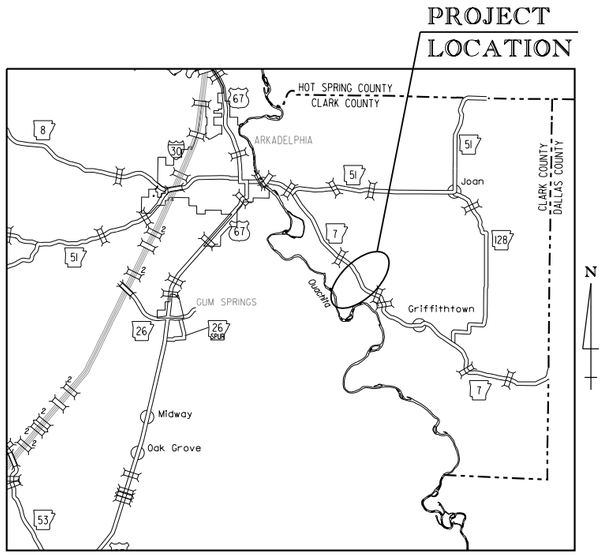
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070571	1	39
		HWY. 7 FLOOD DAMAGE REPAIR (CLARK CO.) (S)				



VICINITY MAP

ARKANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS FOR STATE HIGHWAY

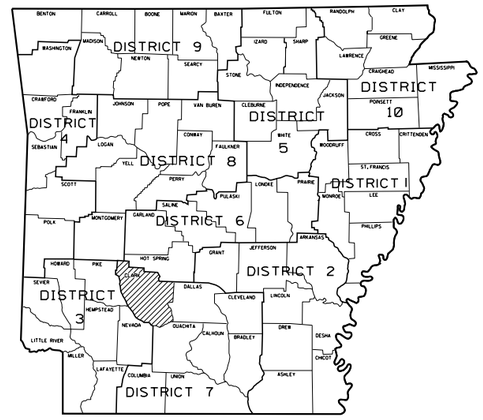
HWY. 7 FLOOD DAMAGE REPAIR (CLARK CO.) (S)

CLARK COUNTY

ROUTE 7 SECTION 6

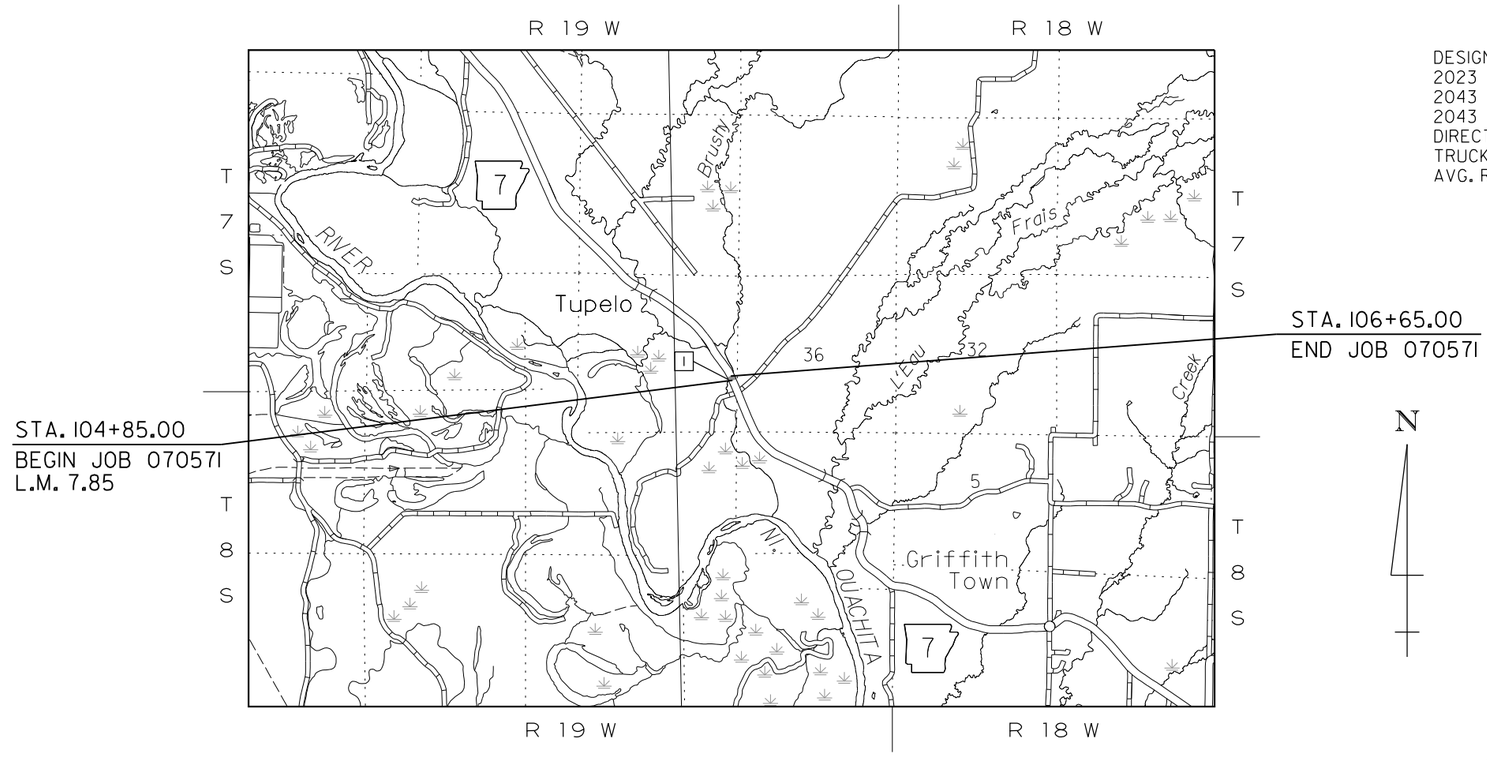
JOB 070571

FED. AID PROJ. ER-0010 (56)



ARKANSAS HIGHWAY DISTRICT 7

NOT TO SCALE



STRUCTURES OVER 20'-0" SPAN

[1] STA. 105+84 CONSTRUCT
SEXT. 10' X 5' X 78' R.C. BOX CULVERT
5° RT. FWD. SKEW
WITH 3:1 WINGS LT. & RT.
Q50 = 1265 CFS D.A. = 3.31 SQ. MI.
TOTAL Q50 = 1981 CFS WITH 7.16 CFS
OVERFLOW FROM TUPELO CREEK
SPAN = 64.33'

· DESIGN TRAFFIC DATA ·

DESIGN YEAR	2043
2023 ADT	1600
2043 ADT	1800
2043 DHV	198
DIRECTIONAL DISTRIBUTION	60%
TRUCKS	14%
AVG. RUNNING SPEED	50 MPH

PROJECT COORDINATES

	BEGIN	MID-POINT	END
LATITUDE	N 34°04'38"	N 34°04'39"	N 34°04'40"
LONGITUDE	W 92°59'38"	W 92°59'38"	W 92°59'39"
STATION	104+85.00	105+75.00	106+65.00

GROSS LENGTH OF	PROJECT	180.00	FEET OR	0.034	MILES
NET "	" ROADWAY	115.67	" "	0.022	"
NET "	" BRIDGES	64.33	" "	0.012	"
NET "	" PROJECT	180.00	" "	0.034	"

CERTIFICATE OF AUTHORIZATION
GARVER LLC
No. 766
ARKANSAS ENGINEER

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14994
DUSTIN L. TACKETT
DIGITALLY SIGNED 08/11/2023

dewerclark 8/9/2023 3:51:11 PM
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070571	2	39
		INDEX OF SHEETS AND STANDARD DRAWINGS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13653
ADAM E. WIERCIAK

DIGITALLY SIGNED 08/11/2023

INDEX OF SHEETS

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
SI-1	DETAILS OF SPECIAL ITEMS	10-25-18
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

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REVISED DATE:

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070571	3	39
		GOVERNING SPECIFICATIONS AND GENERAL NOTES				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13653
ADAM E. WIERCIAK

DIGITALLY SIGNED 09/12/2023

GOVERNING SPECIFICATIONS

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

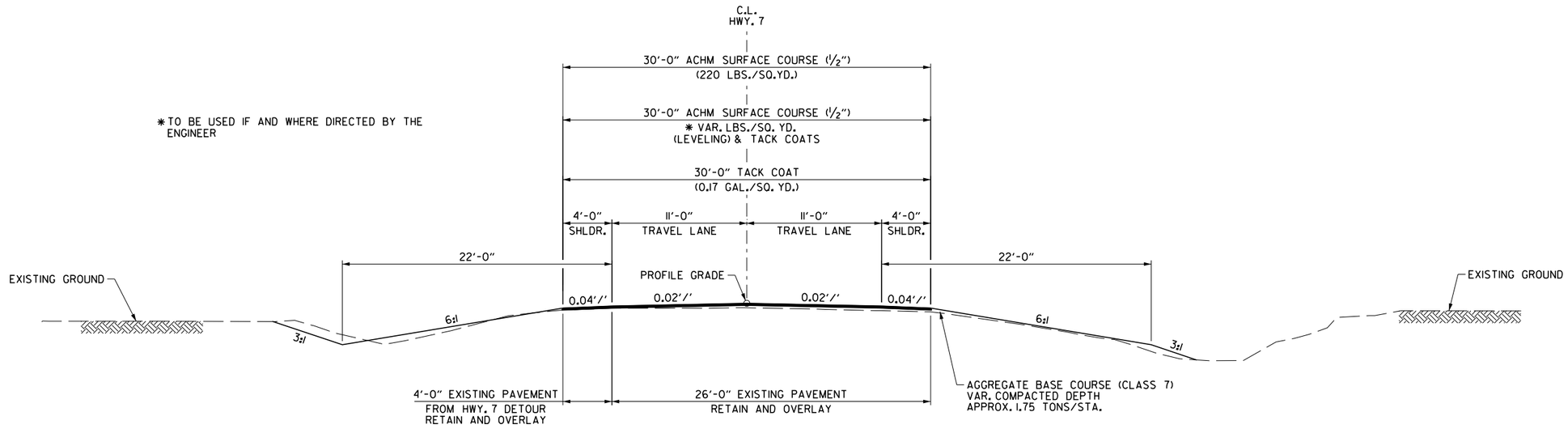
NUMBER	TITLE
ERRATA_____	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273__	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273__	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA-1273__	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHWA-1273__	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273__	SUPPLEMENT - WAGE RATE DETERMINATION
100-3_____	CONTRACTOR'S LICENSE
100-4_____	DEPARTMENT NAME CHANGE
102-2	ISSUANCE OF PROPOSALS
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
409-2_____	ASPHALT LABORATORY FACILITY
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
416-1_____	RECYCLED ASPHALT PAVEMENT
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
621-1_____	FILTER SOCKS
800-1_____	STRUCTURES
802-4	CEMENT
804-2_____	REINFORCING STEEL FOR STRUCTURES
JOB 070571__	BIDDING REQUIREMENTS AND CONDITIONS
JOB 070571__	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 070571__	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 070571__	BUY AMERICA - CONSTRUCTION MATERIALS
JOB 070571	CARGO PREFERENCE ACT REQUIREMENTS
JOB 070571__	COLD MILLING – COUNTY PROPERTY
JOB 070571__	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 070571__	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
JOB 070571	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB 070571__	ESTABLISHING CONTRACT TIME – WORKING DAY CONTRACT
JOB 070571__	FLEXIBLE BEGINNING OF WORK
JOB 070571__	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 070571	LIQUIDATED DAMAGES PROCEDURE FOR BID LETTINGS
JOB 070571	LONGITUDINAL JOINT DENSITIES FOR ACHM SURFACE COURSES
JOB 070571__	MANDATORY ELECTRONIC CONTRACT
JOB 070571__	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB 070571	OFF-SITE RESTRAINING CONDITIONS FOR INDIANA AND NORTHERN LONG-EARED BATS
JOB 070571__	PORTABLE TRAFFIC SIGNAL SYSTEM
JOB 070571__	PRICE ADJUSTMENT FOR ASPHALT BINDER
JOB 070571	PRICE ADJUSTMENT FOR FUEL
JOB 070571__	PROHIBITION OF CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT
JOB 070571__	RUMBLE STRIPS
JOB 070571__	SHORING FOR CULVERTS
JOB 070571	SOIL STABILIZATION
JOB 070571__	SPECIAL CLEARING REQUIREMENTS
JOB 070571__	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 070571	TOTAL SOLAR ECLIPSE
JOB 070571__	UTILITY ADJUSTMENTS
JOB 070571__	WARM MIX ASPHALT

GENERAL NOTES

1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
2. ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
3. ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
4. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
5. 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.
6. 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.
7. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
8. 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.
9. 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.	070571	4	39
		TYPICAL SECTIONS OF IMPROVEMENT				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13653
ADAM E. WIERCIAK
DIGITALLY SIGNED 08/11/2023



HWY. 7 OVERLAY SECTION

STA. 104+85.00 TO STA. 105+32.00
STA. 106+36.00 TO STA. 106+65.00

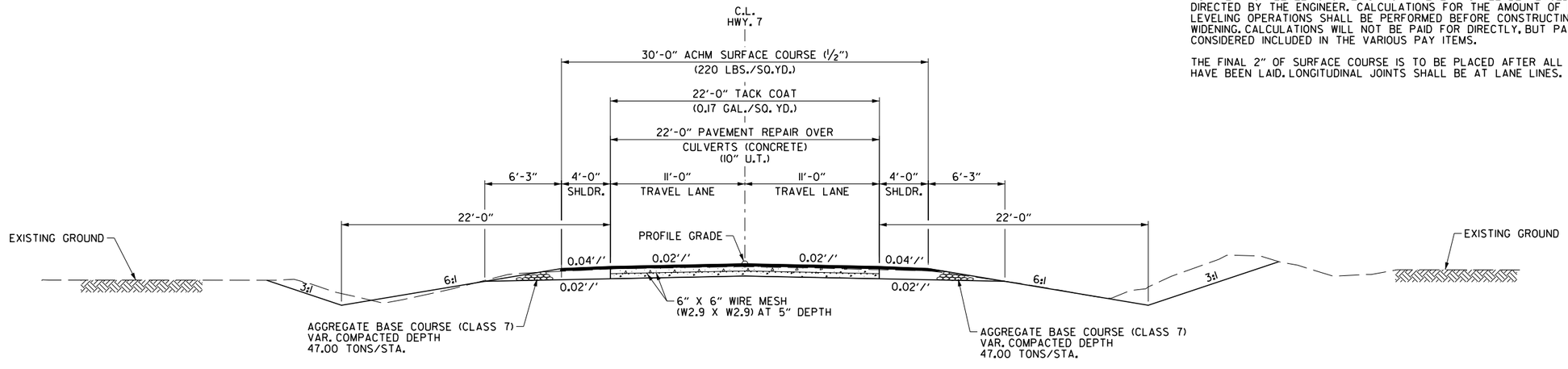
NOTES:

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

THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

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

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



HWY. 7 TYPICAL SECTION

STA. 105+32.00 TO STA. 106+36.00

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REVISED DATE:

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070571	5	39
		TYPICAL SECTIONS OF IMPROVEMENT				

STATE OF ARKANSAS
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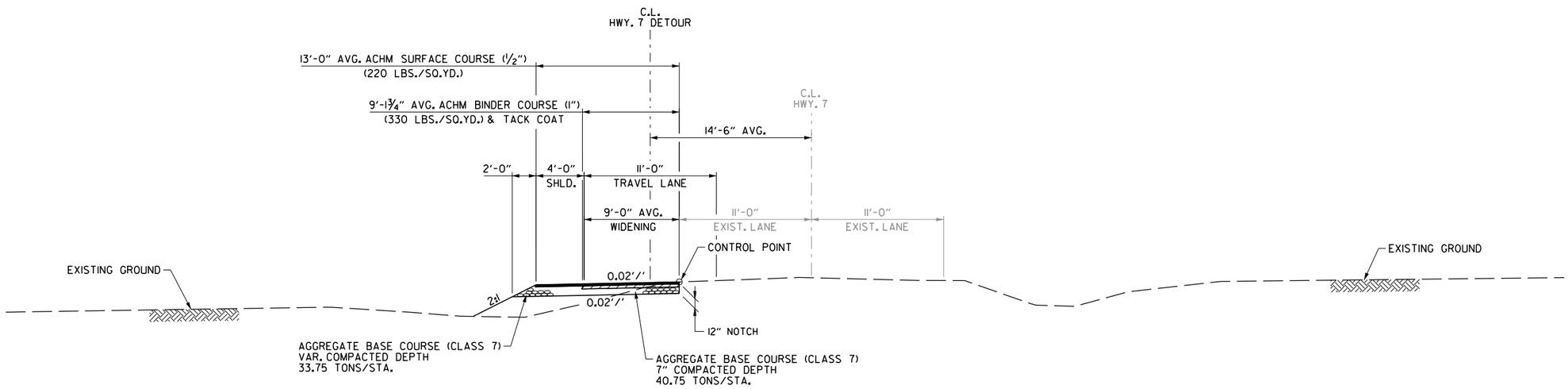


HWY. 7 DETOUR NOTCH AND WIDEN SECTION

STA. 20+00.00 TO STA. 22+48.34
STA. 23+53.83 TO STA. 26+46.20

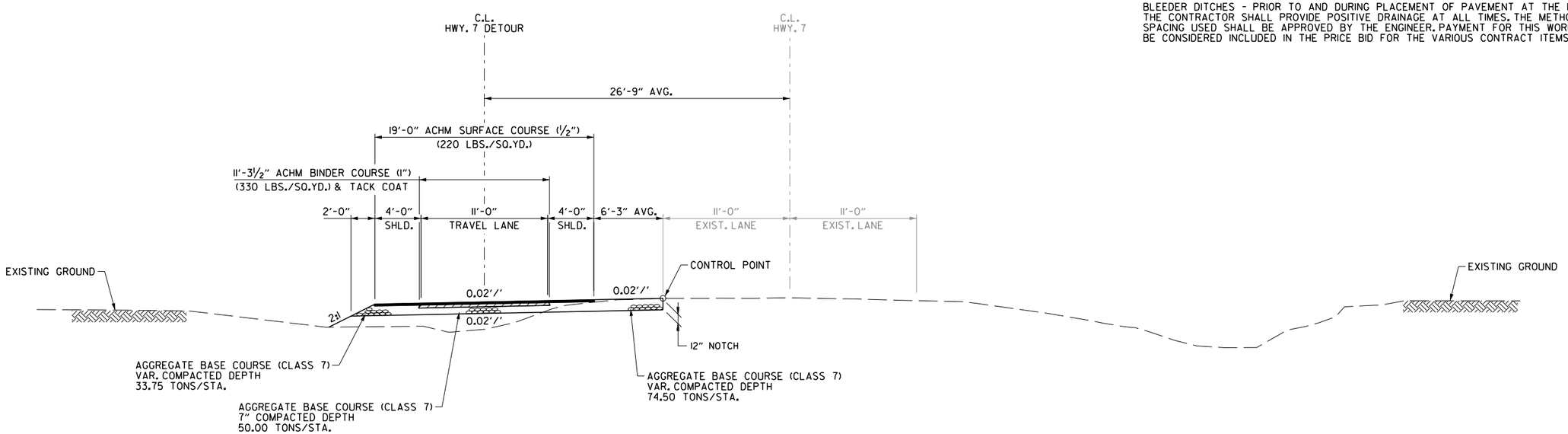
NOTES:

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

THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

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

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



HWY. 7 DETOUR NOTCH AND WIDEN SECTION

STA. 22+48.34 TO STA. 23+53.83

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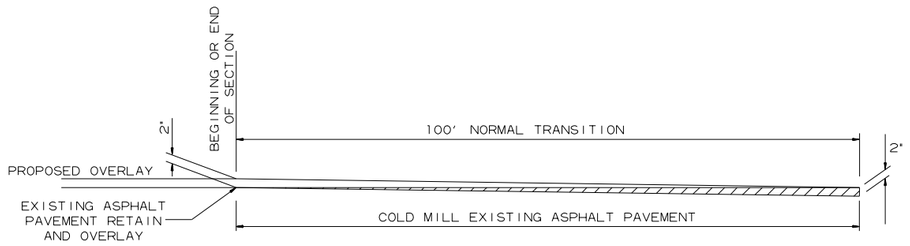
REVISED DATE:

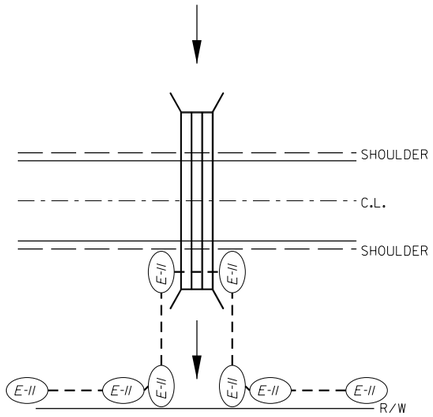
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070571	6	39
		SPECIAL DETAILS				

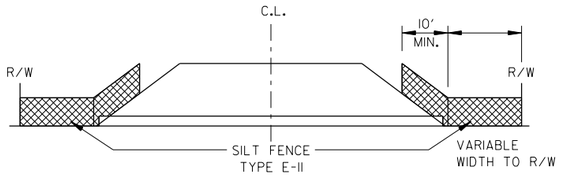
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13653
ADAM E. WIERCIAK

DIGITALLY SIGNED 08/11/2023

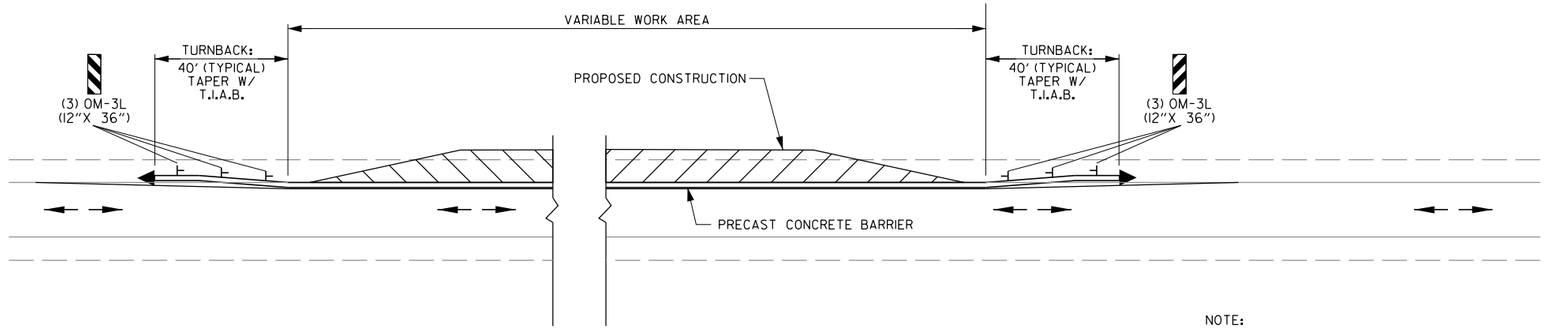


DETAIL FOR TRANSITIONS





DETAILS OF SILT FENCE
AT R.C. BOX



DETAIL OF OBJECT MARKERS
AT PRECAST CONCRETE BARRIER TURNBACKS

NOTE:

NUMBER OF OBJECT MARKERS AT P.C.C.B. TERMINALS SHALL BE EQUAL TO DETAIL SHOWN WHEN SPECIAL END UNITS ARE UTILIZED IN PLACE OF TEMPORARY IMPACT ATTENUATION BARRIERS.

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		6	ARK.	070571	7	39
		SPECIAL DETAILS				

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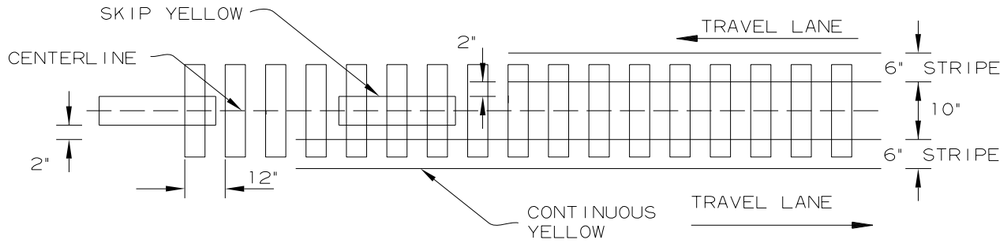
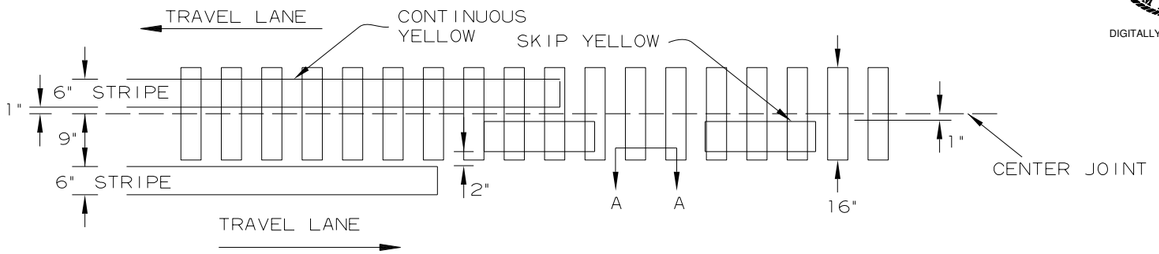
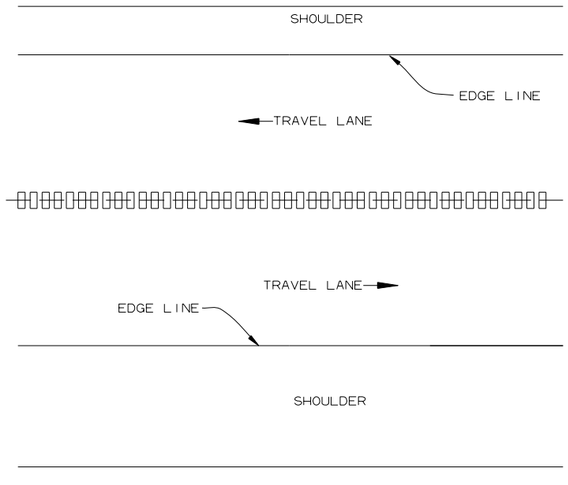


ASPHALT PAVEMENT

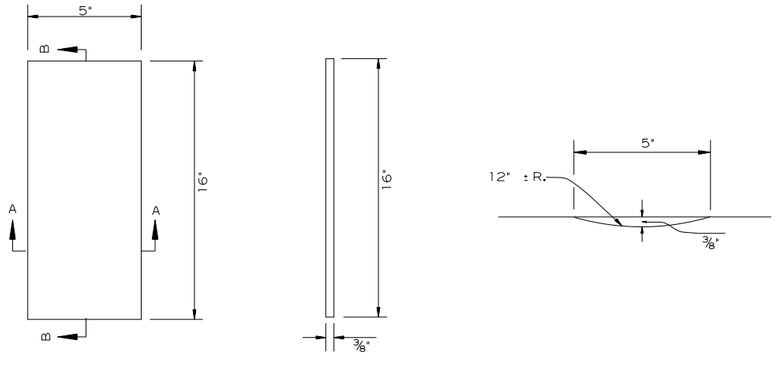


CONCRETE PAVEMENT

LOCATION PLAN OF CENTERLINE RUMBLE STRIPES



PLAN VIEW



PLAN SECTION B-B SECTION A-A

DETAILS OF CENTERLINE RUMBLE STRIPES

GENERAL NOTES

1. RUMBLE STRIPES SHALL NOT BE INSTALLED ON BRIDGE DECKS, APPROACH SLABS, INTERSECTING STREETS OR ROADWAYS, OR ACROSS TRANSVERSE JOINTS OF CONCRETE SHOULDERS.
2. RUMBLE STRIPES SHALL BE MEASURED BY THE LINEAR FOOT LONGITUDINALLY ALONG THE CENTERLINE.
3. THE 3/8" DEPTH SHALL GENERALLY APPLY FOR THE ENTIRE 16" LENGTH. SOME VARIATION TO SUIT SLOPE BREAKS MAY BE NECESSARY.

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070571	8	39
		SPECIAL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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ADAM E. WIERCIAK
DIGITALLY SIGNED 08/11/2023

INLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	LENGTH OF FOOTING HEEL WING A	LENGTH OF FOOTING HEEL WING B	CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4	INLET	INLET
64'-4"	5'-0"	0'-9"	0'-8"	5	3:1	63'-6 7/8"	1'-0"	5'-10"	1'-8"	25	35	2'-2"	2'-11 5/8"	3'-0 7/8"	0'-11 5/8"	1'-0 1/8"	13'-6"	15'-0"	15'-4 5/8"	16'-10 5/8"	CU.YD	LBS.
																					9.24	681

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY			F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS	F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS	F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY			F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS		REINF. STEEL QTY. PER WING (LBS.)
WING A	4	12	14	L	Min	2'-8"	-	-	-	L	-	-	-	L	-	4	18	6	Min	4	18	2	13'-2"	4	18	9	L	Min	3'-7"	4	6	16'-3"	6	18	9	Min	-	-	-	Min	-	4	2	13'-8"	4	2	15'-0"	6	12	5	I	3'-4"	327
					Max	7'-6"				X	-			X	-				2'-0"								X	Min	1'-4"																					
				X	Min	0'-9"													Max									Max	1'-4"																				X	1'-8"	
					Max	1'-7"				Y	-			Y	-				11'-9"								Y	Min	2'-4"																					
				Y	Min	2'-0"																						Max	6'-0"																					
					Max	6'-0"																																													
WING B	4	12	15	L	Min	2'-10"	-	-	-	L	-	-	-	L	-	4	18	6	Min	4	18	2	14'-0"	4	18	10	L	Min	3'-6"	4	6	17'-9"	6	18	10	Min	-	-	-	Min	-	4	2	15'-1"	4	2	16'-11"	6	12	5	L	3'-4"	354
					Max	7'-7"				X	-			X	-				2'-3"								X	Min	1'-4"																				X	1'-8"	
				X	Min	0'-9"													Max									Max	1'-4"																					
					Max	1'-8"				Y	-			Y	-				13'-0"								Y	Min	2'-3"																					
				Y	Min	2'-2"																						Max	6'-0"																					
					Max	6'-0"																																												

MID-SECTION
BAR LAP TABLE

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

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

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

TABULAR DATA BY: JDB DATE: 7/10/2023
CHECKED BY: AEW DATE: 7/19/2023

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

INLET SKEWED END SECTION

SKEW (DEGREE)	SLOPE	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THK.	HDWL DEPTH	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVER ALL WIDTH	OVER ALL HEIGHT	TOP SLAB REINFORCING STEEL "a" SIZE	"a" SPACING	"a" LENGTHS VARY	"a" NO. REQ'D	TOP SLAB REINFORCING STEEL "c" SIZE	"c" SPACING	"c" LENGTHS VARY	"c" NO. REQ'D	BOTTOM SLAB REINFORCING STEEL "c" SIZE	"c" SPACING	"c" LENGTHS VARY	"c" NO. REQ'D	BOTTOM SLAB REINFORCING STEEL "f" SIZE	"f" SPACING	"f" LENGTHS VARY	"f" NO. REQ'D	SIDE WALL REINFORCING STEEL "f0" SIZE	"f0" SPACING	"f0" NO. REQ'D	"f0" LENGTH	INTERIOR WALL REINFORCING STEEL "f1" SIZE	"f1" SPACING	"f1" NO. REQ'D	"f1" LENGTH	TOP SLAB DISTRIBUTION REINFORCING STEEL "g" SIZE	"g" SPACING	"g" NO. REQ'D	"g" LENGTHS VARY	BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY	SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH	INTERIOR WALL DISTRIBUTION REINFORCING STEEL "d2" SIZE	"d2" SPACING	"d2" NO. REQ'D	"d2" LENGTHS VARY
SK	SL	D	S	H	LL	T	HD	B	C	W	OW	OH																																									
5	3:1	5	10	5	4'-10"	12	3	12	6	8	64'-4"	7'-0"	5	5	Max 64'-0" Min 17'-4" 64'-0"	10 5	8	8	Max 64'-0" Min 17'-4" 64'-0"	7 3	4	5	Max 64'-0" Min 17'-4" 64'-0"	10 5	4	7	Max 64'-0" Min 17'-4" 64'-0"	7 4	4	5.5	22	6'-8"	4	12	60	6'-8"	4	9	179	Max 7'-6" Min 1'-10"	4	9	179	Max 7'-6" Min 1'-10"	4	12	5	LONG 7'-5" SHORT 1'-10"	4	12	10 30 10	LONG 6'-6" MID 5'-7" SHORT 2'-9"

CLASS "S" CONCRETE (Includes HDWL.)	REINFORCING STEEL (GR 60) (Includes HDWL.)
CU. YDS.	LBS.
28.10	5177

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

"k1" HDWL BARS			"k2" HDWL BARS			"h" HDWL BARS			
SIZE	LENGTH	NO. REQ'D	SIZE	LENGTH	NO. REQ'D	SIZE	LENGTH	Y	NO. REQ'D
4	33'-0"	12	4	33'-0"	12	4	1'-11"	0'-11"	66

INLET SLOPE SECTION(S)

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

HDWL DEPTH	ADDITIONAL REINF. FOR HDWL	"h" HDWL BARS			
HD	LBS.	SIZE	Y	LENGTH	NO. REQ'D

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

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

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

MID-SECTION

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	TOP SLAB THK.	BOTTOM SLAB THK	SIDE WALL THK.	INTERIOR WALL THK.	OVER ALL WIDTH	OVER ALL HEIGHT	SECTION LENGTH (FT.)	TOP SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS "a" SIZE	"a" L	Bent "b" SIZE	Bent "b" L	"c" SIZE	"c" L	"c" SPACING	"c" NO. REQ'D	BOTTOM SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS "d" SIZE	"d" L	Bent "b1" SIZE	Bent "b1" L	"f" SIZE	"f" L	"f" SPACING	"f" NO. REQ'D	SIDE WALL REINFORCING STEEL "f0" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH	INTERIOR WALL REINFORCING STEEL "f1" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH	TOP SLAB DISTRIBUTION REINF. STEEL "g" LENGTH = SL SIZE	SPACING	NO. REQ'D	BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE	SPACING	NO. REQ'D	SIDE WALL DISTRIBUTION REINF. STEEL "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D	INTERIOR WALL DISTRIBUTION REINF. STEEL "d2" LENGTH = SL SIZE	SPACING	NO. REQ'D
D	S	H	T	B	C	W	OW	OH	SL																																								
A	5	10	5	12	12	6	8	64'-4"	7'-0"	71.16	5	64'-0"	7	65'-9"	4	64'-0"	17	50	4	64'-0"	4	65'-8"	4	64'-0"	12	71	4	5.5	310	6'-8"	4	12	710	6'-8"	4	9	179	4	9	179	4	12	10	4	12	50

CLASS "S" CONCRETE	REINFORCING STEEL (GR. 60)
CU. YDS.	LBS.
396.21	47148

SHEET 1 OF 2
DETAILS OF R.C. BOX CULVERT
SEXTUPLE BARREL BOX CULVERT
STA. 105+84

SPECIAL DETAILS

JDBradley 8/10/2023 9:20:18 AM
WORKSPACE: AHTD
L:\2021\21T0148 - ARDOT 070571Hwy 7 Flood Damage Repair\Drawings\r070751_SD_LRFD_01.dgn
REVISED DATE:
Ver. 1.11.7

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070571	9	39
		SPECIAL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13653
ADAM E. WIERCIAK

DIGITALLY SIGNED 08/11/2023

TABULAR DATA BY: JDB DATE: 7/10/2023
CHECKED BY: AEW DATE: 7/19/2023

OUTLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	LENGTH OF FOOTING HEEL WING A	LENGTH OF FOOTING HEEL WING B
CW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4
64'-4"	5'-0"	0'-9"	0'-8"	5	3:1	63'-6 7/8"	1'-0"	5'-10"	1'-8"	25	35	2'-2"	2'-11 5/8"	3'-0 7/8"	0'-11 5/8"	1'-0 1/8"	13'-6"	15'-0"	15'-4 5/8"	16'-10 5/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
OUTLET	OUTLET
CU.YD	LBS.
11.10	681

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY	F1 LENGTHS	F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS	F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS	F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY	F6 LENGTHS	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 NO. REQ'D	F10 LENGTHS	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS	REINF STEEL QTY. PER WING (LBS)
WING A	4	12	14	L Min	2'-8"	-	-	-	L -	-	-	-	L -	4	18	6	Min	4	18	2	13'-2"	4	18	9	L Min	3'-7"	4	6	6	18	9	Min	-	-	-	Min	4	2	13'-8"	4	2	15'-0"	6	12	5	L 3'-4"	327
				L Max	7'-6"				L -				L -				2'-0"								X Min	1'-4"						1'-8"				-								X 1'-6"	
				X Min	0'-9"				X -				X -				Max								X Min	1'-4"						Max				Max								
				X Max	1'-7"				X -				X -				11'-9"								Y Min	2'-4"						2'-5"				-								
				Y Min	2'-0"				Y -				Y -												Y Max	6'-0"																			
				Y Max	6'-0"				Y -				Y -																																	
WING B	4	12	15	L Min	2'-10"	-	-	-	L -	-	-	-	L -	4	18	6	Min	4	18	2	14'-8"	4	18	10	L Min	3'-6"	4	6	6	18	10	Min	-	-	-	Min	4	2	15'-1"	4	2	16'-11"	6	12	5	L 3'-4"	354
				L Max	7'-7"				L -				L -				2'-3"								X Min	1'-4"						1'-8"				-								X 1'-6"	
				X Min	0'-9"				X -				X -				Max								X Max	1'-4"						Max				Max								
				X Max	1'-8"				X -				X -				13'-0"								Y Min	2'-3"						2'-6"				-								
				Y Min	2'-2"				Y -				Y -																																	
				Y Max	6'-0"				Y -				Y -												Y Max	6'-0"																			

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

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

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

OUTLET SKEWED END SECTION

SKEW (DEGREE)	SLOPE	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THK.	HDWL DEPTH	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVER ALL WIDTH	OVER ALL HEIGHT	TOP SLAB REINFORCING STEEL "a" SIZE	"a" SPACING	"a" LENGTHS VARY	"a" NO. REQ'D	TOP SLAB REINFORCING STEEL "c" SIZE	"c" SPACING	"c" LENGTHS VARY	"c" NO. REQ'D	BOTTOM SLAB REINFORCING STEEL "d" SIZE	"d" SPACING	"d" LENGTHS VARY	"d" NO. REQ'D	BOTTOM SLAB REINFORCING STEEL "f" SIZE	"f" SPACING	"f" LENGTHS VARY	"f" NO. REQ'D	SIDE WALL REINFORCING STEEL "f0" SIZE	"f0" SPACING	"f0" NO. REQ'D	"f0" LENGTH	INTERIOR WALL REINFORCING STEEL "f1" SIZE	"f1" SPACING	"f1" NO. REQ'D	"f1" LENGTH	TOP SLAB DISTRIBUTION REINFORCING STEEL "g" SIZE	"g" SPACING	"g" NO. REQ'D	"g" LENGTHS VARY	BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY	SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH	INTERIOR WALL DISTRIBUTION REINFORCING STEEL "d2" SIZE	"d2" SPACING	"d2" NO. REQ'D	"d2" LENGTHS VARY
SK	SL	D	S	H	LL	T	HD	B	C	W	OW	OH																																								
5	3:1	5	10	5	4'-10"	12	3	12	6	8	64'-4"	7'-0"	5	5	Max 64'-0" Min 17'-4"	10	8	8	Max 64'-0" Min 17'-4"	7	4	5	Max 64'-0" Min 17'-4"	10	4	7	Max 64'-0" Min 17'-4"	7	4	5.5	22	6'-8"	4	12	60	6'-8"	4	9	179	Max 7'-6" Min 1'-10"	4	9	179	Max 7'-6" Min 1'-10"	4	12	5	LONG 7'-5" SHORT 1'-10"	4	12	10	LONG 6-6" MID 5-7" SHORT 2-9"
															64'-0"	5			64'-0"	3			64'-0"	5			64'-0"	4																											30	

CLASS "S" CONCRETE (Includes HDWL.)	① REINFORCING STEEL (GR 60) (Includes HDWL.)
CU. YDS.	LBS.
28.10	5177

"k1" HDWL BARS SIZE	"k1" HDWL BARS LENGTH	"k1" HDWL BARS NO. REQ'D	"k2" HDWL BARS SIZE	"k2" HDWL BARS LENGTH	"k2" HDWL BARS NO. REQ'D	"h" HDWL BARS SIZE	"h" HDWL BARS LENGTH	"h" HDWL BARS Y	"h" HDWL BARS NO. REQ'D
4	33'-0"	12	4	33'-0"	12	4	1'-11"	0'-11"	66

OUTLET SLOPE SECTION(S)

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

HDWL DEPTH HD	ADDITIONAL REINF. FOR HDWL LBS.	"h" HDWL BARS SIZE	"h" HDWL BARS Y	"h" HDWL BARS LENGTH	"h" HDWL BARS NO. REQ'D

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

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

Unless otherwise noted, all dimensions are in inches.

SHEET 2 OF 2

DETAILS OF R.C. BOX CULVERT

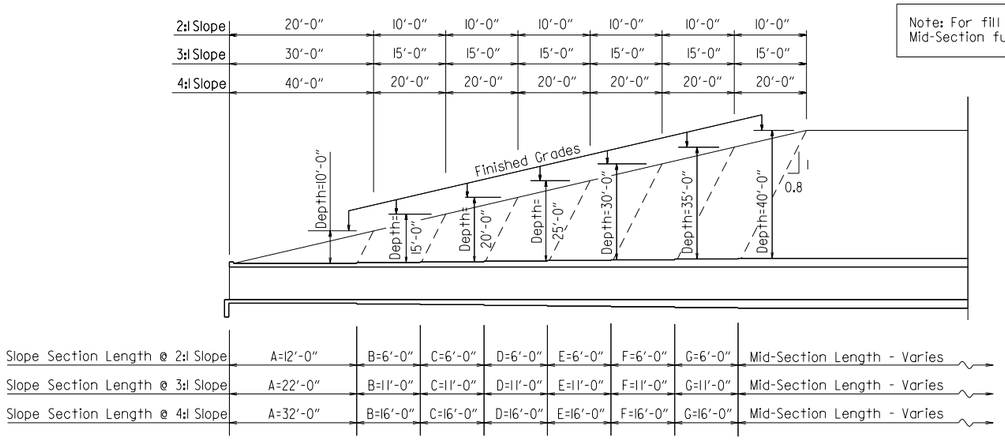
SEXTUPLE BARREL BOX CULVERT
STA. 105+84

SPECIAL DETAILS

LRFD

JDBradley 8/10/2023 9:20:36 AM
WORKSPACE: AHTD
L:\2021\21T0048 - ARDOT 070571Hwy 7 Flood Damage Repair\Drawings\r-070751_SD_LRFD_01.dgn
REVISED DATE:
Ver. 1.117

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070571	10	39
		SPECIAL DETAILS				



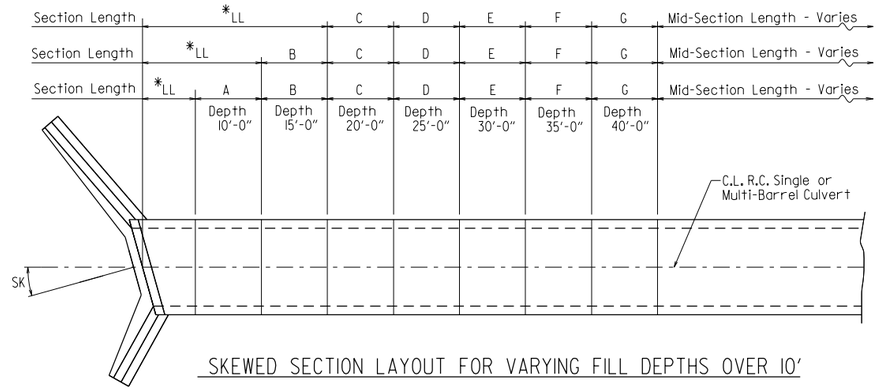
Note: For fill depths 10' and under, use Mid-Section full length of box culvert.

* 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.

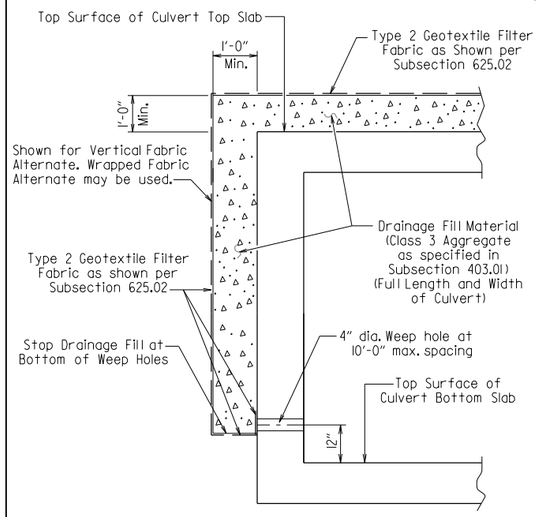
Slope Section Length @ 2:1 Slope	A=12'-0"	B=6'-0"	C=6'-0"	D=6'-0"	E=6'-0"	F=6'-0"	G=6'-0"	Mid-Section Length - Varies
Slope Section Length @ 3:1 Slope	A=22'-0"	B=11'-0"	C=11'-0"	D=11'-0"	E=11'-0"	F=11'-0"	G=11'-0"	Mid-Section Length - Varies
Slope Section Length @ 4:1 Slope	A=32'-0"	B=16'-0"	C=16'-0"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

LONGITUDINAL SECTION LENGTH SCHEDULE FOR VARYING FILL DEPTHS OVER 10'

Lengths for Non-Skewed Boxes

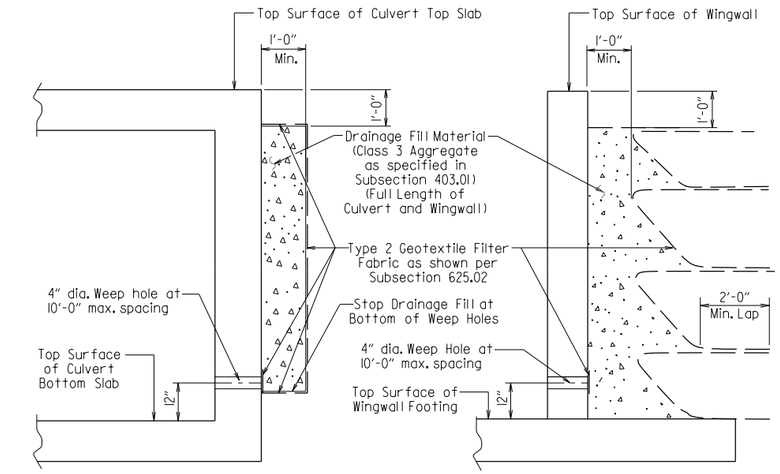


SKEWED SECTION LAYOUT FOR VARYING FILL DEPTHS OVER 10'



CULVERT DRAINAGE DETAIL FOR ROCK FILL

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

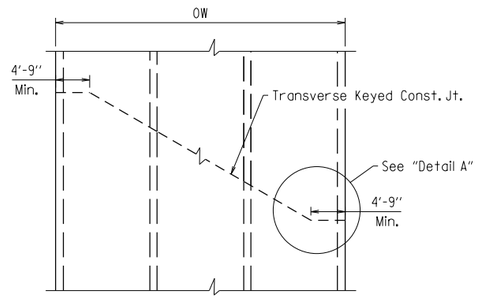


For Details of Excavation and Pay Limits, see Standard Drawing RCB-2.

VERTICAL FABRIC ALTERNATE
(Shown for Culvert, Similar for Wingwall)

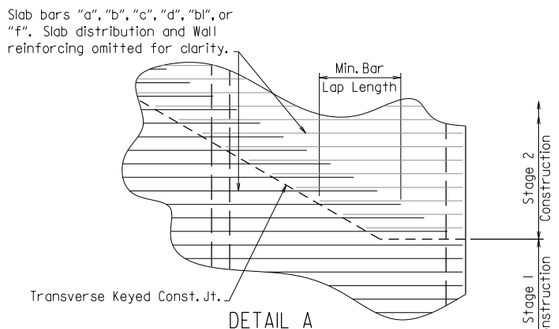
WRAPPED FABRIC ALTERNATE
(Shown for Wingwall, Similar for Culvert)

WINGWALL & CULVERT DRAINAGE DETAIL



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.



DETAIL A

See Tabular Data Sheets for Minimum Bar Lap Lengths.

Shown for transverse reinforcing, longitudinal reinforcing similar.

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 ¾" 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 tine finish shall be applied in accordance with subsection 802.19 for Class S 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.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13653
ADAM E. WIERCIAK
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SHEET 1 OF 4
GENERAL DETAILS OF R.C. BOX CULVERT

GENERAL NOTES &
LONGITUDINAL SECTION LENGTH SCHEDULE

SPECIAL DETAILS

LRFD

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		6	ARK.	070571	11	39
		SPECIAL DETAILS				

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No. 13653
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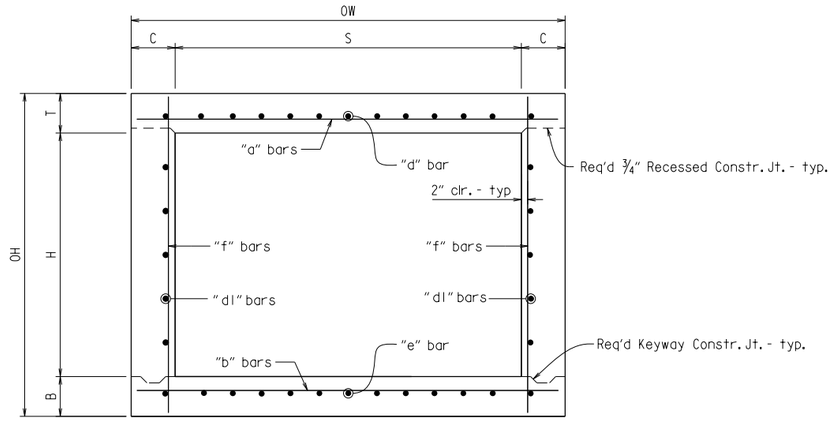
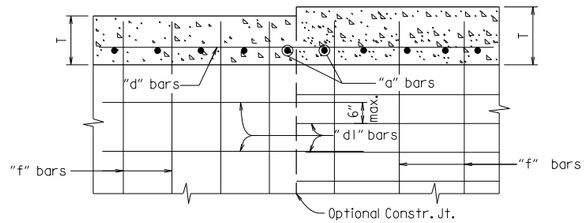
Note: When top slab of culvert serves as finished roadway surface, see General Notes on Sheet 1 of 4.



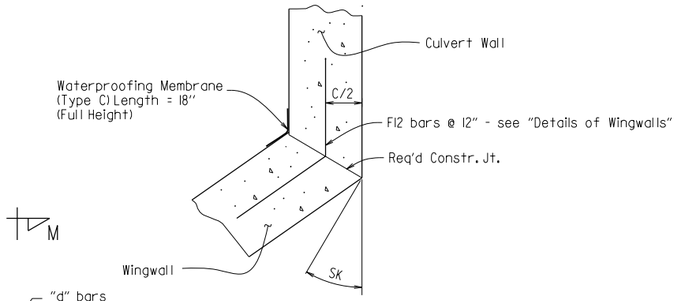
TYPICAL SECTION M-M



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

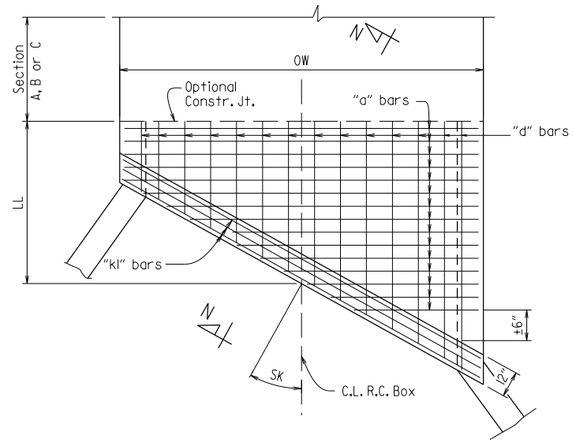
LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

TOP SLAB SHOWN, BOTTOM SLAB SIMILAR

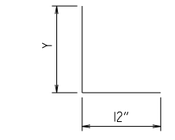


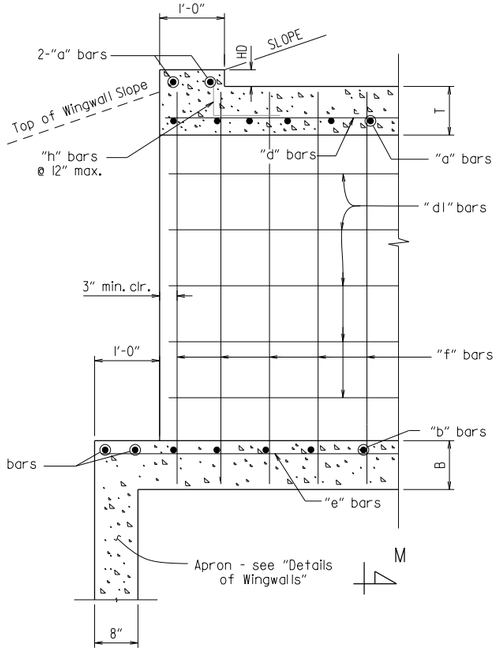
WINGWALL ATTACHMENT

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



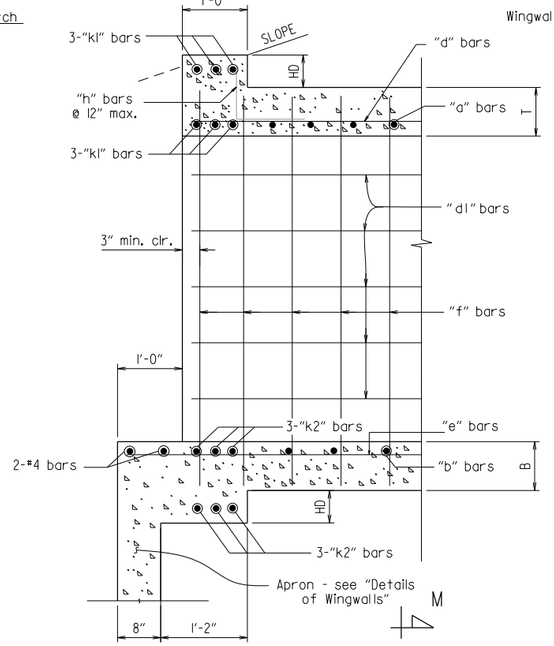
TOP SLAB REINFORCEMENT





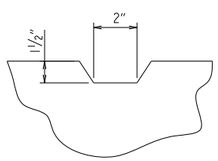
PART LONGITUDINAL SECTION

(Non-Skewed Ends)



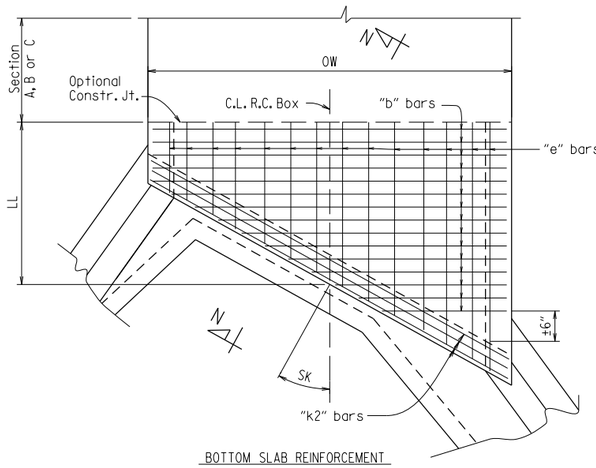
PART LONGITUDINAL SECTION N-N

(Skewed Ends)



TYPICAL KEYWAY DETAIL

(All Construction Joints)



BOTTOM SLAB REINFORCEMENT

SKEWED END SECTION DETAILS

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

DETAILS OF SINGLE BARREL R.C. BOX CULVERT

SPECIAL DETAILS

JDBradley 8/10/2023 9:20:59 AM
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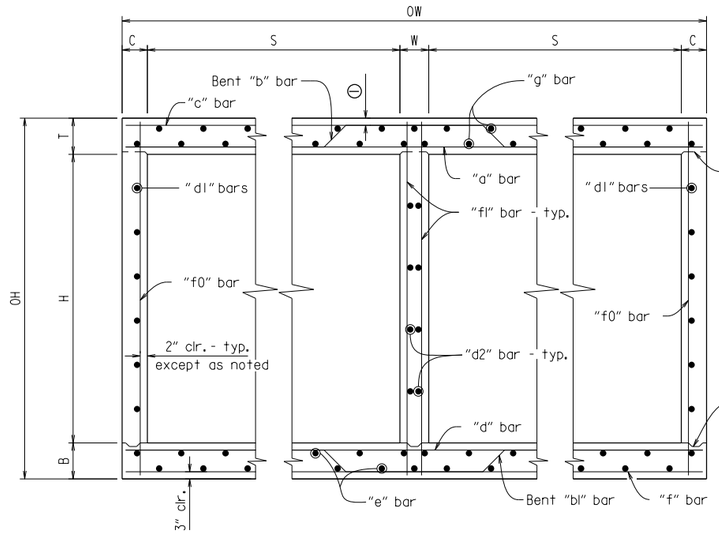
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070571	12	39
		SPECIAL DETAILS				

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

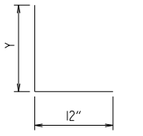
Note: When top slab of culvert serves as finished roadway surface, see General Notes on Sheet 1 of 4.



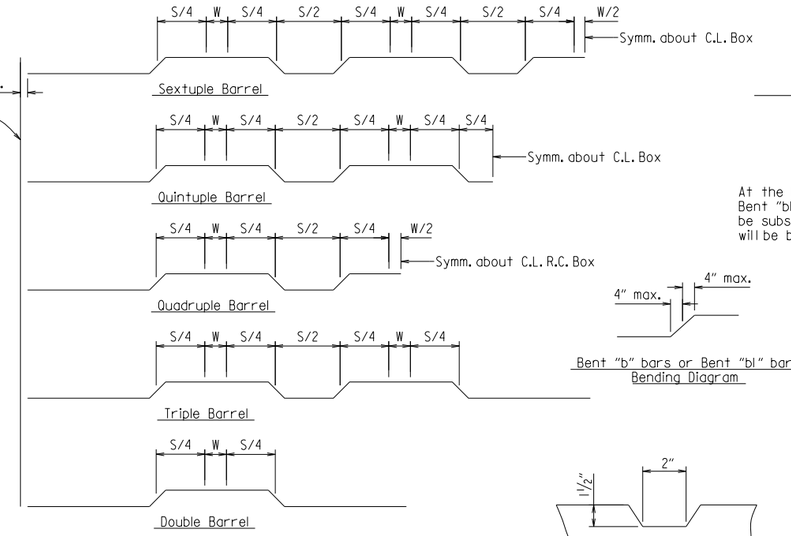
TYPICAL SECTION M-M

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.

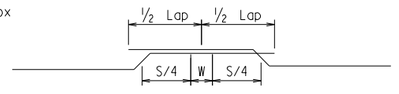


"h" bars sketch



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

TYPICAL KEYWAY DETAIL
(All Construction Joints)



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

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

Bent "b" bars or Bent "bl" bars
Bending Diagram

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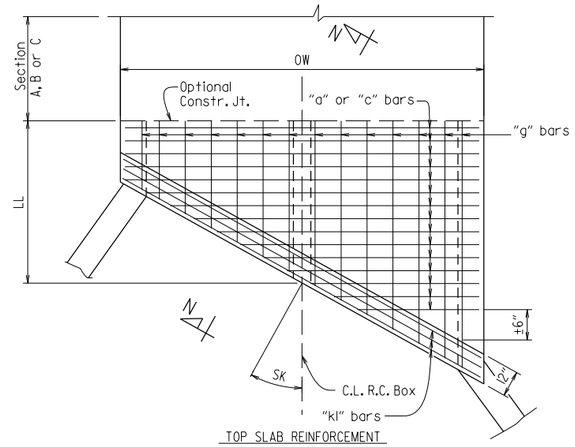
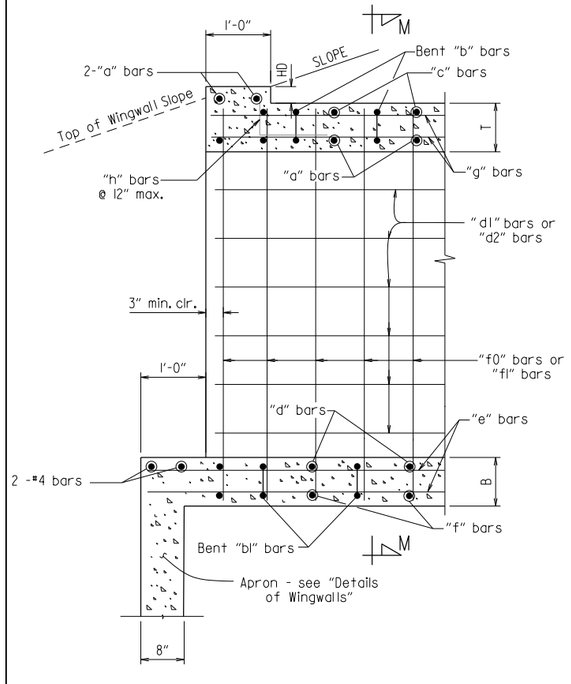
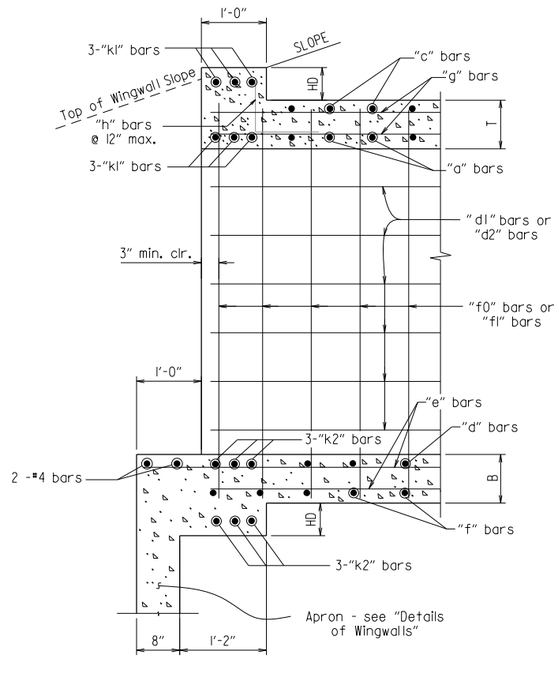


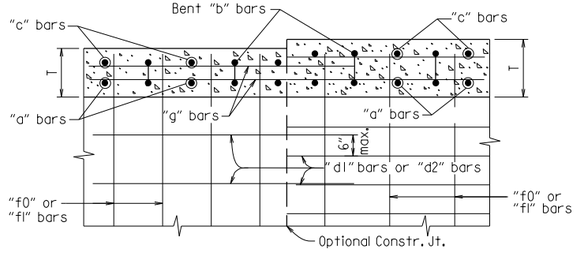
TOP SLAB REINFORCEMENT
Straight "c" bars in top.
Straight "a" bars in bottom.



PART LONGITUDINAL SECTION
(Non-Skewed Ends)

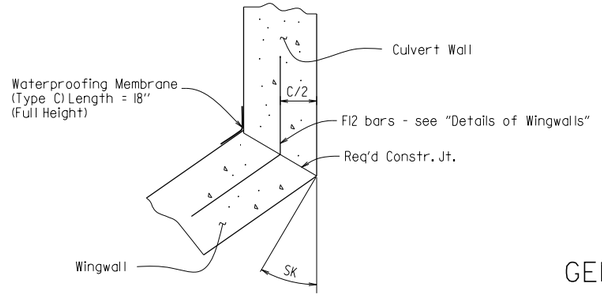


PART LONGITUDINAL SECTION N-N
(Skewed Ends)

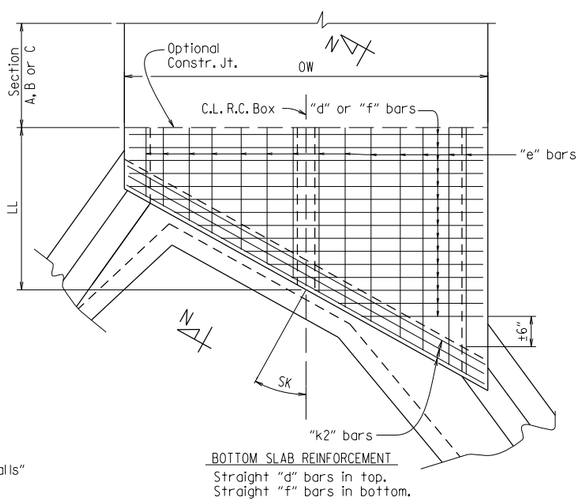


Longitudinal Bar Spacing at individual sections shall be maintained, which may result in noncontact bar laps.

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.



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

SKEWED END SECTION DETAILS

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

DETAILS OF MULTI-BARREL
R.C. BOX CULVERT

SPECIAL DETAILS

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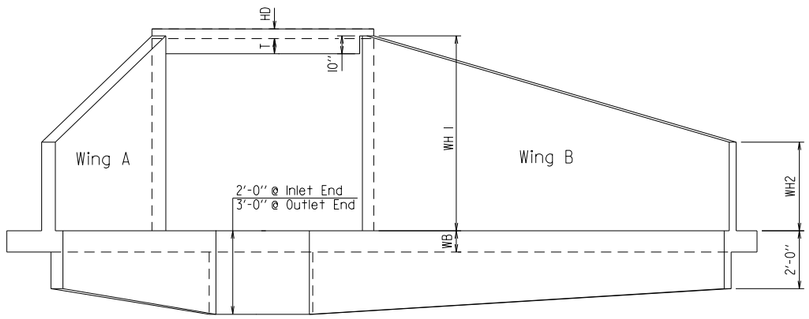
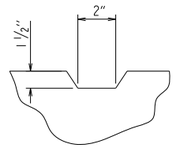


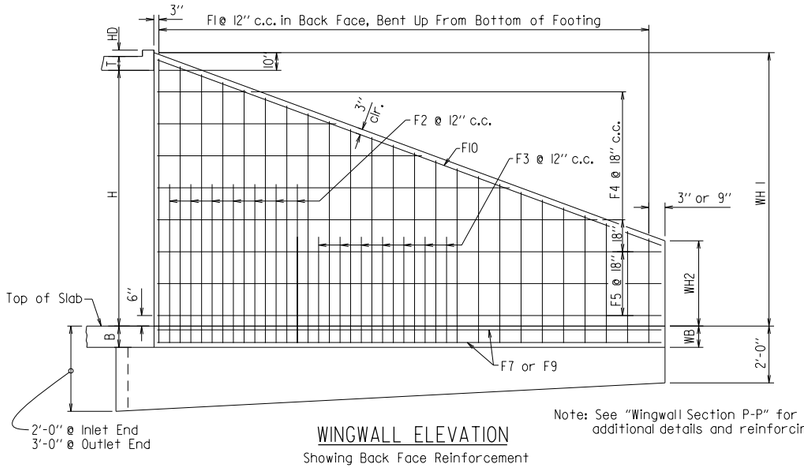
END ELEVATION

Flared Wingwalls Shown



TYPICAL KEYWAY DETAIL

All Construction Joints

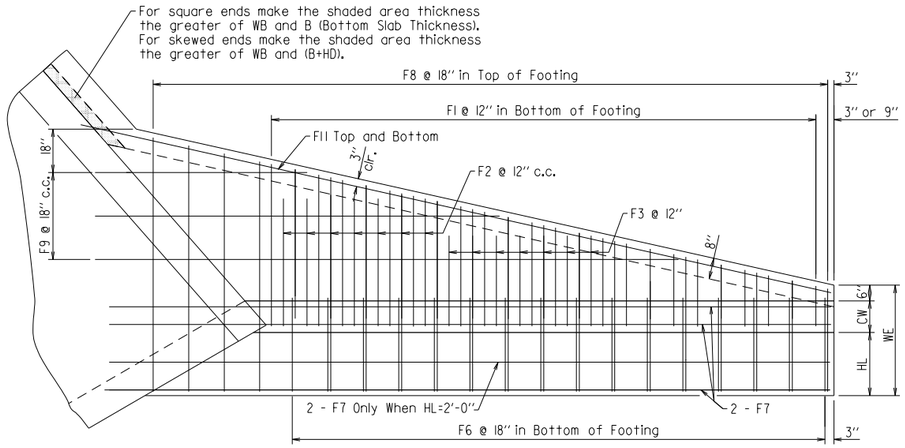


WINGWALL ELEVATION

Showing Back Face Reinforcement

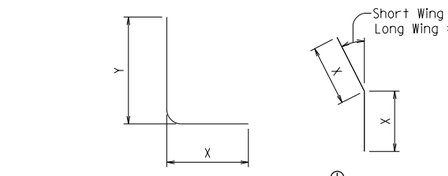
Note: See "Wingwall Section P-P" for additional details and reinforcing.

PART PLAN - FLARED WINGWALLS



PLAN - FLARED WINGWALLS

Showing Footing Reinforcement

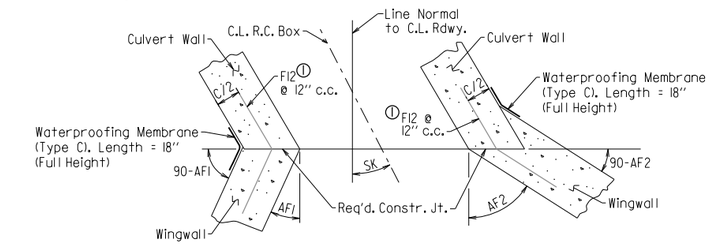


WINGWALL SECTION P-P

F1, F2, F3, & F6 BARS

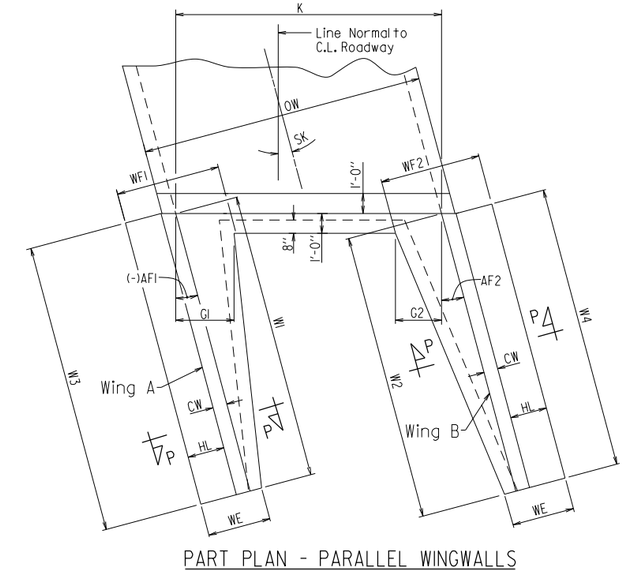
①F12 BAR

①F12 is a straight bar for parallel wingwalls

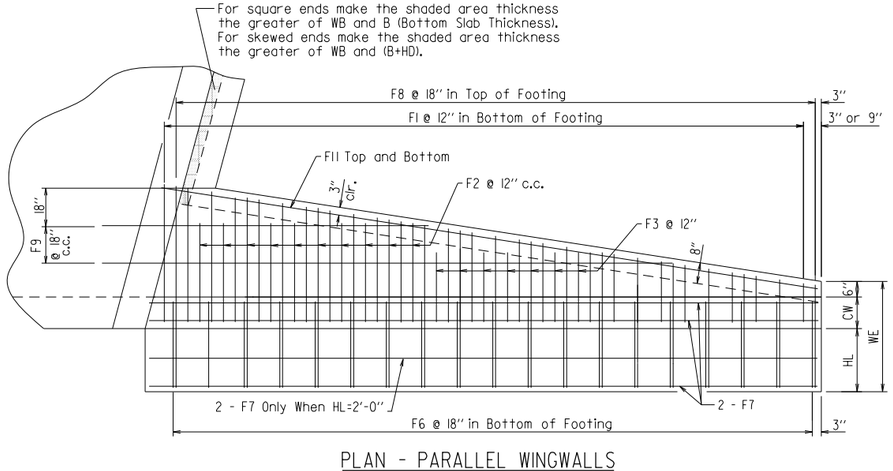


CONSTRUCTION JOINTS

Flared Wingwalls Shown



PART PLAN - PARALLEL WINGWALLS



PLAN - PARALLEL WINGWALLS

Showing Footing Reinforcement

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

STATE OF ARKANSAS
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No.13653
ADAM E. WIERCIAK
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		TEMPORARY EROSION CONTROL DETAILS				

STATE OF ARKANSAS
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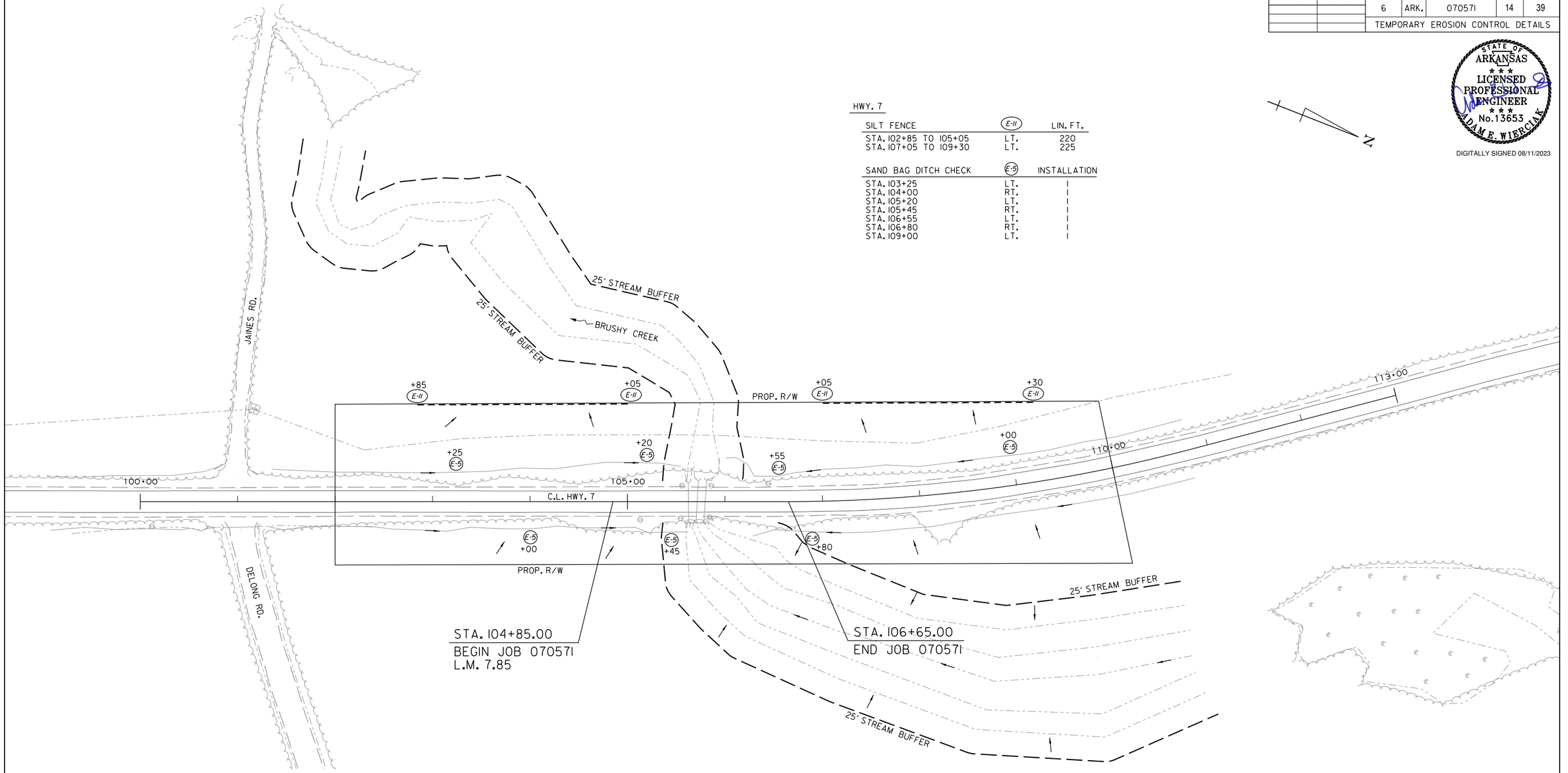
DIGITALLY SIGNED 08/11/2023

HWY. 7

SILT FENCE (E-II)		LIN. FT.
STA. 102+85 TO 105+05	LT.	220
STA. 107+05 TO 109+30	LT.	225

SAND BAG DITCH CHECK (E-5)		INSTALLATION
STA. 103+25	LT.	1
STA. 104+00	RT.	1
STA. 105+20	LT.	1
STA. 105+45	RT.	1
STA. 106+55	LT.	1
STA. 106+80	RT.	1
STA. 109+00	LT.	1



REVISIONS

DATE	REVISION

LEGEND

(E-5) = SAND BAG DITCH CHECKS (E-II) = SILT FENCE

CLEARING AND GRUBBING EROSION CONTROL MEASURES TO BE PLACED BEFORE ANY CONSTRUCTION. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

TEMPORARY EROSION CONTROL DETAILS
CLEARING & GRUBBING

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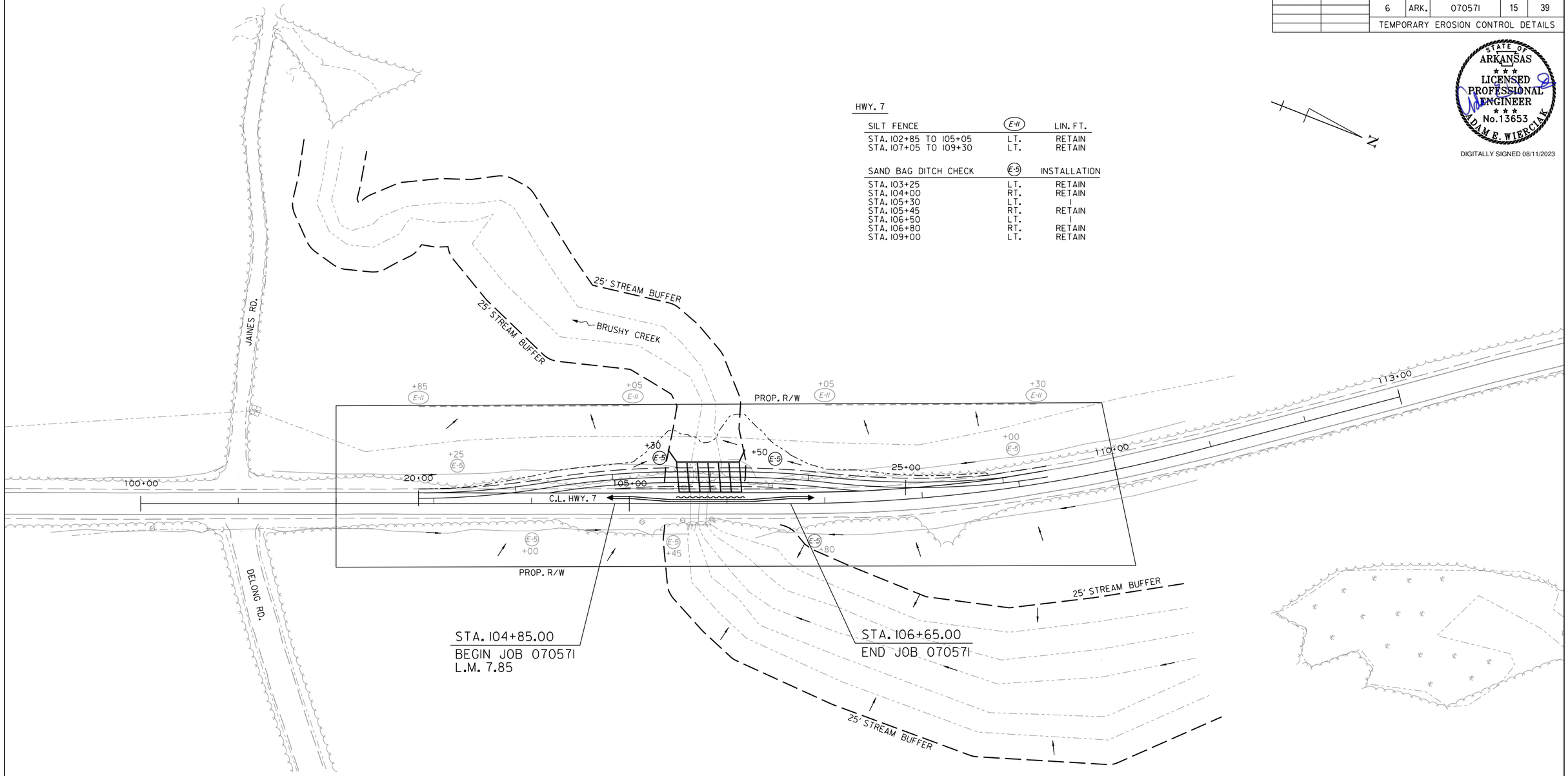
		TEMPORARY EROSION CONTROL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13653
ADAM E. WIERCIAK
DIGITALLY SIGNED 08/11/2023

HWY. 7

SILT FENCE (E-II)		LIN. FT.
STA. 102+85 TO 105+05	LT.	RETAIN
STA. 107+05 TO 109+30	LT.	RETAIN

SAND BAG DITCH CHECK (E-5)		INSTALLATION
STA. 103+25	LT.	RETAIN
STA. 104+00	RT.	RETAIN
STA. 105+30	LT.	I
STA. 105+45	RT.	RETAIN
STA. 106+50	LT.	I
STA. 106+80	RT.	RETAIN
STA. 109+00	LT.	RETAIN



REVISIONS

DATE	REVISION

LEGEND

(E-5) = SAND BAG DITCH CHECKS (E-II) = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

TEMPORARY EROSION CONTROL DETAILS
STAGE I

JDBradley 8/10/2023 9:21:01 AM
WORKSPACE: AHTD
L:\2021\21T0148 - ARDOT 070571Hwy 7 Flood Damage Repair\Drawings\r070571_EC_STG1_01.dgn
REVISED DATE:

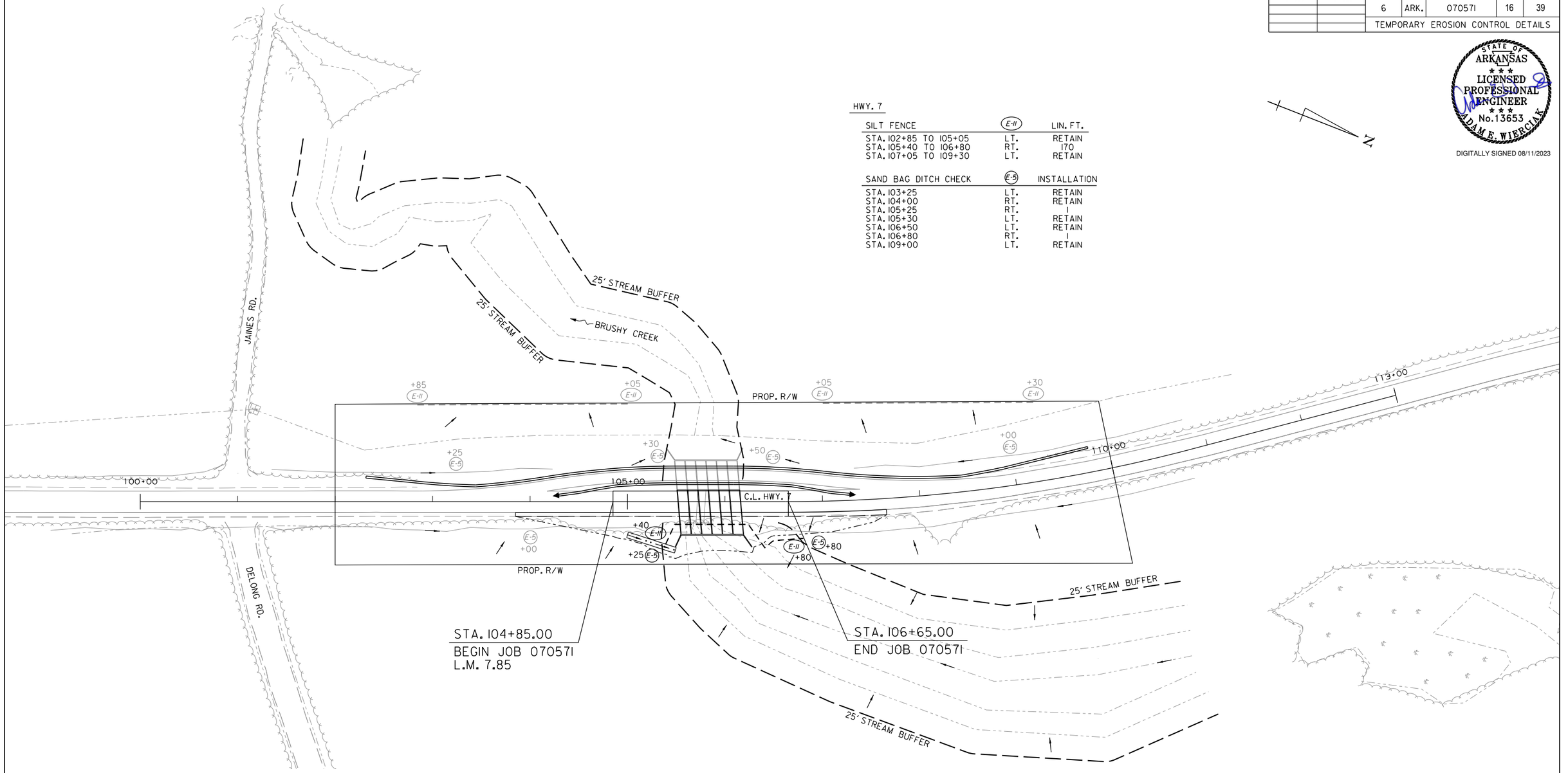
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070571	16	39
		TEMPORARY EROSION CONTROL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13653
ADAM E. WIERCIAK
DIGITALLY SIGNED 08/11/2023

HWY. 7

SILT FENCE (E-II)		LIN. FT.
STA. 102+85 TO 105+05	LT.	RETAIN
STA. 105+40 TO 106+80	RT.	170
STA. 107+05 TO 109+30	LT.	RETAIN

SAND BAG DITCH CHECK (E-5)		INSTALLATION
STA. 103+25	LT.	RETAIN
STA. 104+00	RT.	RETAIN
STA. 105+25	RT.	I
STA. 105+30	LT.	RETAIN
STA. 106+50	LT.	RETAIN
STA. 106+80	RT.	I
STA. 109+00	LT.	RETAIN



REVISIONS

DATE	REVISION

LEGEND

(E-5) = SAND BAG DITCH CHECKS (E-II) = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

TEMPORARY EROSION CONTROL DETAILS
STAGE 2

JDBradley 8/10/2023 9:21:01 AM
WORKSPACE: AHTD
L:\2021\211010148 - ARDOT 070571 Hwy 7 Flood Damage Repair\Drawings\r070571_EC_STG2_01.dgn
REVISED DATE:

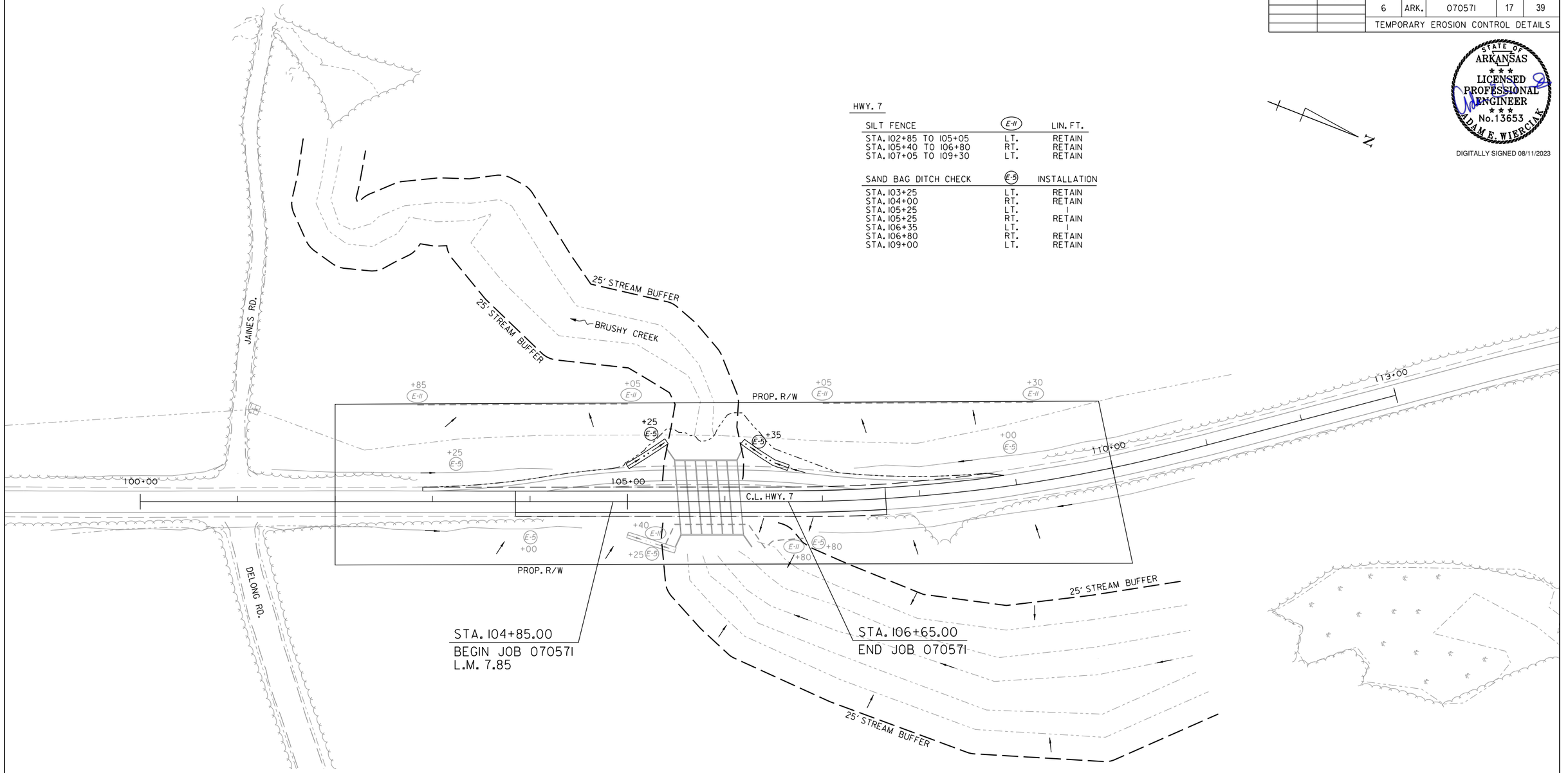
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070571	17	39
		TEMPORARY EROSION CONTROL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13653
ADAM E. WIERCIAK
DIGITALLY SIGNED 08/11/2023

HWY. 7

SILT FENCE (E-II)		LIN. FT.
STA. 102+85 TO 105+05	LT.	RETAIN
STA. 105+40 TO 106+80	RT.	RETAIN
STA. 107+05 TO 109+30	LT.	RETAIN

SAND BAG DITCH CHECK (E-5)		INSTALLATION
STA. 103+25	LT.	RETAIN
STA. 104+00	RT.	RETAIN
STA. 105+25	LT.	I
STA. 105+25	RT.	RETAIN
STA. 106+35	LT.	I
STA. 106+80	RT.	RETAIN
STA. 109+00	LT.	RETAIN



REVISIONS

DATE	REVISION

LEGEND

(E-5) = SAND BAG DITCH CHECKS (E-II) = SILT FENCE

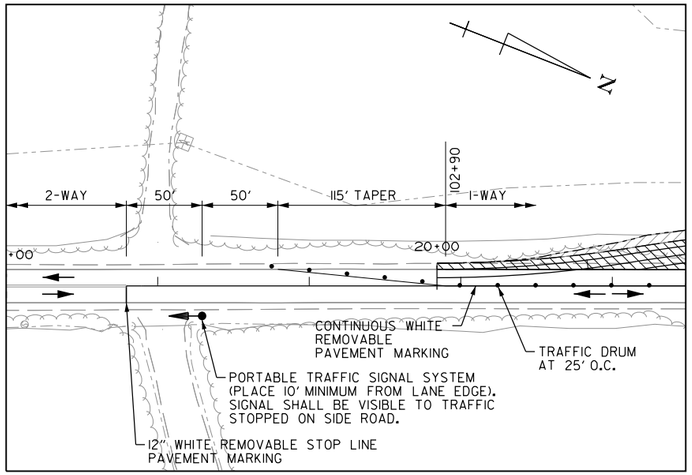
EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

TEMPORARY EROSION CONTROL DETAILS
STAGE 3

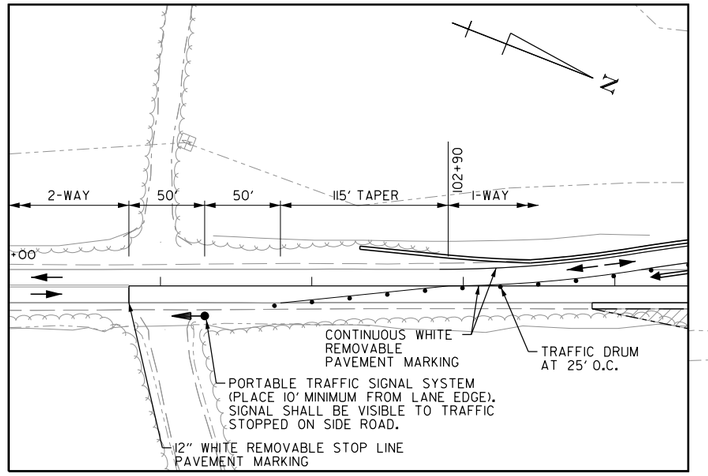
JDBradley 8/10/2023 9:21:02 AM
WORKSPACE: AHTD
L:\202\21T0048 - ARDOT 070571Hwy 7 Flood Damage Repair\Drawings\r070571_EC_STG3_01.dgn
REVISED DATE:

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070571	18	39
		MAINTENANCE OF TRAFFIC DETAILS				

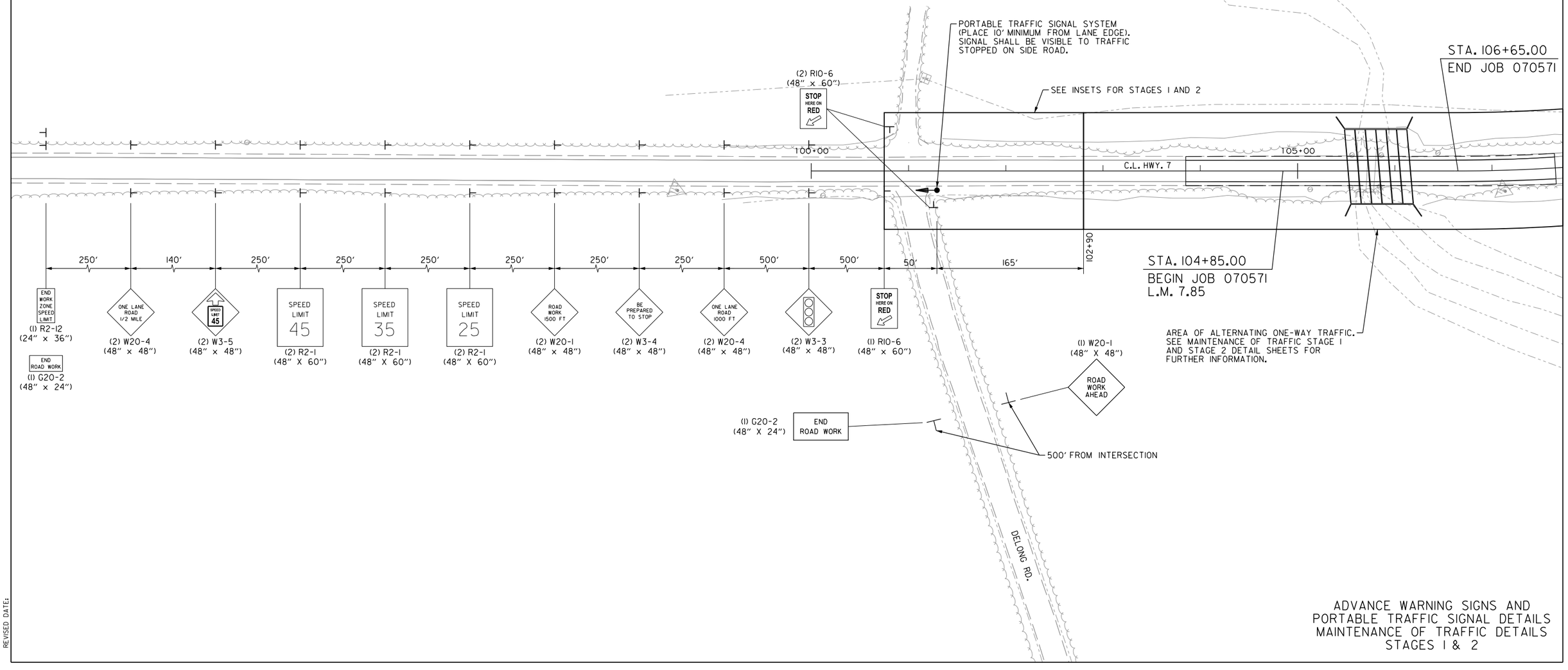
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13653
ADAM E. WIERCIAK
DIGITALLY SIGNED 08/11/2023



BEGIN STAGE 1



BEGIN STAGE 2



ADVANCE WARNING SIGNS AND PORTABLE TRAFFIC SIGNAL DETAILS
MAINTENANCE OF TRAFFIC DETAILS
STAGES 1 & 2

JDBradley 8/10/2023 9:21:02 AM
WORKSPACE: AHTD
L:\2021\21T0148 - ARDOT 070571 Hwy 7 Flood Damage Repair\Drawings\r070571_MOT_SD_01.dgn
REVISED DATE:

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070571	19	39
		MAINTENANCE OF TRAFFIC DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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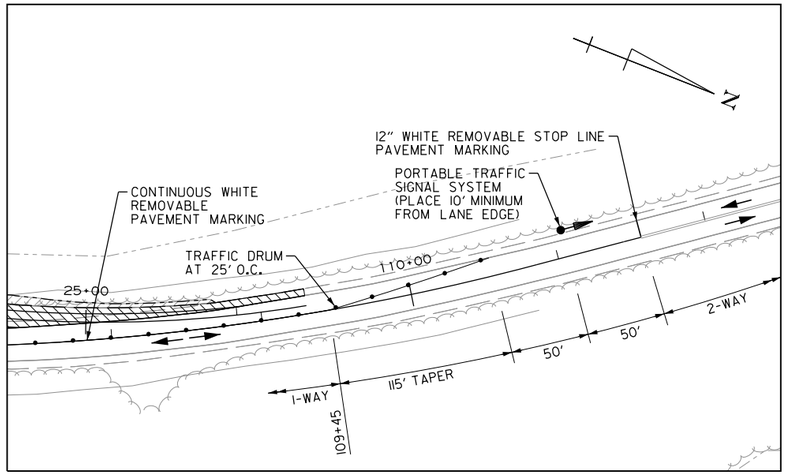
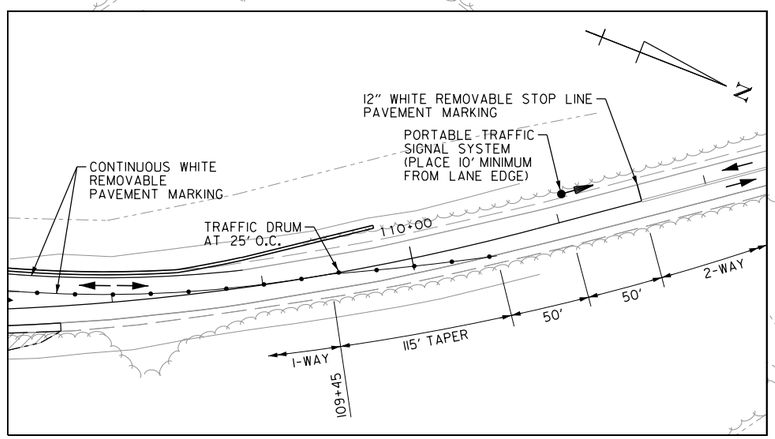


END STAGE 1



END STAGE 2

ADVANCE WARNING SIGNS AND PORTABLE TRAFFIC SIGNAL DETAILS
MAINTENANCE OF TRAFFIC DETAILS
STAGES 1 & 2

JDBradley 8/10/2023 9:21:02 AM
WORKSPACE: AHTD
L:\2021\210048 - ARDOT 070571Hwy 7 Flood Damage Repair\Drawings\r070571_MOT_SD_02.dgn
REVISED DATE:

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070571	20	39
		MAINTENANCE OF TRAFFIC DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13653
ADAM E. WIERCIAK
DIGITALLY SIGNED 08/11/2023

STAGE I CONSTRUCTION SEQUENCE NOTES:

1) INSTALL ADVANCE WARNING SIGNS, PORTABLE SIGNALS, AND CHANNELIZING DEVICES.
2) UTLILIZING PORTABLE SIGNALS, SHIFT ALTERNATING ONE WAY TRAFFIC TO THE RT. SIDE OF EXISTING HWY. 7.
3) CONSTRUCT HWY. 7 DETOUR AND PORTION OF BOX CULVERT AS SHOWN.

STAGE I TRAFFIC
STAGE I TRAFFIC DRUMS AT 25' O.C.
STAGE I PAVING
STAGE I GRADING

N

C.L. HWY. 7 DETOUR
PI = 20+66.55
Δ = 9°17'46" LT.
D = 7°00'00"
T = 66.55'
L = 132.80'
PC = 20+00.00
PRC = 21+32.80
e = NO SUPER

(1) R11-2 (48" X 30")
(1) W1-6 (48" X 24")
16' BARR. TYPE III LT.
ROAD CLOSED

C.L. HWY. 7 DETOUR
PI = 25+33.25
Δ = 15°54'58" LT.
D = 7°00'00"
T = 114.42'
L = 227.37'
PRC = 24+18.83
PT = 26+46.20
e = MATCH EXIST.

(1) R11-2 (48" X 30")
(1) W1-6 (48" X 24")
16' BARR. TYPE III RT.
ROAD CLOSED

JAINES RD.
BRUSHY CREEK
DELONG RD.

C.L. HWY. 7 DETOUR STA. 20+00.00 = C.L. HWY. 7 STA. 102+84.26, 5.50' LT.
C.L. HWY. 7 DETOUR STA. 26+46.20 = C.L. HWY. 7 STA. 109+30.38, 5.50' LT.

PC 20+00.00
PRC 21+32.80
PI 21+99.35
PI 23+72.26
PT 26+46.20
PI 20+66.55
PT 22+65.60
PC 23+25.60
PRC 24+18.83
PI 25+33.25

40' P.C.C.B TAPER
40' P.C.C.B TAPER
T.I.A.B.
T.I.A.B.
C.L. HWY. 7
C.L. HWY. 7 DETOUR

100+00
105+00
110+00
113+00
20+00
25+00

PORTABLE SIGNAL (SEE DETAIL SHEET FOR FURTHER INFORMATION)
PORTABLE SIGNAL (SEE DETAIL SHEET FOR FURTHER INFORMATION)
CONTINUOUS WHITE REMOVABLE PAVEMENT MARKING
CONTINUOUS WHITE REMOVABLE PAVEMENT MARKING
CONTINUOUS WHITE CONSTRUCTION PAVEMENT MARKING
TEMPORARY SHORING
200' P.C.C.B 104+83 TO 106+83 W/ 2 T.I.A.B.

R ← → C +85
C ← → R +65

STA. 104+85.00
BEGIN JOB 070571
L.M. 7.85

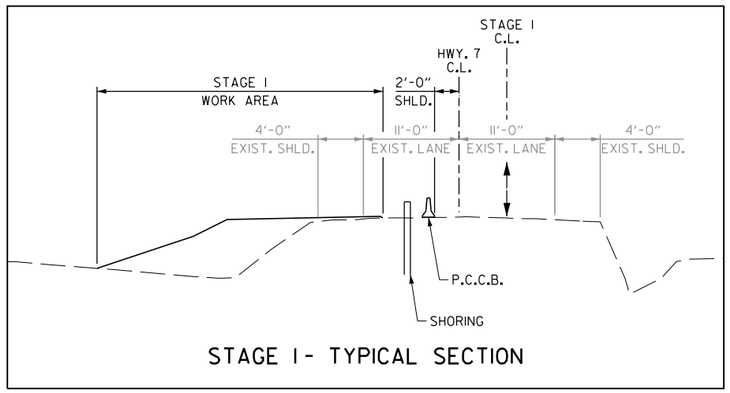
STA. 106+65.00
END JOB 070571

C.L. HWY. 7 DETOUR
PI = 21+99.35
Δ = 9°17'46" RT.
D = 7°00'00"
T = 66.55'
L = 132.80'
PRC = 21+32.80
PT = 22+65.60
e = NO SUPER

C.L. HWY. 7 DETOUR
PI = 23+72.26
Δ = 6°31'32" RT.
D = 7°00'00"
T = 46.66'
L = 93.23'
PC = 23+25.60
PRC = 24+18.83
e = NO SUPER

R ← → C
NOTE INDICATES TRANSITION BETWEEN CONSTRUCTION (C) AND REMOVABLE (R) PAVEMENT MARKINGS

DO NOT PASS — (4 PER STG.) R4-1 (24" X 30")
(4 PER STG.) W8-17 (36" X 36")
SHOULDER DROP-OFF — (4 PER STG.) W8-17P (24" X 18")
RIGHT SHOULDER CLOSED — (4 PER STG.) W21-5a (36" X 36")
TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER



STAGE I- TYPICAL SECTION

MAINTENANCE OF TRAFFIC DETAILS
STAGE I

JDBradley 8/10/2023 9:21:05 AM
WORKSPACE: AHTD
L:\2021\21T0048 - ARDOT 070571\Hwy 7 Flood Damage Repair\Drawings\r070571_MOT_STG1_01.dgn
REVISED DATE:

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070571	21	39
		MAINTENANCE OF TRAFFIC DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13653
ADAM E. WIERCIAK
DIGITALLY SIGNED 08/11/2023

STAGE 2 CONSTRUCTION SEQUENCE NOTES:

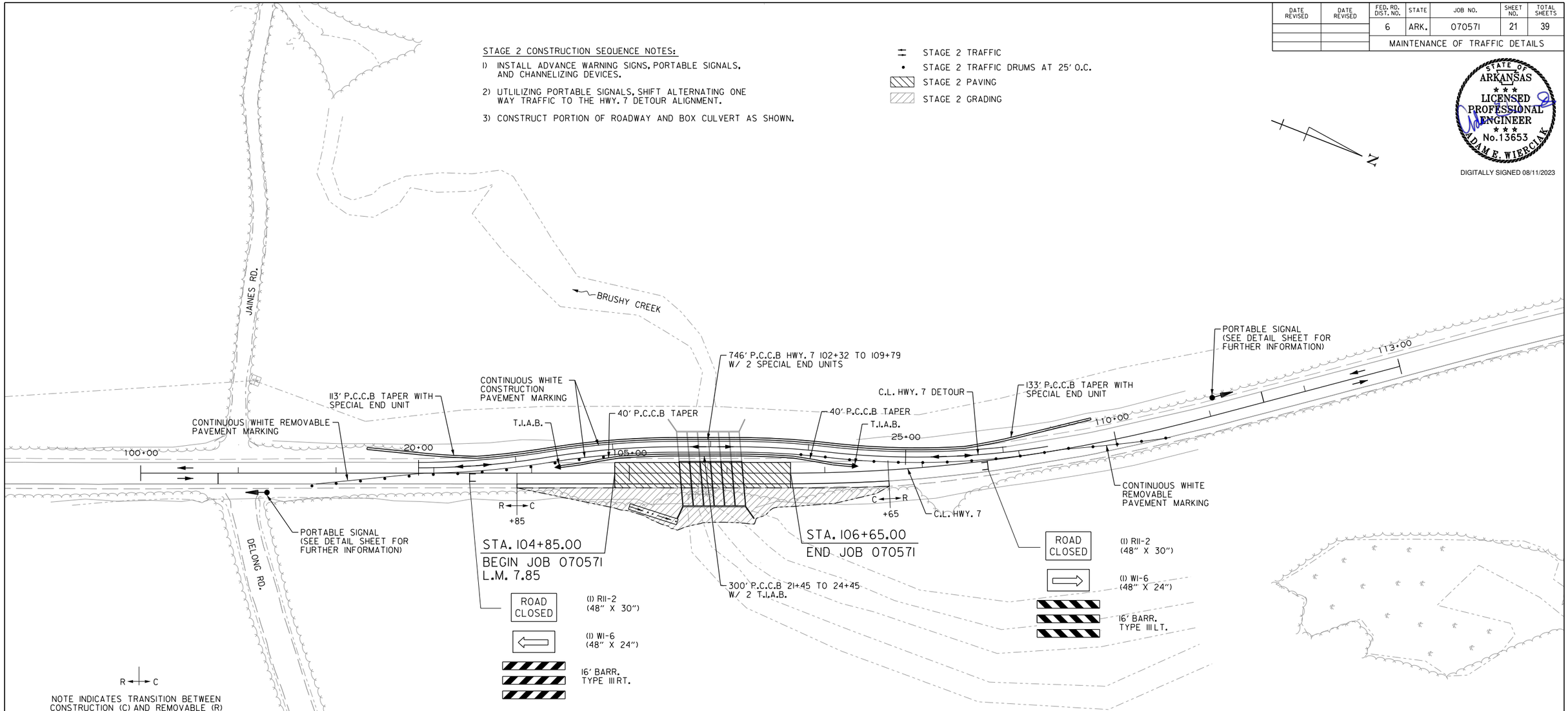
1) INSTALL ADVANCE WARNING SIGNS, PORTABLE SIGNALS, AND CHANNELIZING DEVICES.

2) UTILIZING PORTABLE SIGNALS, SHIFT ALTERNATING ONE WAY TRAFFIC TO THE HWY. 7 DETOUR ALIGNMENT.

3) CONSTRUCT PORTION OF ROADWAY AND BOX CULVERT AS SHOWN.

= STAGE 2 TRAFFIC
• STAGE 2 TRAFFIC DRUMS AT 25' O.C.
▨ STAGE 2 PAVING
▨ STAGE 2 GRADING

N



R C
NOTE INDICATES TRANSITION BETWEEN CONSTRUCTION (C) AND REMOVABLE (R) PAVEMENT MARKINGS

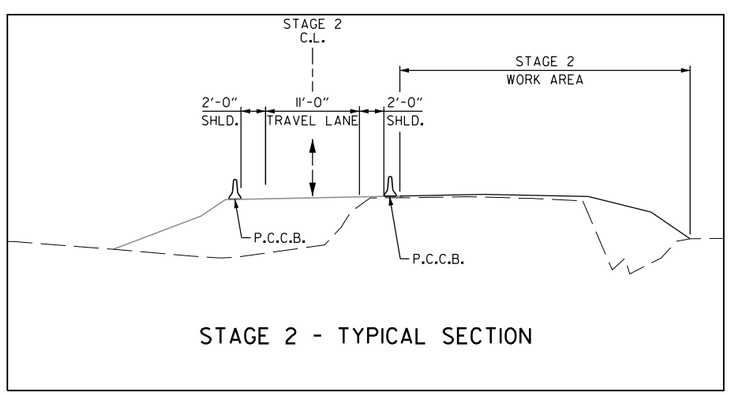
DO NOT PASS — (4 PER STG.) R4-1 (24" X 30")

(4 PER STG.) W8-17 (36" X 36")

SHOULDER DROP-OFF — (4 PER STG.) W8-17P (24" X 18")

RIGHT SHOULDER CLOSED — (4 PER STG.) W21-5a (36" X 36")

TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER



STAGE 2 - TYPICAL SECTION

MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

JDBradley 8/10/2023 9:21:05 AM
WORKSPACE: AHTD
L:\2021\2170048 - ARDOT 070571\Hwy 7 Flood Damage Repair\Drawings\r070571_MOT_STG2_01.dgn
REVISED DATE:

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070571	22	39
		MAINTENANCE OF TRAFFIC DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13653
ADAM E. WIERCIAK
DIGITALLY SIGNED 08/11/2023

STAGE 3 CONSTRUCTION SEQUENCE NOTES:

1) INSTALL ADVANCE WARNING SIGNS AND CHANNELIZING DEVICES.
2) SHIFT TRAFFIC FROM HWY. 7 DETOUR TO TWO-WAY OPERATION ON PROPOSED HWY. 7 ALIGNMENT.
3) CONSTRUCT ROADWAY GRADING AS SHOWN.
4) PLACE FINAL LIFT OF SURFACE COURSE & PERMANENT STRIPING.

= STAGE 3 TRAFFIC
• STAGE 3 TRAFFIC DRUMS AT 25' O.C.
STAGE 3 PAVING UNDER TRAFFIC
STAGE 3 GRADING

N

JAINES RD.

BRUSHY CREEK

(1) R11-2 (48" X 30") ROAD CLOSED
(1) W1-6 (48" X 24")
16' BARR. TYPE III LT.
(1) G20-2 (48" X 24") END ROAD WORK

(1) R11-2 (48" X 30") ROAD CLOSED
(1) W1-6 (48" X 24")
16' BARR. TYPE III RT.

SEE PERMANENT PAVEMENT MARKING DETAILS

(1) R4-1 (24" X 30") DO NOT PASS
(1) W20-1 (48" X 48") ROAD WORK 500 FT
(1) W20-1 (48" X 48") ROAD WORK 1000 FT
(1) W20-1 (48" X 48") ROAD WORK 1500 FT

100+00
105+00
110+00
113+00
500'
500'
500'
500'

C.L. HWY. 7

STA. 104+85.00
BEGIN JOB 070571
L.M. 7.85

STA. 106+65.00
END JOB 070571

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

500'
500'
500'

(1) W20-1 (48" X 48") ROAD WORK 1500 FT
(1) W20-1 (48" X 48") ROAD WORK 1000 FT
(1) W20-1 (48" X 48") ROAD WORK 500 FT
(1) R4-1 (24" X 30") DO NOT PASS

DELONG RD.

(4 PER STG.) R4-1 (24" X 30") DO NOT PASS
(4 PER STG.) W8-17 (36" X 36")
(4 PER STG.) W8-17P (24" X 18") SHOULDER DROP-OFF
(4 PER STG.) W21-5a (36" X 36") RIGHT SHOULDER CLOSED

TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

MAINTENANCE OF TRAFFIC DETAILS
STAGE 3

JDBradley 8/10/2023 9:21:06 AM
WORKSPACE: AHTD
L:\2021\21T0148 - ARDOT 070571 Hwy 7 Flood Damage Repair\Drawings\r-070571_MOT_STG3.01.dgn
REVISED DATE:

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070571	23	39
		PERMANENT PAVEMENT MARKING DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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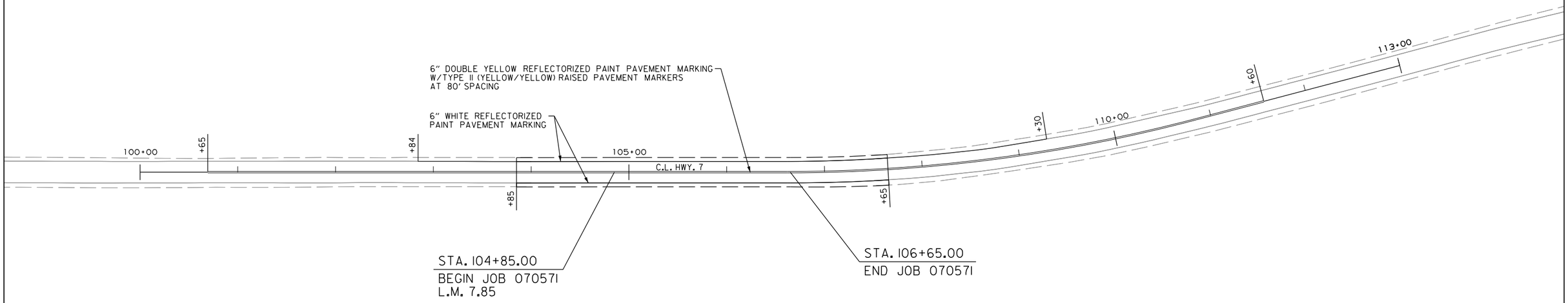
DIGITALLY SIGNED 08/11/2023



HWY. 7

6" WHITE REFLECTORIZED PAINT PAVEMENT MARKING

STA.	STA.	LOCATION	LIN. FT.
102+84	109+30	LT.	646
103+85	107+65	RT.	380

*6" YELLOW REFLECTORIZED PAINT PAVEMENT MARKING

STA.	STA.	LOCATION	LIN. FT.
100+65	111+60	C.L.	2190

TYPE II (YELLOW/YELLOW) RAISED PAVEMENT MARKERS AT 80' SPACING

STA.	STA.	LOCATION	EA.
100+65	111+60	C.L.	14

*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.

JDBradley 8/10/2023 9:21:06 AM
WORKSPACE: AHTD
L:\2021\211\0148 - ARDOT 070571Hwy 7 Flood Damage Repair\Drawings\r070571_PM_01.dgn
REVISED DATE:

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070571	24	39
		QUANTITIES				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 1	STAGE 2	STAGE 3	END OF JOB	REMOVAL OF PERMANENT PAVEMENT MARKINGS	CONSTRUCTION PAVEMENT MARKINGS	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW)	REFLECTORIZED PAINT PAVEMENT MARKING 6" WHITE	REFLECTORIZED PAINT PAVEMENT MARKING 6" YELLOW
	LIN. FT. - EACH				LIN. FT.		LIN. FT.		EACH	LIN. FT.	
REMOVAL OF PERMANENT PAVEMENT MARKINGS	2705				2705						
CONSTRUCTION PAVEMENT MARKINGS	380	761	1140			2281					
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS		200					200				
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	573	773						1346			
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW)				14					14		
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")				1026						1026	
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")				2190							2190
TOTALS:					**2705**	**2281**	**200**	**1346**	**14**	**1026**	**2190**

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.

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	STAGE 3	END OF JOB	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED NO.	TOTAL SIGNS REQUIRED SQ. FT.	TRAFFIC DRUMS	BARRICADES (TYPE III) RIGHT	BARRICADES (TYPE III) LEFT	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.	EACH	RIGHT	LEFT	LIN. FT.			EACH		LUMP SUM
G20-2	END ROAD WORK	48"x24"	3	3	3		3	3	24.0									
R11 2	ROAD CLOSED	48"x30"	2	2	2		2	2	20.0									
R4-1	DO NOT PASS	24"x30"	4	4	6		6	6	30.0									
W1-6	LARGE ARROW	48"x24"	2	2	2		2	2	16.0									
W20-1	ROAD WORK AHEAD	48"x48"	1	1	1		1	1	16.0									
W20-1	ROAD WORK 1500 FT.	48"x48"	4	4	2		4	4	64.0									
W20-1	ROAD WORK 1000 FT.	48"x48"			2		2	2	32.0									
W20-1	ROAD WORK 500 FT.	48"x48"			2		2	2	32.0									
* W21-5A	RIGHT SHOULDER CLOSED	36"x36"	4	4	4		4	4	36.0									
R2-12	END WORK ZONE SPEED LIMIT	24"36"	2	2			2	2	12.0									
W20-4	ONE LANE ROAD 1/2 MILE	48"x48"	4	4			4	4	64.0									
W20-4	ONE LANE ROAD 1000 FT	48"x48"	4	4			4	4	64.0									
W3-5	SPEED REDUCTION 45 MPH	48"x48"	4	4			4	4	64.0									
R2-12	SPEED LIMIT 45	48"x60"	4	4			4	4	80.0									
R2-12	SPEED LIMIT 35	48"x60"	4	4			4	4	80.0									
R2-12	SPEED LIMIT 25	48"x60"	4	4			4	4	80.0									
W3-4	BE PREPARED TO STOP	48"x48"	4	4			4	4	64.0									
W3-3	TRAFFIC LIGHT AHEAD	48"x48"	4	4			4	4	64.0									
R10-6	STOP HERE ON RED	48"x60"	4	4			4	4	80.0									
W8-17	SHOULDER DROP OFF (SYMBOL)	36"x36"	4	4	4		4	4	36.0									
W8-17P	SHOULDER DROP OFF (PLAQUE)	24"x18"	4	4	4		4	4	12.0									
OM-3L	OBJECT MARKER	12"x36"	6	6			6	6	18.0									
	TRAFFIC DRUMS		31	29	26		31			31								
	TYPE III BARRICADE-RT. (16')		1	1	1		1				16							
	TYPE III BARRICADE-LT. (16')		1	1	1		1					16						
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER		200	846			1046						1046					
	RELOCATING PRECAST CONCRETE BARRIER			200			200							200				
	TEMPORARY IMPACT ATTENUATION BARRIER		2				2								2			
	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)		2	2			4									4		
	TEMPORARY IMPACT ATTENUATION BARRIER (RELOCATION)			2			2										2	
	PORTABLE TRAFFIC SIGNAL SYSTEM - ACTUATED		2	2			2											1.00
TOTALS:									**988.0**	**31**	**16**	**16**	**1046**	**200**	**2**	**4**	**2**	**1.00**

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

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

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070571	25	39
		QUANTITIES				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13653
ADAME. WIERCIAK
DIGITALLY SIGNED 08/11/2023

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
102+84	109+31	HWY. 7	7	7
TOTALS:			7	7

REMOVAL AND DISPOSAL OF CULVERTS

STATION	DESCRIPTION	PIPE CULVERTS
		EACH
105+72	HWY. 7	3
TOTAL:		3

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

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
103+85.00	104+85.00	HWY. 7	30.00	333.33
106+65.00	107+65.00	HWY. 7	30.00	333.33
TOTAL:				666.66

STOCKPILE LOCATION: HWY. 7, SECTION 6, L.M. 0.63 ON THE LEFT.

CONCRETE DITCH PAVING

STATION	STATION	LOCATION	LENGTH	"W"	CONC. DITCH PAVING (TYPE B)	SOLID SODDING	WATER
			LIN. FT.	FEET	SQ. YD.	SQ. YD.	M. GAL.
104+85.00	105+49.00	HWY. 7 RT.	64.00	6.00	42.67	28.44	0.36
105+00.00	105+40.00	HWY. 7 LT.	40.00	6.00	26.67	17.78	0.22
106+18.00	106+65.00	HWY. 7 LT.	47.00	6.00	31.33	20.89	0.26
TOTALS:					100.67	67.11	0.84

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

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

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT
			CU. YD.	
ENTIRE	PROJECT	STAGE 1	481	559
ENTIRE	PROJECT	STAGE 2	32	405
ENTIRE	PROJECT	STAGE 3	399	13
TOTALS:			912	977

NOTE: EARTHWORK QUANTITIES SHOWN ABOVE SHALL BE PAID AS PLAN QUANTITY.

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

BENCH MARKS

STATION	LOCATION	BENCH MARKS
		EACH
106+19	HWY. 7 BOX CULVERT NW CORNER	1
TOTAL:		1

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

SOIL STABILIZATION

STATION	STATION	LOCATION / DESCRIPTION	SOIL STABILIZATION
			TON
* ENTIRE	PROJECT	TO BE USED IF AND WHERE	
		DIRECTED BY THE ENGINEER	100
TOTAL:			100

* QUANTITY 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	100
TOTAL:	100

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

EROSION CONTROL MATTING

STATION	STATION	LOCATION	LENGTH	CLASS 3
			LIN. FT.	SQ. YD.
104+85.00	105+00.00	HWY. 7 LT.	15.00	13.33
TOTAL:				13.33

NOTE: AVERAGE WIDTH = 8'-0"

STRUCTURES

STATION	DESCRIPTION	SPAN	HEIGHT	LENGTH	CLASS S CONCRETE-ROADWAY	REINF. STEEL-ROADWAY (GRADE 60)	UNCL.EXC. FOR STR.-ROADWAY	SOLID SODDING	WATER	STD. DWG. NOS.
		LIN. FT.			CU.YD.	POUND	CU.YD.	SQ.YD.	M.GAL.	
STRUCTURES OVER 20' - 0" SPAN										
105+84	HWY. 7 CONST. SEXT. 10'x5' R.C. BOX CULVERT	10	5	78	472.75	58864	210	43	0.54	RCB-1,RCB-2, SPECIAL DETAILS
TOTALS:					472.75	58864	210	43	0.54	

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

RUMBLE STRIPS

STATION	STATION	LOCATION	CENTERLINE RUMBLE STRIPES IN ASPHALT ROADWAYS
			LIN.FT.
104+85	106+65	HWY. 7	180
TOTAL			180

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WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070571	26	39
		QUANTITIES				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13653
ADAM E. WIERCIAK
DIGITALLY SIGNED 09/12/2023

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL					TEMPORARY EROSION CONTROL								
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	TEMPORARY SEEDING	MULCH COVER	WATER	WATTLE (20") DITCH CHECKS (E-1)	SAND BAG DITCH CHECKS (E-5)	ROCK DITCH CHECKS (E-6)	SILT FENCE (E-11)	FILTER SOCK (18") (E-13)	*SEDIMENT REMOVAL & DISPOSAL
			ACRE	TON	ACRE	M.GAL.	ACRE	ACRE	ACRE	M.GAL.	LIN. FT.	BAG	CU.YD.	LIN. FT.	LIN. FT.	CU. YD.
ENTIRE	PROJECT	CLEARING AND GRUBBING										154		445		23
ENTIRE	PROJECT	STAGE 1						0.31	0.31	6.3		44				2
ENTIRE	PROJECT	STAGE 2						0.28	0.28	5.7		44		170		8
ENTIRE	PROJECT	STAGE 3						0.44	0.44	9.0		44				2
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			0.75	1.50	0.75	76.5	0.75				45	110	15		100	115
TOTALS:			0.75	1.50	0.75	76.5	0.75	1.03	1.03	21.0	45	396	15	615	100	150

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
WATTLE DITCH CHECKS.....9 LIN. FT. / LOCATION
SAND BAG DITCH CHECKS.....22 BAGS / LOCATION
ROCK DITCH CHECKS.....3 CU.YD./LOCATION

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

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

BASE AND SURFACING

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT						ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")			
				TON / STATION	TON	(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
			FEET			TOTAL WID. FEET	SQ.YD.	GALLON	TOTAL WID. FEET	SQ.YD.	GALLON		FEET			TON	FEET			TON
MAIN LANES																				
103+85.00	104+85.00	HWY. 7 - TRANSITION	100.00	0.88	0.88				30.00	333.33	56.67	56.67					30.00	333.33	220.00	36.67
104+85.00	105+32.00	HWY. 7 - NOTCH AND WIDEN	47.00	1.75	0.82	30.00	156.67	7.83									30.00	156.67	220.00	17.23
105+32.00	106+36.00	HWY. 7 - FULL DEPTH	104.00	94.00	97.76				22.00	254.22	43.22	43.22					30.00	346.67	220.00	38.13
106+36.00	106+65.00	HWY. 7 - NOTCH AND WIDEN	29.00	1.75	0.51	30.00	96.67	4.83									30.00	96.67	220.00	10.63
106+65.00	107+65.00	HWY. 7 - TRANSITION	100.00	0.88	0.88				30.00	333.33	56.67	56.67					30.00	333.33	220.00	36.67
ADDITIONAL FOR DETOUR																				
20+00.00	22+48.34	HWY. 7 DETOUR	248.34	74.50	185.01	9.15	252.48	12.62				12.62	9.15	252.48	330.00	41.66	13.00	358.71	220.00	39.46
22+48.34	23+53.83	HWY. 7 DETOUR	105.49	158.25	166.94	11.29	132.33	6.62				6.62	11.29	132.33	330.00	21.83	19.00	222.70	220.00	24.50
23+53.83	26+46.20	HWY. 7 DETOUR	292.37	74.50	217.82	9.15	297.24	14.86				14.86	9.15	297.24	330.00	49.04	13.00	422.31	220.00	46.45
ADDITIONAL FOR LEVELING																				
104+85.00	105+32.00	HWY. 7 - NOTCH AND WIDEN	47.00						30.00	156.67	26.63	26.63					26.00	135.78	VAR.	6.18
106+36.00	106+65.00	HWY. 7 - NOTCH AND WIDEN	29.00						30.00	96.67	16.43	16.43					26.00	83.78	VAR.	4.31
ADDITIONAL FOR BOX CULVERT																				
105+51.84	106+16.17	HWY. 7 - NOTCH AND WIDEN	64.33	VAR.	124.36															
ADDITIONAL FOR SUPERELEVATION																				
106+43.00	106+65.00	HWY. 7 - NOTCH AND WIDEN	22.00	0.25	0.06															
TOTALS:					795.04		935.39	46.76		1174.22	199.62	233.72		682.05		112.53		2489.95		260.23

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.8% MIN. AGGR.....5.2% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.8% MIN. AGGR.....4.2% 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.

PAVEMENT REPAIR OVER CULVERTS (CONCRETE)

STATION	STATION	LOCATION	WIDTH	LENGTH	CU.YD.
			FEET		
105+32	106+36	HWY. 7	22.00	104.00	70.6
TOTAL:					70.6

AVG. DEPTH = 10"

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WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
10-13-23		6	ARK.	070571	27	39
		SUMMARY OF QUANTITIES AND REVISIONS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13653
ADAM E. WIERCIAK

DIGITALLY SIGNED 10/13/2023

SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM	QUANTITY	UNIT
SP & 201	CLEARING	7	STATION
201	GRUBBING	7	STATION
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS	3	EACH
SP, SS, & 210	UNCLASSIFIED EXCAVATION	912	CU. YD.
SP & 210	COMPACTED EMBANKMENT	977	CU. YD.
SP & 210	SOIL STABILIZATION	100	TON
SP, SS, & 303	AGGREGATE BASE COURSE (CLASS 7)	795	TON
SS & 401	TACK COAT	236	GAL.
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	108	TON
SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")	5	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	247	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")	14	TON
SP & 412	COLD MILLING ASPHALT PAVEMENT	667	SQ. YD.
SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	1	TON
SP, SS, & 415	ACHM PATCHING OF EXISTING ROADWAY	100	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	988	SQ. FT.
SS & 604	BARRICADES	32	LIN. FT.
SS & 604	TRAFFIC DRUMS	31	EACH
SS & 604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	1046	LIN. FT.
SS & 604	RELOCATING PRECAST CONCRETE BARRIER	200	LIN. FT.
604	CONSTRUCTION PAVEMENT MARKINGS	2281	LIN. FT.
604	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	1346	LIN. FT.
604	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	200	LIN. FT.
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS	2705	LIN. FT.
SP, SS, & 605	CONCRETE DITCH PAVING (TYPE B)	101	SQ. YD.
SS & 611	4" PIPE UNDERDRAINS	100	LIN. FT.
SS & 611	UNDERDRAIN OUTLET PROTECTORS	2	EACH
SS & 615	PAVEMENT REPAIR OVER CULVERTS (CONCRETE)	70.6	CU. YD.
620	LIME	2	TON
620	SEEDING	0.75	ACRE
SS & 620	MULCH COVER	1.78	ACRE
620	WATER	98.9	M. GAL.
621	TEMPORARY SEEDING	1.03	ACRE
621	SILT FENCE	615	LIN. FT.
621	SAND BAG DITCH CHECKS	396	BAG
621	SEDIMENT REMOVAL AND DISPOSAL	150	CU. YD.
621	ROCK DITCH CHECKS	15	CU. YD.
SS & 621	FILTER SOCK (18")	100	LIN. FT.
621	WATTLE (20")	45	LIN. FT.
623	SECOND SEEDING APPLICATION	0.75	ACRE
624	SOLID SODDING	110	SQ. YD.
626	EROSION CONTROL MATTING (CLASS 3)	13	SQ. YD.
635	ROADWAY CONSTRUCTION CONTROL	1.00	LUMP SUM
SP & 642	CENTERLINE RUMBLE STRIPES IN ASPHALT ROADWAYS	180	LIN. FT.
SP	PORTABLE TRAFFIC SIGNAL SYSTEM - ACTUATED	1.00	LUMP SUM
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")	1026	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")	2190	LIN. FT.
721	RAISED PAVEMENT MARKERS (TYPE II)	14	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER	2	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)	4	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER (RELOCATION)	2	EACH
	STRUCTURES OVER 20' SPAN		
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY	210	CU. YD.
SP, SS, & 802	CLASS S CONCRETE-ROADWAY	472.75	CU. YD.
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)	58864	POUND

* DENOTES ALTERNATE BID ITEMS.

REVISIONS

DATE	REVISION	SHEET NUMBER
10-13-2023	CORRECTED AGGREGATE BASE COURSE (CLASS 7) UNIT TO "TON".	27

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070571	28	39
		SURVEY CONTROL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13653
ADAM E. WIERCIAK

DIGITALLY SIGNED 08/11/2023

SURVEY CONTROL COORDINATES

Project Name: s070571
Date: 2/17/2023
Coordinate System: ARKANSAS STATE PLANE -SOUTH ZONE BASED ON GPS CONTROL, GRID COORDINATES
Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
1	1825727.3640	1011942.9870	181.248	CTL	*STD. ARDOT MONUMENT
2	1826512.5310	1011636.4770	180.060	CTL	*STD. ARDOT MONUMENT
3	1827304.9610	1011326.1960	170.896	CTL	*STD. ARDOT MONUMENT
4	1828144.5810	1010788.3470	174.244	CTL	*STD. ARDOT MONUMENT
5	1828952.1910	1010231.3050	175.928	CTL	*STD. ARDOT MONUMENT
6	1829546.3630	1009511.9690	176.933	CTL	*STD. ARDOT MONUMENT
7	1829965.4270	1008950.6520	175.020	CTL	*STD. ARDOT MONUMENT

Note - Rebar and Cap - Standard -" Rebar with 2" Aluminum Cap stamped
*(standard markings common to all caps), or as indicated
(other markings indicated in the point description of the individual point).
USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT
GRID COORDINATES ARE STORED UNDER FILE NAME s070571gi.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

ALIGNMENT NAME: HWY. 7

POINT	STATION	TYPE	NORTHING	EASTING
8000	100+00.00	POB	1826633.0313	1011567.4827
8001	106+62.08	PC	1827245.3128	1011325.5096
8002	110+84.81	PT	1827618.5971	1011122.2058
8003	113+00.00	POE	1827792.1798	1010995.0137

ALIGNMENT NAME: HWY. 7 DETOUR

POINT	STATION	TYPE	NORTHING	EASTING
8100	20+00.00	PC	1826895.6125	1011458.4751
8101	21+32.80	PRC	1827014.7567	1011400.1463
8102	22+65.60	PT	1827133.9010	1011341.8176
8103	23+25.60	PC	1827189.7503	1011319.8892
8104	24+18.83	PRC	1827278.2742	1011290.8287
8105	26+46.20	PT	1827487.1016	1011202.7490

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WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070571	29	39
		SURVEY CONTROL DETAILS				

100 50 0 100

Scale: 1" = 100'

ALL BEARINGS ARE GRID
BASED ON GPS
ALL DISTANCES ARE GROUND

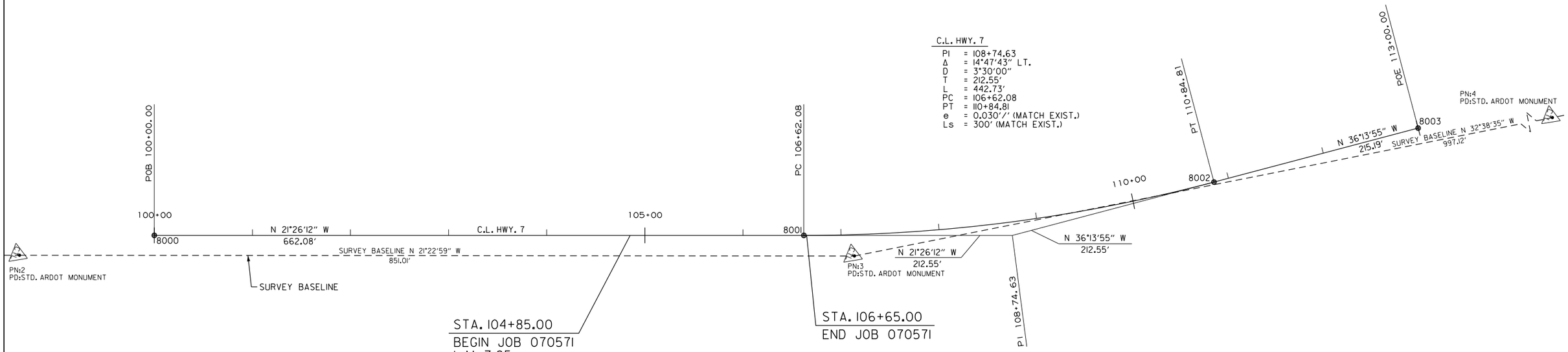
N

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13653
ADAM E. WIERCIAK

DIGITALLY SIGNED 08/11/2023

C.L. HWY. 7

PI = 108+74.63
Δ = 14°47'43" LT.
D = 3°30'00"
T = 212.55'
L = 442.73'
PC = 106+62.08
PT = 110+84.81
e = 0.030'/' (MATCH EXIST.)
Ls = 300' (MATCH EXIST.)



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WORKSPACE: AHTD
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REVISED DATE:

SURVEY CONTROL DETAILS

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070571	30	39
		TEMPORARY SURVEY CONTROL DETAILS				

100 50 0 100

Scale: 1" = 100'

ALL BEARINGS ARE GRID
BASED ON GPS
ALL DISTANCES ARE GROUND

N

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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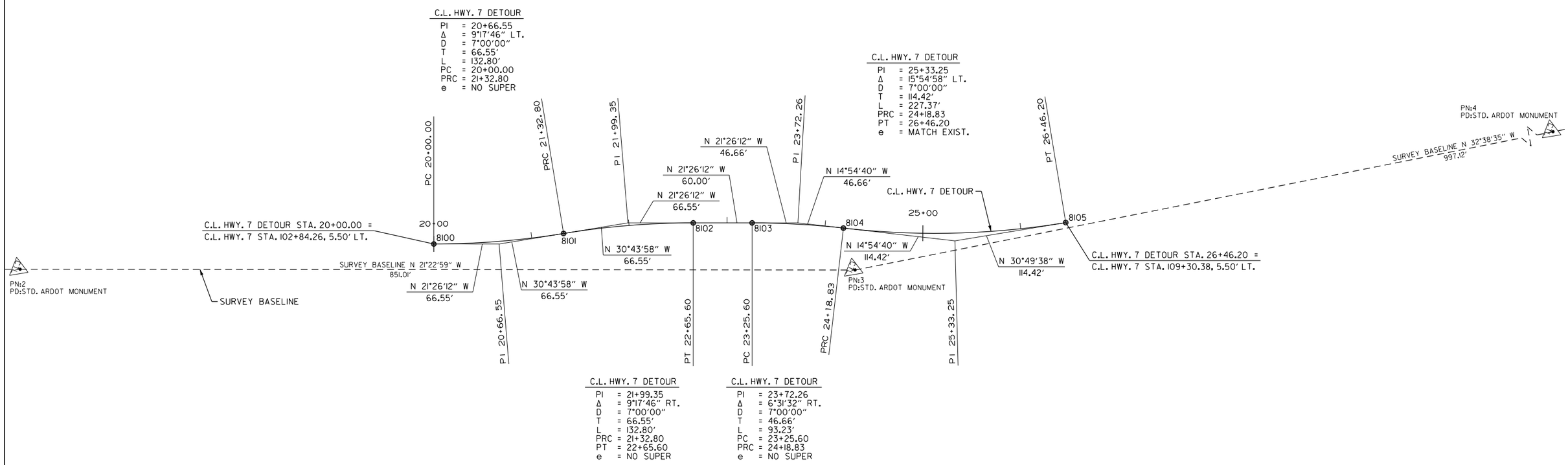
DIGITALLY SIGNED 08/11/2023



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WORKSPACE: AHTD
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REVISED DATE:

TEMPORARY SURVEY CONTROL DETAILS

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070571	31	39
		PLAN & PROFILE - HWY. 7				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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STA. 105+84 CONSTRUCT
SEXT. 10' X 5' X 78' R.C. BOX CULVERT
5° RT. FWD. SKEW
WITH 3:1 WINGS LT. & RT.
Q50 = 1265 CFS D.A. = 3.31 SQ. MI.
TOTAL Q50 = 1981 CFS WITH 716 CFS
OVERFLOW FROM TUPELO CREEK
SPAN = 64.33'

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YDS.
104+85	105+49	RT. = 64 LIN. FT.	6'-0"	43
105+00	105+40	LT. = 40 LIN. FT.	6'-0"	27
106+18	106+65	LT. = 47 LIN. FT.	6'-0"	31

STA. 105+72 IN PLACE
DBL. 72" X 44' R.C. PIPE CULVERT &
60" X 44' C.M. PIPE CULVERT
REMOVE

C.L. HWY. 7
PI = 108+74.63
Δ = 14°47'43" LT.
D = 3°30'00"
T = 212.55'
L = 442.73'
PC = 106+62.08
PT = 110+84.81
e = 0.030'/' (MATCH EXIST.)
Ls = 300' (MATCH EXIST.)

JAINES RD.
BRUSHY CREEK
DELONG RD.
100' TRANSITION TO MATCH EXISTING
PROP. R/W
DETOUR CONST. LIMITS
CONST. LIMITS
C.L. HWY. 7
EXIST. 22'
4'
+00 100'
+00 65'
+00 70'
+00 100'
+85
+65
PC 106+62.08
PT 110+84.81
PI 108+74.63
100+00
105+00
110+00
113+00
N 21°26'12" W
N 36°13'55" W
STA. 104+85.00
BEGIN JOB 070571
L.M. 7.85
STA. 106+65.00
END JOB 070571
SPECIAL FLOOD HAZARD AREA
HWY. 7

REFER TO SURVEY CONTROL DETAIL SHEETS
FOR HORIZONTAL AND VERTICAL CONTROL POINTS

BRUSHY CREEK AT STA. 105+54 TO 106+14 IS CLASSIFIED AS A PERENNIAL STREAM. THE TOP OF THE CHANNEL IS 167.0 FT. MSL. REFER TO SECTION 110.05(c) TEMPORARY FILL OF THE 2014 STANDARD SPECIFICATIONS.

STA. 106+43.00 BEGIN SUPERELEVATION
STA. 109+43.00 MAX. SUPERELEVATION (0.030'/') (MATCH EXIST.)

100' VERTICAL TRANSITION TO MATCH EXISTING
PROFILE GRADE
PVI 104+85.00 ELEV. 172.72
PVC 104+95.00 ELEV. 172.76
PVI 105+70.00 ELEV. 173.08
PVT 106+45.00 ELEV. 172.66
PVI 106+65.00 ELEV. 172.55
0.42%
-0.56%
EXISTING GROUND
Q50 DESIGN H.W. ELEV. = 170.85
STA. 104+85.00
BEGIN JOB 070571
ELEV. 172.72
STA. 106+65.00
END JOB 070571
ELEV. 172.55
+85.00 RT. 169.34
+00.00 LT. 168.35
+40.00 LT. 163.28
+49.00 RT. 165.41
+18.00 LT. 163.28
+65.00 LT. 168.56
-6.14% RT. DITCH GRADE
-12.67% LT. DITCH GRADE
11.23% LT. DITCH GRADE
VC = 150.00'
K = 153.06
e = -0.18'
PROP. F.L. = 165.41 RT.
PROP. F.L. = 163.28 LT.

210 200 190 180 170 160 150 140 130 120
100+00 101+00 102+00 103+00 104+00 105+00 106+00 107+00 108+00 109+00 110+00 111+00 112+00 113+00

JDBradley 8/10/2023 9:22:08 AM
WORKSPACE: AHTD
L:\2021\210048 - ARDOT 070571\Hwy 7 Flood Damage Repair\Drawings\r070571_PP_01.dgn
REVISED DATE:

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070571	32	39
		PLAN & PROFILE - HWY. 7 DETOUR				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13653
ADAME. WIERCIAK
DIGITALLY SIGNED 08/11/2023

SPECIAL FLOOD HAZARD AREA

BRUSHY CREEK

JAINES RD.

DELONG RD.

N

C.L. HWY. 7 DETOUR
PI = 20+66.55
Δ = 9°17'46" LT.
D = 7°00'00"
T = 66.55'
L = 132.80'
PC = 20+00.00
PRC = 21+32.80
e = NO SUPER

C.L. HWY. 7 DETOUR
PI = 25+33.25
Δ = 15°54'58" LT.
D = 7°00'00"
T = 114.42'
L = 227.37'
PRC = 24+18.83
PT = 26+46.20
e = MATCH EXIST.

C.L. HWY. 7 DETOUR STA. 20+00.00 =
C.L. HWY. 7 STA. 102+84.26, 5.50' LT.

C.L. HWY. 7 DETOUR STA. 26+46.20 =
C.L. HWY. 7 STA. 109+30.38, 5.50' LT.

+00 100'
+00 65'
+00 70'
+00 100'

PC 20+00.00
PRC 21+32.80
PI 21+99.35
PI 23+72.26
PT 26+46.20
PI 20+66.55
PT 22+65.60
PC 23+25.60
PRC 24+18.83
PI 25+33.25

PROP. R/W
PROP. R/W

N 21°26'12" W
N 21°26'12" W
N 30°43'58" W
N 30°49'38" W
N 14°54'40" W
N 36°13'55" W

DETOUR CONST. LIMITS
DETOUR CONST. LIMITS 25+00
C.L. HWY. 7

100+00
105+00
110+00
113+00

4'
4'
4'

C.L. HWY. 7 DETOUR
PI = 21+99.35
Δ = 9°17'46" RT.
D = 7°00'00"
T = 66.55'
L = 132.80'
PRC = 21+32.80
PT = 22+65.60
e = NO SUPER

C.L. HWY. 7 DETOUR
PI = 23+72.26
Δ = 6°31'32" RT.
D = 7°00'00"
T = 46.66'
L = 93.23'
PC = 23+25.60
PRC = 24+18.83
e = NO SUPER

STA. 104+85.00
BEGIN JOB 070571
L.M. 7.85

STA. 106+65.00
END JOB 070571

HWY. 7 DETOUR

REFER TO SURVEY CONTROL DETAIL SHEETS
FOR HORIZONTAL AND VERTICAL CONTROL POINTS

+00.00
+46.20
NOTCH AND WIDEN
OUTSIDE EDGE OF LANE
(CONTROL POINT)
EXISTING GROUND

220
210
200
190
180
170
160
150
140
130

20+00 21+00 22+00 23+00 24+00 25+00 26+00

JDBradley 8/10/2023 9:22:08 AM
WORKSPACE: AHTD
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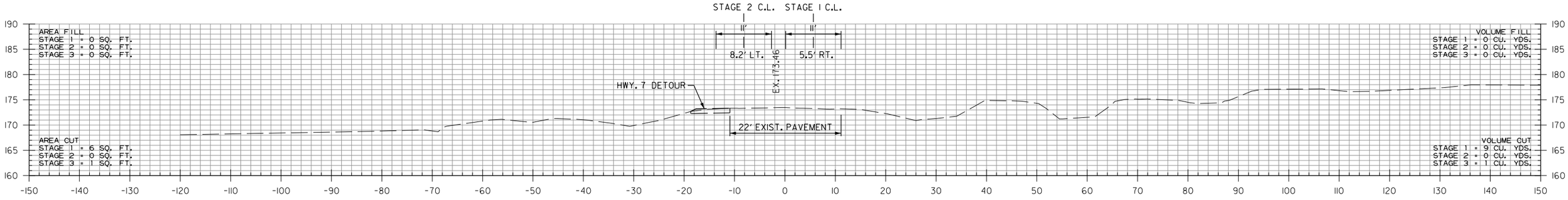
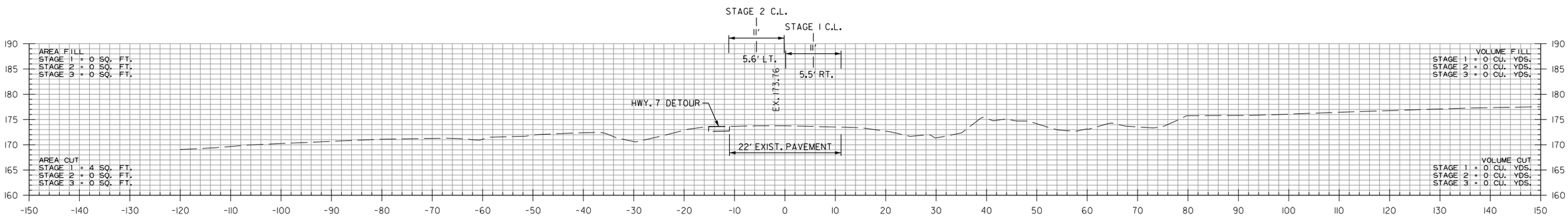
REVISED DATE:

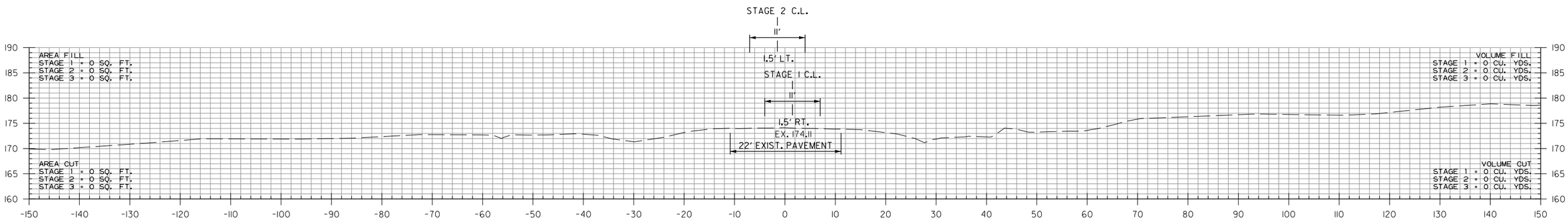
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070571	33	39
		CROSS SECTIONS				



103+50.00



103+00.00



102+50.00

HWY. 7
STA. 102+50 TO STA. 103+50

JDBradley 8/10/2023 9:22:08 AM
WORKSPACE: AHTD
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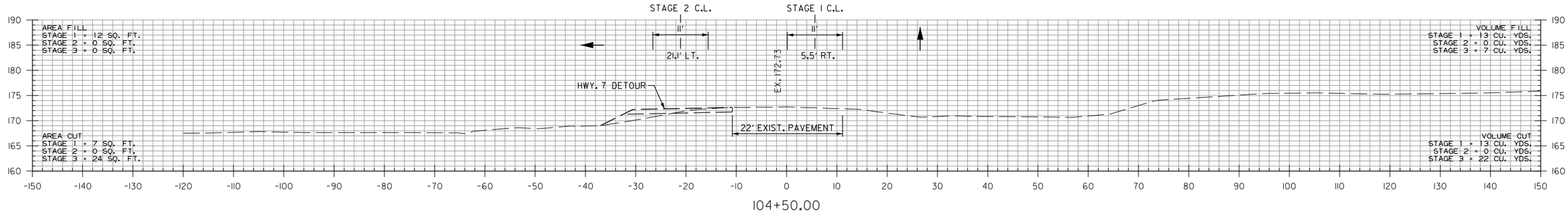
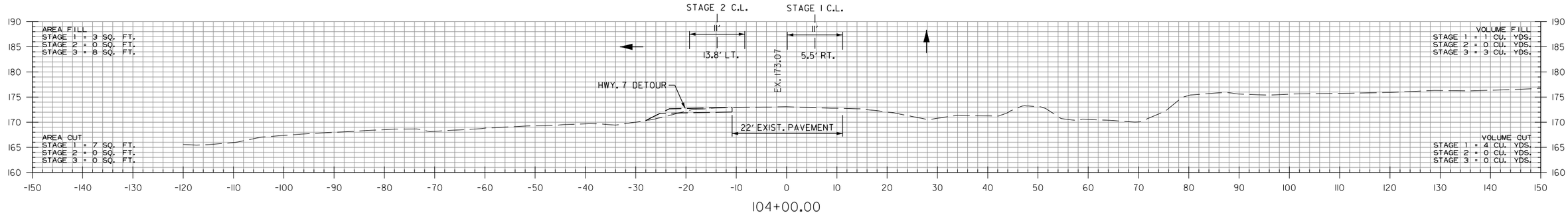
REVISED DATE:

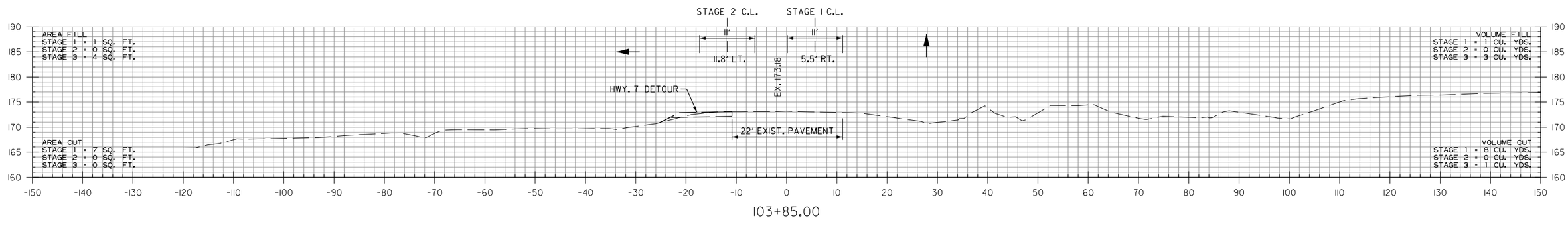
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070571	34	39
		CROSS SECTIONS				



104+50.00



104+00.00



103+85.00

STA. 103+85.00 BEGIN 100' TRANSITION

HWY. 7
STA. 103+85 TO STA. 104+50

JDBradley 8/10/2023 9:22:08 AM
WORKSPACE: AHTD
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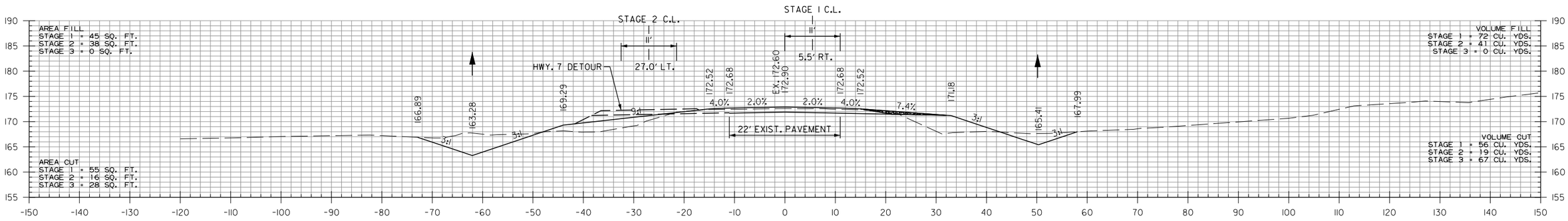
REVISED DATE:

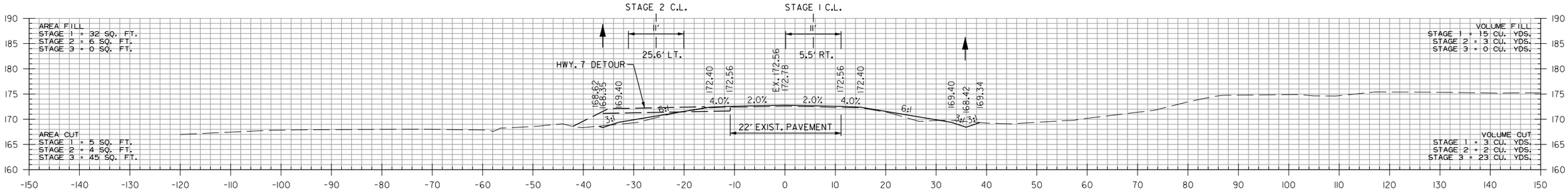
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070571	35	39
		CROSS SECTIONS				



105+50.00

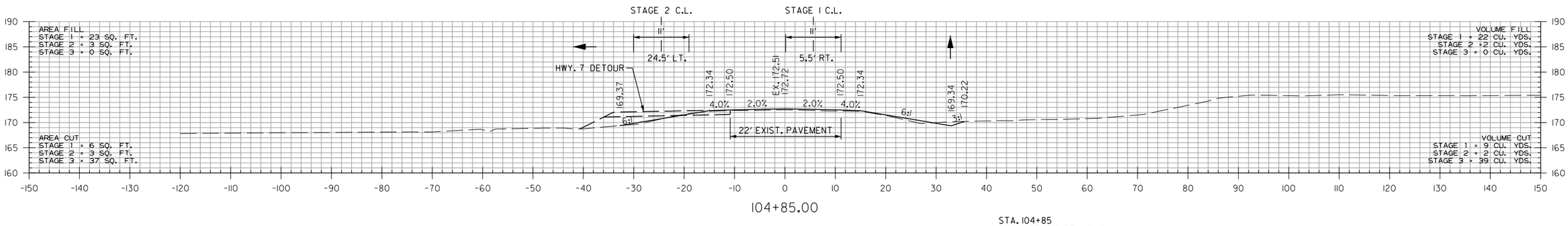
STA. 105+40
END SP. DT. LT. -12.67%
ELEV. 163.28

STA. 105+49
END SP. DT. RT. -6.14%
ELEV. 165.41



105+00.00

STA. 105+00
BEGIN SP. DT. LT. -12.67%
ELEV. 168.35



104+85.00

STA. 104+85.00 END 100' TRANSITION
BEGIN JOB 070571

STA. 104+85
BEGIN SP. DT. RT. -6.14%
ELEV. 169.34

HWY. 7
STA. 104+85 TO STA. 105+50

JDBradley 8/10/2023 9:22:09 AM
WORKSPACE: AHTD
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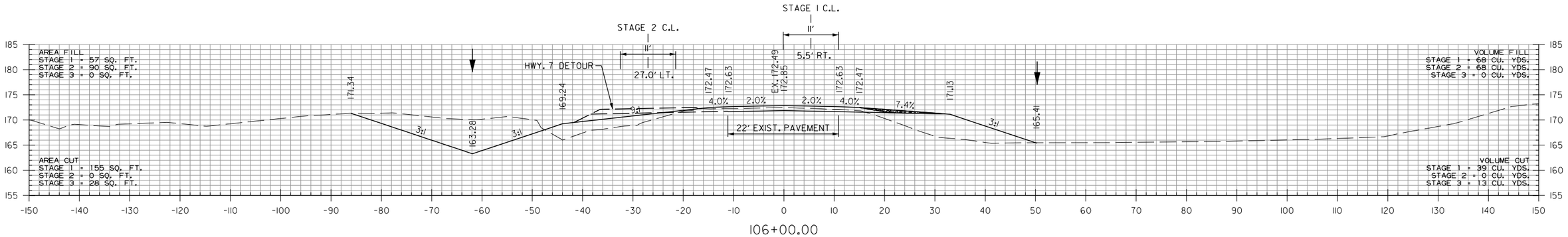
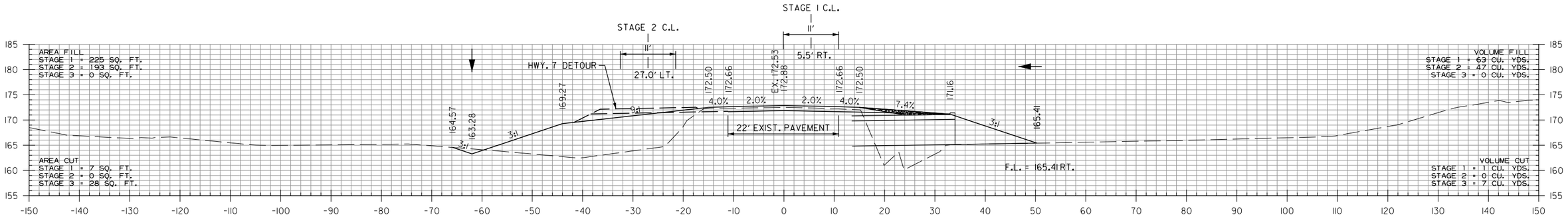
REVISED DATE:

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070571	36	39
		CROSS SECTIONS				

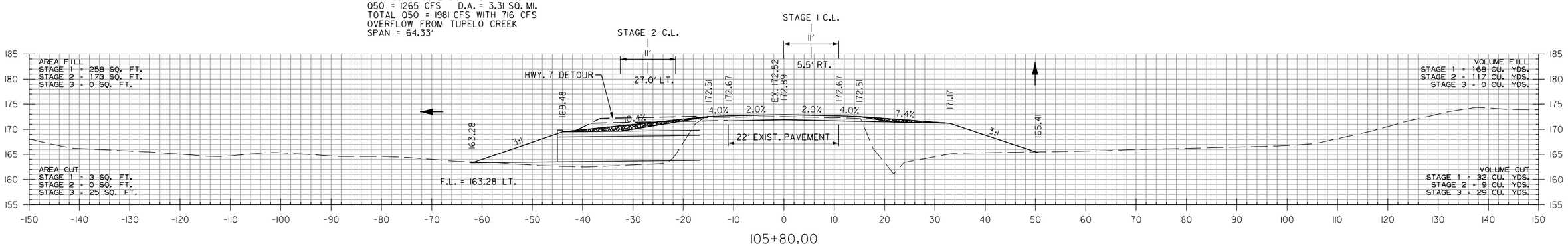


106+00.00



105+87.00

STA. 105+84 CONSTRUCT
SEXT. 10' X 5' X 78' R.C. BOX CULVERT
5° RT. FWD. SKEW
WITH 3:1 WINGS LT. & RT.
Q50 = 1265 CFS D.A. = 3.31 SQ. MI.
TOTAL Q50 = 1981 CFS WITH 716 CFS
OVERFLOW FROM TUPELO CREEK
SPAN = 64.33'



105+80.00

HWY. 7
STA. 105+80 TO STA. 106+00

JDBradley 8/10/2023 9:22:09 AM
WORKSPACE: AHTD
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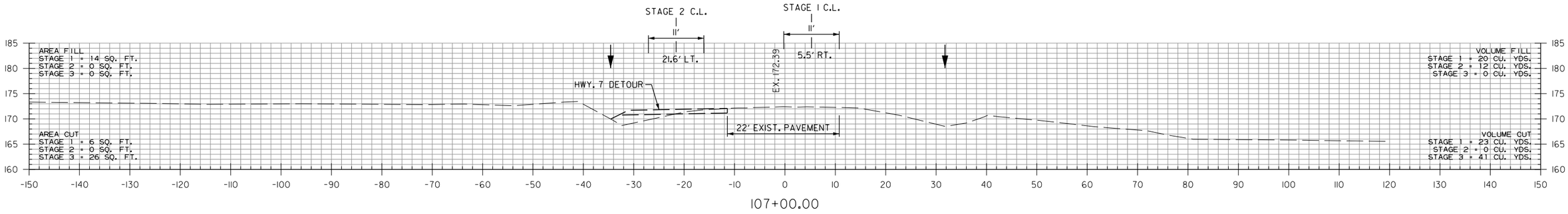
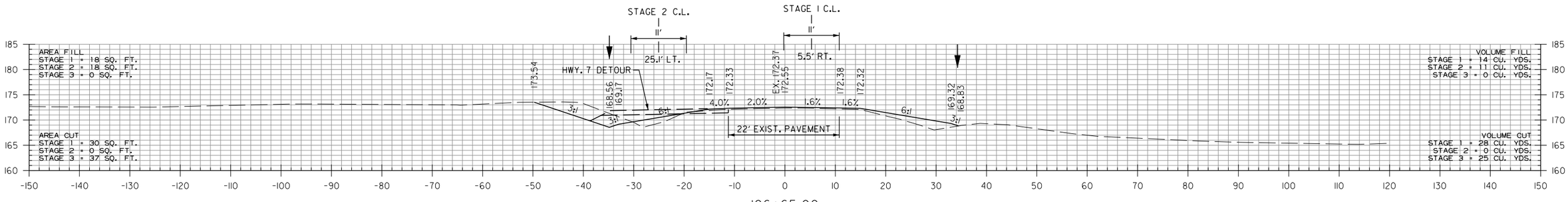
REVISED DATE:

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070571	37	39
		CROSS SECTIONS				



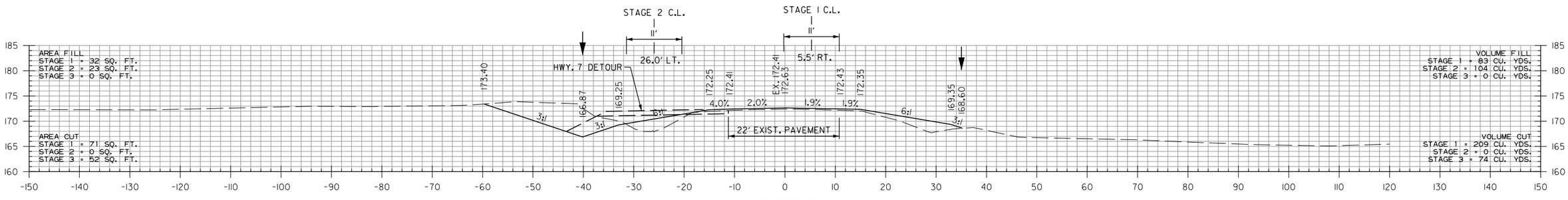
107+00.00



106+65.00

STA. 106+65
END SP. DT. LT. 11.23%
ELEV. 168.56

END JOB 070571
STA. 106+65.00 BEGIN 100' TRANSITION



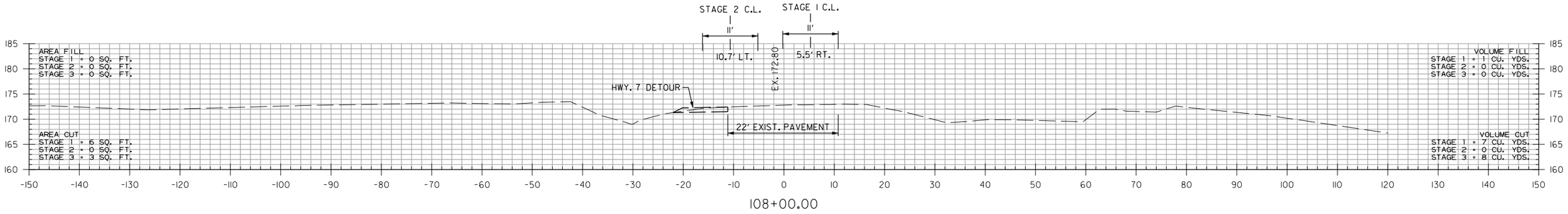
106+50.00

STA. 106+18
BEGIN SP. DT. LT. 11.23%
ELEV. 163.28

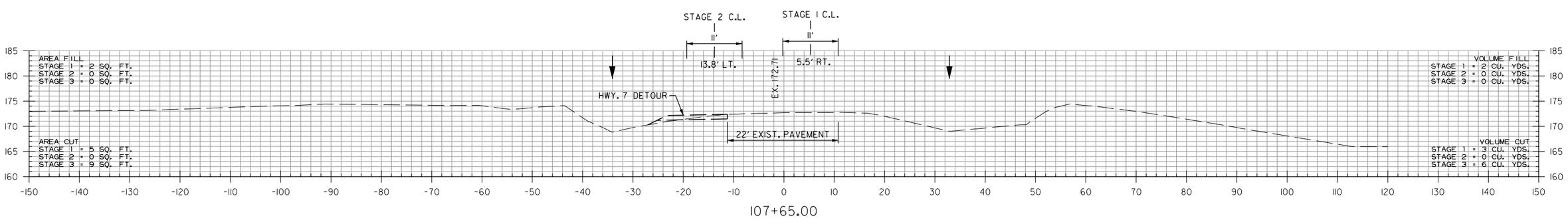
STA. 106+43.00 BEGIN SUPERELEVATION

HWY. 7
STA. 106+50 TO STA. 107+00

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070571	38	39
		CROSS SECTIONS				

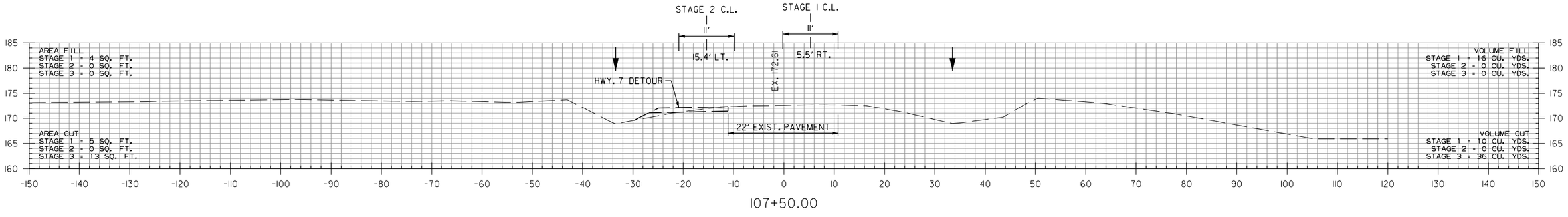


108+00.00



107+65.00

STA. 107+65.00 END 100' TRANSITION

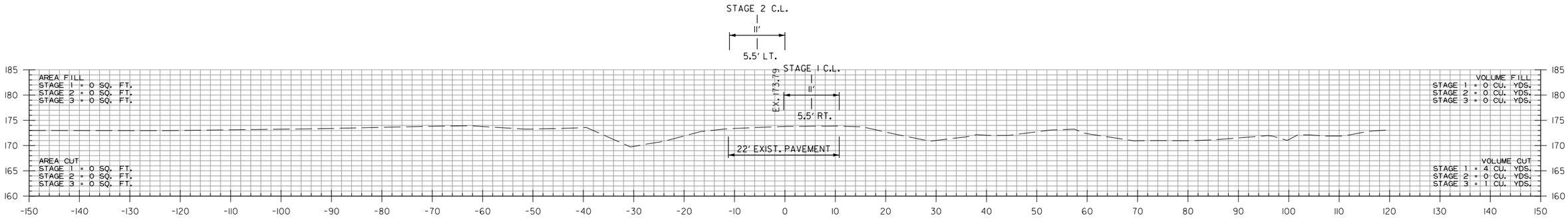


107+50.00

HWY. 7
STA. 107+50 TO STA. 108+00

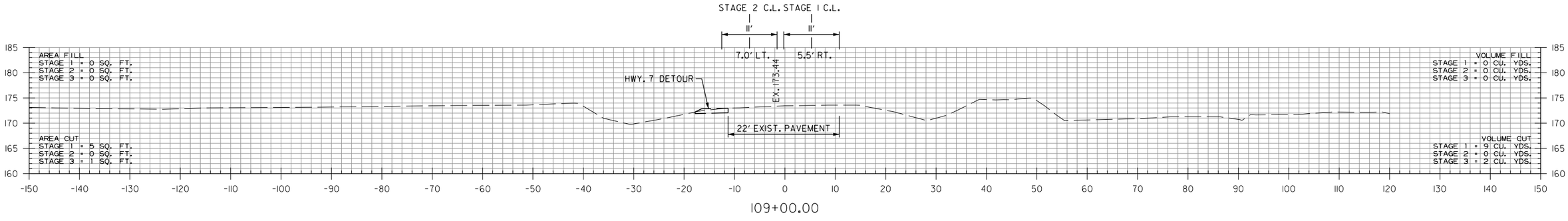
JDBradley 8/10/2023 9:22:09 AM
WORKSPACE: AHTD
L:\202\2110048 - ARDOT 070571Hwy 7 Flood Damage Repair\Drawings\r070571_CX_01.dgn
REVISED DATE:

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	070571	39	39
		CROSS SECTIONS				

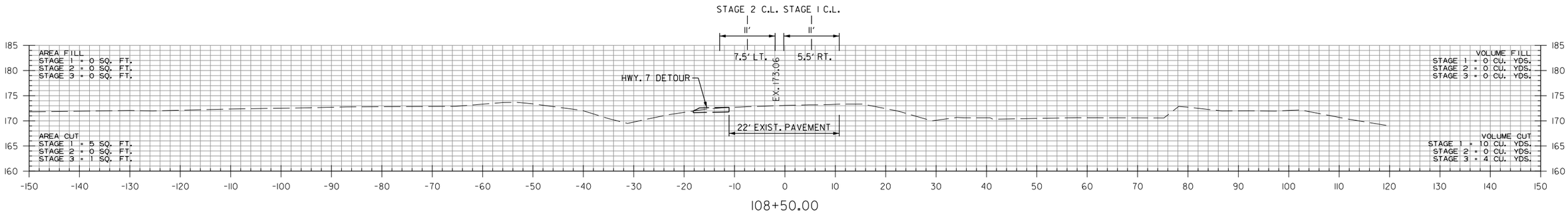


109+50.00

STA. 109+43.00 MAX. SUPERELEVATION (0.030'/') (MATCH EXIST.)



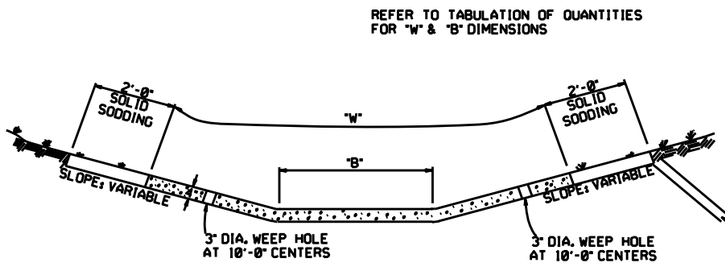
109+00.00



108+50.00

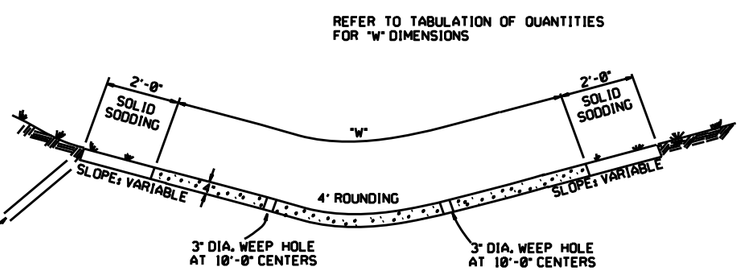
HWY. 7
STA. 108+50 TO STA. 109+50

JDBradley 8/10/2023 9:22:09 AM
WORKSPACE: AHTD
L:\202\21T0048 - ARDOT 070571Hwy 7 Flood Damage Repair\Drawings\r070571_CX_01.dgn
REVISED DATE:



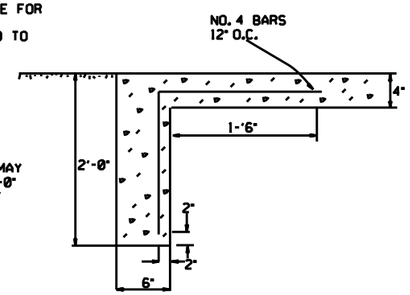
TYPE A

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



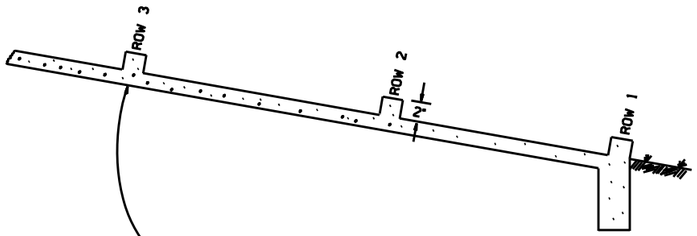
TYPE B

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



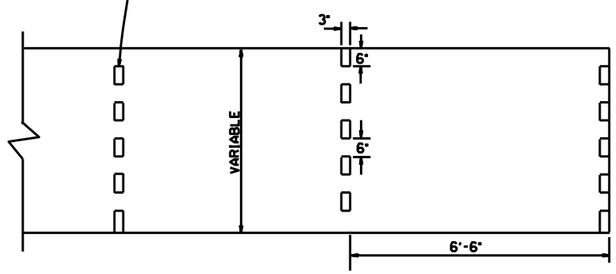
TOE WALL DEPTH MAY BE ALTERED TO 1'-0" WHEN DIRECTED BY THE ENGINEER IN ROCK EXCAVATION

TOE WALL DETAIL FOR CONCRETE DITCH PAVING



NUMBER OF ELEMENTS PER ROW VARIES WITH WIDTH OF PAVING SPECIFIED

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



ENERGY DISSIPATORS
(NO SCALE)

GENERAL NOTES:

THE FULL WIDTH OF EACH SECTION SHALL BE POURED MONOLITHICALLY.

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

SOLID SOD ALONG DITCH PAVING TO BE PLACED WITHIN 14 DAYS OF DITCH PAVING CONSTRUCTION.

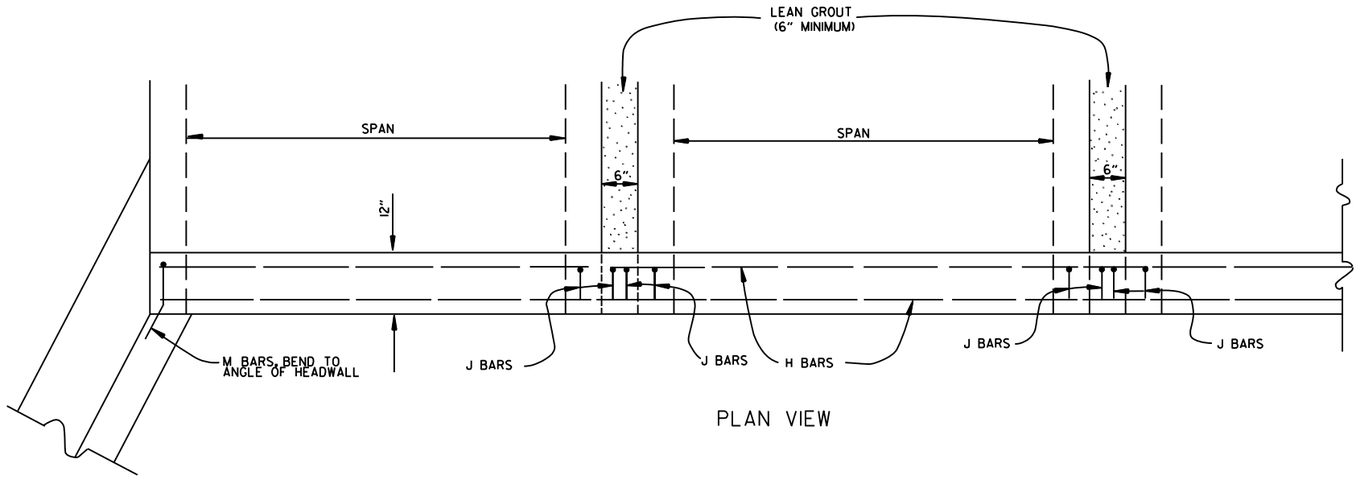
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45° INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

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 ADDED	508-11-1-84
11-1-84	EXCAVATION DETAILS ADDED TYPED A & B	
10-2-72	REVISED AND REDRAWN	508-10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

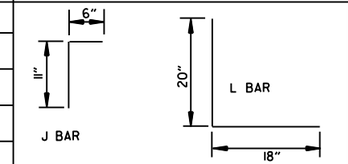
STANDARD DRAWING CDP-1



PLAN VIEW

BAR LIST

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



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

GENERAL NOTES

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

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

ALL EXPOSED CORNERS TO HAVE ¾" CHAMFERS.

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

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

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

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

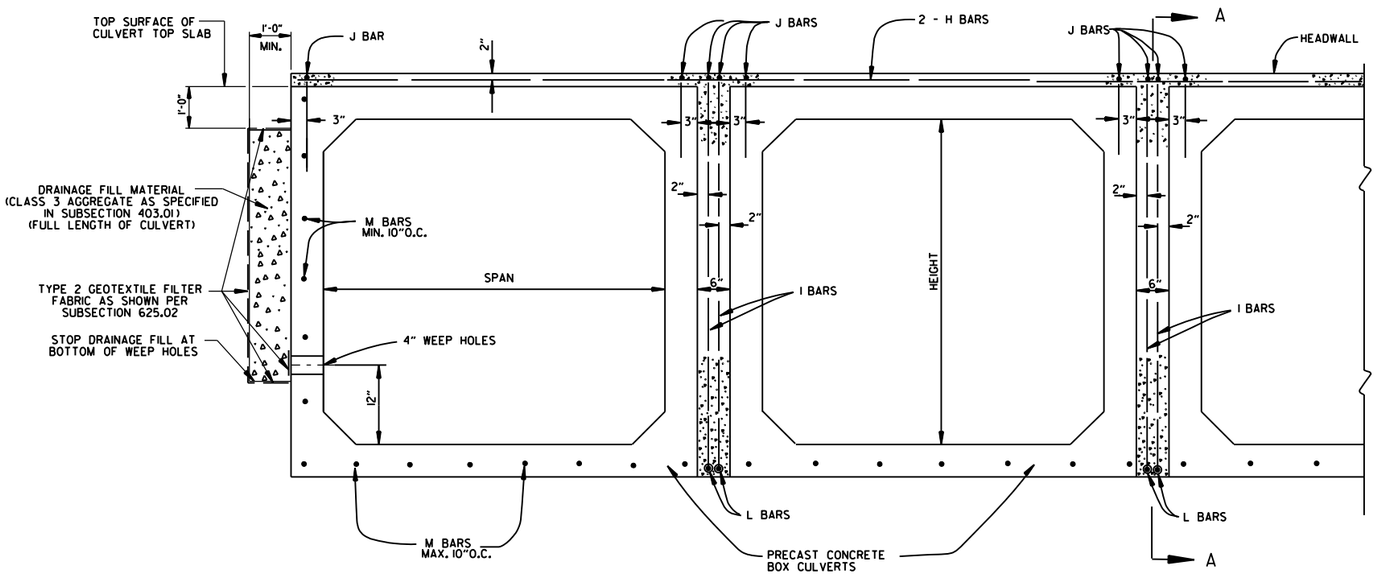
THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

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

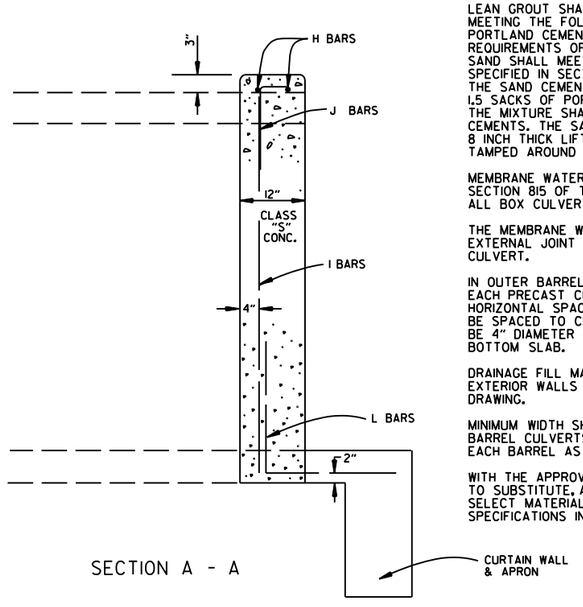
DRAINAGE FILL MATERIAL WITH GEOTEXTILE FABRIC IS REQUIRED AT THE EXTERIOR WALLS OF THE ASSEMBLED CULVERT, SEE DETAILS ON THIS DRAWING.

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

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



END VIEW



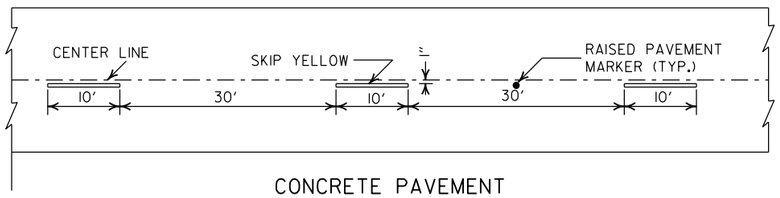
SECTION A - A

DATE	REVISION	DATE FILMED
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	

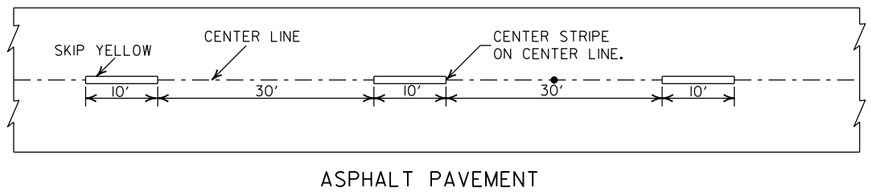
ARKANSAS STATE HIGHWAY COMMISSION

PRECAST CONCRETE BOX CULVERTS

STANDARD DRAWING PBC-1

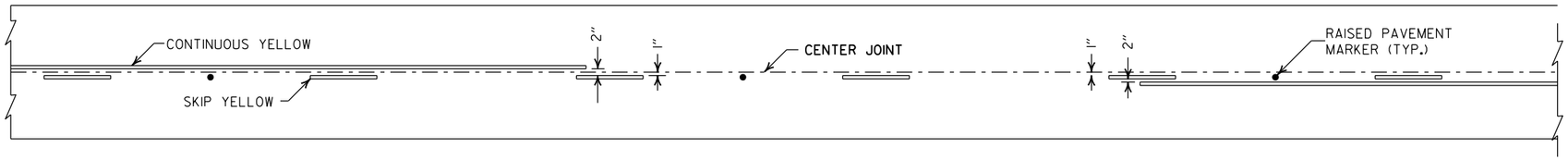


CONCRETE PAVEMENT

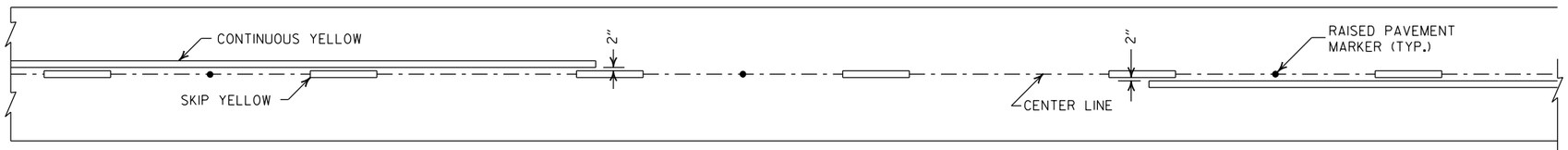


ASPHALT PAVEMENT

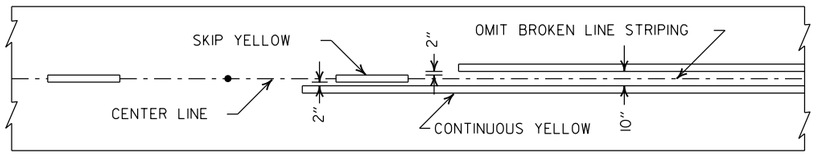
BROKEN LINE STRIPING



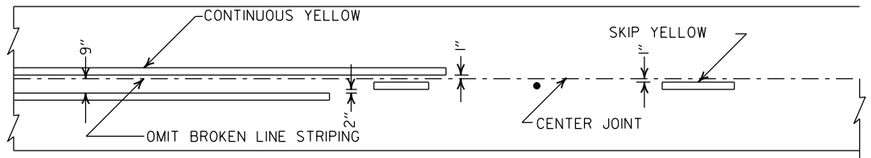
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

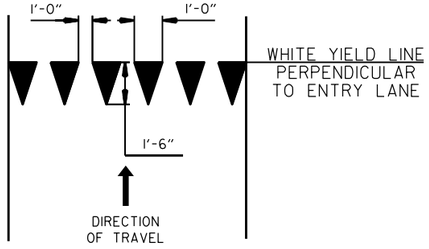


ASPHALT PAVEMENT

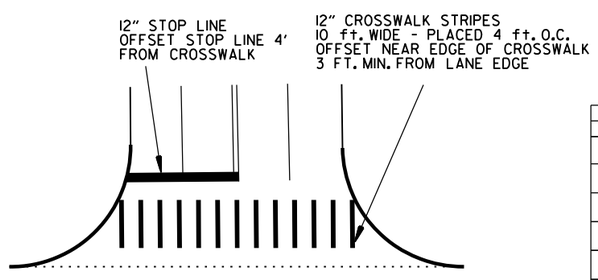


CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

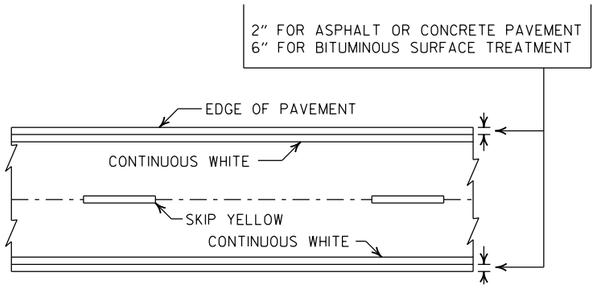


YIELD LINE DETAIL



CROSSWALK AND STOP LINE DETAILS

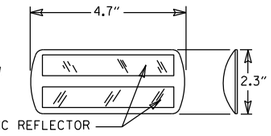
NOTES:
1. REFER TO THE STRIPING DETAILS FOR PAVEMENT MARKING LINE WIDTHS.
2. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
3. RAISED PAVEMENT MARKERS SHALL BE PLACED ON AN 80 FEET SPACING UNLESS OTHERWISE SHOWN IN THE PLANS.



PAVEMENT EDGE LINE MARKING

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

TYPE II
RED/CLEAR OR
YELLOW/YELLOW



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

DETAIL OF STANDARD RAISED PAVEMENT MARKERS

DATE	REVISION	FILMED
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

ARKANSAS STATE HIGHWAY COMMISSION

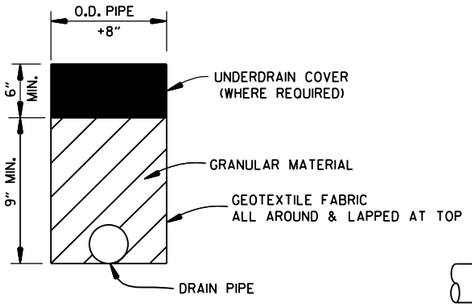
PAVEMENT MARKING DETAILS

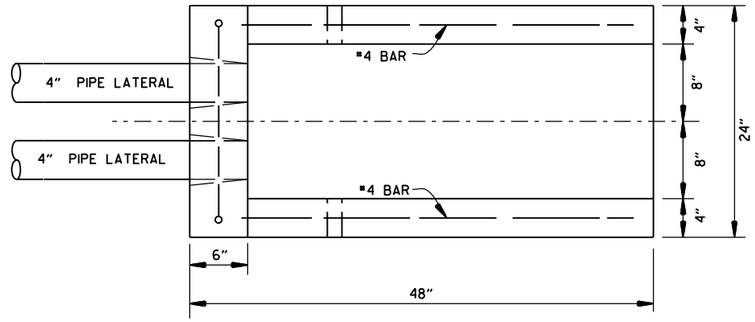
STANDARD DRAWING PM-1

NOTE:

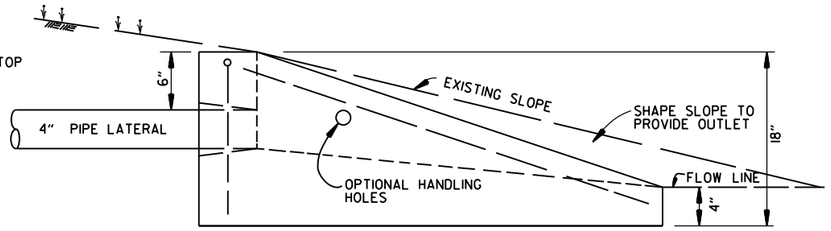
1. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.

2. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC. LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.

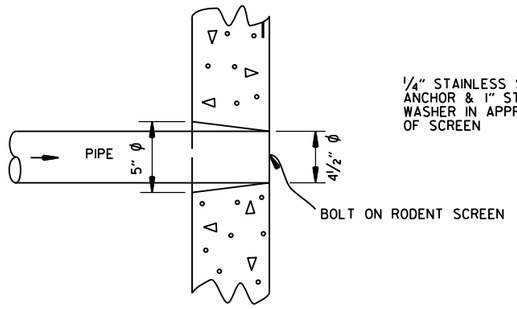




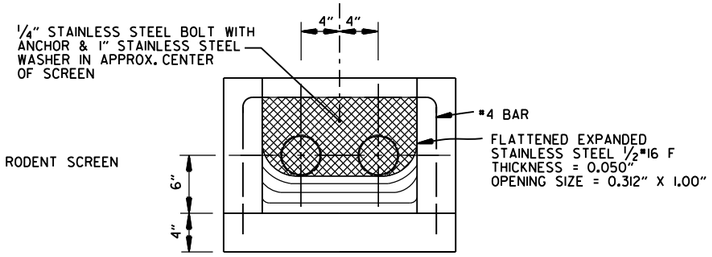
PLAN VIEW



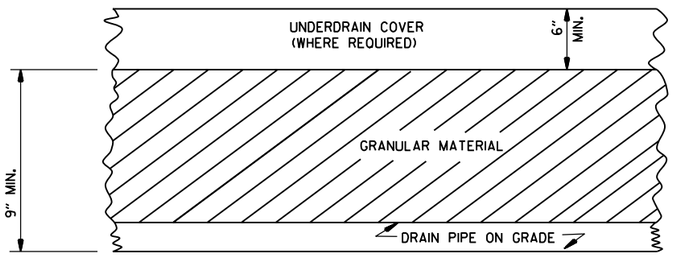
SIDE VIEW



DETAIL OF HOLE
FOR 4" PIPE

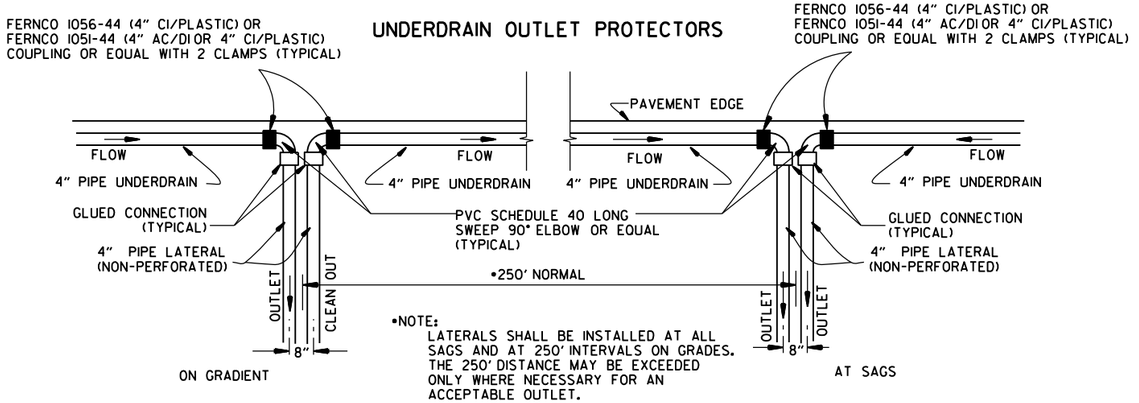


FRONT VIEW
(DETAIL OF RODENT SCREEN)



DETAILS OF PIPE UNDERDRAIN

UNDERDRAIN OUTLET PROTECTORS



DETAIL OF PIPE UNDERDRAIN LATERALS
WHEN PLACED ALONG PAVEMENT EDGE

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

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.

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

ARKANSAS STATE HIGHWAY COMMISSION

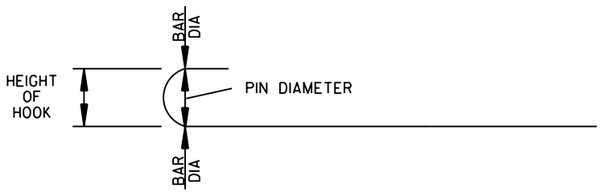
DETAILS OF PIPE UNDERDRAIN

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

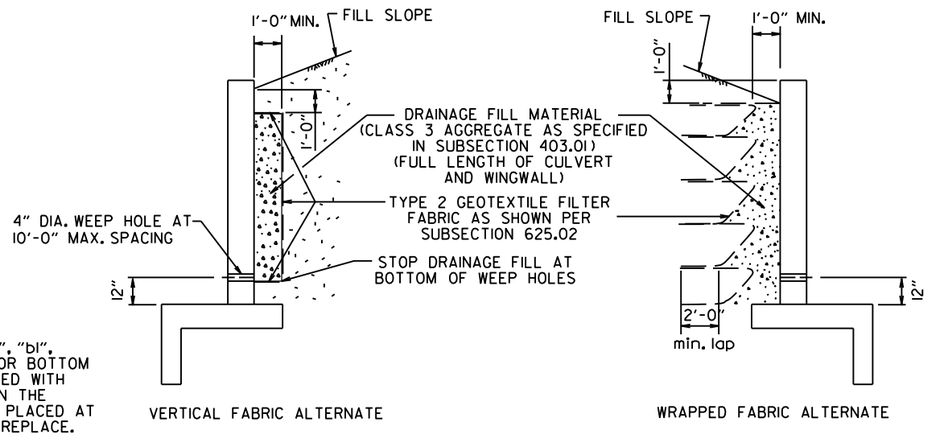
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

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 31 OR M 53, GRADE 60.

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

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

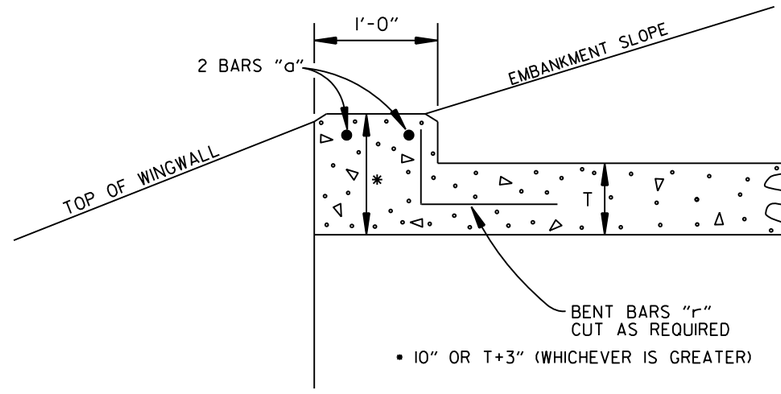
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

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

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

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

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



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

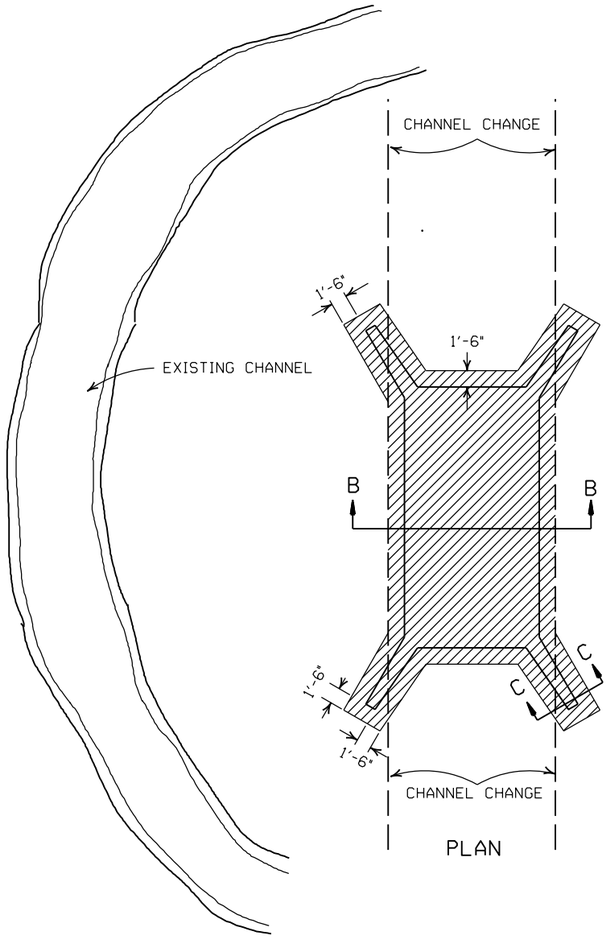
R.C. BOX CULVERT HEADWALL MODIFICATIONS

DATE	REVISION	DATE FILMED
7/26/12	REV. DRAINAGE FILL MATERIAL & DETAIL	
12/15/11	REQUIRE WEEP HOLES IN BOX CULVERT WALLS	
5-25-06	REV. GEN. NOTES AND DETAILS FOR WEEP HOLES; BAR DIAGRAM	
11-16-01	ADDED WINGWALL DRAINAGE DETAIL/EDITED GEN. NOTES	
10-18-96	REV. ASTM REF. TO AASHTO & ADDED BAR DIAGRAM	
10-12-95	MOVED SOLID SODDING DETAIL TO RCB-2	
6-2-94	ADDED SOLID SODDING PLAN DETAIL	
8-5-93	REVISED PIN DIAMETER TO SPECS.	
8-15-91	DRAWN AND ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

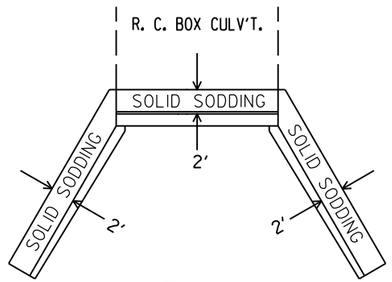
REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1



PLAN

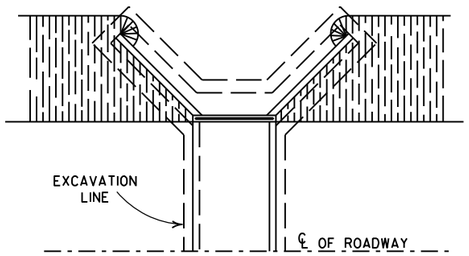
SOLID SODDING



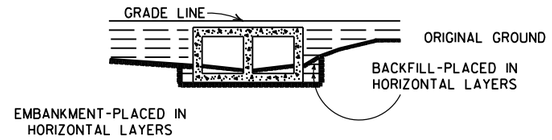
PLAN

PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

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

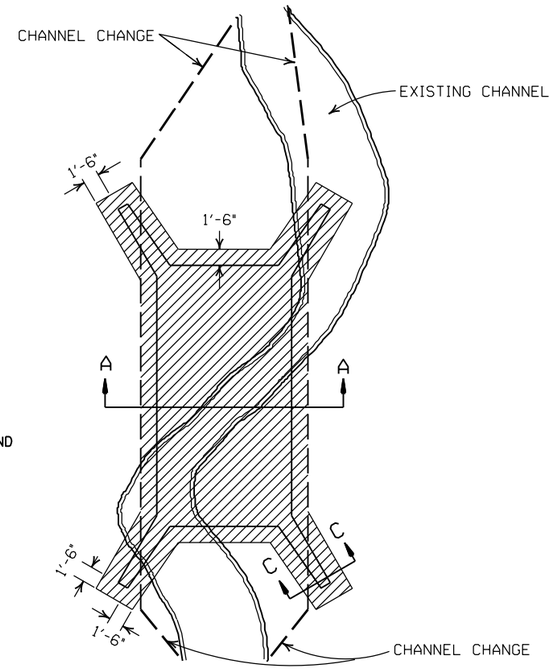


PLAN

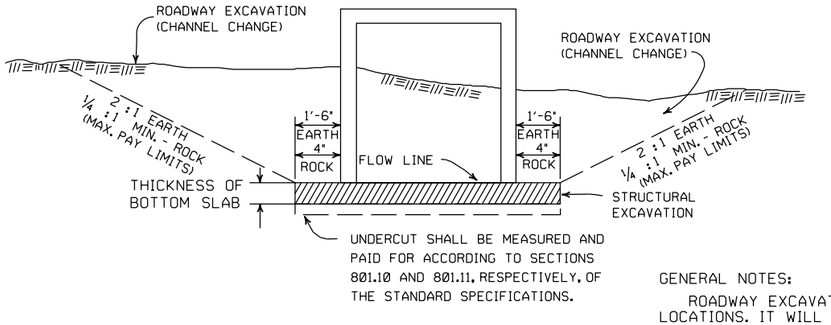


LONGITUDINAL SECTION

BACKFILL DETAILS FOR BOX CULVERT

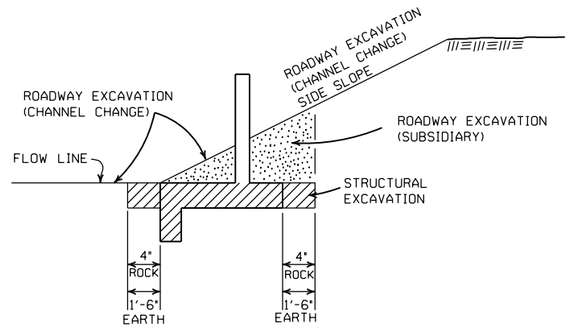


PLAN

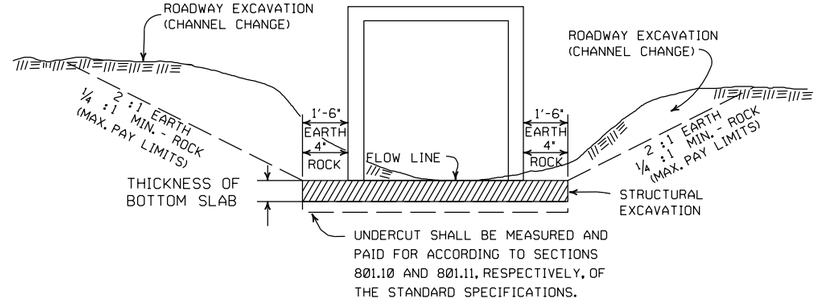


SECTION B-B

DETAILS FOR NEW CHANNELS



SECTION C-C



SECTION A-A

DETAILS THROUGH EXISTING CHANNELS

GENERAL NOTES:

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

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

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

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

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			RC	96		RC	96		RC	96		RC	96		0.022	101	
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	300	0.042	149	300
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	300	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		0.080	240	
2° 15'	RC	72		0.026	90		0.032	109		0.038	131		0.046	158		0.054	178	300	0.062	197		0.070	216		0.078	235	350	0.088	259	350
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	350	0.086	254		0.096	278	
2° 45'	0.024	79		0.030	98		0.038	122		0.046	149	200	0.054	178		0.064	202		0.072	221		0.082	245		0.092	269		0.100	288	400
3° 00'	0.026	83		0.034	105		0.040	126		0.050	158		0.058	187	250	0.068	211		0.078	235		0.088	259		0.098	283	400	D MAX = 2° 45'		
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		0.100	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	350	D MAX = 3° 30'					
3° 45'	0.032	93		0.040	117		0.050	147		0.058	176		0.070	216		0.080	240		0.090	264		0.098	283							
4° 00'	0.034	97		0.042	121	200	0.052	151		0.062	185		0.072	221		0.084	250		0.094	274	350	0.100	288		D MAX = 4° 15'					
4° 15'	0.036	100		0.044	125		0.054	155		0.064	189		0.076	230		0.086	254		0.096	278									
4° 30'	0.036	100		0.046	129		0.056	160		0.068	198		0.078	235		0.090	264		0.098	283									
4° 45'	0.038	104	200	0.048	133		0.060	168		0.070	203		0.082	245		0.092	269	350	0.100	288										
5° 00'	0.040	108		0.050	137		0.062	172		0.072	207		0.084	250		0.094	274		D MAX = 5° 15'										
5° 30'	0.044	115		0.054	144		0.066	181		0.078	221	250	0.088	259		0.098	283												
6° 00'	0.046	119		0.058	152		0.070	189		0.082	230		0.092	269	300	0.100	288												
6° 30'	0.050	126		0.062	160		0.074	198		0.086	239		0.096	278		D MAX = 6° 30'													
7° 00'	0.052	130		0.064	164		0.078	206		0.090	248		0.098	283															
7° 30'	0.054	133		0.068	172		0.080	210		0.092	252	300	0.100	288															
8° 00'	0.058	140		0.070	176		0.084	219		0.094	257		D MAX = 8° 25'																
8° 30'	0.060	144		0.072	179		0.086	223	250	0.096	261																		
9° 00'	0.062	148		0.076	187		0.088	227		0.098	266																		
9° 30'	0.064	151		0.078	191		0.092	235		0.100	270																		
10° 00'	0.066	155		0.080	195		0.094	240		D MAX = 10° 30'																			
11° 00'	0.070	162		0.084	203		0.096	244																					
12° 00'	0.074	169		0.088	211	250	0.098	248																					
13° 00'	0.076	173		0.090	215		0.100	252	300																				
14° 00'	0.080	180		0.094	222		D MAX = 13° 45'																						
15° 00'	0.082	184		0.096	226																								
16° 00'	0.086	191		0.098	230																								
17° 00'	0.088	194		0.100	234																								
18° 00'	0.090	198	250	D MAX = 19° 30'																									
19° 00'	0.092	202																											
20° 00'	0.094	205																											
21° 00'	0.096	209																											
22° 00'	0.096	209																											
23° 00'	0.098	212																											
24° 00'	0.098	212																											
25° 00'	0.100	216																											

D MAX = 28° 30'

GENERAL NOTES

1. ON PAVEMENT WITH TWO-WAY TRAFFIC, THE SUPERELEVATION SHALL BE REVOLVED ON THE INSIDE PAVEMENT EDGE UNLESS OTHERWISE NOTED ON THE PLANS
2. SUPERELEVATION VALUES SHOWN ON THE CROSS SECTIONS ARE VALUES (+) OR (-) TO BE ADDED TO OR SUBTRACTED FROM THE POINT OF CONTROL.
3. LENGTHS FOR L MAY BE ROUNDED IN MULTIPLES OF 25 FT. OR 50 FT. TO PERMIT SIMPLER CALCULATIONS.
4. PAVEMENTS WIDER THAN 2 LANES SHALL HAVE ADDITIONAL TRANSITION LENGTHS AS FOLLOWS:

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

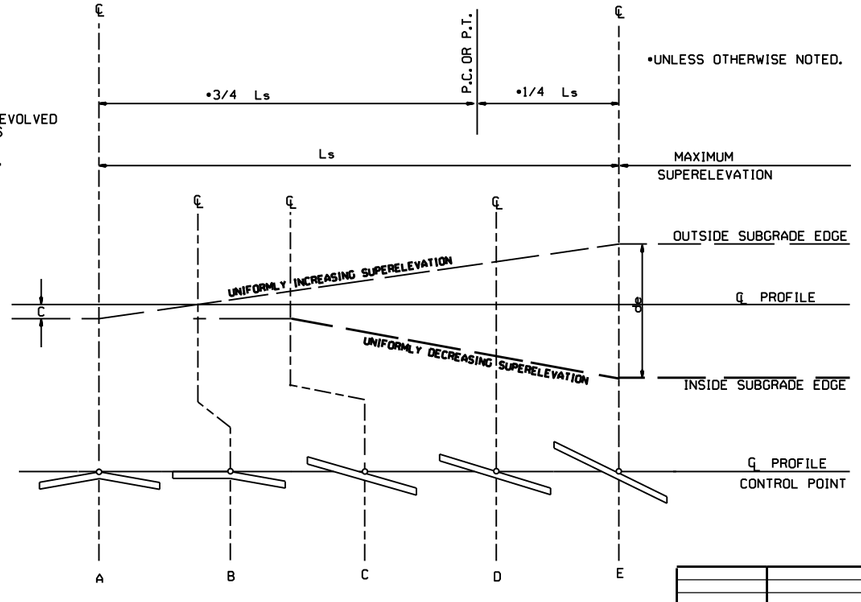
NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

RATE OF SUPERELEVATION SHALL BE COMPUTED ON STRAIGHT LINE METHOD USING APPLICABLE Ls.

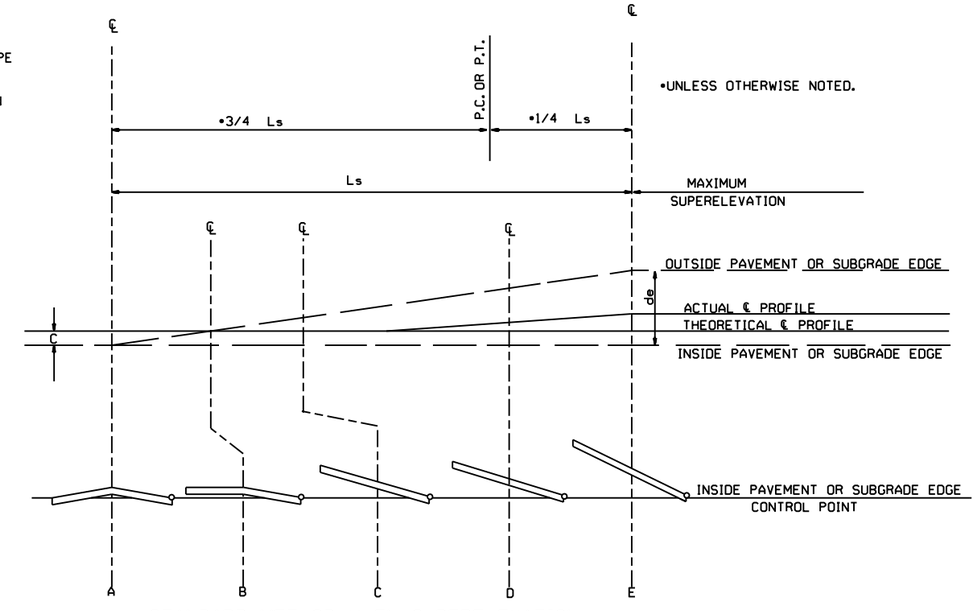
SUPERELEVATION FORMULA = $\frac{Lde}{Ls}$

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



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND INNER SUBGRADE POINT OR INNER PAVEMENT EDGE

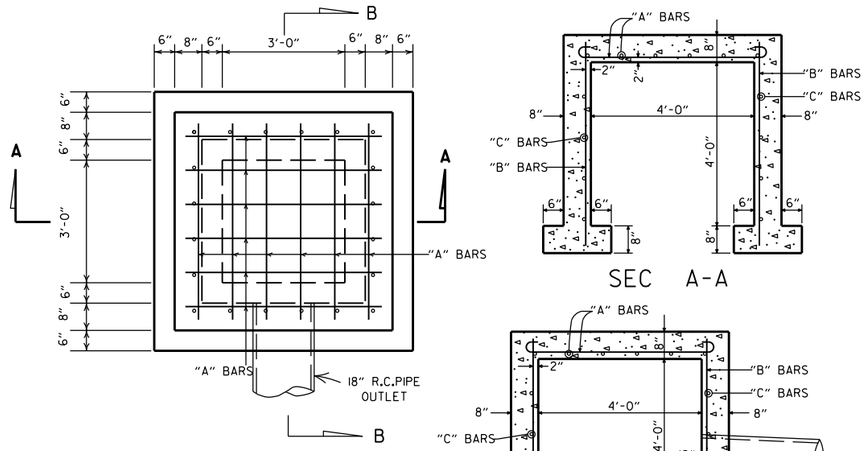
NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

DATE	REVISION	DATE FILLMED
11-07-19	REVISED SUPERELEVATION TABLE	
10-18-96	ADDED FORMULA	
01-09-87	ISSUED	534-1-9-87

ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

STANDARD DRAWING SE-2



SEC A-A

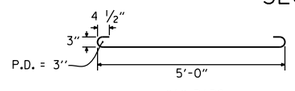
SEC B-B

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

STEEL SCHEDULE

BARS	NUMBER	LENGTH	SPACING
"A"	12	6'-0"	10"
"B"	20	5'-0"	10 ½"
"C"	16	5'-0"	12"

ALL STEEL TO BE #4 BARS



"A" BARS

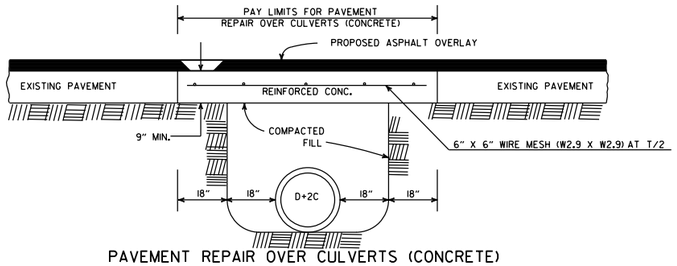
QUANTITIES

CONCRETE 3.31 CU. YDS.
REINFORCING STEEL 168 LB.

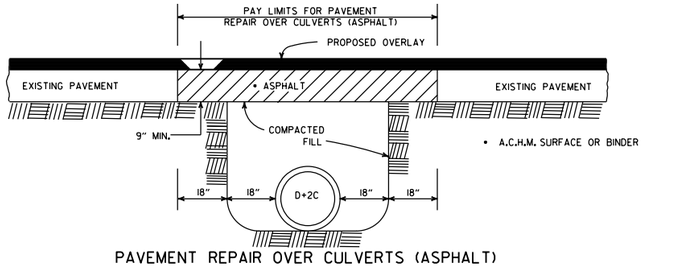
GENERAL NOTE:

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

REINFORCED CONCRETE SPRING BOX



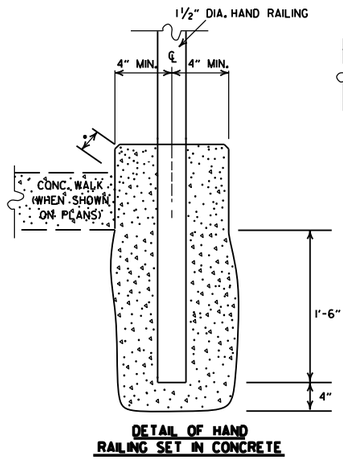
PAVEMENT REPAIR OVER CULVERTS (CONCRETE)



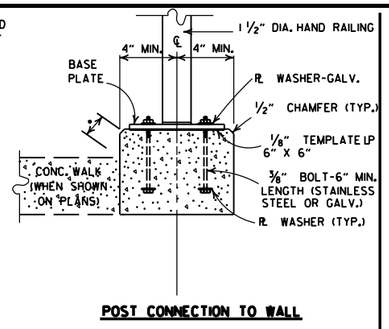
PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS

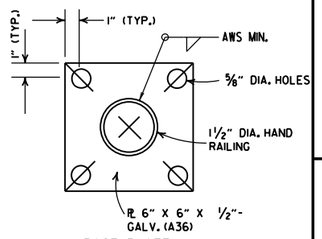
• A 2" MIN. HIGH CURB IS REQUIRED WHEN CONCRETE WALK IS ADJACENT TO THE HAND RAILING. PAYMENT FOR CURB SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR CONCRETE WALKS.



DETAIL OF HAND RAILING SET IN CONCRETE

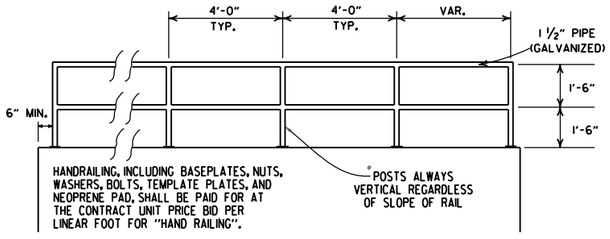


POST CONNECTION TO WALL

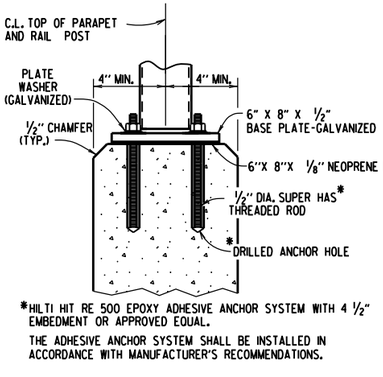


BASE PLATE

POST CONNECTION DETAILS



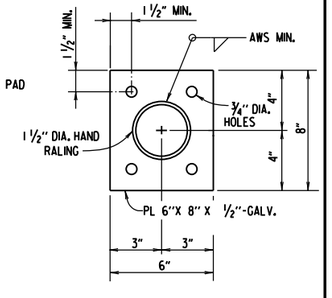
HAND RAILING SHALL CONFORM TO SECTION 633.



*HILTI HIT RE 500 EPOXY ADHESIVE ANCHOR SYSTEM WITH 4 ½" EMBEDMENT OR APPROVED EQUAL.

THE ADHESIVE ANCHOR SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

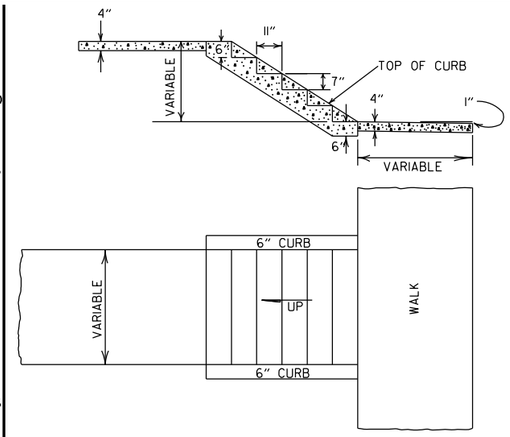
POST CONNECTION TO WALL



BASE PLATE

DETAILS OF ALTERNATE POST ANCHOR SYSTEM
(EPOXY ADHESIVE ANCHORS)

HAND RAILING DETAILS



GENERAL NOTES

1. RISE AND TREAD DIMENSIONS OF STEPS MAY BE VARIED AS DIRECTED BY THE ENGINEER, HOWEVER, TREAD WIDTHS SHALL BE 11" MIN. ALL STEPS IN A FLIGHT SHALL HAVE CONSISTENT TREAD & RISER DIMENSIONS.
2. 1" TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE WALKS AT 45' INTERVALS.

DETAILS OF CONCRETE STEPS & WALKS

10-25-18	REVISED DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS	
9-12-13	REVISED REINFORCED CONCRETE SPRING BOX	
7-26-12	REMOVED RETAINING WALL DETAILS & REVISED HAND RAILING DETAILS	
4-17-08	REV. JOINT & FOOTING STEP DETAILS	
11-29-07	REVISED RETAINING WALL DRAINAGE	
5-25-06	REVISED PVMT REPAIR OVER CULVERTS (CONC); REVISED REINFORCED CONC SPRING BOX	
10-9-03	REVISED PIPE RAILING DETAILS TO HAND RAILING DETAILS	
4-10-03	REVISED RETAINING WALL DRAWING	
8-22-02	ADDED HAND RAILING DETAIL	
11-16-01	REVISED PVMT REPAIR OVER CULVERTS (CONC); CORRECTED SPELLING IN GENERAL NOTES	
11-18-98	ADDED GENERAL NOTES TO CONCRETE STEPS & WALKS	
7-02-98	ENLARGED PIPE	
4-03-97	ADDED NOTE TO STEEL BAR SCHED.	
10-18-96	CORRECTED SPELLING	
4-26-94	ADD WEEP HOLE;REV. JOINT SPACING IN RET. WALL	
6-2-94	CHANGED CONST. TO CONTRACTION JOINT	
10-1-92	CHANGED MESH FABRIC TO WIRE MESH	10-1-92
8-15-91	DELETED HDWL MODIFICATION DETAIL	8-15-91
11-8-90	DELETED COLD MIX FROM CULV'T. REPAIR	11-8-90
11-30-89	REV. RETAINING WALL STEEL SCHEDULE	11-30-89
11-17-88	V. BARS BEHIND ARROW	665-11-17-88
7-15-88	REV. PAVEMENT REPAIR ADDED HDWL. MODS, DEL. PIPE UNDERDRAINS	649-7-15-88
11-1-84	REV. TRENCH FOR PIPE UNDERDRAIN	510-11-1-84
1-4-83	ELIMINATED CONC. CLASS & ADDED CHAMFER NOTE	682-1-4-83
3-2-81	SPELLING OF "UNDERDRAIN"	721-3-2-81
4-20-79	REV. UNDERDRAIN DET& PAVEMENT REPAIR	674-4-20-79
2-2-76	12"MIN. GRAN. MAT'L. OVER PIPE	919-2-2-76
4-10-75	REM. SPECS. FOR GRAN. MAT'L.	568-4-10-75-853
5-22-74	GRANULAR MAT'L. TO BE SB-3	567-5-22-74-740
10-2-72	REVISED AND REDRAWN	564-10-16-72
DATE	REVISION	DATE FILMED

ARKANSAS STATE HIGHWAY COMMISSION

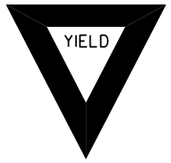
DETAILS OF SPECIAL ITEMS

STANDARD DRAWING SI - 1

R1-1

STANDARD 30"X30"
EXPRESSWAY 36"X36"
SPECIAL 48"X48"

R1-2



STD. 36"X36"X36"
EXPWY. 48"X48"X48"
FWY. 60"X60"X60"

R2-1

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

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"

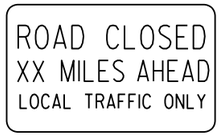
R5-1

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"

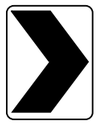
W1-4

STD. 48"X48"

W1-6

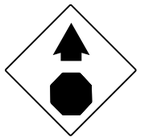
STD. 48"X24"
SPECIAL 60"X30"

W1-8



STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

W3-1

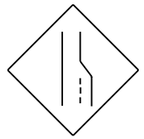


STD. 36"X36"
SPECIAL 48"X48"

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"

W8-11

STD. 36"X36"
FWY. 48"X48"

W8-9

STD. 36"X36"
FWY. 48"X48"

G20-1

60"X24"

G20-2

48"X24"

OM-3L OM-3R

12"X36"

M4-9

STD. 30"X24"
SPECIAL 48"X36"
SPECIAL 60"X48"

M4-10

48"X18"

R55-1

36"X60"

• USE 6" C LETTERS
•• USE 4" D LETTERS

ADVANCE DISTANCES
(XXXX)

500 FT	½ MILE
1000 FT	¾ MILE
1500 FT	1 MILE AHEAD

GENERAL NOTES:

1. ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.

2. TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND REMOVED THEREAFTER.

3. EXISTING SIGNS AND CONSTRUCTION SIGNS SHALL BE KEPT IN PROPER POSITION, AND BE CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED. SIGNS THAT ARE DAMAGED, DEFACED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED.

• 4. SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SQ. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE.

• 5. SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3.

6. POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE.

7. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE, EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS.

8. FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.

9. MOST OF THE SIGNS SHOWN ARE ORIENTED TO THE RIGHT. HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT.

10. R55-1 SIGNS SHALL BE PLACED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE SIGN SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN.

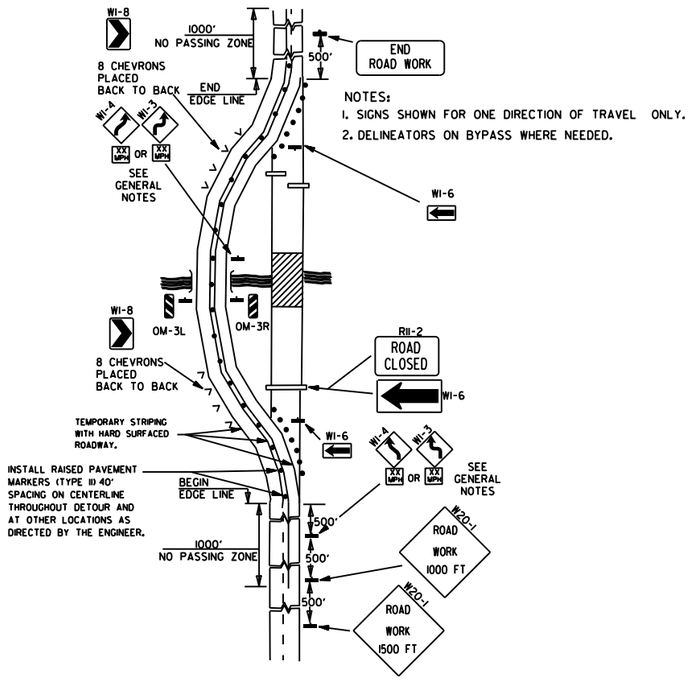
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED FOR ALL PROJECTS.

DATE	REVISION	FILMED
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	

ARKANSAS STATE HIGHWAY COMMISSION

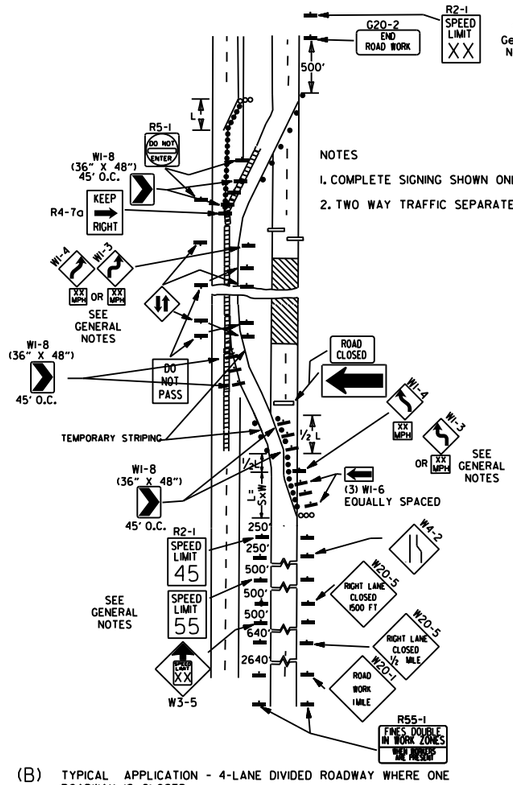
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



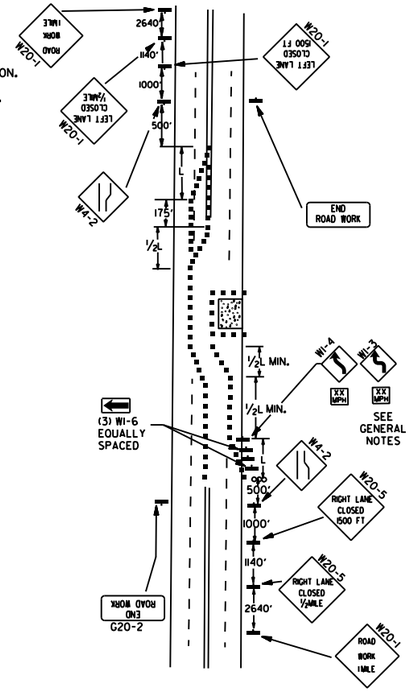
(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.

NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

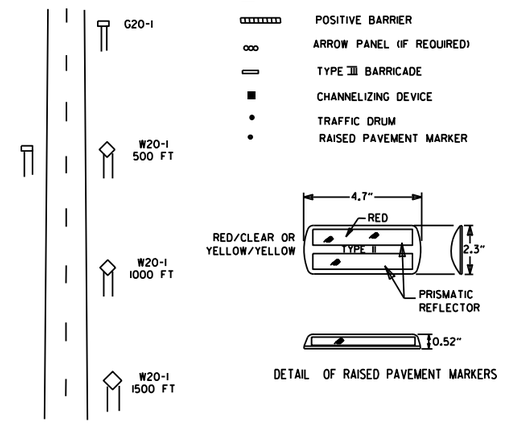


(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.

NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.



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



TYPICAL ADVANCE WARNING SIGN PLACEMENT

TAPER FORMULAE:

L=SXW FOR SPEEDS OF 45MPH OR MORE.

$L = \frac{WS^2}{60}$ FOR SPEEDS OF 40MPH OR LESS.

WHERE:

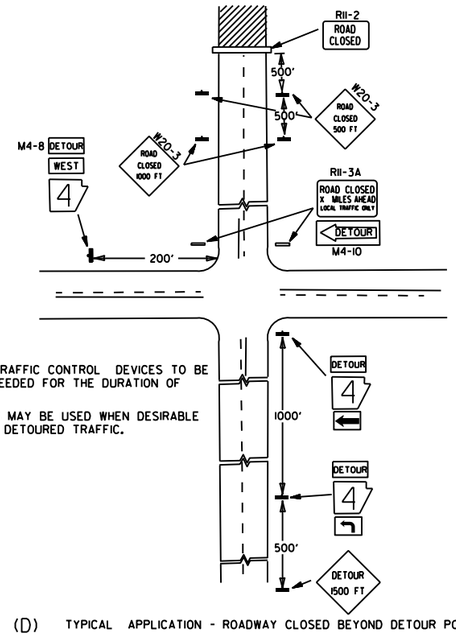
L= MINIMUM LENGTH OF TAPER.

S= NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.

W= WIDTH OF OFFSET.

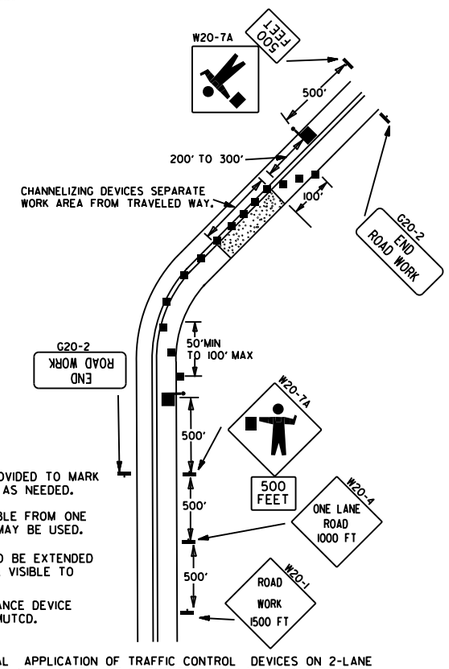
GENERAL NOTES:

1. 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 R2-1 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-1 55MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE. 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).



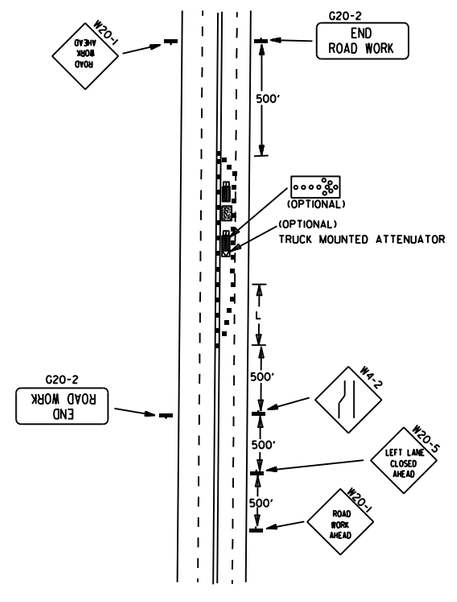
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

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



NOTES:
1. FLOOD LIGHTS SHOULD BE PROVIDED TO MARK FLAGGER STATIONS AT NIGHT AS NEEDED.
2. IF ENTIRE WORK AREA IS VISIBLE FROM ONE STATION, A SINGLE FLAGGER MAY BE USED.
3. CHANNELIZING DEVICES ARE TO BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
4. AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD) OPTIONAL. REFER TO MUTCD.

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



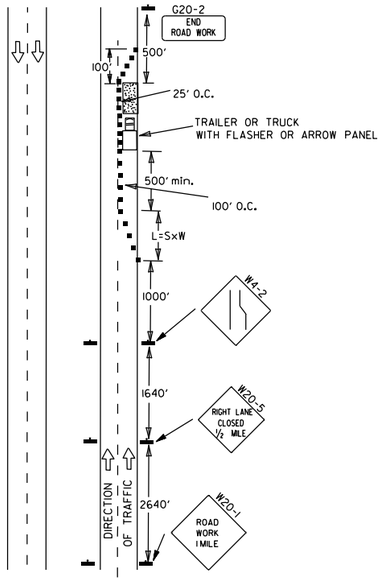
(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

DATE	REVISION	FILMED
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	

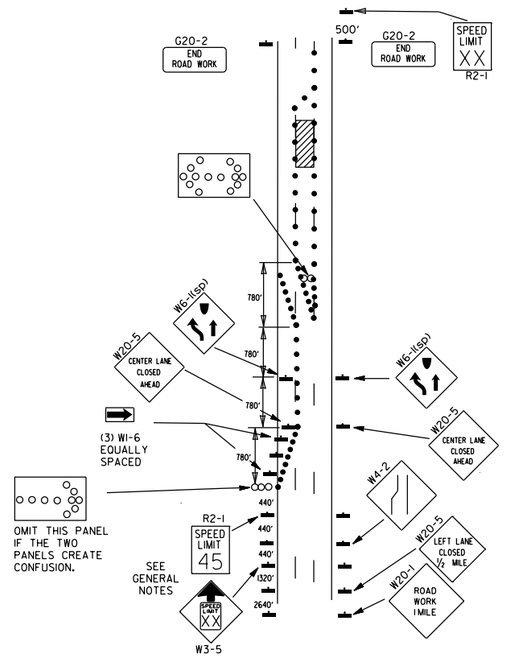
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-2



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



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

KEY:

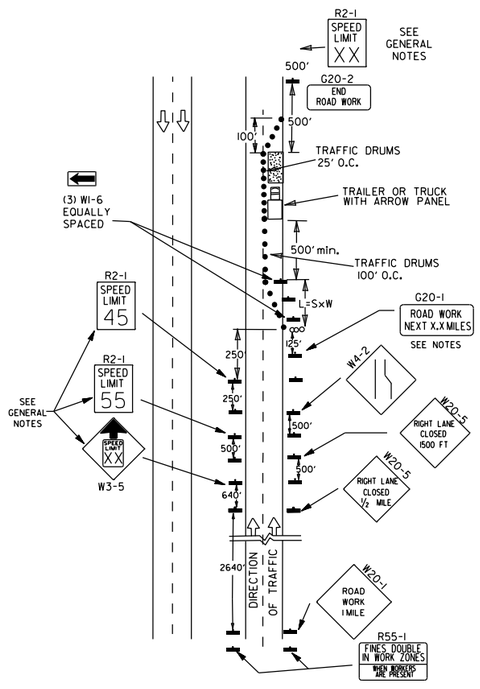
ooo ARROW PANEL (IF REQUIRED)

■ CHANNELIZING DEVICE

● TRAFFIC DRUM

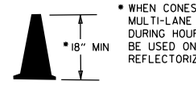
GENERAL NOTES:

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 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-1 55MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS, AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. THE G20-1 SIGN WILL BE REQUIRED ON JOBS OF OVER TWO MILES IN LENGTH. WHEN THE LANE CLOSURE IS NOT AT THE BEGINNING OF THE PROJECT, THE G20-1 SIGN SHALL BE ERECTED 125' IN ADVANCE OF THE JOB LIMIT. ADDITIONAL W20-1 (1 MILE) SIGNS ARE NOT REQUIRED IN ADVANCE OF LANE CLOSURES THAT BEGIN INSIDE THE PROJECT LIMITS.
8. FLAGGERS SHALL USE STOP/SLOW PADDLES FOR CONTROLLING TRAFFIC THROUGH WORK ZONES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. ALL PLASTIC DRUMS AND CONES SHALL MEET THE REQUIREMENTS OF 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).



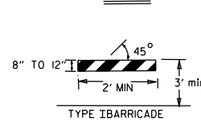
(C) TYPICAL APPLICATION - CONSTRUCTION OPERATIONS OF INTERMEDIATE TO LONG TERM DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.

CHANNELIZING DEVICES

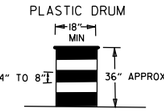


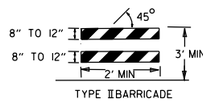
* WHEN CONES ARE USED ON FREEWAYS AND MULTI-LANE HIGHWAYS, THEY SHALL BE 28" MIN. DURING HOURS OF DARKNESS, 28" CONES SHALL BE USED ON ALL ROADWAYS, AND SHALL BE REFLECTORIZED IN ACCORDANCE WITH THE M.U.T.C.D.

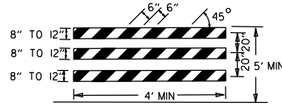
CONES



PLASTIC DRUM

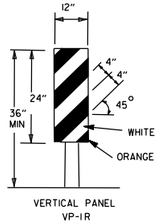






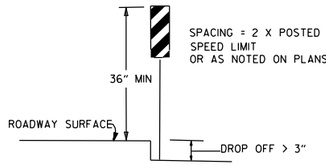
TYPE III BARRICADE

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

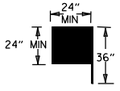


VERTICAL PANEL
VP-1R

VERTICAL PANEL PLACEMENT



FLAG



FLAG SHALL BE OF GOOD GRADE RED MATERIAL

TRAFFIC CONTROL DEVICES

NON-INTERSTATE

VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL	
		≤ 45 MPH	> 45 MPH
≤ 1"	CENTERLINE	W8-11	W8-11
> 1" ≤ 3"	CENTERLINE	W8-11 AND CENTERLINE LANE STRIPING	W8-11 AND CENTERLINE LANE STRIPING
> 3"	CENTERLINE	STANDARD LANE CLOSURE[#]	STANDARD LANE CLOSURE[#]
≤ 3"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9 AND TRAFFIC DRUMS[1]	W8-9 AND TRAFFIC DRUMS[1]
> 3" ≤ 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[1]
> 6" ≤ 18"	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" ≤ 24"	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[2]
> 24"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	PRECAST CONCRETE BARRIER[3] & EDGE LINES	PRECAST CONCRETE BARRIER[3] & EDGE LINES

INTERSTATE

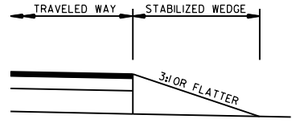
VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL
≤ 3"	CENTERLINE	W8-11 AND LANE STRIPING
≤ 3"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9, EDGE LINE STRIPING, AND TRAFFIC DRUMS[1]
> 3" ≤ 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[2]
> 6"	EDGE OF TRAVELED 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

GENERAL NOTES:

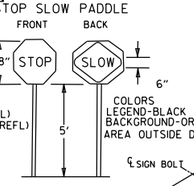
1. WHEN THE SHOULDER AREA IS USED AS PART OF THE TRAVELED LANE AND THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, THEN VERTICAL PANELS SHALL BE USED.
2. WHEN THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, A STABILIZED WEDGE SHALL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

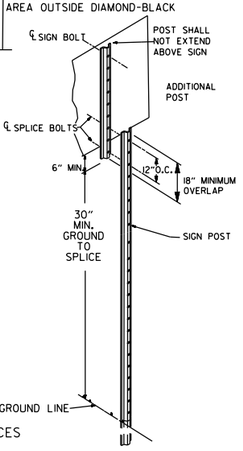


STABILIZED WEDGE

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

STOP SLOW PADDLE

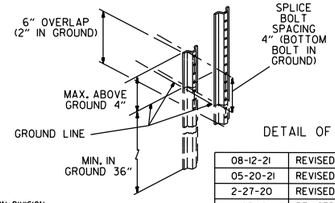




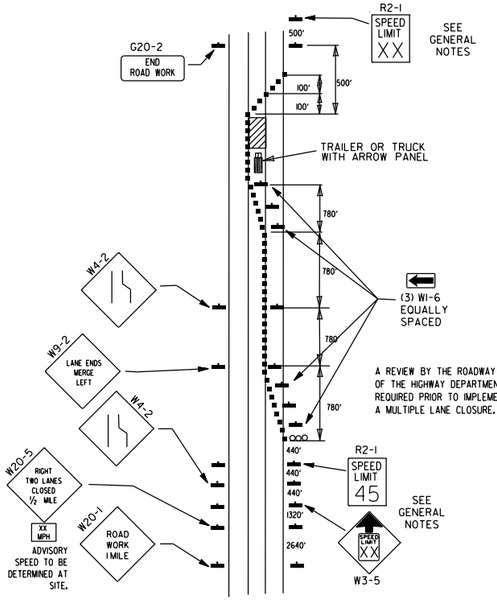
NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-21)

NORMAL INSTALLATIONS WILL REQUIRE 1/4" DIA. BOLTS TO MOUNT SIGNS TO POST AND 5/16" DIA. BOLTS TO ASSEMBLE THE VARIOUS POST SUPPORTS. EACH OF THESE BOLTS SHALL BE CARRIAGE BOLTS.

SIGN POSTS SHALL BE PAINTED GREEN; SIGNS SHALL NOT BE PAINTED, AND ALL SIGN POSTS SHALL BE PLUMB.



DETAIL OF SPLICES



A REVIEW BY THE ROADWAY DESIGN DIVISION OF THE HIGHWAY DEPARTMENT WILL BE REQUIRED PRIOR TO IMPLEMENTING A MULTIPLE LANE CLOSURE.

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

DATE	REVISION	FILMED
08-12-21	REVISED TRAFFIC CONTROL DEVICES AND NOTES	
05-20-21	REVISED NOTE 10	
2-27-20	REVISED TRAFFIC CONTROL DEVICES DETAILS	
11-07-19	REVISED NOTE 9, ADDED NOTE 11	
7-25-19	REVISED TRAFFIC CONTROL DEVICES DETAILS	
9-2-15	REVISED NOTE 2 & REPLACED R2-5A WITH W3-5	
10-15-09	ADDED REFERENCE TO MASH	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED NOTE	
10-1-98	ADDED NOTE	
4-03-97	ADDED (SP) TO W6-1& REVISED TRAFFIC CONTROL DEVICES NOTE	
10-18-96	ADDED R55-1	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL, TEXT	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

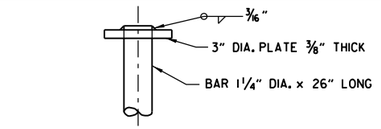
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

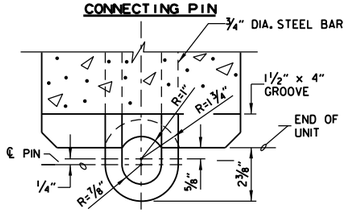
STANDARD DRAWING TC-3

REINFORCING BAR TABLE PER BARRIER UNIT

MARK	LOCATION	BAR SIZE	(NO. BARS)	SKETCH
H-1	HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS	#5	(6)	19'-3"
H-2	CENTERED ABOVE DRAIN SLOTS LONG. & TRANSVERSELY	#5	(6)	6'-6"
H-3	TIED ABOVE H-1 BARS TO SUPPORT H-2, TIED TO V-1	#4	(2)	1'-6"
S-1	OVER LIFT HOLES	#4	(2)	2'-5", LIFTING HOLE, 90°, 3 3/8" R
S-2	HORIZ. AROUND SLOTS BETWEEN V-1'S @ DRAIN SLOTS	#4	(2)	1 1/2" R, SLOTS, 7", 1'-6", 1" MIN. CLEAR TO BAR; 5'-1" BAR W/(4) 1 1/2" R BENDS & MIN. 1'-0" OVERLAP
V-1	VERTICAL IN BARRIER(3) EACH END & (2) AT EACH DRAIN SLOTS	#5	(16)	TOTAL LENGTH 4'-9"; 2 3/16" R; 12°; 1 1/2"; 9"; 2'-1 3/8"; 4 3/8"

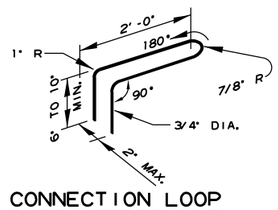


CONNECTING PIN

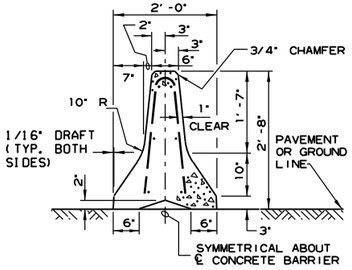


SECTION E-E

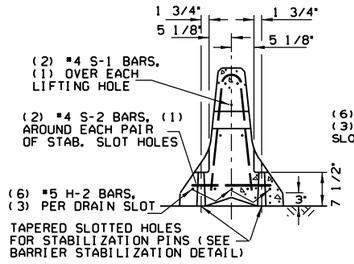
CONNECTION DETAILS



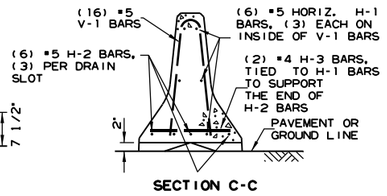
CONNECTION LOOP



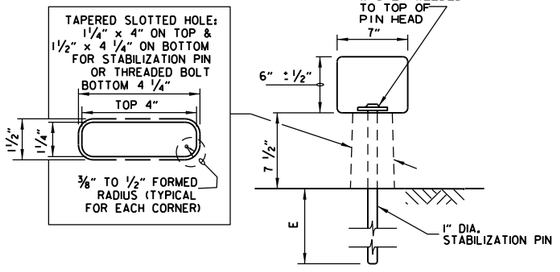
SECTION A-A



SECTION B-B



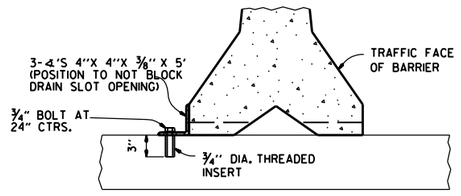
SECTION C-C



BARRIER STABILIZATION DETAIL

ROADWAY SECTION

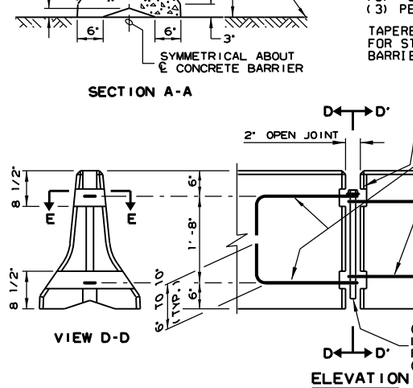
(E) 4" - CONCRETE PAVEMENT
8" - ASPHALT PAVEMENT
12" - SHOULDER AREAS



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.

BARRIER STABILIZATION DETAIL

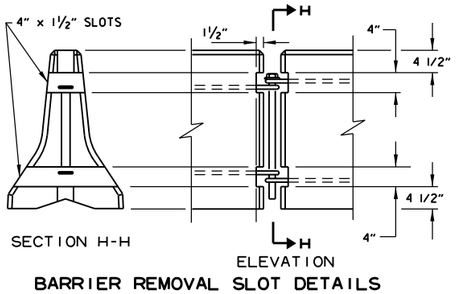
BRIDGE DECKS



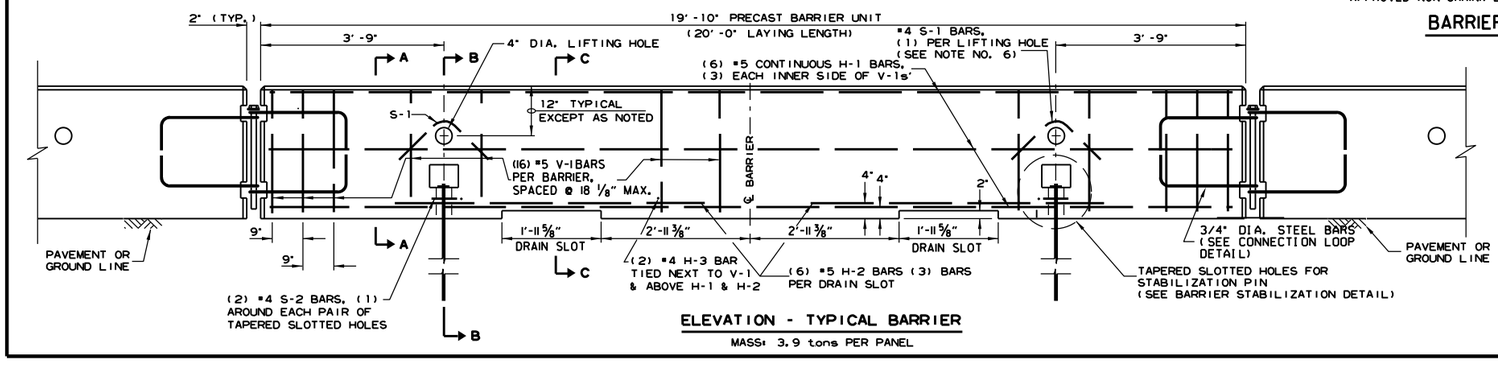
VIEW D-D

VIEW D'-D'

ELEVATION



BARRIER REMOVAL SLOT DETAILS



ELEVATION - TYPICAL BARRIER

MASS: 3.9 tons PER PANEL

GENERAL NOTES

(1) THE CONTRACTOR SHALL FURNISH THE PRECAST CONCRETE BARRIER UNITS AND SHALL BE RESPONSIBLE FOR THE MANUFACTURE, SHIPMENT, STORAGE, PLACEMENT AND REMOVAL. AT THE COMPLETION OF THE PROJECT, THE PRECAST UNITS WILL REMAIN THE PROPERTY OF THE CONTRACTOR.

(2) MATERIALS SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS:
CONCRETE: 2500 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
REINFORCING STEEL: AASHTO M 31 OR M 53, GRADE 60
STRUCTURAL STEEL: AASHTO-M270 GRADE 36 SHALL BE USED FOR THE CONNECTION PIN, CONNECTION LOOPS, AND STABILIZATION PINS. A ONE PIECE PIN WITH A 3" ROUNDED TOP MAY BE USED IN PLACE OF THE DETAILED CONNECTION PIN.
DELINEATORS: DELINEATORS SHALL BE MOUNTED AT 10' SPACING ON TOP OF PRECAST BARRIER.

IN APPLICATIONS WHERE BARRIER WALL IS WITHIN 6 FEET OF A TRAFFIC LANE, ADDITIONAL DELINEATORS SHALL BE PLACED ON THE BARRIER AT 10' SPACING APPROXIMATELY ONE (1) FOOT FROM THE TOP OF THE BARRIER. DELINEATORS SHALL BE ON THE ARDOT QUALIFIED PRODUCTS LIST FOR CONSTRUCTION CONCRETE BARRIER MARKERS.
DELINEATOR COLOR SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
PAYMENT FOR DELINEATORS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID PER LIN. FT. FOR "FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER". THE CONTRACTOR SHALL CERTIFY TO THE ENGINEER THAT THE MATERIAL AND THE DESIGN USED IN THE PRECAST BARRIER UNITS MEETS THE REQUIREMENTS AS SHOWN ON THIS STANDARD DRAWING.

(3) OTHER PRECAST CONCRETE BARRIERS THAT HAVE BEEN CRASH TESTED AND APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION TO MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) WILL BE ACCEPTED IN LIEU OF THE BARRIER SHOWN. DRAIN SLOTS SHALL BE PROVIDED AS NEEDED OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL FURNISH A CERTIFICATION OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) COMPLIANCE FOR ANY OTHER TYPES OF PRECAST BARRIER TO BE USED. THE CERTIFICATION SHALL STATE THAT THE PRECAST CONCRETE BARRIER MEETS THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH). MIXING OF SHAPES WILL NOT BE ALLOWED IN A CONTINUOUS LINE OF UNITS.

(4) DOWEL HOLES IN PAVEMENT OR BRIDGE SLABS THAT ARE TO REMAIN IN PLACE SHALL BE FILLED. HOLES IN CONCRETE PAVEMENT AND BRIDGE SLABS SHALL BE FILLED WITH AN APPROVED NON-SHRINK EPOXY GROUT. HOLES IN ASPHALT PAVEMENT SHALL BE FILLED WITH AN APPROVED ASPHALT JOINT FILLER. PAYMENT FOR DRILLING AND FILLING HOLES TO BE INCLUDED IN THE PRICE FOR VARIOUS BARRIER ITEMS.

(5) ATTACH UNITS TO ROADWAY SURFACE WITH STABILIZATION PINS AND TO DECK SLABS USING BOLTS WHEN REQUIRED.

(6) A 4" WHITE PVC SLEEVE MAY BE USED TO FORM THE LIFTING HOLE AND IF USED THE SLEEVE IS TO BE LEFT IN PLACE.

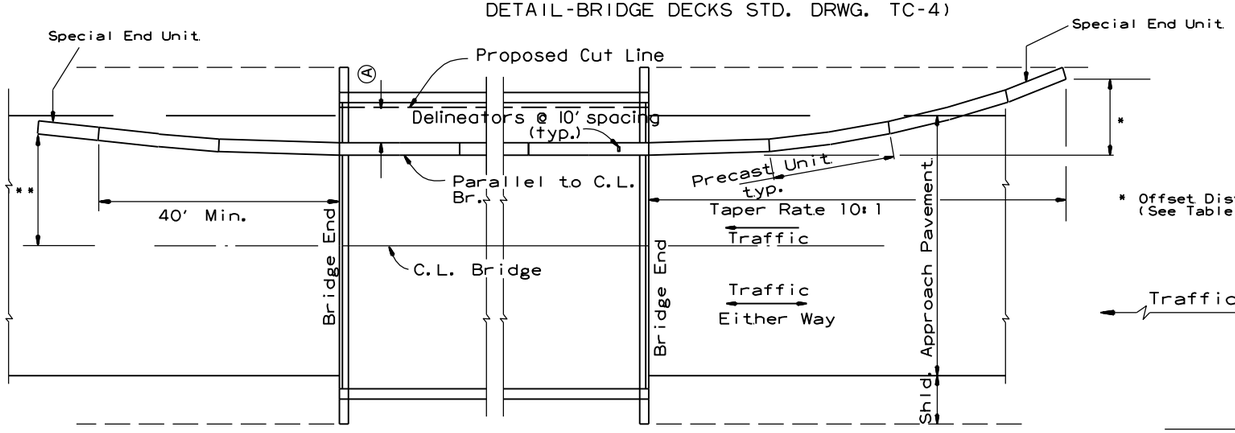
DATE	REVISION	FILMED
11-07-19	REVISED NOTE 3	
2-27-14	REVISED BARRIER STABILIZATION DETAIL	
10-15-09	ADDED REFERENCE TO WASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02	ISSUED NEW DRAWING	

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

STANDARD DRAWING TC-4

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

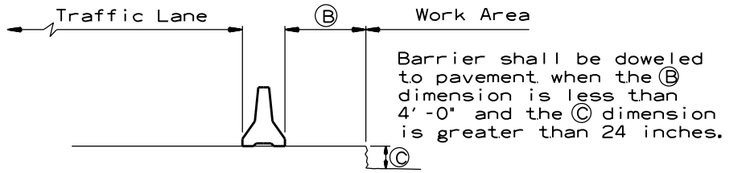


BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

* Offset Distance (See Table)

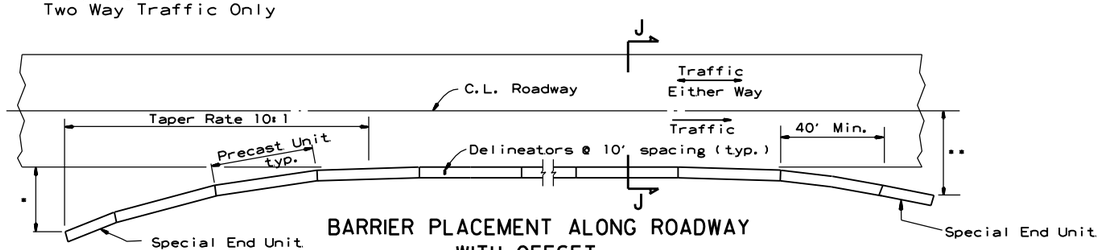
** Offset Distance for Two Way Traffic Only



Barrier shall be doweled to pavement when the Ⓑ dimension is less than 4'-0" and the Ⓒ dimension is greater than 24 inches.

SECTION J-J

No Scale



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

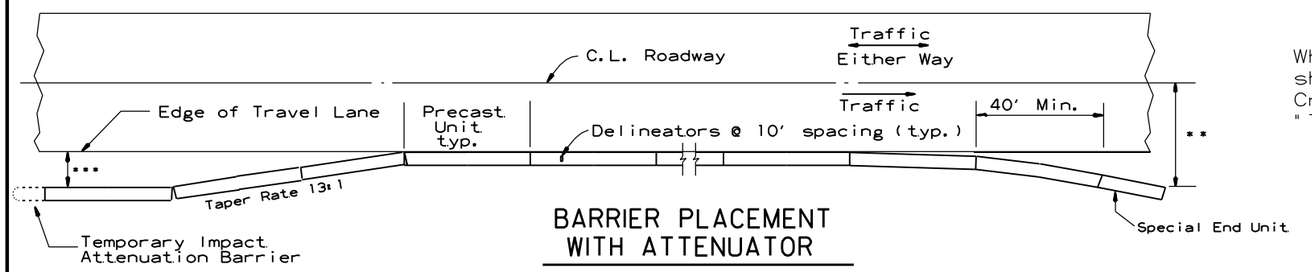
* Offset Distance (See Table)

** Offset Distance For Two Way Traffic Only

Offset Distance Table

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

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

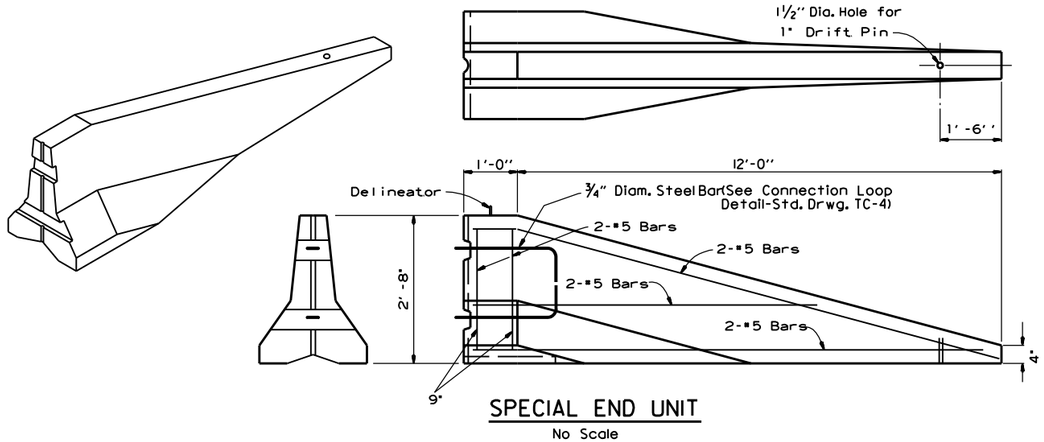


BARRIER PLACEMENT WITH ATTENUATOR

No Scale

** Offset Distance For Two Way Traffic Only

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



SPECIAL END UNIT

No Scale

General Notes

When shown on the Plans, the ends of the Temporary Precast Concrete Barrier shall be protected with 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."

DATE	REVISION	FILMED
11-07-19	REVISED NOTE	
10-15-09	ADDED REFERENCE TO MASH	
5-25-06	REVISED BARRIER PLACEMENT	
8-22-02	ISSUED NEW DRAWING	

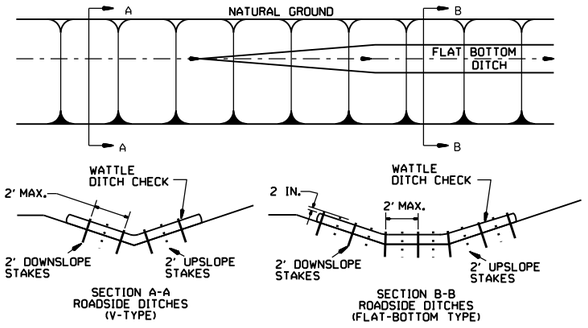
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

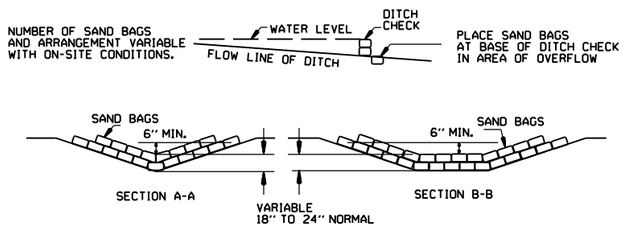
STANDARD DRAWING TC-5

GENERAL NOTES

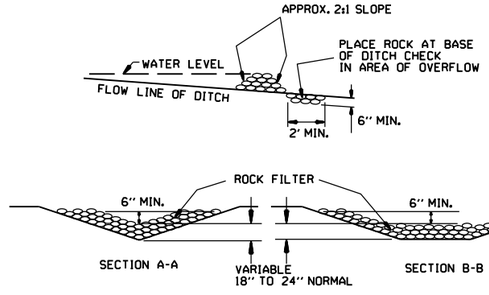
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



SAND BAG DITCH CHECK (E-5)

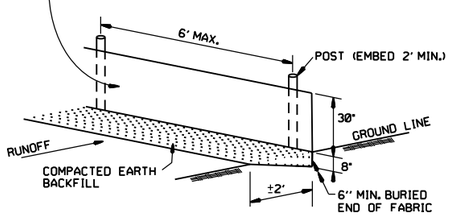


ROCK DITCH CHECK (E-6)

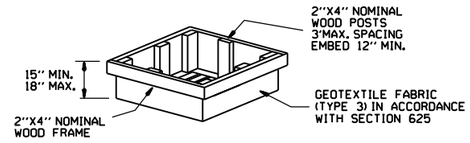
GENERAL NOTES

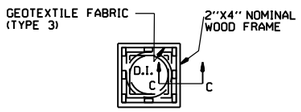
GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625

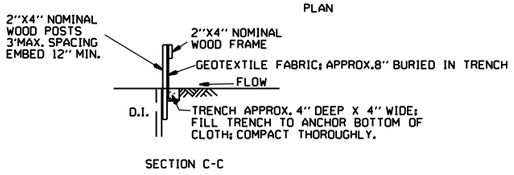
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



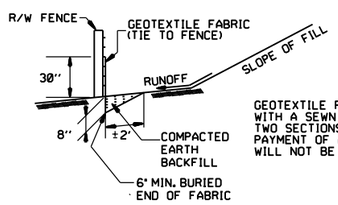
SILT FENCE (E-11)





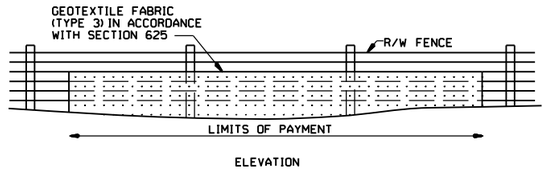


DROP INLET SILT FENCE (E-7)



GENERAL NOTES

GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



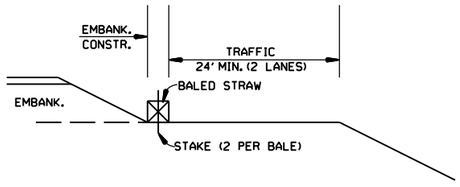
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

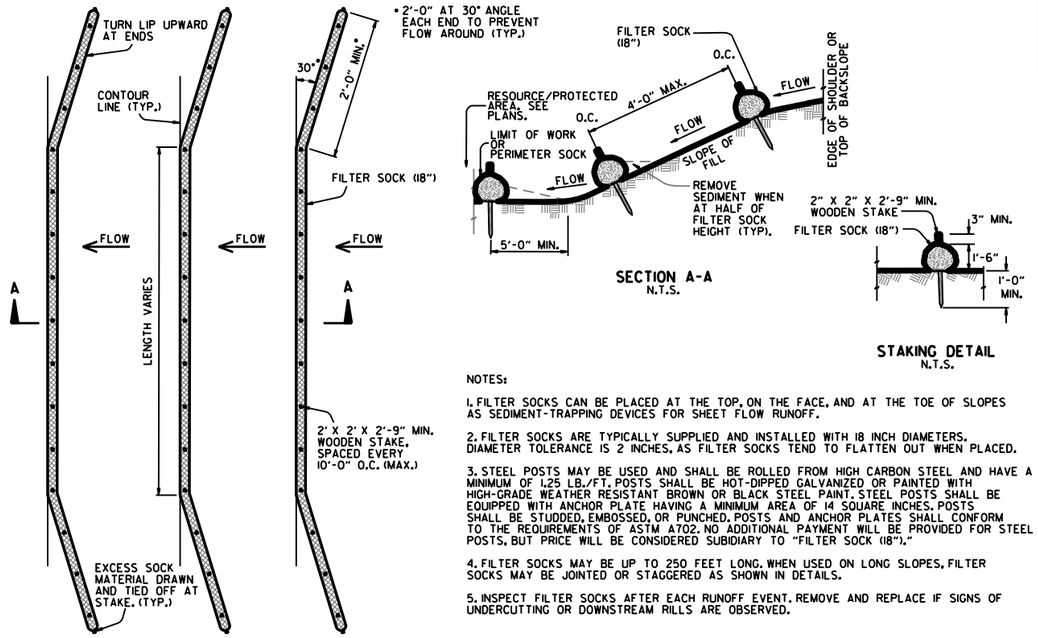
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

2. NO GAPS SHALL BE LEFT BETWEEN BALES.

3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.



BALED STRAW FILTER BARRIER (E-2)



FILTER SOCK ALONG SLOPE (E-3)

NOTES:

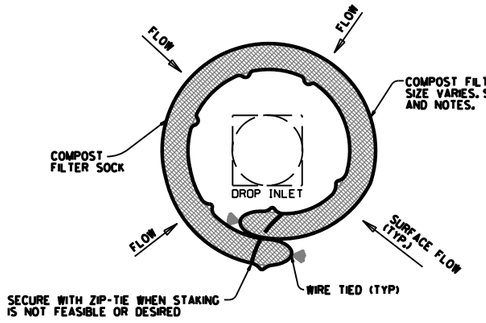
1. FILTER SOCKS CAN BE PLACED AT THE TOP, ON THE FACE, AND AT THE TOE OF SLOPES AS SEDIMENT-TRAPPING DEVICES FOR SHEET FLOW RUNOFF.

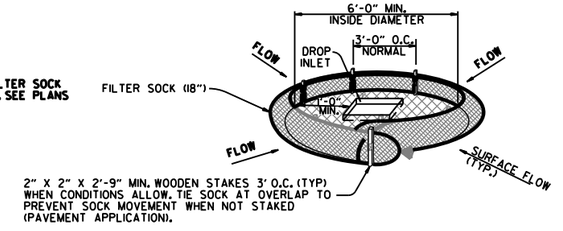
2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES, AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.

3. STEEL POSTS MAY BE USED AND SHALL BE ROLLED FROM HIGH CARBON STEEL AND HAVE A MINIMUM OF 1.25 LB./FT. POSTS SHALL BE HOT-DIPPED GALVANIZED OR PAINTED WITH HIGH-GRADE WEATHER RESISTANT BROWN OR BLACK STEEL PAINT. STEEL POSTS SHALL BE EQUIPPED WITH ANCHOR PLATE HAVING A MINIMUM AREA OF 14 SQUARE INCHES. POSTS SHALL BE STUDDED, EMBOSSED, OR PUNCHED. POSTS AND ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR STEEL POSTS, BUT PRICE WILL BE CONSIDERED SUBIDIARY TO "FILTER SOCK (18")."

4. FILTER SOCKS MAY BE UP TO 250 FEET LONG. WHEN USED ON LONG SLOPES, FILTER SOCKS MAY BE JOINTED OR STAGGERED AS SHOWN IN DETAILS.

5. INSPECT FILTER SOCKS AFTER EACH RUNOFF EVENT. REMOVE AND REPLACE IF SIGNS OF UNDERCUTTING OR DOWNSTREAM RILLS ARE OBSERVED.





NOTES:

1. OVERLAP ENDS OF SOCK (1' MIN. 3' MAX.).

2. USE 18" DIA. SOCK IN NON-TRAFFIC AREAS OR AREAS WHERE SAFETY IS NOT A CONCERN.

COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)

DATE	REVISION	FILMED
11-16-17	ADDED FILTER SOCK E-3 AND E-13	
12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK	
11-18-98	ADDED NOTES	
07-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)	
07-20-95	REVISED SILT FENCE E-4 AND E-11	7-20-95
07-15-94	REV. E-4 & E-11 MIN. 13" BURIED END OF FABRIC	
06-02-94	REVISED E-1,4,7 & 11; DELETED E-2 & 3	6-2-94
04-01-93	REDRAWN	
10-01-92	REDRAWN	
08-02-76	ISSUED R.D.M.	298-7-28-76

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

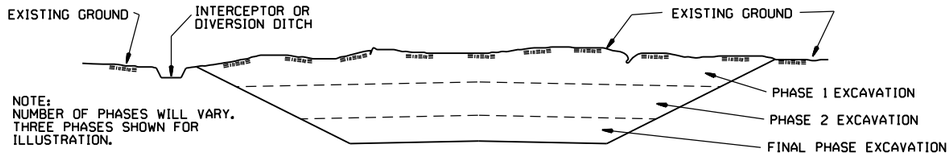
STANDARD DRAWING TEC-1

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



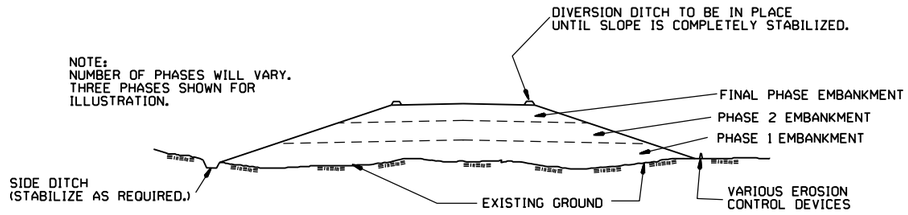
GENERAL NOTE

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.

11-03-94	CORRECTED SPELLING	
6-2-94	Drawn & Issued	6-2-94
DATE	REVISION	FILMED

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3