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.		050189	1	340
				(2)	HWY. 13 EXTENSION (SEARCY) (S)			

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
CONSTRUCTION PLANS FOR STATE HIGHWAY

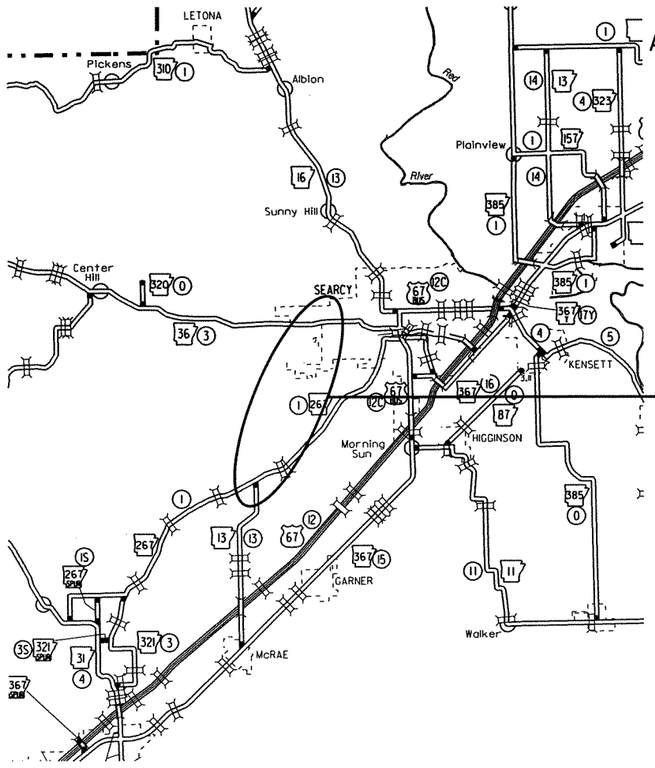
HWY. 13 EXTENSION (SEARCY) (S)

ROUTE 13

WHITE COUNTY

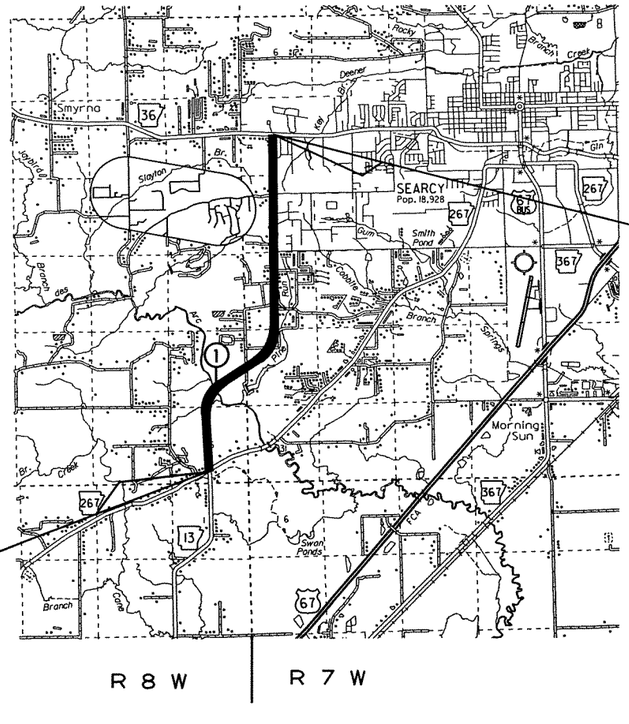
JOB 050189

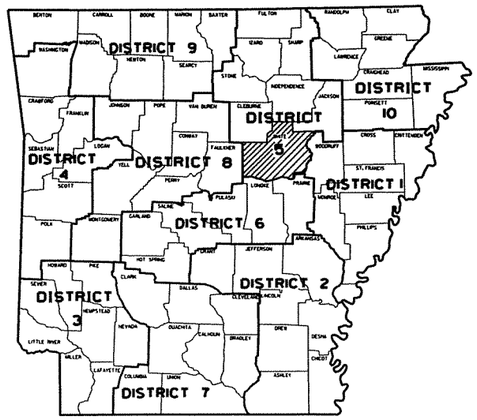
FED. AID PROJ. STP-9386(20)



VICINITY MAP

PROJECT LOCATION





ARK. HWY. DIST. NO. 5

STRUCTURES OVER 20' SPAN

(1) STA. 163+31.75 - BRIDGE END
BRIDGE NO. 07253
CONT. COMP. W-BEAM UNIT
40' CLEAR ROADWAY
317'-6" BRIDGE LENGTH
30° LT. FWD. SKEW
STA. 166+49.25 - BRIDGE END

(2) STA. 229+15 - CONSTRUCT
TRP. 6' x 4' x 94' R.C. BOX CULVERT
WITH 3:1 WINGS LT. & RT.
SPAN WIDTH = 20' - 2"

(3) STA. 228+30 (100' RT.) - CONSTRUCT
DBL. 12' x 7' x 36' R.C. BOX CULVERT
WITH 3:1 WINGS LT. & RT.

STA. 99+87.00 - BEGIN JOB 050189
LOG MILE 3.04

• DESIGN TRAFFIC DATA •

DESIGN YEAR	2032
2012 ADT	5,000
2032 ADT	6,500
2032 DHV	715
DIRECTIONAL DISTRIBUTION	60%
TRUCKS	10%
DESIGN SPEED	55 MPH RURAL 45 MPH URBAN

STA. 363+49.00
END JOB 050189

T 7 N
T 6 N

N

APPROVED

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 3917
FRANK VOZEL

8/9/13
DEPUTY DIRECTOR
AND CHIEF ENGINEER

	BEGIN PROJECT	MID-POINT OF PROJECT	END PROJECT
LATITUDE	N 35°10'56.3"	N 35°12'38.1"	N 35°14'49.5"
LONGITUDE	W 91°48'38.9"	W 91°47'36.9"	W 91°47'36.3"

GROSS LENGTH OF PROJECT		26362.00	FEET	OR	4.992	MILES
NET	" " ROADWAY	26024.33	"	"	4.928	"
NET	" " BRIDGES	337.67	"	"	0.064	"
NET	" " PROJECT	26362.00	"	"	4.992	"

P.E. 050185
NON-PART.

7/18/12 r050189.dgn/title sheet

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-20-12				6	ARK.			
				JOB NO.		050189	2	340

(2) INDEX OF SHEETS AND GOVERNING SPECIFICATIONS

INDEX OF SHEETS

SHEET NO.	TITLE	BRIDGE NO.	DRWG.NO.	DATE
1	TITLE SHEET			
2	INDEX OF SHEETS AND GOVERNING SPECIFICATIONS			
3	GENERAL NOTES			
4 - 7	TYPICAL SECTIONS OF IMPROVEMENT			
8 - 17	SPECIAL DETAILS			
18 - 44	TEMPORARY EROSION CONTROL DETAILS			
45 - 66	MAINTENANCE OF TRAFFIC DETAILS			
67 - 77	PERMANENT PAVEMENT MARKING DETAILS			
78 - 86	QUANTITY SHEETS			
87	SCHEDULE OF BRIDGE QUANTITIES	07253	52711	
88 89	SUMMARY OF QUANTITIES AND REVISION BOX			
90 - 101	SURVEY CONTROL DETAILS			
102 - 127	PLAN AND PROFILE SHEETS			
128 - 129	SIGNAL QUANTITIES AND NOTES			
130 - 132	SIGNALIZATION PLAN SHEETS			
133 - 138	SIGNALIZATION DETAILS			
139	LAYOUT OF BRIDGE OVER BAYOU DES ARC (SHEET 1 OF 2)	07253	52712	
140	LAYOUT OF BRIDGE OVER BAYOU DES ARC (SHEET 2 OF 2)	07253	52713	
141	DETAILS OF BENTS 1 AND 6 (SHEET 1 OF 3)	07253	52714	
142	DETAILS OF BENTS 1 AND 6 (SHEET 2 OF 3)	07253	52715	
143	DETAILS OF BENTS 1 AND 6 (SHEET 3 OF 3)	07253	52716	
144	DETAILS OF BENT 2	07253	52717	
145	DETAILS OF BENT 3	07253	52718	
146	DETAILS OF BENT 4	07253	52719	
147	DETAILS OF BENT 5	07253	52720	
148	DETAILS COMMON TO INTERIOR BENTS	07253	52721	
149	DETAILS OF ELASTOMERIC BEARINGS	07253	52722	
150	DETAILSOF 315'-0" CONTINUOUS W-BEAM UNIT (SHEET 1 OF 7)	07253	52723	
151	DETAILSOF 315'-0" CONTINUOUS W-BEAM UNIT (SHEET 2 OF 7)	07253	52724	
152	DETAILSOF 315'-0" CONTINUOUS W-BEAM UNIT (SHEET 3 OF 7)	07253	52725	
153	DETAILSOF 315'-0" CONTINUOUS W-BEAM UNIT (SHEET 4 OF 7)	07253	52726	
154	DETAILSOF 315'-0" CONTINUOUS W-BEAM UNIT (SHEET 5 OF 7)	07253	52727	
155	DETAILSOF 315'-0" CONTINUOUS W-BEAM UNIT (SHEET 6 OF 7)	07253	52728	
156	DETAILSOF 315'-0" CONTINUOUS W-BEAM UNIT (SHEET 7 OF 7)	07253	52729	
157	DETAILS OF TYPE SPECIAL APPROACH SLAB	07253	52730	
158	EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS		1888A	4-10-03
159	DETAILS FOR DUMPED RIPRAP AND FILTER BLANKET AND DETAILS FOR COMPUTING EXCAVATION FOR STRUCTURES		1891F	4-10-03
160	DETAILS OF STANDARD TYPE C APPROACH GUTTERS		2016C	7-14-10
161	DETAILS OF STANDARD TYPE D BRIDGE NAME PLATES		2387	9-08-11
162	DETAILS OF PERMISSIBLE TYPE PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS		14991	4-10-03
163	DETAILS OF CONCRETE RIPRAP AND MISC. DETAILS OF STEEL PILING		14995A	4-10-03
164	CONCRETE DITCH PAVING		CDP-1	11-17-10
165	CURBING DETAILS		CG-1	11-29-07
166	DETAILS OF DRIVEWAYS & ISLANDS		DR-1	11-29-07
167	FLARED END SECTION		FES-1	10-18-96
168	FLARED END SECTION		FES-2	10-18-96
169	DETAILS OF DROP INLETS & JUNCTION BOXES		FPC-9	11-16-01
170	DETAILS OF DROP INLETS (TYPE C)		FPC-9E	8-22-02
171	DETAILS OF DROP INLET (TYPE MO)		FPC-9M	8-22-02
172	DETAILS OF DROP INLET & JUNCTION BOX (TYPE ST)		FPC-9S	7-26-12
172A	GUARD RAIL DETAILS (TYPE C) STREET/ROAD BARRICADE OR TEMPORARY INSTALLATION		GR-7	7-14-10
173	GUARD RAIL DETAILS		GR-8	7-14-10
174	GUARD RAIL DETAILS		GR-8A	7-14-10
175	GUARD RAIL DETAILS		GR-9	4-17-08
176	GUARD RAIL DETAILS		GR-9A	4-17-08
177	GUARD RAIL DETAILS		GR-10	7-14-10
178	GUARD RAIL DETAILS		GR-10A	7-14-10
179	GUARD RAIL DETAILS		GRT-1	7-14-10
180	MAILBOX DETAILS		MB-1	11-18-04
181	PRECAST CONCRETE BOX CULVERTS		PBC-1	12-15-11
182	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING		PCC-1	12-15-11
183	METAL PIPE CULVERT FILL HEIGHTS & BEDDING		PCM-1	12-15-11
184	PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)		PCP-1	12-15-11
185	PLASTIC PIPE CULVERT (PVC F949)		PCP-2	12-15-11
186	PAVEMENT MARKING DETAILS		PM-1	11-17-10
187	DETAILS OF PIPE UNDERDRAIN		PU-1	4-10-03
188	REINFORCED CONCRETE BOX CULVERT DETAILS		RCB-1	7-26-12
189	EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS		RCB-2	11-20-03
190	METHOD OF EXTENDING EXISTING R.C. BOX CULVERTS		RCB-3	10-12-95
191	TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC		SE-2	10-18-96
192	DETAILS OF SPECIAL ITEMS		SI-1	7-26-12
192A	STANDARD HIGHWAY SIGNS & SUPPORTS ASSEMBLIES ITEMS		SHS-1	4-17-08
192B	U-CHANNEL POST ASSEMBLIES ITEMS		SHS-2	10-09-03
193	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION		TC-1	12-15-11
194	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION		TC-2	3-11-10
195	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION		TC-3	10-15-09
196	TEMPORARY EROSION CONTROL DEVICES		TEC-1	12-15-11
197	TEMPORARY EROSION CONTROL DEVICES		TEC-2	6-02-94
198	TEMPORARY EROSION CONTROL DEVICES		TEC-3	11-03-94
199	WIRE FENCE WATER GAPS		WF-2	4-20-79
200	WIRE FENCE TYPE C AND D		WF-4	8-22-02
201	WHEELCHAIR RAMPS NEW CONSTRUCTION AND ALTERATIONS		WR-1	11-10-05
202	DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS		W-X003-1	5-10-66
203	DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS		R-200X-0	2-15-63
204 - 340	CROSS SECTIONS			

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 17605
MICHAEL D. FUGETT
8/22/12

GOVERNING SPECIFICATIONS

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

NUMBER	TITLE
ERRATA	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHWA-1273	SUPPLEMENT - TRAINING PROGRAM - JOB 050189
FHWA-1273	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273	SUPPLEMENT - WAGE RATE DETERMINATION
100-2	MANUAL FOR ASSESSING SAFETY HARDWARE (MASH)
102-1	BIDDING REQUIREMENTS AND CONDITIONS
103-1	DETERMINATION OF DBE PARTICIPATION
105-1	CONSTRUCTION CONTROL MARKINGS
105-2	EQUIPMENT AND MATERIAL STORAGE ON BRIDGE STRUCTURES
105-3	CONTROL OF WORK
107-1	WORKER VISIBILITY
108-1	LIQUIDATED DAMAGES
110-1	PROTECTION OF WATER QUALITY AND WETLANDS
303-1	AGGREGATE BASE COURSE
404-1	PRODUCTION VERIFICATION OF ASPHALT CONCRETE HOT MIX
404-2	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
409-1	MINERAL AGGREGATES
410-3	DENSITY TESTING FOR ACHM LEVELING COURSES AND BOND BREAKERS
411-1	ASPHALT CONCRETE COLD PLANT MIX
600-1	WATER FOR VEGETATION
603-1	MAINTENANCE OF TRAFFIC
604-1	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
604-2	INSPECTION OF TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
606-1	PIPE CULVERTS FOR SIDE DRAINS
606-2	PIPE CULVERTS
711-1	CONCRETE PULL BOX
714-1	DESIGN AND MATERIAL REQUIREMENTS FOR TRAFFIC SIGNAL MAST ARMS AND POLES
718-2	REFLECTORIZED PAINT PAVEMENT MARKINGS
719-2	THERMOPLASTIC PAVEMENT MARKING MATERIAL
723-1	GENERAL REQUIREMENTS FOR SIGNS
804-1	INSTALLATION OF DOWEL BARS AND TIE BARS
JOB 050189	ANTENNA SUPPORT
JOB 050189	ASPHALT CONCRETE HOT MIX SURFACE COURSE SURFACE TOLERANCE AND INCENTIVE PAYMENTS
JOB 050189	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 050189	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 050189	CABINET DRAWER ASSEMBLY
JOB 050189	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 050189	EDGE CARD VIDEO PROCESSOR
JOB 050189	ELECTRICAL CONDUCTORS FOR LUMINAIRES
JOB 050189	ELECTRICAL CONDUCTORS-IN-CONDUIT
JOB 050189	EXTENSION FOR PIPE CULVERTS
JOB 050189	GEOSYNTHETIC INTERNAL REINFORCED EMBANKMENT CONSTRUCTION
JOB 050189	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 050189	HIGH PERFORMANCE PAVEMENT MARKING
JOB 050189	INTERNET BIDDING
JOB 050189	LED COUNTDOWN PEDESTRIAN SIGNAL HEAD
JOB 050189	LED TRAFFIC SIGNAL HEAD
JOB 050189	LRFD PRECAST REINFORCED CONCRETE BOX CULVERTS
JOB 050189	LUMINAIRE ASSEMBLY (CUTOFF TYPE)
JOB 050189	NESTING SITES OF MIGRATORY BIRDS
JOB 050189	PARTNERING REQUIREMENTS
JOB 050189	PLASTIC PIPE
JOB 050189	ROCK FILL EMBANKMENT CONSTRUCTION
JOB 050189	SECTION 404 NATIONWIDE 14 PERMIT REQUIREMENTS
JOB 050189	SERVICE POINT ASSEMBLY
JOB 050189	SEQUENCE OF CONSTRUCTION
JOB 050189	SILICONE JOINT SEALANT
JOB 050189	SITE USE (A + C METHOD)
JOB 050189	SOIL STABILIZATION
JOB 050189	STORM WATER POLLUTION PREVENTION PLAN
JOB 050189	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 050189	SYSTEM LOCAL CONTROLLER
JOB 050189	UTILITY ADJUSTMENTS
JOB 050189	VALUE ENGINEERING
JOB 050189	VIDEO DETECTOR (COLOR)
JOB 050189	WARM MIX ASPHALT

8/22/2012

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				6	ARK.			
				JOB NO.		050189	3	340

(2) GENERAL NOTES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT

8/8/12

GENERAL NOTES

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

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

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

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

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

6. ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED IF AND WHERE 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.

7. 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.

8. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.

9. 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.

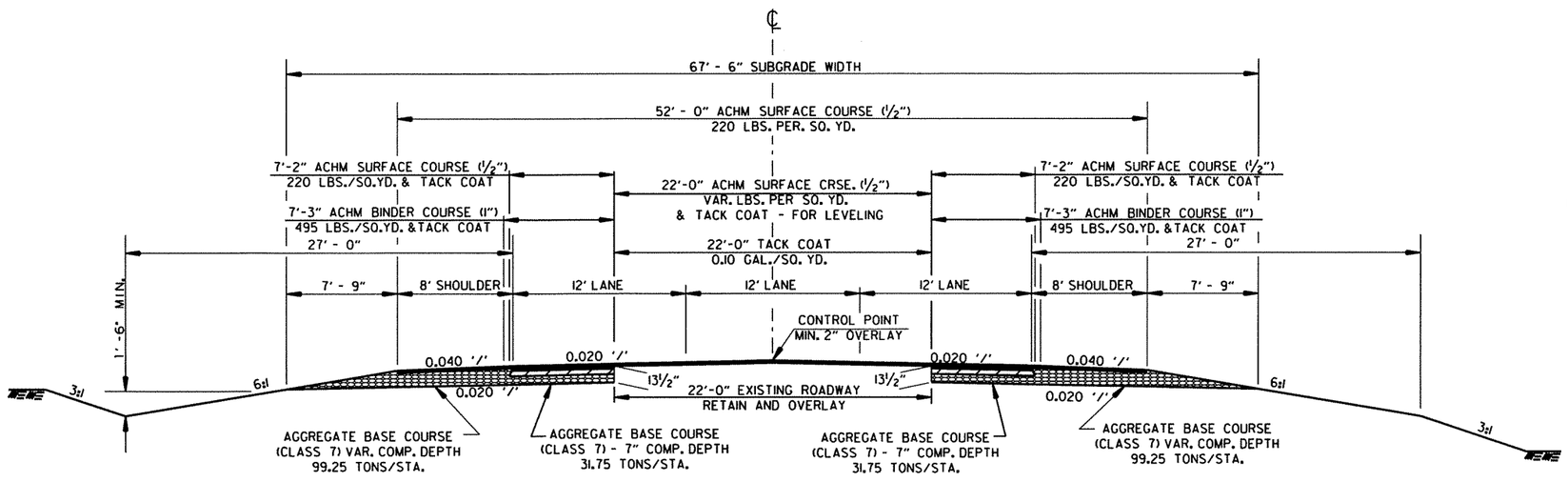
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(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/8/12



TYPICAL SECTIONS OF IMPROVEMENT
3 LANE OPEN SHOULDER - FULL DEPTH

NOTES:

REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

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 TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

ASPHALT FOR LEVELING OF EXISTING PAVEMENT SHALL BE PLACED ONLY IF AND WHERE DIRECTED BY THE ENGINEER. CALCULATIONS FOR THE AMOUNT OF LEVELING AND/OR LEVELING OPERATIONS SHALL BE PERFORMED BEFORE CONSTRUCTING NOTCH AND WIDENING.

THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAID. LONGITUDINAL JOINTS SHALL BE AT LANE LINES.

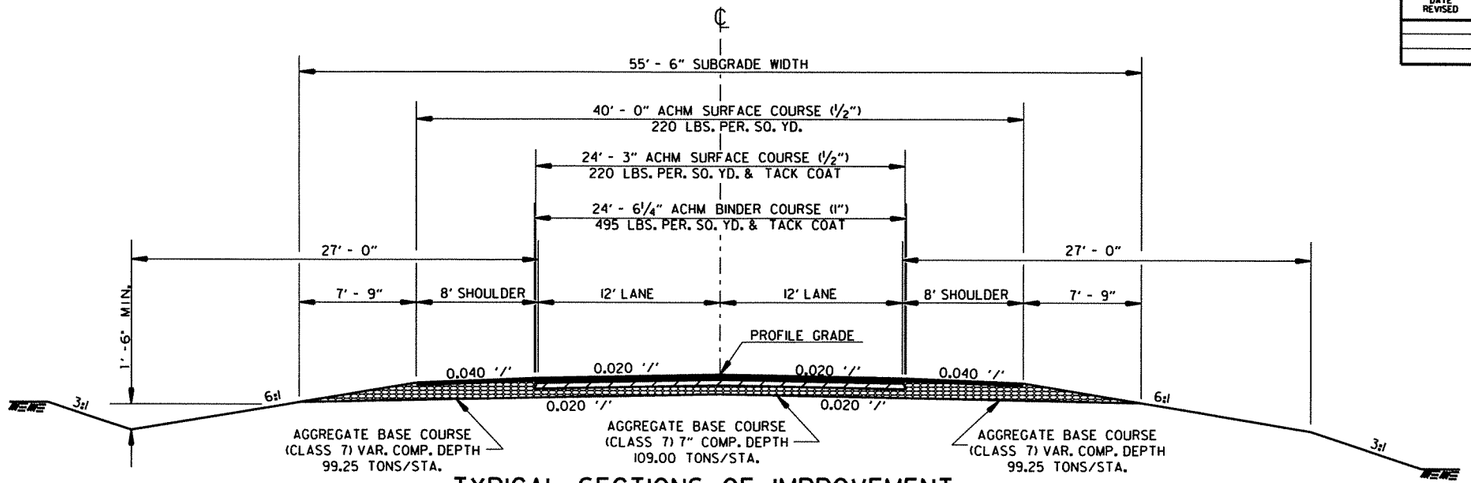
R050189.DGN 7/31/2012

TYPICAL SECTIONS OF IMPROVEMENT

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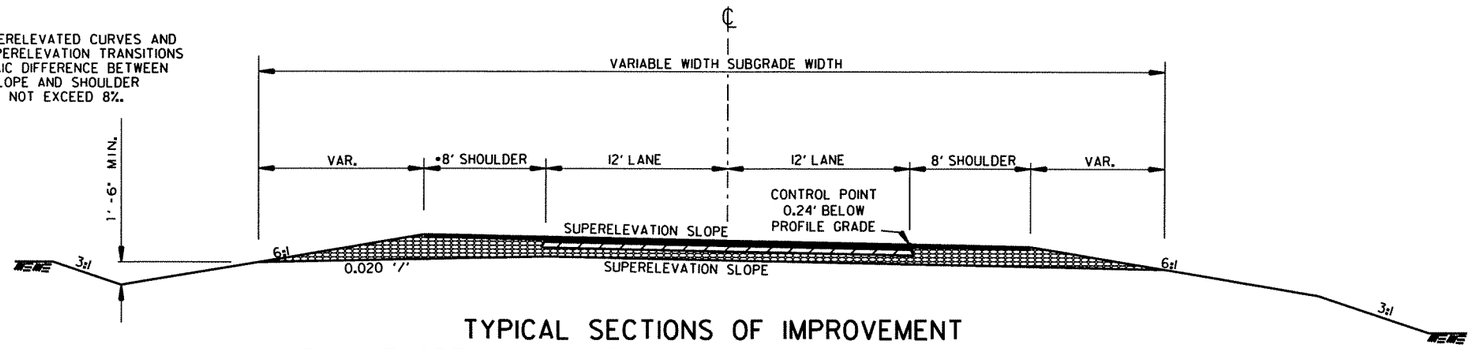
(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 7605
MICHAEL D. FUGETT
8/8/12



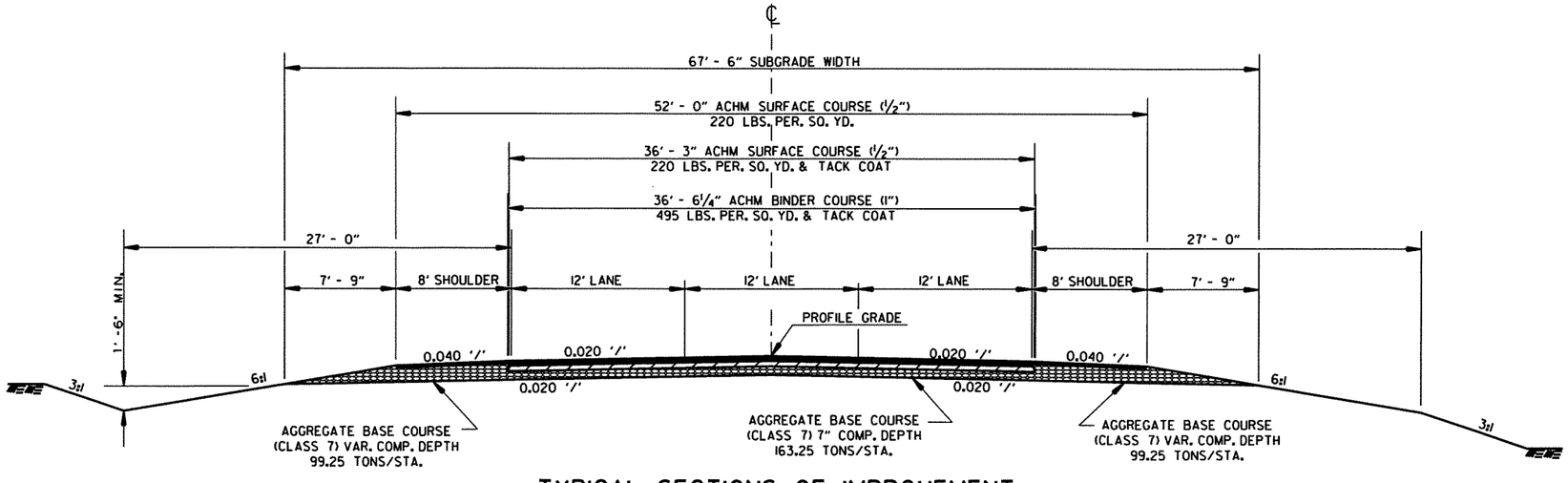
TYPICAL SECTIONS OF IMPROVEMENT
2 LANE OPEN SHOULDER - FULL DEPTH

• NOTE: ON ALL SUPERELEVATED CURVES AND THROUGH SUPERELEVATION TRANSITIONS THE ALGEBRAIC DIFFERENCE BETWEEN PAVEMENT SLOPE AND SHOULDER SLOPE SHALL NOT EXCEED 8%.



TYPICAL SECTIONS OF IMPROVEMENT
2 LANE OPEN SHOULDER - FULL DEPTH - SUPERELEVATION

REFER TO TYPICAL SECTION ABOVE FOR DETAILS



TYPICAL SECTIONS OF IMPROVEMENT
3 LANE OPEN SHOULDER - FULL DEPTH

NOTES:

REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

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 TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

THE FINAL 2" OF SURFACE COURSE IS TO BE LACED AFTER ALL OTHER COURSES HAVE BEEN LAID. LONGITUDINAL JOINTS SHALL BE AT LANE LINES.

7/31/2012

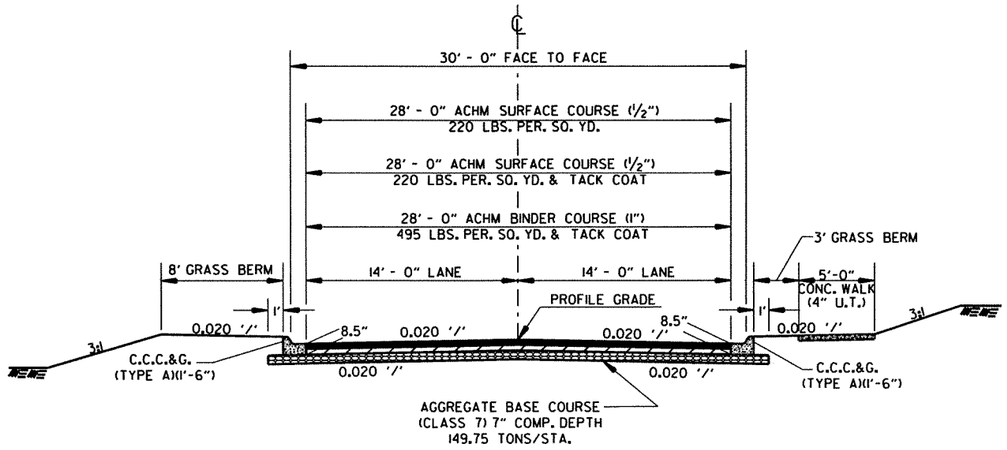
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TYPICAL SECTIONS OF IMPROVEMENT

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(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
14477605
MICHAEL D. FUGETT
8/8/12



TYPICAL SECTIONS OF IMPROVEMENT
2 LANE CURB AND GUTTER - FULL DEPTH

NOTES:

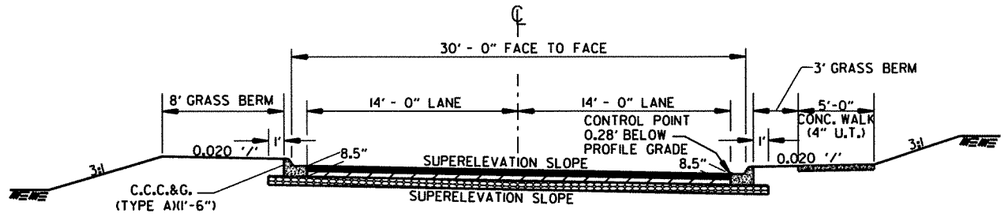
REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

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 TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAID. LONGITUDINAL JOINTS SHALL BE AT LANE LINES.

REFER TO PLAN SHEETS FOR SIDEWALK LOCATIONS.

PRIOR TO AND DURING PLACEMENT OF PAVEMENT IN FRONT OF THE CURB OR CURB AND GUTTER, THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES. THE METHOD(S) USED SHALL BE APPROVED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.



TYPICAL SECTIONS OF IMPROVEMENT
2 LANE CURB AND GUTTER - FULL DEPTH - SUPERELEVATION

REFER TO TYPICAL SECTION ABOVE FOR DETAILS

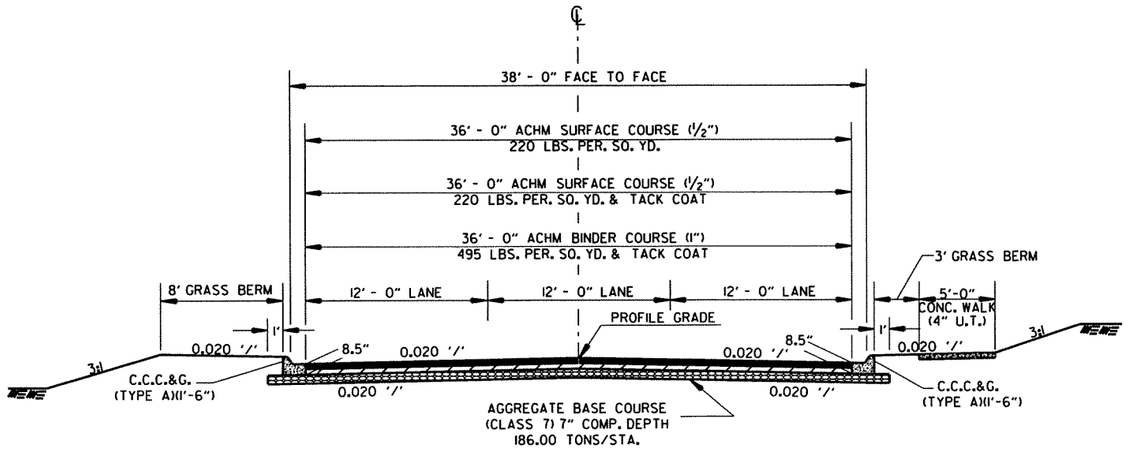
7/31/2012

R050189.DGN

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.		050189	7	340

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
M. 7605
MICHAEL D. FUGETT
8/8/12



TYPICAL SECTIONS OF IMPROVEMENT
3 LANE CURB AND GUTTER - FULL DEPTH

NOTES:

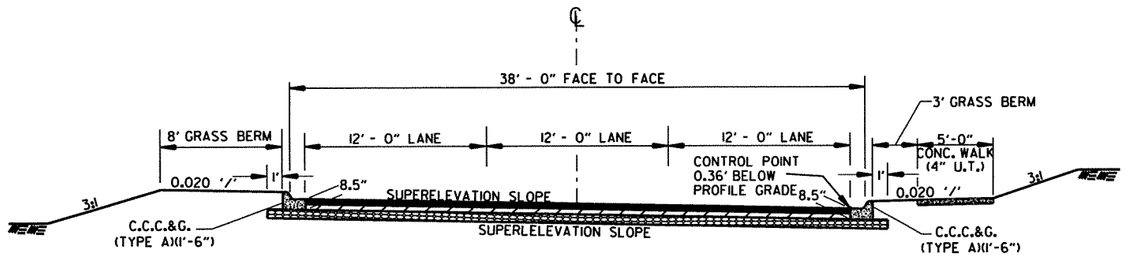
REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

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REFER TO PLAN SHEETS FOR SIDEWALK LOCATIONS.

PRIOR TO AND DURING PLACEMENT OF PAVEMENT IN FRONT OF THE CURB OR CURB AND GUTTER, THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES. THE METHOD(S) USED SHALL BE APPROVED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.



TYPICAL SECTIONS OF IMPROVEMENT
3 LANE CURB AND GUTTER - FULL DEPTH - SUPERELEVATION

REFER TO TYPICAL SECTION ABOVE FOR DETAILS

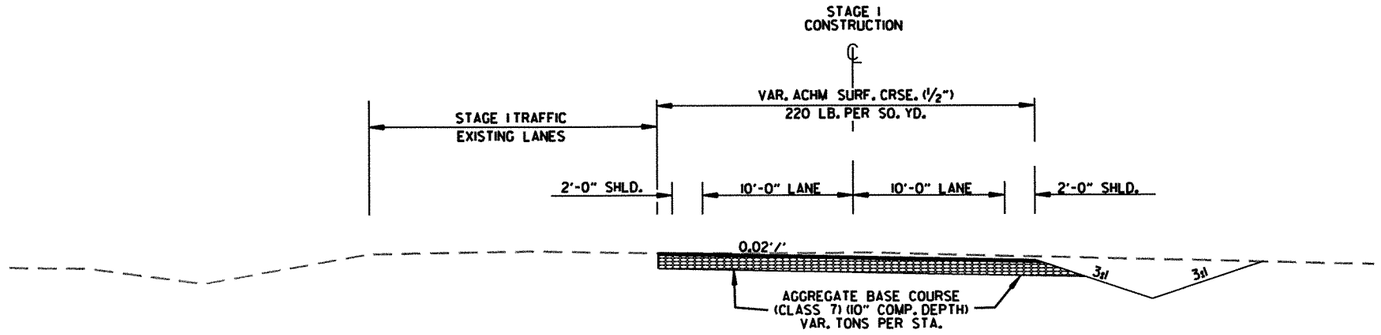
7/31/2012

R050189.DGN

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.		050189	8	340

(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
RICHARD D. FUGETT
8/8/12



DETAILS OF STAGE I TEMPORARY WIDENING

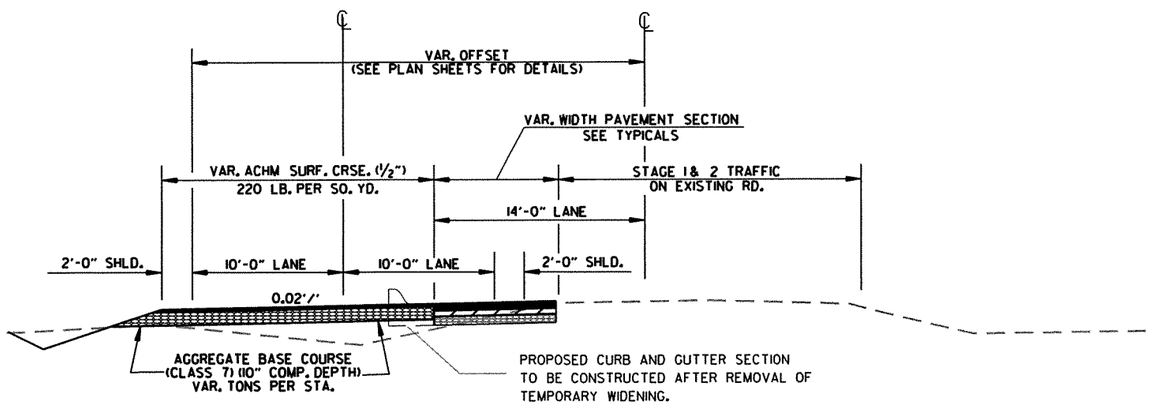
REFER TO MAINTENANCE OF TRAFFIC DETAILS AND CROSS SECTIONS FOR LOCATIONS AND WIDTHS OF TEMPORARY WIDENING. FOR DETAILS OF ALIGNMENTS REFER TO SURVEY CONTROL DETAILS.

NOTES:

REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

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 TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAID. LONGITUDINAL JOINTS SHALL BE AT LANE LINES.



DETAILS OF STAGE 2 TEMPORARY WIDENING

REFER TO MAINTENANCE OF TRAFFIC DETAILS AND CROSS SECTIONS FOR LOCATIONS AND WIDTHS OF TEMPORARY WIDENING. FOR DETAILS OF ALIGNMENTS REFER TO SURVEY CONTROL DETAILS.

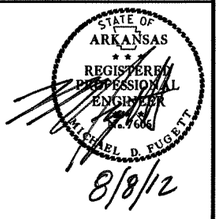
NOTE: STA. 316+00 - STA. 357+00: IF AND WHERE DIRECTED BY THE ENGINEER, 19 DROP INLETS ARE TO BE PARTIALLY CONSTRUCTED AND PLATED. REFER TO SPECIAL PROVISION "SEQUENCE OF CONSTRUCTION".

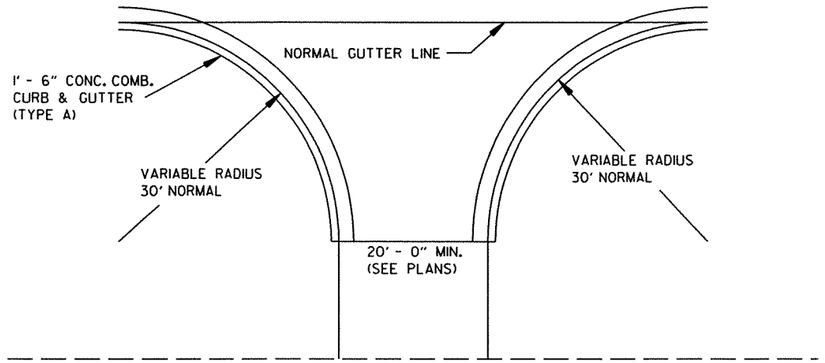
8/7/2012

R050189.DGN

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.		050189	9	340

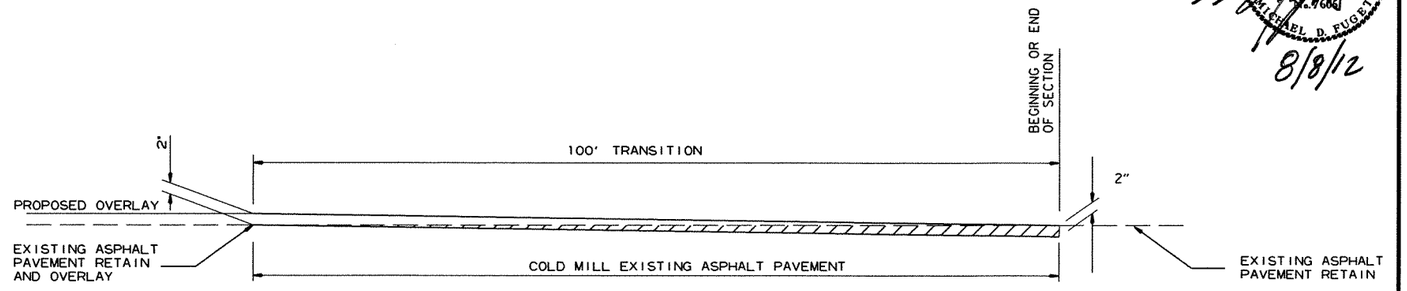
(2) SPECIAL DETAILS



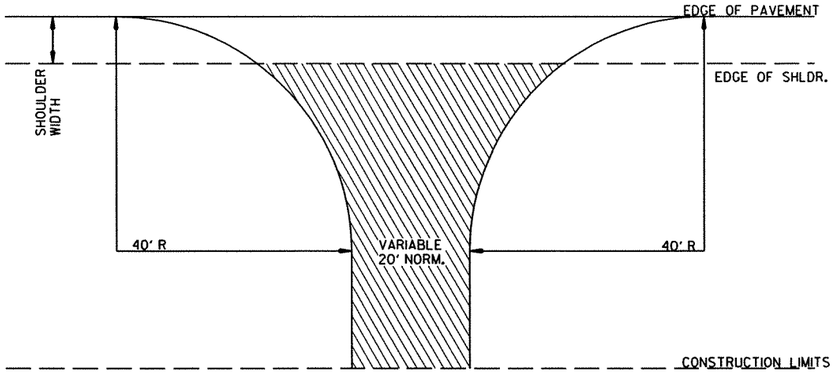


DETAIL OF TURNOUTS ASPHALT STREETS
CURB & GUTTER SECTION

NOTE:
PAVEMENT STRUCTURE TO BE SAME AS MAIN LANES



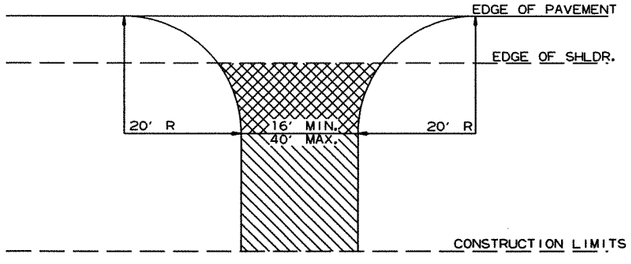
DETAIL FOR TRANSITIONS



ASPHALT CONCRETE HOT MIX SURFACE COURSE (220 LBS. PER SQ. YD.) AND AGGREATE BASE COURSE (CLASS 7) 7" COMP.

NOTE:
REFER TO PLAN SHEETS FOR WIDTHS OF COUNTY ROADS.

DETAIL FOR COUNTY ROAD TURNOUTS



ASPHALT CONCRETE HOT MIX SURFACE COURSE (220 LBS. PER SQ. YD.)
AGGREGATE BASE COURSE (CLASS 7)
7" COMP. DEPTH IF ASPHALT DRIVE EXIST OR
6" CONCRETE IF CONCRETE DRIVE EXIST.

AGGREGATE BASE COURSE (CLASS 7)
9" COMP. DEPTH OR CONFORM
TO EXISTING DRIVEWAY

DETAIL FOR DRIVEWAY TURNOUTS
(COLLECTORS)

7/31/2012

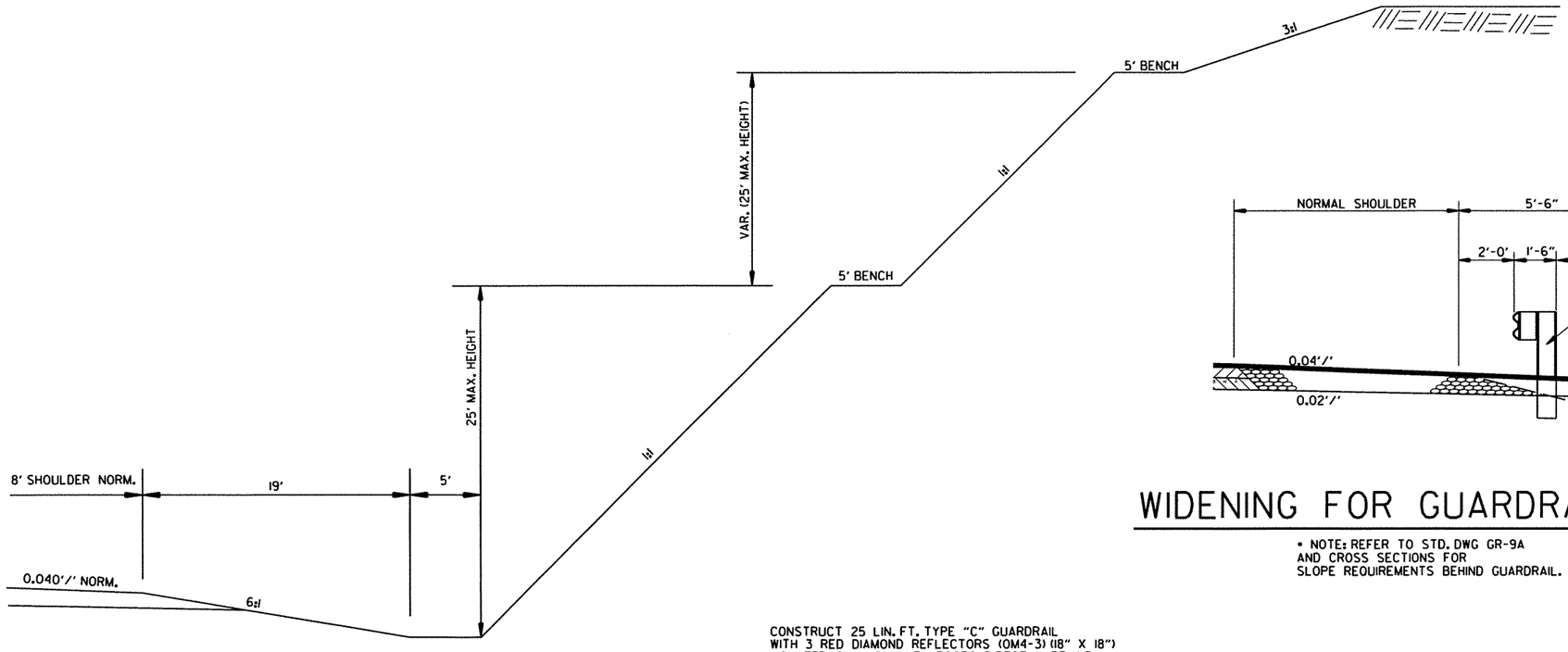
R050189.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-20-12				6	ARK.			
				JOB NO.		050189	9A	340

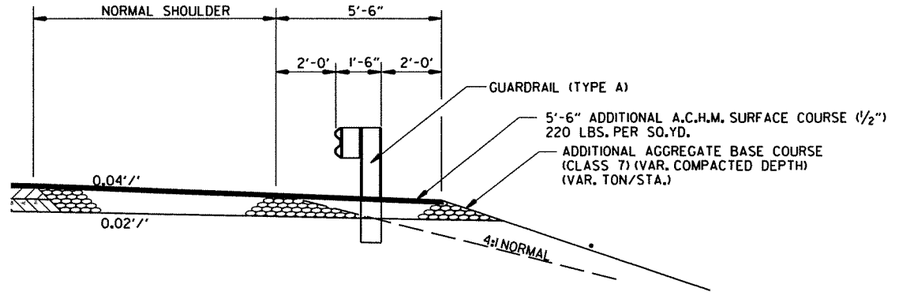
(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
M. CHABIL D. PUGH, P.E.

8/22/12



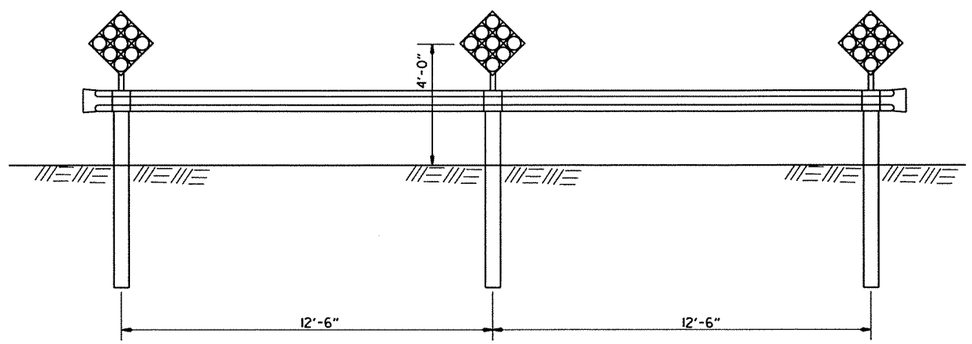
BENCHING DETAIL



WIDENING FOR GUARDRAIL DETAIL

• NOTE: REFER TO STD. DWG GR-9A AND CROSS SECTIONS FOR SLOPE REQUIREMENTS BEHIND GUARDRAIL.

CONSTRUCT 25 LIN. FT. TYPE "C" GUARDRAIL WITH 3 RED DIAMOND REFLECTORS (OM4-3) (18" X 18") MOUNTED ON U-CHANNEL POSTS DIRECTLY BEHIND THE GUARDRAIL AT A HEIGHT OF 4'-0".



ROAD CLOSED DETAIL

TO BE USED WHERE EXISTING ROADS WILL BE PERMANENTLY CLOSED. SEE PLAN SHEETS FOR LOCATIONS. SEE STD. DWG. GR-7 FOR MORE DETAILS.

8/20/2012

R050189.DGN

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.		050189	10	340

① SPECIAL DETAILS

INLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (deg.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (deg.) WING A	WINGWALL ANGLE (deg.) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	INSIDE FOOTING DIMENSIONS WING A	INSIDE FOOTING DIMENSIONS WING B
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W4	W5
8'-0"	6'-0"	0'-9"	0'-8"	15	3:1	8'-3"	2'-0"	6'-10"	2'-0"	15	45	3'-2"	3'-4"	3'-7"	1'-1 1/4"	1'-2 7/8"	15'-0"	20'-6"	14'-3 7/8"	20'-8 1/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
INLET	INLET
CU.YD	LBS.
8.79	867

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY			F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS			F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS			F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	
WING A	4	12	15	L	Min	3'-2"	-	-	-	L	-		-	-	-	L	-		4	12	4	Min	
					Max	7'-10"																3'-5"	
				X	Min	0'-9"				X	-		-	-	-	X	-					Max	
					Max	0'-11"																12'-9"	
				Y	Min	2'-6"				Y	-					Y	-						
					Max	7'-0"																	
WING B	4	12	21	L	Min	3'-0"	-	-	-	L	-		-	-	-	L	-		4	12	4	Min	
					Max	8'-1"																4'-9"	
				X	Min	0'-9"				X	-		-	-	-	X	-					Max	
					Max	1'-2"																17'-6"	
				Y	Min	2'-4"				Y	-					Y	-						
					Max	7'-0"																	

WING	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY	
WING A	4	12	2	14'-8"	4	18	3	Min	3'-5"
								Max	12'-9"
WING B	4	12	2	20'-2"	4	18	3	Min	4'-9"
								Max	17'-6"

WING	F7 BAR SIZE	F7 SPACING	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	
WING A	4	18	1	14'-8"	4	18	10	L Min	4'-11"
								L Max	9'-3"
								X Min	2'-4"
								X Max	2'-4"
								Y Min	2'-8"
								Y Max	7'-0"
WING B	4	18	1	20'-2"	4	18	14	L Min	4'-8"
								L Max	9'-3"
								X Min	2'-4"
								X Max	2'-4"
								Y Min	2'-5"
								Y Max	7'-0"

WING	F9 BAR SIZE	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 SPACING	F10 NO. REQ'D	F10 LENGTHS VARY	
WING A	4	8	19'-4"	4	18	10	Min	2'-8"
							Max	2'-10"
WING B	4	8	24'-10"	4	18	14	Min	2'-8"
							Max	3'-1"

WING	F11 BAR SIZE	F11 SPACING	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 NO. REQ'D	F12 LENGTHS	F13 BAR SIZE	F13 NO. REQ'D	F13 LENGTHS	F14 BAR SIZE	F14 SPACING	F14 NO. REQ'D	F14 LENGTHS		REINF. STEEL QTY. PER WING (LBS)
WING A	-	-	-	Min	4	2	15'-3"	4	2	15'-10"	6	12	6	L	3'-4"	374
				Max										X	1'-8"	
WING B	-	-	-	Min	4	2	20'-7"	4	2	22'-6"	6	12	6	L	3'-4"	493
				Max										X	1'-8"	

TABULAR DATA BY: ACP DATE: 6/14/12
CHECKED BY: KWY DATE: 6/15/12

This drawing to be used in conjunction with
SHEET 1 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'GENERAL NOTES & LONGITUDINAL SECTION LENGTH SCHEDULE'.
SHEET 3 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'DETAILS OF MULTI-BARREL R.C. BOX CULVERT'.
SHEET 4 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'DETAILS OF WINGWALLS', and
STANDARD DRAWING RCB-2.
For additional information and outlet sections, see Sheet 2 of 2.

INLET SKEWED END SECTION

SKEW (degree)	SLOPE	DESIGN FILL DEPTH (feet)	CLEAR SPAN (feet)	CLEAR HEIGHT (feet)	SECTION LENGTH	TOP SLAB THICKNESS	BOTTOM SLAB THK.	SIDE WALL THICKNESS	HEADWALL HEIGHT	OVER ALL WIDTH	OVER ALL HEIGHT	TOP SLAB REINFORCING STEEL "a" SIZE	"a" SPACING	"a" LENGTHS VARY	"a" NO. REQ'D	BOTTOM SLAB REINFORCING STEEL "b" SIZE	"b" SPACING	"b" LENGTHS VARY	"b" NO. REQ'D	SIDE WALL REINFORCING STEEL "f" SIZE	"f" SPACING	"f" NO. REQ'D	"f" LENGTH	TOP SLAB DISTRIBUTION REINFORCING STEEL "d" SIZE	"d" SPACING	"d" NO. REQ'D	"d" LENGTHS VARY	BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY	SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH	HDWL "k1", "k2" & "h" BAR	HDWL SIZE	HDWL NO. REQ'D	HDWL LENGTH
SK	SL	D	S	H	LL	T	B	C	HW	OW	OH																												
15	3:1	10	7	6	2'-1"	7	7.5	6	3	8'-0"	7'-2 1/2"	5	4	Max 7'-8" / Min 5'-11"	2	5	4	Max 7'-6" / Min 5'-11"	2	4	6	9	6'-11"	4	12	8	Max 2'-12" / Min 0'-10"	4	12	8	Max 2'-12" / Min 0'-10"	4	12	6	LONG 2'-12" / SHORT 0'-10"	k1	4	6	7'-11"
														7'-8"	3			7'-8"	3																	k2	4	6	7'-11"
																																				h	4	10	1'-0" / X / 0'-6"

CLASS "S" CONCRETE (Includes HDWL)	① REINFORCING STEEL (GR. 60) (Includes HDWL)
CU. YDS.	LBS.
5.69	224

① Any Bar Lap Required for the Skewed End Section shall be considered subsidiary to the item "Reinforcing Steel - Roadway (Gr. 60)."

INLET SLOPE SECTION(S)

R.C. BOX SECTION	DESIGN FILL DEPTH (feet)	CLEAR SPAN (feet)	CLEAR HEIGHT (feet)	TOP SLAB THICKNESS	BOTTOM SLAB THK.	SIDE WALL THICKNESS	OVER ALL WIDTH	OVER ALL HEIGHT	SECTION LENGTH (feet)	TOP SLAB REINFORCING STEEL "a" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH	BOTTOM SLAB REINFORCING STEEL "b" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH	SIDE WALL REINFORCING STEEL "f" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH	TOP SLAB DISTRIBUTION REINFORCING STEEL "d" LENGTH = SL SIZE	SPACING	NO. REQ'D	BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" LENGTH = SL SIZE	SPACING	NO. REQ'D	SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D
D	S	H	T	B	C	OW	OH	SL																					
A	10	7	6	7	7.5	6	8'-0"	7'-2 1/2"	23	5	4	68	7'-8"	5	4	68	7'-8"	4	6	90	6'-10"	4	12	8	4	12	8	4	12	12
B	15	7	6	8.5	8.5	6.5	8'-1"	7'-5"	11	6	6	22	7'-9"	6	6	22	7'-9"	5	7	38	7'-1"	4	12	8	4	12	8	4	12	12
C	20	7	6	9	9.5	7	8'-2"	7'-6 1/2"	11	7	7	19	7'-10"	7	6.5	21	7'-10"	6	9	30	7'-2"	4	12	8	4	10	9	4	12	12
D	25	7	6	10	10	7.5	8'-3"	7'-8"	11	6	4.5	30	7'-11"	7	6	22	7'-11"	7	11	24	7'-4"	4	10	9	4	10	9	4	12	12
E	30	7	6	11	11	8	8'-4"	7'-10"	11	6	4.5	30	8'-0"	8	7.5	18	8'-0"	6	7	38	7'-6"	4	10	9	4	10	9	4	12	12
F	35	7	6	12	12	8.5	8'-5"	8'-0"	11	7	5.5	24	8'-1"	7	5.5	24	8'-1"	7	9	30	7'-8"	4	9	10	4	9	10	4	12	12
G	40	7	6	13	13	9	8'-6"	8'-2"	11	8	7.5	18	8'-2"	6	4	34	8'-2"	8	11	24	7'-10"	4	8.5	10	4	8.5	10	4	12	12

HDWL THK.	ADDITIONAL REINF. FOR HDWL	"h" bars				
HW	LBS	SIZE	X	Y	LENGTH	NO. REQ'D

CLASS "S" CONCRETE	REINFORCING STEEL (GR. 50)	② ADTL. REINF. PER LONG. LAP LOCATION	ADDITIONAL CONCRETE FOR HDWL	TOTAL ADDITIONAL REINF. FOR HDWL
CU. YDS. PER LIN. FT.	LBS. PER LIN. FT.	LBS.	CU. YDS.	LBS.
0.58	85	33		
0.66	91	33		
0.73	105	34		
0.79	117	35		
0.86	125	35		
0.94	135	37		
1.02	139	37		

② Bar Lap - Add one long. lap for each Slope Section, and one additional long. lap for Slope Sections greater than 40'-0" in length.

Min. Bar Lap Length	
#4	1'-9"
#5	2'-2"
#6	2'-7"
#7	3'-6"
#8	4'-7"

Bar Pin Dia. Table	
#4	3"
#5	3 3/4"
#6	4 1/2"
#7	5 1/4"
#8	6"

Design Fill Depth	Range of Actual Fill Depth
2	0.0 ft - 2.0 ft
5	>2.0 ft - 5.0 ft
10	>5.0 ft - 10.0 ft
15	>10.0 ft - 15.0 ft
20	>15.0 ft - 20.0 ft
25	>20.0 ft - 25.0 ft
30	>25.0 ft - 30.0 ft
35	>30.0 ft - 35.0 ft
40	>35.0 ft - 40.0 ft

Data shown for Mid-Section, Slope Section(s), and Skewed End Section is based on the design fill depth shown in the table, see PLAN AND PROFILE SHEETS for actual fill depth.

MID-SECTION

R.C. BOX SECTION	DESIGN FILL DEPTH (feet)	CLEAR SPAN (feet)	CLEAR HEIGHT (feet)	TOP SLAB THK.	BOTTOM SLAB THK.	SIDE WALL THK	OVER ALL WIDTH	OVER ALL HEIGHT	SECTION LENGTH (feet)	TOP SLAB REINFORCING STEEL "a" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH	BOTTOM SLAB REINFORCING STEEL "b" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH	SIDE WALL REINFORCING STEEL "f" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH	TOP SLAB DISTRIBUTION REINFORCING STEEL "d" LENGTH = SL SIZE	SPACING	NO. REQ'D	BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" LENGTH = SL SIZE	SPACING	NO. REQ'D	SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D
D	S	H	T	B	C	OW	OH	SL																					
50	7	6	15	15	10	8'-8"	8'-6"	169.83	7	5	407	8'-4"	8	6	339	8'-4"	6	5	814	8'-2"	4	7	13	4	7	13	4	10.5	12

CLASS "S" CONCRETE	REINFORCING STEEL (Gr. 60)	③ ADTL. REINF. PER LONG. LAP LOCATION(S)
CU. YDS. PER LIN. FT.	LBS. PER LIN. FT.	LBS.
1.17	170	44

③ MID-SECTION BAR LAP TABLE

# of Long. Laps Req'd.	SL = Section Length
0	< 40.0 ft
1	>40.0 ft - 78.0 ft
2	>78.0 ft - 116.0 ft
3	>116.0 ft - 154.0 ft
4	>154.0 ft - 192.0 ft
5	>192.0 ft - 230.0 ft
6	>230.0 ft - 268.0 ft
7	>268.0 ft - 306.0 ft
8	>306.0 ft - 344.0 ft

STATE OF ARKANSAS
CARL J. FUSELIER
REGISTERED PROFESSIONAL ENGINEER
No. 7510
6/15/12

SHEET 1 OF 2
DETAILS OF R.C. BOX CULVERT
SINGLE BARREL BOX CULVERT
STA 149+70

SPECIAL DETAILS

b050189_cl.dgn

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.		050189	11	340

① SPECIAL DETAILS

STATE OF ARKANSAS
Carl L. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL L. FUSELIER

TABULAR DATA BY: ACP DATE: 6/14/12
CHECKED BY: KWY DATE: 6/15/12

OUTLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (deg.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (deg.) WING A	WINGWALL ANGLE (deg.) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	INSIDE FOOTING DIMENSIONS WING A	INSIDE FOOTING DIMENSIONS WING B
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W4	W5
8	6	0'-9"	0'-8"	15	3:1	8'-3"	2'-0"	6'-10"	2'-0"	15	45	3'-2"	3'-4"	3'-7"	1'-1 1/4"	1'-2 7/8"	15'-0"	20'-6"	14'-3 7/8"	20'-8 1/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
OUTLET	OUTLET
CU.YD	LBS.
9.37	867

| WING | F1 BAR SIZE | F1 MAX. SPACING | F1 NO. REQ'D | F1 LENGTHS VARY | F1 LENGTHS | F2 BAR SIZE | F2 SPACING | F2 NO. REQ'D | F2 LENGTHS VARY | F2 LENGTHS | F3 BAR SIZE | F3 SPACING | F3 NO. REQ'D | F3 LENGTHS VARY | F3 LENGTHS | F4 BAR SIZE | F4 SPACING | F4 NO. REQ'D | F4 LENGTHS VARY | F4 LENGTHS | F5 BAR SIZE | F5 SPACING | F5 NO. REQ'D | F5 LENGTHS | F6 BAR SIZE | F6 SPACING | F6 NO. REQ'D | F6 LENGTHS VARY | F6 LENGTHS | F7 BAR SIZE | F7 SPACING | F7 NO. REQ'D | F7 LENGTHS | F8 BAR SIZE | F8 SPACING | F8 NO. REQ'D | F8 LENGTHS VARY | F8 LENGTHS | F9 BAR SIZE | F9 NO. REQ'D | F9 LENGTHS | F10 BAR SIZE | F10 SPACING | F10 NO. REQ'D | F10 LENGTHS VARY | F10 LENGTHS | F11 BAR SIZE | F11 SPACING | F11 NO. REQ'D | F11 LENGTHS | F12 BAR SIZE | F12 NO. REQ'D | F12 LENGTHS | F13 BAR SIZE | F13 NO. REQ'D | F13 LENGTHS | F14 BAR SIZE | F14 SPACING | F14 NO. REQ'D | F14 LENGTHS | REINF. STEEL QTY. PER WING (LBS) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---

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.		050189	12	340

① SPECIAL DETAILS

INLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (deg.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (deg.) WING A	WINGWALL ANGLE (deg.) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	INSIDE FOOTING DIMENSIONS WING A	INSIDE FOOTING DIMENSIONS WING B
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W4	W5
25'-8"	7'-0"	0'-9"	0'-8"	0	3:1	25'-8"	2'-0"	7'-10"	2'-4"	30	30	3'-2"	3'-10"	3'-10"	1'-6 3/8"	1'-6 3/8"	19'-0"	19'-0"	18'-11"	18'-11"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
INLET	INLET
CU.YD	LBS.
11.19	1070

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY	F1 LENGTHS	F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS	F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS	F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY	F7 BAR SIZE	F7 SPACING	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F9 BAR SIZE	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 SPACING	F10 NO. REQ'D	F10 LENGTHS VARY	F11 BAR SIZE	F11 SPACING	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 NO. REQ'D	F12 LENGTHS	F13 BAR SIZE	F13 NO. REQ'D	F13 LENGTHS	F14 BAR SIZE	F14 SPACING	F14 NO. REQ'D	F14 LENGTHS	REINF. STEEL QTY. PER WING (LBS)
WING A	4	12	19	L	Min 3'-6"	4	12	4	L 3'-9"	-	-	-	L -	4	12	5	Min	4	12	2	18'-8"	4	18	3	Min	4	18	2	18'-8"	4	18	13	L Min 5'-1"	4	8	23'-4"	4	18	13	Min	-	-	-	Min	4	2	19'-4"	4	2	20'-6"	6	12	7	L 3'-4"	535
					Max 9'-4"												3'-10"							3'-10"								Max 10'-3"							2'-8"				Max										X 1'-8"	
				X	Min 0'-9"				X 1'-4"				X -				Max							Max							X	Min 2'-4"							Max														
					Max 1'-5"												17'-8"							14'-3"								Max 2'-4"							3'-4"														
				Y	Min 2'-10"				Y 2'-6"				Y -																			Y	Min 2'-10"							-														
					Max 8'-0"																												Max 8'-0"																					
WING B	4	12	19	L	Min 3'-6"	4	12	4	L 3'-9"	-	-	-	L -	4	12	5	Min	4	12	2	18'-8"	4	18	3	Min	4	18	2	18'-8"	4	18	13	L Min 5'-1"	4	8	23'-4"	4	18	13	Min	-	-	-	Min	4	2	19'-4"	4	2	20'-6"	6	12	7	L 3'-4"	535
					Max 9'-4"												3'-10"							3'-10"								Max 10'-3"							2'-8"				Max										X 1'-8"	
				X	Min 0'-9"				X 1'-4"				X -				Max							Max							X	Min 2'-4"							Max														
					Max 1'-5"												17'-8"							14'-3"								Max 2'-4"							3'-4"														
				Y	Min 2'-10"				Y 2'-6"				Y -																			Y	Min 2'-10"							-														
					Max 8'-0"																												Max 8'-0"																					

INLET SKEWED END SECTION

SKEW (degree)	SLOPE	FILL DEPTH (feet)	CLEAR SPAN (feet)	CLEAR HEIGHT (feet)	SECTION LENGTH	TOP SLAB THK.	HDWL THK.	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVER ALL WIDTH	OVER ALL HEIGHT	TOP SLAB REINFORCING STEEL a SIZE	a SPACING	a LENGTHS VARY	a NO. REQ'D	TOP SLAB REINFORCING STEEL c SIZE	c SPACING	c LENGTHS VARY	c NO. REQ'D	BOTTOM SLAB REINFORCING STEEL d SIZE	d SPACING	d LENGTHS VARY	d NO. REQ'D	BOTTOM SLAB REINFORCING STEEL f SIZE	f SPACING	f LENGTHS VARY	f NO. REQ'D	SIDE WALL REINFORCING STEEL f0 SIZE	f0 SPACING	f0 NO. REQ'D	f0 LENGTH	INTERIOR WALL REINFORCING STEEL f1 SIZE	f1 SPACING	f1 NO. REQ'D	f1 LENGTH	TOP SLAB DISTRIBUTION REINFORCING STEEL g SIZE	g SPACING	g NO. REQ'D	g LENGTHS VARY	BOTTOM SLAB DISTRIBUTION REINFORCING STEEL e SIZE	e SPACING	e NO. REQ'D	e LENGTHS VARY	SIDE WALL DISTRIBUTION REINFORCING STEEL d1 SIZE	d1 SPACING	d1 NO. REQ'D	d1 LENGTH	INTERIOR WALL DISTRIBUTION REINFORCING STEEL d2 SIZE	d2 SPACING	d2 NO. REQ'D	d2 LENGTH
SK	SL	D	S	H	LL	T	HW	B	C	W	OW	OH	SIZE	SPACING	LENGTHS VARY	NO. REQ'D	SIZE	SPACING	LENGTHS VARY	NO. REQ'D	SIZE	SPACING	LENGTHS VARY	NO. REQ'D	SIZE	SPACING	LENGTHS VARY	NO. REQ'D	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTHS VARY	SIZE	SPACING	NO. REQ'D	LENGTHS VARY	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH
															Max				Max																					Max							LONG			
															Min				Min																					Min							SHORT			

k1 SIZE	k1 LENGTH	k1 NO. REQ'D	k2 SIZE	k2 LENGTH	k2 NO. REQ'D	h SIZE	h LENGTH	h X	h NO. REQ'D

CLASS "S" CONCRETE (Includes HDWL)	① REINFORCING STEEL (GR 60) (Includes HDWL)
CU. YDS.	LBS.

① Any Bar Lap Required for the Skewed End Section shall be considered subsidiary to the item "Reinforcing Steel - Roadway (Gr. 60)."

INLET SLOPE SECTION(S)

R.C. BOX SECTION	DESIGN FILL DEPTH (feet)	CLEAR SPAN (feet)	CLEAR HEIGHT (feet)	TOP SLAB THK.	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVER ALL WIDTH	OVER ALL HEIGHT	SECTION LENGTH (feet)	TOP SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS a SIZE	a L	Bent b SIZE	Bent b L	c SIZE	c L	SPACING	NO. REQ'D	BOTTOM SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS d SIZE	d L	Bent b1 SIZE	Bent b1 L	f SIZE	f L	SPACING	NO. REQ'D	SIDE WALL REINFORCING STEEL "f0" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH	INTERIOR WALL REINFORCING STEEL "f1" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH	TOP SLAB DISTRIBUTION REINFORCING STEEL "g" LENGTH = SL SIZE	SPACING	NO. REQ'D	BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" LENGTH = SL SIZE	SPACING	NO. REQ'D	SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D	INTERIOR WALL DISTRIBUTION REINFORCING STEEL "d2" LENGTH = SL SIZE	SPACING	NO. REQ'D
	D	S	H	T	B	C	W	OW	OH	SL																																										
	5	12	7																																																

HDWL THK.	ADDITIONAL REINF. FOR HDWL	"h" BARS SIZE	"h" BARS X	"h" BARS Y	"h" BARS LENGTH	"h" BARS NO. REQ'D
HW	LBS.					
3"	34	4	1'-0"	0'-7"	1'-7"	27

CLASS "S" CONCRETE CU. YDS. PER LIN. FT.	REINFORCING STEEL (GR. 60) LBS. PER LIN. FT.	② ADTL REINF. PER LONG. LAP LOCATION LBS.	ADDITIONAL CONCRETE FOR HDWL CU. YDS.	TOTAL ADDITIONAL REINF FOR HDWL LBS.
			0.59	62

② Bar Lap - Add one long. lap for each Slope Section, and one additional long. lap for Slope Sections greater than 40'-0" in length.

Design Fill Depth	Range of Actual Fill Depth
2	0.0 ft - 2.0 ft
5	>2.0 ft - 5.0 ft
10	>5.0 ft - 10.0 ft
15	>10.0 ft - 15.0 ft
20	>15.0 ft - 20.0 ft
25	>20.0 ft - 25.0 ft
30	>25.0 ft - 30.0 ft
35	>30.0 ft - 35.0 ft
40	>35.0 ft - 40.0 ft

Data shown for Mid-Section, Slope Section(s), and Skewed End Section is based on the design fill depth shown in the table, see PLAN AND PROFILE SHEETS for actual fill depth.

MID-SECTION

R.C. BOX SECTION	DESIGN FILL DEPTH (feet)	CLEAR SPAN (feet)	CLEAR HEIGHT (feet)	TOP SLAB THK.	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVER ALL WIDTH	OVER ALL HEIGHT	SECTION LENGTH (feet)	TOP SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS a SIZE	a L	Bent b SIZE	Bent b L	c SIZE	c L	SPACING	NO. REQ'D	BOTTOM SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS d SIZE	d L	Bent b1 SIZE	Bent b1 L	f SIZE	f L	SPACING	NO. REQ'D	SIDE WALL REINFORCING STEEL "f0" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH	INTERIOR WALL REINFORCING STEEL "f1" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH	TOP SLAB DISTRIBUTION REINF STEEL "g" LENGTH = SL SIZE	SPACING	NO. REQ'D	BOTTOM SLAB DISTRIBUTION REINF STEEL "e" LENGTH = SL SIZE	SPACING	NO. REQ'D	SIDE WALL DISTRIBUTION STEEL "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D	INTERIOR WALL DISTRIBUTION STEEL "d2" LENGTH = SL SIZE	SPACING	NO. REQ'D
	D	S	H	T	B	C	W	OW	OH	SL																																										
A	5	12	7	11.5	11.5	6	8	25'-8"	8'-11"	36	4	25'-4"	8	25'-8"	7	25'-4"	14	30	4	25'-4"	5	25'-8"	5	25'-4"	9	48	5	6	144	8'-7"	4	12	144	8'-7"	4	9	67	4	9	67	4	12	14	4	12	14

CLASS "S" CONCRETE CU. YDS. PER LIN. FT.	REINFORCING STEEL (GR. 60) LBS. PER LIN. FT.	② ADTL REINF. PER LONG. LAP LOCATION (S) LBS.
3.33	367	189

③ MID-SECTION BAR LAP TABLE

# of Long. Laps Req'd.	SL = Section Length
0	< 40.0 ft
1	>40.0 ft - 78.0 ft
2	>78.0 ft - 116.0 ft
3	>116.0 ft - 154.0 ft
4	>154.0 ft - 192.0 ft
5	>192.0 ft - 230.0 ft
6	>230.0 ft - 268.0 ft
7	>268.0 ft - 306.0 ft
8	>306.0 ft -344.0 ft

Min. Bar Lap Length	
#4	1'-9"
#5	2'-2"
#6	2'-7"
#7	3'-6"
#8	4'-7"

Bar Pin Dia. Table	
#4	3"
#5	3 3/4"
#6	4 1/2"
#7	5 1/4"
#8	6"

STATE OF ARKANSAS — CARL E. FUSELIER — REGISTERED PROFESSIONAL ENGINEER — No. 7510 — 8/10/12

TABULAR DATA BY: A.M.S. DATE: 8/3/12
CHECKED BY: CEF DATE: 8-10-12

This drawing to be used in conjunction with
SHEET 1 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'GENERAL NOTES & LONGITUDINAL SECTION LENGTH SCHEDULE',
SHEET 3 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'DETAILS OF MULTI-BARREL R.C. BOX CULVERT',
SHEET 4 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'DETAILS OF WINGWALLS', and
STANDARD DRAWING RCB-2.
For additional information and outlet sections, see Sheet 2 of 2.

SHEET 1 OF 2
DETAILS OF R.C. BOX CULVERT
DOUBLE BARREL BOX CULVERT
STA. 227+00

SPECIAL DETAILS

LRFD

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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.		050189	12A	340

① SPECIAL DETAILS

STATE OF ARKANSAS
Carl T. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL T. FUSELIER
8/6/12

TABULAR DATA BY: A.M.S. DATE: 8/3/12
CHECKED BY: JVP DATE: 8-6-12

OUTLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (deg.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (deg.) WING A	WINGWALL ANGLE (deg.) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	INSIDE FOOTING DIMENSIONS WING A	INSIDE FOOTING DIMENSIONS WING B
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W4	W5
25'-8"	7'-0"	0'-9"	0'-8"	0	3:1	25'-6"	2'-0"	7'-10"	2'-4"	30	30	3'-2"	3'-10"	3'-10"	1'-6 3/8"	1'-6 3/8"	19'-0"	19'-0"	18'-11"	18'-11"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
OUTLET	OUTLET
CU.YD	LBS.
12.21	1070

		F1						F2				F3				F4				F5			F6				F7			F8				F9		F10			F11			F12			F13		F14			
	WING	BAR SIZE	MAX. SPACING	NO. REQ'D	LENGTHS VARY			BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS VARY	BAR SIZE	SPACING	NO. REQ'D	LENGTHS VARY	BAR SIZE	SPACING	NO. REQ'D	BAR SIZE	SPACING	NO. REQ'D	LENGTHS VARY	BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS VARY	BAR SIZE	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS	REINF. STEEL QTY. PER WING (LBS)
	WING A	4	12	19	L	Min	3'-6"	4	12	4	L 3'-9"	-	-	-	L -	4	12	5	Min	4	12	2	4	18	3	Min	4	18	2	18'-8"	4	18	13	L Min 5'-1"	4	8	23'-4"	4	18	13	Min	-	-	-	Min	4	2	19'-4"	4	2	20'-6"	6	12	7	L 3'-4"	535
						Max	9'-4"												3'-10"							3'-10"								Max 10'-3"								2'-8"									X 1'-8"	
					X	Min	0'-9"				X 1'-4"				X -				Min							Max				18'-8"				X Min 2'-4"			8	23'-4"	4	18	13	Max	-	-	-	Max									
						Max	1'-5"												Max							14'-3"								Max 2'-4"								3'-4"										
					Y	Min	2'-10"				Y 2'-6"				Y -				Min							Min								Y Min 2'-10"								Min				Min				L 3'-4"	
						Max	8'-0"												Max							17'-8"								Max 8'-0"								-								X 1'-8"	
	WING B	4	12	19	L	Min	3'-6"	4	12	4	L 3'-9"	-	-	-	L -	4	12	5	Min	4	12	2	4	18	3	Min	4	18	2	18'-8"	4	18	13	L Min 5'-1"	4	8	23'-4"	4	18	13	Min	-	-	-	Min	4	2	19'-4"	4	2	20'-6"	6	12	7	L 3'-4"	535
						Max	9'-4"												3'-10"							3'-10"								Max 10'-3"								2'-8"									X 1'-8"	
					X	Min	0'-9"				X 1'-4"				X -				Min							Max				18'-8"				X Min 2'-4"			8	23'-4"	4	18	13	Max	-	-	-	Max									
						Max	1'-5"												Max							14'-3"								Max 2'-4"								3'-4"										
					Y	Min	2'-10"				Y 2'-6"				Y -				Min							Min								Y Min 2'-10"								Min				Min				L 3'-4"	
						Max	8'-0"												Max							17'-8"								Max 8'-0"								-								X 1'-8"	

① Any Bar Lap Required for the Skewed End Section shall be considered subsidiary to the item "Reinforcing Steel - Roadway (Gr. 60)."

OUTLET SKEWED END SECTION

SKEW (degree)	SLOPE	FILL DEPTH (feet)	CLEAR SPAN (feet)	CLEAR HEIGHT (feet)	SECTION LENGTH	TOP SLAB THK.	HDWL THK.	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVER ALL WIDTH	OVER ALL HEIGHT	TOP SLAB REINFORCING STEEL a SIZE	a SPACING	a LENGTHS VARY	a NO. REQ'D	TOP SLAB REINFORCING STEEL c SIZE	c SPACING	c LENGTHS VARY	c NO. REQ'D	BOTTOM SLAB REINFORCING STEEL d SIZE	d SPACING	d LENGTHS VARY	d NO. REQ'D	BOTTOM SLAB REINFORCING STEEL f SIZE	f SPACING	f LENGTHS VARY	f NO. REQ'D	SIDE WALL REINFORCING STEEL f0 SIZE	f0 SPACING	f0 NO. REQ'D	f0 LENGTH	INTERIOR WALL REINFORCING STEEL f1 SIZE	f1 SPACING	f1 NO. REQ'D	f1 LENGTH	TOP SLAB DISTRIBUTION REINFORCING STEEL g SIZE	g SPACING	g NO. REQ'D	g LENGTHS VARY	BOTTOM SLAB DISTRIBUTION REINFORCING STEEL e SIZE	e SPACING	e NO. REQ'D	e LENGTHS VARY	SIDE WALL DISTRIBUTION REINFORCING STEEL d1 SIZE	d1 SPACING	d1 NO. REQ'D	d1 LENGTH	INTERIOR WALL DISTRIBUTION REINFORCING STEEL d2 SIZE	d2 SPACING	d2 NO. REQ'D	d2 LENGTH
SK	SL	D	S	H	LL	T	HW	B	C	W	OW	OH																																													
															Max				Max																						Max														
															Min				Min																						Min														

k1 SIZE	k1 LENGTH	k1 NO. REQ'D	k2 SIZE	k2 LENGTH	k2 NO. REQ'D	h SIZE	h LENGTH	h X	h NO. REQ'D

CLASS "S" CONCRETE (Includes HDWL) CU. YDS.	① REINFORCING STEEL (GR 60) (Includes HDWL) LBS.

OUTLET SLOPE SECTION(S)

R.C. BOX SECTION	DESIGN FILL DEPTH (feet) D	CLEAR SPAN (feet) S	CLEAR HEIGHT (feet) H	TOP SLAB THK. T	BOTTOM SLAB THK. B	SIDE WALL THK. C	INTERIOR WALL THK. W	OVER ALL WIDTH OW	OVER ALL HEIGHT OH	SECTION LENGTH (feet) SL	TOP SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS a SIZE	a L	Bent b SIZE	Bent b L	c SIZE	c L	SPACING	NO. REQ'D	BOTTOM SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS d SIZE	d L	Bent b1 SIZE	Bent b1 L	f SIZE	f L	SPACING	NO. REQ'D	SIDE WALL REINFORCING STEEL "f0" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH	INTERIOR WALL REINFORCING STEEL "f1" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH	TOP SLAB DISTRIBUTION REINFORCING STEEL "g" LENGTH = SL SIZE	SPACING	NO. REQ'D	BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" LENGTH = SL SIZE	SPACING	NO. REQ'D	SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D	INTERIOR WALL DISTRIBUTION REINFORCING STEEL "d2" LENGTH = SL SIZE	SPACING	NO. REQ'D
	5	12	7																																																	

HDWL THK. HW	ADDITIONAL REINF. FOR HDWL LBS.	"h" BARS SIZE	X	Y	LENGTH	NO. REQ'D
3"	34	4	1'-0"	0'-7"	1'-7"	27

CLASS "S" CONCRETE CU. YDS. PER LIN. FT.	REINFORCING STEEL (GR. 60) LBS. PER LIN. FT.	② ADTL. REINF. PER LONG. LAP LOCATION LBS.	ADDITIONAL CONCRETE FOR HDWL CU. YDS.	TOTAL ADDITIONAL REINF FOR HDWL LBS.
			0.59	62

Min. Bar Lap Length	
#4	1'-9"
#5	2'-2"
#6	2'-7"
#7	3'-6"
#8	4'-7"

Bar Pin Dia. Table	
#4	3"
#5	3 3/4"
#6	4 1/2"
#7	5 1/4"
#8	6"

② Bar Lap - Add one long. lap for each Slope Section, and one additional long. lap for Slope Sections greater than 40'-0" in length.

The required number of bars shown is for estimating purpose only. The actual number required shall be determined in field.

Unless otherwise noted, all dimensions are in inches.

SHEET 2 OF 2
DETAILS OF R.C. BOX CULVERT
DOUBLE BARREL BOX CULVERT
STA. 227+00

SPECIAL DETAILS

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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.		050189	13	340

SPECIAL DETAILS

INLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (deg.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (deg.) WING A	WINGWALL ANGLE (deg.) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	INSIDE FOOTING DIMENSIONS WING A	INSIDE FOOTING DIMENSIONS WING B
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W4	W5
20'-4"	4'-0"	0'-9"	0'-8"	15	3:1	21'-1"	1'-0"	4'-10"	1'-4"	15	45	2'-2"	2'-5"	2'-7"	1'-2 1/4"	1'-3"	10'-6"	14'-6"	9'-10 1/8"	14'-8 1/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
INLET	INLET
CU.YD	LBS.
5.45	512

WING	BAR SIZE	MAX. SPACING	NO. REQ'D	LENGTHS VARY		F1	F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS	F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS	F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY	F7 BAR SIZE	F7 SPACING	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 SPACING	F10 NO. REQ'D	F10 LENGTHS VARY	F11 BAR SIZE	F11 SPACING	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 NO. REQ'D	F12 LENGTHS	F13 BAR SIZE	F13 NO. REQ'D	F13 LENGTHS	F14 BAR SIZE	F14 SPACING	F14 NO. REQ'D	F14 LENGTHS		REINF. STEEL QTY. PER WING (LBS)
WING A	4	12	11	X	L	Min	2'-4"	-	-	-	L	-	-	-	L	-	-	-	4	12	3	Min	4	12	1	10'-2"	4	18	2	Min	4	18	1	10'-2"	4	18	7	Min	4	6	13'-1"	4	18	7	Min	-	-	-	Min	4	2	10'-7"	4	2	11'-4"	6	12	4	L	3'-4"	221
						Max	4'-11"															3'-4"													6'-3"																										
						Min	0'-9"															Max													Min	1'-4"																					X	1'-8"	
						Max	0'-0"															9'-4"													Max	1'-4"																							
				Y		Min	1'-8"																													Min	2'-0"																							
						Max	5'-0"																													Max	5'-0"																							
WING B	4	12	15	X	L	Min	2'-4"	-	-	-	L	-	-	-	L	-	-	-	4	12	3	Min	4	12	1	14'-2"	4	18	2	Min	4	18	1	14'-2"	4	18	10	Min	4	6	17'-1"	4	18	10	Min	-	-	-	Min	4	2	14'-5"	4	2	16'-6"	6	12	4	L	3'-4"	291
						Max	6'-1"															4'-8"													6'-3"																										
						Min	0'-9"															Max													Min	1'-4"																					X	1'-8"	
						Max	1'-2"															12'-11"													Max	1'-4"																							
				Y		Min	1'-8"																													Min	1'-9"																							
						Max	5'-0"																													Max	5'-0"																							

INLET SKEWED END SECTION

SKEW (degree)	SLOPE	DESIGN FILL DEPTH (feet)	CLEAR SPAN (feet)	CLEAR HEIGHT (feet)	SECTION LENGTH	TOP SLAB THK.	HDWL THK.	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVER ALL WIDTH	OVER ALL HEIGHT	TOP SLAB REINFORCING STEEL a SIZE	a SPACING	a LENGTHS VARY	a NO. REQ'D	TOP SLAB REINFORCING STEEL c SIZE	c SPACING	c LENGTHS VARY	c NO. REQ'D	BOTTOM SLAB REINFORCING STEEL d SIZE	d SPACING	d LENGTHS VARY	d NO. REQ'D	BOTTOM SLAB REINFORCING STEEL f SIZE	f SPACING	f LENGTHS VARY	f NO. REQ'D	SIDE WALL REINFORCING STEEL f0 SIZE	f0 SPACING	f0 NO. REQ'D	f0 LENGTH	INTERIOR WALL REINFORCING STEEL f1 SIZE	f1 SPACING	f1 NO. REQ'D	f1 LENGTH	TOP SLAB DISTRIBUTION REINFORCING STEEL g SIZE	g SPACING	g NO. REQ'D	g LENGTHS VARY	BOTTOM SLAB DISTRIBUTION REINFORCING STEEL e SIZE	e SPACING	e NO. REQ'D	e LENGTHS VARY	SIDE WALL DISTRIBUTION REINFORCING STEEL d1 SIZE	d1 SPACING	d1 NO. REQ'D	d1 LENGTH	INTERIOR WALL DISTRIBUTION REINFORCING STEEL d2 SIZE	d2 SPACING	d2 NO. REQ'D	d2 LENGTH
SK	SL	D	S	H	LL	T	HW	B	C	W	OW	OH																																																					
15	3:1	10	6	4	22'-9"	7	3	7.5	6	8	20'-4"	5'-2 1/2"	4	7	Max 20'-0" Min 5'-11" 20'-0"	7 35	4	7	Max 20'-0" Min 5'-11" 20'-0"	7 35	4	6.5	Max 20'-0" Min 5'-11" 20'-0"	7 38	4	7.5	Max 20'-0" Min 5'-11" 20'-0"	7 33	4	9	62	4'-11"	4	12	94	4'-11"	4	12	41	Max 25'-4" Min 19'-11"	4	12	41	Max 25'-4" Min 19'-11"	4	12	4	LONG 25'-4" SHORT 19'-11"	4	12	4	LONG 23'-6" SHORT 21'-9"

k1 SIZE	k1 LENGTH	k1 NO. REQ'D	k2 SIZE	k2 LENGTH	k2 NO. REQ'D	h SIZE	h LENGTH	h X	h NO. REQ'D
4	5'-1"	6	4	5'-1"	6	4	1'-2"	0'-7"	23

CLASS "S" CONCRETE (Includes HDWL)	REINFORCING STEEL (GR. 60) (Includes HDWL)
CU. YDS.	LBS.
29.02	4178

(1) Any Bar Lap Required for the Skewed End Section shall be considered subsidiary to the item "Reinforcing Steel - Roadway (Gr. 60)."

INLET SLOPE SECTION(S)

R.C. BOX SECTION D	DESIGN FILL DEPTH (feet) D	CLEAR SPAN (feet) S	CLEAR HEIGHT (feet) H	TOP SLAB THK. T	BOTTOM SLAB THK. B	SIDE WALL THK. C	INTERIOR WALL THK. W	OVER ALL WIDTH OW	OVER ALL HEIGHT OH	SECTION LENGTH (feet) SL	TOP SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS a SIZE	a L	Bent b SIZE	Bent b L	c SIZE	c L	SPACING	NO. REQ'D	BOTTOM SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS d SIZE	d L	Bent b1 SIZE	Bent b1 L	f SIZE	f L	SPACING	NO. REQ'D	SIDE WALL REINFORCING STEEL "f0" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH	INTERIOR WALL REINFORCING STEEL "f1" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH	TOP SLAB DISTRIBUTION REINFORCING STEEL "g" LENGTH = SL SIZE	SPACING	NO. REQ'D	BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" LENGTH = SL SIZE	SPACING	NO. REQ'D	SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D	INTERIOR WALL DISTRIBUTION REINFORCING STEEL "d2" LENGTH = SL SIZE	SPACING	NO. REQ'D

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.		050189	13A	340

① SPECIAL DETAILS

STATE OF ARKANSAS — CARL E. FUSELIER — REGISTERED PROFESSIONAL ENGINEER — No. 7510

TABULAR DATA BY: A.M.S. DATE: 8/9/12
CHECKED BY: ACP DATE: 8/9/12

OUTLET WINGWALL TABLE

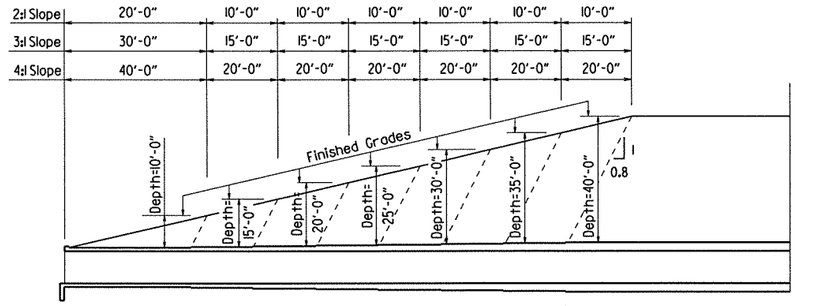
OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (deg.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (deg.) WING A	WINGWALL ANGLE (deg.) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	INSIDE FOOTING DIMENSIONS WING A	INSIDE FOOTING DIMENSIONS WING B
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W4	W5
20'-4"	4'-0"	0'-9"	0'-8"	15	3:1	21'-1"	1'-0"	4'-10"	1'-4"	15	45	2'-2"	2'-5"	2'-7"	1'-2 1/4"	1'-3"	10'-6"	14'-6"	9'-10 1/8"	14'-8 1/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
OUTLET	OUTLET
CU.YD	LBS.
6.21	512

| WING | F1 BAR SIZE | F1 MAX. SPACING | F1 NO. REQ'D | F1 LENGTHS VARY | F1 LENGTHS | F2 BAR SIZE | F2 SPACING | F2 NO. REQ'D | F2 LENGTHS | F3 BAR SIZE | F3 SPACING | F3 NO. REQ'D | F3 LENGTHS VARY | F3 LENGTHS | F4 BAR SIZE | F4 SPACING | F4 NO. REQ'D | F4 LENGTHS VARY | F4 LENGTHS | F5 BAR SIZE | F5 SPACING | F5 NO. REQ'D | F5 LENGTHS | F6 BAR SIZE | F6 SPACING | F6 NO. REQ'D | F6 LENGTHS VARY | F6 LENGTHS | F7 BAR SIZE | F7 SPACING | F7 NO. REQ'D | F7 LENGTHS | F8 BAR SIZE | F8 SPACING | F8 NO. REQ'D | F8 LENGTHS VARY | F8 LENGTHS | F9 BAR SIZE | F9 NO. REQ'D | F9 LENGTHS | F10 BAR SIZE | F10 SPACING | F10 NO. REQ'D | F10 LENGTHS VARY | F10 LENGTHS | F11 BAR SIZE | F11 SPACING | F11 NO. REQ'D | F11 LENGTHS | F12 BAR SIZE | F12 NO. REQ'D | F12 LENGTHS | F13 BAR SIZE | F13 NO. REQ'D | F13 LENGTHS | F14 BAR SIZE | F14 SPACING | F14 NO. REQ'D | F14 LENGTHS | REINF. STEEL QTY. PER WING (LBS) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---

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.		050189	14	340

(1) SPECIAL DETAILS



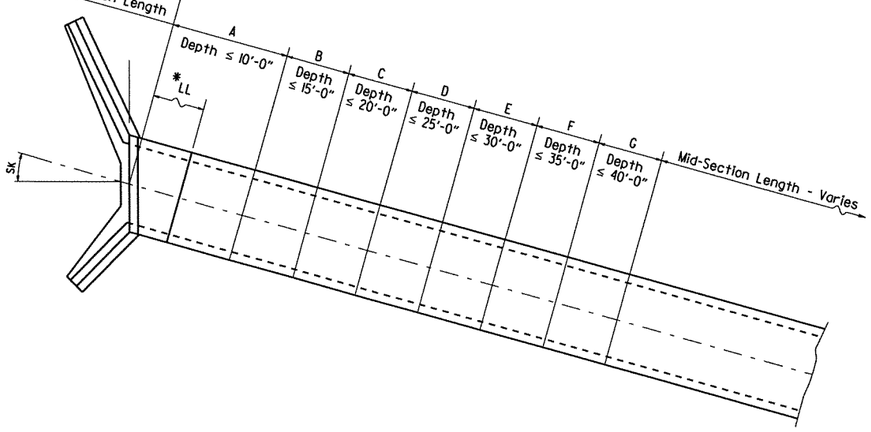
Slope Section Length @ 2:1 Slope	A=12'-0"	B=6'-0"	C=6'-0"	D=6'-0"	E=6'-0"	F=6'-0"	G=6'-0"	Mid-Section Length - Varies
Slope Section Length @ 3:1 Slope	A=22'-0"	B=11'-0"	C=11'-0"	D=11'-0"	E=11'-0"	F=11'-0"	G=11'-0"	Mid-Section Length - Varies
Slope Section Length @ 4:1 Slope	A=32'-0"	B=16'-0"	C=16'-0"	D=16'-0"	E=16'-0"	F=16'-0"	G=16'-0"	Mid-Section Length - Varies

LONGITUDINAL SECTION LENGTH SCHEDULE FOR VARYING FILL DEPTHS OVER 5'

Lengths for Non-Skewed Boxes

Note: For fill depths 5' and under, use Mid-Section full length of box culvert.

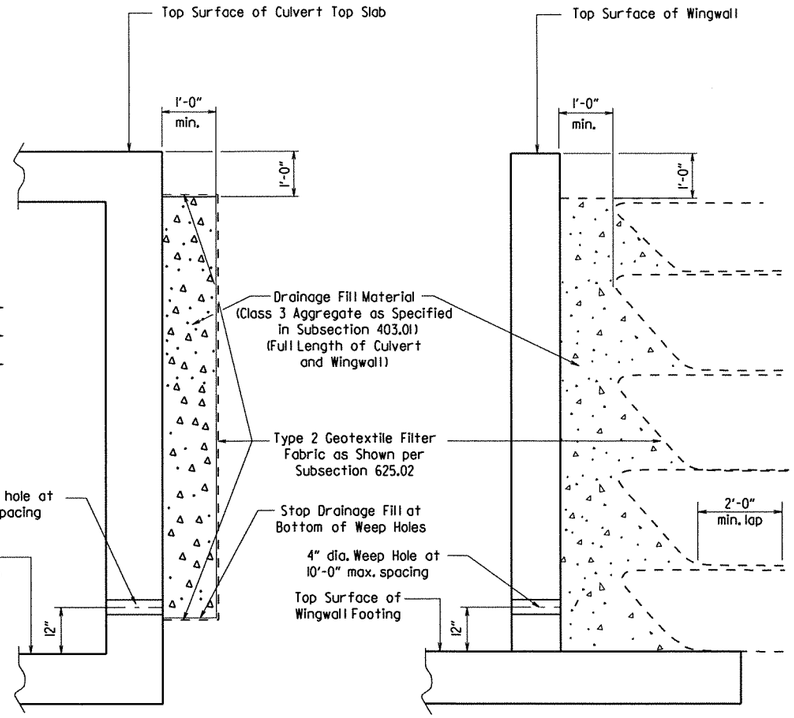
* LL = Skewed End Section Length - See "Skewed End Section Details"



SLOPE		2:1		3:1		4:1	
SECTION		A	B, C, D, E, F, G	A	B, C, D, E, F, G	A	B, C, D, E, F, G
SKEW ANGLE (SK)	15	12'-5 1/8"	6'-2 1/2"	22'-9 3/8"	11'-4 5/8"	33'-1 1/2"	16'-6 3/4"
	30	13'-10 1/4"	6'-11 1/8"	25'-4 7/8"	12'-8 3/8"	36'-11 3/8"	18'-5 3/4"
	45	16'-11 5/8"	8'-5 7/8"	31'-1 3/8"	15'-6 5/8"	45'-3"	22'-7 1/2"

LONGITUDINAL SECTION LENGTH SCHEDULE FOR VARYING FILL DEPTH OVER 5'

Lengths for Skewed Boxes



VERTICAL FABRIC ALTERNATE

(Shown for Culvert - Similar for Wingwall)

WRAPPED FABRIC ALTERNATE

(Shown for Wingwall - Similar for Culvert)

For Details of Excavation and Pay Limits, see Standard Drawing RCB-2.

WINGWALL & CULVERT DRAINAGE DETAIL

STATE OF ARKANSAS
Carl J. Fussner
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSSNER

GENERAL NOTES

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

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Fifth Edition (2010) with 2010 interim revisions.

LIVE LOADING: HL-93

All concrete shall be Class S with a minimum 28-day compressive strength of 3,500 psi and shall be poured in the dry. All exposed corners to have ¾" chamfers.

Reinforcing Steel shall be AASHTO M 31 or M 53, Grade 60.

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.

Excavation and backfilling shall be in accordance with the requirements of Section 801.

Membrane Waterproofing shall conform to the requirements of Section 815 of the Standard Specifications. Membrane Waterproofing shall be Type C and as directed by the Engineer applied to all construction joints in the top slab and the sidewalls of R.C. Box culverts and to the construction joint between wingwalls and R.C. Box culvert walls.

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.

Construction Joints between footings and walls shall be made only where shown on the Plans. The maximum length of culvert for which a continuous pour will be permitted is 75 ft. For longer culvert construction, joints shall be provided in slabs and walls at intervals not greater than 50 ft. Joints shall be normal to the centerline of barrel and shall be keyed. Longitudinal reinforcing shall be continuous through joints unless shown otherwise.

Membrane Waterproofing, Weep Holes, Geotextile Filter Fabric, and Drainage Fill Material will not be paid for directly but shall be considered subsidiary to Class S Concrete.

When precast reinforced concrete box culverts are substituted for cast in place box culverts, they shall be manufactured according to ASTM C 1577 and meet the requirements of Special Provision "LRFD Precast Reinforced Concrete Box Culverts".

SHEET 1 OF 4

GENERAL DETAILS OF R.C. BOX CULVERT

GENERAL NOTES & LONGITUDINAL SECTION LENGTH SCHEDULE

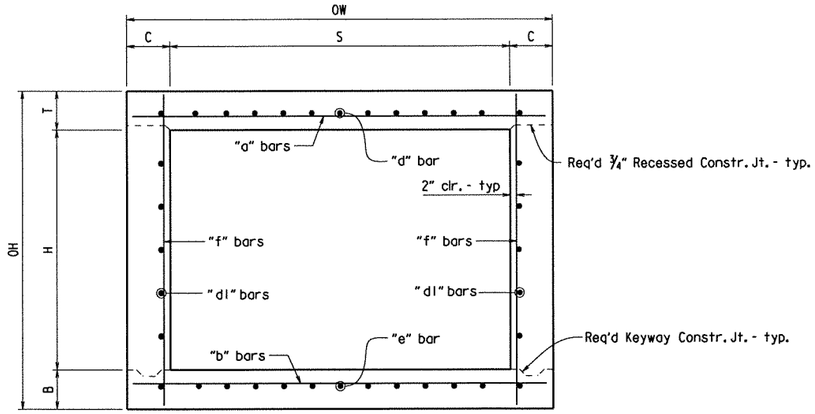
SPECIAL DETAILS

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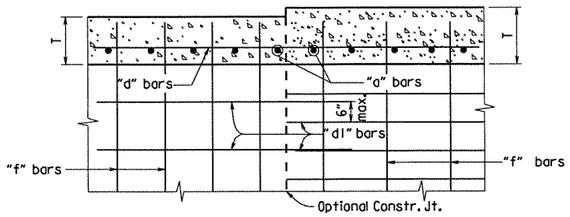
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050189	15	340

SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSELIER

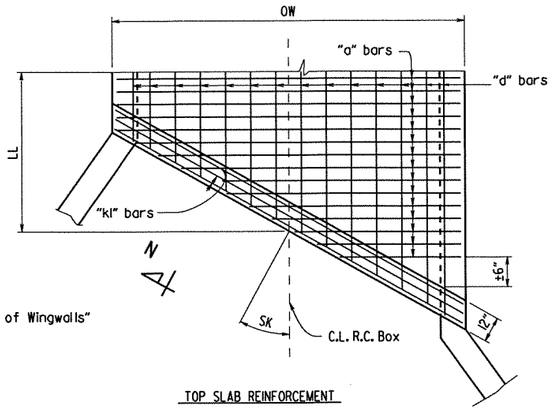


TYPICAL SECTION M-M

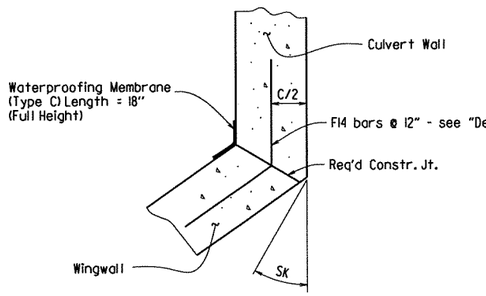


LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

Longitudinal Bar Spacing at individual sections shall be maintained, which may result in noncontact bar laps.

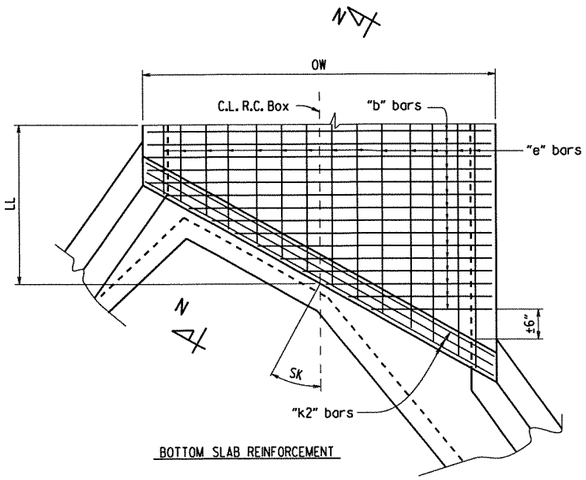


TOP SLAB REINFORCEMENT



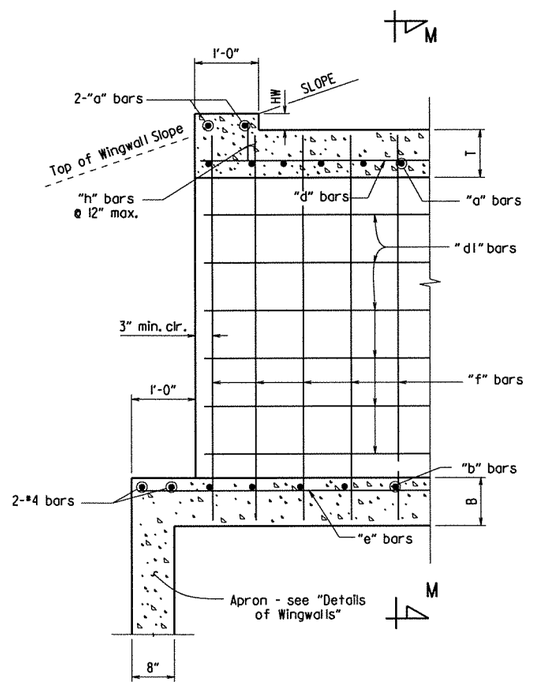
WINGWALL ATTACHMENT

See "Details of Wingwalls" for additional information and wingwall details.



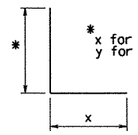
BOTTOM SLAB REINFORCEMENT

SKEWED END SECTION DETAILS

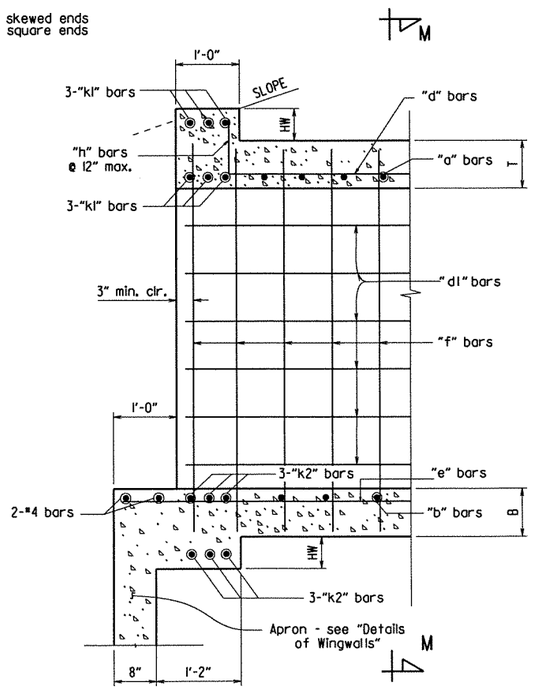


PART LONGITUDINAL SECTION

(Non-Skewed Ends)

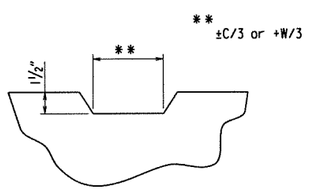


"h" bars sketch



PART LONGITUDINAL SECTION N-N

(Skewed Ends)



TYPICAL KEYWAY DETAIL

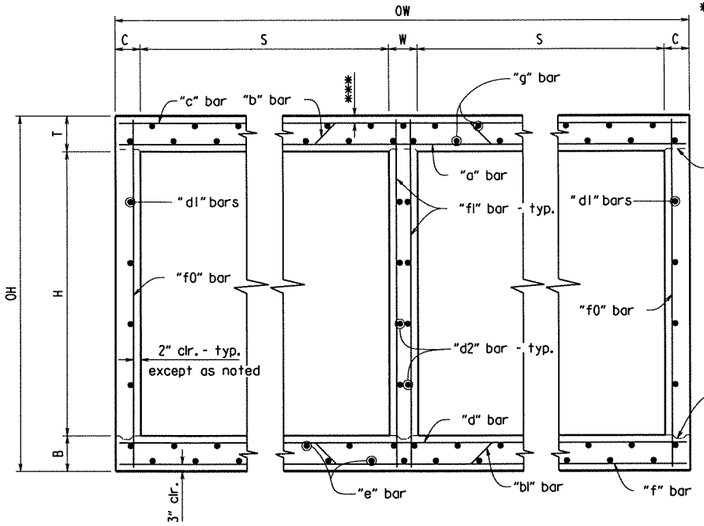
SHEET 2 OF 4
GENERAL DETAILS OF R.C. BOX CULVERT

DETAILS OF SINGLE BARREL R.C. BOX CULVERT

SPECIAL DETAILS

b050189_culvert.dgn

DATE REVISED	DATE FILMED	REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050189	16	340
				①		SPECIAL DETAILS		

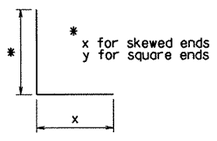


*** 2" clr. for fill depth (D) greater than 2 ft.
2½" clr. for fill depth (D) equal to or less than 2 ft.

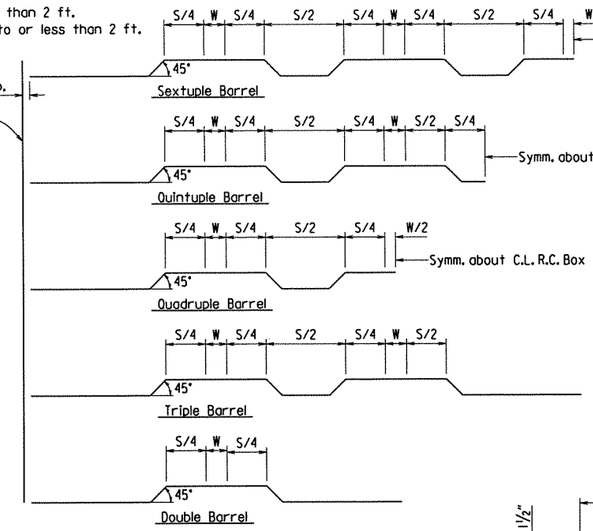
TYPICAL SECTION

Top Slab
Straight "c" bars shall alternate with Bent "b" bars in top.
Straight "a" bars shall alternate with Bent "b" bars in bottom.

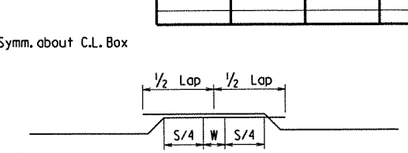
Bottom Slab
Straight "d" bars shall alternate with Bent "bl" bars in top.
Straight "f" bars shall alternate with Bent "bl" bars in bottom.



"h" bars sketch

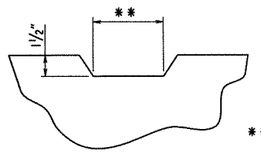


Bent "b" bars or Bent "bl" bars sketch



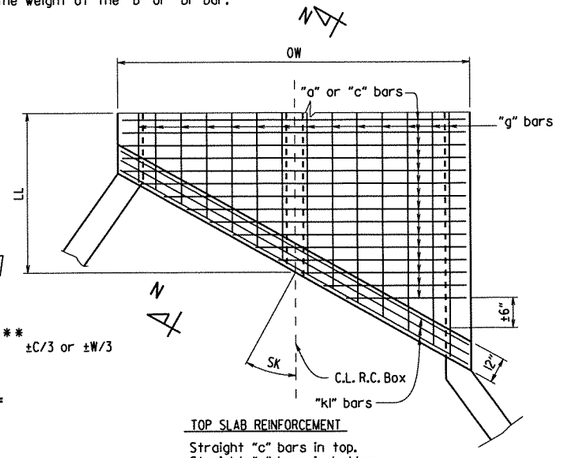
Optional Lap Detail
For Bent "b" bars and Bent "bl" bars

At the Contractor's option in lieu of providing Bent "b" or Bent "bl" bars, one bar top and bottom of equivalent size may be substituted for each bent bar. Payment for the reinforcing will be based on the weight of the "b" or "bl" bar.

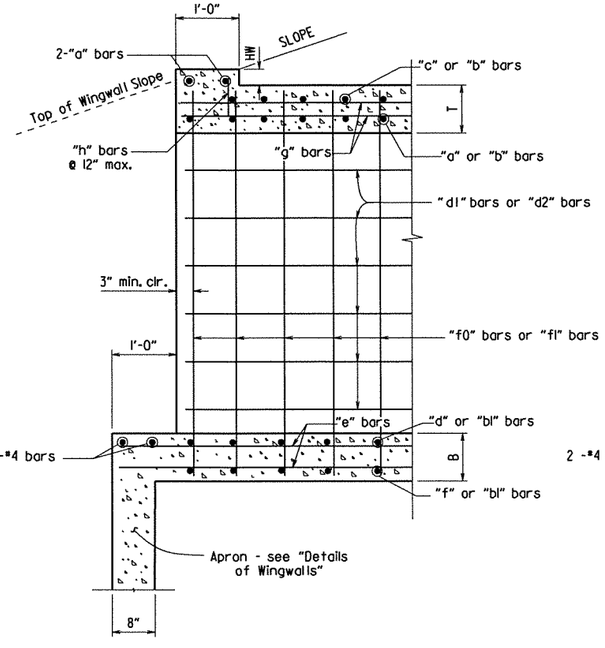


** ±C/3 or ±W/3

TYPICAL KEYWAY DETAIL

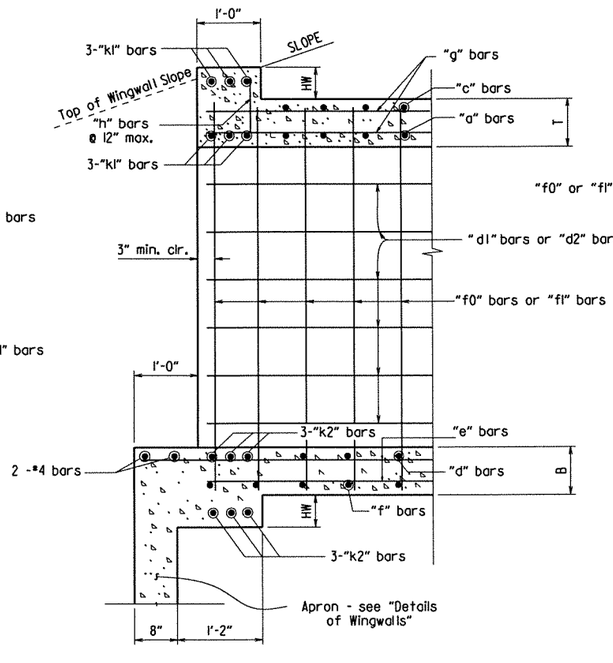


TOP SLAB REINFORCEMENT
Straight "c" bars in top.
Straight "a" bars in bottom.



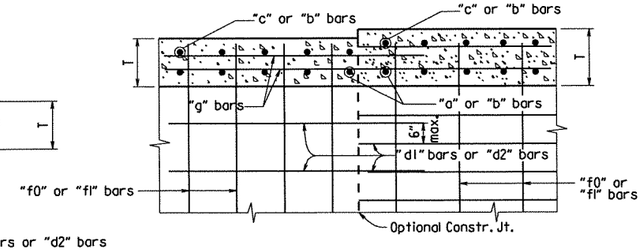
PART LONGITUDINAL SECTION

(Non-Skewed Ends)



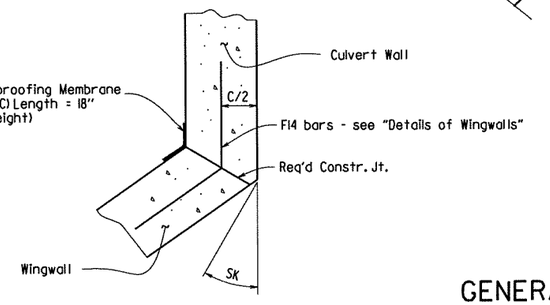
PART LONGITUDINAL SECTION N-N

(Skewed Ends)



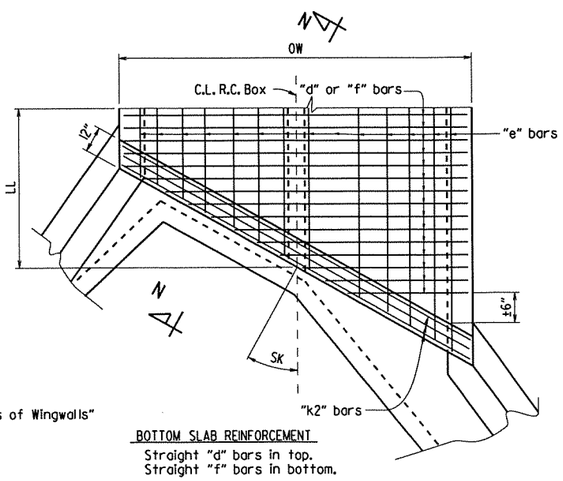
LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

Longitudinal Bar Spacing at individual sections shall be maintained, which may result in noncontact bar laps.



WINGWALL ATTACHMENT

See "Details of Wingwalls" for additional information and wingwall details.



BOTTOM SLAB REINFORCEMENT
Straight "d" bars in top.
Straight "f" bars in bottom.

SKEWED END SECTION DETAILS

SHEET 3 OF 4
GENERAL DETAILS OF R.C. BOX CULVERT

DETAILS OF MULTI-BARREL R.C. BOX CULVERT

SPECIAL DETAILS

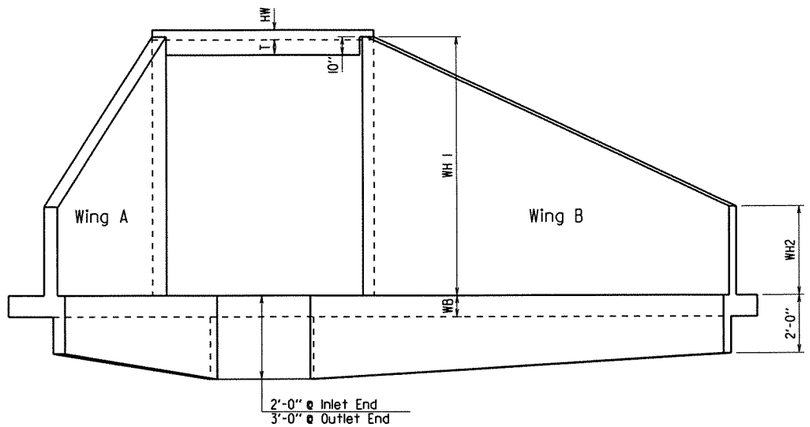
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSELIER

b050189_culvert.dgn

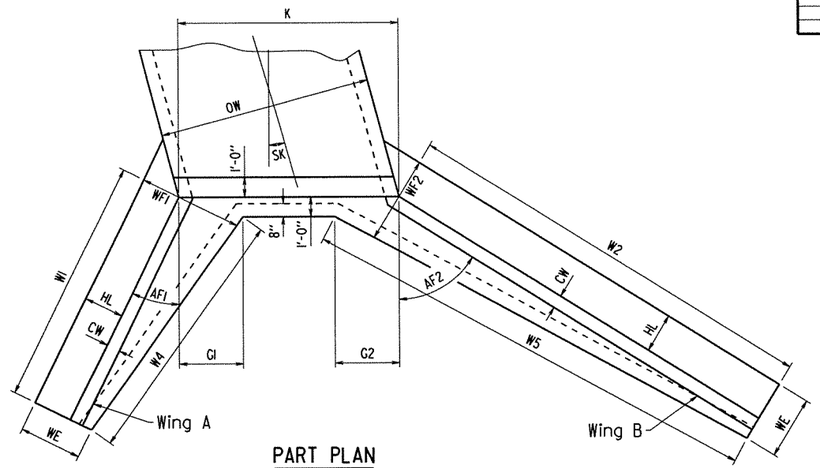
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050189	17	340

(1) SPECIAL DETAILS

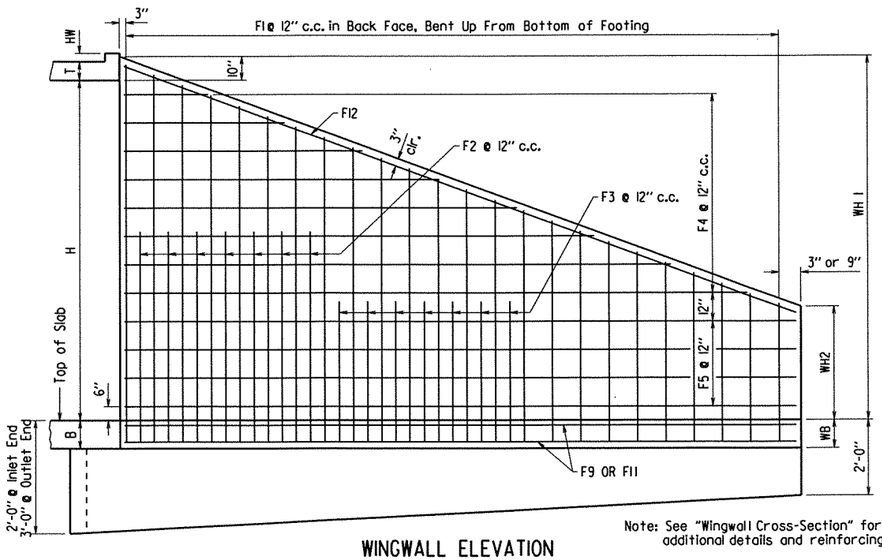
STATE OF ARKANSAS
CARL J. FUSSELIER
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSSELIER



END ELEVATION



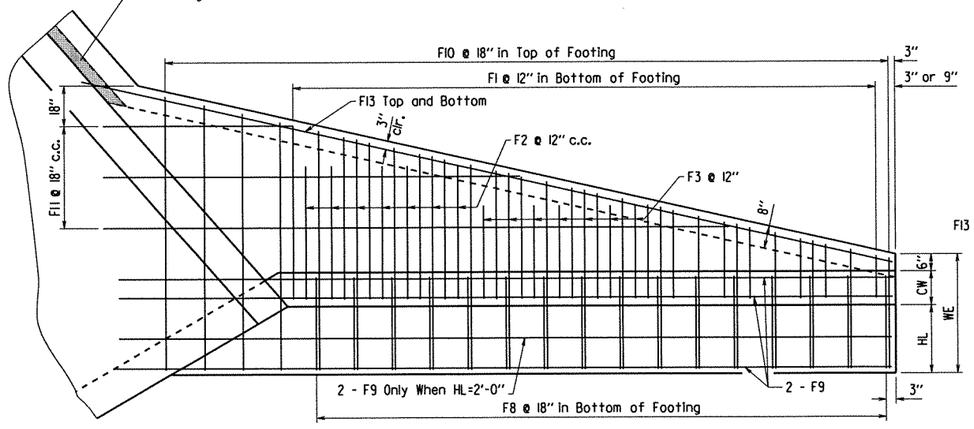
PART PLAN



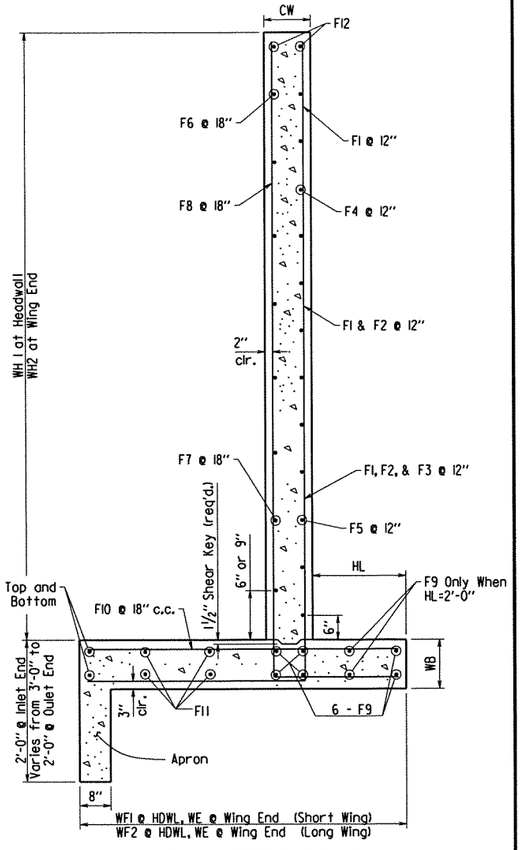
WINGWALL ELEVATION
Showing Back Face Reinforcement

Note: See "Wingwall Cross-Section" for additional details and reinforcing

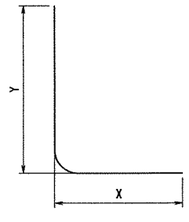
For square ends make the shaded area thickness the greater of WB and B (Bottom Slab Thickness). For skewed ends make the shaded area thickness the greater of WB and (B+HW).



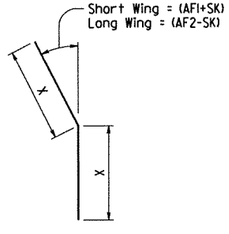
WINGWALL PLAN



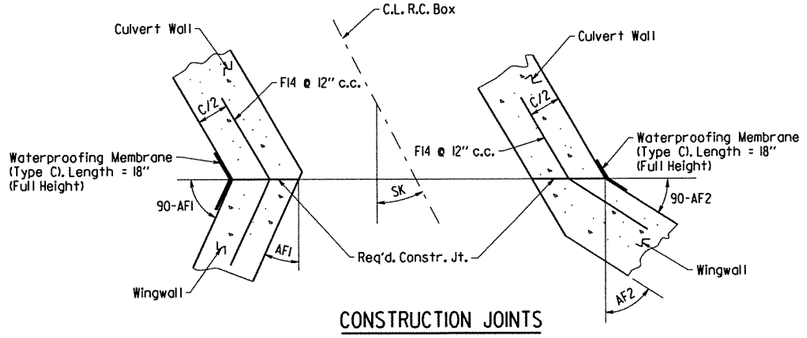
WINGWALL CROSS SECTION



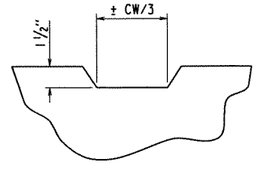
F1, F2, F3, & F8 SKETCH



F14 SKETCH



CONSTRUCTION JOINTS



TYPICAL KEYWAY DETAIL

SHEET 4 OF 4
GENERAL DETAILS OF R.C. BOX CULVERT
DETAILS OF WINGWALLS
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.		050189	18	340
				(2)	TEMPORARY EROSION CONTROL DETAILS			

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/8/12

NOTE: RETAIN EROSION CONTROL ITEMS INSTALLED FOR "INTERSECTION HWYS. 13/267 STAGES I-A & IB" AND ON "ALL STAGES - NEW LOCATION" DURING REMAINING CONSTRUCTION IF AND WHERE DIRECTED BY THE ENGINEER.

QUANTITIES FOR STAGE 3
INTERSECTION HWYS. 13/267

SAND BAG DITCH CHECKS	156 BAGS
SEDIMENT BASINS	58 CU. YDS.
OBLIT. SED. BASINS	58 CU. YDS.

STA. 106+06.69 HWY. 13 =
STA. 508+48.33 HWY. 267
Δ = 64° 34" 17.2"

STA. 99+87 - BEGIN JOB 050189
LOG MILE 3.04

DATE OF REVISION	REVISION

E-5 SAND BAG DITCH CHECK
E-6 ROCK DITCH CHECK
E-7 DROP INLET SILT FENCE
E-11 SILT FENCE
E-14 SEDIMENT BASIN

TEMPORARY EROSION CONTROL DETAILS
INTERSECTION HWYS. 13/267: STAGE 3

r050189.dgn
4-18-12

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.		050189	19	340

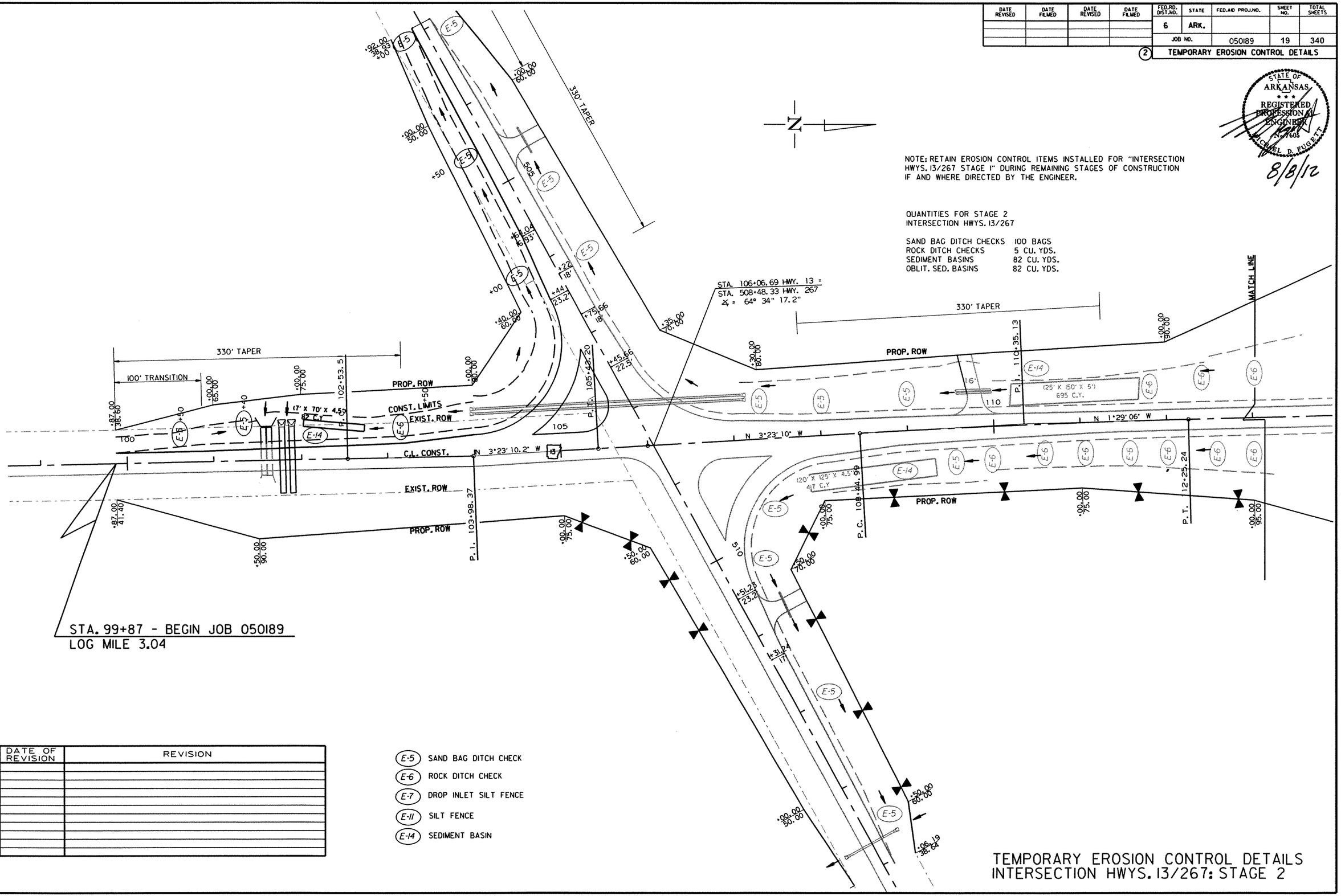
(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/8/12

NOTE: RETAIN EROSION CONTROL ITEMS INSTALLED FOR "INTERSECTION HWYS. 13/267 STAGE 1" DURING REMAINING STAGES OF CONSTRUCTION IF AND WHERE DIRECTED BY THE ENGINEER.

QUANTITIES FOR STAGE 2
INTERSECTION HWYS. 13/267

SAND BAG DITCH CHECKS	100 BAGS
ROCK DITCH CHECKS	5 CU. YDS.
SEDIMENT BASINS	82 CU. YDS.
OBLIT. SED. BASINS	82 CU. YDS.



DATE OF REVISION	REVISION

- (E-5) SAND BAG DITCH CHECK
- (E-6) ROCK DITCH CHECK
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- (E-14) SEDIMENT BASIN

TEMPORARY EROSION CONTROL DETAILS
INTERSECTION HWYS. 13/267: STAGE 2

r050189.dgn
4-18-12

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.		050189	20	340

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7600
MICHAEL D. PUGETT
8/8/12

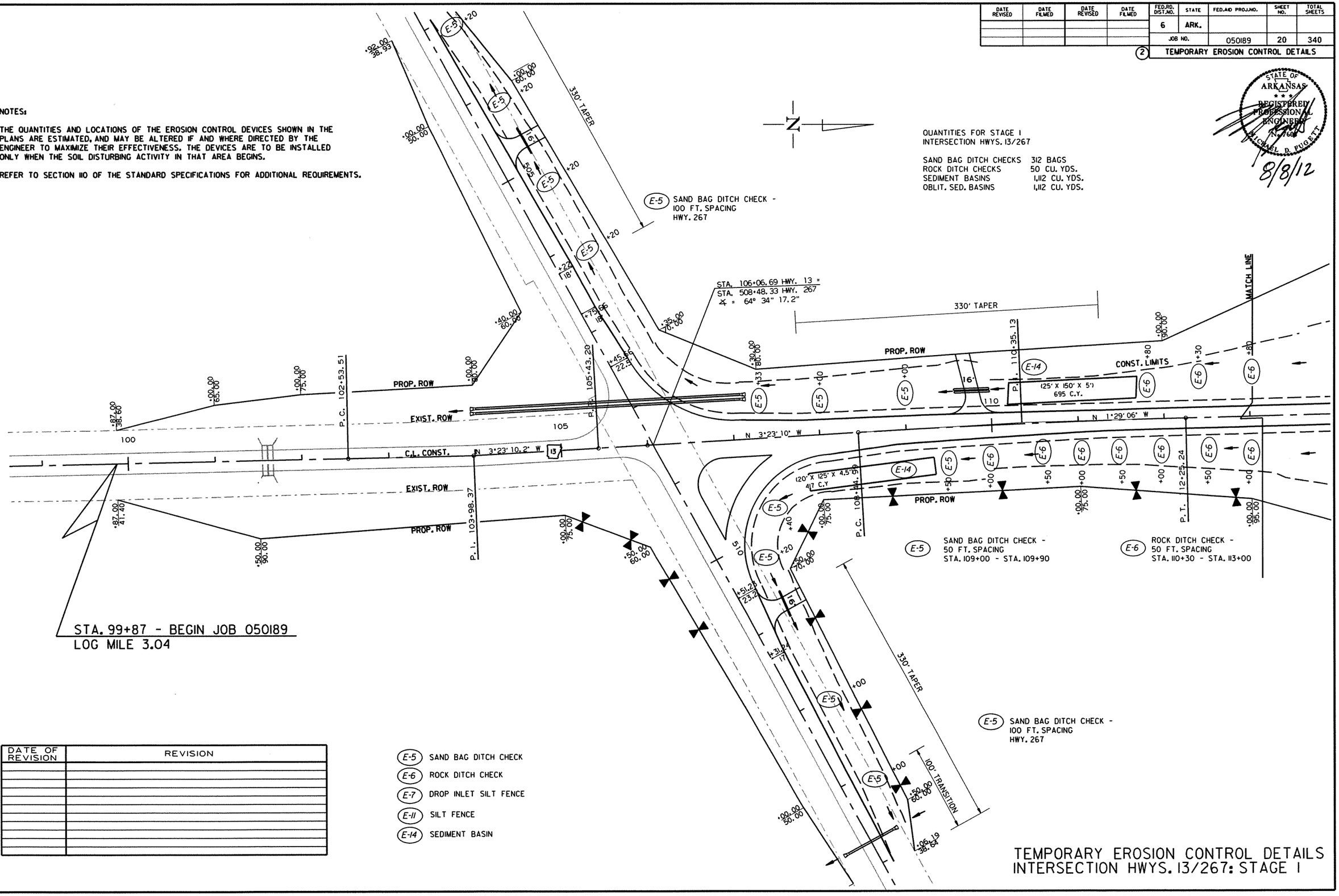
NOTES:

THE QUANTITIES AND LOCATIONS OF THE EROSION CONTROL DEVICES SHOWN IN THE PLANS ARE ESTIMATED, AND MAY BE ALTERED IF AND WHERE DIRECTED BY THE ENGINEER TO MAXIMIZE THEIR EFFECTIVENESS. THE DEVICES ARE TO BE INSTALLED ONLY WHEN THE SOIL DISTURBING ACTIVITY IN THAT AREA BEGINS.

REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

QUANTITIES FOR STAGE I
INTERSECTION HWYS. 13/267

SAND BAG DITCH CHECKS	312 BAGS
ROCK DITCH CHECKS	50 CU. YDS.
SEDIMENT BASINS	1,112 CU. YDS.
OBLIT. SED. BASINS	1,112 CU. YDS.



DATE OF REVISION	REVISION

E-5 SAND BAG DITCH CHECK
E-6 ROCK DITCH CHECK
E-7 DROP INLET SILT FENCE
E-11 SILT FENCE
E-14 SEDIMENT BASIN

E-5 SAND BAG DITCH CHECK - 100 FT. SPACING HWY. 267

TEMPORARY EROSION CONTROL DETAILS
INTERSECTION HWYS. 13/267: STAGE I

r050189.dgn
4-18-12

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.		050189	21	340

(2) TEMPORARY EROSION CONTROL DETAILS

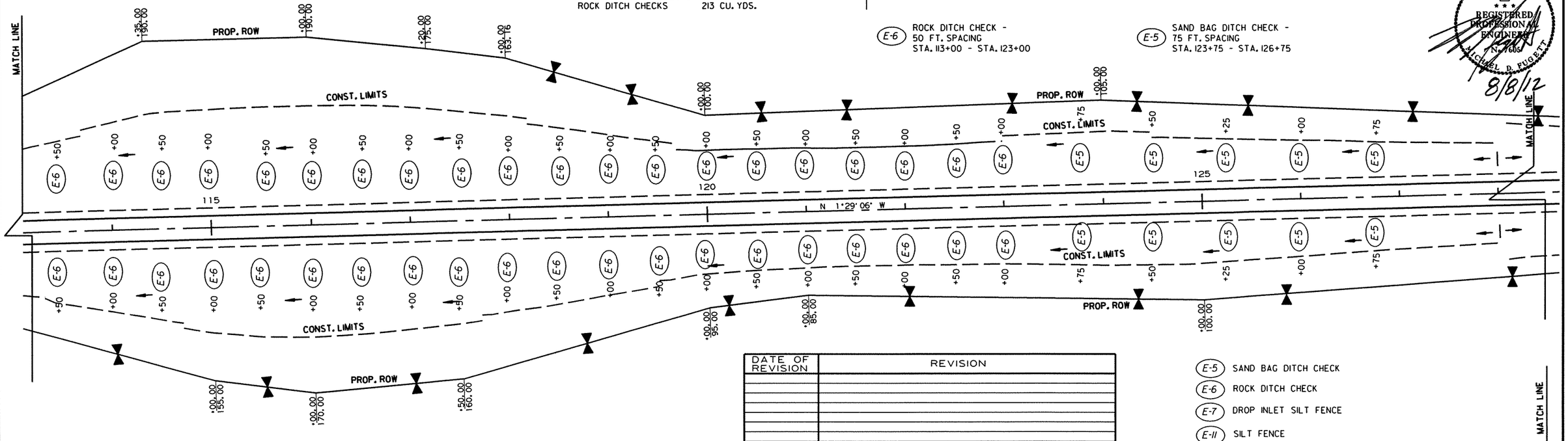
QUANTITIES FOR STAGE I
HWY. 13 NEW LOCATION
STA. 113+00 - STA. 128+00

SAND BAG DITCH CHECKS 340 BAGS
ROCK DITCH CHECKS 213 CU. YDS.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/8/12

(E-6) ROCK DITCH CHECK - 50 FT. SPACING
STA. 113+00 - STA. 123+00

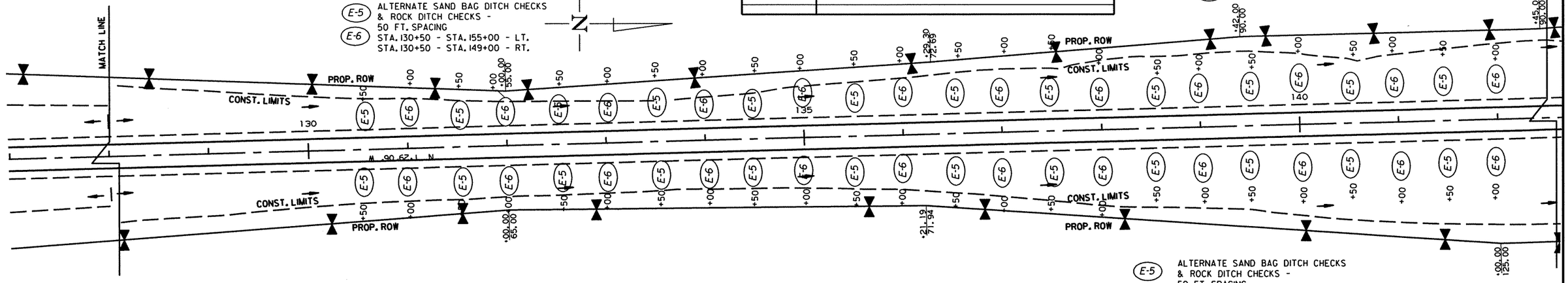
(E-5) SAND BAG DITCH CHECK - 75 FT. SPACING
STA. 123+75 - STA. 126+75



DATE OF REVISION	REVISION

(E-5) SAND BAG DITCH CHECK
(E-6) ROCK DITCH CHECK
(E-7) DROP INLET SILT FENCE
(E-11) SILT FENCE
(E-14) SEDIMENT BASIN

(E-5) ALTERNATE SAND BAG DITCH CHECKS & ROCK DITCH CHECKS - 50 FT. SPACING
(E-6) STA. 130+50 - STA. 155+00 - LT.
STA. 130+50 - STA. 149+00 - RT.



(E-5) ALTERNATE SAND BAG DITCH CHECKS & ROCK DITCH CHECKS - 50 FT. SPACING
(E-6) STA. 130+50 - STA. 142+00 - LT.
STA. 130+50 - STA. 142+00 - RT.

QUANTITIES FOR STAGE I
HWY. 13 NEW LOCATION
STA. 128+00 - STA. 142+00

SAND BAG DITCH CHECKS 120 BAGS
ROCK DITCH CHECKS 816 CU. YDS.

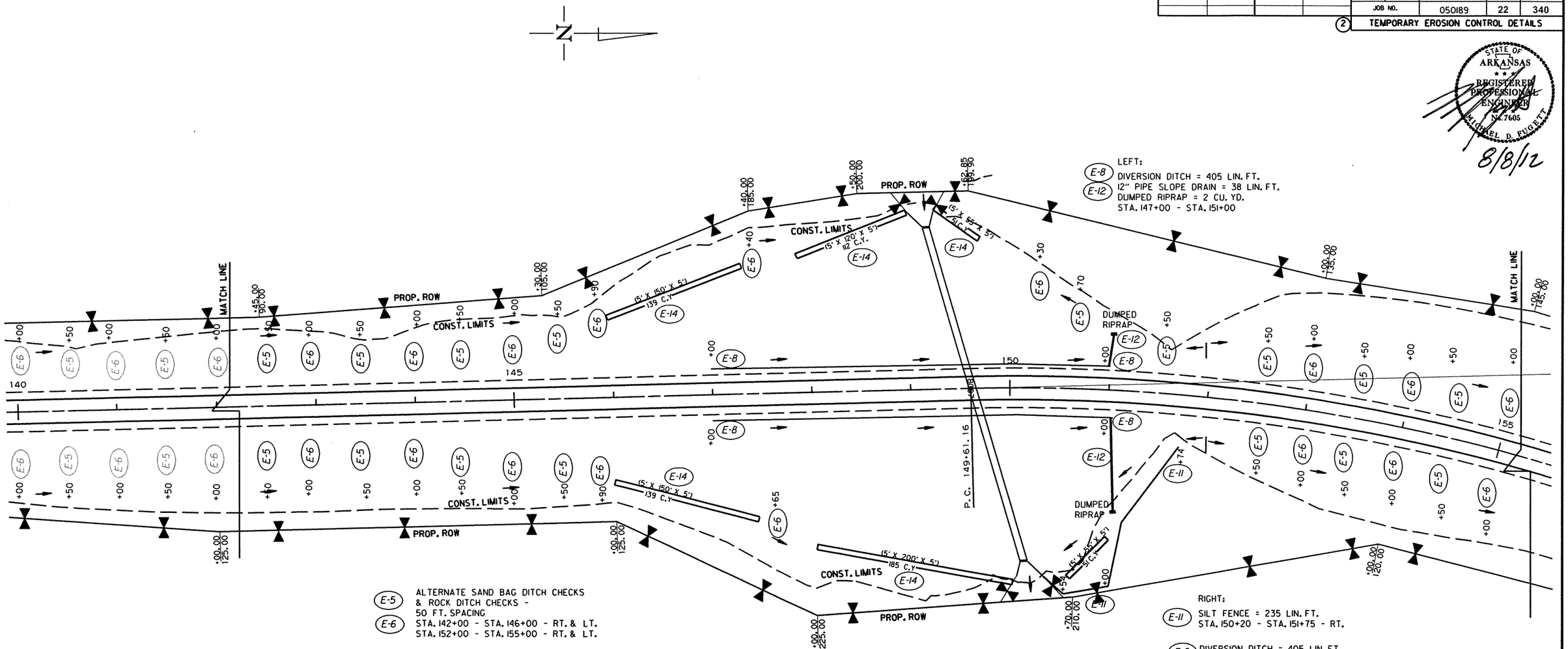
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4-18-12

TEMPORARY EROSION CONTROL DETAILS STAGE I- NEW LOCATION

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.		050189	22	340

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/8/12



DATE OF REVISION	REVISION

E-5 SAND BAG DITCH CHECK
E-6 ROCK DITCH CHECK
E-7 DROP INLET SILT FENCE
E-11 SILT FENCE
E-8 DIVERSION DITCH
E-12 PIPE SLOPE DRAIN
E-14 SEDIMENT BASIN

QUANTITIES FOR STAGE I
HWY. 13 NEW LOCATION
STA. 142+00 - STA. 155+00

SAND BAG DITCH CHECKS	472 BAGS
ROCK DITCH CHECKS	73 CU. YDS.
SILT FENCE	235 LIN. FT.
DIVERSION DITCH	810 LIN. FT.
PIPE SLOPE DRAIN	126 LIN. FT.
DUMPED RIPRAP	4 CU. YD.
SEDIMENT BASINS	677 CU. YDS.
OBLIT. SED. BASINS	677 CU. YDS.

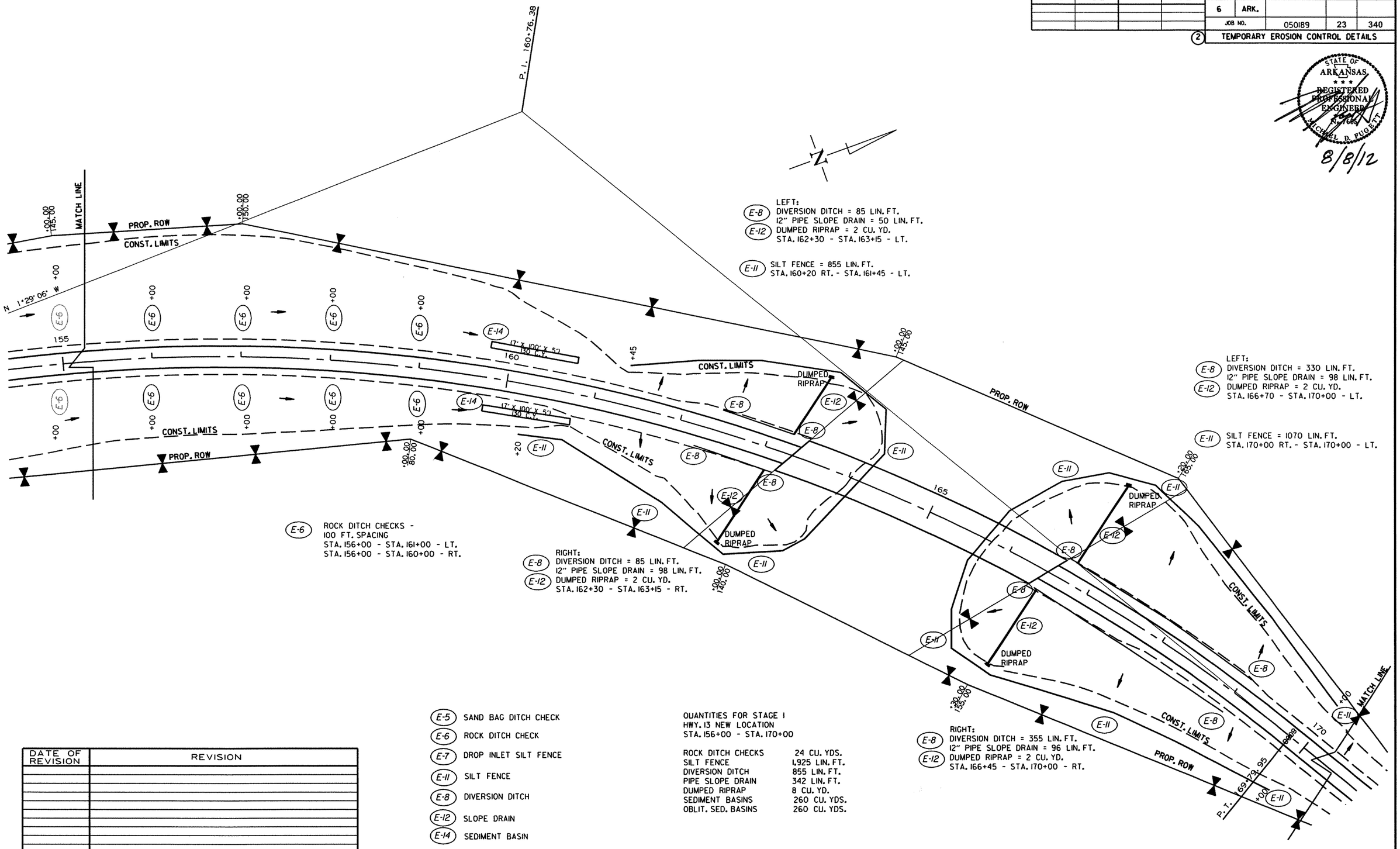
TEMPORARY EROSION CONTROL DETAILS
STAGE I - NEW LOCATION

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4-18-12

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.		050189	23	340

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 17605
MICHAEL D. PUGETT
8/8/12



DATE OF REVISION	REVISION

E-5 SAND BAG DITCH CHECK
E-6 ROCK DITCH CHECK
E-7 DROP INLET SILT FENCE
E-11 SILT FENCE
E-8 DIVERSION DITCH
E-12 SLOPE DRAIN
E-14 SEDIMENT BASIN

QUANTITIES FOR STAGE I
HWY. 13 NEW LOCATION
STA. 156+00 - STA. 170+00

ROCK DITCH CHECKS	24 CU. YDS.
SILT FENCE	1,925 LIN. FT.
DIVERSION DITCH	855 LIN. FT.
PIPE SLOPE DRAIN	342 LIN. FT.
DUMPED RIPRAP	8 CU. YD.
SEDIMENT BASINS	260 CU. YDS.
OBLIT. SED. BASINS	260 CU. YDS.

TEMPORARY EROSION CONTROL DETAILS
STAGE I - NEW LOCATION

r050189.dgn
4-18-12

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.		050189	24	340

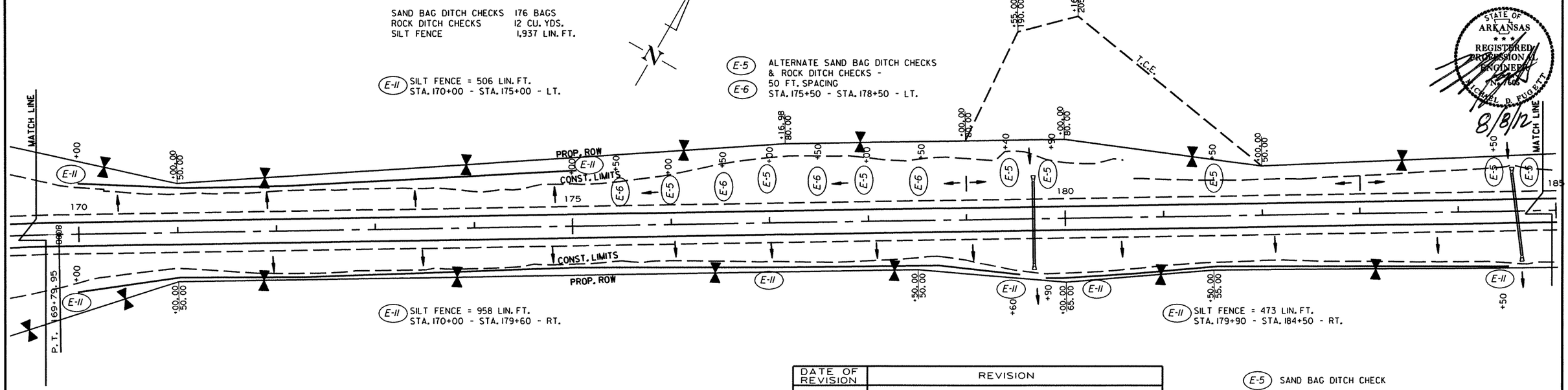
(2) TEMPORARY EROSION CONTROL DETAILS

QUANTITIES FOR STAGE I
HWY. 13 NEW LOCATION
STA. 170+00 - STA. 185+00

SAND BAG DITCH CHECKS 176 BAGS
ROCK DITCH CHECKS 12 CU. YDS.
SILT FENCE 1,937 LIN. FT.

(E-11) SILT FENCE = 506 LIN. FT.
STA. 170+00 - STA. 175+00 - LT.

(E-5) (E-6) ALTERNATE SAND BAG DITCH CHECKS & ROCK DITCH CHECKS - 50 FT. SPACING
STA. 175+50 - STA. 178+50 - LT.



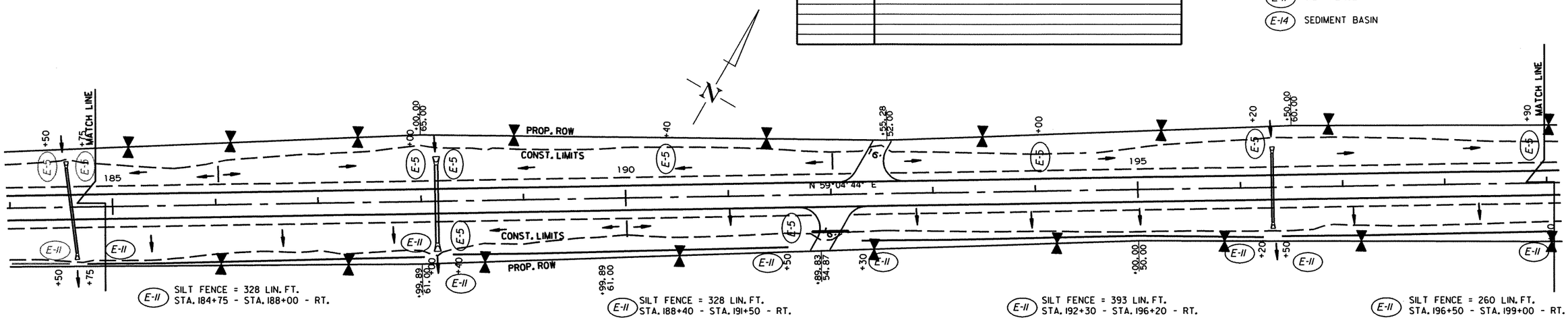
(E-11) SILT FENCE = 958 LIN. FT.
STA. 170+00 - STA. 179+60 - RT.

(E-11) SILT FENCE = 473 LIN. FT.
STA. 179+90 - STA. 184+50 - RT.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 17606
MICHAEL D. PUGETT
8/8/12

DATE OF REVISION	REVISION

(E-5) SAND BAG DITCH CHECK
(E-6) ROCK DITCH CHECK
(E-7) DROP INLET SILT FENCE
(E-11) SILT FENCE
(E-14) SEDIMENT BASIN



(E-11) SILT FENCE = 328 LIN. FT.
STA. 184+75 - STA. 188+00 - RT.

(E-11) SILT FENCE = 328 LIN. FT.
STA. 188+40 - STA. 191+50 - RT.

(E-11) SILT FENCE = 393 LIN. FT.
STA. 192+30 - STA. 196+20 - RT.

(E-11) SILT FENCE = 260 LIN. FT.
STA. 196+50 - STA. 199+00 - RT.

QUANTITIES FOR STAGE I
HWY. 13 NEW LOCATION
STA. 185+00 - STA. 199+00

SAND BAG DITCH CHECKS 176 BAGS
SILT FENCE 1,309 LIN. FT.

4-18-12 r050189.dgn

TEMPORARY EROSION CONTROL DETAILS STAGE I - NEW LOCATION

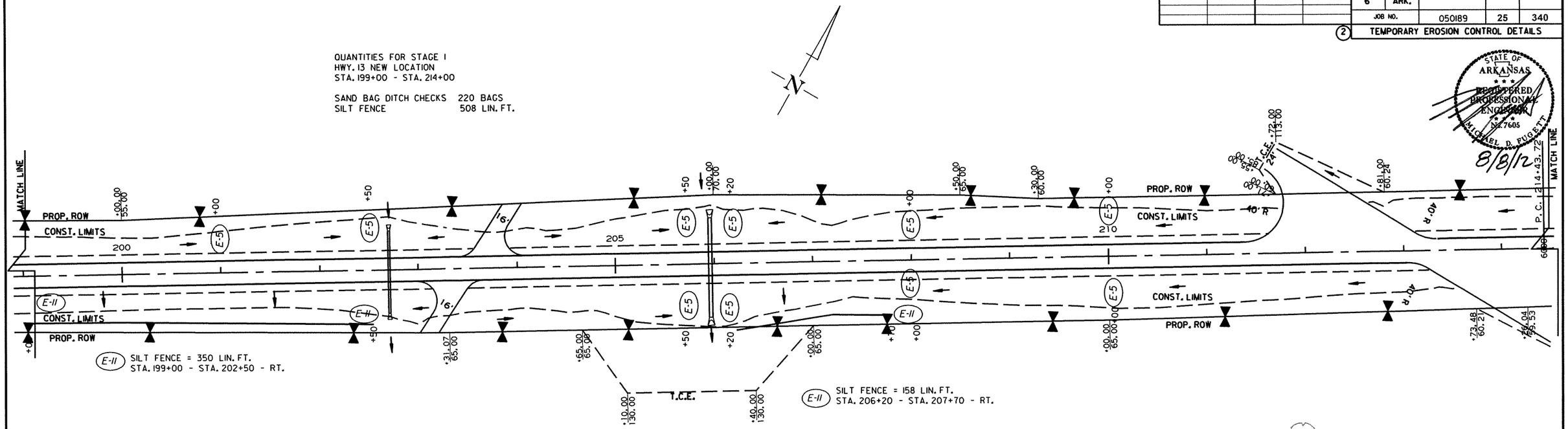
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050189	25	340

(2) TEMPORARY EROSION CONTROL DETAILS

QUANTITIES FOR STAGE I
HWY. 13 NEW LOCATION
STA. 199+00 - STA. 214+00

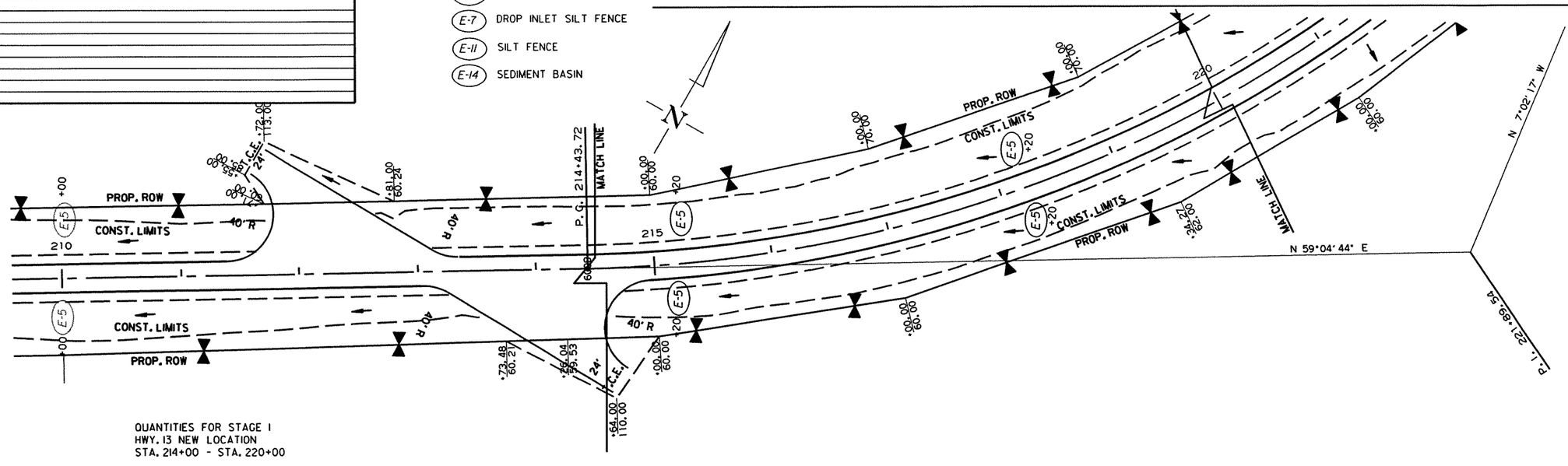
SAND BAG DITCH CHECKS 220 BAGS
SILT FENCE 508 LIN. FT.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. PUGETT
8/8/12



DATE OF REVISION	REVISION

E-5 SAND BAG DITCH CHECK
E-6 ROCK DITCH CHECK
E-7 DROP INLET SILT FENCE
E-11 SILT FENCE
E-14 SEDIMENT BASIN



QUANTITIES FOR STAGE I
HWY. 13 NEW LOCATION
STA. 214+00 - STA. 220+00

SAND BAG DITCH CHECKS 88 BAGS

TEMPORARY EROSION CONTROL DETAILS
STAGE I - NEW LOCATION

r050189.dgn
4-18-12

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.		050189	26	340

(2) TEMPORARY EROSION CONTROL DETAILS

QUANTITIES FOR STAGE I
HWY. 13 NEW LOCATION
STA. 220+00 - STA. 235+00

SAND BAG DITCH CHECKS 220 BAGS
SILT FENCE 1,527 LIN. FT.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. PUGATT
8/8/12

(E-11) SILT FENCE = 111 LIN. FT.
STA. 234+00 - STA. 235+00 - LT.

(E-11) SILT FENCE = 806 LIN. FT.
STA. 220+50 - STA. 227+70 - RT.

(E-11) SILT FENCE = 610 LIN. FT.
STA. 228+50 - RT.
STA. 229+30 - STA. 233+70 - RT.
STA. 234+00 - STA. 235+00 - RT.

NOTE: BEFORE FILLING THE EXISTING POND, THE CONTRACTOR SHALL CONSTRUCT A DRAINAGE SEDIMENT BASIN IF AND WHERE DIRECTED BY THE ENGINEER.

(E-11) SILT FENCE = 899 LIN. FT.
STA. 237+00 - STA. 245+90 - LT.

(E-11) SILT FENCE = 201 LIN. FT.
STA. 235+00 - STA. 237+00 - RT.

(E-11) SILT FENCE = 283 LIN. FT.
STA. 243+00 - STA. 247+00 - RT.

DATE OF REVISION	REVISION

(E-5) SAND BAG DITCH CHECK
(E-6) ROCK DITCH CHECK
(E-7) DROP INLET SILT FENCE
(E-11) SILT FENCE
(E-14) SEDIMENT BASIN

QUANTITIES FOR STAGE I
HWY. 13 NEW LOCATION
STA. 235+00 - STA. 247+00

SAND BAG DITCH CHECKS 264 BAGS
SILT FENCE 1,383 LIN. FT.
SEDIMENT BASINS 223 CU. YDS.
OBLIT. SED. BASINS 223 CU. YDS.

TEMPORARY EROSION CONTROL DETAILS STAGE I - NEW LOCATION

r050189.dgn
4-18-12

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.		050189	27	340

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7400
MICHAEL D. FUGETT
8/8/12

(EROSION CONTROL ITEMS NOTED ON PREVIOUS PAGE)
STA. 240+00 - STA. 247+00

DATE OF REVISION	REVISION

(E-5) SAND BAG DITCH CHECK
(E-6) ROCK DITCH CHECK
(E-7) DROP INLET SILT FENCE
(E-11) SILT FENCE
(E-14) SEDIMENT BASIN

QUANTITIES FOR STAGE I
TEMP. WIDENING (RT.) OF EXISTING RDWY.
STA. 255+00 - 260+00 (C.L. CONST.)

SAND BAG DITCH CHECKS 132 BAGS

(E-5) MOT TEMP. WIDENING 80' O.C.

7/31/2012

R050189.DGN

TEMPORARY EROSION CONTROL DETAILS
STAGE I - TEMP. WIDENING

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.		050189	28	340

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 14603
MICHAEL D. FUGETT
8/8/12

QUANTITIES FOR STAGE I
TEMP. WIDENING (RT.) OF EXISTING RDWY.
STA. 271+50 - 285+00 (C.L. CONST.)

SILT FENCE	304 LIN. FT.
SAND BAG DITCH CHECKS	88 BAGS
ROCK DITCH CHECKS	3 CU. YDS.

SILT FENCE
STA. 271+25 - STA. 272+47 = 156 LIN. FT.
STA. 272+70 - STA. 274+22 = 148 LIN. FT.

(E-5) SAND BAG DITCH CHECKS
STA. 276+00 - STA. 280+30
SPACING 110' O.C.

DATE OF REVISION	REVISION

(E-5) SAND BAG DITCH CHECK
(E-6) ROCK DITCH CHECK
(E-7) DROP INLET SILT FENCE
(E-11) SILT FENCE
(E-14) SEDIMENT BASIN

(E-5) MOT TEMP. WIDENING 50' O.C.

QUANTITIES FOR STAGE I
TEMP. WIDENING (RT.) OF EXISTING RDWY.
STA. 285+00 - 287+50 (C.L. CONST.)

SAND BAG DITCH CHECKS 66 BAGS

QUANTITIES FOR STAGE I
TEMP. WIDENING (RT.) OF EXISTING RDWY.
STA. 288+00 - 300+00 (C.L. CONST.)

SAND BAG DITCH CHECKS 22 BAGS

TEMPORARY EROSION CONTROL DETAILS
STAGE I - TEMP. WIDENING

7/31/2012
R050189.DGN

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.		050189	29	340

(2) TEMPORARY EROSION CONTROL DETAILS

QUANTITIES FOR STAGE I
TEMP. WIDENING (RT.) OF EXISTING RDWY.
STA. 300+00 - 310+05 (C.L. CONST.)

SILT FENCE	112 LIN. FT.
SAND BAG DITCH CHECKS	242 BAGS
SEDIMENT BASIN	69 CU. YDS.
OBLIT. SED. BASIN	69 CU. YDS.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 7605
MICHAEL D. FUGETT
8/8/12

DATE OF REVISION	REVISION

- (E-5) SAND BAG DITCH CHECK
- (E-6) ROCK DITCH CHECK
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- (E-14) SEDIMENT BASIN

7/31/2012

R050189.DGN

TEMPORARY EROSION CONTROL DETAILS
STAGE I - TEMP. WIDENING

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.		050189	30	340

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/8/12

DATE OF REVISION	REVISION

(E-5) SAND BAG DITCH CHECK
(E-6) ROCK DITCH CHECK
(E-7) DROP INLET SILT FENCE
(E-11) SILT FENCE
(E-14) SEDIMENT BASIN

P. C. 330+44.52
P. T. 334+90.29
P. I. 338+43.73
P. I. 332+70.26
P. C. 336+44.70
P. T. 340+38.82
N 19°33' 14" W
330
335
340
345
POINT ON ROAD
BRICK HOUSE FRAME
GARAGE IS WOOD
FRAME SHED
N 0°09' 07" E
350
355
HONEY HILL
CARTER DRIVE
FRAMED GARAGE
BRICK HOUSE
DRIVEWAY
P. I. 355+68.93
P. C. 353+93.03
GRAVEL PARKING
GRAVEL DRIVE
CONCRETE
CRUSHED STONE
GRAVEL DRIVE TO ANIMAL HOSPITAL
P. C. 358+76
P. T. 357+41.54
N 19° 19' 12" E
360
+33
10"
P. T. 360+13.52
135' TAPER

QUANTITIES FOR STAGE I
NEW TURNOUT @ HWY. 36
STA. 357+41 - 360+00 (C.L. CONST.)

SILT FENCE 448 LIN. FT.

SILT FENCE (RT.) = 267 LIN. FT.
SILT FENCE (LT.) = 181 LIN. FT.

TEMPORARY EROSION CONTROL DETAILS STAGE I

7/31/2012
R050189.DGN

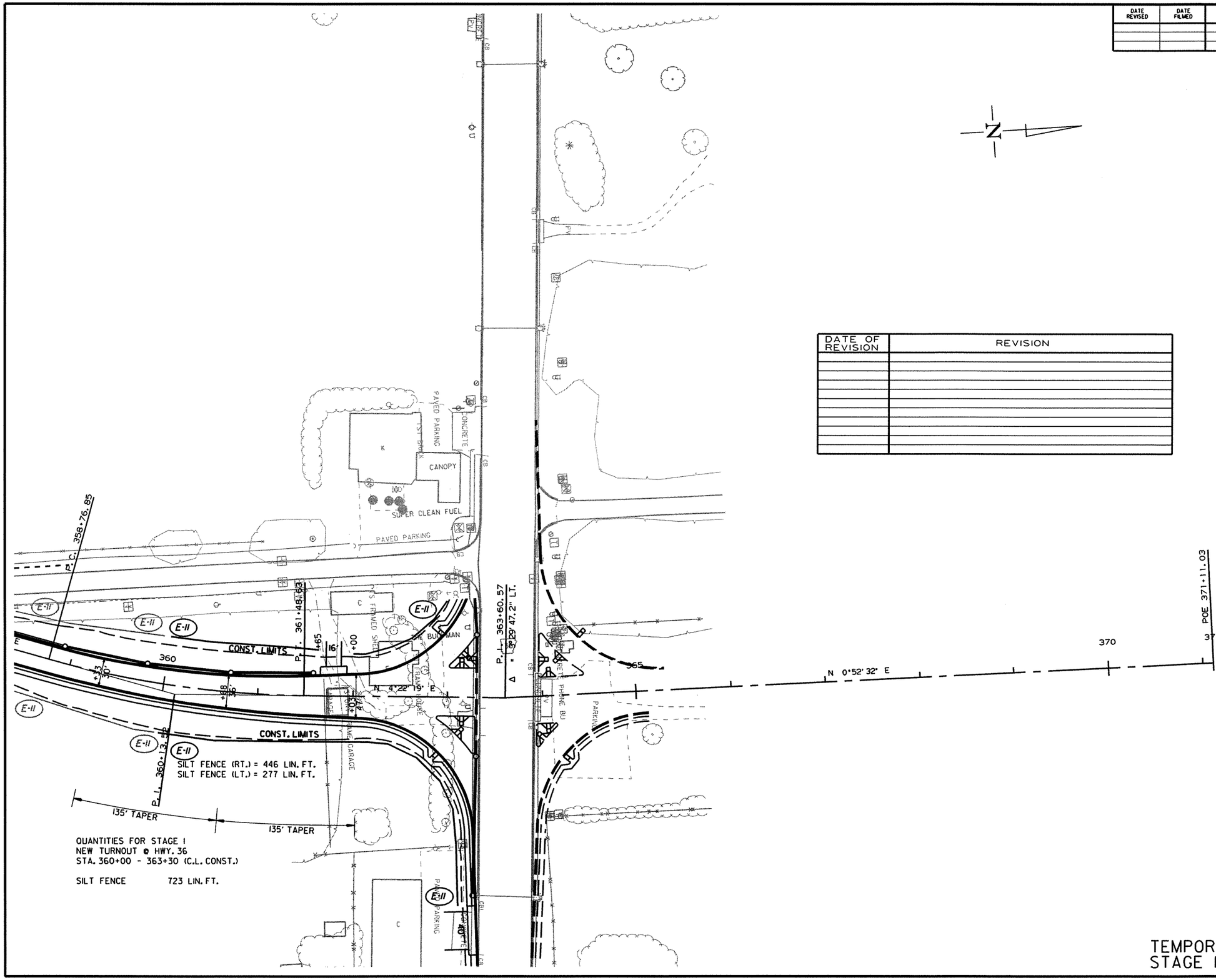
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050189	31	340

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 14603
MICHAEL D. PUGETT
8/8/12

DATE OF REVISION	REVISION

(E-5) SAND BAG DITCH CHECK
(E-6) ROCK DITCH CHECK
(E-7) DROP INLET SILT FENCE
(E-11) SILT FENCE
(E-14) SEDIMENT BASIN



TEMPORARY EROSION CONTROL DETAILS
STAGE I

7/31/2012
R050189.DGN

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.		050189	32	340

(2) TEMPORARY EROSION CONTROL DETAILS

NOTE: FOR STAGE 2, RETAIN EROSION CONTROL ITEMS INSTALLED FOR STAGE 1 TEMPORARY WIDENING AND CONSTRUCTION.

QUANTITIES FOR STAGE 2
LT. - HWY. 13
STA. 246+70 - 255+00

SAND BAG DITCH CHECKS 22 BAGS
ROCK DITCH CHECKS 18 CU. YD.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/8/12

DATE OF REVISION	REVISION

- (E-5) SAND BAG DITCH CHECK
- (E-6) ROCK DITCH CHECK
- (E-7) DROP INLET SILT FENCE
- (E-11) SILT FENCE
- (E-14) SEDIMENT BASIN

QUANTITIES FOR STAGE 2
LT. - HWY. 13
STA. 255+00 - 270+00

SAND BAG DITCH CHECKS 22 BAGS
ROCK DITCH CHECKS 39 CU. YD.

(E-6) (LT. CONSTRUCTION)
STA. 257+10 - STA. 265+90
80' O.C.

(E-6) (LT. CONSTRUCTION)
STA. 255+80 - STA. 257+10
130' O.C.

7/31/2012

R050189.DGN

TEMPORARY EROSION CONTROL DETAILS
STAGE 2

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.		050189	33	340

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/8/12

QUANTITIES FOR STAGE 2
LT. - HWY. 13
STA. 270+60 - 285+00

SAND BAG DITCH CHECKS	110 BAGS
SILT FENCE	250 LIN. FT.
SEDIMENT BASINS	46 CU. YD.
OBLIT. SED. BASINS	46 CU. YD.

E-5 (LT. CONSTRUCTION)
STA. 270+60 - STA. 275+00
180' O.C.

SILT FENCE
STA. 282+60 - STA. 285+00 = 250 LIN. FT.

DATE OF REVISION	REVISION

E-5 SAND BAG DITCH CHECK
E-6 ROCK DITCH CHECK
E-7 DROP INLET SILT FENCE
E-11 SILT FENCE
E-14 SEDIMENT BASIN

DROP INLET SILT FENCE = 125 LIN. FT.
STA. 285+00 - STA. 300+00: 5 DROP INLETS

SILT FENCE
STA. 285+00 - STA. 286+00 = 105 LIN. FT.
STA. 286+30 - STA. 291+70 = 597 LIN. FT.
STA. 291+98 - STA. 292+27 = 29 LIN. FT.
STA. 292+50 - STA. 294+62 = 216 LIN. FT.
STA. 294+82 - STA. 300+00 = 494 LIN. FT.

QUANTITIES FOR STAGE 2
LT. - HWY. 13
STA. 285+00 - 300+00

SILT FENCE	1,441 LIN. FT.
DROP INLET SILT FENCE	125 LIN. FT.

7/31/2012

R050189.DGN

TEMPORARY EROSION CONTROL DETAILS
STAGE 2

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.		050189	34	340

(2) TEMPORARY EROSION CONTROL DETAILS

SILT FENCE
STA. 300+00 - STA. 304+82 = 534 LIN. FT.
STA. 305+00 - STA. 308+56 = 365 LIN. FT.
STA. 308+86 - STA. 315+00 = 620 LIN. FT.

DROP INLET SILT FENCE = 225 LIN. FT.
STA. 300+00 - STA. 315+00: 9 DROP INLETS

QUANTITIES FOR STAGE 2
LT. - HWY. 13
STA. 300+00 - 315+00

SILT FENCE 1,519 LIN. FT.
DROP INLET SILT FENCE 225 LIN. FT.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7686
MICHAEL D. FUGETT
8/8/12

E-11 E-11 E-11

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050189	35	340

(2) TEMPORARY EROSION CONTROL DETAILS

SILT FENCE
STA. 330+00 - STA. 340+75 = 1,081 LIN. FT.
STA. 340+93 - STA. 343+00 = 209 LIN. FT.

QUANTITIES FOR STAGE 2
LT. - HWY. 13
STA. 330+00 - 345+00

SILT FENCE 1,290 LIN. FT.
SAND BAG DITCH CHECKS 22 BAGS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13605
MICHAEL D. FUGETT
8/8/12

(E-5) STA. 344+00 - STA. 349+40
110' O.C.

DATE OF REVISION	REVISION

(E-5) SAND BAG DITCH CHECK
(E-6) ROCK DITCH CHECK
(E-7) DROP INLET SILT FENCE
(E-11) SILT FENCE
(E-14) SEDIMENT BASIN

SILT FENCE
STA. 349+80 - STA. 357+70 = 798 LIN. FT.

QUANTITIES FOR STAGE 2
LT. - HWY. 13
STA. 345+00 - 358+00

SILT FENCE 798 LIN. FT.
SAND BAG DITCH CHECKS 110 BAGS

(E-5) STA. 344+00 - STA. 349+40
110' O.C.

7/31/2012

R050189.DGN

TEMPORARY EROSION CONTROL DETAILS STAGE 2

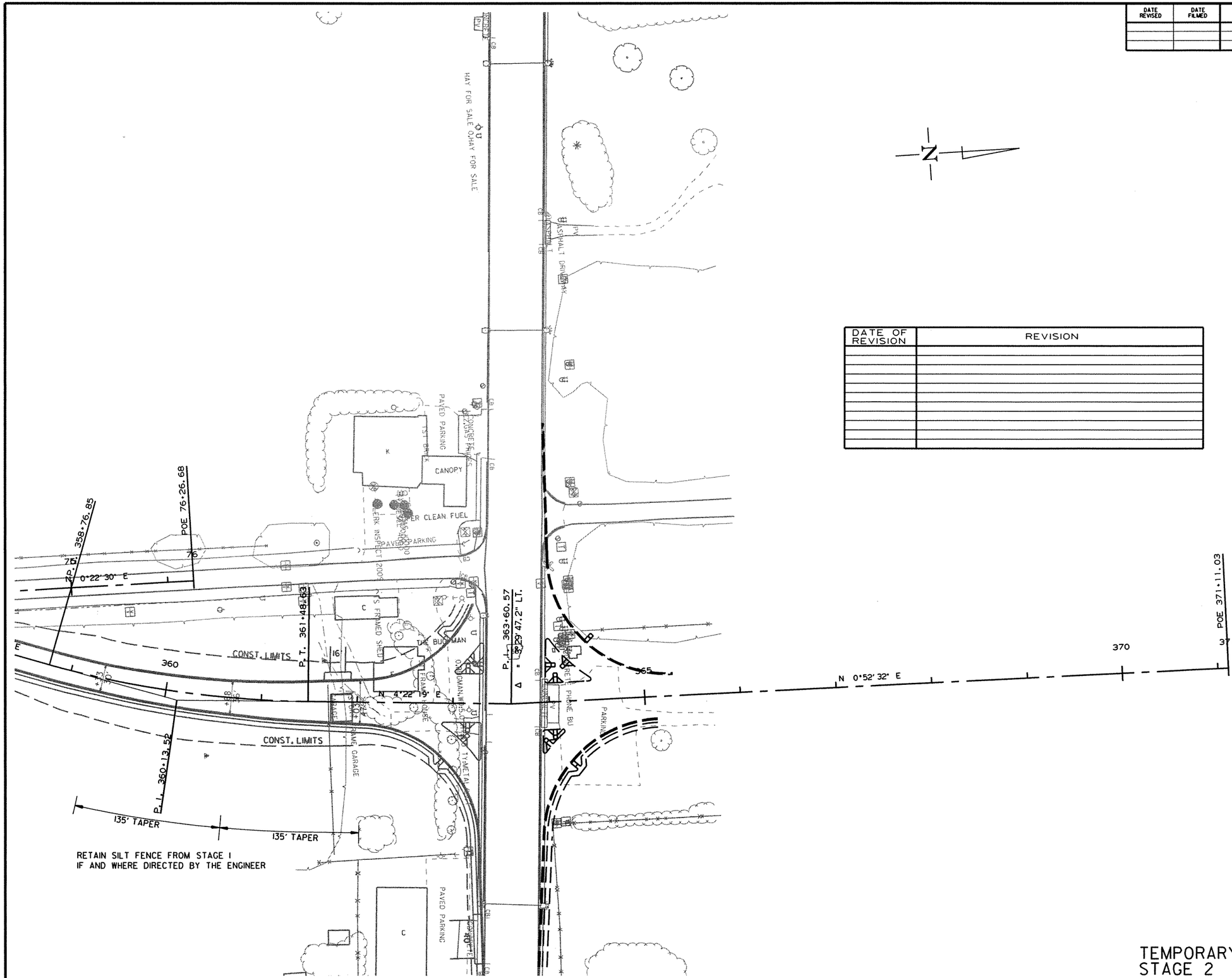
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				6	ARK.			
				JOB NO.		050189	36	340

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9600
MICHAEL D. PUGETT
8/8/12

DATE OF REVISION	REVISION

(E-5) SAND BAG DITCH CHECK
(E-6) ROCK DITCH CHECK
(E-7) DROP INLET SILT FENCE
(E-11) SILT FENCE
(E-14) SEDIMENT BASIN



TEMPORARY EROSION CONTROL DETAILS
STAGE 2

7/31/2012

R050189.DGN

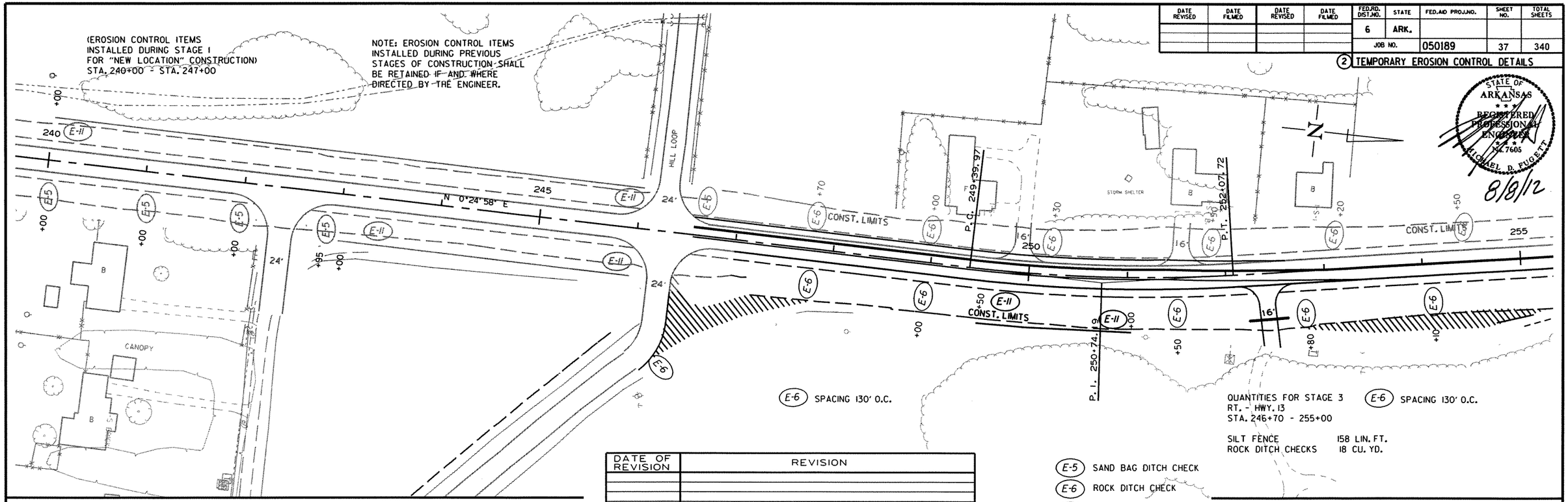
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050189	37	340

(2) TEMPORARY EROSION CONTROL DETAILS

(EROSION CONTROL ITEMS INSTALLED DURING STAGE I FOR "NEW LOCATION" CONSTRUCTION) STA. 240+00 - STA. 247+00

NOTE: EROSION CONTROL ITEMS INSTALLED DURING PREVIOUS STAGES OF CONSTRUCTION SHALL BE RETAINED IF AND WHERE DIRECTED BY THE ENGINEER.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 7605
MICHAEL D. FUGETT
8/8/12



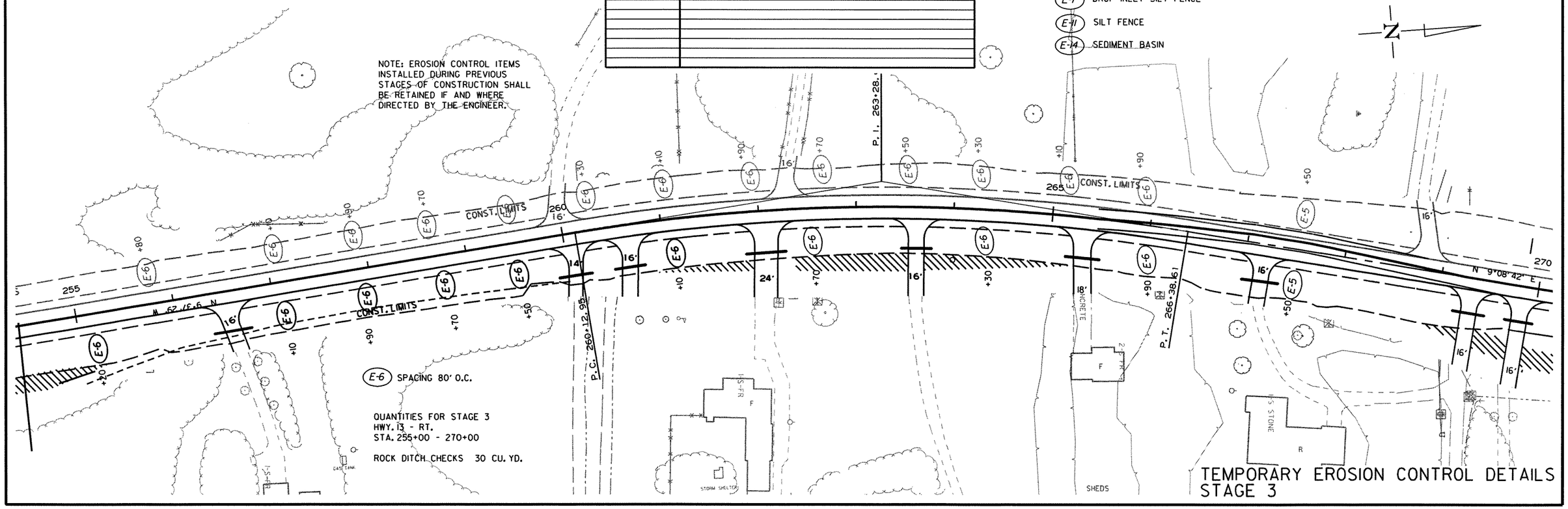
E-6 SPACING 130' O.C.

QUANTITIES FOR STAGE 3
RT. - HWY. 13
STA. 246+70 - 255+00

SILT FENCE	158 LIN. FT.
ROCK DITCH CHECKS	18 CU. YD.

DATE OF REVISION	REVISION

E-5 SAND BAG DITCH CHECK
E-6 ROCK DITCH CHECK
E-7 DROP INLET SILT FENCE
E-11 SILT FENCE
E-14 SEDIMENT BASIN



E-6 SPACING 80' O.C.

QUANTITIES FOR STAGE 3
HWY. 13 - RT.
STA. 255+00 - 270+00

ROCK DITCH CHECKS 30 CU. YD.

TEMPORARY EROSION CONTROL DETAILS
STAGE 3

7/31/2012

R050189.DGN

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.		050189	38	340

(2) TEMPORARY EROSION CONTROL DETAILS

QUANTITIES FOR STAGE 3
STA. 270+00 - 285+00 (RT. CONST.)

DROP INLET SILT FENCE	50 LIN. FT.
SAND BAG DITCH CHECKS	132 BAGS
SEDIMENT BASIN	46 CU. YD.
OBLIT. SED. BASIN	46 CU. YD.

NOTE: EROSION CONTROL ITEMS INSTALLED DURING PREVIOUS STAGES OF CONSTRUCTION SHALL BE RETAINED IF AND WHERE DIRECTED BY THE ENGINEER.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 7605
MICHAEL D. FUGETT
8/8/12

SILT FENCE - IN PLACE FROM STAGE 1 - RETAIN IF AND WHERE DIRECTED BY THE ENGINEER.

(E-5) SAND BAG DITCH CHECKS
STA. 276+00 - STA. 280+30
SPACING 110' O.C.

DATE OF REVISION	REVISION

(E-5) SAND BAG DITCH CHECK
(E-6) ROCK DITCH CHECK
(E-7) DROP INLET SILT FENCE
(E-11) SILT FENCE
(E-14) SEDIMENT BASIN

NOTE: EROSION CONTROL ITEMS INSTALLED DURING PREVIOUS STAGES OF CONSTRUCTION SHALL BE RETAINED IF AND WHERE DIRECTED BY THE ENGINEER.

(E-5) SPACING 50' O.C.

QUANTITIES FOR STAGE 3
STA. 285+00 - 300+00 (RT. CONST.)

DROP INLET SILT FENCE	200 LIN. FT.
SILT FENCE	1,258 LIN. FT.

TEMPORARY EROSION CONTROL DETAILS STAGE 3

7/31/2012

R050189.DGN

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.	050189		39	340

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 17603
MICHAEL D. FUGETT
8/8/12

QUANTITIES FOR STAGE 3
STA. 300+00 - 315+00 (RT. CONST.)

SILT FENCE 452 LIN. FT.

NOTE: EROSION CONTROL ITEMS INSTALLED DURING PREVIOUS STAGES OF CONSTRUCTION SHALL BE RETAINED IF AND WHERE DIRECTED BY THE ENGINEER.

P.T. 303+96.36
CONST. LIMITS
N 0°06' 06" E
E-14 5' x 75' x 5' 69 C.Y.
E-5 SPACING 80' O.C.
E-5 SPACING 60' O.C.
HILL CREEK CIRCLE

NOTE: EROSION CONTROL ITEMS INSTALLED DURING PREVIOUS STAGES OF CONSTRUCTION SHALL BE RETAINED IF AND WHERE DIRECTED BY THE ENGINEER.

P.I. 318+08.64
270' TAPER
HONEY HILL CHRISTIAN UNION CHURCH
PAVED P.A.
P.C. 315+45.29
HONEY HILL CEMETERY
PARKING
CHURCH
P.T. 320+71.89
TRAIL LACK EST
WEST COUNTRY CLUB LANE
SHEDS
270' TAPER
N 2°44' 05" E
CONST. LIMITS

QUANTITIES FOR STAGE 3
STA. 315+00 - 330+00 (RT. CONST.)

SILT FENCE	478 LIN. FT.
DROP INLET SILT FENCE	150 LIN. FT.
SAND BAG DITCH CHECKS	198 BAGS
ROCK DITCH CHECKS	21 CU. YD.

E-5 E-6 STA. 320+40 - 321+60 ALTERNATE @ 50' O.C.

DATE OF REVISION	REVISION

- E-5 SAND BAG DITCH CHECK
- E-6 ROCK DITCH CHECK
- E-7 DROP INLET SILT FENCE
- E-11 SILT FENCE
- E-14 SEDIMENT BASIN

8/1/2012

R050189.DGN

TEMPORARY EROSION CONTROL DETAILS STAGE 3

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.		050189	40	340

(2) TEMPORARY EROSION CONTROL DETAILS

NOTE: EROSION CONTROL ITEMS INSTALLED DURING PREVIOUS STAGES OF CONSTRUCTION SHALL BE RETAINED IF AND WHERE DIRECTED BY THE ENGINEER.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
9307605
MICHAEL D. PUGH
8/8/12

E-5 SPACING 100' O.C.

QUANTITIES FOR STAGE 3
STA. 330+00 - 345+00 (RT. CONST.)

SILT FENCE	487 LIN. FT.
SAND BAG DITCH CHECKS	132 BAGS
DROP INLET SILT FENCE	275 LIN. FT.

DATE OF REVISION	REVISION

E-5 SAND BAG DITCH CHECK
E-6 ROCK DITCH CHECK
E-7 DROP INLET SILT FENCE
E-11 SILT FENCE
E-14 SEDIMENT BASIN

NOTE: EROSION CONTROL ITEMS INSTALLED DURING PREVIOUS STAGES OF CONSTRUCTION SHALL BE RETAINED IF AND WHERE DIRECTED BY THE ENGINEER.

QUANTITIES FOR STAGE 3
STA. 345+00 - 357+50 (RT. CONST.)

SILT FENCE	968 LIN. FT.
SAND BAG DITCH CHECKS	22 BAGS
DROP INLET SILT FENCE	250 LIN. FT.

8/1/2012

R050189.DGN

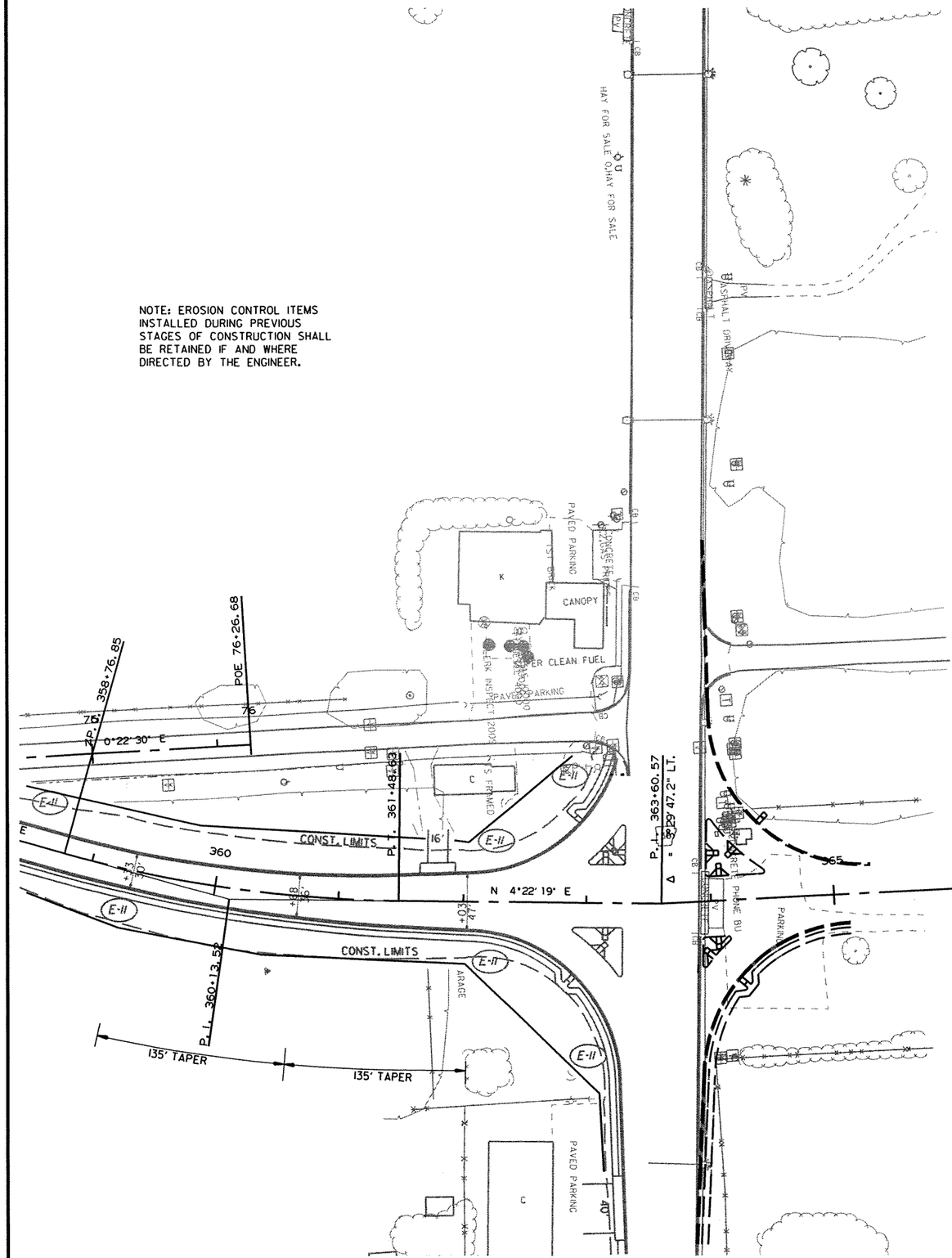
TEMPORARY EROSION CONTROL DETAILS
STAGE 3

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.		050189	41	340

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 7605
MICHAEL D. FUGETT
8/8/12

NOTE: EROSION CONTROL ITEMS INSTALLED DURING PREVIOUS STAGES OF CONSTRUCTION SHALL BE RETAINED IF AND WHERE DIRECTED BY THE ENGINEER.



DATE OF REVISION	REVISION

(E-5) SAND BAG DITCH CHECK
(E-6) ROCK DITCH CHECK
(E-7) DROP INLET SILT FENCE
(E-11) SILT FENCE
(E-14) SEDIMENT BASIN

TEMPORARY EROSION CONTROL DETAILS
STAGE 3

8/1/2012

R050189.DGN

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.		050189	42	340

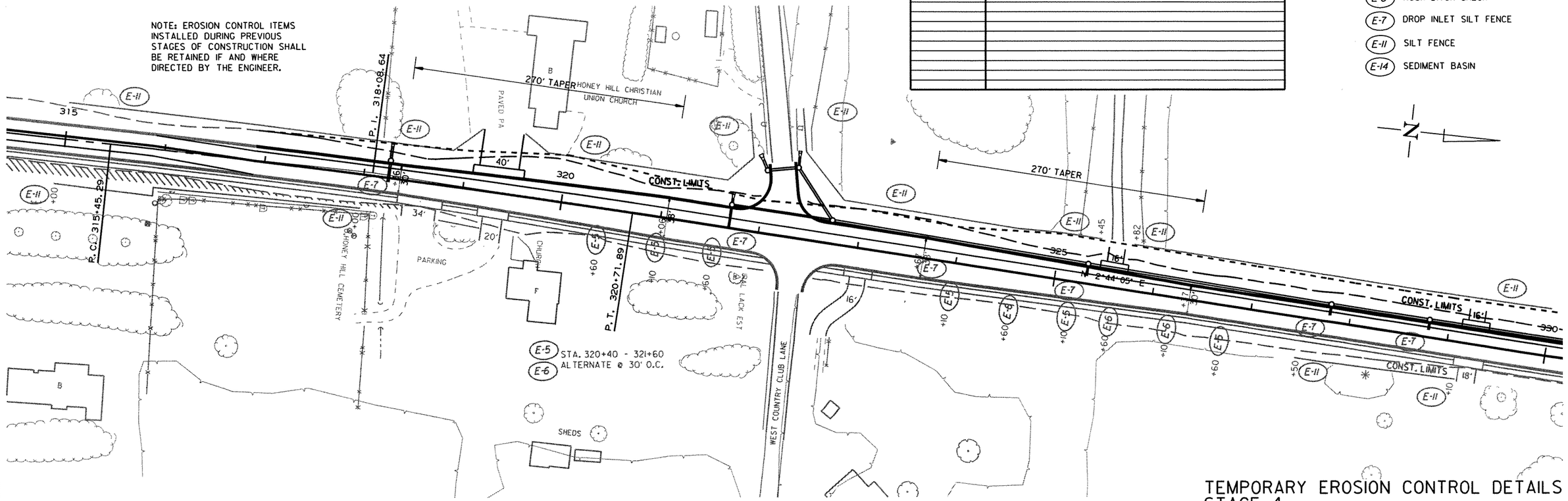
(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 17605
MICHAEL D. FUGETT
8/8/12

DATE OF REVISION	REVISION

(E-5) SAND BAG DITCH CHECK
(E-6) ROCK DITCH CHECK
(E-7) DROP INLET SILT FENCE
(E-11) SILT FENCE
(E-14) SEDIMENT BASIN

NOTE: EROSION CONTROL ITEMS INSTALLED DURING PREVIOUS STAGES OF CONSTRUCTION SHALL BE RETAINED IF AND WHERE DIRECTED BY THE ENGINEER.



TEMPORARY EROSION CONTROL DETAILS
STAGE 4

8/1/2012

R050189.DGN

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.	050189		43	340

(2) TEMPORARY EROSION CONTROL DETAILS

NOTE: EROSION CONTROL ITEMS INSTALLED DURING PREVIOUS STAGES OF CONSTRUCTION SHALL BE RETAINED IF AND WHERE DIRECTED BY THE ENGINEER.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/8/12

E-5 SPACING 100' O.C.

DATE OF REVISION	REVISION

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.		050189	44	340

(2) TEMPORARY EROSION CONTROL DETAILS

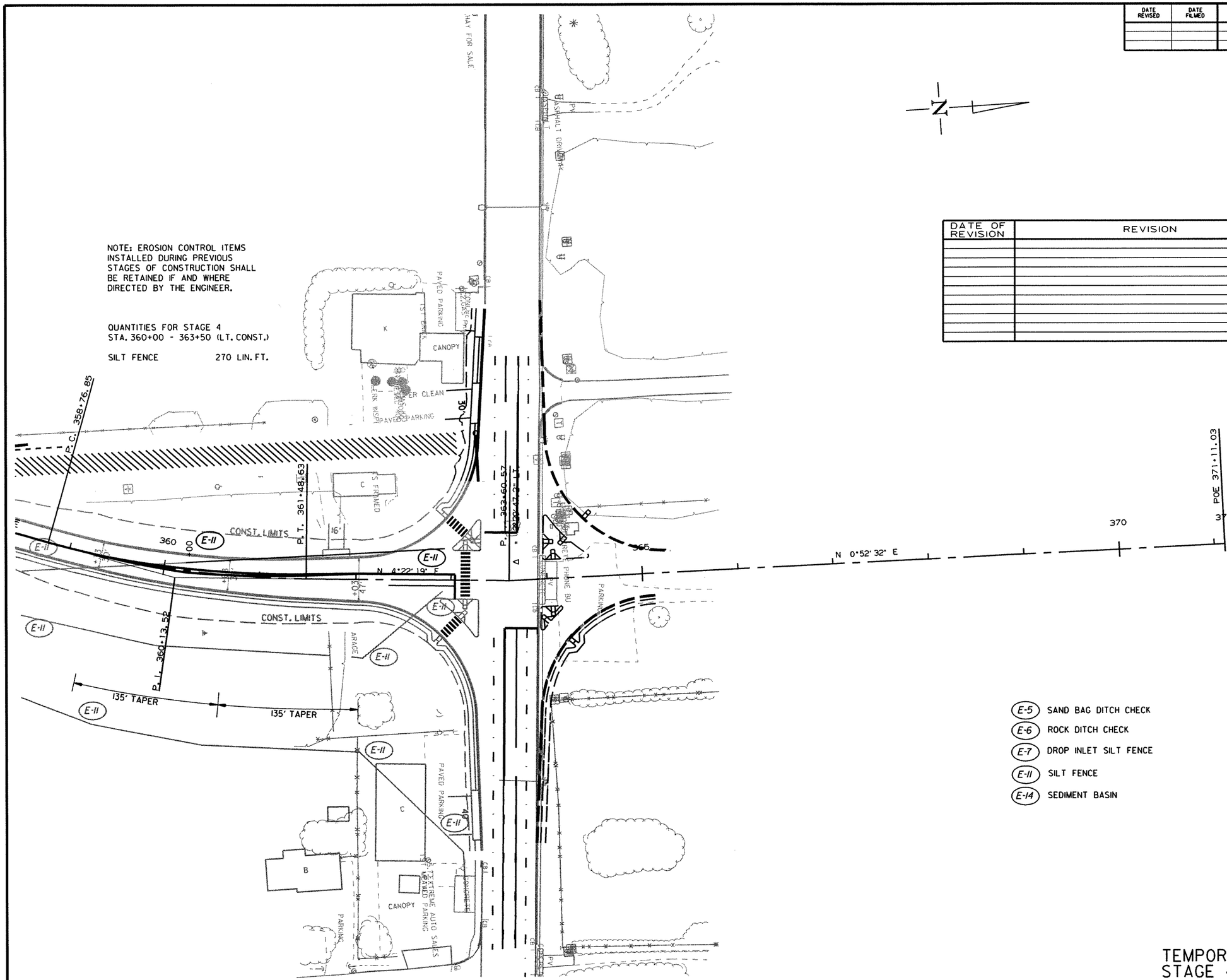
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/8/12

DATE OF REVISION	REVISION

NOTE: EROSION CONTROL ITEMS INSTALLED DURING PREVIOUS STAGES OF CONSTRUCTION SHALL BE RETAINED IF AND WHERE DIRECTED BY THE ENGINEER.

QUANTITIES FOR STAGE 4
STA. 360+00 - 363+50 (LT. CONST.)

SILT FENCE	270 LIN. FT.



E-5 SAND BAG DITCH CHECK
E-6 ROCK DITCH CHECK
E-7 DROP INLET SILT FENCE
E-11 SILT FENCE
E-14 SEDIMENT BASIN

TEMPORARY EROSION CONTROL DETAILS
STAGE 4

8/1/2012
R050189.DGN

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.		050189	45	340

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
14760
MICHAEL D. FUGETT
8/8/12

STAGE 1

STA. 106+20 TO STA. 247+00 MAINTAIN TRAFFIC ON CROSSING STREETS WITH LEVELING. CONSTRUCT HWY. 13 NEW LOCATION RT. AND LT. & BRIDGE

STA. 502+92 TO STA. 514+05 MAINTAIN TRAFFIC ON EXISTING HWY. 267. CONSTRUCT HWY. 13 NOTCH AND WIDEN ON LT. SIDE.

STA. 247+00 TO STA. 255+00 MAINTAIN TRAFFIC ON EXISTING HONEY HILL RD.

STA. 255+00 TO STA. 260+00 MAINTAIN TRAFFIC ON EXISTING HONEY HILL RD. CONSTRUCT TEMPORARY WIDENING ON RT. SIDE.

STA. 260+00 TO STA. 272+00 MAINTAIN TRAFFIC ON EXISTING HONEY HILL RD.

STA. 272+00 TO STA. 287+50 MAINTAIN TRAFFIC ON EXISTING HONEY HILL RD. CONSTRUCT TEMPORARY WIDENING ON RT. SIDE.

STA. 287+50 TO STA. 299+00 MAINTAIN TRAFFIC ON EXISTING HONEY HILL RD.

STA. 299+00 TO STA. 308+70 MAINTAIN TRAFFIC ON EXISTING HONEY HILL RD. CONSTRUCT TEMPORARY WIDENING ON RT. SIDE.

STA. 308+70 TO STA. 357+40 MAINTAIN TRAFFIC ON EXISTING HONEY HILL RD.

STA. 357+40 TO STA. 363+35 MAINTAIN TRAFFIC ON EXISTING HONEY HILL RD. CONSTRUCT HWY. 13 ON LT. AND RT. SIDE.

STAGE 2

STA. 99+87 TO STA. 106+07 MAINTAIN TRAFFIC ON EXISTING HWY. 13. CONSTRUCT HWY. 13 NOTCH AND WIDEN ON LT. SIDE.

STA. 502+92 TO STA. 508+48 MAINTAIN TRAFFIC ON EXISTING HWY. 267. CONSTRUCT HWY. 267 NOTCH AND WIDEN ON RT. SIDE.

STA. 246+08 TO STA. 253+00 MAINTAIN TRAFFIC ON EXISTING HONEY HILL RD. OR TEMPORARY WIDENING. CONSTRUCT HWY. 13 ON LT. SIDE WITH FULL DEPTH SHOULDERS.

STA. 253+00 TO STA. 265+43 MAINTAIN TRAFFIC ON EXISTING HONEY HILL RD. OR TEMPORARY WIDENING. CONSTRUCT HWY. 13 ON LT. SIDE.

STA. 265+43 TO STA. 269+24 MAINTAIN TRAFFIC ON EXISTING HONEY HILL RD. OR TEMPORARY WIDENING. CONSTRUCT HWY. 13 ON LT. SIDE WITH FULL DEPTH SHOULDERS.

STA. 269+24 TO STA. 274+50 MAINTAIN TRAFFIC ON EXISTING HONEY HILL RD. OR TEMPORARY WIDENING. CONSTRUCT HWY. 13 ON LT. SIDE.

STA. 274+50 TO STA. 282+29 MAINTAIN TRAFFIC ON EXISTING HONEY HILL RD. OR TEMPORARY WIDENING. CONSTRUCT HWY. 13 ON LT. SIDE WITH FULL DEPTH SHOULDERS.

STA. 282+29 TO STA. 316+90 MAINTAIN TRAFFIC ON EXISTING HONEY HILL RD. OR TEMPORARY WIDENING. CONSTRUCT HWY. 13 ON LT. SIDE.

STA. 316+90 TO STA. 358+08 MAINTAIN TRAFFIC ON EXISTING HONEY HILL RD. OR TEMPORARY WIDENING. CONSTRUCT HWY. 13 ON LT. SIDE WITH ADDTIONAL WIDENING IN PLACE OF CURB.

STAGE 3

STA. 99+87 TO STA. 106+07 MAINTAIN TRAFFIC ON EXISTING HWY. 13. CONSTRUCT HWY. 13 NOTCH AND WIDEN ON LT. SIDE.

STA. 508+48 TO STA. 514+05 MAINTAIN TRAFFIC ON EXISTING HWY. 13. CONSTRUCT HWY. 13 NOTCH AND WIDEN ON LT. SIDE.

STA. 246+08 TO STA. 358+08 MAINTAIN TRAFFIC ON HWY. 13 ON LT. SIDE. CONSTRUCT HWY. 13 ON RT. SIDE.

STAGE 4

STA. 316+90 TO STA. 358+08 MAINTAIN TRAFFIC ON EXISTING HWY. 13. CONSTRUCT HWY. 13 NOTCH AND WIDEN ON LT. SIDE FOR CURB AND GUTTER.

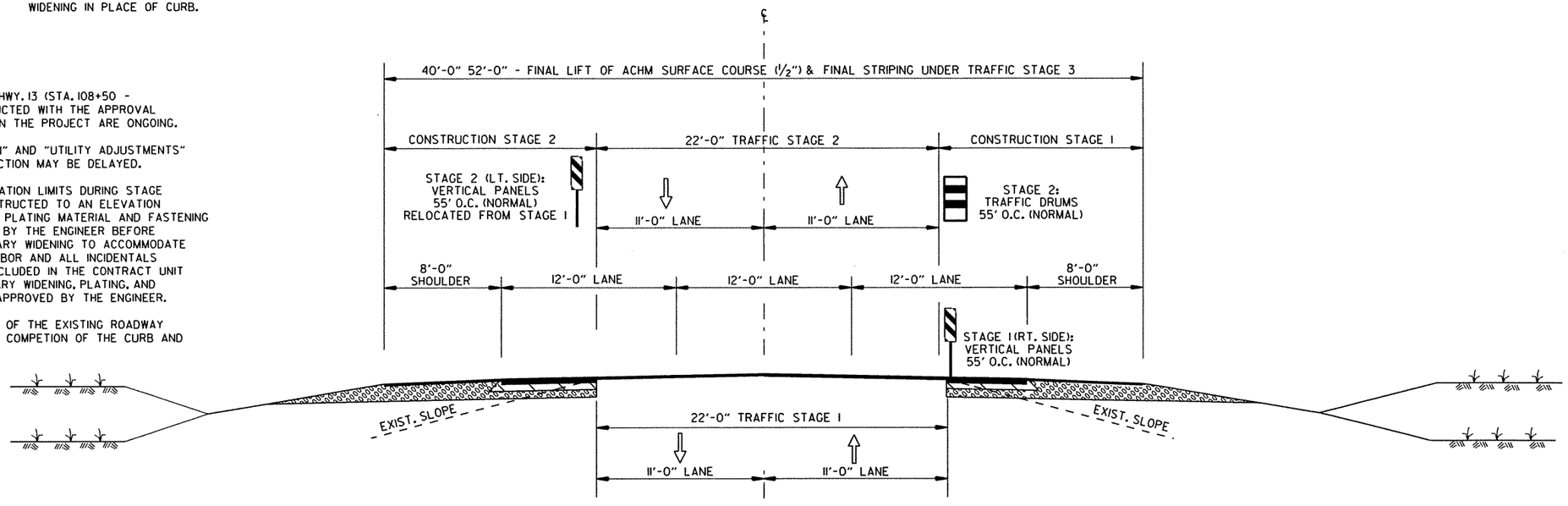
STA. 356+50 + STA. 363+50 OBLITERATE EXISTING HONEY HILL RD.

NOTES:
1. STAGES 1-3 AT THE INTERSECTION OF HWY. 13/HWY. 267 AND HWY. 13 (STA. 108+50 - STA. 246+00 - NEW LOCATION WITH BRIDGE) MAY BE CONSTRUCTED WITH THE APPROVAL OF THE ENGINEER AS CONSTRUCTION AT OTHER LOCATIONS ON THE PROJECT ARE ONGOING.

2. REFER TO SPECIAL PROVISIONS "SEQUENCE OF CONSTRUCTION" AND "UTILITY ADJUSTMENTS" FOR LOCATIONS WITHIN THE PROJECT LIMITS WHERE CONSTRUCTION MAY BE DELAYED.

3. HWY. 13 (STA. 316+00 - STA. 357+40 - LT.): WITHIN THESE STATION LIMITS DURING STAGE CONSTRUCTION, THE DROP INLETS SHALL BE PARTIALLY CONSTRUCTED TO AN ELEVATION IF AND WHERE APPROVED BY THE ENGINEER, COVERED WITH A PLATING MATERIAL AND FASTENING METHOD SUBMITTED BY THE CONTRACTOR FOR PREAPPROVAL BY THE ENGINEER BEFORE COVERING WITH THE 2" ACHM SURFACE COURSE FOR TEMPORARY WIDENING TO ACCOMMODATE STAGE 3 TRAFFIC. THE PLATING MATERIALS, INSTALLATION, LABOR AND ALL INCIDENTALS NECESSARY TO COMPLETE THE WORK WILL BE CONSIDERED INCLUDED IN THE CONTRACT UNIT PRICE BID FOR THE DROP INLETS. REMOVAL OF THE TEMPORARY WIDENING, PLATING, AND COMPLETION OF THE DROP INLETS SHALL BE IF AND WHERE APPROVED BY THE ENGINEER.

4. EXISTING HWY. 13 (STA. 357+40 - STA. 363+50): OBLITERATION OF THE EXISTING ROADWAY SHALL BE WITH THE APPROVAL OF THE ENGINEER AND AFTER COMPETION OF THE CURB AND GUTTER SECTION OF THE PROJECT.



MAINTENANCE OF TRAFFIC - OPEN SHOULDER STAGE CONSTRUCTION

8/8/2012

R050189.DGN

MAINTENANCE OF TRAFFIC ALL STAGES

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.		050189	46	340

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
RICHARD D. RUGETT
8/18/12

(1) G20-2 (48" X 24")
END ROAD WORK

(1) W20-1 (48" X 48") ROAD WORK 1000 FT
(1) W20-1 (48" X 48") ROAD WORK 1000 FT
(1) W20-1 (48" X 48") ROAD WORK 500 FT

ALL STAGES INTERSECTION HWYS. 13/267: INSTALL ADVANCE WARNING SIGNS:
HWY. 13 - AT THE BEGINNING OF PROJECT
HWY. 267 BEFORE & AFTER INTERSECTION

DO NOT PASS
(1) R4-1 (24" X 30")
INSTALL IF AND WHERE DIRECTED BY THE ENGINEER

NOTES:
TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS IF AND WHERE DIRECTED BY THE ENGINEER.

330' TAPER
TRAFFIC DRUMS
5 TRAFFIC DRUMS
ROAD CLOSED
(1) RII-2 (48" X 30")
16' BARR. TYP. III LT.
16' BARR. TYP. III RT.
16' BARR. TYP. III LT.
8' BARR. TYP. III RT.
8' BARR. TYP. III RT.
INSTALL VERTICAL PANELS 40' O.C.
330' TAPER
100' TRANSITION
SHOULDER CLOSED
(1) RSP-1 (48" X 30")
INSTALL IF AND WHERE DIRECTED BY THE ENGINEER BEFORE TRAFFIC APPROACHES CONSTRUCTION.

PROP. ROW
EXIST. ROW
C.L. CONST.
P. C. 102+53.51
P. I. 103+98.37
P. I. 105+43.20
P. I. 108+44.99
P. C. 108+44.99
P. I. 110+35.13
P. T. 112+25.24
N 3°23' 10.2" W
N 3°23' 10" W
N 1°29' 06" W

STA. 99+87.00 - BEGIN JOB 050189
LOG MILE 3.04

STA. 106+06.69 HWY. 13 =
STA. 508+48.33 HWY. 267
Δ = 64° 34" 17.2"

NOTES:
ALL INTERSECTION IMPROVEMENTS MAY BE CONSTRUCTED WITH THE APPROVAL OF THE ENGINEER AS CONSTRUCTION AT OTHER LOCATIONS ON THE PROJECT ARE ONGOING.

MAINTAIN TRAFFIC ON HWY. 267 AND HWY. 13 FOR ALL STAGES.

"STAGE I - HWYS. 13/267 INTERSECTION"

INSTALL TEMPORARY TRAFFIC CONTROL DEVICES TO NOTCH AND WIDEN HWY. 267 ON LT. SIDE.

HWY. 13 (NEW LOCATION): PROVIDE TEMPORARY ACCESS TO PROPERTY OWNERS ON HWY. 13 IF AND WHERE DIRECTED BY THE ENGINEER AND CONSTRUCT DRIVEWAY @ STA. 109+90 (LT.) WITH SIDE DRAINS.

STAGE I - INTERSECTION HWYS. 13/267 MAINTENANCE OF TRAFFIC DETAILS

8/1/2012
R050189.DGN

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				6	ARK.			
				JOB NO.		050189	47	340

(2) MAINTENANCE OF TRAFFIC DETAILS

NOTE:
TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS IF AND WHERE DIRECTED BY THE ENGINEER.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
MICHAEL D. FUGETT
8/8/12

(1) RII-2 (48" X 30")
16' BARR. TYP. III RT.
16' BARR. TYP. III LT.
ROAD CLOSED

CONST. LIMITS
180 185 190 195
59° 0' 44"
16 TRAFFIC DRUMS
20' O.C. DRIVEWAY
METAL BARN GOOD CONDITION

(1) RII-2 (48" X 30")
16' BARR. TYP. III RT.
16' BARR. TYP. III LT.
ROAD CLOSED

CONST. LIMITS
195 200 205 210
18 TRAFFIC DRUMS
20' O.C. DRIVEWAY
METAL BARN GOOD CONDITION
BARN OLD POOR CONDITION

NOTE:
TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS IF AND WHERE DIRECTED BY THE ENGINEER.

MAINTENANCE OF TRAFFIC DETAILS STAGE I

R050189.DGN 8/1/2012

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.		050189	48	340

2 MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/8/12

END ROAD WORK
(1) G20-2 (48" X 24")

ROAD WORK AHEAD
(1) W20-1 (48" X 48")

NOTE:
TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS IF AND WHERE DIRECTED BY THE ENGINEER.

ACCESS TO PROPERTY WILL BE COORDINATED WITH THE PROPERTY OWNERS. TRAFFIC DRUMS PROVIDED WILL BE REARRANGED IF AND WHERE DIRECTED BY THE ENGINEER.

ROAD CLOSED
(1) RII-2 (48" X 30")
16' BARR. TYP. III RT.
16' BARR. TYP. III LT.

P.C. 214+43.72

P.I. 227+66.05

P.I. 236+80.23

P.C. 234+31.41

P.T. 239+28.34

CONST. LIMITS

40' R

24'

16'

N 16°20' W

210 215 220 225 230 235 240

P.O.B.

P.O.T.

S-FR GARAGE

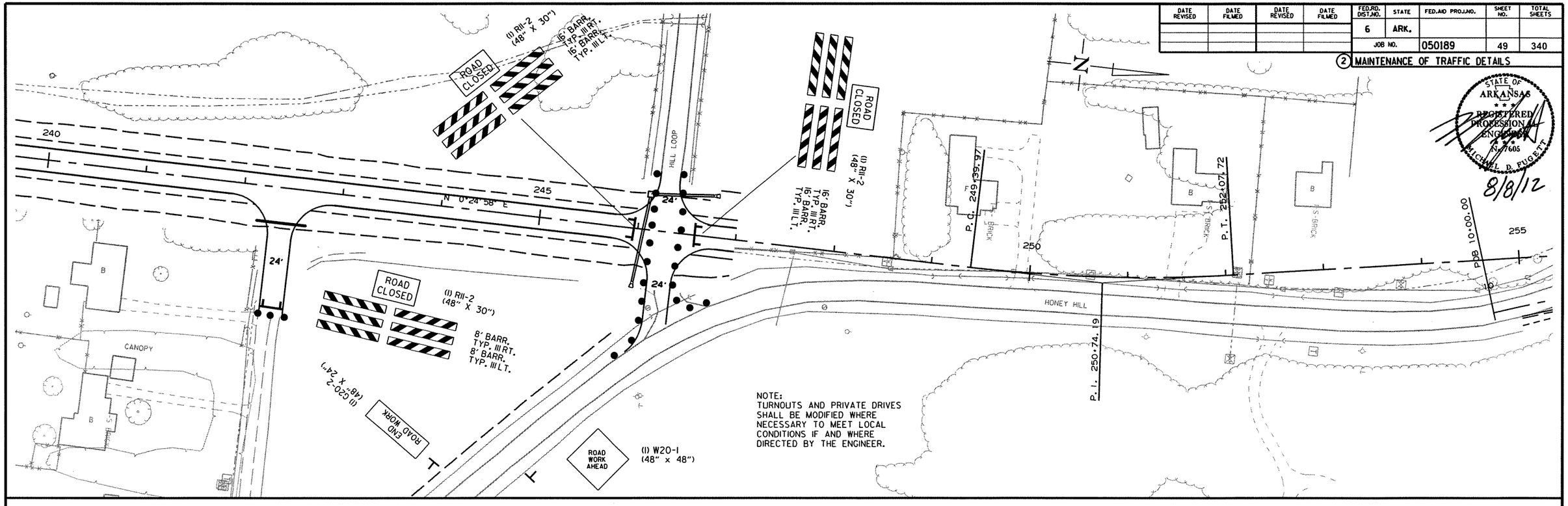
8/1/2012

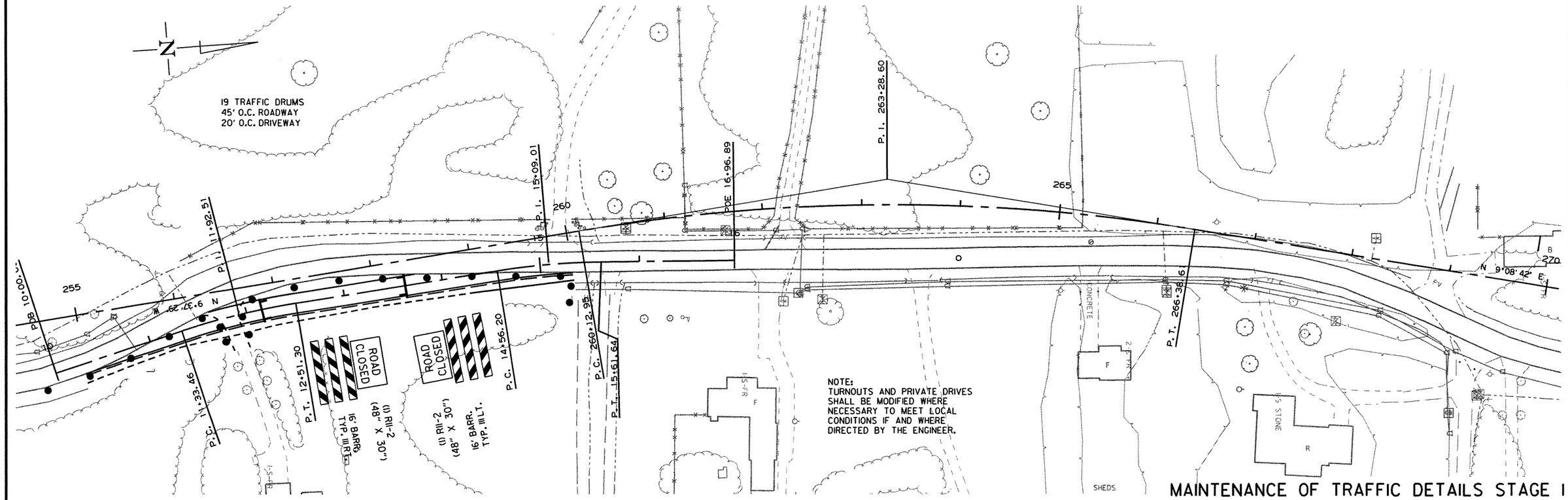
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MAINTENANCE OF TRAFFIC DETAILS STAGE I

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.		050189	49	340

(2) MAINTENANCE OF TRAFFIC DETAILS





MAINTENANCE OF TRAFFIC DETAILS STAGE I

8/1/2012

R050189.DGN

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				6	ARK.			
				JOB NO.		050189	50	340

(2) MAINTENANCE OF TRAFFIC DETAILS

NOTE:
TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS IF AND WHERE DIRECTED BY THE ENGINEER.

49 TRAFFIC DRUMS
90' O.C. ROADWAY
20' O.C. DRIVEWAY

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 7605
MICHAEL D. FUGETT
8/8/12

POB 30+00.00
P.I. 30+94.49
P.C. 272+86.66
P.C. 32+14.55
P.T. 34+84.88
P.T. 277+07.65
P.I. 42+79.82
P.I. 284+36.25
P.C. 30+14.04
P.T. 31+74.91
P.I. 274+98.01
P.I. 33+49.81
P.C. 40+00.95
P.C. 282+34.18
N 3°29'05" W
100' TAPER
100' TAPER
ROAD WORK AHEAD
(1) W20-1 (48" x 48")
END ROAD WORK
(1) G20-2 (48" x 24")

NOTE:
TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS IF AND WHERE DIRECTED BY THE ENGINEER.

POE 46+76.06
P.T. 286+37.06
P.T. 45+56.94
N 4°33'33" E
P.C. 295+04.84
POB 50+00.00
P.I. 50+94.36
P.I. 299+50.83
P.C. 50+06.73
P.T. 51+81.93
3 TRAFFIC DRUMS
90' O.C. ROADWAY

8/7/2012
R050189.DGN

MAINTENANCE OF TRAFFIC DETAILS STAGE I

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.		050189	51	340

(2) MAINTENANCE OF TRAFFIC DETAILS

NOTE:
TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS IF AND WHERE DIRECTED BY THE ENGINEER.

25 TRAFFIC DRUMS
90' O.C. ROADWAY
20' O.C. DRIVEWAY

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. PUGETT
8/8/12

P.T. 303+96.36
P.C. 307+14.41
P.T. 58+63.87
P.I. 60+20.24
P.C.C. 62+10.03
N 0°06' 06" E
300
315
55
60
62
HILL CREEK CIRCLE
ROAD CLOSED
(1) R11-2 (48" X 30")
16' BARR. TYP. III RT.
P.I. 57+89.29
(1) R11-2 (48" X 30")
16' BARR. TYP. III LT.
P.C. 59+16.62
P.T. 61+23.65
CONCRETE
B
F

P.I. 318+08.64
315
270' TAPER
HONEY HILL CHRISTIAN UNION CHURCH
PAVED PARKING
(1) W20-1 (48" X 48")
ROAD WORK AHEAD
320
P.C. 315+45.29
PARKING
P.T. 320+71.89
(1) G20-2 (48" X 24")
END ROAD WORK
SHEDS
WEST COUNTRY CLUB LANE
E. BEECHNUT
PONDEROSA ROAD
(1) G20-2 (48" X 24")
END ROAD WORK
270' TAPER
325
N 2°44' 05" E
330
ROAD WORK AHEAD
(1) W20-1 (48" X 48")

NOTE:
TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS IF AND WHERE DIRECTED BY THE ENGINEER.

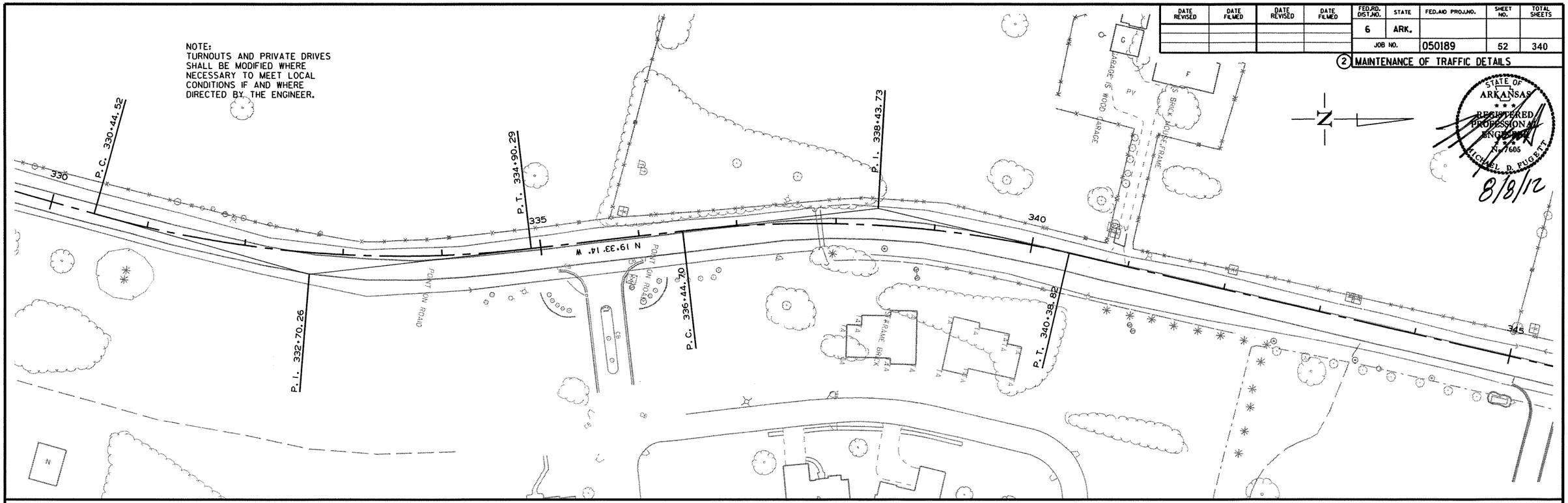
MAINTENANCE OF TRAFFIC DETAILS STAGE I

8/1/2012
R050189.DGN

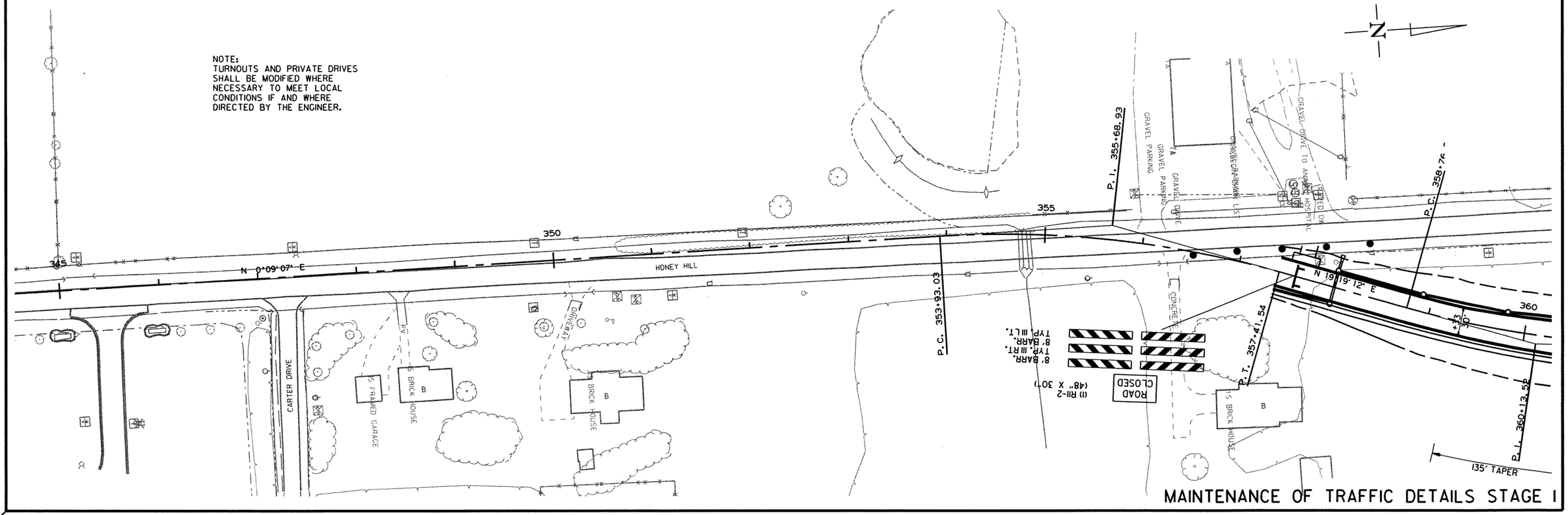
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050189	52	340

(2) MAINTENANCE OF TRAFFIC DETAILS

NOTE:
TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS IF AND WHERE DIRECTED BY THE ENGINEER.



NOTE:
TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS IF AND WHERE DIRECTED BY THE ENGINEER.



MAINTENANCE OF TRAFFIC DETAILS STAGE I

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/8/12

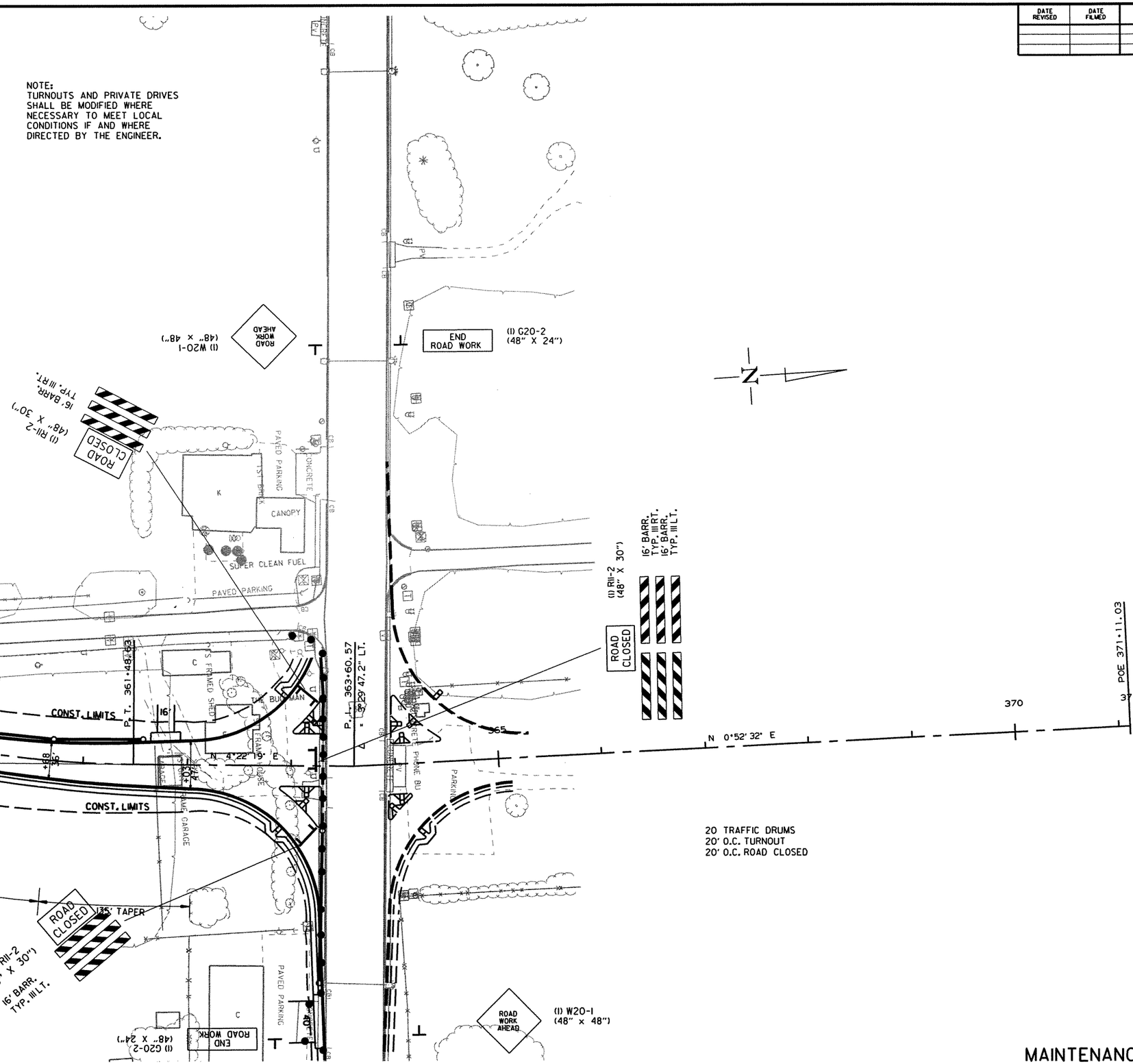
8/1/2012

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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.		050189	53	340

(2) MAINTENANCE OF TRAFFIC DETAILS

NOTE:
TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS IF AND WHERE DIRECTED BY THE ENGINEER.



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/8/12

8/1/2012

R050189.DGN

MAINTENANCE OF TRAFFIC DETAILS STAGE I

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.		050189	54	340

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/8/12

DO NOT PASS (I) R4-1 (24" X 30")
RETAIN FROM STAGE I

SHOULDER CLOSED (I) RSP-1 (48" X 30")
RELOCATE FROM STAGE I & INSTALL IF AND WHERE DIRECTED BY THE ENGINEER BEFORE TRAFFIC APPROACHES CONSTRUCTION.

INSTALL VERTICAL PANELS 40' O.C.

330' TAPER

505

16'

+16.04 16.58'

+22 18'

+44 23.2'

+75.66 18'

+45.66 22.5'

105+43.20 P.T.

5 TRAFFIC DRUMS

ROAD CLOSED (I) RII-2 (48" X 30")

16' BARR. TYP. III L.T. 16' BARR. TYP. III L.T.

RETAIN FROM STAGE I FOR ALL STAGES

ROAD CLOSED (I) RII-2 (48" X 30")

16' BARR. TYP. III L.T. 16' BARR. TYP. III L.T.

RETAIN FROM STAGE I FOR ALL STAGES

330' TAPER

PROP. ROW

CONST. LIMITS

INSTALL VERTICAL PANELS 40' O.C.

330' TAPER

100' TRANSITION

P.C. 102+53.5

PROP. ROW

EXIST. ROW

100

C.L. CONST.

N 3°23' 10.2" W

105

P.I. 104+98.20

EXIST. ROW

PROP. ROW

P.I. 103+98.37

16'

110

P.I. 111+35.13

N 3°23' 10" W

N 1°29' 06" W

P.C. 108+44.99

P.T. 112+25.24

PROP. ROW

267

510

+51.23 23.2'

16'

+31.24 17'

330' TAPER

100' TRANSITION

+05 24'

DO NOT PASS (I) R4-1 (24" X 30")

INSTALL ON HWY. 13 IF AND WHERE DIRECTED BY THE ENGINEER

RETAIN FROM STAGE I

STA. 99+87.00 - BEGIN JOB 050189
LOG MILE 3.04

STA. 106+06.69 HWY. 13 =
STA. 508+48.33 HWY. 267
∠ = 64° 34" 17.2"

"STAGE 2 - HWYS. 13/267 INTERSECTION"

INSTALL TEMPORARY TRAFFIC CONTROL DEVICES TO NOTCH AND WIDEN
HWY. 13 (LT.: STA. 99+87 - 105+50) AND
HWY. 267 (RT.: STA. 503+00 - 507+50).

STAGES 2 - INTERSECTION HWYS. 13/267 MAINTENANCE OF TRAFFIC DETAILS

8/1/2012

R050189.DGN

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.		050189	55	340

(2) MAINTENANCE OF TRAFFIC DETAILS

PROPOSED HWY. 13 MAY BE OPENED FROM HWY. 265 TO STA. 246+00 IF AND WHERE DIRECTED BY THE ENGINEER

NOTE:
TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS IF AND WHERE DIRECTED BY THE ENGINEER.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL P. FUGETT
8/8/12

ROAD CLOSED
(1) RII-2 (48" X 30")
16' BARR. TYP. III RT.
16' BARR. TYP. III LT.
8' BARR. TYP. III RT.
8' BARR. TYP. III LT.

37 TRAFFIC DRUMS
90' O.C. ROADWAY
20' O.C. TURNOUTS

50 TRAFFIC DRUMS
90' O.C. ROADWAY
20' O.C. TURNOUT

CONSTRUCTION PAVEMENT MARKINGS (HONEY HILL RD.)
STA. 10+25 TO STA. 15+33 = 2040 LIN. FT.

MAINTENANCE OF TRAFFIC DETAILS STAGE 2

8/1/2012

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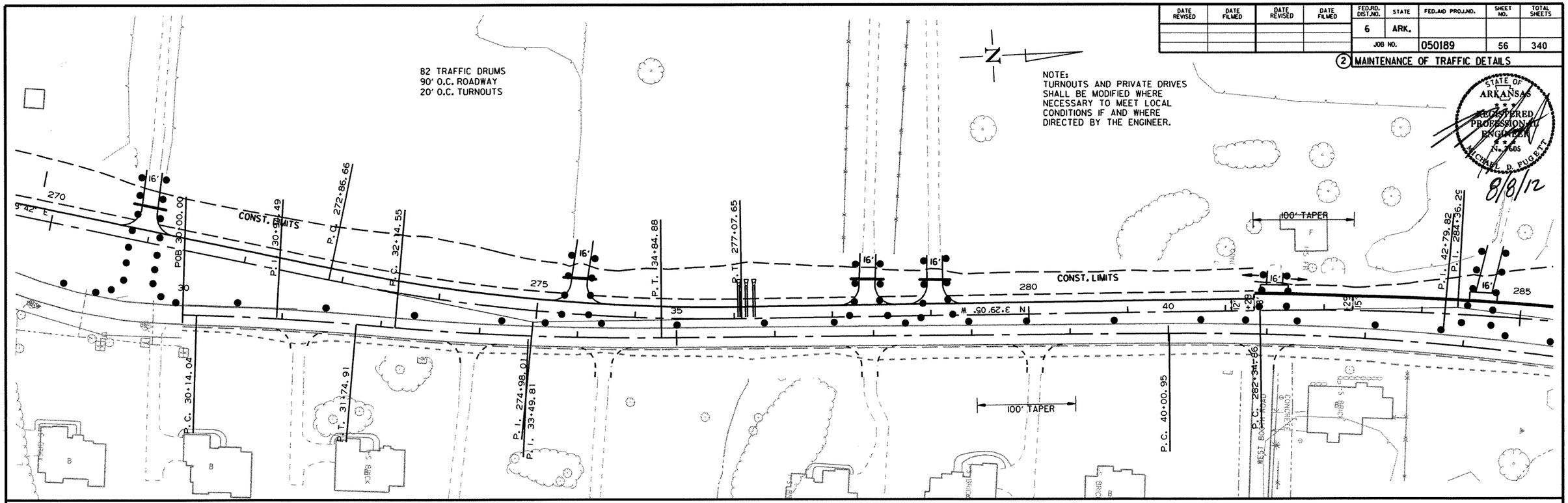
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050189	56	340

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/8/12

82 TRAFFIC DRUMS
90' O.C. ROADWAY
20' O.C. TURNOUTS

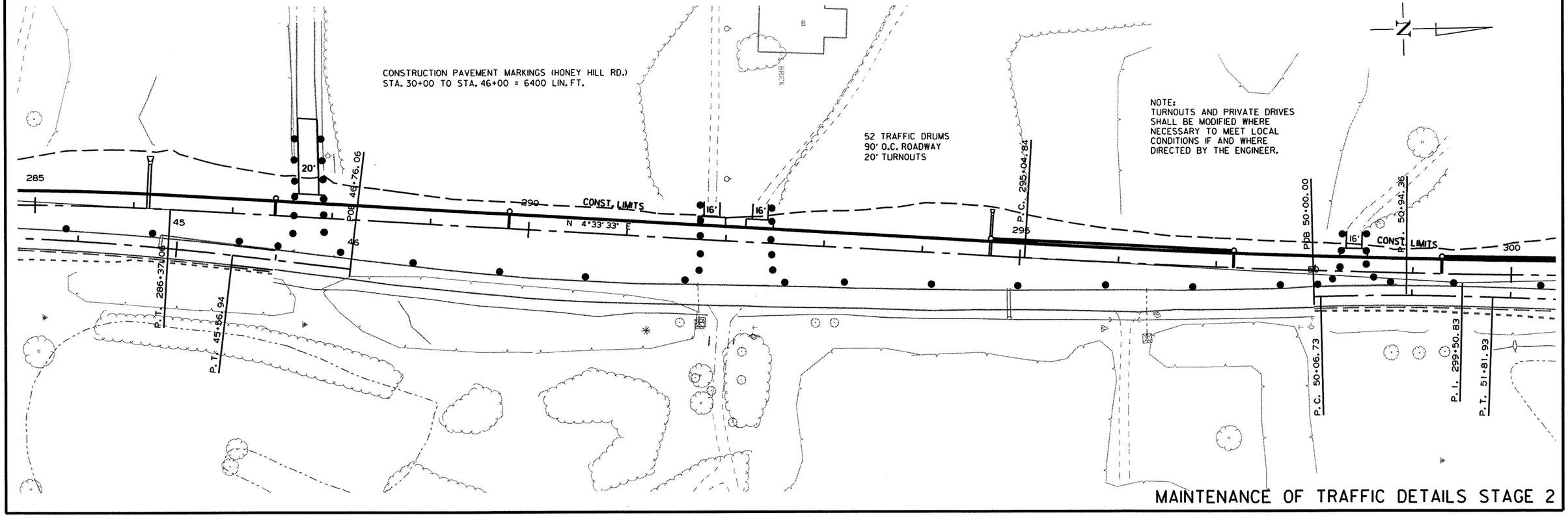
NOTE:
TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS IF AND WHERE DIRECTED BY THE ENGINEER.



CONSTRUCTION PAVEMENT MARKINGS (HONEY HILL RD.)
STA. 30+00 TO STA. 46+00 = 6400 LIN. FT.

52 TRAFFIC DRUMS
90' O.C. ROADWAY
20' TURNOUTS

NOTE:
TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS IF AND WHERE DIRECTED BY THE ENGINEER.



8/1/2012

R050189.DGN

MAINTENANCE OF TRAFFIC DETAILS STAGE 2

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.		050189	57	340

(2) MAINTENANCE OF TRAFFIC DETAILS

50 TRAFFIC DRUMS
90' O.C. ROADWAY
20' O.C. TURNOUTS

NOTE:
TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS IF AND WHERE DIRECTED BY THE ENGINEER.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/8/12

CONSTRUCTION PAVEMENT MARKINGS (HONEY HILL RD.)
STA. 50+00 TO STA. 62+10 = 4840 LIN. FT.

HILL CREEK CIRCLE

P.I. 57+89.29
P.C. 59+16.62
P.T. 61+23.69
P.I. 57+14.41
P.T. 58+63.87
P.I. 60+20.24
P.T. 303+96.36
PGE 62+10.03
N 0°06'06" E

49 TRAFFIC DRUMS
90' O.C. ROADWAY
20' O.C. TURNOUTS

NOTE:
TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS IF AND WHERE DIRECTED BY THE ENGINEER.

HONEY HILL CHRISTIAN UNION CHURCH
HONEY HILL CEMETERY
PARKING
SHEDS
WEST COUNTRY CLUB LANE
WEST GENERAL LACK EST
CONCRETE

END ROAD WORK
(1) G20-2 (48" X 24")
(1) R11-2 (48" X 30")
16' BARR. TYP. III LT.
ROAD CLOSED
270' TAPER
150' TAPER
210' TAPER
(1) W20-1 (48" X 48")
ROAD WORK AHEAD
16' BARR. TYP. III RT.
(1) R11-2 (48" X 30")
ROAD CLOSED
(1) G20-2 (48" X 24")
END ROAD WORK

P.I. 318+08.64
P.C. 315+45.29
P.T. 320+71.89
N 2°44'05" E

8/1/2012
R050189.DGN

MAINTENANCE OF TRAFFIC DETAILS STAGE 2

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.		050189	58	340

(2) MAINTENANCE OF TRAFFIC DETAILS

18 TRAFFIC DRUMS
90' ROADWAY
20' TURNOUTS

P.C. 330+44.52
330
150' TAPER
+00 30'
+50 23'
P.T. 334+90.29
335
N 19°33'14" W
100' TAPER
P.I. 338+43.73
+00 23'
+00 26'
340
345
P.I. 332+70.26
P.C. 336+44.70
P.T. 340+38.82
GARAGE
S WOOD GARAGE
S BRICK HOUSE FRAME
S FRAME BRICK

NOTE:
TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS IF AND WHERE DIRECTED BY THE ENGINEER.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 7605
MICHAEL D. FUGETT
8/8/12

NOTE:
TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS IF AND WHERE DIRECTED BY THE ENGINEER.

(1) RII-2 (48" X 30")
16' BARR. TYP. III RT.
ROAD CLOSED
POB 70+00.00
N 0°09'07" E
337
P.I. 71+52.26
P.I. 355+68.93
P.C. 73+12.80
P.T. 74+27.34
GRAVEL PARKING
GRAVEL DRIVE TO ANNEX
CONCRETE
S 32°17' E
358+76
N 0°22'30" E
N 19°19'12" E
360
P.I. 360+13.52
135' TAPER

150' TAPER
345
N 0°09'07" E
+00 26'
+50 23'
350
HONEY HILL
CARTER DRIVE
S FRAMED GARAGE
BRICK HOUSE
DRIVEWAY
P.C. 353+93.03
P.C. 70+93.47
P.T. 72+10.79
P.T. 357+41.54
P.I. 73+70.29

29 TRAFFIC DRUMS
90' ROADWAY
20' TURNOUTS

MAINTENANCE OF TRAFFIC DETAILS STAGE 2

8/1/2012

R050189.DGN

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				6	ARK.			
				JOB NO.		050189	59	340

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/8/12

DO NOT PASS (I) R4-1 (24" X 30")

RETAIN FROM STAGES 1 & 2

ROAD CLOSED (I) RII-2 (48" X 30")

16' BARR. TYP. IIILT. 16' BARR. TYP. IIILT.

RETAIN FROM STAGE 1 FOR ALL STAGES

330' TAPER

100' TRANSITION

PROP. ROW

P.C. 102+53.5

P.I. 105+43.20

P.T. 110+35.13

105

100

C.L. CONST. N 3°23'10.2" W

N 3°23'10" W

N 1°29'06" W

EXIST. ROW

PROP. ROW

16'

505

510

P.I. 103+98.37

P.C. 108+44.99

P.T. 112+25.24

STA. 106+06.69 HWY. 13 =
STA. 508+48.33 HWY. 267
Δ = 64° 34' 17.2"

STA. 99+87.00 - BEGIN JOB 050189
LOG MILE 3.04

SHOULDER CLOSED (I) RSP-I (48" X 30")

RELOCATE FROM STAGE 2 & INSTALL IF AND WHERE D DIRECTED BY THE ENGINEER BEFORE TRAFFIC APPROACHES CONSTRUCTION.

DO NOT PASS (I) R4-1 (24" X 30")

RETAIN FROM STAGE 2

"STAGE 3 - HWYS. 13/267 INTERSECTION"

INSTALL TEMPORARY TRAFFIC CONTROL DEVICES TO NOTCH AND WIDEN:
HWY. 13 (RT.: STA. 99+87 - 105+50) AND
HWY. 267 (RT.: STA. 509+00 - 514+00).

CONSTRUCT FINAL ACHM SURFACE COURSE AND PLACE PERMANENT MARKINGS ON HWYS. 13 AND 267. (REFER TO PERMANENT PAVEMENT MARKING PLAN SHEETS.)

DO NOT PASS (I) R4-1 (24" X 30")

RETAIN FROM STAGES 1 & 2

STAGE 3 - INTERSECTION HWYS. 13/267
MAINTENANCE OF TRAFFIC DETAILS

8/1/2012

R050189.DGN

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.		050189	60	340

(2) MAINTENANCE OF TRAFFIC DETAILS

PROPOSED HWY. 13 MAY BE OPENED FROM HWY. 265 TO STA. 246+00 IF AND WHERE DIRECTED BY THE ENGINEER

23 TRAFFIC DRUMS
20' O.C. TURNOUTS

VERTICAL PANELS SHOWN FOR LOCATION. QUANTITY PAID FOR IS 2 MILES AT 90' O.C. SPACING IN OPEN SHOULDER SECTIONS.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7603
MICHAEL D. FUGETT
8/8/12

ROAD CLOSED
(1) RII-2 (48" X 30")
16' BARR. TYP. III RT.
16' BARR. TYP. III LT.

ROAD CLOSED
(1) RII-2 (48" X 30")
8' BARR. TYP. III RT.
8' BARR. TYP. III LT.

ROAD CLOSED
(1) RII-2 (48" X 30")
16' BARR. TYP. III RT.
16' BARR. TYP. III LT.

240
245
N 0°24'58" E
HILL LOOP
24'
CONST. LIMITS
P.C. 249+39.97
P.T. 252+07.72
160' TRAFFIC SHIFT
STORM SHELTER
CANOPY
250
255
P.I. 250+74.19

NOTE:
TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS IF AND WHERE DIRECTED BY THE ENGINEER.

CONSTRUCTION PAVEMENT MARKINGS (HWY. 13)
STA. 246+55 - STA. 255+00 = 3380 LIN. FT.

53 TRAFFIC DRUMS
20' O.C. TURNOUTS

VERTICAL PANELS SHOWN FOR LOCATION. QUANTITY PAID FOR IS 2 MILES AT 90' O.C. SPACING IN OPEN SHOULDER SECTIONS.

P.I. 263+28.60
160' TRAFFIC SHIFT
160' TRAFFIC SHIFT
CONST. LIMITS
260
265
270
255
N 62°16' W
N 9°08'42" E
P.C. 260+12.95
P.T. 266+38.61
18' CONCRETE
STORM SHELTER
SHEDS
STONE

NOTE:
TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS IF AND WHERE DIRECTED BY THE ENGINEER.

CONSTRUCTION PAVEMENT MARKINGS (HWY. 13)
STA. 255+00 - STA. 270+00 = 6000 LIN. FT.

MAINTENANCE OF TRAFFIC DETAILS STAGE 3

8/1/2012

R050189.DGN

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.		050189	61	340

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 605
MICHAEL D. PUGETT
8/8/12

CONSTRUCTION PAVEMENT MARKINGS (HWY. 13)
STA. 270+00 - STA. 285+00 = 6000 LIN. FT.

160' TRAFFIC SHIFT

100' TAPER

100' TAPER

CONST. LIMITS

P.C. 272+86.66

P.T. 277+07.65

P.I. 274+98.01

P.I. 284+36.25

P.C. 282+37.96

WEST BOONE ROAD

N 3°29'50" W

N 9°42' E

54 TRAFFIC DRUMS
20' TURNOUTS

VERTICAL PANELS SHOWN FOR LOCATION.
QUANTITY PAID FOR IS 2 MILES AT
90' O.C. SPACING IN OPEN SHOULDER
SECTIONS AND 60' O.C. SPACING IN
CURB AND GUTTER SECTIONS.

NOTE:
TURNOUTS AND PRIVATE DRIVES
SHALL BE MODIFIED WHERE
NECESSARY TO MEET LOCAL
CONDITIONS IF AND WHERE
DIRECTED BY THE ENGINEER.

CONSTRUCTION PAVEMENT MARKINGS (HWY. 13)
STA. 285+00 - STA. 300+00 = 4500 LIN. FT.

CONST. LIMITS

P.C. 295+04.84

P.T. 286+37.06

P.I. 299+50.83

N 4°33'33" E

12 TRAFFIC DRUMS
20' TURNOUTS

VERTICAL PANELS SHOWN FOR LOCATION.
QUANTITY PAID FOR IS 2 MILES AT
60' O.C. SPACING IN CURB AND GUTTER
SECTIONS.

NOTE:
TURNOUTS AND PRIVATE DRIVES
SHALL BE MODIFIED WHERE
NECESSARY TO MEET LOCAL
CONDITIONS IF AND WHERE
DIRECTED BY THE ENGINEER.

MAINTENANCE OF TRAFFIC DETAILS STAGE 3

8/1/2012

R050189.DGN

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.		050189	62	340

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 7605
MICHAEL D. FUGETT
8/8/12

18 TRAFFIC DRUMS
20' O.C. TURNOUTS

VERTICAL PANELS SHOWN FOR LOCATION.
QUANTITY PAID FOR IS 2 MILES AT
60' O.C. SPACING IN CURB AND GUTTER
SECTIONS.

P.T. 303+96.36

CONST. LIMITS

N 0°06' 06" E

HILL CREEK CIRCLE

CONSTRUCTION PAVEMENT MARKINGS (HWY. 13)
STA. 300+00 - STA. 315+00 = 4500 LIN. FT.

NOTE:
TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS IF AND WHERE DIRECTED BY THE ENGINEER.

END ROAD WORK
(1) G20-2
(48" X 24")

36 TRAFFIC DRUMS
20' O.C. TURNOUTS

VERTICAL PANELS SHOWN FOR LOCATION.
QUANTITY PAID FOR IS 2 MILES AT
60' O.C. SPACING IN CURB AND GUTTER
SECTIONS.

210' TRAFFIC SHIFT
270' TAPER
150' TRAFFIC SHIFT
270' TAPER

P.I. 318+08.64
P.C. 315+45.29
P.T. 320+71.89

HONEY HILL CHRISTIAN UNION CHURCH
HONEY HILL CEMETERY
PARKING
PAVED P.A.
ROAD WORK AHEAD (1) W20-1 (48" x 48")
END ROAD WORK (1) G20-2 (48" x 24")
ROAD WORK AHEAD (1) W20-1 (48" x 48")
WEST COUNTRY CLUB LANE
SHEDS

CONSTRUCTION PAVEMENT MARKINGS (HWY. 13)
STA. 315+00 - STA. 330+00 = 6000 LIN. FT.

NOTE:
TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS IF AND WHERE DIRECTED BY THE ENGINEER.

8/1/2012

R050189.DGN

MAINTENANCE OF TRAFFIC DETAILS STAGE 3

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.		050189	63	340

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9605
MICHAEL D. FUGETT
8/8/12

8 TRAFFIC DRUMS
20' O.C. TURNOUTS

VERTICAL PANELS SHOWN FOR LOCATION.
QUANTITY PAID FOR IS 2 MILES AT
60' O.C. SPACING IN CURB AND GUTTER
SECTIONS.

P.I. 330+44.52
330
150' TRAFFIC SHIFT
P.I.T. 334+90.29
335
100' TRAFFIC SHIFT
P.I. 338+43.73
340
CONST. LIMITS
N 10°33'14" W
36'
P.I. 332+70.26
P.C. 336+44.70
P.T. 340+38.82
345
CONST. LIMITS
26'

NOTE:
TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS IF AND WHERE DIRECTED BY THE ENGINEER.

CONSTRUCTION PAVEMENT MARKINGS (HWY. 13)
STA. 330+00 - STA. 345+00 = 6000 LIN. FT.

GARAGE
WOOD
BRICK HOUSE
FRAME BARN
FRAME

38 TRAFFIC DRUMS
20' O.C. TURNOUT

VERTICAL PANELS SHOWN FOR LOCATION.
QUANTITY PAID FOR IS 2 MILES AT
60' O.C. SPACING IN CURB AND GUTTER
SECTIONS.

345
150' TRAFFIC SHIFT
N 0°09'07" E
350
CONST. LIMITS
26'
16'
CARTER DRIVE
FRAMED GARAGE
BRICK HOUSE
DRIVEWAY
POB 70+00.00
P.C. 353+93.03
P.C. 70+93.47
P.I. 71+52.26
P.I. 355+68.93
N 0°09'07" E
355
N 9°52'17" E
GRAVEL PARKING
P.C. 73+12.80
P.T. 72+10.78
P.T. 73+27.34
GRAVEL DRIVE TO ANNEX
CONCRETE
P.T. 357+41.54
P.I. 73+70.29
N 19°19'12" E
P.I. 358+76.
N 0°22'30" E
360
P.I. 360+13.52
135' TAPER

NOTE:
TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS IF AND WHERE DIRECTED BY THE ENGINEER.

CONSTRUCTION PAVEMENT MARKINGS (HWY. 13)
STA. 345+00 - STA. 360+00 = 6000 LIN. FT.

8/1/2012
R050189.DGN

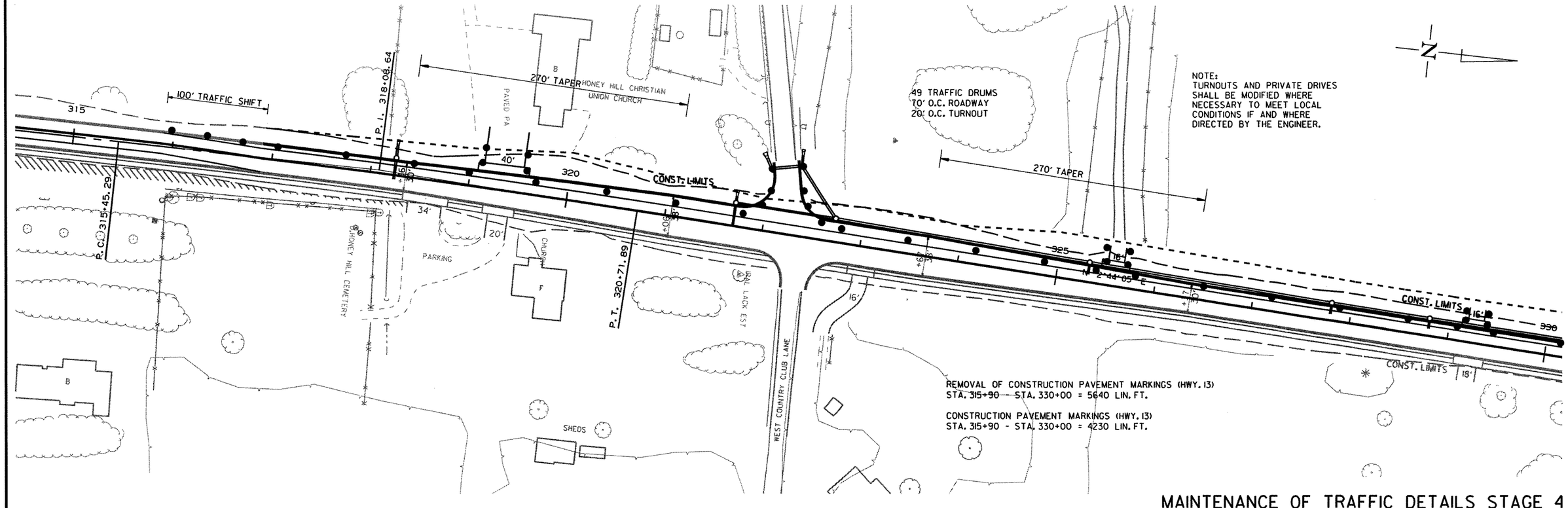
MAINTENANCE OF TRAFFIC DETAILS STAGE 3

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.		050189	64	340

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. PUGETT

8/8/12



MAINTENANCE OF TRAFFIC DETAILS STAGE 4

8/1/2012

R050189.DGN

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.		050189	65	340

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL P. FUGETT
8/8/12

NOTE:
TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS IF AND WHERE DIRECTED BY THE ENGINEER.

31 TRAFFIC DRUMS
70' O.C. ROADWAY
20' O.C. TURNOUT

P.C. 330+44.52
P.T. 334+90.29
P.I. 338+43.73
P.I. 332+70.26
P.C. 336+44.70
P.T. 340+38.82
N 19°33'14" W
CONST. LIMITS
36'
330
335
340
345
GARAGE
WOOD GARAGE
BRICK HOUSE FRAME
FRAME BRICK

REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS (HWY. 13)
STA. 330+00 - STA. 345+00 = 4500 LIN. FT.

CONSTRUCTION PAVEMENT MARKINGS (HWY. 13)
STA. 330+00 - STA. 345+00 = 4500 LIN. FT.

NOTE:
TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS IF AND WHERE DIRECTED BY THE ENGINEER.

32 TRAFFIC DRUMS
70' O.C. ROADWAY
20' TURNOUT

P.I. 355+68.93
P.C. 358+76
P.C. 353+93.03
P.T. 357+41.54
P.I. 360+13.52
N 6°09'07" E
N 19°19'12" E
CONST. LIMITS
345
350
355
360
24'
16'
26'
GRAVEL PARKING
GRAVEL DRIVE TO ANIMAL HOSPITAL
CRAWLSPACE
CONCRETE
(1) W5-1 (48" X 48")
ROAD NARROWS
100' TRAFFIC TAPER
135' TAPER
CARTER DRIVE
FRAMED GARAGE
BRICK HOUSE
DRIVEWAY
PV

MAINTENANCE OF TRAFFIC DETAILS STAGE 4

8/1/2012
R050189.DGN

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.		050189	66	340

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7603
MICHAEL D. FUGETT
8/8/12

NOTE:
TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS IF AND WHERE DIRECTED BY THE ENGINEER.

(1) RII-2 (48" X 30")
16' BARR. TYP. III RT.
16' BARR. TYP. III LT.
ROAD CLOSED
(1) W20-1 (48" X 48")
ROAD WORK AHEAD
END ROAD WORK
(1) G20-2 (48" X 24")
18 TRAFFIC DRUM 20' O.C. TURNOUT

HAY FOR SALE
ASPHALT DRIVE
PAVED PARKING
CANOPY
CLEAN
CONST. LIMITS
P.C. 358+76.85
P.T. 361+48.63
P.I. 360+13.52
135' TAPER
135' TAPER
P.C. 363+60.57
P.T. 365+47.21
N 4°22' 19" E
N 0°52' 32" E
POE 371+11.03
360
365
370
371
PAVED PARKING
CANOPY
CONCRETE
EXTREME AUTO SALES
PARKING
ROAD WORK AHEAD
(1) W20-1 (48" X 48")
(1) G20-2 (48" X 24")

8/1/2012
R050189.DGN

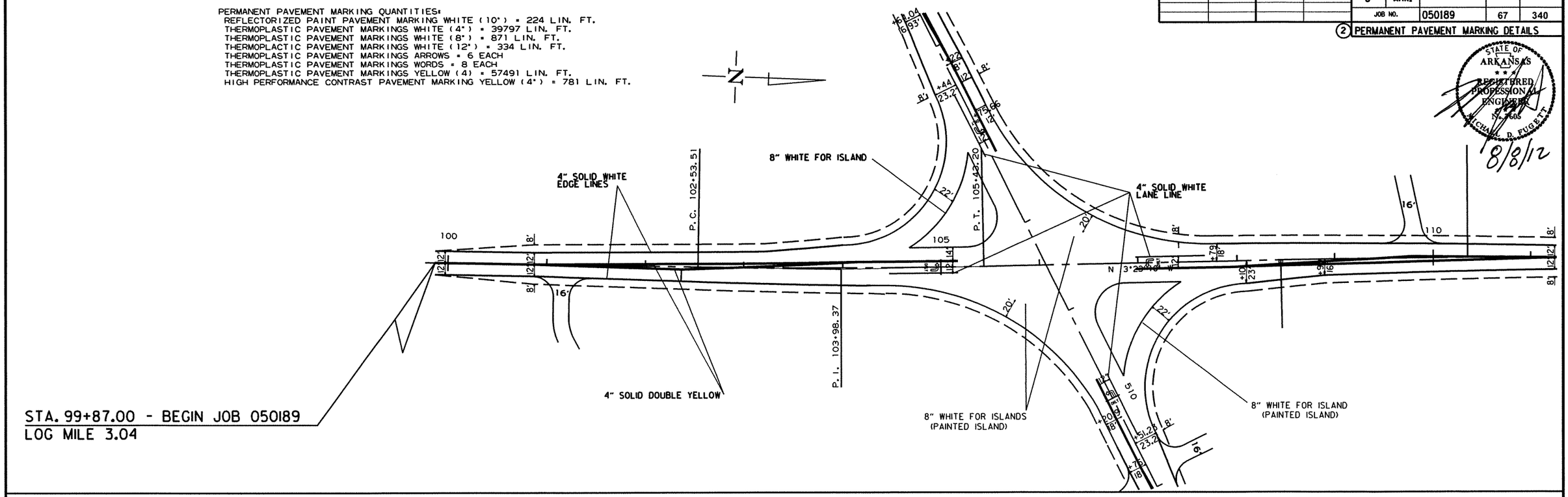
MAINTENANCE OF TRAFFIC DETAILS STAGE 4

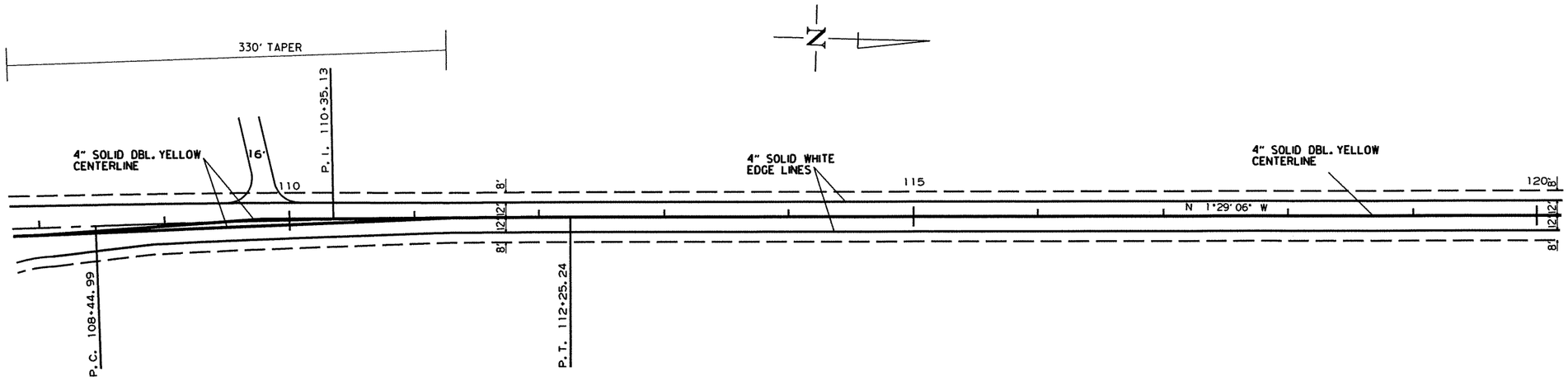
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				6	ARK.			
				JOB NO.		050189	67	340

(2) PERMANENT PAVEMENT MARKING DETAILS

PERMANENT PAVEMENT MARKING QUANTITIES:
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10") = 224 LIN. FT.
THERMOPLASTIC PAVEMENT MARKINGS WHITE (4") = 39797 LIN. FT.
THERMOPLASTIC PAVEMENT MARKINGS WHITE (8") = 871 LIN. FT.
THERMOPLACTIC PAVEMENT MARKINGS WHITE (12") = 334 LIN. FT.
THERMOPLASTIC PAVEMENT MARKINGS ARROWS = 6 EACH
THERMOPLASTIC PAVEMENT MARKINGS WORDS = 8 EACH
THERMOPLASTIC PAVEMENT MARKINGS YELLOW (4) = 57491 LIN. FT.
HIGH PERFORMANCE CONTRAST PAVEMENT MARKING YELLOW (4") = 781 LIN. FT.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9605
MICHAEL D. FUGETT
8/8/12





PERMANENT PAVEMENT MARKING DETAILS

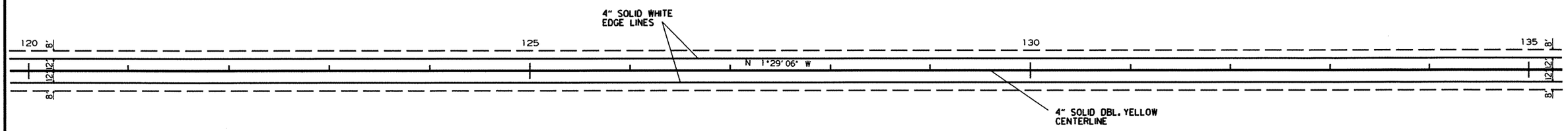
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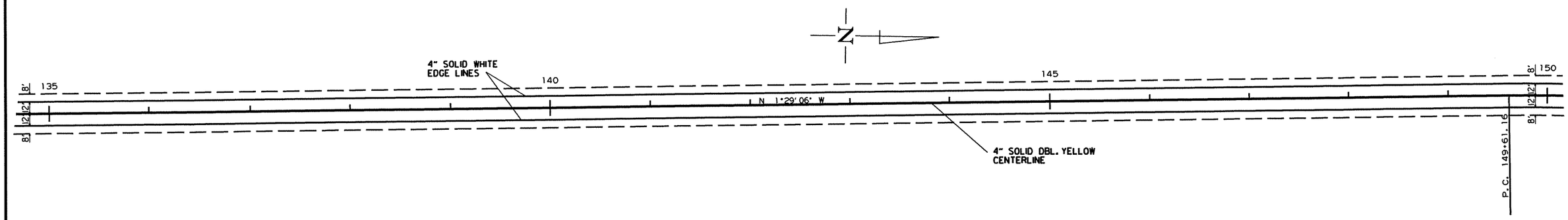
R050189.DGN

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.		050189	68	340

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 7605
MICHAEL D. FUGETT
8/8/12





8/3/2012

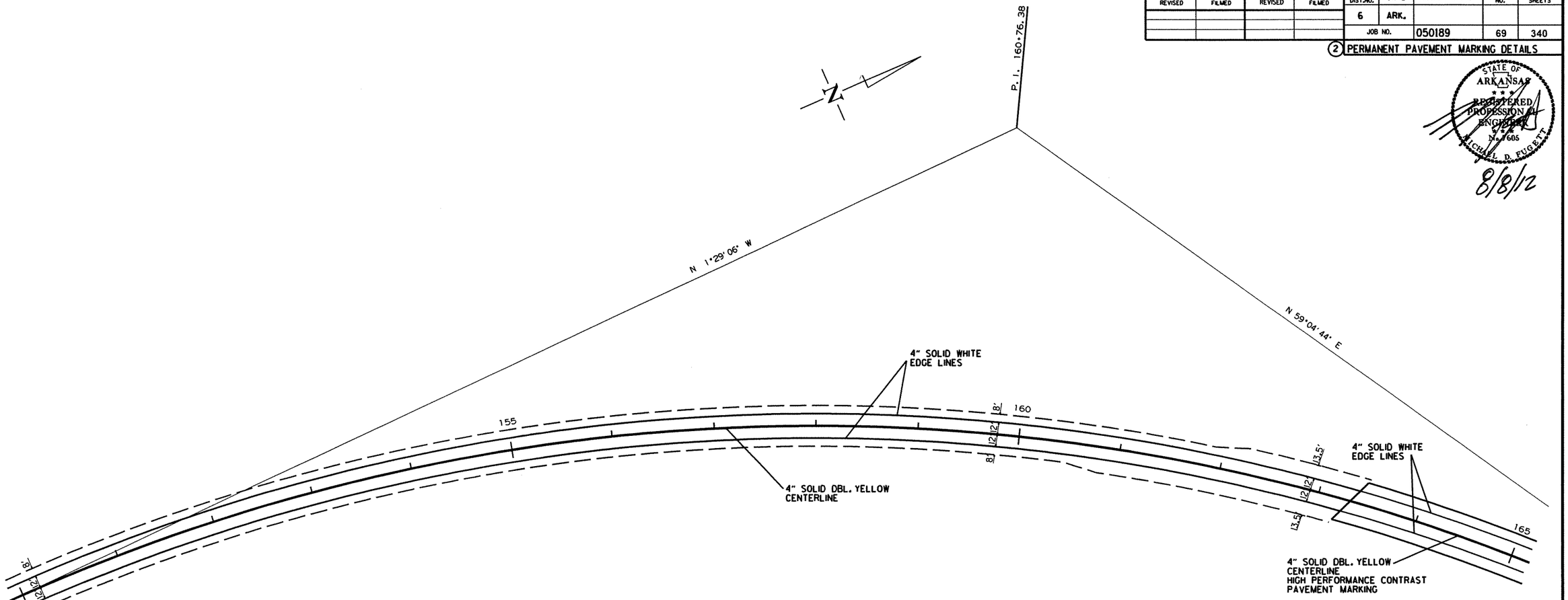
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PERMANENT PAVEMENT MARKING DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050189	69	340

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/8/12



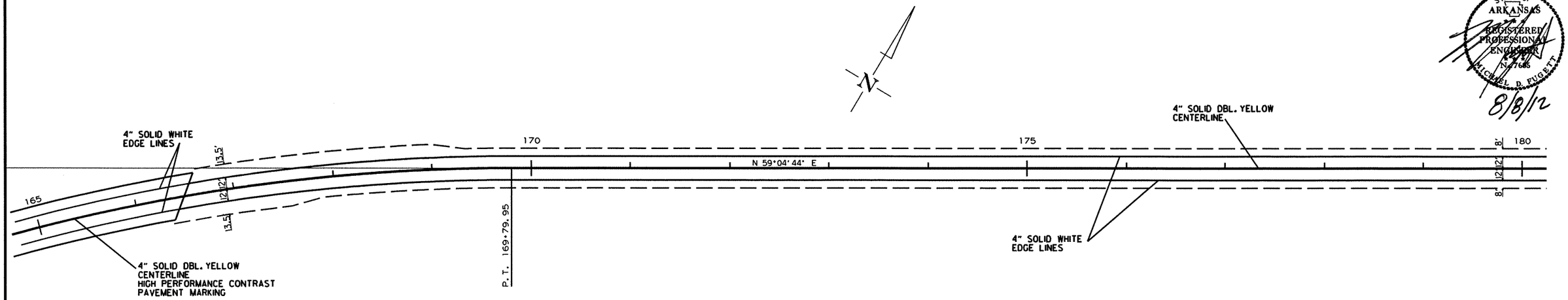
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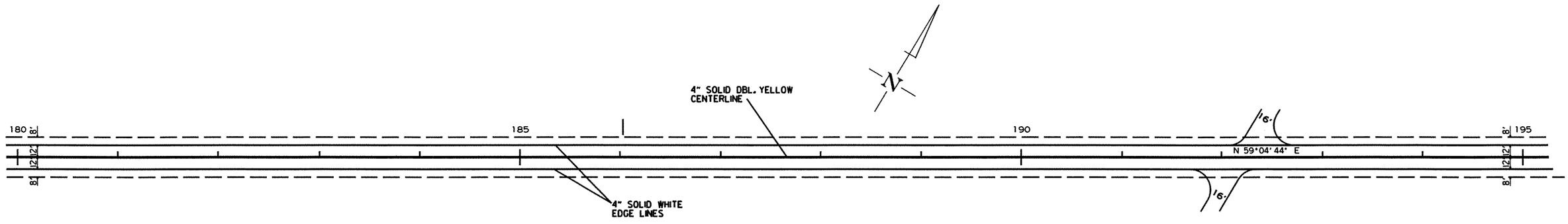
PERMANENT PAVEMENT MARKING DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050189	70	340

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 17685
MICHAEL D. FUGETT
8/8/12





8/3/2012

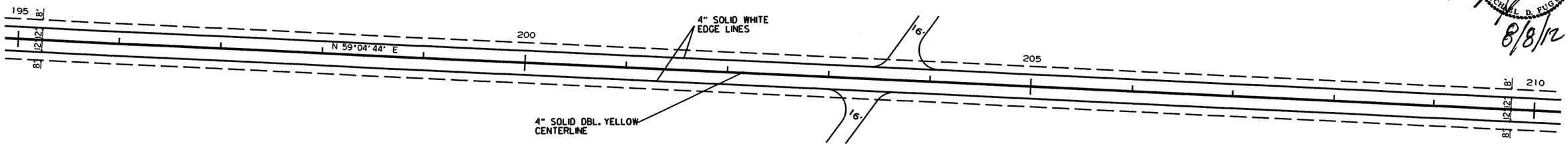
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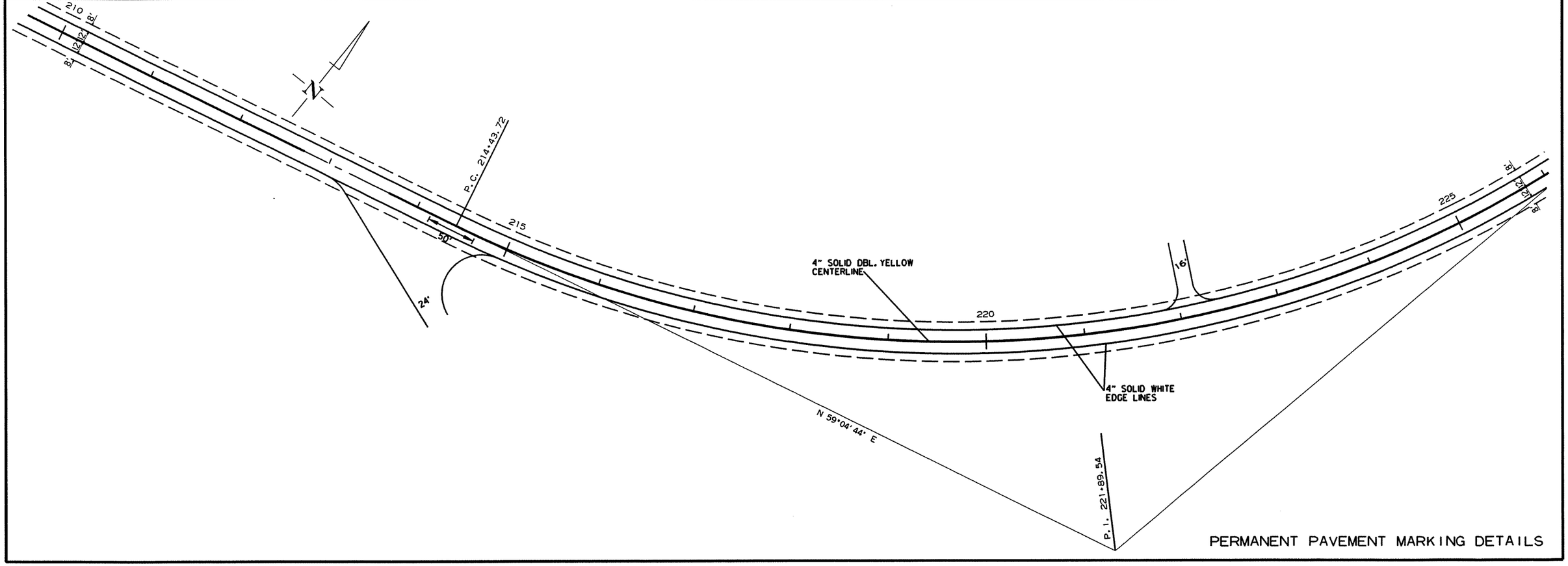
PERMANENT PAVEMENT MARKING DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050189	71	340

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 14603
MICHAEL D. FUGETT
8/8/12





PERMANENT PAVEMENT MARKING DETAILS

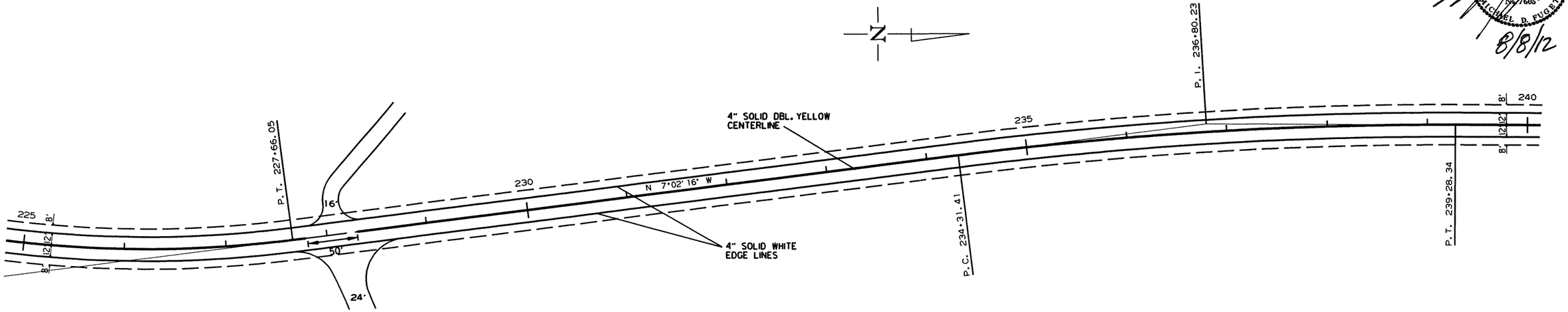
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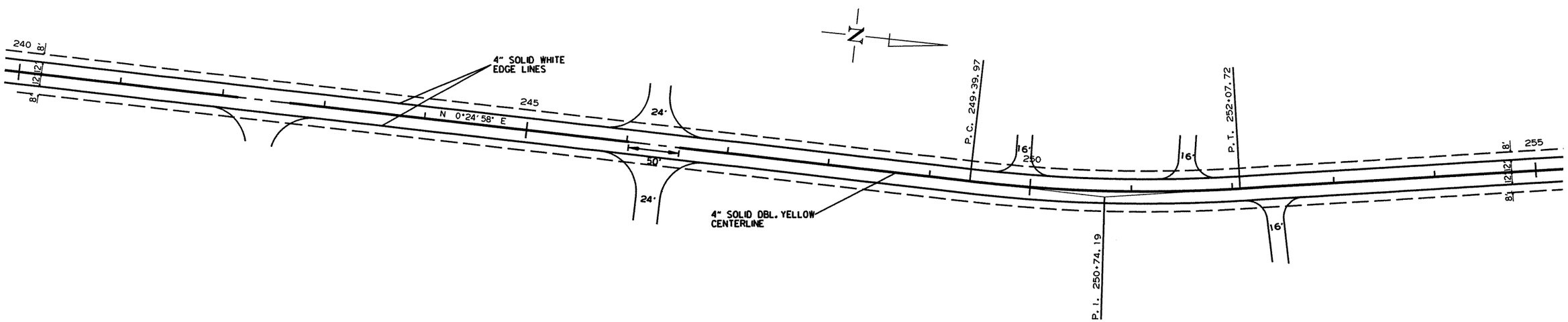
R050189.DGN

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.		050189	72	340

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/8/12





PERMANENT PAVEMENT MARKING DETAILS

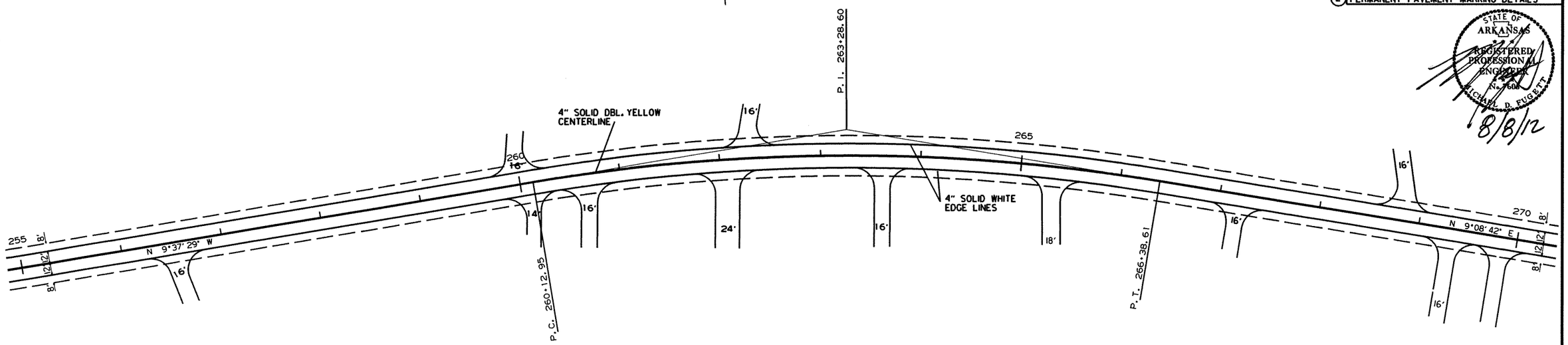
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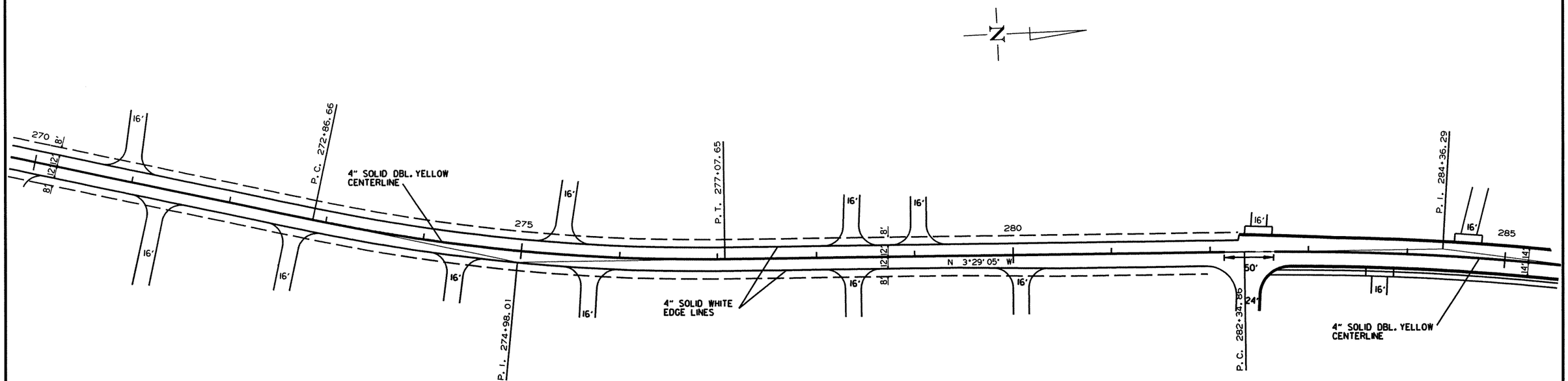
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050189	73	340

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7608
MICHAEL D. FUGETT
8/8/12





8/3/2012

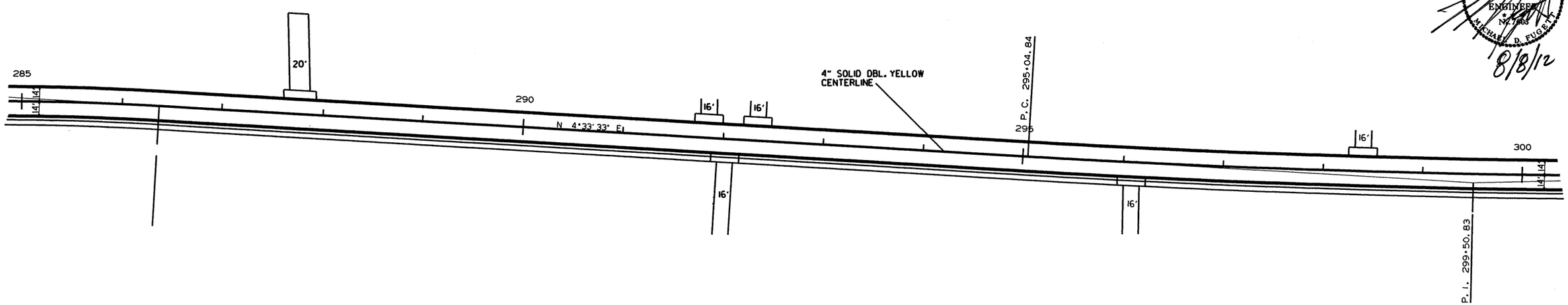
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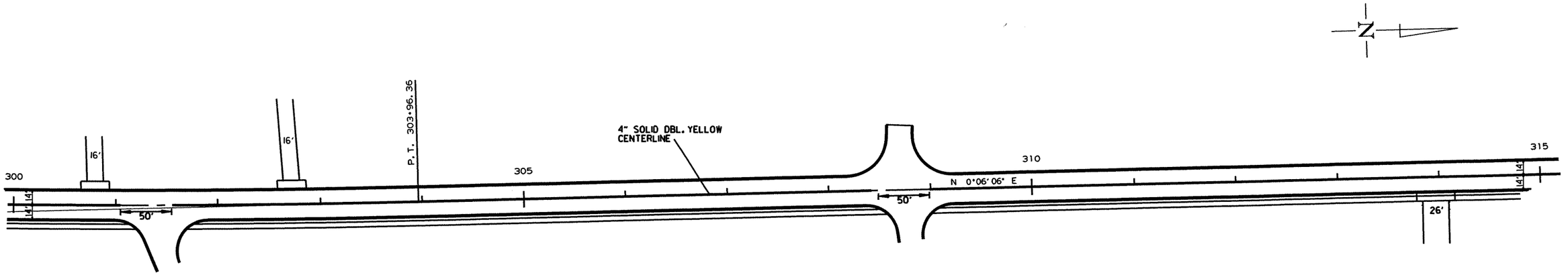
PERMANENT PAVEMENT MARKING DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050189	74	340

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 7605
MICHAEL D. FUGETT
8/8/12





8/3/2012

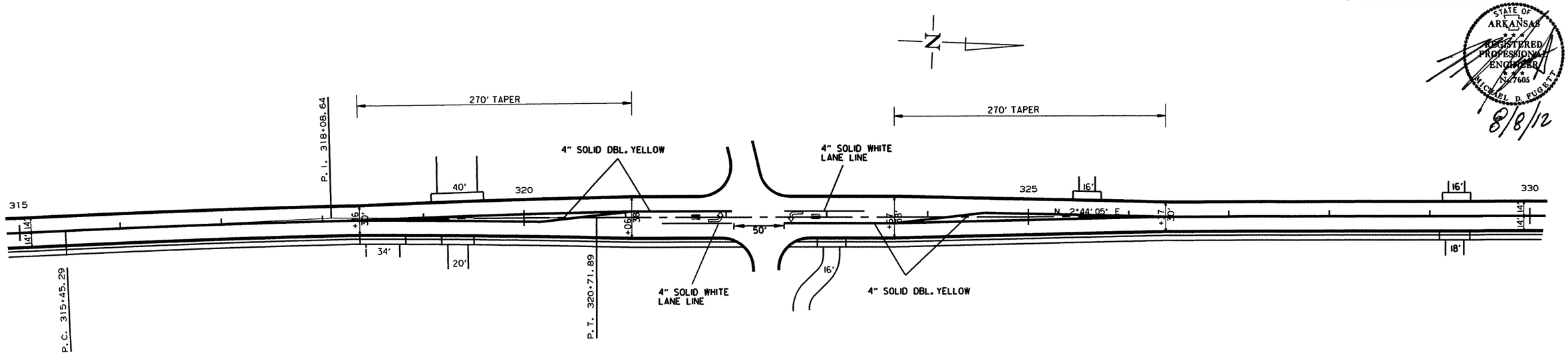
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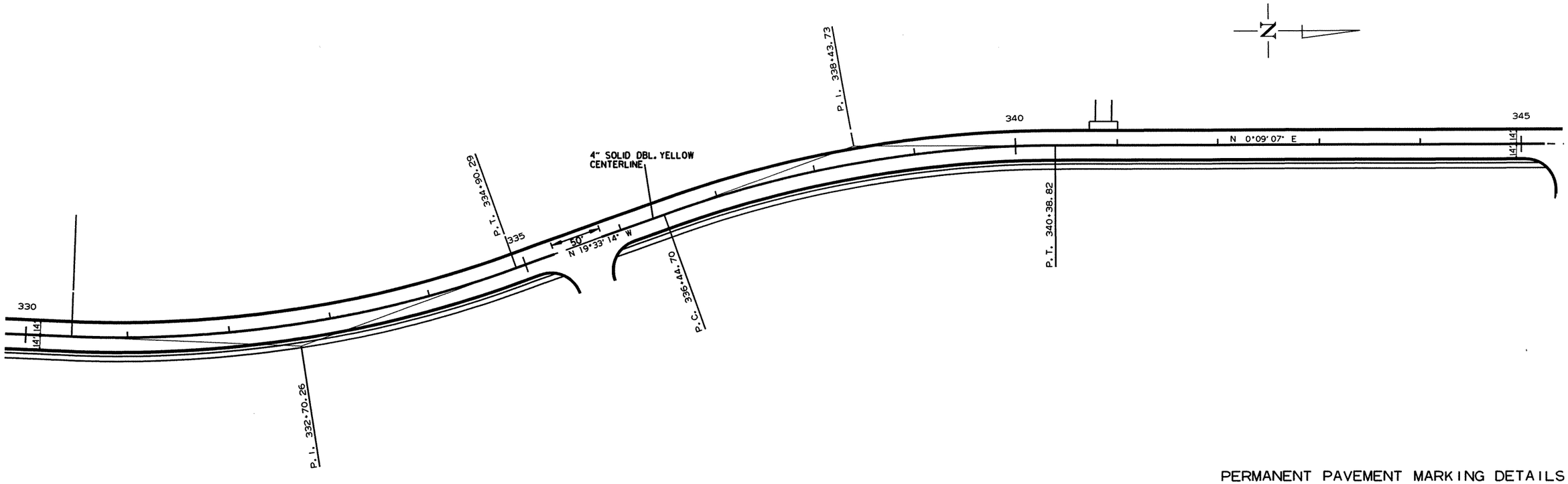
PERMANENT PAVEMENT MARKING DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050189	75	340

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/8/12





8/3/2012

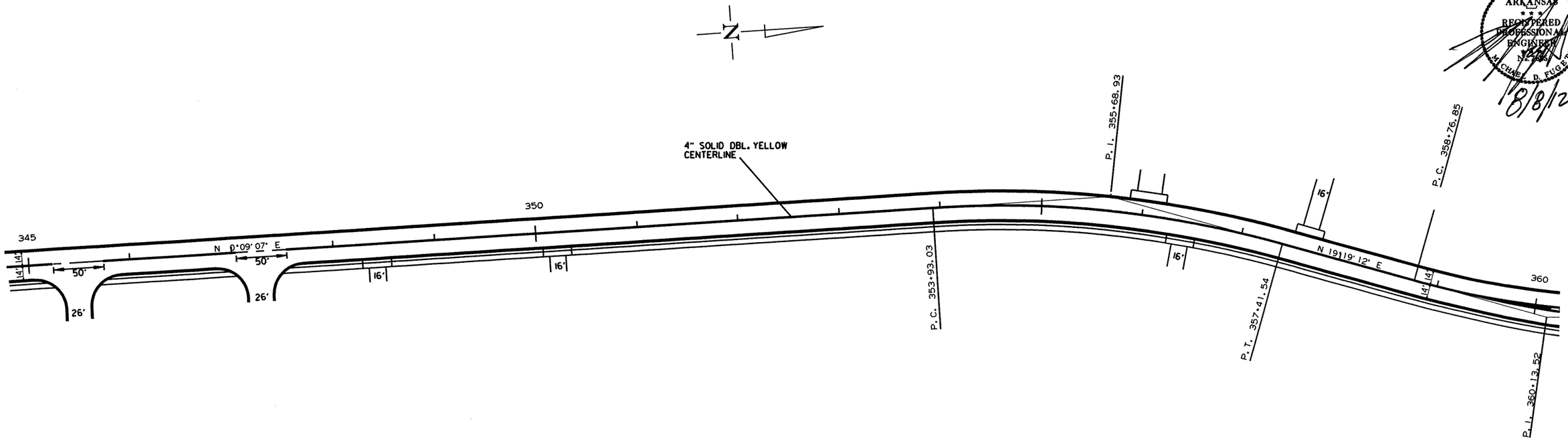
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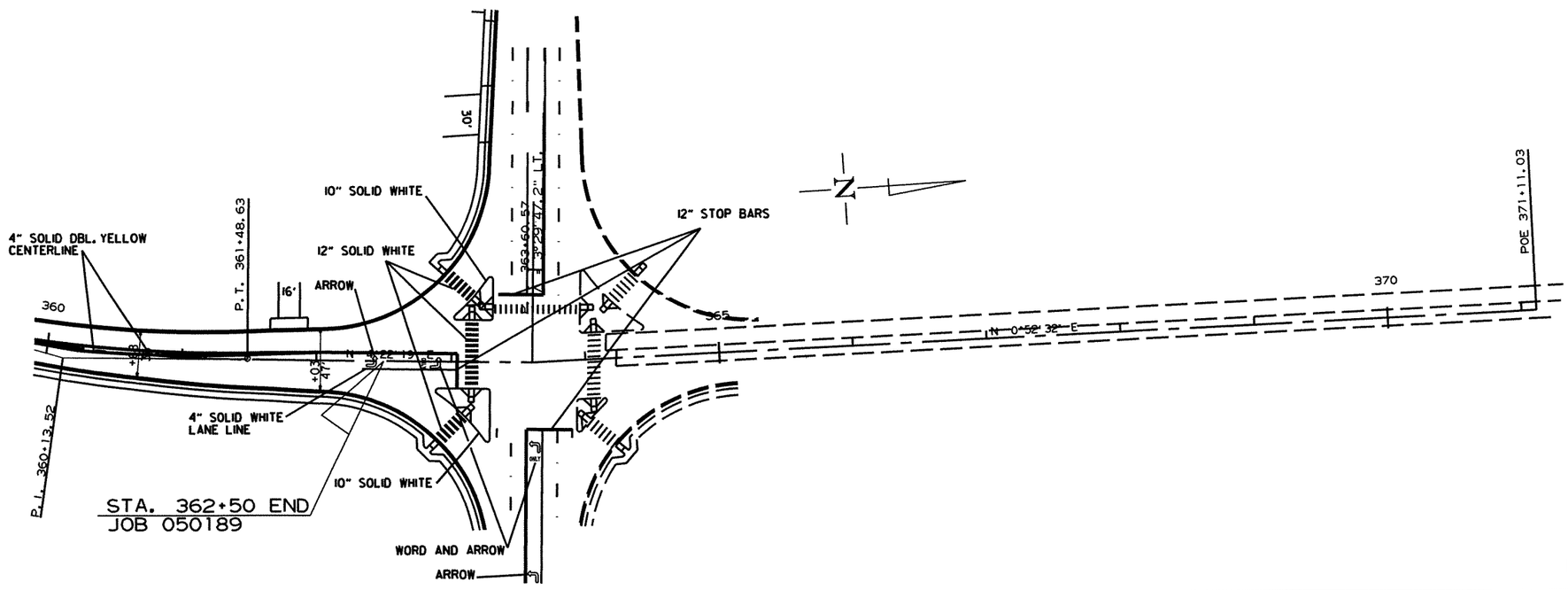
PERMANENT PAVEMENT MARKING DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050189	76	340

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
MICHAEL D. FUGETT
8/8/12





PERMANENT PAVEMENT MARKING DETAILS

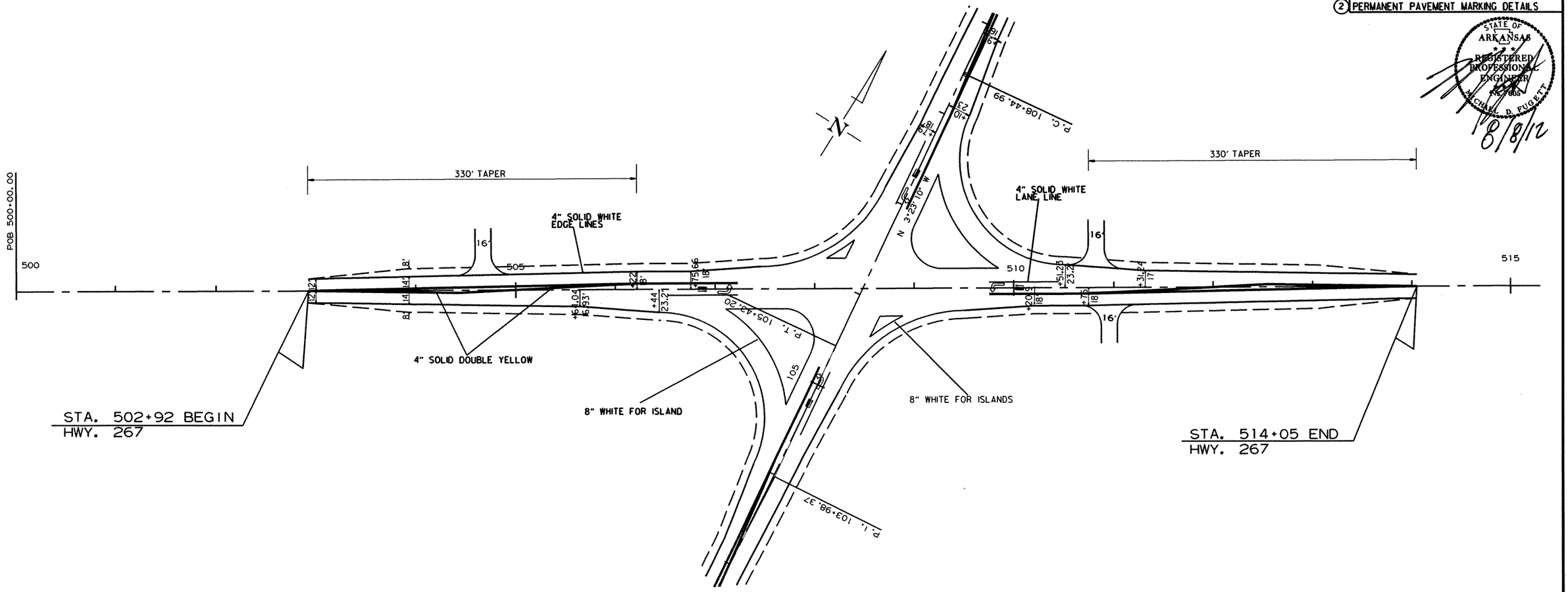
8/3/2012

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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.		050189	77	340

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 7605
CHARLES D. FUGETT
8/8/12



R050189.DGN 8/3/2012

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
				6	ARK.			
				JOB NO.		050189	78	340

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/8/12

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	STAGE 3	STAGE 4	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		VERTICAL PANELS	TRAFFIC DRUMS	BARRICADES (TYPE III)	
												RIGHT	LEFT
			LIN. FT. - EACH					NO.	SQ. FT.	EACH		LIN. FT.	
W20-1	ROAD WORK 1500 FT.	48"x48"	3	3	3	3	3	3	48.0				
W20-1	ROAD WORK 1000 FT.	48"x48"	3	3	3	3	3	3	48.0				
W20-1	ROAD WORK 500 FT.	48"x48"	3	3	3	3	3	3	48.0				
W20-1	ROAD WORK AHEAD	48"x48"	9	2	2	2	9	9	144.0				
G20-2	END ROAD WORK	48"x24"	12	5	5	5	12	12	96.0				
R11-2	ROAD CLOSED	48"x30"	24	9	5	1	24	24	240.0				
R4-1	DO NOT PASS	24"x30"	22	22	22	22	22	22	110.0				
RSP-1	SHOULDER CLOSED	48"x30"	1	1	1		1	1	10.0				
	VERTICAL PANELS		26	26	169	120	169			169			
	TRAFFIC DRUMS		150	367	242		367				367		
	TYPE III BARRICADE-RT. (8')		4	1	1		4					32	
	TYPE III BARRICADE-LT. (8')		2	1	1		2						16
	TYPE III BARRICADE-RT. (16')		18	3	2	1	18					288	
	TYPE III BARRICADE-LT. (16')		18	9	6	1	18						288
TOTALS:									744.0	169	367	320	304

NOTE: THIS IS A HIGH TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2003 EDITION.

THE QUANTITY OF VERTICAL PANELS PROVIDED IN THE CONTRACT IS FOR ONE SIDE OF THE ROADWAY FOR 2 MILES. THIS IS THE MAXIMUM QUANTITY REQUIRED TO ALLOW THE CONTRACTOR TO NOTCH ONE MILE, BACKFILL TO A POINT WHERE THE VERTICAL DIFFERENTIAL IS 4" OR LESS, AND THEN NOTCH ANOTHER ONE-MILE SECTION. THIS IS THE MAXIMUM NUMBER OF VERTICAL PANELS THAT WILL BE PAID FOR. REFER TO SECTION 603.02 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION REQUIREMENTS.

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 1	STAGE 2	STAGE 3	STAGE 4	END OF JOB	CONSTRUCTION PAVEMENT MARKINGS	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	REFLECTORIZED PAINT PAVEMENT MARKING	THERMOPLASTIC PAVEMENT MARKINGS						HIGH PERFORMANCE CONTRAST PAVEMENT MARKING
									4"		8" WHITE	12" WHITE	WORDS	ARROWS	4" YELLOW
								10" WHITE	WHITE	YELLOW					
	LIN. FT. - EACH							LIN. FT.					EACH		LIN. FT.
CONSTRUCTION PAVEMENT MARKINGS		13280	42380	13230		68890									
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS				14640			14640								
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10")					224			224							
THERMOPLASTIC PAVEMENT MARKINGS WHITE (4")					39797				39797						
THERMOPLASTIC PAVEMENT MARKINGS YELLOW (4")					57491					57491					
THERMOPLASTIC PAVEMENT MARKINGS WHITE (8")					871						871				
THERMOPLASTIC PAVEMENT MARKINGS WHITE (12")					334							334			
THERMOPLASTIC PAVEMENT MARKINGS WORDS					6								6		
THERMOPLASTIC PAVEMENT MARKINGS ARROWS					8									8	
HIGH PERFORMANCE CONTRAST PAVEMENT MARKING (4") YELLOW					781										781
TOTALS:						68890	14640	224	39797	57491	871	334	6	8	781

NOTE: THIS IS A HIGH TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2003 EDITION.

NOTE: THERMOPLASTIC PAVEMENT MARKINGS MAY BE SUBSTITUTED FOR INVERTED PROFILE PAVEMENT MARKINGS AT INTERSECTIONS, ISLANDS, TURNOUTS, AND OTHER SIMILAR LOCATIONS IF AND WHERE DIRECTED BY THE ENGINEER.
* ALTERNATE BID ITEM

8/7/2012

R050189.DGN

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.		050189	79	340

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7805
MICHAEL D. FUGATT
8/8/12

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
101+00	106+00	HWY. 13	5	5
110+00	172+00	HWY. 13	62	62
173+00	181+00	HWY. 13	8	8
184+00	189+00	HWY. 13	5	5
194+00	196+00	HWY. 13	2	2
201+00	215+00	HWY. 13	14	14
219+00	246+00	HWY. 13	27	27
248+00	276+00	HWY. 13	28	28
277+00	278+00	HWY. 13	1	1
282+00	309+00	HWY. 13	27	27
311+00	312+00	HWY. 13	1	1
315+00	316+00	HWY. 13	1	1
317+00	329+00	HWY. 13	12	12
331+00	339+00	HWY. 13	8	8
340+00	345+00	HWY. 13	5	5
350+00	356+00	HWY. 13	6	6
358+00	364+00	HWY. 13	6	6
TOTALS:			218	218

REMOVAL AND DISPOSAL OF FENCE

STATION	STATION	LOCATION	FENCE
			LIN. FT.
104+94	106+78	POST AND WIRE ON RT.	297
106+85	115+52	6 STRAND BARB WIRE ON RT. AND LT.	1315
118+00	120+70	4 STRAND BARB WIRE ON RT.	503
120+82	121+41	4 STRAND BARB WIRE ON RT. AND LT.	197
164+50	165+23	6 STRAND BARB WIRE ON RT. AND LT.	87
170+90	171+10	5 STRAND BARB WIRE ON RT. AND LT.	106
174+37	180+00	5 STRAND BARB WIRE ON RT. AND LT.	584
185+58	186+07	5 STRAND BARB WIRE ON RT. AND LT.	114
185+83	187+76	5 STRAND BARB WIRE ON RT. AND LT.	227
191+70	192+34	6 STRAND BARB WIRE ON RT. AND LT.	125
192+05	192+68	6 STRAND BARB WIRE ON RT. AND LT.	125
203+34	204+24	5 STRAND BARB WIRE ON RT. AND LT.	161
208+17	210+44	FENCE ON RT. AND LT.	408
211+69	213+68	6 STRAND BARB WIRE ON RT. AND LT.	233
212+80	214+77	4 STRAND BARB WIRE ON RT. AND LT.	233
219+28	221+67	4 STRAND BARB WIRE ON RT. AND LT.	272
232+30	246+00	4 STRAND BARB WIRE ON LT.	1491
245+00	355+86	5 STRAND BARB WIRE ON LT.	1091
246+48	248+58	5 STRAND BARB WIRE ON LT.	321
252+32		4' CHAIN LINK	62
256+12	256+55	2 BARB 4' WEB WIRE ON LT.	49
257+62	261+21	2 BARB 4' WEB WIRE ON LT.	342
261+21	265+17	3 RAIL WOOD ON LT.	656
269+16	269+49	5' WOOD PRIVACY FENCE	63
278+13	278+63	4 RAIL WOOD	113
283+87		4' CHAIN LINK	19
288+00	291+78	3 RAIL WOOD ON LT.	436
309+15	318+15	5 STRAND BARB WIRE ON LT.	1005
321+88		4' CHAIN LINK	78
322+40	325+19	4 STRAND BARB WIRE ON LT.	342
322+84	325+18	3 RAIL WOOD ON RT.	282
325+84	335+78	5 STRAND BARB WIRE ON LT.	1016
335+79	340+75	5 STRAND BARB WIRE ON LT.	550
341+00	245+00	3 STRAND BARB WIRE ON LT.	445
361+70		4' WEB WIRE ON LT. AND RT.	75
TOTAL:			13423

NOTE: REMOVAL AND DISPOSAL OF GATES WILL BE INCLUDED IN PRICE BID FOR REMOVAL AND DISPOSAL OF FENCE.

REMOVAL AND DISPOSAL ITEMS

STATION	STATION	LOCATION	CURB AND GUTTER	CONCRETE DRIVEWAYS	WALKS	SIGNS	SIGN FOUNDATION	WELL	POST	SEPTIC SYSTEM	PROPANE TANK	WATER SPIGOT	COLUMNS	PLANTER
			LIN. FT.	SQ. YD.	SQ. YD.	EACH								
265+39		DRIVEWAY ON RT.		56										
269+82		DRIVEWAY ON RT.		45										
271+27		DRIVEWAY ON RT.		37										
272+70		DRIVEWAY ON RT.		49										
274+34		DRIVEWAY ON RT.		56										
275+71		DRIVEWAY ON RT.		68										
278+37		DRIVEWAY ON RT.		73										
280+06		DRIVEWAY ON RT.		66										
308+70		CURB AND GUTTER ON LT.	177											
313+95		DRIVEWAY ON RT.		86										
322+77		DRIVEWAY ON RT.		68										
335+60		CURB AND GUTTER ON RT.	75											
345+50		DRIVEWAY, CURB AND GUTTER ON RT.	89	175										
353+15		HWY. 36 DRIVEWAYS AND WALKS		146	385									
103+72	105+43	PROPANE TANK									1			
104+74		CLOSE SEPTIC SYSTEM								1				
104+90		SIGN				1								
105+00		CONCRETE POST							13					
106+72		POST							2					
106+94		WATER SPIGOT										1		
117+00		CLOSE WELL						1						
221+92		BRICK COLUMNS											1	
221+92		PLANTER BED												1
222+45		PLANTER BED												1
222+45		BRICK COLUMNS											1	
256+22		PLANTER BED												1
258+92		SIGN				1								
262+10	262+40	ROCK COLUMNS											2	
270+00		CLOSE SEPTIC SYSTEM								1				
275+40	275+50	WOOD POST							2					
278+10	278+55	BRICK COLUMNS											2	
278+10	278+55	PLANTER BED												1
308+32		WOOD POST							2					
319+88		SIGN				1								
321+70		SIGN				1								
321+92		SIGN				1								
354+84		SIGN				1								
363+00		SIGN				1								
363+00		SIGN FOUNDATION					1							
363+10		SIGN				1								
TOTALS:			341	925	385	8	1	1	19	2	1	1	6	4

REMOVAL AND DISPOSAL OF CULVERTS AND DROP INLETS

STATION	DESCRIPTION	PIPE CULVERTS	DROP INLETS
		EACH	EACH
101+18	24" x 24' PLASTIC PIPE ON RT.	1	
103+46	24" x 24' CM PIPE ON LT.	1	
104+76	18" x 24' CM PIPE ON LT.	1	
212+65	12" x 20' PCP PIPE ON LT.	1	
228+08	12" x 25' RC PIPE ON LT.	1	
228+25	12" x 24' PLASTIC PIPE ON RT.	1	
246+36	16" x 41' CM PIPE ON RT.	1	
246+36	18" x 40' CM PIPE ON RT.	1	
248+38	18" x 27' CM PIPE ON LT.	1	
249+90	18" x 24' CM PIPE ON LT.	1	
251+56	18" x 24' CM PIPE ON LT.	1	
252+40	18" x 28' CM PIPE ON RT.	1	
252+40	16" x 24' CM PIPE ON RT.	1	
256+57	18" x 26' CM PIPE ON RT.	1	
260+07	24" x 44' CM PIPE ON LT.	1	
260+07	18" x 24' PLASTIC PIPE ON RT.	1	
260+63	24" x 20' CM PIPE ON RT.	1	
262+34	18" x 38' CM PIPE ON LT.	1	
262+34	18" x 24' CM PIPE ON RT.	1	
263+62	24" x 30' PLASTIC PIPE ON RT.	1	
265+35	18" x 33' CM PIPE ON RT.	1	
267+18	18" x 24' CM PIPE ON RT.	1	
272+70	12" x 24' PLASTIC PIPE ON RT.	1	
274+36	12" x 24' PVC PIPE ON RT.	1	
275+43	18" x 21' CM PIPE ON LT.	1	
275+70	12" x 24' PLASTIC PIPE ON RT.	1	
277+38	16" x 26' CM PIPE ON LT.	1	
278+38	12" x 24' PLASTIC PIPE ON RT.	1	
279+00	16" x 44' CM PIPE ON LT.	1	
280+00	16" x 28' STEEL PIPE ON RT.	1	
283+73	16" x 26' CM PIPE ON RT.	1	
284+62	16" x 24' CM PIPE ON LT.	1	
285+50	DBL. 18" x 41' CM PIPE CROSS DRAIN	1	
294+10	DBL. 18" x 36' CM PIPE CROSS DRAIN	1	
296+08	18" x 26' CM PIPE ON RT.	1	
300+62	18" x 36' CM PIPE ON RT.	1	
300+80	18" x 26' CM PIPE ON LT.	1	
302+72	18" x 26' CM PIPE ON LT.	1	
304+76	TRP. 24" x 38' CM PIPE ON RT.	1	
307+97	18" x 95' PLASTIC PIPE ON LT.	1	
307+97	18" x 35' CM PIPE ON RT.	1	
313+95	15" x 38' CM PIPE ON RT.	1	
321+45	18" x 41' CM PIPE ON RT.	1	
321+54	24" x 48' CM PIPE ON LT.	1	
321+98	18" x 26' CM PIPE ON RT.	1	
325+58	18" x 24' CM PIPE ON LT.	1	
329+26	18" x 27' RC PIPE ON LT.	1	
329+26	18" x 27' CM PIPE ON RT.	1	
334+00	18" x 95' PLASTIC PIPE ON RT.	1	
337+03	24" x 28' CM PIPE ON RT.	1	
337+13	30" x 130' PLASTIC PIPE ON RT.	1	
337+22	18" x 22' CM PIPE ON LT.	1	
340+06	18" x 27' CM PIPE ON LT.	1	
342+49	18" x 24' CM PIPE ON LT.	1	
344+40	18" x 27' CM PIPE ON LT.	1	
345+14	18" x 27' PLASTIC PIPE ON RT.	1	
346+48	18" x 27' CM PIPE ON RT.	1	
347+63	18" x 27' CM PIPE ON RT.	1	
349+41	18" x 27' CM PIPE ON RT.	1	
349+41	QUAD 24" x 37' CM PIPE CROSS DRAIN	1	
355+61	24" x 34' CM PIPE ON LT.	1	
355+61	18" x 27' CM PIPE ON RT.	1	
363+30	18" x 172' RC PIPE	1	
363+30	DROP INLETS LT. AND RT.		2
504+67	18" x 38' CM PIPE ON LT.	1	
510+83	18" x 24 CM PIPE ON LT.	1	
TOTALS:		65	2

NOTE: QUANTITIES SHOWN ABOVE SHALL INCLUDE REMOVAL & DISPOSAL OF ALL HEADWALLS AND FLARED END SECTIONS IF APPLICABLE.

8/1/2012

R050189.DGN

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-20-12				6	ARK.			
				JOB NO.		050189	80	340

(2) QUANTITIES

SOIL LOG

STATION	LOCATION	DEPTH FEET	LIQUID LIMIT	PLASTICITY INDEX	AASHTO CLASSIFICATION	COLOR
105+00	5' RT.	0-5	24	9	A-4(4)	BR/GR
113+00	CL	0-5	24	9	A-4(2)	RD/BR
121+00	CL	0-3Z	27	11	A-6(3)	BROWN
129+00	CL	0-2.5Z	28	11	A-6(5)	BROWN
137+00	CL	0-1Z	23	4	A-4(0)	BROWN
177+00	CL	0-5	34	13	A-6(9)	BROWN
185+00	CL	0-5	32	12	A-6(7)	BROWN
193+00	CL	0-5	31	11	A-6(7)	RD/BR
201+00	CL	0-2Z	33	18	A-6(12)	RD/BR
209+00	CL	0-1.5Z	29	14	A-6(7)	RD/BR
213+00	5' RT.	0-4.3Z	22	6	A-4(2)	BROWN
225+00	12' LT.	0-5	23	5	A-4(1)	RD/BR
225+00	CL	0-3Z	27	8	A-4(5)	RD/BR
233+00	CL	0-1Z	25	2	A-4(0)	RD/BR
242+00	50' RT.	0-2.5Z	28	9	A-4(4)	RD/BR
245+50	CL	0-5	22	9	A-4(2)	BROWN
249+00	CL	0-5	25	8	A-4(2)	RD/BR
257+00	CL	0-4.7Z	29	13	A-6(5)	RD/BR
265+00	CL	0-2.5Z	27	5	A-4(0)	RD/BR
273+00	CL	0-3.5Z	ND	NP	A-4(0)	RD/BR
280+90	5' RT.	0-5	21	6	A-4(1)	RD/BR
281+10	15' RT.	0-5	24	9	A-4(3)	RD/BR
289+00	20' RT.	0-5	41	25	A-7-6(13)	RED
297+00	CL	0-5	31	12	A-6(6)	RED
305+00	16' RT.	0-5	ND	NP	A-4(0)	RD/BR
305+00	CL	0-5	ND	NP	A-2-4(0)	RD/BR
313+00	27' RT.	0-5	ND	NP	A-4(0)	RD/BR
313+00	10' RT.	0-5	ND	NP	A-4(0)	RD/BR
320+00	CL	0-4.5Z	22	5	A-4(0)	RD/BR
320+00	11' RT.	0-5	23	6	A-4(1)	RD/BR
329+00	6' RT.	0-5	28	13	A-6(5)	RD/BR
329+00	14' RT.	0-5	36	19	A-6(9)	RD/BR
337+00	7' LT.	0-5	22	6	A-4(1)	RD/BR
337+00	19' LT.	0-5	23	6	A-4(2)	RD/BR
345+00	4' LT.	0-5	27	11	A-6(6)	RD/BR
345+00	18' LT.	0-5	38	18	A-6(17)	RD/BR
361+00	3' RT.	0-5	29	22	A-6(7)	RD/BR
361+00	10' LT.	0-5	22	6	A-4(2)	RD/BR
105+00	23' RT.	0-5	23	8	A-4(3)	BR/GR
225+00	CL	0-3Z	24	6	A-4(2)	RD/BR
345+00	18' LT.	0-5	38	19	A-6(16)	RD/BR

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS 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.
Z- AUGER REFUSAL
NP - NON-PLASTIC
ND - NOT DETERMINABLE

BENCH MARKS

STATION	LOCATION	BENCH MARKS EACH
101+60	HDWL. OF R.C.BOX CULVERT ON RT.	1
163+32	BRIDGE END ON LT.	1
229+15	HDWL. OF R.C.BOX CULVERT ON RT.	1
286+15	TOP OF DROP INLET ON RT.	1
336+40	TOP OF DROP INLET ON LT.	1
TOTAL:		5

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

CONCRETE DITCH PAVING

STATION	STATION	LOCATION	LENGTH	"W"	"B"	CONC. DITCH PAVING (TYPE A)	CONC. DITCH PAVING (TYPE B)	SOLID SODDING	WATER
			LIN. FT.	FEET	FEET	SQ. YD.	SQ. YD.	SQ. YD.	M. GAL.
101+88	106+85	RT. OF MAIN LANES	497.00	17	5	938.78		220.89	2.78
101+95	103+98	LT. OF MAIN LANES	203.00	14	5	315.78		90.22	1.14
107+15	109+55	LT. OF MAIN LANES	240.00	14	5	373.33		106.67	1.34
133+61	137+00	LT. OF MAIN LANES	339.00	14	5	527.33		150.67	1.90
133+71	150+18	RT. OF MAIN LANES	1647.00	17	5	3111.00		732.00	9.22
137+00	149+09	LT. OF MAIN LANES	1209.00	17	5	2283.67		537.33	6.77
149+10	151+60	LT. OF MAIN LANES	250.00	12			333.33	111.11	1.40
229+27	232+41	LT. OF MAIN LANES	314.00	12			418.67	139.56	1.76
TOTALS:						7549.89	752.00	2088.45	26.31

BASIS OF ESTIMATE:
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 17605
CHAEL D. PUGETT
8/22/12

EROSION CONTROL MATTING

STATION	STATION	LOCATION	LENGTH LIN. FT.	CLASS 3 SQ. YD.
99+69	101+54	LT OF MAIN LANES	185.0	164.4
100+00	101+88	RT OF MAIN LANES	188.0	167.1
178+38	180+70	LT OF MAIN LANES	232.0	206.2
185+92	192+02	LT OF MAIN LANES	610.0	542.2
194+60	196+30	LT OF MAIN LANES	170.0	151.1
200+35	203+35	LT OF MAIN LANES	300.0	266.7
213+81	219+00	LT OF MAIN LANES	519.0	461.3
211+85	213+28	RT OF MAIN LANES	143.0	127.1
220+50	222+15	RT OF MAIN LANES	165.0	146.7
221+00	229+25	LT OF MAIN LANES	825.0	733.3
232+41	237+42	LT OF MAIN LANES	501.0	445.3
246+80	253+80	LT OF MAIN LANES	700.0	622.2
247+15	267+80	RT OF MAIN LANES	2065.0	1835.6
271+41	277+13	RT OF MAIN LANES	572.0	508.4
275+15	279+23	LT OF MAIN LANES	408.0	362.7
TOTAL:				6740.3

NOTE: AVERAGE WIDTH = 8'-0"

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	COMPACTED EMBANKMENT (SPECIAL)	ROCK FILL	* SOIL STABILIZATION
			CU. YD.				TON
ENTIRE	PROJECT	HWY. 13	441533	244353	6099	36093	
ENTIRE	PROJECT	HWY. 267	3496	454			
ENTIRE	PROJECT	TEMPORARY WIDENING AND					
		REMOVAL OF TEMPORARY WIDENING	9441	6985			
ENTIRE	PROJECT	OBLITERATION OF EXISTING ROAD	11132				
ENTIRE	PROJECT	APPROACHES	270	3450			
282+43		WEST BOOTH RD.		5			
301+47		HILL CREEK CIRCLE		15			
308+70		HILL CREEK CIRCLE		20			
308+70		HILL CREEK CIRCLE		10			
322+30		COUNTRY CLUB LN.		55			
322+30		COUNTRY CLUB LN.		20			
335+60		UNNAMED ST.		5			
345+48		UNNAMED ST.		10			
347+26		CARTER DRIVE		15			
358+50		HONEY HILL RD.		225			
* ENTIRE	PROJECT	TO BE USED IF AND WHERE					500
		DIRECTED BY THE ENGINEER					
TOTALS:			465872	255622	6099	36093	500

* QUANTITY ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL: SEEDING ACRE	LIME TON	MULCH COVER ACRE	WATER M.GAL.	SECOND SEEDING APPLICATION ACRE	SOLID SODDING SQ.YD.	TEMPORARY EROSION CONTROL: TEMPORARY SEEDING ACRE	MULCH COVER ACRE	WATER M.GAL.	SAND BAG DITCH CHECKS (E-5) BAG	ROCK DITCH CHECKS (E-6) CU.YD.	DROP INLET SILT FENCE (E-7) LIN. FT.	SILT FENCE (E-11) LIN. FT.	DIVERSION DITCH (E-8) LIN. FT.	SLOPE DRAIN (E-12): PIPE FOR SLOPE DRAINS LIN. FT.	SLOPE DRAIN (E-12): DUMPED RIPRAP CU.YD.	SEDIMENT BASIN (E-14) CU.YD.	OBLITERATION OF SEDIMENT BASIN CU.YD.	*SEDIMENT REMOVAL & DISPOSAL CU. YD.
ENTIRE	PROJECT	STAGE 1										2516	1116		10411	1665	468	12	1229	1229	1615
ENTIRE	PROJECT	STAGE 2										286	57	350	6808				46	46	311
ENTIRE	PROJECT	STAGE 3										484	69	925	3801				46	46	221
ENTIRE	PROJECT	STAGE 4													487						18
ENTIRE	PROJECT	MAIN LANES, HWY. 267 & HWY. 36	37.50	75.00	37.50	3858.3	37.50	2639	93.40	93.40	1905.4										
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			10.00	20.00	10.00	1026.3	10.00	500	20.00	20.00	408.0	1100	300	400	5000	400	100	5	600	600	800
TOTALS:			47.50	95.00	47.50	4884.6	47.50	3139	113.40	113.40	2313.4	4386	1542	1675	26507	2065	568	17	1921	1921	2965

BASIS OF ESTIMATE:
LIME .....2 TONS / ACRE OF SEEDING
WATER.....102.0 M.G. / ACRE OF SEEDING.
WATER.....20.4 M.G. / ACRE OF TEMPORARY SEEDING.
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING.
SAND BAG DITCH CHECKS.....22 BAGS / LOCATION
ROCK DITCH CHECKS.....3 CU.YD./LOCATION

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

*QUANTITIES ARE ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.

8/22/2012

R050189.DGN

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-20-12				6	ARK.			
				JOB NO.		050189	81	340

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9605
MICHAEL D. FUGETT
8/22/12

GUARDRAIL

STATION	STATION	LOCATION	GUARDRAIL (TYPE A)	GUARDRAIL (TYPE C)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)	TERMINAL ANCHOR POST (TYPE 1)
			LIN. FT.		EACH		
162+37.15	163+30.90	LT. SIDE	75		1		1
160+89.05	163+07.80	RT. SIDE	150		1	1	
166+73.20	168+91.95	LT. SIDE	150		1	1	
166+50.10	167+43.85	RT. SIDE	75		1		1
363+06.00		HONEY HILL RD.		25			
TOTALS:			450	25	4	2	2

CONCRETE ISLAND

STATION	LOCATION	CURB FACE TYPE	CONCRETE ISLAND SQ.YD.
105+91	RT. OF MAIN LANES	B	33
106+24	LT. OF MAIN LANES	B	36
362+91	RT. OF MAIN LANES	A	92
363+04	LT. OF MAIN LANES	A	59
TOTAL:			220

CONCRETE WALKS

STATION	STATION	LOCATION	LENGTH	CONCRETE WALKS
			LIN. FT.	SQ.YD.
282+74	301+06	RT. OF MAIN LANES	1748	971
301+83	308+44	RT. OF MAIN LANES	661	367
309+15	322+03	RT. OF MAIN LANES	1172	651
322+76	335+18	RT. OF MAIN LANES	1184	658
336+00	345+11	RT. OF MAIN LANES	911	506
345+83	346+91	RT. OF MAIN LANES	108	60
347+63	362+85	RT. OF MAIN LANES	1438	799
362+85	363+28	RT. OF MAIN LANES	168	93
362+83	363+24	LT. OF MAIN LANES	184	102
TOTAL:				4207

WHEELCHAIR RAMPS

STATION	LOCATION	TYPE 3	TYPE 4
		SQ.YD.	
282+74	RT. OF MAIN LANES	5.4	
301+06	RT. OF MAIN LANES	5.4	
301+83	RT. OF MAIN LANES	5.8	
308+44	RT. OF MAIN LANES	5.8	
309+15	RT. OF MAIN LANES	5.4	
322+03	RT. OF MAIN LANES	5.4	
322+76	RT. OF MAIN LANES	5.4	
335+18	RT. OF MAIN LANES	5.8	
336+00	RT. OF MAIN LANES	5.4	
345+11	RT. OF MAIN LANES	5.4	
345+83	RT. OF MAIN LANES	5.4	
346+91	RT. OF MAIN LANES	5.4	
347+63	RT. OF MAIN LANES	5.8	
362+83	LT. OF MAIN LANES		7.6
362+85	RT. OF MAIN LANES		13.7
363+13	RT. OF MAIN LANES		8.7
363+13	LT. OF MAIN LANES		8.2
363+15	RT. OF MAIN LANES		8.7
363+21	LT. OF MAIN LANES		8.2
363+22	LT. OF MAIN LANES		8.7
TOTALS:		71.8	63.8

FENCING

STATION	STATION	LOCATION	WIRE FENCE (TYPE C)	WIRE FENCE (TYPE D)	WIRE FENCE (TYPE D-1)	WIRE FENCE (TYPE D-2)	* 16'-0" GATES
			LIN. FT.				EACH
108+00	120+00	HWY. 13 ON RT.				1216	
118+29	120+00	HWY. 13 ON LT.				171	
120+00	135+00	HWY. 13 ON RT.				1505	
120+00	135+00	HWY. 13 ON LT.				1505	
135+00	150+00	HWY. 13 ON RT.				1543	
135+00	150+00	HWY. 13 ON LT.				1519	
150+00	163+20	HWY. 13 ON RT.				1294	
150+00	164+09	HWY. 13 ON LT.				1658	
165+48	170+89	HWY. 13 ON RT.				682	
166+62	171+11	HWY. 13 ON LT.				565	
170+89	180+00	HWY. 13 ON RT.	913				
171+11	180+00	HWY. 13 ON LT.	889				
180+00	191+71	HWY. 13 ON RT.	1171				
180+00	192+34	HWY. 13 ON LT.	1236				
219+34	225+00	HWY. 13 ON RT.			611		
223+11	240+58	HWY. 13 ON RT.	741				
225+00	227+89	HWY. 13 ON RT.			313		
232+30	240+00	HWY. 13 ON LT.			784		
240+00	240+58	HWY. 13 ON RT.	58				
240+00	246+00	HWY. 13 ON LT.	600				
246+49	248+58	HWY. 13 ON LT.	209				
256+06	256+57	HWY. 13 ON LT.	50				
257+65	259+95	HWY. 13 ON LT.	232				1
260+13	262+25	HWY. 13 ON LT.	220				1
262+46	265+17	HWY. 13 ON LT.	278				
309+17	315+00	HWY. 13 ON LT.			582		
315+00	318+15	HWY. 13 ON LT.			316		
322+40	325+19	HWY. 13 ON LT.		296			
325+85	330+00	HWY. 13 ON LT.		413			1
330+00	340+74	HWY. 13 ON LT.		1074			1
341+00	345+00	HWY. 13 ON LT.		402			
509+98	513+67	HWY. 267 ON LT.				408	1
TOTALS:			6597	2185	2606	12066	5

* DENOTES ALTERNATE BID ITEM.

CONCRETE COMBINATION CURB AND GUTTER

STATION	STATION	LOCATION	(TYPE A) (1' 6")
			LIN. FT.
282+30	308+58	HWY. 13 ON LT.	2589
282+50	301+41	HWY. 13 ON RT.	1898
301+59	308+68	HWY. 13 ON RT.	732
308+82	322+06	HWY. 13 ON LT.	1364
308+91	322+28	HWY. 13 ON RT.	1354
322+25	363+32	HWY. 13 ON LT.	4237
322+52	335+42	HWY. 13 ON RT.	1298
335+75	345+35	HWY. 13 ON RT.	964
345+59	347+14	HWY. 13 ON RT.	203
347+38	363+35	HWY. 13 ON RT.	1878
TOTAL:			16517

4" PIPE UNDERDRAIN

STATION	STATION	LOCATIONS	4" PIPE UNDERDRAINS	UNDERDRAIN OUTLET PROTECTORS
			LIN. FT.	EACH
100+00	104+00	LT. OF MAIN LANES (SAG)	480	3
100+00	104+00	RT. OF MAIN LANES (SAG)	480	3
203+30	205+30	LT. OF MAIN LANES (SAG)	240	2
203+30	205+30	RT. OF MAIN LANES (SAG)	240	2
227+50	230+00	LT. OF MAIN LANES (SAG)	290	2
227+50	230+00	RT. OF MAIN LANES (SAG)	290	2
276+00	278+00	LT. OF MAIN LANES (SAG)	240	2
276+00	278+00	RT. OF MAIN LANES (SAG)	240	2
285+00	287+00	LT. OF MAIN LANES (SAG)	200	
285+00	287+00	RT. OF MAIN LANES (SAG)	200	
302+00	306+00	LT. OF MAIN LANES (SAG)	400	
302+00	306+00	RT. OF MAIN LANES (SAG)	400	
351+75	356+75	LT. OF MAIN LANES (SAG)	500	
351+75	356+75	RT. OF MAIN LANES (SAG)	500	
* ENTIRE PROJECT TO BE USED IF AND			5000	20
WHERE DIRECTED BY THE ENGINEER				
TOTALS:			9700	38

* NOTE: QUANTITIES ARE ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.

UNDERDRAINS SHALL BE STUBBED INTO THE PROPOSED DROP INLET IF AND WHERE DIRECTED BY THE ENGINEER. PAYMENT FOR THIS TO BE INCLUDED IN THE UNIT PRICE BID FOR 4" PIPE UNDERDRAIN.

MAILBOXES

LOCATION	MAILBOXES	MAILBOX SUPPORTS (SINGLE)	MAILBOX SUPPORTS (DOUBLE)
		EACH	
ENTIRE PROJECT	46	42	2
TOTALS:	46	42	2

APPROACH GUTTERS AND SLABS

STATION	STATION	LOCATION	APPROACH GUTTER (TYPE C)	APPROACH SLABS (TYPE SPECIAL)	REINFORCING STEEL RDWY. (GR 60)	AGGREGATE BASE CRS. (CLASS 7)
			CU.YD.	CU.YD.	POUND	TON
162+77.00	163+20.20	RT. SIDE	14.79			
163+14.07	163+43.30	LT. SIDE	14.79			
166+37.70	166+80.90	RT. SIDE	14.79			
166+60.80	166+90.03	LT. SIDE	17.79			
162+95.25	163+31.75	TYPE SPECIAL APPROACH SLAB		53.89	6294	25.7
166+49.25	166+85.75	TYPE SPECIAL APPROACH SLAB		53.89	6294	25.7
TOTALS:			62.16	107.78	12588	51.4

NOTE: USE T =14.5" FOR 8' SHOULDER.

8/21/2012

R050189.DGN

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-27-12				6	ARK.			
8-29-12				JOB NO.		050189	82	340

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/30/12

STRUCTURES OPEN SHOULDER SECTION

STATION	DESCRIPTION	CROSS DRAIN PIPE CULVERT ALTERNATES										SIDE DRAIN	FLARED END SECTIONS FOR PIPE CULVERT ALTERNATES					YARD DRAIN	SOLID SODDING	WATER
		ALT. 1 (CLASS III)				ALT. 1 (CLASS IV)	ALT. 2, 3, 4, 5, AND 6													
		24"	42"	54"	73"X45"	36"	24"	36"	42"	54"	71"X47"	12"	24"	36"	42"	54"	73"X45"			
		LIN. FT.											EACH						SQ.YD.	M.GAL
101+81	CONST. DBL. ARCH PIPE CULVERT LT. & RT.				152						162						4		180	2.27
507+93	CONST. DBL. PIPE CULVERT LT.	612					627						2						16	0.20
179+68	CONST. PIPE CULVERT LT. & RT.	84					89						2						16	0.20
184+54	CONST. PIPE CULVERT LT. & RT.	84					89						2						16	0.20
188+15	CONST. PIPE CULVERT LT. & RT.					76		82						2					34	0.43
196+31	CONST. PIPE CULVERT LT. & RT.	68					73						2						16	0.20
202+70	CONST. PIPE CULVERT LT. & RT.	84					89						2						16	0.20
205+96	CONST. PIPE CULVERT LT. & RT.		102						108						2				46	0.58
233+93	CONST. PIPE CULVERT LT. & RT.			160						167						4			58	0.73
277+13	CONST. TRP. PIPE CULVERT LT. & RT.	222					237						2						16	0.20
ENTIRE PROJECT IF AND WHERE DIRECTED BY THE ENGINEER												1200						12		
TOTALS:		1154	102	160	152	76	1204	82	108	167	162	1200	12	2	2	4	4	12	414	5.21

BASIS OF ESTIMATE:
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING.

NOTE: FOR R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.

NOTE: FOR C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

STRUCTURES CURB AND GUTTER SECTION (BOX 1 OF 2)

STATION	DESCRIPTION	CROSS DRAIN R.C. PIPE CULVERT									CROSS DRAIN PIPE CULVERT ALTERNATES			PIPE CULVERT STORM DRAIN ALTERNATES					FLARED END SECTIONS FOR R.C. PIPE CULVERTS							DROP INLETS			JUNCT. BOX	JUNCT. BOX	SOLID SODDING	WATER	STD. DWG. NOS.
		(CLASS III)								(CLASS IV)	(CLASS III)														TYPE	EXT.						
		18"	24"	30"	36"	48"	22"X14"	44"X27"	51"X31"	24"	24"	22"X14"	44"X27"	18"	24"	30"	44"X27"	51"x31"	18"	24"	30"	36"	22"X14"	44"X27"	51"X31"	MO	4'	8'	(TYPE ST)	(TYPE E)			
		LIN. FT.																	EACH											SQ.YD.	M.GAL	
246+62	CONST. JCT. BOX & PIPE CULVERT ON LT.									150										2									1		8	0.10	PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-1
283+48	CONST. D.I. & PIPE CULVERT ON RT.	5												127					1							1	1				5	0.06	PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
284+80	CONST. D.I. & PIPE CULVERT ON RT.													100												1	1						PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
285+85	CONST. D.I. & PIPE CULVERT ON RT.													25												1	1						PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
286+15	CONST. D.I. & PIPE CULVERT ON RT.				76																	2				1		1			34	0.43	PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
286+44	CONST. D.I. & PIPE CULVERT ON RT.													24												1	1						PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
287+43	CONST. D.I. & PIPE CULVERT ON LT.													35												1	1						PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
287+43	CONST. D.I. & PIPE CULVERT ON RT.													95												1	1						PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
289+80	CONST. D.I. & PIPE CULVERT ON RT.													233												1		1					PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
289+80	CONST. D.I. & PIPE CULVERT ON LT.													31												1		1					PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
294+70	CONST. D.I. & PIPE CULVERT ON RT.		8								35									1						1	1				8	0.10	PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
294+70	CONST. D.I. & PIPE CULVERT ON LT.		22																	1						1	1				8	0.10	PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
297+18	CONST. D.I. & PIPE CULVERT ON LT.														244											1	1						PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
297+18	CONST. D.I. & PIPE CULVERT ON RT.													35												1	1						PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
299+30	CONST. D.I. & PIPE CULVERT ON RT.													36												1	1						PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
299+30	CONST. D.I. & PIPE CULVERT ON LT.													177												1	1						PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
300+95	CONST. D.I. & PIPE CULVERT ON RT.		6												38					1						1	1				8	0.10	PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
301+11	CONST. D.I. & PIPE CULVERT ON LT.														130											1	1						PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
302+45	CONST. D.I. & PIPE CULVERT ON LT.														150											1	1						PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
302+45	CONST. D.I. & PIPE CULVERT ON RT.													36												1	1						PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
304+00	CONST. D.I. & PIPE CULVERT ON RT.													40												1	1						PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
304+00	CONST. D.I. & PIPE CULVERT ON LT.															39										1		1					PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
304+44	CONST. D.I. & PIPE CULVERT ON RT.													36												1	1						PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
304+44	CONST. D.I. & PIPE CULVERT ON LT.															41										1		1					PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
304+85	CONST. D.I. & ARCH PIPE CULVERT ON RT.												35													1							PCC-1, FES-1, FES-2
304+85	CONST. D.I. & PIPE CULVERT ON LT.					28																				1							PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
305+70	CONST. D.I. & ARCH PIPE CULVERT ON RT.							30									79						1			1	1				17	0.21	PCC-1, FES-1, FES-2
306+05	CONST. D.I. & PIPE CULVERT ON LT.													115												1							PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
307+30	CONST. D.I. & PIPE CULVERT ON LT.													121												1							PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
307+30	CONST. D.I. & PIPE CULVERT ON RT.													35												1	1						PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
309+26	CONST. D.I. & PIPE CULVERT ON RT.	6												35					1							1		1			5	0.06	PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
309+26	CONST. D.I. & PIPE CULVERT ON LT.													192												1							PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
312+26	CONST. D.I. & PIPE CULVERT ON RT.													35												1		1					PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
312+26	CONST. D.I. & PIPE CULVERT ON LT.													296												1		1					PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
314+27	CONST. D.I. & PIPE CULVERT ON RT.													197												1		1					PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
318+25	CONST. D.I. & ARCH PIPE CULVERT ON LT.						6					35											1			1	1				5	0.06	PCC-1, FES-1, FES-2
316+25	CONST. D.I. & ARCH PIPE CULVERT ON RT.						8																1			1	1				5	0.06	PCC-1, FES-1, FES-2
321+70	CONST. D.I. & PIPE CULVERT ON LT.	4												98					1							1		1			5	0.06	PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
321+70	CONST. D.I. & PIPE CULVERT ON RT.	5												43					1							1		1			5	0.06	PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
322+00	CONST. D.I. & PIPE CULVERT ON LT.		16								27									1						1	1				8	0.10	PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-3
322+29	CONST. D.I. & PIPE CULVERT ON LT.	16													59				1							1	1				8	0.10	PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-4
322+72	CONST. D.I. & PIPE CULVERT ON LT.		6												256					1						1					8	0.10	PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
323+80	CONST. D.I. & PIPE CULVERT ON RT.													148												1		1					PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
325+32	CONST. D.I. & PIPE CULVERT ON LT.														244											1		1					PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
325+32	CONST. D.I. & PIPE CULVERT ON RT.	5												36					1							1	1				5	0.06	PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
327+80	CONST. D.I. & PIPE CULVERT ON LT.														96											1	1						PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
327+80	CONST. D.I. & PIPE CULVERT ON RT.													32												1	1						PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
328+80	CONST. D.I. & PIPE CULVERT ON LT.														196											1							PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
328+80	CONST. D.I. & PIPE CULVERT ON RT.													32												1							PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
SUBTOTALS BOX 1 OF 2:		41	58		76	28	14	30		150	62	35	35	2445	1413	80	79		6	7		2	2	1		48	27	13	1		142	1.76	

BASIS OF ESTIMATE:
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING.

NOTE: FOR R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.

NOTE: FOR C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

8/30/2012

R050189.DGN

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-27-12				6	ARK.			
8-29-12				JOB NO.		050189	83	340

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 7605
MICHAEL D. FUGETT
8/30/12

STRUCTURES CURB AND GUTTER SECTION (BOX 2 OF 2)

STATION	DESCRIPTION	CROSS DRAIN R.C. PIPE CULVERT (CLASS III)								(CLASS IV)	CROSS DRAIN PIPE CULVERT ALTERNATES (CLASS III)			PIPE CULVERT STORM DRAIN ALTERNATES					FLARED END SECTIONS FOR R.C. PIPE CULVERTS							DROP INLETS TYPE	DROP INLETS EXT.		JUNCT. BOX	JUNCT. BOX	SOLID SODDING	WATER	STD. DWG. NOS.
		18"	24"	30"	36"	48"	22"X14"	44"X27"	51"X31"	24"	24"	22"X14"	44"X27"	18"	24"	30"	44"X27"	51"X31"	18"	24"	30"	36"	22"X14"	44"X27"	51"X31"	MO	4'	8'	(TYPE ST)	(TYPE E)			
		LIN. FT.																	EACH													SQ.YD.	M.GAL	
330+80	CONST. D.I. & PIPE CULVERT ON LT.														193											1		1					PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
330+80	CONST. D.I. & PIPE CULVERT ON RT.														32											1							PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
332+80	CONST. D.I. & PIPE CULVERT ON LT.														220											1		1					PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
332+80	CONST. D.I. & PIPE CULVERT ON RT.														32											1							PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
335+08	CONST. D.I. & PIPE CULVERT ON LT.															127										1		1					PCC-1, PCM-1, PCP-1, PCP-2
335+08	CONST. D.I. & PIPE CULVERT ON RT.	6									32								1							1					5	0.06	PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
336+40	CONST. D.I. & PIPE CULVERT ON LT.		11										32							1						1					8	0.10	PCC-1, FES-1, FES-2
336+40	CONST. D.I. & PIPE CULVERT ON RT.																	145								1	1						PCC-1, FES-1, FES-2
337+92	CONST. D.I. & ARCH PIPE CULVERT ON RT.								7	47										1					1	1	1				16	0.20	PCC-1, FES-1, FES-2
338+90	CONST. D.I. & PIPE CULVERT ON RT.													75												1							PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
339+70	CONST. D.I. & PIPE CULVERT ON RT.													75												1							PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
340+50	CONST. D.I. & PIPE CULVERT ON RT.														126											1							PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
341+80	CONST. D.I. & PIPE CULVERT ON RT.														96											1	1						PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
342+80	CONST. D.I. & PIPE CULVERT ON LT.													31												1							PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
342+80	CONST. D.I. & PIPE CULVERT ON RT.														218											1							PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
345+02	CONST. D.I. & PIPE CULVERT ON RT.														173											1	1						PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
346+56	CONST. D.I. & PIPE CULVERT ON LT.													120												1	1						PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
346+80	CONST. D.I. & PIPE CULVERT ON RT.	4													134				1							1	1				5	0.06	PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
346+80	CONST. D.I. & PIPE CULVERT ON LT.													134												1		1					PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
348+18	CONST. D.I. & PIPE CULVERT ON RT.	6													174				1							1	1				5	0.06	PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
348+18	CONST. D.I. & PIPE CULVERT ON LT.													31												1	1						PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
349+80	CONST. D.I. & PIPE CULVERT ON LT.													96												1	1						PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
349+96	CONST. D.I. & PIPE CULVERT ON RT.	8													80				1							1	1				5	0.06	PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
350+80	CONST. D.I. & PIPE CULVERT ON RT.														196											1							PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
350+80	CONST. D.I. & PIPE CULVERT ON LT.	4													116				1							1					5	0.06	PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
352+00	CONST. D.I. & PIPE CULVERT ON LT.														76											1							PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
352+80	CONST. D.I. & PIPE CULVERT ON RT.														65											1	1						PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
352+80	CONST. D.I. & PIPE CULVERT ON LT.														31											1							PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
353+49	CONST. D.I. & PIPE CULVERT ON RT.		42													69				1						1					8	0.10	PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
354+24	CONST. D.I. & PIPE CULVERT ON RT.															50										1							PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
354+80	CONST. D.I. & PIPE CULVERT ON RT.			14						46										1	1					1					21	0.26	PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
355+80	CONST. D.I. & PIPE CULVERT ON RT.															93										1	1						PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
356+80	CONST. D.I. & PIPE CULVERT ON RT.		50													93										1	1						PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
356+80	CONST. JCT. BOX & PIPE CULVERT ON LT.													208															1				PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
358+00	CONST. D.I. & PIPE CULVERT ON RT.														114											1							PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
358+00	CONST. D.I. & PIPE CULVERT ON LT.		8												39					1						1					8	0.10	PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
358+90	CONST. D.I. & PIPE CULVERT ON LT.													86												1	1						PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
359+80	CONST. D.I. & PIPE CULVERT ON LT.														84											1							PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
360+70	CONST. D.I. & PIPE CULVERT ON LT.													84												1	1						PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
361+58	CONST. D.I. & PIPE CULVERT ON LT.													82												1		1					PCC-1, PCM-1, PCP-1, PCP-2, FES-1, FES-2
SUBTOTALS BOX 1 OF 2:		41	58		76	28	14	30		150	62	35	35	2445	1413	80	79		6	7		2	2	1		48	27	13	1		142	1.76	
SUBTOTALS BOX 2 OF 2:		28	111	14					7	93	32		32	1022	2199	432		145	5	5	1				1	39	15	5		1	86	1.06	
TOTALS:		69	169	14	76	28	14	30	7	243	94	35	67	3467	3612	512	79	145	11	12	1	2	2	1	1	87	42	18	1	1	228	2.82	

BASIS OF ESTIMATE:
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING.

NOTE: FOR R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.

NOTE: FOR C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

8/30/2012

R050189.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-20-12				6	ARK.			
				JOB NO.		050189	84	340

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/22/12

R.C. BOX CULVERTS

STATION	DESCRIPTION	SPAN	HEIGHT	LENGTH	CLASS S CONCRETE-ROADWAY	REINF. STEEL-ROADWAY (GRADE 60)	UNCL.EXC. FOR STR.-ROADWAY	SOLID SODDING	WATER	STD. DWG. NOS.
		LIN. FT.			CU.YD.	POUND	CU.YD.	SQ.YD.	M.GAL	
101+60	EXISTING DBL R.C.BOX CULVERT EXTEND 20' LT. & 20' RT. (3:1 WINGS)	6	4	44	48.57	7207	29	17	0.21	R-200X-0, W-X003-1, RCB-1, RCB-2, RCB-3
149+70	CONSTRUCT R.C. BOX CULVERT WITH 15 RT. FWD SKEW	7	6	352	369	51314	118	87	1.10	SPECIAL DETAILS, RCB-1, RCB-2
SUBTOTALS:					417.57	58521	147	104	1.31	
	STRUCTURES OVER 20' - 0" SPAN									
229+15	CONSTRUCT TRP. R.C. BOX CULVERT WITH 15 LT. FWD SKEW	6	4	94	132.27	17943	61	20	0.25	SPECIAL DETAILS, RCB-1, RCB-2
228+30	CONSTRUCT DBL. R.C. BOX CUVLERT ON THE RT.	12	7	36	144.46	15476	63	28	0.35	SPECIAL DETAILS, RCB-1, RCB-2
SUBTOTALS:					276.73	33419	124	48	0.60	
TOTALS:					694.30	91940	271	152	1.91	

BASIS OF ESTIMATE:
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING.

SELECTED PIPE BEDDING

LOCATION	SELECTED PIPE BEDDING
	CU.YD.
ENTIRE PROJECT TO BE USED IF	
AND WHERE DIRECTED BY THE	300
ENGINEER	
TOTAL:	300

NOTE: QUANTITY ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
99+87	100+87	HWY. 13	20	222.22
502+92	503+92	HWY. 267	20	222.22
513+05	514+05	HWY. 267	20	222.22
TOTAL:				666.66

NOTE: AVERAGE MILLING DEPTH 1".

ACHM PATCHING OF EXISTING ROADWAY

DESCRIPTION	TON
ENTIRE PROJECT - TO BE USED IF AND WHERE	300
DIRECTED BY THE ENGINEER	
TOTAL:	300

NOTE: QUANTITY IS ESTIMATED
SEE SECTION 104.03 OF THE STD. SPECS.

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	TON	TACK COAT
		GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE	125	250
DIRECTED BY THE ENGINEER		
TOTALS:	125	250

NOTE: QUANTITIES ARE ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.

PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

STATION	LOCATION	WIDTH	LENGTH	TON
		FEET		
101+84	CROSS DRAIN	24	22	29
277+12	CROSS DRAIN	20	22	24
337+83	CROSS DRAIN	9	22	11
337+83	CROSS DRAIN	9	22	11
507+92	CROSS DRAIN	14	29	22
513+72	CROSS DRAIN	9	22	11
TOTAL:				108

AVG. DEPTH = 9"

SIGNS

SIGN NUMBER	LOCATION	STANDARD SIGN	CHANNEL POST SIGN SUPPORT (TYPE C)
		SQ. FT.	EACH
OM4-3	CLOSE HONEY HILL RD.	6.3	3
TOTALS:		6.3	3

8/20/2012

R050189.DGN

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-20-12				6	ARK.			
				JOB NO.		050189	85	340

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/22/12

BASE AND SURFACING

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT				ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")				
				TON / STATION	TON	TOTAL WID.	SQ.YD.	GALLONS / SQ.YD.	GALLON	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	PG 70-22
			FEET			FEET				FEET			TON	FEET			TON	TON
MAIN LANES (HWY. 13)																		
99+87	100+87	100' TRANSITION	100.0	151.26	151.3	24.5	272.2	0.03	8.2	1.8	20.0	495.0	5.0	31.5	350.0	220.0		38.5
100+87	103+16	NOTCH AND WIDEN	229.0	229.26	525.0	36.3	923.6	0.03	27.7	7.3	185.7	495.0	46.0	45.0	1145.0	220.0		126.0
103+16	108+90	HWY. 13 AND HWY. 267 INTERSECTION	574.0	VAR.	3170.2	VAR.	9240.8	0.03	277.2	VAR.	2543.1	495.0	629.4	VAR.	7278.0	220.0		800.6
108+90	111+29	FULL DEPTH OPEN SHOULDER	239.0	326.62	780.6	57.2	1519.0	0.03	45.6	28.8	764.8	495.0	189.3	72.8	1933.2	220.0		212.7
111+29	163+32	FULL DEPTH OPEN SHOULDER	5203.0	307.50	15999.2	48.8	28211.8	0.03	846.4	24.5	14163.7	495.0	3505.5	64.3	37172.5	220.0	4089.0	
166+49	279+46	FULL DEPTH OPEN SHOULDER	11297.0	307.50	34738.3	48.8	61254.8	0.03	1837.6	24.5	30752.9	495.0	7611.3	64.3	80710.8	220.0	8878.2	
279+46	280+46	FULL DEPTH OPEN SHOULDER	100.0	311.92	311.9	40.8	453.3	0.03	13.6	25.5	283.3	495.0	70.1	66.3	736.7	220.0	81.0	
280+46	281+96	FULL DEPTH OPEN SHOULDER	150.0	316.46	474.7	52.8	880.0	0.03	26.4	26.5	441.7	495.0	109.3	52.8	880.0	220.0	96.8	
281+96	282+81	BOOTH RD AND HWY. 13 INTERSECTION	85.0	VAR.	296.6	VAR.	922.6	0.03	27.7	VAR.	461.3	495.0	114.2	VAR.	922.6	220.0	101.5	
282+81	283+29	FULL DEPTH CURB AND GUTTER	48.0	152.84	73.4	57.4	306.1	0.03	9.2	28.7	153.1	495.0	37.9	57.4	306.1	220.0	33.7	
283+29	318+36	FULL DEPTH CURB AND GUTTER	3507.0	158.79	5568.8	56.0	21821.3	0.03	654.6	28.0	10910.7	495.0	2700.4	56.0	21821.3	220.0	2400.3	
318+36	321+06	FULL DEPTH CURB AND GUTTER	270.0	167.86	453.2	64.0	1920.0	0.03	57.6	32.0	960.0	495.0	237.6	64.0	1920.0	220.0	211.2	
321+06	323+67	FULL DEPTH CURB AND GUTTER	261.0	195.00	509.0	72.0	2088.0	0.03	62.6	36.0	1044.0	495.0	258.4	72.0	2088.0	220.0	229.7	
323+67	326+37	FULL DEPTH CURB AND GUTTER	270.0	167.86	453.2	64.0	1920.0	0.03	57.6	32.0	960.0	495.0	237.6	64.0	1920.0	220.0	211.2	
326+37	359+33	FULL DEPTH CURB AND GUTTER	3296.0	158.79	5233.7	56.0	20508.4	0.03	615.3	28.0	10254.2	495.0	2537.9	56.0	20508.4	220.0	2255.9	
359+33	360+68	FULL DEPTH CURB AND GUTTER	135.0	163.33	220.5	62.0	930.0	0.03	27.9	31.0	465.0	495.0	115.1	62.0	930.0	220.0		102.3
360+68	362+03	FULL DEPTH CURB AND GUTTER	135.0	201.89	272.6	79.0	1185.0	0.03	35.6	39.5	592.5	495.0	146.6	79.0	1185.0	220.0		130.4
362+03	363+64	HWY. 13 AND HWY. 36 INTERSECTION	161.0	VAR.	759.2	VAR.	3349.3	0.03	100.5	VAR.	1674.7	495.0	414.5	VAR.	3349.3	220.0		368.4
SIDE ROADS AND CITY STREETS																		
502+92	503+92	HWY. 267 100' TRANSITION	100.0	160.70	160.7	29.5	327.8	0.03	9.8	40.0	444.4	495.0	110.0	47.8	531.1	220.0		58.4
503+92	505+64	HWY. 267 NOTCH AND WIDEN	172.0	241.74	415.8	41.8	798.8	0.03	24.0	10.0	191.1	495.0	47.3	57.8	1104.6	220.0		121.5
511+31	513+05	HWY. 267 NOTCH AND WIDEN	174.0	239.60	416.9	9.6	185.6	0.03	5.6	9.6	185.6	495.0	45.9	47.3	914.5	220.0		100.6
513+05	514+05	HWY. 267 100' TRANSITION	100.0	159.29	159.3	28.8	320.0	0.03	9.6	3.6	40.0	495.0	9.9	33.3	370.0	220.0		40.7
301+47		HILL CREEK CIRCLE		VAR.	91.3	VAR.	374.2	0.03	11.2	VAR.	187.1	495.0	46.3	VAR.	374.2	220.0	41.2	
308+70		HILL CREEK CIRCLE		VAR.	101.0	VAR.	414.1	0.03	12.4	VAR.	207.0	495.0	51.2	VAR.	414.1	220.0	45.6	
308+70		HILL CREEK CIRCLE		VAR.	68.2	VAR.	274.0	0.03	8.2	VAR.	136.9	495.0	33.9	VAR.	273.9	220.0	30.1	
322+30		COUNTRY CLUB LN. ON LT.		VAR.	96.5	VAR.	197.0	0.03	5.9	VAR.	197.0	495.0	48.8	VAR.	271.8	220.0	29.9	
322+30		COUNTRY CLUB LN. ON RT.		VAR.	67.0	VAR.	271.8	0.03	8.2	VAR.	135.9	495.0	33.6	VAR.	271.8	220.0	29.9	
335+60		UNNAMED ST.		VAR.	76.7	VAR.	321.9	0.03	9.7	VAR.	318.4	495.0	78.8	VAR.	321.9	220.0	35.4	
345+48		UNNAMED ST.		VAR.	78.8	VAR.	318.4	0.03	9.6	VAR.	159.2	495.0	39.4	VAR.	318.4	220.0	35.0	
347+26		CARTER DRIVE		VAR.	70.5	VAR.	285.9	0.03	8.6	VAR.	143.0	495.0	35.4	VAR.	285.9	220.0	31.4	
358+50		HONEY HILL RD.		VAR.	143.4	VAR.	585.5	0.03	17.6	VAR.	292.8	495.0	72.5	VAR.	585.4	220.0	64.4	
TEMPORARY WIDEING FOR MAINTENANCE OF TRAFFIC																		
10+28	15+32	STAGE 1 WIDENING EXISTING ON RT.	504.0	130.14	655.9									17.0	952.0	220.0	104.7	
30+14	34+50	STAGE 1 WIDENING EXISTING ON RT.	436.0	78.33	341.5									9.0	436.0	220.0	48.0	
34+50	37+66	STAGE 1 WIDENING EXISTING ON RT.	316.0	110.70	349.8									14.0	491.6	220.0	54.1	
37+66	39+67	STAGE 1 WIDENING EXISTING ON RT.	201.0	97.75	196.5									12.0	268.0	220.0	29.5	
39+67	41+79	STAGE 1 WIDENING EXISTING ON RT.	212.0	113.90	241.5									14.5	341.6	220.0	37.6	
41+79	45+98	STAGE 1 WIDENING EXISTING ON RT.	419.0	79.61	333.6									9.5	442.3	220.0	48.7	
50+06	53+64	STAGE 1 WIDENING EXISTING ON RT.	358.0	73.15	261.9									8.2	326.2	220.0	35.9	
53+64	53+96	STAGE 1 WIDENING EXISTING ON RT.	32.0	129.82	41.5									17.0	60.4	220.0	6.6	
53+96	57+54	STAGE 1 WIDENING EXISTING ON RT.	358.0	164.15	587.7									22.3	887.0	220.0	97.6	
57+54	61+24	STAGE 1 WIDENING EXISTING ON RT.	370.0	107.47	397.6									13.5	555.0	220.0	61.1	
316+89	319+00	STAGE 3 WIDENGING ON LT.	211.0	58.89	124.3									6.0	140.7	220.0	15.5	
319+00	321+08	STAGE 3 WIDENGING ON LT.	208.0	68.59	142.7									7.5	173.3	220.0	19.1	
321+08	321+49	STAGE 3 WIDENGING ON LT.	41.0	52.39	21.5									5.0	22.8	220.0	2.5	
321+49	323+00	STAGE 3 WIDENGING ON LT.	151.0	75.07	113.4									8.5	142.6	220.0	15.7	
323+00	326+40	STAGE 3 WIDENGING ON LT.	340.0	117.18	398.4									15.0	566.7	220.0	62.3	
326+40	332+00	STAGE 3 WIDENGING ON LT.	560.0	136.62	765.1									18.0	1120.0	220.0	123.2	
332+00	333+50	STAGE 3 WIDENGING ON LT.	150.0	113.95	170.9									14.5	241.7	220.0	26.6	
333+50	337+00	STAGE 3 WIDENGING ON LT.	350.0	91.27	319.4									11.0	427.8	220.0	47.1	
337+00	338+00	STAGE 3 WIDENGING ON LT.	100.0	101.00	101.0									12.5	138.9	220.0	15.3	
338+00	353+93	STAGE 3 WIDENGING ON LT.	1593.0	110.71	1763.6									14.0	2478.0	220.0	272.6	
70+00	72+26	STAGE 3 WIDENGING ON LT.	226.0	195.55	441.9									24.0	602.7	220.0	66.3	
72+26	74+27	STAGE 3 WIDENGING ON LT.	201.0	130.70	262.7									24.0	536.0	220.0	59.0	
ADDITIONAL FOR LEVELING																		
99+87	106+00	HWY. 13	613.0			VAR.	VAR.	0.10	136.5					VAR.	VAR.	VAR.	179.8	
502+92	514+05	HWY. 267	1113.0			VAR.	VAR.	0.10	263.8					VAR.	VAR.	VAR.	326.5	
ADDITIONAL FOR SUPERELEVATION																		
147+36	172+05	ADDITIONAL AGGREGATE	2469.0	VAR.	2098.3													
211+81	230+28	ADDITIONAL AGGREGATE	1847.0	VAR.	1861.8													
232+06	241+53	ADDITIONAL AGGREGATE	947.0	VAR.	163.1													
247+15	257+32	ADDITIONAL AGGREGATE	1017.0	VAR.	667.0													
257+88	268+64	ADDITIONAL AGGREGATE	1076.0	VAR.	753.7													
270+62	279+33	ADDITIONAL AGGREGATE	871.0	VAR.	554.8													
TOTALS:					**86068.6**		**162381.2**		**5272.0**		**79269.1**		**19619.1**		**202545.8**		**20686.7**	**2100.1**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.4% MIN. AGGR.....5.6% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.7% MIN. AGGR.....4.3% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22
MAXIMUM NUMBER OF GYRATIONS = 160 FOR PG 70-22

8/20/2012

R050189.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-20-12				6	ARK.			
				JOB NO.		050189	86	340

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
RICHARD D. FUGETT
8/22/12

DRIVEWAYS & TURNOUTS

STATION	SIDE	LOCATION	WIDTH	**MODIFIED CURB		PORTLAND CEMENT CONCRETE DRIVEWAY	ACHM SURFACE COURSE (1/2") 220 LBS. PER SQ. YD. (PG 64-22)		AGGREGATE BASE COURSE (CLASS 7)	SIDE DRAINS		STANDARD DRAWINGS
										18"	24"	
			FEET	STATION	STATION	SQ. YD.	SQ. YD.	TON	TON	LIN. FT.		
101+18	RT	DRIVEWAY	16				24.7	2.7	31.9		38	PCC-1, PCM-1
504+67	LT	DRIVEWAY	16				24.7	2.7	35.9	34		PCC-1, PCM-1
510+83	LT	DRIVEWAY	16				24.7	2.7	33.9		32	PCC-1, PCM-1
510+95	RT	DRIVEWAY	16				24.7	2.7	27.1			
109+72	LT	DRIVEWAY	16				24.7	2.7	61.7		80	PCC-1, PCM-1
177+00	RT	DRIVEWAY	16				24.7	2.7	27.4			
192+00	RT	DRIVEWAY	16				24.7	2.7	22.8			
192+22	LT	DRIVEWAY	16				24.7	2.7	20.0			
203+54	RT	DRIVEWAY	16				24.7	2.7	34.7			
203+54	LT	DRIVEWAY	16				24.7	2.7	34.7			
213+15	LT	HONEY HILL LOOP	24				122.2	13.4	49.9			
213+15	RT	HONEY HILL LOOP	24				122.2	13.4	49.9	46		PCC-1, PCM-1
222+00	LT	DRIVEWAY	16				111.3	12.2	45.4	46		PCC-1, PCM-1
228+08	LT	DRIVEWAY	16				24.7	2.7	61.7	48		PCC-1, PCM-1
228+25	RT	HONEY HILL LOOP	24				199.0	21.9	81.3			
242+41	LT	CO. RD.	24				321.7	35.4	131.4	42		PCC-1, PCM-1
246+28	RT	HONEY HILL RD.	24				350.3	38.5	143.0			
246+28	LT	HONEY HILL LOOP	24				142.0	15.6	58.0			
249+90	LT	DRIVEWAY	16				24.7	2.7	61.7		32	PCC-1, PCM-1
251+56	LT	DRIVEWAY	16				24.7	2.7	22.8		36	PCC-1, PCM-1
252+40	RT	DRIVEWAY	16				24.7	2.7	20.0	40		PCC-1, PCM-1
256+57	RT	DRIVEWAY	16			79.90				38		PCC-1, PCM-1
260+07	LT	DRIVEWAY	16				24.7	2.7	61.7	28		PCC-1, PCM-1
260+07	RT	DRIVEWAY	16				24.7	2.7	22.8	36		PCC-1, PCM-1
260+63	RT	DRIVEWAY	16				24.7	2.7	20.0	32		PCC-1, PCM-1
262+04	RT	DRIVEWAY	24			190.50				42		PCC-1, PCM-1
262+34	LT	DRIVEWAY	16				65.1	7.2	26.6	28		PCC-1, PCM-1
263+62	RT	DRIVEWAY	16				24.7	2.7	61.7	32		PCC-1, PCM-1
265+35	RT	DRIVEWAY	18			119.50				36		PCC-1, PCM-1
267+18	RT	DRIVEWAY	16				24.7	2.7	61.7	38		PCC-1, PCM-1
268+77	LT	DRIVEWAY	16				96.1	10.6	39.2	36		PCC-1, PCM-1
269+33	RT	DRIVEWAY	16				137.0	15.1	55.9	34		PCC-1, PCM-1
269+85	RT	DRIVEWAY	16			150.10				30		PCC-1, PCM-1
270+95	LT	DRIVEWAY	16				101.5	11.2	41.4	34		PCC-1, PCM-1
271+29	RT	DRIVEWAY	16			146.90						
272+70	RT	DRIVEWAY	16			100.40				34		PCC-1, PCM-1
274+36	RT	DRIVEWAY	16			73.90				38		PCC-1, PCM-1
275+71	LT	DRIVEWAY	16				24.7	2.7	61.7	34		PCC-1, PCM-1
277+13	RT	DRIVEWAY	16			84.70				38		PCC-1, PCM-1
278+38	LT	DRIVEWAY	16				83.7	9.2	34.2	34		PCC-1, PCM-1
278+38	RT	DRIVEWAY	16			74.90				38		PCC-1, PCM-1
279+00	LT	DRIVEWAY	16				77.4	8.5	31.6	32		PCC-1, PCM-1
280+00	RT	DRIVEWAY	16			76.10				38		PCC-1, PCM-1
282+43	RT	BOOTH RD.	24				107.8	11.9	44.0			
282+43	LT	DRIVEWAY	16	282+21	282+65	24.90	24.0	2.6	9.8			
283+73	RT	DRIVEWAY	16	283+51	283+95	24.90	31.8	3.5	13.0			
284+62	LT	DRIVEWAY	16	284+40	284+84	24.90	92.9	10.2	37.9			
287+76	LT	DRIVEWAY	16	287+54	287+98		161.8	17.8	66.1			
292+00	RT	DRIVEWAY	16	291+78	292+22	24.90	94.7	10.4	38.7			
292+33	LT	DRIVEWAY	16	292+11	292+55	24.90	28.6	3.1	11.7			
291+84	LT	DRIVEWAY	16	291+62	292+06	24.90	27.2	3.0	11.1			
296+08	RT	DRIVEWAY	16	295+86	296+30	24.90	51.0	5.6	20.8			
298+39	LT	DRIVEWAY	16	298+17	298+61	24.90	31.0	3.4	12.7			
300+80	LT	DRIVEWAY	16	300+58	301+02	24.90	79.7	8.8	32.5			
302+72	LT	DRIVEWAY	16	302+50	302+94	24.90	144.8	15.9	59.1			
313+95	RT	DRIVEWAY	26	313+68	314+22	33.80	71.9	7.9	29.4			
318+59	RT	DRIVEWAY	34	318+28	318+90	40.90	47.9	5.3	19.6			
319+32	RT	DRIVEWAY	20	319+08	319+56	28.40	54.3	6.0	22.2			
319+32	LT	DRIVEWAY	40	318+98	319+66	46.20	177.6	19.5	72.5			
323+05	RT	DRIVEWAY	16	322+83	323+27	24.90	132.4	14.6	54.1			
325+58	LT	DRIVEWAY	16	325+36	325+80	24.90	26.6	2.9	10.9			
329+26	RT	DRIVEWAY	18	329+03	329+49	26.70	31.0	3.4	12.7			
329+26	LT	DRIVEWAY	16	329+04	329+48	24.90	21.1	2.3	8.6			
340+88	LT	DRIVEWAY	16	340+66	341+10	24.90	38.2	4.2	15.6			
347+50	LT	DRIVEWAY	16	347+28	347+72		48.2	5.3	19.7			
348+43	RT	DRIVEWAY	16	348+21	348+65	24.90	25.2	2.8	10.3			
350+20	RT	DRIVEWAY	16	349+98	350+42	24.90	26.8	2.9	10.9			
355+62	RT	DRIVEWAY	16	355+40	355+84	24.90	38.9	4.3	15.9			
356+00	LT	DRIVEWAY	24	355+74	356+26	32.00	75.7	8.3	30.9			
356+41	LT	DRIVEWAY	16	356+19	356+63	24.90	94.0	10.3	38.4			
* ENTIRE PROJECT TEMPORARY DRIVES									2000.0			
TOTALS:						**1753.10**	**4208.6**	**462.4**	**4302.8**	**986**	**218**	

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.4% MIN. AGGR.....5.6% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

THE CONTRACTOR, WITH THE APPROVAL OF THE ENGINEER, WILL BE ALLOWED TO SUBSTITUTE A HIGHER PERFORMANCE GRADE ASPHALT SURFACE COURSE FOR DRIVEWAYS AND MINOR SIDE STREET CONSTRUCTION AT NO ADDITIONAL COST TO THE DEPARTMENT.

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

** FOR INFORMATION ONLY

NOTE: FOR R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.

8/22/2012

R050189.DGN

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.		050189	87	340
① 07253		QUANTITIES		52711

SCHEDULE OF BRIDGE QUANTITIES - JOB NO. 050189

BRIDGE NO.	CODE NO.	NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NO.	801	802	802	803	SS & 804	SS & 804	805	805	807	808	812	816	SPJOB 050189
				ITEM	UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE	CLASS S CONCRETE-BRIDGE	CLASS S(AE) CONCRETE-BRIDGE	CLASS 1 PROTECTIVE SURFACE TREATMENT	REINFORCING STEEL-BRIDGE (GRADE 60)	EPOXY COATED REINFORCING STEEL (GRADE 60)	① STEEL PILING (HP 12X53)	PREBORING	STRUCTURAL STEEL IN BEAM SPANS (M 270, GRADE 50W)	ELASTOMERIC BEARINGS	BRIDGE NAME PLATE (TYPE D)	CONCRETE RIPRAP	SILICONE JOINT SEALANT
				UNIT	CU. YD.	CU. YD.	CU. YD.	GAL.	LB.	LB.	LIN. FT.	LIN. FT.	LB.	CU. IN.	EACH	CU. YD.	LIN. FT.
07253	X071	BAYOU DES ARC	BENT 1			41.29		0.3	4,364	500	210	205	871	1,957.5		85	
			BENT 2		171	102.27			17,800		162	144		1,767.0			
			BENT 3		264	112.32			20,142		216	198		1,767.0			
			BENT 4		182	112.82			20,327		360			1,767.0			
			BENT 5		162	100.14			17,393		648			1,767.0			
			BENT 6			41.56		0.3	4,364	500	320	315	871	1,957.5		93	
			315' CONT. W-BEAM UNIT				404.70	33.0		100,560			292,078		1		99
TOTALS FOR JOB NO. 050189					779	510.40	404.70	33.6	84,390	101,560	1,916	862	293,820	10,983.0	1	178	99

① THESE STEEL PILES ARE REQUIRED TO HAVE SPECIAL PILE TIPS WHICH WILL NOT BE PAID FOR DIRECTLY, BUT WILL BE CONSIDERERED SUBSIDIARY TO THE ITEM "STEEL PILING (HP 12X53)".

AILEEN SCHUBEL
DESIGN SECTION SUPERVISOR

STATE OF ARKANSAS
Carl G. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL G. FUSELIER

BRIDGE ENGINEER

SCHEDULE OF BRIDGE QUANTITIES
HWY. 13 EXTENSION (SEARCY) (S)
WHITE COUNTY
ROUTE 13 SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: A.M.S. DATE: 10/10/11 FILENAME: b050189_ql.dgn
CHECKED BY: KWY DATE: 10/19/11 SCALE: None
DESIGNED BY: DATE:
BRIDGE NO. 07253 DRAWING NO. 52711

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-20-12				6	ARK.			
8-27-12				JOB NO.		050189	88	340
8-29-12				(2) SUMMARY OF QUANTITIES				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
14760
MICHAEL D. FUGETT
8/30/12

SUMMARY OF QUANTITIES (BOX 1 OF 3)

ITEM NUMBER	ITEM		QUANTITY	UNIT
201	CLEARING		218	STATION
201	GRUBBING		218	STATION
202	REMOVAL AND DISPOSAL OF CURB AND GUTTER		341	LIN. FT.
202	REMOVAL AND DISPOSAL OF WELL		1	EACH
202	REMOVAL AND DISPOSAL OF FENCE		13423	LIN. FT.
202	REMOVAL AND DISPOSAL OF POSTS		19	EACH
202	REMOVAL AND DISPOSAL OF COLUMNS		6	EACH
202	REMOVAL AND DISPOSAL OF CONCRETE DRIVEWAYS		925	SQ. YD.
202	REMOVAL AND DISPOSAL OF WALKS		385	SQ. YD.
202	REMOVAL AND DISPOSAL OF SIGN FOUNDATIONS		1	EACH
202	REMOVAL AND DISPOSAL OF DROP INLETS		2	EACH
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS		65	EACH
202	REMOVAL AND DISPOSAL OF SIGNS		8	EACH
202	REMOVAL AND DISPOSAL OF PLANTERS		4	EACH
202	REMOVAL AND DISPOSAL OF SEPTIC SYSTEM		2	EACH
202	REMOVAL AND DISPOSAL OF WATER SPIGOT		1	EACH
202	REMOVAL AND DISPOSAL OF PROPANE TANK		1	EACH
SP & 210	UNCLASSIFIED EXCAVATION		465872	CU. YD.
210	COMPACTED EMBANKMENT		255622	CU. YD.
SP & 210	COMPACTED EMBANKMENT (SPECIAL)		6099	CU. YD.
SP & 210	ROCK FILL		36093	CU. YD.
SP & 210	SOIL STABILIZATION		500	TON
SS & 303	AGGREGATE BASE COURSE (CLASS 7)		90423	TON
401	TACK COAT		5522	GAL.
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")		18775	TON
SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")		844	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")		21947	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")		1184	TON
SP, SS, & 407	ASPHALT BINDER (PG 70-22) IN ACHM SURFACE COURSE (1/2")		118	TON
412	COLD MILLING ASPHALT PAVEMENT		667	SQ. YD.
SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC		125	TON
SP, SS, & 415	ACHM PATCHING OF EXISTING ROADWAY		300	TON
504	APPROACH SLABS (TYPE SPECIAL)		107.78	CU. YD.
504	APPROACH GUTTERS (TYPE C)		62.16	CU. YD.
505	PORTLAND CEMENT CONCRETE DRIVEWAY		1753.10	SQ. YD.
601	MOBILIZATION		1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE		1	EACH
SS & 603	MAINTENANCE OF TRAFFIC		1.00	LUMP SUM
SS & 604	SIGNS		744	SQ. FT.
SS & 604	BARRICADES		624	LIN. FT.
SS & 604	TRAFFIC DRUMS		367	EACH
SS & 604	CONSTRUCTION PAVEMENT MARKINGS		68890	LIN. FT.
604	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS		14640	LIN. FT.
SS & 604	VERTICAL PANELS		169	EACH
605	CONCRETE DITCH PAVING (TYPE A)		7550	SQ. YD.
605	CONCRETE DITCH PAVING (TYPE B)		752	SQ. YD.
SS & 606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		69	LIN. FT.
* SS & 606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	(ALTERNATE NO. 1)	3467	LIN. FT.
* 606	18" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE	(ALTERNATE NO. 2)	3467	LIN. FT.
* SP & 606	18" HIGH DENSITY POLYETHYLENE PIPE	(ALTERNATE NO. 3)	3467	LIN. FT.
* SP & 606	18" PVC PIPE	(ALTERNATE NO. 4)	3467	LIN. FT.
SS & 606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		169	LIN. FT.
* SS & 606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	(ALTERNATE NO. 1)	1248	LIN. FT.
* 606	24" ASPHALT COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE)	(ALTERNATE NO. 2)	1298	LIN. FT.
* 606	24" ALUMINUM COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE)	(ALTERNATE NO. 3)	1298	LIN. FT.
* 606	24" POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE)	(ALTERNATE NO. 4)	1298	LIN. FT.
* SP & 606	24" HIGH DENSITY POLYETHYLENE PIPE	(ALTERNATE NO. 5)	1298	LIN. FT.
* SP & 606	24" PVC PIPE	(ALTERNATE NO. 6)	1298	LIN. FT.
* SS & 606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	(ALTERNATE NO. 1)	3612	LIN. FT.
* 606	24" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE	(ALTERNATE NO. 2)	3612	LIN. FT.
* SP & 606	24" HIGH DENSITY POLYETHYLENE PIPE	(ALTERNATE NO. 3)	3612	LIN. FT.
* SP & 606	24" PVC PIPE	(ALTERNATE NO. 4)	3612	LIN. FT.
SS & 606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV)		243	LIN. FT.
SS & 606	30" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		14	LIN. FT.
* SS & 606	30" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	(ALTERNATE NO. 1)	512	LIN. FT.
* 606	30" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE	(ALTERNATE NO. 2)	512	LIN. FT.
* SP & 606	30" HIGH DENSITY POLYETHYLENE PIPE	(ALTERNATE NO. 3)	512	LIN. FT.
* SP & 606	30" PVC PIPE	(ALTERNATE NO. 4)	512	LIN. FT.
SS & 606	36" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		76	LIN. FT.
* SS & 606	36" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV)	(ALTERNATE NO. 1)	76	LIN. FT.
* SP & 606	36" ASPHALT COATED CORRUGATED STEEL PIPE CULVERTS (14 GAUGE)	(ALTERNATE NO. 2)	82	LIN. FT.
* 606	36" ALUMINUM COATED CORRUGATED STEEL PIPE CULVERTS (14 GAUGE)	(ALTERNATE NO. 3)	82	LIN. FT.
* 606	36" POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE CULVERT (14 GAUGE)	(ALTERNATE NO. 4)	82	LIN. FT.
* SP & 606	36" HIGH DENSITY POLYETHYLENE PIPE	(ALTERNATE NO. 5)	82	LIN. FT.
* SP & 606	36" PVC PIPE	(ALTERNATE NO. 6)	82	LIN. FT.
* SS & 606	42" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	(ALTERNATE NO. 1)	102	LIN. FT.
* SP & 606	42" ASPHALT COATED CORRUGATED STEEL PIPE CULVERTS (14 GAUGE)	(ALTERNATE NO. 2)	108	LIN. FT.
* 606	42" ALUMINUM COATED CORRUGATED STEEL PIPE CULVERTS (14 GAUGE)	(ALTERNATE NO. 3)	108	LIN. FT.
* 606	42" POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE CULVERT (14 GAUGE)	(ALTERNATE NO. 4)	108	LIN. FT.
* SP & 606	42" HIGH DENSITY POLYETHYLENE PIPE	(ALTERNATE NO. 5)	108	LIN. FT.

*ALTERNATE BID ITEMS

SUMMARY OF QUANTITIES (BOX 2 OF 3)

ITEM NUMBER	ITEM		QUANTITY	UNIT
SS & 606	48" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		28	LIN. FT.
* SS & 606	54" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	(ALTERNATE NO. 1)	160	LIN. FT.
* 606	54" ASPHALT COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE)	(ALTERNATE NO. 2)	167	LIN. FT.
* 606	54" ALUMINUM COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE)	(ALTERNATE NO. 3)	167	LIN. FT.
* 606	54" POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE CULVERT (16 GAUGE)	(ALTERNATE NO. 4)	167	LIN. FT.
SS & 606	22" X 14" REINFORCED CONCRETE ARCH PIPE CULVERTS (CLASS III)		14	LIN. FT.
* SS & 606	22" X 14" REINFORCED CONCRETE ARCH PIPE CULVERTS (CLASS III)	(ALTERNATE NO. 1)	35	LIN. FT.
* 606	21" X 15" ASPHALT COATED CORRUGATED ALUMINUM ARCH PIPE CULVERTS (16 GAUGE)	(ALTERNATE NO. 2)	35	LIN. FT.
* 606	21" X 15" ALUMINUM COATED CORRUGATED STEEL ARCH PIPE CULVERTS (16 GAUGE)	(ALTERNATE NO. 3)	35	LIN. FT.
* 606	21" X 15" POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL ARCH PIPE CULVERT (16 GAUGE)	(ALTERNATE NO. 4)	35	LIN. FT.
SS & 606	44" X 27" REINFORCED CONCRETE ARCH PIPE CULVERTS (CLASS III)		30	LIN. FT.
* SS & 606	44" X 27" REINFORCED CONCRETE ARCH PIPE CULVERTS (CLASS III)	(ALTERNATE NO. 1)	67	LIN. FT.
* 606	42" X 29" ASPHALT COATED CORRUGATED STEEL ARCH PIPE CULVERTS (14 GAUGE)	(ALTERNATE NO. 2)	67	LIN. FT.
* 606	42" X 29" ALUMINUM COATED CORRUGATED STEEL ARCH PIPE CULVERTS (14 GAUGE)	(ALTERNATE NO. 3)	67	LIN. FT.
* 606	42" X 29" POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL ARCH PIPE CULVERT (14 GAUGE)	(ALTERNATE NO. 4)	67	LIN. FT.
* SS & 606	44" X 27" REINFORCED CONCRETE ARCH PIPE CULVERTS (CLASS III)	(ALTERNATE NO. 1)	79	LIN. FT.
* 606	42" X 29" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL ARCH PIPE	(ALTERNATE NO. 2)	79	LIN. FT.
SS & 606	51" X 31" REINFORCED CONCRETE ARCH PIPE CULVERTS (CLASS III)		7	LIN. FT.
* SS & 606	51" X 31" REINFORCED CONCRETE ARCH PIPE CULVERTS (CLASS III)	(ALTERNATE NO. 1)	145	LIN. FT.
* 606	49" X 33" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL ARCH PIPE	(ALTERNATE NO. 2)	145	LIN. FT.
* SS & 606	73" X 45" REINFORCED CONCRETE ARCH PIPE CULVERTS (CLASS III)	(ALTERNATE NO. 1)	152	LIN. FT.
* 606	71" X 47" ASPHALT COATED CORRUGATED STEEL ARCH PIPE CULVERTS (10 GAUGE)	(ALTERNATE NO. 2)	162	LIN. FT.
* 606	71" X 47" ALUMINUM COATED CORRUGATED STEEL ARCH PIPE CULVERTS (10 GAUGE)	(ALTERNATE NO. 3)	162	LIN. FT.
* 606	71" X 47" POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL ARCH PIPE CULVERT (10 GAUGE)	(ALTERNATE NO. 4)	162	LIN. FT.
SS & 606	12" SIDE DRAIN		1200	LIN. FT.
SP, SS, & 606	18" SIDE DRAIN		986	LIN. FT.
SP, SS, & 606	24" SIDE DRAIN		218	LIN. FT.
606	18" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		11	EACH
606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		12	EACH
* 606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	(ALTERNATE NO. 1)	12	EACH
* 606	24" FLARED END SECTIONS FOR CORRUGATED STEEL PIPE CULVERTS	(ALTERNATE NO. 2)	12	EACH
606	30" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		1	EACH
606	36" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		2	EACH
* 606	36" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	(ALTERNATE NO. 1)	2	EACH
* 606	36" FLARED END SECTIONS FOR CORRUGATED STEEL PIPE CULVERTS	(ALTERNATE NO. 2)	2	EACH
* 606	42" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	(ALTERNATE NO. 1)	2	EACH
* 606	42" FLARED END SECTIONS FOR CORRUGATED STEEL PIPE CULVERTS	(ALTERNATE NO. 2)	2	EACH
* 606	54" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	(ALTERNATE NO. 1)	4	EACH
* 606	54" FLARED END SECTIONS FOR CORRUGATED STEEL PIPE CULVERTS	(ALTERNATE NO. 2)	4	EACH
606	22" X 14" FLARED END SECTIONS FOR REINFORCED CONCRETE ARCH PIPE CULVERTS		2	EACH
606	44" X 27" FLARED END SECTIONS FOR REINFORCED CONCRETE ARCH PIPE CULVERTS		1	EACH
606	51" X 31" FLARED END SECTIONS FOR REINFORCED CONCRETE ARCH PIPE CULVERTS		1	EACH
* 606	73" X 45" FLARED END SECTIONS FOR REINFORCED CONCRETE ARCH PIPE CULVERTS	(ALTERNATE NO. 1)	4	EACH
* 606	71" X 47" FLARED END SECTIONS FOR CORRUGATED STEEL ARCH PIPE CULVERTS	(ALTERNATE NO. 2)	4	EACH
606	SELECTED PIPE BEDDING		300	CU. YD.
609	DROP INLETS (TYPE MO)		87	EACH
609	JUNCTION BOXES (TYPE ST)		1	EACH
609	JUNCTION BOXES (TYPE E)		1	EACH
609	DROP INLET EXTENSIONS (4')		42	EACH
609	DROP INLET EXTENSIONS (8')		18	EACH
609	YARD DRAINS		12	EACH
611	UNDERDRAIN OUTLET PROTECTORS		38	EACH
611	4" PIPE UNDERDRAINS		9700	LIN. FT.
615	PAVEMENT REPAIR OVER CULVERTS (ASPHALT)		108.0	TON
SS & 617	GUARDRAIL (TYPE A)		450	LIN. FT.
SS & 617	GUARDRAIL (TYPE C)		25	LIN. FT.
SS & 617	TERMINAL ANCHOR POSTS (TYPE 1)		2	EACH
SS & 617	GUARDRAIL TERMINAL (TYPE 2)		2	EACH
SS & 617	THRIE BEAM GUARDRAIL TERMINAL		4	EACH
619	WIRE FENCE (TYPE C)		6597	LIN. FT.
619	WIRE FENCE (TYPE D)		2185	LIN. FT.
619	WIRE FENCE (TYPE D-1)		2606	LIN. FT.
619	WIRE FENCE (TYPE D-2)		12066	LIN. FT.
* 619	16' STEEL GATES	(ALTERNATE NO. 1)	5	EACH
* 619	16' ALUMINUM GATES	(ALTERNATE NO. 2)	5	EACH
620	LIME		95	TON
620	SEEDING		47.50	ACRE
620	MULCH COVER		160.90	ACRE
SS & 620	WATER		7234.3	M.GAL.

*ALTERNATE BID ITEMS

8/30/2012

R050189.DGN

SUMMARY OF QUANTITIES

SUMMARY OF QUANTITIES (BOX 3 OF 3)

ITEM NUMBER	ITEM		QUANTITY	UNIT
621	TEMPORARY SEEDING		113.40	ACRE
621	SILT FENCE		26507	LIN. FT.
621	SAND BAG DITCH CHECKS		4386	BAG
621	DIVERSION DITCH		2065	LIN. FT.
621	DROP INLET SILT FENCE		1675	LIN. FT.
621	SEDIMENT BASIN		1921	CU. YD.
621	OBLITERATION OF SEDIMENT BASIN		1921	CU. YD.
621	SEDIMENT REMOVAL AND DISPOSAL		2965	CU. YD.
621	PIPE FOR SLOPE DRAINS		568	LIN. FT.
621	ROCK DITCH CHECKS		1542	CU. YD.
623	SECOND SEEDING APPLICATION		47.50	ACRE
624	SOLID SODDING		6021	SQ. YD.
626	EROSION CONTROL MATTING (CLASS 3)		6740	SQ. YD.
632	CONCRETE ISLAND		220	SQ. YD.
633	CONCRETE WALKS		4207	SQ. YD.
634	CONCRETE COMBINATION CURB AND GUTTER (TYPE A) (1' 6")		16517	LIN. FT.
635	ROADWAY CONSTRUCTION CONTROL		1.00	LUMP SUM
637	MAILBOXES		46	EACH
637	MAILBOX SUPPORTS (SINGLE)		42	EACH
637	MAILBOX SUPPORTS (DOUBLE)		2	EACH
641	WHEELCHAIR RAMPS (TYPE 3)		72	SQ. YD.
641	WHEELCHAIR RAMPS (TYPE 4)		64	SQ. YD.
SP & 701	SYSTEM LOCAL CONTROLLER TS 2-TYPE 2 (8 PHASES)		1	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)		6	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)		1	EACH
SP & 707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED		2	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)		1051	LIN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)		260	LIN. FT.
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)		641	LIN. FT.
709	GALVANIZED STEEL CONDUIT (1.25")		20	LIN. FT.
710	NON-METALLIC CONDUIT (1.25")		20	LIN. FT.
710	NON-METALLIC CONDUIT (2")		20	LIN. FT.
710	NON-METALLIC CONDUIT (3")		351	LIN. FT.
SS & 711	CONCRETE PULL BOX (TYPE 2 HD)		2	EACH
SS & 711	CONCRETE PULL BOX (TYPE 2)		5	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (34')		1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (42')		1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (46')		1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (54')		1	EACH
SS & 718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10")		224	LIN. FT.
SS & 719	THERMOPLASTIC PAVEMENT MARKING WHITE (4")		39797	LIN. FT.
SS & 719	THERMOPLASTIC PAVEMENT MARKING WHITE (8")		871	LIN. FT.
SS & 719	THERMOPLASTIC PAVEMENT MARKING WHITE (12")		334	LIN. FT.
SS & 719	THERMOPLASTIC PAVEMENT MARKING YELLOW (4")		57491	LIN. FT.
SS & 719	THERMOPLASTIC PAVEMENT MARKING (WORDS)		6	EACH
SS & 719	THERMOPLASTIC PAVEMENT MARKING (ARROWS)		8	EACH
SP & 719	INVERTED PROFILE THERMOPLASTIC CONTRAST PAVEMENT MARKING YELLOW (4")	(ALTERNATE NO. 1)	781	LIN. FT.
SP	HIGH PERFORMANCE CONTRAST MARKING TAPE YELLOW (4")	(ALTERNATE NO. 2)	781	LIN. FT.
SS & 726	STANDARD SIGN		6	SQ. FT.
729	CHANNEL POST SIGN SUPPORT (TYPE C)		3	EACH
733	VIDEO CABLE		1164	LIN. FT.
SP & 733	VIDEO DETECTOR (CLR)		6	EACH
733	VIDEO MONITOR (CLR)		1	EACH
SP & 733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)		5	EACH
SP & 733	VEHICLE DETECTOR RACK (16 CHANNEL)		1	EACH
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY		147	CU. YD.
802	CLASS S CONCRETE-ROADWAY		417.57	CU. YD.
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)		71109	POUND
816	DUMPED RIPRAP		17	CU. YD.
SP	ANTENNA CABLE (TYPE 6)		70	LIN. FT.
SP	ANTENNA SUPPORT (SHOE BASE, 50' HT.)		1	EACH
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES		831	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., EGC)		452	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., EGC)		190	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)		20	LIN. FT.
SP	LOCAL RADIO WITH ANTENNA		1	EACH
SP	LUMINAIRE ASSEMBLY		4	EACH
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)		1	EACH
	STRUCTURES OVER 20' SPAN			
636	BRIDGE CONSTRUCTION CONTROL		1.00	LUMP SUM
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE		779	CU. YD.
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY		124	CU. YD.
802	CLASS S CONCRETE-ROADWAY		276.73	CU. YD.
802	CLASS S CONCRETE-BRIDGE		510.40	CU. YD.
802	CLASS S(AE) CONCRETE-BRIDGE		404.70	CU. YD.
803	CLASS 1 PROTECTIVE SURFACE TREATMENT		33.6	GAL.
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)		33419	POUND
SS & 804	REINFORCING STEEL-BRIDGE (GRADE 60)		84390	POUND
SS & 804	EPOXY COATED REINFORCING STEEL (GRADE 60)		101560	POUND
805	STEEL PILING (HP 12X53)		1916	LIN. FT.
805	PREBORING		862	LIN. FT.
807	STRUCTURAL STEEL IN BEAM SPANS (M270-GR50W)		293820	POUND
808	ELASTOMERIC BEARINGS		10983.0	CU. IN.
SP	SILICONE JOINT SEALANT		99	LIN. FT.
812	BRIDGE NAME PLATE (TYPE D)		1	EACH
816	CONCRETE RIPRAP		178	CU. YD.

*ALTERNATE BID ITEMS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-20-12				6	ARK.			
8-27-12				JOB NO.		050189	89	340
8-29-12								

(2) SUMMARY OF QUANTITIES AND REVISION BOX

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT

8/30/12

REVISION BOX

DATE	REVISION	SHEET NUMBER
8/20/2012	ADDED 2 DRIVEWAYS, HONEY HILL RD. CONNECTION, AND REMOVED FENCING PER RIGHT OF WAYS REQUEST.	2, 9A, 80, 81, 84, 85, 86, 88, 89, 105, 106, 107, 108, 123, 125, 172A, 192A, 192B, 242, 330, 323
8/27/2012	REVISED DRAINAGE NOTES AND QUANTITES: STORM SEWER STUB OUTLET AND INLET PIPES WITH FLARED END SECTIONS SHALL BE REINFORCED CONCRETE. FLARED END SECTIONS IN OPEN SHOULDER AREAS SHALL HAVE ALTERNATES.	82, 83, 88, 89, 102 - 127, 205, 243, 245, 247, 250, 252, 254, 264, 268, 284, 286, 289, 294, 308, 310, 312, 316, 317, 323 - 330
8/29/2012	ADDED 2 DROP INLETS AND CONNECTING PIPES TO PROJECT AT COUNTRY CLUB LANE.	82, 83, 88, 89, 119, 120, 310

8/30/2012

R050189.DGN

SUMMARY OF QUANTITIES AND REVISION BOX

SURVEY CONTROL COORDINATES

Project Name: s050189
Date: 8/26/2010
Coordinate System: ARKANSAS STATE PLANE - NORTH ZONE BASED ON GPS CONTROL, PROJECTED TO GROUND.
Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
1	309711.17	1368898.80	257.57	CTL	5/8"REBAR W/2" CAP
2	310750.65	1368927.65	370.16	CTL	5/8"REBAR W/2" CAP
3	311289.71	1368972.09	355.30	CTL	5/8"REBAR W/2" CAP
4	311579.08	1368859.06	377.60	CTL	5/8"REBAR W/2" CAP
5	311911.95	1368707.81	370.11	CTL	5/8"REBAR W/2" CAP
6	312212.85	1368978.30	360.04	CTL	5/8"REBAR W/2" CAP
7	312563.97	1368874.26	344.76	CTL	5/8"REBAR W/2" CAP
8	313043.08	1368970.35	330.61	CTL	5/8"REBAR W/2" CAP
9	313462.02	1368964.54	303.76	CTL	5/8"REBAR W/2" CAP
10	313874.56	1368948.58	271.10	CTL	5/8"REBAR W/2" CAP
11	313963.15	1368709.70	239.29	CTL	5/8"REBAR W/2" CAP
12	314062.24	1368901.53	234.18	CTL	5/8"REBAR W/2" CAP
13	314174.39	1369293.54	231.32	CTL	5/8"REBAR W/2" CAP
14	314534.83	1369279.61	241.25	CTL	5/8"REBAR W/2" CAP
15	314745.42	1369386.44	232.67	CTL	5/8"REBAR W/2" CAP
16	314969.80	1369522.58	230.16	CTL	5/8"REBAR W/2" CAP
17	315255.51	1369228.89	239.20	CTL	5/8"REBAR W/2" CAP
18	315369.12	1369418.95	228.35	CTL	5/8"REBAR W/2" CAP
19	315420.20	1369641.16	245.24	CTL	5/8"REBAR W/2" CAP
20	315495.64	1369851.42	270.26	CTL	5/8"REBAR W/2" CAP
21	315817.21	1370329.66	280.41	CTL	5/8"REBAR W/2" CAP
22	316227.23	1370720.07	290.43	CTL	5/8"REBAR W/2" CAP
23	316581.12	1371134.04	294.50	CTL	5/8"REBAR W/2" CAP
24	316868.45	1371638.47	297.00	CTL	5/8"REBAR W/2" CAP
25	317143.59	1372173.41	290.58	CTL	5/8"REBAR W/2" CAP
26	317520.36	1372629.18	290.82	CTL	5/8"REBAR W/2" CAP
27	317638.57	1373265.24	297.50	CTL	5/8"REBAR W/2" CAP
28	317935.80	1373628.00	303.23	CTL	5/8"REBAR W/2" CAP
29	318458.65	1373962.40	310.78	CTL	5/8"REBAR W/2" CAP
30	319612.85	1373892.76	307.39	CTL	5/8"REBAR W/2" CAP
31	320186.38	1373839.93	314.24	CTL	5/8"REBAR W/2" CAP
32	320899.28	1374019.93	323.57	CTL	5/8"REBAR W/2" CAP
33	321682.32	1373992.53	335.88	CTL	5/8"REBAR W/2" CAP
34	322366.78	1373886.07	348.93	CTL	5/8"REBAR W/2" CAP
35	323169.85	1373876.64	373.83	CTL	5/8"REBAR W/2" CAP
36	323780.41	1374007.60	367.40	CTL	5/8"REBAR W/2" CAP
37	325151.20	1373955.21	360.40	CTL	5/8"REBAR W/2" CAP
38	325591.51	1374072.04	379.48	CTL	5/8"REBAR W/2" CAP
39	326308.38	1374031.99	368.63	CTL	5/8"REBAR W/2" CAP
40	327135.95	1374050.71	365.11	CTL	5/8"REBAR W/2" CAP
41	327855.62	1374047.23	394.89	CTL	5/8"REBAR W/2" CAP
42	328342.29	1374044.70	391.39	CTL	5/8"REBAR W/2" CAP
43	329489.62	1374132.28	338.09	CTL	5/8"REBAR W/2" CAP
44	330217.32	1373955.13	326.22	CTL	5/8"REBAR W/2" CAP
45	331031.95	1373944.44	319.29	CTL	5/8"REBAR W/2" CAP
46	331905.18	1373967.59	310.79	CTL	5/8"REBAR W/2" CAP
47	332634.56	1373928.96	322.94	CTL	5/8"REBAR W/2" CAP
48	332698.66	1373002.33	333.72	CTL	5/8"REBAR W/2" CAP
49	332583.93	1374712.87	312.53	CTL	5/8"REBAR W/2" CAP
50	332500.28	1375909.94	298.33	CTL	5/8"REBAR W/2" CAP
51	332443.97	1377143.05	286.34	CTL	5/8"REBAR W/2" CAP
52	332408.81	1378198.53	288.00	CTL	5/8"REBAR W/2" CAP
53	310062.13	1369542.26	250.84	CTL	5/8"REBAR W/2" CAP
100	309347.88	1368216.31	252.68	CTL	AHTD GPS 730023
101	308507.61	1366753.02	278.35	GPS	AHTD GPS 730023A
102	324582.28	1373997.06	367.22	GPS	AHTD GPS 730025A
103	324585.54	1375511.92	370.63	GPS	AHTD GPS 730025
104	332616.25	1379087.06	295.42	GPS	AHTD GPS 730014
105	319120.42	1371624.76	362.71	GPS	AHTD GPS 730024
106	320227.83	1371664.45	354.21	GPS	AHTD GPS 730024A
900	-99999.00	-99999.00	225.47	TBM	SQ. CUT SQ. CUT IN BR. SW. CORNER, 367
901	-99999.00	-99999.00	227.97	TBM	SQ. CUT HEADWALL NW PART OF IN, 367
902	-99999.00	-99999.00	239.29	TBM	REBAR &CAP ,18FT W OF CL 367, 367, MCRAE
903	-99999.00	-99999.00	225.10	TBM	SQ. CUT HEADWALL WEST SIDE HWY, 13
904	-99999.00	-99999.00	263.14	TBM	SQ. CUT SE CORNER OVERPASS BR. , MCRAE
905	-99999.00	-99999.00	225.85	TBM	SQ. CUT EAST HEADWALL ARCOSS D, 13
906	-99999.00	-99999.00	233.26	TBM	SQ. CUT SW CORNER BR. HWY. 13 SEC, 13
907	-99999.00	-99999.00	235.37	TBM	REBAR &CAP HWY. 13, MCRAE
908	-99999.00	-99999.00	239.57	TBM	REBAR &CAP HWY. 13, MCRAE
909	-99999.00	-99999.00	238.51	TBM	SQ. CUT IN HEADWALL WEST SIDE ,13
910	-99999.00	-99999.00	243.63	TBM	SQ. CUT IN HEADWALL EAST SIDE ,13
911	-99999.00	-99999.00	253.52	TBM	CPS, CPS IN N SIDE 34IN POST OAK 43F
920	-99999.00	-99999.00	366.69	TBM	REBAR &CAP ,14FT EAST OF CL. SEARCY
921	326174.89	1374060.82	374.23	BM	REBAR &CAP
923	-99999.00	-99999.00	323.30	TBM	SQ. CUT SE CORNER OF CATCH BASIN
924	-99999.00	-99999.00	321.69	TBM	SQ. CUT LIGHT POLE BASE VALLEY
925	-99999.00	-99999.00	297.14	TBM	REBAR &CAP ,HWY. 36, SEARCY
926	-99999.00	-99999.00	295.34	BM	SQ. CUT HEADWALL
990	-99999.00	-99999.00	227.85	BM	NGS MARK RV 114
991	-99999.00	-99999.00	224.59	BM	NGS MARK RV 118
992	-99999.00	-99999.00	295.76	BM	NGS MARK GB
993	-99999.00	-99999.00	305.46	BM	NGS MARK H 206
994	-99999.00	-99999.00	290.34	BM	NGS MARK J 206
999	-99999.00	-99999.00	223.99	TBM	

*Note - Rebar and Cap - Standard - 5/8" Rebar with 2" Aluminum Cap stamped
*(standard markings common to all caps), or as indicated
(other markings indicated in the point description of the individual point).
USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT
A PROJECT CAF OF 0.99994432I 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. s050189gi.ctl
HORIZONTAL DATUM: NAD 83 (1997)
VERTICAL DATUM: NAVD 88 POSITIONAL ACCURACY THIRD ORDER, UNLESS SPECIFIED OTHERWISE AT A SPECIFIC POINT.

C.L. CONSTRUCTION HWY. 13

POINT NO.	TYPE	STATION	NORTHING	EASTING
8000	POB	88+74.42	307964.6232	1368955.6141
8001	PC	90+30.06	308120.2536	1368956.8203
8002	PT	93+61.56	308451.7388	1368954.5944
8003	PC	102+53.51	309343.4874	1368935.7051
8004	PT	105+43.20	309632.9270	1368924.0809
8005	PC	108+44.99	309934.1883	1368906.2557
8006	PT	112+25.24	310314.0838	1368890.0975
8007	PC	149+61.16	314048.7428	1368793.2886
8008	PT	169+79.95	315736.6538	1369721.1096
8009	PC	214+43.72	318030.3984	1373550.4660
8010	PT	227+66.05	319153.8553	1374098.9092
8011	PC	234+31.41	319814.1993	1374017.3857
8012	PT	239+28.34	320309.9548	1373988.7061
8013	PC	249+39.97	321321.5531	1373996.0531
8014	PT	252+07.72	321588.1033	1373974.5868
8015	PC	260+12.95	322381.9913	1373839.9584
8016	PT	266+38.61	323004.8518	1373837.3513
8017	PC	272+86.66	323644.6666	1373940.3493
8018	PT	277+07.65	324064.2946	1373961.0942
8019	PC	282+34.86	324590.5334	1373929.0492
8020	PT	286+37.06	324992.3825	1373932.8175
8021	PC	295+04.84	325857.4163	1374001.7968
8022	PT	303+96.36	326747.9775	1374038.0389
8023	PC	315+45.29	327896.9015	1374040.0762
8024	PT	320+71.89	328423.2939	1374053.1074
8025	PC	330+44.52	329394.8144	1374099.5112
8026	PT	334+90.29	329833.0157	1374034.7280
8027	PC	336+44.70	329978.5270	1373983.0457
8028	PT	340+38.82	330365.0961	1373916.9616
8029	PC	353+93.03	331719.2987	1373920.5530
8030	PT	357+41.54	332061.1886	1373979.2141
8031	PC	358+76.85	332188.8814	1374023.9814
8032	PT	361+48.63	332454.1199	1374079.6148
8033	PI	363+60.57	332665.4423	1374095.7714
8034	POE	371+11.03	333415.8135	1374107.2391

C.L. CONSTRUCTION MOT 255+00

POINT NO.	TYPE	STATION	NORTHING	EASTING
8060	POB	10+00.00	321856.2689	1373983.8241
8061	PC	11+33.46	321982.7564	1373941.2659
8062	PT	12+51.30	322097.0326	1373913.0231
8063	PC	14+56.20	322299.3117	1373880.3759
8064	PT	15+61.64	322404.2634	1373871.2848
8065	POE	16+96.89	322539.5062	1373869.5542

C.L. CONSTRUCTION MOT 265+00

POINT NO.	TYPE	STATION	NORTHING	EASTING
8070	POB	20+00.00	322765.7020	1373866.8010
8071	PC	21+61.04	322926.7204	1373864.1038
8072	PT	25+02.50	323259.4946	1373928.7375
8073	POE	26+00.81	323350.0194	1373967.0564

C.L. CONSTRUCTION MOT 271+00

POINT NO.	TYPE	STATION	NORTHING	EASTING
8080	POB	30+00.00	323499.4639	1373982.5032
8081	PC	30+14.04	323513.4986	1373982.2873
8082	PT	31+74.91	323674.3367	1373984.3299
8083	PC	32+14.55	323713.9405	1373985.9457
8084	PT	34+84.88	323984.1726	1373984.2144
8085	PC	40+00.95	324499.4987	1373956.5719
8086	PT	45+56.94	325054.0959	1373980.6842
8087	POE	46+76.06	325172.0388	1373997.3637

C.L. CONSTRUCTION MOT 297+00

POINT NO.	TYPE	STATION	NORTHING	EASTING
8090	POB	50+00.00	326150.4788	1374048.0748
8091	PC	50+06.73	326157.2131	1374048.0458
8092	PT	51+81.93	326332.3161	1374052.6463
8093	PC	57+14.41	326863.9371	1374082.8982
8094	PT	58+63.87	327013.2169	1374079.7007
8095	PC	59+16.62	327065.7036	1374074.4515
8096	PT	61+23.65	327272.4196	1374065.0443
8097	POE	62+10.03	327358.7952	1374065.7979

C.L. CONSTRUCTION MOT 353+00

POINT NO.	TYPE	STATION	NORTHING	EASTING
8100	POB	70+00.00	331719.3332	1373907.5531
8101	PC	70+93.47	331812.7980	1373907.8009
8102	PT	72+10.79	331929.5750	1373917.6994
8103	PC	73+12.80	332030.1763	1373934.6031
8104	PT	74+27.34	332144.1666	1373944.4887
8105	POE	76+26.68	332343.5000	1373945.7930

REFERENCE POINTS (1500 SERIES) ARE TO BE USED TO ESTABLISH CONTROL IF THE PRIMARY CONTROL POINTS LISTED ABOVE HAVE BEEN DESTROYED.
REFERENCE POINTS ARE NOT TO BE USED FOR VERTICAL CONTROL

BASIS OF BEARING:
ARKANSAS STATE PLANE GRID BEARINGS - 0301-NORTH ZONE
DETERMINED FROM GPS CONTROL POINTS: 730014, 730023A, 730024A, 730025A
CONVERGENCE ANGLE: 00 07 11.4 RIGHT AT LT: 35-13-04.1 LG: 091-47-38.6
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

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.		050189	90	340

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
MICHAEL D. PUGETT
8/8/12

C.L. CONST. HWY. 267

POINT NO.	TYPE	STATION	NORTHING	EASTING
8050	POB	500+00.00	309287.4628	1368177.0161
8051	POE	516+53.19	310084.2011	1369625.5494

8/1/2012

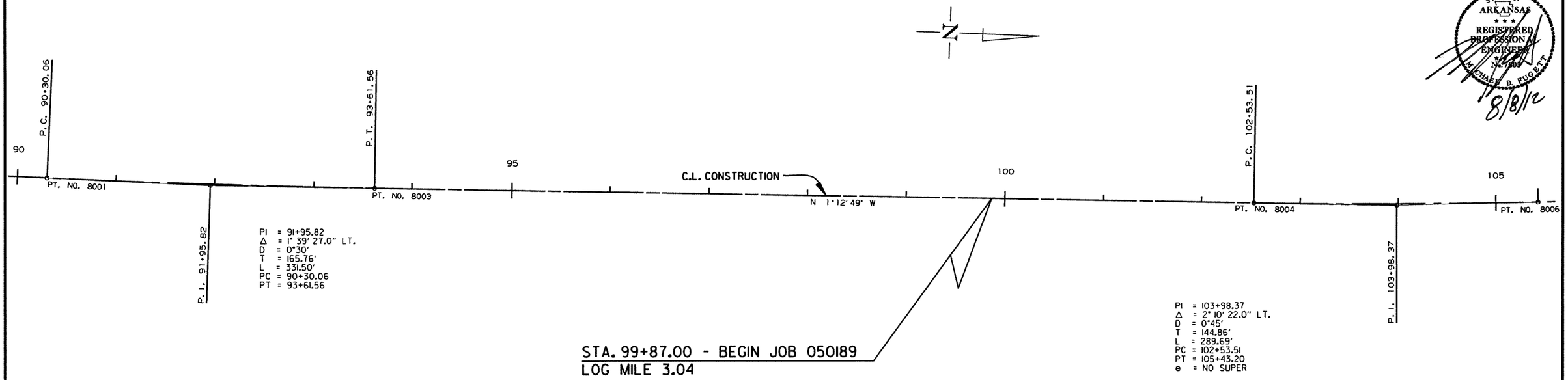
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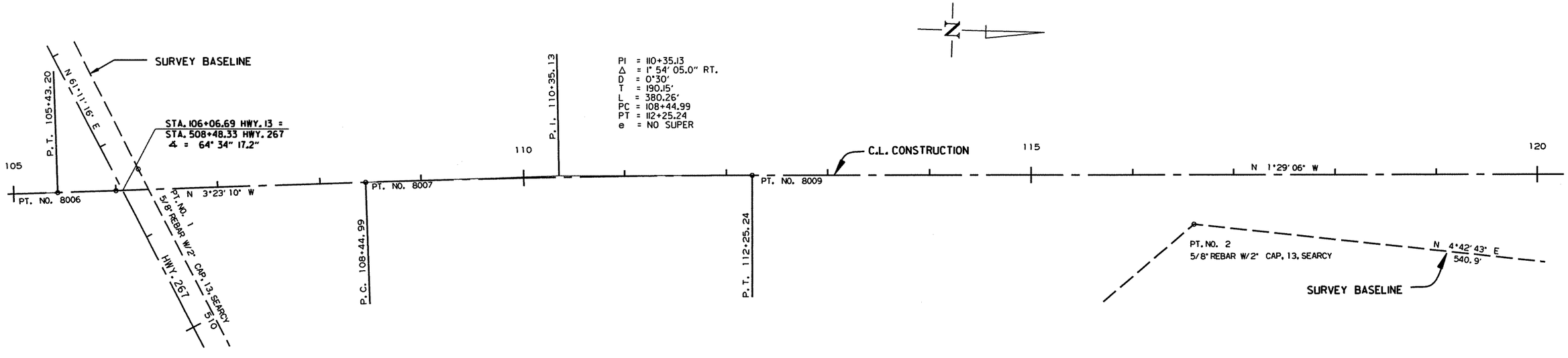
SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050189	91	340

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11607
MICHAEL P. FUGETT
8/8/12





SURVEY CONTROL DETAILS

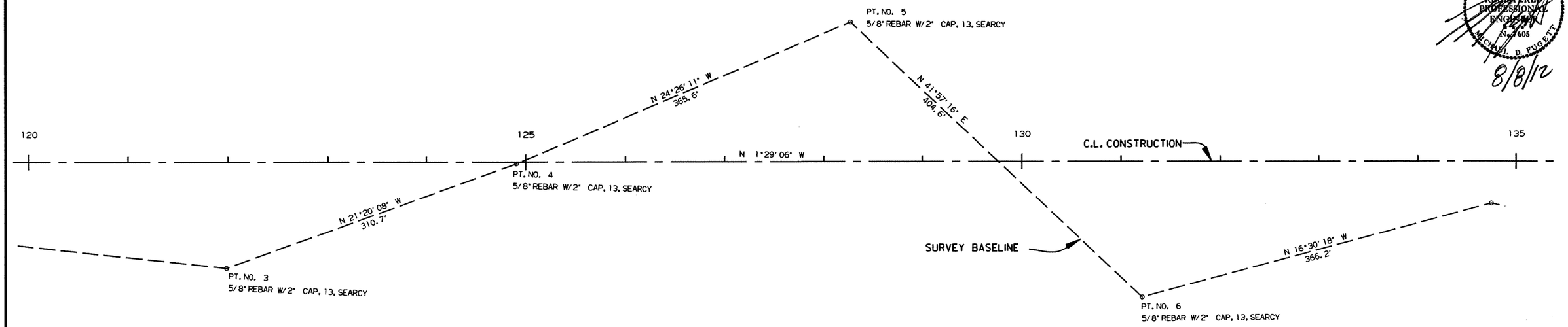
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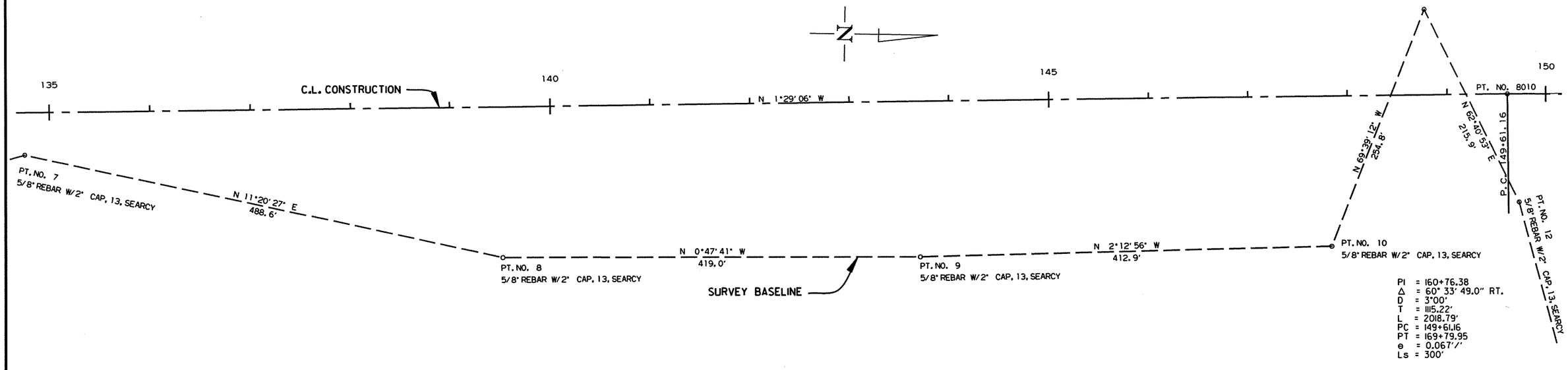
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050189	92	340

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. PUGETT
8/8/12





SURVEY CONTROL DETAILS

8/1/2012

R050189.DGN

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.		050189	93	340

(2) SURVEY CONTROL DETAILS

PI = 160+76.38
Δ = 60° 33' 49.0" RT.
D = 3°00'
T = 1115.22'
L = 2018.79'
PC = 149+61.16
PT = 169+79.95
e = 0.067'/'
Ls = 300'

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
N. 7603
MICHAEL D. FUGETT
8/8/12

P. I. 160+76.38

N 1°29' 06" W

N 59°04' 44" E

C.L. CONSTRUCTION

150 155 160 165

PT. NO. 12
5/8" REBAR W/2" CAP, 13, SEARCY

N 74°02' 04" E
407.7'

PT. NO. 13
5/8" REBAR W/2" CAP, 13, SEARCY

N 2°12' 46" W
360.7'

SURVEY BASELINE

N 26°53' 49" E
236.1'

PT. NO. 14
5/8" REBAR W/2" CAP, 13, SEARCY

PT. NO. 15
5/8" REBAR W/2" CAP, 13, SEARCY

N 31°14' 49" E
262.4'

PT. NO. 16
5/8" REBAR W/2" CAP, 13, SEARCY

N 45°47' 18" W
409.7'

PT. NO. 17
5/8" REBAR W/2" CAP, 13, SEARCY

N 59°07' 49" E
221.4'

8/1/2012

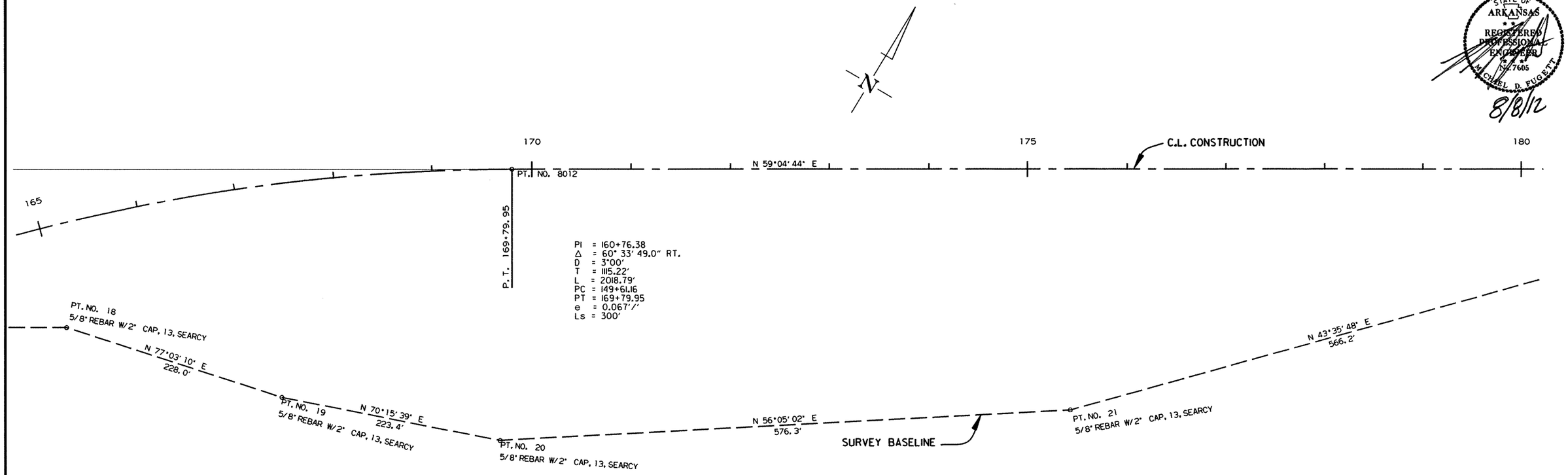
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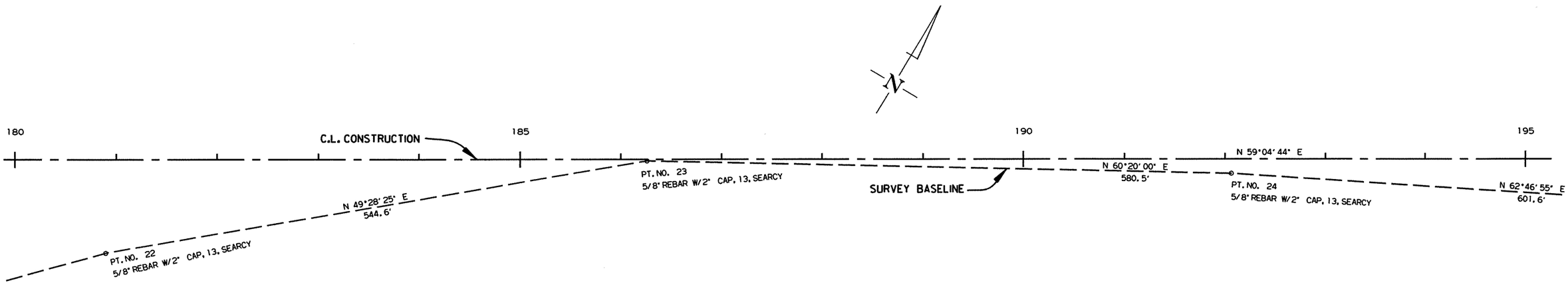
SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050189	94	340

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. PUGETT
8/8/12





SURVEY CONTROL DETAILS

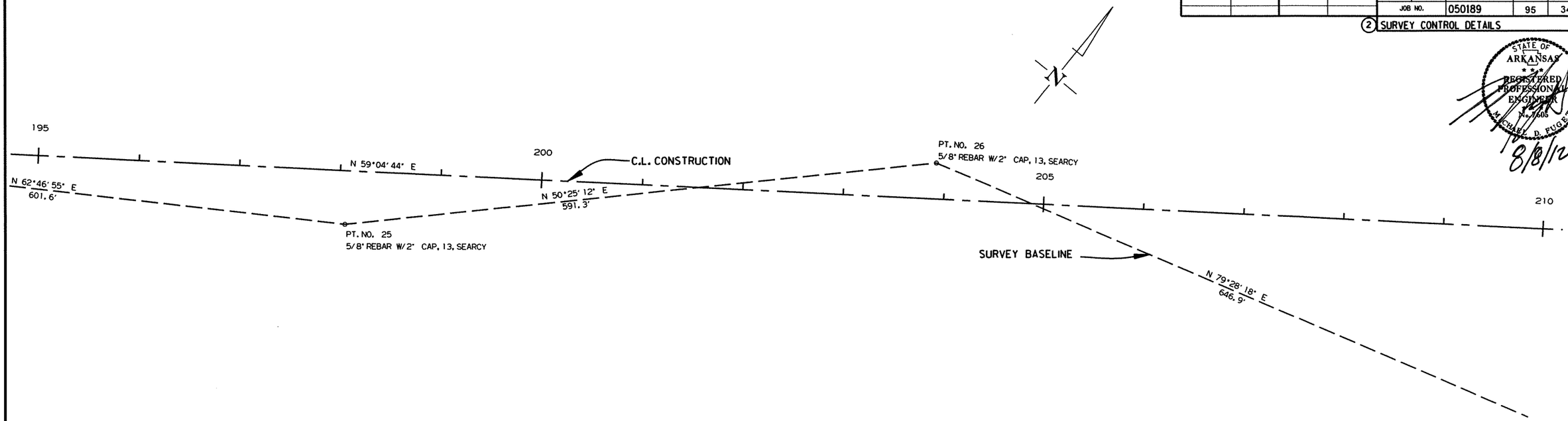
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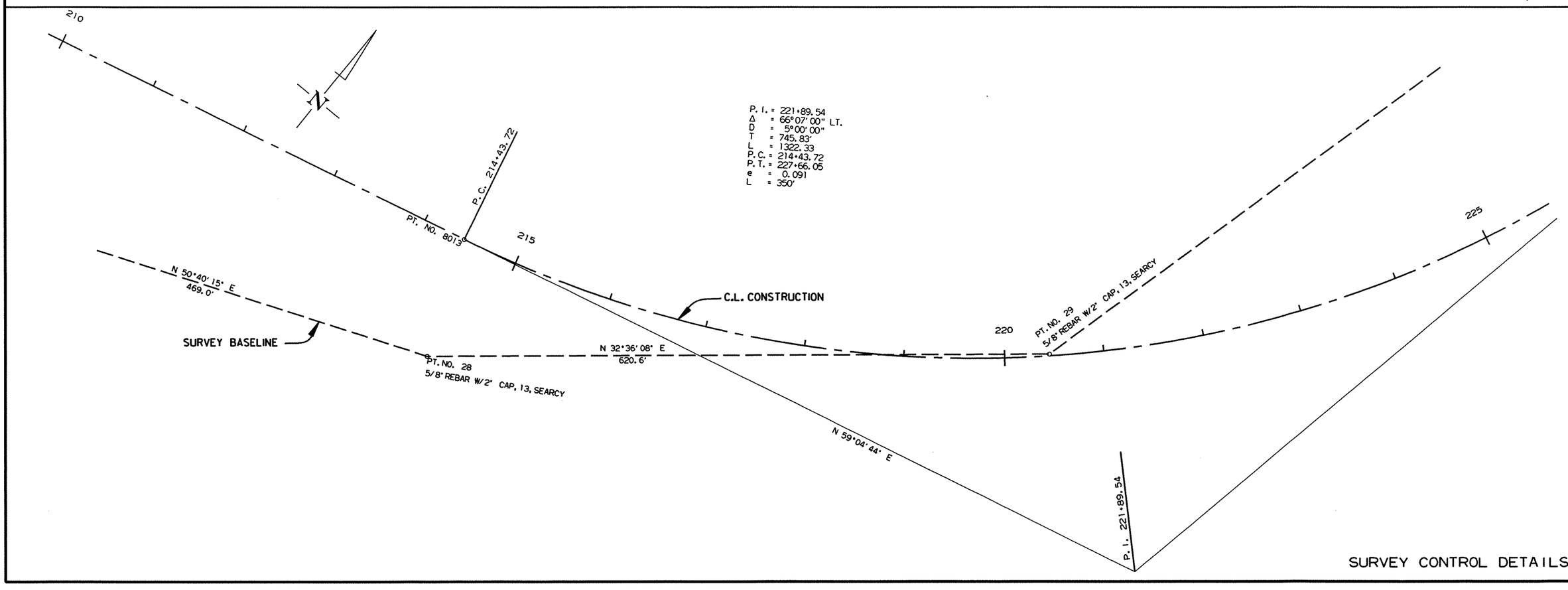
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050189	95	340

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7405
MICHAEL D. FUGETT
8/8/12





SURVEY CONTROL DETAILS

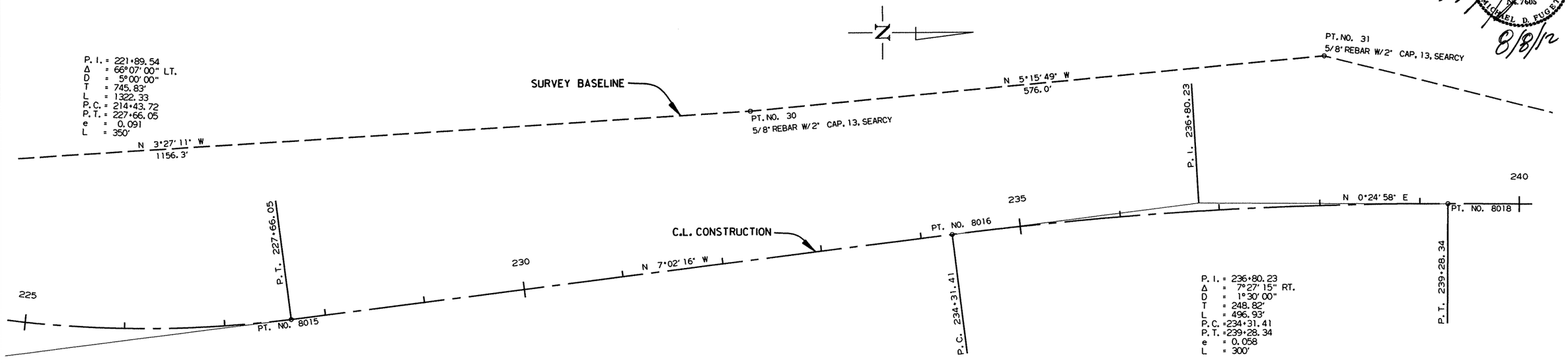
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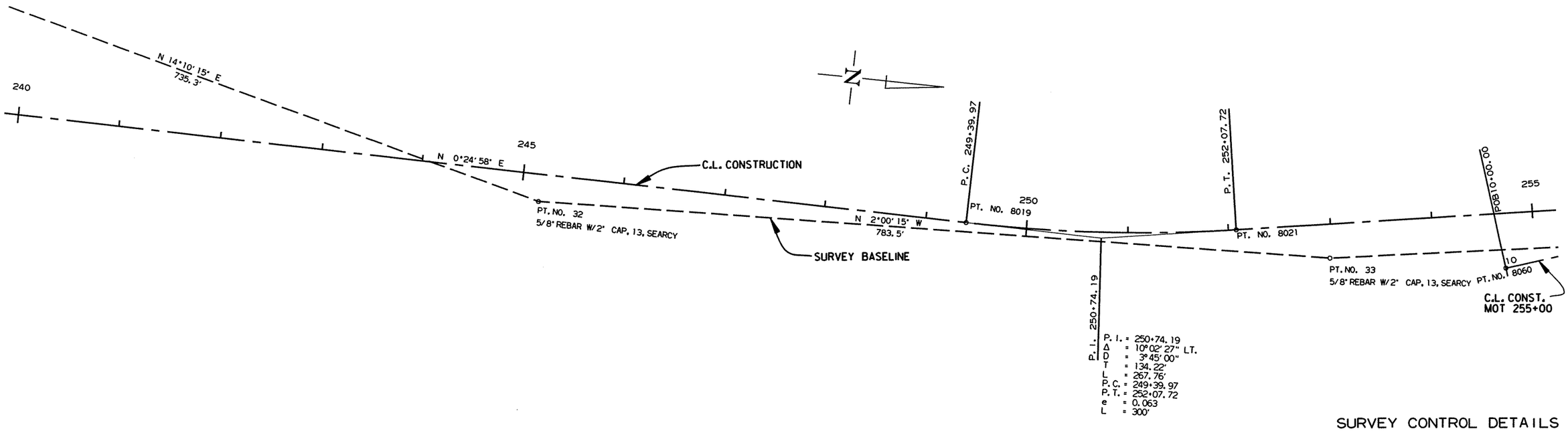
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050189	96	340

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/8/12





SURVEY CONTROL DETAILS

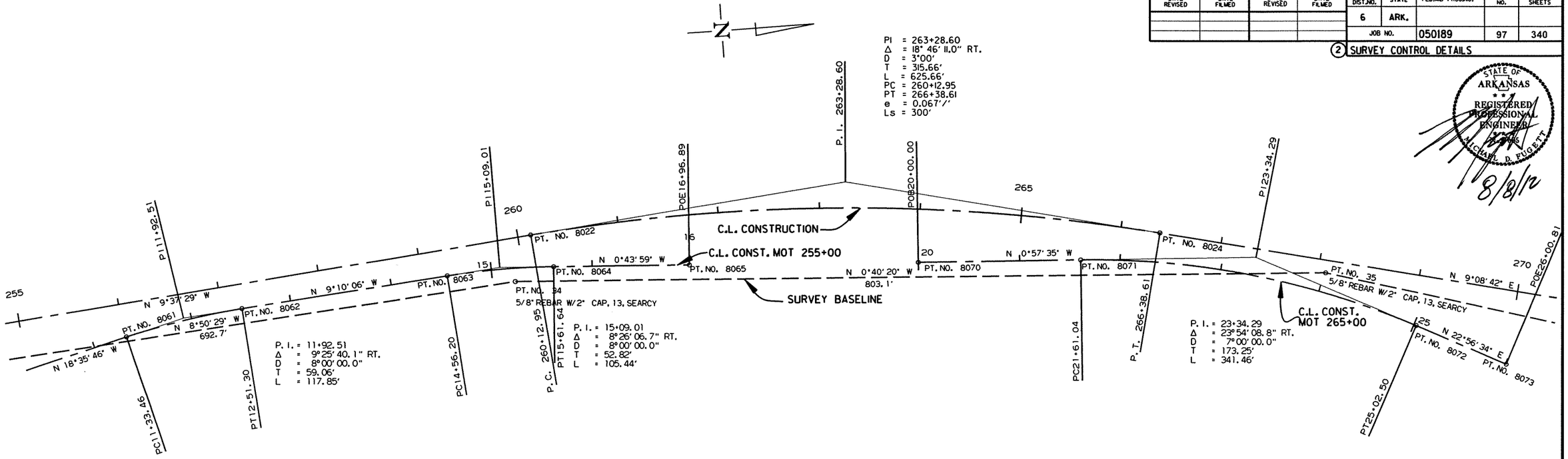
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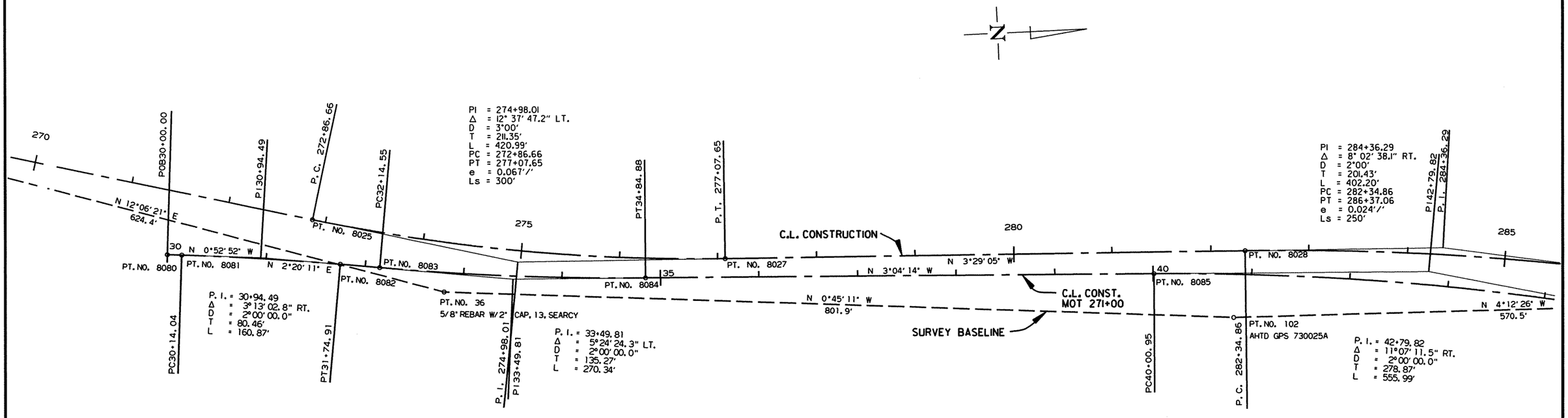
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050189	97	340

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
MICHAEL D. FUGETT
8/8/12





8/1/2012

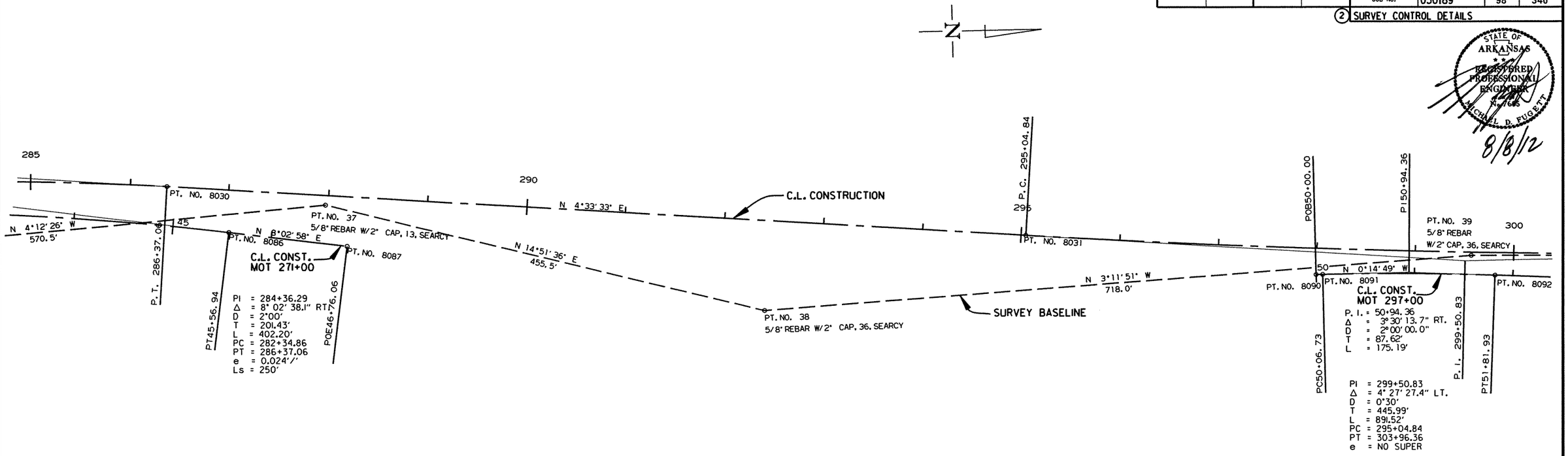
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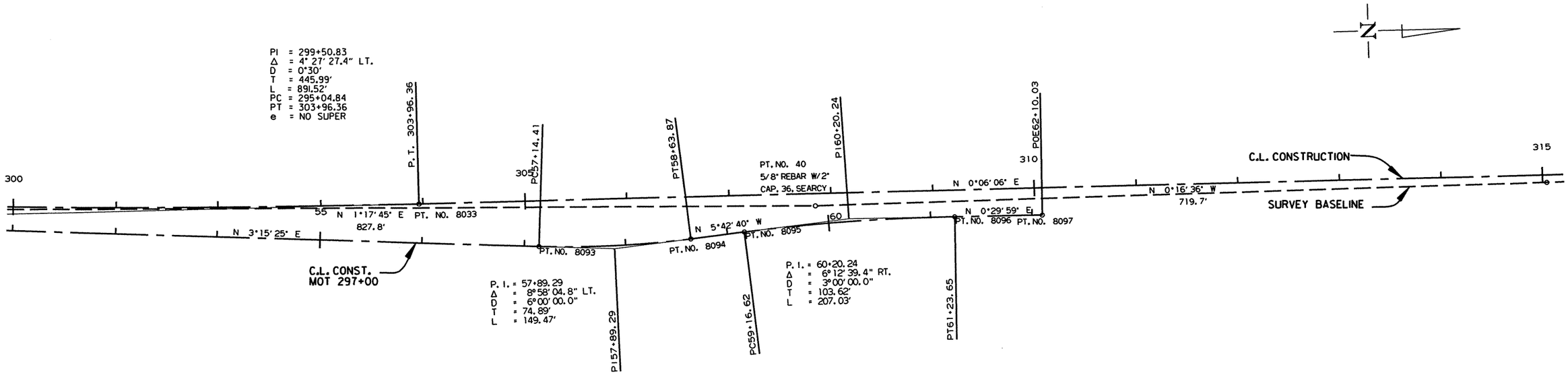
SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050189	98	340

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 17685
MICHAEL D. FUGETT
8/8/12





SURVEY CONTROL DETAILS

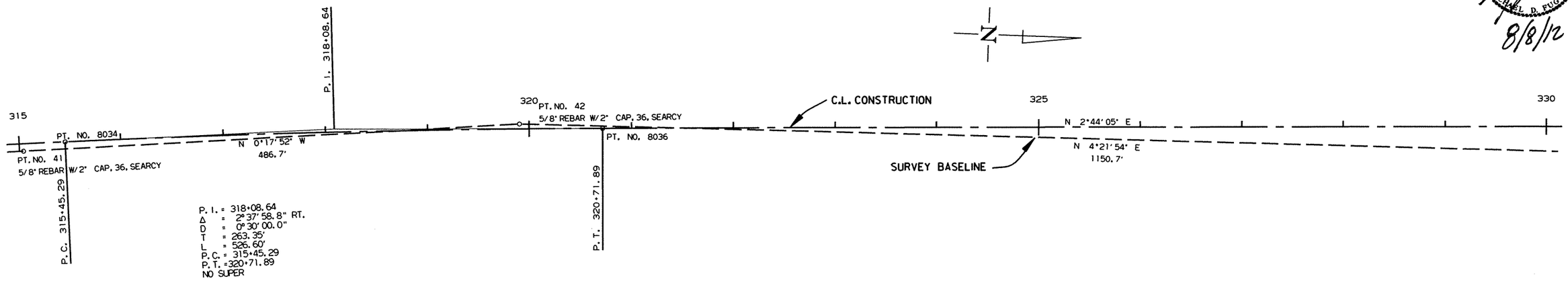
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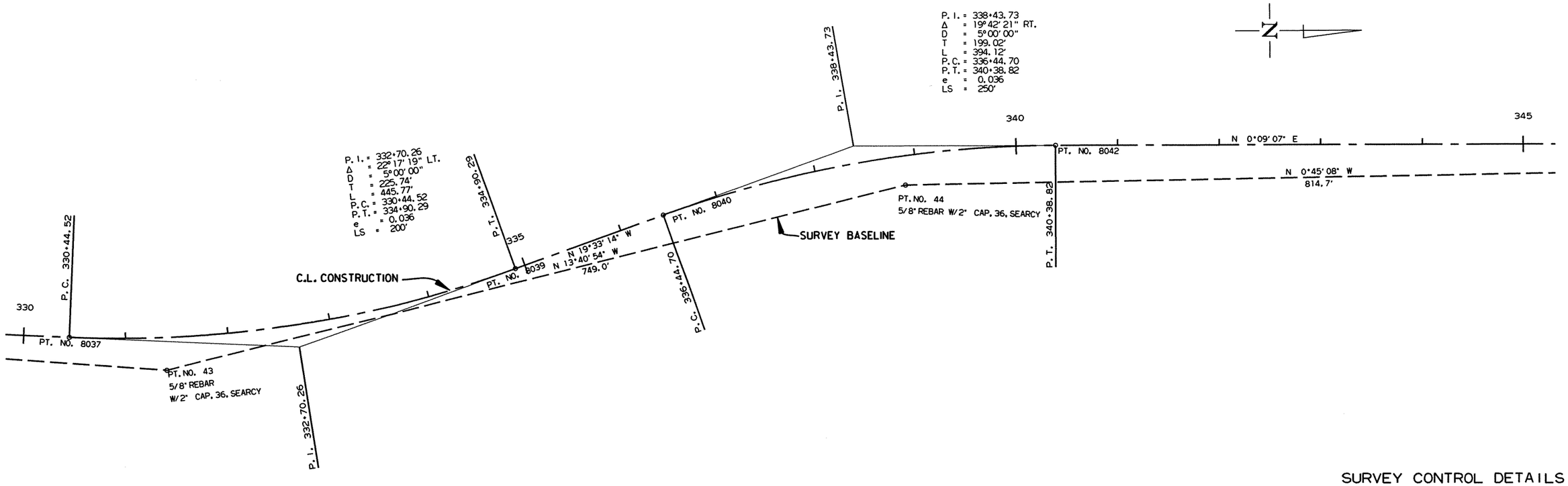
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050189	99	340

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/8/12





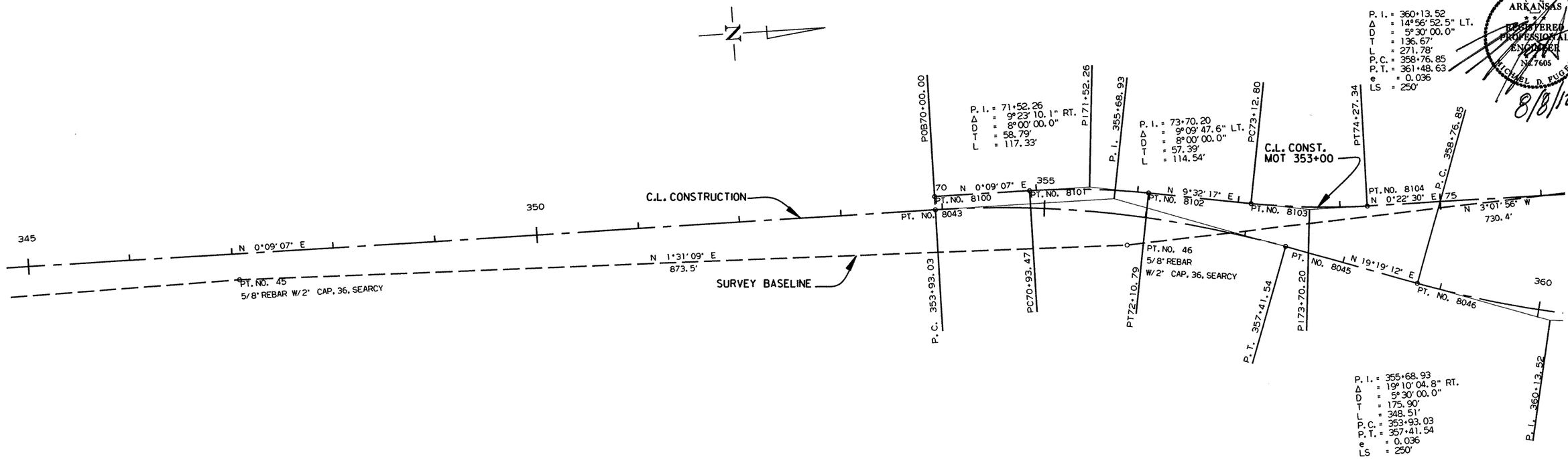
SURVEY CONTROL DETAILS

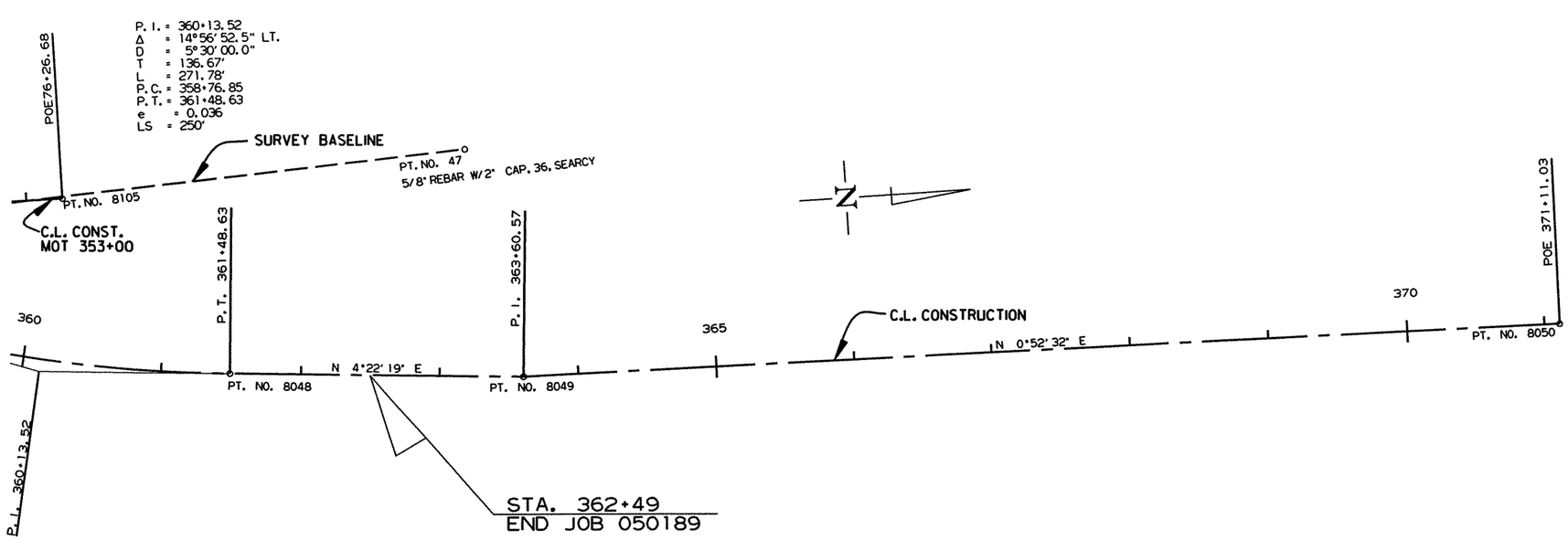
8/1/2012

R050189.DGN

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.		050189	100	340

(2) SURVEY CONTROL DETAILS





SURVEY CONTROL DETAILS

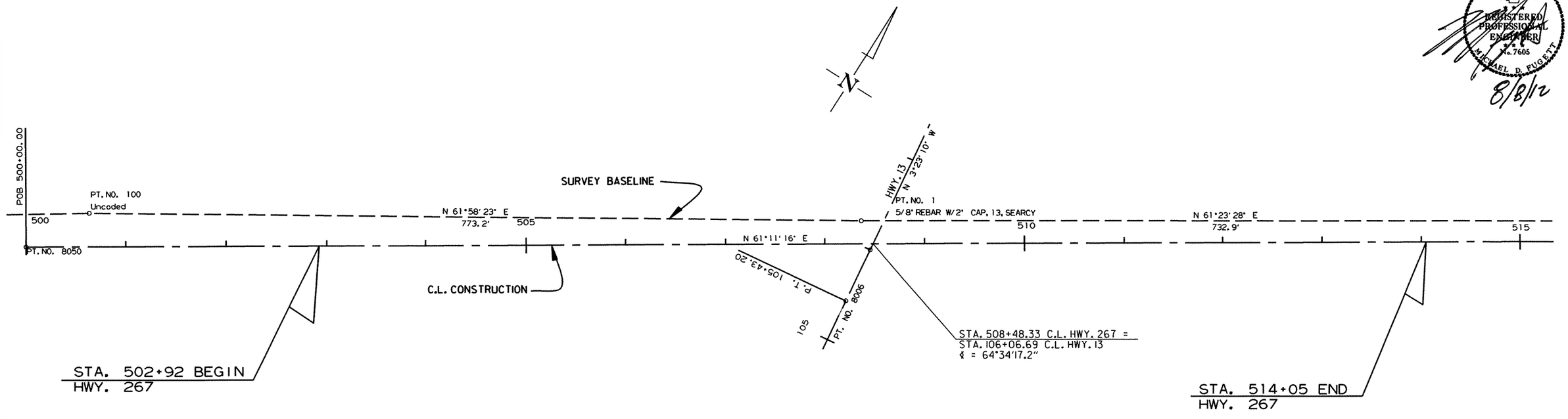
8/1/2012

R050189.DGN

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.		050189	101	340

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. PUGETT
8/8/12



R050189.DGN 8/1/2012

HWY. 267
SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-27-12				6	ARK.			
				JOB NO.		050189	102	340

(2) PLAN AND PROFILE SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 17605
MICHAEL D. FUGETT
8/29/12

STA. 103+46 - IN PLACE
24" x 24' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE

STA. 104+76 - IN PLACE
18" x 24' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE

P.C. 90+30.06

P.T. 93+61.56

P.I. 91+95.82

PI = 91+95.82
Δ = 1° 39' 27.0" LT.
D = 0°30'
T = 165.76'
L = 331.50'
PC = 90+30.06
PT = 93+61.56

330' TAPER

100' TRANSITION

PROP. ROW
CONST. LIMITS
EXIST. ROW
C.L. CONST.
EXIST. ROW
CONST. LIMITS
PROP. ROW

P.C. 102+53.5

P.I. 103+98.37

PI = 103+98.37
Δ = 2° 10' 22.0" LT.
D = 0°45'
T = 144.86'
L = 289.69'
PC = 102+53.51
PT = 105+43.20
e = NO SUPER

STA. 99+87.00 - BEGIN JOB 050189
LOG MILE 3.04

STA. 101+18 - IN PLACE
24" x 24' PLASTIC PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
24" x 38" PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 140 CU. YDS.

STA. 101+60 - IN PLACE
DBL. 6' x 4' x 36' R.C. BOX CULVERT
WITH 3:1 WINGS LT. & RT.
RETAIN AND EXTEND 20' LT. & 20' RT.
Q25 = 507 CFS D.A. = 309 ACRES

STA. 101+81 - CONSTRUCT
DBL. 73" x 45" x 76' ARCH PIPE CULVERT
WITH FES LT. & RT.
Q25 = 507 CFS D.A. = 309 ACRES
73" X 45" R.C. PIPE (CLASS III) = 152 LIN. FT.
71" x 47" C.M. AND PLASTIC PIPE = 162 LIN. FT.

HWY. 13

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

99+69.14
244.83

99+99.93
241.32

101+54.93
239.50

101+87.93
236.50

LT. DITCH GRADE -2.87%
RT. DITCH GRADE -2.58%
LT. DITCH GRADE 2.95%
RT. DITCH GRADE 3.80%

F.L. INLET ELEV. (LT.) = 239.40
F.L. OUTLET ELEV. (RT.) = 237.74

UNNAMED TRIBUTARY:
THIS STREAM IS CLASSIFIED AS INTERMITTENT.
THE TOP OF CHANNEL ELEVATION IS 242 FT. MSL.
REFER TO SECTION 110.06(c) TEMPORARY FILL OF THE 2003 STANDARD SPECIFICATIONS.

290 280 270 260 250 240 230 220 210 200

90+00 91+00 92+00 93+00 94+00 95+00 96+00 97+00 98+00 99+00 100+00 101+00 102+00 103+00 104+00 105+00

R050189.DGN 8/28/2012

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
8-27-12			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		050189	103	340

(2) PLAN AND PROFILE SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/29/12

STA. 106+00 - CONSTRUCT
DBL. 24" x 306' PIPE CULVERT
WITH FES LT.
Q25 = 18.0 CFS D.A. = 21.5 ACRES
24" R.C. PIPE (CLASS III) = 612 LIN. FT.
24" C.M. AND PLASTIC PIPE = 627 LIN. FT.

STA. 106+06.69 HWY. 13 =
STA. 508+48.33 HWY. 267
Δ = 64° 34' 17.2"

PI = 110+35.13
Δ = 1° 54' 05.0" RT.
D = 0°30'
T = 190.15'
L = 380.26'
PC = 108+44.99
PT = 112+25.24
e = NO SUPER

STA. 109+72 - IN PLACE
TRP. 14" x 21' CLAY PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
DBL. 24" x 40' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 115 CU. YDS. COMPACTED EMBANKMENT
CONSTRUCT APPROACH = 20 CU. YDS. UNCLASSIFIED EXCAVATION

350' TAPER

PROP. ROW
CONST. LIMITS
P.I. 110+35.13
P.C. 108+44.99
P.T. 112+25.24
N 3°23'10" W
105+43.20
16'
5.10
2.5
1.6
B
SHED, WOOD FRAME
GARAGE, WOOD FRAME

REMOVAL AND DISPOSAL OF FENCE

STA.	STA.	SIDE	LIN. FT.	GATES EACH
104+94	106+78	RT.	297	1
106+85	115+52	RT. & LT.	1315	1
118+00	120+70	RT.	503	

WIRE FENCE

STA.	STA.	SIDE	TYPE	LIN. FT.
108+00	120+00	RT.	D-2	1216
118+29	120+00	LT.	D-2	171

HWY. 13

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

K 120.00
VC=600'
e=3.75'

P.V.I. 106+06.69
ELEV. 256.95
2.00%
LT. DITCH GRADE 2.95%
RT. DITCH GRADE 3.80%
106+85.00
255.38
107+11.03
255.90
P.V.C. 107+29.01
ELEV. 259.40
P.V.I. 110+29.00
ELEV. 265.40
P.V.I. 113+28.99
ELEV. 286.40
7.00%

330 320 310 300 290 280 270 260 250 240

105+00 106+00 107+00 108+00 109+00 110+00 111+00 112+00 113+00 114+00 115+00 116+00 117+00 118+00 119+00 120+00

R050189.DGN 8/28/2012

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-27-12				6	ARK.			
				JOB NO.		050189	104	340

(2) PLAN AND PROFILE SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
13017605
MICHAEL D. FUGETT
8/29/12

HWY. 13

PROP. ROW
CONST. LIMITS
100+00
120
125
130
135
95+00
85+00
100+00
65+00

REMOVAL AND DISPOSAL OF FENCE

STA.	STA.	SIDE	LIN. FT.
120+82	121+41	RT. & LT.	197

WIRE FENCE

STA.	STA.	SIDE	TYPE	LIN. FT.
120+00	135+00	RT.	D-2	1505
120+00	135+00	LT.	D-2	1505

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

P.V.I. 126+61.00
ELEV. 379.64

P.V.C. 120+11.00
ELEV. 334.14

7.00%

K 118.18
VC-1300'
e=-17.87'

P.V.T. 133+11.00
ELEV. 353.64

133+61.08
348.41

133+71.13
348.01

-4.00%
RT. DITCH GRADE -5.00%
LT. DITCH GRADE -5.80%

390 380 370 360 350 340 330 320 310 300

120+00 121+00 122+00 123+00 124+00 125+00 126+00 127+00 128+00 129+00 130+00 131+00 132+00 133+00 134+00 135+00

R050189.DGN 8/28/2012

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-20-12				6	ARK.			
8-27-12				JOB NO.		050189	105	340

(2) PLAN AND PROFILE SHEET

SPECIAL FLOOD HAZARD AREA
STA. 147+00 TO STA. 152+00

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 7605
MICHAEL D. FUGETT
8/29/12

PROP. ROW
CONST. LIMITS
•29.30 72.69
•42.00 90.00
•45.00 90.00
•30.00 105.00
•21.19 71.94
•00.00 125.00

PI = 160+76.38
Δ = 60° 33' 49.0" RT.
D = 3°00'
T = 1115.22'
L = 2018.79'
PC = 149+61.16
PT = 169+79.95
e = 0.067'/'
Ls = 300'

P.C. 149+61.16

STA. 149+70 - CONSTRUCT
7' x 6' x 352' R.C. BOX CULVERT
WITH 3:1 WINGS LT. & RT.
Q25 = 485 CFS D.A. = 291 ACRES

HWY. 13

WIRE FENCE

STA.	STA.	SIDE	TYPE	LIN. FT.
135+00	150+00	RT.	D-2	1543
135+00	150+00	LT.	D-2	1519

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

LT. DITCH GRADE -5.80%
RT. DITCH GRADE -5.00%
-4.00%
LT. DITCH GRADE -4.20%
RT. DITCH GRADE -5.65%
LT. DITCH GRADE -7.47%
136+99.93 328.76
139+47.26 319.20
143+69.93 300.62

STA. 147+36.16 BEGIN SUPERELEVATION
STA. 150+36+16 MAX. SUPERELEVATION (0.067'/')
STA. 169+04.95 MAX. SUPERELEVATION (0.067'/')
STA. 172+04.95 END SUPERELEVATION

-4.00%
LT. DT. GR. -7.47%
RT. DT. GR. -5.65%
RT. DITCH GRADE -13.00%
LT. DITCH GRADE -13.65%
LT. DT. GR. 16.37%
145+49.93 287.18
145+99.93 282.34
149+09.93 238.05

INLET ELEV. (LT.) = 237.69
OUTLET ELEV. (RT.) = 228.92

UNNAMED TRIBUTARY:
THIS STREAM IS CLASSIFIED AS INTERMITTENT.
THE TOP OF CHANNEL ELEVATION IS 236 FT. MSL.
REFER TO SECTION 110.06(c) TEMPORARY FILL OF THE 2003 STANDARD SPECIFICATIONS.

R050189.DGN 8/28/2012

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-20-12				6	ARK.			
8-27-12				JOB NO.		050189	106	340

(2) PLAN AND PROFILE SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/29/12

SPECIAL FLOOD HAZARD AREA
STA. 147+00 TO STA. 152+00

SPECIAL FLOOD HAZARD AREA
STA. 162+00 TO STA. 168+00

PROP. ROW
CONST. LIMITS
CONST. LIMITS
PROP. ROW
CONST. LIMITS
CONST. LIMITS
BRIDGE END 163+31.75

150 155 160 165

-100.00 145.00
-100.00 150.00
-100.00 135.00
-100.00 120.00
-100.00 80.00
-100.00 140.00

C.P. 149+61.76

PI = 160+76.38
Δ = 60° 33' 49.0" RT.
D = 3°00'
T = 1115.22'
L = 2018.79'
PC = 149+61.16
PT = 169+79.95
e = 0.067'/'
Ls = 300'

WIRE FENCE

STA.	STA.	SIDE	TYPE	LIN. FT.
150+00	163+20	RT.	D-2	1294
150+00	164+09	LT.	D-2	1658

REMOVAL AND DISPOSAL OF FENCE

STA.	STA.	SIDE	LIN. FT.
164+50	156+23	RT. & LT.	87

HWY. 13

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

STA. 147+36.16 BEGIN SUPERELEVATION
STA. 150+36+16 MAX. SUPERELEVATION (0.067'/')
STA. 169+04.95 MAX. SUPERELEVATION (0.067'/')
STA. 172+04.95 END SUPERELEVATION

300 290 280 270 260 250 240 230 220 210

150+00 151+00 152+00 153+00 154+00 155+00 156+00 157+00 158+00 159+00 160+00 161+00 162+00 163+00 164+00 165+00

-4.00%
LT. DITCH GRADE 16.37%
RT. DITCH GRADE -13.00%
LT. DITCH GRADE -1.94%
RT. DITCH GRADE -3.18%
LT. DITCH GRADE -2.58%
RT. DITCH GRADE -2.57%
LT. DITCH GRADE -3.21%
RT. DITCH GRADE -2.36%
LT. DITCH GRADE -1.00%
RT. DITCH GRADE -1.00%
-1.00%

P.V.C. 151+13.00 ELEV. 281.56
151+59.98 278.98
152+00.00 276.31
152+00.00 273.66
153+00.00 274.37
153+00.00 270.48
K 166.66 VC=500' e=1.88'
P.V.I. 153+63.00 ELEV. 271.56
154+00.00 271.79
154+00.00 267.91
155+00.00 268.58
155+00.00 265.55
156+00.00 267.20
P.V.T. 156+13.00 ELEV. 269.06
160+00.00 263.20
160+00.00 260.55
150+17.93 228.00
RT. DT. GR.
BRIDGE END 163+31.75
P.V.C. 163+61.00 ELEV. 261.58
K 160.00 VC=800' e=5.00'

BAYOU DES ARC:
THIS STREAM IS CLASSIFIED AS 5CFS.
THE TOP OF CHANNEL ELEVATION IS 222 FT. MSL.
REFER TO SECTION 110.06(c) TEMPORARY FILL OF THE 2003 STANDARD SPECIFICATIONS.

R050189.DGN 8/28/2012

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-20-12				6	ARK.			
8-27-12				JOB NO.		050189	107	340

(2) PLAN AND PROFILE SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/29/12

SPECIAL FLOOD HAZARD AREA
STA. 162+00 TO STA. 168+00

PROP. ROW
CONST. LIMITS
BRIDGE END 166+49.25
CONST. LIMITS
PROP. ROW
CONST. LIMITS
PROP. ROW
CONST. LIMITS
PROP. ROW

20.00 / 165.00
30.00 / 155.00
00.00 / 50.00
00.00 / 56.00
16.98 / 80.00
00.00 / 80.00
50.00 / 50.00
00.00 / 65.00

165
170
175
180
16'

P.T. 169+79.95

PI = 160+76.38
Δ = 60° 33' 49.0" RT.
D = 3°00'
T = 1115.22'
L = 2018.79'
PC = 149+61.16
PT = 169+79.95
e = 0.067'/'
Ls = 300'

WIRE FENCE

STA.	STA.	SIDE	TYPE	LIN. FT.
165+48	170+89	RT.	D-2	682
166+62	171+11	LT.	D-2	565
170+89	180+00	RT.	C	913
171+11	180+00	LT.	C	889

STA. 177+00 - CONSTRUCT
APPROACH ON RT. = 15 CU.YDS.

REMOVAL AND DISPOSAL OF FENCE

STA.	STA.	SIDE	LIN. FT.
170+90	171+10	RT. & LT.	106
174+37	180+00	RT. & LT.	584

STA. 179+68 - CONSTRUCT
24" x 84' PIPE CULVERT
WITH FES LT. & RT.
Q25 = 7.6 CFS D.A. = 9.2 ACRES
24" R.C. PIPE (CLASS III) = 84 LIN. FT.
24" C.M. AND PLASTIC PIPE = 89 LIN. FT.

HWY. 13

STA. 147+36.16 BEGIN SUPERELEVATION
STA. 150+36+16 MAX. SUPERELEVATION (0.067'/')
STA. 169+04.95 MAX. SUPERELEVATION (0.067'/')
STA. 172+04.95 END SUPERELEVATION

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

BRIDGE END 166+49.25

K 160.00
VC-800'
e-5.00'

P.V.I. 167+61.00
ELEV. 257.58

P.V.I. 171+61.00
ELEV. 273.58

4.00%

P.V.C. 175+00.00
ELEV. 287.14

K 162.78
VC-700'
e--3.76'

P.V.I. 178+50.00
ELEV. 301.14

178+38.33
293.96

LT. DT.
GR. -1.00%

LT. DT.
GR. 2.96%

F.L. INLET ELEV. (LT.) = 292.66
F.L. OUTLET ELEV. (RT.) = 289.65

179+67.93
292.66

BAYOU DES ARC:
THIS STREAM IS CLASSIFIED AS 5CFS.
THE TOP OF CHANNEL ELEVATION IS 222 FT. MSL.
REFER TO SECTION 110.06(c) TEMPORARY FILL OF THE 2003 STANDARD SPECIFICATIONS.

300 290 280 270 260 250 240 230 220 210

165+00 166+00 167+00 168+00 169+00 170+00 171+00 172+00 173+00 174+00 175+00 176+00 177+00 178+00 179+00 180+00

R050189.DGN 8/28/2012

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-20-12				6	ARK.			
8-27-12				JOB NO.		050189	108	340

(2) PLAN AND PROFILE SHEET

WIRE FENCE

STA.	STA.	SIDE	TYPE	LIN. FT.
180+00	191+71	RT.	C	1171
180+00	192+34	LT.	C	1236

REMOVAL AND DISPOSAL OF FENCE

STA.	STA.	SIDE	LIN. FT.
185+58	186+07	RT. & LT.	114
185+83	187+76	RT. & LT.	227
191+70	192+34	RT. & LT.	125
192+05	192+68	RT. & LT.	125

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 7605 MICHAEL D. FUGETT 8/29/12

STA. 192+22 - CONSTRUCT APPROACH ON LT. = 25 CU. YDS.

T.C.E.

PROP. ROW

CONST. LIMITS

CONST. LIMITS

PROP. ROW

N 59°04'44" E

STA. 184+54 - CONSTRUCT
24" x 84" PIPE CULVERT
WITH FES LT. & RT.
Q25 = 15.7 CFS D.A. = 15 ACRES
24" R.C. PIPE (CLASS III) = 84 LIN. FT.
24" C.M. AND PLASTIC PIPE = 89 LIN. FT.

STA. 188+15 - CONSTRUCT
36" x 76" PIPE CULVERT
WITH FES LT. & RT.
Q25 = 43.3 CFS D.A. = 53.6 ACRES
36" R.C. PIPE (CLASS IV) = 76 LIN. FT.
36" C.M. AND PLASTIC PIPE = 82 LIN. FT.

STA. 192+00 - CONSTRUCT
APPROACH = 30 CU. YDS

HWY. 13

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

LT. DITCH GRADE 2.96%

180+69.93 295.68

K 162.78
VC=700'
e=-3.76'

P.V.T. 182+00.00
ELEV. 300.09

F.L. INLET ELEV. (LT.) = 292.62
F.L. OUTLET ELEV. (RT.) = 290.14

185+92.46 295.69

LT. DITCH GRADE -2.00%

188+07.93 291.38

F.L. INLET ELEV. (LT.) = 291.42
F.L. OUTLET ELEV. (RT.) = 289.30

-0.30%

LT. DITCH GRADE 0.63%

192+01.71 293.86

194+59.93 292.93

LT. DT. GR. -1.38%

330 320 310 300 290 280 270 260 250 240

180+00 181+00 182+00 183+00 184+00 185+00 186+00 187+00 188+00 189+00 190+00 191+00 192+00 193+00 194+00 195+00

R050189.DGN 8/28/2012

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-27-12				6	ARK.			
				JOB NO.		050189	109	340

(2) PLAN AND PROFILE SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
CHARLES D. FUGETT
8/29/12

STA. 196+31 - CONSTRUCT
24" x 68' PIPE CULVERT
WITH FES LT. & RT.
Q25 = 12.2 CFS D.A. = 13.9 ACRES
24" R.C. PIPE (CLASS III) = 68 LIN. FT.
24" C.M. AND PLASTIC PIPE = 73 LIN. FT.

STA. 203+54 - CONSTRUCT
APPROACH ON LT. = 80 CU. YDS.

PROP. ROW
CONST. LIMITS
CONST. LIMITS
PROP. ROW

METAL BARN GOOD CONDITION

STATE R/W

FRAME & TIN POOR CONDITION

T.C.E.

REMOVAL AND DISPOSAL OF FENCE

STA.	STA.	SIDE	LIN. FT.
203+34	204+24	RT. & LT.	161
208+17	210+44	RT. & LT.	408

STA. 202+70 - CONSTRUCT
24" x 84' PIPE CULVERT
WITH FES LT. & RT.
Q25 = 7.1CFS D.A. = 8 ACRES
24" R.C. PIPE (CLASS III) = 84 LIN. FT.
24" C.M. AND PLASTIC PIPE = 89 LIN. FT.

STA. 203+54 - IN PLACE
12" x 16' PCP PIPE
RT. SIDE DRAIN
RETAIN AND CONSTRUCT
APPROACH ON RT. = 75 CU. YDS.

STA. 205+96 - CONSTRUCT
42" x 102' PIPE CULVERT
WITH FES LT. & RT.
Q25 = 75.3 CFS D.A. = 143 ACRES
42" R.C. PIPE (CLASS III) = 102 LIN. FT.
42" C.M. AND PLASTIC PIPE = 108 LIN. FT.

HWY. 13

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

LT. DITCH GRADE -1.38%
LT. DITCH GRADE 0.25%
-0.30%
LT. DITCH GRADE -2.00%
LT. DITCH GRADE 3.44%
1.08%

196+30.93 — 290.57
INLET ELEV. (LT.) = 290.57
OUTLET ELEV. (RT.) = 290.44

199+94.55 — 291.48
200+34.47 — 291.36

F.L. INLET ELEV. (LT.) = 286.65
F.L. OUTLET ELEV. (RT.) = 285.00

202+69.93 — 286.65
P.V.C. 203+36.00 ELEV. 293.68
203+35.93 — 288.92

K 307.65
VC-400'
e-0.65'

P.V.I. 205+36.00 ELEV. 293.08
F.L. INLET ELEV. (LT.) = 282.91
F.L. OUTLET ELEV. (RT.) = 279.90

P.V.T. 207+36.00 ELEV. 295.08

330 320 310 300 290 280 270 260 250 240

195+00 196+00 197+00 198+00 199+00 200+00 201+00 202+00 203+00 204+00 205+00 206+00 207+00 208+00 209+00 210+00

R050189.DGN 8/28/2012

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-27-12				6	ARK.			
				JOB NO.		050189	110	340

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 6605
MICHAEL D. FUGETT
8/29/12

STA. 212+65 - IN PLACE
12" x 20' PCP PIPE CULVERT
LT. SIDE DRAIN
REMOVE

WIRE FENCE

STA.	STA.	SIDE	TYPE	LIN. FT.
219+34	225+00	RT.	D-1	611

STA. 222+10 - INSTALL
18" x 46' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 135 CU. YDS

PI = 221+89.54
Δ = 66° 07' 00" LT.
D = 5°00'
T = 745.83'
L = 1322.33'
PC = 214+43.72
PT = 227+66.05
e = 0.091'/'
Ls = 350'

STA. 213+15 - CONSTRUCT
APPROACH ON LT. = 60 CU. YDS. COMPACTED EMBANKMENT
APPROACH ON LT. = 40 CU. YDS. UNCLASSIFIED EXCAVATION

STA. 213+15 - CONSTRUCT
18" x 46' PIPE CULVERT
RT. SIDE DRAIN
APPROACH ON RT. = 195 CU. YDS.

REMOVAL AND DISPOSAL OF FENCE

STA.	STA.	SIDE	LIN. FT.
211+69	213+68	RT. & LT.	233
212+80	214+77	RT. & LT.	233
219+28	221+67	RT. & LT.	272

HWY. 13

STA. 211+81.22 BEGIN SUPERELEVATION
STA. 215+31.22 MAX. SUPERELEVATION (0.091'/')
STA. 226+78.55 MAX. SUPERELEVATION (0.091'/')
STA. 230+28.55 END SUPERELEVATION

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

P.V.C. 210+90.00
ELEV. 298.62
1.00%
210+99.93
295.50
211+84.81
297.48
P.V.I. 212+40.00
ELEV. 300.12
K 250.03
VC=300'
e=0.45'
RT. DT. GR. 2.30%
LT. DITCH GRADE 0.87%
213+27.91
300.77
213+81.34
297.96
P.V.T. 213+90.00
ELEV. 303.42
2.20%
LT. DITCH GRADE 2.00%
P.V.C. 216+95.00
ELEV. 310.13
216+99.93
304.33
LT. DITCH GRADE 1.32%
P.V.I. 219+45.00
ELEV. 315.63
218+70.42
311.64
218+99.84
306.98
K 135.14
VC=500'
e=-2.31'
RT. DITCH GRADE 0.10%
220+49.79
311.83
220+99.93
307.22
LT. DITCH GRADE 0.12%
RT. DITCH GRADE -1.18%
P.V.T. 221+95.00
ELEV. 311.88
222+14.93
309.89
LT. DITCH GRADE -1.50%
-1.50%
223+78.98
303.03
LT. DITCH GRADE -1.74%

210+00 211+00 212+00 213+00 214+00 215+00 216+00 217+00 218+00 219+00 220+00 221+00 222+00 223+00 224+00 225+00

350 340 330 320 310 300 290 280 270 260

R050189.DGN 8/28/2012

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-27-12				6	ARK.			
				JOB NO.		050189	111	340

(2) PLAN AND PLOFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/29/12

PI = 221+89.54
Δ = 66° 07' 00" LT.
D = 5°00'
T = 745.83'
L = 1322.33'
PC = 214+43.72
PT = 227+66.05
e = 0.091'/'
Ls = 350'

STA. 228+08 - IN PLACE
12' x 25' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 72' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 170 CU. YDS

WIRE FENCE

STA.	STA.	SIDE	TYPE	LIN. FT.
225+00	227+89	RT.	D-1	313
223+11	240+58	RT.	C	741
232+30	240+00	LT.	D-1	784

REMOVAL AND DISPOSAL OF FENCE

STA.	STA.	SIDE	LIN. FT.
232+30	246+00	LT.	1491

PI = 236+80.23
Δ = 7° 27' 15.0" RT.
D = 1°30'
T = 248.82'
L = 496.93'
PC = 234+31.41
PT = 239+28.34
e = 0.037'/'
Ls = 300'

STA. 228+30 - CONSTRUCT
DBL. 12' x 7'x 36' R.C. BOX CULVERT
RT. SIDE DRAIN
025=1000 CFS. D.A.=835 ACRES

STA. 228+25 - IN PLACE
12" x 24' PLASTIC PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON LT. = 215 CU. YDS.

STA. 229+15 - CONSTRUCT
TRP. 6' x 4' x 94' R.C. BOX CULVERT
WITH 31 WINGS LT. & RT.
025 = 476 CFS D.A. = 282 ACRES

STA. 233+93 - CONSTRUCT
DBL. 54" x 80' PIPE CULVERT
WITH FES LT. & RT.
025 = 300 CFS D.A. = 154 ACRES
54" R.C. PIPE (CLASS III) = 80 LIN. FT.
54" C.M. AND PLASTIC PIPE = 87 LIN .FT.

HWY. 13

STA. 211+81.22 BEGIN SUPERELEVATION
STA. 215+31.22 MAX. SUPERELEVATION (0.091'/')
STA. 226+78.55 MAX. SUPERELEVATION (0.091'/')
STA. 230+28.55 END SUPERELEVATION

STA. 232+06.41 BEGIN SUPERELEVATION
STA. 235+06.41 MAX. SUPERELEVATION (0.037'/')
STA. 238+53.34 MAX. SUPERELEVATION (0.037'/')
STA. 241+53.34 END SUPERELEVATION

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

P.V.C. 226+21.00 ELEV. 305.49
K 150.00
VC=450'
e=1.69'
P.V.I. 228+46.00 ELEV. 302.11
P.V.T. 230+71.00 ELEV. 305.49

-1.50%
LT. DITCH GRADE -1.74%
RT. DITCH GRADE 0.70%
RT. DITCH GRADE 1.78%
RT. DITCH GRADE 0.93%
LT. DITCH GRADE 3.50%
LT. DITCH GRADE -2.00%
1.50%
LT. DITCH GRADE 2.50%

225+18.30 286.00
226+00.00 286.57
226+46.91 287.40
229+15.00 291.50
229+26.93 293.50
231+42.00 293.60
232+41.39 304.51
233+92.93 301.48
237+41.93 310.20

F.L. INLET ELEV. (LT.) = 293.31
F.L. OUTLET ELEV. (RT.) = 291.50
F.L. INLET ELEV. (LT.) = 301.48
F.L. OUTLET ELEV. (RT.) = 300.18

UNNAMED TRIBUTARY:
THIS STREAM IS CLASSIFIED AS INTERMITTENT.
THE TOP OF CHANNEL ELEVATION IS 295 FT. MSL.
REFER TO SECTION 110.06(c) TEMPORARY FILL OF THE 2003 STANDARD SPECIFICATIONS.

340 330 320 310 300 290 280 270 260 250

225+00 226+00 227+00 228+00 229+00 230+00 231+00 232+00 233+00 234+00 235+00 236+00 237+00 238+00 239+00 240+00

R050189.DGN 8/28/2012

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-27-12				6	ARK.			
				JOB NO.		050189	112	340

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9605
MICHAEL D. FUGETT
8/29/12

STA. 246+08 - CONSTRUCT JUNCTION BOX ON LT. & 24" x 62' R.C. STUB IN & 24" x 88' R.C. PIPE OUTLET (CLASS IV) CONNECT TO OPEN DITCH ON RT. TYPE ST = 4' x 4' H = 4' 0"

STA. 246+28 - CONSTRUCT APPROACH ON LT. = 45 CU. YDS

STA. 248+38 - IN PLACE 18" x 27' CM PIPE CULVERT LT. SIDE DRAIN REMOVE

STA. 249+90 - IN PLACE 18" x 24' CM PIPE CULVERT LT. SIDE DRAIN REMOVE AND INSTALL 24" x 32' PIPE CULVERT LT. SIDE DRAIN CONSTRUCT APPROACH = 45 CU. YDS

STA. 251+56 - IN PLACE 18" x 24' CM PIPE CULVERT LT. SIDE DRAIN REMOVE AND INSTALL 24" x 36' PIPE CULVERT LT. SIDE DRAIN CONSTRUCT APPROACH = 60 CU. YDS

WIRE FENCE

STA.	STA.	SIDE	TYPE	LIN. FT.
240+00	240+58	RT.	C	58
240+00	246+00	LT.	C	600
246+49	248+58	LT.	C	209

STA. 241+40 - IN PLACE 10" x 20' CM PIPE CULVERT RT. SIDE DRAIN RETAIN

STA. 242+41 - INSTALL 18" x 42' PIPE CULVERT RT. SIDE DRAIN CONSTRUCT APPROACH = 60 CU. YDS

STA. 246+36 - IN PLACE 16" x 41' CM PIPE CULVERT 18" x 40' CM PIPE CULVERT RT. SIDE DRAIN REMOVE

STA. 246+28 - CONSTRUCT APPROACH ON RT. = 55 CU. YDS COMPACTED EMBANKMENT APPROACH ON RT. = 50 CU. YDS. UNCLASSIFIED EXCAVATION

PI = 250+74.19
Δ = 10° 02' 27.0" LT.
D = 3°45'
T = 134.22'
L = 267.76'
PC = 249+39.97
PT = 252+07.72
e = 0.080'/'
Ls = 300'

REMOVAL AND DISPOSAL OF FENCE

STA.	STA.	SIDE	LIN. FT.
245+00	255+86	LT.	1091
246+48	248+58	LT.	321
252+32			62

STA. 252+40 - IN PLACE 18" x 28' CM PIPE CULVERT LT. SIDE DRAIN & 16" x 24' PLASTIC PIPE CULVERT RT. SIDE DRAIN REMOVE AND INSTALL 18" x 40' PIPE CULVERT RT. SIDE DRAIN CONSTRUCT APPROACH = 95 CU. YDS

OBLITERATION OF EXISTING PAVEMENT AREAS

HWY. 13

STA. 232+06.41 BEGIN SUPERELEVATION
STA. 235+06.41 MAX. SUPERELEVATION (0.037'/')
STA. 238+53.34 MAX. SUPERELEVATION (0.037'/')
STA. 241+53.34 END SUPERELEVATION

STA. 247+14.97 BEGIN SUPERELEVATION
STA. 250+14.97 MAX. SUPERELEVATION (0.080'/')
STA. 251+32.72 MAX. SUPERELEVATION (0.080'/')
STA. 254+32.72 END SUPERELEVATION

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

STA. 246+09
TOP ELEV.=328.07
F.L. ELEV.=324.07

24"x 149' @ 0.30%
24"x 68' @ 0.30%
1.50%
LT. DITCH GRADE 2.00%
RT. DITCH GRADE 1.50%
LT. DITCH GRADE 1.00%
LT. DITCH GRADE 2.50%

246+79.93 324.26
247+15.37 325.19
248+79.93 328.26
251+37.40 330.83
253+79.93 336.90

380 370 360 350 340 330 320 310 300 290

240+00 241+00 242+00 243+00 244+00 245+00 246+00 247+00 248+00 249+00 250+00 251+00 252+00 253+00 254+00 255+00

R050189.DGN 8/28/2012

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-27-12				6	ARK.			
				JOB NO.		050189	113	340

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/29/12

STA. 260+07 - IN PLACE
24" x 44' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 28' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 30 CU. YDS

STA. 262+34 - IN PLACE
18" x 38' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 28' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 40 CU. YDS

PI = 263+28.60
Δ = 18° 46' 11.0" RT.
D = 3°00'
T = 315.66'
L = 625.66'
PC = 260+12.95
PT = 266+38.61
e = 0.067'/'
Ls = 300'

REMOVAL AND DISPOSAL OF FENCE

STA.	STA.	SIDE	LIN. FT.	GATE EACH
256+12	256+55	LT.	49	
257+62	261+21	LT.	342	1
261+21	256+17	LT.	656	1
269+16	269+49		63	

WIRE FENCE

STA.	STA.	SIDE	TYPE	LIN. FT.
256+06	256+57	LT.	C	50
257+65	259+95	LT.	C	232
260+13	262+25	LT.	C	220
262+46	265+17	LT.	C	278

STA. 268+77 - INSTALL
18" x 36' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 70 CU. YDS COMPACTED EMBANKMENT
CONSTRUCT APPROACH = 5 CU. YDS. UNCLASSIFIED EXCAVATION

PROP. ROW
CONST. LIMITS
P.I. 263+28.60
P.C. 260+12.95
P.T. 266+38.61
T.C.E.
OBLITERATION OF EXISTING PAVEMENT AREAS
N 9° 08' 42" E

STA. 255+00 - STA. 260+00
TEMP. WIDENING FOR MOT
STAGE I TRAFFIC
(REFER TO MOT STAGE I DETAILS, CROSS SECTIONS & SURVEY CONTROL DETAIL SHEETS)

STA. 265+50 - STA. 269+00
TEMP. WIDENING FOR MOT
STAGE I TRAFFIC
(REFER TO MOT STAGE I DETAILS, CROSS SECTIONS & SURVEY CONTROL DETAIL SHEETS)

STA. 256+57 - IN PLACE
18" x 26' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 38' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 65 CU. YDS

STA. 260+07 - IN PLACE
18" x 24' PLASTIC PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 34' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 55 CU. YDS

STA. 260+63 - IN PLACE
24" x 20' CM PIPE CULVERT
RT SIDE DRAIN
REMOVE AND INSTALL
18" x 32' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 70 CU. YDS

STA. 262+04 - IN PLACE
18" x 26' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 42' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 70 CU. YDS

STA. 263+62 - IN PLACE
24" x 30' PLASTIC PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 32' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 40 CU. YDS

STA. 265+35 - IN PLACE
18" x 33' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 36' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 55 CU. YDS

STA. 267+18 - IN PLACE
18" x 24' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 38' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 75 CU. YDS

STA. 269+33 - INSTALL
18" x 34' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 55 CU. YDS

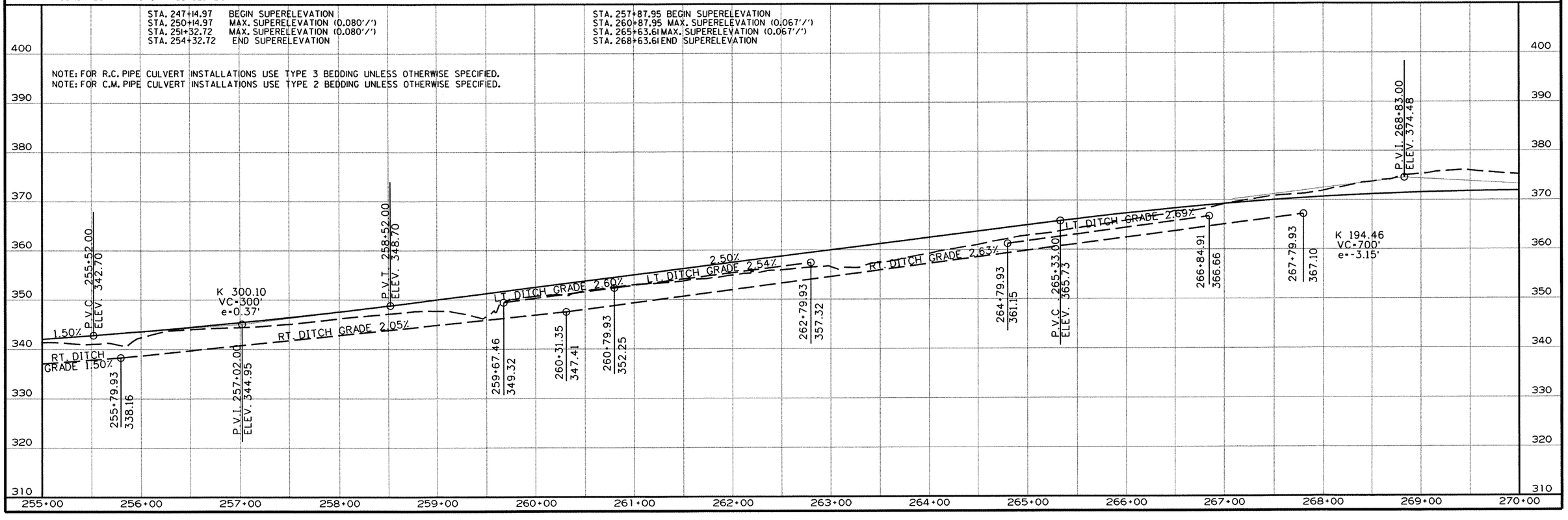
STA. 269+85 - INSTALL
18" x30' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 40 CU. YDS

HWY. 13

STA. 247+14.97 BEGIN SUPERELEVATION
STA. 250+14.97 MAX. SUPERELEVATION (0.080'/')
STA. 251+32.72 MAX. SUPERELEVATION (0.080'/')
STA. 254+32.72 END SUPERELEVATION

STA. 257+87.95 BEGIN SUPERELEVATION
STA. 260+87.95 MAX. SUPERELEVATION (0.067'/')
STA. 265+63.61 MAX. SUPERELEVATION (0.067'/')
STA. 268+63.61 END SUPERELEVATION

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



R050189.DGN 8/28/2012

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-27-12				6	ARK.			
				JOB NO.		050189	114	340

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 7656
MICHAEL D. FUGETT
8/29/12

STA. 270+95 - INSTALL
18" x 34' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 50 CU. YDS

STA. 275+43 - IN PLACE
18" x 21' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 34' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 55 CU. YDS

OBLITERATION OF EXISTING PAVEMENT AREAS

STA. 277+13 - IN PLACE
TRP. 24" x 36' C.M. PIPE CULVERT
WITH HDWLS. LT. & RT.
REMOVE AND CONSTRUCT
TRP. 24" x 74' PIPE CULVERT
WITH FES LT. & RT.
Q25 = 8.4 CFS D.A. = 9.7 ACRES
24" R.C. PIPE (CLASS III) = 222 LIN. FT.
24" C.M. AND PLASTIC PIPE = 237 LIN. FT.

REMOVAL AND DISPOSAL OF FENCE

STA.	STA.	SIDE	LIN. FT.	GATE EACH
278+13	278+63	LT.	113	1
283+87		RT.	19	

PI = 274+98.01
Δ = 12° 37' 47.2" LT.
D = 3°00'
T = 211.35'
L = 420.99'
PC = 272+86.66
PT = 277+07.65
e = 0.067'/'
Ls = 300'

STA. 278+38 - IN PLACE
16" x 26' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 34' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 50 CU. YDS.

STA. 279+00 - IN PLACE
16" x 44' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 32' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 40 CU. YDS

STA. 282+43 - CONSTRUCT
APPROACH ON LT.

STA. 284+62 - IN PLACE
16" x 24' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON LT. = 85 CU. YDS.

PI = 284+36.29
Δ = 8° 02' 38.1" RT.
D = 2°00'
T = 201.43'
L = 402.20'
PC = 282+34.86
PT = 286+37.06
e = 0.024'/'
Ls = 250'

STA. 271+29 - CONSTRUCT
APPROACH ON RT. = 35 CU. YDS.

STA. 272+70 - IN PLACE
12" x 24' PLASTIC PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 34' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 50 CU. YDS

STA. 274+36 - IN PLACE
12" x 24' PVC PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 38' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 70 CU. YDS

STA. 275+70 - IN PLACE
12" x 24' PLASTIC PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 38' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 75 CU. YDS

STA. 270+50 - STA. 286+00
TEMP. WIDENING FOR MOT
STAGE 2 TRAFFIC (REFER
TO MOT STAGE 2 DETAILS,
CROSS SECTIONS & SURVEY
CONTROL DETAIL SHEETS)

STA. 281+70 - IN PLACE
10" x 18' STEEL PIPE CULVERT
RT. SIDE DRAIN
RETAIN

STA. 278+38 - IN PLACE
12" x 24' PLASTIC PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 38' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 65 CU. YDS

STA. 280+00 - IN PLACE
16" x 28' STEEL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 38' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 65 CU. YDS

STA. 282+43 - CONSTRUCT
APPROACH ON RT. = 5 CU. YDS.

100' TAPER

STA. 283+48 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 5' R.C. STUB INLET
WITH FES
& 18" x 127' PIPE OUTLET
CONNECT TO D.I. @ STA. 284+80 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 3'10"

STA. 283+73 - IN PLACE
16" x 26' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON RT. = 15 CU. YDS.

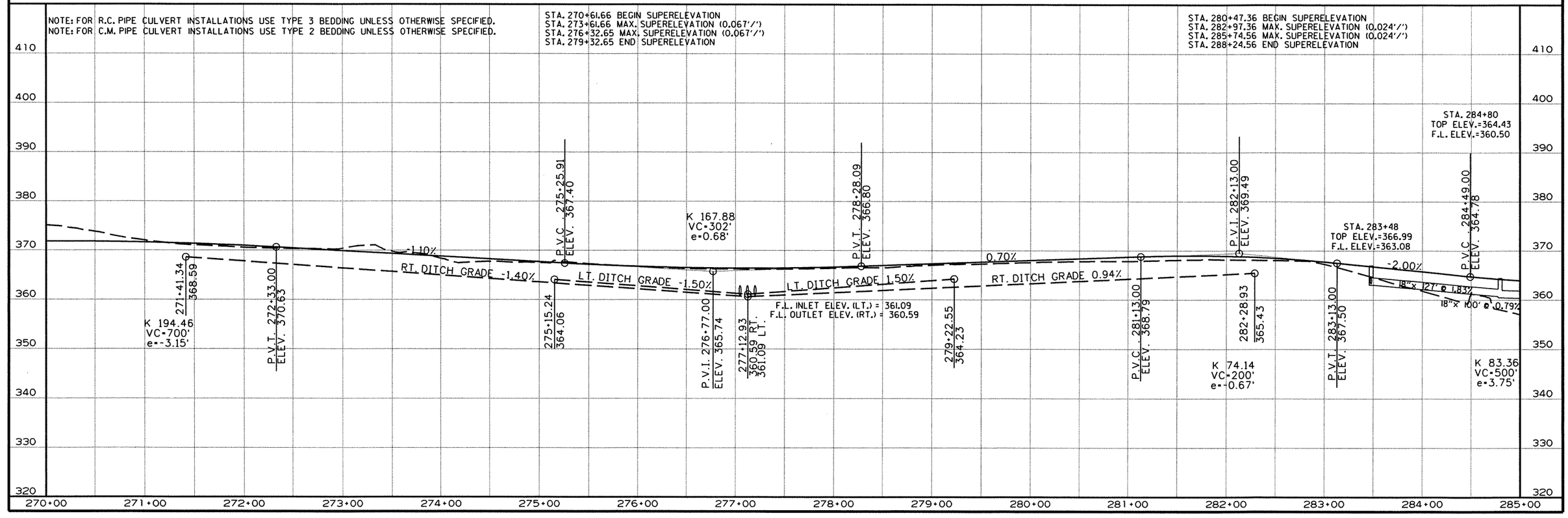
STA. 284+80 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
18" x 100' PIPE OUTLET
CONNECT TO D.I. @ STA. 285+85 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 3' 11"

PROP. ROW
CONST. LIMITS
P.O. 272+86.66
P.I. 274+98.01
P.T. 277+07.65
100' TAPER PT 286+37.06
P.I. 284+36.29
P.C. 282+34.86
WEST BOUND

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

STA. 270+61.66 BEGIN SUPERELEVATION
STA. 273+61.66 MAX. SUPERELEVATION (0.067'/')
STA. 276+32.65 MAX. SUPERELEVATION (0.067'/')
STA. 279+32.65 END SUPERELEVATION

STA. 280+47.36 BEGIN SUPERELEVATION
STA. 282+97.36 MAX. SUPERELEVATION (0.024'/')
STA. 285+74.56 MAX. SUPERELEVATION (0.024'/')
STA. 288+24.56 END SUPERELEVATION



R050189.DGN 8/29/2012

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-27-12				6	ARK.			
				JOB NO.		050189	115	340
				(2) PLAN SHEET				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/29/12

STA. 287+43 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 35' PIPE OUTLET
CONNECT TO D.I. @ STA. 287+43 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4' 9"

PI = 284+36.29
Δ = 8° 02' 38.1" RT.
D = 2°00'
T = 201.43'
L = 402.20'
PC = 282+34.86
PT = 286+37.06
e = 0.024'/'
Ls = 250'

STA. 287+76 - IN PLACE
18" x 31' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON LT. = 70 CU. YDS.

STA. 289+80 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 18" x 31' PIPE OUTLET
CONNECT TO D.I. @ STA. 289+80 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4' 8"

STA. 291+84 - CONSTRUCT
APPROACH ON LT.

STA. 292+33 - CONSTRUCT
APPROACH ON LT. = 5 CU. YDS.

STA. 294+70 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 24" x 22' STUB OUTLET
WITH FES.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 8' 4"

STA. 297+18 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 244' PIPE OUTLET
CONNECT TO D.I. @ STA. 296+38 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4' 3"

STA. 298+39 - CONSTRUCT
APPROACH ON LT. = 5 CU. YDS.

STA. 299+30 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 177' PIPE OUTLET
CONNECT TO D.I. @ STA. 301+11 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5' 0"

REMOVAL AND DISPOSAL OF FENCE

STA.	STA.	SIDE	LIN. FT.
288+00	291+78	LT.	436

PI = 299+50.83
Δ = 4° 27' 27.4" LT.
D = 0°30'
T = 445.99'
L = 891.52'
PC = 295+04.84
PT = 303+96.36
e = NO SUPER

PROP. ROW
CONST. LIMITS
T.C.E.
P.C. 295+04.84
P.T. 286+37.06
P.I. 299+50.83
N 4°33'33" E
20'
16'
B
75 BRICK

OBLITERATION OF EXISTING PAVEMENT AREAS

STA. 285+50 - IN PLACE
DBL. 18" x 41' CM PIPE CULVERT
CROSS DRAIN
REMOVE

STA. 285+85 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 25' PIPE OUTLET
CONNECT TO D.I. @ STA. 286+15 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 3' 11"

STA. 286+15 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 36" x 16' R.C. STUB INLET
WITH F.E.S.
& 36" x 60' R.C. STUB OUTLET
WITH F.E.S.
TY C = 4' x 4'
TY MO = 5' I.D.
H = 7' 11"

STA. 286+44 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 24' PIPE OUTLET
CONNECT TO D.I. @ STA. 286+15 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4' 11"

STA. 287+43 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 95' PIPE OUTLET
CONNECT TO D.I. @ STA. 286+44 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4' 11"

STA. 289+80 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 233' PIPE OUTLET
CONNECT TO D.I. @ STA. 287+43 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5' 0"

STA. 292+00 - CONSTRUCT
APPROACH ON RT. = 10 CU. YDS.

STA. 294+70 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 24" X 8' R.C. STUB INLET
WITH F.E.S.
& 24" x 35' PIPE OUTLET
CONNECT TO D.I. @ STA. 294+70 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5' 0"

STA. 294+10 - IN PLACE
DBL. 18" x 36' CM PIPE CULVERT
CROSS DRAIN
REMOVE

STA. 296+08 - IN PLACE
18" x 26' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON RT. = 5 CU. YDS.

STA. 297+18 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 35' PIPE OUTLET
CONNECT TO D.I. @ STA. 297+18 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4' 6"

STA. 299+30 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" X 36' PIPE OUTLET
CONNECT TO D.I. @ STA. 299+30 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4' 8"

8/29/2012

R050189.DGN

HWY. 13

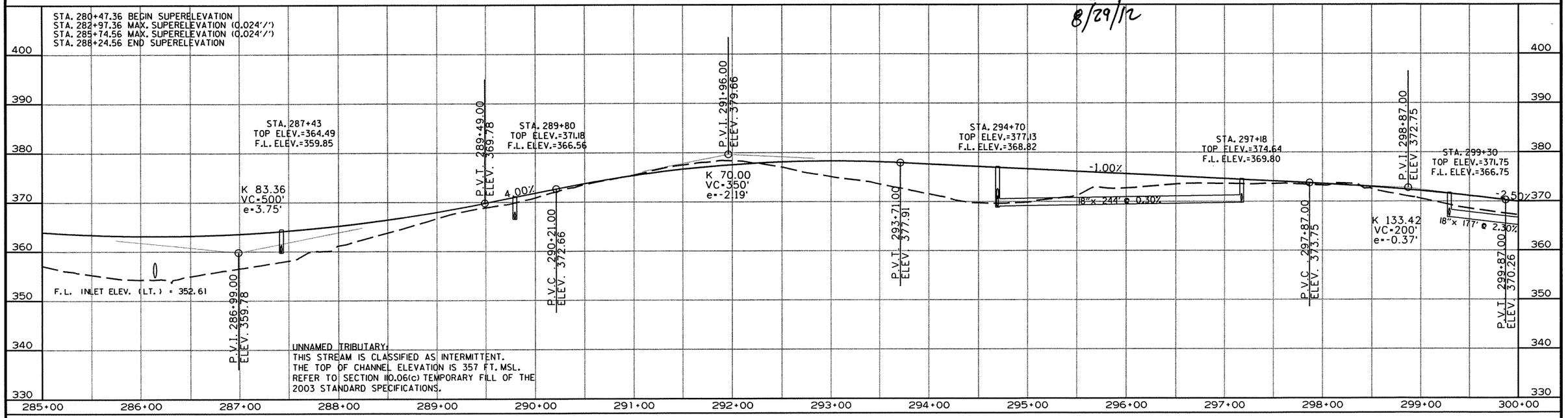
NOTE: FOR R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.
NOTE: FOR C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/29/12

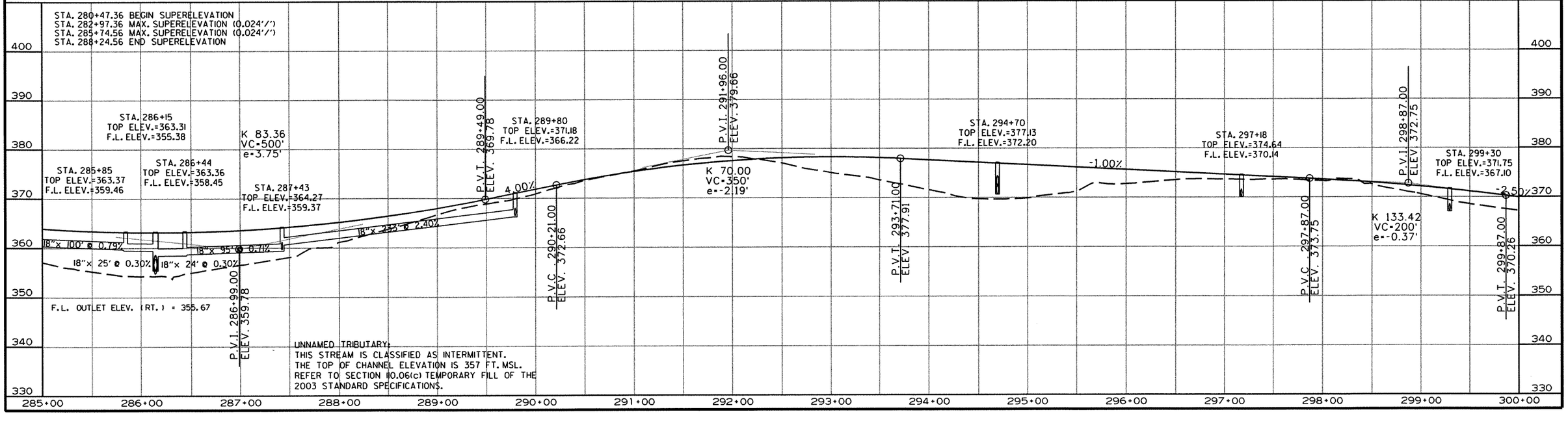
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-27-12				6	ARK.			
				JOB NO.		050189	116	340

(2) PROFILE SHEET

LEFT SIDE



RIGHT SIDE



R050189.DGN 8/28/2012

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-27-12				6	ARK.			
				JOB NO.		050189	117	340

(2) PLAN SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/29/12

STA. 300+80 - IN PLACE
18" x 26' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON LT. = 50 CU. YDS.

STA. 301+11 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 24" x 130' PIPE OUTLET
CONNECT TO D.I. @ STA. 302+45 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5' 0"

STA. 302+45 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 24" x 150' PIPE OUTLET
CONNECT TO D.I. @ STA. 304+00 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5' 0"

STA. 302+72 - IN PLACE
18" x 26' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON LT. = 190 CU. YDS.

STA. 304+00 - CONSTRUCT
D.I. ON LT. WITH 0' EXTENSION
& 30" x 39' PIPE OUTLET
CONNECT TO D.I. @ STA. 304+44 LT.
TY C = 4' x 4'
TY MO = 5' I.D.
H = 5' 11"

STA. 304+44 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 30" x 41' PIPE OUTLET
CONNECT TO D.I. @ STA. 304+85 RT.
TY C = 4' x 4'
TY MO = 5' I.D.
H = 6' 3"

STA. 304+85 - CONSTRUCT
D.I. ON LT. WITH
48" x 28' R.C. STUB OUTLET
WITH FES.
TY C = 5' X 5'
TY MO = 6' I.D.
H = 12' 11"

STA. 306+05 - CONSTRUCT
D.I. ON LT. WITH
18" X 115' PIPE OUTLET
CONNECT TO D.I. @ STA. 304+85
TY C = 4' X 4'
TY MO = 4' I.D.
H = 4' 7"

STA. 307+30 - CONSTRUCT
D.I. ON LT. WITH
18" X 121' PIPE OUTLET
CONNECT TO D.I. @ STA. 306+05
TY C = 4' X 4'
TY MO = 4' I.D.
H = 5' 0"

STA. 307+97 - IN PLACE
18" x 95' PLASTIC PIPE CULVERT
LT. SIDE DRAIN
REMOVE

STA. 309+26 - CONSTRUCT
D.I. ON LT. WITH
18" X 192' PIPE OUTLET
CONNECT TO D.I. @ STA. 307+30 LT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 5' 0"

STA. 312+26 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 18" x 296' PIPE OUTLET
CONNECT TO D.I. @ STA. 309+26 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5' 0"

PI = 299+50.83
Δ = 4° 27' 27.4" LT.
D = 0°30'
T = 445.99'
L = 891.52'
PC = 295+04.84
PT = 303+96.36
e = NO SUPER

REMOVAL AND DISPOSAL OF FENCE

STA.	STA.	SIDE	LIN. FT.
309+15	318+15	LT.	1005

WIRE FENCE

STA.	STA.	SIDE	TYPE	LIN. FT.
309+17	315+00	LT.	D-1	582

PROP. ROW
CONST. LIMITS
N 0°06' 06" E
T.C.E.
HILL CREEK CIRCLE
OBLITERATION OF EXISTING PAVEMENT AREAS

STA. 300+62 - IN PLACE
18" x 36' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE

STA. 300+95 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 24" x 6' R.C. STUB INLET
WITH FES.
& 24" X 38' PIPE OUTLET
CONNECT TO D.I. @ STA. 300+11 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4' 8"

STA. 301+31 - IN PLACE
12" x 24' CM PIPE CULVERT
RT. SIDE DRAIN
RETAIN

STA. 302+45 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 36' PIPE OUTLET
CONNECT TO D.I. @ STA. 302+45 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4' 8"

STA. 304+00 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 40' PIPE OUTLET
CONNECT TO D.I. @ STA. 304+44 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4' 0"

STA. 304+44 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 36' PIPE OUTLET
CONNECT TO D.I. @ STA. 304+85 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 3' 11"

STA. 304+85 - CONSTRUCT
D.I. ON RT. WITH
44" x 27" x 35' PIPE OUTLET
CONNECT TO D.I. @ STA. 304+85 LT.
TY C = 5' x 5'
TY MO = 6' I.D.
H = 12' 5"

STA. 304+76 - IN PLACE
TRP. 24" x 38' CM PIPE CULVERT
CROSS DRAIN
REMOVE

STA. 305+70 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 44" X 27" X 30' R.C. STUB INLET
WITH FES
& 44" x 27" X 79' PIPE OUTLET
CONNECT TO D.I. @ STA. 304+85 RT.
TY C = 4' x 4'
TY MO = 5' I.D.
H = 12' 4"

STA. 307+30 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 35' PIPE OUTLET
CONNECT TO D.I. @ STA. 307+30 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4' 8"

STA. 307+97 - IN PLACE
18" x 35' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE

STA. 309+26 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 6' R.C. STUB INLET
WITH FES.
& 18" x 35' PIPE OUTLET
CONNECT TO D.I. @ STA. 309+26 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4' 8"

STA. 312+26 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 35' PIPE OUTLET
CONNECT TO D.I. @ STA. 312+26 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4' 8"

STA. 313+95 - IN PLACE
15" x 38' CM PIPE CULVERT
REMOVE AND CONSTRUCT
APPROACH ON RT. = 5 CU. YDS. UNCLASSIFIED EXCAVATION

STA. 314+27 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 197' PIPE OUTLET
CONNECT TO D.I. @ STA. 312+26 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 3' 8"

HWY. 13

8/29/2012

R050189.DGN

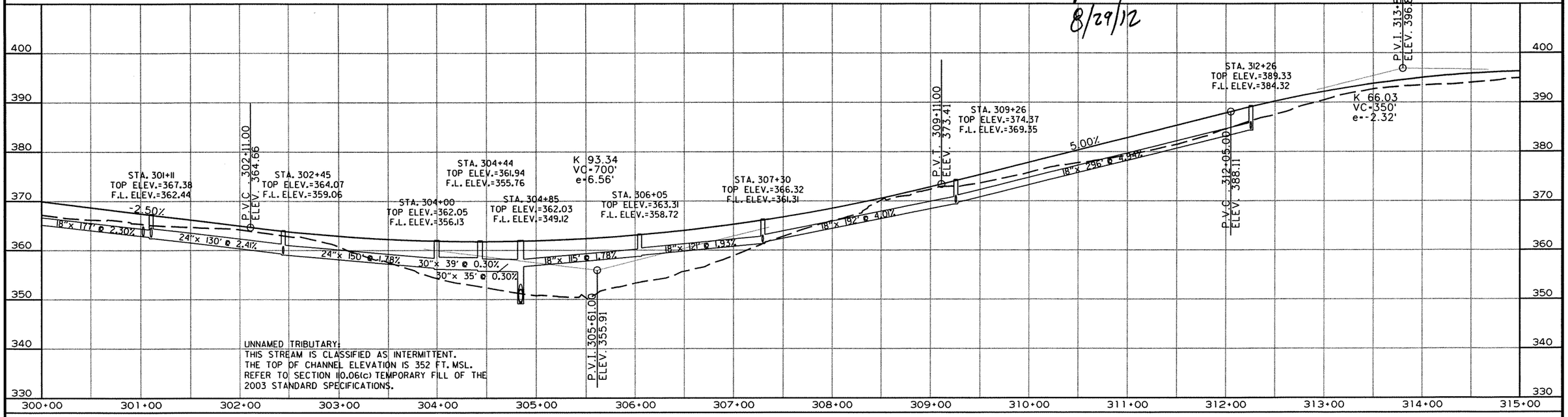
NOTE: FOR R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.
NOTE: FOR C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
N.I. 7655
MICHAEL D. FUGETT
8/29/12

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-27-12				6	ARK.			
				JOB NO.		050189	118	340

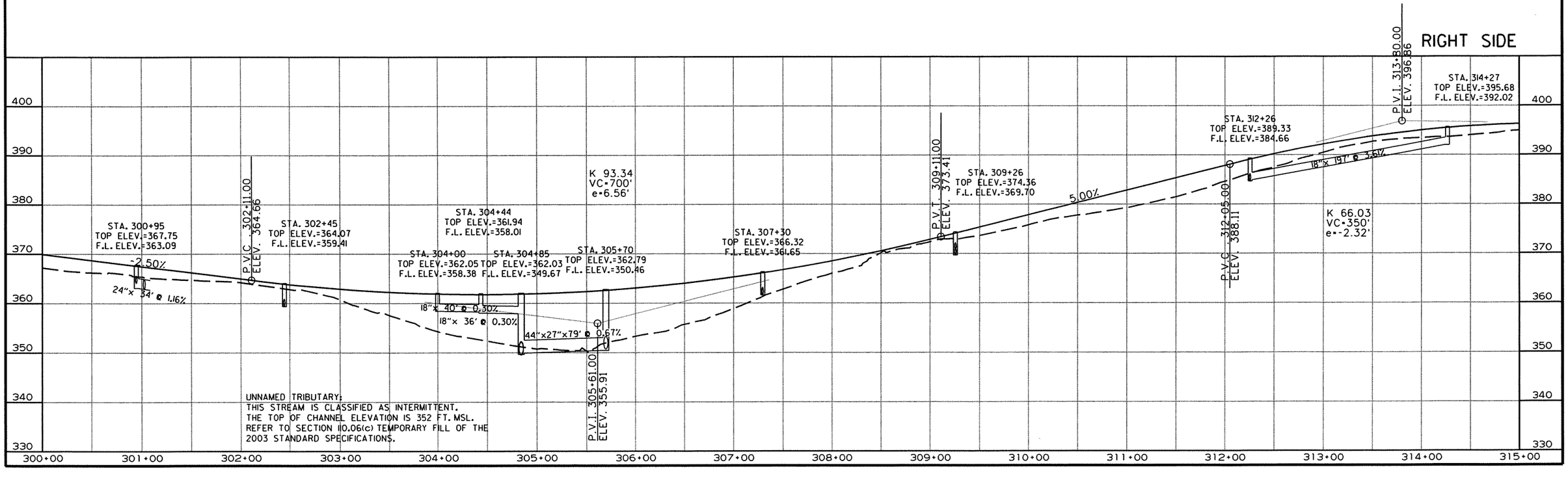
(2) PROFILE SHEETS

LEFT SIDE



UNNAMED TRIBUTARY:
THIS STREAM IS CLASSIFIED AS INTERMITTENT.
THE TOP OF CHANNEL ELEVATION IS 352 FT. MSL.
REFER TO SECTION 110.06(c) TEMPORARY FILL OF THE 2003 STANDARD SPECIFICATIONS.

RIGHT SIDE



UNNAMED TRIBUTARY:
THIS STREAM IS CLASSIFIED AS INTERMITTENT.
THE TOP OF CHANNEL ELEVATION IS 352 FT. MSL.
REFER TO SECTION 110.06(c) TEMPORARY FILL OF THE 2003 STANDARD SPECIFICATIONS.

R050189.DGN 8/28/2012

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AND PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-27-12				6	ARK.			
8-29-12				JOB NO.		050189	119	340

(2) PLAN SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. RUGETT
8/30/12

STA. 318+25 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 22" x 14" x 6' R.C. STUB INLET
WITH FES.
& 22" x 14" x 35' PIPE OUTLET
CONNECT TO D.I. @ STA. 318+25 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 3' 2"

STA. 319+32 - CONSTRUCT
APPROACH ON LT. = 100 CU. YDS.

STA. 321+54 - IN PLACE
24" x 48' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE

STA. 321+70 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 18" x 4' R.C. STUB INLET
WITH FES.
& 18" x 98' PIPE OUTLET
CONNECT TO D.I. @ STA. 322+72 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5' 0"

STA. 322+00 - CONSTRUCT
D.I. ON LT. WITH 4' EXT.
& 24" x 16' R.C. PIPE STUB INLET
& 24" x 27' PIPE OUTLET
CONNECT TO D.I. @ STA. 322+29 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 2' 11"

STA. 322+29 - CONSTRUCT
D.I. ON LT. WITH 4' EXT.
& 18" x 16' R.C. PIPE STUB INLET
& 24" x 59' PIPE OUTLET
CONNECT TO D.I. @ STA. 322+71 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 2' 11"

STA. 322+72 - CONSTRUCT
D.I. ON LT. WITH
24" x 6' R.C. STUB INLET
WITH FES.
& 24" x 256' PIPE OUTLET
CONNECT TO D.I. @ STA. 325+32 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4' 10"

STA. 325+32 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
24" x 244' PIPE OUTLET
CONNECT TO D.I. @ STA. 327+80 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4' 10"

STA. 325+58 - IN PLACE
18" x 24' CM PIPE CULVERT
REMOVE AND CONSTRUCT
APPROACH ON LT. = 5 CU. YDS.

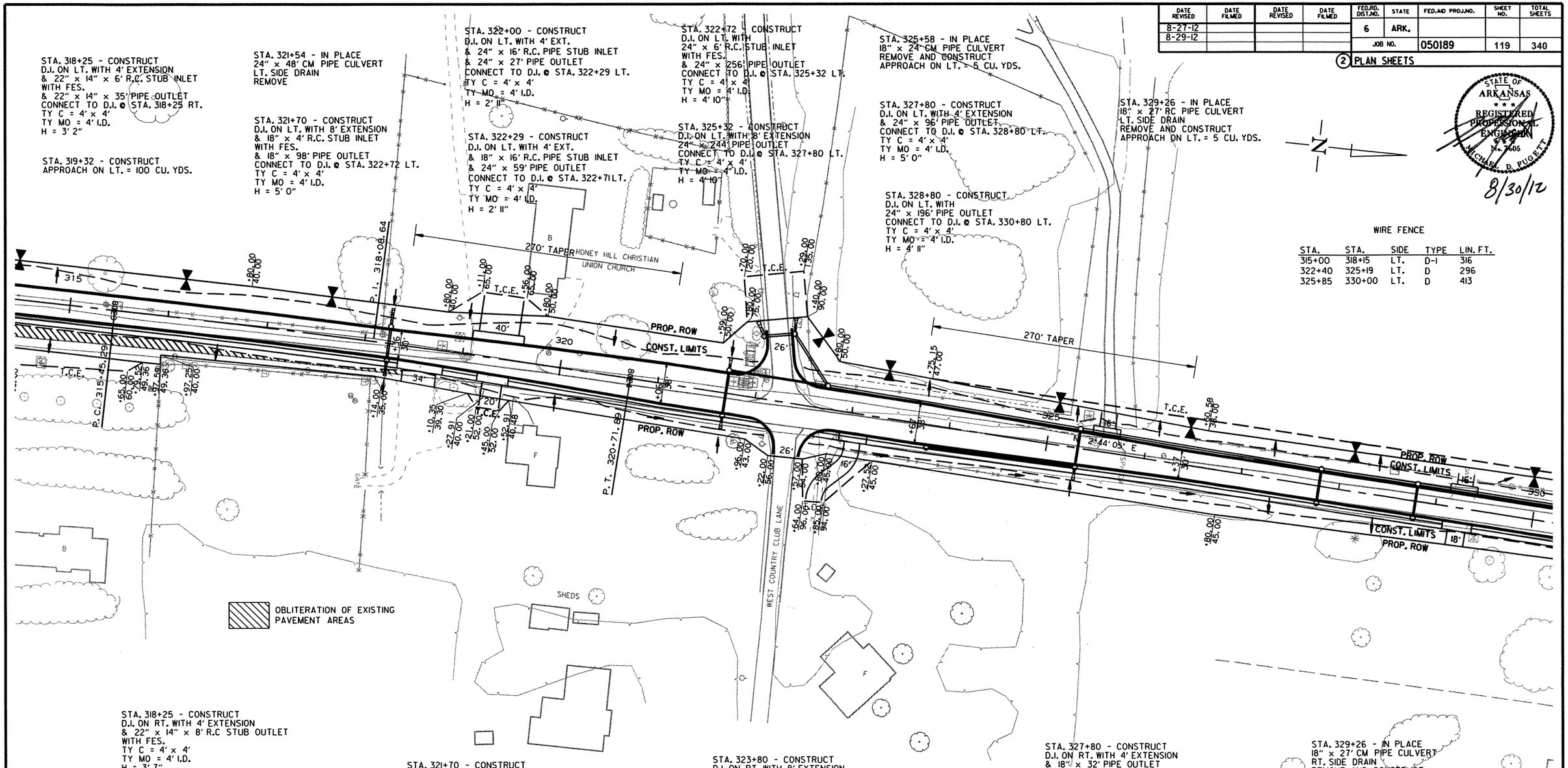
STA. 327+80 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 24" x 96' PIPE OUTLET
CONNECT TO D.I. @ STA. 328+80 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5' 0"

STA. 328+80 - CONSTRUCT
D.I. ON LT. WITH
24" x 196' PIPE OUTLET
CONNECT TO D.I. @ STA. 330+80 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4' 11"

STA. 329+26 - IN PLACE
18" x 27' RC PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON LT. = 5 CU. YDS.

WIRE FENCE

STA.	STA.	SIDE	TYPE	LIN. FT.
315+00	318+15	LT.	D-1	316
322+40	325+19	LT.	D	296
325+85	330+00	LT.	D	413



STA. 318+25 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 22" x 14" x 8' R.C STUB OUTLET
WITH FES.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 3' 7"

STA. 318+59 - CONSTRUCT
APPROACH ON RT.

STA. 319+32 - CONSTRUCT
APPROACH ON RT. = 30 CU. YDS.

STA. 321+45 - IN PLACE
18" x 41' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE

STA. 321+70 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 5' R.C. STUB INLET
WITH FES.
& 18" x 43' PIPE OUTLET
CONNECT TO D.I. @ STA. 321+70 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4' 8"

STA. 321+98 - IN PLACE
18" x 26' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE

STA. 323+05 - CONSTRUCT
APPROACH ON RT. = 25 CU. YDS.

STA. 323+80 - CONSTRUCT
D.I. ON RT. WITH 8' EXTENSION
& 18" x 148' PIPE OUTLET
CONNECT TO D.I. @ STA. 325+32 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 3' 9"

STA. 325+32 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 5' R.C. STUB INLET
WITH FES.
& 18" x 36' PIPE OUTLET
CONNECT TO D.I. @ STA. 325+32 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4' 5"

STA. 327+80 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 32' PIPE OUTLET
CONNECT TO D.I. @ STA. 327+80 LT.
TY C = 4" x 4"
TY MO = 4' I.D.
H = 4' 8"

STA. 328+80 - CONSTRUCT
D.I. ON RT. WITH
18" x 32' PIPE OUTLET
CONNECT TO D.I. @ STA. 328+80 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4' 8"

STA. 329+26 - IN PLACE
18" x 27' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON RT.

8/30/2012

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HWY. 13

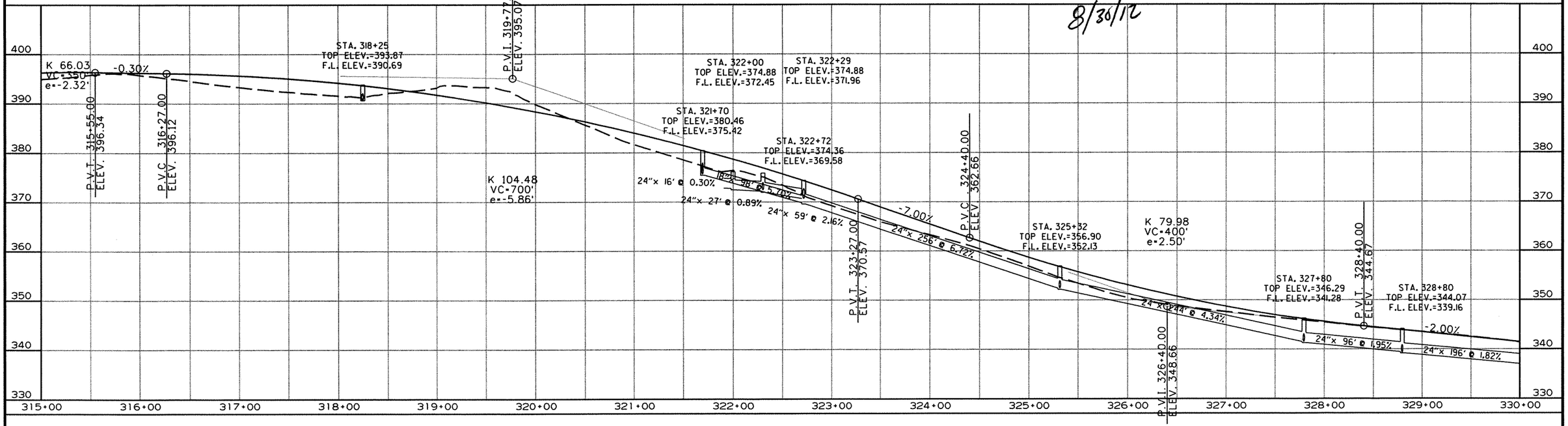
NOTE: FOR R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.
NOTE: FOR C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/30/12

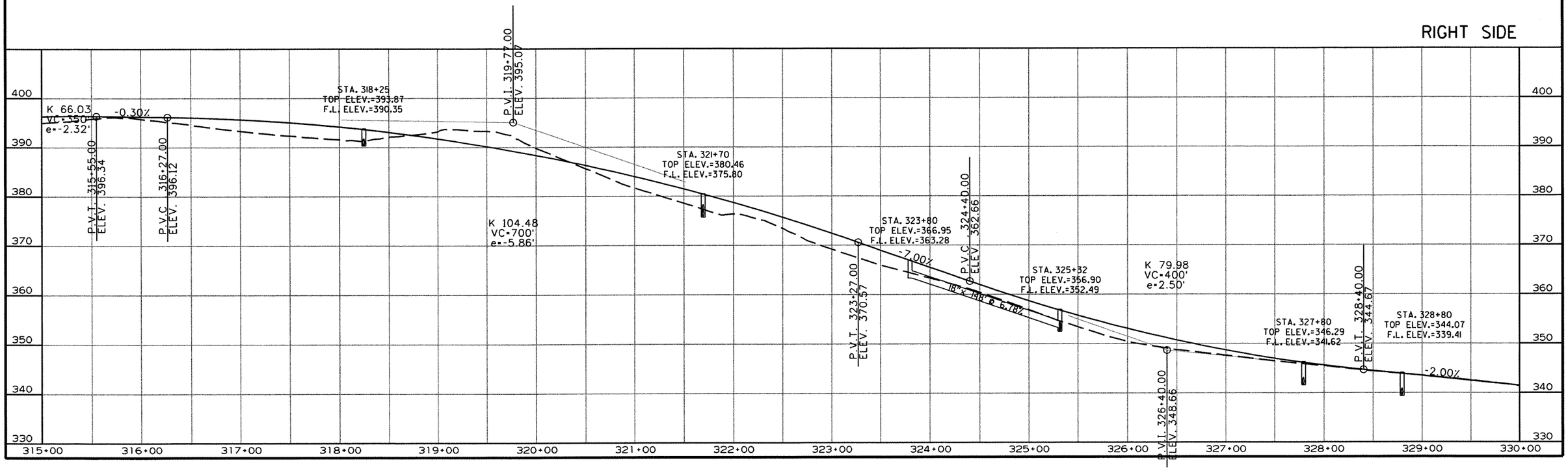
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-27-12				6	ARK.			
8-29-12				JOB NO.		050189	120	340

(2) PROFILE SHEETS

LEFT SIDE



RIGHT SIDE



R050189.DGN 8/30/2012

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-27-12				6	ARK.			
				JOB NO.		050189	121	340

(2) PLAN SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. PUGETT
8/29/12

STA. 330+80 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 24" x 193' PIPE OUTLET
CONNECT TO D.I. @ STA. 332+80 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4' 9"

STA. 332+80 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 24" x 220' PIPE OUTLET
CONNECT TO D.I. @ STA. 335+08 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5' 0"

STA. 335+08 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 30" x 127' PIPE OUTLET
CONNECT TO D.I. @ STA. 336+40 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4' 8"

STA. 336+40 - CONSTRUCT
D.I. ON LT. WITH
24" x 11' R.C. STUB INLET
WITH FES.
& 44" x 27" x 32' ARCH PIPE OUTLET
CONNECT TO D.I. @ STA. 336+40 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5' 6"

STA. 337+22 - IN PLACE
18" x 22' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE

STA. 340+06 - IN PLACE
18" x 27' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE

STA. 340+88 - CONSTRUCT
APPROACH ON LT. = 15 CU. YDS.

STA. 342+49 - IN PLACE
18" x 24' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE

STA. 342+80 - CONSTRUCT
D.I. ON LT. WITH
18" x 31' PIPE OUTLET
CONNECT TO D.I. @ STA. 342+80 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4' 8"

REMOVAL AND DISPOSAL OF FENCE

STA.	STA.	SIDE	LIN. FT.
335+79	340+75	LT.	550
341+00	245+00	LT.	445

WIRE FENCE

STA.	STA.	SIDE	TYPE	LIN. FT.
330+00	340+74	LT.	D	1074
341+00	345+00	LT.	D	402

PI = 332+70.26
Δ = 22° 17' 19" LT.
D = 5°00'
T = 225.74'
L = 445.77'
PC = 330+44.52
PT = 334+90.29
e = 0.036'/'
Ls = 250'

PI = 338+43.73
Δ = 19° 42' 21.0" RT.
D = 5°00'
T = 199.02'
L = 394.12'
PC = 336+44.70
PT = 340+38.82
e = 0.036'/'
Ls = 250'

STA. 330+80 - CONSTRUCT
D.I. ON RT. WITH
OPENING IN BACK
& 24" x 32' PIPE OUTLET
CONNECT TO D.I. @ STA. 330+80 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4' 11"

STA. 332+80 - CONSTRUCT
D.I. ON RT. WITH
OPENING IN BACK
& 24" x 32' PIPE OUTLET
CONNECT TO D.I. @ STA. 332+80 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5' 6"

STA. 335+08 - CONSTRUCT
D.I. ON RT. WITH
18" x 6' R.C. STUB INLET
WITH FES
& 24" x 32' PIPE OUTLET
CONNECT TO D.I. @ STA. 335+08 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4' 2"

STA. 334+00 - IN PLACE
18" x 95' PLASTIC PIPE CULVERT
RT. SIDE DRAIN
REMOVE

STA. 336+40 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 51" X 31" x 145' PIPE OUTLET
CONNECT TO D.I. @ STA. 337+92 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5' 4"

STA. 337+03 - IN PLACE
24" x 38' CM PIPE CULVERT
CROSS DRAIN
REMOVE

STA. 337+13 - IN PLACE
30" x 130' PLASTIC PIPE CULVERT
RT. SIDE DRAIN
REMOVE

STA. 337+92 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 24" x 47' STUB INLET
WITH FES.
& 51" x 31" x 7' ARCH STUB OUTLET
WITH FES
TY C = 5' x 5'
TY MO = 6' I.D.
H = 5' 6"

STA. 338+90 - CONSTRUCT
D.I. ON RT. WITH
18" x 75' PIPE OUTLET
CONNECT TO D.I. @ STA. 339+70 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 3' 8"

STA. 339+70 - CONSTRUCT
D.I. ON RT. WITH
18" x 75' PIPE OUTLET
CONNECT TO D.I. @ STA. 340+50 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4' 1"

STA. 340+50 - CONSTRUCT
D.I. ON RT. WITH
24" x 126' PIPE OUTLET
CONNECT TO D.I. @ STA. 341+80 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4' 11"

STA. 341+80 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 24" x 96' PIPE OUTLET
CONNECT TO D.I. @ STA. 342+80 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5' 3"

STA. 342+80 - CONSTRUCT
D.I. ON RT. WITH
24" x 218' PIPE OUTLET
CONNECT TO D.I. @ STA. 345+02 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4' 10"

8/29/2012

R050189.DGN

HWY. 13

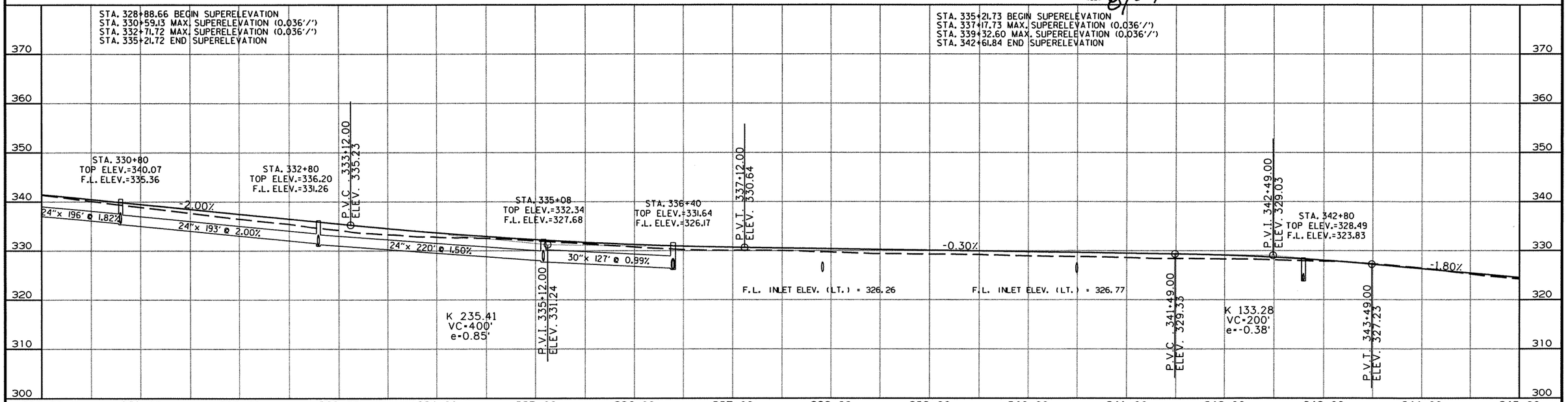
NOTE: FOR R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.
NOTE: FOR C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9605
MICHAEL D. PUGETT
8/29/12

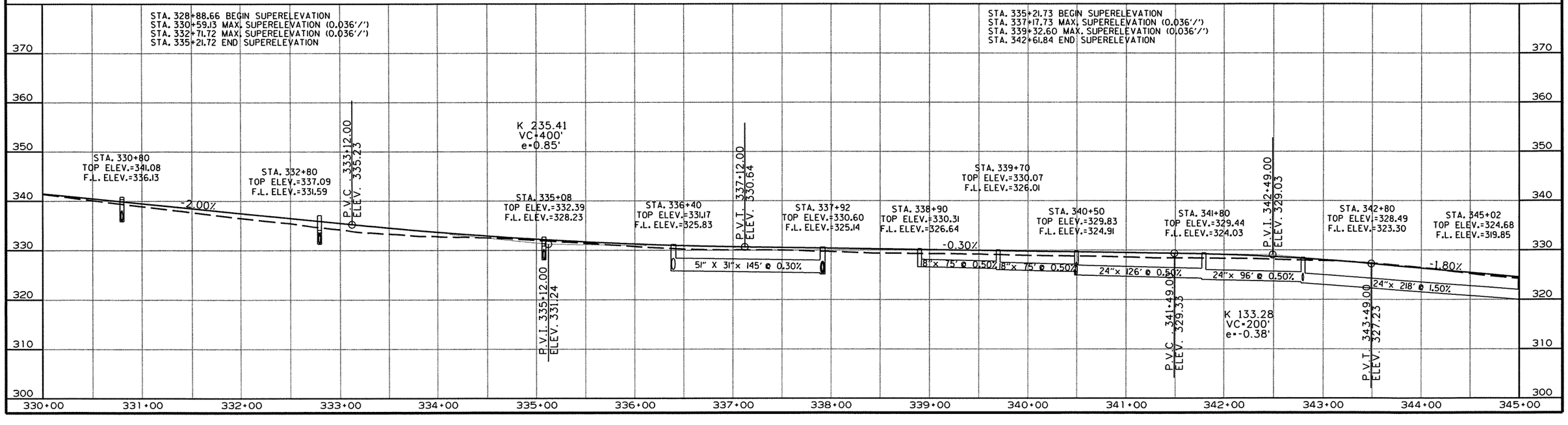
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-27-12				6	ARK.			
				JOB NO.		050189	122	340

(2) PROFILE SHEETS

LEFT SIDE



RIGHT SIDE



R050189.DGN 8/28/2012

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-20-12				6	ARK.			
8-27-12				JOB NO.		050189	123	340

(2) PLAN SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. PUGETT
8/29/12

STA. 344+40 - IN PLACE
18" x 27' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE

STA. 345+56 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 120' PIPE OUTLET
CONNECT TO D.I. @ STA. 346+80 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 3' 8"

STA. 346+80 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 18" x 134' PIPE OUTLET
CONNECT TO D.I. @ STA. 348+18 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 3' 11"

STA. 347+50 - CONSTRUCT
APPROACH ON LT. = 20 CU. YDS.

STA. 348+18 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 31' PIPE OUTLET
CONNECT TO D.I. @ STA. 348+18 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5' 0"

STA. 349+80 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 96' PIPE OUTLET
CONNECT TO D.I. @ STA. 350+80 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 3' 9"

STA. 350+80 - CONSTRUCT
D.I. ON LT. WITH
18" x 4' R.C. STUB INLET
WITH FES.
& 24" x 116' PIPE OUTLET
CONNECT TO D.I. @ STA. 352+00 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 3' 9"

STA. 352+00 - CONSTRUCT
D.I. ON LT. WITH
24" x 76' PIPE OUTLET
CONNECT TO D.I. @ STA. 352+80 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 3' 9"

STA. 352+80 - CONSTRUCT
D.I. ON LT. WITH
24" x 31' PIPE OUTLET
CONNECT TO D.I. @ STA. 352+80 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5' 0"

STA. 355+61 - IN PLACE
24" x 34' CM PIPE CULVERT
LT. SIDE DRAIN
RETAIN

STA. 356+00 - CONSTRUCT
APPROACH ON LT. = 25 CU. YDS.

STA. 356+80 - CONSTRUCT TEMPORARY
JUNCTION BOX LT.
& 24" x 160' PIPE INLET
CONNECT TO 24" PIPE INLET ON LT.
TY ST = 4' x 4'
H = 3' 0"

STA. 356+41 - CONSTRUCT
APPROACH ON LT. = 10 CU. YDS.

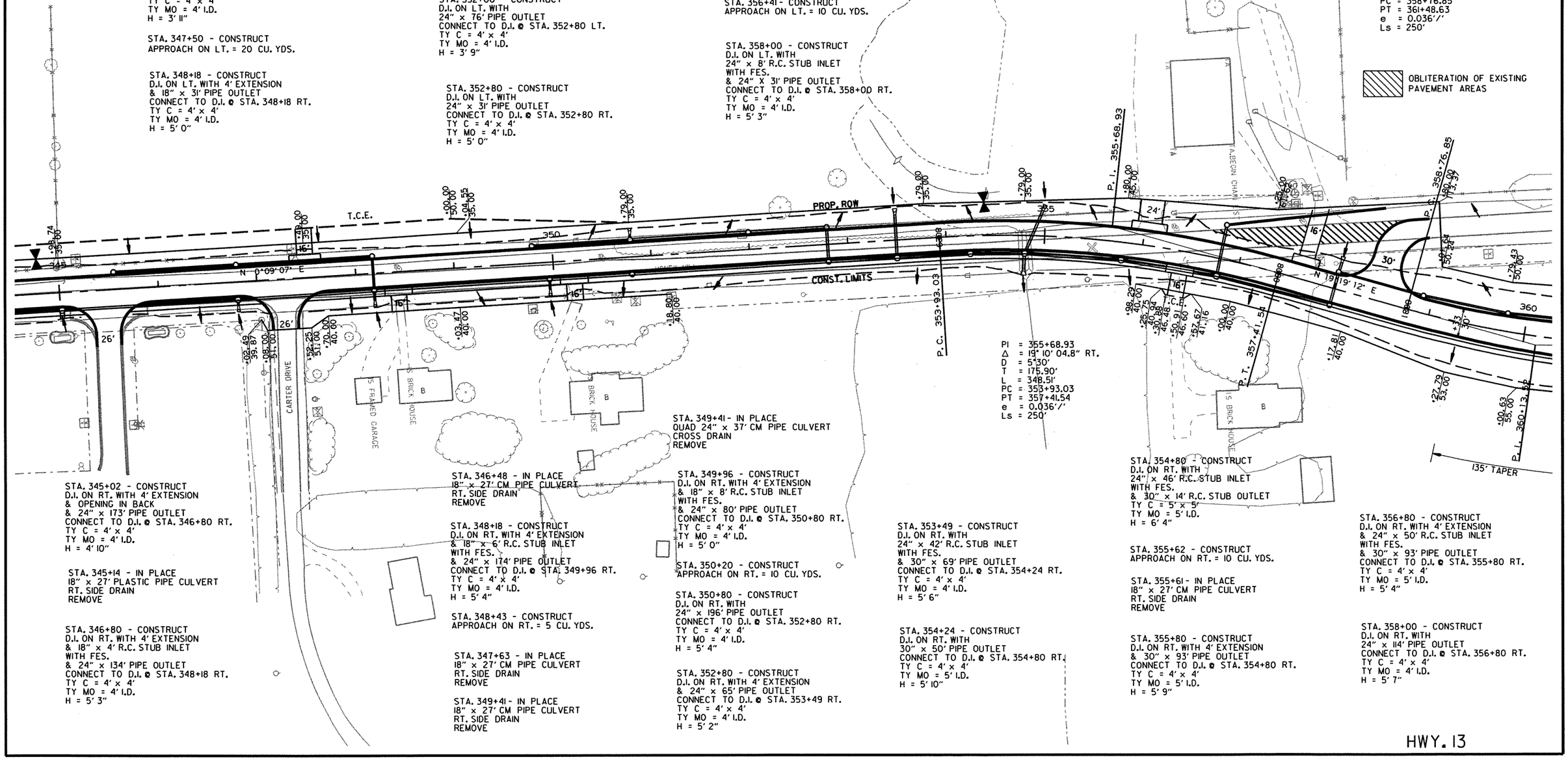
STA. 358+00 - CONSTRUCT
D.I. ON LT. WITH
24" x 8' R.C. STUB INLET
WITH FES.
& 24" X 31' PIPE OUTLET
CONNECT TO D.I. @ STA. 358+00 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5' 3"

STA. 358+90 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 86' PIPE OUTLET
CONNECT TO D.I. @ STA. 358+00 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4' 11"

STA. 359+80 - CONSTRUCT
D.I. ON LT. WITH
24" x 84' PIPE OUTLET
CONNECT TO D.I. @ STA. 358+90 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4' 8"

PI = 360+13.52
Δ = 14° 56' 52.5" LT.
D = 5°30'
T = 136.67'
L = 271.78'
PC = 358+76.85
PT = 361+48.63
e = 0.036'/'
Ls = 250'

OBLITERATION OF EXISTING PAVEMENT AREAS



STA. 345+02 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& OPENING IN BACK
& 24" x 173' PIPE OUTLET
CONNECT TO D.I. @ STA. 346+80 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4' 10"

STA. 345+14 - IN PLACE
18" x 27' PLASTIC PIPE CULVERT
RT. SIDE DRAIN
REMOVE

STA. 346+80 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 4' R.C. STUB INLET
WITH FES.
& 24" x 134' PIPE OUTLET
CONNECT TO D.I. @ STA. 348+18 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5' 3"

STA. 346+48 - IN PLACE
18" x 27' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE

STA. 348+18 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 6' R.C. STUB INLET
WITH FES.
& 24" x 174' PIPE OUTLET
CONNECT TO D.I. @ STA. 349+96 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5' 4"

STA. 348+43 - CONSTRUCT
APPROACH ON RT. = 5 CU. YDS.

STA. 347+63 - IN PLACE
18" x 27' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE

STA. 349+41 - IN PLACE
18" x 27' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE

STA. 349+41 - IN PLACE
QUAD 24" x 37' CM PIPE CULVERT
CROSS DRAIN
REMOVE

STA. 349+96 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 18" x 8' R.C. STUB INLET
WITH FES.
& 24" x 80' PIPE OUTLET
CONNECT TO D.I. @ STA. 350+80 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5' 0"

STA. 350+20 - CONSTRUCT
APPROACH ON RT. = 10 CU. YDS.

STA. 350+80 - CONSTRUCT
D.I. ON RT. WITH
24" x 196' PIPE OUTLET
CONNECT TO D.I. @ STA. 352+80 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5' 4"

STA. 352+80 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 24" x 65' PIPE OUTLET
CONNECT TO D.I. @ STA. 353+49 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5' 2"

STA. 353+49 - CONSTRUCT
D.I. ON RT. WITH
24" x 42' R.C. STUB INLET
WITH FES.
& 30" x 69' PIPE OUTLET
CONNECT TO D.I. @ STA. 354+24 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5' 6"

STA. 354+24 - CONSTRUCT
D.I. ON RT. WITH
30" x 50' PIPE OUTLET
CONNECT TO D.I. @ STA. 354+80 RT.
TY C = 4' x 4'
TY MO = 5' I.D.
H = 5' 10"

STA. 354+80 - CONSTRUCT
D.I. ON RT. WITH
24" x 46' R.C. STUB INLET
WITH FES.
& 30" x 14' R.C. STUB OUTLET
TY C = 5' x 5'
TY MO = 5' I.D.
H = 6' 4"

STA. 355+62 - CONSTRUCT
APPROACH ON RT. = 10 CU. YDS.

STA. 355+61 - IN PLACE
18" x 27' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE

STA. 355+80 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 30" x 93' PIPE OUTLET
CONNECT TO D.I. @ STA. 354+80 RT.
TY C = 4' x 4'
TY MO = 5' I.D.
H = 5' 9"

STA. 356+80 - CONSTRUCT
D.I. ON RT. WITH 4' EXTENSION
& 24" x 50' R.C. STUB INLET
WITH FES.
& 30" x 93' PIPE OUTLET
CONNECT TO D.I. @ STA. 355+80 RT.
TY C = 4' x 4'
TY MO = 5' I.D.
H = 5' 4"

STA. 358+00 - CONSTRUCT
D.I. ON RT. WITH
24" x 114' PIPE OUTLET
CONNECT TO D.I. @ STA. 356+80 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5' 7"

8/29/2012

R050189.DGN

HWY. 13

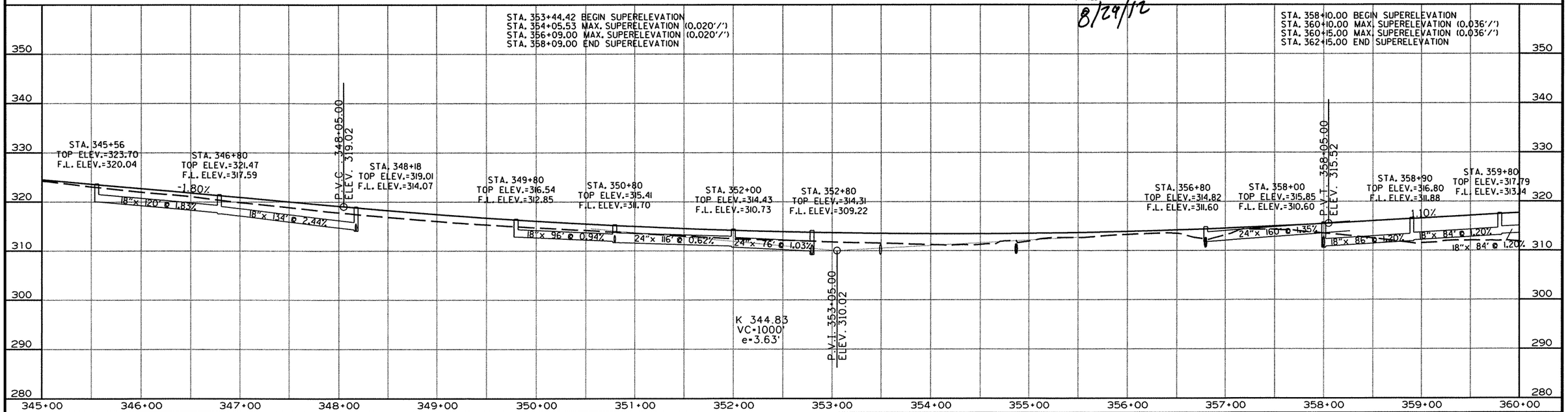
NOTE: FOR R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.
NOTE: FOR C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/29/12

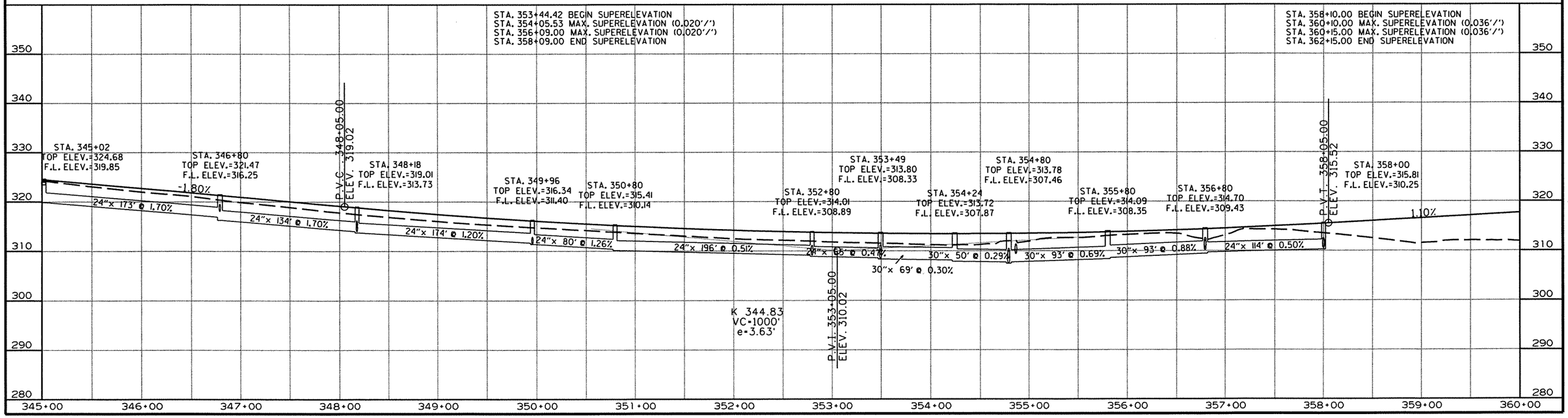
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-27-12				6	ARK.			
				JOB NO.		050189	124	340

(2) PROFILE SHEETS

LEFT SIDE



RIGHT SIDE



R050189.DGN 8/28/2012

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-20-12				6	ARK.			
8-27-12				JOB NO.		050189	125	340

(2) PLAN SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/29/12

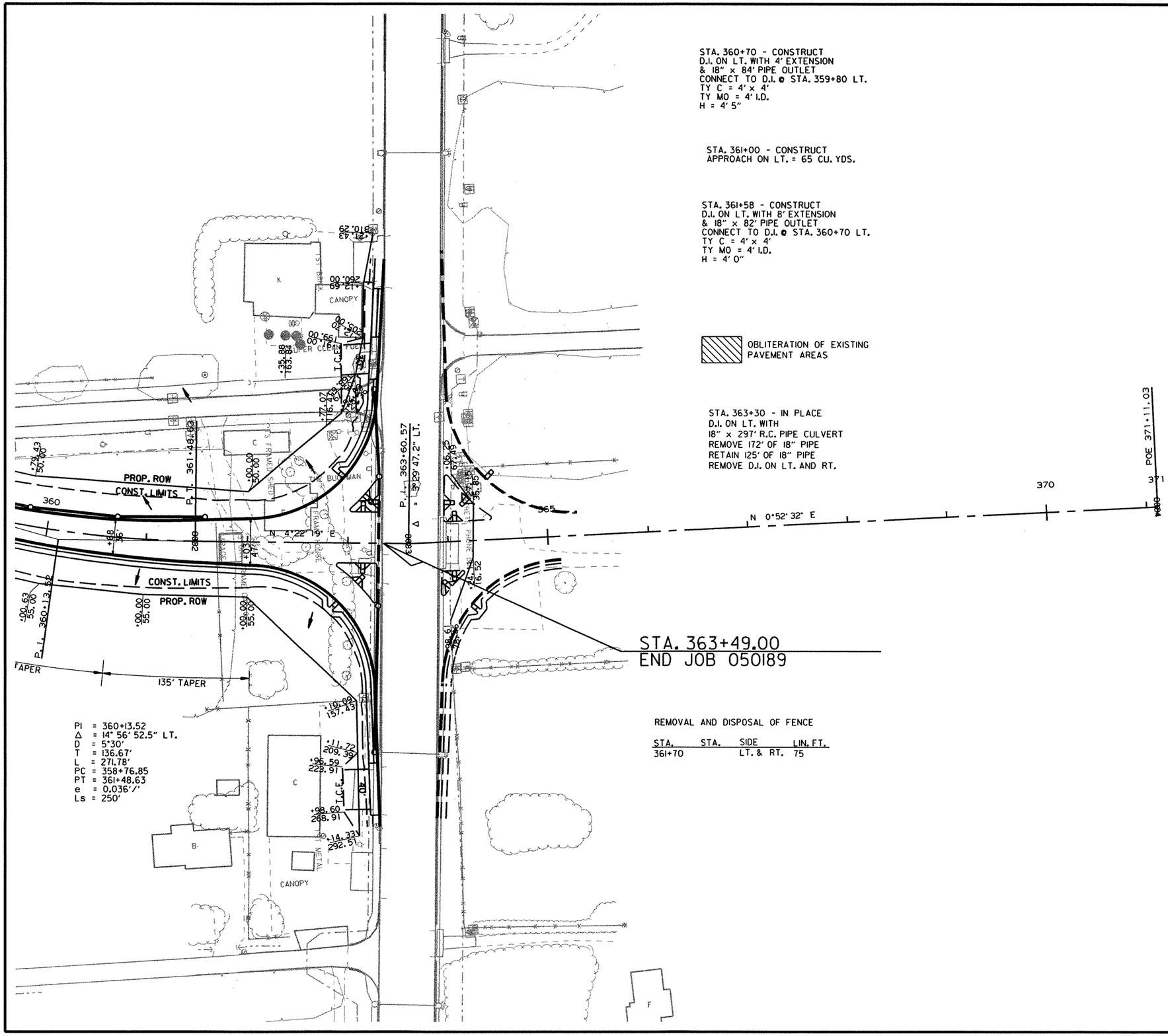
STA. 360+70 - CONSTRUCT
D.I. ON LT. WITH 4' EXTENSION
& 18" x 84' PIPE OUTLET
CONNECT TO D.I. @ STA. 359+80 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4' 5"

STA. 361+00 - CONSTRUCT
APPROACH ON LT. = 65 CU. YDS.

STA. 361+58 - CONSTRUCT
D.I. ON LT. WITH 8' EXTENSION
& 18" x 82' PIPE OUTLET
CONNECT TO D.I. @ STA. 360+70 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4' 0"

OBLITERATION OF EXISTING PAVEMENT AREAS

STA. 363+30 - IN PLACE
D.I. ON LT. WITH
18" x 297' R.C. PIPE CULVERT
REMOVE 172' OF 18" PIPE
RETAIN 125' OF 18" PIPE
REMOVE D.I. ON LT. AND RT.



PI = 360+13.52
Δ = 14° 56' 52.5" LT.
D = 5°30'
T = 136.67'
L = 271.78'
PC = 358+76.85
PT = 361+48.63
e = 0.036'/'
Ls = 250'

REMOVAL AND DISPOSAL OF FENCE

STA.	STA.	SIDE	LIN. FT.
361+70		LT. & RT.	75

8/28/2012

R050189.DGN

HWY. 13

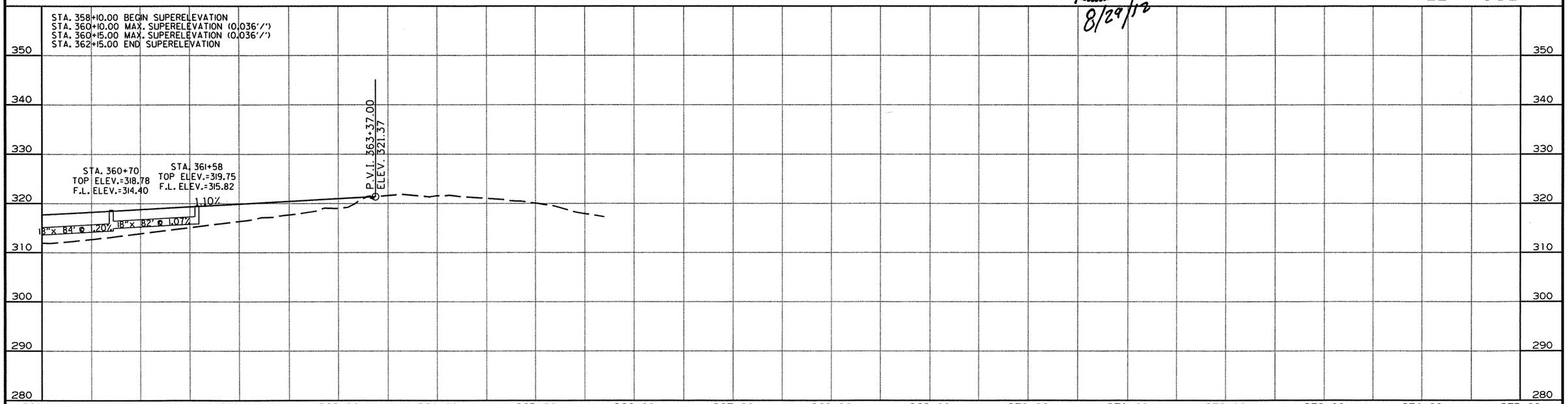
NOTE: FOR R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.
NOTE: FOR C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/29/12

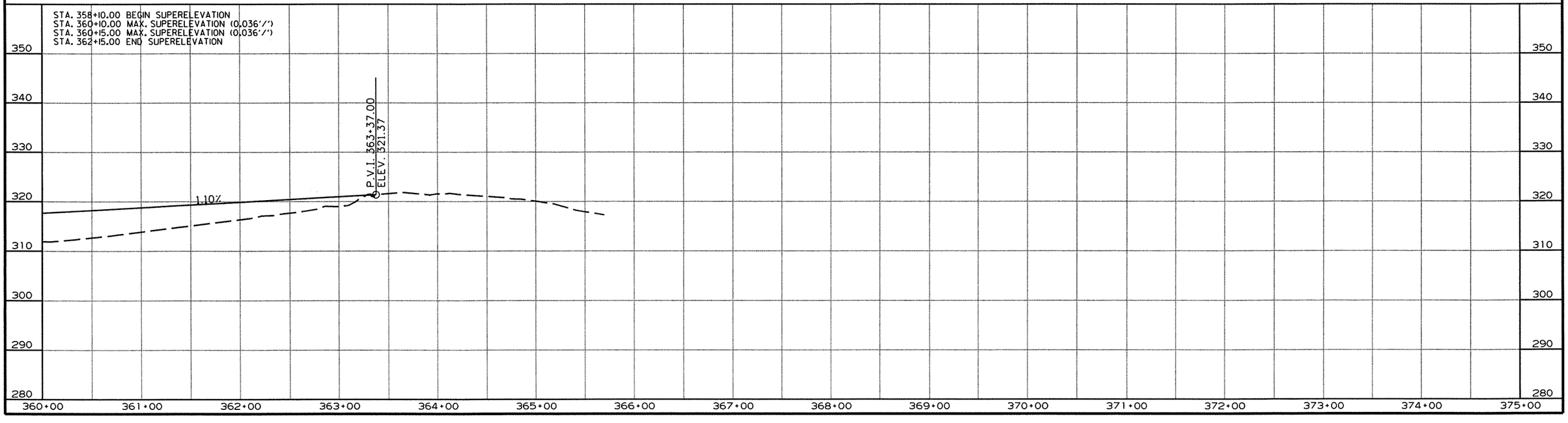
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-27-12				6	ARK.			
				JOB NO.		050189	126	340

(2) PROFILE SHEETS

LEFT SIDE



RIGHT SIDE



R050189.DGN 8/28/2012

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-27-12				6	ARK.			
				JOB NO.		050189	127	340

(2) PLAN AND PROFILE SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/29/12

STA. 504+67 - IN PLACE
18" x 38' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 34' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 50 CU. YDS.

STA. 507+93 - CONSTRUCT
DBL. 24" x 306' PIPE CULVERT
WITH FES LT.
Q25 = 18.0 CFS D.A. = 21.5 ACRES

STA. 106+06.69 HWY. 13 = 267
STA. 508+48.33 HWY. 267
Δ = 64° 34' 17.2"

STA. 510+83 - IN PLACE
18" x 24' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
24" x 32' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 45 CU. YDS.

330' TAPER
100' TRANSITION
PROP. ROW
POB 500+00.00
P.I. 500+00.00
Begin 4:1 Slopes
End 4:1 Slopes
CONST. LIMITS
PROP. R/W
T. LIMITS
EXIST. ROW

WIRE FENCE

STA.	STA.	SIDE	TYPE	LIN. FT.	GATES EACH
509+98	519+67	LT.	D-2	408	1

STA. 510+95 - CONSTRUCT
APPROACH ON RT. = 20 CU. YDS.

STA. 513+72 - IN PLACE
24" x 48' R.C. PIPE CULVERT
WITH HDWLS. LT. & RT.
RETAIN AND EXTEND R.C PIPE
10' LT. & 1' RT.
WITH FES LT. & RT.
Q25 = 16.1 CFS D.A. = 12.6 ACRES

HWY. 267

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

F.L. INLET ELEV. (LT.) = 255.93
F.L. OUTLET ELEV. (RT.) = 246.83

510+19.45
252.62

LT. DITCH GRADE = 1.50%

513+72.00
247.33

F.L. INLET ELEV. (LT.) = 247.33
F.L. OUTLET ELEV. (RT.) = 246.89

290 280 270 260 250 240 230 220 210 200

500+00 501+00 502+00 503+00 504+00 505+00 506+00 507+00 508+00 509+00 510+00 511+00 512+00 513+00 514+00 515+00

R050189.DGN 8/28/2012

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.		050189	128	340

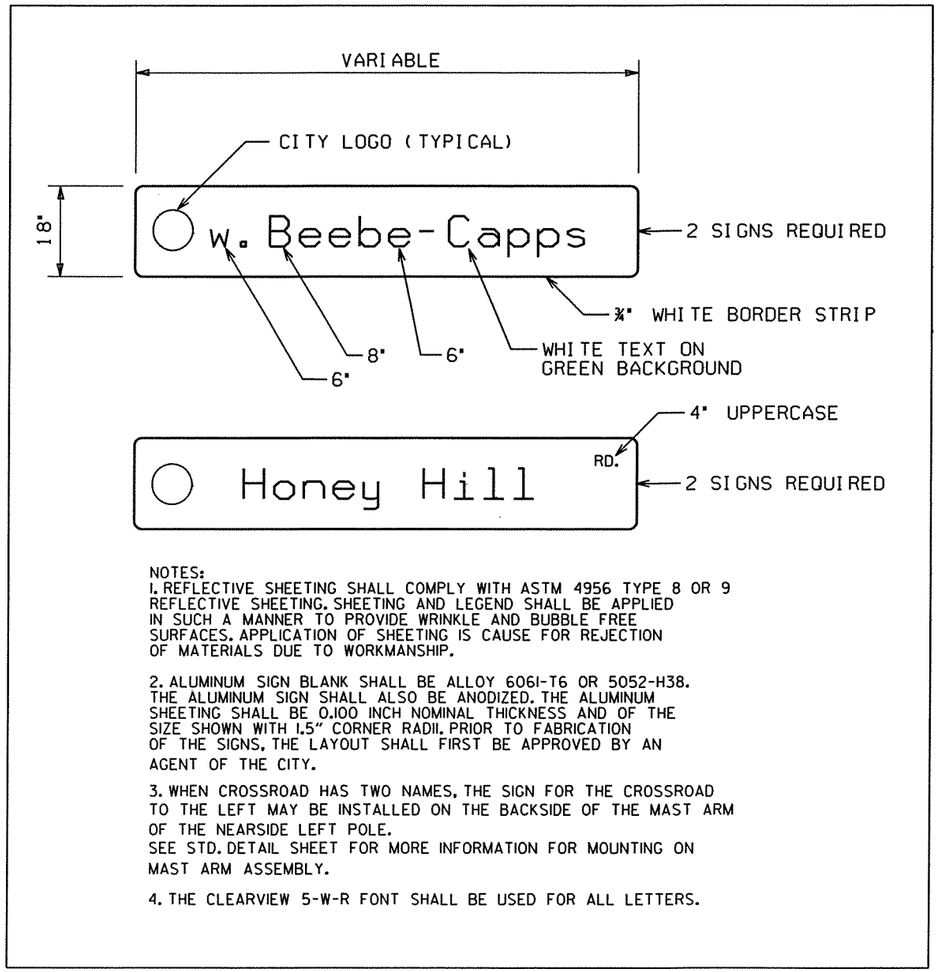
(2) SIGNAL QUANTITIES AND NOTES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/8/12

TRAFFIC SIGNAL QUANTITIES

ITEM NO.	ITEM	QUANTITY	UNIT
SP&701	SYSTEM LOCAL CONTROLLER TS2-TYPE 2 (8 PHASES)	1	EACH
SP&706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	6	EACH
SP&706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	1	EACH
SP&707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED	2	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	1051	LIN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	260	LIN. FT.
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	641	LIN. FT.
709	GALVANIZED STEEL CONDUIT (1.25")	20	LIN. FT.
710	NON-METALLIC CONDUIT (1.25")	20	LIN. FT.
710	NON-METALLIC CONDUIT (2")	20	LIN. FT.
710	NON-METALLIC CONDUIT (3")	351	LIN. FT.
SS&711	CONCRETE PULL BOX (TYPE 2 HD)	2	EACH
SS&711	CONCRETE PULL BOX (TYPE 2)	5	EACH
SS&714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (34')	1	EACH
SS&714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (42')	1	EACH
SS&714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (46')	1	EACH
SS&714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (54')	1	EACH
733	VIDEO CABLE	1164	LIN. FT.
• SP&733	VIDEO DETECTOR (CLR)	6	EACH
733	VIDEO MONITOR (CLR)	1	EACH
• SP&733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)	5	EACH
SP&733	VEHICLE DETECTOR RACK (16 CHANNEL)	1	EACH
SP	ANTENNA CABLE (TYPE 6)	70	LIN. FT.
SP	ANTENNA SUPPORT (SHOE BASE, 50' HT.)	1	EACH
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	831	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., EGC)	452	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., EGC)	190	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	20	LIN. FT.
SP	LOCAL RADIO WITH ANTENNA	1	EACH
SP	LUMINAIRE ASSEMBLY	4	EACH
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	1	EACH

• QUANTITIES INCLUDE ONE SPARE VIDEO DETECTOR AND ONE SPARE VIDEO PROCESSOR.



NOTES:
1. REFLECTIVE SHEETING SHALL COMPLY WITH ASTM 4956 TYPE 8 OR 9 REFLECTIVE SHEETING. SHEETING AND LEGEND SHALL BE APPLIED IN SUCH A MANNER TO PROVIDE WRINKLE AND BUBBLE FREE SURFACES. APPLICATION OF SHEETING IS CAUSE FOR REJECTION OF MATERIALS DUE TO WORKMANSHIP.

2. ALUMINUM SIGN BLANK SHALL BE ALLOY 6061-T6 OR 5052-H38. THE ALUMINUM SIGN SHALL ALSO BE ANODIZED. THE ALUMINUM SHEETING SHALL BE 0.100 INCH NOMINAL THICKNESS AND OF THE SIZE SHOWN WITH 1.5" CORNER RADII. PRIOR TO FABRICATION OF THE SIGNS, THE LAYOUT SHALL FIRST BE APPROVED BY AN AGENT OF THE CITY.

3. WHEN CROSSROAD HAS TWO NAMES, THE SIGN FOR THE CROSSROAD TO THE LEFT MAY BE INSTALLED ON THE BACKSIDE OF THE MAST ARM OF THE NEARSIDE LEFT POLE.
SEE STD. DETAIL SHEET FOR MORE INFORMATION FOR MOUNTING ON MAST ARM ASSEMBLY.

4. THE CLEARVIEW 5-W-R FONT SHALL BE USED FOR ALL LETTERS.

DATE: 08-08-12 FILE NAME: t050189.dgn

LOCATION: HWY. 13/HWY. 36
CITY: SEARCY
COUNTY: WHITE
DISTRICT: 5 SCALE: N/A DRAWN BY: GWE

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.		050189	129	340

(2) SIGNAL QUANTITIES AND NOTES

TRAFFIC SIGNAL NOTES:

1. PERFORM ELECTRICAL WORK IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE NFPA 70 (2002) NATIONAL ELECTRICAL CODE, NFPA 101 (2000) LIFE SAFETY CODE, STATE ELECTRICAL CODE AND LOCAL ELECTRICAL CODE.
2. EXTEND GREEN EQUIPMENT GROUNDING CONDUCTOR (EGC) FROM GROUND BAR AT MAIN BREAKER TO CONTROL PANEL AND TO FIRST POLE. SOLIDLY BOND EGC TO GROUND LUG OF CONTROL CABINET AND TO POLE GROUND. ENSURE THAT ONLY ONE NEUTRAL-TO-GROUND BOND EXISTS IN THE SYSTEM AND THAT IT IS AT THE MAIN BREAKER.
3. ELECTRICAL SERVICE SHALL BE PROVIDED BY THE CITY TO A SERVICE POLE WITH EXTERNAL RAINTIGHT BREAKER (MAIN BREAKER), GALVANIZED STEEL SERVICE RISER, METER LOOP (IF REQUIRED), AND WEATHERHEAD AT A MUTUALLY ACCEPTABLE POINT WITHIN THE RIGHT-OF-WAY. IF THE SERVICE POINT IS OVER 10 FEET FROM THE CONTROLLER, THE CONTRACTOR SHALL PROVIDE AND INSTALL A SEPARATE TWO CIRCUIT EXTERNAL BREAKER (SECONDARY BREAKER) ON OR NEAR THE TRAFFIC SIGNAL CONTROLLER CABINET AND SHALL INSTALL CONDUIT, ELECTRICAL SERVICE WIRE (2c/#6 USE RATED, WITH GROUND TYPICAL), AND PERFORM WIRING TO TAP INTO THE CITY'S MAIN BREAKER AS PART OF THIS CONTRACT. CONDUIT IS PAID FOR AS A SEPARATE ITEM OF THIS CONTRACT. TWO CIRCUIT BREAKERS, CONSIDERED SUBSIDIARY TO THE CONTROL EQUIPMENT WHERE STREET LIGHTING IS INCLUDED. AS PART OF THE SIGNAL INSTALLATION, STREET LIGHTING CIRCUIT (2c/#12 AWG UF RATED, TYPICAL) SHALL BE KEPT FROM THE CIRCUIT SERVING THE TRAFFIC SIGNAL CONTROL EQUIPMENT FROM THE POINT OF TIE-IN AT THE SECONDARY BREAKER PROVIDED BY THE CONTRACTOR.
4. CONTRACTOR SHALL CONNECT A SEPARATE NEUTRAL FOR EACH LOAD SWITCH REPRESENTED ON EACH SIGNAL POLE.
5. TRAFFIC CONTROLLER CABINET SHALL HAVE 16 LOAD BAYS AND LAYOUT SHALL BE SUCH THAT IT IS NOT NECESSARY TO SHUT DOWN POWER OR REMOVE LOAD SWITCHES IN ORDER TO EASILY TEST OR MODIFY DETECTOR INPUTS TO THE CONTROLLER.
6. CONTROLLER CABINET SHALL BE WIRED SUCH THAT DURING FLASH OPERATIONS POWER TO THE LOAD SWITCHES CANNOT BACKFEED TO LOAD SWITCH POWER BUSS.
7. ALL PARTS OF THIS INSTALLATION SHALL BE IN ACCORDANCE WITH THE ARKANSAS HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARDS AND DETAILS, AND WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITIONS.
8. CONDUIT INSTALLED UNDER ROADWAY SURFACES SHALL BE INSTALLED BY PUSHING OR BORING METHODS. IF THE ENGINEER DETERMINES THIS IS NOT FEASIBLE, THEN A TRENCHING METHOD MAY BE USED.
9. TRAFFIC SIGNAL POLES SHALL BE GALVANIZED. BACKPLATES SHALL BE SUPPLIED FOR ALL SIGNAL HEADS.
10. PAVEMENT MARKING SHOWN FOR REFERENCE ONLY. SEE PAVEMENT MARKING PLAN SHEETS.
11. FOUNDATION FOR ALL POLES SHALL BE EXTENDED IF NECESSARY TO ACCOMMODATE THE REQUIREMENTS FOR SIGNAL HEAD CLEARANCE ABOVE ROADWAY ONLY AT LOCATIONS WHERE THE GROUND ELEVATION AT THE POLE IS BELOW THE ELEVATION OF THE ROADWAY (SEE NOTES ON SPECIAL DETAILS). PAYMENT WILL BE INCLUDED IN SECTION 714, AHTD STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
12. ALL BOXES SHALL BE (TYPE 2 HD) UNLESS OTHERWISE INDICATED. ALL CONDUIT SHALL BE 3" DIAMETER UNLESS SPECIFIED ON PLANS.
13. CONTRACTOR SHALL NOTIFY ALL EXISTING UTILITY OWNERS BEFORE BEGINNING WORK ON THIS PROJECT.
14. LUMINAIRE ASSEMBLIES SHALL BE OF THE FULL CUTOFF TYPE.
15. HARDWARE INPUTS MAY BE DETERMINED BY SUPPLIER. EACH DETECTOR OUTPUT SHALL INPUT THE CONTROLLER THROUGH A SEPARATE INPUT UNLESS OTHERWISE NOTED AND BE PROGRAMMED TO ACTUATE THE ASSOCIATED PHASE. COMBINATION (COMB.) DETECTORS SHALL ALSO BE PROGRAMMED TO PROVIDE VEHICLE COUNT/OCCUPANCY DATA.
16. THE LOCAL RADIO WITH ANTENNA SHALL BE COMPATIBLE WITH THE EXISTING CLOSED LOOP COORDINATION SYSTEM IN THE CITY.
17. TO DETERMINE UTILITY CLEARANCES ABOVE THE TRAFFIC SIGNAL POLE, REFER TO THE POLE SCHEDULE FOR VERTICAL SHAFT HEIGHT. WHERE THE POLE SCHEDULE INDICATES THAT A LUMINAIRE ARM WILL BE USED. 38 FEET SHOULD BE USED TO DETERMINE UTILITY CLEARANCE ABOVE THE LUMINAIRE ARM. WHERE THE POLE SCHEDULE INDICATES A TRAFFIC SIGNAL POLE WITHOUT A LUMINAIRE ARM, A HEIGHT OF 21' SHOULD BE USED TO DETERMINE UTILITY CLEARANCE ABOVE THE TRAFFIC SIGNAL MAST ARM. AN ADDITIONAL 6 FEET SHOULD BE USED DIRECTLY ABOVE "VIDEO DETECTOR" AT LOCATIONS SHOWN ON THE SIGNAL PLANS.
18. THE DESIRABLE MINIMUM DISTANCE FROM THE FACE OF ROADWAY CURB OR SHOULDER EDGE TO THE FACE OF NON-BREAKAWAY POLE OR OBSTRUCTION IS 6 FEET. REFER TO TRAFFIC SIGNAL PLANS FOR SPECIFIC LOCATION OF POLES, CONTROLLER AND ANY OTHER NON-BREAKAWAY OBSTRUCTIONS. REFER TO "DESIGN PARAMETERS, MINIMUM CLEAR ZONE DISTANCE" FOR MINIMUM DISTANCE FROM THE EDGE OF TRAVELED WAY TO THE FACE OF A NON-BREAKAWAY POLE OR OBSTRUCTION. TRAFFIC SIGNAL POLES OR ANY OTHER NON-BREAKAWAY OBSTRUCTION SHALL NOT BE INSTALLED WITHIN THE CLEAR ZONE.
19. AS DETERMINED BY THE ENGINEER, FOUNDATION EMBEDMENT MAY BE DECREASED BY A MAXIMUM OF TWO FEET IF COMPETENT ROCK IS ENCOUNTERED PRIOR TO ACHIEVING PLAN EMBEDMENT AND AT LEAST HALF OF THE REMAINING PLAN EMBEDMENT LENGTH IS KEYED INTO COMPETENT ROCK.
20. CONNECTION OF TRAFFIC SIGNAL DISPLAY TO FIELD WIRING SHALL UTILIZE AN APPROVED TERMINAL STRIP BEHIND HAND-HOLE COVER AT BASE OF POLE. TERMINAL STRIP SHALL PROVIDE PROTECTION TO PREVENT EXPOSURE TO THE PUBLIC IN THE EVENT THAT POLE COVER IS MISSING. PAYMENT FOR TERMINAL STRIPS SHALL BE INCLUDED IN ITEM 714-TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION.
21. CONTROLLER CABINET LAYOUT AND ORIENTATION SHALL CONFORM TO ISMA STANDARDS.
22. ONE VIDEO PROGRAMMING MODULE SHALL BE PROVIDED FOR AIMING AND SETUP OF DETECTORS IF THE VIDEO SYSTEM CANNOT BE ADJUSTED THROUGH HARDWARE AND SOFTWARE PROVIDED BY ITEMS WITHIN THE JOB.
23. TRAFFIC SIGNAL CONTRACTOR MUST NOTIFY RESIDENT ENGINEER OR ASSIGNED DEPARTMENT PROJECT INSPECTOR EACH DAY PRIOR TO SIGNAL RELATED WORK. NO WORK ON TRAFFIC SIGNALS WILL BE ALLOWED OR APPROVED WITHOUT THIS PRIOR NOTIFICATION.
24. ALL STEEL POLES SHALL BE DESIGNED TO MEET THE AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 4TH EDITION (2001) WITH 2003 AND 2006 INTERIMS.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT
8/8/12

DATE: 07-31-12 FILE NAME: t050189.dgn

LOCATION: HWY. 13/HWY. 36
CITY: SEARCY
COUNTY: WHITE
DISTRICT: 5 SCALE: N/A DRAWN BY: GWE

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.		050189	130	340

(2) SIGNALIZATION PLAN SHEET

SIGNAL FACES

12" LENSES

NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISIONS FOR DETAILS ON NEW REQUIREMENTS FOR PEDESTRIAN SIGNAL HEADS

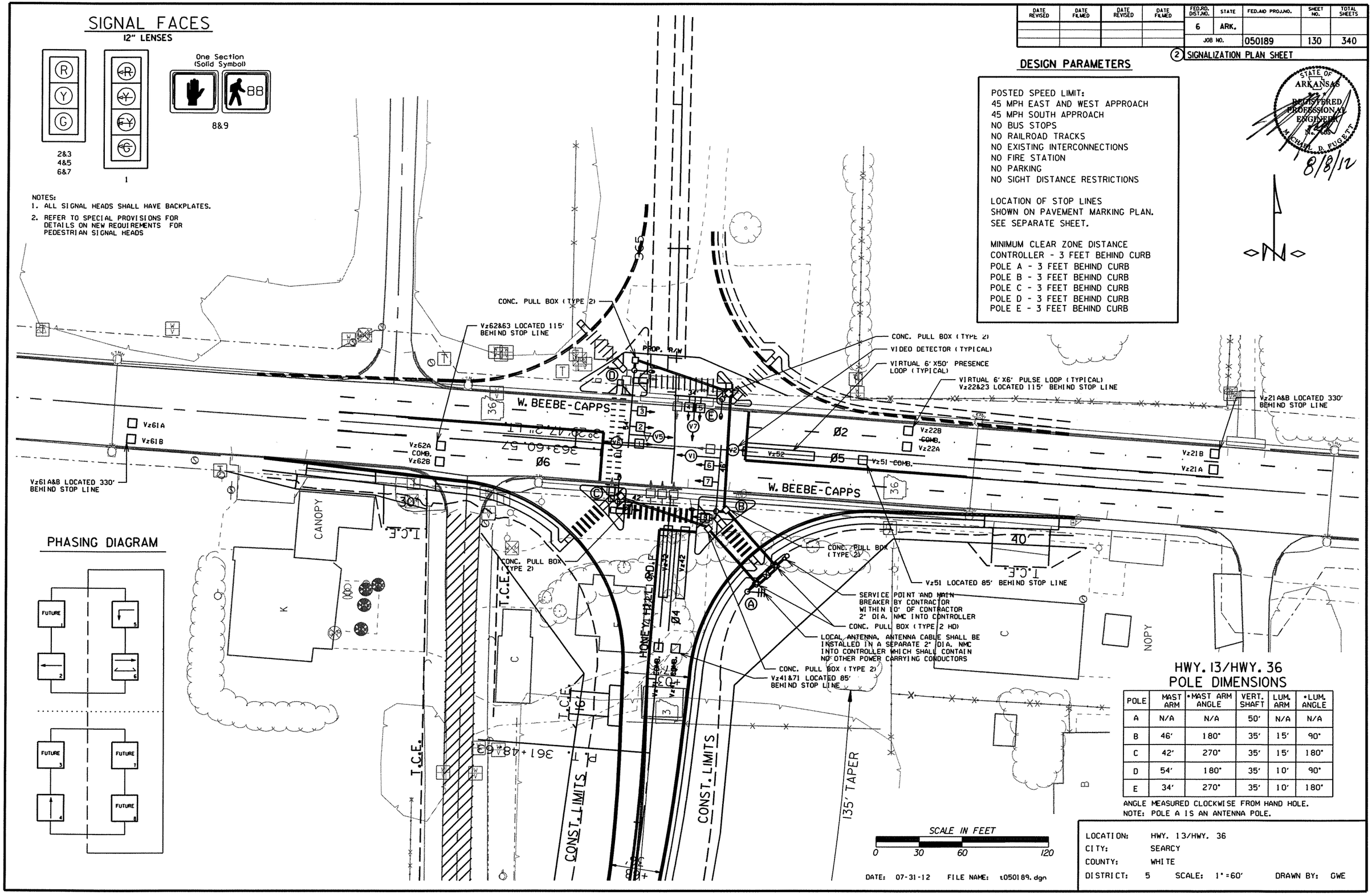
DESIGN PARAMETERS

POSTED SPEED LIMIT:
45 MPH EAST AND WEST APPROACH
45 MPH SOUTH APPROACH
NO BUS STOPS
NO RAILROAD TRACKS
NO EXISTING INTERCONNECTIONS
NO FIRE STATION
NO PARKING
NO SIGHT DISTANCE RESTRICTIONS

LOCATION OF STOP LINES
SHOWN ON PAVEMENT MARKING PLAN.
SEE SEPARATE SHEET.

MINIMUM CLEAR ZONE DISTANCE
CONTROLLER - 3 FEET BEHIND CURB
POLE A - 3 FEET BEHIND CURB
POLE B - 3 FEET BEHIND CURB
POLE C - 3 FEET BEHIND CURB
POLE D - 3 FEET BEHIND CURB
POLE E - 3 FEET BEHIND CURB

STATE OF ARKANSAS
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No. 9605
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PHASING DIAGRAM

HWY. 13/HWY. 36 POLE DIMENSIONS

POLE	MAST ARM	•MAST ARM ANGLE	VERT. SHAFT	LUM. ARM	•LUM. ANGLE
A	N/A	N/A	50'	N/A	N/A
B	46'	180°	35'	15'	90°
C	42'	270°	35'	15'	180°
D	54'	180°	35'	10'	90°
E	34'	270°	35'	10'	180°

ANGLE MEASURED CLOCKWISE FROM HAND HOLE.
NOTE: POLE A IS AN ANTENNA POLE.

LOCATION: HWY. 13/HWY. 36
CITY: SEARCY
COUNTY: WHITE
DISTRICT: 5 SCALE: 1"=60' DRAWN BY: GWE
DATE: 07-31-12 FILE NAME: t050189.dgn

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(2) SIGNALIZATION PLAN SHEET

HWY. 13/HWY. 36
POLE LOCATIONS

POLE	LOCATION & STATION	OFFSET	X, Y COORDINATES
A	HWY. 13 - STA. 362+65.54	59' RT.	1374147.16, 332566.21
B	HWY. 13 - STA. 363+19+69	33' RT.	1374125.06, 332622.21
C	HWY. 13 - STA. 363+21.21	37' LT.	1374056.34, 332628.99
D	HWY. 13 - STA. 364+14.70	29' LT.	1374067.50, 332720.02
E	HWY. 13 - STA. 363+95.66	33' RT.	1374128.91, 332700.03

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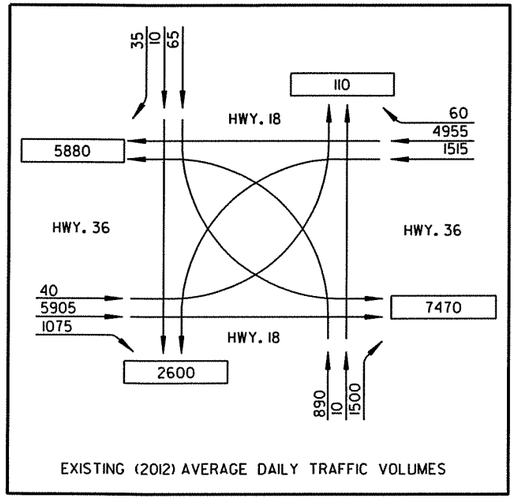
ANTENNA ORIENTATION

HWY. 13/HWY. 36
ORIENTED TO MASTER ANTENNA
LOCATED AT BEEBE CAPPS EXPRESSWAY
AT REMINGTON ST.

N
93° 48' 57"

CONC. PULL BOX (TYPE 2)
Vz62&63 LOCATED 115' BEHIND STOP LINE
PROP. R/W
W. BEEBE-CAPPS
CONC. PULL BOX (TYPE 2)
VIDEO DETECTOR (TYPICAL)
VIRTUAL 6'X50' PRESENCE LOOP (TYPICAL)
VIRTUAL 6'X6' PULSE LOOP (TYPICAL)
Vz22&23 LOCATED 115' BEHIND STOP LINE
Vz62A COMB. Vz62B
Vz22B COMB. Vz22A
Vz52
Vz51 COMB.
Vz51 LOCATED 85' BEHIND STOP LINE
CONC. PULL BOX (TYPE 2)
T.C.E.
HONEYHILL RD.
Vz72
Vz42
SERVICE POINT AND MAIN BREAKER BY CONTRACTOR WITHIN 10' OF CONTRACTOR 2" DIA. NMC INTO CONTROLLER
CONC. PULL BOX (TYPE 2 HD)
LOCAL ANTENNA, ANTENNA CABLE SHALL BE INSTALLED IN A SEPARATE 2" DIA. NMC INTO CONTROLLER WHICH SHALL CONTAIN NO OTHER POWER CARRYING CONDUCTORS
CONC. PULL BOX (TYPE 2)
Vz41&71 LOCATED 85' BEHIND STOP LINE
Vz71 COMB.
Vz41 COMB.
Ø1 Ø2 Ø3 Ø4 Ø5 Ø6
30' 42' 34' 54' 46' 40'

TRAFFIC FLOW DIAGRAM



EXISTING (2012) AVERAGE DAILY TRAFFIC VOLUMES

SCALE IN FEET
0 20 40 80

DATE: 07-31-12 FILE NAME: t050189.dgn

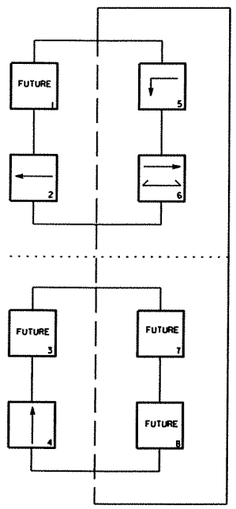
LOCATION:	HWY. 13/HWY. 36		
CITY:	SEARCY		
COUNTY:	WHITE		
DISTRICT:	5	SCALE: 1"=40'	DRAWN BY: GWE

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) SIGNALIZATION PLAN SHEET

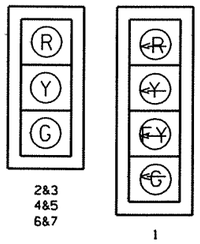
STATE OF ARKANSAS
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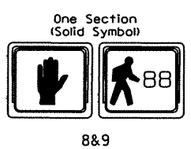
PHASING DIAGRAM



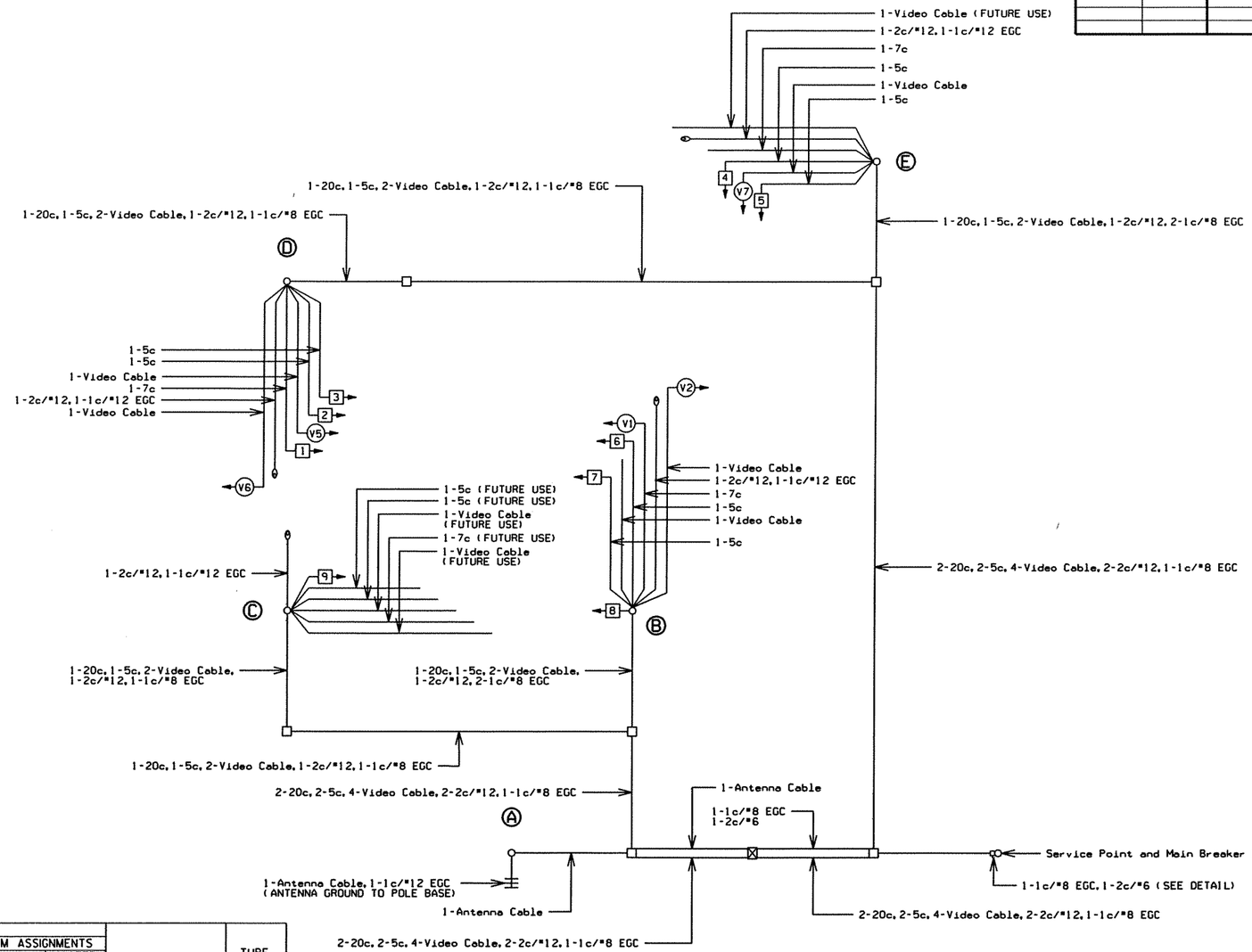
SIGNAL FACES

12" LENSES





NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISIONS FOR DETAILS ON NEW REQUIREMENTS FOR PEDESTRIAN SIGNAL HEADS



SYSTEM DESCRIPTION: JOB 050189											
SEARCY - HWY. 13/HWY. 36 DETECTOR ASSIGNMENTS				HARDWARE INPUTS BY SUPPLIER			PROGRAM ASSIGNMENTS			COMMENTS	TUBE LENGTH
								LOCAL	MASTER SYSTEM DETECTOR NUMBERS		
DET. ID*	LOCATION DIRECTION	TYPE	DET. *	CAB. TRM *	AMP CHN. *	CON. INP.*	PHS	SYSTEM DET. *			
Vz21A&B	SB ADVANCE	LOCAL			5	V2	2			CAMERA V2	74'
Vz22A	SB INSIDE NEAR	COMB.			6	V10	2	2		CAMERA V5	23'
Vz22B	SB OUTSIDE NEAR	COMB.			6	V10	2	2		CAMERA V5	23'
Vz41	WB RIGHT ADVANCE	COMB.			9	V12	4	4		CAMERA V7	23'
Vz42	WB RIGHT TURN	LOCAL			10	V4	4			CAMERA V7	23'
Vz51	SB LT. TURN ADVANCE	COMB.			7	V13	5	5		CAMERA V5	23'
Vz52	SB LEFT TURN	LOCAL			8	V5	5			CAMERA V5	23'
Vz61A&B	NB ADVANCE	LOCAL			3	V6	6			CAMERA V6	74'
Vz62A	NB INSIDE NEAR	COMB.			4	V14	6	6		CAMERA V1	23'
Vz62B	NB OUTSIDE NEAR	COMB.			4	V14	6	6		CAMERA V1	23'
Vz71	WB LEFT ADVANCE	COMB.			11	V15	4	7		CAMERA V7	23'
Vz72	WB LEFT TURN	LOCAL			12	V7	4			CAMERA V7	23'
PB6A&B	HWY. 13	PED.					6				
					SPARE 1, 2, 13, 14, 15&16						

CONTROLLER INPUT ABBREVIATIONS:
V = VEHICLE INPUT
D = SYSTEM OR AUXILIARY INPUT
P = PEDESTRIAN INPUT
NOTE: *AMP CHN** REFERS TO TOE DETECTOR RACK OUTPUT POSITION.
THIS IS WIRED TO CONTROLLER INPUT DETECTOR NUMBER WHICH IS PROGRAMMED TO ACTUATE THE DESIGNATED PHASE.

WIRING DIAGRAM

NOTES TO CONTRACTOR:

1. ONE SEPARATE 1-5c IS RUN TO EACH POLE FOR THE PEDESTRIAN PUSH BUTTON.
2. ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA OF CABINET.
3. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.
4. SUFFICIENT CONDUCTOR SHALL BE PROVIDED IN THE MAST ARMS OF POLES B, C AND E ALONG WITH ACCESS THROUGH TO ARM TO INSTALL SIGNAL HEADS IN THE PROPER LOCATION AS SHOWN ON THE PLANS IN THE FUTURE.

INTERVAL CHART

SIGNAL FACES	HWY. 13/HWY. 36							FLASH SEQ.
	2+5	CLR.	2+6	CLR.	4	CLR.		
1	~~G~~	•	~~FY~~	•••	~~R~~	~~R~~		~~R~~
2&3	G	••	G	••	R	R		R
4&5	R	R	R	R	G	••		R
6&7	R	R	G	••	R	R		R
8&9	DW	DW	W	FDW	DW	DW		BLK

• DENOTES GREEN OR YELLOW ARROW DEPENDING ON NEXT PHASE
•• DENOTES GREEN OR YELLOW BALL DEPENDING ON NEXT PHASE
••• DENOTES FLASHING YELLOW ARROW OR YELLOW ARROW DEPENDING ON NEXT PHASE

LOCATION: HWY. 13/HWY. 36
CITY: SEARCY
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DISTRICT: 5 SCALE: N/A DRAWN BY: GWE

DATE: 07-31-12 FILE NAME: t050189.dgn

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				6	ARK.			
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(2) SIGNALIZATION DETAILS

DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 4TH EDITION (2001) WITH 2003 AND 2006 INTERIMS.

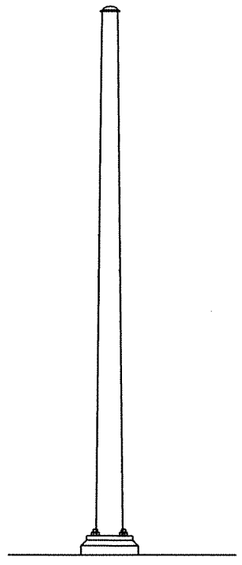
USE FATIGUE CATEGORY II.

CONSTRUCTION SPECIFICATIONS: ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2003 EDITION) WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

BASE WIND SPEED: 90 MPH

STEEL MEMBERS CONSIDERED MAIN LOAD CARRYING MEMBERS WITH A THICKNESS GREATER THAN ½" SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH TEST SPECIFIED IN SUBSECTION 807.05 OF THE STANDARD SPECIFICATIONS.

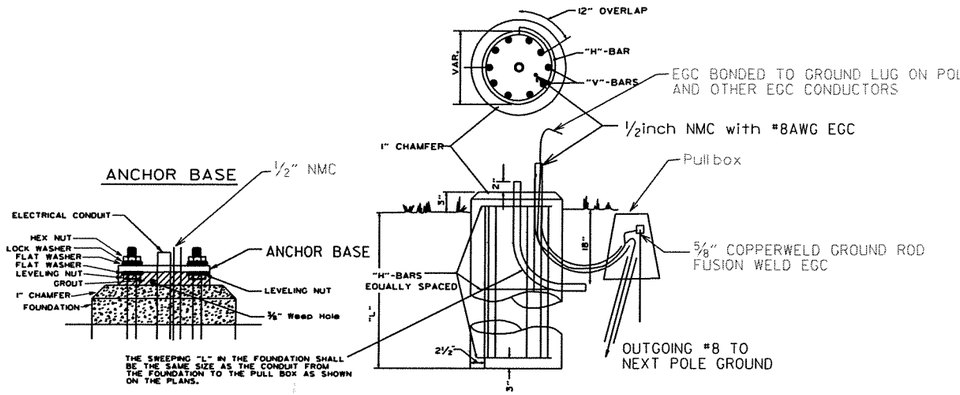
THE GROUND ROD SHALL BE FUSION WELDED TO A IC/#8 A.W.G. SOLID COPPER GROUND WIRE. ATTACHMENT TO THE PRIMARY GROUND MAY BE BY AN APPROVED CLAMP. THE ROD IS TO BE LOCATED IN THE CONCRETE PULL BOX PAID FOR SEPARATELY AS SHOWN ON THE PLANS.



ANTENNA POLE

NOTE: COMMUNICATION CABLE SHIELD SHALL BE TIED TO GROUND AT ONLY ONE POINT (MASTER CABINET). THE SHIELD SHALL BE MAINTAINED CONTINUOUS (THROUGH ALL SPLICES). PLEASE REFER TO TESTING PROCEDURES IN SPECIAL PROVISIONS.

STATE OF ARKANSAS
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TYPICAL FOUNDATION DETAILS

POLE FOUNDATION MINIMUM DIMENSIONS AND STEEL REINFORCING.

POLE HEIGHT	FOUNDATION DIAMETER	DEPTH "L"	VERTICAL	HORIZONTAL	TIE SPACING
20.0'	30"	5'-6"	12-#7	#4	5 sp @ 12"
25.0'	30"	6'-0"	12-#7	#4	6 sp @ 11"
30.0'	30"	6'-6"	12-#7	#4	6 sp @ 12"
35.0'	30"	7'-0"	12-#7	#4	7 sp @ 11"
40.0'	30"	7'-6"	12-#7	#4	7 sp @ 12"
45.0'	36"	8'-6"	13-#8	#4	8 sp @ 12"
50.0'	36"	9'-6"	13-#8	#4	9 sp @ 12"
55.0'	36"	10'-0"	13-#8	#4	10 sp @ 11"
60.0'	36"	10'-6"	13-#8	#4	10 sp @ 12"
65.0'	36"	11'-0"	13-#8	#4	12 sp @ 10½"
70.0'	36"	11'-6"	13-#8	#4	11 sp @ 12"
75.0'	42"	13'-0"	18-#8	#4	14 sp @ 10½"
80.0'	42"	13'-6"	18-#8	#4	13 sp @ 12"
85.0'	42"	14'-6"	18-#8	#4	14 sp @ 12"
90.0'	42"	15'-0"	18-#8	#4	18 sp @ 9½"

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 CHAMFERED ¾" UNLESS NOTED OTHERWISE.

ALL REINFORCING STEEL SHALL CONFORM TO AASHTO M31 OR M53, GRADE 40 (YIELD STRENGTH=40,000 PSI).

PROVIDE 3" CLEAR TIES. DETAIL 3" TO FIRST TIE AT TOP OF SHAFT.

DATE	REVISION	DATE FILM
5-21-09	REVISED GROUNDING	
7-31-08	REVISED GROUNDING	
4-18-08	REVISED AASHTO NOTES	
4-17-08	REVISED TO 2001 AASHTO STANDARDS	
9-6-00	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

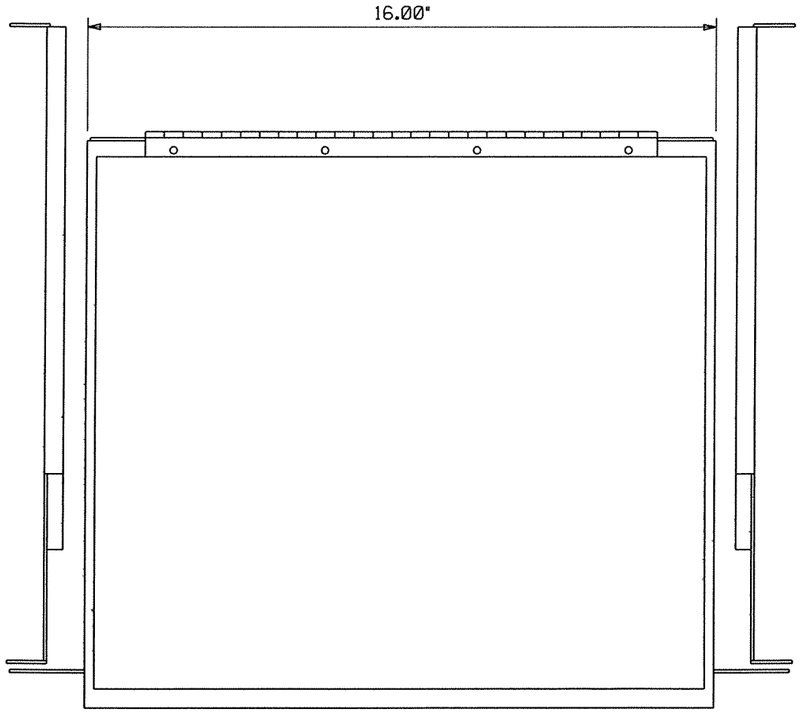
SIGNALIZATION DETAIL
(Antenna Pole)

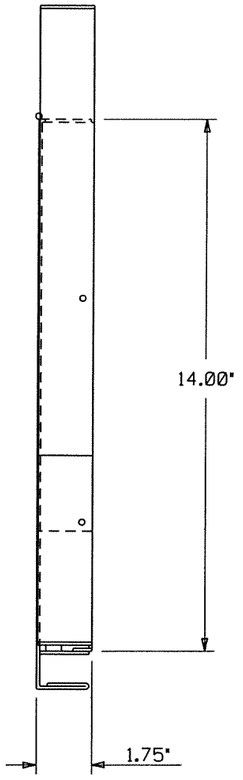
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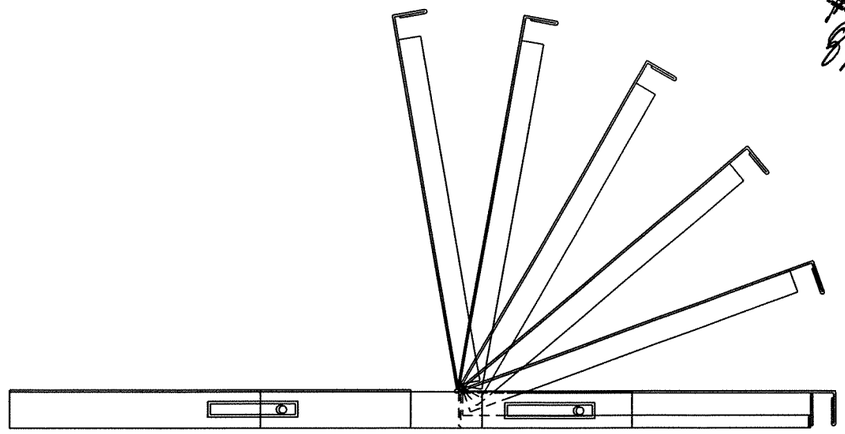
(2) SIGNALIZATION DETAILS

STATE OF ARKANSAS
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MICHAEL D. PUGETT
8/8/12

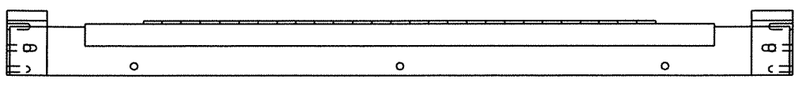
DRAWER PLAN VIEW



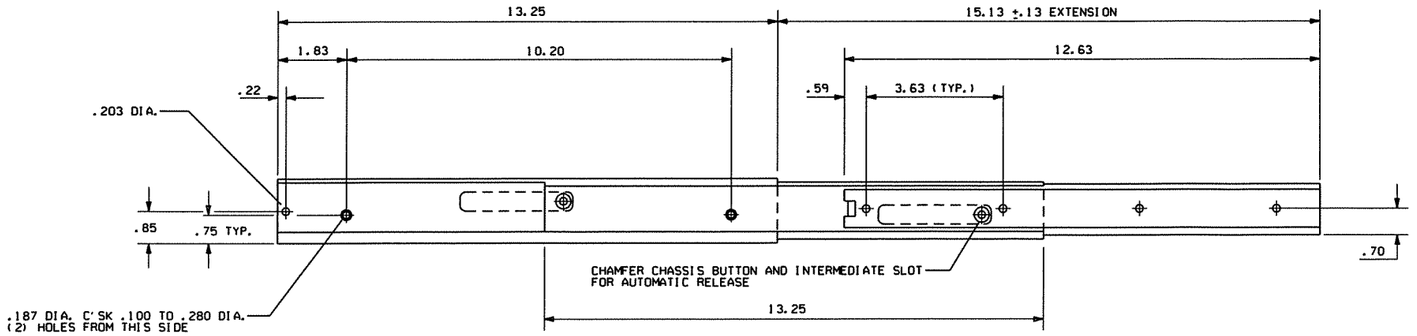




NOTES:
1. RIGHT HAND SLIDE SHOWN, LEFT SLIDE OPPOSITE.
2. GENERAL DEVICES (CC3002-99-0102) OR EQUAL AND CONTAINS (1) RIGHT HAND SLIDE ASSEMBLY, (1) LEFT HAND SLIDE ASSEMBLY.
3. ALL HARDWARE NECESSARY TO FASTEN SLIDE ASSEMBLY TO UNDERSIDE OF CONTROLLER SHELF SHALL BE INCLUDED.



FRONT VIEW



RIGHT SIDE ASSEMBLY

6-15-05	ISSUED	
DATE	REVISION	DATE FILM

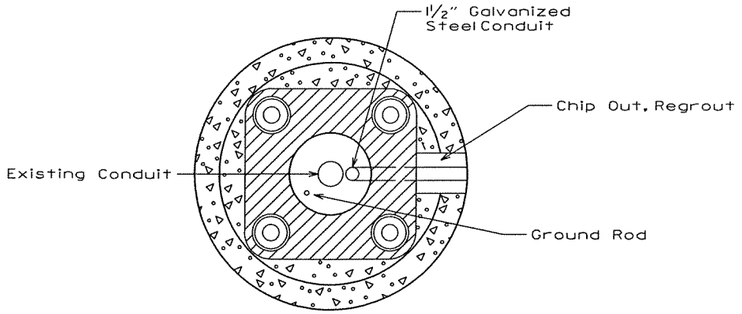
ARKANSAS STATE HIGHWAY COMMISSION

SIGNALIZATION DETAIL
(Controller Cabinet Utility Drawer)

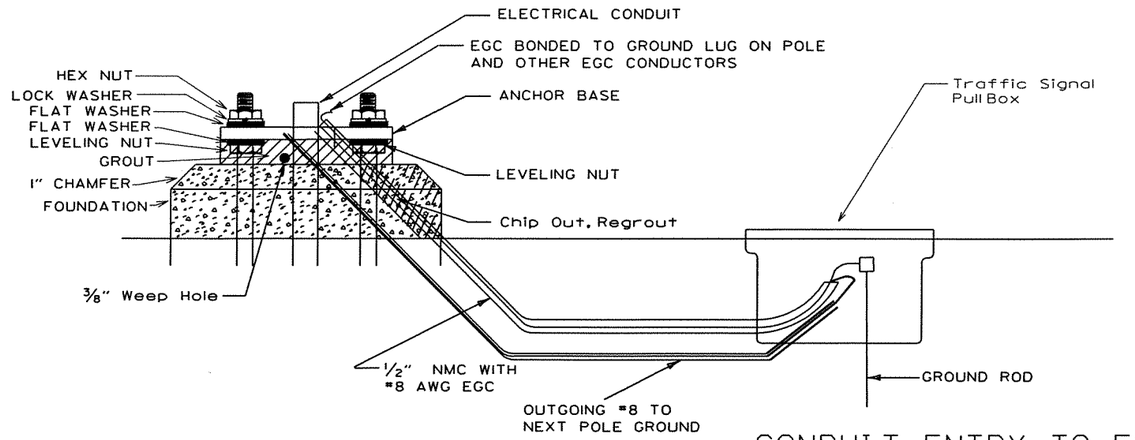
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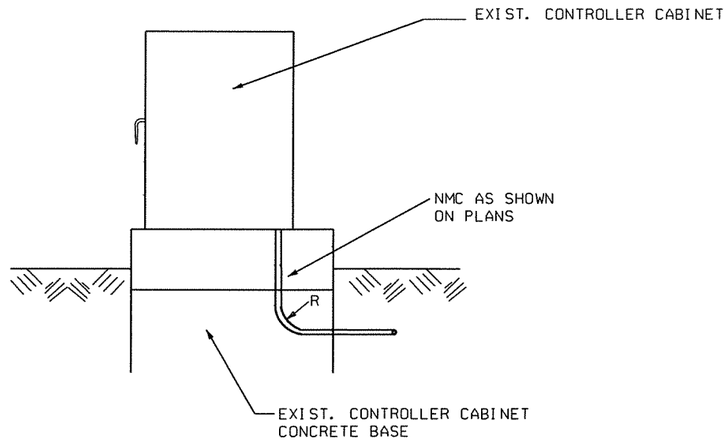
CONDUIT ENTRY TO EXISTING POLE BASE



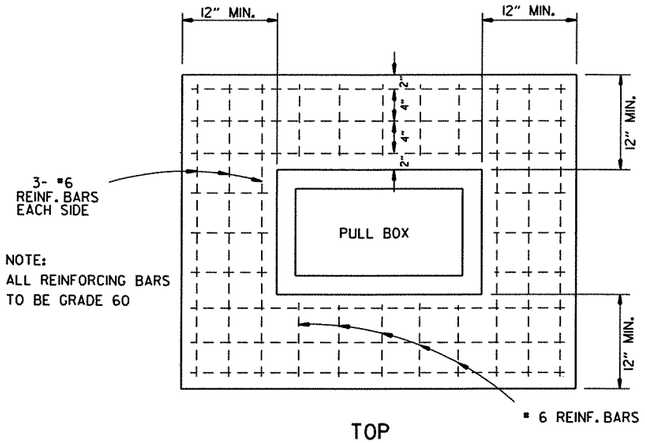
ANCHOR BASE



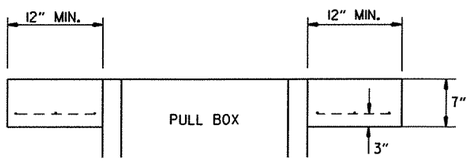
CONDUIT ENTRY TO EXISTING CONTROLLER CABINET



NOTE: ENTRY TO CABINET SHALL BE THROUGH A CUT IN THE BASE SUFFICIENT TO PROVIDE ADEQUATE CONDUIT RADIUS FOR ITEM.

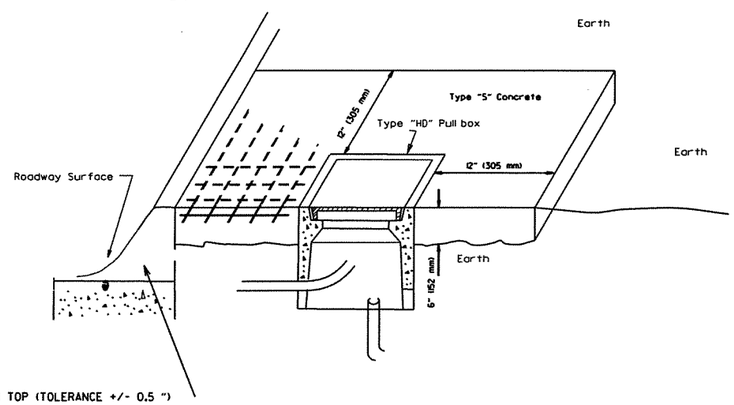


TOP



ELEVATION

Type "HD" Concrete Pull Box Detail



Note: All Type 1 and Type 2 HD pullboxes are installed with an apron of concrete 12" (305 mm) wide and 6" (152 mm) in depth. All payment shall be included in the price of the Type HD pullbox. Pullbox shall be installed flush to surrounding grade unless otherwise instructed by the engineer. The concrete shall be Class "S." Three #6 reinforcing bars in the apron on all sides of the pullbox is required in concrete.

DATE	REVISION	DATE FILM
5-21-09	REVISED GROUNDING	
7-31-08	ADDED & REVISED CONDUIT ENTRY	
6-23-04	REVISED CLEARANCE AT CURB ENTRY	
1-4-02	ADDED REINFORCING TO BOX APRON	
7-2-01	REVISED	
12-27-99	REVISED NOTES	
11-18-98	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

SIGNALIZATION DETAIL
(Heavy Duty Pull Box)

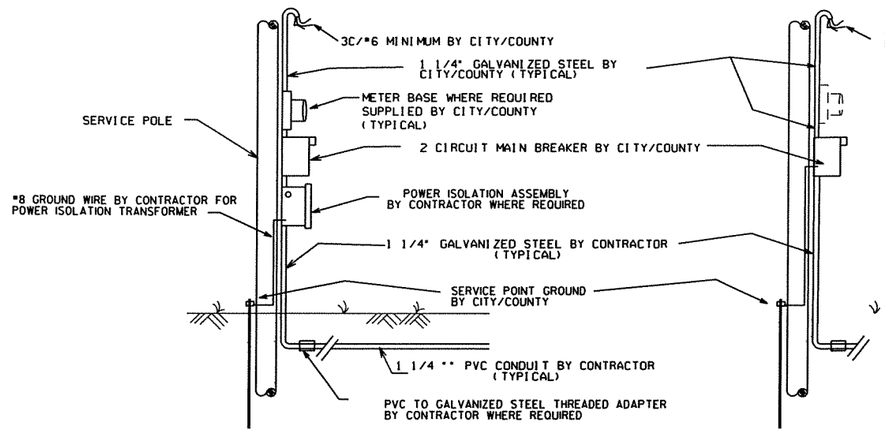
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER 17605 MICHAEL D. PUGETT 8/8/12

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.		050189	136	340

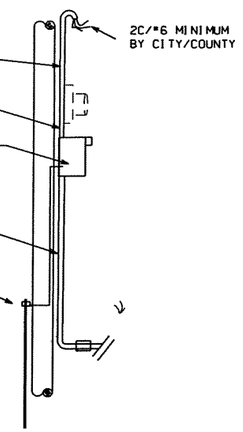
(2) SIGNALIZATION DETAILS

MAIN BREAKER NOT NEAR CONTROLLER CABINET SECONDARY REQUIRED

WITH POWER ISOLATION ASSEMBLY

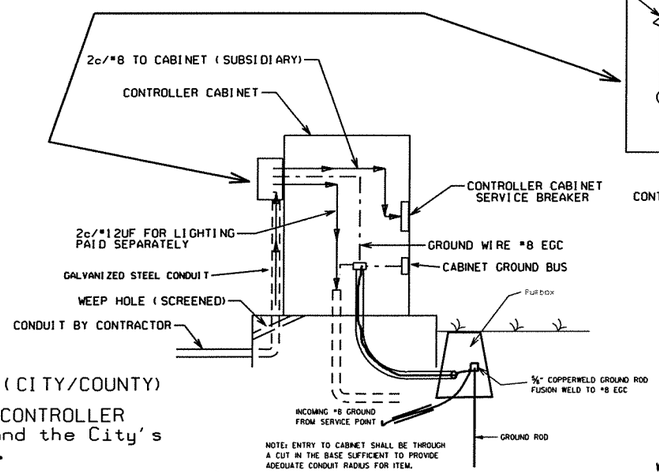


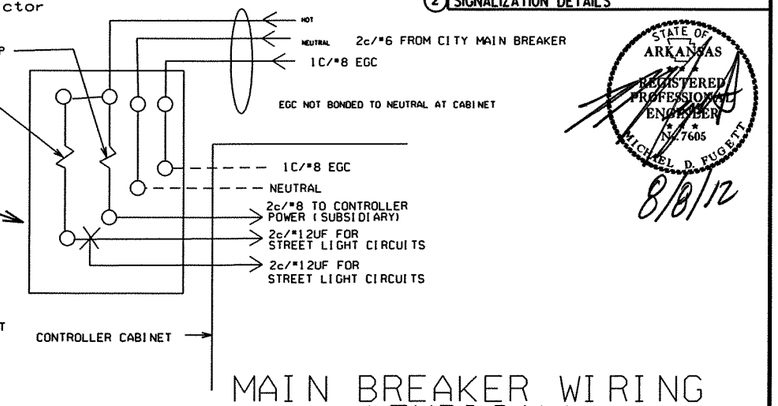
WITHOUT POWER ISOLATION ASSEMBLY



Ground Rod-A 10' x ⅝" ground rod shall be installed in the pull box for each pole and the controller. Payment for the ground rod and ½" NMC shall be included in Item 701. The pull box and conductor box shall be paid for separately.

SECONDARY BREAKER BY CONTRACTOR (SUBSIDIARY)





MAIN BREAKER WIRING (TYPICAL)

Service Ground is typically tied to neutral at the Main Breaker. As such, controller ground IS NOT tied to Neutral at secondary Breaker or in controller cabinet.

NOTES TO CONTRACTOR AND AGENCY RESPONSIBLE FOR MAINTENANCE OF THE INTERSECTION (CITY/COUNTY)

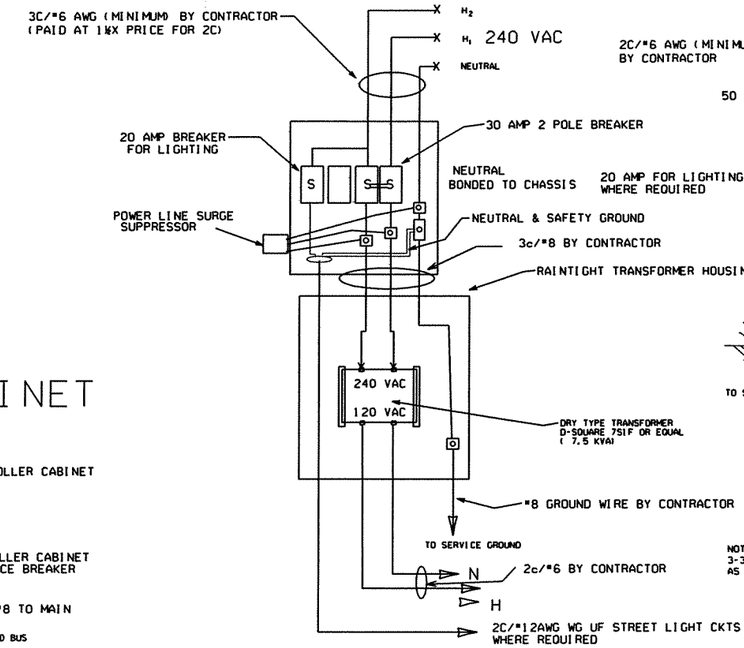
Electrical service typically falls into two categories: MAIN BREAKER NEAR CONTROLLER CABINET; and MAIN BREAKER NOT NEAR CONTROLLER CABINET. The Contractor's and the City's or County's responsibility varies accordingly as indicated on these details.

1. ALL SITUATIONS: Electrical service shall be provided by the City/County to a service pole with external raintight breaker (MAIN BREAKER) at a mutually acceptable point within the right-of-way. Service point includes galvanized steel conduit to a point 18" below ground line, two circuit main breaker, power isolation assembly where required, meter loop if required by local utility, electrical conductors and weatherhead. Where street lighting is included as part of signal installation, street lighting circuit (2c/#12 awg UF rated, typical) shall be kept separate from the circuit serving traffic signal. Service wire and wiring from the controller to main breaker is provided by the Contractor as a part of this contract. Wire and wiring from main breaker, and connection to the utility is the responsibility of the City/County.

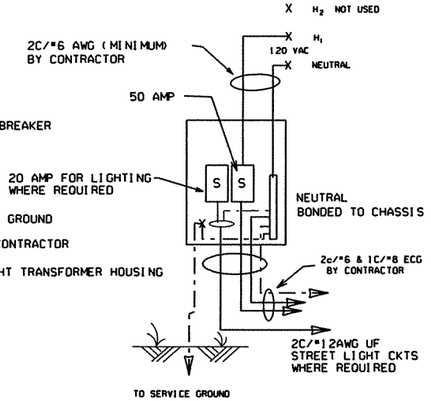
2. MAIN BREAKER NOT NEAR CONTROLLER CABINET: The Main Breaker assembly, galvanized steel conduit, weatherhead and wire above Main Breaker and connection to the utility shall be provided by City/County. Contractor shall provide as part of contract Secondary Breaker, conduit, wire and wiring to the Main Breaker.

3. MAIN BREAKER NEAR CONTROLLER CABINET: All components of the service point with the exception of the wire and wiring above the Main Breaker is furnished and installed by the Contractor. Wiring from Main Breaker including connection to the utility, is the responsibility of the City/County. If meter loop is required, meter base and hardware is provided by the City/County and installed by the contractor.

WITH POWER ISOLATION ASSEMBLY
4 CIRCUIT MAIN BREAKER

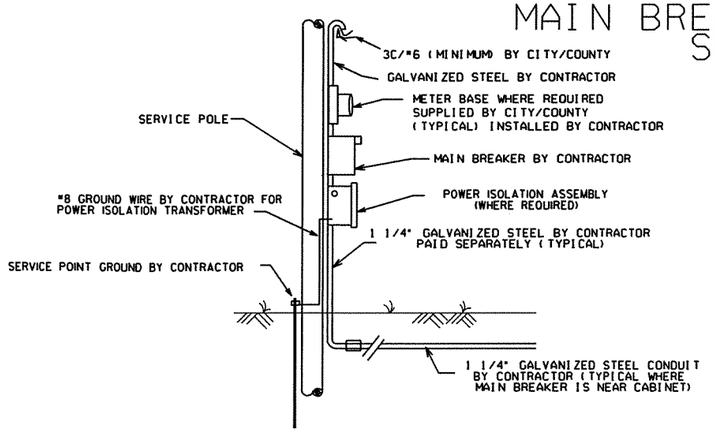


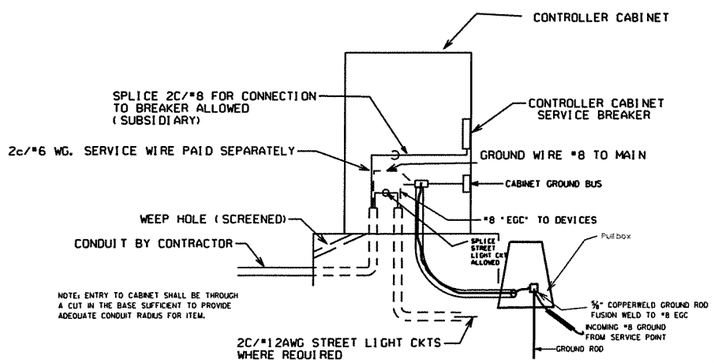
WITHOUT POWER ISOLATION ASSEMBLY
2 CIRCUIT MAIN BREAKER



NOTE: ELECTRICAL GROUND CONDUCTOR (ECG) ADDED 3-3-2003, CONSISTING OF A 1C/#8AWG CU GREEN WIRE AS PER NATIONAL ELECT. CODES.

MAIN BREAKER NEAR CONTROLLER CABINET SECONDARY NOT REQUIRED





DATE	REVISION	DATE FILM
5-21-09	REVISED GROUNDING	
7-31-08	REVISED GROUNDING	
3-3-03	ADDED EGC NOTE	
9-26-01	REVISED	
12-27-99	REVISED	
7-28-99	REVISED	
2-5-99	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

SIGNALIZATION DETAIL (Service Point)

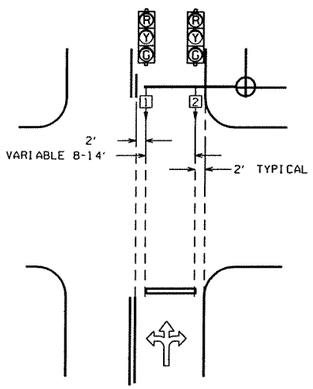
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER 13605 MICHAEL D. FUGETT 8/8/12

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.		050189	137	340

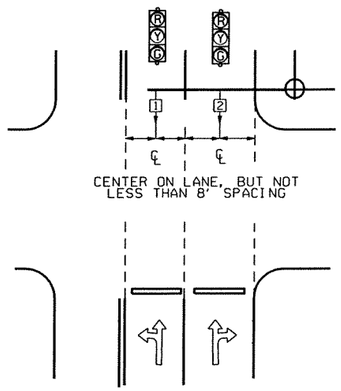
(2) SIGNALIZATION DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 17605
MICHAEL D. FUGETT
8/18/12

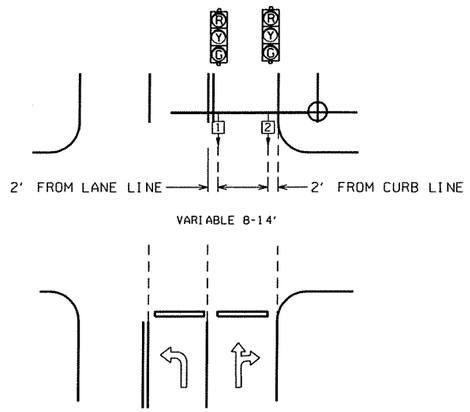
(A)



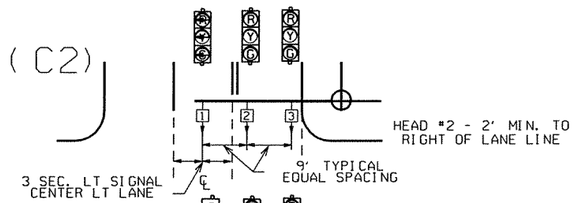
(B)



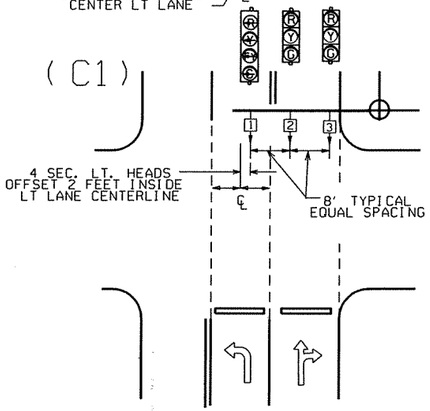
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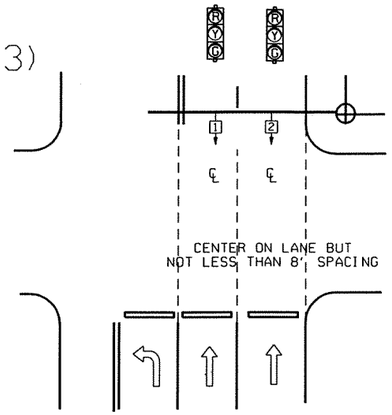
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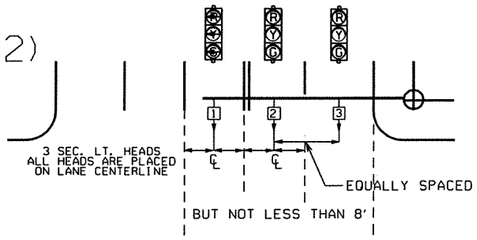
(C1)



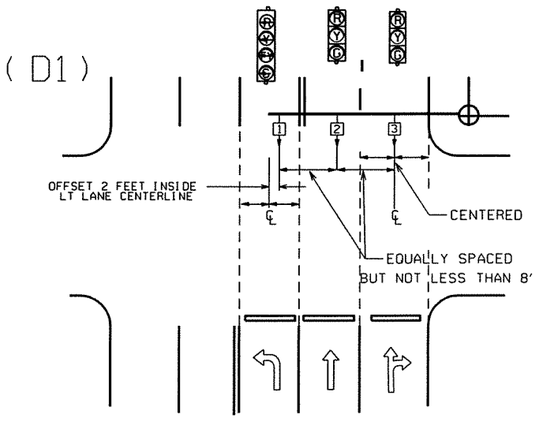
(C3)



(D2)

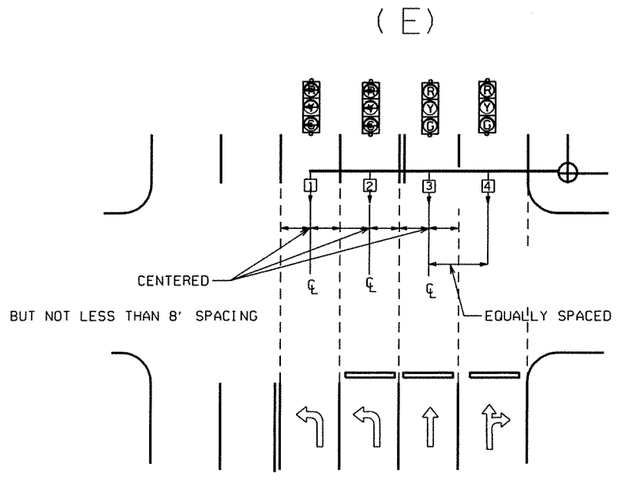


(D1)



NOTE: WHERE LEFT TURN HEAD (HEAD 1 ON D1 AND D2) IS NOT CALLED FOR ON PLANS, MAST ARM LENGTH MAY STILL BE ALLOWED FOR FUTURE INSTALLATION. HEADS FOR THROUGH MOVEMENTS SHALL STILL BE ALIGNED WITH THROUGH LANES AS SHOWN ON DETAILS

(E)



℄ = CENTER OF LANE FROM APPROACH SIDE

GENERAL NOTES:

1. FOUR SECTION 'PROTECTED/PERMISSIVE' LEFT TURN HEADS SHOULD BE PLACED A MINIMUM OF TWO (2') FEET TO THE RIGHT OF THE CENTERLINE OF THE APPROACHING LEFT TURN LANE.

2. THREE SECTION 'PROTECTED' LEFT TURN HEADS SHOULD BE PLACED ON THE CENTERLINE OF THE APPROACHING LEFT TURN LANE.

3. WHEN IT IS NECESSARY TO PLACE POLES OTHER THAN AS SHOWN ON PLAN SHEET(S) RESULTING IN MAST ARM EXTENDING MORE THAN TWO FEET PAST (TO THE LEFT OF) THE CENTERLINE OF THE APPROACHING LEFT TURN LANE, MAST ARM SHALL BE CUT TO APPROPRIATE LENGTH AS DETERMINED BY THE ENGINEER, AND A NEW END CAP PROVIDED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THIS PRIOR TO INSTALLING THE MAST ARM IF ADDITIONAL COMPENSATION IS REQUIRED.

4. SIGNAL HEAD SPACING SHALL, IN NO CASE, BE LESS THAN EIGHT (8') FEET BETWEEN HEADS ON CENTER, MEASURED HORIZONTALLY PERPENDICULAR TO THE APPROACH.

5. ALL SIGNAL HEADS SHOWN ON THIS DETAIL SHEET SHALL BE LOCATED ACCORDING TO THE DIMENSIONS SHOWN IN RELATION TO THE APPROACH SIDE OF THE INTERSECTION.

6. MAXIMUM MOUNTING HEIGHT OF SIGNAL FACES LOCATED BETWEEN 40 FEET AND 53 FEET FROM STOP BAR SHALL BE IN ACCORDANCE WITH FIGURE 4D-1 OF 2009 MUTCD.

3-11-10	2009 MUTCD	
12-9-99	ISSUED	
DATE	REVISION	DATE FILM

ARKANSAS STATE HIGHWAY COMMISSION

SIGNALIZATION DETAIL
(Signal Head Placement)

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.		050189	138	340

(2) SIGNALIZATION DETAILS

NOTES, PED AND TRAFFIC SIGNAL HEAD SIGNS:
EACH ITEM 'TRAFFIC SIGNAL HEAD (4 SEC., 1-WAY)' SHALL INCLUDE A SPECIAL SIGN AS SHOWN, ATTACHED TO THE MAST ARM OR SPAN ASSEMBLY 12" TO THE RIGHT OF THE SIGNAL HEAD UNLESS REMOVED WITHIN THE SIGNAL PLAN NOTES.

EACH ITEM 'TRAFFIC SIGNAL HEAD (3 SEC., 1-WAY)' TO BE USED AS A LEFT TURN INDICATION ONLY SHALL INCLUDE A SIGN (R10-10) AS SHOWN, ATTACHED TO THE MAST ARM OR SPAN ASSEMBLY 12" TO THE RIGHT OF THE SIGNAL HEAD.

EACH PEDESTRIAN PUSHBUTTON SHALL HAVE ONE R10-3E SIGN ATTACHED TO THE POLE ABOVE THE BUTTON. ALL SIGN FACES SHALL BE CONSTRUCTED OF HIGH INTENSITY SHEETING (TYPE III) WITH SILKSCREEN LEGEND AND BORDER.

ALL SIGN BLANKS SHALL BE CONSTRUCTED OF ALUMINUM ALLOY (ASTM DESIGNATION B-209. ALLOY 5052-H38) WITH THICKNESS OF 0.100 INCH.

GENERAL NOTES:
1. MAST ARM POLES SHALL BE MOUNTED A MINIMUM OF 4 FT. BEHIND CURB OR SHOULDER.

2. OCTAGONAL POLES AND ARMS MEETING THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS CAN BE INSTALLED IN LIEU OF ROUND. ALL POLES AND ARMS IN A JOB MUST BE THE SAME SHAPE.

3. MINIMUM STRUCTURAL REQUIREMENTS:
DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 4TH EDITION (2001) WITH 2003 AND 2006 INTERIMS.

USE FATIGUE CATEGORY I FOR ALL STRUCTURES ON ROUTES WHERE THE SPEED LIMIT IS 65 MPH AND GREATER AT THE STRUCTURE LOCATION AND ON ROUTES WHERE SPEED LIMIT IS GREATER THAN 45 MPH WITH AN ARM 60' OR LONGER.

USE FATIGUE CATEGORY II FOR STRUCTURES ON ROUTES WITH A SPEED LIMIT LESS THAN 65 MPH AND GREATER THAN 45 MPH WITH ARMS LESS THAN 60' AND ROUTES WITH SPEED LIMITS OF 45 MPH AND LESS WITH AN ARM 60' OR LONGER.

USE FATIGUE CATEGORY III FOR ALL STRUCTURES WHERE SPEED LIMIT IS 45 MPH AND LESS AND ARMS LESS THAN 60'.

CONSTRUCTION SPECIFICATIONS: ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2003 EDITION) WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

BASE WIND SPEED: 90 MPH.

STEEL MEMBERS CONSIDERED MAIN LOAD CARRYING MEMBERS WITH A THICKNESS GREATER THAN 1/2" SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH TEST SPECIFIED IN SUBSECTION 807.05 OF THE STANDARD SPECIFICATIONS.

DEAD LOAD: AS A MINIMUM, DESIGN SHALL BE BASED ON THE FIXED ATTACHMENTS SHOWN BELOW OR AS MODIFIED IN THE PLANS.

ALL SIGNAL HEADS TO BE ONE WAY, 12 INCH, AND HAVE 5 IN. BACK PLATES:

HEADS AT END OF ARM - ONE 4 SEC., 85 LB., 16.0 SQ. FT. ONE SIGN MOUNTED 3 FT. FROM SIGNAL * 2' X 0" X 2' * 6", 20 LB. REMAINING HEADS SPACED A 8 FT. * 3 SEC., 56 LB., TWO 5 SEC):
14.4 SQ. FT. DESIGN TO ACCOMMODATE (INCLUDING
2 HEADS FOR ARMS 10 TO 16 FT.
2 HEADS FOR ARMS 10 TO 16 FT., INCLUDING LB.
3 HEADS FOR 18 TO 24 FT. ARMS;
4 HEADS FOR OVER 26 FT. ARMS.

STREET NAME SIGN -- 72" X 18", 36 LB., MOUNTED SUCH THAT OUTSIDE EDGE IS NOT GREATER THAN 12 FT. FROM POLE. DEPENDING UPON POSITION OF SIGNAL HEAD ADJACENT TO POLE, SIGN MAY OVERLAP POLE SHAFT ROADWAY LUMINAIRES (WHERE REQUIRED ON PLAN SHEET) * VARIABLE ARM LENGTH (MAX.), 3.3 SQ. FT., 75 LB. PED SIGNALS -- TWO 2 SEC. 12 INCH MOUNTED 8 FT. FROM BASE OF POLE.
POST MOUNTED 3 SEC. SIGNAL HEAD AT 10 FT. ON SIDE OF POLE.

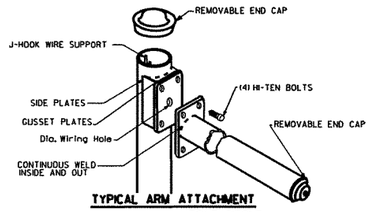
4. POLE/MAST ARM CAP -- POLE AND MAST ARMS CAPS SHALL BE PROVIDED, FABRICATED OF EITHER STEEL OR CAST ALUMINUM.

5. HAND HOLE -- HAND HOLES SHALL BE 4 X 6 INCHES FOR STANDARD, AND 3 X 5 INCHES FOR PED POLES, MINIMUM PLACED APPROXIMATELY 12 INCHES FROM BASE, AND SHALL BE FIXED WITH A BOLT DOWN COVER. A VACUUM FORMED ABS COVER IS AN ACCEPTABLE ALTERNATE TO STEEL. POLES GREATER THAN 21 FT. IN HEIGHT (FOR ROADWAY LUMINAIRE ATTACHMENT) SHALL INCLUDE A HAND HOLD WITHIN 12 INCHES OF MAST ARM(S) ATTACHMENT(S).

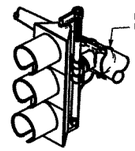
6. POLE/MAST ARM TAPER AND SLOPE - AVERAGE TAPER OF SIGNAL ARMS AND POLE SHALL BE 0.125 TO 0.15 INCHES PER FT.

MAST ARM CENTERLINE ANGLE AT ATTACHMENT POINT WITH POLE SHALL MAINTAIN NOT LESS THAN 0.5 DEGREES OR MORE THAN 4 DEGREES POSITIVE SLOPE WITH A LINE PERPENDICULAR TO THE POLE CENTERLINE. THE ARM SHALL MAINTAIN A POSITIVE AFTER IT IS PLACED UNDER LOAD.

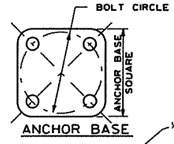
7. NUT COVERS - EACH POLE SHALL INCLUDE A BOLT DOWN NUT COVER FOR EACH ANCHOR BOLT.



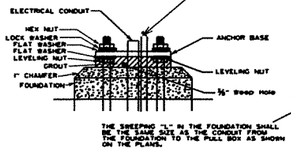
TYPICAL ARM ATTACHMENT

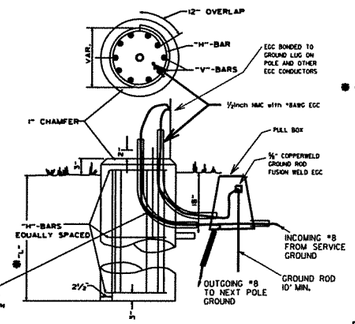


NOTE: THE SIGNAL SHALL BE CONNECTED TO THE MAST ARM BY BRACKETING AS DIRECTED BY THE ENGINEER.



ANCHOR BASE



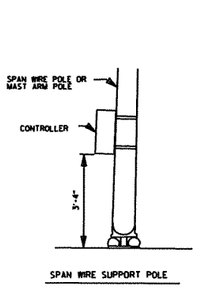


THE GROUND ROD SHALL BE FUSION WELDED TO A 1C/#8 A.W.G. SOLID COPPER GROUND WIRE. ATTACHMENT TO THE PRIMARY GROUND MAY BE BY AN APPROVED CLAMP. THE ROD IS TO BE LOCATED IN THE CONCRETE PULL BOX.

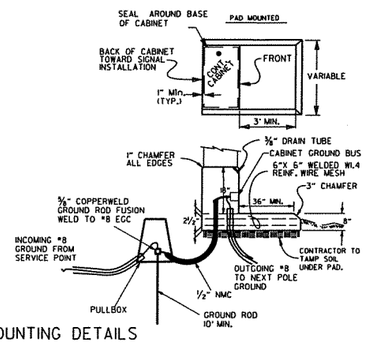
TYPICAL FOUNDATION DETAILS

POLE FOUNDATION MINIMUM DIMENSIONS AND STEEL REINFORCING. ALL REINFORCING STEEL SHALL BE GRADE 40 MIN.

ARM LENGTH	FDN. DIAMETER	DEPTH 'L' *	STEEL VERT.	STEEL HORZ.	STEEL O/C.
PED	30"	7'-0"	12-#7 (6'-6")	10-#4	8.44"
2' to 12'	30"	10'-6"	12-#7 (10'-0")	15-#4	8.42"
over 12' to 20'	30"	11'-6"	12-#7 (11'-0")	16-#4	8.66"
over 20' to 35'	36"	12'-6"	13-#8 (12'-0")	17-#4	8.88"
over 35' to 50'	36"	13'-6"	13-#8 (13'-0")	19-#4	8.56"
over 50' to 72'	42"	14'-6"	18-#8 (14'-0")	20-#4	8.74"
Twins to 20'	30"	16'-0"	12-#6 (15'-6")	22-#4	8.76"
Twins over 20' to 44'	36"	16'-0"	13-#8 (15'-6")	22-#4	8.76"
Twins over 44' to 50'	42"	16'-0"	18-#8 (15'-6")	22-#4	8.76"
Twins over 50' to 72'	42"	16'-6"	18-#8 (16'-0")	23-#4	8.64"



SPAN WIRE SUPPORT POLE AND MAST ARM POLE MOUNTED



CONTROLLER CABINET MOUNTING DETAILS

UNLESS OTHERWISE DIRECTED BY THE ENGINEER, CABINET ORIENTATION SHALL BE SUCH THAT THE BACK OF THE CABINET IS PARALLEL TO THE STREET AND POSITIONED TO ALLOW VISIBILITY OF THE SIGNAL DISPLAY WHILE OBSERVING THE CONTROLLER FRONT PANEL.

8. GROUND ROD - A 10' X 5/8" GROUND ROD SHALL BE INSTALLED IN THE PULL BOX FOR EACH POLE AND THE CONTROLLER. PAYMENT FOR THE GROUND ROD AND 1/2" NMC SHALL BE INCLUDED IN ITEM 714 FOR SIGNAL POLES AND ITEM 701 FOR THE CONTROLLER. THE PULL BOX AND CONDUCTOR BOX SHALL BE PAID FOR SEPARATELY.

9. POLE BASE/FOUNDATION - ANCHOR BOLTS SHALL INCLUDE AS A MINIMUM, ONE LEVELING NUT, TWO FLAT WASHERS, ONE LOCK WASHER, AND ONE HEX. NUT. PERIMETER OF ANCHOR BASE SHALL BE GROUTED WITH A 1/4" WEEP HOLE. ALL CONCRETE SHALL BE CLASS "S" OR GREATER.

10. CONCRETE - ALL CONCRETE FOR CONTROLLER CABINET AND POLE FOUNDATIONS SHALL BE CLASS "S" OR GREATER.

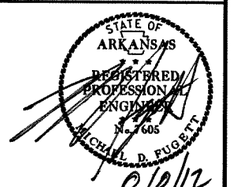
11. PEDESTRIAN PHASES - PEDESTRIAN MOVEMENTS SHALL BE PUSH BUTTON ACTUATED AND CONCURRENTLY TIMED, UNLESS OTHERWISE INDICATED ON THE PLAN SHEET(S). FURNISHING AND INSTALLING PED PUSH SWITCH SHALL BE CONSIDERED SUBSIDIARY TO THE ITEM PEDESTRIAN SIGNAL HEAD.

SIGNAL OPERATION NOTES:

FLASHING OPERATION - PRIOR TO NORMAL OPERATION, SIGNAL SHALL BE FLASHED FOR A PERIOD OF 3 TO 5 WORK DAYS OR AS DIRECTED BY THE ENGINEER. SIGNAL SHALL BE PLACED IN OPERATION ONLY ON A REGULAR WORK DAY, EXCEPT FRIDAY.

THE CONTRACTOR MAY BE REQUIRED TO ALTER THE FLASHING DISPLAY DURING THE TEMPORARY FLASH PERIOD. AT THE TIME INTERSECTION IS PLACED IN PERMANENT OPERATION, THE FLASH SEQUENCE SHALL THEN BE RETURNED TO THAT INDICATED ON THE PLAN SHEETS. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED FOR THESE ALTERATIONS IN FLASH SEQUENCE.

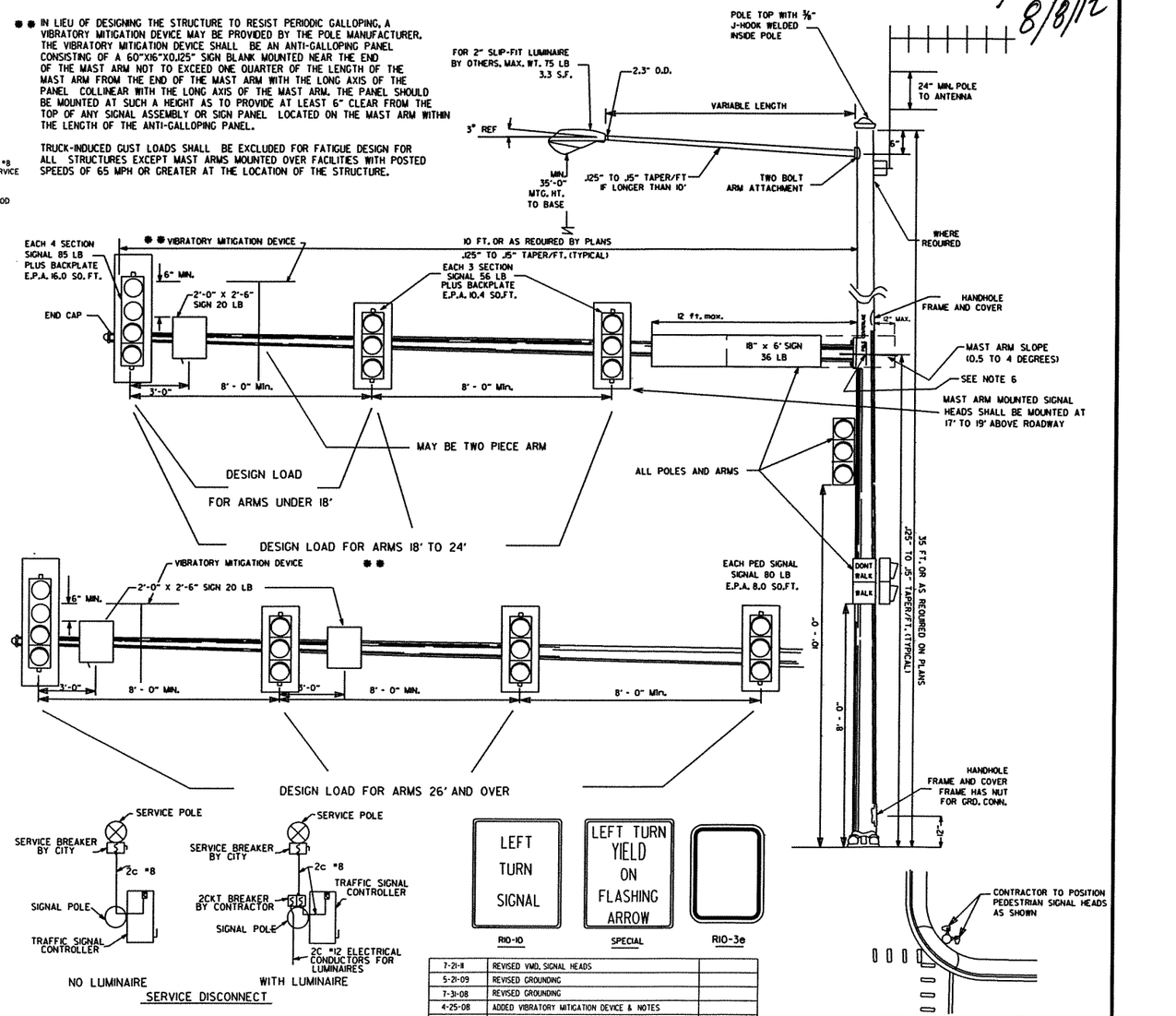
SPECIAL NOTE: 90 MPH WIND ZONE DESIGN, SEE NOTE 3. MINIMUM STRUCTURAL REQUIREMENTS.



* WHEN THE GROUND ELEVATION AT THE POLE IS LOWER THAN THE ROADWAY ELEVATION, THE LENGTH OF FOUNDATION ABOVE THE GROUND MAY BE INCREASED TO PROVIDE THE REQUIRED SIGNAL HEAD CLEARANCE ABOVE THE ROADWAY. WHEN THE REQUIRED LENGTH OF FOUNDATION ABOVE THE GROUND IS 18" OR LESS, NO INCREASE IN DEPTH "L" WILL BE REQUIRED. WHEN THE REQUIRED LENGTH OF FOUNDATION ABOVE THE GROUND IS 5'-6" OR LESS, INCREASE DEPTH "L" BY 1'-0". FOR LENGTHS GREATER THAN 5'-6", DEPTH "L" SHALL BE ADJUSTED AS DIRECTED BY THE ENGINEER. LONGITUDINAL REINFORCING, AS SHOWN IN THE TABLE, SHALL BE PROVIDED FOR THE LENGTH OF THE EXTENDED SHAFT AND #4 TIES SHALL BE PROVIDED AT A SPACING NOT TO EXCEED 9" ON CENTERS. PAYMENT WILL BE IN ACCORDANCE WITH SECTION 714 OF THE STANDARD SPECIFICATIONS.

** IN LIEU OF DESIGNING THE STRUCTURE TO RESIST PERIODIC GALLOPING, A VIBRATORY MITIGATION DEVICE MAY BE PROVIDED BY THE POLE MANUFACTURER. THE VIBRATORY MITIGATION DEVICE SHALL BE AN ANTI-GALLOPING PANEL CONSISTING OF A 60"X16"XO.125" SIGN BLANK MOUNTED NEAR THE END OF THE MAST ARM NOT TO EXCEED ONE QUARTER OF THE LENGTH OF THE MAST ARM FROM THE END OF THE MAST ARM WITH THE LONG AXIS OF THE PANEL COLLINEAR WITH THE LONG AXIS OF THE MAST ARM. THE PANEL SHOULD BE MOUNTED AT SUCH A HEIGHT AS TO PROVIDE AT LEAST 6" CLEAR FROM THE TOP OF ANY SIGNAL ASSEMBLY OR SIGN PANEL LOCATED ON THE MAST ARM WITHIN THE LENGTH OF THE ANTI-GALLOPING PANEL.

TRUCK-INDUCED GUST LOADS SHALL BE EXCLUDED FOR FATIGUE DESIGN FOR ALL STRUCTURES EXCEPT MAST ARMS MOUNTED OVER FACILITIES WITH POSTED SPEEDS OF 65 MPH OR GREATER AT THE LOCATION OF THE STRUCTURE.



SERVICE DISCONNECT

7-21-11	REVISED VMD, SIGNAL HEADS	
5-21-09	REVISED GROUNDING	
7-31-08	REVISED GROUNDING	
4-25-08	ADDED VIBRATORY MITIGATION DEVICE & NOTES	
4-18-08	REVISED AASHTO NOTES	
4-17-08	REVISED TO 2004 AASHTO STANDARDS	
10-12-04	REVISED CABINET ORIENTATION	
6-23-04	REVISED	
5-11-04	REV. NOTE 3/AASHTO REQUIREMENTS	
6-11-01	REV. NOTES & POLE MAST ARM SLOPE	
4-11-01	REVISED POLE TAPERS	
4-25-00	REV. NOTES & SIGNAL HEAD PLACEMENT	
11-22-99	REVISED FOUNDATION DETAILS	
11-17-98	REVISED DETAILS AND NOTES	
11-21-95	ISSUED	
DATE	REVISION	DATE FILM

ARKANSAS STATE HIGHWAY COMMISSION

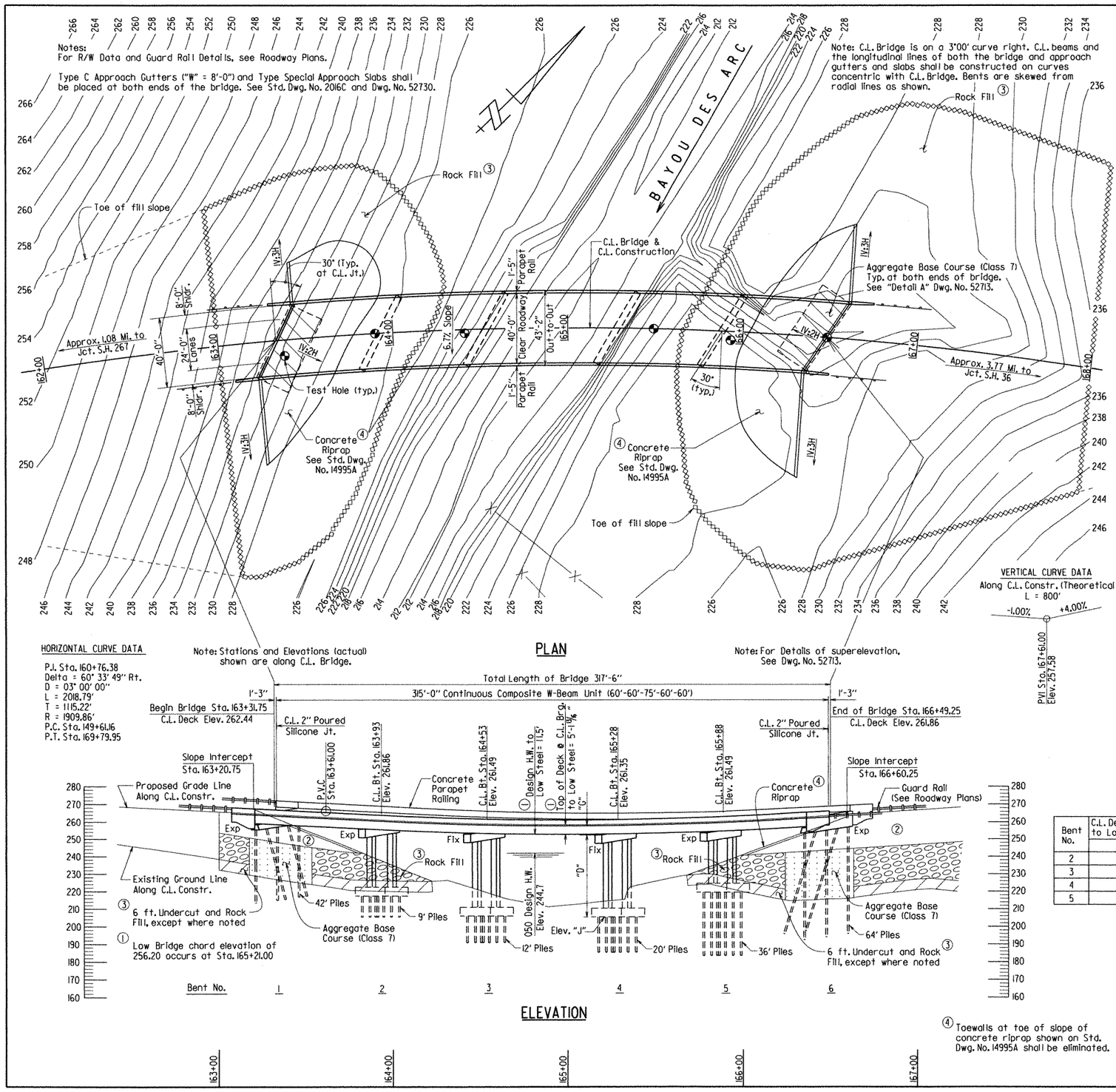
SIGNALIZATION DETAILS
(Steel Pole With Mast Arm)

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.		050189	139	340
				(1) 07253		LAYOUT		52712

Notes:
For R/W Data and Guard Rail Details, see Roadway Plans.

Type C Approach Gutters ("W" = 8'-0") and Type Special Approach Slabs shall be placed at both ends of the bridge. See Std. Dwg. No. 2016C and Dwg. No. 52730.

Note: C.L. Bridge is on a 3°00' curve right. C.L. beams and the longitudinal lines of both the bridge and approach gutters and slabs shall be constructed on curves concentric with C.L. Bridge. Bents are skewed from radial lines as shown.



PLAN

ELEVATION

(4) Toewalls at toe of slope of concrete riprap shown on Std. Dwg. No. 14995A shall be eliminated.

VERTICAL CURVE DATA
Along C.L. Constr. (Theoretical)
L = 800'
-1.00% +4.00%
PVI Sta. 167+61.00
Elev. 257.58

GENERAL NOTES

BENCH MARK: 5/8" Rebar, 2" Alum. Cap, 36.14' Right of Sta. 162+82.11, Elevation 239.20.

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

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Fifth Edition, with 2010 Interim Revisions.

LIVE LOADING: HL-93
SEISMIC PERFORMANCE ZONE: 2

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (superstructure)	f'c = 4,000 psi
Class S Concrete (substructure)	f'c = 3,500 psi
Reinforcing Steel (AASHTO M31 or M53, GR. 60)	fy = 60,000 psi
Structural Steel (AASHTO M270, GR. 50W)	Fy = 50,000 psi
Structural Steel (AASHTO M270, GR. 36)	Fy = 36,000 psi

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

STEEL PILING: All Piling shall be HP 12x53 (Grade 50) and shall be driven with an approved air, steam, or diesel hammer into material designated as B1, C1, P1, A2, D1, or P2 on the boring legend and to a minimum safe bearing capacity of 95 tons per pile. Piles in end bents shall be driven after embankment to bottom of cap is in place. Lengths of piling shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with Section 805. The Contractor shall use approved steel H-Pile driving points on all piles. Minimum penetration for piling shall be 8 feet below bottom of footing at intermediate bents and 8 feet below bottom of undercut at end bents.

PREBORING: Preboring is required for all piling in Bents 1, 2, 3 and 6. The depth of preboring shall be sufficient to provide the specified minimum penetration and to set pile tips into the above designated material. Quantities of preboring shown are for bidding purposes only. The acual size and depths of preboring are to be determined in the field by the Engineer. The Contractor shall be responsible for keeping prebored holes free from debris prior to backfilling which may require casings or other methods. After driving is completed, the prebored holes shall be backfilled with Class S Concrete to completely fill voids. The backfill and any required casings will not be paid for directly, but shall be considered subsidiary to the item "Preboring".

FOOTINGS: The top of the footings shall be set a minimum of 5 feet below natural ground or at the elevations shown on the plans, whichever is lower. Foundations for footings shall be prepared in accordance with subsection 801.04.

BRIDGE DECK: The concrete bridge deck shall be given a tine finish as specified for final finishing in subsection 802.17 for Class 5 Tined Roadway Surface Finish.

DETAIL DRAWINGS:	DRAWING NOS.
End Bents	52714 - 52716
Int. Bents	52717 - 52721
Elastomeric Bearings	52722
315'-0" Continuous W-Beam Unit	52723 - 52729
Type Special Approach Slab	52730
Steel Piling	14995A
Type C Approach Gutters	2016C

(2) See Special Provision Job No. 050189 "Geosynthetic Internal Reinforced Embankment Construction" for details of geogrid reinforcement in bridge embankments.

(3) See Special Provision Job No. 050189 "Rock Fill Embankment Construction" and "Detail A" on Dwg. No. 52713.

HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	DISCHARGE	*NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEV. WITH BACKWATER
	YEARS	CFS	FEET	FEET
Design	50	20,800	244.4	244.7
Base	100	24,200	246.2	246.6
Extreme	500	32,700	250.3	250.7
Overtopping	> 500	—	—	—

* Unconstricted water surface without structure or roadway approaches.
Proposed Low Bridge Chord Elev. = 256.20
Drainage area = 84.1 square miles.
Historical H.W. Elev. = N/A

TABLE OF VARIABLES

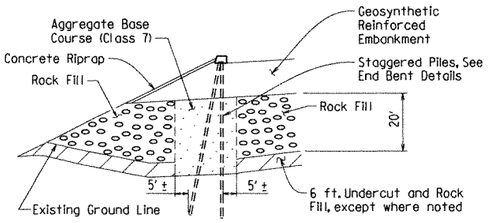
Bent No.	C.L. Deck @ C.L. Bent to Low Seat of Cap "G"	Bottom of Ftg. Elevation "J"	Low Seat of Cap to Bottom of Ftg. "D"
2	5'-4 9/16"	217.48	39'-0"
3	5'-5 1/16"	206.07	50'-0"
4	5'-5 5/8"	205.38	50'-6"
5	5'-6 1/8"	219.48	36'-6"

STATE OF ARKANSAS
CARL J. PUSELLER
REGISTERED PROFESSIONAL ENGINEER
No. 7510
6/24/11
BRIDGE ENGINEER

SHEET 1 OF 2
LAYOUT OF BRIDGE OVER BAYOU DES ARC
HWY. 13 EXTENSION (SEARCY) (S)
WHITE COUNTY
ROUTE 13 SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: PGT DATE: 5-12 SCALE: 1" = 30'
DESIGNED BY: ACW DATE: 7-11
BRIDGE NO. 07253 DRAWING NO. 52712

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.		050189	140.340	
				(1) 07253		LAYOUT		52713



Where rock fill is used for embankment construction, Aggregate Base Course (Class 7), in accordance with Section 303.02, shall be placed as shown in areas where piling will be located. Aggregate Base Course (Class 7) shall be paid for as "Compacted Embankment".

At the Contractor's option, preboring or other methods as approved by the Engineer may be used to facilitate pile installation through the aggregate base course (Class 7) material at these locations. Preboring or other methods used for installation of piles, where rock fill is used for embankment construction, will not be paid for separately but shall be considered subsidiary to the item "Steel Piling (HP 12x53)".

DETAIL "A"

(Shown Normal to End Bent 6, Bent 1 Similar)
Not to Scale

"N" VALUES

Sta. 163+38 - 9' Right of C.L. of Constr.
5.5- 5.9, N=60(5")
10.0- 10.1, N=30(1")

Sta. 163+90 - Center Line of Construction
4.5- 5.5, N=0
9.5- 10.5, N=2
14.0- 14.3, N=60(4")

Sta. 164+41 - 2' Right of C.L. of Constr.
4.7- 5.7, N=0
9.7- 10.7, N=11
14.7- 15.7, N=5
19.7- 20.7, N=14

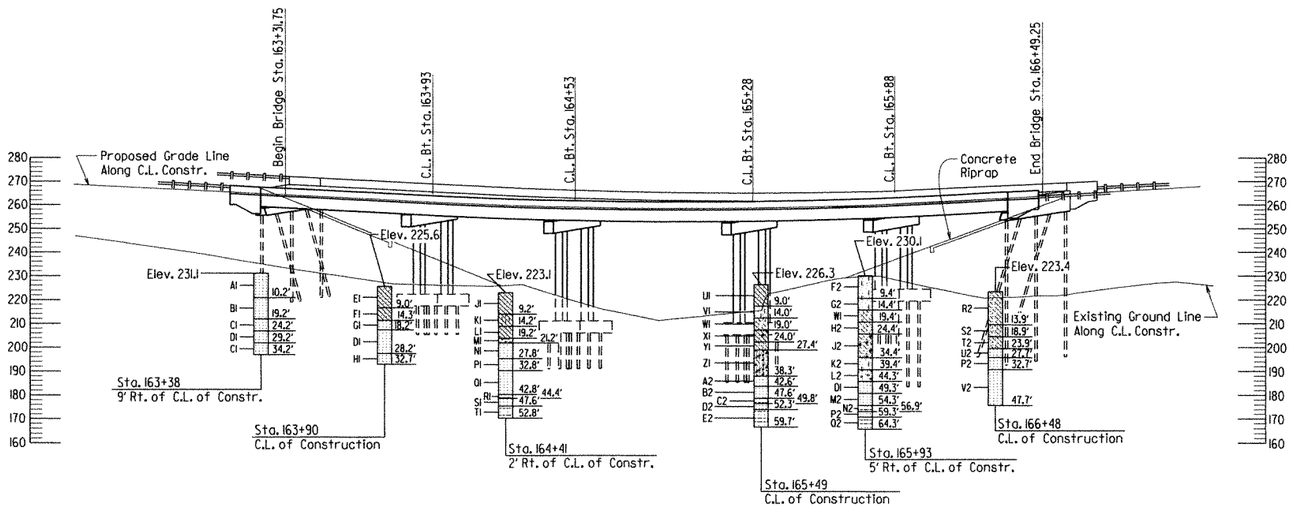
Sta. 165+49 - Center Line of Construction
4.5- 5.5, N=0
9.5- 10.5, N=3
14.5- 15.5, N=4
19.5- 20.5, N=5
24.5- 25.5, N=7
29.5- 30.5, N=24
34.5- 35.5, N=24

Sta. 165+93 - 5' Right of C.L. of Constr.
4.9- 5.9, N=2
9.9- 10.9, N=3
14.9- 15.9, N=2
19.9- 20.9, N=2
24.9- 25.9, N=7
29.9- 30.9, N=7
34.9- 35.9, N=12
39.9- 40.9, N=38

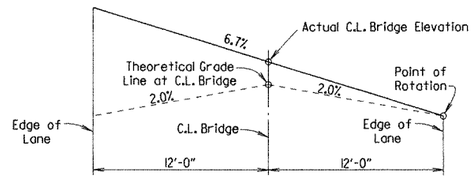
Sta. 166+48 - Center Line of Construction
4.4- 5.4, N=0
9.4- 10.4, N=1
14.4- 15.4, N=4
19.4- 20.4, N=7
23.9- 23.9, N=30(0.01)

BORING LEGEND

A1-SANDSTONE - Brown, Weathered, Poorly-Cemented
B1-SANDSTONE - Brown, Thick Bedded, Slightly Weathered, Cemented, with Slight Dip
C1-SANDSTONE - Gray, Very Thick Bedded, Slightly Weathered, Cemented, with Slight Dip
D1-SANDSTONE - Gray, Thick Bedded, Slightly Weathered, Cemented, with Slight Dip
E1-Wet, Very Soft, Brown Sandy Clay with some Organic Matter
F1-Wet, Soft, Brown Sandy Clay
G1-SANDSTONE - Brown, Thick Bedded, Slightly Weathered, Cemented, with Slight Dip and Fractured Layers
H1-SANDSTONE - Gray, Thick Bedded, Slightly Weathered, Vuggy, Cemented, with Slight Dip
J1-Wet, Very Soft, Brown Sandy Clay with some Organic Matter
K1-Wet, Stiff, Brown Silty Clay
L1-Wet, Soft, Brown and Gray Sandy Clay with some Organic Matter
M1-Wet, Medium Dense, Gray Sand with Gravel (Sandstone Framents) and Cobbles
N1-SANDSTONE - Gray, Weathered, Poorly-Cemented
P1-SANDSTONE - Brown and Gray, Thick Bedded, Weathered, Cemented, with Slight Dip and Vertically Fractured Layers (Sandstone)
Q1-SANDSTONE - Gray, Very Thick Bedded, Slightly Weathered, Well-Cemented, with Slight Dip
R1-SANDSTONE INTERBEDDED WITH SHALE - Gray, Thin Bedded, Slightly Weathered, Cemented, with Slight Dip and Vertically Fractured Layers (Sandstone); Dark Gray, Laminated, Slightly Weathered, Hard, with Slight Dip (Shale)
S1-SANDSTONE - Gray, Thick Bedded, Slightly Weathered, Cemented, with Slight Dip and some Vertically Fractured Layers
T1-SHALE INTERBEDDED WITH SANDSTONE - Dark Gray, Laminated, Slightly Weathered, Hard, with Slight Dip (Shale); Gray, Thin Bedded, Slightly Weathered, Cemented, with Slight Dip (Sandstone)
U1-Moist to Wet, Very Soft, Brown Sandy Clay
V1-Wet, Very Loose, Brown Slity Sand with some Organic Matter
W1-Wet, Very Loose, Brown Clayey Sand
X1-Wet, Medium Stiff, Gray Sandy Clay with Organic Matter
Y1-Wet, Loose, Gray Sand with Clay and Trace of Gravel (Sandstone Fragments)
Z1-Wet, Medium Dense, Gray Sand with Clay and Gravel (Sandstone Fragments)
A2-SANDSTONE - Gray, Thick Bedded, Slightly Weathered, Cemented, with Slight Dip and some Fractured Seams
B2-SANDSTONE - Gray, Very Thick Bedded, Cemented, with Slight Dip
C2-SANDSTONE WITH DARK GRAY SHALE SEAMS - Gray, Medium Bedded, Slightly Weathered, Cemented, with Slight Dip
D2-SANDSTONE - Gray, Medium Bedded, Slightly Weathered, Cemented, with Slight Dip (Sandstone)
E2-SHALE INTERBEDDED WITH SANDSTONE - Dark Gray, Laminated, Slightly Weathered, Hard, with Slight Dip (Shale); Gray, Slightly Weathered, Cemented, with Slight Dip (Sandstone)
F2-Moist, Very Loose, Brown Silty Sand
G2-Wet, Very Loose, Brown Slity Sand
H2-Wet, Very Loose, Gray Clayey Sand with some Organic Matter
J2-Wet, Loose, Gray Sand with Clay and Organic Matter
K2-Wet, Medium Dense, Brown Silty Sand
L2-Wet, Dense, Gray Sand with Gravel (Sandstone Fragments)
M2-SANDSTONE - Gray, Thick Bedded, Vuggy, Well- Cemented, with Slight Dip
N2-SHALE INTERBEDDED WITH SANDSTONE - Dark Gray, Laminated, Slightly Weathered, Hard, with Slight Dip (Shale); Gray, Medium Bedded, Slightly Weathered, Cemented, with Slight Dip (Sandstone)
P2-SANDSTONE - Gray, Thick Bedded, Cemented, with Slight Dip
Q2-SHALE INTERBEDDED WITH SANDSTONE - Dark Gray, Laminated, Slightly Weathered, Hard, with Slight Dip (Shale); Gray, Medium Bedded, Slightly Weathered, Cemented, with Slight Dip (Sandstone)
R2-Wet, Very Loose, Brown Clayey Sand
S2-Wet, Very Loose, Brown and Gray Clayey Sand
T2-Wet, Loose, Gray and Brown Sand with Clay
U2-SANDSTONE - Gray, Medium Bedded, Slightly Weathered, Cemented, with Slight Dip and some Fractured Seams
V2-SANDSTONE - Gray, Very Thick Bedded, Well- Cemented, with Slight Dip



ELEVATION OF SOIL BORINGS



SKETCH SHOWING BRIDGE DECK CROSS-SLOPE

No Scale
(View is Looking Ahead)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
6/22/11
CARL J. FUSELIER
BRIDGE ENGINEER

SHEET 2 OF 2
LAYOUT OF BRIDGE OVER BAYOU DES ARC
HWY. 13 EXTENSION (SEARCY) (S)
WHITE COUNTY
ROUTE 13 SEC.

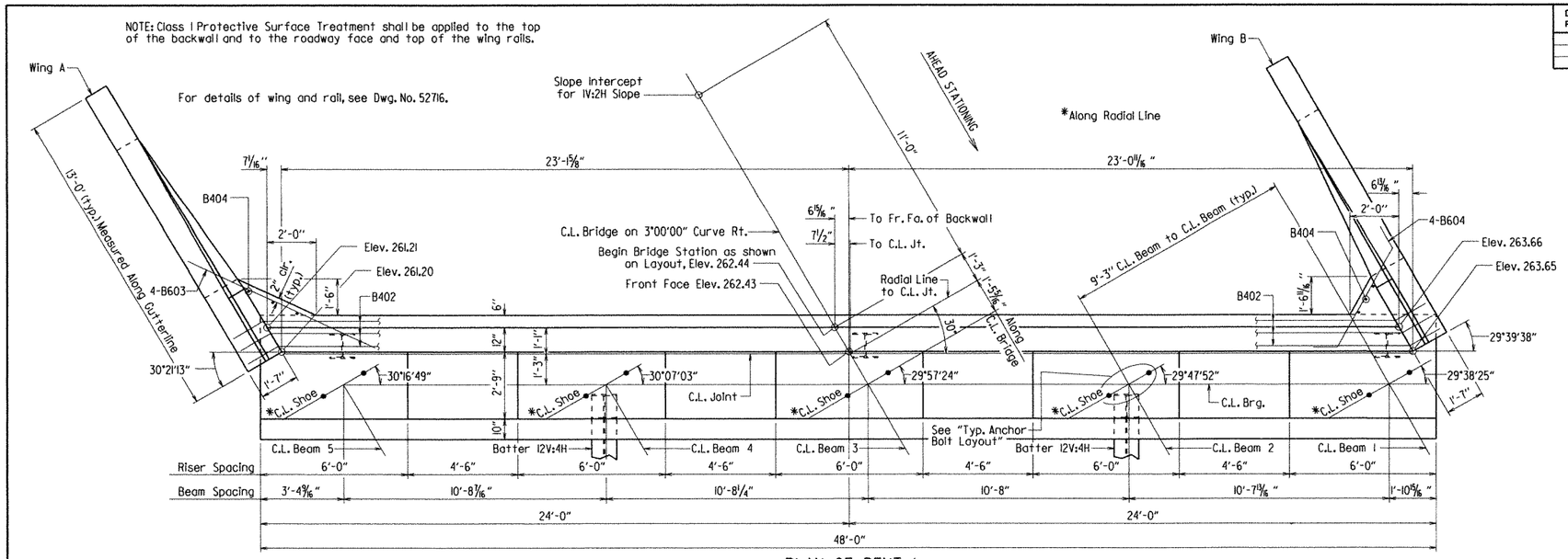
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: TCT DATE: 5-12 SCALE: 1" = 30'
DESIGNED BY: ACW DATE: 7-11

BRIDGE NO. 07253 DRAWING NO. 52713

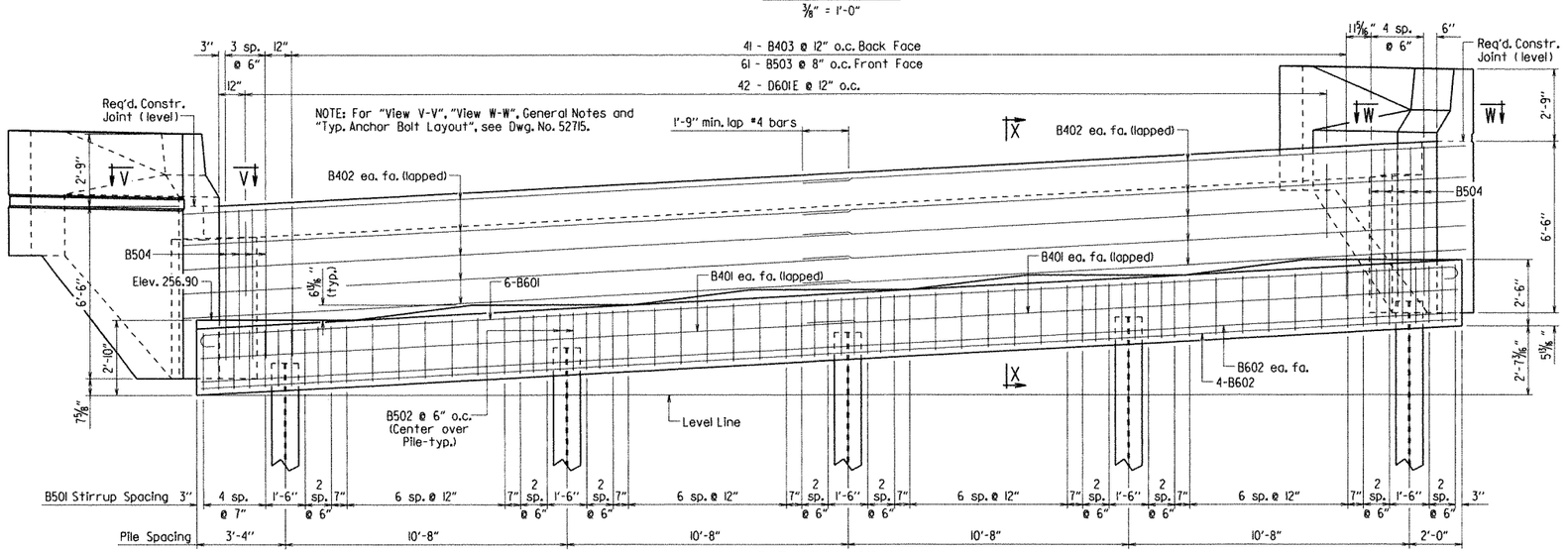
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				6	ARK.			
				JOB NO.		050189	1	3
				07253		END BENTS		52714

NOTE: Class I Protective Surface Treatment shall be applied to the top of the backwall and to the roadway face and top of the wing rails.



PLAN OF BENT 1

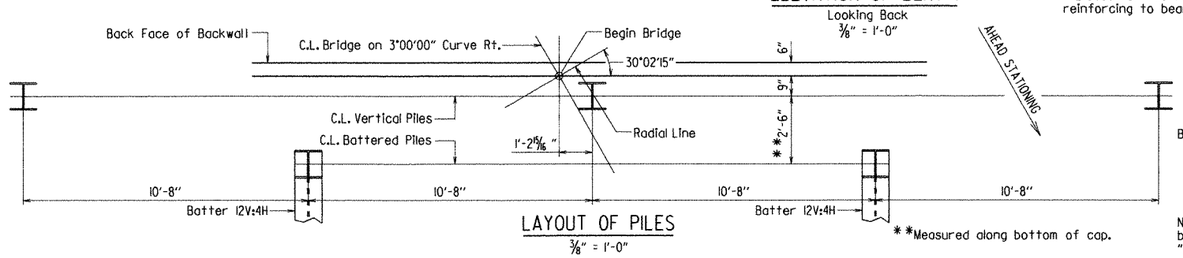
3/8" = 1'-0"



ELEVATION OF BENT 1

Looking Back

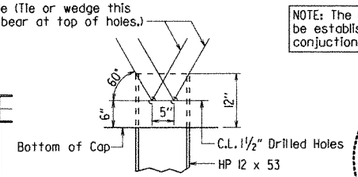
3/8" = 1'-0"



LAYOUT OF PILES

3/8" = 1'-0"

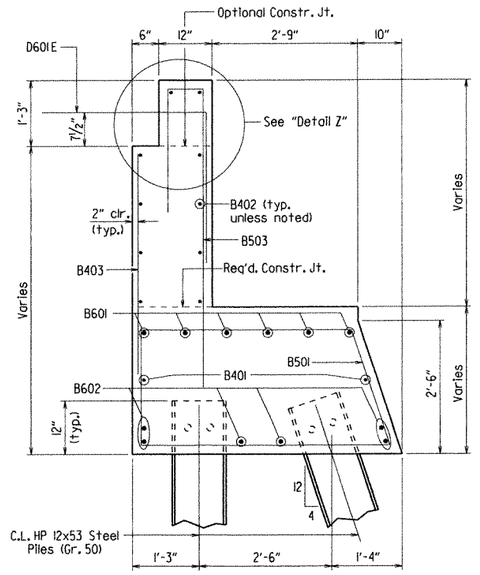
**Measured along bottom of cap.



DETAIL AT PILE TOP

No Scale

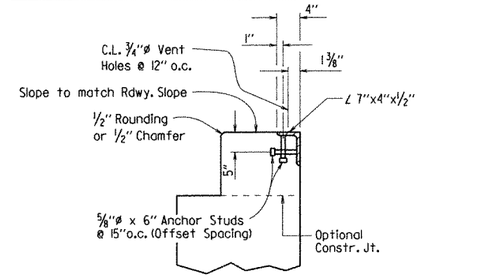
NOTE: Drilled holes will not be paid for directly but shall be considered incidental to the item "Steel Piling (HP12x53)".



SECTION X-X

3/4" = 1'-0"

NOTE: The Backwall above the required construction joint shall not be poured until the beams are in place. Backwall may be placed prior to placing the adjacent concrete deck only if the optional backwall construction joint is used. See Dwg. No. 52728, "Expansion Device Installation at End Bents", for additional information.



NOTE: For additional joint details, see Dwg. No. 52728.

DETAIL Z

No Scale

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

NOTE: The profile of the backwall angle shall be established based on the vertical curve in conjuction with the skew.

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
6/22/12
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 1 OF 3
DETAILS OF BENTS 1 AND 6
BAYOU DES ARC

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

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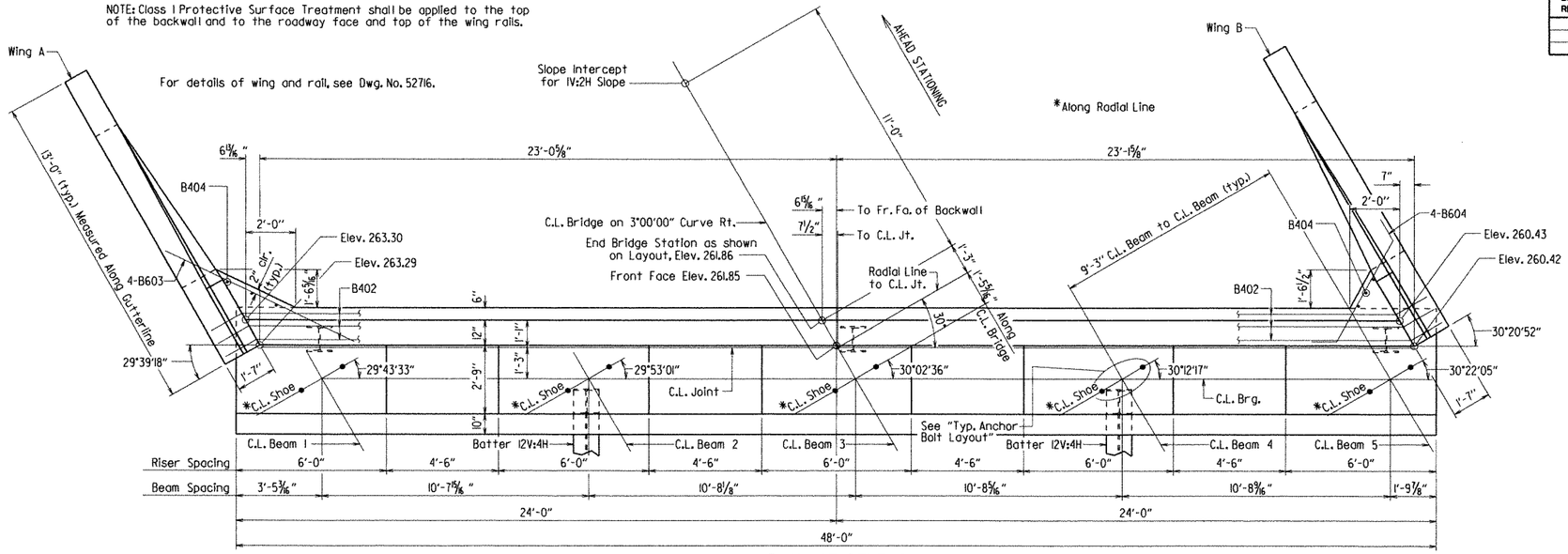
CHECKED BY: PGT DATE: 5-12 SCALE: as noted

DESIGNED BY: KWY DATE: 3/12

BRIDGE NO. 07253 DRAWING NO. 52714

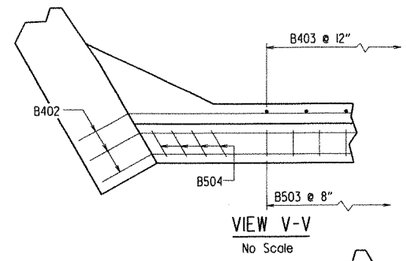
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				6	ARK.			
				JOB NO.		050189	142	340
				1	07253	END BENTS		52715

NOTE: Class 1 Protective Surface Treatment shall be applied to the top of the backwall and to the roadway face and top of the wing rails.



PLAN OF BENT 6

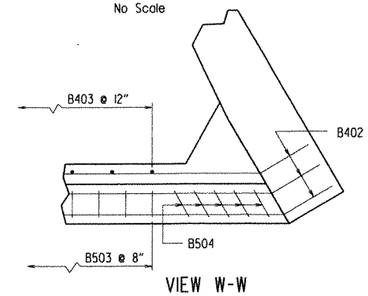
⅜" = 1'-0"



VIEW V-V

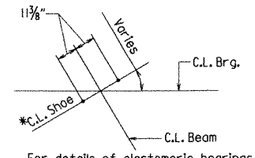
No Scale

NOTE: For "Section X-X", see Dwg. No. 52714.



VIEW W-W

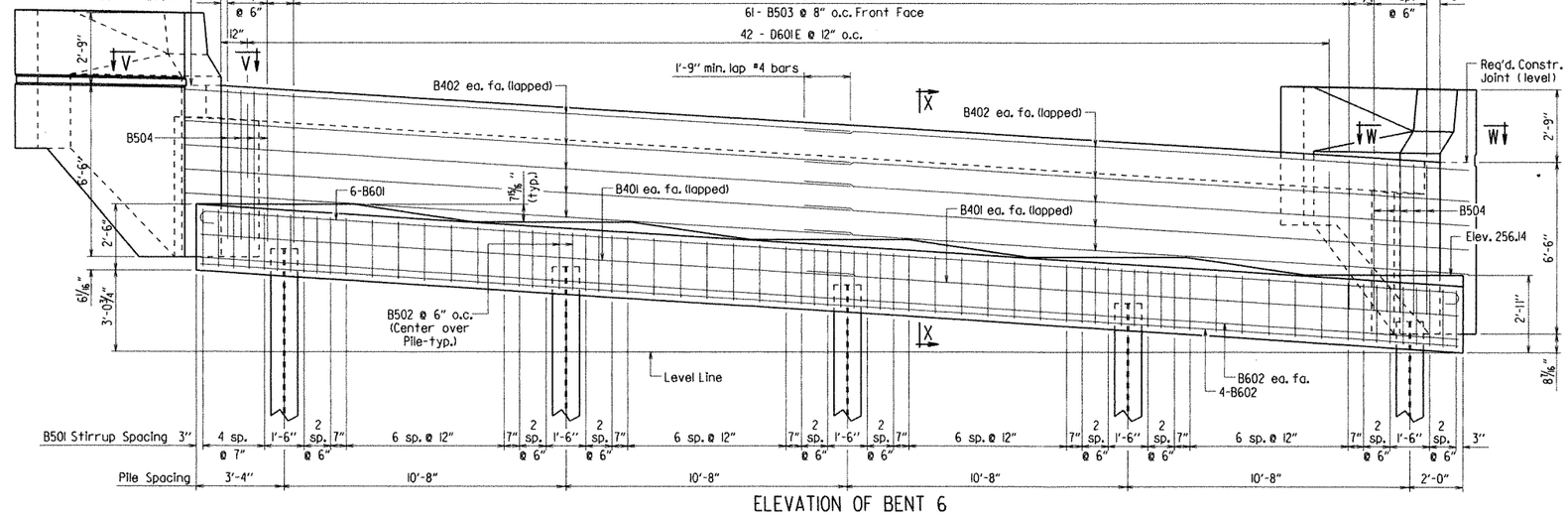
No Scale



For details of elastomeric bearings see Dwg. No. 52722.

TYPICAL ANCHOR BOLT LAYOUT

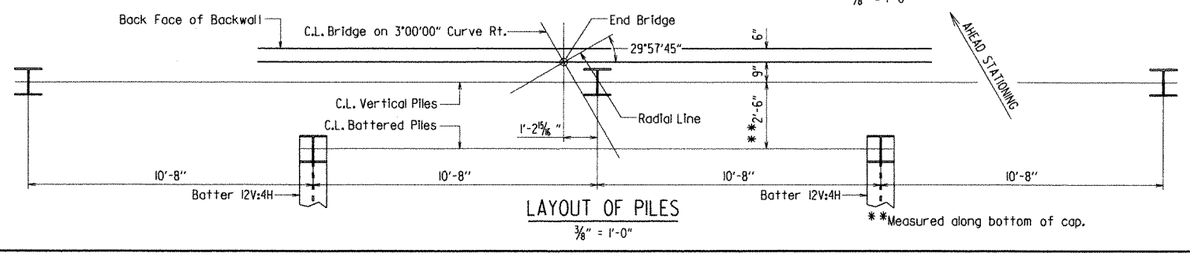
No Scale



ELEVATION OF BENT 6

Looking Ahead

⅜" = 1'-0"



LAYOUT OF PILES

⅜" = 1'-0"

NOTE: The profile of the backwall angle shall be established based on the vertical curve in conjuction with the skew.

GENERAL NOTES

All concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 3,500 psi. Concrete shall be poured in the dry and all exposed corners to be chamfered ¾" unless otherwise noted.

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

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

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

For additional information, see Layout.

STATE OF ARKANSAS
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No. 7510
6/22/12
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SHEET 2 OF 3

DETAILS OF BENTS 1 AND 6

BAYOU DES ARC

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

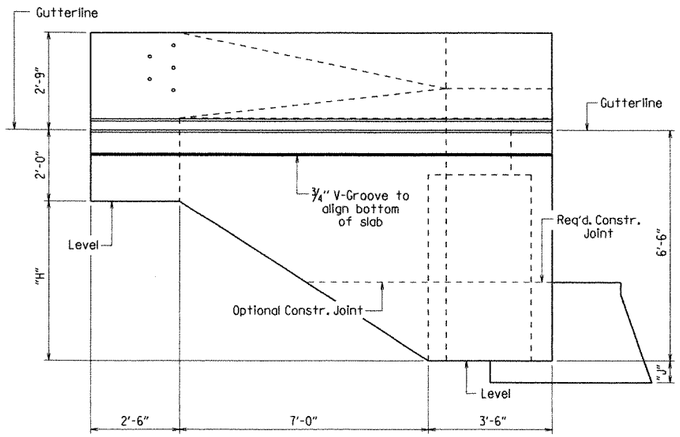
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CHECKED BY: PGT DATE: 5-12 SCALE: as noted

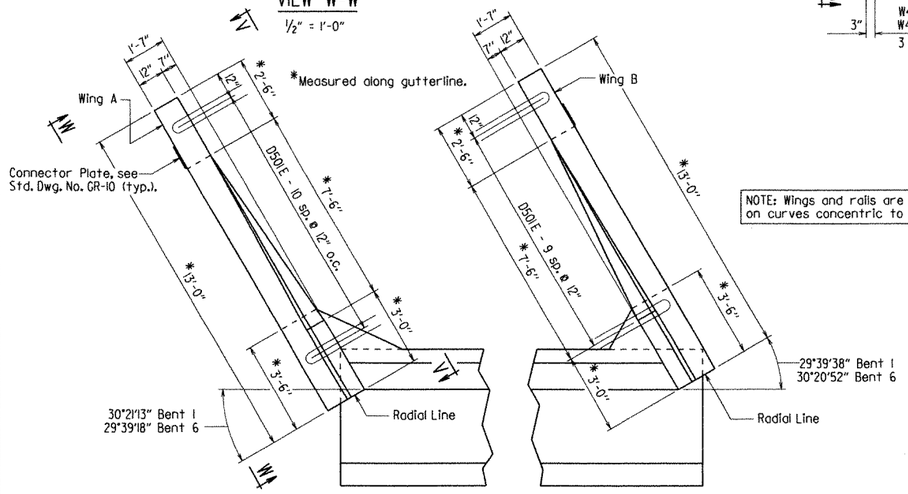
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BRIDGE NO. 07253 DRAWING NO. 52715

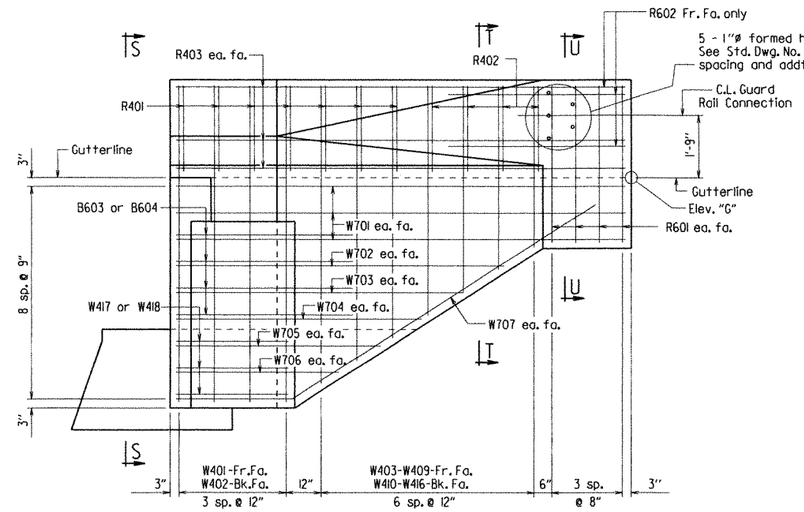
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050189	143	340
				07253		END BENTS		52716



VIEW W-W
½" = 1'-0"

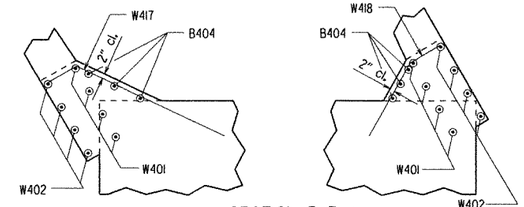


PLAN OF RAILS
⅜" = 1'-0"

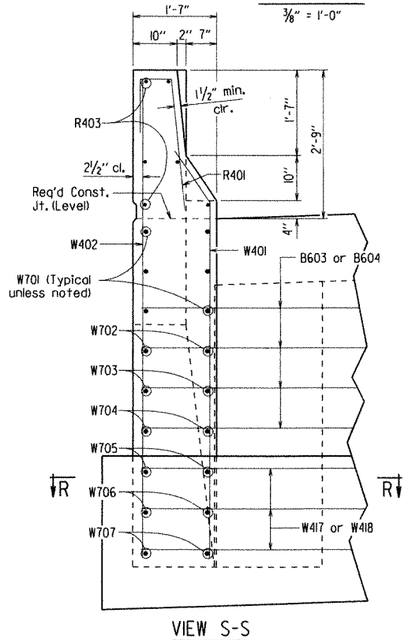


VIEW V-V
½" = 1'-0"

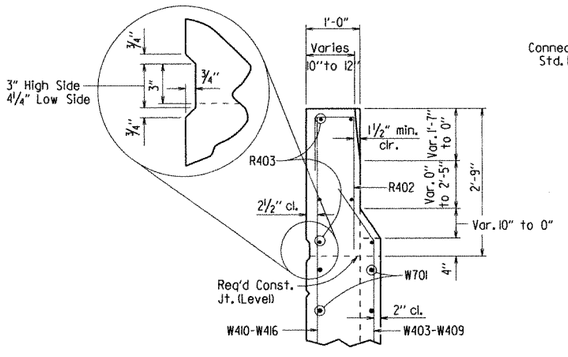
NOTE: Wings and rails are constructed on curves concentric to C.L. Bridge.



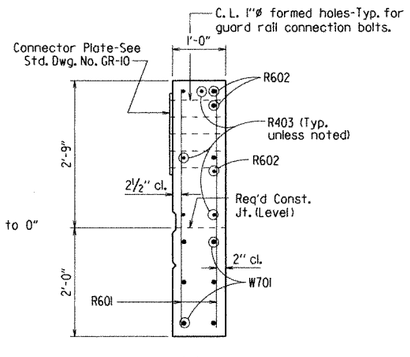
SECTION R-R
⅜" = 1'-0"



VIEW S-S
¾" = 1'-0"



SECTION T-T
¾" = 1'-0"

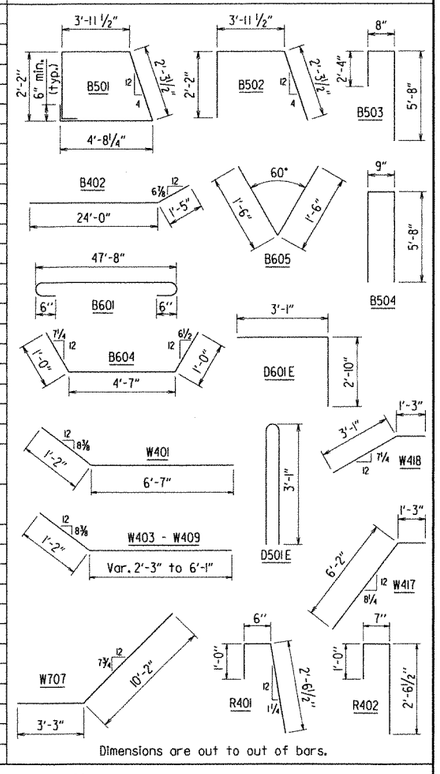


SECTION U-U
¾" = 1'-0"

BAR LIST - PER BENT

MARK	NO. REQ'D.	LENGTH	P.D.
B401	4	24'-9"	Str.
B402	20	25'-4"	2"
B403	41	4'-2"	Str.
B404	6	4'-11"	Str.
B501	60	13'-7"	2½"
B502	10	8'-4"	2½"
B503	61	8'-6"	2½"
B504	9	11'-11"	2½"
B601	6	49'-0"	4½"
B602	6	47'-8"	Str.
B603	4	8'-4"	Str.
B604	4	6'-3"	4½"
B605	10	2'-10"	4½"
R401	14	3'-11"	2"
R402	8	4'-0"	2"
R403	12	12'-8"	Str.
R601	16	4'-5"	Str.
R602	6	5'-0"	Str.
W401	8	7'-9"	2"
W402	8	8'-11"	Str.
W403-W409	2 each	Var. 3'-5" to 7'-3"	2"
W410-W416	2 each	Var. 4'-6" to 8'-4"	Str.
W417	3	7'-4"	2"
W418	3	4'-4"	2"
W701	12	12'-8"	Str.
W702	4	9'-3"	Str.
W703	4	8'-1"	Str.
W704	4	6'-11"	Str.
W705	4	5'-9"	Str.
W706	4	4'-7"	Str.
W707	4	13'-3"	5¼"
D501E	21	6'-4"	3¾"
D601E	42	5'-9"	4½"

BENDING DIAGRAMS

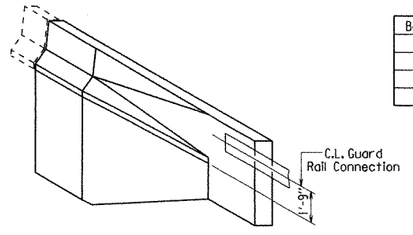


Dimensions are out to out of bars.

NOTE: Bars designated with an "E" suffix shall be epoxy coated.

TABLE OF VARIABLES

Bent No.	Wing	Elev. G	H	J
1	A	261.34	4'-7 11/16"	7 5/8"
1	B	263.78	4'-7 5/16"	5 11/16"
6	A	263.40	4'-7 5/16"	6 1/16"
6	B	260.52	4'-7 3/16"	8 1/16"



THREE DIMENSIONAL VIEW OF RAIL
No Scale

STATE OF ARKANSAS
Carl J. Fuselier
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No. 7510
CARL J. FUSELIER

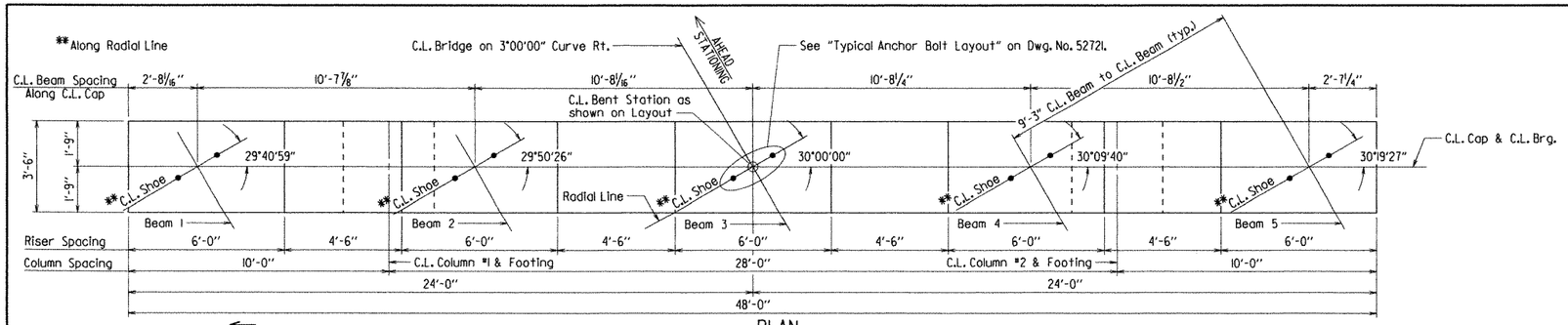
BRIDGE ENGINEER

SHEET 3 OF 3
DETAILS OF BENTS 1 AND 6
BAYOU DES ARC
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

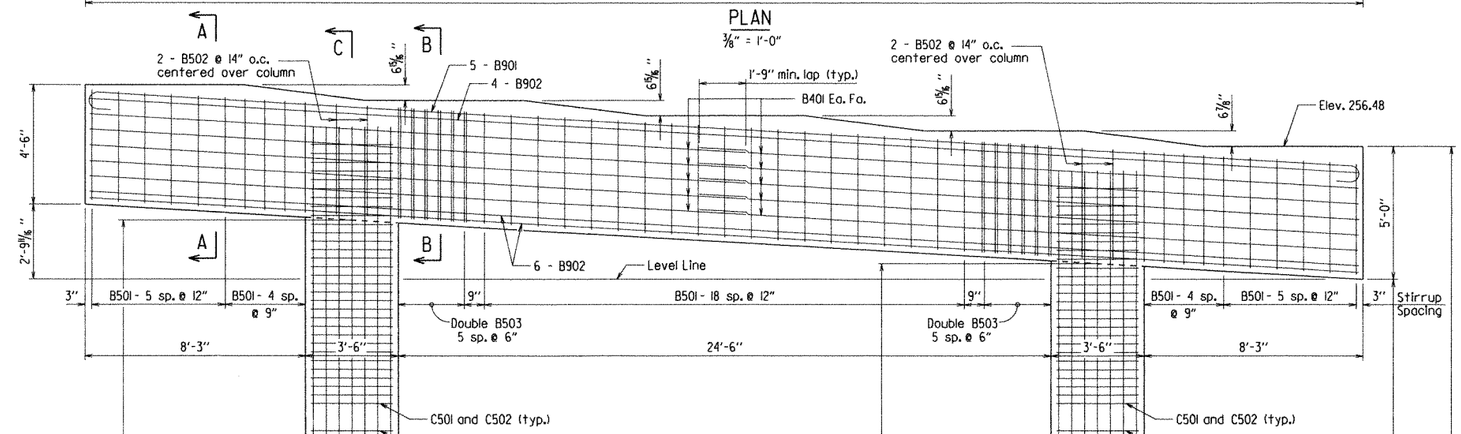
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CHECKED BY: PGT DATE: 5-12 SCALE: as noted
DESIGNED BY: KWY DATE: 5/12

BRIDGE NO. 07253 DRAWING NO. 52716

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.		050189	144.340	
				① 07253		BENT 2		52717



PLAN
3/8" = 1'-0"

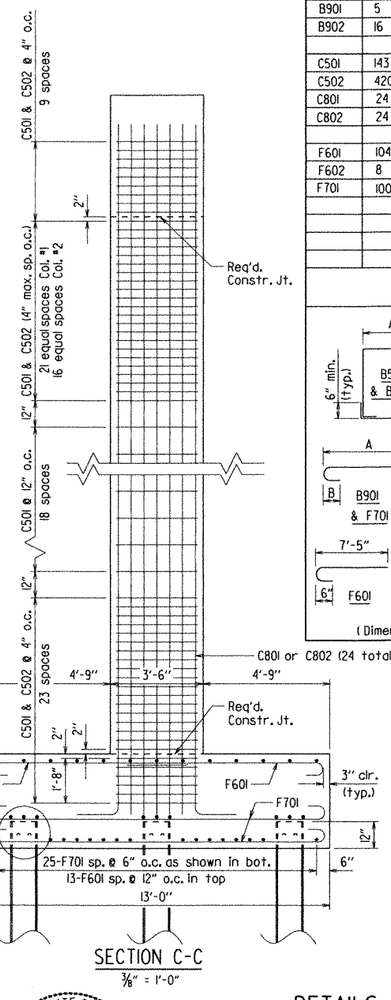


***Reinforcing shall rest on top of piles.

*Measured along C.L. of column

Elev. 217.48 (typ.)

ELEVATION
3/8" = 1'-0"

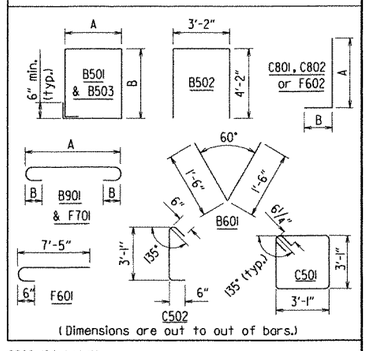


SECTION C-C
3/8" = 1'-0"

BAR LIST

Mark	No. Req'd.	Length	A	B	Pin Dia.
B401	20	24'-10"			Str.
B501	39	15-2"	3'-2"	4'-2"	2 1/2"
B502	4	11'-4"			2 1/2"
B503	24	12'-10"	2'-0"	4'-2"	2 1/2"
B601	36	2'-10"			4 1/2"
B901	5	50'-2"	47'-8"	10"	9"
B902	16	47'-8"			Str.
C501	143	13'-0"			3 3/4"
C502	420	4'-0"			2 1/2"
C801	24	39'-8"	38'-6"	1'-4"	Str.
C802	24	38'-0"	36'-10"	1'-4"	Str.
F601	104	8'-1"			4 1/2"
F602	8	4'-10"	2'-6"	2'-6"	4 1/2"
F701	100	14'-2"	12'-6"	7"	5 1/4"

Bending Diagrams



(Dimensions are out to out of bars.)

STATE OF ARKANSAS
CARL G. FUSELIER
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/22/12

BRIDGE ENGINEER

Note: For "Section A-A", "Section B-B", "Section D-D", "Section E-E", Layout of Footings and General Notes, see Dwg. No. 52721.

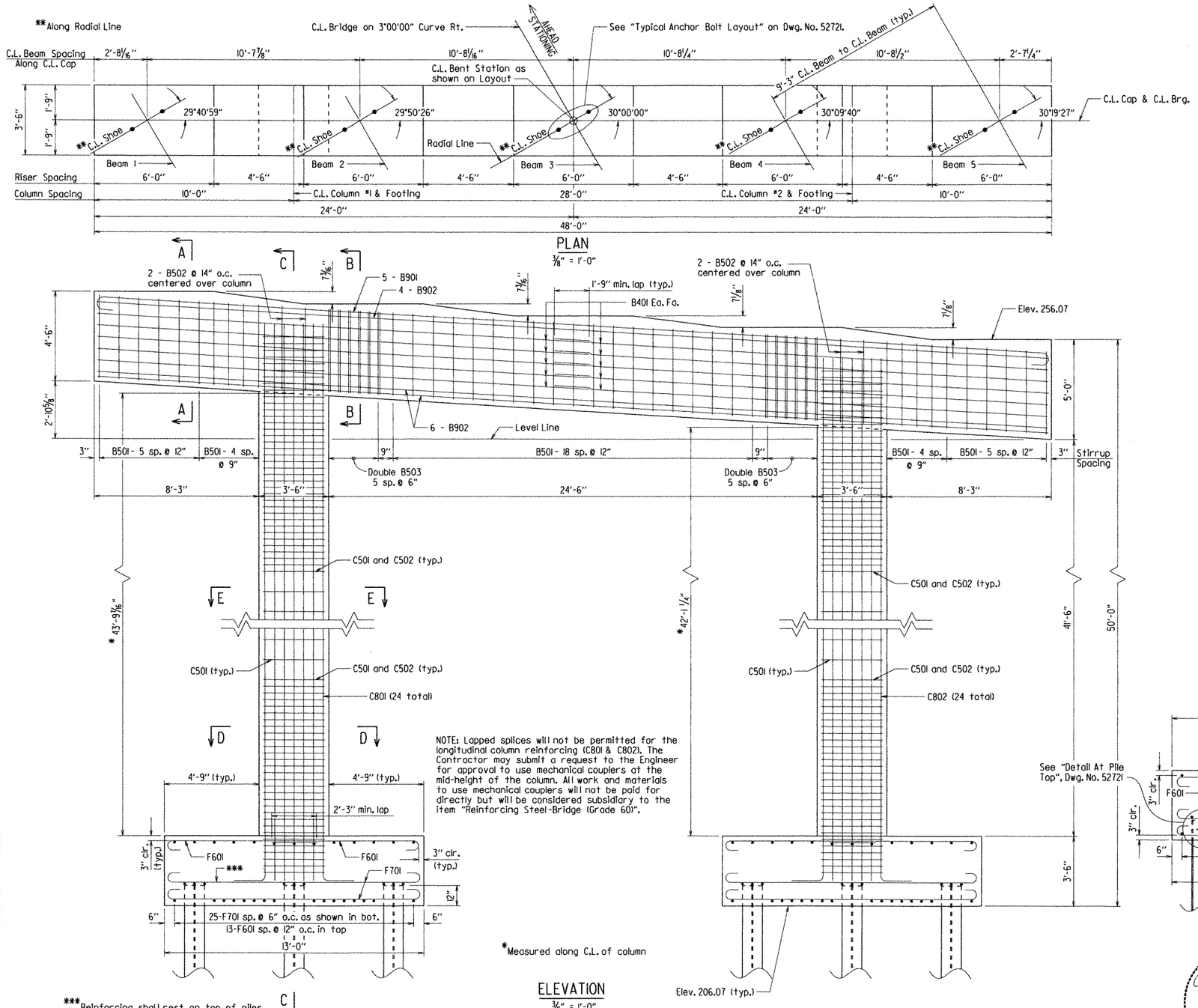
DETAILS OF BENT 2
BAYOU DES ARC
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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DESIGNED BY: KWY DATE: 5/12

BRIDGE NO. 07253 DRAWING NO. 52717

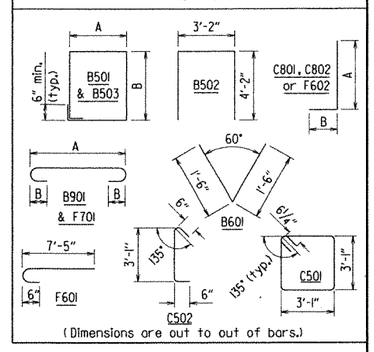
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				6	ARK.			
				JOB NO.		050189	145	340
				07253		BENT 3		52718



BAR LIST

Mark	No. Req'd.	Length	A	B	Pin Dia.
B401	20	24'-10"			Str.
B501	39	15-2"	3'-2"	4'-2"	2½"
B502	4	11'-4"			2½"
B503	24	12'-10"	2'-0"	4'-2"	2½"
B601	36	2'-10"			4½"
B901	5	50'-3"	47'-9"	10"	9"
B902	16	47'-9"			Str.
C501	181	13'-0"			3¾"
C502	516	4'-0"			2½"
C801	24	50'-9"	49'-7"	1'-4"	Str.
C802	24	49'-1"	47'-11"	1'-4"	Str.
F601	104	8'-1"			4½"
F602	8	4'-10"	2'-6"	2'-6"	4½"
F701	100	14'-2"	12'-6"	7"	5¼"

Bending Diagrams



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7310
12/28/12
CARL J. FUSELIER
BRIDGE ENGINEER

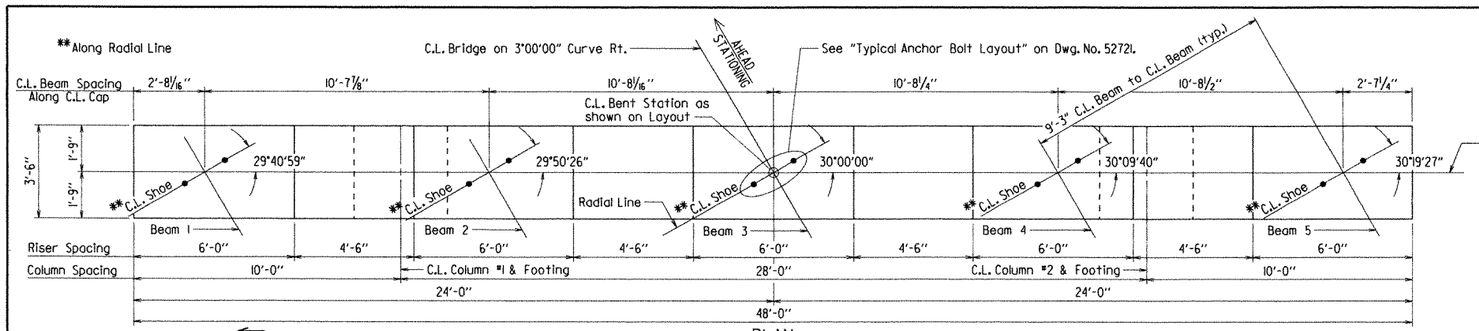
DETAILS OF BENT 3
BAYOU DES ARC
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: PGT DATE: 5-12 SCALE: As Shown
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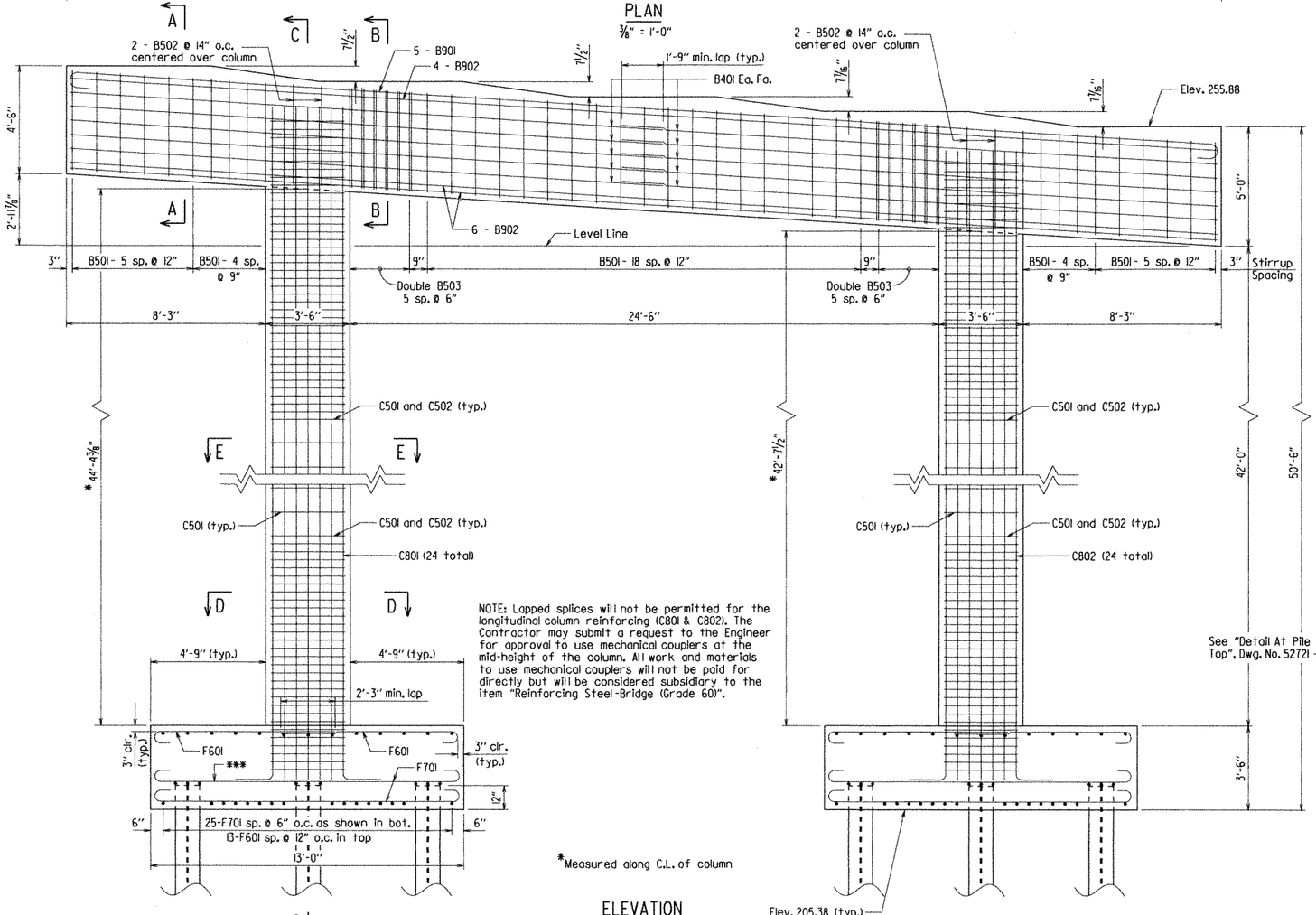
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				6	ARK.			
				JOB NO.		050189	146	340
				07253		BENT 4		52719



PLAN

3/8" = 1'-0"



***Reinforcing shall rest on top of piles.

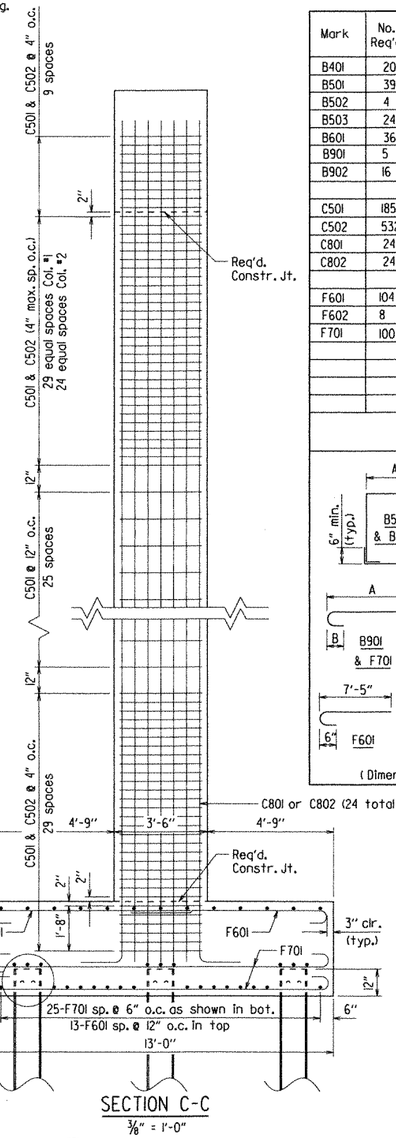
*Measured along C.L. of column

ELEVATION

3/8" = 1'-0"

NOTE: Lapped splices will not be permitted for the longitudinal column reinforcing (C801 & C802). The Contractor may submit a request to the Engineer for approval to use mechanical couplers at the mid-height of the column. All work and materials to use mechanical couplers will not be paid for directly but will be considered subsidiary to the item "Reinforcing Steel-Bridge (Grade 60)".

Note: For "Section A-A", "Section B-B", "Section D-D", "Section E-E", Layout of Footings and General Notes, see Dwg. No. 52721.



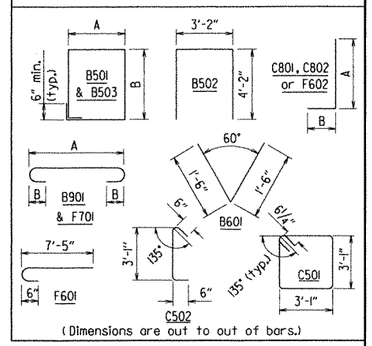
SECTION C-C

3/8" = 1'-0"

BAR LIST

Mark	No. Req'd.	Length	A	B	Pin Dia.
B401	20	24'-10"			Str.
B501	39	15-2"	3'-2"	4'-2"	2 1/2"
B502	4	11'-4"			2 1/2"
B503	24	12'-10"	2'-0"	4'-2"	2 1/2"
B601	36	2'-10"			4 1/2"
B901	5	50'-3"	47'-9"	10"	9"
B902	16	47'-9"			Str.
C501	185	13'-0"			3 3/4"
C502	532	4'-0"			2 1/2"
C801	24	51'-3"	50'-1"	1'-4"	Str.
C802	24	49'-7"	48'-5"	1'-4"	Str.
F601	104	8'-1"			4 1/2"
F602	8	4'-10"	2'-6"	2'-6"	4 1/2"
F701	100	14'-2"	12'-6"	7"	5 1/4"

Bending Diagrams



(Dimensions are out to out of bars.)

STATE OF ARKANSAS
Carl J. Puseliер
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12-21-11
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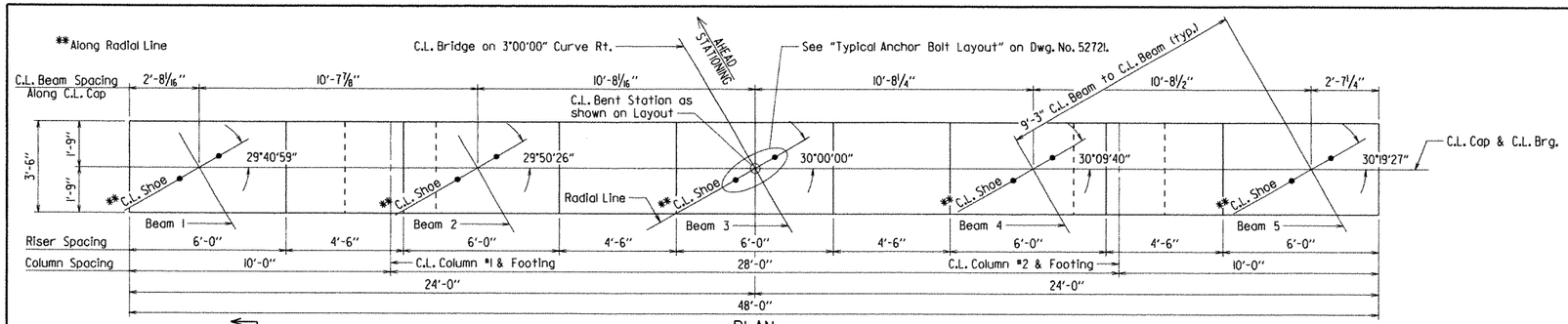
DETAILS OF BENT 4
BAYOU DES ARC
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: GT DATE: 5-12 SCALE: As Shown
DESIGNED BY: KWY DATE: 3/12

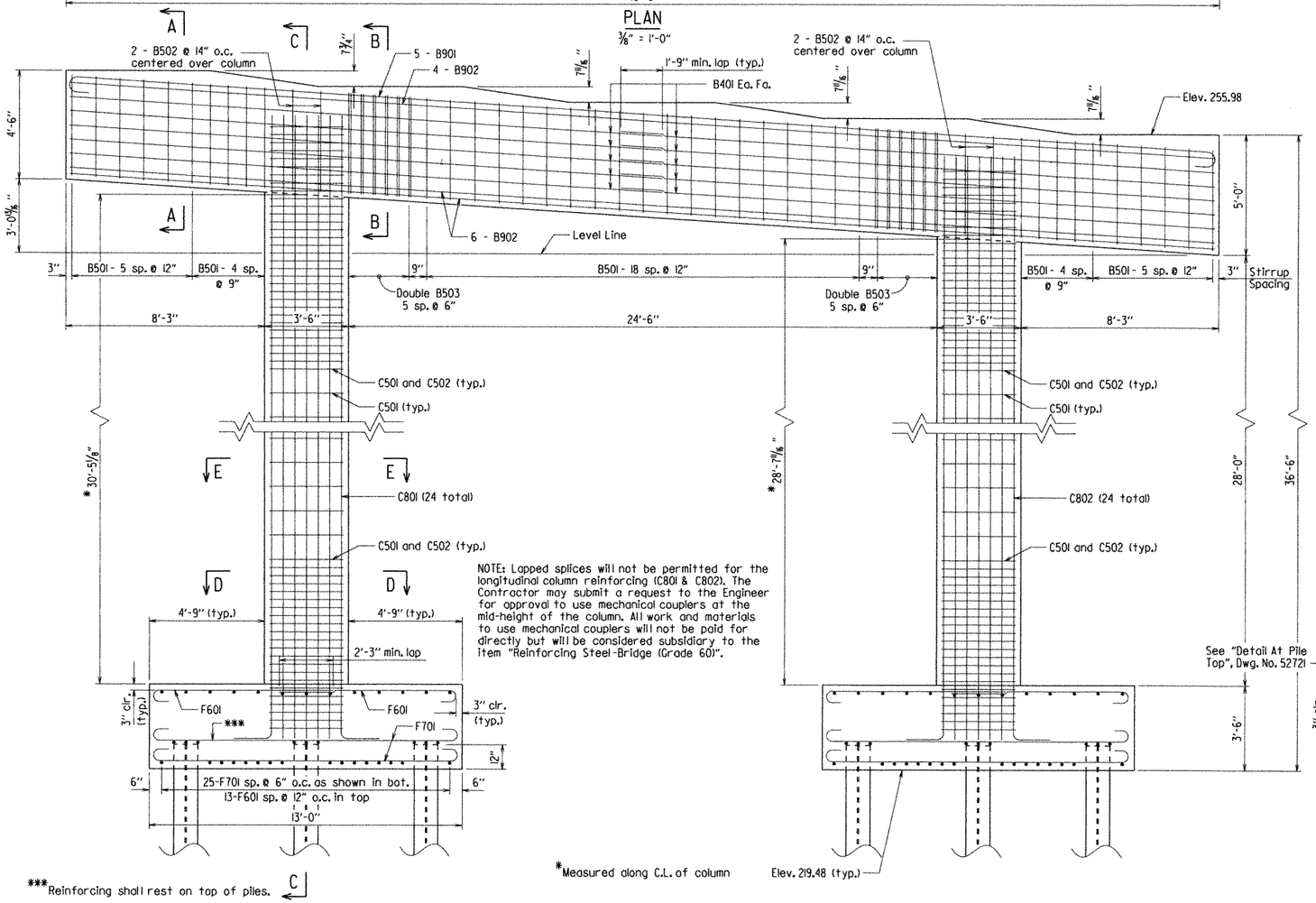
BRIDGE NO. 07253 DRAWING NO. 52719

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.		050189	147	340
				07253		BENT 5		52720



PLAN

3/8" = 1'-0"



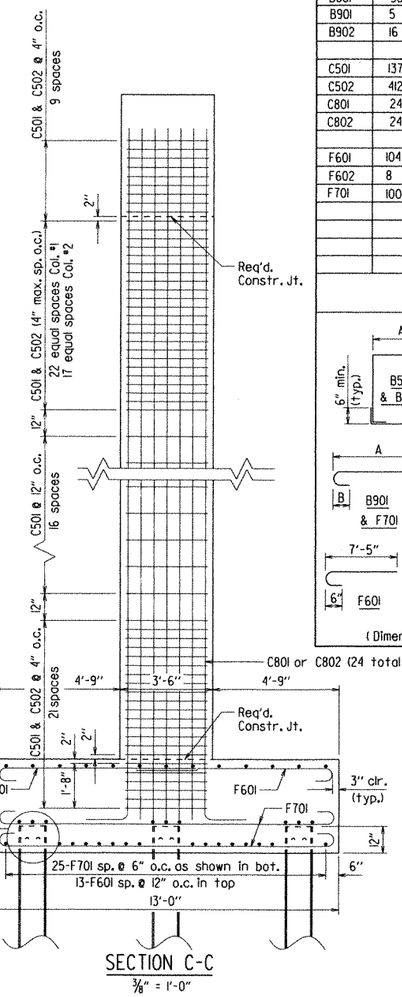
NOTE: Lapped splices will not be permitted for the longitudinal column reinforcing (C801 & C802). The Contractor may submit a request to the Engineer for approval to use mechanical couplers at the mid-height of the column. All work and materials to use mechanical couplers will not be paid for directly but will be considered subsidiary to the item "Reinforcing Steel-Bridge (Grade 60)".

***Reinforcing shall rest on top of piles.

*Measured along C.L. of column

ELEVATION

3/8" = 1'-0"



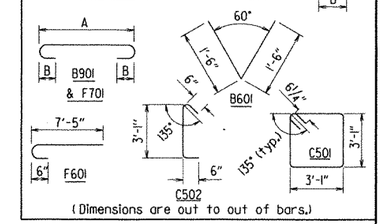
SECTION C-C

3/8" = 1'-0"

BAR LIST

Mark	No. Req'd.	Length	A	B	Pin Dia.
B401	20	24'-10"			Str.
B501	39	15-2"	3'-2"	4'-2"	2 1/2"
B502	4	11'-4"			2 1/2"
B503	24	12'-10"	2'-0"	4'-2"	2 1/2"
B601	36	2'-10"			4 1/2"
B901	5	50'-3"	47'-9"	10"	9"
B902	16	47'-9"			Str.
C501	137	13'-0"			3 3/4"
C502	412	4'-0"			2 1/2"
C801	24	37'-5"	36'-3"	1'-4"	Str.
C802	24	35'-7"	34'-5"	1'-4"	Str.
F601	104	8'-1"			4 1/2"
F602	8	4'-10"	2'-6"	2'-6"	4 1/2"
F701	100	14'-2"	12'-6"	7"	5 1/4"

Bending Diagrams



(Dimensions are out to out of bars.)

Note: For "Section A-A", "Section B-B", "Section D-D", "Section E-E", Layout of Footings and General Notes, see Dwg. No. 52721.

STATE OF ARKANSAS
Carl J. Fuselier
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No. 7510
CARL J. FUSELIER

BRIDGE ENGINEER

DETAILS OF BENT 5
BAYOU DES ARC
ROUTE SEC.

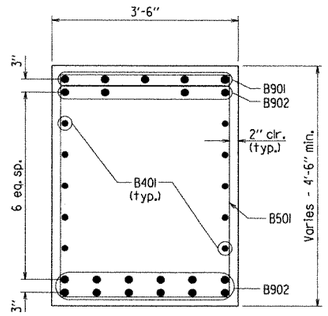
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

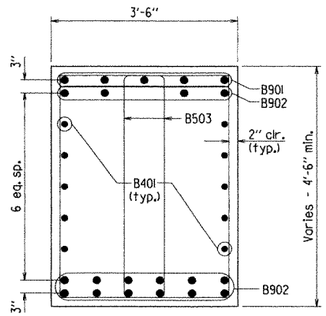
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CHECKED BY: PGT DATE: 5-12 SCALE: As Shown
DESIGNED BY: KWY DATE: 3/12

BRIDGE NO. 07253 DRAWING NO. 52720

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.		050189	148	340
				(1) 07253		INT BENTS		52721

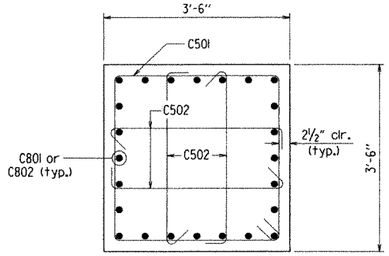


SECTION A-A
3/4" = 1'-0"

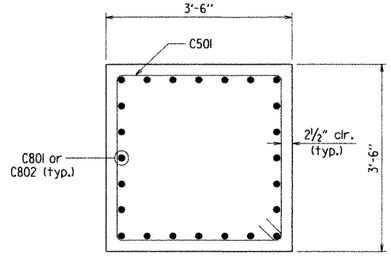


SECTION B-B
3/4" = 1'-0"

NOTE: The 135° hooks of consecutive C502 cross-ties engaging the same longitudinal bars shall be alternated end-for-end.



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



SECTION E-E
3/4" = 1'-0"

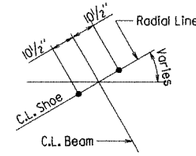
GENERAL NOTES

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 to be chamfered ¾" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M53, Grade 60.

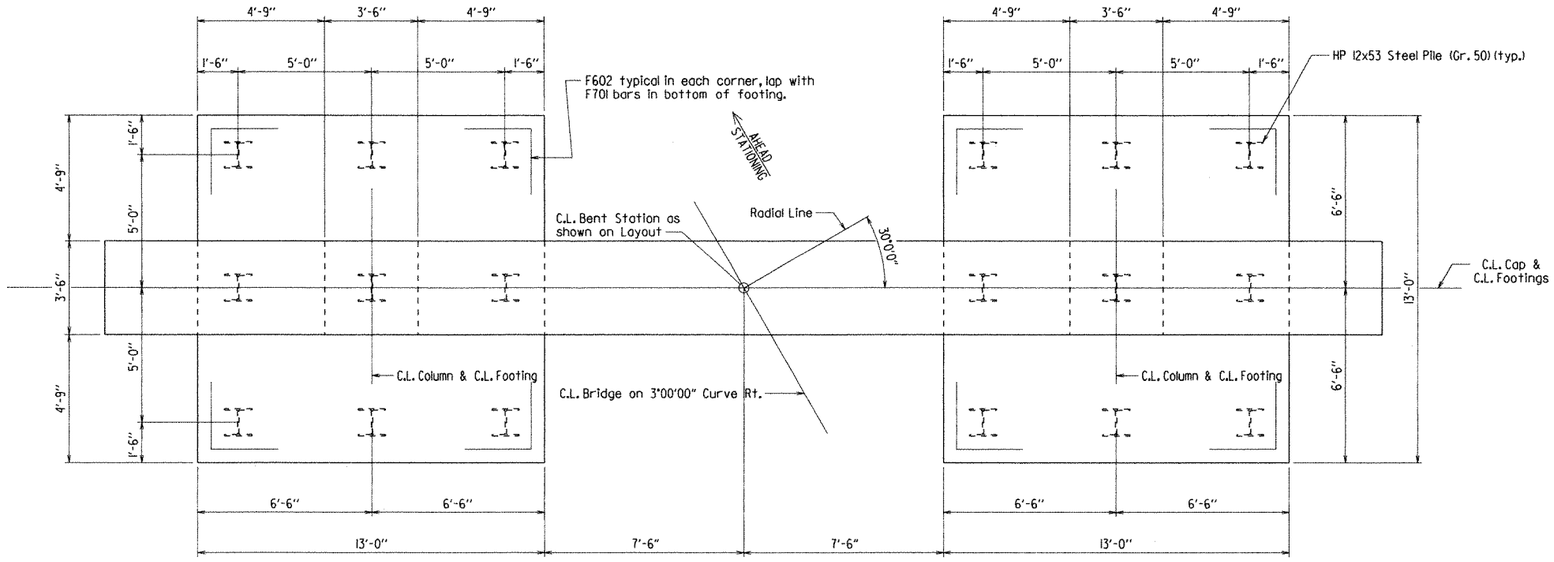
If anchor bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

For additional information, see Layout.

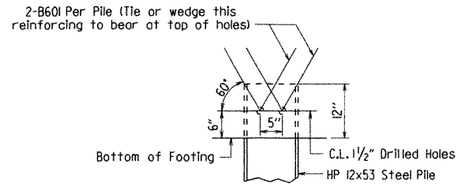


For details of elastomeric bearings see Dwg. No. 52722.

TYPICAL ANCHOR BOLT LAYOUT
3/8" = 1'-0"



LAYOUT OF FOOTINGS
3/8" = 1'-0"



DETAIL AT PILE TOP
No Scale

NOTE: Drilled holes will not be paid for directly but shall be considered incidental to the item "Steel Piling (HP12x53)".

STATE OF ARKANSAS
Carl J. Fuselier
No. 7510
REGISTERED PROFESSIONAL ENGINEER
CARL J. FUSELIER
6/22/12

BRIDGE ENGINEER

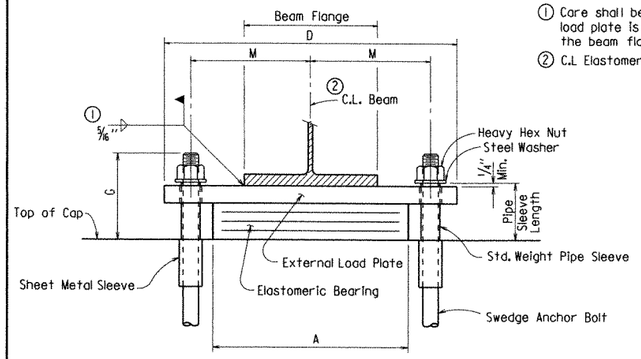
DETAILS COMMON TO INTERIOR BENTS
BAYOU DES ARC
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ACP DATE: 04-16-12 FILENAME: b050189_b2.dgn
CHECKED BY: PGT DATE: 5-12 SCALE: As Shown
DESIGNED BY: KWY DATE: 5/12
BRIDGE NO. 07253 DRAWING NO. 52721

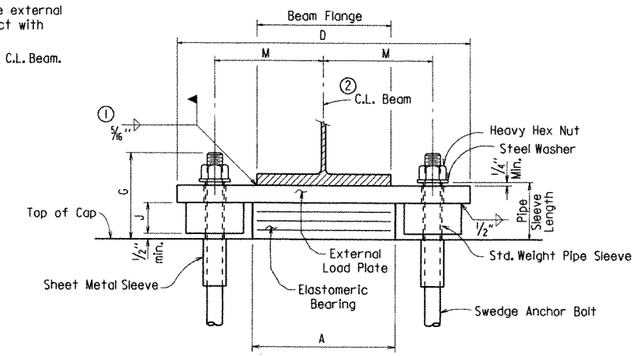
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050189		149 340
				①	07253	ELASTOMERIC BEARINGS		52722

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

② C.L Elastomeric pad shall be aligned with C.L. Beam.

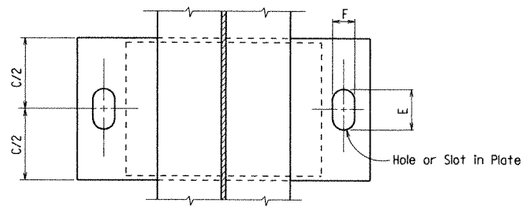


FRONT VIEW AT BENTS 2-5

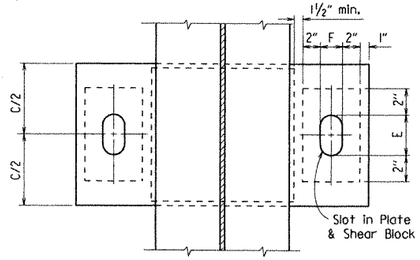


FRONT VIEW AT BENTS 1 & 6

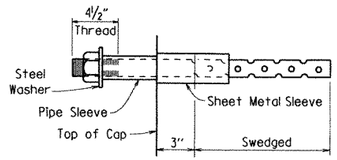
Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the beam will be allowed only when: 1) the approximate average air temperature during the 24 hour period immediately preceding welding is between 40° F and 80° F; and 2) the slots in the external load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



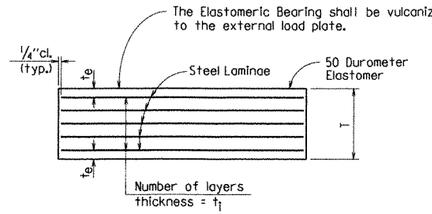
PLAN VIEW AT BENTS 2-5



PLAN VIEW AT BENTS 1 & 6



ANCHOR BOLT DETAIL



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

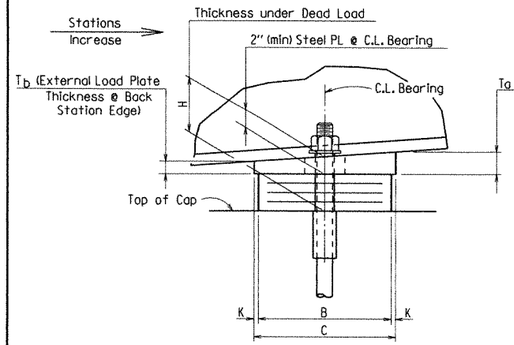
t_1 = thickness of elastomer between steel laminae

N = number of elastomer layers of thickness t_1

ELASTOMERIC BEARING

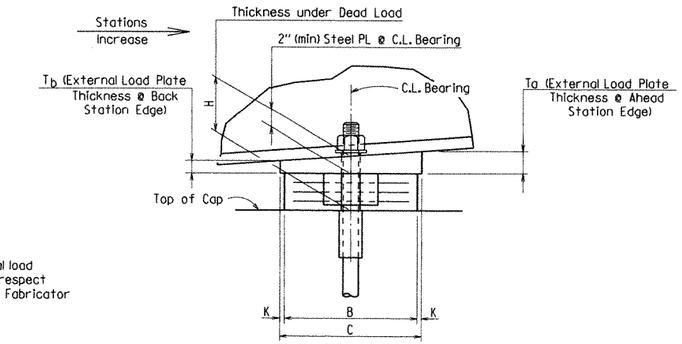
NOTE: Anchor Bolts may be cast in place or drilled and grouted into place. If Anchor Bolts are to be cast in place, the Galvanized Sheet Metal Sleeves will not be required.

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 OPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized Sheet Metal Sleeves will not be paid for directly, but will be considered subsidiary to the item "Structural Steel in Beam Spans (M 270, Gr. 50W)".



SIDE VIEW AT BENTS 2-5

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



SIDE VIEW AT BENTS 1 & 6

GENERAL NOTES

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

External load plates and shear blocks shall conform to AASHTO M 270, Grade 50W. Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or AASHTO M 298, Class 50.

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

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

TABLE OF FABRICATOR VARIABLES

* Maximum Design Load = Service I Limit State

BRIDGE NO.	LOCATION: BENT NO(S).	LOCATION: BEAM OR GIRDER NO.	BEARING TYPE	NO. of BEARINGS EACH BENT	*MAXIMUM DESIGN LOAD (KIPS)	G	H	ELASTOMERIC PAD: A	B	N	t_i	t_e	NO. & THICKNESS OF STEEL LAMINAE	T	EXTERNAL LOAD PLATE: C	D	E	F	J	K	M	T_a	T_b	ANCHOR BOLT: ANCHOR BOLT (ø x L)	GRADE	PIPE SLEEVE SIZE (ø x L)	SHEET METAL SLEEVE SIZE (ø x L)	STEEL WASHER SIZE (O.D.)
07253	1	All	Exp	5	108	9 3/8"	5 5/8"	12"	9"	5	1/2"	1/4"	6 @ 12ga.	3 5/8"	11"	32 1/2"	6 5/16"	3 3/4"	3"	1"	11 3/8"	1.95"	2.05"	2 1/2"x36"	55	3"x5 5/8"	4"x8"	4 1/2"
	2	All	Exp	5	214	7 5/8"	3 13/16"	15"	13"	2	1/2"	1/4"	3 @ 12ga.	1 13/16"	14"	28"	5 7/16"	3 3/4"	-	1/2"	10 1/2"	1.95"	2.05"	2 1/2"x36"	55	3"x4 1/8"	4"x10"	4 1/2"
	3	All	Fix	5	225	7 5/8"	3 13/16"	15"	13"	2	1/2"	1/4"	3 @ 12ga.	1 13/16"	14"	28"	3 3/4"	3 3/4"	-	1/2"	10 1/2"	1.97"	2.03"	2 1/2"x36"	55	3"x4 1/8"	4"x10"	4 1/2"
	4	All	Fix	5	225	7 5/8"	3 13/16"	15"	13"	2	1/2"	1/4"	3 @ 12ga.	1 13/16"	14"	28"	3 3/4"	3 3/4"	-	1/2"	10 1/2"	2.00"	2.00"	2 1/2"x36"	55	3"x4 1/8"	4"x10"	4 1/2"
	5	All	Exp	5	214	7 5/8"	3 13/16"	15"	13"	2	1/2"	1/4"	3 @ 12ga.	1 13/16"	14"	28"	5 7/16"	3 3/4"	-	1/2"	10 1/2"	2.03"	1.97"	2 1/2"x36"	55	3"x4 1/8"	4"x10"	4 1/2"
	6	All	Exp	5	108	9 3/8"	5 5/8"	12"	9"	5	1/2"	1/4"	6 @ 12ga.	3 5/8"	11"	32 1/2"	6 5/16"	3 3/4"	3"	1"	11 3/8"	2.04"	1.96"	2 1/2"x36"	55	3"x5 5/8"	4"x8"	4 1/2"

STATE OF ARKANSAS
Carl Gilbert Fusselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL GILBERT FUSSELIER
BRIDGE ENGINEER

DETAILS OF ELASTOMERIC BEARINGS BAYOU DES ARC

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: ACP DATE: 04-25-12 FILENAME: b050189_el.dgn

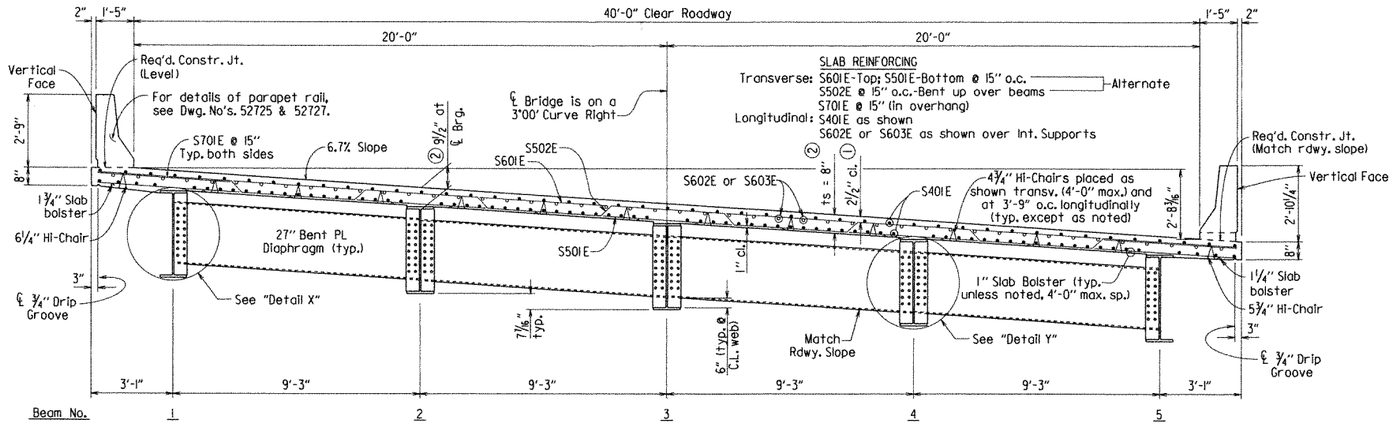
CHECKED BY: KWY DATE: 6/20/12 SCALE: None

DESIGNED BY: ACP DATE: 4-12

BRIDGE NO. 07253 DRAWING NO. 52722

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

NOTE: At the Contractor's option, two straight epoxy coated #5 bars may be substituted for bar S502E. Payment for reinforcing will be based on the weight of bar S502E.



TYPICAL ROADWAY SECTION

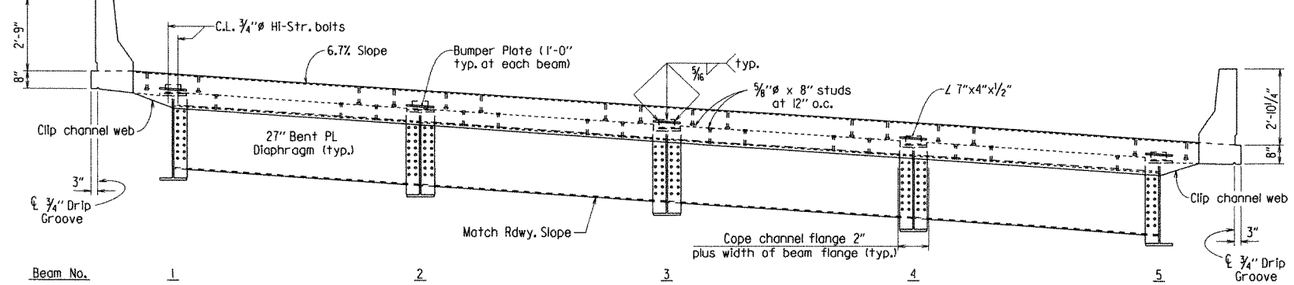
Looking Ahead
Scale: ⅜" = 1'-0"

① Tolerance: Minus = ¼"
Plus = Equal to amount of slab thickening used to meet slab thickness tolerance-
See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE"

② See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE"

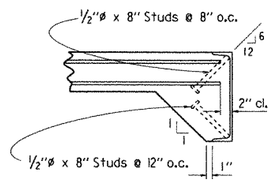
Expansion Device:
Rdwy. Channel - C15x33.9
Conn. ∠'s 7"x4"x ½"
Detail Device ⅛" high & provide ¼" shims using 2- 7/16" & 1- ⅛" PLs

For details of Poured Silicone Joint, see Dwg. No. 52728.



SECTION THRU JOINT

Looking Ahead
Scale: ⅜" = 1'-0"



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

DETAILS OF ALTERNATE ANCHORS AND PLACEMENT OF LONGITUDINAL REINFORCEMENT

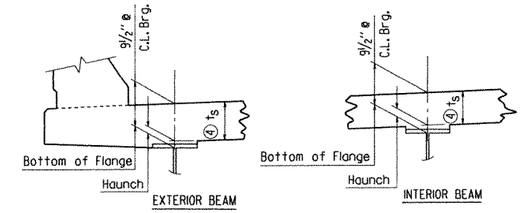
NTS

TABLE FOR WELD

Material Thickness of Thicker Part Joined (Inches)	Minimum Size of Fillet Weld (Inches)	Single Pass Weld Must Be Used
To ¾" Inclusive	¼"	
Over ¾"	⅝"	

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.

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.		050189	150	340
				① 07253		CONT. UNIT 52723		



t_s = slab thickness as shown in "Typical Roadway Section"

④ Tolerance when removable deck forming is used is + ½", - ¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

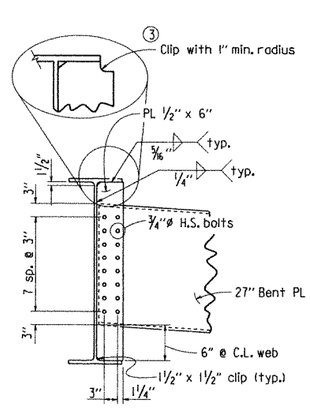
Notes:
Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance : Minimum occurs when top flange contacts bottom reinforcing steel; Maximum = top flange thickness plus 1¾". No increase in concrete and structural steel quantities will be made to maintain tolerances.

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

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

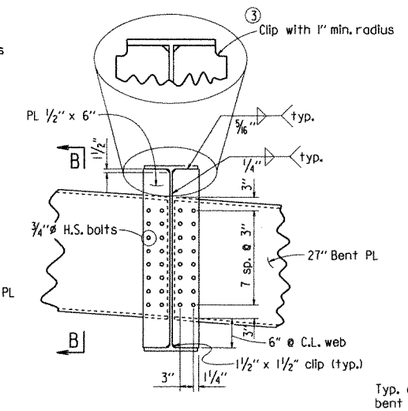
NTS

③ If permanent steel bridge deck forms are used, the Fabricator shall clip plate as necessary to accomodate the deck form supports.



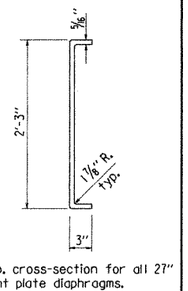
DETAIL X

NTS



DETAIL Y

NTS



Typ. cross-section for all 27" bent plate diaphragms.

SECTION B-B

NTS

Notes: Stop weld ¼" to 1" from end of clip (typ.)

Bolts in connections shall be properly installed and tightened in accordance with subsection 807.71.

STATE OF ARKANSAS
Carl J. Fuselier
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No. 7510
6/22/12
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 1 OF 7

DETAILS OF 315'-0" CONTINUOUS W-BEAM UNIT BAYOU DES ARC

ROUTE SEC.

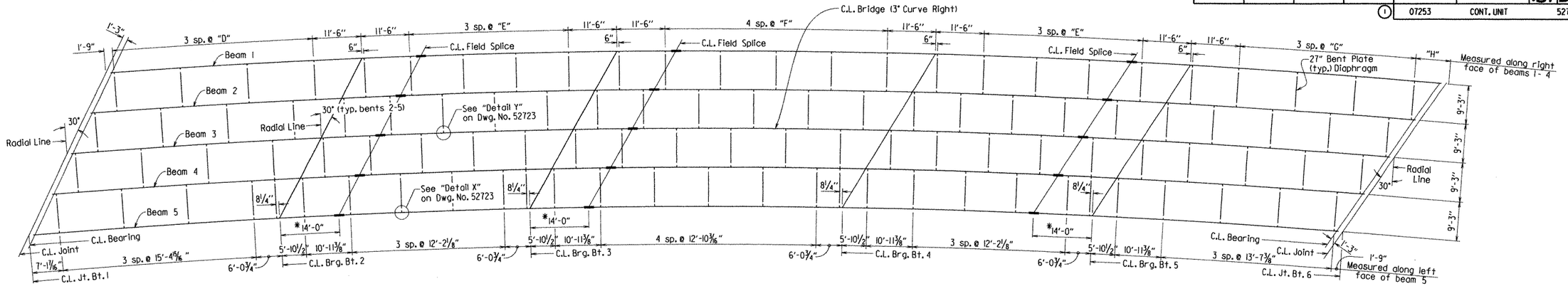
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ACW DATE: 11-01-11 FILENAME: b050189_sl.dgn
CHECKED BY: KWY DATE: 6/20/12 SCALE: As Noted
DESIGNED BY: ACW DATE: 11-11

BRIDGE NO. 07253 DRAWING NO. 52723

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.		050189	151	340
				07253		CONT. UNIT		52724

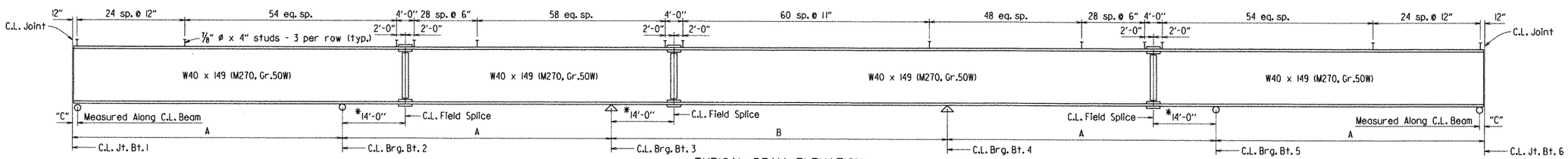
Note: All beams are concentric to C.L. Bridge.
All diaphragms are on radial lines.



FRAMING PLAN

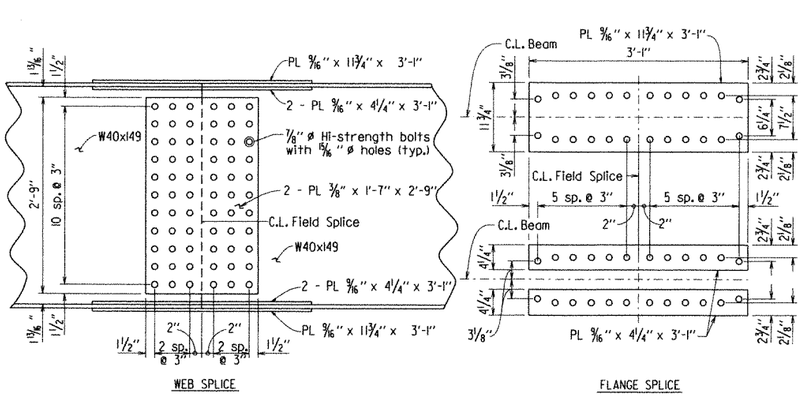
1/16" = 1'-0"

*Measured from C.L. Bent to C.L. Field Splice along each Beam



TYPICAL BEAM ELEVATION

NTS

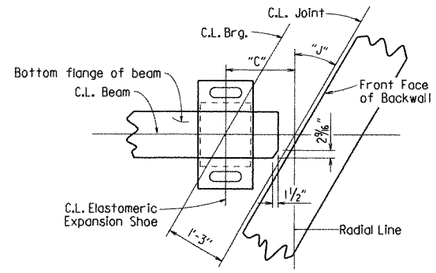


TYPICAL FIELD SPLICE DETAILS

1" = 1'-0"

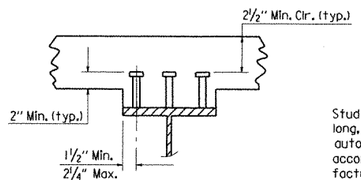
Note: Bolted field splices shown may be eliminated or shop welded splices may be substituted with approval of the Engineer. Payment will be made on the basis of the plan quantities.

All field splice bolts shall be ⅞"ø Hi-str. bolts
All holes for splice bolts shall be 15/16" ø
All field splice plates shall be AASHTO M270 Gr. 50W steel.



PLAN OF BEARING AT END BENTS

NTS



SHEAR CONNECTOR DETAIL

NTS

Stud Shear Connectors shown shall be ⅞"ø x 4" long, granular flux filled, solid fluxed or equal, and automatically end welded to the beam flange in accordance with the recommendations of the Manufacturer. ¾"ø studs may be used in place of the ⅞"ø studs shown, at the ratio of 1.361 - ¾"ø studs in place of one ⅞"ø stud. ⅞"ø studs will be used as basis for measurement of structural steel in shear connectors.

TABLE OF VARIABLES

Beam No.	A	B	C	D	E	F	G	H	J
1	60'-7"	75'-8¾"	1'-5¼"	15'-9⅝"	12'-6⅝"	13'-2⅜"	14'-0⅛"	7'-0¾"	29°40'59"
2	60'-3½"	75'-4⅜"	1'-5⅝"	15'-8⅛"	12'-5⅜"	13'-1⅛"	13'-10⅛"	7'-1⅛"	29°50'27"
3	60'-0"	75'-0"	1'-5⅝"	15'-7"	12'-4"	13'-0"	13'-9½"	7'-1⅜"	30°00'00"
4	59'-8½"	74'-7⅝"	1'-5⅜"	15'-5⅝"	12'-2⅛"	12'-10⅝"	13'-8⅜"	7'-2"	30°09'40"
5	59'-5"	74'-3¼"	1'-5⅜"	-	-	-	-	-	30°19'27"

STATE OF ARKANSAS
Carl B. Fusselier
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No. 7510
CARL FUSSELIER
6/22/12

BRIDGE ENGINEER

SHEET 2 OF 7

DETAILS OF 315'-0" CONTINUOUS W-BEAM UNIT BAYOU DES ARC

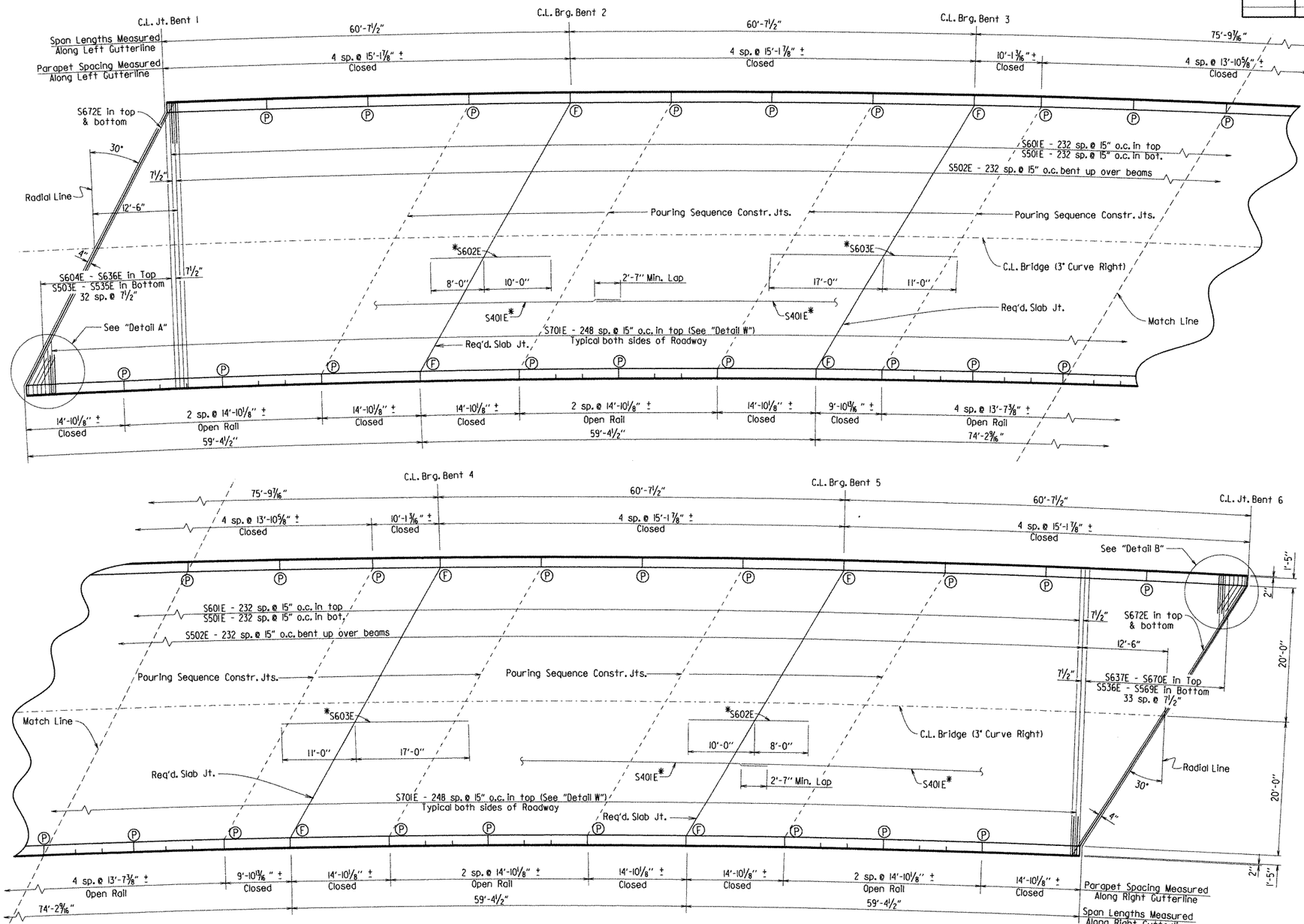
ROUTE SEC.

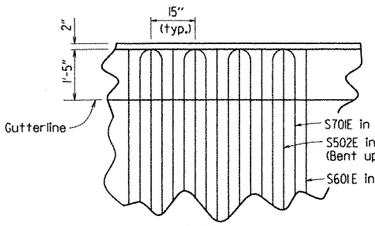
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: ACW DATE: 11-01-11 FILENAME: b050189_sl.dgn
CHECKED BY: KWV DATE: 6/20/12 SCALE: As Noted
DESIGNED BY: ACW DATE: 11-11
BRIDGE NO. 07253 DRAWING NO. 52724

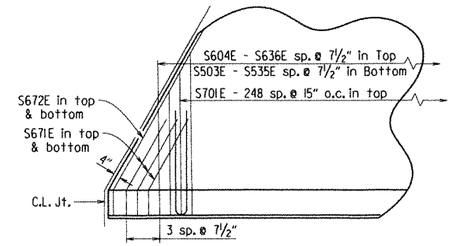
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				6	ARK.			
				JOB NO.		050189	152	340
				07253		CONT. UNIT		52725





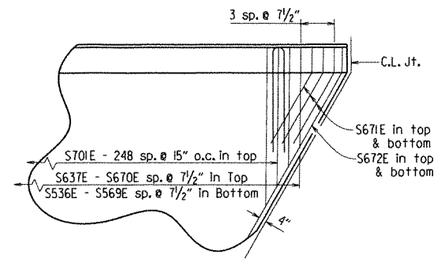
DETAIL W

½" = 1'-0"



DETAIL A

⅜" = 1'-0"



DETAIL B

⅜" = 1'-0"

Notes:

Req'd. slab joints and pouring sequence joints shall align with open joints in parapet rail at the gutterline.

All longitudinal lines and longitudinal reinforcing steel shall be placed on curves concentric with C.L. Bridge.

All transverse reinforcing steel shall be placed on radial lines to C.L. Bridge. Spacing shown is measured along C.L. Bridge.

REINFORCING PLAN

1/12" = 1'-0"

(P) Partial depth parapet joint at this location
(F) Full depth parapet joint at this location

*Placed as shown in "Typical Roadway Section," see Dwg. No. 52723.

Note: See Dwg. No. 52727 for parapet reinforcing details.
See Dwg. No. 52726 for Bar List.

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SHEET 3 OF 7

DETAILS OF 315'-0" CONTINUOUS W-BEAM UNIT BAYOU DES ARC

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: ACW DATE: 11-02-11 FILENAME: b050189_sl.dgn
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DESIGNED BY: ACW DATE: 11-11

BRIDGE NO. 07253 DRAWING NO. 52725

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.		050189	153	340
				① 07253		CONT. UNIT 52726		

GENERAL NOTES

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

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Fifth Edition, with 2010 interim revisions.

MATERIALS AND STRENGTHS:

Class S(AE) Concrete	f'c =	4,000 psi
Reinforcing Steel (AASHTO M31 or M53, Gr. 60)	fy =	60,000 psi
Structural Steel (M 270, Gr. 50W)	Fy =	50,000 psi
Structural Steel (M 270, Gr. 36)	Fy =	36,000 psi

CONCRETE :

Concrete shall be poured in the dry and all exposed corners to be chamfered ¾" 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 measurement of Class S(AE) Concrete. See Standard Drawing No. 1499I 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 beam. A minimum of 72 hours shall elapse between the completion of the slab and the pouring of the railing.

Use of a longitudinal screed is prohibited.

REINFORCING STEEL :

All reinforcing steel shall conform to AASHTO M31 or M53, 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 item "Epoxy Coated Reinforcing Steel (Grade 60)."

STRUCTURAL STEEL :

All structural steel shall be AASHTO M 270, Grade 50W unless otherwise noted and shall be paid for as "Structural Steel in Beam Spans (M 270, Gr. 50W)". Grade 50W steel shall not be painted. All exposed surfaces shall be cleaned in accordance with subsection 807.84(e). Structural steel completely embedded in concrete may be AASHTO M 270, Grade 36 unless otherwise noted.

Drawings show general features of design only. Shop drawings shall be made in accordance with subsection 807.04, submitted and approval secured before fabrication is begun.

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

Beams, field splice plates, diaphragms, and connection plates are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in subsection 807.05. This work and materials will not be paid for directly, but shall be considered subsidiary to the item "Structural Steel in Beam Spans (M270, Gr.50W)".

All beams shall be assembled in the shop as specified in Subsection 807.54 and blocked in their true position. The camber, length of sections, distance between bearings, and openings of joints shall be measured and this information shall become part of the permanent records. The component parts shall be match marked in this assembly and these marks shall be shown on the erection diagram. All beam dimensions are based on a temperature of 60 degrees F. A tolerance of ¼" +/- is allowed for camber.

Flange field splice plates and bent plate diaphragms 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 permanent or temporary, a formal request with detailed drawings shall be submitted to the Engineer for approval; however, additional welds used for attaching falsework support devices or screed rail supports to the structural steel that do not exceed the limitations of subsection 802.13 will not require approval prior to construction. All welding shall conform to subsection 807.26.

Field connections shall be bolted with high-strength bolts and shall be ¾" ø bolts unless otherwise noted. Bolts shall be placed with heads on the outside face of the exterior beam webs and on the bottom of the beam flanges. Holes for ¾" ø high-strength bolts may be ⅞" ø diameter if a washer is supplied for use under both the nut and head of the bolt.

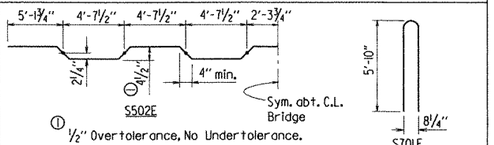
Diaphragms shall be installed as beams are erected. All bolts in diaphragms and field splices shall be installed and tightened in accordance with subsection 807.71 prior to pouring the concrete deck unless otherwise noted.

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.

BAR LIST

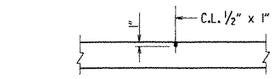
Mark	No. Req'd.	Length	Pin Dia.
S401E	1107	37'-8"	Str.
S501E	233	42'-10"	Str.
S502E	233	43'-6"	3"
S503E - S535E	1 ea.	5'-10" - 40'-8"	Str.
S536E - S569E	1 ea.	5'-7" - 41'-2"	Str.
S601E	233	42'-10"	Str.
S602E	92	18'-0"	Str.
S603E	92	28'-0"	Str.
S604E - S636E	1 ea.	5'-10" - 40'-8"	Str.
S637E - S670E	1 ea.	5'-7" - 41'-2"	Str.
S671E	12	5'-9"	4½"
S672E	4	49'-3"	4½"
S701E	498	11'-11"	6½"
P401E	536	5'-8"	2"
P402E	96	5'-0"	2"
P403E	136	5'-7"	Str.
P404E	14	9'-6"	Str.
P405E	14	9'-9"	Str.
P406E	28	13'-3"	Str.
P407E	28	13'-6"	Str.
P408E	112	14'-6"	Str.
P409E	112	14'-9"	Str.
P410E	650	5'-6"	2"
P501E	1186	4'-8"	3¾"

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



① ½" Overtolerance, No Undertolerance.

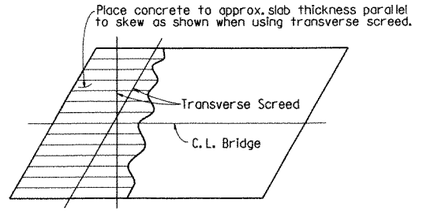
Note: All bars designated with an "E" are to be epoxy coated.



Use Type 3, 4 or 6 Joint Sealer. See subsections 501.02(h) and 501.05(j). Backer rod filler will not be required. Joint Sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. Slab Joints shall extend to the outside edge of the deck slab and shall align with open joints at the front face of the parapet. 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 damaging 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

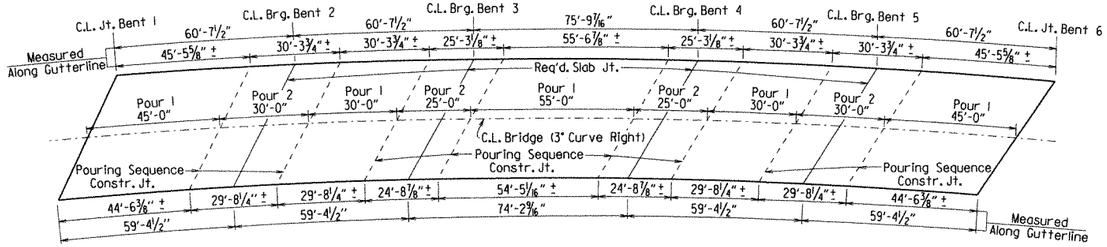
NTS



Note: At the Contractor's option, the transverse screed may be placed parallel to the skew or perpendicular to C.L. Bridge.

CONCRETE PLACEMENT PROCEDURE

NTS



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

SLAB POURING SEQUENCE

1/16" = 1'-0"

Note:
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.

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SHEET 4 OF 7

DETAILS OF 315'-0" CONTINUOUS W-BEAM UNIT BAYOU DES ARC

ROUTE SEC.

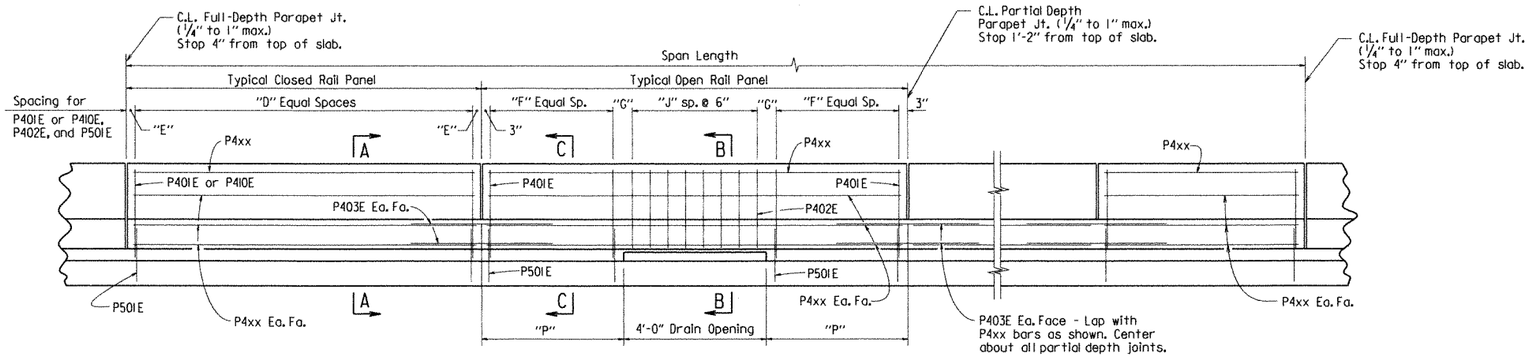
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LITTLE ROCK, ARK.

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CHECKED BY: KWY DATE: 6/20/12 SCALE: As Noted
DESIGNED BY: ACW DATE: 11-11

BRIDGE NO. 07253 DRAWING NO. 52726

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.		050189	154	340
				1	07253	CONT. UNIT		52727



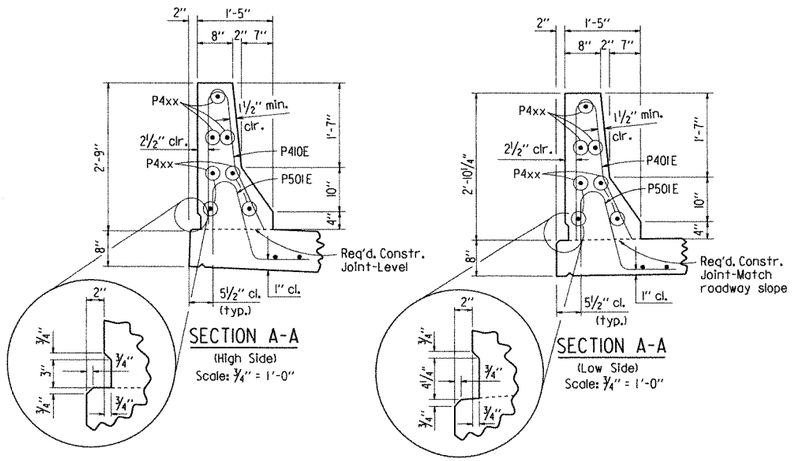
ELEVATION - CONCRETE PARAPET RAIL

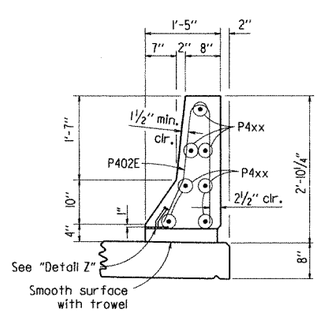
Scale: 1/2" = 1'-0"

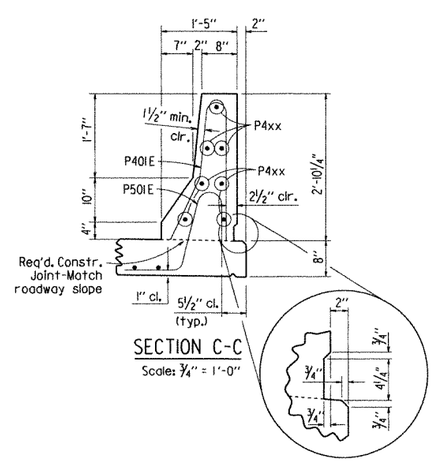
Note:
For location of full and partial depth parapet joints, See Dwg. No. 52725.

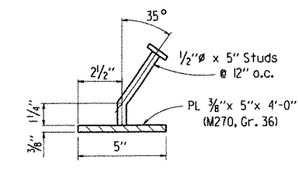
TABLE OF VARIABLES

Closed Rail Panels				Open Rail Panels					
Panel Length	"D"	"E"	P4xx Bar	Panel Length	"F"	"G"	"J"	"P"	P4xx Bar
9'-10 11/16" ±	19	3"	P404E	13'-7 3/8" ±	9	6"	7	4'-9 11/16" ±	P406E
10'-1 3/16" ±	20	3"	P405E	14'-10 1/8" ±	10	6"	7	5'-5 1/16" ±	P408E
13'-10 5/8" ±	27	3"	P407E						
14'-10 1/8" ±	29	3"	P408E						
15'-1 3/8" ±	30	3"	P409E						







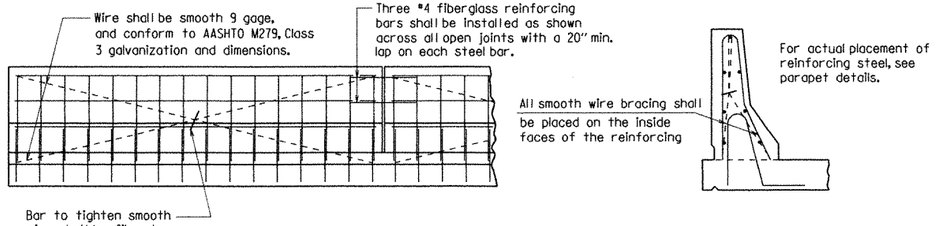


Note:
Parapet Studs shall be 5" long, granular flux filled, solid fluxed, or equal, and automatically end welded to the plate. Studs and plate shall meet the requirements of Section 807. Studs and plate shall be measured and paid for as Structural Steel in Beam Spans (M270, Gr. 50W).

The surfaces of the 3/8" Plates which will not be in contact with concrete shall be painted in accordance with Section 638, or as approved by the Engineer. Only one coat is required and shall be applied in the Fabricator's shop. Painting will not be paid for directly, but will be considered subsidiary to Structural Steel in Beam Spans (M270, Gr. 50W).

DETAIL Z

NTS

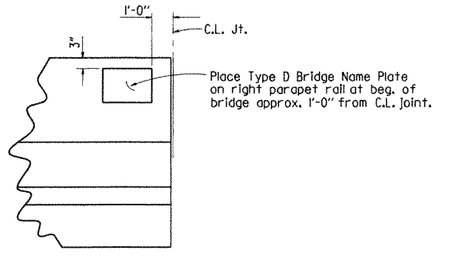


All panels shall be braced as required to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of 1/4". To control cracking before sawing, all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

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. Unless otherwise noted, exposed surfaces may be given a light brush finish or a Class 3 Textured Coating Finish in place of Class 2 Rubbed Finish.

DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL

NTS



VIEW SHOWING LOCATION OF NAME PLATE

NTS

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BRIDGE ENGINEER

SHEET 5 OF 7

DETAILS OF 315'-0" CONTINUOUS W-BEAM UNIT BAYOU DES ARC

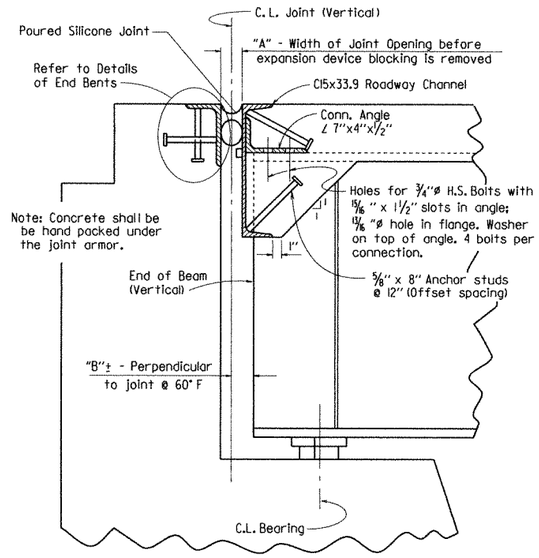
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

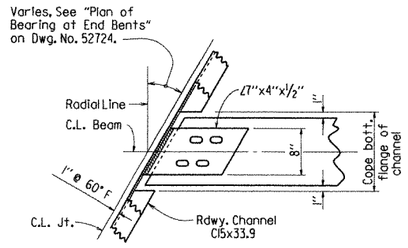
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DESIGNED BY: ACW DATE: 11-11
BRIDGE NO. 07253 DRAWING NO. 52727

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.		050189	155	340
				① 07253		CONT. UNIT	52728	

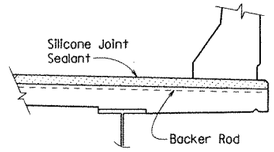


Note: Section taken perpendicular to C.L. Joint

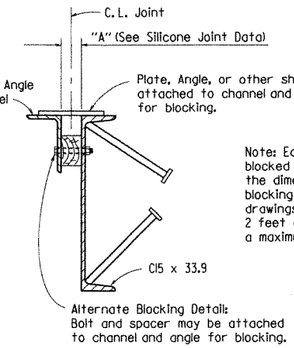
SECTION THRU JOINT AT END BENT



CHANNEL CONNECTION DETAIL



JOINT SEAL PLACEMENT AT CURB



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

DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

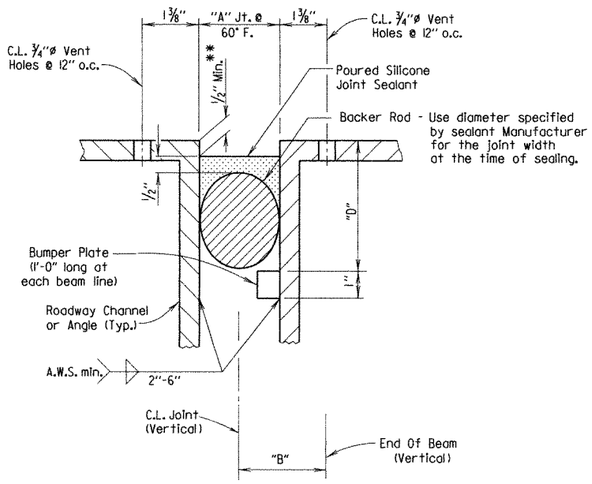
EXPANSION DEVICE INSTALLATION AT END BENTS:

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

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

** Recess depth as recommended by the sealant Manufacturer



DETAIL OF POURED SILICONE JOINT

SILICONE JOINT DATA

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

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

Notes:
The temperature limitations recommended by the sealant Manufacturer shall be observed. The sealant shall be installed only when the average 24 hour air temperature is between 40° and 80° F.

Use an appropriately sized backer rod at the depth shown in the Manufacturer's literature based on the joint width at the time of sealing. Unless otherwise noted, do not install more backer rod than can be sealed in the same day.

The Contractor shall verify separation of the backer rod from the joint material after the joint material has set.

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SHEET 6 OF 7

DETAILS OF
315'-0" CONTINUOUS W-BEAM UNIT
BAYOU DES ARC

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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FILENAME: b050189_sl.dgn
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BRIDGE NO. 07253 DRAWING NO. 52728

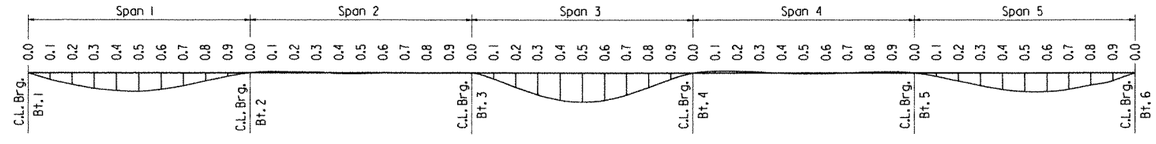
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				6	ARK.			
				JOB NO.		050189	156	340
				①	07253	CONT. UNIT	52729	

TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

Span	Point of Deflection	Beam 1 Structural Steel	Beam 1 Structural Steel + Slab	Beam 1 Str. Steel + Slab + Rail
1	0.0	0.000	0.000	0.000
	0.1	0.030	0.188	0.200
	0.2	0.055	0.350	0.373
	0.3	0.075	0.482	0.515
	0.4	0.084	0.538	0.574
	0.5	0.085	0.542	0.578
	0.6	0.077	0.494	0.527
	0.7	0.062	0.394	0.420
	0.8	0.038	0.241	0.256
	0.9	0.019	0.120	0.127
2	0.0	0.000	0.000	0.000
	0.1	-0.007	-0.044	-0.044
	0.2	-0.005	-0.037	-0.033
	0.3	-0.003	-0.027	-0.020
	0.4	0.001	0.001	0.011
	0.5	0.001	0.001	0.011
	0.6	-0.001	-0.011	-0.002
	0.7	-0.004	-0.030	-0.024
	0.8	-0.009	-0.058	-0.057
	0.9	-0.007	-0.045	-0.045
3	0.0	0.000	0.000	0.000
	0.1	0.028	0.174	0.185
	0.2	0.065	0.411	0.438
	0.3	0.101	0.637	0.680
	0.4	0.126	0.795	0.849
	0.5	0.136	0.861	0.919
	0.6	0.128	0.808	0.862
	0.7	0.104	0.656	0.699
	0.8	0.070	0.439	0.467
	0.9	0.032	0.198	0.212
4	0.0	0.000	0.000	0.000
	0.1	-0.010	-0.063	-0.065
	0.2	-0.009	-0.061	-0.059
	0.3	-0.007	-0.049	-0.044
	0.4	-0.001	-0.011	-0.002
	0.5	0.000	-0.001	0.009
	0.6	0.001	0.001	0.011
	0.7	-0.001	-0.011	-0.003
	0.8	-0.005	-0.034	-0.030
	0.9	-0.004	-0.028	-0.027
5	0.0	0.000	0.000	0.000
	0.1	0.015	0.097	0.102
	0.2	0.038	0.241	0.256
	0.3	0.057	0.361	0.384
	0.4	0.076	0.479	0.509
	0.5	0.086	0.543	0.578
	0.6	0.086	0.544	0.579
	0.7	0.078	0.491	0.522
	0.8	0.059	0.374	0.397
	0.9	0.031	0.196	0.208
	0.0	0.000	0.000	0.000

Span	Point of Deflection	Beams 2, 3, & 4 Structural Steel	Beams 2, 3, & 4 Structural Steel + Slab	Beams 2, 3, & 4 Str. Steel + Slab + Rail
1	0.0	0.000	0.000	0.000
	0.1	0.031	0.228	0.237
	0.2	0.057	0.419	0.438
	0.3	0.077	0.565	0.591
	0.4	0.087	0.638	0.668
	0.5	0.087	0.637	0.667
	0.6	0.077	0.567	0.593
	0.7	0.060	0.444	0.464
	0.8	0.038	0.281	0.293
	0.9	0.016	0.120	0.125
2	0.0	0.000	0.000	0.000
	0.1	-0.005	-0.043	-0.043
	0.2	-0.004	-0.034	-0.031
	0.3	0.000	-0.007	-0.001
	0.4	0.004	0.016	0.024
	0.5	0.004	0.019	0.027
	0.6	0.001	0.001	0.008
	0.7	-0.004	-0.032	-0.028
	0.8	-0.008	-0.062	-0.062
	0.9	-0.009	-0.064	-0.065
3	0.0	0.000	0.000	0.000
	0.1	0.029	0.211	0.221
	0.2	0.069	0.490	0.513
	0.3	0.105	0.750	0.787
	0.4	0.131	0.934	0.980
	0.5	0.140	0.998	1.048
	0.6	0.131	0.934	0.981
	0.7	0.106	0.753	0.790
	0.8	0.069	0.494	0.519
	0.9	0.030	0.214	0.224
4	0.0	0.000	0.000	0.000
	0.1	-0.009	-0.066	-0.068
	0.2	-0.008	-0.065	-0.065
	0.3	-0.004	-0.035	-0.032
	0.4	0.001	-0.002	0.004
	0.5	0.004	0.016	0.024
	0.6	0.003	0.012	0.019
	0.7	0.000	-0.009	-0.004
	0.8	-0.004	-0.035	-0.033
	0.9	-0.006	-0.044	-0.044
5	0.0	0.000	0.000	0.000
	0.1	0.017	0.121	0.126
	0.2	0.039	0.283	0.294
	0.3	0.062	0.444	0.463
	0.4	0.079	0.569	0.595
	0.5	0.090	0.643	0.673
	0.6	0.090	0.644	0.674
	0.7	0.080	0.572	0.600
	0.8	0.060	0.433	0.453
	0.9	0.032	0.231	0.242
	0.0	0.000	0.000	0.000

Span	Point of Deflection	Beam 5 Structural Steel	Beam 5 Structural Steel + Slab	Beam 5 Str. Steel + Slab + Rail
1	0.0	0.000	0.000	0.000
	0.1	0.027	0.172	0.183
	0.2	0.049	0.313	0.333
	0.3	0.066	0.421	0.448
	0.4	0.076	0.485	0.516
	0.5	0.076	0.485	0.516
	0.6	0.067	0.432	0.460
	0.7	0.054	0.344	0.369
	0.8	0.037	0.233	0.248
	0.9	0.014	0.090	0.095
2	0.0	0.000	0.000	0.000
	0.1	-0.005	-0.031	-0.031
	0.2	-0.004	-0.030	-0.027
	0.3	0.000	-0.003	0.004
	0.4	0.003	0.010	0.019
	0.5	0.004	0.020	0.030
	0.6	0.002	0.008	0.017
	0.7	-0.002	-0.018	-0.012
	0.8	-0.005	-0.034	-0.032
	0.9	-0.007	-0.046	-0.047
3	0.0	0.000	0.000	0.000
	0.1	0.025	0.158	0.168
	0.2	0.058	0.369	0.393
	0.3	0.089	0.563	0.599
	0.4	0.113	0.714	0.765
	0.5	0.120	0.758	0.809
	0.6	0.113	0.716	0.766
	0.7	0.092	0.581	0.621
	0.8	0.061	0.388	0.414
	0.9	0.027	0.169	0.180
4	0.0	0.000	0.000	0.000
	0.1	-0.008	-0.048	-0.050
	0.2	-0.008	-0.055	-0.055
	0.3	-0.003	-0.024	-0.020
	0.4	0.000	-0.005	0.002
	0.5	0.003	0.017	0.027
	0.6	0.003	0.014	0.023
	0.7	0.000	-0.002	0.005
	0.8	-0.002	-0.016	-0.012
	0.9	-0.005	-0.032	-0.032
5	0.0	0.000	0.000	0.000
	0.1	0.014	0.091	0.095
	0.2	0.032	0.205	0.216
	0.3	0.053	0.335	0.354
	0.4	0.066	0.421	0.446
	0.5	0.076	0.483	0.513
	0.6	0.077	0.488	0.518
	0.7	0.068	0.434	0.461
	0.8	0.052	0.331	0.352
	0.9	0.030	0.185	0.197
	0.0	0.000	0.000	0.000



DEAD LOAD DEFLECTION DIAGRAM

N.T.S.

Notes:
Camber for Dead Load Deflection ± 1/4" tolerance. Deflections shown are along C.L. Beam from the plane perpendicular to the web extending from C.L. Bearing to C.L. Bearing. Negative sign (-) indicates point above plane. Vertical Curve corrections not included.

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
6/22/12
CARL J. FUSELIER
BRIDGE ENGINEER

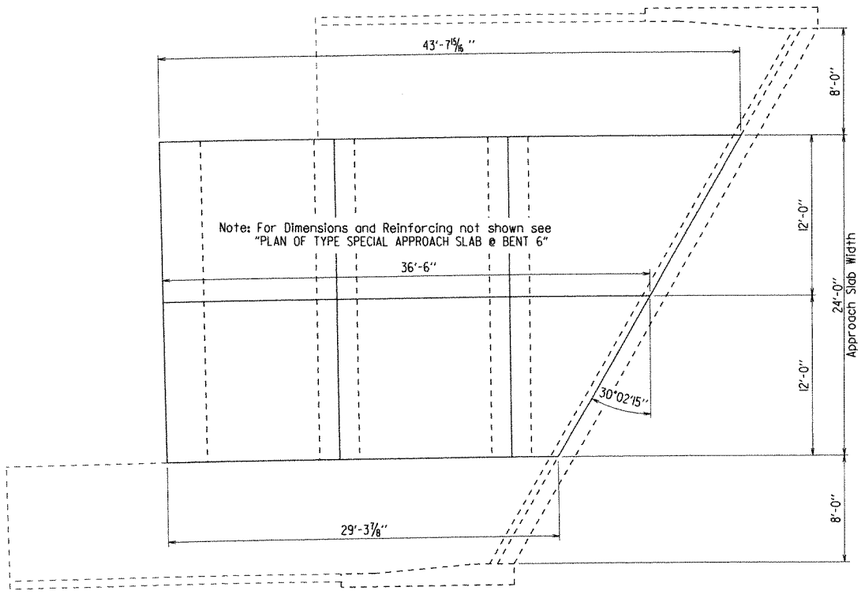
SHEET 7 OF 7

DETAILS OF
315'-0" CONTINUOUS W-BEAM UNIT
BAYOU DES ARC
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ACW DATE: 11-04-11 FILENAME:
CHECKED BY: KWY DATE: 6/20/12 SCALE: As Noted
DESIGNED BY: ACW DATE: 11-11

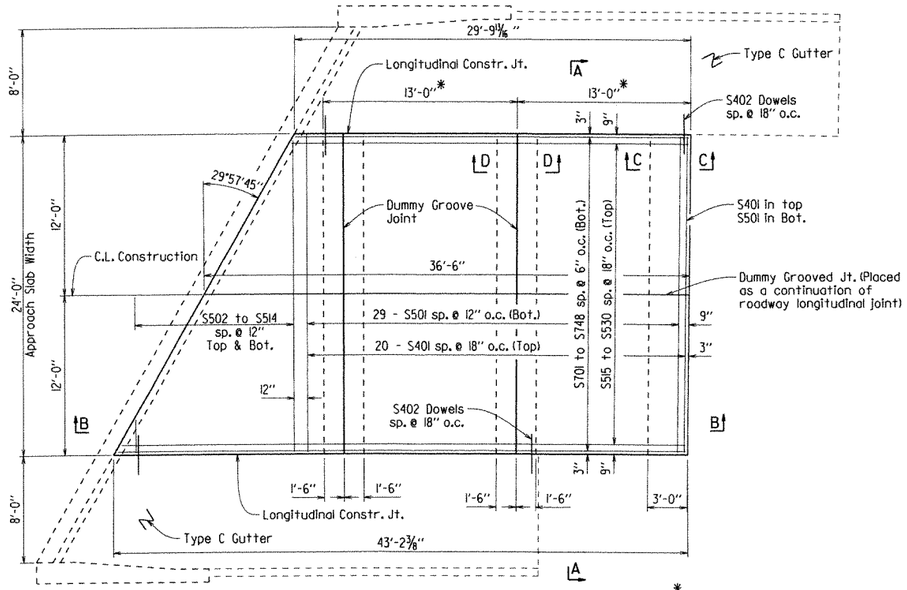
BRIDGE NO. 07253 DRAWING NO. 52729

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.		050189	157	340
				(1) 07253		APPROACH SLAB		52730



PLAN OF TYPE SPECIAL APPROACH SLAB @ BENT 1

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



*Measured Along C.L. Construction

PLAN OF TYPE SPECIAL APPROACH SLAB @ BENT 6

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

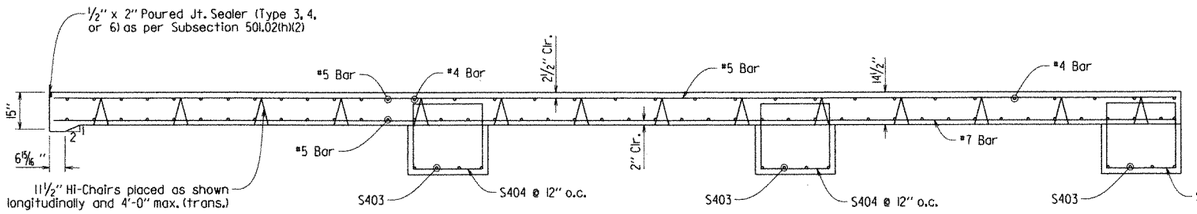
Note: All longitudinal lines and longitudinal reinforcing steel shall be placed on arcs concentric with C.L. Construction. All transverse reinforcing steel shall be placed on radial lines and shall be measured along C.L. Construction.

BAR LIST
TYPE SPECIAL APPROACH SLAB

Mark	No. Req'd	Length	P.D.	Bending Diagram
S401	20	23'-8"	Str.	2'-7" / S404 / 2'-5" / 4 1/2" Min. (Typ.)
S402	40	3'-0"	Str.	
S403	12	23'-8"	Str.	
S404	72	10'-4"	2"	
S501	29	23'-8"	Str.	
S502 to S514	2 ea.	2'-5" to 23'-3"	Str.	
S515 to S530	1 ea.	29'-10" to 42'-5"	Str.	
S701 to S748	1 ea.	29'-7" to 42'-8"	Str.	Dimensions are out to out of bar.

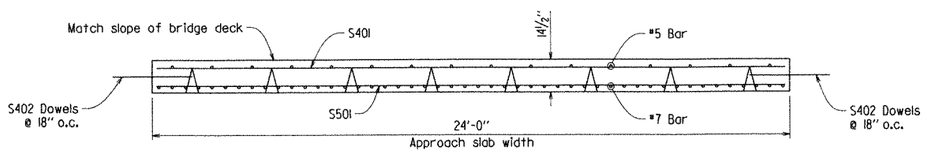
QUANTITIES FOR ONE TYPE SPECIAL APPROACH SLAB

Length (ft.)	Reinforcing Steel (lbs.)	Concrete (cubic yards)
36'-6"	6294	53.89



SECTION B-B

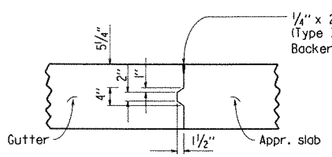
Scale: 3/8" = 1'-0"



SECTION A-A

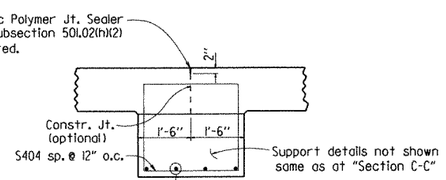
Scale: 3/8" = 1'-0"

Note: The 1/2" Preformed Joint AASHTO Type I shall be eliminated between concrete faces where dowel bars are used to tie approach slabs and gutters to the bent components. See End Bent details.



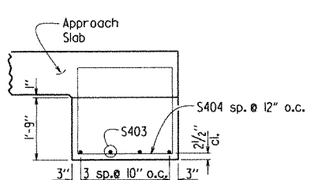
DETAILS OF LONGITUDINAL CONSTRUCTION JOINT

3/4" = 1'-0"



SECTION D-D

Scale: None



SECTION C-C

Scale: None

GENERAL NOTES

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

Reinforcing Steel shall conform to AASHTO M 31 or M 53, Grade 60 (fy = 60,000 psi).

Surface finish for Approach Slabs shall match that used on the bridge deck.

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

STATE OF ARKANSAS
Carl J. Puselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
6/22/12
CARL J. PUSELIER

BRIDGE ENGINEER

DETAILS OF TYPE SPECIAL APPROACH SLAB

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

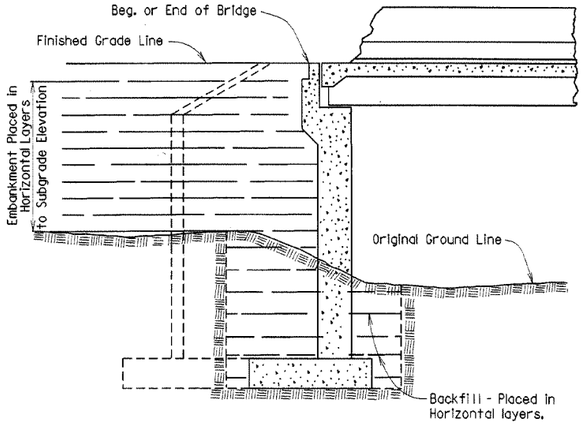
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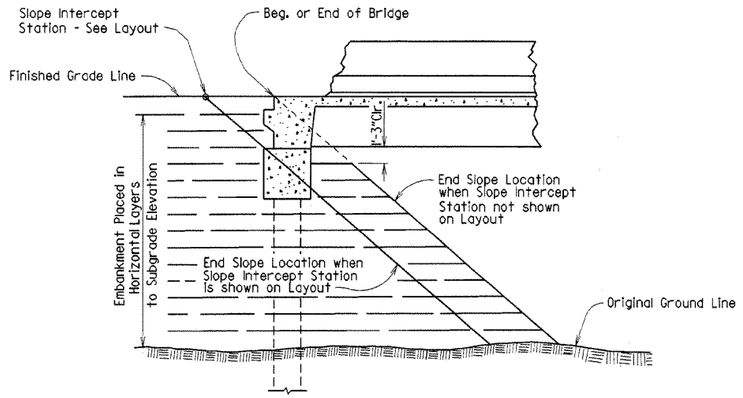
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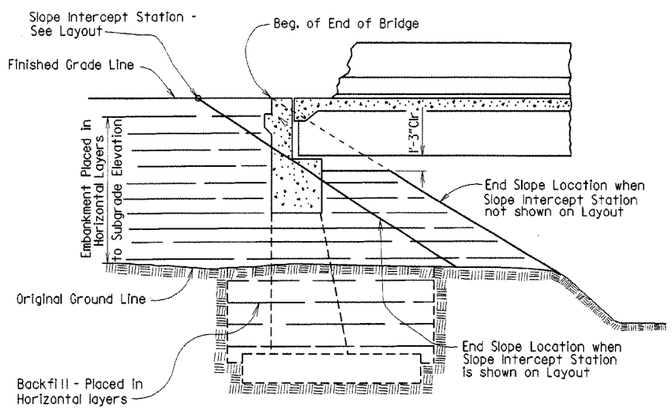
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04-10-2003				6	ARK.		158	
				JOB NO.				
				①	EMBANKMENT & BACKFILL		1888A	



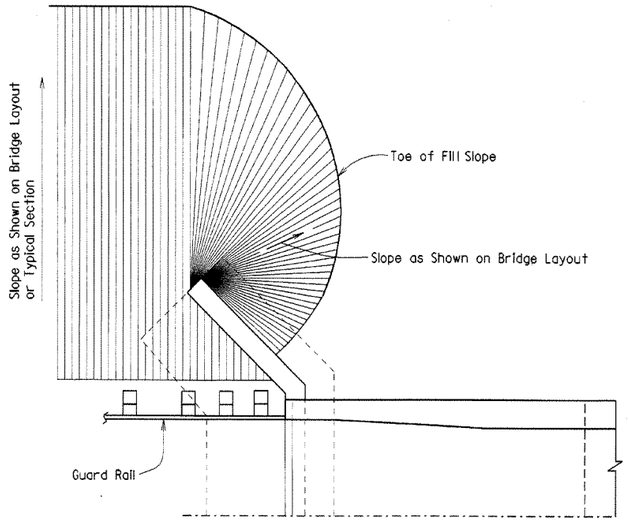
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT VERTICAL WALL ABUTMENTS



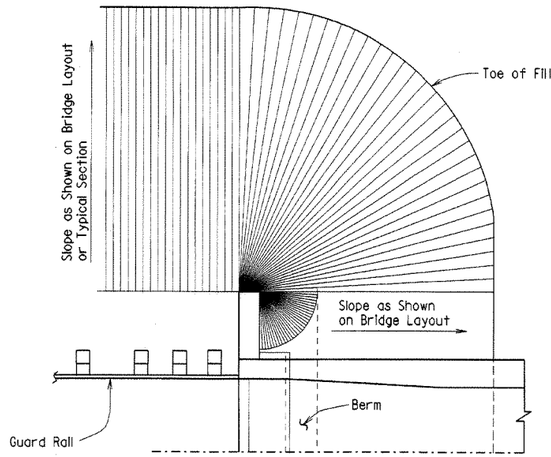
EMBANKMENT CONSTRUCTION AT SPILL-THROUGH PILE END BENTS



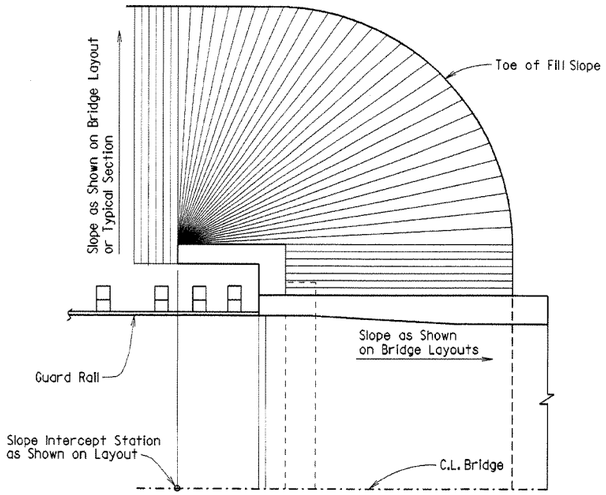
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT SPILL-THROUGH END BENTS



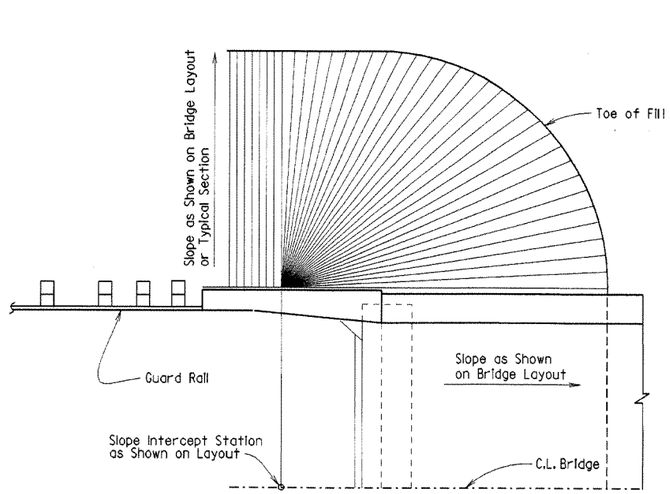
VERTICAL WALL ABUTMENTS



SPILL-THROUGH END BENTS WITH STUB WING



SPILL-THROUGH END BENTS WITH TURNBACK WING



SPILL-THROUGH END BENTS WITH TRANSITION WING

METHOD OF DETERMINING FILL SLOPE LOCATION AT BRIDGE ENDS

GENERAL NOTES

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

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

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

BRIDGE ENGINEER

EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

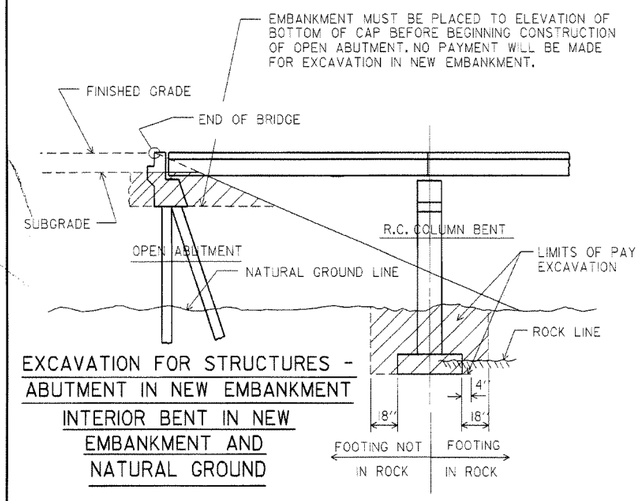
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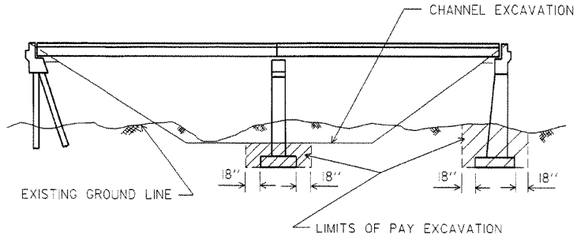
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.				

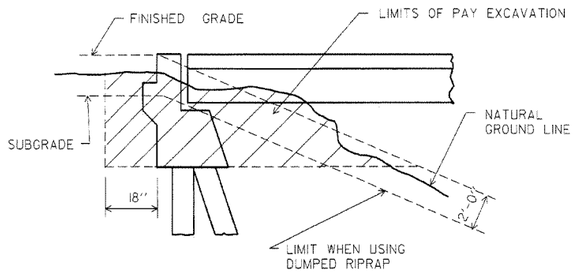
① RIP. & EXCAV. 1891F



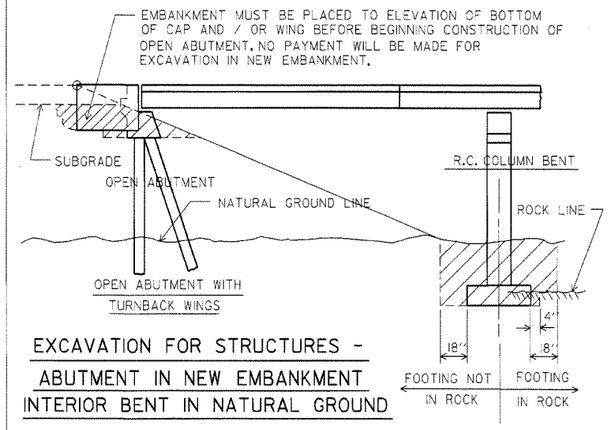
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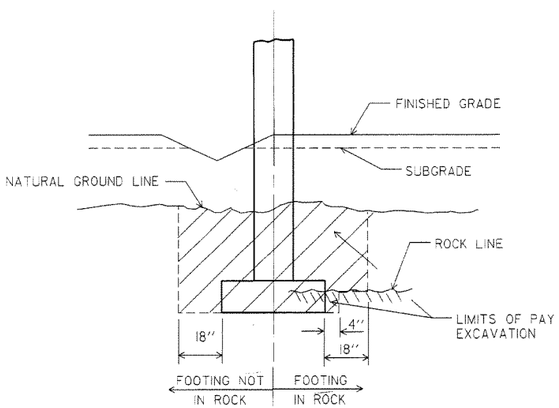
EXCAVATION FOR STRUCTURES - BRIDGE LOCATION WITH DESIGNATED CHANNEL CHANGE



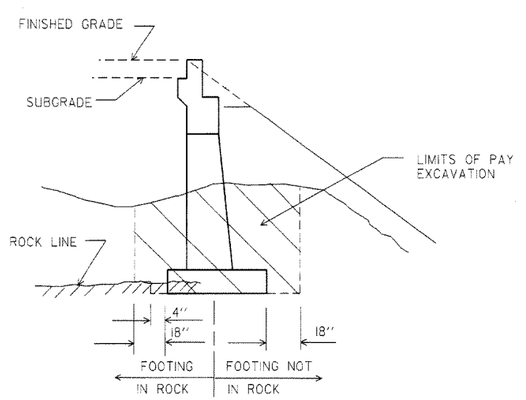
EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND



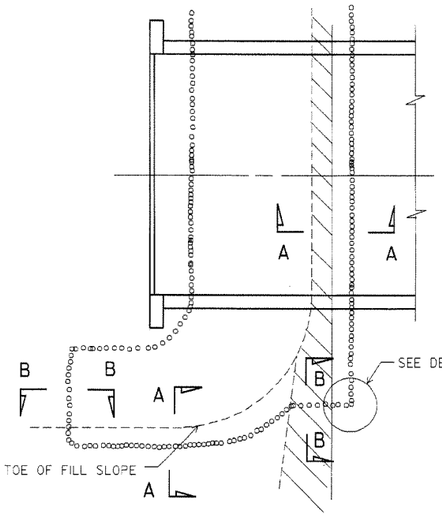
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NATURAL GROUND



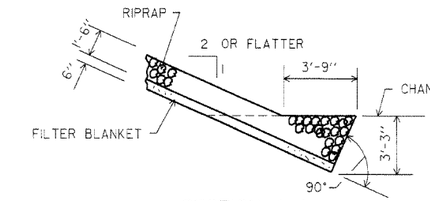
EXCAVATION FOR STRUCTURES - BENT IN ROADWAY FILL SECTION AND NATURAL GROUND



EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND AND NEW EMBANKMENT



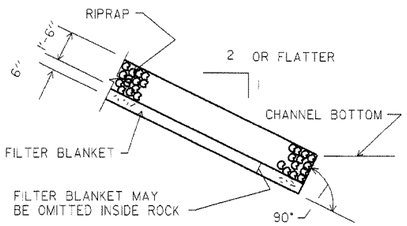
PLAN OF DUMPED RIPRAP



SECTION A-A

(TOE EXCAVATION IN SOIL)

EXCAVATION FOR TOES IS NOT A PAY ITEM



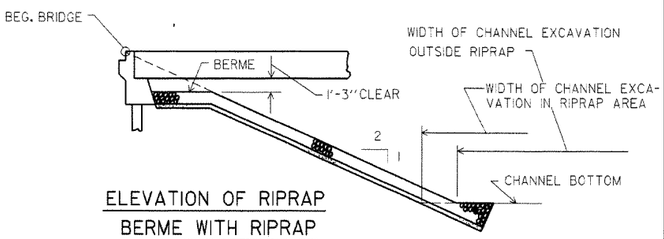
SECTION A-A

(TOE EXCAVATION IN ROCK)

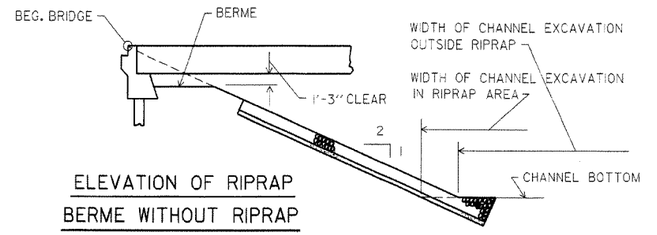
NOTE : USE THIS TYPE OF TOE WHEN ROCK IS ENCOUNTERED WHICH IS IN A STABLE CONDITION.

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

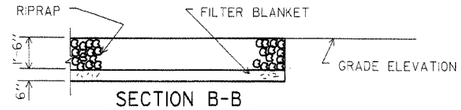
NOTE : DETAILS FOR COMPUTING EXCAVATION FOR STRUCTURES ARE INCLUDED FOR INFORMATION AS TO HOW PLAN QUANTITIES WERE CALCULATED AND FOR USE WHEN ADJUSTING QUANTITIES WHEN CHANGING FOOTING ELEVATION.



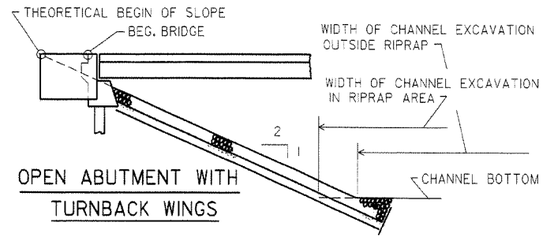
ELEVATION OF RIPRAP BERME WITH RIPRAP



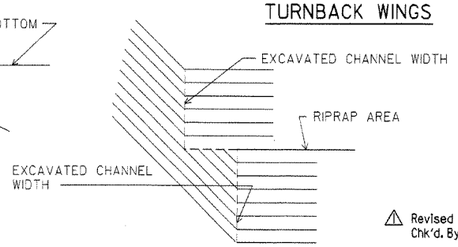
ELEVATION OF RIPRAP BERME WITHOUT RIPRAP



SECTION B-B



OPEN ABUTMENT WITH TURNBACK WINGS



DETAIL C

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

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

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

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

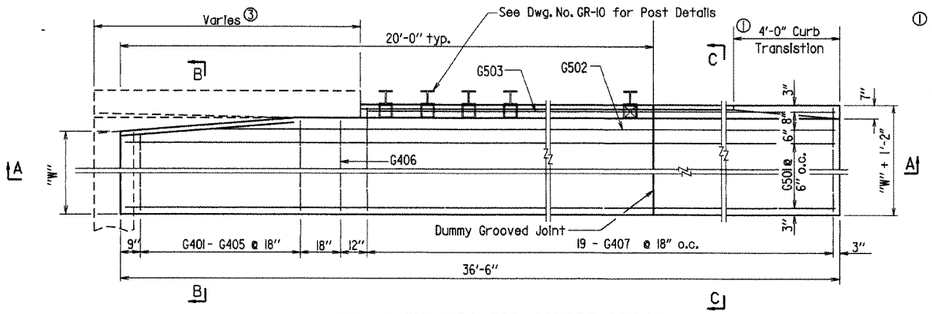
LITTLE ROCK, ARK.

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

BRIDGE NO. DRAWING NO. 1891F

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
4-10-2003				6	ARK.		160	
07-14-2010				JOB NO.				

1 TYPE C GUTTERS - 2016C

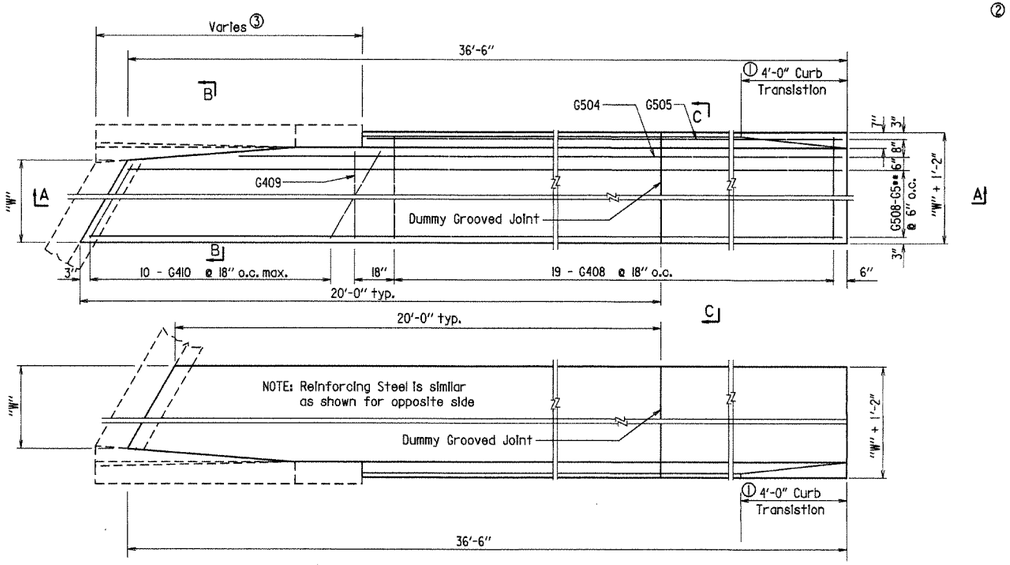


HALF PLAN OF APPROACH GUTTERS FOR SQUARE BRIDGE

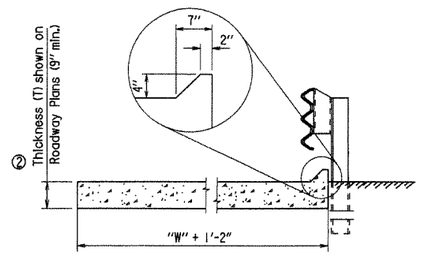
① Construct gutter curb with height-transition as shown if drop inlet is not placed at end of gutter.

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.

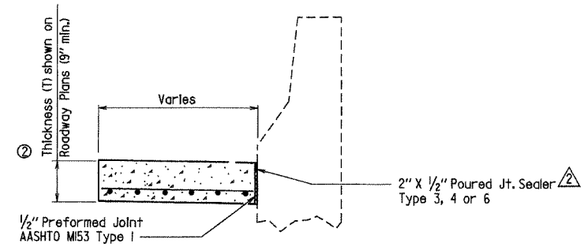
③ Length Varies See End Bt. Details for Actual Length. Quantities Shown are for 10'-0" Transition Rail.



PLAN OF APPROACH GUTTERS FOR SKEWED BRIDGE

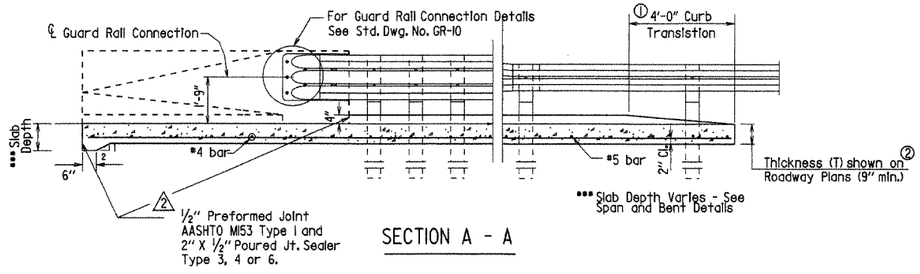


SECTION C - C
N.T.S.



SECTION B - B
N.T.S.

② Thickness shall match Approach Slab Thickness. Thickness shall be 9" If Approach Slab is not used.



SECTION A - A

*** BAR LIST FOR ONE TYPE C GUTTER

Mark	No. Req'd. for Width "W" 4'-0"	6'-0"	8'-0"	10'-0"	Length	Square or Skewed
G401 - G405	1 each	1 each	1 each	1 each	"W"-3" to "W"+3"	Square
G406	1	1	1	1	"W"+3"	Square
G407	19	19	19	19	"W"+ 10"	Square
G408	19	19	19	19	"W"+ 10"	Skewed
G409	1	1	1	1	"W"+3"	Skewed
G410	10	10	10	10	*	Skewed
G501	8	12	16	20	36'-2"	Square
G502	1	1	1	1	31'-8"	Square
G503	1	1	1	1	27'-2"	Square
G504	1	1	1	1	*	Skewed
G505	1	1	1	1	*	Skewed
G508 - G5... **	1 each	1 each	1 each	1 each	*	Skewed

*** Special bar list required when skew angle exceeds 35° for W = 10'; 40° for W = 8'; 50° for W = 6'; or 60° for W = 4'.

* Bar Lengths vary with Skew.

** G515 for W = 4'
G519 for W = 6'
G523 for W = 8'
G527 for W = 10'

QUANTITIES FOR ONE SQUARE APPROACH GUTTER ③

"W" Width (ft.)	Reinforcing Steel (lbs.)	Concrete (cubic yards) T=9"	T=10"	T=11"	T=12"	T=13 4½"
4	439	5.19	5.75	6.31	6.88	8.25
6	623	7.24	8.02	8.80	9.59	11.52
8	807	9.28	10.29	11.30	12.32	14.79
10	991	11.33	12.56	13.79	15.03	18.06

GENERAL NOTES

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

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

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

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

△2 Added joint sealer type
07-14-2010 by MJT Checked by: CJF 7-14-2010

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 4537
CHARLES P. BRAND
BRIDGE ENGINEER

DETAILS OF STANDARD TYPE C APPROACH GUTTERS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 4-10-2003 FILENAME: B2016C.STD
CHECKED BY: CJF DATE: 4-10-2003 SCALE: 3/8" = 1'-0"
DESIGNED BY: STD. DATE:

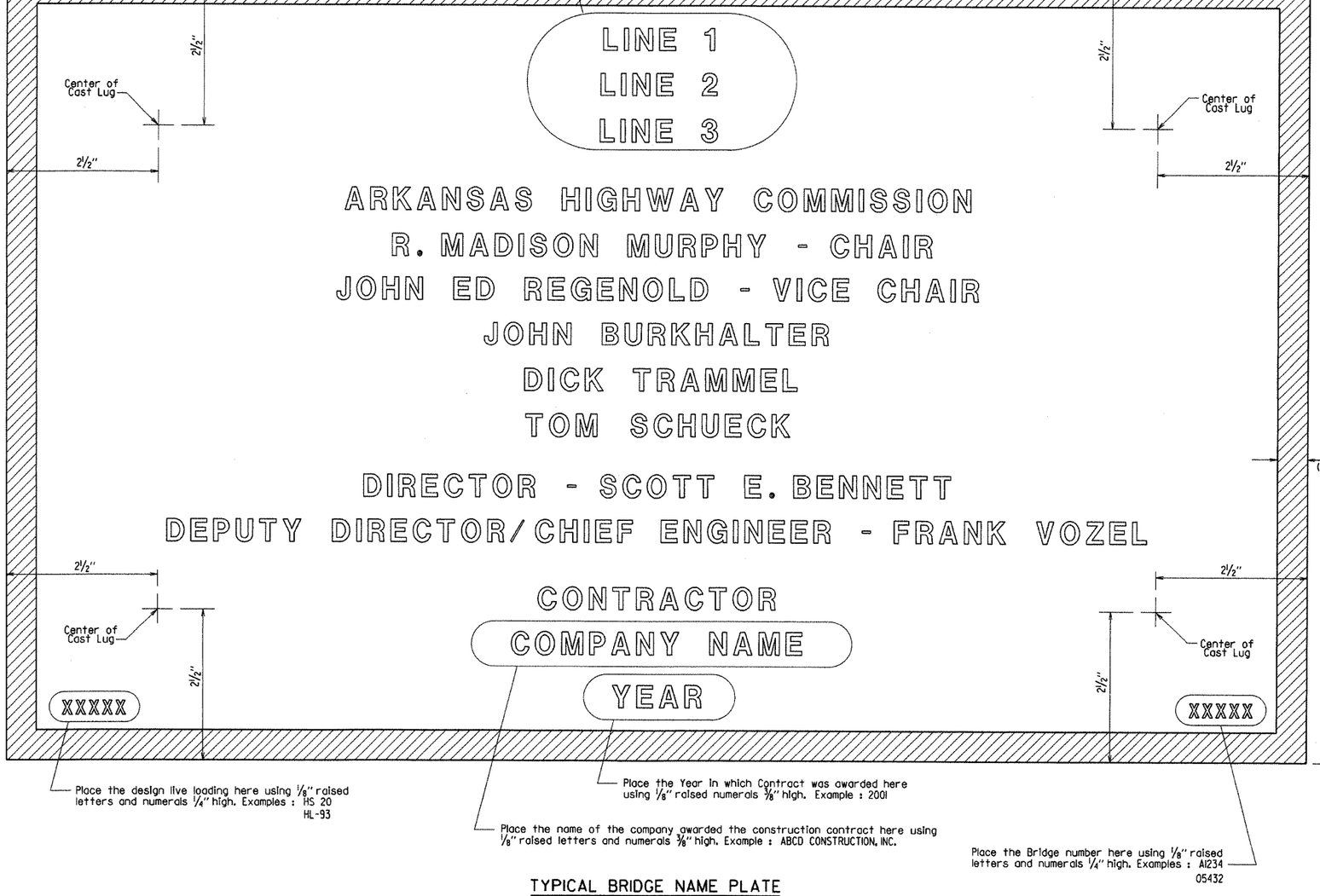
BRIDGE NO. DRAWING NO. 2016C

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
9-8-11				6	ARK.		161	
				JOB NO.				
				NAME PLATE		2387		

(1)

The name of the bridge as shown on the plans shall be placed on Lines 1 - 3 using 1/8" raised letters and numerals 3/8" high.

	Example 1	Example 2	Example 3	Example 4
Line 1	Red River	Southern	Saline	
Line 2	Relief	Railroad	River	Highway 5
Line 3		Overpass	Relief	



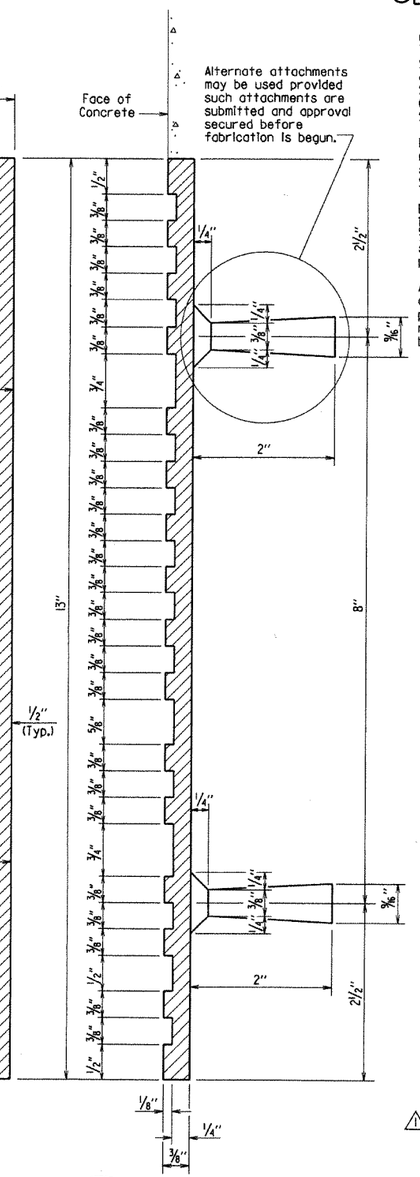
Place the design live loading here using 1/8" raised letters and numerals 1/4" high. Examples : HS 20
HL-93

Place the Year in which Contract was awarded here using 1/8" raised numerals 3/8" high. Example : 2001

Place the name of the company awarded the construction contract here using 1/8" raised letters and numerals 3/8" high. Example : ABCD CONSTRUCTION, INC.

Place the Bridge number here using 1/8" raised letters and numerals 1/4" high. Examples : AI234
05432

TYPICAL BRIDGE NAME PLATE



GENERAL NOTES

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

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

Body of plate shall be 1/4" thick and shall include four tapering cone lugs 3/8" to 9/16" x 2" long. The border and all lettering shall be raised 1/8" above the face of plate and shall be polished.

All lettering shall be plain gothic, square cut and not tapered. The number of plates required and the location and name on the plate for each bridge shall be as designated on the plans.

⚠ Revised and Redrawn 9-8-11 KDH Checked By: CRE

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7610
CARL E. PUSPLIER
BRIDGE ENGINEER

DETAILS OF STANDARD TYPE D BRIDGE NAME PLATE

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

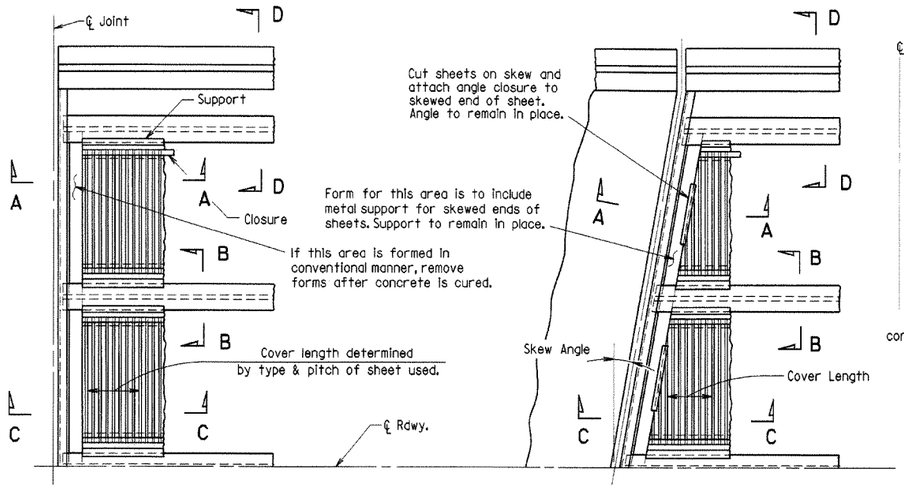
DRAWN BY: KDH DATE: 9-8-11 FILENAME: B2387.STD
CHECKED BY: CRE DATE: 9-8-11 SCALE: 1'-0" = 1'-0" OR AS NOTED
DESIGNED BY: STD. DATE: —

BRIDGE NO.

DRAWING NO. 2387

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
11-27-96						6	ARK.		162	
04-10-2003						JOB NO.				

(1) BR. DECK FORMS 14991

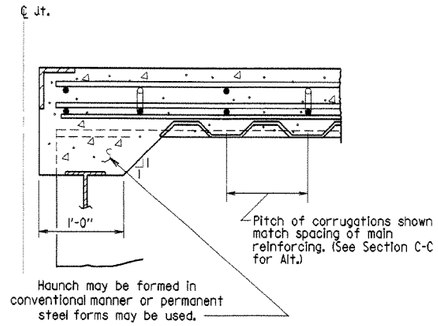


PART PLAN - SQUARE SPAN

3/8" = 1'-0"

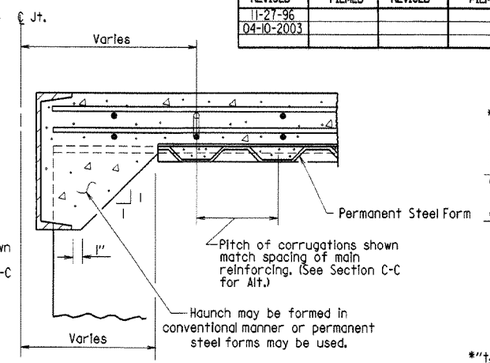
PART PLAN - SKEWED SPAN

3/8" = 1'-0"



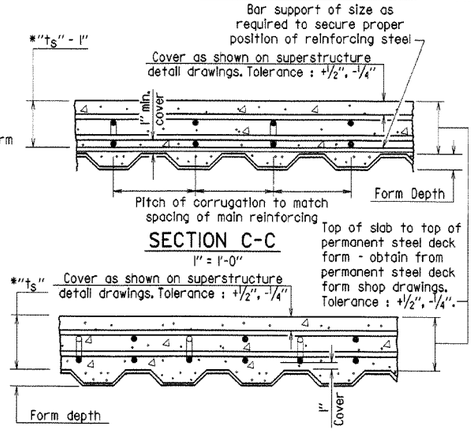
SECTION A-A

N.T.S.
(Angle at end of span)



SECTION A-A

N.T.S.
(Channel at end of span)

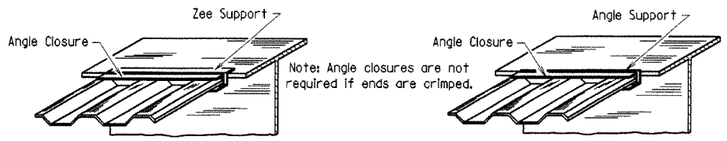


SECTION C-C

1" = 1'-0"

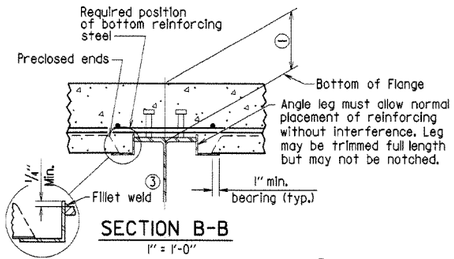
SECTION C-C - ALTERNATE

1" = 1'-0"
(Applicable when corrugations do not match spacing of main reinforcement)



SKETCH OF PERMISSIBLE SUPPORTS

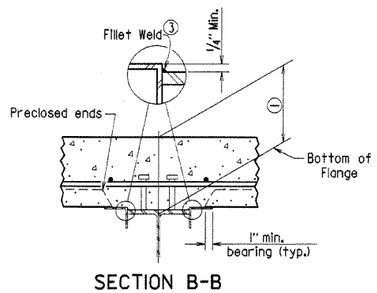
N.T.S.



SECTION B-B

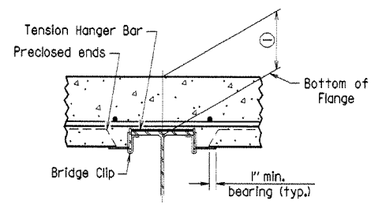
1" = 1'-0"
(Showing permissible support for tension flange where shear connectors are used, and for all compression flanges)

(3) Minimum weld: 1/8" x 1" ℓ 18". More weld may be required; maximum length per weld = 1 1/2" (typ.)



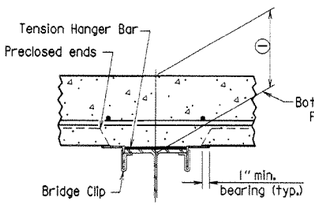
SECTION B-B

1" = 1'-0"
(Showing permissible support for tension flange where shear connectors are used and for all compression flanges)



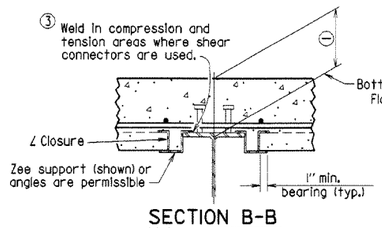
SECTION B-B

1" = 1'-0"
(Showing permissible support for tension flange where shear connectors are not used)



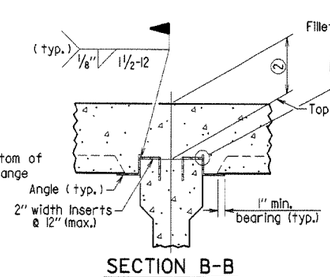
SECTION B-B

1" = 1'-0"
(Showing permissible support for tension flange where shear connectors are not used)



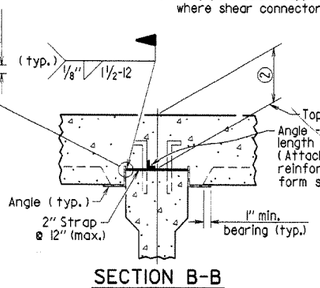
SECTION B-B

1" = 1'-0"
(Showing ∠ Closure)



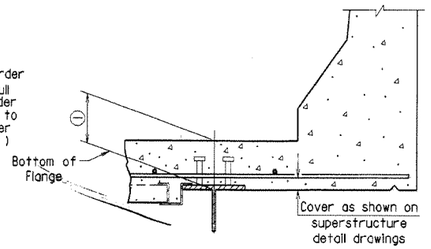
SECTION B-B (FOR CONCRETE GIRDERS)

1" = 1'-0"
(Showing support by Insert cast in girder)



SECTION B-B (FOR CONCRETE GIRDERS)

1" = 1'-0"
(Showing support by Strap)



SECTION D-D

1" = 1'-0"
Note: Only Bottom Reinforcing is shown.

(1) Distance from top of slab to bottom of top flange as measured at centerline girder and as shown on superstructure detail drawings. This dimension may vary within the following limits to maintain the grade and slab thickness tolerances : Minimum - occurs when either the top flange or the support angle leg contacts the bottom reinforcing steel; Maximum = t_S + 1 3/4" + flange thickness. See Section C-C for slab thickness tolerance between adjacent girder flanges.

(2) Distance from top of slab to top of girder as measured at centerline girder and as shown on superstructure detail drawings. This dimension may vary within the following limits to maintain the grade and slab thickness tolerances : Minimum - occurs when either the top of girder or the support angle leg contacts the bottom reinforcing steel; Maximum - value shown on the superstructure detail drawings when removable forms are used. See Section C-C for slab thickness tolerance between adjacent girder flanges.

(2) Revised for 2003 AHTD Construction Specifications and CPB Seal. MJT 04-10-2003
Chk'd. By: CJF 04-10-2003

(1) Redrawn and revised 11/27/96; MJT

*t_S = slab thickness as shown on superstructure detail drawings.

GENERAL NOTES

Permanent steel deck forms may be used at the Contractor's option and shall be at no additional cost to the Department. Such use may result in changes to the dead load deflection of the girder. Any cost for adjustments due to a change in the dead load deflection will be borne by the Contractor. Payment for deck concrete and structural steel will not be increased due to use of permanent steel deck forms.

Permanent steel deck forms shall conform to subsection 802.14(b) of the Standard Specifications. Detailed plans, including detailed calculations and manufacturer's technical brochure, shall be submitted to and approved by the Bridge Engineer before work of forming the bridge deck is started.

Welding of form supports to the tension flange of steel girders will be permitted only in areas where shear connectors are used. When welding is not allowed, the method of fastening Z or ∠ supports to the flange must be approved by the Bridge Engineer.

Form sheets shall be fastened to supporting members and to each other with galvanized metal screws sufficient in size and number to provide a secure attachment. Alternate methods of attachment must be approved by the Bridge Engineer.

When the pitch of form corrugations match the reinforcing spacing, transversely align form sheets across the bridge to maintain the correct orientation of continuous reinforcing bars in the corrugations.

Bar support rods, when used, shall be sized and spaced to adequately support the bottom reinforcing mat at the required position.

High chairs shall be sized to support the top mat of reinforcing at the proper position. High chairs shall be placed at locations shown on the detail drawings.

(2) Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2003 Edition), with applicable supplemental specifications and special provisions.

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

DETAILS OF PERMISSIBLE TYPE PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

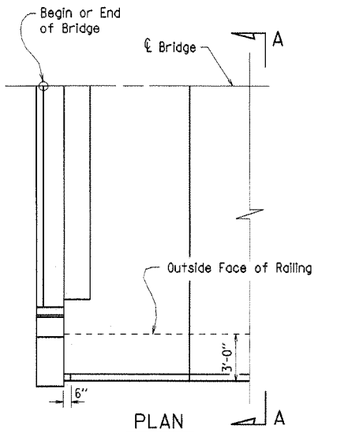
DRAWN BY: MJT DATE: 10-17-96
CHECKED BY: CPB DATE: 10-17-96
DESIGNED BY: STD. DATE: —
SCALE: as noted

BRIDGE NO. DRAWING NO. 14991

B14991.STD

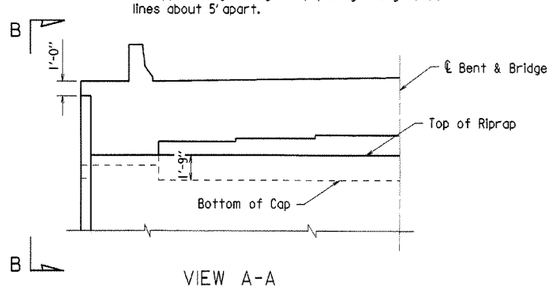
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
04-10-2003				6	ARK.		163	
				JOB NO.				

1 RIPRAP & PILE - 14995A

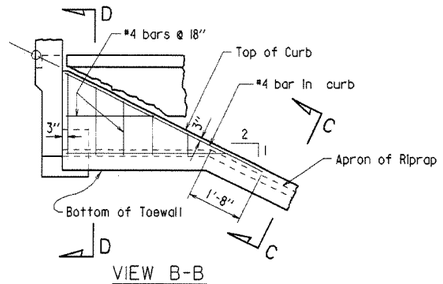


PLAN

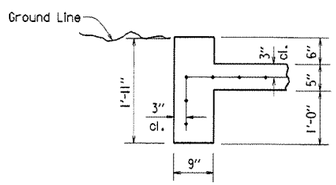
Note:
Sloped surfaces of concrete riprap to be marked off into blocks (construction joints optional) with an approved grooving tool, spacing the grooved lines about 5' apart.



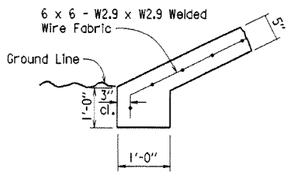
VIEW A-A



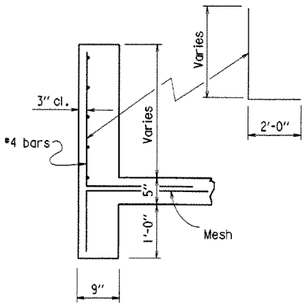
VIEW B-B



SECTION C-C

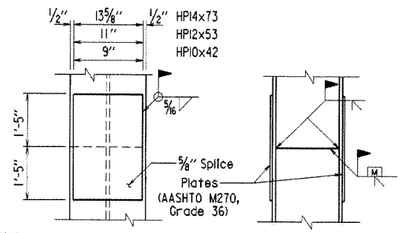


TOE WALL



SECTION D-D

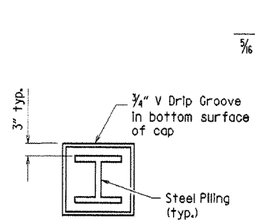
DETAILS OF CONCRETE RIPRAP



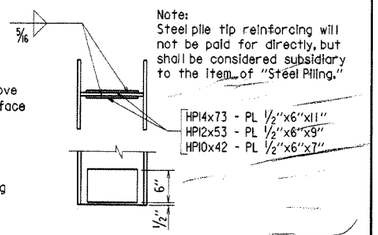
Note:
The contractor may for his own convenience and at this own expense provide as many as three splices per pile for steel bearing piling. Minimum spacing between splices shall be 5 ft.

PILE SPLICE DETAIL

Scale : 1" = 1'-0"

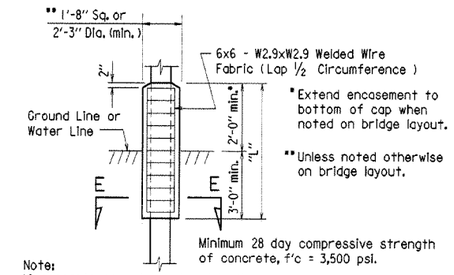


VIEW X-X



REINFORCING DETAIL FOR STEEL PILE TIP

Scale : 1" = 1'-0"



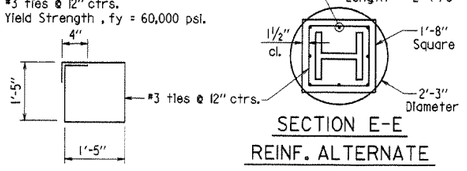
*Extend encasement to bottom of cap when noted on bridge layout.

**Unless noted otherwise on bridge layout.

Minimum 28 day compressive strength of concrete, f'c = 3,500 psi.

Note:
If concrete cannot be placed in the dry, seal concrete may be deposited under water. Concrete & welded wire fabric or reinforcing in encasements shall be paid for at the contract unit price per linear foot bid for "Pile Encasement."

PILE ENCASEMENT DETAIL



SECTION E-E

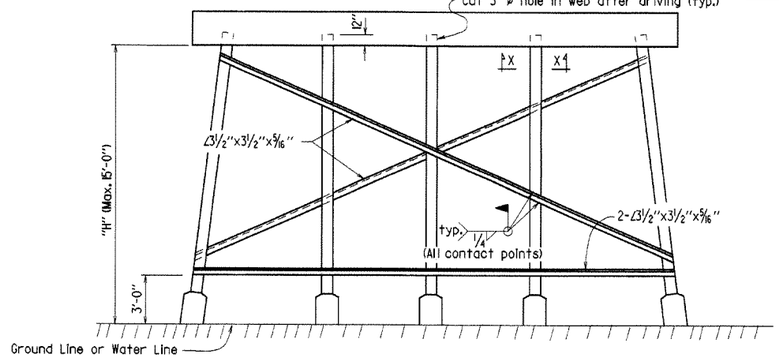
REINF. ALTERNATE

Note:
Where required by the bridge layout sheet, pile encasements shall be constructed.

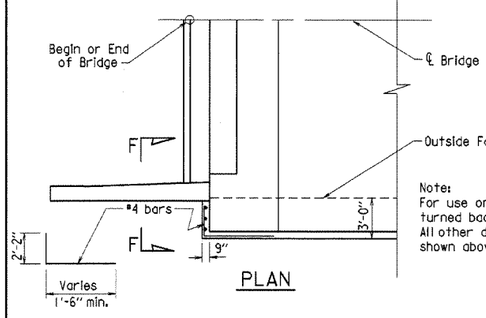
Omit bracing (and V-groove in cap) where pile encasement is extended to bottom of bent cap.

Note:
All bracing shall be cut and welded in the field. Each brace shall be furnished in one piece. Payment shall be made under item 807.

Omit bottom bracing where "H" is less than 10 ft. Omit all bracing where "H" is less than 5 ft.

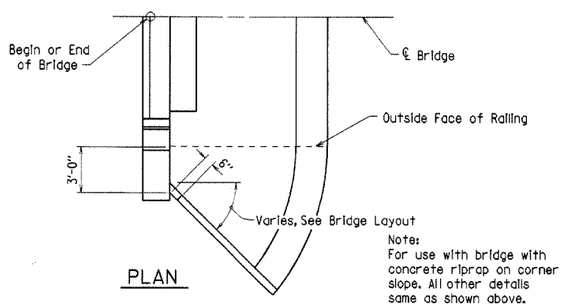


TYPICAL BRACING FOR INT. STEEL PILE BENTS



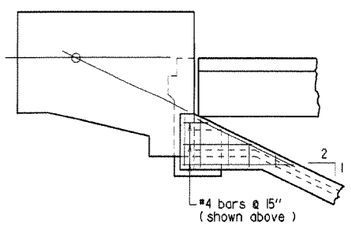
PLAN

Note:
For use on bridges with turned back wings. All other details same as shown above.

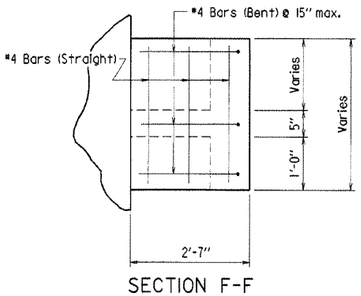


PLAN

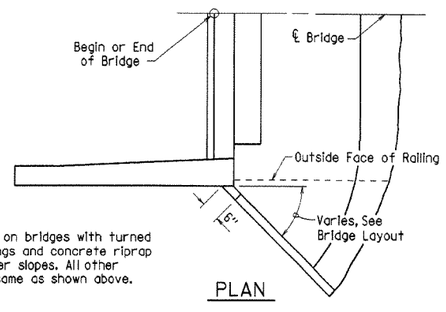
Note:
For use with bridge with concrete riprap on corner slope. All other details same as shown above.



ELEVATION



SECTION F-F



Note:
For use on bridges with turned back wings and concrete riprap on corner slopes. All other details same as shown above.

PLAN

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

DETAILS OF CONCRETE RIPRAP AND MISC. DETAILS OF STEEL PILING

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

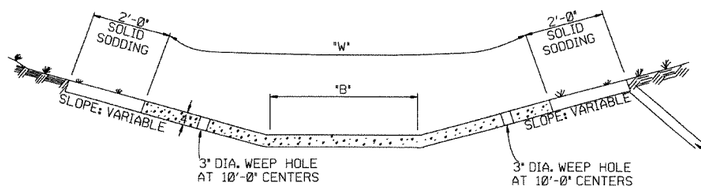
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 4337
CHARLES P. BRAND

BRIDGE ENGINEER

DRAWN BY: MJT DATE: 04-10-2003 FILENAME: BI4995A.STD
CHECKED BY: CJF DATE: 04-10-2003 SCALE: No Scale or As Noted
DESIGNED BY: STD. DATE: —

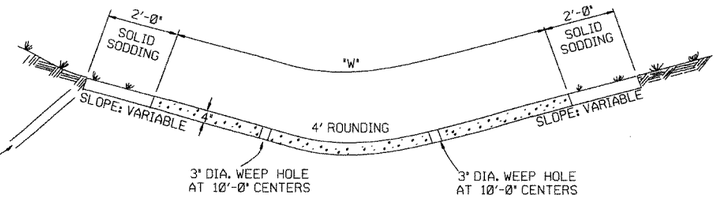
BRIDGE NO. DRAWING NO. 14995A

REFER TO TABULATION OF QUANTITIES FOR 'W' & 'B' DIMENSIONS



TYPE A

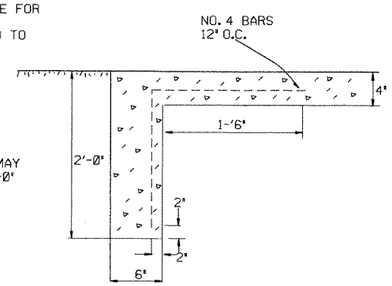
REFER TO TABULATION OF QUANTITIES FOR 'W' DIMENSIONS



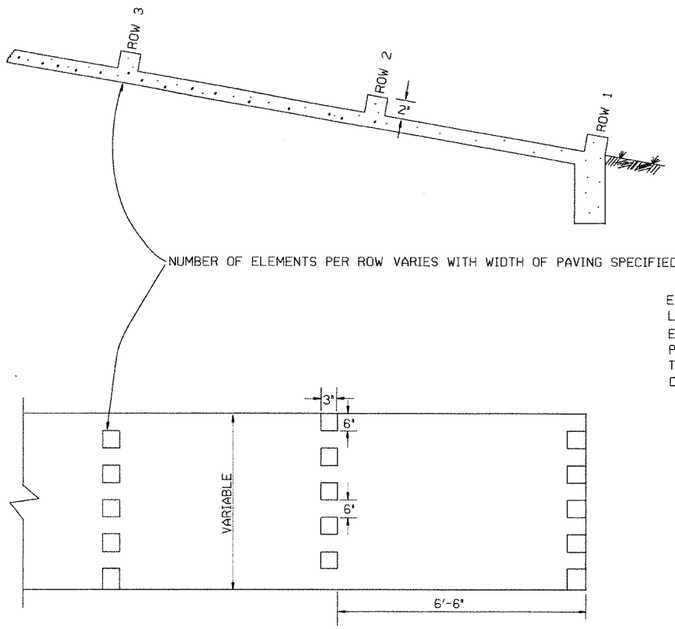
TYPE B

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



ENERGY DISSIPATORS
(NO SCALE)

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 UNCLUDED IN THE PRICE BID FOR CONCRETE DITCH PAVING.

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.

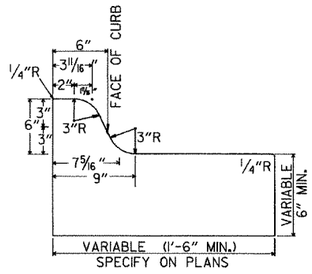
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

DATE	REVISION	DATE FILM'D
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 ADDED	508-11-1-84
11-1-84	EXCAVATION DETAILS ADDED TYPED A & B	
10-2-72	REVISED AND REDRAWN	508-10-2-72

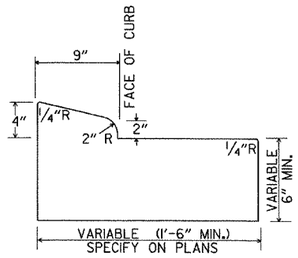
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

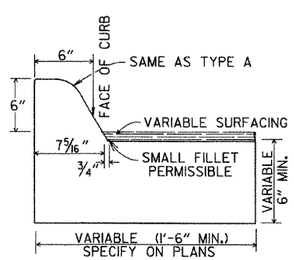
STANDARD DRAWING CDP-1



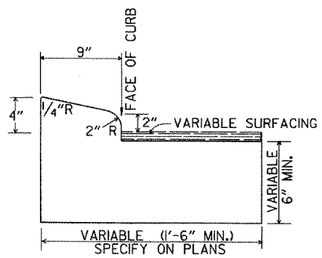
TYPE A



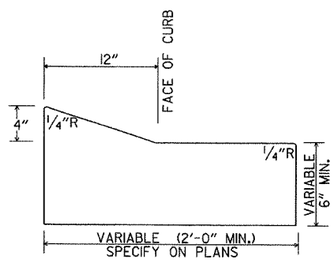
TYPE B-1



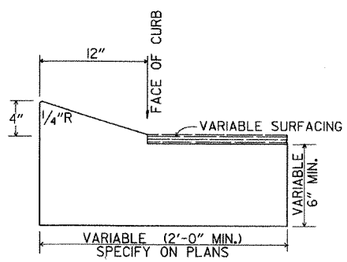
TYPE C



TYPE B-2

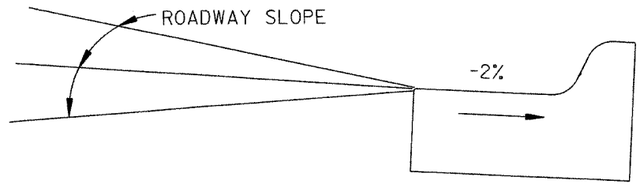


TYPE E-1



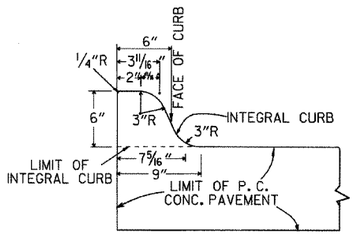
TYPE E-2

CONCRETE COMBINATION CURB AND GUTTER

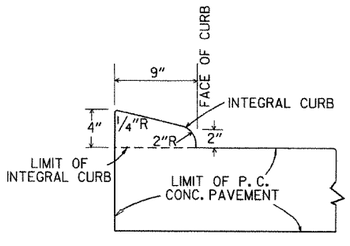


DETAIL OF GUTTER SLOPE

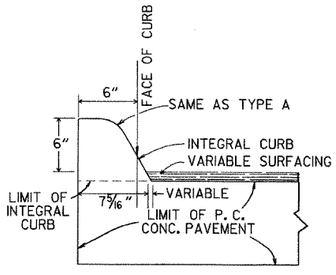
GUTTER SHALL BE CONSTRUCTED ON 2% SLOPE AWAY FROM ROADWAY, REGARDLESS OF ROADWAY SLOPE.



TYPE A

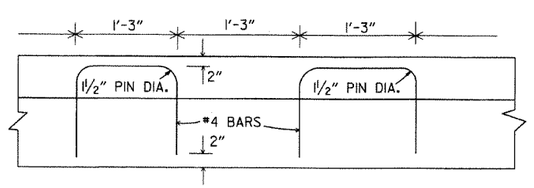


TYPE B

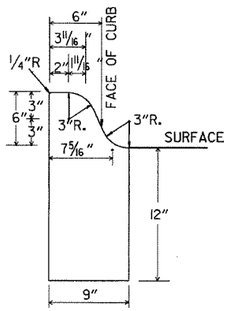


TYPE C

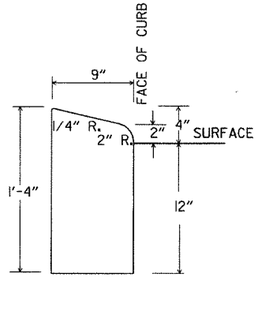
INTEGRAL CURB



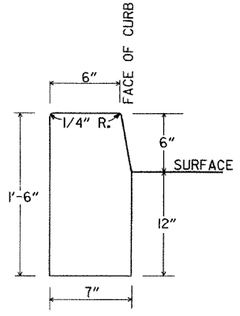
ALTERNATE CONSTRUCTION METHOD FOR INTEGRAL CURB



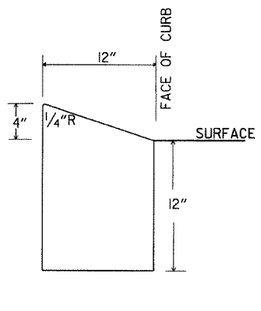
TYPE A



TYPE B

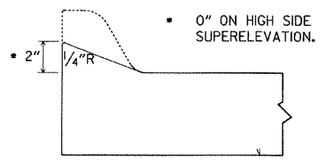


TYPE D



TYPE E

CONCRETE CURB



NOTE: USE MODIFIED CURB AS SPECIFIED ON STD. DR-1. COMPENSATION FOR MODIFIED CURB WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE TYPE OF CURB OR CURB AND GUTTER SPECIFIED.

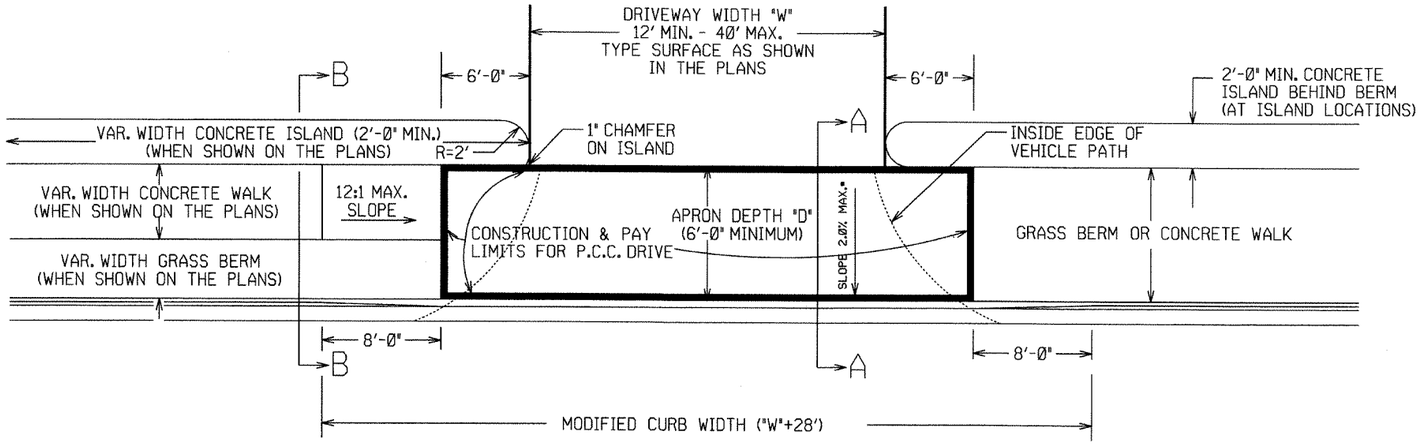
DETAILS OF MODIFIED CURB

DATE	REVISION	DATE FILMED
11-29-07	REVISED GUTTER SLOPE & MODIFIED CURB DETAILS	
11-10-05	ADDED DETAILS OF TYPE E CURBS	
11-16-01	REVISED CONCRETE CURB TYPE B	
11-18-98	REVISED MODIFIED CURB	
6-2-94	ADDED NOTE TO SPECIAL MODIFIED CURB	
8-5-93	CORRECTED GUTTER SLOPE	8-5-93
10-1-92	ADDED DETAILS OF GUTTER SLOPE	10-1-92
5-24-90	ADDED DETAILS OF MODIFIED CURB	5-24-90
11-30-89	VARIBLE DEPTH TYPE A & B 1	11-30-89
7-15-88	REVISED MODIFIED CURB	630-7-15-88
11-1-73	REVISED MODIFIED CURB	500-11-1-73
10-2-72	REVISED AND REDRAWN	512-10-2-72

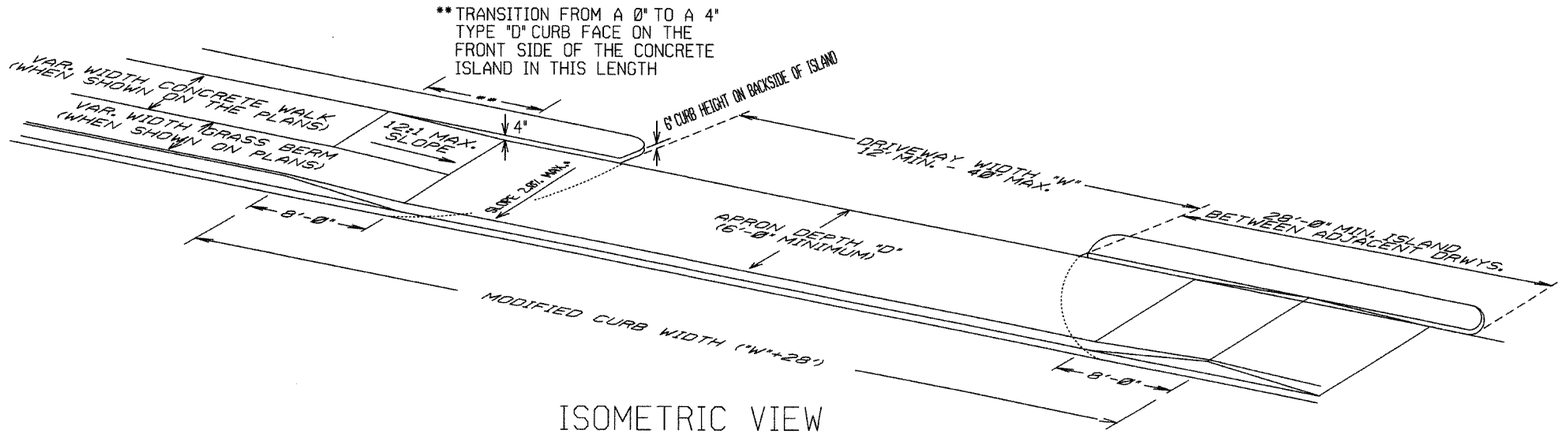
ARKANSAS STATE HIGHWAY COMMISSION

CURBING DETAILS

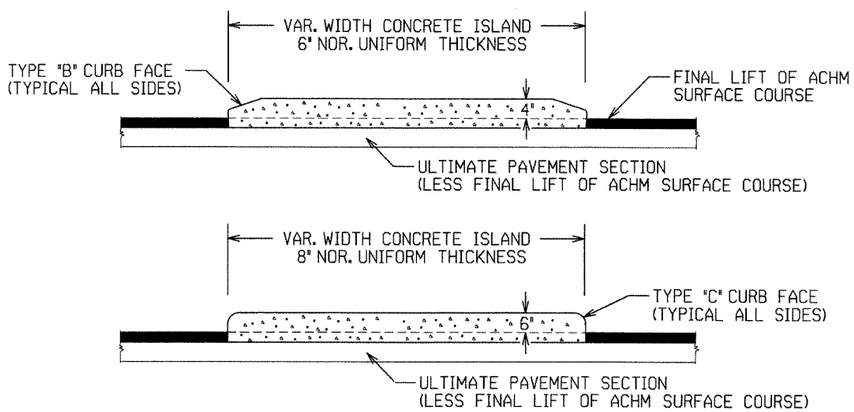
STANDARD DRAWING CG-1



PLAN VIEW

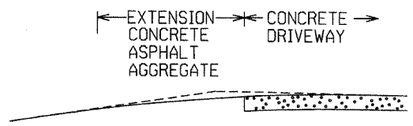


ISOMETRIC VIEW



CURBED ISLANDS FOR CHANNELIZATION

REFER TO PLANS FOR TYPE OF CURB FACE TO BE USED. NO DIRECT PAYMENT WILL BE MADE FOR THE CURB FACES SHOWN ON THE ISLAND DETAILS. PAYMENT FOR THE CURB FACE WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE ITEM "CONCRETE ISLAND".



EXTENSION TYPICAL SECTIONS

1: CONCRETE - 6" P.C. CONCRETE DRIVEWAY

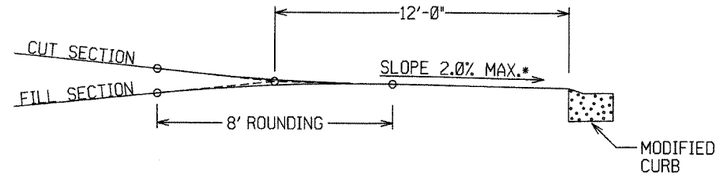
2: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
4" ACHM BINDER COURSE.(1") OR
4" ACHM BASE COURSE (1-1/2")

3: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
7" AGGREGATE BASE COURSE

4: AGGREGATE - 6" AGGREGATE BASE COURSE

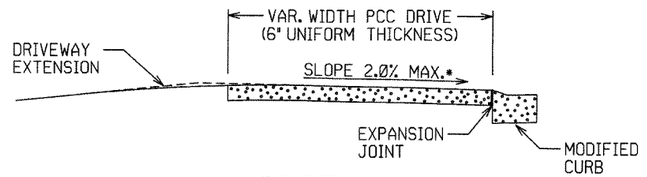
THE TYPE OF EXTENSION SHALL BE AS SHOWN IN THE PLANS. THE CONTRACTOR MAY, WITH THE APPROVAL OF THE ENGINEER, SUBSTITUTE A LOWER NUMBERED TYPE OF EXTENSION IN LIEU OF THE TYPE SPECIFIED IN THE PLANS, BUT AT NO ADDITIONAL COST TO THE DEPARTMENT.

DRIVEWAY EXTENSION DETAILS

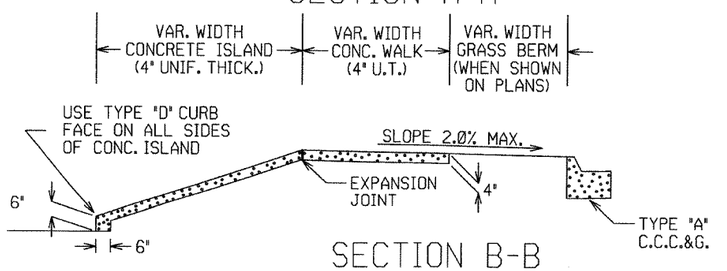


DRIVEWAY VERTICAL ALIGNMENT DETAILS

* NOTE: DRIVEWAYS MAY NOT BE SLOPED AWAY FROM THE ROADWAY UNLESS APPROVED BY THE ENGINEER.



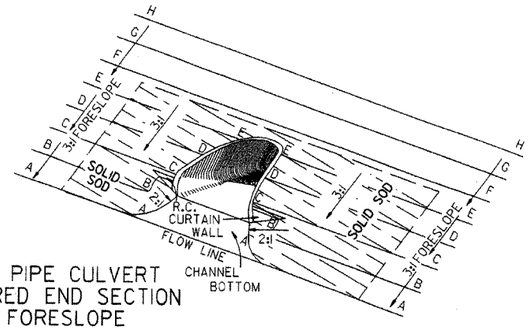
SECTION A-A



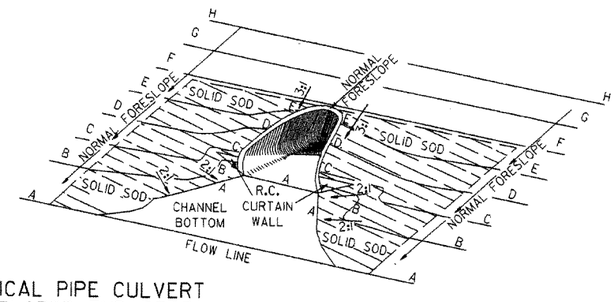
SECTION B-B
CURBED ISLAND BEHIND WALK

DATE REV	DATE FILMED	DESCRIPTION
11-29-07		ADDED CHANNELIZATION ISLAND WITH TYPE C CURB FACE & REVISED DRIVEWAY SLOPE NOTE & VERTICAL ALIGNMENT DETAIL
11-10-05		REV. APRON SLOPE & DEPTH OF AGG. BASE.
8-22-02		ADDED ISLAND DETAILS & NOTES
3-30-00		REV. MOD. CURB WIDTH & TRANS. NOTE
11-19-98		REVISED NOTES
11-18-98		REDRAWN AND REISSUED

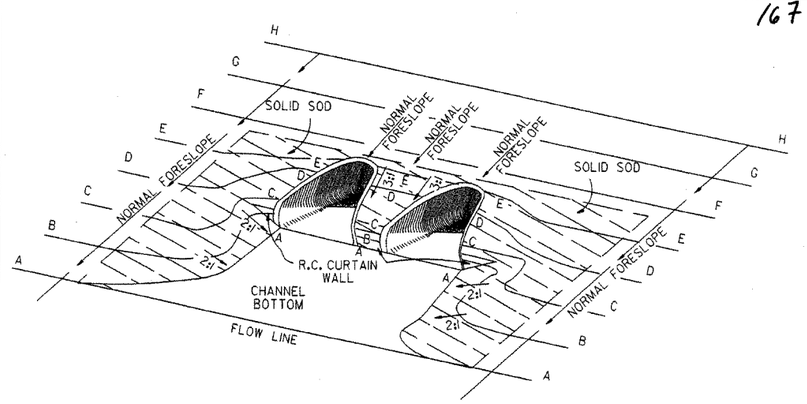
ARKANSAS STATE HIGHWAY COMMISSION
DETAILS OF DRIVEWAYS & ISLANDS
STANDARD DRAWING DR-1



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

R.C. CURTAIN WALL
DIMENSIONS & QUANTITIES

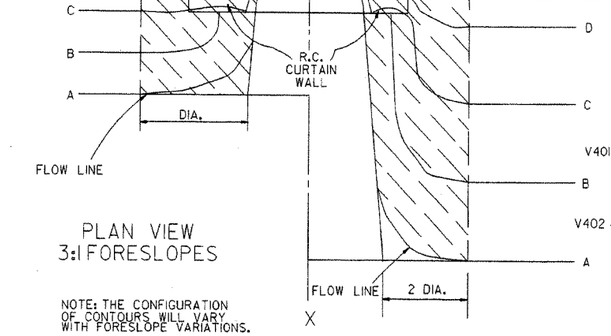
PIPE DIA.	H_1	L_1	L	L (DBL.)/2	SINGLE R.C.P.C.		DOUBLE R.C.P.C.	
					CONC.	REINF. STEEL	CONC.	REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	1'-11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	39.0	0.67	59.0
36"	1'-7"	6'-8"	13'-0"	10'-6"	0.58	52.6	0.83	73.9
42"	2'-1½"	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'-9½"	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.

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.	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		

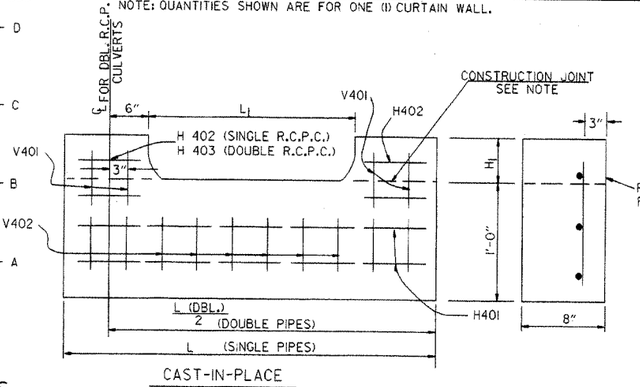
ALL REINFORCING STEEL #4 BARS @ 6" O.C.



PLAN VIEW
3:1 FORESLOPES

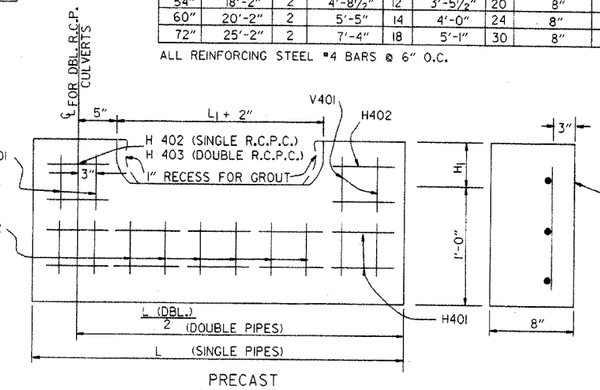
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW
FLATTENED FORESLOPES



CAST-IN-PLACE

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.



PRECAST

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.

R.C. CURTAIN WALL DETAILS

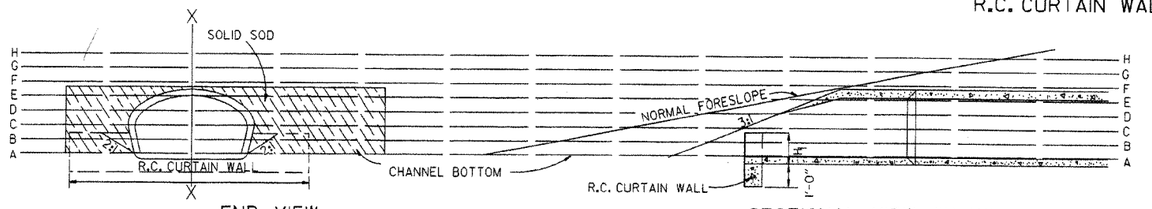
SOLID SODDING

PIPE DIA.	SINGLE R.C.P.C.			DOUBLE R.C.P.C.		
	3:1	4:1	6:1	3:1	4:1	6:1
	SQ. YDS.			SQ. 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	56	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 ¾".
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 × 3 W10 × W10 MAY BE USED IN LIEU OF REINFORCING BARS.



END VIEW

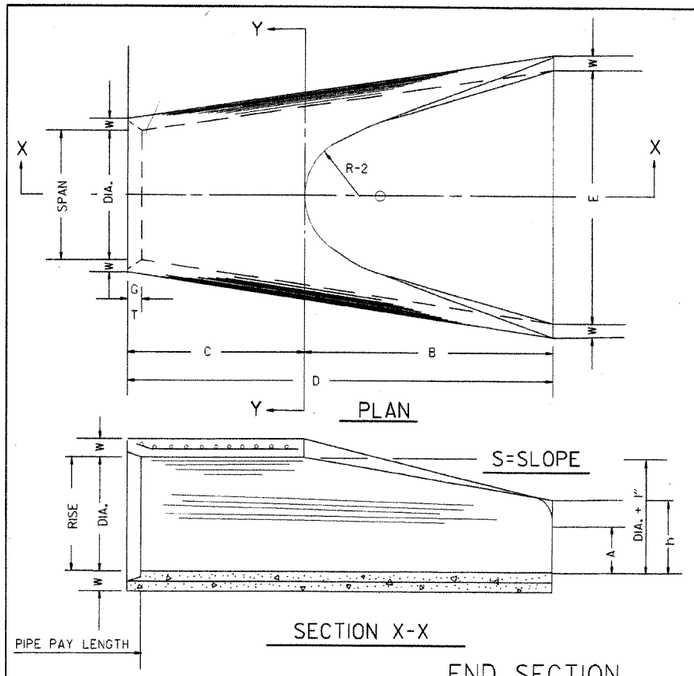
SECTIONAL VIEW "X-X"

DATE	REVISION	FILMED
10-18-96	ADDED NOTE TO SOLID SODDING	10-18-96
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	

ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

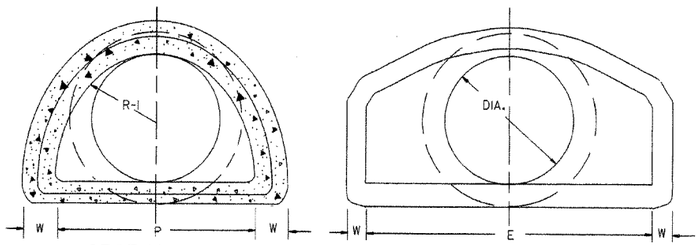
STANDARD DRAWING FES-1



END SECTION
FOR REINFORCED CONCRETE PIPE CULVERTS

TABLE OF DIMENSIONS

DIA.	WALL	A	B	C	D	E	S	DIA. + 1"	P	R-1	R-2	G-T	WT.	h
18"	2½"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3:1	19"	29"	15½"	12"	2"	1000	1'-0½"
24"	3"	9½"	3'-7½"	2'-6"	6'-1½"	4'-0"	3:1	25"	33 3/16"	16 13/16"	14"	2½"	1600	1'-1½"
30"	3½"	1'-0"	4'-6"	1'-7¾"	6'-1¾"	5'-0"	3:1	31"	37"	18½"	15"	3¼"	1940	1'-4 5/8"
36"	4"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	6'-0"	3:1	37"	47 1/16"	24 5/16"	20"	3½"	4100	1'-8"
42"	4½"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3:1	43"	53⅛"	27½"	22"	3½"	5380	2'-2½"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3:1	49"	56½"	28½"	22"	3½"	6550	2'-6"
54"	5½"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3:1	55"	65½"	33⅛"	24"	4"	8750	2'-10½"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3:1	61"	72½"	36 11/16"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3:1	73"	77 11/16"	38 5/16"	24"	5"	13250	4'-6"

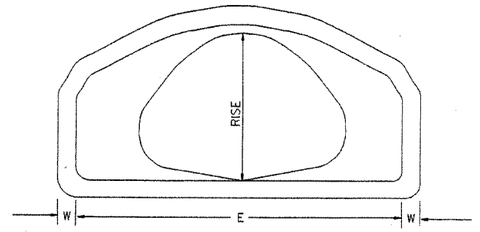


NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

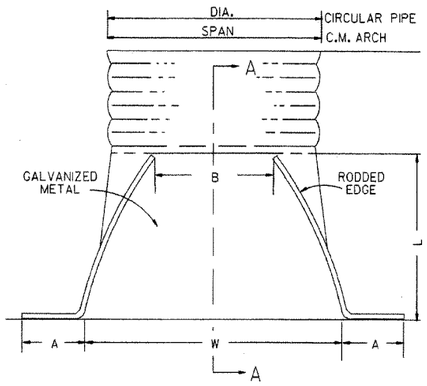
ARCH PIPE

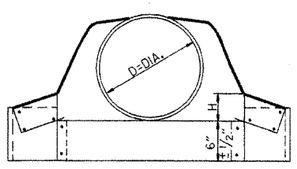
EQUIV. DIA.	• SPAN AASHTO M 206	• SPAN AHD NOMINAL	• RISE AASHTO M 206	• RISE AHD NOMINAL	W	A	B	C	D	E	P	R2	G-T	S
	INCHES													
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1½"	2½:1
18	22	22	13½	14	2½"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32⅛"	13"	2½"	2½:1
21	26	26	15½	16	2¾"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34⅛"	14"	2½"	2½:1
24	28½	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36 13/16"	15"	2½"	2½:1
30	36¼	36	22½	23	3½"	10"	3'-1"	3'-0½"	6'-1½"	6'-0"	47 13/16"	20"	3"	2½:1
36	43¾	44	26⅝	27	4"	10½"	4'-0"	2'-11½"	6'-1½"	6'-6"	54 5/16"	22"	3½"	2½:1
42	51⅛	51	31 3/16	31	4½"	11½"	4'-7"	1-10¼"	6'-5¼"	7'-2"	59½"	23"	3¾"	2½:1
48	58½	59	36	36	5"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	7'-10"	70 5/16"	24"	4¼"	2½:1
54	65	65	40	40	5½"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72 1/16"	24"	4¾"	2¼:1
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77 13/16"	24"	5"	2¼:1

• THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.



END VIEW
CONCRETE ARCH PIPE

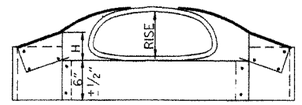




CIRCULAR PIPE

CIRCULAR PIPE

D. DIA.	GAUGE	A 1" ±	B. MAX.	H 1" ±	L 1½" ±	W 2" ±	S
		INCHES					
12	16	6	6	6	21	24	2½:1
15	16	7	8	6	26	30	2½:1
18	16	8	10	6	31	36	2½:1
21	16	9	12	6	36	42	2½:1
24	16	10	13	6	41	48	2½:1
30	14	12	16	8	51	60	2½:1
36	14	14	19	9	60	72	2½:1
42	12	16	22	11	69	84	2½:1
48	12	18	27	12	78	90	2½:1
54	12	18	30	12	84	102	2:1
60	12	18	33	12	87	114	1¾:1
66	12	18	36	12	87	120	1½:1
72	12	18	39	12	87	126	1 1/3:1



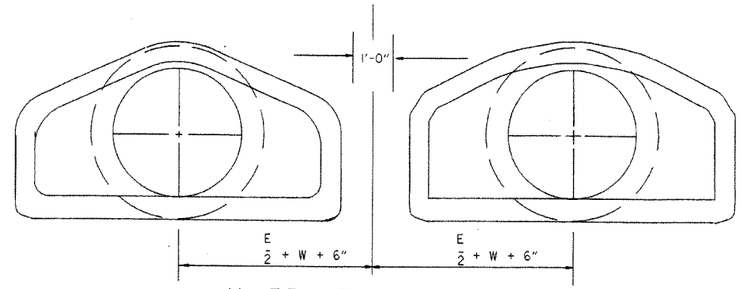
C.M. ARCH PIPE

C.M. ARCH PIPE

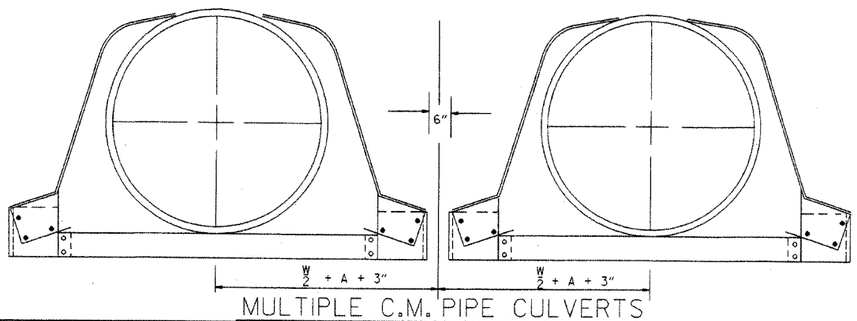
EQUIV. DIA.	SPAN	RISE	A 1" ±	B MAX.	H 1" ±	L 1½" ±	W 2" ±	S	GAUGE
	INCHES								
15"	17	13	7	9	6	19	30	2½:1	16
18"	21	15	7	10	6	23	36	2½:1	16
21"	24	18	8	12	6	28	42	2½:1	16
24"	28	20	9	14	6	32	48	2½:1	16
30"	35	24	10	16	6	39	60	2½:1	14
36"	42	29	12	18	8	46	75	2½:1	14
42"	49	33	13	21	9	53	85	2½:1	12
48"	57	38	18	26	12	63	90	2½:1	12
54"	64	43	18	30	12	70	102	2¼:1	12
60"	71	47	18	33	12	77	114	2¼:1	12

NOTE: ALTERNATE CONNECTIONS TO THE PIPE CULVERTS, IN ACCORDANCE WITH MANUFACTURER'S STANDARD PRACTICES, MAY BE MADE SUBJECT TO THE APPROVAL OF THE ENGINEER.

END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS



MULTIPLE R.C. PIPE CULVERTS



MULTIPLE C.M. PIPE CULVERTS

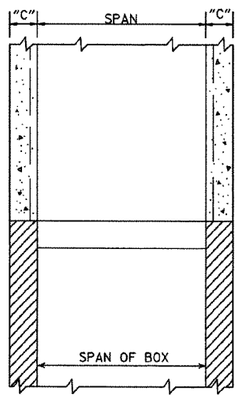
DATE	REVISION	FILMED
10-18-96	REVISED ASTM REF. TO AASHTO	10-18-96
5-15-80	REVISED DISTANCE BETWEEN MULTIPLE R.C.P. F.E.S.	664-5-15-80
7-14-78	C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES	752-7-14-78
8-22-75	ADDED MULTIPLE PIPE CULVERTS	517-8-22-75
12-5-74	REMOVED NOTE RE REINF. FOR R.C. F.E.S.	500-12-5-74
5-24-73	CMP END SECTION, SHOW PIPE PAY LENGTH	627-5-24-73
10-2-72	REVISED AND REDRAWN	760-10-2-72

ARKANSAS STATE HIGHWAY COMMISION

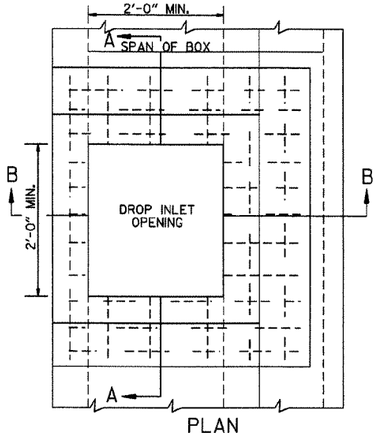
FLARED END SECTION

STANDARD DRAWING FES-2

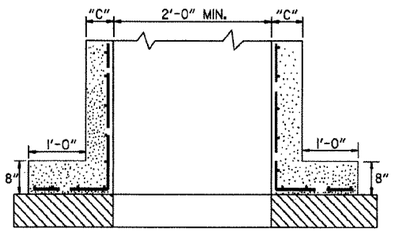
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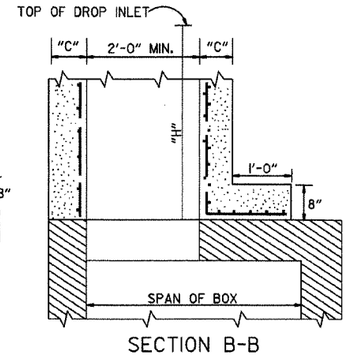
SECTION B-B



PLAN

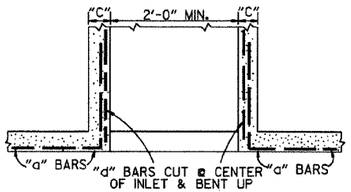


SECTION A-A

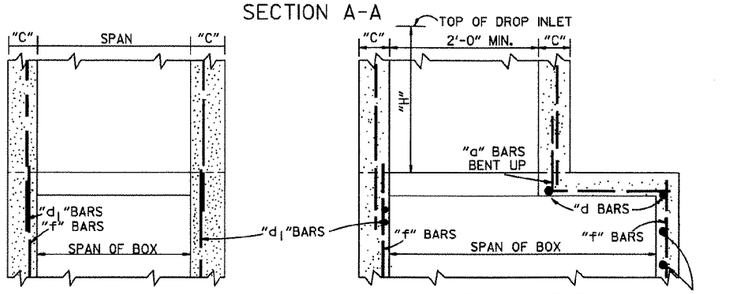


SECTION B-B

METHOD OF CONSTRUCTING DROP INLET ON EXISTING R.C. BOX CULVERT



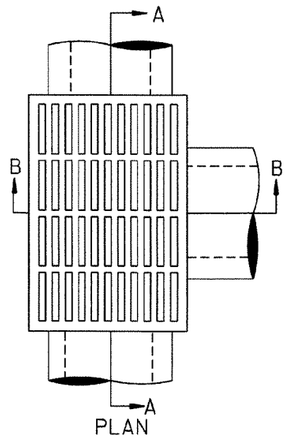
SECTION A-A



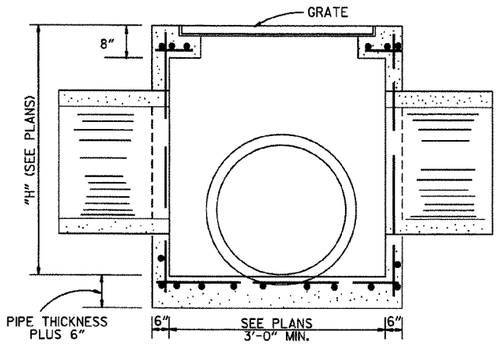
SECTION B-B SECTION B-B

METHOD OF CONSTRUCTING DROP INLET ON NEW R.C. BOX CULVERT

NOTE: "C" DIMENSIONS AND REINFORCING BAR SIZES, SHALL CONFORM TO THOSE SHOWN ON STANDARD DRAWING FOR DROP INLET.

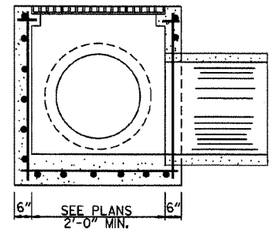


PLAN



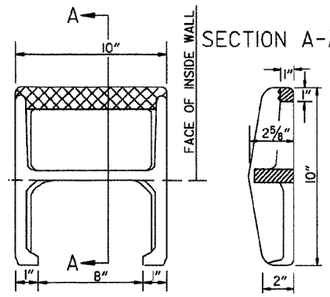
SECTION A-A

NOTE: REINF. BARS TO BE #4 BARS ON 6" CTRS. WITH 1½" MIN. COVER. THIS TYPE DROP INLET TO BE USED WHERE NOT SUBJECTED TO TRAFFIC.



SECTION B-B

DROP INLET (TYPE E)



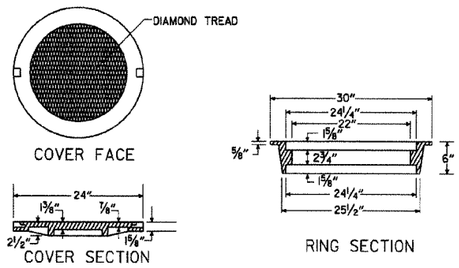
SECTION A-A

APPROX. WEIGHT = 11 LBS. (CAST IRON)

PLAN

NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

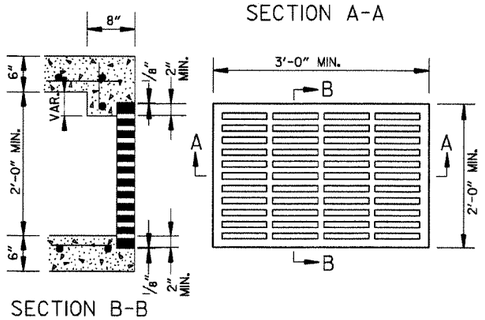
DETAIL OF STEP FOR DROP INLET



APPROXIMATE TOTAL WEIGHT = 333 LBS.

HEAVY DUTY RING & COVER

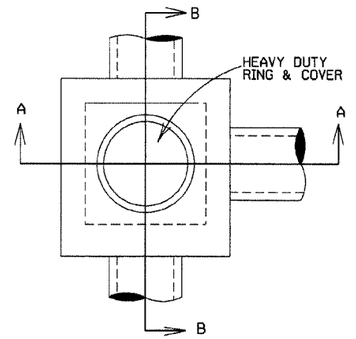
SECTION A-A



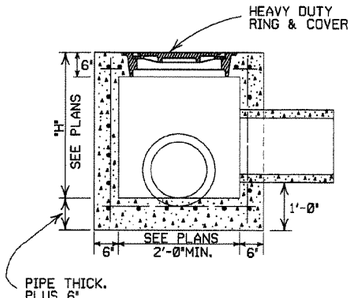
SECTION B-B

APPROXIMATE MINIMUM WATERWAY OPENING = 260 SQ. IN.

GRATE FOR TYPE E DROP INLET

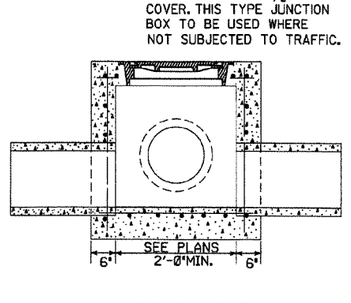


PLAN



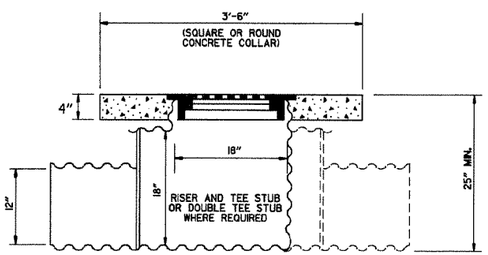
SECTION A-A

NOTE: REINF. BARS TO BE #4 BARS ON 6" CTRS. WITH 1½" MIN. COVER. THIS TYPE JUNCTION BOX TO BE USED WHERE NOT SUBJECTED TO TRAFFIC.

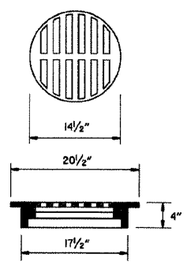


SECTION B-B

JUNCTION BOX (TYPE E)



NOTE: CONCRETE COLLAR TO BE CAST IN PLACE. 12" PIPE CULVERTS TO BE MEASURED AND PAID FOR AS " 12" SIDE DRAIN ".



USE NEENAH R-5901-C OR EQUIVALENT BICYCLE SAFE FRAME AND GRATE

DETAIL OF YARD DRAIN

GENERAL NOTES:

1. ALL EXPOSED CORNERS SHALL BE ¾" CHAMFERED.
2. STEPS SHALL BE INSTALLED ON 16" CENTERS ON ALL INLETS 4'-0" HIGH OR OVER, OR AS APPROVED BY THE ENGINEER.
3. EXPANSION JOINT MATERIAL SHALL BE ¾" PREFORMED FIBER.
4. GRATE OR 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. GRATE MAY BE USED WITHOUT FRAME.
5. GRATE AND FRAME SHALL NOT BE PAINTED.
6. GRATE SHALL BE BICYCLE SAFE.
7. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
8. 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 M105 CLASS 35B & AASHTO M306.
9. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
10. 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.

DATE REV.	REVISION	DATE FILMED
11-16-01	ADDED NOTE 10	
1-12-00	REVISED HEAVY DUTY RING & COVER	
7-02-98	CHANGED GRATE DETAIL, DELETED DI(TYPE D), REPLACED RING & COVER W/HEAVY DUTY RING & COVER, ADDED JUNCTION BOX (TYPE E)	
6-26-97	ADDED DIMENSION TO TYPE IV-A	
10-18-96	ADDED DETAIL OF YARD DRAIN	
8-15-91	DELETE TYPE IV GRATE	
7-15-88	REVISED STEP DETAIL	
5-20-83	REVISED DETAILS OF GRATES (TYPE IV & IV-A)	
2-4-83	ADDED GENERAL NOTE NO. 4	
3-2-81	ADDED TYPE IV-A GRATE	
5-22-74	DELETED INLET (TYPE F) & GRATE (TYPE III)	
10-2-72	REVISED AND REDRAWN	

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS & JUNCTION BOXES

STANDARD DRAWING FPC-9

4'-0" LENGTH DROP INLET

PIPE SIZE	MIN. WIDTH	HEIGHT 5'-0" CLASS A CONC.	HEIGHT 5'-0" REINF. STEEL	PLUS OR MINUS PER LIN. FT. OF HEIGHT CLASS A CONC.	PLUS OR MINUS PER LIN. FT. OF HEIGHT REINF. STEEL
		CU. YDS.	POUNDS	CU. YDS.	POUNDS
18"	2'-6"	1.77	156	0.28	22
24"	2'-6"	1.79	156	0.28	22
30"	3'-2"	2.39	205	0.30	26
36"	3'-8"	2.63	236	0.32	28
42"	4'-4"	2.95	250	0.34	30
48"	4'-10"	3.21	265	0.36	32

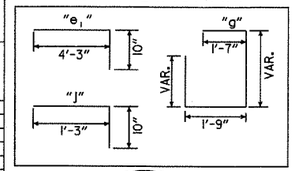
NOTE: QUANTITIES ARE APPROXIMATE AND ARE SHOWN FOR BIDDER INFORMATION ONLY.

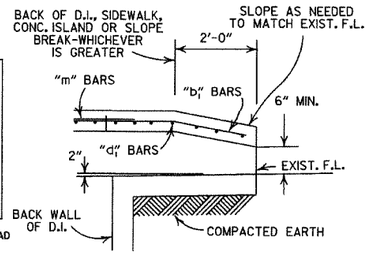
DROP INLET EXTENSION

4'-0" CLASS A CONC.	4'-0" REINF. STEEL	8'-0" CLASS A CONC.	8'-0" REINF. STEEL
CU. YDS.	POUNDS	CU. YDS.	POUNDS
0.58	38	0.87	72
DEDUCT FROM QUANTITY COMPUTED FOR EACH EXTENSION ADDED.			
0.04	3		

DEDUCT FROM QUANTITY COMPUTED FOR EACH PIPE ENTERING INLET		
INSIDE DIA. PIPE	CLASS A CONC.	REINF. STEEL
INCHES	CU. YDS.	POUNDS
18	0.05	2
24	0.09	3
30	0.13	4
42	0.24	8

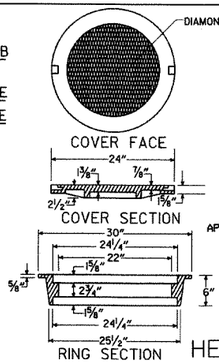
BAR DIAMETER





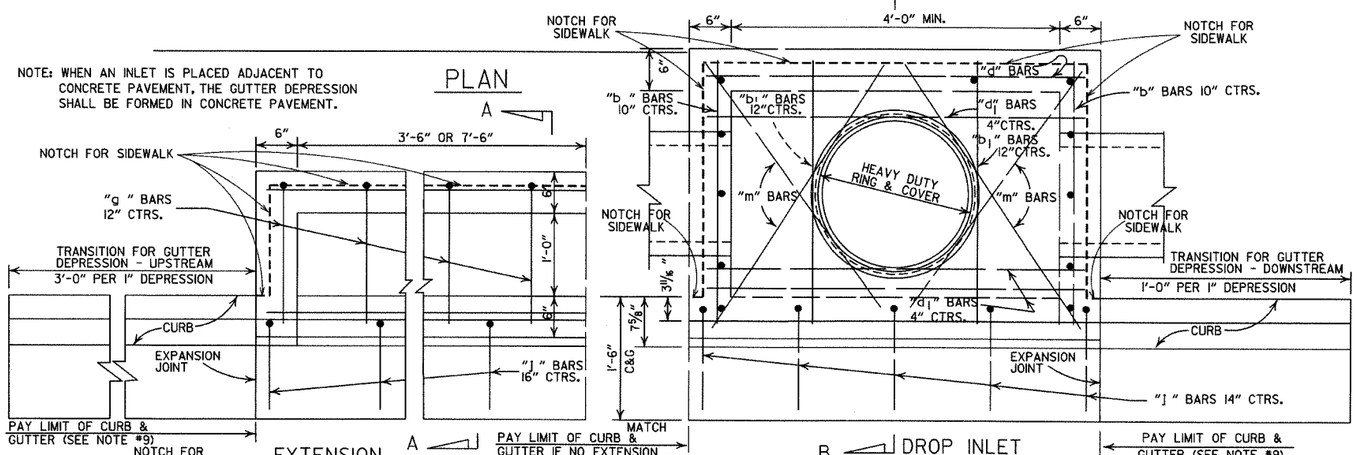
BACK OPENING

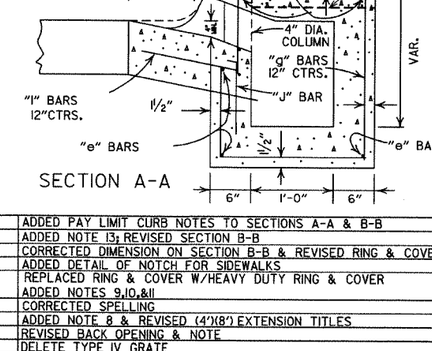
WHEN OPENING IN BACK IS CALLED FOR ON PLANS EXTEND OPENING AS SHOWN IN DETAIL. PAYMENT TO BE INCLUDED IN PRICE BID FOR DROP INLET (TYPE C).



APPROXIMATE TOTAL WEIGHT = 333 LBS.

HEAVY DUTY RING & COVER





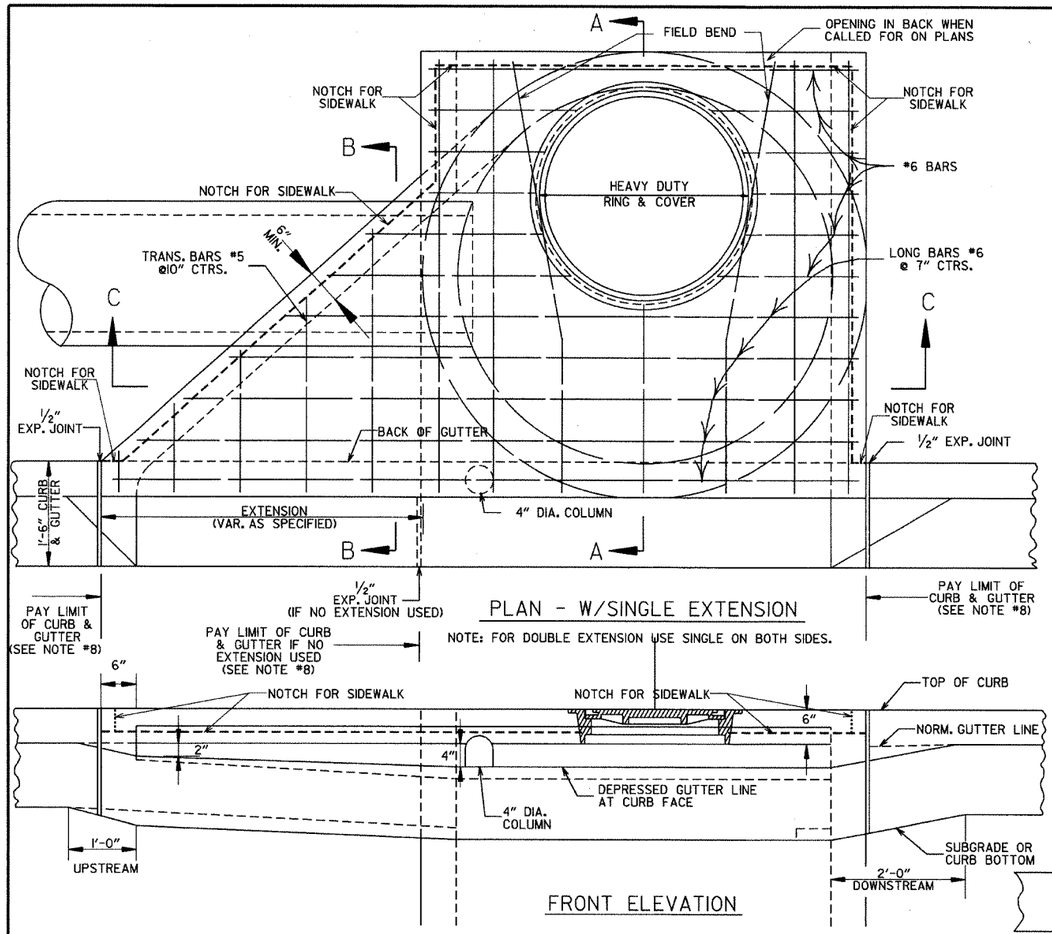
GENERAL NOTES:
1. ALL EXPOSED CORNERS TO HAVE ¾" CHAMFER.
2. STEPS SHALL BE INSTALLED IN ALL INLETS 4'-0" HIGH AND OVER OF AS APPROVED BY THE ENGINEER.
3. ALL REINF. BARS SHALL BE #4 AND HAVE 1½" COVER.
4. DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
5. THIS DROP INLET MAY BE CONSTRUCTED ON NEW OR EXISTING R.C. BOX CULVERT AS SHOWN ON F.P.C.-9.
6. WHEN PLANS CALL FOR DROP INLET OVER 10'-0" HIGH, FLOOR AND WALLS SHALL BE CONSTRUCTED AS SHOWN FOR TYPE "RM" DROP INLET (F.P.C.-9D).
7. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
8. DURING CONSTRUCTION OF THE ROADWAY THE CONTRACTOR SHALL MAINTAIN DRAINAGE INTO OR AROUND THE DROP INLET AS APPROVED BY THE ENGINEER.
9. PAYMENT FOR CURB AND/OR CURB AND GUTTER WITHIN THE LIMITS OF DROP INLETS AND DROP INLET EXTENSIONS SHALL BE CONSIDERED INCLUDED IN PAYMENT MADE FOR DROP INLETS AND/OR DROP INLET EXTENSIONS.
10. 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 M105 CLASS 35B & AASHTO M306.
11. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
12. 4"x2" NOTCH SHALL BE FORMED IN ALL DROP INLETS TO SUPPORT SIDEWALK CONSTRUCTION. REFER TO DETAIL OF NOTCH FOR SIDEWALKS.
13. 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.

DATE REV.	REVISION	DATE FILMED
8-22-02	ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B	
11-16-01	ADDED NOTE 13; REVISED SECTION B-B	
1-12-00	CORRECTED DIMENSION ON SECTION B-B & REVISED RING & COVER	
5-13-99	ADDED DETAIL OF NOTCH FOR SIDEWALKS	
7-02-98	REPLACED RING & COVER W/HEAVY DUTY RING & COVER ADDED NOTES 9,10,&11	
10-18-96	CORRECTED SPELLING	
4-26-96	ADDED NOTE 8 & REVISED (4')(8') EXTENSION TITLES	10-18-96
4-1-93	REVISED BACK OPENING & NOTE	
8-15-91	DELETE TYPE IV GRATE	
7-15-88	REVISED STEP DETAIL	
5-20-83	REVISED DETAILS OF GRATES (TYPE IV & IV-A)	
2-4-83	ADDED GENERAL NOTE NO. 4	
3-2-81	ADDED TYPE IV-A GRATE	
5-22-74	DELETED INLET (TYPE F) & GRATE (TYPE III)	
10-2-72	REVISED AND REDRAWN	

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS (TYPE C)

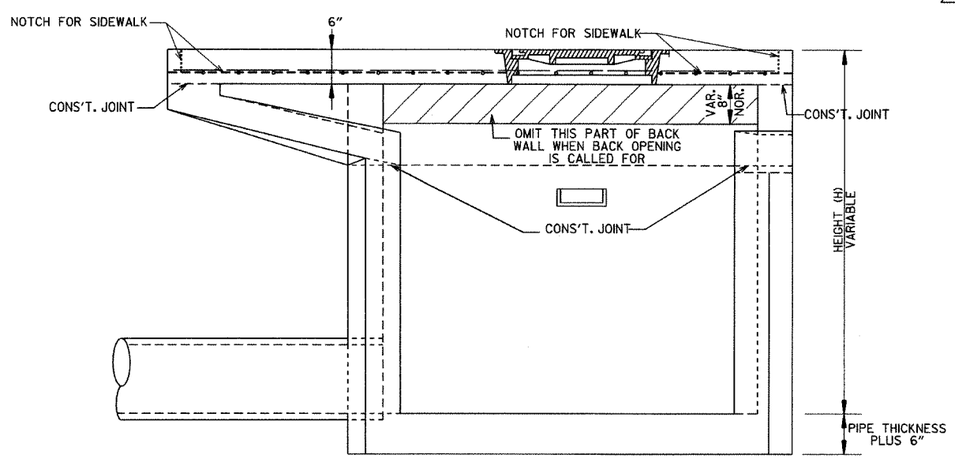
STANDARD DRAWING FPC-9E



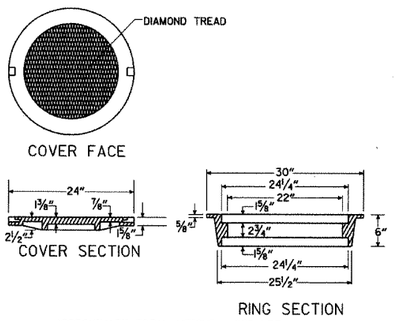
PLAN - W/SINGLE EXTENSION

NOTE: FOR DOUBLE EXTENSION USE SINGLE ON BOTH SIDES.

FRONT ELEVATION



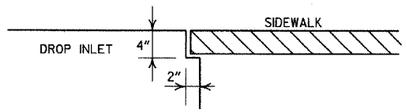
SECTION C-C



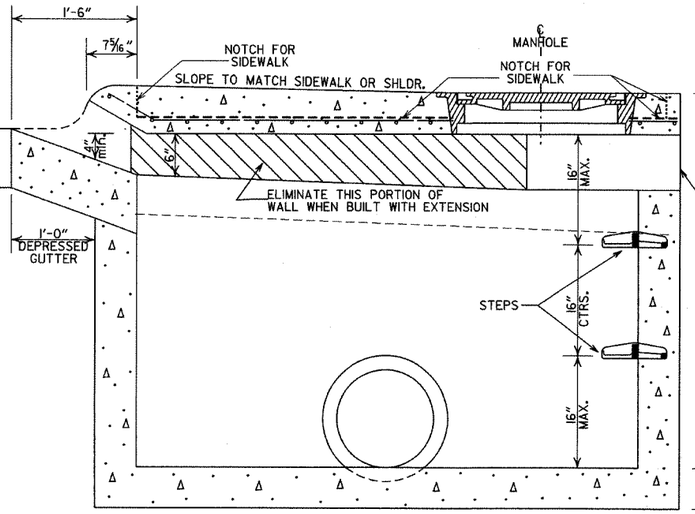
APPROXIMATE TOTAL WEIGHT = 333 LBS.

HEAVY DUTY RING & COVER

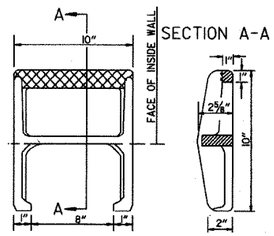
1. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M105 CLASS 35B & AASHTO M306.
2. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
3. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.



DETAIL OF NOTCH FOR SIDEWALKS



SECTION A-A

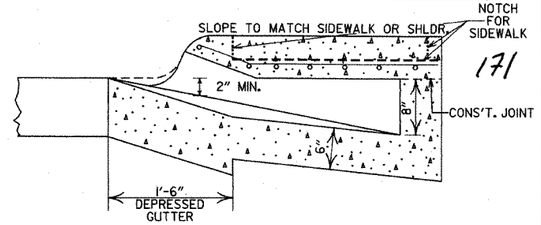


APPROX. WEIGHT = 11 LBS. (CAST IRON)

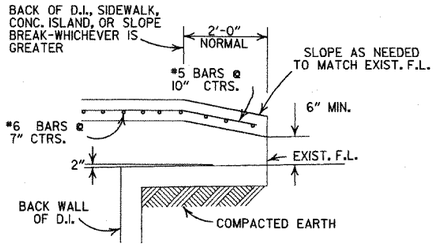
PLAN

NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

DETAIL OF STEP FOR DROP INLET



SECTION B-B



BACK OPENING

WHEN OPENING IN BACK IS CALLED FOR ON PLANS EXTEND OPENING AS SHOWN IN DETAIL. PAYMENT TO BE INCLUDED IN PRICE BID FOR DROP INLET (TYPE MO).

GENERAL NOTES:

1. ALL EXPOSED CORNERS TO HAVE ¾" CHAMFER.
2. STEPS SHALL BE INSTALLED IN ALL INLETS 4'-0" HIGH AND OVER OR AS DIRECTED BY THE ENGINEER.
3. ALL REINFORCING BARS SHALL BE GRADE 60 AND HAVE MIN. 1½" COVER.
4. DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
5. 4" DIA. COLUMNS SPACED AT MAX. 4'-0" INTERVALS SHALL BE INSTALLED ALONG INLET AND EXTENSION TO SUPPORT TOP.
6. BASE AND INLET WALLS SHALL BE CAST MONOLITHICALLY.
7. THE THROAT SHALL BE CAST INTEGRALLY WITH THE GUTTER.
8. PAYMENT FOR CURB AND/OR CURB AND GUTTER WITHIN THE LIMITS OF DROP INLETS AND DROP INLET EXTENSIONS SHALL BE CONSIDERED INCLUDED IN PAYMENT MADE FOR DROP INLETS AND/OR DROP INLET EXTENSIONS.
9. PIPES MAY ENTER DROP INLET FROM ANY ANGLE OR ELEVATION AS MAY BE APPROVED BY THE ENGINEER.
10. APPROPRIATE SIZE TYPE C DROP INLETS MAY BE SUBSTITUTED FOR TYPE MO DROP INLETS AS APPROVED BY THE ENGINEER. PAYMENT TO BE AS DROP INLET (TYPE MO).
11. DURING CONSTRUCTION OF THE ROADWAY THE CONTRACTOR SHALL MAINTAIN DRAINAGE INTO OR AROUND THE DROP INLET AS APPROVED BY THE ENGINEER.
12. 4"x2" NOTCH SHALL BE FORMED IN ALL DROP INLETS TO SUPPORT SIDEWALK CONSTRUCTION. REFER TO DETAIL OF NOTCH FOR SIDEWALKS.
13. 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.

LEAVE OPENING IN BACK WHEN CALLED FOR ON PLANS REFER TO BACK OPENING DETAIL

DIA. OF D.I.	DIA. OF OUTLET PIPE	MINIMUM WALL THICKNESS	
		CAST IN PLACE	PRECAST
4' I.D.	12" THRU 27"	6"	5"
5' I.D.	30" THRU 42"	8"	6"
6' I.D.	48" THRU 54"	8"	7"

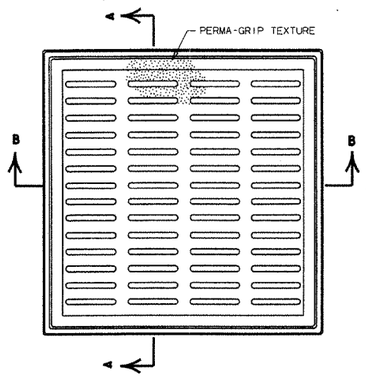
DATE	REVISIONS	DATE FILMED
8-22-02	ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B	
11-16-01	ADDED NOTE 13	
1-12-00	REVISED HEAVY DUTY RING & COVER	
5-13-99	ADDED NOTCH DETAIL FOR SIDEWALKS	
7-02-98	REP. NOTE 8, REM. PLAN DET., REV. PICTURE FOR NEW RING & COVER, ADDED HEAVY DUTY RING & COVER AND DETAIL OF STEP FOR DROP INLET	
4-26-96	ADDED NOTE 11 & ADJ. OPENING DIMENSION	
10-12-95	CORRECTED #6 BAR SPACING	
7-20-95	CORRECTED DIAMETER OF D.I. IN BOX	
4-2-95	TYPE C TO MO (OPEN BACK DETAIL)	
11-3-94	REVISED GENERAL NOTES	11-3-94
4-1-93	REV. BACK OPEN. DETAIL & NOTE	4-1-93
8-15-91	REVISED NOTES 11&12 & ADDED BK.OPEN DETAIL	8-15-91
11-30-89	ADDED NOTE NO.12	11-30-89
5-23-89	ADDED NOTE 8 & MINUMUM WALL THICKNESS	SIS-5-23-89
7-15-88	ADDED EXTEND NOTE TO SECTION A-A	6-29-7-15-88
1-14-87	MODIFIED WALL THICKNESS	183-1-14-87
6-12-87	ISSUED	4-6-12-87

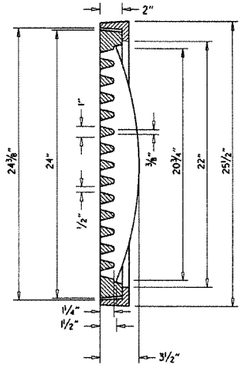
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLET (TYPE MO)

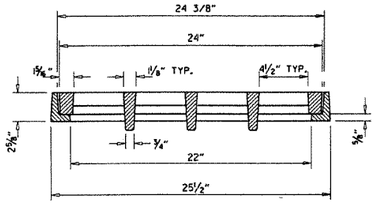
STANDARD DRAWING FPC-9M

171





SECTION A-A

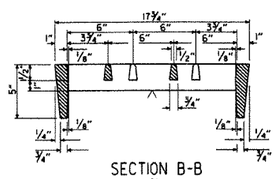


SECTION B-B

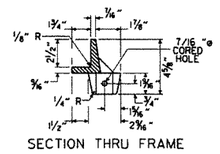
GENERAL NOTES (PEDESTRIAN GRATE & FRAME)

1. THE PEDESTRIAN GRATE SHALL BE ORIENTED IN THE TOP OF THE DROP INLET SO THAT THE ½" 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 FOR 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 211LBS.
6. THE MINIMUM WATERWAY OPENING SHALL BE 122 SQ. IN.

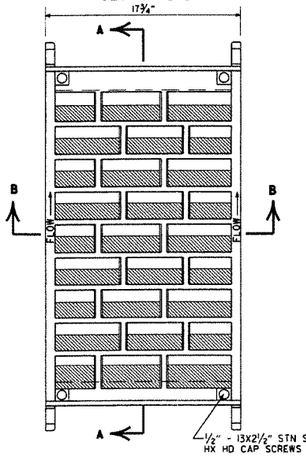
DETAILS OF PEDESTRIAN GRATE AND FRAME

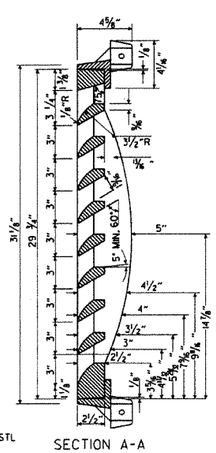


SECTION B-B



SECTION THRU FRAME



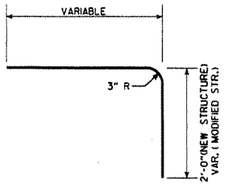


SECTION A-A

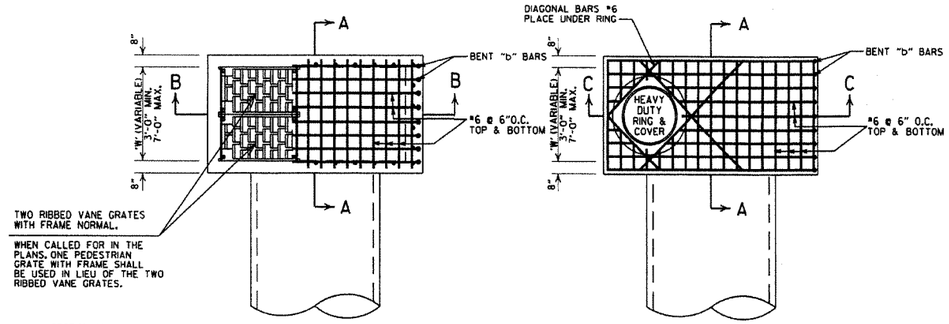
DETAILS OF RIBBED VANE GRATE AND FRAME

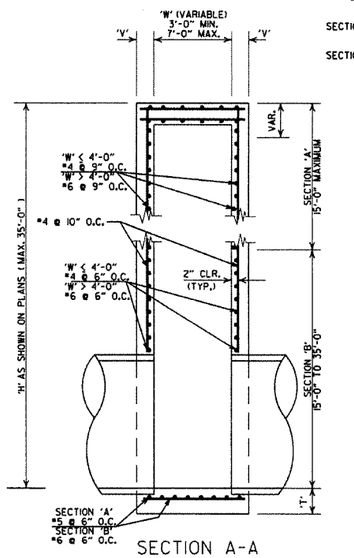
GENERAL NOTES (RIBBED VANE GRATE & FRAME)

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.

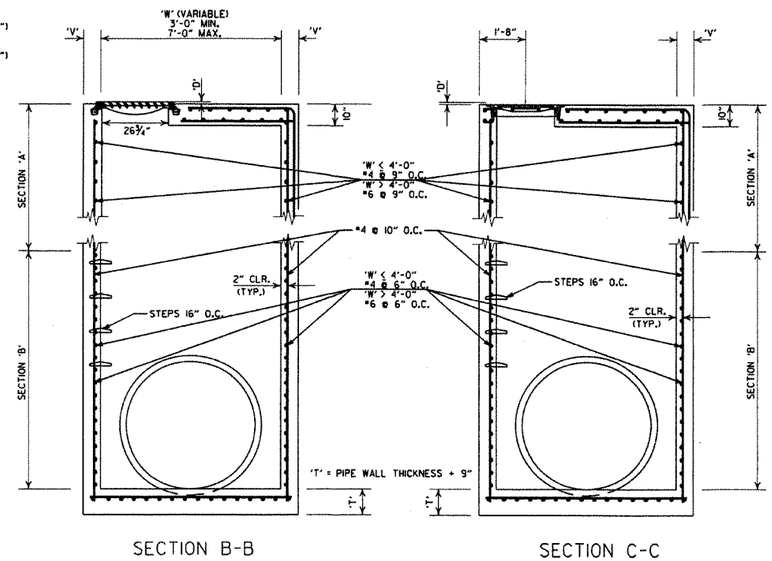


DETAIL OF BENT "b" BAR





SECTION A-A



SECTION B-B

SECTION C-C

DETAILS OF DROP INLET (TYPE ST)

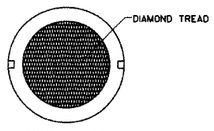
DETAILS OF JUNCTION BOX (TYPE ST)

GENERAL NOTES (TYPE ST DROP INLET & JUNCTION BOX)

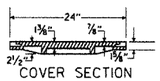
1. THE 'D' DIMENSION SHALL MATCH THE FINAL LIFT OF ACHM SURFACE COURSE SHOWN IN THE PLANS WHEN ASPHALT PAVING SURROUNDS THE GRATE OR RING COVER, AND SHALL BE 0" AT OTHER INSTALLATIONS.
2. THE STEPS SHALL BE OMITTED WHERE 'H' IS LESS THAN 4'-0".
3. ALL EXPOSED CORNERS ARE TO HAVE A ¾" CHAMFER.

GENERAL NOTES (HEAVY DUTY RING & COVER):

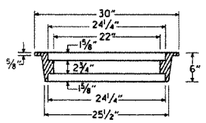
1. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
2. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
3. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE 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.



COVER FACE



COVER SECTION



RING SECTION

HEAVY DUTY RING & COVER

APPROXIMATE TOTAL WEIGHT = 333 LBS.

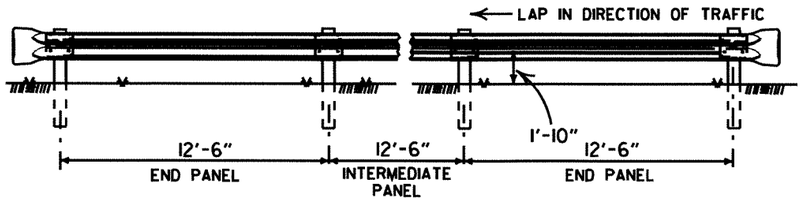
DATE REVISED	DATE FILMED	DESCRIPTION
7-26-12		REMOVED NOTE 4, REVISED 'T', REVISED BOTTOM SLAB REBAR FOR SECTION 'A', SHOWED REBAR CLEARANCE IN SECTIONS
11-16-01		ADDED NOTE 4
1-12-00		REVISED HEAVY DUTY RING & COVER
5-13-99		ADDED PEDESTRIAN FRAME & GRATE
7-02-98		REMOVED NOTE 5, REV. DIMENSIONS, ADDED 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

ARKANSAS STATE HIGHWAY COMMISSION

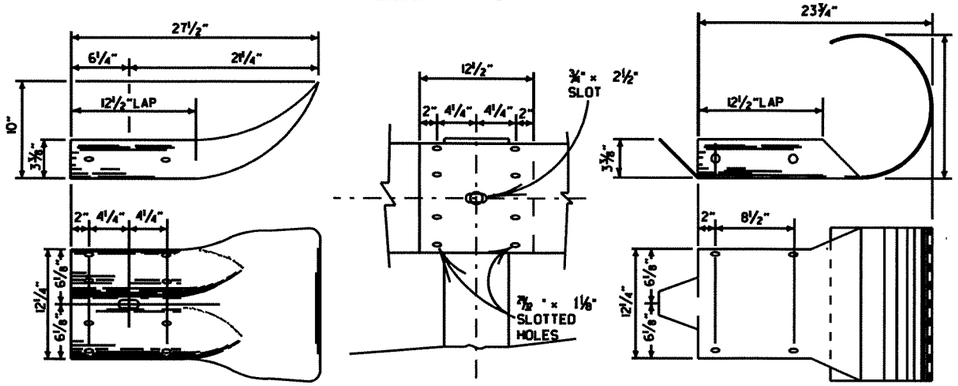
DETAILS OF DROP INLET & JUNCTION BOX (TYPE ST)

STANDARD DRAWING FPC-9S

PLAN



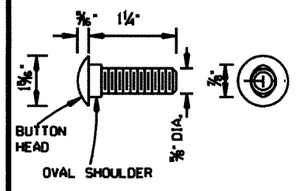
ELEVATION



TERMINAL SECTION

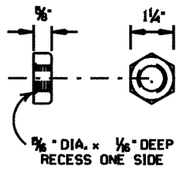
RAIL SPLICE

TERMINAL SECTION

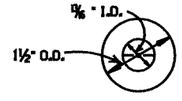


SPLICE BOLT

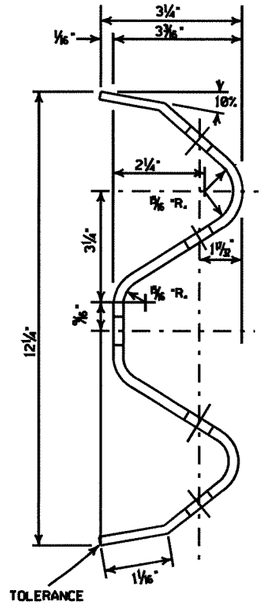
NOTE: POST BOLT SAME EXCEPT LENGTH.



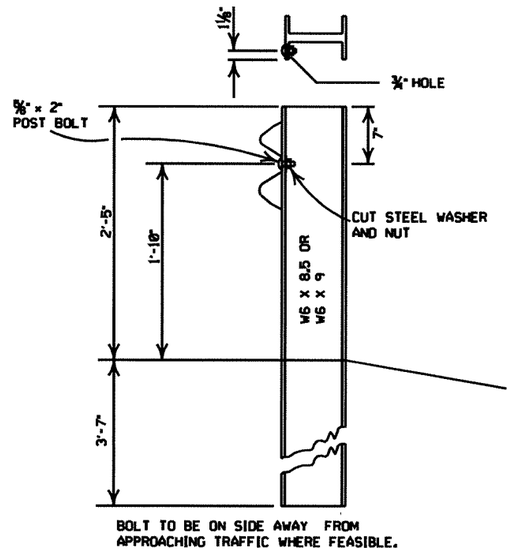
NUT



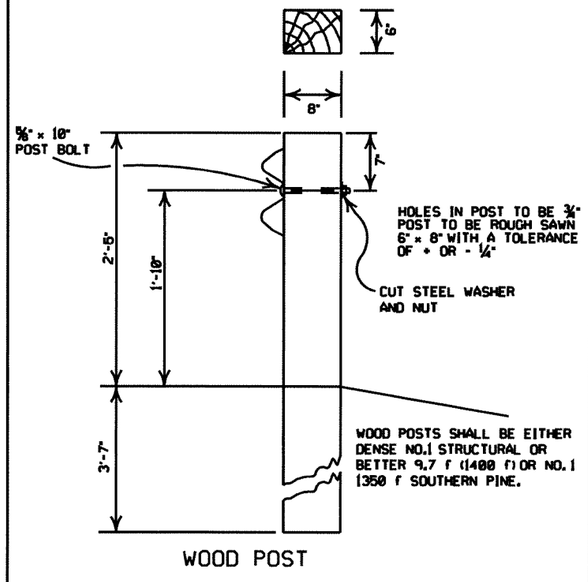
CUT STEEL WASHER



SECTION THRU RAIL



STEEL POST



WOOD POST

DETAILS OF POST CONNECTIONS

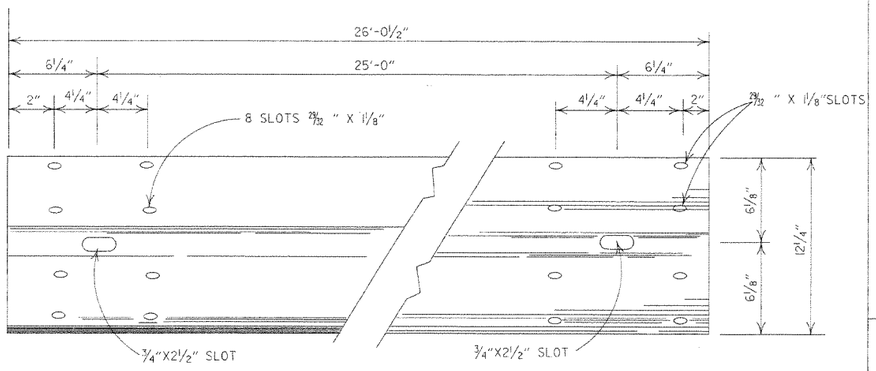
DATE	REVISION	DATE FILM
7-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
8-22-02	REVISED DIMENSION ON STEEL POST	
11-16-01	REVISED STEEL AND WOOD POST	
8-12-98	REMOVED CONCRETE POST	
10-18-96	CHANGED WOOD POST NOTE	10-18-96
6-2-94	ADDED ALTERNATE STEEL POST SIZE	
8- 5-93	REVISED STEEL POSTS SIZE	8-5-93
8-15-91	DELETE STEEL PLATE WASHER & ADDED TYPE C TO TITLE	8-15-91
10-30-87	REMOVED DET. PLCMNT. ON HWY.	555-11-20-87
1-4-83	GRADE FOR WOOD POSTS	679-1-4-83
10-1-77	HARDENED WASHER	922-10-1-72
10-2-72	REVISED & REDRAWN	521-10-2-72

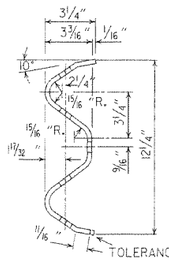
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS (TYPE C)

STREET / ROAD BARRICADE OR TEMPORARY INSTALLATION

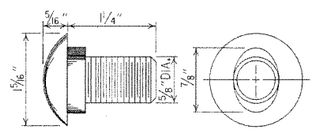
STANDARD DRAWING GR-7



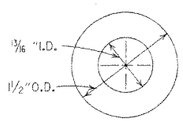


DETAILS OF W-BEAM GUARD RAIL

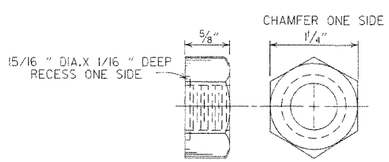
RAIL SECTION OF CLOSELY SIMILAR DIMENSIONS AND COMPARABLE STRENGTH MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.



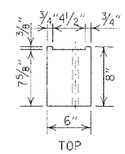
SPLICE BOLT
POST BOLT - SAME EXCEPT LENGTH



CUT STEEL WASHER

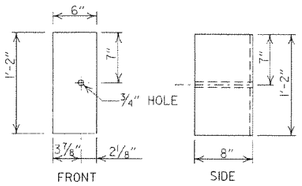


NUT

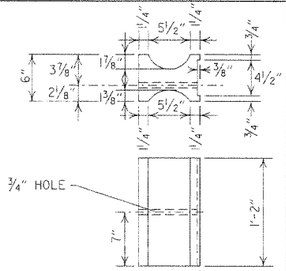


WOOD BLOCKOUT USED WITH WOOD POSTS SHALL BE 6"x8"x1'-2" WITH NO NOTCH REQUIRED.

TOP



WOOD BLOCKOUT (W-BEAM)

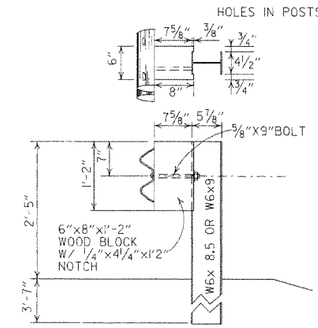


NOTES:

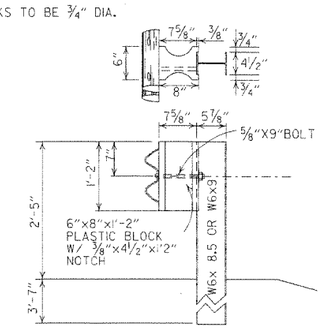
1. SIMILAR SHAPED PLASTIC BLOCKOUTS MAY BE USED AS LONG AS THEY MEET NCHRP-350 TEST LEVEL 3 SPECIFICATIONS OR REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
2. DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCES.

PLASTIC BLOCKOUT (W-BEAM)

HOLES IN POSTS AND BLOCKS TO BE 3/4" DIA.

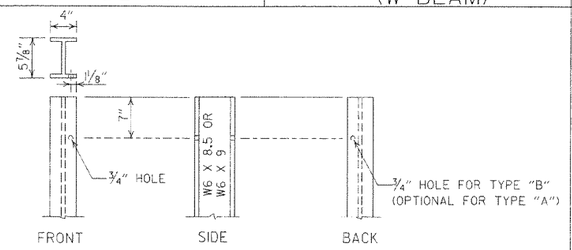


WOOD BLOCKOUT CONNECTIONS

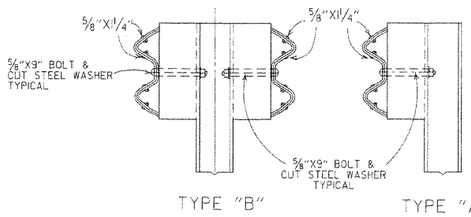


PLASTIC BLOCKOUT CONNECTIONS

DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)

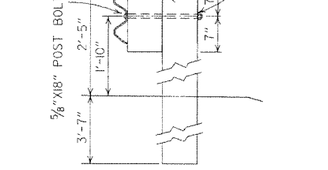


STEEL POST



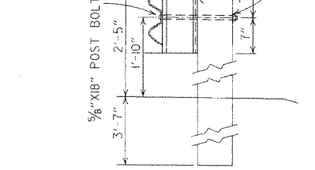
DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)

HOLES IN POSTS AND BLOCKS TO BE 3/4" DIA.



POSTS AND BLOCKS TO BE ROUGH SAWN 6"X8" WITH A TOLERANCE OF + OR - 1/4".

WOOD BLOCKOUT CONNECTIONS



PLASTIC BLOCKOUT CONNECTIONS

DETAILS OF WOOD LINE POST CONNECTIONS (W-BEAM)

-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 CONTINUES, 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 9.7# (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

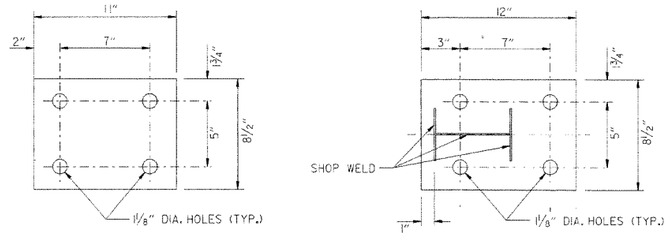
CONTRACTOR SHALL HAVE THE OPTION OF USING WOOD BLOCKOUTS FOR W-BEAM GUARD RAIL OR PLASTIC BLOCKOUTS, AS LONG AS BLOCKOUT USED MEETS NCHRP-350 TEST LEVEL 3 SPECIFICATIONS OR REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) FOR W-BEAM GUARD RAIL.

DATE	REVISION	DATE FILM
7-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
10-15-09	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	
1-12-00	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 W.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 & DEPHT OF ANC. 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

ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

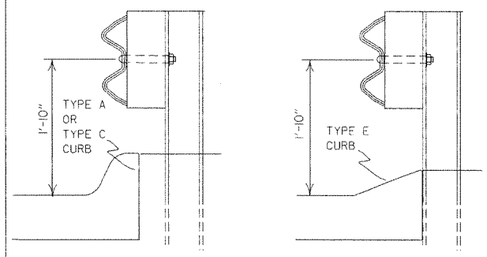
STANDARD DRAWING GR-8



WASHER PLATE

BASE PLATE

Note: Bolts, nuts, washers and plates shall be galvanized in accordance with Section 807 of the Standard Specifications.



FOR DESIGN SPEEDS OF 50 MPH OR LESS

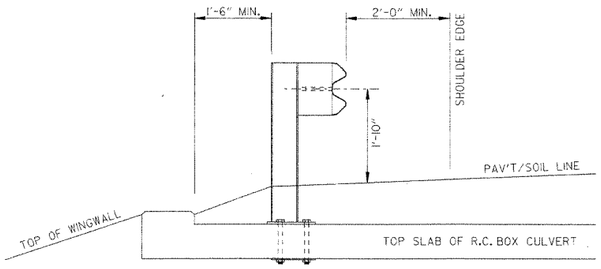
ALIGN FACE OF GUARD RAIL WITH FACE OF CURB.

FOR DESIGN SPEEDS OF 55 MPH OR MORE

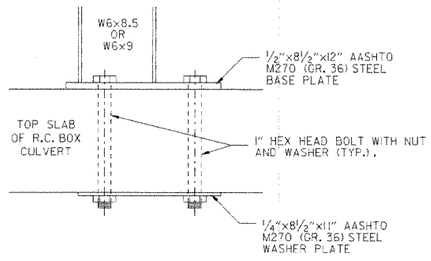
PLACE GUARD RAIL POSTS AGAINST BACK OF CURB.

DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB (W-BEAM)

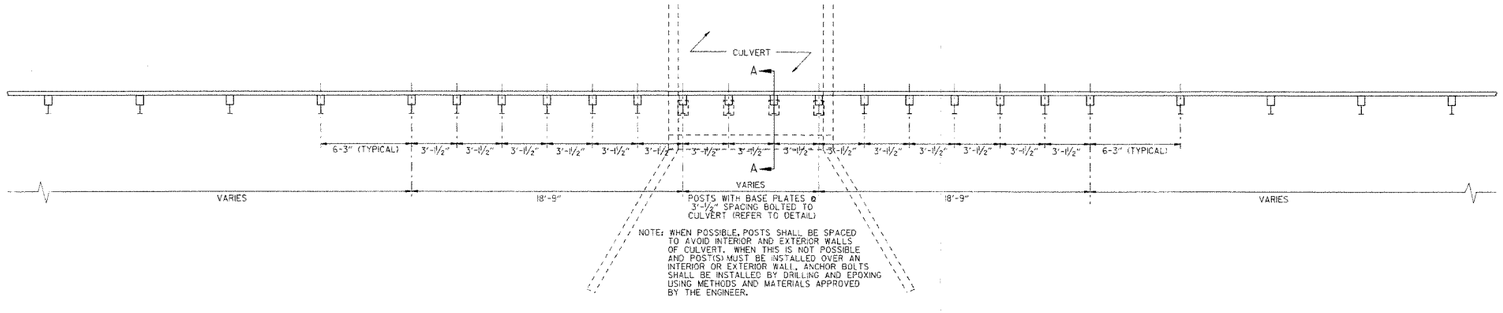
FOR DESIGN SPEEDS OF 50 MPH OR LESS ALL CURB FACES, AS SHOWN ON STD. DRWG. CG-1, MAY BE USED. FOR DESIGN SPEEDS OF 55 MPH OR MORE TYPE "E" CURB FACE SHALL BE USED.



SECTION A-A



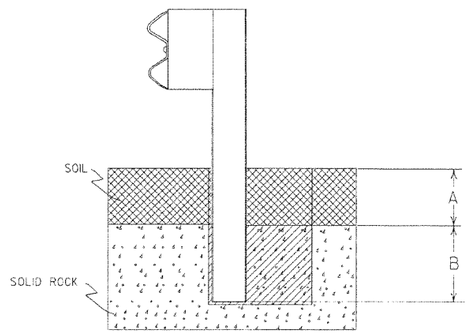
DETAIL OF CONNECTION



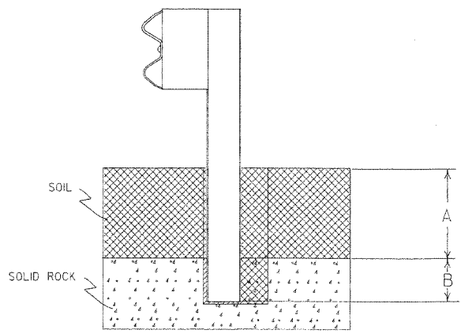
PLAN LAYOUT OF TYPE A GUARD RAIL AT LOW-FILL CULVERTS

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. DWG. GR-8.

Case 1

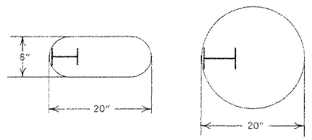


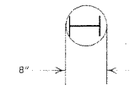
Case 2



Plan View Steel Posts

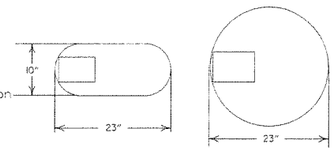
Either hole configuration acceptable

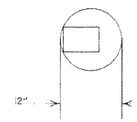




Plan View Wood Posts

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.

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).

DETAIL OF POST PLACEMENT IN SOLID ROCK (W-BEAM)

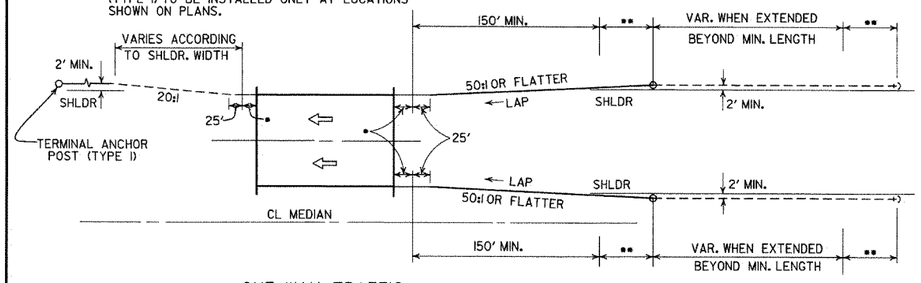
DATE	REVISION	DATE FILM
7-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
4-12-07	REVISED DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB	
11-10-05	ADDED GUARD RAIL PLACEMENT BEHIND CURB; REVISED DETAIL OF CONNECTION	
11-18-04	REVISED POST PLACEMENT IN ROCK & CULVERT CONNECTION DETAILS. ADDED DETAIL FOR GUARD RAIL 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 CULVT. DELETED DET. OF STEEL LINE POST CONN.& ADDED DET. OF GUARD RAIL PLACE. BEHIND CURB & DET. OF POST PLACE. 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

ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

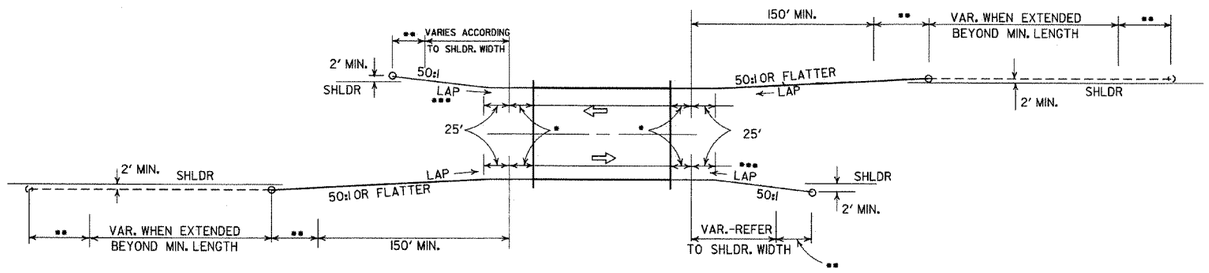
STANDARD DRAWING GR-8A

NOTE: GUARD RAIL WITH GUARD RAIL TERMINAL (TYPE I) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS.



ONE-WAY TRAFFIC

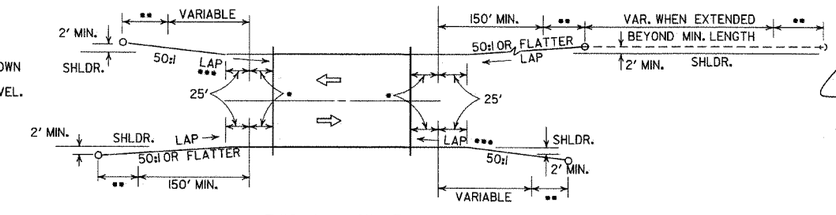
••• LAP OF GUARD RAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200', CHANGE TO LAP IN DIRECTION OF TRAVEL.



TWO-WAY TRAFFIC

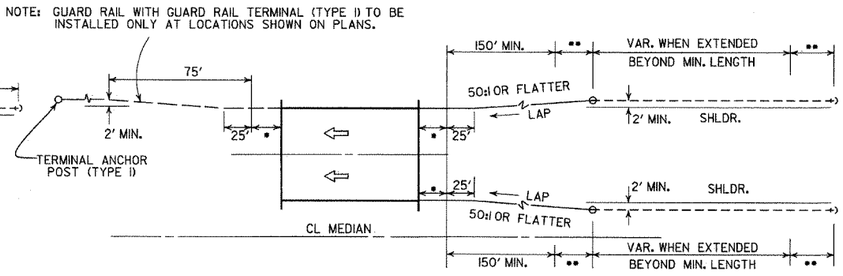
METHODS OF INSTALLATION OF GUARD RAIL AT LESS THAN FULL SHOULDER WIDTH BRIDGES USING GUARD RAIL TERMINAL (TYPE 2)

••• LAP OF GUARD RAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200', CHANGE TO LAP IN DIRECTION OF TRAVEL.



TWO-WAY TRAFFIC

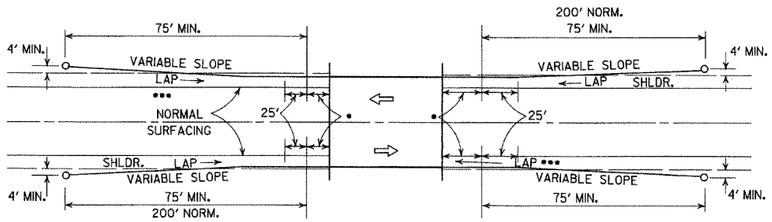
NOTE: GUARD RAIL WITH GUARD RAIL TERMINAL (TYPE I) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS.



ONE-WAY TRAFFIC

METHOD OF INSTALLATION OF GUARD RAIL AT FULL SHOULDER WIDTH BRIDGES USING GUARD RAIL TERMINAL (TYPE 2)

••• LAP OF GUARD RAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200', CHANGE TO LAP IN DIRECTION OF TRAVEL.



METHOD OF INSTALLATION OF GUARD RAIL USING GUARD RAIL TERMINAL (TYPE I) (FULL SHOULDER WIDTH OR LESS BRIDGES)

LEGEND

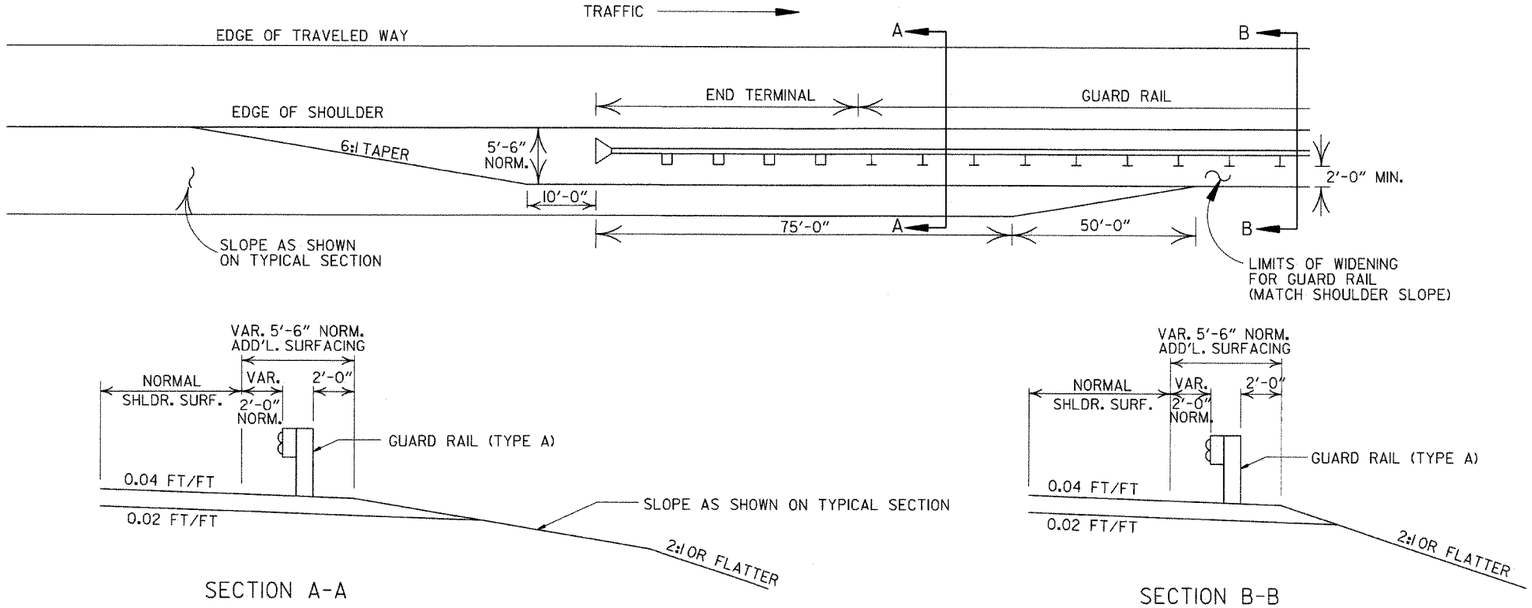
- • THRIE BEAM GUARD RAIL TERMINAL
- •• GUARD RAIL TERMINAL (TYPE 2)

DATE	REVISION	DATE FILM
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. I)	
1-12-00	ADDED CONSTRUCTION NOTE	1-12-00
6-26-97	REVISED LAYOUT	
10-1-92	REDRAWN & REVISED	10-1-92
	ADDED NOTE	
10-9-87	REDRAWN & REVISED	

ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-9

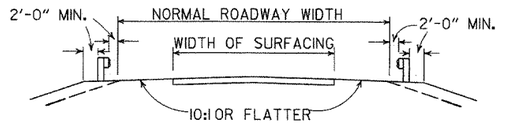


SECTION A-A

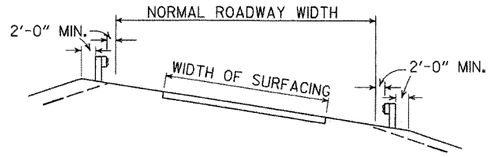
SECTION B-B

DETAILS OF WIDENING FOR GUARD RAIL

NOTE: NORMAL SECTION TO BE WIDENED APPROX. 5'-6" EACH SIDE TO SUPPORT GUARD RAIL.

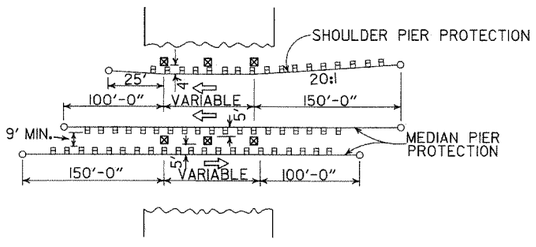


SECTION ON TANGENT



SECTION ON CURVE

DETAILS SHOWING POSITION OF GUARD RAIL ON HIGHWAY



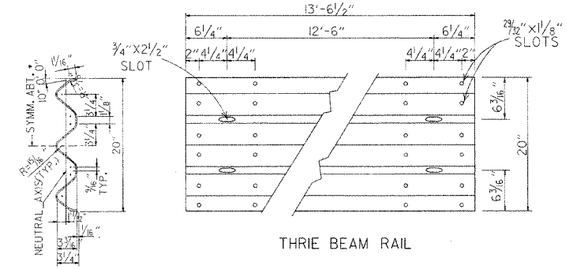
METHOD OF INSTALLATION OF GUARD RAIL AT FIXED OBSTACLE

DATE	REVISION	DATE FILM
4-17-08	MINOR REVISION	
11-10-05	DRAWN	

ARKANSAS STATE HIGHWAY COMMISSION

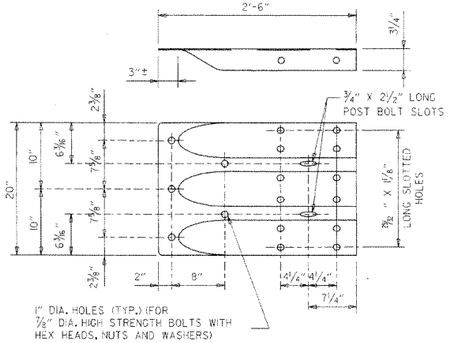
GUARD RAIL DETAILS

STANDARD DRAWING GR-9A



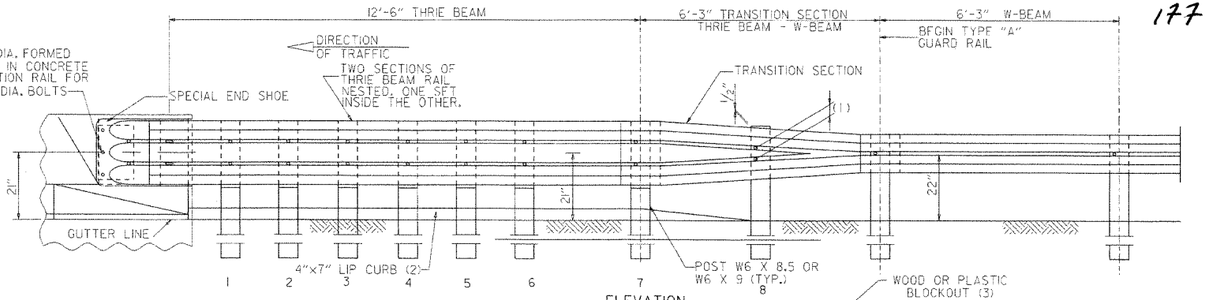
SECTION THRU THRIE BEAM RAIL

THRIE BEAM RAIL

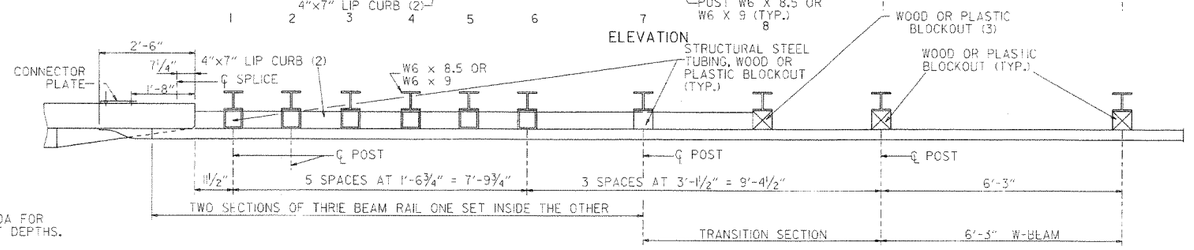


1" DIA. HOLES (TYP.) (FOR ⅞" DIA. HIGH STRENGTH BOLTS WITH HEX HEADS, NUTS AND WASHERS)

SPECIAL END SHOE

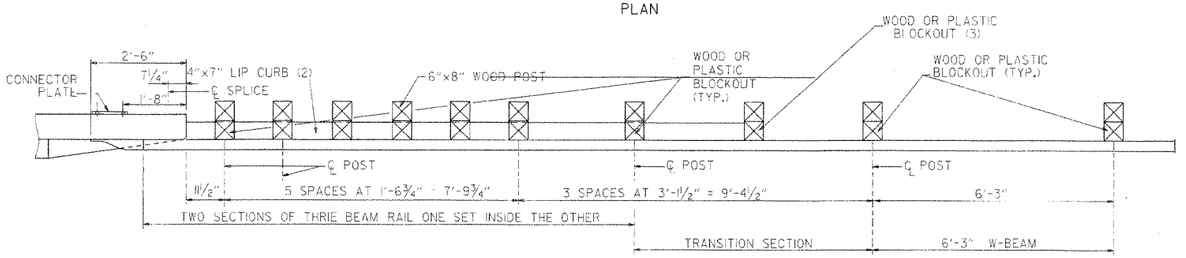


ELEVATION



PLAN

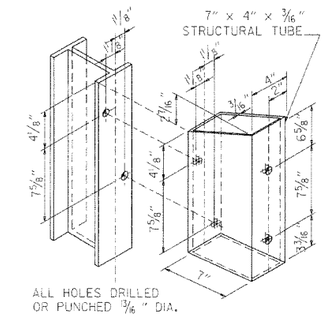
NOTE:
SEE STANDARD DRAWING GR-10A FOR GUARD RAIL POST EMBEDMENT DEPTHS.



PLAN

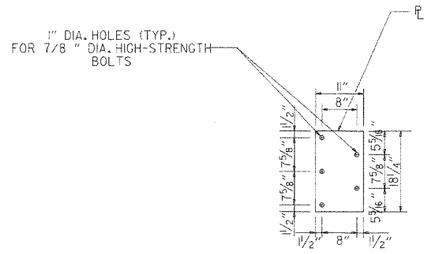
(1) VERIFY BOLT SPACING FROM RAIL TRANSITION PRODUCER.
(2) REFER TO APPROACH GUTTER DETAILS.
(3) LENGTH OF BLOCKOUT ON POST 8 TO BE MODIFIED TO FIT RAIL WIDTH.

THRIE BEAM GUARD RAIL CONNECTION AT BRIDGE ENDS

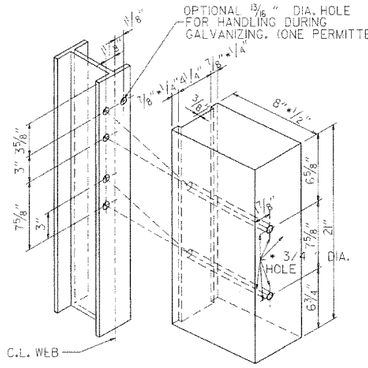


STRUCTURAL STEEL TUBING BLOCKOUT DETAIL

ATTACH BLOCKOUT TO POST USING ⅝" DIA. HEX HEAD BOLTS WITH 1½" O.D. CUT STEEL WASHERS AND NUT.



CONNECTOR PLATE



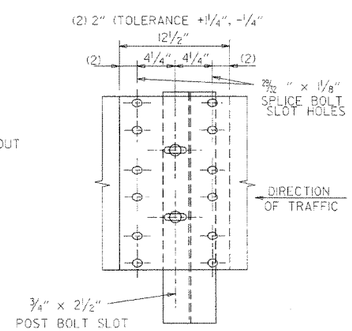
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED

HOLE PUNCHING DETAIL
FOR STEEL POST & WOOD OR PLASTIC BLOCKOUTS

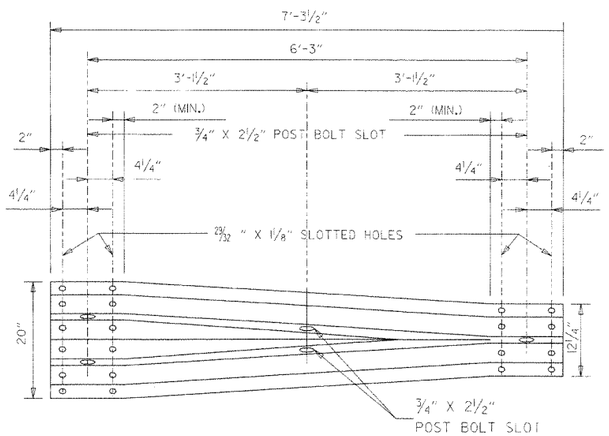
NOTE: BLOCKS SHALL BE THE SAME TYPE THROUGHOUT THE PROJECT LIMITS.

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 ⅞" 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.



THRIE BEAM RAIL SPLICE AT POST



TRANSITION SECTION

GENERAL NOTES:

THE THRIE BEAM RAIL, SPECIAL END SHOE, AND THE TRANSITION SECTION SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE. ZINC COATING SHALL BE TYPE II.

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 ¼" BEYOND IT.

ALL LAP SPLICES, INCLUDING SPECIAL END SHOES, SHALL BE MADE IN THE DIRECTION SHOWN ON STANDARD DRAWINGS GR-9 & GR-11.

WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7# (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

REFER TO STD. DRWG. GR-10A FOR POST DETAILS.

USE THRIE BEAM GUARD RAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB.

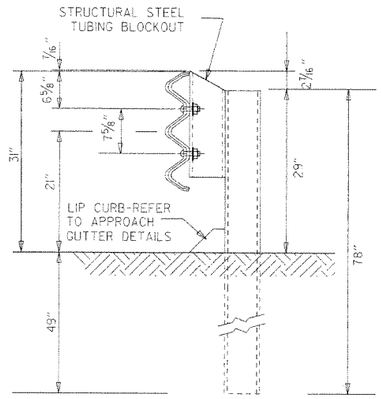
THRIE BEAM POSTS SHALL BE SAME MATERIAL AS W-BEAM POSTS FOR ENTIRE JOB.

DATE	REVISION	DATE FILM
7-14-10	RAISED HEIGHT OF W-BEAM 1"	
11-29-07	ADDED PLASTIC BLOCKOUTS	
11-10-05	ADDED NOTE FOR ATTACHING STEEL BLOCKOUT	
11-18-04	REVISED GENERAL NOTES	
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	

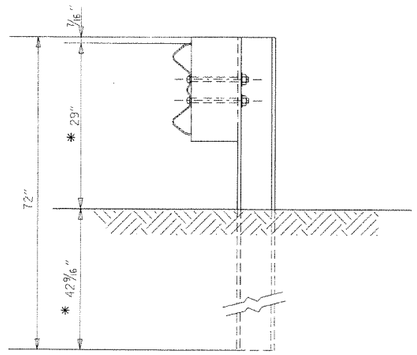
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-10

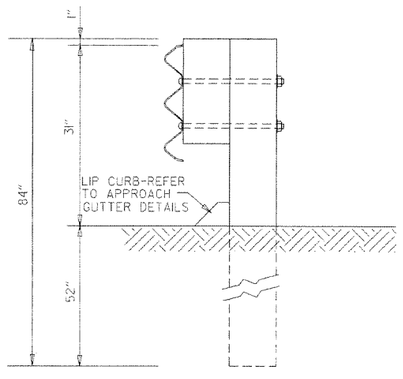


THRIE BEAM RAIL WITH STEEL TUBING BLOCKOUT
AND STEEL POST
POSTS 1-7

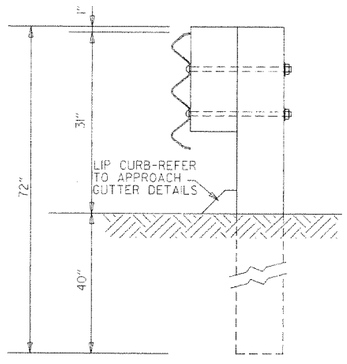


W-BEAM TO THRIE BEAM TRANSITION RAIL
WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST
POST 8

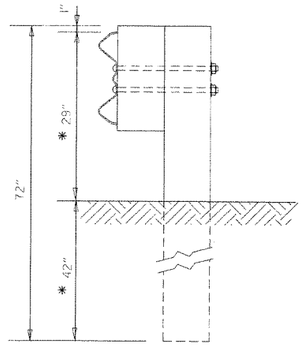
* NOTE:
THESE DIMENSIONS WILL NEED TO BE ADJUSTED IN THE FIELD TO MAKE THE TRANSITION FROM 21" MID POINT OF THRIE BEAM TO 22" MID POINT OF W-BEAM.



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.

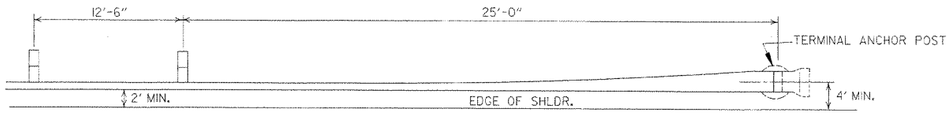
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

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	

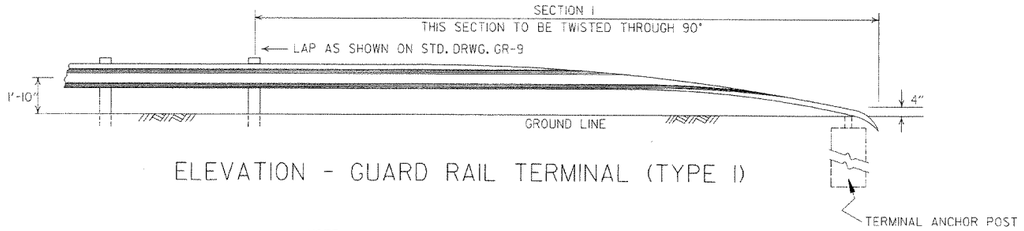
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-10A

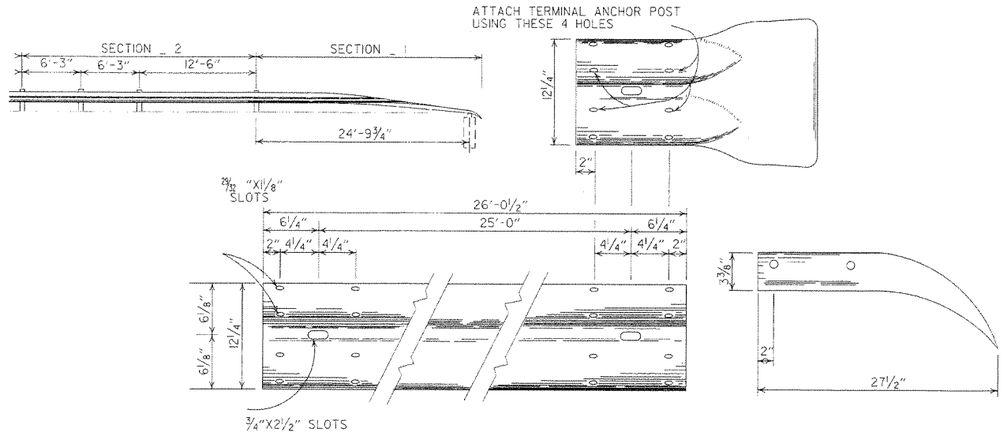


PLAN - GUARD RAIL TERMINAL (TYPE I)



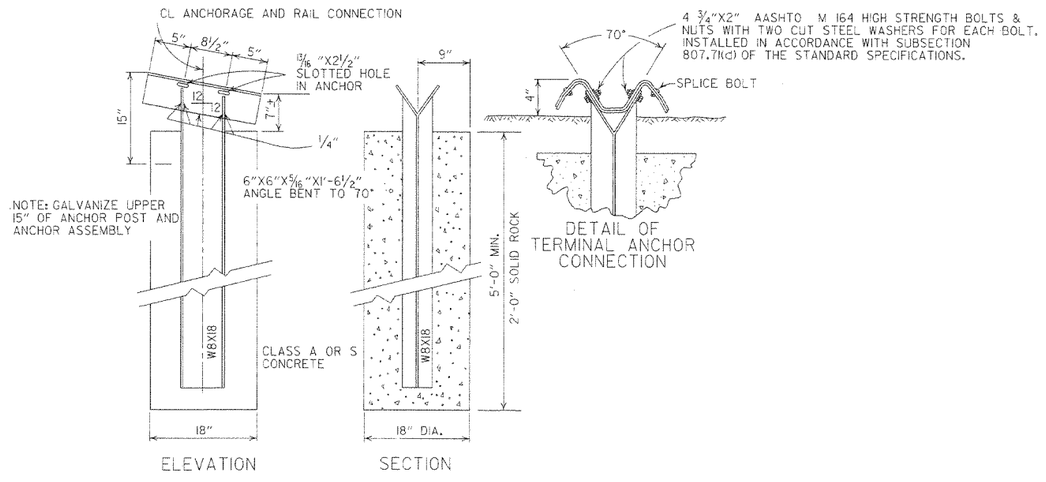
ELEVATION - GUARD RAIL TERMINAL (TYPE I)

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

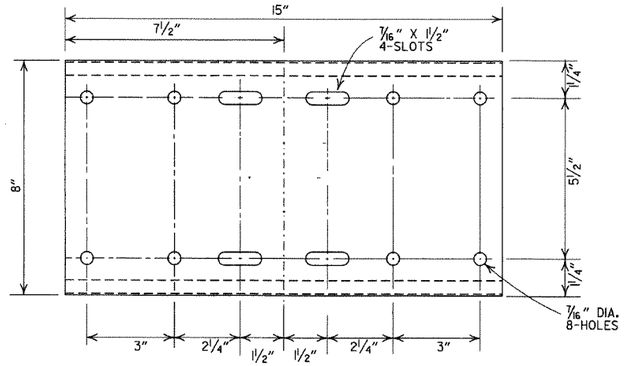
TERMINAL SECTION



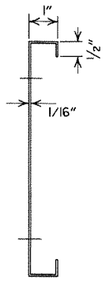
NOTE: RAIL MEMBERS MAY BE BOLTED TO ANGLE AT TERMINAL ANCHOR AND THE TWO ASSEMBLIES POSITIONED TO PROPER ALIGNMENT PRIOR TO PLACING CONCRETE AROUND 8 WF 17 POST IF CONTRACTOR SO DESIRES.

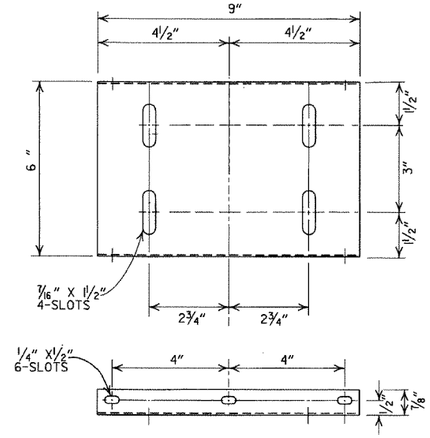
DETAIL OF TERMINAL ANCHOR POST (TYPE I)

			ARKANSAS STATE HIGHWAY COMMISSION
7-14-10	RAISED HEIGHT OF GUARD RAIL 1"		GUARD RAIL DETAILS
6-26-97	REVISED LAP NOTE		
10-18-96	REVISED ASTM REF. TO AASHTO		
11-3-94	DIMENSION TERMINAL DETAIL		
11-11-92	ADDED NOTE FOR PAYMENT	11-11-92	STANDARD DRAWING GRT-1
10-1-92	DRAWN & ISSUED	10-1-92	
DATE	REVISION	DATE FILM	

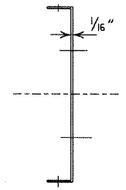


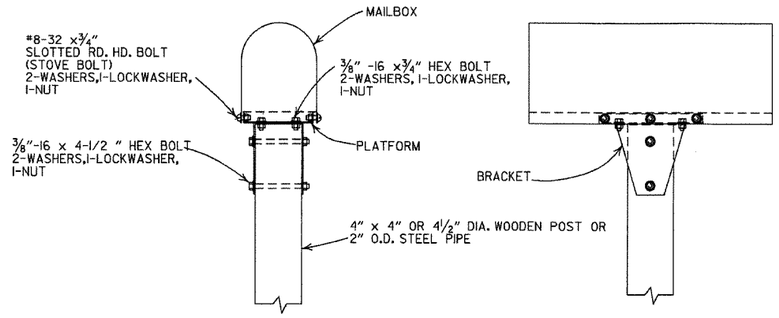
SHELF



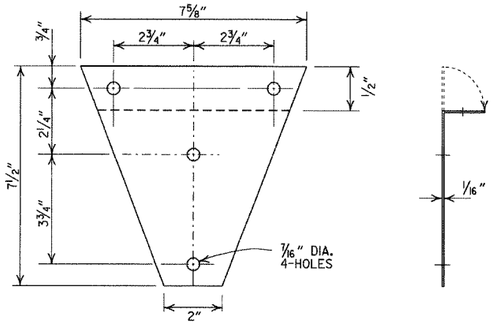


PLATFORM





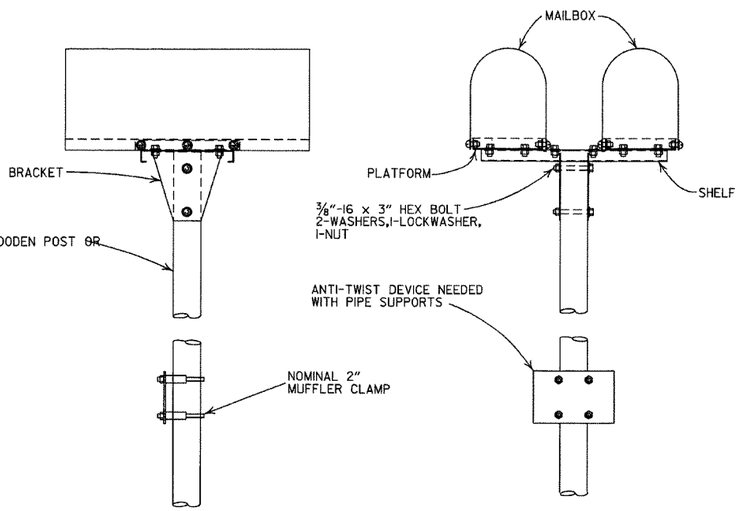
SINGLE INSTALLATION



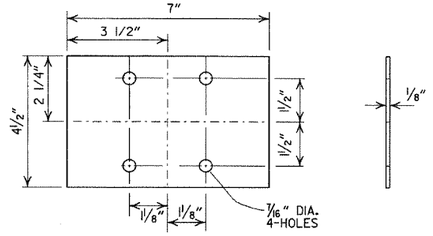
BRACKET

GENERAL NOTES

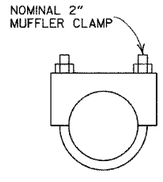
1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
2. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
3. MAILBOX SHELF, BRACKET & PLATFORM SHALL BE GALVANIZED OR PAINTED STEEL, HOWEVER TREATED WOOD MAY BE USED WITH WOODEN POSTS. THE WOODEN SHELF, BRACKET & PLATFORM SHALL BE A MINIMUM OF ¾" THICK AND SHALL BE ASSEMBLED WITH BOLTS OF THE APPROPRIATE LENGTH WITH SIX 8 X ¾" FLATHEAD WOOD SCREWS USED TO ATTACH THE MAILBOX TO THE PLATFORM.
4. THE MAILBOX SHELF AND PLATFORM THAT IS SHOWN IS FOR STANDARD SIZE MAILBOXES. THE SHELF AND PLATFORM SIZE SHALL BE MODIFIED TO FIT MAILBOXES OF A DIFFERENT SIZE.
5. METAL PIPE FOR MAILBOX SUPPORT SHALL BE 2" OUTSIDE DIAMETER STEEL WITH A WALL THICKNESS OF 0.145" AND A WEIGHT OF 2.72 LBS PER FT. OUTSIDE DIAMETER AND WEIGHT SHALL HAVE A TOLERANCE OF +/- 5% ACCORDING TO AASHTO M 181.
6. MAILBOX SUPPORT SYSTEM DIFFERING FROM THOSE SHOWN MAY BE USED, PROVIDED THEY ARE ON THE AHTD QUALIFIED PRODUCTS LIST FOR MAILBOX SUPPORTS.



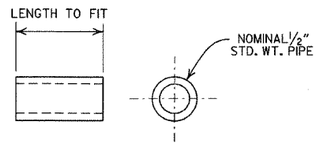
DOUBLE INSTALLATION



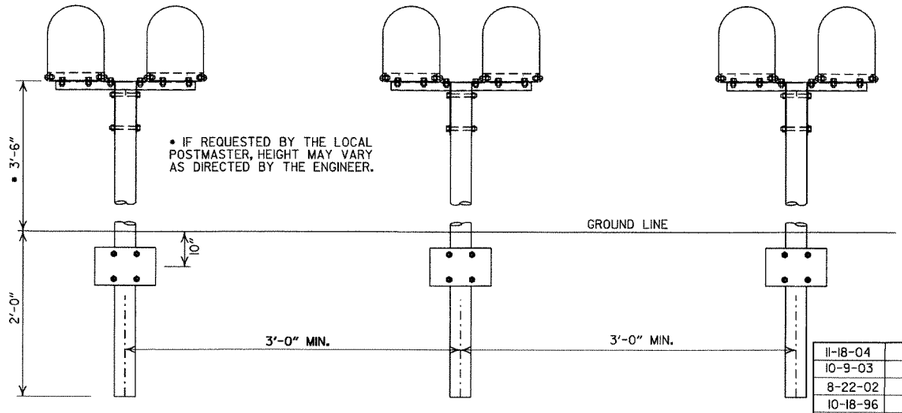
ANTI-TWIST PLATE



CLAMP



SPACER



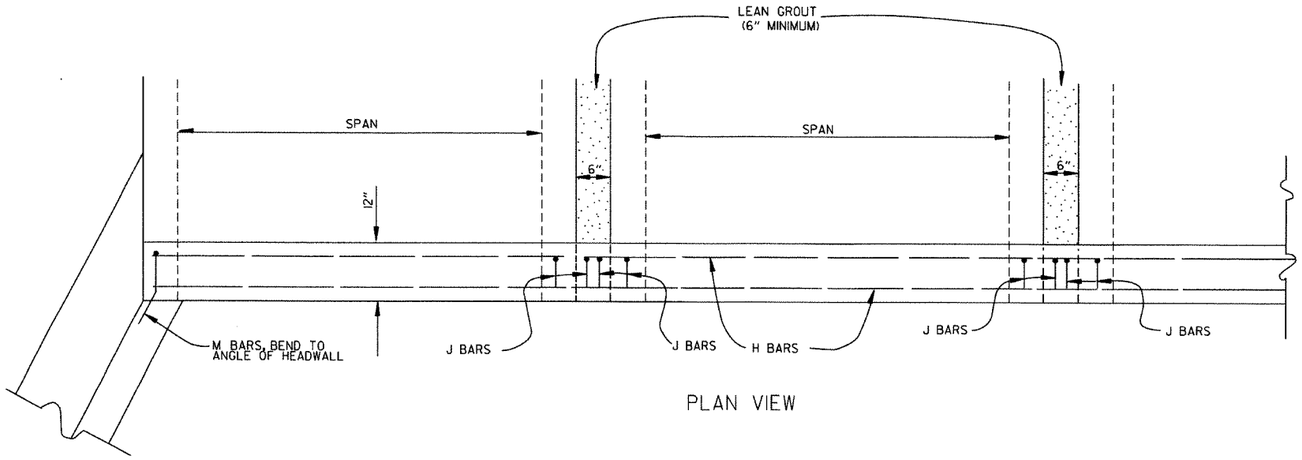
SPACING FOR MULTIPLE POST INSTALLATION

DATE	FILMED	REVISION
11-18-04		REVISED NOTES
10-9-03		REVISED NOTE 6
8-22-02		REVISED NOTE 6
10-18-96		CORRECTED AASHTO
10-1-92		CORRECTED SPELLING
9-26-91		NEW PHONE NUMBER
8-15-91		ADDED NOTE
11-30-89		ADJUSTED HEIGHT & ADDED NOTE
2-16-89		DELETED SLOTS FROM SHELF & PLTF
11-17-88	10-1-92	ADJUSTED DIMENSIONS OF STEEL POSTS
7-15-88	20-7-15-88	ISSUED

ARKANSAS STATE HIGHWAY COMMISSION

MAILBOX DETAILS

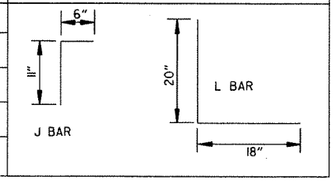
STANDARD DRAWING MB-1



PLAN VIEW

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 ¾" 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.

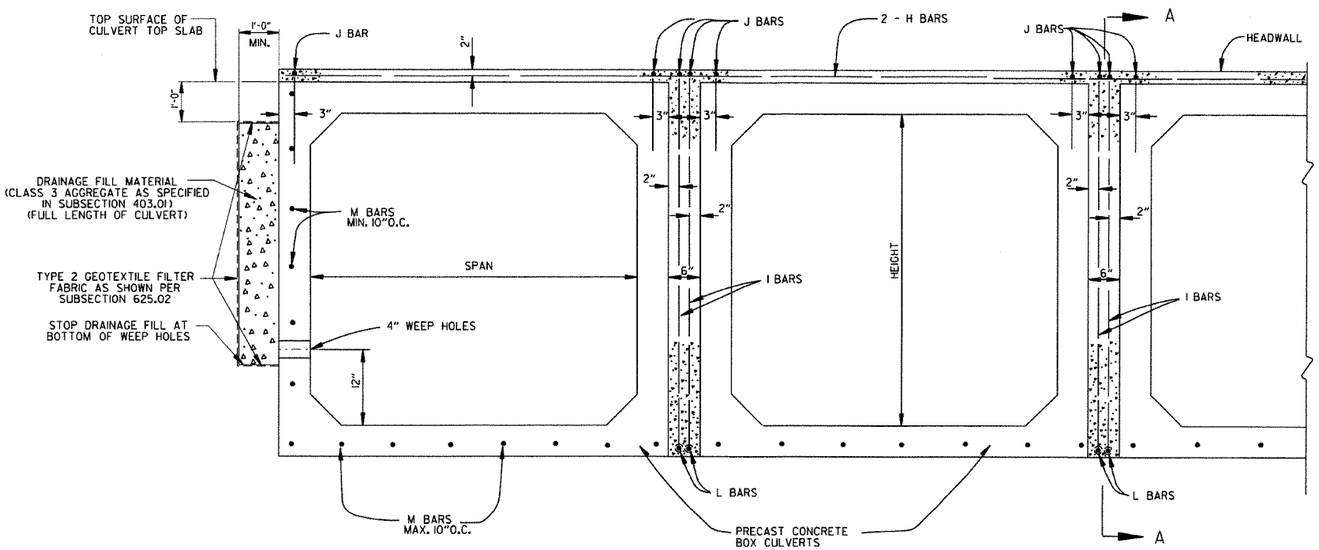
THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

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.

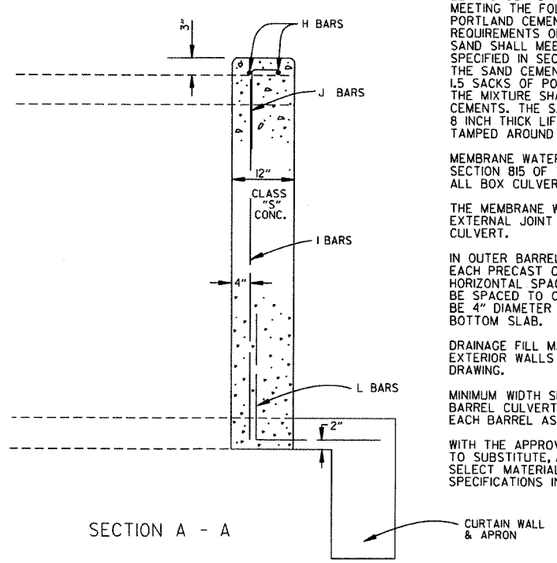
DRAINAGE FILL MATERIAL WITH GEOTEXTILE FABRIC IS REQUIRED AT THE EXTERIOR WALLS OF THE ASSEMBLED CULVERT. SEE DETAILS ON THIS DRAWING.

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.



END VIEW



SECTION A - A

DATE	REVISION	DATE FILMED
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	

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	43⅜	44	26⅝	27
42	51⅛	51	31 5/16	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	87⅛	87
120	154	154	96⅞	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)(1).

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.

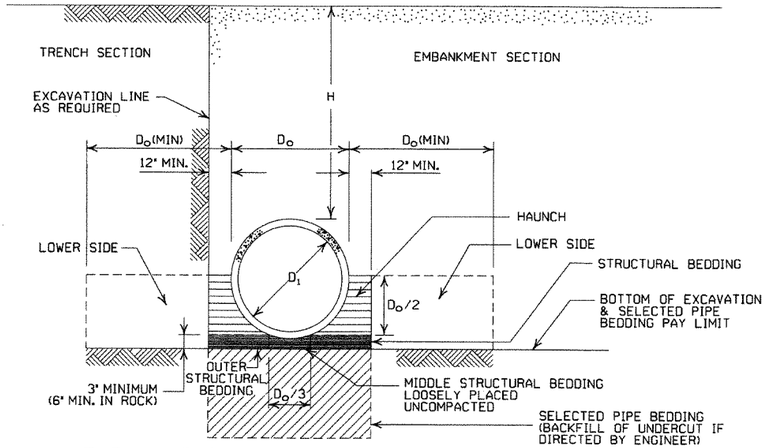
- LEGEND -

D_i = 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 (2003 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

	CLASS OF PIPE			
	CLASS III		CLASS IV	CLASS V
INSTALLATION TYPE	TYPE 1 OR 2	TYPE 3	ALL	ALL
PIPE ID (IN.)	FEET			
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.

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.

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 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
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

CORRUGATED STEEL PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS (INCHES)				
		0.064	0.079	0.109	0.138	0.168
2⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM						
12	1	84	91			
15	1	67	73			
18	1	56	61			
24	1	42	46	59		
30	2	34	36	47		
36	2		30	39	41	
42	2		43	67	70	73
48	2		37	58	61	64
② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, BOLTED, OR HELICAL LOCK-SEAM						
36	1	48	60	88	111	118
42	1	41	51	72	90	102
48	1	36	45	64	77	85
54	2	32	40	59	71	79
60	2	29	36	53	64	71
66	2	26	33	47	58	64
72	2	24	30	44	53	59
78	2		28	41	49	54
84	2		26	38	45	51
90	2		24	35	43	45
96	2		22	33	40	44
102	2			31	38	42
108	2			30	35	39
114	2			28	34	37
120	2			27	32	35

CORRUGATED ALUMINUM PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS IN INCHES				
		0.060	0.075	0.105	0.135	0.164
		2⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM				
12	1	45	45			
18	2	30	30	52		
24	2	22	22	39	41	
30	2		18	31	32	34
36	2.5		15	26	27	28
42	2			43	43	44
48	2			40	41	43
54	2			35	37	38
60	2				33	34
66	2					31
72	2					29

CORRUGATED METAL PIPE ARCHES

EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINUMUM CORNER RADIUS (INCHES)	STEEL			ALUMINUM		
			MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MAX. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MAX. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1
			2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM			2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM		
15	17x13	3	0.064	2	15	0.060	2	15
18	21x15	3	0.064	2	15	0.060	2	15
21	24x18	3	0.064	2.25	15	0.060	2.25	15
24	28x20	3	0.064	2.5	15	0.075	2.5	15
30	35x24	3	0.079	3	12	0.075	3	12
36	42x29	3½	0.079	3	12	0.105	3	12
42	49x33	4	0.079	3	12	0.105	3	12
48	57x38	5	0.109	3	13	0.135	3	13
54	64x43	6	0.109	3	14	0.135	3	14
60	71x47	7	0.138	3	15	0.164	3	15
66	77x52	8	0.168	3	15			
72	83x57	9	0.168	3	15			

EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINUMUM CORNER RADIUS (INCHES)	② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM				
				INSTALLATION		INSTALLATION	
				TYPE 2	TYPE 1	TYPE 2	TYPE 1
36	40x31	5	0.079	3	2	12	15
42	46x36	6	0.079	3	2	13	15
48	53x41	7	0.079	3	2	13	15
54	60x46	8	0.079	3	2	13	15
60	66x51	9	0.079	3	2	13	15
66	73x55	12	0.079	3	2	15	15
72	81x59	14	0.079	3	2	15	15
78	87x63	14	0.079	3	2	15	15
84	95x67	16	0.109	3	2	15	15
90	103x71	16	0.109	3	2	15	15
96	112x75	18	0.109	3	2	15	15
102	117x79	18	0.109	3	2	15	15
108	128x83	18	0.138	3	2	15	15

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. COMPLETE STRUCTURAL BACKFILL OPERATION BY WORKING FROM SIDE TO SIDE OF THE PIPE. THE SIDE TO SIDE STRUCTURAL BACKFILL DIFFERENTIAL SHALL NOT EXCEED 24 INCHES OR 1/3 THE SIZE OF THE PIPE, WHICHEVER IS LESS.

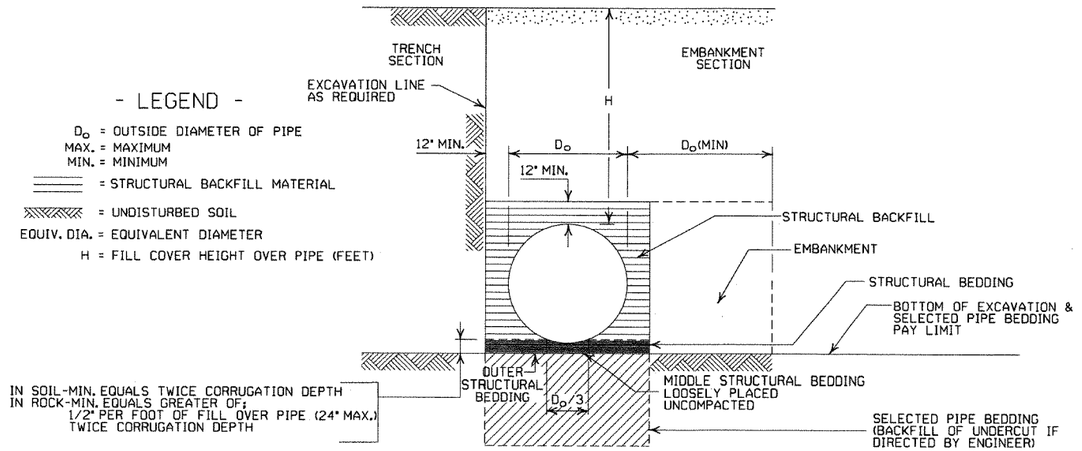
NOTE: STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF METAL PIPE.

INSTALLATION TYPE	MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 1	AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7)
TYPE 2	SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4) OR TYPE 1 INSTALLATION MATERIAL ③

③ SM-3 WILL NOT BE ALLOWED.

EQUIVALENT METAL THICKNESSES AND GAUGES

METAL THICKNESS IN INCHES			GAUGE NUMBER
STEEL			
ZINC COATED	UNCOATED	ALUMINUM	
0.064	0.0598	0.060	16
0.079	0.0747	0.075	14
0.109	0.1046	0.105	12
0.138	0.1345	0.135	10
0.168	0.1644	0.164	8



EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE (ROUND).
3. INSTALALTION TYPE 1 SHALL BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 2⅔" X ½" CORRUGATION.
4. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 3" X 1" OR 5" X 1" CORRUGATION.

GENERAL NOTES

1. METAL PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2003 EDITION), WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. METAL PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. METAL PIPE CULVERT MATERIALS AND INSTALLATIONS SHALL CONFORM TO SECTION 606 AND JOB SPECIAL PROVISION "METAL PIPE".
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. 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."
9. 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 AS STRUCTURAL BACKFILL), 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."

① FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

② WHERE THE STANDARD 2 2/3"x ½" CORRUGATION AND GAUGE IS SPECIFIED FOR A GIVEN DIAMETER, A PIPE OF THE SAME DIAMETER WITH A 3" x 1" OR 5" x 1" CORRUGATION MAY BE SUBSTITUTED, PROVIDING IT IS GAUGED FOR A FILL HEIGHT CONDITION EQUAL TO OR GREATER THAN THE MAXIMUM FILL HEIGHT CONDITION FOR THE SPECIFIED GAUGE AND CORRUGATION.

DATE	REVISION	DATE FILMED
12-15-11	REVISED FOR LRFD DESIGN SPECS	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

METAL PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCM-1

INSTALLATION TYPE	•• MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 2	•SELECTED MATERIALS (CLASS SM-1, SM-2 OR SM-4)

• AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL.

SM3 WILL NOT BE ALLOWED.

•• STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1 INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

STRUCTURAL BACKFILL 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 HDPE PIPE.

MULTIPLE INSTALLATION OF HIGH DENSITY POLYETHYLENE PIPES

PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"
42"	3'-6"
48"	4'-0"

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" >OR= 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"
42"	7'-0"	10'-6"
48"	8'-0"	12'-0"

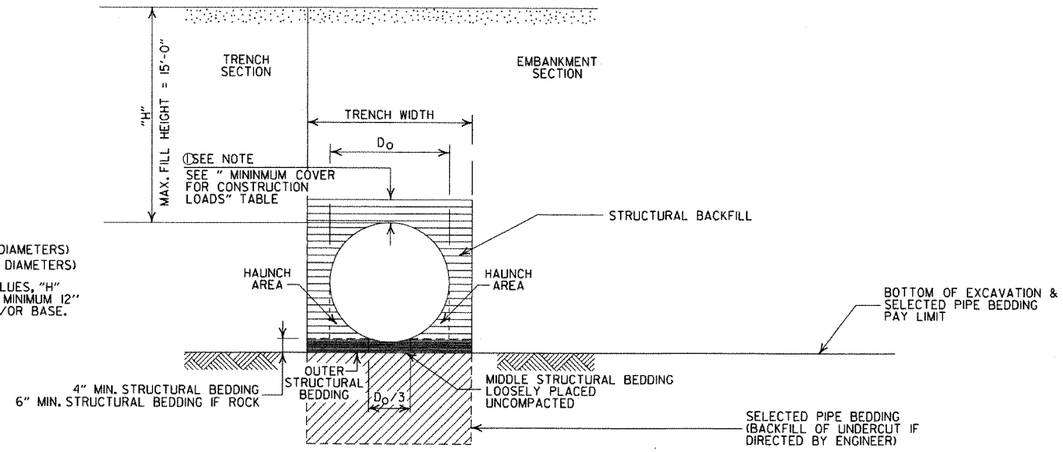
①NOTE:
18" MIN. (18" - 30" DIAMETERS)
24" MIN. (36" - 48" DIAMETERS)

MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

MINIMUM COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS			
	18.0-50.0 (KIPS)	50.0-75.0 (KIPS)	75.0-110.0 (KIPS)	110.0-175.0 (KIPS)
36" OR LESS	2'-0"	2'-6"	3'-0"	3'-0"
42" OR GREATER	3'-0"	3'-0"	3'-6"	4'-0"

②MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

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. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

GENERAL NOTES

1. PIPE SHALL CONFORM TO AASHTO M294, TYPE S. INSTALLATION SHALL CONFROM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICIATIONS FOR HIGHWAY CONSTRUCTION, 2003 EDITION.
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. 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.
5. 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."
6. 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 STRUCTURAL BACKFILL), 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."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. HIGH DENSITY POLYETHYLENE PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR HDPE PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

- LEGEND -

H = FILL HEIGHT (FT.)
Ø = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

= STRUCTURAL BACKFILL MATERIAL

= UNDISTURBED SOIL

DATE	REVISION	DATE FILMED
12-15-11	REVISED GENERAL NOTES & MINIMUM COVER NOTE	
11-17-10	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)

STANDARD DRAWING PCP-1

INSTALLATION TYPE	•• MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 2	•SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4)

• AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL.

SM3 WILL NOT BE ALLOWED.

•• STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

STRUCTURAL BACKFILL 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 PVC PIPE.

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" >OR= 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"

MULTIPLE INSTALLATION OF PVC PIPES

PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"

MAXIMUM FILL HEIGHT BASED ON STRUCTURAL BACKFILL

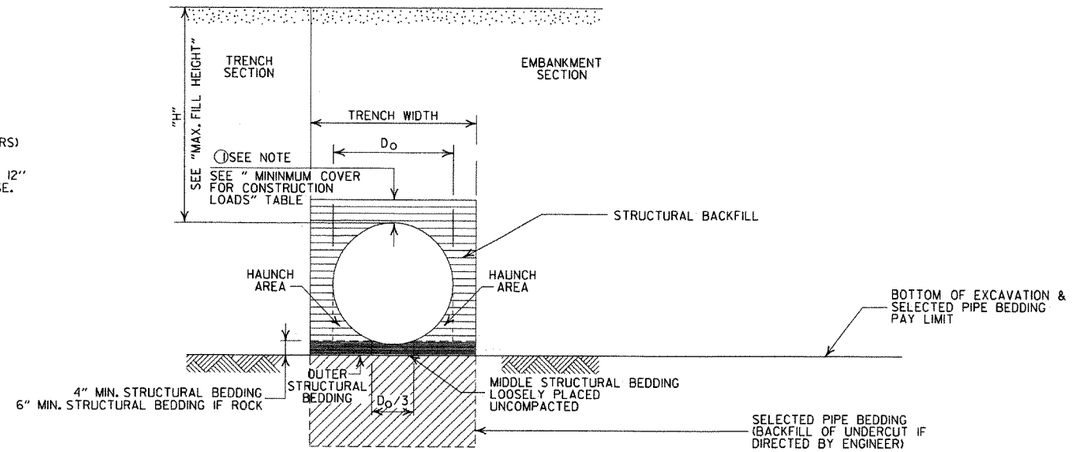
PIPE DIAMETER	"H"
18"	45'-0"
24"	45'-0"
30"	40'-0"
36"	40'-0"

① NOTE:
12" MIN. (18" - 36" DIAMETERS)
MINIMUM COVER VALUE. "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

MINIMUM COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS			
	18.0-50.0 (KIPS)	50.0-75.0 (KIPS)	75.0-110.0 (KIPS)	110.0-175.0 (KIPS)
18" THRU 36"	2'-0"	2'-6"	3'-0"	3'-0"

②MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

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. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

GENERAL NOTES

1. PIPE SHALL CONFORM TO ASTM F949, CELL CLASS 12454. INSTALLATION SHALL CONFROM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICIATIONS FOR HIGHWAY CONSTRUCTION, 2003 EDITION.
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. 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.
5. 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."
6. 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 STRUCTURAL BACKFILL), 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."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. PVC PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR PVC PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

- LEGEND -

H = FILL HEIGHT (FT.)
D_O = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

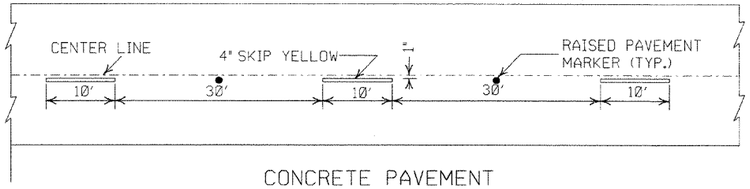
= STRUCTURAL BACKFILL MATERIAL
= UNDISTURBED SOIL

DATE	REVISION	DATE FILMED
12-15-11	REV GENERAL NOTES & MINIMUM COVER NOTE; DELETED SM3 MATERIAL	
11-17-10	ISSUED	

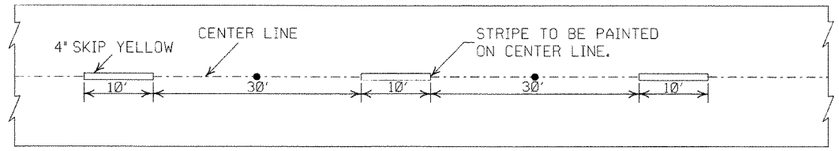
ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (PVC F949)

STANDARD DRAWING PCP-2

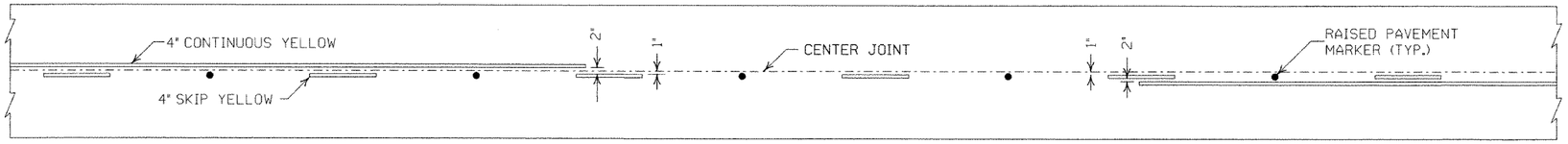


CONCRETE PAVEMENT

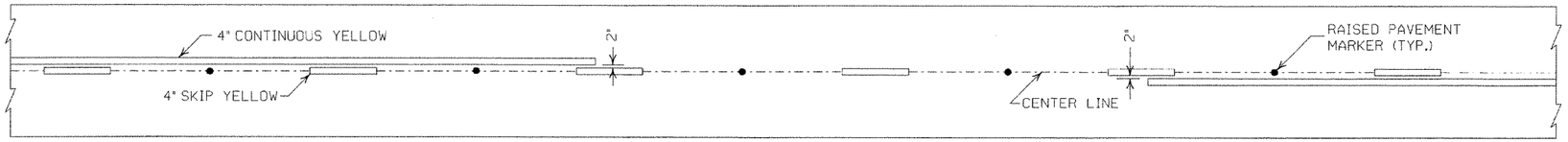


ASPHALT PAVEMENT

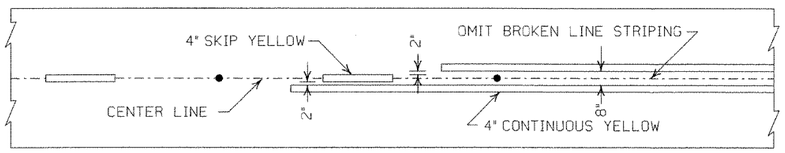
BROKEN LINE STRIPING



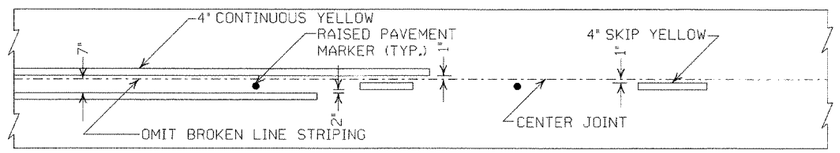
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

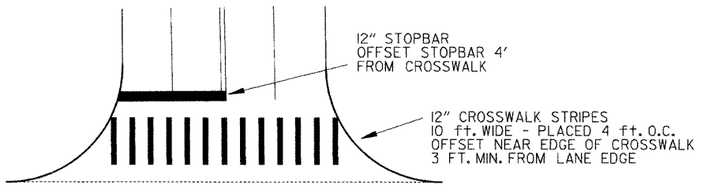


ASPHALT PAVEMENT



CONCRETE PAVEMENT

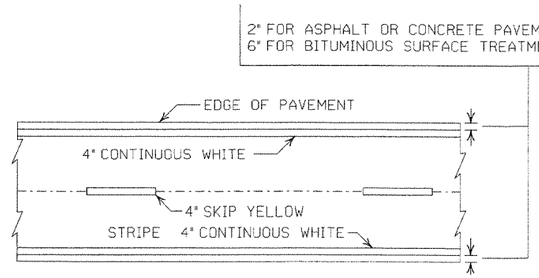
STRIPING AT ADJACENT NO PASSING LANES



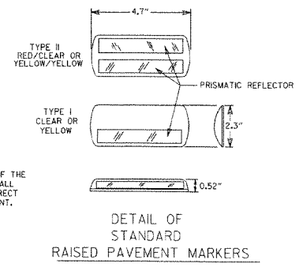
CROSSWALK AND STOPBAR DETAILS

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.



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.

DATE	REVISION	FILMED
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

ARKANSAS STATE HIGHWAY COMMISSION

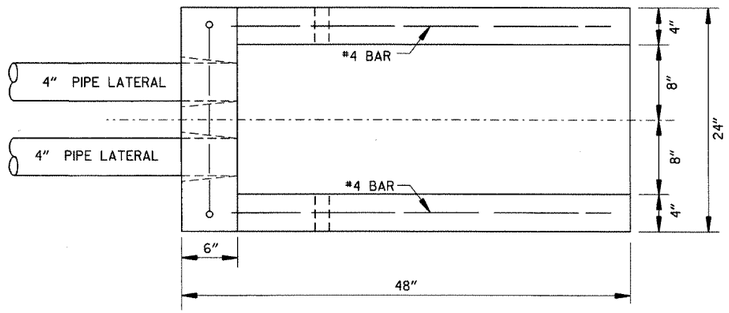
PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

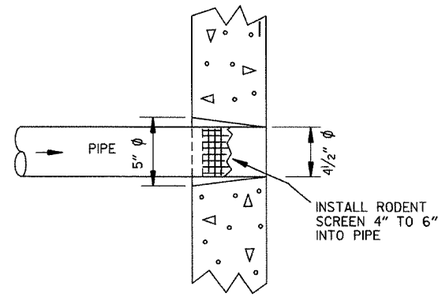
NOTE:
1. GRANULAR BACKFILL TO BE SUBSIDIARY TO PIPE UNDERDRAIN.

2. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.

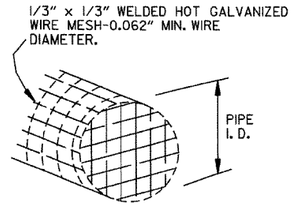
3. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC. LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.



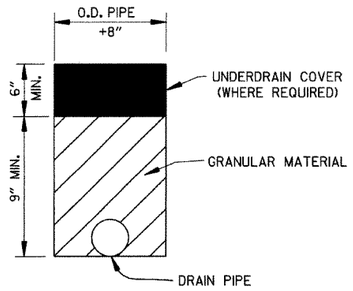
PLAN VIEW

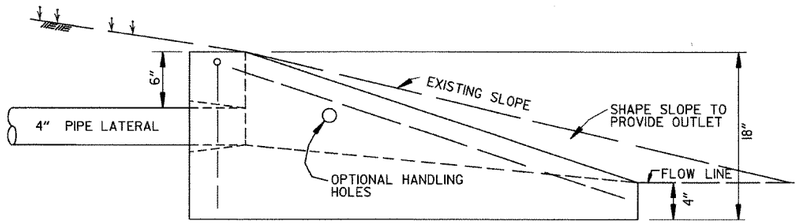


DETAIL OF HOLE FOR 4" PIPE

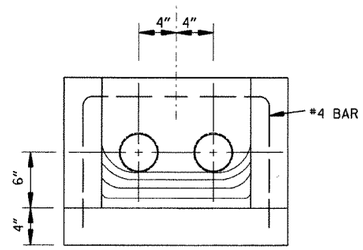


DETAIL OF RODENT SCREEN

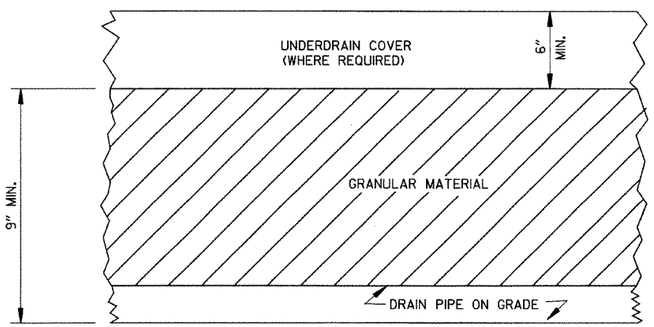




SIDE VIEW

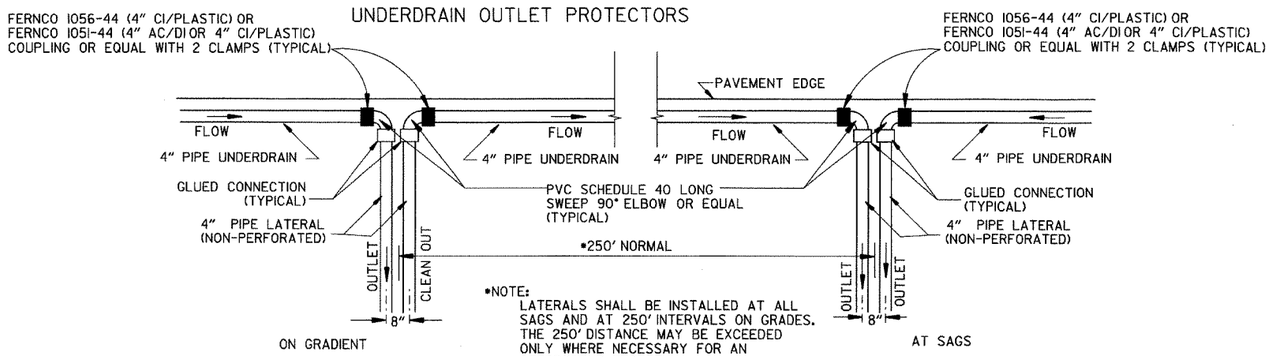


FRONT VIEW



DETAILS OF PIPE UNDERDRAIN

UNDERDRAIN OUTLET PROTECTORS



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.

DATE	REVISION	DATE FILMED
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; 5½" 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 POLYEDTHYLENE 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

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DETAILS OF PIPE UNDERDRAIN

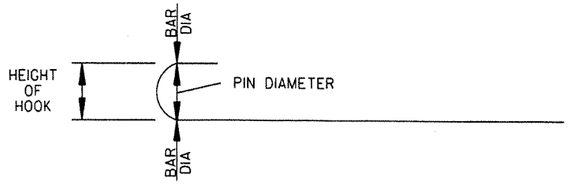
STANDARD DRAWING PU-1

7-20-95 INSTD.PUI

STEEL FABRICATION: REINFORCING STEEL FABRICATION SHALL CONFORM TO THE DIMENSIONS LISTED IN THE TABLE BELOW:

BAR SIZE	PIN DIAMETER	HOOK EXTENSION "K"
3	2¼"	4"
4	3 "	4½"
5	3¾"	5"
6	4½"	6"
7	5¼"	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 2¾ 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

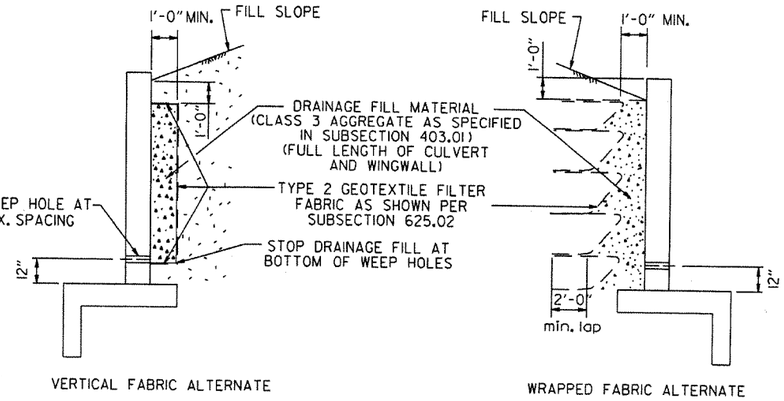
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

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 31 OR 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.

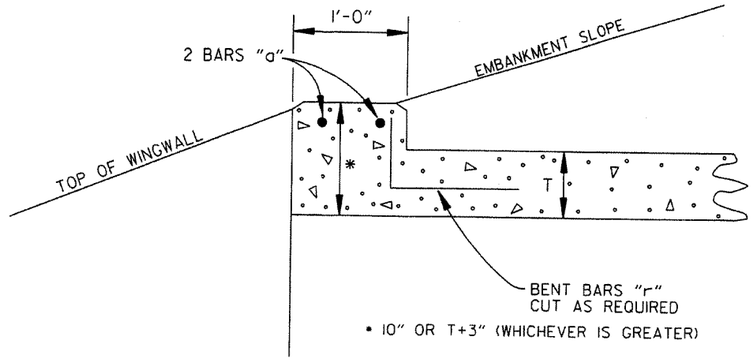
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

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 ½ 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.



• 10" OR T+3" (WHICHEVER IS GREATER)

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.

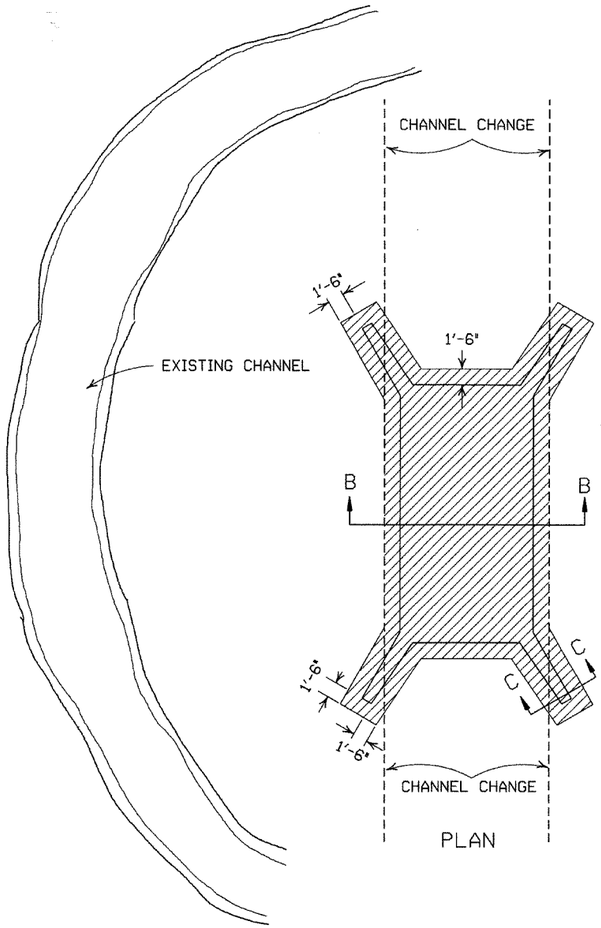
R.C. BOX CULVERT HEADWALL MODIFICATIONS

DATE	REVISION	DATE FILMED
7/26/12	REV. DRAINAGE FILL MATERIAL & DETAIL	
12/15/11	REQUIRE WEEP HOLES IN BOX CULVERT WALLS	
5-25-06	REV. GEN. NOTES AND DETAILS FOR WEEP HOLES; BAR DIAGRAM	
11-16-01	ADDED WINGWALL DRAINAGE DETAIL/EDITED GEN. NOTES	
10-18-96	REV. ASTM REF. TO AASHTO & ADDED BAR DIAGRAM	
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	

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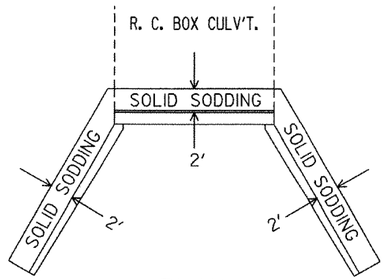
REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1



PLAN

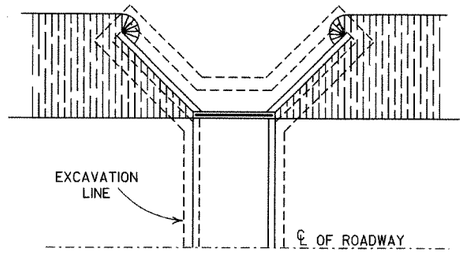
SOLID SODDING



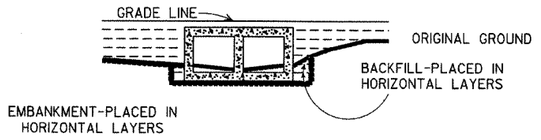
PLAN

PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

NOTE: LENGTH MEASURED ALONG THE CENTER OF 2' STRIP OF SOLID SODDING.

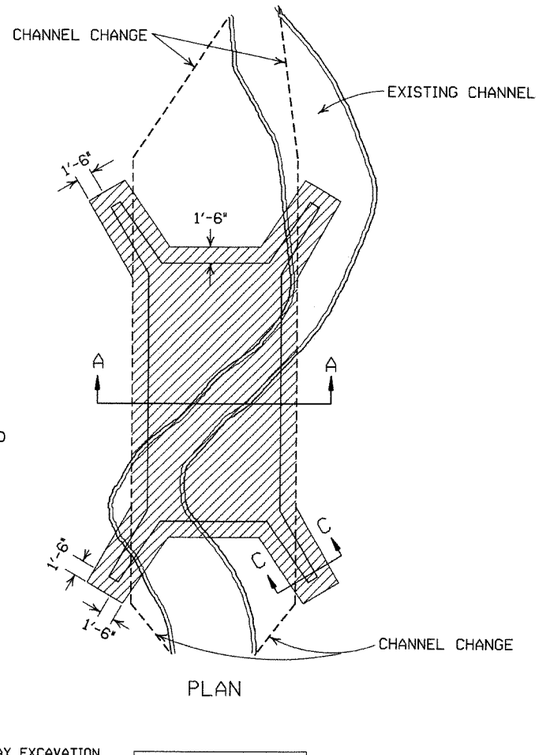


PLAN

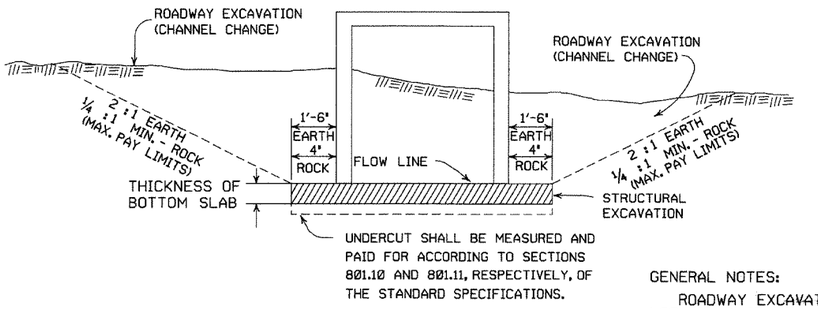


LONGITUDINAL SECTION

BACKFILL DETAILS FOR BOX CULVERT

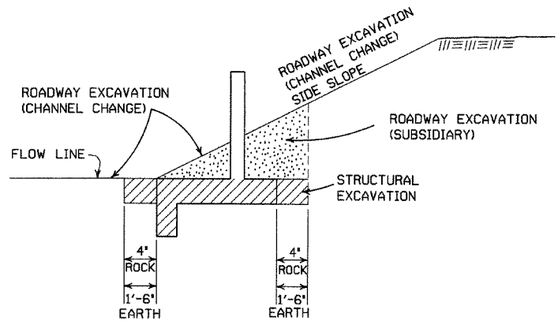


PLAN

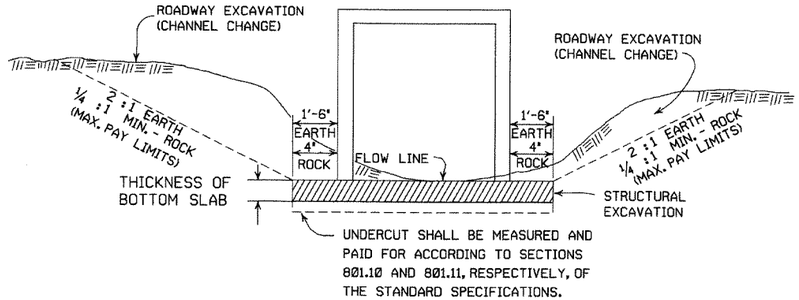


SECTION B-B

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.

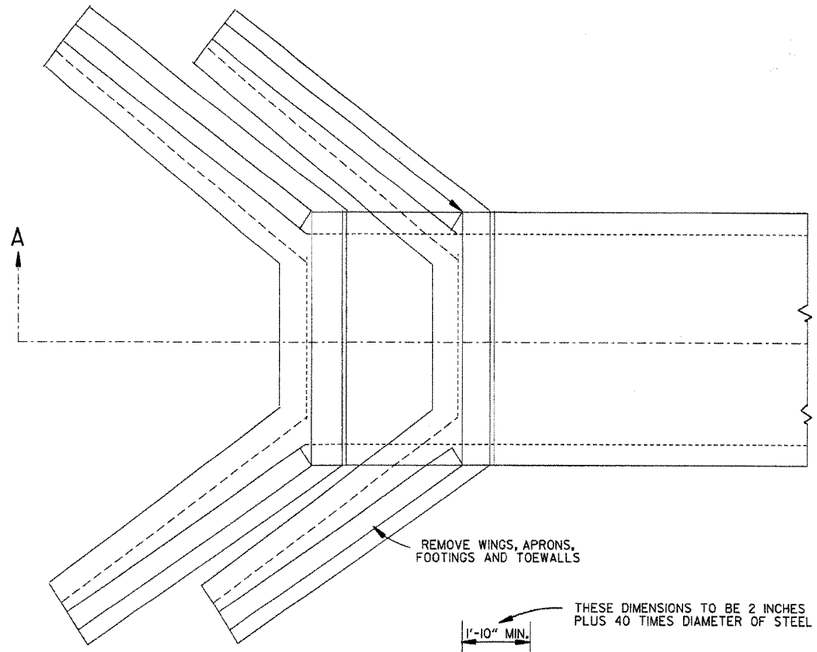
ROADWAY EXCAVATION SHOWN IN SECTION C-C ABOVE AS SUBSIDIARY WILL NOT BE MEASURED OR PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION.

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	674-1-4-83
	AND ADDED MAXIMUM PAY	
	LIMIT NOTES.	
2-2-76	EXCAV. PAY LIMITS	917-2-2-76
10-2-72	REVISED AND REDRAWN	564-10-16-72

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EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS

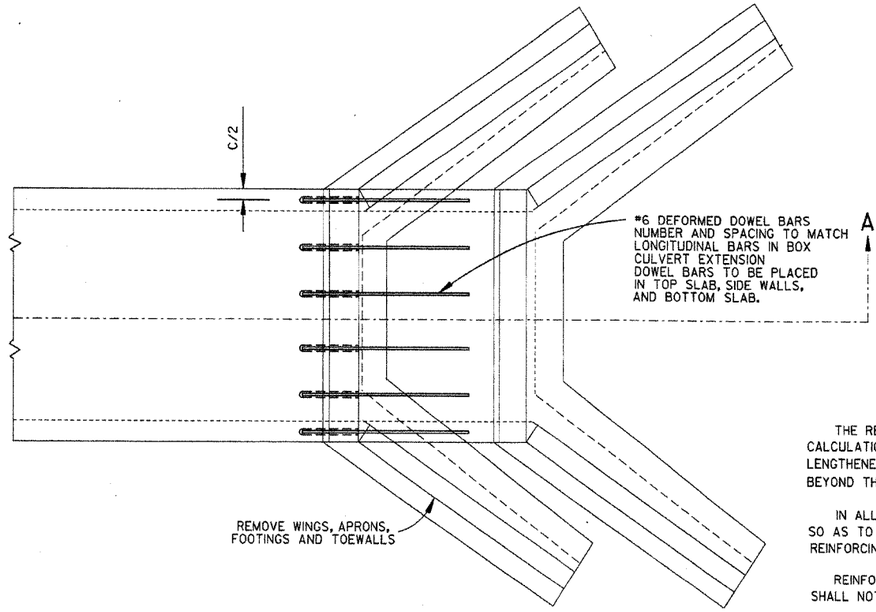
STANDARD DRAWING RCB-2



TOP VIEW
R.C. BOX CULVERT

SECTION A-A

METHOD 1



TOP VIEW
R.C. BOX CULVERT

SECTION A-A

METHOD 2

GENERAL NOTES

	USE FOR METHOD
THE RESIDENT ENGINEER WILL MAKE INDIVIDUAL CALCULATIONS OF QUANTITIES FOR EACH STRUCTURE LENGTHENED, MAKING NO ALLOWANCE FOR OVERBREAKAGE BEYOND THE LINES INDICATED.	1
IN ALL INSTANCES CONCRETE SHALL BE REMOVED SO AS TO PERMIT FULL 40 DIAMETER SPLICE OF REINFORCING STEEL.	1
REINFORCING STEEL REMOVED FROM EXISTING STRUCTURE SHALL NOT BE REUSED IN CONSTRUCTING EXTENSION.	1&2
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.	1&2
MATERIALS FOR SECURING DOWEL BARS SHALL MEET THE REQUIREMENTS OF SECTION 507.02 OF THE STANDARD SPECIFICATIONS.	2
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.	2
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.	1&2

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.

DATE	REVISION	DATE FILM
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	

ARKANSAS STATE HIGHWAY COMMISSION

METHOD OF EXTENDING EXISTING R.C. BOX CULVERTS

STANDARD DRAWING RCB-3

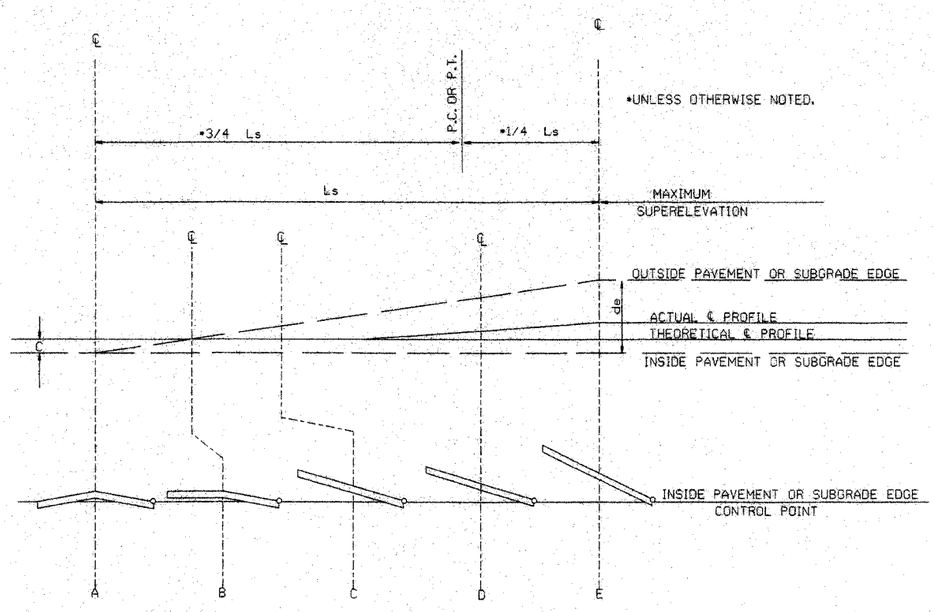
SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

DEGREE OF CURVE	30 MPH e	30 MPH Ls (FT) MINIMUM	30 MPH Ls (FT) DESIRABLE	40 MPH e	40 MPH Ls (FT) MINIMUM	40 MPH Ls (FT) DESIRABLE	50 MPH e	50 MPH Ls (FT) MINIMUM	50 MPH Ls (FT) DESIRABLE	55 MPH e	55 MPH Ls (FT) MINIMUM	55 MPH Ls (FT) DESIRABLE	60 MPH e	60 MPH Ls (FT) MINIMUM	60 MPH Ls (FT) DESIRABLE	70 MPH e	70 MPH Ls (FT) MINIMUM	70 MPH Ls (FT) DESIRABLE
0° 15′	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.		
0° 45′	N.C.			N.C.			R.C.			0.022			0.023			0.028		
1° 00′	N.C.			N.C.			0.021			0.026			0.030			0.037	275	300
1° 15′	N.C.			R.C.			0.026			0.032			0.037			0.046		
1° 30′	N.C.			0.021			0.031	200		0.037	225		0.043	250		0.054		
1° 45′	N.C.			0.025	175		0.036			0.043		300	0.049		300	0.062		
2° 00′	R.C.			0.028			0.040			0.048			0.055			0.070		
2° 15′	R.C.			0.031			0.045		250	0.053			0.061			0.078	300	350
2° 30′	0.021			0.034			0.049			0.058			0.067			0.085	315	
2° 45′	0.023			0.037			0.053			0.063			0.072			0.091	335	
3° 00′	0.025			0.040			0.057			0.067	230		0.077	260		0.096	350	400
3° 15′	0.027	150		0.043		200	0.061			0.072	245		0.082	275		0.098	360	
3° 30′	0.029			0.046			0.065	205		0.076	255		0.086	285		0.100	360	
3° 45′	0.031		200	0.049			0.069	215		0.080	265		0.090	295	350			
4° 00′	0.033			0.051			0.072	225		0.083	270		0.093	305				
4° 30′	0.037			0.056			0.078	240		0.087	280		0.096	315				
5° 00′	0.040			0.061			0.083	250		0.091	295	350	0.098	320				
5° 30′	0.043			0.066	185		0.088	260		0.094	300							
6° 00′	0.046			0.070	190		0.092	270		0.096	305							
6° 30′	0.050			0.074	200		0.095	280	300	0.100	315							
7° 00′	0.053			0.078	210		0.098	285										
7° 30′	0.056			0.081	215		0.099	290										
8° 00′	0.058			0.084	220		0.100	290										
8° 30′	0.061			0.087	225	250												
9° 00′	0.063			0.089	230													
10° 00′	0.068	160		0.094	235													
11° 00′	0.072	170		0.097	250													
12° 00′	0.076	175		0.099	250													
13° 00′	0.080	180		0.100	250													
14° 00′	0.083	190																
15° 00′	0.086	195																
16° 00′	0.089	200																
17° 00′	0.091	200																
18° 00′	0.093	205																
19° 00′	0.095	210																
20° 00′	0.097	215	250															
21° 00′	0.098	215																
22° 00′	0.099	215																
23° 00′	0.099	215																
24° 00′	0.100	220																

D MAX = 24° 45′ | D MAX = 13° 15′ | D MAX = 8° 15′ | D MAX = 6° 30′ | D MAX = 5° 15′ | D MAX = 3° 30′

ABBREVIATIONS

NC - NORMAL CROWN
RC - REVERSE CROWN, SUPERELEVATION AT NORMAL CROWN SLOPE
e - RATE OF SUPERELEVATION (FT. PER FT.)
Ls - LENGTH OF SUPERELEVATION TRANSITION (FT.)
L - DISTANCE FROM BEGINNING OF SUPERELEVATION TRANSITION TO ANY POINT (FT.)
d - WIDTH OF PAVEMENT (FT.) OR WIDTH OF SUBGRADE (FT.)
C - NORMAL CROWN (FT.)



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND INNER SUBGRADE POINT OR INNER PAVEMENT EDGE

NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

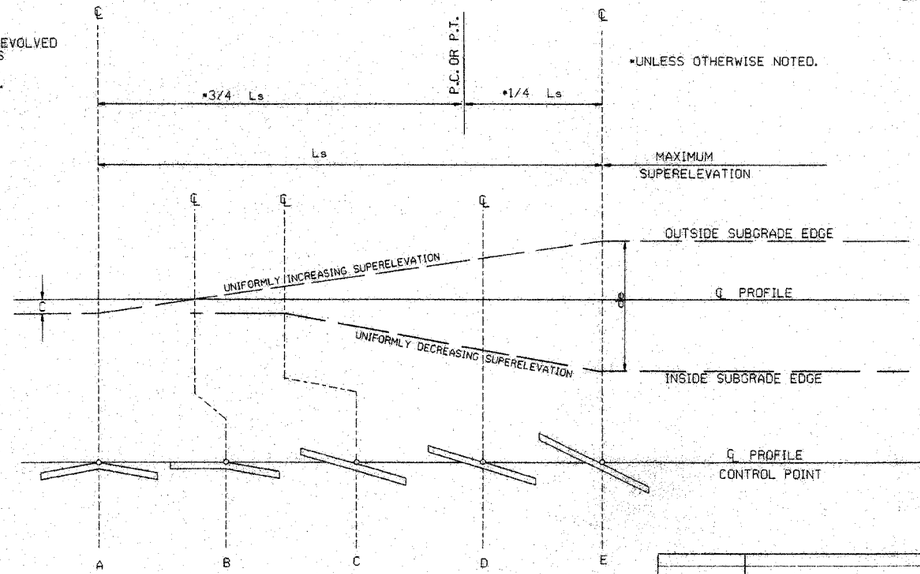
GENERAL NOTES

1. ON PAVEMENT WITH TWO-WAY TRAFFIC, THE SUPERELEVATION SHALL BE REVOLVED ON THE INSIDE PAVEMENT EDGE UNLESS OTHERWISE NOTED ON THE PLANS
2. SUPERELEVATION VALUES SHOWN ON THE CROSS SECTIONS ARE VALUES (+) OR (-) TO BE ADDED TO OR SUBTRACTED FROM THE POINT OF CONTROL.
3. LENGTHS FOR L MAY BE ROUNDED IN MULTIPLES OF 25 FT. OR 50 FT. TO PERMIT SIMPLER CALCULATIONS.
4. PAVEMENTS WIDER THAN 2 LANES SHALL HAVE ADDITIONAL TRANSITION LENGTHS AS FOLLOWS:

3 LANE UNDIVIDED - - - - - +20%
4 LANE UNDIVIDED - - - - - +50%
5 LANE UNDIVIDED - - - - - +80%
6 LANE UNDIVIDED - - - - - +100%

NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

RATE OF SUPERELEVATION SHALL BE COMPUTED ON STRAIGHT LINE METHOD USING APPLICABLE Ls.



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE

SUPERELEVATION FORMULA = $\frac{Lde}{Ls}$

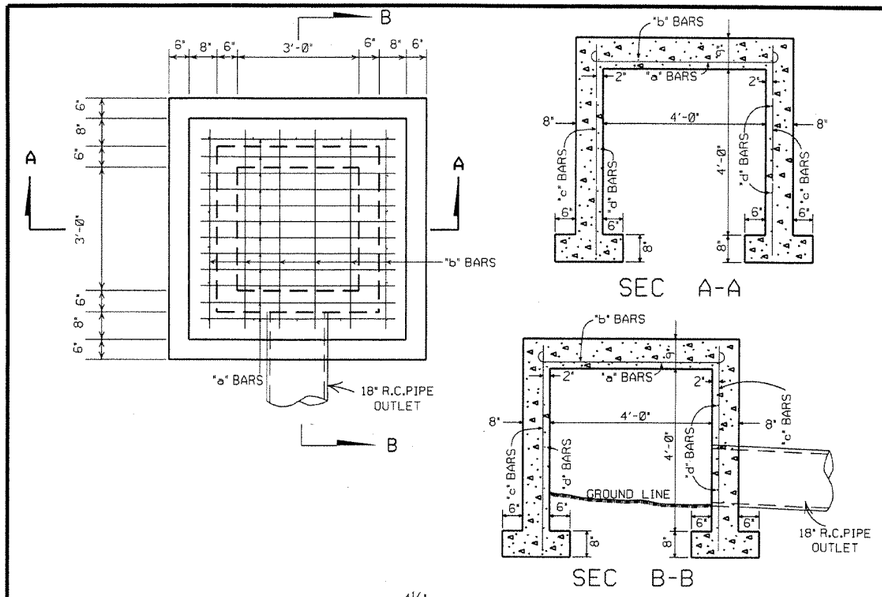
DATE	REVISION	DATE FILMED
10-18-96	ADDED FORMULA	10-18-96
01-09-87	ISSUED	534-1-9-87

ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

STANDARD DRAWING SE-2

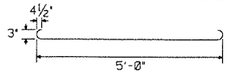
FILE STDSE2.DGN



STEEL SCHEDULE

BARS	NUMBER	LENGTH	SPACING
"a"	11	6'-0"	5"
"b"	6	6'-0"	10"
"c"	16	5'-1"	12"
"d"	16	5'-0"	12"

ALL STEEL TO BE #4 BARS



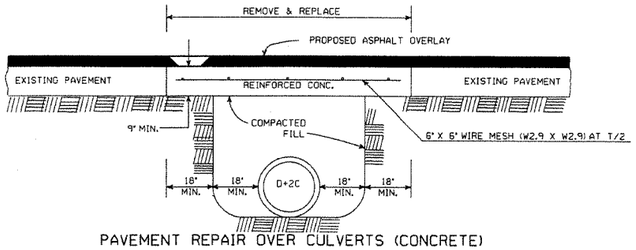
QUANTITIES

CONCRETE 3.40 CU. YDS.
REINFORCING STEEL 176 LB.

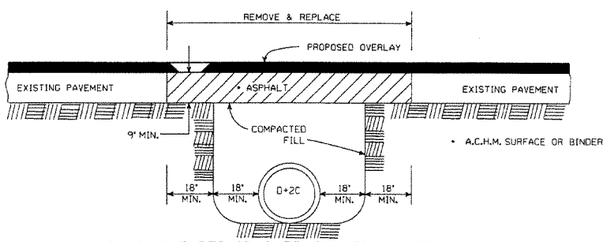
GENERAL NOTE:

THE PAY ITEMS FOR REINFORCED CONCRETE SPRING BOXES SHALL BE FOR THE QUANTITTIES OF CONCRETE OF THE CLASS SPECIFIED. REINFORCING STEEL, EXCAVATION FOR STRUCTURES AND 18" R.C. PIPE CULVERT.

REINFORCED CONCRETE SPRING BOX



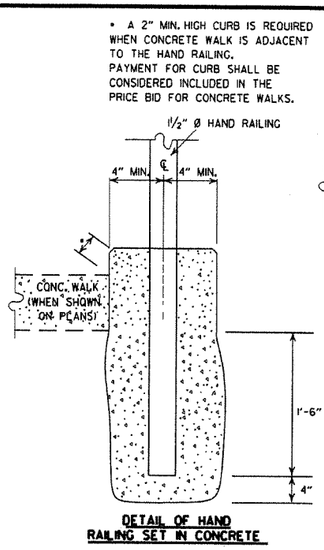
PAVEMENT REPAIR OVER CULVERTS (CONCRETE)



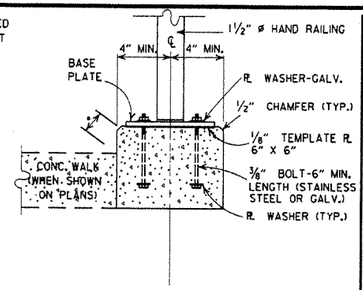
PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS

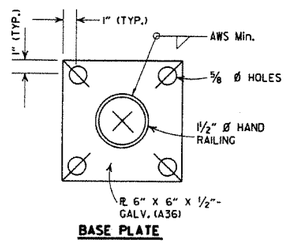
• A 2" MIN. HIGH CURB IS REQUIRED WHEN CONCRETE WALK IS ADJACENT TO THE HAND RAILING. PAYMENT FOR CURB SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR CONCRETE WALKS.



DETAIL OF HAND RAILING SET IN CONCRETE

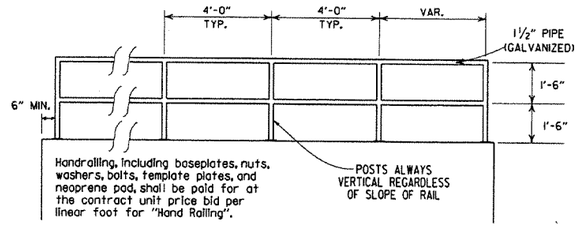


POST CONNECTION TO WALL

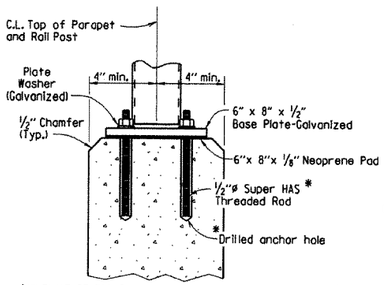


BASE PLATE

POST CONNECTION DETAILS



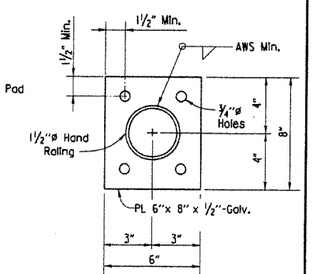
Hand railing shall conform to Section 633.



*HILTI HIT RE 500 Epoxy Adhesive Anchor System with 4½" embedment or approved equal.

The Adhesive Anchor System shall be installed in accordance with Manufacturer's recommendations.

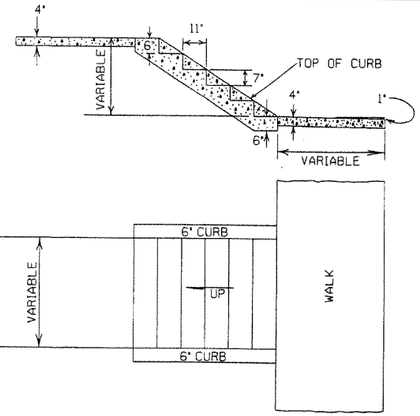
POST CONNECTION TO WALL



BASE PLATE

DETAILS OF ALTERNATE POST ANCHOR SYSTEM
(EPOXY ADHESIVE ANCHORS)

HAND RAILING DETAILS



GENERAL NOTES

1. RISE AND TREAD DIMENSIONS OF STEPS MAY BE VARIED AS DIRECTED BY THE ENGINEER, HOWEVER, TREAD WIDTHS SHALL BE 11" MIN. ALL STEPS IN A FLIGHT SHALL HAVE CONSISTENT TREAD & RISER DIMENSIONS.
2. 1" TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE WALKS AT 45° INTERVALS.

DETAILS OF CONCRETE STEPS & WALKS

DATE	REVISION	DATE FILMED
7-26-12	REMOVED RETAINING WALL DETAILS & REVISED HAND RAILING DETAILS	
4-17-08	REV. JOINT & FOOTING STEP DETAILS	
11-29-07	REVISED RETAINING WALL DRAINAGE	
5-25-06	REVISED PVMT REPAIR OVER CULVERTS (CONC); REVISED REINFORCED CONC SPRING BOX	
10-9-03	REVISED PIPE RAILING DETAILS TO HAND RAILING DETAILS	
4-10-03	REVISED RETAINING WALL DRAWING	
8-22-02	ADDED HAND RAILING DETAIL	
11-16-01	REVISED PVMT REPAIR OVER CULVERTS (CONC); CORRECTED SPELLING IN GENERAL NOTES	
11-18-98	ADDED GENERAL NOTES TO CONCRETE STEPS & WALKS	
7-02-98	ENLARGED PIPE	
4-03-97	ADDED NOTE TO STEEL BAR SCHED.	
10-18-96	CORRECTED SPELLING	
4-26-96	ADD WEEP HOLE; REV. JOINT SPACING IN RET. WALL	
6-2-94	**CHANGED CONST. TO CONTRACTION JOINT**	
10-1-92	CHANGED MESH FABRIC TO WIRE MESH	10-1-92
8-15-91	DELETED HDWL MODIFICATION DETAIL	8-15-91
11-8-90	DELETED COLD MIX FROM CULV'T. REPAIR	11-8-90
11-30-89	REV. RETAINING WALL STEEL SCHEDULE	11-30-89
11-17-88	V. BARS BEHIND ARROW	665-11-17-88
7-15-88	REV. PAVEMENT REPAIR	649-7-15-88
	ADDED HDWL. MODS, DEL. PIPE UNDERDRAINS	
11-1-84	REV. TRENCH FOR PIPE UNDERDRAIN	510-11-1-84
1-4-83	ELIMINATED CONC. CLASS & ADDED CHAMFER NOTE	682-1-4-83
3-2-81	SPELLING OF "UNDERDRAIN"	721-3-2-81
4-20-79	REV. UNDERDRAIN DET.& PAVEMENT REPAIR	674-4-20-79
2-2-76	12"MIN. GRAN. MAT'L. OVER PIPE	914-2-2-76
4-10-75	REM. SPECS. FOR GRAN. MAT'L.	568-4-10-75-853
5-22-74	GRANULAR MAT'L. TO BE SB-3	567-5-22-74-740
10-2-72	REVISED AND REDRAWN	564-10-16-72

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF SPECIAL ITEMS

STANDARD DRAWING SI - 1

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		192A	
JOB NO.				

(4) STD. HWY. SIGNS & SUP ASSEMB

R1-1
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"

R1-2
36"X36"X36"

W1-4
30"X30"
(LT. or RT.)

W2-1
30"X30"

S1-1
36"X36"

W3-2
36"X36"

County Route Marker
M1-5
24"X24"

NOTE: REFLECTORIZED YELLOW LEGEND (COUNTY NAME, ROUTE LETTER & NUMBER) & BORDER ON A BLUE BACKGROUND.

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"

R1-3
12"X6"

M6-5
21"X15"

W1-1
30"X30"
(LT. or RT.)

W1-6
48"X24"

W2-3
30"X30"
(LT. or RT.)

W5-3
36"X36"

W13-1
18"X18"

M6-1
21"X15"

NOTE: ALL M6 SIGNS TO BE MADE WITH REFLECTORIZED YELLOW ARROW & BORDER WITH BLUE BACKGROUND.

M6-6
21"X15"

W1-7
48"X24"

W1-2
30"X30"
(LT. or RT.)

W2-4
30"X30"

W10-1
36" DIAMETER

W3-3
36"X36"

M6-2
21"X15"

S4-3
24"X8"

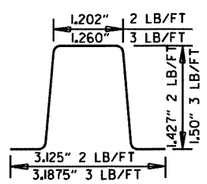
S4-2
24"X10"

OM-3
12"X36"
(LT. or RT.)

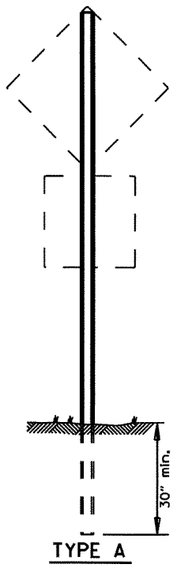
STANDARD HIGHWAY SIGNS

MINIMUM DIMENSIONS SHOWN

SUPPORT SECTION

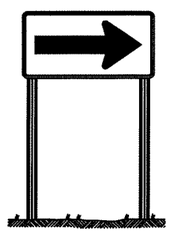


(U-CHANNEL) STANDARD SUPPORT ASSEMBLIES

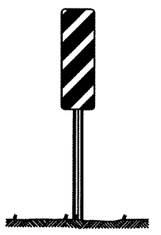


TYPE A

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.



TYPE B



TYPE C

MINIMUM WEIGHT

TYPE A & B = 3 LBS./FT.
TYPE C = 2 LBS./FT.

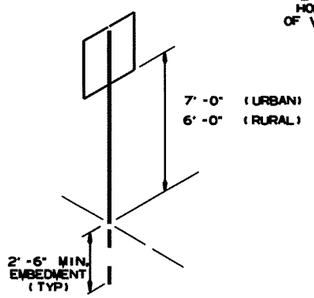
DATE	REVISION	DATE FILMED
4-17-08	REVISED SIGN DESIGNATION - W3-1& W3-2	
4-10-03	REVISED W5-2, W8-3, OM-3; ADDED W1-8	
1-5-81	REDRAWN	960-1-15-81
9-15-78	ADDED W14-3	877-9-15-78
9-2-76	POST WT.	623-9-3-76
5-3-76	STEEL POST WT. FROM 2# - 3# ADDED S4-2 & S4-3	504-5-3-76
8-12-74	REV. HT. TYPE "C" ASSEMBLY	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

SUPPORT ASSEMBLIES

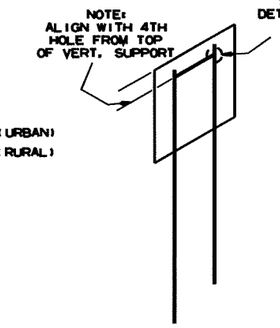
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD HIGHWAY SIGNS AND SUPPORT ASSEMBLIES

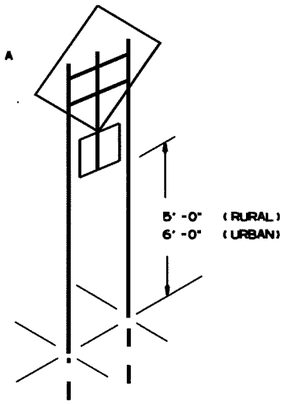
STANDARD DRAWING SHS-1



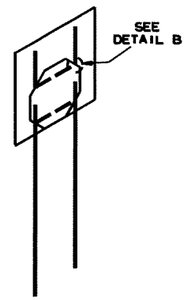
U-1



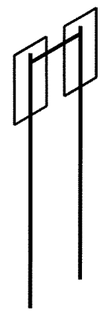
U-2



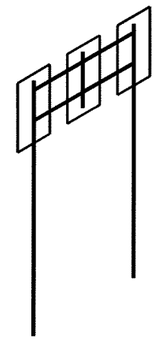
U-2 (A)



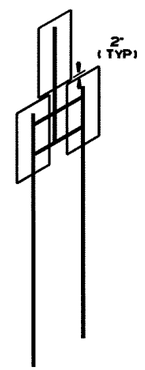
U-2 (B)



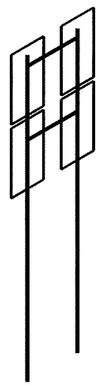
U-2 (1)



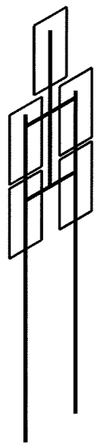
U-2 (2)



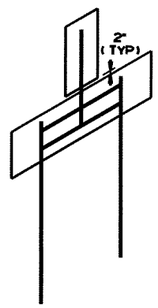
U-2 (3)



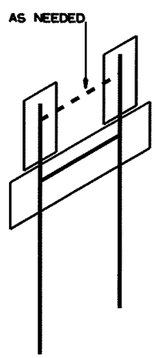
U-2 (4)



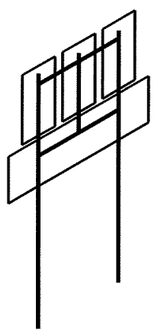
U-2 (5)



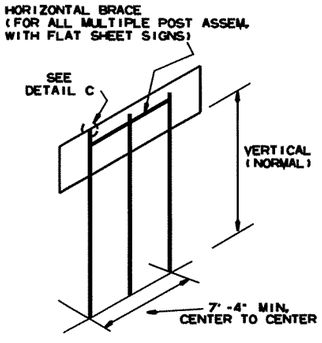
U-2 (6)



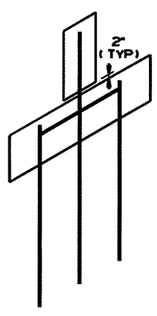
U-2 (7)



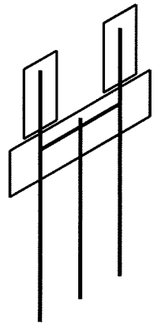
U-2 (8)



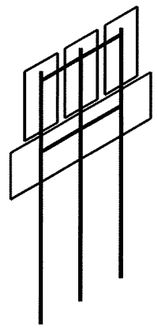
U-3



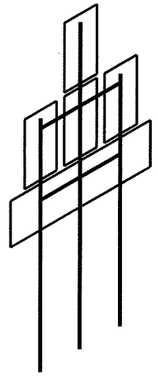
U-3 (1)



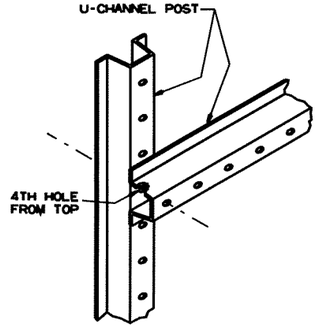
U-3 (2)



U-3 (3)

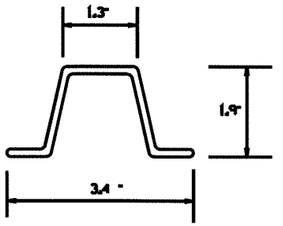


U-3 (4)



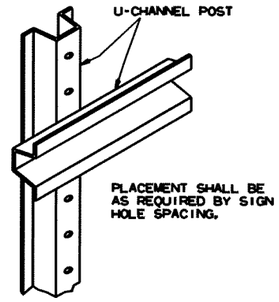
DETAIL A

SHOWING HORIZONTAL BRACE



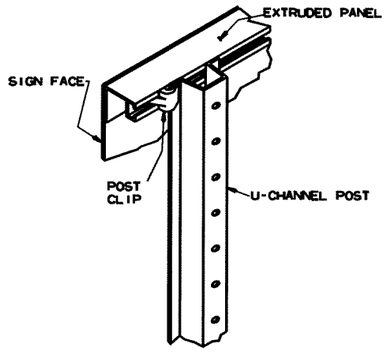
DETAIL D

(3 LB. U-CHANNEL POST)



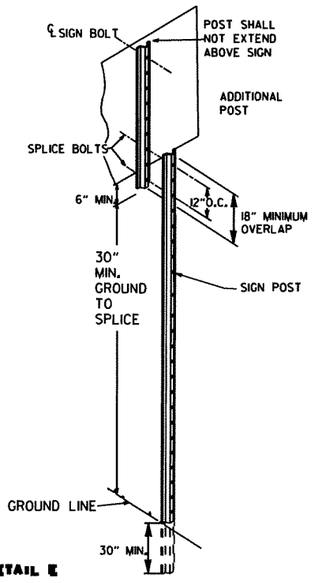
DETAIL B

SHOWING BACK-TO-BACK INSTALLATION



DETAIL C

SHOWING GUIDE SIGN MOUNTING WITH EXTRUDED PANELS



DETAIL E

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 (E).

NORMAL INSTALLATIONS WILL REQUIRE 1/4" DIA. CARRIAGE BOLTS TO MOUNT SIGNS TO POST AND 5/8" DIA. CARRIAGE BOLTS TO ASSEMBLE THE VARIOUS POST SUPPORTS.

ALL SIGN POSTS SHALL BE PLUMB.

DATE	REVISION	FILMED
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

ARKANSAS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

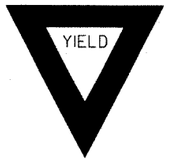
STANDARD DRAWING SHS-2

R1-1



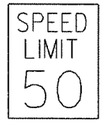
STANDARD 30"X30"
EXPRESSWAY 36"X36"
SPECIAL 48"X48"

R1-2



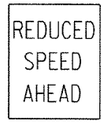
STD. 36"X36"X36"
EXPWY. 48"X48"X48"
FWY. 60"X60"X60"

R2-1



STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R2-5A



STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R2-5C



STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R4-1



STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R4-2



STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R5-1



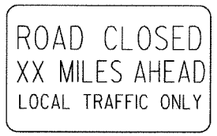
STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

RII-2



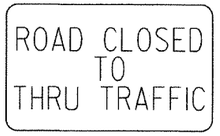
48"X30"

RII-3A



60"X30"

RII-4



60"X30"

RSP-1



48"X30"

WI-1



STD. 36"X36"
FWY. 48"X48"

WI-2



STD. 36"X36"
FWY. 48"X48"

WI-3



STD. 48"X48"

WI-4



STD. 48"X48"

WI-6



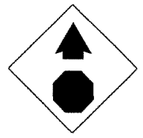
STD. 48"X24"
SPECIAL 60"X30"

WI-8



STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

W3-1



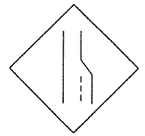
STD. 36"X36"
SPECIAL 48"X48"

W3-2



STD. 36"X36"
SPECIAL 48"X48"

W4-2



STD. 36"X36"
FWY. 48"X48"

W5-1



STD. 36"X36"
SPECIAL 48"X48"

W6-3



EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7



EXPWY. 36"X36"
FWY. 48"X48"

W9-2



STD. 36"X36"
FWY. 48"X48"

WI3-1



STD. 24"X24"

W20-1



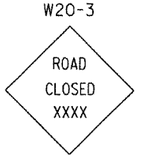
STD. 48"X48"

W20-2



STD. 48"X48"

W20-3



STD. 48"X48"

W20-4



STD. 48"X48"

W20-5



STD. 48"X48"

W20-7a



STD. 36"X36"
FWY. 48"X48"

W21-2



STD. 30"X30"
SPECIAL 36"X36"

W21-5



STD. 30"X30"
SPECIAL 36"X36"

W24-1



STD. 36"X36"

WI-4b



STD. 48"X48"

R56-1



STD. 18"X18"

W8-11



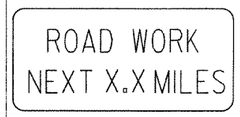
STD. 36"X36"
FWY. 48"X48"

W8-9



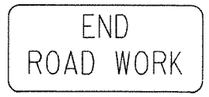
STD. 36"X36"
FWY. 48"X48"

G20-1



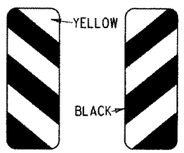
60"X24"

G20-2



48"X24"

OM-3L OM-3R



12"X36"

M4-9



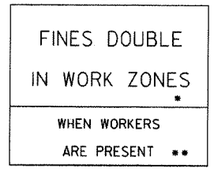
STD. 30"X24"
SPECIAL 48"X36"
SPECIAL 60"X48"

M4-10



48"X18"

R55-1



36"X60"

* USE 6" C LETTERS
** USE 4" D LETTERS

ADVANCE DISTANCES
(XXXX)

500 FT	½ MILE
1000 FT	¾ MILE
1500 FT	1 MILE
	AHEAD

GENERAL NOTES:

1. ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.
2. TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND REMOVED THEREAFTER.
3. EXISTING SIGNS AND CONSTRUCTION SIGNS SHALL BE KEPT IN PROPER POSITION, AND BE CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED. SIGNS THAT ARE DAMAGED, DEFACED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED.
- 4. SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SQ. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE.
- 5. SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3.
6. POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE.
7. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE, EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS.
8. FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. MOST OF THE SIGNS SHOWN ARE ORIENTED TO THE RIGHT. HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT.
10. R55-1 SIGNS SHALL BE PLACED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE SIGN SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN.

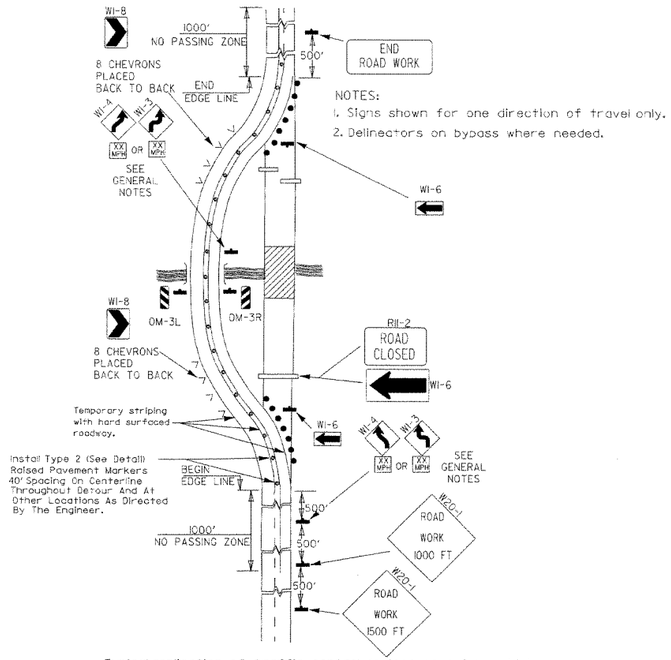
- NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED FOR ALL PROJECTS.

DATE	REVISION	FILMED
12-15-11	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	

ARKANSAS STATE HIGHWAY COMMISSION

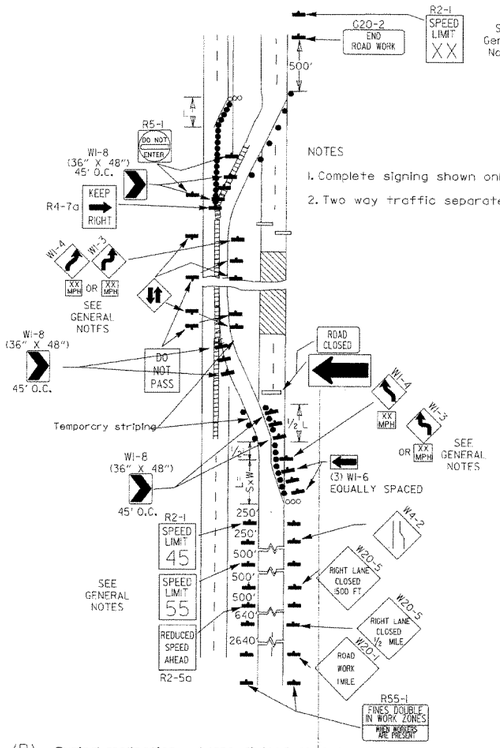
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



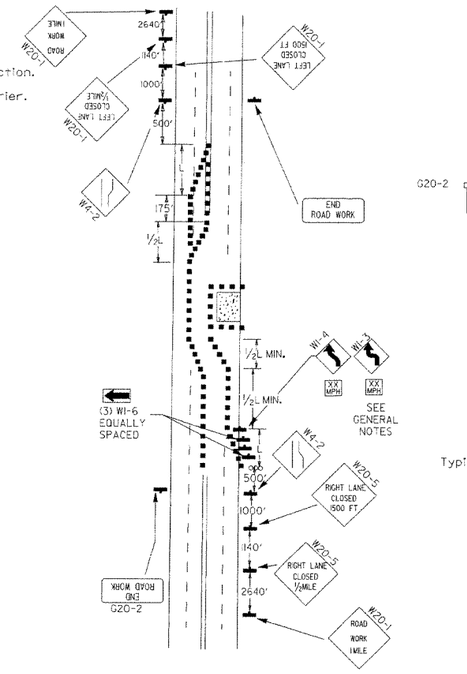
NOTES:
1. Signs shown for one direction of travel only.
2. Delineators on bypass where needed.

(A) Typical application of traffic control devices on a 2-lane highway where the entire roadway is closed and a bypass detour is provided.

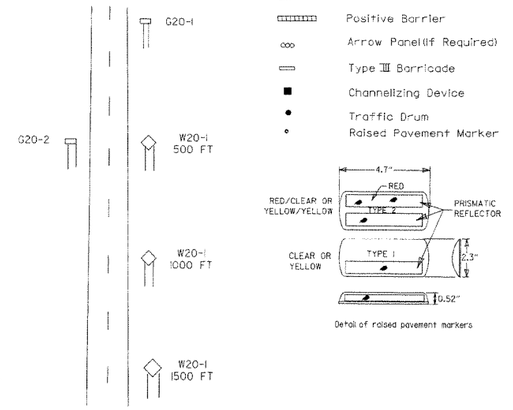


NOTES
1. Complete signing shown only in crossover direction.
2. Two way traffic separated with positive barrier.

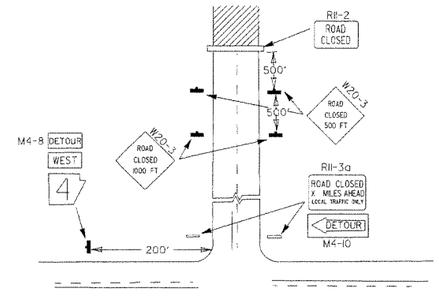
(B) Typical application - 4-lane divided roadway where one roadway is closed.



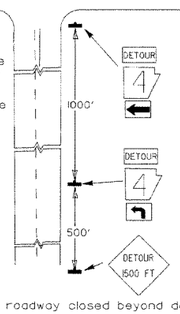
(C) Typical application - 4-lane undivided roadway where half of the roadway is closed.



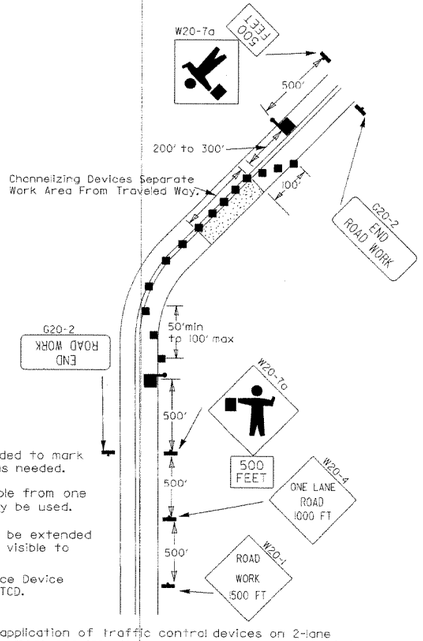
Typical advance warning sign placement



NOTES:
1. Regulatory traffic control devices to be modified as needed for the duration of the detour.
2. Street names may be used when desirable for directing detoured traffic.

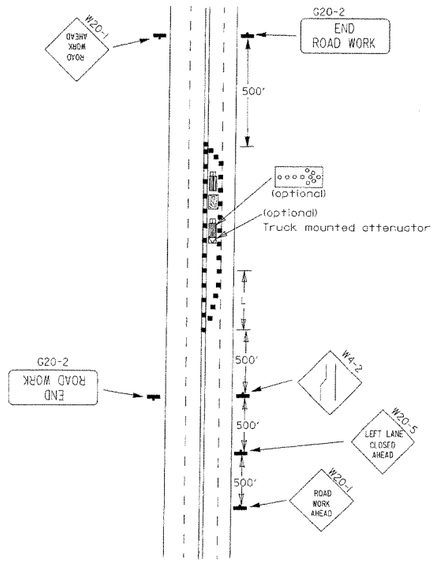


(D) Typical application - roadway closed beyond detour point.



NOTES:
1. Flood lights should be provided to mark flagger stations at night as needed.
2. If entire work area is visible from one station, a single flagger may be used.
3. Channelizing devices are to be extended to a point where they are visible to approaching traffic.
4. Automated Flagger Assistance Device (AFAD) optional. Refer to MUTCD.

(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.

Taper formulae:

L=SxW for speeds of 45mph or more.

$L = \frac{WS^2}{60}$ for speeds of 40mph or less.

Where:
L= Minimum length of taper.
S= Numerical value of posted speed limit prior to work or 85th percentile speed.
W= Width of offset.

GENERAL NOTES:

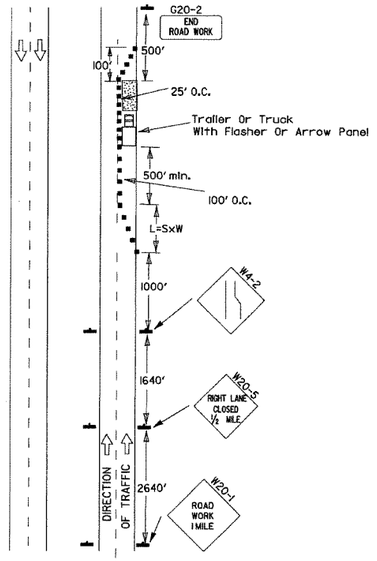
1. Advisory speed posted on WI-3 or WI-4 curve warning signs to be determined at site. Use WI-4 when speed is greater than 30mph and WI-3 when 30mph or less.
2. When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the R2-5A shall be installed at that location. Additional R2-1 45mph speed limit signs shall be installed at a maximum of 1mile intervals. At the end of the work area a R2-1(xx) shall be installed to match original speed limit.
3. When the existing speed limit is 65mph and the plans require a speed limit of 55mph, the R2-1(45) shall be omitted. Additional R2-1 55mph speed limit signs shall be installed at a maximum of 1mile intervals. At the end of the work area a R2-1(xx) shall be installed to match original speed limit.
4. The maximum spacing between channelizing devices in a taper should be approximately equal in feet to the speed limit. Beyond the taper, maximum spacing shall be two times the speed limit, or as directed by the Engineer.
5. Warning lights and/or flags may be mounted to signs or channelizing devices at night as needed.
6. Pavement markings no longer applicable which might create confusion in the minds of vehicle operators shall be removed or obliterated as soon as practicable.
7. Trailer mounted devices such as arrow panels and portable changeable message signs shall be delineated by affixing conspicuity material in a continuous line on the face of the trailer. When placed on or adjacent to the shoulder and not behind a positive barrier, these devices shall be delineated by placing five (5) traffic drums, equally spaced along the traffic side of the device.

DATE	REVISION	FILMED
3-11-10	ADDED (AFAD)	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (a) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON W1-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

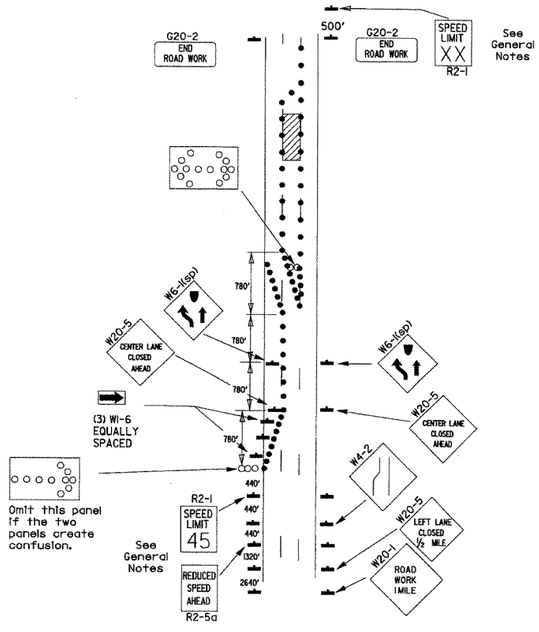
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

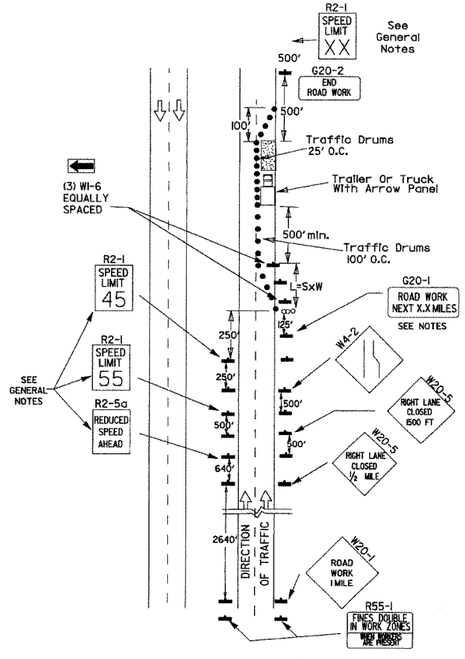
STANDARD DRAWING TC-2



(A) Typical application - daytime maintenance operations of short duration on a 4-lane divided roadway where half of the roadway is closed.



(B) Typical application - 3-lane oneway roadway where center lane is closed.



(C) Typical application - construction operations of intermediate to long term duration on a 4-lane divided roadway where half of the roadway is closed.

KEY:

○○○ Arrow Panel (If Required)

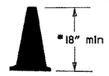
■ Channelizing Device

● Traffic drum

GENERAL NOTES:

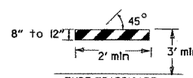
1. A speed limit reduction may be implemented ONLY when designated in the plan or when recommended by the Roadway Design Division.
2. When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the R2-5A shall be installed at that location. Additional R2-1 45mph speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
3. When the existing speed limit is 65mph and the plans require a speed limit of 55mph, the R2-1(45) shall be omitted. Additional R2-1 55mph speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
4. The maximum spacing between channelizing devices in a taper should be approximately equal in feet to the speed limit. Beyond the taper, maximum spacing shall be two times the speed limit or as directed by the Engineer.
5. Warning lights and/or flags may be mounted to signs or channelizing devices at night as needed.
6. Pavement markings no longer applicable which might create confusion in the minds of vehicle operators shall be removed or obliterated as soon as practicable.
7. The G20-1 sign will be required on jobs of over two miles in length. When the lane closure is not at the beginning of the project, the G20-1 sign shall be erected 125' in advance of the job limit. Additional W20-1 (1 MILE) signs are not required in advance of lane closures that begin inside the project limits.
8. Flaggers shall use STOP/SLOW paddles for controlling traffic through work zones. Flags may be used only for emergency situations.
9. All plastic drums and cones shall meet the requirements of NCHRP-350 or Manual For Assessing Safety Hardware (MASH).
10. Trailer mounted devices such as arrow panels and portable changeable message signs shall be delineated by affixing conspicuity material in a continuous line on the face of the trailer. When placed on or adjacent to the shoulder and not behind a positive barrier, these devices shall be delineated by placing five (5) traffic drums, equally spaced along the traffic side of the device.

Channelizing devices



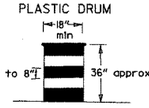
* When cones are used on freeways and multi-lane highways, they shall be 28" min. During hours of darkness, 28" cones shall be used on all roadways, and shall be reflectorized in accordance with the M.U.T.C.D.

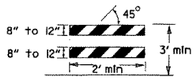
CONES



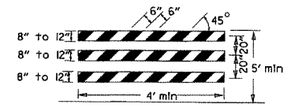
TYPE I BARRICADE

PLASTIC DRUM



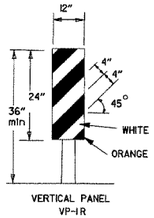


TYPE II BARRICADE



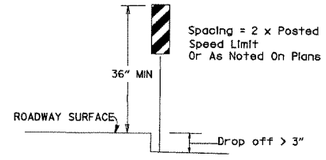
TYPE III BARRICADE

NOTE: For all road closures, the Type III barricades shall be of sufficient length to extend across entire roadway.



VERTICAL PANEL
VP-1R

VERTICAL PANEL PLACEMENT



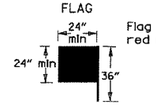
TRAFFIC CONTROL DEVICES
FOR
VERTICAL PAVEMENT DIFFERENTIALS

VERTICAL DIFFERENTIAL	LOCATIONS	TRAFFIC CONTROL
1" to 3"	Centerline, lane lines	W8-11
1" to 3"	Edge of shoulder	W8-9
Greater than 3"	Lane lines	Standard lane closure required
Greater than 3"	Edge of traveled lane	*RSP-1 and vertical panels, drums or concrete barrier
Greater than 3"	Edge of shoulder	*Vertical panels, drums or concrete barrier

* When shown on the plans concrete barrier will be used.

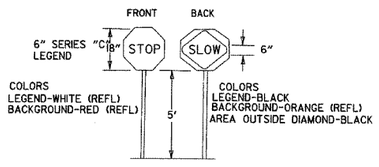
When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.

FLAG

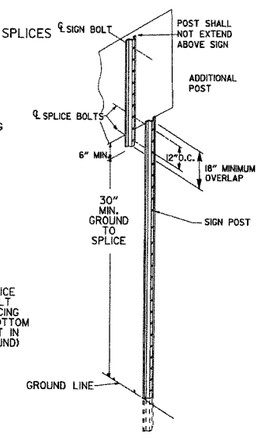


Flag shall be of good grade red material

STOP SLOW PADDLE



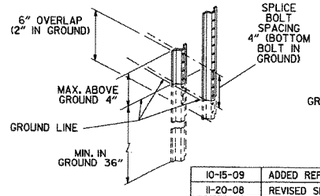
DETAIL OF SPLICES

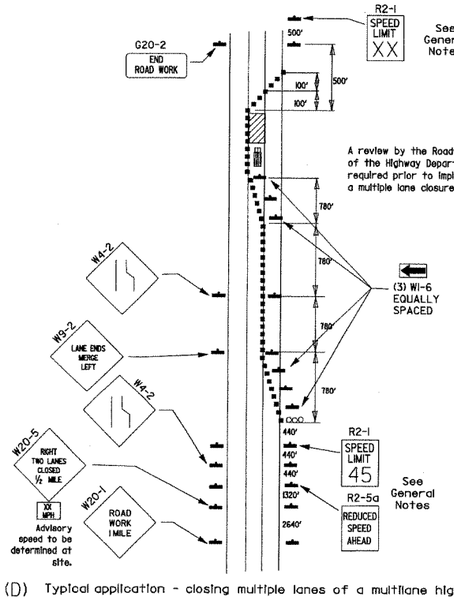


NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-2)

NORMAL INSTALLATIONS WILL REQUIRE 1/4" DIA. BOLTS TO MOUNT SIGNS TO POST AND 5/16" DIA. BOLTS TO ASSEMBLE THE VARIOUS POST SUPPORTS. EACH OF THESE BOLTS SHALL BE CARRIAGE BOLTS.

SIGN POSTS SHALL BE PAINTED GREEN; SIGNS SHALL NOT BE PAINTED, AND ALL SIGN POSTS SHALL BE PLUMB.





(D) Typical application - closing multiple lanes of a multilane highway.

DATE	REVISION	FILMED
10-15-09	ADDED REFERENCE TO MASH	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED NOTE	
10-1-98	ADDED NOTE	
4-03-97	ADDED (SP) TO W6-1 & REVISED TRAFFIC CONTROL DEVICES NOTE	
10-18-96	ADDED R55-1	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL, TEXT	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

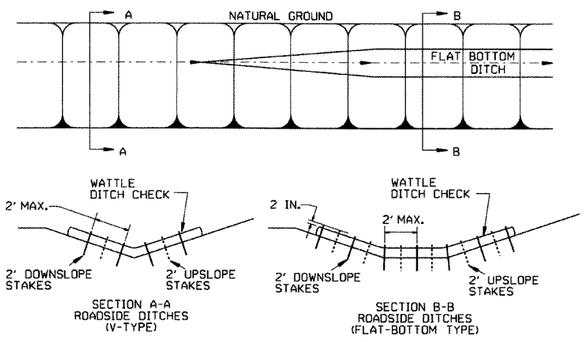
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

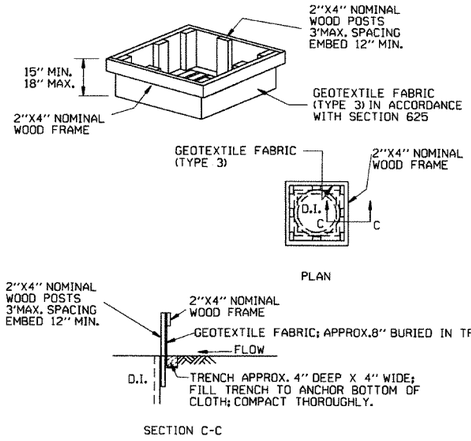
STANDARD DRAWING TC-3

GENERAL NOTES

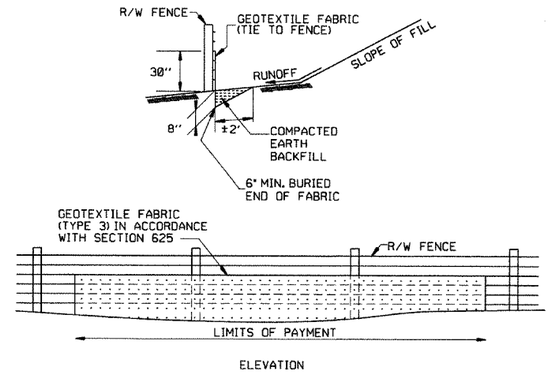
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



DROP INLET SILT FENCE (E-7)



SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

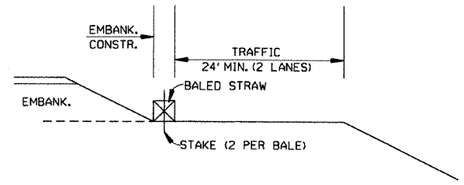
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

GENERAL NOTES

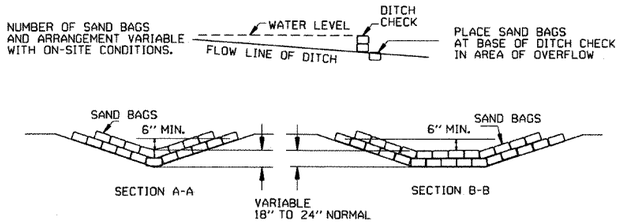
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

2. NO GAPS SHALL BE LEFT BETWEEN BALES.

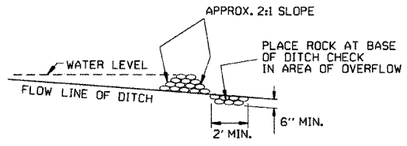
3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.

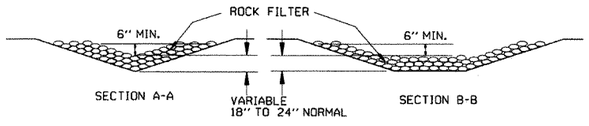


BALED STRAW FILTER BARRIER (E-2)

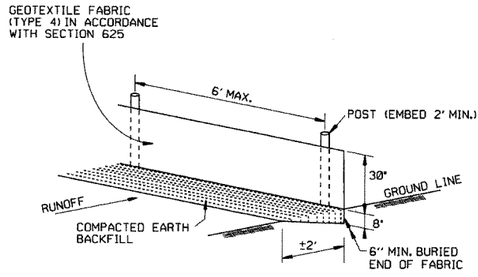


SAND BAG DITCH CHECK (E-5)





ROCK DITCH CHECK (E-6)



SILT FENCE (E-11)

GENERAL NOTES

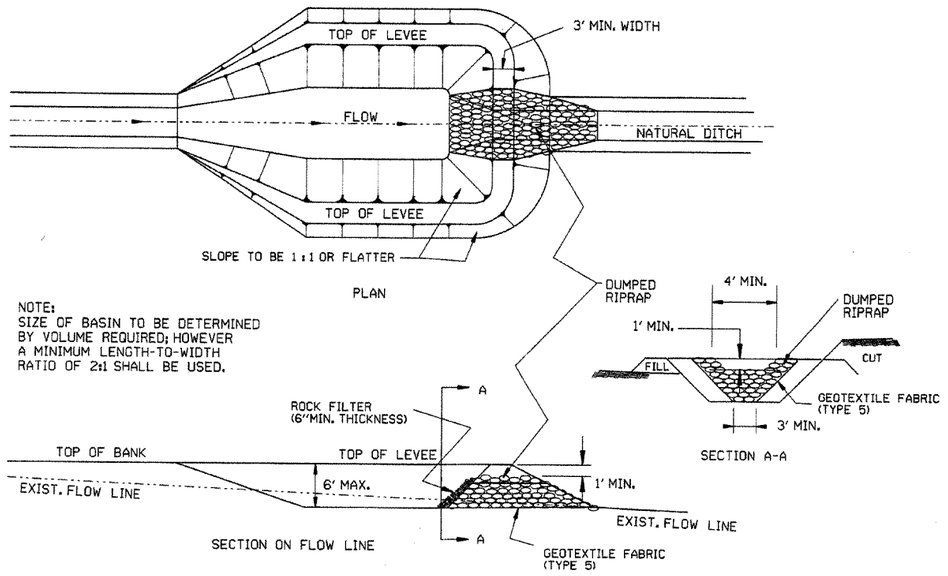
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

DATE	REVISION	FILMED
12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK	
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

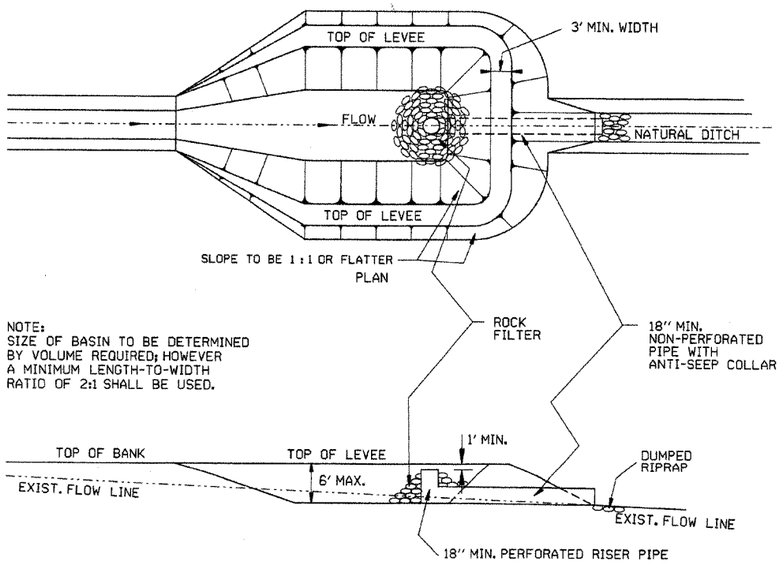
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

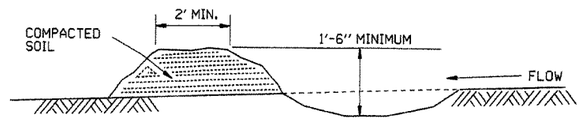
STANDARD DRAWING TEC-1



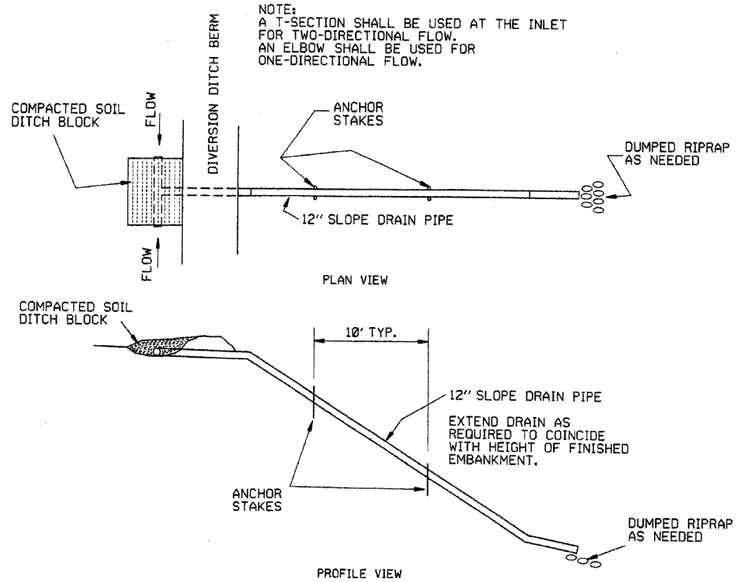
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



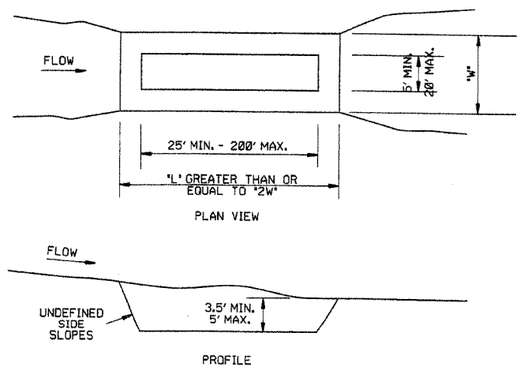
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



SEDIMENT BASIN (E-14)

DATE	REVISION	FILMED
6-2-94	Revised E-8 & E-12; Added E-14 & Deleted E-13	
4-1-93	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

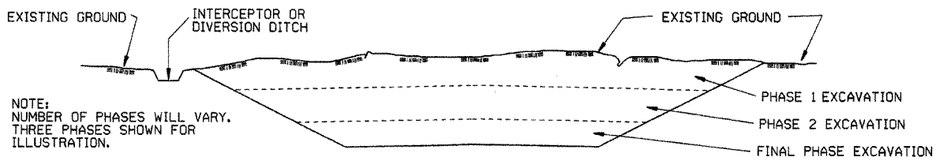
STANDARD DRAWING TEC-2

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



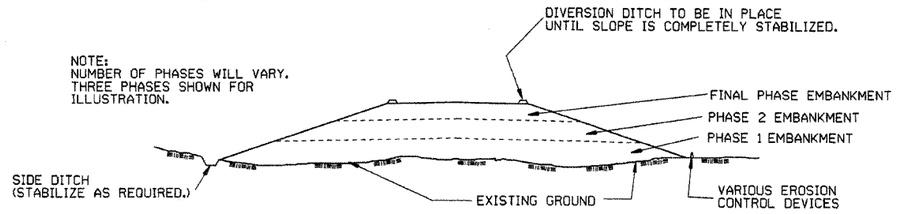
GENERAL NOTE

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



GENERAL NOTE

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.

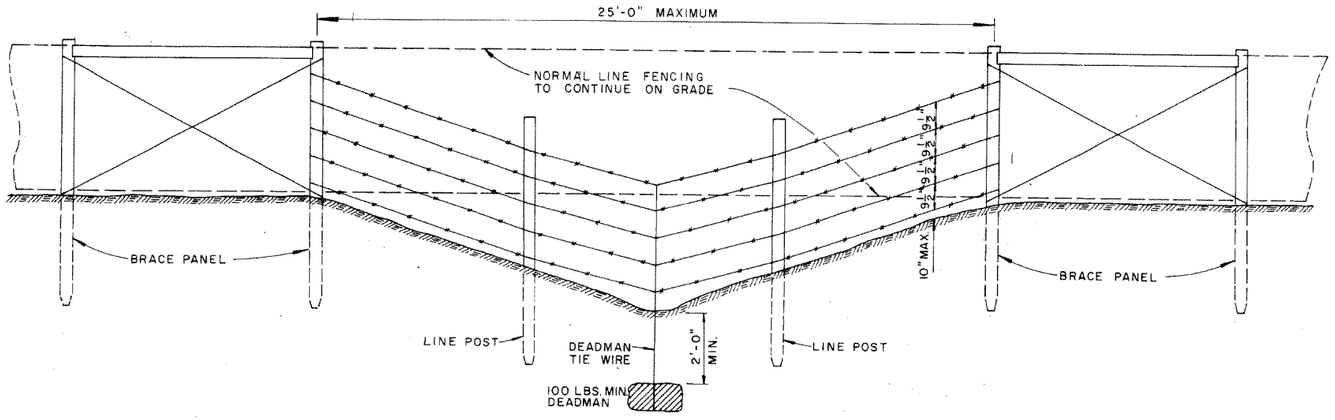
DATE	REVISION	FILMED
11-03-94	CORRECTED SPELLING	
6-2-94	Drawn & Issued	6-2-94

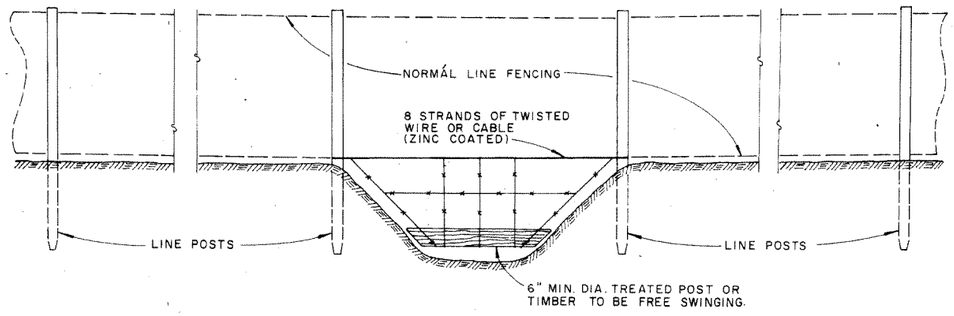
ARKANSAS STATE HIGHWAY COMMISSION

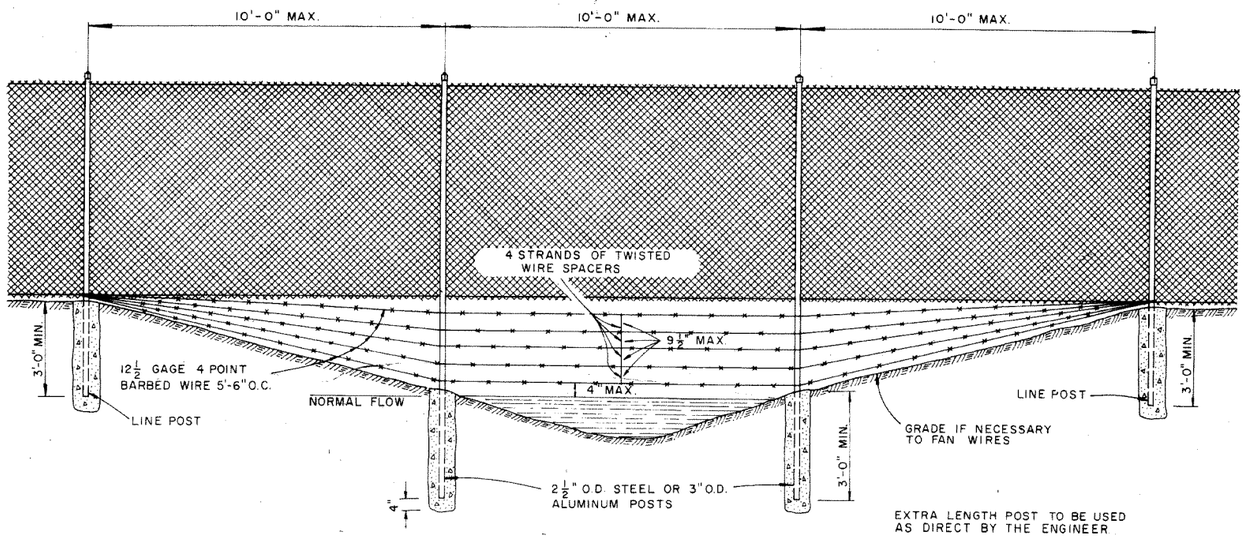
TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3

stdtec3.dgn







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.

DATE	REVISION	DATE FILM'D.
4-20-79	REVISED TOP RAIL & TENSION WIRE	676-4-20-79
10-2-72	REVISED & REDRAWN	529-10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE WATER GAPS

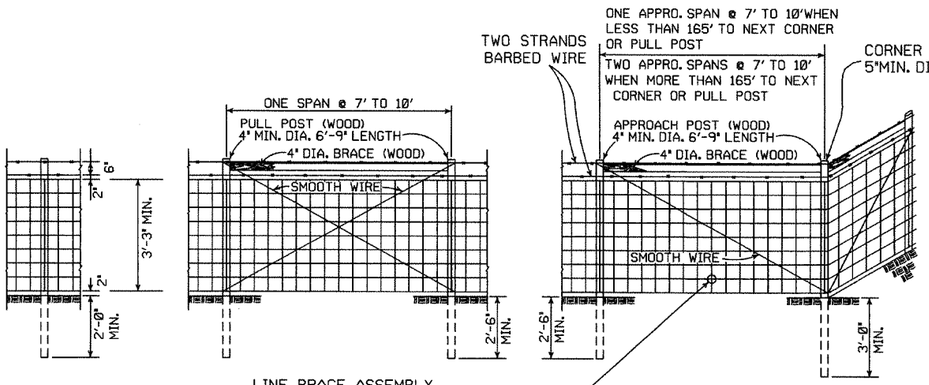
STANDARD DRAWING

WF-2

73

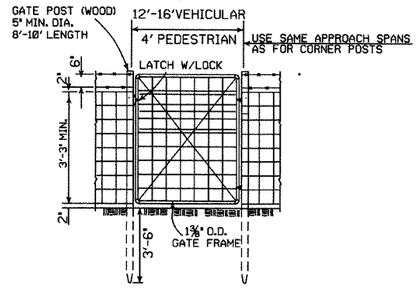
1M—11-71—67001—PPASCo

TYPE C FENCE (WOOD POSTS)



LINE POST
3" MIN. DIA. 6'-3" LENGTH
MAX. SPACING TO BE 10'-0"

LINE BRACE ASSEMBLY
MAX. SPACING TO BE 330'



GENERAL NOTES:

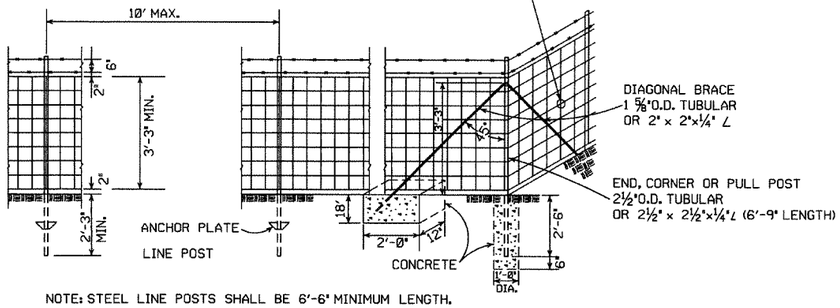
STEEL LINE POSTS SHALL BE PAINTED OR GALVANIZED.
TUBULAR END, CORNER, PULL, OR DIAGONAL BRACES MUST CONFORM TO THE DIMENSIONS AND WEIGHTS SPECIFIED ON STANDARD DRAWING WF-3 (CHAIN LINK). APPROVED ALTERNATES ARE ACCEPTABLE.
AN ACCEPTABLE TOLERANCE IN LENGTH OF TUBULAR OR WOODEN POSTS SHALL BE - 1" TO +2".
TUBULAR POSTS MUST BE PAINTED OR GALVANIZED.

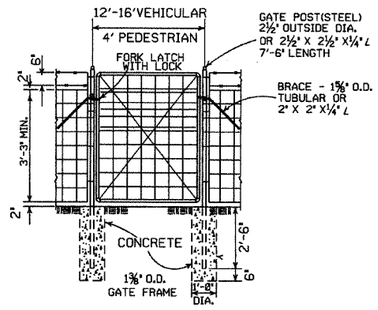
THE CONTRACTOR SHALL FURNISH AT LEAST 25% OF TIMBER LINE POSTS OF 7 FOOT LENGTHS IN ORDER TO PROVIDE SUFFICIENT SET IN SOFT GROUND OR SMALL DEPRESSIONS.

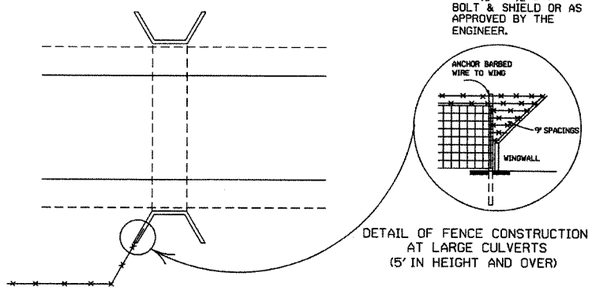
DRIVEWAY GATES, EITHER SINGLE 12' TO 16' OR DOUBLE 6' TO 8' OPENING OF THE SAME TYPE AS THE PEDESTRIAN GATE, SHALL BE INSTALLED ON THE RIGHT SIDE OF EACH THROUGH LANE ROAD AT LARGE CULVERTS OR BRIDGE CROSS FENCE, FOR USE OF MAINTENANCE EQUIPMENT. LOCATION OF GATES TO BE SHOWN ON PLANS OR AS DESIGNATED BY THE ENGINEER.

AT STREAM CROSSINGS, THE FENCE SHALL NOT BE CONSTRUCTED ACROSS LARGE STREAMS. WHERE CLEARANCE IS SUFFICIENT FROM THE TOP OF THE BANK TO THE BRIDGE STRUCTURE A CROSS CONNECTION SHALL BE CONSTRUCTED BETWEEN THE FENCE ON EACH SIDE OF THE ROAD. WHERE THE CLEARANCE IS NOT SUFFICIENT, THE FENCE SHALL BE TERMINATED WITH CROSS CONNECTIONS AND END POSTS ADJACENT TO BRIDGE ABUTMENTS OR CULVERT WINGWALLS.

OTHER APPROVED TIES WILL BE PERMITTED







DETAIL OF FENCE CONSTRUCTION
AT LARGE CULVERTS
(5' IN HEIGHT AND OVER)

SPLICE FOR BARBED WIRE BETWEEN PULL POST ASSEMBLY SHALL BE BY THE "EYE METHOD" AS DESCRIBED AS FOLLOWS: THE ENDS OF THE BARBED WIRE SHALL BE BENT TO FORM A LOOP. THE LOOPS SHALL BE CONNECTED. AFTER THE LOOPS ARE CONNECTED THE ENDS OF THE WIRE SHALL BE WRAPPED AROUND THE PROJECTING WIRES A MINIMUM OF 4 TIMES FOR EACH WIRE LOOP.

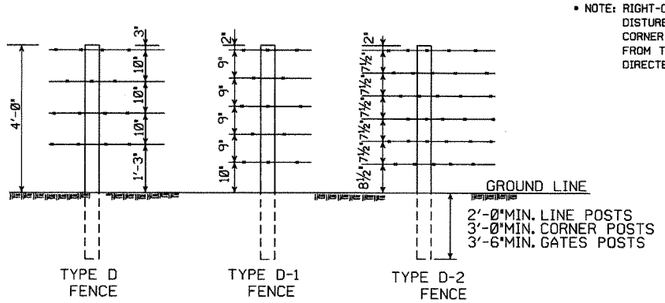
SPLICE FOR WOVEN WIRE BETWEEN PULL POST SHALL BE BY THE "WESTERN UNION METHOD" AS DESCRIBED AS FOLLOWS: THE VERTICAL WIRES FOR EACH END OF THE FENCE FABRIC SHALL BE PLACED SIDE BY SIDE AND THE PROJECTING HORIZONTAL WIRES SHALL BE WRAPPED A MINIMUM OF 4 TIMES AROUND THE HORIZONTAL WIRES OF THE FIRST WEB.

STAPLE AT LEAST TOP, BOTTOM AND ALTERNATE WIRES OF WOVEN FABRIC FOR WOOD LINE POSTS.

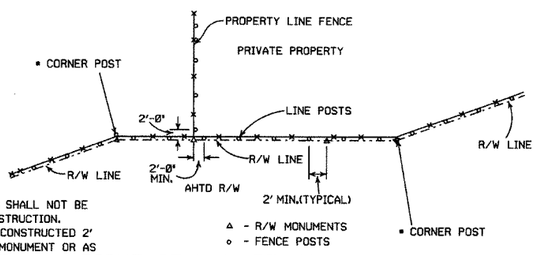
NOTE: STEEL LINE POSTS SHALL BE 6'-6" MINIMUM LENGTH.

TYPE C FENCE (STEEL POSTS)

4 STRANDS BARBED WIRE (D)
5 STRANDS BARBED WIRE (D-1)
6 STRANDS BARBED WIRE (D-2)

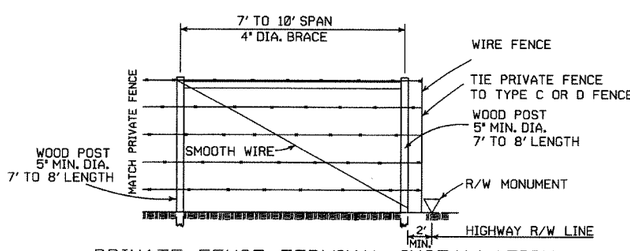


NOTE: SPACING AND SIZE (EXCEPT LENGTH) OF POSTS, APPROACH SPANS, PULL POST ASSEMBLIES, AND CORNER BRACING FOR TYPE D FENCE SHALL CONFORM TO TYPE C FENCE. USE GALVANIZED STAPLES ON WOOD POSTS AND APPROVED FASTENERS ON STEEL POSTS.



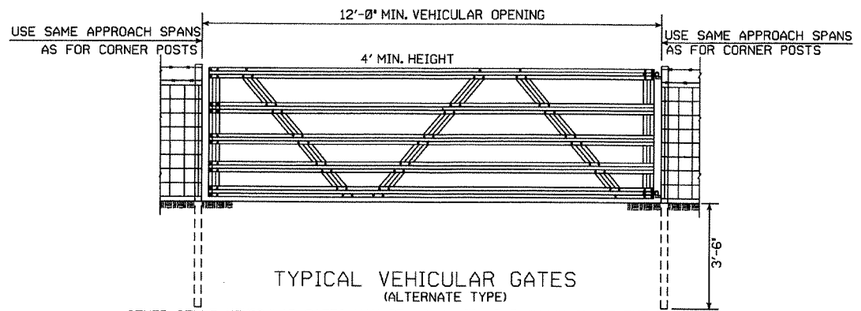
• NOTE: RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY FENCE CONSTRUCTION. CORNER POSTS SHALL BE CONSTRUCTED 2' FROM THE RIGHT-OF-WAY MONUMENT OR AS DIRECTED BY THE ENGINEER.

RIGHT-OF-WAY FENCE LOCATION



PRIVATE FENCE TERMINAL INSTALLATION

WHERE EXISTING FENCE CONSISTS OF STEEL POSTS, USE END POST ASSEMBLY AS SHOWN IN TYPE C FENCE OR OTHER END POST ASSEMBLY AS APPROVED BY THE ENGINEER.



TYPICAL VEHICULAR GATES
(ALTERNATE TYPE)

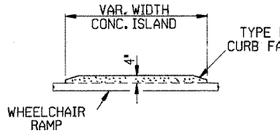
OTHER STYLE VEHICULAR GATES MAY BE USED WITH THE APPROVAL OF THE ENGINEER. THE METHOD OF SECURING GATE (LATCH AND/OR LOCK) SHALL MEET THE APPROVAL OF THE ENGINEER.

DATE	REVISION	FILMED
8-22-02	REVISED GENERAL NOTES	
10-18-96	REVISED AASHTO	
11-22-95	REVISED R-O-W LOCATION DETAIL	
6-2-94	REVISED BARB WIRE AND ADDED CORNER POST NOTES	6-2-94
8-5-93	REVISED R/W INSTALLATION FENCE	8-5-93
10-1-92	ADDED STAPLE NOTE	10-1-92
8-15-91	ADDED TYPE D-2 FENCE	8-15-91
11-30-89	DELETED CLASS CONCRETE	11-30-89
7-15-88	ADDED SPLICE NOTE	700-7-15-88
10-30-87	GENERAL REVISIONS	549-10-30-87
11-1-84	MAX. POST SPACING MIN. WIRE GAUGE	507-11-1-84
1-4-83	MIN. DIA. LINE POST	648-1-4-83
3-2-81	TOLERANCE FOR POST LENGTH	722-3-2-81
12-1-72	ADDED D-1 & FENCE INSTALLATION	564-12-1-72
10-2-72	REVISED AND REDRAWN	540-10-2-72

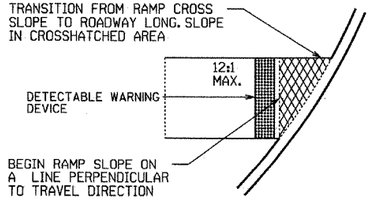
ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE
TYPE C AND D

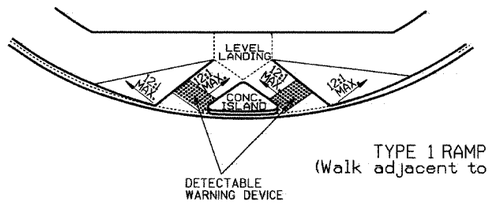
STANDARD DRAWING WF-4



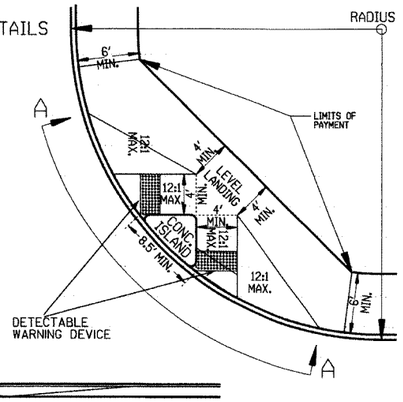
CONCRETE ISLAND DETAIL



SLOPE TRANSITION DETAILS



TYPE 1 RAMP
(Walk adjacent to curb)

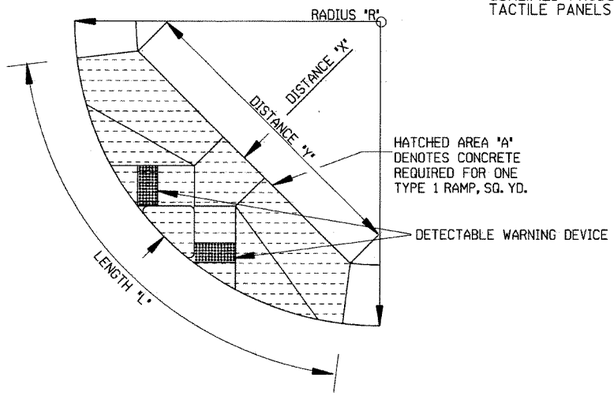




SECTION A-A

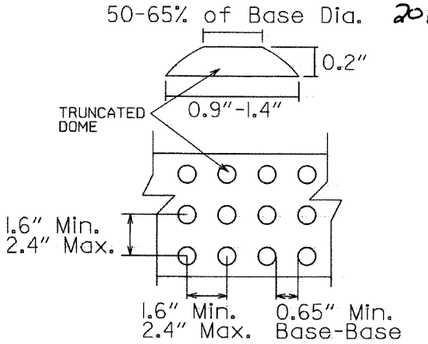
TYPE 1 RAMP DIMENSIONS AND QUANTITIES

RADIUS 'R' FEET	DISTANCE 'X' FEET	DISTANCE 'Y' FEET	LENGTH 'L' FEET	RAMP AREA 'A' SQ. YD.
15	11.67	18.82	32.18	26.21
20	11.52	22.28	35.46	30.07
25	11.43	26.60	38.77	33.80
30	11.37	30.26	40.93	36.90
35	11.33	33.51	43.11	39.77
40	11.30	36.45	45.26	42.45
45	11.27	39.16	47.34	44.97
50	11.25	41.69	49.36	47.35
55	11.24	44.07	51.31	49.63
60	11.22	46.33	53.21	51.80



GENERAL NOTES FOR DETECTABLE WARNING DEVICES

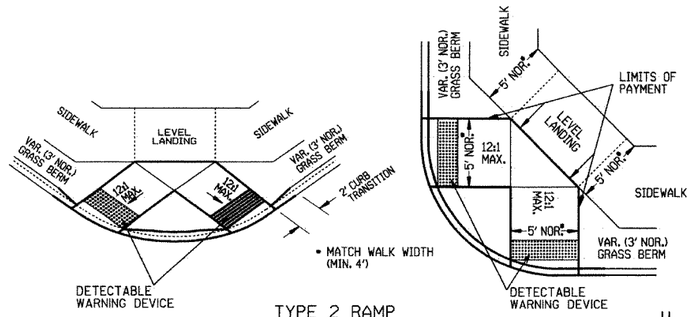
THE DETECTABLE WARNING DEVICE SHALL BE LOCATED SO THAT THE NEAREST EDGE OF THE DEVICE IS 6 TO 8 INCHES FROM THE FACE OF THE CURB.
TRUNCATED DOMES IN THE DETECTABLE WARNING SURFACE SHALL MEET THE REQUIREMENTS OF THE GEOMETRIC CONFIGURATION SHOWN.
DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF TRAVEL TO PERMIT WHEELS TO ROLL BETWEEN DOMES.
DETECTABLE WARNING DEVICE SHALL BE 24 INCHES IN THE DIRECTION OF TRAVEL AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR FLUSH SURFACE.
DETECTABLE WARNING DEVICE SHALL BE ON THE AHTD QUALIFIED PRODUCTS LIST FOR CAST-IN-PLACE TACTILE PANELS (ADA DETECTABLE WARNING).



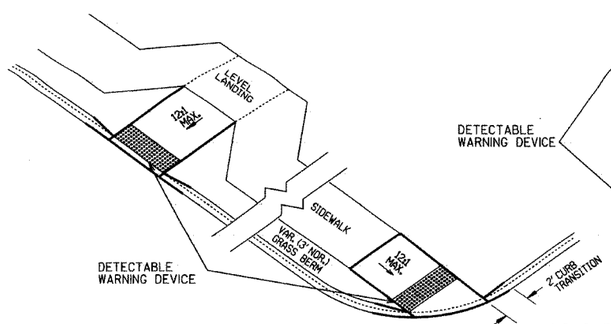
DETECTABLE WARNING DEVICE DETAIL

GENERAL NOTES:

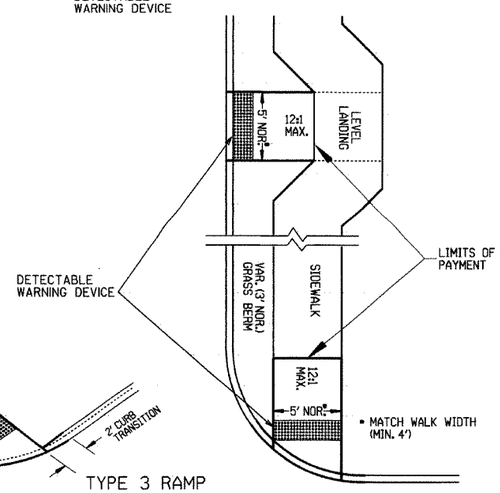
IN NEW CONSTRUCTION, UNLESS OTHERWISE INDICATED ON THE PLANS, WHEELCHAIR RAMPS ARE TO BE PROVIDED AT ALL CORNERS OF CURBED STREET INTERSECTIONS AND MID-BLOCK CROSSWALK LOCATIONS.
IN ALTERATIONS WHEELCHAIR RAMPS ARE TO BE PROVIDED AT CURBED STREET INTERSECTIONS WITH PEDESTRIAN TRAFFIC AND MID-BLOCK CROSSWALK LOCATIONS.
THE LENGTH OF THE RAMP SHALL BE SUCH THAT THE SLOPE DOES NOT EXCEED 12:1. THE SURFACE TEXTURE OF THE RAMP SHALL CONFORM TO A CLASS 6 FINISH ACCORDING TO SECTION 802.19.
THE NORMAL GUTTER GRADE SHALL BE MAINTAINED THROUGH THE AREA OF THE RAMP.
ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION.
THE MINIMUM THICKNESS OF THE RAMP, WALK, & LANDING SHALL BE 4".
THE MINIMUM WIDTH OF THE RAMPS SHALL BE THE WALK WIDTH OR 36", WHICHEVER IS GREATER.
RAMPS SHALL BE MODIFIED AS NECESSARY TO INSURE THAT THEY ARE PARALLEL TO A LINE DRAWN FROM THE CENTER OF ONE RAMP TO THE CENTER OF THE RAMP ON THE OPPOSITE SIDE OF THE INTERSECTION.
THE DIMENSIONS AND QUANTITIES SHOWN ON THIS DRAWING ARE FOR A 90° INTERSECTION ONLY. DIMENSIONS AND QUANTITIES FOR SKEWED INTERSECTIONS WILL VARY, AND ARE TO BE DETERMINED BY THE ENGINEER.



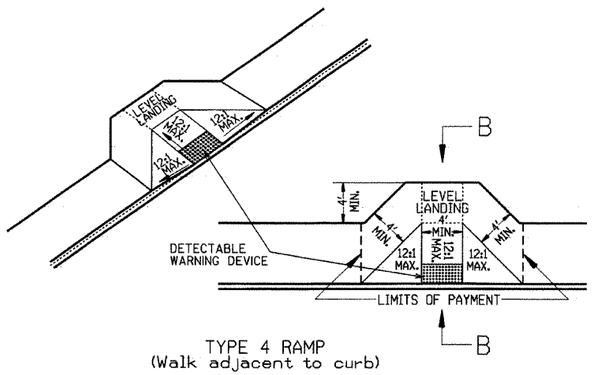
TYPE 2 RAMP



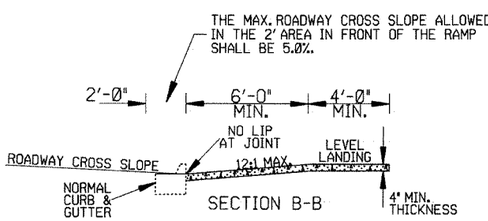
TYPE 3 RAMP



NOTE:
THE CROSS SLOPE OF THE RAMPS, LEVEL LANDINGS, AND SIDEWALKS SHALL NOT EXCEED 2.0% UNLESS REQUIRED TO MATCH STREET LONGTITUDINAL GRADE.



TYPE 4 RAMP
(Walk adjacent to curb)



SECTION B-B

RAMP SELECTION CRITERIA

FIRST CHOICE	TYPE 1	CORNER LOCATIONS WITH THE WALK ADJACENT TO THE CURB (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 2	CORNER LOCATIONS WITH THE WALK OFFSET FROM THE CURB A DISTANCE INSUFFICIENT TO ALLOW THE REQUIRED RAMP SLOPE (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 3	CORNER LOCATIONS WITH THE WALK OFFSET FROM THE CURB A DISTANCE SUFFICIENT TO ALLOW THE REQUIRED RAMP SLOPE (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 4	TANGENT LOCATIONS (BOTH NEW CONSTRUCTION AND ALTERATIONS).
SECOND CHOICE	TYPE 5	TANGENT LOCATIONS (ALTERATIONS ONLY).
THIRD CHOICE	TYPE 6	CORNER LOCATIONS (ALTERATIONS ONLY). THIS RAMP MAY BE USED ONLY IF THE TYPE 5 RAMPS CANNOT BE PLACED AT THE ENDS OF THE RADIUS.
FOURTH CHOICE		IF SITE CONSTRAINTS PREVENT THE CONSTRUCTION OF ANY OF THE TYPES LISTED, THEN AND ONLY THEN CAN THE 12:1 MAX. SLOPE ON THE RAMP BE EXCEEDED TO PROVIDE ACCESS TO THE STREET LEVEL (ALTERATIONS ONLY). THE SLOPE CAN BE STEEPENED TO A 10:1 MAX. FOR A MAX. LENGTH OF 5' OR A 8:1 MAX. FOR A MAX. LENGTH OF 2'. SLOPES STEEPER THAN 8:1 ARE NOT ALLOWED UNDER ANY CIRCUMSTANCES.

NOTE: IN ALTERATIONS, THE SELECTION OF THE TYPE OF WHEELCHAIR RAMP TO BE CONSTRUCTED SHALL BE BASED ON THE AMOUNT OF RIGHT-OF-WAY AVAILABLE, AND ON THE PRESENCE OF OTHER SITE CONSTRAINTS (UTILITIES, BUILDINGS, ETC.). THE TABLE ABOVE LISTS THE ORDER IN WHICH THE RAMPS ARE TO BE CONSIDERED.
AN ALTERATION IS DEFINED AS A PROJECT THAT CHANGES OR AFFECTS THE USE OF A PEDESTRIAN PATHWAY (OVERLAYS, SIGNALIZATION PROJECTS, ETC.) BUT DOES NOT REQUIRE THE PURCHASE OF ADDITIONAL RIGHT-OF-WAY. ALL PROJECTS THAT REQUIRE THE PURCHASE OF ADDITIONAL RIGHT-OF-WAY WILL USUALLY BE CONSIDERED NEW CONSTRUCTION FOR THE PURPOSES OF THE CHART ABOVE.

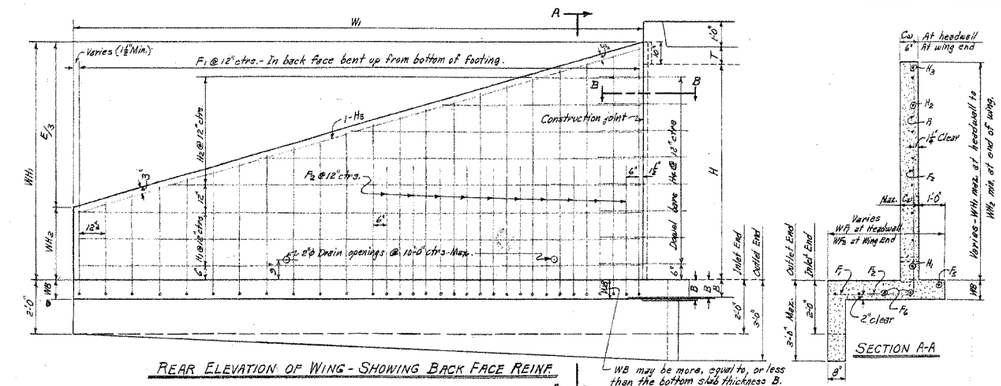
DATE	REVISION	DATE FILM
11-10-05	REVISED TO NEW SIDEWALK POLICY	
10-9-03	REVISED GEN. NOTES & ADDED NOTE	
4-10-03	REV. DETECTABLE WARNING DEVICES	
8-22-02	ADD DETECTABLE WARNING DEVICES	
3-30-00	ADD.SLOPE TRANS. & REV. ISL. DIMS.	
11-18-98	REVISED NOTES	
8-12-98	REVISED TEXTURE	
7-02-98	REDRAWN & REISSUED	
10-18-96	CORRECTED DIMENSIONS	10-18-96
5-24-90	FROM8:1TO12:1MAX.SLOPES	5-24-90
7-15-88	ADJUSTED MAX. SLOPE	652-7-15-88
7-14-88	INCLUD."CONC. ISLD."IN PAY ITEM	-------
6-02-76	ISSUED-P.H.D.	299-7-28-76

ARKANSAS STATE HIGHWAY COMMISSION

WHEELCHAIR RAMPS NEW CONSTRUCTION AND ALTERATIONS

STANDARD DRAWING WR-1

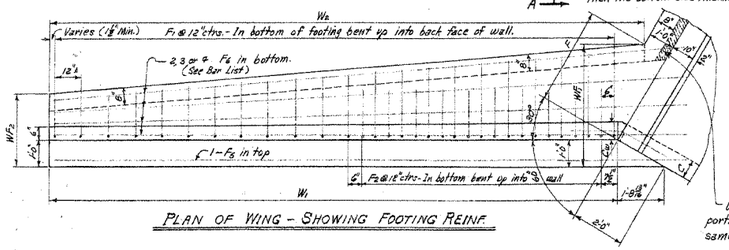
FED. ROAD DIST. NO.	STATE	FED. AID PROJECT	SHEET NO.	SHEET TOTAL	TOTAL SHEETS
8	ARK.			202	
JOB NO.					



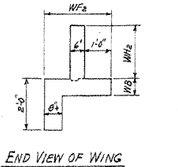
REAR ELEVATION OF WING - SHOWING BACK FACE REINF.

WB may be more, equal to, or less than the bottom slab thickness B.

SECTION A-A

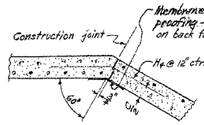


PLAN OF WING - SHOWING FOOTING REINF.

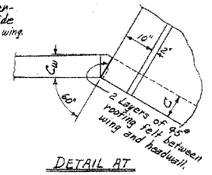


END VIEW OF WING

When B is more than WB, the shaded portion of the apron shall be made the same thickness as the barrel base B.



SECTION B-B THRU CONSTRUCTION JOINT



DETAIL AT TOP OF WING

Note:- Payment for membrane waterproofing and roofing felt to be included in the price bid for Class S Concrete.

WING DIMENSIONS

CLEAR HEIGHT OF BOX	THICKNESS OF WING FOOTING	THICKNESS OF WING AT HEADWALL = C	WINGWALL HEIGHTS AT HEADWALL	WINGWALL HEIGHTS AT END OF WING	WIDTHS OF WING FOOTINGS AT HEADWALL	WIDTHS OF WING FOOTINGS AT END OF WING	PERPENDICULAR FOOTING DIMENSION	PERPENDICULAR DIST. FROM HDWL. TO END OF WING	LENGTH OF WING WALLS	INSIDE FOOTING DIMENSION	* QUANTITY PER WING CLASS S CONCRETE	
											INLET END	OUTLET END
H	WB	Cw	WH1	WH2	WF1	WF2	F	E	W1	W2	CU.YD.	CU.YD.
2'	7"	6"	2'-10"	0'-8"	2'-6"	2'-0"	0'-11⅜"	6'-6"	7'-6"	7'-1⅝"	0.889	0.986
3'	7"	6"	3'-10"	1'-0"	2'-8"	2'-1⅝"	1'-4⅜"	8'-6"	9'-10⅝"	9'-7½"	1.338	1.466
4'	7"	6"	4'-10"	1'-4"	3'-0"	2'-3"	1'-9"	10'-6"	12'-1⅝"	12'-1⅝"	1.868	2.027
5'	7"	6"	5'-10"	1'-8"	3'-4"	2'-4½"	2'-1⅜"	12'-6"	14'-5⅛"	14'-7½"	2.478	2.669
		7"	5'-10"	1'-8"	3'-4"	2'-4½"	2'-1⅜"	12'-6"	14'-5⅛"	14'-7½"	2.582	2.772
6'	8"	7"	6'-10"	2'-0"	3'-8"	2'-6"	2'-6½"	14'-6"	16'-9"	17'-1⅝"	3.440	3.661
		7½"	6'-10	2'-0"	3'-8"	2'-6"	2'-6½"	14'-6"	16'-9"	17'-1⅝"	3.611	3.782
		8"	6'-10"	2'-0"	3'-8"	2'-6"	2'-6½"	14'-6"	16'-9"	17'-1⅝"	3.582	3.803
7'	8½"	7½"	7'-10"	2'-4"	4'-2"	2'-7½"	3'-1⅛"	16'-6"	19'-0⅝"	19'-8⅜"	4.505	4.758
		8"	7'-10"	2'-4"	4'-2"	2'-7½"	3'-1⅛"	16'-6"	19'-0⅝"	19'-8⅜"	4.597	4.851
8'	9"	8"	8'-10"	2'-8"	4'-8"	2'-9"	3'-8"	18'-6"	21'-6⅝"	22'-6"	5.761	6.047

* Quantity per wing does not include headwall or that portion of apron or toewall for the length W3.

APRON DIMENSION W3

W3 = (OW - 2F)

CLEAR SPAN	CLEAR HEIGHT	FOOTING DIMENSION	SINGLE BARREL CULVERT		DOUBLE BARREL CULVERT		TRIPLE BARREL CULVERT		QUADRUPLE BARREL CULVERT		QUINTUPLE BARREL CULVERT	
S	H	F	OW	W3	OW	W3	OW	W3	OW	W3	OW	W3
4'	2'	1'-11⅝"	5'-0"	3'-0½"	9'-8"	7'-8½"	14'-4"	12'-4½"	19'-0"	17'-0½"	23'-8"	21'-8½"
	3'	2'-8⅜"	5'-0"	2'-3½"	9'-8"	6'-11⅛"	14'-4"	11'-7⅛"	19'-0"	16'-3½"	23'-8"	20'-11⅛"
	4'	3'-6"	5'-0"	1'-6"	9'-8"	6'-2"	14'-4"	10'-10"	19'-0"	15'-6"	23'-8"	20'-0"
	5'	4'-3⅜"	5'-0"	0'-8⅜"	9'-8"	5'-4⅜"	14'-4"	10'-0⅜"	19'-0"	14'-8⅜"	23'-8"	19'-4⅜"
	6'	5'-0⅝"	5'-2"	0'-1⅝"	9'-11"	4'-10⅝"	14'-8"	9'-7⅝"	19'-5"	14'-2⅝"	24'-2"	19'-1⅝"
5'	3'	2'-8⅜"	6'-0"	3'-3⅜"	11'-6"	8'-11⅛"	17'-4"	14'-7⅛"	23'-0"	20'-3⅛"	28'-8"	25'-11⅛"
	4'	3'-6"	6'-0"	2'-6"	11'-8"	8'-2"	17'-4"	13'-10"	23'-0"	19'-6"	28'-8"	25'-2"
	5'	4'-3⅜"	6'-0"	1'-8⅜"	11'-8"	7'-4⅜"	17'-4"	13'-0⅜"	23'-0"	18'-8⅜"	28'-8"	24'-4⅜"
	6'	5'-0⅝"	6'-2"	1'-1⅝"	11'-11"	6'-10⅝"	17'-8"	12'-7⅝"	23'-5"	18'-2⅝"	29'-2"	23'-11⅝"
	7'	6'-2⅝"	6'-5"	0'-0⅝"	12'-1"	5'-10⅝"	17'-11"	11'-8⅝"	23'-9"	17'-6⅝"	29'-7"	23'-4⅝"
6'	3'	2'-8⅜"	7'-0"	4'-3⅜"	13'-8"	10'-11⅛"	20'-4"	17'-7⅛"	27'-0"	24'-3⅛"	33'-8"	30'-11⅛"
	4'	3'-6"	7'-0"	3'-6"	13'-8"	10'-2"	20'-4"	16'-10"	27'-0"	23'-6"	33'-8"	30'-8"
	5'	4'-3⅜"	7'-0"	2'-8⅜"	13'-9"	9'-4⅜"	20'-4"	16'-0⅜"	27'-0"	22'-8⅜"	33'-8"	29'-10⅜"
	6'	5'-0⅝"	7'-2"	2'-1⅝"	13'-11"	8'-10⅝"	20'-8"	15'-7⅝"	27'-5"	22'-2⅝"	34'-2"	29'-1⅝"
	7'	6'-2⅝"	7'-3"	1'-0⅝"	14'-1"	7'-10⅝"	20'-11"	14'-8⅝"	27'-9"	21'-6⅝"	34'-7"	28'-4⅝"
	8"	7'-4"	7'-4"	0'-0"	14'-2"	6'-10"	21'-0"	13'-8"	27'-10"	20'-6"	34'-8"	27'-4"
7'	4'	3'-6"	8'-0"	4'-6"	15'-8"	12'-2"	23'-4"	19'-10"	31'-0"	27'-6"	38'-8"	35'-2"
	5'	4'-3⅜"	8'-0"	3'-8⅜"	15'-8"	11'-4⅜"	23'-4"	19'-0⅜"	31'-0"	26'-8⅜"	38'-8"	34'-4⅜"
	6'	5'-0⅝"	8'-2"	3'-1⅝"	15'-11"	10'-10⅝"	23'-8"	18'-7⅝"	31'-5"	26'-2⅝"	39'-2"	34'-1⅝"
	7'	6'-2⅝"	8'-3"	2'-0⅝"	16'-1"	9'-10⅝"	23'-11"	17'-8⅝"	31'-9"	25'-6⅝"	39'-7"	33'-4⅝"
	8'	7'-4"	8'-4"	1'-0"	16'-2"	8'-10"	24'-0"	16'-8"	31'-10"	24'-6"	39'-8"	32'-4"
8'	4'	3'-6"	9'-0"	5'-6"	17'-8"	14'-2"	26'-4"	22'-10"	35'-6"	31'-6"	43'-8"	40'-2"
	5'	4'-3⅜"	9'-2"	4'-10⅜"	17'-11"	13'-7⅜"	26'-8"	22'-1⅜"	35'-5"	31'-1⅜"	44'-2"	39'-10⅜"
	6'	5'-0⅝"	9'-2"	4'-1⅛"	17'-11"	12'-10⅝"	26'-8"	21'-2⅝"	35'-5"	30'-1⅝"	44'-2"	39'-1⅛"
	7'	6'-2⅝"	9'-3"	3'-0⅝"	18'-1"	11'-10⅝"	26'-11"	20'-8⅝"	35'-9"	29'-6⅝"	44'-7"	38'-4⅝"
	8'	7'-4"	9'-4"	2'-0"	18'-2"	10'-10"	27'-0"	19'-8"	35'-10"	28'-6"	44'-8"	37'-4"
9'	5'	4'-3⅜"	10'-2"	5'-10⅜"	19'-11"	15'-7⅜"	29'-8"	25'-0⅜"	39'-5"	35'-1⅜"	49'-2"	44'-10⅜"
	6'	5'-0⅝"	10'-3"	5'-2⅝"	20'-1"	15'-0⅝"	29'-11"	24'-1⅝"	39'-9"	34'-5⅝"	49'-7"	44'-1⅝"
	7'	6'-2⅝"	10'-3"	4'-0⅝"	20'-1"	13'-10⅝"	29'-11"	23'-0⅝"	39'-9"	33'-5⅝"	49'-7"	43'-1⅝"
	8'	7'-4"	10'-4"	3'-0"	20'-2"	12'-10"	30'-0"	22'-0"	39'-10"	32'-6"	49'-8"	42'-4"
10'	5'	4'-3⅜"	11'-2"	6'-10⅜"	21'-11"	17'-7⅜"	32'-8"	28'-4⅜"	43'-5"	39'-1⅜"	54'-2"	49'-10⅜"
	6'	5'-0⅝"	11'-3"	6'-2⅝"	22'-1"	17'-0⅝"	32'-11"	27'-10⅝"	43'-9"	38'-5⅝"	54'-7"	49'-1⅝"
	7'	6'-2⅝"	11'-3"	5'-0⅝"	22'-1"	15'-10⅝"	32'-11"	26'-0⅝"	43'-9"	37'-5⅝"	54'-7"	48'-1⅝"
	8'	7'-4"	11'-4"	4'-0"	22'-2"	14'-10"	33'-0"	25'-0"	43'-10"	36'-6"	54'-8"	47'-4"
11'	6'	5'-0⅝"	12'-3"	7'-3⅛"	24'-2"	19'-1⅝"	36'-0"	30'-1⅛"	47'-10"	42'-9⅛"		
	7'	6'-2⅝"	12'-4"	6'-1⅝"	24'-2"	17'-11⅝"	36'-0"	28'-5⅝"	47'-10"	41'-7⅛"		
	8'	7'-4"	12'-5"	5'-0"	24'-2"	16'-10"	36'-0"	28'-8"	47'-10"	40'-6"		
12'	6'	5'-0⅝"	13'-0"	8'-3⅝"	26'-2"	21'-1⅝"	39'-0"	33'-1⅛"	51'-10"	46'-9⅛"		
	7'	6'-2⅝"	13'-0"	7'-1⅝"	26'-2"	19'-11⅝"	39'-0"	32'-5⅝"	51'-10"	45'-7⅛"		
	8'	7'-4"	13'-0"	6'-0"	26'-2"	18'-10"	39'-0"	31'-8"	51'-10"	44'-6"		

QUANTITIES

CLEAR SPAN	CLEAR HEIGHT	THICKNESS OF WING AT HEADWALL	THICKNESS OF WING FOOTING	REINFORCING STEEL - FOR 4 WINGS @	CLASS S CONCRETE - 4 WINGS HEADWALLS, WINGWALLS, FOOTINGS, TOEWALLS AND APRONS				
					SINGLE BARREL CULVERT	DOUBLE BARREL CULVERT	TRIPLE BARREL CULVERT	QUADRUPLE BARREL CULVERT	QUINTUPLE BARREL CULVERT
S	H	Cw	WB	LB.	CU.YD.	CU.YD.	CU.YD.	CU.YD.	CU.YD.
4'	2'	6"	7"	108.0	4.50	5.46	6.42	7.38	8.34
	3'	6"	7"	164.9	6.26	7.21	8.17	9.13	10.09
	4'	6"	7"	259.6	8.33	9.28	10.24	11.20	12.16
	5'	6"	7"	357.8	10.72	11.68	12.64	13.60	14.56
	6'	7"	8"	583.1	14.55	15.53	16.52	17.51	18.49
5'	3'	6"	7"	164.9	6.97	7.63	8.29	9.96	11.12
	4'	6"	7"	259.6	8.56	9.70	10.87	10.03	12.20
	5'	6"	7"	357.8	10.94	12.10	13.26	14.43	15.59
	6'	7"	8"	583.1	14.77	15.96	17.15	18.34	19.54
	7'	7½"	8½"	1134.6	18.94	20.16	21.37	22.59	23.80
6'	3'	6"	7"	164.9	6.68	8.06	9.42	10.80	12.18
	4'	6"	7"	259.6	8.75	10.19	11.99	12.87	14.25
	5'	6"	7"	357.8	11.15	12.53	13.89	15.27	16.65
	6'	7"	8"	583.1	14.98	16.39	17.78	19.18	20.59
	7'	7½"	8½"	1134.6	19.16	20.58	22.00	23.43	24.86
	8'	8"	9"	1422.6	24.09	25.53	26.96	28.39	29.83
7'	4'	6"	7"	259.6	8.97	10.58	12.15	13.76	15.35
	5'	6"	7"	357.8	11.36	12.97	14.58	16.15	17.75
	6'	7"	8"	583.1	15.20	16.82	18.42	20.04	21.66
	7'	7½"	8½"	1134.6	19.38	21.02	22.69	24.28	25.92
	8'	8"	9"	1425.6	24.32	25.97	27.60	29.25	30.89
8'	4'	6"	7"	259.6	9.19	11.03	12.82	14.65	16.45
	5'	7"	7"	357.8	12.03	13.89	15.70	17.55	19.36
	6'	7"	8"	583.1	15.92	17.27	19.09	20.93	22.75
	7'	7½"	8½"	1134.6	19.59	21.46	23.30	25.16	26.93
	8'	8"	9"	1425.6	24.52	26.41	28.24	30.11	31.96
9'	5'	7"	7"	357.8	12.26	14.33	16.87	18.95	20.97
	6'	7½"	8"	583.1	15.99	18.04	20.09	22.19	24.23
	7'	7½"	8½"	1134.6	19.81	21.91	23.96	26.06	28.10
	8'	8"	9"	1425.6	24.76	26.86	28.91	31.00	33.05
10'	5'	7"	7"	357.8	12.49	14.90	17.05	19.26	21.52
	6'	7½"	8"	583.1	16.17	18.50	20.77	22.99	25.28
	7'	7½"	8½"	1134.6	20.09	22.37	24.64	26.87	29.15
	8'	8"	9"	1425.6	24.98	27.31	29.58	31.81	34.10
11'	6'	8"	8"	583.1	16.69	19.27	21.76	24.23	
	7'	8"	8½"	1134.6	20.64	23.22	25.71	28.18	
	8'	8"	9"	1425.6	25.19	27.77	30.27	32.74	
12'	6'	8"	8"	583.1	16.92	19.75	22.45	25.18	
	7'	8"	8½"	1134.6	20.87	23.69	26.50	29.13	
	8'	8"	9"	1425.6	25.48	28.25	30.96	33.69	

* For reinforcing steel in Headwalls and Aprons, See Details of Standard Barrel Sections for R.C. Box Culverts for the desired Span and Height.

GENERAL NOTES:-

CONCRETE:- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have ¾" chamfers.

REINFORCING STEEL:- Reinforcing steel to be deformed bars of intermediate or hard grade.

CONSTRUCTION JOINTS:- Construction joints between wingwall, footings and sidewalls shall be only where shown on plans.

SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.

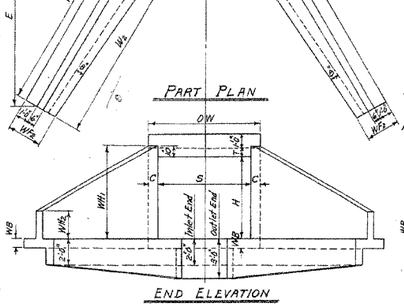
UNIT STRESSES:-

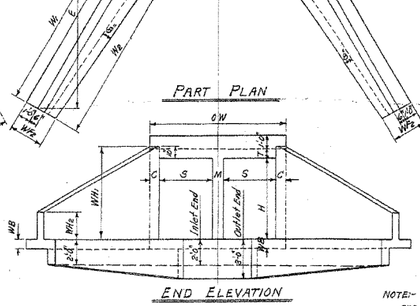
Class S Concrete (n=10) 1200#/□"
Reinforcing Steel 20,000#/□"

NOTE:- This drawing to be used in conjunction with Standard Barrel Sections, Drawing Nos. as listed below.

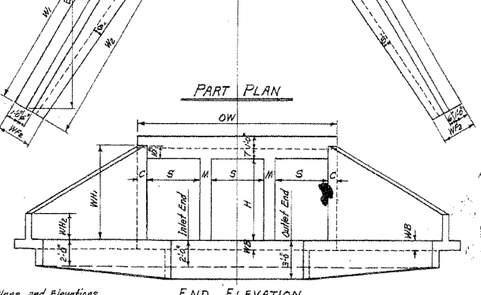
SINGLES	DOUBLES	TRIPLES	QUADRUPLES	QUINTUPLES
R-100X-0	R-200X-0	R-300X-0	R-400X-0	R-500X-0
R-100X-X1	R-200X-X1	R-300X-X1	R-400X-X1	R-500X-X1
R-100X-X2	R-200X-X2	R-300X-X2	R-400X-X2	
	R-200X-X3	R-300X-X3		

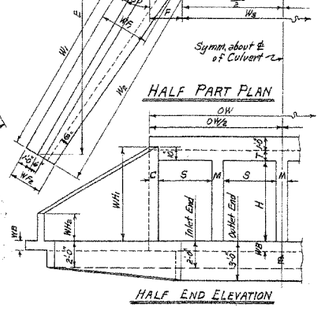
CLASS S CONCRETE

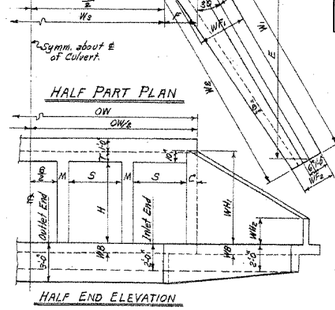




NOTE:- Plans and Elevations are not to scale.







MEMBRANE:- A membrane waterproofing 12" wide, consisting of three moppings of waterproofing asphalt and two alternate layers of treated cotton fabric shall be applied to the back face of wing to cover the construction joints in wings.

BAR LIST FOR ONE WING - 4 REQUIRED

CLEAR HEIGHT	F1 BENT: In bottom of footing, bent up into back face of wing. One bar of each length.							F2 BENT: In bottom of footing, bent up into back face of wing. Alt. with F1 bars.						F3 STRAIGHT: Longitudinal in top of wing footing heel.			F4 STRAIGHT: Longitudinal in bottom of wing footing toe.			H1 STRAIGHT: Horizontal in back face of wing.			H2 STRAIGHT: Horizontal in back face of wing. One bar of each length.					H3 STRAIGHT: In back face of wing at top - on slope.			H4 BENT: Dowels thru construction joint at headwall.				QUANTITY REINFORCING STEEL PER WING	BAR BENDING DIAGRAMS
				LENGTHS VARY																			LENGTHS VARY														
H	SIZE	SPACING	NO. REQD	MIN.	MAX.	X MIN.	X MAX.	SIZE	SPACING	NO. REQD	LENGTH	X	Y	SIZE	NO. REQD	LENGTH	SIZE	NO. REQD	LENGTH	SIZE	SPACING	NO. REQD	LENGTH	SIZE	SPACING	NO. REQD	LENGTH	MAX.	MIN.	SIZE	NO. REQD	LENGTH	SIZE	SPACING	NO. REQD	LENGTH	X	LB.	
2'	#3	12"	8	1'-6"	3'-10"	0'-8"	1'-0"	#3	12"	1	9'-8"	#3	2	#3	2	8'-6"	#3	1	7'-2"	#3	12"	1	9'-6"	#3	12"	1	——	9'-0"	#3	1	7'-9"	#3	12"	2	2'-8"	1'-9"	27.0	
3'	#3	12"	10	2'-2"	5'-2"	0'-10"	1'-3"	#3	12"	1	12'-0"	#3	2	11'-0"	#3	12"	1	9'-6"	#3	16"	2	7'-6"	9'-0"	#3	1	9'-9"	#3	12"	3	2'-8"	1'-9"	41.1	
4'	#3	12"	13	2'-9"	6'-6"	0'-11"	1'-7"	#3	12"	1	14'-9"	#3	3	13'-6"	#3	12"	1	11'-10"	#3	12"	3	10'-11"	9'-0"	#3	1	12'-2"	#3	12"	4	2'-8"	1'-9"	63.7	
5'	#3	12"	15	2'-11"	7'-10"	1'-1"	1'-11"	#3	12"	4	5'-6"	1'-1"	2'-6"	#3	1	16'-8"	#3	3	16'-0"	#5	12"	2	14'-2"	#3	12"	3	10'-11"	9'-0"	#3	1	14'-7"	#3	12"	5	2'-8"	1'-9"	89.5	
6'	#3	12"	17	3'-6"	9'-3"	1'-2"	2'-3"	#3	12"	4	9'-6"	1'-9"	3'-3"	#3	1	19'-0"	#3	3	18'-6"	#3	12"	2	16'-6"	#3	12"	4	14'-4"	9'-0"	#3	1	17'-0"	#3	12"	6	2'-8"	1'-9"	145.8	
7'	#3	12"	20	3'-9"	10'-9"	1'-3"	2'-9"	#3	12"	7	5'-6"	1'-7"	4'-0"	#4	1	21'-4"	#4	4	21'-0"	#4	12"	2	18'9"	#4	12"	5	17'-9"	9'-0"	#4	1	19'-5"	#3	12"	7	3'-6"	1'-9"	283.7	
8'	#4	12"	22	4'-6"	12'-3"	1'-5"	3'-2"	#3	12"	10	6'-6"	1'-10"	4'-9"	#4	1	23'-8"	#4	4	23'-9"	#4	12"	3	21'-1"	#4	12"	5	17'-9"	9'-0"	#4	1	21'-10"	#4	12"	8	3'-6"	1'-9"	356.4	

NOTE:- Dimensions are to bar centers.

REVISIONS:- Membrane added. 5-10-66 W.C.H.

Designed By:- W.C.H. 8-20-62 Checked By:- RHS- 1-9-63
Drawn By:- W.C.H. 12-4-62 Checked By:- RHS- 1-30-63
Quantities By:- W.C.H. 12-14-62 Reviewed By:- RHS- 2-20-63

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS

4', 5', 6', 7', 8', 9', 10', 11' & 12' SPANS — 3:1 SLOPES

SINGLES, DOUBLES, TRIPLES, QUADRUPLES & QUINTUPLES. — ALL DEPTHS OF COVER FOR H = 8'-0" OR LESS

STANDARD DRAWING NO. W-X003-1

MYLAR (3)

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			203	
JOB No.					

BAR LIST FOR BARREL SECTION 60'-0" IN LENGTH

DEPTH OF COVER D	CLEAR SPAN S	CLEAR HEIGHT H	"a" bars STRAIGHT: In Top and Bottom Slab of Barrel. 2 Add'l in Apron and Headwall - Each. SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH
0'-0" TO 5'-0" MAXIMUM.	2 @ 4'-0"	2'	#5	12"	128	128	9'-5"
		3'			128	128	9'-5"
		4'			128	128	9'-5"
		5'			128	128	9'-5"
		6'			128	128	9'-8"
	2 @ 5'-0"	3'	#6	12"	128	128	11'-5"
		4'			128	128	11'-5"
		5'			128	128	11'-5"
		6'			128	128	11'-8"
		7'			128	128	11'-10"
	2 @ 6'-0"	3'	#6	12"	140	140	13'-5"
		4'			140	140	13'-5"
		5'			140	140	13'-5"
		6'			140	140	13'-8"
		7'			140	140	13'-10"
		8'			140	140	13'-11"
	2 @ 7'-0"	4'	#6	11"	128	128	15'-5"
		5'			128	128	15'-5"
		6'			128	128	15'-8"
		7'			128	128	15'-10"
		8'			128	128	15'-11"
		9'			128	128	16'-2"
	2 @ 8'-0"	4'	#6	11"	140	140	17'-5"
		5'			140	140	17'-5"
		6'			140	140	17'-8"
		7'			140	140	17'-10"
		8'			140	140	17'-11"
		9'			140	140	18'-2"
		10'			140	140	18'-5"
	2 @ 9'-0"	5'	#6	11"	140	140	19'-8"
		6'			140	140	19'-10"
		7'			140	140	19'-10"
		8'			140	140	19'-11"
		9'			140	140	20'-2"
		10'			140	140	20'-5"
		11'			140	140	20'-7"
	2 @ 10'-0"	5'	#7	12"	128	128	21'-8"
		6'			128	128	21'-10"
		7'			128	128	21'-10"
		8'			128	128	21'-11"
		9'			128	128	22'-2"
		10'			128	128	22'-5"
		11'			128	128	22'-7"
		12'			128	128	22'-8"
	2 @ 11'-0"	6'	#7	11"	128	128	23'-11"
		7'			128	128	23'-11"
		8'			128	128	23'-11"
		9'			128	128	24'-2"
		10'			128	128	24'-5"
		11'			128	128	24'-7"
		12'			128	128	24'-9"
	2 @ 12'-0"	6'	#7	11"	140	140	25'-11"
		7'			140	140	25'-11"
		8'			140	140	25'-11"
		9'			140	140	26'-2"
		10'			140	140	26'-5"
		11'			140	140	26'-7"
		12'			140	140	26'-9"

DEPTH OF COVER D	CLEAR SPAN S	CLEAR HEIGHT H	"b" bars BENT - See Diagram below. In Bottom of Top Slab bent up over Division Wall - hooked. Alternate with "a" and "c" bars. SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH	X	Y	Z
0'-0" TO 5'-0" MAXIMUM.	2 @ 4'-0"	2'	#5	12"	59	59	10'-6"	0'-3"	2'-2½"	3'-6"
		3'			59	59	10'-6"	0'-3"	2'-2½"	3'-6"
		4'			59	59	10'-6"	0'-3"	2'-2½"	3'-6"
		5'			59	59	10'-6"	0'-3"	2'-2½"	3'-6"
		6'			59	59	10'-9"	0'-3"	2'-3½"	3'-5"
	2 @ 5'-0"	3'	#6	12"	59	59	12'-7"	0'-3½"	2'-7½"	4'-1"
		4'			59	59	12'-7"	0'-3½"	2'-7½"	4'-1"
		5'			59	59	12'-7"	0'-3½"	2'-7½"	4'-1"
		6'			59	59	12'-10"	0'-3½"	2'-8½"	4'-2"
		7'			59	59	13'-0"	0'-3½"	2'-9½"	4'-2½"
	2 @ 6'-0"	3'	#6	11"	65	65	14'-7"	0'-4"	3'-0½"	4'-10"
		4'			65	65	14'-7"	0'-4"	3'-0½"	4'-10"
		5'			65	65	14'-7"	0'-4"	3'-0½"	4'-10"
		6'			65	65	14'-10"	0'-4"	3'-1½"	4'-11"
		7'			65	65	15'-0"	0'-4"	3'-2½"	4'-11½"
		8'			65	65	15'-1"	0'-4"	3'-2½"	5'-0"
	2 @ 7'-0"	4'	#6	12"	59	59	16'-9"	0'-4½"	3'-5"	5'-7"
		5'			59	59	16'-9"	0'-4½"	3'-5"	5'-7"
		6'			59	59	17'-0"	0'-4½"	3'-6"	5'-8"
		7'			59	59	17'-2"	0'-4½"	3'-7"	5'-8½"
		8'			59	59	17'-3"	0'-4½"	3'-7"	5'-9"
		9'			59	59	17'-6"	0'-4½"	3'-8"	5'-10"
	2 @ 8'-0"	4'	#6	11"	65	65	18'-10"	0'-5"	3'-10"	6'-4"
		5'			65	65	19'-1"	0'-5"	3'-11"	6'-5"
		6'			65	65	19'-1"	0'-5"	3'-11"	6'-5"
		7'			65	65	19'-3"	0'-5"	4'-0"	6'-5½"
		8'			65	65	19'-9"	0'-5"	4'-0"	6'-6"
		9'			65	65	19'-7"	0'-5"	4'-1"	6'-7"
		10'			65	65	19'-10"	0'-5"	4'-2"	6'-8"
	2 @ 9'-0"	5'	#6	11"	65	65	21'-1"	0'-5½"	4'-4½"	7'-2"
		6'			65	65	21'-3"	0'-5½"	4'-5"	7'-2½"
		7'			65	65	21'-3"	0'-5½"	4'-5"	7'-2½"
		8'			65	65	21'-7"	0'-5½"	4'-5"	7'-3"
		9'			65	65	21'-10"	0'-5½"	4'-6"	7'-4"
		10'			65	65	22'-0"	0'-5½"	4'-7"	7'-5"
		11'			65	65	22'-3"	0'-5½"	4'-7½"	7'-6"
	2 @ 10'-0"	5'	#7	12"	59	59	23'-2"	0'-6"	4'-9"	7'-11"
		6'			59	59	23'-4"	0'-6"	4'-10"	7'-11½"
		7'			59	59	23'-6"	0'-6"	4'-10"	7'-11½"
		8'			59	59	23'-5"	0'-6"	4'-10"	8'-0"
		9'			59	59	23'-8"	0'-6"	4'-11"	8'-0"
		10'			59	59	23'-11"	0'-6"	5'-0"	8'-0½"
		11'			59	59	24'-1"	0'-6"	5'-0"	8'-0½"
		12'			59	59	24'-3"	0'-6"	5'-0"	8'-1"
	2 @ 11'-0"	6'	#7	12"	59	59	25'-5"	0'-6½"	5'-3"	8'-5"
		7'			59	59	25'-5"	0'-6½"	5'-3"	8'-5"
		8'			59	59	25'-5"	0'-6½"	5'-3"	8'-5"
		9'			59	59	25'-8"	0'-6½"	5'-4"	8'-6"
		10'			59	59	25'-11"	0'-6½"	5'-5"	8'-6½"
		11'			59	59	26'-1"	0'-6½"	5'-5"	9'-0"
		12'			59	59	26'-3"	0'-6½"	5'-5"	9'-1"
	2 @ 12'-0"	6'	#7	12"	65	65	27'-5"	0'-7"	5'-8"	9'-6"
		7'			65	65	27'-5"	0'-7"	5'-8"	9'-6"
		8'			65	65	27'-5"	0'-7"	5'-8"	9'-6"
		9'			65	65	27'-8"	0'-7"	5'-9"	9'-7"
		10'			65	65	27'-11"	0'-7"	5'-10"	9'-8"
		11'			65	65	28'-1"	0'-7"	5'-10"	9'-9"
		12'			65	65	28'-3"	0'-7"	5'-10"	9'-10"

DEPTH OF COVER D	CLEAR SPAN S	CLEAR HEIGHT H	"b2" bars BENT - See Diagram below. In Top of Bottom Slab bent down under Division Wall - hooked. Alternate with "a" and "c" bars. SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH	X	Y	Z
0'-0" TO 5'-0" MAXIMUM.	2 @ 4'-0"	2'	#5	12"	59	59	10'-6"	0'-2⅝"	2'-3⅝"	3'-6"
		3'			59	59	10'-6"	0'-2⅝"	2'-3⅝"	3'-6"
		4'			59	59	10'-6"	0'-2⅝"	2'-3⅝"	3'-6"
		5'			59	59	10'-6"	0'-2⅝"	2'-3⅝"	3'-6"
		6'			59	59	10'-9"	0'-2⅝"	2'-3⅝"	3'-5"
	2 @ 5'-0"	3'	#6	12"	59	59	12'-6"	0'-3"	2'-8⅝"	4'-1"
		4'			59	59	12'-6"	0'-3"	2'-8⅝"	4'-1"
		5'			59	59	12'-6"	0'-3"	2'-8⅝"	4'-1"
		6'			59	59	12'-9"	0'-3"	2'-9⅝"	4'-1"
		7'			59	59	12'-11"	0'-3"	2'-10⅝"	4'-2"
	2 @ 6'-0"	3'	#6	11"	65	65	14'-7"	0'-4"	3'-2⅝"	4'-10"
		4'			65	65	14'-7"	0'-4"	3'-2⅝"	4'-10"
		5'			65	65	14'-7"	0'-4"	3'-2⅝"	4'-10"
		6'			65	65	14'-10"	0'-4"	3'-3⅝"	4'-11"
		7'			65	65	15'-0"	0'-4"	3'-4⅝"	4'-11½"
		8'			65	65	15'-1"	0'-4"	3'-4⅝"	5'-0"
	2 @ 7'-0"	4'	#6	12"	59	59	16'-9"	0'-4½"	3'-5"	5'-7"
		5'			59	59	16'-9"	0'-4½"	3'-5"	5'-7"
		6'			59	59	17'-0"	0'-4½"	3'-6"	5'-8"
		7'			59	59	17'-2"	0'-4½"	3'-7"	5'-8½"
		8'			59	59	17'-3"	0'-4½"	3'-7"	5'-9"
		9'			59	59	17'-6"	0'-4½"	3'-8"	5'-10"
	2 @ 8'-0"	4'	#6	11"	65	65	18'-10"	0'-5"	3'-10"	6'-4"
		5'			65	65	19'-1"	0'-5"	3'-11"	6'-5"
		6'			65	65	19'-1"	0'-5"	3'-11"	6'-5"
		7'			65	65	19'-3"	0'-5"	4'-0"	6'-5½"
		8'			65	65	19'-9"	0'-5"	4'-0"	6'-6"
		9'			65	65	19'-7"	0'-5"	4'-1"	6'-7"
		10'			65	65	19'-10"	0'-5"	4'-2"	6'-8"
	2 @ 9'-0"	5'	#6	11"	65	65	21'-1"	0'-5½"	4'-4⅛"	7'-2"
		6'			65	65	21'-3"	0'-5½"	4'-5"	7'-2½"
		7'			65	65	21'-3"	0'-5½"	4'-5"	7'-2½"
		8'			65	65	21'-7"	0'-5½"	4'-5½"	7'-3"
		9'			65	65	21'-7"	0'-5½"	4'-6"	7'-4"
		10'			65	65	21'-10"	0'-5½"	4'-6½"	7'-5"
		11'			65	65	22'-0"	0'-5½"	4'-7"	7'-6"
	2 @ 10'-0"	5'	#7	12"	59	59	23'-2"	0'-6½"	4'-8"	7'-11"
		6'			59	59	23'-4"	0'-6½"	4'-9"	7'-11½"
		7'			59	59	23'-6"	0'-6½"	4'-9"	7'-11½"
		8'			59	59	23'-5"	0'-6½"	4'-9"	8'-0"
		9'			59	59	23'-8"	0'-6½"	4'-10"	8'-0"
		10'			59	59	23'-11"	0'-6½"	4'-11"	8'-0½"
		11'			59	59	24'-1"	0'-6½"	4'-11"	8'-0½"
		12'			59	59	24'-3"	0'-6½"	4'-11"	8'-1"
	2 @ 11'-0"	6'	#7	12"	59	59	25'-5"	0'-7⅛"	5'-1"	8'-5"
		7'			59	59	25'-5"	0'-7⅛"	5'-1"	8'-5"
		8'			59	59	25'-5"	0'-7⅛"	5'-1"	8'-5"
		9'			59	59	25'-8"	0'-7⅛"	5'-2"	8'-6"
		10'			59	59	25'-11"	0'-7⅛"	5'-3"	8'-6½"
		11'			59	59	26'-1"	0'-7⅛"	5'-3"	9'-0"
		12'			59	59	26'-3"	0'-7⅛"	5'-3"	9'-1"
	2 @ 12'-0"	6'	#7	12"	65	65	27'-5"	0'-7⅝"	5'-5"	9'-6"
		7'			65	65	27'-5"	0'-7⅝"	5'-5"	9'-6"
		8'			65	65	27'-5"	0'-7⅝"	5'-5"	9'-6"
		9'			65	65	27'-8"	0'-7⅝"	5'-6"	9'-7"
		10'			65	65	27'-10"	0'-7⅝"	5'-6"	9'-8"
		11'			65	65	28'-1"	0'-7⅝"	5'-7"	9'-9"
		12'			65	65	28'-3"	0'-7⅝"	5'-7"	9'-10"

DEPTH OF COVER D	CLEAR SPAN S	CLEAR HEIGHT H	"c" bars STRAIGHT: In Top and Bottom Slab of Barrel. Alternate with "b" and "b2" bars. SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH
0'-0" TO 5'-0" MAXIMUM.	2 @ 4'-0"	2'	#5	12"	120	120	4'-8"
		3'			120	120	4'-8"
		4'			120	120	4'-8"
		5'			120	120	4'-8"
		6'			120	120	4'-9"
	2 @ 5'-0"	3'	#5	11½"	120	120	5'-8"
		4'			120	120	5'-8"
		5'			120	120	5'-8"
		6'			120	120	5'-9"
		7'			120	120	5'-10"
	2 @ 6'-0"	3'	#5	11½"	132	132	6'-5"
		4'			132	132	6'-5"
		5'			132	132	6'-5"
		6'			132	132	6'-6"
		7'			132	132	6'-10"
		8'			132	132	6'-10"
	2 @ 7'-0"	4'	#5	11½"	120	120	7'-8"
		5'			120	120	7'-8"
		6'			120	120	7'-9"
		7'			120	120	7'-10"
		8'			120	120	7'-10"
		9'			120	120	7'-11"
	2 @ 8'-0"	4'	#5	11½"	132	132	8'-8"
		5'			132	132	8'-8"
		6'			132	132	8'-9"
		7'			132	132	8'-9"
		8'			132	132	8'-10"
		9'			132	132	9'-0"
		10'			132	132	9'-0"
	2 @ 9'-0"	5'	#5	11½"	132	132	9'-9"
		6'			132	132	9'-10"
		7'			132	132	9'-10"
		8'			132	132	9'-11"
		9'			132	132	10'-0"
		10'			132	132	10'-0"
		11'			132	132	10'-0"
	2 @ 10'-0"	5'	#5	11½"	120	120	10'-9"
		6'			120	120	10'-10"
		7'			120	120	10'-10"
		8'			120	120	10'-11"
		9'			120	120	11'-0"
		10'			120	120	11'-0"
		11'			120	120	11'-0"
		12'			120	120	11'-0"
	2 @ 11'-0"	6'	#5	11½"	120	120	11'-10"
		7'			120	120	11'-10"
		8'			120	120	11'-10"
		9'			120	120	12'-0"
		10'			120	120	12'-0"
		11'			120	120	12'-0"
		12'			120	120	12'-0"
	2 @ 12'-0"	6'	#5	11½"	132	132	12'-10"
		7'			132	132	12'-10"
		8'			132	132	12'-10"
		9'			132	132	12'-11"
		10'			132	132	13'-0"
		11'			132	132	13'-0"
		12'			132	132	13'-0"

DEPTH OF COVER D	CLEAR SPAN S	CLEAR HEIGHT H	"d" bars STRAIGHT: Longitudinal in Top Slab of Barrel. SIZE	SPACING	NO. REQ'D	LENGTH
0'-0" TO 5'-0" MAXIMUM.	2 @ 4'-0"	2'	#4	12"	8	
		3'			12	
		4'			16	
		5'			20	
		6'			24	
	2 @ 5'-0"	3'	#4	12"	12	
		4'			16	
		5'			20	
		6'			24	
		7'			28	
	2 @ 6'-0"	3'	#4	12"	12	
		4'			16	
		5'			20	
		6'			24	
		7'			28	
		8'			32	
	2 @ 7'-0"	4'	#4	12"	16	
		5'			20	
		6'			24	
		7'			28	
		8'			32	
		9'			36	
	2 @ 8'-0"	4'	#4	12"	16	
		5'			20	
		6'			24	
		7'			28	
		8'			32	
		9'			36	
		10'			40	
	2 @ 9'-0"	5'	#4	12"	20	
		6'			24	
		7'			28	
		8'			32	
		9'			36	
		10'			40	
		11'			44	
	2 @ 10'-0"	5'	#4	12"	20	
		6'			24	
		7'			28	
		8'			32	
		9'			36	
		10'			40	
		11'			44	
		12'			48	
	2 @ 11'-0"	6'	#4	12"	24	
		7'			28	
		8'			32	
		9'			36	
		10'			40	
		11'			44	
		12'			48	
	2 @ 12'-0"	6'	#4	12"	24	
		7'			28	
		8'			32	
		9'			36	
		10'			40	
		11'			44	
		12'			48	

DEPTH OF COVER D	CLEAR SPAN S	CLEAR HEIGHT H	"d1" bars STRAIGHT: Longitudinal in Sidewalls and Division Walls. SIZE	SPACING	NO. REQ'D	LENGTH
0'-0" TO 5'-0" MAXIMUM.	2 @ 4'-0"	2'	#4	12"	8	
		3'			12	
		4'			16	
		5'			20	
		6'			24	
	2 @ 5'-0"	3'	#4	12"	12	
		4'			16	
		5'			20	
		6'			24	
		7'			28	
	2 @ 6'-0"	3'	#4	12"	12	
		4'			16	
		5'			20	
		6'			24	
		7'			28	
		8'			32	
	2 @ 7'-0"	4'	#4	12"	16	
		5'			20	
		6'			24	
		7'			28	
		8'			32	
		9'			36	
	2 @ 8'-0"	4'	#4	12"	16	
		5'			20	
		6'			24	
		7'			28	
		8'			32	
		9'			36	
		10'			40	
	2 @ 9'-0"	5'	#4	12"	20	
		6'			24	
		7'			28	
		8'			32	
		9'			36	
		10'			40	
		11'			44	
	2 @ 10'-0"	5'	#4	12"	20	
		6'			24	
		7'			28	
		8'			32	
		9'			36	
		10'			40	
		11'			44	
		12'			48	
	2 @ 11'-0"	6'	#4	12"	24	
		7'			28	
		8'			32	
		9'			36	
		10'			40	
		11'			44	
		12'			48	
	2 @ 12'-0"	6'	#4	12"	24	
		7'			28	
		8'			32	
		9'			36	
		10'			40	
		11'			44	
		12'			48	

DEPTH OF COVER D	CLEAR SPAN S	CLEAR HEIGHT H	"e" bars STRAIGHT: Longitudinal in Bottom Slab of Barrel. SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH
0'-0" TO 5'-0" MAXIMUM.	2 @ 4'-0"	2'	#4	12"	120	120	4'-8"
		3'			120	120	4'-8"
		4'			120	120	4'-8"
		5'			120	120	4'-8"
		6'			120	120	4'-9"
	2 @ 5'-0"	3'	#4	12"	120	120	5'-8"
		4'			120	120	5'-8"
		5'			120	120	5'-8"
		6'			120	120	5'-9"
		7'			120	120	5'-10"
	2 @ 6'-0"	3'	#4	12"	132	132	6'-5"
		4'			132	132	6'-5"
		5'			132	132	6'-5"
		6'			132	132	6'-6"
		7'			132	132	6'-10"
		8'			132	132	6'-10"
	2 @ 7'-0"	4'	#4	12"	120	120	7'-8"
		5'			120	120	7'-8"
		6'			120	120	7'-9"
		7'			120	120	7'-10"
		8'			120	120	7'-10"
		9'			120	120	7'-11"
	2 @ 8'-0"	4'	#4	12"	132	132	8'-8"
		5'			132	132	8'-8"
		6'			132	132	8'-9"
		7'			132	132	8'-9"
		8'			132	132	8'-10"
		9'			132	132	9'-0"
		10'			132	132	9'-0"
	2 @ 9'-0"	5'	#4	12"	132	132	9'-9"
		6'			132	132	9'-10"
		7'			132	132	9'-10"
		8'			132	132	9'-11"
		9'			132	132	10'-0"
		10'			132	132	10'-0"
		11'			132	132	10'-0"
	2 @ 10'-0"	5'	#4	12"	120	120	10'-9"
		6'			120	120	10'-10"
		7'			120	120	10'-10"
		8'			120	120	10'-11"
		9'			120	120	11'-0"
		10'			120	120	11'-0"
		11'			120	120	11'-0"
		12'			120	120	11'-0"
	2 @ 11'-0"	6'	#4	12"	132	132	11'-10"
		7'			132	132	11'-10"
		8'			132	132	11'-10"
		9'			132	132	12'-0"
		10'			132	132	12'-0"
		11'			132	132	12'-0"
		12'			132	132	12'-0"
	2 @ 12'-0"	6'	#4	12"	144	144	12'-10"
		7'			144	144	12'-10"
		8'			144	144	12'-10"
		9'			144	144	12'-11"
		10'			144	144	13'-0"
		11'			144	144	13'-0"
		12'			144	144	13'-0"

DEPTH OF COVER D	CLEAR SPAN S	CLEAR HEIGHT H	"f" bars STRAIGHT: Vertical in Sidewalls and Division Walls. SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH
0'-0" TO 5'-0" MAXIMUM.	2 @ 4'-0"	2'	#4	12"	240	240	2'-10"
		3'			240	240	3'-10"
		4'			240	240	4'-10"
		5'			240	240	5'-10"
		6'			240	240	6'-10"
	2 @ 5'-0"	3'	#4	12"	240	240	3'-11"
		4'			240	240	4'-11"
		5'			240	240	5'-11"
		6'			240	240	6'-11"
		7'			240	240	7'-11"
	2 @ 6'-0"	3'	#4	12"	240	240	4'-0"
		4'			240	240	5'-0"
		5'			240	240	6'-0"
		6'			240	240	7'-0"
		7'			240	240	8'-0"
		8'			240	240	9'-0"
	2 @ 7'-0"	4'	#4	12"	240	240	5'-1"
		5'			240	240	6'-1"
		6'			240	240	7'-1"
		7'			240	240	8'-1"
		8'			240	240	9'-1"
		9'			240	240	10'-1"
	2 @ 8'-0"	4'	#5	12"	240	240	5'-2"
		5'			240	240	6'-2"
		6'			240	240	7'-2"
		7'			240	240	8'-2"
		8'			240	240	9'-2"
		9'			240	240	10'-2"
		10'			240	240	11'-2"
	2 @ 9'-0"	5'	#5	12"	240	240	6'-3"
		6'			240	240	7'-3"
		7'			240	240	8'-3"
		8'			240	240	9'-3"
		9'			240	240	10'-3"
		10'			240	240	11'-3"
		11'			240	240	12'-3"
	2 @ 10'-0"	5'	#5	12"	240	240	6'-4"
		6'			240	240	7'-4"
		7'			240	240	8'-4"
		8'			240	240	9'-4"
		9'			240	240	10'-4"
		10'			240	240	11'-4"
		11'			240	240	12'-4"
		12'			240	240	13'-4"
	2 @ 11'-0"	6'	#5	12"	240	240	7'-5"
		7'			240	240	8'-5"
		8'			240	240	9'-5"
		9'			240	240	10'-5"
		10'			240	240	11'-5"
		11'			240	240	12'-5"
		12'			240	240	13'-5"
	2 @ 12'-0"	6'	#5	12"	240	240	7'-6"
		7'			240	240	8'-6"
		8'			240	240	9'-6"
		9'			240	240	10'-6"
		10'			240	240	11'-6"
		11'			240	240	12'-6"
		12'			240	240	13'-6"

Designed by:- W.C.H. 1-17-63.
Drawn by:- W.C.H. 2-15-63.
Quantities by:- W.C.H. 2-19-63.
Checked by:- TAHS - 5-14-63
Checked by:- TAHS - 5-24-63
Checked by:- TAHS - 5-29-63

BAR SIZE	PIN DIAM.	K	ADD FOR 2 HOOKS
#5	2⅝"	4⅝"	0'-11½"
#6	3"	5"	1