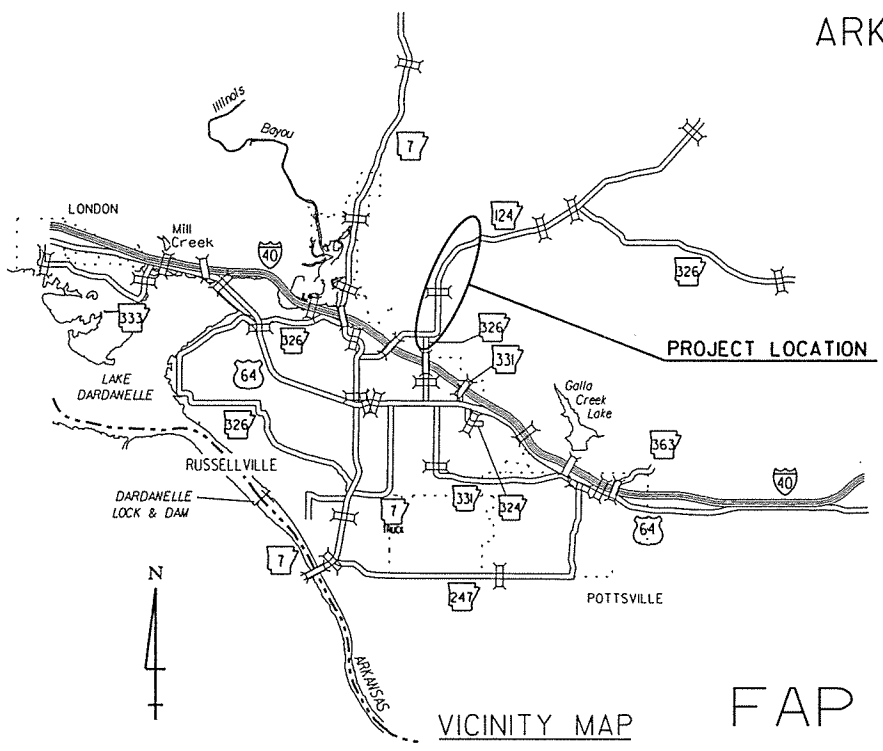


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	080484		1	283

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT  
CONSTRUCTION PLANS FOR STATE HIGHWAY

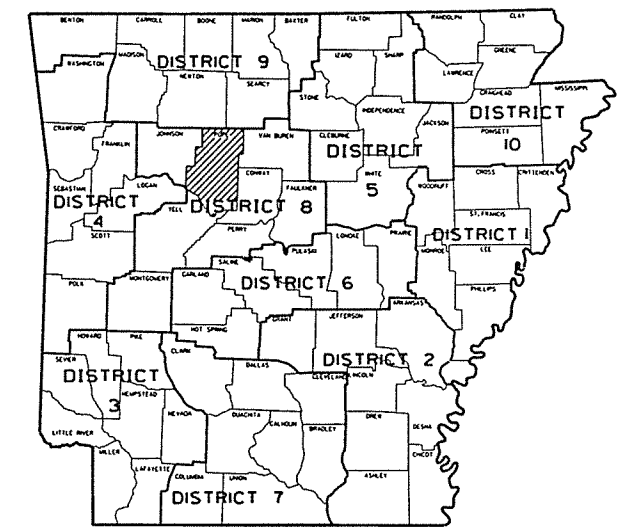
② HOB NOB RD.-CENTER VALLEY RD. (S)



# HOB NOB RD.- CENTER VALLEY RD. (S)

POPE COUNTY  
ROUTE 326 SECTION 2  
ROUTE 124 SECTION 1  
JOB 080484

FAP NO. STPC-9379(20) & STPF-0058(43)

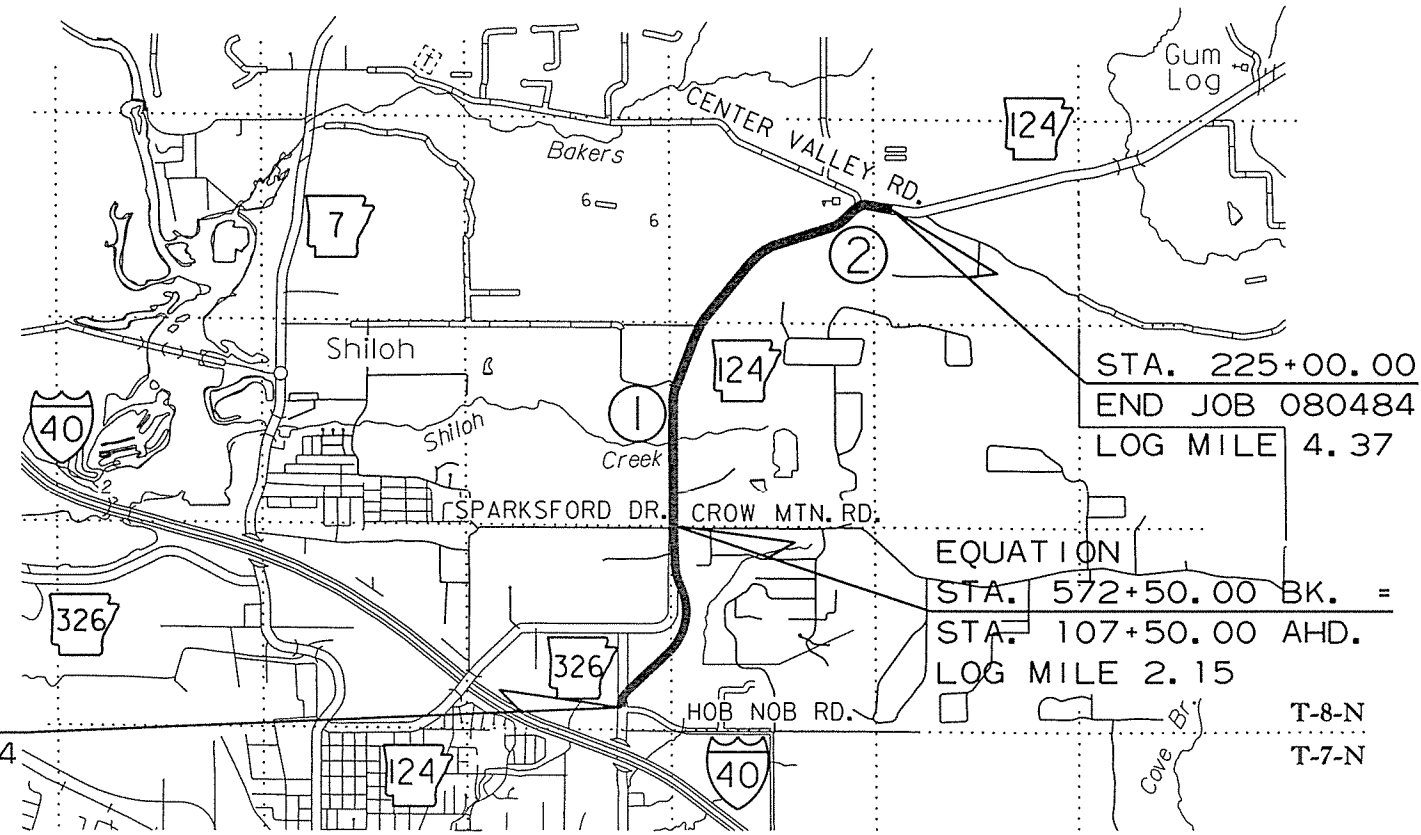


ARK. HWY. DIST. NO. 8

STRUCTURES OVER 20'-0" SPAN

NOT TO SCALE

- ① STA. 128+19 - IN PLACE QUINT. 7' X 5' X 58' R.C. BOX CULV'T WITH 3:1 WINGS LT. & RT. RETAIN AND EXTEND 45' LT. & 6' RT. AND CONSTRUCT ADDITIONAL 7' X 5' X 109' R.C. BARREL WITH 3:1 WINGS LT. & RT. Q25= 1280 CFS; D.A. = 1088 ACRES SPAN = 46'-8"
- ② STA. 208+34 - CONSTRUCT DBL. 10' X 5' X 123' R.C. BOX CULV'T ON A 30° RT. FWD. SKEW WITH 3:1 WINGS LT. & RT. Q25= 300 CFS; D.A. = 211 AC. SPAN = 21'-11"



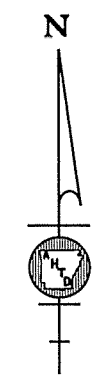
DESIGN TRAFFIC DATA

DESIGN YEAR	2034
2014 ADT	13,000
2034 ADT	16,000
2034 DHV	1,760
DIRECTIONAL DISTRIBUTION	0.60
TRUCKS	3%
DESIGN SPEED:	
STA. 517+20.44 - STA. 551+35.00	50 MPH RURAL
STA. 551+35.00 - STA. 572+50.00	40 MPH URBAN
STA. 107+50.00 - STA. 225+00.00	50 MPH RURAL

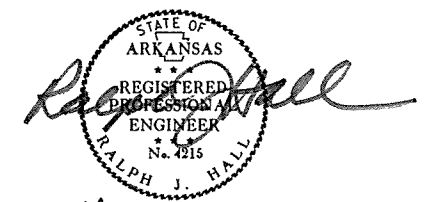
STA. 517+20.44  
BEGIN JOB 080484  
LOG MILE 1.10

STA. 225+00.00  
END JOB 080484  
LOG MILE 4.37

EQUATION  
STA. 572+50.00 BK. =  
STA. 107+50.00 AHD.  
LOG MILE 2.15  
T-8-N  
T-7-N



APPROVED



11-14-14

DEPUTY DIRECTOR  
AND CHIEF ENGINEER

	BEGIN PROJECT	MID-POINT OF PROJECT	END PROJECT
LATITUDE	N 35°18'25"	N 35°19'23"	N 35°19'46"
LONGITUDE	W 93°06'06"	W 93°05'52"	W 93°04'50"

GROSS LENGTH OF PROJECT	17,279.56	FEET OR	3.273	MILES
NET " " ROADWAY	17,210.97	" "	3.260	" "
NET " " BRIDGES	68.59	" "	0.013	" "
NET " " PROJECT	17,279.56	" "	3.273	" "

P.E. JOB 080484

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.	080484		2	283

INDEX OF SHEETS

GOVERNING SPECIFICATIONS

INDEX OF SHEETS, GOV. SPECS., & GEN. NOTES

SHEET NO.	TITLE	DRWG. NO.	DATE
1	TITLE SHEET		
2	INDEX OF SHEETS, GOVERNING SPECIFICATIONS, AND GENERAL NOTES		
3 - 7	TYPICAL SECTIONS OF IMPROVEMENT		
8 - 14	SPECIAL DETAILS		
15 - 34	TEMPORARY EROSION CONTROL DETAILS		
35 - 59	MAINTENANCE OF TRAFFIC DETAILS		
60 - 67	PERMANENT PAVEMENT MARKING DETAILS		
68 - 84	QUANTITIES		
85	SUMMARY OF QUANTITIES AND REVISIONS		
86 - 98	SURVEY CONTROL DETAILS		
99 - 114	PLAN AND PROFILE SHEETS		
115	TRAFFIC SIGNAL QUANTITIES		
116 - 126	SIGNALIZATION PLAN SHEETS		
127	CONCRETE DITCH PAVING	CDP-1	11-17-10
128	CURBING DETAILS	CG-1	11-29-07
129	DETAILS OF DRIVEWAYS & ISLANDS	DR-1	2-27-14
130	FLARED END SECTION	FES-1	10-18-96
131	FLARED END SECTION	FES-2	10-18-96
132	DETAILS OF DROP INLETS & JUNCTION BOXES	FPC-9	11-16-01
133	DETAILS OF DROP INLETS (TYPE C)	FPC-9E	8-22-02
134	DETAILS OF DROP INLET (TYPE MO)	FPC-9M	8-22-02
135	DETAILS OF DROP INLET & JUNCTION BOX (TYPE ST)	FPC-9S	7-26-12
136	MAILBOX DETAILS	MB-1	11-18-04
137	PRECAST CONCRETE BOX CULVERTS	PBC-1	12-15-11
138	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING	PCC-1	2-27-14
139	METAL PIPE CULVERT FILL HEIGHTS & BEDDING	PCM-1	2-27-14
140	PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)	PCP-1	2-27-14
141	PLASTIC PIPE CULVERT (PVC F949)	PCP-2	2-27-14
142	PAVEMENT MARKING DETAILS	PM-1	9-12-13
143	DETAILS OF PIPE UNDERDRAIN	PU-1	4-10-03
144	REINFORCED CONCRETE BOX CULVERT DETAILS	RCB-1	7-26-12
145	EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS	RCB-2	11-20-03
146	METHOD OF EXTENDING EXISTING R.C. BOX CULVERTS	RCB-3	10-12-95
147	LOOP DETECTOR INSTALLATION	SD-4	9-12-13
148	CONTROLLER CABINET UTILITY DRAWER	SD-5	9-12-13
149	HEAVY DUTY PULL BOX	SD-6	9-12-13
150	SIGNAL HEAD PLACEMENT	SD-8	9-12-13
151	SERVICE POINT	SD-9	9-12-13
152	WOOD POLE SPAN WIRE INSTALLATION	SD-10	9-12-13
153	STEEL POLE WITH MAST ARM	SD-11	2-27-14
154	FLASHING BEACON INSTALLATION FOR HAZARDOUS CONDITIONS	SD-13	2-27-14
155	TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC	SE-2	10-18-96
156	DETAILS OF SPECIAL ITEMS	SI-1	9-12-13
157	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-1	12-15-11
158	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-2	9-12-13
159	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-3	10-15-09
160	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	TC-4	2-27-14
161	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	TC-5	10-15-09
162	TEMPORARY EROSION CONTROL DEVICES	TEC-1	12-15-11
163	TEMPORARY EROSION CONTROL DEVICES	TEC-2	6-02-94
164	TEMPORARY EROSION CONTROL DEVICES	TEC-3	11-03-94
165	WIRE FENCE WATER GAPS	WF-2	4-20-79
166	CHAIN LINK FENCE	WF-3	11-17-10
167	WIRE FENCE TYPE C AND D	WF-4	8-22-02
168	WHEELCHAIR RAMPS NEW CONSTRUCTION AND ALTERATIONS	WR-1	11-10-05
169	DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS	W-X003-1	5-10-66
170	DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS	W-X15	6-13-63
171	DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS	W-X153-1	5-10-66
172	DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS	W-X30	7-15-63
173	DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS	W-X303-1	5-10-66
174	DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS	R-100X-0	2-08-63
175	DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS	R-500X-0	3-15-63
176	DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS	R-115X-0	8-14-63
177	DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS	R-130X-0	2-24-64
178 - 283	CROSS SECTIONS		

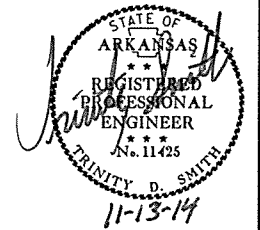
NOTE: CROSS SECTIONS NOT NORMALLY INCLUDED IN PLANS SOLD TO PROSPECTIVE BIDDERS, BUT MAY BE HAD UPON REQUEST.

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

NUMBER	TITLE
ERRATA	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
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 080484
FHWA-1273	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273	SUPPLEMENT - WAGE RATE DETERMINATION
108-1	LIQUIDATED DAMAGES
410-1	CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
620-1	MULCH COVER
JOB 080484	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 080484	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 080484	CABINET DRAWER ASSEMBLY
JOB 080484	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 080484	DELAY IN RIGHT OF WAY OCCUPANCY
JOB 080484	EDGE CARD VIDEO PROCESSOR
JOB 080484	ELECTRICAL CONDUCTORS FOR LUMINAIRES
JOB 080484	ELECTRICAL CONDUCTORS-IN-CONDUIT
JOB 080484	ELECTRONIC SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 080484	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 080484	LED COUNTDOWN PEDESTRIAN SIGNAL HEAD
JOB 080484	LED TRAFFIC SIGNAL HEAD
JOB 080484	LUMINAIRE ASSEMBLY (CUTOFF TYPE)
JOB 080484	MANDATORY USE OF INTERNET BIDDING
JOB 080484	MODIFICATION OF EXISTING REINFORCED CONCRETE BOX CULVERT
JOB 080484	NESTING SITES OF MIGRATORY BIRDS
JOB 080484	PARTNERING REQUIREMENTS
JOB 080484	PERCENT WITHIN LIMITS/PAVEMENT SMOOTHNESS
JOB 080484	PLASTIC PIPE
JOB 080484	PRE-BID ON SITE INVESTIGATION OF SOIL CONDITIONS
JOB 080484	RELOCATION OF TRAFFIC SIGNAL HEAD
JOB 080484	REMOVAL AND DISPOSAL OF GUARDRAIL
JOB 080484	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT
JOB 080484	SERVICE POINT ASSEMBLY (TRAFFIC CONTROL DEVICES)
JOB 080484	SITE USE (A + C METHOD)
JOB 080484	SOIL STABILIZATION
JOB 080484	STORM WATER POLLUTION PREVENTION PLAN
JOB 080484	STREET NAME SIGN (MAST ARM MOUNTED)
JOB 080484	SYSTEM LOCAL CONTROLLER
JOB 080484	UTILITY ADJUSTMENTS
JOB 080484	VALUE ENGINEERING
JOB 080484	VIDEO DETECTOR (COLOR)
JOB 080484	WARM MIX ASPHALT

GENERAL NOTES

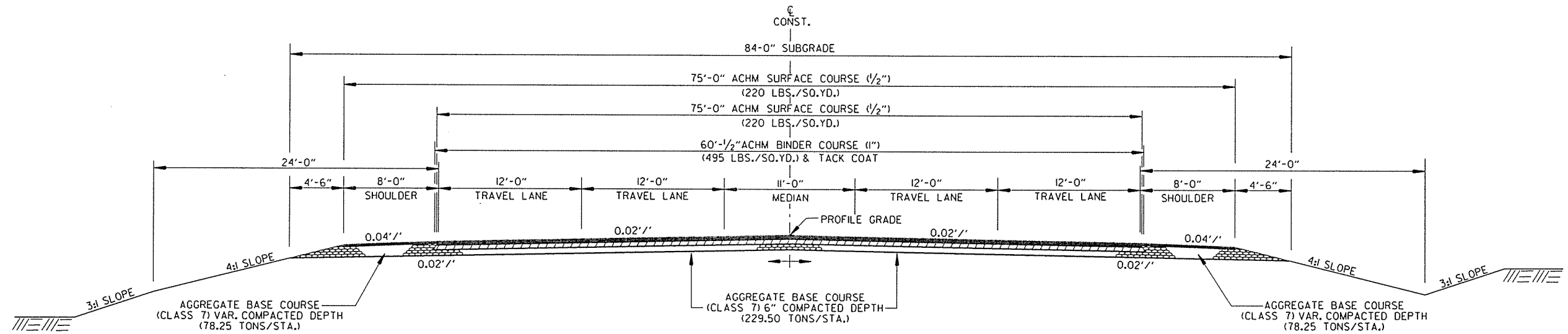
- GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
- ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
- ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
- 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.
- ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
- ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED AS DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO INSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FENCE TO CONTROL LIVESTOCK IN AREAS WHERE PASTURES ARE SEVERED. WIRE FENCE MAY BE CONSTRUCTED INITIALLY, OR IN LIEU THEREOF, THE CONTRACTOR AT HIS OWN EXPENSE, MAY ELECT TO PROVIDE TEMPORARY FENCING SUITABLE TO CONTAIN LIVESTOCK.
- THIS PROJECT IS COVERED UNDER A SECTION 404 NATIONWIDE 14 PERMIT. REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS, EDITION OF 2014, FOR PERMIT REQUIREMENTS.
- ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
- 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.





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.	080484		3	283

2 TYPICAL SECTIONS OF IMPROVEMENT



FULL DEPTH - 5 LANE OPEN SHOULDER  
 HWY. 124  
 STA. 518+50.00 - STA. 551+35.00  
 STA. 118+00.00 - STA. 155+00.00  
 STA. 215+00.00 - STA. 218+00.00

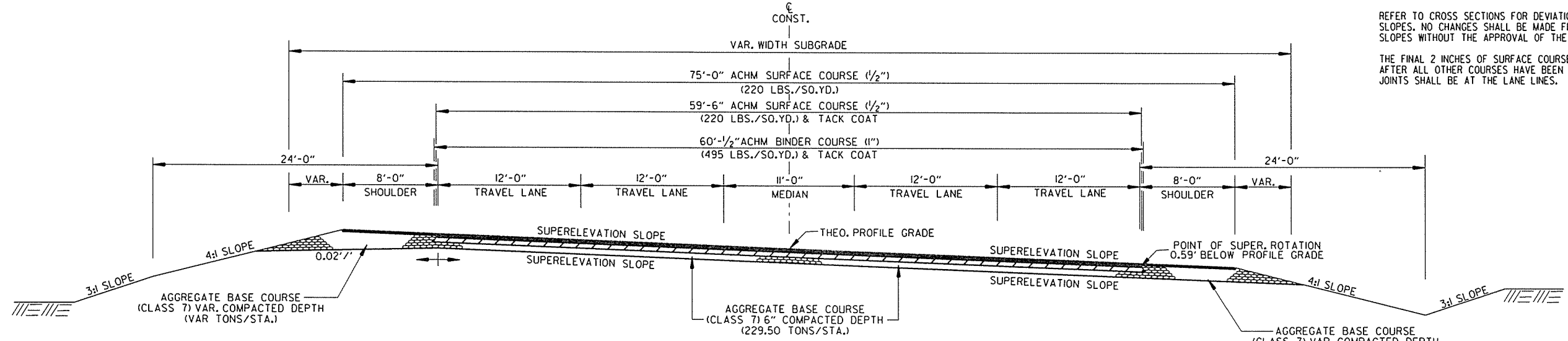
NOTES:

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. CALCULATIONS WILL NOT BE PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED INCLUDED IN THE VARIOUS PAY ITEMS.

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

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



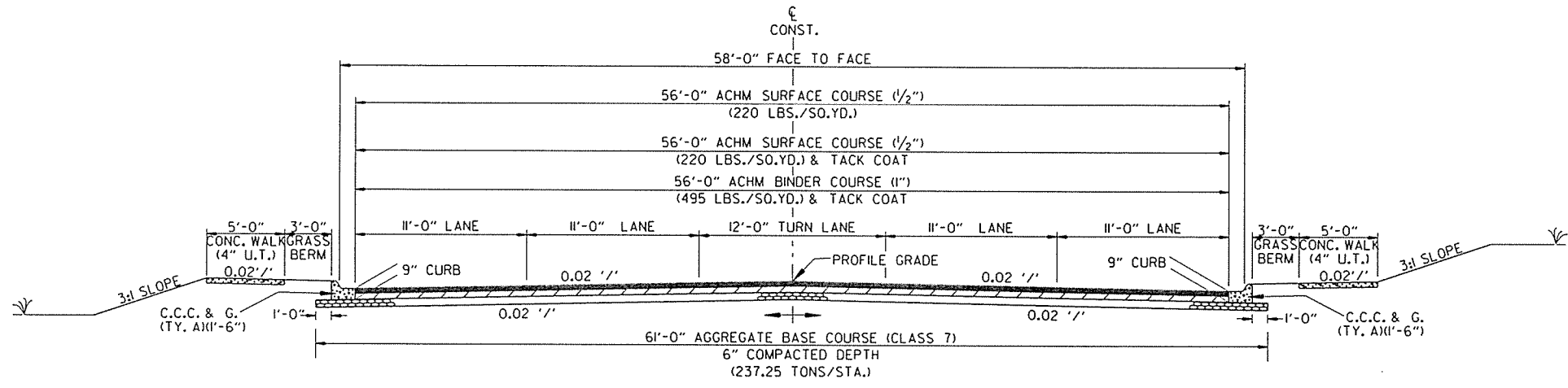
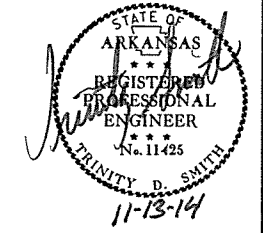
FULL DEPTH - 5 LANE OPEN SHOULDER  
 SUPERELEVATION  
 HWY. 124

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

11/7/2014  
 R080484.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.	080484		4	283

② TYPICAL SECTIONS OF IMPROVEMENT



FULL DEPTH - 5 LANE CURB AND GUTTER  
HWY. 124

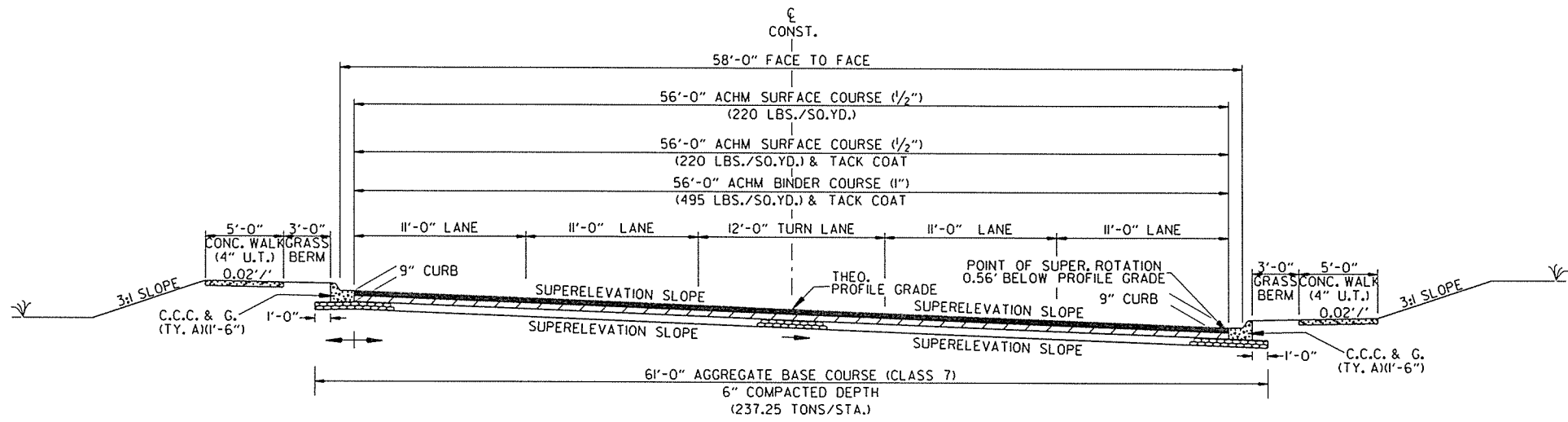
STA. 556+00.00 - STA. 558+00.00  
STA. 561+50.00 - STA. 571+00.00

NOTES:

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. CALCULATIONS WILL NOT BE PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED INCLUDED IN THE VARIOUS PAY ITEMS.

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



FULL DEPTH - 5 LANE CURB AND GUTTER  
SUPERELEVATION  
HWY. 124

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

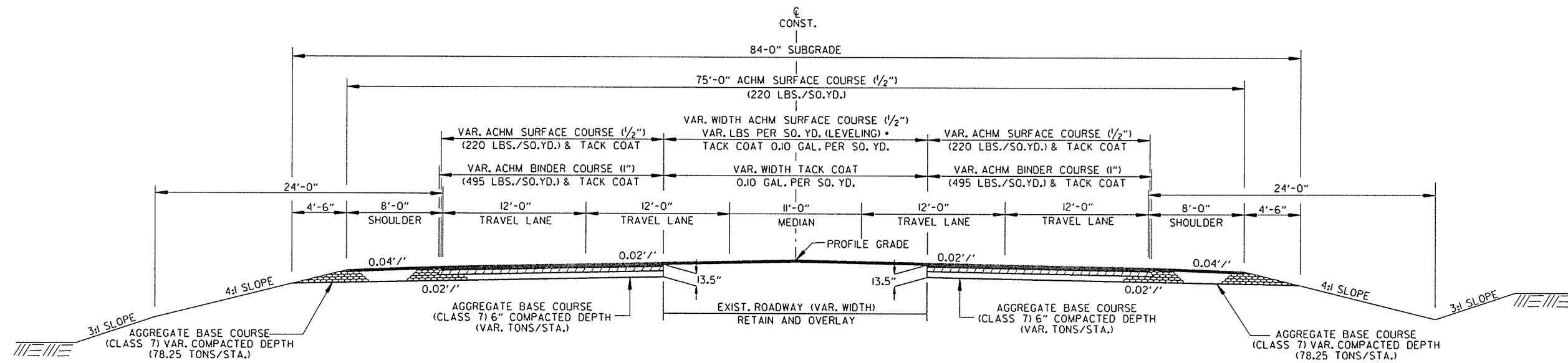
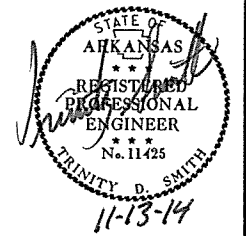
PRIOR TO AND DURING PLACEMENT OF PAVEMENT IN FRONT OF THE CURB AND GUTTER, THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES. THE METHOD(S) USED SHALL BE APPROVED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN THE CONCRETE WALKS AT 45' INTERVALS.

11/7/2014  
R080484.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. 080484							5	283

2 TYPICAL SECTIONS OF IMPROVEMENT



NOTCH AND WIDEN - 5 LANE OPEN SHOULDER  
 HWY. 124  
 STA. 517+20.44 - STA. 518+50.00  
 STA. 572+08.00 - STA. 572+50.00 BK.  
 STA. 107+50.00 AHD. - STA. 118+00.00

• IF AND WHERE DIRECTED BY THE ENGINEER.

NOTES:

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.

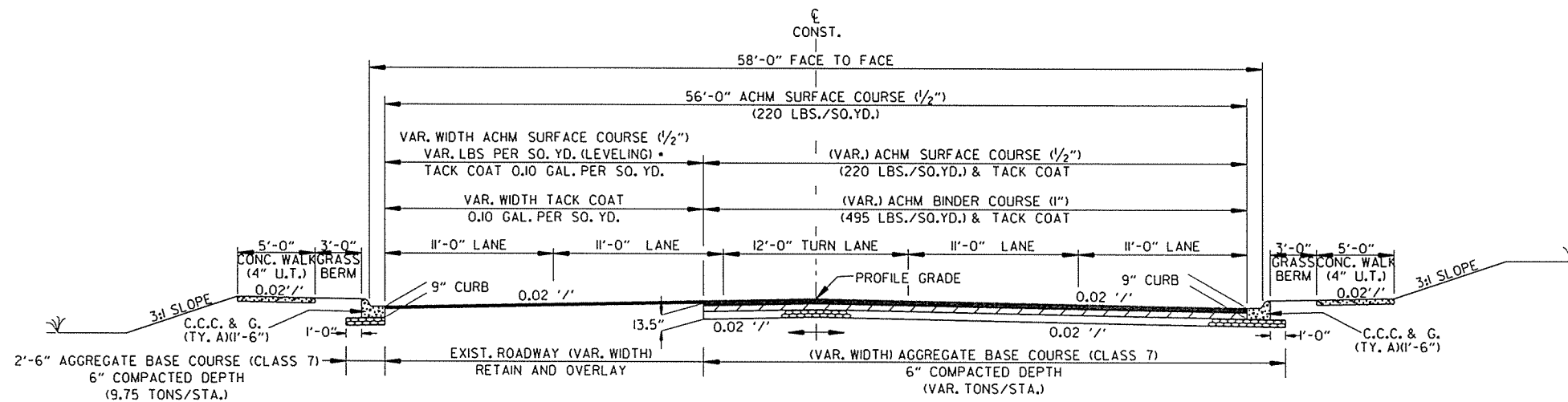
ASPHALT FOR LEVELING OF EXISTING PAVEMENT SHALL BE PLACED ONLY IF AND WHERE DIRECTED BY THE ENGINEER. CALCULATIONS FOR THE AMOUNT OF LEVELING AND/OR LEVELING OPERATIONS SHALL BE PERFORMED BEFORE CONSTRUCTING NOTCH AND WIDENING. CALCULATIONS WILL NOT BE PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED INCLUDED IN THE VARIOUS PAY ITEMS.

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

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

PRIOR TO AND DURING PLACEMENT OF PAVEMENT IN FRONT OF THE 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.

TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN THE CONCRETE WALKS AT 45' INTERVALS.



• IF AND WHERE DIRECTED BY THE ENGINEER.

NOTCH AND WIDEN - 5 LANE CURB AND GUTTER  
 HWY. 124

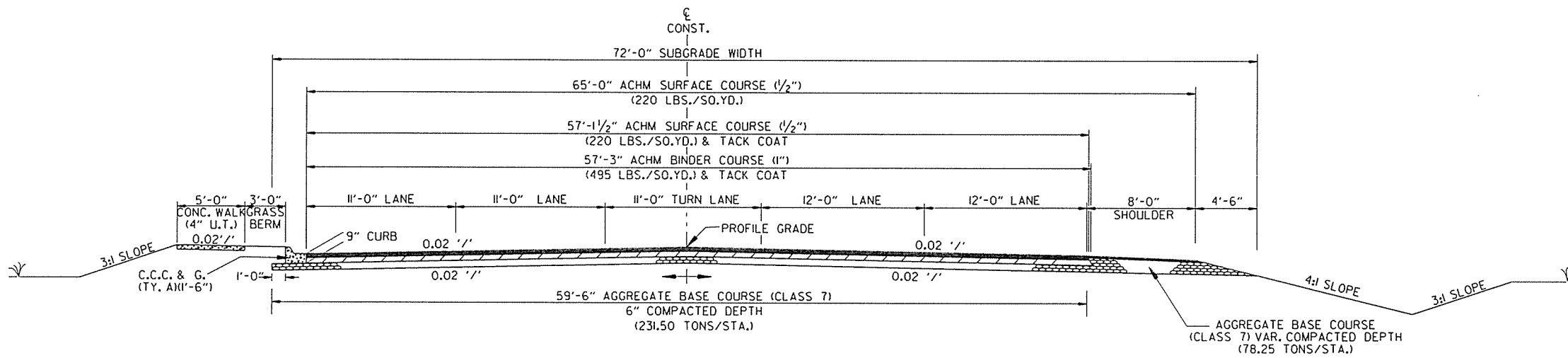
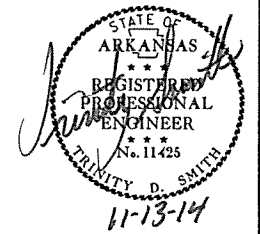
STA. 558+00.00 - STA. 561+50.00  
 STA. 571+00.00 - STA. 572+08.00

11/7/2014

RO80484.DGN

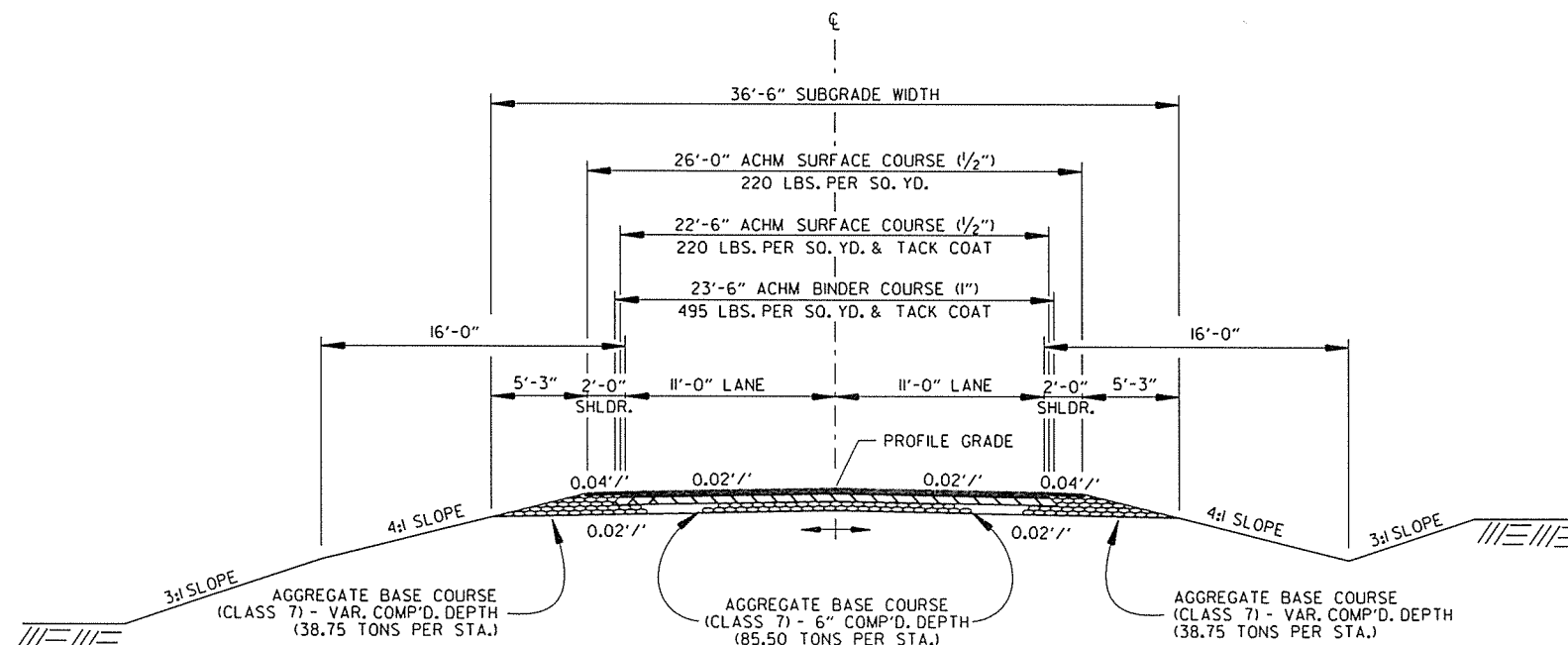
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO.	080484	6
						TOTAL SHEETS		
						283		

② TYPICAL SECTIONS OF IMPROVEMENT



FULL DEPTH - 5 LANE  
CURB AND GUTTER ON LT  
OPEN SHOULDER ON RT  
HWY. 124

STA. 551+35.00 - STA. 556+00.00



FULL DEPTH - 2 LANE OPEN SHOULDER  
SOUTHERN CONNECTOR  
NORTHERN CONNECTOR

NOTES:

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. CALCULATIONS WILL NOT BE PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED INCLUDED IN THE VARIOUS PAY ITEMS.

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

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

PRIOR TO AND DURING PLACEMENT OF PAVEMENT IN FRONT OF THE 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.

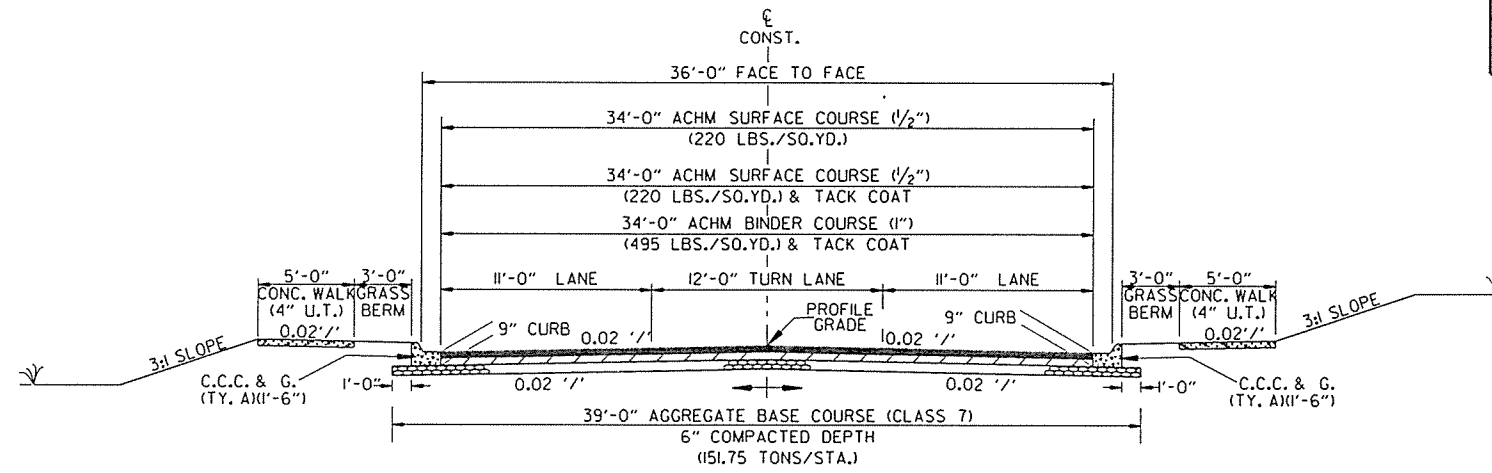
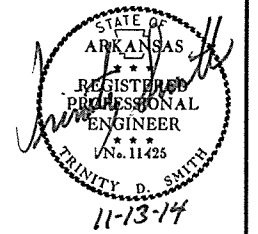
TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN THE CONCRETE WALKS AT 45' INTERVALS.

11/7/2014

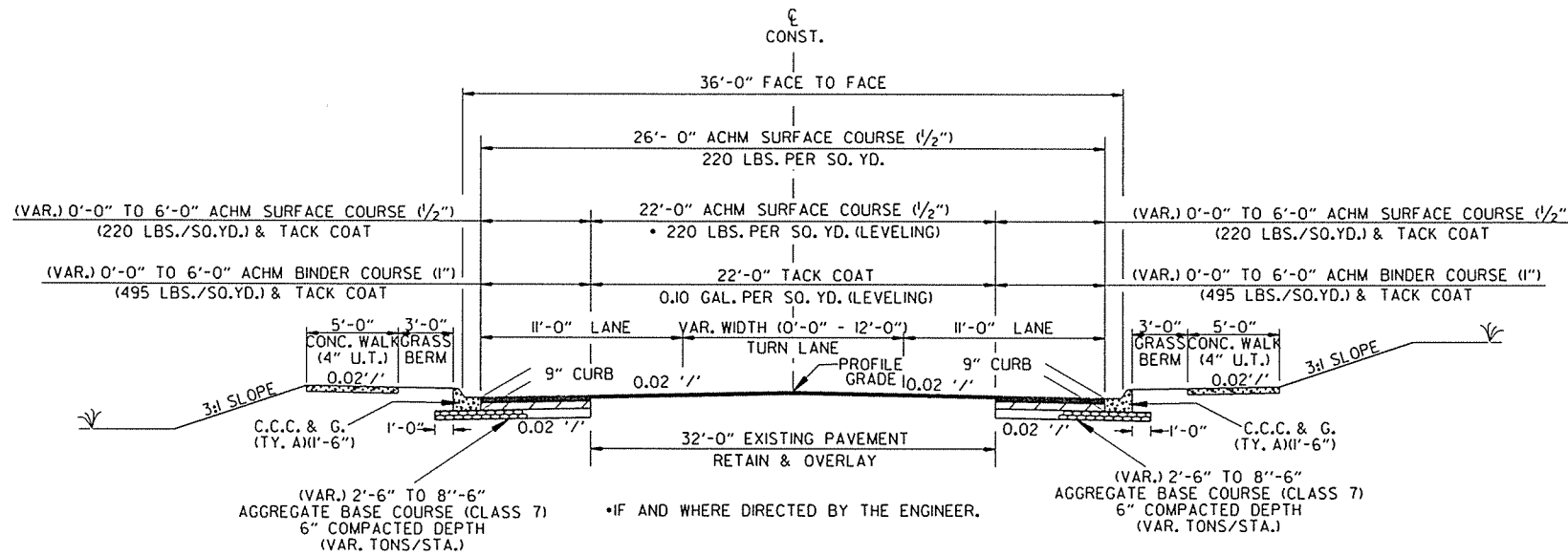
R080484.DGN

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.	080484		7	283

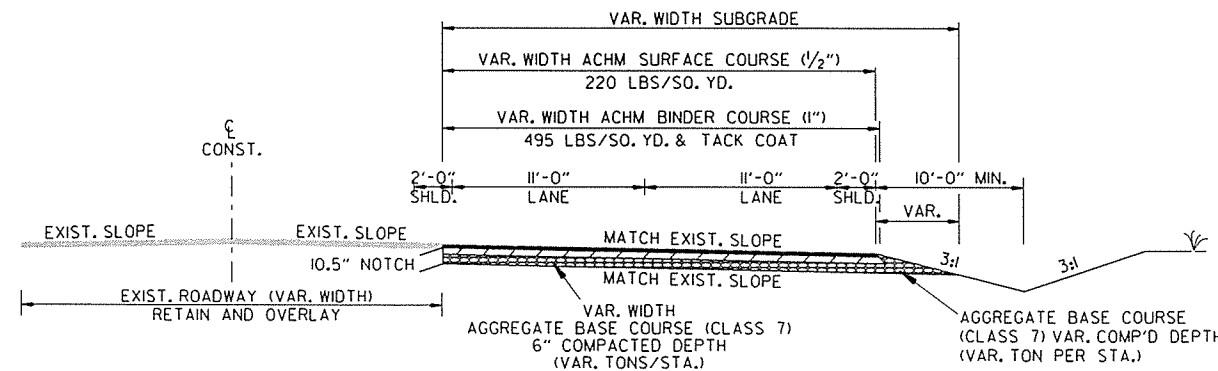
② TYPICAL SECTIONS OF IMPROVEMENT



FULL DEPTH - 3 LANE CURB AND GUTTER  
SPARKSFORD DR.  
CROW MOUNTAIN RD.



NOTCH & WIDEN - 3 LANE CURB AND GUTTER  
CROW MOUNTAIN RD.



TEMPORARY WIDENING AND DETOUR  
FOR MAINTENANCE OF TRAFFIC

NOTES:

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. CALCULATIONS WILL NOT BE PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED INCLUDED IN THE VARIOUS PAY ITEMS.

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

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

PRIOR TO AND DURING PLACEMENT OF PAVEMENT IN FRONT OF THE 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.

TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN THE CONCRETE WALKS AT 45' INTERVALS.

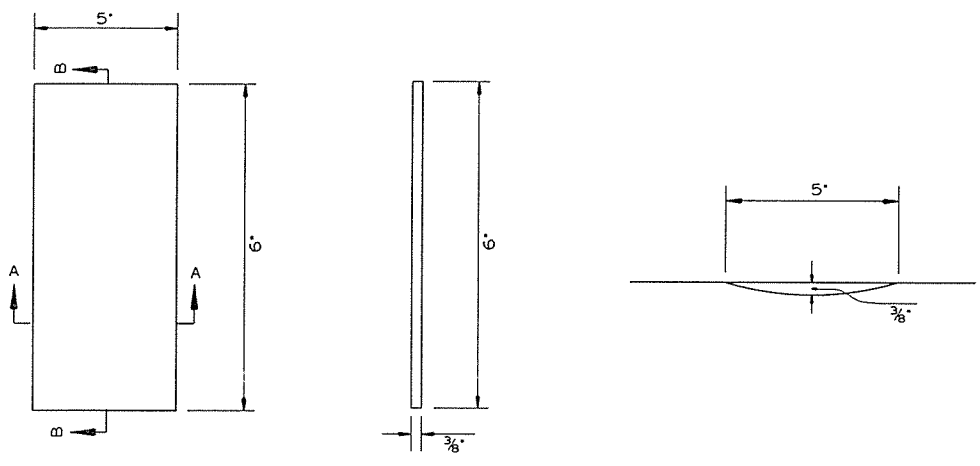
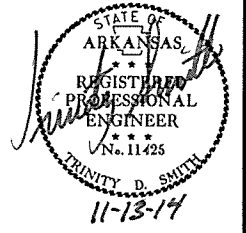
11/7/2014

R080484.DGN



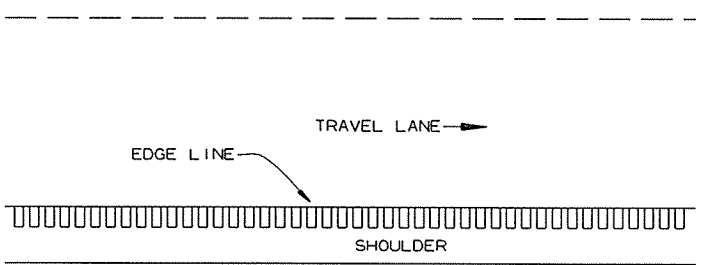
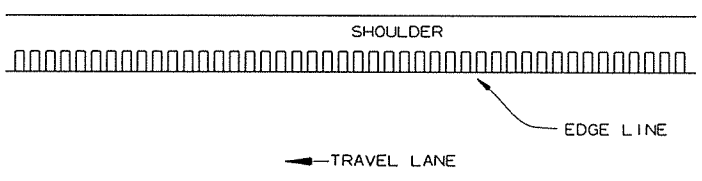
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 080484							8	283

2 SPECIAL DETAILS

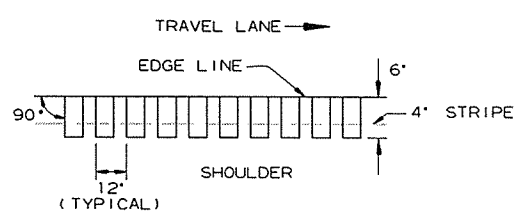


PLAN SECTION B-B SECTION A-A

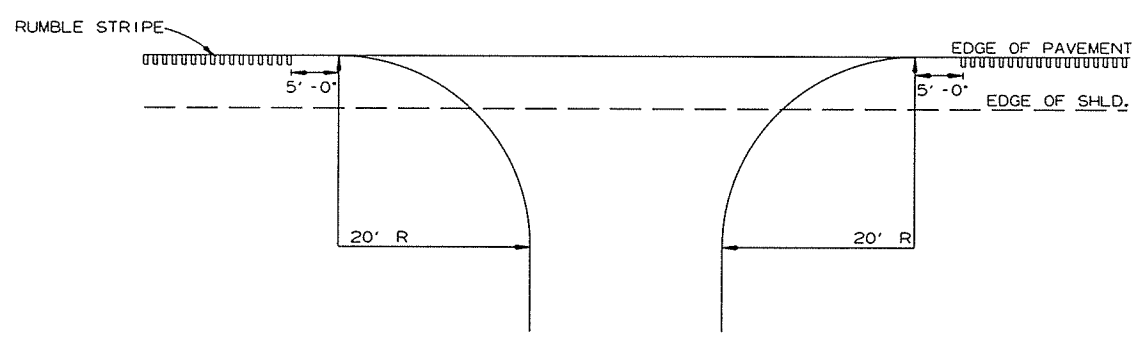
DETAILS OF RUMBLE STRIPE



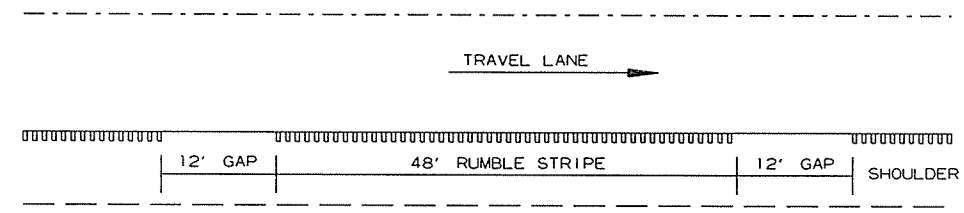
PLAN VIEW



LOCATION PLAN OF RUMBLE STRIPE LEFT OR RIGHT SHOULDER



DETAIL FOR RUMBLE STRIPE GAP AT DRIVEWAY TURNOUTS

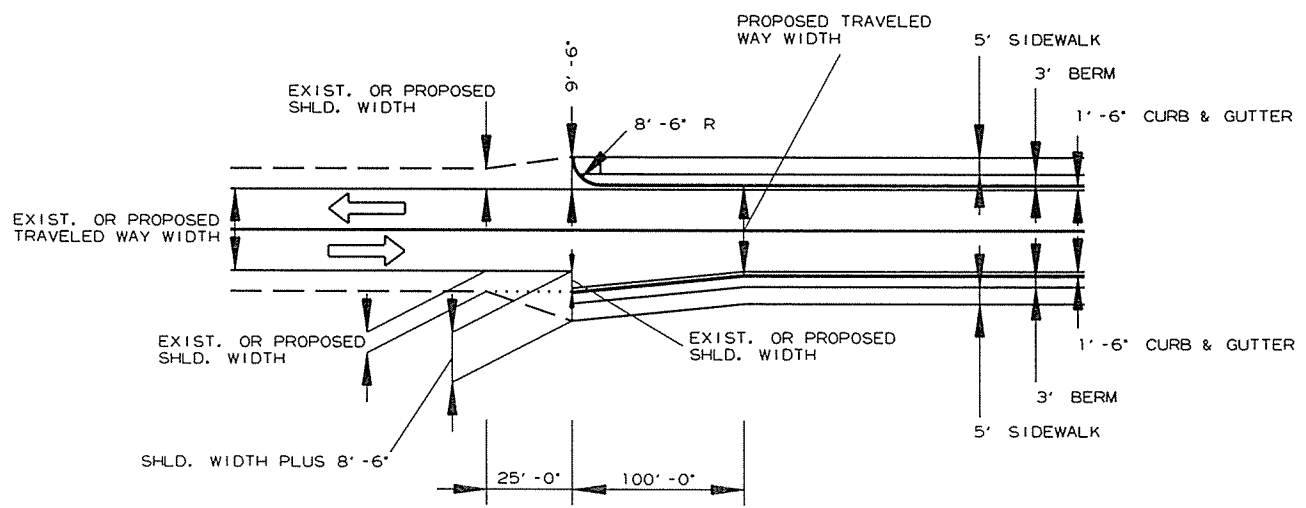


NOTE: GAP PATTERN SHALL BE ADJUSTED BY THE ENGINEER IN THE FIELD ALLOWING FOR DRIVEWAYS TO SERVE AS THE GAP.

DETAIL FOR GAP PATTERN RUMBLE STRIPE

GENERAL NOTES

1. RUMBLE STRIPES SHALL NOT BE INSTALLED ON BRIDGE DECKS, APPROACH SLABS, INTERSECTING STREETS OR ROADWAYS, RESIDENTIAL OR COMMERCIAL DRIVEWAYS.
2. RUMBLE STRIPES SHALL NOT BE INSTALLED ON A PAVED SHOULDER THAT IS USED AS A DECELERATION LANE FOR THE LENGTH DEEMED APPROPRIATE BY THE ENGINEER.
3. RUMBLE STRIPES SHALL BE MEASURED BY THE LINEAR FOOT LONGITUDINALLY ALONG THE SHOULDER. PAYMENT SHALL ONLY INCLUDE THAT PORTION OF THE SHOULDER ON WHICH RUMBLE STRIPES HAVE BEEN CONSTRUCTED. NO MEASUREMENT OR PAYMENT WILL BE MADE FOR GAPS, DRIVEWAYS, TURNOUTS, OR OTHER PUBLIC ROAD INTERSECTIONS WHERE RUMBLE STRIPES HAVE NOT BEEN CONSTRUCTED.
4. THE 3/8\"/>

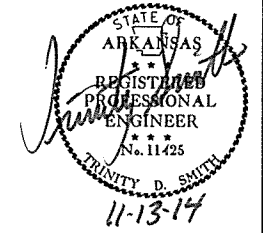


TRANSITION FROM OPEN SHOULDER TO CURB & GUTTER SECTION

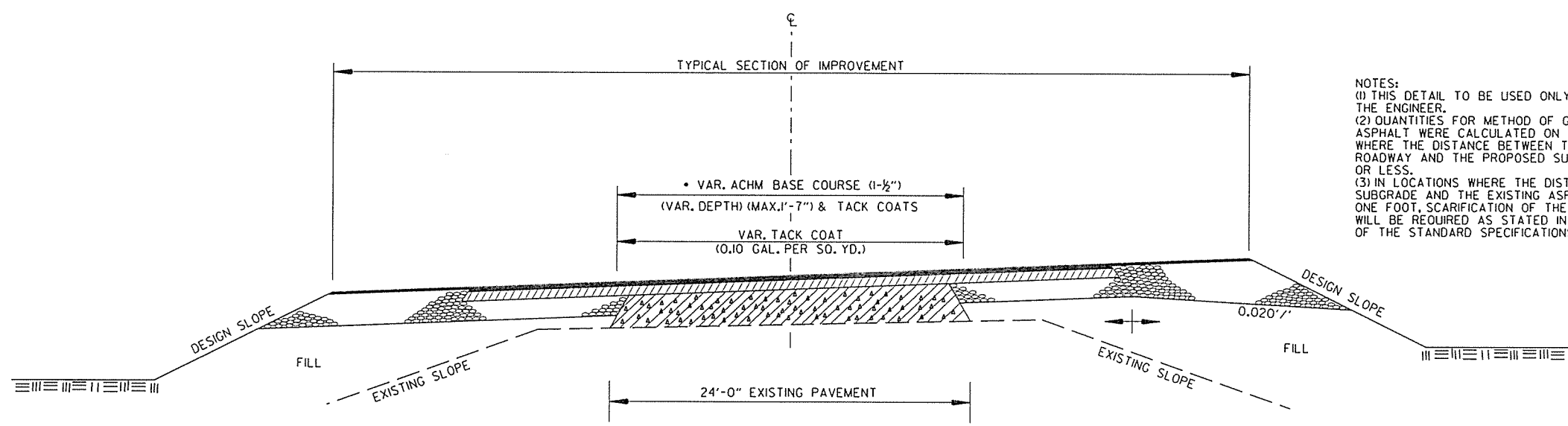
11/6/2014  
R080484.DCN

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	080484		9	283

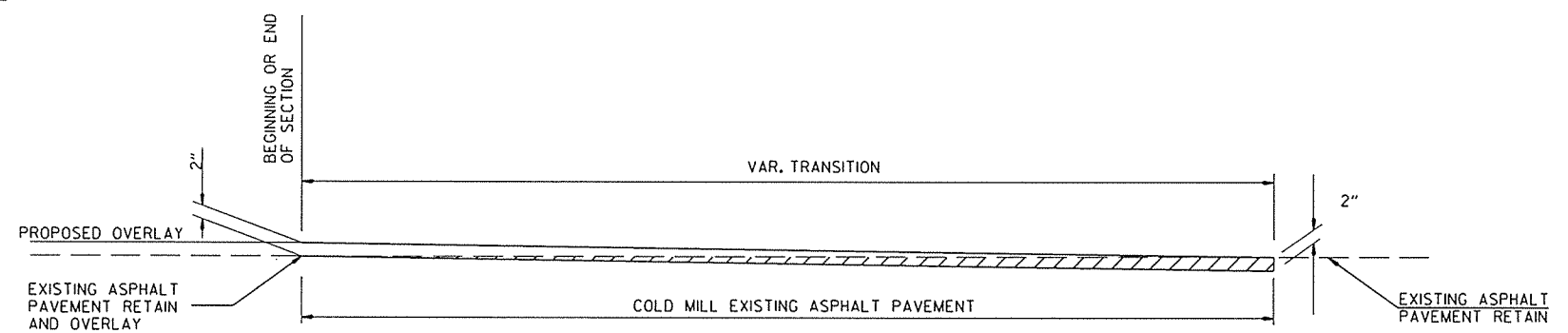
② SPECIAL DETAILS



NOTES:  
 (1) THIS DETAIL TO BE USED ONLY IF AND WHERE DIRECTED BY THE ENGINEER.  
 (2) QUANTITIES FOR METHOD OF GRADE RAISE USING ASPHALT WERE CALCULATED ON THIS PROJECT AT LOCATIONS WHERE THE DISTANCE BETWEEN THE EXISTING ASPHALT ROADWAY AND THE PROPOSED SUBGRADE WAS ONE FOOT OR LESS.  
 (3) IN LOCATIONS WHERE THE DISTANCE BETWEEN THE PROPOSED SUBGRADE AND THE EXISTING ASPHALT ROADWAY IS MORE THAN ONE FOOT, SCARIFICATION OF THE EXISTING ASPHALT ROADWAY WILL BE REQUIRED AS STATED IN SECTION 210, SUBSECTION 210.09 OF THE STANDARD SPECIFICATIONS, EDITION OF 2014.



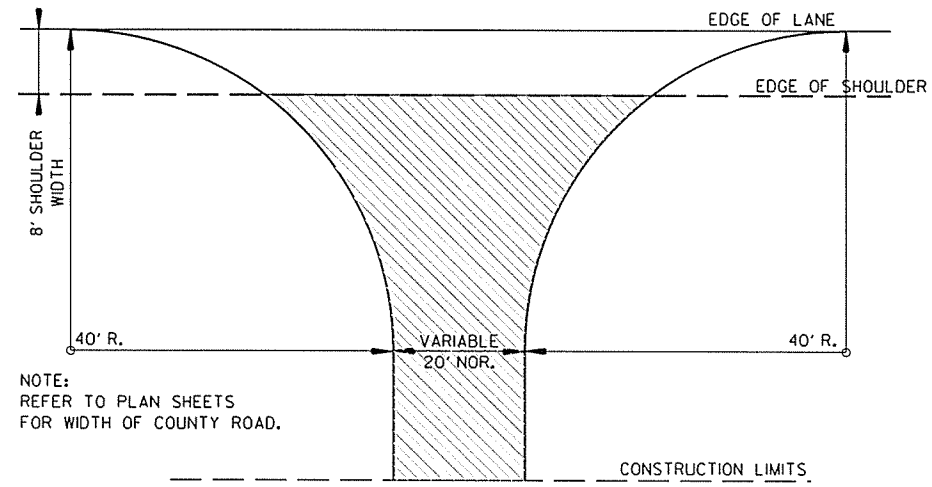
\* 6" AGGREGATE BASE COURSE (CLASS 7) TO BE REPLACED WITH A.C.H.M. BASE COURSE (1/2") METHOD OF RAISING GRADE



DETAIL FOR TRANSITIONS

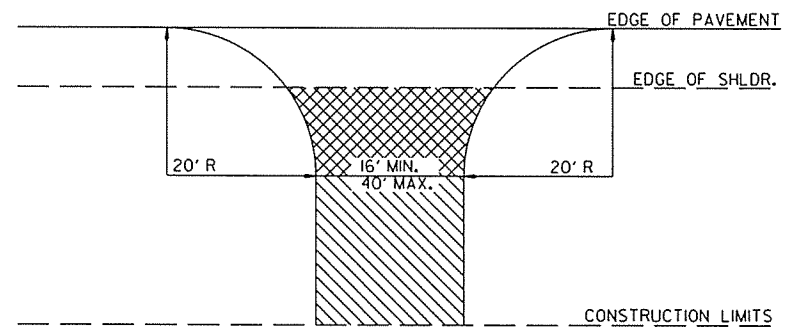
SEE PLANS FOR TRANSITION LENGTHS

A.C.H.M. SURFACE COURSE (1/2") (220 LBS. PER SQ. YD.) AND AGGREGATE BASE COURSE (CLASS 7) 6" COMP. DEPTH IF ASPHALT OR GRAVEL DRIVE EXISTING; OR 6" CONCRETE IF CONCRETE DRIVE EXISTING.



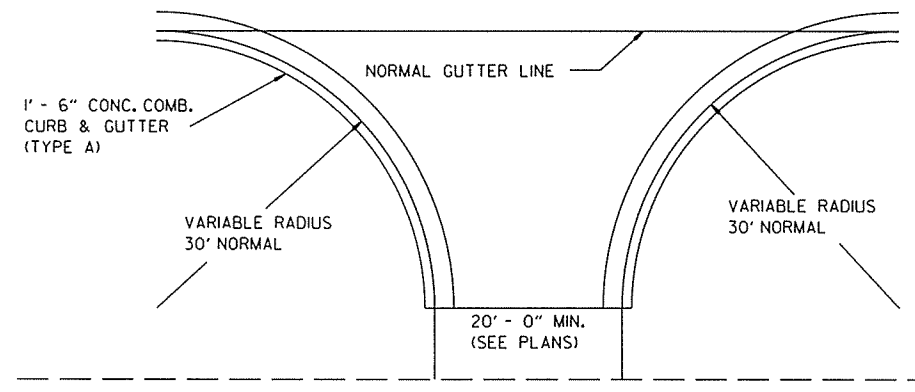
DETAIL FOR COUNTY ROAD TURNOUTS OPEN SHOULDER SECTION

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



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)



DETAIL OF TURNOUTS ASPHALT STREETS CURB & GUTTER SECTION

NOTE: PAVEMENT STRUCTURE TO BE SAME AS MAIN LANES

11/6/2014

RO80484.DGN

**MID-SECTION**

R.C. BOX SECTION		DESIGN FILL DEPTH (FT.)		CLEAR SPAN (FT.)		CLEAR HEIGHT (FT.)		TOP SLAB THK.		BOTTOM SLAB THK.		SIDE WALL THK.		INTERIOR WALL THK.		OVER ALL WIDTH		OVER ALL HEIGHT		SECTION LENGTH (FT.)		TOP SLAB REINFORCING STEEL				BOTTOM SLAB REINFORCING STEEL				SIDE WALL REINFORCING STEEL "f0"		INTERIOR WALL REINFORCING STEEL "f1"		TOP SLAB DISTRIBUTION REINF. STEEL "g"		BOTTOM SLAB DISTRIBUTION REINF. STEEL "e"		SIDE WALL DISTRIBUTION REINF. STEEL "d1"		INTERIOR WALL DISTRIBUTION REINF. STEEL "d2"			
D	S	H	T	B	C	W	OW	OH	SL	SIZE	L	SIZE	L	SIZE	L	SPACING	NO. REQ'D	SIZE	L	SIZE	L	SIZE	L	SPACING	NO. REQ'D	SIZE	L	SIZE	L	SIZE	L	SIZE	L	SIZE	L	SIZE	L	SIZE	L	SIZE	L		
A	5	10	5	10.5	10.5	6.0	8	21'-8"	6'-9"	106.5	4	21'-4"	8	21'-7"	7	21'-4"	18	71	4	21'-4"	5	21'-7"	4	21'-4"	9	142	4	6	426	6'-5"	4	12	212	6'-5"	4	10	51	4	10	51	4	12	10

**INLET SLOPE SECTIONS(S)**

R.C. BOX SECTION		DESIGN FILL DEPTH (FT.)		CLEAR SPAN (FT.)		CLEAR HEIGHT (FT.)		TOP SLAB THK.		BOTTOM SLAB THK.		SIDE WALL THK.		INTERIOR WALL THK.		OVER ALL WIDTH		OVER ALL HEIGHT		SECTION LENGTH (FT.)		TOP SLAB REINFORCING STEEL				BOTTOM SLAB REINFORCING STEEL				SIDE WALL REINFORCING STEEL "f0"		INTERIOR WALL REINFORCING STEEL "f1"		TOP SLAB DISTRIBUTION REINF. STEEL "g"		BOTTOM SLAB DISTRIBUTION REINF. STEEL "e"		SIDE WALL DISTRIBUTION REINF. STEEL "d1"		INTERIOR WALL DISTRIBUTION REINF. STEEL "d2"	
D	S	H	T	B	C	W	OW	OH	SL	SIZE	L	SIZE	L	SIZE	L	SPACING	NO. REQ'D	SIZE	L	SIZE	L	SIZE	L	SPACING	NO. REQ'D	SIZE	L	SIZE	L	SIZE	L	SIZE	L	SIZE	L	SIZE	L	SIZE	L		

**INLET SKEWED END SECTION**

SK	SL	D	S	H	LL	T	HW	B	C	W	OW	OH	TOP SLAB REINFORCING STEEL				BOTTOM SLAB REINFORCING STEEL				SIDE WALL REINFORCING STEEL		INTERIOR WALL REINFORCING STEEL		TOP SLAB DISTRIBUTION REINFORCING STEEL		BOTTOM SLAB DISTRIBUTION REINFORCING STEEL		SIDE WALL DISTRIBUTION REINFORCING STEEL		INTERIOR WALL DISTRIBUTION REINFORCING STEEL										
													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	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE
30	3-1	5	10	5	8'-3"	10.5	3	10.5	6	8	21'-8"	6'-9"	6	8	16	7	8	16	5	5	26	4	7	19	4	6	34	6'-5"	4	12	18	6'-5"	4	10	51	4	10	51	4	12	10

**INLET WINGWALL TABLE**

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT		WINGWALL ANGLE (DEGREE)		FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL		FOOTING DIMENSION PARALLEL WITH HDWL		LENGTH OF WINGWALLS		LENGTH OF FOOTING HEEL		CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
								AT HDWL	AT WING END	WING A	WING B		WING A	WING B	WING A	WING B	WING A	WING B	WING A	WING B		
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	API	AFB	WE	WF1	WF2	G1	G2	W1	W2	W3	W4	CU.YD	LBS.
21'-8"	5'-0"	0'-9"	0'-8"	30	3:1	23'-10 3/8"	1'-0"	5'-10"	1'-8"	0	60	2'-2"	2'-8 1/2"	3'-3 3/8"	1'-0 1/2"	1'-6"	12'-6"	25'-0"	14'-4 5/8"	26'-10 5/8"	8.70	794

**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

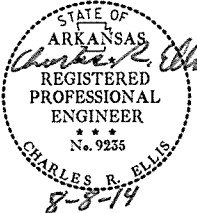
Min. Bar Lap Length	
#4	1'-9"
#5	2'-2"
#6	2'-7"
#7	3'-6"
#8	4'-7"

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

This drawing to be used in conjunction with STANDARD DRAWING RCB-2. For additional information and outlet sections, see Sheet 2 of 5.

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. 080484							10	283

**SPECIAL DETAILS**



TABULAR DATA BY: ACP DATE: 07/09/14  
 CHECKED BY: AMS DATE: 8/6/14

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

CLASS "S" CONCRETE (Includes HDWL)	REINFORCING STEEL (GR. 60) (Includes HDWL)
CU. YDS.	LBS.
14.64	2679

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 Sections, and Skewed End Section is based on the design fill depth shown in the table, see PLAN AND PROFILE SHEETS for actual fill depth.



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.	080484		11	283

OUTLET WINGWALL TABLE

OVERALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT		WINGWALL ANGLE (DEGREE)	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL		FOOTING DIMENSION PARALLEL WITH HDWL		LENGTH OF WINGWALLS		LENGTH OF FOOTING HEEL		CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)	
								AT HDWL	AT WING END			WING A	WING B	WING A	WING B	WING A	WING B	WING A	WING B			
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WF1	WF2	G1	G2	W1	W2	W3	W4	CU.YD	LBS.	
21'-8"	5'-0"	0'-9"	0'-8"	30	3:1	23'-10 3/8"	1'-0"	5'-10"	1'-8"	0	60	2'-2"	2'-8 1/2"	3'-3 3/8"	1'-0 1/2"	1'-6"	12'-6"	25'-0"	14'-4 5/8"	26'-10 5/8"	9.69	794

OUTLET SKEWED END SECTION

SKEW (DEGREE)	SLOPE	FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THK.	HDWL THK.	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVERALL WIDTH	OVERALL HEIGHT	TOP SLAB REINFORCING STEEL				BOTTOM SLAB REINFORCING STEEL				SIDE WALL REINFORCING STEEL		INTERIOR WALL REINFORCING STEEL		TOP SLAB DISTRIBUTION REINFORCING STEEL		BOTTOM SLAB DISTRIBUTION REINFORCING STEEL		SIDE WALL DISTRIBUTION REINFORCING STEEL		INTERIOR WALL DISTRIBUTION REINFORCING STEEL											
													a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z				
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	LENGTH	SIZE	SPACING	LENGTH	SIZE	SPACING	LENGTH	SIZE	SPACING	LENGTH	SIZE	SPACING	LENGTH	SIZE	SPACING	LENGTH				
30	3:1	5	10	5	8'-3"	10.5	3	10.5	6	8	21'-8"	6'-9"	6	8	16	7	8	16	5	5	26	4	7	19	4	6	34	6'-5"	4	12	18	6'-5"	4	10	51	4	10	51	4	12	10	8'-1"

OUTLET SLOPE SECTION(S)

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	TOP SLAB THK.	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVERALL WIDTH	OVERALL HEIGHT	SECTION LENGTH (FT.)	TOP SLAB REINFORCING STEEL				BOTTOM SLAB REINFORCING STEEL				SIDE WALL REINFORCING STEEL		INTERIOR WALL REINFORCING STEEL		TOP SLAB DISTRIBUTION REINF. STEEL	BOTTOM SLAB DISTRIBUTION REINF. STEEL	SIDE WALL DISTRIBUTION REINF. STEEL	INTERIOR WALL DISTRIBUTION REINF. STEEL														
											a	Bent b	c	SPACING	d	Bent b1	f	SPACING	NO. REQ'D	SIZE	SPACING	NO. REQ'D					LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH					
D	S	H	T	B	C	W	OW	OH	SL	SIZE	L	SIZE	L	SIZE	L	SIZE	L	SIZE	L	SIZE	L	SIZE	L	SIZE	L	SIZE	L	SIZE	L	SIZE	L	SIZE	L	SIZE	L	SIZE	L	SIZE	L	

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"

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

CLASS "S" CONCRETE	REINFORCING STEEL (GR. 60)	ADDITIONAL 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.

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.



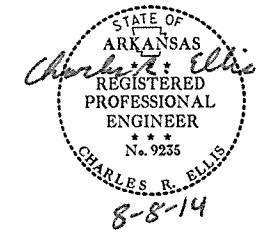
TABULAR DATA BY: ACP DATE: 07/09/14  
 CHECKED BY: AMS DATE: 8/6/14

The required number of bars and lengths shown are for estimating purpose only. The actual number and length required shall be determined in field.

Unless otherwise noted, all dimensions are in inches.



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. 080484							12	283

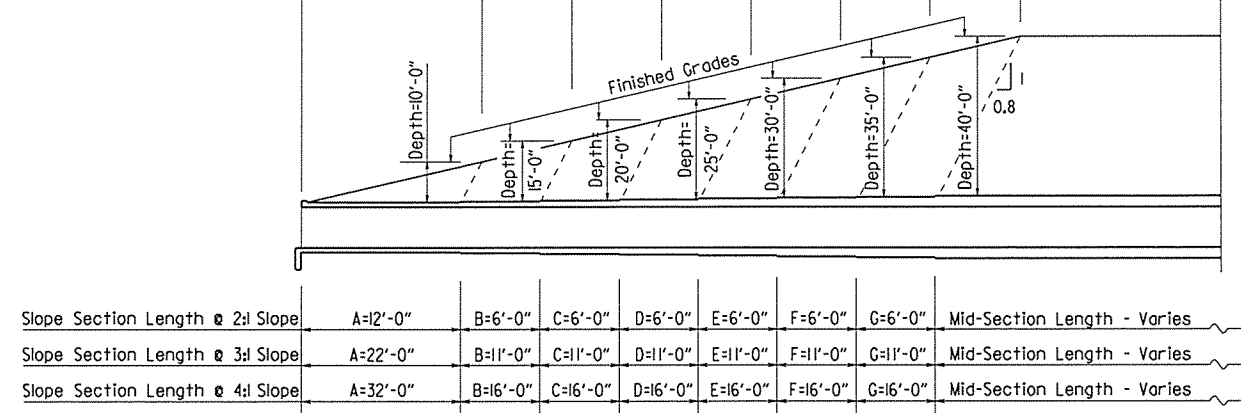


2:1 Slope	20'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"
3:1 Slope	30'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"
4:1 Slope	40'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"

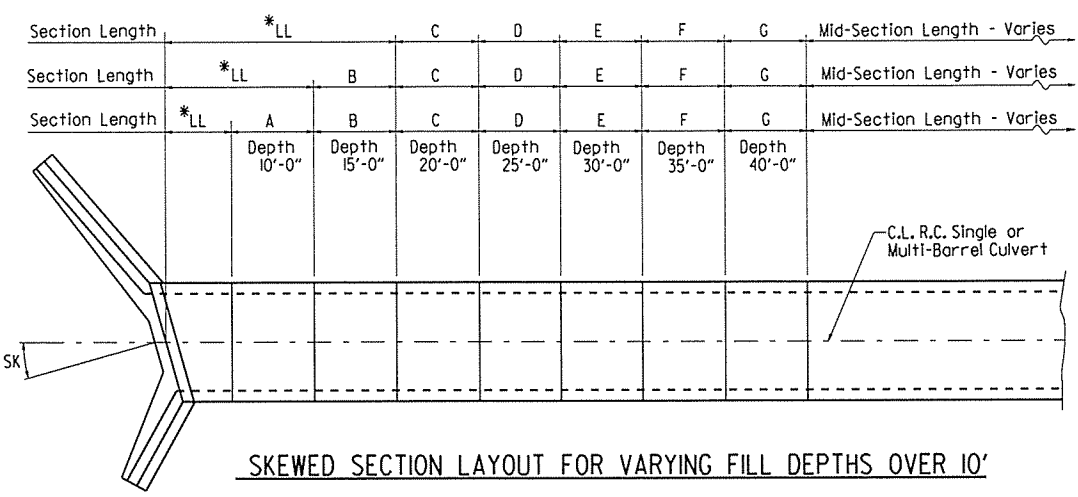
Note: For fill depths 10' and under, use Mid-Section full length of box culvert.

\* LL = Skewed End Section Length - See "Skewed End Section Details" Length LL varies with skew angle, overall box width and fill depth and may eliminate the need for some slope section lengths as shown.

SPECIAL DETAILS



**LONGITUDINAL SECTION LENGTH SCHEDULE FOR VARYING FILL DEPTHS OVER 10'**  
Lengths for Non-Skewed Boxes



**SKewed SECTION LAYOUT FOR VARYING FILL DEPTHS OVER 10'**

**GENERAL NOTES:**

**CONSTRUCTION SPECIFICATIONS:** Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 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 3/4" chamfers.

Reinforcing Steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

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. 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.

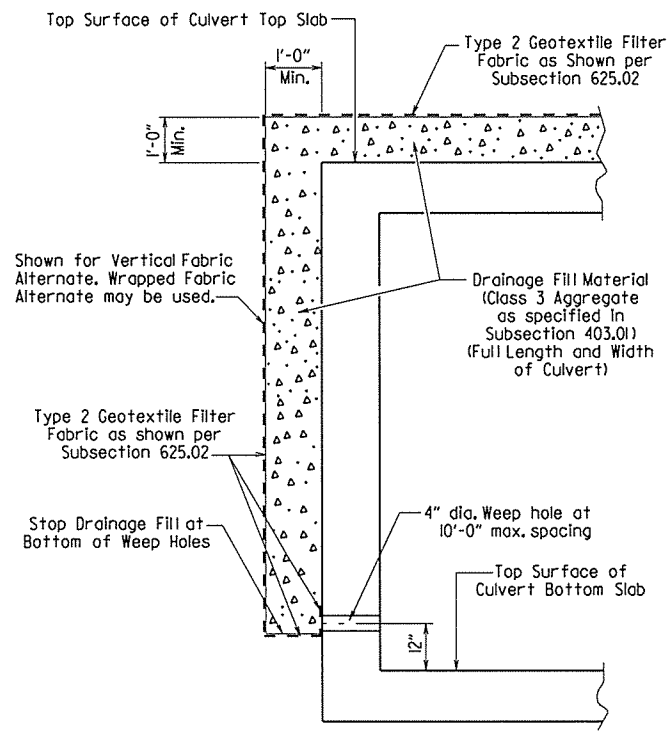
Weep Holes in wingwalls shall have a maximum horizontal spacing of 10'-0" and shall be spaced to clear all reinforcing steel. There shall be a minimum of two (2) weep holes in each wingwall. The drain opening shall be 4" diameter and shall be placed 12" above the top of the wingwall footing.

The barrel components of the culvert may be constructed using continuous pours. For longer culvert construction, the Contractor may use multiple pours with transverse construction joints spaced a minimum of 50 feet apart unless superseded by stage construction or site constraints as approved by the Engineer. Construction joints between footings and walls shall be made only where shown in the Plans. Joints shall be normal to the centerline of barrel and shall be keyed. Longitudinal reinforcing shall be continuous through joints unless shown otherwise. All longitudinal construction joints shall be submitted to the Engineer for approval.

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.

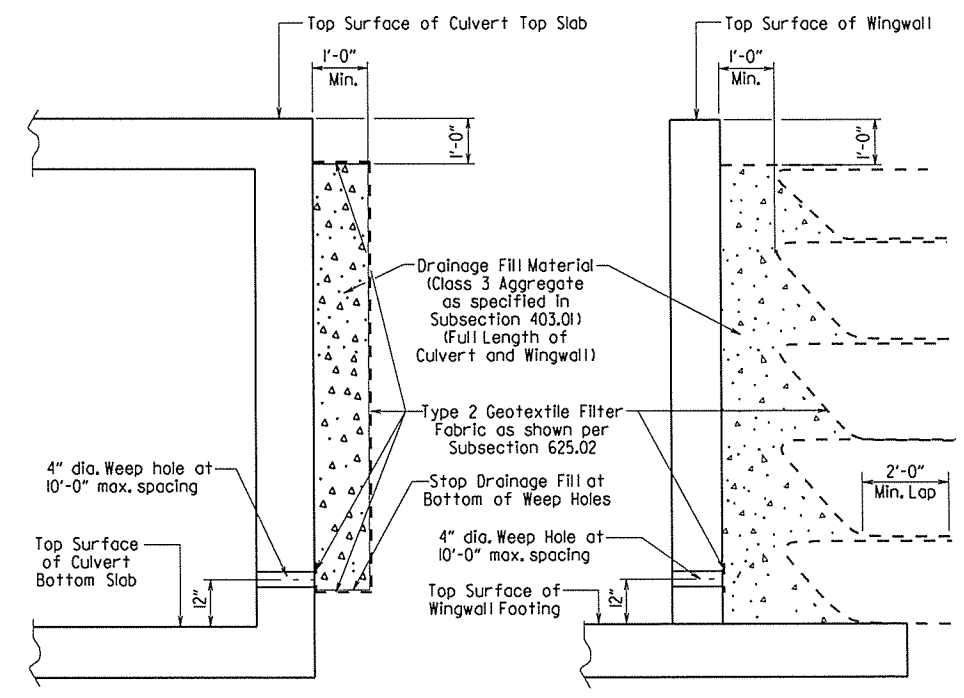
When the top slab of the box culvert serves as finished roadway surface, curing and finishing shall be in accordance with subsections 802.17 and 802.20 for bridge roadway surface and a tine finish shall be applied in accordance with subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Curing and finishing shall not be paid for directly, but shall be considered incidental to the item "Class 5 Concrete-Roadway". Class 1 Protective Surface Treatment shall be applied to the roadway surface and this work shall be paid for under the unit price bid for "Class 1 Protective Surface Treatment".

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 Section 607. When the top slab of the box culvert serves as the finished roadway surface, a precast reinforced concrete box culvert substitution is not allowed.



**CULVERT DRAINAGE DETAIL FOR ROCK FILL**

This detail shall be used when rock fill is specified for embankment construction.



**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**

SHEET 3 OF 5  
DETAILS OF R.C. BOX CULVERT  
DOUBLE BARREL BOX CULVERT  
Sta. 208+34  
SPECIAL DETAILS



V:114 b080484\_culvert.dgn

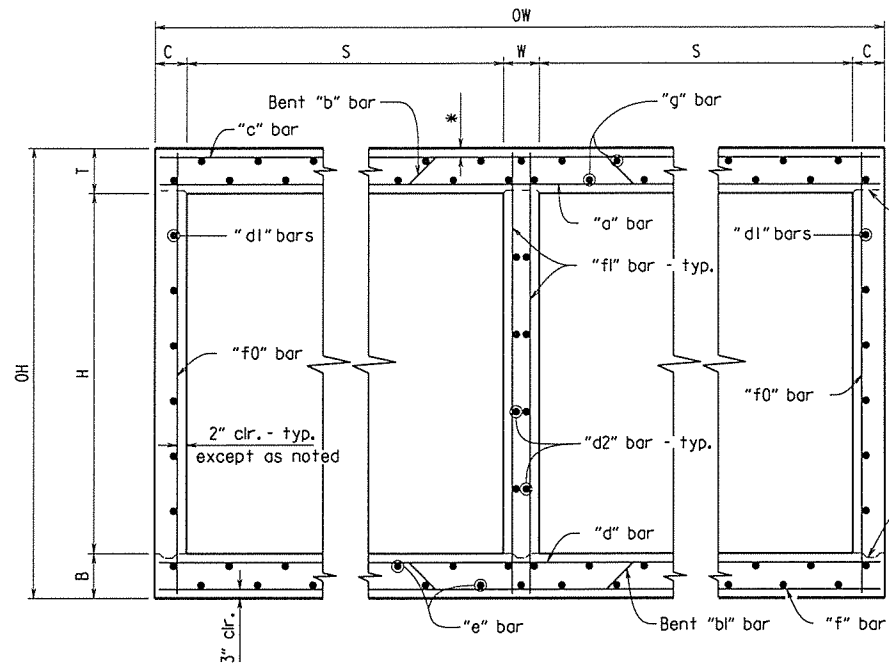


DATE REVISED	DATE FILMED	REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080484	13	283



\*2" clr. for fill depth (D) greater than 2 ft.  
 2 1/2" clr. for fill depth (D) equal to or less than 2 ft.

Note: When top slab of culvert serves as finished roadway surface, see General Notes on Sheet 3 of 5.

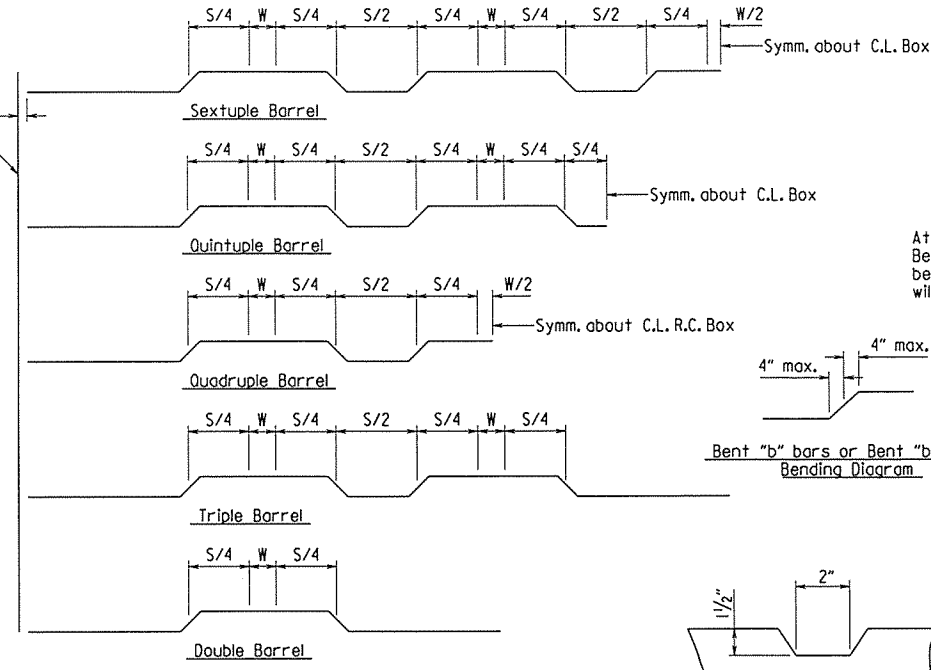


TYPICAL SECTION M-M

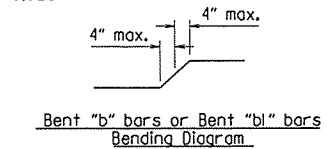
Top Slab  
 Straight "c" bars shall alternate with Bent "b" bars in top.  
 Straight "a" bars shall alternate with Bent "b" bars in bottom.

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

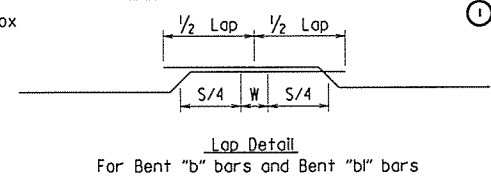
2" clr. - typ.  
 Outside Face of R.C. Box  
 Req'd 3/4" Recessed Constr. Jt. - typ.  
 Req'd Keyway Constr. Jt. - typ.



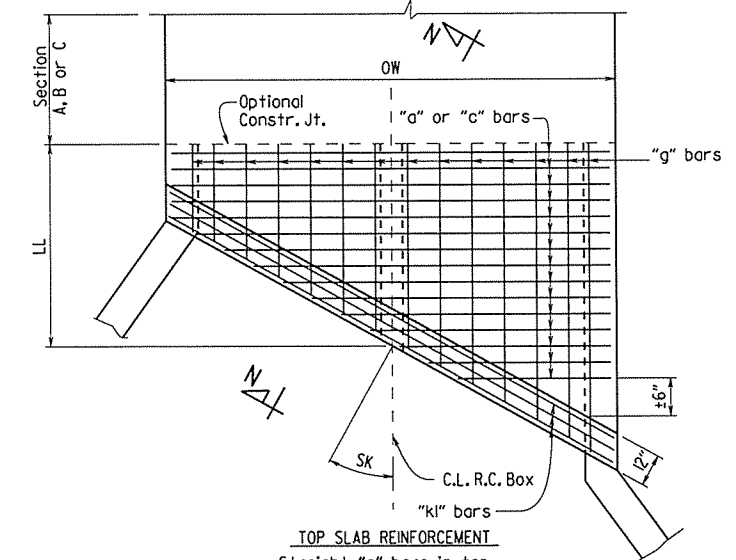
Bent "b" bars or Bent "bl" bars sketch



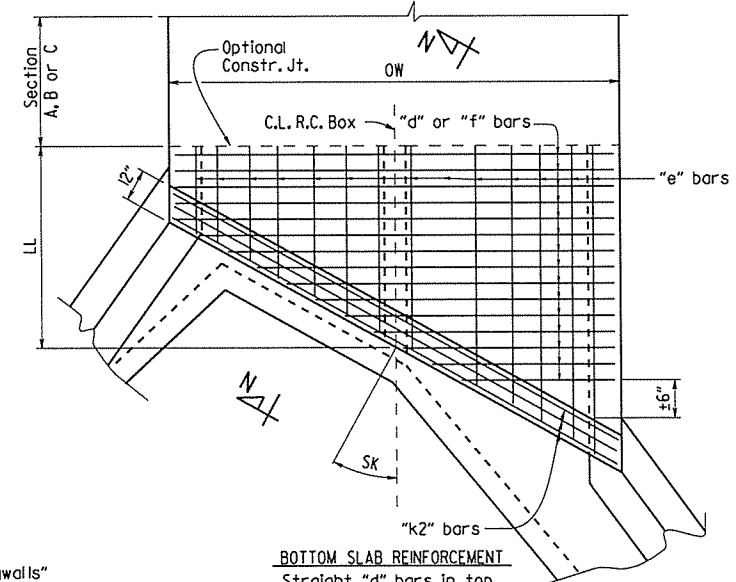
TYPICAL KEYWAY DETAIL (All Construction Joints)



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.

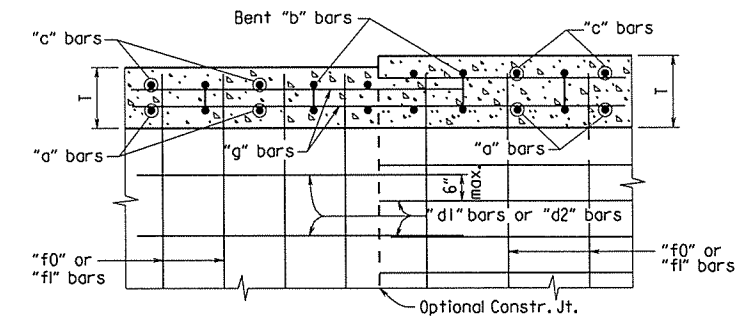


TOP SLAB REINFORCEMENT  
 Straight "c" bars in top.  
 Straight "a" bars in bottom.



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

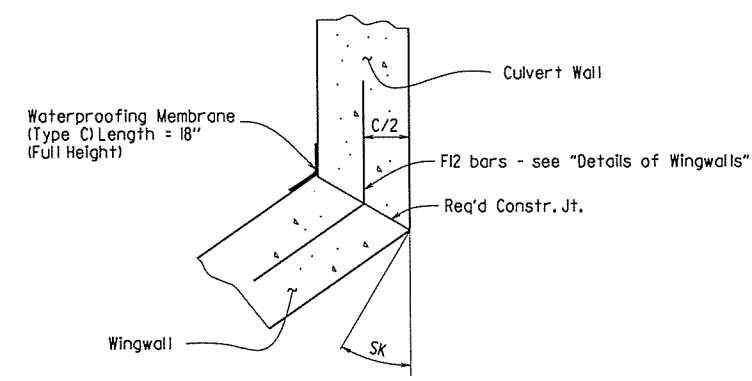
SKewed END SECTION DETAILS



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

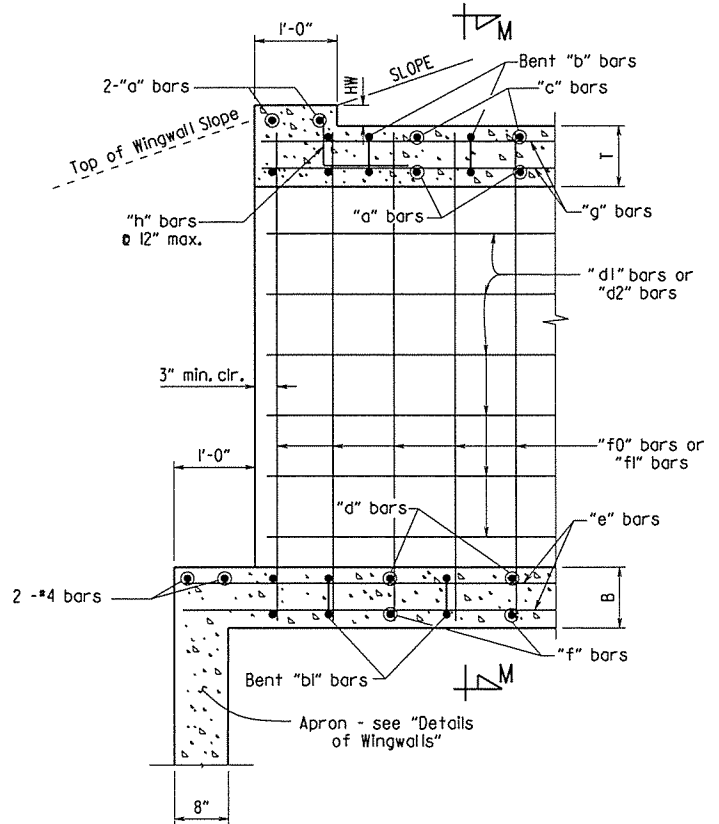
LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

TOP SLAB SHOWN, BOTTOM SLAB SIMILAR



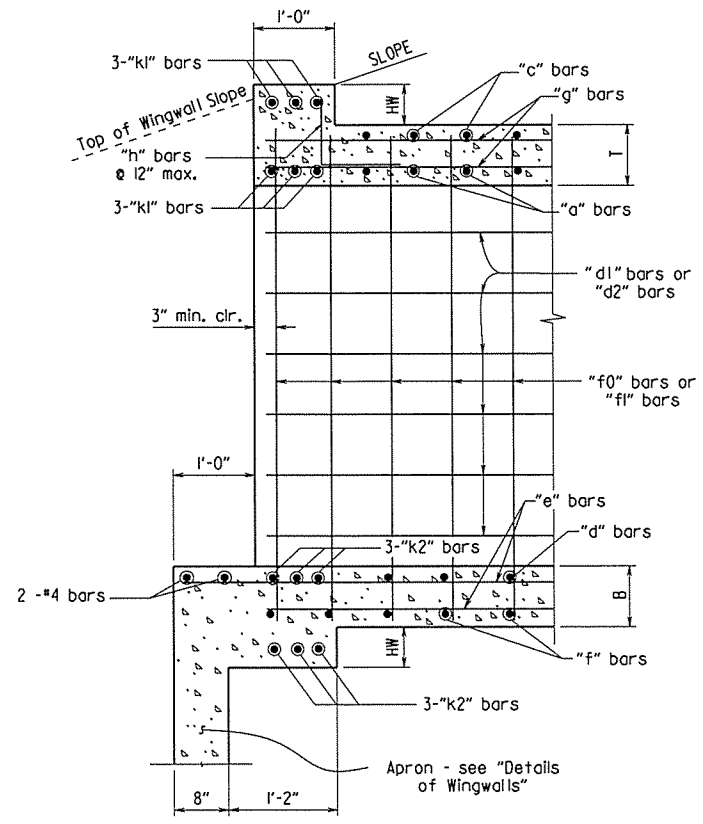
WINGWALL ATTACHMENT

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



PART LONGITUDINAL SECTION

(Non-Skewed Ends)



PART LONGITUDINAL SECTION N-N

(Skewed Ends)

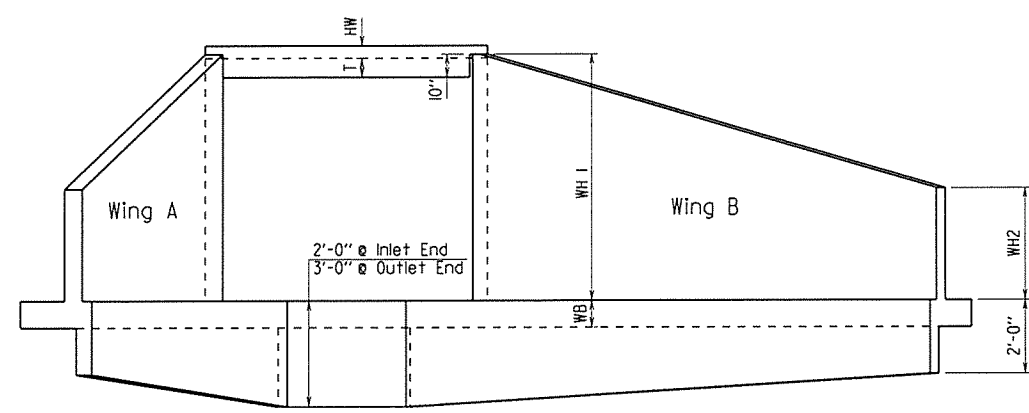
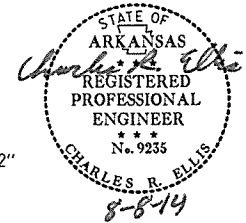
SHEET 4 OF 5  
 DETAILS OF R.C. BOX CULVERT  
 DOUBLE BARREL BOX CULVERT  
 Sta. 208+34

SPECIAL DETAILS

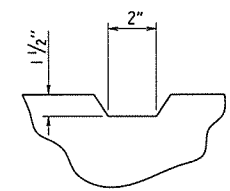
b080484\_culvert.dgn

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.		080484	14	283

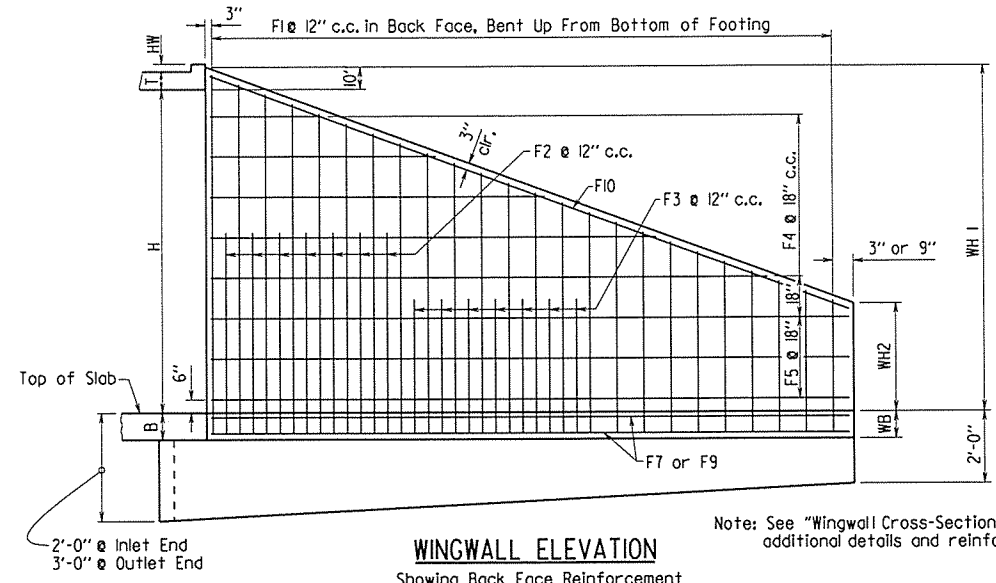
① SPECIAL DETAILS



**END ELEVATION**  
Flared Wingwalls Shown

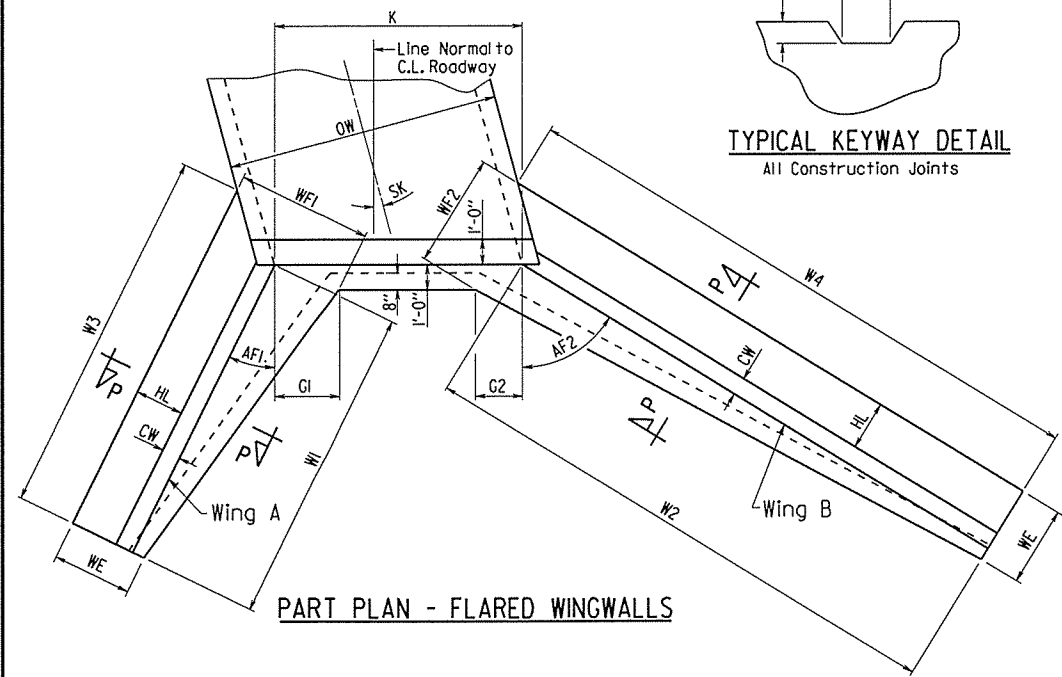


**TYPICAL KEYWAY DETAIL**  
All Construction Joints

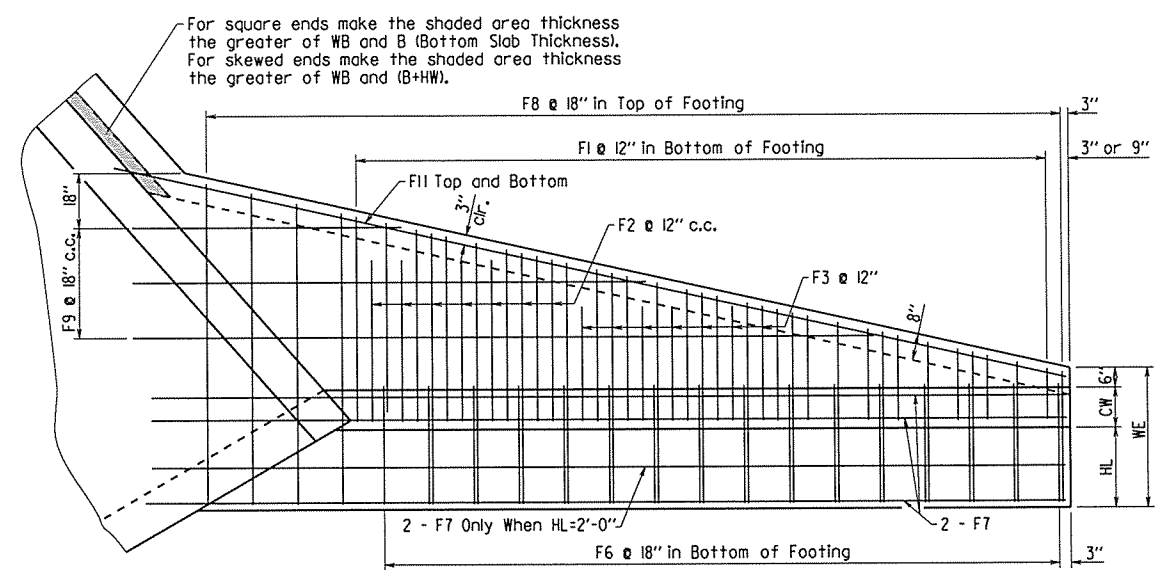


**WINGWALL ELEVATION**  
Showing Back Face Reinforcement

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

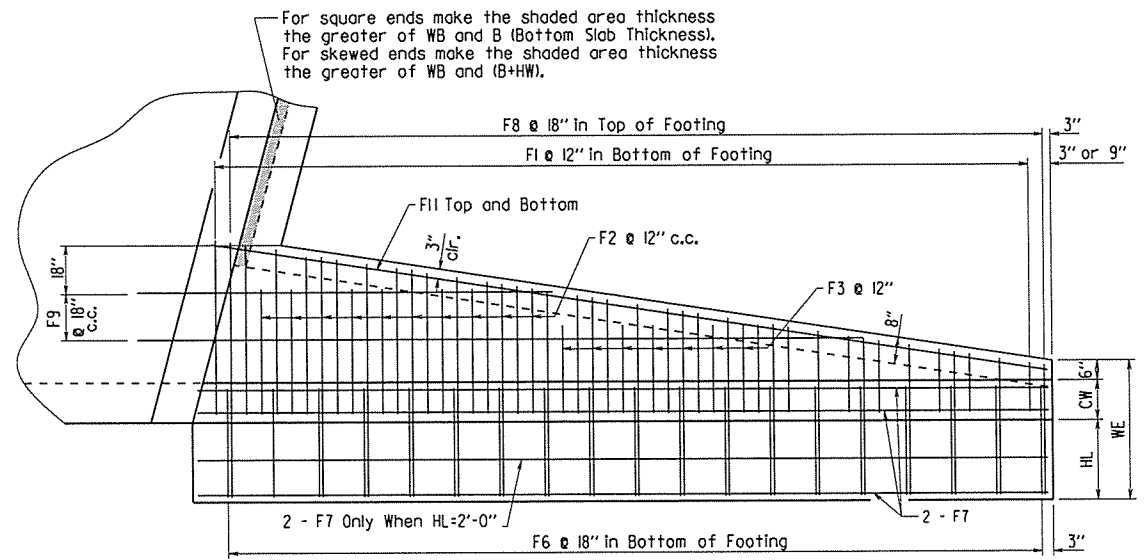


**PART PLAN - FLARED WINGWALLS**

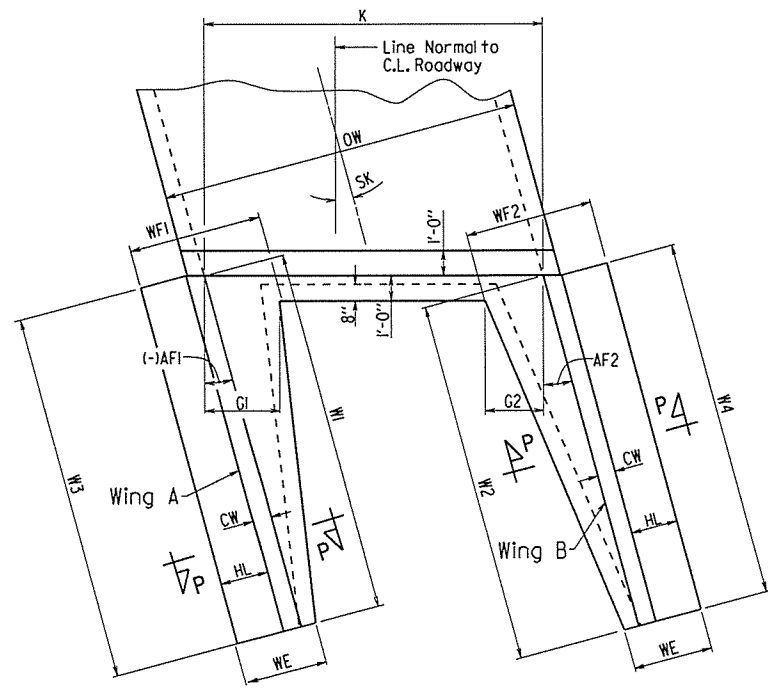


**PLAN - FLARED WINGWALLS**  
Showing Footing Reinforcement

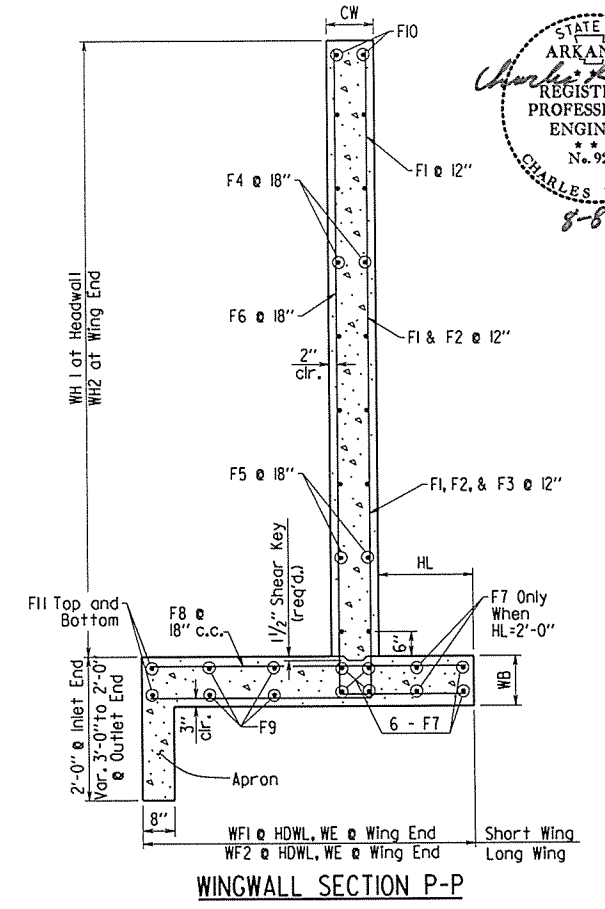
For square ends make the shaded area thickness the greater of WB and B (Bottom Slab Thickness). For skewed ends make the shaded area thickness the greater of WB and (B+HW).



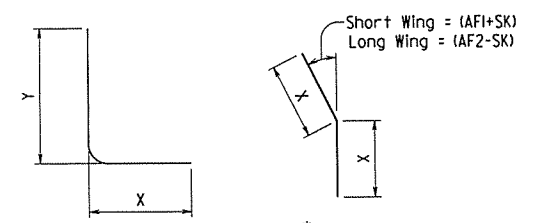
**PLAN - PARALLEL WINGWALLS**  
Showing Footing Reinforcement



**PART PLAN - PARALLEL WINGWALLS**

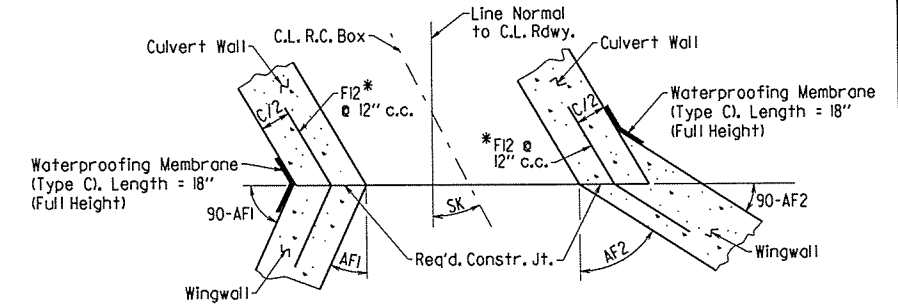


**WINGWALL SECTION P-P**



**F1, F2, F3, & F6 BARS**      **F12 BAR**

\*F12 is a straight bar for parallel wingwalls



**CONSTRUCTION JOINTS**  
Flared Wingwalls Shown

SHEET 5 OF 5  
DETAILS OF R.C. BOX CULVERT  
DOUBLE BARREL BOX CULVERT  
Sta. 208+34  
SPECIAL DETAILS

d080484\_culvert.dgn



TEMPORARY EROSION CONTROL GENERAL NOTES:

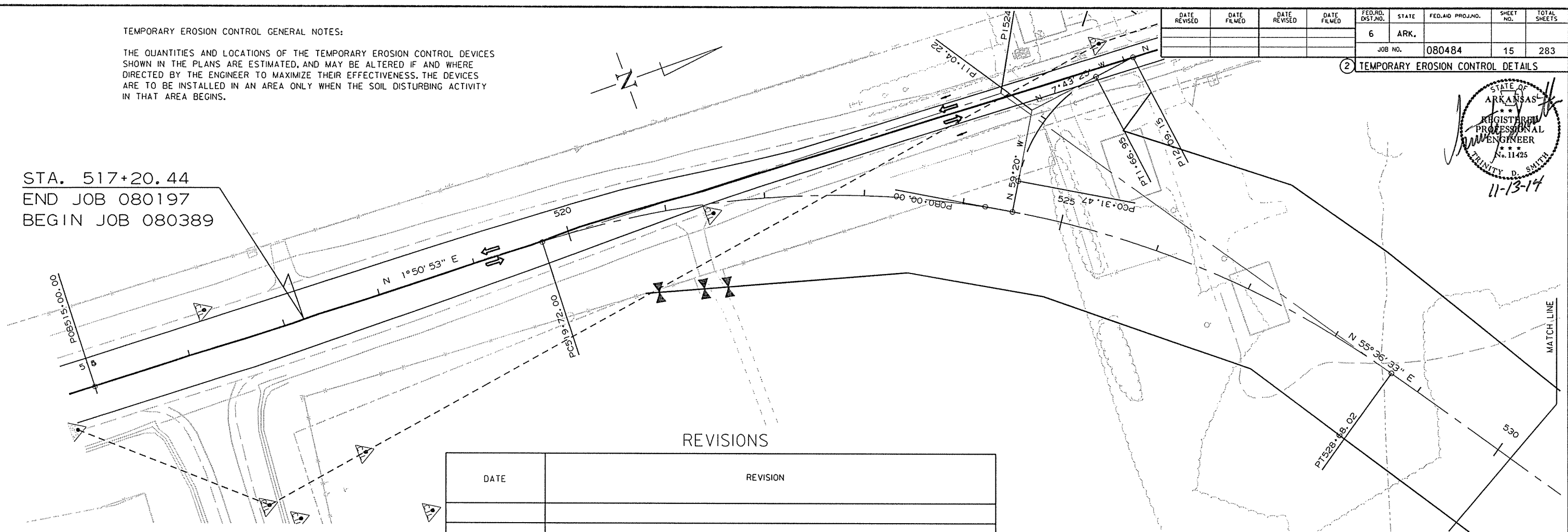
THE QUANTITIES AND LOCATIONS OF THE TEMPORARY EROSION CONTROL DEVICES SHOWN IN THE PLANS ARE ESTIMATED, AND MAY BE ALTERED IF AND WHERE DIRECTED BY THE ENGINEER TO MAXIMIZE THEIR EFFECTIVENESS. THE DEVICES ARE TO BE INSTALLED IN AN AREA ONLY WHEN THE SOIL DISTURBING ACTIVITY IN THAT AREA BEGINS.

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			

JOB NO. 080484 15 283  
 ② TEMPORARY EROSION CONTROL DETAILS

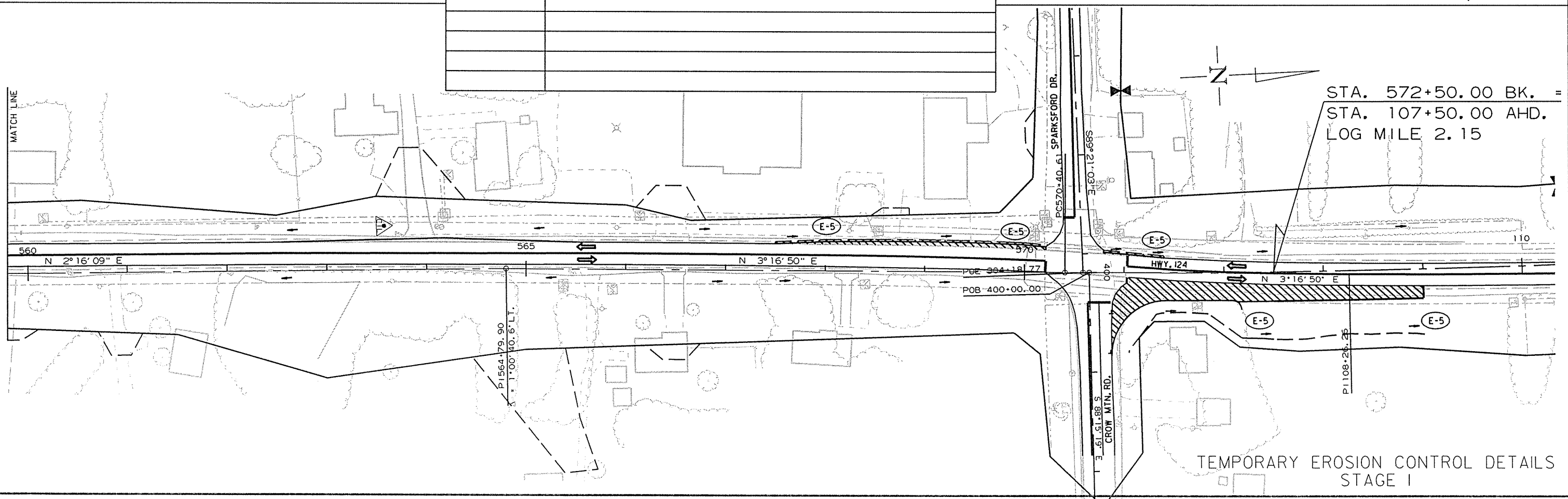


STA. 517+20.44  
 END JOB 080197  
 BEGIN JOB 080389



REVISIONS

DATE	REVISION



STA. 572+50.00 BK. =  
 STA. 107+50.00 AHD.  
 LOG MILE 2.15

TEMPORARY EROSION CONTROL DETAILS  
 STAGE I

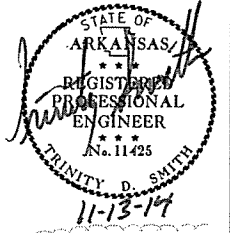
11/10/2014  
 R080484.DGN

TEMPORARY EROSION CONTROL GENERAL NOTES:

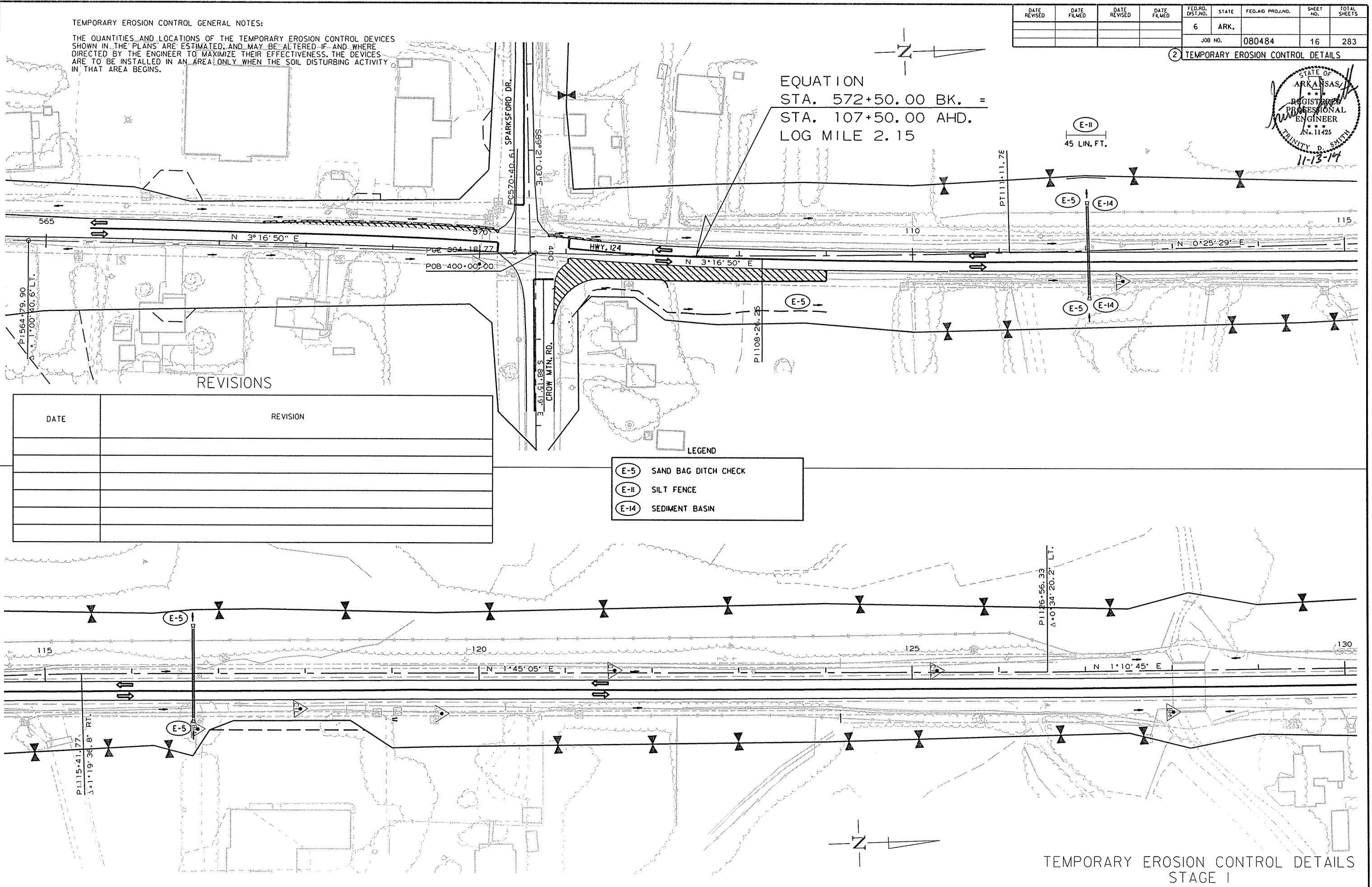
THE QUANTITIES AND LOCATIONS OF THE TEMPORARY EROSION CONTROL DEVICES SHOWN IN THE PLANS ARE ESTIMATED, AND MAY BE ALTERED IF AND WHERE DIRECTED BY THE ENGINEER TO MAXIMIZE THEIR EFFECTIVENESS. THE DEVICES ARE TO BE INSTALLED IN AN AREA ONLY WHEN THE SOIL DISTURBING ACTIVITY IN THAT AREA BEGINS.

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. 080484							16	283

2 TEMPORARY EROSION CONTROL DETAILS



EQUATION  
 STA. 572+50.00 BK. =  
 STA. 107+50.00 AHD.  
 LOG MILE 2.15



REVISIONS

DATE	REVISION

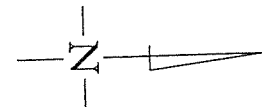
LEGEND

(E-5)	SAND BAG DITCH CHECK
(E-II)	SILT FENCE
(E-14)	SEDIMENT BASIN

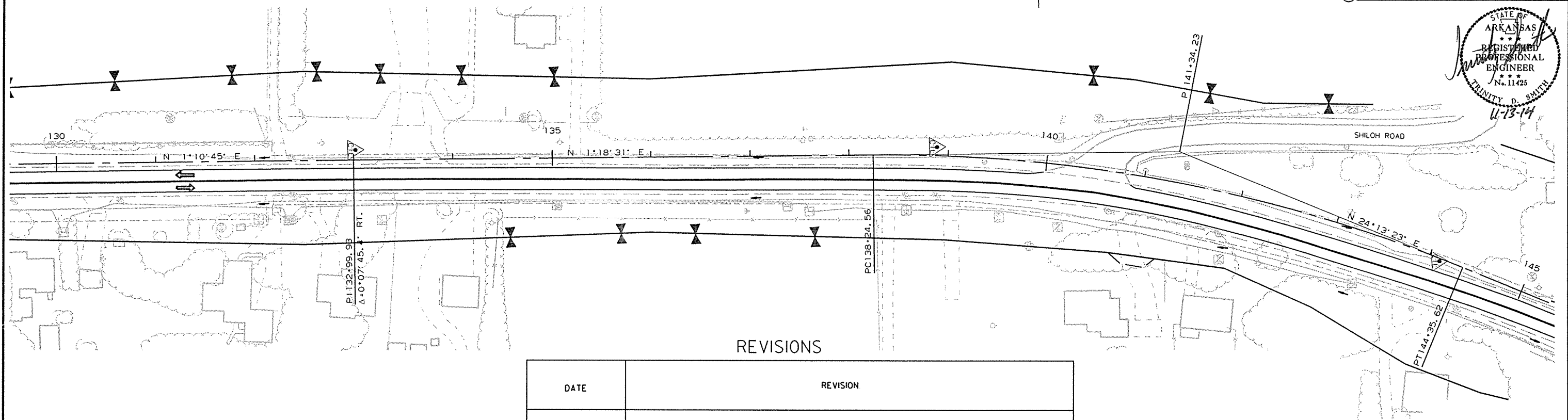
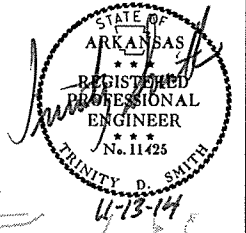
8/26/2014  
 R080484.DCN

TEMPORARY EROSION CONTROL 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.		17	283
				JOB NO.	080484		17	283

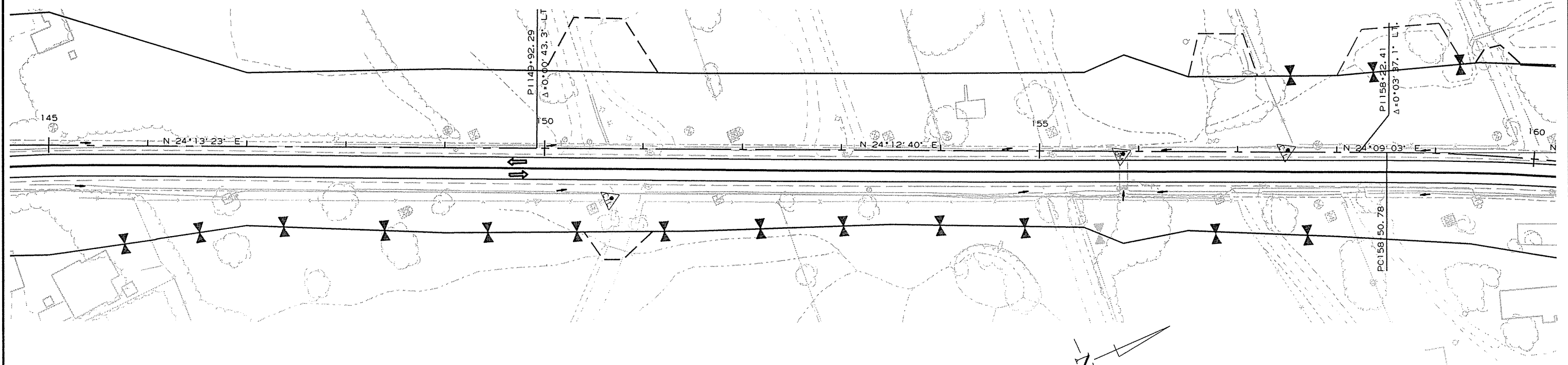


② TEMPORARY EROSION CONTROL DETAILS



REVISIONS

DATE	REVISION



TEMPORARY EROSION CONTROL DETAILS  
STAGE I

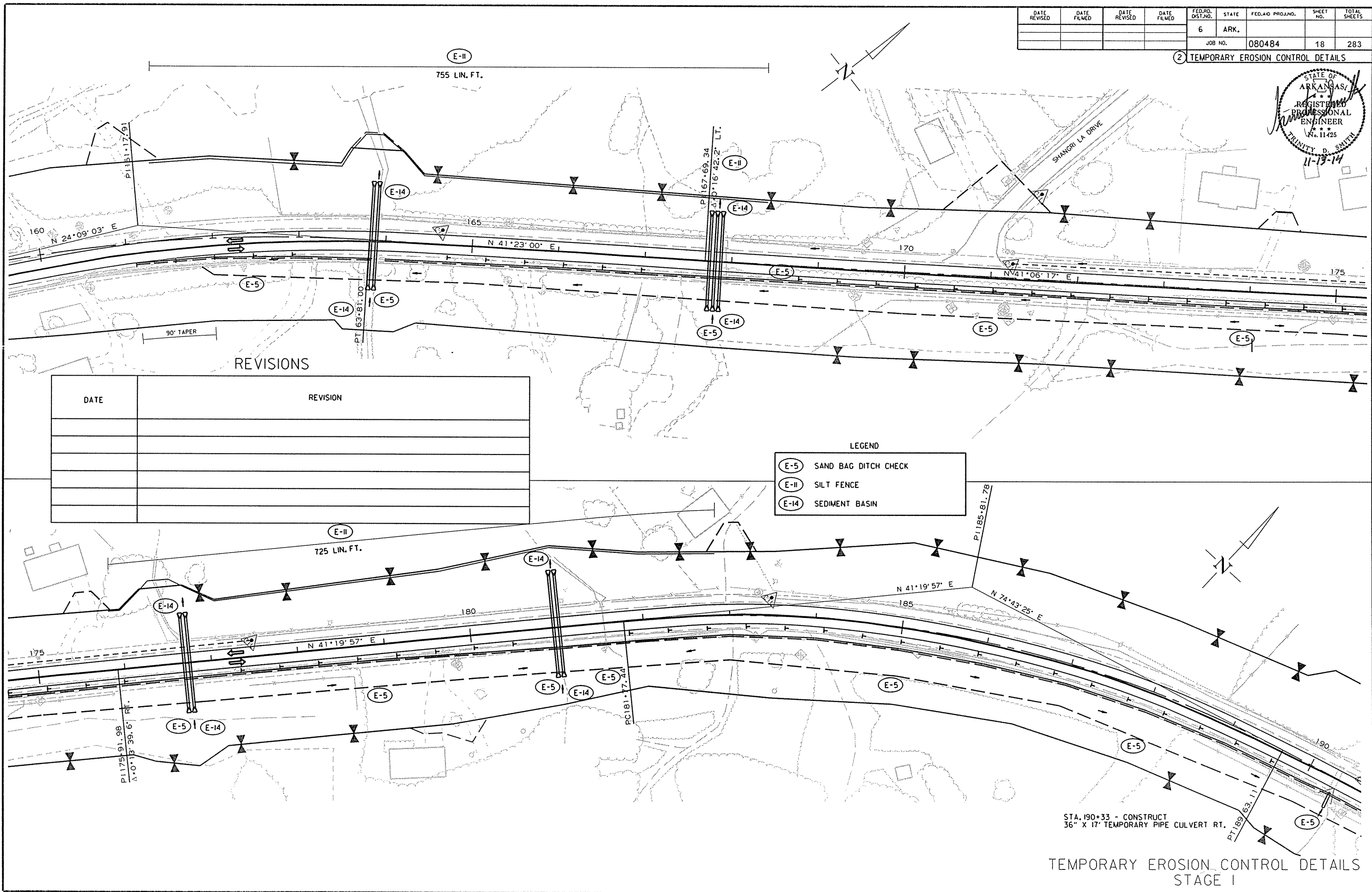
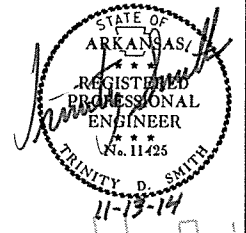
8/26/2014

RO80484.DGN



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		18	283
				JOB NO.	080484		18	283

② TEMPORARY EROSION CONTROL DETAILS



REVISIONS

DATE	REVISION

LEGEND

(E-5)	SAND BAG DITCH CHECK
(E-II)	SILT FENCE
(E-14)	SEDIMENT BASIN

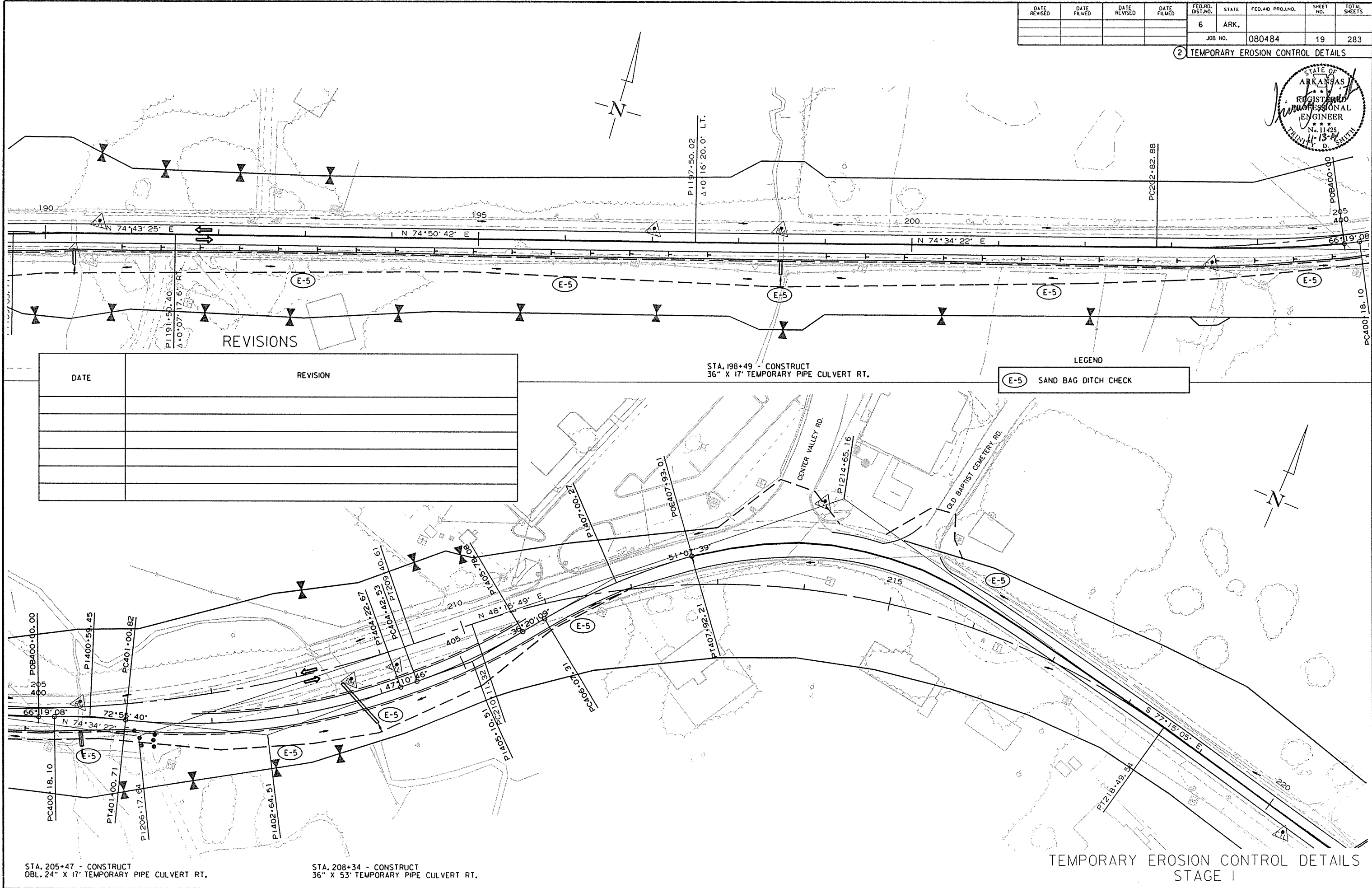
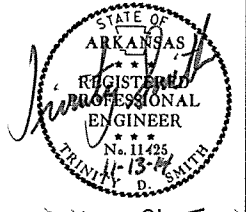
STA. 190+33 - CONSTRUCT  
36" X 17' TEMPORARY PIPE CULVERT RT.

TEMPORARY EROSION CONTROL DETAILS  
STAGE I

8/26/2014  
R080484.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.	080484		19	283

② TEMPORARY EROSION CONTROL DETAILS



REVISIONS

DATE	REVISION

LEGEND

	SAND BAG DITCH CHECK
--	----------------------

8/26/2014  
R080484.DGN

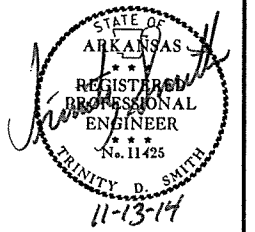
STA. 205+47 - CONSTRUCT  
DBL. 24" X 17" TEMPORARY PIPE CULVERT RT.

STA. 208+34 - CONSTRUCT  
36" X 53" TEMPORARY PIPE CULVERT RT.

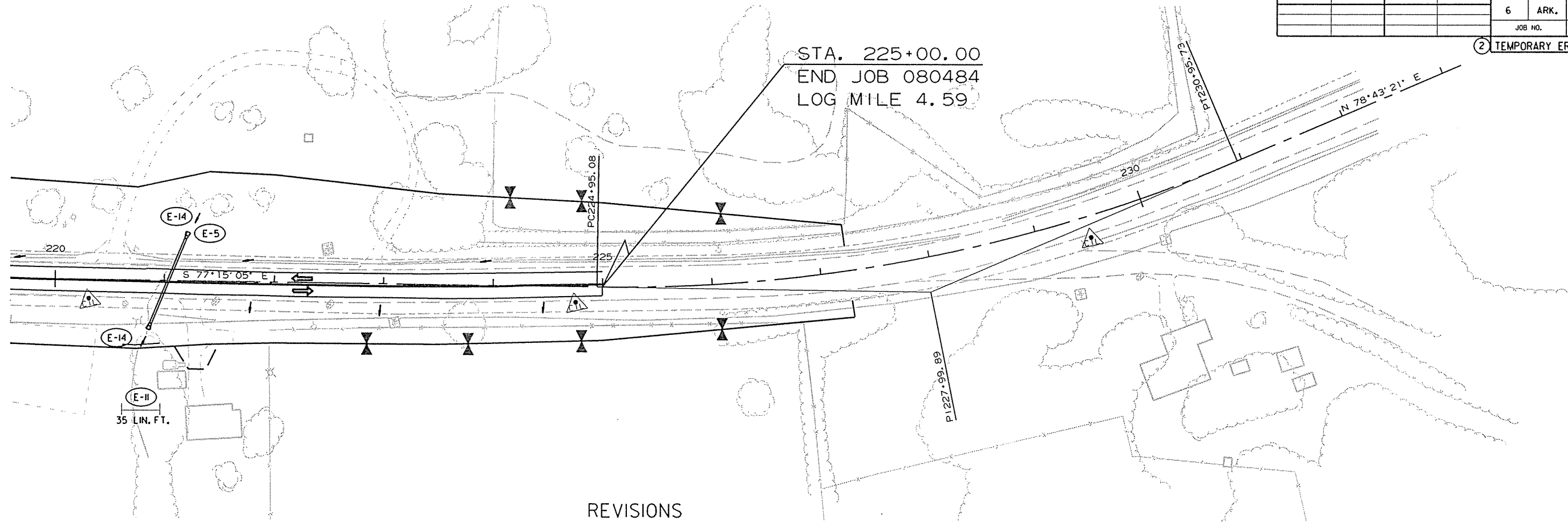
TEMPORARY EROSION CONTROL DETAILS  
STAGE I

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. 080484							20	283

② TEMPORARY EROSION CONTROL DETAILS



STA. 225+00.00  
END JOB 080484  
LOG MILE 4.59



REVISIONS

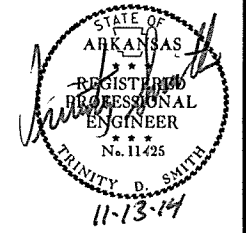
LEGEND

(E-5)	SAND BAG DITCH CHECK
(E-II)	SILT FENCE
(E-14)	SEDIMENT BASIN

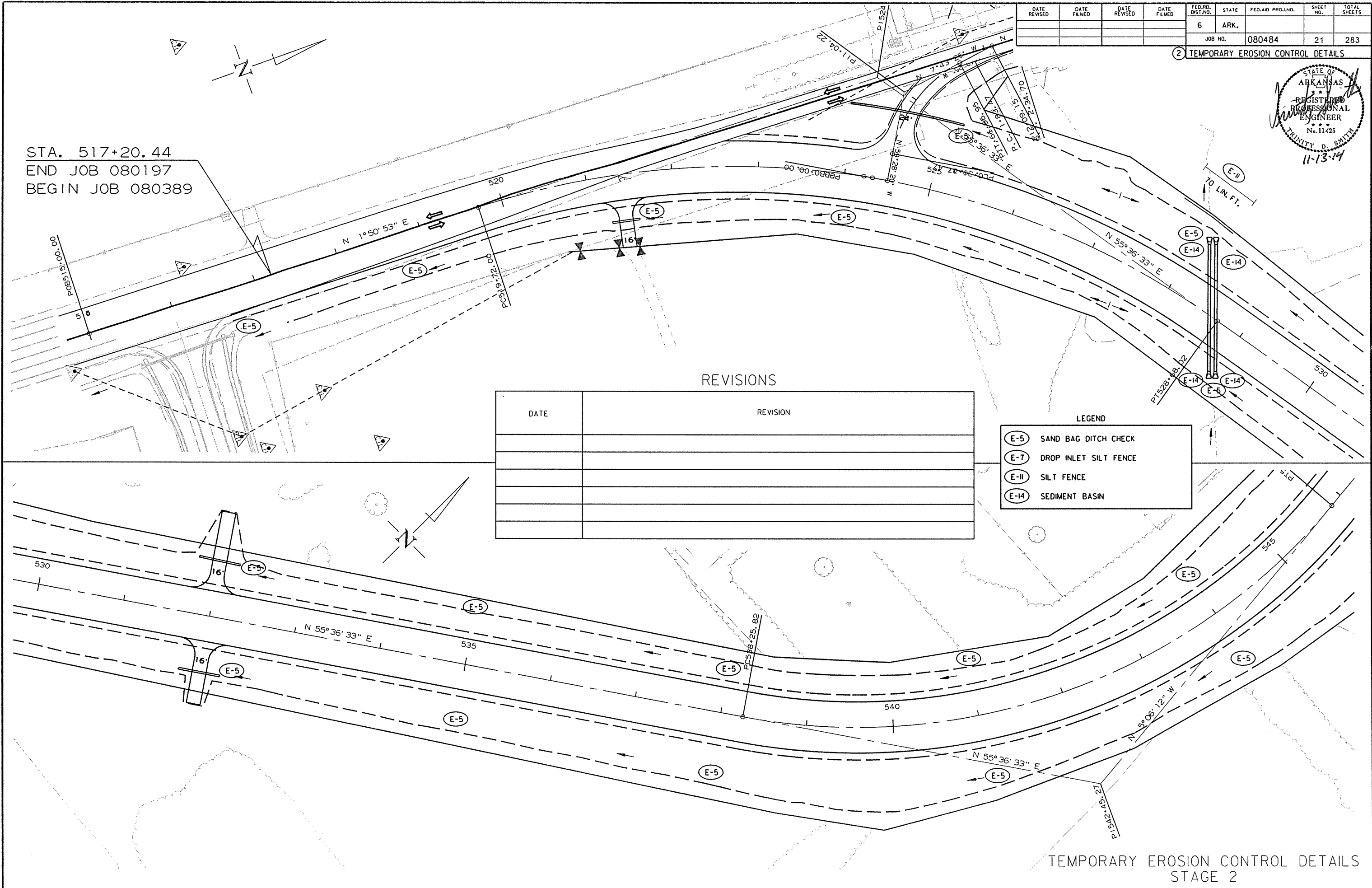
DATE	REVISION

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		21	283
JOB NO. 080484								

② TEMPORARY EROSION CONTROL DETAILS



STA. 517+20.44  
 END JOB 080197  
 BEGIN JOB 080389



REVISIONS

DATE	REVISION

LEGEND

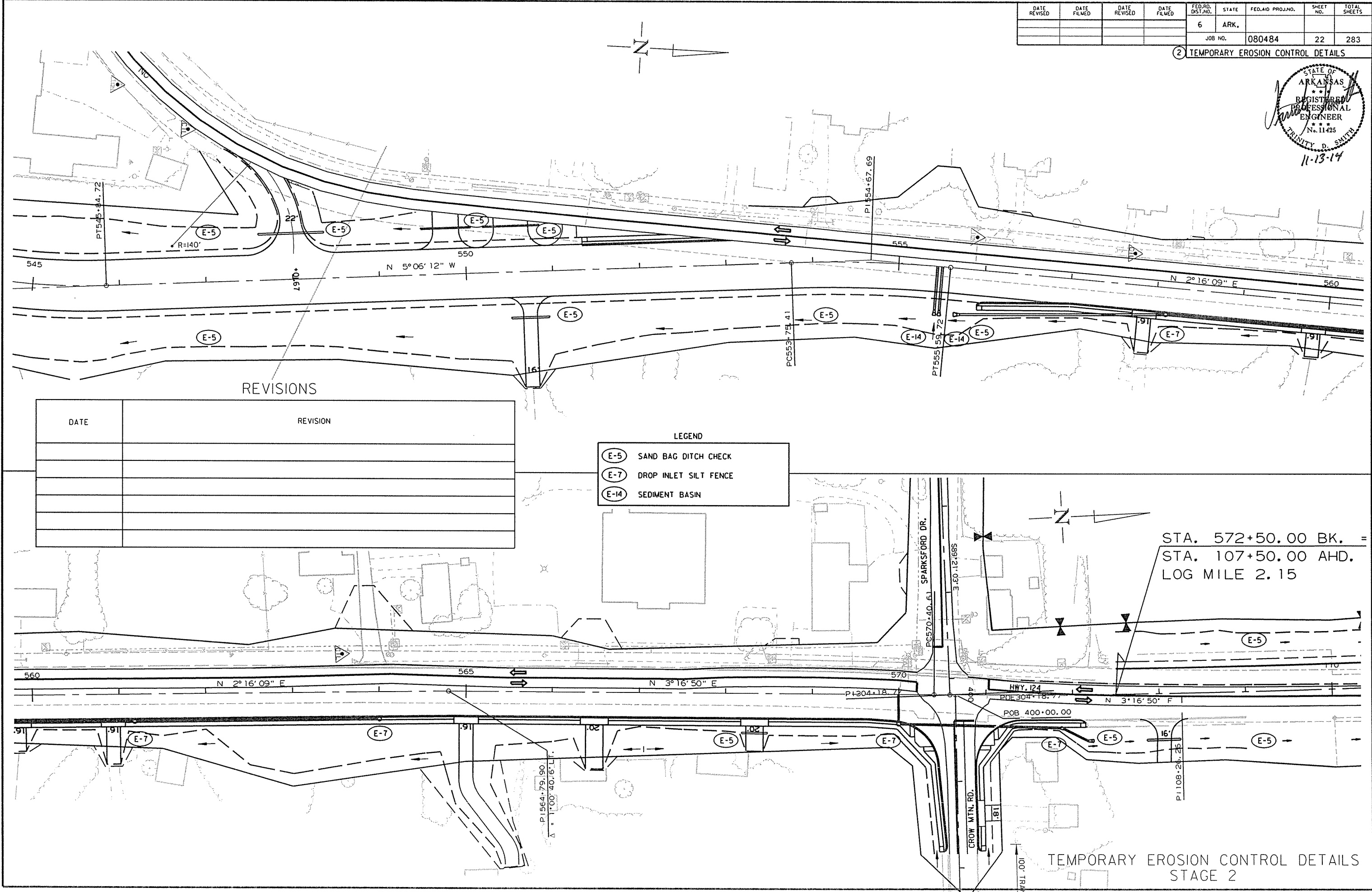
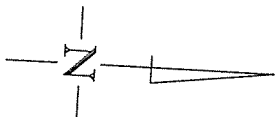
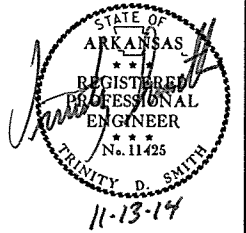
(E-5)	SAND BAG DITCH CHECK
(E-7)	DROP INLET SILT FENCE
(E-11)	SILT FENCE
(E-14)	SEDIMENT BASIN

11/10/2014  
 R080484.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.		22	283
				JOB NO.	080484			

② TEMPORARY EROSION CONTROL DETAILS



REVISIONS

DATE	REVISION

LEGEND

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

STA. 572+50.00 BK. =  
STA. 107+50.00 AHD.  
LOG MILE 2.15

TEMPORARY EROSION CONTROL DETAILS  
STAGE 2

11/10/2014  
R080484.DGN

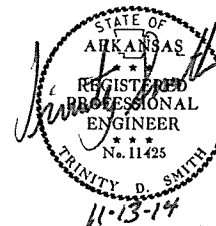


TEMPORARY EROSION CONTROL GENERAL NOTES:

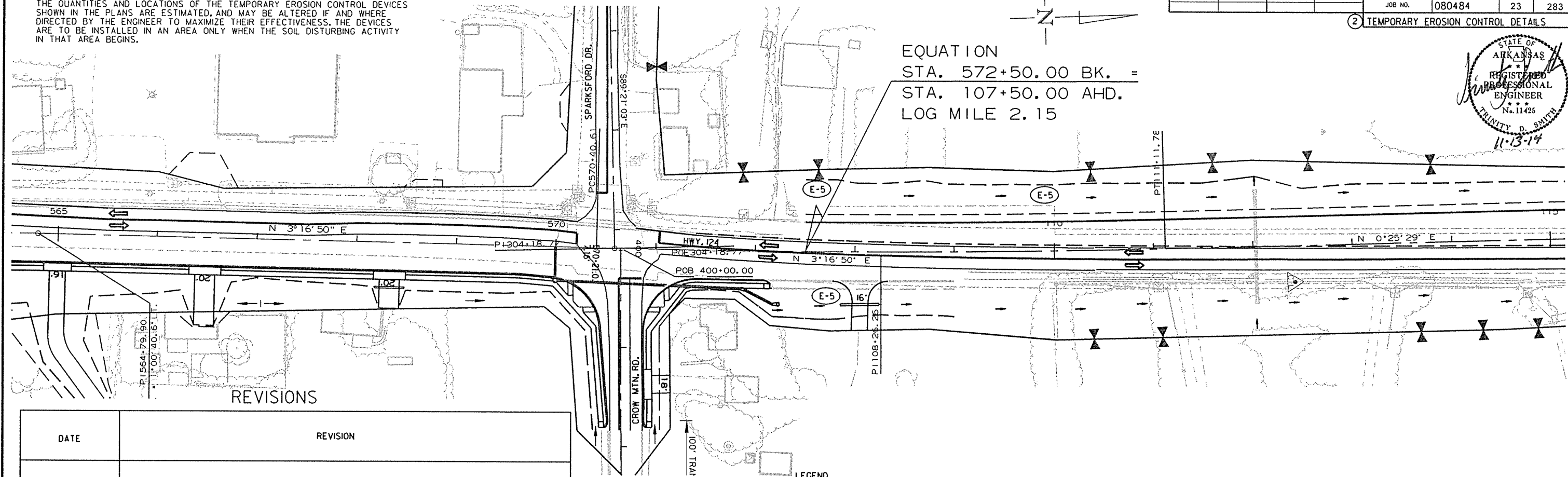
THE QUANTITIES AND LOCATIONS OF THE TEMPORARY EROSION CONTROL DEVICES SHOWN IN THE PLANS ARE ESTIMATED, AND MAY BE ALTERED IF AND WHERE DIRECTED BY THE ENGINEER TO MAXIMIZE THEIR EFFECTIVENESS. THE DEVICES ARE TO BE INSTALLED IN AN AREA ONLY WHEN THE SOIL DISTURBING ACTIVITY IN THAT AREA BEGINS.

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. 080484							23	283

2 TEMPORARY EROSION CONTROL DETAILS



EQUATION  
 STA. 572+50.00 BK. =  
 STA. 107+50.00 AHD.  
 LOG MILE 2.15

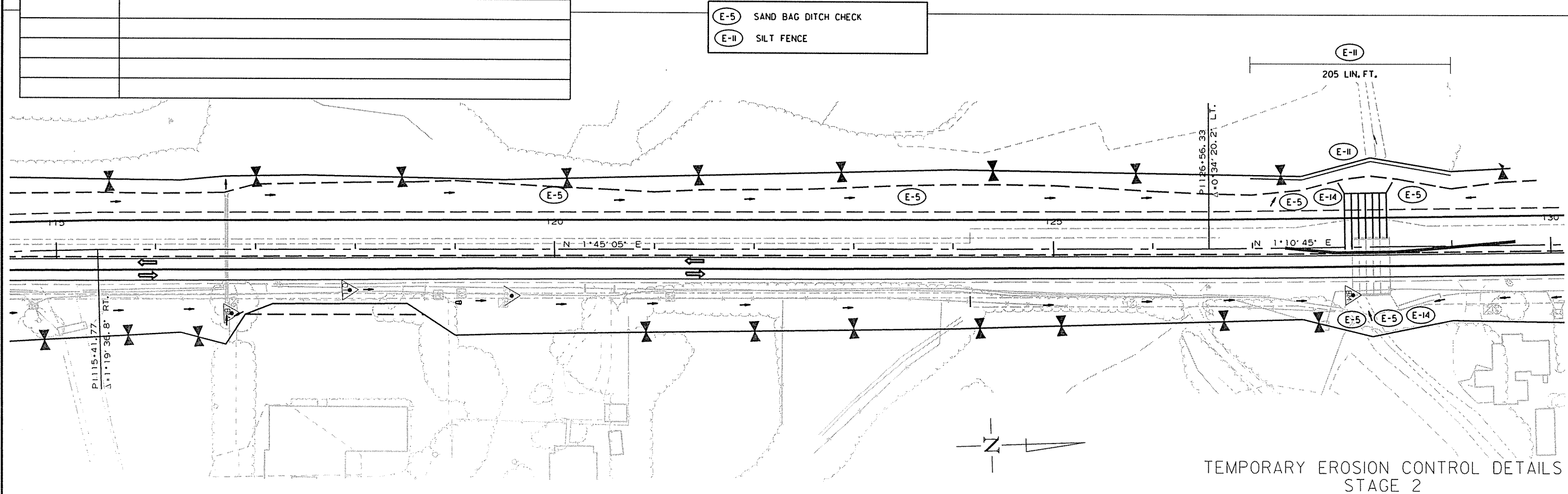


REVISIONS

DATE	REVISION

LEGEND

- (E-5) SAND BAG DITCH CHECK
- (E-II) SILT FENCE

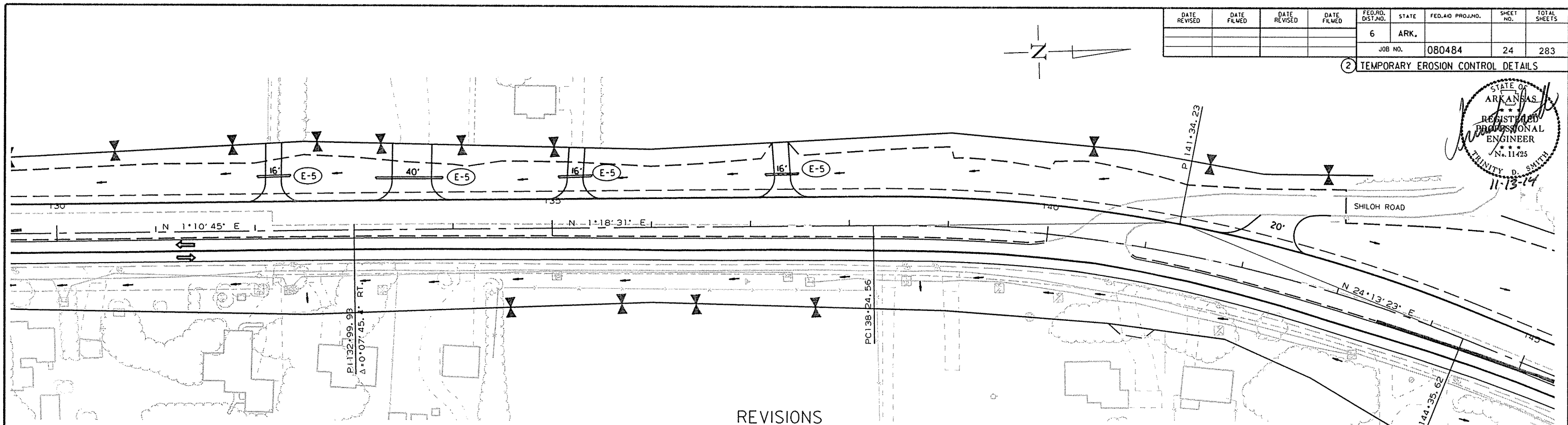
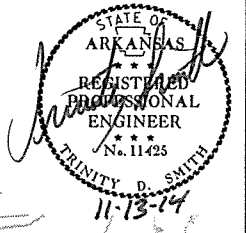


TEMPORARY EROSION CONTROL DETAILS  
 STAGE 2

8/26/2014  
 R080484.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. PROJ. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		24	283
				JOB NO.	080484		24	283

② TEMPORARY EROSION CONTROL DETAILS

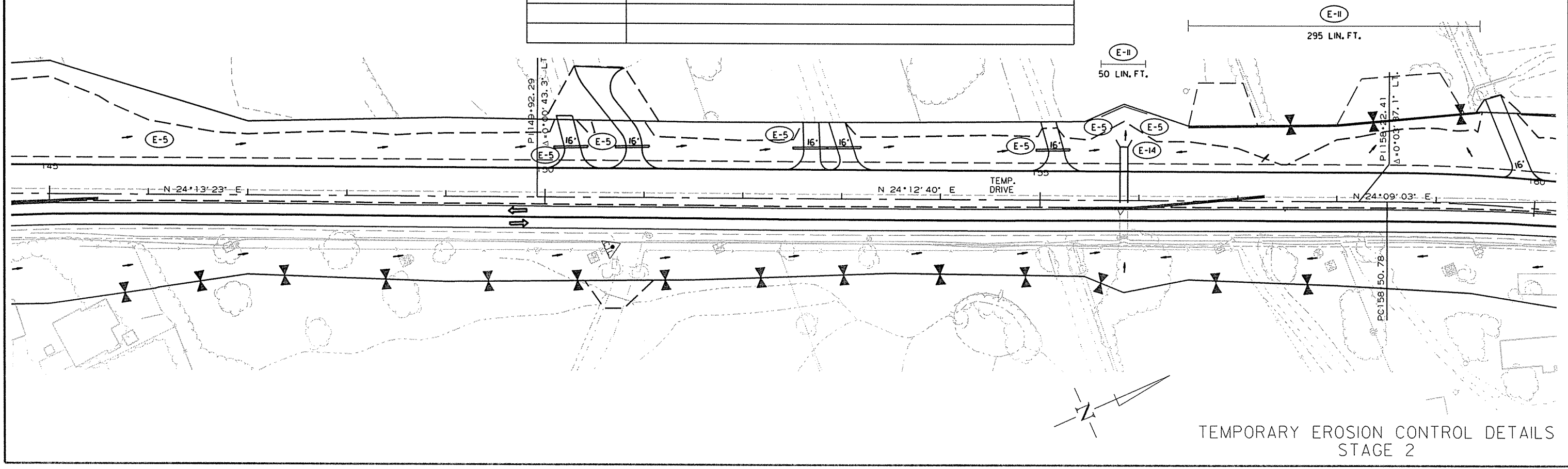


REVISIONS

DATE	REVISION

LEGEND

- E-5 SAND BAG DITCH CHECK
- E-II SILT FENCE



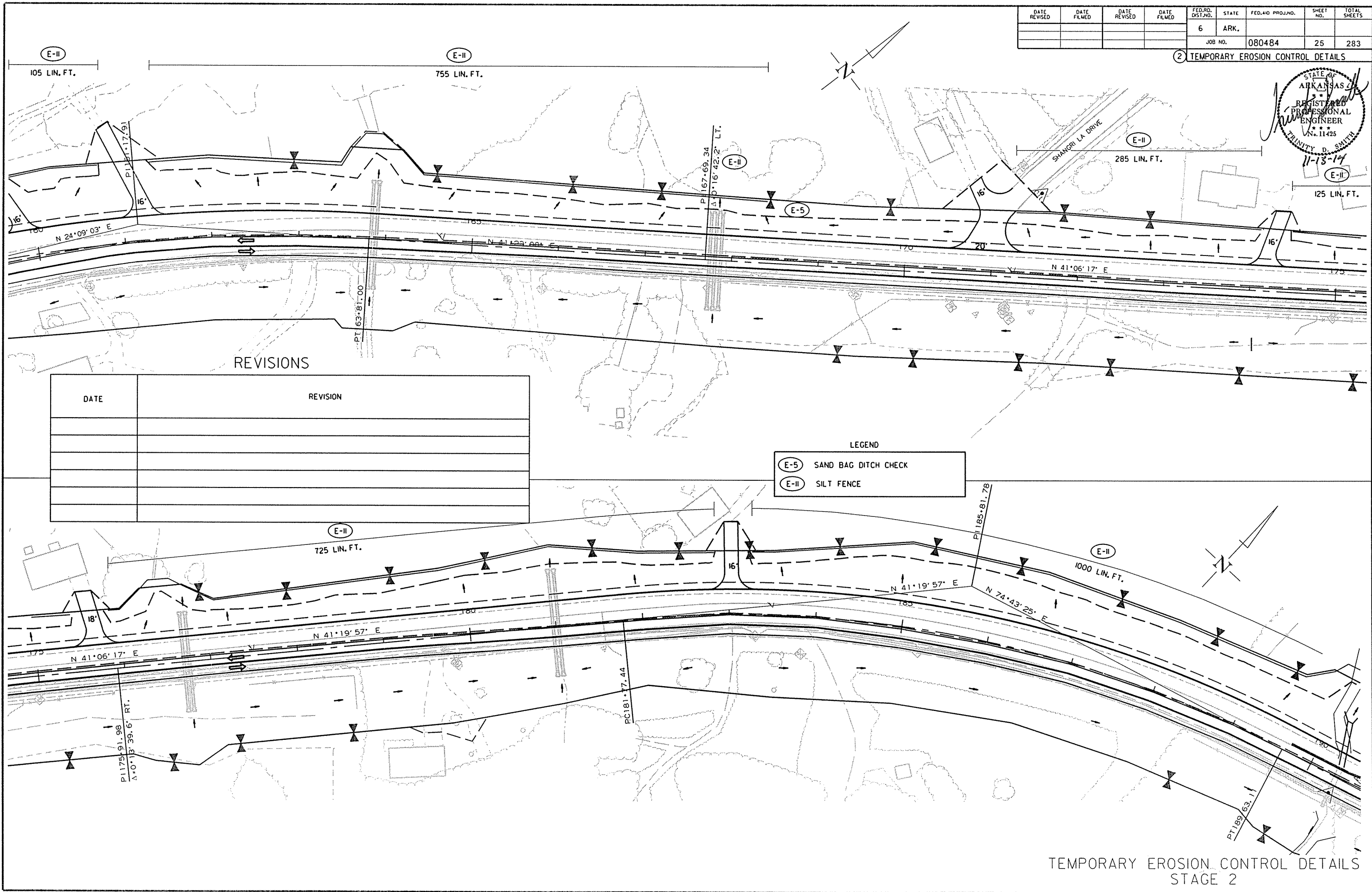
TEMPORARY EROSION CONTROL DETAILS  
STAGE 2

8/26/2014  
R080484.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.							080484	25	283

② TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS  
 REGISTERED PROFESSIONAL ENGINEER  
 No. 11425  
 TRINITY D. SMITH  
 11-18-14



REVISIONS

DATE	REVISION

LEGEND

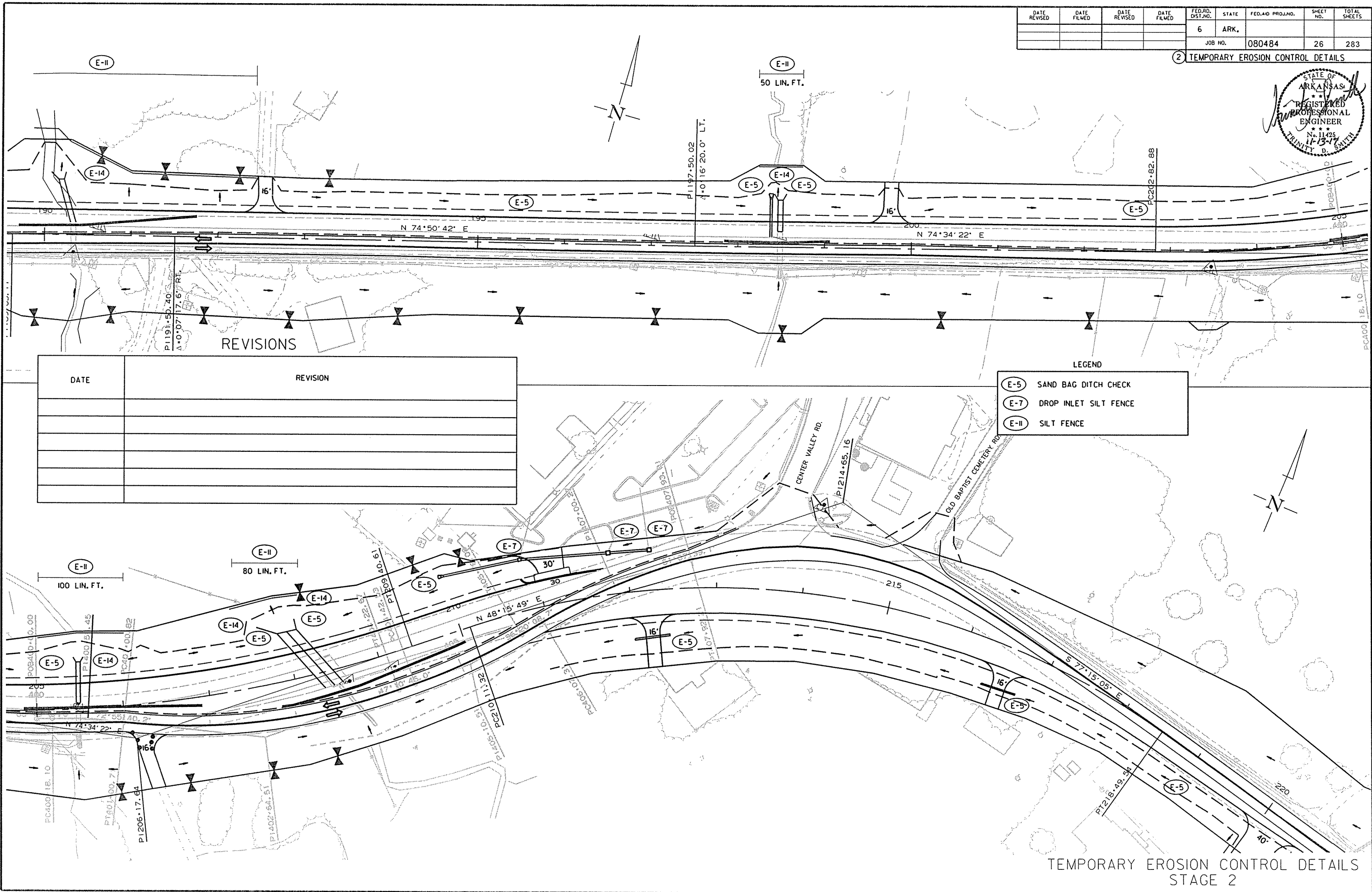
E-5	SAND BAG DITCH CHECK
E-II	SILT FENCE

8/26/2014  
 R080484.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.							080484	26	283

② TEMPORARY EROSION CONTROL DETAILS



DATE	REVISION

LEGEND

(E-5)	SAND BAG DITCH CHECK
(E-7)	DROP INLET SILT FENCE
(E-14)	SILT FENCE

R080484.DGN 8/26/2014

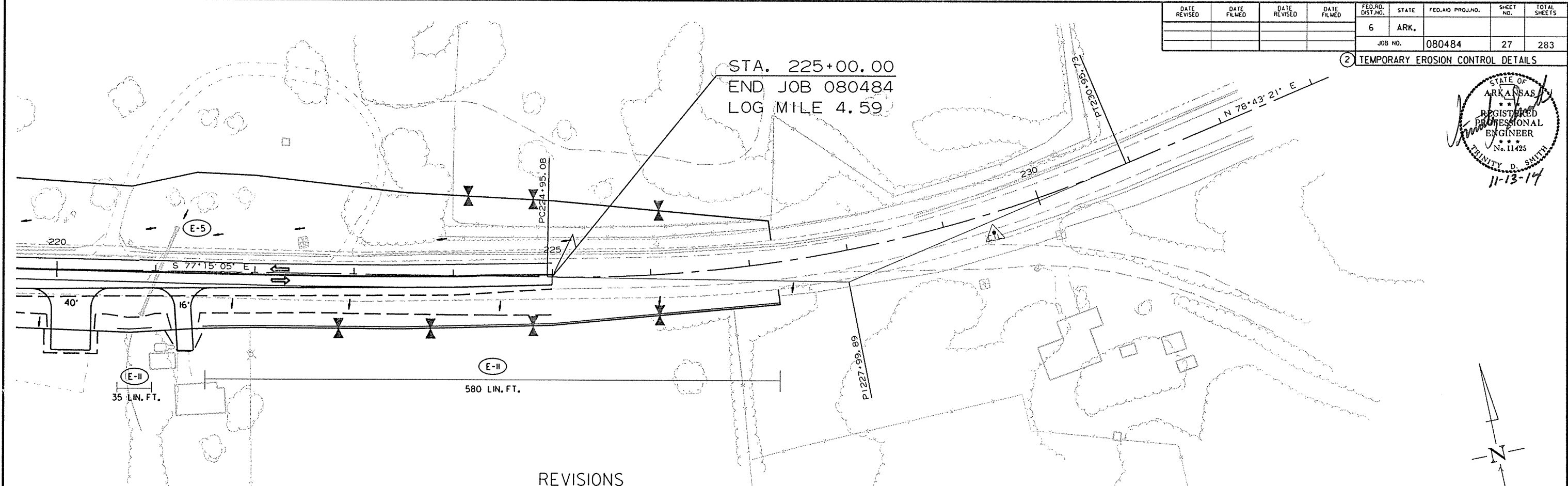
TEMPORARY EROSION CONTROL DETAILS  
STAGE 2

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.	080484		27	283

② TEMPORARY EROSION CONTROL DETAILS



STA. 225+00.00  
 END JOB 080484  
 LOG MILE 4.59



REVISIONS

LEGEND

(E-5)	SAND BAG DITCH CHECK
(E-II)	SILT FENCE

DATE	REVISION

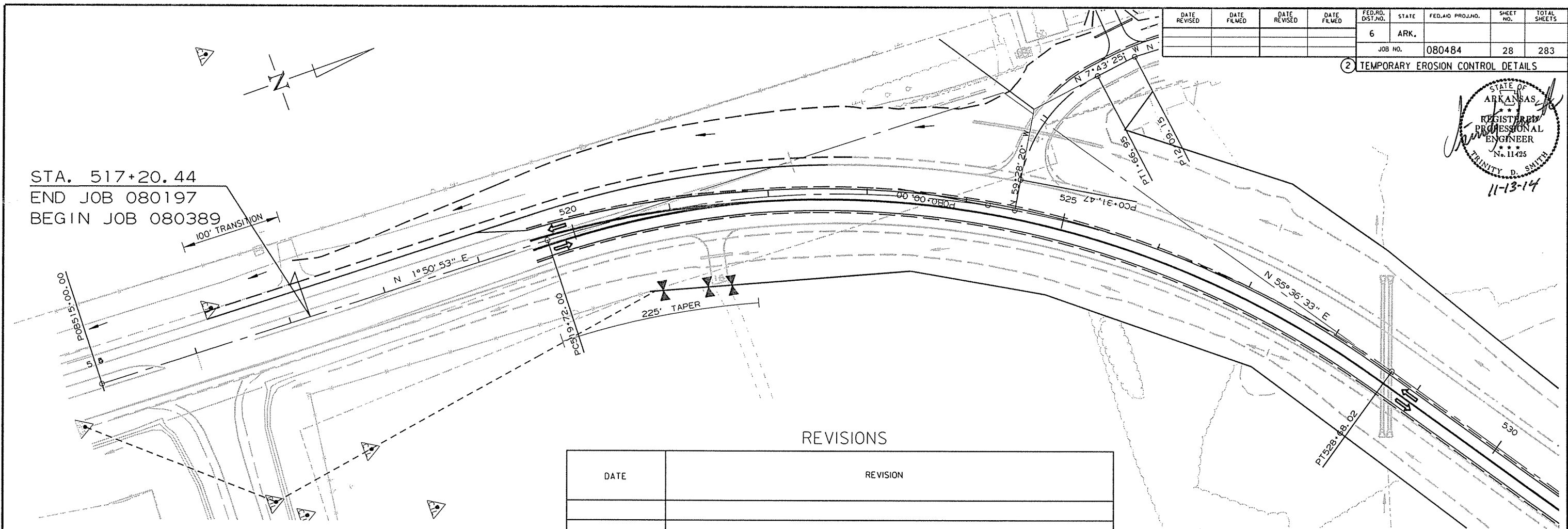
8/26/2014  
 R080484.DGN

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			

JOB NO. 080484 SHEET NO. 28 TOTAL SHEETS 283  
 ② TEMPORARY EROSION CONTROL DETAILS

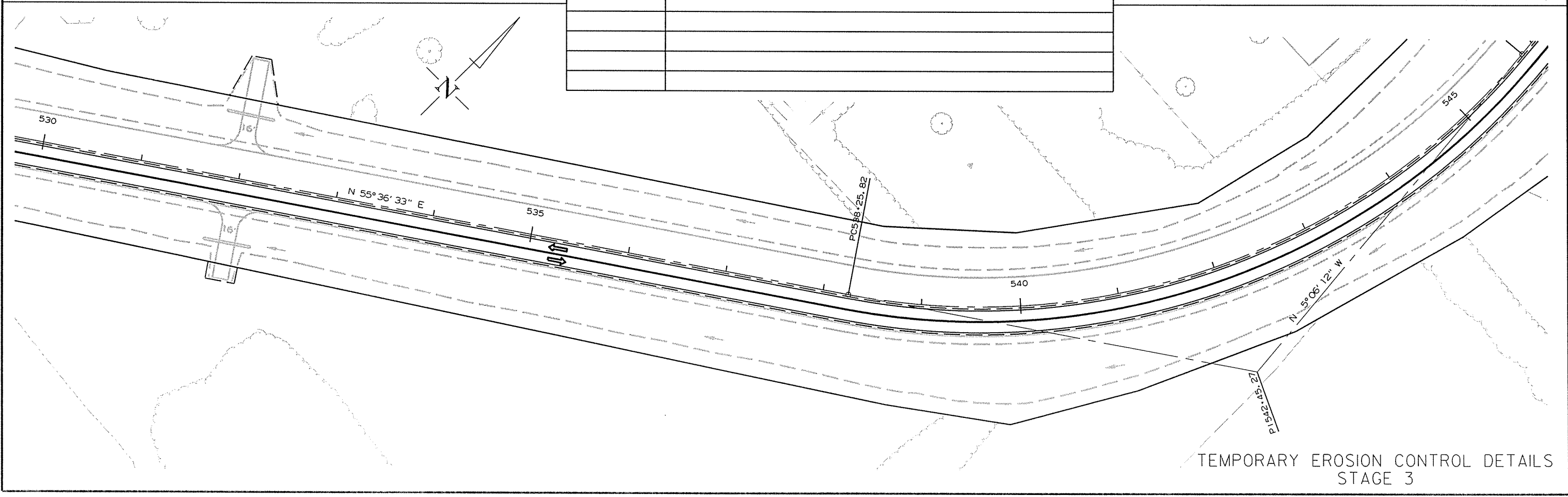


STA. 517+20.44  
 END JOB 080197  
 BEGIN JOB 080389



REVISIONS

DATE	REVISION

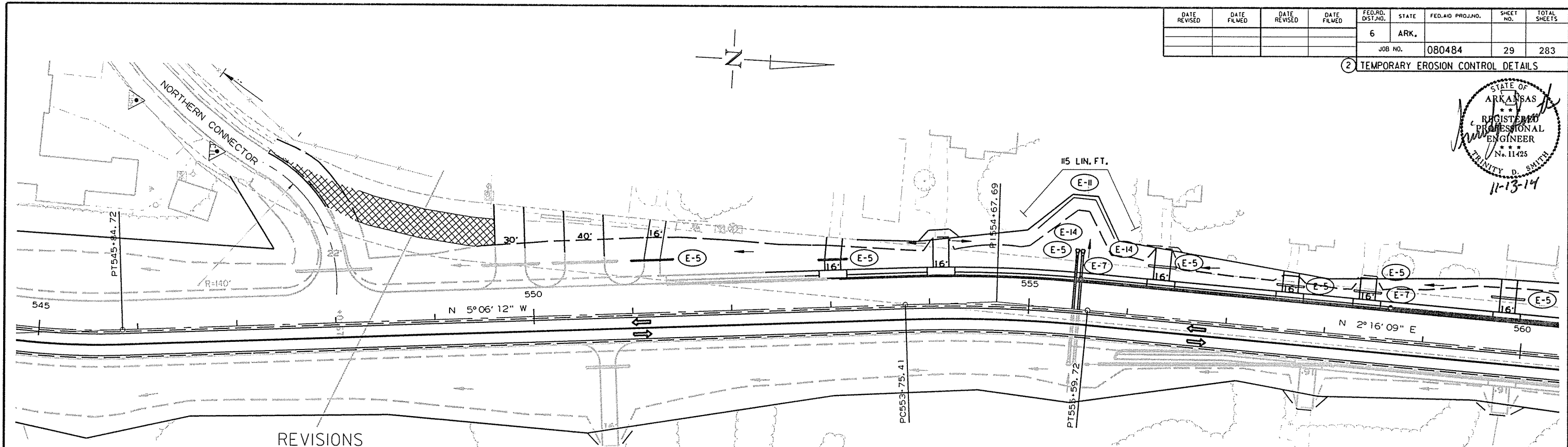
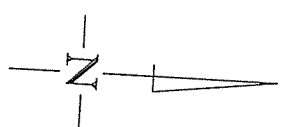


TEMPORARY EROSION CONTROL DETAILS  
 STAGE 3



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.	080484		29	283

2 TEMPORARY EROSION CONTROL DETAILS

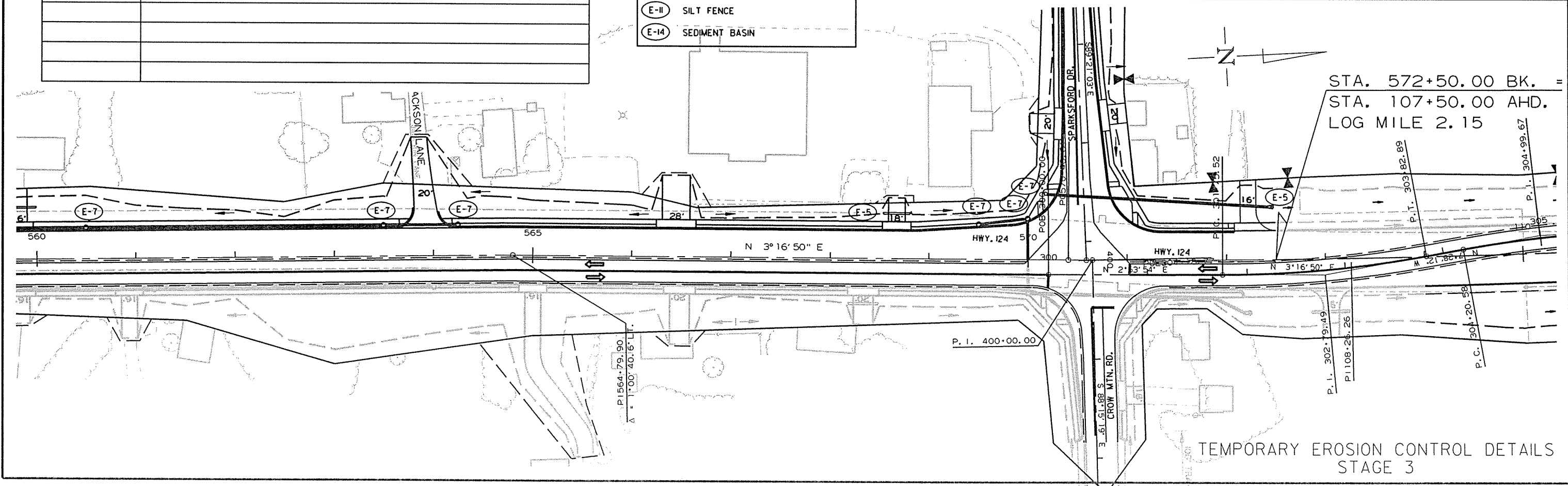


REVISIONS

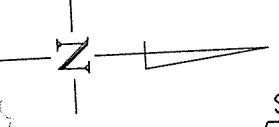
DATE	REVISION

LEGEND

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



STA. 572+50.00 BK. =  
STA. 107+50.00 AHD.  
LOG MILE 2.15



TEMPORARY EROSION CONTROL DETAILS  
STAGE 3

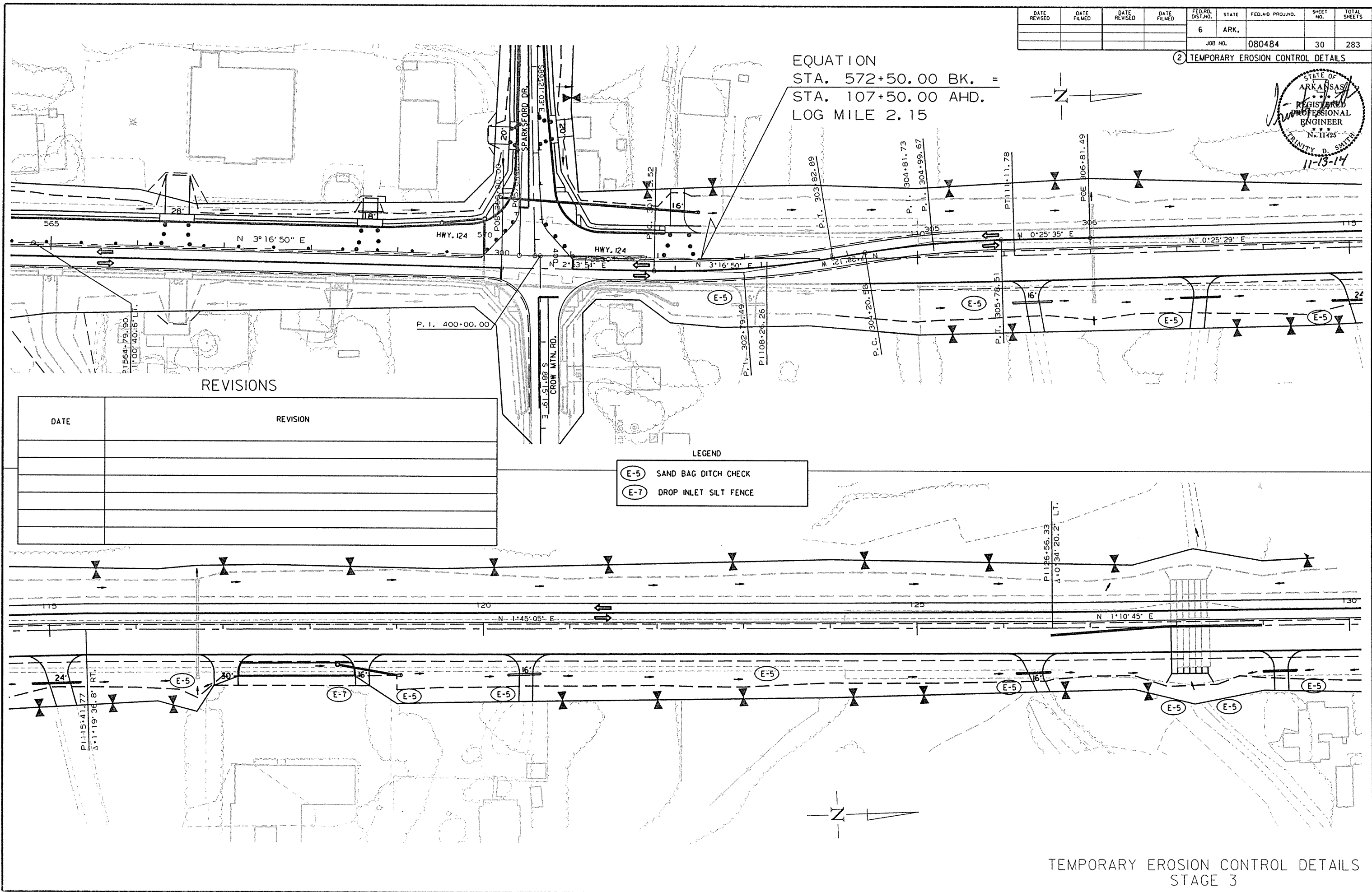
11/10/2014  
R080484.DGN

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. 080484							30	283

② TEMPORARY EROSION CONTROL DETAILS



EQUATION  
 STA. 572+50.00 BK. =  
 STA. 107+50.00 AHD.  
 LOG MILE 2.15



REVISIONS

DATE	REVISION

LEGEND

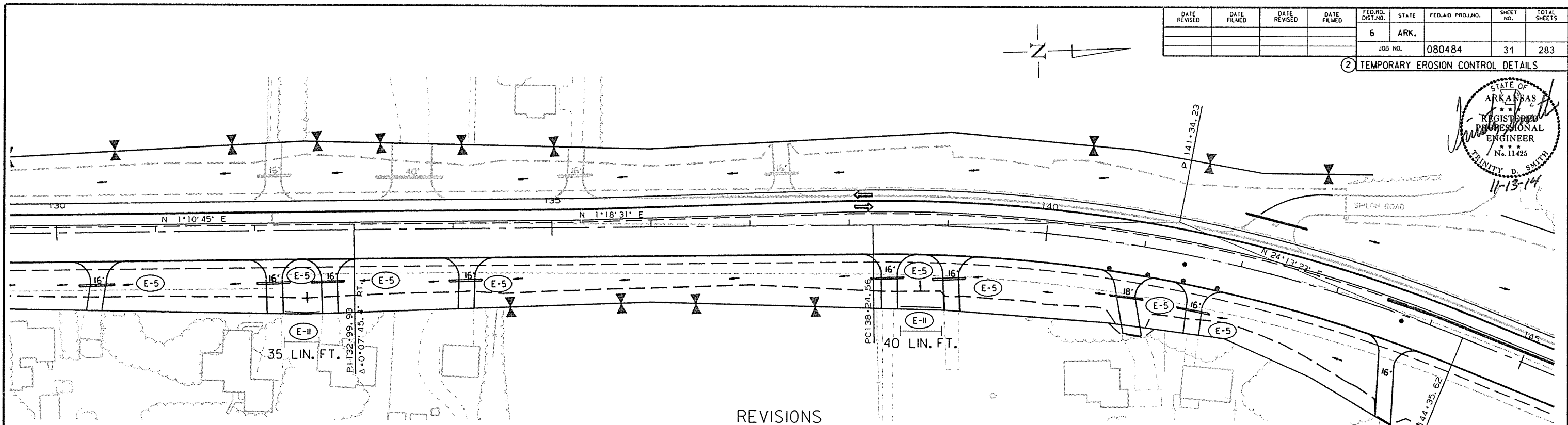
	SAND BAG DITCH CHECK
	DROP INLET SILT FENCE

8/26/2014  
 R080484.DCN

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		31	283
				JOB NO.	080484			

② TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS  
 REGISTERED PROFESSIONAL ENGINEER  
 No. 11425  
 TRINITY D. SMITH  
 11-13-14

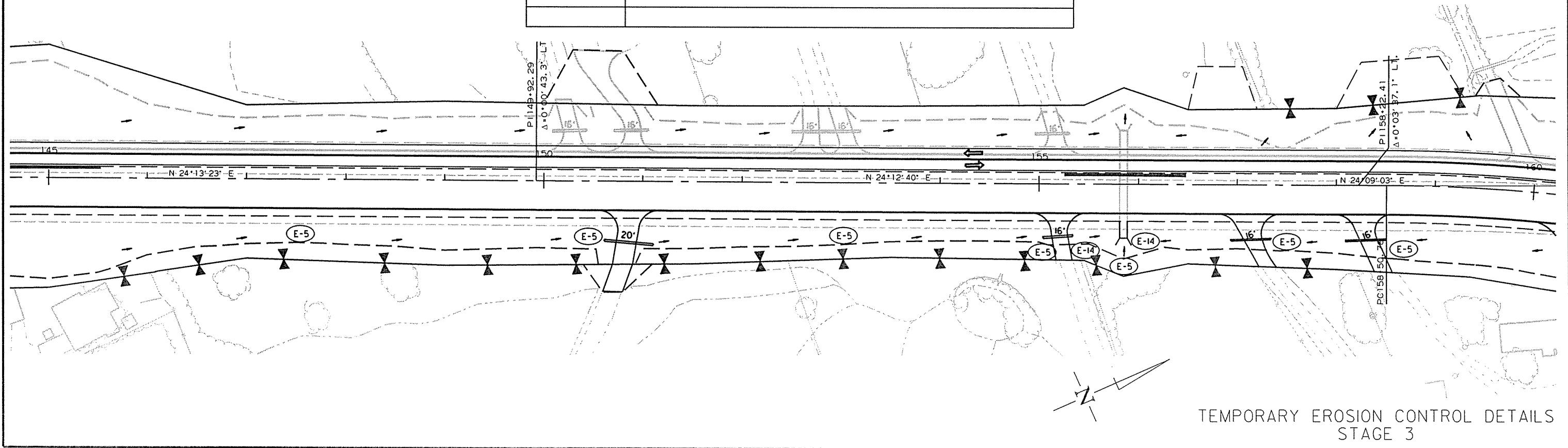


REVISIONS

DATE	REVISION

LEGEND

(E-5)	SAND BAG DITCH CHECK
(E-II)	SILT FENCE
(E-14)	SEDIMENT BASIN

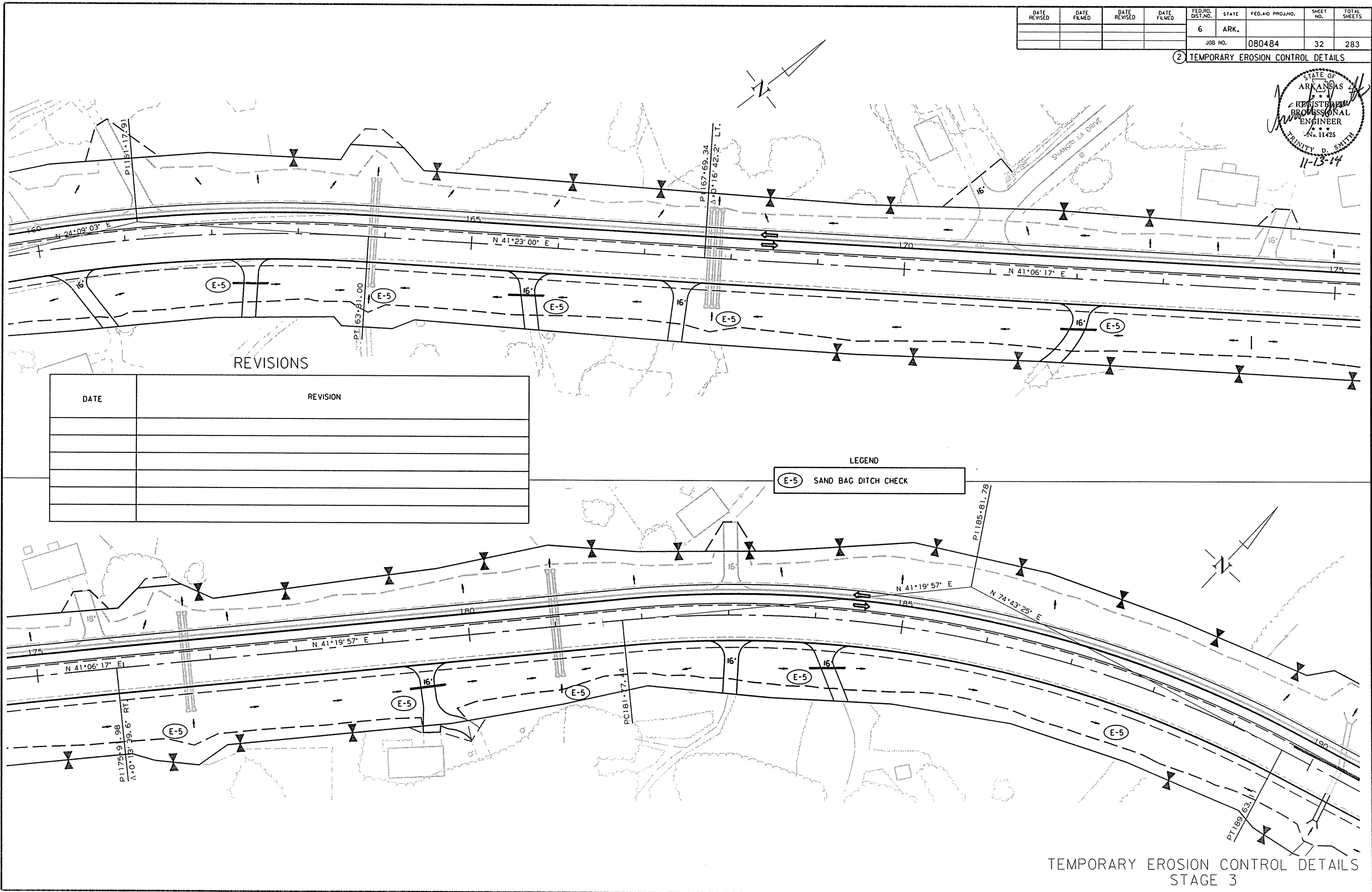


TEMPORARY EROSION CONTROL DETAILS  
 STAGE 3

8/26/2014  
 R080484.DCN

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	080484		32	283

② TEMPORARY EROSION CONTROL DETAILS



REVISIONS

DATE	REVISION

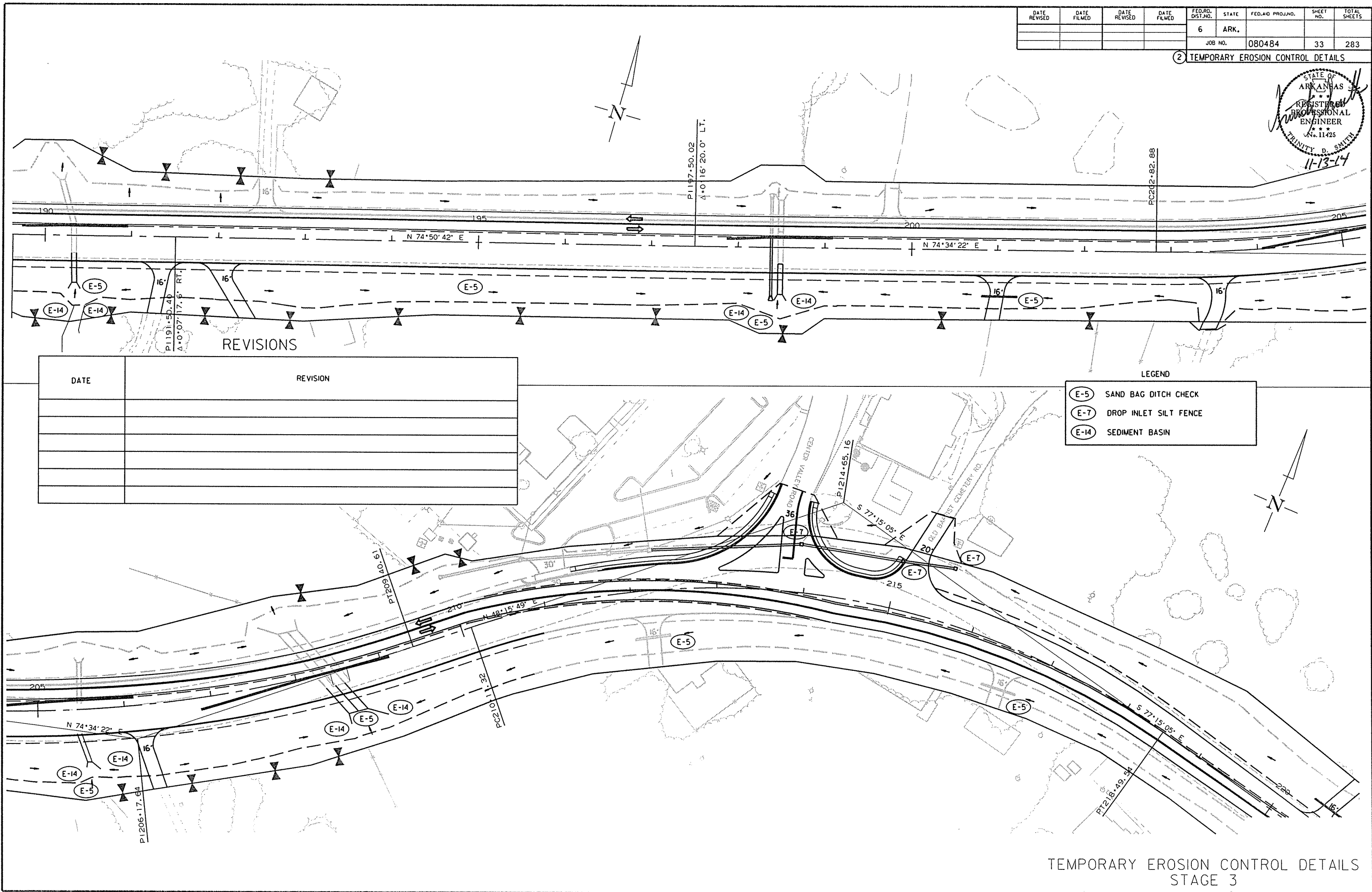
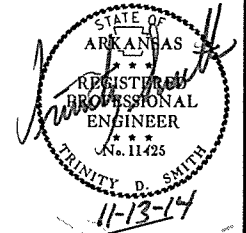
LEGEND

E-5 SAND BAG DITCH CHECK

8/26/2014  
R080484.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.	080484		33	283

② TEMPORARY EROSION CONTROL DETAILS



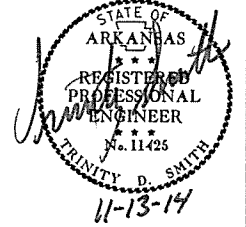
DATE	REVISION

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

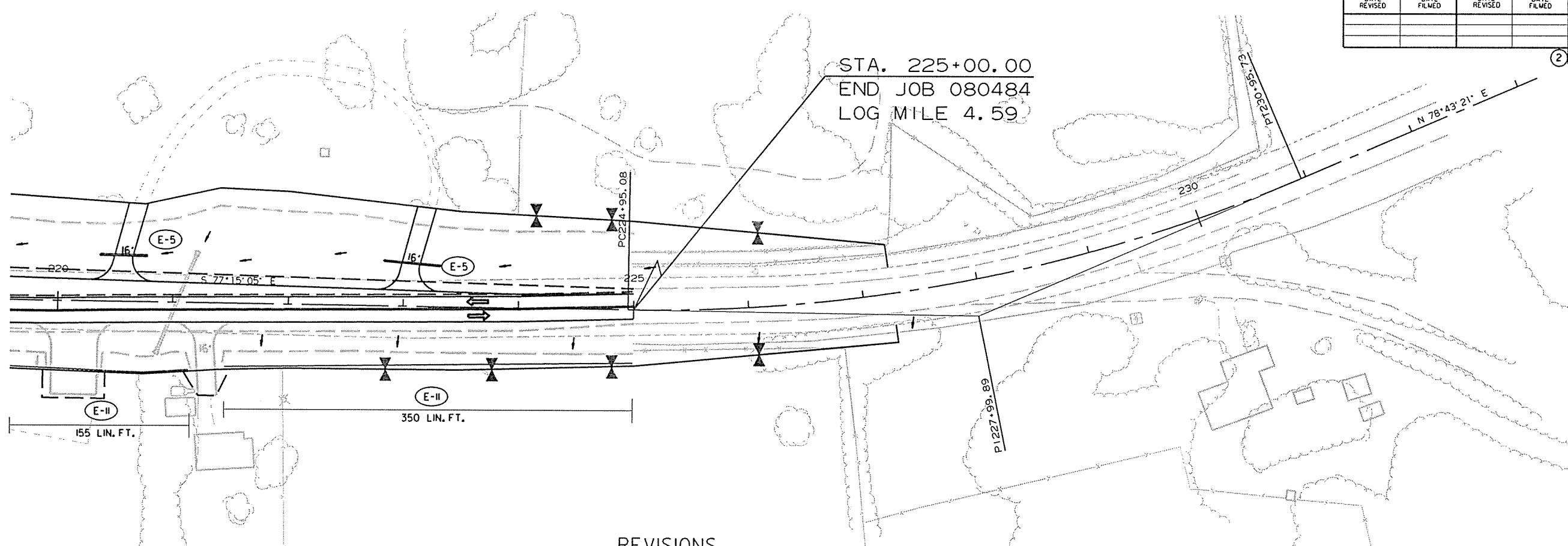
8/26/2014  
R080484.DGN

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.	080484		34	283

② TEMPORARY EROSION CONTROL DETAILS



STA. 225+00.00  
END JOB 080484  
LOG MILE 4.59



REVISIONS

LEGEND

(E-5)	SAND BAG DITCH CHECK
(E-II)	SILT FENCE

DATE	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.	080484
							SHEET NO.	35
							TOTAL SHEETS	283

② MAINTENANCE OF TRAFFIC DETAILS



STAGE 1:  
 INSTALL ADVANCE WARNING SIGNS  
 LEVEL EXISTING ROADWAY LANES CORRECTING LEFT LANE FOR NEW CROWN.  
 INSTALL CONSTRUCTION PAVEMENT MARKINGS TO MAINTAIN TRAFFIC ON EXISTING ROADWAY.  
 CONSTRUCT TEMPORARY WIDENING FROM STA. 563+50 TO STA. 571+00 ON LEFT AND FROM STA. 161+10 TO 205+00 ON RIGHT AS SHOWN BELOW.  
 CONSTRUCT CROSS DRAINS AND MINOR DRAINAGE STRUCTURES.  
 INSTALL 36" X 53" TEMPORARY PIPE CULVERT AND CONSTRUCT DETOUR FROM STA. 205+00 TO STA. 212+00 ON RIGHT.  
 FURNISH AND INSTALL TEMPORARY PRECAST CONCRETE BARRIER ON THE LEFT SIDE OF THE EXISTING ROADWAY TO CONSTRUCT & EXTEND EXISTING R.C. BOX CULVERTS AT THE FOLLOWING LOCATIONS:  
 STA. 127+33 TO STA. 129+79, STA. 143+47 TO STA. 145+40, STA. 155+21 TO 157+27, STA. 189+68 TO STA. 191+74, STA. 197+84 TO 198+97, STA. 204+85 TO STA. 206+91 AND STA. 207+79 TO 210+05.  
 DELINEATE THE WORK ZONE USING VERTICAL PANELS AT 40' O.C.

STAGE 2:  
 MAINTAIN TRAFFIC ON EXISTING ROADWAY AND CONSTRUCT LEFT SIDE OF HWY. 124 DELINEATING THE WORK ZONE USING VERTICAL PANELS AT 40' O.C. ON THE SIDE BEING WIDENED.

CONSTRUCT FULL DEPTH SHOULDER FROM STA. 135+30 TO STA. 208+20 TO RUN TRAFFIC ON STAGE 3.  
 CONSTRUCT MINOR DRAINAGE STRUCTURES ON THE LEFT SIDE OF HWY. 124.  
 CONSTRUCT LEFT SIDE OF R.C. BOX CULVERTS AT STA. 128+19, STA. 155+85, STA. 190+33, AND STA. 198+49.  
 SHIFT TRAFFIC TO DETOUR ROAD FROM STA. 205+00 TO STA. 212+00 AND CONSTRUCT PORTION OF R.C. BOX CULVERT AT STA. 208+34 ON LT.  
 DELINEATE CITY STREETS AND DRIVEWAYS THROUGHOUT THE PROJECT USING TRAFFIC DRUMS (6 PER TURNOUT) ON THE SIDE BEING WIDENED.

STAGE 3:  
 REMOVE THE CONFLICTING PAVEMENT MARKINGS AND STRIPE THE LEFT SIDE OF HWY. 124 USING A DBL. YELLOW LINE AND LEFT AND RIGHT EDGE LINES AS SHOWN.  
 RELOCATE THE TEMPORARY PRECAST CONCRETE BARRIER FOR STAGE 3 TRAFFIC AND SHIFT TRAFFIC ONTO LEFT SIDE OF HWY. 124.

CONSTRUCT THE RIGHT SIDE OF HWY. 124 DELINEATING THE WORK ZONE USING VERTICAL PANELS AT 40' O.C. ON THE SIDE BEING WIDENED AND TRAFFIC DRUMS AT 80' O.C. SPACING AT EXISTING LANE EDGE ON LEFT.

SHIFT TRAFFIC TO THE RIGHT SIDE HWY. 124 FROM STA. 107+50 TO 110+00.

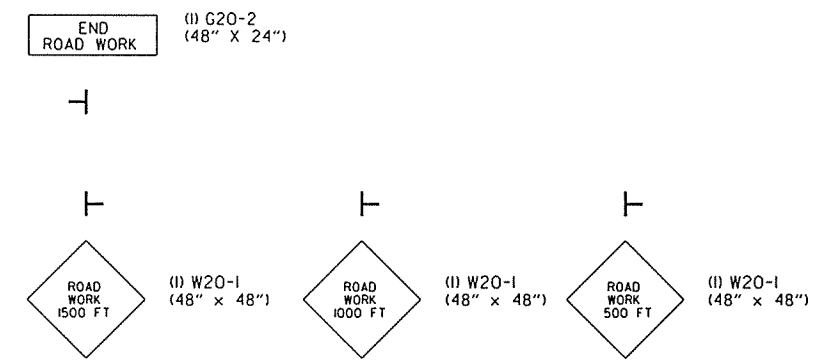
CONSTRUCT THE REMAINDER OF THE PROPOSE R.C. BOX CULVERTS AND MINOR DRAINAGE STRUCTURES ON THE RIGHT SIDE OF HWY. 124 AND REMOVE DETOUR.

CONSTRUCT A PORTION OF CONCRETE ISLAND AT THE INTERSECTION OF HWY. 124 & CENTER VALLEY RD. CONSTRUCT THE REMAINING CONCRETE ISLAND AFTER ALL WIDENING HAS BEEN COMPLETED.

DELINEATE CITY STREETS AND DRIVEWAYS THROUGHOUT THE PROJECT USING TRAFFIC DRUMS (6 PER TURNOUT) ON THE SIDE BEING WIDENED.

APPLY THE FINAL 2" OF ACHM SURFACE AFTER ALL WIDENING HAS BEEN COMPLETED.

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.



ADVANCE WARNING SIGNS

11/10/2014  
 R080484.DGN

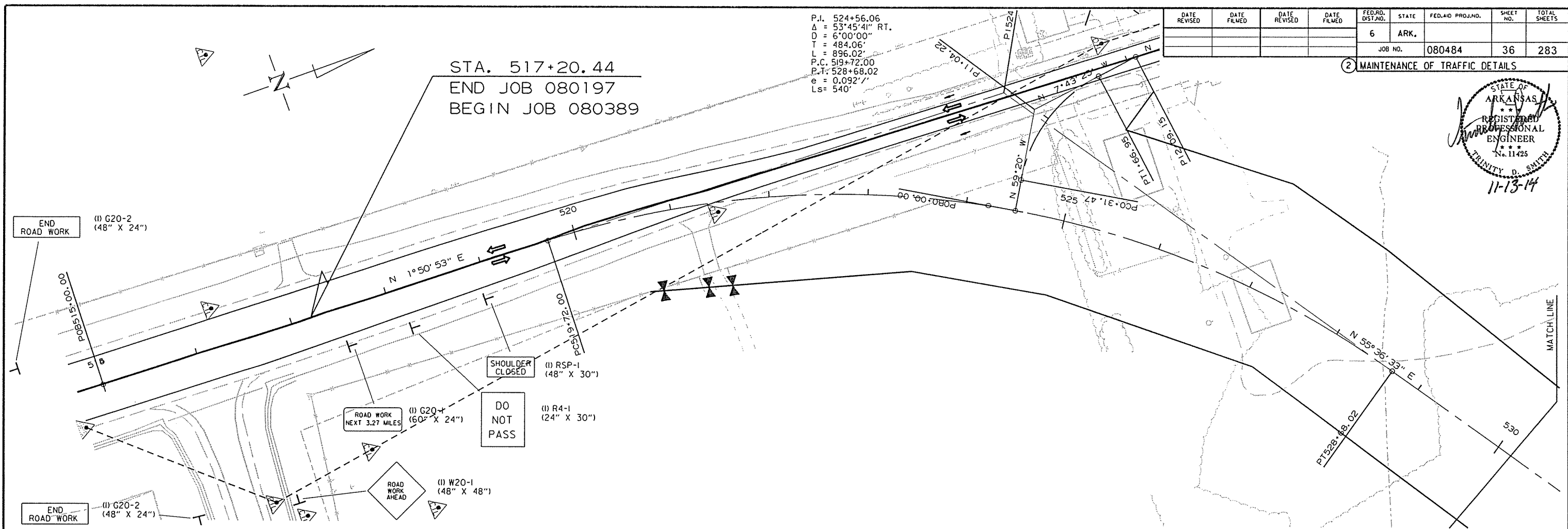
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 080484							36	283

② MAINTENANCE OF TRAFFIC DETAILS

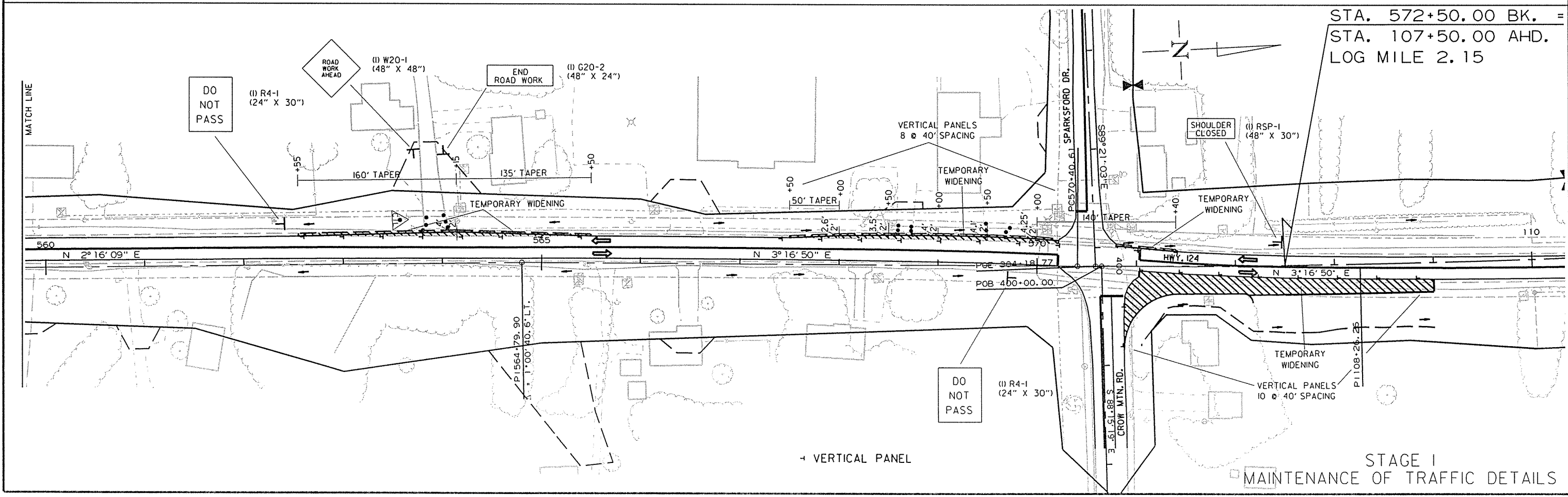


P.I. 524+56.06  
 $\Delta = 53^\circ 45' 41''$  RT.  
 $D = 6^\circ 00' 00''$   
 $T = 484.06'$   
 $L = 896.02'$   
 $P.C. = 519+72.00$   
 $P.T. = 528+68.02$   
 $e = 0.092' /'$   
 $LS = 540'$

STA. 517+20.44  
 END JOB 080197  
 BEGIN JOB 080389



STA. 572+50.00 BK. =  
 STA. 107+50.00 AHD.  
 LOG MILE 2.15

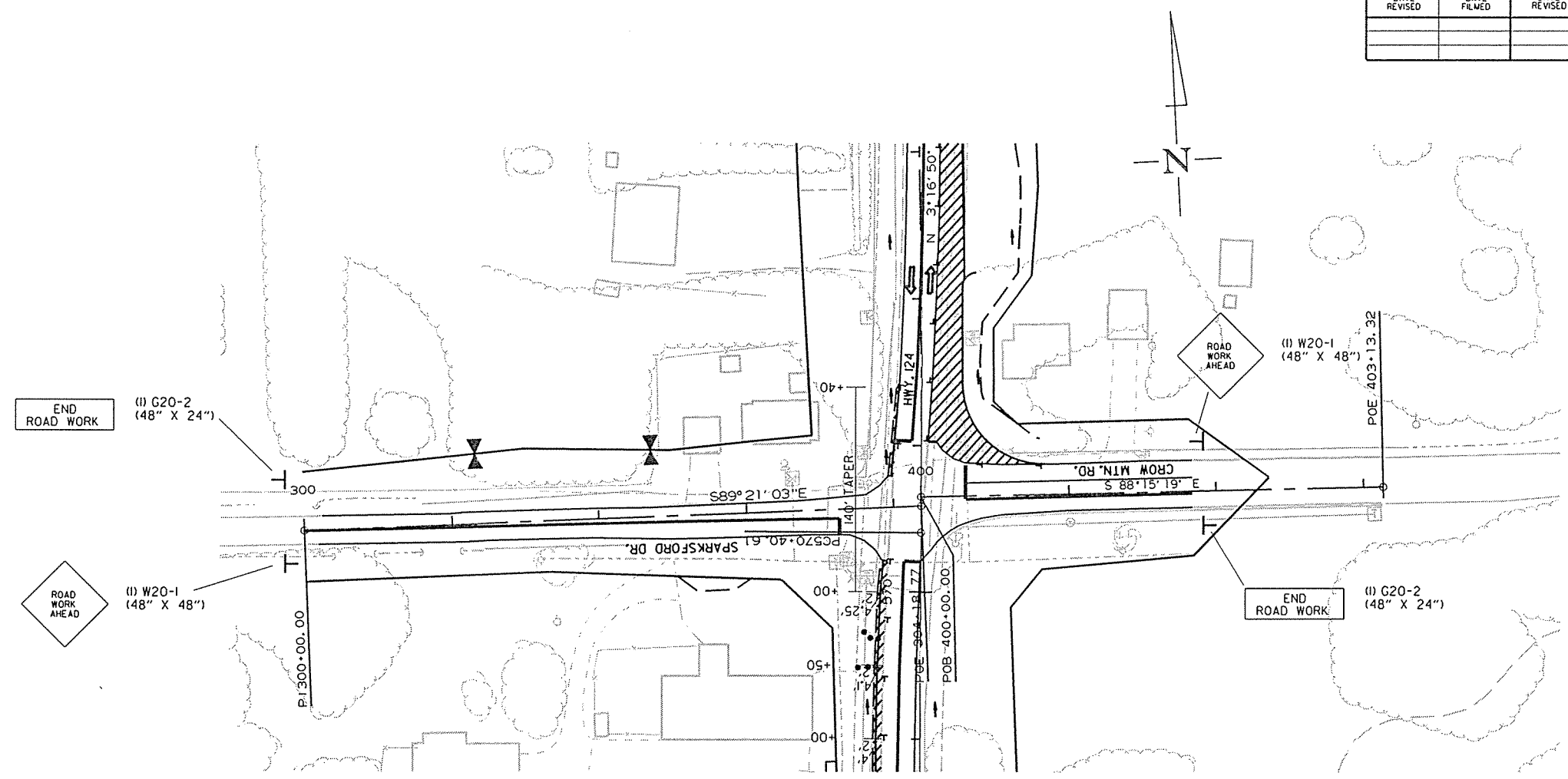
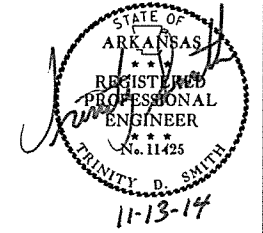


STAGE I  
 MAINTENANCE OF TRAFFIC DETAILS

11/10/2014  
 R080484.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. 080484	37	283

② MAINTENANCE OF TRAFFIC DETAILS



11/10/2014  
R080484.DGN

STAGE I  
MAINTENANCE OF TRAFFIC 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. 080484							38	283

② MAINTENANCE OF TRAFFIC DETAILS



STAGE 1:  
 INSTALL ADVANCE WARNING SIGNS  
 LEVEL EXISTING ROADWAY LANES CORRECTING LEFT LANE FOR NEW CROWN.  
 INSTALL CONSTRUCTION PAVEMENT MARKINGS TO MAINTAIN TRAFFIC ON EXISTING ROADWAY.  
 CONSTRUCT TEMPORARY WIDENING FROM STA. 563+50 TO STA. 571+00 ON LEFT AND FROM STA. 161+10 TO 205+00 ON RIGHT AS SHOWN BELOW.  
 CONSTRUCT CROSS DRAINS AND MINOR DRAINAGE STRUCTURES.

INSTALL 36" X 53" TEMPORARY PIPE CULVERT AND CONSTRUCT DETOUR FROM STA. 205+00 TO STA. 212+00 ON RIGHT.  
 FURNISH AND INSTALL TEMPORARY PRECAST CONCRETE BARRIER ON THE LEFT SIDE OF THE EXISTING ROADWAY TO CONSTRUCT & EXTEND EXISTING R.C. BOX CULVERTS AT THE FOLLOWING LOCATIONS:  
 STA. 127+33 TO STA. 129+79, STA. 143+47 TO STA. 145+40, STA. 155+21 TO 157+27, STA. 189+68 TO STA. 191+74, STA. 197+84 TO 198+97, STA. 204+85 TO STA. 206+91 AND STA. 207+79 TO 210+05.

DELINEATE THE WORK ZONE USING VERTICAL PANELS AT 40' O.C.

STAGE 2:  
 MAINTAIN TRAFFIC ON EXISTING ROADWAY AND CONSTRUCT LEFT SIDE OF HWY. 124 DELINEATING THE WORK ZONE USING VERTICAL PANELS AT 40' O.C. ON THE SIDE BEING WIDENED.

CONSTRUCT FULL DEPTH SHOULDER FROM STA. 135+30 TO STA. 208+20 TO RUN TRAFFIC ON STAGE 3.  
 CONSTRUCT MINOR DRAINAGE STRUCTURES ON THE LEFT SIDE OF HWY. 124.  
 CONSTRUCT LEFT SIDE OF R.C. BOX CULVERTS AT STA. 128+19, STA. 155+85, STA. 190+33, AND STA. 198+49.  
 SHIFT TRAFFIC TO DETOUR ROAD FROM STA. 205+00 TO STA. 212+00 AND CONSTRUCT PORTION OF R.C. BOX CULVERT AT STA. 208+34 ON LT.

DELINEATE CITY STREETS AND DRIVEWAYS THROUGHOUT THE PROJECT USING TRAFFIC DRUMS (6 PER TURNOUT) ON THE SIDE BEING WIDENED.

STAGE 3:  
 REMOVE THE CONFLICTING PAVEMENT MARKINGS AND STRIPE THE LEFT SIDE OF HWY. 124 USING A DBL. YELLOW LINE AND LEFT AND RIGHT EDGE LINES AS SHOWN.  
 RELOCATE THE TEMPORARY PRECAST CONCRETE BARRIER FOR STAGE 3 TRAFFIC AND SHIFT TRAFFIC ONTO LEFT SIDE OF HWY. 124.

CONSTRUCT THE RIGHT SIDE OF HWY. 124 DELINEATING THE WORK ZONE USING VERTICAL PANELS AT 40' O.C. ON THE SIDE BEING WIDENED AND TRAFFIC DRUMS AT 80' O.C. SPACING AT EXISTING LANE EDGE ON LEFT.

SHIFT TRAFFIC TO THE RIGHT SIDE HWY. 124 FROM STA. 107+50 TO 110+00.

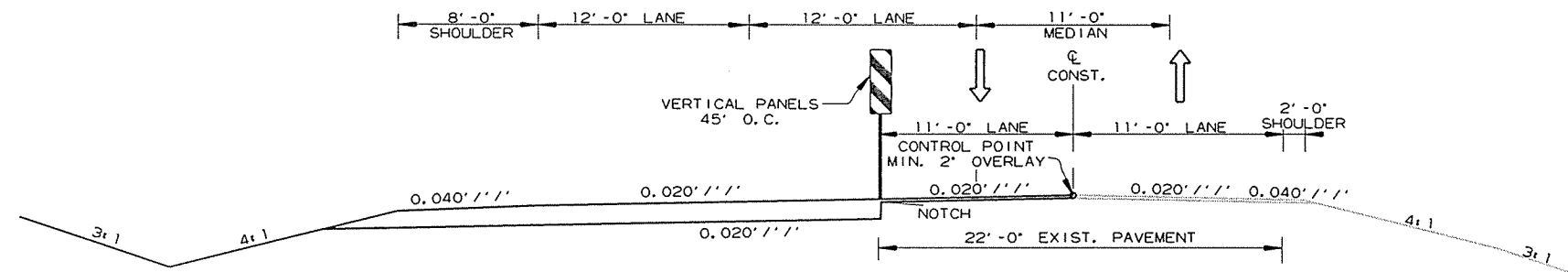
CONSTRUCT THE REMAINDER OF THE PROPOSE R.C. BOX CULVERTS AND MINOR DRAINAGE STRUCTURES ON THE RIGHT SIDE OF HWY. 124 AND REMOVE DETOUR.

CONSTRUCT A PORTION OF CONCRETE ISLAND AT THE INTERSECTION OF HWY. 124 & CENTER VALLEY RD. CONSTRUCT THE REMAINING CONCRETE ISLAND AFTER ALL WIDENING HAS BEEN COMPLETED.

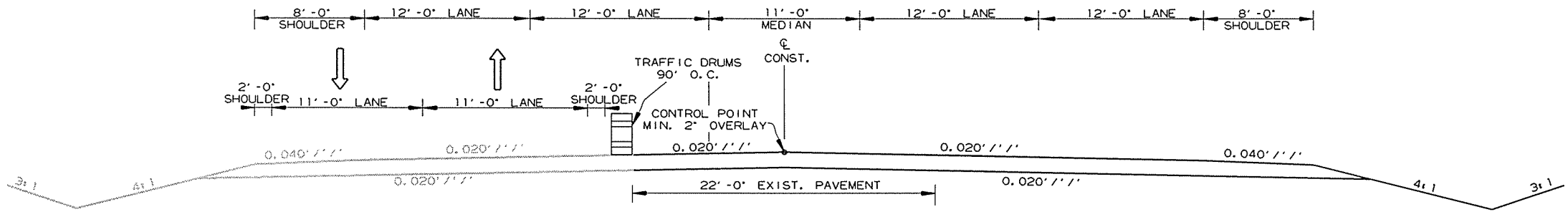
DELINEATE CITY STREETS AND DRIVEWAYS THROUGHOUT THE PROJECT USING TRAFFIC DRUMS (6 PER TURNOUT) ON THE SIDE BEING WIDENED.

APPLY THE FINAL 2" OF ACHM SURFACE AFTER ALL WIDENING HAS BEEN COMPLETED.

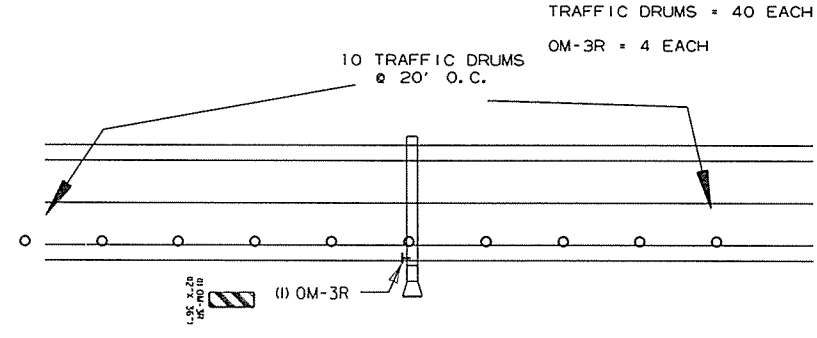
THE QUANTITY OF VERTICAL PANELS PROVIDED IN THE CONTRACT IS FOR ONE SIDE OF THE ROADWAY FOR 2 MILES. THIS IS THE MAXIMUM QUANTITY REQUIRED TO ALLOW THE CONTRACTOR TO NOTCH ONE MILE, BACKFILL TO A POINT WHERE THE VERTICAL DIFFERENTIAL IS 4" OR LESS, AND THEN NOTCH ANOTHER ONE-MILE SECTION. THIS IS THE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



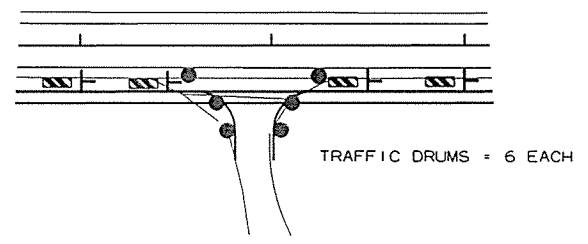
OVERLAY TANGENT - NORTHBOUND (LEFT SIDE) WIDENING



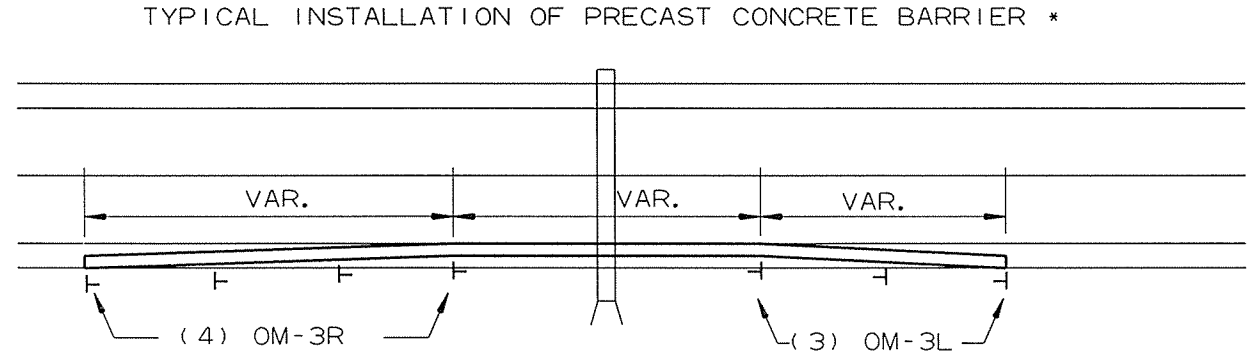
OVERLAY TANGENT - NORTHBOUND (RIGHT SIDE) WIDENING



TRAFFIC DRUMS ON EXISTING SHOULDER FOR EXTENDING PIPE CULVERTS LT. AND RT.



DRIVEWAY/TRAFFIC DRUM DETAIL



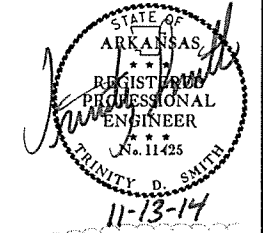
\* TO BE INSTALLED AT LOCATIONS DETERMINED BY THE ENGINEER

8/26/2014

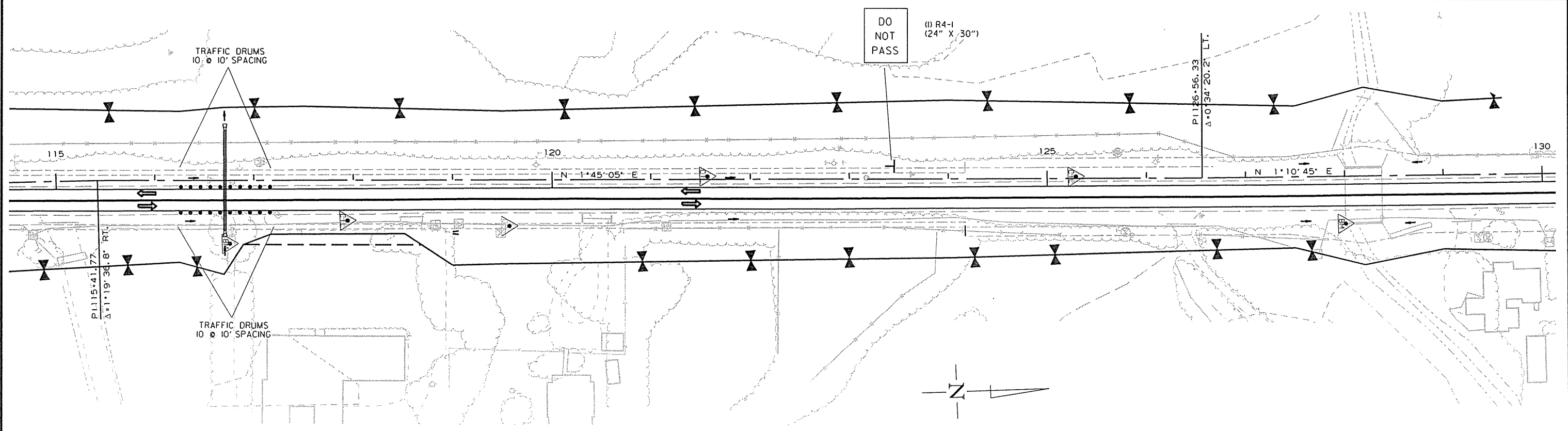
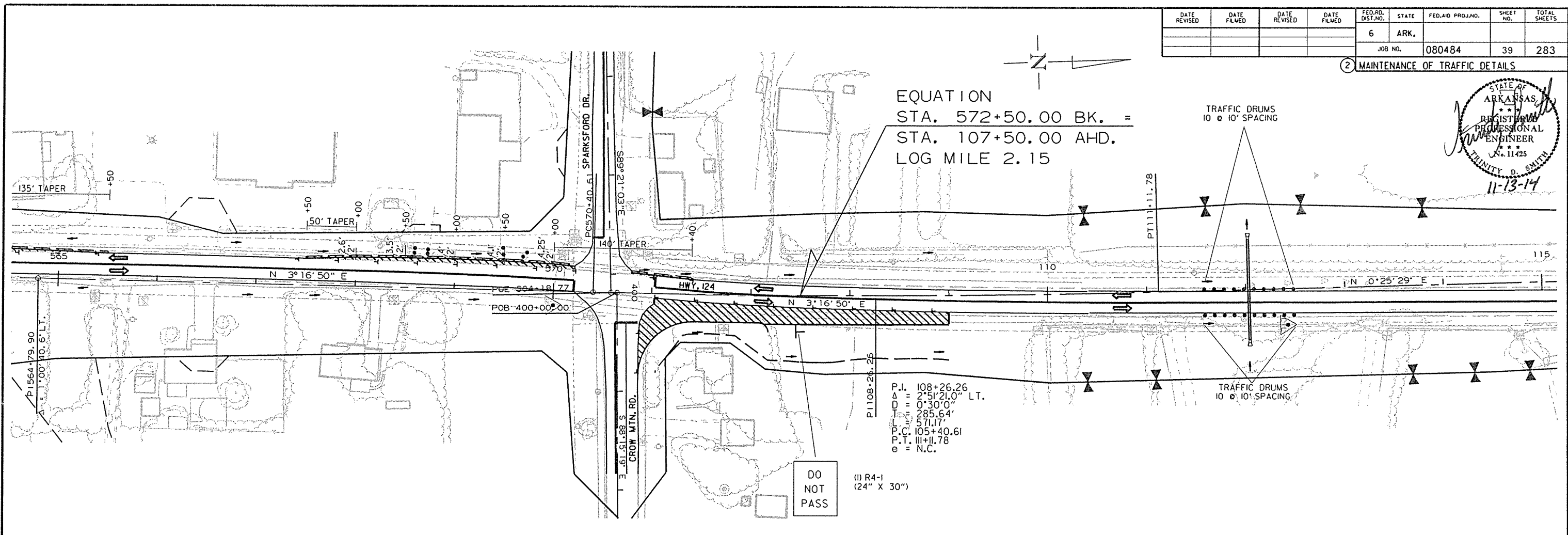
RO80484.DGN

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. 080484							39	283

② MAINTENANCE OF TRAFFIC DETAILS



EQUATION  
 STA. 572+50.00 BK. =  
 STA. 107+50.00 AHD.  
 LOG MILE 2.15



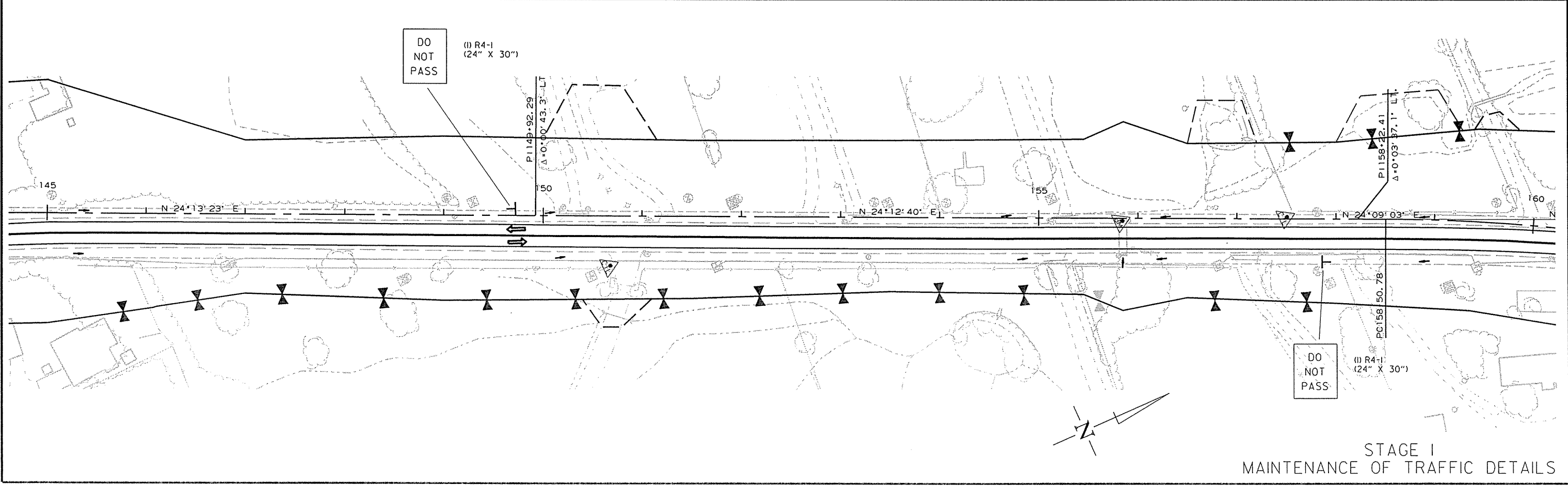
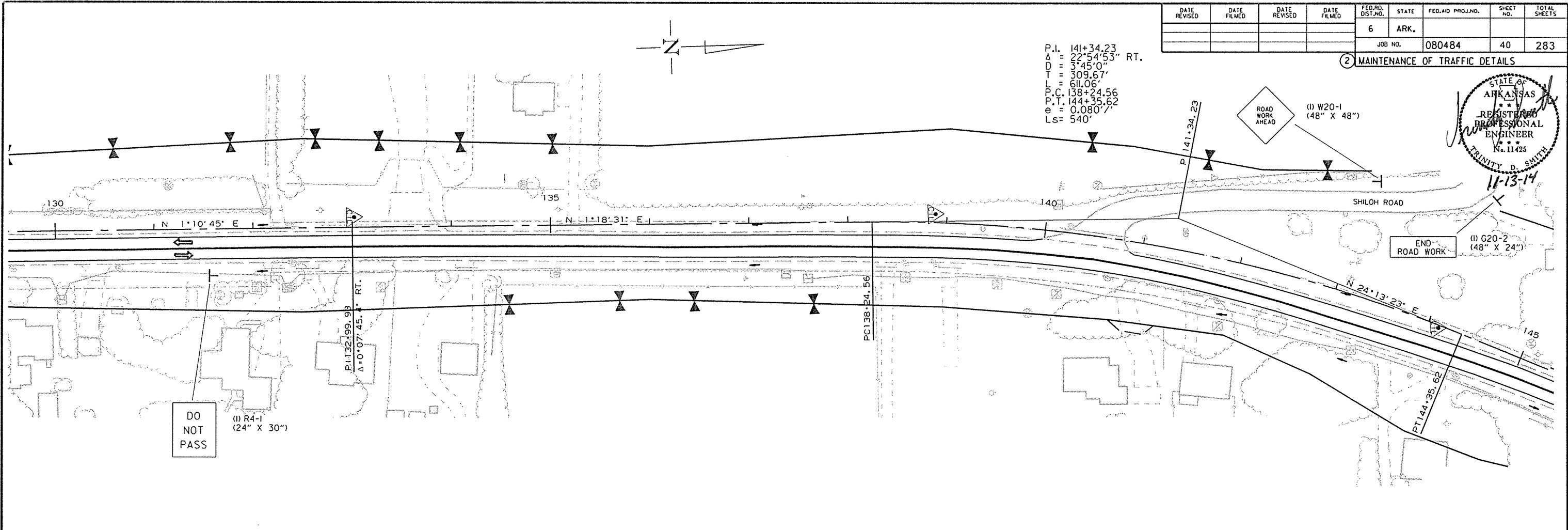
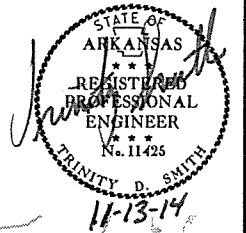
STAGE I  
 MAINTENANCE OF TRAFFIC DETAILS

8/26/2014  
 R080484.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	080484	40	283

② MAINTENANCE OF TRAFFIC DETAILS

P.I. 141+34.23  
 $\Delta = 22^{\circ}54'53''$  RT.  
D = 3'45'0"  
T = 309.67'  
L = 611.06'  
P.C. 138+24.56  
P.T. 144+35.62  
e = 0.0807'  
LS = 540'



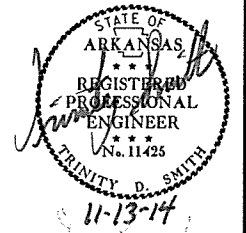
STAGE I  
MAINTENANCE OF TRAFFIC DETAILS

8/26/2014  
RO80484.DGN

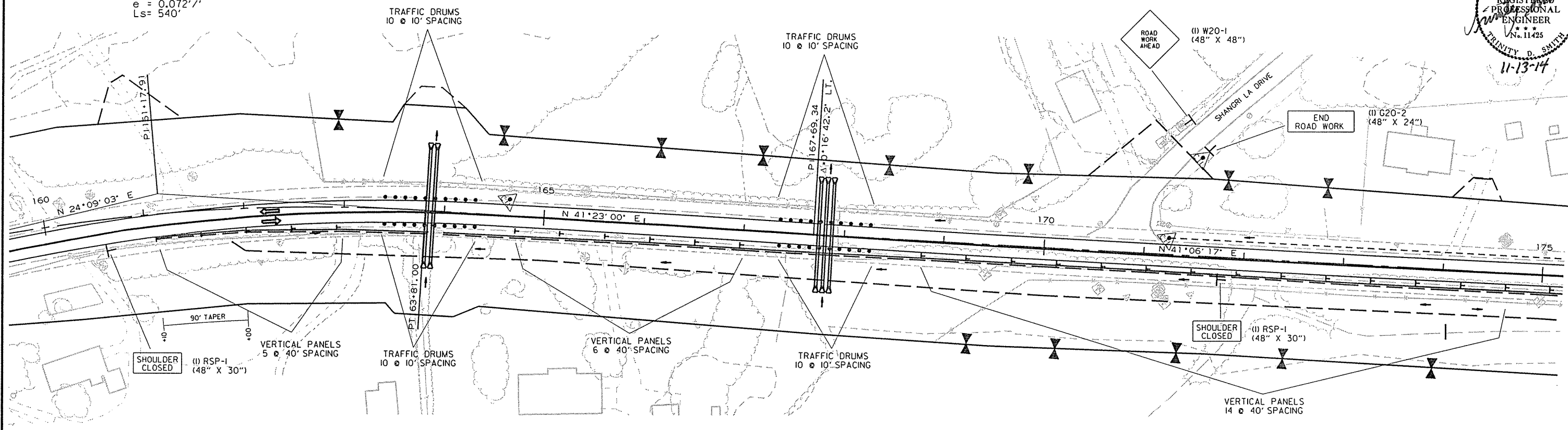


DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		41	283
				JOB NO.		080484		

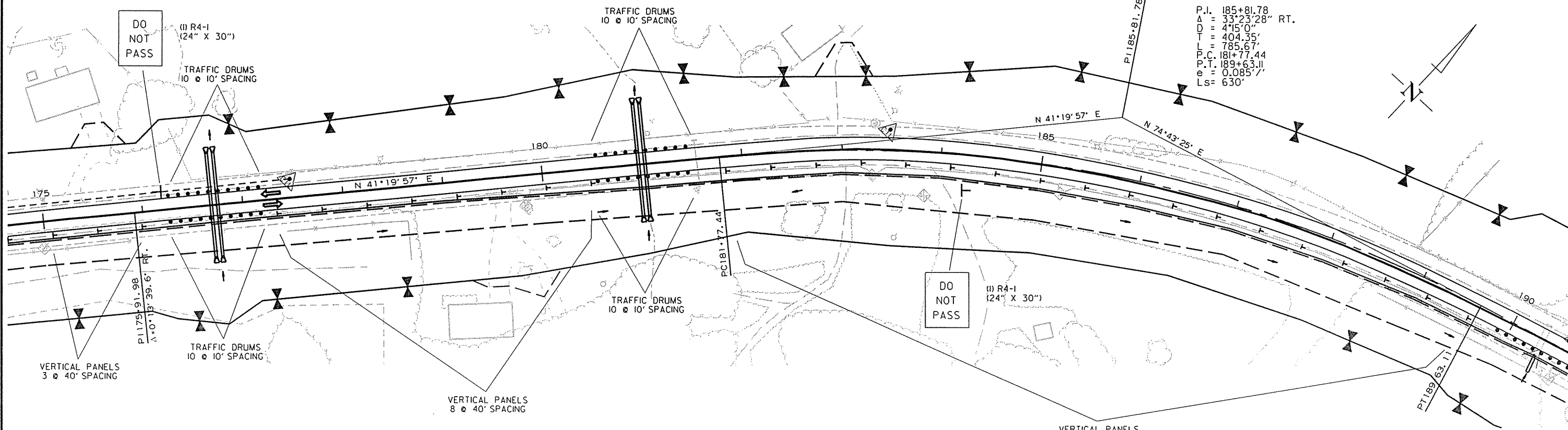
② MAINTENANCE OF TRAFFIC DETAILS



P.I. 161+17.91  
 $\Delta = 17^{\circ}13'56''$  RT.  
 $D = 3^{\circ}15'0''$   
 $T = 267.13'$   
 $L = 530.23'$   
 $P.C. = 158+50.78$   
 $P.T. = 163+81.00$   
 $e = 0.0727'$   
 $LS = 540'$



P.I. 185+81.78  
 $\Delta = 33^{\circ}23'28''$  RT.  
 $D = 4^{\circ}15'0''$   
 $T = 404.35'$   
 $L = 785.67'$   
 $P.C. = 181+77.44$   
 $P.T. = 189+63.11$   
 $e = 0.0857'$   
 $LS = 630'$

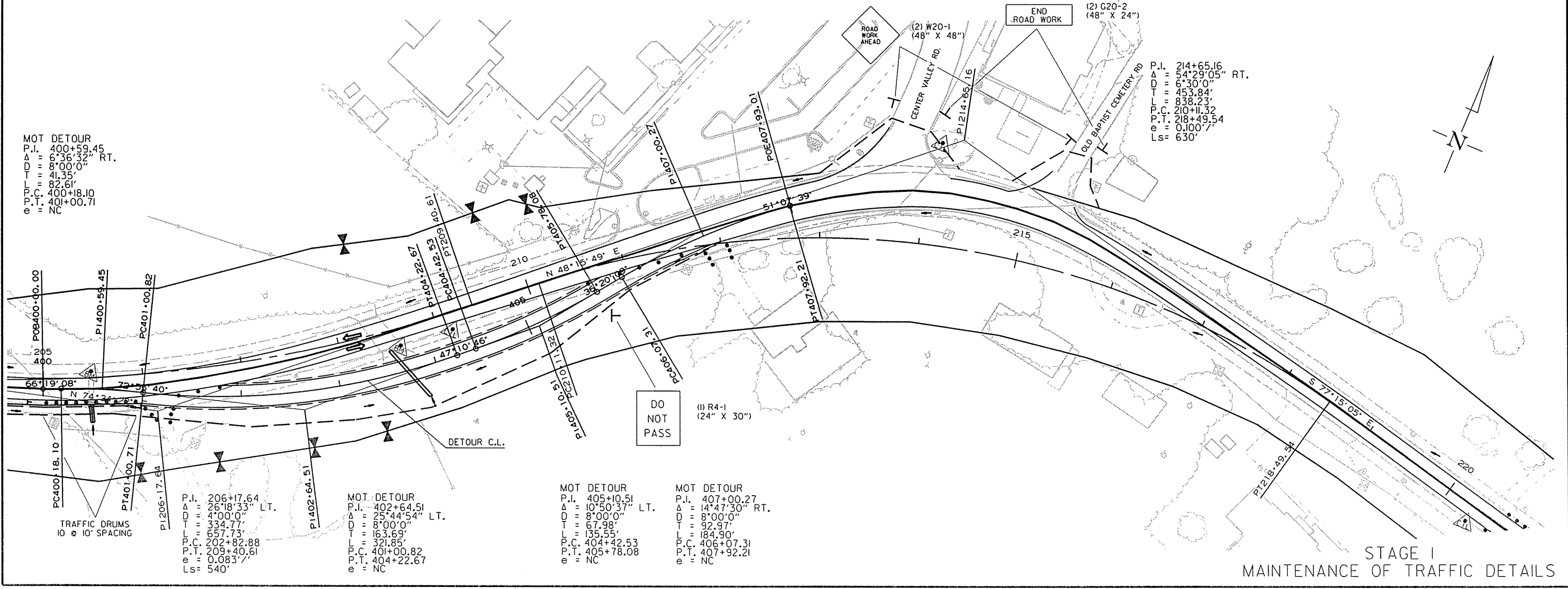
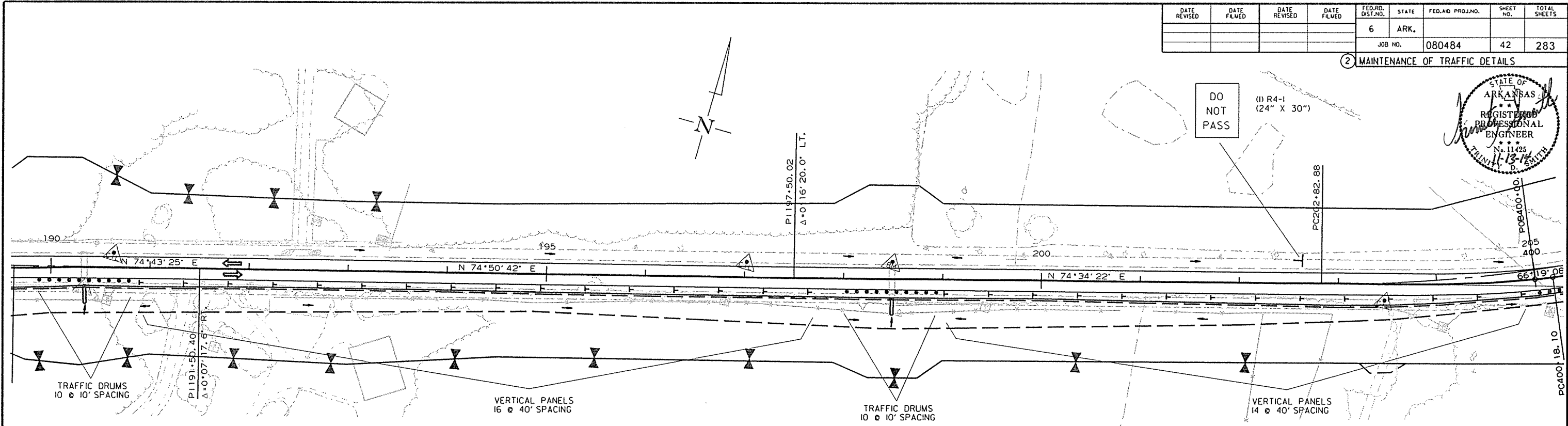
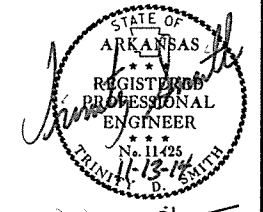


STAGE I  
 MAINTENANCE OF TRAFFIC DETAILS

8/26/2014  
 R080484.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. 080484							42	283

② MAINTENANCE OF TRAFFIC DETAILS



MOT DETOUR  
P.I. 400+59.45  
Δ = 6°36'32" RT.  
D = 8°00'0"  
T = 41.35'  
L = 82.61'  
P.C. 400+18.10  
P.T. 401+00.71  
e = NC

P.I. 214+65.16  
Δ = 54°29'05" RT.  
D = 6°30'0"  
T = 453.84'  
L = 838.23'  
P.C. 210+11.32  
P.T. 218+49.54  
e = 0.100'  
Ls = 630'

P.I. 206+17.64  
Δ = 26°18'33" LT.  
D = 4°00'0"  
T = 334.77'  
L = 657.73'  
P.C. 202+82.88  
P.T. 209+40.61  
e = 0.083'  
Ls = 540'

MOT DETOUR  
P.I. 402+64.51  
Δ = 25°44'54" LT.  
D = 8°00'0"  
T = 163.69'  
L = 321.85'  
P.C. 401+00.82  
P.T. 404+22.67  
e = NC

MOT DETOUR  
P.I. 405+10.51  
Δ = 10°50'37" LT.  
D = 8°00'0"  
T = 67.98'  
L = 135.55'  
P.C. 404+42.53  
P.T. 405+78.08  
e = NC

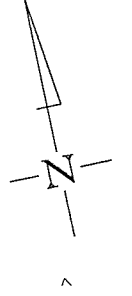
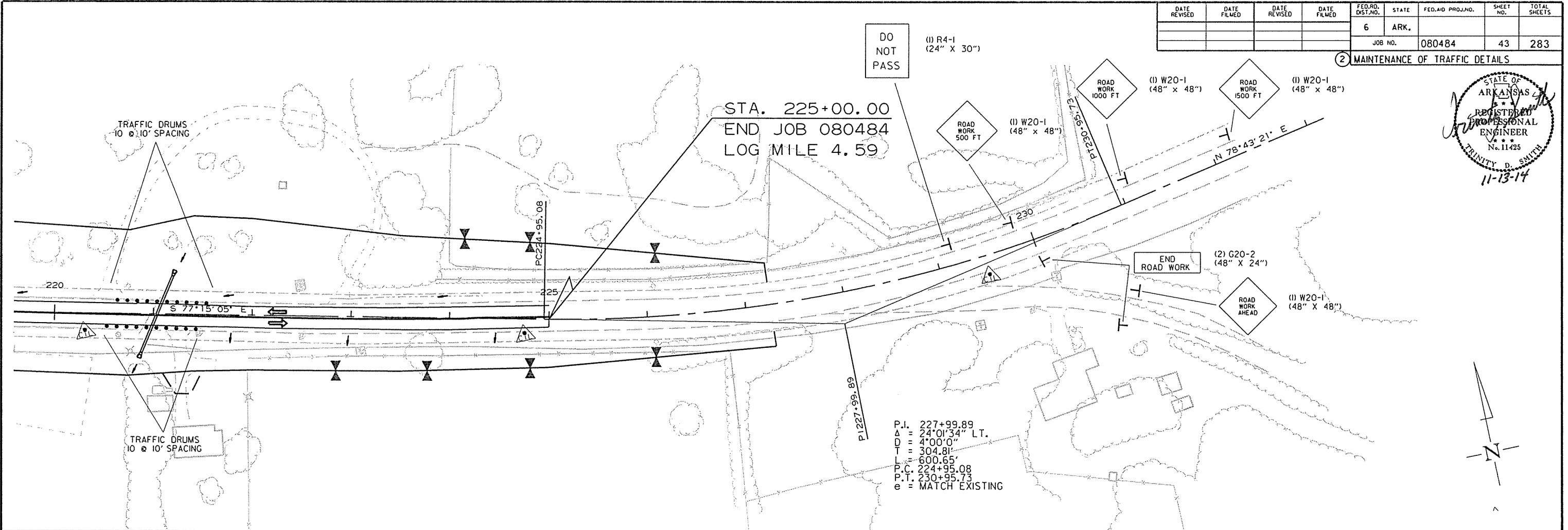
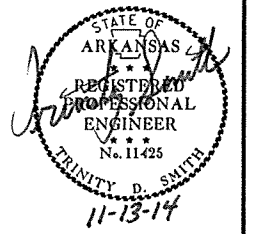
MOT DETOUR  
P.I. 407+00.27  
Δ = 14°47'30" RT.  
D = 8°00'0"  
T = 92.97'  
L = 184.90'  
P.C. 406+07.31  
P.T. 407+92.21  
e = NC

8/26/2014  
R080484.DGN

STAGE I  
MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		43	283

② MAINTENANCE OF TRAFFIC DETAILS

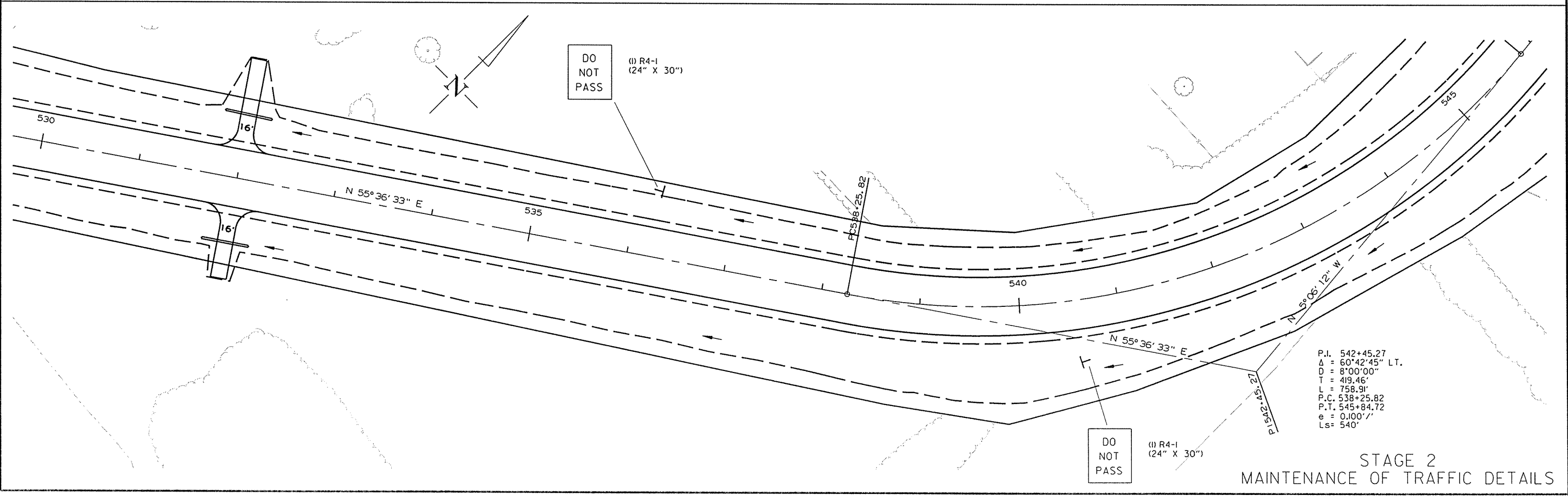
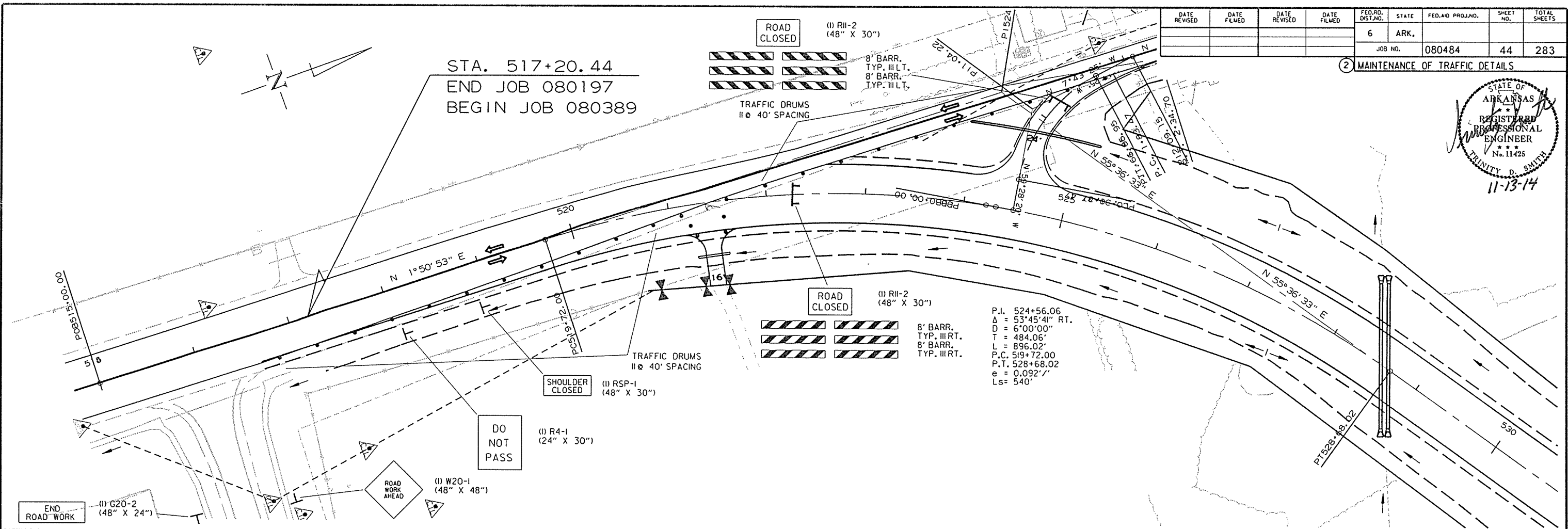


8/26/2014

R080484.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		44	283

2 MAINTENANCE OF TRAFFIC DETAILS



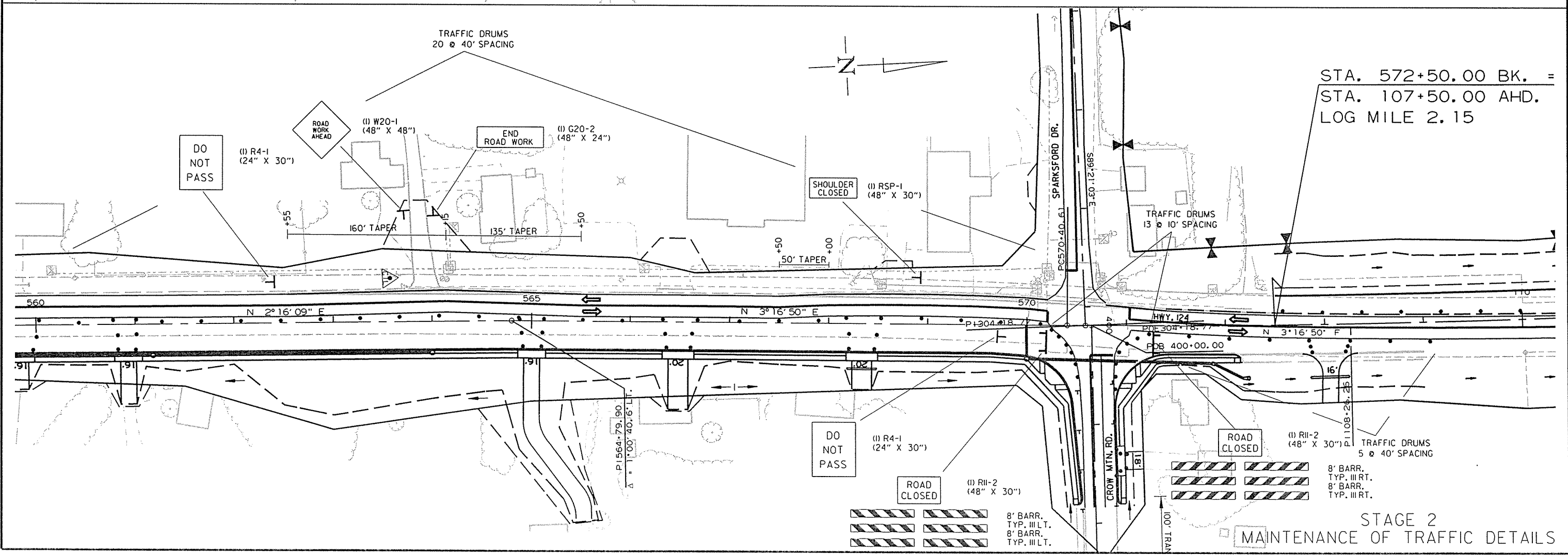
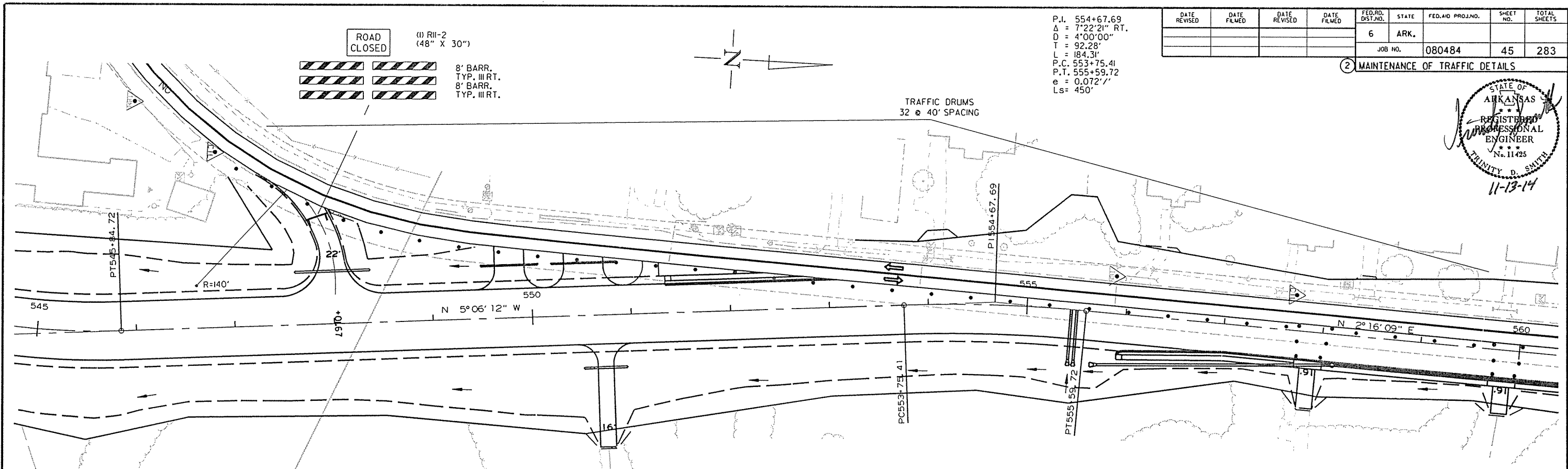
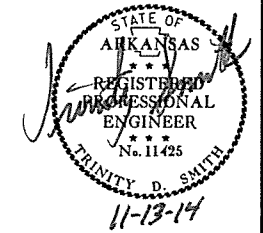
11/10/2014  
R080484.DCN

STAGE 2  
MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. PROJ. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		45	283
JOB NO. 080484							45	283

P.I. 554+67.69  
 $\Delta = 7^{\circ}22'21''$  RT.  
 $D = 4^{\circ}00'00''$   
 $T = 92.28'$   
 $L = 184.31'$   
P.C. 553+75.41  
P.T. 555+59.72  
 $e = 0.0727'$   
 $LS = 450'$

② MAINTENANCE OF TRAFFIC DETAILS



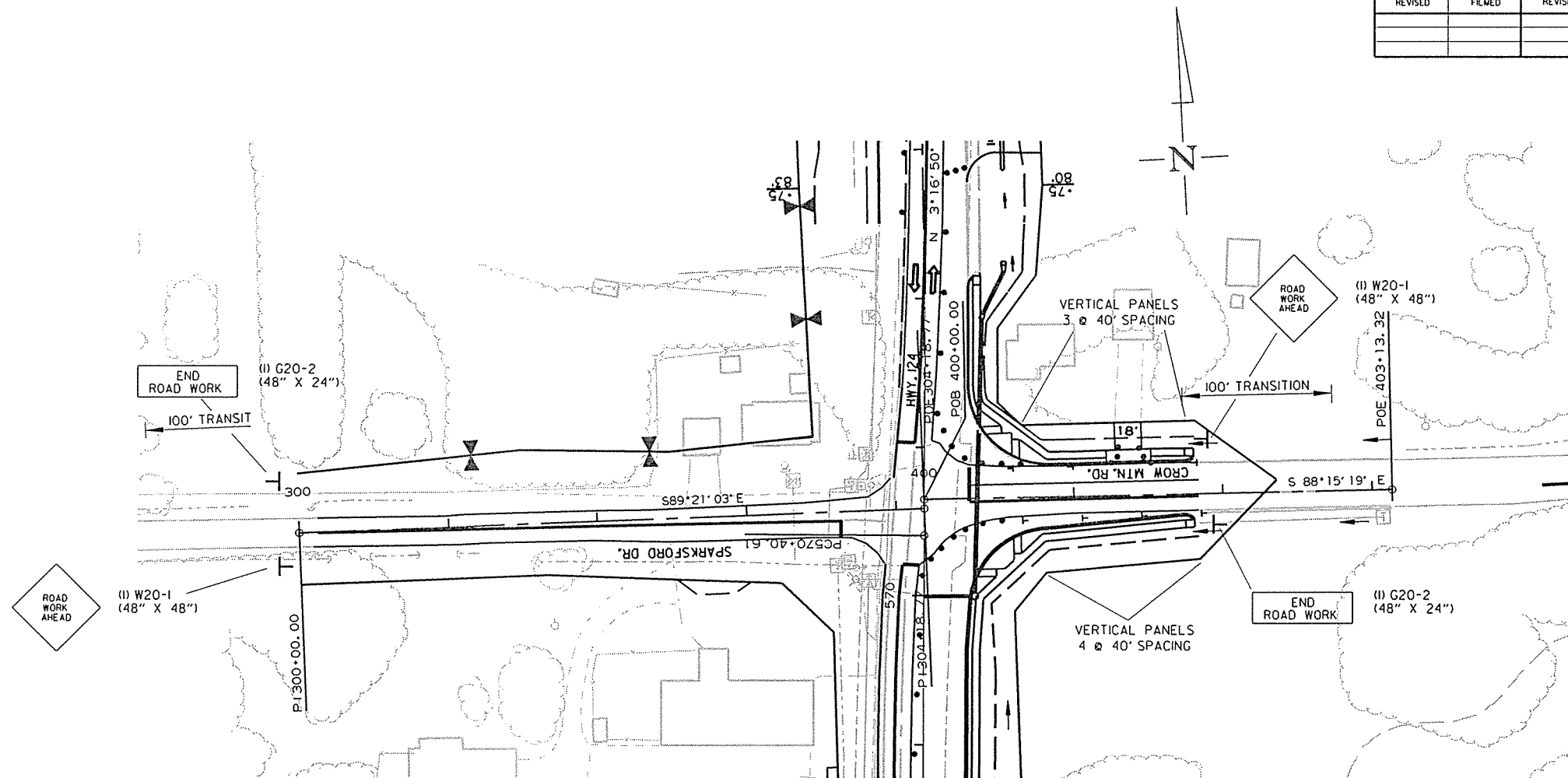
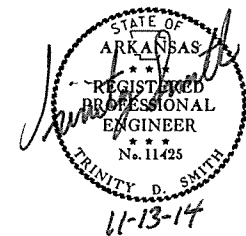
11/10/2014  
R080484.DGN

STA. 572+50.00 BK. =  
STA. 107+50.00 AHD.  
LOG MILE 2.15

STAGE 2  
MAINTENANCE OF TRAFFIC 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.	080484		46	283

② MAINTENANCE OF TRAFFIC DETAILS



11/10/2014

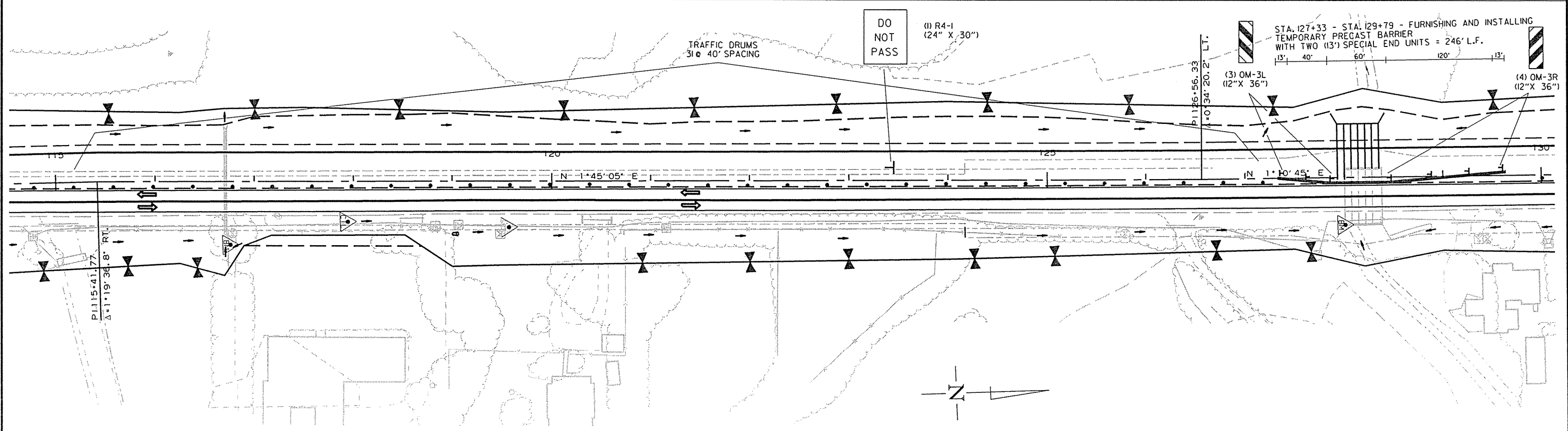
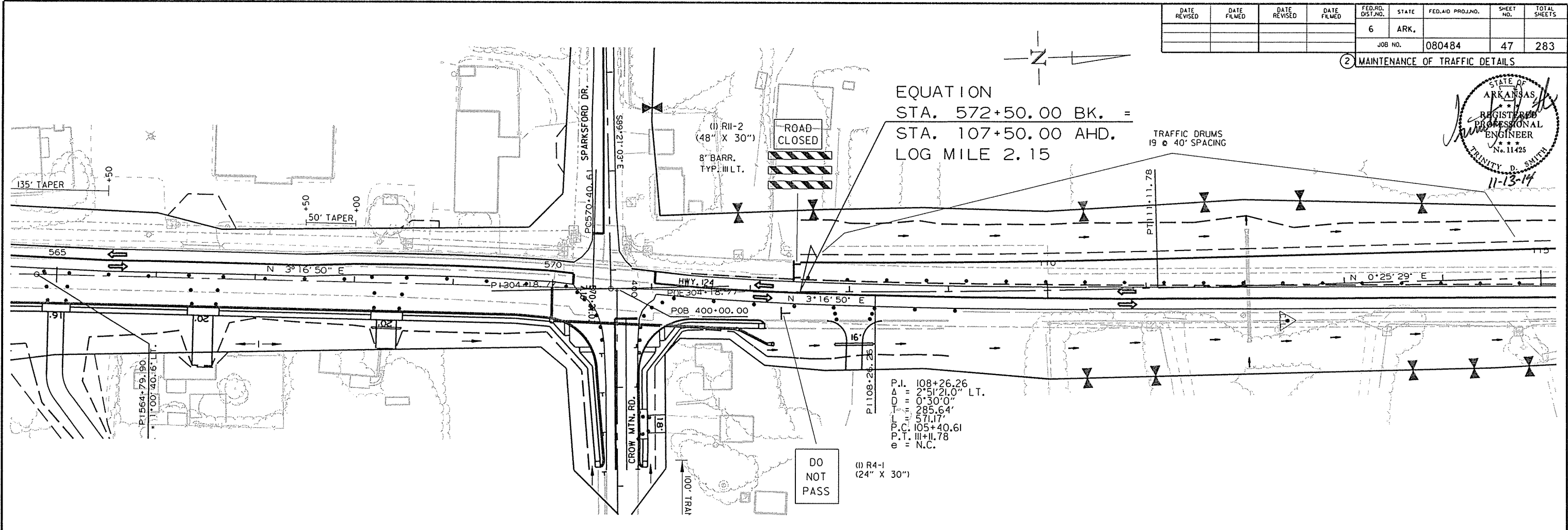
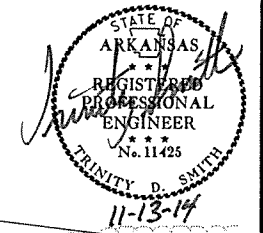
R0604B4.DGN

STAGE 2  
MAINTENANCE OF TRAFFIC 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. 080484							47	283

② MAINTENANCE OF TRAFFIC DETAILS

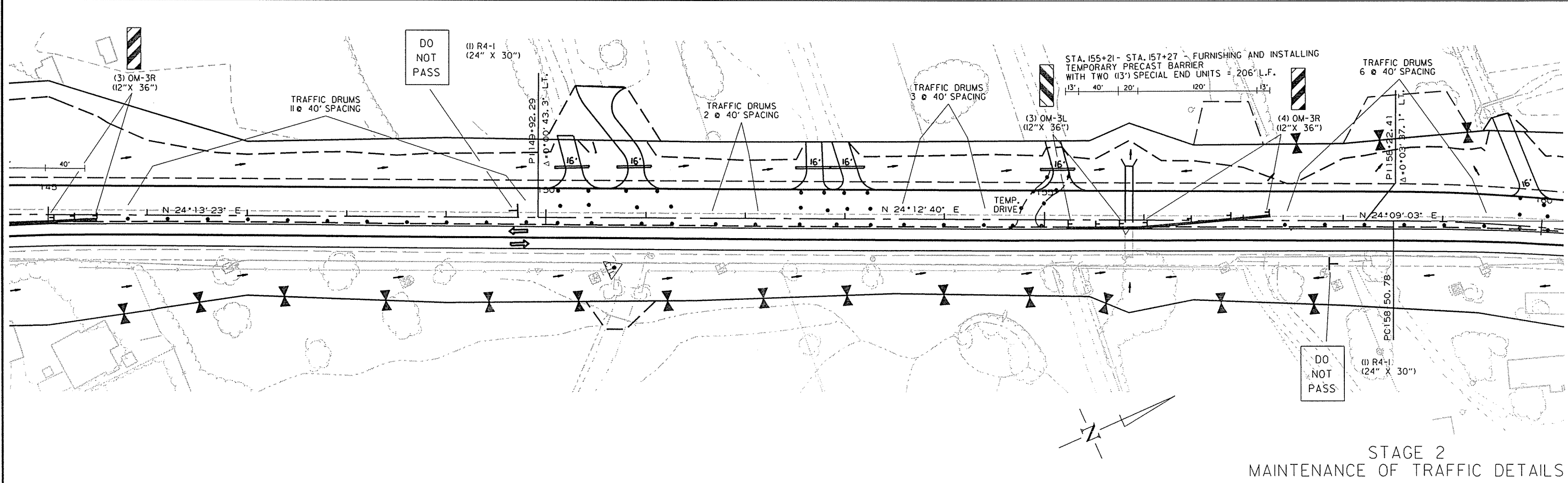
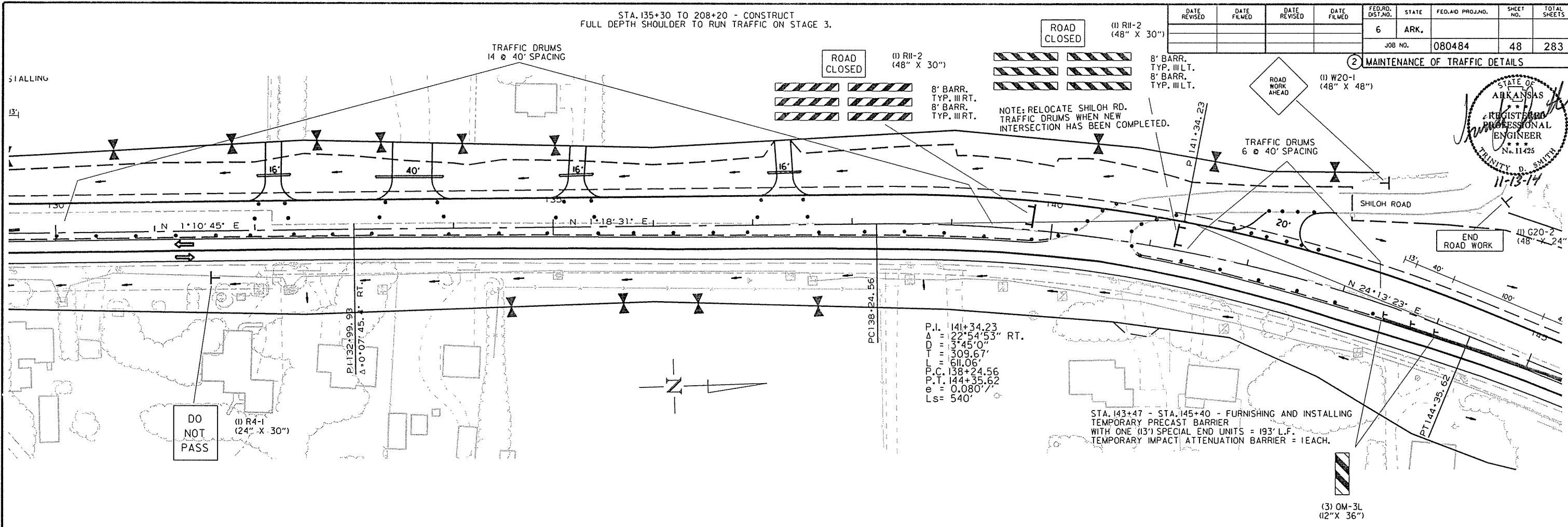
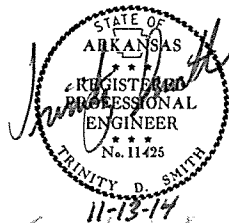


8/26/2014  
 R080484.DGN

STA. 135+30 TO 208+20 - CONSTRUCT  
FULL DEPTH SHOULDER TO RUN TRAFFIC ON 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.	080484	48	283

MAINTENANCE OF TRAFFIC DETAILS

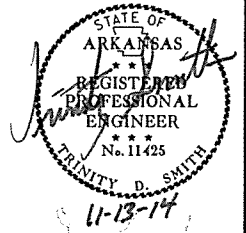


STAGE 2  
MAINTENANCE OF TRAFFIC DETAILS

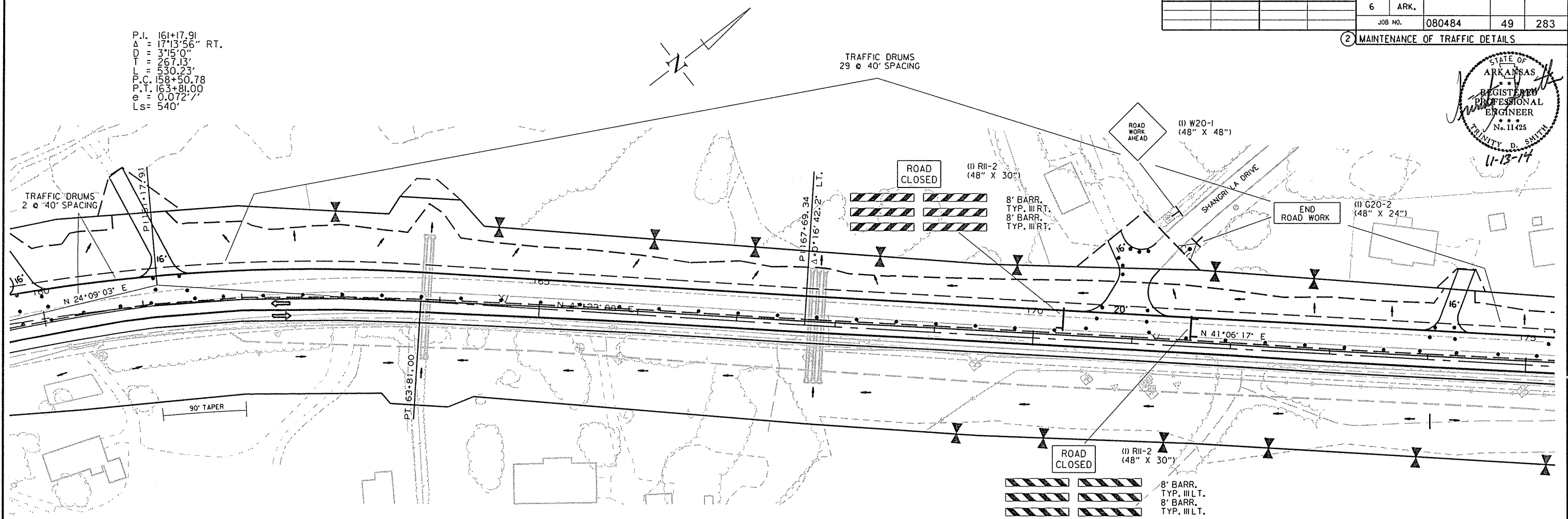
8/26/2014  
R0804B4.DGN

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.	080484		49	283

② MAINTENANCE OF TRAFFIC DETAILS

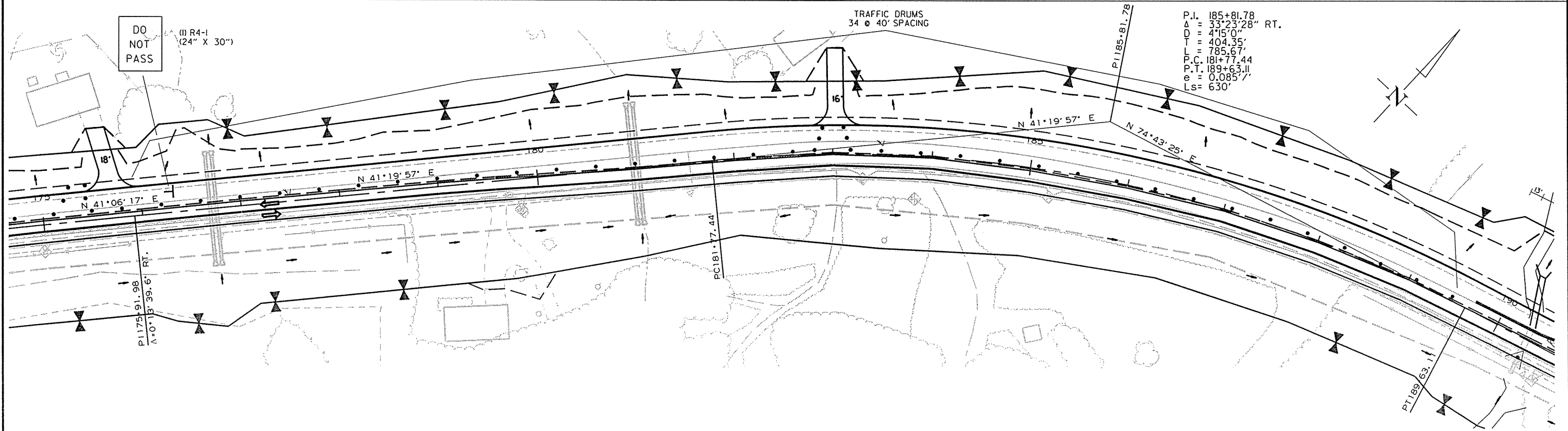


P.I. 161+17.91  
 $\Delta = 17^{\circ}13'56''$  RT.  
 $D = 3^{\circ}15'0''$   
 $T = 267.13'$   
 $L = 530.23'$   
 $P.C. 158+50.78$   
 $P.T. 163+81.00$   
 $e = 0.0727'$   
 $LS = 540'$



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

P.I. 185+81.78  
 $\Delta = 33^{\circ}23'28''$  RT.  
 $D = 4^{\circ}15'0''$   
 $T = 404.35'$   
 $L = 785.67'$   
 $P.C. 181+77.44$   
 $P.T. 189+63.11$   
 $e = 0.0857'$   
 $LS = 630'$



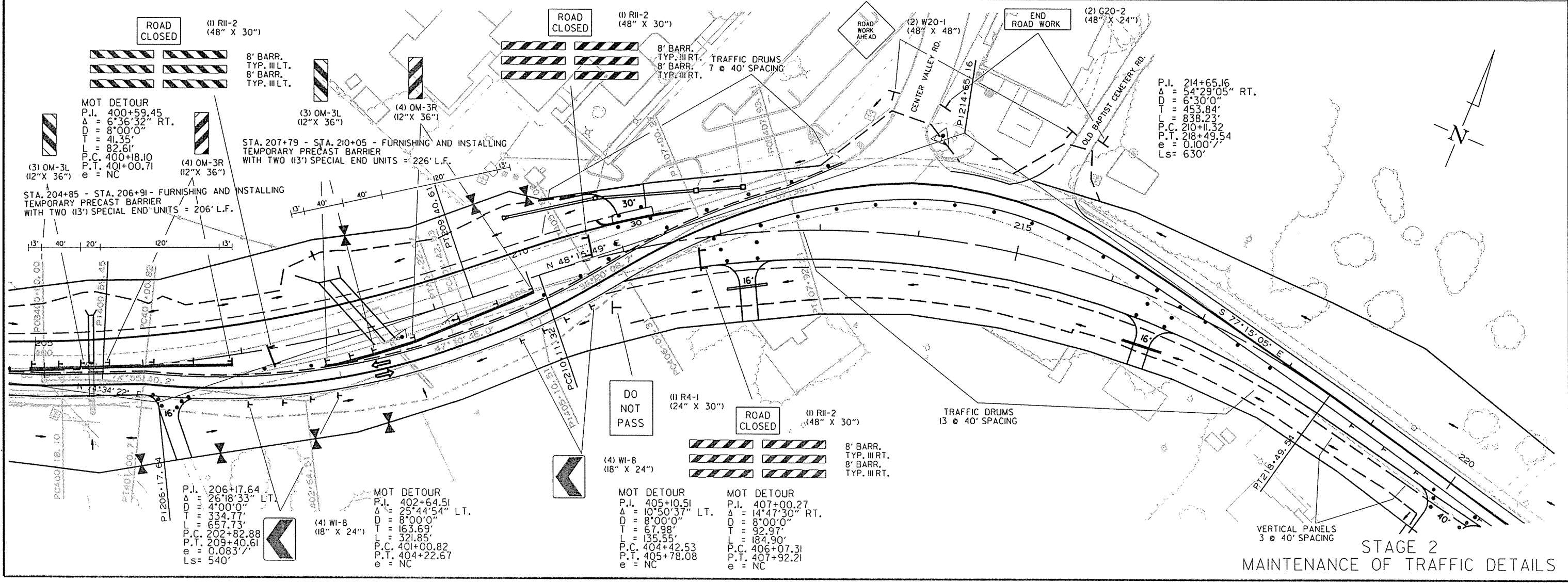
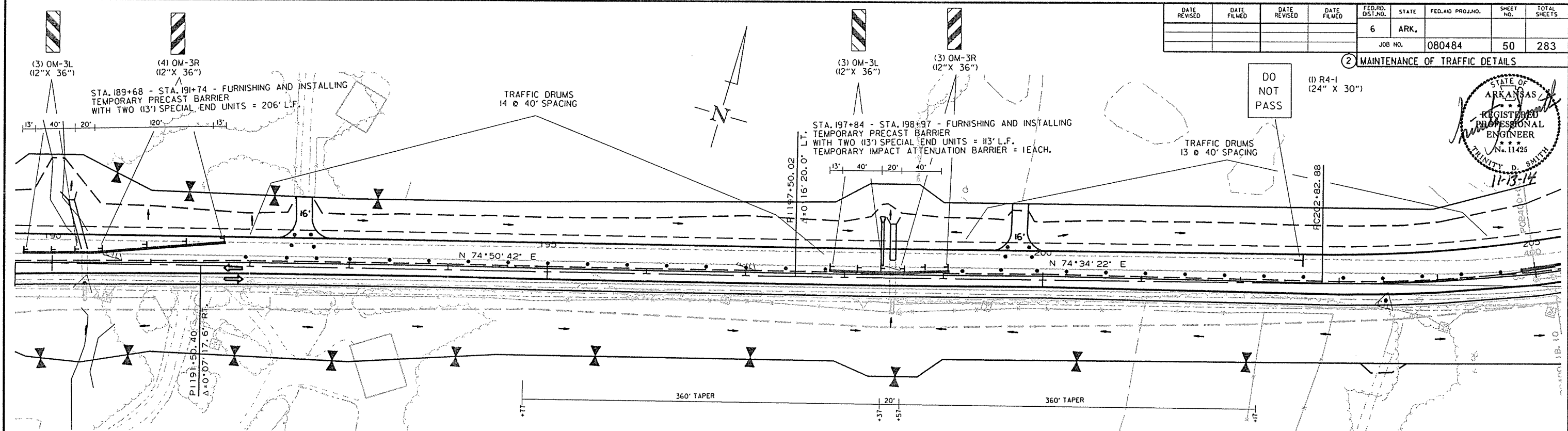
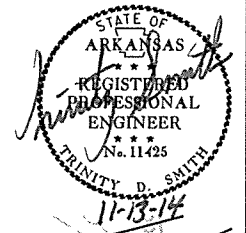
STAGE 2  
 MAINTENANCE OF TRAFFIC DETAILS

8/26/2014

R080484.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		50	283
				JOB NO.		080484		

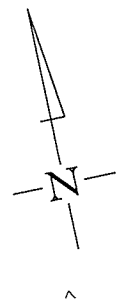
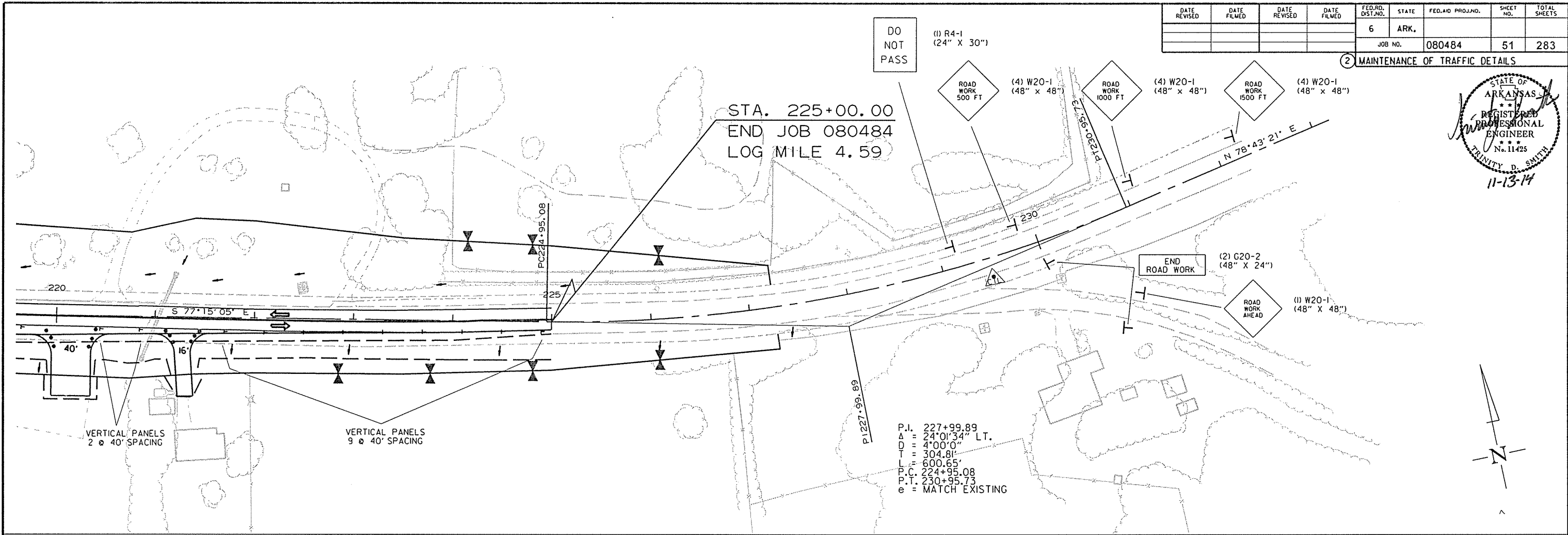
② MAINTENANCE OF TRAFFIC DETAILS



8/26/2014  
R080484.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		51	283

② MAINTENANCE OF TRAFFIC DETAILS

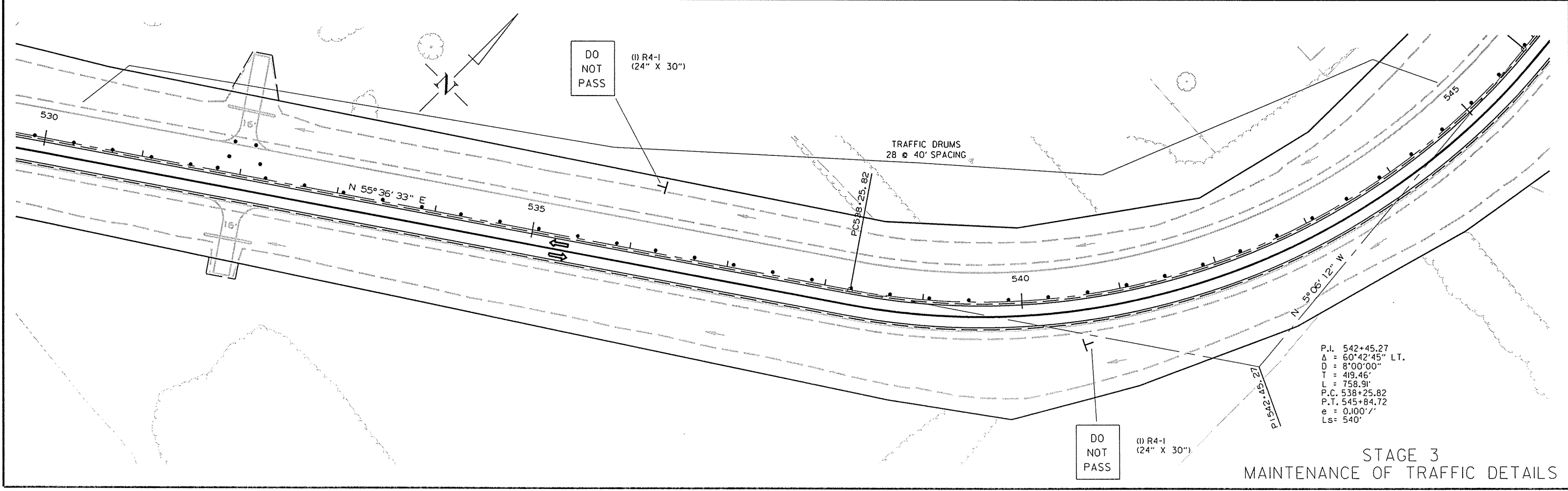
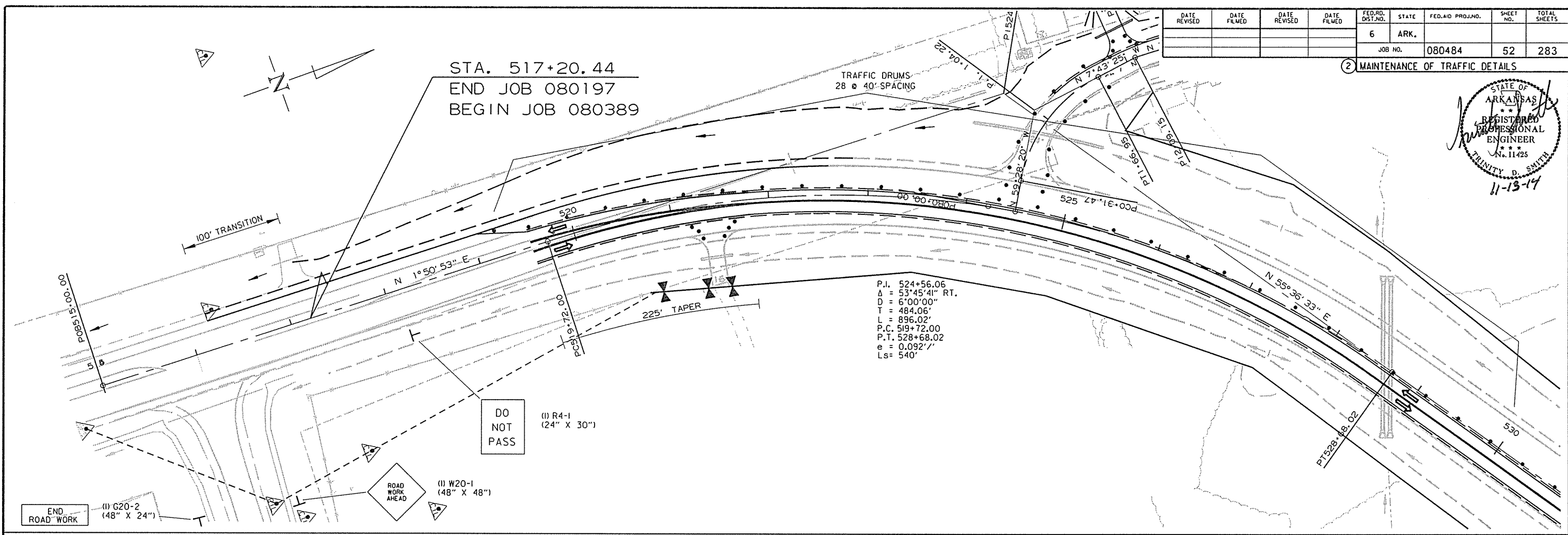


8/26/2014

R080484.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		52	283
				JOB NO.		080484	52	283

② MAINTENANCE OF TRAFFIC DETAILS



STAGE 3  
MAINTENANCE OF TRAFFIC DETAILS

11/10/2014  
R080484.DGN

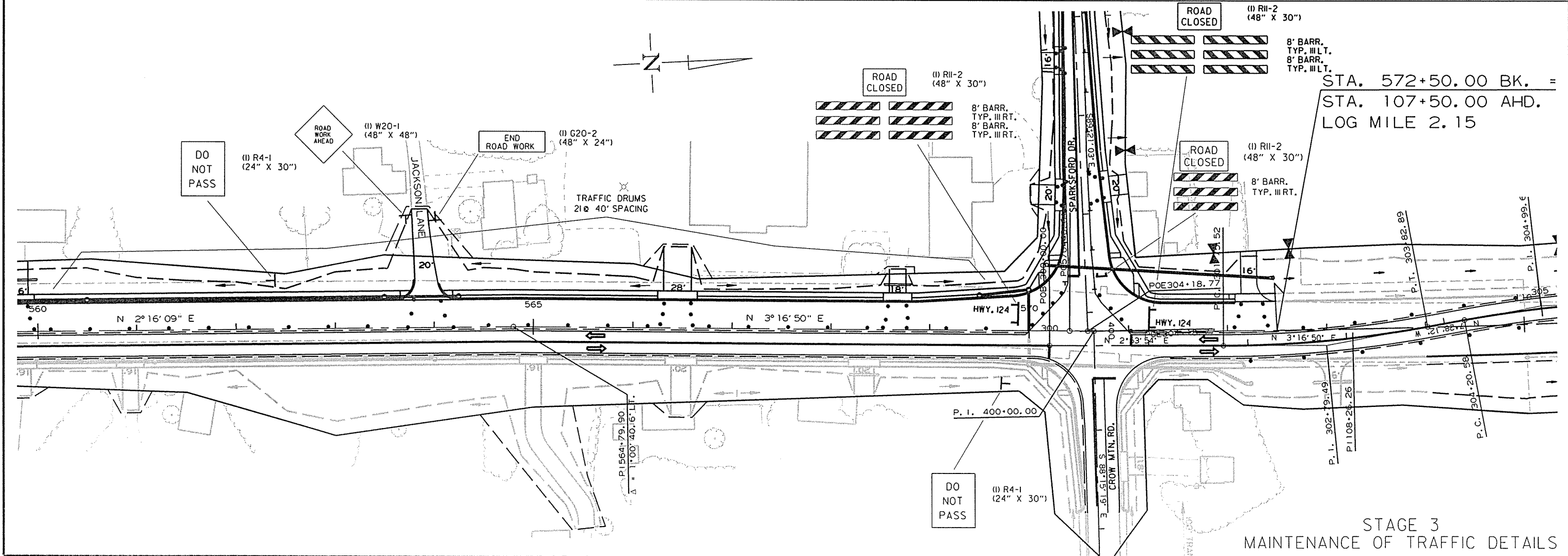
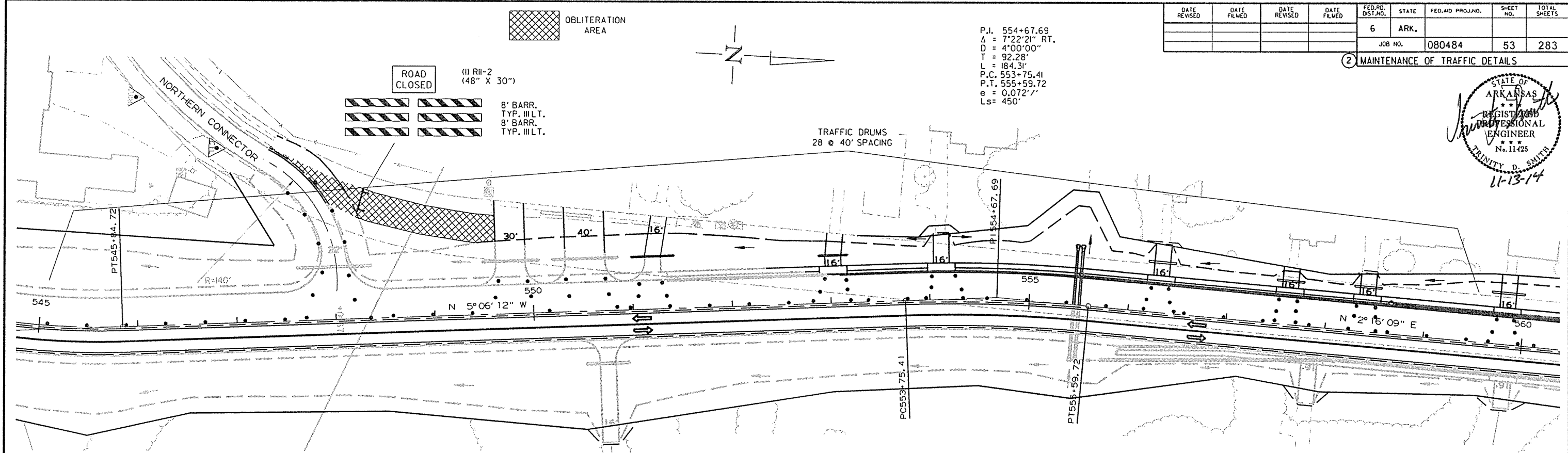


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	080484		53	283

② MAINTENANCE OF TRAFFIC DETAILS



P.I. 554+67.69  
 $\Delta = 7'22'21''$  RT.  
 $D = 4'00'00''$   
 $T = 92.28'$   
 $L = 184.31'$   
 $P.C. 553+75.41$   
 $P.T. 555+59.72$   
 $e = 0.072' //$   
 $Ls = 450'$

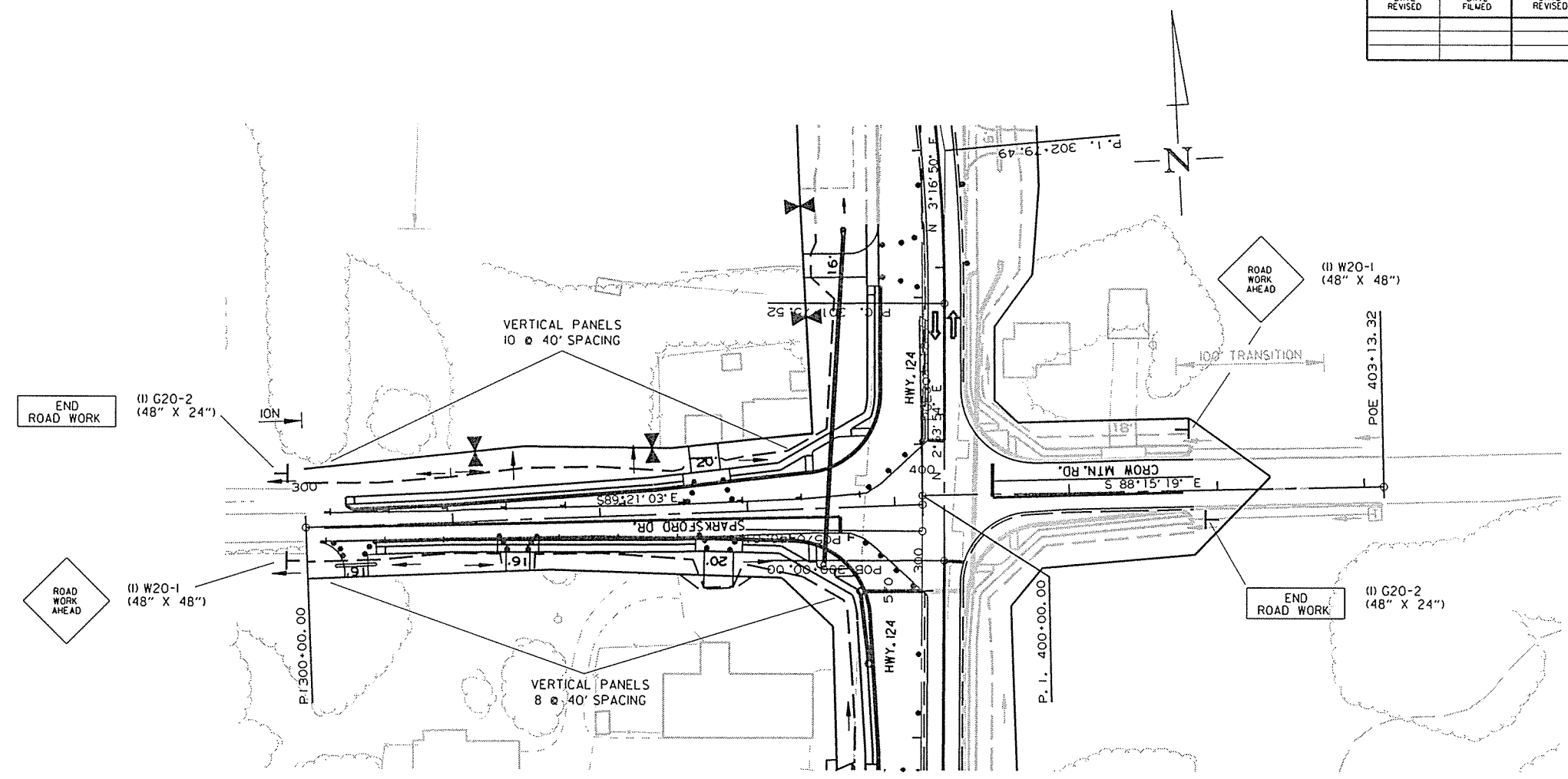
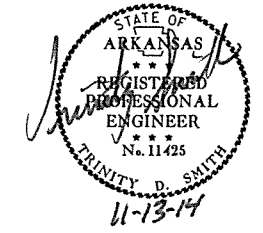


STA. 572+50.00 BK. =  
 STA. 107+50.00 AHD.  
 LOG MILE 2.15

STAGE 3  
 MAINTENANCE OF TRAFFIC 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.	080484		54	283

② MAINTENANCE OF TRAFFIC DETAILS



11/10/2014

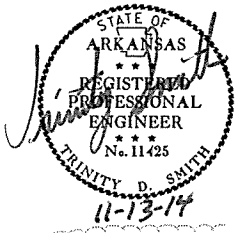
R080484.DGN

STAGE 3  
MAINTENANCE OF TRAFFIC DETAILS

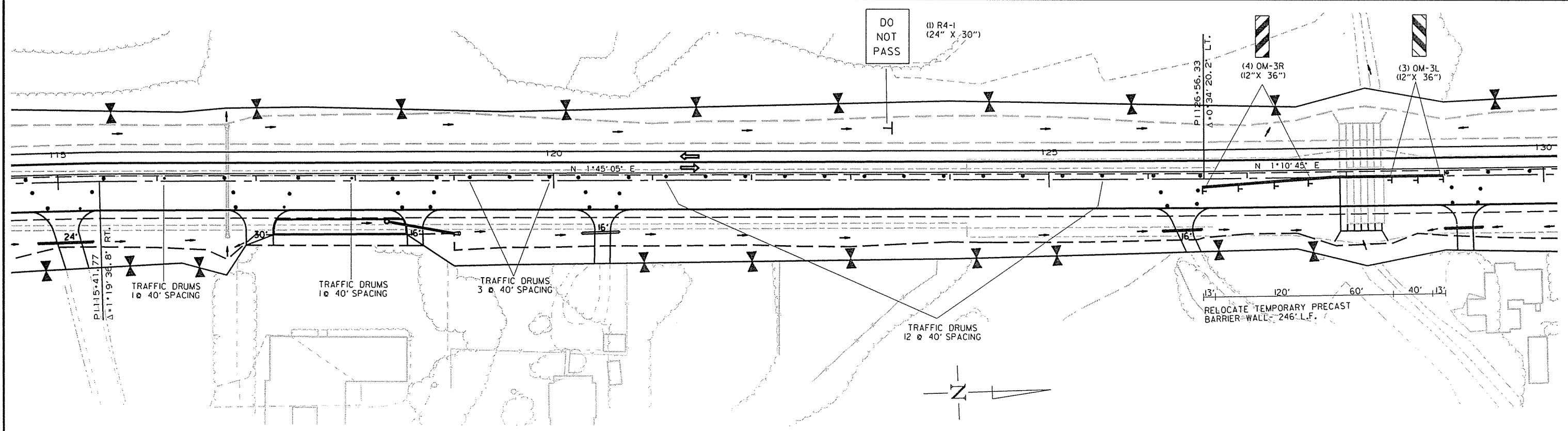
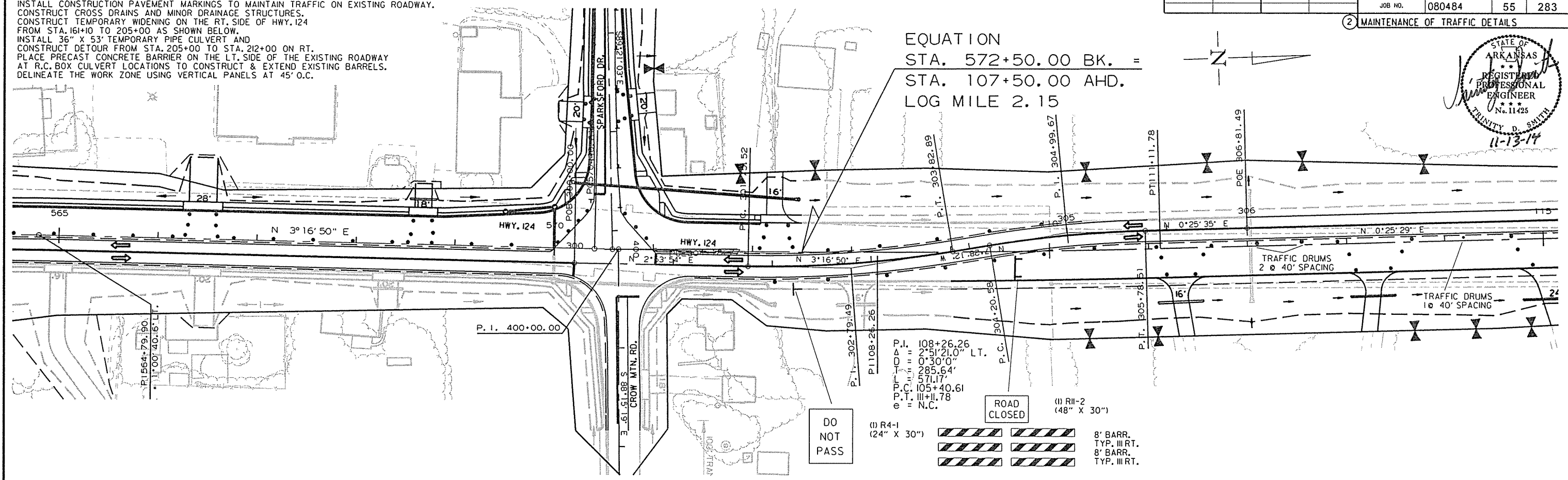
STAGE 1:  
 INSTALL ADVANCE WARNING SIGNS  
 LEVEL EXISTING ROADWAY LANES CORRECTING LEFT LANE FOR NEW CROWN.  
 INSTALL CONSTRUCTION PAVEMENT MARKINGS TO MAINTAIN TRAFFIC ON EXISTING ROADWAY.  
 CONSTRUCT CROSS DRAINS AND MINOR DRAINAGE STRUCTURES.  
 CONSTRUCT TEMPORARY WIDENING ON THE RT. SIDE OF HWY. 124  
 FROM STA. 161+00 TO 205+00 AS SHOWN BELOW.  
 INSTALL 36" X 53" TEMPORARY PIPE CULVERT AND  
 CONSTRUCT DETOUR FROM STA. 205+00 TO STA. 212+00 ON RT.  
 PLACE PRECAST CONCRETE BARRIER ON THE LT. SIDE OF THE EXISTING ROADWAY  
 AT R.C. BOX CULVERT LOCATIONS TO CONSTRUCT & EXTEND EXISTING BARRELS.  
 DELINEATE THE WORK ZONE USING VERTICAL PANELS AT 45° O.C.

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		55	283

2 MAINTENANCE OF TRAFFIC DETAILS



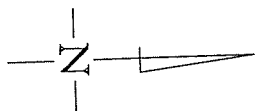
EQUATION  
 STA. 572+50.00 BK. =  
 STA. 107+50.00 AHD.  
 LOG MILE 2.15



STAGE 3  
 MAINTENANCE OF TRAFFIC DETAILS

8/26/2014  
 R080484.DGN

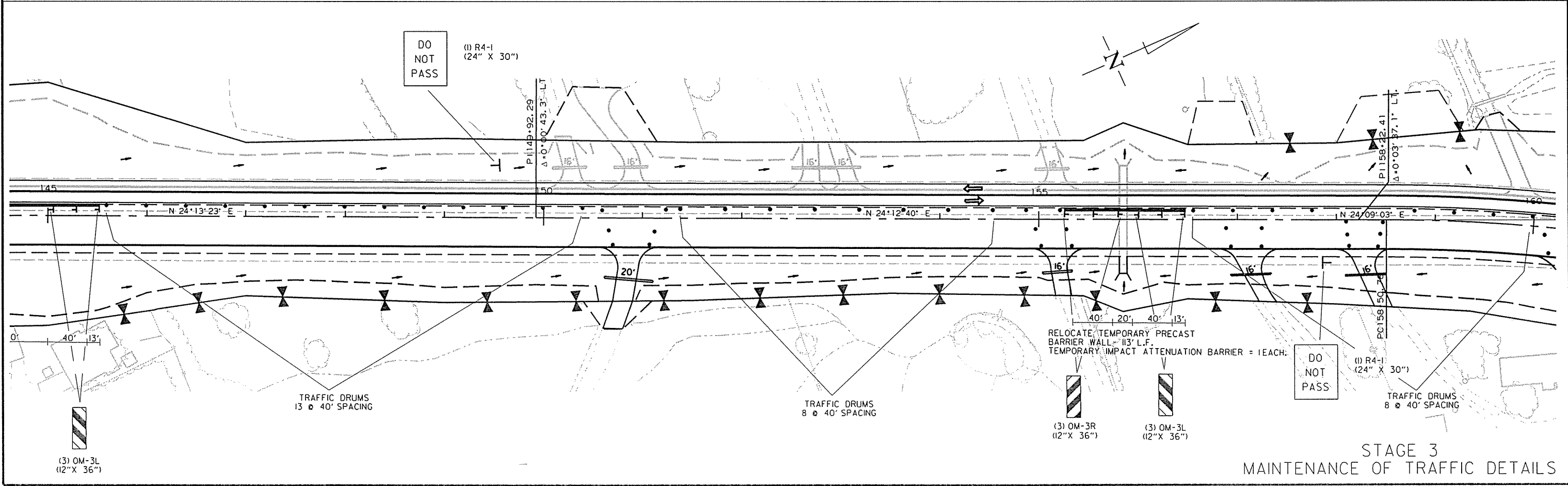
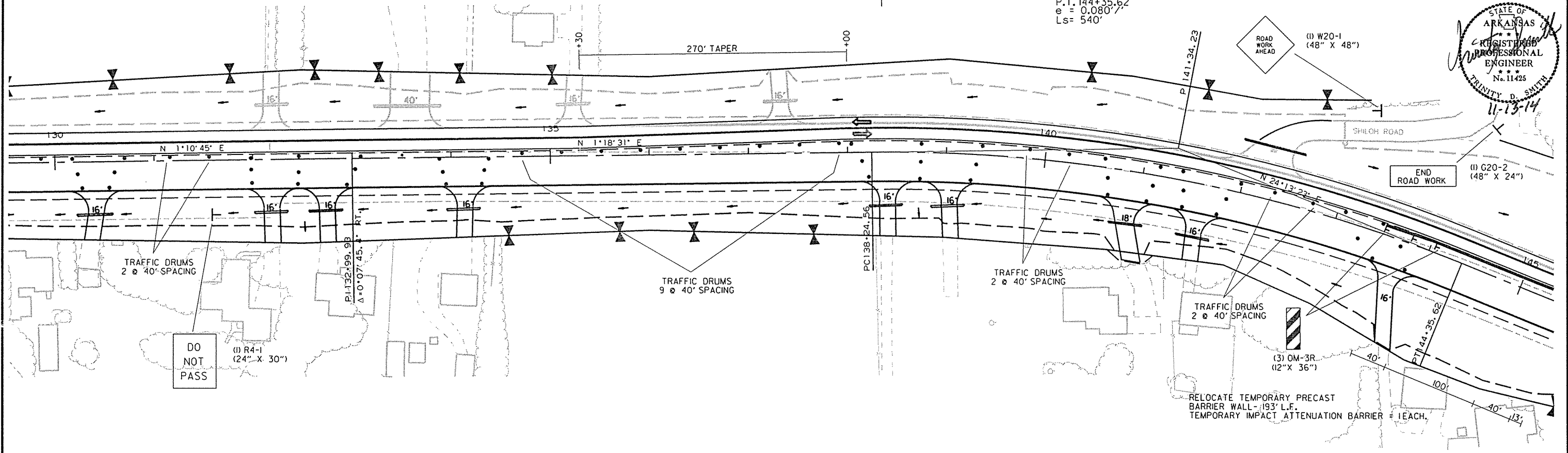
STA. 135+30 TO 208+20 - CONSTRUCT  
FULL DEPTH SHOULDER TO RUN TRAFFIC ON STAGE 3.



P.I. 141+34.23  
Δ = 22°54'53" RT.  
D = 3'45" 0"  
T = 309.67'  
L = 611.06'  
P.C. 138+24.56  
P.T. 144+35.62  
e = 0.080'  
Ls = 540'

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. 080484							56	283

② MAINTENANCE OF TRAFFIC DETAILS

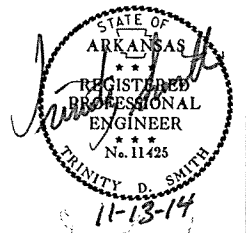


8/26/2014  
R080484.DGN

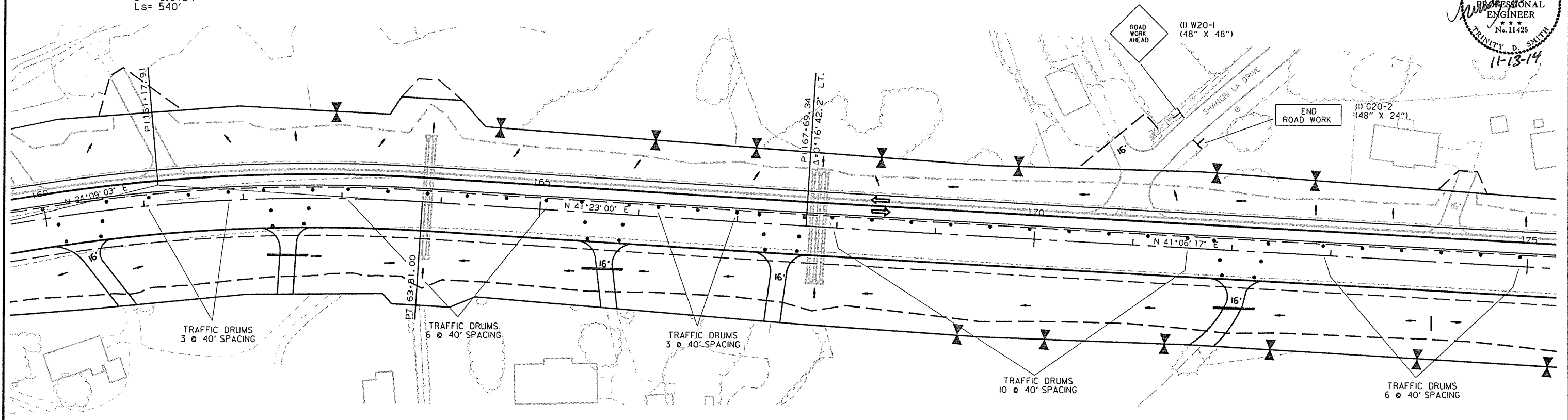
STAGE 3  
MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		57	283
				JOB NO.		080484		

② MAINTENANCE OF TRAFFIC DETAILS

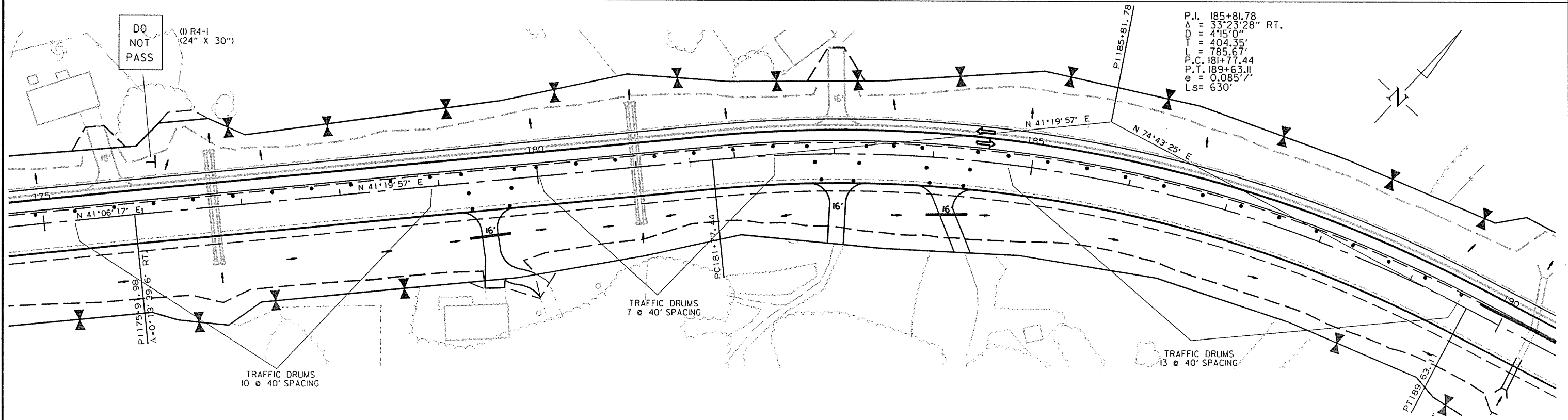


P.I. 161+17.91  
 $\Delta = 17^{\circ}13'56''$  RT.  
D = 3'15" 0"  
T = 267.13'  
L = 530.23'  
P.C. 158+50.78  
P.T. 163+81.00  
e = 0.072'  
Ls = 540'



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

P.I. 185+81.78  
 $\Delta = 33^{\circ}23'28''$  RT.  
D = 4'15" 0"  
T = 404.35'  
L = 785.67'  
P.C. 181+77.44  
P.T. 189+63.11  
e = 0.085'  
Ls = 630'



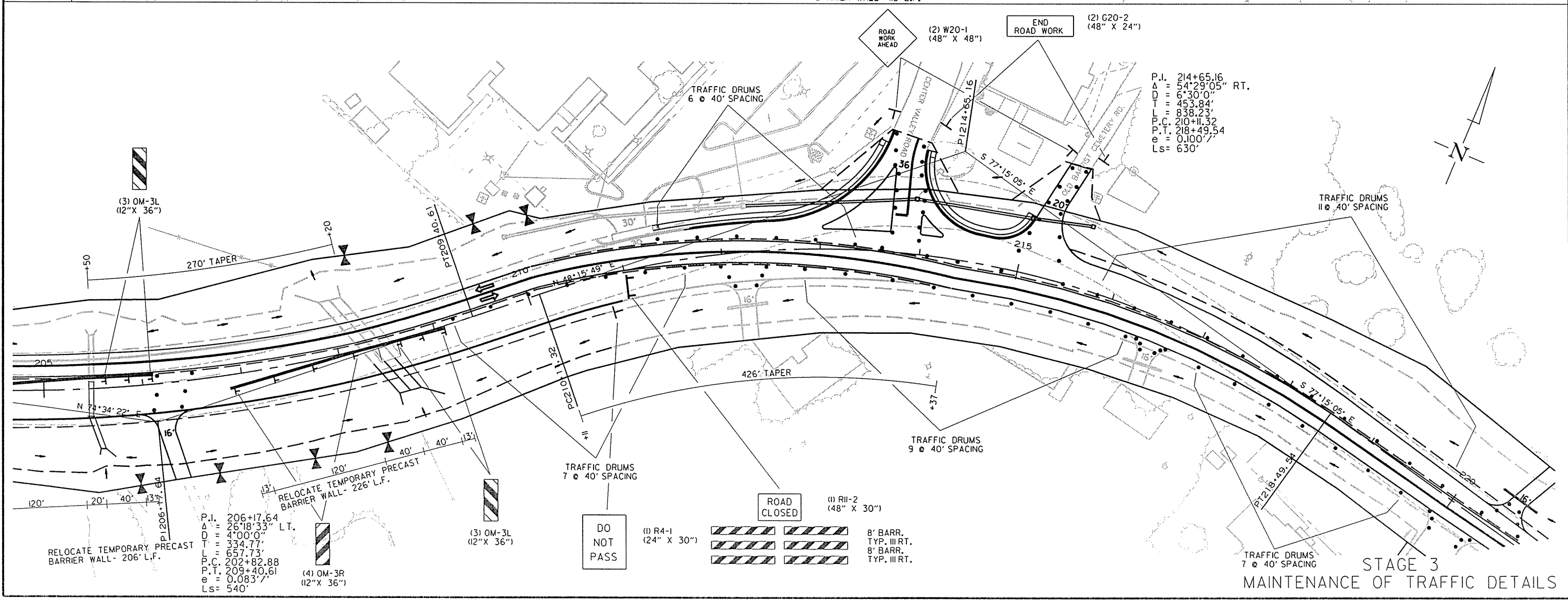
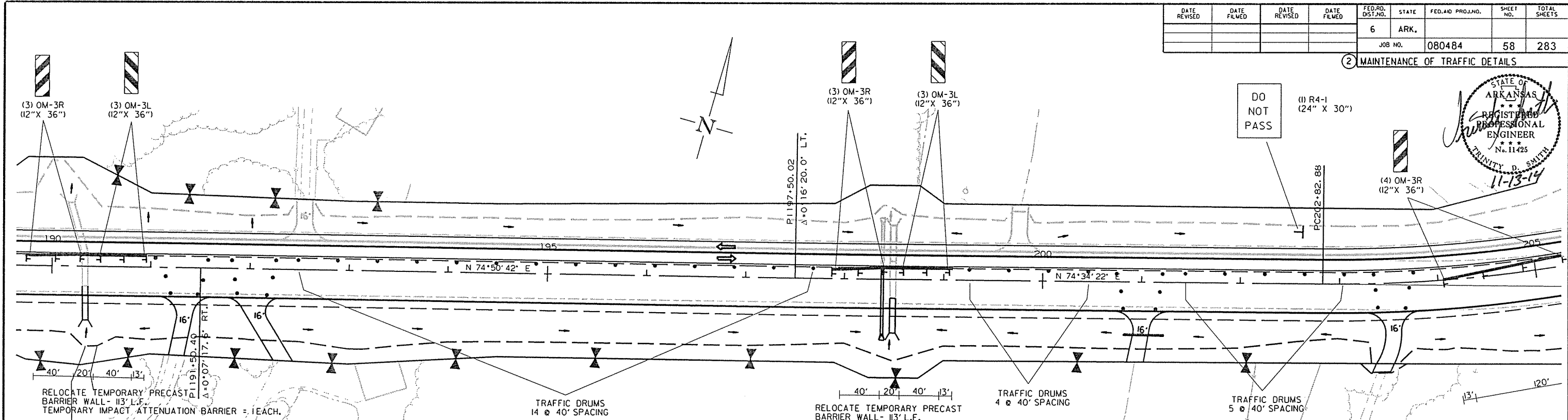
STAGE 3  
MAINTENANCE OF TRAFFIC DETAILS

8/26/2014

R080484.DGN

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		58	283
				JOB NO.	080484		58	283

② MAINTENANCE OF TRAFFIC DETAILS

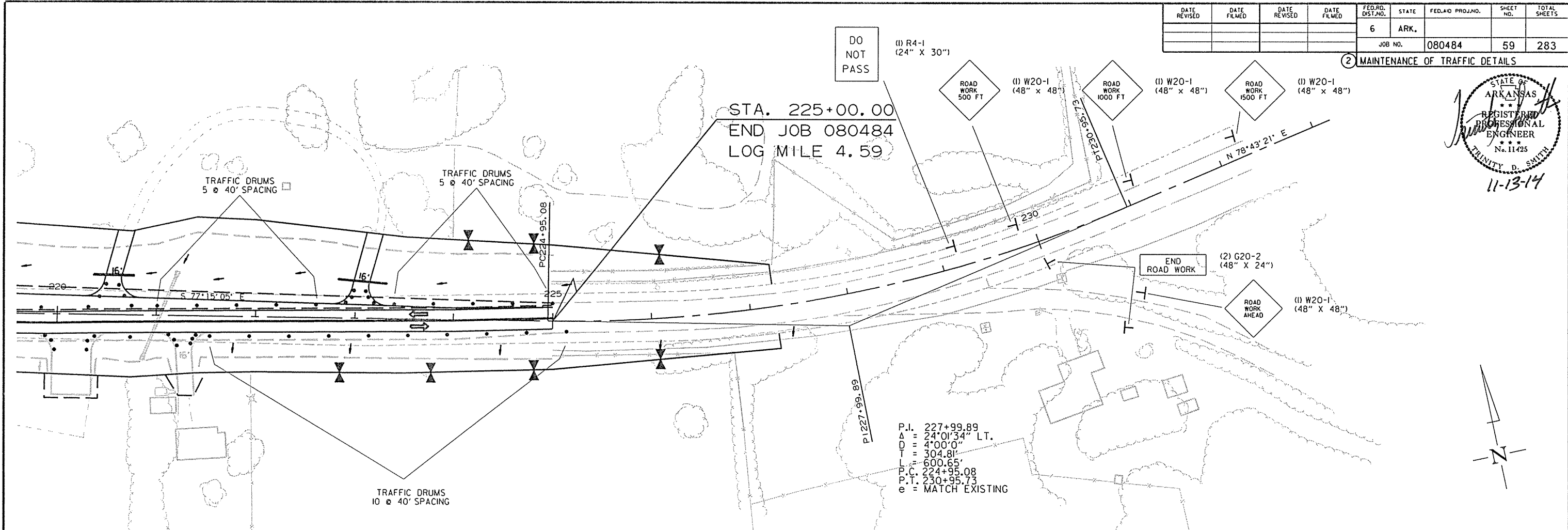
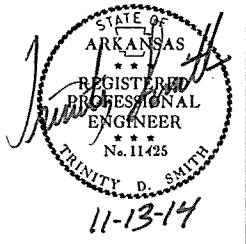


8/26/2014  
R080484.DGN



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.	080484		59	283

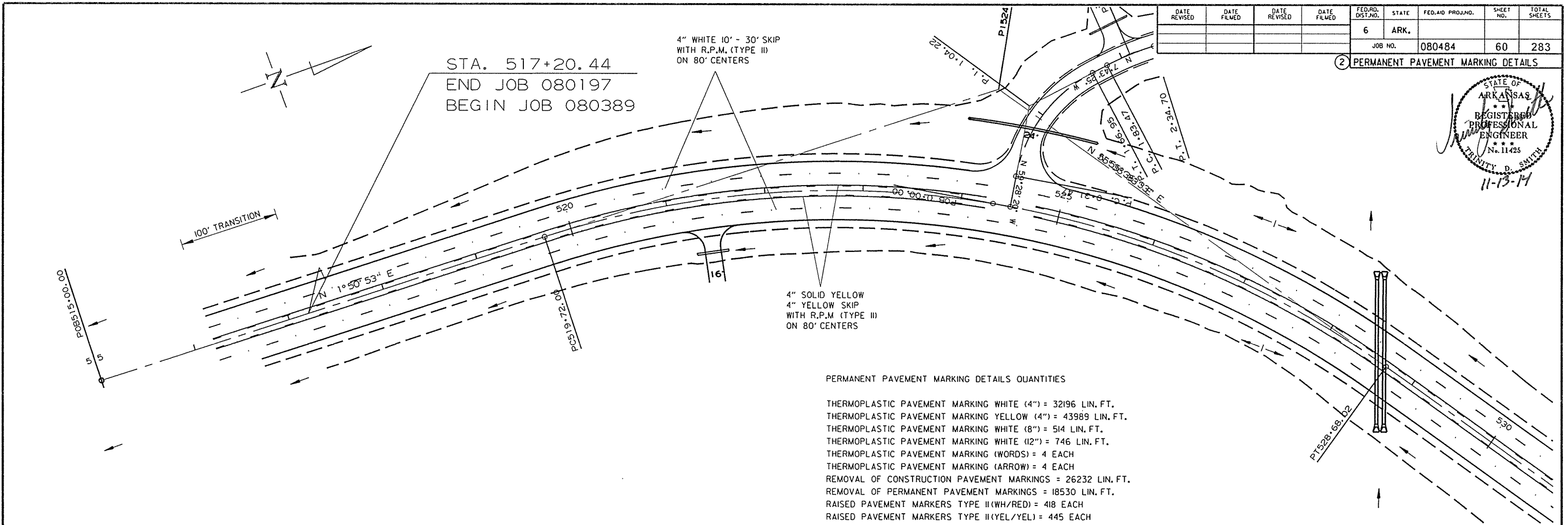
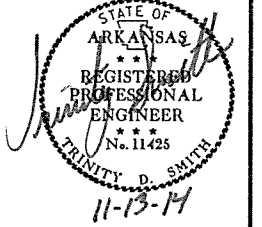
② MAINTENANCE OF TRAFFIC DETAILS



8/26/2014  
R080484.DGN

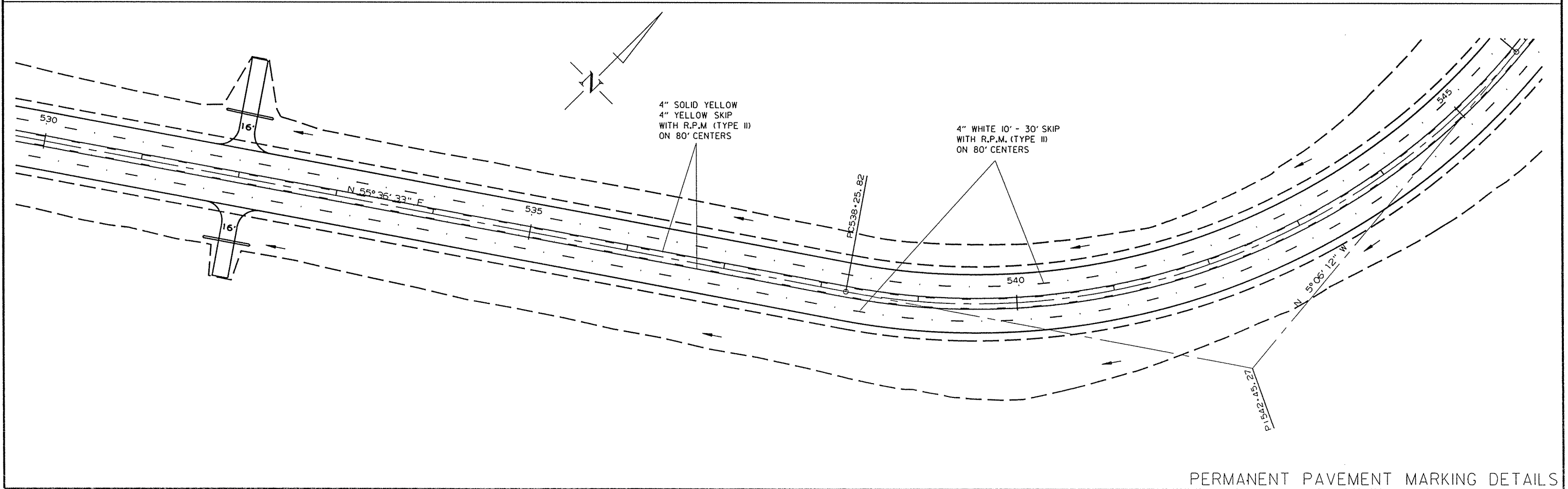
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	080484		60	283

2 PERMANENT PAVEMENT MARKING DETAILS



PERMANENT PAVEMENT MARKING DETAILS QUANTITIES

- THERMOPLASTIC PAVEMENT MARKING WHITE (4") = 32196 LIN. FT.
- THERMOPLASTIC PAVEMENT MARKING YELLOW (4") = 43989 LIN. FT.
- THERMOPLASTIC PAVEMENT MARKING WHITE (8") = 514 LIN. FT.
- THERMOPLASTIC PAVEMENT MARKING WHITE (12") = 746 LIN. FT.
- THERMOPLASTIC PAVEMENT MARKING (WORDS) = 4 EACH
- THERMOPLASTIC PAVEMENT MARKING (ARROW) = 4 EACH
- REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS = 26232 LIN. FT.
- REMOVAL OF PERMANENT PAVEMENT MARKINGS = 18530 LIN. FT.
- RAISED PAVEMENT MARKERS TYPE II (WH/RED) = 418 EACH
- RAISED PAVEMENT MARKERS TYPE II (YEL/YEL) = 445 EACH



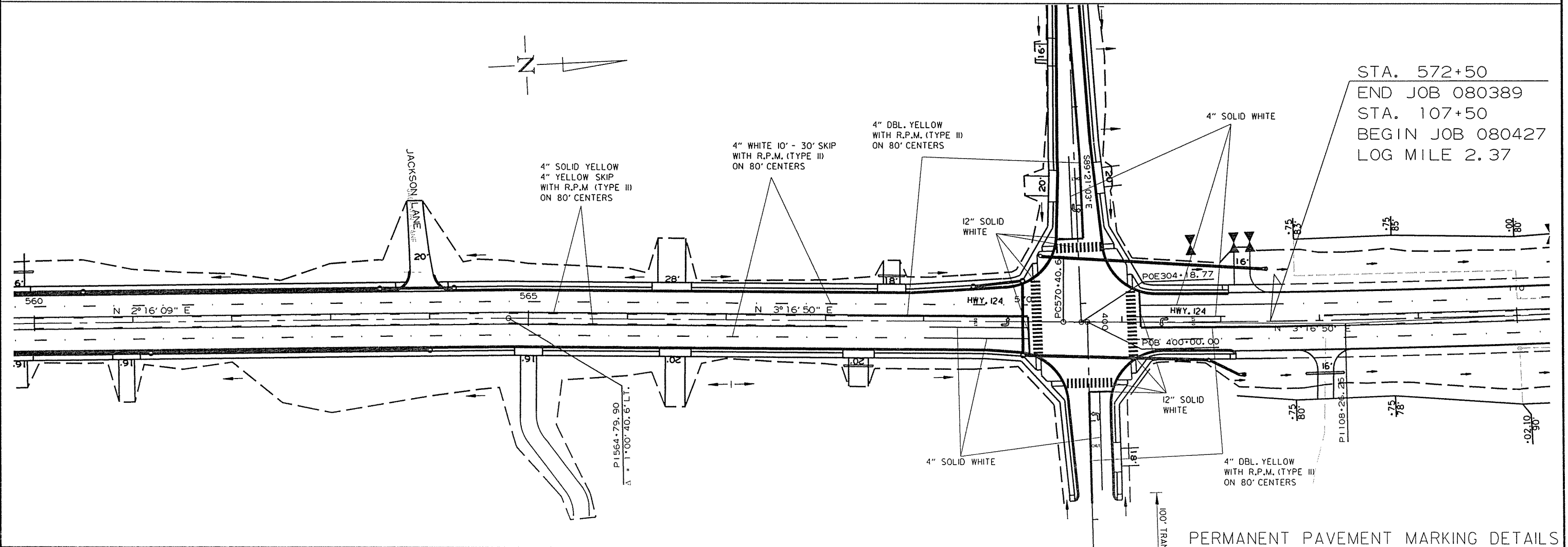
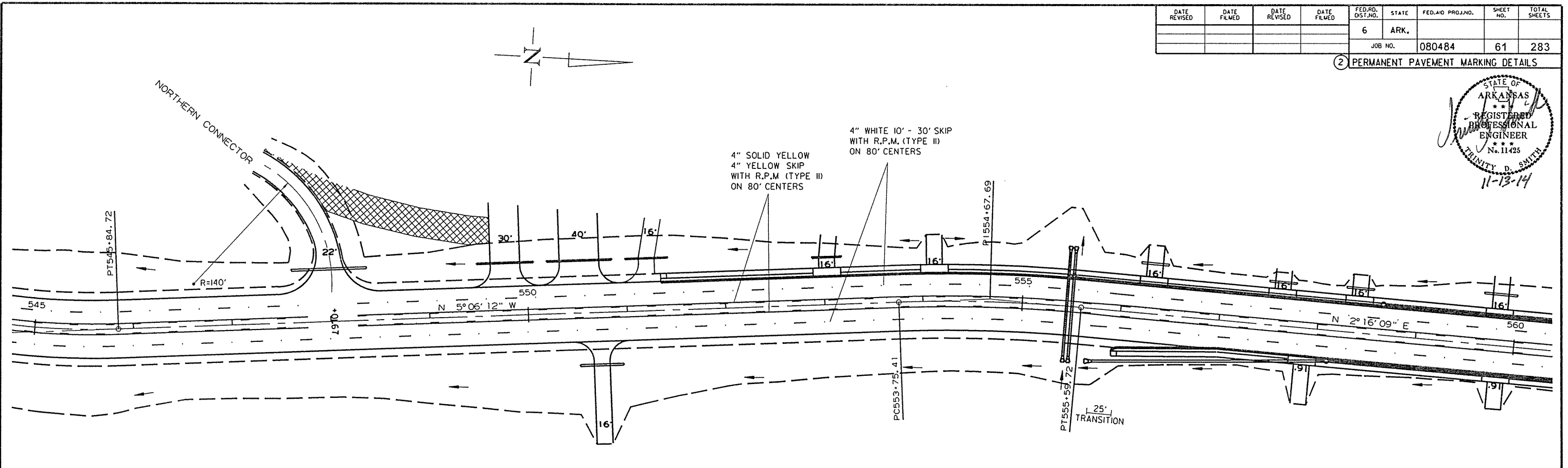
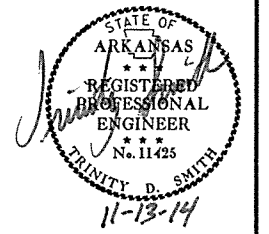
PERMANENT PAVEMENT MARKING DETAILS

11/13/2014

R080484.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. 080484							61	283

2 PERMANENT PAVEMENT MARKING DETAILS



STA. 572+50  
 END JOB 080389  
 STA. 107+50  
 BEGIN JOB 080427  
 LOG MILE 2.37

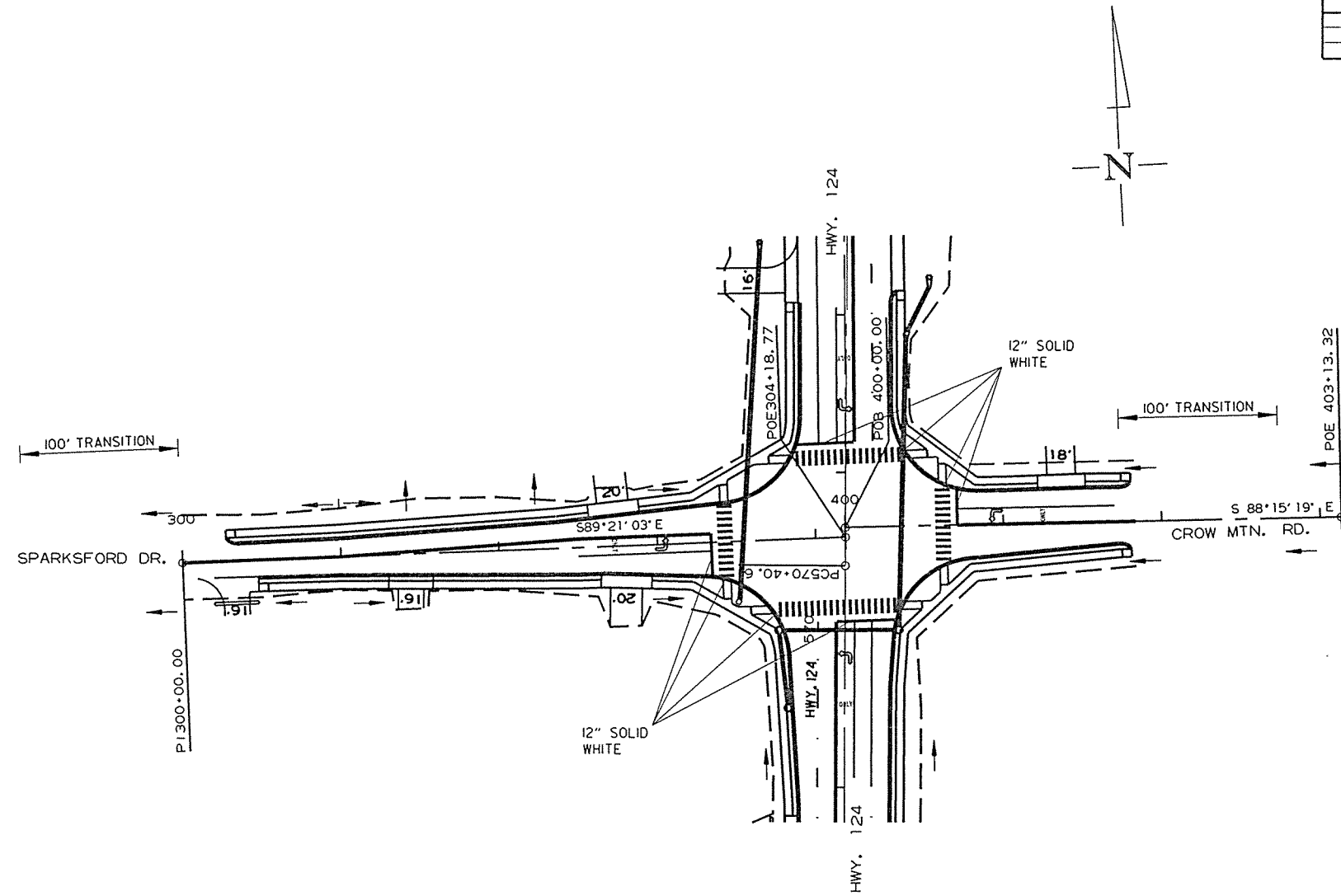
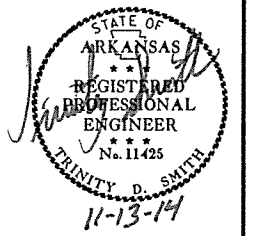
PERMANENT PAVEMENT MARKING DETAILS

11/13/2014

RO80484.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.							080484	62	283

2 PERMANENT PAVEMENT MARKING DETAILS



11/13/2014

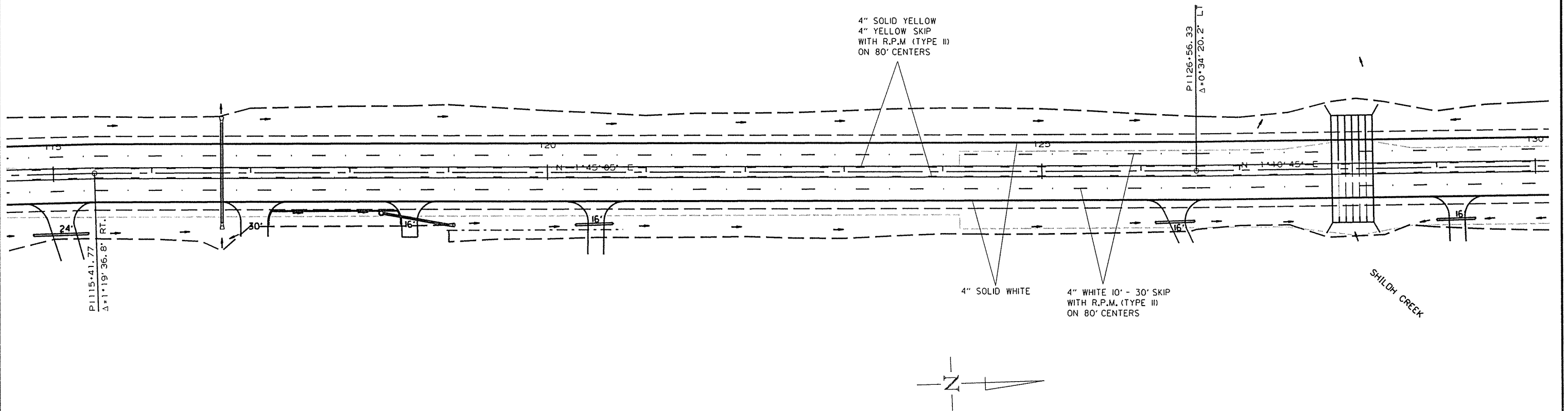
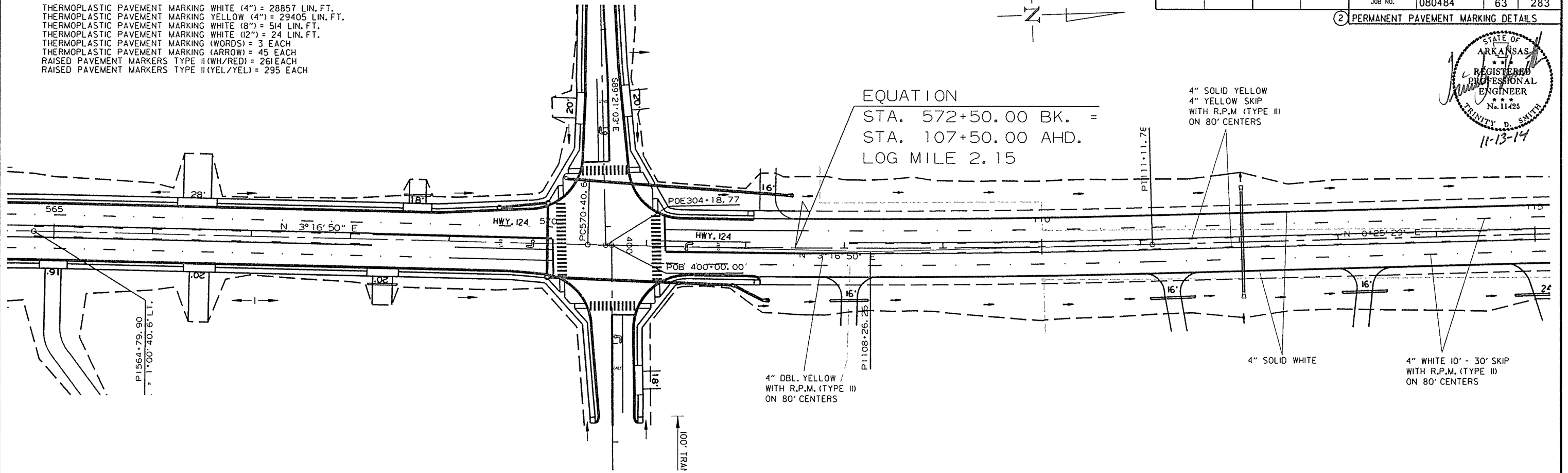
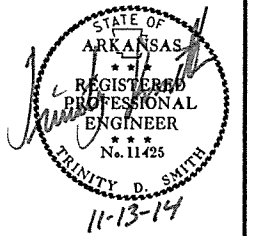
R080484.DGN

PERMANENT PAVEMENT MARKING DETAILS QUANTITIES

THERMOPLASTIC PAVEMENT MARKING WHITE (4") = 28857 LIN. FT.  
 THERMOPLASTIC PAVEMENT MARKING YELLOW (4") = 29405 LIN. FT.  
 THERMOPLASTIC PAVEMENT MARKING WHITE (8") = 514 LIN. FT.  
 THERMOPLASTIC PAVEMENT MARKING WHITE (12") = 24 LIN. FT.  
 THERMOPLASTIC PAVEMENT MARKING (WORDS) = 3 EACH  
 THERMOPLASTIC PAVEMENT MARKING (ARROW) = 45 EACH  
 RAISED PAVEMENT MARKERS TYPE II (WH/RED) = 26 EACH  
 RAISED PAVEMENT MARKERS TYPE II (YEL/YEL) = 295 EACH

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.	080484		63	283

2 PERMANENT PAVEMENT MARKING DETAILS



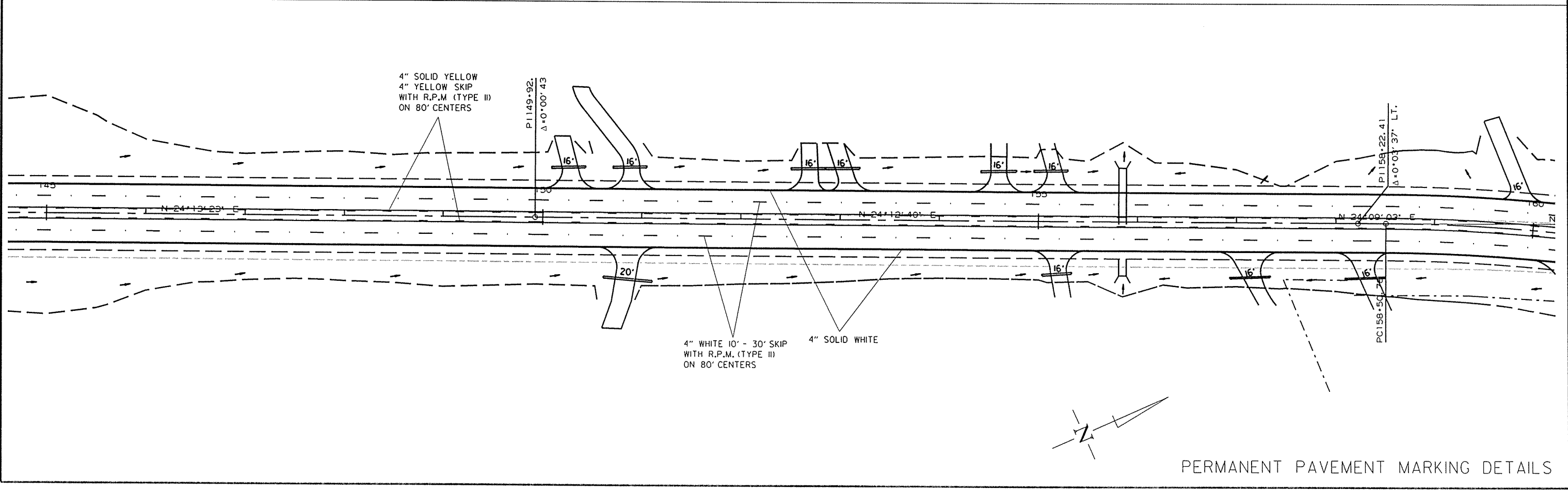
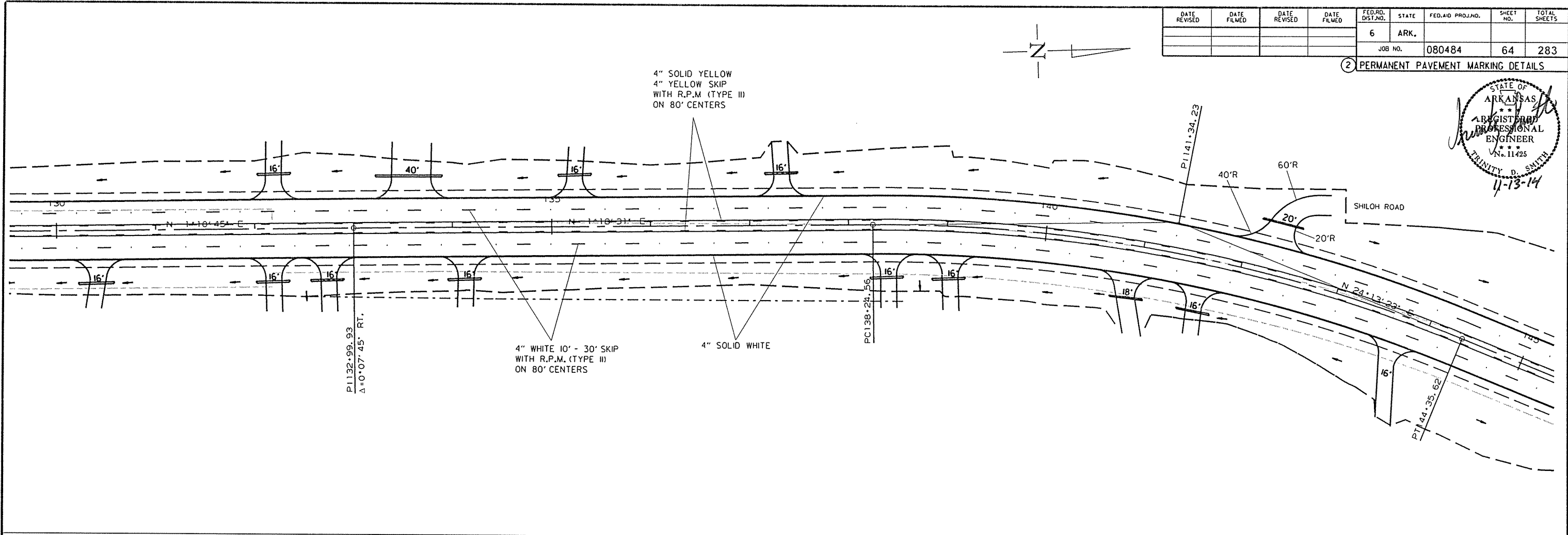
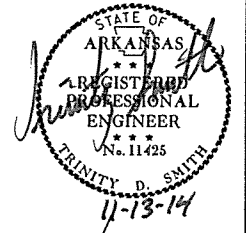
PERMANENT PAVEMENT MARKING DETAILS

8/26/2014

RO80484.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.							080484	64	283

PERMANENT PAVEMENT MARKING DETAILS



PERMANENT PAVEMENT MARKING DETAILS

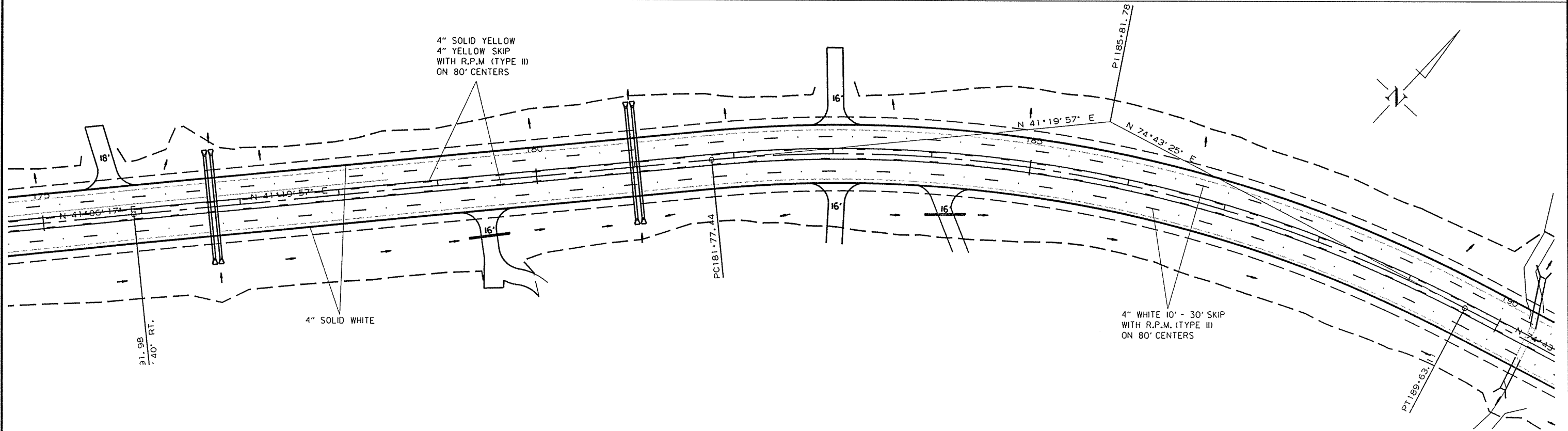
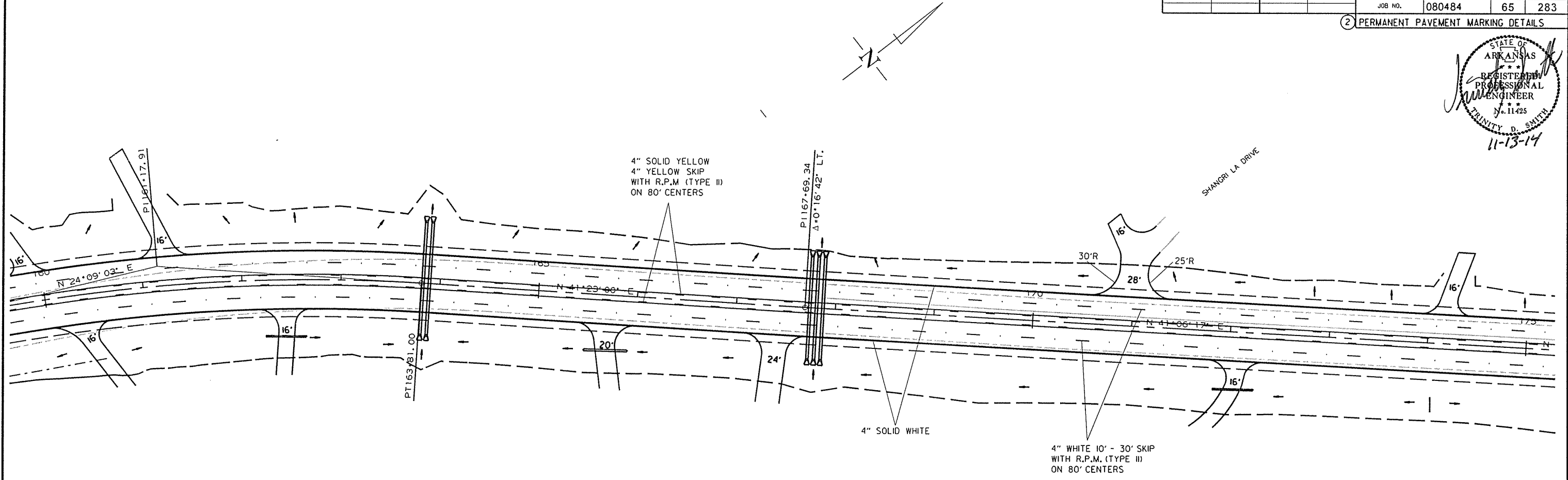
8/26/2014

R080484.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.							080484	65	283

② PERMANENT PAVEMENT MARKING DETAILS

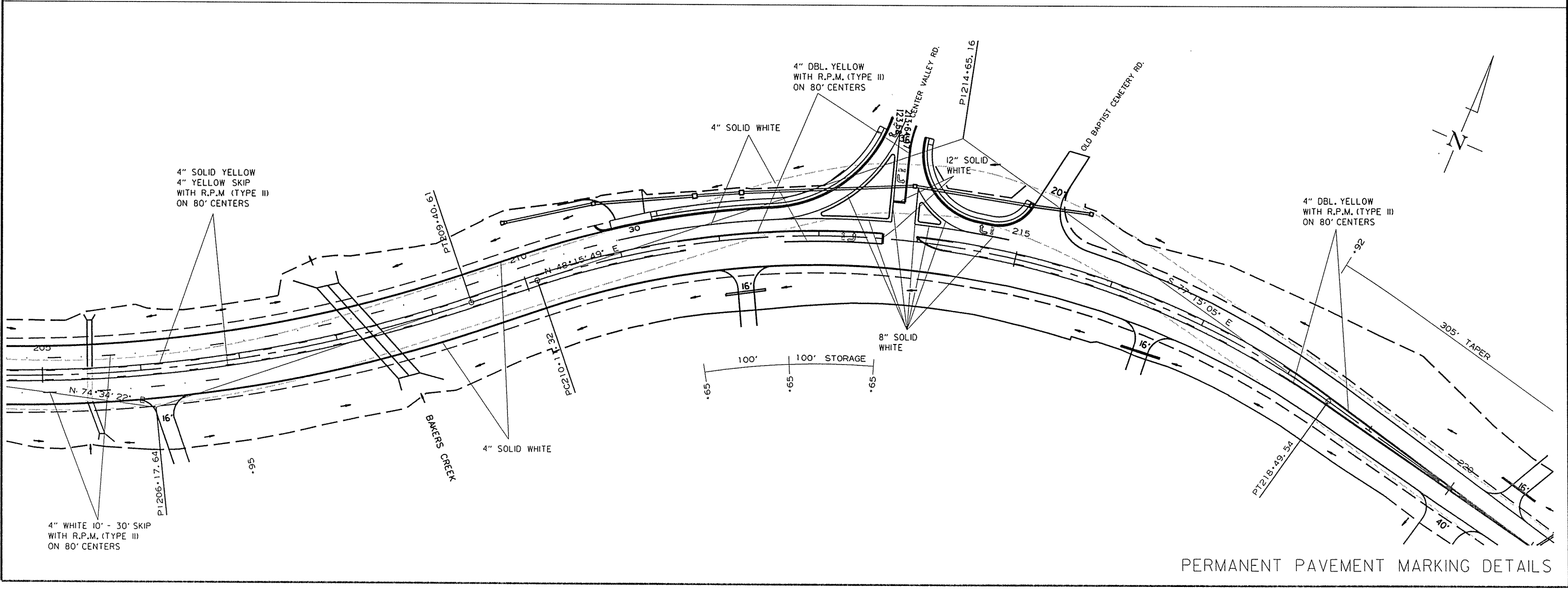
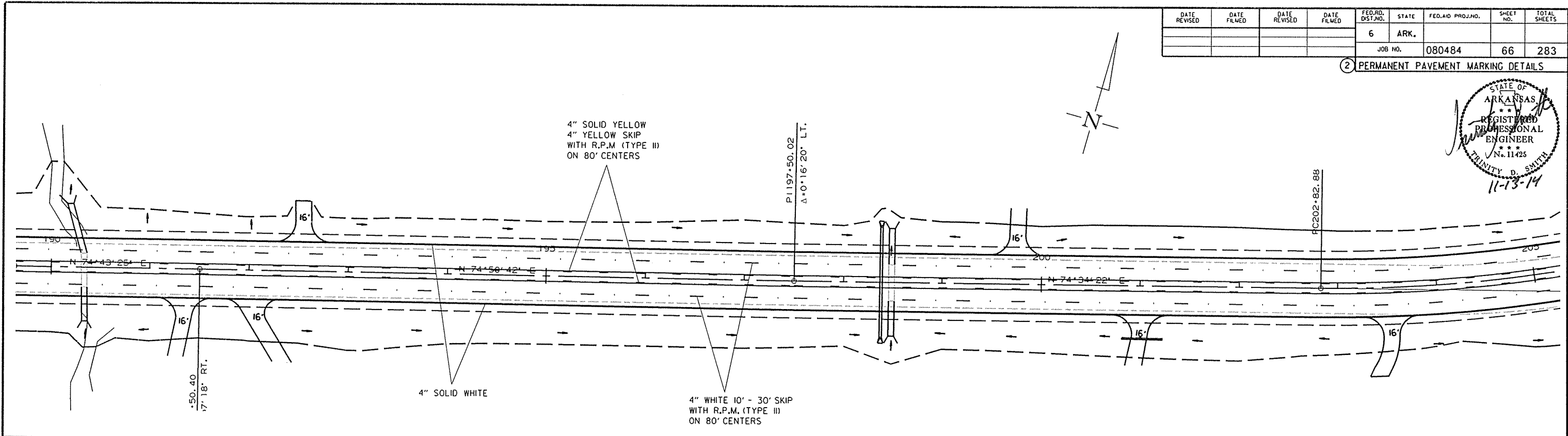
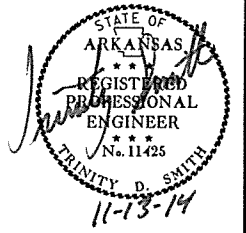


PERMANENT PAVEMENT MARKING DETAILS

8/26/2014  
R080484.DCN

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.	080484		66	283

2 PERMANENT PAVEMENT MARKING DETAILS

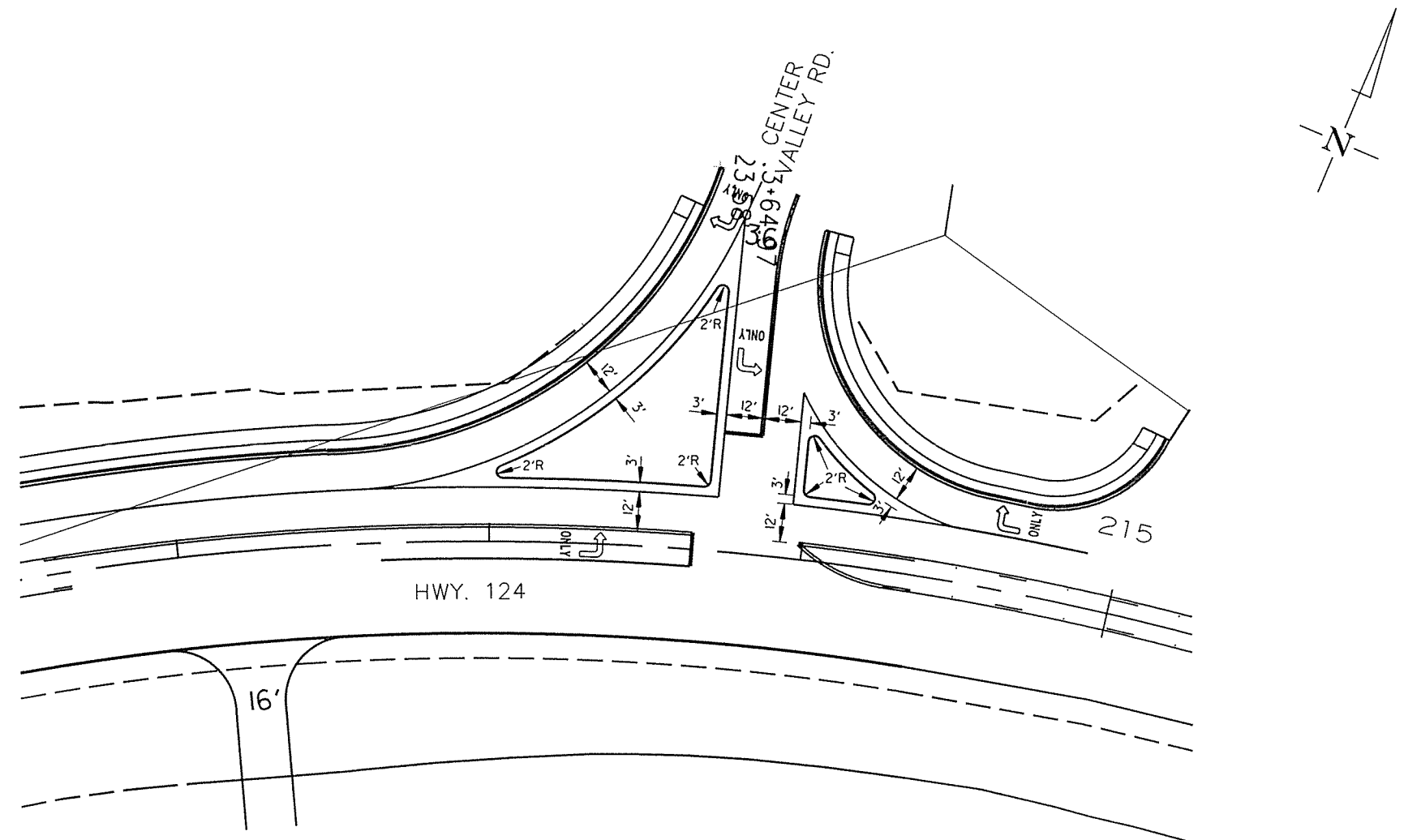
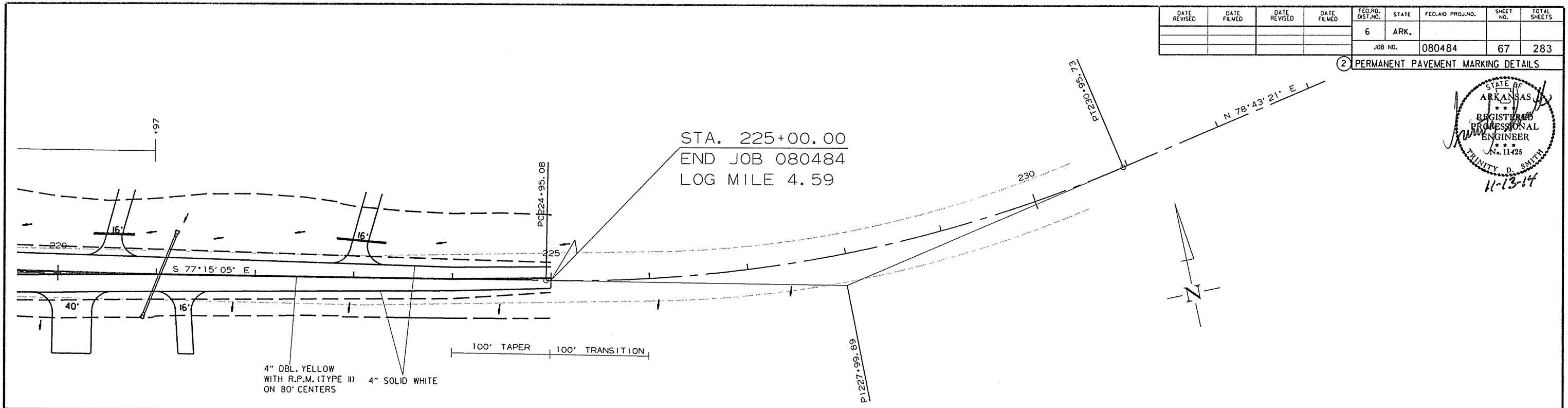
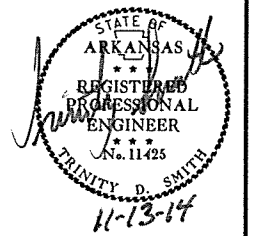


8/26/2014  
R080484.DGN

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.	080484
							SHEET NO.	67
							TOTAL SHEETS	283

② PERMANENT PAVEMENT MARKING DETAILS



HWY. 124 AND CENTER VALLEY RD. INTERSECTION LAYOUT

PERMANENT PAVEMENT MARKING DETAILS

8/26/2014

RO80484.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
							JOB NO.	080484
								68
								283

2 QUANTITIES



**ADVANCE WARNING SIGNS AND DEVICES**

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	STAGE 3	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		VERTICAL PANELS	TRAFFIC DRUMS	BARRICADES (TYPE III)		
							NO.	SQ. FT.			EACH	RIGHT	LEFT
												LIN. FT.	
W20-1	ROAD WORK 1500 FT.	48"x48"	1	1	1	1	1	16.0					
W20-1	ROAD WORK 1000 FT.	48"x48"	1	1	1	1	1	16.0					
W20-1	ROAD WORK 500 FT.	48"x48"	1	1	1	1	1	16.0					
W20-1	ROAD WORK AHEAD	48"x48"	5	5	5	5	5	80.0					
G20-2	END ROAD WORK	48"x24"	6	6	6	6	6	48.0					
G20-1	ROAD WORK NEXT xx MILES	60"x24"	1	1	1	1	1	10.0					
R11-2	ROAD CLOSED	48"x30"		5	4	5	5	50.0					
R4-1	DO NOT PASS	24"x30"	5	5	5	5	5	25.0					
RSP-1	SHOULDER CLOSED	48"x30"	2	2		2	2	20.0					
	VERTICAL PANELS		30	26	20	30			30				
	TRAFFIC DRUMS			151	281	281				281			
	TYPE III BARRICADE-RT. (8')			5	3	5					40		
	TYPE III BARRICADE-LT. (8')			4	4	4						32	
<b>TOTALS:</b>								281.0	30	281	40	32	

NOTE: THIS IS A HIGH TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION. THE QUANTITY OF VERTICAL PANELS PROVIDED IN THE CONTRACT IS FOR ONE SIDE OF THE ROADWAY FOR THE FULL LENGTH OF THE JOB. 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	END OF JOB	CONSTRUCTION PAVEMENT MARKINGS	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS		THERMOPLASTIC PAVEMENT MARKINGS				
							TYPE II (WHITE)	TYPE II (YEL/YEL)	4"		12" WHITE	WORDS	ARROWS
									WHITE	YELLOW			
					LIN. FT.	LIN. FT.	EACH		LIN. FT.		EACH		
CONSTRUCTION PAVEMENT MARKINGS	26982	2445	23764		53191								
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS		2264				2264							
RAISED PAVEMENT MARKERS TYPE II (WHITE)				157			157						
RAISED PAVEMENT MARKERS TYPE II (YEL/YEL)				150				150					
THERMOPLASTIC PAVEMENT MARKING WHITE (4")				14149					14149				
THERMOPLASTIC PAVEMENT MARKING YELLOW (4")				14584						14584			
THERMOPLASTIC PAVEMENT MARKING WHITE (12")				722							722		
THERMOPLASTIC PAVEMENT MARKING WORDS				4								4	
THERMOPLASTIC PAVEMENT MARKING ARROWS				10									4
<b>TOTALS:</b>					53191	2264	157	150	14149	14584	722	4	4

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

QUANTITIES FOR  
FAP NO. STPC-9379(20)

11/13/2014

RO80484.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
12/05/2014				6	ARK.			
						JOB NO.	080484	69 283

② QUANTITIES

**REMOVAL AND DISPOSAL OF FENCE**

STATION	STATION	LOCATION	FENCE	GATES
			LIN. FT.	EACH
520+62	523+57	HWY. 124 - RT.	293	
523+25	526+20	HWY. 124 - LT.	409	
525+48		HWY. 124 - LT.		2
540+00		HWY. 124 - RT.		1
546+00	548+15	HWY. 124 - RT.	233	
549+01	549+60	HWY. 124 - LT.	124	
551+39	557+45	HWY. 124 - RT.	1174	
560+60	562+73	HWY. 124 - LT.	239	
561+97	563+33	HWY. 124 - RT.	262	
572+27	572+50	HWY. 124 - LT.	47	
300+00	302+59	SPARKSFORD RD. - LT.	275	
<b>TOTALS:</b>			<b>3056</b>	<b>3</b>

**CLEARING AND GRUBBING**

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
523+00	527+37	HWY. 124	5	5
528+60	569+10	HWY. 124	42	42
570+30	572+50	HWY. 124	3	3
300+00	302+35	SPARKSFORD RD.	3	3
<b>TOTALS:</b>			<b>53</b>	<b>53</b>



**REMOVAL AND DISPOSAL OF ITEMS**

STATION	STATION	LOCATION	CURB AND GUTTER	CONCRETE DRIVEWAYS	HOUSE FOUNDATIONS	SIGNS	SIGN FOUNDATIONS	BRICK COLUMNS	LIGHTS	GAS LIGHT	BUILDINGS	SEPTIC SYSTEM	WELL
			LIN. FT.	SQ. YD.	LIN. FT.	EACH							
524+83		HWY. 124 - LT.				1	1						
525+10	525+85	HWY. 124 - LT.			289								
525+20		HWY. 124 - LT.				1	1						
525+45		HWY. 124 - LT.											1
525+78	526+52	HWY. 124 - C.L.			276								
526+46		HWY. 124 - LT.				1	1						
525+45		HWY. 124 - RT.											1
544+70	545+30	HWY. 124 - LT.									1		
549+40		HWY. 124 - RT.									1		
550+65		HWY. 124 - RT.									1		
551+10		HWY. 124 - RT.										1	
561+10		HWY. 124 - RT.			178					1			
561+60		HWY. 124 - RT.											
566+38	566+68	HWY. 124 - LT.						2	2				
566+50		HWY. 124 - RT.		141	211								
567+13		HWY. 124 - LT.				1	2						
568+00		HWY. 124 - RT.			233								
568+21		HWY. 124 - RT.		86									
570+32	570+57	CROW MOUNTAIN RD.	168										
571+03		HWY. 124 - LT.				1	1						
571+17		HWY. 124 - LT.									2		
<b>TOTALS:</b>			<b>168</b>	<b>227</b>	<b>1187</b>	<b>5</b>	<b>6</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>5</b>	<b>1</b>	<b>2</b>

11/18/2014

R080484.DGN

QUANTITIES FOR  
FAP NO. STPC-9379(20)

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.	080484		70	283

② QUANTITIES

**REMOVAL AND DISPOSAL OF CULVERTS**

STATION	LOCATION	DESCRIPTION	PIPE CULVERTS
			EACH
521+28	HWY. 124 - RT.	24" X 40' CMP	1
524+74	HWY. 124 - LT.	18" X 23" X 33' ARCH CMP	1
553+03	HWY. 124 - LT.	18" X 25' RCP	1
553+93	HWY. 124 - C.L.	24" X 38' CMP	1
554+11	HWY. 124 - LT.	24" X 25' CMP	1
555+88	HWY. 124 - C.L.	24" X 38' RCP	1
556+11	HWY. 124 - LT.	24" X 31' CMP	1
557+62	HWY. 124 - LT.	18" X 25' RCP	1
557+87	HWY. 124 - RT.	18" X 26' RCP	1
558+40	HWY. 124 - LT.	18" X 25' RCP	1
559+83	HWY. 124 - LT.	18" X 25' RCP	1
559+89	HWY. 124 - RT.	18" X 49' CMP	1
560+83	HWY. 124 - RT.	18" X 28' RCP	1
563+91	HWY. 124 - LT.	18" X 37' CMP	1
566+44	HWY. 124 - LT.	18" X 40' CMP	1
566+48	HWY. 124 - RT.	18" X 25' RCP	1
568+21	HWY. 124 - RT.	18" X 25' RCP	1
568+67	HWY. 124 - LT.	18" X 24' CMP	1
569+58	HWY. 124 - LT.	18" X 29' CMP	1
570+50	HWY. 124 - LT.	18" X 62' CMP	1
570+64	HWY. 124 - RT.	18" X 68' RCP	1
570+96	HWY. 124 - RT.	18" X 30' CMP	1
571+44	HWY. 124 - RT.	18" X 85' CMP	1
572+13	HWY. 124 - RT.	18" X 27' CMP	1
1+15	SOUTHERN CONNECTOR - RT.	18" X 23" X 33' ARCH CMP	1
2+00	SOUTHERN CONNECTOR - LT.	18" X 28' RCP	1
<b>TOTAL:</b>			<b>26</b>

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

**CONCRETE WALKS**

STATION	STATION	LOCATION	LENGTH	CONCRETE WALKS	SOLID SODDING	WATER
			LIN. FT.	SQ.YD.	SQ.YD.	M. GAL.
551+35	563+61	HWY. 124 - LT.	1101	612	367	4.6
555+94	570+01	HWY. 124 - RT.	1495	831	498	6.3
564+24	569+79	HWY. 124 - LT.	643	357	214	2.7
571+36	572+50	HWY. 124 - LT.	199	111	66	0.8
571+42	572+50	HWY. 124 - RT.	278	154	93	1.2
300+25	303+24	SPARKSFORD DR. - LT.	267	148	89	1.1
300+47	303+22	SPARKSFORD DR. - RT.	215	119	72	0.9
<b>TOTALS:</b>				<b>2332</b>	<b>1399</b>	<b>17.6</b>

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 ENGINEER	300
<b>TOTAL:</b>	<b>300</b>

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

**CONCRETE COMBINATION CURB AND GUTTER**

STATION	STATION	LOCATION	TYPE A (1' 6")
			LIN. FT.
551+35	563+61	HWY. 124 - LT.	1257
555+94	569+94	HWY. 124 - RT.	1474
564+24	570+34	HWY. 124 - LT.	684
570+79	572+50	HWY. 124 - LT.	156
570+88	572+50	HWY. 124 - RT.	166
300+25	303+24	SPARKSFORD DR. - LT.	320
300+47	303+22	SPARKSFORD DR. - RT.	279
400+83	401+83	CROW MTN. RD. - LT.	104
400+83	401+83	CROW MTN. RD. - RT.	104
<b>TOTAL:</b>			<b>4544</b>

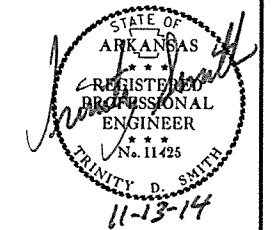
**MAILBOXES**

LOCATION	MAILBOXES	MAILBOX SUPPORTS	
		(SINGLE)	(DOUBLE)
EACH			
ENTIRE PROJECT	18	12	3
<b>TOTALS:</b>	<b>18</b>	<b>12</b>	<b>3</b>

**ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC**

LOCATION	TON	TACK COAT
		GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	26	52
<b>TOTALS:</b>	<b>26</b>	<b>52</b>

BASIS OF ESTIMATE:  
 ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC...25 TON/MILE  
 TACK COAT FOR MAINTENANCE OF TRAFFIC.....50 GAL./MILE



QUANTITIES FOR  
 FAP NO. STPC-9379(20)



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.	080484		71	283

**4" PIPE UNDERDRAIN**

STATION	STATION	LOCATIONS	4" PIPE UNDERDRAINS	UNDERDRAIN OUTLET PROTECTORS
			LIN. FT.	EACH
ENTIRE	PROJECT	HWY. 124	4718	21
* ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER			2000	9
<b>TOTALS:</b>			<b>6718</b>	<b>30</b>

\* 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.

**COLD MILLING ASPHALT PAVEMENT**

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
516+20	517+20	HWY. 124	59	655.56
570+70		HWY. 124 - RT.	32	355.56
300+00	301+00	SPARKSFORD RD.	20	222.22
3+16	4+16	SOUTHERN CONNECTOR	22	244.44
547+43		HWY. 124 - LT.	22	244.44
<b>TOTAL:</b>				<b>1722.22</b>

NOTE: AVERAGE MILLING DEPTH 1"

**WHEELCHAIR RAMPS**

STATION	LOCATION	TYPE 3
		SQ. YD.
551+38	HWY. 124 - LT.	3.3
555+96	HWY. 124 - RT.	3.3
563+70	HWY. 124 - LT.	4.9
564+14	HWY. 124 - LT.	4.9
570+12	HWY. 124 - LT.	5.6
570+16	HWY. 124 - RT.	6.9
570+25	HWY. 124 - LT.	6.8
570+35	HWY. 124 - RT.	6.8
570+88	HWY. 124 - LT.	6.3
570+99	HWY. 124 - RT.	6.8
571+08	HWY. 124 - LT.	7.0
571+12	HWY. 124 - RT.	7.1
572+05	HWY. 124 - LT.	3.3
572+12	HWY. 124 - RT.	3.3
300+31	SPARKSFORD DR. - LT.	3.3
300+50	SPARKSFORD DR. - RT.	3.3
401+78	CROW MTN. RD. - LT.	3.3
401+78	CROW MTN. RD. - RT.	3.3
<b>TOTAL:</b>		<b>89.5</b>



② QUANTITIES

**RUMBLE STRIPS IN ASPHALT SHOULDERS**

STATION	STATION	LOCATION	* RUMBLE STRIPS IN ASPHALT SHOULDERS
			LIN. FT.
517+20	551+35	MAIN LANES - LT.	2284
517+20	556+00	MAIN LANES - RT.	2906
<b>TOTAL:</b>			<b>5190</b>

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

**PAVEMENT REPAIR OVER CULVERTS (CONCRETE)**

STATION	LOCATION	WIDTH	LENGTH	CU. YD.
		FEET		
555+48	HWY. 124 - C.L.	14.00	29	15.0
570+00	HWY. 124 - C.L.	7.92	29	8.5
570+65	HWY. 124 - RT.	7.92	42	12.3
303+54	SPARKSFORD RD. - C.L.	7.92	54	15.8
<b>TOTAL:</b>				<b>51.6</b>

AVG. DEPTH = 12"

**EROSION CONTROL**

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL					TEMPORARY EROSION CONTROL									
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	SOLID SODDING **	TEMPORARY SEEDING	MULCH COVER	WATER	SAND BAG DITCH CHECKS	DROP INLET SILT FENCE	SILT FENCE	SEDIMENT BASIN	OBLITERATION OF SEDIMENT BASIN	*SEDIMENT REMOVAL & DISPOSAL
			ACRE	TON	ACRE	M.GAL.	ACRE	SQ.YD.	ACRE	ACRE	M.GAL.	(E-5) BAG	(E-7) LIN. FT.	(E-11) LIN. FT.	(E-14) CU.YD.	CU.YD.	CU. YD.
ENTIRE	PROJECT	STAGE 1									110			333	333	338	
ENTIRE	PROJECT	STAGE 2				0.6		50	2.67	2.67	54.5	638	125		333	367	
ENTIRE	PROJECT	STAGE 3						14	2.67	2.67	54.5	198	200	115	333	354	
ENTIRE	PROJECT	HWY. 124	5.28	10.56	5.28	538.6	5.28										
* ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			1.32	2.64	1.32	134.8	1.32	16	1.34	1.34	27.0	237	81	29	250	265	
<b>TOTALS:</b>			<b>6.60</b>	<b>13.20</b>	<b>6.60</b>	<b>674.0</b>	<b>6.60</b>	<b>80</b>	<b>6.68</b>	<b>6.68</b>	<b>136.0</b>	<b>1183</b>	<b>406</b>	<b>144</b>	<b>1249</b>	<b>1324</b>	

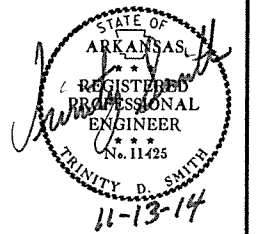
BASIS OF ESTIMATE:  
 LIME .....2 TONS / ACRE OF SEEDING  
 WATER.....102.0 M.G. / ACRE OF SEEDING  
 WATER.....20.4 M.G. / ACRE OF TEMPORARY SEEDING  
 WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING  
 SAND BAG DITCH CHECKS.....22 BAGS / LOCATION

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 ESTIMATED. SEE SECTION 104.03 OF THE STD. SPECS.

QUANTITIES FOR  
 FAP NO. STPC-9379(20)

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.		080484	72	283

② QUANTITIES



DRIVEWAYS & TURNOUTS

STATION	SIDE	LOCATION	WIDTH FEET	**MODIFIED CURB		PORTLAND CEMENT CONCRETE DRIVEWAY SQ. YD.	ACHM SURFACE COURSE (1/2") 220 LBS. PER SQ. YD. (PG 70-22)		AGGREGATE BASE COURSE (CLASS 7) TON	SIDE DRAINS			STANDARD DRAWINGS	
				STATION	STATION		SQ. YD.	TON		18"	24"	21"X15"		
										LIN. FT.				
521+28	RT.	HWY. 124	16				86.6	9.5	35.4		34		PCC-1, PCM-1, PCP-1, PCP-2	
532+00	LT.	HWY. 124	16				81.2	8.9	33.2		48		PCC-1, PCM-1, PCP-1, PCP-2	
532+00	RT.	HWY. 124	16				93.7	10.3	38.3		48		PCC-1, PCM-1, PCP-1, PCP-2	
548+02	LT.	HWY. 124	22								76		PCC-1, PCM-1, PCP-1, PCP-2	
549+78	LT.	HWY. 124	30				256.7	28.2	104.8	58			PCC-1, PCM-1, PCP-1, PCP-2	
550+53	LT.	HWY. 124	40				297.3	32.7	121.4	66			PCC-1, PCM-1, PCP-1, PCP-2	
550+73	RT.	HWY. 124	16				174.6	19.2	71.3		44		PCC-1, PCM-1, PCP-1, PCP-2	
551+21	LT.	HWY. 124	16				127.3	14.0	52.0		42		PCC-1, PCM-1, PCP-1, PCP-2	
553+03	LT.	HWY. 124	16	552+81	553+25	24.90	59.0	6.5	24.1	30			PCC-1, PCM-1, PCP-1, PCP-2	
554+10	LT.	HWY. 124	16	553+88	554+32	24.90	54.2	6.0	22.1					
556+30	LT.	HWY. 124	16	556+08	556+52	24.90	57.1	6.3	23.3		28		PCC-1, PCM-1, PCP-1, PCP-2	
557+62	LT.	HWY. 124	16	557+40	557+84	24.90	36.6	4.0	14.9			28	PCC-1, PCM-1, PCP-1, PCP-2	
557+87	RT.	HWY. 124	16	557+65	558+09	24.90	71.7	7.9	29.3					
558+40	LT.	HWY. 124	16	558+18	558+62	24.90	39.6	4.4	16.2			28	PCC-1, PCM-1, PCP-1, PCP-2	
559+83	LT.	HWY. 124	16	559+61	560+05	24.90	59.9	6.6	24.5	36			PCC-1, PCM-1, PCP-1, PCP-2	
559+84	RT.	HWY. 124	16	559+62	560+06	24.90	48.5	5.3	19.8					
560+93	RT.	HWY. 124	16	560+71	561+15	24.90	76.4	8.4	31.2					
563+91	LT.	HWY. 124	20				225.8	24.8	92.2					
565+00	RT.	HWY. 124	16	564+78	565+22	24.90	321.8	35.4	131.4					
566+44	LT.	HWY. 124	28	566+16	566+72	35.60	140.0	15.4	57.2					
566+48	RT.	HWY. 124	20	566+24	566+72	141.30								
568+33	RT.	HWY. 124	20	568+09	568+57	92.80					30		PCC-1, PCM-1, PCP-1, PCP-2	
568+67	LT.	HWY. 124	18	568+44	568+90	26.70		48.6	5.3	19.8	28		PCC-1, PCM-1, PCP-1, PCP-2	
572+22	LT.	HWY. 124	16					83.4	9.2	34.1				
300+33	RT.	SPARKSFORD RD.	16				42.7	4.7	17.4		28		PCC-1, PCM-1, PCP-1, PCP-2	
301+44	RT.	SPARKSFORD RD.	16	301+22	301+66	24.90	23.2	2.6	9.5					
302+72	LT.	SPARKSFORD RD.	20	302+48	302+96	28.40	40.4	4.4	16.5					
302+79	RT.	SPARKSFORD RD.	20	302+55	303+03	28.40	40.7	4.5	16.6					
401+38	LT.	CROW MTN. RD.	18	401+15	401+61	26.70	36.4	4.0	14.9					
0+83	C.L.	SOUTHERN CONNECTOR	24								134		PCC-1, PCM-1, PCP-1, PCP-2	
2+00	LT.	SOUTHERN CONNECTOR	18				95.3	10.5	38.9	42			PCC-1, PCM-1, PCP-1, PCP-2	
* ENTIRE PROJECT TEMPORARY DRIVES									435.0					
<b>TOTALS:</b>						653.80	2718.7	299.0	1545.3	232	454	142		

BASIS OF ESTIMATE:  
 ACHM SURFACE COURSE (1/2").....94.6% MIN. AGGR.....5.4% ASPHALT BINDER  
 MAXIMUM NUMBER OF GYRATIONS = 160 FOR PG 70-22  
 \* 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.  
 NOTE: FOR C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

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.

QUANTITIES FOR  
 FAP NO. STPC-9379(20)

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.	080484		73	283

② QUANTITIES



**CONCRETE DITCH PAVING**

**EROSION CONTROL MATTING**

STATION	STATION	LOCATION	LENGTH		"W"	"B"	CONC. DITCH PAVING		SOLID SODDING	WATER
			LIN. FT.	FEET			(TYPE B)	SQ. YD.		
ENTIRE	PROJECT	HWY. 124	VAR.	VAR.	VAR.		100.00	50.00	0.6	
<b>TOTALS:</b>							100.00	50.00	0.60	

STATION	STATION	LOCATION	LENGTH		CLASS 3
			LIN. FT.	SQ. YD.	
ENTIRE	PROJECT	HWY. 124	1000.0	888.9	
<b>TOTAL:</b>					888.9

BASIS OF ESTIMATE:  
 WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING.  
 QUANTITY ESTIMATED. SEE SECTION 104.03 OF THE STD. SPECS.  
 TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

NOTE: AVERAGE WIDTH = 8'-0"  
 QUANTITY ESTIMATED. SEE SECTION 104.03 OF THE STD. SPECS.  
 TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

**EARTHWORK**

**FENCING**

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	* SOIL STABILIZATION
			CU. YD.	CU. YD.	TON
ENTIRE	PROJECT	STAGE 1 - TEMPORARY WIDENING	757	21	
ENTIRE	PROJECT	STAGE 2 - WIDENING ON RT. & NEW LOCATION	35098	57646	
ENTIRE	PROJECT	STAGE 3 - WIDENING ON LT.	5958	5161	
ENTIRE	PROJECT	APPROACHES	100	3170	
ENTIRE	PROJECT	OBLITERATION OF HWY. 124	208		
ENTIRE	PROJECT	TEMPORARY APPROACHES	15	420	
ENTIRE	PROJECT	SPARKSFORD RD.	1142	450	
ENTIRE	PROJECT	SOUTHERN CONNECTION	69	3361	
ENTIRE	PROJECT	CROW MOUNTAIN RD.	600	600	
ENTIRE	PROJECT	TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER			200
<b>TOTALS:</b>			43947	70829	200

STATION	STATION	LOCATION	WIRE FENCE		* 16'-0" GATES
			(TYPE D-1)	(TYPE D-2)	
			LIN. FT.		EACH
520+62	526+20	HWY. 124 - RT.		558	1
545+50	548+15	HWY. 124 - RT.	265		
551+00	557+48	HWY. 124 - RT.	648		
560+54	562+73	HWY. 124 - LT.		219	
571+07	572+50	HWY. 124 - LT.		143	
300+00	303+46	SPARKSFORD RD. - LT.		346	
<b>TOTALS:</b>			913	1266	1

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

\* DENOTES ALTERNATE BID ITEM.

**STRUCTURES**

STATION	DESCRIPTION	PIPE CULVERT CROSS DRAIN ALTERNATES 1, 2, 3, 4, 5, & 6				SIDE DRAIN *	PIPE CULVERT STORM DRAIN ALTERNATES 1, 2, 3, & 4		FLARED END SECTIONS FOR R.C. PIPE CULVERTS			DROP INLETS		JUNCTION BOX (TYPE E)	YARD DRAIN *	SOLID SODDING SQ.YD.	WATER M.GAL.	STD. DWG. NOS.		
		REINF. CONCRETE CLASS		CORR. STEEL			CLASS III		18"	24"	36"	E	MO						4'	8'
		III	IV	24"	36"		18"	24"												
		36"	24"	24"	36"		12"	18"	24"	18"	24"	36"								
528+61	DBL. R.C. PIPE CULVERTS W/FES	296			302					4	4					36	0.45	PCC-1, FES-1, FES-2		
555+48	DBL. R.C. PIPE CULVERTS W/FES		196	201						4						18	0.23	PCC-1, FES-1, FES-2		
555+50	JUNCTION BOX ON LT.												1					FPC-9		
558+12	D.I. ON RT. W/EXT., FES & PIPE CULVERT									1	1					8	0.10	FPC-9E, FPC-9M, PCC-1, PCM-1, FES-1, FES-2		
558+65	D.I. ON LT. W/EXT. & PIPE CULVERT											1	1					FPC-9E, FPC-9M, PCC-1, PCM-1		
560+50	D.I. ON LT. W/EXT. & PIPE CULVERT						181					1	1	1				FPC-9E, FPC-9M, PCC-1, PCM-1		
561+18	D.I. ON RT. W/EXT. & PIPE CULVERT						303					1	1					FPC-9E, FPC-9M, PCC-1, PCM-1		
563+50	D.I. ON LT. W/EXT. & PIPE CULVERT						296					1	1					FPC-9E, FPC-9M, PCC-1, PCM-1		
564+00	D.I. ON RT. W/EXT. & PIPE CULVERT						279					1	1	1				FPC-9E, FPC-9M, PCC-1, PCM-1		
564+25	D.I. ON LT. W/EXT. & PIPE CULVERT						71					1	1	1				FPC-9E, FPC-9M, PCC-1, PCM-1		
569+50	D.I. ON LT. W/EXT. & PIPE CULVERT						46					1	1					FPC-9E, FPC-9M, PCC-1, PCM-1		
570+00	D.I. ON LT. W/EXT. & PIPE CULVERT						72					1	1					FPC-9E, FPC-9M, PCC-1, PCM-1		
570+00	D.I. ON RT. W/EXT. & PIPE CULVERT						186					1	1					FPC-9E, FPC-9M, PCC-1, PCM-1		
570+17	D.I. ON LT. W/FES & PIPE CULVERT						224		1		1					5	0.06	FPC-9, PCC-1, PCM-1, FES-1, FES-2		
571+88	J.B. ON RT. W/FES & PIPE CULVERT						32		1					1		5	0.06	FPC-9, PCC-1, PCM-1, FES-1, FES-2		
* ENTIRE PROJECT: TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.						200									10			FPC-9, PCM-1		
<b>TOTALS:</b>		296	196	201	302	200	1690	547	2	5	4	1	10	6	4	2	10	72	0.90	

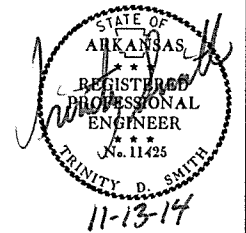
BASIS OF ESTIMATE:  
 WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING.  
 NOTE: FOR R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.  
 NOTE: FOR C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.  
 \* QUANTITIES ESTIMATED. SEE SECTION 104.03 OF THE STD. SPECS.

QUANTITIES FOR  
 FAP NO. STPC-9379(20)

11/12/2014  
 R080484.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.							080484	74	283

2 QUANTITIES



BASE AND SURFACING

STATION	STATION	LOCATION	LENGTH FEET	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT				ACHM BASE COURSE (1 1/2")				ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")						TOTAL PG 70-22 TON			
				TON / STATION	TON	AVG. WID. FEET	SQ. YD.	GALLONS / SQ. YD.	GALLON	AVG. WID. FEET	SQ. YD.	POUND / SQ. YD.	PG 70-22 TON	AVG. WID. FEET	SQ. YD.	POUND / SQ. YD.	PG 70-22 TON	AVG. WID. FEET	SQ. YD.	POUND / SQ. YD.	PG 70-22 TON	AVG. WID. FEET	SQ. YD.		POUND / SQ. YD.	PG 70-22 TON	
MAIN LANES																											
516+20.00	517+20.00	HWY. 124	100.00																								
517+20.00	518+50.00	HWY. 124 - NOTCH & WIDEN 5 LANE OPEN SHLD.	130.00	160.31	208.40	150.14	2168.69	0.03	65.06																		
518+50.00	551+35.00	HWY. 124 - FULL DEPTH 5 LANE OPEN SHLD.	3285.00	386.00	12680.10	135.04	49289.60	0.03	1478.69																		
551+35.00	556+00.00	HWY. 124 - FULL DEPTH 5 LANE C&G LT. & OPEN SHLD. RT.	465.00	309.75	1440.34	122.25	6316.25	0.03	189.49																		
556+00.00	557+00.00	HWY. 124 - FULL DEPTH 5 LANE C&G	100.00	273.50	273.50	117.13	1301.44	0.03	39.04																		
557+00.00	558+00.00	HWY. 124 - FULL DEPTH 5 LANE C&G	100.00	237.25	237.25	112.00	1244.44	0.03	37.33																		
558+00.00	561+50.00	HWY. 124 - NOTCH & WIDEN 5 LANE C&G	350.00	146.28	511.91	112.00	4355.56	0.03	130.67																		
561+50.00	568+90.00	HWY. 124 - FULL DEPTH 5 LANE C&G	740.00	237.25	1755.65	112.00	9208.89	0.03	276.27																		
568+90.00	569+64.00	HWY. 124 - FULL DEPTH 5 LANE C&G	74.00	246.94	182.74	117.00	962.00	0.03	28.86																		
569+64.00	571+00.00	HWY. 124 - FULL DEPTH 5 LANE C&G	136.00	252.78	343.78	120.00	1813.33	0.03	54.40																		
571+00.00	572+08.00	HWY. 124 - FULL DEPTH 5 LANE C&G	108.00	245.00	264.60	94.00	1128.00	0.03	33.84																		
572+08.00	572+50.00	HWY. 124 - NOTCH & WIDEN 5 LANE OPEN SHLD.	42.00	386.00	162.12	124.04	578.85	0.03	17.37																		
299+00.00	300+00.00	SPARKSFORD DRIVE	100.00																								
300+00.00	301+00.00	SPARKSFORD DRIVE - FULL DEPTH 3 LANE C&G	100.00	105.00	105.00	48.89	543.22	0.03	16.30																		
301+00.00	302+37.00	SPARKSFORD DRIVE - FULL DEPTH 3 LANE C&G	137.00	124.44	170.48	72.21	1099.20	0.03	32.98																		
302+37.00	303+50.00	SPARKSFORD DRIVE - FULL DEPTH 3 LANE C&G	113.00	180.83	204.34	98.82	1240.74	0.03	37.22																		
400+30.00	400+85.00	CROW MOUNTAIN RD. - FULL DEPTH 3 LANE C&G	55.00	239.75	131.86	47.66	291.26	0.03	8.74																		
400+85.00	401+75.00	CROW MOUNTAIN RD. - NOTCH & WIDEN 3 LANE C&G	90.00	147.78	133.00	4.20	42.00	0.03	1.26																		
401+75.00	402+75.00	CROW MOUNTAIN RD.	100.00																								
0+50.00	3+16.00	SOUTHERN CONNECTOR	266.00	162.50	432.25	113.19	3345.39	0.03	100.36																		
3+16.00	4+16.00	SOUTHERN CONNECTOR	100.00																								
		NORTHERN CONNECTOR	162.00	162.50	263.25	VAR.	1084.00	0.03	32.52																		
		NORTHERN CONNECTOR	100.00																								
ADDITIONAL FOR TEMPORARY WIDENING (MAINTENANCE OF TRAFFIC)																											
562+55.00	564+15.00	HWY. 124 - LT.	160.00	20.12	32.19	6.33	112.53	0.03	3.38																		
564+15.00	565+50.00	HWY. 124 - LT.	135.00	20.12	27.16	6.33	94.95	0.03	2.85																		
567+50.00	568+00.00	HWY. 124 - LT.	50.00	17.38	8.69	4.93	27.39	0.03	0.82																		
568+00.00	568+50.00	HWY. 124 - LT.	50.00	23.53	11.77	8.43	46.83	0.03	1.40																		
568+50.00	569+00.00	HWY. 124 - LT.	50.00	26.28	13.14	9.83	54.61	0.03	1.64																		
569+00.00	569+50.00	HWY. 124 - LT.	50.00	27.44	13.72	10.43	57.94	0.03	1.74																		
569+50.00	570+00.00	HWY. 124 - LT.	50.00	27.91	13.96	10.69	59.39	0.03	1.78																		
570+00.00	570+22.00	HWY. 124 - LT.	22.00	26.55	5.84	9.99	24.42	0.03	0.73																		
570+80.00	571+40.00	HWY. 124 - LT.	60.00	16.20	9.72	4.33	28.87	0.03	0.87																		
570+84.00	572+50.00	HWY. 124 - RT.	166.00	97.23	161.40	44.33	817.64	0.03	24.53																		
ADDITIONAL FOR LEVELING AND GRADE RAISE																											
517+20.00	572+50.00	HWY. 124	5530.00			VAR.	VAR.	0.10	401.20																		
517+20.00	572+50.00	HWY. 124	5530.00			VAR.	VAR.	0.10	67.04																		
ADDITIONAL FOR SUPERELEVATION																											
517+45.44	522+85.44	HWY. 124 - LT.	540.00	45.13	243.70																						
522+85.44	527+33.02	HWY. 124 - LT.	447.58	90.25	403.94																						
527+33.02	532+73.02	HWY. 124 - LT.	540.00	45.13	243.70																						
534+20.82	539+60.82	HWY. 124 - RT.	540.00	48.25	260.55																						
539+60.82	544+49.72	HWY. 124 - RT.	488.90	96.50	471.79																						
544+49.72	549+89.72	HWY. 124 - RT.	540.00	48.25	260.55																						
TOTALS:						21682.39		87337.43		3088.38			215.90		39419.86		9756.43		36533.77		6284.61		47872.96		5266.05	11550.66	

BASIS OF ESTIMATE:  
 ACHM SURFACE COURSE (1/2").....94.6% MIN. AGGR.....5.4% ASPHALT BINDER  
 ACHM BINDER COURSE (1").....95.5% MIN. AGGR.....4.5% ASPHALT BINDER  
 ACHM BASE COURSE (1 1/2").....95.8% MIN. AGGR.....4.2% ASPHALT BINDER  
 MAXIMUM NUMBER OF GYRATIONS = 160 FOR PG 70-22

11/12/2014 R080484.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. 080484	75	283

② SOIL BORING LOG



SOIL LOG

STATION	LATITUDE			LONGITUDE			LOCATION	DEPTH FEET	LIQUID LIMIT	PLASTICITY INDEX	AASHTO CLASSIFICATION	COLOR
	DEG	MIN	SEC	DEG	MIN	SEC						
518+00	35	17	39.80	93	6	23.60	15' RT.	0-5	23	6	A-4 (2)	BROWN
518+00	35	17	39.80	93	6	23.50	25' RT.	0-5	25	8	A-4 (3)	BROWN
518+00	35	17	39.80	93	6	23.30	40' RT.	0-5	30	10	A-4 (7)	BROWN
526+00	35	17	47.10	93	6	21.10	C.L.	0-5	31	9	A-4 (2)	BROWN
534+00	35	17	52.10	93	6	13.70	C.L.	0-5	28	10	A-4 (6)	BROWN
558+00	35	18	13.00	93	6	6.80	5' RT.	0-5	20	5	A-4 (0)	BROWN
558+00	35	18	13.20	93	6	6.50	15' RT.	0-5	21	4	A-4 (0)	BROWN

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.

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.							080484	76	283

② QUANTITIES

ADVANCE WARNING SIGNS AND DEVICES

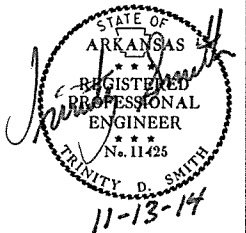
SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	STAGE 3	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		VERTICAL PANELS	TRAFFIC DRUMS	BARRICADES (TYPE III)		FURNISHING & INSTALLING PRECAST CONC. BARRIER	RELOCATING PRECAST CONCRETE BARRIER	TEMPORARY IMPACT ATTENUATION BARRIER	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)
							NO.	SQ. FT.			RIGHT	LEFT				
			LIN. FT. - EACH					EACH								
W20-1	ROAD WORK 1500 FT.	48"x48"	1	1	1	1	1	16.0								
W20-1	ROAD WORK 1000 FT.	48"x48"	1	1	1	1	1	16.0								
W20-1	ROAD WORK 500 FT.	48"x48"	1	1	1	1	1	16.0								
W20-1	ROAD WORK AHEAD	48"x48"	5	5	5	5	5	80.0								
G20-2	END ROAD WORK	48"x24"	6	6	6	6	6	48.0								
G20-1	ROAD WORK NEXT xx MILES	60"x24"	1	1	1	1	1	10.0								
R11-2	ROAD CLOSED	48"x30"		8	2	8	8	80.0								
OM-3L	OBJECT MARKER	12"x36"		21	21	21	21	63.0								
OM-3R	OBJECT MARKER	12"x36"		26	24	26	26	78.0								
W1-8	CHEVRONS	18"x24"		8		8	8	24.0								
R4-1	DO NOT PASS	24"x30"	9	9	9	9	9	45.0								
RSP-1	SHOULDER CLOSED	48"x30"	2			2	2	20.0								
VERTICAL PANELS			115	16		115			115							
TRAFFIC DRUMS			170	487	479	487				487						
TYPE III BARRICADE-RT. (8')				8	4	8				64						
TYPE III BARRICADE-LT. (8')				7		7					56					
FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER				1396		1396						1396				
RELOCATING PRECAST CONCRETE BARRIER					1210	1210							1210			
TEMPORARY IMPACT ATTENUATION BARRIER				2	2	4								4		
TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)					4	4										4
<b>TOTALS:</b>								496.0	115	487	64	56	1396	1210	4	4

NOTE: THIS IS A HIGH TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION. THE QUANTITY OF VERTICAL PANELS PROVIDED IN THE CONTRACT IS FOR ONE SIDE OF THE ROADWAY FOR THE FULL LENGTH OF THE JOB. 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	END OF JOB	REMOVAL OF PERMANENT PAVEMENT MARKINGS	CONSTRUCTION PAVEMENT MARKINGS	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS	THERMOPLASTIC PAVEMENT MARKINGS							
									TYPE II		4"		8" WHITE	12" WHITE	WORDS	ARROWS
									(WHITE)	(YEL/YEL)	WHITE	YELLOW				
LIN. FT. - EACH					LIN. FT.			EACH		LIN. FT.				EACH		
REMOVAL OF PERMANENT PAVEMENT MARKINGS		16430	2100		18530											
CONSTRUCTION PAVEMENT MARKINGS	47000	20080	47000			114080										
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS		18968	5000				23968									
RAISED PAVEMENT MARKERS TYPE II (WHITE)				261				261								
RAISED PAVEMENT MARKERS TYPE II (YEL/YEL)				295				295								
THERMOPLASTIC PAVEMENT MARKING WHITE (4")				28857					28857							
THERMOPLASTIC PAVEMENT MARKING YELLOW (4")				29405					29405							
THERMOPLASTIC PAVEMENT MARKING WHITE (8")				514						514						
THERMOPLASTIC PAVEMENT MARKING WHITE (12")				24							24					
THERMOPLASTIC PAVEMENT MARKING WORDS				3								3				
THERMOPLASTIC PAVEMENT MARKING ARROWS				3												3
<b>TOTALS:</b>					18530	114080	23968	261	295	28857	29405	514	24	3		3

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



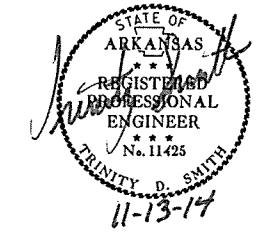
8/26/2014 R080484.DGN

QUANTITIES FOR  
FAP NO. STPF-0058(43)



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.		080484	77	283

② QUANTITIES



REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	CURB AND GUTTER	POSTS	WATER SPIGOT	BACKFLOW PREVENTER	CONCRETE DRIVEWAYS	COLUMNS	HOUSE FOUNDATIONS	BUILDINGS	SIGNS	SIGN FOUNDATIONS	GUARDRAIL	WELL	CATTLE GUARD	PLANTERS
			LIN. FT.	EACH	EACH	SQ. YD.	EACH	LIN. FT.	EACH	LIN. FT.	EACH	LIN. FT.	EACH	EACH	EACH	
106+66		HWY. 124 - RT.														
115+15		HWY. 124 - RT.														
117+48		HWY. 124 - RT.									1	1			1	
130+60		HWY. 124 - RT.												1		
133+58		HWY. 124 - LT.					202									
134+54		HWY. 124 - LT.									1	1				
141+40		HWY. 124 - LT.									1	1				
144+50		HWY. 124 - RT.								1						
145+00		HWY. 124 - LT.								1						
145+30		HWY. 124 - LT.												1		
145+50		HWY. 124 - RT.								1						
150+83		HWY. 124 - RT.													1	
154+30		HWY. 124 - LT.							101							
169+44		HWY. 124 - LT.									1	2				
191+40		HWY. 124 - RT.			1											
191+75		HWY. 124 - RT.				1										
193+30		HWY. 124 - RT.								1						
206+30		HWY. 124 - RT.		1												
207+75	209+04	HWY. 124 - LT.											127			
207+85	209+10	HWY. 124 - RT.											127			
208+20		HWY. 124 - LT.		1												
208+50		HWY. 124 - LT.		1												
209+18		HWY. 124 - RT.								1	1	2				
210+62	211+04	HWY. 124 - LT.	66													
210+62	211+78	HWY. 124 - RT.	116													
210+85	211+45	HWY. 124 - LT.					94									
211+26	213+66	HWY. 124 - LT.	313													
212+09	215+67	HWY. 124 - LT.	374													
212+70		HWY. 124 - RT.							333							
213+82		HWY. 124 - LT.									1	1				
213+96	214+33	HWY. 124 - LT.	58													
214+10		HWY. 124 - LT.								1	1	1				
215+35		HWY. 124 - RT.								1						
215+38	215+73	HWY. 124 - LT.	59													
219+60		HWY. 124 - RT.														1
219+60		HWY. 124 - RT.								1	1	1				
220+30		HWY. 124 - LT.						1								
220+80		HWY. 124 - LT.						1								
TOTALS:			986	3	1	1	296	2	434	8	8	10	254	2	2	1

NOTE: TERMINAL ANCHOR POST TO BE SUBSIDERY OF GUARDRAIL.

QUANTITIES FOR  
FAP NO. STPF-0058(43)

8/26/2014

R080484.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.							080484	78	283

② QUANTITIES

REMOVAL AND DISPOSAL OF CULVERTS AND DROP INLETS  
(BOX 1 OF 2)

STATION	DESCRIPTION	PIPE CULVERTS	BOX CULVERTS	DROP INLETS
		EACH	EACH	EACH
108+05	18" X 24' CMP - RT.	1		
111+30	24" X 24' CMP - RT.	1		
112+03	24" X 34' RCP - C.L.	1		
113+25	18" X 23' CMP - RT.	1		
115+05	18" X 41' CMP - RT.	1		
116+71	24" X 34' RCP - C.L.	1		
118+58	16" X 25' CMP - RT.	1		
120+49	18" X 32' CMP - RT.	1		
126+40	24" X 30' CMP - RT.	1		
129+20	18" X 30' CMP - RT.	1		
130+40	18" X 30' CMP - RT.	1		
132+17	18" X 23' CMP - RT.	1		
132+18	16" X 37' CMP - LT.	1		
132+73	18" X 24' CMP - RT.	1		
133+58	18" X 60' CMP - LT.	1		
134+15	18" X 23' CMP - RT.	1		
135+23	18" X 25' CMP - LT.	1		
137+31	18" X 21' CMP - LT.	1		
138+40	18" X 22' CMP - RT.	1		
139+05	18" X 24' CMP - RT.	1		
140+89	18" X 21' RCP - RT.	1		
141+62	18" X 25' RCP - RT.	1		
142+21	18" X 70' CMP - LT.	1		
150+32	18" X 30' CMP - LT.	1		
150+86	18" X 34' RCP - RT.	1		
	18" X 22' CMP - RT.	1		
150+90	18" X 25' RCP - LT.	1		
152+69	18" X 26' RCP - LT.	1		
153+04	18" X 22' CRP RCP - LT.	1		
155+16	18" X 25' RCP - LT.	1		
155+20	24" X 25' CMP - RT.	1		
157+16	24" X 36" X 31" ARCH CMP - RT.	1		
	18" X 31' PLASTIC PIPE - RT.	1		
158+33	12" X 18" X 24" ARCH CMP - RT.	1		
160+40	18" X 24' CMP - RT.	1		
163+04	18" X 40' PLASTIC PIPE - RT.	1		
163+86	24" X 40' RCP - LT.	1		
165+68	18" X 22' CMP - RT.	1		
167+43	18" X 24' RCP - RT.	1		
167+94	24" X 35' RCP - RT.	1		
176+72	24" X 35' RCP - RT.	1		
179+47	18" X 22' CMP - RT.	1		
181+55	24" X 40' RCP - RT.	1		
191+35	18" X 24' PLASTIC PIPE - RT.	1		
192+55	18" X 24' CMP - LT.	1		
199+74	18" X 22' CMP - LT.	1		
203+54	24" X 16" X 24" ARCH CMP - RT.	1		
208+44	R.C. BOX CULVERT		1	
209+69	24" X 21' CMP - LT.	1		
211+08	24" X 64' RCP - LT.	1		
211+41	DROP INLET - LT.			1
<b>SUBTOTALS:</b>		49	1	1

NOTE: QUANTITIES SHOWN ABOVE SHALL INCLUDE REMOVAL & DISPOSAL

CONCRETE WALKS

STATION	STATION	LOCATION	LENGTH	CONCRETE WALKS	SOLID SODDING	WATER
			LIN. FT.	SQ. YD.	SQ. YD.	M. GAL.
211+36	213+65	HWY. 124 - LT.	275	153	92	1.2
214+00	215+05	HWY. 124 - LT.	168	93	56	0.7
<b>TOTAL:</b>				246	148	1.9

WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING.

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
108+00	178+70	HWY. 124	71	71
179+70	180+10	HWY. 124	2	2
182+05	225+00	HWY. 124	43	43
<b>TOTALS:</b>			116	116

MAILBOXES

LOCATION	MAILBOXES	MAILBOX SUPPORTS				
		(SINGLE)	(DOUBLE)			
EACH						
ENTIRE PROJECT	36	32	2			
<b>TOTALS:</b>				36	32	2

SELECTED PIPE BEDDING

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

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

REMOVAL AND DISPOSAL OF CULVERTS AND DROP INLETS  
(BOX 2 OF 2)

STATION	DESCRIPTION	PIPE CULVERTS	BOX CULVERTS	DROP INLETS
		EACH	EACH	EACH
211+43	26" X 20" X 149' ARCH CMP - RT.	1		
211+84	28" X 20" X 86" ARCH CMP - LT.	1		
212+18	DROP INLET - RT.			1
212+26	DROP INLET - LT.			1
212+98	26" X 20" X 160' ARCH CMP - RT.	1		
213+76	DROP INLET - RT.			1
213+84	24" X 32' CMP - LT.	1		
214+62	24" X 179' CMP - LT.	1		
215+44	DROP INLET - LT.			1
215+66	28" X 20" X 48' ARCH CMP - LT.	1		
220+96	24" X 44' CMP - LT.	1		
221+19	18" X 56' CMP - RT.	1		
222+90	18" X 24' CMP - LT.	1		
<b>SUBTOTALS:</b>		9		4
<b>TOTALS:</b>		58	1	5

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

QUANTITIES FOR  
FAP NO. STPF-0058(43)



**REMOVAL AND DISPOSAL OF FENCE**

STATION	STATION	LOCATION	FENCE	GATES
			LIN. FT.	EACH
107+50	107+85	HWY. 124 - LT.	75	
109+97	111+23	HWY. 124 - RT.	216	
110+32	128+04	HWY. 124 - LT.	1805	
113+35	115+00	HWY. 124 - RT.	218	1
115+28	116+74	HWY. 124 - RT.	203	
120+72	125+14	HWY. 124 - RT.	533	
126+52	127+83	HWY. 124 - RT.	131	
128+13	128+28	HWY. 124 - LT.	15	
128+32	132+14	HWY. 124 - LT.	468	
132+34	135+47	HWY. 124 - LT.	304	2
133+40	133+43	HWY. 124 - RT.	30	
134+43	138+28	HWY. 124 - RT.	422	
140+50	142+96	HWY. 124 - LT.	269	
145+30	150+72	HWY. 124 - RT.	607	
150+92	157+16	HWY. 124 - RT.	736	
151+64	151+74	HWY. 124 - LT.	30	
153+80	154+01	HWY. 124 - LT.	72	
157+26	159+82	HWY. 124 - LT.	400	
158+06	158+20	HWY. 124 - RT.	40	
162+68	170+14	HWY. 124 - LT.	815	
163+76	163+85	HWY. 124 - RT.	72	
168+97	175+86	HWY. 124 - RT.	712	
173+18		HWY. 124 - LT.		1
176+33	192+44	HWY. 124 - LT.	1932	
177+40	178+62	HWY. 124 - RT.	161	
188+63	200+80	HWY. 124 - RT.	1300	1
192+63	193+55	HWY. 124 - LT.	177	
201+13	202+94	HWY. 124 - RT.	285	
205+17	206+16	HWY. 124 - RT.	105	1
206+30	208+59	HWY. 124 - RT.	291	
207+58	210+89	HWY. 124 - LT.	401	
213+10	213+23	HWY. 124 - RT.	18	
221+96	226+79	HWY. 124 - RT.	500	
223+98	227+25	HWY. 124 - LT.	680	
<b>TOTALS:</b>			<b>14023</b>	<b>6</b>

**PAVEMENT REPAIR OVER CULVERTS (CONCRETE)**

STATION	LOCATION	WIDTH	LENGTH	CU.YD.
112+03	HWY. 124	8.50	30	9.4
116+71	HWY. 124	8.50	30	9.4
163+86	HWY. 124	14.00	30	15.6
167+94	HWY. 124	22.25	30	24.7
176+72	HWY. 124	15.67	30	17.4
181+00	HWY. 124	15.67	30	17.4
181+55	HWY. 124	8.50	30	9.4
198+38	HWY. 124	9.08	30	10.1
220+96	HWY. 124	8.50	34	10.7
221+04	HWY. 124	8.50	32	10.1
<b>TOTALS:</b>				<b>134.2</b>

AVG. DEPTH = 12"

**CONCRETE CURB**

STATION	STATION	LOCATION	TYPE B
			LIN. FT.
117+18	118+53	HWY. 124 - RT.	296
<b>TOTAL:</b>			<b>296</b>

**CONCRETE COMBINATION CURB AND GUTTER**

STATION	STATION	LOCATION	TYPE A (1' 6")
			LIN. FT.
210+81	213+66	HWY. 124 - LT.	372
213+95	215+07	HWY. 124 - LT.	178
<b>TOTAL:</b>			<b>550</b>

**WHEELCHAIR RAMPS**

STATION	LOCATION	TYPE 3
		SQ.YD.
211+36	HWY. 124 - LT.	3.3
213+65	HWY. 124 - LT.	3.3
214+00	HWY. 124 - LT.	3.3
215+05	HWY. 124 - LT.	3.3
<b>TOTAL:</b>		<b>13.2</b>

**CONCRETE ISLAND**

STATION	LOCATION	CURB FACE TYPE	CONCRETE ISLAND
			SQ.YD.
213+40	HWY. 124 - LT.	B	221
214+10	HWY. 124 - LT.	B	30
<b>TOTAL:</b>			<b>251</b>

**FENCING**

STATION	STATION	LOCATION	WIRE FENCE			* 5' CHAIN LINK FENCE	* 16'-0" GATES
			(TYPE D)	(TYPE D-1)	(TYPE D-2)		
			LIN. FT.				
107+50	107+85	HWY. 124 - LT.	35				
110+02	111+23	HWY. 124 - RT.		121			
110+32	127+88	HWY. 124 - LT.	1773				
113+35	115+00	HWY. 124 - RT.		165			
115+28	116+74	HWY. 124 - RT.		146			
120+72	125+14	HWY. 124 - RT.		442			
126+52	127+87	HWY. 124 - RT.	152				
128+40	132+14	HWY. 124 - LT.		396			
132+34	135+46	HWY. 124 - LT.			312	2	
134+43	138+28	HWY. 124 - RT.	385				
140+50	142+96	HWY. 124 - LT.	246				
145+30	157+16	HWY. 124 - RT.	1186			2	
157+26	159+45	HWY. 124 - LT.	219				
162+68	170+14	HWY. 124 - LT.	746				
168+97	178+62	HWY. 124 - RT.	965				
188+63	202+94	HWY. 124 - RT.	1431			3	
190+24	193+55	HWY. 124 - LT.	331			1	
205+17	206+16	HWY. 124 - RT.	99			1	
206+34	208+50	HWY. 124 - RT.		247			
207+58	210+89	HWY. 124 - LT.	361				
221+96	226+79	HWY. 124 - RT.		483			
223+98	227+25	HWY. 124 - LT.			335		
<b>TOTALS:</b>			<b>7929</b>	<b>2000</b>	<b>335</b>	<b>312</b>	<b>9</b>

\* DENOTES ALTERNATE BID ITEM.

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO.	080484	79
						② QUANTITIES		



QUANTITIES FOR  
FAP NO. STPF-0058(43)

8/26/2014

RO80484.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.	080484
								80
								283

② QUANTITIES

**EARTHWORK**

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	* SOIL STABILIZATION
			CU. YD.	CU. YD.	TON
ENTIRE	PROJECT	STAGE 1 - TEMP. WIDENING & DETOUR	8197	2264	
ENTIRE	PROJECT	STAGE 2 - HWY. 124 - LT.	21156	49979	
ENTIRE	PROJECT	STAGE 3 - HWY. 124 - RT.	53666	16202	
ENTIRE	PROJECT	APPROACHES	240	6750	
ENTIRE	PROJECT	TEMPORARY APPROACHES	600	20	
		142+21 SHILOH RD.		95	
		170+93 SHANGRI LA DRIVE		100	
		213+84 CENTER VALLEY RD.		295	
		215+20 OLD BAPTIST CEMETERY RD.		245	
		205+47 CHANNEL CHANGE	48		
*	ENTIRE PROJECT	TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER			200
<b>TOTALS:</b>			<b>83907</b>	<b>75950</b>	<b>200</b>

\* QUANTITY 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 DIRECTED BY THE ENGINEER	56	112
<b>TOTALS:</b>	<b>56</b>	<b>112</b>

BASIS OF ESTIMATE:  
ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC...25 TON/MILE  
TACK COAT FOR MAINTENANCE OF TRAFFIC.....50 GAL./MILE

**BENCH MARKS**

STATION	LOCATION	BENCH MARKS
		EACH
128+19	HWY. 124 - HEADWALL ON RT	1
155+85	HWY. 124 - HEADWALL ON RT	1
190+33	HWY. 124 - HEADWALL ON RT	1
208+34	HWY. 124 - HEADWALL ON RT	1
<b>TOTAL:</b>		<b>4</b>

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



**EROSION CONTROL**

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL					TEMPORARY EROSION CONTROL								
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	TEMPORARY SEEDING	MULCH COVER	WATER	SAND BAG DITCH CHECKS	DROP INLET SILT FENCE	SILT FENCE	SEDIMENT BASIN	OBLITERATION OF SEDIMENT BASIN	* SEDIMENT REMOVAL & DISPOSAL
			ACRE	TON	ACRE	M.GAL.	ACRE	ACRE	ACRE	M.GAL.	BAG	IN. FT.	IN. FT.	CU.YD.	CU.YD.	CU. YD.
ENTIRE	PROJECT	STAGE 1						2.80	2.80	57.1	594		1525	297	297	380
ENTIRE	PROJECT	STAGE 2						6.95	6.95	141.8	748	66	4390	297	297	496
ENTIRE	PROJECT	STAGE 3						7.50	7.50	153.0	1034	88	580	297	297	369
ENTIRE	PROJECT	HWY. 124	13.35	26.70	13.35	1361.7	13.35									
*	ENTIRE PROJECT	TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.	3.34	6.68	3.34	340.4	3.34	4.31	4	88.0	594	39	1624	223	223	311
<b>TOTALS:</b>			<b>16.69</b>	<b>33.38</b>	<b>16.69</b>	<b>1702.1</b>	<b>16.69</b>	<b>21.56</b>	<b>21.25</b>	<b>439.9</b>	<b>2970</b>	<b>193</b>	<b>8119</b>	<b>1114</b>	<b>1114</b>	<b>1556</b>

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 ESTIMATED. SEE SECTION 104.03 OF THE STD. SPECS.

QUANTITIES FOR  
FAP NO. STPF-0058(43)

8/26/2014  
R080484.DGN

DRIVEWAYS & TURNOUTS

STATION	SIDE	LOCATION	WIDTH FEET	**MODIFIED CURB		PORTLAND CEMENT CONCRETE DRIVEWAY SQ. YD.	ACHM SURFACE COURSE (1/2") 220 LBS. PER SQ. YD. (PG 70-22)			AGGREGATE BASE COURSE (CLASS 7) TON	SIDE DRAINS		STANDARD DRAWINGS
				STATION	STATION		SQ. YD.	TON	TON		18" LIN. FT.	24" LIN. FT.	
108+05	RT.	HWY. 124	16				78.0	8.6	31.9		38	PCC-1, PCM-1, PCP-1, PCP-2	
111+30	RT.	HWY. 124	16				96.5	10.6	39.4		40	PCC-1, PCM-1, PCP-1, PCP-2	
113+25	RT.	HWY. 124	16				96.9	10.7	39.6		40	PCC-1, PCM-1, PCP-1, PCP-2	
115+05	RT.	HWY. 124	24				138.8	15.3	56.7		46	PCC-1, PCM-1, PCP-1, PCP-2	
117+00	RT.	HWY. 124	30				96.7	10.6	39.5				
118+58	RT.	HWY. 124	16				53.7	5.9	21.9				
120+49	RT.	HWY. 124	16				85.0	9.4	34.7		36	PCC-1, PCM-1, PCP-1, PCP-2	
126+40	RT.	HWY. 124	16				89.3	9.8	36.5		34	PCC-1, PCM-1, PCP-1, PCP-2	
129+20	RT.	HWY. 124	16				71.2	7.8	29.1		32	PCC-1, PCM-1, PCP-1, PCP-2	
130+40	RT.	HWY. 124	16				81.5	9.0	33.3		36	PCC-1, PCM-1, PCP-1, PCP-2	
132+17	RT.	HWY. 124	16				86.3	9.5	35.2		38	PCC-1, PCM-1, PCP-1, PCP-2	
132+18	LT.	HWY. 124	16				94.4	10.4	38.5		38	PCC-1, PCM-1, PCP-1, PCP-2	
132+73	RT.	HWY. 124	16				87.3	9.6	35.6		38	PCC-1, PCM-1, PCP-1, PCP-2	
133+58	LT.	HWY. 124	40			220.00					62	PCC-1, PCM-1, PCP-1, PCP-2	
134+15	RT.	HWY. 124	16				80.7	8.9	33.0		36	PCC-1, PCM-1, PCP-1, PCP-2	
135+23	LT.	HWY. 124	16				80.7	8.9	33.0		36	PCC-1, PCM-1, PCP-1, PCP-2	
137+31	LT.	HWY. 124	16				88.3	9.7	36.1		42	PCC-1, PCM-1, PCP-1, PCP-2	
138+40	RT.	HWY. 124	16				86.4	9.5	35.3		36	PCC-1, PCM-1, PCP-1, PCP-2	
139+05	RT.	HWY. 124	16				88.7	9.8	36.2		38	PCC-1, PCM-1, PCP-1, PCP-2	
140+89	RT.	HWY. 124	16				105.0	11.6	42.9		38	PCC-1, PCM-1, PCP-1, PCP-2	
141+62	RT.	HWY. 124	16				74.7	8.2	30.5		32	PCC-1, PCM-1, PCP-1, PCP-2	
142+21	LT.	HWY. 124	16								42	PCC-1, PCM-1, PCP-1, PCP-2	
143+71	RT.	HWY. 124	16				137.3	15.1	56.1				
150+32	LT.	HWY. 124	16				91.8	10.1	37.5		38	PCC-1, PCM-1, PCP-1, PCP-2	
150+86	RT.	HWY. 124	20				177.9	19.6	72.6		50	PCC-1, PCM-1, PCP-1, PCP-2	
150+90	LT.	HWY. 124	16				191.8	21.1	78.3		42	PCC-1, PCM-1, PCP-1, PCP-2	
152+69	LT.	HWY. 124	16				84.0	9.2	34.3		34	PCC-1, PCM-1, PCP-1, PCP-2	
153+04	LT.	HWY. 124	16				89.0	9.8	36.3		36	PCC-1, PCM-1, PCP-1, PCP-2	
154+60	LT.	HWY. 124	16				77.4	8.5	31.6		36	PCC-1, PCM-1, PCP-1, PCP-2	
155+16	LT.	HWY. 124	16				83.3	9.2	34.0		36	PCC-1, PCM-1, PCP-1, PCP-2	
155+20	RT.	HWY. 124	16				79.0	8.7	32.3		34	PCC-1, PCM-1, PCP-1, PCP-2	
157+16	RT.	HWY. 124	16				102.3	11.3	41.8		34	PCC-1, PCM-1, PCP-1, PCP-2	
158+33	RT.	HWY. 124	16				106.5	11.7	43.5		38	PCC-1, PCM-1, PCP-1, PCP-2	
159+85	LT.	HWY. 124	16				159.7	17.6	65.2				
160+40	RT.	HWY. 124	16				127.1	14.0	51.9				
161+22	LT.	HWY. 124	16				202.6	22.3	82.7				
162+45	RT.	HWY. 124	16				110.7	12.2	45.2		39	PCC-1, PCM-1, PCP-1, PCP-2	
165+68	RT.	HWY. 124	20				134.6	14.8	55.0		44	PCC-1, PCM-1, PCP-1, PCP-2	
167+43	RT.	HWY. 124	16				111.9	12.3	45.7				
170+98	LT.	HWY. 124	16				55.8	6.1	22.8				
172+07	RT.	HWY. 124	16				121.6	13.4	49.7		44	PCC-1, PCM-1, PCP-1, PCP-2	
174+19	LT.	HWY. 124	16				111.1	12.2	45.4				
175+69	LT.	HWY. 124	18				118.1	13.0	48.2				
179+47	RT.	HWY. 124	16				223.8	24.6	91.4		44	PCC-1, PCM-1, PCP-1, PCP-2	
183+03	LT.	HWY. 124	16				128.7	14.2	52.6				
183+06	RT.	HWY. 124	16				99.5	10.9	40.6				
184+15	RT.	HWY. 124	16				121.4	13.4	49.6		38	PCC-1, PCM-1, PCP-1, PCP-2	
191+35	RT.	HWY. 124	16				100.8	11.1	41.2				
192+06	RT.	HWY. 124	16				122.9	13.5	50.2				
192+55	LT.	HWY. 124	16				62.9	6.9	25.7				
199+74	LT.	HWY. 124	16				74.0	8.1	30.2				
201+00	RT.	HWY. 124	16				84.8	9.3	34.6		36	PCC-1, PCM-1, PCP-1, PCP-2	
203+54	RT.	HWY. 124	16				102.9	11.3	42.0				
206+20	RT.	HWY. 124	16				89.3	9.8	36.5				
211+16	LT.	HWY. 124	30	210+87	211+45	120.60							
212+22	RT.	HWY. 124	16				94.6	10.4	38.6		40	PCC-1, PCM-1, PCP-1, PCP-2	
216+54	RT.	HWY. 124	16				71.2	7.8	29.1	34		PCC-1, PCM-1, PCP-1, PCP-2	
220+18	RT.	HWY. 124	40				242.0	26.6	98.8				
220+57	LT.	HWY. 124	16				115.4	12.7	47.1	48		PCC-1, PCM-1, PCP-1, PCP-2	
221+28	RT.	HWY. 124	16				102.4	11.3	41.8				
223+07	LT.	HWY. 124	16				124.6	13.7	50.9	50		PCC-1, PCM-1, PCP-1, PCP-2	
* ENTIRE PROJECT TEMPORARY DRIVES									930.0				
<b>TOTALS:</b>						340.60	6194.8	681.6	3459.9	132	1441		

BASIS OF ESTIMATE:  
ACHM SURFACE COURSE (1/2").....94.6% MIN. AGGR.....5.4% ASPHALT BINDER  
MAXIMUM NUMBER OF GYRATIONS = 160 FOR PG 70-22

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

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.

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.	080484	81	283

QUANTITIES

RUMBLE STRIPS IN ASPHALT SHOULDERS

STATION	STATION	LOCATION	* RUMBLE STRIPS IN ASPHALT SHOULDERS LIN. FT.
107+50	210+80	HWY. 124 - LT.	6968
107+50	225+00	HWY. 124 - RT.	6762
215+66	225+00	HWY. 124 - LT.	615
<b>TOTAL:</b>			14345

\* QUANTITY ESTIMATED.

SEE SECTION 104.03 OF THE STD. SPECS.

TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

DUMPED RIPRAP AND FILTER BLANKET

STATION	LOCATION	DUMPED RIPRAP	FILTER BLANKET
		CU. YDS.	SQ. YDS.
128+19	OUTLET OF BOX CULVERT	51	101
155+85	OUTLET OF BOX CULVERT	12	23
167+94	OUTLET OF PIPE CULVERT	11	22
176+72	OUTLET OF PIPE CULVERT	20	40
181+55	OUTLET OF PIPE CULVERT	17	33
190+33	OUTLET OF BOX CULVERT	30	60
198+49	OUTLET OF BOX CULVERT	27	53
205+90	OUTLET OF BOX CULVERT	16	31
208+34	OUTLET OF BOX CULVERT	44	87
TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER		50	100
<b>TOTALS:</b>		278	550

\*NOTE: QUANTITIES ESTIMATED.

SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS

NOTE: FILTER BLANKET SHALL BE GEOTEXTILE FABRIC (TYPE 5).

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
225+00	226+00	MAIN LANES	31	344.44
<b>TOTAL:</b>				344.44

NOTE: AVERAGE MILLING DEPTH 1".

4" PIPE UNDERDRAIN

STATION	STATION	LOCATIONS	4" PIPE UNDERDRAINS	UNDERDRAIN OUTLET PROTECTORS
			LIN. FT.	EACH
ENTIRE PROJECT	HWY. 124		8077	33
* ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER			2000	9
<b>TOTALS:</b>			10077	42

\* NOTE: QUANTITIES 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.



QUANTITIES FOR  
FAP NO. STPF-0058(43)

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.	080484		82	283

② QUANTITIES



STRUCTURES

STATION	DESCRIPTION	PIPE CULVERT CROSS DRAIN ALTERNATES 1, 2, 3, 4, 5, & 6								SIDE DRAIN	PIPE CULVERT STORM DRAIN ALTERNATES 1, 2, 3, & 4 CLASS III	FLARED END SECTIONS FOR PIPE CULVERTS ALTERNATES 1 & 2			TEMPORARY CULVERTS		JUNCT. BOX TYPE	YARD DRAIN	SPAN	HEIGHT	LENGTH	CLASS S CONCRETE ROADWAY	REINFORCING STEEL ROADWAY (GRADE 60)	UNCLASSIFIED EXCAVATION FOR STRUCTURES ROADWAY	SOLID SODDING	WATER	STANDARD DRAWING NUMBERS	
		REINF. CONCRETE CLASS IV		CORR. STEEL		REINF. CONCRETE CLASS V		CORR. STEEL				18"	24"	30"	24"	36"												E
		24"	30"	24"	30"	24"	30"	24"	30"			12"	18"	24"	18"	24"	30"	24"	36"									
112+03	PIPE CULVERT	102		107									2											16	0.20	FES-1, FES-2, PCC-1, PCM-1		
116+71	PIPE CULVERT	102		107									2											16	0.20	FES-1, FES-2, PCC-1, PCM-2		
118+32	JUNCTION BOX ON RT. WITH PIPE CULVERT & FES									68		1											5	0.06	FPC-9S, FES-1, FES-2, PCC-1, PCM-1			
155+85	7' X 4' R.C. BOX CULVERT - RETAIN & EXTEND 57' LT. & 17' RT.																8	4	74	59.21	7531	48	22	0.28	R-100X-0, W-X003-1, RCB-1, RCB-2, RCB-3			
163+86	DBL. PIPE CULVERT		228		231								4										28	0.35	FES-1, FES-2, PCC-1, PCM-2			
167+94	TRP. PIPE CULVERT					312		315					6										54	0.68	FES-1, FES-2, PCC-1, PCM-2			
176+72	DBL. PIPE CULVERT					208		211					4										28	0.35	FES-1, FES-2, PCC-1, PCM-2			
181+55	DBL. PIPE CULVERT		232		235								4										28	0.35	FES-1, FES-2, PCC-1, PCM-2			
190+33	TEMPORARY PIPE													17									28	0.35	FES-1, FES-2, PCC-1, PCM-2			
190+33	6' X 3' R.C. BOX CULVERT - RETAIN & EXTEND 52' LT. (15° SKEW) & 34' RT.														17		6	3	86	45.24	6122	53	35	0.44	R-100X-0, R-115X-0, W-X003-1, W-X15, W-X153-1, RCB-1, RCB-2, RCB-3			
198+38	PIPE CULVERT		112		115								2										26	0.33	FES-1, FES-2, PCC-1, PCM-2			
198+49	TEMPORARY PIPE													17														
198+49	6' X 3' R.C. BOX CULVERT - RETAIN & EXTEND 36' LT. & 35' RT.															6	3	71	38.35	4955	33	18		0.23	R-100X-0, W-X003-1, RCB-1, RCB-2, RCB-3			
205+47	TEMPORARY PIPE													34														
205+47	5' X 2' R.C. BOX CULVERT - RETAIN & EXTEND 48' LT. & 35' RT. (20° RT. FWD. SKEW)															5	2	83	38.95	5049	34	18		0.23	R-100X-0, W-X003-1, W-X30, W-X303-1, R-130X-0, RCB-1, RCB-2, RCB-3			
208+34	TEMPORARY PIPE													53														
210+85	JUNCTION BOX ON LT. WITH PIPE CULVERT & FES										87	1											8	0.10	FPC-9, FES-1, FES-2, PCC-1, PCM-1			
211+81	JUNCTION BOX ON LT. WITH PIPE CULVERT										99																	
212+26	JUNCTION BOX ON LT. WITH PIPE CULVERT										44																	
213+92	JUNCTION BOX ON LT. WITH PIPE CULVERT										171																	
215+04	JUNCTION BOX ON LT. WITH PIPE CULVERT										114																	
215+60	JUNCTION BOX ON LT. WITH PIPE CULVERT										56																	
221+04	PIPE CULVERT WITH FES				86		91						2										16	0.20	FES-1, FES-2, PCC-1, PCM-2			
* ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.									100																			
SUBTOTALS:		204	572	214	581	86	520	91	526	100	68	571	1	7	20	34	87	5	2	5				181.75	23657	168	318	4.00

STRUCTURES OVER 20' - 0" SPAN

128+19	QUINT. 7' X 5' R.C. BOX CULVERT RETAIN & EXTEND 45' LT. & 6' RT. & CONST. ADDITION 7' X 5' X 109' BARREL																7	5	160	228.01	35900	72	35	0.44	R-100X-0, R-500X-0, W-X003-1, RCB-1, RCB-2, RCB-3			
208+34	CONST. DBL. 10' X 5' X 123' R.C. BOX CULVERT (30° RT. FWD. SKEW)																10	5	123	229.79	34070	130	42	0.53	LRFD BOX SPECIAL DETAILS, RCB-1, RCB-2, RCB-3			
SUBTOTALS:																								457.80	69970	202	77	0.97
TOTALS:		204	572	214	581	86	520	91	526	100	68	571	1	7	20	34	87	5	2	5				639.55	93627	370	395	4.97

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

8/26/2014 R080484.DGN

QUANTITIES FOR  
FAP NO. STPF-0058(43)



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.							080484	83	283

② QUANTITIES



BASE AND SURFACING

STATION	STATION	LOCATION	LENGTH FEET	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT				ACHM BASE COURSE (1 1/2")				ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")									
				TON / STATION	TON	AVG. WID. FEET	SQ.YD.	GALLONS / SQ.YD.	GALLON	AVG. WID. FEET	SQ.YD.	POUND / SQ.YD.	PG70-22 TON	AVG. WID. FEET	SQ.YD.	POUND / SQ.YD.	PG70-22 TON	AVG. WID. FEET	SQ.YD.	POUND / SQ.YD.	PG70-22 TON	AVG. WID. FEET	SQ.YD.	POUND / SQ.YD.	PG70-22 TON	TOTAL PG 70-22 TON	
MAIN LANES																											
107+50.00	118+00.00	HWY. 124 - NOTCH & WIDEN 5 LANE OPEN SHLD.	1050.00	300.44	3154.62	113.04	13188.00	0.03	395.64					38.04	4438.00	495	1098.41	37.75	4404.17	220	484.46	75.00	8750.00	220	962.50	1446.96	
118+00.00	155+00.00	HWY. 124 - FULL DEPTH 5 LANE OPEN SHLD.	3700.00	386.00	14282.00	135.04	55516.44	0.03	1665.49					60.04	24683.11	495	6109.07	59.75	24563.89	220	2702.03	75.00	30833.33	220	3391.67	6093.70	
155+00.00	161+00.00	HWY. 124 - NOTCH & WIDEN 5 LANE OPEN SHLD.	600.00	307.06	1842.36	114.74	7649.33	0.03	229.48					39.74	2649.33	495	655.71	39.45	2630.00	220	289.30	75.00	5000.00	220	550.00	839.30	
161+00.00	165+00.00	HWY. 124 - FULL DEPTH 5 LANE OPEN SHLD.	400.00	386.00	1544.00	135.04	6001.78	0.03	180.05					60.04	2668.44	495	660.44	59.75	2655.56	220	292.11	75.00	3333.33	220	366.67	658.78	
165+00.00	179+57.00	HWY. 124 - NOTCH & WIDEN 5 LANE OPEN SHLD.	1457.00	304.33	4434.09	114.04	18461.81	0.03	553.85					39.04	6320.14	495	1564.23	38.75	6273.19	220	690.05	75.00	12141.67	220	1335.58	2025.63	
179+57.00	191+00.00	HWY. 124 - FULL DEPTH 5 LANE OPEN SHLD.	1143.00	386.00	4411.98	135.04	17150.08	0.03	514.50					60.04	7625.08	495	1887.21	59.75	7588.25	220	834.71	75.00	9525.00	220	1047.75	1882.46	
191+00.00	203+54.00	HWY. 124 - NOTCH & WIDEN 5 LANE OPEN SHLD.	1254.00	304.33	3816.30	114.04	15889.57	0.03	476.69					39.04	5439.57	495	1346.29	38.75	5399.17	220	593.91	75.00	10450.00	220	1149.50	1743.41	
203+54.00	210+00.00	HWY. 124 - FULL DEPTH 5 LANE OPEN SHLD.	646.00	386.00	2493.56	135.04	9692.87	0.03	290.79					60.04	4309.54	495	1066.61	59.75	4288.72	220	471.76	75.00	5383.33	220	592.17	1063.93	
210+00.00	210+89.00	HWY. 124 - NOTCH & WIDEN 5 LANE OPEN SHLD.	89.00	278.98	248.29	107.54	1063.45	0.03	31.90					32.54	321.78	495	79.64	32.23	318.72	220	35.06	75.00	741.67	220	81.58	116.64	
210+89.00	212+00.00	HWY. 124 - NOTCH & WIDEN 5 LANE C&G LT. & OPEN SHLD. RT.	111.00	204.64	227.15	98.04	1209.16	0.03	36.27					31.04	382.83	495	94.75	30.50	376.17	220	41.38	67.00	826.33	220	90.90	132.28	
212+00.00	215+50.00	HWY. 124 - FULL DEPTH 5 LANE C&G LT. & OPEN SHLD. RT.	350.00	312.36	1093.26	132.38	5148.11	0.03	154.44					66.71	2594.28	495	642.08	66.17	2573.28	220	283.06	65.67	2553.83	220	280.92	563.98	
215+50.00	218+00.00	HWY. 124 - FULL DEPTH 5 LANE OPEN SHLD.	250.00	352.89	882.23	118.04	3278.89	0.03	98.37					51.54	1431.67	495	354.34	51.00	1416.67	220	155.83	66.50	1847.22	220	203.19	359.02	
218+00.00	225+00.00	HWY. 124 - NOTCH & WIDEN OPEN SHLD.	700.00	202.82	1419.74	62.86	4889.11	0.03	146.67					12.95	1007.22	495	249.29	12.41	965.22	220	106.17	49.91	3881.89	220	427.01	533.18	
225+00.00	226+00.00	HWY. 124	100.00																			22.00	244.44	220		26.89	
142+21.00		SHILOH RD.		VAR.	121.68	VAR.	486.11	0.03	14.58					VAR.	247.78	495	61.33	VAR.	238.33	220	26.22	VAR.	238.33	220	26.22	52.44	
170+92.00		SHANGRILA DRIVE		VAR.	92.63	VAR.	400.00	0.03	12.00					VAR.	204.44	495	50.60	VAR.	195.56	220	21.51	VAR.	195.56	220	21.51	43.02	
213+84.00		CENTER VALLEY RD.		VAR.	311.50	VAR.	1518.89	0.03	45.57					VAR.	777.78	495	192.50	VAR.	741.11	220	81.52	VAR.	741.11	220	81.52	163.04	
215+20.00		OLD BAPTIST CEMETERY RD.		VAR.	149.64	VAR.	608.33	0.03	18.25					VAR.	315.00	495	77.96	VAR.	293.33	220	32.27	VAR.	293.33	220	32.27	64.54	
ADDITIONAL FOR TEMPORARY WIDENING AND DETOUR (MAINTENANCE OF TRAFFIC)																											
107+50.00	109+00.00	HWY. 124 - RT.	150.00	70.01	105.02	16.69	278.17	0.03	8.35					1.69	28.17	495	6.97					15.00	250.00	220	27.50	27.50	
161+10.00	211+95.00	HWY. 124 - RT.	5085.00	VAR.	2664.49	VAR.	VAR.	0.03	207.69					VAR.	VAR.	495	1523.11					VAR.	VAR.	220	739.49	739.49	
135+30.00	138+00.00	HWY. 124 - LT.	270.00			6.61	198.30	0.03	5.95					3.48	104.40	495	25.84					3.13	93.90	220	10.33	10.33	
138+00.00	205+50.00	HWY. 124 - LT.	6750.00			13.21	9907.50	0.03	297.23					6.96	5220.00	495	1291.95					6.25	4667.50	220	515.63	515.63	
205+50.00	208+20.00	HWY. 124 - LT.	270.00			6.61	198.30	0.03	5.95					3.48	104.40	495	25.84					3.13	93.90	220	10.33	10.33	
ADDITIONAL FOR LEVELING & GRADE RAISE																											
107+50.00	225+00.00	HWY. 124	11750.00			VAR.	VAR.	0.10	1190.25													VAR.	VAR.	VAR.	3905.10	3905.10	
152+75.00	219+00.00	HWY. 124	6625.00			VAR.	VAR.	0.10	398.29		VAR.	VAR.	VAR.	951.20													
ADDITIONAL FOR SUPERELEVATION																											
134+13.15	139+53.15	HWY. 124 - LT.	540.00	39.88	215.35																						
139+53.15	143+44.88	HWY. 124 - LT.	391.73	79.75	312.40																						
143+44.88	148+84.88	HWY. 124 - LT.	540.00	39.88	215.35																						
155+08.84	160+50.00	HWY. 124 - LT.	541.16	36.88	199.58																						
160+50.00	163+09.60	HWY. 124 - LT.	259.60	73.75	191.46																						
163+09.60	168+52.68	HWY. 124 - LT.	543.08	36.88	200.29																						
177+04.94	183+34.94	HWY. 124 - LT.	630.00	42.25	266.18																						
183+34.94	188+05.61	HWY. 124 - LT.	470.67	84.50	397.72																						
188+05.61	194+35.61	HWY. 124 - LT.	630.00	42.25	266.18																						
199+14.66	204+00.66	HWY. 124 - RT.	486.00	40.63	197.46																						
204+00.66	204+92.08	HWY. 124 - RT.	91.42	81.25	74.28																						
204+92.08	209+78.08	HWY. 124 - RT.	486.00	40.63	197.46																						
209+78.08	215+45.08	HWY. 124 - LT.	567.00	48.25	273.58																						
215+45.08	217+17.99	HWY. 124 - LT.	172.91	96.50	166.86																						
217+17.99	222+84.99	HWY. 124 - LT.	567.00	48.25	273.58																						
TOTALS:					46742.27		172734.20		6978.25					951.20		70872.96		19064.17		64921.34		7141.35		102105.67		16876.23	23017.58

BASIS OF ESTIMATE:  
 ACHM SURFACE COURSE (1/2").....94.6% MIN. AGGR.....5.4% ASPHALT BINDER  
 ACHM BINDER COURSE (1").....95.5% MIN. AGGR.....4.5% ASPHALT BINDER  
 ACHM BASE COURSE (1 1/2").....95.8% MIN. AGGR.....4.2% ASPHALT BINDER  
 MAXIMUM NUMBER OF GYRATIONS = 160 FOR PG 70-22

8/26/2014  
 R080484.DCN

QUANTITIES FOR  
 FAP NO. STPF-0058(43)



DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO.	080484	84 283

② SOIL BORING LOG



SOIL LOG

STATION	LATITUDE			LONGITUDE			LOCATION	DEPTH FEET	LIQUID LIMIT	PLASTICITY INDEX	AASHTO CLASSIFICATION	COLOR
	DEG	MIN	SEC	DEG	MIN	SEC						
108+00	35	18	27.50	93	6	6.00	5' RT.	0-4Z	25	16	A-6 (7)	BR/GR
108+00	35	18	27.80	93	6	5.90	20' RT.	0-2Z	ND	NP	A-4 (0)	BR/GR
116+00	35	18	35.90	93	6	5.90	6' LT.	0-2Z	ND	NP	A-4 (0)	BROWN
116+00	35	18	35.90	93	6	6.10	20' LT.	0-3Z	ND	NP	A-4 (0)	BR/GR
124+00	35	18	43.50	93	6	5.70	5' RT.	0-5	23	5	A-4 (0)	BROWN
124+00	35	18	43.50	93	6	5.50	20' RT.	0-4.8Z	27	8	A-4 (0)	BROWN
132+00	35	18	51.60	93	6	5.60	5' LT.	0-3Z	18	2	A-4 (0)	BROWN
140+00	35	18	59.40	93	6	5.40	6' LT.	0-5	24	9	A-4 (3)	BROWN
140+00	35	18	59.50	93	6	5.60	25' LT.	0-3Z	44	22	A-4 (0)	BROWN
148+00	35	19	6.80	93	6	2.10	6' RT.	0-5	20	5	A-4 (1)	BROWN
148+00	35	19	6.70	93	6	1.90	20' RT.	0-5	21	7	A-4 (1)	BR/GR
156+00	35	19	14.20	93	5	58.30	6' LT.	0-5	ND	NP	A-4 (0)	GRAY
156+00	35	19	14.20	93	5	58.40	20' LT.	0-5	ND	NP	A-4 (0)	GRAY
164+00	35	19	20.70	93	5	54.00	6' RT.	0-5	19	3	A-4 (0)	BR/GR
164+00	35	19	20.60	93	5	53.80	20' RT.	0-5	21	4	A-4 (0)	BR/GR
172+00	35	19	27.20	93	5	47.40	6' LT.	0-5	28	9	A-4 (5)	BROWN
172+00	35	19	27.30	93	5	47.50	20' LT.	0-5	31	12	A-6 (6)	BROWN
180+00	35	19	33.10	93	5	41.10	7' RT.	0-5	27	9	A-4 (5)	BROWN
180+00	35	19	33.00	93	5	40.90	20' RT.	0-5	32	16	A-6 (9)	BROWN
188+00	35	19	38.20	93	5	33.20	7' LT.	0-5	27	11	A-6 (6)	BROWN
188+00	35	19	38.40	93	5	33.20	20' LT.	0-5	20	4	A-4 (0)	BROWN
196+00	35	19	40.10	93	5	24.50	7' RT.	0-5	33	17	A-6 (9)	BROWN
196+00	35	19	40.00	93	5	24.50	20' RT.	0-5	29	11	A-6 (4)	BROWN
204+00	35	19	42.40	93	5	15.30	7' LT.	0-5	29	14	A-6 (8)	BROWN
204+00	35	19	42.60	93	5	15.40	20' LT.	0-5	28	12	A-6 (5)	BR/GR
212+00	35	19	47.40	93	5	6.60	18' RT.	0-5	38	16	A-6 (13)	BROWN
220+00	35	19	47.50	93	4	58.10	5' LT.	0-5	23	7	A-4 (1)	BROWN
220+00	35	19	47.70	93	4	58.10	18' LT.	0-5	21	5	A-4 (0)	BROWN

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

8/26/2014

RO80484.DCN

QUANTITIES FOR  
 FAP NO. STPF-0058(43)

SUMMARY OF QUANTITIES (BOX 1 OF 2)

ITEM NUMBER	ITEM	QUANTITIES			UNIT
		STPC-9379(20)	STPF-0058(43)	TOTAL	
201	CLEARING	53	116	169	STATION
201	GRUBBING	53	116	169	STATION
202	REMOVAL AND DISPOSAL OF CURB AND GUTTER	168	986	1154	LN. FT.
202	REMOVAL AND DISPOSAL OF BRICK COLUMNS	2		2	EACH
202	REMOVAL AND DISPOSAL OF WELL	2	2	4	EACH
202	REMOVAL AND DISPOSAL OF FENCE	3056	14023	17079	LN. FT.
202	REMOVAL AND DISPOSAL OF GATES	3	6	9	EACH
202	REMOVAL AND DISPOSAL OF POSTS		3	3	EACH
202	REMOVAL AND DISPOSAL OF COLUMNS		2	2	EACH
202	REMOVAL AND DISPOSAL OF CONCRETE DRIVEWAYS	227	296	523	SQ. YD.
202	REMOVAL AND DISPOSAL OF SIGN FOUNDATIONS	6	10	16	EACH
202	REMOVAL AND DISPOSAL OF HOUSE FOUNDATION	1187	434	1621	LN. FT.
202	REMOVAL AND DISPOSAL OF DROP INLETS		5	5	EACH
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS	26	58	84	EACH
202	REMOVAL AND DISPOSAL OF BOX CULVERTS		1	1	EACH
202	REMOVAL AND DISPOSAL OF BACKFLOW PREVENTER		1	1	EACH
SP & 202	REMOVAL AND DISPOSAL OF GUARDRAIL		254	254	LN. FT.
202	REMOVAL AND DISPOSAL OF BUILDINGS	5	8	13	EACH
202	REMOVAL AND DISPOSAL OF CATTLE GUARD		2	2	EACH
202	REMOVAL AND DISPOSAL OF SIGNS	5	8	13	EACH
202	REMOVAL AND DISPOSAL OF PLANTERS		1	1	EACH
202	REMOVAL AND DISPOSAL OF LIGHTS	2		2	EACH
202	REMOVAL AND DISPOSAL OF SEPTIC SYSTEM	1		1	EACH
202	REMOVAL AND DISPOSAL OF GAS LIGHT	1		1	EACH
202	REMOVAL AND DISPOSAL OF WATER SPIGOT		1	1	EACH
210	UNCLASSIFIED EXCAVATION	43947	83907	127854	CU. YD.
210	COMPACTED EMBANKMENT	70829	75950	146779	CU. YD.
SP & 210	SOIL STABILIZATION	200	200	400	TON
303	AGGREGATE BASE COURSE (CLASS 7)	23228	50202	73430	TON
401	TACK COAT	3140	7090	10230	GAL.
SP & 405	MINERAL AGGREGATE IN ACHM BASE COURSE (1 1/2")	207	911	1118	TON
SP & 405	ASPHALT BINDER (PG 70-22) IN ACHM BASE COURSE (1 1/2")	9	40	49	TON
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	9317	18206	27523	TON
SP, SS, & 406	ASPHALT BINDER (PG 70-22) IN ACHM BINDER COURSE (1")	439	858	1297	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	11210	22419	33629	TON
SP, SS, & 407	ASPHALT BINDER (PG 70-22) IN ACHM SURFACE COURSE (1/2")	640	1280	1920	TON
412	COLD MILLING ASPHALT PAVEMENT	1722	344	2066	SQ. YD.
SP & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	26	56	82	TON
503	PORTLAND CEMENT CONCRETE DRIVEWAY	653.40	340.60	994.00	SQ. YD.
601	MOBILIZATION	0.40	0.60	1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE	0.4	0.6	1	EACH
603	MAINTENANCE OF TRAFFIC	0.40	0.60	1.00	LUMP SUM
603	24" TEMPORARY CULVERT		34	34	LN. FT.
603	36" TEMPORARY CULVERT		87	87	LN. FT.
604	SIGNS	281	496	777	SQ. FT.
604	BARRICADES	72	120	192	LN. FT.
604	TRAFFIC DRUMS	281	487	768	EACH
604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER		1396	1396	LN. FT.
604	RELOCATING PRECAST CONCRETE BARRIER		1210	1210	LN. FT.
604	CONSTRUCTION PAVEMENT MARKINGS	53191	114080	167271	LN. FT.
604	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	2264	23968	26232	LN. FT.
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS		18530	18530	LN. FT.
604	VERTICAL PANELS	30	115	145	EACH
605	CONCRETE DITCH PAVING (TYPE B)	100		100	SQ. YD.
606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	1690	68	1758	LN. FT.
606	18" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE	1690	68	1758	LN. FT.
SP & 606	18" HIGH DENSITY POLYETHYLENE PIPE	1690	68	1758	LN. FT.
SP & 606	18" PVC PIPE	1690	68	1758	LN. FT.
606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	547	571	1118	LN. FT.
606	24" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE	547	571	1118	LN. FT.
SP & 606	24" HIGH DENSITY POLYETHYLENE PIPE	547	571	1118	LN. FT.
SP & 606	24" PVC PIPE	547	571	1118	LN. FT.
606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV)	196	204	400	LN. FT.
606	24" ASPHALT COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE)	201	214	415	LN. FT.
606	24" ALUMINUM COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE)	201	214	415	LN. FT.
606	24" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE	201	214	415	LN. FT.
SP & 606	24" HIGH DENSITY POLYETHYLENE PIPE	201	214	415	LN. FT.
SP & 606	24" PVC PIPE	201	214	415	LN. FT.
606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS V)	86	86	172	LN. FT.
606	24" ASPHALT COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE)	91	91	182	LN. FT.
606	24" ALUMINUM COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE)	91	91	182	LN. FT.
606	24" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE	91	91	182	LN. FT.
SP & 606	24" HIGH DENSITY POLYETHYLENE PIPE	91	91	182	LN. FT.
SP & 606	24" PVC PIPE	91	91	182	LN. FT.
606	30" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV)	572	572	1144	LN. FT.
606	30" ASPHALT COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE)	581	581	1162	LN. FT.
606	30" ALUMINUM COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE)	581	581	1162	LN. FT.
606	30" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE	581	581	1162	LN. FT.
SP & 606	30" HIGH DENSITY POLYETHYLENE PIPE	581	581	1162	LN. FT.
SP & 606	30" PVC PIPE	581	581	1162	LN. FT.
606	30" REINFORCED CONCRETE PIPE CULVERTS (CLASS V)	526	526	1052	LN. FT.
606	30" ASPHALT COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE)	526	526	1052	LN. FT.
606	30" ALUMINUM COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE)	526	526	1052	LN. FT.
606	30" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE	526	526	1052	LN. FT.
SP & 606	30" HIGH DENSITY POLYETHYLENE PIPE	526	526	1052	LN. FT.
SP & 606	30" PVC PIPE	526	526	1052	LN. FT.
606	36" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	296		296	LN. FT.
606	36" ASPHALT COATED CORRUGATED STEEL PIPE CULVERTS (14 GAUGE)	302		302	LN. FT.
606	36" ALUMINUM COATED CORRUGATED STEEL PIPE CULVERTS (14 GAUGE)	302		302	LN. FT.
606	36" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE	302		302	LN. FT.
SP & 606	36" HIGH DENSITY POLYETHYLENE PIPE	302		302	LN. FT.
SP & 606	36" PVC PIPE	302		302	LN. FT.
606	12" SIDE DRAIN	200	100	300	LN. FT.
SP & 606	18" SIDE DRAIN	232	132	364	LN. FT.
SP & 606	24" SIDE DRAIN	454	1441	1895	LN. FT.
606	21" X 15" SIDE DRAIN	142		142	LN. FT.
606	18" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	2	1	3	EACH
606	18" FLARED END SECTIONS FOR CORRUGATED STEEL PIPE CULVERTS	2	1	3	EACH
606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	5	7	12	EACH
606	24" FLARED END SECTIONS FOR CORRUGATED STEEL PIPE CULVERTS	5	7	12	EACH
606	30" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	20	20	40	EACH
606	30" FLARED END SECTIONS FOR CORRUGATED STEEL PIPE CULVERTS	20	20	40	EACH
606	36" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	4	4	8	EACH
606	36" FLARED END SECTIONS FOR CORRUGATED STEEL PIPE CULVERTS	4	4	8	EACH
606	SELECTED PIPE BEDDING	300	300	600	CU. YD.
609	DROP INLETS (TYPE E)	1		1	EACH
609	DROP INLETS (TYPE MO)	10		10	EACH
609	JUNCTION BOXES (TYPE E)	2	5	7	EACH
609	JUNCTION BOXES (TYPE S)		2	2	EACH
609	DROP INLET EXTENSIONS (4")	6		6	EACH
609	DROP INLET EXTENSIONS (8")	4		4	EACH
609	YARD DRAINS	10	5	15	EACH
611	UNDERDRAIN OUTLET PROTECTORS	30	42	72	EACH
611	4" PIPE UNDERDRAINS	6718	10077	16795	LN. FT.
615	PAVEMENT REPAIR OVER CULVERTS (CONCRETE)	51.6	134.2	185.8	CU. YD.

\* DENOTES ALTERNATE BID ITEMS.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
12/05/2014				6	ARK.		85	283

SUMMARY OF QUANTITIES AND REVISIONS

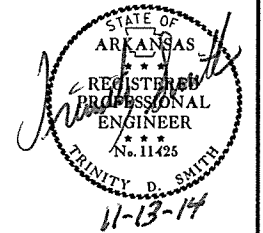


SUMMARY OF QUANTITIES (BOX 2 OF 2)

ITEM NUMBER	ITEM	QUANTITIES			UNIT
		STPC-9379(20)	STPF-0058(43)	TOTAL	
619	WIRE FENCE (TYPE D)		7929	7929	LN. FT.
619	WIRE FENCE (TYPE D-1)	913	2000	2913	LN. FT.
619	WIRE FENCE (TYPE D-2)	1266	335	1601	LN. FT.
619	5" STEEL CHAIN LINK FENCE (ALTERNATE NO. 1)		312	312	LN. FT.
619	5" ALUMINUM CHAIN LINK FENCE (ALTERNATE NO. 2)		312	312	LN. FT.
619	16" STEEL GATES (ALTERNATE NO. 1)	1	9	10	EACH
619	16" ALUMINUM GATES (ALTERNATE NO. 2)	1	9	10	EACH
620	LME	13	33	46	TON
620	SEEDING	6.80	16.69	23.29	ACRE
SS & 620	MULCH COVER	13.28	37.94	51.22	ACRE
620	WATER	829.1	2148.9	2978.0	M.GAL.
621	TEMPORARY SEEDING	6.68	21.56	28.24	ACRE
621	SILT FENCE	144	8119	8263	LN. FT.
621	SAND BAG DITCH CHECKS	1183	2970	4153	BAG
621	DROP INLET SILT FENCE	406	193	599	LN. FT.
621	SEDIMENT BASIN	1249	1114	2363	CU. YD.
621	OBLITERATION OF SEDIMENT BASIN	1249	1114	2363	CU. YD.
621	SEDIMENT REMOVAL AND DISPOSAL	1324	1556	2880	CU. YD.
623	SECOND SEEDING APPLICATION	6.80	16.69	23.29	ACRE
624	SOLID SOODING	1601	543	2144	SQ. YD.
628	EROSION CONTROL MATTING (CLASS 3)	889		889	SQ. YD.
632	CONCRETE ISLAND		251	251	SQ. YD.
633	CONCRETE WALKS	2332	246	2578	SQ. YD.
634	CONCRETE CURB (TYPE B)		296	296	LN. FT.
634	CONCRETE COMBINATION CURB AND GUTTER (TYPE A) (1' 6")	4544	550	5094	LN. FT.
635	ROADWAY CONSTRUCTION CONTROL	0.40	0.60	1.00	LUMP SUM
637	MAILBOXES	18	36	54	EACH
637	MAILBOX SUPPORTS (SINGLE)	12	32	44	EACH
637	MAILBOX SUPPORTS (DOUBLE)	3	2	5	EACH
641	WHEELCHAIR RAMPS (TYPE 3)	90	13	103	SQ. YD.
642	RUMBLE STRIPS IN ASPHALT SHOULDERS	5190	14345	19535	LN. FT.
SP & 701	SYSTEM LOCAL CONTROLLER TS 2-TYPE 2 (8 PHASES)	2		2	EACH
703	FLASHING BEACON CONTROLLER	1		1	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (1 SECTION, 1 WAY)	2		2	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	16		16	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	6		6	EACH
SP & 707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED	8		8	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	3349		3349	LN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	262		262	LN. FT.
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	663		663	LN. FT.
709	GALVANIZED STEEL CONDUIT (1")	20		20	LN. FT.
709	GALVANIZED STEEL CONDUIT (1.25")	60		60	LN. FT.
709	GALVANIZED STEEL CONDUIT (2")	70		70	LN. FT.
710	NON-METALLIC CONDUIT (1")	20		20	LN. FT.
710	NON-METALLIC CONDUIT (1.25")	60		60	LN. FT.
710	NON-METALLIC CONDUIT (2")	40		40	LN. FT.
710	NON-METALLIC CONDUIT (3")	620		620	LN. FT.
711	CONCRETE PULL BOX (TYPE 1 HD)	2		2	EACH
711	CONCRETE PULL BOX (TYPE 2 HD)	10		10	EACH
711	SPAN WIRE ASSEMBLY	1		1	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (34')	1		1	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (40')	1		1	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (48')	1		1	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (56')	1		1	EACH
715	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION	4		4	EACH
716	TREATED WOOD POLE (CLASS 2, 40')	4		4	EACH
719	THERMOPLASTIC PAVEMENT MARKING WHITE (4")	14149	28857	43006	LN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (8")		514	514	LN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (12")	722	24	746	LN. FT.
719	THERMOPLASTIC PAVEMENT MARKING YELLOW (4")	14584	29405	43989	LN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WORDS	4		4	EACH
719	THERMOPLASTIC PAVEMENT MARKING (ARROWS)	4		4	EACH
721	RAISED PAVEMENT MARKERS (TYPE II)	307	556	863	EACH
731	TEMPORARY IMPACT ATTENUATION BARRIER		4	4	EACH
731	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)		4	4	EACH
SP & 733	VIDEO DETECTOR (CLR)	11		11	EACH
733	VIDEO CABLE	2161		2161	LN. FT.
733	VIDEO MONITOR (CLR)	2		2	EACH
SP & 733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)	6		6	EACH
SP & 733	VEHICLE DETECTOR RACK (16 CHANNEL)	2		2	EACH
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY		168	168	CU. YD.
802	CLASS S CONCRETE-ROADWAY		181.75	181.75	CU. YD.
804	REINFORCING STEEL-ROADWAY (GRADE 60)		23657	23657	POUND
816	FILTER BLANKET		550	550	SQ. YD.
816	DUMPED RIPRAP		278	278	CU. YD.
SP	ANTENNA CABLE (TYPE 6)	70		70	LN. FT.
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	873		873	LN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., EGC)	643		643	LN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., EGC)	210		210	LN. FT.

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.							080484	86	283

2 SURVEY CONTROL DETAILS



APPROX. MID POINT  
 LT: 35-17-47.3  
 LG: 93-06-23.8

SURVEY CONTROL COORDINATES

Project Name: s080389  
 Date: 4/13/2011  
 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	351843.1789	978068.0828	392.305	CTL	*REBAR&CAP
2	350541.9939	981923.9349	396.928	CTL	*REBAR&CAP
3	350247.6536	982635.5118	400.450	CTL	*REBAR&CAP LANE 1-40
4	350576.4392	982163.3790	419.163	CTL	*REBAR&CAP
5	350204.1617	982123.5112	417.687	CTL	*REBAR&CAP
6	349606.0579	982111.5118	392.264	CTL	*REBAR&CAP
7	348319.5335	984903.2728	413.415	CTL	*REBAR&CAP
8	350104.6978	986098.1765	417.838	CTL	*REBAR&CAP
10	349967.2757	981797.2821	393.899	CTL	*CAP/REBAR IN FIELD
11	349359.8274	981711.3490	389.407	CTL	*CAP/REBAR RT SH IN FIELD
12	351510.0289	982337.6773	416.369	CTL	*CAP/REBAR FIELD RT, BY OAK
13	351596.6592	981886.7809	406.027	CTL	*CAP/REBAR FIELD LT
20	345837.2821	981992.8855	395.354	CTL	*REBAR&CAP
21	346288.9010	982021.1745	401.164	CTL	*REBAR&CAP
22	352450.9428	982182.9058	408.337	CTL	*REBAR&CAP
23	353729.9871	982235.1890	418.145	CTL	*REBAR&CAP
24	353736.3634	982261.9534	417.915	CTL	*REBAR&CAP
25	353662.8178	983088.5210	426.571	CTL	*5/8" REBAR W/2" CAP
26	353894.9382	983099.4179	433.860	CTL	*5/8" REBAR W/2" CAP
27	354349.7462	983603.0819	440.869	CTL	*5/8" REBAR W/2" CAP
28	354994.3485	983592.6146	443.957	CTL	*5/8" REBAR W/2" CAP
29	355581.5932	983607.8215	490.704	CTL	*5/8" REBAR W/2" CAP
30	345831.5414	981974.0555	395.353	CTL	*CAP/REBAR RT SH
31	346287.6144	982005.5268	401.802	CTL	*CAP/REBAR RT SH
32	347320.6302	982112.8046	384.624	CTL	*CAP/REBAR LT SH
33	347914.2026	982114.3603	383.392	CTL	*CAP/REBAR LT BANK
100	351355.0198	982201.2725	411.723	GPS	*AHTD GPS 580016
101	353031.7679	982195.3231	410.032	GPS	*AHTD GPS 580016A
102	356107.1527	975258.6015	395.200	GPS	*AHTD GPS 580017, GPS ELEV
103	356418.1733	973557.0977	399.300	GPS	*AHTD GPS 580017A, GPS ELEV
104	336775.6797	987734.3131	432.109	GPS	*AHTD GPS 580014
105	336952.4070	985912.9605	407.896	GPS	*AHTD GPS 580014A
1501	349566.3180	982264.3143	389.194	CTL	*8" SPIKE 15' S. OF 36" ELM, TRIG ELEV
1502	349527.8564	982328.6646	390.137	CTL	*8" SPIKE 15' S. OF TP, TRIG ELEV
1503	349501.7973	982354.0639	390.996	CTL	*8" SPIKE 10' W. OF 10" ELM, TRIG ELEV
1504	349525.3739	982272.7431	389.450	CTL	*8" SPIKE 10' N. OF BU. *JOHNS, TRIG ELEV
1505	349630.0987	981765.1941	392.407	CTL	*8" SPIKE 5' S. OF LARGE LP, TRIG ELEV
1506	349570.5712	981759.2041	391.669	CTL	*8" SPIKE 5' S. OF LARGE LP, TRIG ELEV
1507	349511.7206	981752.5465	391.229	CTL	*8" SPIKE 5' S. OF LARGE LP, TRIG ELEV
1508	349450.7209	981746.8286	390.924	CTL	*8" SPIKE 5' S. OF LARGE LP, TRIG ELEV
1509	351535.1768	982360.9990	415.478	CTL	*8" SPIKE 15' E. OF LARGE OAK, TRIG ELEV
1510	351619.0426	982320.3058	410.947	CTL	*8" SPIKE 10' W. OF PERSIMMON, TRIG ELEV
1511	351661.9338	982398.0773	411.576	CTL	*8" SPIKE 10' S. OF 28" ELM, TRIG ELEV
1512	351654.8636	982603.6200	411.105	CTL	*8" SPIKE 10' S. OF 2-18" GUM, TRIG ELEV
1513	351663.9811	981823.6922	408.265	CTL	*8" SPIKE 10' S. DBL CEDAR, TRIG ELEV
1514	351666.0413	981743.9513	409.051	CTL	*8" SPIKE 10' S. 15" CEDAR ON, TRIG ELEV
1515	351667.4450	981691.9444	409.003	CTL	*8" SPIKE 10' S. OF 24" CEDAR, TRIG ELEV
1516	351539.5489	981680.9499	405.557	CTL	*8" SPIKE 10' S. OF FE. CORNER, TRIG ELEV

\*Note - Rebar and Cap - Standard - \*\* 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 0.9999337371 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 s080284gi.CTL  
 HORIZONTAL DATUM: NAD 83 (1997)  
 VERTICAL DATUM: NAVD 88 POSITIONAL ACCURACY THIRD ORDER, UNLESS SPECIFIED OTHERWISE  
 AT A SPECIFIC POINT.

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:  
 580014 - 580014A  
 580016 - 580016A  
 580017 - 580017A  
 CONVERGENCE ANGLE: 0-38-38.01 LEFT AT LT: 35-17-36.5 LG: 093-06-23.5  
 GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

C. L. HWY. 124

POINT NO.	TYPE	STATION	NORTHING	EASTING
8000	POB	515+00.00	351385.8042	982165.7356
8001	PC	519+72.00	351857.5635	982180.9565
8003	PT	528+68.02	352614.7815	982596.0122
8004	PC	538+25.82	353155.7781	983386.3898
8006	PT	548+84.72	353810.4939	983695.2151
8007	PC	553+75.41	354598.0465	983624.8822
8009	PT	555+59.72	354782.1749	983620.3273
8010	PI	564+79.90	355701.6260	983656.7609
8011	PC	570+40.61	356261.4243	983688.8471
8013	PT	576+11.78	356832.2335	983707.3094
8014	POE	580+41.77	357262.2138	983710.4961

C. L. SPARKSFORD DRIVE

POINT NO.	TYPE	STATION	NORTHING	EASTING
8021	POB	300+00.00	356284.30638	983271.13087
8022	POE	304+18.77	356279.56173	983689.87225

C. L. CROW MOUNTAIN ROAD

POINT NO.	TYPE	STATION	NORTHING	EASTING
8023	POB	400+00.00	356285.7728	983690.2167
8024	POE	403+13.32	356276.2329	984003.3919

C. L. SOUTHERN CONNECTOR

POINT NO.	TYPE	STATION	NORTHING	EASTING
8100	POB	0+00.00	352311.8333	982312.8302
8101	PC	0+31.47	352327.8187	982285.7226
8103	PT	1+66.95	352436.8671	982213.2770
8104	PC	1+83.47	352453.2364	982211.0570
8106	PT	2+34.70	352504.3513	982208.7360
8107	POE	3+15.59	352585.1556	982212.2974

C. L. MOT STG3

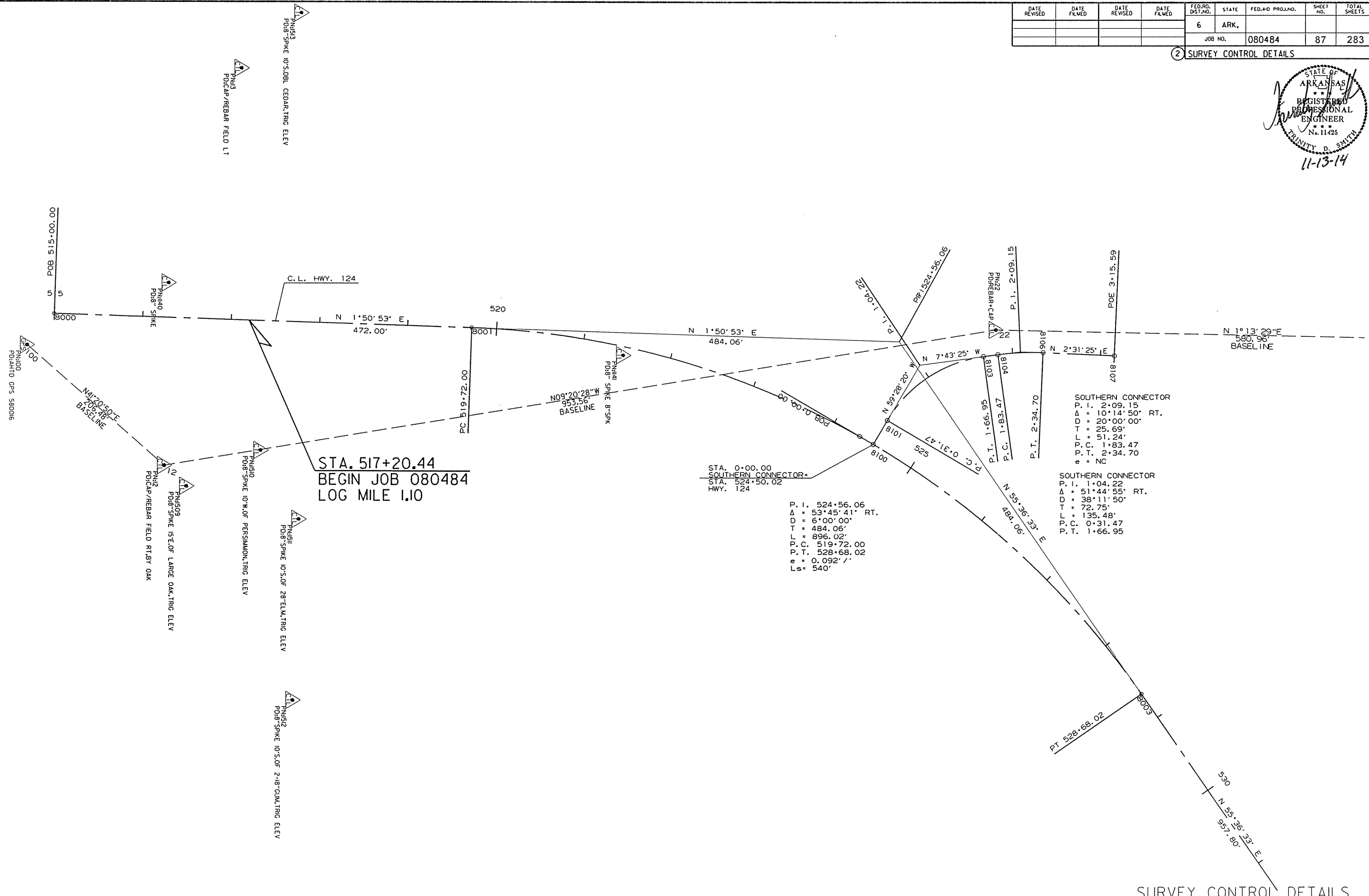
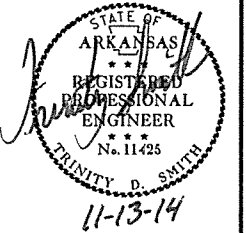
POINT NO.	TYPE	STATION	NORTHING	EASTING
8300	POB	300+00.00	356240.51	983702.67
8301	PC	301+75.52	356415.80	983711.55
8303	PT	303+82.89	356622.73	983703.29
8304	PC	304+20.58	356660.10	983698.39
8306	PT	305+78.51	356817.61	983688.69
8307	POE	306+81.49	356920.59	983689.46

11/7/2014

R080484.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.		080484	87	283

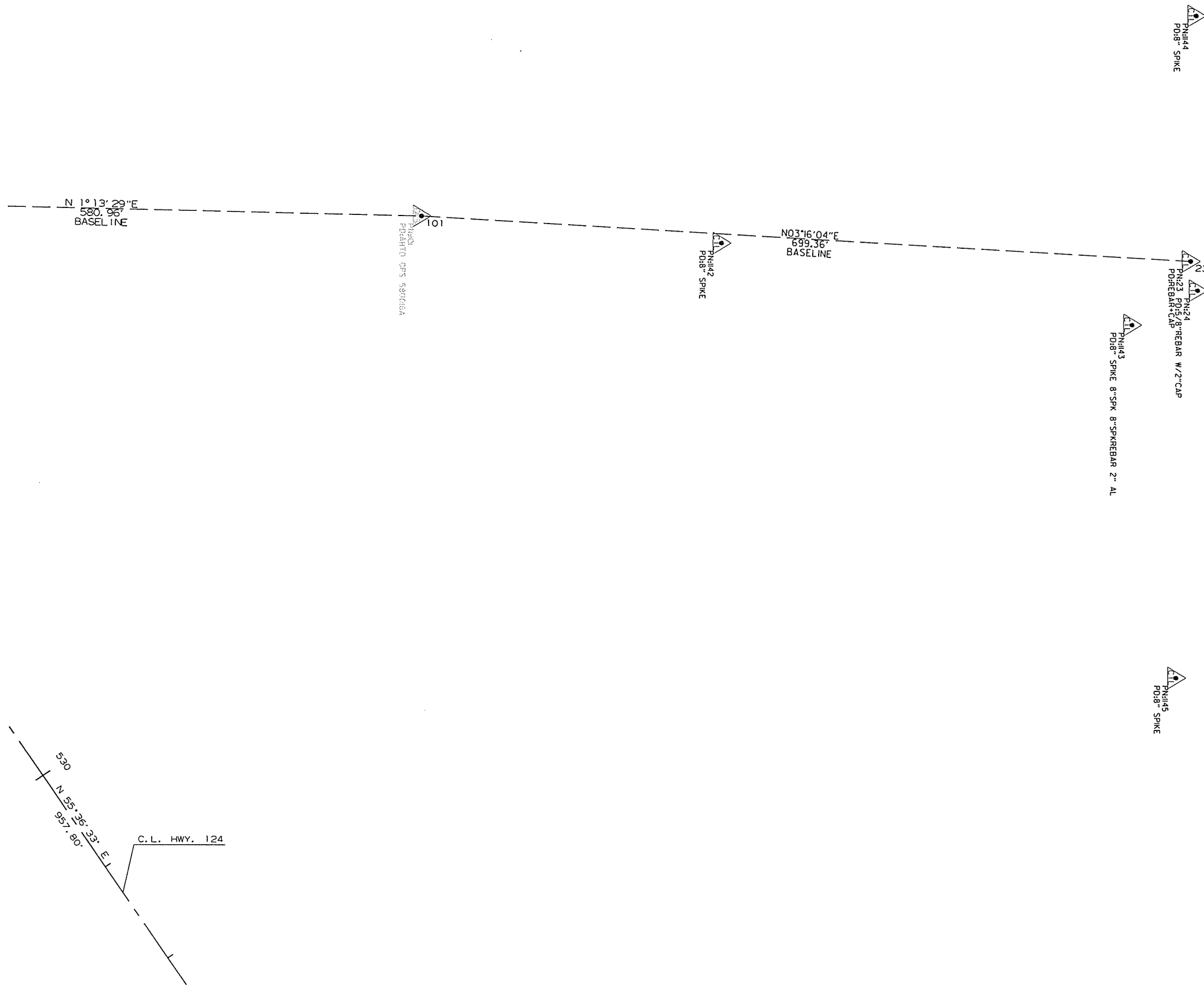
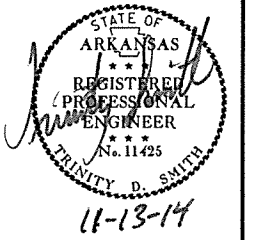
2 SURVEY CONTROL DETAILS



SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	
				6	ARK.				
JOB NO.							080484	88	283

2 SURVEY CONTROL DETAILS



11/7/2014

R080484.DGN

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.							080484	89	283

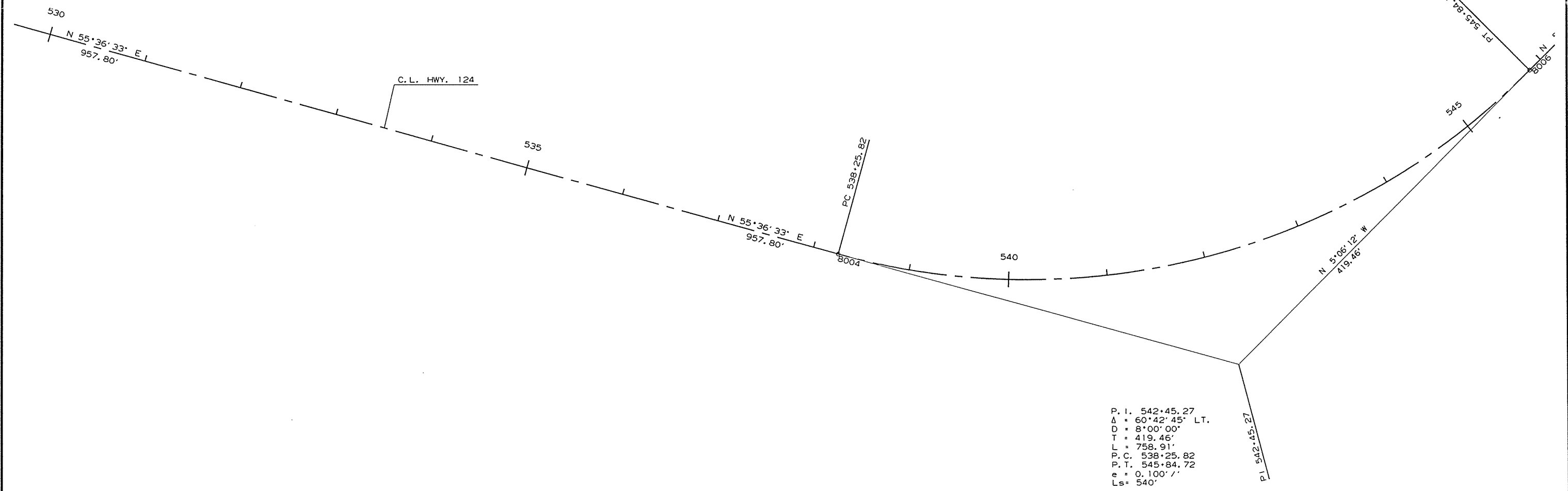
② SURVEY CONTROL DETAILS



11425  
PDS 8" REBAR W/2" CAP

11425  
PDS 8" REBAR W/2" CAP

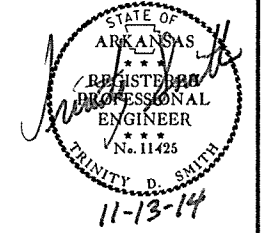
11425  
PDS 8" REBAR W/2" CAP



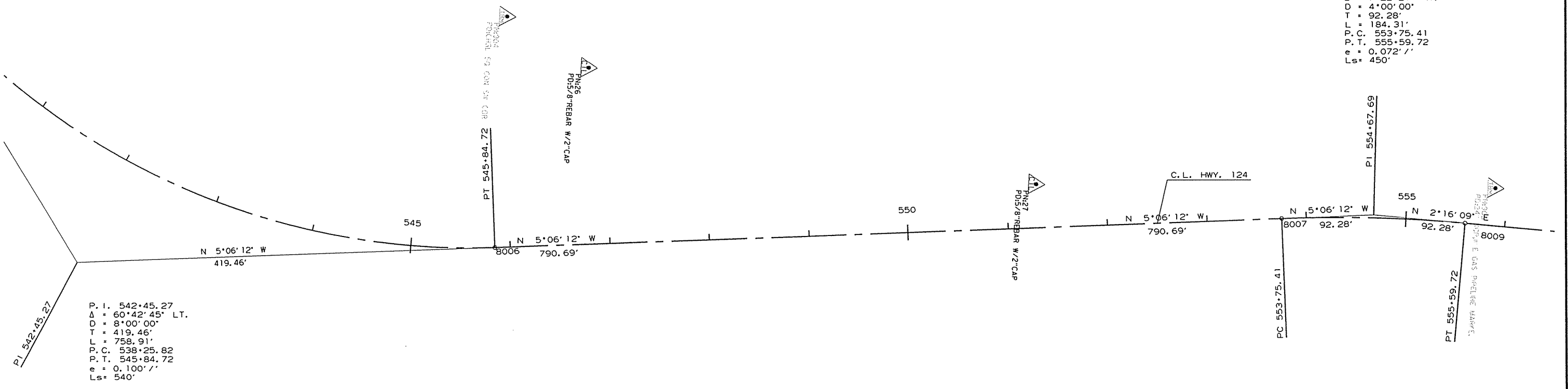
P. I. 542+45.27  
 $\Delta = 60^\circ 42' 45"$  LT.  
D = 8'00" 00"  
T = 419.46'  
L = 758.91'  
P. C. 538+25.82  
P. T. 545+84.72  
e = 0.100' /'  
Ls = 540'

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.							080484	90	283

2 SURVEY CONTROL DETAILS



P. I. 554+67.69  
 $\Delta = 7^{\circ}22'21''$  RT.  
D = 4'00'00"  
T = 92.28'  
L = 184.31'  
P. C. 553+75.41  
P. T. 555+59.72  
e = 0.072' /'  
Ls = 450'



P. I. 542+45.27  
 $\Delta = 60^{\circ}42'45''$  LT.  
D = 8'00'00"  
T = 419.46'  
L = 758.91'  
P. C. 538+25.82  
P. T. 545+84.72  
e = 0.100' /'  
Ls = 540'

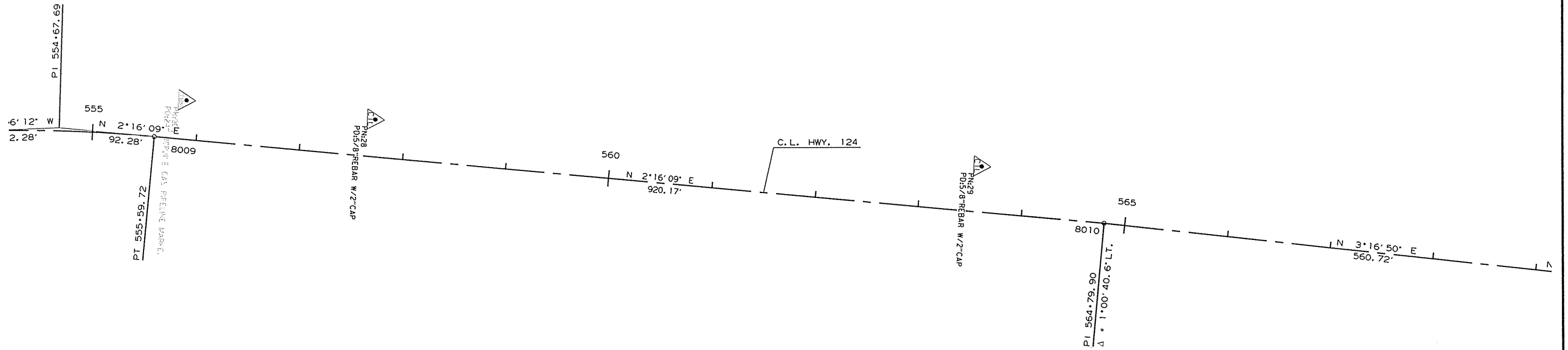


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	
				6	ARK.				
JOB NO.							080484	91	283

2 SURVEY CONTROL DETAILS

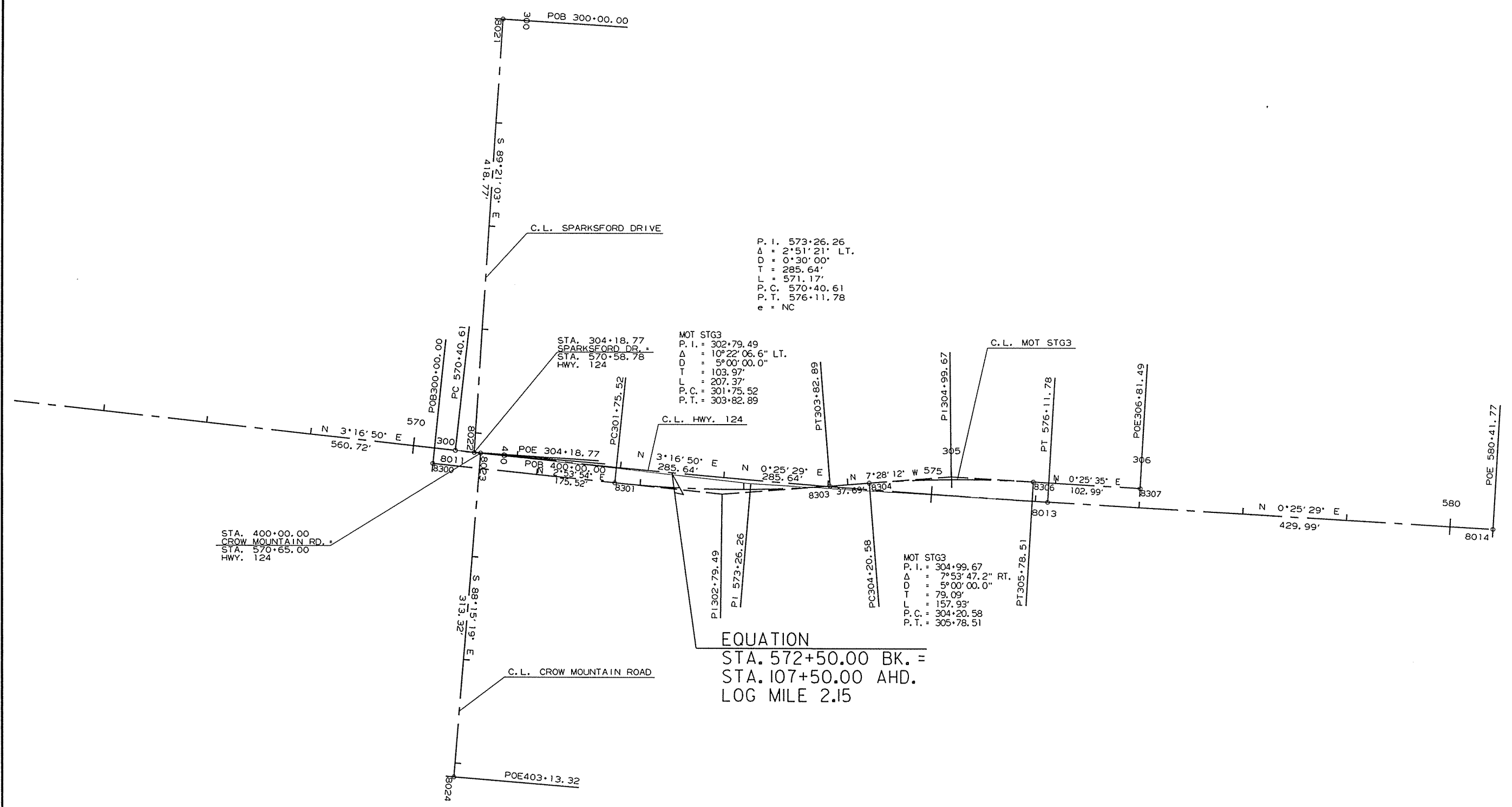
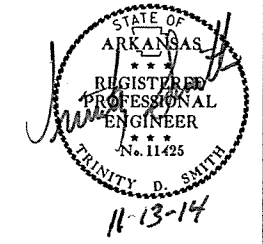


P. I. 554+67.69  
 $\Delta = 7^{\circ}22'21''$  RT.  
 D = 4'00'00"  
 T = 92.28'  
 L = 184.31'  
 P. C. 553+75.41  
 P. T. 555+59.72  
 e = 0.072' /'  
 Ls = 450'



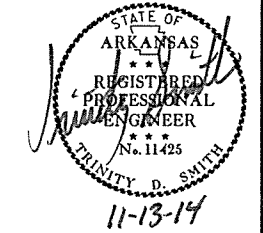
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	080484		92	283

② SURVEY CONTROL DETAILS



11/7/2014  
R080484.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO.	080484	93
						2 SURVEY CONTROL DETAILS		



SURVEY CONTROL COORDINATES

Project Name: s080427  
 Date: 6/25/2012  
 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	356962.1944	983744.8528	459.125	CTL	5/8" REBAR W/2" ALUM. CAP
2	357513.4769	983759.1607	447.646	CTL	5/8" REBAR W/2" ALUM. CAP
3	358249.0986	983738.7274	424.935	CTL	5/8" REBAR W/2" ALUM. CAP
4	359021.9948	983747.6920	434.942	CTL	5/8" REBAR W/2" ALUM. CAP
5	359608.8367	983763.9831	452.141	CTL	5/8" REBAR W/2" ALUM. CAP
6	360112.9981	983896.7219	479.222	CTL	5/8" REBAR W/2" ALUM. CAP
7	360692.7665	984209.2496	447.380	CTL	5/8" REBAR W/2" ALUM. CAP
8	361336.4032	984441.6040	439.995	CTL	5/8" REBAR W/2" ALUM. CAP
9	361944.9665	984813.3796	440.587	CTL	5/8" REBAR W/2" ALUM. CAP
10	362440.9934	985248.1954	447.215	CTL	5/8" REBAR W/2" ALUM. CAP
11	362912.2316	985657.3305	445.098	CTL	5/8" REBAR W/2" ALUM. CAP
12	363358.5742	986060.8072	444.951	CTL	5/8" REBAR W/2" ALUM. CAP
13	363672.3480	986704.4439	433.704	CTL	5/8" REBAR W/2" ALUM. CAP
14	363840.9302	987320.7307	430.908	CTL	5/8" REBAR W/2" ALUM. CAP
15	363981.4335	987951.0895	429.468	CTL	5/8" REBAR W/2" ALUM. CAP
16	364262.0821	988448.4875	432.220	CTL	5/8" REBAR W/2" ALUM. CAP
17	364630.1325	988829.6697	447.683	CTL	5/8" REBAR W/2" ALUM. CAP
18	364483.9528	989464.4308	460.072	CTL	5/8" REBAR W/2" ALUM. CAP
19	364388.8455	989898.8086	471.494	CTL	5/8" REBAR W/2" ALUM. CAP
20	364350.1139	990371.9619	481.906	CTL	5/8" REBAR W/2" ALUM. CAP
21	364474.9592	991000.6646	451.396	CTL	5/8" REBAR W/2" ALUM. CAP
22	364659.5844	991664.9876	448.510	CTL	5/8" REBAR W/2" ALUM. CAP
23	364759.4640	992350.6810	457.263	CTL	5/8" REBAR W/2" ALUM. CAP
24	364949.2826	992997.7799	440.859	CTL	5/8" REBAR W/2" ALUM. CAP
25	365058.8339	993561.4983	435.158	CTL	5/8" REBAR W/2" ALUM. CAP
26	365163.4688	994250.7419	433.934	CTL	5/8" REBAR W/2" ALUM. CAP
27	365294.9075	994932.3871	435.558	CTL	5/8" REBAR W/2" ALUM. CAP
28	365541.2008	996070.1275	436.035	CTL	5/8" REBAR W/2" ALUM. CAP
29	366272.5533	997333.0432	443.726	CTL	5/8" REBAR W/2" ALUM. CAP
30	366582.5768	997952.0062	445.317	CTL	5/8" REBAR W/2" ALUM. CAP
31	366974.2718	998608.3777	441.248	CTL	5/8" REBAR W/2" ALUM. CAP
32	367392.1405	999246.0439	446.833	CTL	5/8" REBAR W/2" ALUM. CAP
33	367702.5390	999836.9131	458.916	CTL	5/8" REBAR W/2" ALUM. CAP
34	368034.7621	1000256.8489	473.448	CTL	5/8" REBAR W/2" ALUM. CAP
35	368373.3675	1000718.9145	497.630	CTL	5/8" REBAR W/2" ALUM. CAP
100	357675.7496	983769.9184	443.466	GPS	AHTD GPS 580005
101	356220.1262	983700.7669	487.893	GPS	AHTD GPS 580005A
102	365332.0040	995355.2751	432.717	GPS	AHTD GPS 580006
103	365843.1338	996753.6348	453.467	GPS	AHTD GPS 580006A
104	353031.7649	982195.3311	409.994	GPS	AHTD GPS 580016A
105	364946.5854	988564.0721	458.145	GPS	AHTD GPS 580028
106	365693.3409	987119.0854	459.382	GPS	AHTD GPS 580028A
900	358519.6896	983795.6512	423.462	BM	AHTD ACAP BM 900
901	361182.8360	984377.4607	441.213	BM	BM 901 IN CONC HEADWALL
902	363631.7033	986684.7706	434.104	TBM	TBM-902 CHISELED SQ. IN HEADWALL
903	363881.7069	987461.9301	430.431	BM	903 CHISELED SQ. IN CONC HEADWALL
904	364079.5400	988129.6243	428.493	BM	904 CHISELED SQ. IN HEADWALL
905	364226.3957	988406.7747	432.451	BM	905 CHISELED SQ. IN NE CNR HEADWALL
906	365318.4711	987811.4803	457.352	TBM	S. SIDE OF CENTER VALLEY ROAD
907	365452.2269	987531.3257	457.096	TBM	S. SIDE OF CENTER VALLEY ROAD
908	365064.9643	993760.9535	434.899	TBM	S. SIDE OF HWY. 124
909	365460.8465	995813.4445	433.670	TBM	NW COR BOX CULVERT HEADWALL
910	367399.0659	999347.8477	445.014	TBM	SE COR BOX CULVERT HEADWALL
990	353810.1830	983462.0681	433.455	TBM	RIVER VALLEY WAREHOUSE PK
991	367009.7061	998558.3449	441.325	BM	SET IN TOP OF SQ. CONC. POST
992	357394.3790	983778.7190	452.457	BM	A CAP IN CONC USGS 3GHC

\*Note - Rebar and Cap - Standard - \* 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 0.9999337371 HAS BEEN USED TO COMPUTE THE GROUND COORDINATES LISTED ABOVE.  
 THIS CAF IS INTENDED FOR USE WITHIN THE PROJECT LIMITS.  
 GRID DISTANCE = GROUND DISTANCE X CAF.  
 GRID COORDINATES ARE STORED UNDER FILE NAME. s080427G1.CTL  
 HORIZONTAL DATUM: NAD 83 (1997)  
 VERTICAL DATUM: NAVD 88 POSITIONAL ACCURACY THIRD ORDER, UNLESS SPECIFIED OTHERWISE  
 AT A SPECIFIC POINT.

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: 580005 - 580005A, 580006 - 580006A, 580028 - 580028A, 580016A  
 CONVERGENCE ANGLE: 00 37 23 LEFT AT LT; 35-19-52.17 LG; 093-04-15.08  
 GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

HWY. 124

POINT NO.	TYPE	STATION	NORTHING	EASTING
8000	POB	88+00.00	354522.9340	983631.5902
8001	PC	88+75.41	354598.0465	983624.8822
8003	PT	90+59.72	354782.1749	983620.3273
8004	PI	99+79.90	355701.6260	983656.7609
8005	PC	105+40.61	356261.4243	983688.8471
8007	PT	111+11.78	356832.2335	983707.3094
8008	PI	115+41.77	357262.2138	983710.4961
8009	PI	126+56.33	358376.2558	983744.5621
8010	PI	132+99.93	359019.7143	983757.8073
8011	PC	138+24.56	359544.2096	983769.7876
8013	PT	144+35.62	360136.1996	983903.9134
8014	PI	149+92.29	360643.8581	984132.3113
8015	PI	158+22.41	361400.9578	984472.7427
8016	PC	158+50.78	361426.8445	984484.3500
8018	PT	163+81.00	361871.0212	984770.2408
8019	PI	167+69.34	362162.3908	985026.9660
8020	PI	175+91.98	362782.2548	985567.8002
8021	PC	181+77.44	363221.8724	985954.4559
8023	PT	189+63.11	363632.0264	986611.5547
8024	PI	191+50.40	363681.3733	986792.2280
8025	PI	197+50.02	363838.1316	987370.9947
8026	PC	202+82.88	363979.8779	987884.6517
8028	PT	209+40.61	364291.7854	988457.1658
8029	PC	210+11.32	364338.8580	988509.9316
8031	PT	218+49.54	364540.8308	989291.2477
8032	PC	224+95.08	364398.3789	989920.8698
8034	PT	230+95.73	364390.7250	990517.0810
8035	POE	235+26.36	364474.9402	990939.3988

DETOUR

POINT NO.	TYPE	STATION	NORTHING	EASTING
8100	POB	400+00.00	364044.2030	988092.2041
8101	PC	400+18.10	364051.4727	988108.7798
8103	PT	401+00.71	364080.2217	988186.1798
8104	PC	401+00.82	364080.2532	988186.2824
8106	PT	404+22.67	364239.5710	988462.8265
8107	PC	404+42.53	364253.0687	988477.3922
8109	PT	405+78.08	364354.0313	988567.5288
8110	PC	406+07.31	364377.5773	988584.8477
8112	PT	407+92.21	364510.8109	988712.3093
8113	POE	407+93.01	364511.3155	988712.9353

MOT STAGE 3

POINT NO.	TYPE	STATION	NORTHING	EASTING
8300	POB	300+00.00	356240.5122	983702.6731
8301	PC	301+75.52	356415.8039	983711.5481
8303	PT	303+82.89	356622.7264	983703.2884
8304	PC	304+20.58	356660.0996	983698.3880
8306	PT	305+78.51	356817.6053	983688.6941
8307	POE	306+81.49	356920.5885	983689.4604

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.							080484	94	283

② SURVEY CONTROL DETAILS

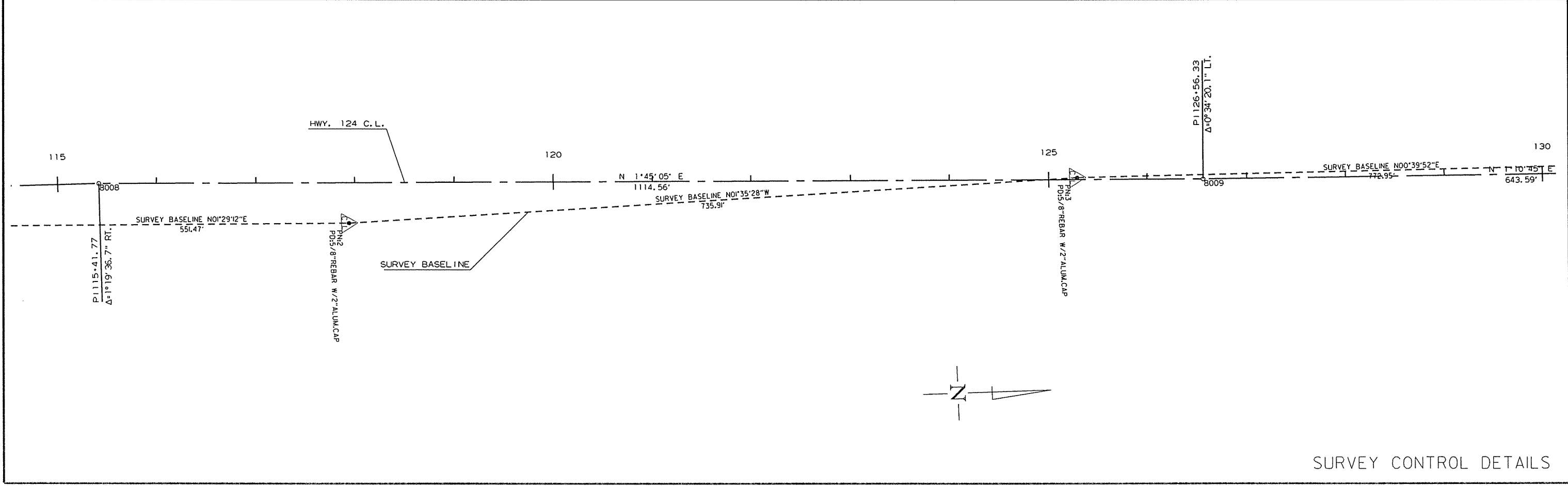
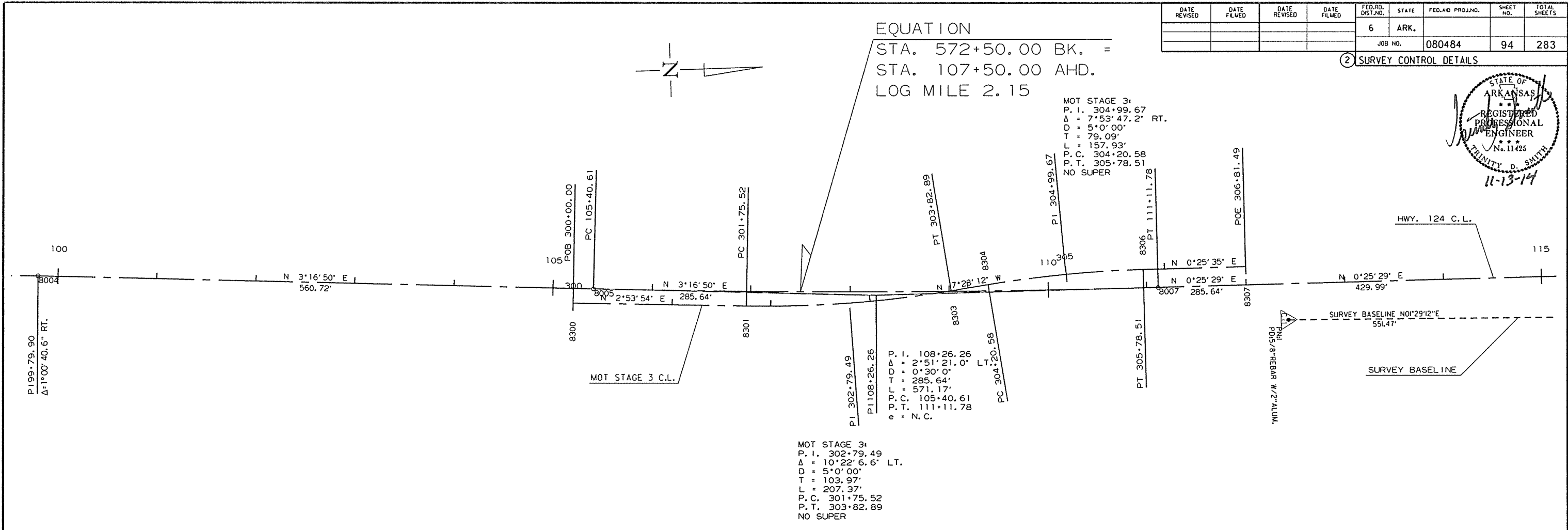


EQUATION  
 STA. 572+50.00 BK. =  
 STA. 107+50.00 AHD.  
 LOG MILE 2.15

MOT STAGE 3:  
 P. I. 304+99.67  
 Δ = 7°53'47.2" RT.  
 D = 5'0"00"  
 T = 79.09'  
 L = 157.93'  
 P. C. 304+20.58  
 P. T. 305+78.51  
 NO SUPER

P. I. 108+26.26  
 Δ = 2°51'21.0" LT.  
 D = 0'30"00"  
 T = 285.64'  
 L = 571.17'  
 P. C. 105+40.61  
 P. T. 111+11.78  
 e = N. C.

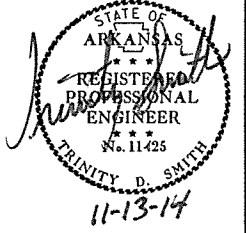
MOT STAGE 3:  
 P. I. 302+79.49  
 Δ = 10°22'6.6" LT.  
 D = 5'0"00"  
 T = 103.97'  
 L = 207.37'  
 P. C. 301+75.52  
 P. T. 303+82.89  
 NO SUPER



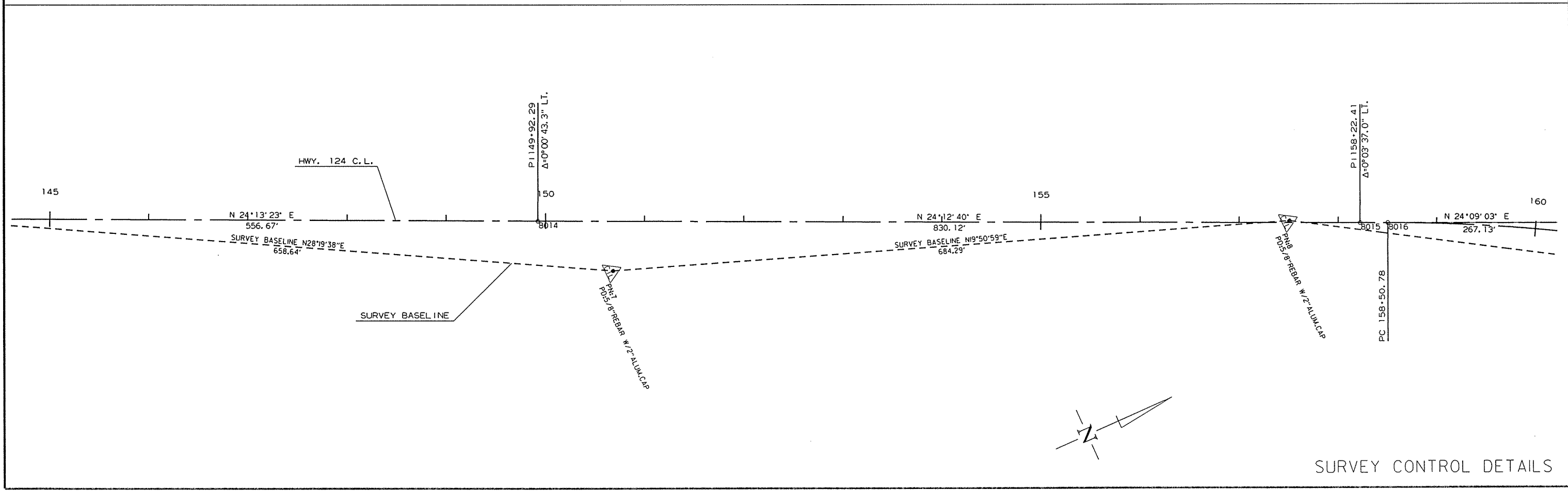
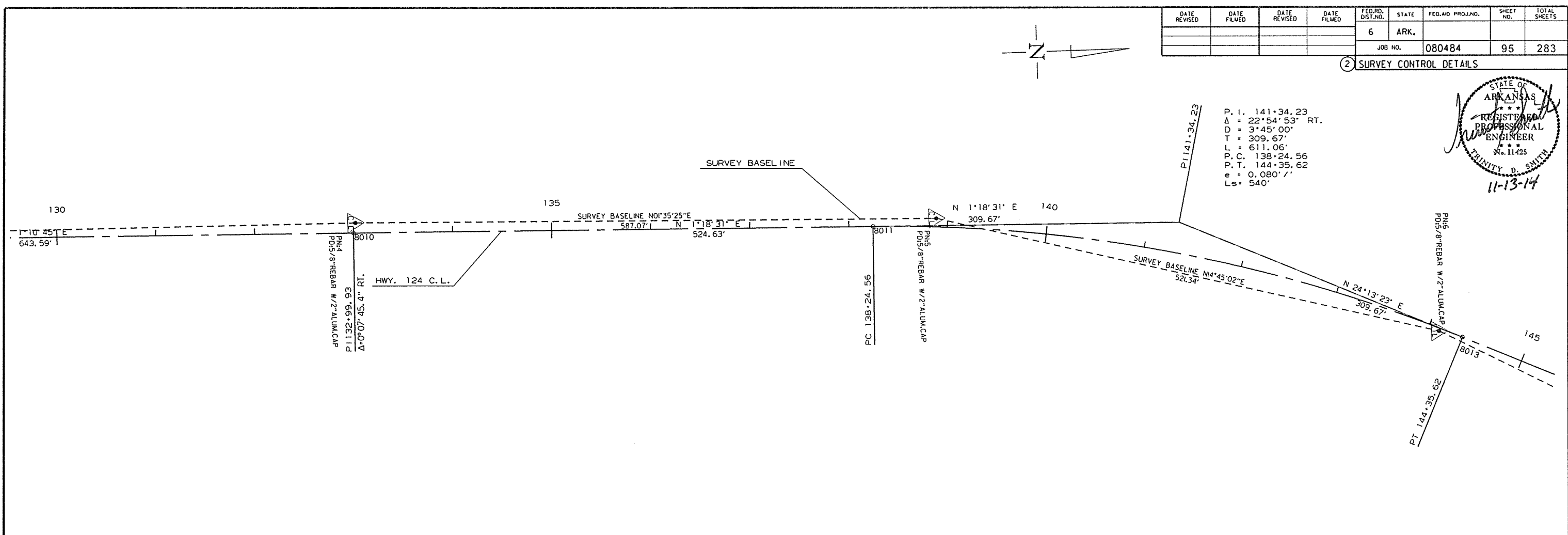
8/26/2014 R080484.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. RD. PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 080484							95	283

② SURVEY CONTROL DETAILS



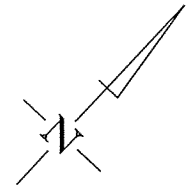
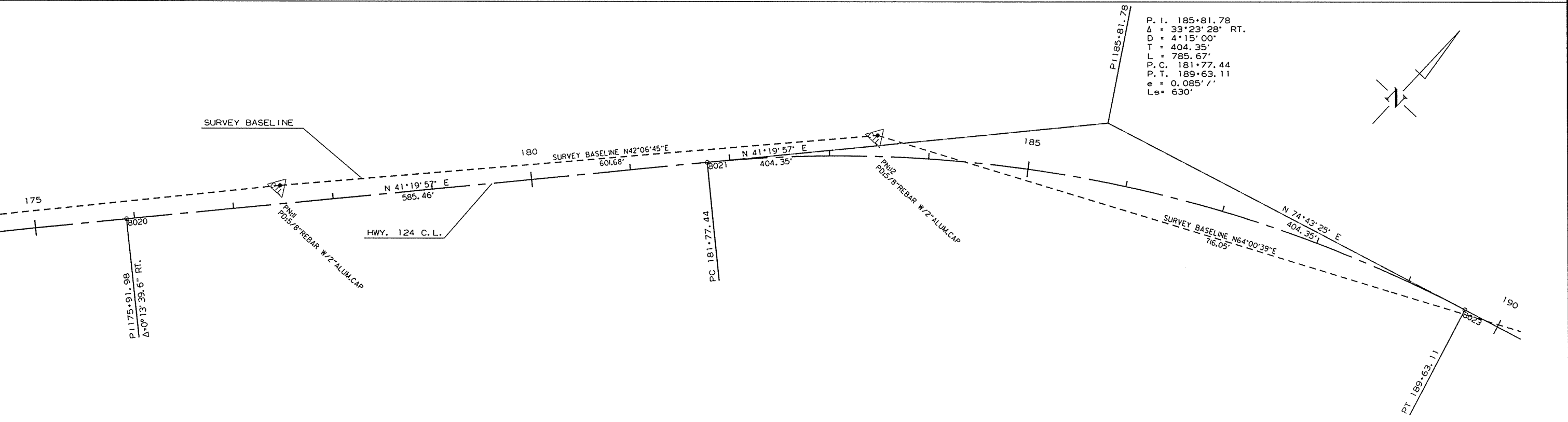
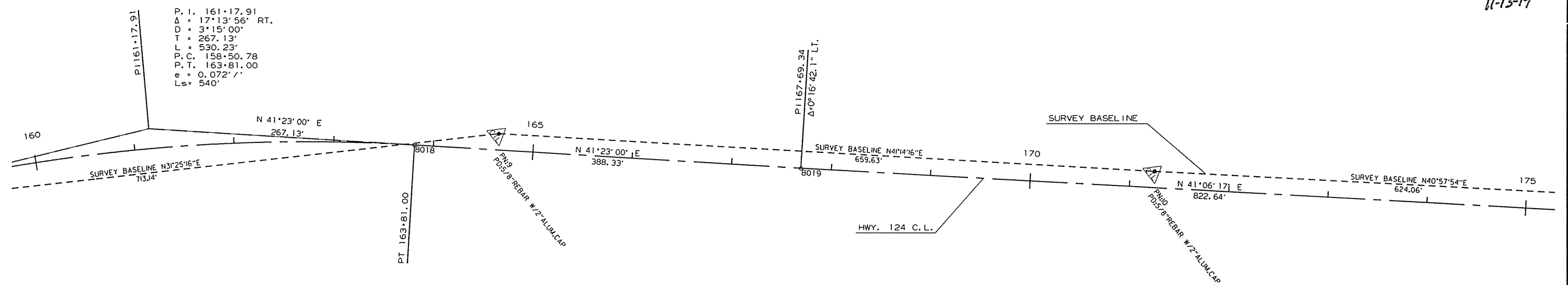
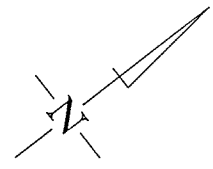
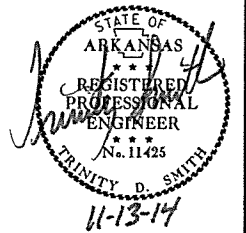
P. I. 141+34.23  
 $\Delta = 22^\circ 54' 53''$  RT.  
 $D = 3^\circ 45' 00''$   
 $T = 309.67'$   
 $L = 611.06'$   
 $P.C. = 138+24.56$   
 $P.T. = 144+35.62$   
 $e = 0.080' /'$   
 $L_s = 540'$



8/26/2014  
 R080484.DGN

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.	080484	96
						2 SURVEY CONTROL DETAILS		

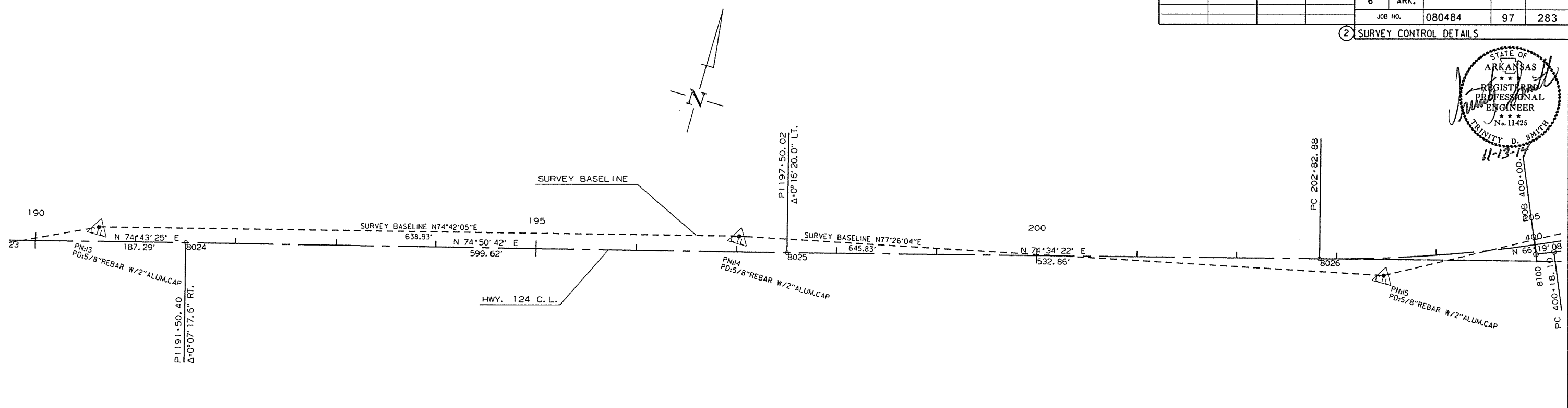
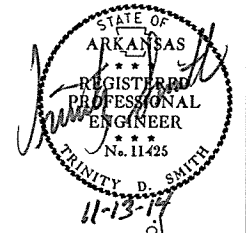


SURVEY CONTROL DETAILS

8/26/2014  
R080484.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.	080484		97	283

② SURVEY CONTROL DETAILS



MOT DETOUR  
 P. I. 407+00.27  
 $\Delta = 14^\circ 47' 30''$  RT.  
 D = 8'00" 00"  
 T = 92.97'  
 L = 184.90'  
 P. C. 406+07.31  
 P. T. 407+92.21  
 e = NC

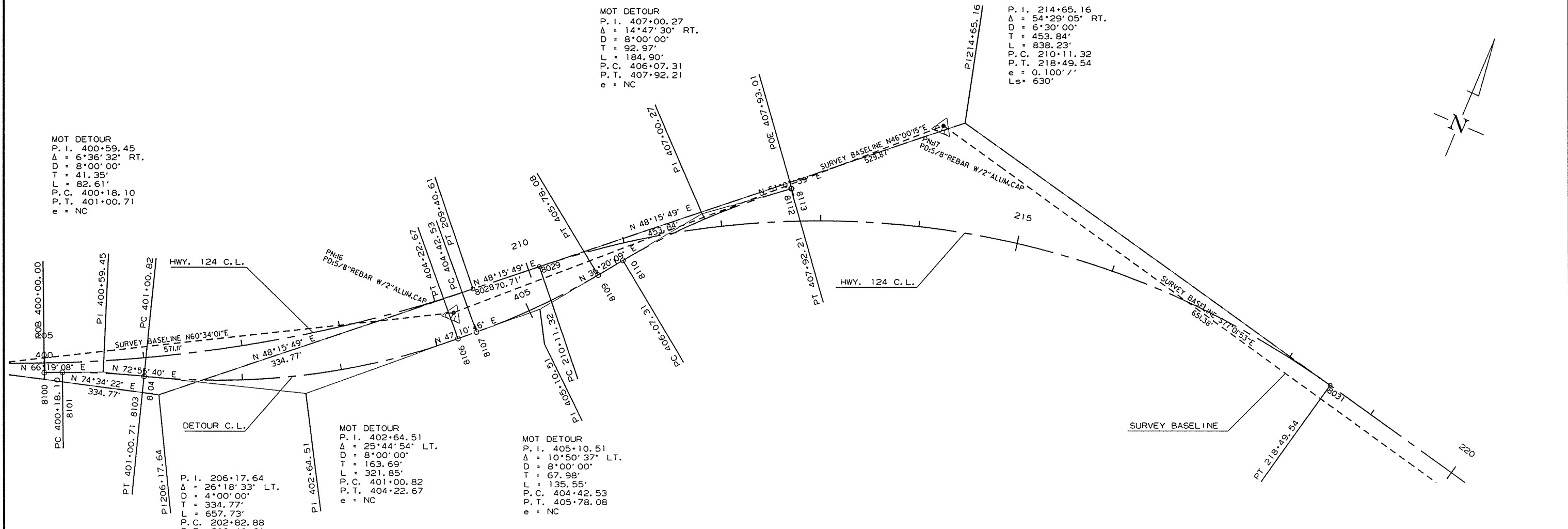
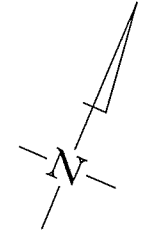
P. I. 214+65.16  
 $\Delta = 54^\circ 29' 05''$  RT.  
 D = 6'30" 00"  
 T = 453.84'  
 L = 838.23'  
 P. C. 210+11.32  
 P. T. 218+49.54  
 e = 0.100' /'  
 Ls = 630'

MOT DETOUR  
 P. I. 400+59.45  
 $\Delta = 6^\circ 36' 32''$  RT.  
 D = 8'00" 00"  
 T = 41.35'  
 L = 82.61'  
 P. C. 400+18.10  
 P. T. 401+00.71  
 e = NC

MOT DETOUR  
 P. I. 402+64.51  
 $\Delta = 25^\circ 44' 54''$  LT.  
 D = 8'00" 00"  
 T = 163.69'  
 L = 321.85'  
 P. C. 401+00.82  
 P. T. 404+22.67  
 e = NC

MOT DETOUR  
 P. I. 405+10.51  
 $\Delta = 10^\circ 50' 37''$  LT.  
 D = 8'00" 00"  
 T = 67.98'  
 L = 135.55'  
 P. C. 404+42.53  
 P. T. 405+78.08  
 e = NC

P. I. 206+17.64  
 $\Delta = 26^\circ 18' 33''$  LT.  
 D = 4'00" 00"  
 T = 334.77'  
 L = 657.73'  
 P. C. 202+82.88  
 P. T. 209+40.61  
 e = 0.083' /'  
 Ls = 540'



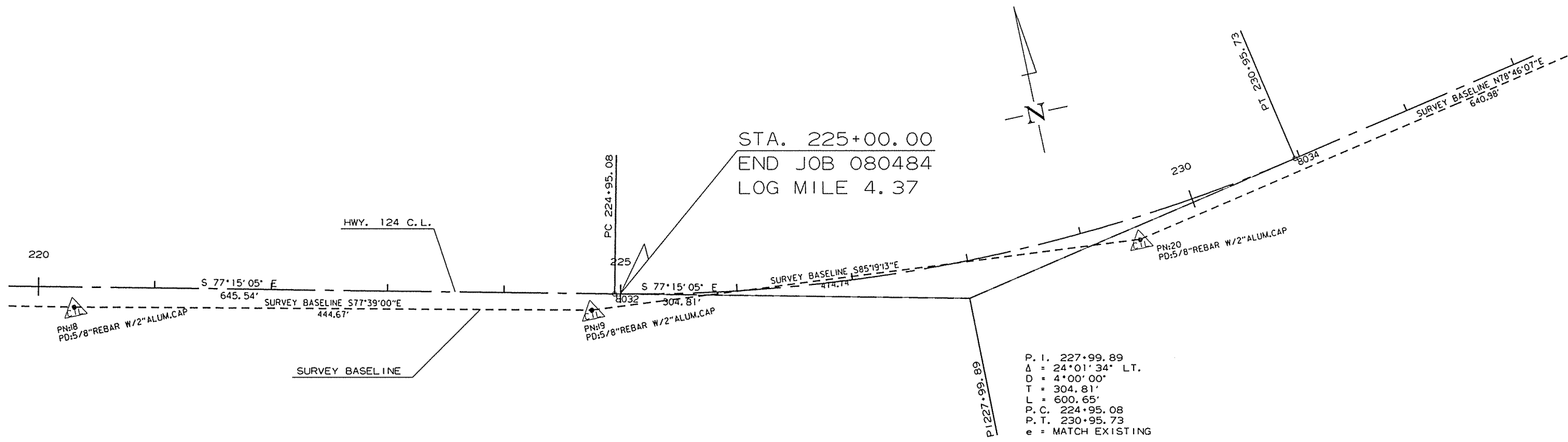
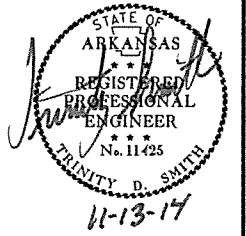
SURVEY CONTROL DETAILS

RO80484.DGN 8/26/2014



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.	080484		98	283

2 SURVEY CONTROL DETAILS



8/26/2014

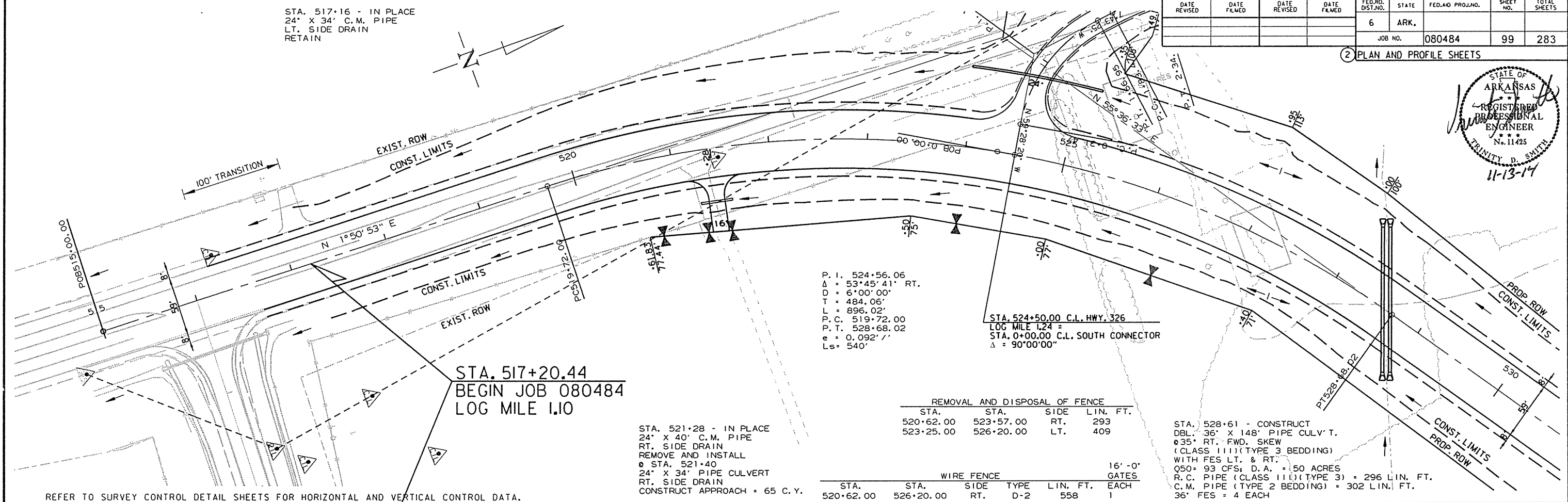
R080484.DGN

SURVEY CONTROL DETAILS

STA. 517+16 - IN PLACE  
24" X 34" C.M. PIPE  
LT. SIDE DRAIN  
RETAIN

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 080484							99	283

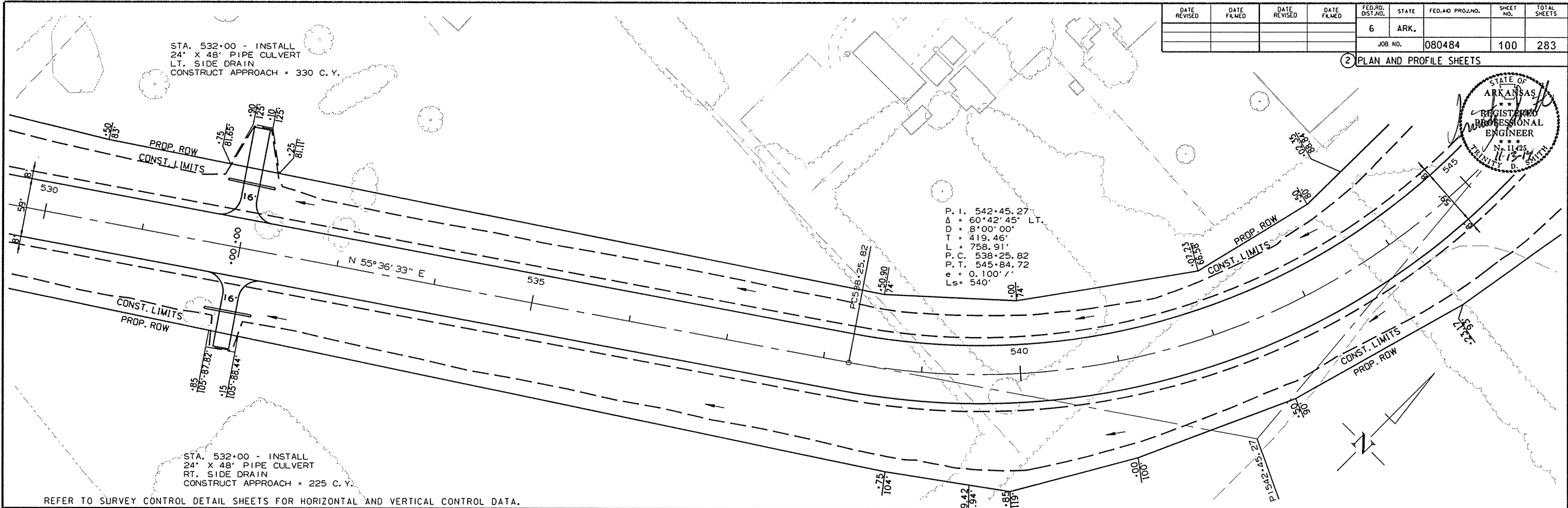
(2) PLAN AND PROFILE SHEETS



R080484.DGN 11/7/2014

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. 080484							100	283

② PLAN AND PROFILE SHEETS

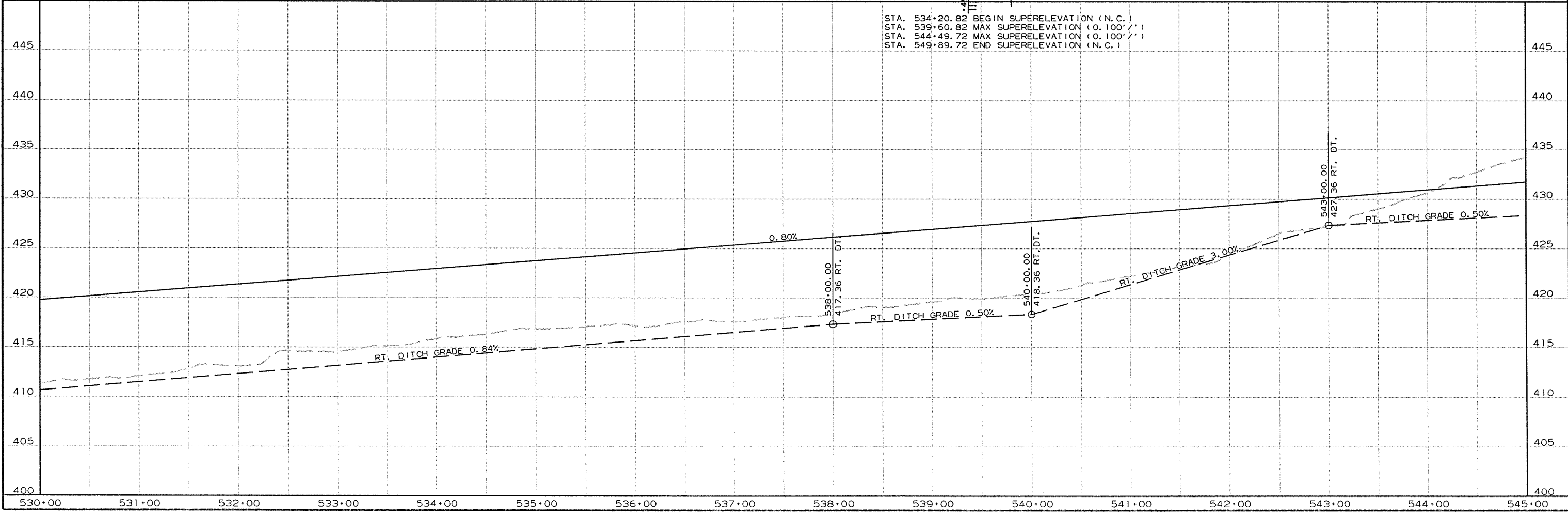


STA. 532+00 - INSTALL  
24" X 48" PIPE CULVERT  
LT. SIDE DRAIN  
CONSTRUCT APPROACH = 330 C. Y.

STA. 532+00 - INSTALL  
24" X 48" PIPE CULVERT  
RT. SIDE DRAIN  
CONSTRUCT APPROACH = 225 C. Y.

P. I. 542+45.27  
Δ = 60° 42' 45" LT.  
D = 8° 00' 00"  
T = 419.46'  
L = 758.91'  
P. C. 538+25.82  
P. T. 545+84.72  
e = 0.100' /'  
Ls = 540'

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

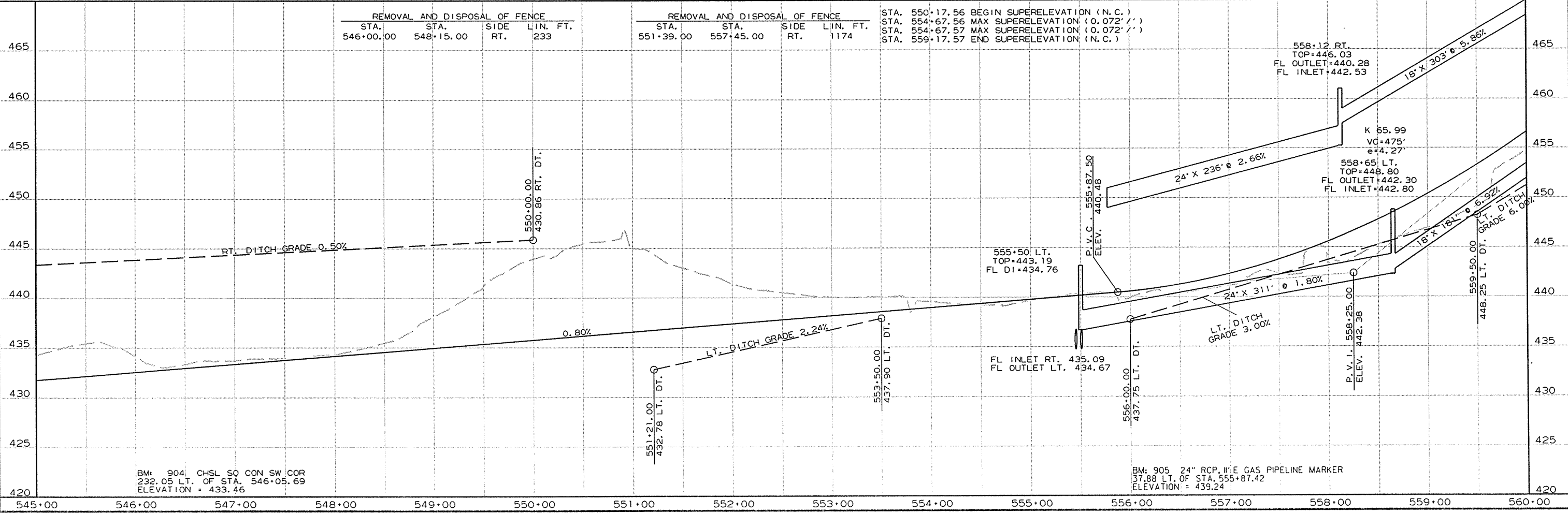
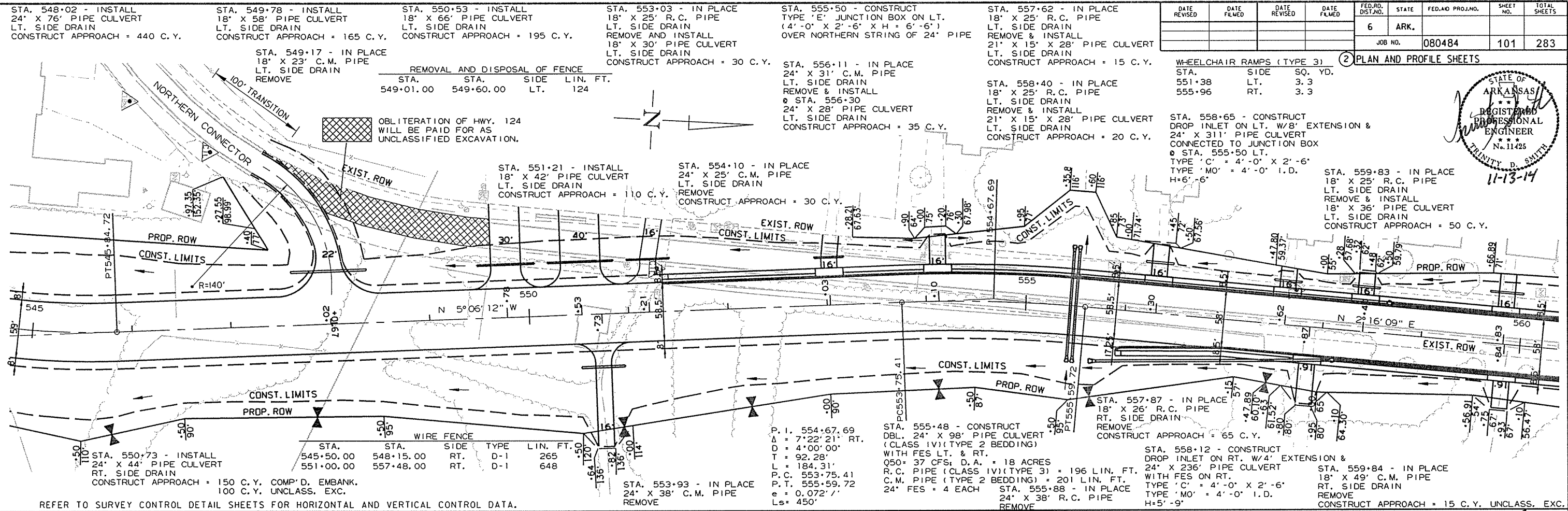
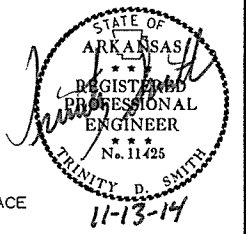


STA. 534+20.82 BEGIN SUPERELEVATION (N.C.)  
STA. 539+60.82 MAX SUPERELEVATION (0.100' /'  
STA. 544+49.72 MAX SUPERELEVATION (0.100' /'  
STA. 549+89.72 END SUPERELEVATION (N.C.)

11/7/2014  
R080484.DGN

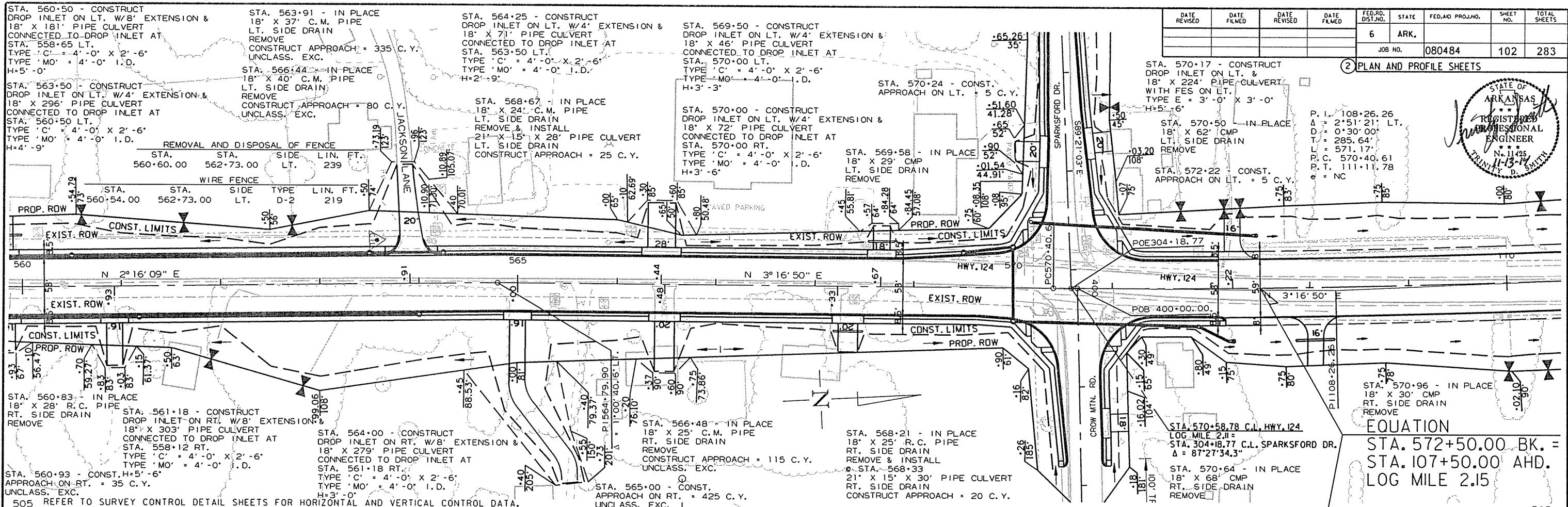
DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	
				6	ARK.				
							JOB NO. 080484	101	283

2 PLAN AND PROFILE SHEETS



11/7/2014  
R080484.DGN

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.



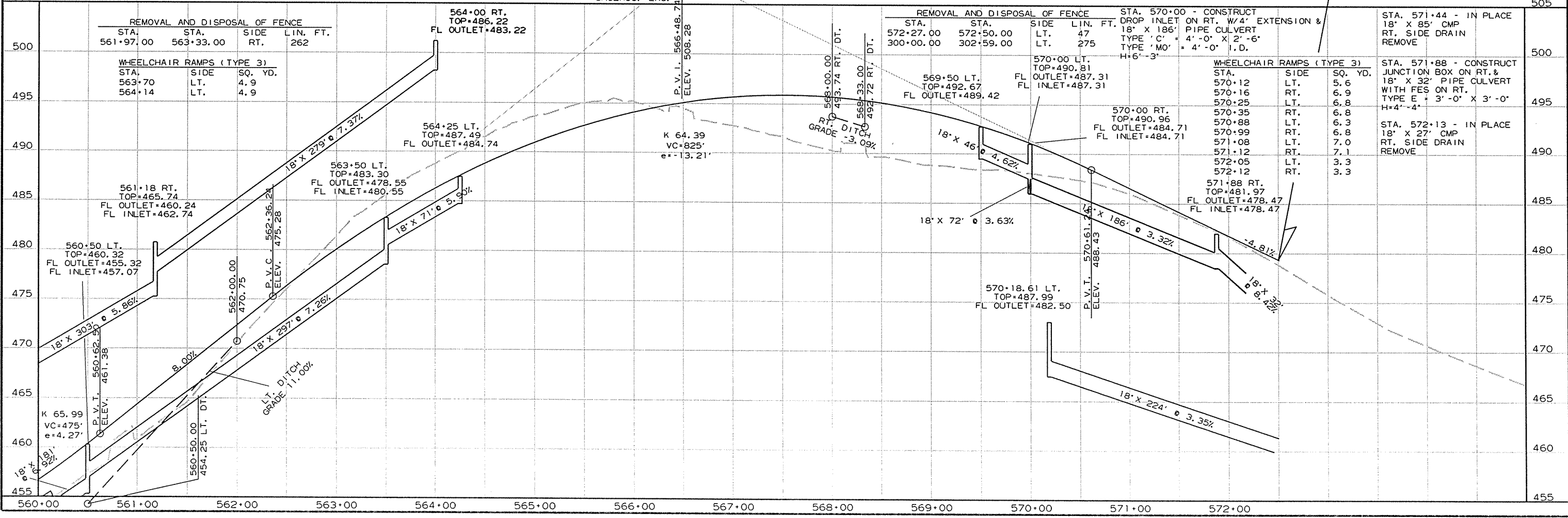
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		102	283
						JOB NO.	080484	

2 PLAN AND PROFILE SHEETS



P. I. 108+26.26  
 Δ = 2'51'21" LT.  
 D = 0'30'00"  
 T = 285.64'  
 L = 571.17'  
 P. C. 570+40.61  
 P. T. 111+11.78  
 e = NC

EQUATION  
 STA. 572+50.00 BK. =  
 STA. 107+50.00 AHD.  
 LOG MILE 2.15



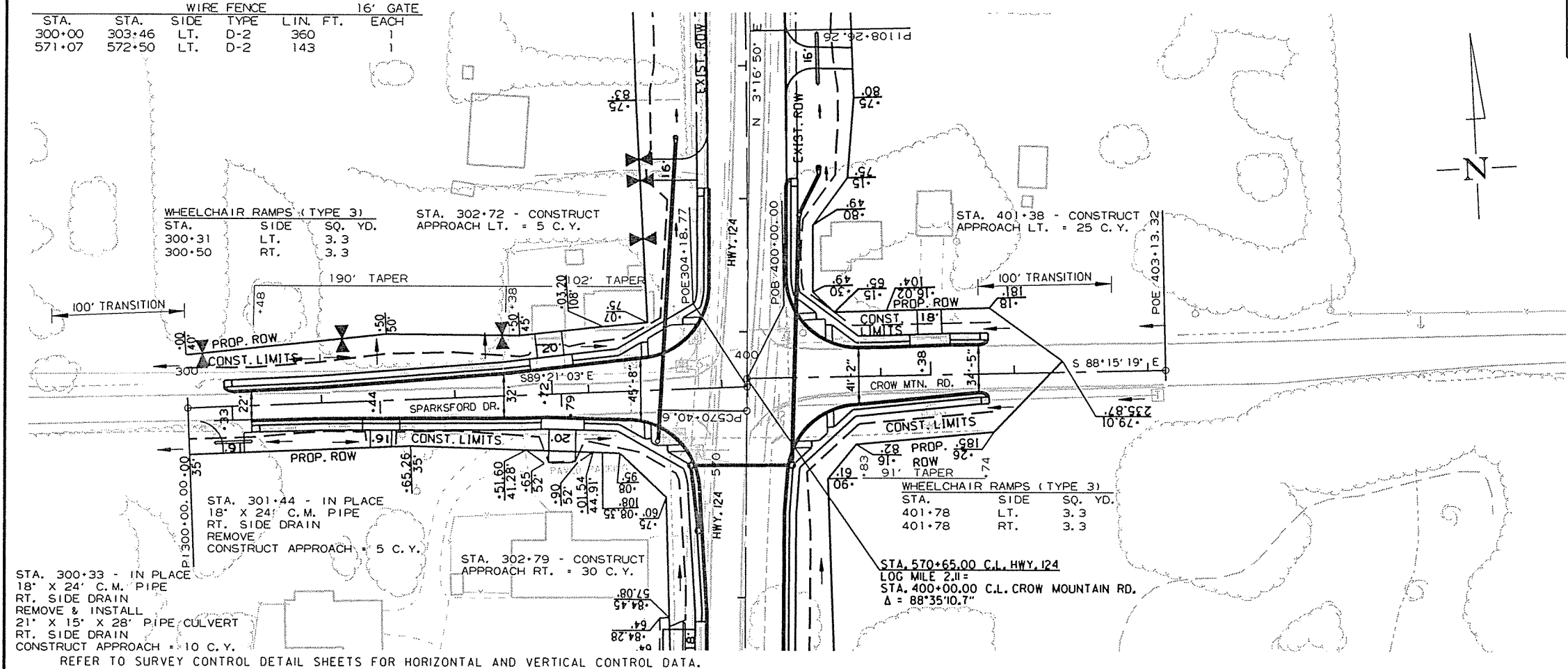
11/7/2014  
 R080484.DGN



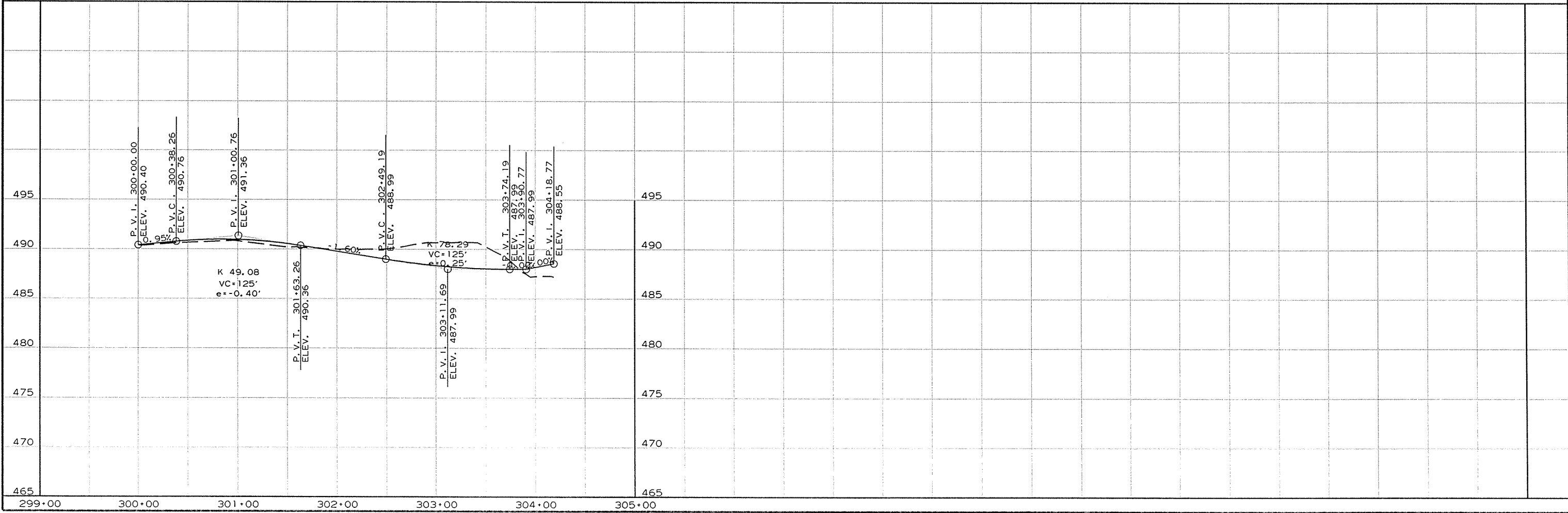
WIRE FENCE				16' GATE	
STA.	STA.	SIDE	TYPE	LIN. FT.	EACH
300+00	303+46	LT.	D-2	360	1
571+07	572+50	LT.	D-2	143	1

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. 080484	103	283

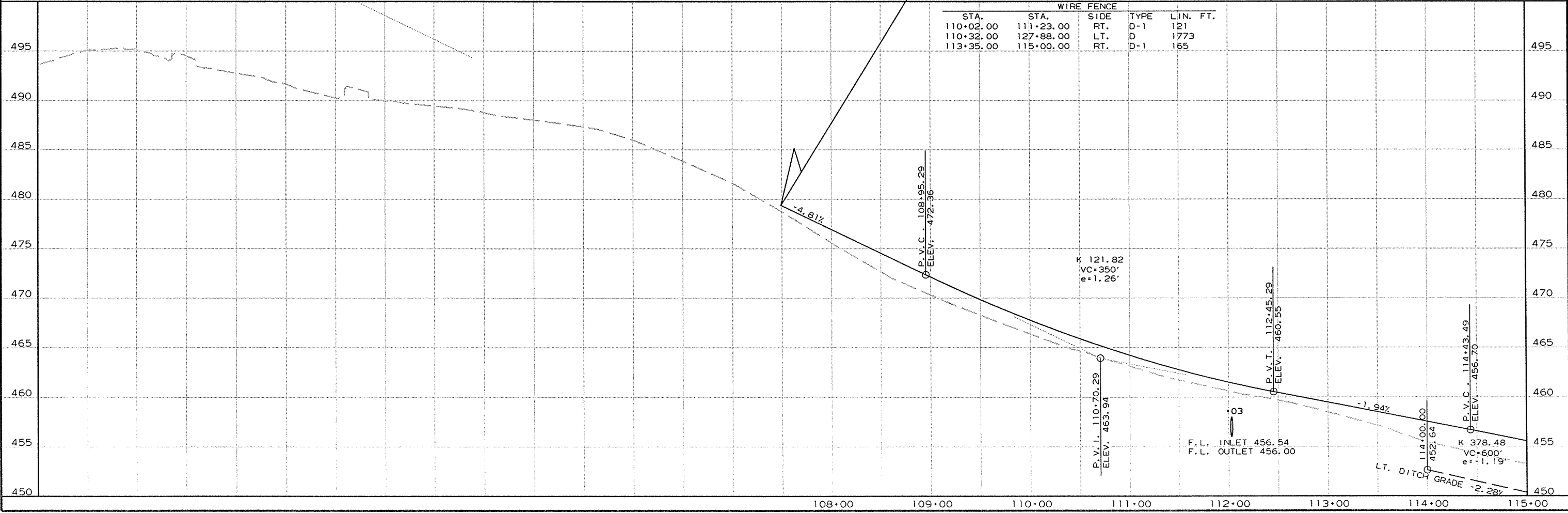
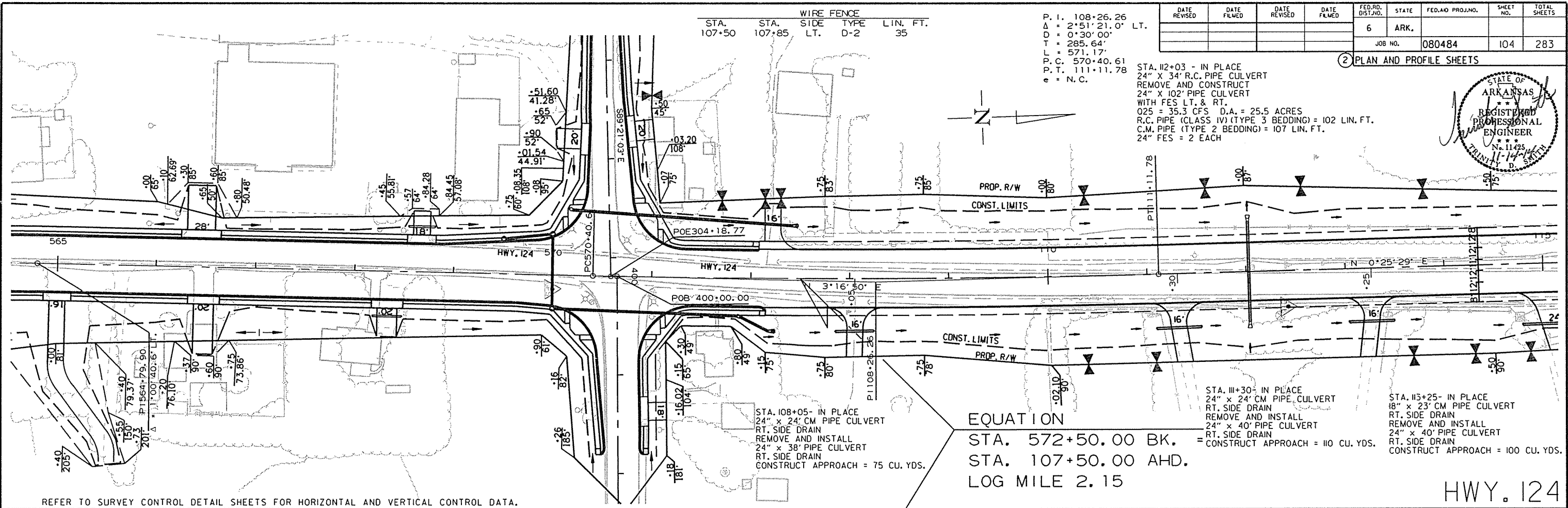
2 PLAN AND PROFILE SHEETS



HWY. 124 &  
 SPARKSFORD RD./CROW MOUNTAIN RD.  
 INTERSECTION



11/7/2014 R080484.DGN

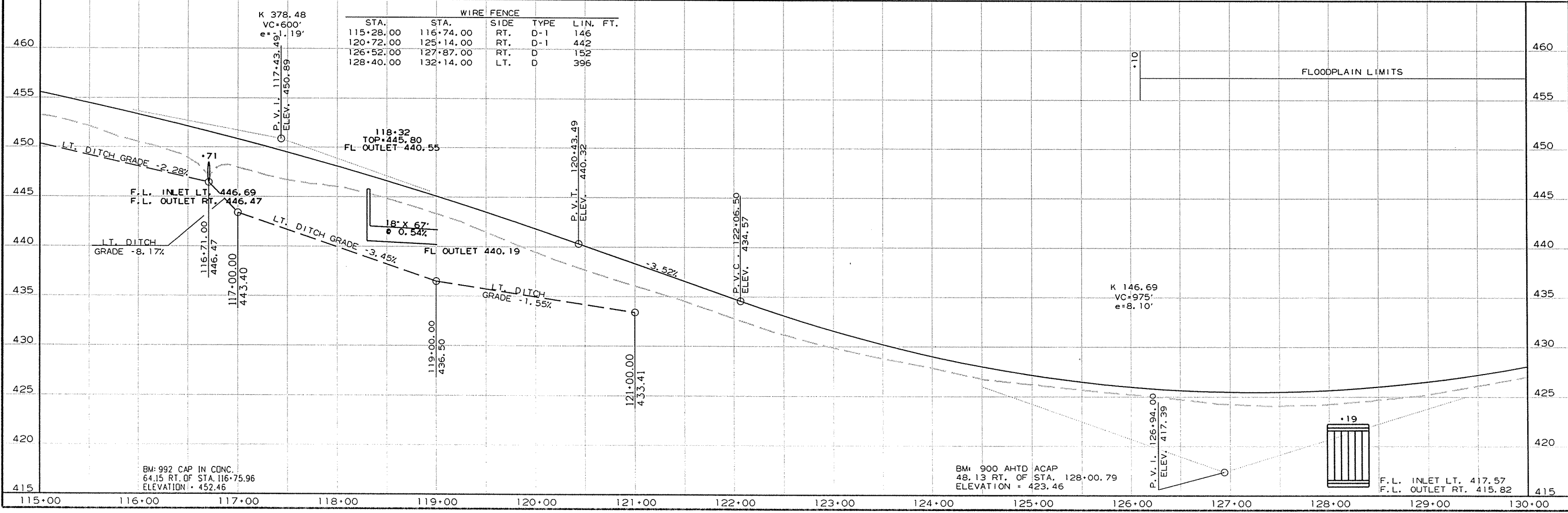
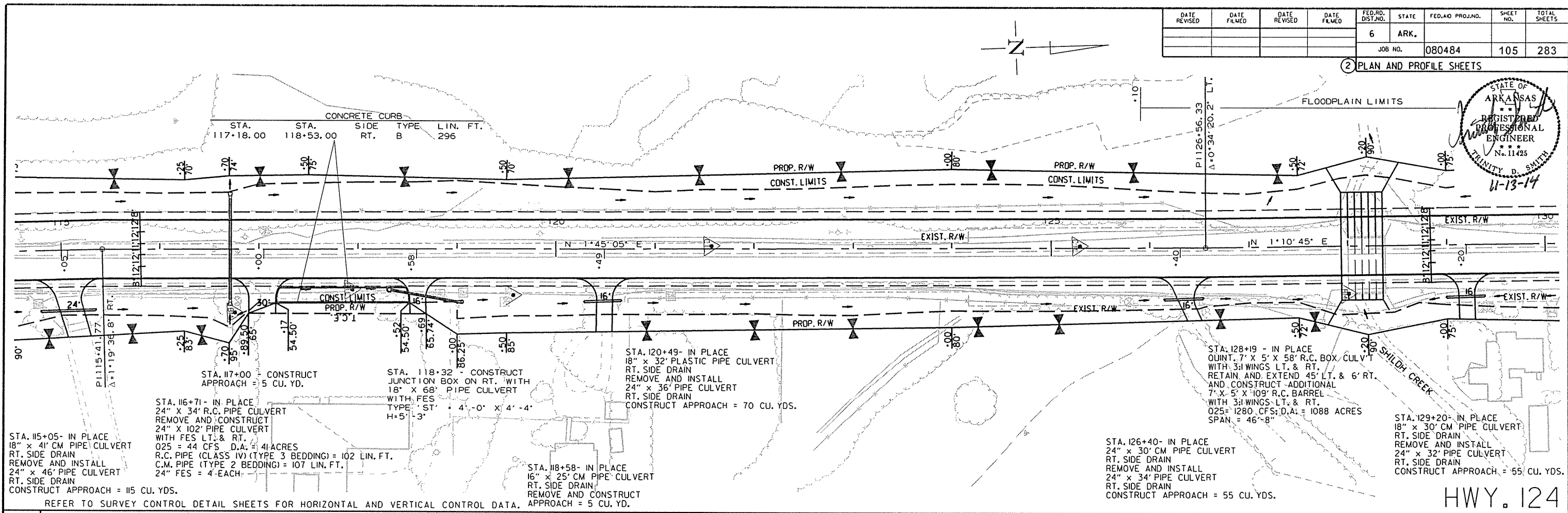
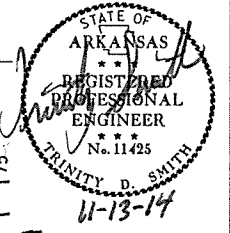


R080484.DGN 8/26/2014



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		105	283
				JOB NO.		080484		

② PLAN AND PROFILE SHEETS



8/26/2014 R080484.DGN

STA. 132+18 - IN PLACE  
16" x 37' CM PIPE CULVERT  
LT. SIDE DRAIN  
REMOVE AND INSTALL  
24" x 38' PIPE CULVERT  
LT. SIDE DRAIN  
CONSTRUCT APPROACH = 80 CU. YDS.

STA. 133+58 - IN PLACE  
18" x 60' CM PIPE CULVERT  
LT. SIDE DRAIN  
REMOVE AND INSTALL  
24" x 62' PIPE CULVERT  
LT. SIDE DRAIN  
CONSTRUCT APPROACH = 145 CU. YDS.

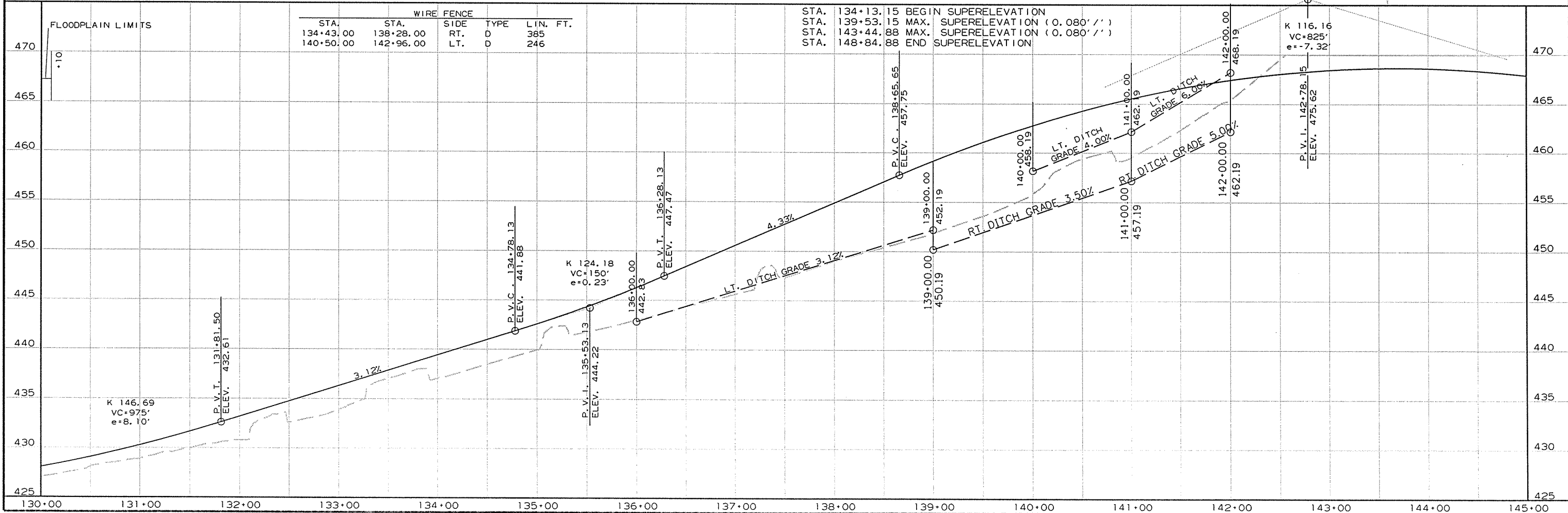
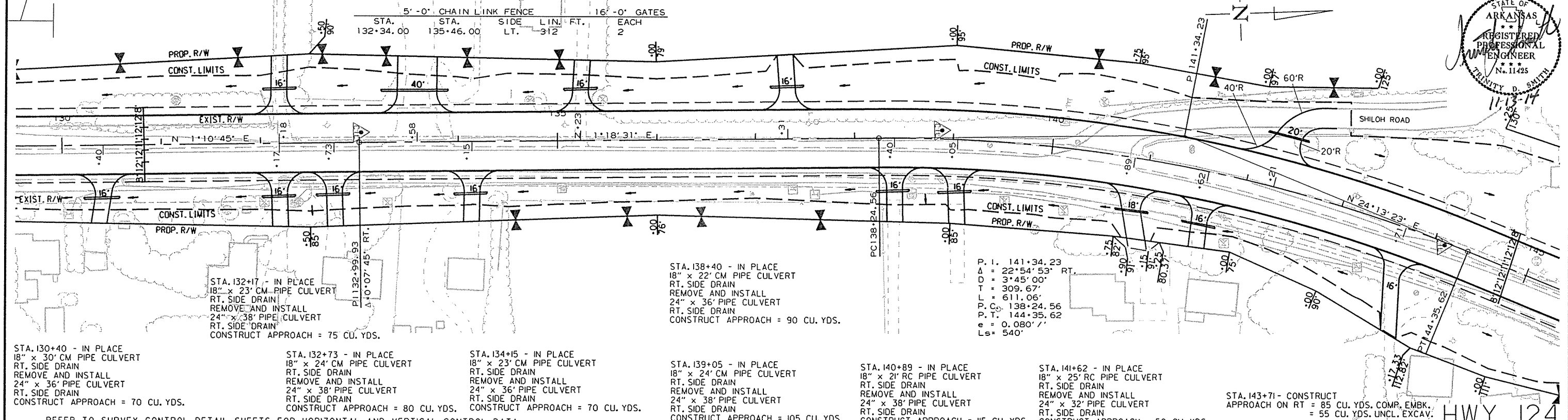
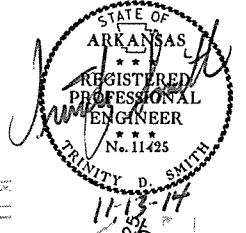
STA. 135+23 - IN PLACE  
18" x 25' CM PIPE CULVERT  
LT. SIDE DRAIN  
REMOVE AND INSTALL  
24" x 36' PIPE CULVERT  
LT. SIDE DRAIN  
CONSTRUCT APPROACH = 70 CU. YDS.

STA. 137+31 - IN PLACE  
18" x 21' CM PIPE CULVERT  
LT. SIDE DRAIN  
REMOVE AND INSTALL  
24" x 42' PIPE CULVERT  
LT. SIDE DRAIN  
CONSTRUCT APPROACH = 125 CU. YDS.

STA. 142+21 - IN PLACE  
18" x 70' CM PIPE CULVERT  
LT. SIDE DRAIN  
REMOVE AND INSTALL  
24" x 42' PIPE CULVERT  
LT. SIDE DRAIN  
CONSTRUCT APPROACH = 95 CU. YDS.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		106	283

PLAN AND PROFILE SHEETS



STA.	STA.	WIRE FENCE	SIDE	TYPE	LIN. FT.
134+43.00	138+28.00	RT. D			385
140+50.00	142+96.00	LT. D			246

STA. 134+13.15 BEGIN SUPERELEVATION  
STA. 139+53.15 MAX. SUPERELEVATION (0.080' /')  
STA. 143+44.88 MAX. SUPERELEVATION (0.080' /')  
STA. 148+84.88 END SUPERELEVATION

STA. 143+71 - CONSTRUCT  
APPROACH ON RT = 85 CU. YDS. COMP. EMBK.  
= 55 CU. YDS. UNCL. EXCAV.

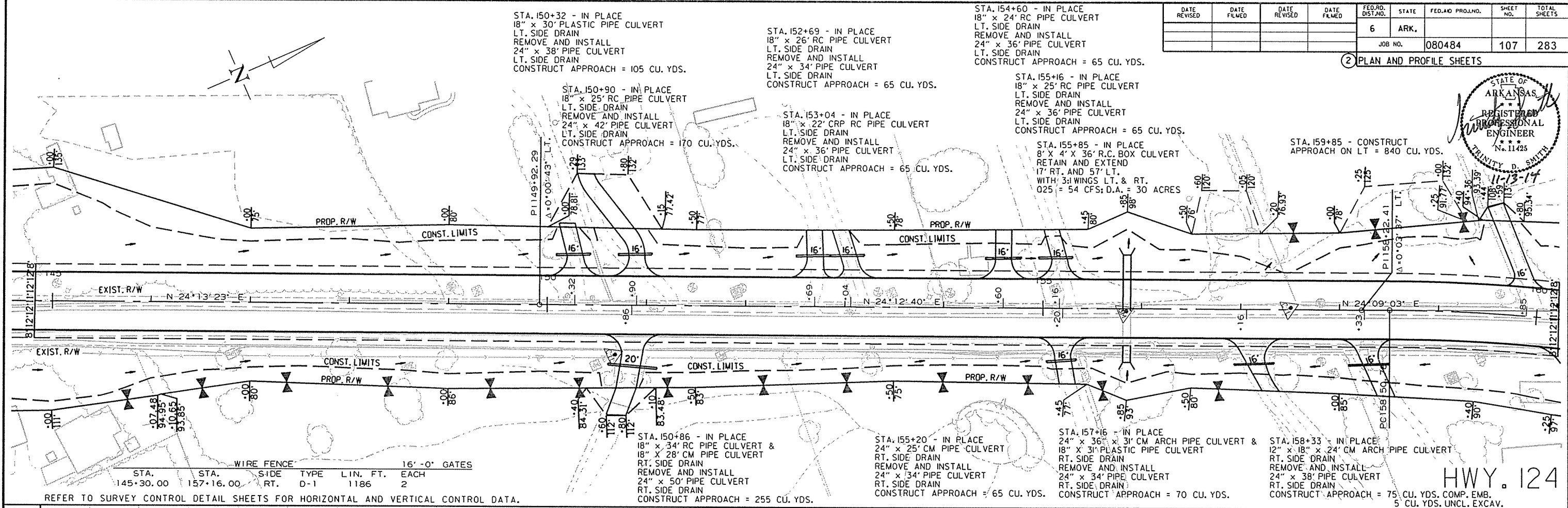
HWY. 124

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

R080484.DGN 8/26/2014

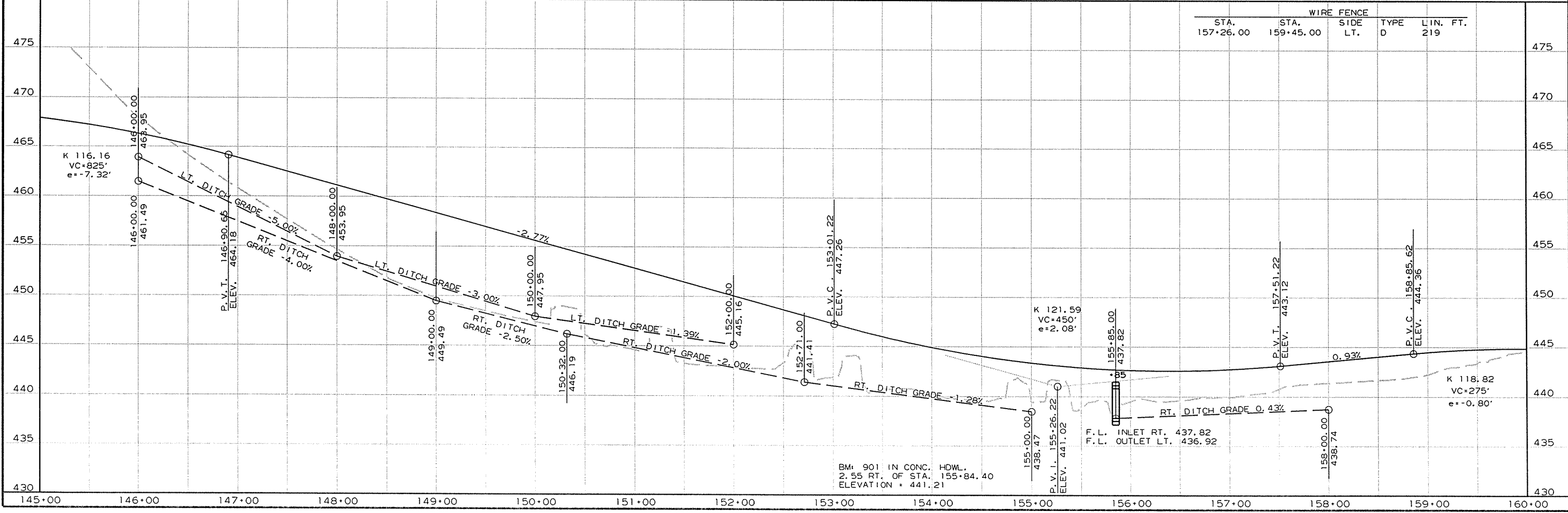
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO.	080484	107

2 PLAN AND PROFILE SHEETS



STA.	STA.	WIRE FENCE	SIDE	TYPE	LIN. FT.	16'-0" GATES
145+30.00	157+16.00	RT.	D-1	1186	2	

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.



8/26/2014  
RO80484.DGN

HWY. 124

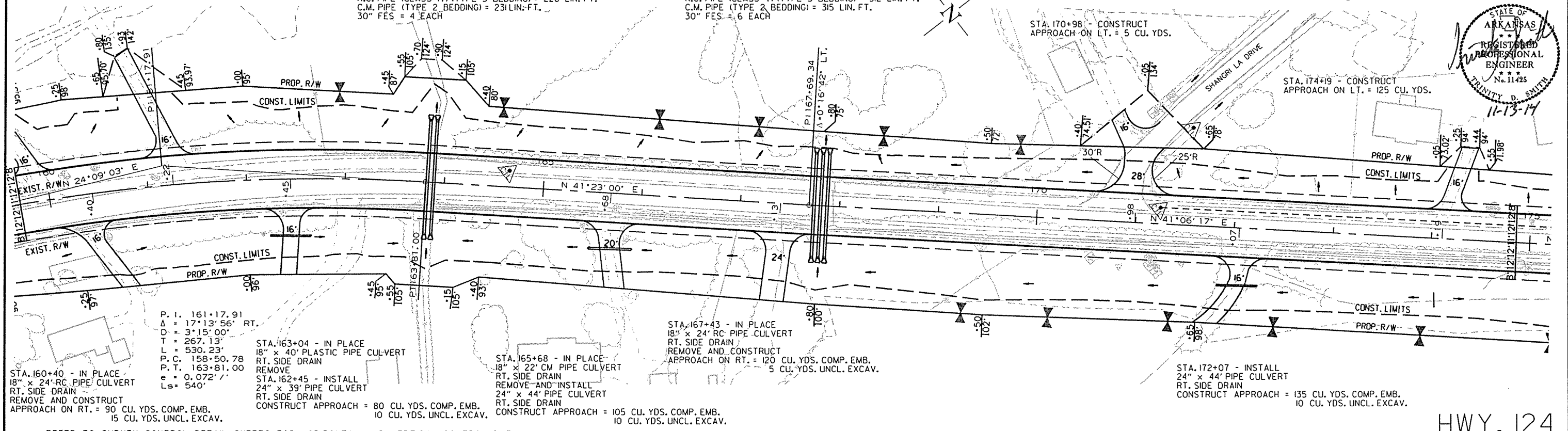
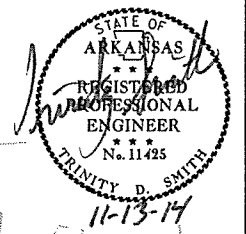
STA. 161+22 - CONSTRUCT  
APPROACH ON LT. = 505 CU. YDS.

STA. 163+86 - IN PLACE  
24" X 40" R.C. PIPE CULVERT  
REMOVE AND CONSTRUCT  
DBL. 30" X 14" PIPE CULVERT  
WITH FES LT. & RT.  
Q25 = 68 CFS; D.A. = 17 ACRES  
R.C. PIPE (CLASS IV) (TYPE 3 BEDDING) = 228 LIN. FT.  
C.M. PIPE (TYPE 2 BEDDING) = 231 LIN. FT.  
30" FES = 4 EACH

STA. 167+94 - IN PLACE  
24" X 35" R.C. PIPE CULVERT  
REMOVE AND CONSTRUCT  
TRP. 30" X 104" PIPE CULVERT  
WITH FES LT. & RT.  
Q25 = 74 CFS; D.A. = 20 ACRES  
R.C. PIPE (CLASS V) (TYPE 3 BEDDING) = 312 LIN. FT.  
C.M. PIPE (TYPE 2 BEDDING) = 315 LIN. FT.  
30" FES = 6 EACH

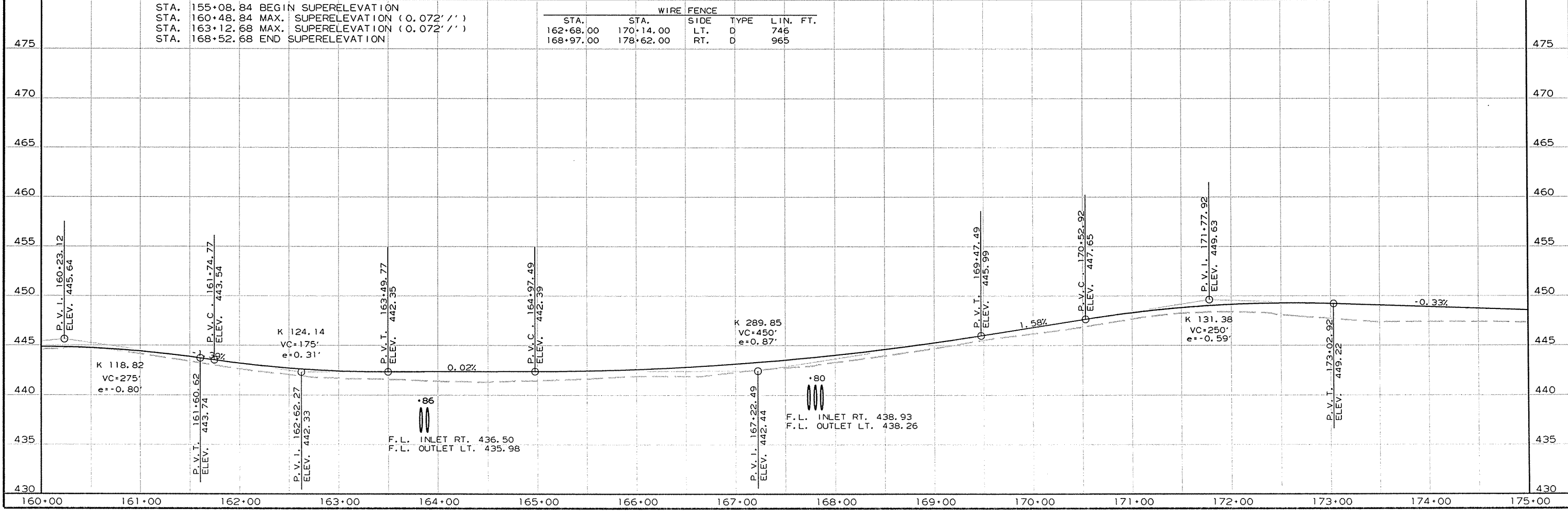
DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	
				6	ARK.				
							JOB NO. 080484	108	283

2 PLAN AND PROFILE SHEETS



REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

HWY. 124

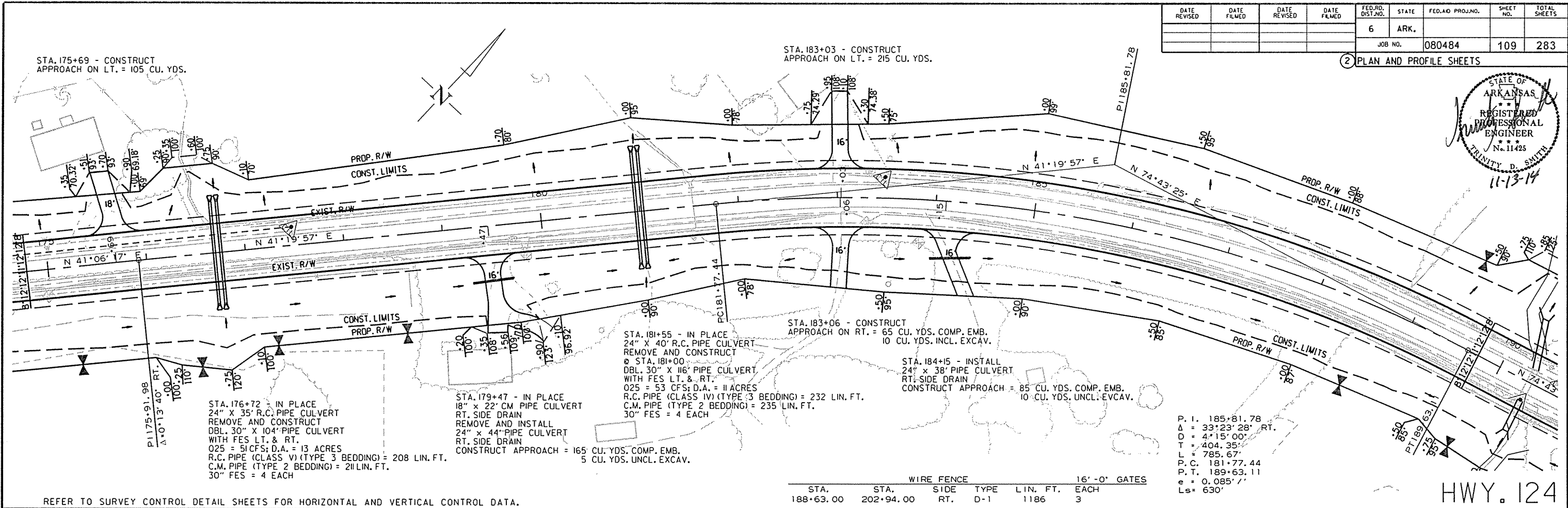
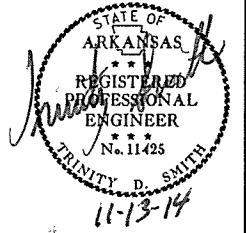


RO80484.DGN 8/26/2014



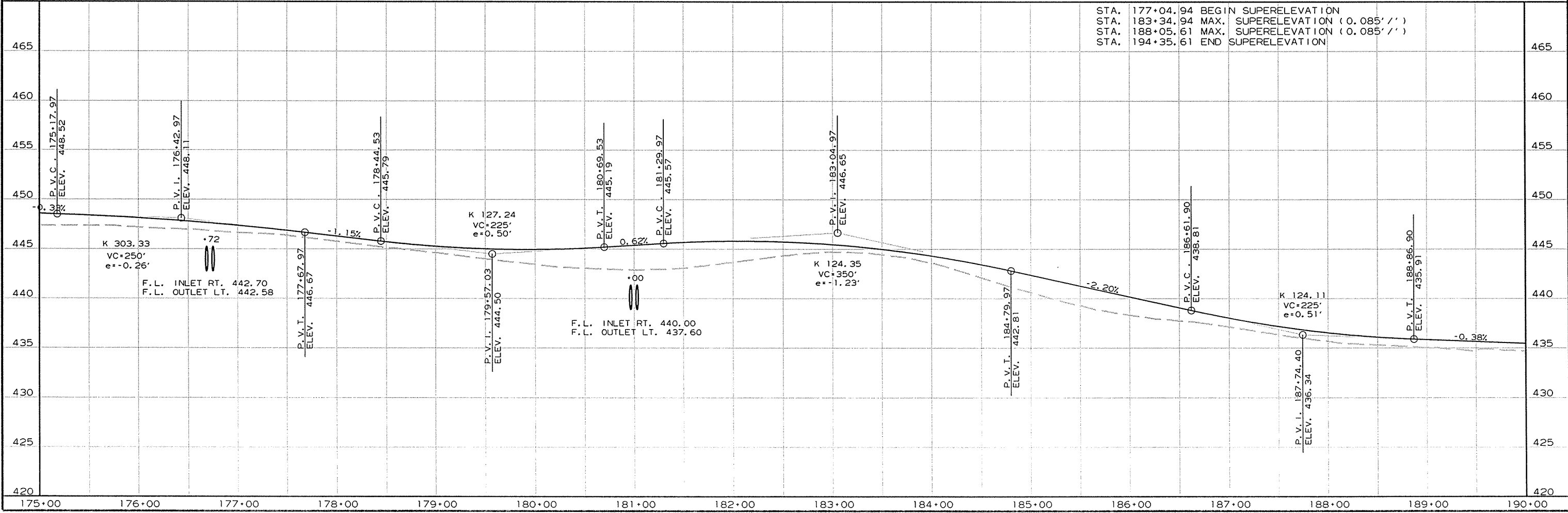
DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 080484							109	283

2 PLAN AND PROFILE SHEETS



P. I. 185+81.78  
 $\Delta = 33^{\circ}23'28''$  RT.  
 $D = 4^{\circ}15'00''$   
 $T = 404.35'$   
 $L = 785.67'$   
 $P. C. 181+77.44$   
 $P. T. 189+63.11$   
 $e = 0.085''$   
 $Ls = 630'$

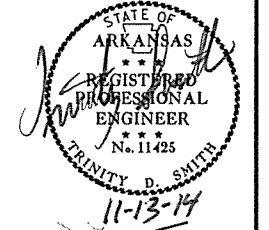
HWY. 124



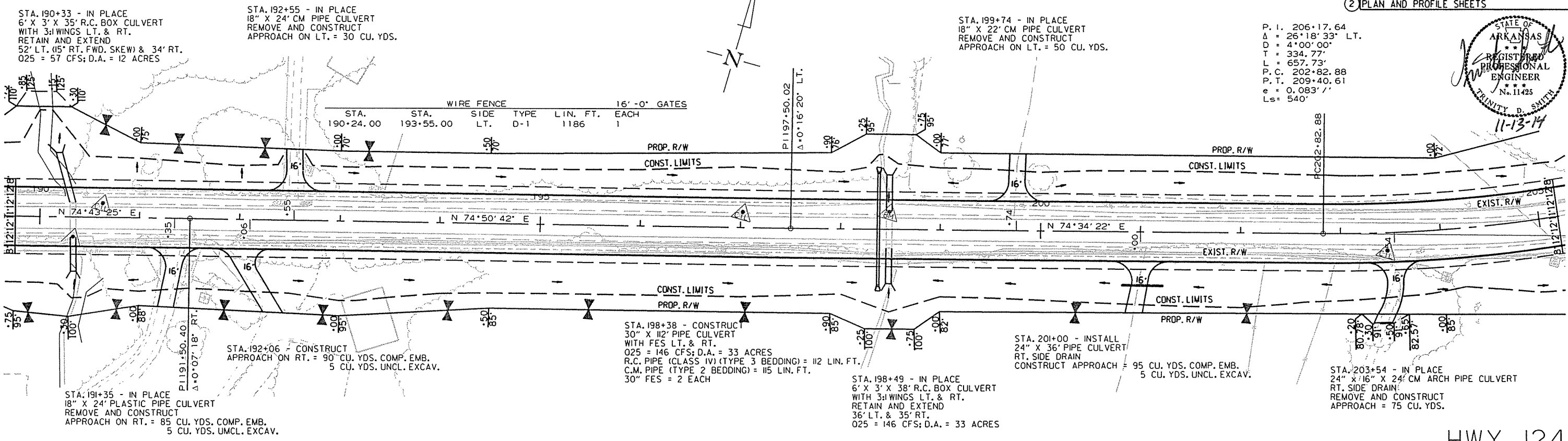
RO80484.DGN 8/26/2014

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.	080484		110	283

2 PLAN AND PROFILE SHEETS

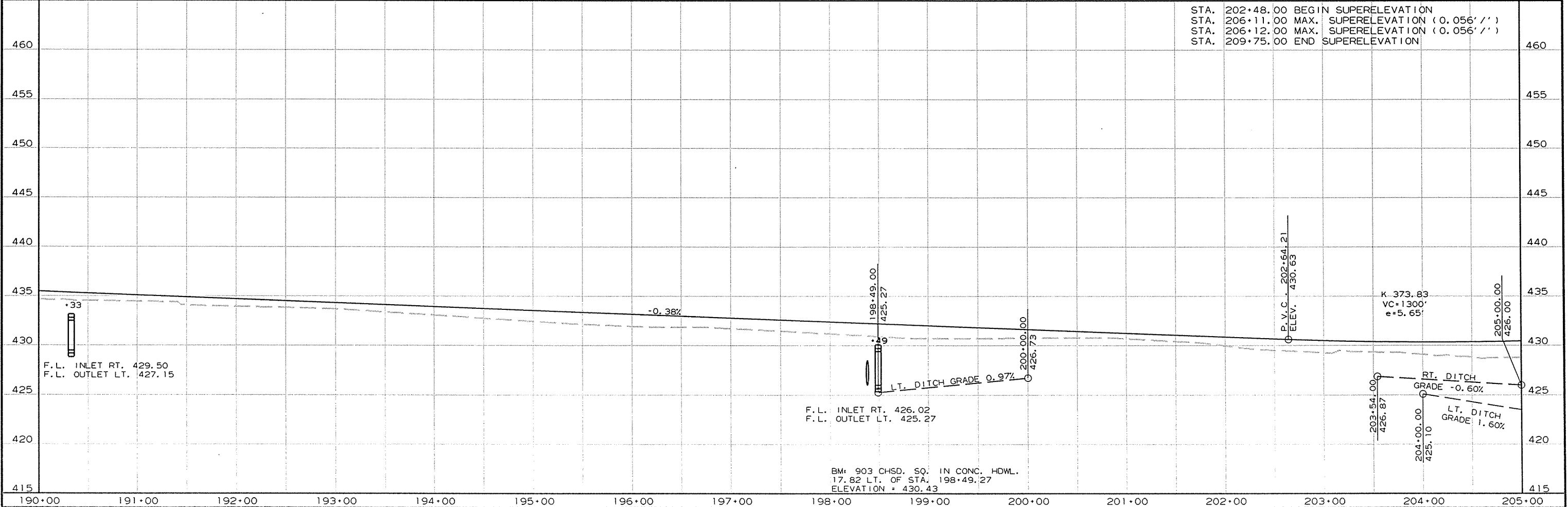


P. I. 206+17.64  
 $\Delta = 26^{\circ}18'33''$  LT.  
 $D = 4^{\circ}00'00''$   
 $T = 334.77'$   
 $L = 657.73'$   
 $P.C. = 202+82.88$   
 $P.T. = 209+40.61$   
 $e = 0.083' /'$   
 $Ls = 540'$



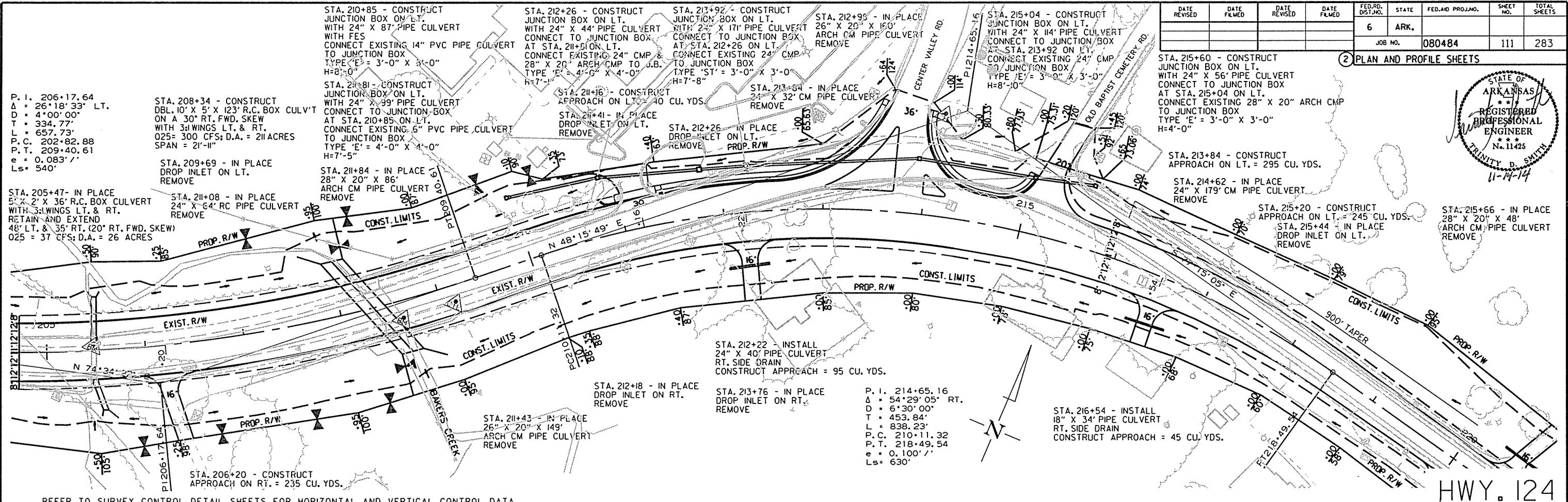
REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

HWY. 124



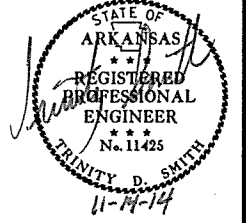
8/26/2014

R080484.DCN



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. 080484							111	283

2 PLAN AND PROFILE SHEETS



P. I. 206+17.64  
 Δ = 26°18'33" LT.  
 D = 4°00'00"  
 T = 334.77'  
 L = 657.73'  
 P. C. 202+82.88  
 P. T. 209+40.61  
 e = 0.083' /'  
 Ls = 540'

STA. 208+34 - CONSTRUCT  
 DBL. 10' X 5' X 123' R.C. BOX CULVERT  
 ON A 30° RT. FWD. SKEW  
 WITH 3/4 WINGS LT. & RT.  
 Q25 = 300 CFS; D.A. = 211 ACRES  
 SPAN = 21'-11"

STA. 210+81 - CONSTRUCT  
 JUNCTION BOX ON LT.  
 WITH 24" X 39" PIPE CULVERT  
 CONNECT TO JUNCTION BOX  
 AT STA. 210+85 ON LT.  
 CONNECT EXISTING 6" PVC PIPE CULVERT  
 TO JUNCTION BOX  
 TYPE 'E' = 4'-0" X 4'-0"  
 H=7'-5"

STA. 212+26 - CONSTRUCT  
 JUNCTION BOX ON LT.  
 WITH 24" X 44" PIPE CULVERT  
 CONNECT TO JUNCTION BOX  
 AT STA. 211+81 ON LT.  
 CONNECT EXISTING 24" CMP &  
 28" X 20" ARCH CMP TO J.B.  
 TYPE 'E' = 4'-0" X 4'-0"  
 H=7'-11"

STA. 213+92 - CONSTRUCT  
 JUNCTION BOX ON LT.  
 WITH 24" X 171" PIPE CULVERT  
 CONNECT TO JUNCTION BOX  
 AT STA. 212+26 ON LT.  
 CONNECT EXISTING 24" CMP  
 TO JUNCTION BOX  
 TYPE 'ST' = 3'-0" X 3'-0"  
 H=7'-8"

STA. 212+95 - IN PLACE  
 26" X 20" X 150'  
 ARCH CM PIPE CULVERT  
 REMOVE

STA. 215+04 - CONSTRUCT  
 JUNCTION BOX ON LT.  
 WITH 24" X 114" PIPE CULVERT  
 CONNECT TO JUNCTION BOX  
 AT STA. 213+92 ON LT.  
 CONNECT EXISTING 24" CMP  
 TO JUNCTION BOX  
 TYPE 'E' = 3'-0" X 3'-0"  
 H=8'-10"

STA. 215+60 - CONSTRUCT  
 JUNCTION BOX ON LT.  
 WITH 24" X 56" PIPE CULVERT  
 CONNECT TO JUNCTION BOX  
 AT STA. 215+04 ON LT.  
 CONNECT EXISTING 28" X 20" ARCH CMP  
 TO JUNCTION BOX  
 TYPE 'E' = 3'-0" X 3'-0"  
 H=4'-0"

STA. 213+84 - CONSTRUCT  
 APPROACH ON LT. = 295 CU. YDS.

STA. 214+62 - IN PLACE  
 24" X 179' CM PIPE CULVERT  
 REMOVE

STA. 215+20 - CONSTRUCT  
 APPROACH ON LT. = 245 CU. YDS.

STA. 215+44 - IN PLACE  
 DROP INLET ON LT.  
 REMOVE

STA. 215+66 - IN PLACE  
 28" X 20" X 48'  
 ARCH CM PIPE CULVERT  
 REMOVE

STA. 205+47 - IN PLACE  
 5' X 2' X 36' R.C. BOX CULVERT  
 WITH 3/4 WINGS LT. & RT.  
 RETAIN AND EXTEND  
 48' LT. & 35' RT. (20° RT. FWD. SKEW)  
 Q25 = 37 CFS; D.A. = 26 ACRES

STA. 211+08 - IN PLACE  
 24" X 64' RC PIPE CULVERT  
 REMOVE

STA. 211+84 - IN PLACE  
 28" X 20" X 86'  
 ARCH CM PIPE CULVERT  
 REMOVE

STA. 211+46 - CONSTRUCT  
 APPROACH ON LT. = 40 CU. YDS.

STA. 213+54 - IN PLACE  
 24" X 32' CM PIPE CULVERT  
 REMOVE

STA. 212+26 - IN PLACE  
 DROP INLET ON LT.  
 REMOVE

STA. 216+54 - INSTALL  
 18" X 34' PIPE CULVERT  
 RT. SIDE DRAIN  
 CONSTRUCT APPROACH = 45 CU. YDS.

STA. 212+22 - INSTALL  
 24" X 40' PIPE CULVERT  
 RT. SIDE DRAIN  
 CONSTRUCT APPROACH = 95 CU. YDS.

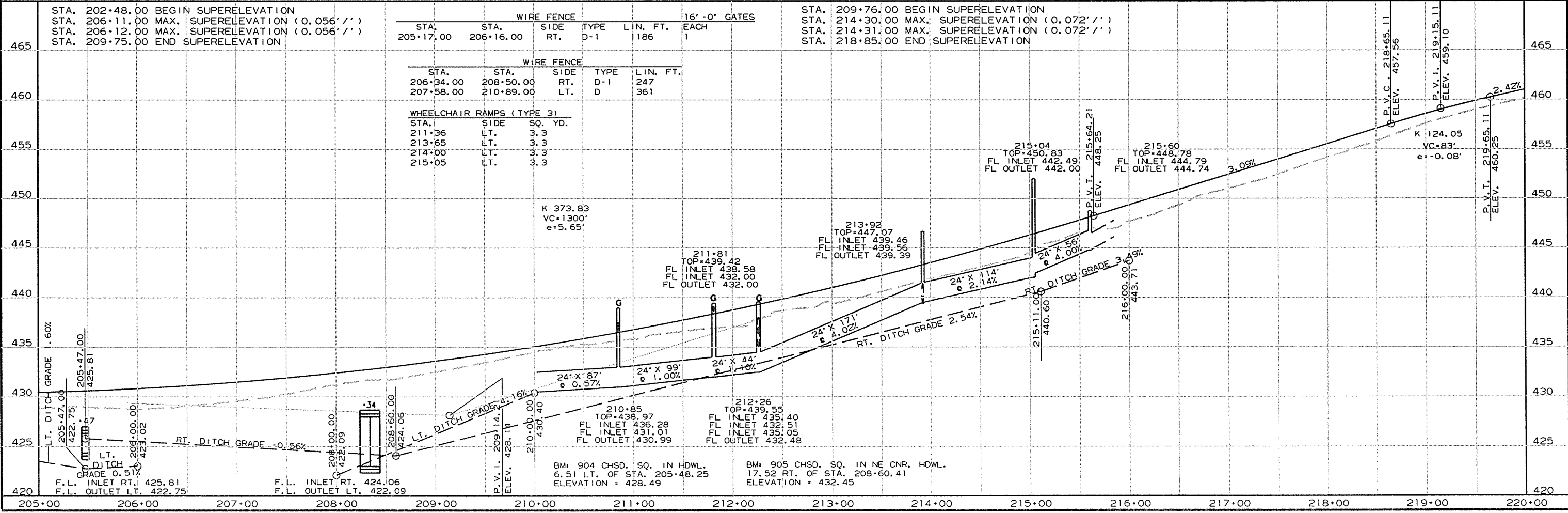
STA. 212+18 - IN PLACE  
 DROP INLET ON RT.  
 REMOVE

STA. 213+76 - IN PLACE  
 DROP INLET ON RT.  
 REMOVE

P. I. 214+65.16  
 Δ = 54°29'05" RT.  
 D = 6°30'00"  
 T = 453.84'  
 L = 838.23'  
 P. C. 210+11.32  
 P. T. 218+49.54  
 e = 0.100' /'  
 Ls = 630'

STA. 216+54 - INSTALL  
 18" X 34' PIPE CULVERT  
 RT. SIDE DRAIN  
 CONSTRUCT APPROACH = 45 CU. YDS.

HWY. 124





STA. 220+96 - IN PLACE  
 24" X 44' CM PIPE CULVERT  
 REMOVE AND CONSTRUCT  
 @ STA. 221+04  
 24" X 86' PIPE CULVERT  
 WITH FES LT. & RT.  
 025 = 9.7 CFS; D.A. = 7.0 ACRES  
 R.C. PIPE (CLASS V) (TYPE 3 BEDDING) = 86 LIN. FT.  
 C.M. PIPE (TYPE 2 BEDDING) = 9 LIN. FT.  
 24" FES = 2 EACH

STA. 220+57 - INSTALL  
 18" X 48' PIPE CULVERT  
 LT. SIDE DRAIN  
 CONSTRUCT APPROACH = 175 CU. YDS.

STA. 222+90 - IN PLACE  
 18" X 24' CM PIPE CULVERT  
 LT. SIDE DRAIN  
 REMOVE  
 STA. 223+07 - INSTALL  
 18" X 50' PIPE CULVERT  
 LT. SIDE DRAIN  
 CONSTRUCT APPROACH = 215 CU. YDS.

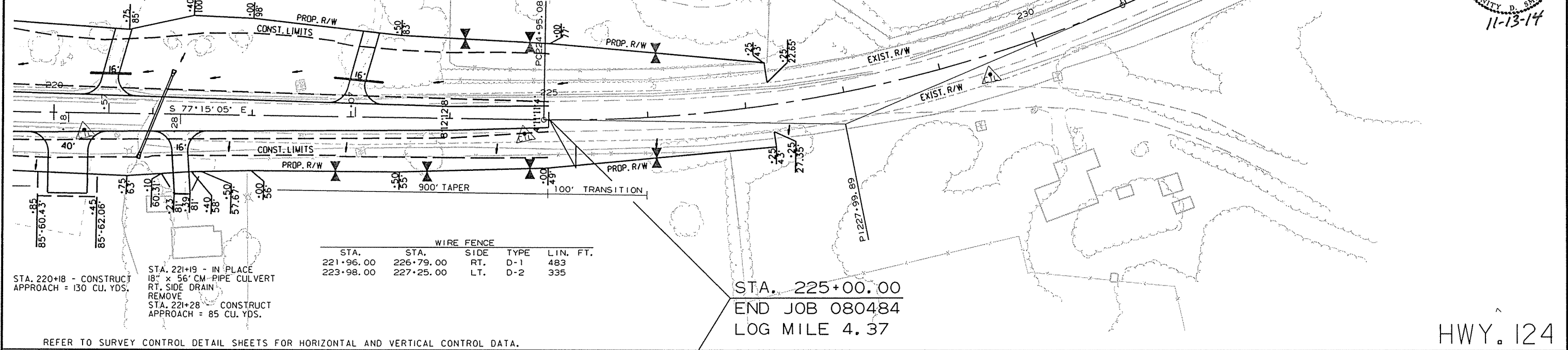
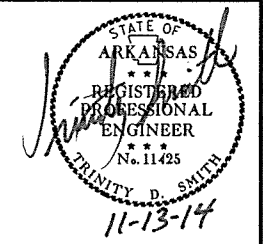
STA. 220+18 - CONSTRUCT  
 APPROACH = 130 CU. YDS.

STA. 221+19 - IN PLACE  
 18" X 56' CM PIPE CULVERT  
 RT. SIDE DRAIN  
 REMOVE  
 STA. 221+28 - CONSTRUCT  
 APPROACH = 85 CU. YDS.

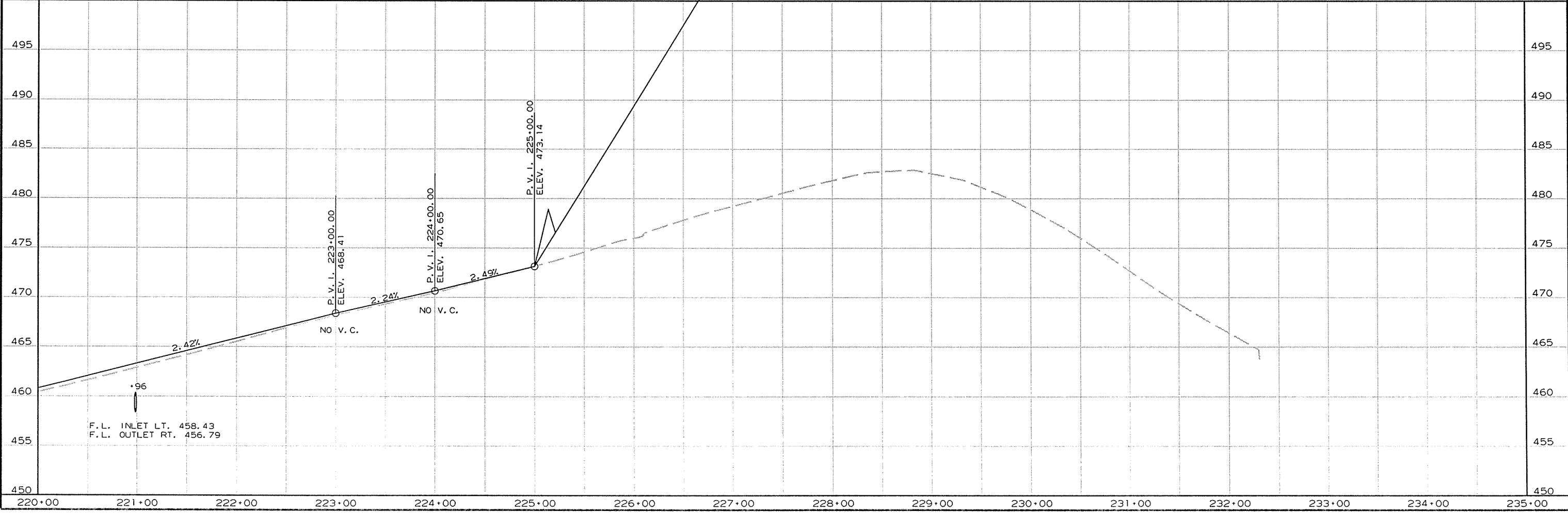
P. I. 227+99.89  
 Δ = 24°01'34" LT.  
 O = 4°00'00"  
 T = 304.81'  
 L = 600.65'  
 P.C. 224+95.08  
 P.T. 230+95.73  
 e = MATCH EXISTING

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. 080484	112 283

2 PLAN AND PROFILE SHEETS



REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

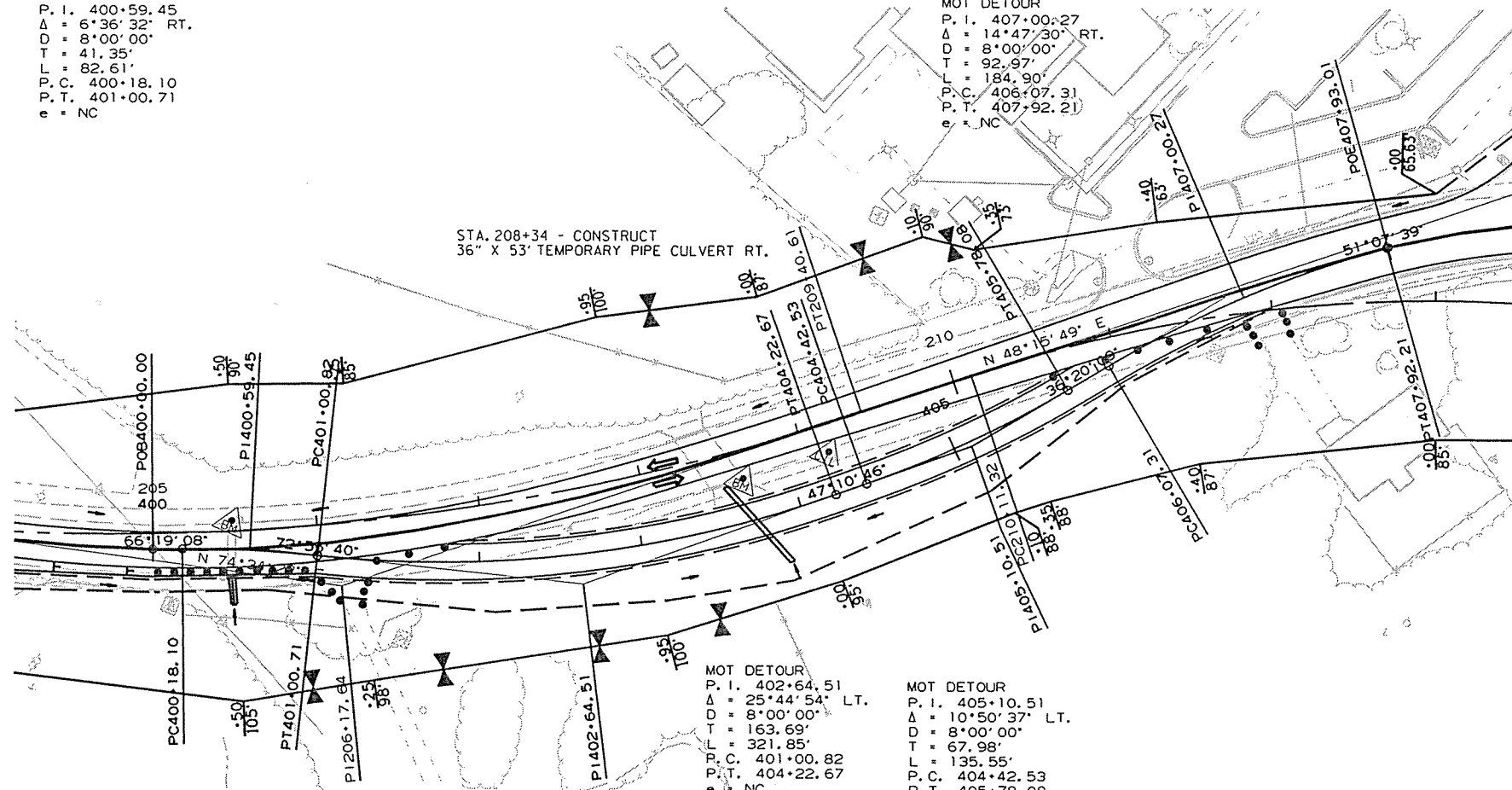


8/26/2014  
R080484.DGN

MOT DETOUR  
 P. I. 400+59.45  
 $\Delta = 6^{\circ}36'32''$  RT.  
 D = 8'00'00"  
 T = 41.35'  
 L = 82.61'  
 P. C. 400+18.10  
 P. T. 401+00.71  
 e = NC

MOT DETOUR  
 P. I. 407+00.27  
 $\Delta = 14^{\circ}47'30''$  RT.  
 D = 8'00'00"  
 T = 92.97'  
 L = 184.90'  
 P. C. 406+07.31  
 P. T. 407+92.21  
 e = NC

STA. 208+34 - CONSTRUCT  
 36" X 53' TEMPORARY PIPE CULVERT RT.



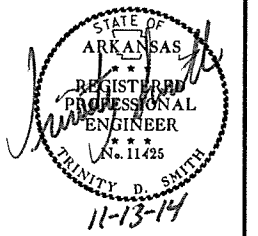
REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

MOT DETOUR  
 P. I. 402+64.51  
 $\Delta = 25^{\circ}44'54''$  LT.  
 D = 8'00'00"  
 T = 163.69'  
 L = 321.85'  
 P. C. 401+00.82  
 P. T. 404+22.67  
 e = NC

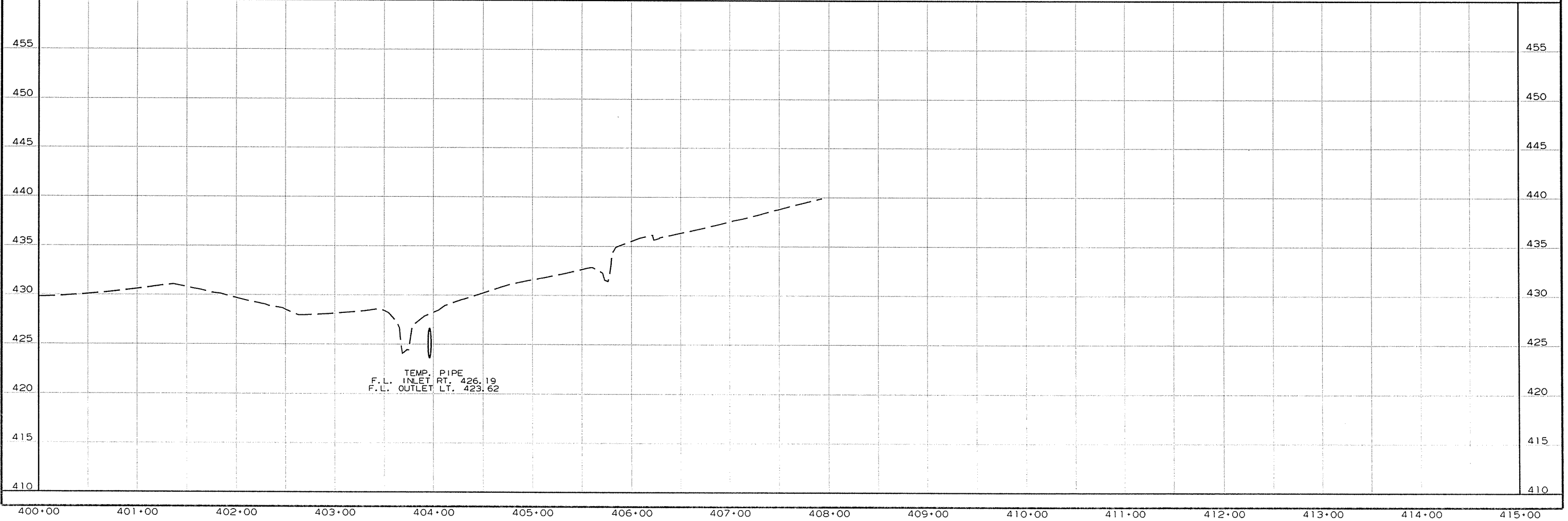
MOT DETOUR  
 P. I. 405+10.51  
 $\Delta = 10^{\circ}50'37''$  LT.  
 D = 8'00'00"  
 T = 67.98'  
 L = 135.55'  
 P. C. 404+42.53  
 P. T. 405+78.08  
 e = NC

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. 080484	113	283

② PLAN AND PROFILE SHEETS



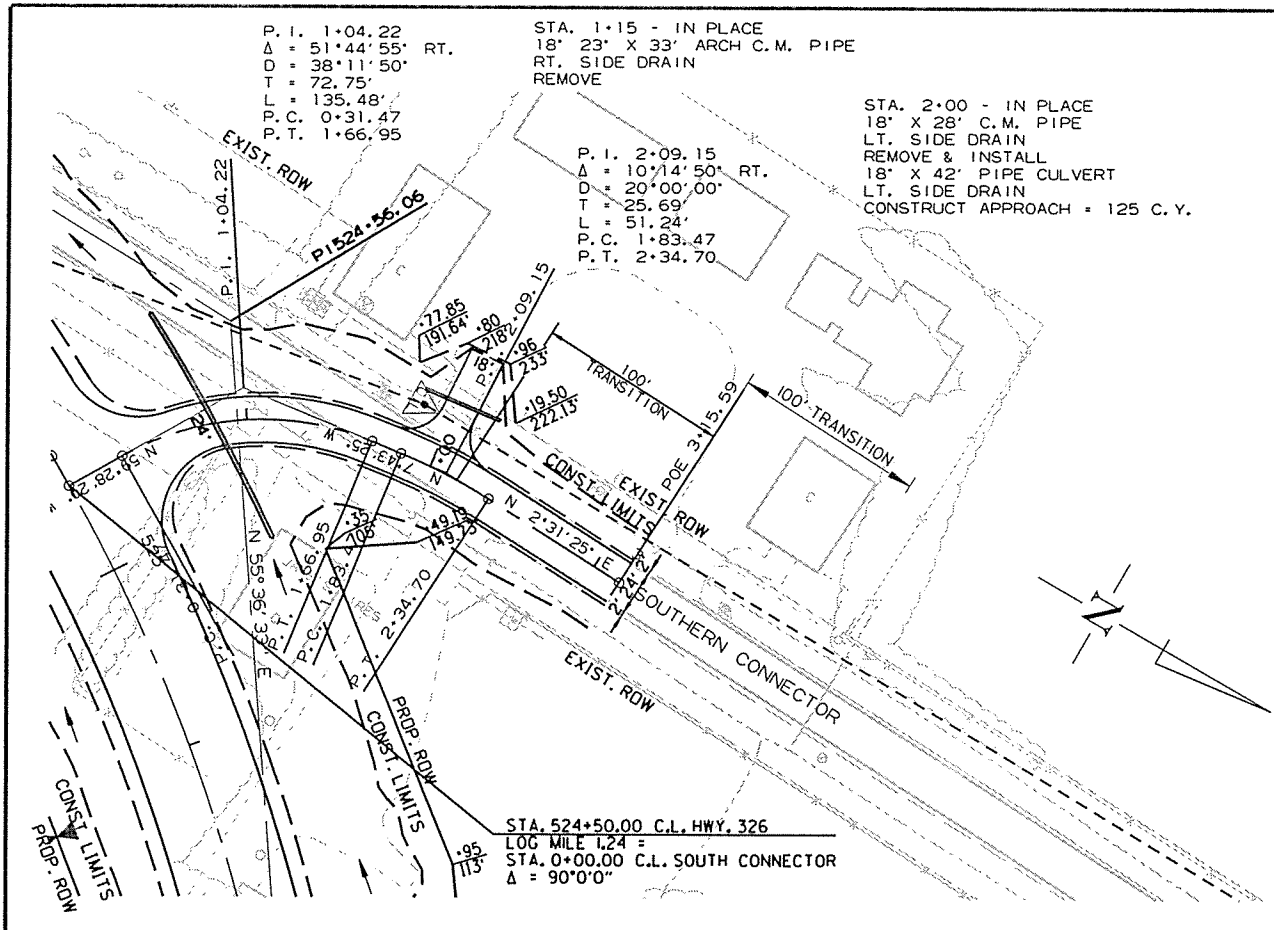
DETOUR



8/26/2014 R080484.DGN

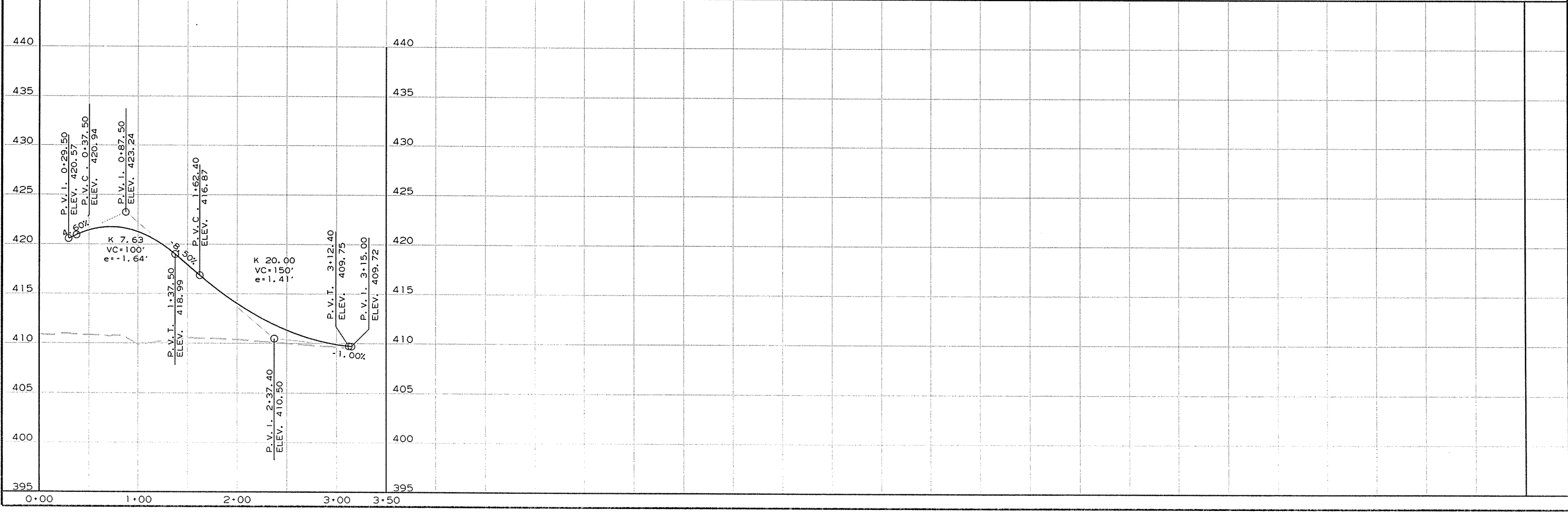
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	080484		114	283

② PLAN AND PROFILE SHEETS



REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

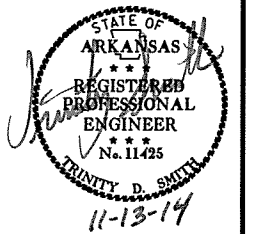
SOUTHERN CONNECTOR



R080484.DGN 11/7/2014

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.							080484	115	283

② TRAFFIC SIGNAL QUANTITIES



### STAGE 1 TRAFFIC SIGNAL QUANTITIES

ITEM NO.	ITEM	QUANTITY	UNIT
SP&701	SYSTEM LOCAL TS 2-TYPE 2 (8 PHASES)	1	EACH
SP&706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1WAY)	6	EACH
SP&706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1WAY)	2	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	703	LIN. FT.
709	GALVANIZED STEEL CONDUIT (1.25")	20	LIN. FT.
709	GALVANIZED STEEL CONDUIT (2")	70	LIN. FT.
710	NON-METALLIC CONDUIT (1.25")	20	LIN. FT.
711	CONCRETE PULL BOX (TYPE 2 HD)	1	EACH
713	SPAN WIRE ASSEMBLY	1	EACH
716	TREATED WOOD POLE (CLASS 2, 40')	4	EACH
733	VIDEO CABLE	363	LIN. FT.
SP&733	VIDEO DETECTOR (CLR)	2	EACH
733	VIDEO MONITOR (CLR)	1	EACH
SP&733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)	1	EACH
SP&733	VEHICLE DETECTOR RACK (16 CHANNEL)	1	EACH
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1c/8 A.W.G., EGC)	20	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2c/6 A.W.G.)	20	LIN. FT.
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.50	LUMP SUM
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	1	EACH

STAGE 1  
THE EXISTING TRAFFIC SIGNAL INSTALLATION SHALL REMAIN IN OPERATION UNTIL THE ENTIRE STAGE 1 TRAFFIC SIGNAL INSTALLATION CAN BE PLACED INTO OPERATION. MAINTAIN THIS TRAFFIC SIGNAL CONFIGURATION AS SHOWN ON THE STAGE 1 TRAFFIC SIGNAL PLAN. (REFER TO MAINTENANCE OF TRAFFIC DETAILS).

### STAGE 2 TRAFFIC SIGNAL QUANTITIES

ITEM NO.	ITEM	QUANTITY	UNIT
SP	RELOCATION OF TRAFFIC SIGNAL HEAD	4	EACH

STAGE 2  
RELOCATE TRAFFIC SIGNAL HEADS AS SHOWN ON THE STAGE 2 TRAFFIC SIGNAL PLAN. MAINTAIN THIS TRAFFIC SIGNAL CONFIGURATION AS SHOWN ON THE STAGE 2 TRAFFIC SIGNAL PLAN. (REFER TO MAINTENANCE OF TRAFFIC DETAILS).

### STAGE 3 TRAFFIC SIGNAL QUANTITIES

ITEM NO.	ITEM	QUANTITY	UNIT
SP	RELOCATION OF TRAFFIC SIGNAL HEAD	4	EACH

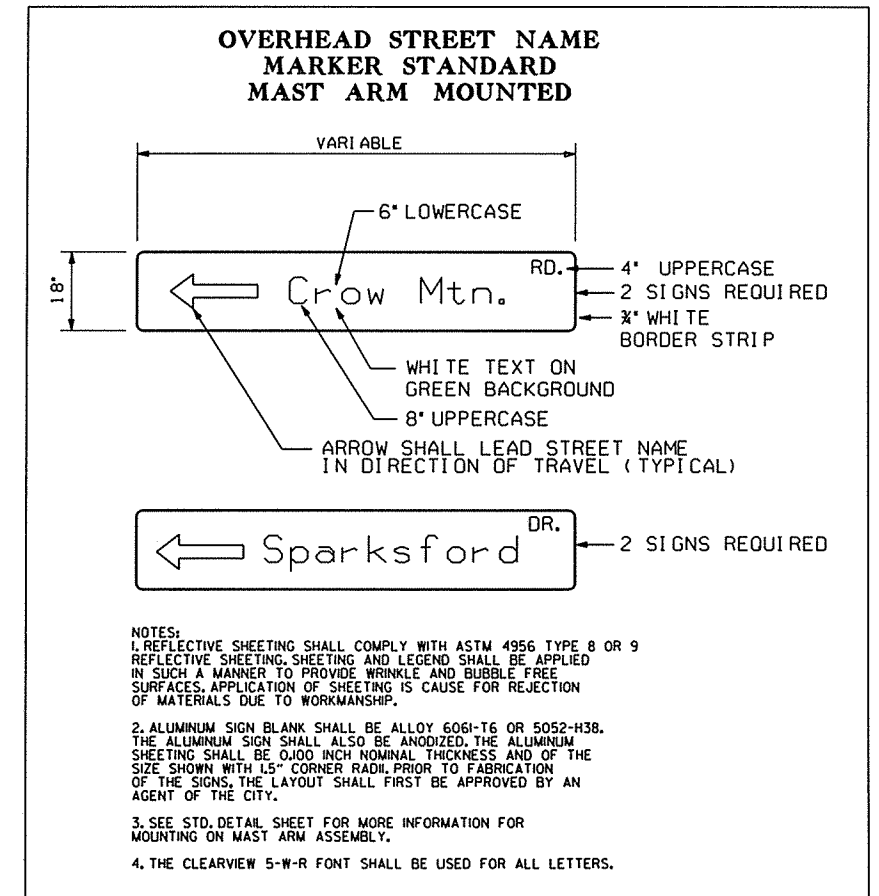
STAGE 3  
RELOCATE TRAFFIC SIGNAL HEADS AS SHOWN ON THE STAGE 2 TRAFFIC SIGNAL PLAN. MAINTAIN THIS TRAFFIC SIGNAL CONFIGURATION AS SHOWN ON THE STAGE 3 TRAFFIC SIGNAL PLAN. (REFER TO MAINTENANCE OF TRAFFIC DETAILS).

### PERMANENT TRAFFIC SIGNAL QUANTITIES

ITEM NO.	ITEM	QUANTITY	UNIT
SP&701	SYSTEM LOCAL CONTROLLER TS 2-TYPE 2 (8 PHASES)	1	EACH
703	FLASHING BEACON CONTROLLER	1	EACH
SP&706	TRAFFIC SIGNAL HEAD, LED, (1 SECTION, 1WAY)	2	EACH
SP&706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1WAY)	10	EACH
SP&706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1WAY)	4	EACH
SP&707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED	8	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	2646	LIN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	262	LIN. FT.
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	663	LIN. FT.
709	GALVANIZED STEEL CONDUIT (1")	20	LIN. FT.
709	GALVANIZED STEEL CONDUIT (1.25")	40	LIN. FT.
710	NON-METALLIC CONDUIT (1.25")	40	LIN. FT.
710	NON-METALLIC CONDUIT (1")	20	LIN. FT.
710	NON-METALLIC CONDUIT (2")	40	LIN. FT.
710	NON-METALLIC CONDUIT (3")	620	LIN. FT.
711	CONCRETE PULL BOX (TYPE 1HD)	2	EACH
711	CONCRETE PULL BOX (TYPE 2 HD)	9	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (34')	1	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (40')	1	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (48')	1	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (56')	1	EACH
715	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION	4	EACH
733	VIDEO CABLE	1798	LIN. FT.
SP&733	VIDEO DETECTOR (CLR)	9	EACH
SP&733	VEHICLE DETECTOR RACK (16 CHANNEL)	1	EACH
733	VIDEO MONITOR (CLR)	1	EACH
SP&733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)	5	EACH
SP	ANTENNA CABLE (TYPE 6)	70	LIN. FT.
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	873	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., EGC)	623	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., EGC)	210	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G., EGC)	40	LIN. FT.
SP	LOCAL RADIO WITH ANTENNA	1	EACH
SP	LUMINAIRE ASSEMBLY	4	EACH
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.50	LUMP SUM
SP	18" STREET NAME SIGN	4	EACH

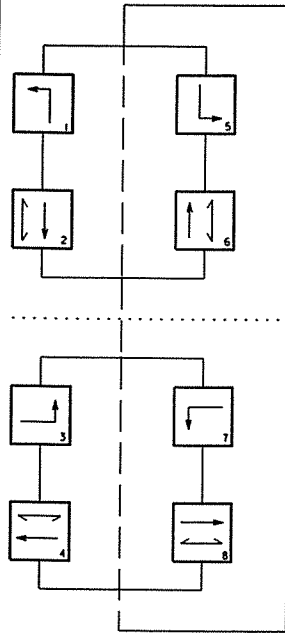
\* ONE SPARE VIDEO DETECTOR AND ONE SPARE VIDEO PROCESSOR SHALL BE SUPPLIED.

PERMANENT TRAFFIC SIGNAL:  
THE TEMPORARY TRAFFIC SIGNAL INSTALLATION SHALL REMAIN IN OPERATION UNTIL THE PERMANENT TRAFFIC SIGNAL IS COMPLETED AND OPERATIONAL. INSTALL PERMANENT TRAFFIC SIGNAL AND REMOVE ALL STAGE 1-3 TEMPORARY TRAFFIC SIGNAL COMPONENTS. (REFER TO PERMANENT TRAFFIC SIGNAL PLANS).



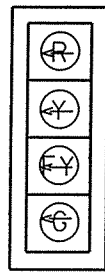
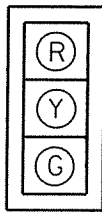
LOCATION: HWY. 124/SPARKSFORD DR. & CROW MTN. RD.  
CITY: N/A  
COUNTY: POPE  
DISTRICT: 8 SCALE: N/A DRAWN BY: GWE

PHASING DIAGRAM



SIGNAL FACES

12" LENSES



One Section (Solid Symbol)



15&16  
17&18  
19&20  
21&22

2&3  
5&6  
8&9  
11&12  
13&14

1, 4, 7&10

NOTES:

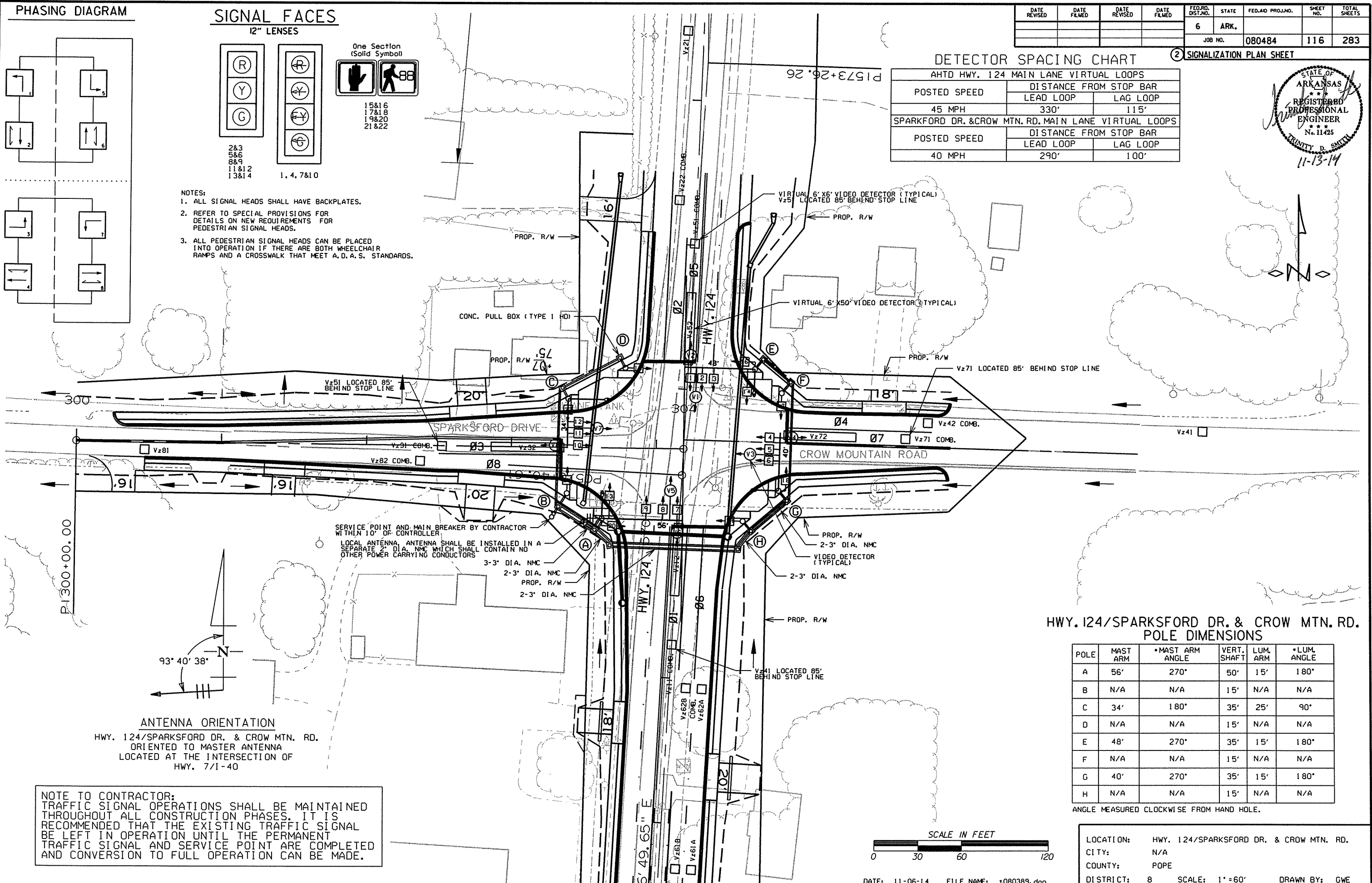
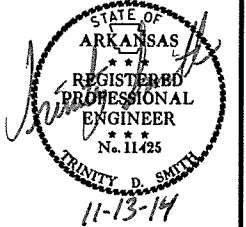
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISIONS FOR DETAILS ON NEW REQUIREMENTS FOR PEDESTRIAN SIGNAL HEADS.
3. ALL PEDESTRIAN SIGNAL HEADS CAN BE PLACED INTO OPERATION IF THERE ARE BOTH WHEELCHAIR RAMP AND A CROSSWALK THAT MEET A. D. A. S. STANDARDS.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 080484							116	283

DETECTOR SPACING CHART

AHTD HWY. 124 MAIN LANE VIRTUAL LOOPS		
POSTED SPEED	DISTANCE FROM STOP BAR	
45 MPH	LEAD LOOP	LAG LOOP
	330'	115'
SPARKFORD DR. & CROW MTN. RD. MAIN LANE VIRTUAL LOOPS		
POSTED SPEED	DISTANCE FROM STOP BAR	
40 MPH	LEAD LOOP	LAG LOOP
	290'	100'

2 SIGNALIZATION PLAN SHEET



HWY. 124/SPARKSFORD DR. & CROW MTN. RD. POLE DIMENSIONS

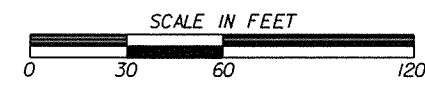
POLE	MAST ARM	MAST ARM ANGLE	VERT. SHAFT	LUM. ARM	LUM. ANGLE
A	56'	270°	50'	15'	180°
B	N/A	N/A	15'	N/A	N/A
C	34'	180°	35'	25'	90°
D	N/A	N/A	15'	N/A	N/A
E	48'	270°	35'	15'	180°
F	N/A	N/A	15'	N/A	N/A
G	40'	270°	35'	15'	180°
H	N/A	N/A	15'	N/A	N/A

ANGLE MEASURED CLOCKWISE FROM HAND HOLE.

ANTENNA ORIENTATION

HWY. 124/SPARKSFORD DR. & CROW MTN. RD. ORIENTED TO MASTER ANTENNA LOCATED AT THE INTERSECTION OF HWY. 7/I-40

NOTE TO CONTRACTOR:  
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES. IT IS RECOMMENDED THAT THE EXISTING TRAFFIC SIGNAL BE LEFT IN OPERATION UNTIL THE PERMANENT TRAFFIC SIGNAL AND SERVICE POINT ARE COMPLETED AND CONVERSION TO FULL OPERATION CAN BE MADE.

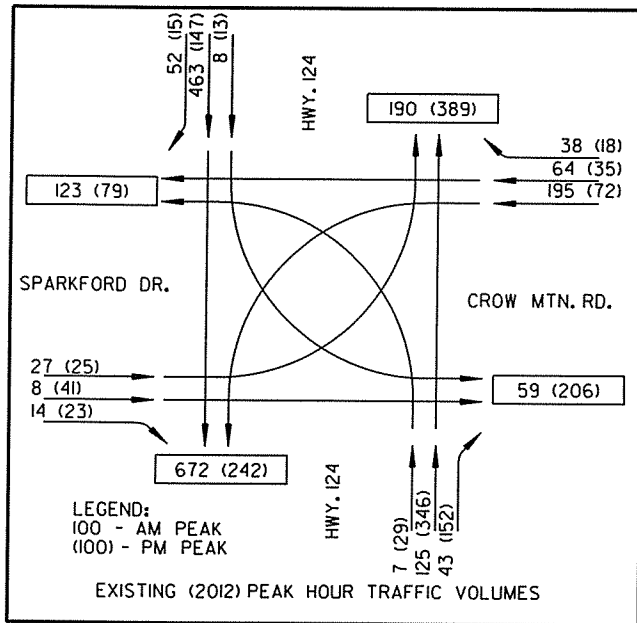


DATE: 11-06-14 FILE NAME: t080389.dgn

LOCATION: HWY. 124/SPARKSFORD DR. & CROW MTN. RD.  
CITY: N/A  
COUNTY: POPE  
DISTRICT: 8  
SCALE: 1" = 60'  
DRAWN BY: GWE

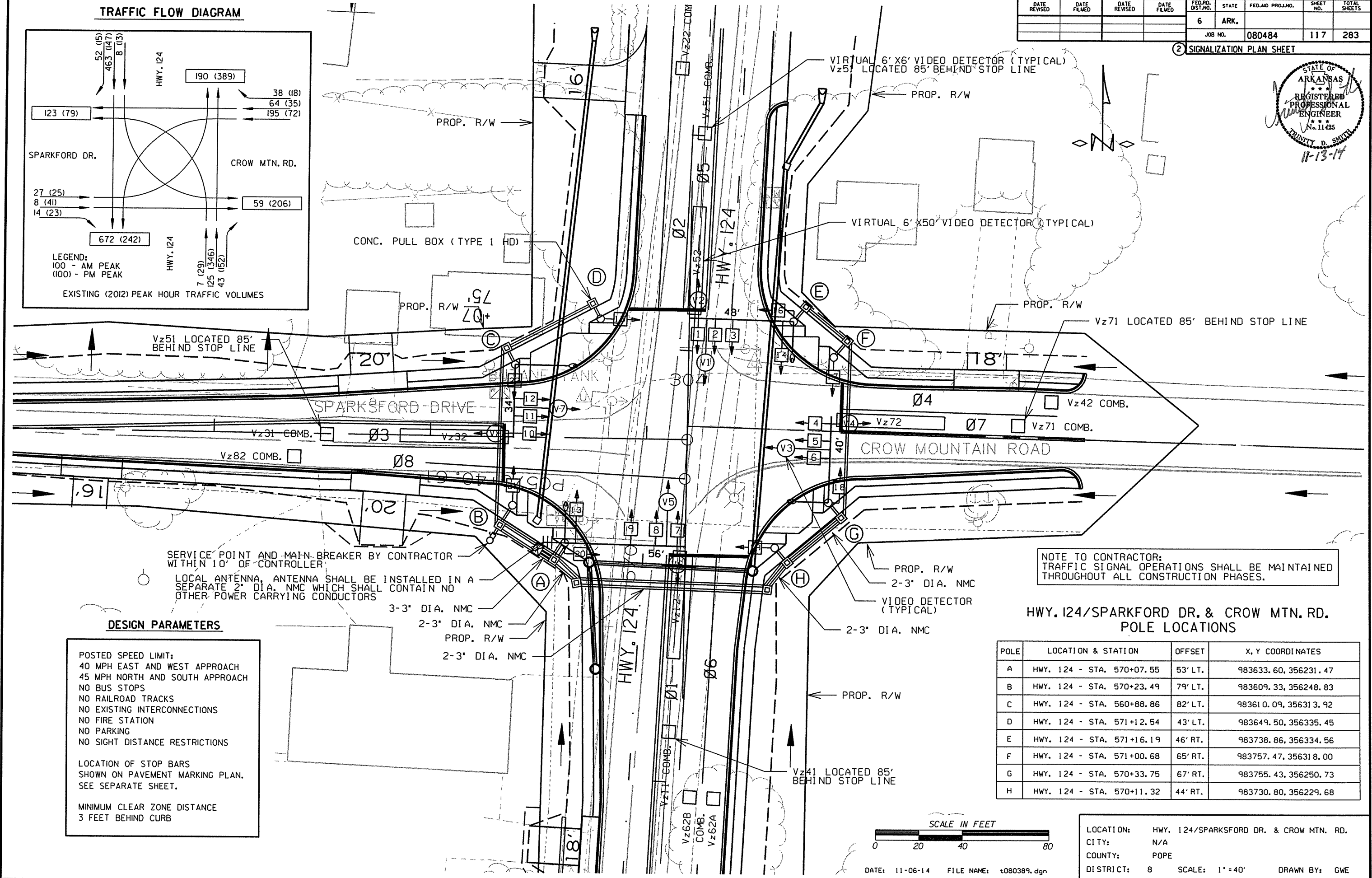
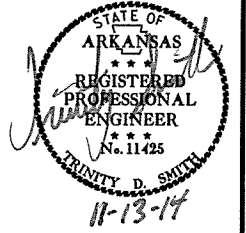


**TRAFFIC FLOW DIAGRAM**



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		117	283
JOB NO. 080484								

**SIGNALIZATION PLAN SHEET**



SERVICE POINT AND MAIN BREAKER BY CONTRACTOR WITHIN 10' OF CONTROLLER

LOCAL ANTENNA, ANTENNA SHALL BE INSTALLED IN A SEPARATE 2" DIA. NMC WHICH SHALL CONTAIN NO OTHER POWER CARRYING CONDUCTORS

NOTE TO CONTRACTOR:  
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

**DESIGN PARAMETERS**

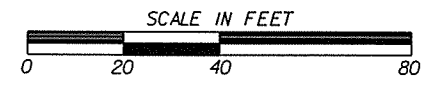
POSTED SPEED LIMIT:  
40 MPH EAST AND WEST APPROACH  
45 MPH NORTH AND SOUTH APPROACH  
NO BUS STOPS  
NO RAILROAD TRACKS  
NO EXISTING INTERCONNECTIONS  
NO FIRE STATION  
NO PARKING  
NO SIGHT DISTANCE RESTRICTIONS

LOCATION OF STOP BARS SHOWN ON PAVEMENT MARKING PLAN. SEE SEPARATE SHEET.

MINIMUM CLEAR ZONE DISTANCE 3 FEET BEHIND CURB

**HWY. 124/SPARKFORD DR. & CROW MTN. RD. POLE LOCATIONS**

POLE	LOCATION & STATION	OFFSET	X, Y COORDINATES
A	HWY. 124 - STA. 570+07.55	53' LT.	983633.60, 356231.47
B	HWY. 124 - STA. 570+23.49	79' LT.	983609.33, 356248.83
C	HWY. 124 - STA. 560+88.86	82' LT.	983610.09, 356313.92
D	HWY. 124 - STA. 571+12.54	43' LT.	983649.50, 356335.45
E	HWY. 124 - STA. 571+16.19	46' RT.	983738.86, 356334.56
F	HWY. 124 - STA. 571+00.68	65' RT.	983757.47, 356318.00
G	HWY. 124 - STA. 570+33.75	67' RT.	983755.43, 356250.73
H	HWY. 124 - STA. 570+11.32	44' RT.	983730.80, 356229.68

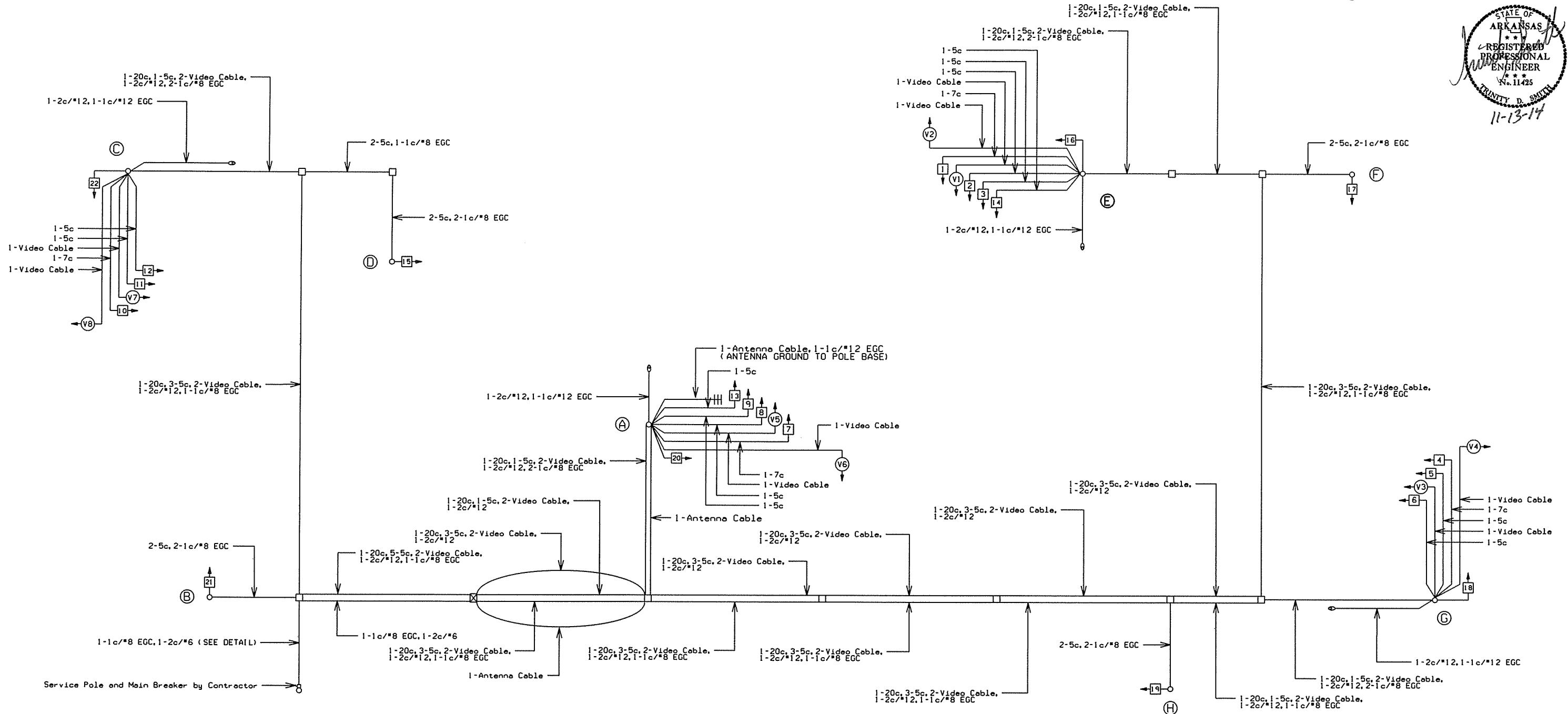
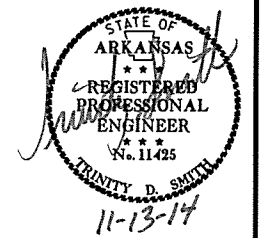


DATE: 11-06-14 FILE NAME: t080389.dgn

LOCATION: HWY. 124/SPARKFORD DR. & CROW MTN. RD.  
CITY: N/A  
COUNTY: POPE  
DISTRICT: 8 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
				6	ARK.			
JOB NO. 080484							118	283

2 SIGNALIZATION PLAN SHEET



### WIRING DIAGRAM

NOTES TO CONTRACTOR:

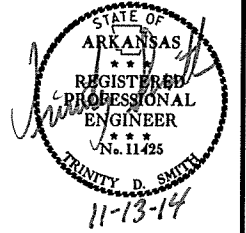
- ONE SEPARATE 1-5c IS RUN TO EACH POLE FOR THE PEDESTRIAN PUSH BUTTON.
- ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA OF CABINET.
- THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.

LOCATION: HWY. 124/SPARKSFORD DR. & CROW MTN. RD.  
 CITY: N/A  
 COUNTY: POPE  
 DISTRICT: 8 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.	080484	119 283

2 SIGNALIZATION PLAN SHEET



### INTERVAL CHART

DETECTOR SYSTEM DESCRIPTION: JOB 080389											
HWY. 124/SPARKSFORD DR. & CROW MTN. RD. DETECTOR ASSIGNMENTS				HARDWARE INPUTS BY SUPPLIER			PROGRAM ASSIGNMENTS			COMMENTS	TUBE LENGTHS
DET. ID#	LOCATION DIRECTION	TYPE	DET. #	CAB. TRM #	AMP CHN. #	CON. INP. #	PHS	SYSTEM DET. #	MASTER SYSTEM DETECTOR NUMBERS		
Vz11	NB LEFT TURN FAR	COMB.			1	V9	1	1		CAMERA V1	23'
Vz12	NB LEFT TURN	LOCAL			2	V1	1			CAMERA V1	23'
Vz21	SB ADVANCE	LOCAL			5	V2	2			CAMERA V2	23'
Vz22	SB INSIDE NEAR	COMB.			6	V10	2	2		CAMERA V5	23'
Vz31	EB LEFT TURN FAR	COMB.			9	V11	3	3		CAMERA V3	23'
Vz32	EB LEFT TURN	LOCAL			10	V3	3			CAMERA V3	23'
Vz41	WB ADVANCE	LOCAL			13	V4	4			CAMERA V4	23'
Vz42	WB NEAR	COMB.			14	V12	4	4		CAMERA V7	23'
Vz51	SB LEFT TURN FAR	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	23'
Vz62A&B	NB INSIDE NEAR	COMB.			4	V14	6	6		CAMERA V1	23'
Vz71	WB LEFT TURN FAR	COMB.			15	V15	7	7		CAMERA V7	23'
Vz72	WB LEFT TURN	LOCAL			16	V7	7			CAMERA V7	23'
Vz81	EB ADVANCE	LOCAL			11	V8	8			CAMERA V8	23'
Vz82	EB NEAR	COMB.			12	V16	8	8		CAMERA V3	23'
PB2A&B	SPARKSFORD W. LEG	PED.				P2	2				
PB4A&B	HWY. 124 N. LEG	PED.				P4	4				
PB6A&B	CROW MTN. RD.	PED.				P6	6				
PB8A&B	HWY. 124 S. LEG	PED.				P8	8				
SPARE											

CONTROLLER INPUT ABBREVIATIONS:  
V = VEHICLE INPUT  
D = SYSTEM OR AUXILIARY INPUT  
P = PEDESTRIAN INPUT

NOTE: \*AMP CHN=\* REFERS TO THE DETECTOR RACK OUTPUT POSITION. THIS IS WIRED TO CONTROLLER INPUT DETECTOR NUMBER WHICH IS PROGRAMED TO ACTUATE THE DESIGNATED PHASE.  
EXAMPLE: V9=SYSTEM DETECTOR 1, V10=SYSTEM DETECTOR 2

SIGNAL FACES	HWY. 124/SPARKSFORD DR. & CROW MTN. RD.														FLASH SEQ.		
	1+5	CLR.	1+6	CLR.	2+5	CLR.	2+6	CLR.	3+7	CLR.	3+8	CLR.	4+7	CLR.		4+8	CLR.
1	←G	•	←G	•	←FY	...	←FY	...	←R	←R	←R	←R	←R	←R	←R	←R	←R
2&3	R	R	G	**	R	R	G	**	R	R	R	R	R	R	R	R	R
4	←R	←R	←R	←R	←R	←R	←R	←R	←G	•	←G	•	←FY	...	←FY	...	←R
5&6	R	R	R	R	R	R	R	R	R	R	G	**	R	R	G	**	R
7	←G	•	←FY	...	←G	•	←FY	...	←R	←R	←R	←R	←R	←R	←R	←R	←R
8&9	R	R	R	R	G	**	G	**	R	R	R	R	R	R	R	R	R
10	←R	←R	←R	←R	←R	←R	←R	←R	←G	•	←FY	...	←G	•	←FY	...	←R
11&12	R	R	R	R	R	R	R	R	R	R	R	G	**	G	**	R	R
13&14	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW	W	FDW	W	BLK
15&16	DW	DW	W	FDW	DW	DW	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	BLK
17&18	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW	DW	DW	W	FDW	BLK
19&20	DW	DW	DW	DW	W	FDW	W	FDW	DW	DW	DW	DW	DW	DW	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

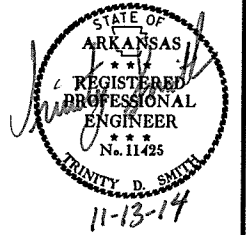
LOCATION: HWY. 124/SPARKSFORD DR. & CROW MTN. RD.  
CITY: N/A  
COUNTY: POPE  
DISTRICT: 8 SCALE: N/A DRAWN BY: GWE

# 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 COUNTY TO A SERVICE POLE WITH EXTERNAL RAIN TIGHT BREAKER (MAIN BREAKER), GALVANIZED STEEL SERVICE RISER, METER LOOP (IF REQUIRED), AND WEATHERHEAD AT A MUTUALLY ACCEPTABLE POINT WITHIN THE RIGHT-OF-WAY. THE SERVICE POINT SHALL NOT BE MORE THAN 10 FEET FROM THE CONTROLLER. THE CONTRACTOR SHALL PROVIDE AND INSTALL A TWO CIRCUIT BREAKER ELECTRICAL SERVICE WIRE (2c/#6 USE RATED, WITH GROUND TYPICAL), AND PERFORM WIRING TO TAP INTO THE COUNTY'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 ON TRAFFIC SIGNAL PLAN SHEETS ARE 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. 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.
17. 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.
18. 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.
19. 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.
20. CONTROLLER CABINET LAYOUT AND ORIENTATION SHALL CONFORM TO ISMA STANDARDS.
21. 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.
22. 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.
23. 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.

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. 080484	120 283

② SIGNALIZATION PLAN SHEET

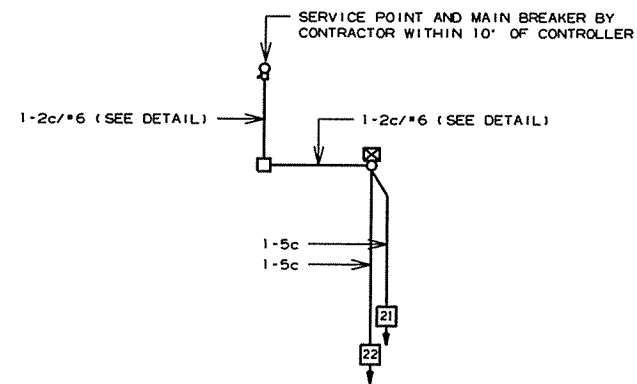


LOCATION: HWY. 124/SPARKSFORD DR. & CROW MTN. RD.  
 CITY: N/A  
 COUNTY: POPE  
 DISTRICT: 8 SCALE: N/A DRAWN BY: GWE

# WARNING BEACON QUANTITIES

ITEM NO.	ITEM	QUANTITY	UNIT
703	FLASHING BEACON CONTROLLER	1	EACH
SP&706	TRAFFIC SIGNAL HEAD, LED, (1 SECTION, 1 WAY)	2	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	110	LIN. FT.
709	GALVANIZED STEEL CONDUIT (1")	20	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.
711	CONCRETE PULL BOX (TYPE 1HD)	1	EACH
SP	SERVICE POINT ASSEMBLY (1 CIRCUITS)	1	EACH
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	20	LIN. FT.

## FLASHING BEACON WIRING DIAGRAM



## SIGNAL FACES

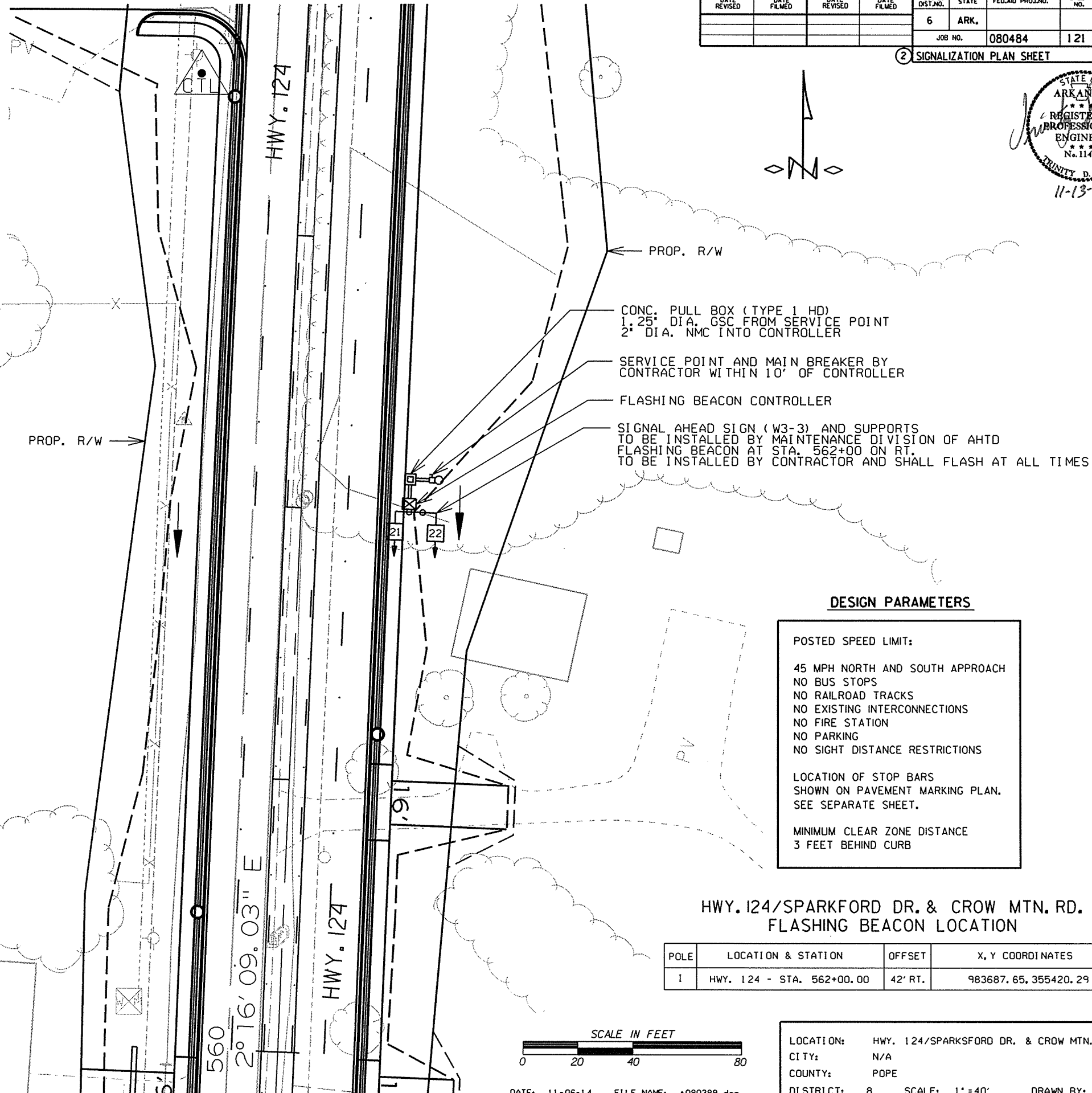
12" LENSES



21 & 22

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.	080484
							SHEET NO.	121
							TOTAL SHEETS	283

2 SIGNALIZATION PLAN SHEET



## DESIGN PARAMETERS

POSTED SPEED LIMIT:

- 45 MPH NORTH AND SOUTH APPROACH
- NO BUS STOPS
- NO RAILROAD TRACKS
- NO EXISTING INTERCONNECTIONS
- NO FIRE STATION
- NO PARKING
- NO SIGHT DISTANCE RESTRICTIONS

LOCATION OF STOP BARS  
SHOWN ON PAVEMENT MARKING PLAN.  
SEE SEPARATE SHEET.

MINIMUM CLEAR ZONE DISTANCE  
3 FEET BEHIND CURB

## HWY. 124/SPARKFORD DR. & CROW MTN. RD. FLASHING BEACON LOCATION

POLE	LOCATION & STATION	OFFSET	X, Y COORDINATES
I	HWY. 124 - STA. 562+00.00	42' RT.	983687.65, 355420.29

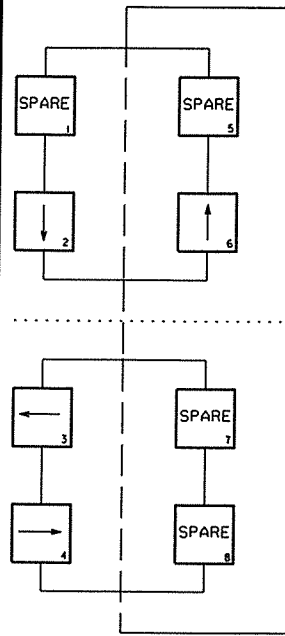
SCALE IN FEET



DATE: 11-06-14 FILE NAME: t080389.dgn

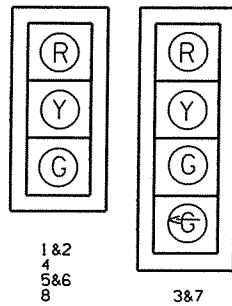
LOCATION: HWY. 124/SPARKSFORD DR. & CROW MTN. RD.  
CITY: N/A  
COUNTY: POPE  
DISTRICT: 8 SCALE: 1" = 40' DRAWN BY: GWE

PHASING DIAGRAM



SIGNAL FACES

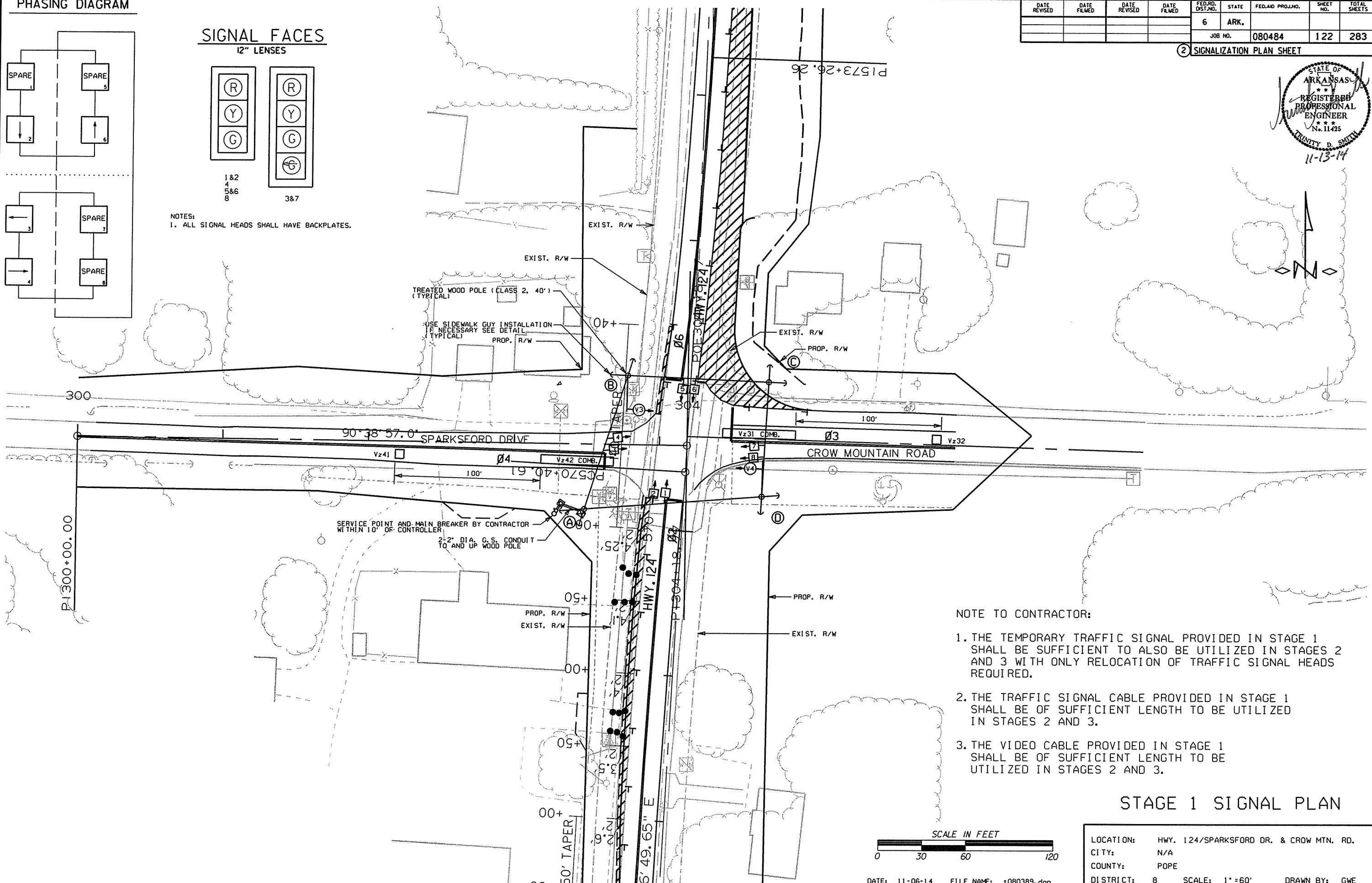
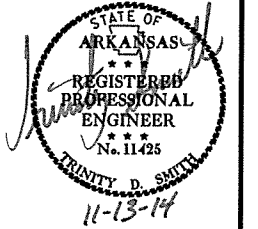
12" LENSES



NOTES:  
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 080484							122	283

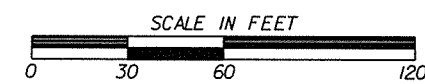
2 SIGNALIZATION PLAN SHEET



NOTE TO CONTRACTOR:

1. THE TEMPORARY TRAFFIC SIGNAL PROVIDED IN STAGE 1 SHALL BE SUFFICIENT TO ALSO BE UTILIZED IN STAGES 2 AND 3 WITH ONLY RELOCATION OF TRAFFIC SIGNAL HEADS REQUIRED.
2. THE TRAFFIC SIGNAL CABLE PROVIDED IN STAGE 1 SHALL BE OF SUFFICIENT LENGTH TO BE UTILIZED IN STAGES 2 AND 3.
3. THE VIDEO CABLE PROVIDED IN STAGE 1 SHALL BE OF SUFFICIENT LENGTH TO BE UTILIZED IN STAGES 2 AND 3.

STAGE 1 SIGNAL PLAN

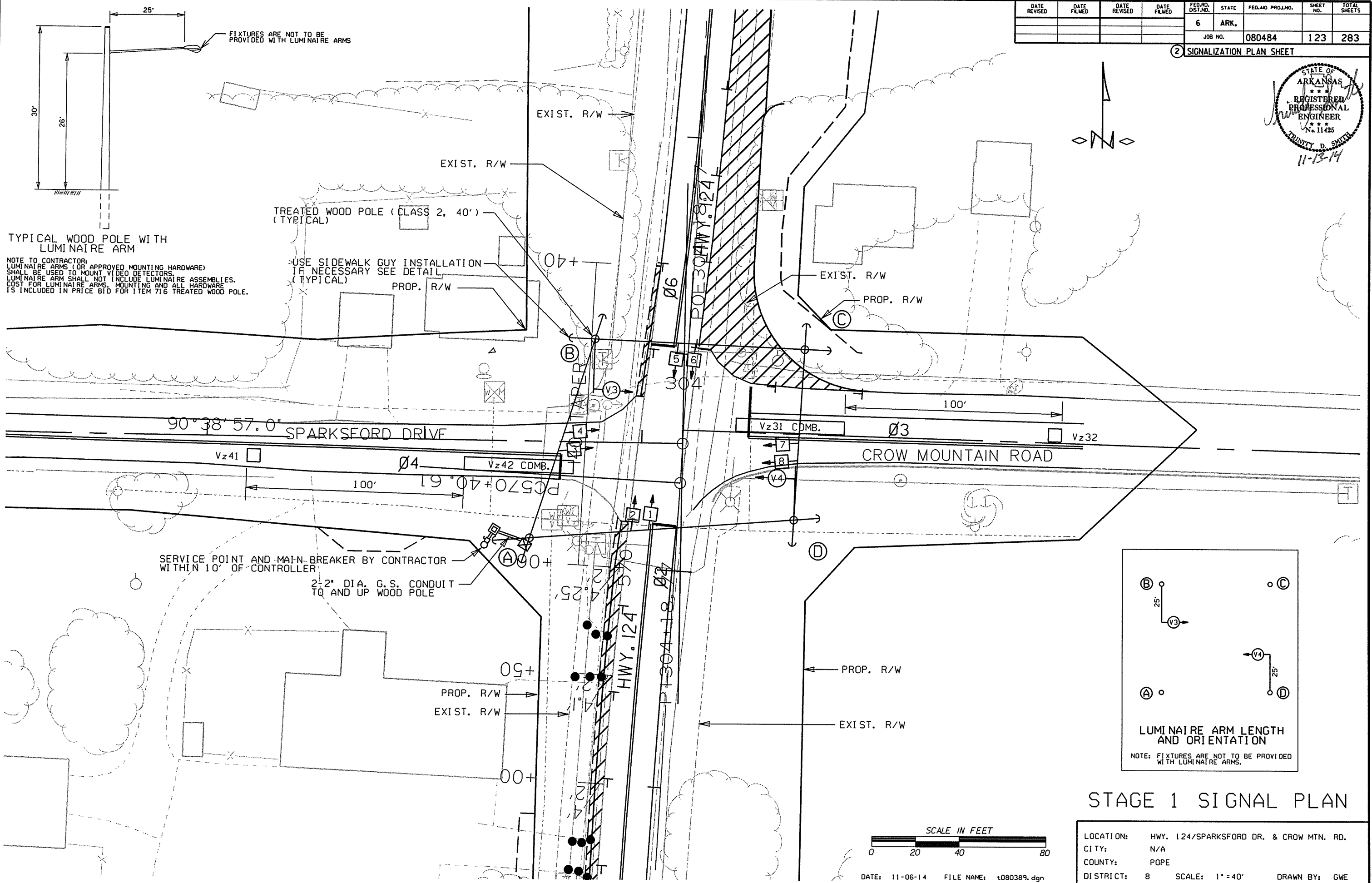
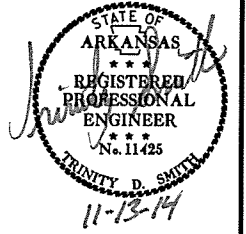


DATE: 11-06-14 FILE NAME: t080389.dgn

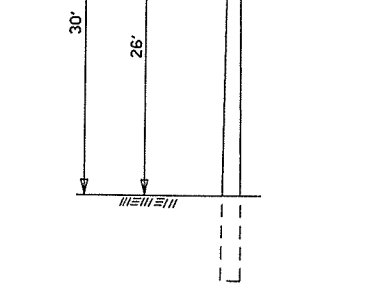
LOCATION: HWY. 124/SPARKSFORD DR. & CROW MTN. RD.  
 CITY: N/A  
 COUNTY: POPE  
 DISTRICT: 8 SCALE: 1"=60' DRAWN BY: GWE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		123	283
				JOB NO.		080484		

2 SIGNALIZATION PLAN SHEET



FIXTURES ARE NOT TO BE PROVIDED WITH LUMINAIRE ARMS



TYPICAL WOOD POLE WITH LUMINAIRE ARM

NOTE TO CONTRACTOR:  
LUMINAIRE ARMS (OR APPROVED MOUNTING HARDWARE) SHALL BE USED TO MOUNT VIDEO DETECTORS. LUMINAIRE ARM SHALL NOT INCLUDE LUMINAIRE ASSEMBLIES. COST FOR LUMINAIRE ARMS, MOUNTING AND ALL HARDWARE IS INCLUDED IN PRICE BID FOR ITEM 716 TREATED WOOD POLE.

TREATED WOOD POLE (CLASS 2, 40') (TYPICAL)

USE SIDEWALK GUY INSTALLATION IF NECESSARY SEE DETAIL (TYPICAL)

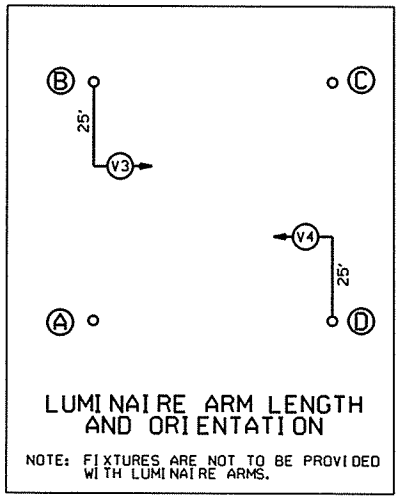
90° 38' 57.0" SPARKSFORD DRIVE

CROW MOUNTAIN ROAD

HWY. 124

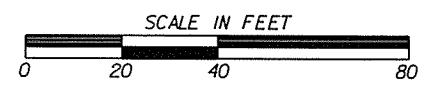
SERVICE POINT AND MAIN BREAKER BY CONTRACTOR WITHIN 10' OF CONTROLLER

2-2" DIA. G.S. CONDUIT TO AND UP WOOD POLE



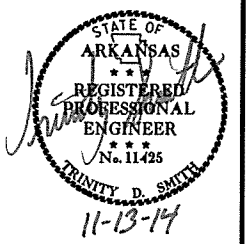
LUMINAIRE ARM LENGTH AND ORIENTATION

STAGE 1 SIGNAL PLAN

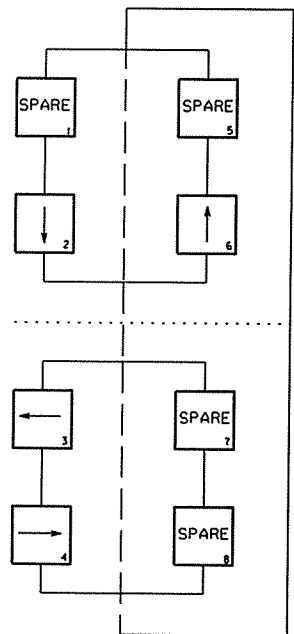


DATE: 11-06-14 FILE NAME: t080389.dgn

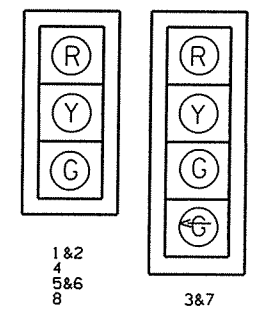
LOCATION: HWY. 124/SPARKSFORD DR. & CROW MTN. RD.  
CITY: N/A  
COUNTY: POPE  
DISTRICT: 8 SCALE: 1" = 40' DRAWN BY: GWE



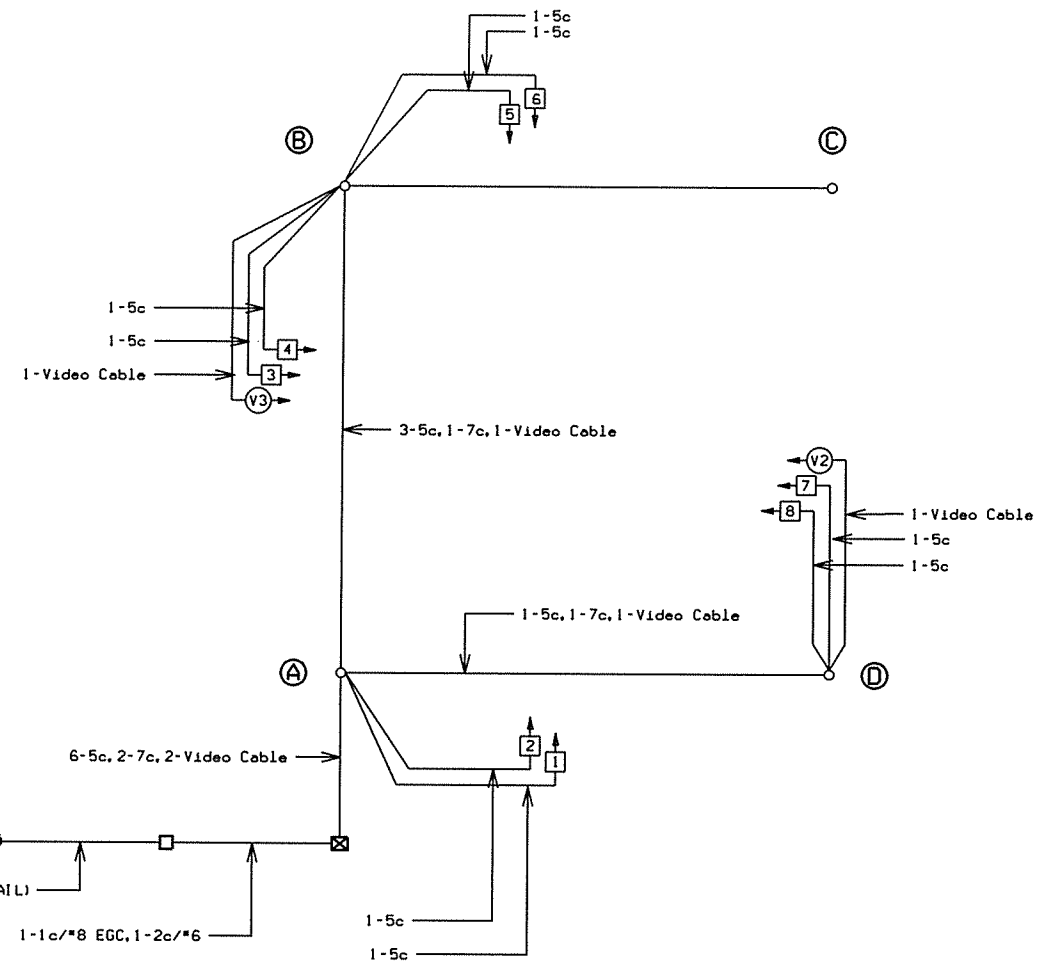
PHASING DIAGRAM



SIGNAL FACES  
12" LENSES



NOTES:  
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.



DETECTOR SYSTEM DESCRIPTION: JOB 080389												
HWY. 124/SPARKSFORD DR. & CROW MTN. RD. DETECTOR ASSIGNMENTS				HARDWARE INPUTS BY SUPPLIER			PROGRAM ASSIGNMENTS				COMMENTS	TUBE LENGTHS
DET. ID*	LOCATION	DIRECTION	TYPE	DET. #	CAB. TRM #	AMP CHN. #	CON. INP. #	PHS	SYSTEM DET. #	MASTER SYSTEM DETECTOR NUMBERS		
Vz31	WB NEAR		COMB.			3	V11	3	3		CAMERA V3	
Vz32	WB ADVANCE		LOCAL			11	V3	3			CAMERA V3	
Vz41	EB ADVANCE		COMB.			4	V12	4	4		CAMERA V4	
Vz42	EB NEAR		LOCAL			12	V4	4			CAMERA V4	
SPARE 1, 2, 5, 6, 7, 8, 9, 10, 13, 14, 15&16												

CONTROLLER INPUT ABBREVIATIONS:  
V = VEHICLE INPUT  
D = SYSTEM OR AUXILIARY INPUT  
P = PEDESTRIAN INPUT

NOTE: \*AMP CHN\* REFERS TO THE DETECTOR RACK OUTPUT POSITION. THIS IS WIRED TO CONTROLLER INPUT DETECTOR NUMBER WHICH IS PROGRAMMED TO ACTUATE THE DESIGNATED PHASE.

STAGE 1  
WIRING DIAGRAM

NOTES TO CONTRACTOR:

1. ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA OF CABINET.
2. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.

INTERVAL CHART

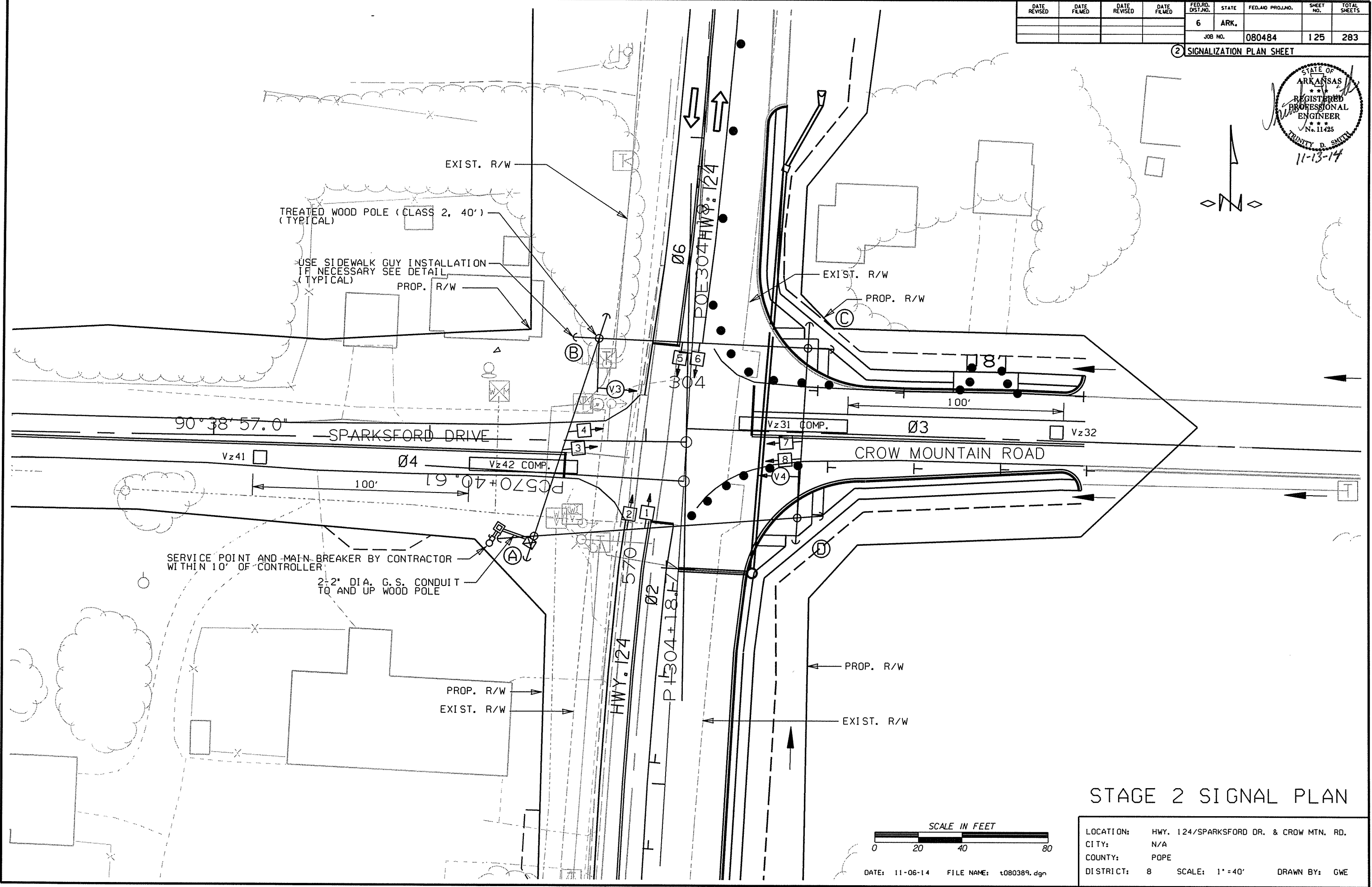
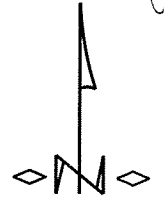
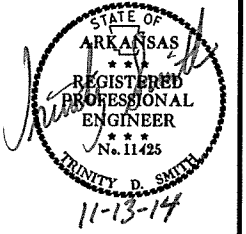
SIGNAL FACES	HWY. 124/CROW MTN. RD.						FLASH SEQ.
	2+6	CLR.	3	CLR.	4	CLR.	
1&2	G	**	R	R	R	R	R
3	R	R	G	**	R	R	R
4	R	R	G	**	R	R	R
5&6	G	**	R	R	R	R	R
7	R	**	R	R	G	**	R
8	R	R	R	R	G	**	R

G = 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

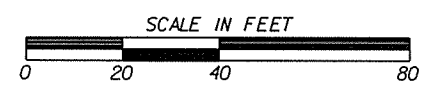
LOCATION: HWY. 124/SPARKSFORD DR. & CROW MTN. RD.  
 CITY: N/A  
 COUNTY: POPE  
 DISTRICT: 8 SCALE: N/A DRAWN BY: GWE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		125	283

② SIGNALIZATION PLAN SHEET



### STAGE 2 SIGNAL PLAN

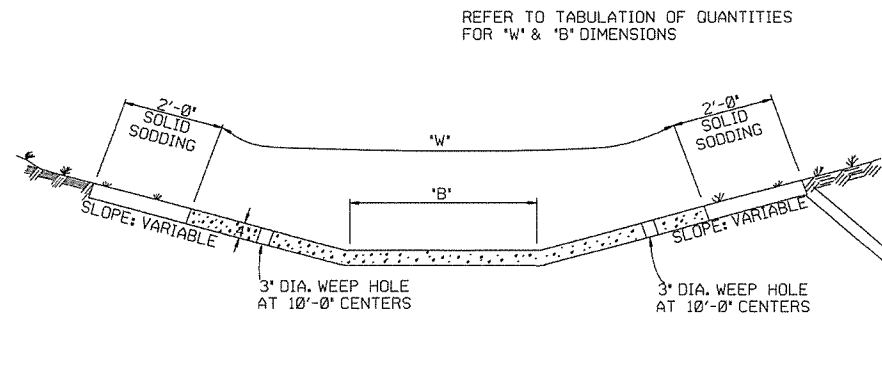


LOCATION: HWY. 124/SPARKSFORD DR. & CROW MTN. RD.  
 CITY: N/A  
 COUNTY: POPE  
 DISTRICT: 8 SCALE: 1" = 40' DRAWN BY: GWE

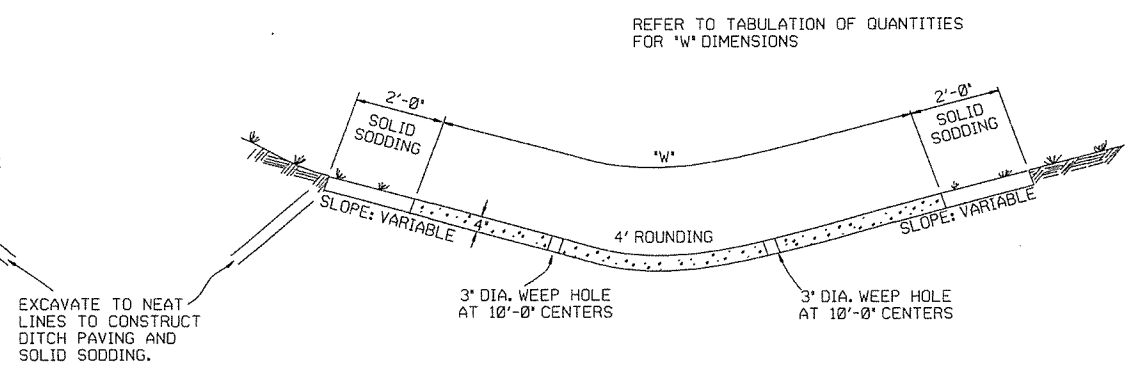
DATE: 11-06-14 FILE NAME: t080389.dgn







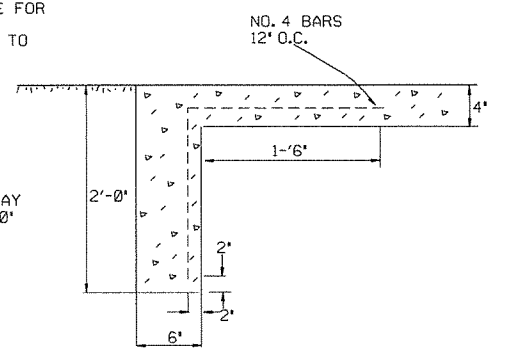
TYPE A



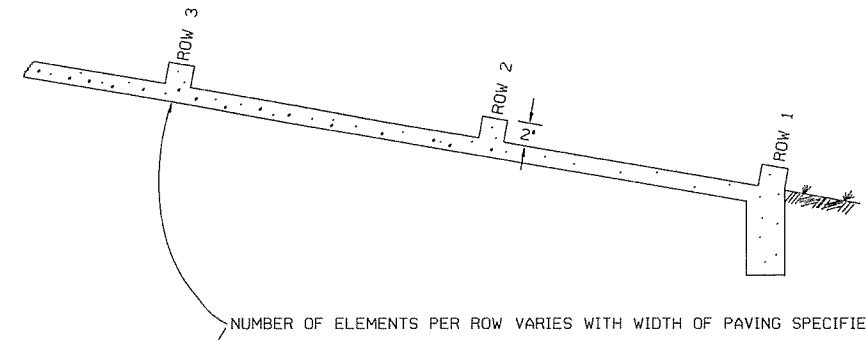
TYPE B

EXCAVATE TO NEAT LINES TO CONSTRUCT DITCH PAVING AND SOLID SODDING.

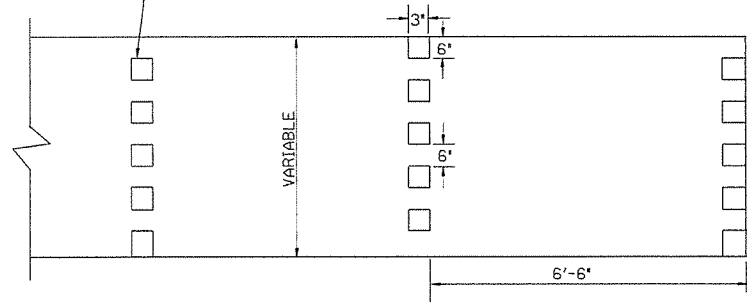
THE STEEL AND ADDITIONAL CONCRETE FOR THE WALLS SHALL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR 'CONCRETE DITCH PAVING.'



TOE WALL DETAIL FOR CONCRETE DITCH PAVING



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 UNINCLUDED IN THE PRICE BID FOR CONCRETE DITCH PAVING.



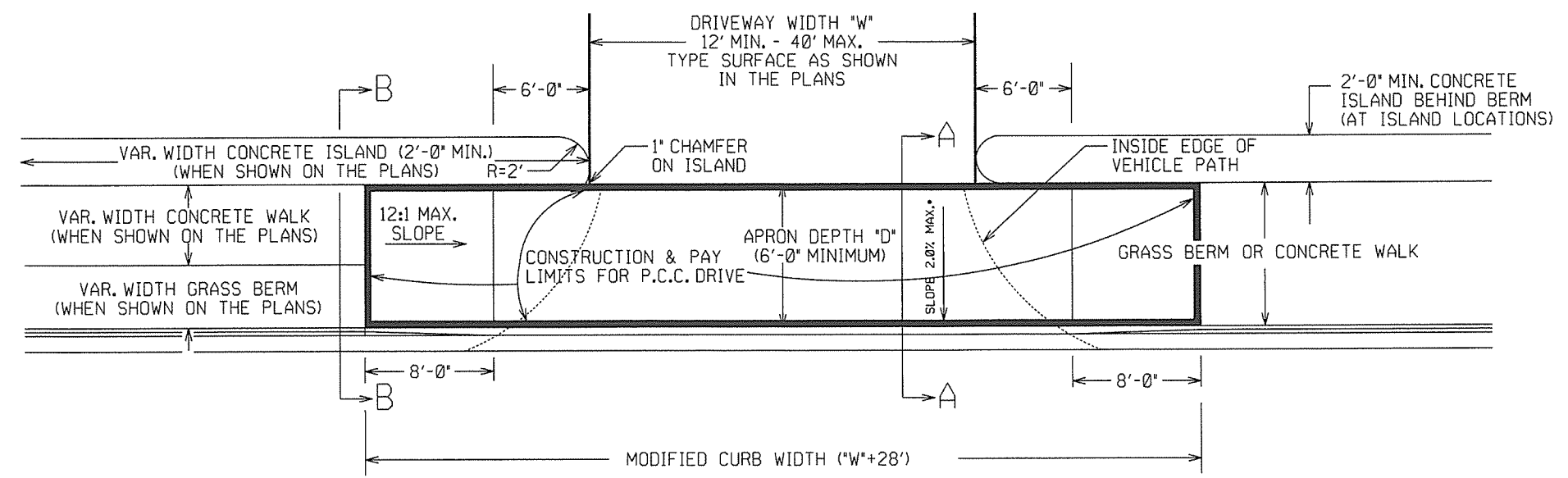
ENERGY DISSIPATORS  
(NO SCALE)

GENERAL NOTES:

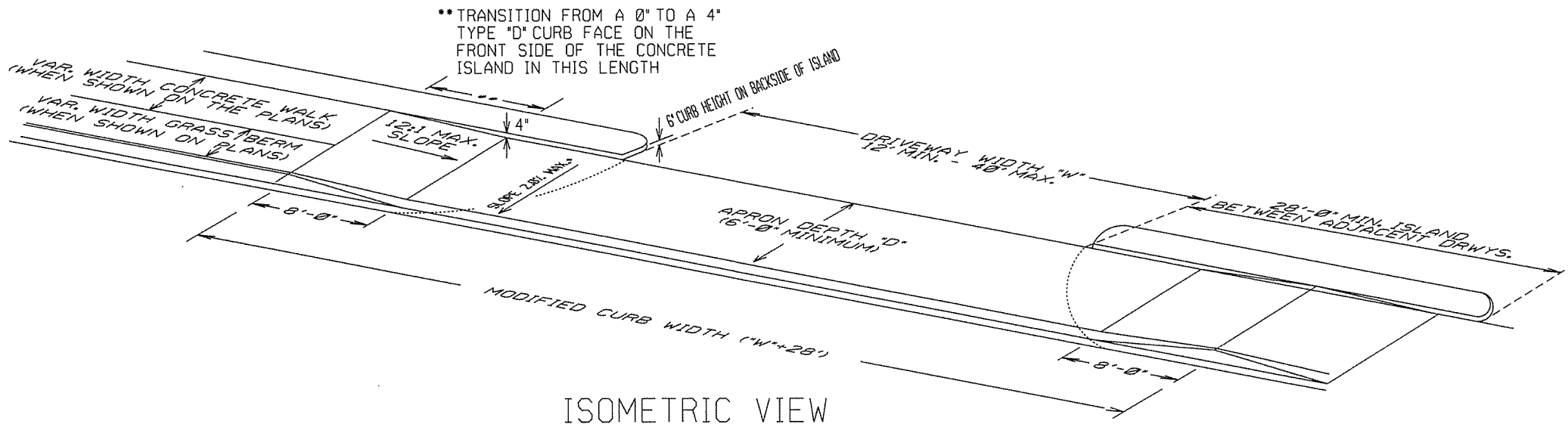
- THE FULL WIDTH OF EACH SECTION SHALL BE POURED MONOLITHICALLY.
- TOE WALLS TO BE CONSTRUCTED FULL WIDTH AT EACH END OF DITCH PAVING, AND POURED MONOLITHICALLY.
- SOLID SOD ALONG DITCH PAVING TO BE PLACED WITHIN 14 DAYS OF DITCH PAVING CONSTRUCTION.
- 1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

			ARKANSAS STATE HIGHWAY COMMISSION	
			CONCRETE DITCH PAVING	
			STANDARD DRAWING CDP-1	
11-17-10	ADDED GENERAL NOTE			
6-2-94	ADDED GENERAL NOTE ABOUT SOLID SODDING			
11-30-8	ELIMINATED MIN. ROWS OF ELEMENTS	111-30-89		
7-15-88	REVISED DISSIPATOR NOTE	653-7-15-88		
4-3-87	REVISED ENERGY DISSIPATOR	671-4-3-87		
1-9-87	MODIFIED NOTE ON ENERGY DISS.	532-1-9-87		
11-3-86	ADDED NOTE TO ENERGY DISS.	599-12-1-86		
11-1-84	ENERGY DISSIPATOR DETAILS	508-11-1-84		
	ADDED			
11-1-84	EXCAVATION DETAILS ADDED			
	TYPED A & B			
10-2-72	REVISED AND REDRAWN	508-10-2-72		
DATE	REVISION	DATE	FILM'D	

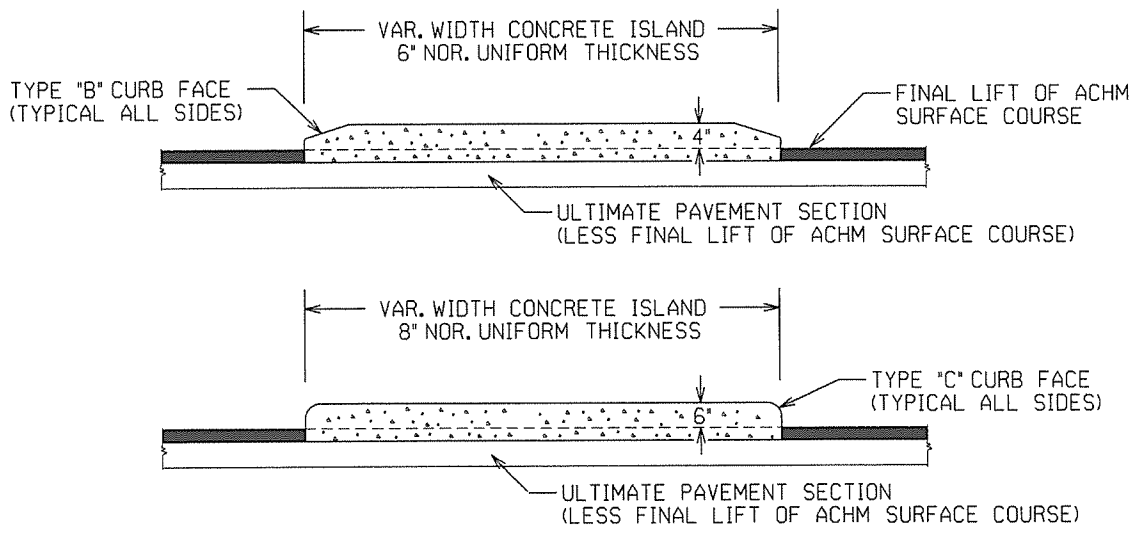




PLAN VIEW

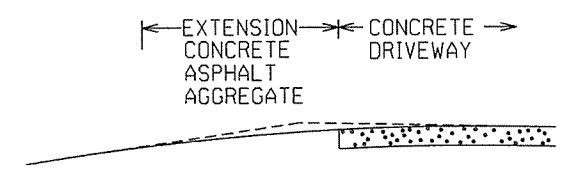


ISOMETRIC VIEW



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".

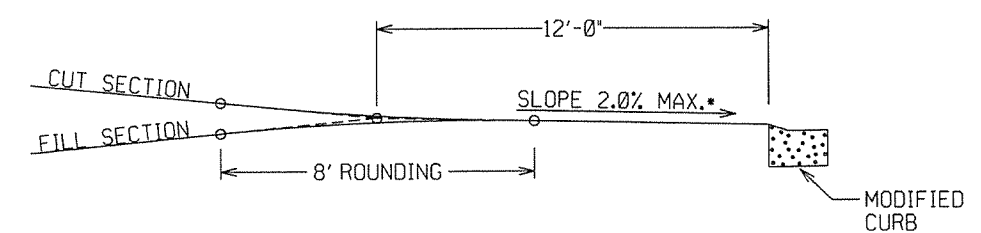


EXTENSION TYPICAL SECTIONS

- 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

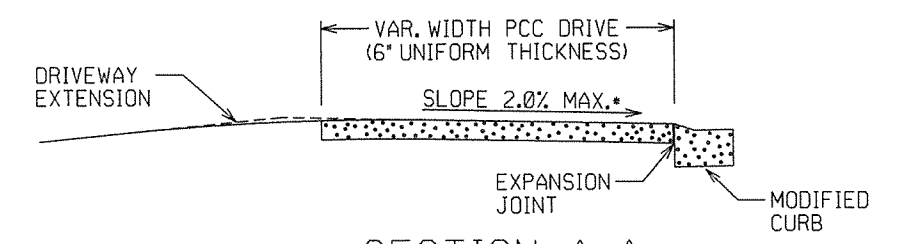
THE TYPE OF EXTENSION SHALL BE AS SHOWN IN THE PLANS.  
THE CONTRACTOR MAY, WITH THE APPROVAL OF THE ENGINEER,  
SUBSTITUTE A LOWER NUMBERED TYPE OF EXTENSION IN LIEU  
OF THE TYPE SPECIFIED IN THE PLANS, BUT AT NO ADDITIONAL  
COST TO THE DEPARTMENT.

DRIVEWAY EXTENSION DETAILS

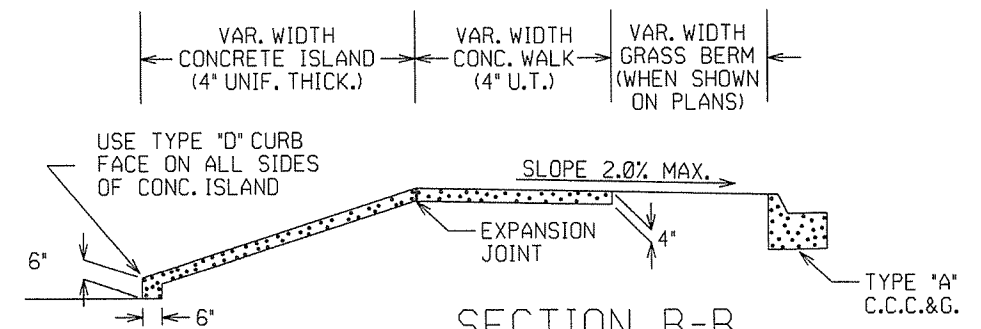


DRIVEWAY VERTICAL ALIGNMENT DETAILS

\* NOTE: DRIVEWAYS MAY NOT BE SLOPED AWAY  
FROM THE ROADWAY UNLESS APPROVED  
BY THE ENGINEER.



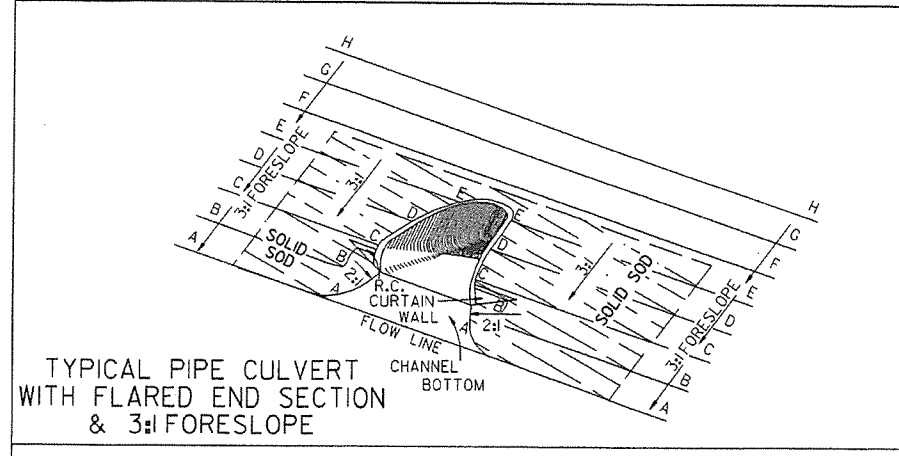
SECTION A-A



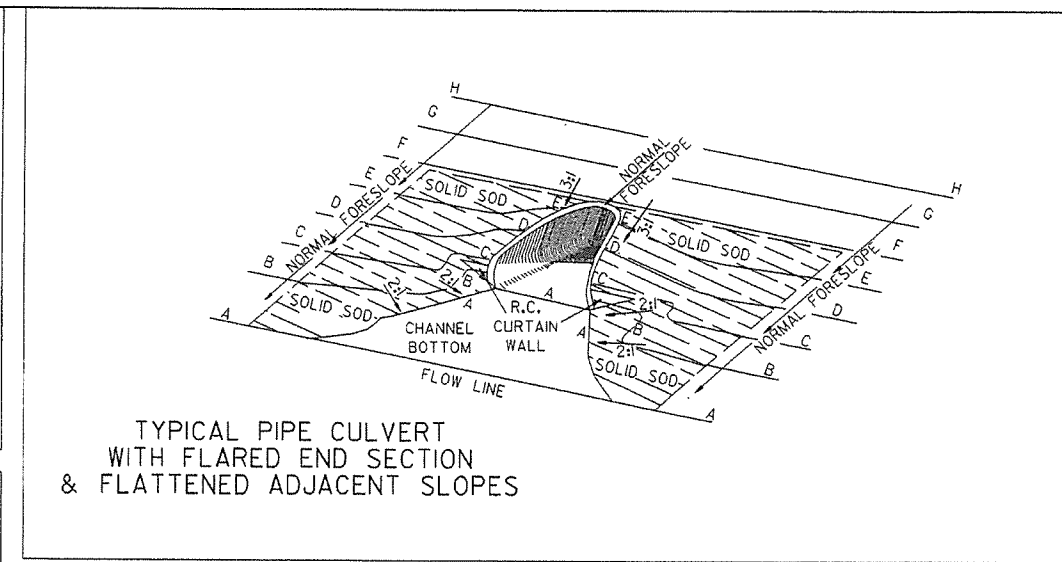
SECTION B-B  
CURBED ISLAND BEHIND WALK

DATE	REV	DATE FILMED	DESCRIPTION
2-27-14			REVISED PLAN & ISOMETRIC VIEW
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

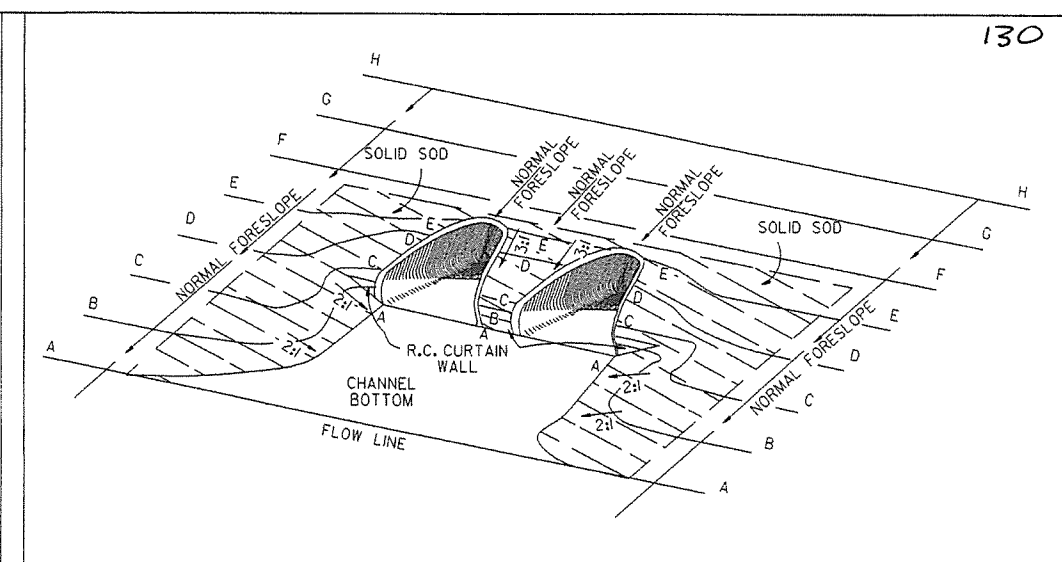
ARKANSAS STATE HIGHWAY COMMISSION  
DETAILS OF DRIVEWAYS & ISLANDS  
STANDARD DRAWING DR-1



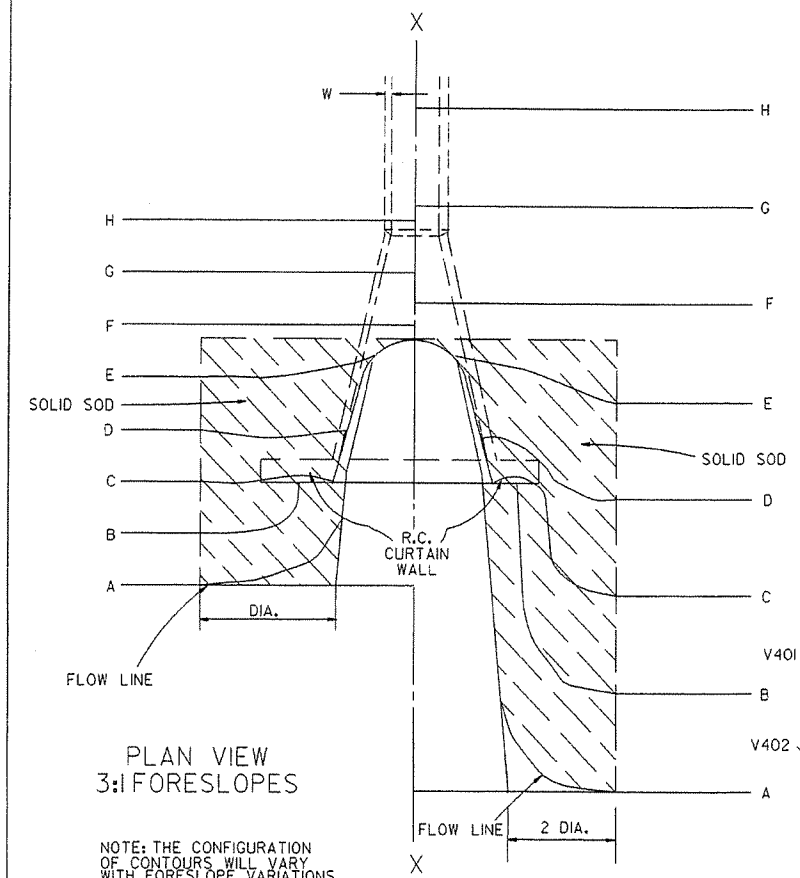
TYPICAL PIPE CULVERT WITH FLARED END SECTION & 3:1 FORESLOPE



TYPICAL PIPE CULVERT WITH FLARED END SECTION & FLATTENED ADJACENT SLOPES



TYPICAL MULTIPLE PIPE CULVERT WITH FLARED END SECTIONS & FLATTENED ADJACENT SLOPES



PLAN VIEW 3:1 FORESLOPES

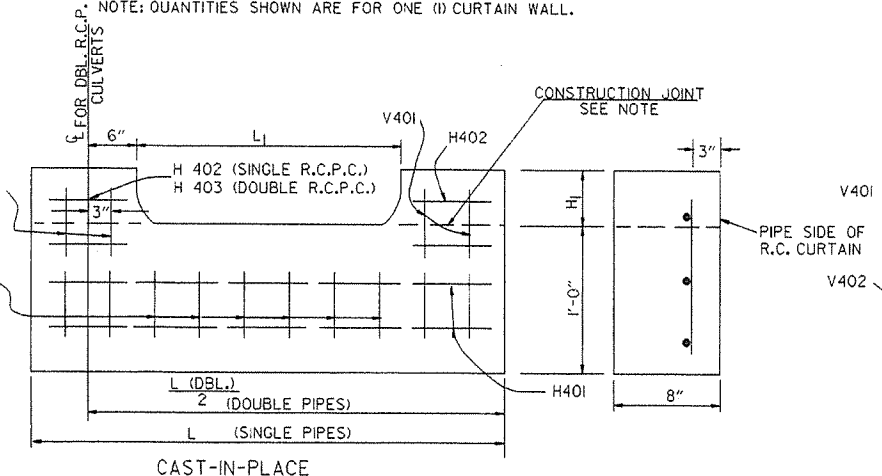
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW FLATTENED FORESLOPES

R.C. CURTAIN WALL DIMENSIONS & QUANTITIES

PIPE DIA.	H <sub>1</sub>	L <sub>1</sub>	L	L (DBL.) 2	SINGLE R.C.P.C.		DOUBLE R.C.P.C.	
					CONC.	REINF. STEEL	CONC.	REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	11'-2"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0 1/2"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3 1/2"	5'-7"	11'-0"	9'-0"	0.45	39.0	0.67	59.0
36"	1'-7"	6'-8"	13'-0"	10'-6"	0.58	52.6	0.83	73.9
42"	2'-1 1/2"	7'-3"	15'-6"	12'-0"	0.82	77.1	1.10	100.7
48"	2'-5"	7'-10"	17'-0"	13'-0"	0.98	94.9	1.27	120.4
54"	2'-9 1/2"	8'-5"	18'-6"	14'-0"	1.16	115.8	1.47	143.7
60"	3'-4"	9'-0"	20'-6"	15'-6"	1.47	149.7	1.84	180.3
72"	4'-5"	10'-2"	25'-6"	18'-6"	2.31	232.6	2.73	271.0

NOTE: QUANTITIES SHOWN ARE FOR ONE (1) CURTAIN WALL.



R.C. CURTAIN WALL DETAILS

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.

REINFORCING STEEL SCHEDULE

PIPE DIA.	SINGLE R.C. PIPE CULVERT								DOUBLE R.C. PIPE CULVERT									
	H401		H402		V401		V402		H401		H402		H403		V401		V402	
	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.
18"	7'-8"	2	1'-11 1/2"	4	1'-7 1/2"	8	8"	8	12'-2"	2	1'-11 1/2"	4	8"	2	1'-7 1/2"	10	8"	14
24"	9'-2"	2	2'-2"	4	1'-8 1/2"	10	8"	9	14'-8"	2	2'-2"	4	8"	2	1'-8 1/2"	12	8"	18
30"	10'-8"	2	2'-4 1/2"	4	1'-11 1/2"	10	8"	12	17'-8"	2	2'-4 1/2"	4	8"	2	1'-11 1/2"	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'-9 1/2"	8	2'-9 1/2"	16	8"	15	23'-8"	2	3'-9 1/2"	8	8"	4	2'-9 1/2"	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'-8 1/2"	12	3'-5 1/2"	20	8"	17	27'-8"	2	4'-8 1/2"	12	8"	6	3'-5 1/2"	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

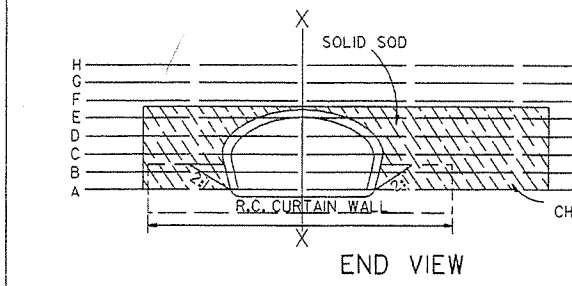
ALL REINFORCING STEEL #4 BARS @ 6" O.C.

SOLID SODDING

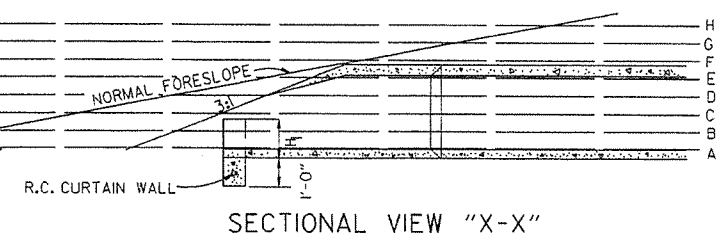
PIPE DIA.	SINGLE R.C.P.C.			DOUBLE R.C.P.C.		
	3:1	4:1	6:1	3:1	4:1	6:1
18"	5	12	12	6	8	13
24"	8	12	19	9	13	20
30"	13	18	29	14	19	30
36"	17	26	41	18	28	43
42"	23	35	55	25	37	57
48"	29	46	68	31	48	70
54"	35	57	85	37	59	87
60"	45	62	104	48	65	107
72"	64	92	156	67	95	159

NOTE: QUANTITIES SHOWN ABOVE ARE FOR ONE (1) END OF F.E.S.

- GENERAL NOTES
- 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.
  - ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4".
  - 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.
  - WELDED WIRE MESH 3 x 3 W/10 x W/10 MAY BE USED IN LIEU OF REINFORCING BARS.

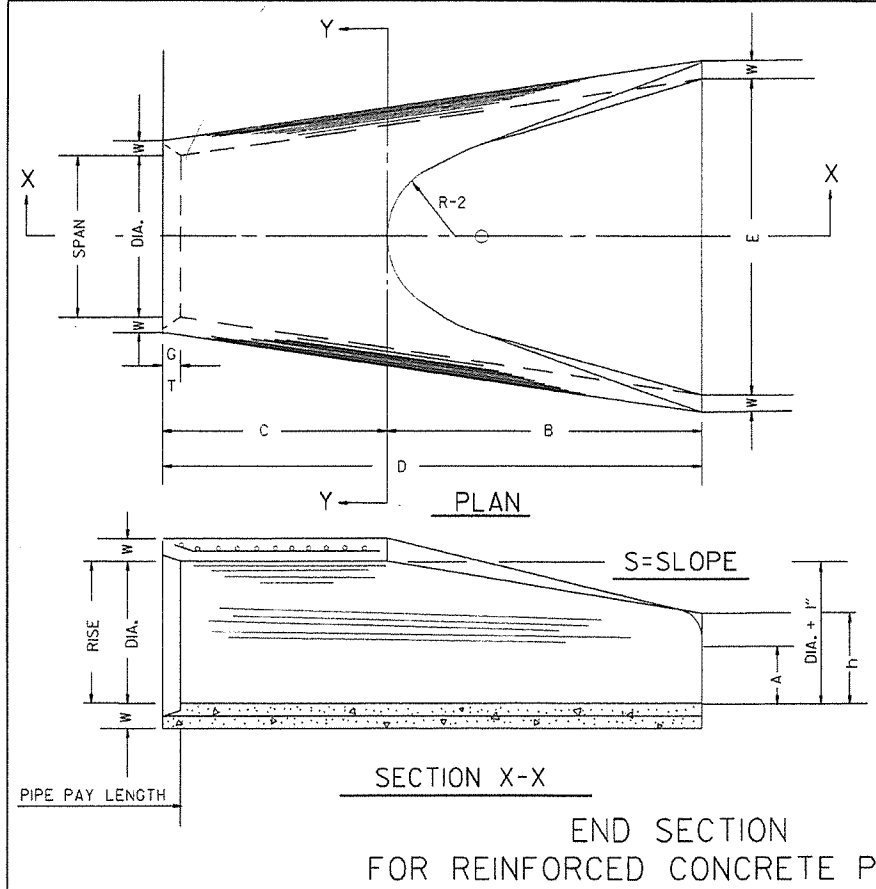


END VIEW



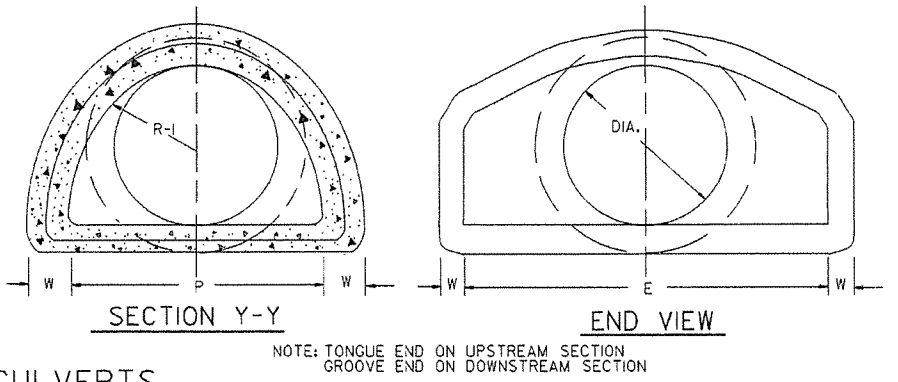
SECTIONAL VIEW "X-X"

10-18-96	ADDED NOTE TO SOLID SODDING	10-18-96	ARKANSAS STATE HIGHWAY COMMISSION
10-12-95	CORRECTED SPELLING		
11-3-94	ADDED GENERAL NOTE NO. 4		
8-15-91	REV. CURTAIN WALL QUANT. STEEL SCH. & SOLID SOD QUANT.		
3-2-81	ALLOW PRECAST IN 2 OR MORE PIECES CHAMFER EDGES		
5-15-80	ADDED PRECAST WALL & GENERAL NOTES		
10-2-72	REVISED AND REDRAWN		
DATE	REVISION	FILMED	STANDARD DRAWING FES-1



**TABLE OF DIMENSIONS**

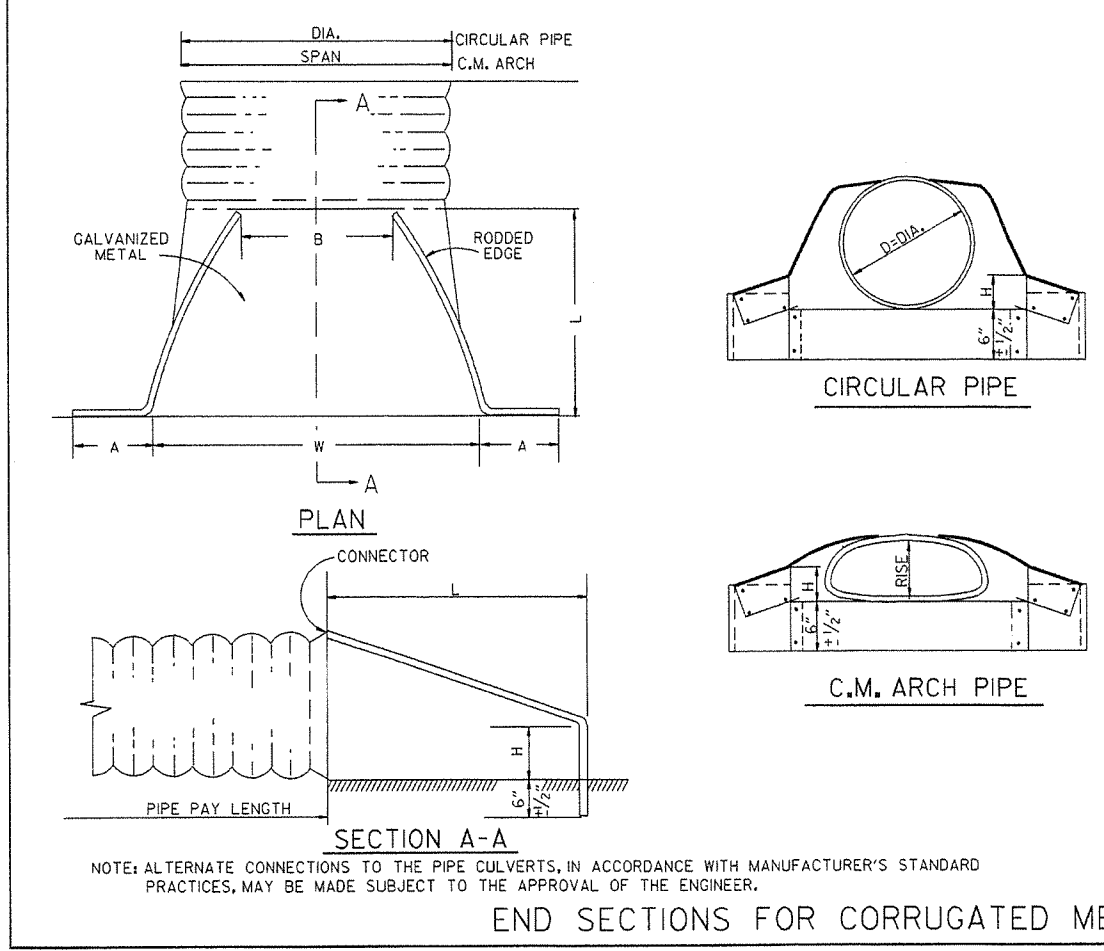
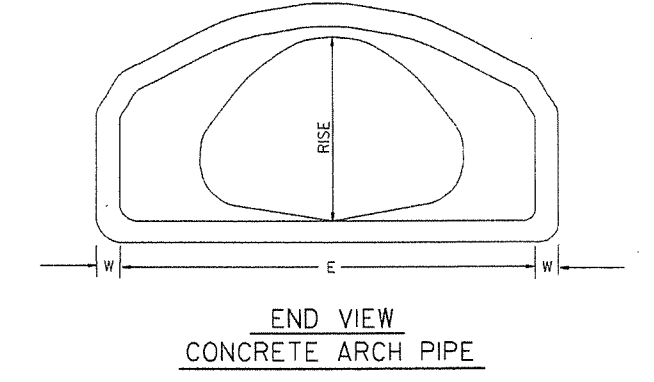
DIA.	WALL	A	B	C	D	E	S	DIA. - 1"	P	R-1	R-2	G-T	WT.	h
18"	2 1/2"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3:1	19"	29"	15 1/2"	12"	2"	1000	1'-0 1/2"
24"	3"	9 1/2"	3'-7 1/2"	2'-6"	6'-1 1/2"	4'-0"	3:1	25"	33 3/8"	16 1/8"	14"	2 1/2"	1600	1'-1 1/2"
30"	3 1/2"	1'-0"	4'-6"	1'-7 3/4"	6'-1 3/4"	5'-0"	3:1	31"	37"	18 1/2"	15"	3 1/4"	1940	1'-4 3/8"
36"	4"	1'-3"	5'-3"	2'-10 3/4"	8'-1 1/4"	6'-0"	3:1	37"	47 1/8"	24 3/8"	20"	3 1/2"	4100	1'-8"
42"	4 1/2"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3:1	43"	53 3/8"	27 1/2"	22"	3 1/2"	5380	2'-2 1/2"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3:1	49"	56 1/2"	28 1/2"	22"	3 1/2"	6550	2'-6"
54"	5 1/2"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3:1	55"	65 1/2"	33 1/8"	24"	4"	8750	2'-10 1/2"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3:1	61"	72 1/2"	36 1/8"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3:1	73"	77 1/8"	38 3/8"	24"	5"	13250	4'-6"



**ARCH PIPE**

EQUIV. DIA.	SPAN		RISE		W	A	B	C	D	E	P	R2	G-T	S
	AASHTO M 206	AHD NOMINAL	AASHTO M 206	AHD NOMINAL										
INCHES														
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1 1/2"	2 1/2:1
18	22	22	13 1/2	14	2 1/2"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32 1/8"	13"	2 1/2"	2 1/2:1
21	26	26	15 1/2	16	2 3/4"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34 1/8"	14"	2 1/2"	2 1/2:1
24	28 1/2	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36 1/8"	15"	2 1/2"	2 1/2:1
30	36 1/4	36	22 1/2	23	3 1/2"	10"	3'-1"	3'-0 1/2"	6'-1 1/2"	6'-0"	47 3/8"	20"	3"	2 1/2:1
36	43 3/4	44	26 3/8	27	4"	10 1/2"	4'-0"	2'-1 1/2"	6'-1 1/2"	6'-6"	54 3/8"	22"	3 1/2"	2 1/2:1
42	51 1/8	51	31 1/8	31	4 1/2"	11 1/2"	4'-7"	1'-10 1/4"	6'-5 1/4"	7'-2"	59 1/2"	23"	3 3/4"	2 1/2:1
48	58 1/2	59	36	36	5"	1'-3"	5'-3"	2'-10 3/4"	8'-1 3/4"	7'-10"	70 3/8"	24"	4 1/4"	2 1/2:1
54	65	65	40	40	5 1/2"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72 1/8"	24"	4 3/4"	2 1/4:1
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77 1/8"	24"	5"	2 1/4:1

\* THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.

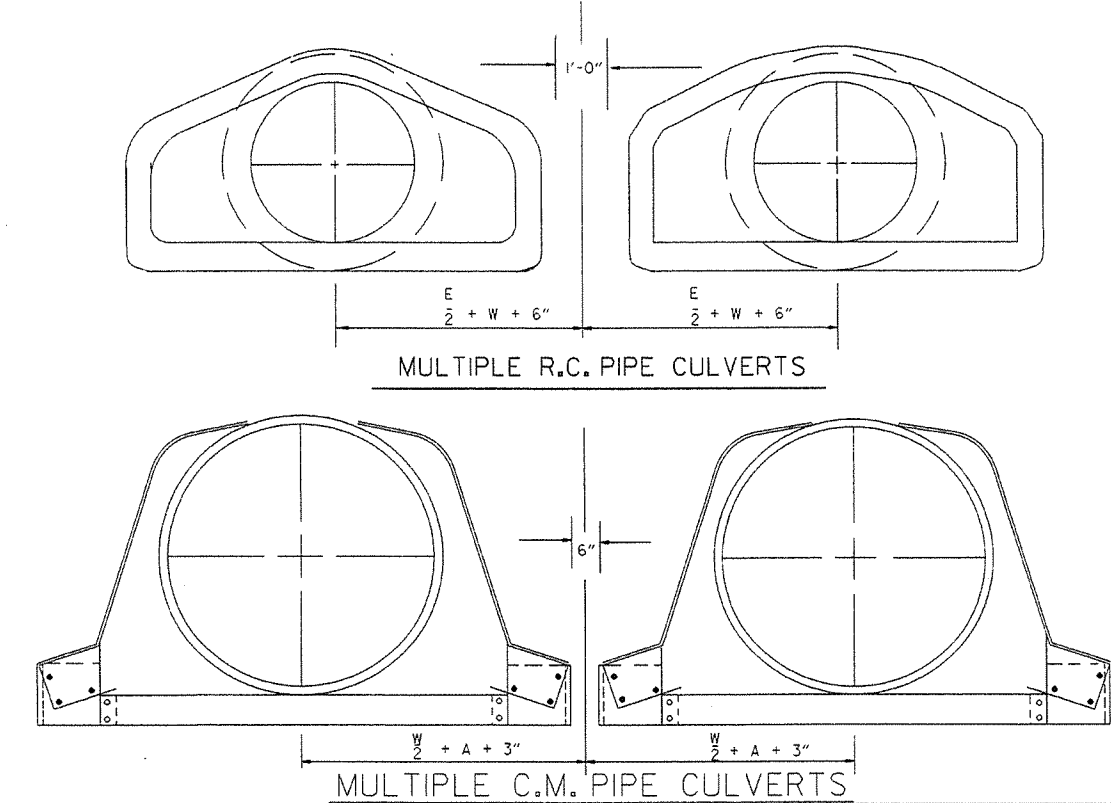


**CIRCULAR PIPE**

D. DIA.	GAUGE	A 1" ±	B. MAX. 1" ±	H 1" ±	L 1 1/2" ±	W 2" ±	S
12	16	6	6	6	21	24	2 1/2:1
15	16	7	8	6	26	30	2 1/2:1
18	16	8	10	6	31	36	2 1/2:1
21	16	9	12	6	36	42	2 1/2:1
24	16	10	13	6	41	48	2 1/2:1
30	14	12	16	8	51	60	2 1/2:1
36	14	14	19	9	60	72	2 1/2:1
42	12	16	22	11	69	84	2 1/2:1
48	12	18	27	12	78	90	2 1/2:1
54	12	18	30	12	84	102	2:1
60	12	18	33	12	87	114	1 3/4:1
66	2	18	36	12	87	120	1 1/2:1
72	12	18	39	12	87	126	1 1/3:1

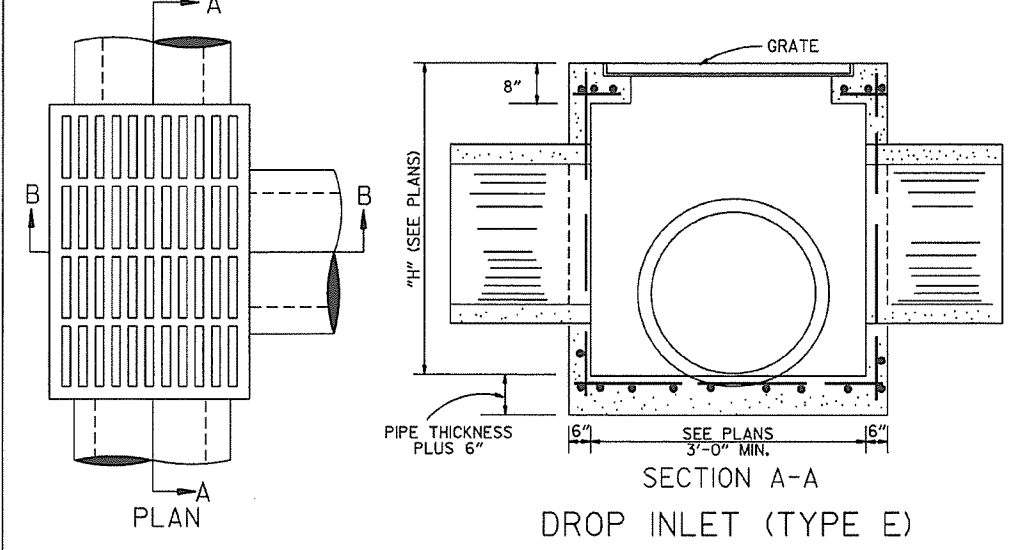
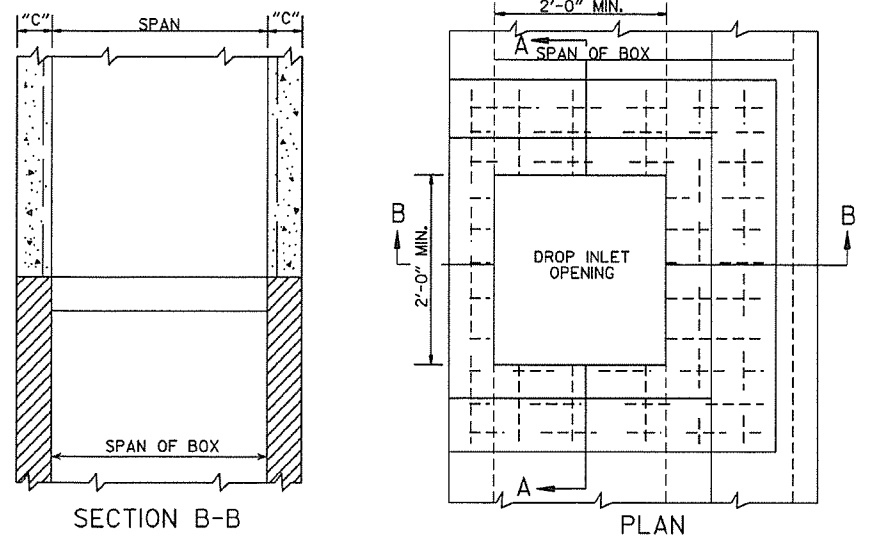
**C.M. ARCH PIPE**

EQUIV. DIA.	SPAN	RISE	A 1" ±	B. MAX. 1" ±	H 1" ±	L 1 1/2" ±	W 2" ±	S	GAUGE
15"	17	13	7	9	6	19	30	2 1/2:1	16
18"	21	15	7	10	6	23	36	2 1/2:1	16
21"	24	18	8	12	6	28	42	2 1/2:1	16
24"	28	20	9	14	6	32	48	2 1/2:1	16
30"	35	24	10	16	6	39	60	2 1/2:1	14
36"	42	29	12	18	8	46	75	2 1/2:1	14
42"	49	33	13	21	9	53	85	2 1/2:1	12
48"	57	38	18	26	12	63	90	2 1/2:1	12
54"	64	43	18	30	12	70	102	2 1/4:1	12
60"	71	47	18	33	12	77	114	2 1/4:1	12

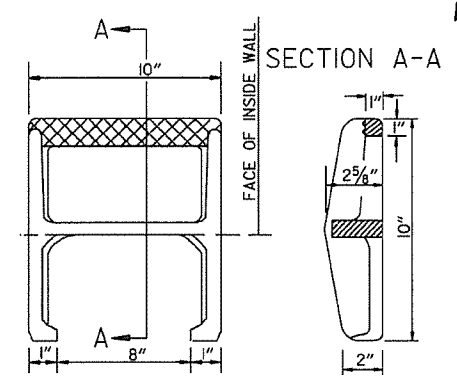


10-18-96	REVISED ASTM REF. TO AASHTO	16-18-96	ARKANSAS STATE HIGHWAY COMMISSION
5-15-80	REVISED DISTANCE BETWEEN MULTIPLE R.C.P. F.E.S.	664-5-15-80	
7-14-78	C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES	752-7-14-78	
8-22-75	ADDED MULTIPLE PIPE CULVERTS	517-8-22-75	FLARED END SECTION
12-5-74	REMOVED NOTE 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	STANDARD DRAWING FES-2
		FILED	



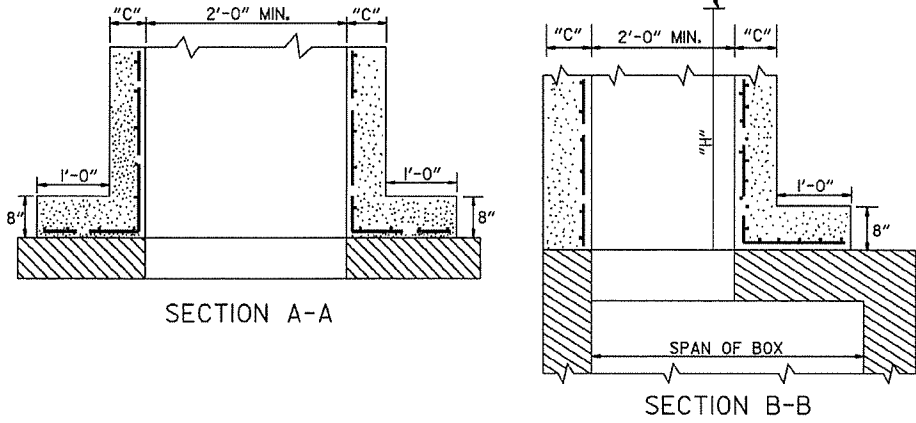


NOTE: REINF. BARS TO BE #4 BARS ON 6" CTRS. WITH 1/2" MIN. COVER. THIS TYPE DROP INLET TO BE USED WHERE NOT SUBJECTED TO TRAFFIC.

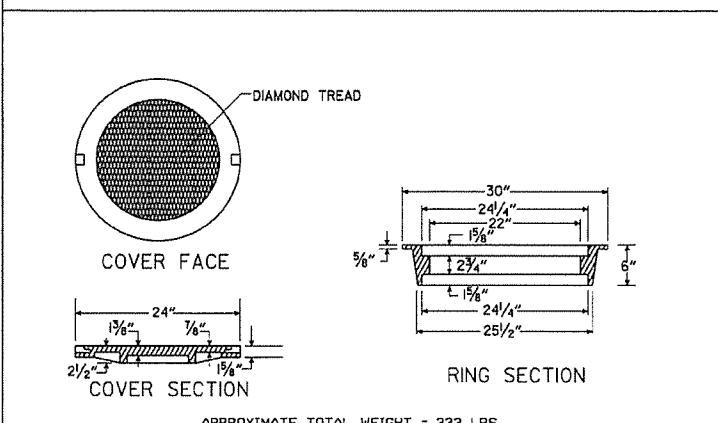


APPROX. WEIGHT = 11 LBS. (CAST IRON)  
 PLAN  
 NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

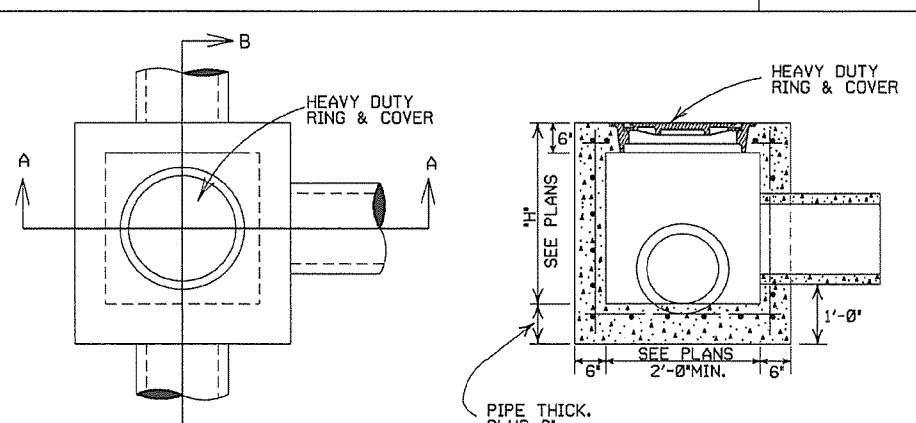
DETAIL OF STEP FOR DROP INLET



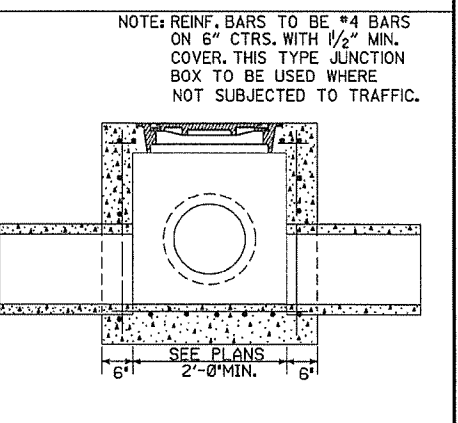
METHOD OF CONSTRUCTING DROP INLET ON EXISTING R.C. BOX CULVERT



HEAVY DUTY RING & COVER

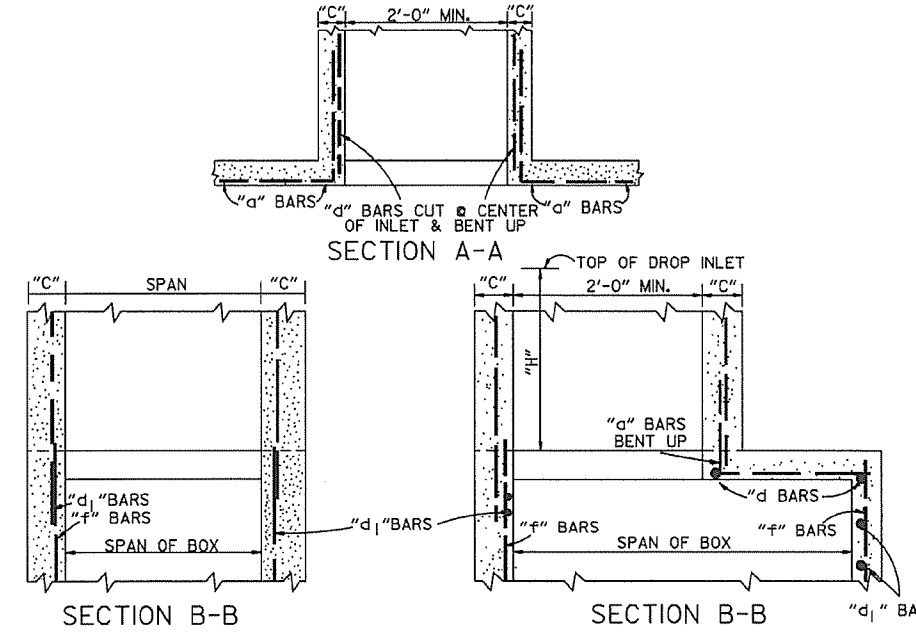


JUNCTION BOX (TYPE E)



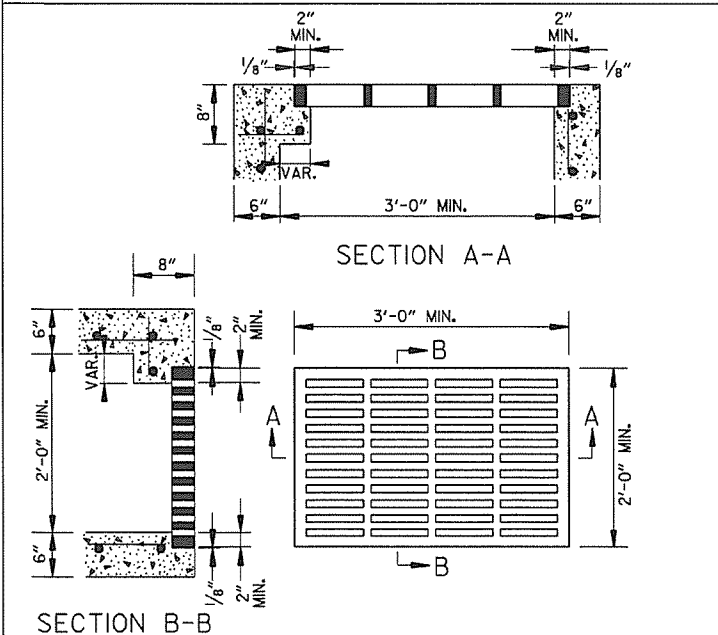
SECTION B-B

NOTE: REINF. BARS TO BE #4 BARS ON 6" CTRS. WITH 1/2" MIN. COVER. THIS TYPE JUNCTION BOX TO BE USED WHERE NOT SUBJECTED TO TRAFFIC.



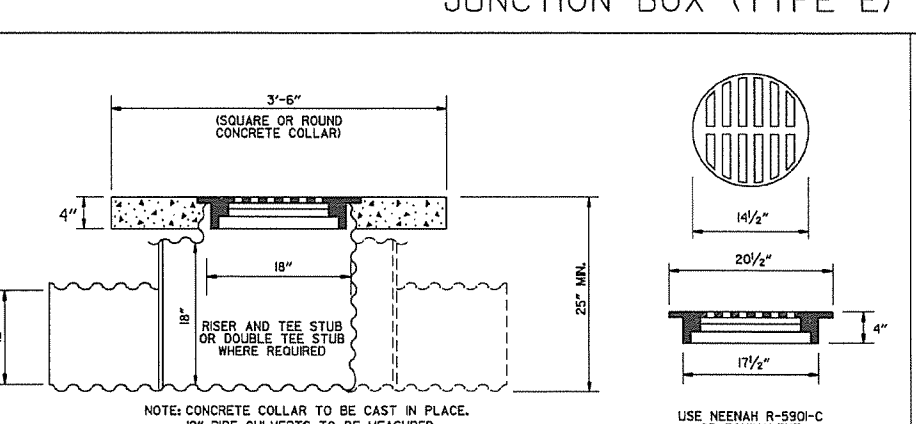
METHOD OF CONSTRUCTING DROP INLET ON NEW R.C. BOX CULVERT

NOTE: "C" DIMENSIONS AND REINFORCING BAR SIZES, SHALL CONFORM TO THOSE SHOWN ON STANDARD DRAWING FOR DROP INLET.



GRATE FOR TYPE E DROP INLET

APPROXIMATE MINIMUM WATERWAY OPENING = 260 SQ. IN.



DETAIL OF YARD DRAIN

- GENERAL NOTES:
- ALL EXPOSED CORNERS SHALL BE 3/4" CHAMFERED.
  - STEPS SHALL BE INSTALLED ON 16" CENTERS ON ALL INLETS 4'-0" HIGH OR OVER, OR AS APPROVED BY THE ENGINEER.
  - EXPANSION JOINT MATERIAL SHALL BE 3/4" PREFORMED FIBER.
  - 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.
  - GRATE AND FRAME SHALL NOT BE PAINTED.
  - GRATE SHALL BE BICYCLE SAFE.
  - HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
  - 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.
  - HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
  - 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	

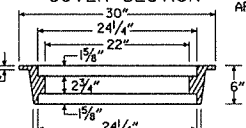
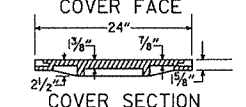
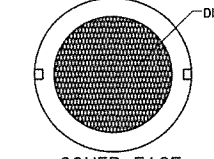
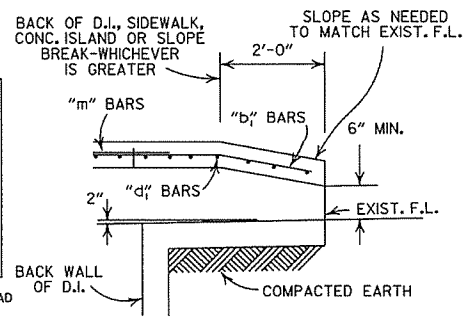
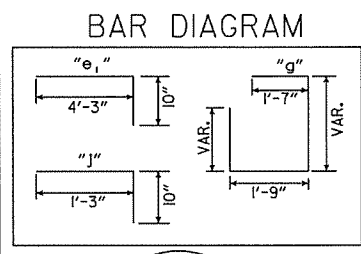
ARKANSAS STATE HIGHWAY COMMISSION  
 DETAILS OF DROP INLETS  
 & JUNCTION BOXES  
 STANDARD DRAWING FPC-9

PIPE SIZE	MIN. WIDTH	HEIGHT 5'-0"		PLUS OR MINUS PER LIN. FT. OF HEIGHT		4'-0"		8'-0"	
		CLASS A CONC.	REINF. STEEL	CLASS A CONC.	REINF. STEEL	CLASS A CONC.	REINF. STEEL	CLASS A CONC.	REINF. STEEL
		CU. YDS.	POUNDS	CU. YDS.	POUNDS	CU. YDS.	POUNDS	CU. YDS.	POUNDS
18"	2'-6"	1.77	156	0.28	22	0.58	38	0.87	72
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				
						DEDUCT FROM QUANTITY COMPUTED FOR EACH EXTENSION ADDED.			
						0.04	3		

NOTE: QUANTITIES ARE APPROXIMATE AND ARE SHOWN FOR BIDDER INFORMATION ONLY.

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

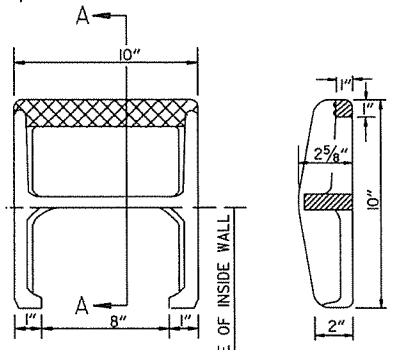
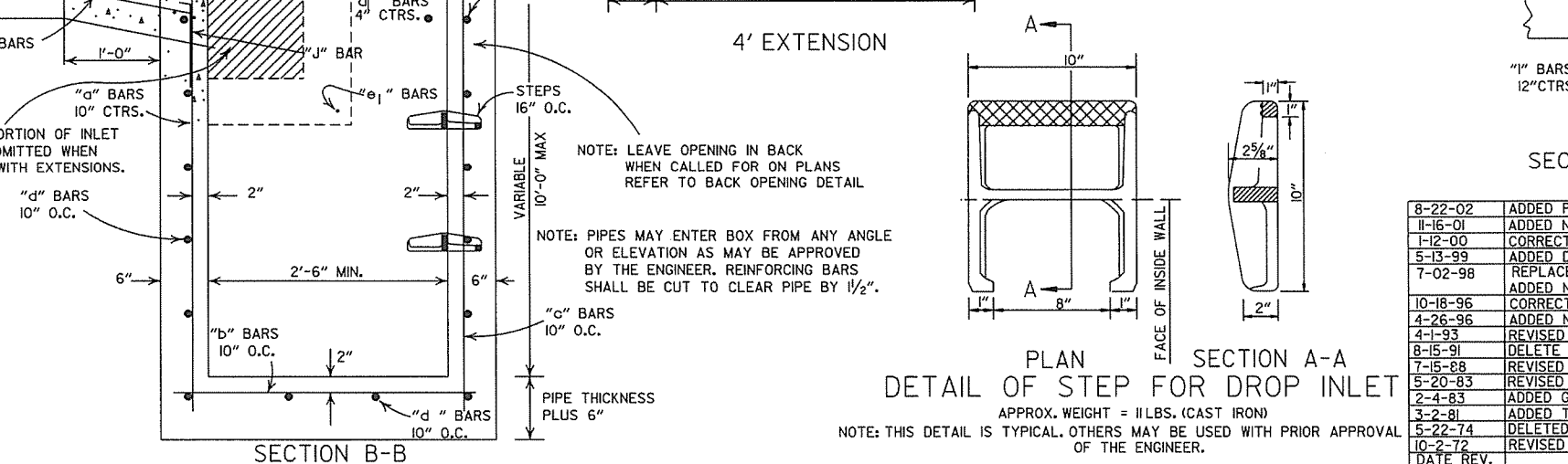
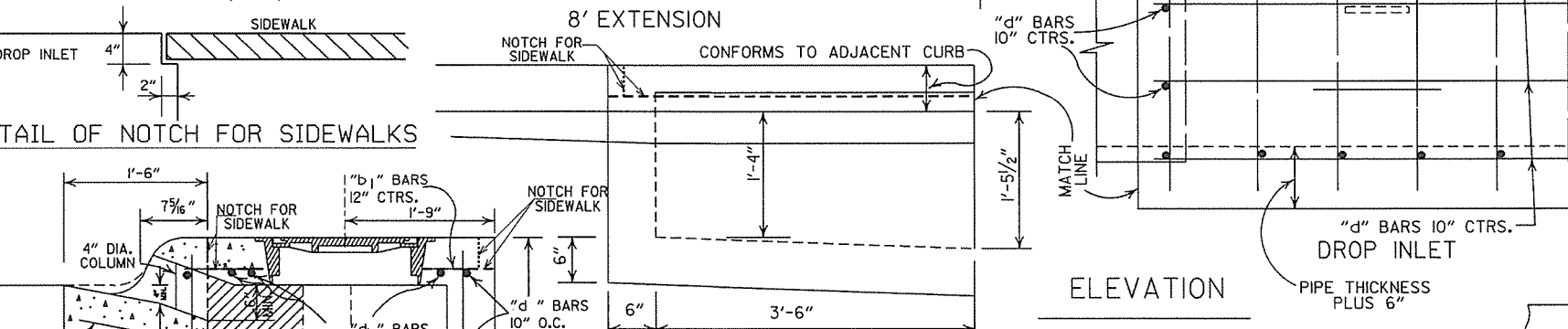
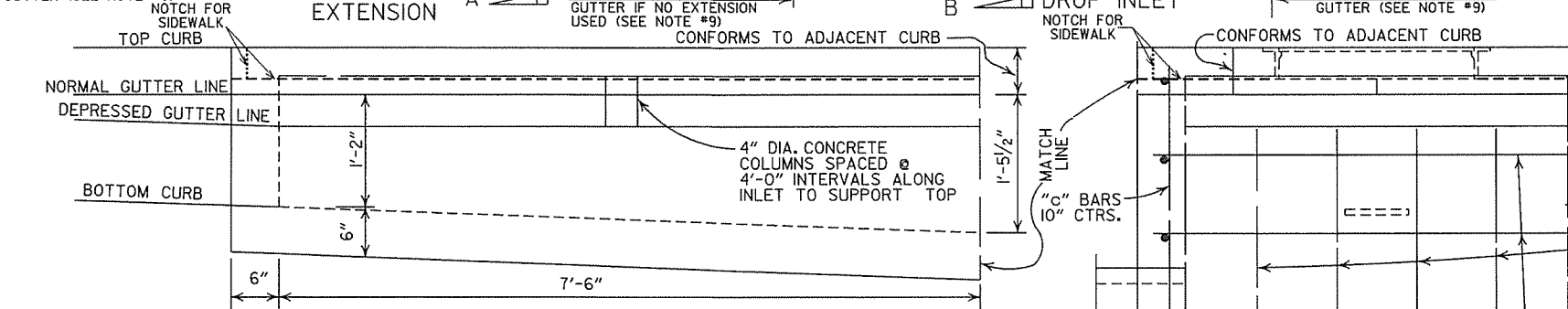
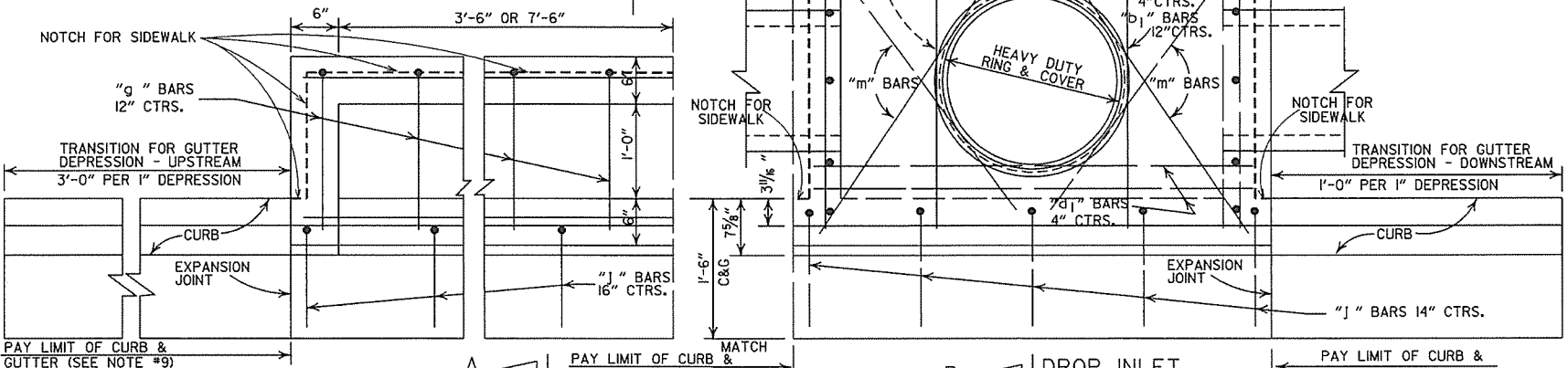


APPROXIMATE TOTAL WEIGHT = 333 LBS.

HEAVY DUTY RING & COVER

- GENERAL NOTES:
- ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFER.
  - STEPS SHALL BE INSTALLED IN ALL INLETS 4'-0" HIGH AND OVER OF AS APPROVED BY THE ENGINEER.
  - ALL REINF. BARS SHALL BE #4 AND HAVE 1/2" COVER.
  - DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
  - THIS DROP INLET MAY BE CONSTRUCTED ON NEW OR EXISTING R.C. BOX CULVERT AS SHOWN ON F.P.C.-9.
  - 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).
  - HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
  - DURING CONSTRUCTION OF THE ROADWAY THE CONTRACTOR SHALL MAINTAIN DRAINAGE INTO OR AROUND THE DROP INLET AS APPROVED BY THE ENGINEER.
  - PAYMENT FOR CURB AND/OR 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.
  - 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 M103 CLASS 35B & AASHTO M306.
  - HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
  - 4"x2" NOTCH SHALL BE FORMED IN ALL DROP INLETS TO SUPPORT SIDEWALK CONSTRUCTION. REFER TO DETAIL OF NOTCH FOR SIDEWALKS.
  - 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.

NOTE: WHEN AN INLET IS PLACED ADJACENT TO CONCRETE PAVEMENT, THE GUTTER DEPRESSION SHALL BE FORMED IN CONCRETE PAVEMENT.



PLAN DETAIL OF STEP FOR DROP INLET

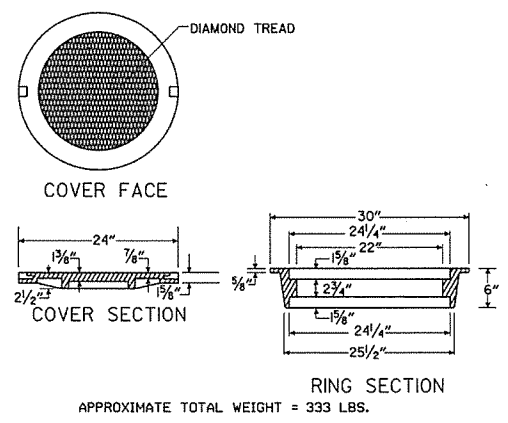
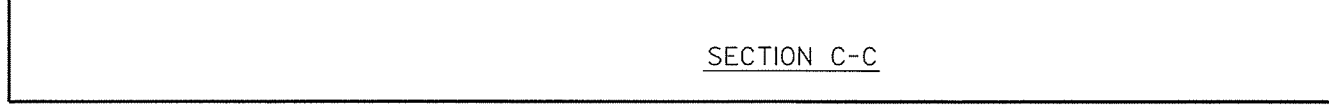
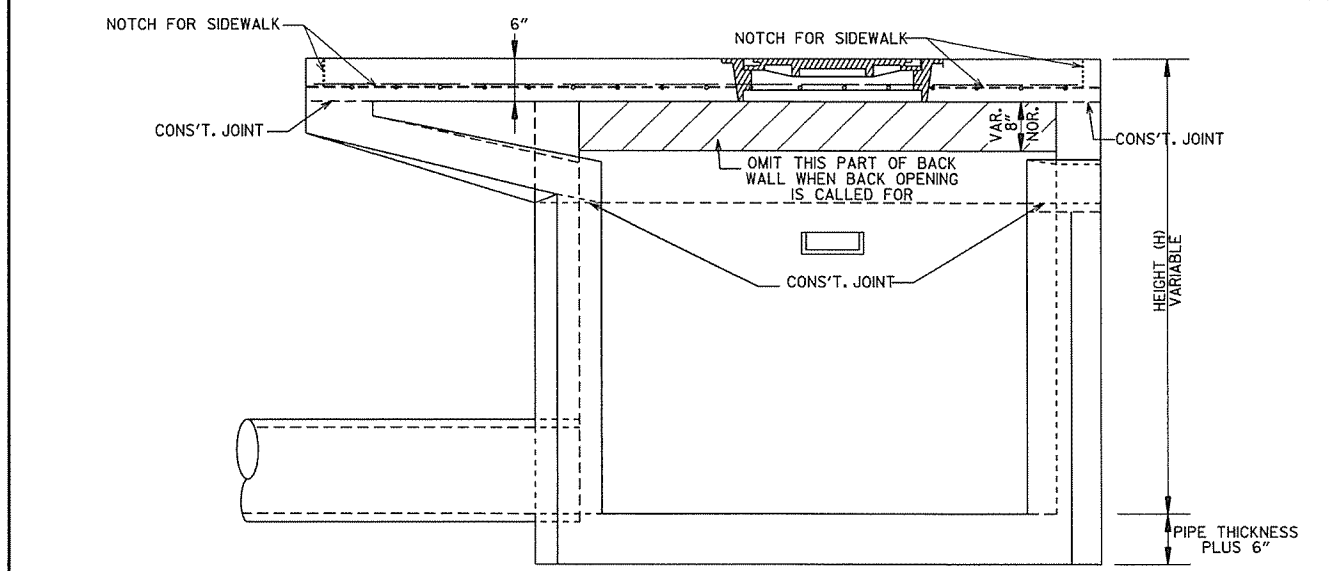
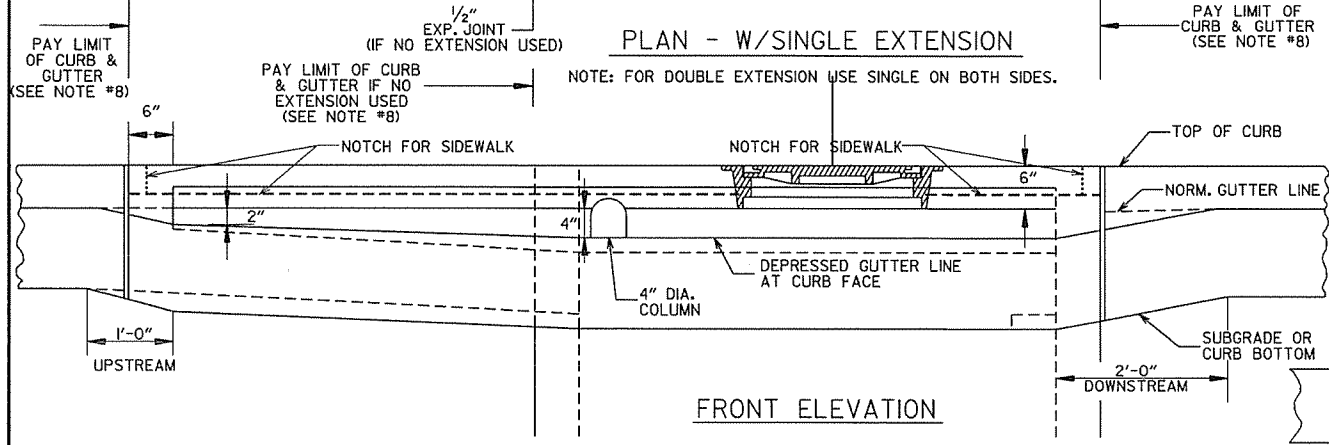
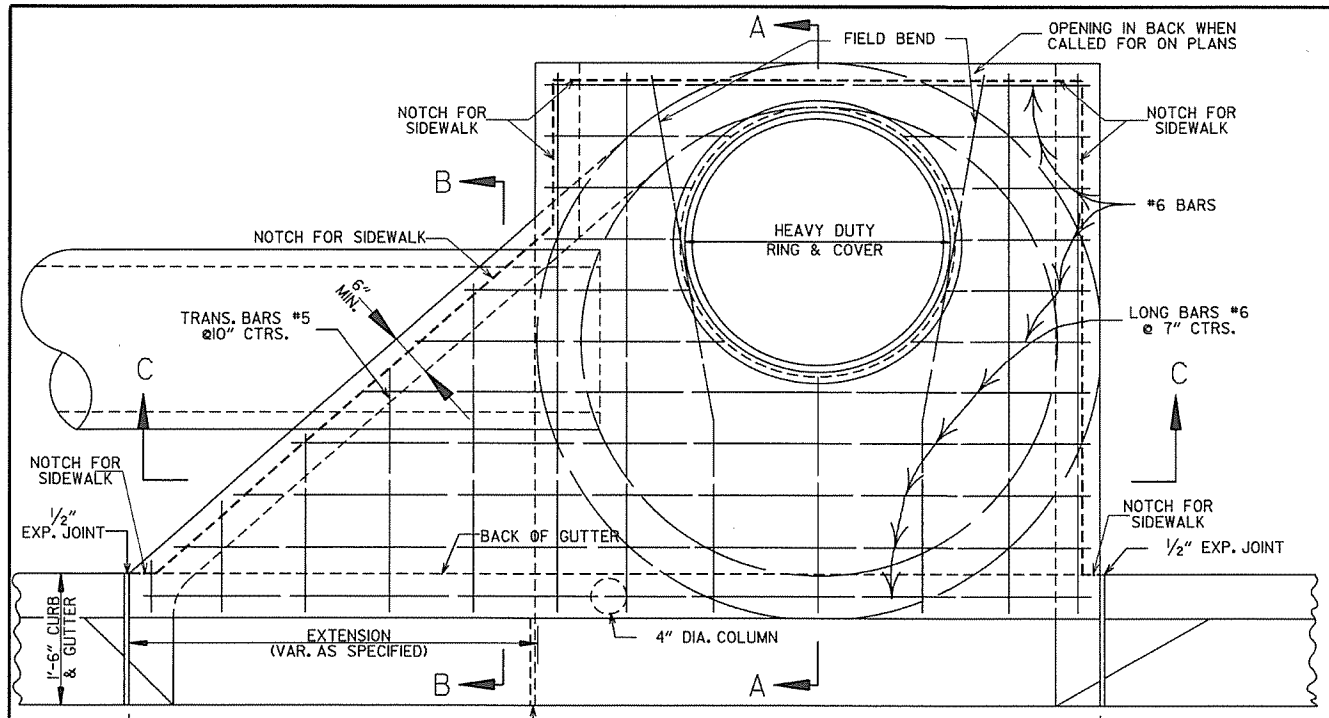
APPROX. WEIGHT = 11 LBS. (CAST IRON)  
NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

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	

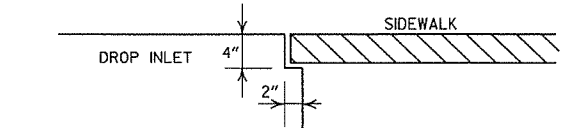
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS (TYPE C)

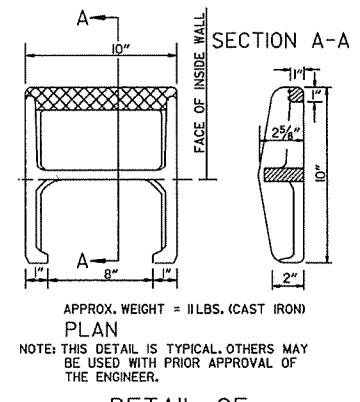
STANDARD DRAWING FPC-9E



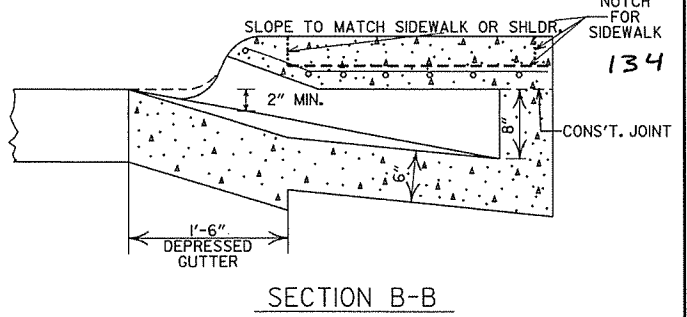
1. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M105 CLASS 35B & AASHTO M306.
2. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
3. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.



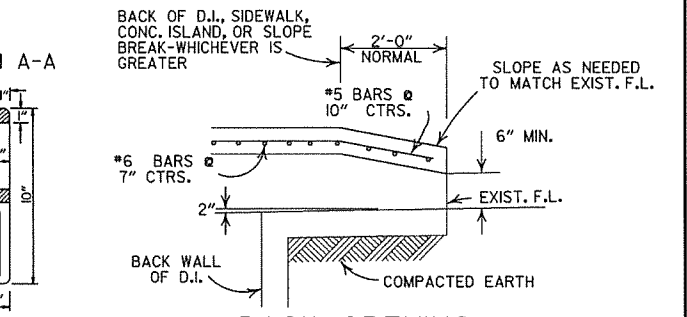
DETAIL OF NOTCH FOR SIDEWALKS



DETAIL OF STEP FOR DROP INLET



SECTION B-B



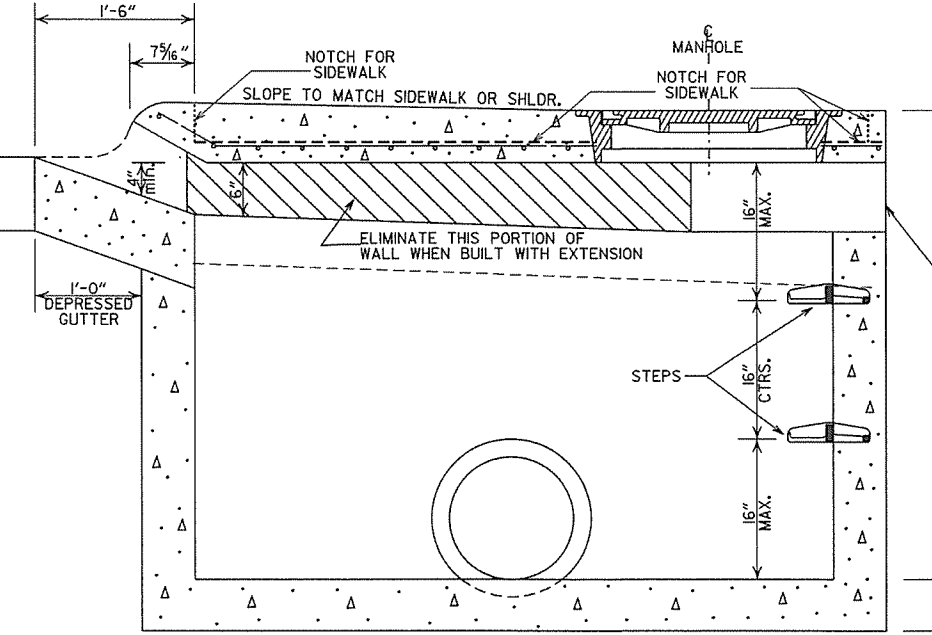
BACK OPENING

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 3/4" 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. 1/2" 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

MINIMUM WALL THICKNESS			
DIA. OF D.I.	DIA. OF OUTLET PIPE	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"



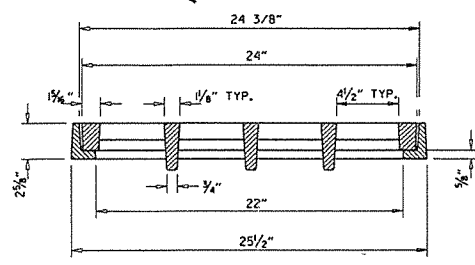
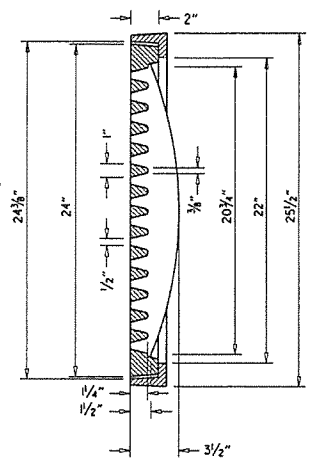
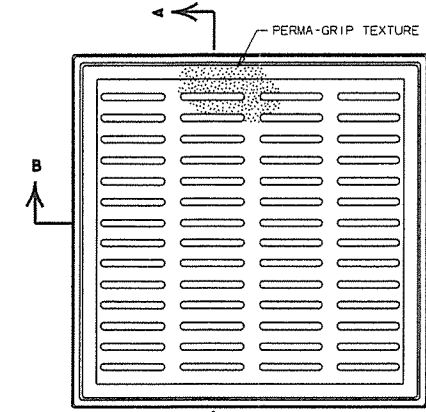
SECTION A-A

DATE	REVISIONS	DATE FILMED
18-22-02	ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B	
11-16-01	ADDED NOTE 13	
11-12-00	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	
4-26-95	ADDED NOTE 11, ALL OPENING DIMENSION	
10-12-95	CORRECTED #6 BAR SPACING	
7-20-95	CORRECTED DIAMETER OF D.I. IN BOX	
11-10-95	TYPE C TO MO (OPEN BACK DETAIL)	
11-4-95	REVISED GENERAL NOTES	
4-1-93	REV. BACK OPEN DETAIL & NOTE	
11-15-91	REVISED NOTES 11/2 & ADDED BK. OPEN DETAIL	
11-10-89	ADDED NOTE NO. 12	11-3-94
4-1-89		8-15-91
11-10-89		12-10-93
4-23-89	ADDED NOTE & MINIMUM WALL THICKNESS	5-13-22-89
7-16-88	ADDED EXTEND NOTE TO SECTION A-A	6-16-7-16-88
11-15-87	MODIFIED WALL THICKNESS	7-6-2-19-87
6-17-87	ISSUED	4-2-87

ARKANSAS STATE HIGHWAY COMMISSION

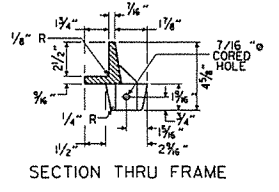
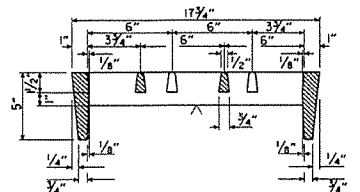
DETAILS OF DROP INLET (TYPE MO)

STANDARD DRAWING FPC-9M



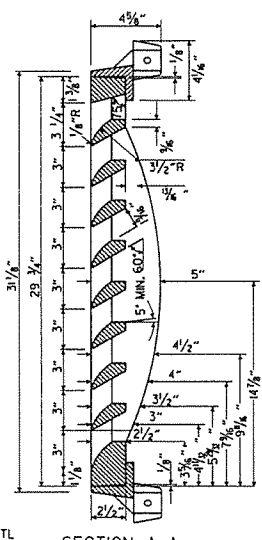
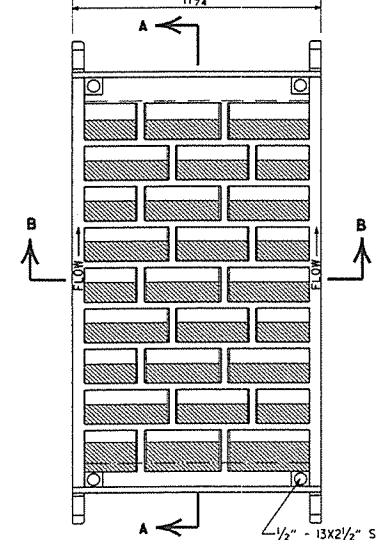
- SECTION A-A**  
GENERAL NOTES (PEDESTRIAN GRATE & FRAME)
1. THE PEDESTRIAN GRATE SHALL BE ORIENTED IN THE TOP OF THE DROP INLET SO THAT THE 1/2" OPENINGS ARE PERPENDICULAR TO THE PATH OF PEDESTRIAN TRAVEL.
  2. THE PEDESTRIAN GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE 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 21 LBS.
  6. THE MINIMUM WATERWAY OPENING SHALL BE 122 SQ. IN.

**SECTION B-B**  
DETAILS OF PEDESTRIAN GRATE AND FRAME



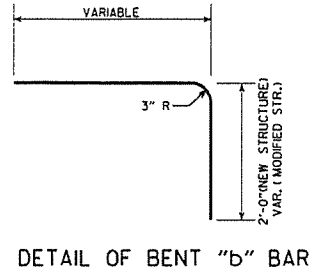
**SECTION B-B**

**SECTION THRU FRAME**

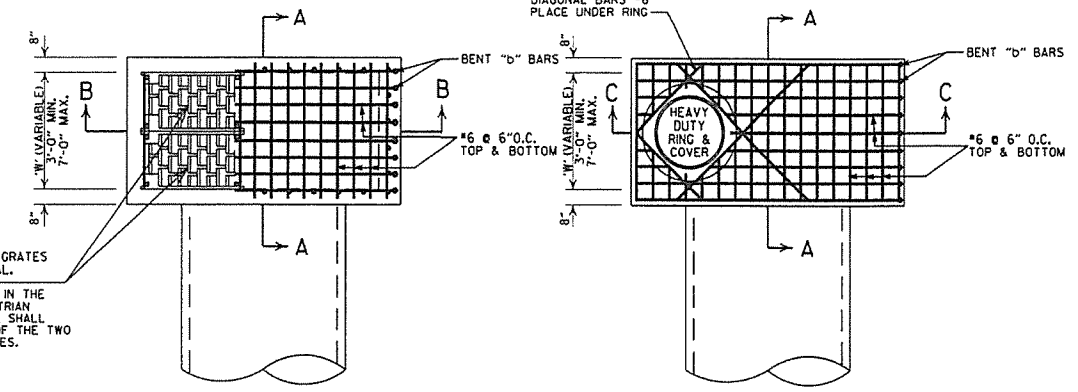


**SECTION A-A**  
DETAILS OF RIBBED VANE GRATE AND FRAME

- 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.

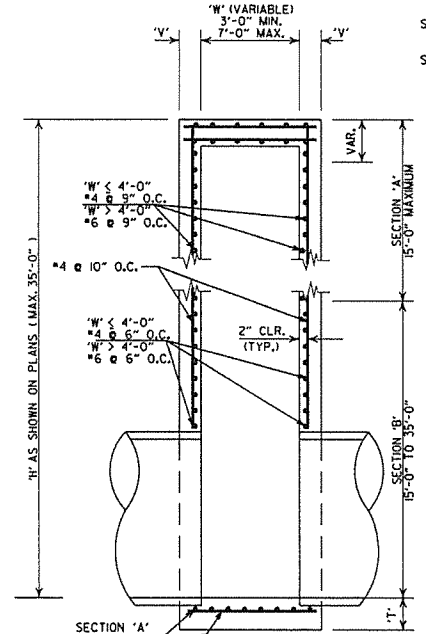


**DETAIL OF BENT "b" BAR**

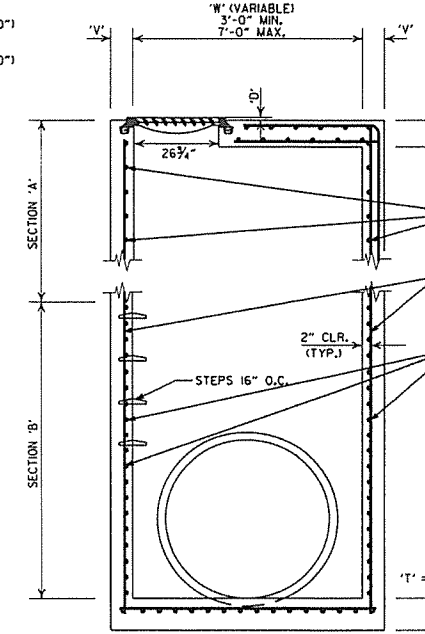


TWO RIBBED VANE GRATES WITH FRAME NORMAL.  
WHEN CALLED FOR IN THE PLANS, ONE PEDESTRIAN GRATE WITH FRAME SHALL BE USED IN LIEU OF THE TWO RIBBED VANE GRATES.

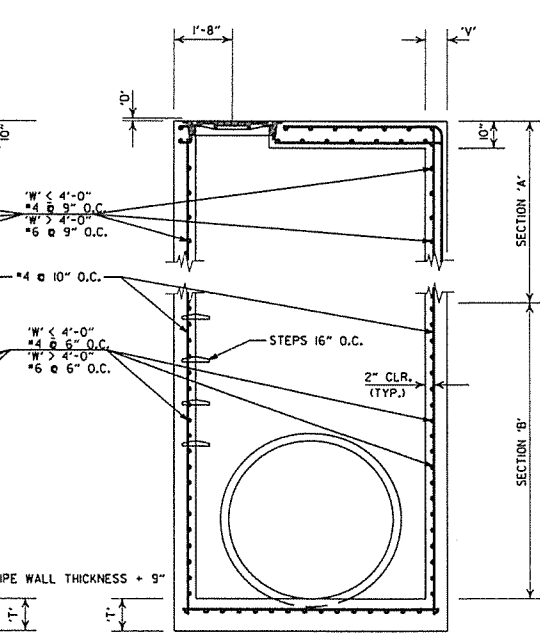
**SECTION 'A'**  
"V" = 8"  
**SECTION 'B'** (W < 4'-0")  
"V" = 8"  
**SECTION 'B'** (W > 4'-0")  
"V" = 10"



**SECTION A-A**  
DETAILS OF DROP INLET (TYPE ST)



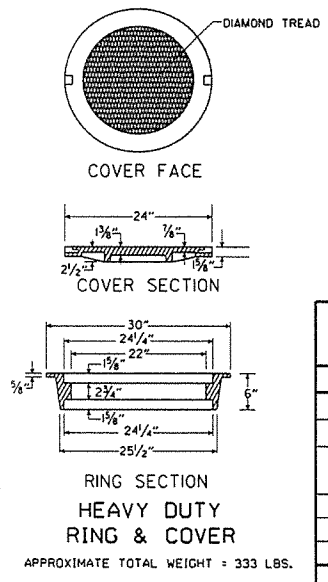
**SECTION B-B**



**SECTION C-C**  
DETAILS OF JUNCTION BOX (TYPE ST)

- GENERAL NOTES (TYPE ST DROP INLET & JUNCTION BOX)**
1. THE "D" DIMENSION SHALL MATCH THE FINAL LIFT OF 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 3/4" CHAMFER.

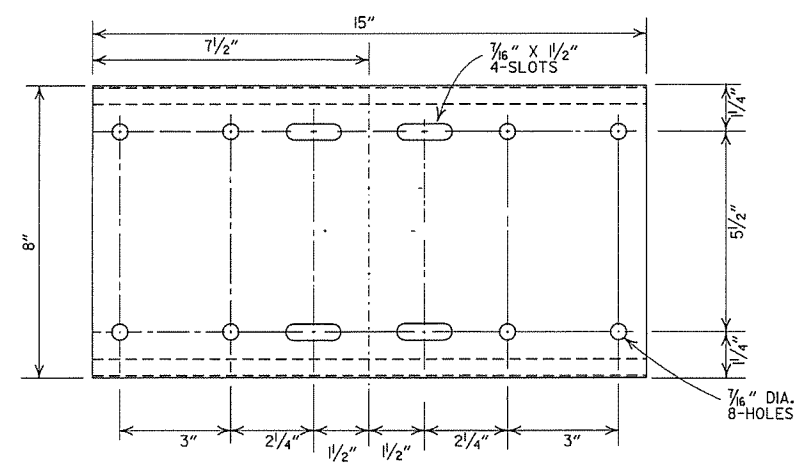
- GENERAL NOTES (HEAVY DUTY RING & COVER):**
1. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
  2. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
  3. HEAVY 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.



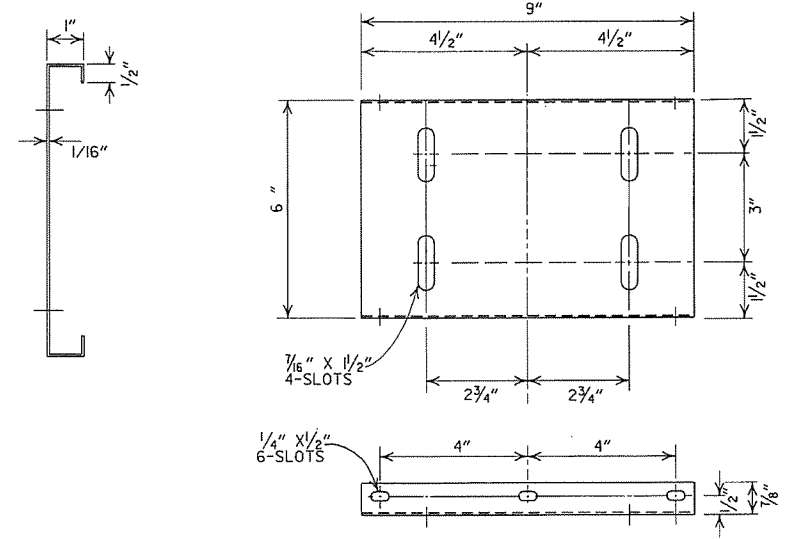
**RING SECTION HEAVY DUTY RING & COVER**  
APPROXIMATE TOTAL WEIGHT = 333 LBS.

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

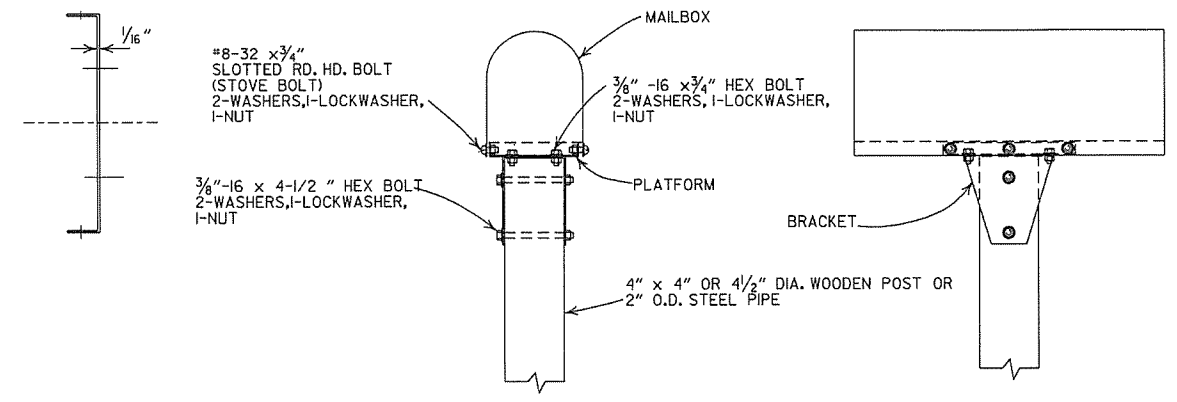
ARKANSAS STATE HIGHWAY COMMISSION  
**DETAILS OF DROP INLET & JUNCTION BOX (TYPE ST)**  
STANDARD DRAWING FPC-9S



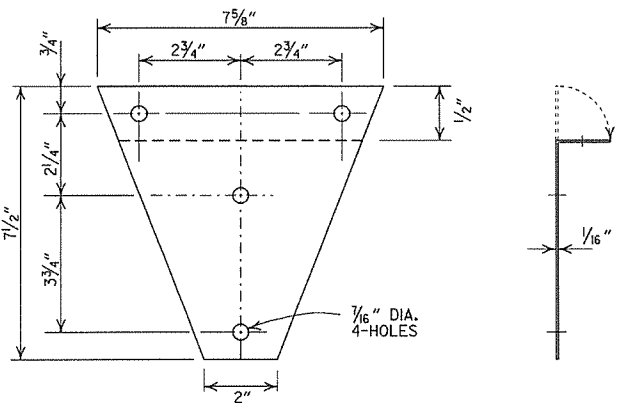
SHELF



PLATFORM

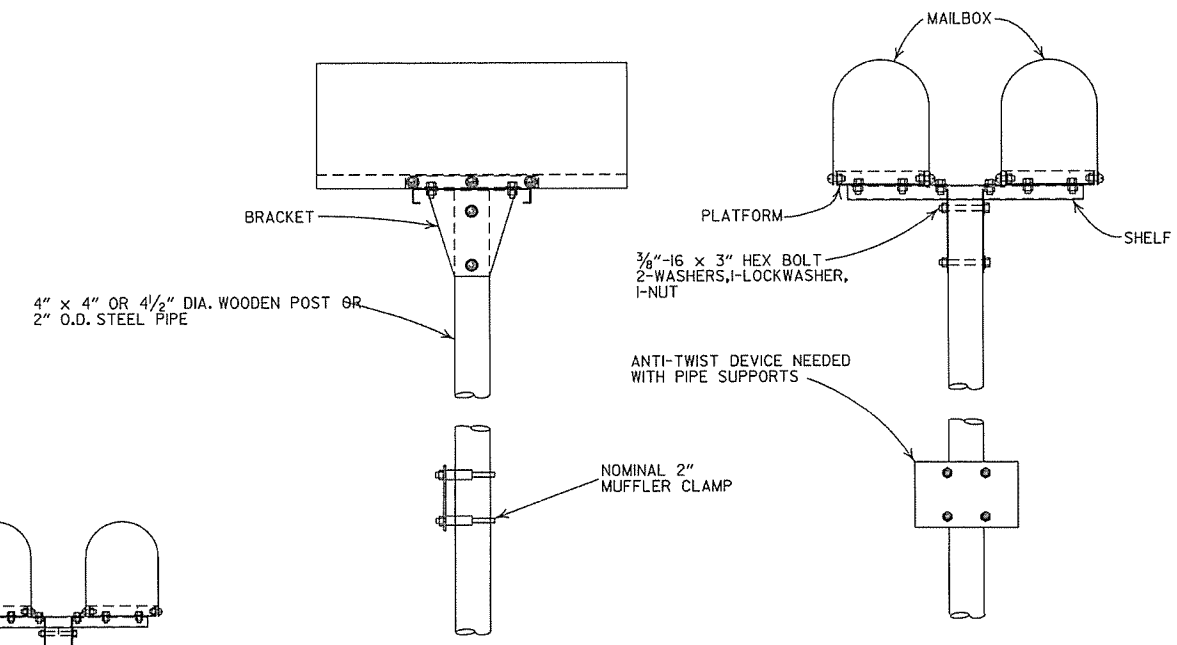


SINGLE INSTALLATION

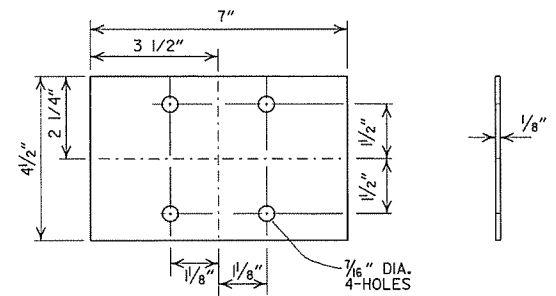


BRACKET

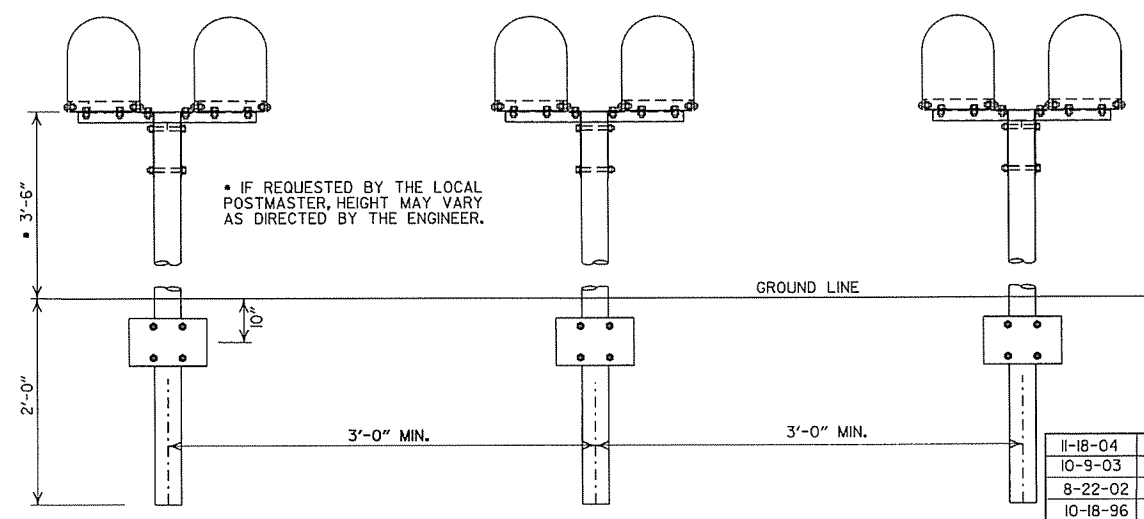
- GENERAL NOTES**
1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
  2. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
  3. MAILBOX SHELF, BRACKET & PLATFORM SHALL BE GALVANIZED OR PAINTED STEEL, HOWEVER TREATED WOOD MAY BE USED WITH WOODEN POSTS. THE WOODEN SHELF, BRACKET & PLATFORM SHALL BE A MINIMUM OF 3/4" THICK AND SHALL BE ASSEMBLED WITH BOLTS OF THE APPROPRIATE LENGTH WITH SIX 8 X 3/4" 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.



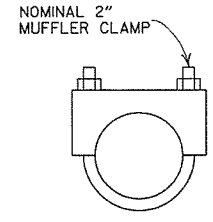
DOUBLE INSTALLATION



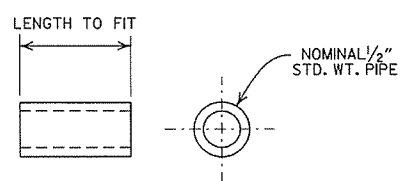
ANTI-TWIST PLATE



SPACING FOR MULTIPLE POST INSTALLATION



CLAMP



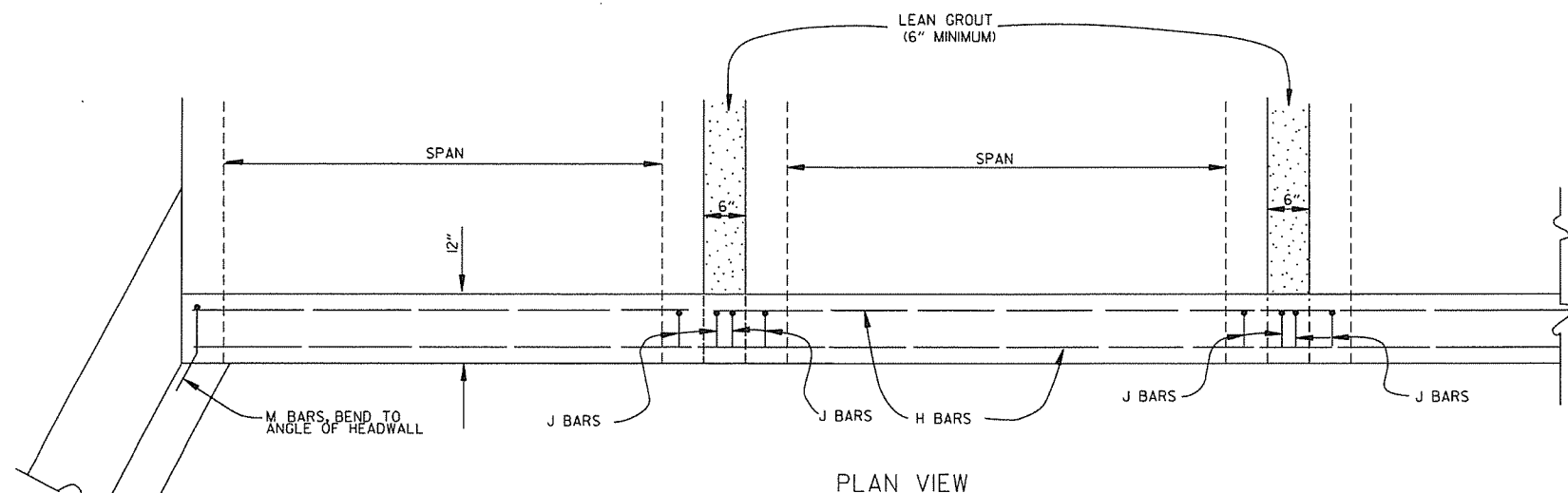
SPACER

DATE	FILED	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	120-7-15-88	ISSUED

ARKANSAS STATE HIGHWAY COMMISSION

MAILBOX DETAILS

STANDARD DRAWING MB-1



BAR LIST

BAR	NO.	SIZE	LENGTH	BAR BENDING DIAGRAM
H	2	#4	•	
I	•	#4	•	
J	•	#4	1'-5"	
L	•	#4	3'-2"	
M	•	#4	1'-8"	

• NOTE: LENGTH AND NUMBER OF BARS VARIES WITH SIZE OF CULVERT

GENERAL NOTES

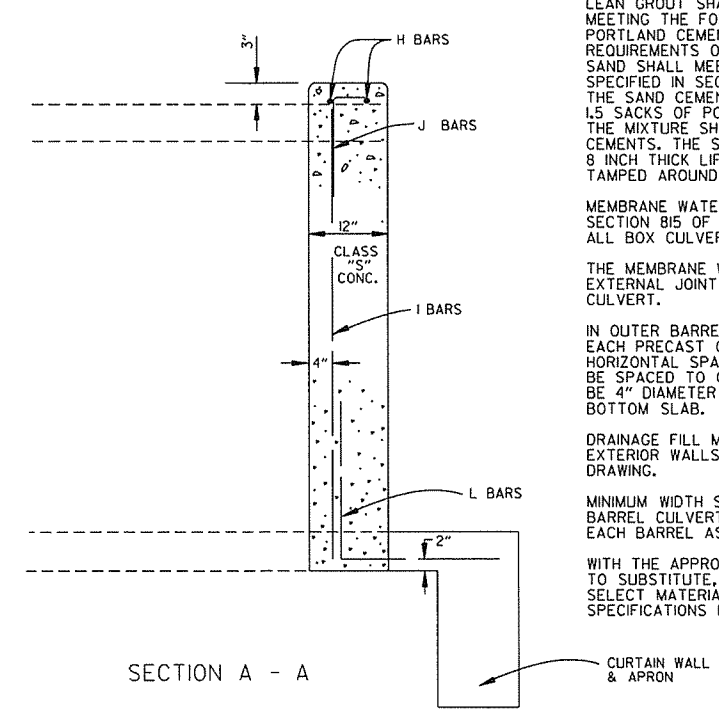
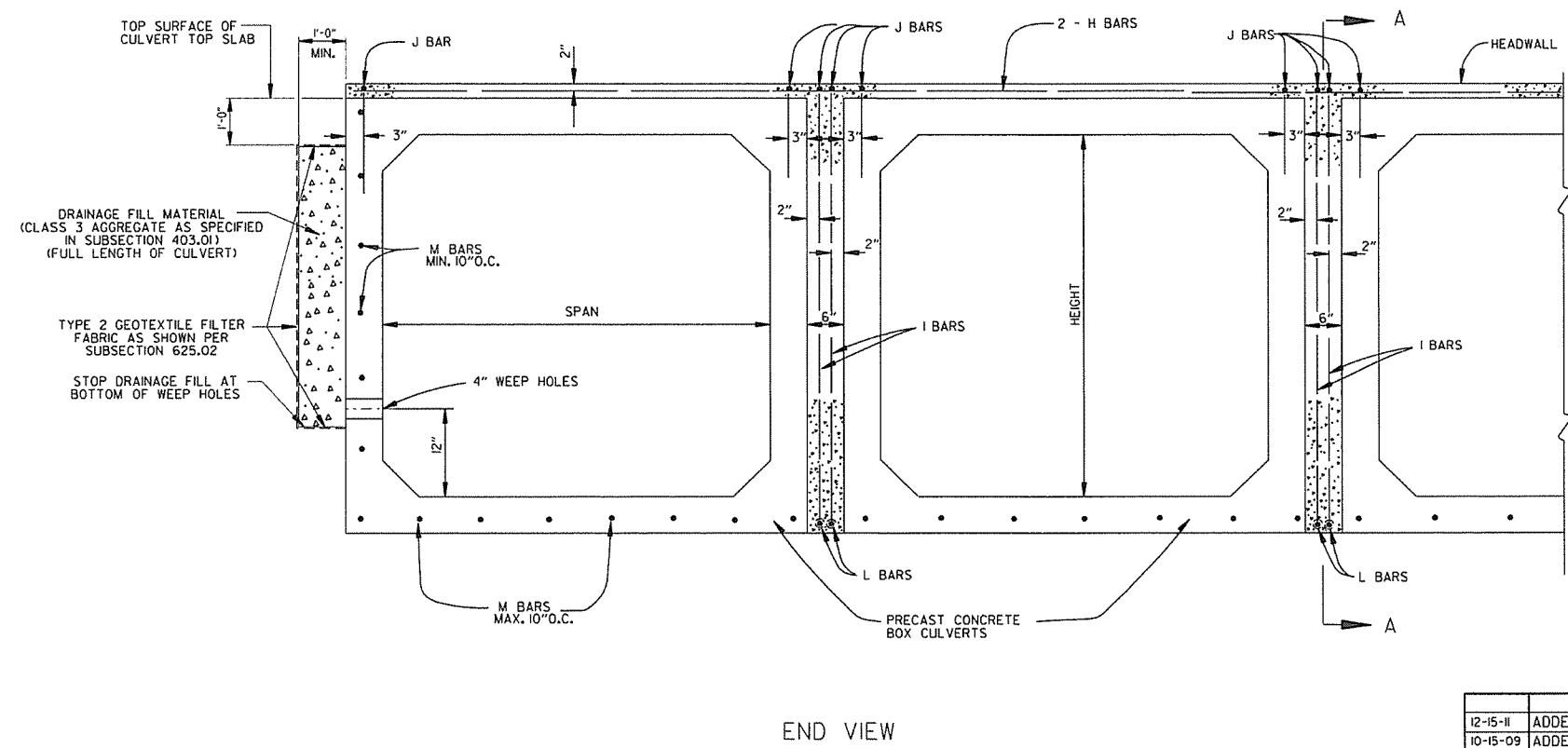
WINGS, CURTAIN WALLS AND APRONS SHALL BE TIED TO THE PRECAST CULVERT SECTION BY CASTING BARS IN CULVERT END SECTIONS AS SHOWN OR BY DOWELING AND GROUTING. J BARS AND M BARS SHALL BE EMBEDDED A MINIMUM OF 10" IN PRECAST BOX.

WINGS, FOOTINGS, APRONS AND CURTAIN WALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE WING DRAWING, STEEL AND CONCRETE QUANTITIES WILL BE ADJUSTED TO FIT THE IN-PLACE WIDTH & HEIGHT OF THE PRECAST CONCRETE BOX CULVERTS.

ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFERS.

WINGWALLS AND FOOTINGS MAY BE ADJUSTED IN THE FIELD AS DIRECTED BY THE ENGINEER.

ALL CONCRETE, REINFORCING STEEL, LEAN GROUT, MEMBRANE WATERPROOFING, DRAINAGE FILL MATERIAL, GEOTEXTILE FILTER FABRIC, LABOR, MATERIALS AND EQUIPMENT REQUIRED FOR INSTALLING PRECAST BOX CULVERTS WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR THE ITEMS AS SPECIFIED IN SECTION 607 OF THE STANDARD SPECIFICATIONS.



LEAN GROUT SHALL CONSIST OF A SAND CEMENT MIXTURE MEETING THE FOLLOWING REQUIREMENTS: PORTLAND CEMENT SHALL BE TYPE I AND SHALL MEET THE REQUIREMENTS OF AASHTO M 85. SAND SHALL MEET THE REQUIREMENTS OF FINE AGGREGATE AS SPECIFIED IN SECTION 802.02 OF THE STANDARD SPECIFICATIONS. THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE. THE MIXTURE SHALL CONTAIN SUFFICIENT WATER TO HYDRATE THE CEMENTS. THE SAND CEMENT MIXTURE SHALL BE PLACED IN MAXIMUM 8 INCH THICK LIFTS, LOOSE MEASURE, AND THOROUGHLY RODDED AND TAMPED AROUND BOX TO THOROUGHLY FILL ALL VOIDS.

MEMBRANE WATERPROOFING CONFORMING TO THE REQUIREMENTS OF SECTION 815 OF THE STANDARD SPECIFICATIONS SHALL BE APPLIED TO ALL BOX CULVERT JOINTS.

THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

IN OUTER BARRELS, ONE WEEP HOLE IS REQUIRED IN EXTERIOR WALLS OF EACH PRECAST CULVERT SECTION. WEEP HOLES SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" IN THE ASSEMBLED CULVERT AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE BOTTOM SLAB.

DRAINAGE FILL MATERIAL WITH GEOTEXTILE FABRIC IS REQUIRED AT THE EXTERIOR WALLS OF THE ASSEMBLED CULVERT. SEE DETAILS ON THIS DRAWING.

MINIMUM WIDTH SHALL BE 12" (6" ON EACH SIDE OF JOINT). ON MULTIPLE BARREL CULVERTS, MEMBRANE WATERPROOFING SHALL BE APPLIED TO EACH BARREL AS DESCRIBED ABOVE.

WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, FLOWABLE SELECT MATERIAL CONFORMING TO SECTION 206 OF THE STANDARD SPECIFICATIONS IN LIEU OF LEAN GROUT.

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	13 1/2	14
21	26	26	15 1/2	16
24	28 1/2	29	18	18
30	36 1/4	36	22 1/2	23
36	43 3/8	44	26 3/8	27
42	51 1/8	51	31 7/16	31
48	58 1/2	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	77 1/2	77
108	138	138	87 1/2	87
120	154	154	96 3/8	97
132	168 3/4	169	106 1/2	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.

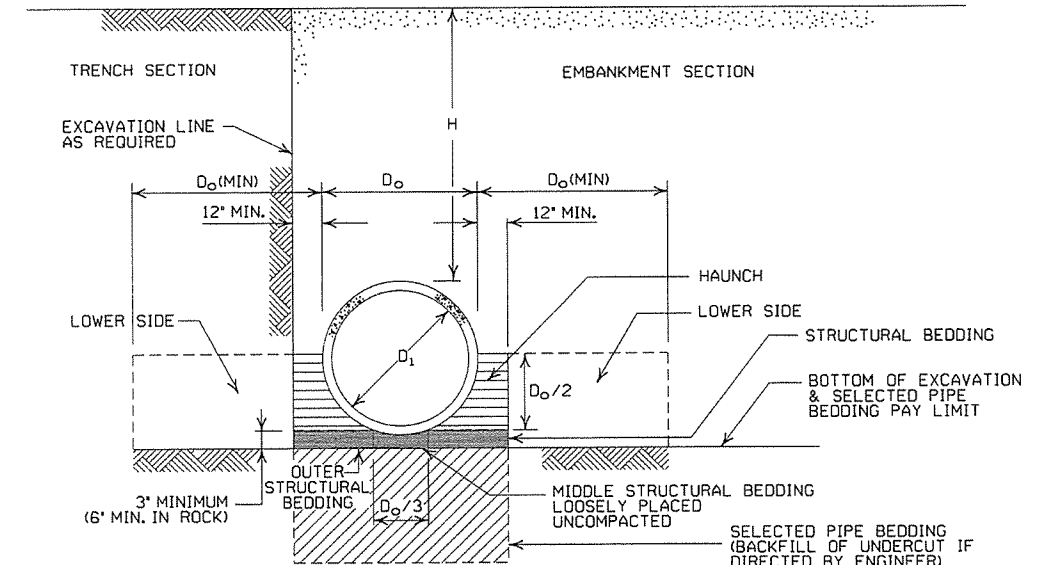
- LEGEND -

- D<sub>1</sub> = NORMAL INSIDE DIAMETER OF PIPE
- D<sub>o</sub> = OUTSIDE DIAMETER OF PIPE
- H = FILL COVER HEIGHT OVER PIPE (FEET)
- MIN. = MINIMUM
- UNDISTURBED SOIL

INSTALLATION TYPE	MATERIAL REQUIREMENTS FOR HAUNCH AND STRUCTURAL BEDDING
TYPE 1	AGGREGATE BASE COURSE (CLASS 5 OR CLASS 7)
TYPE 2	SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4) OR TYPE 1 INSTALLATION MATERIAL*
TYPE 3**	AASHTO CLASSIFICATION A-1 THRU A-6 SOIL OR TYPE 1 OR 2 INSTALLATION MATERIAL

\* SM-3 WILL NOT BE ALLOWED.

\*\* MATERIALS SHALL NOT INCLUDE ORGANIC MATERIALS OR STONES LARGER THAN 3 INCHES.



EMBANKMENT AND TRENCH INSTALLATIONS

1. MATERIAL IN THE HAUNCH AND OUTER STRUCTURAL BEDDING SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. FOR TRENCHES WITH WALLS OF NATURAL SOIL, THE DENSITY OF THE SOIL IN THE LOWER SIDE ZONE SHALL BE AS FIRM AS THE 95% DENSITY REQUIRED FOR THE HAUNCH, IF THE EXISTING SOIL DOES NOT MEET THIS CRITERIA, IT SHALL BE REMOVED AND RECOMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OF MATERIAL USED.
3. FOR EMBANKMENTS, THE MATERIAL IN THE LOWER SIDE ZONE SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

GENERAL NOTES

1. CONCRETE PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION), WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. CONCRETE PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. ALL PIPE SHALL CONFORM TO SECTION 606. CIRCULAR R.C. PIPE CULVERTS SHALL CONFORM TO AASHTO M170, R.C. ARCH PIPE CULVERTS SHALL CONFORM TO AASHTO M206 AND HORIZONTAL ELLIPTICAL PIPE CULVERTS SHALL CONFORM TO AASHTO M207.
4. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT.
5. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS.
6. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
7. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
8. NOT MORE THAN ONE LIFTING HOLE MAY BE PROVIDED IN CONCRETE PIPE TO FACILITATE HANDLING. HOLE MAY BE CAST IN PLACE, CUT INTO THE FRESH CONCRETE AFTER FORMS ARE REMOVED, OR DRILLED. THE HOLE SHALL NOT BE MORE THAN TWO INCHES IN DIAMETER OR TWO INCHES SQUARE. CUTTING OR DISPLACEMENT OF REINFORCEMENT WILL NOT BE PERMITTED. SPALLED AREAS AROUND THE HOLE SHALL BE REPAIRED IN A WORKMANLIKE MANNER. LIFTING HOLE SHALL BE FILLED WITH MORTAR, CONCRETE, OR OTHER METHOD AS APPROVED BY THE ENGINEER.
9. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
10. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS THE HAUNCH), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."

MINIMUM HEIGHT OF FILL "H" OVER CIRCULAR R.C. PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE			
	CLASS III	CLASS IV	CLASS V	CLASS V
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
TYPE 1	21	32	50
TYPE 2	16	25	39
TYPE 3	12	20	30

NOTE: IF FILL HEIGHT EXCEEDS 50 FEET, A SPECIAL DESIGN CONCRETE PIPE WILL BE REQUIRED USING TYPE 1 INSTALLATION.

MAXIMUM HEIGHT OF FILL "H" OVER R.C. ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE	
	CLASS III	CLASS IV
TYPE 2	13	21
TYPE 3	10	16

NOTE: TYPE 1 INSTALLATION WILL NOT BE ALLOWED FOR ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS.

MINIMUM HEIGHT OF FILL "H" OVER R.C. ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE	
	CLASS III	CLASS IV
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.

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED FOR LRFD DESIGN SPECIFICATIONS	
5-18-00	REVISED TYPE 3 BEDDING & ADDED NOTE	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE PIPE CULVERT  
FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1

CORRUGATED STEEL PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINIMUM 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
2 3/8 INCH BY 1/2 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

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.

CORRUGATED ALUMINUM PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINIMUM 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
2 3/8 INCH BY 1/2 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

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

CORRUGATED METAL PIPE ARCHES

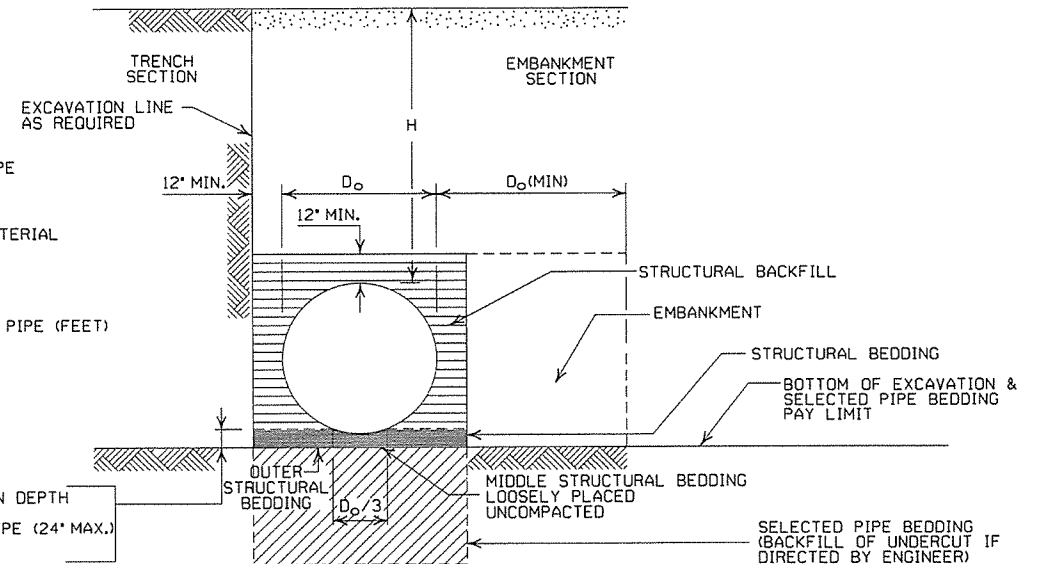
EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINIMUM CORNER RADIUS (INCHES)	STEEL				ALUMINUM			
			MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)		MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)			
				INSTALLATION			INSTALLATION			
				TYPE 1	TYPE 1		TYPE 1	TYPE 1		
2 3/8 INCH BY 1/2 INCH CORRUGATION RIVETED, WELDED, 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	3 1/2	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	0.135	3	14		
66	77x52	8	0.168	3	15					
72	83x57	9	0.168	3	15	0.164	3	15		
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			

① FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

② WHERE THE STANDARD 2 3/8" x 1/2" 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.

- LEGEND -

- D<sub>o</sub> = OUTSIDE DIAMETER OF PIPE
- MAX. = MAXIMUM
- MIN. = MINIMUM
- [Symbol] = STRUCTURAL BACKFILL MATERIAL
- [Symbol] = UNDISTURBED SOIL
- [Symbol] = EQUIV. DIA. = EQUIVALENT DIAMETER
- H = FILL COVER HEIGHT OVER PIPE (FEET)



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. INSTALLATION TYPE 1 SHALL BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 2 3/8" x 1/2" 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 (CURRENT EDITION), WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. 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."

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1	
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 1/4 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 WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF HDPE 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"
42"	7'-0"	10'-6"
48"	8'-0"	12'-0"

NOTE:  
18" MIN. (18" - 30" DIAMETERS)  
24" MIN. (36" - 48" DIAMETERS)  
MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

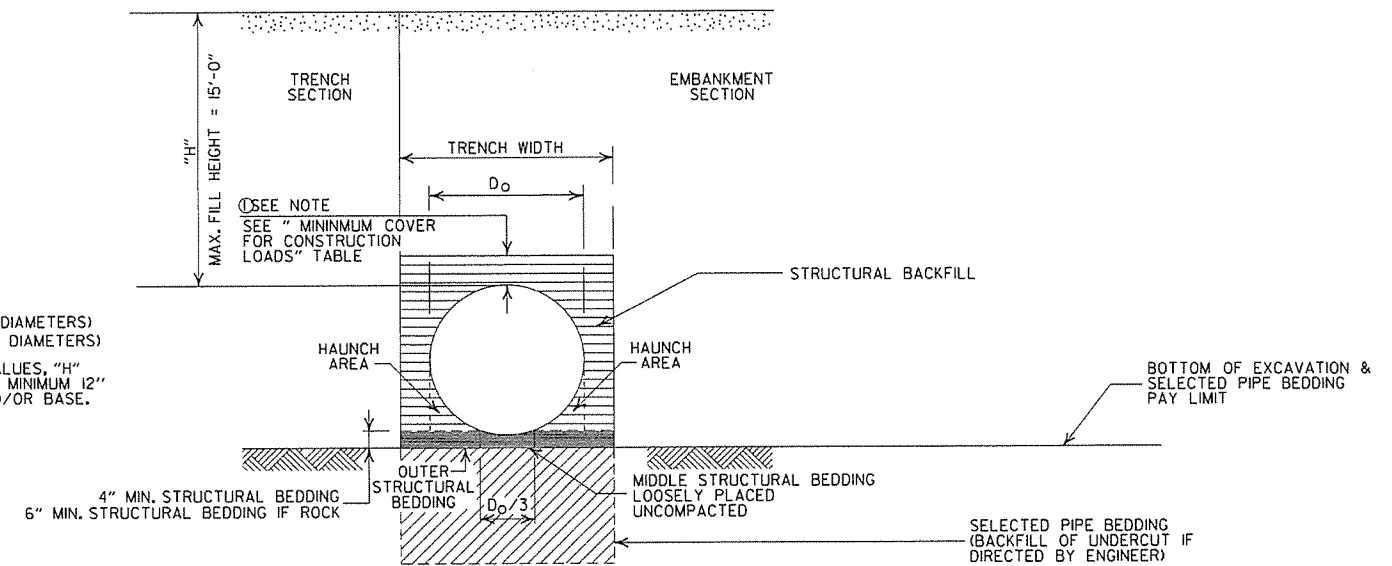
MULTIPLE INSTALLATION OF HIGH DENSITY POLYETHYLENE PIPES

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 COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	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"

MINIMUM 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

- I. 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.

- LEGEND -

H = FILL HEIGHT (FT.)  
D<sub>o</sub> = OUTSIDE DIAMETER OF PIPE  
MAX. = MAXIMUM  
MIN. = MINIMUM

==== = STRUCTURAL BACKFILL MATERIAL  
===== = UNDISTURBED SOIL

GENERAL NOTES

1. PIPE SHALL CONFORM TO AASHTO M294, TYPE S. INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT 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.

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE I.	
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



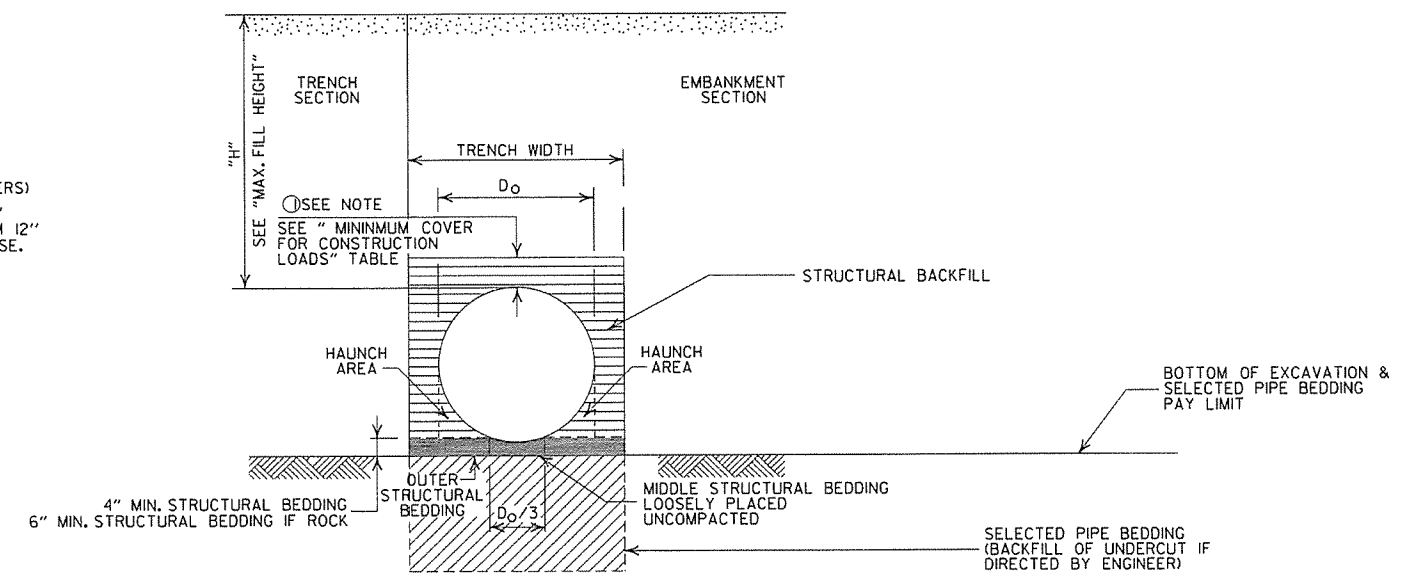
INSTALLATION TYPE	•• MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 2	•SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4)

- 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 1/8 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 PVC PIPE.

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.



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

I. 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.

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"

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"

② MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.

MULTIPLE INSTALLATION OF  
PVC PIPES

PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"

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 I2454. INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT 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 -

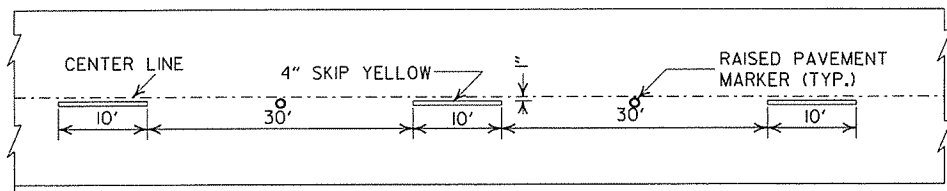
- H = FILL HEIGHT (FT.)
- D<sub>o</sub> = OUTSIDE DIAMETER OF PIPE
- MAX. = MAXIMUM
- MIN. = MINIMUM
- ===== = STRUCTURAL BACKFILL MATERIAL
- ||||| = UNDISTURBED SOIL

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE I.	
12-15-11	REV GENERAL NOTES & MINIMUM COVER NOTE; DELETED SM3 MATERIAL	
11-17-10	ISSUED	

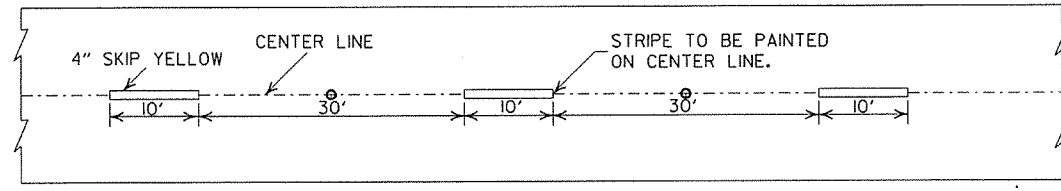
ARKANSAS STATE HIGHWAY COMMISSION
PLASTIC PIPE CULVERT (PVC F949)
STANDARD DRAWING PCP-2

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.

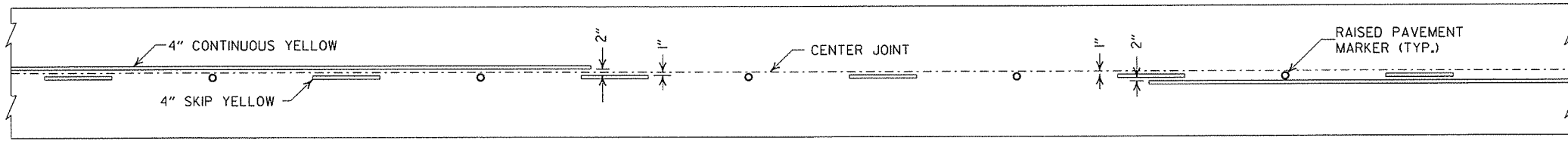


CONCRETE PAVEMENT

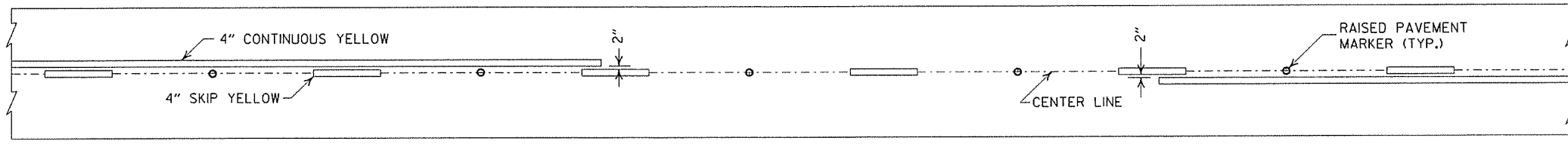


ASPHALT PAVEMENT

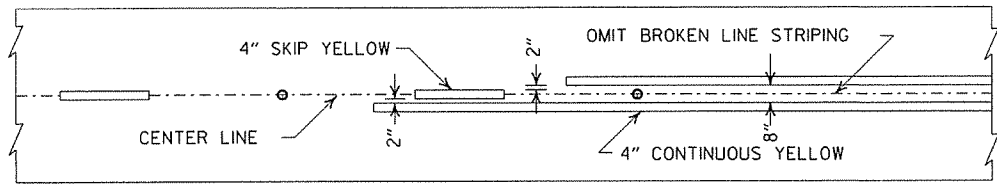
BROKEN LINE STRIPING



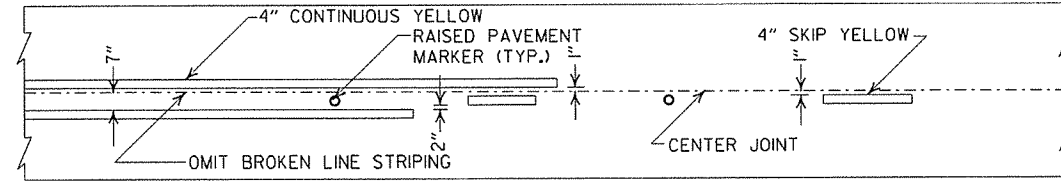
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

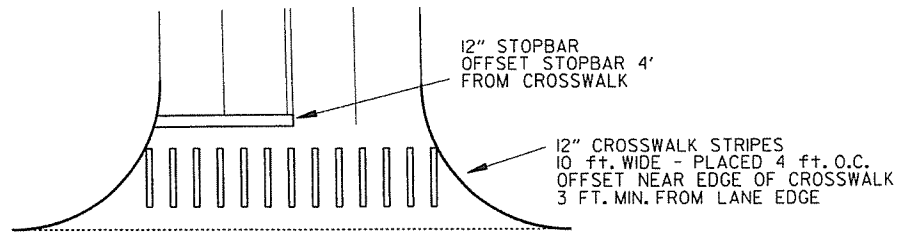


ASPHALT PAVEMENT



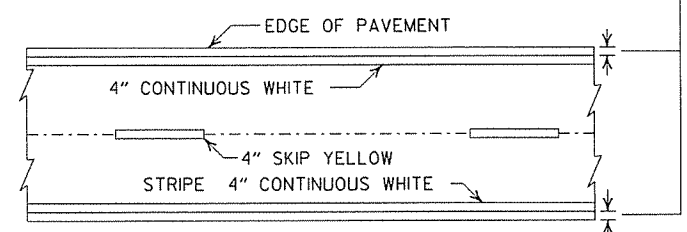
CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

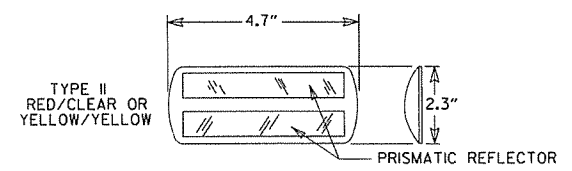


CROSSWALK AND STOPBAR DETAILS

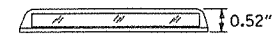
2" FOR ASPHALT OR CONCRETE PAVEMENT  
6" FOR BITUMINOUS SURFACE TREATMENT



PAVEMENT EDGE LINE MARKING



NOTE:  
THE RED LENS OF THE TYPE II R.P.M. SHALL FACE THE INCORRECT TRAFFIC MOVEMENT.



DETAIL OF STANDARD RAISED PAVEMENT MARKERS

GENERAL NOTES:  
THIS DRAWING SHOULD BE CONSIDERED AS TYPICAL ONLY AND THE FINAL LOCATION OF THE STRIPING AND RAISED PAVEMENT MARKERS SHALL BE DETERMINED BY THE ENGINEER.  
THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST REVISION.

NOTE:  
DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE AHTD QUALIFIED PRODUCTS LIST.

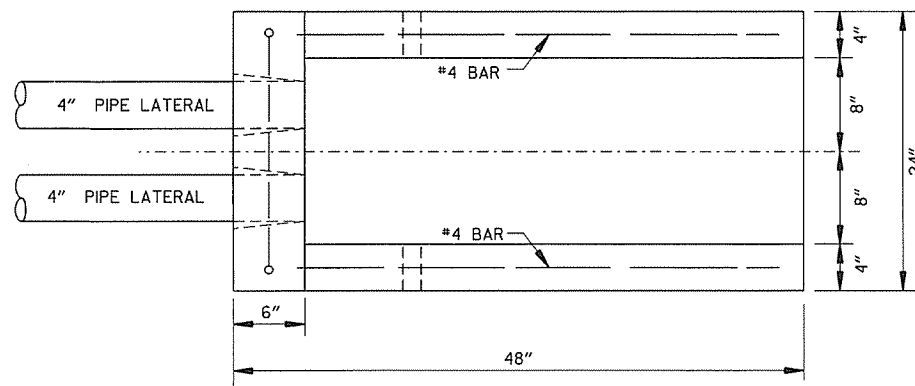
DATE	REVISION	FILMED
9-12-13	REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS	
11-17-10	REVISED GENERAL NOTES & REMOVED PLOWABLE PVMT MRKRS	
11-18-04	REVISED NOTE 2 & GENERAL NOTES	
8-22-02	ADDED CROSSWALK & STOPBAR DTLS.	
7-02-98	ADDED DETAILS OF STD. RAISED PAV'T. MARKERS	
4-26-96	REV. NOTES 3&4; ADDED R.P.M.	
9-30-80	DRAWN	1-9-30-80

ARKANSAS STATE HIGHWAY COMMISSION

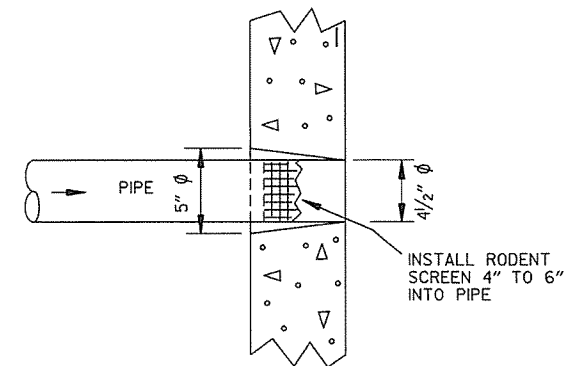
PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

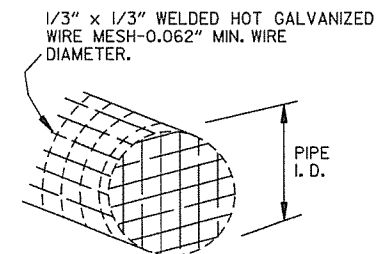
NOTE:  
 1. GRANULAR BACKFILL TO BE SUBSIDIARY TO PIPE UNDERDRAIN.  
 2. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.  
 3. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC, LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.



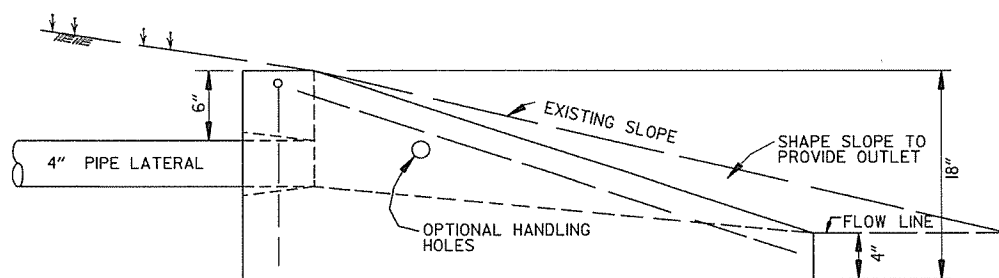
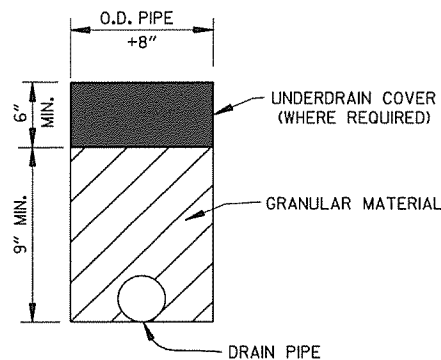
PLAN VIEW



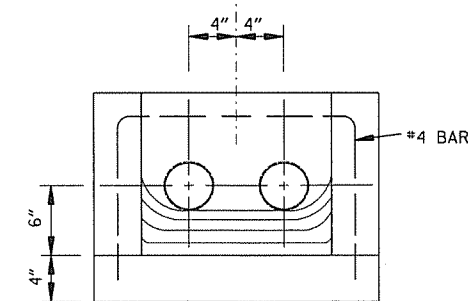
DETAIL OF HOLE FOR 4" PIPE



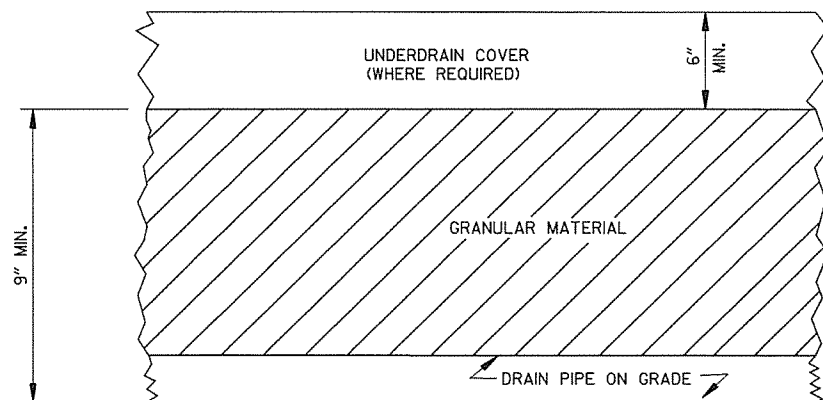
DETAIL OF RODENT SCREEN



SIDE VIEW

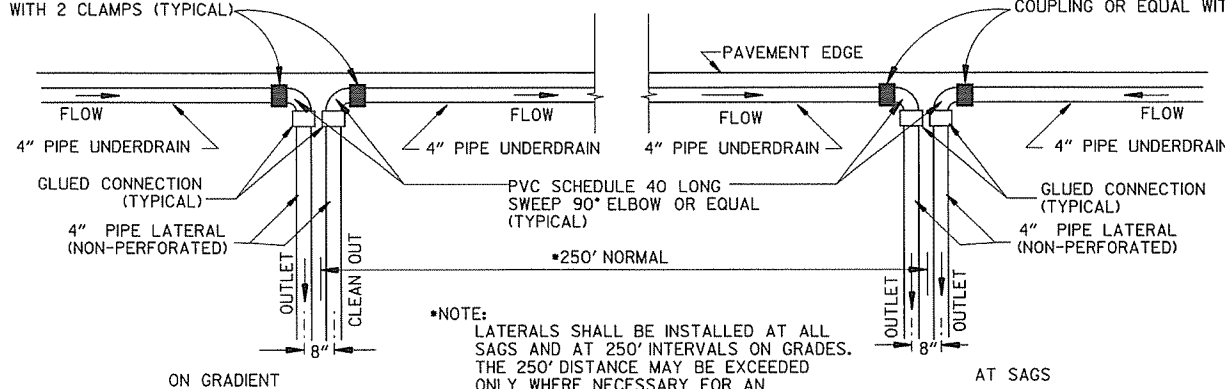


FRONT VIEW



DETAILS OF PIPE UNDERDRAIN

UNDERDRAIN OUTLET PROTECTORS  
 FERNCO 1056-44 (4" CI/PLASTIC) OR FERNCO 1051-44 (4" AC/DI OR 4" CI/PLASTIC) COUPLING OR EQUAL WITH 2 CLAMPS (TYPICAL)



\*NOTE:  
 LATERALS SHALL BE INSTALLED AT ALL SAGS AND AT 250' INTERVALS ON GRADES. THE 250' DISTANCE MAY BE EXCEEDED ONLY WHERE NECESSARY FOR AN ACCEPTABLE OUTLET.

DETAIL OF PIPE UNDERDRAIN LATERALS WHEN PLACED ALONG PAVEMENT EDGE  
 NOTE: PVC PIPE FOR LATERALS SHALL MEET THE REQUIREMENTS OF ASTM D 1785 (LATEST REVISION) FOR SCHEDULE 40 PIPE.

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; 5 1/2" TO 5"	
11-22-95	REVISED LATERALS	
7-20-95	REVISED LATERALS & ADDED NOTE	
11-3-94	REVISED FOR DUAL LATERALS	11-3-94
10-1-92	SUBSTITUTED GEOTEXTILE	10-1-92
8-15-91	ADDED POLYETHYLENE PIPE	8-15-91
11-8-90	DELETED ALTERNATE NOTE	11-8-90
1-25-90	ADDED 4" SNAP ADAPTER	1-25-90
11-30-89	DEL. (SUBGRADE); ADDED (WHERE REQUIRED)	11-30-89
7-15-88	ISSUED P.L.M.	647-7-15-88

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF PIPE UNDERDRAIN

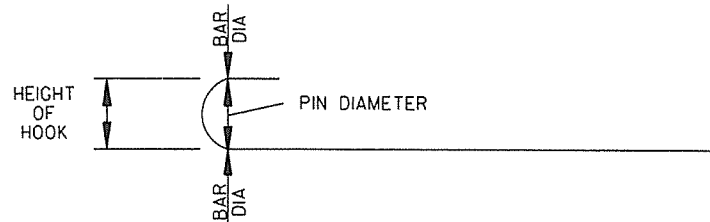
STANDARD DRAWING PU-1



STEEL FABRICATION: REINFORCING STEEL FABRICATION SHALL CONFORM TO THE DIMENSIONS LISTED IN THE TABLE BELOW:

BAR SIZE	PIN DIAMETER	HOOK EXTENSION "K"
3	2 1/4"	4"
4	3"	4 1/2"
5	3 3/4"	5"
6	4 1/2"	6"
7	5 1/4"	7"
8	6"	8"

IF THE OVERALL HEIGHT OF THE HOOK (SEE DIAGRAM BELOW) FOR A "b", "b1", "b2" or "b3" BENT BAR IS GREATER THAN THE CORRESPONDING TOP OR BOTTOM SLAB THICKNESS, LESS 2 3/4 INCHES, EACH BENT BAR SHALL BE REPLACED WITH ONE HOOKED BAR AND ONE STRAIGHT BAR, USING LENGTHS AS SHOWN IN THE TABLE BELOW. THE TWO BARS SHALL BE THE SAME DIAMETER AS, AND PLACED AT THE SAME SPACING AS, THE "b", "b1", "b2" OR "b3" BENT BARS THEY REPLACE.



NOTE: DIMENSIONS OF BARS ARE MEASURED OUT TO OUT OF BARS.

OVERALL HEIGHT OF HOOKED BAR DIAGRAM

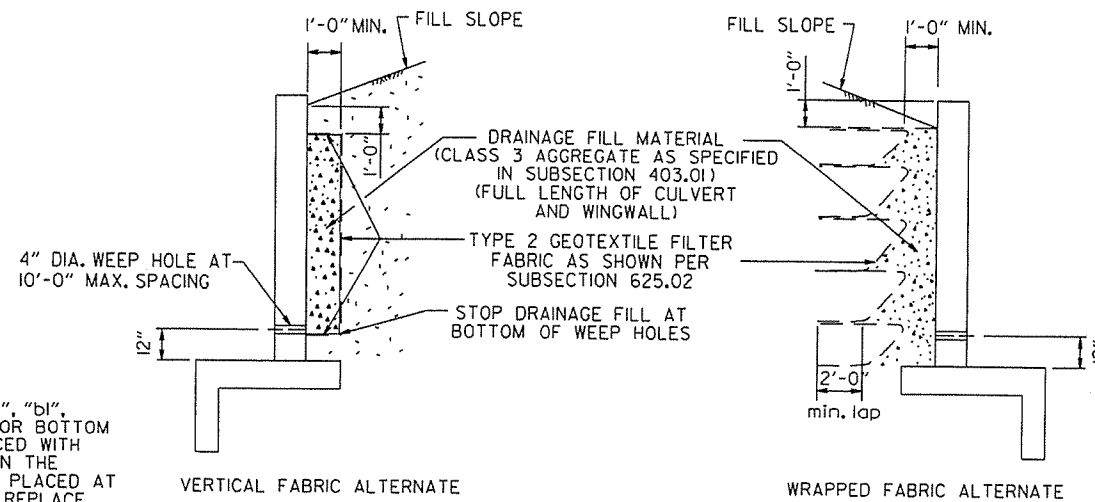
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

FOR SKEWED CULVERTS, THE REPLACEMENT STRAIGHT BAR MAY HAVE TO BE CUT IN FIELD TO FIT.

REPLACEMENT BAR LENGTHS TABLE

BAR SIZE: "b", "b1", "b2" OR "b3"	LENGTH OF HOOKED BAR	LENGTH OF STRAIGHT BAR
#4	L + 1' - 0"	SEE "c" BAR LENGTH
#5	L + 1' - 2"	SEE "c" BAR LENGTH
#6	L + 1' - 4"	SEE "c" BAR LENGTH
#7	L + 1' - 8"	SEE "c" BAR LENGTH
#8	L + 1' - 10"	SEE "c" BAR LENGTH
#9	L + 2' - 6"	SEE "c" BAR LENGTH

L = "OW" - 3 INCHES



WINGWALL & CULVERT DRAINAGE DETAIL

REINFORCED CONCRETE BOX CULVERT GENERAL NOTES

CONCRETE SHALL BE CLASS S WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3500 PSI. REINFORCING STEEL SHALL BE AASHTO M 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.

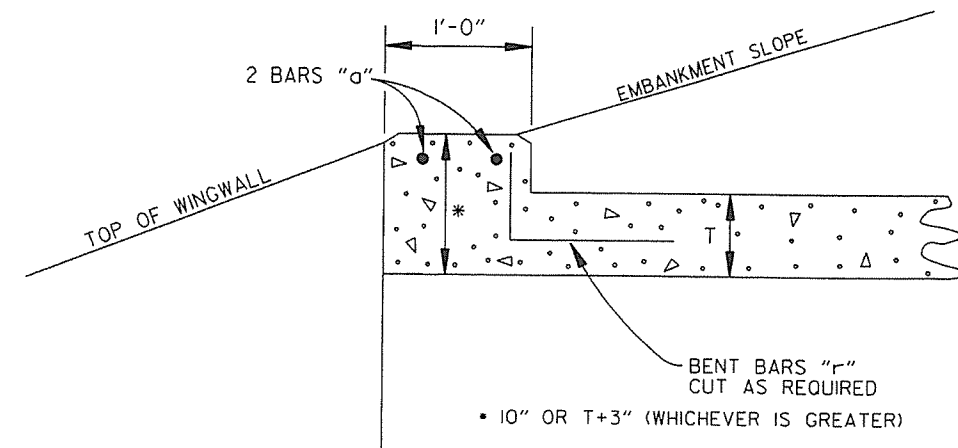
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

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 1/2 INCH.

WEEP HOLES IN BOX CULVERT WALLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE BOTTOM SLAB.

WEEP HOLES IN WINGWALLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THERE SHALL BE A MINIMUM OF TWO (2) WEEP HOLES IN EACH WINGWALL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE WINGWALL FOOTING.

THE REQUIREMENTS SHOWN ON THIS DRAWING SHALL SUPERCEDE THE CORRESPONDING REQUIREMENTS ON ALL REINFORCED CONCRETE BOX CULVERT STANDARD DRAWINGS.



NOTE: FOR ALL SKEWED R.C. BOX CULVERTS THE LENGTH "K" OF THE MODIFIED HEADWALL SHALL BE EQUAL TO THE ROADWAY LENGTH "RL". THE ENDS OF THE HEADWALL SHALL BE CONSTRUCTED PARALLEL TO THE SKEW ANGLE OF THE BOX CULVERT.

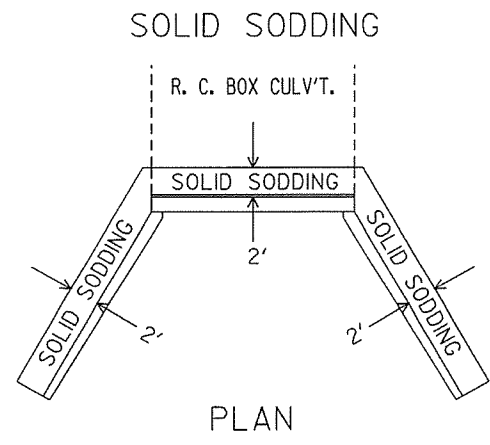
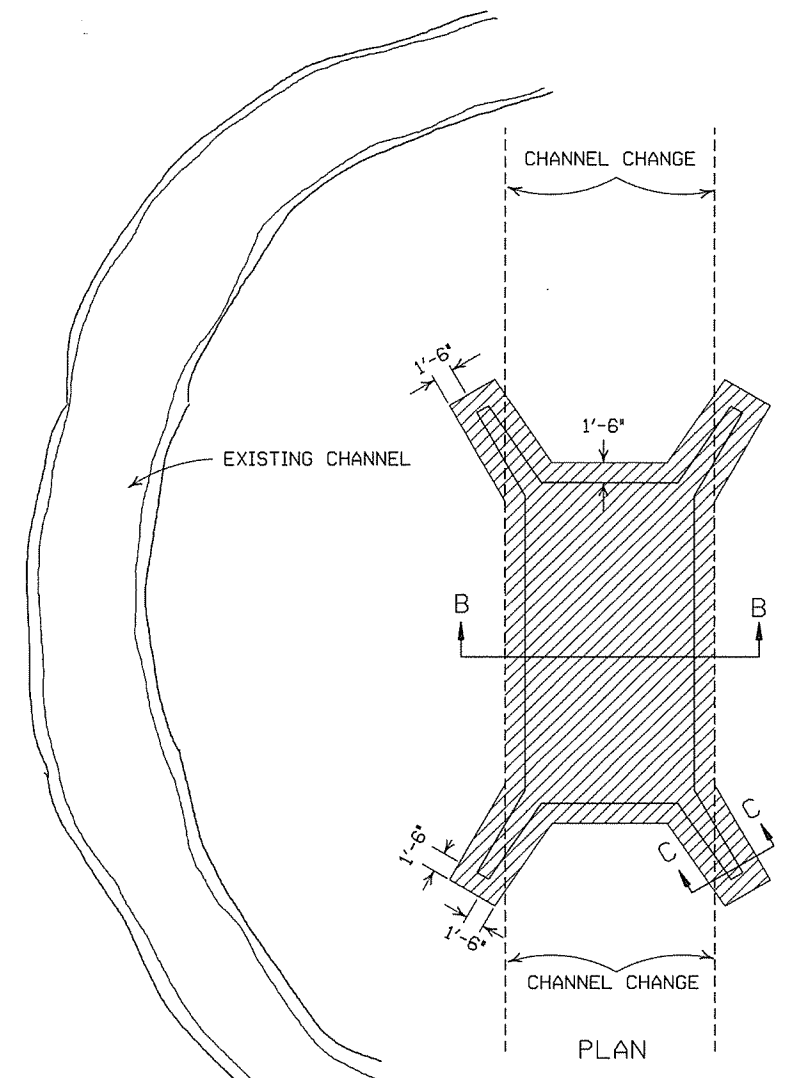
R.C. BOX CULVERT HEADWALL MODIFICATIONS

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	

ARKANSAS STATE HIGHWAY COMMISSION

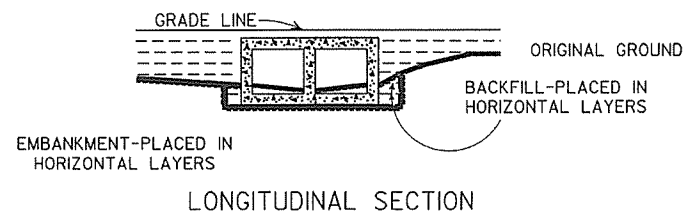
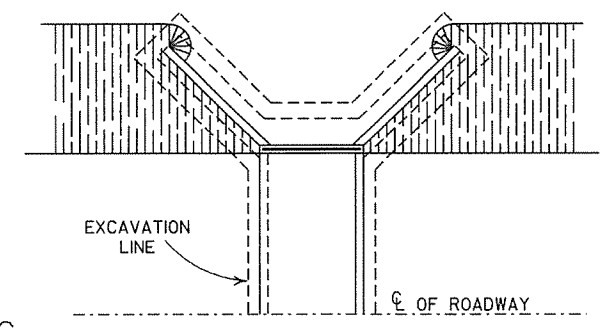
REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1

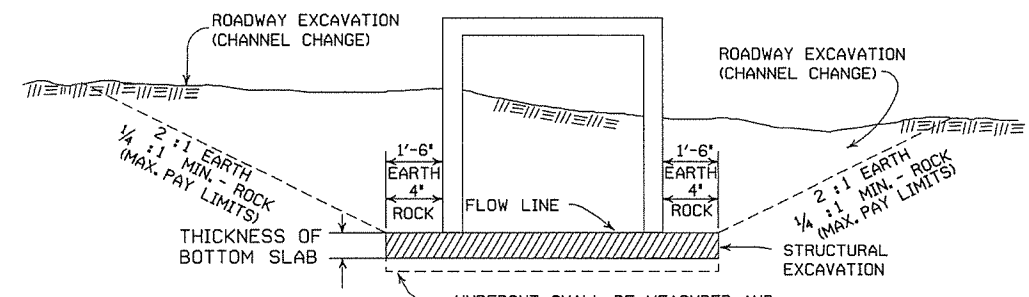
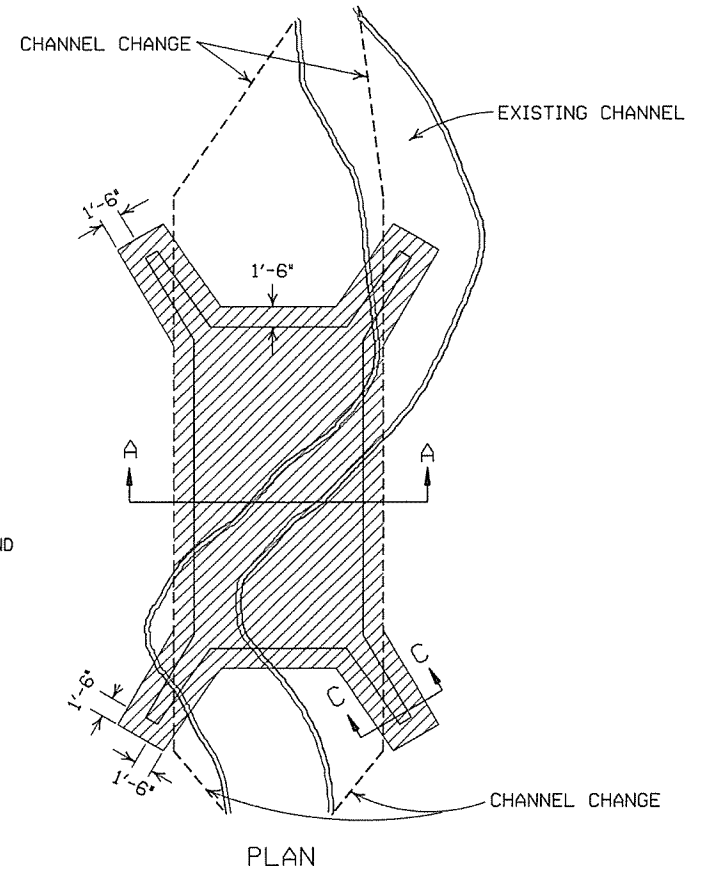


PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

NOTE: LENGTH MEASURED ALONG THE CENTER OF 2' STRIP OF SOLID SODDING.

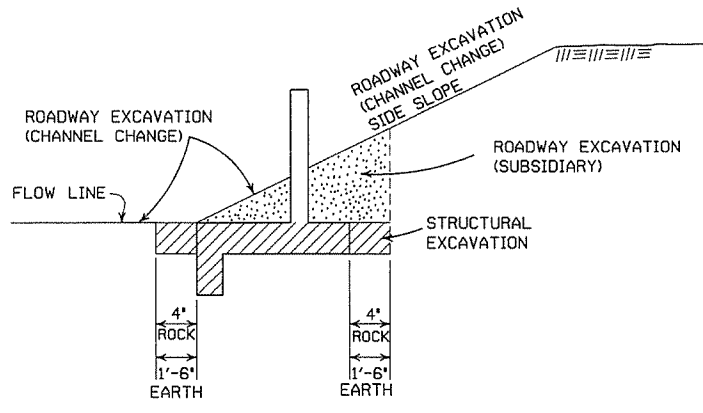


BACKFILL DETAILS FOR BOX CULVERT

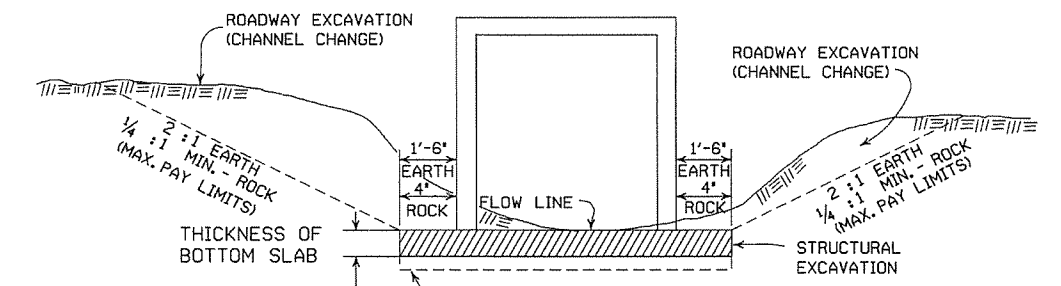


SECTION B-B  
DETAILS FOR NEW CHANNELS

UNDERCUT SHALL BE MEASURED AND PAID FOR ACCORDING TO SECTIONS 801.10 AND 801.11, RESPECTIVELY, OF THE STANDARD SPECIFICATIONS.



SECTION C-C



SECTION A-A  
DETAILS THROUGH EXISTING CHANNELS

UNDERCUT SHALL BE MEASURED AND PAID FOR ACCORDING TO SECTIONS 801.10 AND 801.11, RESPECTIVELY, OF THE STANDARD SPECIFICATIONS.

GENERAL NOTES:

ROADWAY EXCAVATION (CHANNEL CHANGE) WILL BE PAID FOR AT R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS ACTUALLY CUT AND WILL BE CONFINED TO THAT PORTION OF THE INDICATED AREA THAT IS ABOVE THE FLOW LINE. ROADWAY EXCAVATION (CHANNEL CHANGE) SHALL BE MEASURED BY CROSS SECTIONS AND VOLUMES COMPUTED BY AVERAGE END AREA METHOD. ALL CHANNEL CHANGES SHALL BE BROUGHT TO GRADE PRIOR TO MAKING ANY EXCAVATION FOR STRUCTURES.

EXCAVATION FOR STRUCTURES WILL BE PAID FOR AT ALL R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS SHOWN AND SHALL BE CONFINED TO THAT PORTION OF THE INDICATED AREA THAT IS BELOW THE CHANNEL FLOW LINE.

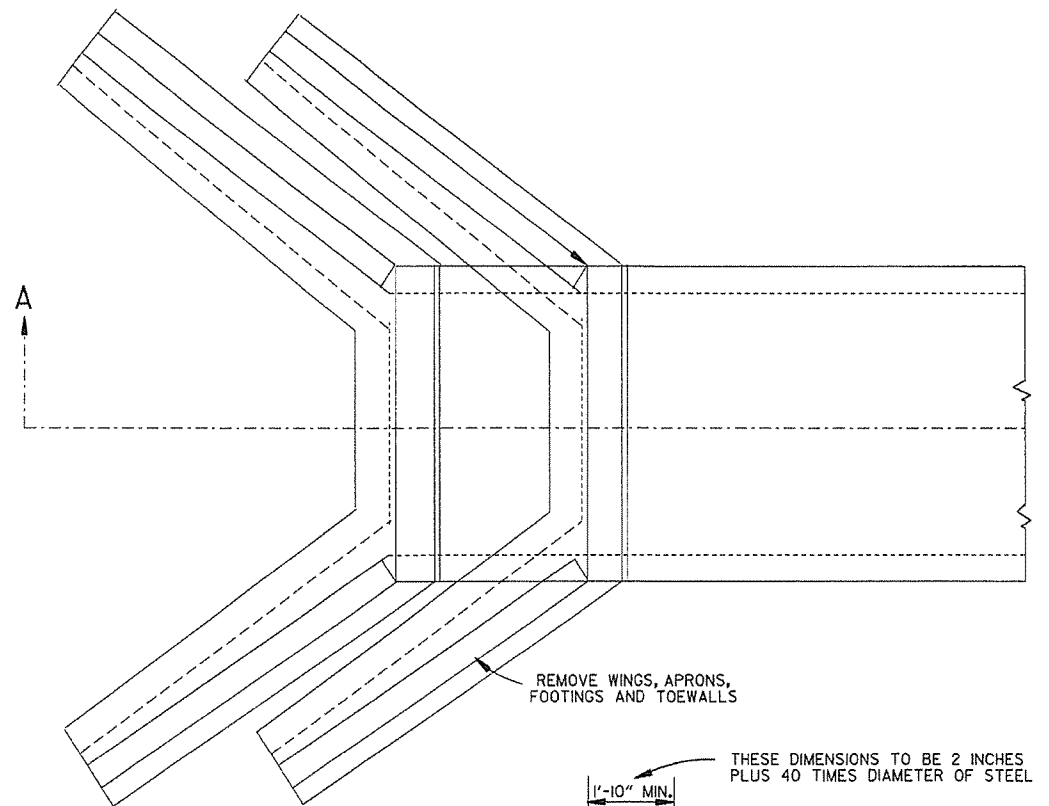
ROADWAY EXCAVATION SHOWN IN SECTION C-C ABOVE AS SUBSIDIARY WILL NOT BE MEASURED OR PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION.

DATE	REVISION	FILMED
11-20-03	REVISED SECTION A-A NOTE	
8-22-02	REVISED SECTION B-B NOTE	
10-12-95	COMBINED 1891B AND 1888A	
1-4-83	REVISED GENERAL NOTES AND ADDED MAXIMUM PAY LIMIT NOTES.	674-1-4-83
2-2-76	EXCAV. PAY LIMITS	917-2-2-76
10-2-72	REVISED AND REDRAWN	564-10-16-72

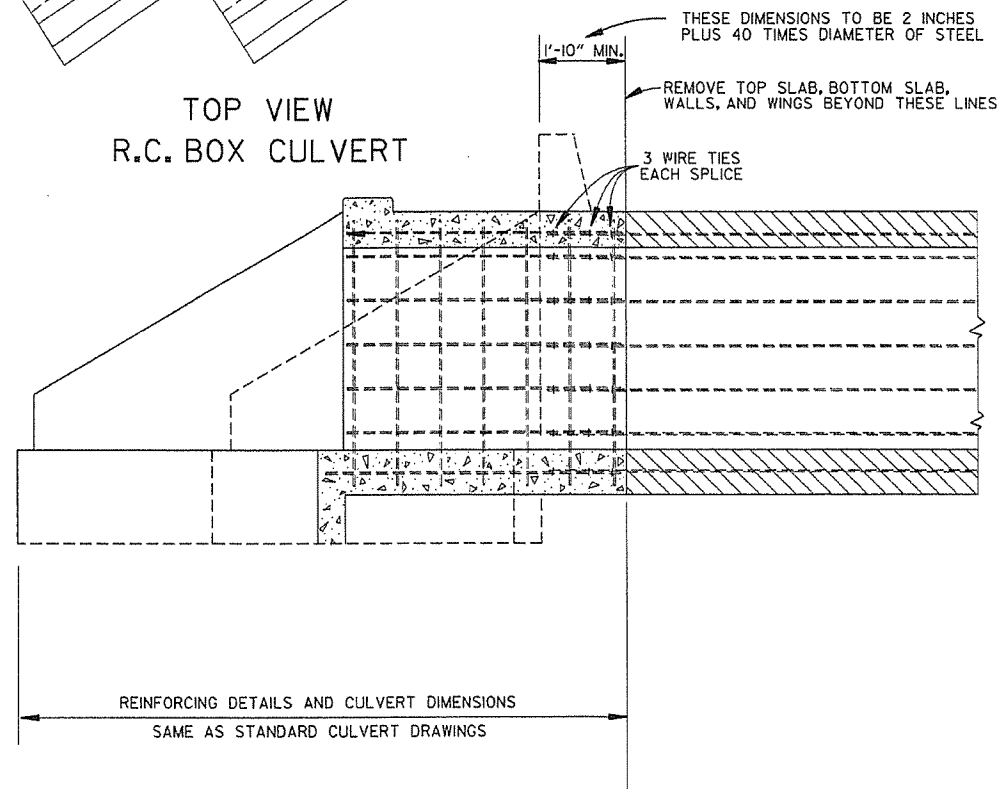
ARKANSAS STATE HIGHWAY COMMISSION

EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS

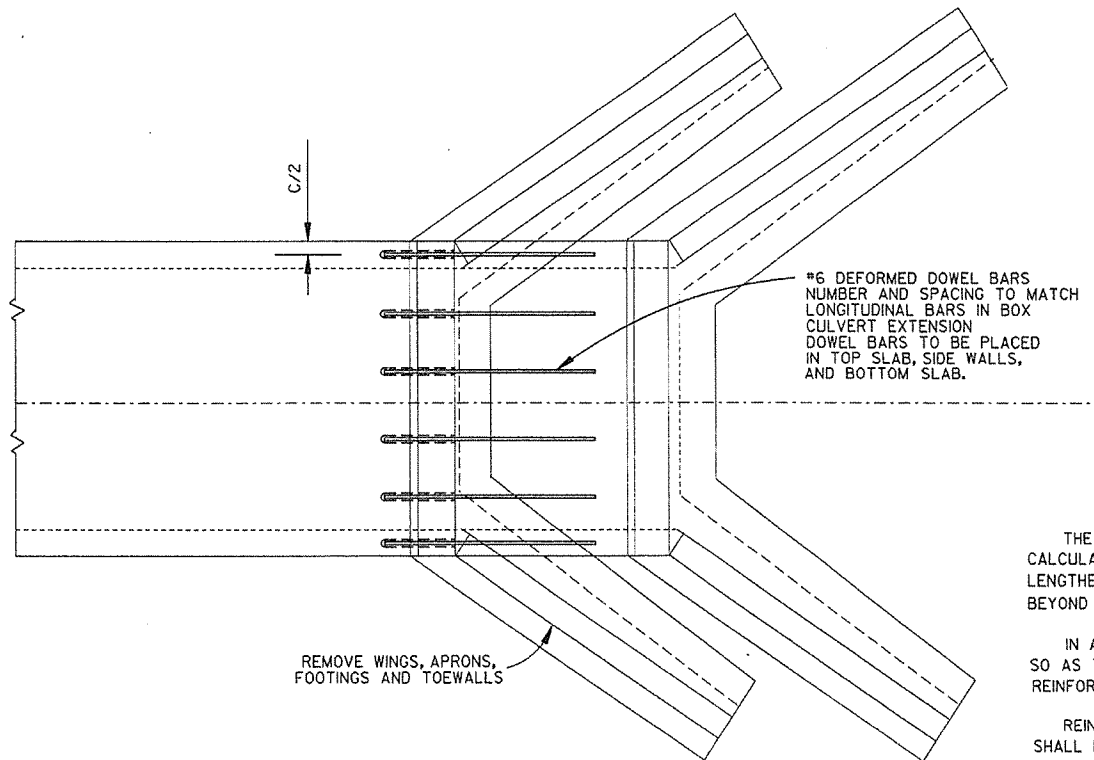
STANDARD DRAWING RCB-2



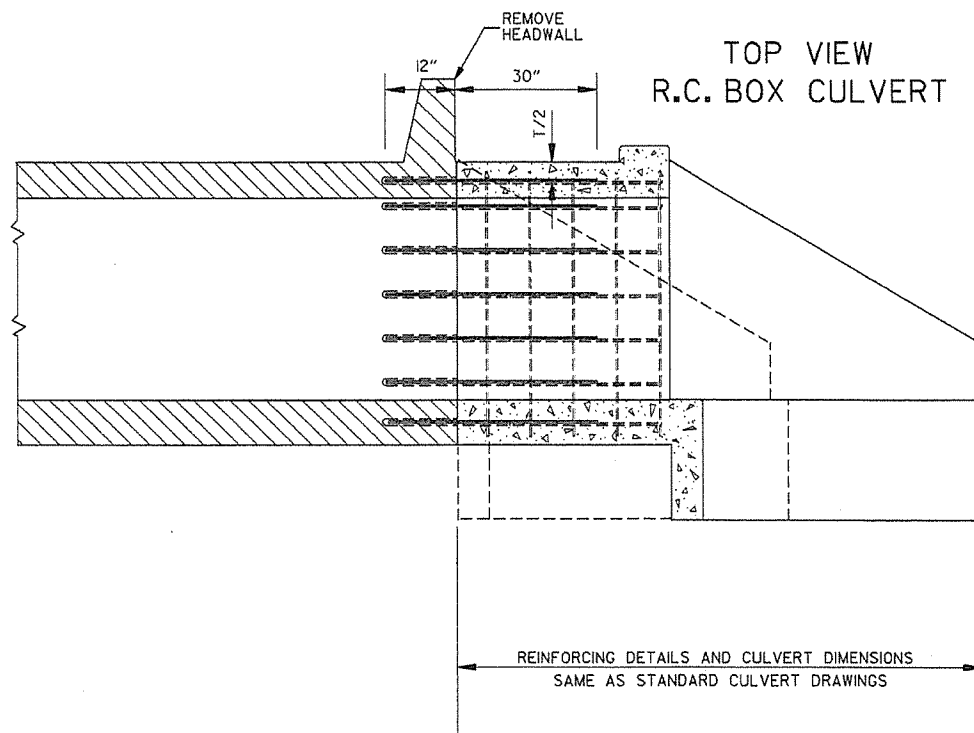
TOP VIEW  
R.C. BOX CULVERT



SECTION A-A  
METHOD 1



TOP VIEW  
R.C. BOX CULVERT



SECTION A-A  
METHOD 2

- GENERAL NOTES
- 1 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&2 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.
  - 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.
  - 1&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.

NOTE:  
NO PART OF THIS STANDARD IS TO BE USED FOR ANY DETAILS RELATIVE TO NEW CONSTRUCTION.  
SEE STANDARD DRAWING LISTED IN TABULATION OF STRUCTURES FOR ALL NEW CONSTRUCTION DETAILS.

ARKANSAS STATE HIGHWAY COMMISSION		
METHOD OF EXTENDING EXISTING R.C. BOX CULVERTS		
STANDARD DRAWING RCB-3		
10-12-95	CHANGED DRAWING FROM 144-A	
4-1-93	ADDED GENERAL NOTE	
10-1-92	ADDED ALT. METHOD OF EXTENSION	
11-30-89	REDRAWN	
1-4-83	ELIMINATED CONCRETE CLASS	
12-20-56	RETRACED	
DATE	REVISION	DATE FILM

# LOOP DETECTOR INSTALLATION AND TESTING

**NOTES:**

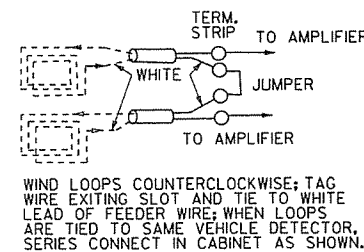
1. LOOPS WITH A PERIMETER GREATER THAN 40' SHALL HAVE TWO TURNS. LOOPS WITH A PERIMETER LESS THAN OR EQUAL TO 40' SHALL HAVE THREE TURNS, UNLESS OTHERWISE NOTED ON THE PLANS. QUADRUPOLE LOOPS SHALL BE TWO TURNS (2-4-2 CONFIGURATION) UNLESS OTHERWISE NOTED.
2. LOOP AND FEEDER WIRE SHALL BE CONTINUOUS WITHOUT SPLICES EXCEPT AT THE LOOP/FEEDER WIRE SPLICE AS SHOWN. SPLICE SHALL BE ROSIN SOLDERED AND WATERPROOFED WITH AN ACCEPTED SPLICE KIT. DRAIN WIRE SHALL BE GROUNDED IN CABINET AND INSULATED AT LOOP TO FEEDER SPLICE.
3. THE LOOP TO FEEDER SPLICE, FEEDER JACKET AND JACKET OF LOOP WIRE IN DUCT SHALL BE COMPLETELY SEALED AND WATERPROOFED.
4. CONTRACTOR MAY MAKE CONNECTIONS TO SIGNAL CABLE AND LOOP TO FEEDER CONNECTION AT TERMINAL STRIPS MOUNTED TO POLE INSIDE HAND HOLD COVER AS SHOWN IN DETAIL. TERMINALS MUST BE EASILY ACCESSIBLE, BUT PROTECTED AGAINST ACCIDENTAL CONTACT. CONNECTION OF POWER CARRYING CIRCUITS MUST BE SEPARATED FROM LOOP OR LOGIC CIRCUITS. ALL CONNECTIONS TO TERMINAL STRIPS SHALL UTILIZE SPADE LUGS OR AS APPROVED BY THE ENGINEER.
5. EACH LOOP SHALL HAVE A SEPARATE "FEEDER WIRE" UNLESS OTHERWISE NOTED. ALL FEEDER WIRES SHALL BE LABELED AS TO LOOP NUMBER AS DESIGNATED ON THE PLANS.
6. ALL LOOP WIRE ENTERING PULL BOXES SHALL BE ENCLOSED IN CONDUIT. EACH LOOP WIRE SHALL ENTER PULL BOX OR POLE BASE THROUGH A SEPARATE PIECE OF ONE INCH (1"Ø) CONDUIT.
7. LOOP WIRE FROM LOOP TO CONDUIT IS NOT TWISTED. LOOP WIRE IN THE CONDUIT MUST BE TWISTED TWO TO FIVE TURNS PER FOOT.
8. WARRANTY PERIOD FOR LOOPS SHALL NOT COMMENCE UNTIL TESTED BY THE CONTRACTOR AND ACCEPTED BY THE ENGINEER. CONTRACTOR SHALL PERFORM TEST AND PROVIDE A RECORD TO THE ENGINEER AS LISTED IN THE DETECTOR LOOP TESTING PROCEDURE.
9. UNLESS OTHERWISE APPROVED BY THE ENGINEER, BACKER ROD SHALL BE INSTALLED IN SHORT SECTIONS SPACED NOT MORE THAN 18" APART AND WEDGED INTO SLOT TO HOLD CABLE IN PLACE. CABLE SHALL BE TOTALLY ENCAPSULATED IN SEALER.
10. "HOT POUR" SEALER SHALL NOT BE ALLOWED WITH 705-LOOP WIRING IN DUCT.
11. WHERE UNDERGROUND SPLICES OF SIGNAL CABLE ARE REQUIRED, CONNECTIONS SHALL BE SOLDERED AND COMPLETELY WATERPROOFED TO THE SATISFACTION OF THE ENGINEER. WATERPROOFING SHALL EXTEND A MINIMUM OF TWO INCHES PAST THE SIGNAL CABLE JACKET AND SHALL COMPLETELY COVER ALL INDIVIDUAL CONDUCTORS OF THE SIGNAL CABLE. WATERPROOFING DOES NOT APPLY TO CONNECTIONS MADE IN POLE BASES.
12. CONTRACTOR SHALL CONNECT A SEPARATE NEUTRAL FOR EACH LOAD SWITCH REPRESENTED ON EACH SIGNAL POLE. ONLY ONE NEUTRAL IS REQUIRED FOR PEDESTRIAN SIGNALS. A SEPARATE 5C (TYPICAL) IS PROVIDED FOR PEDESTRIAN PUSH BUTTONS.
13. TRAFFIC CONTROLLER CABINET 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 CONTROLLER. CONTROLLER CABINET SHALL BE WIRED SUCH POWER TO LOAD SWITCHES CANNOT BACKFEED TO LOAD SWITCH POWER BUSS DURING FLASH OPERATION.

**TYPICAL PROCEDURE FOR DETECTOR LOOP TESTING**

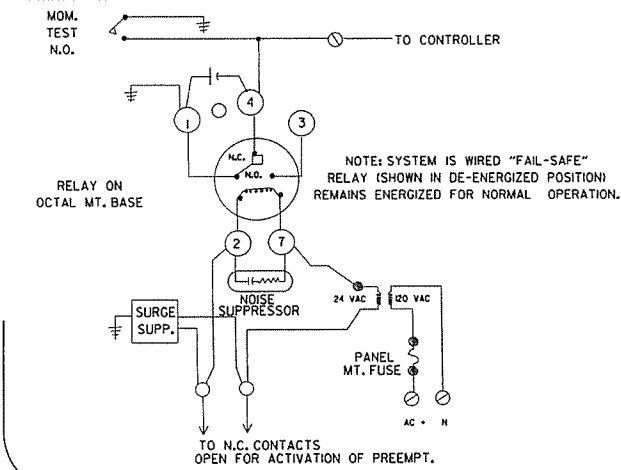
- 1 DISCONNECT AND TEST CONTINUITY (< 10 OHMS) IF CONTINUITY IS BAD, GO TO TEST 3
- 2 TEST INSULATION (@ 500 VOLT TEST > 10 MEG-OHM) IF TESTS 1 & 2 ARE GOOD, NO FURTHER TESTING IS NECESSARY. RECORDED RESULTS CONSIST OF TESTS 1 & 2 FROM CONTROL CABINET WITH FEEDER WIRE CONNECTED TO LOOP.
- 3 OPEN SPLICE (DO NOT BREAK CONNECTION) REPEAT TEST 1 & 2 IF TEST 3 IS BAD, GO TO TEST 4
- 4 BREAK SPLICE, INSTALL JUMPER IN CABINET, REPEAT TESTS 1 & 2 SEPARATELY FOR FEEDER AND FOR LOOP

FAILURES TYPICALLY RESULT FROM BROKEN WIRE IN PAVEMENT, FAULTY INSULATION OF LOOP OR FEEDER WIRE, OR POORLY INSULATED SPLICE CONNECTION.

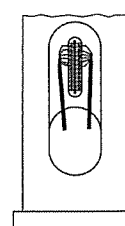
**SERIES CONNECTED LOOPS**



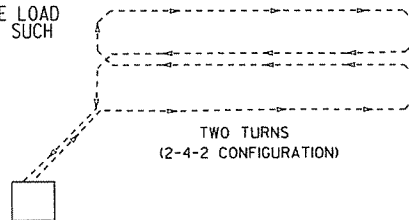
**TRAFFIC SIGNAL PRE-EMPTION INTERFACE WIRING DIAGRAM**



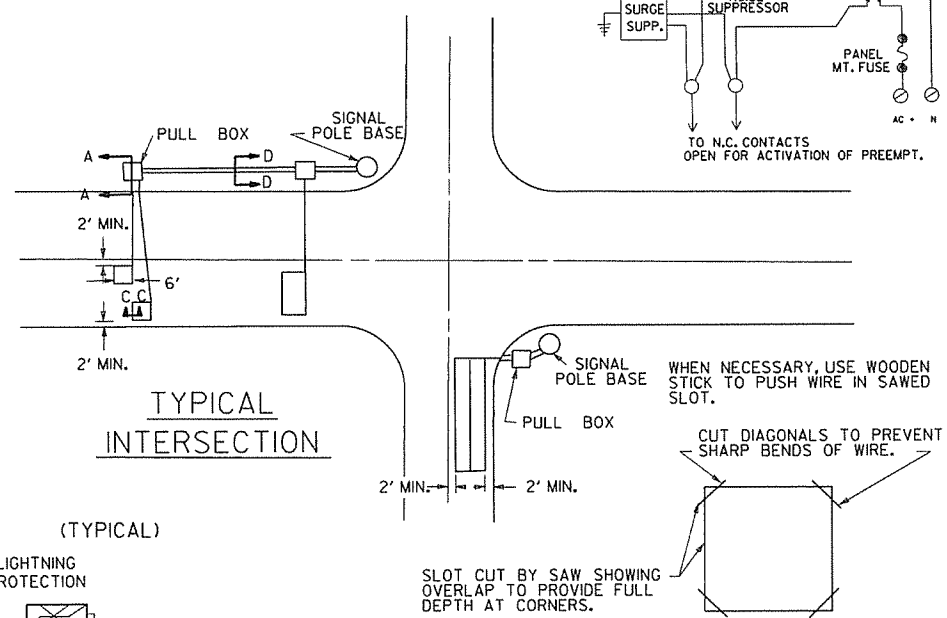
**HANDHOLE TERMINAL**



**QUADRUPOLE LOOP**

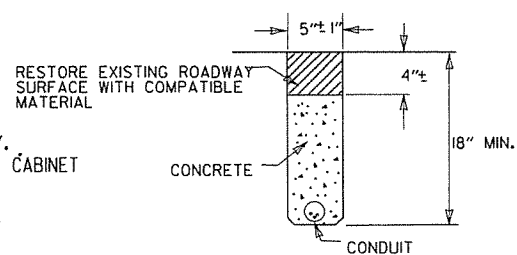


**TYPICAL INTERSECTION**



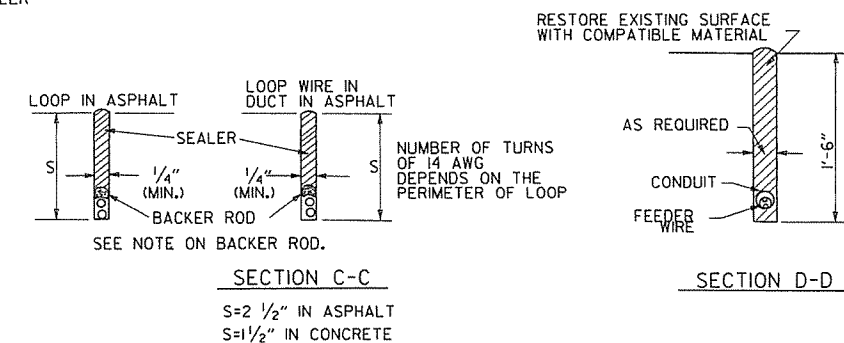
**TRENCHING DETAIL**

(FOR SAW CUT TRENCH IN ROADWAY)



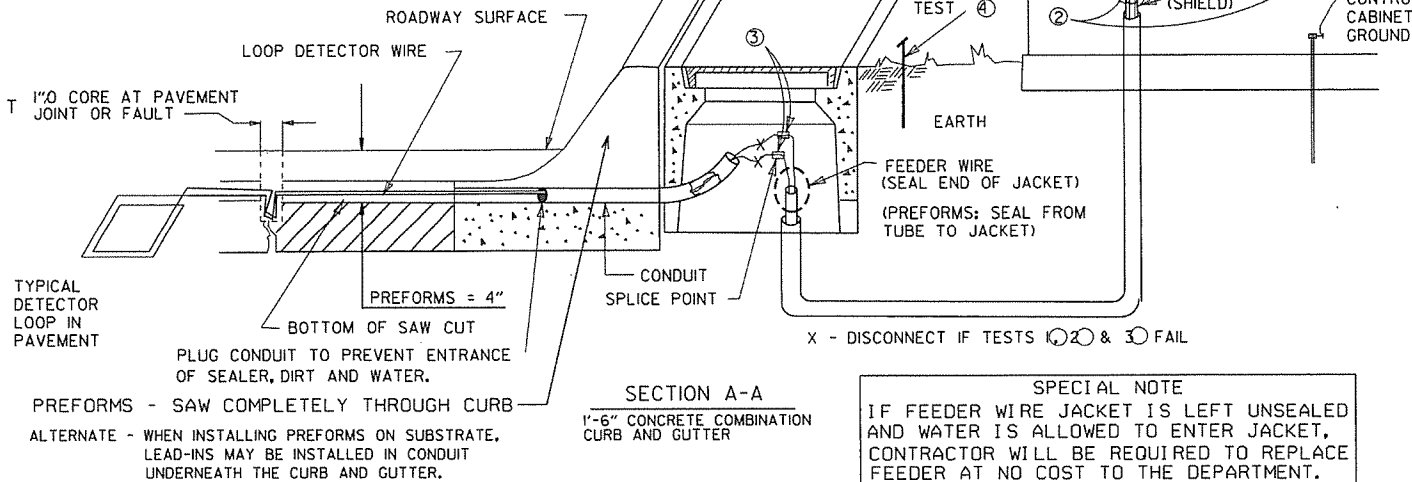
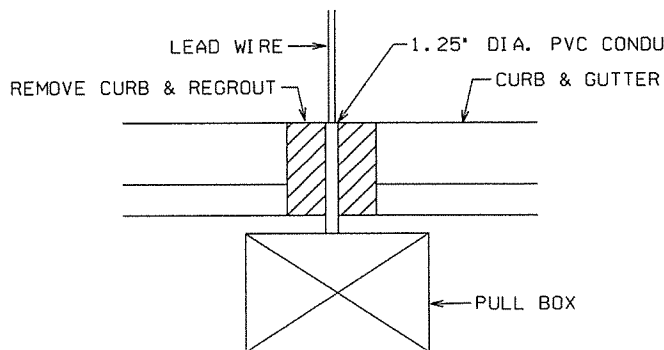
NOTE: CONDUIT SHALL BE INSTALLED IN CURB AS SHOWN OR AS DIRECTED BY THE ENGINEER. END OF CONDUIT SHALL BE WATER-TIGHT.

**TYPICAL SECTIONS FOR PULSE AND PRESENCE LOOP DETECTORS**



**SECTION C-C**

S=2 1/2" IN ASPHALT  
S=1 1/2" IN CONCRETE



**SECTION A-A**

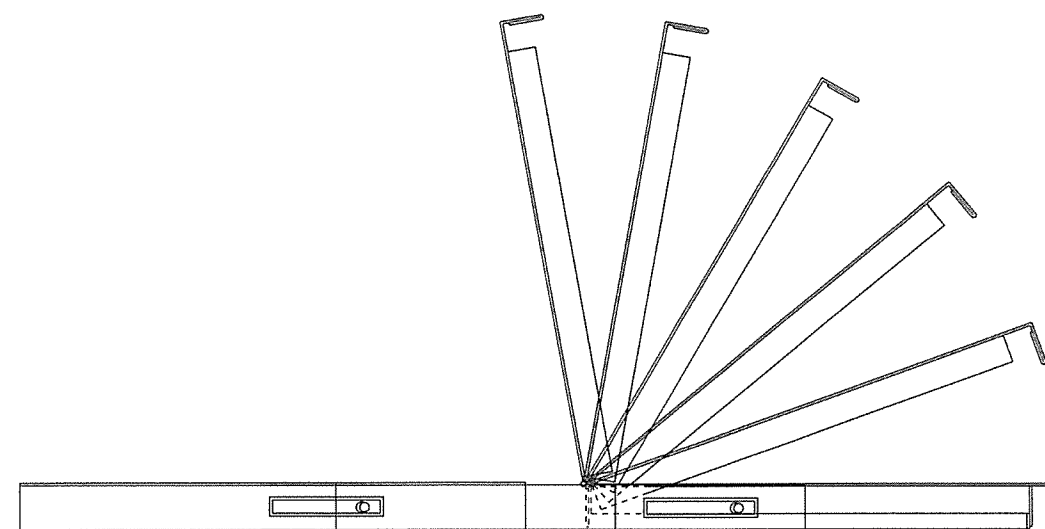
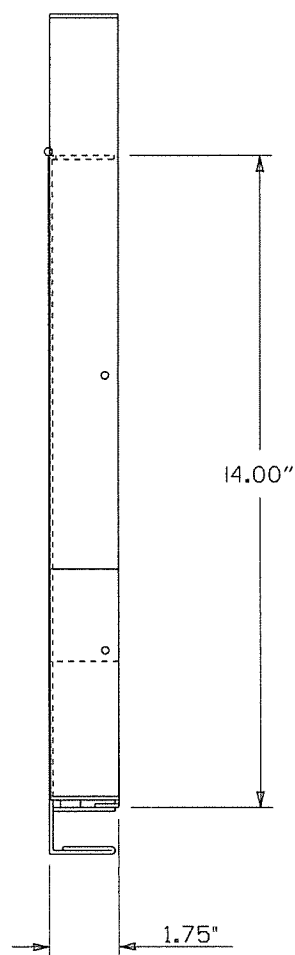
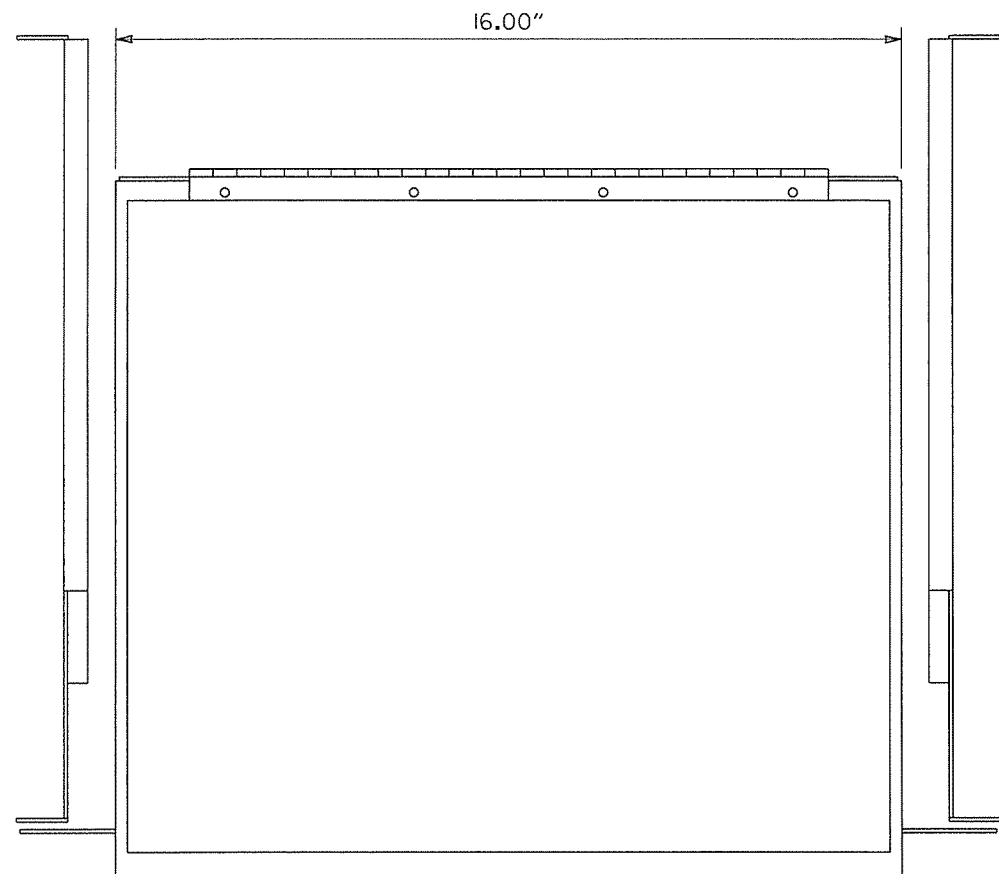
1'-6" CONCRETE COMBINATION CURB AND GUTTER

**SPECIAL NOTE**  
IF FEEDER WIRE JACKET IS LEFT UNSEALED AND WATER IS ALLOWED TO ENTER JACKET, CONTRACTOR WILL BE REQUIRED TO REPLACE FEEDER AT NO COST TO THE DEPARTMENT.

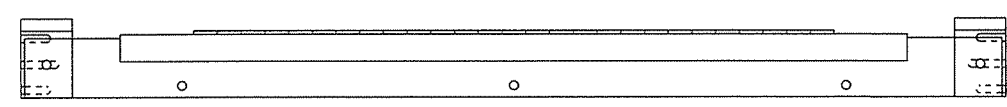
DATE	REVISION	DATE FILM
9-12-13	ISSUED AS STANDARD DRAWING	
5-17-01	REVISED	
4-11-01	REVISED	
2-4-00	REVISED PRE-EMPTION TEST SWITCH	
11-18-98	REVISED NOTES	
11-21-95	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION  
LOOP DETECTOR INSTALLATION  
STANDARD DRAWING SD-4

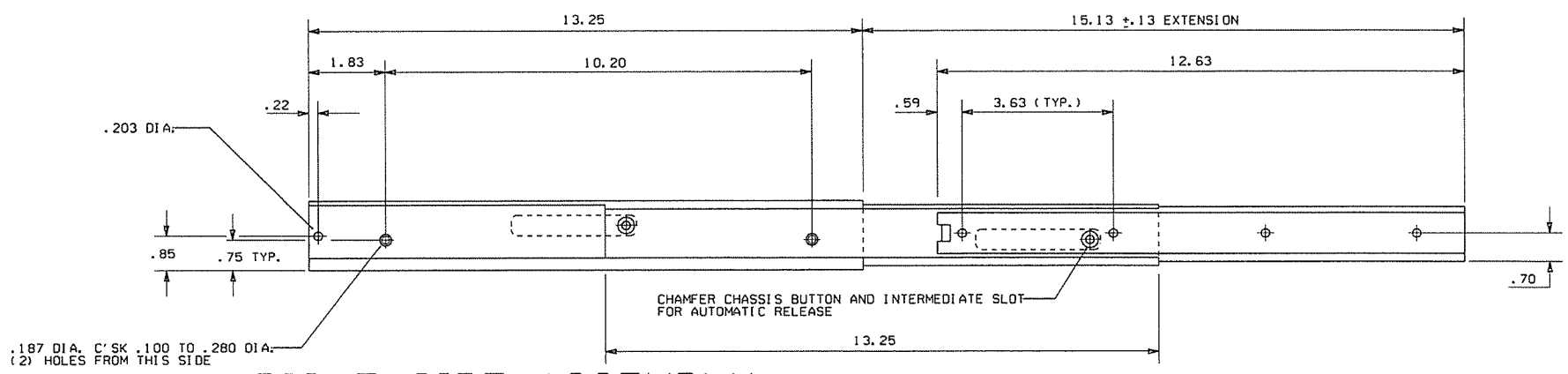
DRAWER PLAN VIEW



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

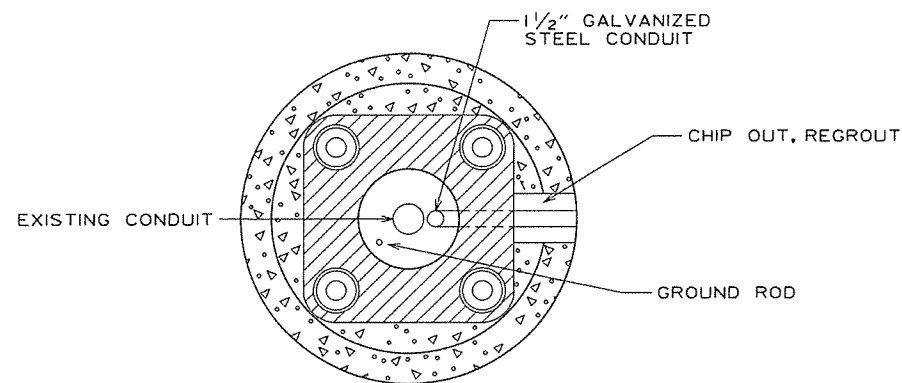


RIGHT SIDE ASSEMBLY

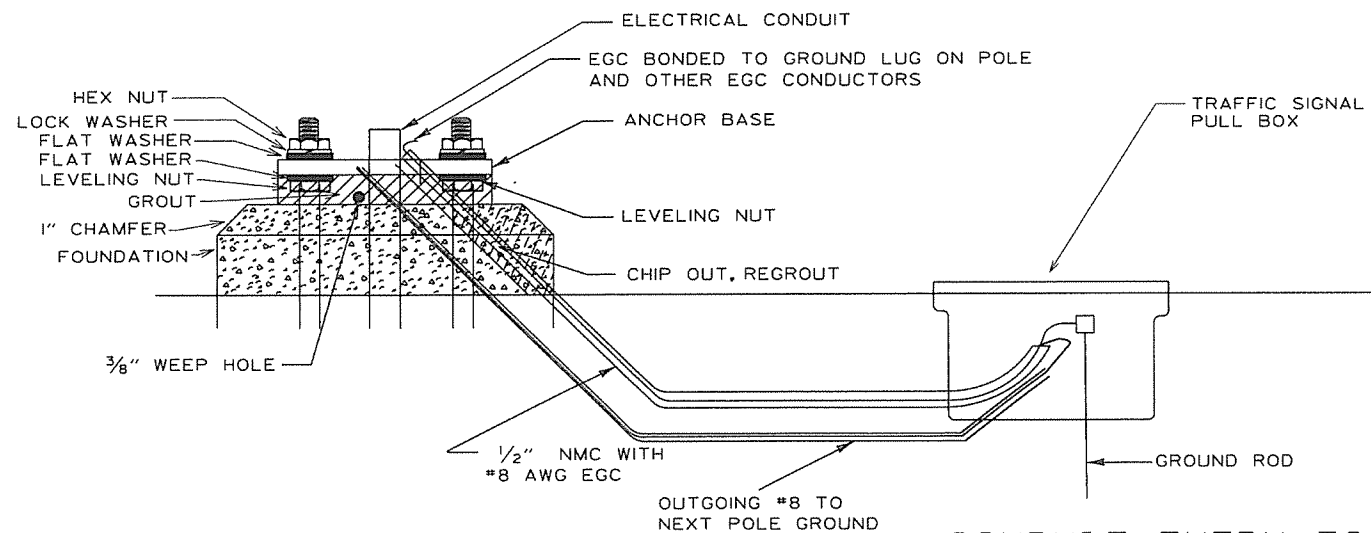
.187 DIA. C'SK .100 TO .280 DIA.  
 (2) HOLES FROM THIS SIDE

			ARKANSAS STATE HIGHWAY COMMISSION
			CONTROLLER CABINET UTILITY DRAWER
9-12-13	ISSUED AS STANDARD DRAWING		
6-15-05	ISSUED		
DATE	REVISION	DATE FILM	STANDARD DRAWING SD-5

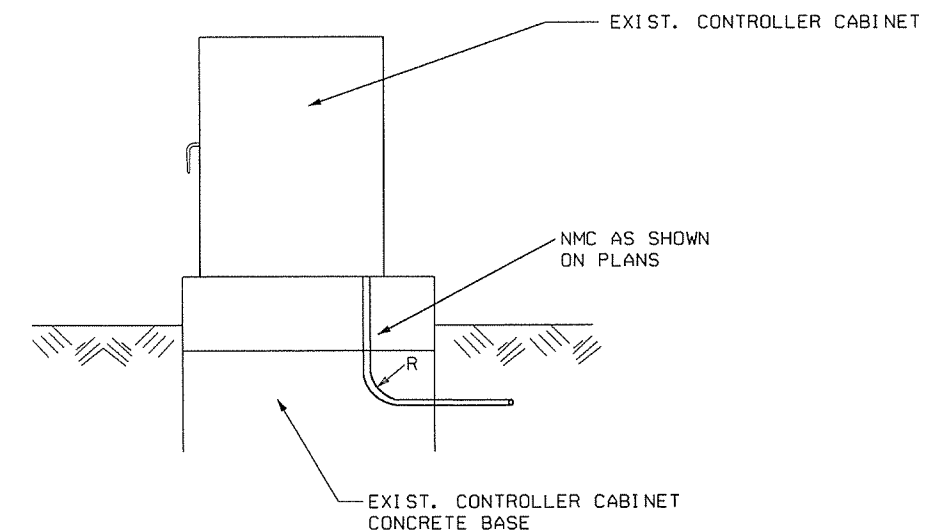
### CONDUIT ENTRY TO EXISTING POLE BASE



### ANCHOR BASE

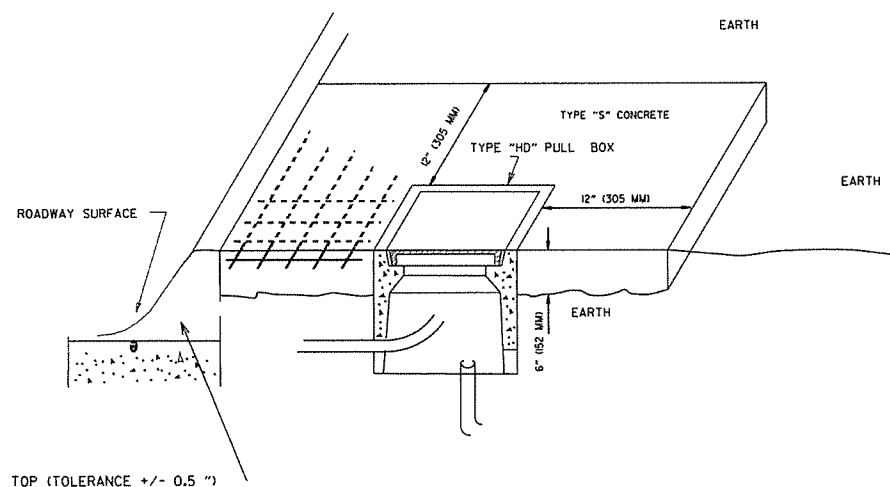


### CONDUIT ENTRY TO EXISTING CONTROLLER CABINET



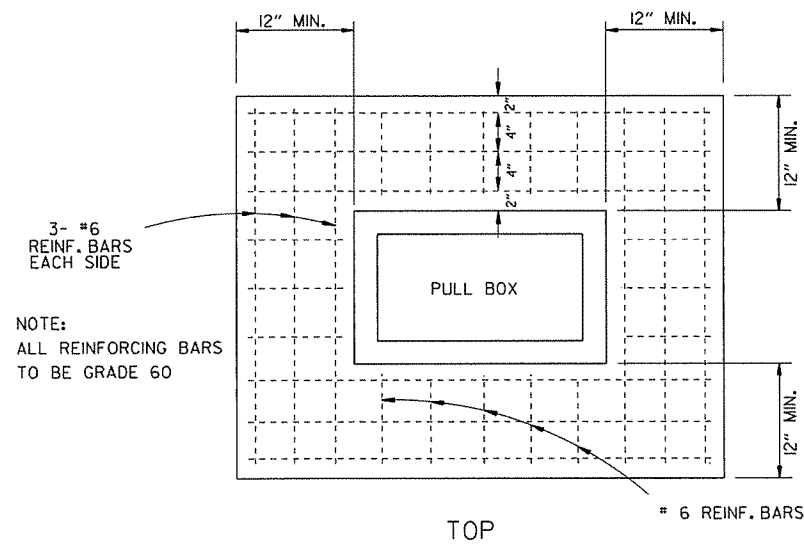
NOTE: ENTRY TO CABINET SHALL BE THROUGH A CUT IN THE BASE SUFFICIENT TO PROVIDE ADEQUATE CONDUIT RADIUS FOR ITEM.

### TYPE "HD" CONCRETE PULL BOX DETAIL

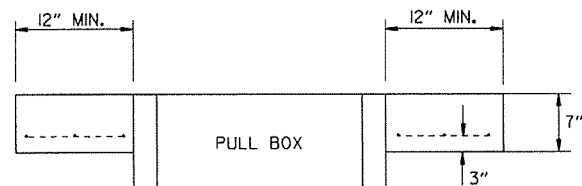


2" CLEAR FROM TOP (TOLERANCE +/- 0.5 ")

NOTE: ALL TYPE 1 AND TYPE 2 HD PULL BOXES 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 PULL BOX. PULL BOX 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 PULL BOX IS REQUIRED IN CONCRETE.



NOTE: ALL REINFORCING BARS TO BE GRADE 60



### ELEVATION

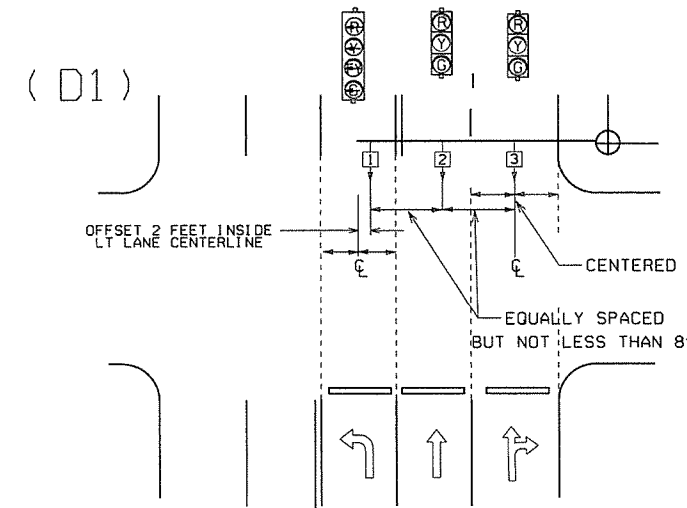
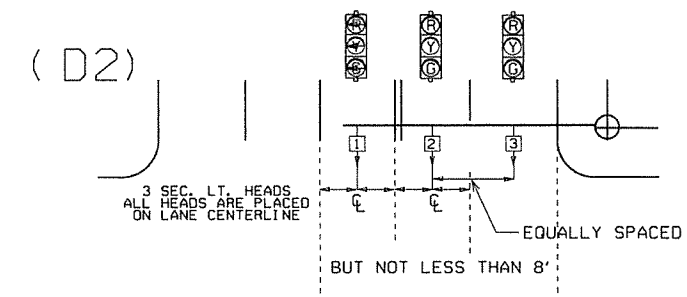
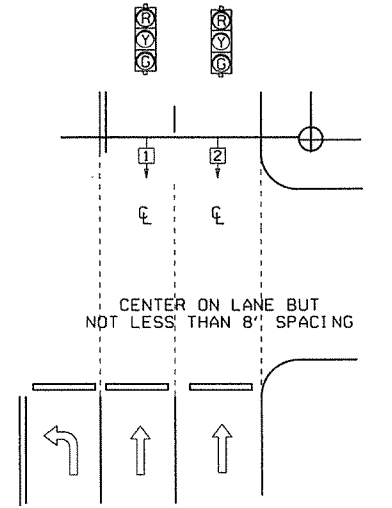
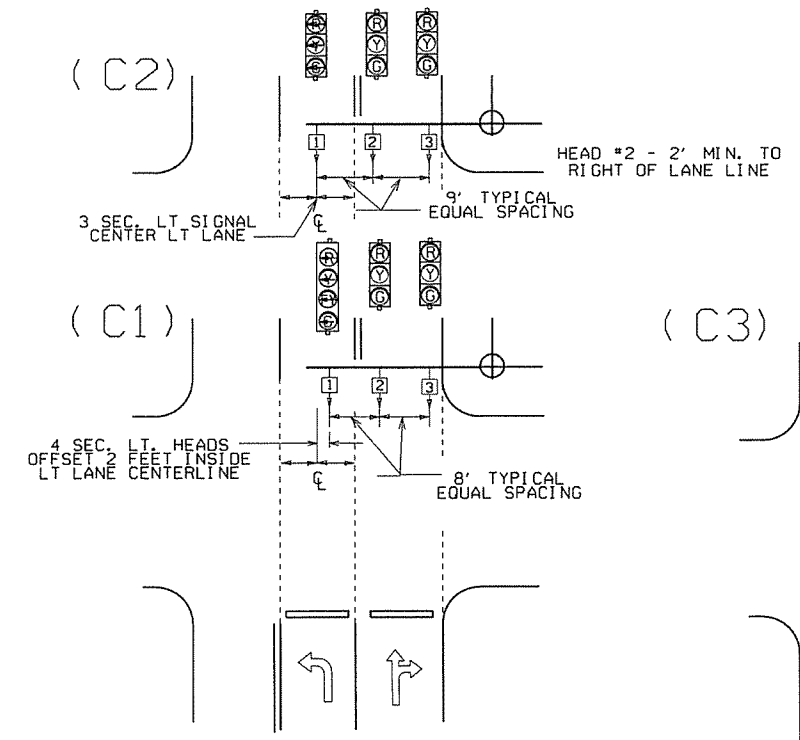
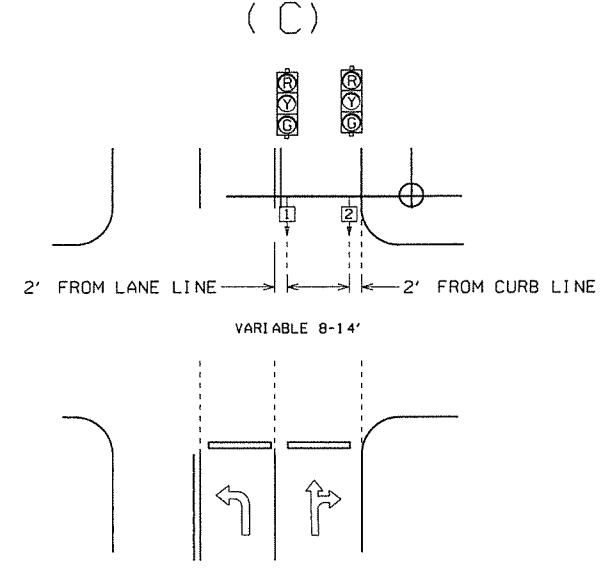
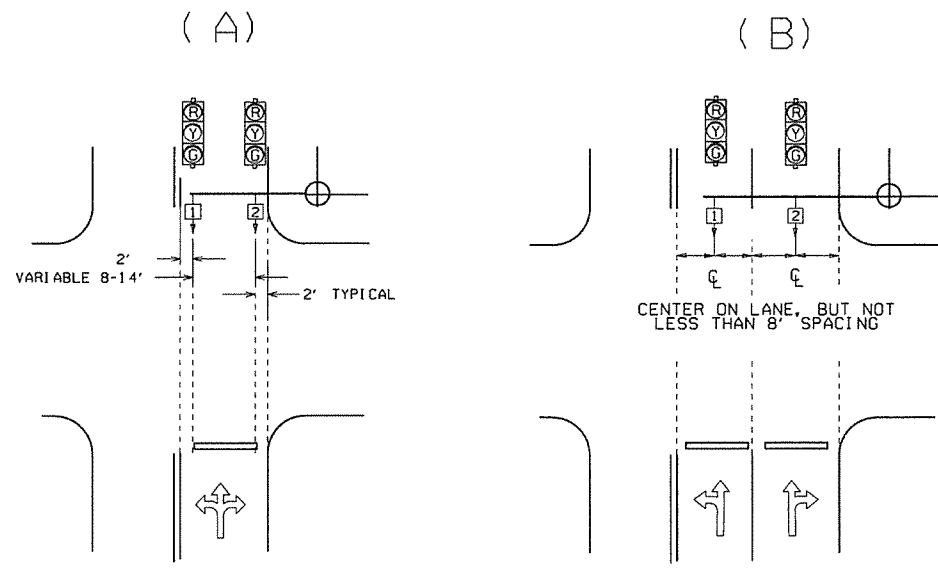
9-12-13	ISSUED AS STANDARD DRAWING	
5-21-09	REVISED GROUNDING	
7-31-08	ADDED & REVISED CONDUIT ENTRY	
6-23-04	REVISED CLEARANCE AT CURB ENTRY	
1-4-02	ADDED REINFORCING TO BOX APRON	
7-2-01	REVISED	
12-27-99	REVISED NOTES	
11-18-98	ISSUED	
DATE	REVISION	DATE FILM

ARKANSAS STATE HIGHWAY COMMISSION

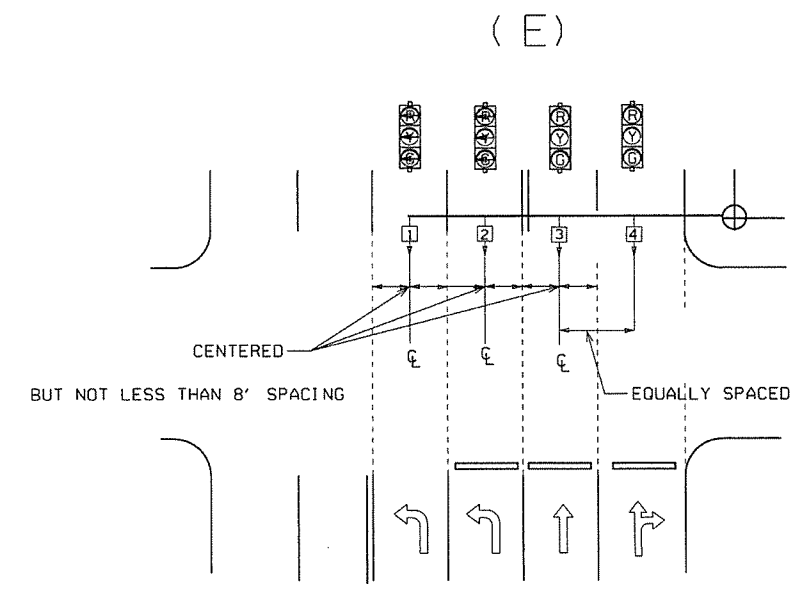
HEAVY DUTY PULL BOX

STANDARD DRAWING SD-6





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.



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.

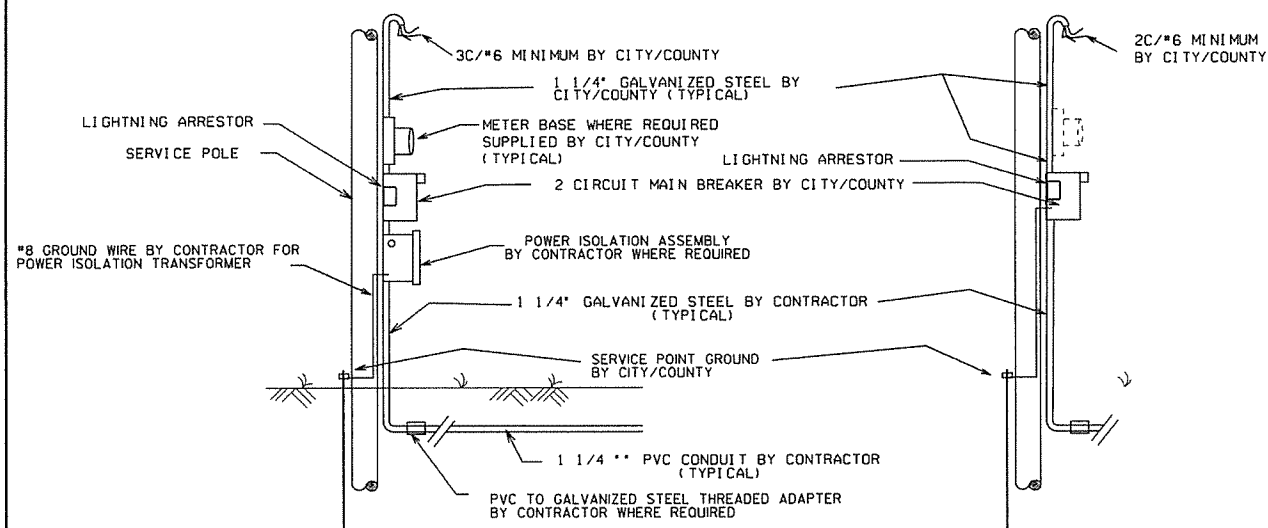
℄ = CENTER OF LANE FROM APPROACH SIDE

			ARKANSAS STATE HIGHWAY COMMISSION
9-12-13	ISSUED AS STANDARD DRAWING		SIGNAL HEAD PLACEMENT
3-11-10	2009 MUTCD		
12-9-99	ISSUED		STANDARD DRAWING SD-8
DATE	REVISION	DATE FILM	

# MAIN BREAKER NOT NEAR CONTROLLER CABINET SECONDARY REQUIRED

WITH POWER ISOLATION ASSEMBLY

WITHOUT POWER ISOLATION ASSEMBLY



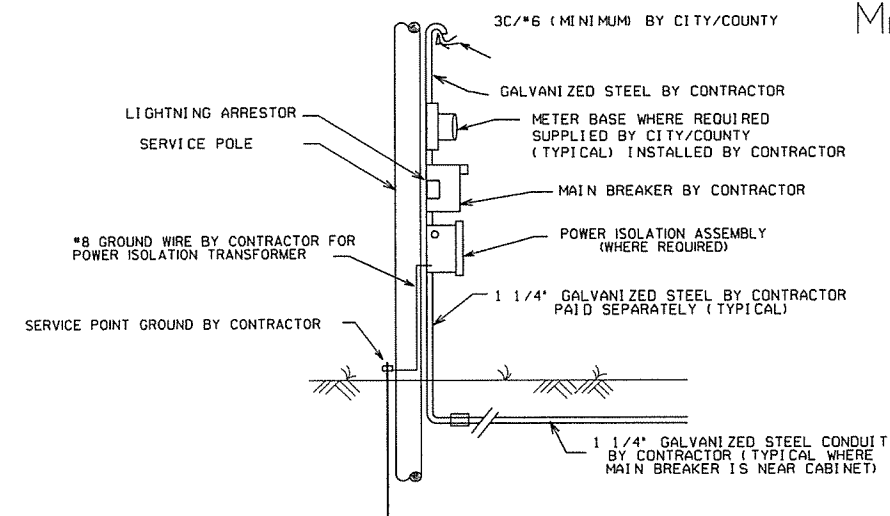
## NOTES TO CONTRACTOR AND AGENCY RESPONSIBLE FOR MAINTENANCE OF THE INTERSECTION (CITY/COUNTY)

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.

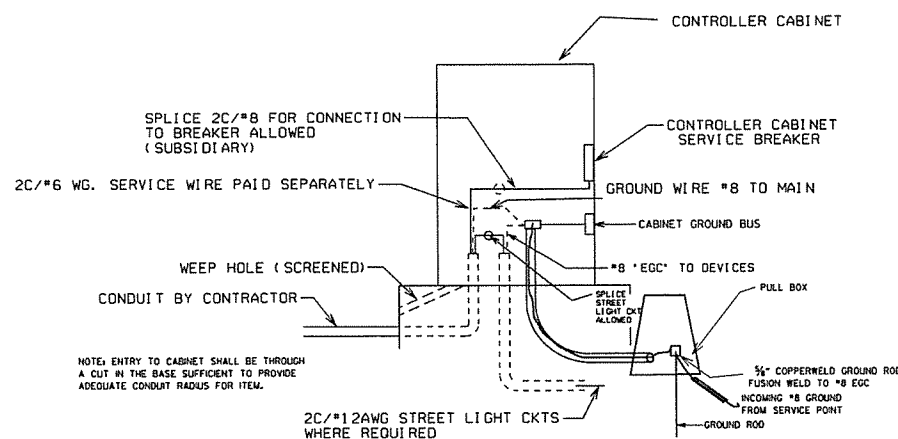
1. ALL SITUATIONS: ELECTRICAL SERVICE SHALL BE PROVIDED BY THE CITY/COUNTY TO A SERVICE POLE WITH EXTERNAL RAIN TIGHT BREAKER (MAIN BREAKER) AT A MUTUALLY ACCEPTABLE POINT WITHIN THE RIGHT-OF-WAY. SERVICE POINT INCLUDES GALVANIZED STEEL CONDUIT TO A POINT 18" BELOW GROUND LINE, TWO CIRCUIT MAIN BREAKER, LIGHTNING ARRESTOR, 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.

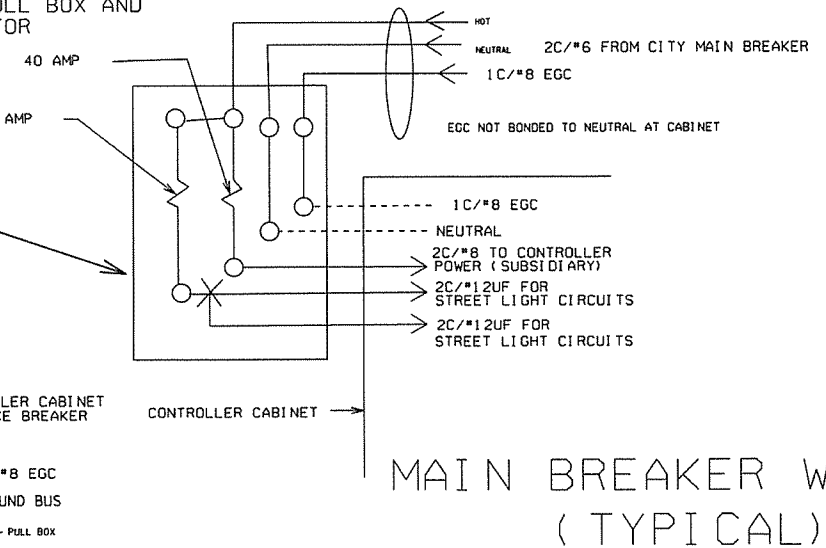
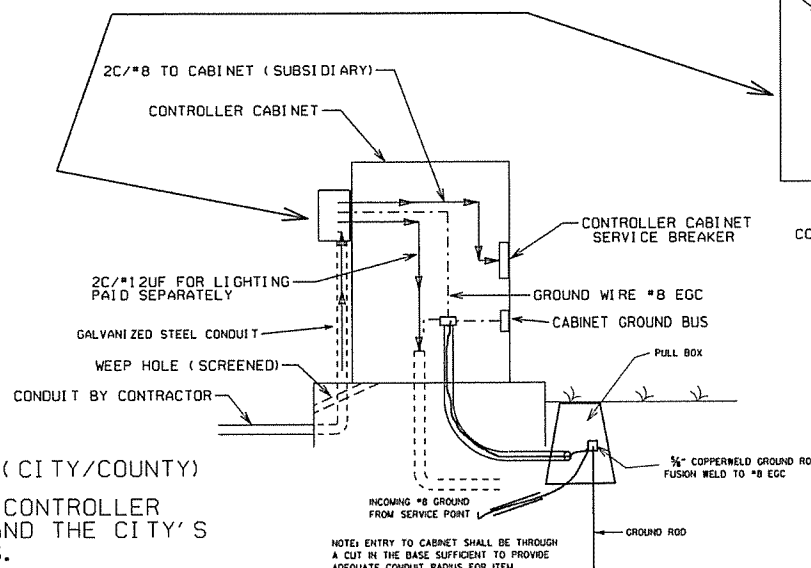


# MAIN BREAKER NEAR CONTROLLER CABINET SECONDARY NOT REQUIRED



GROUND ROD-A 10' X 3/4" 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 701. THE PULL BOX AND CONDUCTOR BOX SHALL BE PAID FOR SEPARATELY.

## SECONDARY BREAKER BY CONTRACTOR (SUBSIDIARY)

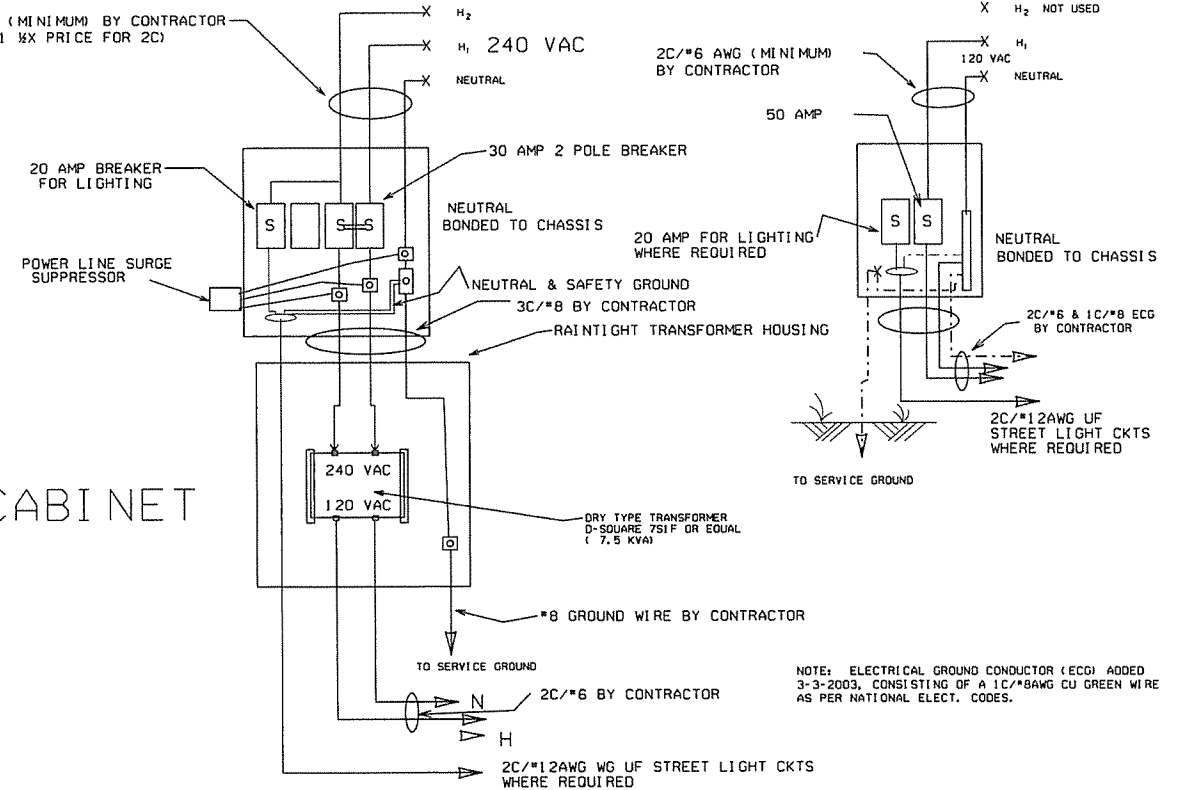


SERVICE GROUND IS TYPICALLY TIED TO NEUTRAL AT THE MAIN BREAKER. AS SUCH, CONTROLLER GROUND IS NOT TIED TO NEUTRAL AT SECONDARY BREAKER OR IN CONTROLLER CABINET.

WITH POWER ISOLATION ASSEMBLY  
4 CIRCUIT MAIN BREAKER

WITHOUT POWER ISOLATION ASSEMBLY  
2 CIRCUIT MAIN BREAKER

3C/#6 AWG (MINIMUM BY CONTRACTOR)  
(PAID AT 1 1/2 X PRICE FOR 2C)



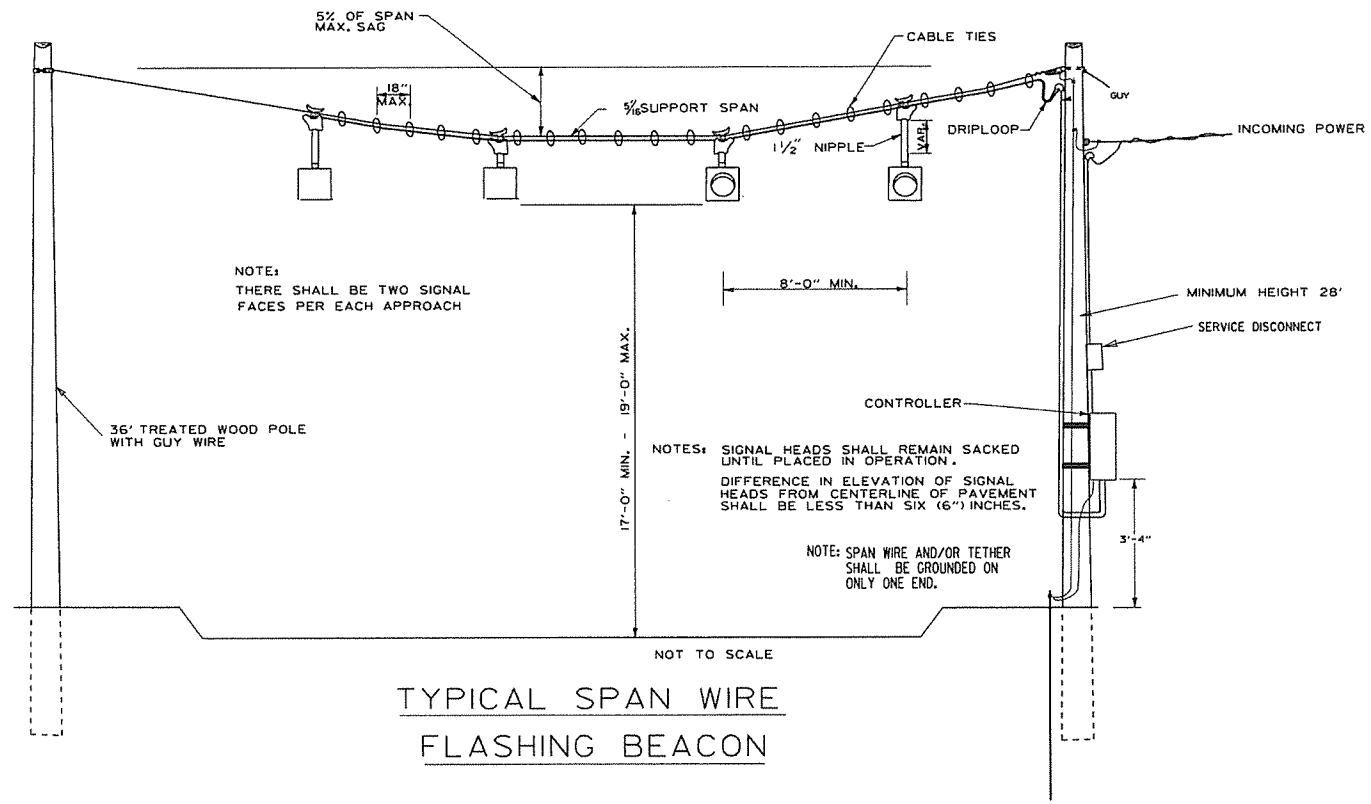
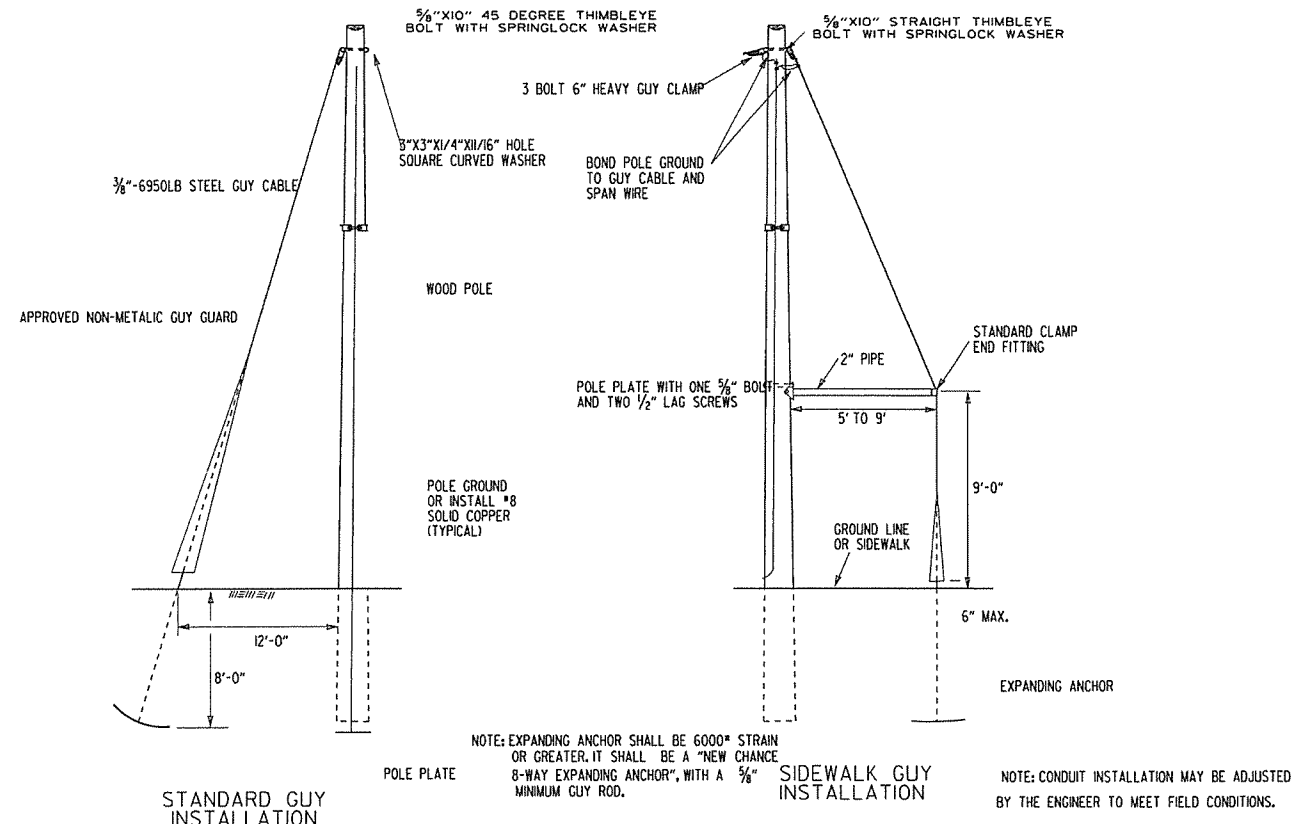
NOTE: ELECTRICAL GROUND CONDUCTOR (EGC) ADDED 3-3-2003, CONSISTING OF A 1C/#8AWG CU GREEN WIRE AS PER NATIONAL ELECT. CODES.

DATE	REVISION	DATE	FILM
9-12-13	ISSUED AS STANDARD DRAWING		
4-18-13	ADDED LIGHTNING ARRESTOR		
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

SERVICE POINT

STANDARD DRAWING SD-9

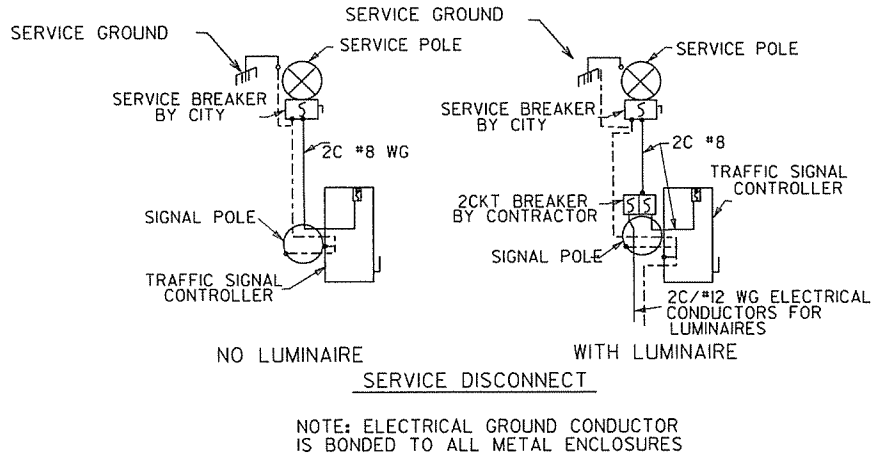


NOTES: SPAN WIRE POLES SHALL BE MOUNTED A MINIMUM OF 4' BEHIND CURB OR SHOULDER. SPAN WIRE ASSEMBLIES DO NOT REQUIRE TETHER UNLESS OTHERWISE NOTED ON PLAN SHEETS. CABLE TIES SHALL BE SUITABLE FOR OUTSIDE USE (BLACK).

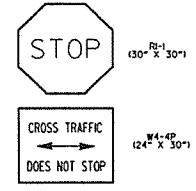
THE CONTROLLER POWER SUPPLY GROUND BUSS SHALL BE BONDED TO THE GROUND ROD WITH A #8 AWG SOLID COPPER WIRE. ON EXISTING INSTALLATIONS WITH NO GROUND ROD, CONTRACTOR SHALL INSTALL A 10' X 5/8" COPPERWELD GROUND ROD.

GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO LATEST ADOPTED ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION,
2. THE FLASHING BEACON ASSEMBLY SHALL INCLUDE LIGHTNING AND R.F.I. SUPPRESSORS, GALVANIZED STEEL CONDUIT, TRAFFIC SIGNAL CABLE, 12" TRAFFIC SIGNAL HEAD (1 SEC., 1 WAY) WITH YELLOW LENSES ON MAJOR APPROACH AND RED LENSES ON MINOR APPROACH, FLASHING BEACON CONTROLLER AND A SOLID STATE CALANDER DATE TIME CLOCK WITH DAYLIGHT SAVINGS TIME PROGRAMMING AND 48 HOUR POWER FAIL PROTECTION.
3. THE CITY OR COUNTY SHALL BE RESPONSIBLE FOR PROVIDING, THROUGH A LOCAL UTILITY COMPANY, A SERVICE POINT AND UNDERGROUND/AERIAL POWER TO THE FLASHING BEACON CONTROLLER.



AT INTERSECTIONS WITH FLASHING RED ON ONE APPROACH AND FLASHING YELLOW ON OTHER, SUPPLEMENTAL "CROSS TRAFFIC DOES NOT STOP" SHALL BE INSTALLED ON THE SUPPORT FOR THE STOP SIGN PRIOR TO ACTIVATION OF BEACON.



TRAFFIC SIGNAL LEGEND

SYMBOL	DEFINITION
[Symbol: Loop Detector]	LOOP DETECTOR
[Symbol: Loop Wiring]	LOOP WIRING
[Symbol: Conduit]	CONDUIT
[Symbol: Phase A in Phasing Diagram]	PHASE A IN PHASING DIAGRAM
[Symbol: 2 inch Diameter]	2" DIAMETER
[Symbol: Signal No. 1]	SIGNAL NO. 1
[Symbol: Arrow on Mast Arm or Spanwire]	ARROW ON MAST ARM OR SPANWIRE SHOWS DIRECTION OF SIGNAL FACE
[Symbol: Arrow in Roadway Lane]	ARROW IN ROADWAY LANE INDICATES DIRECTION OF TRAFFIC IN THAT LANE
[Symbol: Spanwire Support Poles]	SPANWIRE SUPPORT POLES & SPAN WIRE SUPPORTING 2 SIGNALS
[Symbol: Mast Arm & Pole]	MAST ARM & POLE WITH FOUNDATION SUPPORTING 2 SIGNALS
[Symbol: Controller on Pole]	CONTROLLER MOUNTED ON SUPPORT POLE
[Symbol: Controller on Base]	CONTROLLER MOUNTED ON CONCRETE BASE
[Symbol: Precast Concrete Pull Box]	PRECAST CONCRETE PULL BOX

SIGNAL OPERATION NOTES:  
FLASHING OPERATION - PRIOR TO NORMAL OPERATION, SIGNAL SHALL BE FLASHED YELLOW FOR A PERIOD OF 5 WORK DAYS.

DATE	REVISION	DATE FILM	ARKANSAS STATE HIGHWAY COMMISSION
9-12-13	ISSUED AS STANDARD DRAWING		WOOD POLE SPAN WIRE INSTALLATION STANDARD DRAWING SD-10
5-11-04	REV. GROUND CONDUCTORS & SIGNING		
12-27-99	REVISED NOTES		
11-17-98	REVISED NOTES		
11-21-95	ISSUED		

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 (CURRENT 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' X 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.

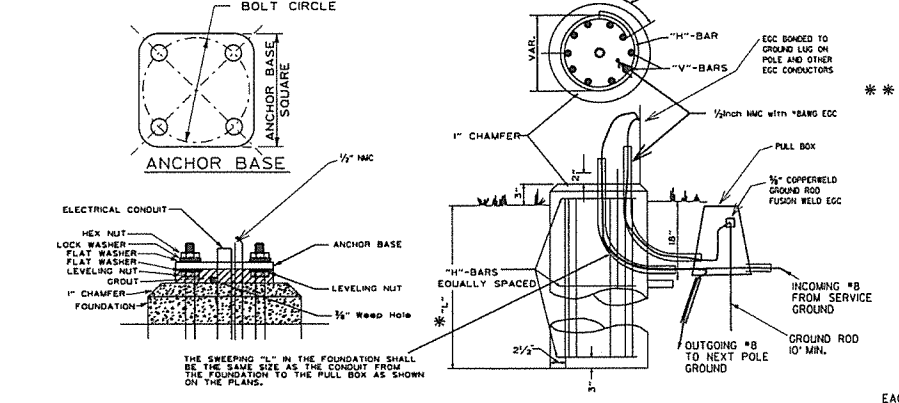
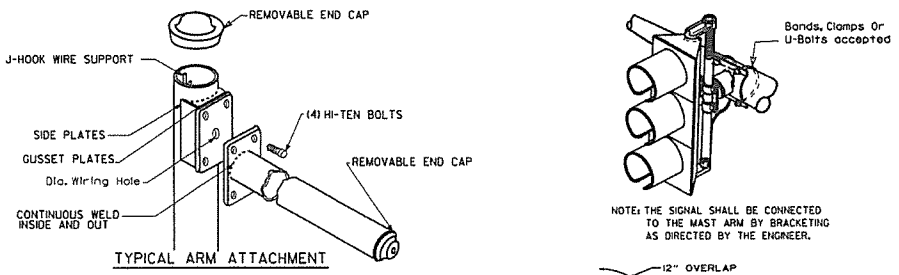
4. POLE/MAST ARM CAP -- POLE AND MAST ARMS CAPS SHALL BE PROVIDED, FABRICATED OF EITHER STEEL OR CAST ALUMINUM.

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 HOLE 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.

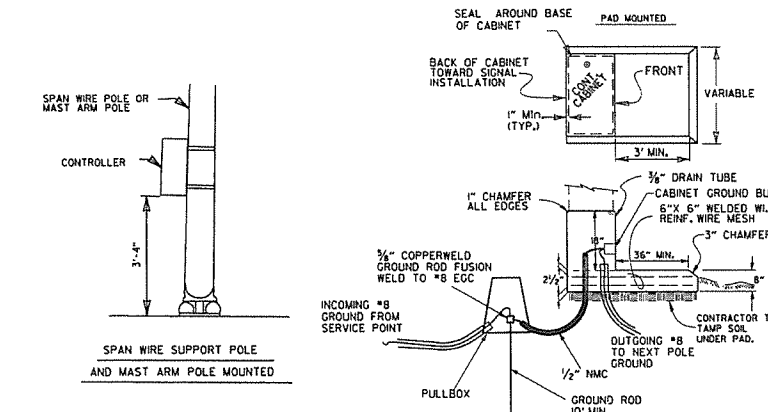


THE GROUND ROD SHALL BE FUSION WELDED TO A 1C/8 A.W.G. SOLID COPPER GROUND WIRE ATTACHMENT TO THE PRIMARY GROUND MAY BE BY AN APPROVED CLAMP. THE ROD IS TO BE LOCATED IN THE CONCRETE PULL BOX.

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.	HORZ.	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'



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.

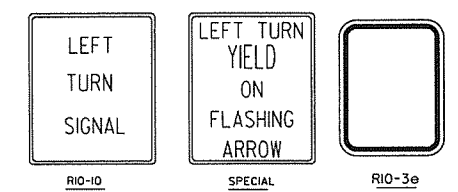
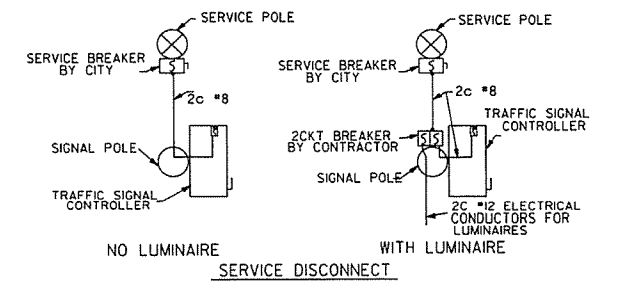
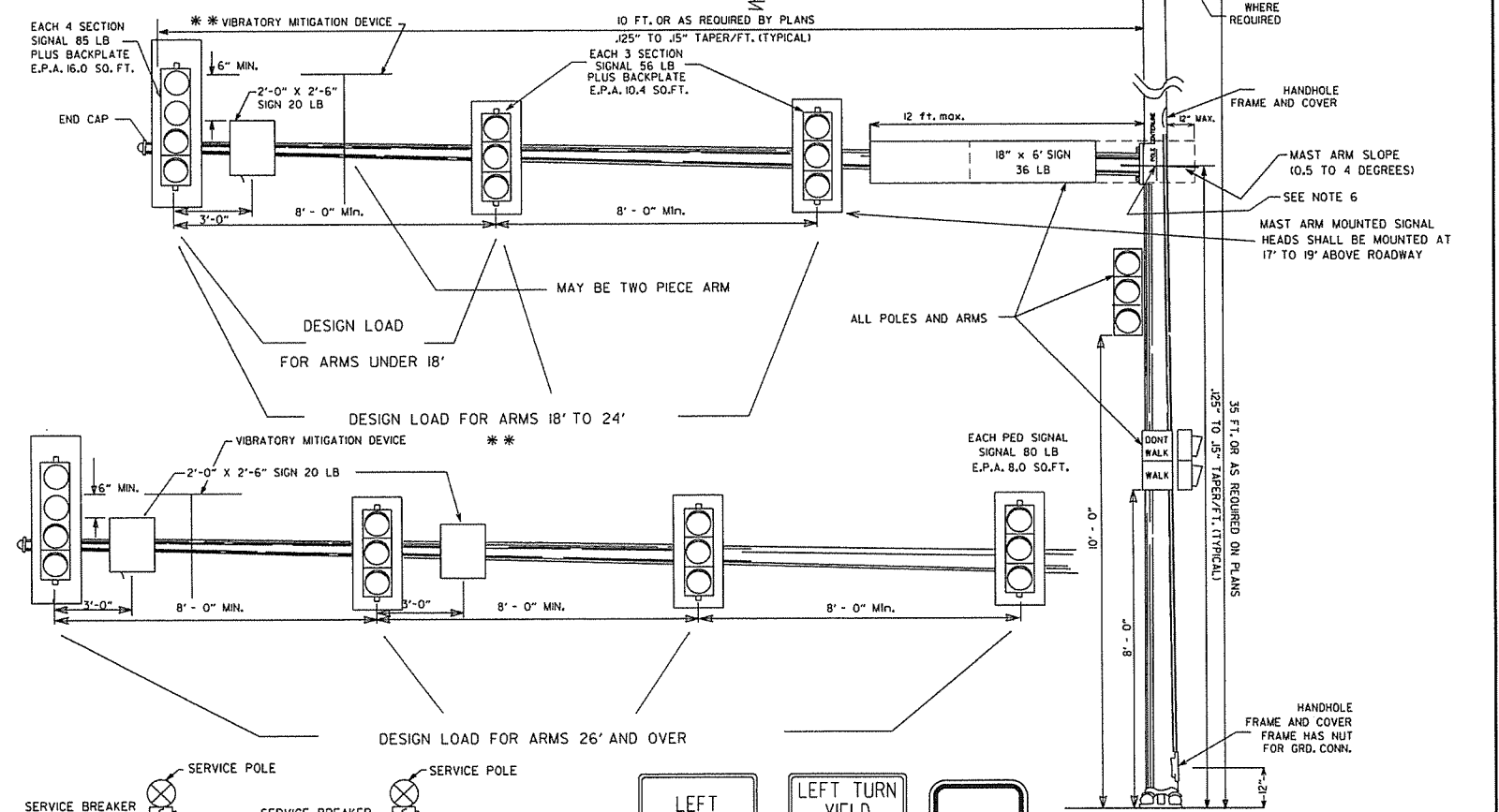
THE CONTRACTOR MAY BE REQUIRED TO ALTER THE FLASHING DISPLAY DURING THE TEMPORARY FLASH PERIOD. AT THE TIME INTERSECTION IS PLACED IN PERMANENT OPERATION, THE FLASH SEQUENCE SHALL THEN BE RETURNED TO THAT INDICATED ON THE PLAN SHEETS. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED FOR THESE ALTERATIONS IN FLASH SEQUENCE.

\* 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.

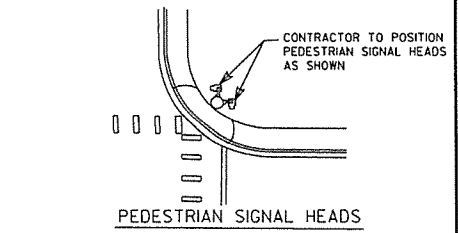
SPECIAL NOTE: 90 MPH WIND ZONE DESIGN, SEE NOTE 3. MINIMUM STRUCTURAL REQUIREMENTS.

\*\* 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"X0.25" 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.



DATE	REVISION	DATE	FILM
2-27-14	REVISED NOTES.		
9-12-13	ISSUED AS STANDARD DRAWING		
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 2001 AASHTO STANDARDS		
10-12-04	REVISED CABINET ORIENTATION		
6-23-04	REVISED		
5-1-04	REV. NOTE 3/AASHTO REQUIREMENTS		
6-1-01	REV. NOTES & POLE MAST ARM SLOPE		
4-1-01	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		

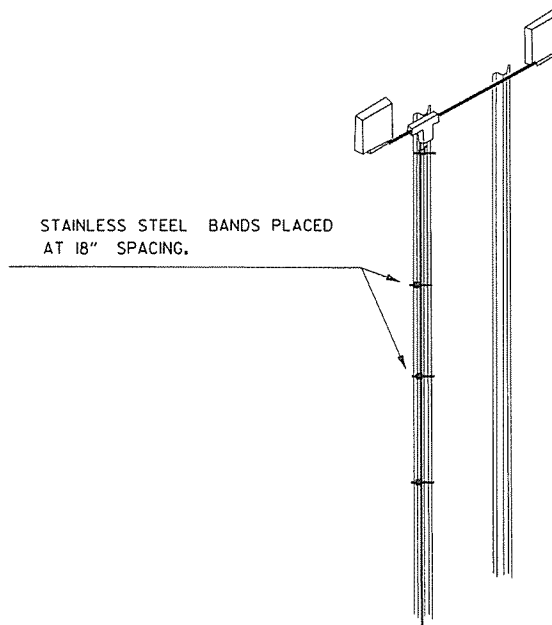
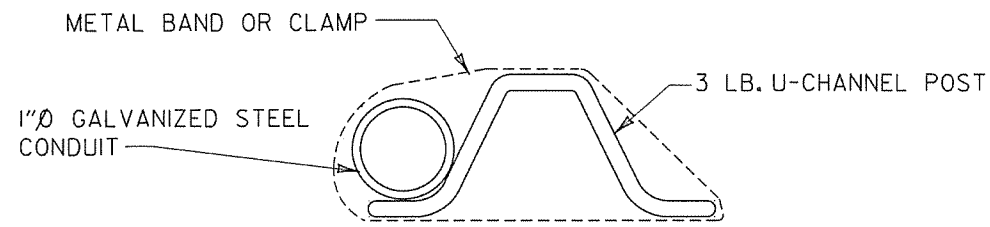


ARKANSAS STATE HIGHWAY COMMISSION

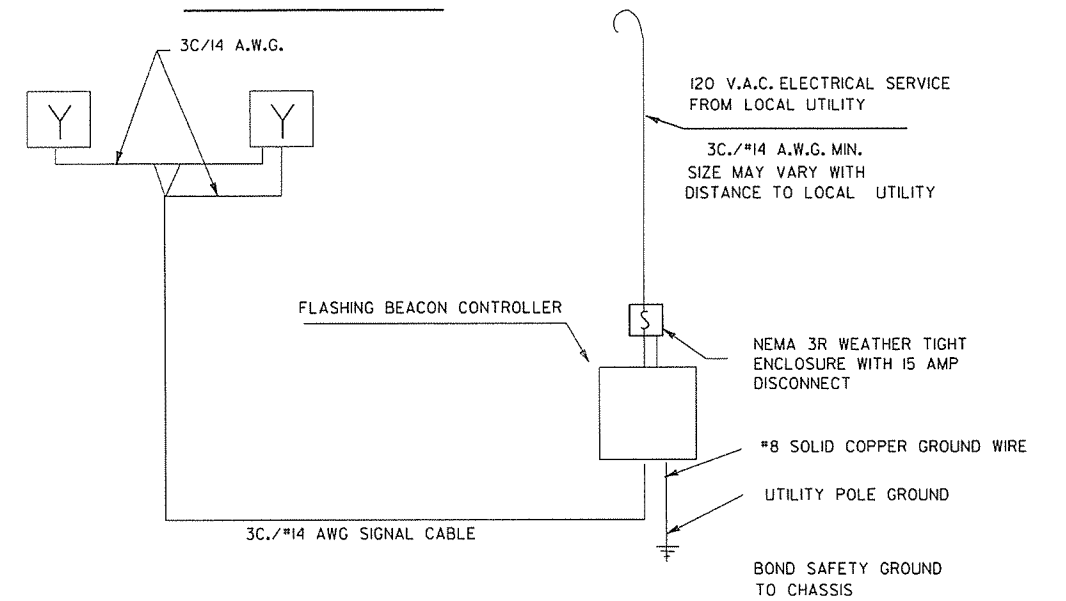
STEEL POLE WITH MAST ARM

STANDARD DRAWING SD-II

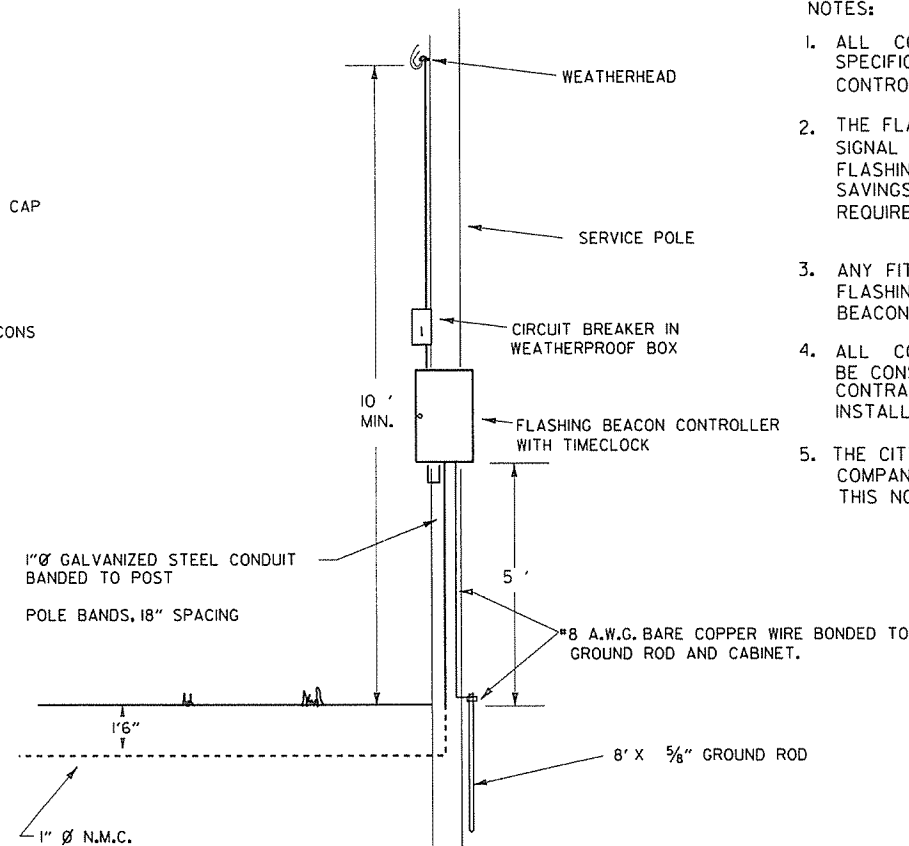
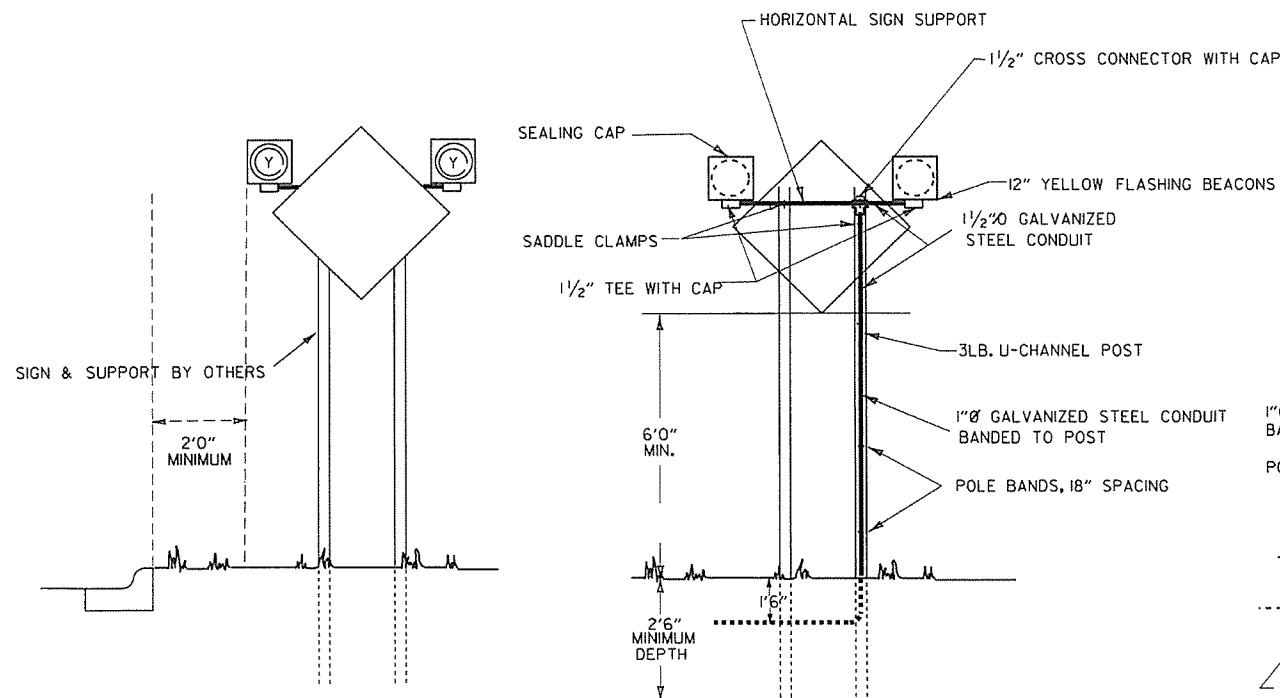
DETAIL OF  
SIGN SUPPORT ASSEMBLY



WIRING DIAGRAM



TYPICAL INSTALLATION



NOTES:

1. ALL CONSTRUCTION SHALL CONFORM TO ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION) DIVISION 700, TRAFFIC CONTROL FACILITIES.
2. THE FLASHING BEACON ASSEMBLY SHALL INCLUDE LIGHTNING SUPPRESSORS, TRAFFIC SIGNAL CABLE, TWO 12" TRAFFIC SIGNAL HEADS (1SEC., 1WAY) WITH YELLOW LENSES, FLASHING BEACON CONTROLLER AND A SOLID STATE CALENDAR DATE TIME CLOCK WITH DAYLIGHT SAVINGS TIME PROGRAMMING AND 48 HOUR POWER FAIL PROTECTION. DATE TIME CLOCK REQUIRED ONLY FOR SCHOOL ZONES. SIGNAL HEADS SHALL BE WIRED TO FLASH ALTERNATELY.
3. ANY FITTINGS, BANDS, GROUND ROD OR ACCESSORIES NECESSARY TO MOUNT CONDUIT AND FLASHING BEACON CONTROLLER SHALL BE CONSIDERED SUBSIDIARY TO THE ITEM FOR FLASHING BEACON CONTROLLER.
4. ALL COUPLINGS, TEES, CLAMPS AND HARDWARE NECESSARY TO MOUNT SIGNAL HEADS SHALL BE CONSIDERED SUBSIDIARY TO THE ITEM FOR TRAFFIC SIGNAL HEAD (1SEC., 1WAY). CONTRACTOR SHALL REMOVE SIGNS AND RE-INSTALL THEM AFTER FLASHING BEACONS ARE INSTALLED.
5. THE CITY OR COUNTY SHALL BE RESPONSIBLE FOR PROVIDING, THROUGH A LOCAL UTILITY COMPANY A SERVICE POINT AND POWER TO THE FLASHING BEACON CONTROLLER. THIS NOTE APPLIES ONLY WHEN USED AT A SCHOOL LOCATION.

2-27-14	REVISED NOTE 1.	
9-12-13	ISSUED AS STANDARD DRAWING	
4-17-08	MINOR REVISIONS	
11-3-97	ISSUED	
DATE	REVISION	DATE FILM

ARKANSAS STATE HIGHWAY COMMISSION

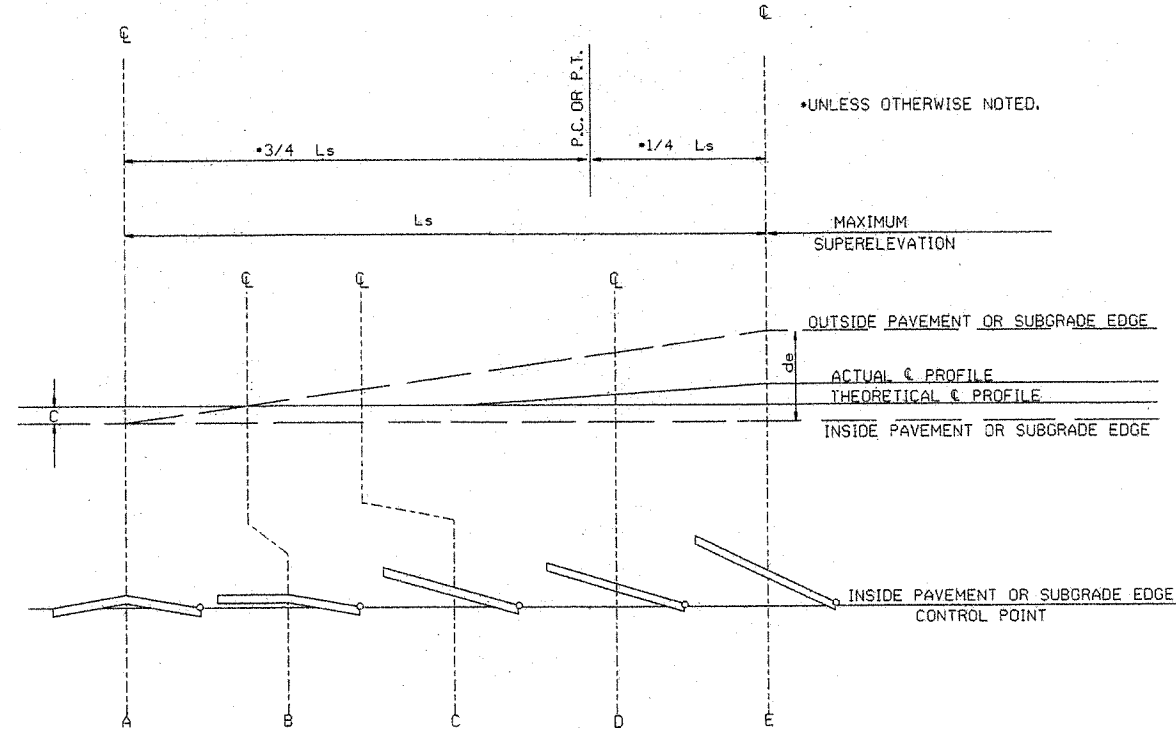
FLASHING BEACON INSTALLATION  
FOR HAZARDOUS CONDITIONS

STANDARD DRAWING SD-13

SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

DEGREE OF CURVE	30 MPH		40 MPH		50 MPH		55 MPH		60 MPH		70 MPH	
	Ls (FT)		Ls (FT)		Ls (FT)		Ls (FT)		Ls (FT)		Ls (FT)	
	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE
0° 15'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
0° 30'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
0° 45'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
1° 00'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
1° 15'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
1° 30'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
1° 45'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
2° 00'	R.C.		R.C.		R.C.		R.C.		R.C.		R.C.	
2° 15'	R.C.		R.C.		R.C.		R.C.		R.C.		R.C.	
2° 30'	0.021		0.021		0.021		0.021		0.021		0.021	
2° 45'	0.023		0.023		0.023		0.023		0.023		0.023	
3° 00'	0.025	150	0.025	200	0.025	200	0.025	230	0.025	250	0.025	300
3° 15'	0.027		0.027		0.027		0.027		0.027		0.027	
3° 30'	0.029		0.029		0.029		0.029		0.029		0.029	
3° 45'	0.031		0.031		0.031		0.031		0.031		0.031	
4° 00'	0.033	200	0.033	250	0.033	250	0.033	300	0.033	350	0.033	400
4° 15'	0.037		0.037		0.037		0.037		0.037		0.037	
4° 30'	0.040		0.040		0.040		0.040		0.040		0.040	
4° 45'	0.043		0.043		0.043		0.043		0.043		0.043	
5° 00'	0.046		0.046		0.046		0.046		0.046		0.046	
5° 15'	0.050		0.050		0.050		0.050		0.050		0.050	
5° 30'	0.053		0.053		0.053		0.053		0.053		0.053	
5° 45'	0.056		0.056		0.056		0.056		0.056		0.056	
6° 00'	0.058		0.058		0.058		0.058		0.058		0.058	
6° 15'	0.061		0.061		0.061		0.061		0.061		0.061	
6° 30'	0.063		0.063		0.063		0.063		0.063		0.063	
6° 45'	0.066	160	0.066	185	0.066	185	0.066	205	0.066	230	0.066	250
7° 00'	0.072		0.072		0.072		0.072		0.072		0.072	
7° 15'	0.075		0.075		0.075		0.075		0.075		0.075	
7° 30'	0.078		0.078		0.078		0.078		0.078		0.078	
7° 45'	0.080		0.080		0.080		0.080		0.080		0.080	
8° 00'	0.083		0.083		0.083		0.083		0.083		0.083	
8° 15'	0.086		0.086		0.086		0.086		0.086		0.086	
8° 30'	0.089		0.089		0.089		0.089		0.089		0.089	
8° 45'	0.091		0.091		0.091		0.091		0.091		0.091	
9° 00'	0.093		0.093		0.093		0.093		0.093		0.093	
9° 15'	0.095		0.095		0.095		0.095		0.095		0.095	
9° 30'	0.097		0.097		0.097		0.097		0.097		0.097	
9° 45'	0.099		0.099		0.099		0.099		0.099		0.099	
10° 00'	0.100	220	0.100	250	0.100	250	0.100	315	0.100	350	0.100	400

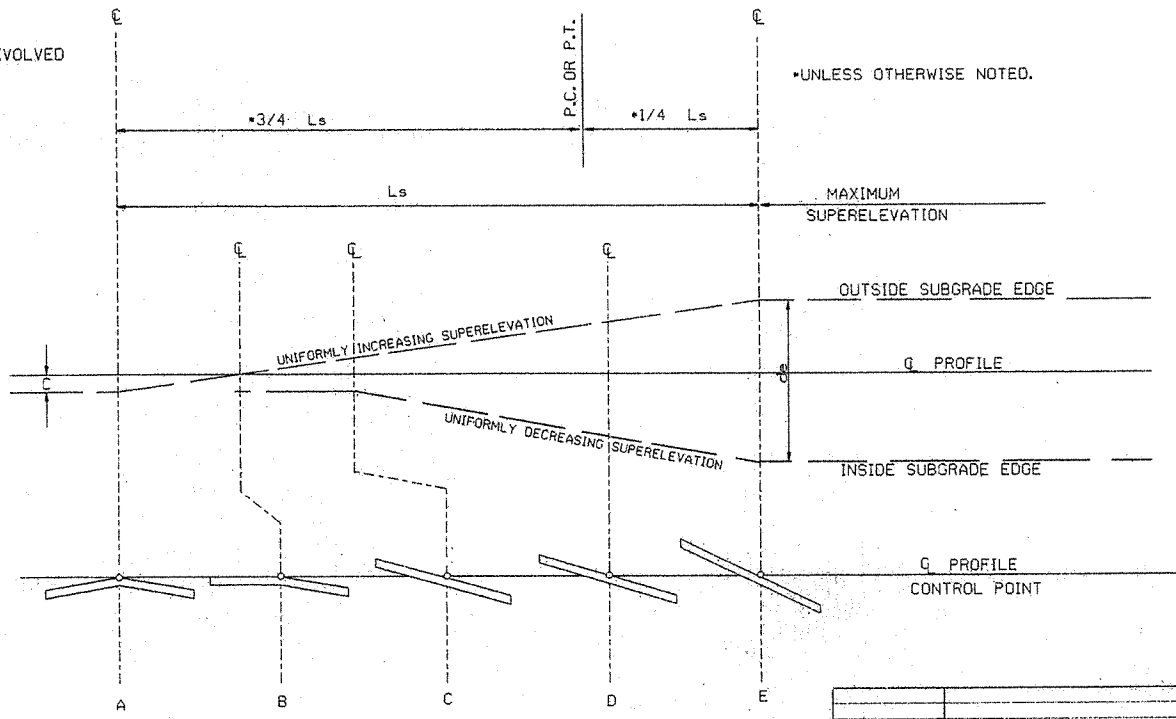
**ABBREVIATIONS**  
 NC - NORMAL CROWN  
 RC - REVERSE CROWN, SUPERELEVATION AT NORMAL CROWN SLOPE  
 e - RATE OF SUPERELEVATION (FT. PER FT.)  
 Ls - LENGTH OF SUPERELEVATION TRANSITION (FT.)  
 L - DISTANCE FROM BEGINNING OF SUPERELEVATION TRANSITION TO ANY POINT (FT.)  
 d - WIDTH OF PAVEMENT (FT.) OR WIDTH OF SUBGRADE (FT.)  
 C - NORMAL CROWN (FT.)



NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

- GENERAL NOTES**
- ON PAVEMENT WITH TWO-WAY TRAFFIC, THE SUPERELEVATION SHALL BE REVOLVED ON THE INSIDE PAVEMENT EDGE UNLESS OTHERWISE NOTED ON THE PLANS
  - SUPERELEVATION VALUES SHOWN ON THE CROSS SECTIONS ARE VALUES (+) OR (-) TO BE ADDED TO OR SUBTRACTED FROM THE POINT OF CONTROL.
  - LENGTHS FOR L MAY BE ROUNDED IN MULTIPLES OF 25 FT. OR 50 FT. TO PERMIT SIMPLER CALCULATIONS.
  - 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 =  $\frac{Lde}{Ls}$

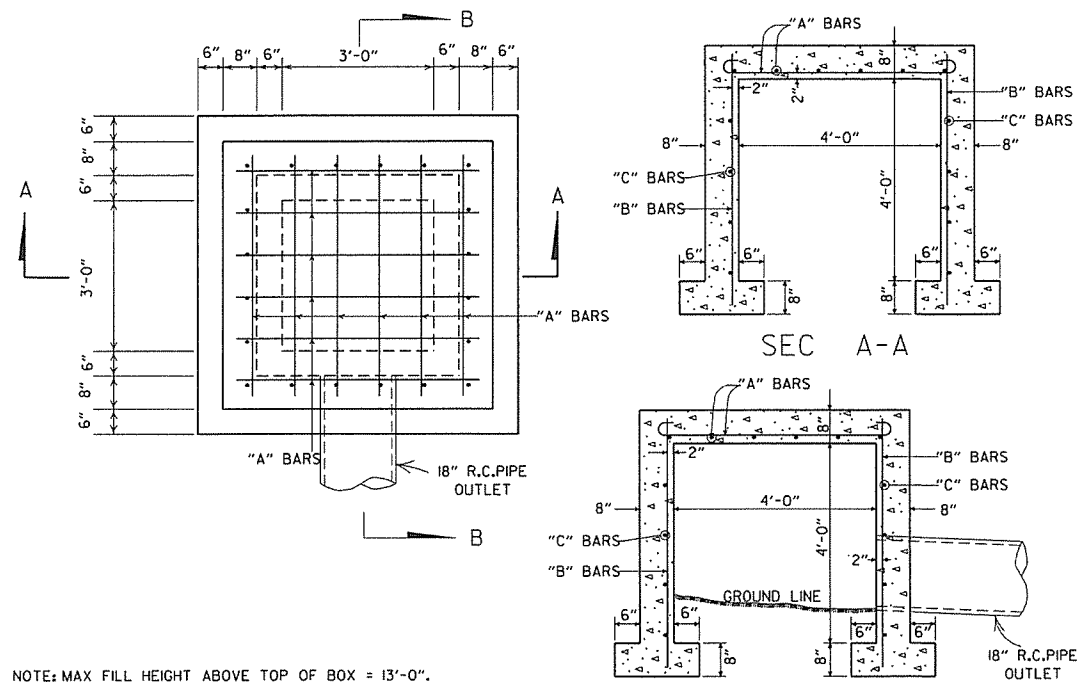
10-18-96	ADDED FORMULA	10-12-96
01-09-87	ISSUED	534-1-9-87
DATE	REVISION	DATE FILLED

ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

STANDARD DRAWING SE-2

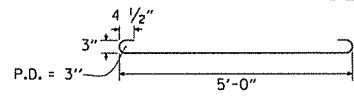




NOTE: MAX FILL HEIGHT ABOVE TOP OF BOX = 13'-0".

STEEL SCHEDULE			
BAR	NUMBER	LENGTH	SPACING
"A"	12	6'-0"	10"
"B"	20	5'-0"	10 1/2"
"C"	16	5'-0"	12"

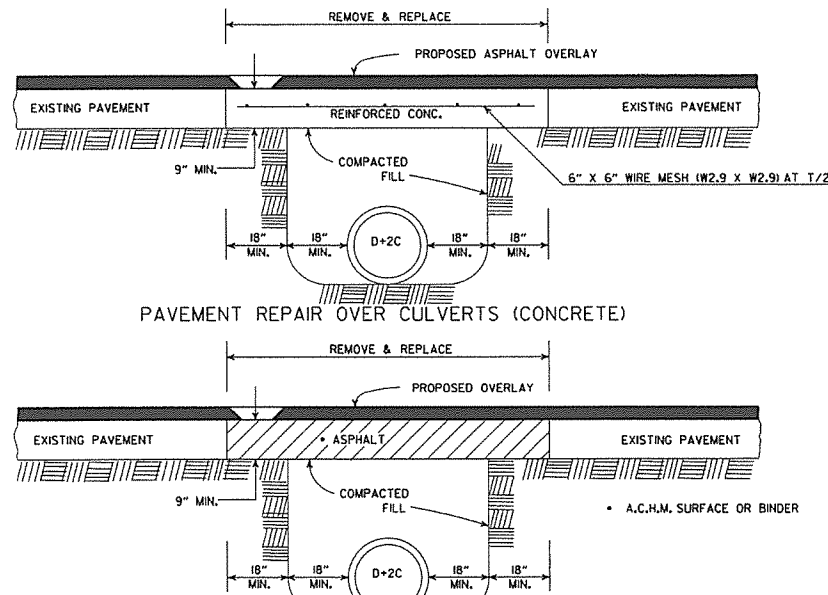
ALL STEEL TO BE #4 BARS



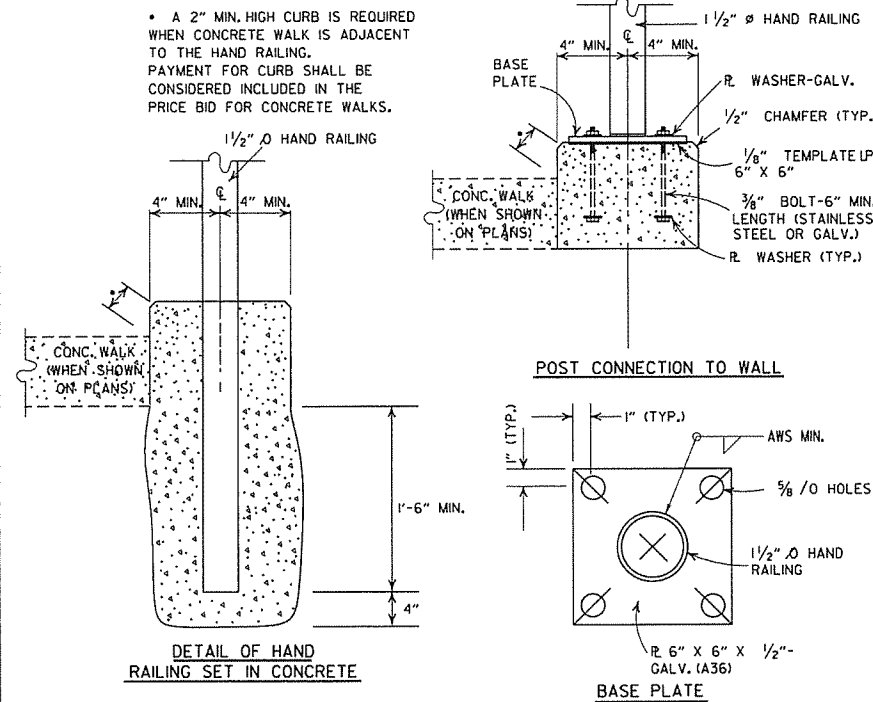
GENERAL NOTE:

THE PAY ITEMS FOR REINFORCED CONCRETE SPRING BOXES SHALL BE FOR THE QUANTITIES OF CONCRETE OF THE CLASS SPECIFIED, REINFORCING STEEL, EXCAVATION FOR STRUCTURES AND 18" R.C. PIPE CULVERT.

REINFORCED CONCRETE SPRING BOX



DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS

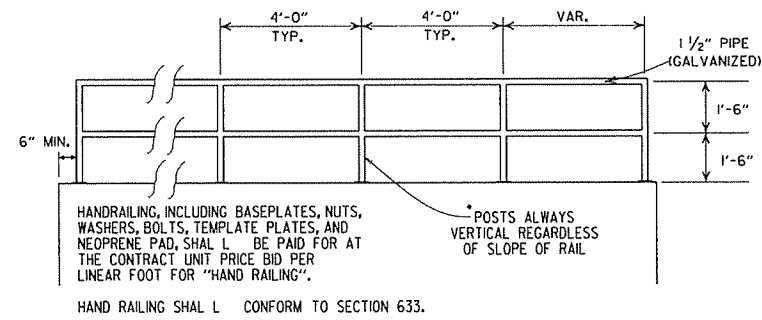


DETAIL OF HAND RAILING SET IN CONCRETE

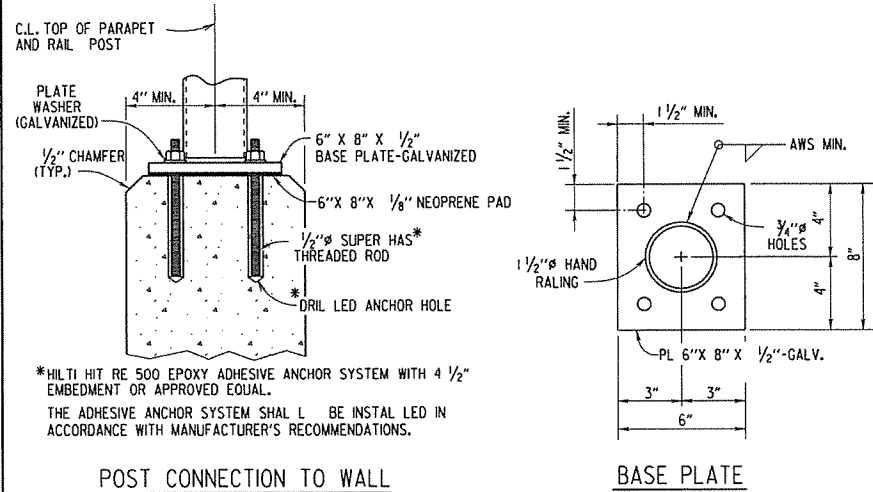
POST CONNECTION TO WALL

BASE PLATE

POST CONNECTION DETAILS



HAND RAILING SHALL CONFORM TO SECTION 633.

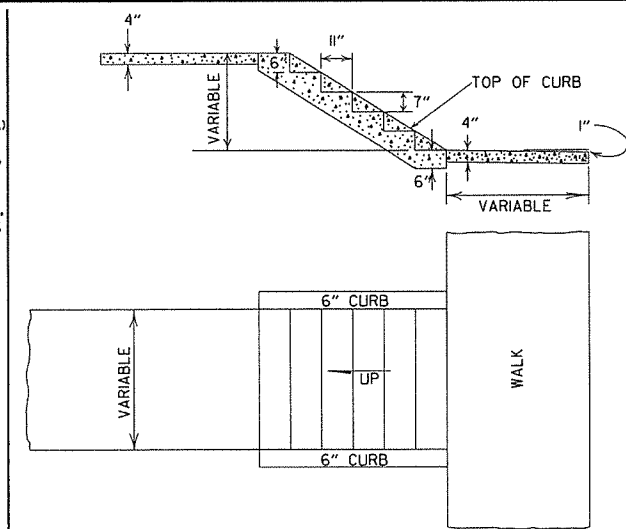


POST CONNECTION TO WALL

BASE PLATE

DETAILS OF ALTERNATE POST ANCHOR SYSTEM (EPOXY ADHESIVE ANCHORS)

HAND RAILING DETAILS



DETAILS OF CONCRETE STEPS & WALKS

- 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.

DATE	REVISION	DATE FILMED
9-12-13	REVISED REINFORCED CONCRETE SPRING BOX	
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
11-1-84	ADDED HDWL. MODS, DEL. PIPE UNDERDRAINS	
1-4-83	REV. TRENCH FOR PIPE UNDERDRAIN	510-11-1-84
	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	919-2-2-76
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

ADVANCE DISTANCES (XXXX)

500 FT	1/2 MILE
1000 FT	3/4 MILE
1500 FT	1 MILE AHEAD

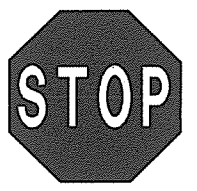
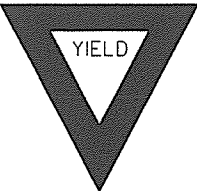

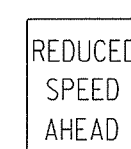

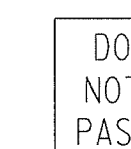

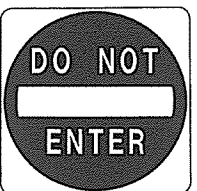

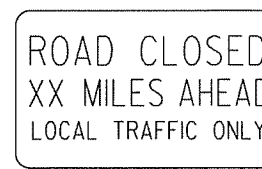
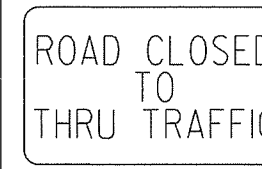
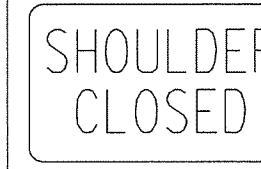
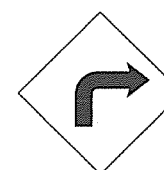
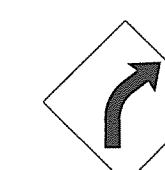
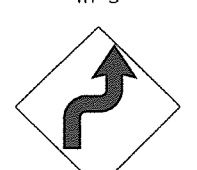
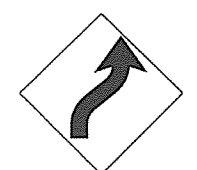
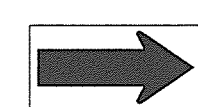
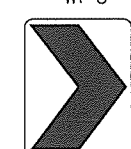
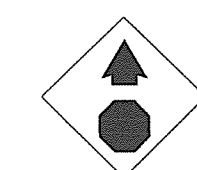
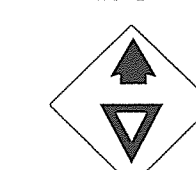
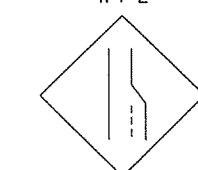

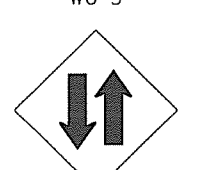
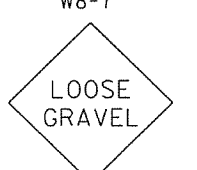
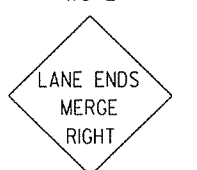
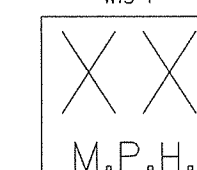
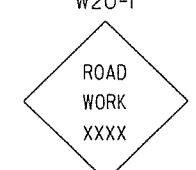
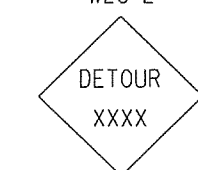
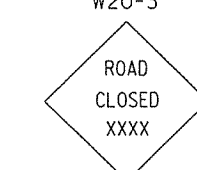

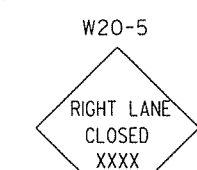


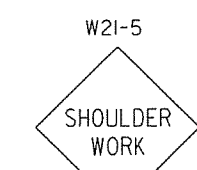
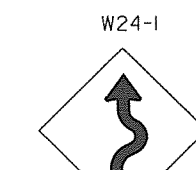
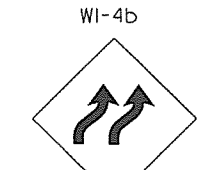
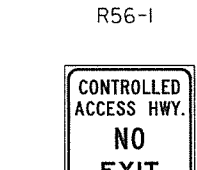

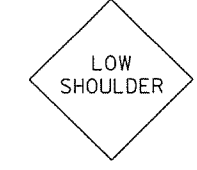
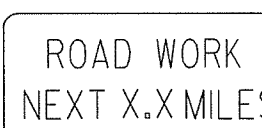
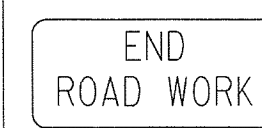
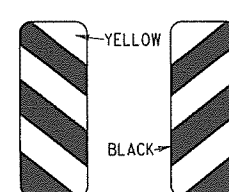


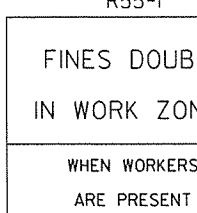
GENERAL NOTES:

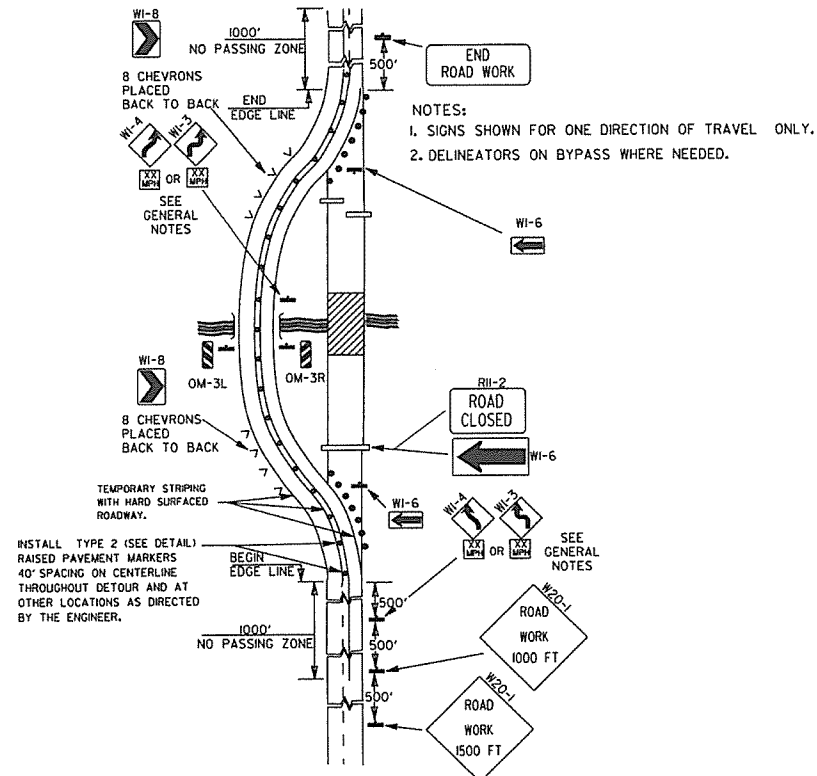
- ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.
- TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
- 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.
- 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.

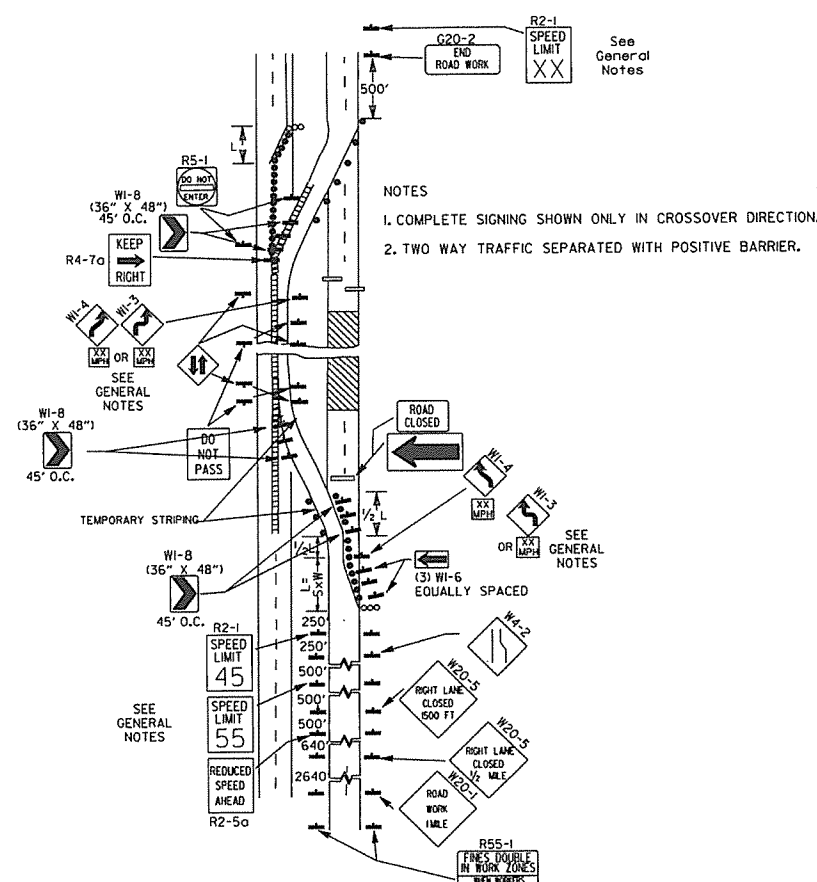
DATE	REVISION	FILMED
12-15-81	REVISED W24-1	
11-17-80	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
11-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
11-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
11-18-98	ADDED NOTE	
6-26-97	REVISED 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

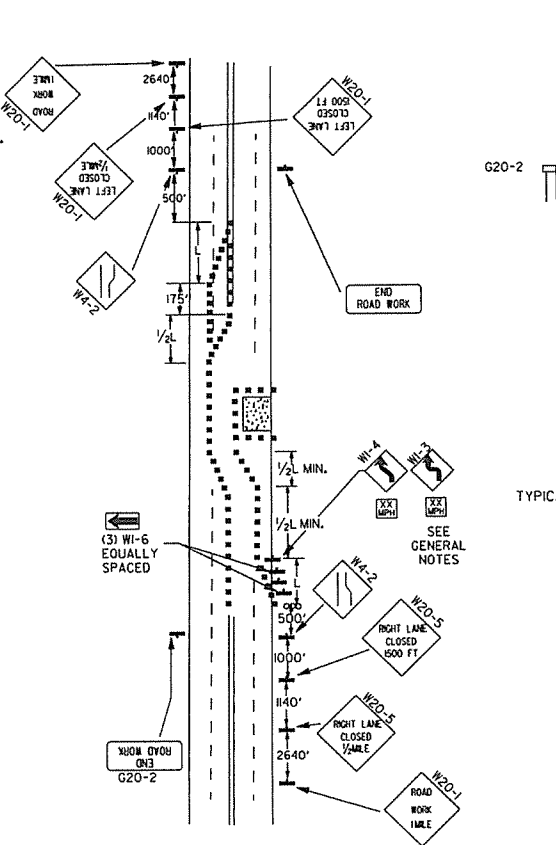
<p>RI-1</p>  <p>STANDARD 30"x30" EXPRESSWAY 36"x36" SPECIAL 48"x48"</p>	<p>RI-2</p>  <p>STD. 36"x36"x36" EXPWY. 48"x48"x48" FWY. 60"x60"x60"</p>	<p>R2-1</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	<p>R2-5A</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	<p>R2-5C</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	<p>R4-1</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	<p>R4-2</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>
<p>R5-1</p>  <p>STD. 30"x30" EXPWY. 36"x36" SPECIAL 48"x48"</p>	<p>R11-2</p>  <p>48"x30"</p>	<p>R11-3A</p>  <p>60"x30"</p>	<p>R11-4</p>  <p>60"x30"</p>	<p>RSP-1</p>  <p>48"x30"</p>	<p>WI-1</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>WI-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p>
<p>WI-3</p>  <p>STD. 48"x48"</p>	<p>WI-4</p>  <p>STD. 48"x48"</p>	<p>WI-6</p>  <p>STD. 48"x24" SPECIAL 60"x30"</p>	<p>WI-8</p>  <p>STD. 18"x24" SPECIAL 24"x30" EXPWY. 30"x36" FWY. 36"x48"</p>	<p>W3-1</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p>	<p>W3-2</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p>	<p>W4-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p>
<p>W5-1</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p>	<p>W6-3</p>  <p>EXPWY. 36"x36" SPECIAL 48"x48"</p>	<p>W8-7</p>  <p>EXPWY. 36"x36" FWY. 48"x48"</p>	<p>W9-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W13-1</p>  <p>STD. 24"x24"</p>	<p>W20-1</p>  <p>STD. 48"x48"</p>	<p>W20-2</p>  <p>STD. 48"x48"</p>
<p>W20-3</p>  <p>STD. 48"x48"</p>	<p>W20-4</p>  <p>STD. 48"x48"</p>	<p>W20-5</p>  <p>STD. 48"x48"</p>	<p>W20-7a</p>  <p>18" 500 FEET 24" W16-2</p> <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W21-2</p>  <p>STD. 30"x30" SPECIAL 36"x36"</p>	<p>W21-5</p>  <p>STD. 30"x30" SPECIAL 36"x36"</p>	<p>W24-1</p>  <p>STD. 36"x36"</p>
<p>W1-4b</p>  <p>STD. 48"x48"</p>	<p>R56-1</p>  <p>STD. 18"x18"</p>	<p>W8-11</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W8-9</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>G20-1</p>  <p>60"x24"</p>	<p>G20-2</p>  <p>48"x24"</p>	<p>OM-3L OM-3R</p>  <p>12"x36"</p>
<p>M4-9</p>  <p>STD. 30"x24" SPECIAL 48"x36" SPECIAL 60"x48"</p>	<p>M4-10</p>  <p>48"x18"</p>	<p>R55-1</p>  <p>36"x60"</p> <p>• USE 6" C LETTERS •• USE 4" D LETTERS</p>				



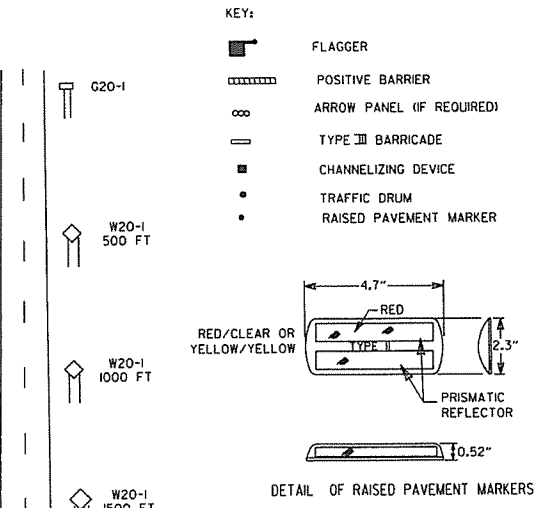
(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.



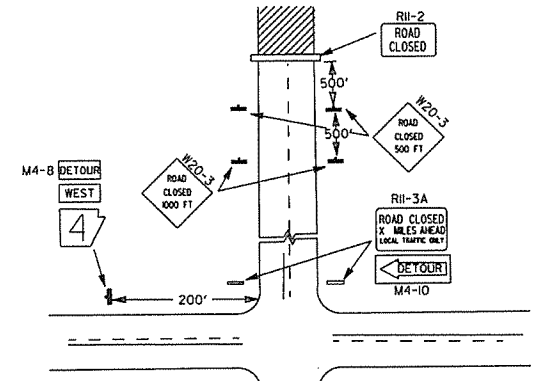
(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.



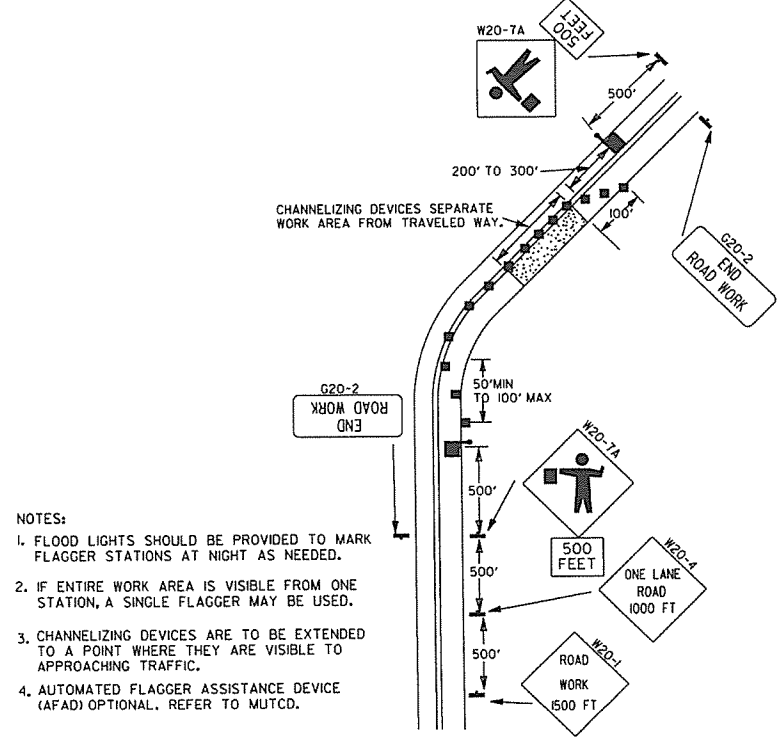
(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



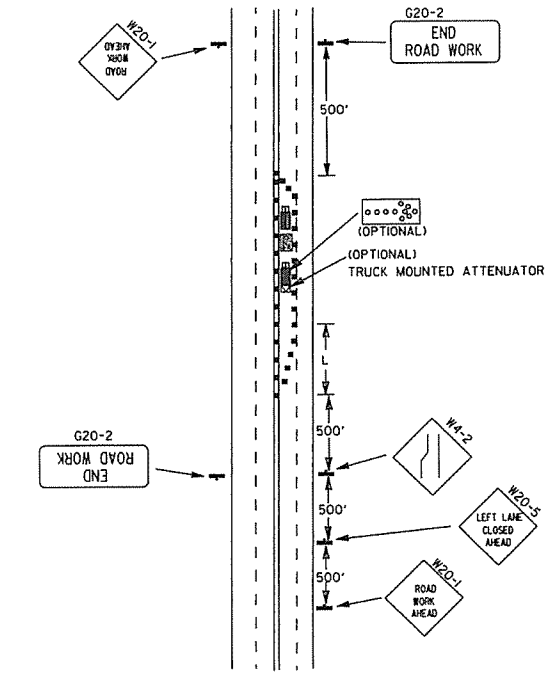
TAPER FORMULAE:  
 $L = SXW$  FOR SPEEDS OF 45MPH OR MORE.  
 $L = \frac{WS^2}{60}$  FOR SPEEDS OF 40MPH OR LESS.  
 WHERE:  
 L = MINIMUM LENGTH OF TAPER.  
 S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.  
 W = WIDTH OF OFFSET.



(D) TYPICAL APPLICATION - ROADWAY CLOSED BEYOND DETOUR POINT.



(E) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON 2-LANE HIGHWAY WHERE ONE LANE IS CLOSED AND FLAGGING IS PROVIDED.

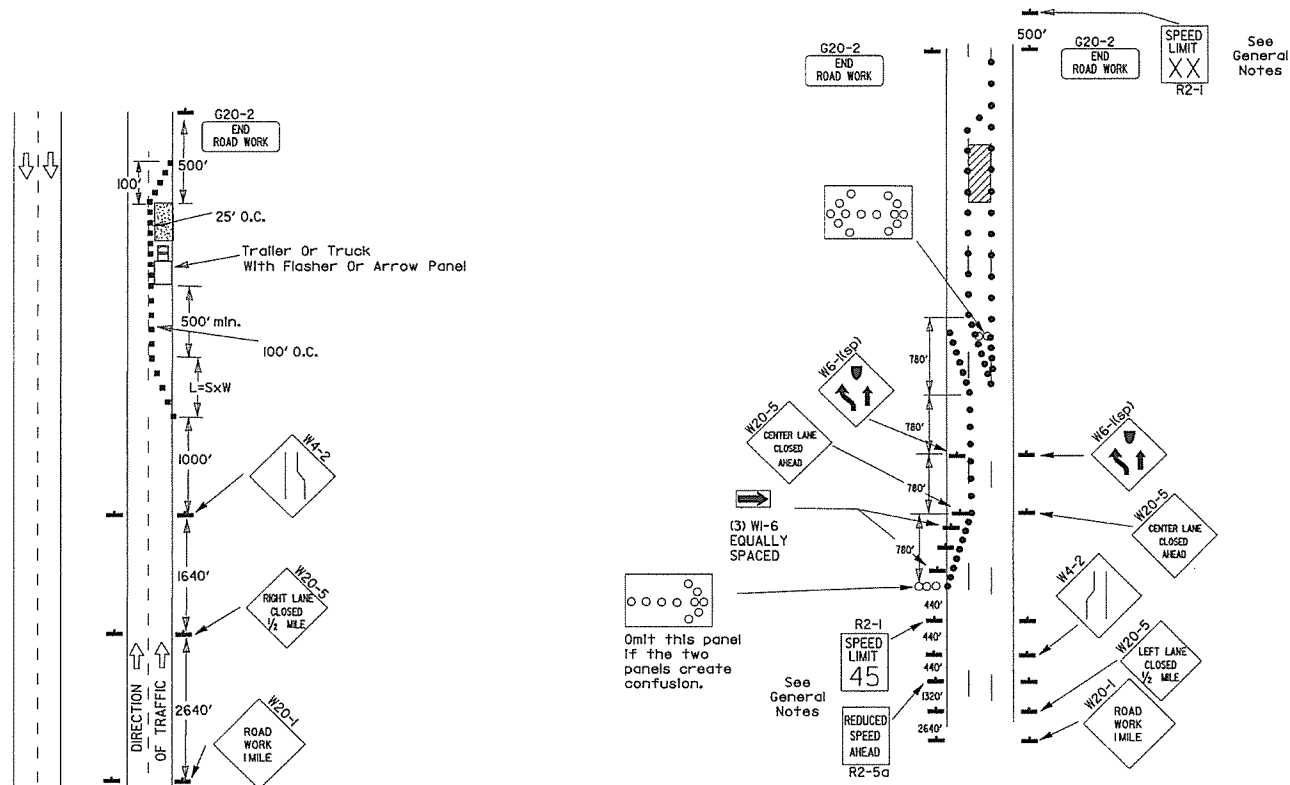


(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

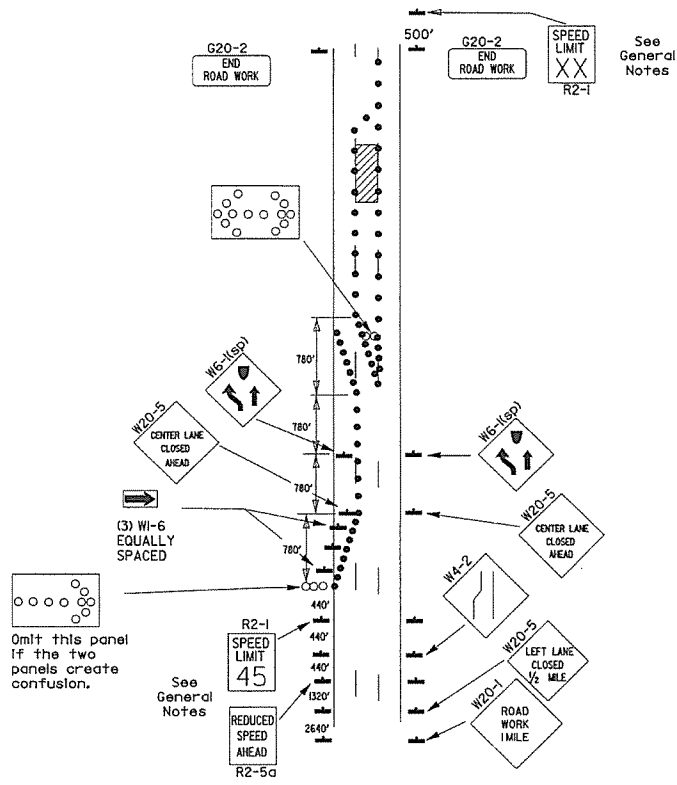
DATE	REVISION	FILMED
9-12-13	REVISED DETAIL OF RAISED PAVEMENT MARKERS	
3-11-10	ADDED (AFAD)	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (g) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON W1-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

ARKANSAS STATE HIGHWAY COMMISSION  
 STANDARD TRAFFIC CONTROLS  
 FOR HIGHWAY CONSTRUCTION  
 STANDARD DRAWING TC-2

Channelizing devices

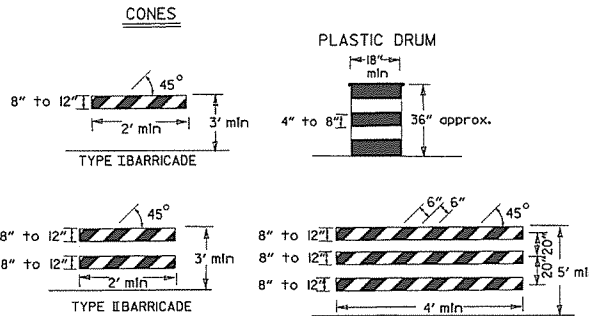


(A) Typical application - daytime maintenance operations of short duration on a 4-lane divided roadway where half of the roadway is closed.

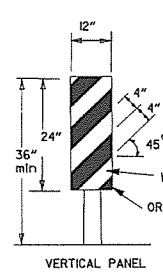


(B) Typical application - 3-lane one-way roadway where center lane is closed.

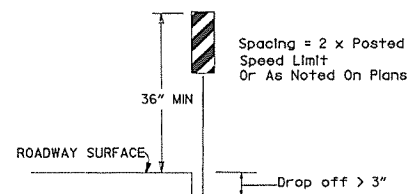
When cones are used on freeways and multi-lane highways, they shall be 28" min. During hours of darkness, 28" cones shall be used on all roadways, and shall be reflectorized in accordance with the M.U.T.C.D.



NOTE: For all road closures, the Type III barricades shall be of sufficient length to extend across entire roadway.



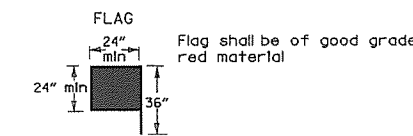
VERTICAL PANEL PLACEMENT



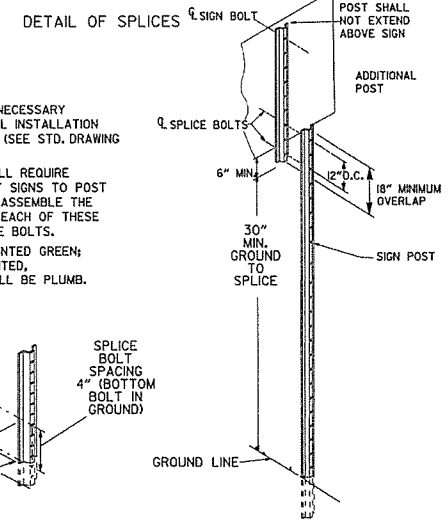
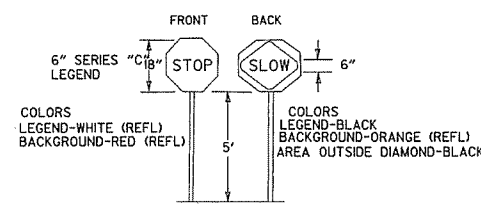
TRAFFIC CONTROL DEVICES FOR VERTICAL PAVEMENT DIFFERENTIALS

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 and vertical panels, drums or concrete barrier
Greater than 3"	Edge of shoulder	*Vertical panels, drums or concrete barrier

When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.



STOP SLOW PADDLE

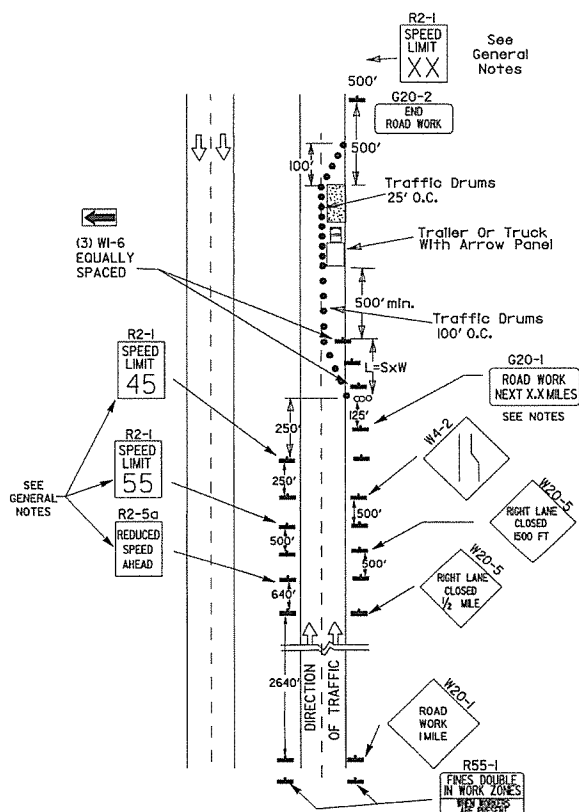


NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-2). NORMAL INSTALLATIONS WILL REQUIRE 1/4" DIA. BOLTS TO MOUNT SIGNS TO POST AND 5/16" DIA. BOLTS TO ASSEMBLE THE VARIOUS POST SUPPORTS. EACH OF THESE BOLTS SHALL BE CARRIAGE BOLTS. SIGN POSTS SHALL BE PAINTED GREEN; SIGNS SHALL NOT BE PAINTED, AND ALL SIGN POSTS SHALL BE PLUMB.

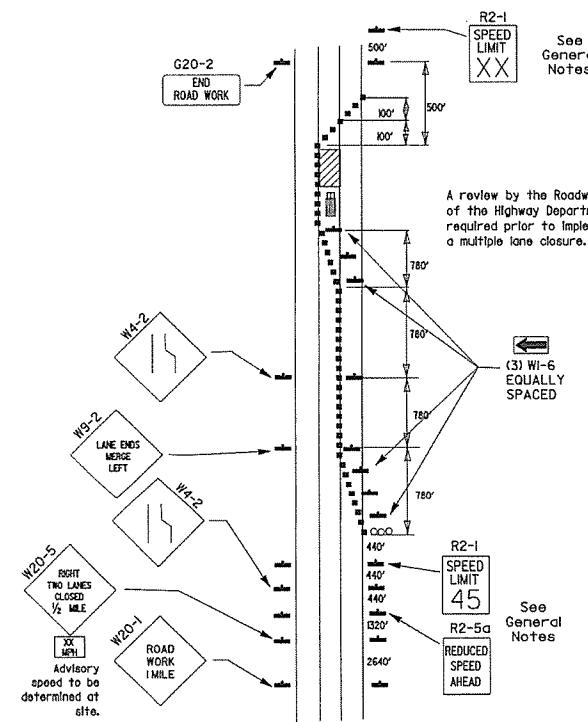
- KEY:
- Arrow Panel (if Required)
  - Channelizing Device
  - Traffic drum

GENERAL NOTES:

- A speed limit reduction may be implemented ONLY when designated in the plan or when recommended by the Roadway Design Division.
- When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the R2-5A shall be installed at that location. Additional R2-1(45) speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
- 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(55) speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
- 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.
- Warning lights and/or flags may be mounted to signs or channelizing devices at night as needed.
- Pavement markings no longer applicable which might create confusion in the minds of vehicle operators shall be removed or obliterated as soon as practicable.
- 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.
- Flaggers shall use STOP/SLOW paddles for controlling traffic through work zones. Flags may be used only for emergency situations.
- All plastic drums and cones shall meet the requirements of NCHRP-350 or Manual for Assessing Safety Hardware (MASH).
- Trailer mounted devices such as arrow panels and portable changeable message signs shall be delineated by affixing conspicuity material in a continuous line on the face of the trailer. When placed on or adjacent to the shoulder and not behind a positive barrier, these devices shall be delineated by placing five (5) traffic drums, equally spaced along the traffic side of the device.



(C) Typical application - construction operations of intermediate to long term duration on a 4-lane divided roadway where half of the roadway is closed.



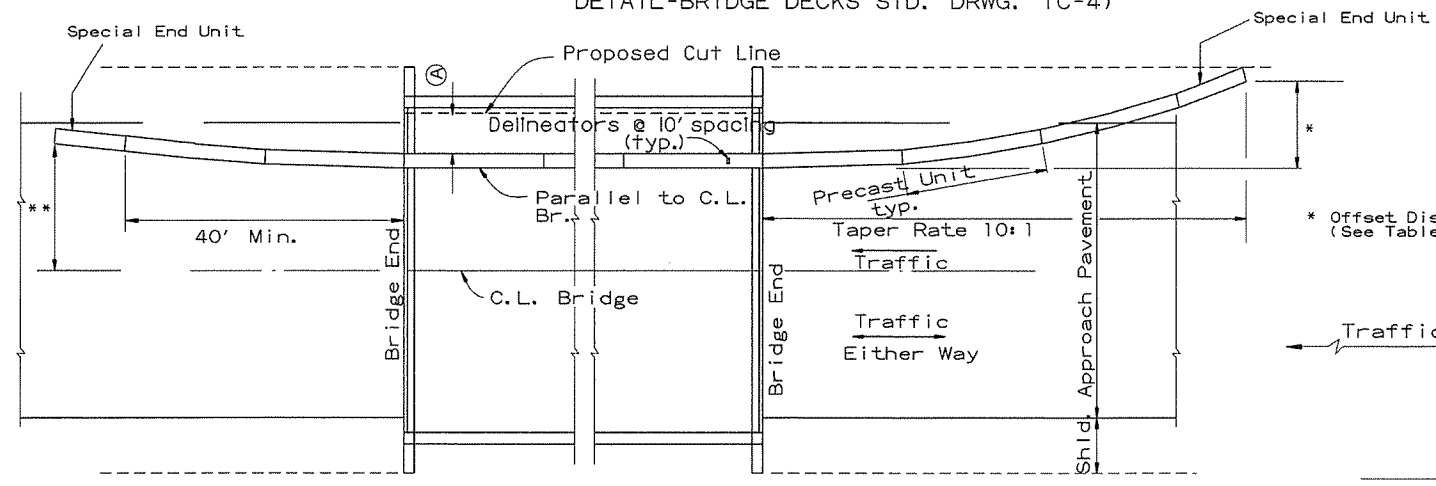
(D) Typical application - closing multiple lanes of a multi-lane highway.

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



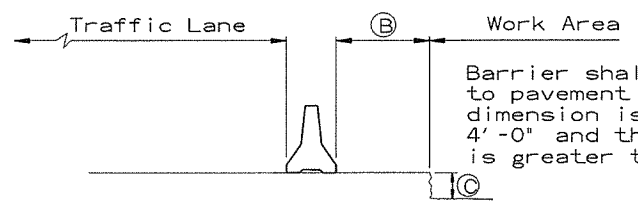
(A) 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)



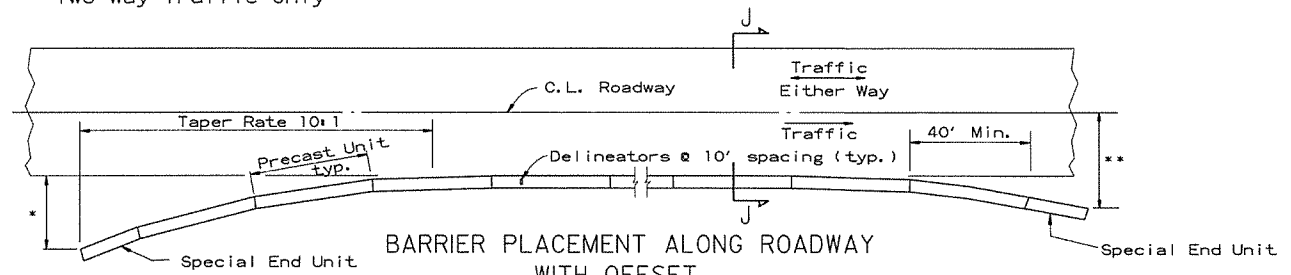
BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

\*\* Offset Distance for Two Way Traffic Only



SECTION J-J  
No Scale



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

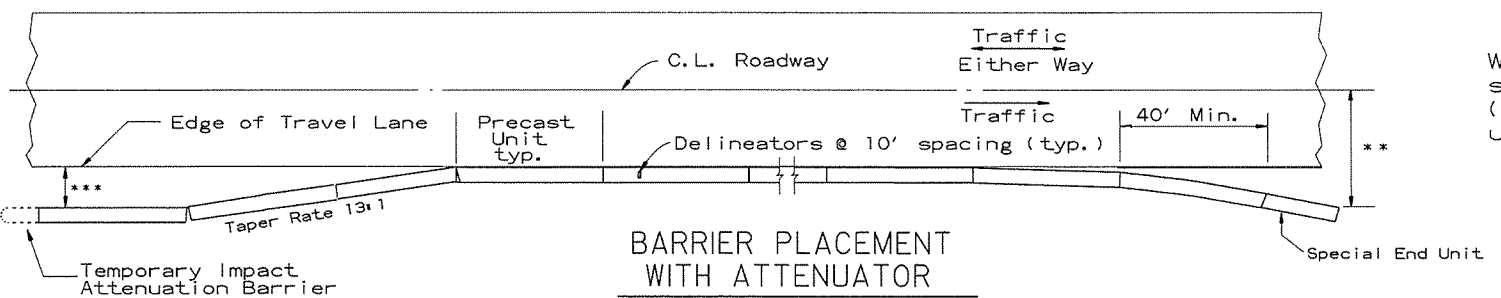
\* Offset Distance (See Table)

\*\* Offset Distance For Two Way Traffic Only

Offset Distance Table

Speed (MPH)	Offset Distance (FT.)
≤ 45	12
> 45	18

If offset distance is not attainable, then see 'Barrier Placement With Attenuator' Detail shown below.

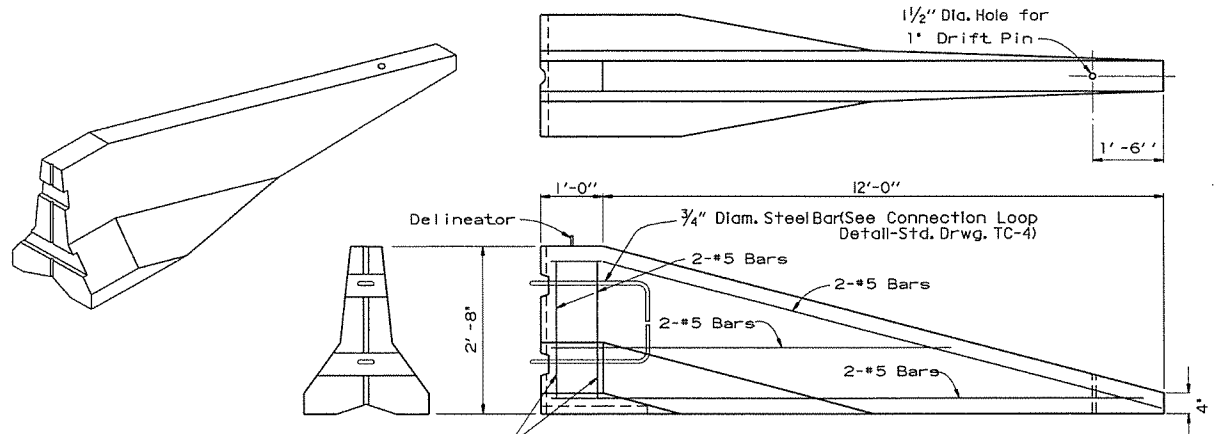


BARRIER PLACEMENT WITH ATTENUATOR

No Scale

\*\* Offset Distance For Two Way Traffic Only

\*\*\* Min. 3'-0" From Edge of Travel Lane to Nearest Edge of Attenuator



SPECIAL END UNIT  
No Scale

General Notes

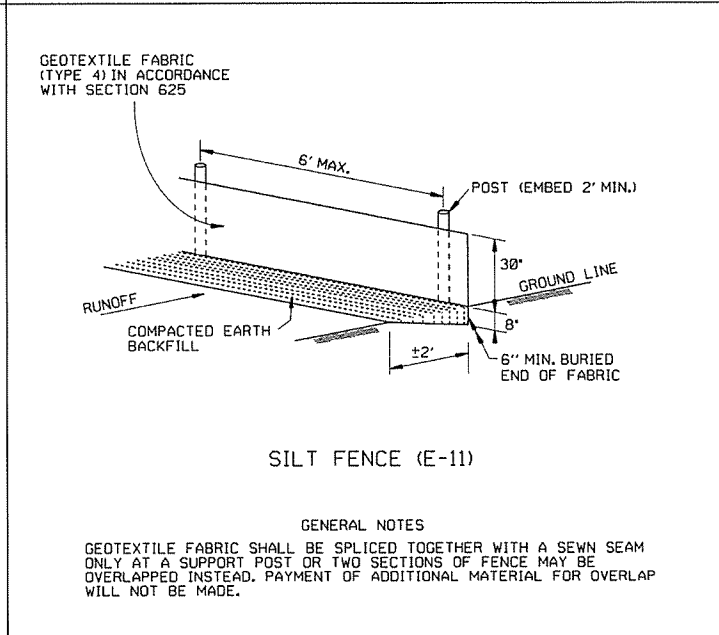
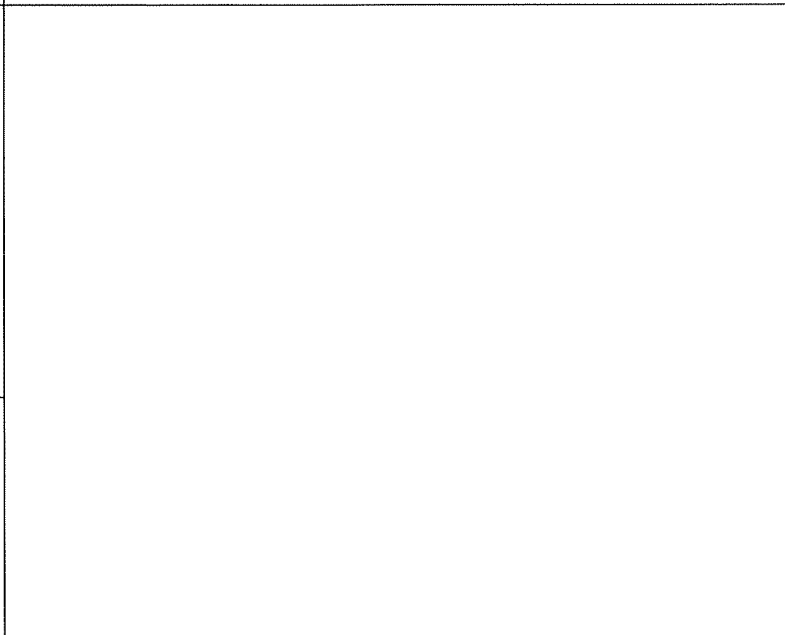
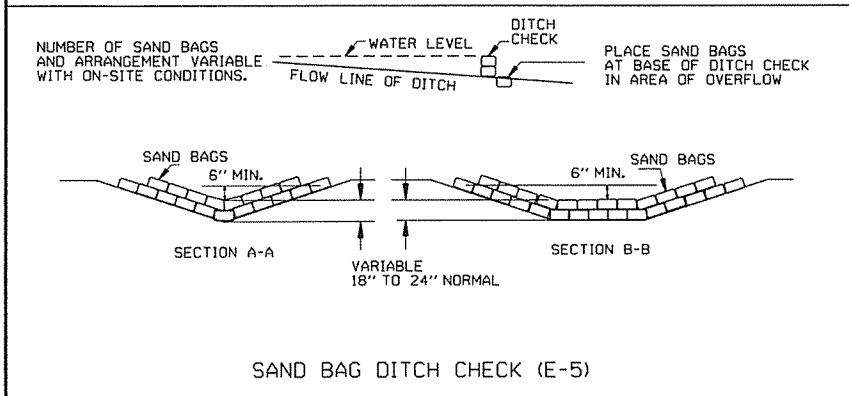
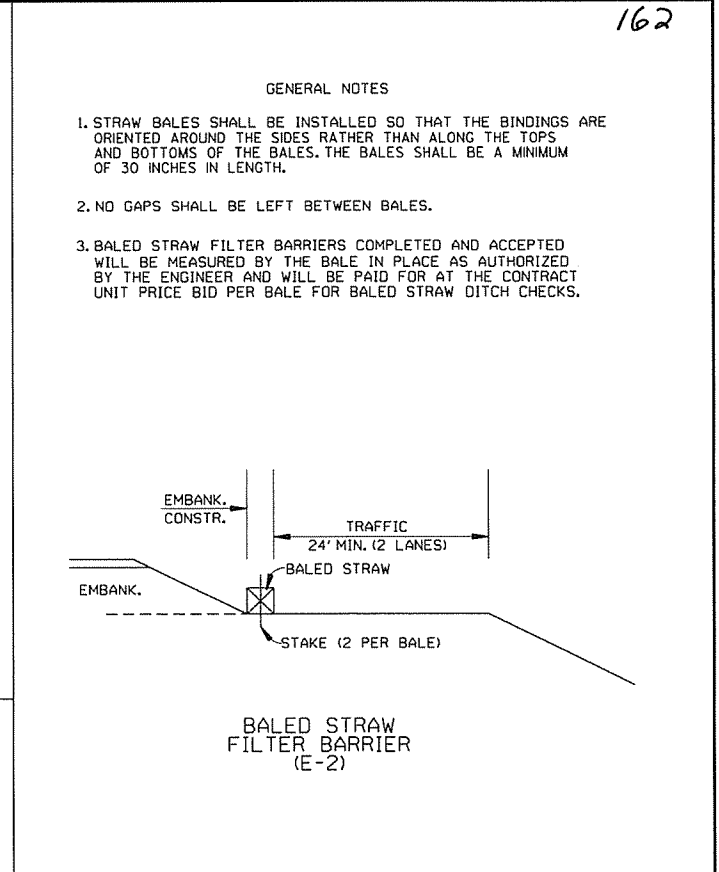
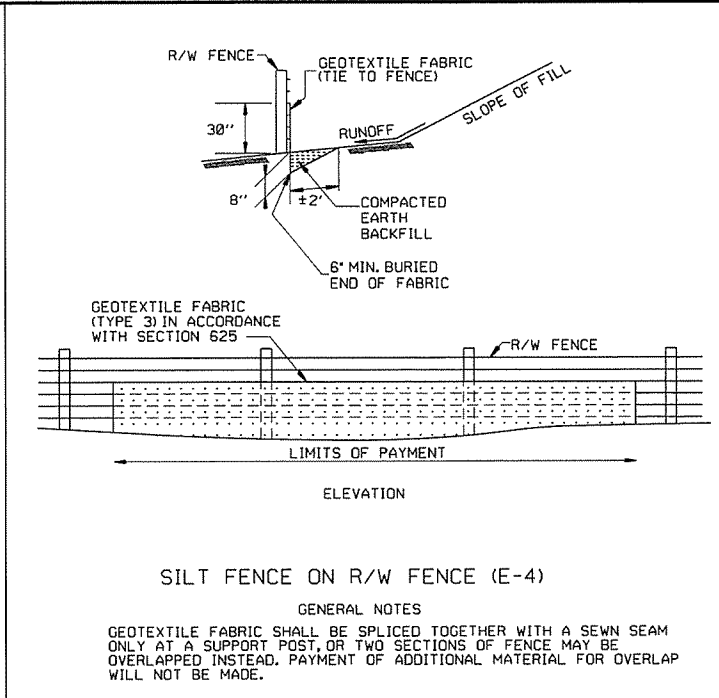
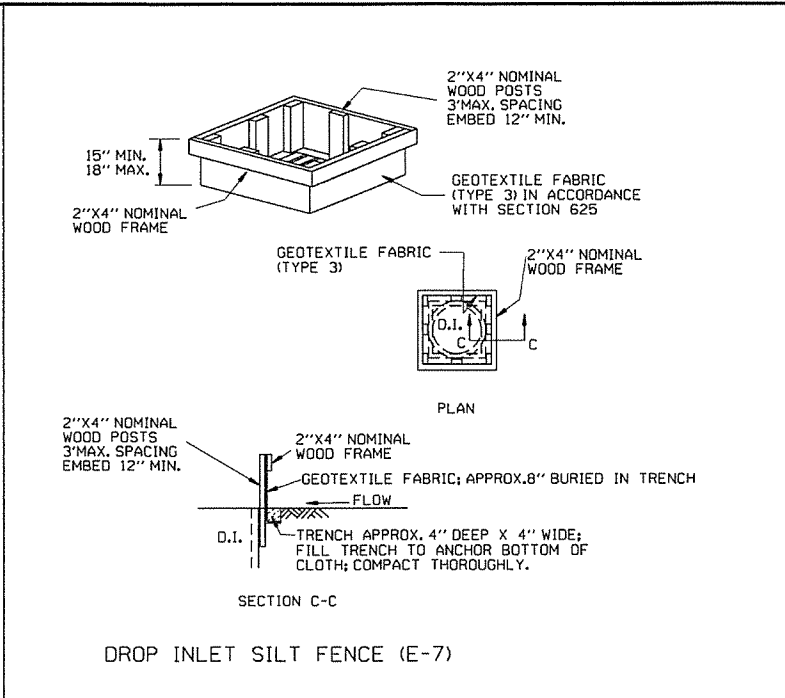
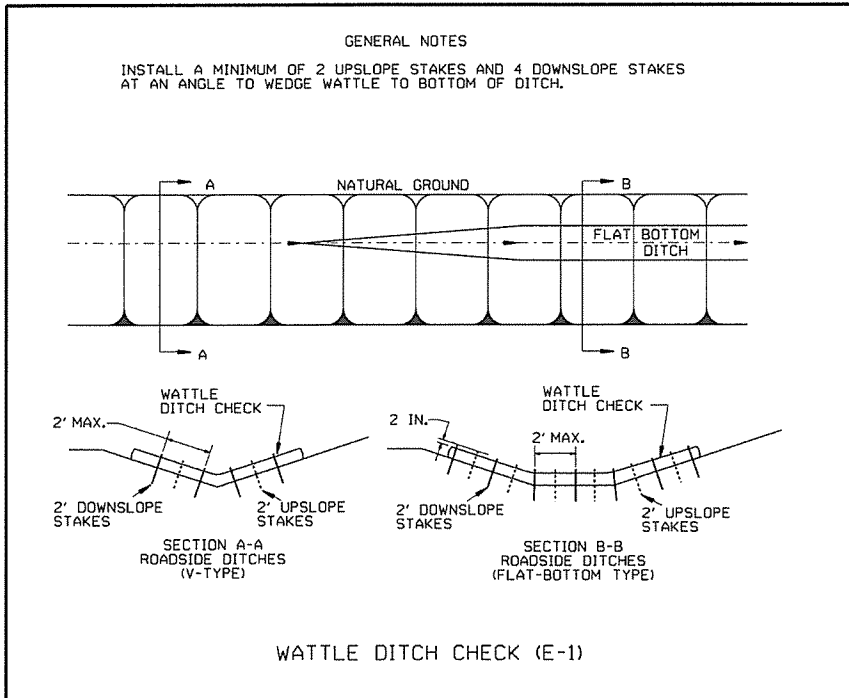
When shown on the Plans, the ends of the Temporary Precast Concrete Barrier shall be protected with an NCHRP-350 or Manual For Assessing Safety Hardware (MASH) approved Crash Cushion. Payment for Crash Cushions shall be made under the item of 'Temporary Impact Attenuation Barrier.'

DATE	REVISION	FILED
10-15-09	ADDED REFERENCE TO MASH	
5-25-06	REVISED BARRIER PLACEMENT	
8-22-02	ISSUED NEW DRAWING	

ARKANSAS STATE HIGHWAY COMMISSION  
STANDARD TRAFFIC CONTROLS  
FOR HIGHWAY CONSTRUCTION -  
TEMPORARY PRECAST BARRIER

STANDARD DRAWING TC-5



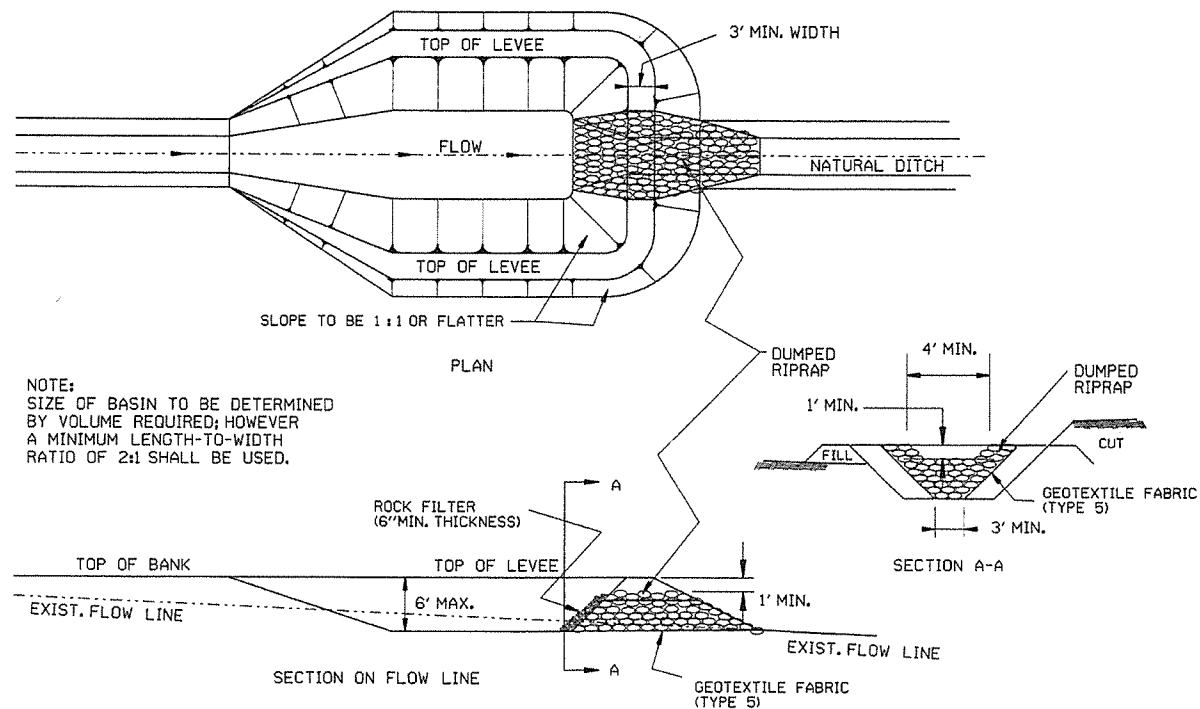


12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK	
11-18-98	ADDED NOTES	
7-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)	
7-20-95	REVISED SILT FENCE E-4 AND E-11	7-20-95
7-15-94	REV. E-4 & E-11 MIN. 13" BURIED END OF FABRIC	
6-2-94	REVISED E-1, 4, 7 & 11; DELETED E-2 & 3	6-2-94
4-1-93	REDRAWN	
10-1-92	REDRAWN	
8-2-76	ISSUED R.D.M.	298-7-28-76
DATE	REVISION	FILMED

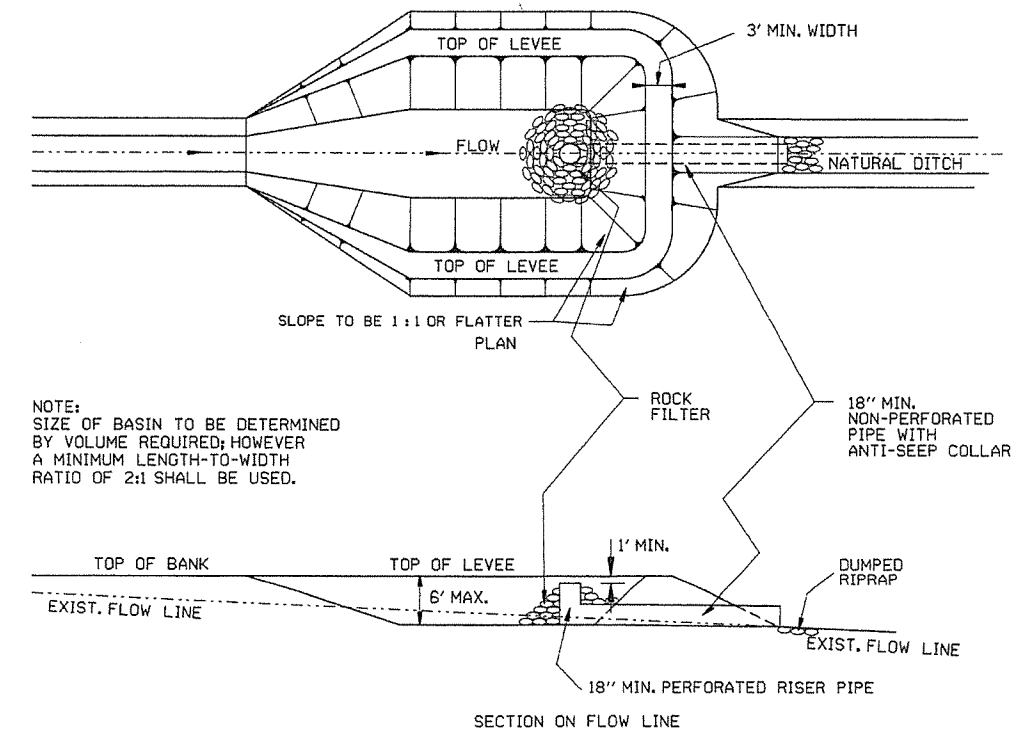
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

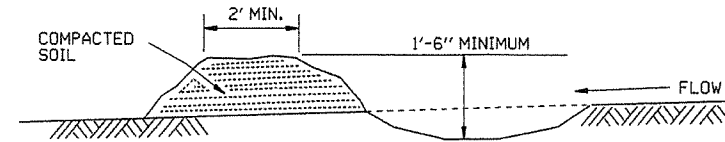
STANDARD DRAWING TEC-1



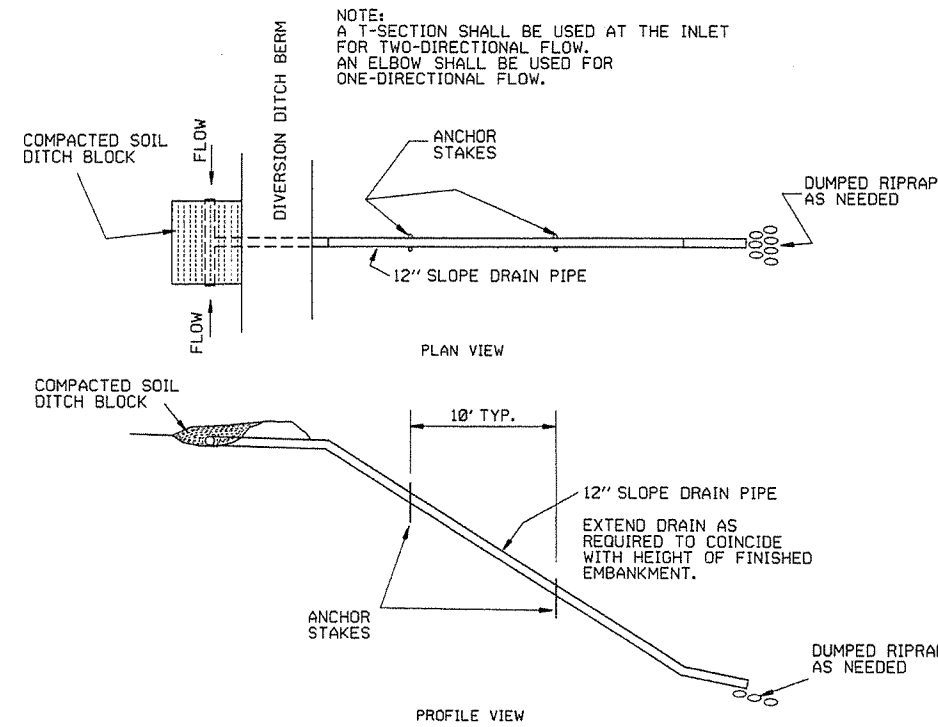
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



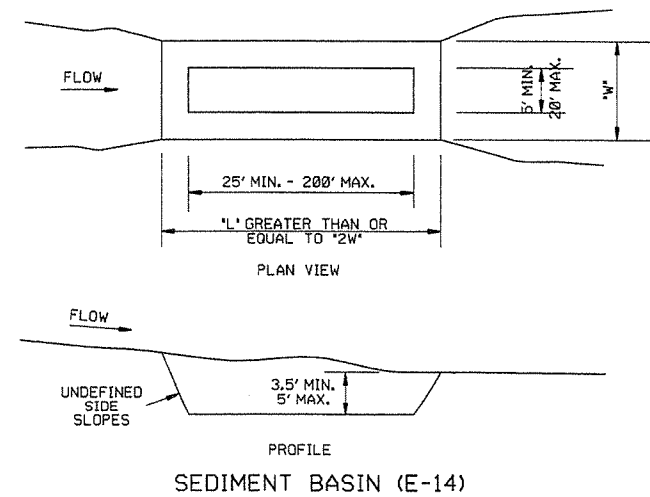
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



SEDIMENT BASIN (E-14)

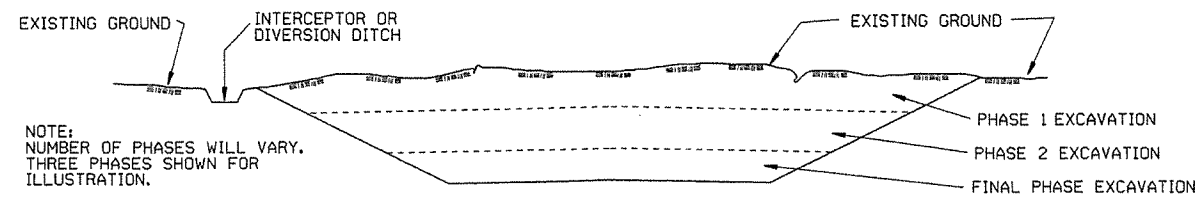
		ARKANSAS STATE HIGHWAY COMMISSION	
		TEMPORARY EROSION CONTROL DEVICES	
		STANDARD DRAWING TEC-2	
6-2-94	Revised E-8 & E-12; Added E-14 & Deleted E-13		
4-1-93	ISSUED		
DATE	REVISION		FILMED

### CLEARING AND GRUBBING

**CONSTRUCTION SEQUENCE**

1. PLACE PERIMETER CONTROLS (I.E. SILT FENCES , DIVERSION DITCHES, SEDIMENT BASINS, ETC.)
2. PERFORM CLEARING AND GRUBBING OPERATION.

### EXCAVATION



NOTE:  
NUMBER OF PHASES WILL VARY.  
THREE PHASES SHOWN FOR  
ILLUSTRATION.

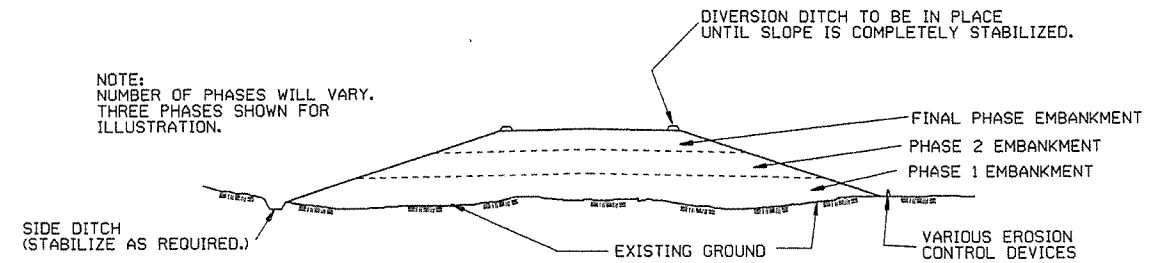
**GENERAL NOTE**

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



NOTE:  
NUMBER OF PHASES WILL VARY.  
THREE PHASES SHOWN FOR  
ILLUSTRATION.

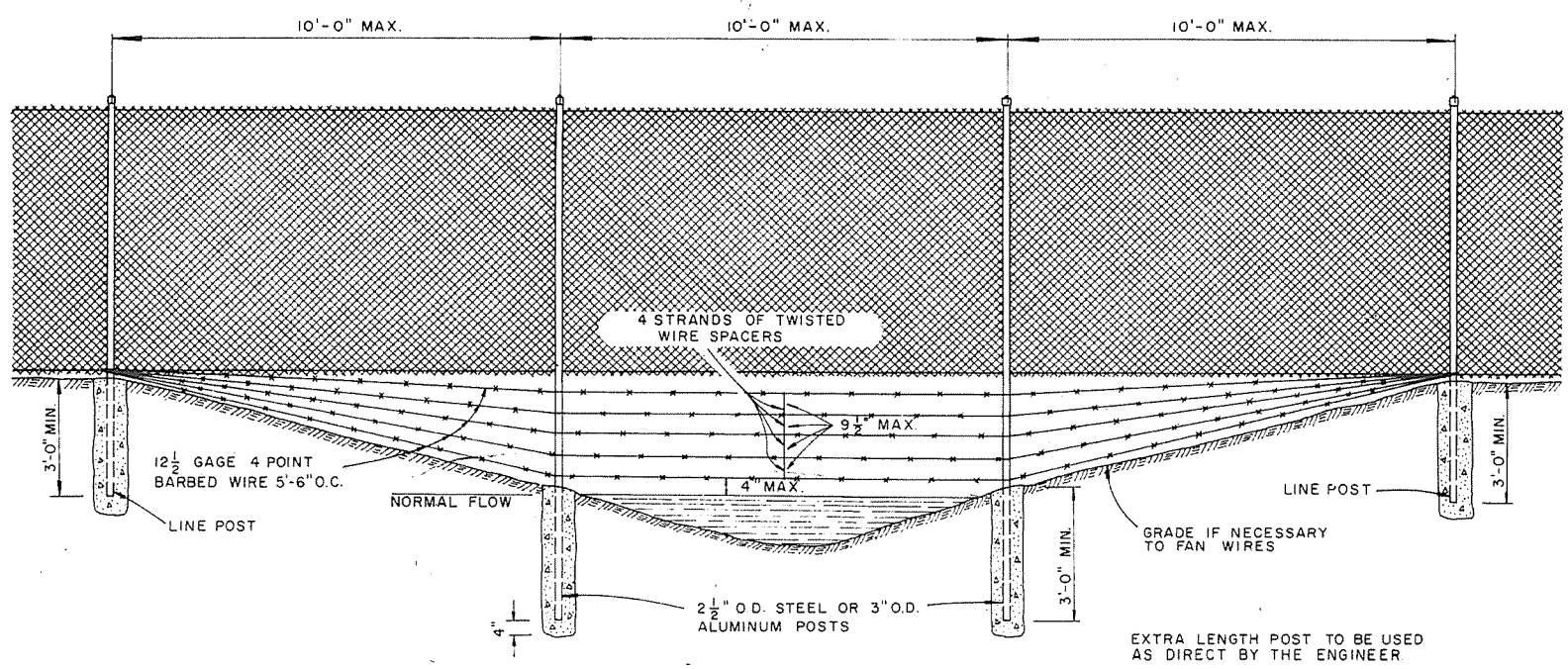
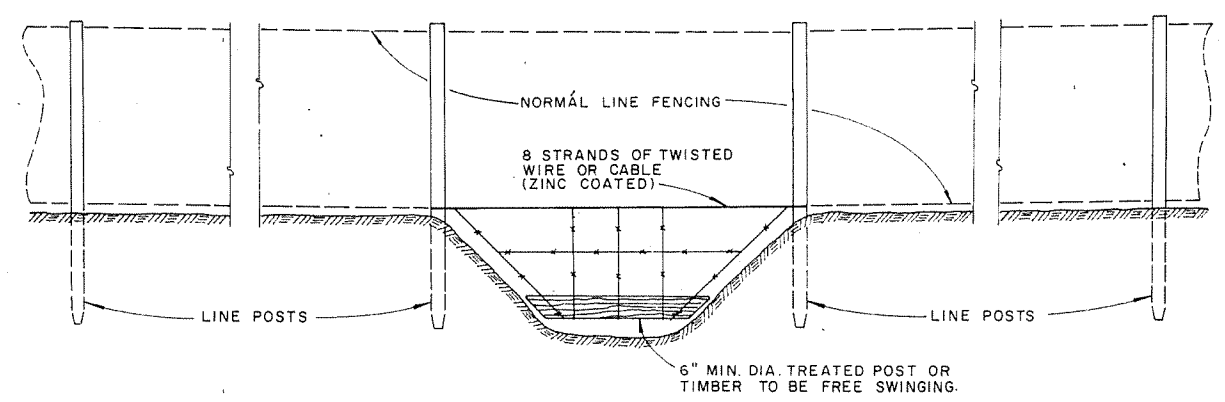
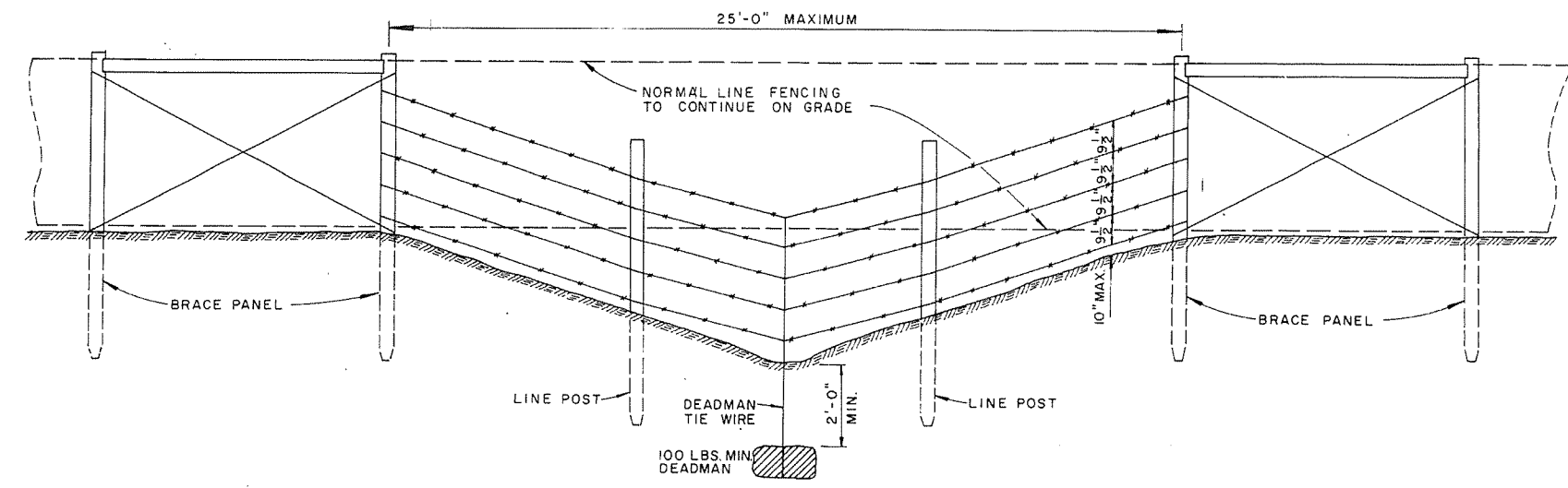
**GENERAL NOTE**

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.

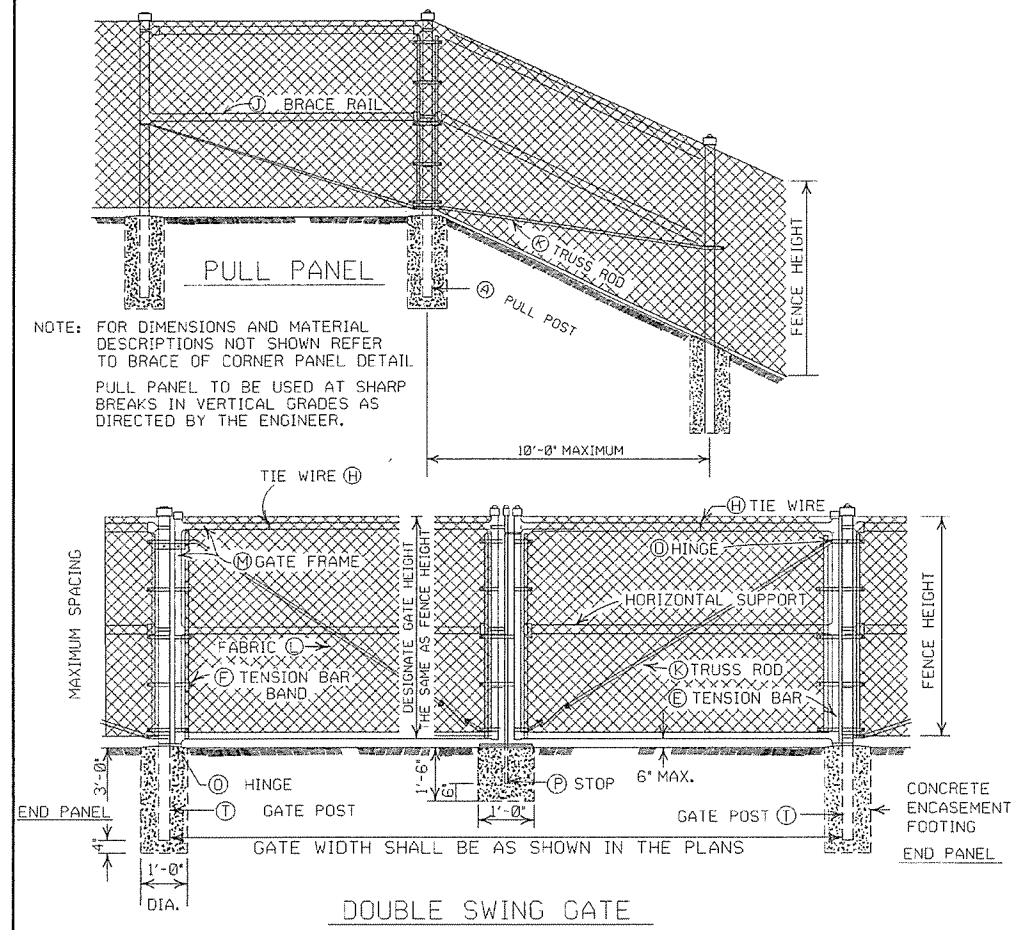
			ARKANSAS STATE HIGHWAY COMMISSION
			TEMPORARY EROSION CONTROL DEVICES
11-03-94	CORRECTED SPELLING		
6-2-94	Drawn & Issued		6-2-94
DATE	REVISION		FILMED
			STANDARD DRAWING TEC-3



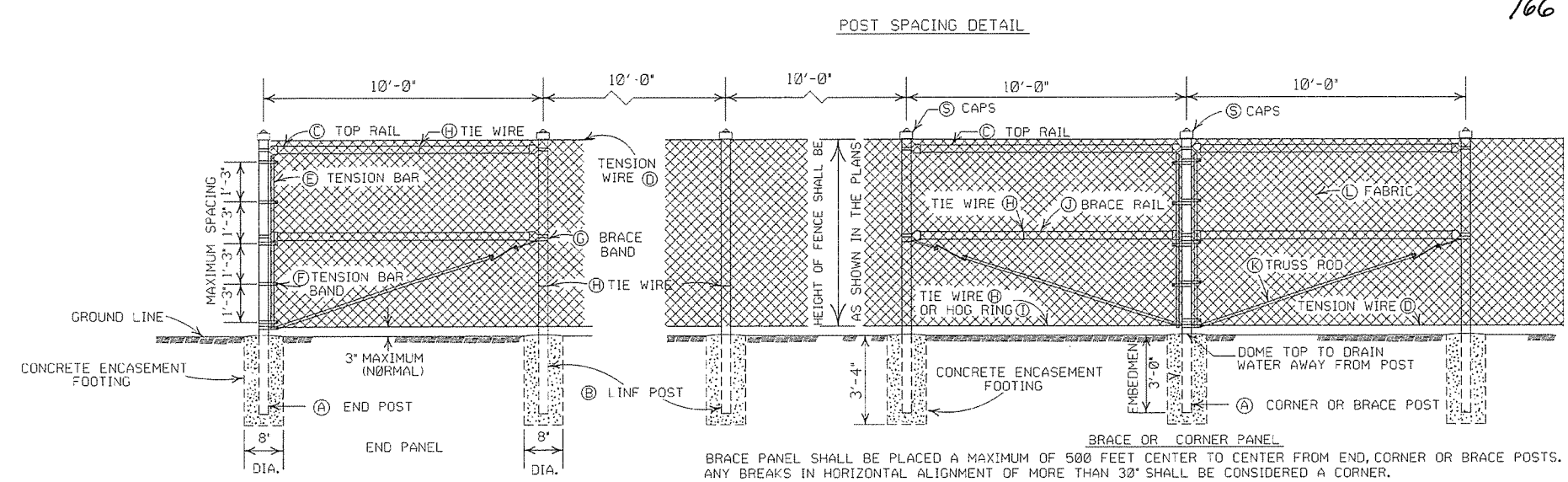
GENERAL NOTES:  
 THESE INSTALLATIONS TO BE USED WHERE NORMAL FENCING INSTALLATION WOULD CAUSE THE COLLECTING OF DRIFT IN THE CHANNEL OR THE DEPRESSION WILL NOT PERMIT NORMAL INSTALLATION. INSTALLATIONS WILL BE MADE ONLY WHERE DIRECTED BY THE ENGINEER.  
 WHEN A FENCE LINE APPROACHES A DITCH, GULLY OR DEPRESSION, THE LAST POST ON LEVEL GROUND SHALL BE PLACED CLOSE ENOUGH TO THE EDGE OF THE DROP OFF THAT THE FENCE MAY BE STRUNG TO THE POST IN THE DEPRESSION WITHOUT TOUCHING THE GROUND.  
 IN TERRAIN OF SUCH EXTREME IRREGULARITY THAT MINOR GRADING WILL NOT BE FEASIBLE, THE NORMAL FENCE SHALL CONTINUE ON GRADE AND THE GULLIES OR DEPRESSIONS TREATED BY AUXILIARY FENCES AS SHOWN.  
 PAYMENT FOR THE TYPE INSTALLATION USED WILL NOT BE MADE DIRECTLY BUT WILL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR WIRE FENCE OR CHAIN LINK FENCE.

ARKANSAS STATE HIGHWAY COMMISSION		
WIRE FENCE WATER GAPS		
STANDARD DRAWING		
4-20-79	REVISED TOP RAIL & TENSION WIRE	696-4-20-79
10-2-72	REVISED & REDRAWN	529 10-2-72
DATE	REVISION	DATE FILMD

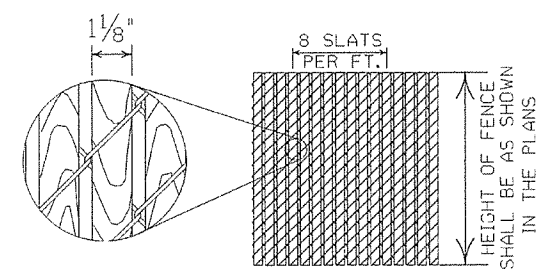
WF-2



NOTE: FOR DIMENSIONS AND MATERIAL DESCRIPTIONS NOT SHOWN REFER TO BRACE OR CORNER PANEL DETAIL. PULL PANEL TO BE USED AT SHARP BREAKS IN VERTICAL GRADES AS DIRECTED BY THE ENGINEER.



BRACE PANEL SHALL BE PLACED A MAXIMUM OF 500 FEET CENTER TO CENTER FROM END, CORNER OR BRACE POSTS. ANY BREAKS IN HORIZONTAL ALIGNMENT OF MORE THAN 30" SHALL BE CONSIDERED A CORNER.



1 1/8" X 1/4" REDWOOD SLATS (LENGTH TO MATCH HEIGHT OF FENCE) (L) FABRIC: SHALL CONFORM TO THE SPECIFICATIONS. (WHERE APPLICABLE)

GENERAL NOTES:

- (C) CHAIN LINK FENCE BEING PLACED ON PRIVATE PROPERTY SHALL INCLUDE A TOP RAIL. ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER LIN. FT. OF CHAIN LINK FENCE.
- (D) TENSION WIRE: SHALL BE SECURED TO ALL TERMINAL, PULL, BRACE OR CORNER POSTS WITH TENSION BAR BANDS.
- (J) BRACE RAIL: BRACE RAILS SHALL BE PROVIDED AT ALL TERMINAL, PULL, BRACE OR CORNER POSTS HALF WAY BETWEEN THE TOP RAIL AND GROUND LEVEL WHEN TOPRAIL IS SPECIFIED AND TWELVE INCHES (12") DOWN FROM TOP OF FABRIC WHEN TOP TENSION WIRE IS SPECIFIED. BRACE RAIL SHALL EXTEND FROM SUCH POST TO THE FIRST ADJACENT LINE POST.
- (M) GATE FRAMES: SHALL BE CONSTRUCTED OF TUBULAR MEMBERS ASSEMBLED BY USE OF HEAVY PRESSED STEEL, MALLEABLE FITTINGS OR BY WELDING. ALL GATES SHALL HAVE ONE HORIZONTAL SUPPORT EXTENDING THE WIDTH OF THE GATE AT THE MIDPOINTS OF VERTICAL FRAME MEMBERS. THE COMPLETE FRAME SHALL BE RIGID AND HAVE AMPLE STRENGTH TO BE FREE FROM SAG AND TWIST.
- (O) HINGES: SHALL BE OF HEAVY PATTERN, OF ADEQUATE STRENGTH FOR GATE, AND WITH LARGE BEARING SURFACES FOR CLAMPING IN POSITION. THE HINGE SHALL BE OF THE PROPER TYPE TO ALLOW FOR THE DESIGNATED DEGREE OF SWING. THE HINGE SHALL NOT TWIST OR TURN UNDER THE ACTION OF THE GATE. THE GATES SHALL BE CAPABLE OF BEING OPENED AND CLOSED EASILY BY ONE PERSON.
- (P) LATCHES AND STOPS: SHALL BE PROVIDED FOR ALL GATES. GATES SHALL HAVE A DROP BAR LATCH. LATCHES SHALL BE ARRANGED FOR LOCKING. THE STOP FOR DROP BAR LATCHES SHALL BE SET IN CONCRETE AND ENGAGE THE PLUNGER OF THE BAR LATCH.
- (S) CAPS: ALL POSTS, EXCEPT ROLL FORMED POSTS AND "T" POSTS SHALL BE CAPPED OVER THE EXTERIOR OF THE POST, AND SHALL CONFORM TO ASTM F626.

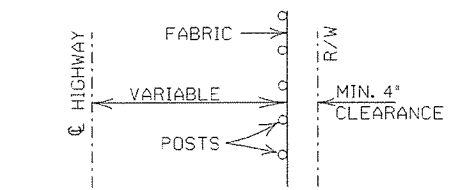
HEIGHT OF FENCE FABRIC	(A)	(B)	(C)			(D)		(E)		(F)		(G)	
	END, PULL CORNER OR BRACE POST	LINE POSTS	TOP RAIL	TENSION WIRE	TENSION BAR	TENSION BAR BAND	BRACE BAND						
	SIZE	TIE SPACING	MIN. LENGTH	SIZE	MIN. OF	SIZE	MIN. OF	LENGTH	MIN. OF	SPACING	MIN. OF	SIZE	BOLT SIZE
6' AND LESS	2 1/2" O.D.	2' O.D.	1 1/2" O.D.	1 TIE EVERY 1'-2"	10'-0"	7 GAUGE COIL SPRING WIRE	1 TIE EVERY 1'-0"	2' LESS THAN FABRIC HEIGHT	3/4" X 3/4"	1 BAND AT TOP AND BOTTOM 15" MAX. INTERVAL BETWEEN BANDS	3/4" X 0.105	3/4" X 5/8"	5/8" X 1/4"
OVER 6' TO 12' INCL.	3" O.D.	2 1/2" O.D.	1 1/2" O.D.	1 TIE EVERY 2'-0"			1 TIE EVERY 1'-0"	MIN. OF FABRIC HEIGHT	3/4" X 3/4"			3/4" X 5/8"	5/8" X 1/4"

HEIGHT OF FENCE FABRIC	(H)	(I)	(J)		(K)	(L)		(M)	(N)		(O)		(T)
	TIE WIRE	HOG RING	BRACE RAIL	TIE SPACING	TRUSS ROD	FABRIC	GATE FRAME	HORIZONTAL SUPPORT	HINGE TYPE	GATE POST			GATE POST
	SIZE	SIZE	SIZE	TIE SPACING	MIN. OF	SIZE	SIZE	SIZE	SIZE	SIZE	SIZE	SIZE	SIZE
6' AND LESS	MIN. OF 12 GA. STEEL OR 9 GA. ALUM.	SAME GAUGE AS FABRIC	1 1/2" O.D.	1 TIE EVERY 2'-0"	3/4" ROUND WITH TIGHTENERS AND FITTINGS	9 GA. 2"	2' O.D.	1 TIE EVERY 1'-0"	2' O.D.	1 TIE EVERY 1'-0"	OFFSET	3' O.D.	4' O.D.
OVER 6' TO 12' INCL.			1 1/2" O.D.	1 TIE EVERY 2'-0"			2' O.D.	1 TIE EVERY 1'-0"	2' O.D.	1 TIE EVERY 1'-0"	OFFSET	3' O.D.	4' O.D.

NOTE: POST SIZES SHOWN ARE FOR STEEL. WHERE ALUMINUM IS PROVIDED, LINE POSTS SHALL HAVE AN OUT SIDE DIAMETER OF 2 1/2" FOR FENCE HEIGHT OF 6' AND LESS, AN OUTSIDE DIAMETER OF 3" FOR FENCE HEIGHT OF 6' TO 12'. END, PULL, CORNER OR BRACE POSTS SHALL HAVE AN OUTSIDE DIAMETER OF 3" FOR FENCE HEIGHT OF 6' AND LESS; AN OUTSIDE DIAMETER OF 3 1/2" FOR FENCE HEIGHTS OF 6' TO 12'. GATE POSTS WHERE GATE WIDTH IS 12' AND LESS SHALL HAVE AN OUTSIDE DIAMETER OF 3 1/2" FOR FENCE HEIGHT OF 6' AND LESS. ALUMINUM TENSION WIRE SHALL BE 0.192" IN DIAMETER. MINIMUM THICKNESS OF MATERIAL FROM WHICH EXPANSION SLEEVES SHALL BE MADE WILL BE 0.078". POSTS AND RAILS MAY HAVE ANY CROSS-SECTIONAL SHAPE THAT WILL MEET THE SPECIFICATIONS.

OTHER DETAILS APPLY TO BOTH STEEL AND ALUMINUM FENCE.

ALL MISCELLANEOUS FITTINGS AND HARDWARE SHALL MEET THE REQUIREMENTS AND PRODUCTION TOLERANCES AS SET FORTH IN THE SPECIFICATIONS. 9 GAUGE ALUMINUM WIRE SHALL BE ACCEPTABLE FOR TIEING FABRIC TO TUBULAR AND ROLL FORMED MEMBERS OF STEEL FENCE.



INSTALLATION MAY BE MODIFIED AS SHOWN IN THE PLANS  
TYPICAL INSTALLATION DIAGRAM

POSTS AND RAILS

SIZE O.D.	GRADE 1 AND ALUMINUM ALLOY				GRADE 2		
	O.D. INCHES	WALL THICKNESS	LBS. PER LINEAR FT.		O.D. INCHES	WALL THICKNESS	LBS. PER LINEAR FT.
			STEEL	ALUMINUM			
1 1/2	1.660	0.140	2.27	0.786	1.660	0.111	1.84
2	1.900	0.145	2.72	0.940	1.900	0.120	2.28
2 1/2	2.375	0.154	3.65	1.264	2.375	0.130	3.11
3	2.875	0.203	5.79	2.004	2.875	0.160	4.64
3 1/2	3.500	0.216	7.58	2.621	3.500	0.160	5.71
4	4.000	0.226	9.11	3.151	4.000	0.160	6.56

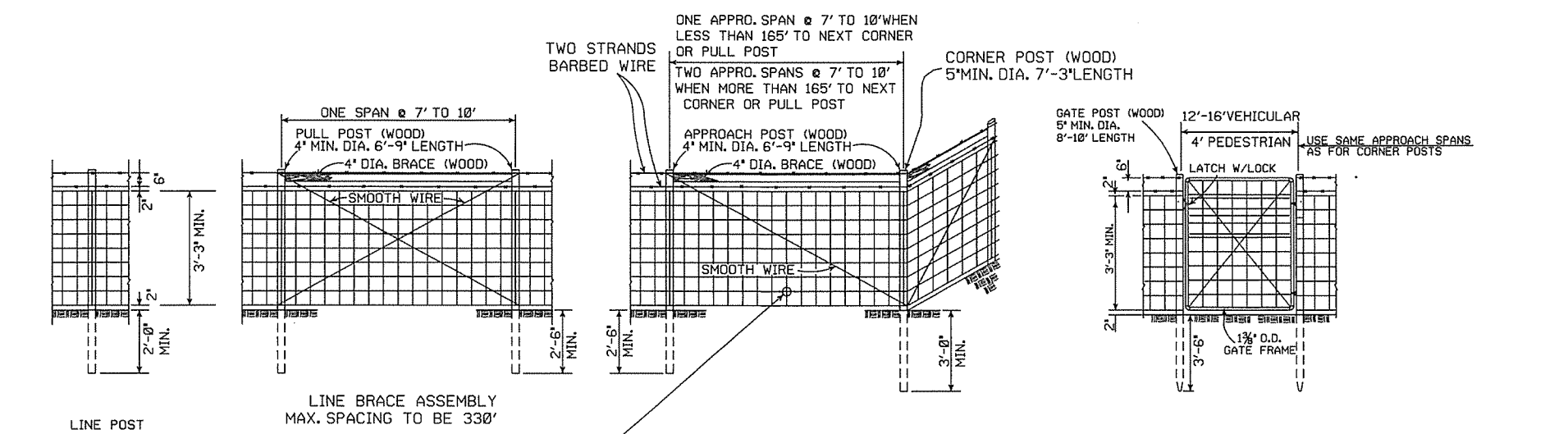
TOLERANCES ON DIMENSIONS AND WEIGHTS ACCORDING TO AASHTO M 181

DATE	REVISION	FILMED
11-17-10	REVISED TRUSS ROD	
12-10-09	REVISED POSTS & RAILS TABLE	
5-21-09	ADDED TABLE & GEN. NOTE (C)	
8-22-02	REVISED NOTES, REMOVED TABLE, & REMOVED FENCE ALTERNATE	
4-3-97	REVISED BRACE RAIL NOTE	
10-18-96	REVISED AASHTO & ASTM REF.	
11-3-94	REVISED NOTE (L)	
10-1-92	DELETED ALTERNATE POST	10-1-92
8-15-91	DELETED ROLL FORMED POST DETAIL & ADDED NOTE	8-15-91
11-30-89	DELETED CLASS CONCRETE	11-30-89
11-17-88	REVISED O.D. SIZES	668-11-17-88
10-30-87	GENERAL REVISIONS	548-10-30-87
4-20-79	REVISED TOP RAIL & TENSION WIRE	695-4-20-79
10-2-72	REVISED AND REDRAWN	530-10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

CHAIN LINK FENCE

STANDARD DRAWING WF-3

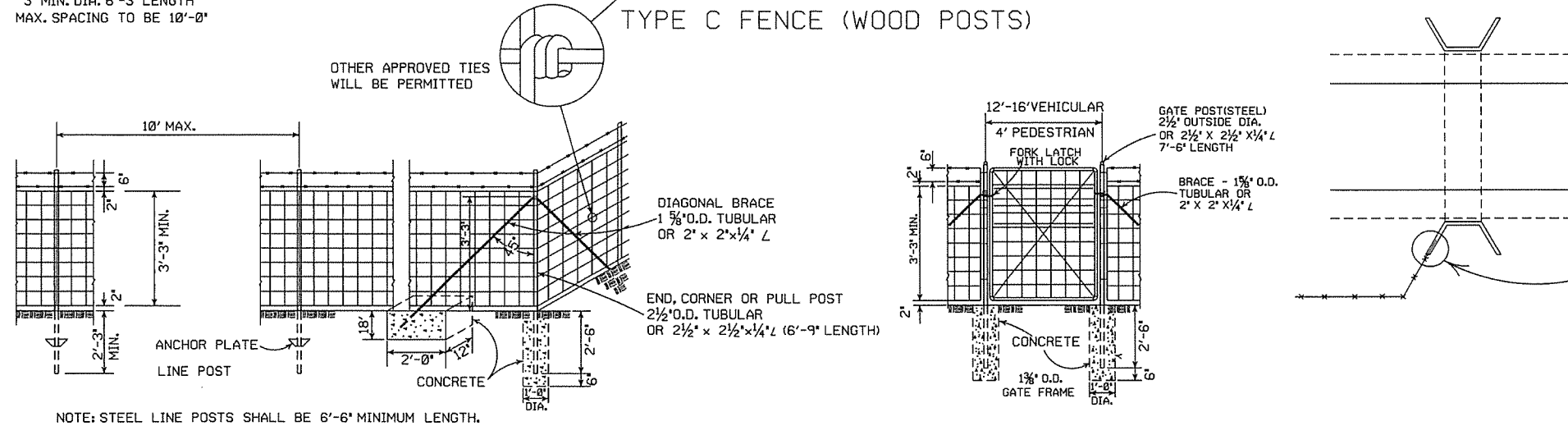


**GENERAL NOTES:**  
 STEEL LINE POSTS SHALL BE PAINTED OR GALVANIZED. TUBULAR END, CORNER, PULL, OR DIAGONAL BRACES MUST CONFORM TO THE DIMENSIONS AND WEIGHTS SPECIFIED ON STANDARD DRAWING WF-3 (CHAIN LINK). APPROVED ALTERNATES ARE ACCEPTABLE.  
 AN ACCEPTABLE TOLERANCE IN LENGTH OF TUBULAR OR WOODEN POSTS SHALL BE - 1" TO +2". TUBULAR POSTS MUST BE PAINTED OR GALVANIZED.

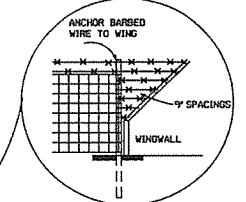
THE CONTRACTOR SHALL FURNISH AT LEAST 25% OF TIMBER LINE POSTS OF 7 FOOT LENGTHS IN ORDER TO PROVIDE SUFFICIENT SET IN SOFT GROUND OR SMALL DEPRESSIONS.

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.



NOTE: USE 3/8" X 1 1/2" LAG BOLT & SHIELD OR AS APPROVED BY THE ENGINEER.



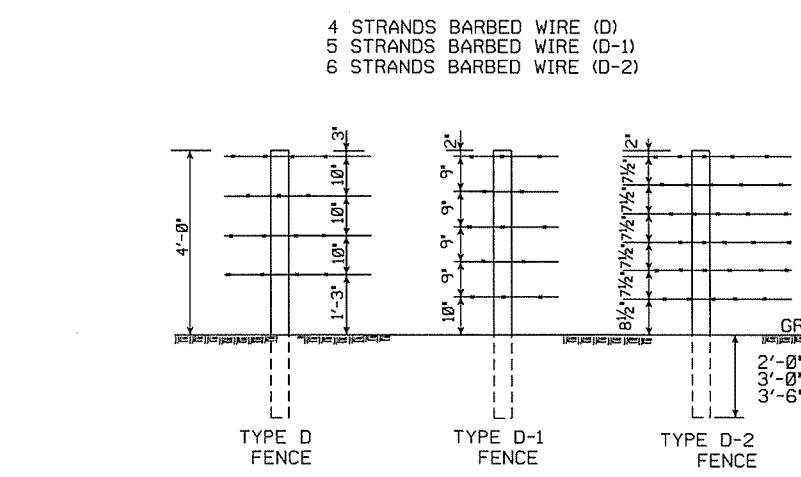
DETAIL OF FENCE CONSTRUCTION AT LARGE CULVERTS (5' IN HEIGHT AND OVER)

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.

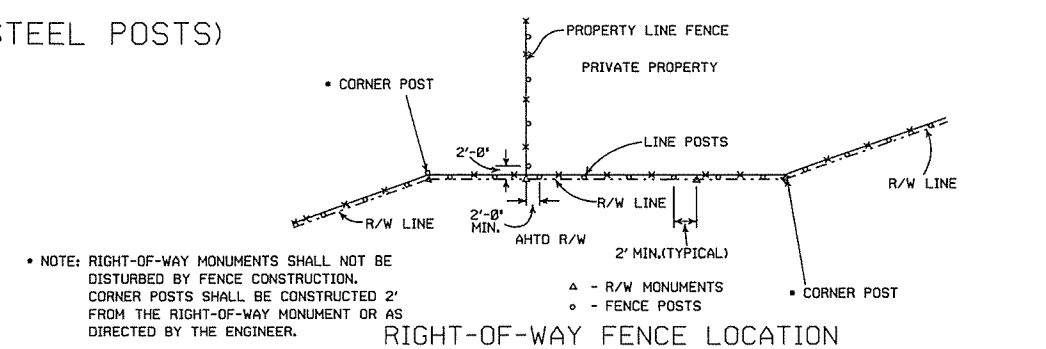
SPLICE FOR WOVEN WIRE BETWEEN PULL POST SHALL BE BY THE 'WESTERN UNION METHOD' AS DESCRIBED AS FOLLOWS: THE VERTICAL WIRES FOR EACH END OF THE FENCE FABRIC SHALL BE PLACED SIDE BY SIDE AND THE PROJECTING HORIZONTAL WIRES SHALL BE WRAPPED A MINIMUM OF 4 TIMES AROUND THE HORIZONTAL WIRES OF THE FIRST WEB.

STAPLE AT LEAST TOP, BOTTOM AND ALTERNATE WIRES OF WOVEN FABRIC FOR WOOD LINE POSTS.

**TYPE C FENCE (STEEL POSTS)**

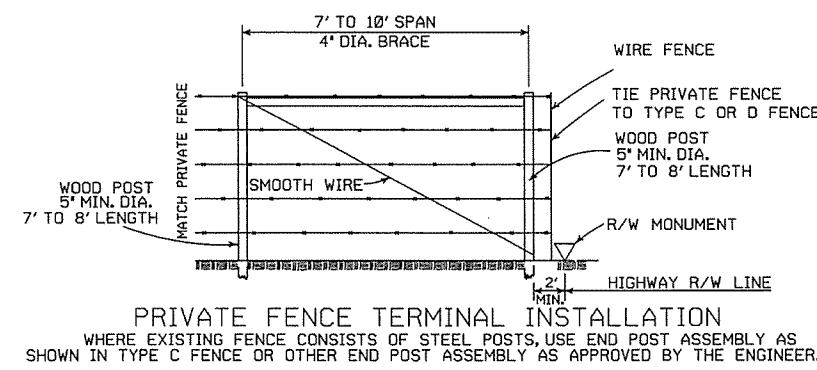


NOTE: SPACING AND SIZE (EXCEPT LENGTH) OF POSTS, APPROACH SPANS, PULL POST ASSEMBLIES, AND CORNER BRACING FOR TYPE D FENCE SHALL CONFORM TO TYPE C FENCE. USE GALVANIZED STAPLES ON WOOD POSTS AND APPROVED FASTENERS ON STEEL POSTS.

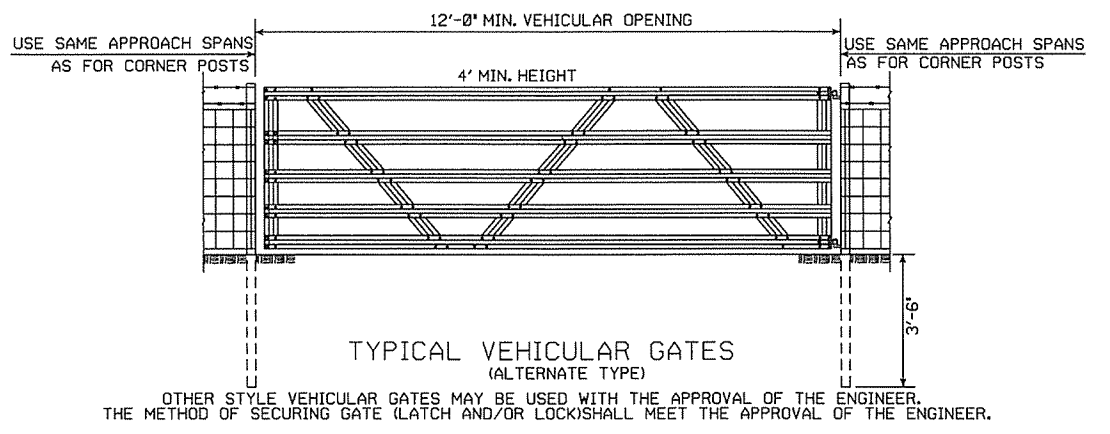


NOTE: RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY FENCE CONSTRUCTION. CORNER POSTS SHALL BE CONSTRUCTED 2' FROM THE RIGHT-OF-WAY MONUMENT OR AS DIRECTED BY THE ENGINEER.

**RIGHT-OF-WAY FENCE LOCATION**



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.



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.

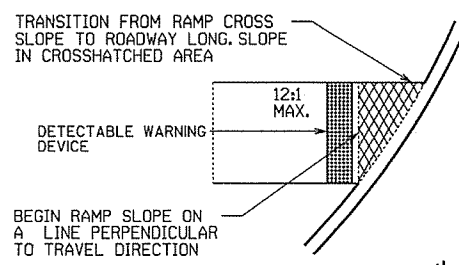
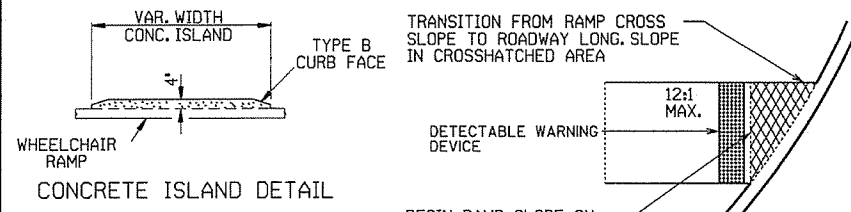
DATE	REVISION	FILMED
8-22-02	REVISED GENERAL NOTES	
10-18-96	REVISED AASHTO	
11-22-95	REVISED R-O-W LOCATION DETAIL	
6-2-94	REVISED BARB WIRE AND ADDED CORNER POST NOTES	6-2-94
8-5-93	REVISED R/W INSTALLATION FENCE	8-5-93
10-1-92	ADDED STAPLE NOTE	10-1-92
8-15-91	ADDED TYPE D-2 FENCE	8-15-91
11-30-89	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

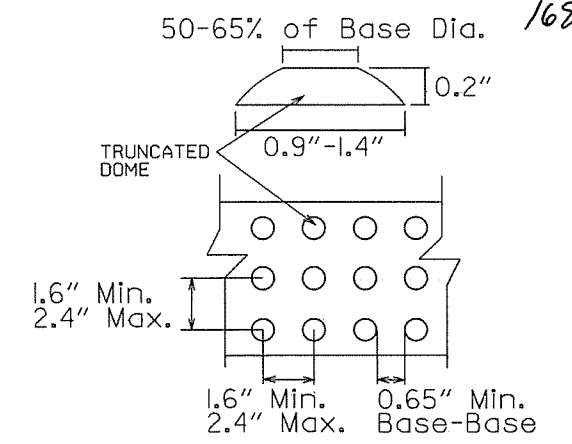




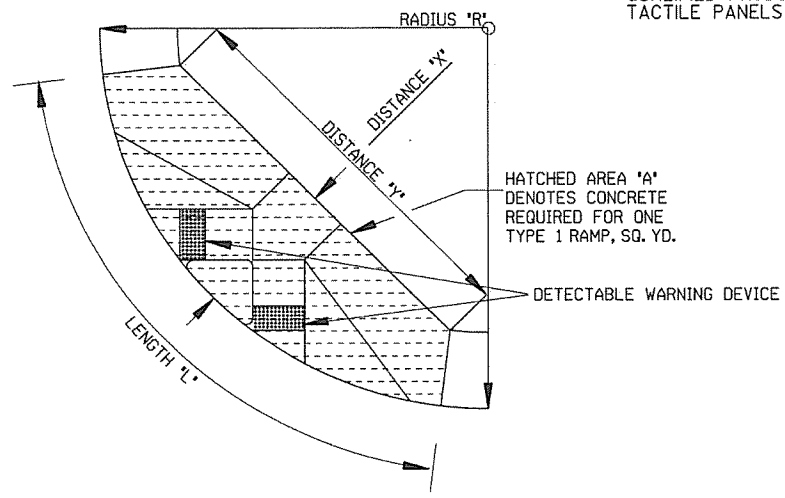
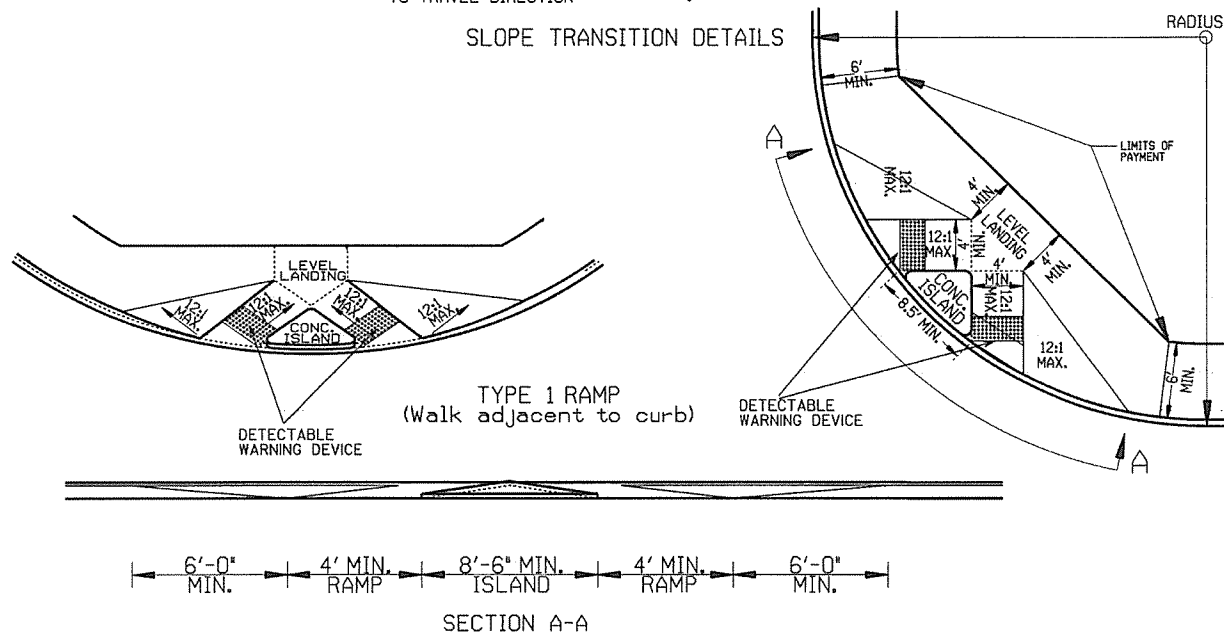
TYPE 1 RAMP DIMENSIONS AND QUANTITIES

RADIUS 'R'	DISTANCE 'X'	DISTANCE 'Y'	LENGTH 'L'	RAMP AREA 'A'
FEET	FEET	FEET	FEET	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).



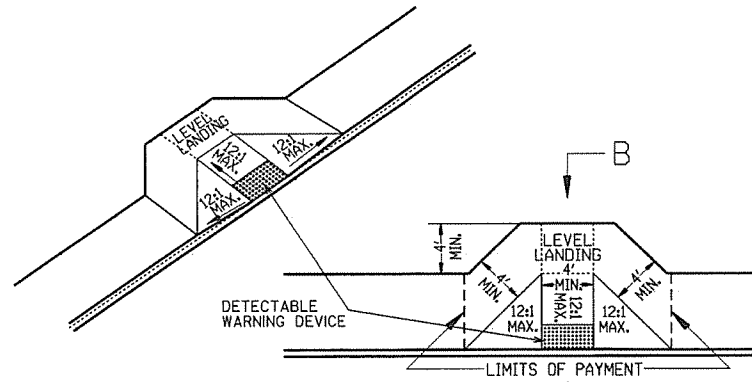
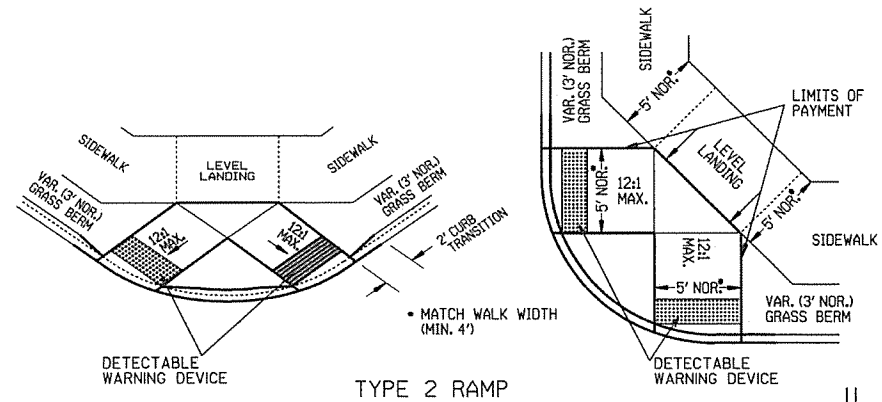
DETECTABLE WARNING DEVICE DETAIL



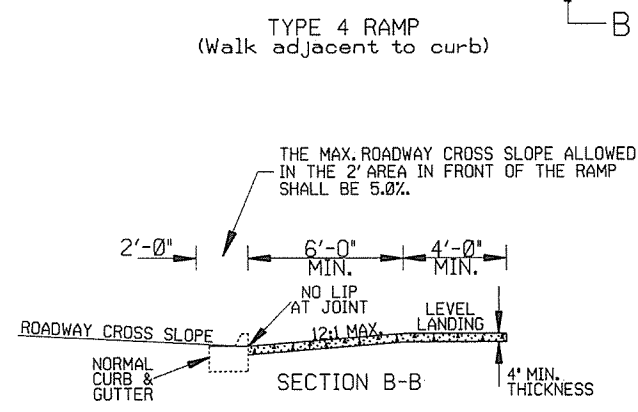
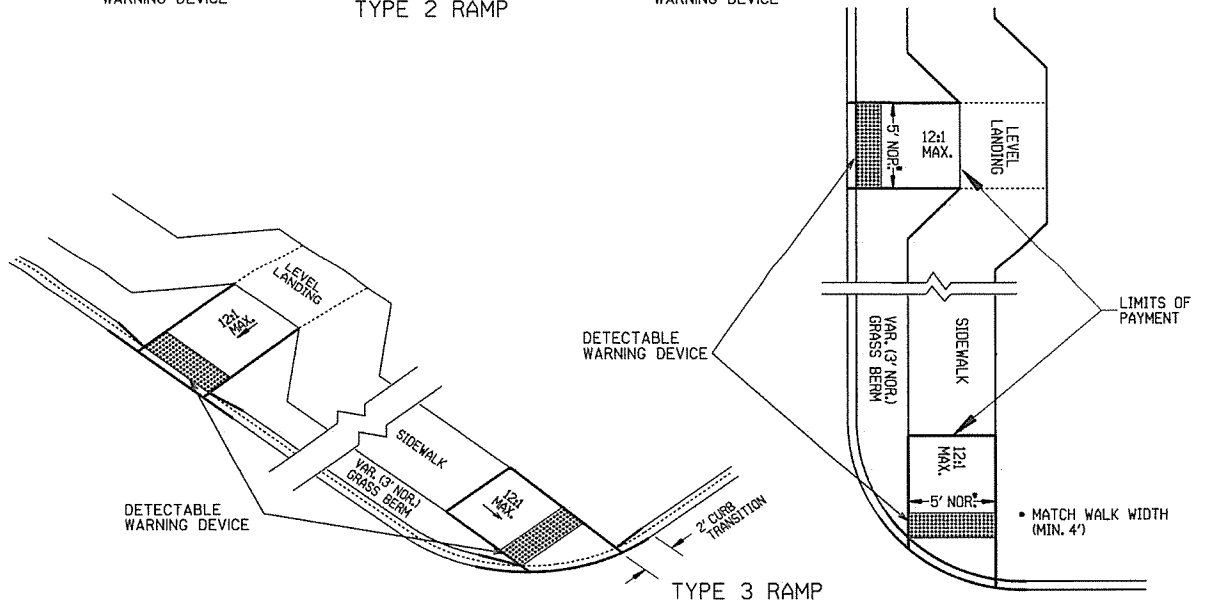
NOTE:  
 THE CROSS SLOPE OF THE RAMPS, LEVEL LANDINGS, AND SIDEWALKS SHALL NOT EXCEED 2.0% UNLESS REQUIRED TO MATCH STREET LONGITUDINAL GRADE.

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 4 RAMP (Walk adjacent to curb)



RAMP SELECTION CRITERIA

CHOICE	TYPE	DESCRIPTION
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.

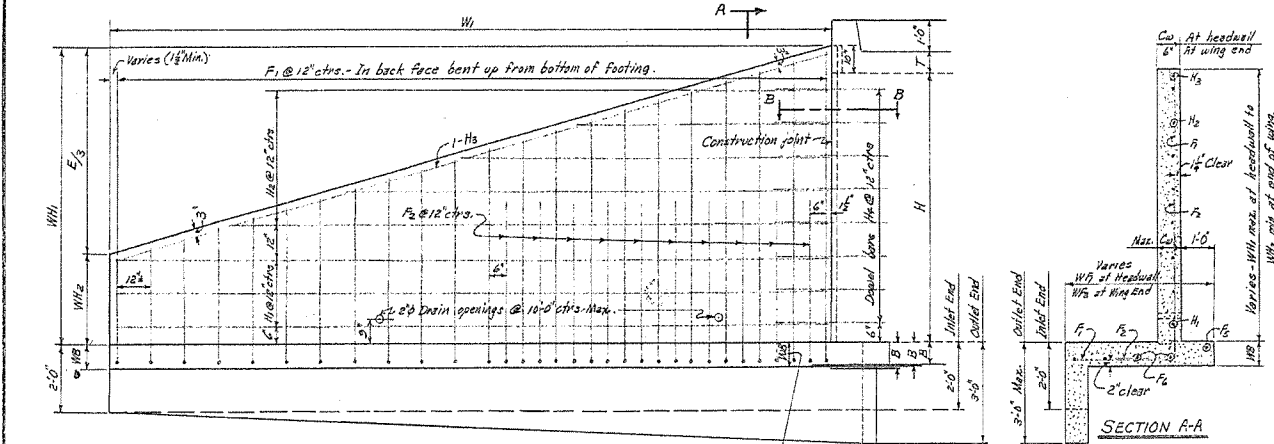
DATE	REVISION	DATE FILM
11-10-05	REVISED TO NEW SIDEWALK POLICY	
10-9-03	REVISED GEN. NOTES & ADDED NOTE	
4-10-03	REV. DETECTABLE WARNING DEVICES	
8-22-02	ADD DETECTABLE WARNING DEVICES	
3-30-00	ADD SLOPE TRANS. & REV. ISL. DIMS.	
11-18-98	REVISED NOTES	
8-12-98	REVISED TEXTURE	
7-02-98	REDRAWN & REISSUED	
10-18-96	CORRECTED DIMENSIONS	10-18-96
5-24-90	FROM 8:1 TO 12:1 MAX. SLOPES	5-24-90
7-15-88	ADJUSTED MAX. SLOPE	652-7-15-88
7-14-88	INCL. "CONC. ISL." IN PAY ITEM	
6-02-76	ISSUED-P.H.D.	299-7-28-76

ARKANSAS STATE HIGHWAY COMMISSION

WHEELCHAIR RAMPS  
 NEW CONSTRUCTION  
 AND ALTERATIONS

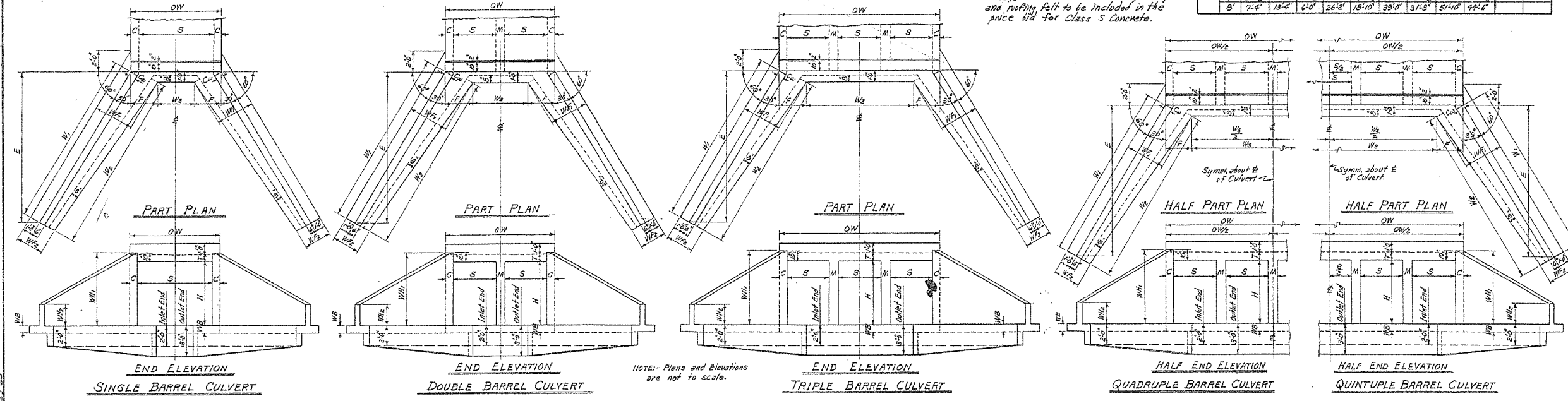
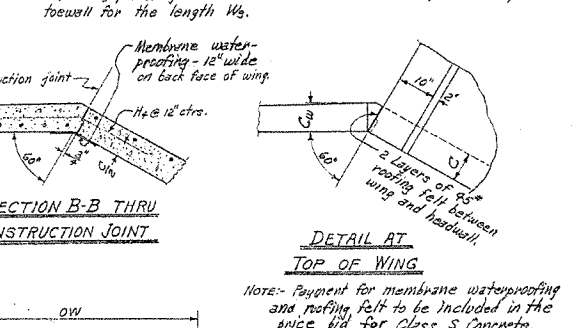
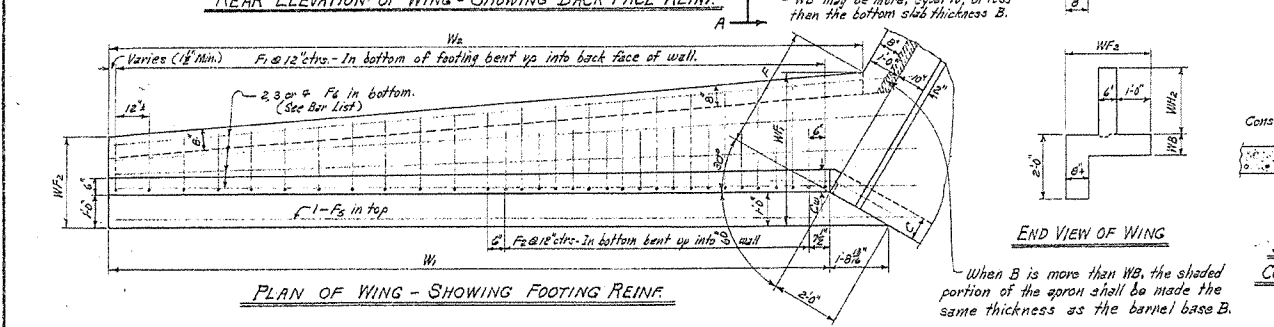
STANDARD DRAWING WR-1

FEED NO.	REV. NO.	REV. DATE	REV. BY	TOTAL
				169
JOB NO.				



WING DIMENSIONS

CLEAR HEIGHT OF BOX THICKNESS OF WING FOOTING	WING WALL HEIGHTS AT HEADWALL		WIDTHS OF WING FOOTINGS AT HEADWALL		PERPENDICULAR DISTANCE TO END OF WING	LENGTH OF WING WALLS	INSIDE FOOTING DIMENSION	QUANTITY PER WING		
	AT HEADWALL	AT END OF WING	AT HEADWALL	AT END OF WING				INLET END	OUTLET END	
2'	7'	6'	2'-10"	0'-8"	2'-0"	0'-11"	6'-6"	7'-6"	0.889	0.996
3'	7'	6'	3'-10"	1'-0"	2'-8"	0'-9"	8'-6"	9'-9"	1.338	1.466
4'	7'	6'	4'-10"	1'-8"	3'-0"	1'-9"	10'-6"	12'-1"	1.668	2.027
5'	7'	6'	5'-10"	1'-8"	3'-4"	2'-9"	12'-6"	14'-9"	2.479	2.669
6'	8'	7'	6'-10"	2'-0"	3'-8"	2'-6"	14'-6"	16'-9"	3.440	3.661
7'	8'	7'	7'-10"	2'-0"	3'-8"	2'-6"	16'-6"	17'-1"	3.511	3.732
8'	8'	7'	8'-10"	2'-0"	3'-8"	2'-6"	18'-6"	19'-9"	4.505	4.758
9'	8'	7'	9'-10"	2'-0"	3'-8"	2'-6"	20'-6"	21'-4"	4.597	4.851
10'	8'	7'	10'-10"	2'-0"	3'-8"	2'-6"	22'-6"	23'-6"	5.761	6.097



APRON DIMENSION W3 = (OW - 2F)

CLEAR SPAN	CLEAR HEIGHT	SINGLE BARREL CULVERT		DOUBLE BARREL CULVERT		TRIPLE BARREL CULVERT		QUADRUPLE BARREL CULVERT		QUINTUPLE BARREL CULVERT	
		OW	W3	OW	W3	OW	W3	OW	W3	OW	W3
2'	7'	11'-0"	5'-0"	9'-0"	3'-0"	7'-0"	2'-0"	5'-0"	1'-0"	3'-0"	1'-0"
3'	7'	12'-0"	5'-0"	10'-0"	3'-0"	8'-0"	2'-0"	6'-0"	1'-0"	4'-0"	1'-0"
4'	7'	13'-0"	5'-0"	11'-0"	3'-0"	9'-0"	2'-0"	7'-0"	1'-0"	5'-0"	1'-0"
5'	7'	14'-0"	5'-0"	12'-0"	3'-0"	10'-0"	2'-0"	8'-0"	1'-0"	6'-0"	1'-0"
6'	8'	15'-0"	5'-0"	13'-0"	3'-0"	11'-0"	2'-0"	9'-0"	1'-0"	7'-0"	1'-0"
7'	8'	16'-0"	5'-0"	14'-0"	3'-0"	12'-0"	2'-0"	10'-0"	1'-0"	8'-0"	1'-0"
8'	8'	17'-0"	5'-0"	15'-0"	3'-0"	13'-0"	2'-0"	11'-0"	1'-0"	9'-0"	1'-0"
9'	8'	18'-0"	5'-0"	16'-0"	3'-0"	14'-0"	2'-0"	12'-0"	1'-0"	10'-0"	1'-0"
10'	8'	19'-0"	5'-0"	17'-0"	3'-0"	15'-0"	2'-0"	13'-0"	1'-0"	11'-0"	1'-0"
11'	7'	20'-0"	5'-0"	18'-0"	3'-0"	16'-0"	2'-0"	14'-0"	1'-0"	12'-0"	1'-0"
12'	7'	21'-0"	5'-0"	19'-0"	3'-0"	17'-0"	2'-0"	15'-0"	1'-0"	13'-0"	1'-0"

QUANTITIES CLASS S CONCRETE - 4 WINGS

CLEAR SPAN	CLEAR HEIGHT	HEADWALLS, WING WALLS, FOOTINGS, TOWERS AND APRONS				
		HEADWALL	WING WALL	FOOTING	TOWER	APRON
2'	7'	128.0	4.50	5.94	6.92	9.34
3'	7'	169.4	6.26	7.21	8.17	10.29
4'	7'	236.6	8.33	9.28	10.24	12.16
5'	7'	329.8	11.28	11.68	12.54	15.56
6'	8'	453.1	14.55	15.53	16.52	18.99
7'	8'	609.4	19.47	20.79	21.87	25.12
8'	8'	809.4	25.94	27.10	28.18	32.25
9'	8'	1054.4	34.26	35.52	36.60	41.38
10'	8'	1344.4	44.55	46.83	47.91	52.51
11'	7'	1689.4	56.84	59.12	60.20	65.64
12'	7'	2089.4	71.13	73.41	74.49	80.77

BAR LIST FOR ONE WING - 4 REQUIRED

CLEAR HEIGHT	F1		F2		F3		H1		H2		H3		H4		QUANTITY PER WING	BAR BENDING DIAGRAMS
	BENT		BENT		STRAIGHT		STRAIGHT		STRAIGHT		BENT		LB.			
	SIZE	SPACING	SIZE	SPACING	SIZE	SPACING	SIZE	SPACING	SIZE	SPACING	SIZE	SPACING				
2'	#3	12"	#3	12"	#3	12"	#3	12"	#3	12"	#3	12"	#3	12"	27.0	
3'	#3	12"	#3	12"	#3	12"	#3	12"	#3	12"	#3	12"	#3	12"	41.1	
4'	#3	12"	#3	12"	#3	12"	#3	12"	#3	12"	#3	12"	#3	12"	63.7	
5'	#3	12"	#3	12"	#3	12"	#3	12"	#3	12"	#3	12"	#3	12"	89.5	
6'	#4	12"	#4	12"	#4	12"	#4	12"	#4	12"	#4	12"	#4	12"	145.8	
7'	#4	12"	#4	12"	#4	12"	#4	12"	#4	12"	#4	12"	#4	12"	283.7	
8'	#4	12"	#4	12"	#4	12"	#4	12"	#4	12"	#4	12"	#4	12"	356.4	

MEMBRANE - A membrane waterproofing 12" wide, consisting of three moppings of waterproof 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.

GENERAL NOTES:  
 CONCRETE - All concrete to be Class S, and shall be poured in the dry. All exposed corners to have 3/4" chamfers.  
 REINFORCING STEEL - Reinforcing steel to be deformed bars of intermediate or hard grade.  
 CONSTRUCTION JOINTS - Construction joints between wingwall, footings and side walls 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 #/sq ft  
 Reinforcing Steel 20,000 #/sq ft

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-500X-X2  
 R-200X-X3 R-300X-X3

CLASS S CONCRETE  
 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, ALL DEPTHS OF COVER  
 QUADRUPLES & QUINTUPLES. FOR H=8'-0" OR LESS  
 STANDARD DRAWING NO. W-X003-1

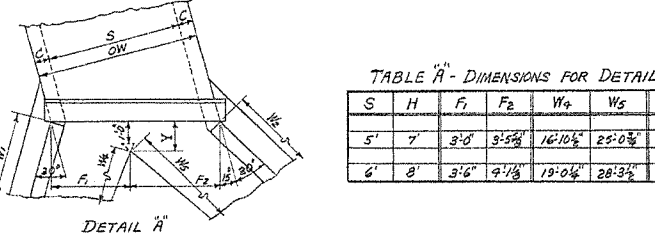
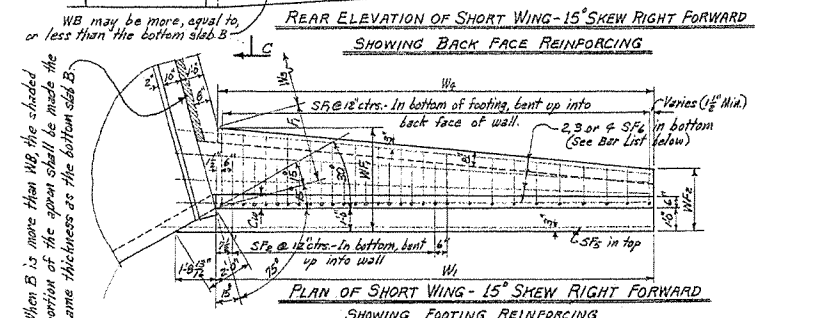
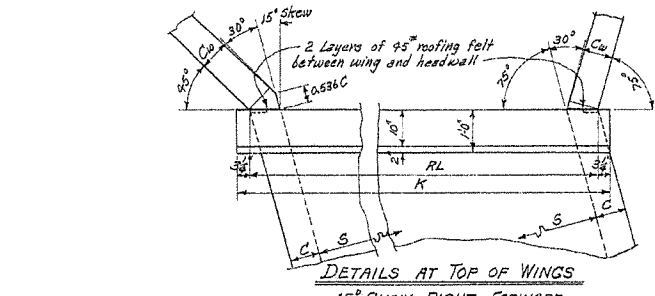
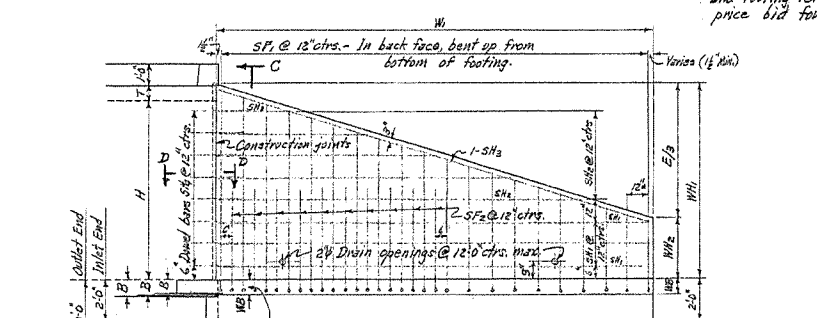
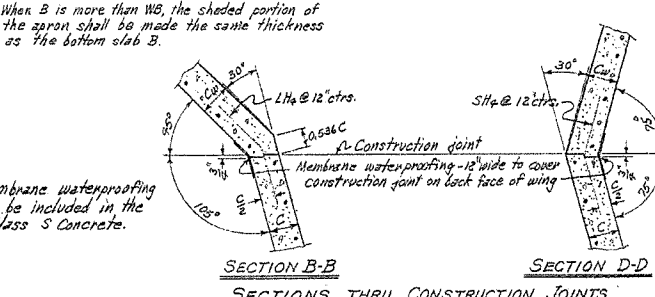
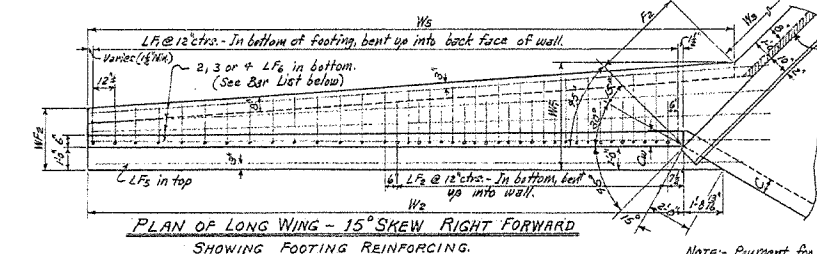
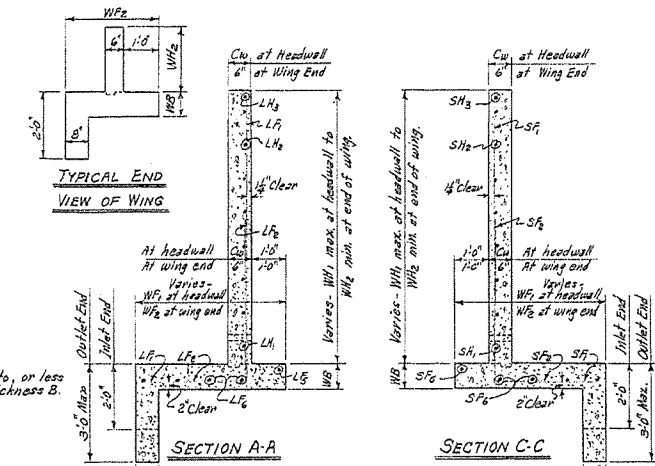
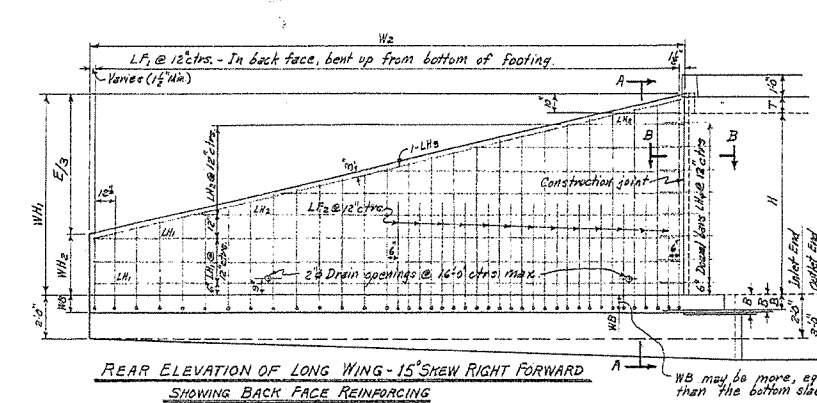
Designed By: M.C.H. 5-30-62. Checked By: Division. Bg: M.C.H. 12-4-62. Checked By: Quantities: Bg: M.C.H. 12-14-62. Rechecked By: R.L.H. 3-22-63.

REVISIONS - Membrane added. 5-10-66 M.C.H.





FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			171	
JOB No.					



REGULAR WING DIMENSIONS - 3:1 SLOPES

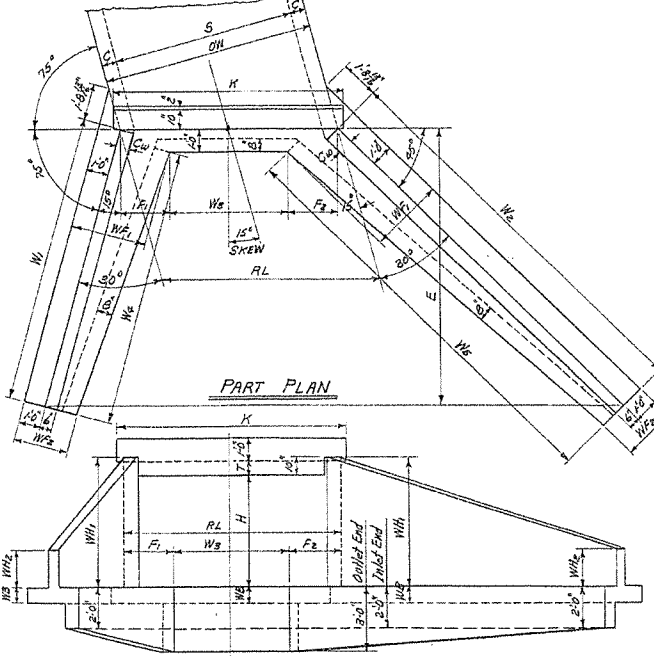
CLEAR HEIGHT OF BOX	THICKNESS OF WING FOOTING	THICKNESS OF WING AT HEADWALL	WIDTHS OF WING FOOTINGS		FOOTING DIMENSIONS - PARALLEL WITH HEADWALL		LENGTHS OF WING WALLS		INSIDE FOOTING DIMENSIONS		QUANTITY PER WING CLASS 5 CONCRETE							
			AT HEADWALL	AT END OF WING	SHORT WING	LONG WING	SHORT WING	LONG WING	SHORT WING	LONG WING	SHORT WING	LONG WING	INLET END	OUTLET END	INLET END	OUTLET END		
H	WB	WB	WF1	WF2	F1	F2	E	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	
2'	7"	6"	2'-0"	0'-6"	2'-4"	2'-0"	14'-6"	6'-6"	6'-0"	9'-2 1/2"	6'-0"	9'-1 1/2"	12'-0"	12'-3 1/2"	0.789	1.084	0.876	1.212
3'	7"	6"	3'-0"	1'-0"	2'-4"	2'-0"	15'-6"	8'-6"	8'-0"	12'-0"	8'-2 1/2"	12'-3 1/2"	15'-5 1/2"	1.186	1.650	1.300	1.808	
4'	7"	6"	4'-0"	1'-4"	3'-0"	2'-3"	16'-6"	10'-6"	10'-0"	14'-10 1/2"	10'-7 1/2"	15'-5 1/2"	18'-7 1/2"	1.288	2.305	1.797	2.602	
5'	7"	6"	5'-0"	1'-8"	3'-6"	2'-4"	17'-6"	12'-6"	12'-0"	17'-8 1/2"	12'-6 1/2"	18'-7 1/2"	20'-7 1/2"	1.390	3.059	2.363	3.295	
6'	7"	6"	6'-0"	2'-2"	4'-0"	2'-6"	18'-6"	14'-6"	14'-0"	19'-10 1/2"	14'-6 1/2"	21'-9"	24'-7 1/2"	1.492	3.828	2.955	4.424	
7'	7"	6"	7'-0"	2'-6"	4'-6"	2'-8"	19'-6"	16'-6"	16'-0"	20'-10 1/2"	16'-6 1/2"	23'-9"	27'-7 1/2"	1.594	4.297	3.309	4.605	
8'	7"	6"	8'-0"	3'-0"	5'-0"	2'-10"	20'-6"	18'-6"	18'-0"	21'-10 1/2"	18'-6 1/2"	25'-9"	29'-7 1/2"	1.696	4.766	3.638	5.016	
9'	7"	6"	9'-0"	3'-4"	5'-6"	3'-0"	21'-6"	20'-6"	20'-0"	22'-10 1/2"	20'-6 1/2"	27'-9"	31'-7 1/2"	1.798	5.235	4.067	5.427	
10'	7"	6"	10'-0"	3'-8"	6'-0"	3'-2"	22'-6"	22'-6"	22'-0"	23'-10 1/2"	22'-6 1/2"	29'-9"	33'-7 1/2"	1.899	5.704	4.418	5.838	
11'	7"	6"	11'-0"	4'-2"	6'-6"	3'-4"	23'-6"	24'-6"	24'-0"	24'-10 1/2"	24'-6 1/2"	31'-9"	35'-7 1/2"	1.999	6.173	4.769	6.249	
12'	7"	6"	12'-0"	4'-6"	7'-0"	3'-6"	24'-6"	26'-6"	26'-0"	25'-10 1/2"	26'-6 1/2"	33'-9"	37'-7 1/2"	2.099	6.642	5.120	6.660	

\* Quantity per wing does not include headwall or that portion of apron or footwall for the length W8.  
 \* See Table A' for special values of F1, F2 and W4 & W5 for Single 5x7 and 6x8 Box Culverts.

QUANTITIES

CLEAR SPAN	CLEAR HEIGHT	THICKNESS OF WING AT HEADWALL	THICKNESS OF WING FOOTING	REINFORCING STEEL FOR WINGS	CLASS 5 CONCRETE - 4 WINGS				
					HEADWALLS, WING WALLS, FOOTINGS, SIDEWALLS AND APRONS	HEADWALLS	WING WALLS	FOOTINGS	SIDEWALLS AND APRONS
S	H	WB	WB	LB	Cu.Yd.	Cu.Yd.	Cu.Yd.	Cu.Yd.	Cu.Yd.
5'	6'	7"	6"	117	4.73	5.78	7.77	8.76	
6'	6'	7"	6"	176	6.65	7.64	8.63	9.63	10.62
7'	6'	7"	6"	267	8.85	9.84	10.84	11.83	12.82
8'	6'	7"	6"	379	11.40	12.38	13.38	14.37	15.36
9'	6'	7"	6"	526	15.25	16.24	17.24	18.23	19.22
10'	6'	7"	6"	716	20.41	21.40	22.40	23.39	24.38
11'	6'	7"	6"	950	27.00	28.00	29.00	30.00	31.00
12'	6'	7"	6"	1239	35.25	36.25	37.25	38.25	39.25

\* For reinforcing steel in Headwalls and Aprons, see Drawings listed below.



SINGLE BARREL CULVERT - 15° SKEW RIGHT FORWARD. Details of Culvert with 15° Skew Left Forward is reversed, see Draw. No. W-X-15. TYPICAL WING DETAILS.

Notes: For remainder of General Plans and Elevations of Single, Double, Triple, Quadruple and Quintuple Span Culverts, see Std. Drawing No. W-X-15. For values of RL, K, and W3 for each box, see the above Std. also.

MEMBRANE: A membrane waterproofing 12 inches 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.

GENERAL NOTES: CONCRETE: All concrete to be Class 5, and shall be poured in the dry. All exposed corners to have 1/2 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 5 Concrete (n=10) 1200 psi; Reinforcing Steel 20000 psi.

Note: This drawing to be used in conjunction with Std. Barrel Sections, Drawing Nos. SINGLES DOUBLES TRIPLES QUADRUPLES QUINTUPLES R-115X-0 R-215X-0 R-315X-0 R-415X-0 R-515X-0 R-115X-1 R-215X-1 R-315X-1 R-415X-1 R-515X-1 R-215X-2 R-315X-2

CLASS 5 CONCRETE ARKANSAS STATE HIGHWAY COMMISSION DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS 15° SKEW 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-X-153-1

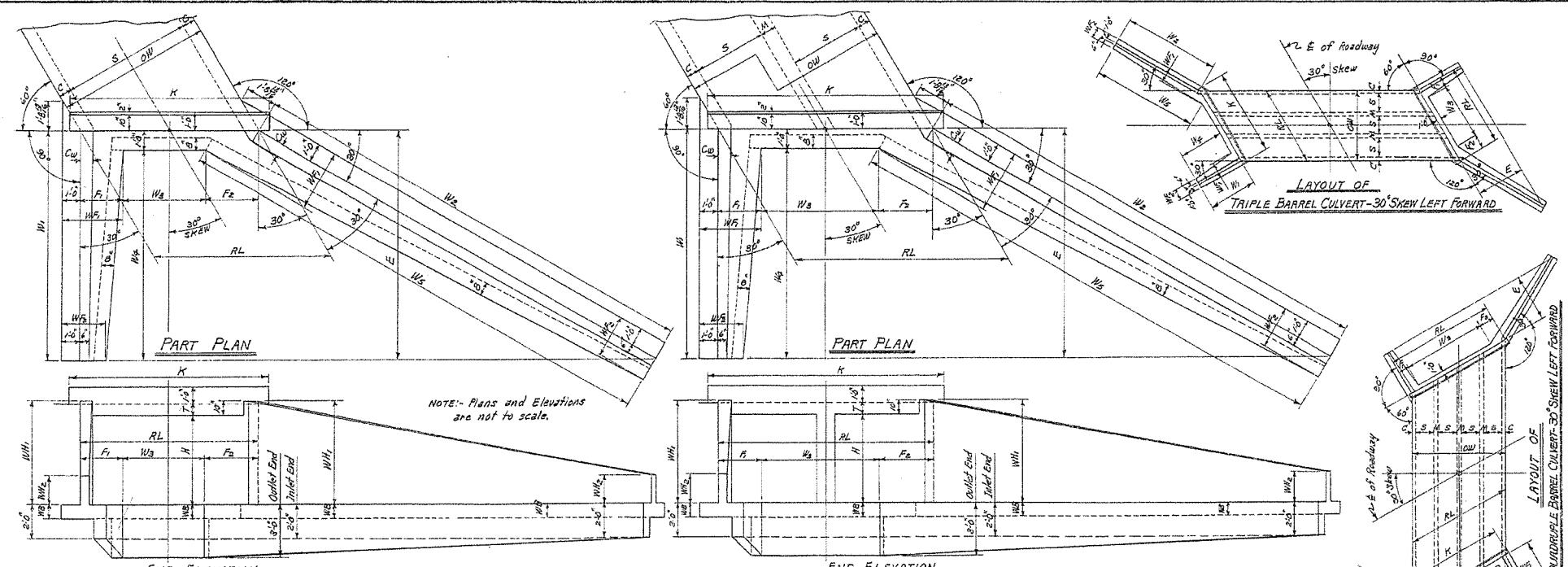
BAR LIST FOR ONE SHORT AND ONE LONG WING - 2 EACH REQUIRED

CLEAR HEIGHT	WING LOCATION	SF1 & LF1 BENT				SF2 & LF2 BENT				SF3 & LF3 STRAIGHT		SF4 & LF4 STRAIGHT		SH1 & LH1 STRAIGHT		SH2 & LH2 STRAIGHT		SH3 & LH3 BENT		SH4 & LH4 BENT		BAR BENDING DIAGRAM	QUANTITY		
		MIN.	MAX.	X	Y	MIN.	MAX.	X	Y	SIZE	NO. REB.	SIZE	NO. REB.	SIZE	NO. REB.	SIZE	NO. REB.	SIZE	NO. REB.	SIZE	NO. REB.			SIZE	NO. REB.
2'	Short	12"	7"	12"	3'-11"	12"	7"	12"	3'-11"	12"	7"	12"	3'-11"	12"	7"	12"	3'-11"	12"	7"	12"	3'-11"	12"	7"	24.9	33.4
2'	Long	12"	10"	12"	3'-11"	12"	10"	12"	3'-11"	12"	10"	12"	3'-11"	12"	10"	12"	3'-11"	12"	10"	12"	3'-11"	12"	10"	37.7	50.3
3'	Short	12"	9"	12"	3'-9"	12"	9"	12"	3'-9"	12"	9"	12"	3'-9"	12"	9"	12"	3'-9"	12"	9"	12"	3'-9"	12"	9"	57.3	76.4
3'	Long	12"	13"	12"	3'-9"	12"	13"	12"	3'-9"	12"	13"	12"	3'-9"	12"	13"	12"	3'-9"	12"	13"	12"	3'-9"	12"	13"	81.1	108.4
4'	Short	12"	11"	12"	3'-7"	12"	11"	12"	3'-7"	12"	11"	12"	3'-7"	12"	11"	12"	3'-7"	12"	11"	12"	3'-7"	12"	11"	134.8	178.1
4'	Long	12"	15"	12"	3'-7"	12"	15"	12"	3'-7"	12"	15"	12"	3'-7"	12"	15"	12"	3'-7"	12"	15"	12"	3'-7"	12"	15"	259.5	345.2
5'	Short	12"	13"	12"	3'-5"	12"	13"	12"	3'-5"	12"	13"	12"	3'-5"	12"	13"	12"	3'-5"	12"	13"	12"	3'-5"	12"	13"	320.0	438.3
5'	Long	12"	17"	12"	3'-5"	12"	17"	12"	3'-5"	12"	17"	12"	3'-5"	12"	17"	12"	3'-5"	12"	17"	12"	3'-5"	12"	17"		

Note: Bars for short wing shall be marked with prefix letter 'S', while those for long wing shall be marked with letter 'L'.

Designed By: W.C.H. 5-15-63 Checked By: W.C.H. 5-15-63  
 Drawn By: W.C.H. 6-20-63 Checked By: W.C.H. 6-20-63  
 Quantities By: W.C.H. 9-23-63 Checked By: W.C.H. 9-23-63

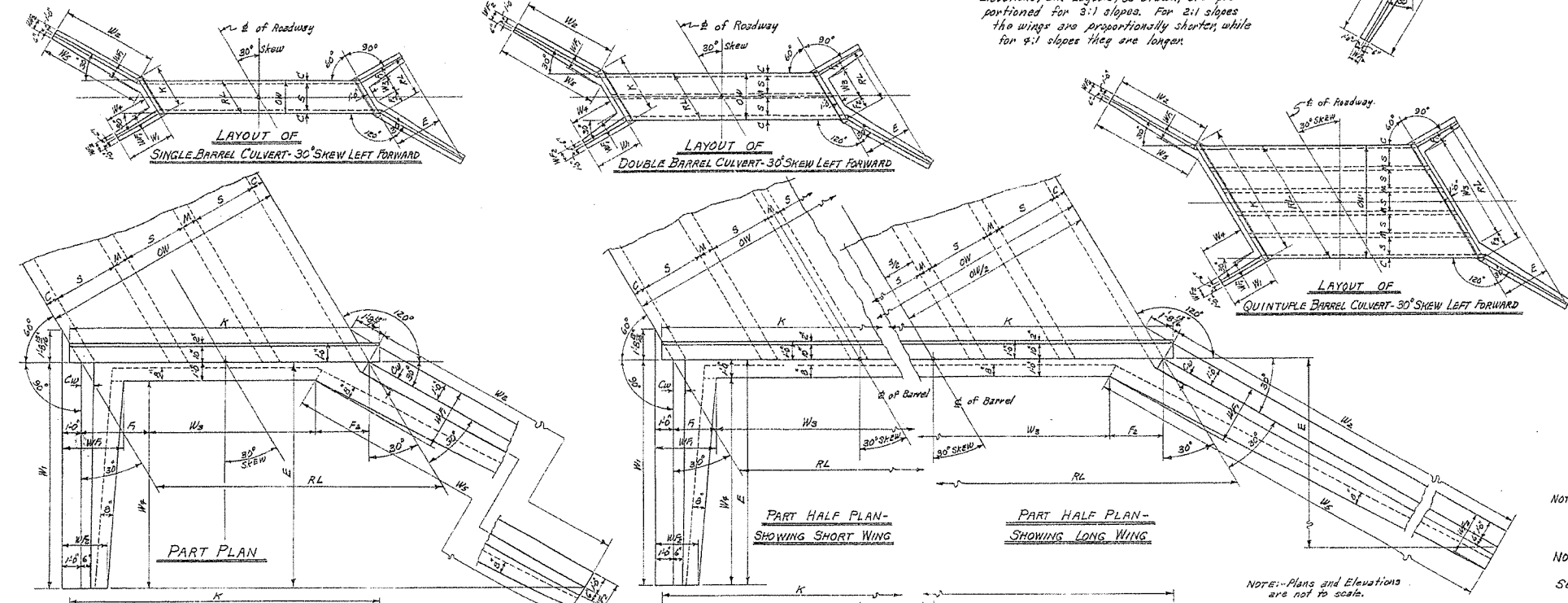
FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			172	
JOB No.					



**SINGLE BARREL CULVERT-30° SKEW RIGHT FORWARD**  
 Details of Culvert with 30° Skew Left Forward is reversed, see Layout below.

**DOUBLE BARREL CULVERT-30° SKEW RIGHT FORWARD**  
 Details of Culvert with 30° Skew Left Forward is reversed, see Layout below.

NOTE: The length of the wings for the Plans, Elevations, and Layouts, as shown, are proportioned for 3:1 slopes. For 2:1 slopes the wings are proportionally shorter, while for 4:1 slopes they are longer.



**TRIPLE BARREL CULVERT-30° SKEW RIGHT FORWARD**  
 Details of Culvert with 30° Skew Left Forward is reversed, see Layout at top center of sheet.

**QUADRUPLE BARREL CULVERT-30° SKEW RT. FWD.**  
 Details of Culvert with 30° Skew Left Forward is reversed, see Layout at above center.

**QUINTUPLE BARREL CULVERT-30° SKEW RT. FWD.**  
 Details of Culvert with 30° Skew Left Forward is reversed, see Layout above.

USE WITH DRAWING No.	CLEAR SPAN	CLEAR HEIGHT	ROADWAY LENGTH RL															HEADWALL LENGTH K															APRON DIMENSION W <sub>3</sub>														
			SINGLE BARREL CULVERT					DOUBLE BARREL CULVERT					TRIPLE BARREL CULVERT					QUADRUPLE BARREL CULVERT					QUINTUPLE BARREL CULVERT																								
			OW	RL	K	W <sub>3</sub>	W <sub>2</sub>	OW	RL	K	W <sub>3</sub>	W <sub>2</sub>	OW	RL	K	W <sub>3</sub>	W <sub>2</sub>	OW	RL	K	W <sub>3</sub>	W <sub>2</sub>	OW	RL	K	W <sub>3</sub>	W <sub>2</sub>																				
5	2'	2'-3 1/2"	5'-0"	5'-9 1/2"	6'-11 1/2"	3'-6"	9'-8"	11'-2"	12'-3 1/2"	14'-0"	16'-6"	17'-8 1/2"	14'-3 1/2"	19'-0"	21'-11 1/2"	19'-5"	23'-8"	27'-4"	28'-5 1/2"	25'-0 1/2"	25'-0 1/2"	28'-8"	27'-4"	28'-5 1/2"	25'-0 1/2"	25'-0 1/2"																					

Special case for these boxes. See Detail 'A' and Table 'A' for revised values of F, F<sub>2</sub>, W<sub>2</sub> and W<sub>3</sub>, when apron width is more than 15' and W<sub>3</sub> 0' for Details 'A' and Table 'A' for each slope, see Drawing Nos. W-X302-1, W-X302-2, or W-X303-1, W-X303-2, or W-X304-1, W-X304-2.

NOTE: This drawing to be used in conjunction with Standard Wing Drawings for 30° Skews for each slope as listed below.  
 2:1 Slopes  
 W-X302-1 or W-X302-2  
 3:1 Slopes  
 W-X303-1 or W-X303-2  
 4:1 Slopes  
 W-X304-1 or W-X304-2.

NOTE: This drawing to be used in conjunction with Standard Barrel Sections, Drawing Nos.

SINGLES R-130X-0 R-130X-1 R-230X-2	DOUBLES R-230X-01 R-230X-02	TRIPLES R-330X-01 R-330X-02	QUADRUPLES R-430X-01 R-430X-02	QUINTUPLES R-530X-01 R-530X-02
---	-----------------------------------	-----------------------------------	--------------------------------------	--------------------------------------

**CLASS S CONCRETE**

ARKANSAS STATE HIGHWAY COMMISSION  
 DETAILS OF STANDARD WINGS  
 FOR  
 REINFORCED CONCRETE BOX CULVERTS  
 30° SKEW

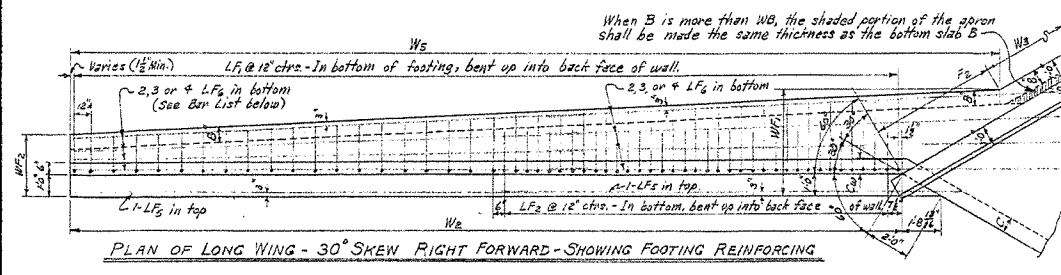
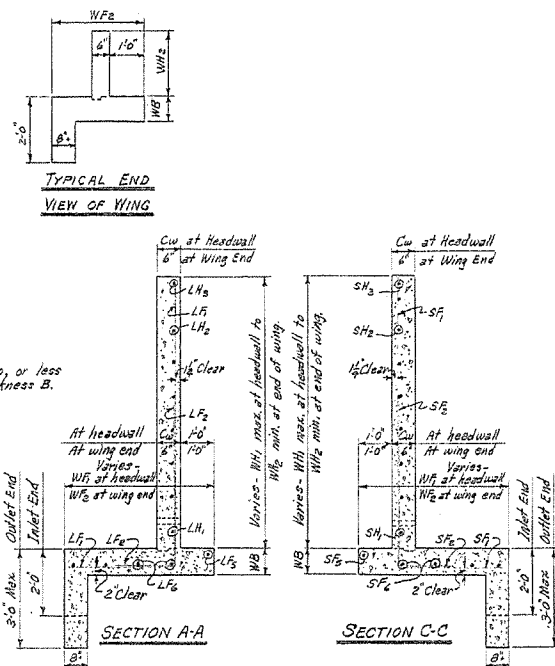
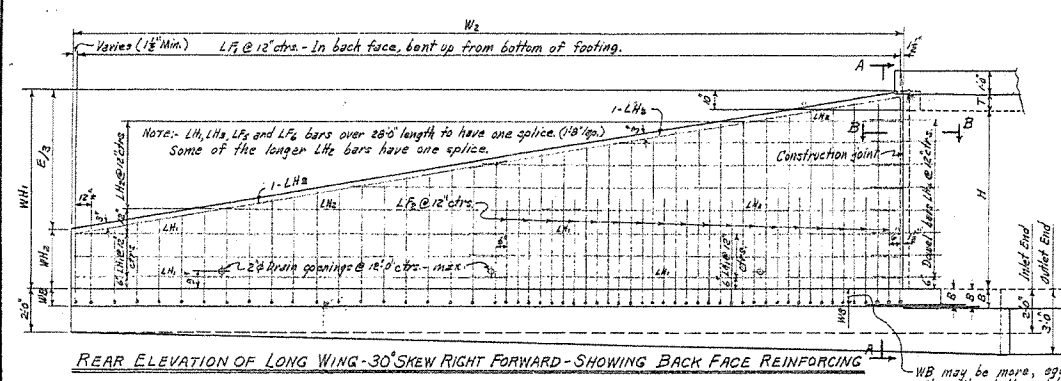
4', 5', 6', 7', 8', 9', 10', 11', 12' SPANS  
 2:1, 3:1 & 4:1 SLOPES  
 ALL DEPTHS OF COVER  
 H=2, 3, 4, 5, 6, 7, 8, 9, 10, 11 & 12.

STANDARD DRAWING NO. W-X30

Designed by: W.C.H. 5-16-63  
 Checked by: W.C.H. 7-15-63  
 Drawn by: W.C.H. 5-21-63  
 Checked by:



FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			173	
JOB No.					



REGULAR WING DIMENSIONS - 3:1 SLOPES

CLEAR HEIGHT OF BOX	THICKNESS OF WING FOOTING	THICKNESS OF WING AT HEADWALL	THICKNESS OF WING AT WING END	WIDTHS OF WING FOOTINGS		FOOTING DIMENSIONS - PARALLEL WITH HEADWALL		LENGTHS OF WING WALLS		INSIDE FOOTING DIMENSION		QUANTITY PER WING				
				AT HEADWALL	AT WING END	SHORT WING	LONG WING	SHORT WING	LONG WING	SHORT WING	LONG WING	SHORT WING	LONG WING	SHORT WING	LONG WING	SHORT WING
2'	7"	6"	2'0"	0'8"	2'0"	1'4"	0'10"	6'6"	6'4"	13'0"	5'6"	13'3"	0.752	1.599	0.834	1.717
3'	7"	6"	3'0"	1'0"	2'8"	2'2"	1'8"	10'2"	10'0"	17'0"	7'6"	17'0"	1.130	2.346	1.289	2.545
4'	7"	6"	4'0"	1'4"	3'0"	2'8"	2'0"	12'6"	12'6"	21'0"	8'6"	22'5"	1.577	3.270	1.711	3.552
5'	7"	6"	5'0"	1'8"	3'4"	2'8"	2'4"	14'6"	14'6"	25'0"	11'6"	27'0"	2.093	4.371	2.252	4.620
6'	8"	7"	6'0"	2'0"	3'8"	2'8"	2'8"	16'6"	16'6"	29'0"	13'6"	31'7"	2.662	5.477	2.837	6.062
7'	8"	7"	7'0"	2'4"	4'2"	2'8"	3'2"	18'6"	18'6"	33'0"	15'6"	36'5"	3.287	6.857	3.425	7.282
8'	9"	8"	8'0"	2'8"	4'6"	2'8"	3'6"	20'6"	20'6"	37'0"	17'6"	41'4"	3.974	8.297	4.077	8.622

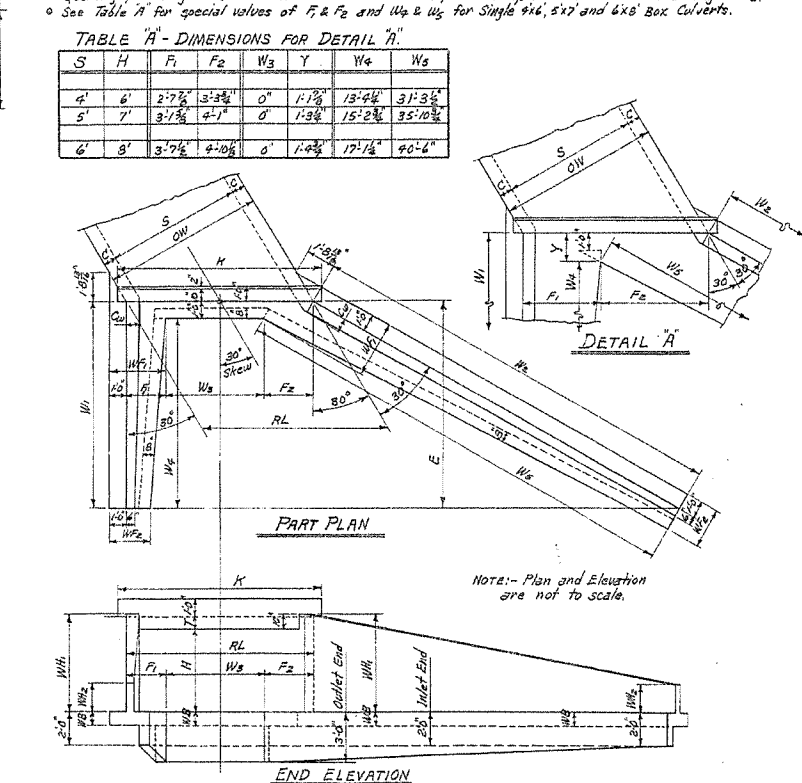
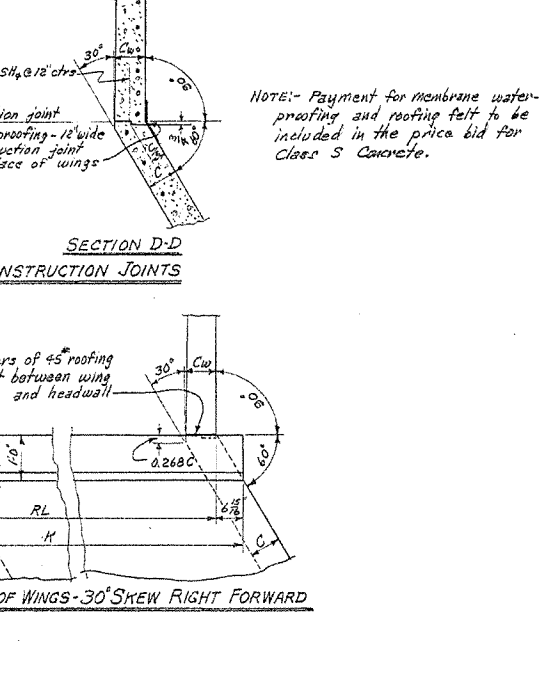
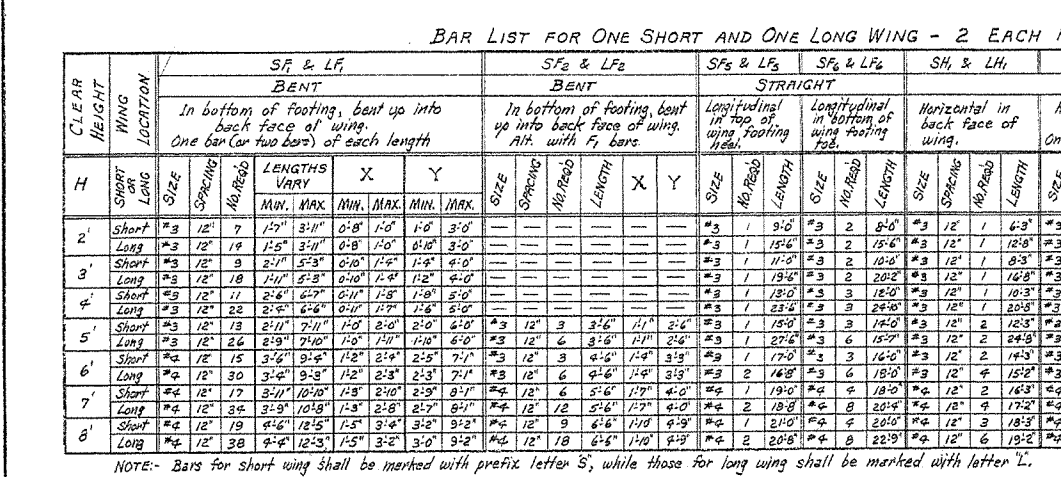
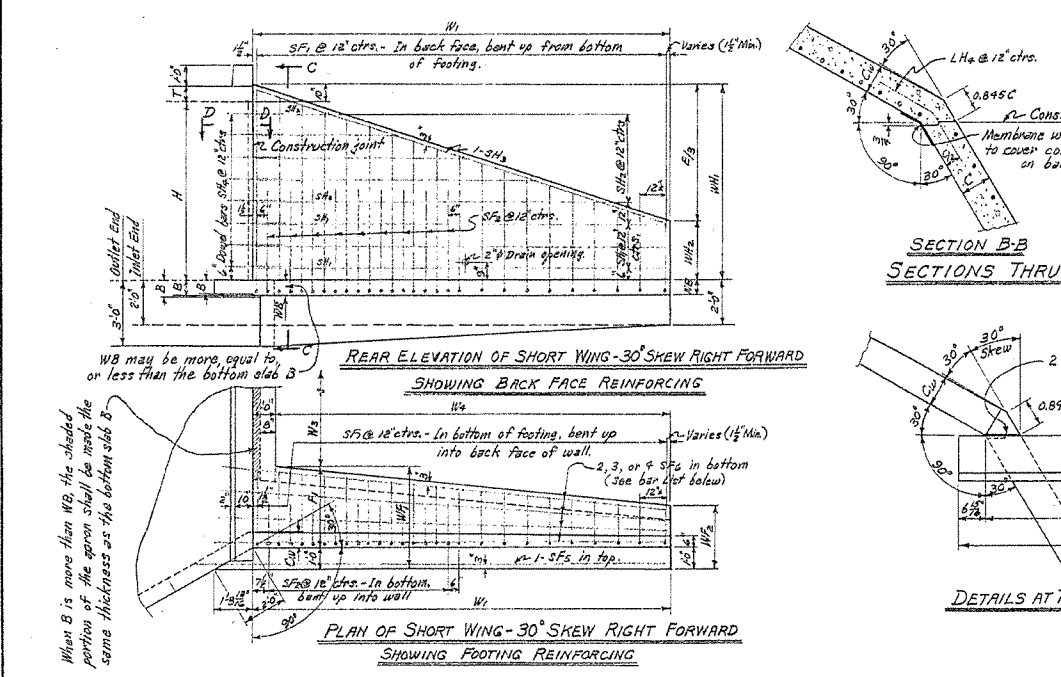


TABLE 'A' - DIMENSIONS FOR DETAIL 'A'

S	H	F1	F2	W3	Y	W4	W5
4'	6'	2'7"	3'3"	0"	1'10"	13'4"	31'3"
5'	7'	3'1"	4'1"	0"	1'3"	15'2"	35'10"
6'	8'	3'5"	4'5"	0"	1'4"	17'1"	40'4"

BAR LIST FOR ONE SHORT AND ONE LONG WING - 2 EACH REQUIRED

CLEAR HEIGHT	WING LOCATION	SF1 & LF1		SF2 & LF2		SF3 & LF3		SF4 & LF4		SH1 & LH1		SH2 & LH2		SH3 & LH3		SH4 & LH4		BAR BENDING DIAGRAM	QUANTITY
		MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.		
2'	Short	12"	15"	12"	15"	12"	15"	12"	15"	12"	15"	12"	15"	12"	15"	12"	15"	247	45.6
	Long	12"	14"	12"	14"	12"	14"	12"	14"	12"	14"	12"	14"	12"	14"	12"	14"		
3'	Short	12"	18"	12"	18"	12"	18"	12"	18"	12"	18"	12"	18"	12"	18"	12"	18"	370	63.5
	Long	12"	17"	12"	17"	12"	17"	12"	17"	12"	17"	12"	17"	12"	17"	12"	17"		
4'	Short	12"	22"	12"	22"	12"	22"	12"	22"	12"	22"	12"	22"	12"	22"	12"	22"	562	107.2
	Long	12"	21"	12"	21"	12"	21"	12"	21"	12"	21"	12"	21"	12"	21"	12"	21"		
5'	Short	12"	26"	12"	26"	12"	26"	12"	26"	12"	26"	12"	26"	12"	26"	12"	26"	780	152.2
	Long	12"	25"	12"	25"	12"	25"	12"	25"	12"	25"	12"	25"	12"	25"	12"	25"		
6'	Short	12"	30"	12"	30"	12"	30"	12"	30"	12"	30"	12"	30"	12"	30"	12"	30"	1278	253.1
	Long	12"	29"	12"	29"	12"	29"	12"	29"	12"	29"	12"	29"	12"	29"	12"	29"		
7'	Short	12"	34"	12"	34"	12"	34"	12"	34"	12"	34"	12"	34"	12"	34"	12"	34"	2670	493.8
	Long	12"	33"	12"	33"	12"	33"	12"	33"	12"	33"	12"	33"	12"	33"	12"	33"		
8'	Short	12"	38"	12"	38"	12"	38"	12"	38"	12"	38"	12"	38"	12"	38"	12"	38"	3129	622.3
	Long	12"	37"	12"	37"	12"	37"	12"	37"	12"	37"	12"	37"	12"	37"	12"	37"		

MEMBRANE - A membrane waterproofing 12" wide, consisting of three layers 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 of wings.

QUANTITIES

CLEAR SPAN	CLEAR HEIGHT	THICKNESS OF WING AT HEADWALL	THICKNESS OF WING AT WING END	REINFORCING STEEL FOR 4'	CLASS 5 CONCRETE - 4 WINGS				
					HEADWALLS, WING WALLS, FOOTINGS, REINWALLS AND BRIS	SINGLE BARREL CULVERT	DOUBLE BARREL CULVERT	TRIPLE BARREL CULVERT	QUADRUPLE BARREL CULVERT
2'	6"	7"	14"	5.80	6.90	8.01	9.12	10.23	
3'	6"	7"	213	8.09	9.18	10.29	11.40	12.51	
4'	6"	7"	327	10.79	11.88	12.99	14.10	15.21	
5'	6"	7"	440	13.90	15.00	16.11	17.22	18.32	
6'	6"	7"	554	17.01	18.11	19.22	20.32	21.43	
7'	6"	7"	668	20.12	21.22	22.33	23.43	24.54	
8'	6"	7"	782	23.23	24.33	25.44	26.54	27.65	
9'	6"	7"	896	26.34	27.44	28.55	29.65	30.76	
10'	6"	7"	1010	29.45	30.55	31.66	32.76	33.87	
11'	6"	7"	1124	32.56	33.66	34.77	35.87	36.98	
12'	6"	7"	1238	35.67	36.77	37.88	38.98	40.09	

GENERAL NOTES:  
 CONCRETE - All concrete to be Class 5, and shall be poured in the dry. All exposed corners to have 1/2 chamfers.  
 REINFORCING STEEL - Reinforcing steel to be deformed bars of intermediate or hard grade.  
 CONSTRUCTION JOINTS - Construction joints between wingwall, footings and side walls shall be only where shown on plans.  
 SPECIFICATIONS - Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable special provisions.  
 UNIT STRESSES -  
 Class 5 Concrete (100%) 1200 psi  
 Reinforcing Steel 20,000 psi

ARKANSAS STATE HIGHWAY COMMISSION  
 DETAILS OF STANDARD WINGS  
 FOR  
 REINFORCED CONCRETE BOX CULVERTS  
 30° SKEW  
 4', 5', 6', 7', 8', 9', 10', 11' & 12' SPANS  
 SINGLES, DOUBLES, TRIPLES, QUADRUPLES & QUINTUPLES.  
 ALL DEPTHS OF COVER FOR H = 8'-0" OR LESS  
 3:1 SLOPES  
 STANDARD DRAWING NO. W-X303-1

Designed By: W.C.H. 5-13-63  
 Checked By: W.C.H. 5-13-63  
 Drawn By: W.C.H. 7-24-63  
 Checked By: W.C.H. 1-7-64  
 Quantities By: W.C.H. 1-7-64









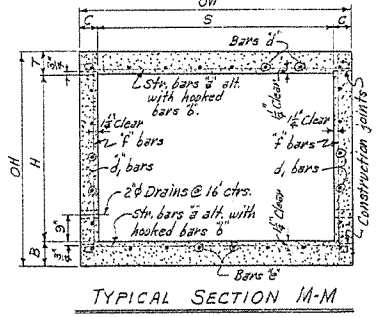
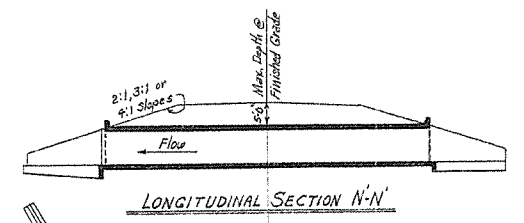
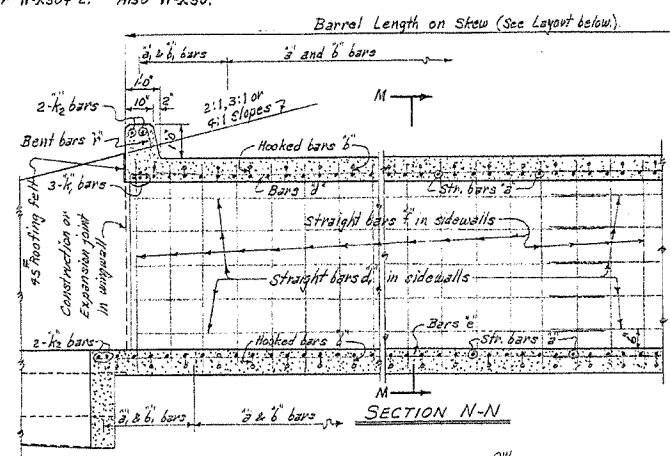


FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			177	
JOB No.					

BAR LIST FOR BARREL SECTION 60'-0" IN LENGTH - TWO 30° SKEWED ENDS.

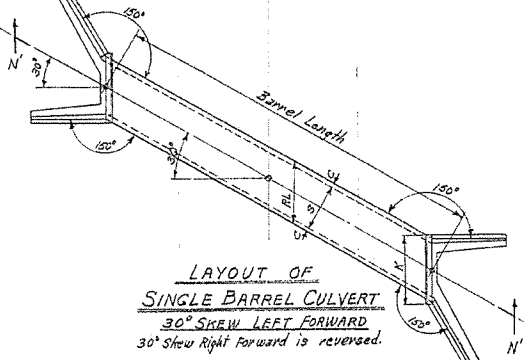
Note: For Details of Standard Wings and bar lists, see Drawing No. W-X302-1 or W-X302-2; W-X303-1 or W-X303-2, and W-X304-1 or W-X304-2. Also W-X30.

DEPTH OF COVER	CLEAR SPAN	CLEAR HEIGHT	STRAIGHT		BENT - See Diagrams below				STRAIGHT		STRAIGHT		STRAIGHT		STRAIGHT	
			In Top and Bottom Slabs of Barrel.	In Top and Bottom Slab of Barrel - (Four of each Length)	In Top and Bottom Slabs of Barrel - hooked. Alternate with 'a' bars	In Top and Bottom Slabs of Barrel - one end hooked. Alternate with 'a' bars.	Longitudinal in Top Slab of Barrel.	Longitudinal in Sidewalls.	Longitudinal in Bottom Slab of Barrel.	Verticals in Sidewalls.	In Bottom of Headwall.	In Top of Headwall and Horn (2 Each)				
D	S	H	SIZE	SPACING	SIZE	SPACING	SIZE	SPACING	SIZE	SPACING	SIZE	SPACING	SIZE	SPACING	SIZE	SPACING
0'-0" TO 5'-0" MAXIMUM	1 @ 4'	2'	108	4-9"	4	2-11"	108	5'-0"	4	2-11"	108	5'-0"	4	2-11"	120	2-11"
		3'	108	4-9"	4	2-11"	108	5'-0"	4	2-11"	108	5'-0"	4	2-11"	120	2-11"
		4'	108	4-9"	4	2-11"	108	5'-0"	4	2-11"	108	5'-0"	4	2-11"	120	2-11"
	1 @ 5'	2'	108	5-9"	4	3-11"	106	6'-0"	4	3-11"	106	6'-0"	4	3-11"	120	3-11"
		3'	108	5-9"	4	3-11"	106	6'-0"	4	3-11"	106	6'-0"	4	3-11"	120	3-11"
		4'	108	5-9"	4	3-11"	106	6'-0"	4	3-11"	106	6'-0"	4	3-11"	120	3-11"
	1 @ 6'	2'	108	6-9"	4	4-11"	106	7'-0"	4	4-11"	106	7'-0"	4	4-11"	120	4-11"
		3'	108	6-9"	4	4-11"	106	7'-0"	4	4-11"	106	7'-0"	4	4-11"	120	4-11"
		4'	108	6-9"	4	4-11"	106	7'-0"	4	4-11"	106	7'-0"	4	4-11"	120	4-11"
	1 @ 7'	2'	114	7-9"	4	5-11"	114	7'-0"	4	5-11"	114	7'-0"	4	5-11"	120	5-11"
		3'	114	7-9"	4	5-11"	114	7'-0"	4	5-11"	114	7'-0"	4	5-11"	120	5-11"
		4'	114	7-9"	4	5-11"	114	7'-0"	4	5-11"	114	7'-0"	4	5-11"	120	5-11"
1 @ 8'	2'	124	8-9"	4	6-11"	122	8'-0"	4	6-11"	122	8'-0"	4	6-11"	120	6-11"	
	3'	124	8-9"	4	6-11"	122	8'-0"	4	6-11"	122	8'-0"	4	6-11"	120	6-11"	
	4'	124	8-9"	4	6-11"	122	8'-0"	4	6-11"	122	8'-0"	4	6-11"	120	6-11"	
1 @ 9'	2'	124	9-9"	4	7-11"	122	9'-0"	4	7-11"	122	9'-0"	4	7-11"	120	7-11"	
	3'	124	9-9"	4	7-11"	122	9'-0"	4	7-11"	122	9'-0"	4	7-11"	120	7-11"	
	4'	124	9-9"	4	7-11"	122	9'-0"	4	7-11"	122	9'-0"	4	7-11"	120	7-11"	
1 @ 10'	2'	124	10-9"	4	8-11"	122	10'-0"	4	8-11"	122	10'-0"	4	8-11"	120	8-11"	
	3'	124	10-9"	4	8-11"	122	10'-0"	4	8-11"	122	10'-0"	4	8-11"	120	8-11"	
	4'	124	10-9"	4	8-11"	122	10'-0"	4	8-11"	122	10'-0"	4	8-11"	120	8-11"	
1 @ 11'	2'	124	11-9"	4	9-11"	122	11'-0"	4	9-11"	122	11'-0"	4	9-11"	120	9-11"	
	3'	124	11-9"	4	9-11"	122	11'-0"	4	9-11"	122	11'-0"	4	9-11"	120	9-11"	
	4'	124	11-9"	4	9-11"	122	11'-0"	4	9-11"	122	11'-0"	4	9-11"	120	9-11"	
1 @ 12'	2'	124	12-9"	4	10-11"	122	12'-0"	4	10-11"	122	12'-0"	4	10-11"	120	10-11"	
	3'	124	12-9"	4	10-11"	122	12'-0"	4	10-11"	122	12'-0"	4	10-11"	120	10-11"	
	4'	124	12-9"	4	10-11"	122	12'-0"	4	10-11"	122	12'-0"	4	10-11"	120	10-11"	



DESIGN LIVE LOAD  
 H20-S16 LOADING A.A.S.H.O. 1961  
 AND  
 SPECIAL MILITARY LOADING  
 Two 24,000 Lb Axles @ 4'-0" ctrs

UNIT STRESSES:-  
 Class S Concrete (n=10) 1200 psi  
 Reinforcing Steel 20,000 psi



NOTE:- This drawing to be used in conjunction with Standard Wing Drawing Nos. W-X302-1 or W-X302-2, W-X303-1 or W-X303-2, and W-X304-1 or W-X304-2. Also W-X30.

GENERAL NOTES  
 CONCRETE:- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have 3/8" chamfers.  
 REINFORCING STEEL:- Reinforcing to be deformed bars of intermediate or hard grade.  
 BAR LAP:- In computing the quantities of steel from the tables add one lap for each additional 33'-0" length of barrel over 33'-0". Lap longitudinal bars 30 diameters min.  
 CONSTRUCTION JOINTS:- Construction joints between wingwalls, sidewalls and slabs shall be only where shown on plans.  
 SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.

MAX. DESIGN DEPTH OF COVER	BARREL DIMENSIONS										QUANTITIES			
	D	S	H	A	OW	T	C	B	OH	AL	K	CU. YD.	LB.	LB.
1 @ 4'	2'	8	5'-0"	6"	3'-11"	5'-9"	6'-11"	0.282	2.622	41.99	17.35			
	3'	12	5'-0"	6"	3'-11"	5'-9"	6'-11"	0.313	2.784	44.16	19.62			
	4'	16	5'-0"	6"	3'-11"	5'-9"	6'-11"	0.354	2.994	46.83	21.89			
1 @ 5'	2'	10	5'-9"	7"	4'-11"	6'-11"	0.399	3.107	49.50	23.94				
	3'	14	5'-9"	7"	4'-11"	6'-11"	0.440	3.280	52.23	26.34				
	4'	18	5'-9"	7"	4'-11"	6'-11"	0.481	3.453	54.96	28.74				
1 @ 6'	2'	14	6'-9"	8"	5'-11"	7'-11"	0.526	3.526	57.69	30.84				
	3'	18	6'-9"	8"	5'-11"	7'-11"	0.567	3.700	60.37	33.24				
	4'	22	6'-9"	8"	5'-11"	7'-11"	0.608	3.873	63.00	35.64				
1 @ 7'	2'	18	7'-9"	9"	6'-11"	8'-11"	0.653	3.946	65.63	37.74				
	3'	22	7'-9"	9"	6'-11"	8'-11"	0.694	4.120	68.31	40.14				
	4'	26	7'-9"	9"	6'-11"	8'-11"	0.735	4.293	70.94	42.54				
1 @ 8'	2'	22	8'-9"	10"	7'-11"	9'-11"	0.780	4.366	73.57	44.64				
	3'	26	8'-9"	10"	7'-11"	9'-11"	0.821	4.540	76.20	47.04				
	4'	30	8'-9"	10"	7'-11"	9'-11"	0.862	4.713	78.83	49.44				
1 @ 9'	2'	26	9'-9"	11"	8'-11"	10'-11"	0.907	4.786	81.46	51.54				
	3'	30	9'-9"	11"	8'-11"	10'-11"	0.948	4.960	84.10	53.94				
	4'	34	9'-9"	11"	8'-11"	10'-11"	0.989	5.133	86.73	56.34				
1 @ 10'	2'	30	10'-9"	12"	9'-11"	11'-11"	1.034	5.206	89.36	58.44				
	3'	34	10'-9"	12"	9'-11"	11'-11"	1.075	5.380	92.00	60.84				
	4'	38	10'-9"	12"	9'-11"	11'-11"	1.116	5.553	94.63	63.24				
1 @ 11'	2'	34	11'-9"	13"	10'-11"	12'-11"	1.161	5.626	97.26	65.34				
	3'	38	11'-9"	13"	10'-11"	12'-11"	1.202	5.800	99.89	67.74				
	4'	42	11'-9"	13"	10'-11"	12'-11"	1.243	5.973	102.52	70.14				
1 @ 12'	2'	38	12'-9"	14"	11'-11"	13'-11"	1.288	6.046	105.15	72.24				
	3'	42	12'-9"	14"	11'-11"	13'-11"	1.329	6.220	107.78	74.64				
	4'	46	12'-9"	14"	11'-11"	13'-11"	1.370	6.393	110.41	77.04				

\* For remainder of quantities see Std. Wing Drawings listed at left. Total steel quantities listed above include one lap of longitudinal bars.

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD BARREL SECTIONS

FOR REINFORCED CONCRETE BOX CULVERTS

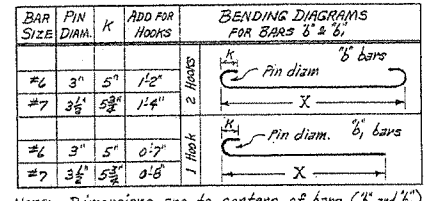
30° SKEW

4, 5, 6, 7, 8, 9, 10, 11 & 12 SPANS 2:1, 3:1 or 4:1 SLOPES

SINGLES UNDER 5'-0" COVER

STANDARD DRAWING NO. R-130X-0

Checked by: R.H.S. 5-8-63  
 Checked by: W.C.H. 2-29-64  
 Checked by: W.C.H. 4-2-64  
 Checked by: W.C.H. 4-2-64  
 Designed by: W.C.H. 1-23-63  
 Drawn by: W.C.H. 2-29-64  
 Quantities by: W.C.H. 4-2-64



NOTE:- Dimensions are to centers of bars ('a' and 'b')

SPAN SIZE	SPACING	No. REB.	LENGTH	X	Dowel bars 1/2" in Two Headwalls.
4'	12"	12	2'-4"	1'-3"	
5'	12"	16	2'-9"	1'-8"	
6'	12"	18	2'-9"	1'-8"	
7'	12"	20	2'-9"	1'-8"	
8'	12"	22	2'-9"	1'-8"	
9'	12"	24	3'-0"	1'-8"	
10'	12"	26	3'-0"	1'-8"	
11'	12"	28	3'-0"	1'-8"	
12'	12"	30	3'-0"	1'-8"	

