

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070511	1	40
CREEKS AT L.M. 0.33 & 1.08 STRS. & APPRS. (DALLAS CO.) (S)						

ARKANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS FOR STATE HIGHWAY

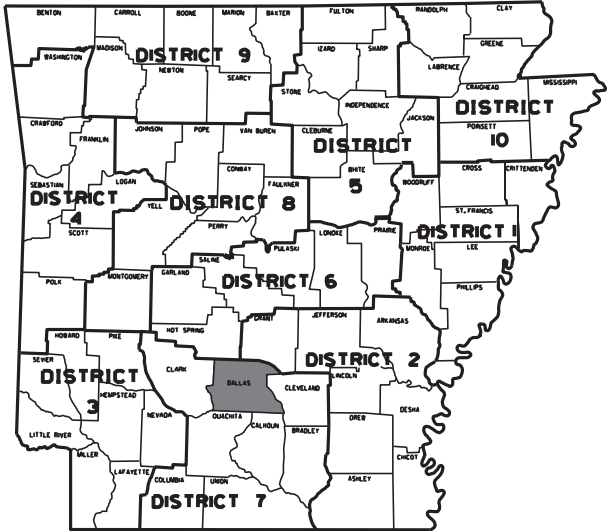
CREEKS AT L.M. 0.33 & 1.08
STRS. & APPRS. (DALLAS CO.) (S)

DALLAS COUNTY
ROUTE 9 SECTION 3

FED. AID PROJ. NHPP-0020(27)

JOB 070511

NOT TO SCALE

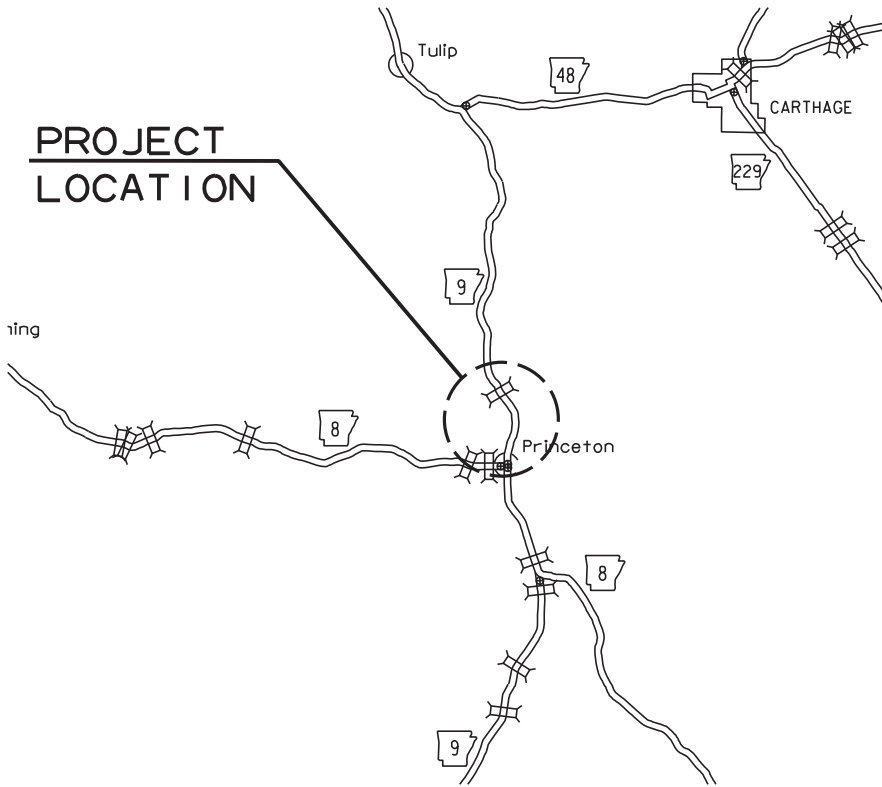


ARK. HWY. DIST. NO. 7

DESIGN TRAFFIC DATA

DESIGN YEAR	2023
2023 ADT	1,500
2043 ADT	1,700
2043 DHV	187
DIRECTIONAL DISTRIBUTION	0.60
TRUCKS	20%
DESIGN SPEED	55 MPH

PROJECT
LOCATION



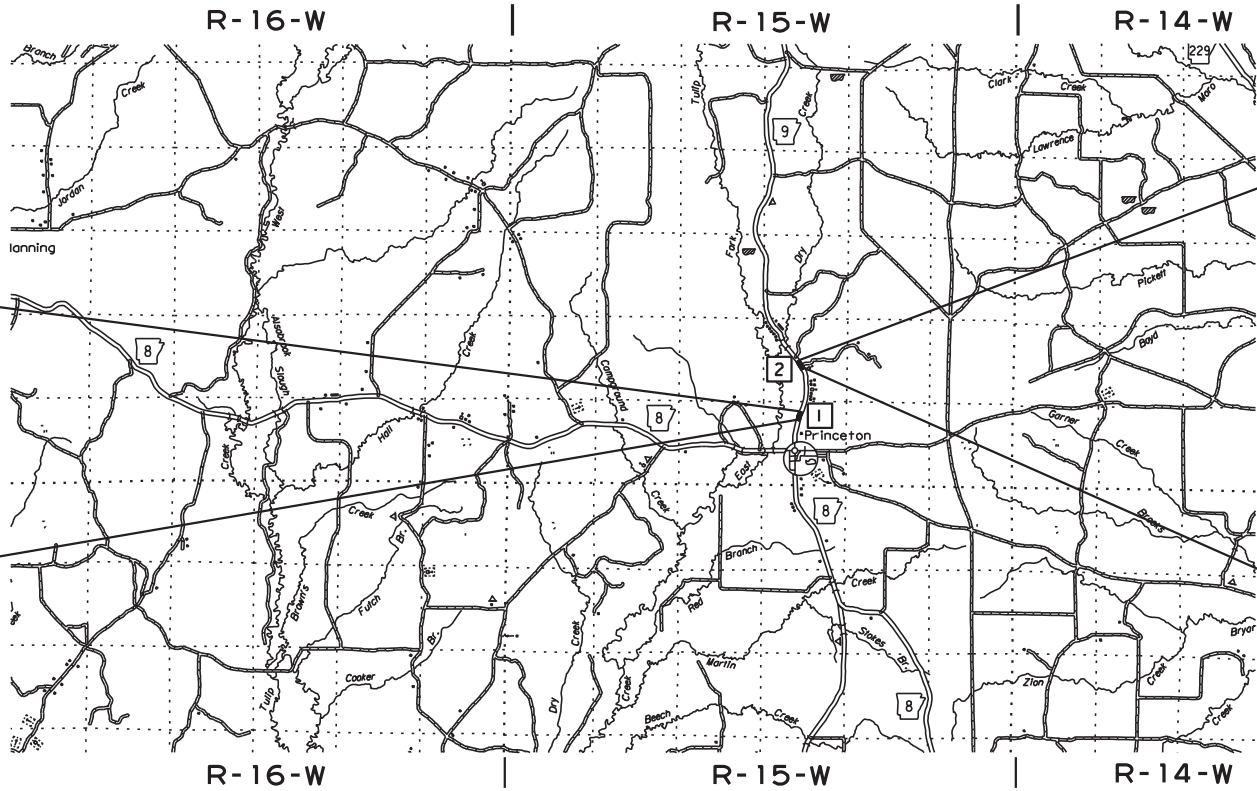
VICINITY MAP

STRUCTURES OVER 20'-0" SPAN

- 1 STA. 110+00 CONSTRUCT
DBL. 10' x 7' x 8' R.C. BOX CULVERT
ON 30' RT. FWD. SKEW
WITH 3:1 WINGS LT. & RT.
Q50 = 830 CFS. D.A. = 1.08 SO. MI.
SPAN = 25'-3"
- 2 STA. 210+35 CONSTRUCT
DBL. 10' x 7' x 7' R.C. BOX CULVERT
WITH 3:1 WINGS LT. & RT.
Q50 = 720 CFS. D.A. = 1.06 SO. MI.
SPAN = 21'-10"

STA. 110+50.00
END SITE 1

STA. 109+50.00
BEGIN JOB 070511
BEGIN SITE 1
LOG MILE 0.33



STA. 210+85.00
END SITE 2
END JOB 070511

STA. 209+85.00
BEGIN SITE 2
LOG MILE 1.07

BEGINNING OF SITE 1	MID POINT OF SITE 1	END OF SITE 1
LATITUDE = N 33°59'11"	LATITUDE = N 33°59'11"	LATITUDE = N 33°59'12"
LONGITUDE = W 92°37'26"	LONGITUDE = W 92°37'26"	LONGITUDE = W 92°37'26"
BEGINNING OF SITE 2	MID POINT OF SITE 2	END OF SITE 2
LATITUDE = N 33°59'48"	LATITUDE = N 33°59'49"	LATITUDE = N 33°59'49"
LONGITUDE = W 92°37'24"	LONGITUDE = W 92°37'24"	LONGITUDE = W 92°37'24"

GROSS LENGTH OF PROJECT	200.00	FEET	OR	0.038	MILES
NET " " ROADWAY	152.92	"	"	0.029	"
NET " " BRIDGES	47.08	"	"	0.009	"
NET " " PROJECT	200.00	"	"	0.038	"

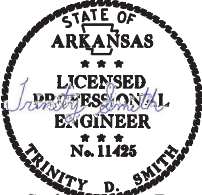
APPROVED



Kelvin Rex Vines
Vines, Rex
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DEPUTY DIRECTOR
AND CHIEF ENGINEER

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070511	2	40
INDEX OF SHEETS AND STANDARD DRAWINGS						



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INDEX OF SHEETS

SHEET NO.	TITLE
1	TITLE SHEET
2	INDEX OF SHEETS AND STANDARD DRAWINGS
3	GOVERNING SPECIFICATIONS AND GENERAL NOTES
4	TYPICAL SECTIONS OF IMPROVEMENT
5 - 13	SPECIAL DETAILS
14 - 17	TEMPORARY EROSION CONTROL DETAILS
18 - 25	MAINTENANCE OF TRAFFIC DETAILS
26	PERMANENT PAVEMENT MARKING DETAILS
27 - 29	QUANTITIES
30	SUMMARY OF QUANTITIES AND REVISIONS
31 - 32	SURVEY CONTROL DETAILS
33 - 34	PLAN AND PROFILE SHEETS
35 - 40	CROSS SECTIONS

ROADWAY STANDARD DRAWINGS

DRWG.NO.	TITLE	DATE
CDP-1	CONCRETE DITCH PAVING	12-08-16
PBC-1	PRECAST CONCRETE BOX CULVERTS	01-28-15
PM-1	PAVEMENT MARKING DETAILS	02-27-20
PU-1	DETAILS OF PIPE UNDERDRAIN	12-08-16
RCB-1	REINFORCED CONCRETE BOX CULVERT DETAILS	07-26-12
RCB-2	EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS	11-20-03
SE-2	TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC	11-07-19
TC-1	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	11-07-19
TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	05-20-21
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	08-12-21
TC-4	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	11-07-19
TC-5	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	11-07-19
TEC-1	TEMPORARY EROSION CONTROL DEVICES	11-16-17
TEC-3	TEMPORARY EROSION CONTROL DEVICES	11-03-94

GOVERNING SPECIFICATIONS

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

NUMBER	TITLE
ERRATA_____	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHW/A-1273__	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHW/A-1273__	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHW/A-1273__	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHW/A-1273__	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHW/A-1273__	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHW/A-1273__	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHW/A-1273__	SUPPLEMENT - WAGE RATE DETERMINATION
100-3_____	CONTRACTOR'S LICENSE
100-4_____	DEPARTMENT NAME CHANGE
102-2_____	ISSUANCE OF PROPCSALS
105-4_____	MAINTENANCE DURING CONSTRUCTION
107-2_____	RESTRAINING CONDITIONS
108-1_____	LIQUIDATED DAMAGES
108-2_____	WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER
110-1_____	PROTECTION OF WATER QUALITY AND WETLANDS
210-1_____	UNCLASSIFIED EXCAVATION
303-1_____	AGGREGATE BASE COURSE
306-1_____	QUALITY CONTROL AND ACCEPTANCE
400-1_____	TACK COATS
400-4_____	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
400-5_____	PERCENT AIR VOIDS FOR ACHM MIX DESIGNS
400-6_____	LIQUID ANTI-STRIP ADDITIVE
400-7_____	TRACKLESS TACK
404-3_____	DESIGN OF ASPHALT MIXTURES
410-1_____	CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
410-2_____	DEVICES FOR MEASURING DENSITY FOR ROLLING PATTERNS
410-4_____	EVALUATION OF ACHM SUBLOT REPLACEMENT MATERIAL
501-2_____	CEMENT
600-2_____	INCIDENTAL CONSTRUCTION
603-1_____	LANE CLOSURE NOTIFICATION
604-1_____	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
604-3_____	TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES (MASH)
605-1_____	CONCRETE DITCH PAVING
620-1_____	MULCH COVER
800-1_____	STRUCTURES
802-4_____	CEMENT
804-2_____	REINFORCING STEEL FOR STRUCTURES
JOB 070511__	BIDDING REQUIREMENTS AND CONDITIONS
JOB 070511__	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 070511__	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 070511__	BUY AMERICA - CONSTRUCTION MATERIALS
JOB 070511__	CARGO PREFERENCE ACT REQUIREMENTS
JOB 070511__	COLD MILLING - COUNTY PROPERTY
JOB 070511__	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 070511__	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
JOB 070511__	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB 070511__	ESTABLISHING CONTRACT TIME - WORKING DAY CONTRACT
JOB 070511__	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 070511__	LIQUIDATED DAMAGES PROCEDURE FOR BID LETTINGS
JOB 070511__	LONGITUDINAL JOINT DENSITIES FOR ACHM SURFACE COURSES
JOB 070511__	MANDATORY ELECTRONIC CONTRACT
JOB 070511__	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB 070511__	PORTABLE TRAFFIC SIGNAL SYSTEM
JOB 070511__	PRICE ADJUSTMENT FOR ASPHALT BINDER
JOB 070511__	PRICE ADJUSTMENT FOR FUEL
JOB 070511__	PROHIBITION OF CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT
JOB 070511__	SHORING FOR CULVERTS
JOB 070511__	SOIL STABILIZATION
JOB 070511__	STORM WATER POLLUTION PREVENTION PLAN
JOB 070511__	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 070511__	UTILITY ADJUSTMENTS
JOB 070511__	WARM MIX ASPHALT

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070511	3	40
GOVERNING SPECIFICATIONS AND GENERAL NOTES						



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GENERAL NOTES

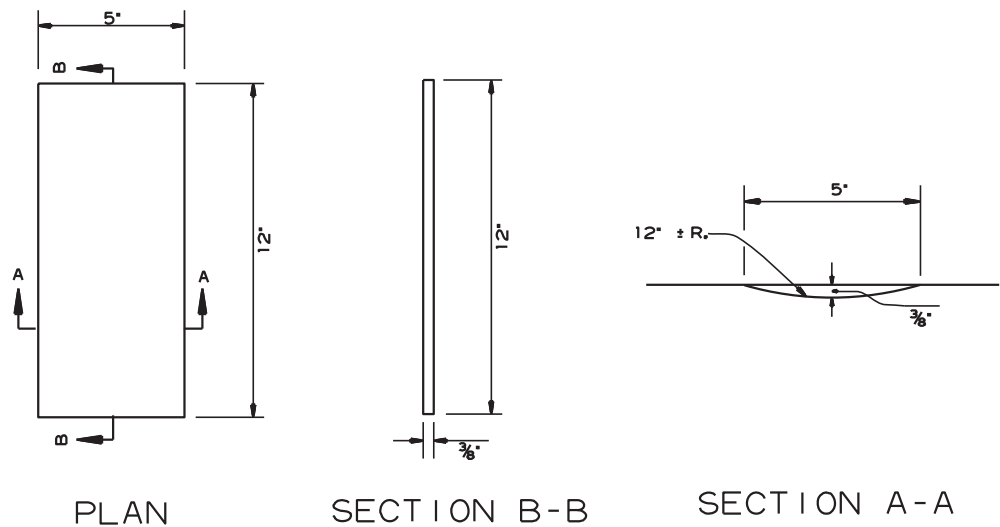
- GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
- ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
- ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY 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 ENSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FENCE TO CONTROL LIVESTOCK IN AREAS WHERE PASTURES ARE SEVERED. WIRE FENCE MAY BE CONSTRUCTED INITIALLY, OR IN LIEU THEREOF, THE CONTRACTOR AT HIS OWN EXPENSE, MAY ELECT TO PROVIDE TEMPORARY FENCING SUITABLE TO CONTAIN LIVESTOCK.
- THE SEQUENCE AS SHOWN ON THE MAINTENANCE OF TRAFFIC PLANS IS A GENERAL OUTLINE FOR THE CONSTRUCTION OF THIS PROJECT, AND IN NO WAY IS IT INTENDED TO COVER EVERY ITEM IN THE PROJECT. ITEMS NOT CRITICAL TO THE CONSTRUCTION SEQUENCE MAY BE CONSTRUCTED IN ANY STAGE AS APPROVED BY THE RESIDENT ENGINEER.
- 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.
- 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.

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070511	5	40
SPECIAL DETAILS						

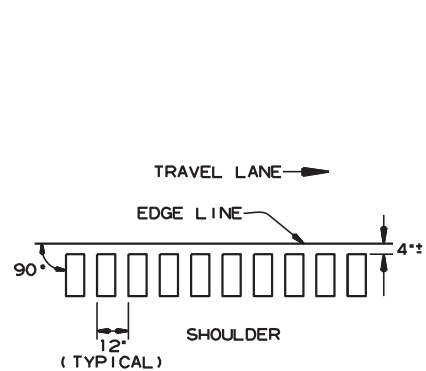


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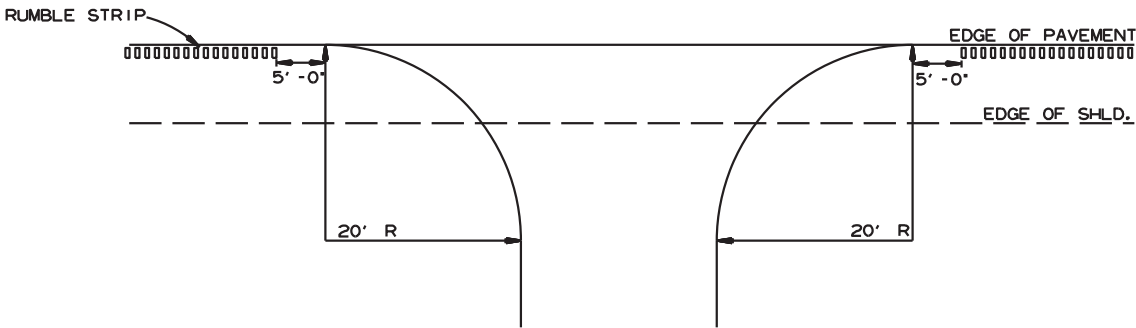
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DETAILS OF RUMBLE STRIPS



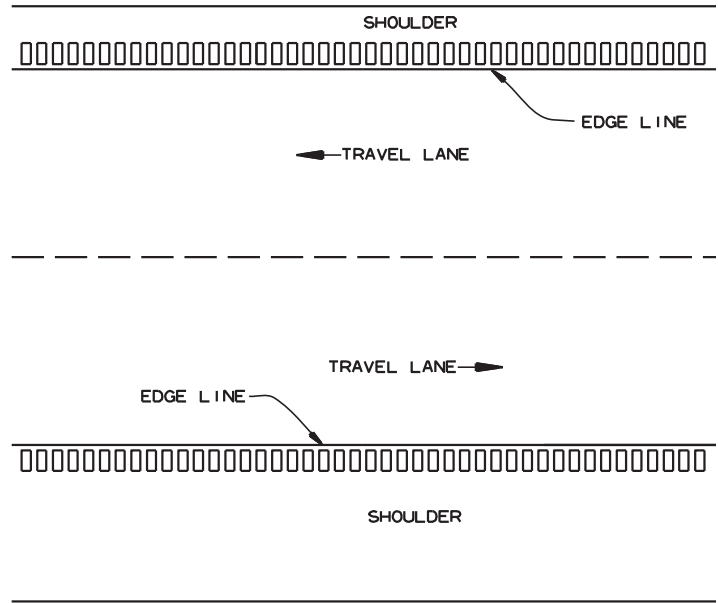
LOCATION PLAN OF RUMBLE STRIPS
LEFT OR RIGHT SHOULDER



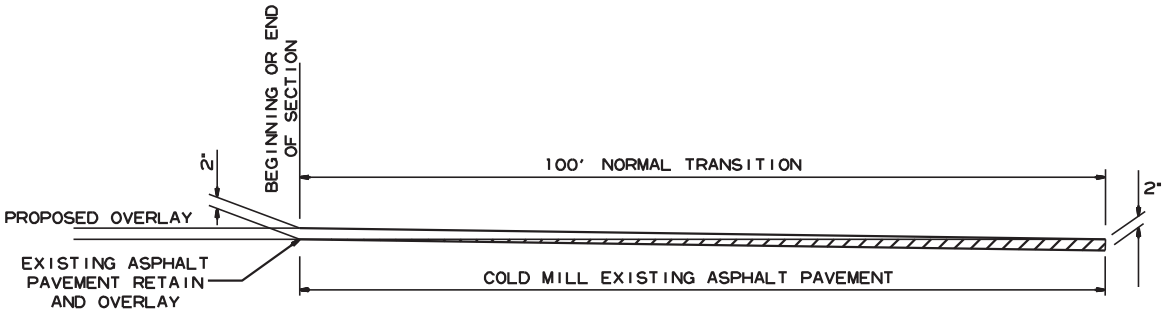
DETAIL FOR RUMBLE STRIP GAP
AT DRIVEWAY TURNOUTS

GENERAL NOTES

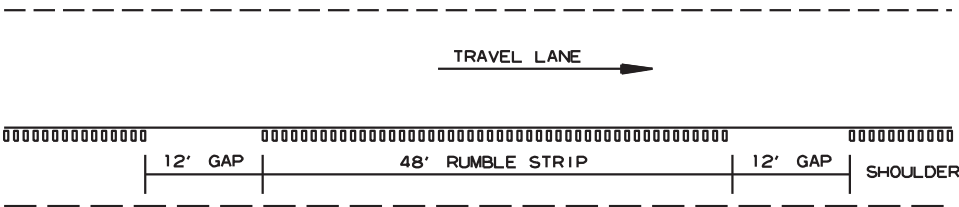
1. RUMBLE STRIPS SHALL NOT BE INSTALLED ON CURB SECTIONS, BRIDGE DECKS, APPROACH SLABS, INTERSECTING STREETS OR ROADWAYS, RESIDENTIAL OR COMMERCIAL DRIVEWAYS OR ACROSS TRANSVERSE JOINTS OF CONCRETE SHOULDERS.
2. RUMBLE STRIPS SHALL NOT BE INSTALLED ON A PAVED SHOULDER THAT IS USED AS A DECELERATION LANE FOR THE LENGTH DEEMED APPROPRIATE BY THE ENGINEER.
3. THE 4' OFFSET FROM THE EDGE LINE MAY BE INCREASED TO AVOID LONGITUDINAL JOINTS. IN ALL CASES, THE LATERAL DEVIATION FROM THE PLANNED OFFSET SHOULD BE KEPT TO A MINIMUM.
4. RUMBLE STRIPS SHALL BE MEASURED BY THE LINEAR FOOT LONGITUDINALLY ALONG THE SHOULDER. PAYMENT SHALL ONLY INCLUDE THAT PORTION OF THE SHOULDER ON WHICH RUMBLE STRIPS HAVE BEEN CONSTRUCTED. NO MEASUREMENT OR PAYMENT WILL BE MADE FOR GAPS, DRIVEWAYS, TURNOUTS, OR OTHER PUBLIC ROAD INTERSECTIONS WHERE RUMBLE STRIPS HAVE NOT BEEN CONSTRUCTED.
5. THE 3/8" DEPTH SHALL GENERALLY APPLY FOR THE ENTIRE 12' LENGTH. SOME VARIATION TO SUIT SHOULDER SLOPE BREAKS MAY BE NECESSARY.



PLAN VIEW



DETAIL FOR TRANSITIONS



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 STRIP

121.62	CU. YDS.	CLASS "S" CONCRETE
18416	LBS.	REINFORCING STEEL (GR. 60)

	CU. YDS.	CLASS "S" CONCRETE
	LBS.	REINFORCING STEEL (GR. 60)
	TOTAL	

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

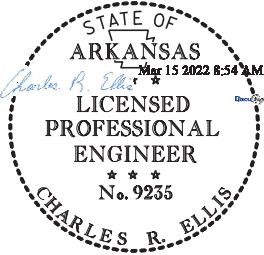
① Any Bar Lap Required for the Skewed End Section shall be considered subsidiary to the item "Reinforcing Steel - Roadway (Grade 60)."

MID-SECTION
BAR LAP TABLE

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

#4	3"
#5	3 3/4"
#6	4 1/2"
#7	5 1/4"
#8	6"

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



TABULAR DATA BY: JCG DATE: 2/2/2022
CHECKED BY: JSO DATE: 2/2/2022

#4	3"
#5	3 3/4"
#6	4 1/2"
#7	5 1/4"
#8	6"

[illegible]

SHEET 2 OF 2
DETAILS OF R.C. BOX CULVERT
DOUBLE BARREL BOX CULVERT
Sta. 110+00
SPECIAL DETAILS

Unless otherwise noted, all dimensions are in inches.

INLET SLOPE SECTION(S)

INLET SKEWED END SECTION

INLET WINGWALL TABLE

[illegible][illegible]

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				
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4				
21'-10"	7'-0"	0'-9"	0'-8"	0	3:1	20'-8"	2'-0"	7'-10"	2'-4"	30	30	3'-2"	3'-9 3/4"	3'-9 3/4"	0'-9"	0'-9"	19'-0"	19'-0"	22'-5 3/8"	22'-5 3/8"				

WING	F1				F2				F3				F4				F5				F6				F7				F8				F9				F10				F11				F12				REINF. STEEL QTY. PER WING (LBS)																																																																																																																																																																																																																																																																																																																											
	BAR SIZE	MAX. SPACING	NO. REQ'D	LENGTHS VARY	BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS																																																																																																																																																																																																																																																																																																																																				
WING A	4	12	19	L	Min 3'-6" Max 9'-4"	4	12	4	12	L	3'-9"	-	-	-	-	X	-	4	18	6	Min 3'-10" Max 14'-3"	4	18	4	18	13	X	Min 5'-1" Max 10'-3"	4	8	23'-3"	6	18	13	Min 2'-8" Max 3'-4"	-	-	-	-	4	2	19'-4"	4	2	20'-6"	6	12	7	L 3'-4" X 1'-8"	530																																																																																																																																																																																																																																																																																																																										
				X	Min 0'-9" Max 1'-5"					Y	2'-6"					Y	-				Max 2'-4"						Y	Min 2'-10" Max 8'-0"							Max														Min 5'-1" Max 10'-3"		Max 2'-4"	Max 2'-4"	Min 2'-8" Max 3'-4"	Min 2'-10" Max 8'-0"	Max	Min 2'-8" Max 3'-4"	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max	Min 2'-10" Max 8'-0"	Max</

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

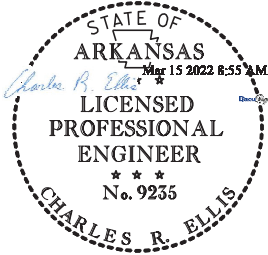
This drawing to be used in conjunction with
SHEET 1 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'GENERAL NOTES & LONGITUDINAL SECTION LENGTH SCHEDULE';
SHEET 3 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'DETAILS OF MULTI-BARREL R.C. BOX CULVERT';
SHEET 4 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT",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

For additional information and outlet sections, see Sheet 2 of 2.

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.		070511	8	40
				1 SPECIAL DETAILS				

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

#4	3"
#5	3 3/4"
#6	4 1/2"
#7	5 1/4"
#8	6"



TABULAR DATA BY: JCG DATE: 2/2/2022
CHECKED BY: JSO DATE: 2/2/2022

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

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

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

134.22	CU. YDS.	CLASS "S" CONCRETE
20309	LBS.	REINFORCING STEEL (GR. 60)

SHEET 1 OF 2
DETAILS OF R.C. BOX CULVERT
DOUBLE BARREL BOX CULVERT
Sta. 210+35

SPECIAL DETAILS



#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 (Grade 60)."

		CU. YDS.	CLASS "S" CONCRETE
		LBS.	REINFORCING STEEL (GR. 60)
		TOTAL	
	0.20	53	

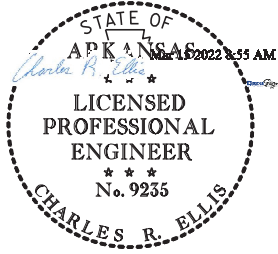
2:1 Slope	20'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"
3:1 Slope	30'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"
4:1 Slope	40'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"

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.

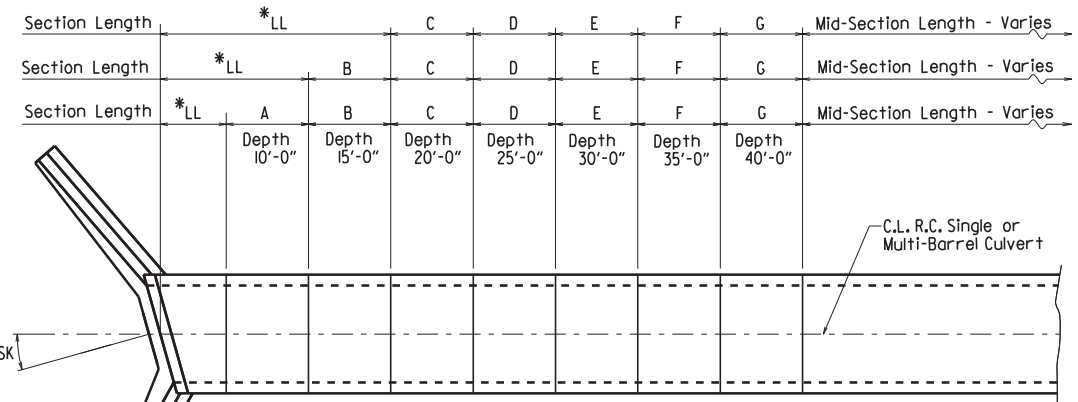
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070511	10	40

SPECIAL DETAILS



LONGITUDINAL SECTION LENGTH SCHEDULE FOR VARYING FILL DEPTHS OVER 10'

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



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 3/8" 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.

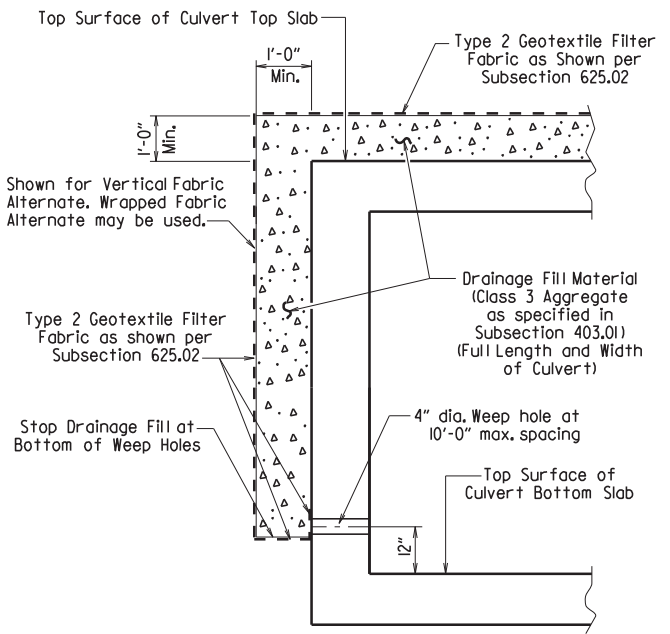
The barrel components of the culvert may be constructed using continuous pours. For longer culvert construction, the Contractor may use multiple pours with transverse construction joints spaced a minimum of 50 feet apart unless superseded by stage construction or site constraints as approved by the Engineer. Construction joints between footings and walls shall be made only where shown in the Plans. Joints shall be keyed and shall be normal to the centerline of barrel except as noted. Reinforcing shall be continuous through joints unless noted otherwise. Reinforcing through stage construction joints shall provide the minimum bar lap length shown on the Tabular Data Sheets. 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 fine 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 S 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".

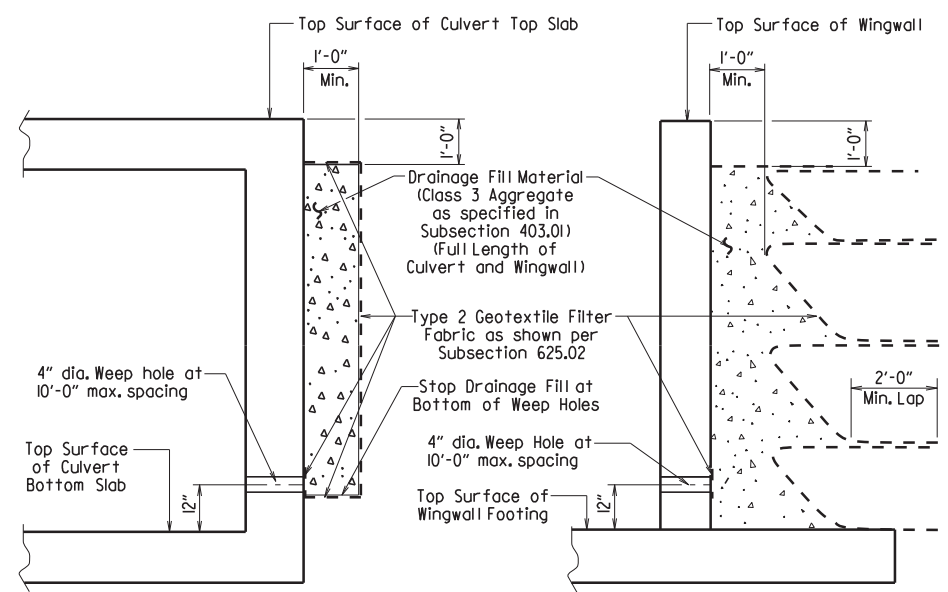
When precast reinforced concrete box culverts are substituted for cast in place box culverts, they shall be manufactured according to ASTM C 1577 and meet the requirements of Section 607. When the top slab of the box culvert serves as the finished roadway surface, a precast reinforced concrete box culvert substitution is not allowed.

SHEET 1 OF 4
GENERAL DETAILS OF R.C. BOX CULVERT
GENERAL NOTES &
LONGITUDINAL SECTION LENGTH SCHEDULE
SPECIAL DETAILS



CULVERT DRAINAGE DETAIL FOR ROCK FILL

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



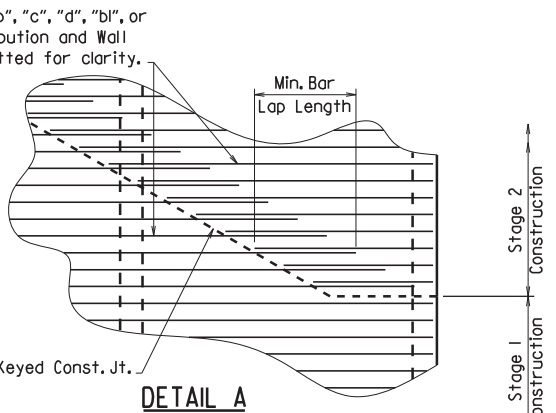
VERTICAL FABRIC ALTERNATE

(Shown for Culvert, Similar for Wingwall)

WRAPPED FABRIC ALTERNATE

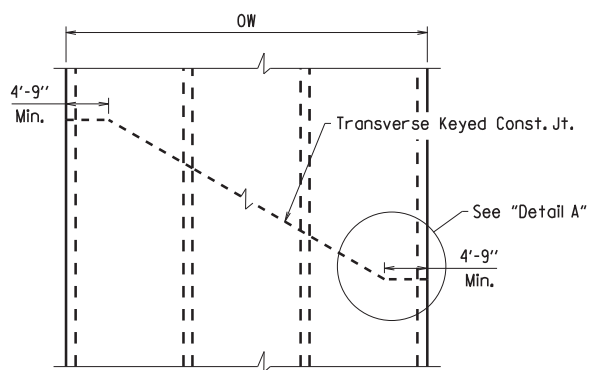
(Shown for Wingwall, Similar for Culvert)

WINGWALL & CULVERT DRAINAGE DETAIL



DETAIL A

See Tabular Data Sheets for Minimum Bar Lap Lengths.
Shown for transverse reinforcing, longitudinal reinforcing similar.



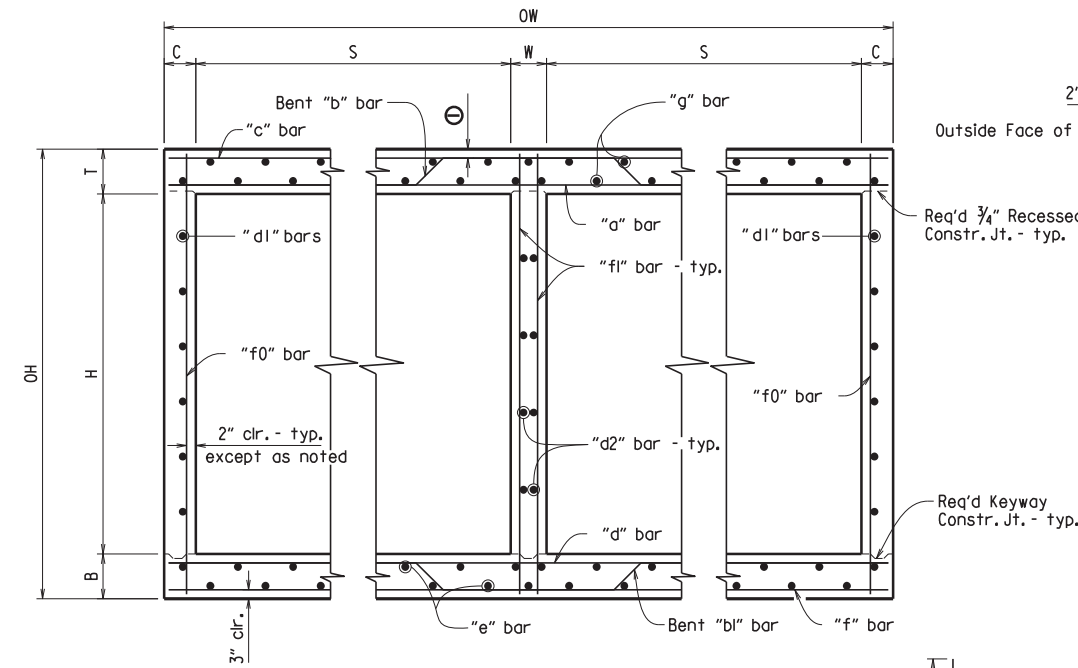
SKewed TRANSVERSE JOINT DETAIL

This detail shall be used to construct a skewed transverse joint only for Multi-Barrel Culverts and only when required by the Maintenance of Traffic Plans. Otherwise, transverse joints should be made normal to the centerline of the barrel.

V:\117 b070511_culvert.dgn

① 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.

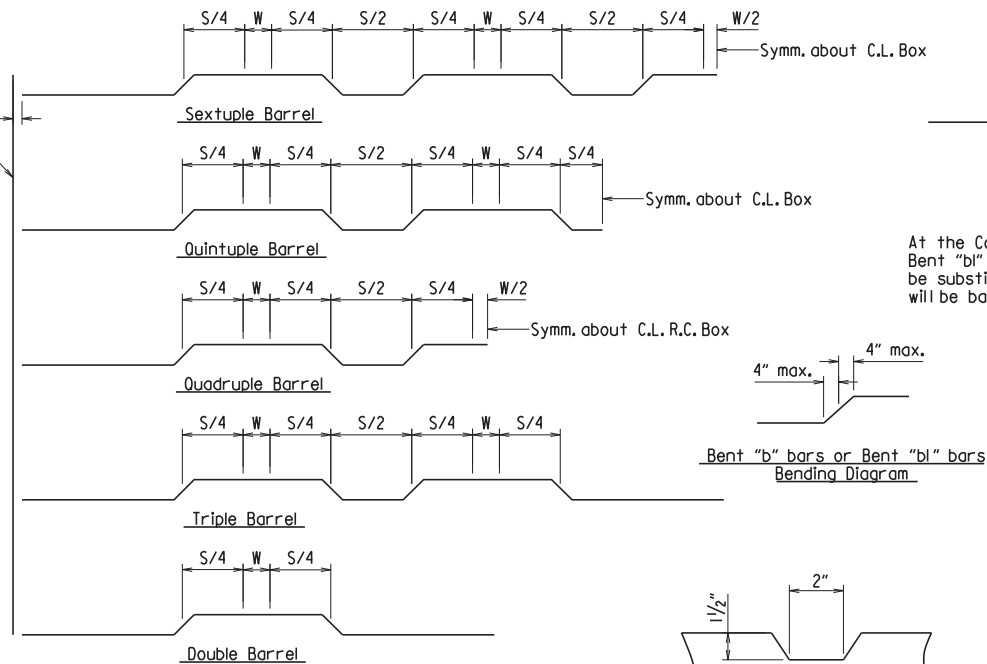
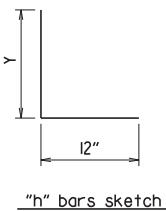
Note: When top slab of culvert serves as finished roadway surface, see General Notes on Sheet 1 of 4.



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.

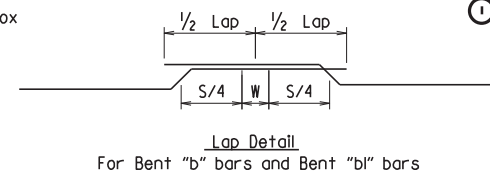
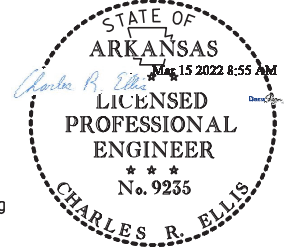
Bottom Slab
Straight "d" bars shall alternate with Bent "bl" bars in top.
Straight "f" bars shall alternate with Bent "bl" bars in bottom.



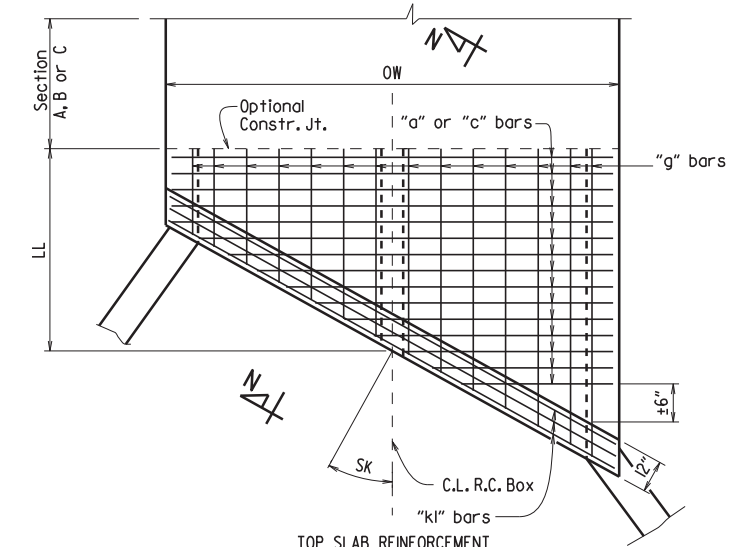
Bent "b" bars or Bent "bl" bars sketch

TYPICAL KEYWAY DETAIL
(All Construction Joints)

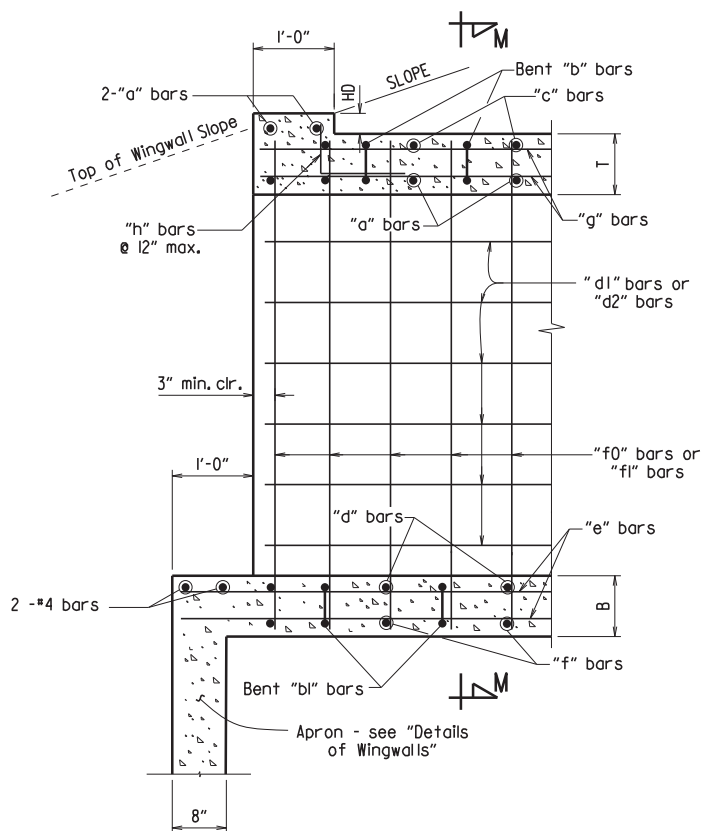
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	070511	12	40
SPECIAL DETAILS								



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.

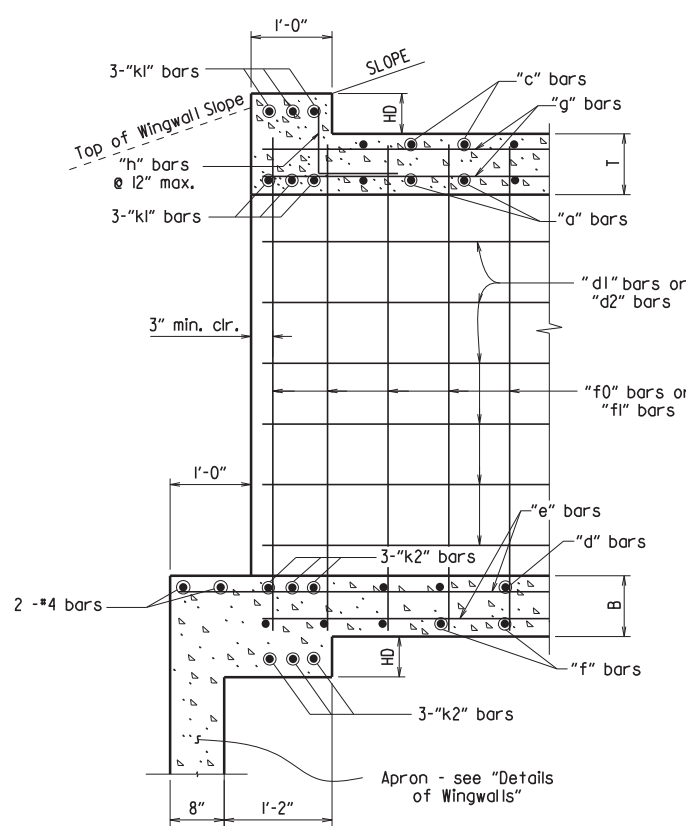


TOP SLAB REINFORCEMENT
Straight "c" bars in top.
Straight "a" bars in bottom.



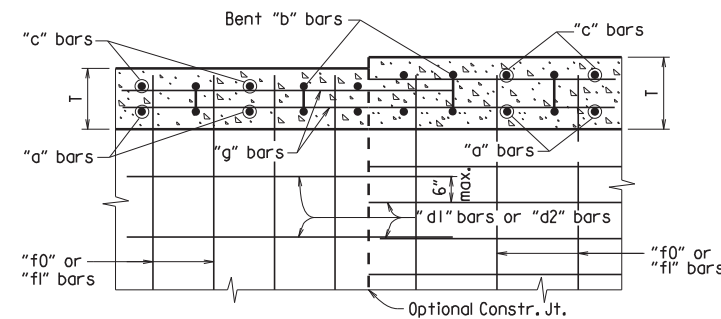
PART LONGITUDINAL SECTION

(Non-Skewed Ends)



PART LONGITUDINAL SECTION N-N

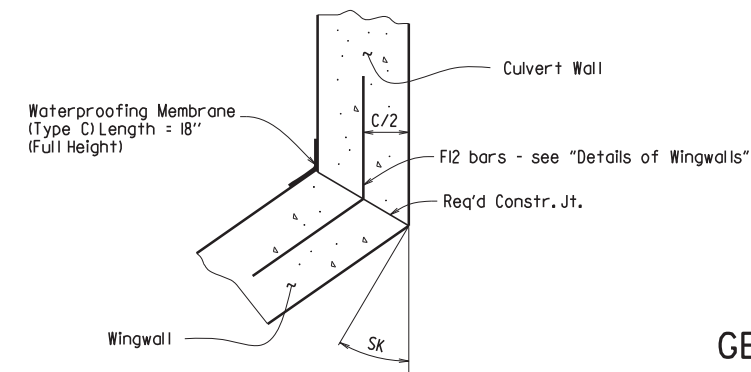
(Skewed Ends)



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

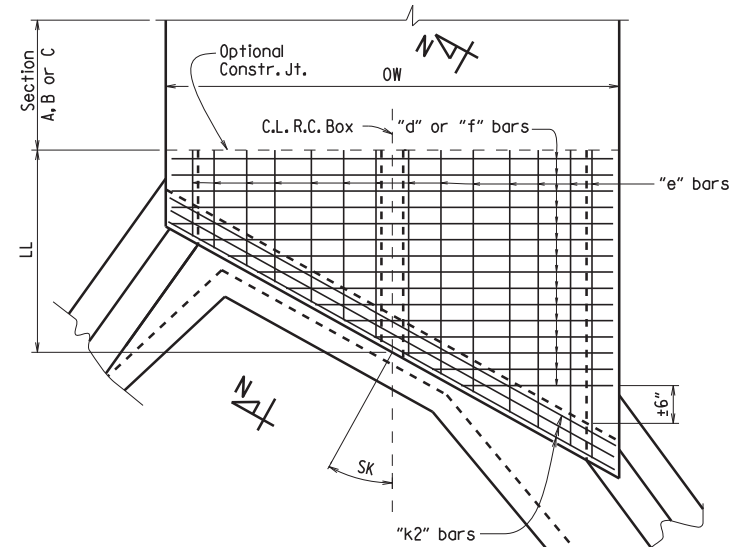
LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

TOP SLAB SHOWN, BOTTOM SLAB SIMILAR



WINGWALL ATTACHMENT

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

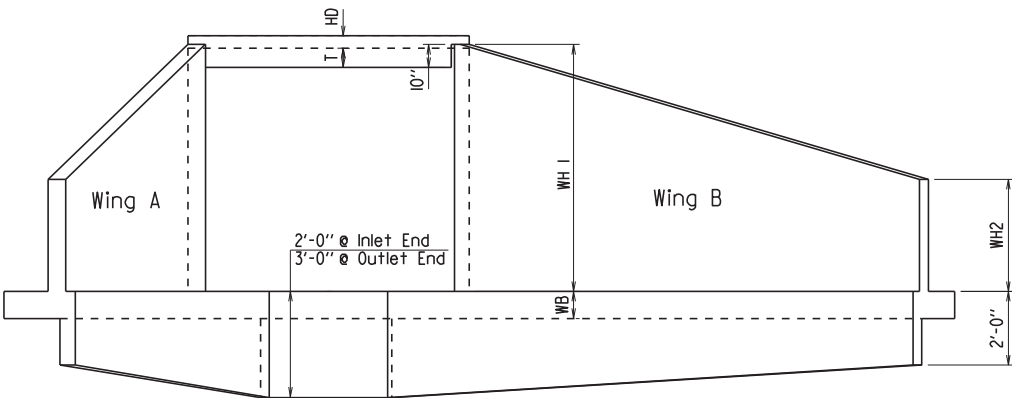


SKewed End Section Details
Straight "d" bars in top.
Straight "f" bars in bottom.

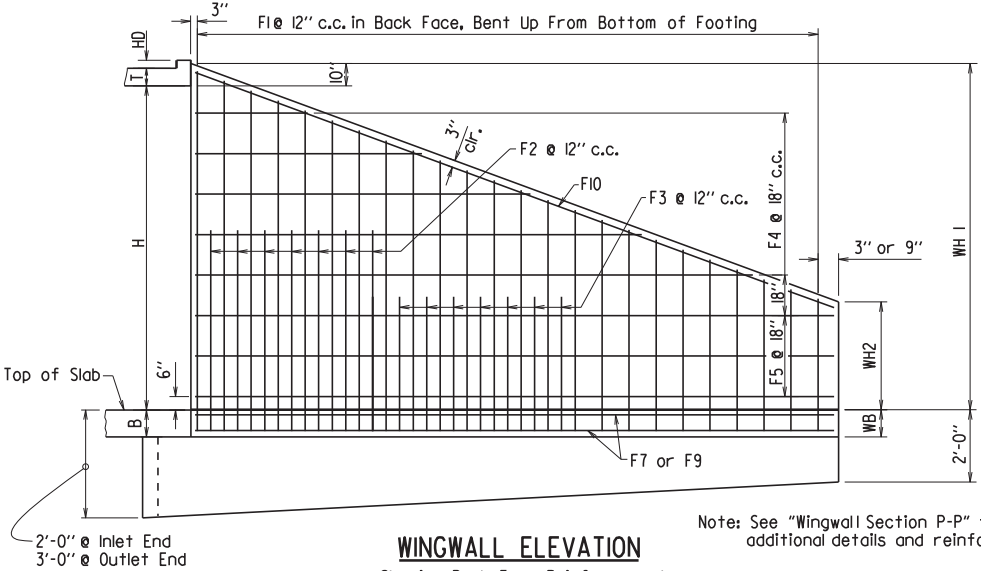
SHEET 3 OF 4
GENERAL DETAILS OF R.C. BOX CULVERT
DETAILS OF MULTI-BARREL
R.C. BOX CULVERT
SPECIAL DETAILS



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.		070511	13	40
SPECIAL DETAILS								

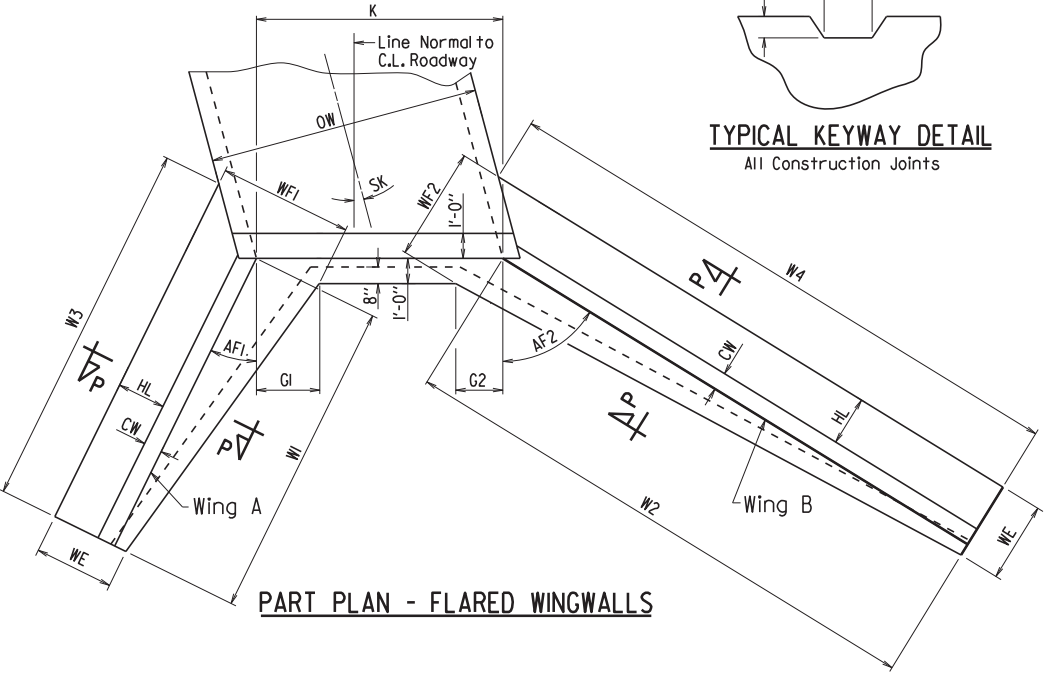
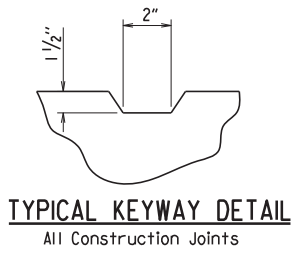


END ELEVATION
Flared Wingwalls Shown

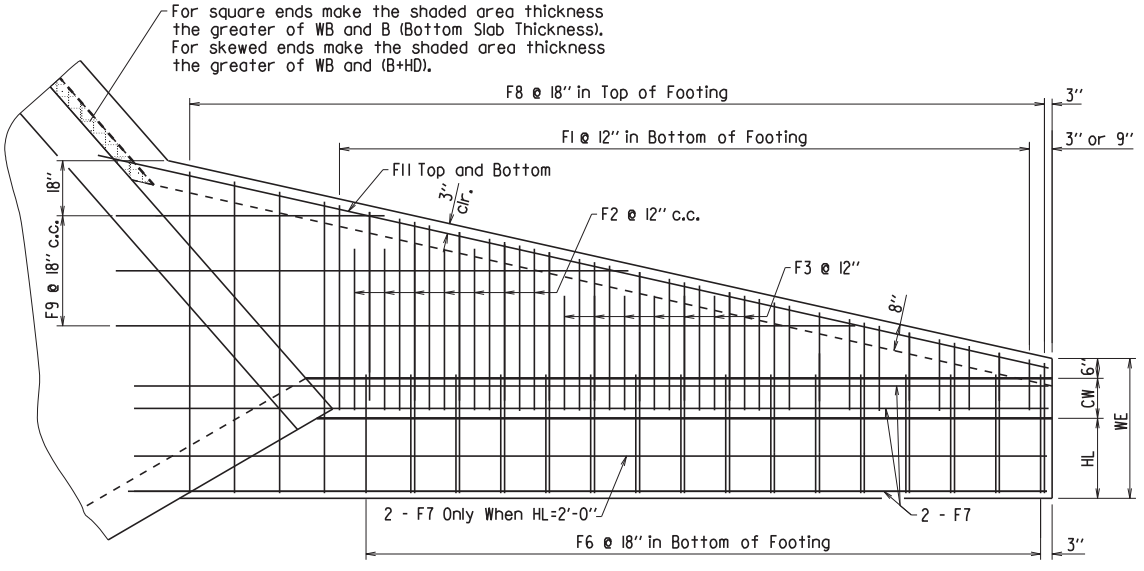


WINGWALL ELEVATION
Showing Back Face Reinforcement

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

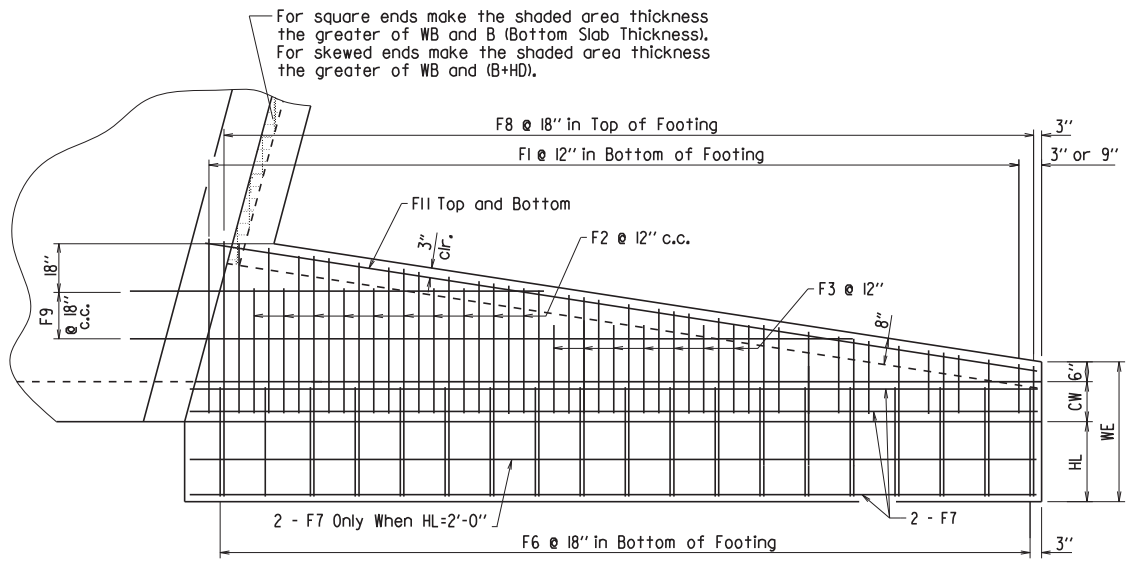


PART PLAN - FLARED WINGWALLS

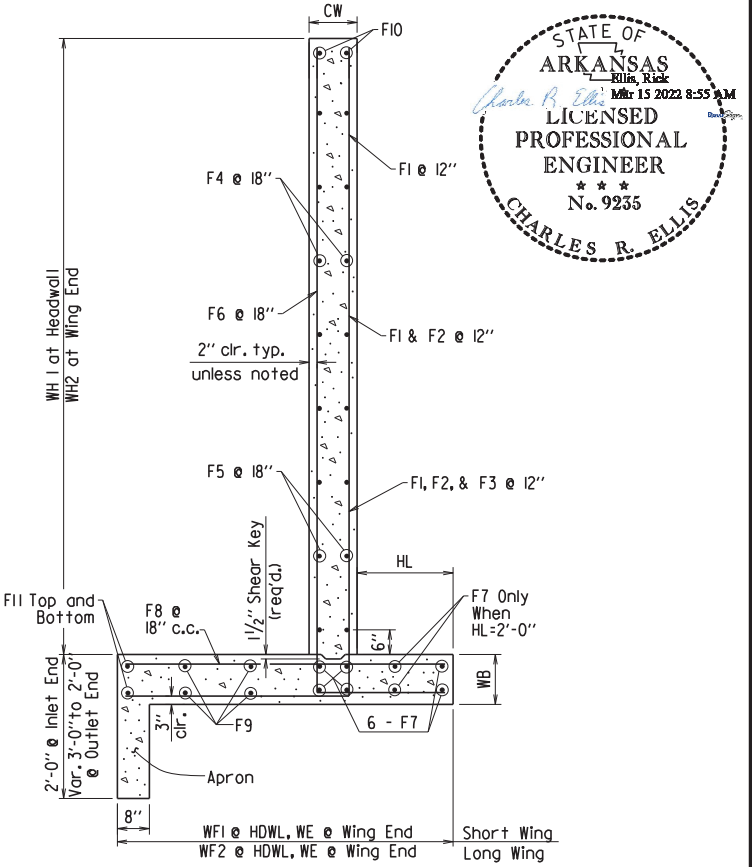


PLAN - FLARED WINGWALLS
Showing Footing Reinforcement

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+HD).

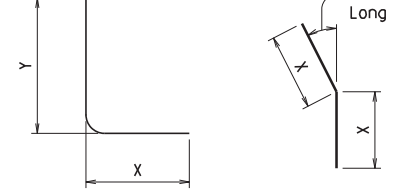


PLAN - PARALLEL WINGWALLS
Showing Footing Reinforcement



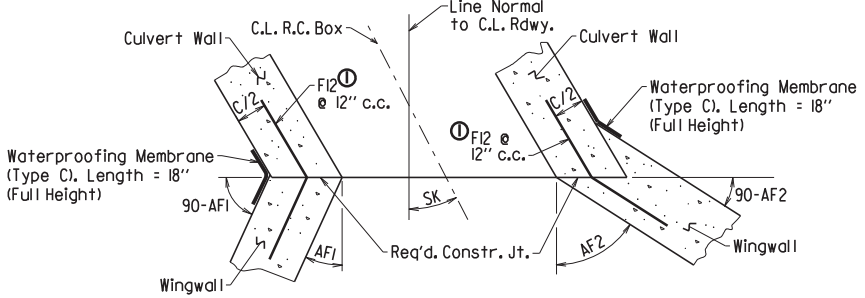
WINGWALL SECTION P-P

Short Wing = (AF1+SK)
Long Wing = (AF2-SK)



F1, F2, F3, & F6 BARS

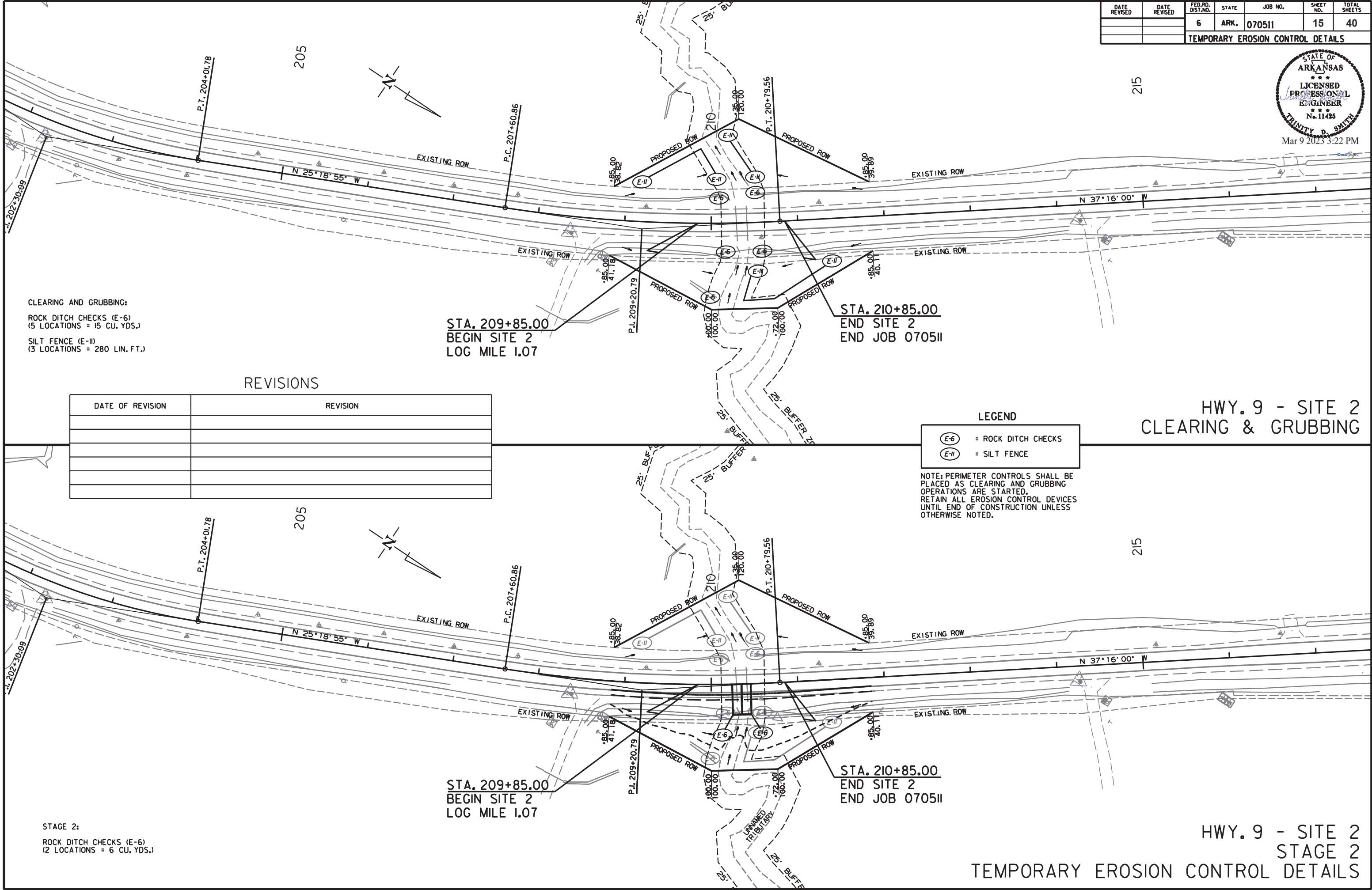
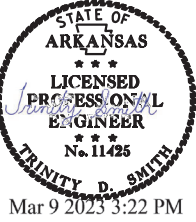
F12 is a straight bar for parallel wingwalls



CONSTRUCTION JOINTS
Flared Wingwalls Shown

SHEET 4 OF 4
GENERAL DETAILS OF R.C. BOX CULVERT
DETAILS OF WINGWALLS
SPECIAL DETAILS

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070511	15	40
TEMPORARY EROSION CONTROL DETAILS						



CLEARING AND GRUBBING:
ROCK DITCH CHECKS (E-6)
(5 LOCATIONS = 15 CU. YDS.)
SILT FENCE (E-II)
(3 LOCATIONS = 280 LIN. FT.)

REVISIONS

DATE OF REVISION	REVISION

LEGEND

(E-6)	= ROCK DITCH CHECKS
(E-II)	= SILT FENCE

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

HWY. 9 - SITE 2
CLEARING & GRUBBING

STAGE 2:
ROCK DITCH CHECKS (E-6)
(2 LOCATIONS = 6 CU. YDS.)

HWY. 9 - SITE 2
STAGE 2
TEMPORARY EROSION CONTROL DETAILS

STAGE 3:
ROCK DITCH CHECKS (E-6)
(2 LOCATIONS = 6 CU. YDS.)

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070511	16	40
TEMPORARY EROSION CONTROL DETAILS						

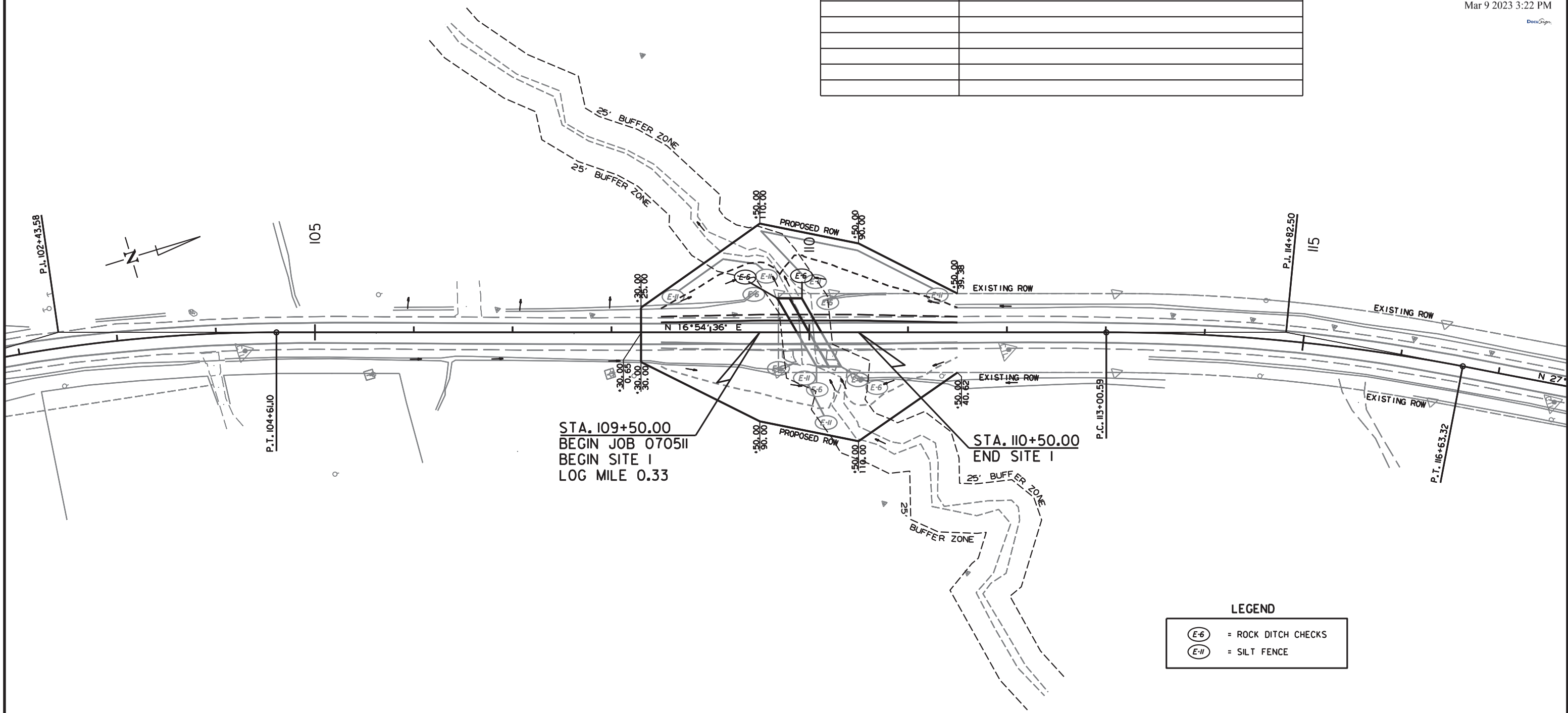


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REVISIONS

DATE OF REVISION	REVISION



LEGEND	
(E-6)	= ROCK DITCH CHECKS
(E-11)	= SILT FENCE

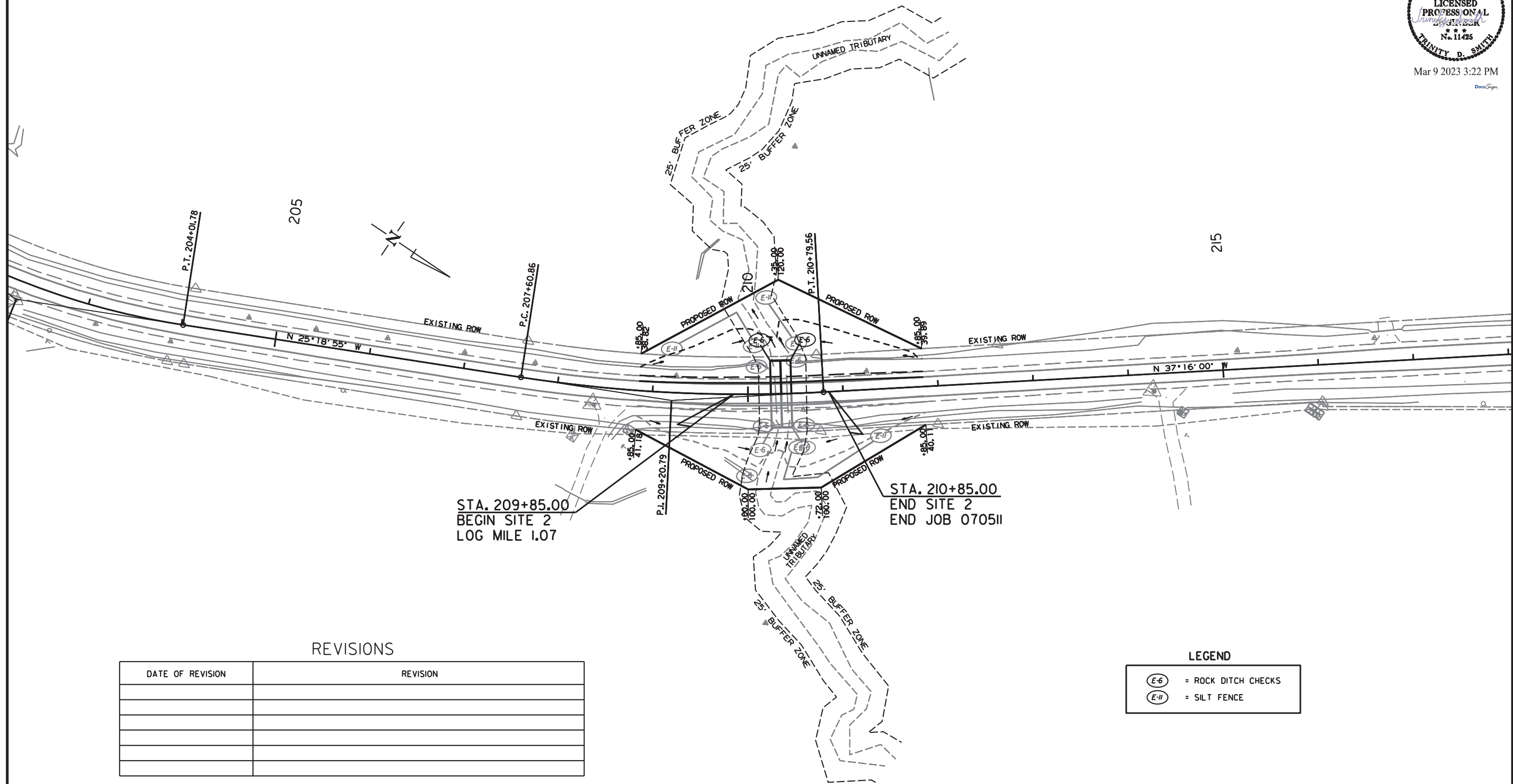
HWY. 9 - SITE 1
STAGE 3
TEMPORARY EROSION CONTROL DETAILS

STAGE 3:
ROCK DITCH CHECKS (E-6)
(2 LOCATIONS = 6 CU. YDS.)

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070511	17	40
TEMPORARY EROSION CONTROL DETAILS						



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REVISIONS

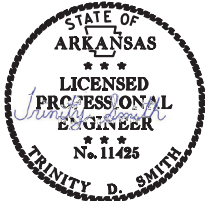
DATE OF REVISION	REVISION

LEGEND

- (E-6) = ROCK DITCH CHECKS
- (E-11) = SILT FENCE

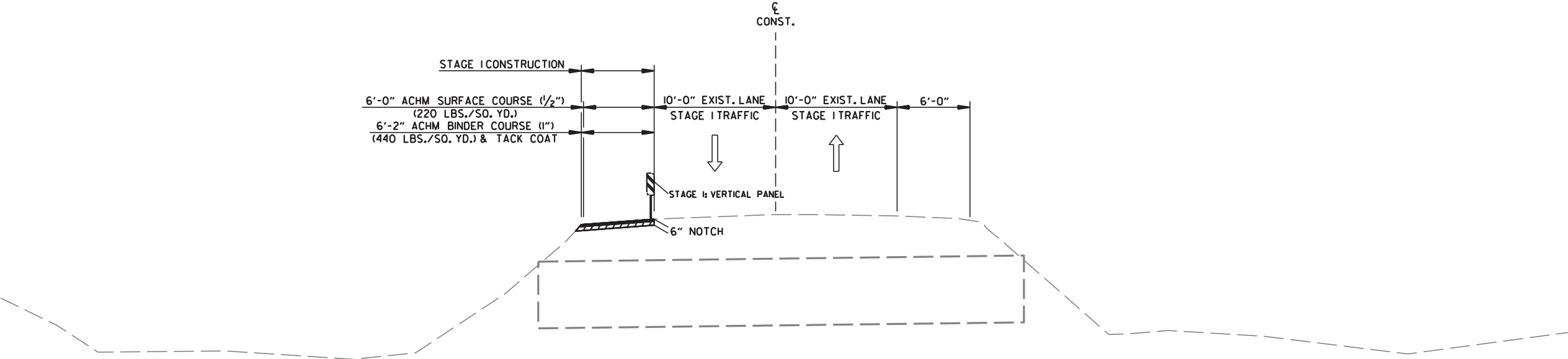
HWY. 9 - SITE 2
STAGE 3
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070511	18	40
MAINTENANCE OF TRAFFIC DETAILS						

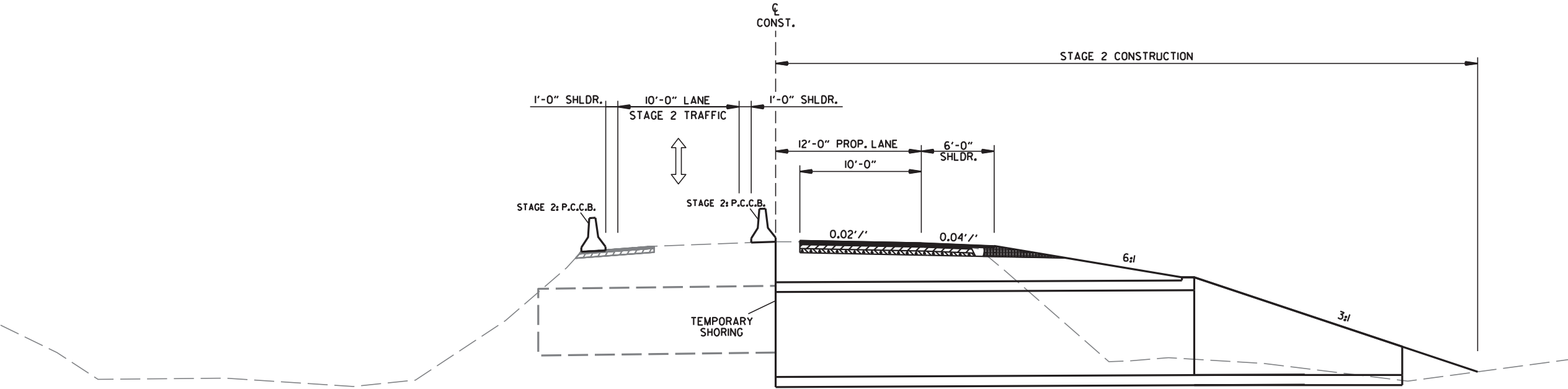


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HWY. 9
STAGE 1 CONSTRUCTION



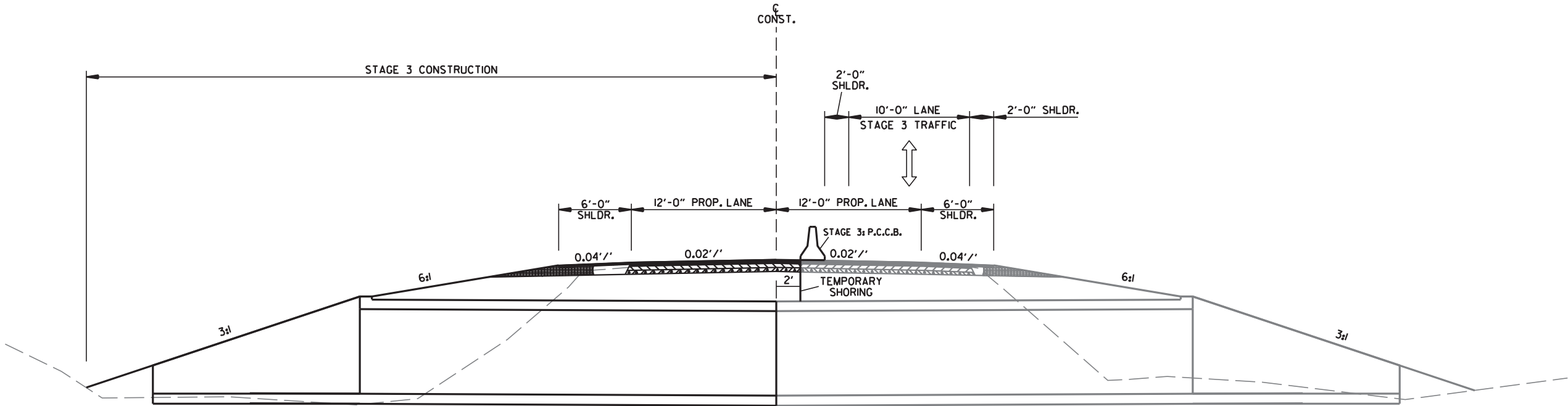
HWY. 9
STAGE 2 CONSTRUCTION

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070511	19	40
MAINTENANCE OF TRAFFIC DETAILS						



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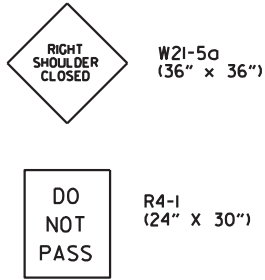
HWY. 9
STAGE 3 CONSTRUCTION

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070511	20	40
MAINTENANCE OF TRAFFIC DETAILS						



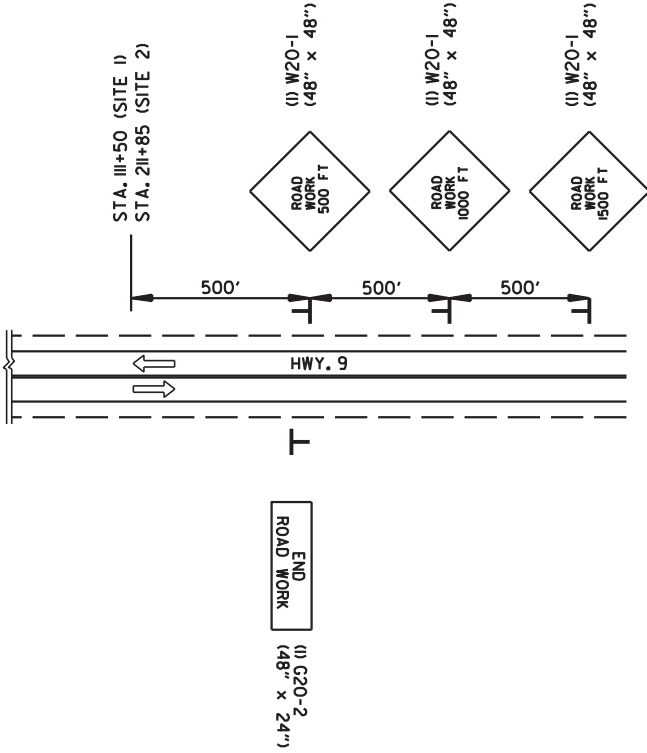
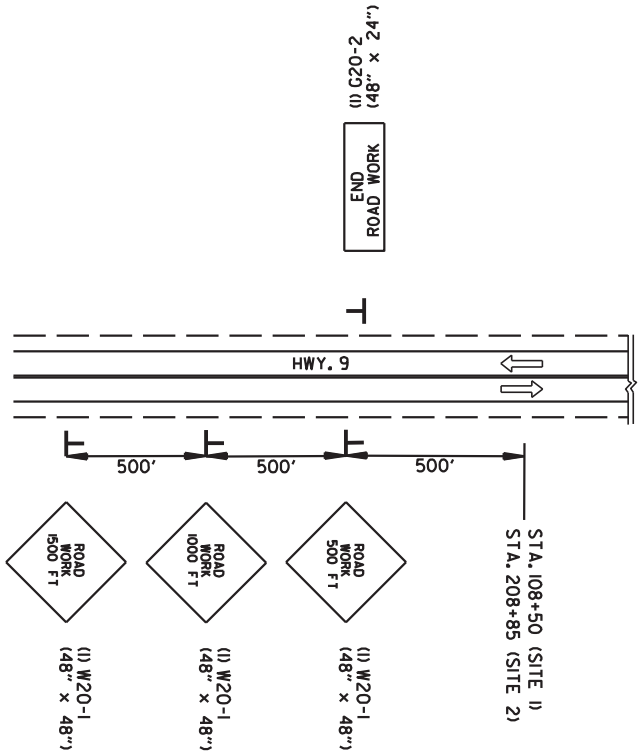
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ALL STAGES
TO BE USED IF AND
WHERE DIRECTED BY
THE ENGINEER

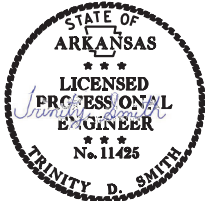
ALL STAGES
TO BE USED IF AND
WHERE DIRECTED BY
THE ENGINEER



ADVANCE WARNING STAGE I

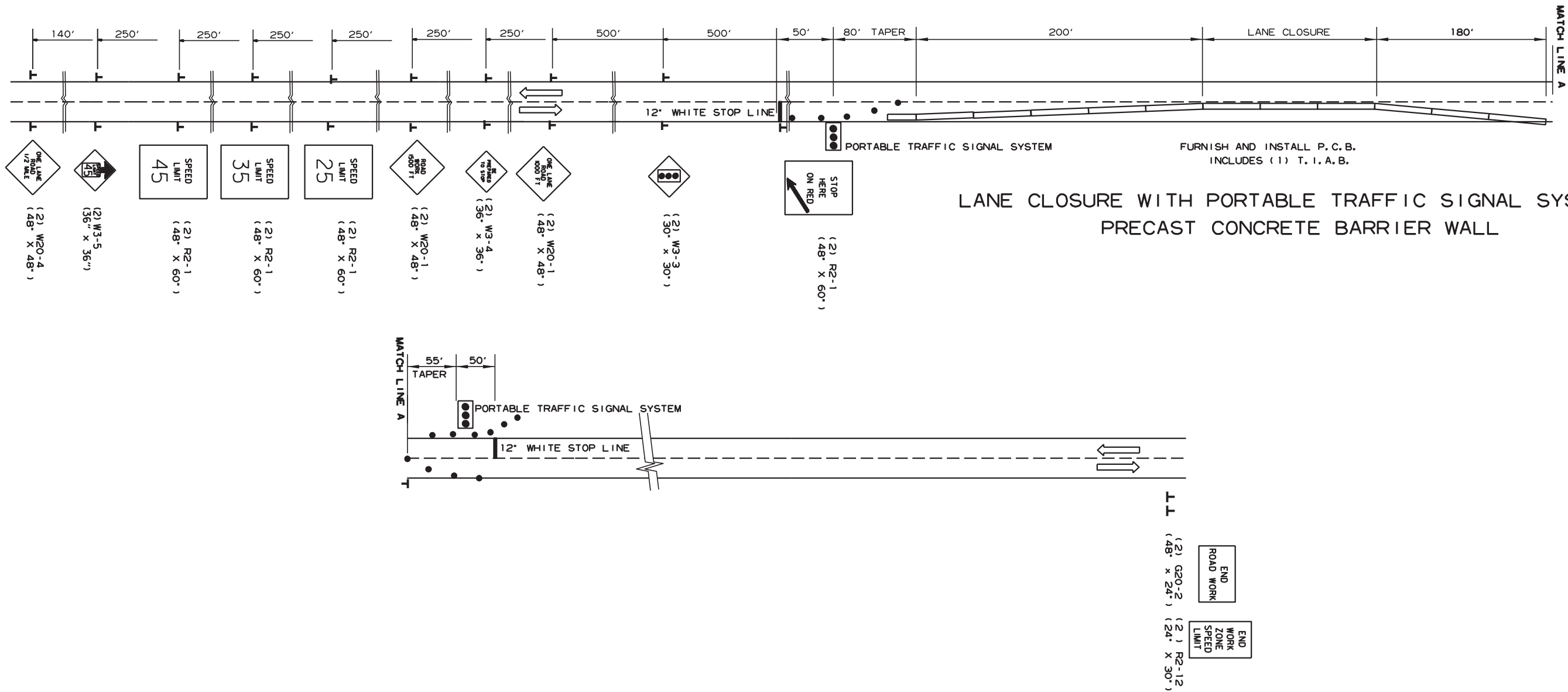
ADVANCE WARNING
MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070511	21	40
MAINTENANCE OF TRAFFIC DETAILS						



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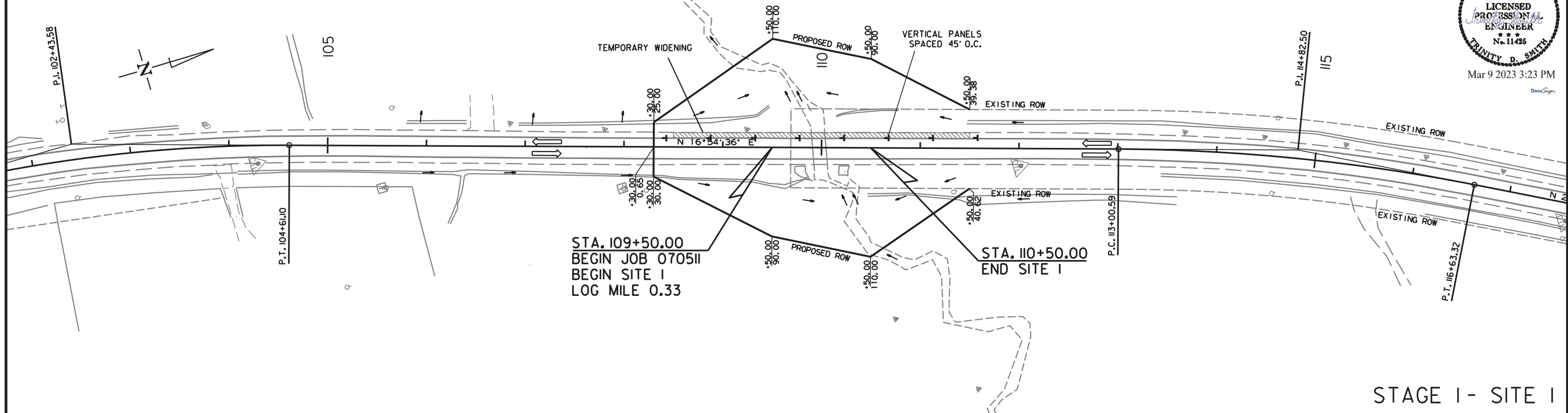
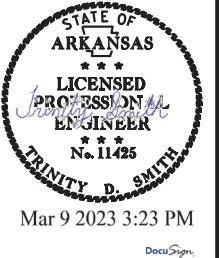


ADVANCE WARNING STAGE 2 AND STAGE 3

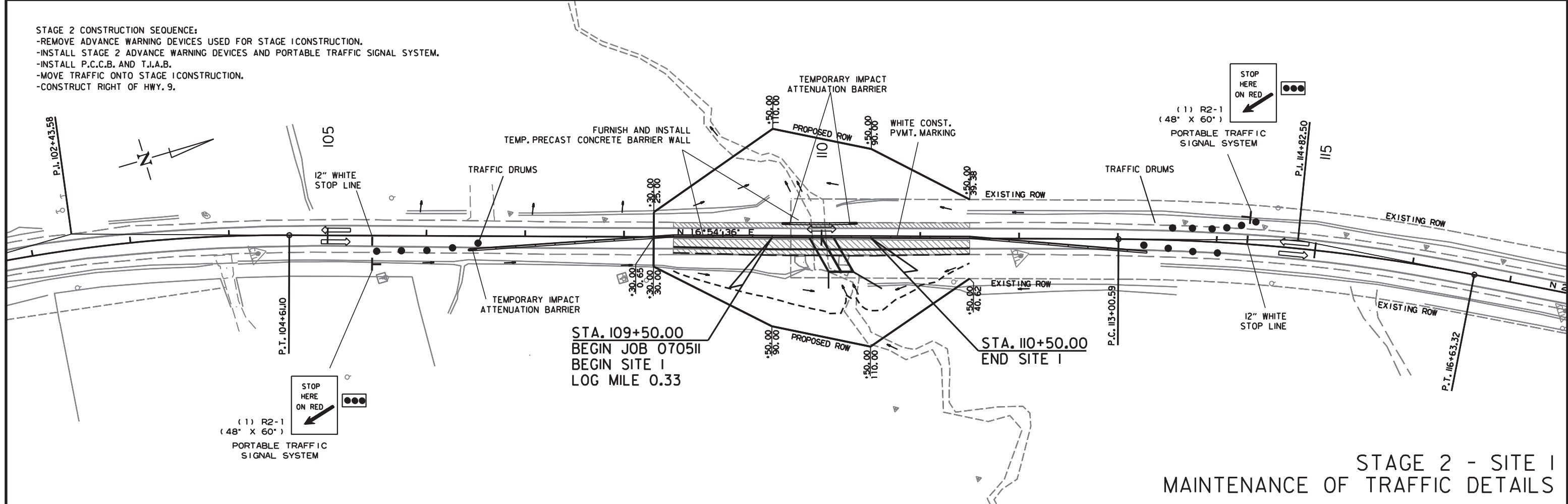
ADVANCE WARNING
MAINTENANCE OF TRAFFIC DETAILS

STAGE 1 CONSTRUCTION SEQUENCE:
-INSTALL ADVANCE WARNING DEVICES, AND VERTICAL PANELS.
-CONSTRUCT TEMPORARY WIDENING.

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070511	22	40
MAINTENANCE OF TRAFFIC DETAILS						



STAGE 2 CONSTRUCTION SEQUENCE:
-REMOVE ADVANCE WARNING DEVICES USED FOR STAGE 1 CONSTRUCTION.
-INSTALL STAGE 2 ADVANCE WARNING DEVICES AND PORTABLE TRAFFIC SIGNAL SYSTEM.
-INSTALL P.C.C.B. AND T.I.A.B.
-MOVE TRAFFIC ONTO STAGE 1 CONSTRUCTION.
-CONSTRUCT RIGHT OF HWY. 9.



STAGE 2 - SITE 1
MAINTENANCE OF TRAFFIC DETAILS

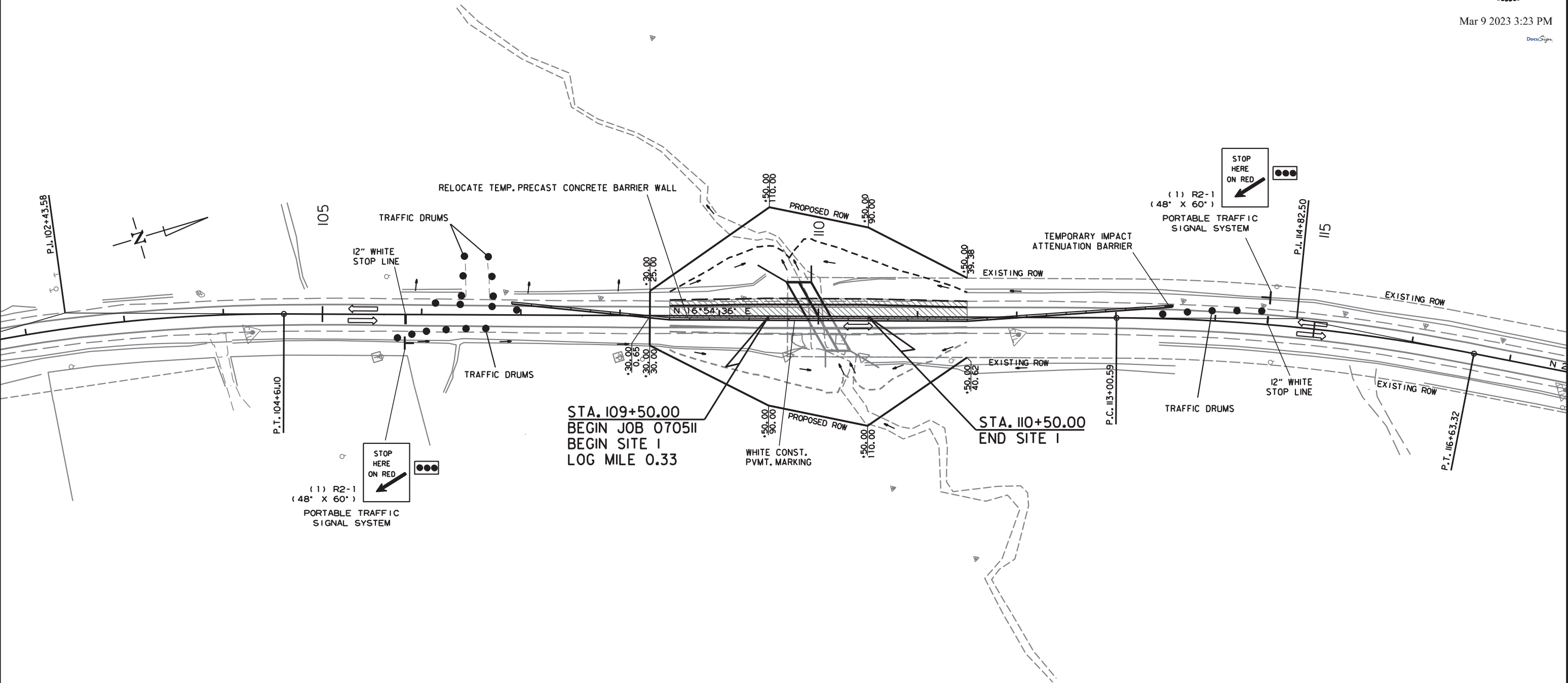
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070511	23	40
MAINTENANCE OF TRAFFIC DETAILS						



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STAGE 3 CONSTRUCTION SEQUENCE:
-MAINTAIN ADVANCE WARNING DEVICES AND PORTABLE TRAFFIC SIGNAL SYSTEM.
-INSTALL AND RELOCATE P.C.C.B. AND T.I.A.B.
-MOVE TRAFFIC ONTO STAGE 2 CONSTRUCTION.
-CONSTRUCT LEFT OF HWY. 9.

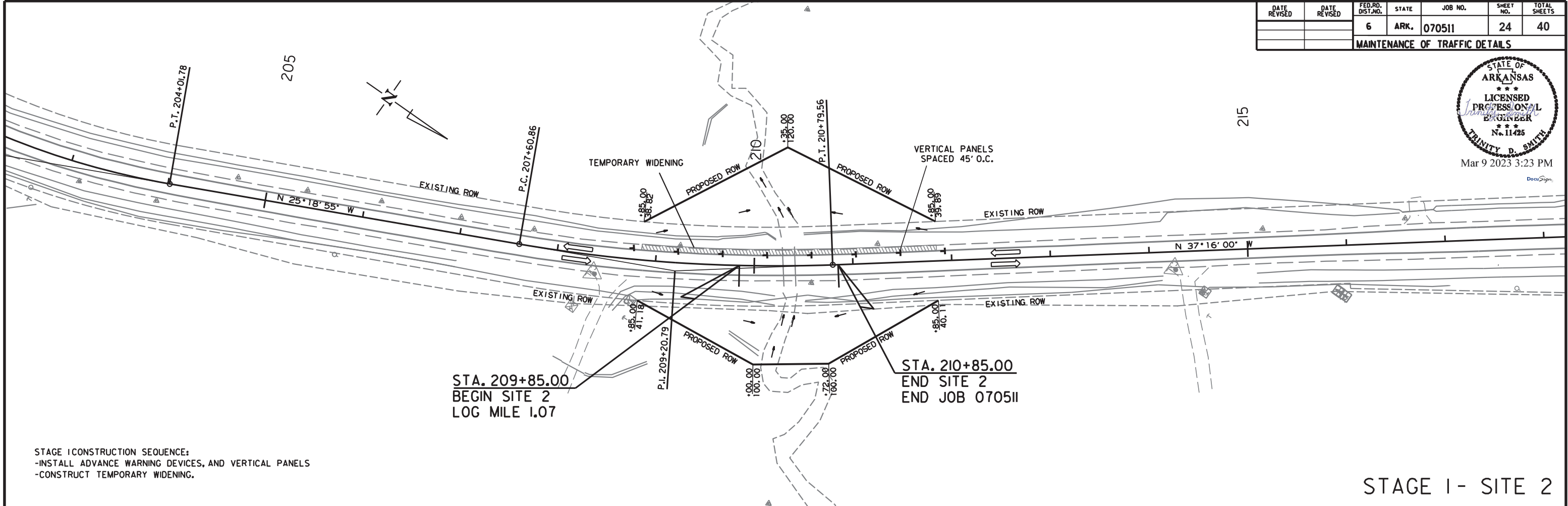


STAGE 3 - SITE 1
MAINTENANCE OF TRAFFIC DETAILS

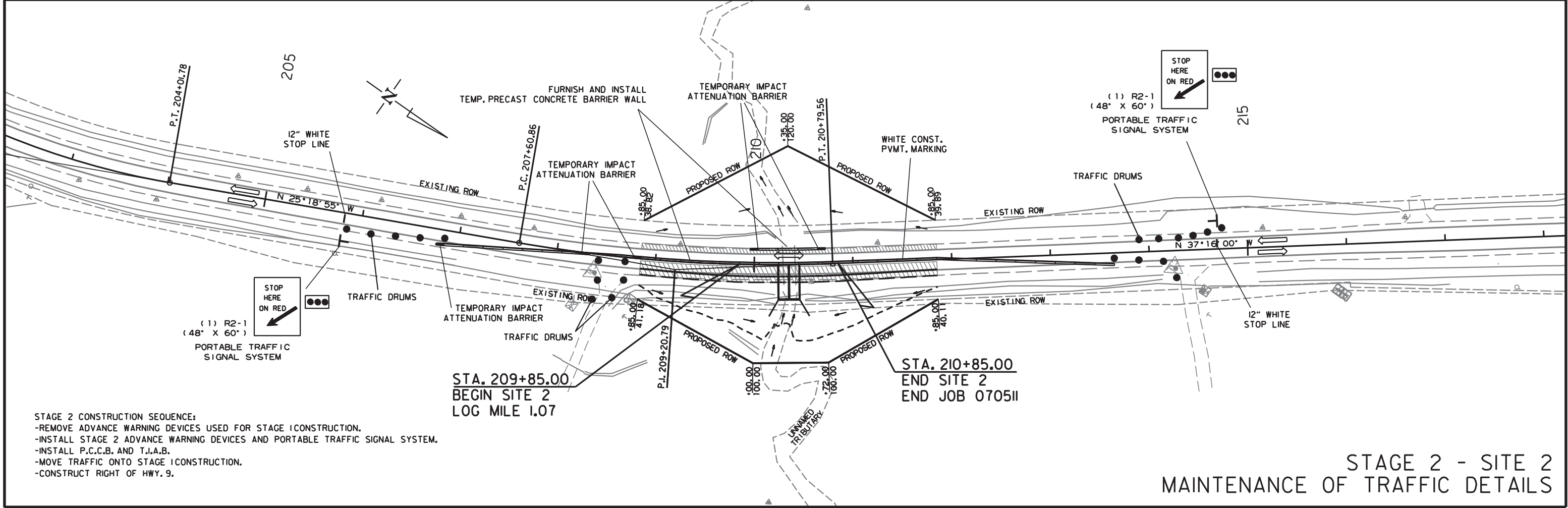
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070511	24	40
MAINTENANCE OF TRAFFIC DETAILS						



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STAGE 1 CONSTRUCTION SEQUENCE:
-INSTALL ADVANCE WARNING DEVICES, AND VERTICAL PANELS
-CONSTRUCT TEMPORARY WIDENING.



STAGE 2 CONSTRUCTION SEQUENCE:
-REMOVE ADVANCE WARNING DEVICES USED FOR STAGE 1 CONSTRUCTION.
-INSTALL STAGE 2 ADVANCE WARNING DEVICES AND PORTABLE TRAFFIC SIGNAL SYSTEM.
-INSTALL P.C.C.B. AND T.I.A.B.
-MOVE TRAFFIC ONTO STAGE 1 CONSTRUCTION.
-CONSTRUCT RIGHT OF HWY. 9.

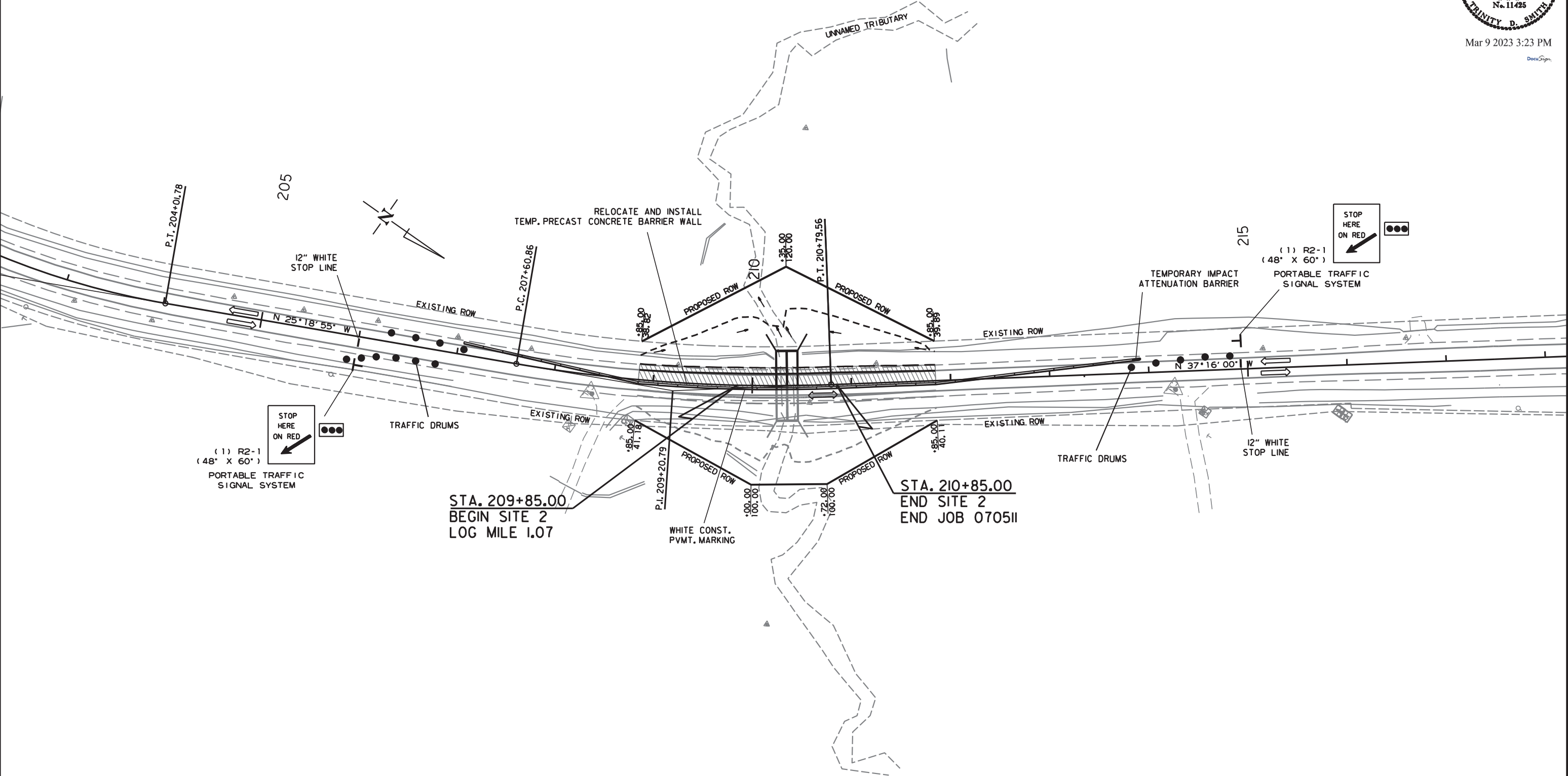
STAGE 2 - SITE 2
MAINTENANCE OF TRAFFIC DETAILS

STAGE 3 CONSTRUCTION SEQUENCE:
-MAINTAIN ADVANCE WARNING DEVICES AND PORTABLE TRAFFIC SIGNAL SYSTEM.
-INSTALL AND RELOCATE P.C.C.B. AND T.I.A.B.
-MOVE TRAFFIC ONTO STAGE 2 CONSTRUCTION.
-CONSTRUCT LEFT OF HWY. 9.

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070511	25	40
MAINTENANCE OF TRAFFIC DETAILS						



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PERMANENT PAVEMENT MARKINGS

SITE 1:
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6") = 600 LIN.FT.
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6") = 600 LIN.FT.
RAISED PAVEMENT MARKERS TYPE II(YEL/YEL) = 4 EACH

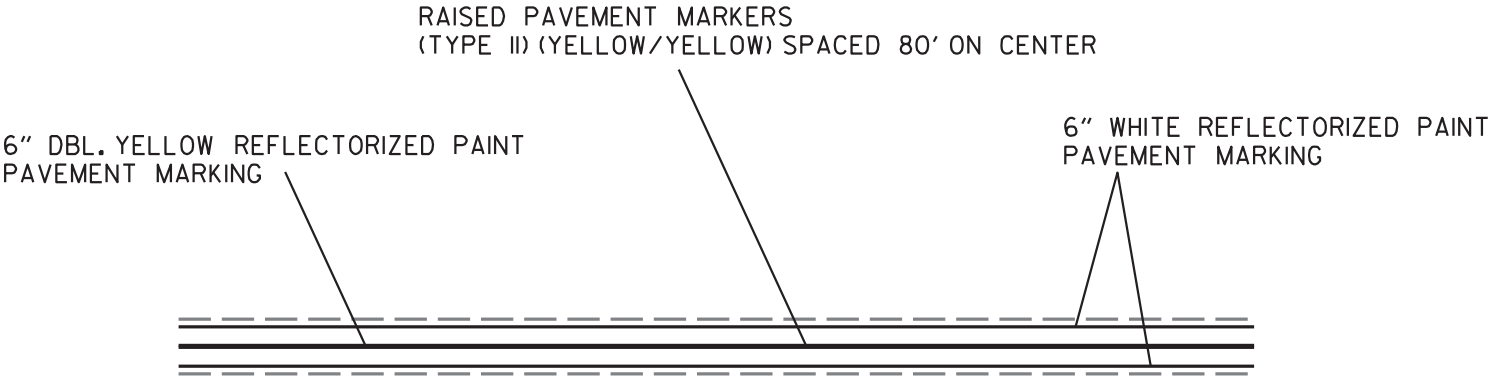
SITE 2:
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6") = 600 LIN.FT.
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6") = 600 LIN.FT.
RAISED PAVEMENT MARKERS TYPE II(YEL/YEL) = 4 EACH

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070511	26	40
PERMANENT PAVEMENT MARKING DETAILS						

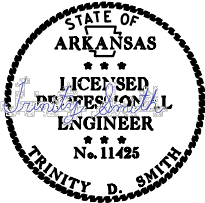


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TYPICAL STRIPING DETAIL



Smith, Trinity D.
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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	FURNISHING & INSTALLING PRECAST CONC. BARRIER	RELOCATING PRECAST CONCRETE BARRIER	TEMPORARY IMPACT ATTENUATION BARRIER	TEMP. IMPACT ATTEN.BARR. (REPAIR)	TEMP. IMPACT ATTEN.BARR. (RELOCATION)	PORTABLE TRAFFIC SIGNAL SYSTEM - ACTUATED
			LIN. FT. - EACH				NO.	SQ. FT.								
W20-1	ROAD WORK 1500 FT.	48"x48"	4	4	4	4	4	64.0								
W20-1	ROAD WORK 1000 FT.	48"x48"	4			4	4	64.0								
W20-1	ROAD WORK 500 FT.	48"x48"	4			4	4	64.0								
G20-2	END ROAD WORK	48"x24"	4	4	4	4	4	32.0								
R2-1	SPEED LIMIT 25	48"x60"		4	4	4	4	80.0								
R2-1	SPEED LIMIT 35	48"x60"		4	4	4	4	80.0								
R2-1	SPEED LIMIT 45	48"x60"		4	4	4	4	80.0								
R2-12	END WORK ZONE SPEED LIMIT	24"x30"		4	4	4	4	20.0								
W3-3	SIGNAL AHEAD	30"x30"		4	4	4	4	25.0								
W3-4	BE PREPARED TO STOP	36"x36"		4	4	4	4	36.0								
W3-5	REDUCED SPEED AHEAD (15)	36"x36"		4	4	4	4	36.0								
R2-1	STOP HERE ON RED	24"x36"		4	4	4	4	24.0								
W20-4	ONE LANE ROAD 1000 FT.	48"x48"		4	4	4	4	64.0								
W20-4	ONE LANE ROAD 1/2 MILE	48"x48"		4	4	4	4	64.0								
R4-1	DO NOT PASS	24"x30"	4	4	4	4	4	20.0								
W21-5a	RIGHT SHOULDER CLOSED	36"x36"	4	4	4	4	4	36.0								
	VERTICAL PANELS		16			16			16							
	TRAFFIC DRUMS			36	36	36				36						
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER			1420		1420					1420					
	RELOCATING PRECAST CONCRETE BARRIER				1340	1340						1340				
	TEMPORARY IMPACT ATTENUATION BARRIER			8		8							8			
	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)			8	2	10								10		
	TEMPORARY IMPACT ATTENUATION BARRIER (RELOCATION)				2	2									2	
	PORTABLE TRAFFIC SIGNAL SYSTEM ACTUATED			2	2	2										2
TOTALS:								789.0	16	36	1420	1340	8	10	2	2

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

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS								
DESCRIPTION	STAGE 2	STAGE 3	END OF JOB	CONSTRUCTION PAVEMENT MARKINGS	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS	REFLECTORIZED PAINT PAVEMENT MARKING	
						TYPE II	6"	
							(YELLOW/YELLOW)	WHITE
	LIN. FT. - EACH			LIN. FT.	LIN. FT.	EACH	LIN. FT.	
CONSTRUCTION PAVEMENT MARKINGS	1380	1360		2740				
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS		1380	1360		2740			
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW)			8			8		
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")			1200				1200	
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")			1200					1200
TOTALS:				2740	2740	8	1200	1200

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

NOTE: THE 6" YELLOW STRIPING QUANTITY HAS BEEN ESTIMATED BASED ON A DOUBLE YELLOW CENTERLINE STRIPE FOR THE ENTIRE PROJECT.
THE PROJECT MUST BE MARKED FOR PASSING/NO PASSING ZONES PRIOR TO THE PLACEMENT OF ANY FINAL STRIPING.
CONTACT THE MAINTENANCE DIVISION AFTER THE FINAL LIFT OF SURFACE COURSE HAS BEEN PLACED TO SCHEDULE THE ZONING OF THE PROJECT.

STATION	STATION	LOCATION	LENGTH	"W"	CONC. DITCH PAVING (TYPE B)	SOLID SODDING	WATER
			LIN. FT.	FEET	SQ. YD.	SQ. YD.	
108+50.00	109+38.00	SITE 1 LT.	88.00	6.32	61.80	39.11	0.49
108+50.00	110+70.00	SITE 1 RT.	220.00	6.32	154.49	97.78	1.23
109+93.00	111+50.00	SITE 1 LT.	157.00	6.32	110.25	69.78	0.88
110+62.00	111+50.00	SITE 1 RT.	88.00	6.32	61.80	39.11	0.49
208+85.00	210+13.00	SITE 2 LT.	128.00	6.32	89.88	56.89	0.72
208+85.00	210+13.00	SITE 2 RT.	128.00	6.32	89.88	56.89	0.72
210+57.00	211+85.00	SITE 2 LT.	128.00	6.32	89.88	56.89	0.72
210+57.00	211+85.00	SITE 2 RT.	128.00	6.32	89.88	56.89	0.72
TOTALS:					747.86	473.34	5.97

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

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
108+50	111+50	SITE 1	3	3
208+85	211+85	SITE 2	3	3
TOTALS:			6	6

STATION	STATION	LOCATION / DESCRIPTION	SOIL STABILIZATION
			TON
ENTIRE	PROJECT	TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	50
TOTAL:			50

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

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070511	28	40
QUANTITIES						



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EROSION CONTROL													
STATION	STATION	LOCATION	PERMANENT EROSION CONTROL					TEMPORARY EROSION CONTROL					
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	TEMPORARY SEEDING	MULCH COVER	WATER	ROCK DITCH CHECKS	SILT FENCE	*SEDIMENT REMOVAL & DISPOSAL
			ACRE	TON	ACRE	M.GAL.	ACRE	ACRE	ACRE	M.GAL.	(E-6) CU.YD.	(E-11) LIN. FT.	CU. YD.
108+50	111+50	SITE 1 - CLEARING AND GRUBBING						0.89	0.89	18.2	12	385	14
108+50	111+50	SITE 1 - STAGE 2						0.44	0.44	9.0	6		
108+50	111+50	SITE 1 - STAGE 3	0.54	1.08	0.54	55.1	0.54	0.45	0.45	9.2	6		
208+85	211+85	SITE 2 - CLEARING AND GRUBBING						0.85	0.85	17.3	15	280	10
208+85	211+85	SITE 2 - STAGE 2						0.42	0.42	8.6	6		
208+85	211+85	SITE 2 - STAGE 3	0.55	1.10	0.55	56.1	0.55	0.43	0.43	8.8	6		
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			0.27	0.54	0.27	27.5	0.27	0.87	0.87	17.7	12	166	6
TOTALS:			1.36	2.72	1.36	138.7	1.36	4.35	4.35	88.8	63	831	30

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
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.

RUMBLE STRIPS IN ASPHALT SHOULDERS

STATION	STATION	LOCATION	* RUMBLE STRIPS IN ASPHALT SHOULDERS
			LIN.FT.
108+50	111+50	HWY. 9 - SITE 1 LT.	300
108+50	111+50	HWY. 9 - SITE 1 RT.	300
208+85	211+85	HWY. 9 - SITE 2 LT.	300
208+85	211+85	HWY. 9 - SITE 2 RT.	300
TOTAL:			1200

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

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	TON	TACK COAT
		GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	1	2
TOTALS:	1	2

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

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

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
108+50.00	109+50.00	MAIN LANES - SITE 1	20.00	222.22
110+50.00	111+50.00	MAIN LANES - SITE 1	20.00	222.22
208+85.00	209+85.00	MAIN LANES - SITE 2	20.00	222.22
210+85.00	211+85.00	MAIN LANES - SITE 2	20.00	222.22
TOTAL:				888.88

STOCKPILE LOCATION: HWY 8, SECTION 7, LOG MILE 0.43 RIGHT

BENCH MARKS

STATION	LOCATION	BENCH MARKS
		EACH
110+00	SITE 1 - HDWL. OF R.C. BOX CULVERT ON RT.	1
210+35	SITE 2 - HDWL. OF R.C. BOX CULVERT ON RT.	1
TOTAL:		2

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

REMOVAL OF EXISTING BRIDGE STRUCTURE

STATION	LOCATION	LUMP SUM
110+00	SITE 1 - DBL. 11' X 6' X 40' METAL PLATE ARCH PIPE CULVERT	1.00
210+35	SITE 2 - DBL. 11' X 6.5' X 40' METAL PLATE ARCH PIPE CULVERT	1.00

4" PIPE UNDERDRAIN

STATION	STATION	LOCATIONS	4" PIPE UNDERDRAINS	UNDERDRAIN OUTLET PROTECTORS
			LIN. FT.	EACH
ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER			100	2
TOTALS:			100	2

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

ACHM PATCHING OF EXISTING ROADWAY

DESCRIPTION	TON
ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	1
TOTAL:	1

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

STRUCTURES

STATION	DESCRIPTION	SPAN	HEIGHT	LENGTH	CLASS S	REINF.	UNCL.EXC.	SOLID	WATER	STD. DWG. NOS.
					CONCRETE-ROADWAY	STEEL-ROADWAY (GRADE 60)	FOR STR.-ROADWAY	SODDING		
			CJ.YD.	POUND	CU.YD.	SQ.YD.	M.GAL.			
STRUCTURES OVER 20'- 0" SPAN										
110+00	DBL. 10' X 7' X 81' R.C. BOX CULVERT ON 30°RT. FWD. SKEW	10	7	81	133.38	27396	86	35	0.44	SPECIAL DETAILS, PBC-1, RCB-1, RCB-2
210+35	DBL. 10' X 7' X 71' R.C. BOX CULVERT	10	7	71	157.39	22535	78	28	0.35	SPECIAL DETAILS, PBC-1, RCB-1, RCB-2
TOTALS:					340.77	49931	164	63	0.79	

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

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070511	29	40
QUANTITIES						



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BASE AND SURFACING

STATION	STATION	LOCATION	LENGTH	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	(0.05 GAL. PER SQ. YD.)			(0.17 GAL. PER SQ. YD.)			TOTAL GALLONS	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	TOTAL PG 64-22
						TOTAL WID. FEET	SQ.YD.	GALLON	TOTAL WID. FEET	SQ.YD.	GALLON																		
MAIN LANES																													
108+50.00	111+50.00	HWY. 9 - SITE 1 - FULL DEPTH SHOULDER	300.00			6.00	200.00	10.00				10.00					6.00	200.00	440.00	44.00					6.00	200.00	220.00	22.00	22.00
108+50.00	109+50.00	HWY. 9 - SITE 1 - TRANSITION	100.00	86.00	86.00	12.00	133.33	6.67	20.00	222.22	37.78	44.45	4.00	44.44	440.00	9.78	4.00	44.44	440.00	9.78	4.00	44.44	220.00	4.89	36.00	400.00	220.00	44.00	48.89
109+50.00	110+50.00	HWY. 9 - SITE 1 - FULL DEPTH SECTION	100.00	86.00	86.00	85.58	950.89	47.54				47.54	28.83	320.33	440.00	70.47	28.50	316.67	440.00	69.67	28.25	313.89	220.00	34.53	36.00	400.00	220.00	44.00	78.53
110+50.00	111+50.00	HWY. 9 - SITE 1 - TRANSITION	100.00	86.00	86.00	12.00	133.33	6.67	20.00	222.22	37.78	44.45	4.00	44.44	440.00	9.78	4.00	44.44	440.00	9.78	4.00	44.44	220.00	4.89	36.00	400.00	220.00	44.00	48.89
208+85.00	211+85.00	HWY. 9 - SITE 2 - FULL DEPTH SHOULDER	300.00			6.00	200.00	10.00				10.00					6.00	200.00	440.00	44.00					6.00	200.00	220.00	22.00	22.00
208+85.00	209+85.00	HWY. 9 - SITE 2 - TRANSITION	100.00	86.00	86.00	12.00	133.33	6.67	20.00	222.22	37.78	44.45	4.00	44.44	440.00	9.78	4.00	44.44	440.00	9.78	4.00	44.44	220.00	4.89	36.00	400.00	220.00	44.00	48.89
209+85.00	210+85.00	HWY. 9 - SITE 2 - FULL DEPTH SECTION	100.00	86.00	86.00	85.58	950.89	47.54				47.54	28.83	320.33	440.00	70.47	28.50	316.67	440.00	69.67	28.25	313.89	220.00	34.53	36.00	400.00	220.00	44.00	78.53
210+85.00	211+85.00	HWY. 9 - SITE 2 - TRANSITION	100.00	86.00	86.00	12.00	133.33	6.67	20.00	222.22	37.78	44.45	4.00	44.44	440.00	9.78	4.00	44.44	440.00	9.78	4.00	44.44	220.00	4.89	36.00	400.00	220.00	44.00	48.89
TOTALS:					516.00		2835.10	141.76		888.88	151.12	292.88		818.42		180.06		1211.10		266.46		805.54		88.62		2800.00		308.00	396.62

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.7% MIN. AGGR.....5.3% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.6% MIN. AGGR.....4.4% ASPHALT BINDER
ACHM BASE COURSE (1 1/2").....96.0% MIN. AGGR.....4.0% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
03-13-23		6	ARK.	070511	30	40
03-24-23		SUMMARY OF QUANTITIES AND REVISIONS				



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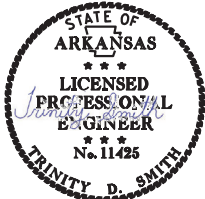
SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM	QUANTITY	UNIT
201	CLEARING	6	STATION
201	GRUBBING	6	STATION
SP, SS & 210	UNCLASSIFIED EXCAVATION	4263	CU. YD.
SP & 210	COMPACTED EMBANKMENT	2050	CU. YD.
SP & 210	SOIL STABILIZATION	50	TON
SP, SS, & 303	AGGREGATE BASE COURSE (CLASS 7)	516	TON
SS & 401	TACK COAT	295	GAL.
SP, SS, & 405	MINERAL AGGREGATE IN ACHM BASE COURSE (1 1/2")	173	TON
SP, SS, & 405	ASPHALT BINDER (PG 64-22) IN ACHM BASE COURSE (1 1/2")	7	TON
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	255	TON
SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")	12	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	376	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")	21	TON
SP & 412	COLD MILLING ASPHALT PAVEMENT	889	SQ. YD.
SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	1	TON
SP, SS, & 415	ACHM PATCHING OF EXISTING ROADWAY	1	TON
601	MOBILIZATION	1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE	1	EACH
SS & 603	MAINTENANCE OF TRAFFIC	1.00	LUMP SUM
SS & 604	SIGNS	769	SQ. FT.
SS & 604	TRAFFIC DRUMS	36	EACH
SS & 604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	1420	LIN. FT.
SS & 604	RELOCATING PRECAST CONCRETE BARRIER	1340	LIN. FT.
604	CONSTRUCTION PAVEMENT MARKINGS	2740	LIN. FT.
604	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	2740	LIN. FT.
SS & 604	VERTICAL PANELS	16	EACH
SP, SS, & 605	CONCRETE DITCH PAVING (TYPE B)	748	SQ. YD.
SS & 611	4" PIPE UNDERDRAINS	100	LIN. FT.
SS & 611	UNDERDRAIN OUTLET PROTECTORS	2	EACH
620	LIME	3	TON
620	SEEDING	1.36	ACRE
SS & 620	MULCH COVER	5.71	ACRE
620	WATER	234.3	M. GAL.
621	TEMPORARY SEEDING	4.35	ACRE
621	SILT FENCE	831	LIN. FT.
621	SEDIMENT REMOVAL AND DISPOSAL	30	CU. YD.
621	ROCK DITCH CHECKS	63	CU. YD.
623	SECOND SEEDING APPLICATION	1.36	ACRE
624	SOLID SODDING	536	SQ. YD.
635	ROADWAY CONSTRUCTION CONTROL	1.00	LUMP SUM
642	RUMBLE STRIPS IN ASPHALT SHOULDERS	1200	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")	1200	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")	1200	LIN. FT.
SP	PORTABLE TRAFFIC SIGNAL SYSTEM - ACTUATED	2.00	LUMP SUM
721	RAISED PAVEMENT MARKERS (TYPE II)	8	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER	8	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)	10	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER (RELOCATION)	2	EACH
	STRUCTURES OVER 20' SPAN		
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)	1.00	LUMP SUM
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 2)	1.00	LUMP SUM
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY	164	CU. YD.
SP, SS, & 802	CLASS S CONCRETE-ROADWAY	340.77	CU. YD.
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)	49931	POUND

REVISIONS

DATE	REVISION	SHEET NUMBER
3/13/2023	REVISED CONCRETE DITCH PAVING (TYPE B) PAY ITEM TO SP, SS, & 605.	30
3/24/2023	ADDED NOTE TO SPECIFY EARTHWORK QUANTITIES SHALL BE PAID AS PLAN QUANTITY.	27 & 30

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070511	31	40
SURVEY CONTROL DETAILS						



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HWY. 9 - SITE 1
PI = 114+82.50
Δ = 10°52' 55" RT.
D = 3°00' 00"
T = 181.91'
L = 362.73'
PC = 113+00.59
PT = 116+63.32
FOR INFORMATION ONLY

HWY. 9 - SITE 1
PI = 102+43.58
Δ = 16°25' 37" RT.
D = 3°45' 00"
T = 220.54'
L = 438.06'
PC = 100+23.03
PT = 104+61.10
FOR INFORMATION ONLY

C.L. HWY. 9

STA. 109+50.00
BEGIN JOB 070511
BEGIN SITE 1
LOG MILE 0.33

STA. 110+50.00
END SITE 1

SURVEY CONTROL COORDINATES

Project Name: s070511
Date: 5/2/2019
Coordinate System: ARKANSAS STATE PLANE - SOUTH ZONE BASED ON GPS CONTROL,
PROJECTED TO GROUND.
Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
1	1792308.1183	1123055.7438	265.356	CTL	ARDOT STD. MON. STAMPED PN: 1
2	1792777.3339	1123150.9498	254.224	CTL	ARDOT STD. MON. STAMPED PN: 2
3	1793516.6585	1123374.3524	250.124	CTL	ARDOT STD. MON. STAMPED PN: 3
4	1794029.1767	1123585.6581	256.395	CTL	ARDOT STD. MON. STAMPED PN: 4
5	1794495.1845	1123772.0812	271.617	CTL	ARDOT STD. MON. STAMPED PN: 5
6	1795881.7989	1123899.8859	281.951	CTL	ARDOT STD. MON. STAMPED PN: 6
7	1796373.6655	1123884.8139	281.948	CTL	ARDOT STD. MON. STAMPED PN: 7
8	1796937.8423	1123635.6189	262.107	CTL	ARDOT STD. MON. STAMPED PN: 8
9	1797417.0607	1123293.9622	254.595	CTL	ARDOT STD. MON. STAMPED PN: 9
10	1797801.0443	1123006.8889	255.354	CTL	ARDOT STD. MON. STAMPED PN: 10
100	1797829.4832	1122987.7842	255.172	GPS	ARDOT GPS #200015
101	1799156.1221	1122225.1060	273.297	GPS	ARDOT GPS #200015A
900	1797822.8396	1123003.4658	255.480	TBM	STANDARD ALUM CAP NORTH END OF EAST CONCRETE HEADWALL

*Note - Rebar and Cap - Standard - 5/8" Rebar with 2" Aluminum Cap stamped
*(standard markings common to all caps), or as indicated
(other markings indicated in the point description of the individual point).
USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT
A PROJECT CAF OF 0.9999046763 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 s070511gi.ctl
HORIZONTAL DATUM: NAD 83 (2011)
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 - 0302-SOUTH ZONE
DETERMINED FROM GPS CONTROL POINTS: #200015-#200015A
CONVERGENCE ANGLE: 0-99-99.9 LEFT/RIGHT AT LT: 33-59-36 LG: 092-37-19
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

HWY. 9 - SITE 1

POINT NO.	TYPE	STATION	NORTHING	EASTING
8000	POB	100+00.00	1792358.3438	1123075.9812
8001	PC	100+23.04	1792381.3873	1123076.1756
8003	PT	104+61.10	1792812.9217	1123142.1838
8004	PC	113+00.59	1793616.1135	1123386.3673
8006	PT	116+63.31	1793951.0863	1123524.0984
8007	PC	118+95.23	1794156.2454	1123632.2298
8009	PT	122+28.40	1794467.8483	1123747.4671
8010	POE	124+27.85	1794662.3386	1123791.6504

SURVEY CONTROL DETAILS

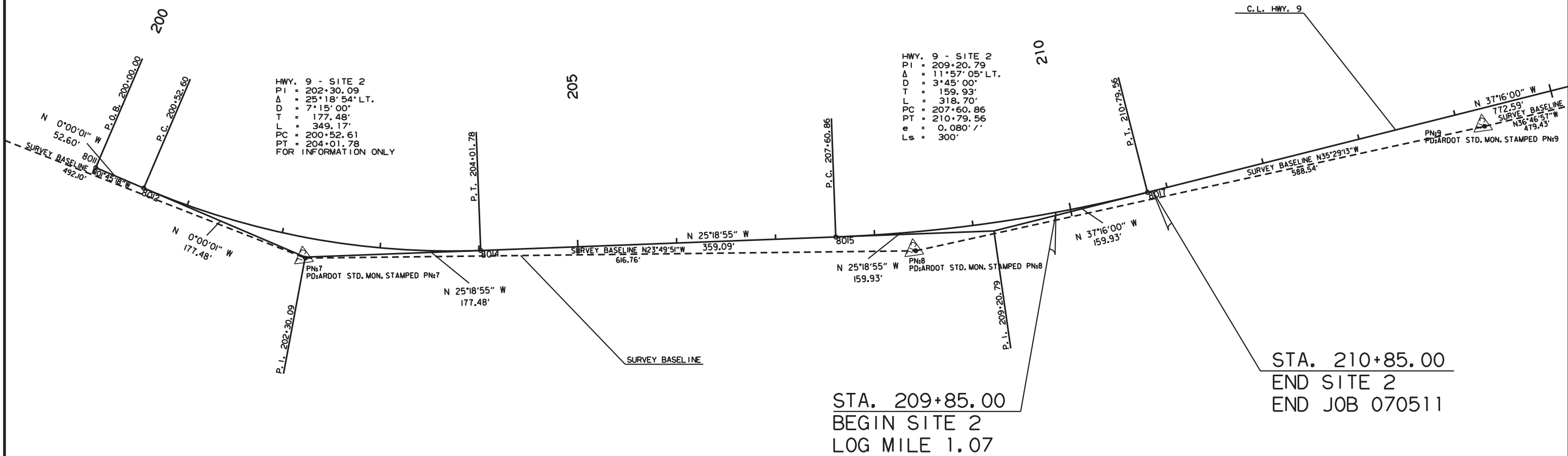
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070511	32	40
SURVEY CONTROL DETAILS						



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HWY. 9 - SITE 2				
POINT NO.	TYPE	STATION	NORTHING	EASTING
8011	POB	200+00.00	1796142.9105	1123884.0075
8012	PC	200+52.60	1796195.5117	1123884.0073
8014	PT	204+01.78	1796533.4364	1123808.1144
8015	PC	207+60.86	1796858.0397	1123654.5685
8017	PT	210+79.56	1797129.8868	1123489.3416
8018	PC	218+52.56	1797744.7377	1123021.5176
8020	PT	220+00.64	1797865.7334	1122935.4970
8021	POE	220+36.53	1797895.6449	1122915.6580

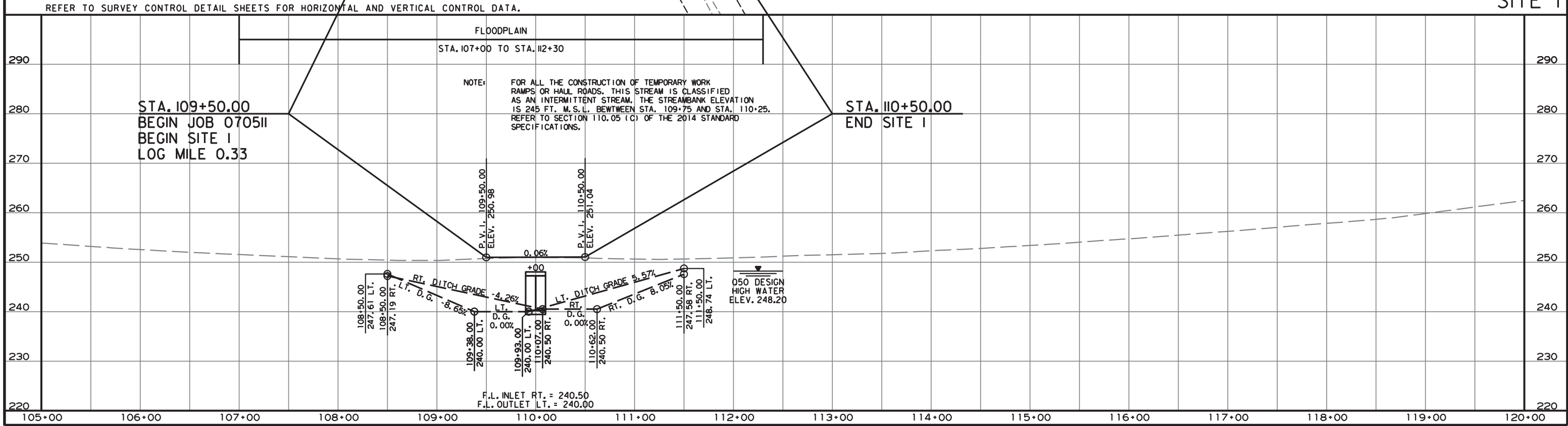
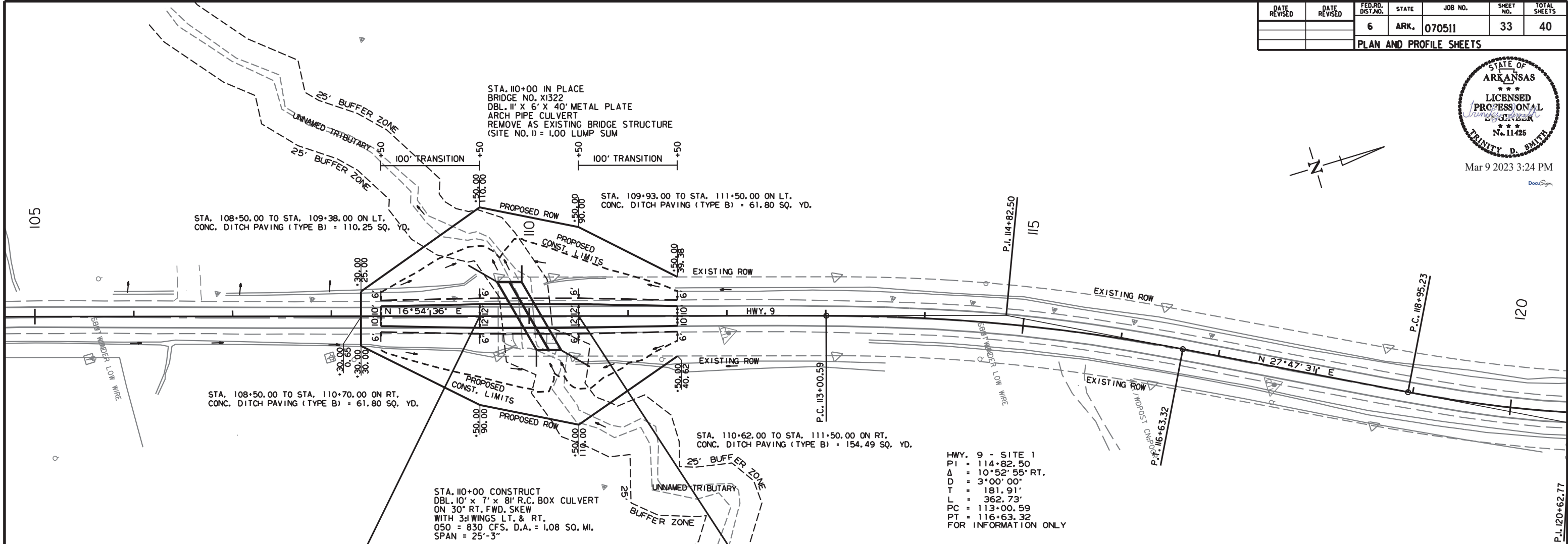
SURVEY CONTROL DETAILS

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070511	33	40
PLAN AND PROFILE SHEETS						



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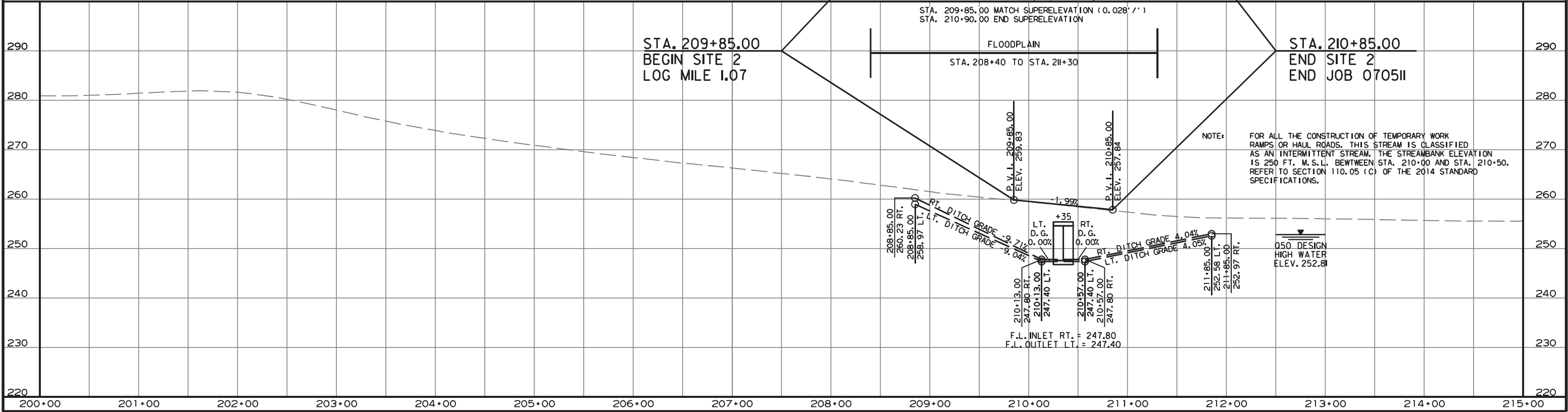
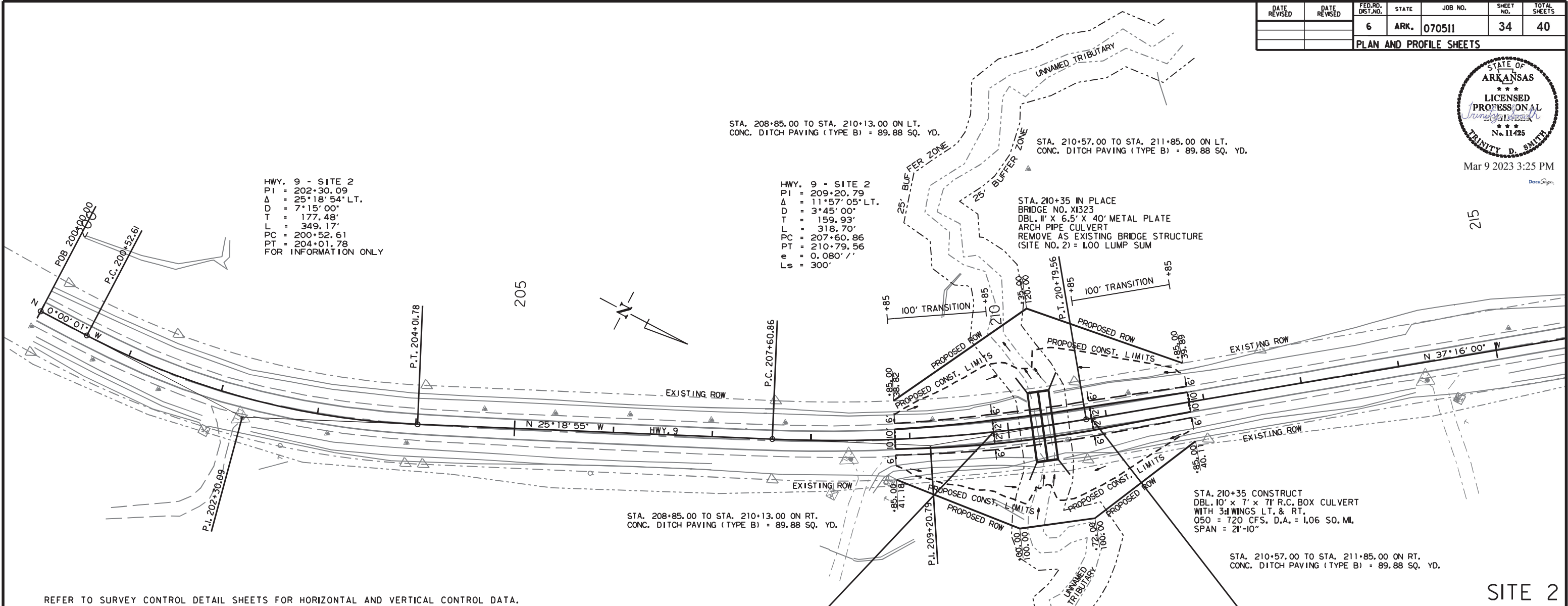
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		6	ARK.	070511	34	40
PLAN AND PROFILE SHEETS						



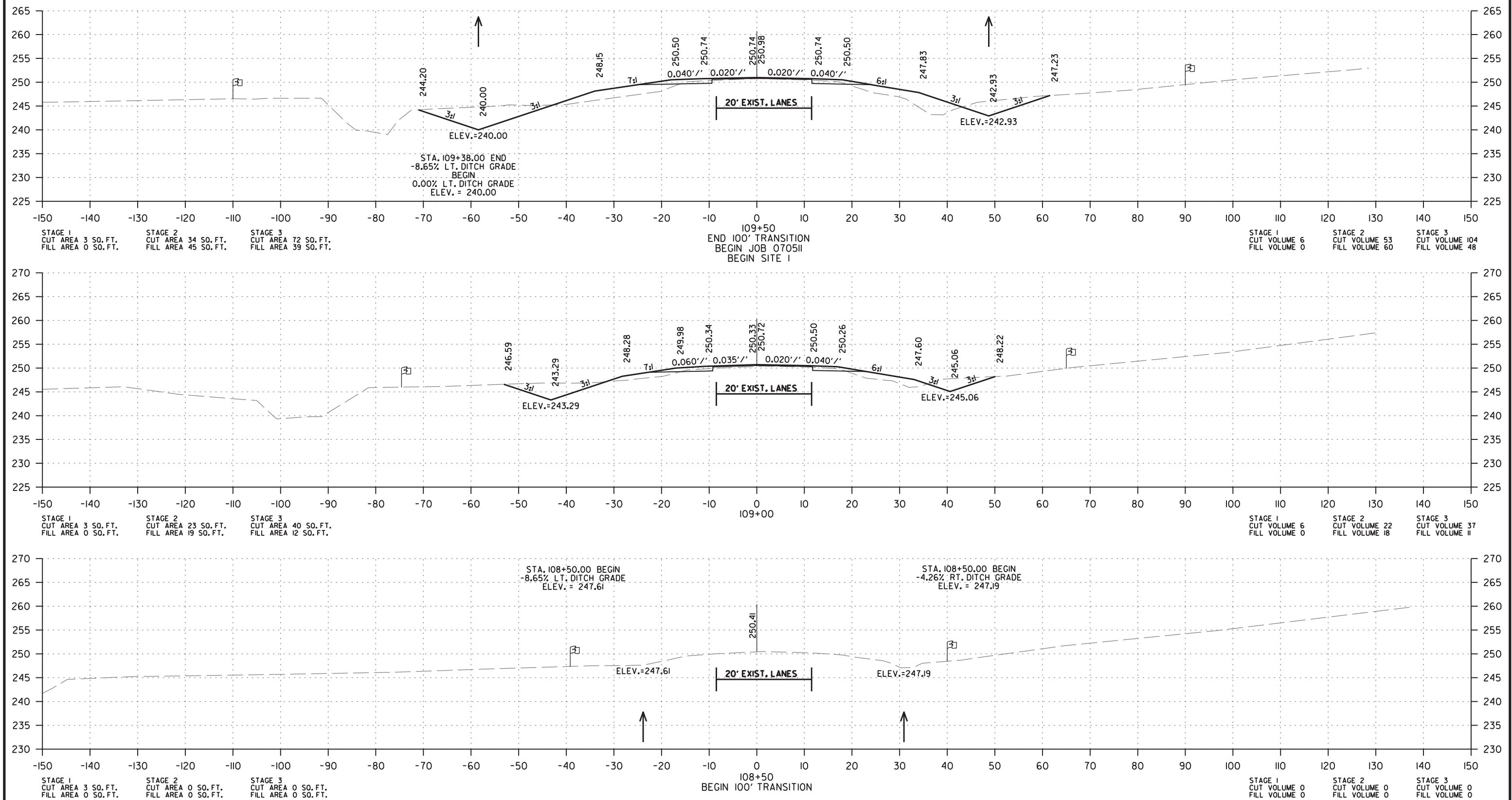
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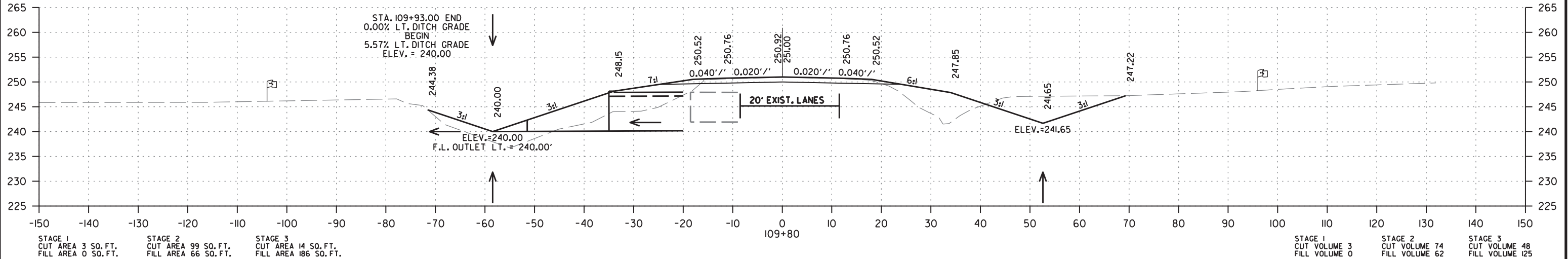
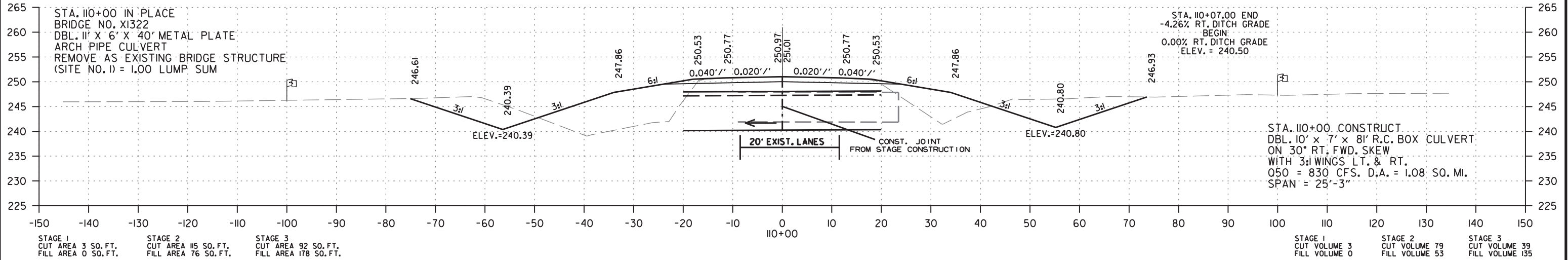
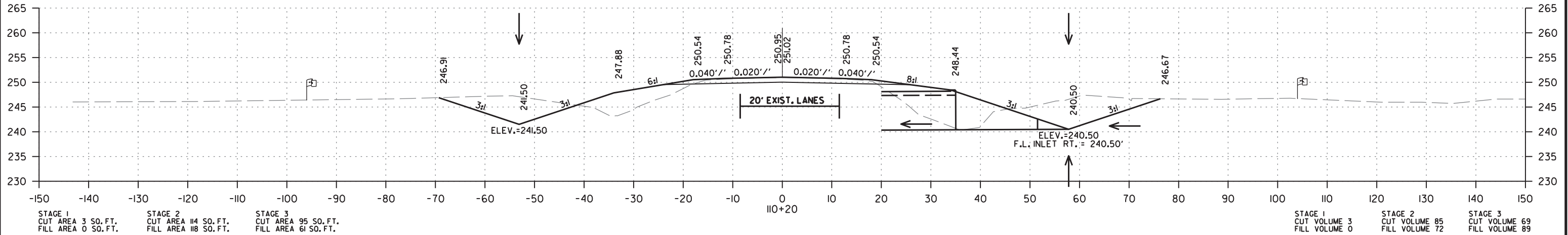


DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070511	35	40
CROSS SECTIONS						



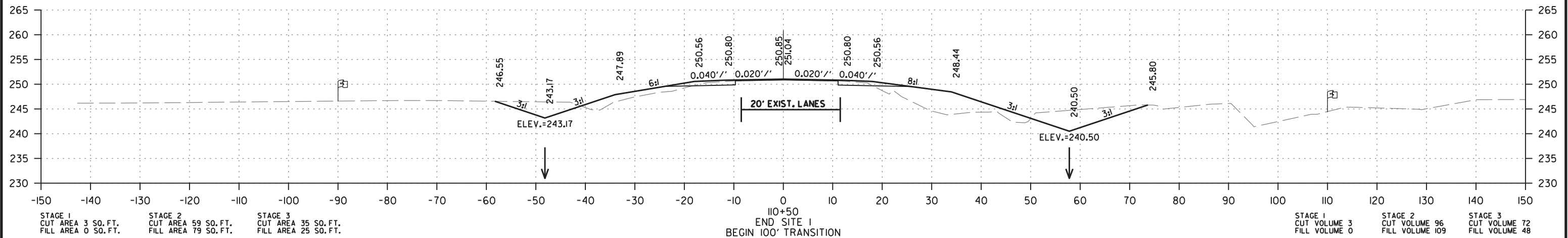
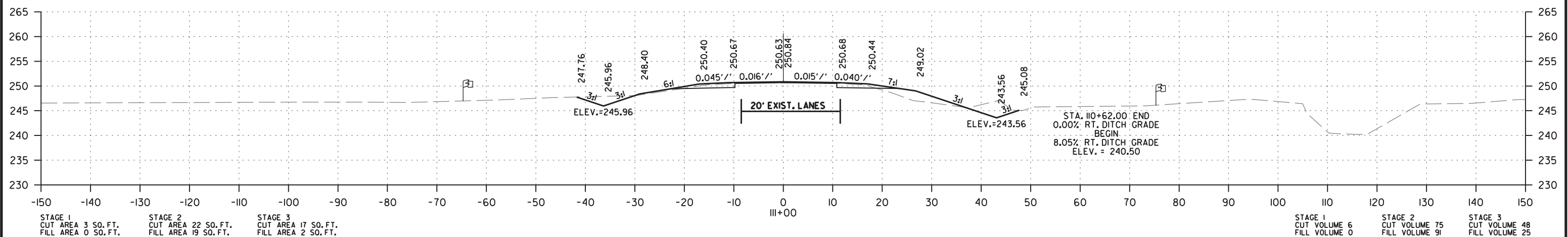
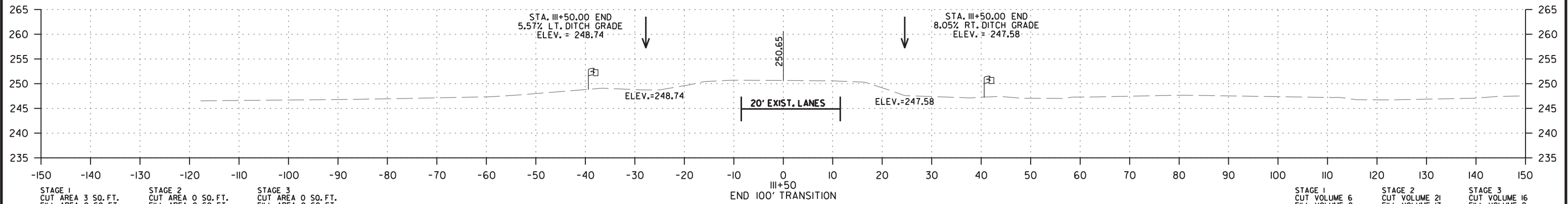
SITE 1
STA. 108+50 TO STA. 109+50

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070511	36	40
CROSS SECTIONS						



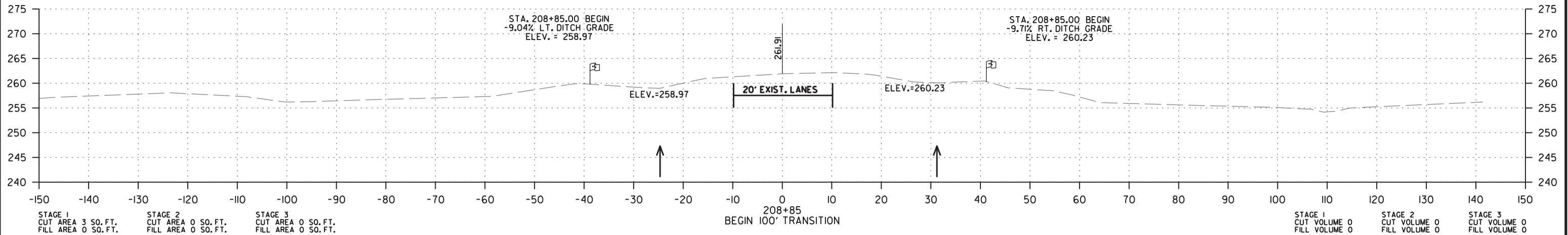
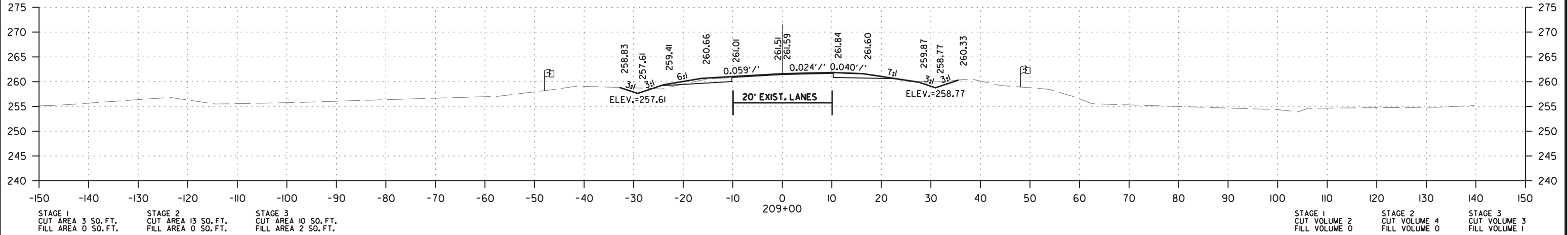
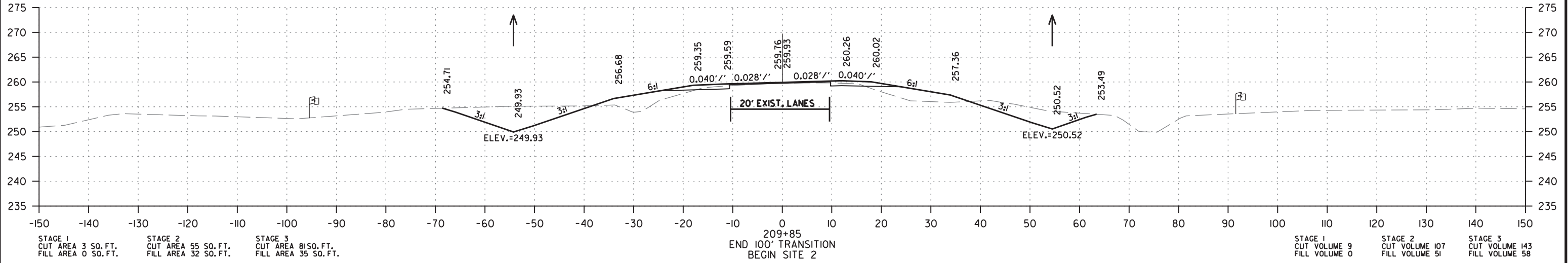
SITE 1
STA. 109+80 TO STA. 110+20

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070511	37	40
CROSS SECTIONS						



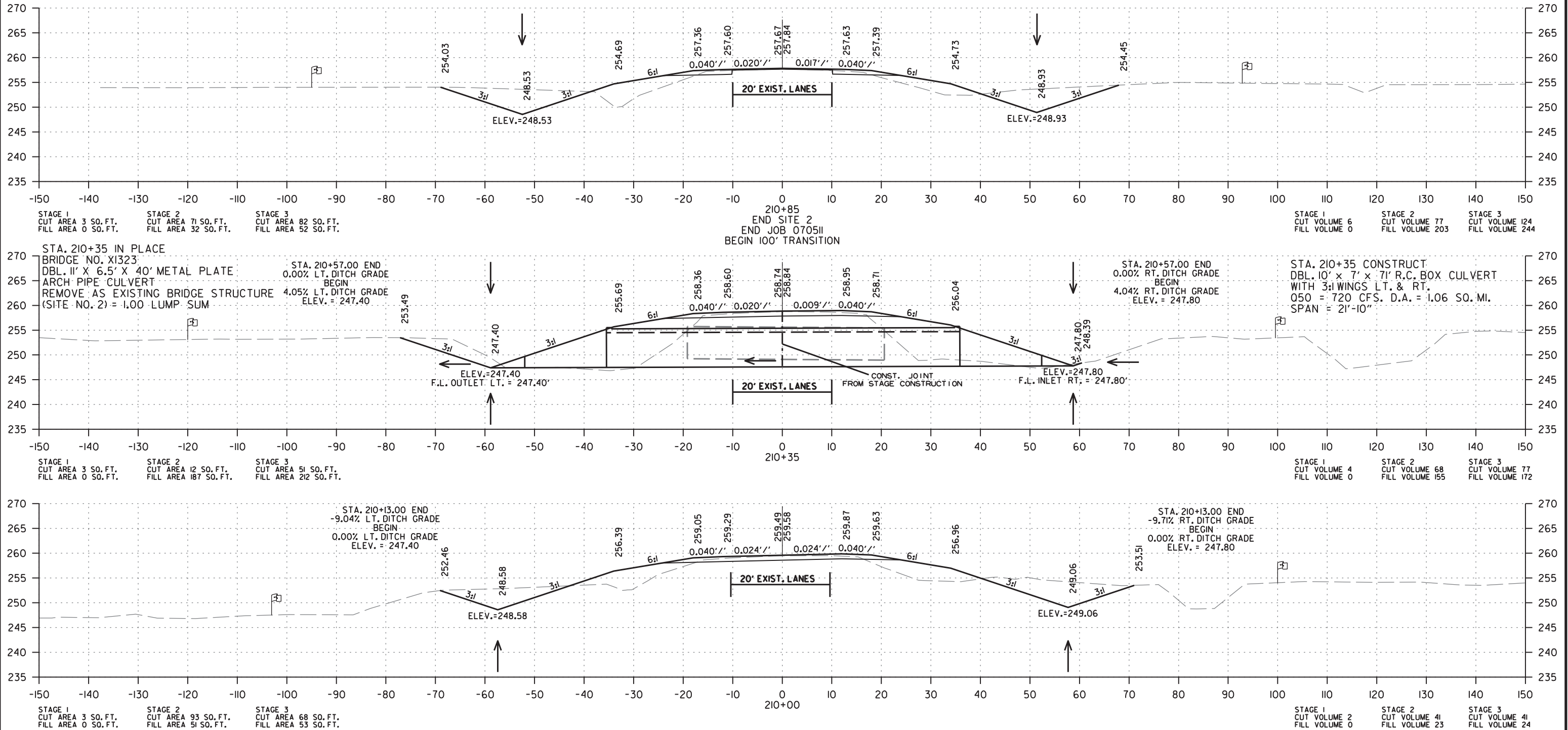
SITE I
STA. III+50 TO STA. III+50

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070511	38	40
CROSS SECTIONS						



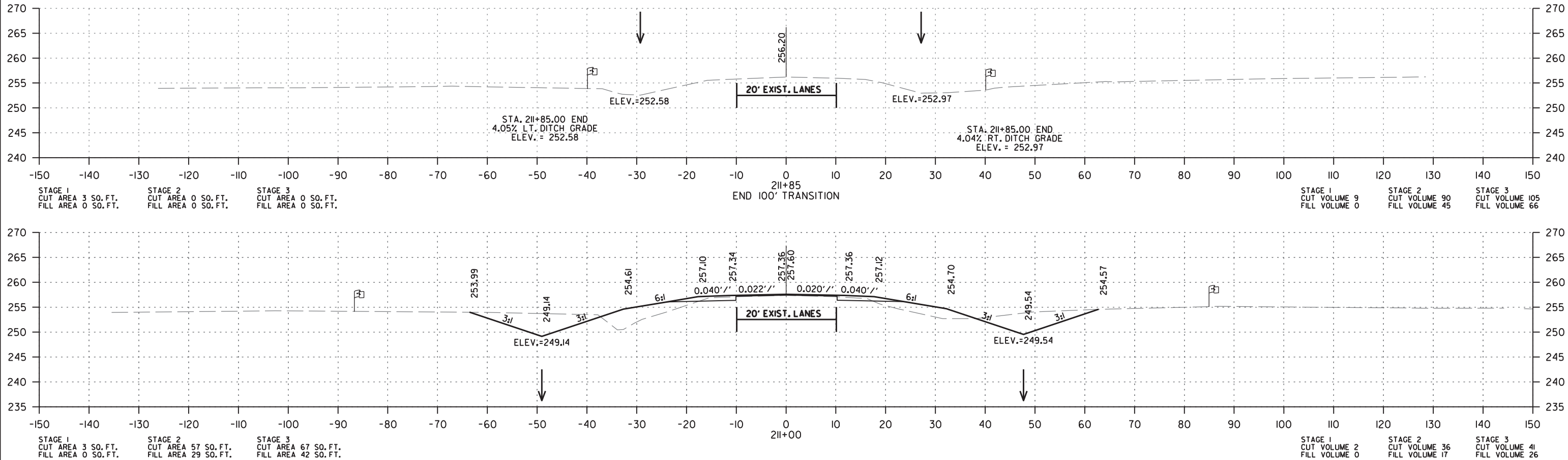
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STA. 208+85 TO STA. 209+85

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070511	39	40
CROSS SECTIONS						

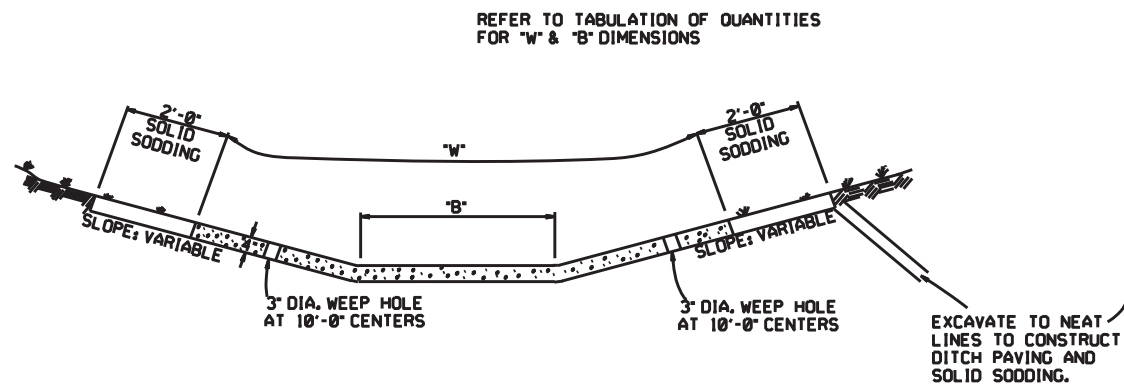


SITE 2
STA. 210+00 TO STA. 210+85

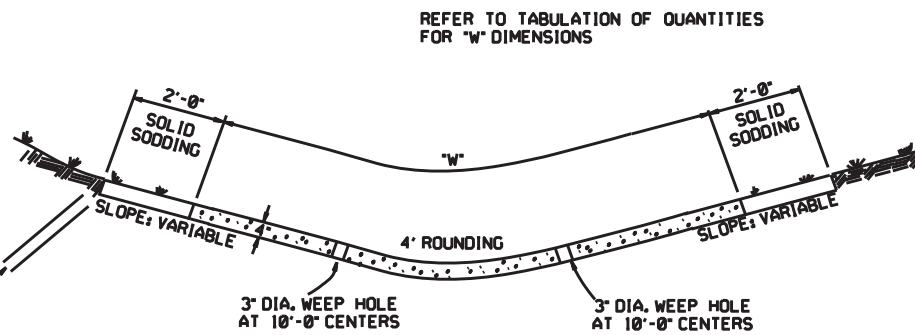
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070511	40	40
CROSS SECTIONS						



SITE 2
STA. 211+00 TO STA. 211+85

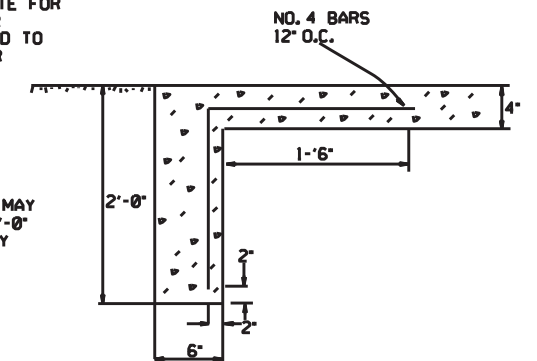


TYPE A



TYPE B

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



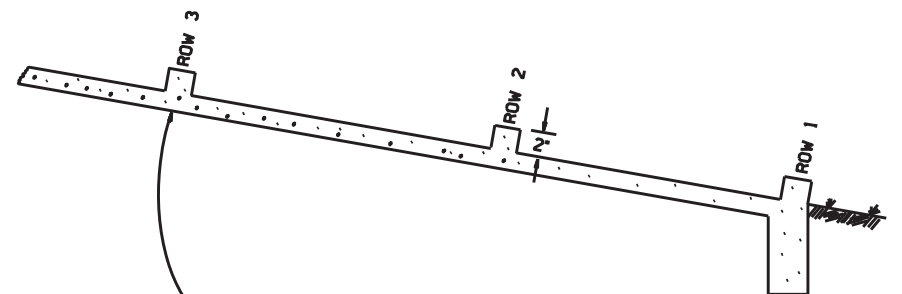
GENERAL NOTES:

THE FULL WIDTH OF EACH SECTION SHALL BE POURED MONOLITHICALLY.

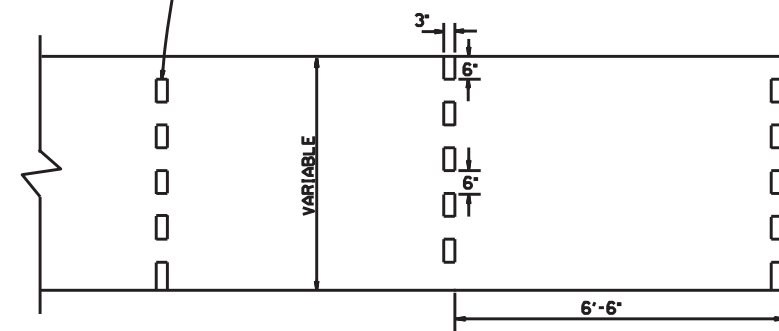
TOE WALLS TO BE CONSTRUCTED FULL WIDTH AT EACH END OF DITCH PAVING, AND POURED MONOLITHICALLY.

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.



ENERGY DISSIPATORS TO BE USED FOR THE ENTIRE LENGTH OF DITCH WHEN SLOPE OF DITCH PAVING EXCEEDS 7%. THE DISSIPATORS WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR CONCRETE DITCH PAVING.



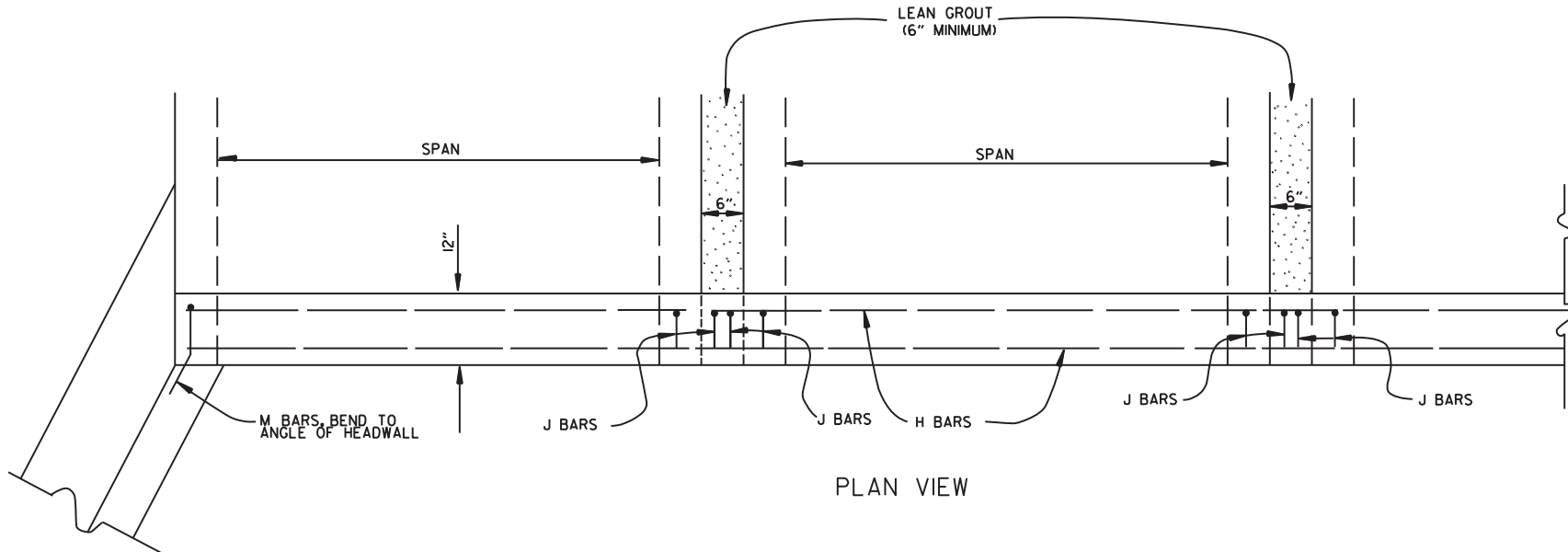
ENERGY DISSIPATORS
(NO SCALE)

DATE	REVISION	DATE	FILM D
12-8-16	CORRECTED ENERGY DISSIPATOR DRAWING AND NOTE		
11-17-10	ADDED GENERAL NOTE		
6-2-94	ADDED GENERAL NOTE ABOUT SOLID SODDING		
11-30-8	ELIMINATED MIN. ROWS OF ELEMENTS	111-30-89	
7-15-88	REVISED DISSIPATOR NOTE	653-7-15-88	
4-3-87	REVISED ENERGY DISSIPATOR	671-4-3-87	
1-9-87	MODIFIED NOTE ON ENERGY DISS.	532-1-9-87	
11-3-86	ADDED NOTE TO ENERGY DISS.	599-12-1-86	
11-1-84	ENERGY DISSIPATOR DETAILS	508-11-1-84	
11-1-84	ADDED		
11-1-84	EXCAVATION DETAILS ADDED		
10-2-72	TYPED A & B		
	REVISED AND REDRAWN	508-10-2-72	
	DATE	REVISION	DATE

ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

STANDARD DRAWING CDP-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.

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

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

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

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

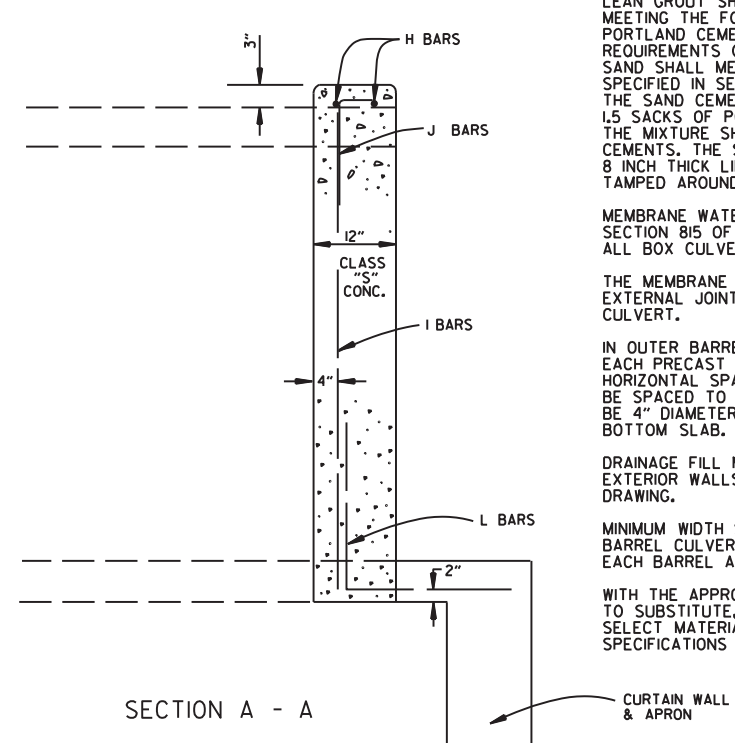
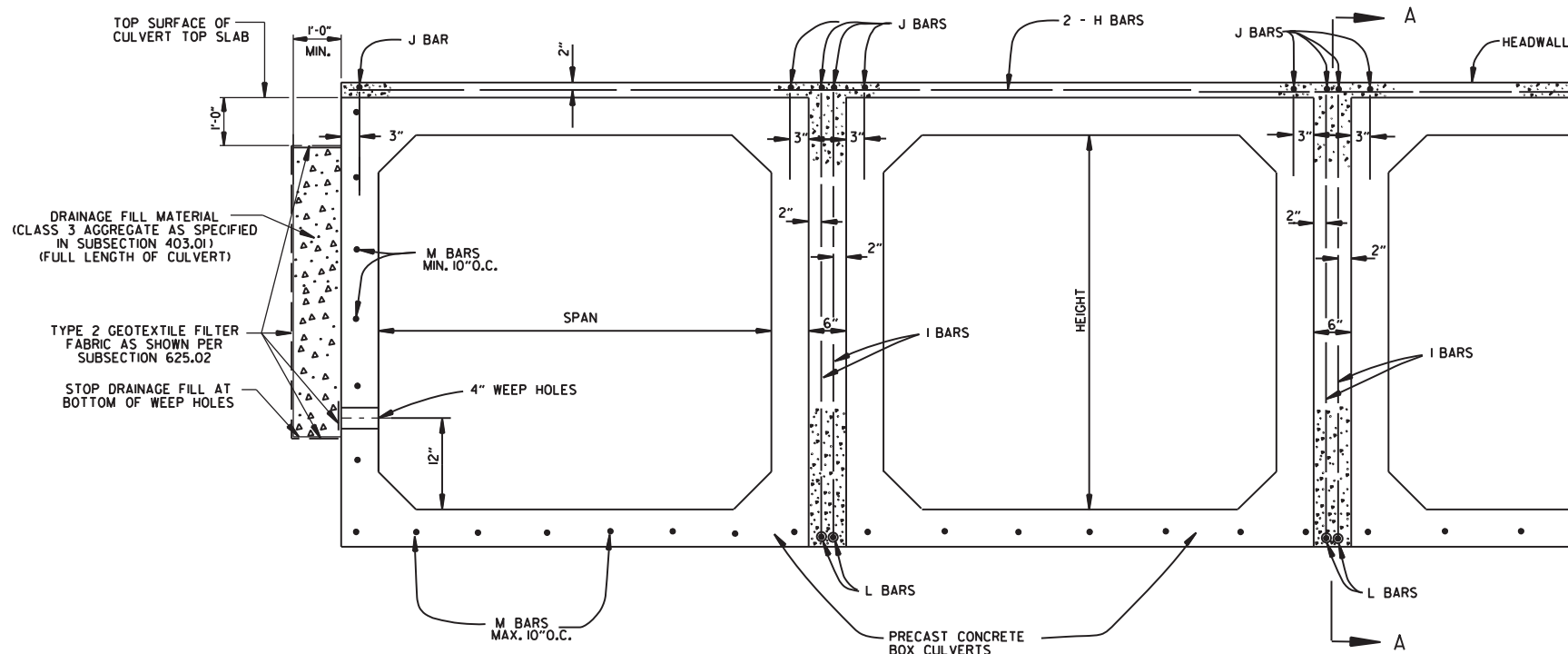
THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

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

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

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

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

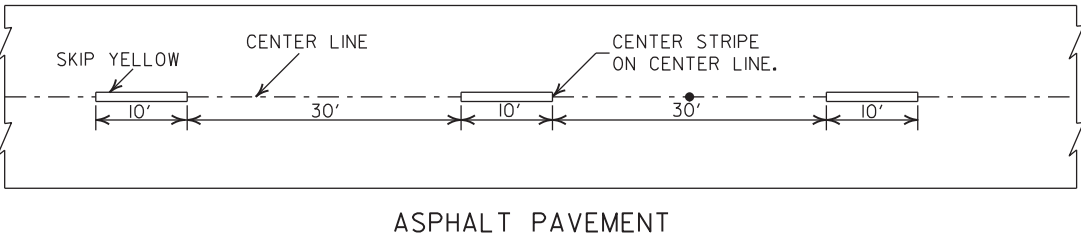
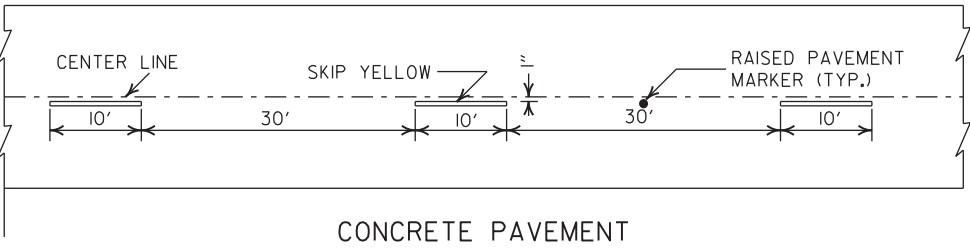


1-28-15	REVISED GEOTEXTILE FABRIC PLACEMENT	
12-15-11	ADDED NOTE & DTLs FOR WEEP HOLE AND DRAINAGE FILL	
10-15-09	ADDED GENERAL NOTE	
11-10-05	REVISED SPACING OF "M" BARS	
4-10-03	REVISED GENERAL NOTES	
10-18-96	CORRECTED AASHTO REF.	
10-1-92	ADDED NOTE FOR MEMBRANE WATERPROOFING	
8-15-91	ADDED NOTE FOR LEAN GROUT	
11- 8-90	REVISED FOR 1991 SPECS	
11-30-89	ISSUED; JABE	
DATE	REVISION	DATE FILMED

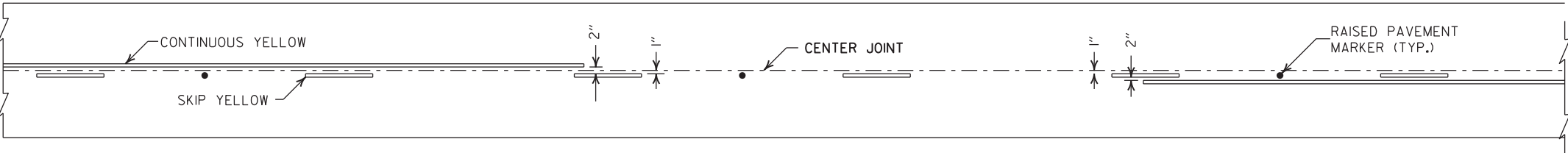
ARKANSAS STATE HIGHWAY COMMISSION

PRECAST CONCRETE BOX CULVERTS

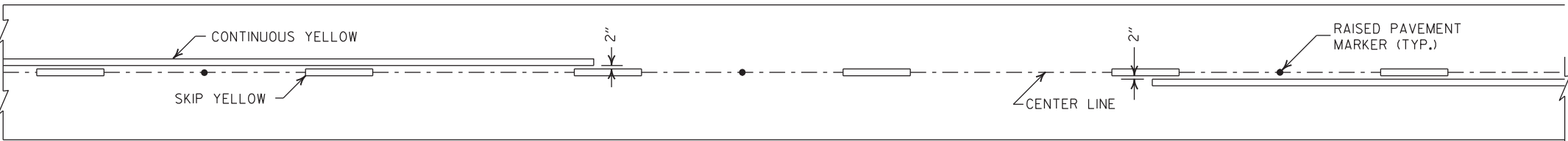
STANDARD DRAWING PBC-1



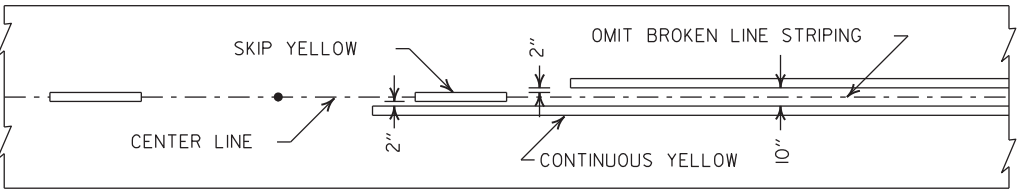
BROKEN LINE STRIPING



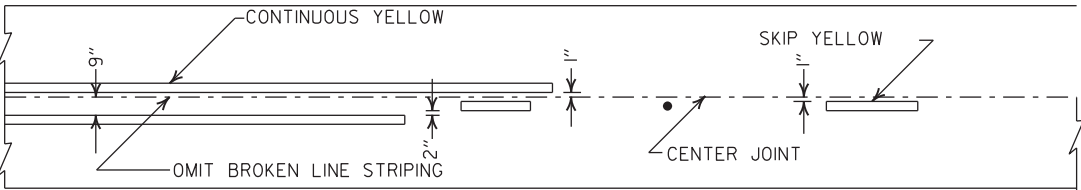
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

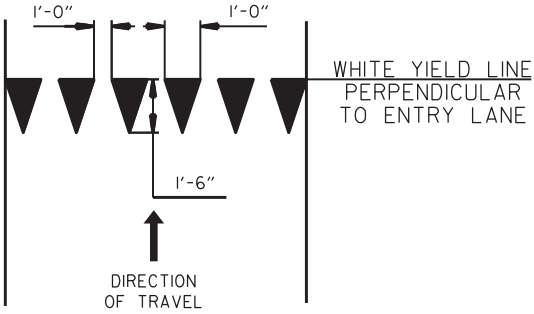


ASPHALT PAVEMENT

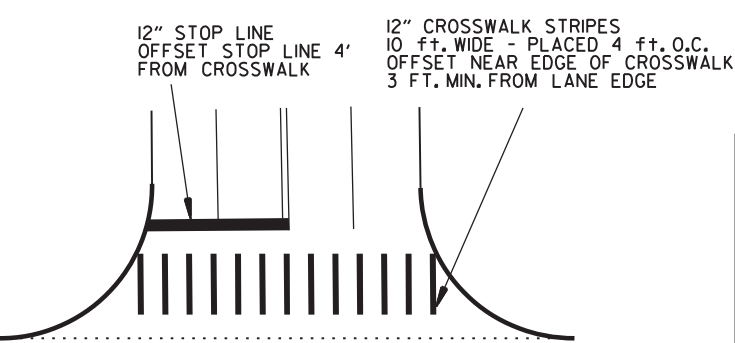


CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

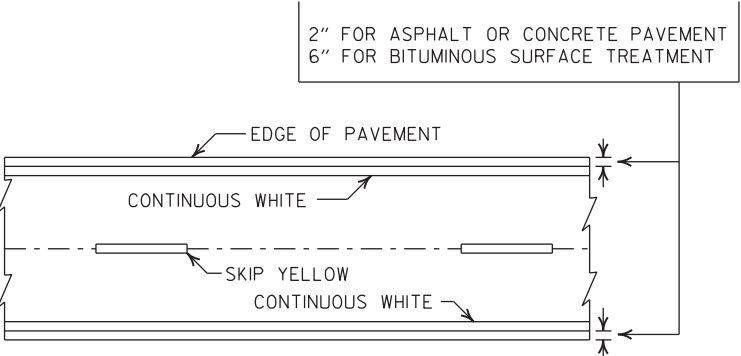


YIELD LINE DETAIL

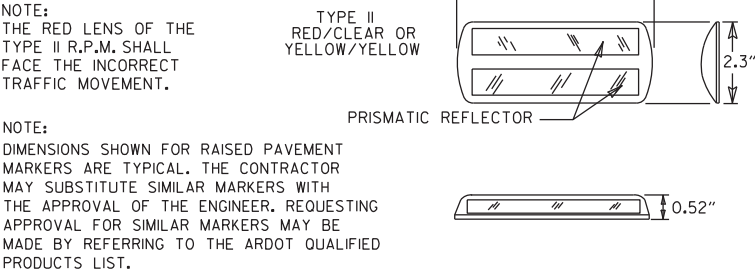


CROSSWALK AND STOP LINE DETAILS

- NOTES:
1. REFER TO THE STRIPING DETAILS FOR PAVEMENT MARKING LINE WIDTHS.
 2. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
 3. RAISED PAVEMENT MARKERS SHALL BE PLACED ON AN 80 FEET SPACING UNLESS OTHERWISE SHOWN IN THE PLANS.



PAVEMENT EDGE LINE MARKING

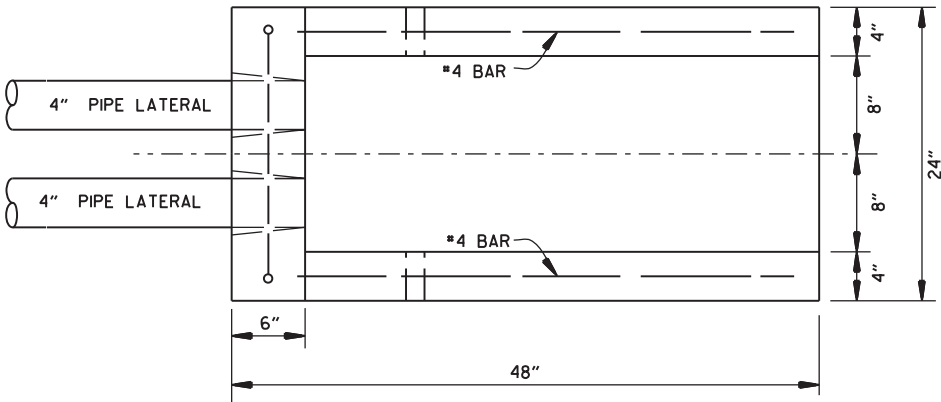
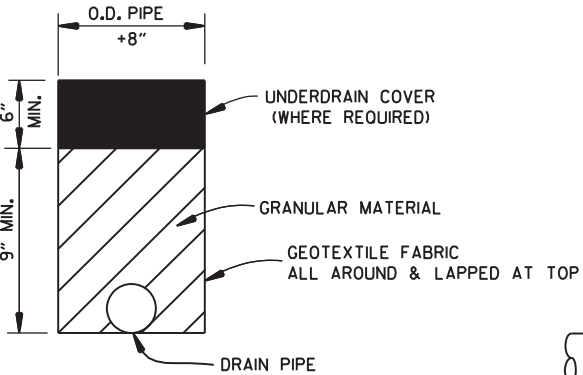


DETAIL OF STANDARD RAISED PAVEMENT MARKERS

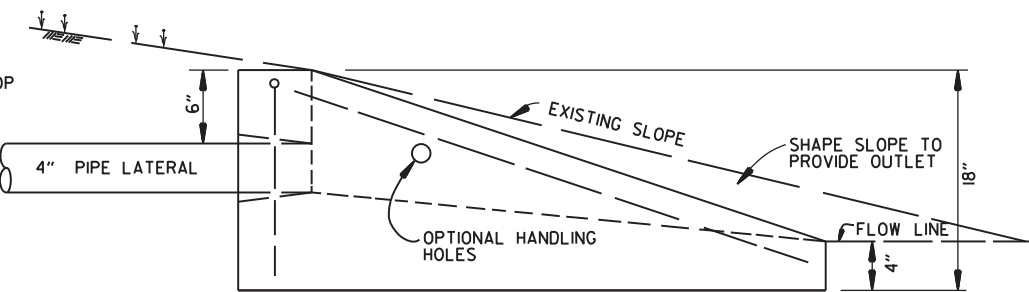
2-27-20	REVISED STOP LINE DETAILS	
6-1-17	ADDED YIELD LINE DETAIL	
5-12-16	REVISED LINE WIDTHS, SPACING, & NOTES	
9-12-13	REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS	
11-17-10	REVISED GENERAL NOTES & REMOVED PLOWABLE PVMT MRKRS	
11-18-04	REVISED NOTE 2 & GENERAL NOTES	
8-22-02	ADDED CROSSWALK & STOPBAR DTLS.	
7-02-98	ADDED DETAILS OF STD. RAISED PAV'T. MARKERS	
4-26-96	REV. NOTES 3&4; ADDED R.P.M.	
9-30-80	DRAWN	1-9-30-80
DATE	REVISION	FILMED

ARKANSAS STATE HIGHWAY COMMISSION
PAVEMENT MARKING DETAILS
STANDARD DRAWING PM-1

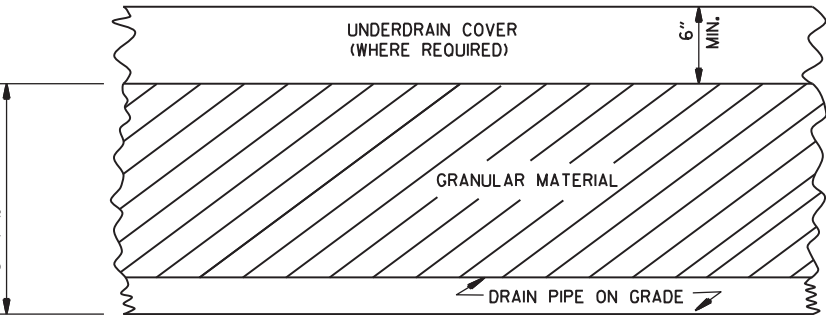
NOTE:
1. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.
2. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC, LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.



PLAN VIEW



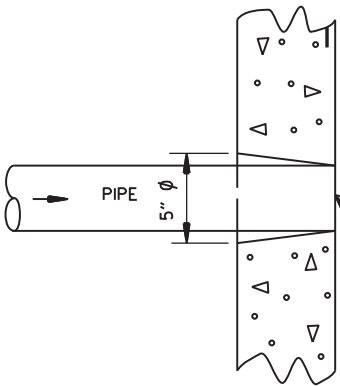
SIDE VIEW



DETAILS OF PIPE UNDERDRAIN

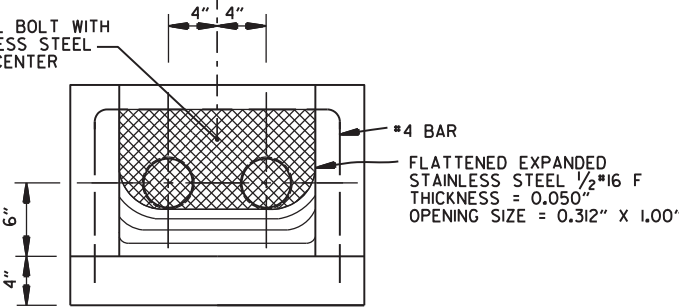
NOTES FOR PIPE UNDERDRAINS

1. GEOTEXTILE FABRIC SHALL MEET THE REQUIREMENTS OF SECTION 625 FOR TYPE I. PAYMENT FOR GEOTEXTILE FABRIC AND GRANULAR FILTER MATERIAL SHALL BE INCLUDED IN THE PRICE BID PER LIN. FT. FOR "4" PIPE UNDERDRAINS" IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.
2. 4" NON-PERFORATED SCHEDULE 40 PVC PIPE LATERALS WITH OUTLET PROTECTORS SHALL BE INSTALLED AS SHOWN HEREON. LATERALS WILL BE MEASURED AND PAID FOR AS "4" PIPE UNDERDRAINS." UNDERDRAIN OUTLET PROTECTORS WILL BE MEASURED AND PAID FOR BY THE UNIT IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.
3. EXISTING 4" PIPE UNDERDRAINS MAY BE CONNECTED TO PROPOSED DROP INLETS OR EXTENDED WHERE DIRECTED BY THE ENGINEER. PAYMENT FOR CONNECTING TO DROP INLETS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR "4" PIPE UNDERDRAINS."
4. THE LOCATION OF ALL LATERALS SHALL BE MARKED WITH 4" X 12" PERMANENT PAVEMENT MARKING TAPE (TYPE III WHITE) AT THE OUTSIDE EDGE OF THE SHOULDER, PLACED TRANSVERSE TO TRAFFIC. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.
5. PAYMENT FOR THE RODENT SCREEN SHALL BE INCLUDED IN THE PRICE BID PER EACH FOR "UNDERDRAIN OUTLET PROTECTORS."
6. ANY EXISTING UNDERDRAINS THAT INTERFERE WITH INSTALLATION OF THE NEW UNDERDRAIN SYSTEM SHALL BE REMOVED AND DISPOSED OF AS DIRECTED BY THE ENGINEER. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS. EXISTING UNDERDRAIN OUTLET PROTECTORS SHALL BE REMOVED UNDER THE ITEM "REMOVAL AND DISPOSAL OF UNDERDRAIN OUTLET PROTECTORS."
7. AT LOCATIONS WHERE A SINGLE LATERAL IS USED THE CONTRACTOR SHALL HAVE THE FOLLOWING OPTIONS: 1. INSTALL OUTLET PROTECTOR AS SHOWN ON STANDARD DRAWING PU-1 AND GROUT THE UNUSED HOLE OR 2. INSTALL AN OUTLET PROTECTOR WITH A SINGLE HOLE.



DETAIL OF HOLE FOR 4" PIPE

1/4" STAINLESS STEEL BOLT WITH ANCHOR & 1" STAINLESS STEEL WASHER IN APPROX. CENTER OF SCREEN

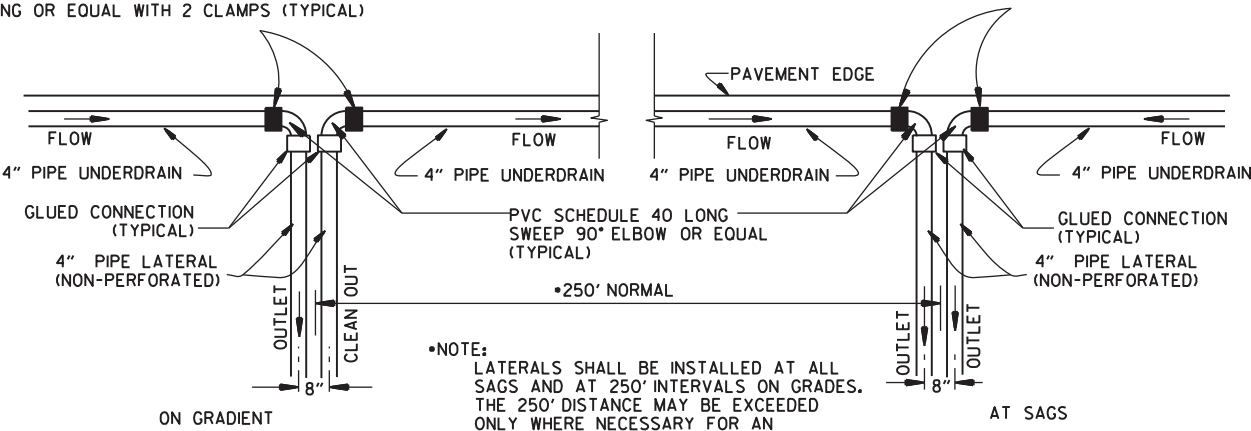


FRONT VIEW (DETAIL OF RODENT SCREEN)

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

UNDERDRAIN OUTLET PROTECTORS

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



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

DETAIL OF PIPE UNDERDRAIN LATERALS WHEN PLACED ALONG PAVEMENT EDGE

NOTE: PVC PIPE FOR LATERALS SHALL MEET THE REQUIREMENTS OF ASTM D 1785 (LATEST REVISION) FOR SCHEDULE 40 PIPE.

12-8-16	ADDED NOTES FOR PIPE UNDERDRAINS, REVISED RODENT SCREEN DETAIL AND NOTES, REMOVED NOTE 1 FOR GRANULAR MATERIAL, ADDED NOTE FOR GEOTEXTILE FABRIC	
4-10-03	REVISED NOTE 3	
1-12-00	REVISED DETAIL OF UNDERDRAIN LATERALS	
11-18-98	REVISED NOTE	
10-18-96	REVISED MIN. DEPTH & GEOTEXTILE FABRIC	
4-26-96	ADDED LATERAL NOTE: 5 1/2" TO 5"	
11-22-95	REVISED LATERALS	
7-20-95	REVISED LATERALS & ADDED NOTE	
11- 3-94	REVISED FOR DUAL LATERALS	11- 3-94
10- 1-92	SUBSTITUTED GEOTEXTILE	10- 1-92
8-15-91	ADDED POLYETHYLENE PIPE	8-15-91
11- 8-90	DELETED ALTERNATE NOTE	11- 8-90
1-25-90	ADDED 4" SNAP ADAPTER	1-25-90
11-30-89	DEL. (SUBGRADE); ADDED (WHERE REQUIRED)	11-30-89
7-15-88	ISSUED P.L.M.	647-7-15-88
DATE	REVISION	DATE FILMED

ARKANSAS STATE HIGHWAY COMMISSION

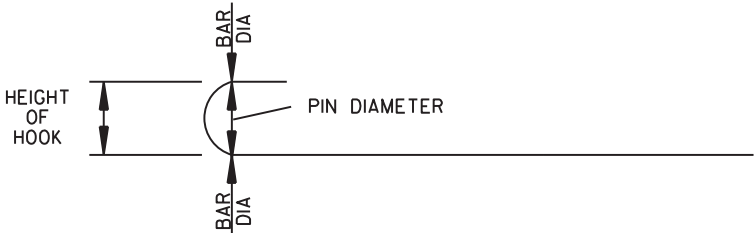
DETAILS OF PIPE UNDERDRAIN

STANDARD DRAWING PU-1

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

BAR SIZE	PIN DIAMETER	HOOK EXTENSION "K"
3	2¼"	4"
4	3 "	4½"
5	3¾"	5"
6	4½"	6"
7	5¼"	7"
8	6"	8"

IF THE OVERALL HEIGHT OF THE HOOK (SEE DIAGRAM BELOW) FOR A "b", "b1", "b2" or "b3" BENT BAR IS GREATER THAN THE CORRESPONDING TOP OR BOTTOM SLAB THICKNESS, LESS 2¾ INCHES, EACH BENT BAR SHALL BE REPLACED WITH ONE HOOKED BAR AND ONE STRAIGHT BAR, USING LENGTHS AS SHOWN IN THE TABLE BELOW. THE TWO BARS SHALL BE THE SAME DIAMETER AS, AND PLACED AT THE SAME SPACING AS, THE "b", "b1", "b2" OR "b3" BENT BARS THEY REPLACE.



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

OVERALL HEIGHT OF HOOKED BAR DIAGRAM

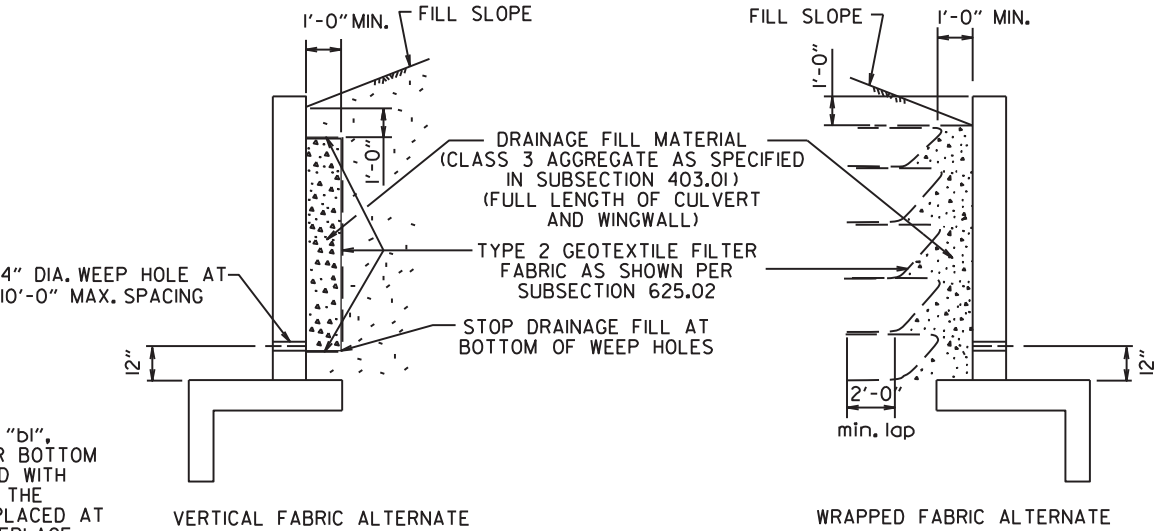
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

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

REPLACEMENT BAR LENGTHS TABLE

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

L = "OW" - 3 INCHES



WINGWALL & CULVERT DRAINAGE DETAIL

REINFORCED CONCRETE BOX CULVERT GENERAL NOTES

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

REINFORCING STEEL SHALL BE AASHTO M 31OR M 53, GRADE 60.

CONSTRUCTION AND MATERIALS FOR WINGWALL & CULVERT DRAINAGE, INCLUDING WEEP HOLES AND GRANULAR MATERIAL, SHALL BE SUBSIDIARY TO THE BID ITEM, "CLASS S CONCRETE".

MEMBRANE WATERPROOFING SHALL CONFORM TO THE REQUIREMENTS OF SECTION 815 OF THE STANDARD SPECIFICATIONS.

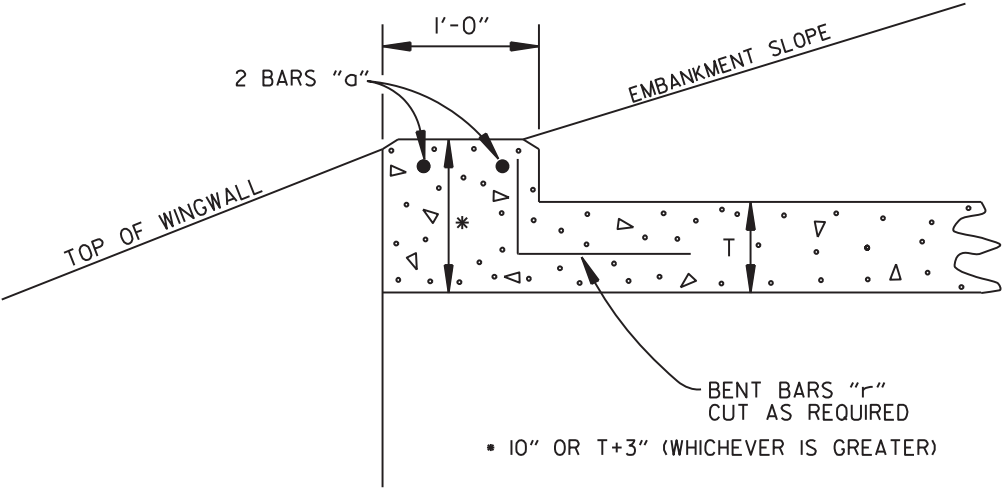
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

REINFORCING STEEL TOLERANCES: THE TOLERANCES FOR REINFORCING STEEL SHALL MEET THOSE LISTED IN "MANUAL OF STANDARD PRACTICE" PUBLISHED BY CONCRETE REINFORCING STEEL INSTITUTE (CRSI) EXCEPT THAT THE TOLERANCE FOR TRUSS BARS SUCH AS FIGURE 3 ON PAGE 7-4 OF THE CRSIMANUAL SHALL BE MINUS ZERO TO PLUS ½ INCH.

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

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

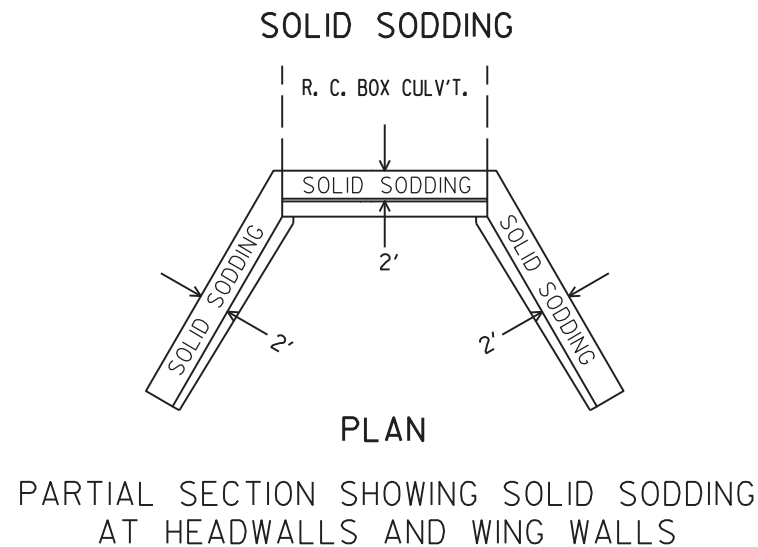
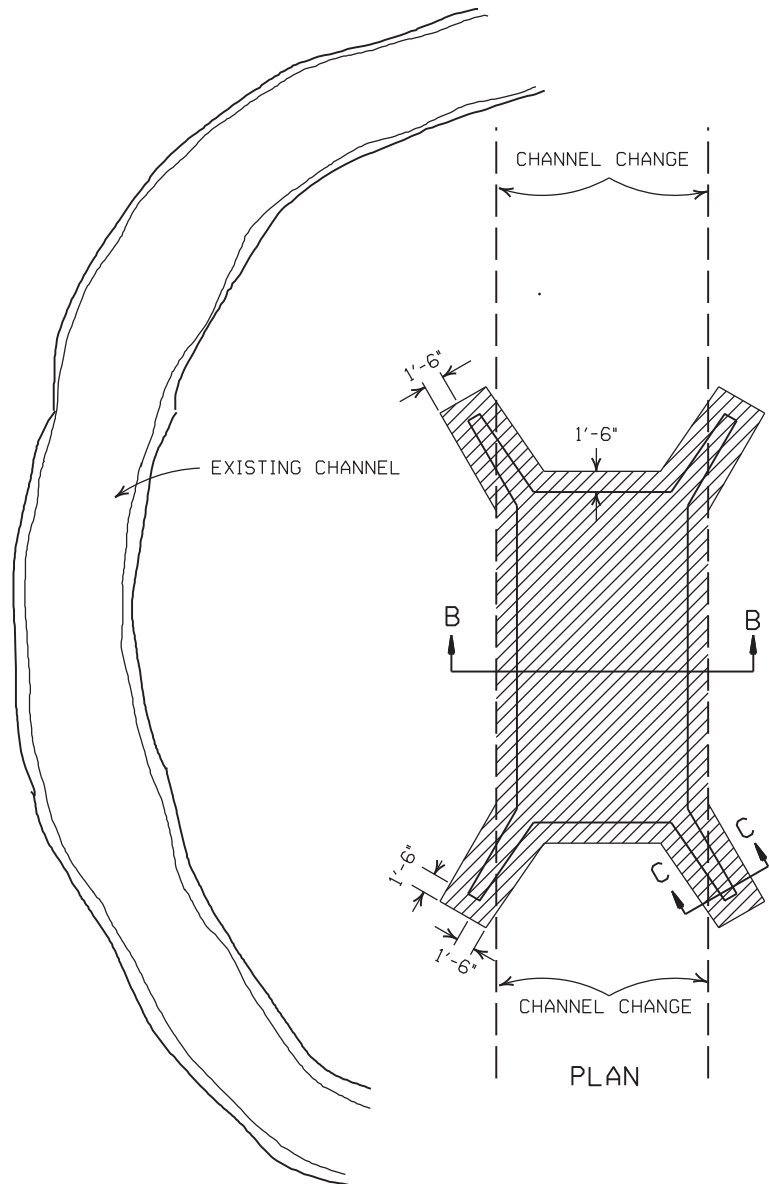
THE REQUIREMENTS SHOWN ON THIS DRAWING SHALL SUPERCEDE THE CORRESPONDING REQUIREMENTS ON ALL REINFORCED CONCRETE BOX CULVERT STANDARD DRAWINGS.



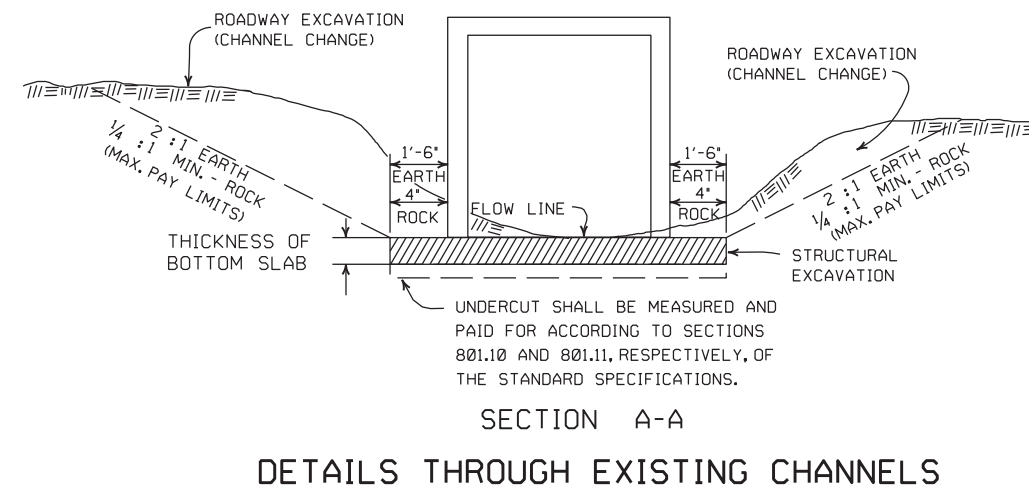
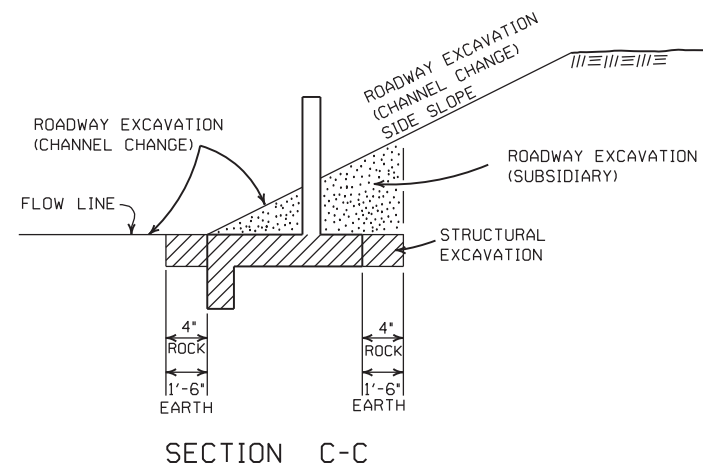
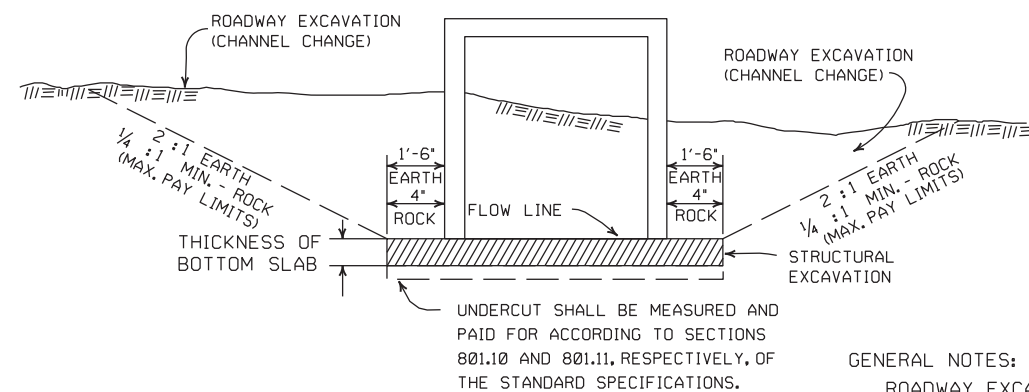
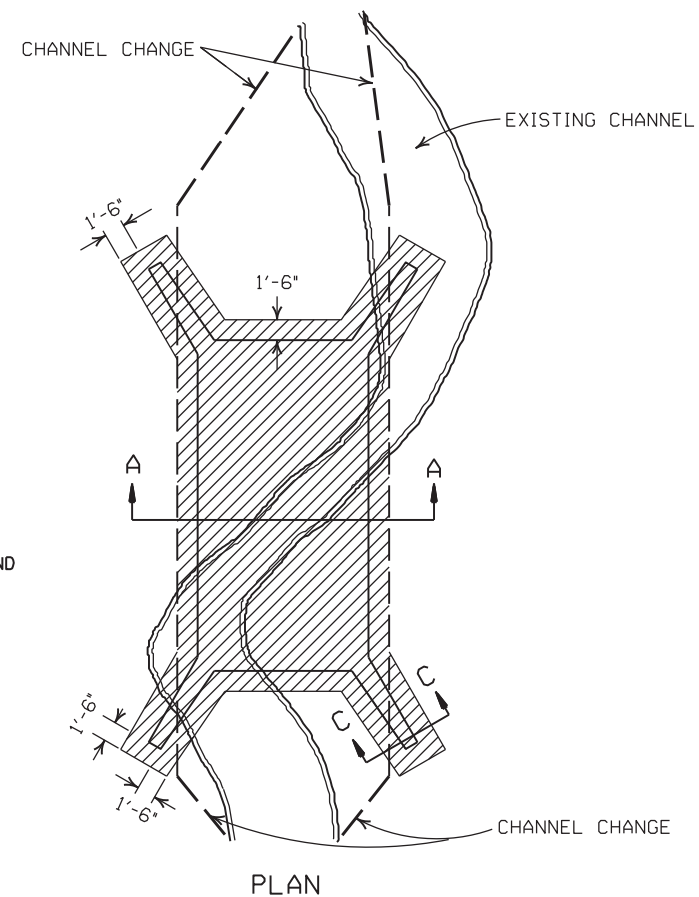
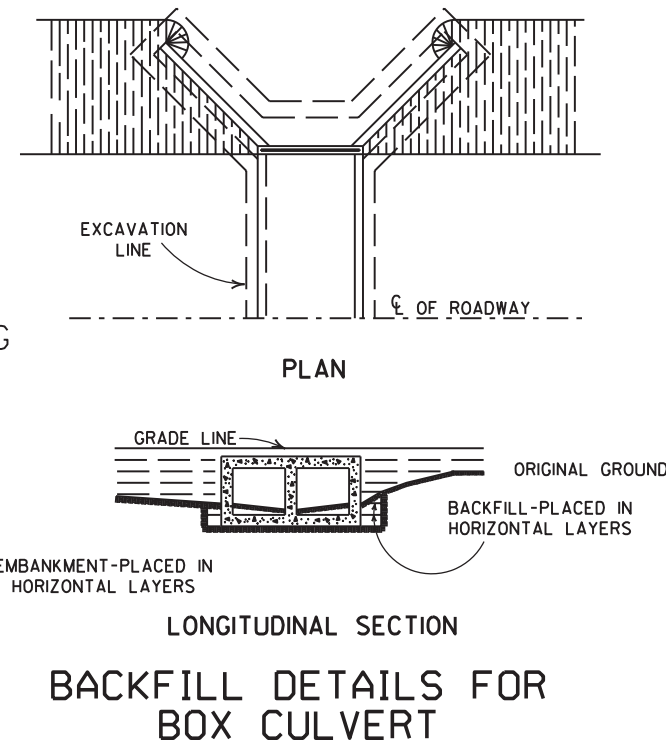
NOTE: FOR ALL SKEWED R.C. BOX CULVERTS THE LENGTH "K" OF THE MODIFIED HEADWALL SHALL BE EQUAL TO THE ROADWAY LENGTH "RL". THE ENDS OF THE HEADWALL SHALL BE CONSTRUCTED PARALLEL TO THE SKEW ANGLE OF THE BOX CULVERT.

R.C. BOX CULVERT HEADWALL MODIFICATIONS

7/26/12	REV. DRAINAGE FILL MATERIAL & DETAIL		ARKANSAS STATE HIGHWAY COMMISSION
12/15/11	REQUIRE WEEP HOLES IN BOX CULVERT WALLS		
5-25-06	REV. GEN. NOTES AND DETAILS FOR WEEP HOLES; BAR DIAGRAM		
11-16-01	ADDED WINGWALL DRAINAGE DETAIL/EDITED GEN. NOTES		REINFORCED CONCRETE BOX CULVERT DETAILS
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		STANDARD DRAWING RCB-1
8-5-93	REVISED PIN DIAMETER TO SPECS.		
8-15-91	DRAWN AND ISSUED		
DATE	REVISION	DATE FILMED	



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



GENERAL NOTES:

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

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

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

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

ARKANSAS STATE HIGHWAY COMMISSION

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

STANDARD DRAWING RCB-2

SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

DEGREE OF CURVE	30 MPH			35 MPH			40 MPH			45 MPH			50 MPH			55 MPH			60 MPH			65 MPH			70 MPH			75 MPH		
	e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)	
		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE
0° 15'	NC			NC			NC			NC			NC			NC			NC			NC			NC			NC		
0° 30'	NC			NC			NC			NC			NC			NC			RC	96		RC	96		RC	96		RC	96	
0° 45'	NC			NC			NC			NC			RC	96		RC	96		0.024	106		0.026	110		0.030	120		0.032	125	
1° 00'	NC			NC			NC			RC	90		0.022	101		0.026	110		0.030	120		0.034	130		0.038	139		0.042	149	
1° 15'	NC			NC			RC	84		0.022	95		0.028	115		0.032	125		0.038	139		0.042	149		0.046	158		0.052	173	
1° 30'	NC			RC	78		0.022	88		0.028	108		0.032	125		0.038	139		0.044	154		0.050	168		0.056	182		0.062	197	
1° 45'	RC	72		RC	78		0.026	97		0.030	113		0.036	134		0.044	154		0.050	168		0.056	182		0.064	202		0.070	216	
2° 00'	RC	72		0.024	86		0.028	101		0.034	122		0.042	149		0.048	163		0.056	182		0.064	202		0.070	216		0.078	235	
2° 15'	RC	72		0.026	90		0.032	109		0.038	131		0.046	158		0.054	178		0.062	197		0.070	216		0.078	235		0.086	254	
2° 30'	0.022	75		0.028	94		0.034	113		0.042	140		0.050	168		0.058	187		0.068	211		0.076	230		0.086	254		0.092	269	
2° 45'	0.024	79		0.030	98		0.038	122		0.046	149		0.054	178		0.064	202		0.072	221		0.082	245		0.092	269		0.098	283	
3° 00'	0.026	83		0.034	105		0.040	126		0.050	158		0.058	187		0.068	211		0.078	235		0.088	259		0.098	283		0.100	288	
3° 15'	0.028	86		0.036	109		0.044	134		0.052	162		0.062	197		0.072	221		0.082	245		0.092	269		0.098	283		0.100	288	
3° 30'	0.030	90		0.038	113		0.046	139	200	0.056	171		0.066	206		0.076	230		0.086	254		0.096	278		0.098	283		0.100	288	
3° 45'	0.032	93		0.040	117		0.050	147		0.058	176		0.070	216		0.080	240		0.090	264		0.096	278		0.098	283		0.100	288	
4° 00'	0.034	97		0.042	121		0.052	151		0.062	185		0.072	221		0.084	250		0.094	274		0.098	283		0.100	288		0.100	288	
4° 15'	0.036	100		0.044	125		0.054	155		0.064	189		0.076	230		0.086	254		0.096	278		0.098	283		0.100	288		0.100	288	
4° 30'	0.036	100		0.046	129		0.056	160		0.068	198		0.078	235		0.090	264		0.096	278		0.098	283		0.100	288		0.100	288	
4° 45'	0.038	104	200	0.048	133		0.060	168		0.070	203		0.082	245		0.092	269		0.098	283		0.098	283		0.100	288		0.100	288	
5° 00'	0.040	108		0.050	137		0.062	172		0.072	207		0.084	250		0.094	274		0.098	283		0.098	283		0.100	288		0.100	288	
5° 30'	0.044	115		0.054	144		0.066	181		0.078	221		0.088	259		0.098	283		0.098	283		0.098	283		0.100	288		0.100	288	
6° 00'	0.046	119		0.058	152		0.070	189		0.082	230		0.092	269		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288	
6° 30'	0.050	126		0.062	160		0.074	198		0.086	239		0.096	278		0.098	283		0.098	283		0.098	283		0.100	288		0.100	288	
7° 00'	0.052	130		0.064	164		0.078	206		0.090	248		0.098	283		0.098	283		0.098	283		0.098	283		0.100	288		0.100	288	
7° 30'	0.054	133		0.068	172		0.080	210		0.092	252		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288	
8° 00'	0.058	140		0.070	176		0.084	219		0.094	257		0.096	261		0.096	261		0.096	261		0.096	261		0.096	261		0.096	261	
8° 30'	0.060	144		0.072	179		0.086	223		0.096	261		0.096	261		0.096	261		0.096	261		0.096	261		0.096	261		0.096	261	
9° 00'	0.062	148		0.076	187		0.088	227		0.098	266		0.098	266		0.098	266		0.098	266		0.098	266		0.098	266		0.098	266	
9° 30'	0.064	151		0.078	191		0.092	235		0.100	270		0.100	270		0.100	270		0.100	270		0.100	270		0.100	270		0.100	270	
10° 00'	0.066	155		0.080	195		0.094	240		0.096	244		0.096	244		0.096	244		0.096	244		0.096	244		0.096	244		0.096	244	
11° 00'	0.070	162		0.084	203		0.096	244		0.096	244		0.096	244		0.096	244		0.096	244		0.096	244		0.096	244		0.096	244	
12° 00'	0.074	169		0.088	211		0.098	248		0.098	248		0.098	248		0.098	248		0.098	248		0.098	248		0.098	248		0.098	248	
13° 00'	0.076	173		0.090	215	250	0.100	252	300	0.100	252	300	0.100	252	300	0.100	252	300	0.100	252	300	0.100	252	300	0.100	252	300	0.100	252	300
14° 00'	0.080	180		0.094	222		0.094	222		0.094	222		0.094	222		0.094	222		0.094	222		0.094	222		0.094	222		0.094	222	
15° 00'	0.082	184		0.096	226		0.096	226		0.096	226		0.096	226		0.096	226		0.096	226		0.096	226		0.096	226		0.096	226	
16° 00'	0.086	191		0.098	230		0.098	230		0.098	230		0.098	230		0.098	230		0.098	230		0.098	230		0.098	230		0.098	230	
17° 00'	0.088	194		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234	
18° 00'	0.090	198		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234	
19° 00'	0.092	202		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234	
20° 00'	0.094	205		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234	
21° 00'	0.096	209		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234	
22° 00'	0.096	209		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234	
23° 00'	0.098	212		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234	
24° 00'	0.098	212		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234	
25° 00'	0.100	216		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234		0.100	234	

D MAX = 28° 30'

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:

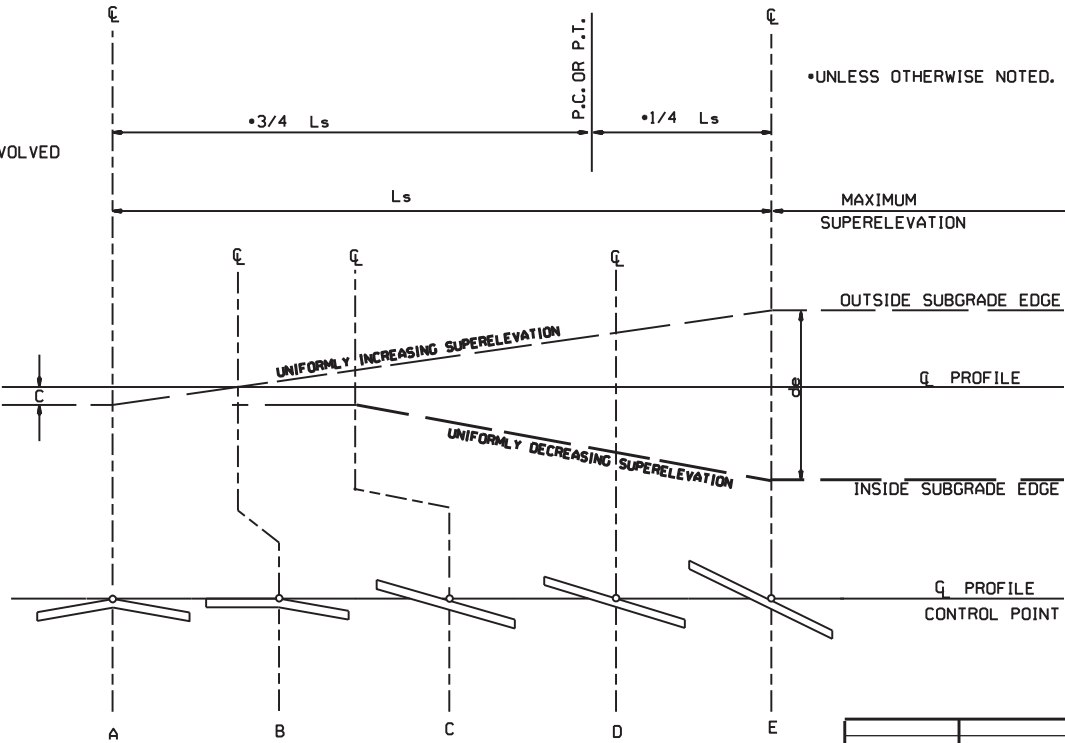
3 LANE UNDIVIDED - - - - +20%
4 LANE UNDIVIDED - - - - +50%
5 LANE UNDIVIDED - - - - +80%
6 LANE UNDIVIDED - - - - +100%

NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.
RATE OF SUPERELEVATION SHALL BE COMPUTED ON STRAIGHT LINE METHOD USING APPLICABLE Ls.

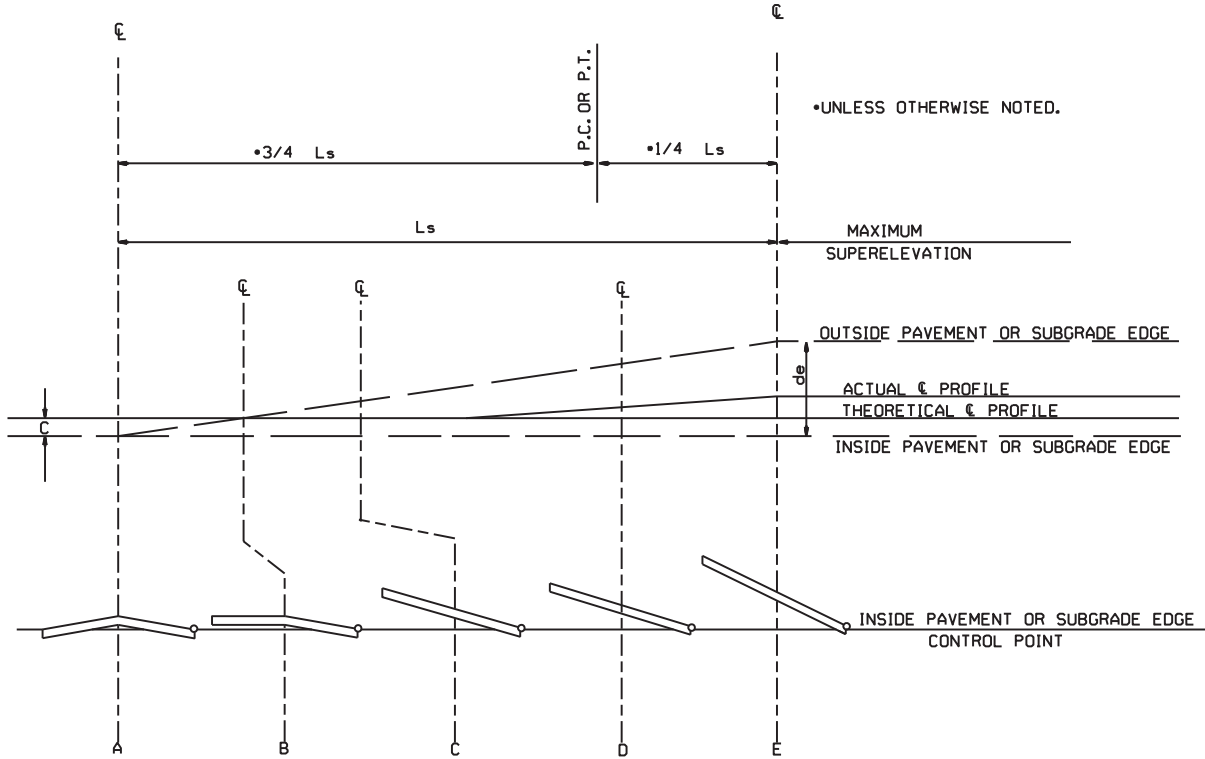
SUPERELEVATION FORMULA = $\frac{Lde}{Ls}$

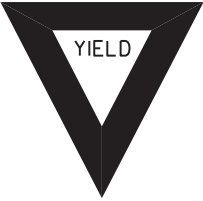
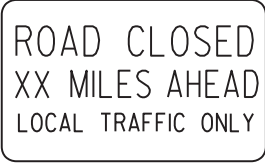
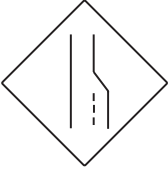
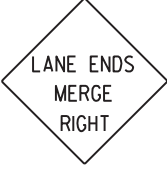
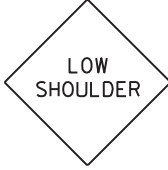
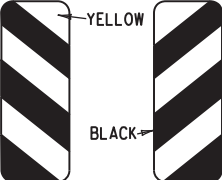
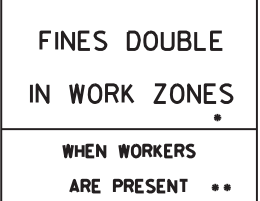
ABBREVIATIONS

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

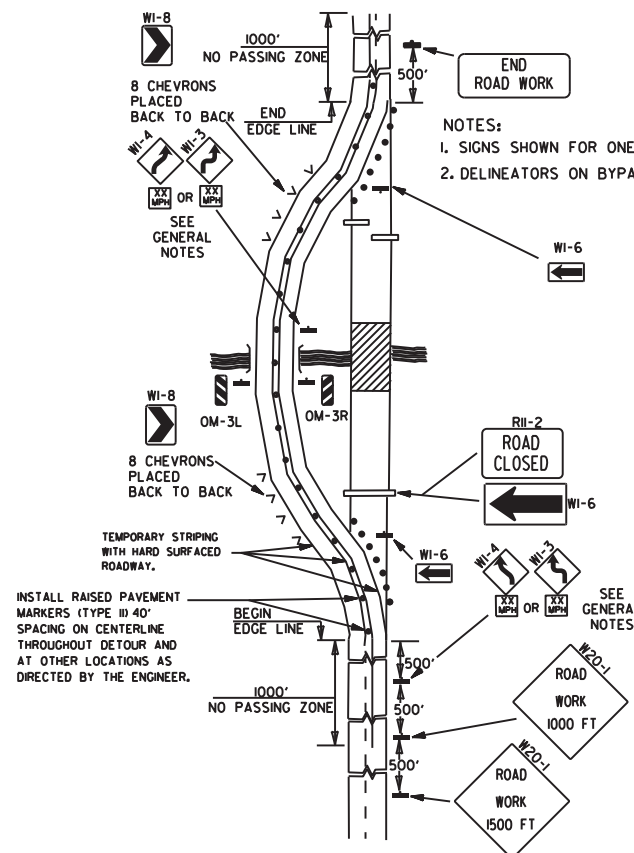


STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE

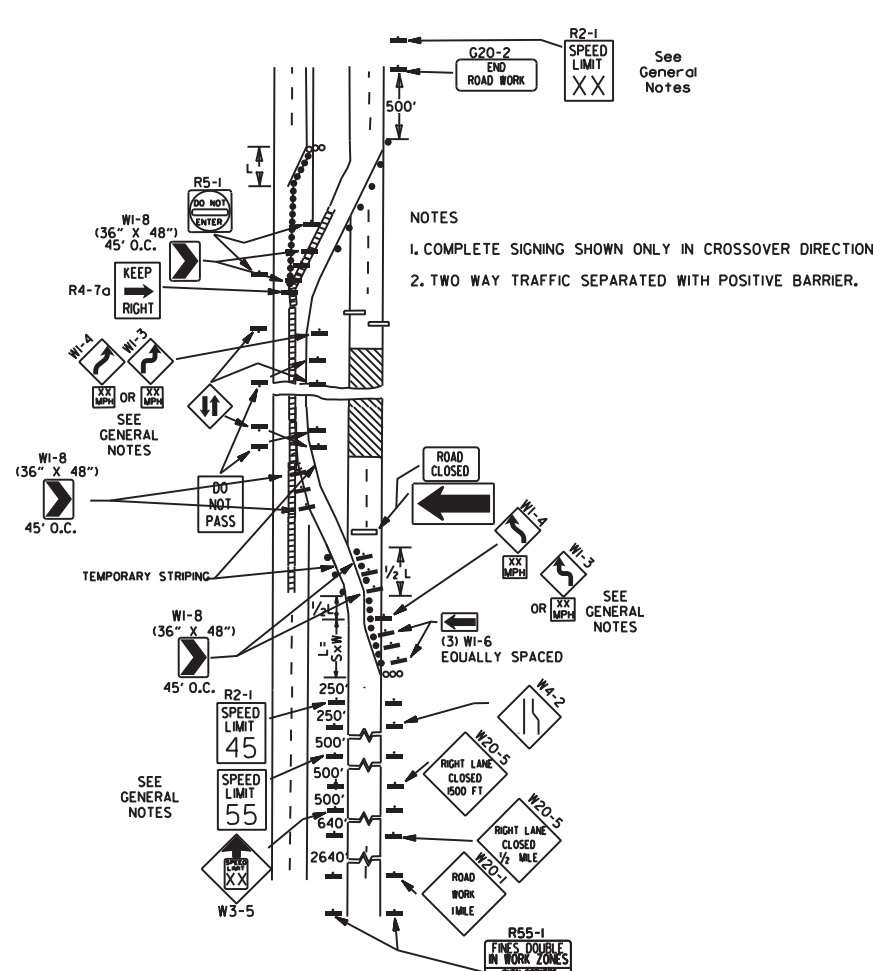


RI-1  STANDARD 30"x30" EXPRESSWAY 36"x36" SPECIAL 48"x48"	RI-2  STD. 36"x36"x36" EXPWY. 48"x48"x48" FWY. 60"x60"x60"	R2-1  STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"	W3-5  STD. 36"x36" EXPWY. 48"x48" FWY. 48"x48"	W3-5a  STD. 36"x36" EXPWY. 48"x48" FWY. 48"x48"	R4-1  STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"	R4-2  STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"	ADVANCE DISTANCES (XXXX) 500 FT 1/2 MILE 1000 FT 3/4 MILE 1500 FT 1 MILE AHEAD GENERAL NOTES: 1. ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION. 2. TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND REMOVED THEREAFTER. 3. EXISTING SIGNS AND CONSTRUCTION SIGNS SHALL BE KEPT IN PROPER POSITION, AND BE CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED. SIGNS THAT ARE DAMAGED, DEFACED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED. 4. SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 50. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE. 5. SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3. 6. POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE. 7. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE, EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS. 8. FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS. 9. MOST OF THE SIGNS SHOWN ARE ORIENTED TO THE RIGHT. HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT. 10. R55-1 SIGNS SHALL BE PLACED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE SIGN SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN. • NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED FOR ALL PROJECTS.
R5-1  STD. 30"x30" EXPWY. 36"x36" SPECIAL 48"x48"	R11-2  48"x30"	R11-3A  60"x30"	R11-4  60"x30"	W21-5a  STD. 36"x36" FWY. 48"x48"	W1-1  STD. 36"x36" FWY. 48"x48"	W1-2  STD. 36"x36" FWY. 48"x48"	
W1-3  STD. 48"x48"	W1-4  STD. 48"x48"	W1-6  STD. 48"x24" SPECIAL 60"x30"	W1-8  STD. 18"x24" SPECIAL 24"x30" EXPWY. 30"x36" FWY. 36"x48"	W3-1  STD. 36"x36" SPECIAL 48"x48"	W3-2  STD. 36"x36" SPECIAL 48"x48"	W4-2  STD. 36"x36" FWY. 48"x48"	
W5-1  STD. 36"x36" SPECIAL 48"x48"	W6-3  EXPWY. 36"x36" SPECIAL 48"x48"	W8-7  EXPWY. 36"x36" FWY. 48"x48"	W9-2  STD. 36"x36" FWY. 48"x48"	W13-1  STD. 24"x24"	W20-1  STD. 48"x48"	W20-2  STD. 48"x48"	W20-3  STD. 48"x48"
W20-4  STD. 48"x48"	W20-5  STD. 48"x48"	W20-7a  STD. 36"x36" FWY. 48"x48"	W21-2  STD. 30"x30" SPECIAL 36"x36"	W21-5  STD. 30"x30" SPECIAL 36"x36"	W24-1  STD. 36"x36"	W1-4b  STD. 48"x48"	R56-1  STD. 18"x18"
W8-II  STD. 36"x36" FWY. 48"x48"	W8-9  STD. 36"x36" FWY. 48"x48"	G20-1  60"x24"	G20-2  48"x24"	OM-3L OM-3R  12"x36"	M4-9  STD. 30"x24" SPECIAL 48"x36" SPECIAL 60"x48"	M4-10  48"x18"	R55-1  36"x60" • USE 6" C LETTERS •• USE 4" D LETTERS

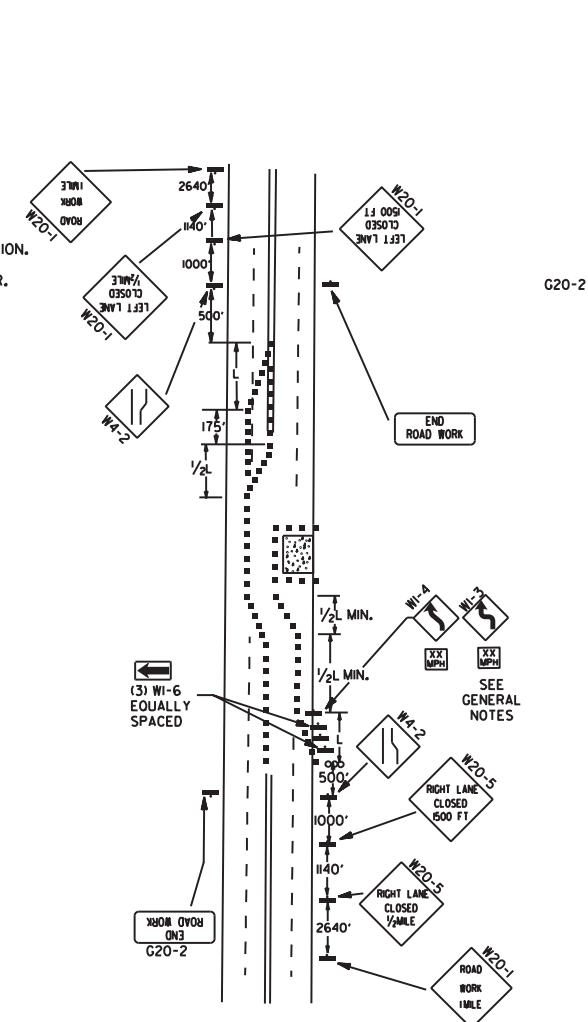
11-07-19	REVISED FOR MASH	
4-13-17	DELETED RSP-1 & ADDED W21-5a	
9-2-15	REVISED REDUCED SPEED LIMIT AHEAD SIGNS REVISED ROAD WORK NEXT XX MILES	
12-15-11	REVISED W24-1	
11-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
11-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
11-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
11-18-98	ADDED NOTE	
6-26-97	REVISED NOTE 5	
4-03-97	REVISED NOTE 5	
10-18-96	ADDED CONTROLLED ACCESS HWY. SIGN & TO NOTE 7	
10-12-95	ADDED R55-1	
6-8-95	REVISED TO CORRECT SIGN ILLUSTRATIONS	6-8-95
2-2-95	REVISED PER PART VI, MUTCD SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	
DATE	REVISION	FILMED



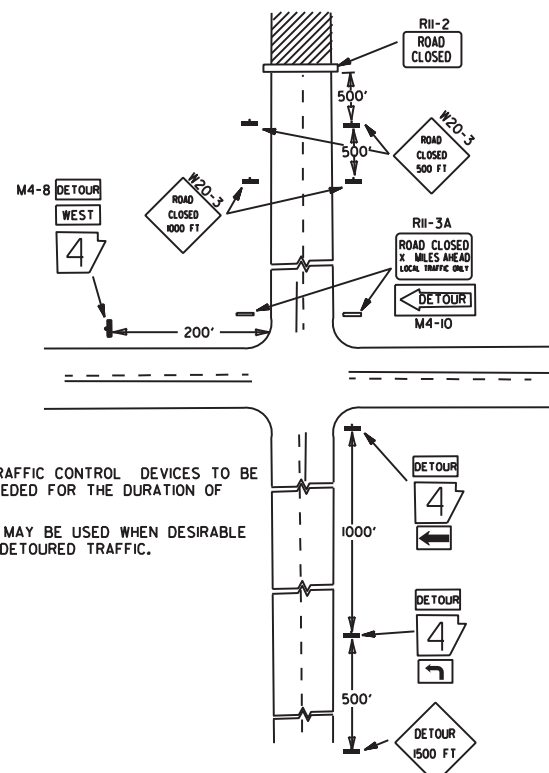
(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.



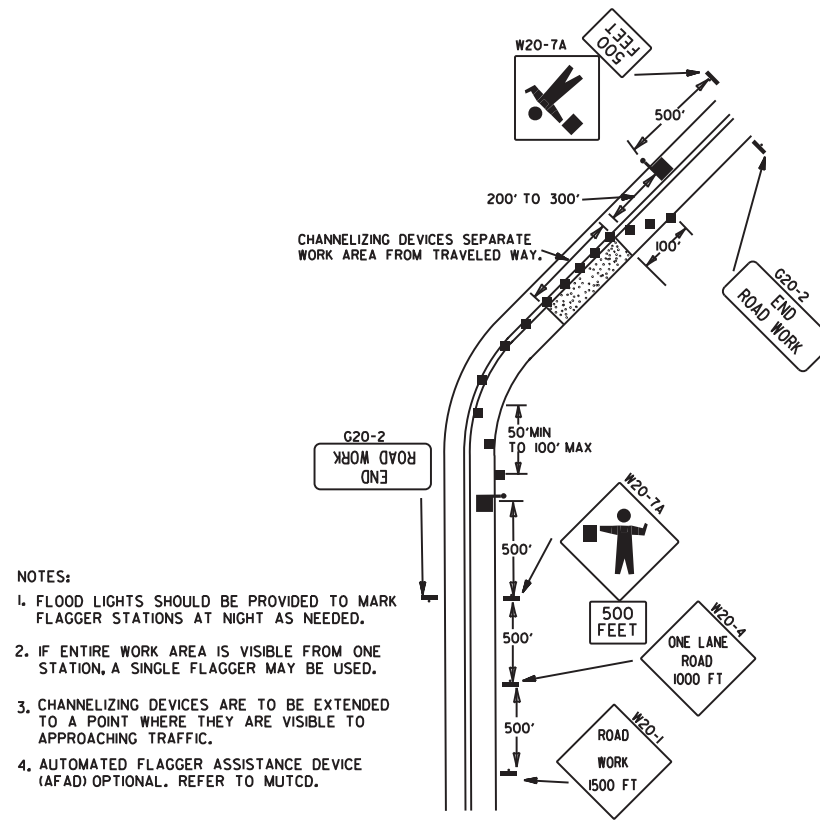
(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.



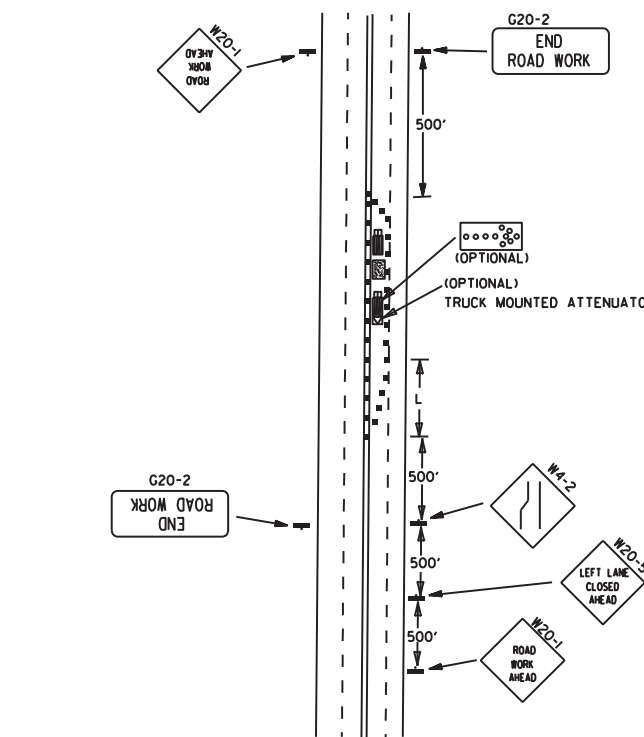
(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



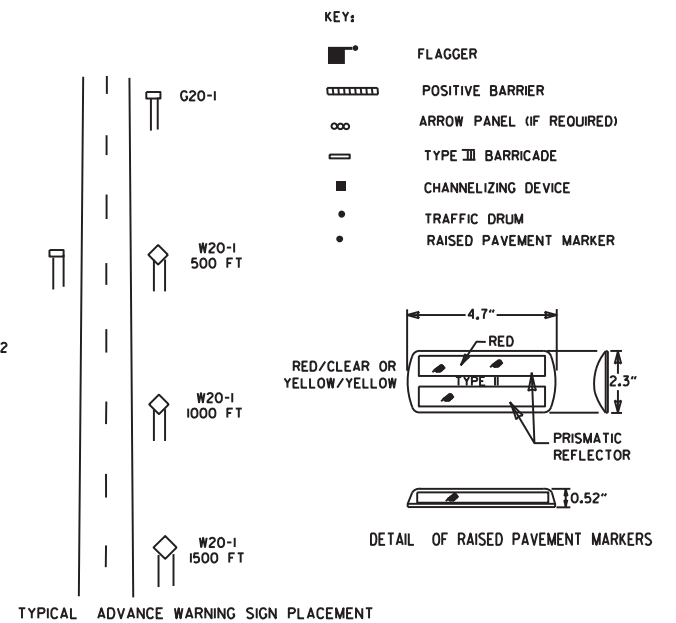
(D) TYPICAL APPLICATION - ROADWAY CLOSED BEYOND DETOUR POINT.



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

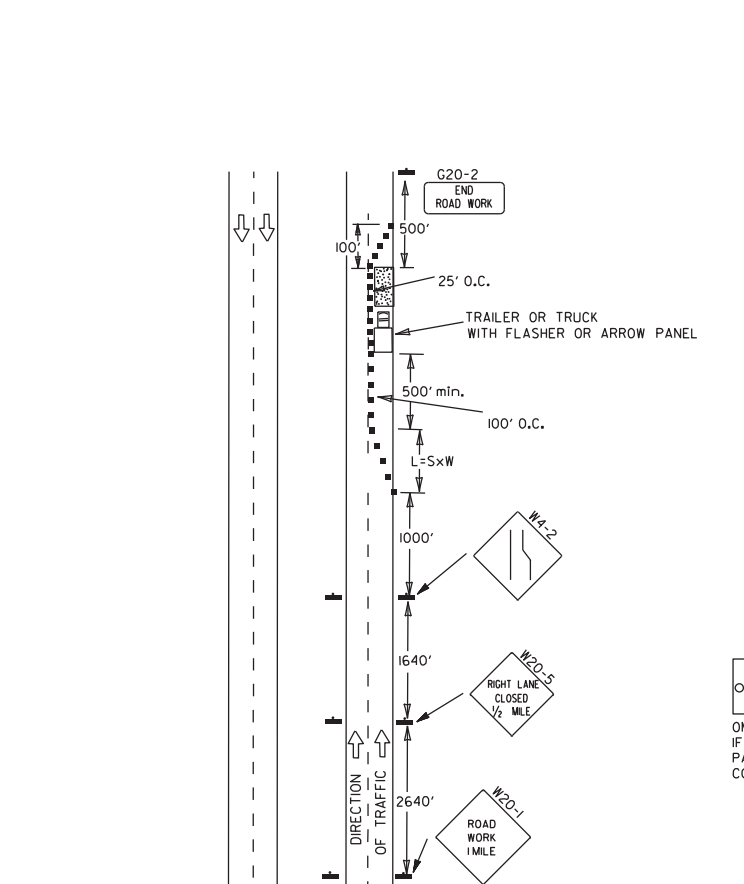


(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

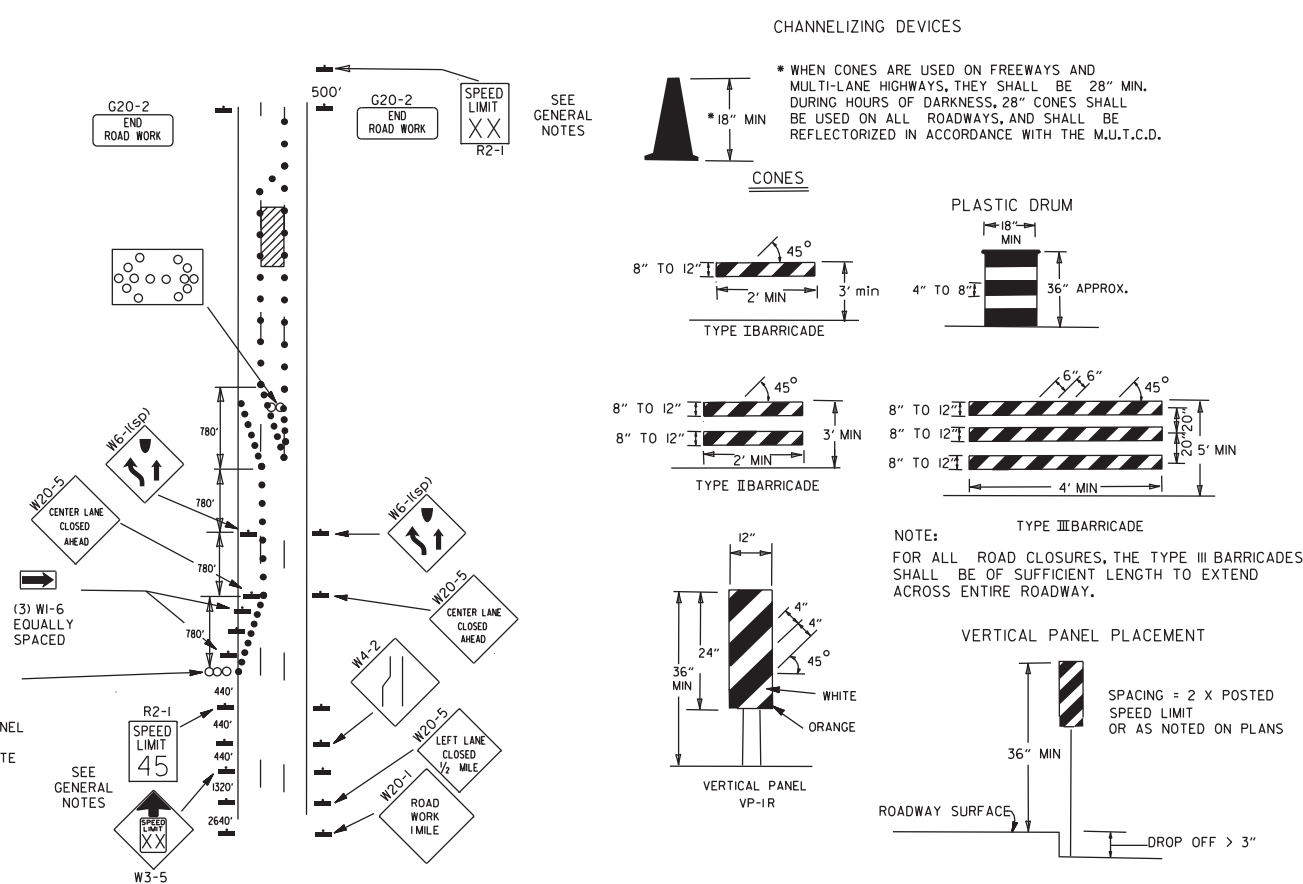


- GENERAL NOTES:
1. THE MAINTENANCE DIVISION SHALL CONDUCT A BALL BANK STUDY TO DETERMINE THE ADVISORY SPEED LIMIT PRIOR TO OPENING TO TRAFFIC. THE ADVISORY SPEED WILL BE POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS.
 2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-145MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1/2 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
 3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(65) SHALL BE OMITTED. ADDITIONAL R2-155MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1/2 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
 4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
 5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
 6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
 7. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE. PAYMENT FOR TRAFFIC DRUMS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR VARIOUS TRAILER MOUNTED DEVICES.
 8. 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 ARDOT QUALIFIED PRODUCTS LIST.
 9. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).

05-20-21	REVISED NOTE 7	
11-07-19	REVISED NOTE 1, ADDED NOTE 9	
9-2-15	REVISED NOTE 2, ADDED NOTE 8, REVISED DRAWING (A) & REPLACED R2-5A WITH W3-5	
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 (a) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON W1-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	
DATE	REVISION	FILMED



(A) TYPICAL APPLICATION - DAYTIME MAINTENANCE OPERATIONS OF SHORT DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



(B) TYPICAL APPLICATION - 3-LANE ONEWAY ROADWAY WHERE CENTER LANE IS CLOSED.

KEY:

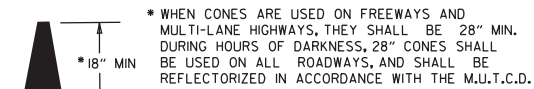
- ARROW PANEL (IF REQUIRED)
- CHANNELIZING DEVICE
- TRAFFIC DRUM

GENERAL NOTES:

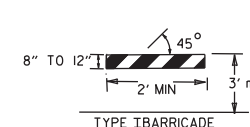
1. A SPEED LIMIT REDUCTION MAY BE IMPLEMENTED ONLY WHEN DESIGNATED IN THE PLAN OR WHEN RECOMMENDED BY THE ROADWAY DESIGN DIVISION.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(65) SHALL BE OMITTED. ADDITIONAL R2-1 55MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. THE G20-1 SIGN WILL BE REQUIRED ON JOBS OF OVER TWO MILES IN LENGTH. WHEN THE LANE CLOSURE IS NOT AT THE BEGINNING OF THE PROJECT, THE G20-1 SIGN SHALL BE ERECTED 125' IN ADVANCE OF THE JOB LIMIT. ADDITIONAL W20-1(1 MILE) SIGNS ARE NOT REQUIRED IN ADVANCE OF LANE CLOSURES THAT BEGIN INSIDE THE PROJECT LIMITS.
8. FLAGGERS SHALL USE STOP/SLOW PADDLES FOR CONTROLLING TRAFFIC THROUGH WORK ZONES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. ALL PLASTIC DRUMS AND CONES SHALL MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
10. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE. PAYMENT FOR TRAFFIC DRUMS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR VARIOUS TRAILER MOUNTED DEVICES.
11. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).

(C) TYPICAL APPLICATION - CONSTRUCTION OPERATIONS OF INTERMEDIATE TO LONG TERM DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.

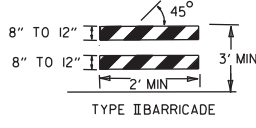
CHANNELIZING DEVICES



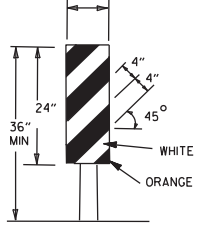
CONES



TYPE I BARRICADE

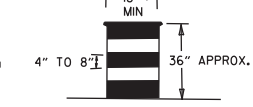


TYPE II BARRICADE

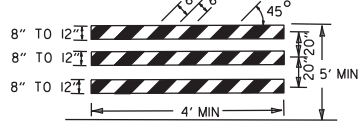


TYPE III BARRICADE

PLASTIC DRUM



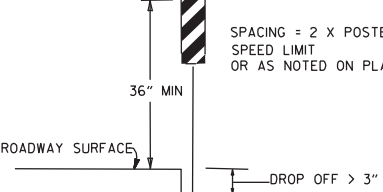
PLASTIC DRUM



TYPE III BARRICADE

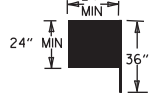
NOTE: FOR ALL ROAD CLOSURES, THE TYPE III BARRICADES SHALL BE OF SUFFICIENT LENGTH TO EXTEND ACROSS ENTIRE ROADWAY.

VERTICAL PANEL PLACEMENT



VERTICAL PANEL PLACEMENT

FLAG



FLAG SHALL BE OF GOOD GRADE RED MATERIAL

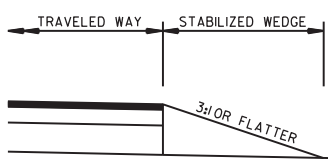
(D) TYPICAL APPLICATION - CLOSING MULTIPLE LANES OF A MULTILANE HIGHWAY.

TRAFFIC CONTROL DEVICES

VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL	
		NON-INTERSTATE	
		≤ 45 MPH	> 45 MPH
≤ 1"	CENTERLINE	W8-11	W8-11
> 1"	CENTERLINE	W8-11 AND CENTERLINE LANE STRIPING	W8-11 AND CENTERLINE LANE STRIPING
≤ 3"	CENTERLINE	STANDARD LANE CLOSURE ⁽⁶⁾	STANDARD LANE CLOSURE ⁽⁶⁾
> 3"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9 AND TRAFFIC DRUMS ⁽¹⁾	W8-9 AND TRAFFIC DRUMS ⁽¹⁾
> 3"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS ⁽¹⁾	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS ⁽¹⁾
> 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS ⁽¹⁾	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS ⁽²⁾
> 18"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS ⁽¹⁾	A STABILIZED WEDGE, W8-17, EDGE LINE STRIPING AND TRAFFIC DRUMS ⁽³⁾
> 24"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	PRECAST CONCRETE BARRIER ⁽⁴⁾ & EDGE LINES	PRECAST CONCRETE BARRIER ⁽⁴⁾ & EDGE LINES

INTERSTATE		
VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL
≤ 3"	CENTERLINE	W8-11 AND LANE STRIPING
≤ 3"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9, EDGE LINE STRIPING, AND TRAFFIC DRUMS ⁽²⁾
> 3"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS ⁽²⁾
> 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	PRECAST CONCRETE BARRIER & EDGE LINES

INTERSTATE AND NON-INTERSTATE		
FORESLOPE	HEIGHT	TRAFFIC CONTROL
1:1	> 2 FT	PRECAST CONCRETE BARRIER
2:1	≤ 5 FT	TRAFFIC DRUMS
2:1	> 5 FT	PRECAST CONCRETE BARRIER
Flatter than 2:1	N/A	TRAFFIC DRUMS

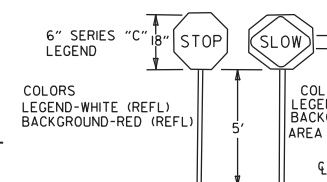


STABILIZED WEDGE

NOTE: MATERIALS FOR THE STABILIZED WEDGE SHALL MEET THE REQUIREMENTS PROVIDED IN SECTION 603.02 OF THE STANDARD SPECIFICATIONS.

- GENERAL NOTES:
1. WHEN THE SHOULDER AREA IS USED AS PART OF THE TRAVELED LANE AND THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, THEN VERTICAL PANELS SHALL BE USED.
 2. WHEN THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, A STABILIZED WEDGE SHALL BE USED. PRECAST CONCRETE BARRIER WALL CAN BE USED IN LIEU OF A STABILIZED WEDGE, W8-17 SIGN, EDGE LINE STRIPING, AND TRAFFIC DRUMS.
 3. A STABILIZED WEDGE, W8-17 SIGN, EDGE LINE STRIPING, AND TRAFFIC DRUMS CAN BE USED IN LIEU OF PRECAST CONCRETE BARRIER WALL, IF AND WHERE DIRECTED BY THE ENGINEER.
 4. W21-5, W21-5a, AND/OR W21-5b SIGNS SHALL BE USED WHERE THE ROADWAY IS UNOBSTRUCTED IF AND WHERE DIRECTED BY THE ENGINEER.
 5. TIME LIMITATIONS MUST CONFORM TO SECTION 603 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).

STOP SLOW PADDLE



STOP SLOW PADDLE

NOTE: MATERIALS FOR THE STABILIZED WEDGE SHALL MEET THE REQUIREMENTS PROVIDED IN SECTION 603.02 OF THE STANDARD SPECIFICATIONS.

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ARKANSAS STATE HIGHWAY COMMISSION
STANDARD TRAFFIC CONTROLS
FOR HIGHWAY CONSTRUCTION
STANDARD DRAWING TC-3

2'-0"

2'

3"

3"

6"

3/4" CHAMFER

10" R

1"

1'-7"

2'-8"

10"

6"

3"

PAVEMENT OR GROUND LINE

1/16" DRAFT (TYP. BOTH SIDES)

SYMMETRICAL ABOUT C

CONCRETE BARRIER

(2) #4 S-1 BARS, (1) OVER EACH LIFTING HOLE

(2) #4 S-2 BARS, (1) AROUND EACH PAIR OF STAB. SLOT HOLES

(6) #5 H-2 BARS, (3) PER DRAIN SLOT

TAPERED SLOTTED HOLES FOR STABILIZATION PINS (SEE - BARRIER STABILIZATION DETAILS)

(6) *5 HORIZ. H-1
BARS, (3) EACH ON
INSIDE OF V-1 BARS

(2) *4 H-3 BARS,
TIED TO H-1 BARS
TO SUPPORT
THE END OF
H-2 BARS

PAVEMENT OR
GROUND LINE

TAPERED SLOTTED HOLE:
 1 1/4" x 4" ON TOP &
 1 1/2" x 4 1/4" ON BOTTOM
 FOR STABILIZATION PIN
 OR THREADED BOLT
 BOTTOM 4 1/4"

TOP 4"

1 1/2"
 1 1/4"

3/8" TO 1/2" FORMED
 RADIUS (TYPICAL
 FOR EACH CORNER)

2" DIA. PLATE WASHER WELDED TO TOP OF PIN HEAD

7"

6" $\pm \frac{1}{2}$ "

7 $\frac{1}{2}$ "

E

1" DIA. STABILIZATION PIN

(E) 4" - CONCRETE PAVEMENT
8" - ASPHALT PAVEMENT
12" - SHOULDER AREAS

NOTE: " THREADED INSERTS SHALL BE CAST IN PLACE FOR ALL NEW BRIDGE DECKS AND DRILLED AND GROUTED FOR EXISTING BRIDGE DECKS. INSERTS SHALL HAVE A MINIMUM ULTIMATE LOAD CAPACITY OF 8000 LBS. IN TENSION. AFTER REMOVAL OF BARRIER, BOLTS, AND ANGLES, THE INSERTS SHALL BE FILLED WITH APPROVED NON-SHRINK EPOXY.

BRIDGE DECKS

II-07-19	REVISED NOTE 3	
2-27-14	REVISED BARRIER STABILIZATION DETAIL	
10-15-09	ADDED REFERENCE TO MASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
II-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
II-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02	ISSUED NEW DRAWING	
DATE	REVISION	FILMED

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

STANDARD DRAWING TC-4

The diagram illustrates the plan view of a bridge deck. Key features include:

- Bridge End:** Indicated by vertical lines on the left and right sides of the main bridge structure.
- C.L. Bridge:** The centerline of the bridge, shown as a horizontal line.
- Proposed Cut Line:** A dashed line indicating the proposed cut for the bridge deck.
- Delineators @ 10' spacing (typ.):** Small vertical lines along the bridge deck edges.
- Parallel to C.L. Br.:** A line parallel to the centerline of the bridge.
- Precast Unit typ.:** A rectangular unit shown in the bridge deck.
- Taper Rate 10:1:** A dimension indicating the taper of the bridge deck.
- Traffic:** Arrows indicating traffic flow in both directions.
- Approach Pavement:** The pavement area leading up to the bridge.
- Shld. Approach Pavement:** The shoulder area of the approach pavement.
- Special End Unit:** Units at the ends of the bridge deck.
- Offset Distance:** A dimension labeled with an asterisk (*) indicating the offset distance from the bridge end to the approach pavement.
- 40' Min.:** A dimension indicating a minimum length of 40 feet.
- Traffic Lane:** A dimension labeled with an asterisk (*) indicating the traffic lane width.

```

** Offset Distance for
    Two Way Traffic Only

```

Diagram illustrating Barrier Placement Along Roadway with Offset. The diagram shows a curved roadway with a centerline (C.L. Roadway). A barrier is placed along the edge, starting with a 'Special End Unit' and followed by 'Precast Unit typ.' and 'Delineators @ 10' spacing (typ.)'. The barrier is offset from the roadway edge by a 'Taper Rate 10:1'. The distance from the barrier to the roadway edge is '40' Min.'. The barrier is labeled 'BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET'.

- * Offset Distance
(See Table)

```

** Offset Distance
    For Two Way
    Traffic Only

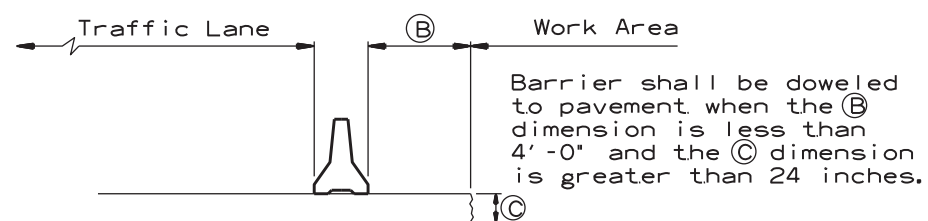
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If offset distance is not attainable,
then see "Barrier Placement With Attenuator"
Detail shown below.

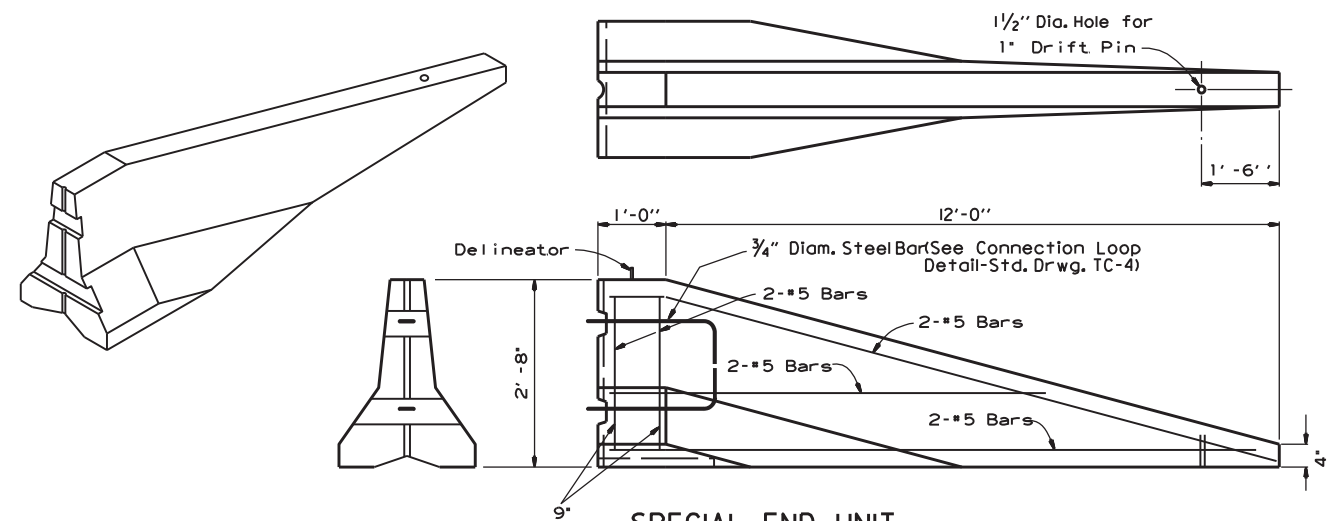
No Scale

```
* * Offset Distance
      For Two Way
      Traffic Only
```

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



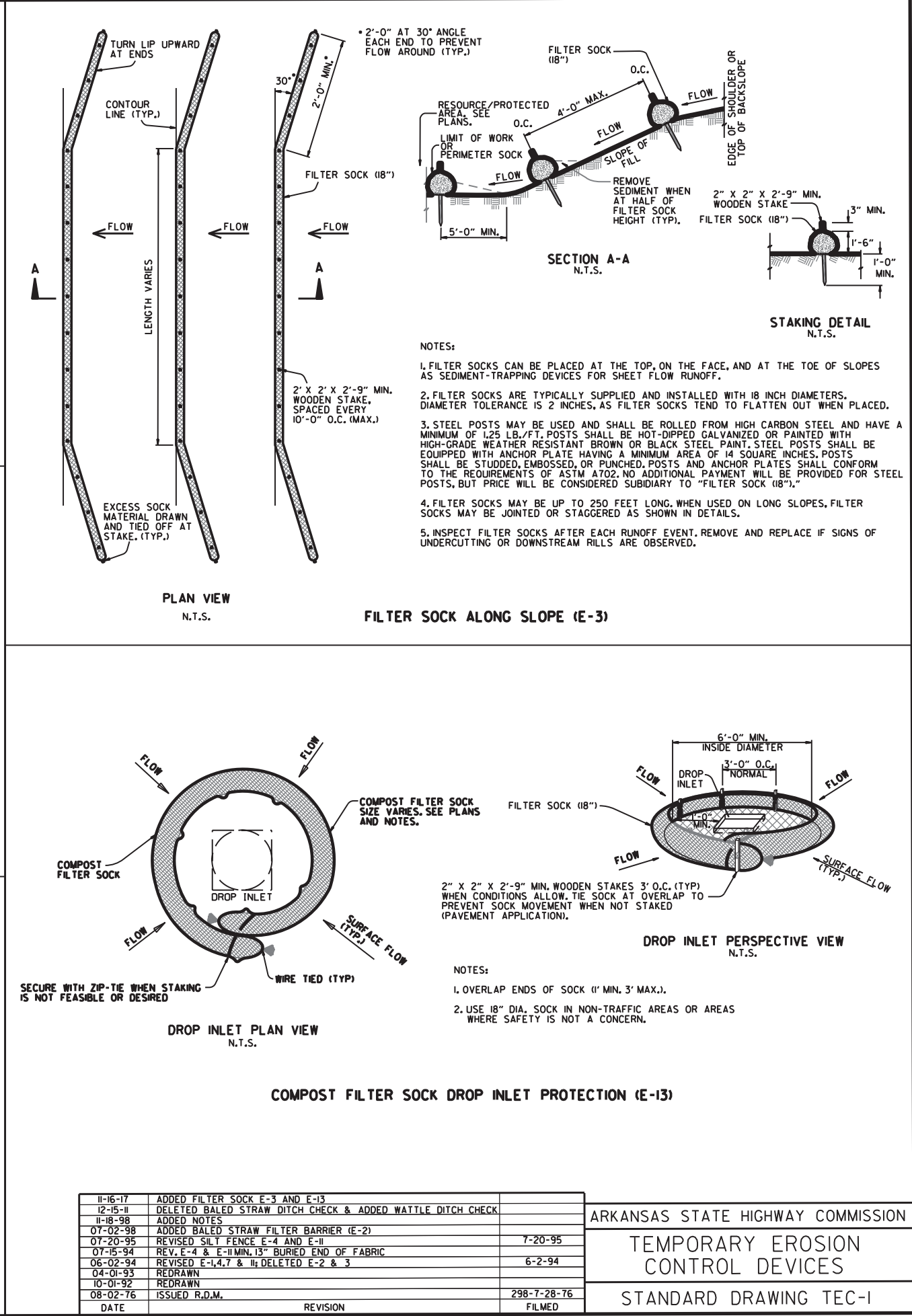
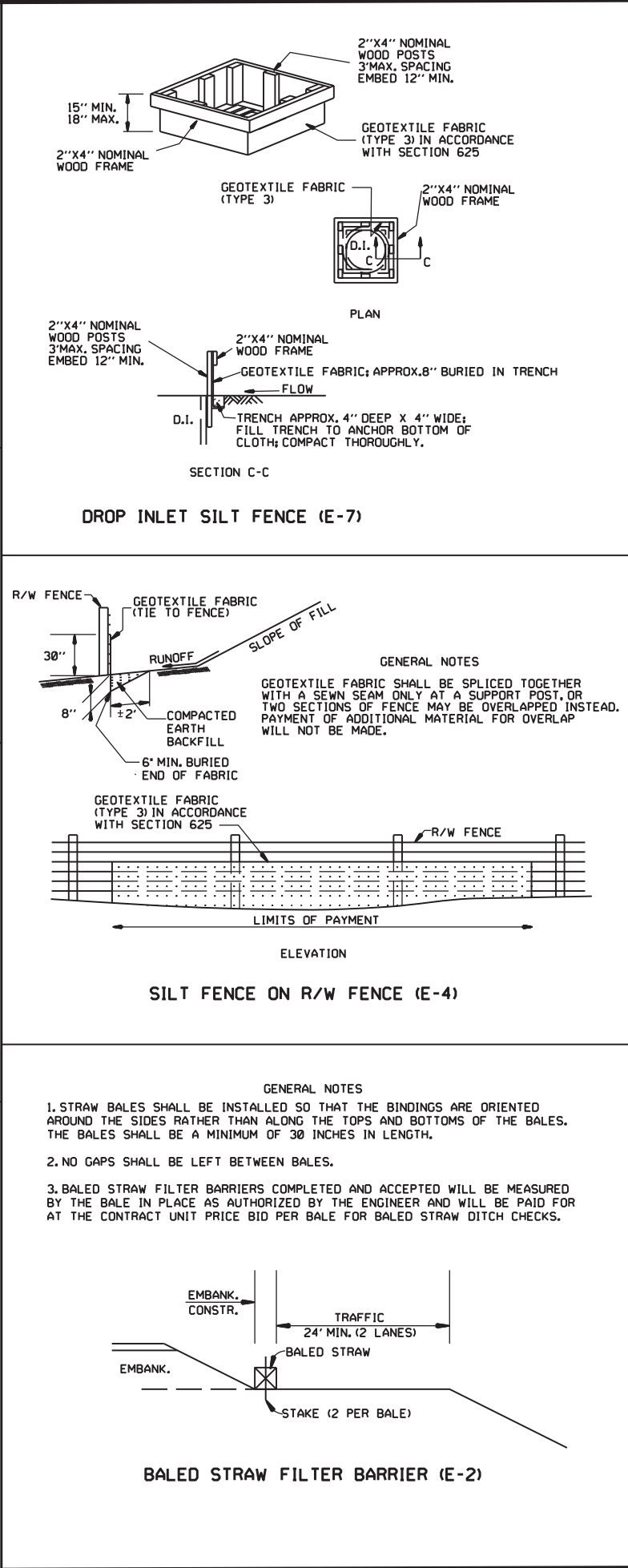
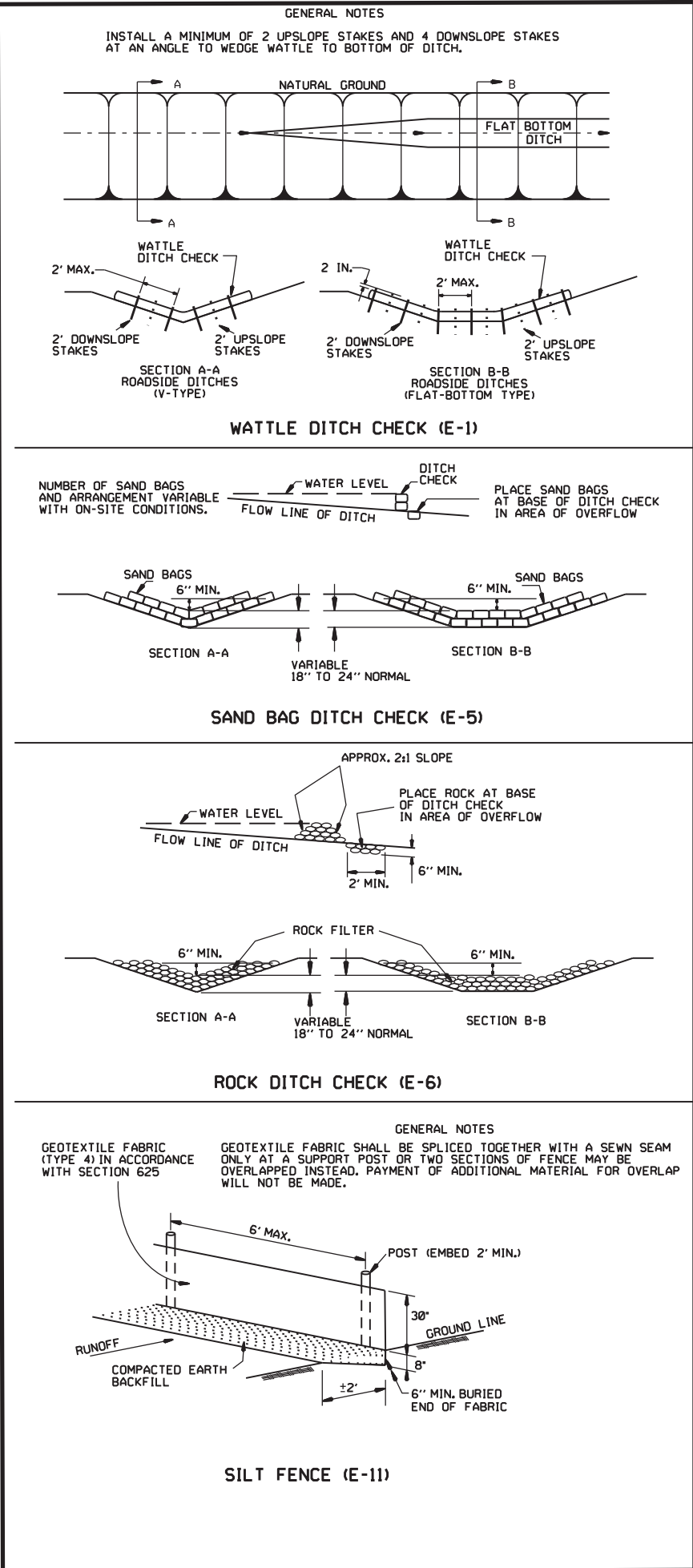
No Scale



No Scale

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

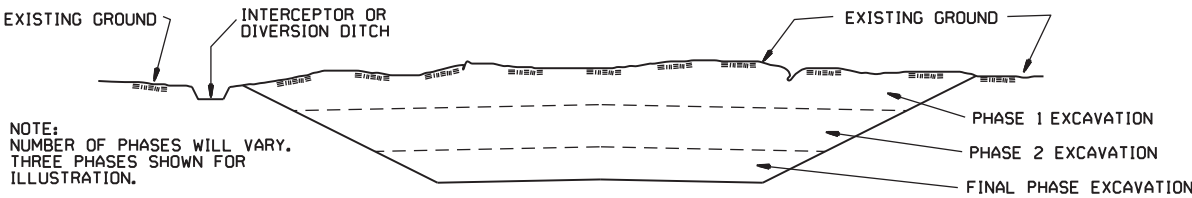
			ARKANSAS STATE HIGHWAY COMMISSION
			STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER
11-07-19	REVISED NOTE		STANDARD DRAWING TC-5
10-15-09	ADDED REFERENCE TO MASH		
5-25-06	REVISED BARRIER PLACEMENT		
8-22-02	ISSUED NEW DRAWING		
DATE	REVISION	FILMED	



CLEARING AND GRUBBING

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

EXCAVATION

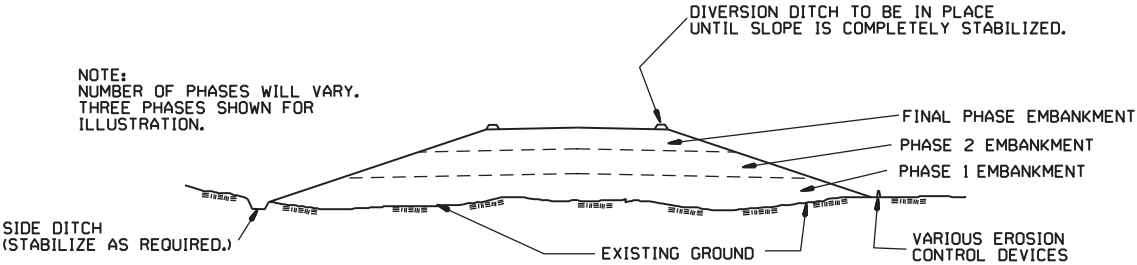


GENERAL NOTE

ALL CUT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE EXCAVATED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

- CONSTRUCTION SEQUENCE
- 1. EXCAVATE AND STABILIZE INTERCEPTOR AND/OR DIVERSION DITCHES.
 - 2. PERFORM PHASE 1 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
 - 3. PERFORM PHASE 2 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
 - 4. PERFORM FINAL PHASE OF EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING. STABILIZE DITCHES. CONSTRUCT DITCH CHECKS, DIVERSION DITCHES, SEDIMENT BASINS, OR OTHER EROSION CONTROL DEVICES AS REQUIRED.

EMBANKMENT



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
			STANDARD DRAWING TEC-3
11-03-94	CORRECTED SPELLING		
6-2-94	Drawn & Issued	6-2-94	
DATE	REVISION	FILMED	