTHER INSTALLATIONS.
2. THE STEPS SHALL BE OMITTED WHERE "H" IS LESS THAN 4'-0".
3. ALL EXPOSED CORNERS ARE TO HAVE A 3/4" CHAMFER.

GENERAL NOTES (HEAVY DUTY RING & COVER):

1. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 145, CLASS 35B, & AASHTO M 306.
2. HEAVY DUTY RING AND COVER SHALL BE CAST IN ONE PIECE.
3. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
4. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER, REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

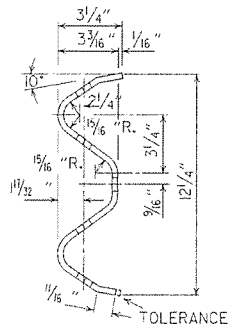
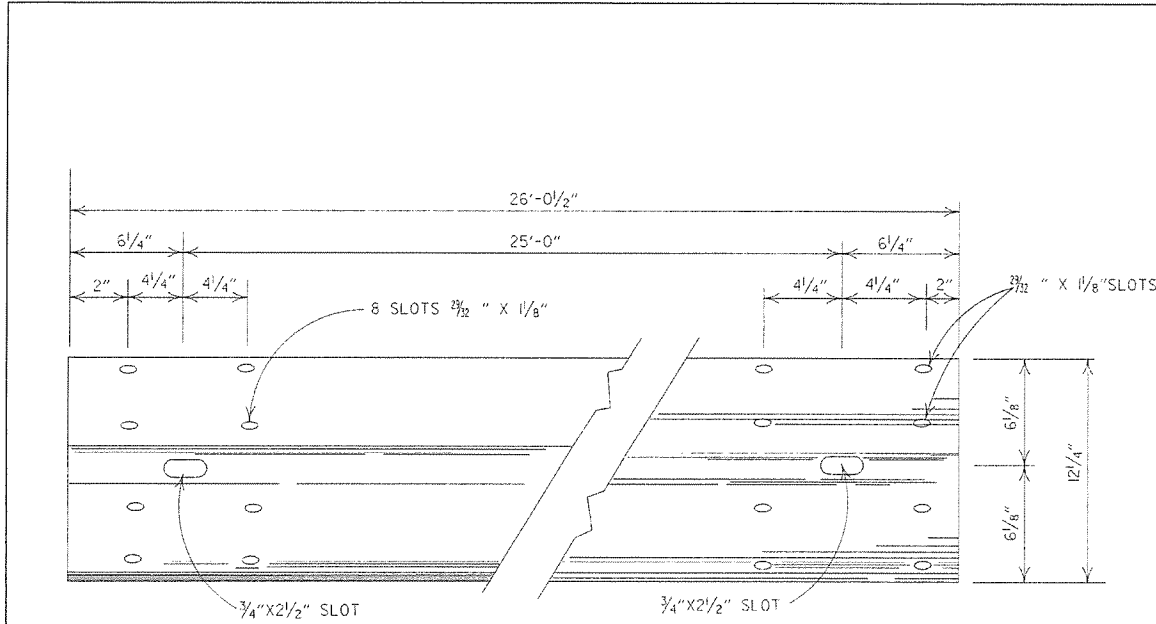
7-26-12		REMOVED NOTE 4, REVISED 'T', REVISED BOTTOM SLAB REBAR FOR SECTION 'A', SHOWED REBAR CLEARANCE IN SECTIONS
11-16-01		ADDED NOTE 4
1-12-00		REVISED HEAVY DUTY RING & COVER
5-13-99		ADDED PEDESTRIAN FRAME & GRATE
7-02-98		REMOVED NOTE 5, REV. DIMENSIONS, ADDED HEAVY DUTY RING & COVER ADDED AASHTO REF. REVISED GRATE
10-18-96		REVISED ASTM REF. TO AASHTO
10-1-92		REVISED & REISSUED
8-15-91	8-15-91	REVISED & REISSUED
DATE REVISED	DATE FILMED	DESCRIPTION

ARKANSAS STATE HIGHWAY COMMISSION
DETAILS OF DROP INLET &
JUNCTION BOX (TYPE ST)

DETAILS OF DROP INLET & JUNCTION BOX (TYPE ST)

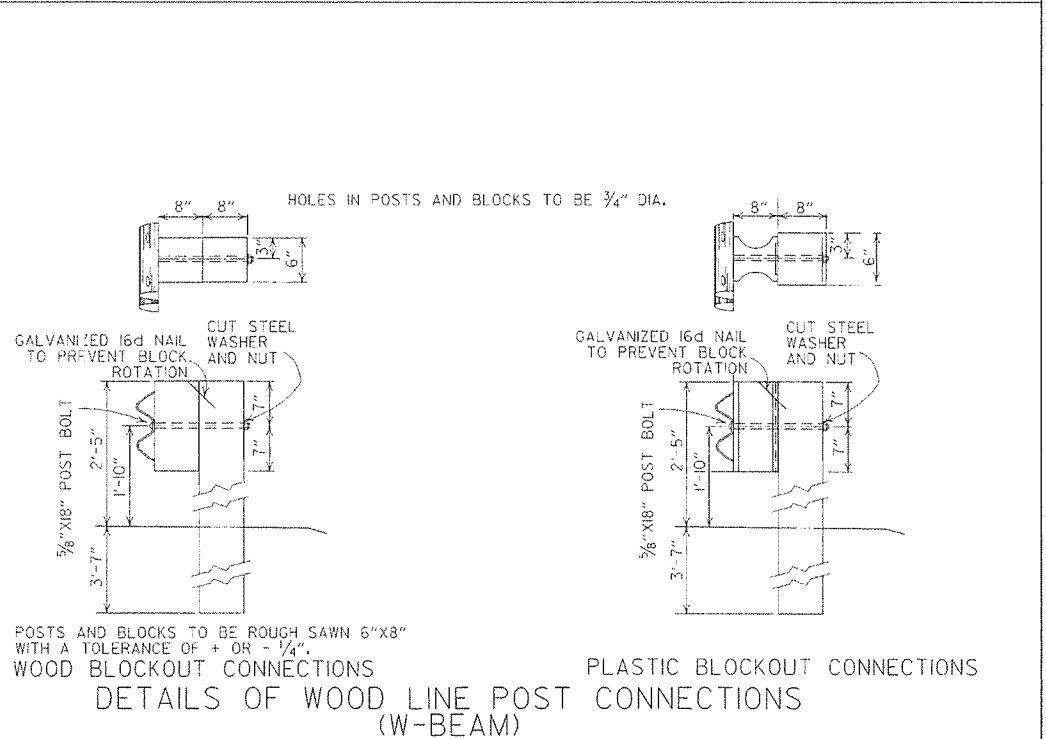
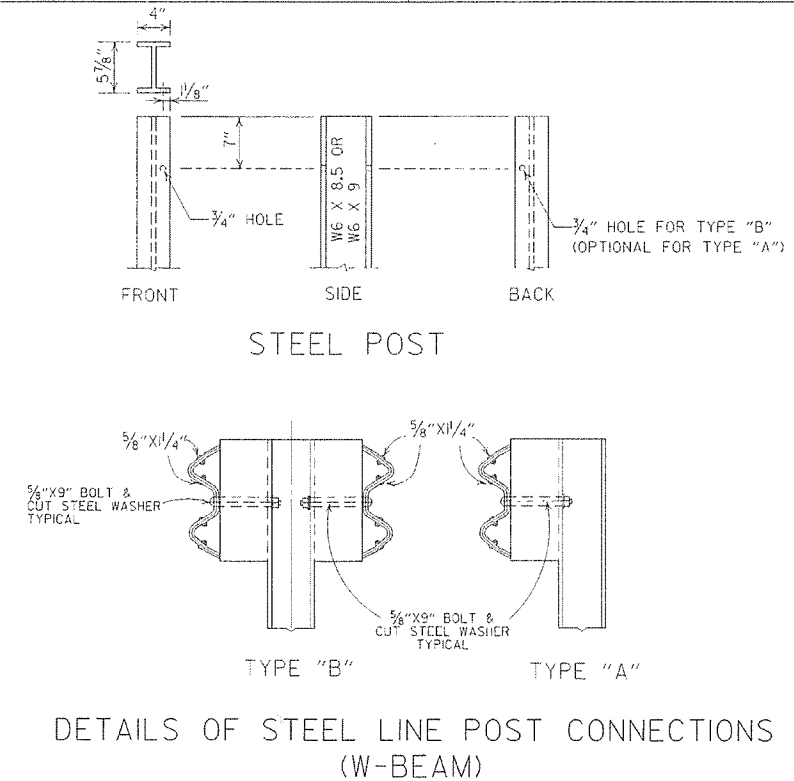
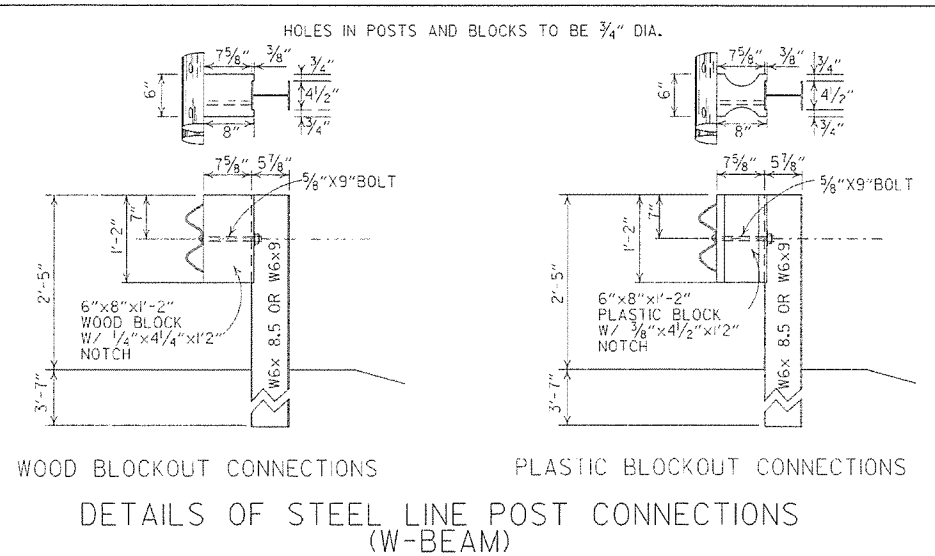
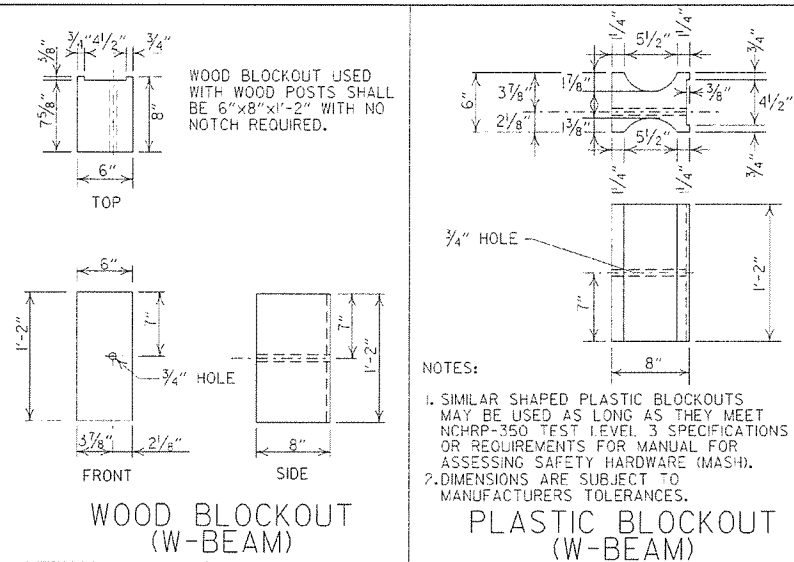
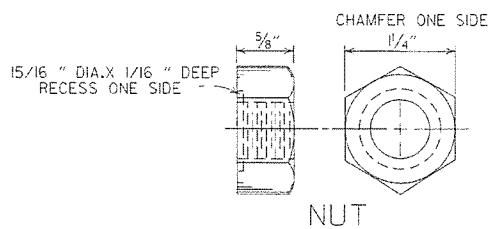
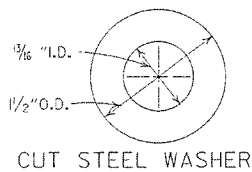
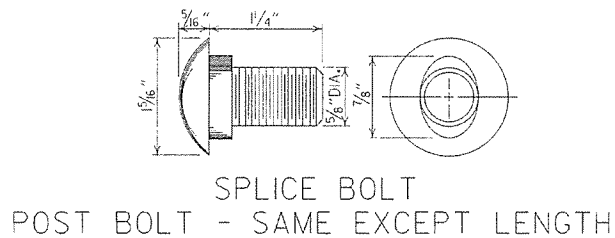
STANDARD DRAWING FPC-9S





DETAILS OF W-BEAM GUARD RAIL

RAIL SECTION OF CLOSELY SIMILAR DIMENSIONS AND COMPARABLE STRENGTH MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.



-GENERAL NOTES-

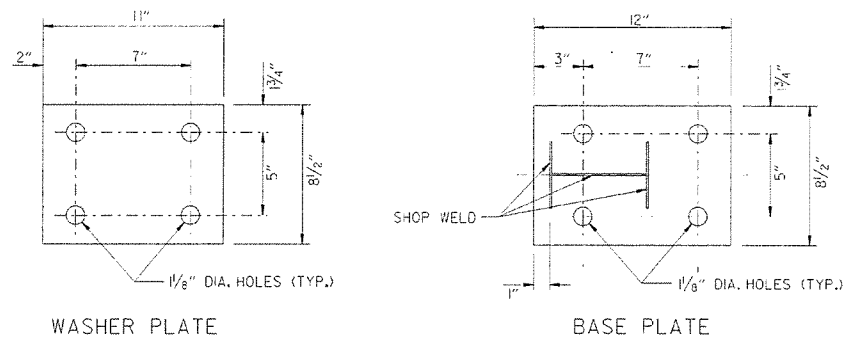
ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN 3/4" BEYOND IT.
WHERE W-BEAM GUARD RAIL CONTIGUES, THE INTERMEDIATE SECTIONS SHALL HAVE A POST SPACING OF 6'-3" UNLESS OTHERWISE NOTED.
W-BEAM GUARD RAIL REPRESENTING INTERMEDIATE SECTIONS WILL BE MEASURED ALONG THE ROADWAY FACE FROM CENTERLINE OF POST TO CENTERLINE OF POST.
USE W-BEAM GUARD RAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB. FOR EXTENSIONS OR MODIFICATION OF EXISTING GUARD RAIL, W-BEAM GUARD RAIL COMPONENTS OF THE SAME TYPE AS THOSE EXISTING SHALL BE USED.
ANY BACKFILLING UNDER OR AROUND POST SHALL BE DAMP SAND THOROUGHLY TAMPED IN PLACE.
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7f (400 f) OR NO. 1350 f SOUTHERN PINE.
CONTRACTOR SHALL HAVE THE OPTION OF USING WOOD BLOCKOUTS FOR W-BEAM GUARD RAIL OR PLASTIC BLOCKOUTS, AS LONG AS BLOCKOUT USED MEETS NCHRP-350 TEST LEVEL 3 SPECIFICATIONS OR REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) FOR W-BEAM GUARD RAIL.

7-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
10-16-09	ADDED REFERENCE TO MASH	
4-10-03	REVISED GENERAL NOTES	
8-22-02	REVISED DIMENSION ON WOOD & PLASTIC BLOCKOUT CONNECTIONS & ON STEEL POST	
11-16-01	REVISED WOOD BLOCKOUT & DETAILS OF WOOD LINE POST CONNECTIONS	
3-30-00	REMOVED GUARD RAIL AT BRIDGE ENDS	
1-2-00	ADDED PLASTIC BLOCKOUT	
8-12-98	REV. BLOCKOUTS TO WOOD, DELETED CONC. POST & REV. GENERAL NOTE, DELETED DET. OF GUARD RAIL REPLACE. BEHIND CURB & DET. OF POST PLACE IN SOLID ROCK & ADDED DETAILS OF STEEL LINE POST CONN. REMOVED BACK-UP PLATE, REVISED HOLES IN STEEL POLES	
4-3-97	REMOVED "LAP IN DIRECTION OF TRAFFIC" NOTE & PLACED ARROWS ON WASHERS	
10-18-96	REVISED WOOD POST NOTE	
6-2-94	ADDED AL T. STEEL POST SIZE	
8-5-93	REVISED STEEL POST SIZE	8-5-93
10-1-92	REDRAWN & REVISED	10-1-92
8-15-91	REVISED WASHER NOTE	8-15-91
8-2-90	REV. GEN. NOTE & DEPTH OF CONC. POST IN ROCK	8-2-90
7-15-88	REVISED SECTION 3 & GENERAL NOTES	
3-4-88	REV. ANCHOR POST, ELEV. NOTES & POST IN ROCK	780-3-4-88
10-30-87	REVISED WOOD LINE POST DETAIL	546-10-30-87
10-9-87	REDRAWN & REVISED	802-10-9-87
DATE	REVISION	DATE FILM

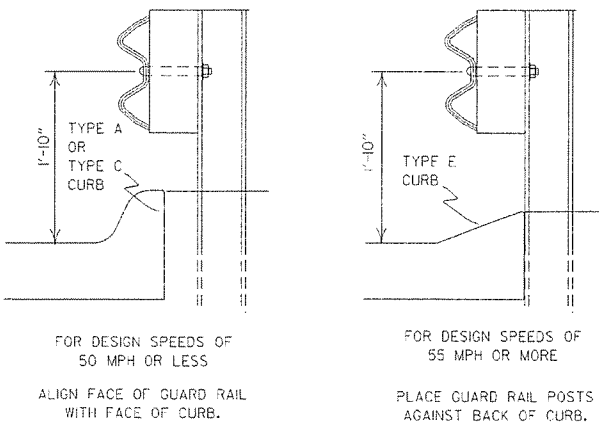
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-8

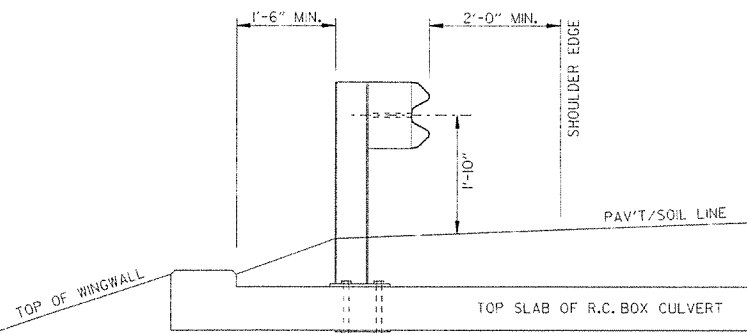


Note: Bolts, nuts, washers and plates shall be galvanized in accordance with Section 801 of the Standard Specifications.

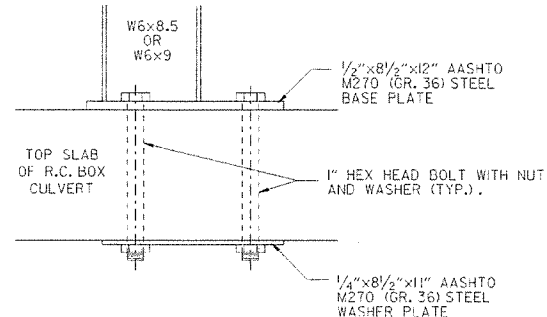


DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB (W-BEAM)

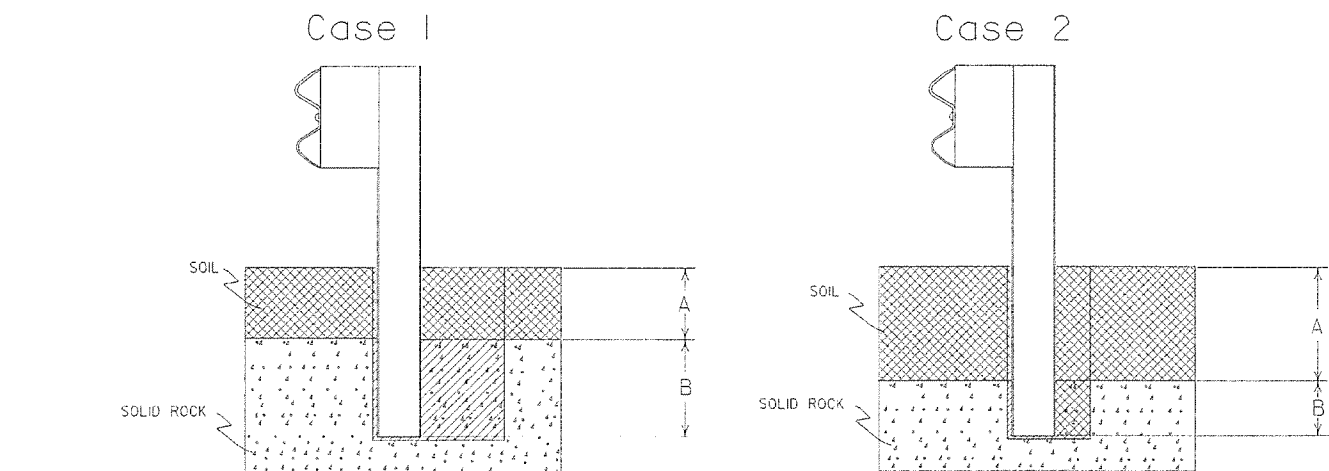
FOR DESIGN SPEEDS OF 50 MPH OR LESS ALL CURB FACES, AS SHOWN ON STD. DRWG. CG-1, MAY BE USED. FOR DESIGN SPEEDS OF 55 MPH OR MORE TYPE "E" CURB FACE SHALL BE USED.



SECTION A-A



DETAIL OF CONNECTION



Plan View Steel Posts

Either hole configuration acceptable

Plan View Wood Posts

Either hole configuration acceptable

Notes: For overlying soil depths (A) ranging from 0 to 18", the depth of required drilling (B) is equal to 24".

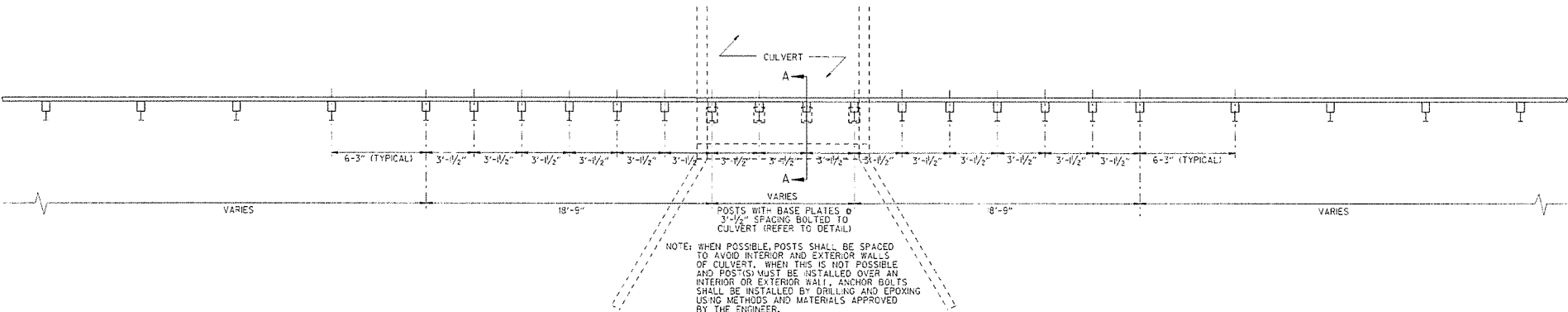
Zone A: Backfill according to Section 617.03(a).

Zone B: Backfill hole in 6" lifts with material meeting the requirements of Section 802.02(c) - Alternate gradation. Compact to 95% maximum dry density per ASTM D-698.

DETAIL OF POST PLACEMENT IN SOLID ROCK (W-BEAM)

Notes: For overlying soil depths (A) ranging from 18" to 44", the depth of required drilling (B) is equal to either 12" or 44" minus the depth of soil whichever is less.

Zone A & B: Backfill according to Section 617.03(a).



PLAN LAYOUT OF TYPE A GUARD RAIL AT LOW-FILL CULVERTS

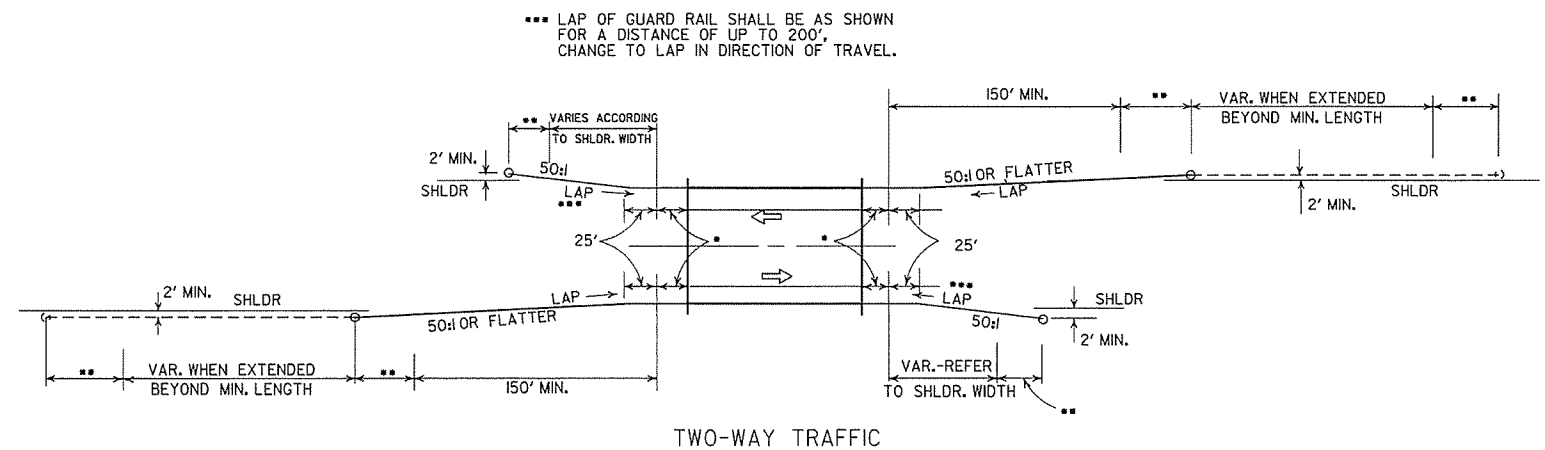
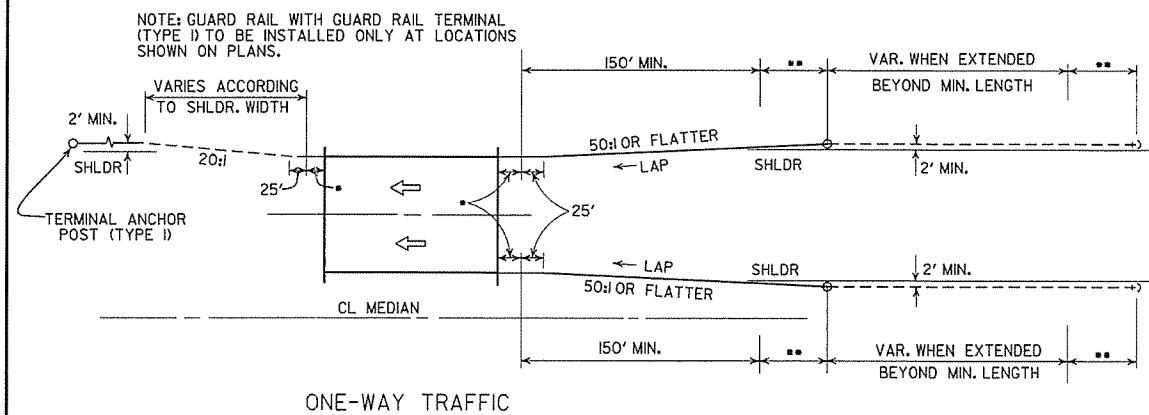
NOTE: THIS DETAIL IS TO BE USED ONLY WHEN THE COVER OVER THE CULVERT DOES NOT PERMIT FULL EMBEDMENT OF GUARD RAIL POSTS AS SHOWN ON STD. DRWG. GR-8.

7-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
4-12-07	REVISED DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB	
11-10-05	ADDED GUARD RAIL PLACEMENT BEHIND CURB; REVISED DETAIL OF CONNECTION	
11-18-04	REVISED POST PLACEMENT IN ROCK & CULVERT CONNECTION DETAILS. ADDED DETAIL FOR GUARD RAIL PLACEMENT AT LOW-FILL CULVERTS	
3-30-00	REMOVED CONCRETE INSERT ANCHOR	
8-12-98	CHANGED STEEL SPACER BLOCK TO WOOD BLOCKOUT. ADD. DET. OF GUARD RAIL CONNECTION TO R.C. BOX CULVERT. DELETED DET. OF STEEL LINE POST CONNECTION. ADDED DET. OF GUARD RAIL PLACEMENT BEHIND CURB & DET. OF POST PLACEMENT IN SOLID ROCK	
4-3-96	PLACED ARROWS AT CUT STEEL WASHERS	4-3-96
10-18-96	REV. ASTM REF. TO AASHTO	
11-22-95	ADDED OPTIONAL HOLES	
6-2-94	REVISED ALTERNATE POST SIZE	
8-5-93	REVISED STEEL POST SIZE	
10-1-92	REDRAWN & REVISED	10-1-92
8-2-90	DEL. WASHER ON ANCHOR ASSEMBLY	8-2-90
7-15-88	CONFORMED TO 1988 SPECS	
3-4-88	REVISED ANCHOR NOTE	
10-30-87	REVISED ANCHOR ASSEMBLY	712-10-30-87
10-30-87	REVISED PLACEMENT BEHIND CURB	547-10-30-87
10-9-87	REDRAWN & REVISED	803-10-9-87
DATE	REVISION	DATE FILED

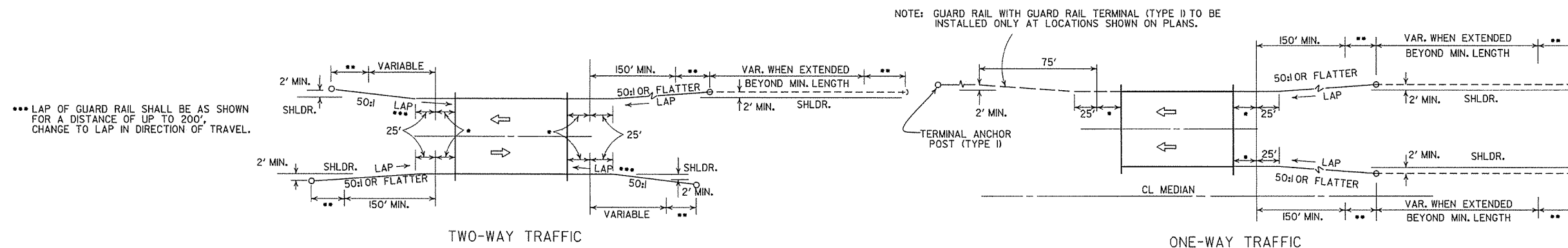
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

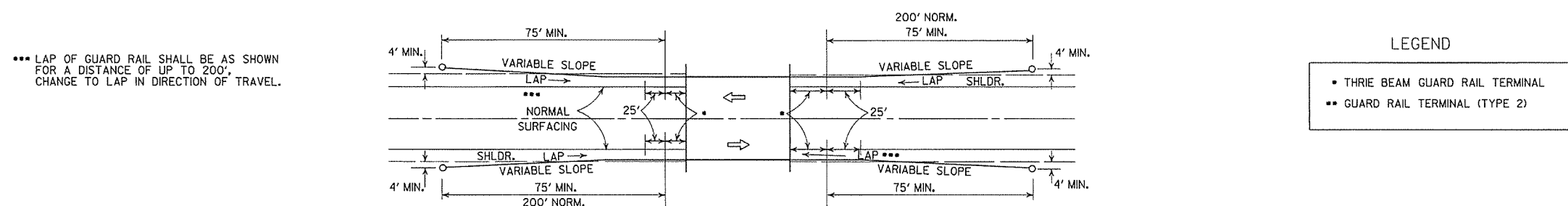
STANDARD DRAWING GR-8A



METHODS OF INSTALLATION OF GUARD RAIL AT LESS THAN FULL SHOULDER WIDTH BRIDGES USING GUARD RAIL TERMINAL (TYPE 2)

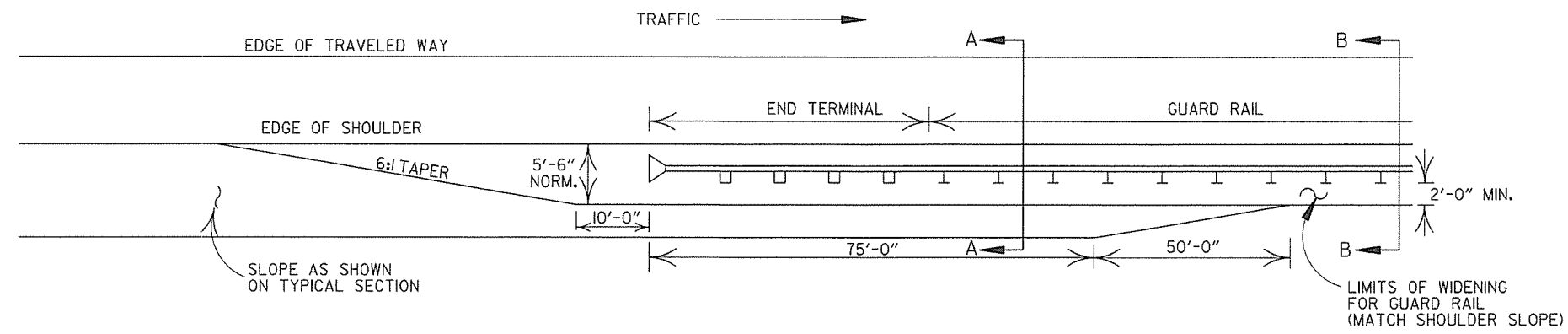


METHOD OF INSTALLATION OF GUARD RAIL AT FULL SHOULDER WIDTH BRIDGES USING GUARD RAIL TERMINAL (TYPE 2)

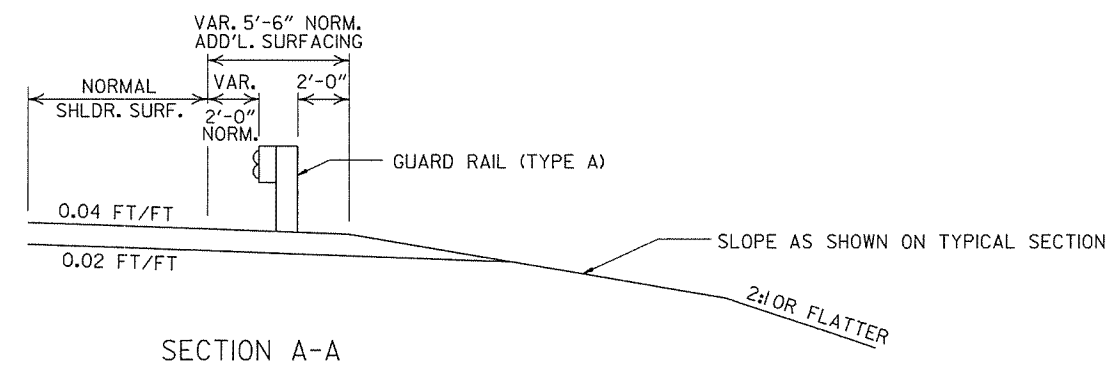


METHOD OF INSTALLATION OF GUARD RAIL USING GUARD RAIL TERMINAL (TYPE I) (FULL SHOULDER WIDTH OR LESS BRIDGES)

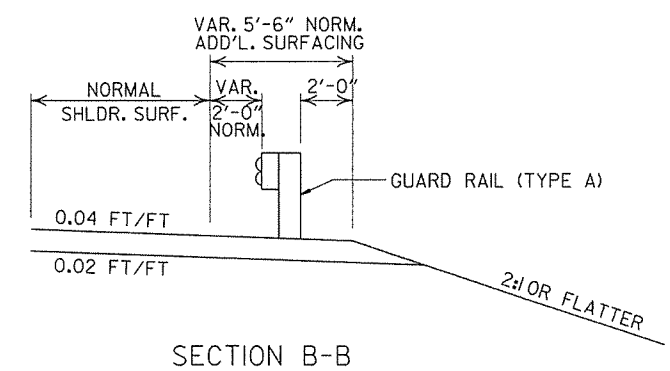
			ARKANSAS STATE HIGHWAY COMMISSION
			GUARD RAIL DETAILS
4-17-08	REVISED LAYOUTS		
11-10-05	REMOVED GUARD RAIL NOTES AND DETAILS		
11-16-01	DELETED NOTE-METHOD OF INSTALLATION OF GUARD RAIL USING GUARD RAIL TERM. (TY. 1)		
1-12-00	ADDED CONSTRUCTION NOTE	1-12-00	
6-26-97	REVISED LAYOUT		STANDARD DRAWING GR-9
10-1-92	REDRAWN & REVISED	10-1-92	
	ADDED NOTE		
10-9-97	REDRAWN & REVISED		
DATE	REVISION	DATE FILM	



NOTE: NORMAL SECTION TO BE WIDENED APPROX. 5'-6" EACH SIDE TO SUPPORT GUARD RAIL.

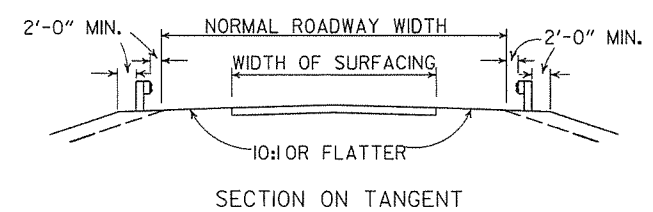


SECTION A-A

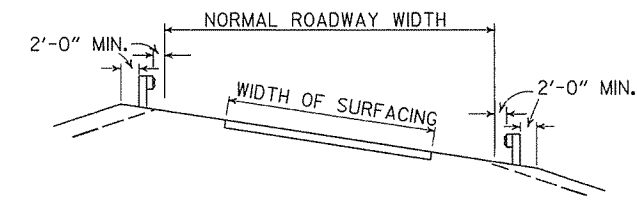


SECTION B-B

DETAILS OF WIDENING FOR GUARD RAIL

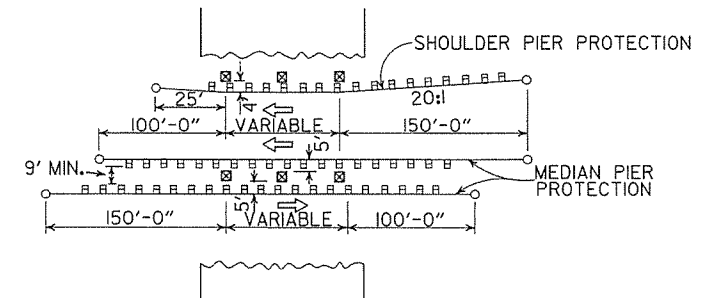


SECTION ON TANGENT



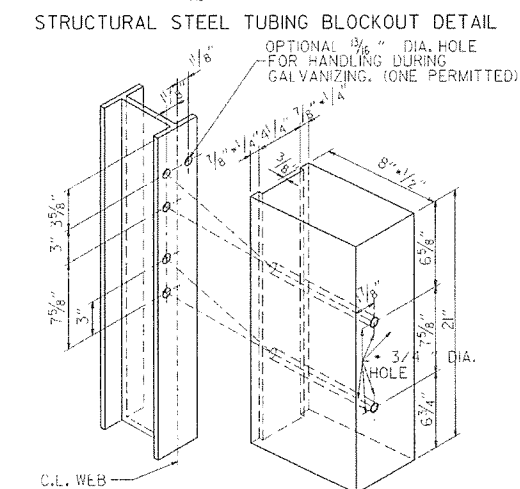
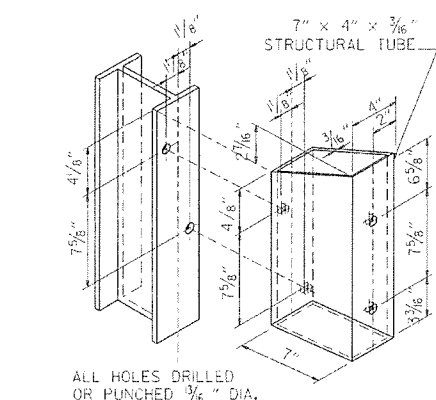
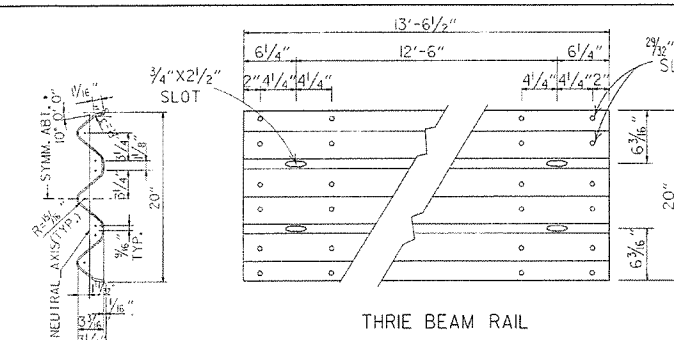
SECTION ON CURVE

DETAILS SHOWING POSITION OF GUARD RAIL ON HIGHWAY



METHOD OF INSTALLATION OF GUARD RAIL AT FIXED OBSTACLE

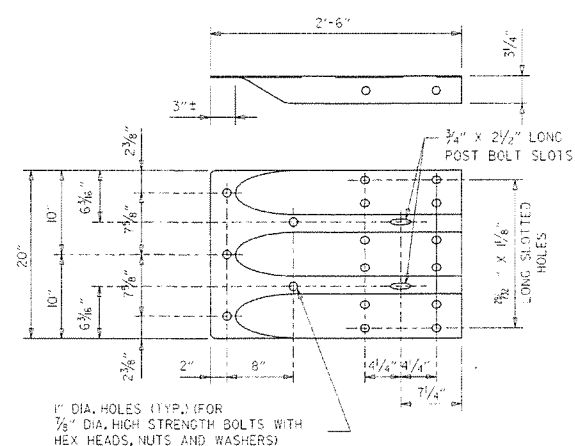
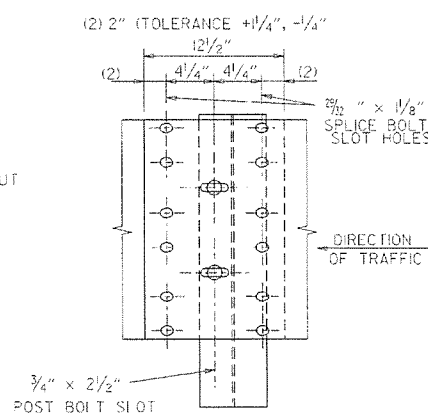
ARKANSAS STATE HIGHWAY COMMISSION		
GUARD RAIL DETAILS		
STANDARD DRAWING GR-9A		
4-17-08	MINOR REVISION	
11-10-05	DRAWN	
DATE	REVISION	DATE FILM



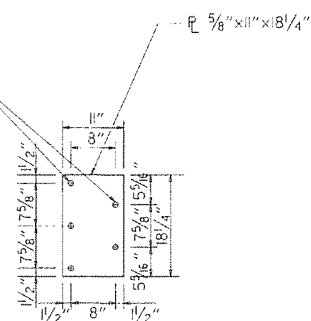
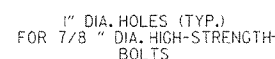
ALL HOLES 1 1/2" DIAMETER EXCEPT AS NOTED

HOLE PUNCHING DETAIL
FOR STEEL POST & WOOD
OR PLASTIC BLOCKOUTS

NOTE: BLOCKS SHALL BE THE SAME TYPE THROUGHOUT THE PROJECT LIMITS.

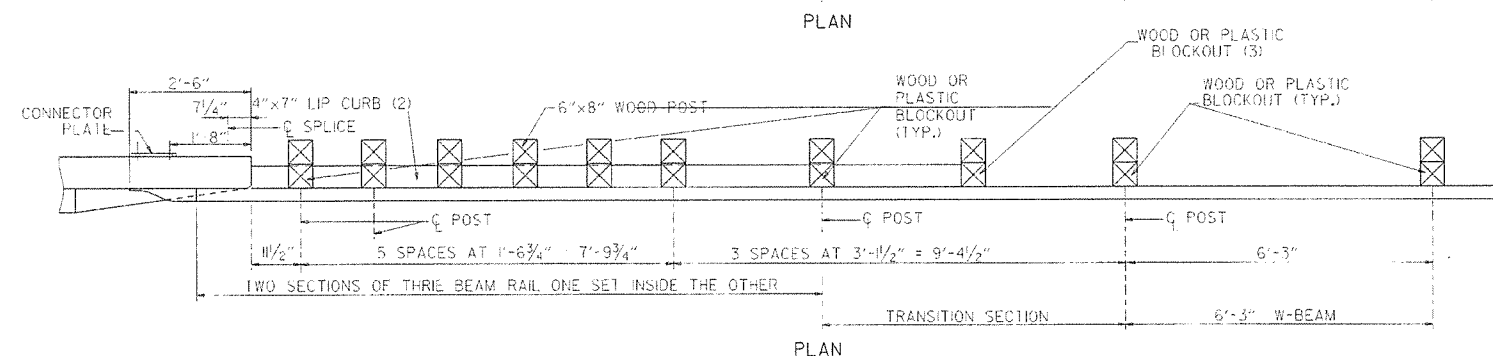
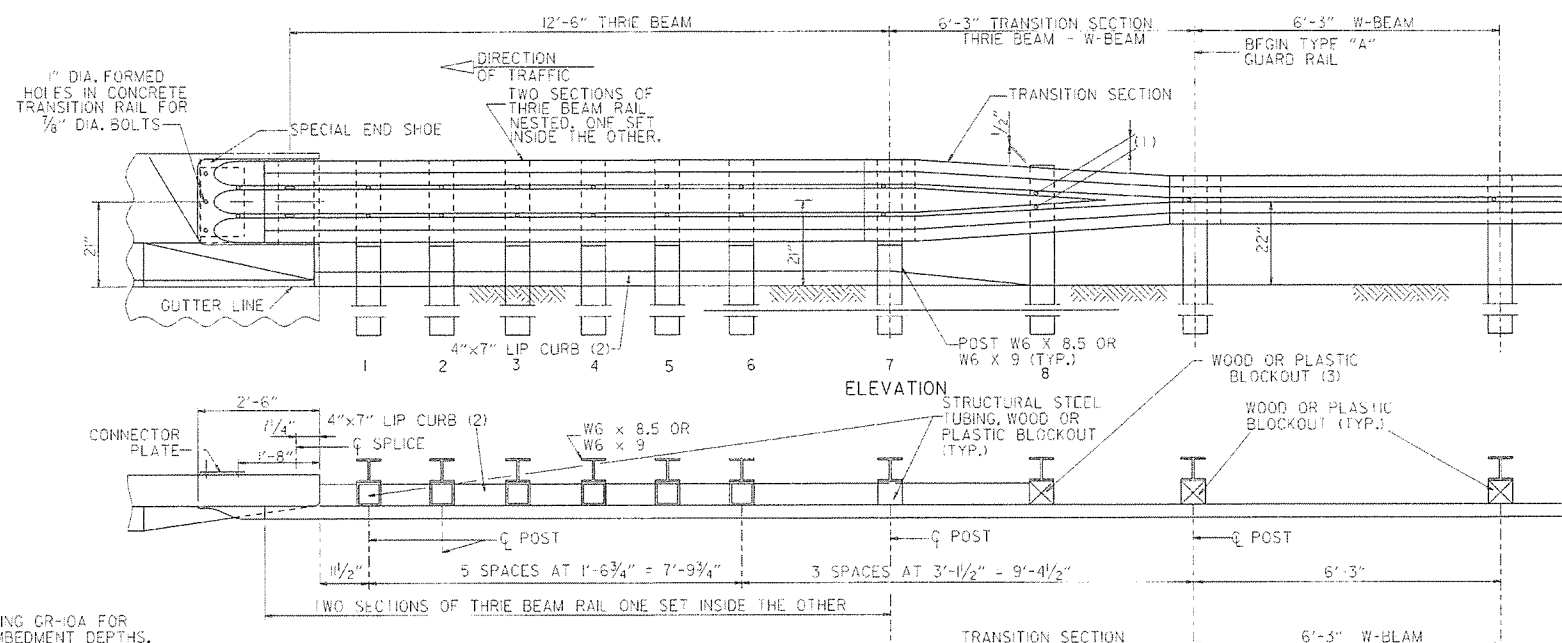


SPECIAL END SHOE



CONNECTOR PLATE

CONNECTOR PLATE SHALL BE AASHTO M270, GR. 36 AND SHALL BE GALVANIZED AFTER FABRICATION. GALVANIZING SHALL CONFORM TO SUBSECTION 807.19 OF THE STANDARD SPECIFICATIONS. CONNECTOR PLATE TO BE BOLTED TO SPECIAL END SHOE USING $\frac{1}{2}$ " DIA. HIGH STRENGTH BOLTS, WITH THE HEADS PLACED ON THE TRAFFIC FACE. WASHERS SHALL BE USED UNDER THE HEAD AND NUT. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AND SHALL CONFORM TO SUBSECTION 807.06.



- (1) VERIFY BOLT SPACING FROM RAIL TRANSITION PRODUCER.
- (2) REFER TO APPROACH GUTTER DETAILS.
- (3) LENGTH OF BLOCKOUT ON POST 8 TO BE MODIFIED TO FIT RAIL WIDTH.

THREE BEAM GUARD RAIL CONNECTION AT BRIDGE ENDS

GENERAL NOTES:

THE THREE BEAM RAIL, SPECIAL END SHOE, AND THE TRANSITION SECTION SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE. ZINC COATING SHALL BE TYPE 1.

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN $\frac{3}{4}$ " BEYOND IT.

ALL LAP SPICES, INCLUDING SPECIAL END SHOES, SHALL BE MADE IN THE DIRECTION SHOWN ON STANDARD DRAWINGS GR-9 & GR-II.

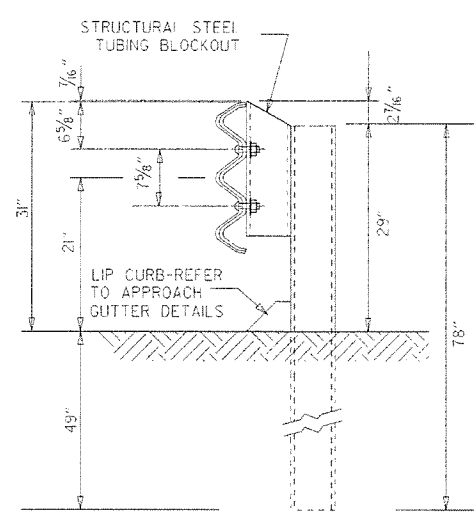
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7F (1400 F) OR NO. 1 350 F SOUTHERN PINE.

REFER TO STD. DRWG. CR-10A FOR POST DETAILS.

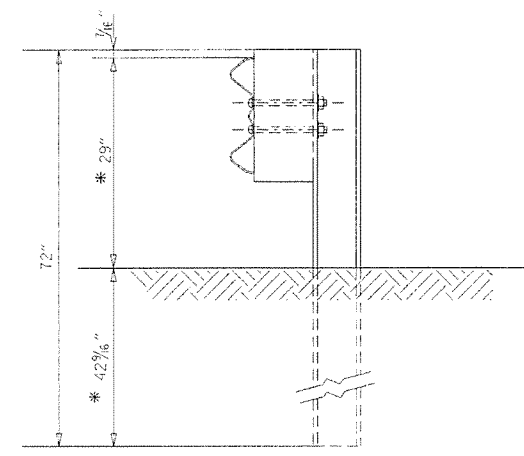
USE THREE BEAM GUARD RAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB.

THREE BEAM POSTS SHALL BE SAME MATERIAL AS W BEAM POSTS FOR ENTIRE JOB.

7-14-10	RAISED HEIGHT OF W-BEAM 1"		ARKANSAS STATE HIGHWAY COMMISSION
11-29-07	ADDED PLASTIC BLOCKOUTS		GUARD RAIL DETAILS
11-10-05	ADDED NOTE FOR ATTACHING STEEL BLOCKOUT		
11-18-04	REVISED GENERAL NOTES		STANDARD DRAWING GR-10
10-9-03	REVISED GENERAL NOTES		
4-10-03	REVISED GENERAL NOTES		
8-22-02	REVISED NOTE (2)		
6-29-00	MOVED DIMENSION LINES		
5-18-00	ADDED NOTE		
3-30-00	DRAWN & ISSUED		
DATE	REVISION	DATE FILED	

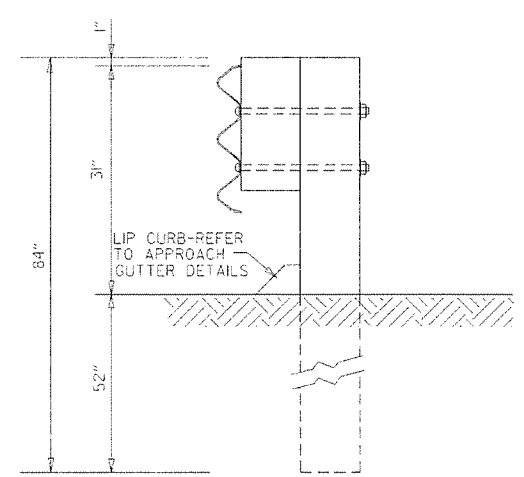


THRIE BEAM RAIL WITH STEEL TUBING BLOCKOUT
AND STEEL POST
POSTS 1-7

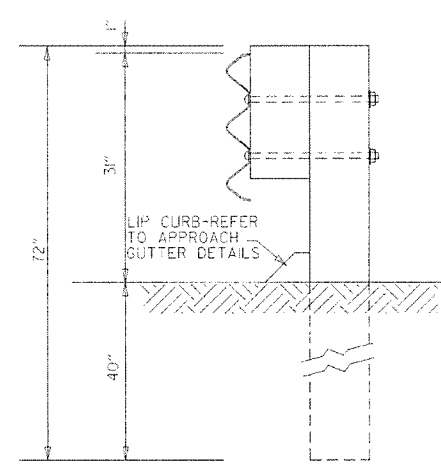


W-BEAM TO THRIE BEAM TRANSITION RAIL
WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST
POST 8

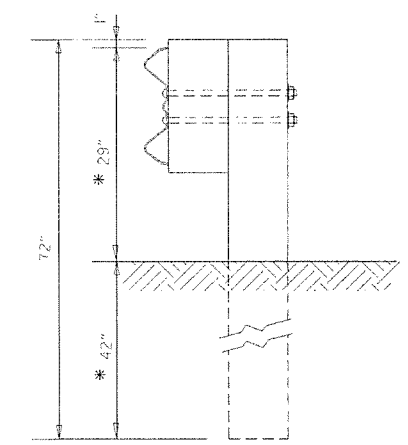
* NOTE:
THESE DIMENSIONS WILL NEED TO BE ADJUSTED
IN THE FIELD TO MAKE THE TRANSITION FROM
21" MID POINT OF THRIE BEAM TO 22" MID POINT
OF W-BEAM.



THRIE BEAM RAIL
WITH WOOD OR PLASTIC
BLOCKOUTS & WOOD POSTS
POSTS 1-6



THRIE BEAM RAIL
WITH WOOD OR PLASTIC
BLOCKOUT & WOOD POST
POST 7

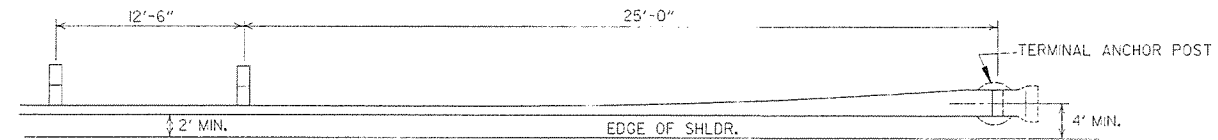


W-BEAM TO THRIE BEAM
TRANSITION RAIL WITH WOOD OR
PLASTIC BLOCKOUT & WOOD POST
POST 8

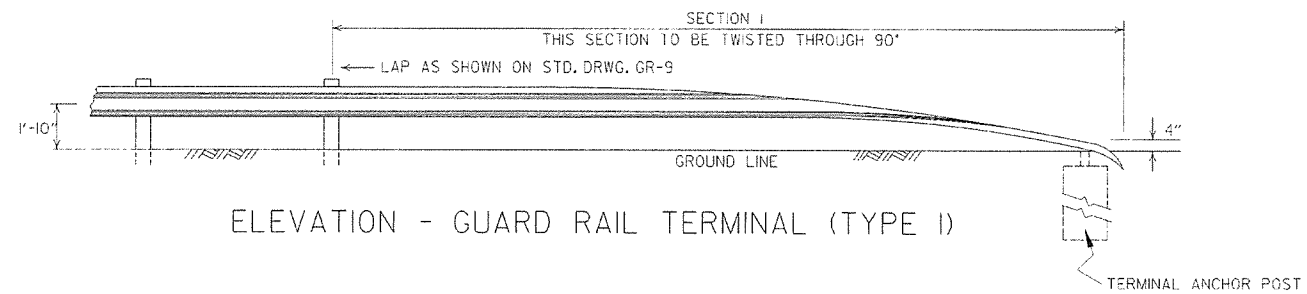
GENERAL NOTES:
RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND
VERTICALLY IN CROSS SECTION.
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR
BETTER 3.7F (4400 F) OR NO. 1 (3500 F) SOUTHERN PINE.

DATE	REVISION	DATE FILM
7-14-10	REVISED POST 8 DIMENSIONS	
11-29-07	ADDED PLASTIC BLOCKOUTS	
8-22-02	REVISED LIP CURB NOTE	
3-30-00	DRAWN & ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION
GUARD RAIL DETAILS
STANDARD DRAWING GR-10A

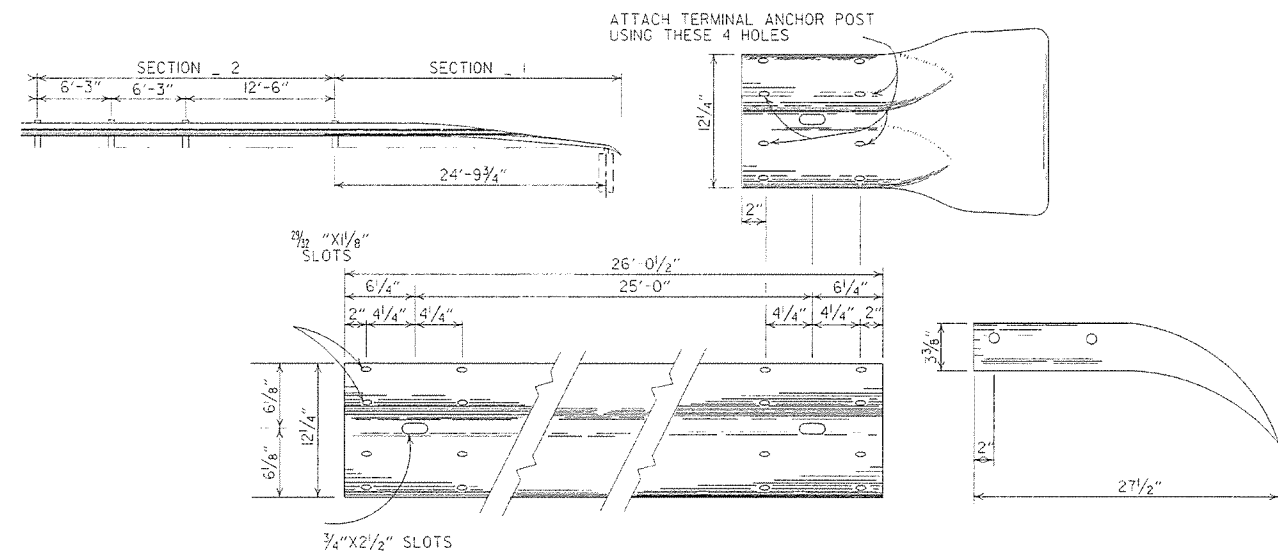


PLAN - GUARD RAIL TERMINAL (TYPE I)



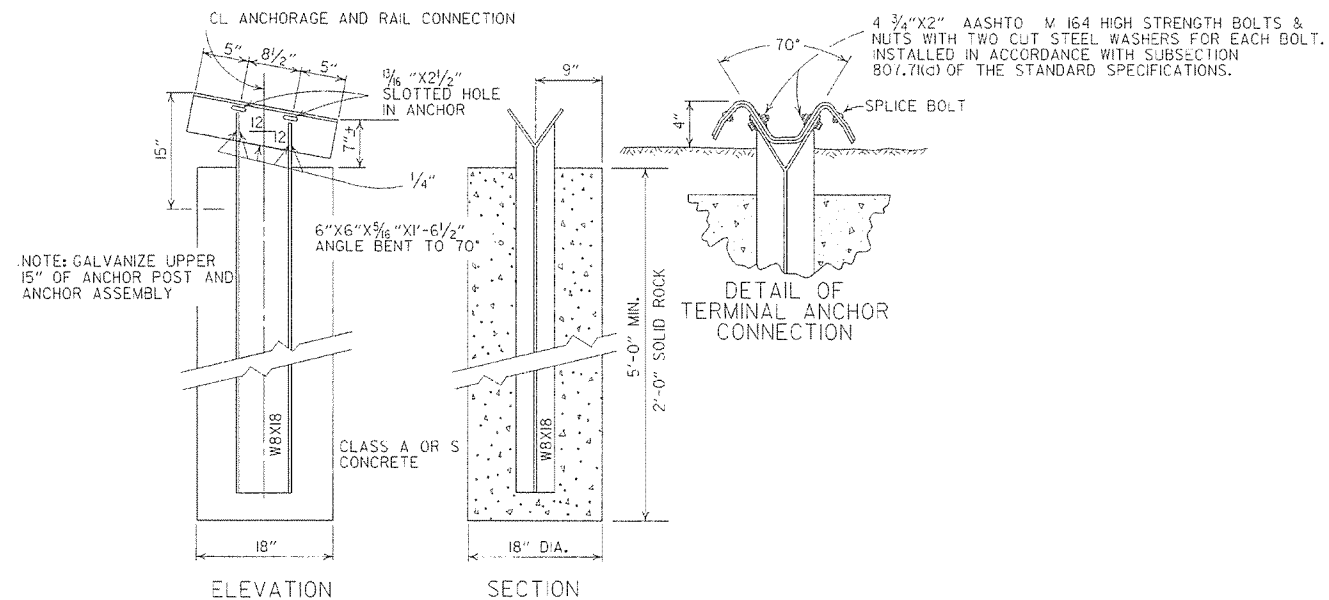
ELEVATION - GUARD RAIL TERMINAL (TYPE I)

NOTE:
SECTIONS 1 AND 2 OF GUARD RAIL TERMINAL
SHALL BE PAID FOR AT THE PRICE BID PER
LINEAR FOOT OF THE TYPE OF GUARD RAIL SPECIFIED.



SECTION 1

TERMINAL SECTION



ELEVATION

SECTION

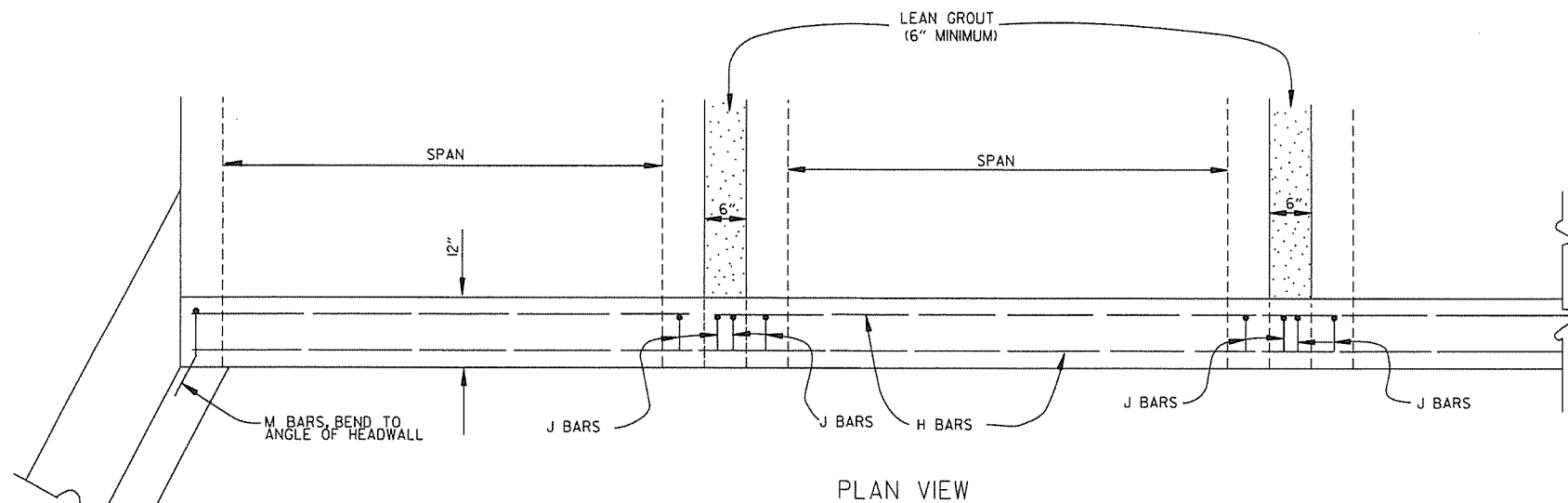
DETAIL OF
TERMINAL ANCHOR
CONNECTION

NOTE: GALVANIZE UPPER
15" OF ANCHOR POST AND
ANCHOR ASSEMBLY

NOTE: RAIL MEMBERS MAY BE BOLTED TO ANGLE AT TERMINAL ANCHOR AND THE TWO
ASSEMBLIES POSITIONED TO PROPER ALIGNMENT PRIOR TO PLACING CONCRETE
AROUND 8 W/ 17 POST IF CONTRACTOR SO DESIRES.

DETAIL OF TERMINAL
ANCHOR POST (TYPE I)

			ARKANSAS STATE HIGHWAY COMMISSION
			GUARD RAIL DETAILS
			STANDARD DRAWING GRT-I
7-14-10	RAISED HEIGHT OF GUARD RAIL 1"		
6-26-97	REVISED LAP NOTE		
10-18-96	REVISED ASTM REF. TO AASHTO		
11-3-94	DIVISION TERMINAL DETAIL		
11-11-92	ADDED NOTE FOR PAYMENT	11-11-92	
10-1-92	DRAWN & ISSUED	10-1-92	
DATE	REVISION	DATE	FIRM



BAR LIST				
BAR	NO.	SIZE	LENGTH	BAR BENDING DIAGRAM
H	2	#4	•	
I	•	#4	•	
J	•	#4	1'-5"	
L	•	#4	3'-2"	
M	•	#4	1'-8"	

• NOTE: LENGTH AND NUMBER OF BARS VARIES WITH SIZE OF CULVERT

GENERAL NOTES

WINGS, CURTAIN WALLS AND APRONS SHALL BE TIED TO THE PRECAST CULVERT SECTION BY CASTING BARS IN CULVERT END SECTIONS AS SHOWN OR BY DOWELING AND GROUTING. J BARS AND M BARS SHALL BE EMBEDDED A MINIMUM OF 10" IN PRECAST BOX.

WINGS, FOOTINGS, APRONS AND CURTAIN WALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE WING DRAWING. STEEL AND CONCRETE QUANTITIES WILL BE ADJUSTED TO FIT THE IN-PLACE WIDTH & HEIGHT OF THE PRECAST CONCRETE BOX CULVERTS.

ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFERS.

WINGWALLS AND FOOTINGS MAY BE ADJUSTED IN THE FIELD AS DIRECTED BY THE ENGINEER.

ALL CONCRETE, REINFORCING STEEL, LEAN GROUT, MEMBRANE WATERPROOFING, DRAINAGE FILL MATERIAL, GEOTEXTILE FILTER FABRIC, LABOR, MATERIALS AND EQUIPMENT REQUIRED FOR INSTALLING PRECAST BOX CULVERTS WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR THE ITEMS AS SPECIFIED IN SECTION 607 OF THE STANDARD SPECIFICATIONS.

LEAN GROUT SHALL CONSIST OF A SAND CEMENT MIXTURE MEETING THE FOLLOWING REQUIREMENTS:
PORTLAND CEMENT SHALL BE TYPE I AND SHALL MEET THE REQUIREMENTS OF AASHTO M 85.
SAND SHALL MEET THE REQUIREMENTS OF FINE AGGREGATE AS SPECIFIED IN SECTION 802.02 OF THE STANDARD SPECIFICATIONS. THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE. THE MIXTURE SHALL CONTAIN SUFFICIENT WATER TO HYDRATE THE CEMENTS. THE SAND CEMENT MIXTURE SHALL BE PLACED IN MAXIMUM 8 INCH THICK LIFTS, LOOSE MEASURE, AND THOROUGHLY RODDED AND TAMPED AROUND BOX TO THOROUGHLY FILL ALL VOIDS.

MEMBRANE WATERPROOFING CONFORMING TO THE REQUIREMENTS OF SECTION 815 OF THE STANDARD SPECIFICATIONS SHALL BE APPLIED TO ALL BOX CULVERT JOINTS.

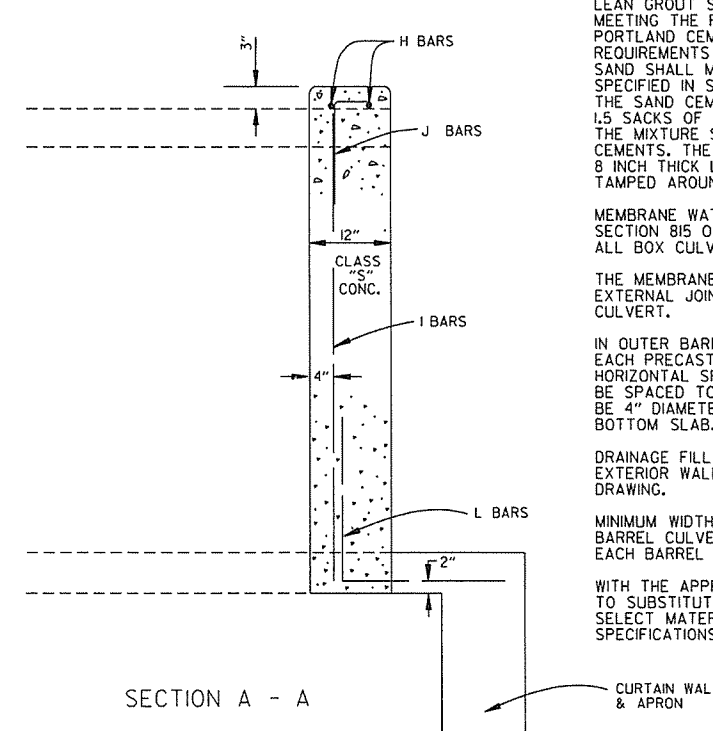
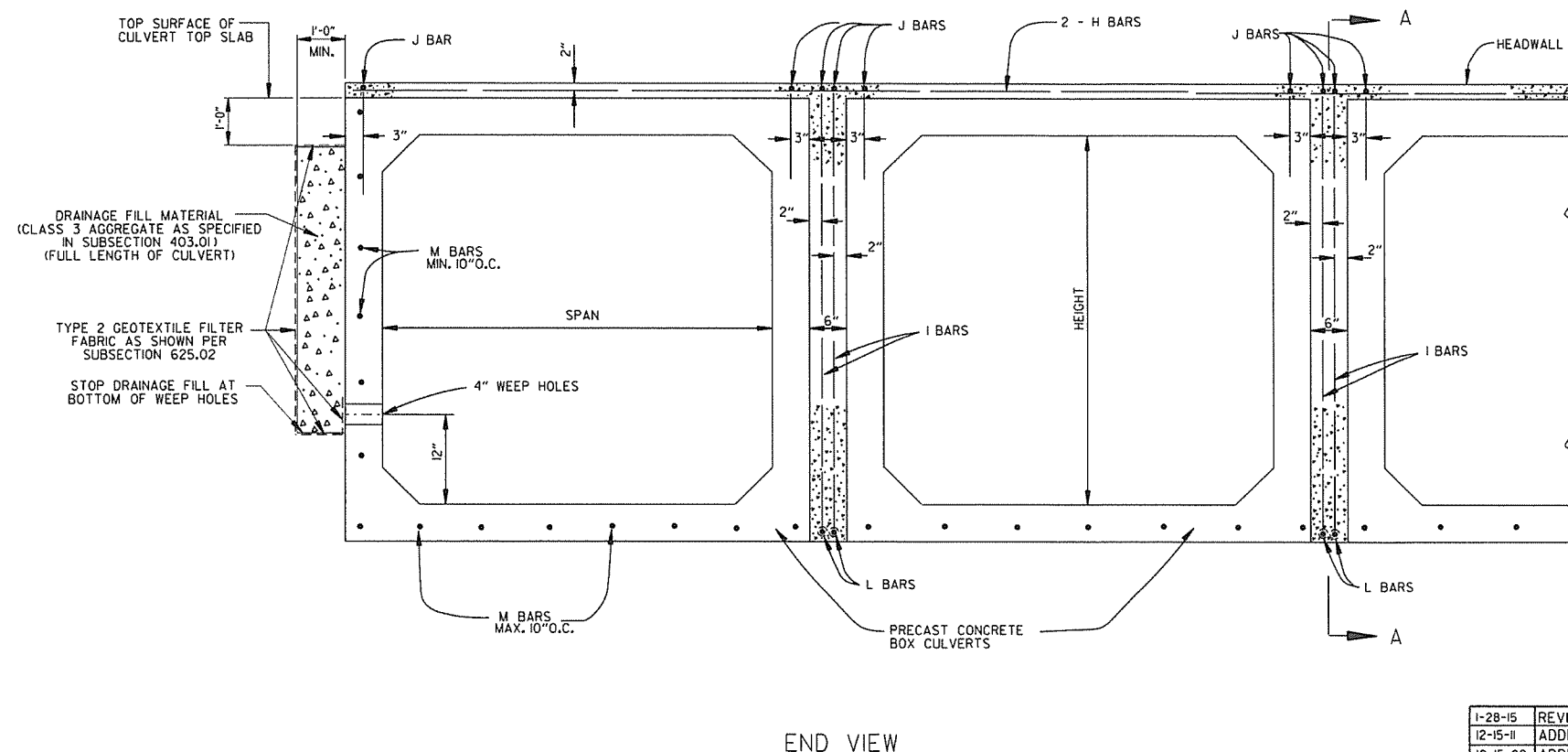
THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

IN OUTER BARRELS, ONE WEEP HOLE IS REQUIRED IN EXTERIOR WALLS OF EACH PRECAST CULVERT SECTION. WEEP HOLES SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" IN THE ASSEMBLED CULVERT AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE BOTTOM SLAB.

DRAINAGE FILL MATERIAL WITH GEOTEXTILE FABRIC IS REQUIRED AT THE EXTERIOR WALLS OF THE ASSEMBLED CULVERT. SEE DETAILS ON THIS DRAWING.

MINIMUM WIDTH SHALL BE 12" (6" ON EACH SIDE OF JOINT). ON MULTIPLE BARREL CULVERTS, MEMBRANE WATERPROOFING SHALL BE APPLIED TO EACH BARREL AS DESCRIBED ABOVE.

WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, FLOWABLE SELECT MATERIAL CONFORMING TO SECTION 206 OF THE STANDARD SPECIFICATIONS IN LIEU OF LEAN GROUT.



1-28-15	REVISED GEOTEXTILE FABRIC PLACEMENT	
12-15-11	ADDED NOTE & DTLS FOR WEEP HOLE AND DRAINAGE FILL	
10-15-09	ADDED GENERAL NOTE	
11-10-05	REVISED SPACING OF "M" BARS	
4-10-03	REVISED GENERAL NOTES	
10-18-96	CORRECTED AASHTO REF.	
10-1-92	ADDED NOTE FOR MEMBRANE WATERPROOFING	
8-15-91	ADDED NOTE FOR LEAN GROUT	
11- 8-90	REVISED FOR 1991 SPECS	
11-30-89	ISSUED, JABE	
DATE	REVISION	DATE FILMED

ARKANSAS STATE HIGHWAY COMMISSION

PRECAST CONCRETE BOX CULVERTS

STANDARD DRAWING PBC-1

REINFORCED CONCRETE
ARCH PIPE DIMENSIONS

EQUIV. DIA.	SPAN		RISE	
	AASHTO M 206	AHTD NOMINAL	AASHTO M 206	AHTD NOMINAL
INCHES	INCHES			
15	18	18	11	11
18	22	22	13½	14
21	26	26	15½	16
24	28½	29	18	18
30	36¼	36	22½	23
36	43¾	44	26¾	27
42	51½	51	31¾	31
48	58½	59	36	36
54	65	65	40	40
60	73	73	45	45
72	88	88	54	54
84	102	102	62	62
90	115	115	72	72
96	122	122	77½	77
108	138	138	87½	87
120	154	154	96¾	97
132	168¾	169	106½	107

THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PERCENT FROM THE VALUES SPECIFIED BY AASHTO M206.

REINFORCED CONCRETE
HORIZONTAL ELLIPTICAL
PIPE DIMENSIONS

EQUIV. DIA.	AASHTO M 207	
	SPAN	RISE
INCHES	INCHES	
18	23	14
24	30	19
27	34	22
30	38	24
33	42	27
36	45	29
39	49	32
42	53	34
48	60	38
54	68	43
60	76	48
66	83	53
72	91	58
78	98	63
84	106	68

THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PERCENT FROM THE VALUES SPECIFIED BY AASHTO M207.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. PLACE AND COMPACT THE HAUNCH AREA UP TO THE MIDDLE OF THE PIPE.
5. COMPLETE BACKFILL ACCORDING TO SUBSECTION 606.03.(f)(II).

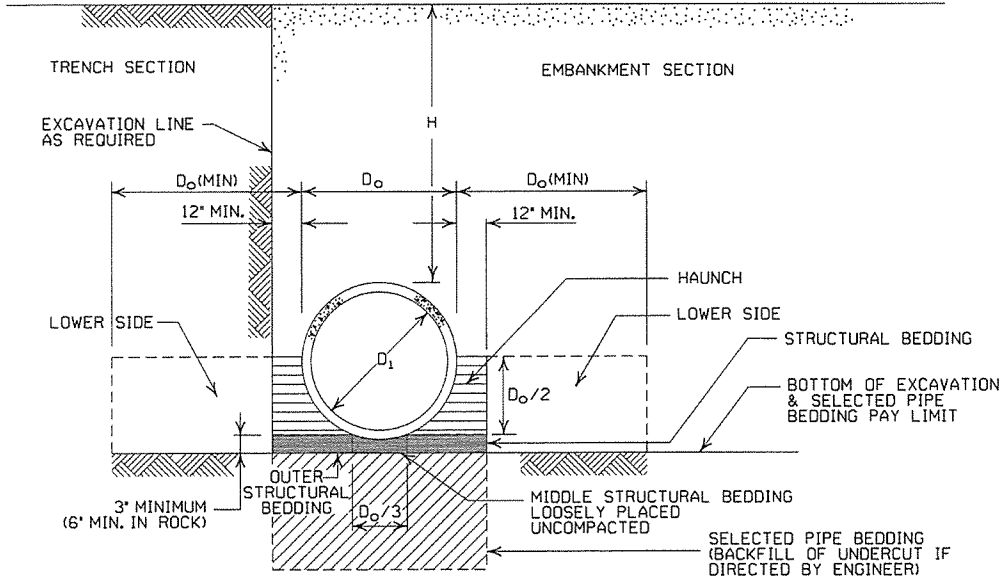
NOTE: HAUNCH AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF CONCRETE PIPE.

- LEGEND -

D₁ = NORMAL INSIDE DIAMETER OF PIPE
D_o = OUTSIDE DIAMETER OF PIPE
H = FILL COVER HEIGHT OVER PIPE (FEET)
MIN. = MINIMUM
= UNDISTURBED SOIL

INSTALLATION TYPE	MATERIAL REQUIREMENTS FOR HAUNCH AND STRUCTURAL BEDDING
TYPE 1	AGGREGATE BASE COURSE (CLASS 5 OR CLASS 7)
TYPE 2	SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4) OR TYPE 1 INSTALLATION MATERIAL*
TYPE 3**	AASHTO CLASSIFICATION A-1 THRU A-6 SOIL OR TYPE 1 OR 2 INSTALLATION MATERIAL

* SM-3 WILL NOT BE ALLOWED.
** MATERIALS SHALL NOT INCLUDE ORGANIC MATERIALS OR STONES LARGER THAN 3 INCHES.



EMBANKMENT AND TRENCH INSTALLATIONS

1. MATERIAL IN THE HAUNCH AND OUTER STRUCTURAL BEDDING SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. FOR TRENCHES WITH WALLS OF NATURAL SOIL, THE DENSITY OF THE SOIL IN THE LOWER SIDE ZONE SHALL BE AS FIRM AS THE 95% DENSITY REQUIRED FOR THE HAUNCH. IF THE EXISTING SOIL DOES NOT MEET THIS CRITERIA, IT SHALL BE REMOVED AND RECOMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OF MATERIAL USED.
3. FOR EMBANKMENTS, THE MATERIAL IN THE LOWER SIDE ZONE SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

GENERAL NOTES

1. CONCRETE PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION), WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS, UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. CONCRETE PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. ALL PIPE SHALL CONFORM TO SECTION 606. CIRCULAR R.C. PIPE CULVERTS SHALL CONFORM TO AASHTO M170, R.C. ARCH PIPE CULVERTS SHALL CONFORM TO AASHTO M206 AND HORIZONTAL ELLIPTICAL PIPE CULVERTS SHALL CONFORM TO AASHTO M207.
4. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT.
5. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS.
6. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
7. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
8. NOT MORE THAN ONE LIFTING HOLE MAY BE PROVIDED IN CONCRETE PIPE TO FACILITATE HANDLING. HOLE MAY BE CAST IN PLACE, CUT INTO THE FRESH CONCRETE AFTER FORMS ARE REMOVED, OR DRILLED. THE HOLE SHALL NOT BE MORE THAN TWO INCHES IN DIAMETER OR TWO INCHES SQUARE. CUTTING OR DISPLACEMENT OF REINFORCEMENT WILL NOT BE PERMITTED. SPALLED AREAS AROUND THE HOLE SHALL BE REPAIRED IN A WORKMANLIKE MANNER. LIFTING HOLE SHALL BE FILLED WITH MORTAR, CONCRETE, OR OTHER METHOD AS APPROVED BY THE ENGINEER.
9. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
10. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS THE HAUNCH), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."

MINIMUM HEIGHT OF FILL "H"
OVER CIRCULAR R.C. PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE			
	CLASS III		CLASS IV	CLASS V
PIPE ID (IN.)	TYPE 1 OR 2	TYPE 3	ALL	ALL
12-15	2	2.5	2	1
18-24	2.5	3	2	1
27-33	3	4	2	1
36-42	3.5	5	2	1
48	4.5	5.5	2	1
54-60	5	7	2	1
66-78	6	8	2	1
84-108	7.5	8	2	1

NOTE: FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM OF 12" OF PAVEMENT AND/OR BASE.

MINIMUM HEIGHT OF FILL "H"
OVER R.C. ARCH & HORIZONTAL
ELLIPTICAL PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE	
	CLASS III	CLASS IV
FEET		
TYPE 2 OR TYPE 3	2.5	1.5

NOTE: TYPE 1 INSTALLATION WILL NOT BE ALLOWED FOR ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS.

NOTE: FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM OF 12" OF PAVEMENT AND/OR BASE.

MAXIMUM HEIGHT OF
FILL "H" OVER CIRCULAR
R.C. PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE		
	CLASS III	CLASS IV	CLASS V
FEET			
TYPE 1	21	32	50
TYPE 2	16	25	39
TYPE 3	12	20	30

NOTE: IF FILL HEIGHT EXCEEDS 50 FEET, A SPECIAL DESIGN CONCRETE PIPE WILL BE REQUIRED USING TYPE 1 INSTALLATION.

MAXIMUM HEIGHT OF FILL "H"
OVER R.C. ARCH & HORIZONTAL
ELLIPTICAL PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE	
	CLASS III	CLASS IV
FEET		
TYPE 2	13	21
TYPE 3	10	16

NOTE: TYPE 1 INSTALLATION WILL NOT BE ALLOWED FOR ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS.

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED FOR LRFD DESIGN SPECIFICATIONS	
5-18-00	REVISED TYPE 3 BEDDING & ADDED NOTE	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

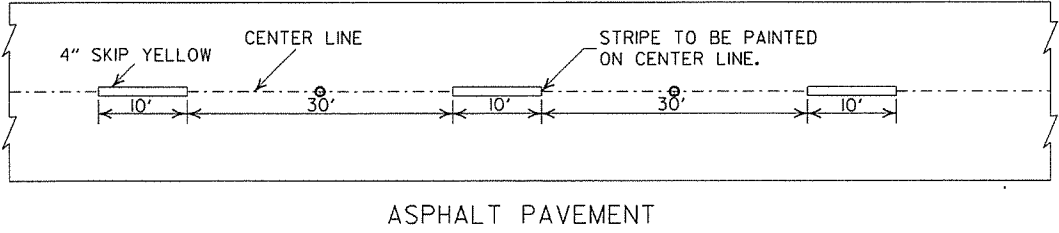
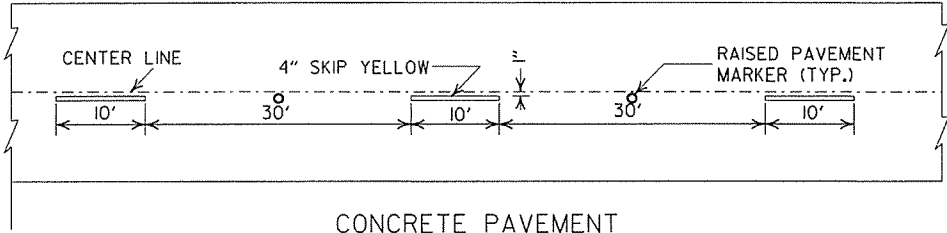
CONCRETE PIPE CULVERT
FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1

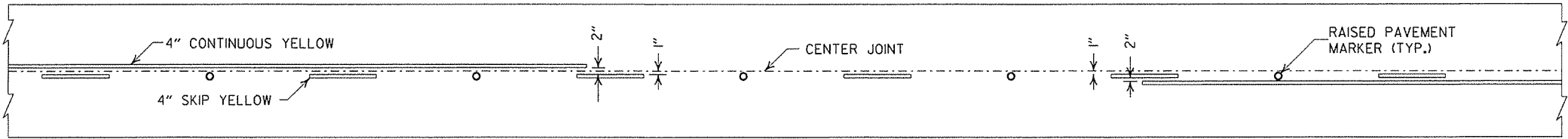


NOTES:

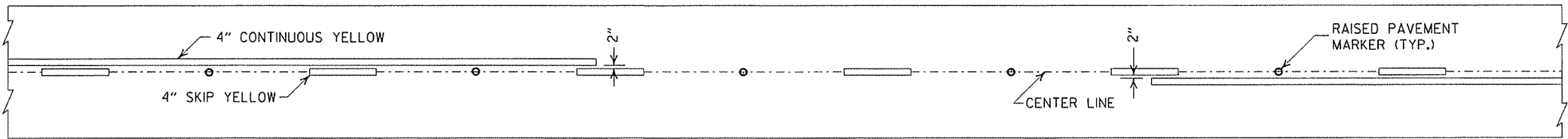
- 1. ALL LINES SHALL HAVE A WIDTH OF 4 INCHES.
- 2. THE THICKNESS AND RATE OF PAINT APPLICATION SHALL BE AS SPECIFIED IN SECTION 718 OF THE STANDARD SPECIFICATIONS.
- 3. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
- 4. RAISED PAVEMENT MARKERS SHALL BE CENTERED BETWEEN SKIP LINES ON 40 FEET SPACING UNLESS OTHERWISE SHOWN ON THE PLANS.



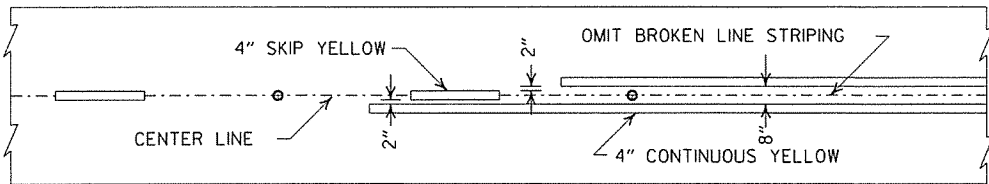
BROKEN LINE STRIPING



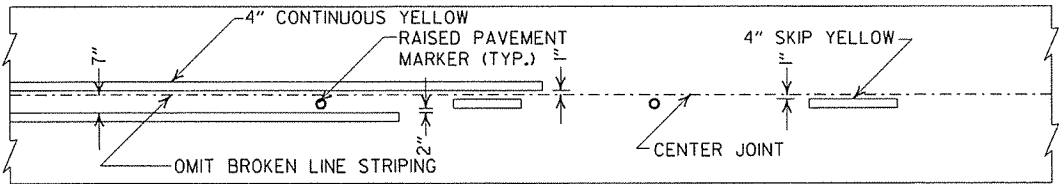
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

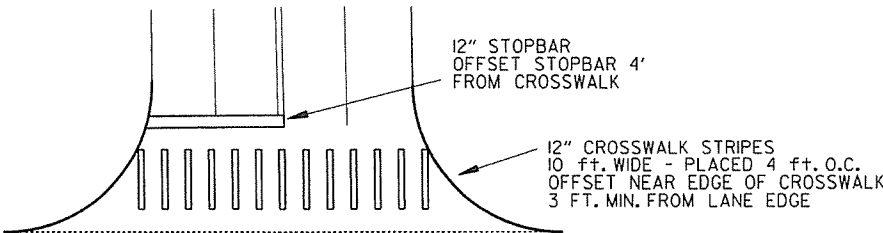


ASPHALT PAVEMENT



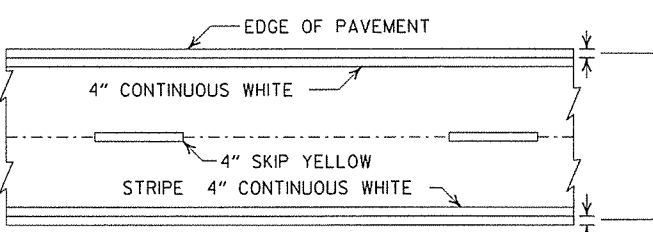
CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

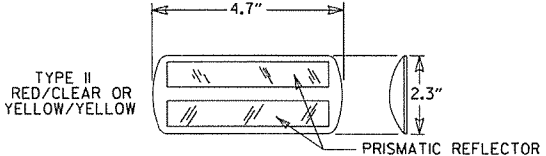


CROSSWALK AND STOPBAR DETAILS

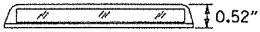
2" FOR ASPHALT OR CONCRETE PAVEMENT
6" FOR BITUMINOUS SURFACE TREATMENT



PAVEMENT EDGE LINE MARKING



NOTE:
THE RED LENS OF THE
TYPE II R.P.M. SHALL
FACE THE INCORRECT
TRAFFIC MOVEMENT.



DETAIL OF
STANDARD
RAISED PAVEMENT MARKERS

GENERAL NOTES:

THIS DRAWING SHOULD BE CONSIDERED AS TYPICAL ONLY AND THE FINAL LOCATION OF THE STRIPING AND RAISED PAVEMENT MARKERS SHALL BE DETERMINED BY THE ENGINEER.

THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST REVISION.

NOTE:
DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE AHTD QUALIFIED PRODUCTS LIST.

9-12-13	REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS	
11-17-10	REVISED GENERAL NOTES & REMOVED PLOWABLE PVMT MRKRS	
11-18-04	REVISED NOTE 2 & GENERAL NOTES	
8-22-02	ADDED CROSSWALK & STOPBAR DTLS.	
7-02-98	ADDED DETAILS OF STD. RAISED PAV'T. MARKERS	
4-26-96	REV. NOTES 3&4; ADDED R.P.M.	
9-30-80	DRAWN	1-9-30-80
DATE	REVISION	FILMED

ARKANSAS STATE HIGHWAY COMMISSION

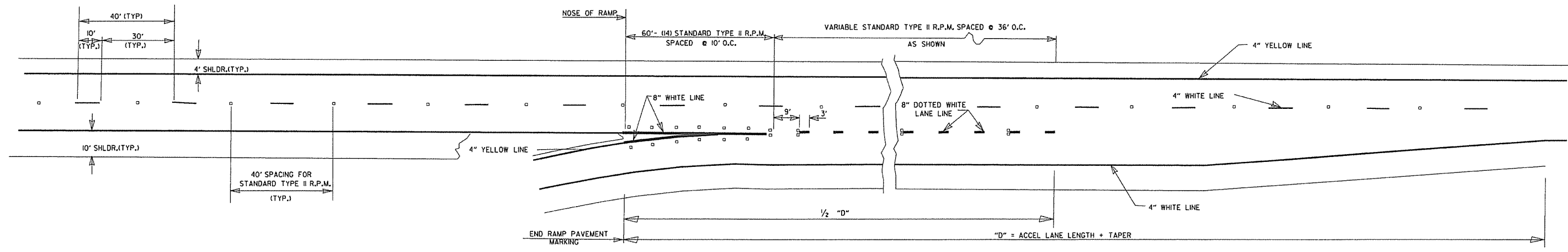
PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

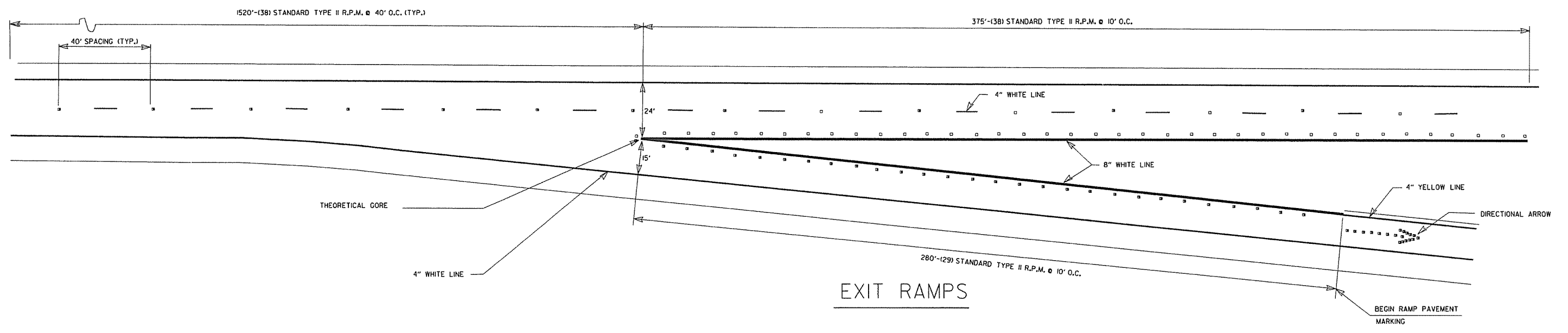
PAVEMENT MARKING QUANTITIES
(BASED ON 700' ACCEL. LANE + 300' TAPER)

ENTRANCE RAMP
8" WHITE = 228 LIN. FT.
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 38 EACH

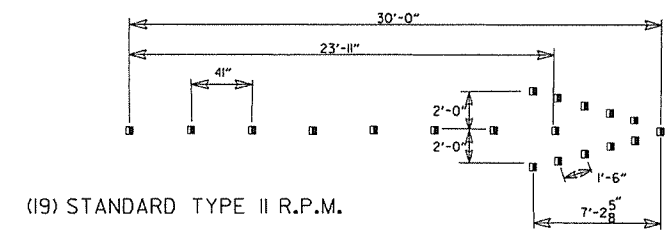
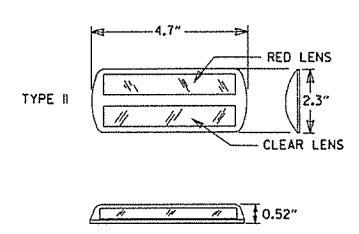
EXIT RAMP
4" WHITE = 280 LIN. FT.
8" WHITE = 655 LIN. FT.
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 38 EACH
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 48 EACH
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 38 EACH



ENTRANCE RAMP



EXIT RAMP



GENERAL NOTES:
THIS DRAWING SHOULD BE CONSIDERED AS TYPICAL ONLY AND THE FINAL LOCATION OF THE STRIPING AND PAVEMENT MARKERS SHALL BE DETERMINED BY THE ENGINEER.

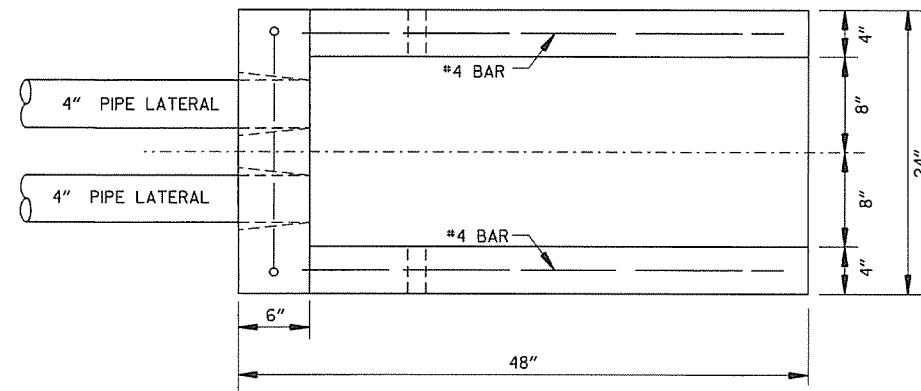
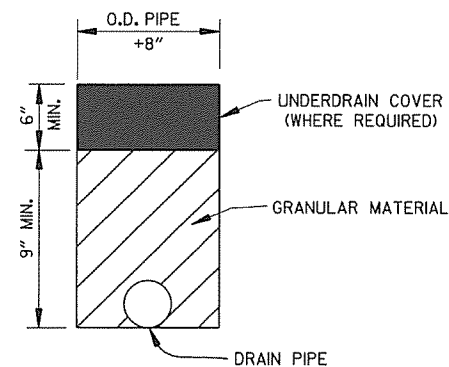
THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST REVISION.

NOTE:
DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE AHTD QUALIFIED PRODUCTS LIST.

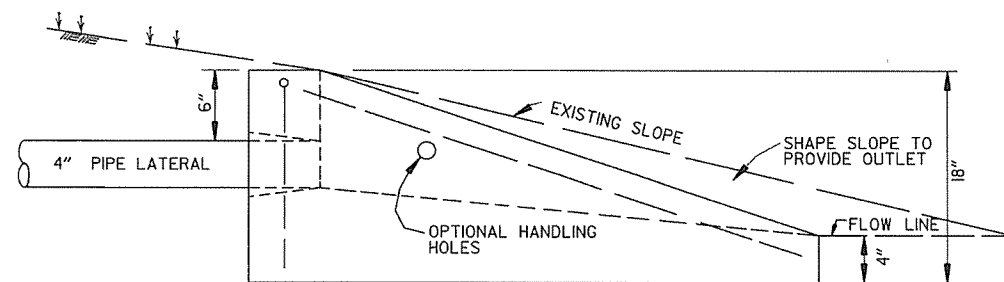
9-12-13	REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS	
7-26-12	REVISED RPM NOTATION	
12-15-11	REVISED RPMs ACCORDING TO LATEST POLICY	
11-17-10	REMOVED PLOWABLE PAVEMENT MARKERS	
6-3-10	REVISED PER 2009 MUTCD	
11-18-04	REVISED NOTES	
8-22-02	ADDED & REVISED NOTES; REV. ENTRANCE & EXIT RAMP	
5-18-00	REMOVED HASHMARKS	
7-02-98	CHANGED TYPES TO ROMAN NUMERALS	
4-26-96	ADDED DIMENSIONS & QUANTITIES; REVISED LANE WIDTH ON EXIT RAMP	
2-2-95	PLACED IN USE	2-2-95
DATE	REVISION	FILMED

ARKANSAS STATE HIGHWAY COMMISSION
PERMANENT PAVEMENT MARKING
ON ACCESS CONTROLLED ROADWAYS
STANDARD DRAWING PM-2

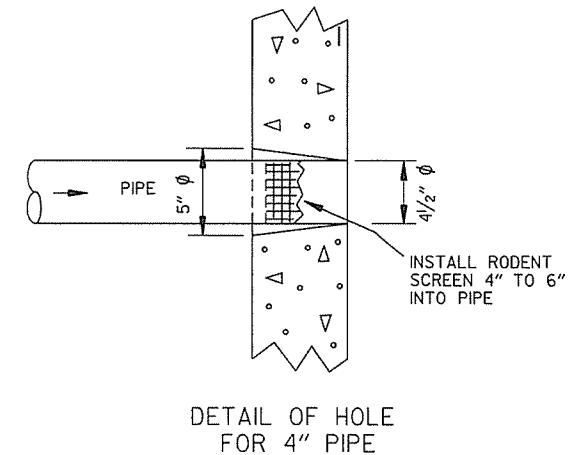
- NOTE:
1. GRANULAR BACKFILL TO BE SUBSIDIARY TO PIPE UNDERDRAIN.
 2. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.
 3. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC, LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.



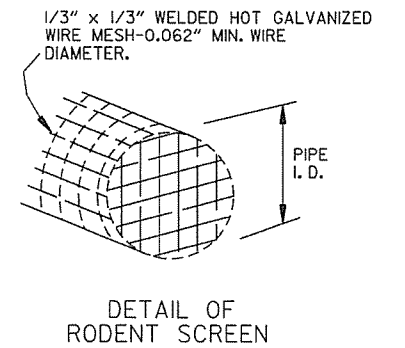
PLAN VIEW



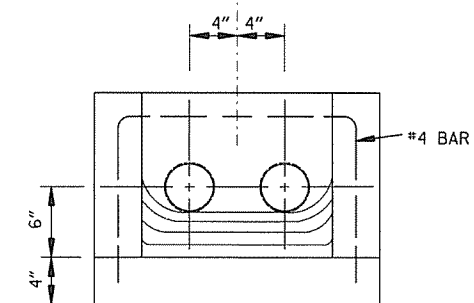
SIDE VIEW



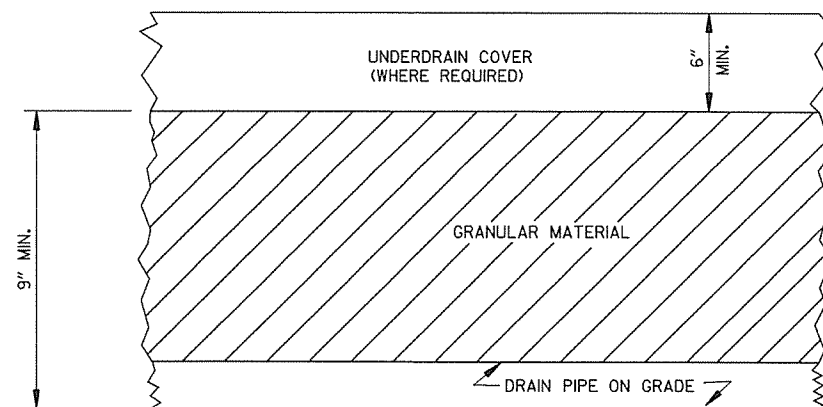
DETAIL OF HOLE FOR 4" PIPE



DETAIL OF RODENT SCREEN



FRONT VIEW

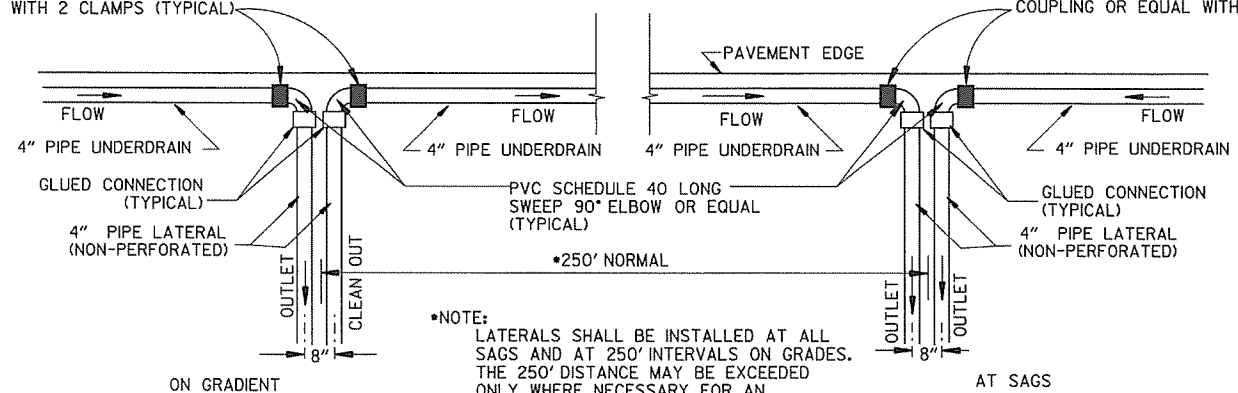


DETAILS OF PIPE UNDERDRAIN

FERNCO 1056-44 (4" CI/PLASTIC) OR
FERNCO 1051-44 (4" AC/DIOR 4" CI/PLASTIC)
COUPLING OR EQUAL WITH 2 CLAMPS (TYPICAL)

UNDERDRAIN OUTLET PROTECTORS

FERNCO 1056-44 (4" CI/PLASTIC) OR
FERNCO 1051-44 (4" AC/DIOR 4" CI/PLASTIC)
COUPLING OR EQUAL WITH 2 CLAMPS (TYPICAL)



- NOTE:
- LATERALS SHALL BE INSTALLED AT ALL SAGS AND AT 250' INTERVALS ON GRADES. THE 250' DISTANCE MAY BE EXCEEDED ONLY WHERE NECESSARY FOR AN ACCEPTABLE OUTLET.

DETAIL OF PIPE UNDERDRAIN LATERALS WHEN PLACED ALONG PAVEMENT EDGE

NOTE: PVC PIPE FOR LATERALS SHALL MEET THE REQUIREMENTS OF ASTM D 1785 (LATEST REVISION) FOR SCHEDULE 40 PIPE.

4-10-03	REVISED NOTE 3	
1-12-00	REVISED DETAIL OF UNDERDRAIN LATERALS	
11-18-98	REVISED NOTE	
10-18-96	REVISED MIN. DEPTH & GEOTEXTILE FABRIC	
4-26-96	ADDED LATERAL NOTE; 5 1/2" TO 5"	
11-22-95	REVISED LATERALS	
7-20-95	REVISED LATERALS & ADDED NOTE	
11-3-94	REVISED FOR DUAL LATERALS	11-3-94
10-1-92	SUBSTITUTED GEOTEXTILE	10-1-92
8-15-91	ADDED POLYETHYLENE PIPE	8-15-91
11-8-90	DELETED ALTERNATE NOTE	11-8-90
1-25-90	ADDED 4" SNAP ADAPTER	1-25-90
11-30-89	DEL. (SUBGRADE); ADDED (WHERE REQUIRED)	11-30-89
7-15-88	ISSUED P.L.M.	647-7-15-88
DATE	REVISION	DATE FILMED

ARKANSAS STATE HIGHWAY COMMISSION

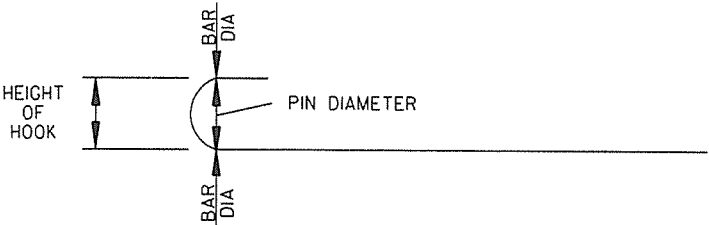
DETAILS OF PIPE UNDERDRAIN

STANDARD DRAWING PU-1

STEEL FABRICATION: REINFORCING STEEL FABRICATION SHALL CONFORM TO THE DIMENSIONS LISTED IN THE TABLE BELOW:

BAR SIZE	PIN DIAMETER	HOOK EXTENSION "K"
3	2 1/4"	4"
4	3 "	4 1/2"
5	3 3/4"	5"
6	4 1/2"	6"
7	5 1/4"	7"
8	6"	8"

IF THE OVERALL HEIGHT OF THE HOOK (SEE DIAGRAM BELOW) FOR A "b", "b1", "b2" or "b3" BENT BAR IS GREATER THAN THE CORRESPONDING TOP OR BOTTOM SLAB THICKNESS, LESS 2 3/4 INCHES, EACH BENT BAR SHALL BE REPLACED WITH ONE HOOKED BAR AND ONE STRAIGHT BAR, USING LENGTHS AS SHOWN IN THE TABLE BELOW. THE TWO BARS SHALL BE THE SAME DIAMETER AS, AND PLACED AT THE SAME SPACING AS, THE "b", "b1", "b2" OR "b3" BENT BARS THEY REPLACE.



NOTE: DIMENSIONS OF BARS ARE MEASURED OUT TO OUT OF BARS.

OVERALL HEIGHT OF HOOKED BAR DIAGRAM

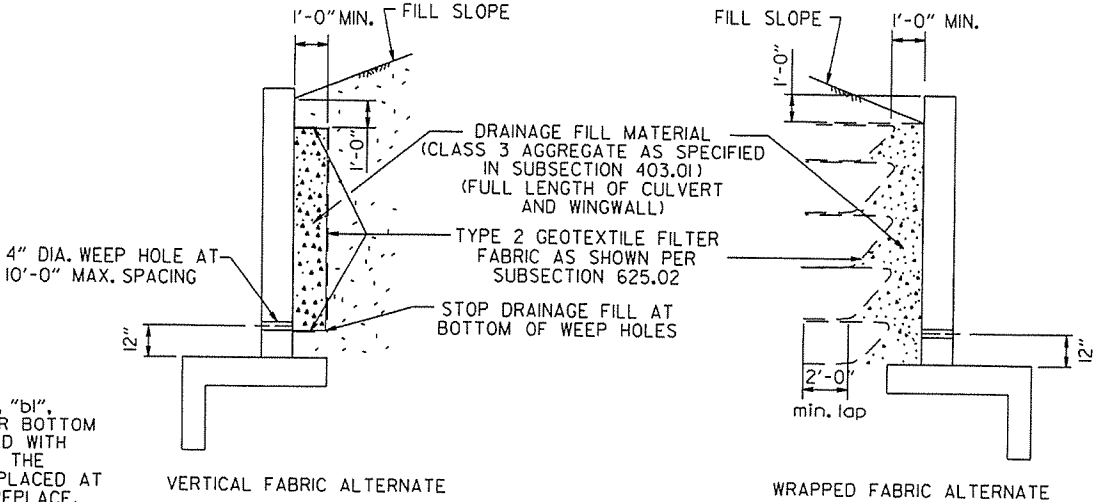
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

FOR SKEWED CULVERTS, THE REPLACEMENT STRAIGHT BAR MAY HAVE TO BE CUT IN FIELD TO FIT.

REPLACEMENT BAR LENGTHS TABLE

BAR SIZE: "b", "b1", "b2" OR "b3"	LENGTH OF HOOKED BAR	LENGTH OF STRAIGHT BAR
#4	L + 1' - 0"	SEE "c" BAR LENGTH
#5	L + 1' - 2"	SEE "c" BAR LENGTH
#6	L + 1' - 4"	SEE "c" BAR LENGTH
#7	L + 1' - 8"	SEE "c" BAR LENGTH
#8	L + 1' - 10"	SEE "c" BAR LENGTH
#9	L + 2' - 6"	SEE "c" BAR LENGTH

L = "OW" - 3 INCHES



WINGWALL & CULVERT DRAINAGE DETAIL

REINFORCED CONCRETE BOX CULVERT GENERAL NOTES

CONCRETE SHALL BE CLASS S WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3500 PSI. REINFORCING STEEL SHALL BE AASHTO M 31OR M 53, GRADE 60.

CONSTRUCTION AND MATERIALS FOR WINGWALL & CULVERT DRAINAGE, INCLUDING WEEP HOLES AND GRANULAR MATERIAL, SHALL BE SUBSIDIARY TO THE BID ITEM, "CLASS S CONCRETE".

MEMBRANE WATERPROOFING SHALL CONFORM TO THE REQUIREMENTS OF SECTION 815 OF THE STANDARD SPECIFICATIONS.

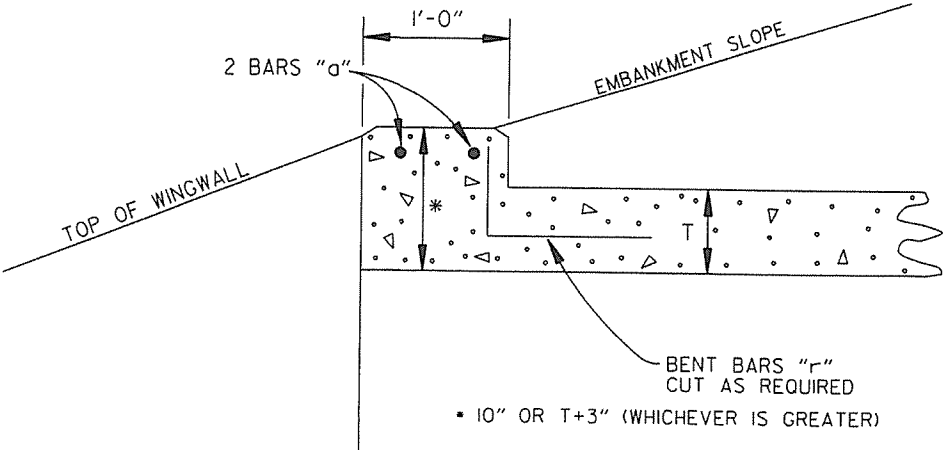
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

REINFORCING STEEL TOLERANCES: THE TOLERANCES FOR REINFORCING STEEL SHALL MEET THOSE LISTED IN "MANUAL OF STANDARD PRACTICE" PUBLISHED BY CONCRETE REINFORCING STEEL INSTITUTE (CRSI) EXCEPT THAT THE TOLERANCE FOR TRUSS BARS SUCH AS FIGURE 3 ON PAGE 7-4 OF THE CRSI MANUAL SHALL BE MINUS ZERO TO PLUS 1/2 INCH.

WEEP HOLES IN BOX CULVERT WALLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE BOTTOM SLAB.

WEEP HOLES IN WINGWALLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THERE SHALL BE A MINIMUM OF TWO (2) WEEP HOLES IN EACH WINGWALL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE WINGWALL FOOTING.

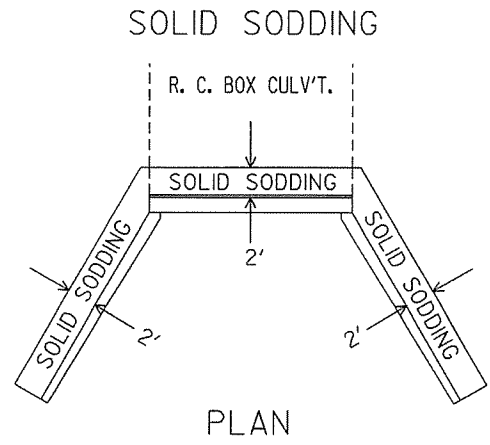
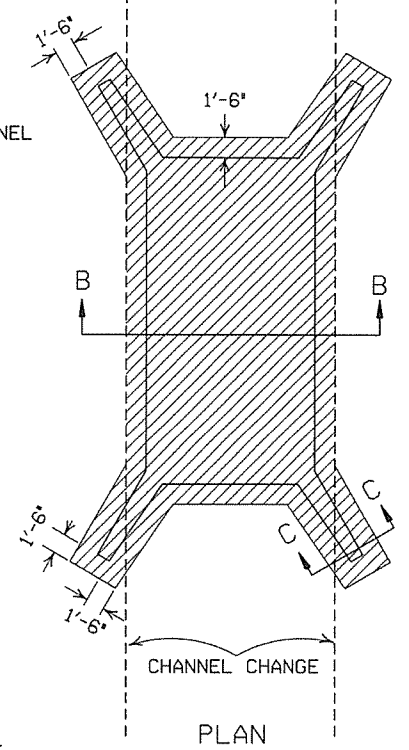
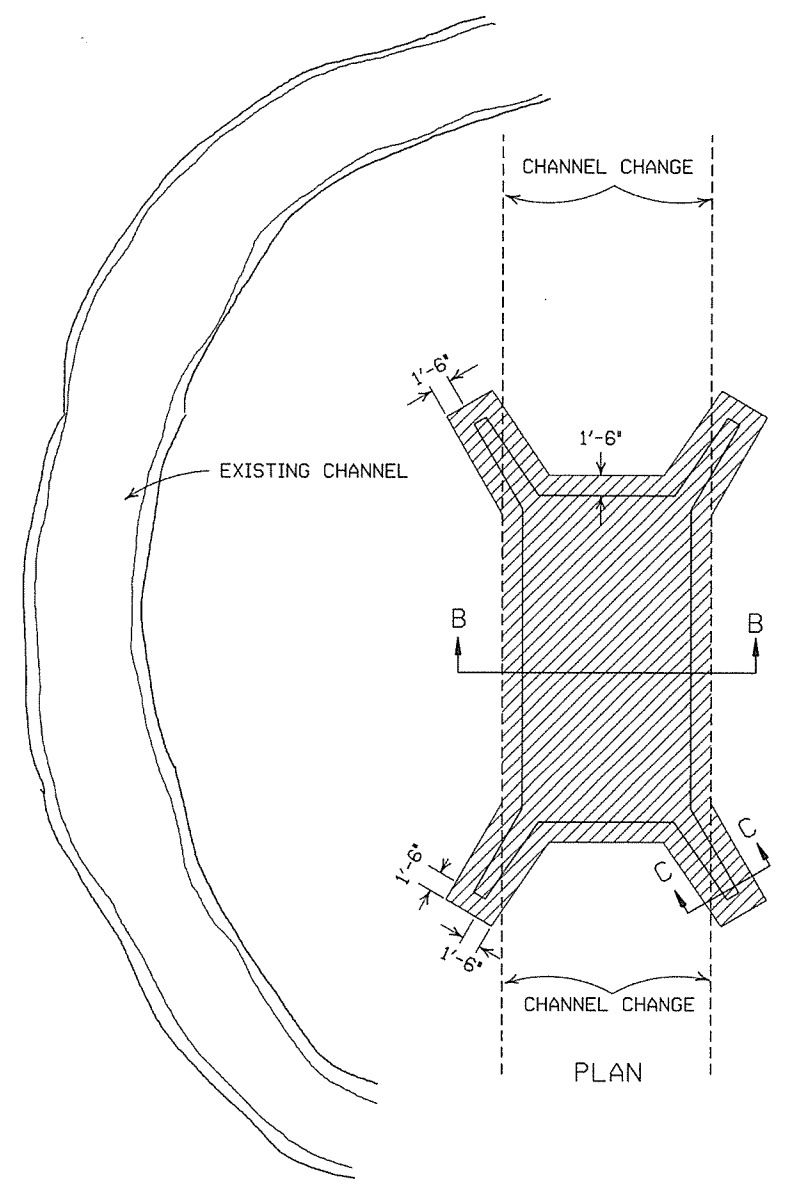
THE REQUIREMENTS SHOWN ON THIS DRAWING SHALL SUPERCEDE THE CORRESPONDING REQUIREMENTS ON ALL REINFORCED CONCRETE BOX CULVERT STANDARD DRAWINGS.



NOTE: FOR ALL SKEWED R.C. BOX CULVERTS THE LENGTH "K" OF THE MODIFIED HEADWALL SHALL BE EQUAL TO THE ROADWAY LENGTH "RL". THE ENDS OF THE HEADWALL SHALL BE CONSTRUCTED PARALLEL TO THE SKEW ANGLE OF THE BOX CULVERT.

R.C. BOX CULVERT HEADWALL MODIFICATIONS

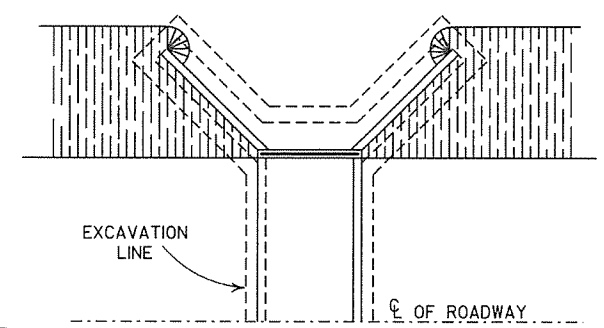
7/26/12	REV. DRAINAGE FILL MATERIAL & DETAIL		ARKANSAS STATE HIGHWAY COMMISSION
12/15/11	REQUIRE WEEP HOLES IN BOX CULVERT WALLS		
5-25-06	REV. GEN. NOTES AND DETAILS FOR WEEP HOLES; BAR DIAGRAM		REINFORCED CONCRETE BOX CULVERT DETAILS
11-16-01	ADDED WINGWALL DRAINAGE DETAIL/EDITED GEN. NOTES		
10-18-96	REV. ASTM REF. TO AASHTO & ADDED BAR DIAGRAM		STANDARD DRAWING RCB-1
10-12-95	MOVED SOLID SODDING DETAIL TO RCB-2		
6-2-94	ADDED SOLID SODDING PLAN DETAIL		
8-5-93	REVISED PIN DIAMETER TO SPECS.		
8-15-91	DRAWN AND ISSUED		
DATE	REVISION	DATE FILMED	



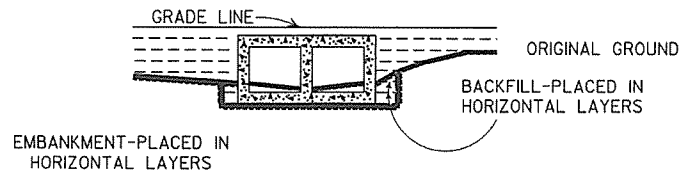
PLAN

PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

NOTE: LENGTH MEASURED ALONG THE CENTER OF 2' STRIP OF SOLID SODDING.

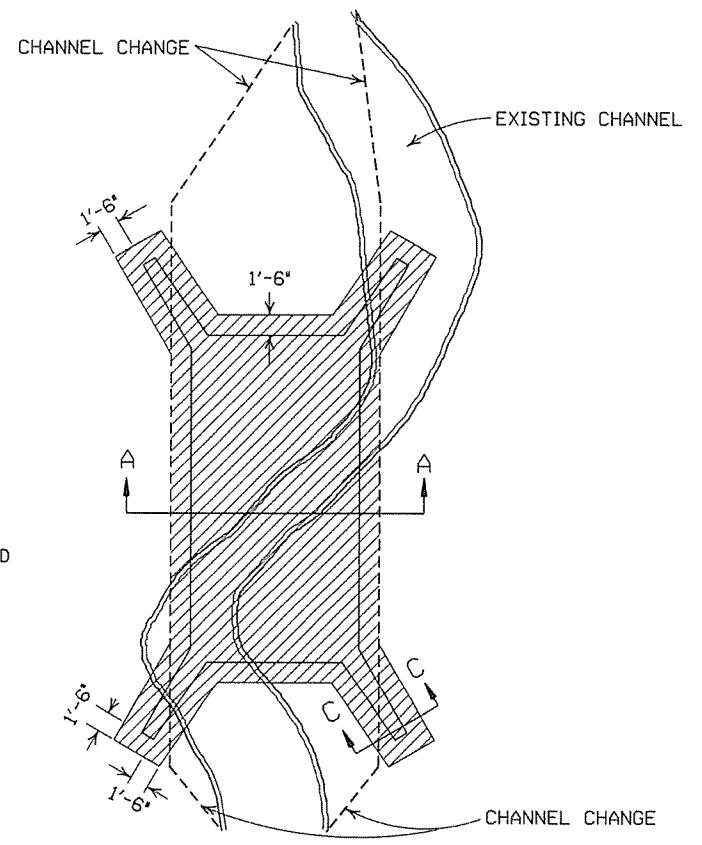


PLAN

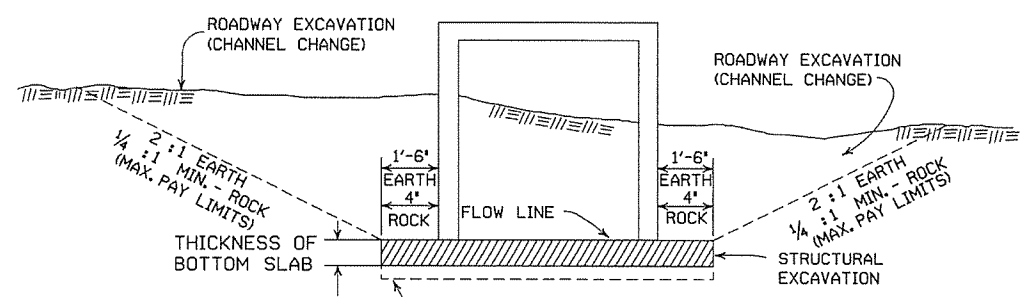


LONGITUDINAL SECTION

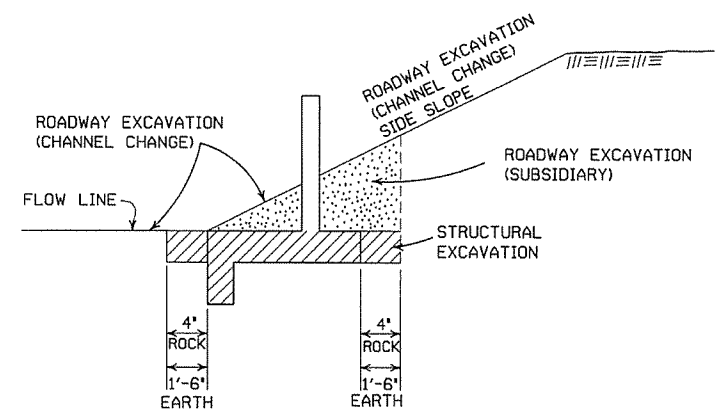
BACKFILL DETAILS FOR BOX CULVERT



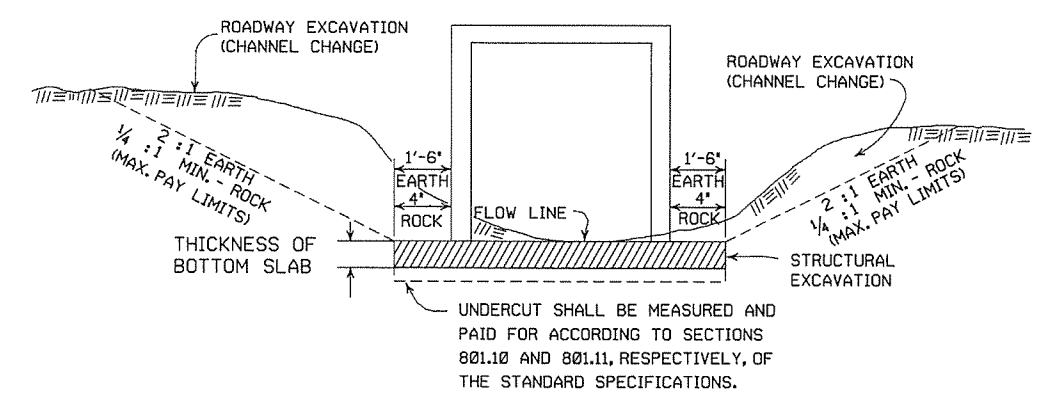
PLAN



SECTION B-B
DETAILS FOR NEW CHANNELS



SECTION C-C



SECTION A-A

DETAILS THROUGH EXISTING CHANNELS

GENERAL NOTES:

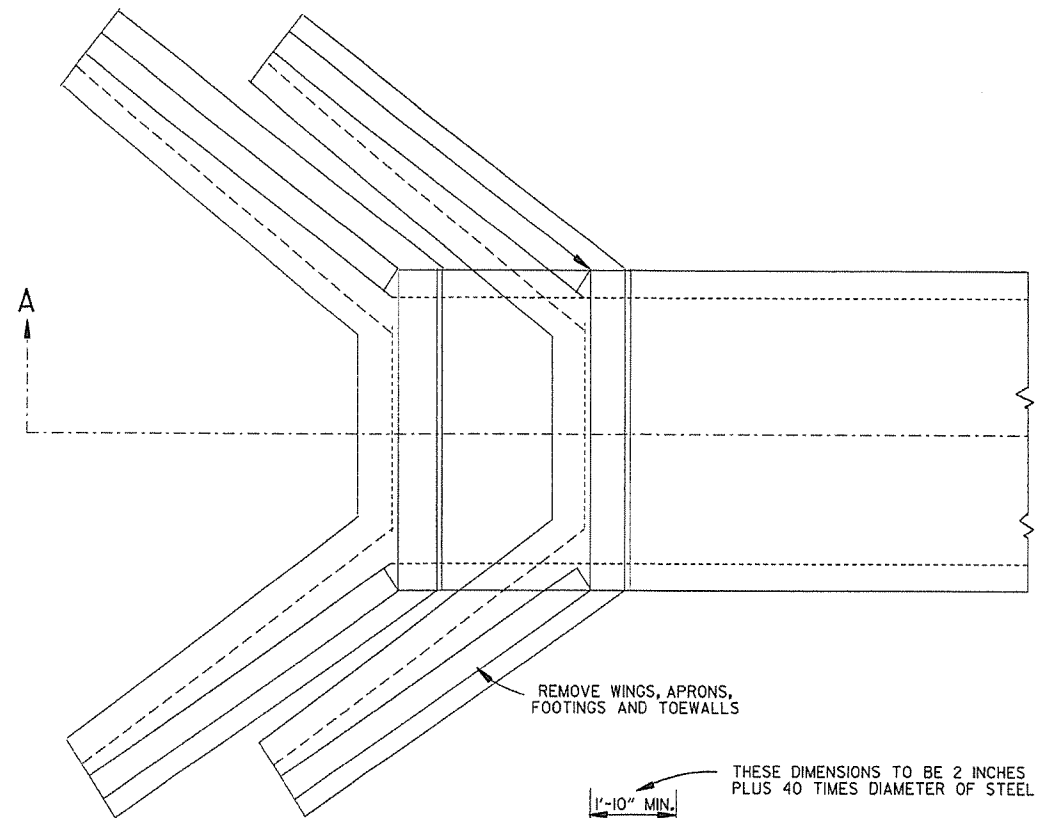
ROADWAY EXCAVATION (CHANNEL CHANGE) WILL BE PAID FOR AT R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS ACTUALLY CUT AND WILL BE CONFINED TO THAT PORTION OF THE INDICATED AREA THAT IS ABOVE THE FLOW LINE. ROADWAY EXCAVATION (CHANNEL CHANGE) SHALL BE MEASURED BY CROSS SECTIONS AND VOLUMES COMPUTED BY AVERAGE END AREA METHOD. ALL CHANNEL CHANGES SHALL BE BROUGHT TO GRADE PRIOR TO MAKING ANY EXCAVATION FOR STRUCTURES.

EXCAVATION FOR STRUCTURES WILL BE PAID FOR AT ALL R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS SHOWN AND SHALL BE CONFINED TO THAT PORTION OF THE INDICATED AREA THAT IS BELOW THE CHANNEL FLOW LINE.

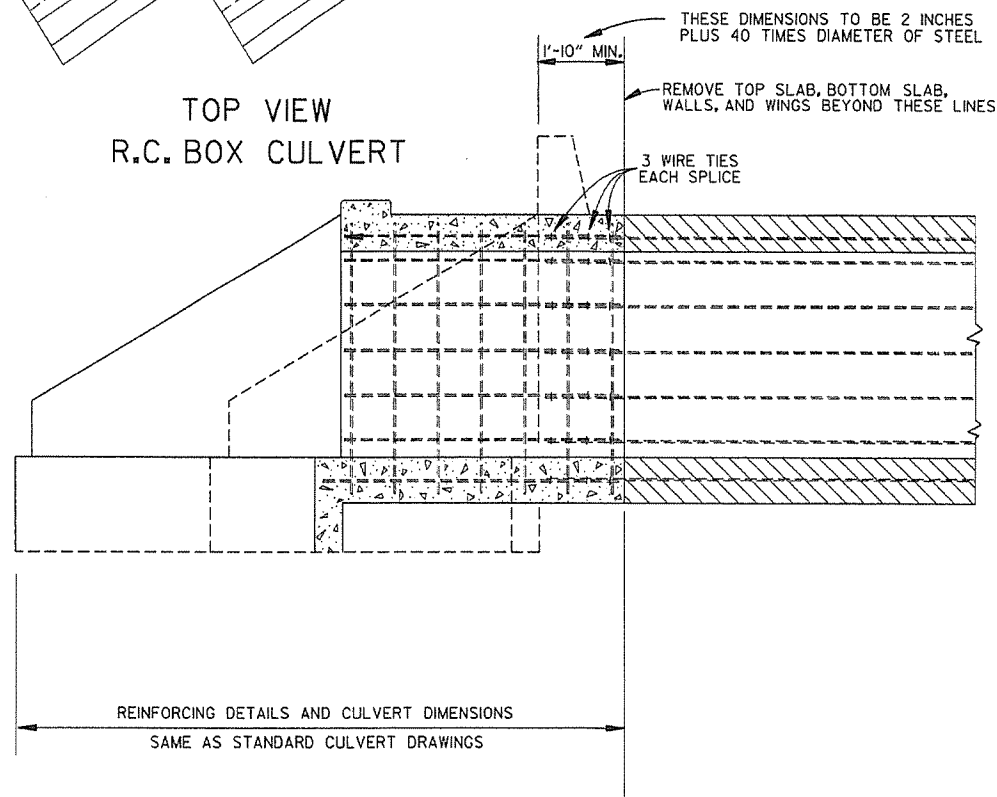
ROADWAY EXCAVATION SHOWN IN SECTION C-C ABOVE AS SUBSIDIARY WILL NOT BE MEASURED OR PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION.

DATE	REVISION	FILMED
11-20-03	REVISED SECTION A-A NOTE	
8-22-02	REVISED SECTION B-B NOTE	
10-12-95	COMBINED 1891B AND 1888A	
1-4-83	REVISED GENERAL NOTES AND ADDED MAXIMUM PAY	674-1-4-83
	LIMIT NOTES	
2-2-76	EXCAV. PAY LIMITS	917-2-2-76
10-2-72	REVISED AND REDRAWN	564-10-16-72

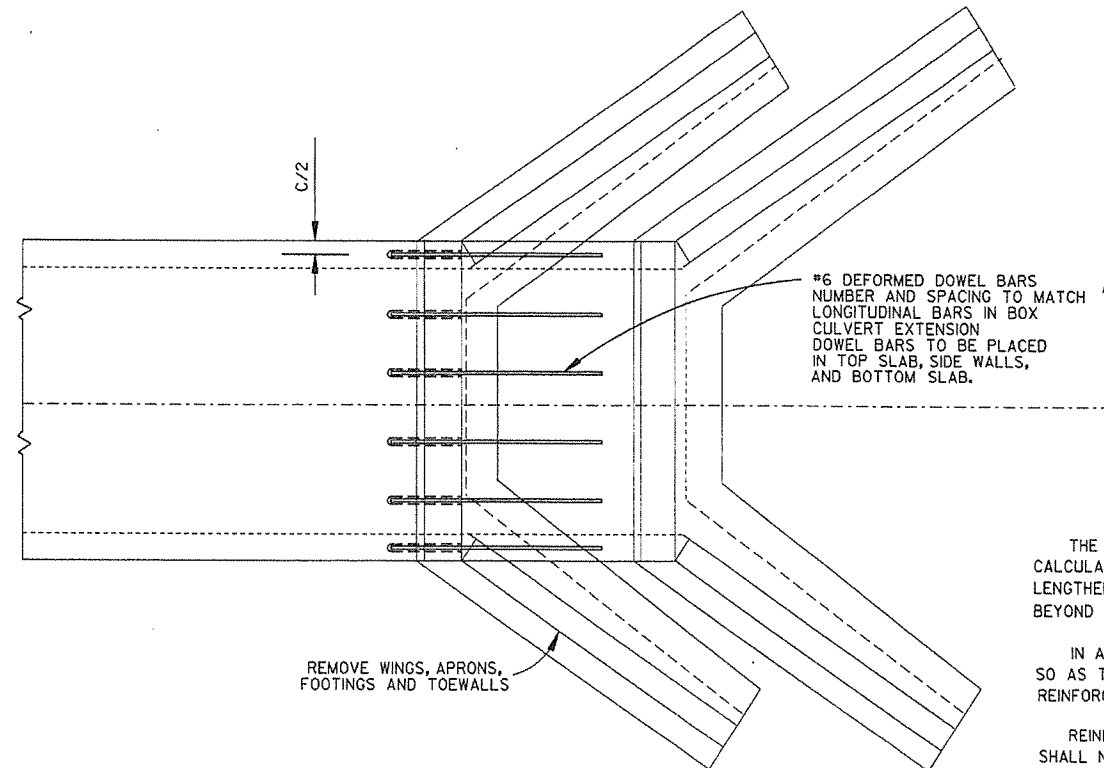
ARKANSAS STATE HIGHWAY COMMISSION
EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS
STANDARD DRAWING RCB-2



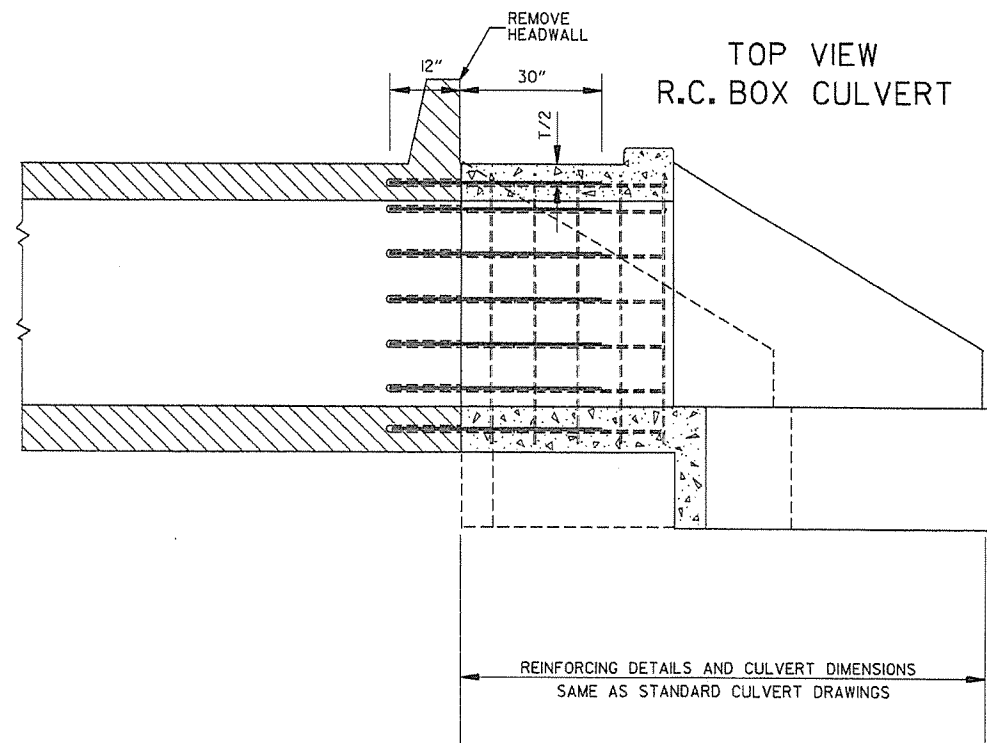
TOP VIEW
R.C. BOX CULVERT



SECTION A-A
METHOD 1



TOP VIEW
R.C. BOX CULVERT



SECTION A-A
METHOD 2

#6 DEFORMED DOWEL BARS
NUMBER AND SPACING TO MATCH
LONGITUDINAL BARS IN BOX
CULVERT EXTENSION
DOWEL BARS TO BE PLACED
IN TOP SLAB, SIDE WALLS,
AND BOTTOM SLAB.

GENERAL NOTES

THE RESIDENT ENGINEER WILL MAKE INDIVIDUAL
CALCULATIONS OF QUANTITIES FOR EACH STRUCTURE
LENGTHENED, MAKING NO ALLOWANCE FOR OVERBREAKAGE
BEYOND THE LINES INDICATED.

IN ALL INSTANCES CONCRETE SHALL BE REMOVED
SO AS TO PERMIT FULL 40 DIAMETER SPLICE OF
REINFORCING STEEL.

REINFORCING STEEL REMOVED FROM EXISTING STRUCTURE
SHALL NOT BE REUSED IN CONSTRUCTING EXTENSION.

ON R.C. BOX CULVERTS THAT HAVE AN EXISTING
CONCRETE APRON; THE CONCRETE APRON SHALL BE REMOVED
WITH THE WINGS. THE COST OF REMOVING ALL OLD CONCRETE
WILL BE INCLUDED IN THE PRICE BID PER CUBIC YARD FOR
NEW CONCRETE OF THE CLASS SPECIFIED AND NO
ADDITIONAL COMPENSATION WILL BE ALLOWED.

MATERIALS FOR SECURING DOWEL BARS SHALL MEET
THE REQUIREMENTS OF SECTION 507.02 OF THE
STANDARD SPECIFICATIONS.

DOWEL BARS SHALL BE INSTALLED AS FOLLOWS: THE DRILLING
PROCEDURE SHALL BE APPROVED BY THE ENGINEER, THE
FILLING SYSTEM SHALL BE APPROVED BY THE ENGINEER, AND
SHALL BE AN INJECTION-TYPE SYSTEM WHICH WILL INSURE
THAT SUFFICIENT MATERIAL IS INJECTED SO IT COMPLETELY
SURROUNDS THE BARS AND FILLS THE HOLES.

THE CONTRACTOR SHALL HAVE THE OPTION OF USING EITHER
METHOD 1 OR METHOD 2, REGARDLESS OF WHICH METHOD IS USED,
PAY QUANTITIES WILL BE CALCULATED BASED ON METHOD 1.

NOTE:
NO PART OF THIS STANDARD IS TO BE USED FOR ANY
DETAILS RELATIVE TO NEW CONSTRUCTION.
SEE STANDARD DRAWING LISTED IN TABULATION OF
STRUCTURES FOR ALL NEW CONSTRUCTION DETAILS.

ARKANSAS STATE HIGHWAY COMMISSION		
METHOD OF EXTENDING EXISTING R.C. BOX CULVERTS		
STANDARD DRAWING RCB-3		
10-12-95	CHANGED DRAWING * FROM 144-A	
4-1-93	ADDED GENERAL NOTE	
10-1-92	ADDED ALT. METHOD OF EXTENSION	
11-30-89	REDRAWN	
1-4-83	ELIMINATED CONCRETE CLASS	
12-20-56	RETRACED	
DATE	REVISION	DATE FILM

SUPERELEVATION TABLE FOR ONE - WAY TRAFFIC

DEGREE OF CURVE	30 MPH			40 MPH			50 MPH			55 MPH			60 MPH			65 MPH			70 MPH		
	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e
	MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE	
0° 15'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
0° 30'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
0° 45'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
1° 00'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
1° 15'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
1° 30'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
1° 45'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
2° 00'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
2° 15'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
2° 30'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
2° 45'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
3° 00'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
3° 15'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
3° 30'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
3° 45'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
4° 00'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
4° 15'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
4° 30'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
4° 45'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
5° 00'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
5° 15'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
5° 30'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
5° 45'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
6° 00'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
6° 15'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
6° 30'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
6° 45'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
7° 00'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
7° 15'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
7° 30'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
7° 45'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
8° 00'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
8° 15'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
8° 30'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
8° 45'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
9° 00'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
9° 15'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
9° 30'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
9° 45'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
10° 00'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
10° 15'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
10° 30'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
10° 45'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
11° 00'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
11° 15'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
11° 30'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
11° 45'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
12° 00'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
12° 15'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
12° 30'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
12° 45'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
13° 00'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
13° 15'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
13° 30'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
13° 45'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
14° 00'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
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14° 30'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
14° 45'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
15° 00'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
15° 15'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
15° 30'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
15° 45'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
16° 00'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
16° 15'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
16° 30'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
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17° 15'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
17° 30'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
17° 45'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
18° 00'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
18° 15'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
18° 30'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
18° 45'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
19° 00'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
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19° 30'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
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20° 15'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
20° 30'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
20° 45'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
21° 00'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
21° 15'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
21° 30'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
21° 45'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
22° 00'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
22° 15'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
22° 30'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
22° 45'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
23° 00'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
23° 15'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
23° 30'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
23° 45'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
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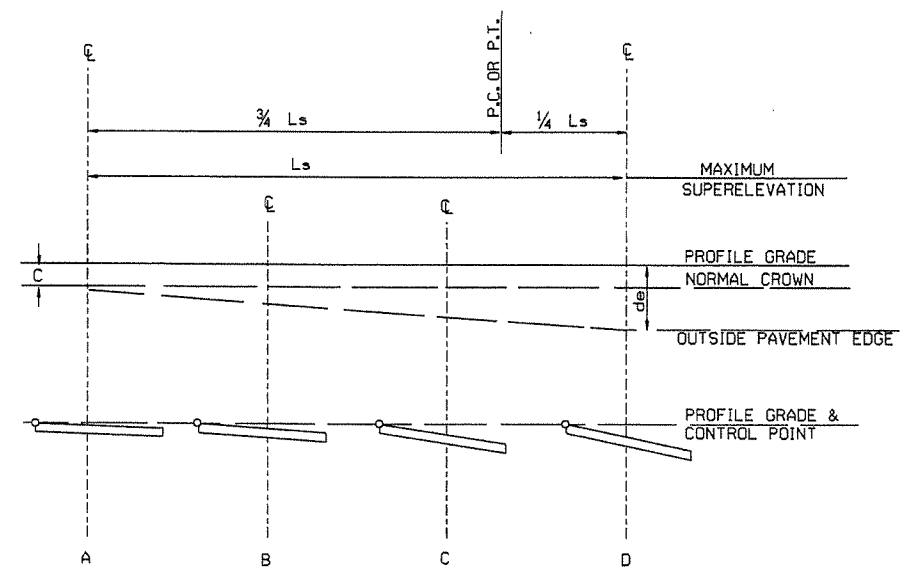
ABBREVIATIONS

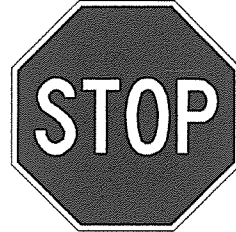
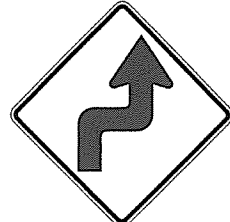
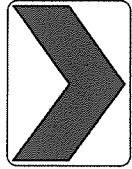
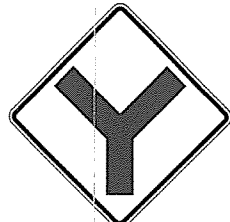
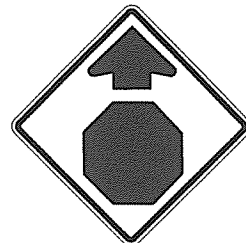
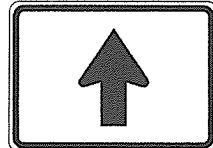
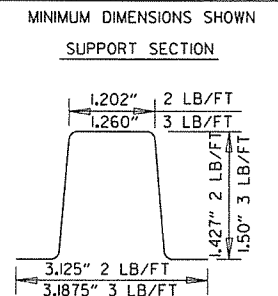
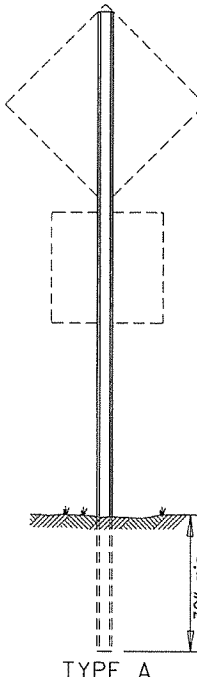
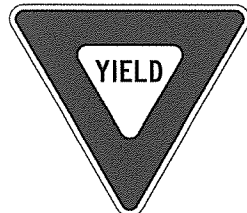
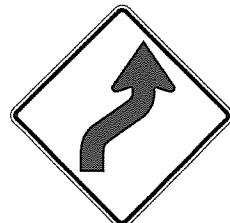
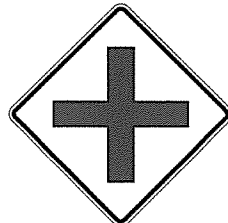
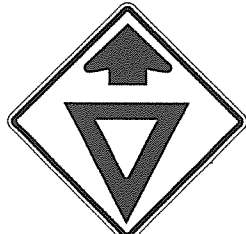
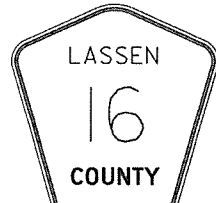
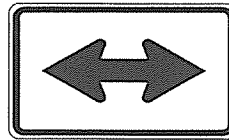
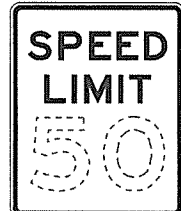
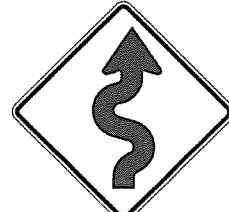
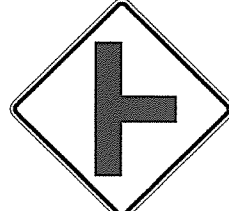
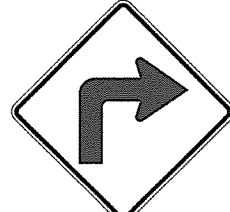
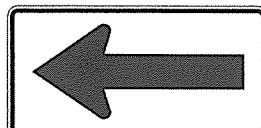
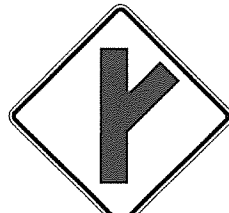
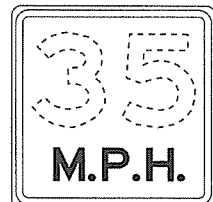
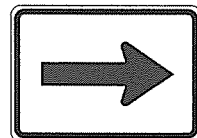
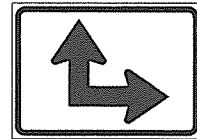
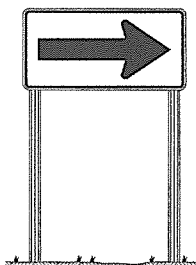
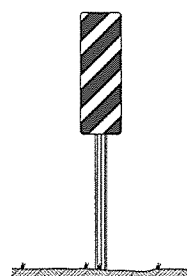
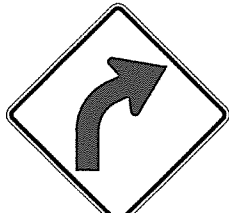
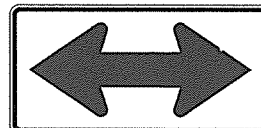
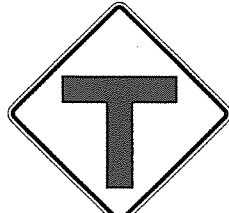
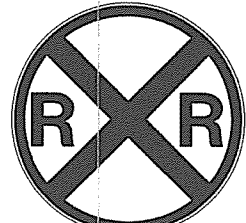
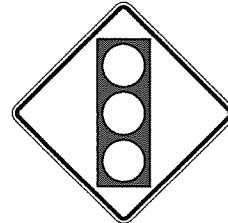
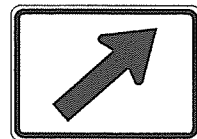
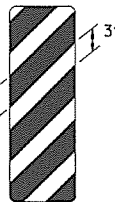
- NC - NORMAL CROWN
- RC - REVERSE CROWN, SUPERELEVATION AT NORMAL CROWN SLOPE
- S - SUPERELEVATION
- L - DISTANCE FROM BEGINNING OF SUPERELEVATION TRANSITION TO ANY POINT (FT.)
- d - WIDTH OF PAVEMENT
- e - MAXIMUM RATE OF SUPERELEVATION (FT. PER FT.)
- Ls - LENGTH OF SUPERELEVATION TRANSITION (FT.)
- C - NORMAL CROWN (FT.)

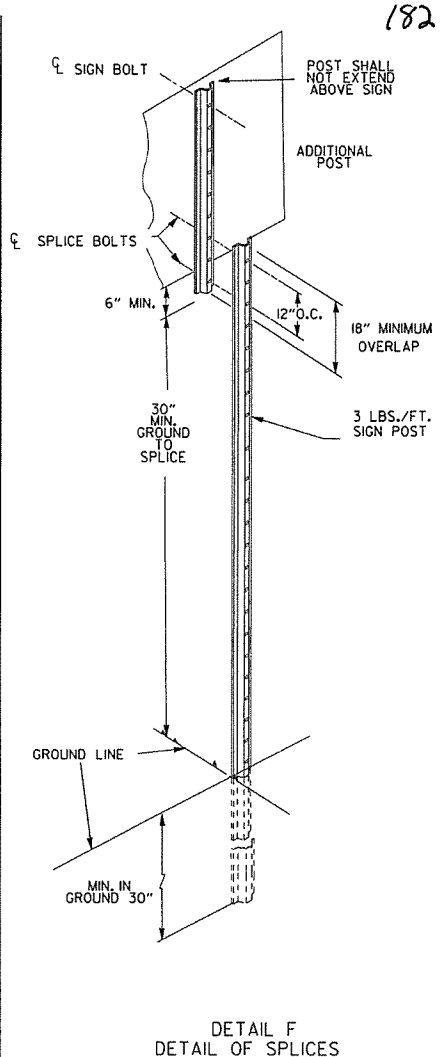
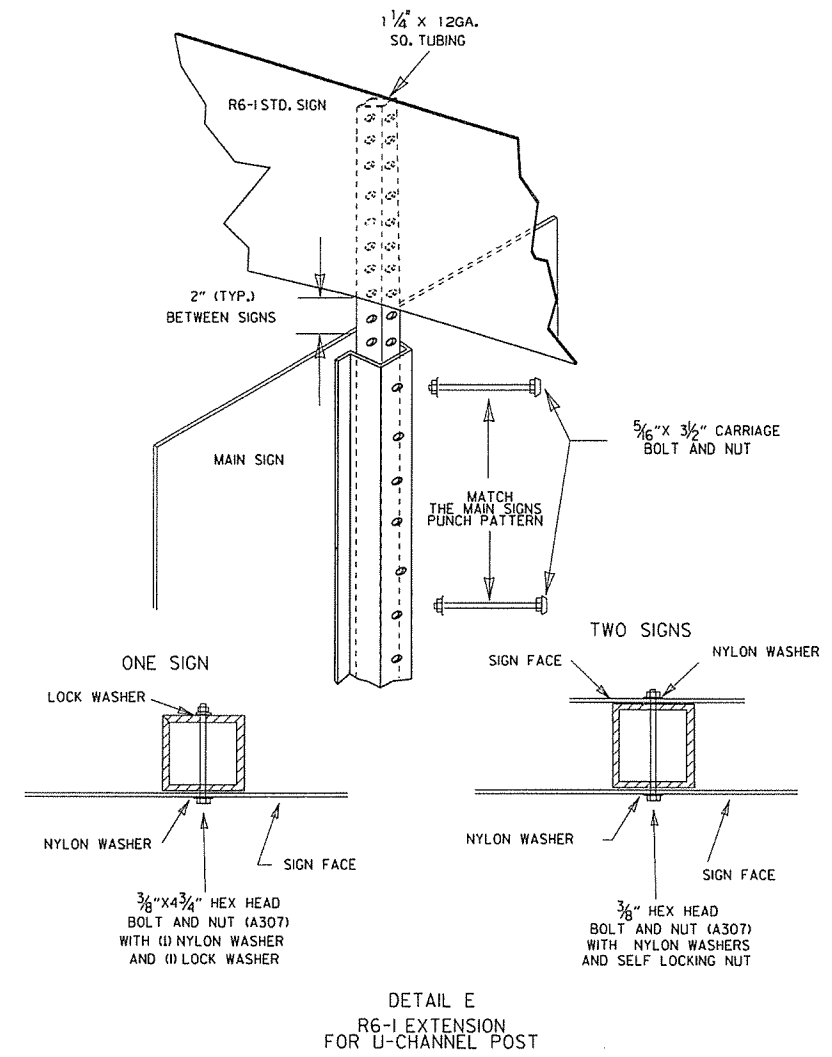
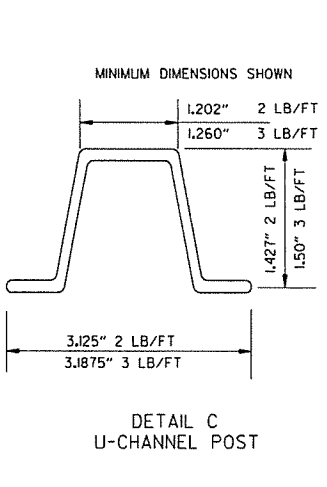
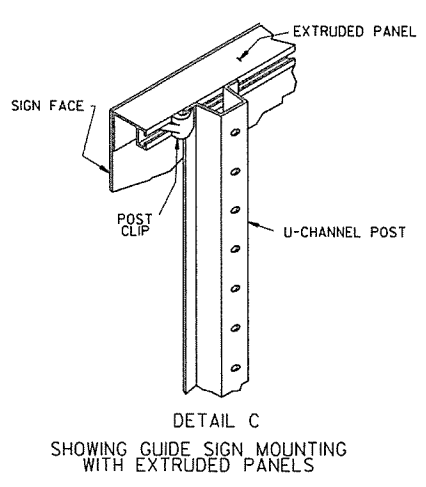
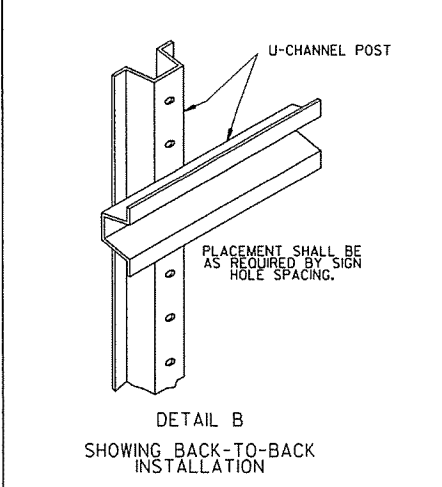
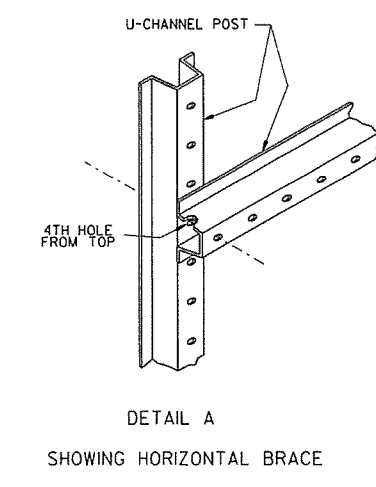
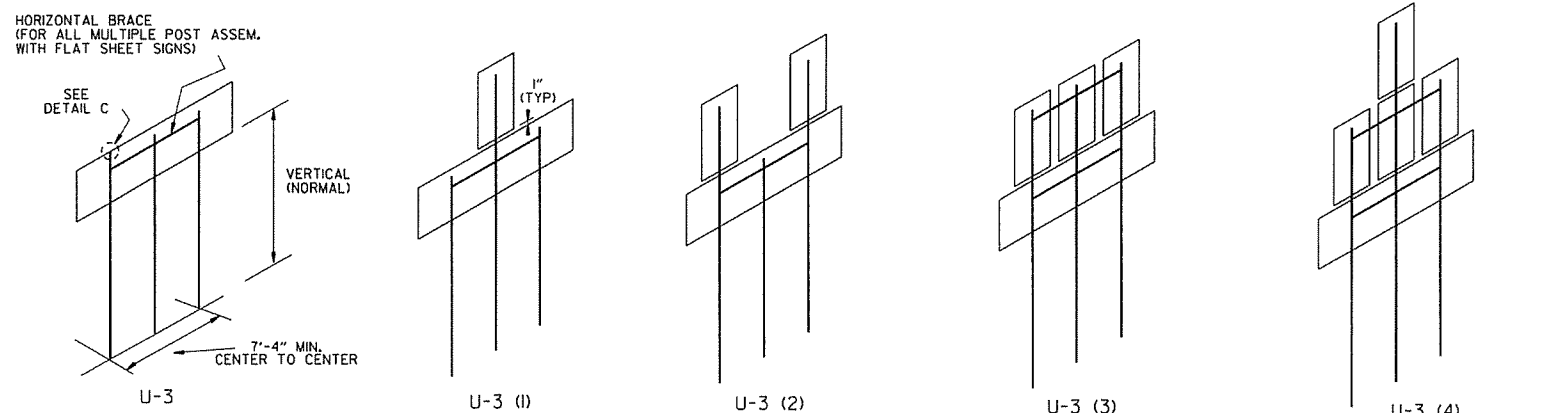
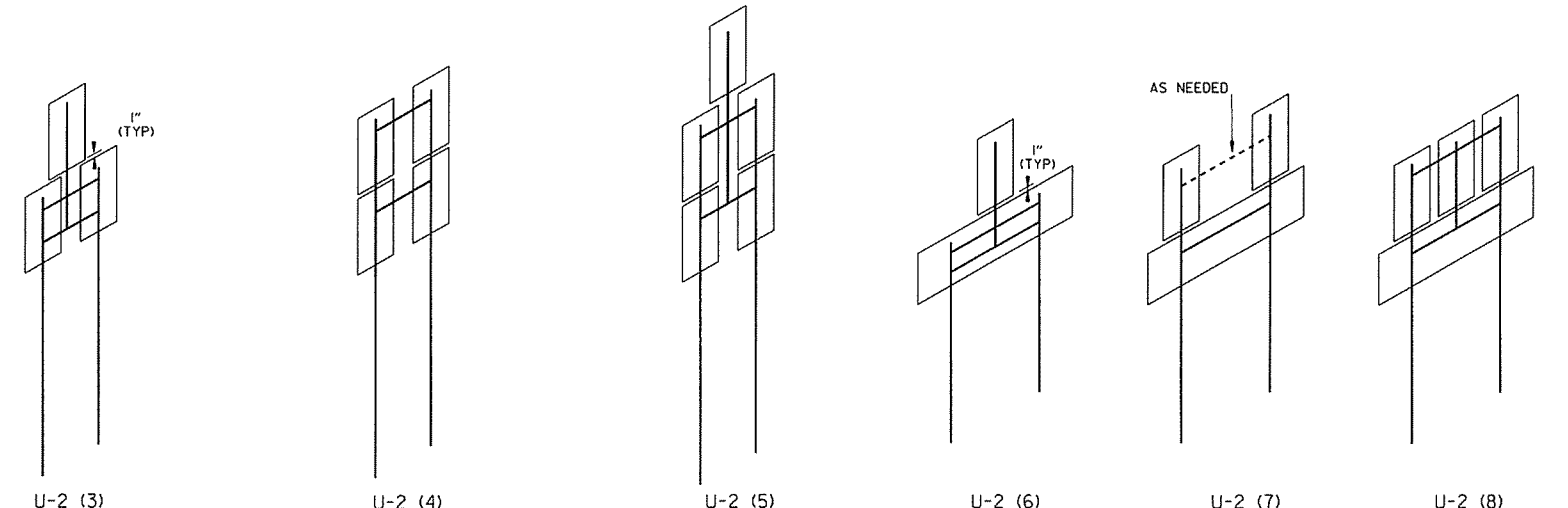
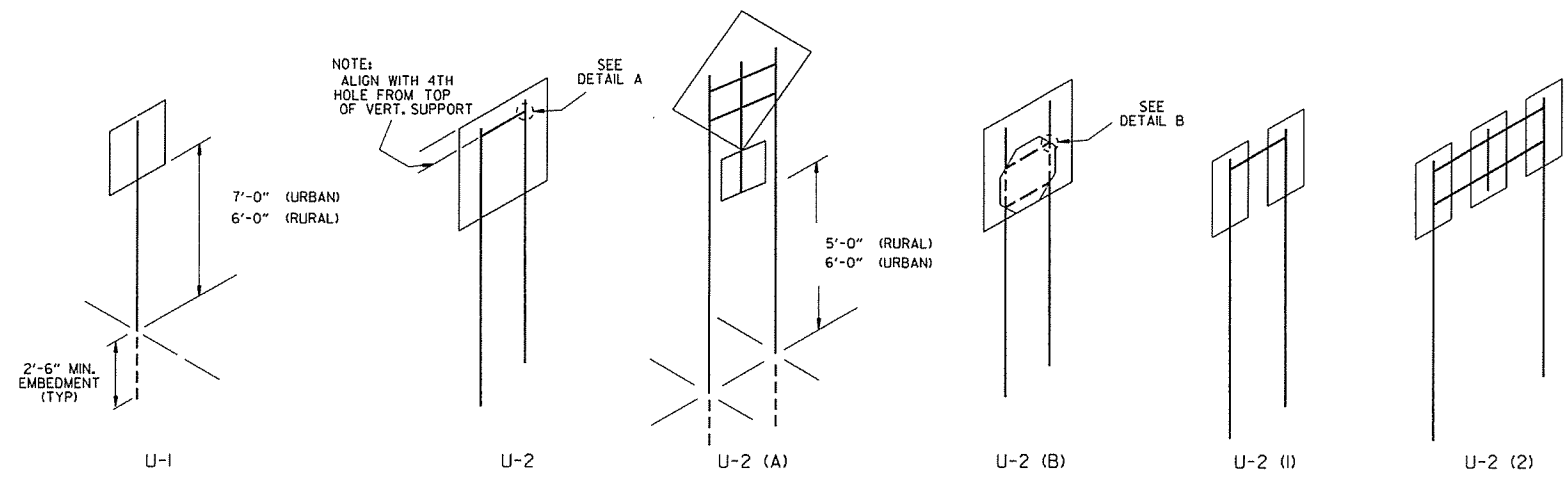
GENERAL NOTES

- ON PAVEMENT WITH ONE-WAY TRAFFIC, THE SUPERELEVATION SHALL BE REVOLVED ON THE PROFILE GRADE POINT.
- SUPERELEVATION VALUES SHOWN ON THE CROSS SECTIONS ARE VALUES (+) OR (-) TO BE ADDED OR SUBTRACTED FROM THE POINT OF CONTROL.
- LENGTHS FOR Ls MAY BE ROUNDED IN MULTIPLES OF 25 FT. OR 50 FT. TO PERMIT SIMPLER CALCULATIONS.
- MINIMUM Ls VALUES MAY BE USED FOR RAMPS; DESIRABLE VALUES SHALL APPLY TO MAIN LANES.
- DIVIDED PAVEMENTS WIDER THAN 4 LANES SHALL HAVE ADDITIONAL TRANSITION LENGTHS AS FOLLOWS:

6 LANE DIVIDED-----+20%
8 LANE DIVIDED-----+50%



 RI-1 30"x30"	 W1-3 30"x30" (LT. OR RT.)	 W1-8 18"x24"	 W2-5 30"x30"	 W3-1 36"x36"	 W5-1 36"x36"	 M6-3 21"x15"		MINIMUM DIMENSIONS SHOWN SUPPORT SECTION  (U-CHANNEL) STANDARD SUPPORT ASSEMBLIES  TYPE A NOTE: LENGTH OF SIGN POSTS SHALL BE DETERMINED SO AS TO PROVIDE FOR MINIMUM VERTICAL CLEARANCES AS CALLED FOR IN THE SPECIFICATIONS PLUS A MINIMUM VERTICAL PENETRATION OF 30" IN THE SOIL.																																		
 RI-2 36"x36"x36"	 W1-4 30"x30" (LT. OR RT.)	 W2-1 30"x30"	 SI-1 36"x36"	 W3-2 36"x36"	 LASSEN 16 COUNTY County Route Marker MI-6 24"x24"	 M6-4 21"x15"																																				
 R2-1 24"x30"	 W1-5 30"x30" (LT. OR RT.)	 W2-2 30"x30"	 W5-2 36"x36"	 W8-3 36"x36"	NOTE: REFLECTORIZED YELLOW LEGEND (COUNTY NAME, ROUTE LETTER & NUMBER) & BORDER ON A BLUE BACKGROUND.  RI-3P 18"x6"	 M6-5 21"x15"																																				
 W1-1 30"x30" (LT. OR RT.)	 W1-6 48"x24"	 W2-3 30"x30" (LT. OR RT.)	 ONE LANE BRIDGE W5-3 36"x36"	 35 M.P.H. W13-1P 18"x18"	 M6-1 21"x15"	 M6-6 21"x15"		 TYPE B  TYPE C MINIMUM WEIGHT TYPE A & B = 3 LBS./FT. TYPE C = 2 LBS./FT.																																		
 W1-2 30"x30" (LT. OR RT.)	 W1-7 48"x24"	 W2-4 30"x30"	 W10-1 36" DIAMETER	 W3-3 36"x36"	 M6-2 21"x15"	 S4-3P 24"x8"	 WHEN CHILDREN ARE PRESENT S4-2P 24"x10"	 OM-3 12"x36" (LT. OR RT.)																																		
STANDARD HIGHWAY SIGNS						<table><tr><td>9-12-13</td><td>DELETED JOB NO. BLOCK; REVISED RI-3 TO RI-3P</td><td></td></tr><tr><td>4-17-08</td><td>REVISED SIGN DESIGNATION - W3-1 & W3-2</td><td></td></tr><tr><td>4-10-03</td><td>REVISED W5-2, W8-3, OM-3; ADDED W1-8</td><td></td></tr><tr><td>1-5-81</td><td>REDRAWN</td><td>960-1-15-81</td></tr><tr><td>9-15-78</td><td>ADDED W14-3</td><td>877-9-15-78</td></tr><tr><td>9-2-76</td><td>POST WT.</td><td>623-9-3-76</td></tr><tr><td>5-3-76</td><td>STEEL POST WT. FROM 2"-3"; ADDED S4-2 & S4-3</td><td>504-5-3-76</td></tr><tr><td>8-12-74</td><td>REV. HT. TYPE "C" ASSEMBLY</td><td>500-8-21-74</td></tr><tr><td>12-21-72</td><td>ADDED M6-2, 3, 4, 5, 6</td><td>500-12-21-72</td></tr><tr><td>12-1-72</td><td>ISSUED</td><td>562-12-1-72</td></tr><tr><td>DATE</td><td>REVISION</td><td>DATE FILMED</td></tr></table>		9-12-13	DELETED JOB NO. BLOCK; REVISED RI-3 TO RI-3P		4-17-08	REVISED SIGN DESIGNATION - W3-1 & W3-2		4-10-03	REVISED W5-2, W8-3, OM-3; ADDED W1-8		1-5-81	REDRAWN	960-1-15-81	9-15-78	ADDED W14-3	877-9-15-78	9-2-76	POST WT.	623-9-3-76	5-3-76	STEEL POST WT. FROM 2"-3"; ADDED S4-2 & S4-3	504-5-3-76	8-12-74	REV. HT. TYPE "C" ASSEMBLY	500-8-21-74	12-21-72	ADDED M6-2, 3, 4, 5, 6	500-12-21-72	12-1-72	ISSUED	562-12-1-72	DATE	REVISION	DATE FILMED	SUPPORT ASSEMBLIES	
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						ARKANSAS STATE HIGHWAY COMMISSION		STANDARD HIGHWAY SIGNS AND SUPPORT ASSEMBLIES																																		
								STANDARD DRAWING SHS-1																																		



NOTES:

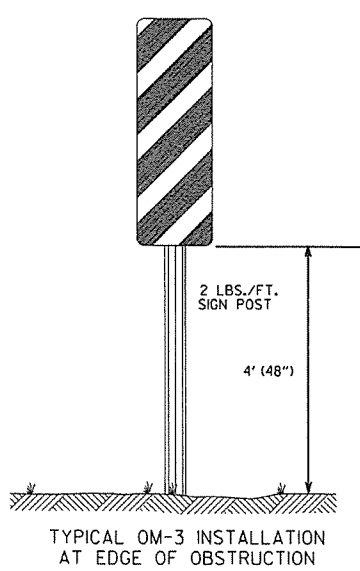
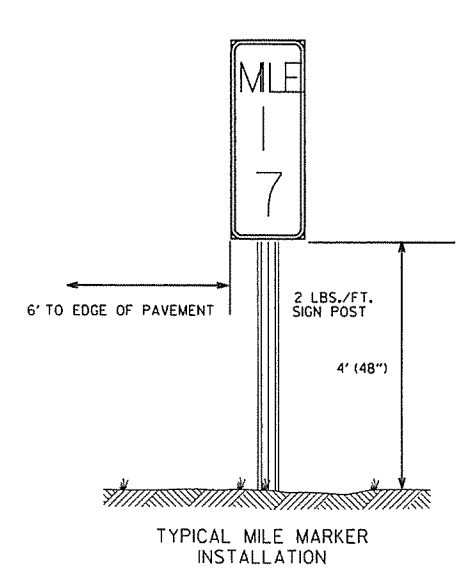
SIGNS AT LEAST 8' IN LENGTH MAY BE INSTALLED ON THREE 3 LB. POST. IN NO CASE SHALL THERE BE MORE THAN TWO 3 LB. POSTS WITHIN A 7' PATH.

SPLICES NECESSARY TO ATTAIN PROPER MOUNTING HEIGHT SHALL BE AS SHOWN IN DETAIL (F).

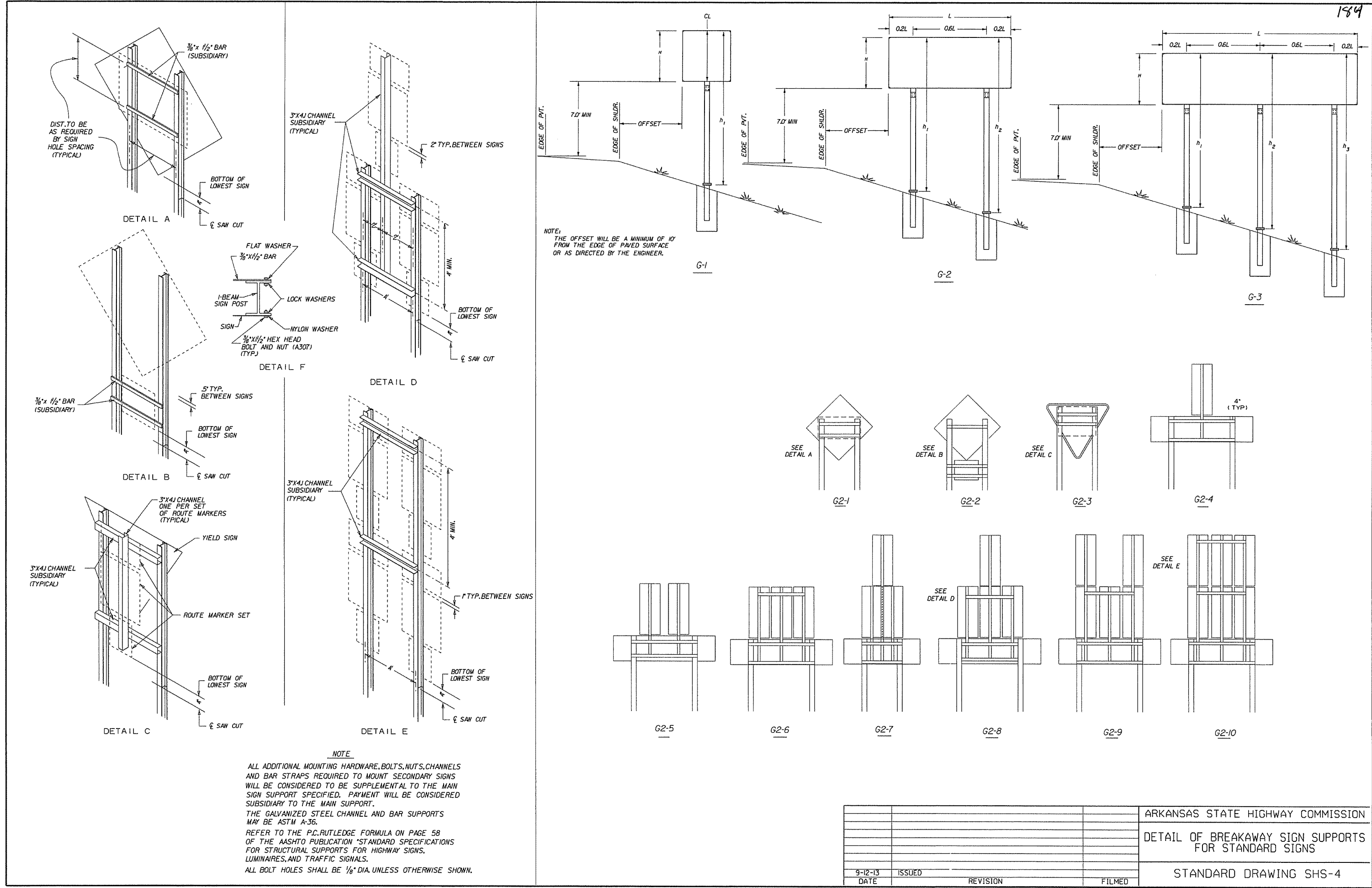
NORMAL INSTALLATIONS WILL REQUIRE 5/16" DIA. CARRIAGE BOLTS TO MOUNT SIGNS TO POST AND TO ASSEMBLE THE VARIOUS POST SUPPORTS.

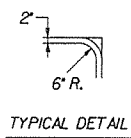
ALL SIGN POSTS SHALL BE PLUMB.

THE POST FOR "TYPE U" SUPPORTS SHALL BE HOT DIP GALVANIZED.

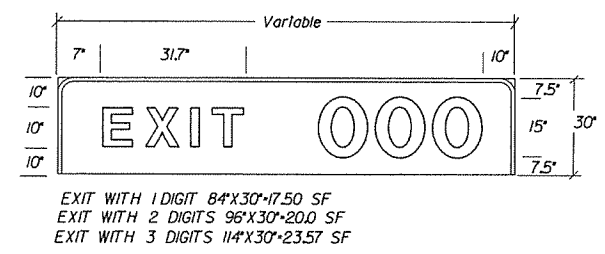


ARKANSAS STATE HIGHWAY COMMISSION		
U-CHANNEL POST ASSEMBLIES		
STANDARD DRAWING SHS-2		
9-12-13	REVISED U-2(3), U-2(6), U-3(1), DETAIL D; ADDED DETAILS E & F; ADDED TYPICAL MARKERS	
10-9-03	REMOVED ROUND POST & REVISED SPACING	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL	6-8-95
2-2-95	REDRAWN	2-2-95
DATE	REVISION	FILMED

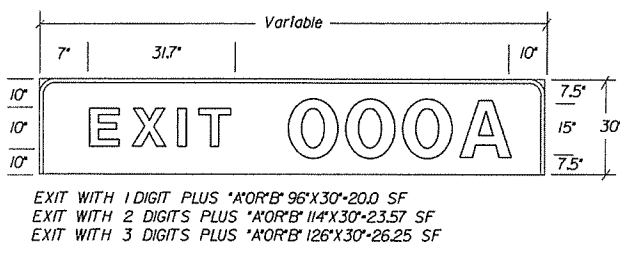




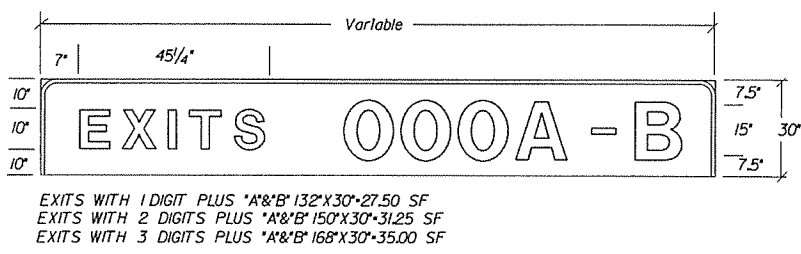
TYPE A



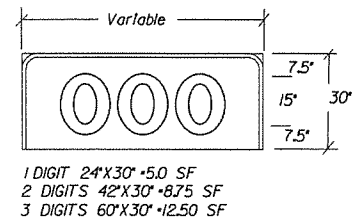
TYPE B



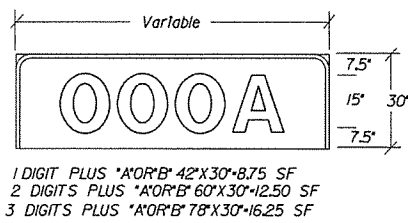
TYPE C



TYPE D



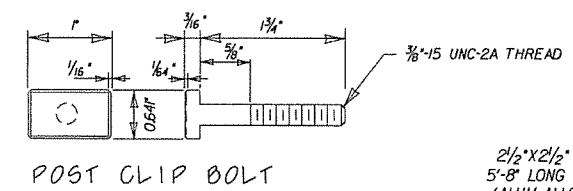
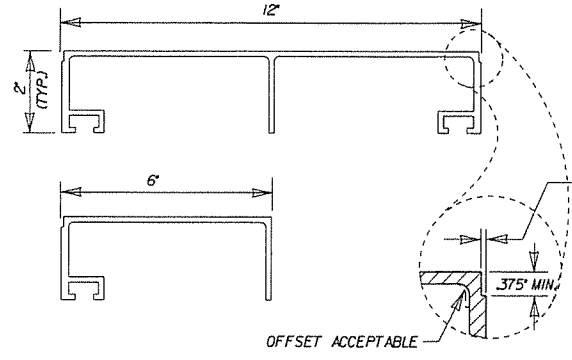
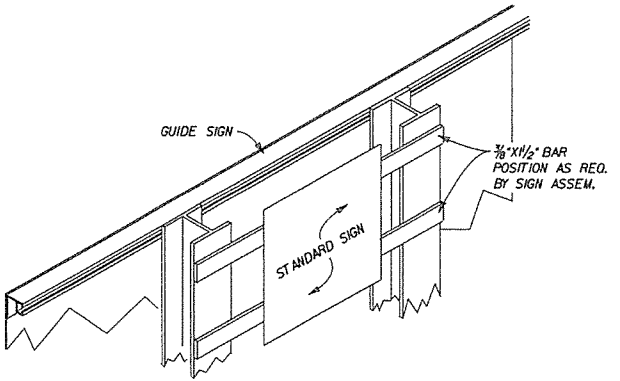
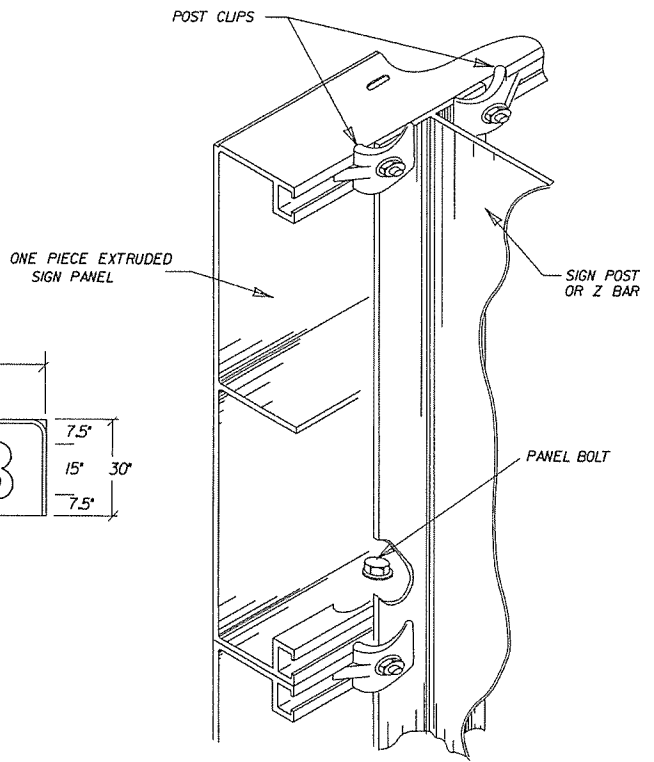
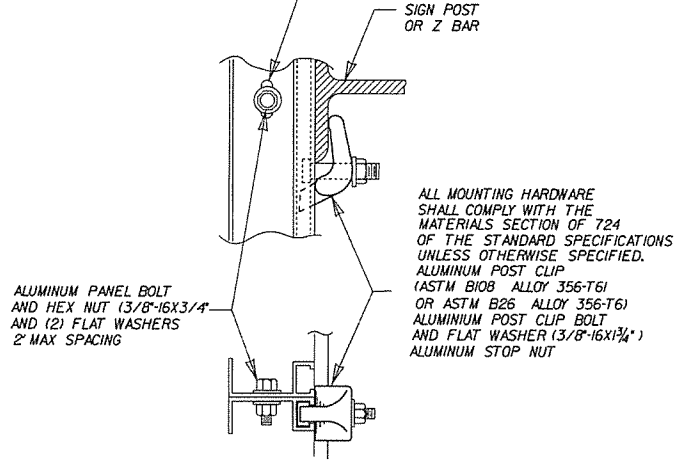
TYPE E



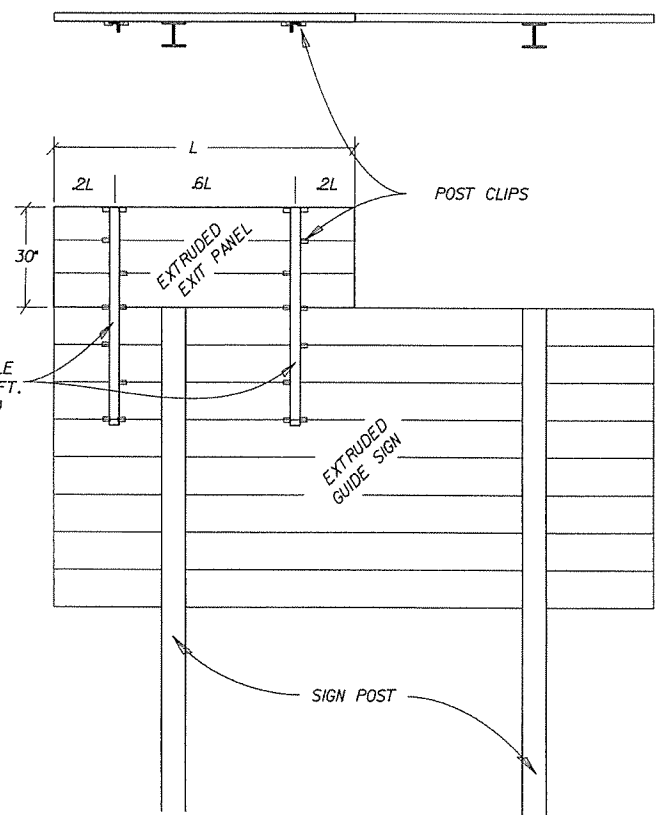
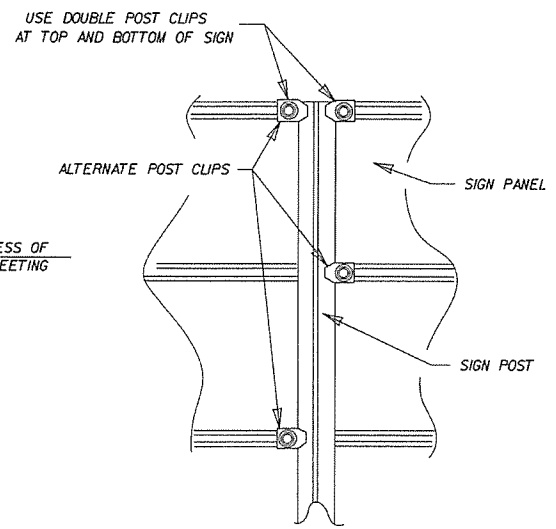
EXIT PANEL DETAILS

NOTE: EXIT NUMBER PANELS SHALL HAVE WHITE LEGENDS AND BORDERS. THE BACK GROUND COLOR WILL BE AS USE SPECIFIES. SHEETING TYPE WILL BE THE SAME AS THE GUIDE SIGN WHICH THE EXIT PANEL IS ATTACHED OR AS SPECIFIED IN THE PLANS. PAYMENT FOR ALL POST CLIPS, BOLTS, AND ANGLES SHALL BE SUBSIDIARY TO THE ITEM 'EXIT NUMBER PANEL'.

SLOTTED HOLES (7/16" X 7/8")
DRILLED OR PUNCHED @ 12" O.C.
BEGINNING 6" FROM ONE END



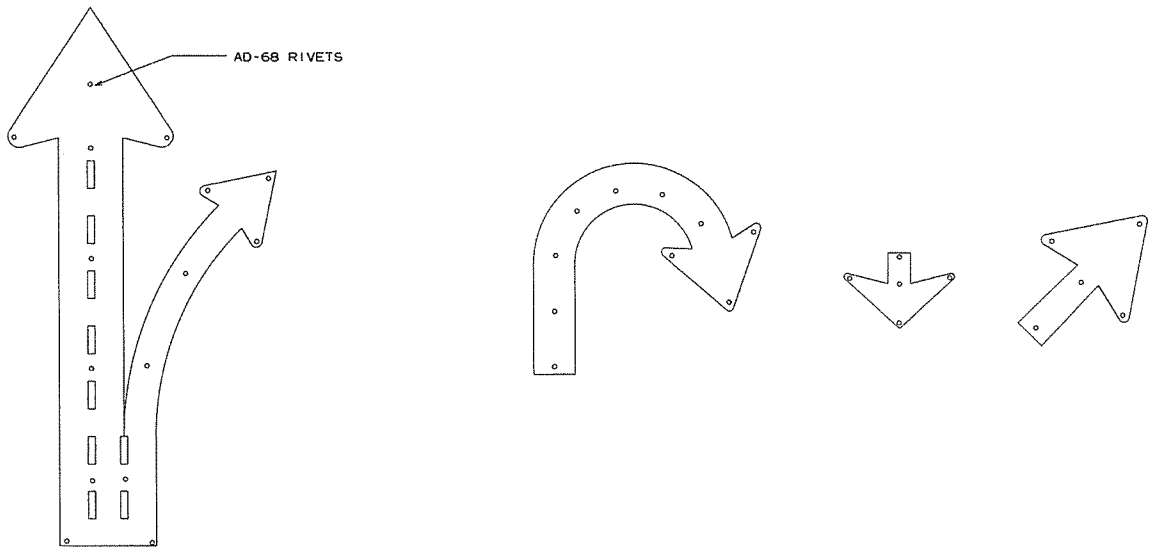
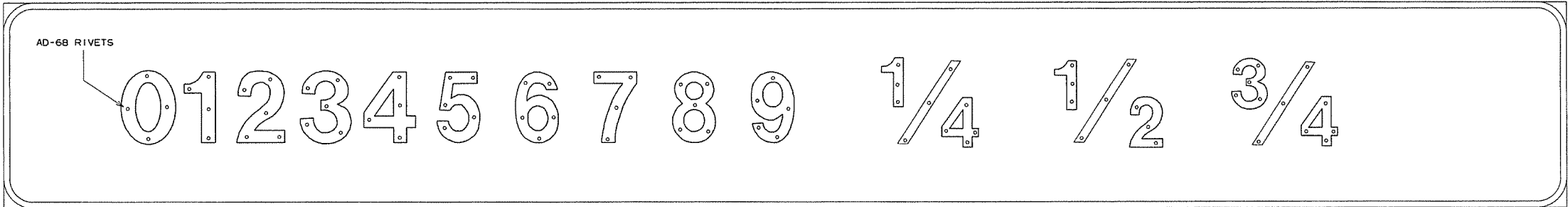
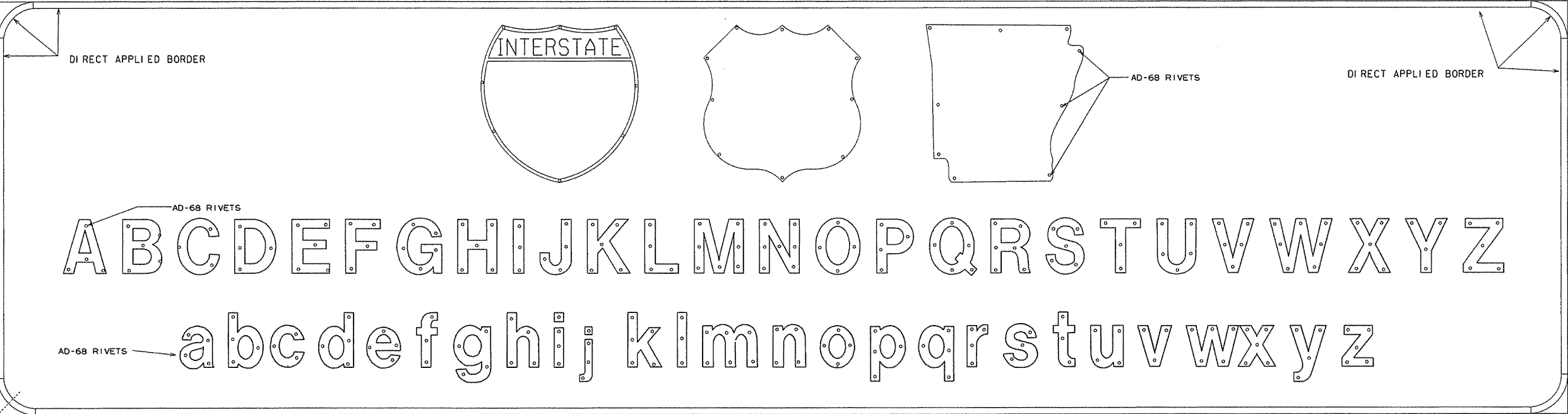
2 1/2" X 2 1/2" X 1/4" ANGLE
5'-8" LONG 1.4" PER FT.
(ALUM. ALLOY 6061-T6)



ARKANSAS STATE HIGHWAY COMMISSION			
DETAILS OF GUIDE SIGN PANELS			
STANDARD DRAWING SHS-5			
9-12-13	ISSUED	REVISION	FILMED
DATE			

THE CONTRACTOR SHALL DRILL AND POP-RIVET LEGEND, SHIELDS, ARROWS, OR OTHER COPY AS SHOWN.

MOUNTING DETAILS FOR DEMOUNTABLE
LEGEND ON GUIDE SIGNS



NOTES:

LEGEND ON GUIDE SIGNS ON THE MAIN LANES SHALL BE DEMOUNTABLE LEGEND.
LEGEND ON GUIDE SIGNS ON CROSS ROADS AND RAMPS SHALL BE DIRECT APPLIED.
THE DEMOUNTABLE AND DIRECT APPLIED LEGENDS SHALL BE TYPE IX SHEETING.

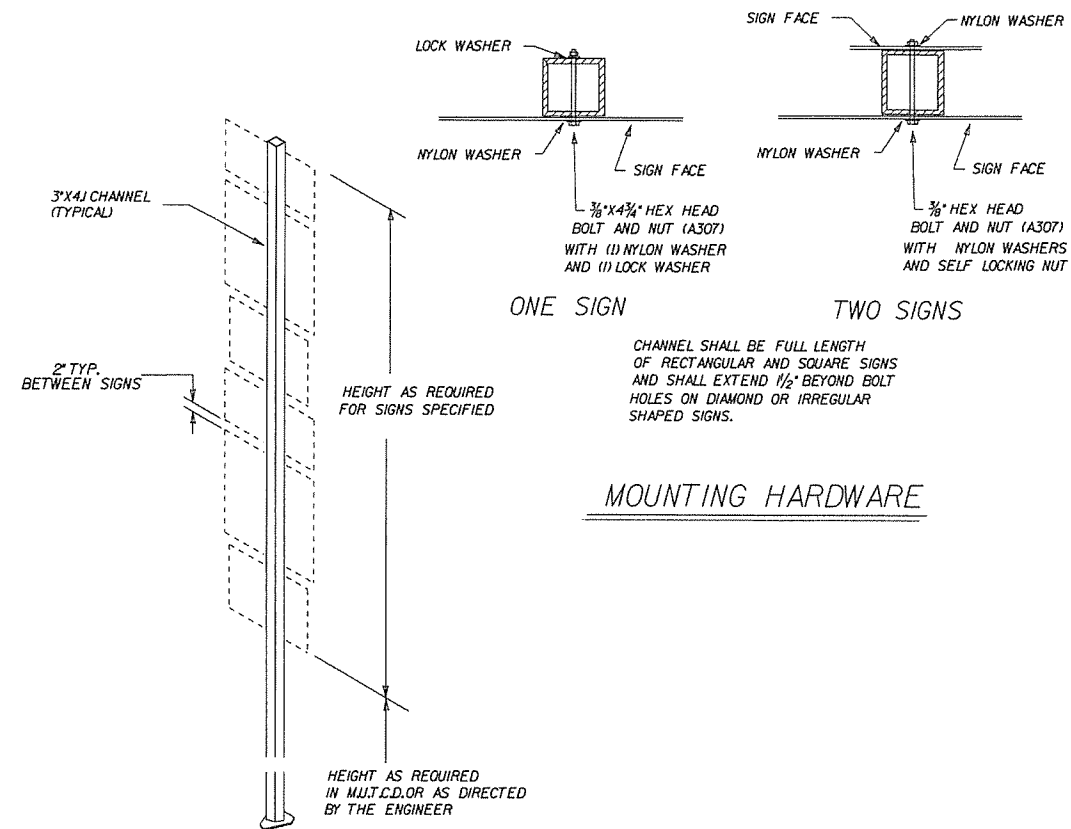
THE BACKGROUND ON ALL GUIDE SIGNS AND STANDARD SIGNS SHALL BE CONSTRUCTED
USING TYPE III SHEETING.

TYPE IX SHEETING FOR BORDER, LEGEND, SHIELDS, ARROWS, OR OTHER COPY
SHALL BE ORIENTED VERTICALLY AS PER MANUFACTURERS' DATUM MARKS,
ORIENTATION MARKS, OR OTHER RECOMMENDATIONS.

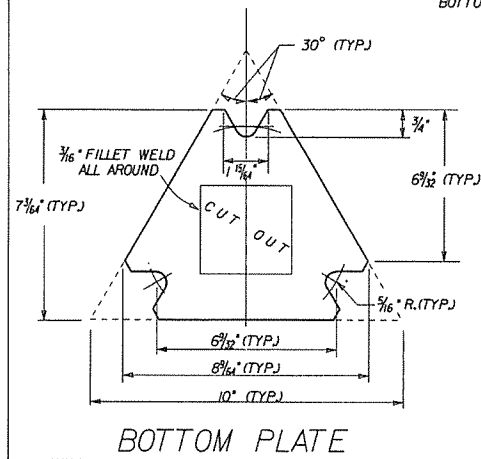
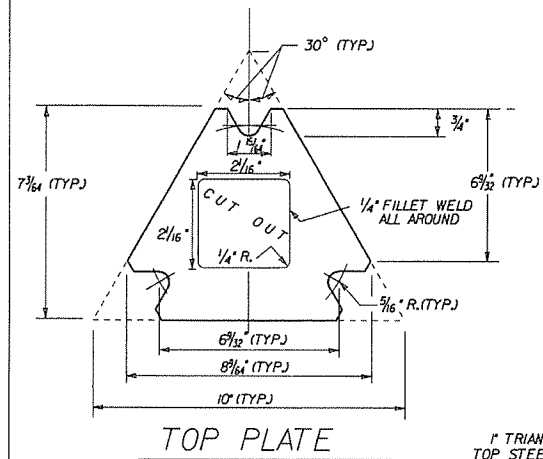
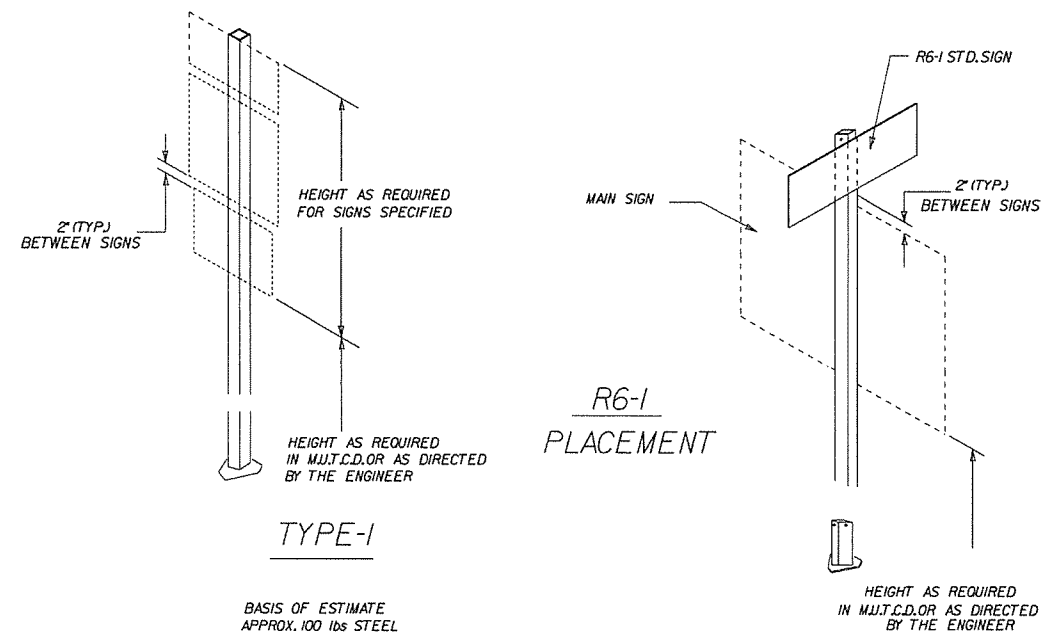
SIGN LEGEND, SHIELDS, ARROWS OR OTHER COPY SHALL BE APPLIED WITH
RIVETS ONLY.

NO OTHER METHOD OF APPLYING CHARACTERS IS ALLOWED.

			ARKANSAS STATE HIGHWAY COMMISSION
			MOUNTING DETAILS FOR DEMOUNTABLE LEGEND ON GUIDE SIGNS
9-12-13 DATE	ISSUED	REVISION	FILMED
			STANDARD DRAWING SHS-6



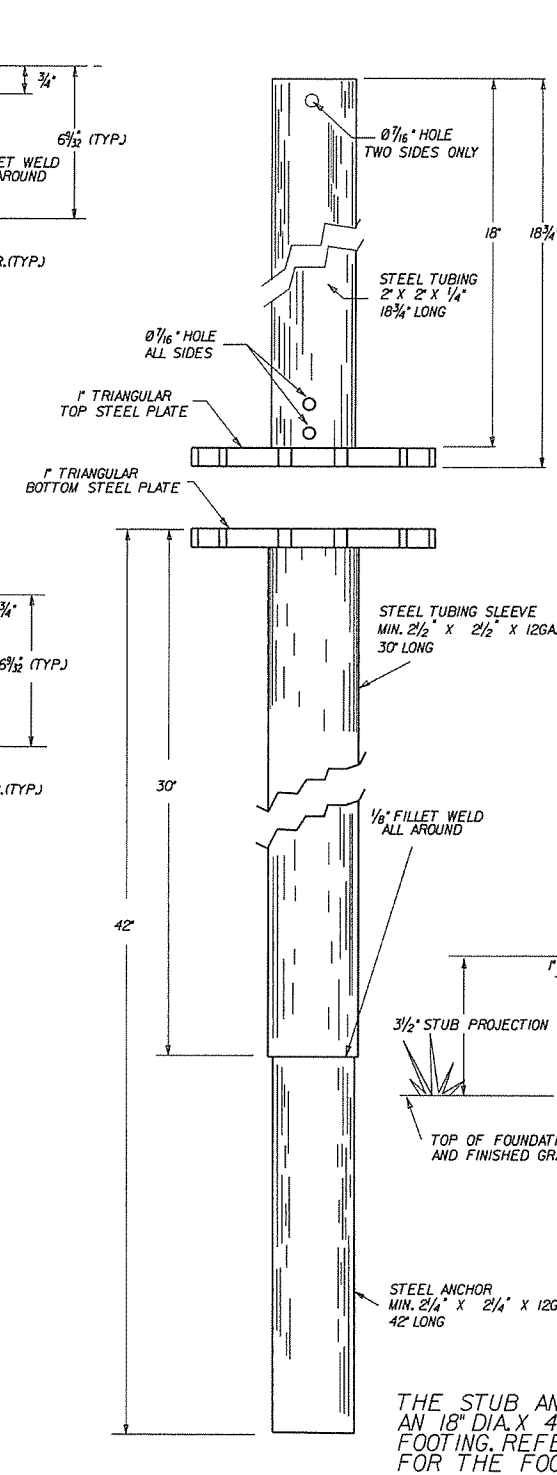
MOUNTING HARDWARE



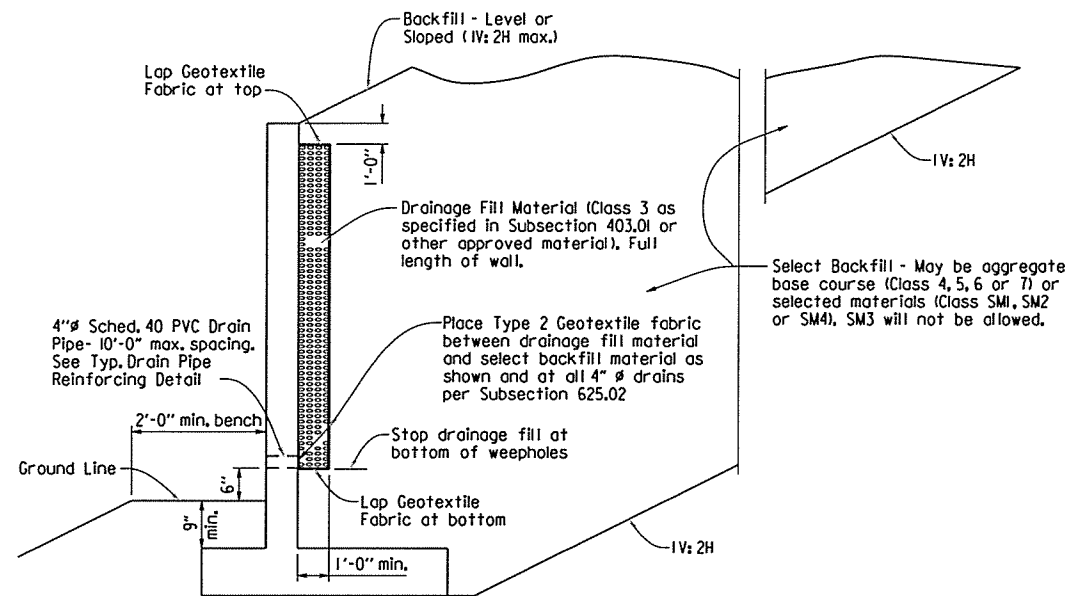
GENERAL NOTES:
THE TOP PLATE OF TRIANGULAR
SLIP BASES SHALL HAVE THE
SAME EXTERIOR DIMENSIONS
AS THE BOTTOM PLATE.

INSIDE DIAMETER OF THE SIGN POST SHALL BE CUT THROUGH THE CENTER OF THE TOP PLATE WITH THE HOLE EDGE BEVELED AS SHOWN. THE BEVEL END SHALL BE TANGENT TO THE BOLT HOLE .ANY MISALIGNMENT SHALL BE REMOVED BY GRINDING . FACE OF BEVEL SHALL BE FINISHED TO A MINIMUM SMOOTHNESS OF 1/500 .

OTHER MASH COMPLIANT BREAKAWAY
SIGN SUPPORTS THAT HAVE THE SAME
TOP PLATE DIMENSIONS AND SUPPORT
2 1/4" X 2 1/4" SQUARE TUBE SIGN POSTS
MAY BE SUBSTITUTED AS APPROVED
BY THE ENGINEER.

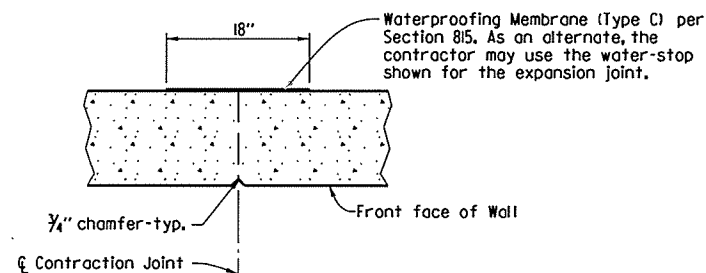


			ARKANSAS STATE HIGHWAY COMMISSION
			DETAIL OF OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS
9-12-13 DATE	ISSUED	REVISION	STANDARD DRAWING SHS-7
			FILMED



TYPICAL DRAINAGE & BACKFILL DETAILS

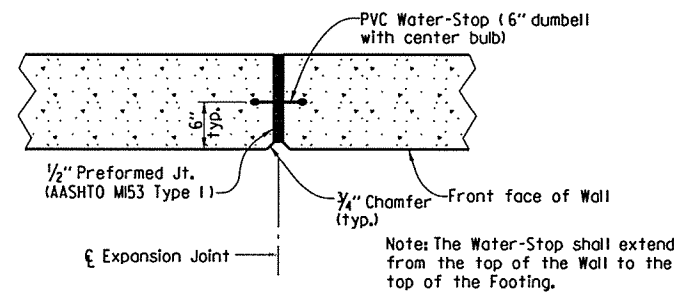
N.T.S.



TYPICAL CONTRACTION JOINT DETAIL

N.T.S.

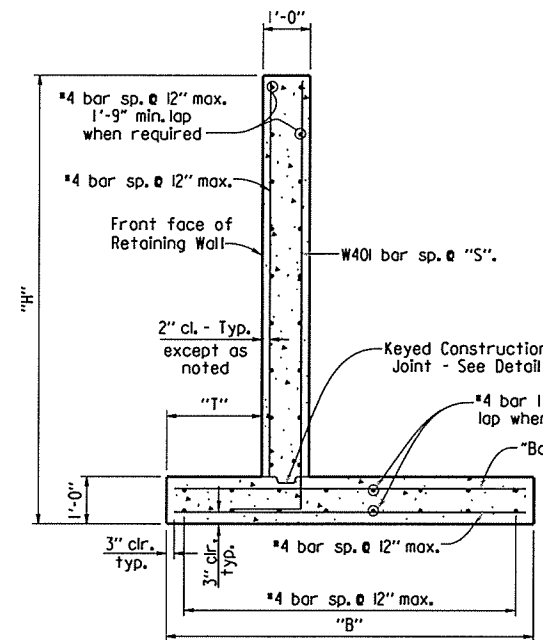
Note: 20'-0" Max. Spacing between Contraction Joints. Horizontal reinforcing shall be continuous through Contraction joints.



TYPICAL EXPANSION JOINT DETAIL

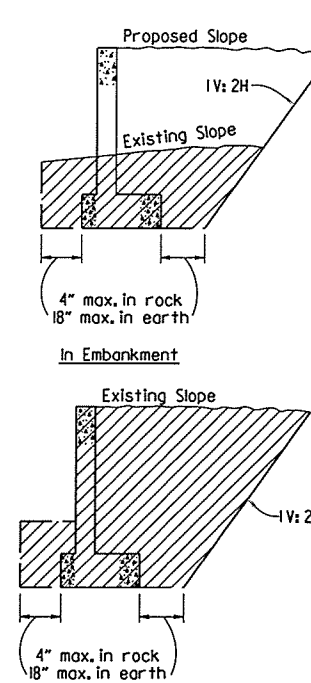
N.T.S.

Note: 60'-0" Max. Spacing between Expansion Joints. Horizontal reinforcing shall stop 2" from Expansion Joint.



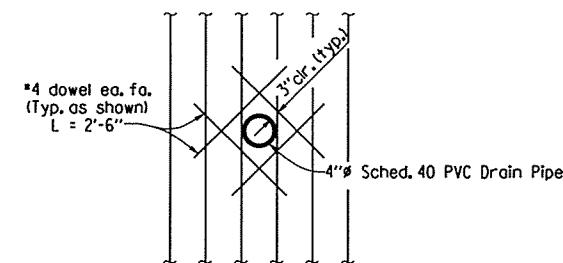
TYPICAL SECTION

N.T.S.



DETAILS OF EXCAVATION

N.T.S.



TYPICAL DRAIN PIPE REINFORCING DETAIL

N.T.S.

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: Arkansas state Highway and Transportation Department Standard Specifications for Highway Construction (Current Edition) with applicable supplemental specifications and special provisions. Unless otherwise noted in the plans, Section and Subsection refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Sixth Edition (2012).

LIVE LOAD: Live Load Surcharge is not included in the design of these walls. Vehicular Live Load shall not be allowed within a distance equal to one-half the height of the wall.

CONCRETE: Concrete shall be poured in the dry and all exposed corners to be chamfered 1/2". All concrete shall be Class S with a minimum 28 day compressive strength f'c = 3,500 psi. A Class 2 Surface finish shall be used on all surfaces of the concrete unless otherwise noted.

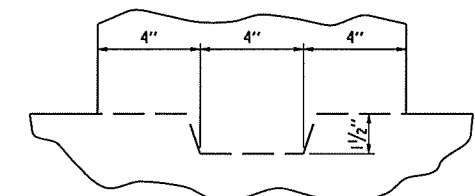
REINFORCING STEEL: All reinforcing steel shall conform to AASHTO M31 or M53, Grade 60.

Foundations for footings shall be prepared in accordance with subsection 80L04. Backfill for retaining walls shall be in accordance with subsection 80L08.

Waterproof Membrane (Type C), waterstops, preformed joints, weep holes & geotextile fabric shall not be paid for directly, but shall be considered subsidiary to Class S Concrete.

Drainage fill material (Class 3) and select backfill shall be measured and paid for as Compacted Embankment.

These details are not intended for use along streams or ditches without consideration for scour.



KEYED CONSTRUCTION JOINT DETAIL

N.T.S.

SEISMIC ZONE: These walls have been designed for the following site adjusted peak ground accelerations (A_g):
Level Backfill - A_g ≤ .40g
Sloped Backfill (1V:2H max.) - A_g ≤ .30g

TABLE OF RETAINING WALL VARIABLES

(LEVEL BACKFILL)

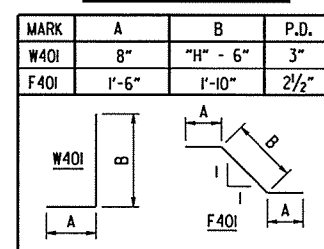
"H"	"T"	"B"	"S"	"Bar A" Size & Spacing
3'-0"	9"	2'-6"	12"	*4 @ 12"
4'-0"	9"	3'-6"	12"	*4 @ 12"
5'-0"	9"	4'-0"	12"	*4 @ 12"
6'-0"	9"	4'-6"	12"	*4 @ 12"
7'-0"	9"	5'-6"	12"	*4 @ 10"
8'-0"	9"	6'-0"	12"	*5 @ 10"
9'-0"	1'-0"	7'-0"	12"	*5 @ 6 1/2"

TABLE OF RETAINING WALL VARIABLES

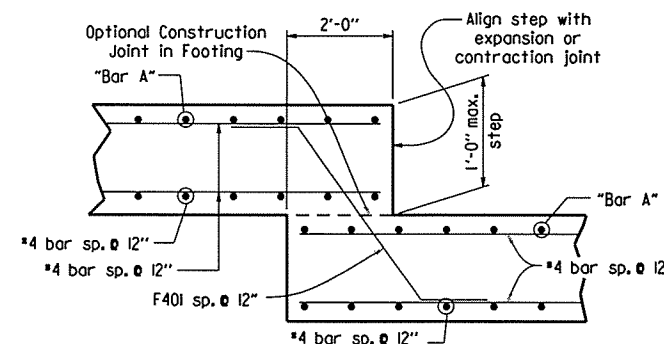
(SLOPED BACKFILL) (1V:2H MAX.)

"H"	"T"	"B"	"S"	"Bar A" Size & Spacing
3'-0"	9"	2'-6"	12"	*4 @ 12"
4'-0"	9"	3'-6"	12"	*4 @ 12"
5'-0"	9"	4'-6"	12"	*4 @ 12"
6'-0"	9"	5'-6"	12"	*4 @ 6"
7'-0"	9"	6'-6"	12"	*5 @ 6 1/2"
8'-0"	1'-6"	8'-0"	7 1/2"	*6 @ 6"
9'-0"	1'-11"	9'-6"	5"	*8 @ 6"

BENDING DIAGRAM



Dimensions are out to out of bars.



FOOTING STEP DETAIL

N.T.S.

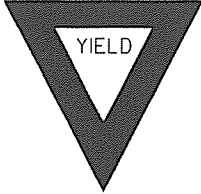
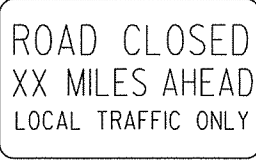
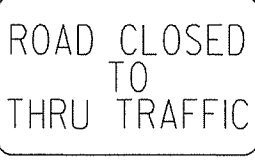
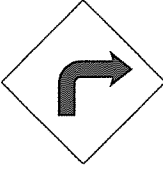
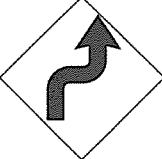
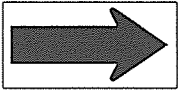
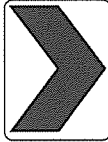
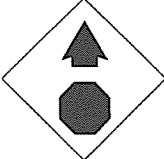
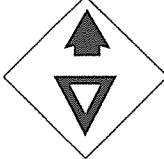
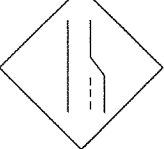
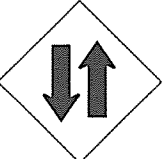
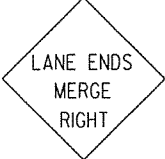
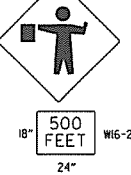
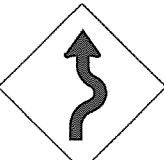
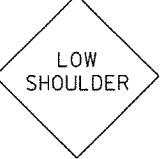
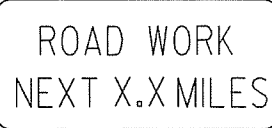
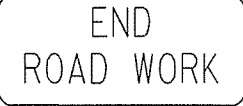
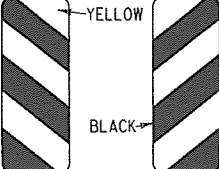
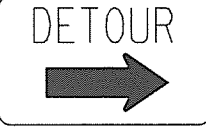
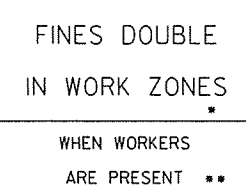
DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTES.	
7-26-12	DRAWING ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

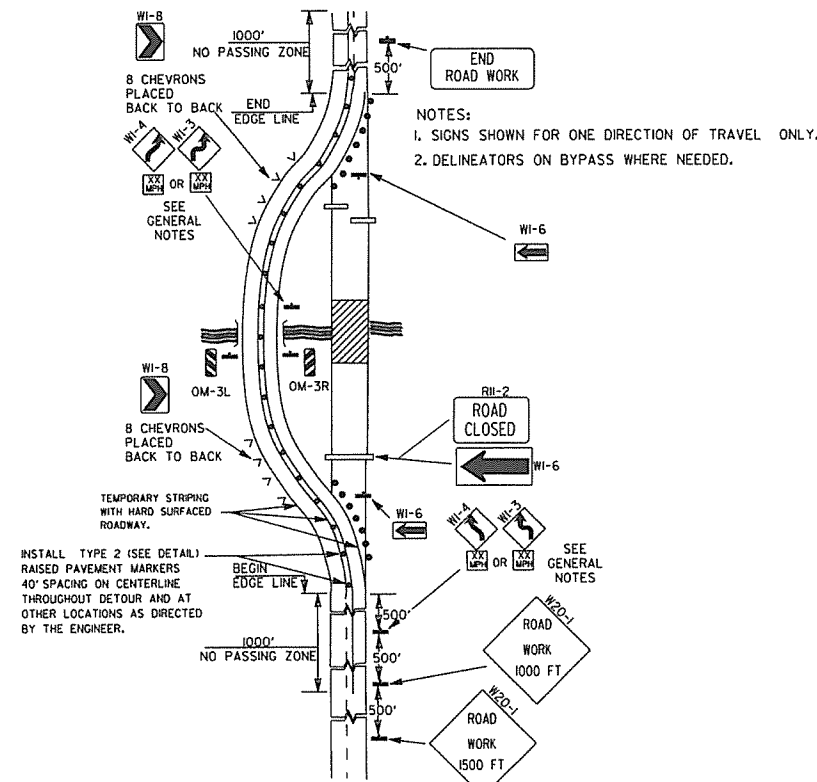
REINFORCED CONCRETE
RETAINING WALL
(WITHOUT LIVE LOAD
SURCHARGE)

STANDARD DRAWING SI - 2

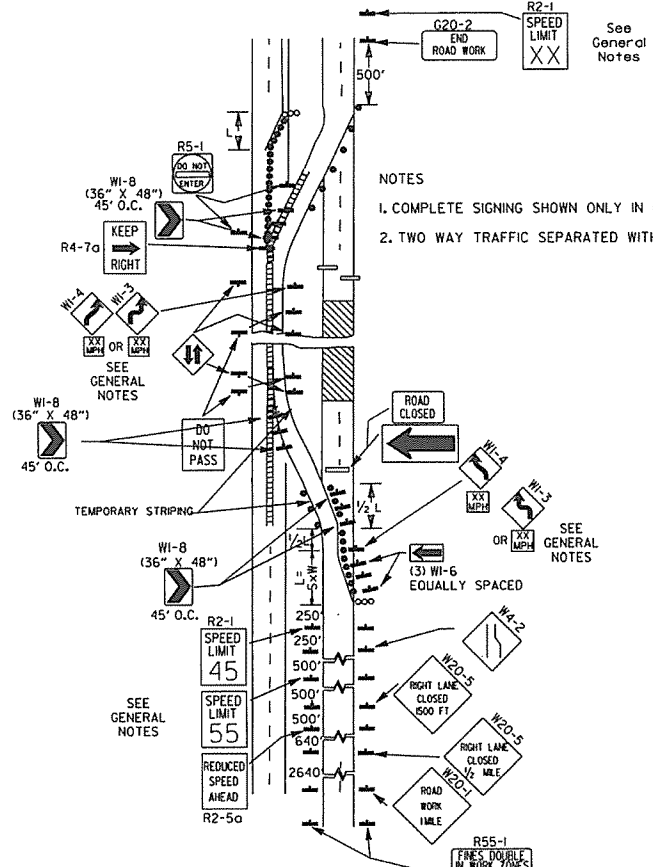


RI-1  STANDARD 30"x30" EXPRESSWAY 36"x36" SPECIAL 48"x48"	RI-2  STD. 36"x36"x36" EXPWY. 48"x48"x48" FWY. 60"x60"x60"	R2-1  STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"	R2-5A  STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"	R2-5C  STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"	R4-1  STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"	R4-2  STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"	ADVANCE DISTANCES (XXX) 500 FT 1/2 MILE 1000 FT 3/4 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.
R5-1  STD. 30"x30" EXPWY. 36"x36" SPECIAL 48"x48"	R11-2  48"x30"	R11-3A  60"x30"	R11-4  60"x30"	RSP-1  48"x30"	W1-1  STD. 36"x36" FWY. 48"x48"	W1-2  STD. 36"x36" FWY. 48"x48"	
W1-3  STD. 48"x48"	W1-4  STD. 48"x48"	W1-6  STD. 48"x24" SPECIAL 60"x30"	W1-8  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"	W13-1  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"	W1-4b  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  36"x60" * USE 6" C LETTERS ** USE 4" D LETTERS

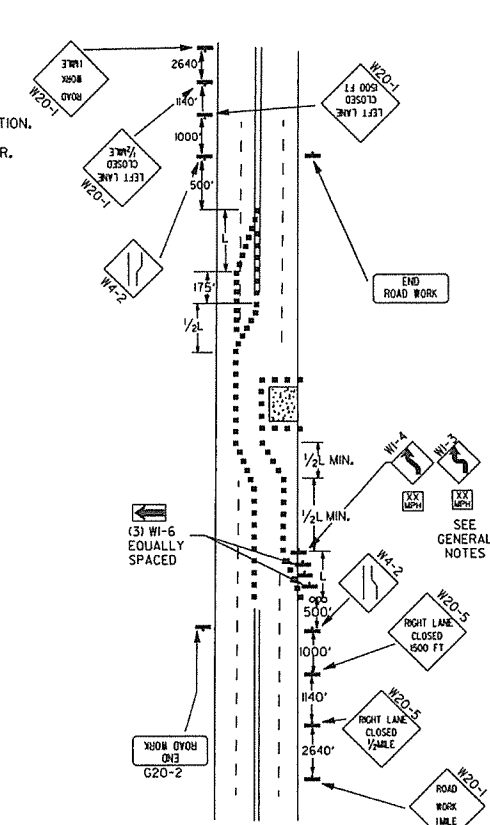
12-15-8	REVISED W24-1	
11-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
11-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
11-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
11-18-98	ADDED NOTE	
6-26-97	REVISED NOTE 5	
4-03-97	REVISED 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	
DATE	REVISION	FILMED



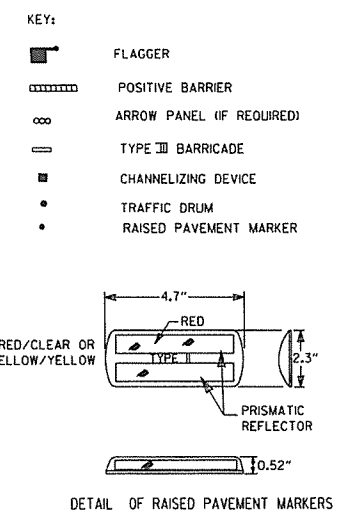
(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.



(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.



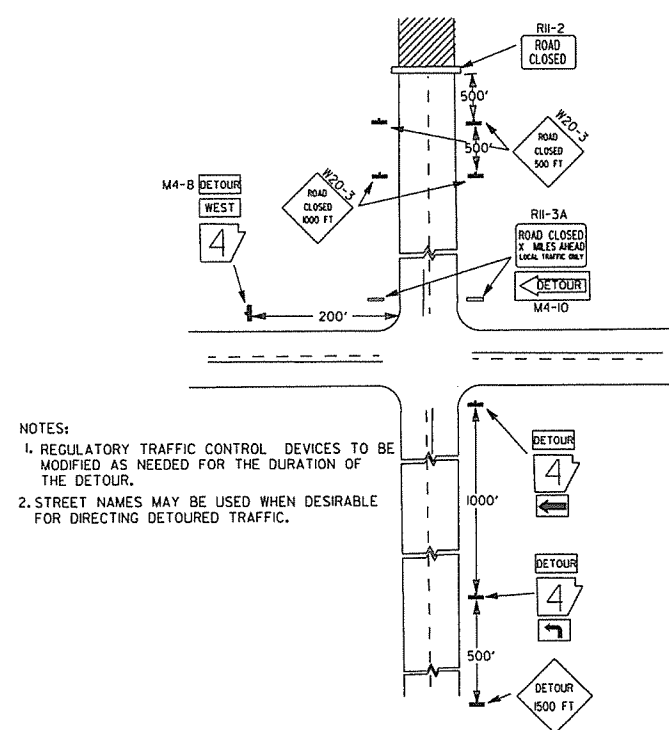
(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



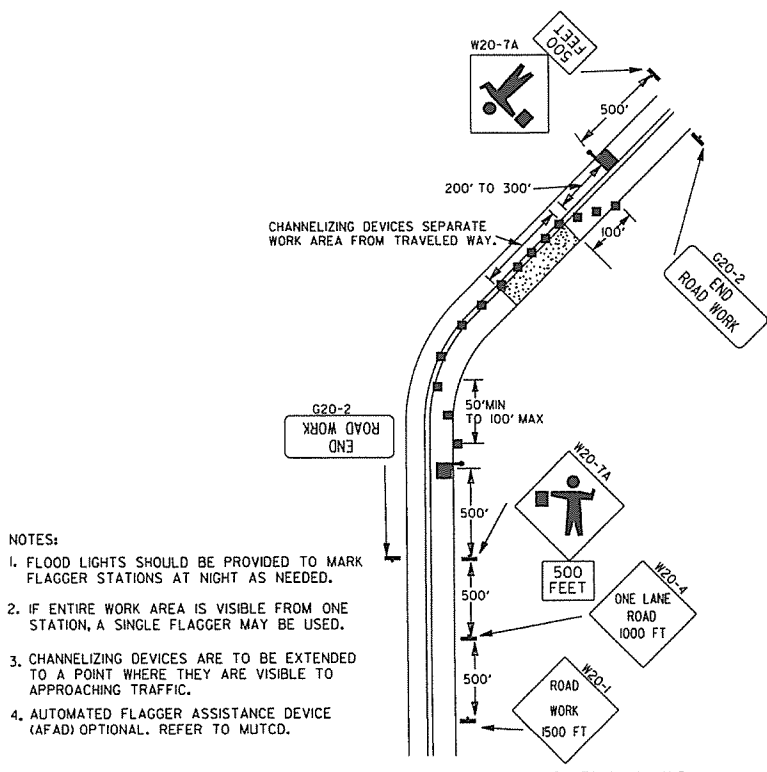
TYPICAL ADVANCE WARNING SIGN PLACEMENT

TAPER FORMULAE:
L=SW 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.

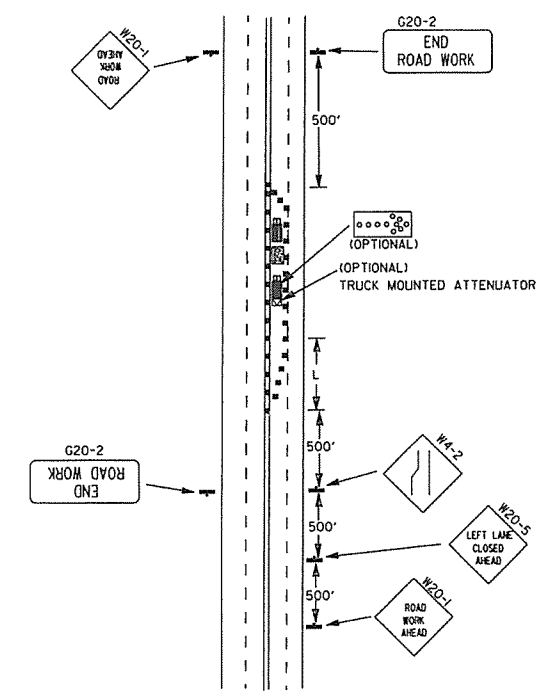
GENERAL NOTES:
1. ADVISORY SPEED POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS TO BE DETERMINED AT SITE. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE R2-5A SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-145MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1/4 MILE INTERVALS.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(65) SHALL BE OMITTED. ADDITIONAL R2-155MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1/4 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 CONSPICUOUS 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.



(D) TYPICAL APPLICATION - ROADWAY CLOSED BEYOND DETOUR POINT.



(E) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON 2-LANE HIGHWAY WHERE ONE LANE IS CLOSED AND FLAGGING IS PROVIDED.

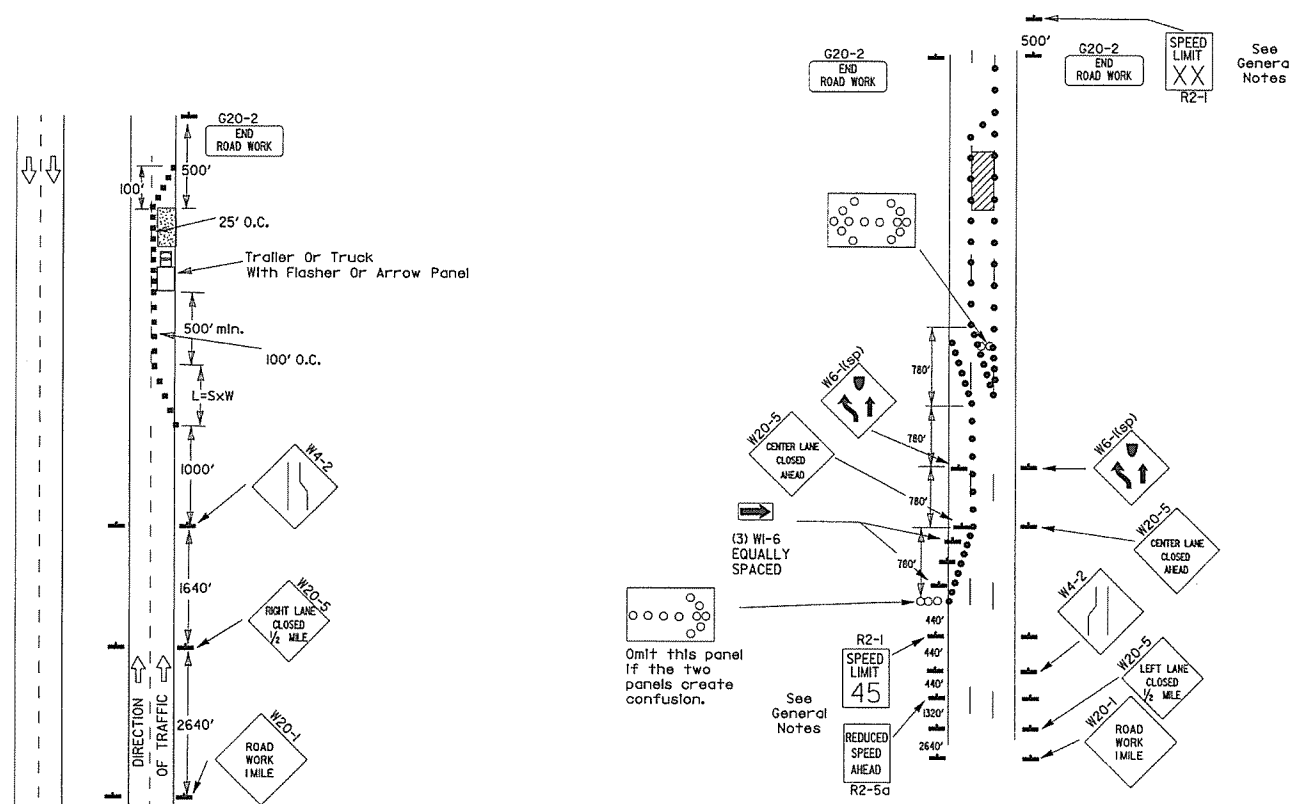


(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

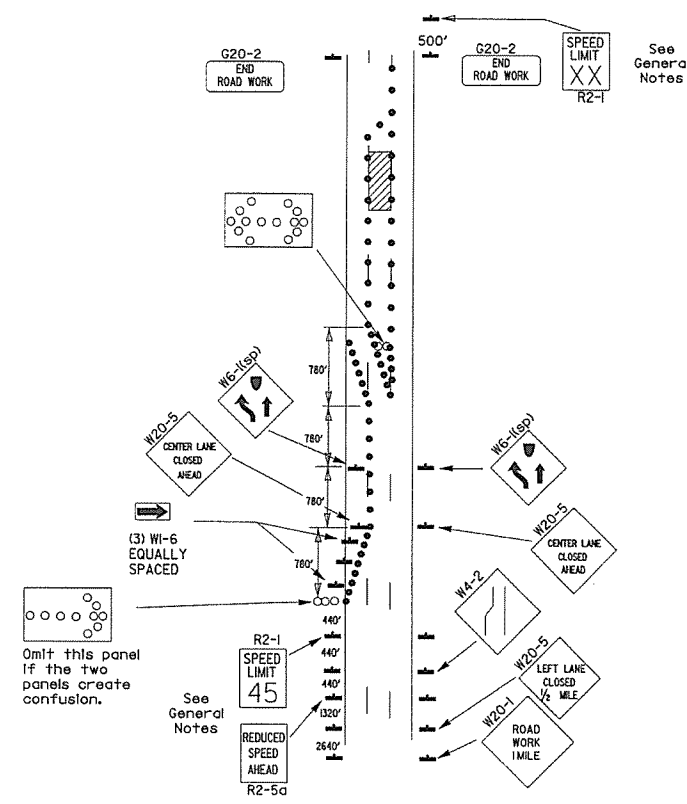
DATE	REVISION	FILED
9-12-13	REVISED DETAIL OF RAISED PAVEMENT MARKERS	
3-8-10	ADDED (AFAD)	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (a) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON W1-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	
DATE	REVISION	FILED

ARKANSAS STATE HIGHWAY COMMISSION
STANDARD TRAFFIC CONTROLS
FOR HIGHWAY CONSTRUCTION
STANDARD DRAWING TC-2

Channelizing devices



(A) Typical application - daytime maintenance operations of short duration on a 4-lane divided roadway where half of the roadway is closed.

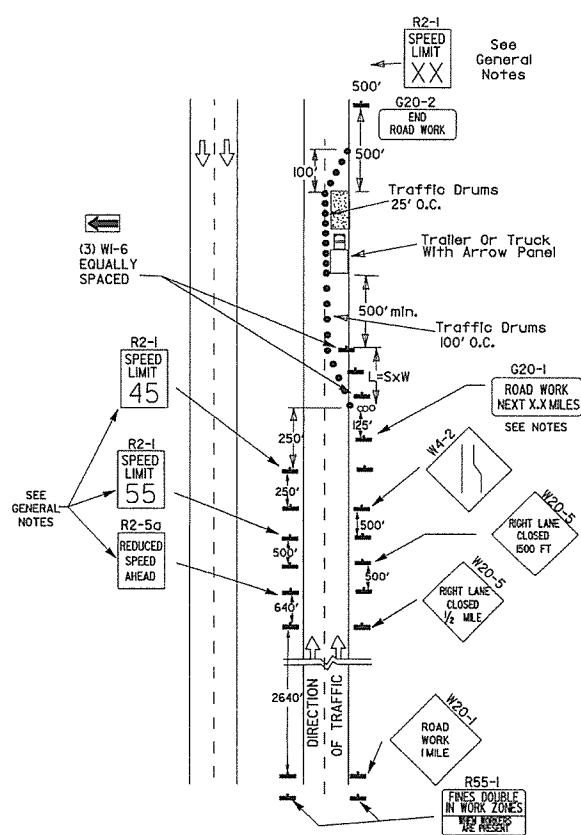


(B) Typical application - 3-lane oneway roadway where center lane is closed.

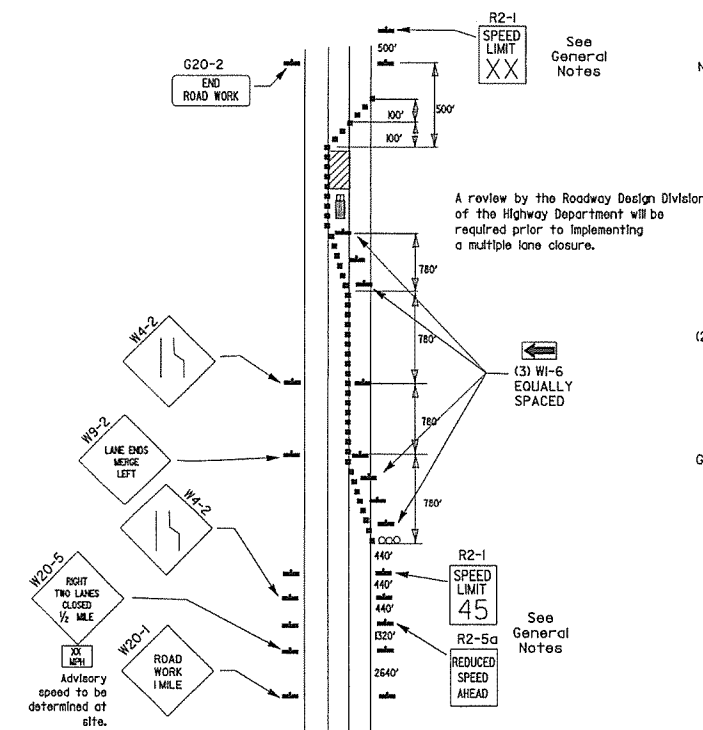
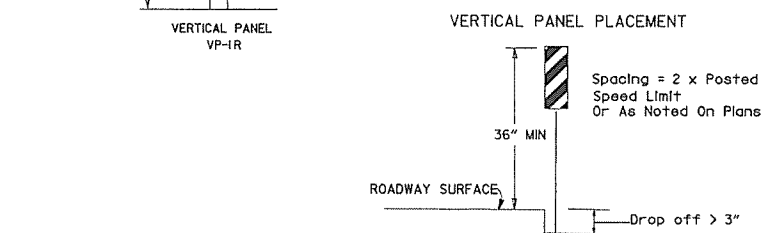
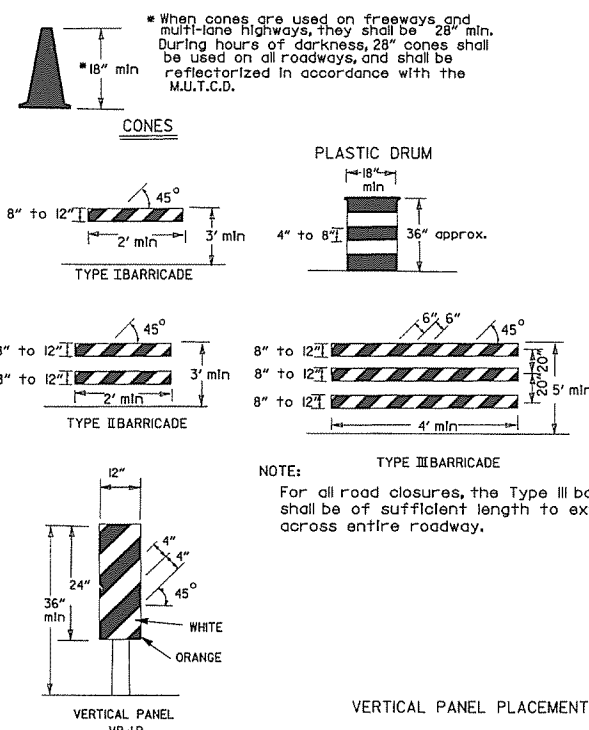
- KEY:
- Arrow Panel (if Required)
 - Channelizing Device
 - Traffic drum

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(45) 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(65) shall be omitted. Additional R2-1(55) 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. 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.



(C) Typical application - construction operations of intermediate to long term duration on a 4-lane divided roadway where half of the roadway is closed.

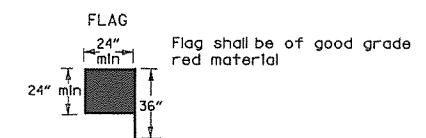


(D) Typical application - closing multiple lanes of a multilane highway.

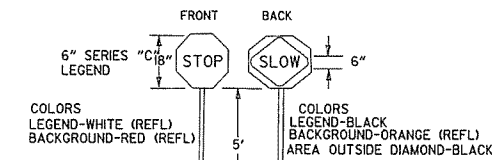
TRAFFIC CONTROL DEVICES FOR VERTICAL PAVEMENT DIFFERENTIALS

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

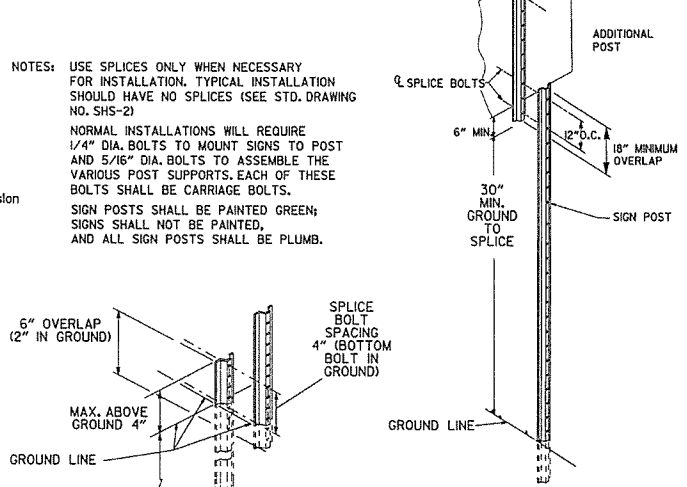
- When shown on the plans concrete barrier will be used.
- When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.



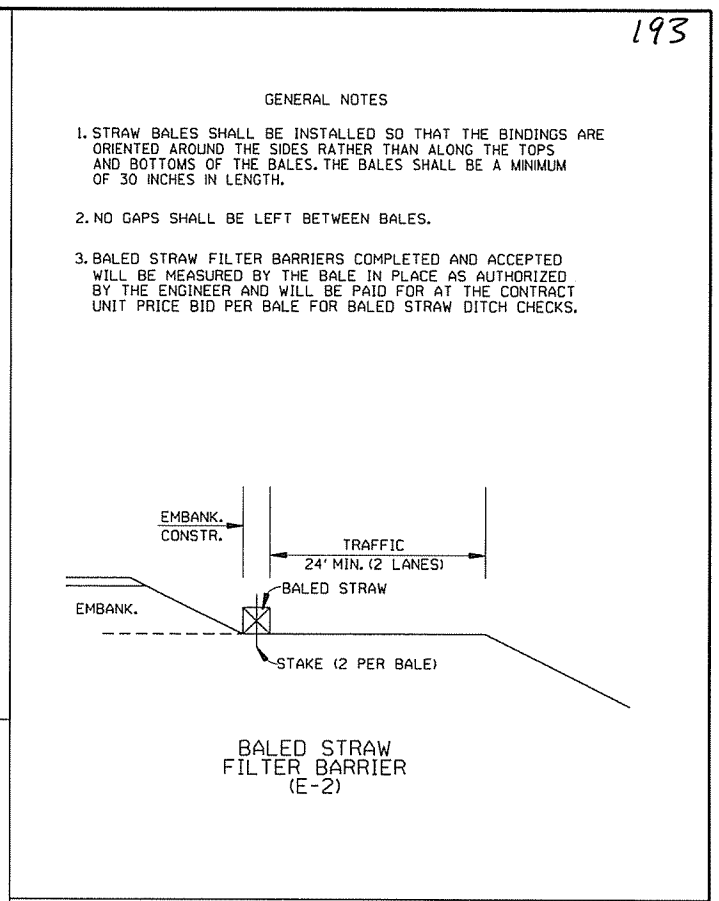
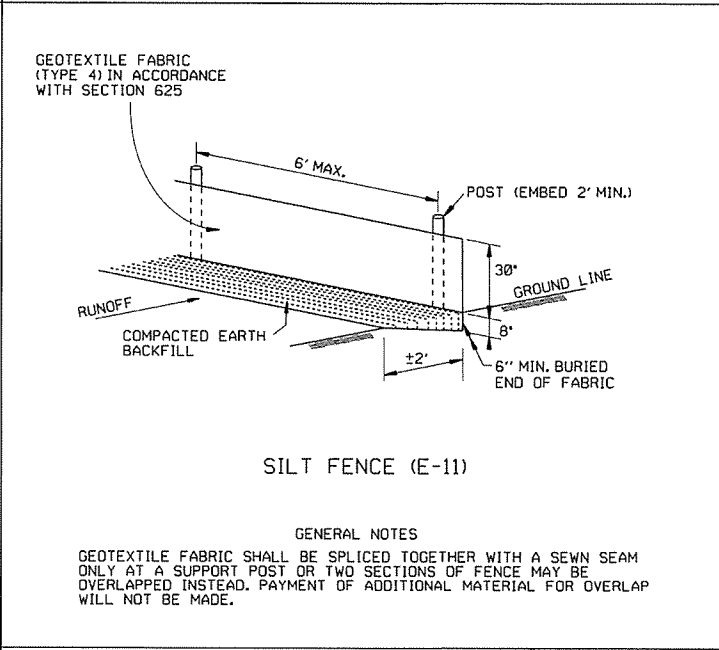
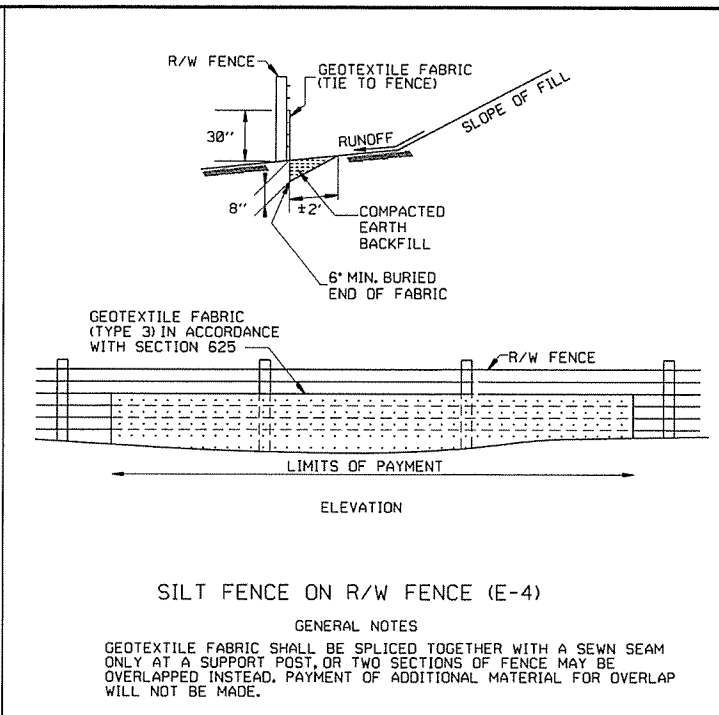
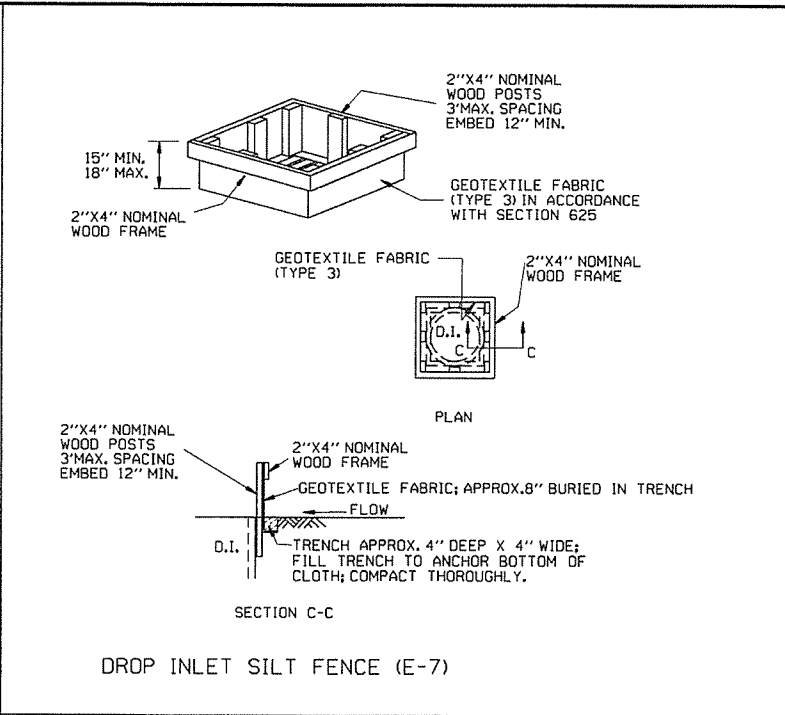
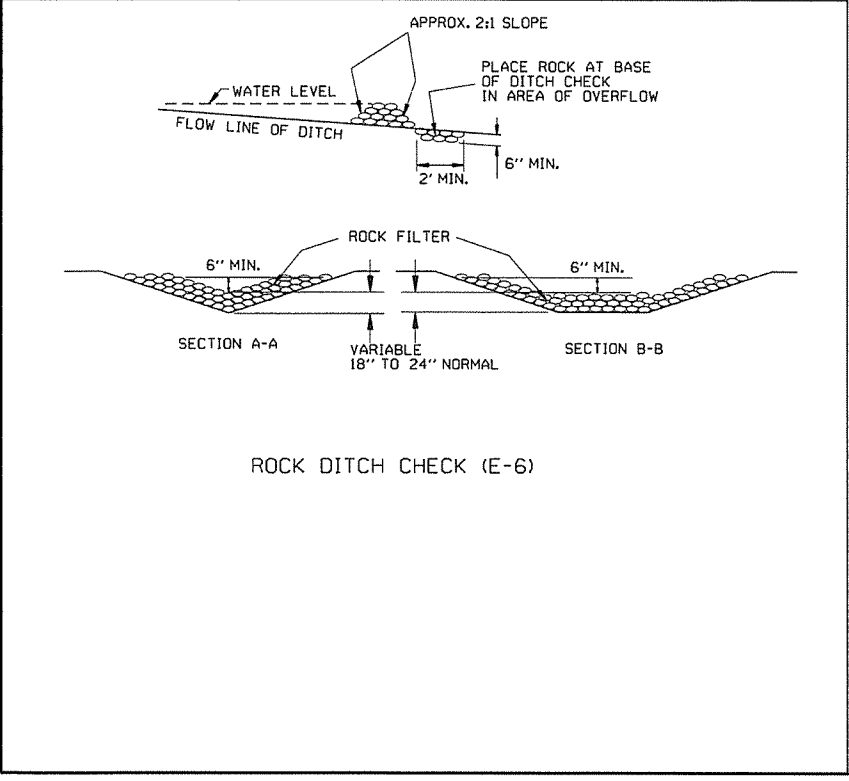
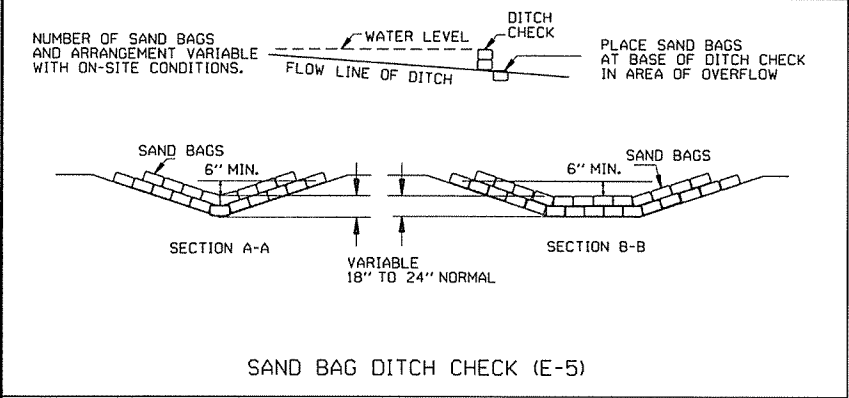
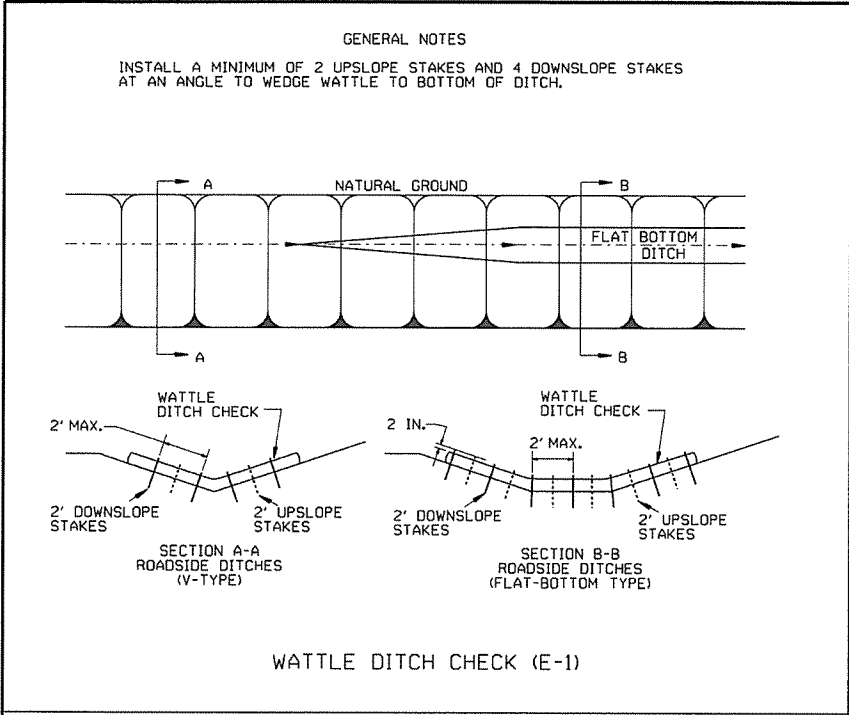
STOP SLOW PADDLE



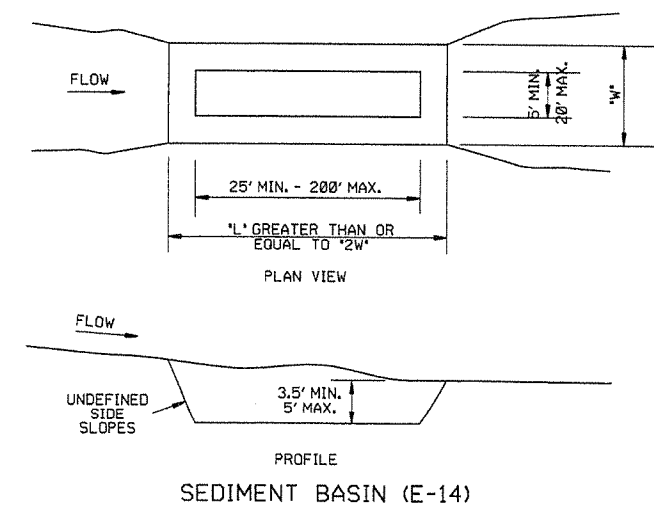
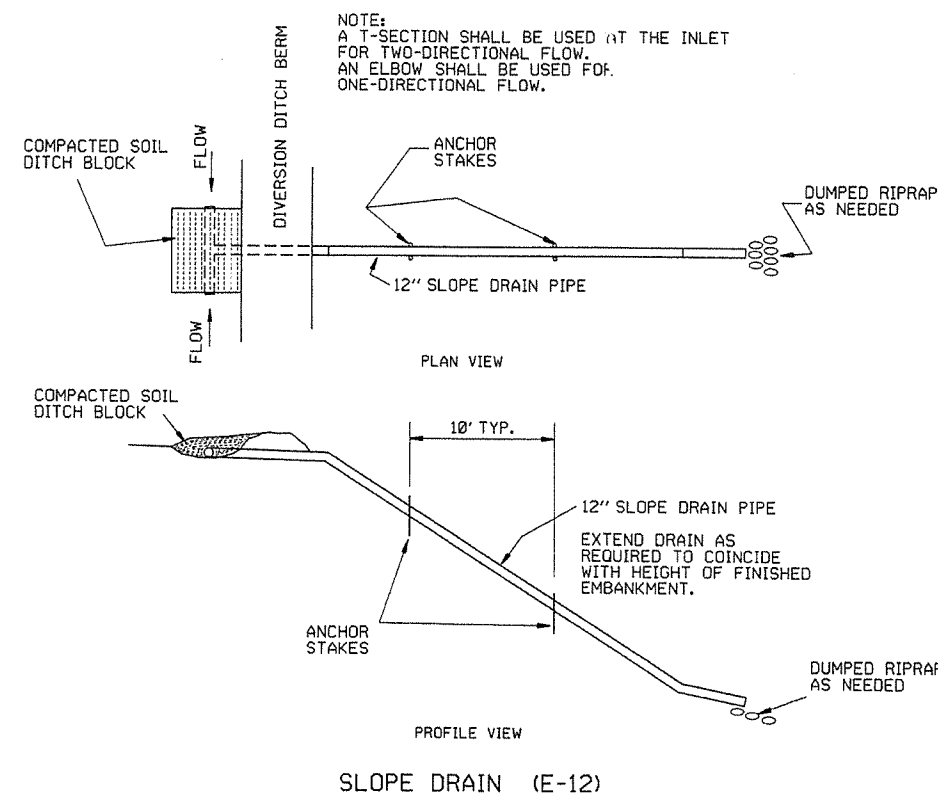
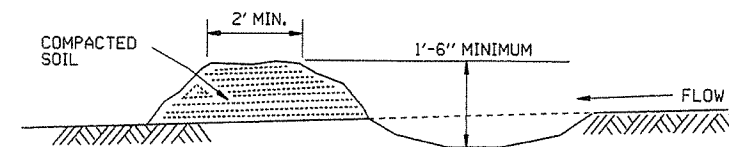
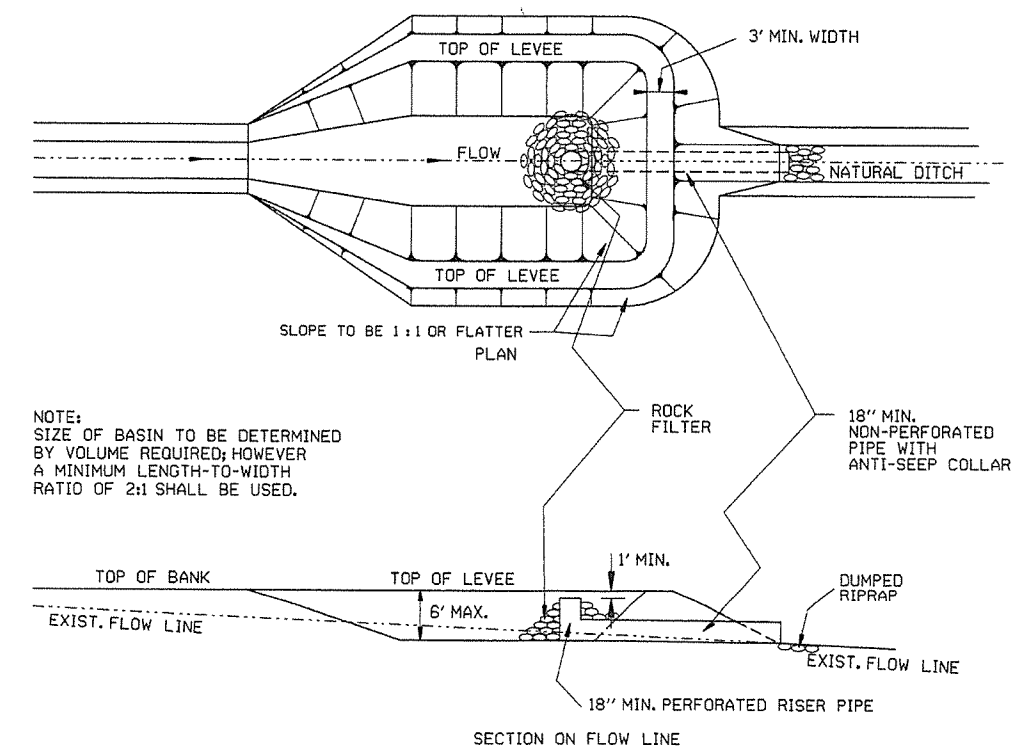
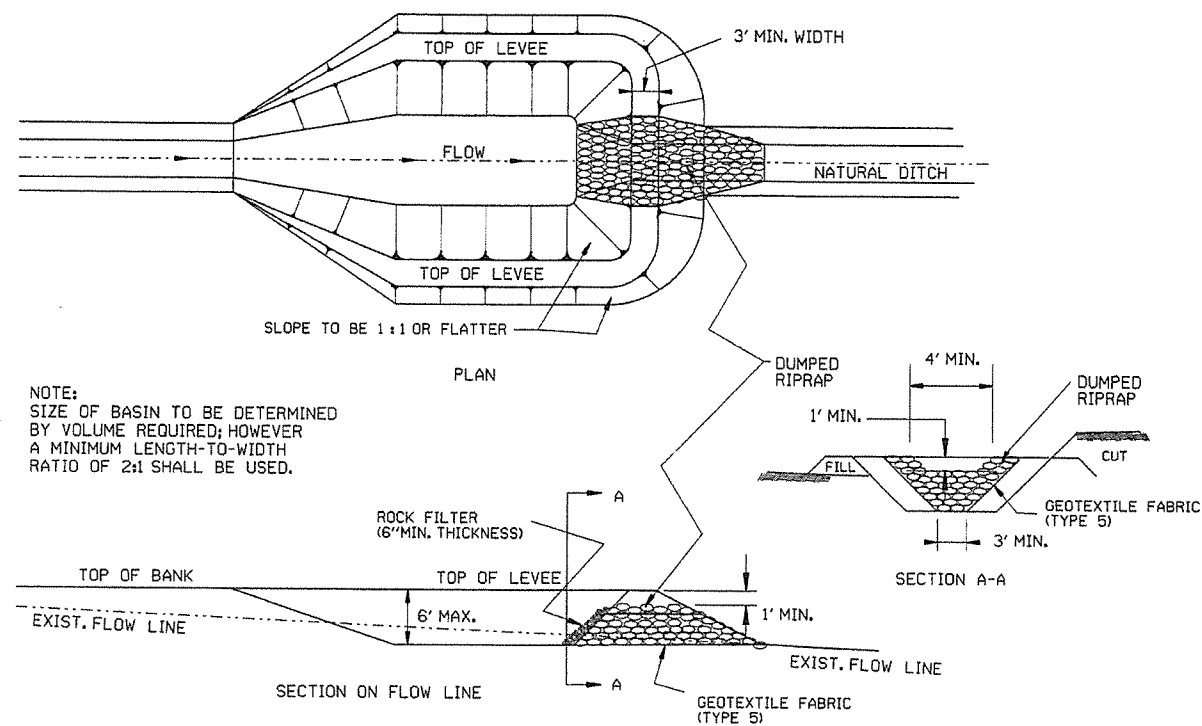
DETAIL OF SPLICES



DATE	REVISION	FILED
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	



12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK		ARKANSAS STATE HIGHWAY COMMISSION
11-18-98	ADDED NOTES		
7-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)		
7-20-95	REVISED SILT FENCE E-4 AND E-11	7-20-95	
7-15-94	REV. E-4 & E-11 MIN. 13" BURIED END OF FABRIC		
6-2-94	REVISED E-1, 4, 7 & 11; DELETED E-2 & 3	6-2-94	
4-1-93	REDRAWN		
10-1-92	REDRAWN		
8-2-76	ISSUED R.D.M.	298-7-28-76	
DATE	REVISION	FILMED	STANDARD DRAWING TEC-1

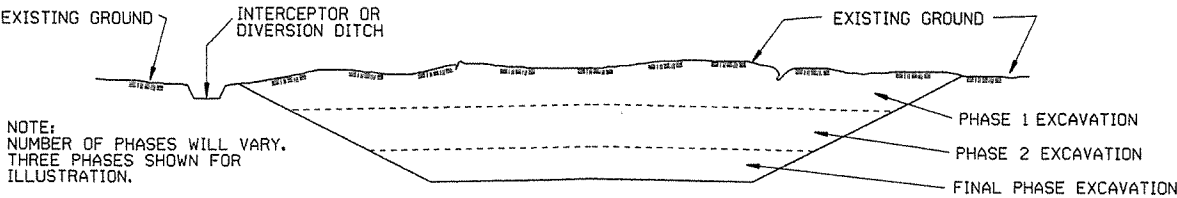


ARKANSAS STATE HIGHWAY COMMISSION			
TEMPORARY EROSION CONTROL DEVICES			
STANDARD DRAWING TEC-2			
6-2-94	Revised E-8 & E-12; Added E-14 & Deleted E-13		
4-1-93	ISSUED		
DATE	REVISION		FILMED

CLEARING AND GRUBBING

- CONSTRUCTION SEQUENCE
1. PLACE PERIMETER CONTROLS (I.E. SILT FENCES , DIVERSION DITCHES, SEDIMENT BASINS, ETC.)
 2. PERFORM CLEARING AND GRUBBING OPERATION.

EXCAVATION

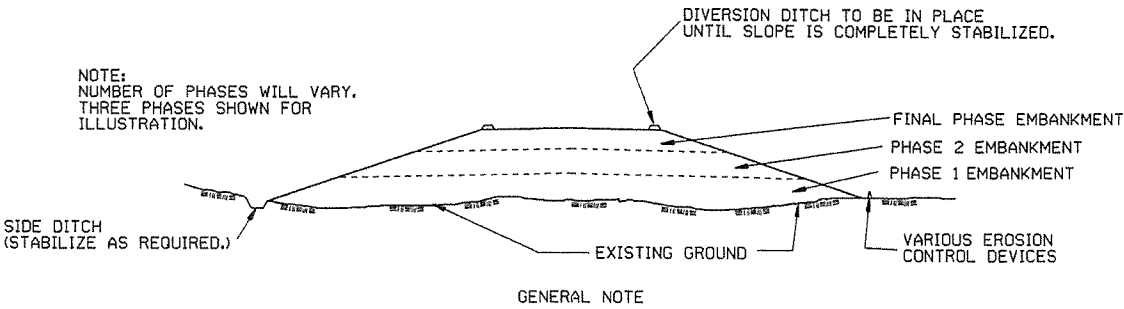


GENERAL NOTE

ALL CUT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE EXCAVATED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

- CONSTRUCTION SEQUENCE
1. EXCAVATE AND STABILIZE INTERCEPTOR AND/OR DIVERSION DITCHES.
 2. PERFORM PHASE 1 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
 3. PERFORM PHASE 2 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
 4. PERFORM FINAL PHASE OF EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING. STABILIZE DITCHES. CONSTRUCT DITCH CHECKS, DIVERSION DITCHES, SEDIMENT BASINS, OR OTHER EROSION CONTROL DEVICES AS REQUIRED.

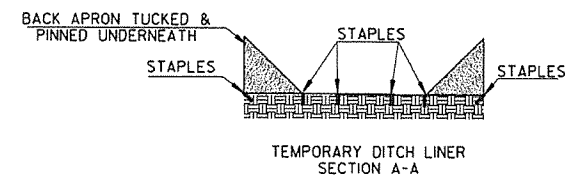
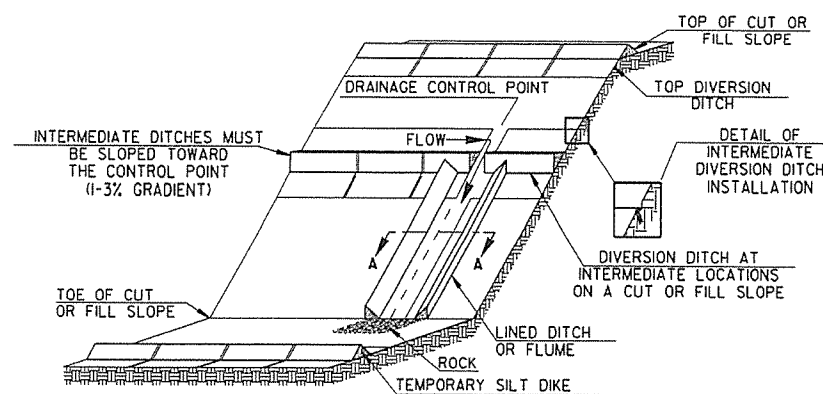
EMBANKMENT



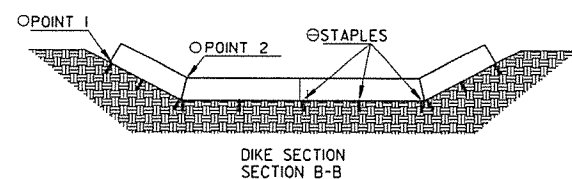
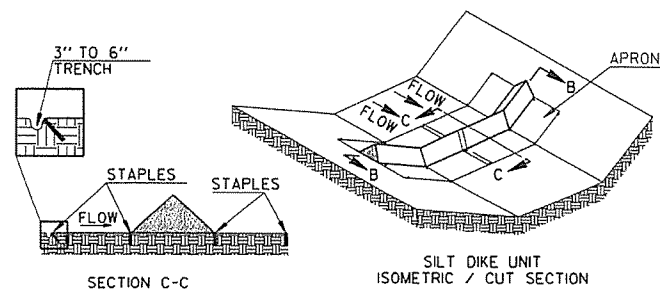
ALL EMBANKMENT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE CONSTRUCTED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

- CONSTRUCTION SEQUENCE
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
 2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.
 3. PLACE PHASE 2 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.
 4. PLACE FINAL PHASE OF EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PLACE DIVERSION DITCHES AND SLOPE DRAINS AND MAINTAIN UNTIL ENTIRE SLOPE IS STABILIZED.

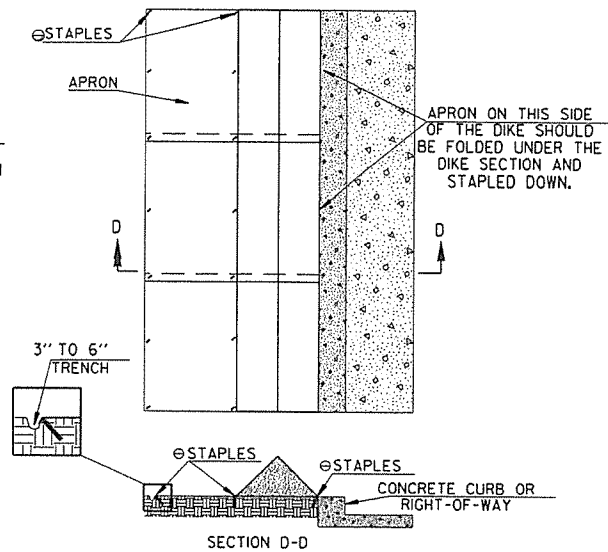
			ARKANSAS STATE HIGHWAY COMMISSION
			TEMPORARY EROSION CONTROL DEVICES
			STANDARD DRAWING TEC-3
11-03-94	CORRECTED SPELLING		
6-2-94	Drawn & Issued		
DATE	REVISION	6-2-94	FILMED



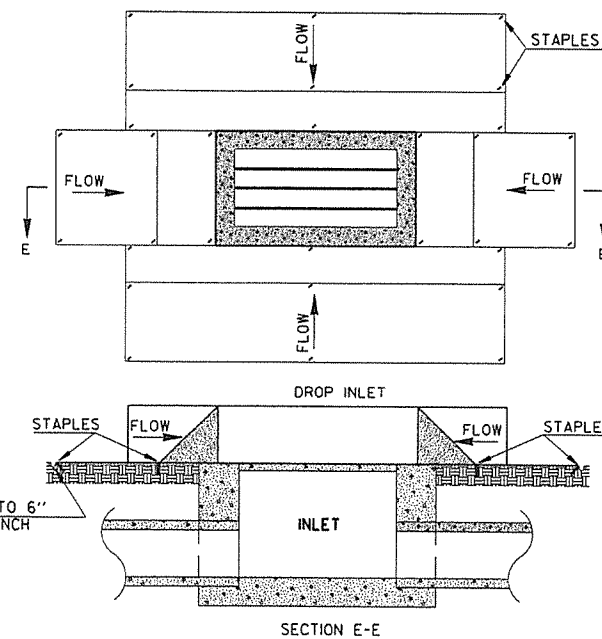
TRIANGULAR SILT DIKE INSTALLATION
FOR
DIVERSION DITCH AND/OR DITCH LINER



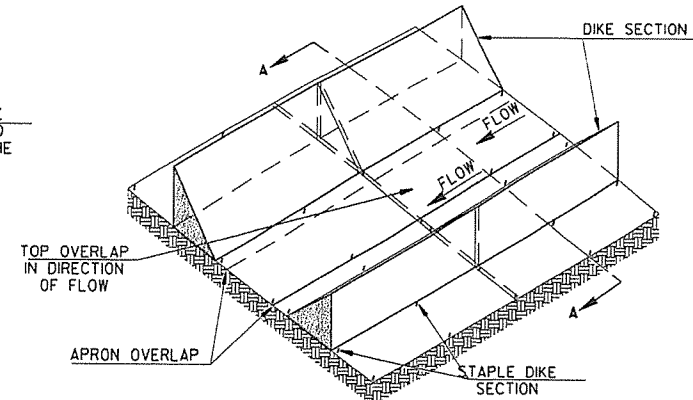
- POINT "1" MUST BE HIGHER THAN POINT "2" TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.
- ⊖ STAPLES SHALL BE PLACED WHERE THE UNITS OVERLAP AND IN THE CENTER OF THE UNIT AS SHOWN ON THE DIAGRAM.



TRIANGULAR SILT DIKE INSTALLATION
FOR
CONTINUOUS BARRIER



TRIANGULAR SILT DIKE INSTALLATION FOR DROP INLETS

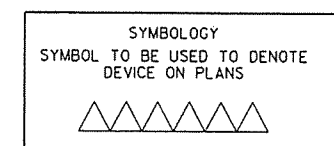


TRIANGULAR SILT DIKE INSTALLATION
FOR
TEMPORARY DITCH LINER

GENERAL NOTES

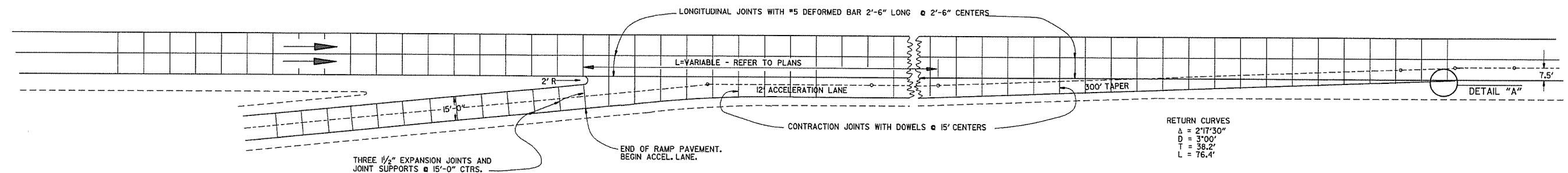
1. THIS WORK SHALL CONSIST OF FURNISHING, INSTALLING, AND MAINTAINING THE TRIANGULAR SILT DIKE. THE DIKES SHALL BE USED AS A CONTINUOUS LINE BARRIER AT THE TOE OF SLOPE OR ACROSS THE ROADWAY DITCH TO CONTAIN SEDIMENT AND MINIMIZE EROSION, OR AS DIRECTED BY THE ENGINEER. THESE DIKES SHALL BE INSTALLED AND LOCATED AS SOON AS CONSTRUCTION WILL ALLOW OR AS DIRECTED BY THE ENGINEER.
2. TRIANGULAR SILT DIKE SHALL BE TRIANGULAR SHAPED HAVING A HEIGHT OF AT LEAST 8" TO 10" IN THE CENTER WITH EQUAL SIDES AND A 16" TO 20" BASE. THE TRIANGULAR SHAPED INNER MATERIAL SHALL BE URETHANE FOAM. THE OUTER COVER SHALL BE A WOVEN GEOTEXTILE FABRIC PLACED AROUND THE INNER MATERIAL & ALLOWED TO EXTEND BEYOND BOTH SIDES OF THE TRIANGLE 24" TO 36". THIS FABRIC SHOULD BE MILDEW RESISTANT, ROT PROOF AND RESISTANT TO HEAT AND ULTRAVIOLET RADIATION MEETING REQUIREMENTS FOR SEDIMENT CONTROL IN AASHTO M288. THE DIKES SHALL BE ATTACHED TO THE GROUND WITH WIRE STAPLES. THE STAPLES SHALL BE NO. 16 GAUGE WIRE AND BE AT LEAST 6" TO 8" LONG. STAPLES SHALL BE PLACED AS SHOWN ON THESE DETAILS.

THE CONTRACTOR SHALL INSPECT ALL DIKES AFTER EACH RAINFALL EVENT OF AT LEAST 0.5" OR GREATER. ANY DEFICIENCIES OR DAMAGE SHALL BE REPAIRED BY THE CONTRACTOR. ACCUMULATED SILT OR DEBRIS SHALL BE REMOVED AND RELOCATED AS DIRECTED BY THE ENGINEER. IF THE DIKES ARE DAMAGED OR INADVERTENTLY MOVED DURING THE SILT REMOVAL PROCESS, THE CONTRACTOR SHALL IMMEDIATELY REPLACE AFTER DAMAGE OCCURS.
3. ACCEPTED TRIANGULAR SILT DIKE, MEASURED AS PROVIDED ABOVE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR TRIANGULAR SILT DIKE. PRICE BID WILL INCLUDE THE COST OF FURNISHING THE DIKES, INSTALLING, MAINTAINING AND REMOVAL WHEN DIRECTED BY THE ENGINEER.



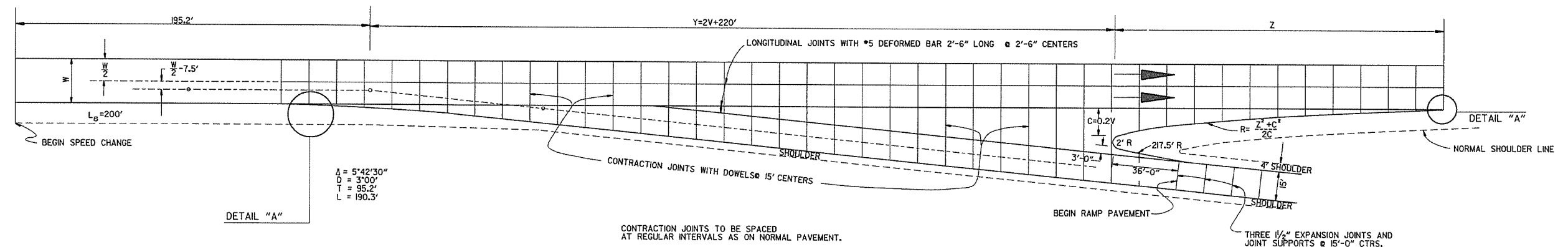
NOTE: SILT DIKE SHOULD ONLY BE USED FOR
DROP INLETS IN SUMP LOCATIONS.

			ARKANSAS STATE HIGHWAY COMMISSION
			TEMPORARY EROSION CONTROL DEVICES
7-26-12	REVISED GENERAL NOTE 2.		STANDARD DRAWING TEC-4
12-15-11	ISSUED		
DATE	REVISION	FILED	



ENTRANCE RAMP

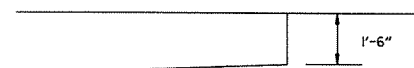
NOTE: JOINT SPACING ON THE MAIN LANES SHALL BE ADJUSTED AS NECESSARY TO CONFORM TO THESE JOINT LAYOUTS. THE MAIN LANE JOINT SPACING MAY BE REDUCED TO A 12' MINIMUM.



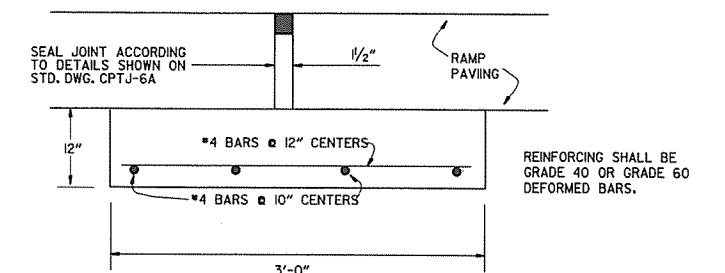
EXIT RAMP

EXIT RAMP

DESIGN SPEED V	Y	NOSE OFFSET C	LENGTH NOSE TAPER Z	RETURN RADIUS R	ADDITIONAL SURFACING SQ. YDS.
40	300.0	8.0	96.0	580.0	602.43
50	320.0	10.0	120.0	725.0	687.29
60	340.0	12.0	168.0	1182.0	790.55
70	360.0	14.0	210.0	1582.0	902.27



DETAIL "A"



DETAIL OF EXPANSION JOINT & JOINT SUPPORT

NOTE: THE EXPANSION JOINTS SHALL BE MEASURED AND PAID FOR AS P.C.C. PAVEMENT (RAV THICKNESS), WHEN RAMP PAVING IS ASPHALT. EXPANSION JOINT IS NOT REQUIRED. THE JOINT SUPPORT MAY BE CONSTRUCTED WITH CLASS "A", "S", OR PAVING CONCRETE. PAYMENT FOR THE JOINT SUPPORT SHALL BE FOR THE CONTRACT UNIT PRICE BID FOR THE CLASS OF CONCRETE USED, ALL OTHER WORK AND MATERIALS REQUIRED FOR THE CONSTRUCTION OF THE JOINT SUPPORT SHALL BE INCLUDED IN THE PRICE BID FOR THE ABOVE ITEMS.

8-22-02	DELETED NOTE	
11-16-01	CORRECTED SPELLING ON ENTRANCE RAMP NOTE	
5-13-99	ADDED, EDITED AND DELETED NOTES	
11-03-94	ADDED NOTE RE: REINF. BARS	
10-1-92	ADDED DETAIL A & OTHER MINOR CHANGES	10-1-92
1-25-90	REVISED EXPANSION JOINT	1-25-90
7-15-88	CONFORM D TO 1988 SPECIFICATIONS	65C-7-15-88
3-2-81	ISSUED	511-10-2-72
DATE	REVISION	DATE FILM

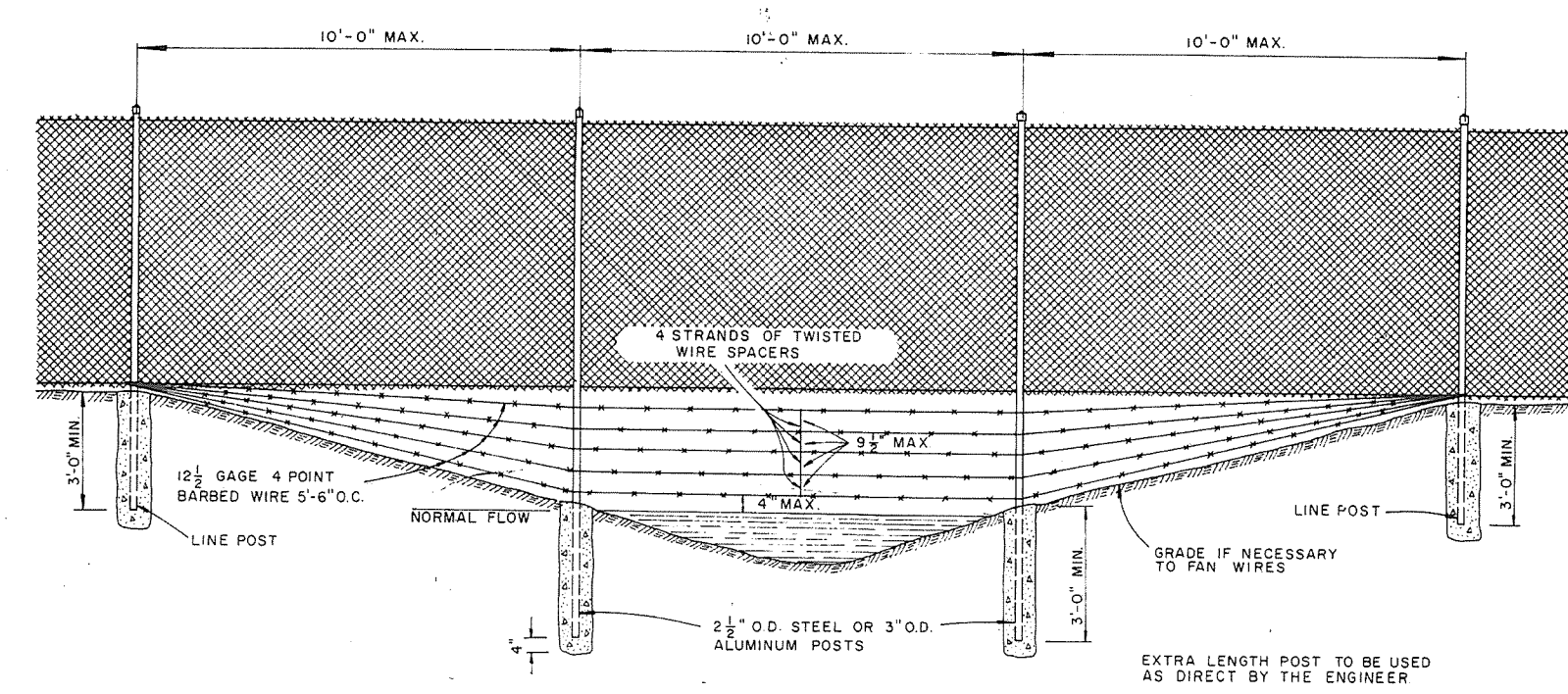
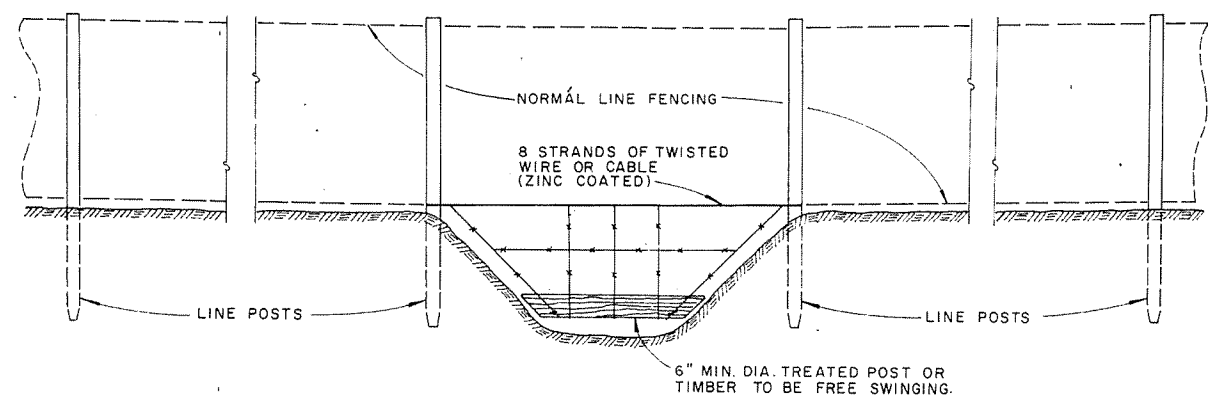
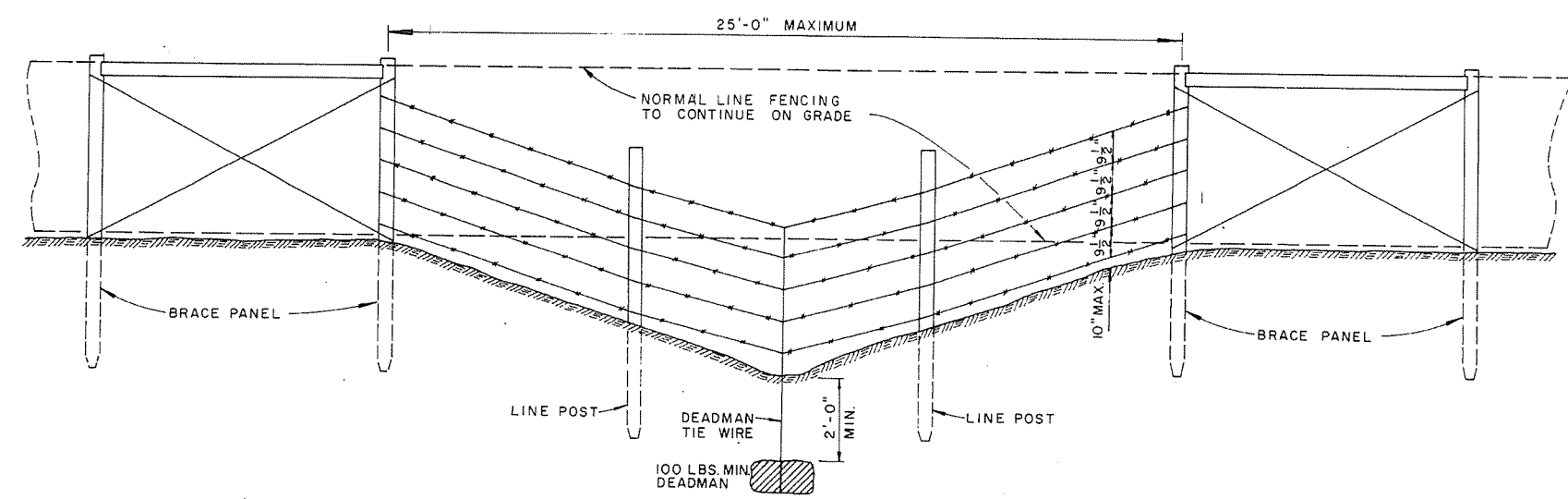
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD TURNOUT

FOR

ENTRANCE & EXIT RAMPS (NON-REINFORCED)

STANDARD DRAWING TR-1A



GENERAL NOTES:
THESE INSTALLATIONS TO BE USED WHERE NORMAL FENCING INSTALLATION WOULD CAUSE THE COLLECTING OF DRIFT IN THE CHANNEL OR THE DEPRESSION WILL NOT PERMIT NORMAL INSTALLATION. INSTALLATIONS WILL BE MADE ONLY WHERE DIRECTED BY THE ENGINEER.
WHEN A FENCE LINE APPROACHES A DITCH, GULLY OR DEPRESSION, THE LAST POST ON LEVEL GROUND SHALL BE PLACED CLOSE ENOUGH TO THE EDGE OF THE DROP OFF THAT THE FENCE MAY BE STRUNG TO THE POST IN THE DEPRESSION WITHOUT TOUCHING THE GROUND.
IN TERRAIN OF SUCH EXTREME IRREGULARITY THAT MINOR GRADING WILL NOT BE FEASIBLE, THE NORMAL FENCE SHALL CONTINUE ON GRADE AND THE GULLIES OR DEPRESSIONS TREATED BY AUXILIARY FENCES AS SHOWN.
PAYMENT FOR THE TYPE INSTALLATION USED WILL NOT BE MADE DIRECTLY BUT WILL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR WIRE FENCE OR CHAIN LINK FENCE.

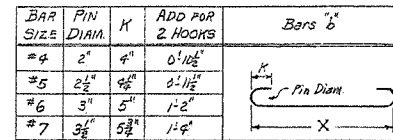
			ARKANSAS STATE HIGHWAY COMMISSION
			WIRE FENCE WATER GAPS
			STANDARD DRAWING
			WF-2
4-20-79	REVISED TOP RAIL & TENSION WIRE	676-4-20-79	
10-2-72	REVISED & REDRAWN	529-10-2-72	
DATE	REVISION	DATE FILMD	

BAR LIST FOR VARIOUS SECTIONS OF BARREL

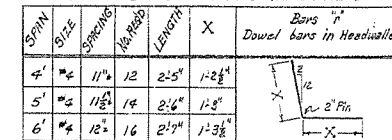
SECTION & BAR GROUP	LENGTH OF SECTION	DEPTH OF COVER	CLEAR SPAN	CLEAR HEIGHT	BARS									
					STRAIGHT					BENT - See Diagram at Right				
					SIZE	NUMBER	LENGTH	RESID.	RESID.	SIZE	NUMBER	LENGTH	RESID.	RESID.
SECTION A & BAR GROUP A	32'-0"	4'-0"	12'-0"	12'-0"	4#	6	4'-0"	4'-0"	4'-0"	4#	6	4'-0"	4'-0"	4'-0"
					4#	6	4'-0"	4'-0"	4'-0"	4#	6	4'-0"	4'-0"	4'-0"
					4#	6	4'-0"	4'-0"	4'-0"	4#	6	4'-0"	4'-0"	4'-0"
					4#	6	4'-0"	4'-0"	4'-0"	4#	6	4'-0"	4'-0"	4'-0"
					4#	6	4'-0"	4'-0"	4'-0"	4#	6	4'-0"	4'-0"	4'-0"
					4#	6	4'-0"	4'-0"	4'-0"	4#	6	4'-0"	4'-0"	4'-0"
					4#	6	4'-0"	4'-0"	4'-0"	4#	6	4'-0"	4'-0"	4'-0"
					4#	6	4'-0"	4'-0"	4'-0"	4#	6	4'-0"	4'-0"	4'-0"
					4#	6	4'-0"	4'-0"	4'-0"	4#	6	4'-0"	4'-0"	4'-0"
					4#	6	4'-0"	4'-0"	4'-0"	4#	6	4'-0"	4'-0"	4'-0"
SECTION B & BAR GROUP B	32'-0"	4'-0"	12'-0"	12'-0"	4#	6	4'-0"	4'-0"	4'-0"	4#	6	4'-0"	4'-0"	4'-0"
					4#	6	4'-0"	4'-0"	4'-0"	4#	6	4'-0"	4'-0"	4'-0"
					4#	6	4'-0"	4'-0"	4'-0"	4#	6	4'-0"	4'-0"	4'-0"
					4#	6	4'-0"	4'-0"	4'-0"	4#	6	4'-0"	4'-0"	4'-0"
					4#	6	4'-0"	4'-0"	4'-0"	4#	6	4'-0"	4'-0"	4'-0"
					4#	6	4'-0"	4'-0"	4'-0"	4#	6	4'-0"	4'-0"	4'-0"
					4#	6	4'-0"	4'-0"	4'-0"	4#	6	4'-0"	4'-0"	4'-0"
					4#	6	4'-0"	4'-0"	4'-0"	4#	6	4'-0"	4'-0"	4'-0"
					4#	6	4'-0"	4'-0"	4'-0"	4#	6	4'-0"	4'-0"	4'-0"
					4#	6	4'-0"	4'-0"	4'-0"	4#	6	4'-0"	4'-0"	4'-0"

DIMENSIONS QUANTITIES

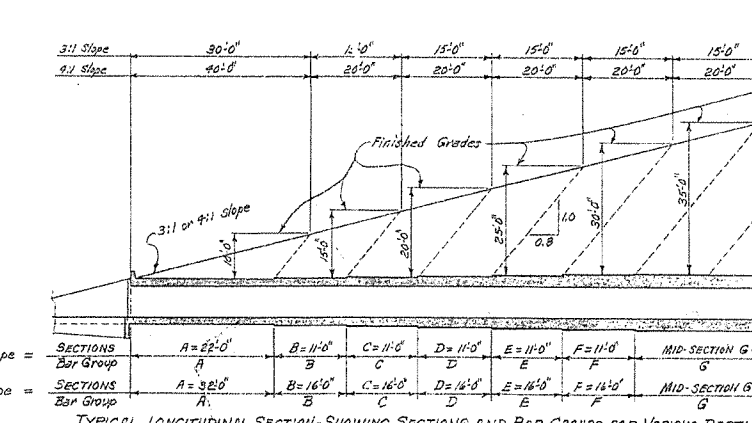
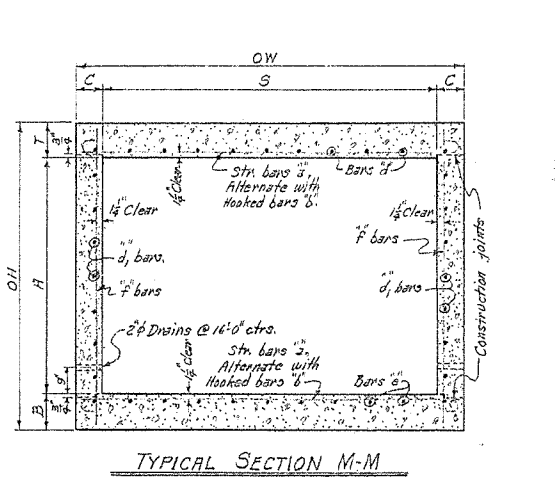
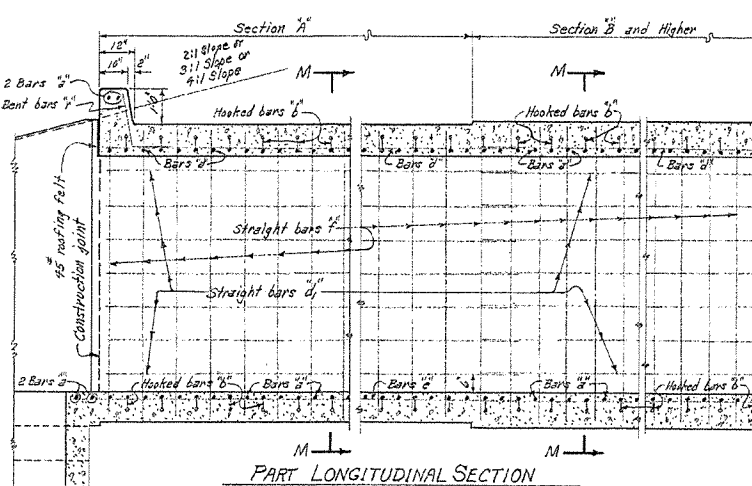
SECTION & BAR GROUP	LENGTH OF SECTION	DEPTH OF COVER	CLEAR SPAN	CLEAR HEIGHT	BARS									
					SIZE	NUMBER	LENGTH	RESID.	RESID.	SIZE	NUMBER	LENGTH	RESID.	RESID.
					SIZE	NUMBER	LENGTH	RESID.	RESID.	SIZE	NUMBER	LENGTH	RESID.	RESID.
SECTION C & BAR GROUP C	32'-0"	4'-0"	12'-0"	12'-0"	4#	6	4'-0"	4'-0"	4'-0"	4#	6	4'-0"	4'-0"	4'-0"
					4#	6	4'-0"	4'-0"	4'-0"	4#	6	4'-0"	4'-0"	4'-0"
					4#	6	4'-0"	4'-0"	4'-0"	4#	6	4'-0"	4'-0"	4'-0"
					4#	6	4'-0"	4'-0"	4'-0"	4#	6	4'-0"	4'-0"	4'-0"
					4#	6	4'-0"	4'-0"	4'-0"	4#	6	4'-0"	4'-0"	4'-0"
					4#	6	4'-0"	4'-0"	4'-0"	4#	6	4'-0"	4'-0"	4'-0"
					4#	6	4'-0"	4'-0"	4'-0"	4#	6	4'-0"	4'-0"	4'-0"
					4#	6	4'-0"	4'-0"	4'-0"	4#	6	4'-0"	4'-0"	4'-0"
					4#	6	4'-0"	4'-0"	4'-0"	4#	6	4'-0"	4'-0"	4'-0"
					4#	6	4'-0"	4'-0"	4'-0"	4#	6	4'-0"	4'-0"	4'-0"



DOWEL BARS FOR TWO HEADWALLS



FED. ROAD NO.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.			20	
JOB No.					



SECTIONS AND BAR GROUPS TO BE USED FOR VARIOUS DEPTHS OF COVER	DEPTHS OF COVER	SECTIONS & BAR GROUPS						MID-SECTION AND BAR GROUP
		A	B	C	D	E	F	
5.0' to 9.5'	5.0' to 9.5'	✓						A
	10.0' to 14.5'	✓						B
	15.0' to 19.5'	✓	✓					C
	20.0' to 24.5'	✓	✓	✓				D
	25.0' to 29.5'	✓	✓	✓	✓			E
30.0' to 34.5'	30.0' to 34.5'	✓	✓	✓	✓	✓		F
	35.0' to 40.0'	✓	✓	✓	✓	✓	✓	G

GENERAL NOTES:-
 CONCRETE:- All concrete to be Class S, and shall be poured in the dry.
 All exposed corners to have 3/4" chamfers.
 REINFORCING STEEL:- Reinforcing to be deformed bars of intermediate or hard grade.
 BAR LAP:- In computing the quantities of steel from the tables add one lap for each additional 33'-0" length of barrel over 32'-0". Lap longitudinal bars 30 diameters.
 CONSTRUCTION JOINTS:- Construction joints between wingwalls, side walls and slabs shall be only where shown on plans.
 SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.

SKW. ANGLE	SEC. OF SKW. ANGLE	SECTIONS & BAR GROUPS						MID-SECTION AND BAR GROUP
		A	B	C	D	E	F	
0°	1.0	22.0'	11.0'	32.0'	16.0'			
15°	1.0353	22.76'	11.389'	33.129'	16.564'			
30°	1.1547	25.903'	12.702'	36.550'	18.475'			
45°	1.4142	31.113'	15.556'	45.255'	22.627'			

DESIGN LIVE LOAD
 H20-S16 LOADING: A.R.S.H.O. 1961
 AND
 SPECIAL MILITARY LOADING
 Two 24,000 Lb. Axles @ 9'-0" cts.
 UNIT STRESSES:-
 Class S Concrete (f' = 10) 1200 psi
 Reinforcing Steel 20,000 psi

CLASS S CONCRETE
 ARKANSAS STATE HIGHWAY COMMISSION
 DETAILS OF STANDARD BARREL SECTIONS
 FOR
 REINFORCED CONCRETE BOX CULVERTS
 4', 5' & 6' SPANS
 SINGLES
 3:1 OR 4:1 SLOPES
 OVER 5'-0" COVER
 STANDARD DRAWING NO. R-100X-X1

Designed By: W.C.H. 9-5-62
 Checked By: J.E.M. 11-8-62
 Drawn By: W.C.H. 10-10-62
 Quantity By: W.C.H. 11-7-62

δ bars	δ_2 bars

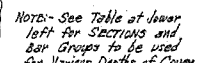
NOTE:- Dimension are to centers of bars. (ϕ' and ϕ'')

DEPTH	SECTIONS & BAR GRADE	MID-SECTION
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GENERAL NOTES:-
 REINFORCING:- All concrete to be Class S, and shall be poured in the dry.
 All exposed corners to have 3" chamfers.
 CONCRETE STEEL:- Reinforcing to be deformed bars of intermediate or hard grade.
 BAR LAP:- In computing the quantities of steel from the tables add one lap for each additional 33 1/3% length of bar over 36". Lap longitudinal bars 30 diameters.
 CONSTRUCTION JOINTS:- Construction joints between wingwalls, sidewalls, division walls and abutts shall be only where shown on plans.
 SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.

BARREL DIMENSIONS	UNIT QUAN
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NOTE: -For details of wings and leg lists, see Drawing Nos. W-X002-1 on W-X002-2.



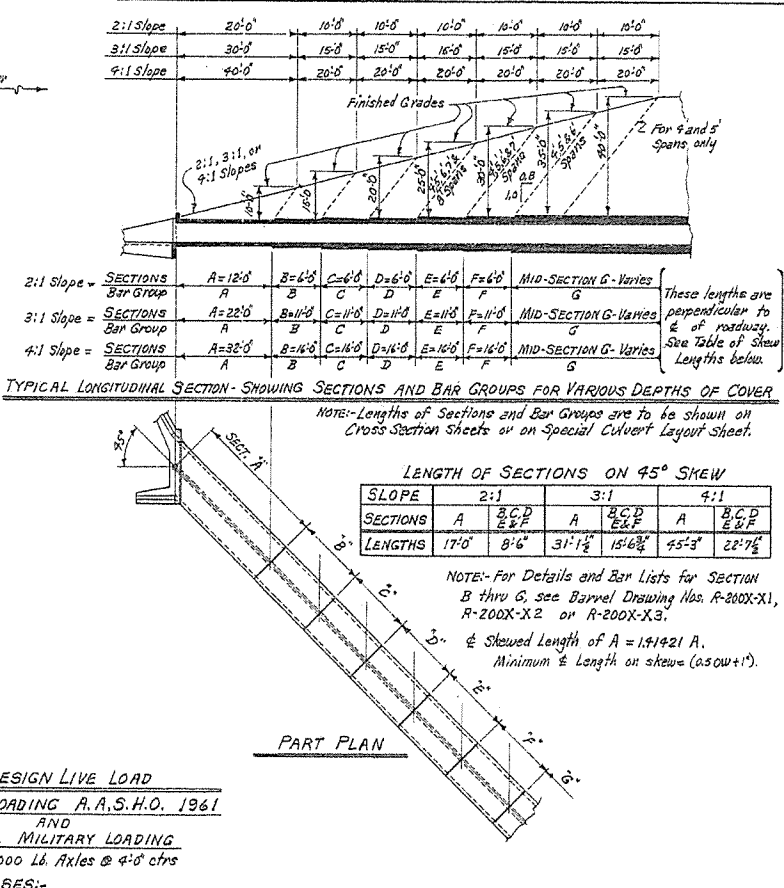
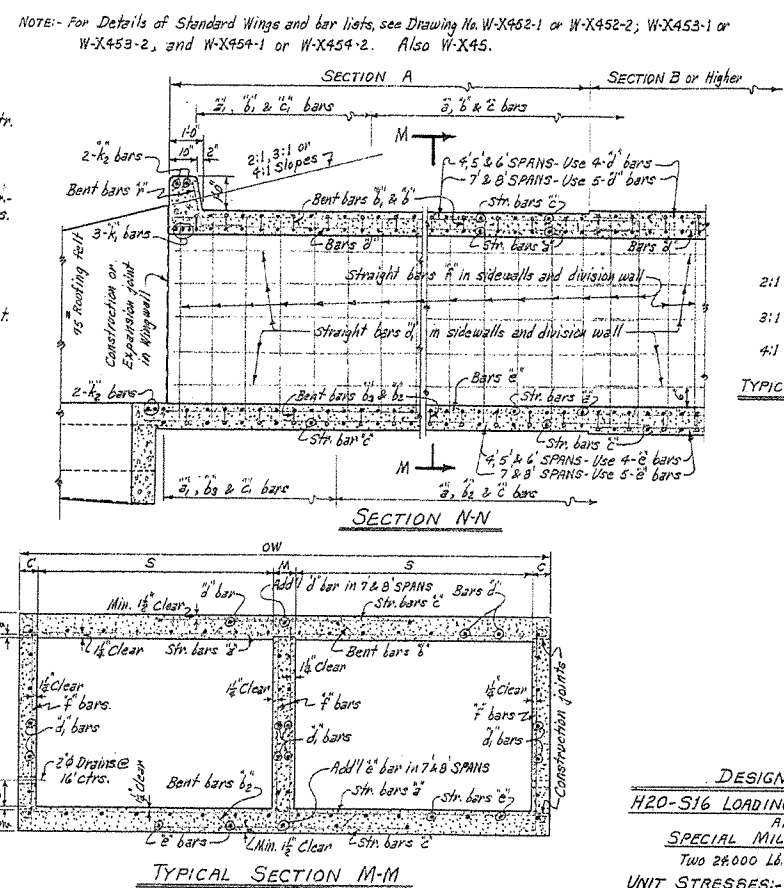
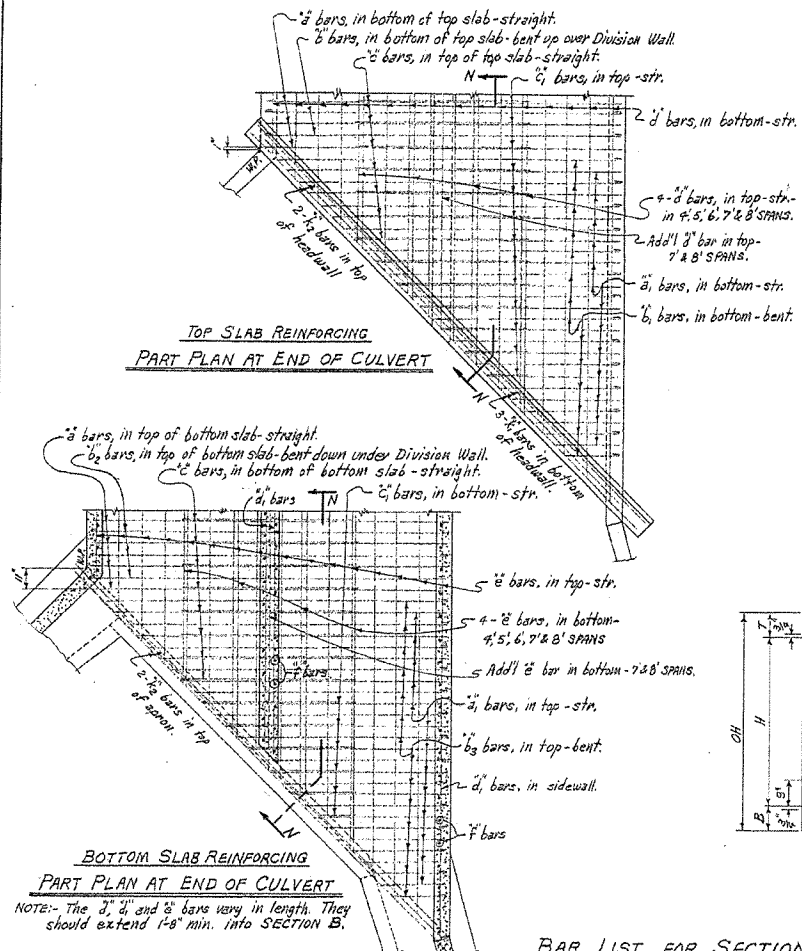
NOTE: - This drawing to be used in conjunction with Standard Drawing Nos. W-X003-1 or W-X003-2, and W-X004-1 or W-X004-2. Also Drawing Nos. W-X002-1 or W-X002-2.
To use this Drawing for skewed culverts, multiply the length of each section by the secant of the skew angle. For 15° by 10359, for 30° by 11597, and for 45° by 14142.

CLASS 5 CONCRETE

REINFORCED CONCRETE BOX CULVERTS
8', 10' & 12' SPANS 3:1 OR 4:1 SLOPES
DOUBLES OVER 5'-0" COVER

STANDARD DRAWING No. R-200X-X2

FED. ROAD NO.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.			204	
JOB No.					

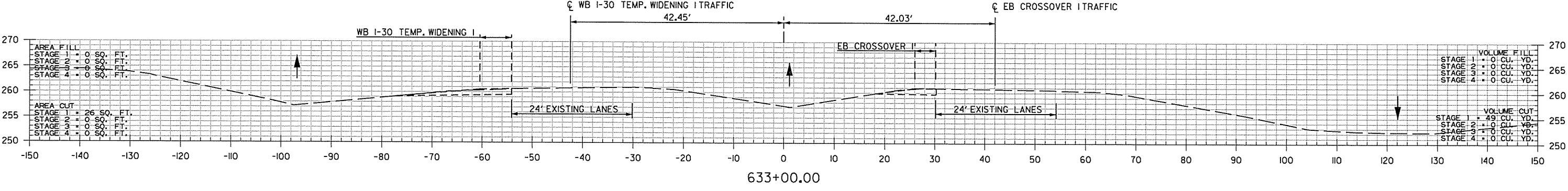
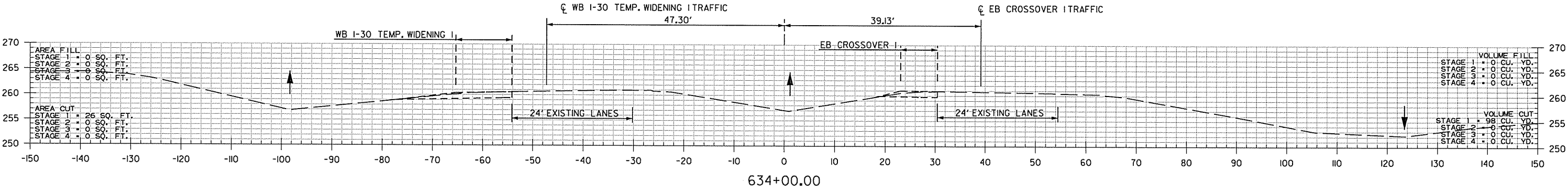
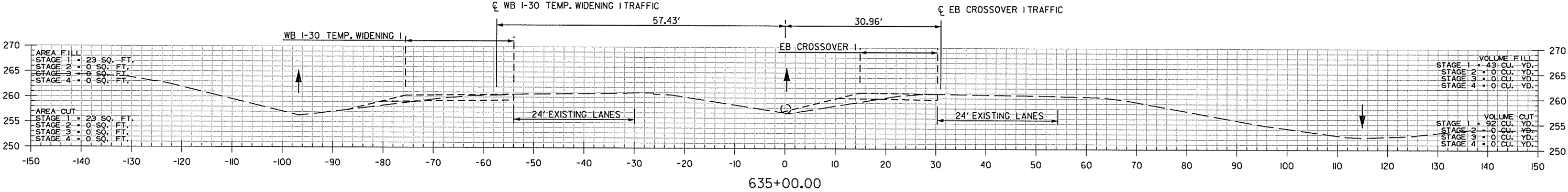


BARREL DIMENSIONS												*QUANTITIES - ONE SECTION A'					
												CLASS S CONCRETE			REINFORCING STEEL		
												BARREL ONLY			BARREL, APRON AND HEADWALL		
												2:1	3:1	4:1	2:1	3:1	4:1
MAX. DESIGN DEPTH OF COVER	DEPTH OF COVER	SECTION A	SECTION B	SECTION C	SECTION D	SECTION E	SECTION F	SECTION G	SECTION H	SECTION I	SECTION J	CYD.	CYD.	CYD.	LB.	LB.	LB.
SECTION A' = 10'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"	1.28	1.28	1.28	1280	1280	1280
	2'-6"	2'-6"	2'-6"	2'-6"	2'-6"	2'-6"	2'-6"	2'-6"	2'-6"	2'-6"	2'-6"	1.32	1.32	1.32	1320	1320	1320
	3'-0"	3'-0"	3'-0"	3'-0"	3'-0"	3'-0"	3'-0"	3'-0"	3'-0"	3'-0"	3'-0"	1.36	1.36	1.36	1360	1360	1360
	3'-6"	3'-6"	3'-6"	3'-6"	3'-6"	3'-6"	3'-6"	3'-6"	3'-6"	3'-6"	3'-6"	1.40	1.40	1.40	1400	1400	1400
	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	1.44	1.44	1.44	1440	1440	1440
	4'-6"	4'-6"	4'-6"	4'-6"	4'-6"	4'-6"	4'-6"	4'-6"	4'-6"	4'-6"	4'-6"	1.48	1.48	1.48	1480	1480	1480
	5'-0"	5'-0"	5'-0"	5'-0"	5'-0"	5'-0"	5'-0"	5'-0"	5'-0"	5'-0"	5'-0"	1.52	1.52	1.52	1520	1520	1520
	5'-6"	5'-6"	5'-6"	5'-6"	5'-6"	5'-6"	5'-6"	5'-6"	5'-6"	5'-6"	5'-6"	1.56	1.56	1.56	1560	1560	1560
	6'-0"	6'-0"	6'-0"	6'-0"	6'-0"	6'-0"	6'-0"	6'-0"	6'-0"	6'-0"	6'-0"	1.60	1.60	1.60	1600	1600	1600
	6'-6"	6'-6"	6'-6"	6'-6"	6'-6"	6'-6"	6'-6"	6'-6"	6'-6"	6'-6"	6'-6"	1.64	1.64	1.64	1640	1640	1640
SECTION B' = 10'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"	1.28	1.28	1.28	1280	1280	1280
	2'-6"	2'-6"	2'-6"	2'-6"	2'-6"	2'-6"	2'-6"	2'-6"	2'-6"	2'-6"	2'-6"	1.32	1.32	1.32	1320	1320	1320
	3'-0"	3'-0"	3'-0"	3'-0"	3'-0"	3'-0"	3'-0"	3'-0"	3'-0"	3'-0"	3'-0"	1.36	1.36	1.36	1360	1360	1360
	3'-6"	3'-6"	3'-6"	3'-6"	3'-6"	3'-6"	3'-6"	3'-6"	3'-6"	3'-6"	3'-6"	1.40	1.40	1.40	1400	1400	1400
	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	1.44	1.44	1.44	1440	1440	1440
	4'-6"	4'-6"	4'-6"	4'-6"	4'-6"	4'-6"	4'-6"	4'-6"	4'-6"	4'-6"	4'-6"	1.48	1.48	1.48	1480	1480	1480
	5'-0"	5'-0"	5'-0"	5'-0"	5'-0"	5'-0"	5'-0"	5'-0"	5'-0"	5'-0"	5'-0"	1.52	1.52	1.52	1520	1520	1520
	5'-6"	5'-6"	5'-6"	5'-6"	5'-6"	5'-6"	5'-6"	5'-6"	5'-6"	5'-6"	5'-6"	1.56	1.56	1.56	1560	1560	1560
	6'-0"	6'-0"	6'-0"	6'-0"	6'-0"	6'-0"	6'-0"	6'-0"	6'-0"	6'-0"	6'-0"	1.60	1.60	1.60	1600	1600	1600
	6'-6"	6'-6"	6'-6"	6'-6"	6'-6"	6'-6"	6'-6"	6'-6"	6'-6"	6'-6"	6'-6"	1.64	1.64	1.64	1640	1640	1640

SECTION A' & BAR GROUP A'	LENGTH OF SECTION	DEPTH OF COVER	SECTION A' & BAR GROUP A'												SECTION B' & BAR GROUP B'														
			STRAIGHT						BENT - See Diagrams below.						STRAIGHT						BENT - See Diagrams below.								
			In Top and Bottom Slab of Barrel.			In Top and Bottom Slab of Barrel - (Two of each Length)			In Bottom of Top Slab bent up over Division Wall - hooked.			In Bottom of Top Slab bent up over Division Wall - hooked.			In Top and Bottom Slab bent down over Division Wall - hooked.			In Top and Bottom Slab bent down over Division Wall - hooked.			In Top and Bottom Slab bent down over Division Wall - hooked.			In Top and Bottom Slab bent down over Division Wall - hooked.					
			SIZE	SPACING	NUMBER READ	SIZE	SPACING	NUMBER READ	SIZE	SPACING	NUMBER READ	SIZE	SPACING	NUMBER READ	SIZE	SPACING	NUMBER READ	SIZE	SPACING	NUMBER READ	SIZE	SPACING	NUMBER READ	SIZE	SPACING	NUMBER READ	SIZE	SPACING	NUMBER READ
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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.						BB0303	205	231

2 CROSS SECTIONS

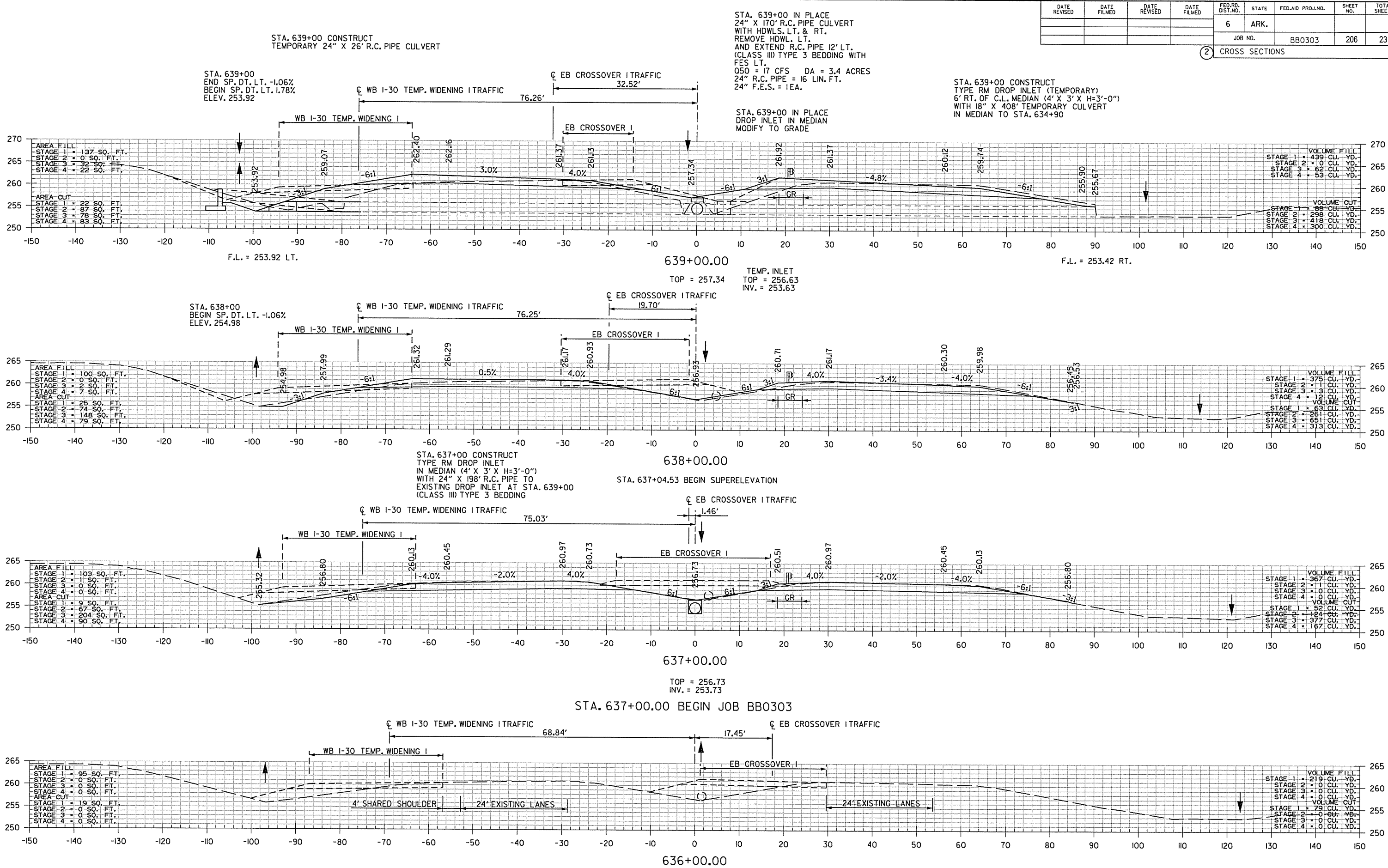


STA. 633+00.00 TO STA. 635+00.00

USER: WORKSPACE: FILE: REVISED DATE:

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						JOB NO.	BB0303	206
								231

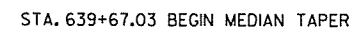
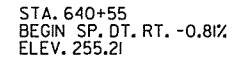
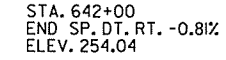
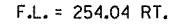
2 CROSS SECTIONS



STA. 636+00.00 TO STA. 639+00.00

\\SUSERS\$
WORKSPACE: \$WORKSPACE\$
\$FILE\$
REVISED DATE:

2 CROSS SECTIONS



STA. 640+00.00 TO STA. 642+00.00

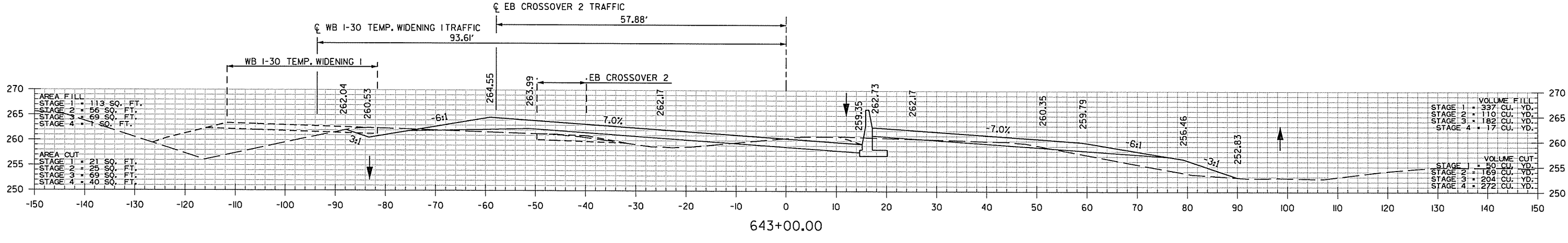
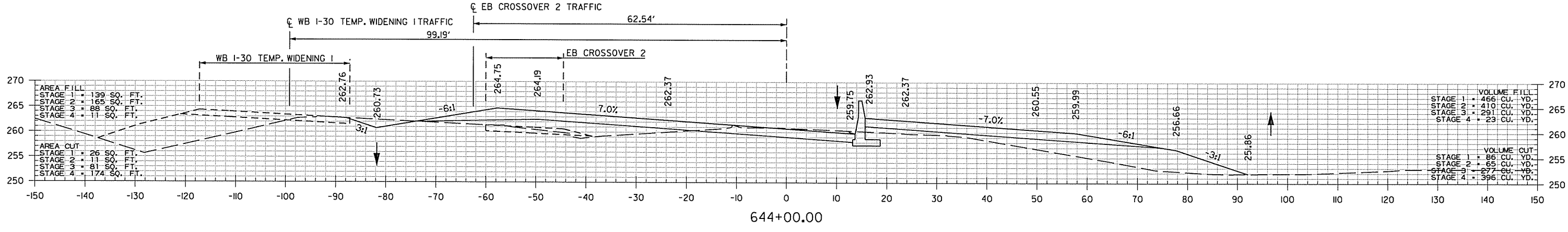
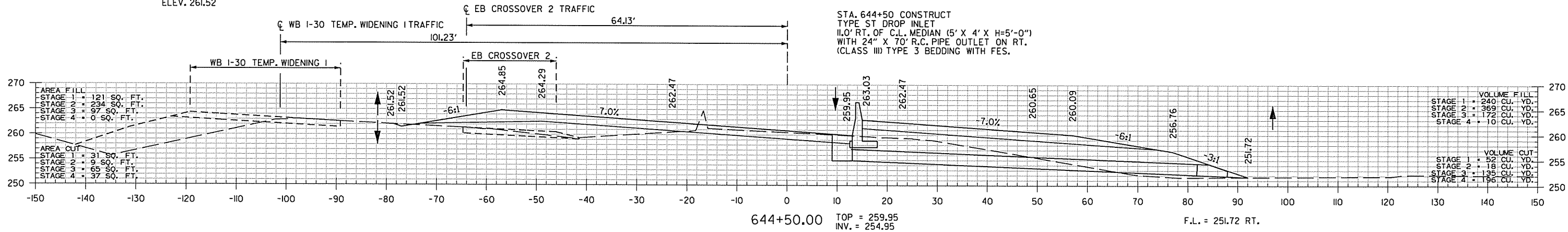
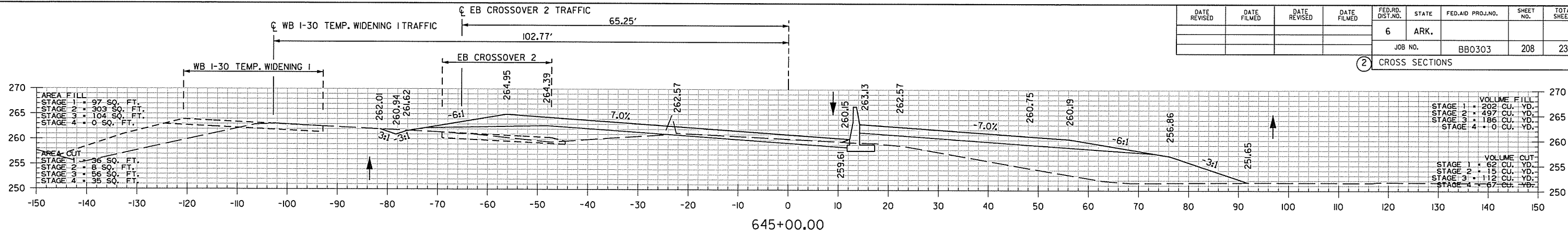
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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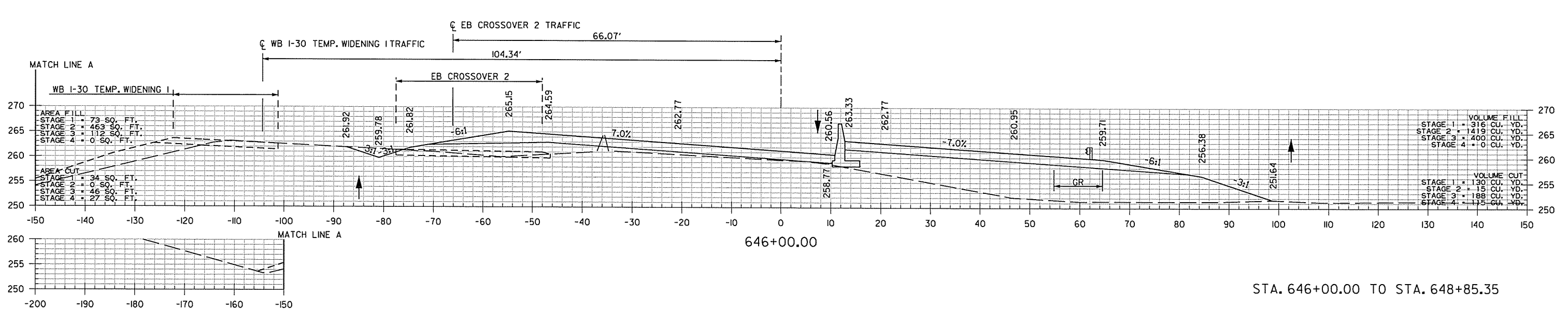
2 CROSS SECTIONS



STA. 643+00.00 TO STA. 645+00.00

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REVISED DATE:

2 CROSS SECTIONS

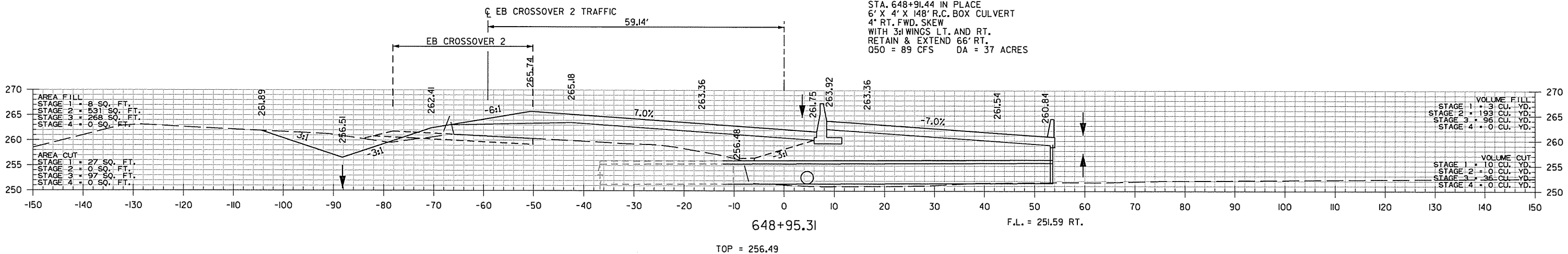
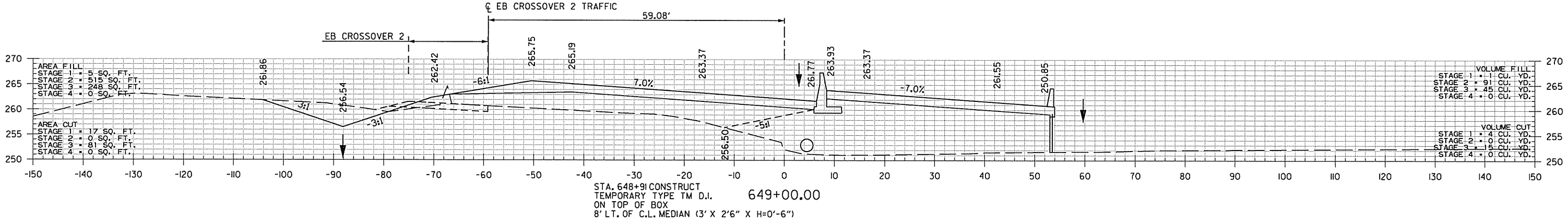
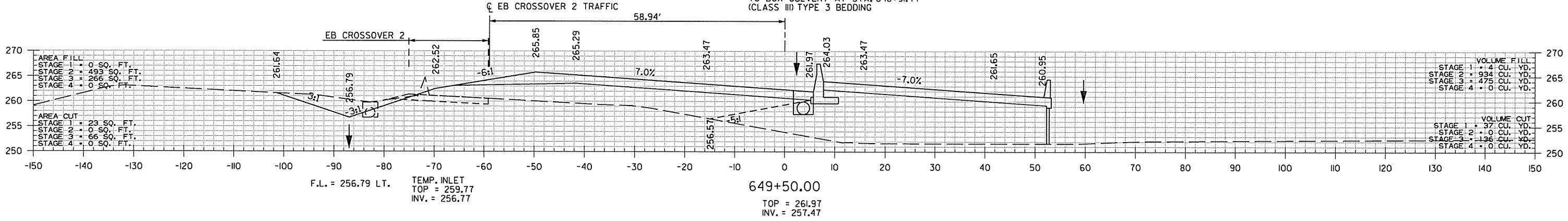
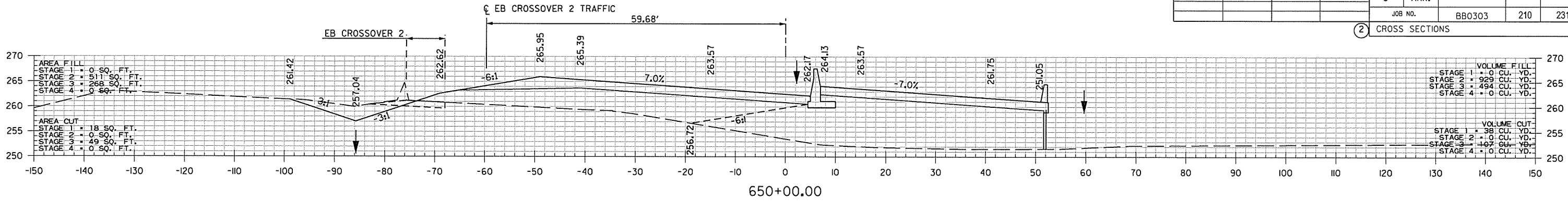


STA. 646+00.00 TO STA. 648+85.35

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WORKSPACE: \$WORKSPACE\$
\$FILE\$\$
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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						JOB NO. BB0303	210	231

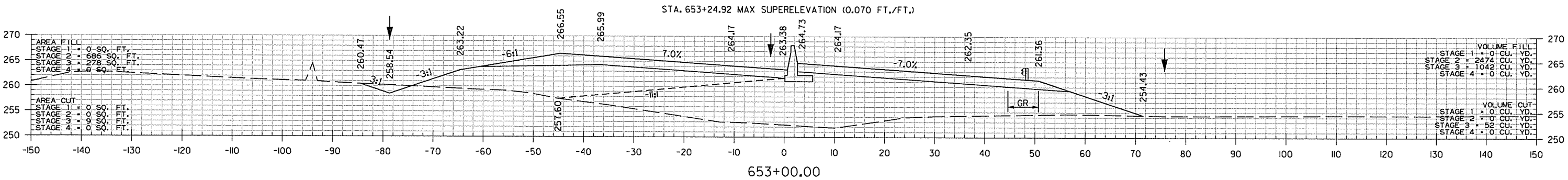
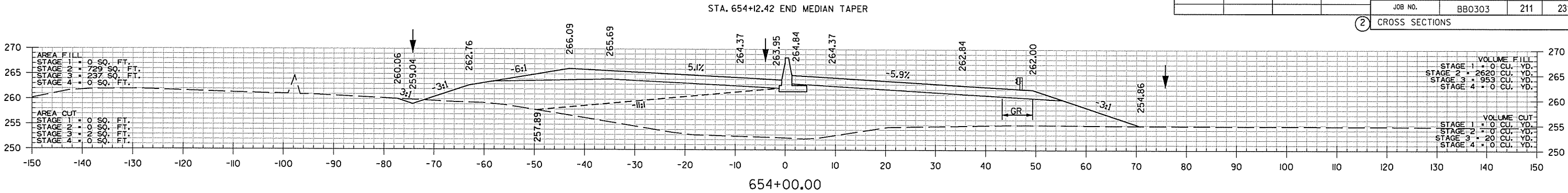
2 CROSS SECTIONS



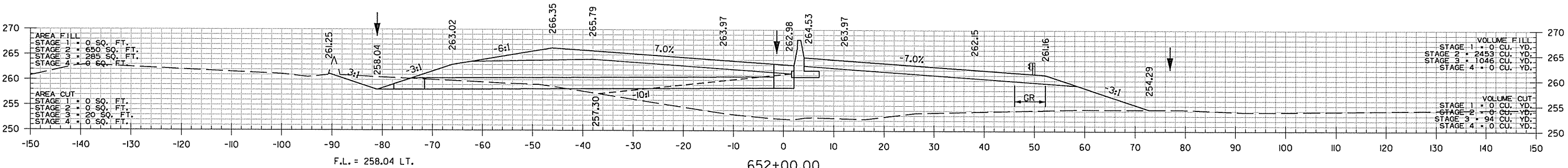
STA. 648+95.31 TO STA. 650+00.00

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. BB0303	211	231

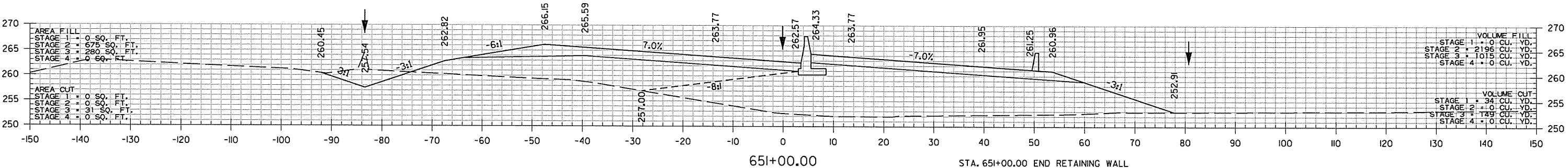
2 CROSS SECTIONS



STA. 652+00 CONSTRUCT
TYPE ST DROP INLET
IN MEDIAN (5' X 4' X H=4'-6")
WITH 24" X 70' R.C. PIPE OUTLET ON LT.
(CLASS III) TYPE 3 BEDDING WITH FES.



TOP = 262.98
INV. = 258.48



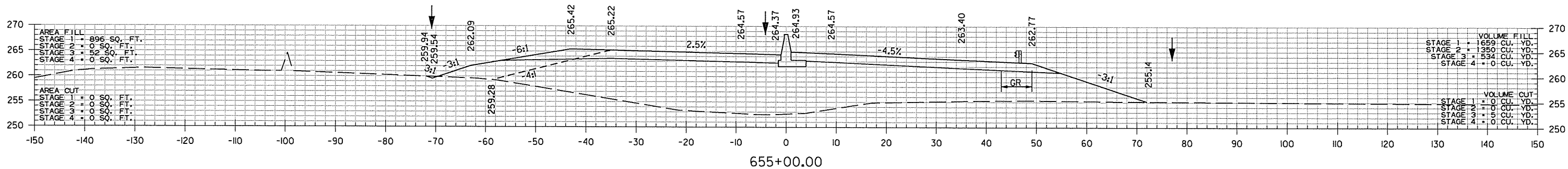
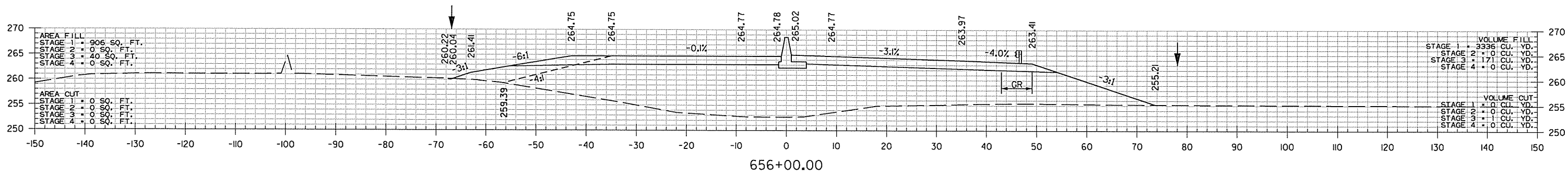
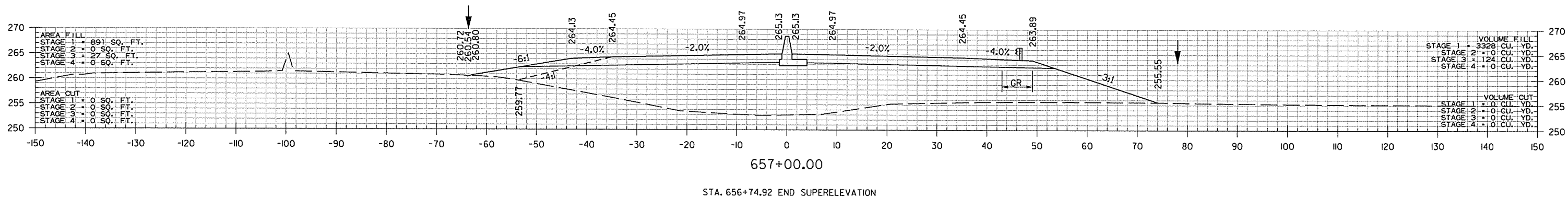
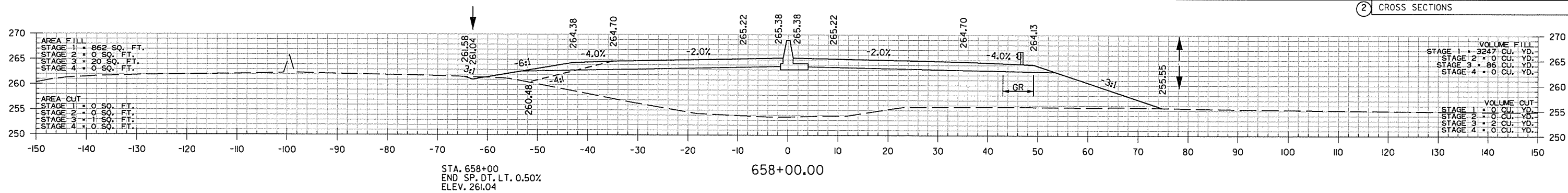
STA. 651+00.00 END RETAINING WALL

STA. 651+00.00 TO STA. 654+00.00

REVISED DATE:
\$USER\$
\$DATE\$
\$TIME\$
\$WORKSPACE\$
\$FILE\$

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		BB0303	212	231

2 CROSS SECTIONS



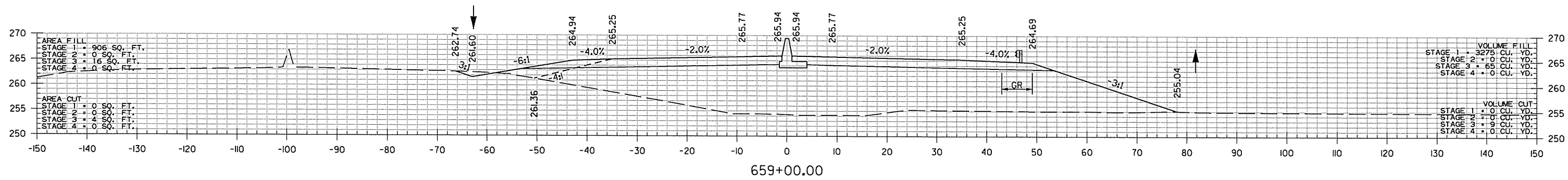
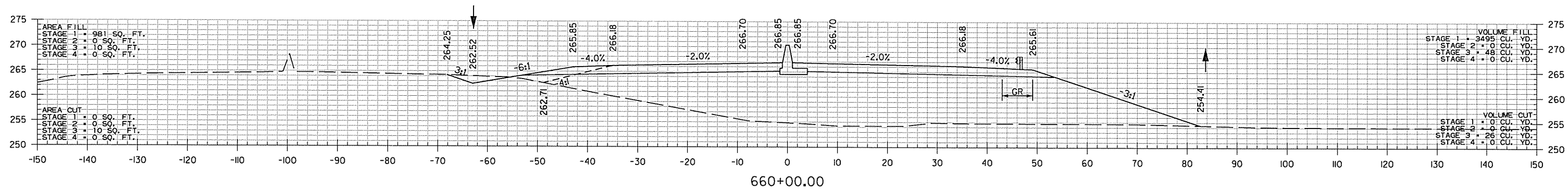
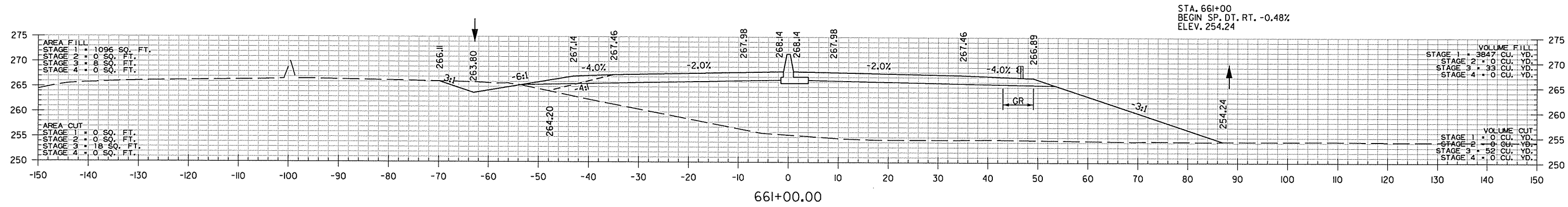
STA. 655+00.00 TO STA. 658+00.00

REVISED DATE:
\$USER\$\$
WORKSPACE:
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REVISED DATE:
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WORKSPACE:
\$FILE\$

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEET'S
				6	ARK.			
				JOB NO.		BBO303	213	231

2 CROSS SECTIONS



STA. 659+00.00 TO STA. 661+00.00

USER: \$
WORKSPACE: \$
FILE: \$
REVISED DATE:

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.		B80303	214	231

2 CROSS SECTIONS

AREA FILL
STAGE 1 = 0 SQ. FT.
STAGE 2 = 0 SQ. FT.
STAGE 3 = 0 SQ. FT.
STAGE 4 = 0 SQ. FT.

AREA CUT
STAGE 1 = 0 SQ. FT.
STAGE 2 = 0 SQ. FT.
STAGE 3 = 0 SQ. FT.
STAGE 4 = 0 SQ. FT.

AREA FILL
STAGE 1 = 1213 SQ. FT.
STAGE 2 = 0 SQ. FT.
STAGE 3 = 2 SQ. FT.
STAGE 4 = 0 SQ. FT.

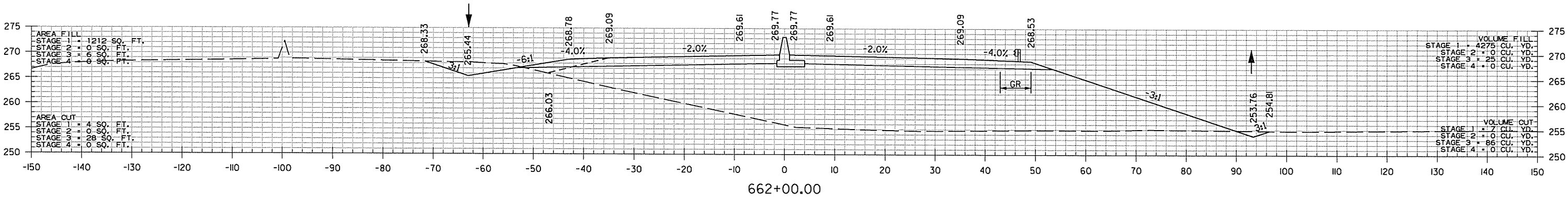
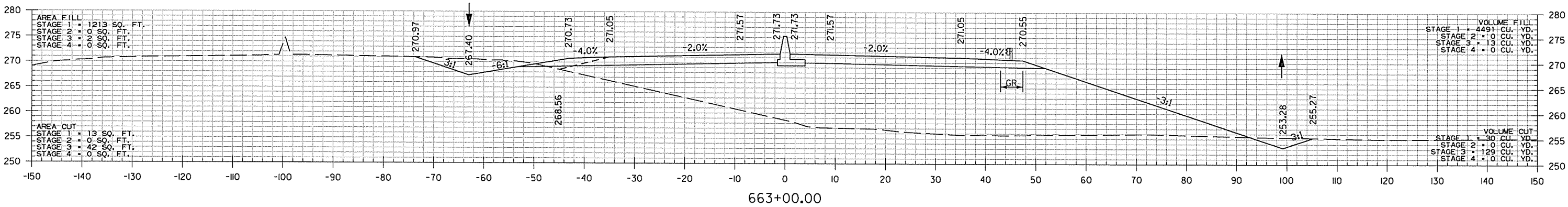
AREA CUT
STAGE 1 = 13 SQ. FT.
STAGE 2 = 0 SQ. FT.
STAGE 3 = 42 SQ. FT.
STAGE 4 = 0 SQ. FT.

VOLUME FILL
STAGE 1 = 344 CU. YD.
STAGE 2 = 0 CU. YD.
STAGE 3 = 0 CU. YD.
STAGE 4 = 0 CU. YD.

VOLUME CUT
STAGE 1 = 4 CU. YD.
STAGE 2 = 0 CU. YD.
STAGE 3 = 12 CU. YD.
STAGE 4 = 0 CU. YD.

VOLUME FILL
STAGE 1 = 3096 CU. YD.
STAGE 2 = 0 CU. YD.
STAGE 3 = 4 CU. YD.
STAGE 4 = 0 CU. YD.

VOLUME CUT
STAGE 1 = 33 CU. YD.
STAGE 2 = 0 CU. YD.
STAGE 3 = 106 CU. YD.
STAGE 4 = 0 CU. YD.

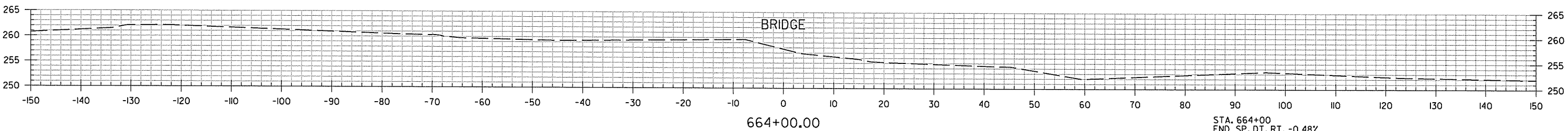
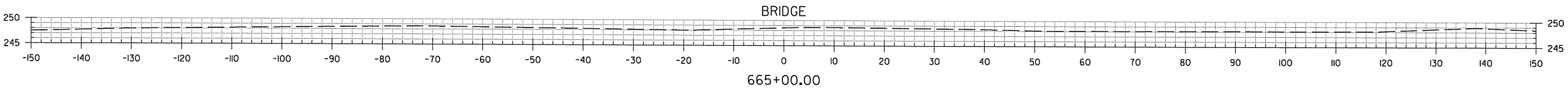
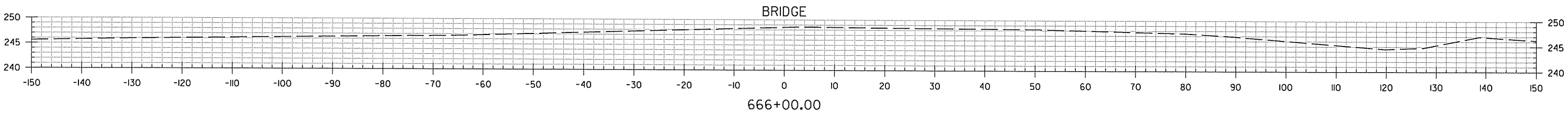
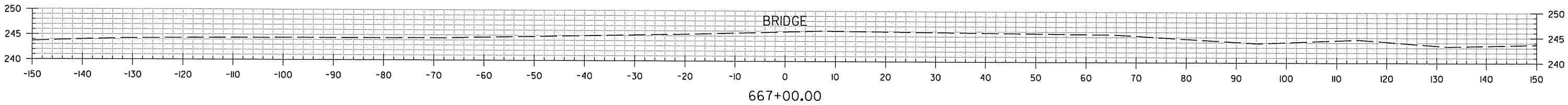
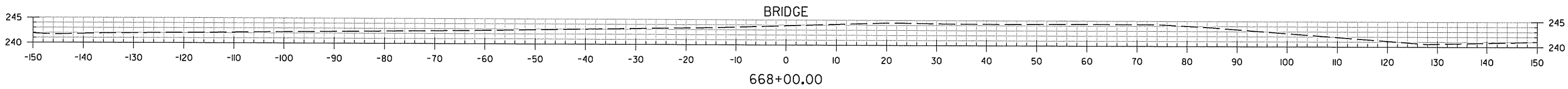


STA. 662+00.00 TO STA. 663+00.00

USER: \$
WORKSPACE: \$
FILE: \$
REVISED DATE: \$

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.		BB0303	215	231

2 CROSS SECTIONS



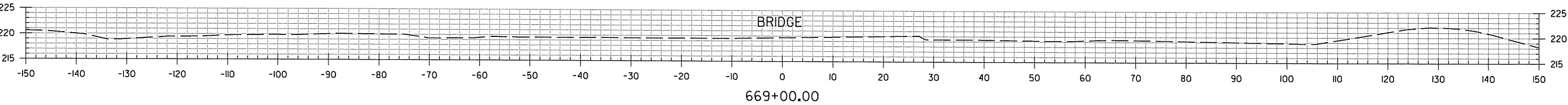
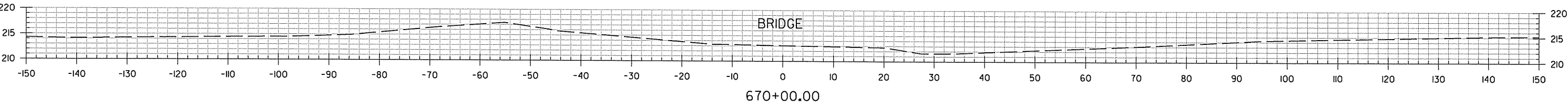
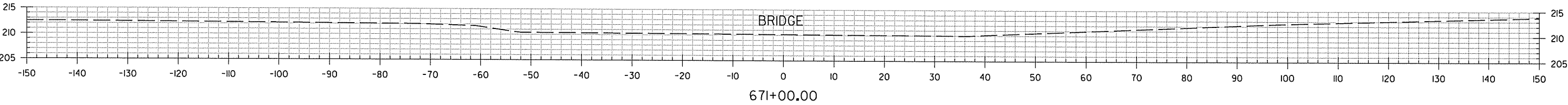
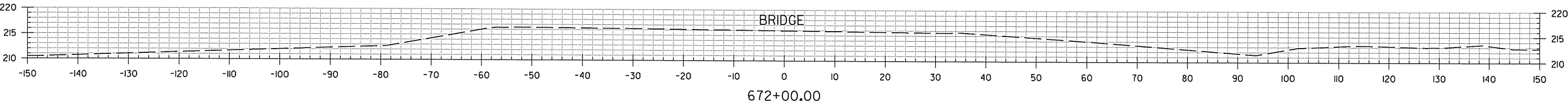
STA. 664+00
END SP. DT. RT. -0.48%
ELEV. 252.80

STA. 664+00.00 TO STA. 668+00.00

USER: WORKSPACE: FILE: REVISED DATE:

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.		BB0303	216	231

2 CROSS SECTIONS



STA. 669+00.00 TO STA. 672+00.00

USER: WORKSPACE: FILE: REVISED DATE:

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.		BB0303	217	231

2 CROSS SECTIONS

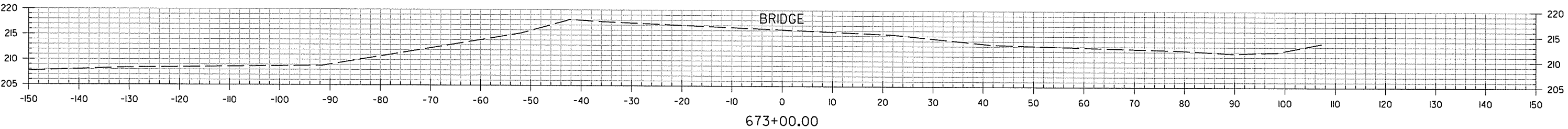
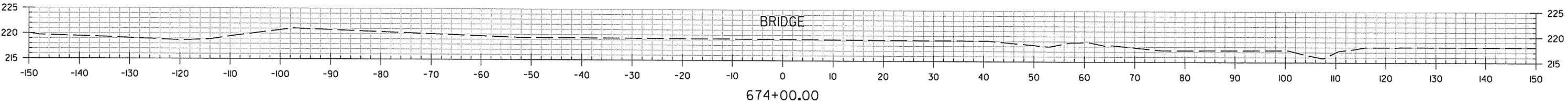
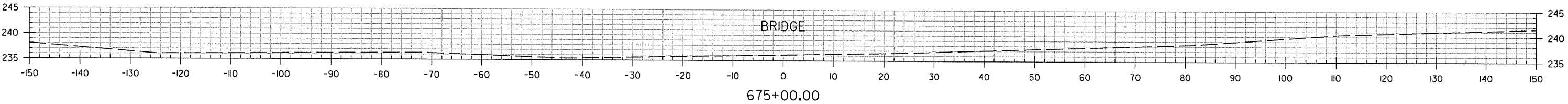
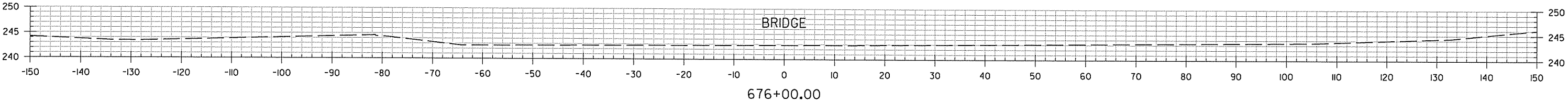
AREA FILL
STAGE 1 = 0 SQ. FT.
STAGE 2 = 0 SQ. FT.
STAGE 3 = 0 SQ. FT.
STAGE 4 = 0 SQ. FT.

AREA CUT
STAGE 1 = 0 SQ. FT.
STAGE 2 = 0 SQ. FT.
STAGE 3 = 0 SQ. FT.
STAGE 4 = 0 SQ. FT.

VOLUME FILL
STAGE 1 = 0 CU. YD.
STAGE 2 = 0 CU. YD.
STAGE 3 = 0 CU. YD.
STAGE 4 = 0 CU. YD.

VOLUME CUT
STAGE 1 = 0 CU. YD.
STAGE 2 = 0 CU. YD.
STAGE 3 = 0 CU. YD.
STAGE 4 = 0 CU. YD.

STA. 676+13.83 BEGIN TOE OF SLOPE

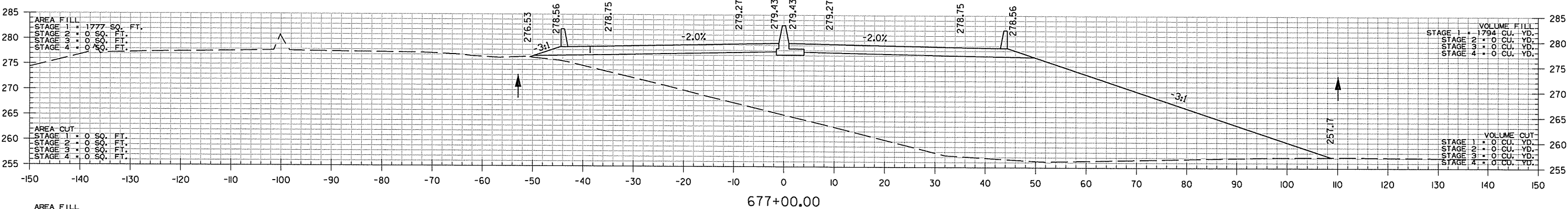
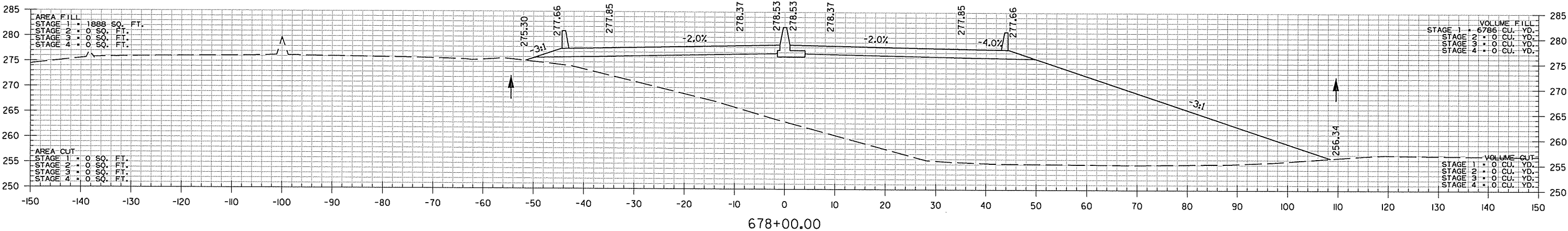
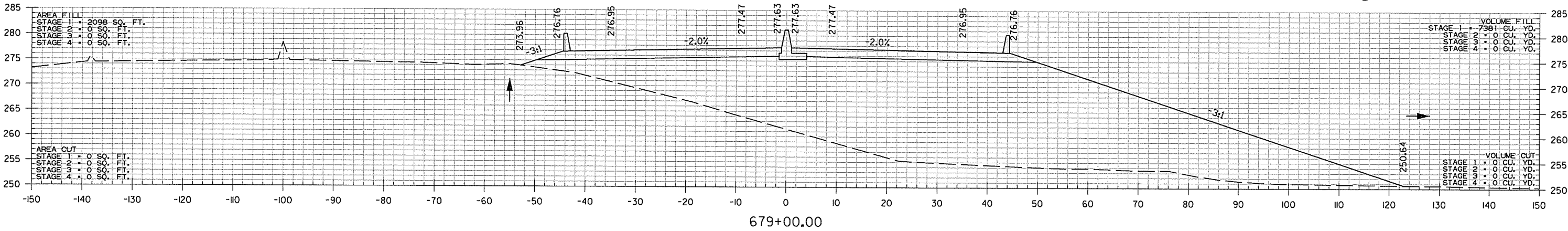


STA. 673+00.00 TO STA. 676+00.00

USER: \$
WORKSPACE: \$
FILE: \$
REVISED DATE:

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.		BB0303	218	231

2 CROSS SECTIONS



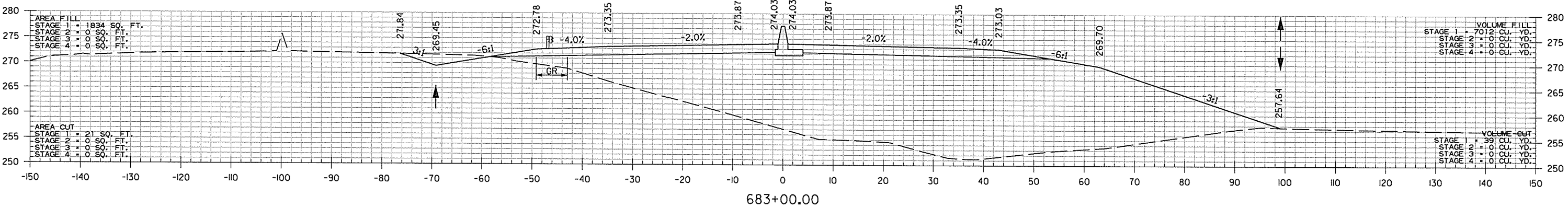
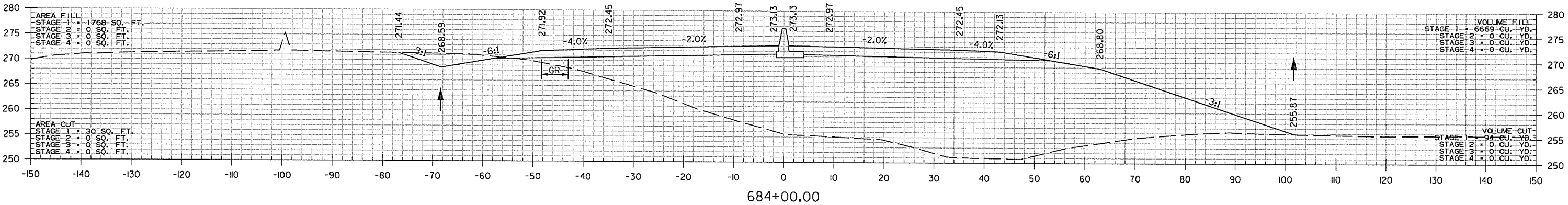
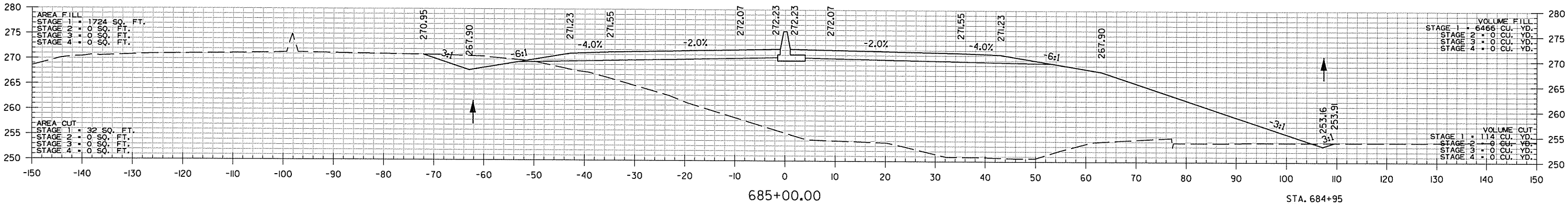
STA. 676+72.73 END BRIDGE

STA. 677+00.00 TO STA. 679+00.00

USER: \$USER\$
WORKSPACE: \$WORKSPACE\$
FILE: \$FILE\$
REVISED DATE:

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.	BB0303	220	231

2 CROSS SECTIONS

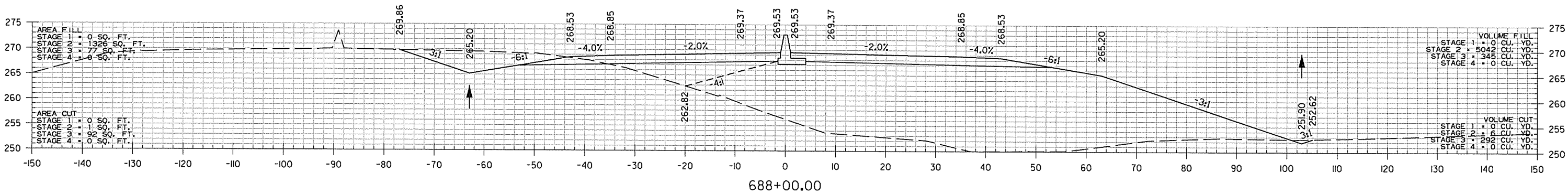


STA. 683+00.00 TO STA. 685+00.00

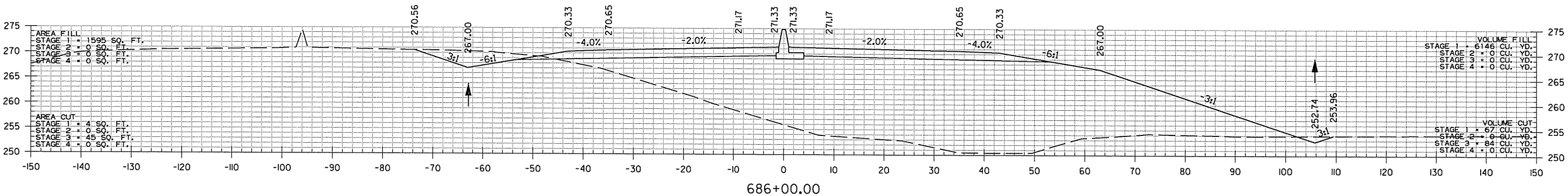
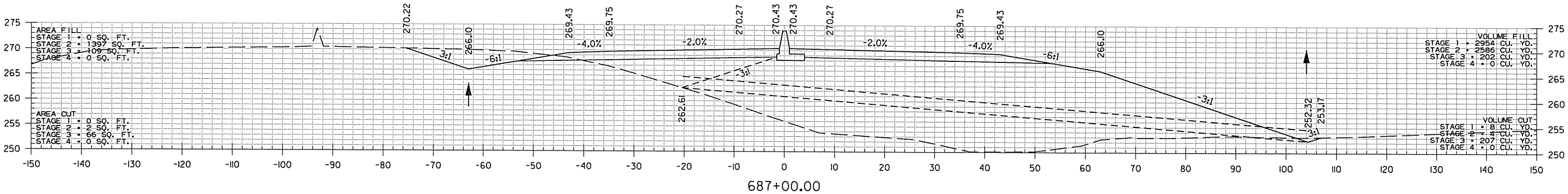
USER: \$
WORKSPACE: \$
REVISION: \$
DATE: \$

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.		BB0303	221	231

2 CROSS SECTIONS



STA. 687+00 CONSTRUCT
24" X 126' TEMPORARY R.C. PIPE CULVERT

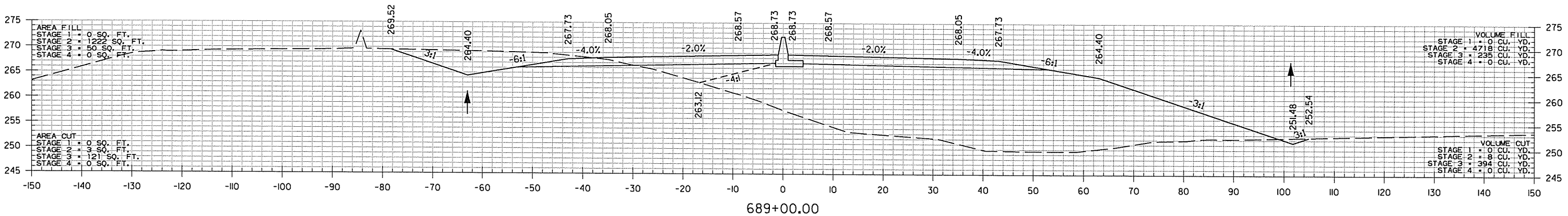
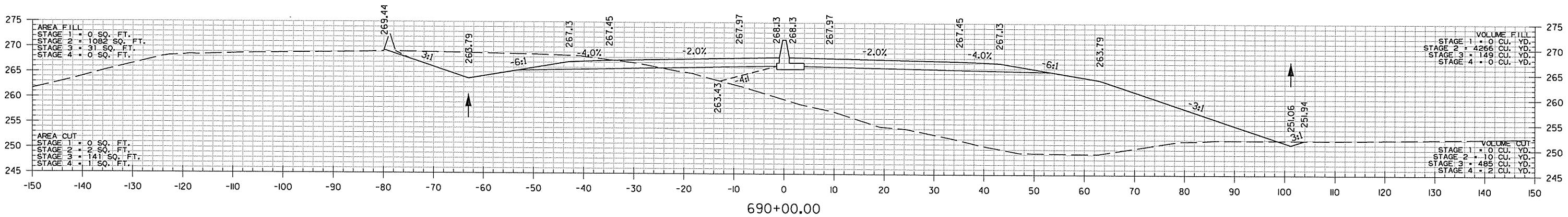
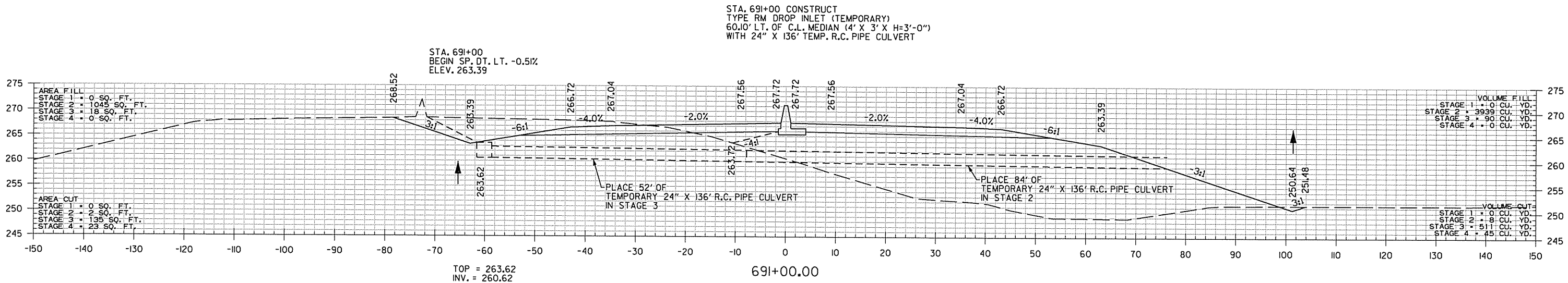


STA. 686+00.00 TO STA. 688+00.00

REVISER: \$USER\$
WORKSPACE: \$DATE\$ \$TIME\$
\$FILE\$
REVISED DATE:

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.	BB0303		222	231

2 CROSS SECTIONS



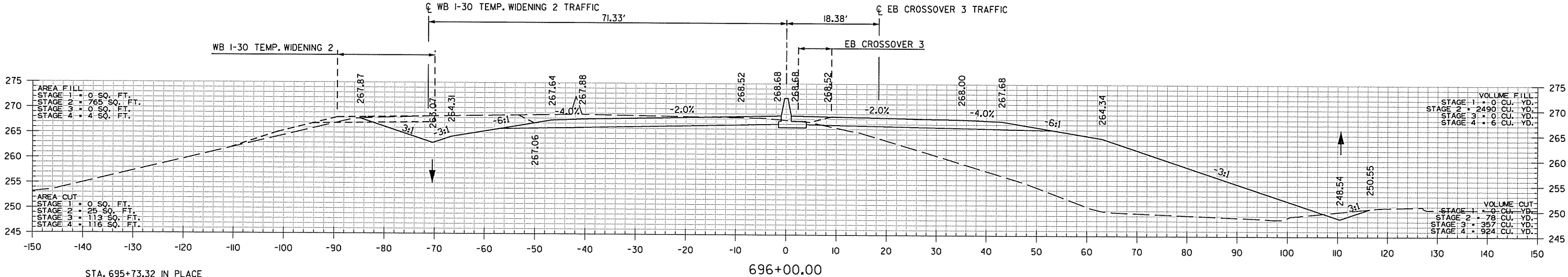
STA. 689+00.00 TO STA. 691+00.00

\$USER\$\$
\$DATE\$\$
\$WORKSPACE\$
\$FILE\$\$
REVISED DATE:

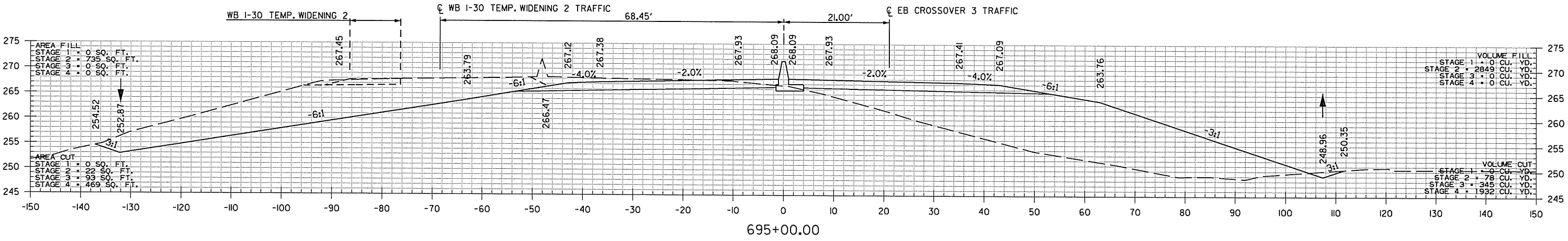
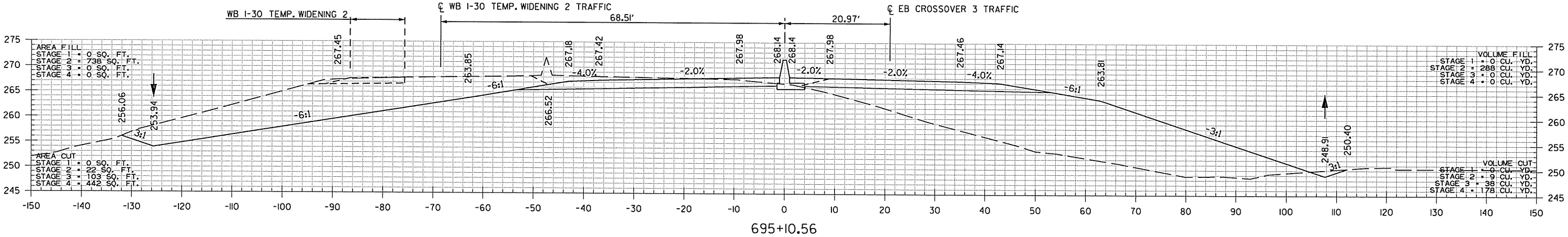
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BBO303	224	231

2 CROSS SECTIONS

STA. 696+00
END SP. DT. LT. 10.20%
BEGIN SP. DT. LT. 1.95%
ELEV. 263.07'



STA. 695+73.32 IN PLACE
DBL. 8' X 6' X 246' R.C. BOX CULVERT
42° RT. FWD. SKEW
WITH 3/4 WINGS LT. AND RT.
REMOVE 35' RT. & EXTEND 94' RT.
WITH 3/4 WINGS RT.
QSO = 489 CFS DA = 347.3 ACRES

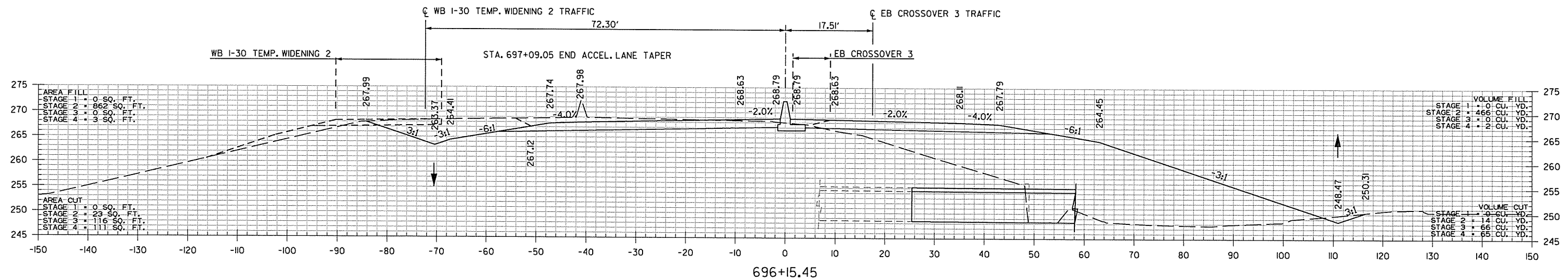
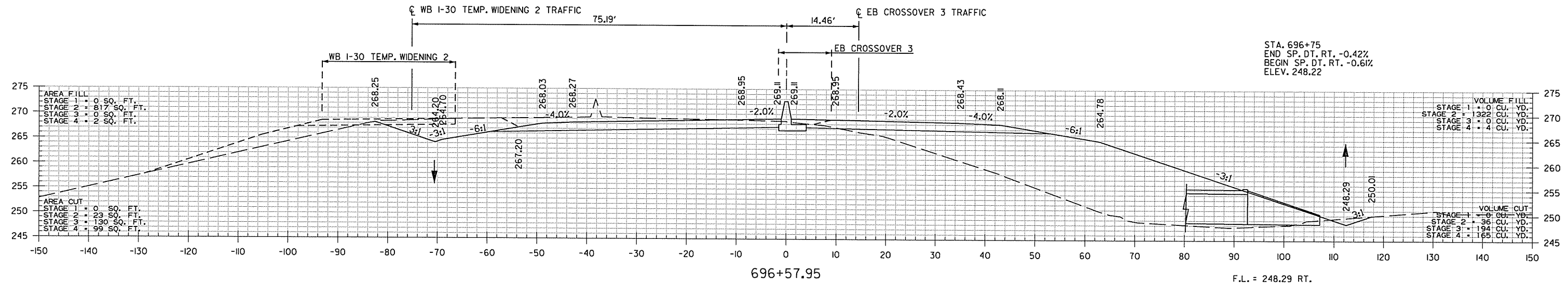
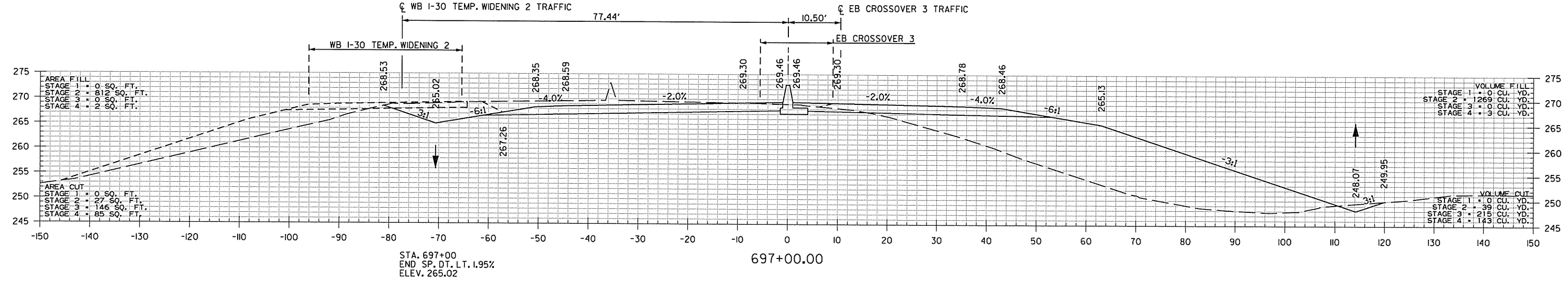


STA. 695+00.00 TO STA. 696+00.00

USER: \$USER\$
WORKSPACE: \$WORKSPACE\$
REVISION: \$REVISION\$
REVISED DATE:

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.	BB0303		225	231

2 CROSS SECTIONS

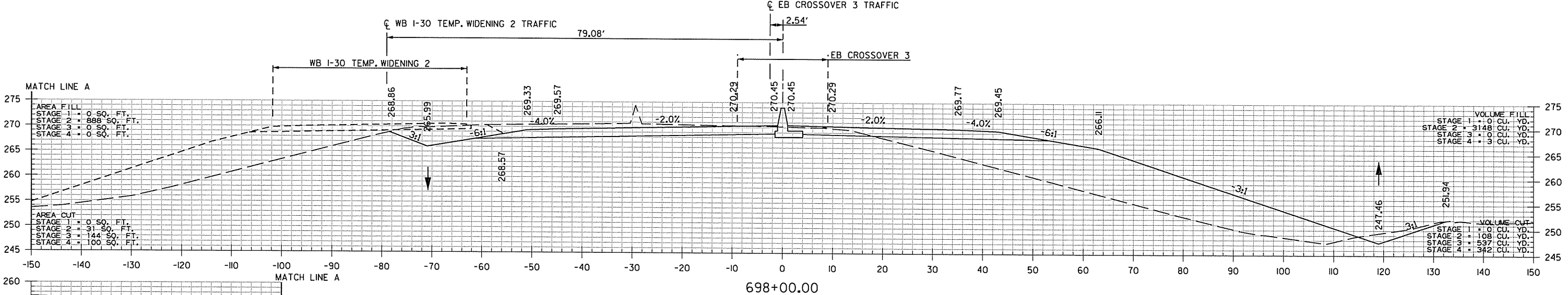
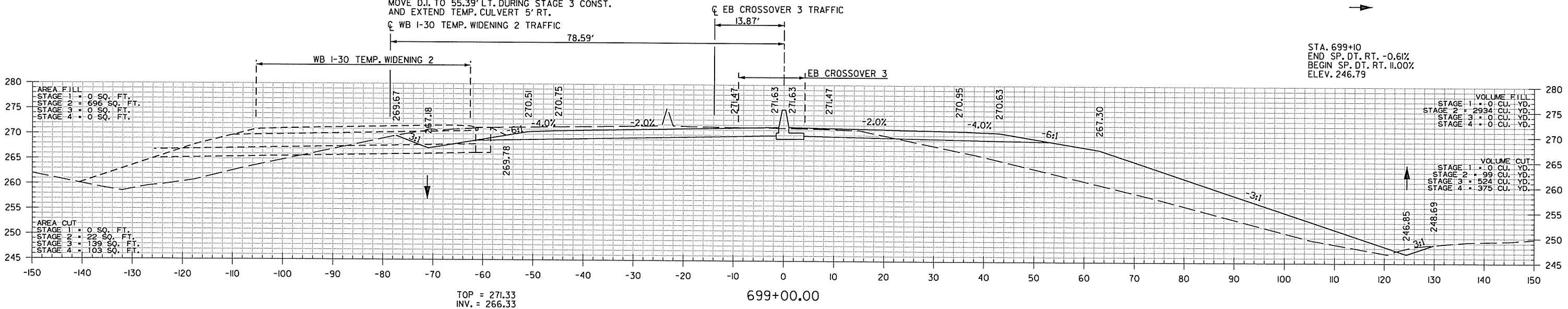
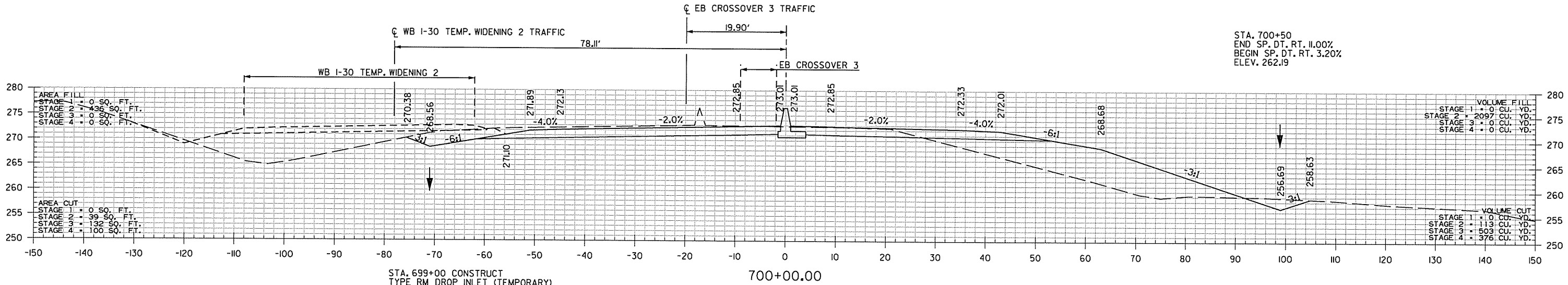


STA. 696+15.45 TO STA. 697+00.00

USER: \$
WORKSPACE: \$
FILE: \$
REVISED DATE:

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.		BB0303	226	231

2 CROSS SECTIONS

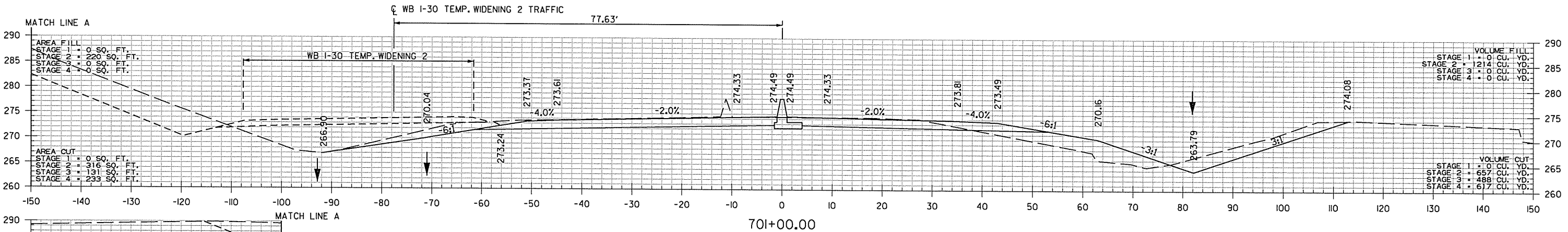
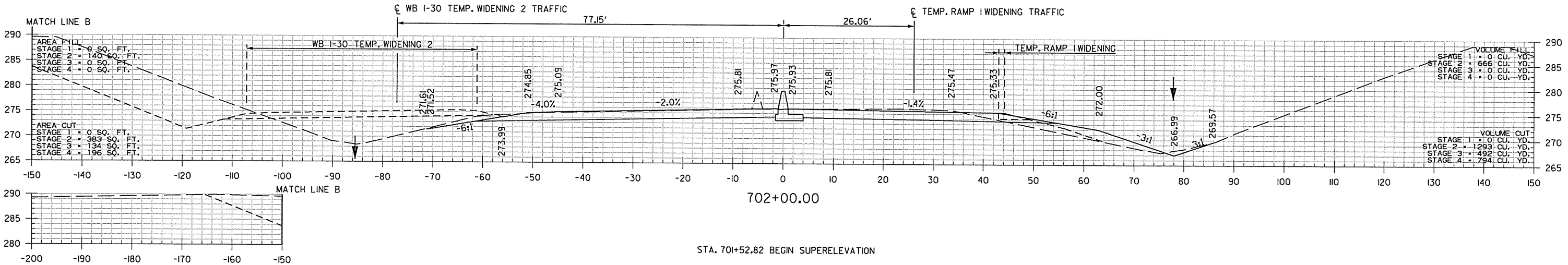
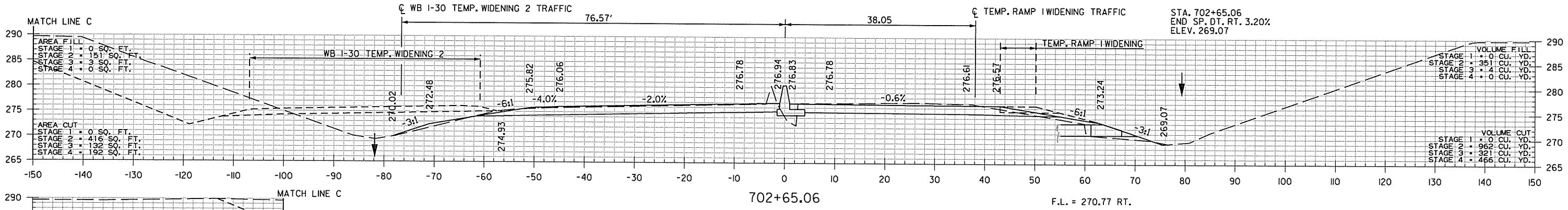


STA. 698+00.00 TO STA. 700+00.00

WORKSPACE: \$WORKSPACE\$
REVISION DATE: \$DATE\$

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.	BB0303	227	231

2 CROSS SECTIONS

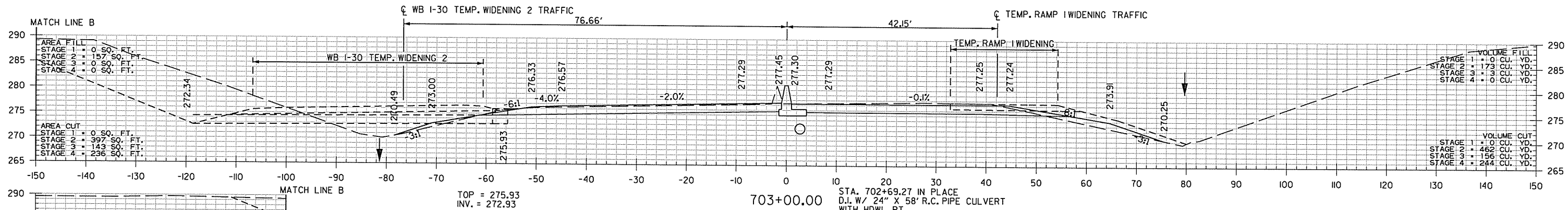
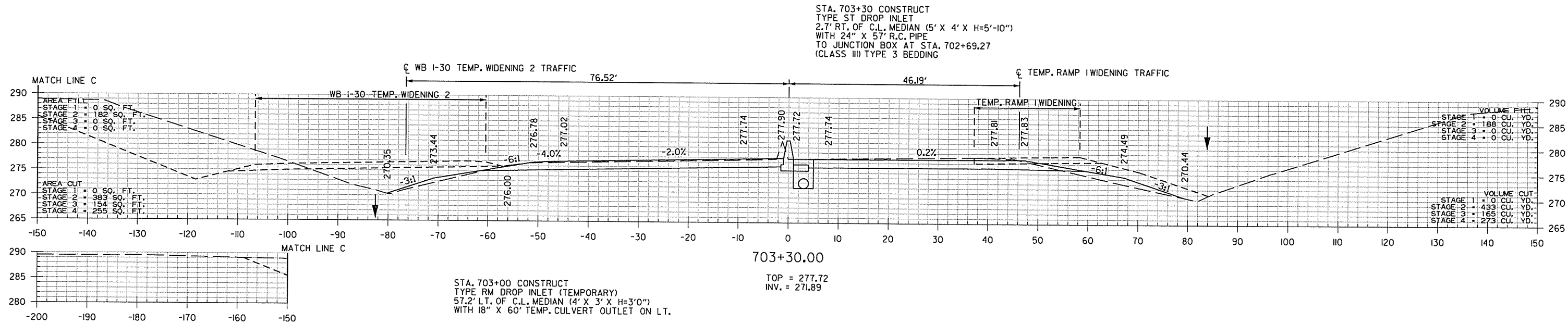


STA. 701+00.00 TO STA. 702+65.06

USER: WORKSPACE: FILE: REVISED DATE:

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.	BBO303	228
								231

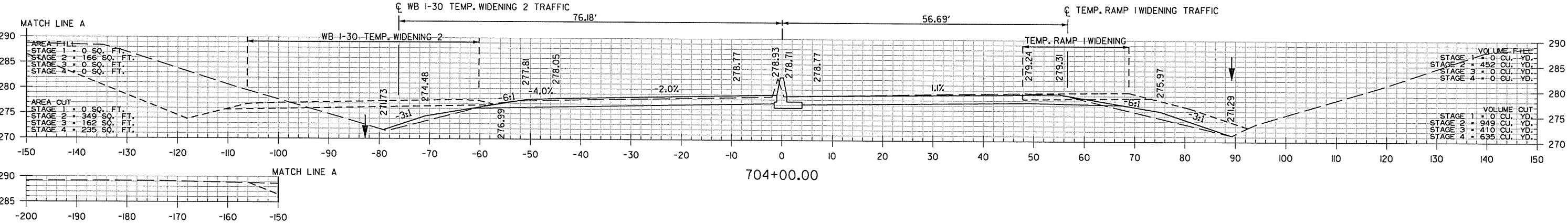
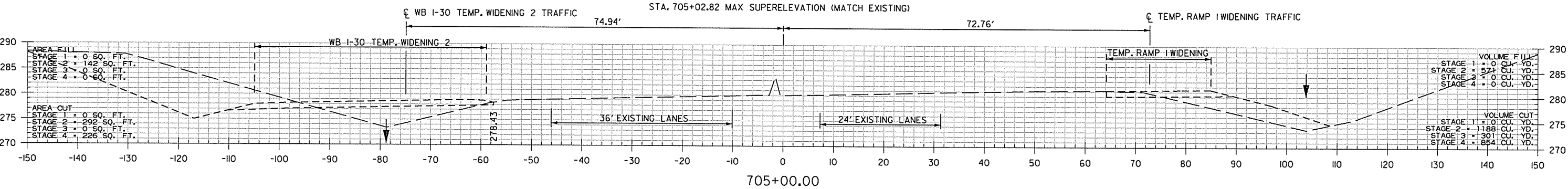
2 CROSS SECTIONS



STA. 702+69.27 TO STA. 703+30.00

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.	BB0303	229
								231

2 CROSS SECTIONS

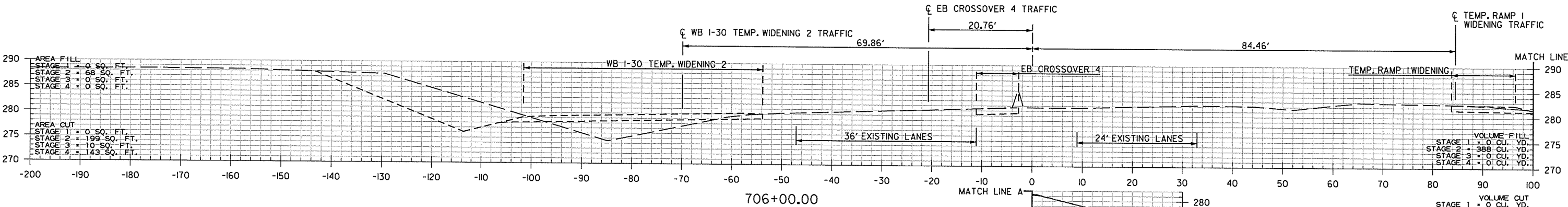
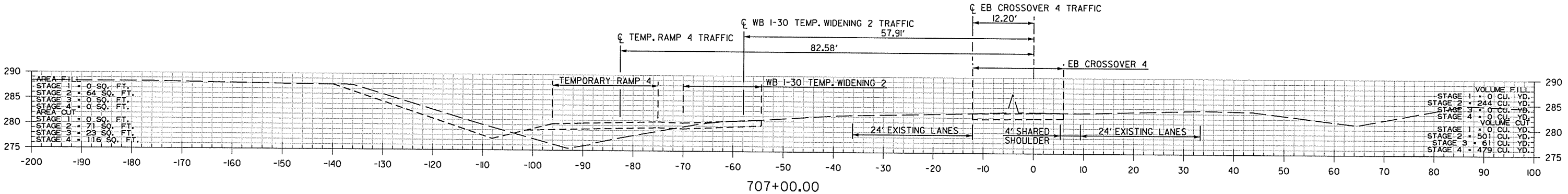
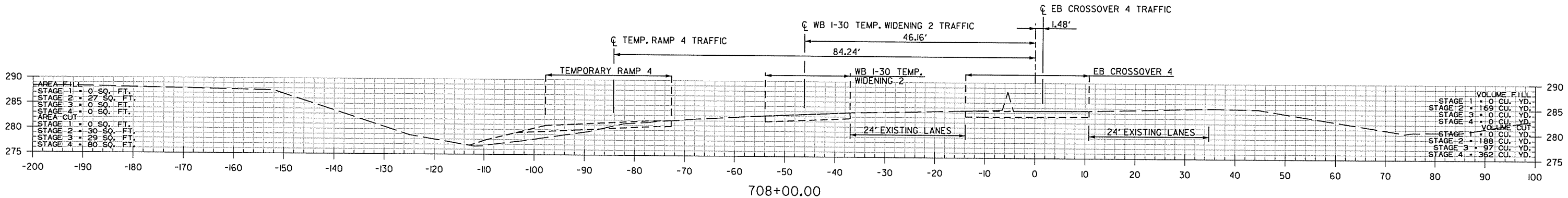
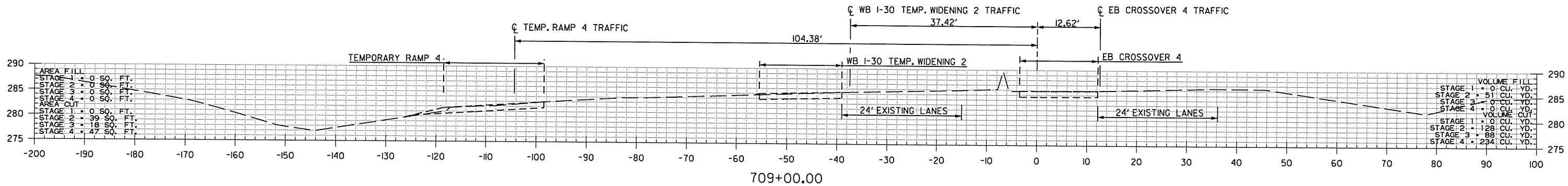


STA. 704+00.00 TO STA. 705+00.00

\$\$\$USER\$\$\$
WORKSPACE: \$\$\$WORKSPACE\$\$\$
\$\$\$FILE\$\$\$
REVISED DATE:

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.	BB0303		230	231

2 CROSS SECTIONS



STA. 706+00.00 TO STA. 709+00.00

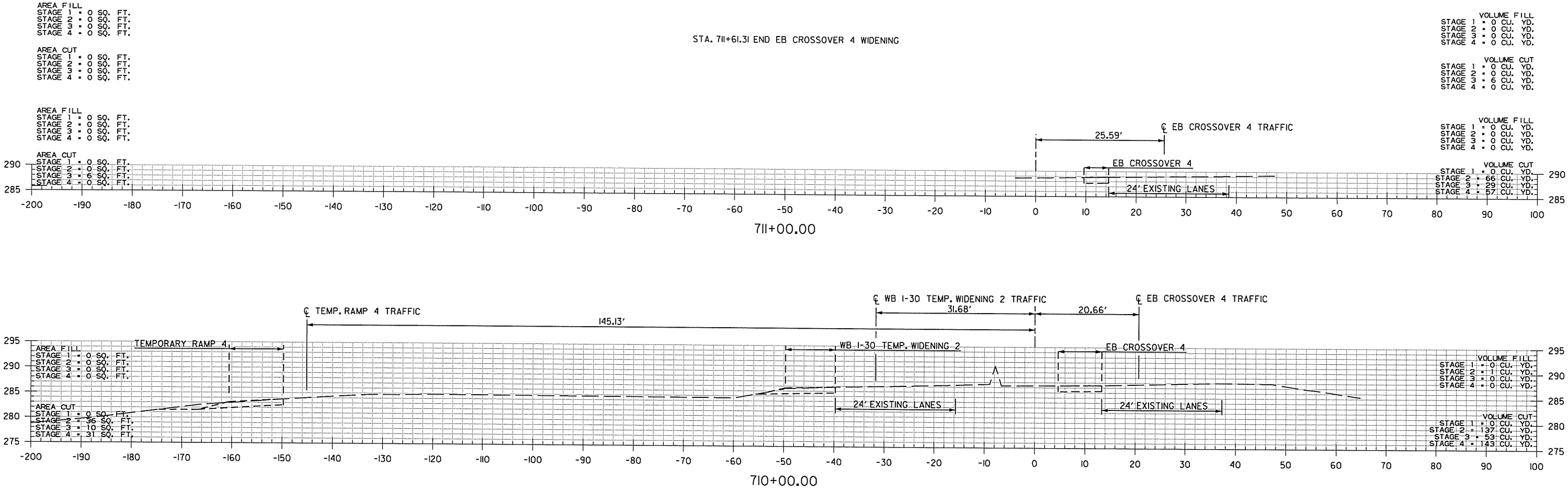
WORKSPACE: \$WORKSPACE\$
REVISED DATE:

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.	BB0303	231	231

2 CROSS SECTIONS

STA. 743+73.32 END JOB BB0303

STA. 711+61.31 END EB CROSSOVER 4 WIDENING



STA. 710+00.00 TO STA. 711+00.00

\$\$\$USER\$\$\$
\$\$\$WORKSPACE\$\$\$
\$\$\$FILE\$\$\$
REVISED DATE: