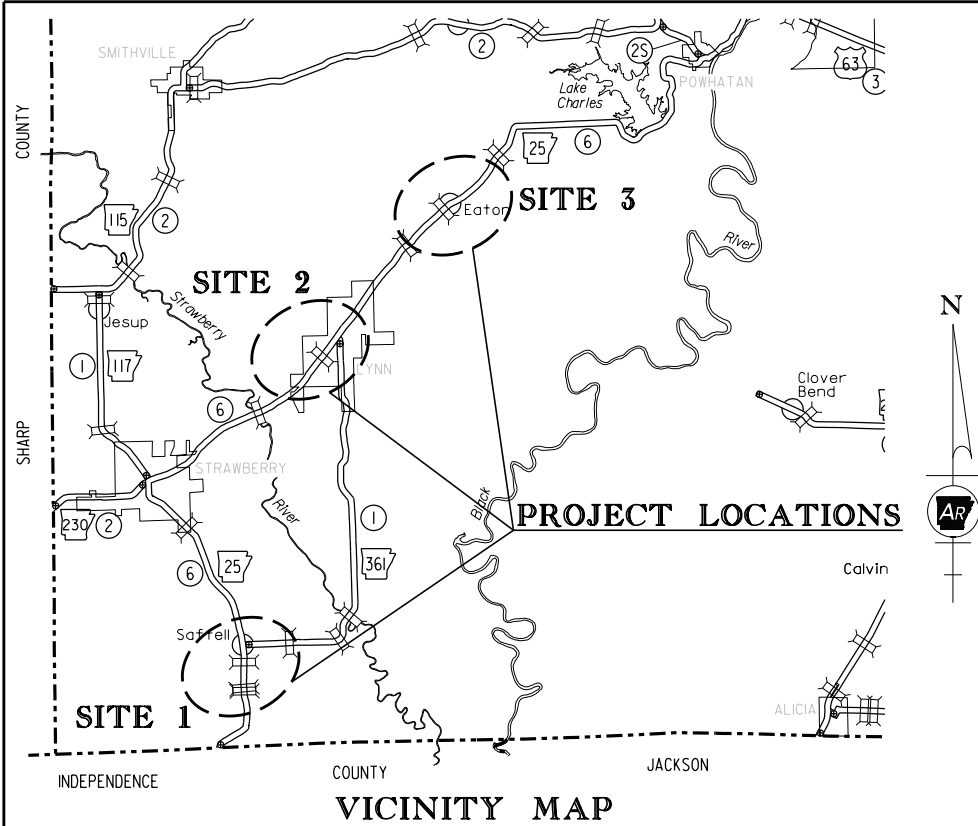


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REVISION DATE: 10/18/2023



VICINITY MAP

STRUCTURES OVER 20'-0" SPAN

- ① STA. 111+00.00 CONSTRUCT QUINT. 12' X 12' X 76' R.C. BOX CULVERT WITH 3:1 WINGS LT. & RT. Q50 = 6660 CFS D.A. = 11456 ACRES SPAN = 64.50'
- ② STA. 114+00.00 CONSTRUCT QUAD. 10' X 8' X 72' R.C. BOX CULVERT WITH 3:1 WINGS LT. & RT. Q50 = 6660 CFS D.A. = 11456 ACRES SPAN = 43.33'
- ③ STA. 201+00.00 CONSTRUCT QUAD. 10' X 8' X 103' R.C. BOX CULVERT WITH 45° LT. FWD. SKEW WITH 3:1 WINGS LT. & RT. Q50 = 1620 CFS D.A. = 1254.4 ACRES SPAN = 61.28'
- ④ STA. 305+23.00 CONSTRUCT SEXT. 11' X 10' X 71' R.C. BOX CULVERT WITH 15° LT. FWD. SKEW WITH 3:1 WINGS LT. & RT. Q50 = 2610 CFS D.A. = 2266 ACRES SPAN = 73.33'

STA. 202+00.00
END SITE 2

STA. 200+00.00
BEGIN SITE 2
LOG MILE 10.48

STA. 125+96.69
END SITE 1

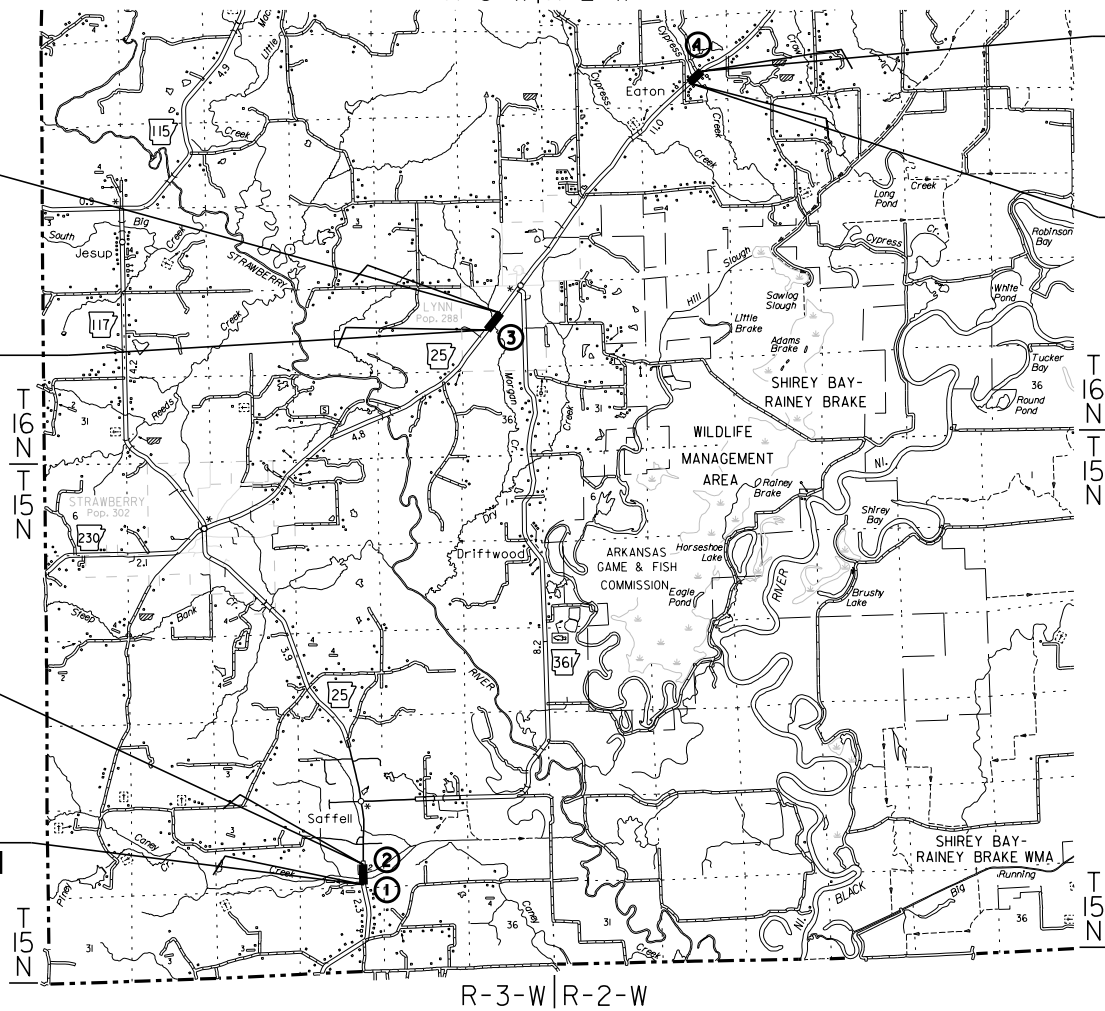
STA. 102+00.00
BEGIN JOB 100991
BEGIN SITE 1
LOG MILE 1.20

SITE		BEGIN OF PROJECT	MID-POINT OF PROJECT	END PROJECT
SITE 1	LATITUDE	N 35°54'15"	N 35°54'27"	N 35°54'39"
	LONGITUDE	W 91°17'25"	W 91°17'25"	W 91°17'25"
SITE 2	LATITUDE	N 36°00'04"	N 36°00'05"	N 36°00'05"
	LONGITUDE	W 91°15'30"	W 91°15'29"	W 91°15'28"
SITE 3	LATITUDE	N 36°02'30"	N 36°02'32"	N 36°02'33"
	LONGITUDE	W 91°12'50"	W 91°12'48"	W 91°12'46"

ARKANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS

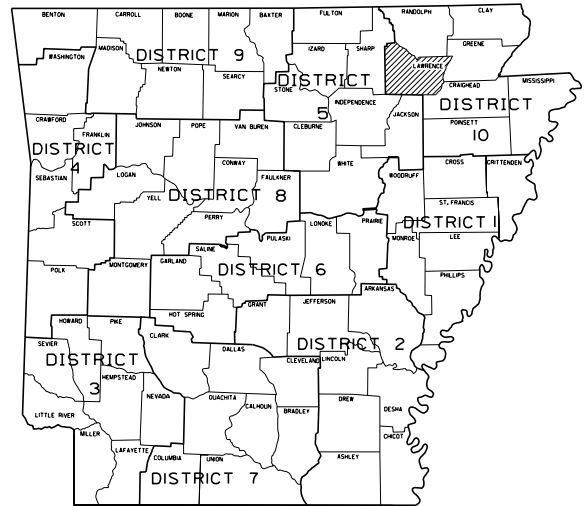
INDEPENDENCE CO. LINE -
EATON STRS. & APPRS. (S)
LAWRENCE COUNTY
JOB 100991
ROUTE 25 SECTION 6
FED. AID PROJ. NHPP-0038(55)

NOT TO SCALE



LENGTH COMPUTED ALONG C.L. HWY. 25			
GROSS LENGTH OF PROJECT	2946.69	FEET	0.558 MILES
NET LENGTH OF ROADWAY	2704.25	FEET	0.512 MILES
NET LENGTH OF BRIDGES	242.44	FEET	0.046 MILES
NET LENGTH OF PROJECT	2946.69	FEET	0.558 MILES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100991	I	90
				INDEPENDENCE CO. LINE - EATON STRS. & APPRS. (S)				



ARKANSAS HIGHWAY DISTRICT 10

. DESIGN TRAFFIC DATA .

STA. 306+50.00
END SITE 3
END JOB 100991

STA. 303+00.00
BEGIN SITE 3
LOG MILE 14.25

DESIGN YEAR----- 2044
2024 ADT----- 1700
2044 ADT----- 2100
2044 DHV----- 231
DIRECTIONAL DISTRIBUTION----- 0.60
TRUCKS----- 5%
DESIGN SPEED----- 55 MPH



10-31-2023

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				6	ARK.			
					JOB NO.	100991	2	90

2 INDEX OF SHEETS AND STANDARD DRAWINGS



10-31-2023

INDEX OF SHEETS

SHEET NO.	TITLE
1	TITLE SHEET
2	INDEX OF SHEETS AND STANDARD DRAWINGS
3	GOVERNING SPECIFICATIONS AND GENERAL NOTES
4 - 6	TYPICAL SECTIONS OF IMPROVEMENT
7 - 19	SPECIAL DETAILS
20 - 33	TEMPORARY EROSION CONTROL DETAILS
34 - 49	MAINTENANCE OF TRAFFIC DETAILS
50 - 52	PERMANENT PAVEMENT MARKING DETAILS
53 - 55	QUANTITIES
56	SUMMARY OF QUANTITIES AND REVISIONS
57 - 60	SURVEY CONTROL DETAILS
61 - 67	PLAN AND PROFILE SHEETS
68 - 90	CROSS SECTIONS

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

ROADWAY STANDARD DRAWINGS

DRWG.NO.	TITLE	DATE
CDP-1	CONCRETE DITCH PAVING	12-08-16
DR-2	DETAILS OF DRIVEWAYS & STREET TURNOUTS	05-19-22
FES-1	FLARED END SECTION	10-18-96
FES-2	FLARED END SECTION	10-18-96
FPC-9	DETAILS OF DROP INLETS & JUNCTION BOXES	11-16-01
PBC-1	PRECAST CONCRETE BOX CULVERTS	01-28-15
PCC-1	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PCM-1	METAL PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PCP-1	PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)	02-27-14
PCP-2	PLASTIC PIPE CULVERT (PVC F949)	02-27-14
PCP-3	PLASTIC PIPE CULVERT (POLYPROPYLENE)	02-27-20
PM-1	PAVEMENT MARKING DETAILS	02-27-20
RCB-1	REINFORCED CONCRETE BOX CULVERT DETAILS	07-26-12
RCB-2	EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS	11-20-03
SE-2	TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC	11-07-19
TC-1	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	11-07-19
TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	05-20-21
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	08-12-21
TC-4	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	11-07-19
TC-5	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	11-07-19
TEC-1	TEMPORARY EROSION CONTROL DEVICES	11-16-17
TEC-2	TEMPORARY EROSION CONTROL DEVICES	06-02-94
TEC-3	TEMPORARY EROSION CONTROL DEVICES	11-03-94
WF-4	WIRE FENCE TYPE C AND D	08-22-02

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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
FHWA-1273	SUPPLEMENT - TRAINING PROGRAM - JOB NUMBER 100991
100-3	CONTRACTOR'S LICENSE
100-4	DEPARTMENT NAME CHANGE
102-2	ISSUANCE OF PROPOSALS
103-2	CONTACT INFORMATION FOR MOTORIST DAMAGE CLAIMS
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
606-1	PIPE CULVERTS FOR SIDE DRAINS
620-1	MULCH COVER
621-1	FILTER SOCKS
800-1	STRUCTURES
802-4	CEMENT
804-2	REINFORCING STEEL FOR STRUCTURES
JOB100991	BIDDING REQUIREMENTS AND CONDITIONS
JOB100991	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB100991	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB100991	BUY AMERICA CONSTRUCTION MATERIALS
JOB100991	CARGO PREFERENCE ACT REQUIREMENTS
JOB100991	CAVE DISCOVERY
JOB100991	COLD MILLING – COUNTY PROPERTY
JOB100991	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB100991	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
JOB100991	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB100991	FLEXIBLE BEGINNING OF WORK - CALENDAR DAY CONTRACT
JOB100991	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB100991	LIQUIDATED DAMAGES PROCEDURE FOR BID LETTINGS
JOB100991	MANDATORY ELECTRONIC CONTRACT
JOB100991	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB100991	NESTING SITES OF MIGRATORY BIRDS
JOB100991	PARTNERING REQUIREMENTS
JOB100991	PERCENT AIR VOIDS AND NDESIGN FOR ACHM SURFACE MIX DESIGNS
JOB100991	PLASTIC PIPE
JOB100991	PRICE ADJUSTMENT FOR ASPHALT BINDER
JOB100991	PRICE ADJUSTMENT FOR FUEL
JOB100991	PROHIBITION OF CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT
JOB100991	SHORING FOR CULVERTS
JOB100991	SOIL STABILIZATION
JOB100991	STORM WATER POLLUTION PREVENTION PLAN
JOB100991	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB100991	UTILITY ADJUSTMENTS
JOB100991	VALUE ENGINEERING
JOB100991	WARM MIX ASPHALT
JOB100991	WATER POLLUTION CONTROL
JOB100991	WELL HEAD PROTECTION
JOB100991	WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER FOR TREE CLEARING

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5-20-2024								
					JOB NO.	100991	3	90
2 GOVERNING SPECIFICATIONS & GENERAL NOTES								



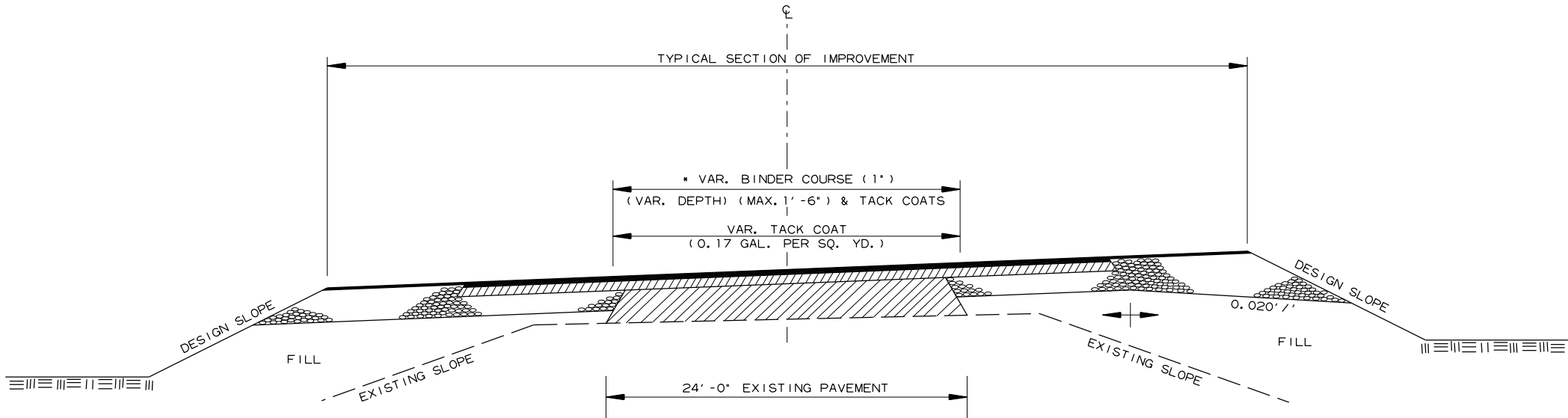
GENERAL NOTES

- GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
- ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
- ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING U. S. MAILBOXES WITHIN THE PROJECT LIMITS IN SUCH A MANNER THAT THE PUBLIC MAY RECEIVE CONTINUED MAIL SERVICE. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS BID ITEMS.
- ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
- ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED AS DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO ENSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FENCE TO CONTROL LIVESTOCK IN AREAS WHERE PASTURES ARE SEVERED. WIRE FENCE MAY BE CONSTRUCTED INITIALLY, OR IN LIEU THEREOF, THE CONTRACTOR AT HIS OWN EXPENSE, MAY ELECT TO PROVIDE TEMPORARY FENCING SUITABLE TO CONTAIN LIVESTOCK.
- THE SEQUENCE AS SHOWN ON THE MAINTENANCE OF TRAFFIC PLANS IS A GENERAL OUTLINE FOR THE CONSTRUCTION OF THIS PROJECT, AND IN NO WAY IS IT INTENDED TO COVER EVERY ITEM IN THE PROJECT. ITEMS NOT CRITICAL TO THE CONSTRUCTION SEQUENCE MAY BE CONSTRUCTED IN ANY STAGE AS APPROVED BY THE RESIDENT ENGINEER.
- ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
- THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. AFTER SAWING, THE PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN. ANY DAMAGE OF THE ASPHALT PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- THIS PROJECT IS COVERED UNDER A SECTION 404 NATIONWIDE 14 PERMIT FOR LINEAR TRANSPORTATION PROJECTS. REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS, EDITION OF 2014, FOR PERMIT REQUIREMENTS. REFER TO THE SPECIAL PROVISIONS FOR ADDITIONAL MEASURES AND RESTRICTIONS.

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				JOB NO.		100991	7	90

2 SPECIAL DETAILS

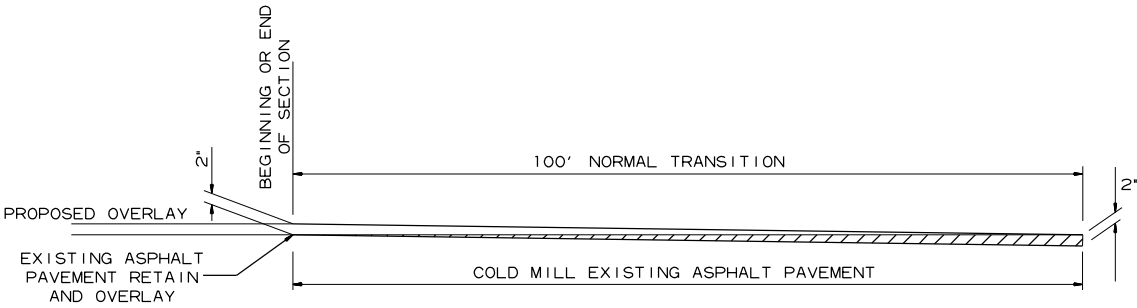


* 6" AGGREGATE BASE COURSE (CLASS 7)
TO BE REPLACED WITH ACHM BINDER COURSE (1")

METHOD OF RAISING GRADE

NOTES:

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

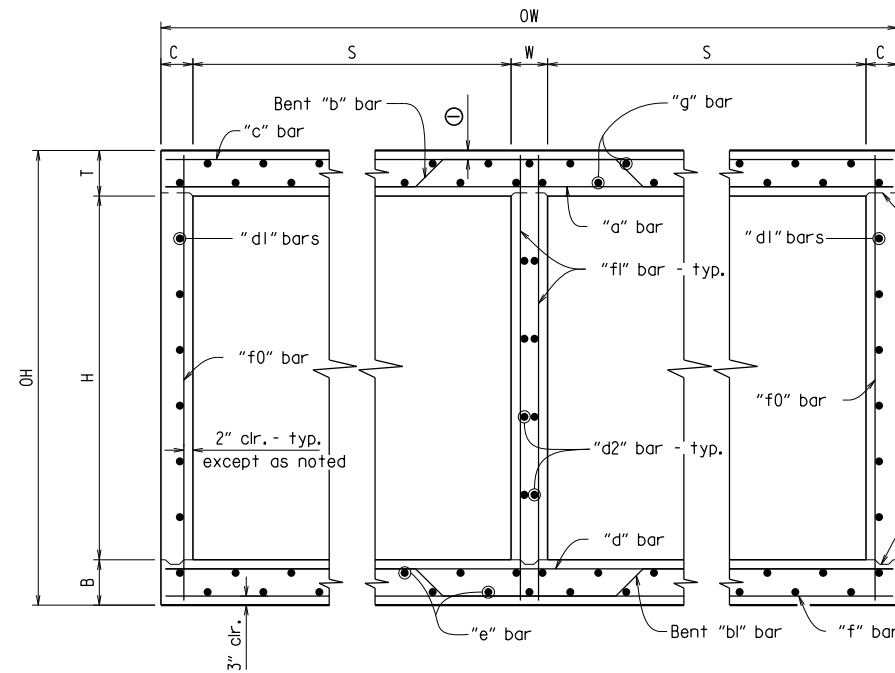


DETAIL FOR TRANSITIONS

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

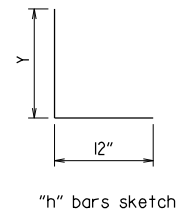
Note: When top slab of culvert serves as finished roadway surface, see General Notes on Sheet 1 of 4.



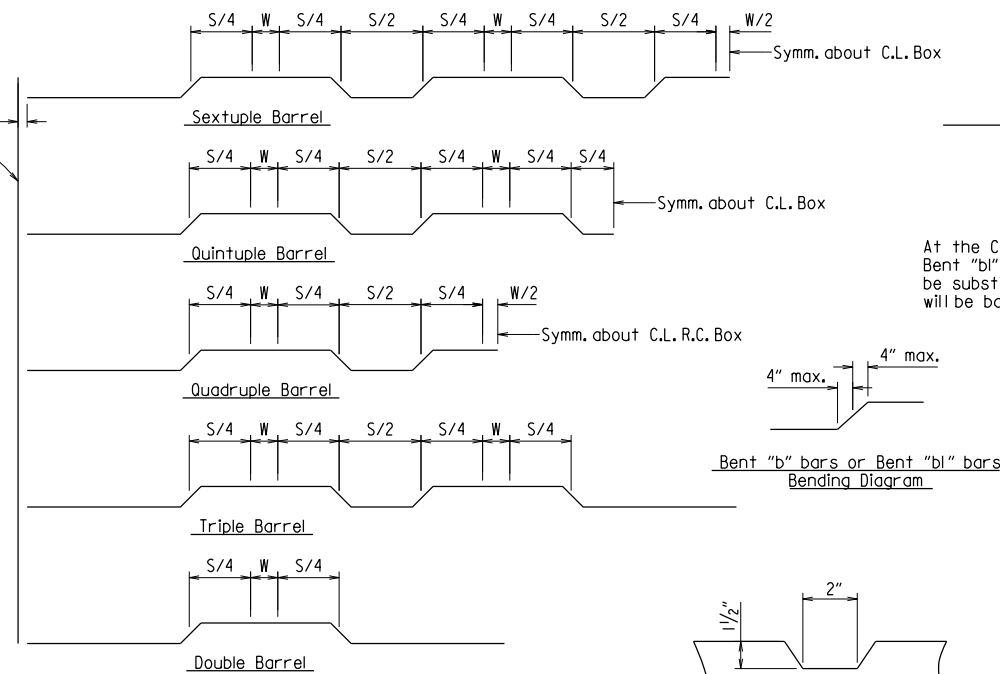
TYPICAL SECTION M-M

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

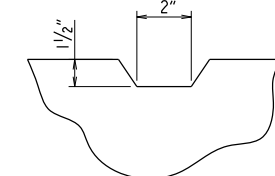
Bottom Slab
Straight "d" bars shall alternate with Bent "bl" bars in top.
Straight "f" bars shall alternate with Bent "bl" bars in bottom.



"h" bars sketch



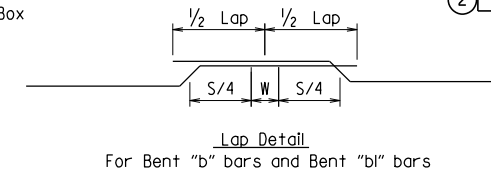
Bent "b" bars or Bent "bl" bars sketch



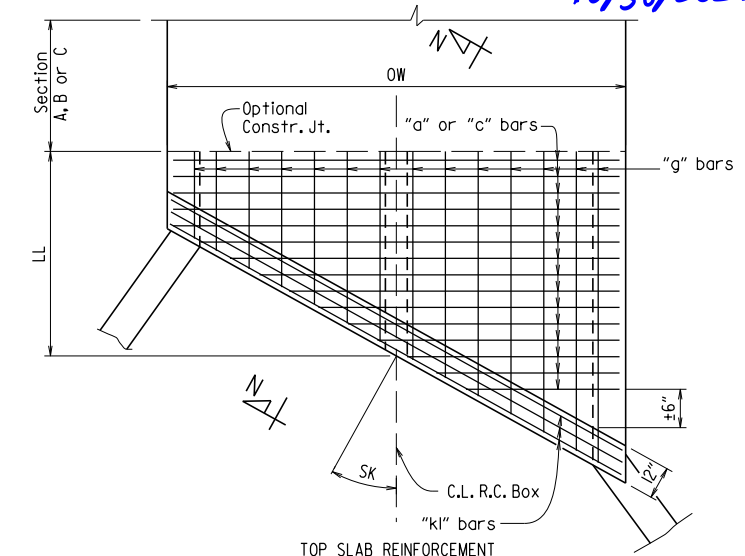
TYPICAL KEYWAY DETAIL
(All Construction Joints)

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		100991	10	90

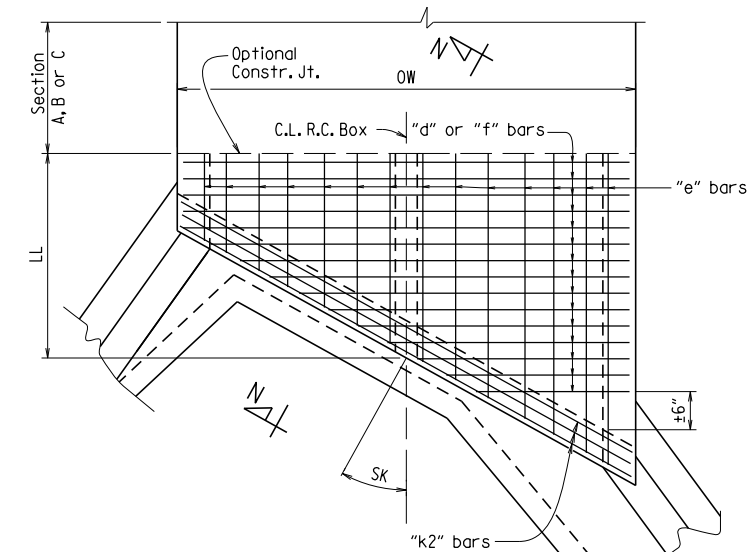
SPECIAL DETAILS



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

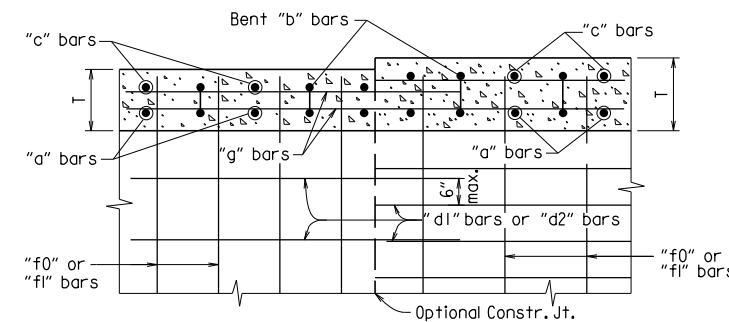


TOP SLAB REINFORCEMENT
Straight "c" bars in top.
Straight "a" bars in bottom.



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

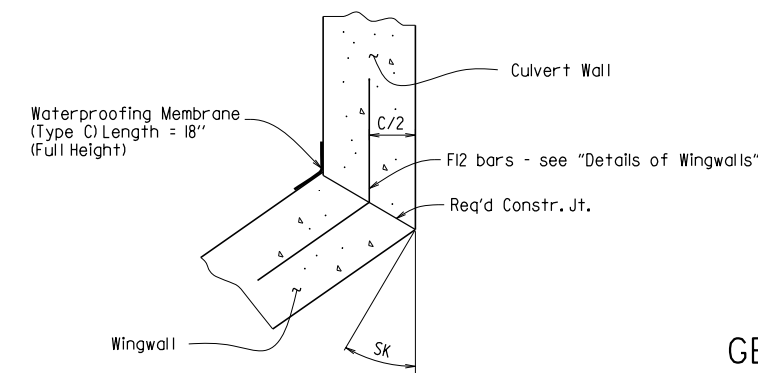
SKewed END SECTION DETAILS



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

LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

TOP SLAB SHOWN, BOTTOM SLAB SIMILAR



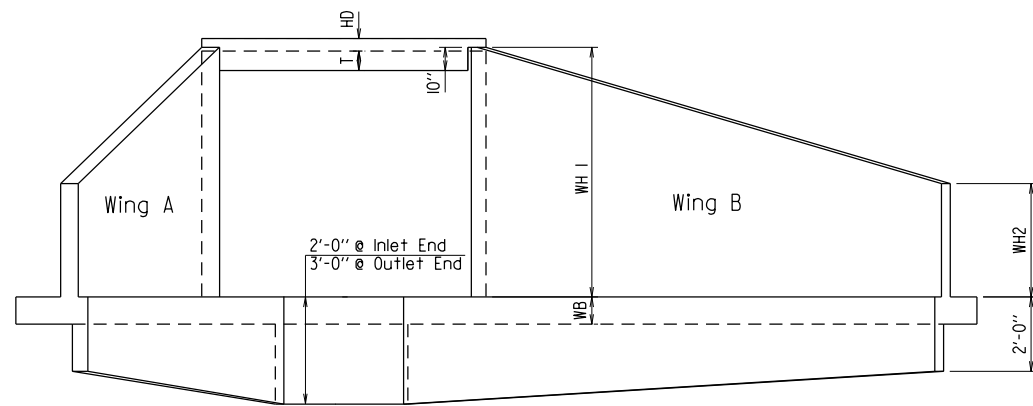
WINGWALL ATTACHMENT

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

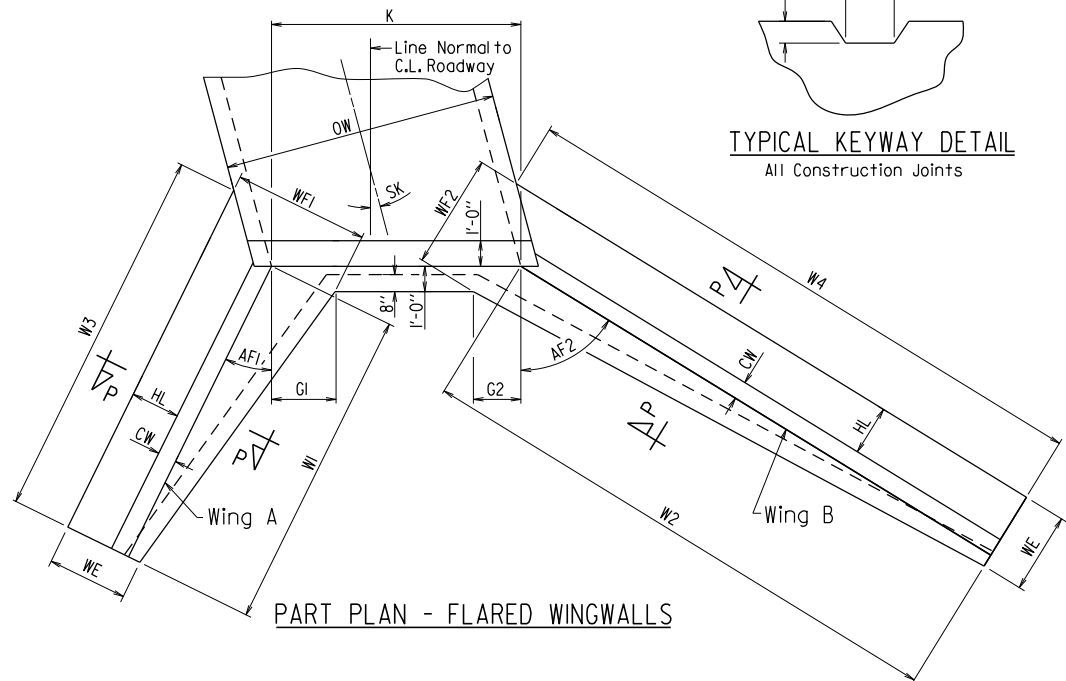
SHEET 3 OF 4
GENERAL DETAILS OF R.C. BOX CULVERT
DETAILS OF MULTI-BARREL
R.C. BOX CULVERT
SPECIAL DETAILS



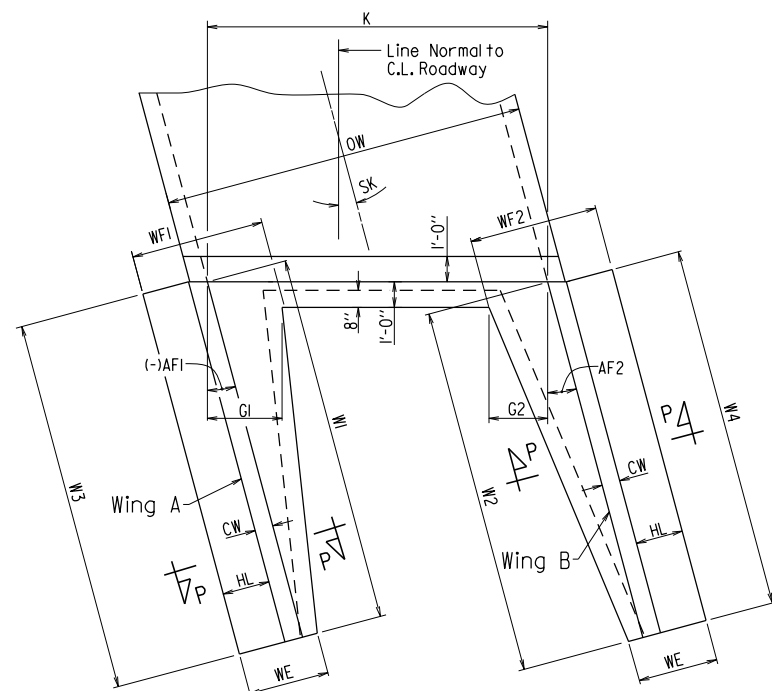
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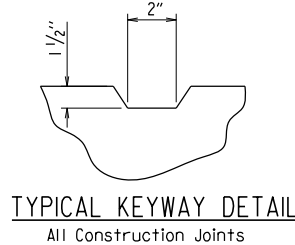
END ELEVATION
Flared Wingwalls Shown



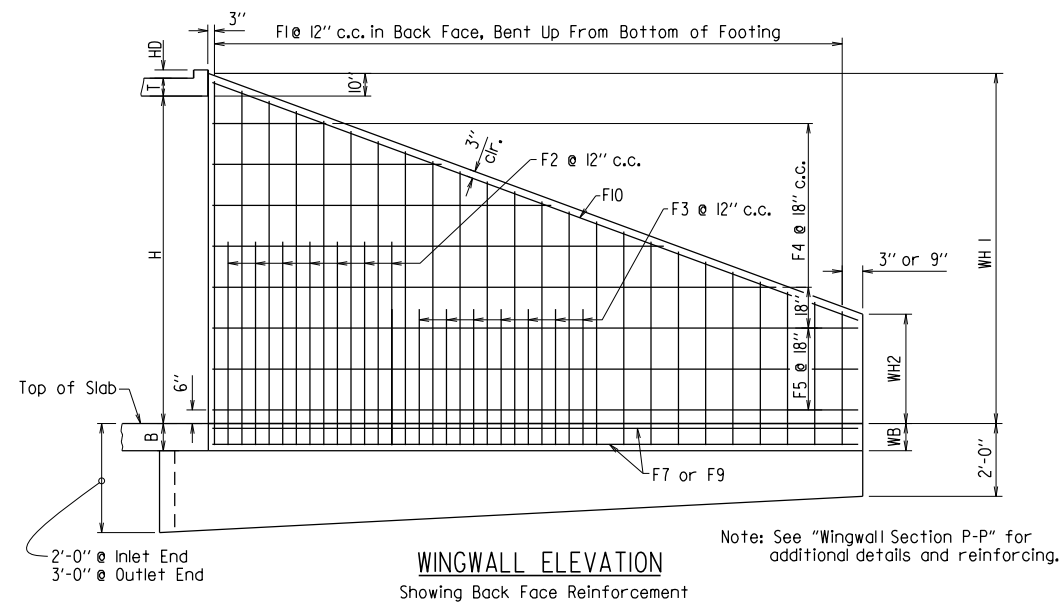
PART PLAN - FLARED WINGWALLS



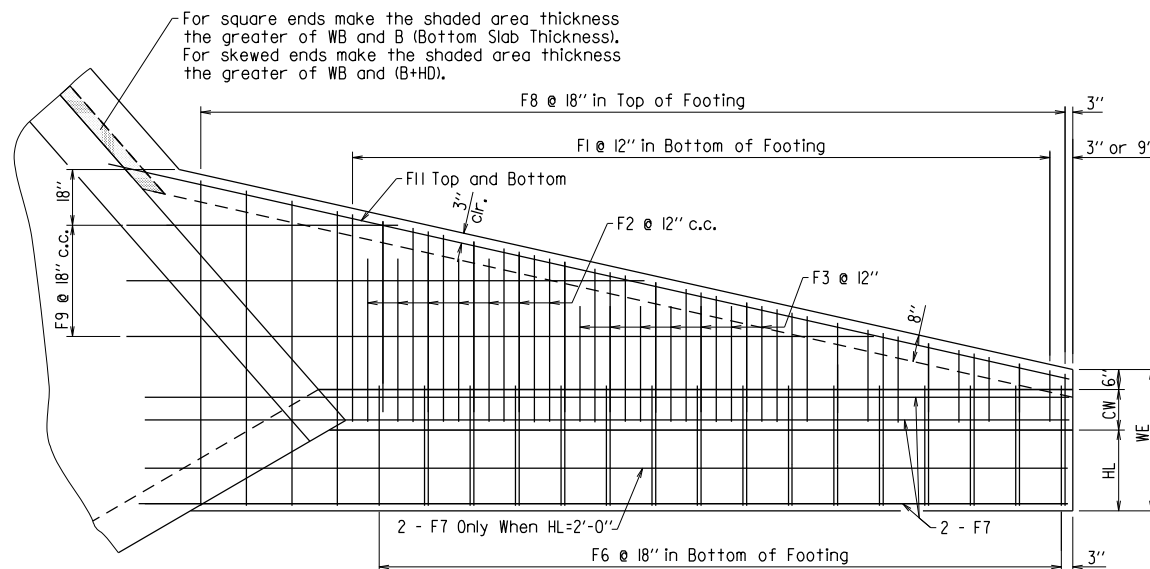
PART PLAN - PARALLEL WINGWALLS



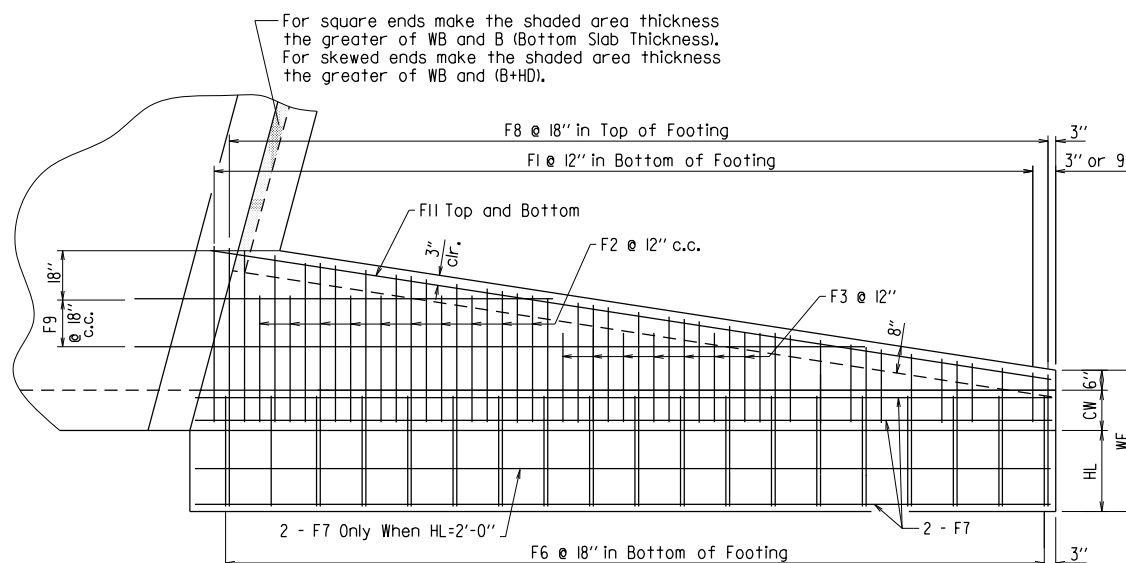
TYPICAL KEYWAY DETAIL
All Construction Joints



WINGWALL ELEVATION
Showing Back Face Reinforcement



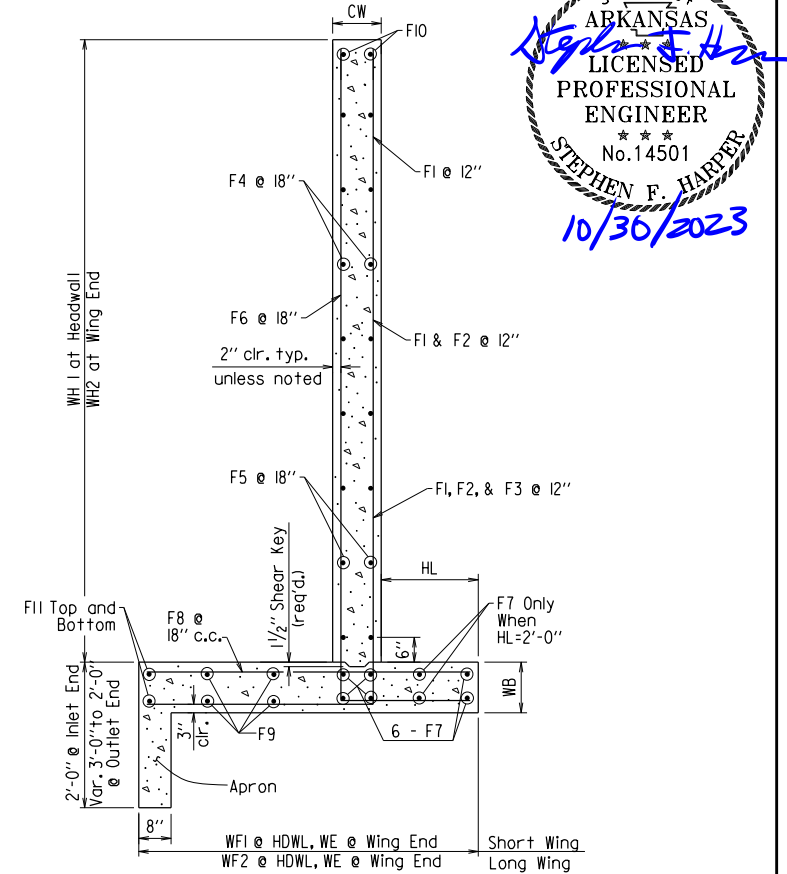
PLAN - FLARED WINGWALLS
Showing Footing Reinforcement



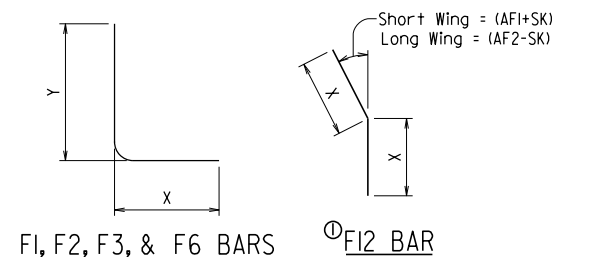
PLAN - PARALLEL WINGWALLS
Showing Footing Reinforcement

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		100991	II	90

2 SPECIAL DETAILS



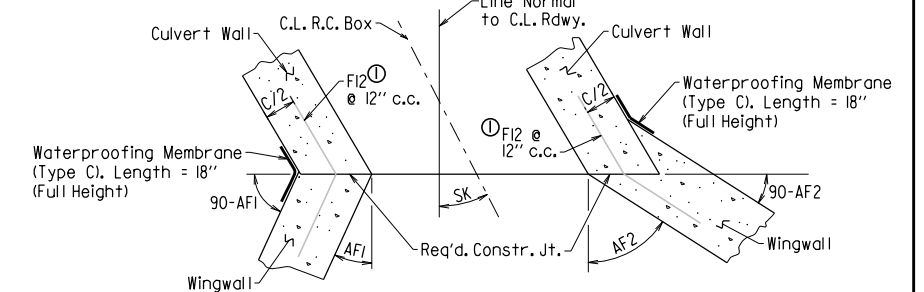
WINGWALL SECTION P-P



F1, F2, F3, & F6 BARS

F12 is a straight bar for parallel wingwalls

F12 BAR



CONSTRUCTION JOINTS
Flared Wingwalls Shown

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



INLET SLOPE SECTION(S)

INLET WINGWALL TABLE

[illegible]

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

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

TABULAR DATA BY: LKM DATE: 12/07/2020
CHECKED BY: BOL DATE: 12/17/2020

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

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

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

SHEET 1 OF 2
OF R.C. BOX CULVERT
SINGLE BARREL BOX CULVERT
STA. 111+00 (SITE 1)



MID-SECTION

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.)										SECTION LENGTH (FT.)	TOP SLAB REINFORCING STEEL								BOTTOM SLAB REINFORCING STEEL								SIDE WALL REINFORCING STEEL				INTERIOR WALL REINFORCING STEEL				TOP SLAB DISTRIBUTION REINF. STEEL			BOTTOM SLAB DISTRIBUTION REINF. STEEL			SIDE WALL DISTRIBUTION REINF. STEEL			INTERIOR WALL DISTRIBUTION REINF. STEEL		
	DESIGN SPAN (FT.)				CLEAR HEIGHT (FT.)		TOP SLAB THK.	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.		OVERALL WIDTH	OVERALL HEIGHT	LENGTH = OW - 4" + BENDS				LENGTH = OW - 4" + BENDS				"f" LENGTH = OH - 4"				"f" LENGTH = OH - 4"				"g" LENGTH = SL			"e" LENGTH = SL			"d1" LENGTH = SL			"d2" LENGTH = SL								
	D	S	H	T	B	C	W	OW	OH	SL		SIZE	L	SIZE	L	SIZE	L	SPACING	NO. REQ'D	SIZE	L	SIZE	L	SIZE	L	SPACING	NO. REQ'D	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	SIZE	SPACING	NO. REQ'D	SIZE	SPACING	NO. REQ'D	SIZE	SPACING	NO. REQ'D
	A	5	10	8	12	12	8	8	43'-4"	10'-0"		72	5	43'-0"	7	44'-1"	4	43'-0"	17	50	4	43'-0"	4	43'-0"	4	43'-0"	11	78	5	5	344	9'-8"	4	12	432	9'-8"	4	9	119	4	9	119	4	12	16	4	12

STATE OF ARKANSAS

 LICENSED PROFESSIONAL ENGINEER

 No. 14501
 STEPHEN F. HARPER
 10/30/2023

INLET WINGWALL TABLE

CU. YDS.	CLASS "S" CONCRETE
248.55	REINFORCING STEEL (GR. 60)
LBS.	
39586	

[illegible]

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

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

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

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

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



TABULAR DATA BY: ERBB DATE: 03/04/2021
CHECKED BY: SCR DATE: 03/08/2021

OUTLET SKEWED END SECTION

OUTLET WINGWALL TABLE

SK	SLOPE	D	S	H	LL	T	HD	B	C	W	OW	OH	TOP SLAB REINFORCING STEEL								BOTTOM SLAB REINFORCING STEEL								SIDE WALL REINFORCING STEEL				INTERIOR WALL REINFORCING STEEL				TOP SLAB DISTRIBUTION REINFORCING STEEL				BOTTOM SLAB DISTRIBUTION REINFORCING STEEL				SIDE WALL DISTRIBUTION REINFORCING STEEL				INTERIOR WALL DISTRIBUTION REINFORCING STEEL			
													"a"				"c"				"d"				"f"				"f0"				"f1"				"g"				"e"				"d1"				"d2"			
													SIZE	SPACING	LENGTHS VARY	NO. REQ'D	SIZE	SPACING	LENGTHS VARY	NO. REQ'D	SIZE	SPACING	LENGTHS VARY	NO. REQ'D	SIZE	SPACING	LENGTHS VARY	NO. REQ'D	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTHS VARY	SIZE	SPACING	NO. REQ'D	LENGTHS VARY	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH
45	3:1	5	10	8	23'-8"	12	3	12	8	8	43'-4"	10'-0"	5	6	Max 43'-0" Min 2'-3" 43'-0"	82	5	7	Max 43'-0" Min 2'-3" 43'-0"	70	4	5.5	Max 43'-0" Min 2'-3" 43'-0"	89	4	7.5	Max 43'-0" Min 2'-3" 43'-0"	66	5	5	114	9'-8"	4	12	148	9'-8"	4	9	119	Max 45'-2" Min 1'-10"	4	9	119	Max 45'-2" Min 1'-10"	4	12	8	LONG 44'-8" SHORT 2'-4"	4	12	16	LONG 34'-4" MID 23'-6" SHORT 12'-8"
"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																																		
6		31'-9"		12		6		31'-9"		12		4		1'-11"		0'-11"		63																																		

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT		WINGWALL ANGLE (DEGREE)		FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL		FOOTING DIMENSION PARALLEL WITH HDWL		LENGTH OF WINGWALLS		LENGTH OF FOOTING HEEL		CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
								AT HDWL	AT WING END	WING A	WING B		WING A	WING B	WING A	WING B	WING A	WING B	WING A	WING B		
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4	CU.YD	LBS.
43'-4"	8'-0"	0'-9"	0'-8"	45	3:1	59'-4 3/4"	2'-0"	8'-10"	2'-8"	0	60	3'-2"	3'-10 1/2"	4'-9 7/8"	1'-2 1/2"	2'-7"	18'-6"	37'-0"	20'-2 5/8"	44'-4 1/2"	21.16	1757

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

①

JULAR DATA BY: ERBB DATE: 03/04/2021
 CHECKED BY: SCR DATE: 03/08/2021



②

INLET SLOPE SECTION(S)

INLET WINGWALL TABLE

[illegible]

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.)			CLEAR SPAN (FT.)			CLEAR HEIGHT (FT.)			TOP SLAB THK.	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVERALL WIDTH	OVERALL HEIGHT	SECTION LENGTH (FT.)	TOP SLAB REINFORCING STEEL								BOTTOM SLAB REINFORCING STEEL								SIDE WALL REINFORCING STEEL				INTERIOR WALL REINFORCING STEEL				TOP SLAB DISTRIBUTION REINF. STEEL			BOTTOM SLAB DISTRIBUTION REINF. STEEL			SIDE WALL DISTRIBUTION REINF. STEEL			INTERIOR WALL DISTRIBUTION REINF. STEEL									
	LENGTH = OW - 4" + BENDS																LENGTH = OW - 4" + BENDS																LENGTH = OH - 4"				LENGTH = OH - 4"				LENGTH = SL			LENGTH = SL			LENGTH = SL			LENGTH = SL									
	"a"		Bent "b"		"c"		SPACING	NO. REQ'D	"d"								Bent "b1"		"f"		SPACING	NO. REQ'D	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	SIZE	SPACING	NO. REQ'D	SIZE	SPACING	NO. REQ'D	SIZE	SPACING	NO. REQ'D	SIZE	SPACING	NO. REQ'D														
	SIZE	L	SIZE	L	SIZE	L			SIZE								L	SIZE	L	SIZE																										L	SIZE	L	SIZE	L									
D	S	H	T	B	C	W	OW	OH	SL	SIZE	L	SIZE	L	SIZE	L	SPACING	NO. REQ'D	SIZE	L	SIZE	L	SIZE	L	SPACING	NO. REQ'D	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	SIZE	SPACING	NO. REQ'D	SIZE	SPACING	NO. REQ'D	SIZE	SPACING	NO. REQ'D																		
A	5	11	10	13	13	9	8	70'-10"	12'-2"	48	5	70'-6"	8	72'-6"	4	70'-6"	20	28	4	70'-6"	4	72'-5"	4	70'-6"	11	52	8	9	128	11'-10"	4	12	480	11'-10"	4	8.5	203	4	8.5	203	4	12	20	4	12	100													

STATE OF
ARKANSAS

LICENSED
PROFESSIONAL
ENGINEER

No. 14501
STEPHEN F. HARPER
10/30/2023

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.



OUTLET SKEWED END SECTION

OUTLET WINGWALL TABLE

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

TABULAR DATA BY: BOL DATE: 12/7/2020
CHECKED BY: LKM DATE: 12/17/2020

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

[illegible]

Unless otherwise noted, all dimensions are in inches.

Stephane.Bessis 10/18/2023 155556 PM
WORKSPACE: ARDOT
Y:\Projects\100991\Indep Co-Eaton Strs & Apprs\Design\Civil Drawings\100991_05E_EC.CG_01_001.dgn
REVIS DATE: **REVIS DATE**

TEMPORARY EROSION CONTROL GENERAL NOTES:

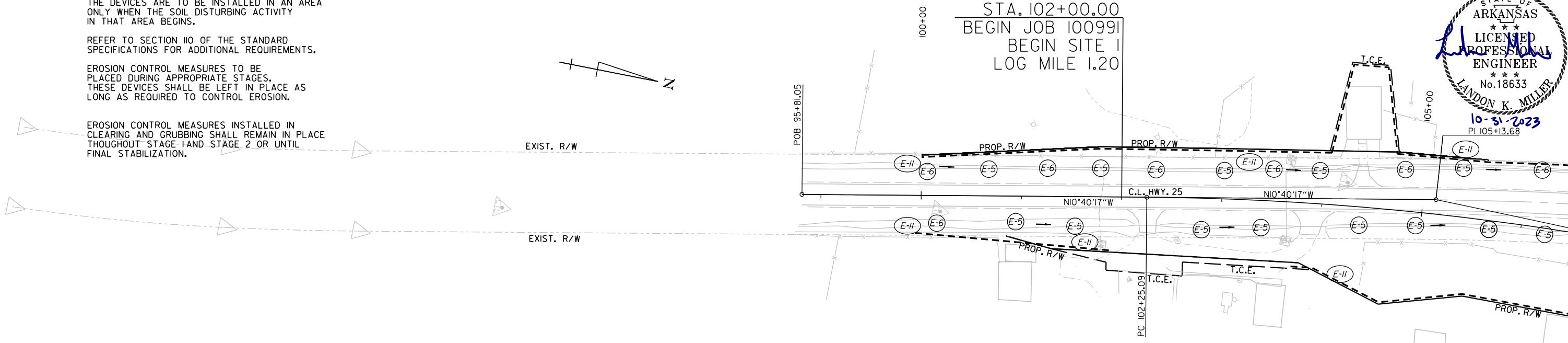
THE QUANTITIES AND LOCATIONS OF THE EROSION CONTROL DEVICES SHOWN IN THE PLANS ARE ESTIMATED AND MAY BE ALTERED IF AND WHERE DIRECTED BY THE ENGINEER TO MAXIMIZE THEIR EFFECTIVENESS. THE DEVICES ARE TO BE INSTALLED IN AN AREA ONLY WHEN THE SOIL DISTURBING ACTIVITY IN THAT AREA BEGINS.

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

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

EROSION CONTROL MEASURES INSTALLED IN CLEARING AND GRUBBING SHALL REMAIN IN PLACE THROUGHOUT STAGE 1 AND STAGE 2 OR UNTIL FINAL STABILIZATION.

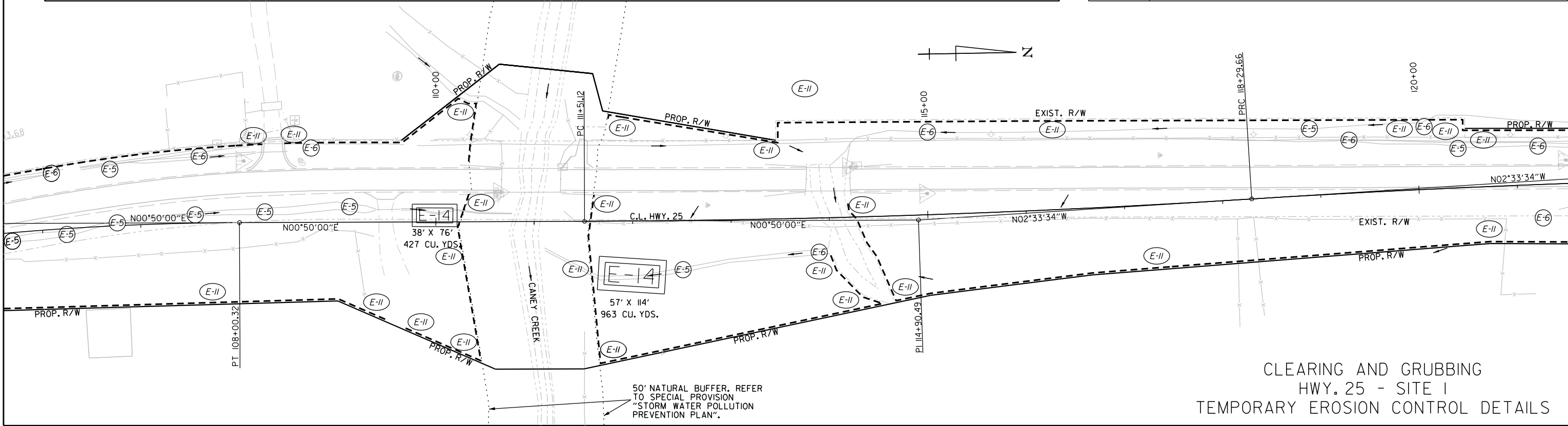
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	100991	20	90	
2 TEMPORARY EROSION CONTROL DETAILS								



REVISIONS

DATE OF REVISION	REVISION

LEGEND		SAND BAG DITCH CHECKS		INSTALLATION		SILT FENCE		LIN. FT.		SEDIMENT BASIN		CU. YD.	
E-6	= ROCK DITCH CHECK	STA. 100+67 TO STA. 106+71	LT.	6		STA. 100+00 TO STA. 108+24	LT.	983		STA. 110+28	RT.	427	
E-5	= SAND BAG DITCH CHECK	STA. 108+92 TO STA. 120+41	LT.	2		STA. 108+46 TO STA. 108+67	LT.	21		STA. 111+69	RT.	963	
E-11	= SILT FENCE	STA. 107+56 TO STA. 109+12	LT.	3		STA. 108+80 TO STA. 110+41	LT.	242					
E-14	= SEDIMENT BASIN	STA. 100+95 TO STA. 106+76	RT.	9		STA. 111+75 TO STA. 120+04	LT.	854					
		STA. 112+51	RT.	1		STA. 120+12 TO STA. 121+00	LT.	99					
						STA. 99+94 TO STA. 101+87	RT.	198					
						STA. 103+69 TO STA. 109+48	RT.	579					
						STA. 109+69 TO STA. 110+45	RT.	238					
						STA. 110+28 TO STA. 110+34	RT.	17					
						STA. 111+67 TO STA. 114+51	RT.	458					
						STA. 111+58 TO STA. 111+61	RT.	80					
						STA. 114+19 TO STA. 121+00	RT.	749					



CLEARING AND GRUBBING
HWY. 25 - SITE 1
TEMPORARY EROSION CONTROL DETAILS

Stephane.Bessis 10/18/2023 1:55:57 PM
WORKSPACE: ARDOT
Y:\Projects\177614\100991\Indep Co-Eaton Strs & Apprs\Design\Civil\Drawings\100991_OSE_EC_CC_OI_002.dgn
REVISED DATE: **REDATE**

LEGEND

E-6

= ROCK DITCH CHECK

E-5

= SAND BAG DITCH CHECK

E-II

= SILT FENCE

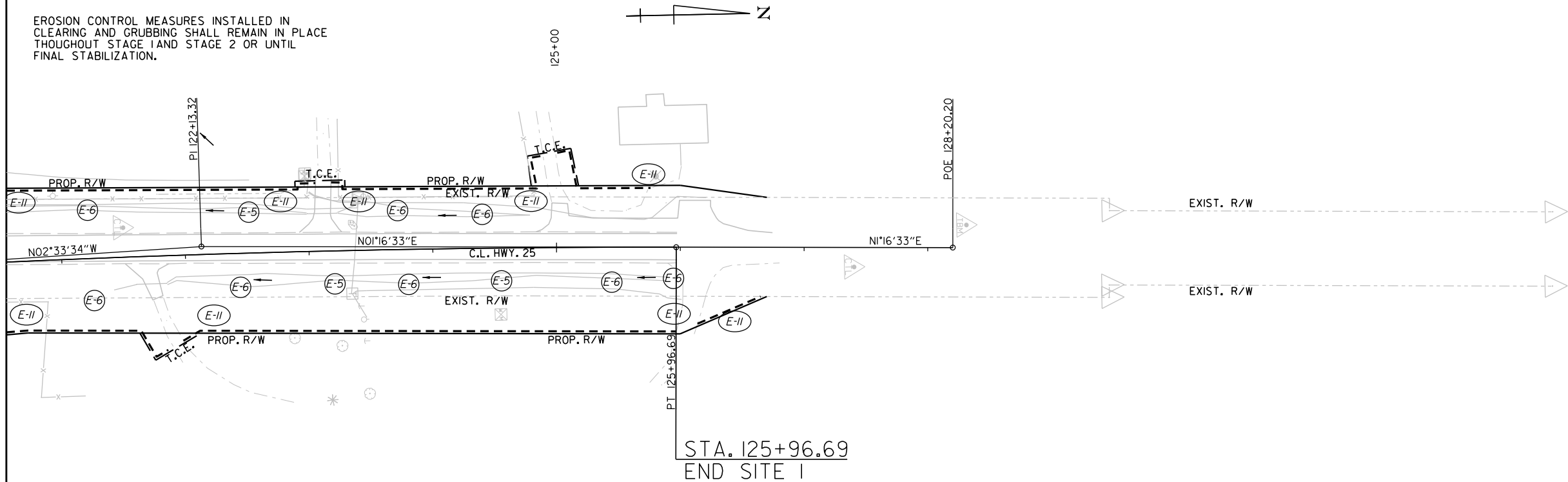
TEMPORARY EROSION CONTROL GENERAL NOTES:

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

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

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

EROSION CONTROL MEASURES INSTALLED IN CLEARING AND GRUBBING SHALL REMAIN IN PLACE THROUGHOUT STAGE 1 AND STAGE 2 OR UNTIL FINAL STABILIZATION.



ROCK DITCH CHECKS		E-6	INSTALLATION
STA. 121+23 TO STA. 124+40		LT.	3
STA. 121+25 TO STA. 125+95		RT.	5
SAND BAG DITCH CHECKS		E-5	INSTALLATION
STA. 122+52		LT.	1
STA. 123+20 TO STA. 124+55		RT.	2
SILT FENCE		E-II	LIN. FT.
STA. 121+00 TO STA. 123+06		LT.	212
STA. 123+19 TO STA. 124+88		LT.	205
STA. 125+01 TO STA. 125+76		LT.	101
STA. 121+00 TO STA. 121+83		RT.	97
STA. 121+96 TO STA. 125+97		RT.	400
STA. 126+14 TO STA. 126+65		RT.	56

REVISIONS	
DATE OF REVISION	REVISION

CLEARING AND GRUBBING
HWY. 25 - SITE 1
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	100991	21	90	
2 TEMPORARY EROSION CONTROL DETAILS								



Stephane.Bessis 10/18/2023 15:55:59 PM
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WORKSPACE: ARDOT
REVISD DATE: **REVIDATE**

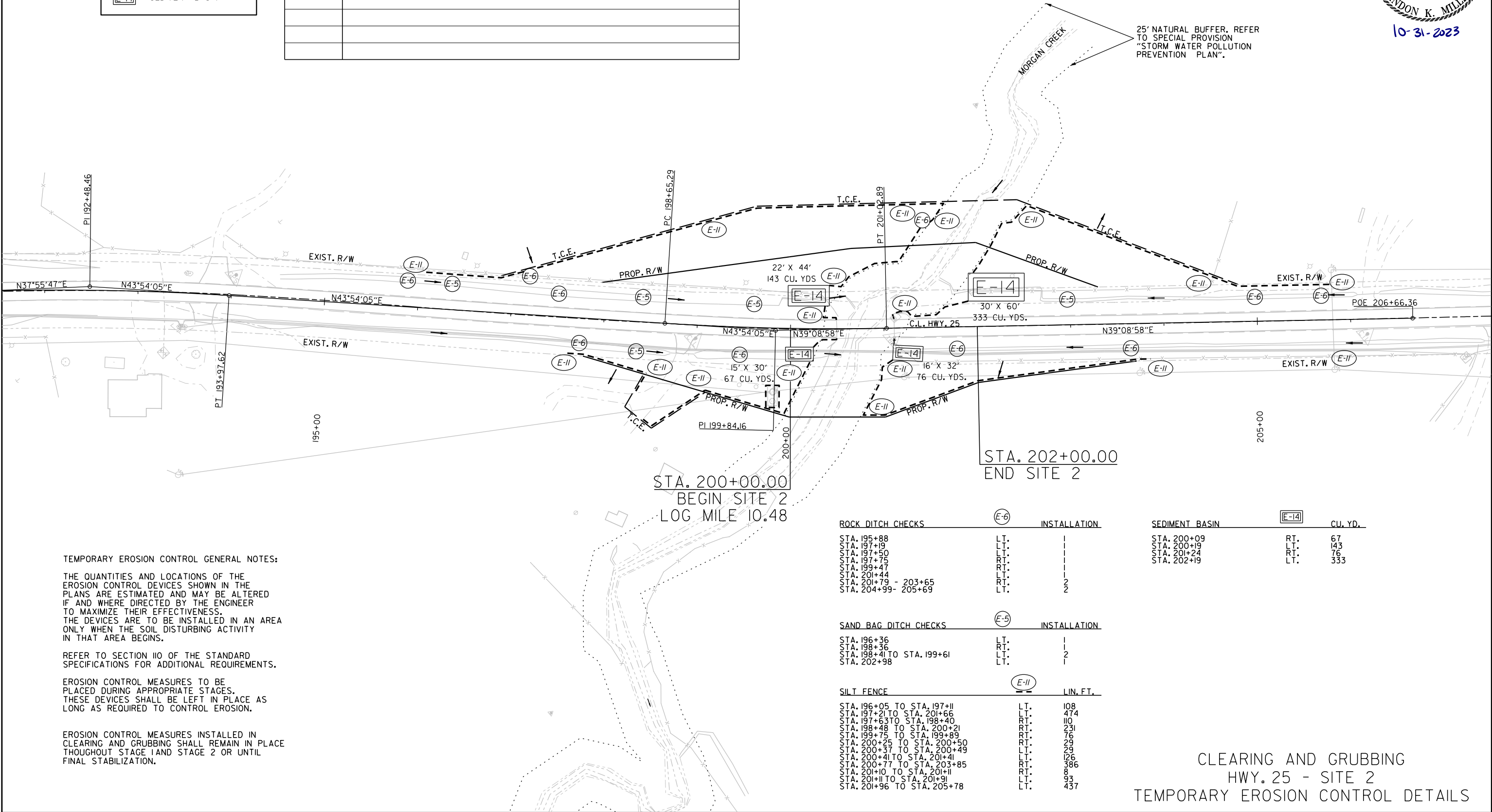
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				6	ARK.			
				JOB NO.	100991	22	90	
2 TEMPORARY EROSION CONTROL DETAILS								



REVISIONS

LEGEND	
	= ROCK DITCH CHECK
	= SAND BAG DITCH CHECK
	= SILT FENCE
	= SEDIMENT BASIN

DATE OF REVISION	REVISION



TEMPORARY EROSION CONTROL GENERAL NOTES:

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

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

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

EROSION CONTROL MEASURES INSTALLED IN CLEARING AND GRUBBING SHALL REMAIN IN PLACE THROUGHOUT STAGE 1 AND STAGE 2 OR UNTIL FINAL STABILIZATION.

ROCK DITCH CHECKS		INSTALLATION
STA. 195+88	LT.	1
STA. 197+19	LT.	1
STA. 197+50	LT.	1
STA. 197+75	RT.	1
STA. 199+47	RT.	1
STA. 201+44	LT.	1
STA. 201+79 - 203+65	RT.	2
STA. 204+99 - 205+69	LT.	2

SAND BAG DITCH CHECKS		INSTALLATION
STA. 196+36	LT.	1
STA. 198+36	RT.	1
STA. 198+41 TO STA. 199+61	LT.	2
STA. 202+98	LT.	1

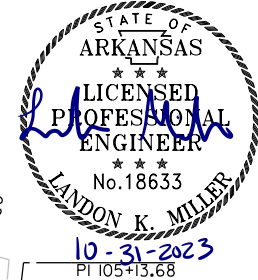
SILT FENCE		LIN. FT.
STA. 196+05 TO STA. 197+11	LT.	108
STA. 197+21 TO STA. 201+66	LT.	474
STA. 197+63 TO STA. 198+40	RT.	110
STA. 198+48 TO STA. 200+21	RT.	231
STA. 199+75 TO STA. 199+89	RT.	76
STA. 200+25 TO STA. 200+50	RT.	29
STA. 200+37 TO STA. 200+49	LT.	29
STA. 200+41 TO STA. 201+41	LT.	126
STA. 200+77 TO STA. 203+85	RT.	386
STA. 201+10 TO STA. 201+11	RT.	8
STA. 201+11 TO STA. 201+91	LT.	93
STA. 201+96 TO STA. 205+78	LT.	437

SEDIMENT BASIN		CU. YD.
STA. 200+09	RT.	67
STA. 200+19	LT.	143
STA. 201+24	RT.	76
STA. 202+19	LT.	333

CLEARING AND GRUBBING
HWY. 25 - SITE 2
TEMPORARY EROSION CONTROL DETAILS

Landon Miller 10/31/2023 9:44:56 AM
WORKSPACE: ARDOT
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REVISED DATE: **REVIDATE**

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	100991	24	90	
2 TEMPORARY EROSION CONTROL DETAILS								



STA. 102+00.00
BEGIN JOB 100991
BEGIN SITE 1
LOG MILE 1.20

SILT FENCE		(E-11)	LIN. FT.
STA. 110+33 TO STA. 110+68		RT.	44
STA. 113+32 TO STA. 113+64		RT.	42
ROCK DITCH CHECKS		(E-6)	INSTALLATION
STA. 110+22 TO STA. 113+70		LT.	2
STA. 113+67 TO STA. 114+31		LT.	2
SAND BAG DITCH CHECKS		(E-5)	INSTALLATION
STA. 101+53 TO STA. 102+80		RT.	2
STA. 104+45 TO STA. 109+00		RT.	8
STA. 113+51 TO STA. 115+27		RT.	2
FILTER SOCKS		(E-13)	LIN. FT.
STA. 114+24 TO STA. 115+30		LT.	106
SEDIMENT BASIN		(E-14)	CU. YD.
STA. 110+46		RT.	427
STA. 113+77		RT.	963

- LEGEND
- (E-6) = ROCK DITCH CHECK
 - (E-5) = SAND BAG DITCH CHECK
 - (E-13) = FILTER SOCK
 - (E-14) = SEDIMENT BASIN

TEMPORARY EROSION CONTROL GENERAL NOTES:

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

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

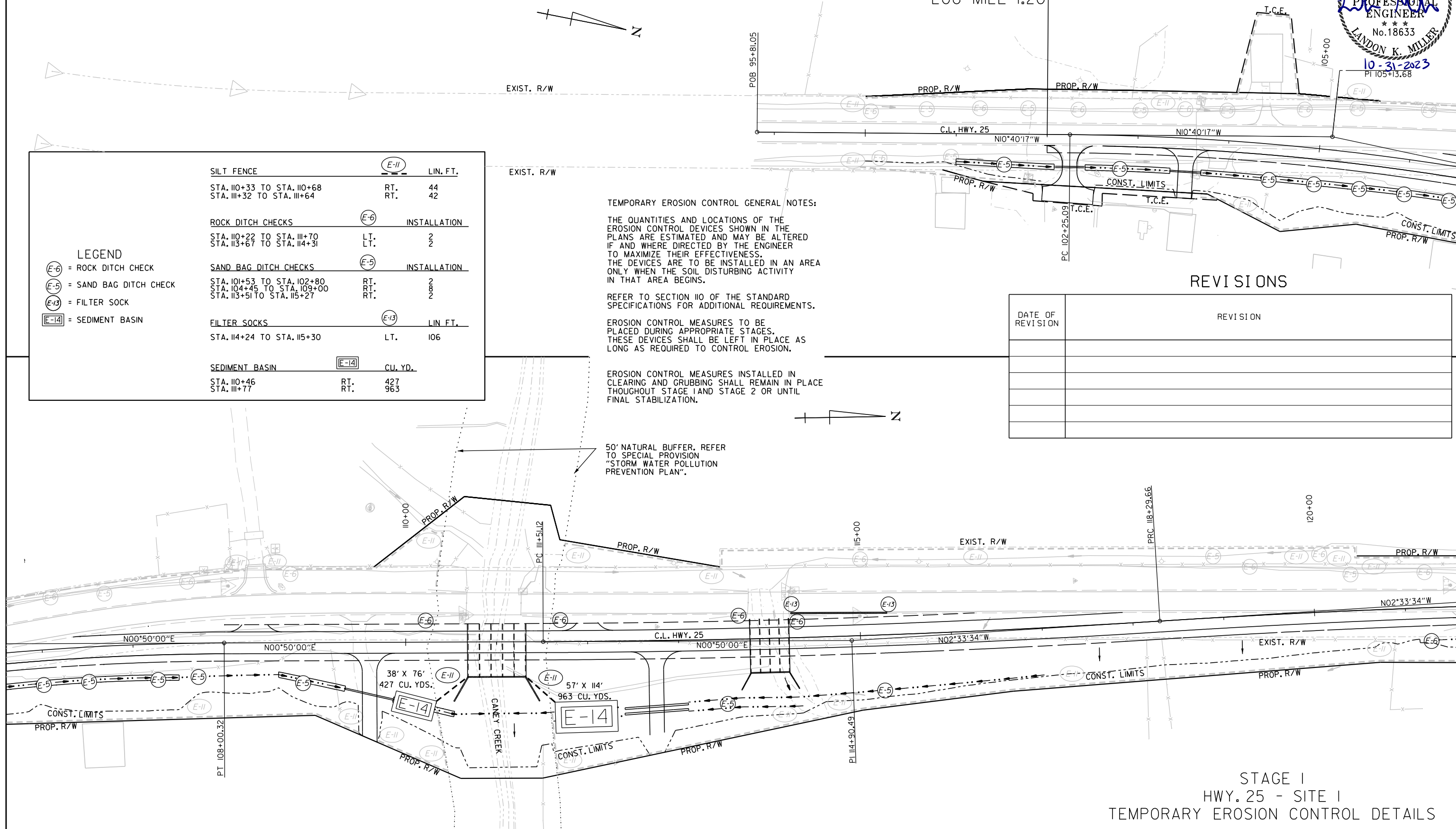
EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

EROSION CONTROL MEASURES INSTALLED IN CLEARING AND GRUBBING SHALL REMAIN IN PLACE THROUGHOUT STAGE 1 AND STAGE 2 OR UNTIL FINAL STABILIZATION.

50' NATURAL BUFFER. REFER TO SPECIAL PROVISION "STORM WATER POLLUTION PREVENTION PLAN".

REVISIONS

DATE OF REVISION	REVISION



STAGE I
HWY. 25 - SITE 1
TEMPORARY EROSION CONTROL DETAILS

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REVISED DATE: **REVIDATE**

TEMPORARY EROSION CONTROL GENERAL NOTES:

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

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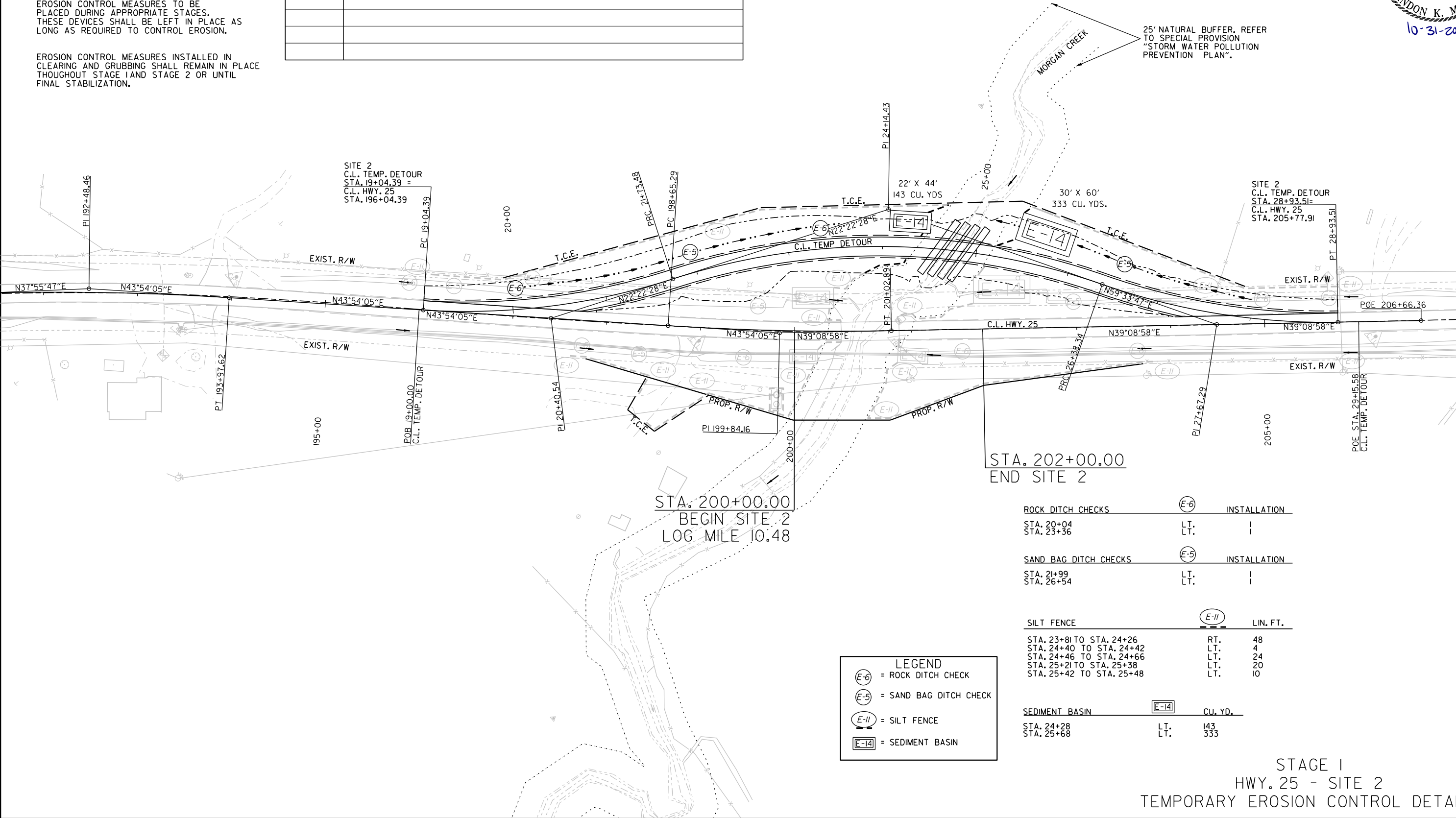
EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

EROSION CONTROL MEASURES INSTALLED IN CLEARING AND CRUBBING SHALL REMAIN IN PLACE THROUGHOUT STAGE 1 AND STAGE 2 OR UNTIL FINAL STABILIZATION.

REVISIONS

DATE OF REVISION	REVISION

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	100991	26	90	
2 TEMPORARY EROSION CONTROL DETAILS								



STA. 200+00.00
BEGIN SITE 2
LOG MILE 10.48

STA. 202+00.00
END SITE 2

ROCK DITCH CHECKS (E-6) INSTALLATION

STA. 20+04	LT.	1
STA. 23+36	LT.	1

SAND BAG DITCH CHECKS (E-5) INSTALLATION

STA. 21+99	LT.	1
STA. 26+54	LT.	1

SILT FENCE (E-II) LIN. FT.

STA. 23+81 TO STA. 24+26	RT.	48
STA. 24+40 TO STA. 24+42	LT.	4
STA. 24+46 TO STA. 24+66	LT.	24
STA. 25+21 TO STA. 25+38	LT.	20
STA. 25+42 TO STA. 25+48	LT.	10

SEDIMENT BASIN (E-14) CU. YD.

STA. 24+28	LT.	143
STA. 25+68	LT.	333

LEGEND	
(E-6)	= ROCK DITCH CHECK
(E-5)	= SAND BAG DITCH CHECK
(E-II)	= SILT FENCE
(E-14)	= SEDIMENT BASIN

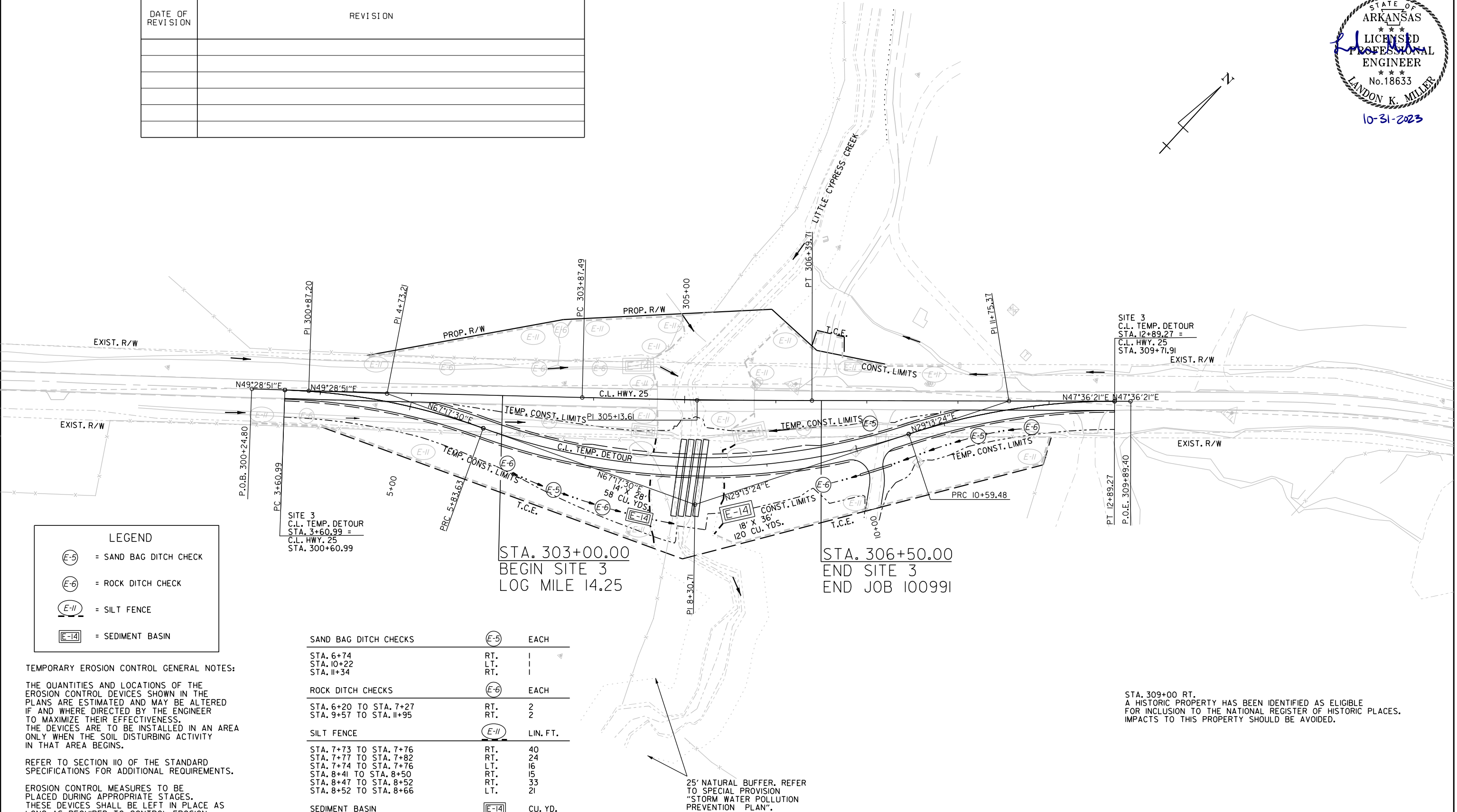
STAGE 1
HWY. 25 - SITE 2
TEMPORARY EROSION CONTROL DETAILS

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REVISION DATE: **REDATE**

REVISIONS

DATE OF REVISION	REVISION

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	100991	27	90	
2				TEMPORARY EROSION CONTROL DETAILS				



LEGEND	
(E-5)	= SAND BAG DITCH CHECK
(E-6)	= ROCK DITCH CHECK
(E-11)	= SILT FENCE
(E-14)	= SEDIMENT BASIN

TEMPORARY EROSION CONTROL GENERAL NOTES:

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SAND BAG DITCH CHECKS	(E-5)	EACH
STA. 6+74	RT.	1
STA. 10+22	LT.	1
STA. 11+34	RT.	1
ROCK DITCH CHECKS	(E-6)	EACH
STA. 6+20 TO STA. 7+27	RT.	2
STA. 9+57 TO STA. 11+95	RT.	2
SILT FENCE	(E-11)	LIN. FT.
STA. 7+73 TO STA. 7+76	RT.	40
STA. 7+77 TO STA. 7+82	RT.	24
STA. 7+74 TO STA. 7+76	LT.	16
STA. 8+41 TO STA. 8+50	RT.	15
STA. 8+47 TO STA. 8+52	RT.	33
STA. 8+52 TO STA. 8+66	LT.	21
SEDIMENT BASIN	(E-14)	CU. YD.
STA. 7+64	RT.	58
STA. 8+64	RT.	120

STA. 309+00 RT.
A HISTORIC PROPERTY HAS BEEN IDENTIFIED AS ELIGIBLE FOR INCLUSION TO THE NATIONAL REGISTER OF HISTORIC PLACES. IMPACTS TO THIS PROPERTY SHOULD BE AVOIDED.

STAGE I
HWY. 25 - SITE 3
TEMPORARY EROSION CONTROL DETAILS

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REVISED DATE: **REDATE**

TEMPORARY EROSION CONTROL GENERAL NOTES:

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	100991	28	90	
2 TEMPORARY EROSION CONTROL DETAILS								

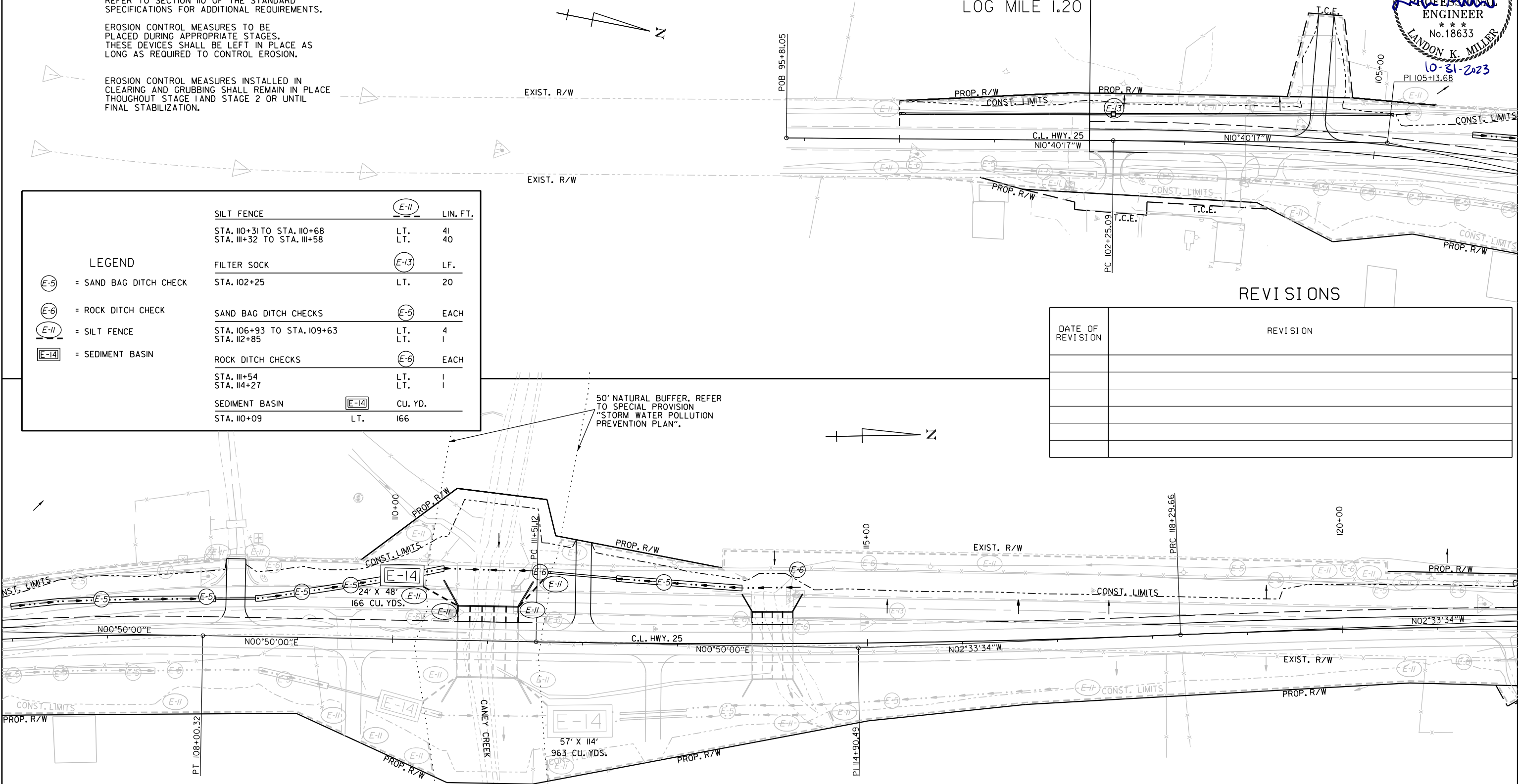


STA. 102+00.00
BEGIN JOB 100991
BEGIN SITE 1
LOG MILE 1.20

LEGEND			
(E-5)	= SAND BAG DITCH CHECK	SILT FENCE (E-11)	LIN. FT.
(E-6)	= ROCK DITCH CHECK	STA. 110+31 TO STA. 110+68	LT. 41
(E-11)	= SILT FENCE	STA. 111+32 TO STA. 111+58	LT. 40
(E-14)	= SEDIMENT BASIN	FILTER SOCK (E-13)	LF.
		STA. 102+25	LT. 20
		SAND BAG DITCH CHECKS (E-5)	EACH
		STA. 106+93 TO STA. 109+63	LT. 4
		STA. 112+85	LT. 1
		ROCK DITCH CHECKS (E-6)	EACH
		STA. 111+54	LT. 1
		STA. 114+27	LT. 1
		SEDIMENT BASIN (E-14)	CU. YD.
		STA. 110+09	LT. 166

REVISIONS

DATE OF REVISION	REVISION



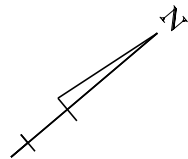
STAGE 2
HWY. 25 - SITE 1
TEMPORARY EROSION CONTROL DETAILS

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REVISED DATE: **REDATE**

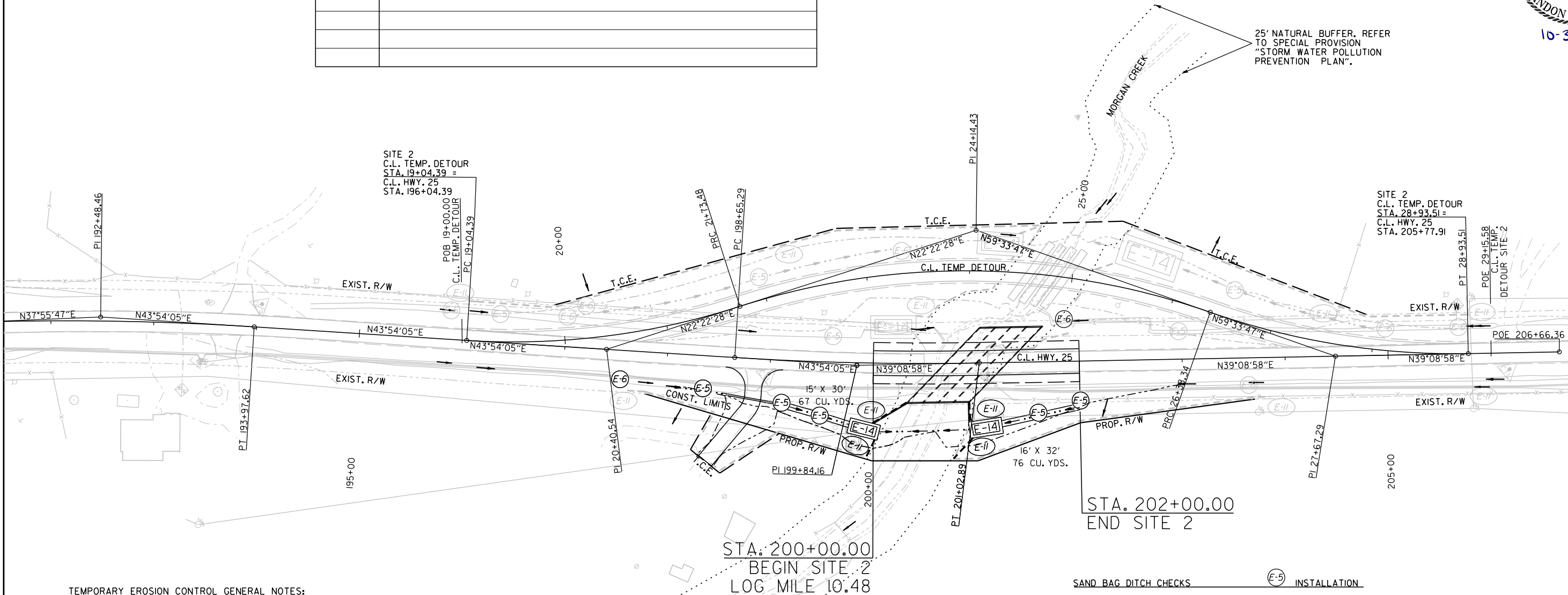
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				6	ARK.			
				JOB NO.	100991		30	90
				TEMPORARY EROSION CONTROL DETAILS				

REVISIONS

DATE OF REVISION	REVISION



25' NATURAL BUFFER. REFER TO SPECIAL PROVISION "STORM WATER POLLUTION PREVENTION PLAN".



TEMPORARY EROSION CONTROL GENERAL NOTES:

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LEGEND

- = SAND BAG DITCH CHECK
- = ROCK DITCH CHECK
- = SILT FENCE
- = SEDIMENT BASIN

SAND BAG DITCH CHECKS	INSTALLATION
STA. 198+36	RT. 1
STA. 199+13 TO STA. 199+50	RT. 2
STA. 201+60 TO STA. 202+01	RT. 2

ROCK DITCH CHECKS	INSTALLATION
STA. 197+56	RT. 1
STA. 201+86	LT. 1

SILT FENCE	LIN. FT.
STA. 199+95 TO STA. 200+03	RT. 19
STA. 199+99 TO STA. 200+33	RT. 39
STA. 200+77 TO STA. 200+95	RT. 27
STA. 200+93 TO STA. 200+94	RT. 19

SEDIMENT BASIN	CU. YD.
STA. 199+91	RT. 67
STA. 201+07	RT. 76

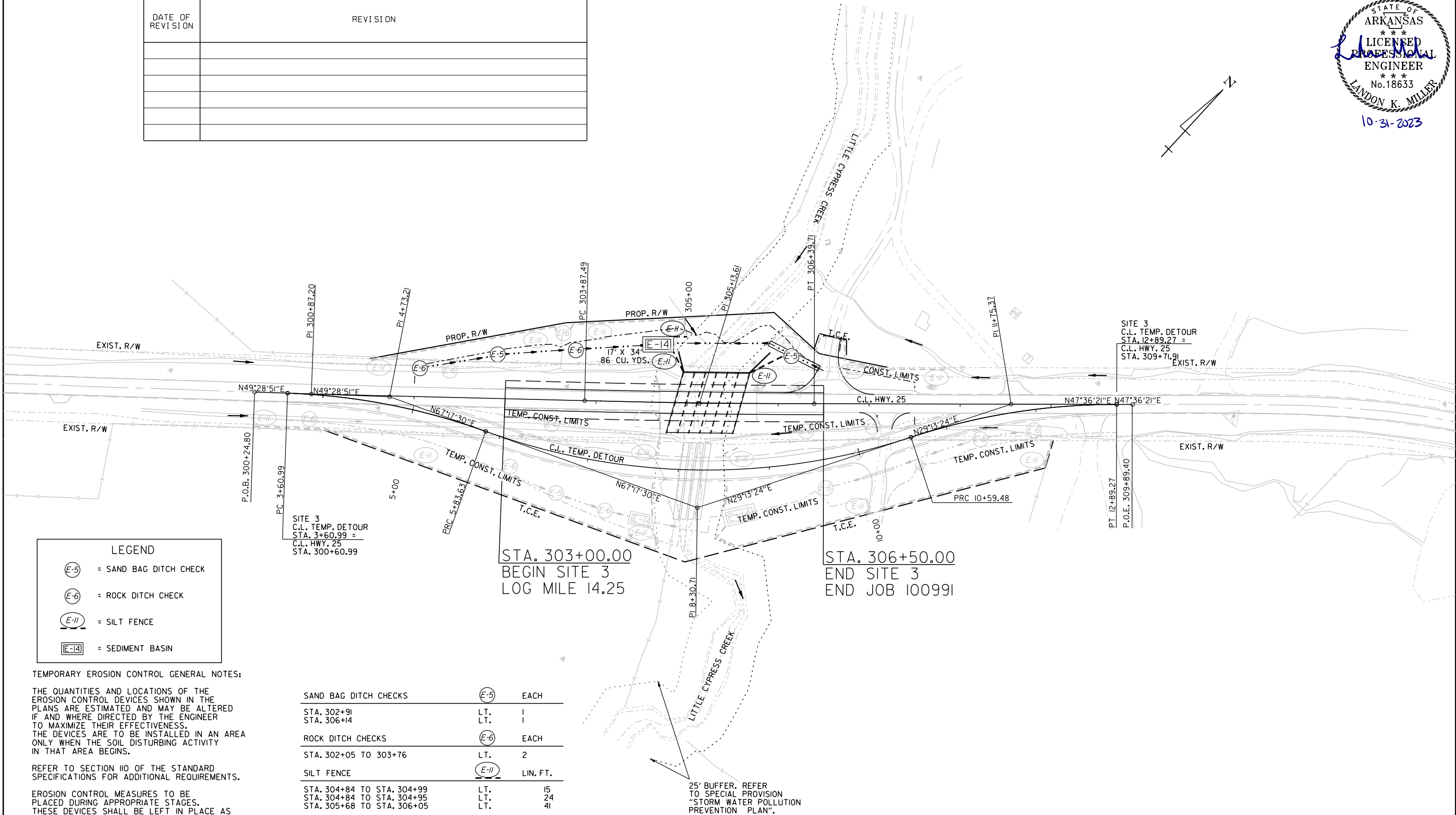
STAGE 2
HWY. 25 - SITE 2
TEMPORARY EROSION CONTROL DETAILS

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WORKSPACE: ARDOT
REVIS DATE: **REVIS DATE**

REVISIONS

DATE OF REVISION	REVISION

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	100991	31	90	
② TEMPORARY EROSION CONTROL DETAILS								



LEGEND

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

TEMPORARY EROSION CONTROL GENERAL NOTES:

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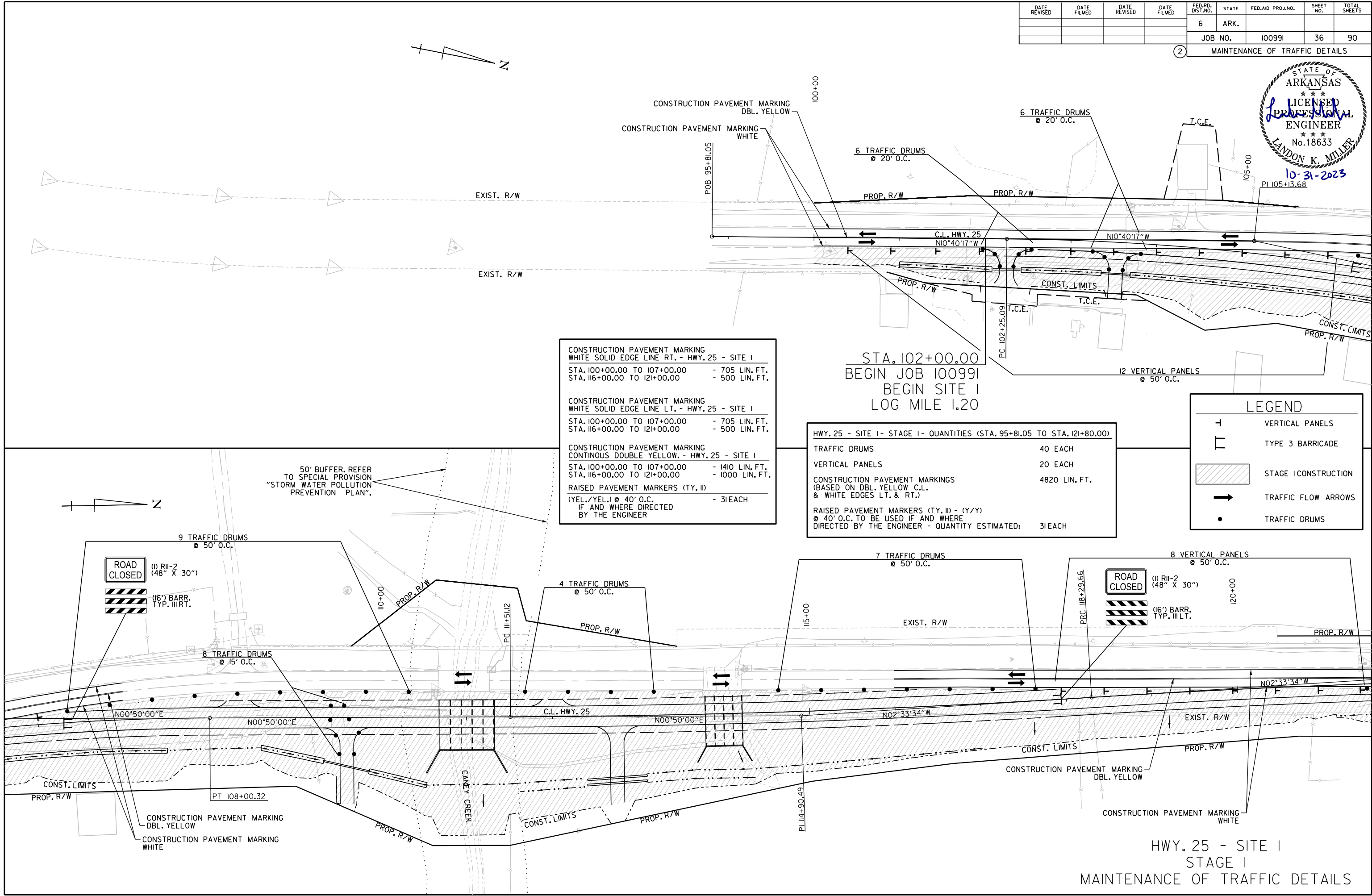
SAND BAG DITCH CHECKS	(E-5)	EACH
STA. 302+91	LT.	1
STA. 306+14	LT.	1
ROCK DITCH CHECKS	(E-6)	EACH
STA. 302+05 TO 303+76	LT.	2
SILT FENCE	(E-11)	LIN. FT.
STA. 304+84 TO STA. 304+99	LT.	15
STA. 304+84 TO STA. 304+95	LT.	24
STA. 305+68 TO STA. 306+05	LT.	41
SEDIMENT BASIN	(E-14)	CU. YD.
STA. 304+67	LT.	86

25' BUFFER. REFER TO SPECIAL PROVISION "STORM WATER POLLUTION PREVENTION PLAN".

STAGE 2
HWY. 25 - SITE 3
TEMPORARY EROSION CONTROL DETAILS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	100991	36	90	
② MAINTENANCE OF TRAFFIC DETAILS								



CONSTRUCTION PAVEMENT MARKING WHITE SOLID EDGE LINE RT. - HWY. 25 - SITE I	
STA. 100+00.00 TO 107+00.00	- 705 LIN. FT.
STA. 116+00.00 TO 121+00.00	- 500 LIN. FT.
CONSTRUCTION PAVEMENT MARKING WHITE SOLID EDGE LINE LT. - HWY. 25 - SITE I	
STA. 100+00.00 TO 107+00.00	- 705 LIN. FT.
STA. 116+00.00 TO 121+00.00	- 500 LIN. FT.
CONSTRUCTION PAVEMENT MARKING CONTINUOUS DOUBLE YELLOW - HWY. 25 - SITE I	
STA. 100+00.00 TO 107+00.00	- 1410 LIN. FT.
STA. 116+00.00 TO 121+00.00	- 1000 LIN. FT.
RAISED PAVEMENT MARKERS (TY. II)	
(YEL./YEL.) @ 40' O.C. IF AND WHERE DIRECTED BY THE ENGINEER	- 31 EACH

HWY. 25 - SITE I - STAGE I - QUANTITIES (STA. 95+81.05 TO STA. 121+80.00)	
TRAFFIC DRUMS	40 EACH
VERTICAL PANELS	20 EACH
CONSTRUCTION PAVEMENT MARKINGS (BASED ON DBL. YELLOW C.L. & WHITE EDGES LT. & RT.)	4820 LIN. FT.
RAISED PAVEMENT MARKERS (TY. II) - (Y/Y) @ 40' O.C. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER - QUANTITY ESTIMATED:	31 EACH

LEGEND	
	VERTICAL PANELS
	TYPE 3 BARRICADE
	STAGE I CONSTRUCTION
	TRAFFIC FLOW ARROWS
	TRAFFIC DRUMS

HWY. 25 - SITE I
STAGE I
MAINTENANCE OF TRAFFIC DETAILS

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REVISD DATE: **REVISD DATE**

LEGEND

	TYPE 3 BARRICADE
	STAGE 3 CONSTRUCTION
	TRAFFIC FLOW ARROWS
	TRAFFIC DRUM
	REMOVAL OF TEMPORARY DETOUR

HWY. 25 - SITE 2 - STAGE 3 - QUANTITIES (STA. 195+00.00 TO STA. 206+00.00)

TRAFFIC DRUMS	32 EACH
CONSTRUCTION PAVEMENT MARKINGS (BASED ON DBL. YELLOW C.L. & WHITE EDGE LINES LT. & RT.)	4000 LIN. FT.
RAISED PAVEMENT MARKERS (TY. II) (Y/Y) @ 40' O.C. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER - QUANTITY ESTIMATED:	25 EACH
REMOVAL OF CONSTRUCTION PAVEMENT MARKING	684 LIN. FT.

CONSTRUCTION PAVEMENT MARKING
WHITE SOLID EDGE LINE RT. - HWY. 25 - SITE 2
STA. 196+00 TO 206+00 - 1000 LIN. FT.

CONSTRUCTION PAVEMENT MARKING
WHITE SOLID EDGE LINE LT. - HWY. 25 - SITE 2
STA. 196+00 TO 206+00 - 1000 LIN. FT.

CONSTRUCTION PAVEMENT MARKING
CONTINUOUS DOUBLE YELLOW. - HWY. 25 - SITE 2
STA. 196+00 TO 206+00 - 2000 LIN. FT.

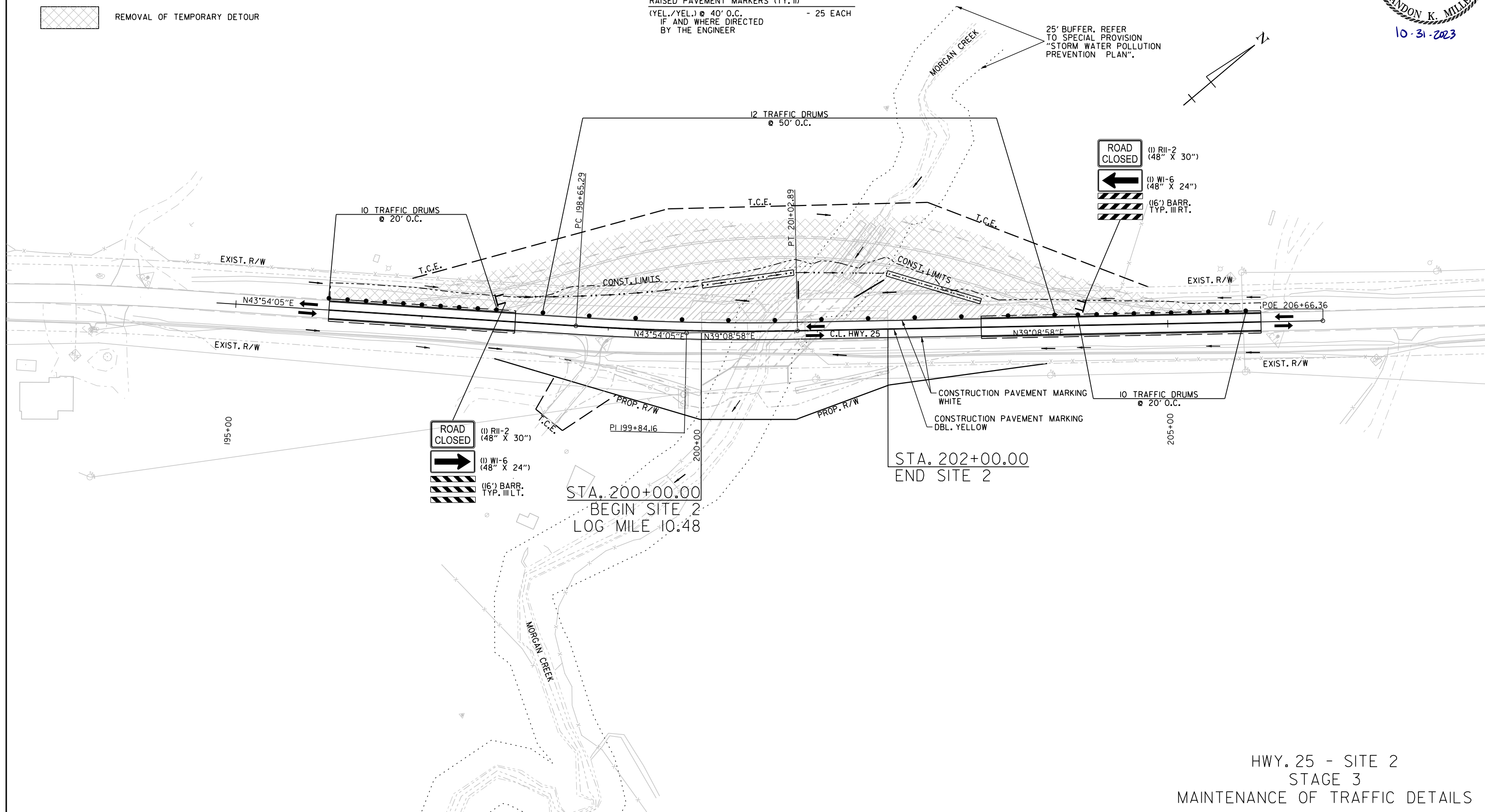
RAISED PAVEMENT MARKERS (TY. II)
(YEL./YEL.) @ 40' O.C. - 25 EACH
IF AND WHERE DIRECTED
BY THE ENGINEER

REMOVAL OF CONSTRUCTION PAVEMENT MARKING
WHITE SOLID EDGE LINE RT. - HWY. 25 - SITE 2 - TEMP. DETOUR
STA. 19+04 TO 20+74 - 171 LIN. FT.
STA. 27+24 TO 28+94 - 171 LIN. FT.

REMOVAL OF CONSTRUCTION PAVEMENT MARKING
CONTINUOUS DOUBLE YELLOW. - HWY. 25 - SITE 2 - TEMP. DETOUR
STA. 19+04 TO 20+74 - 171 LIN. FT.
STA. 27+24 TO 28+94 - 171 LIN. FT.

2

MAINTENANCE OF TRAFFIC DETAILS



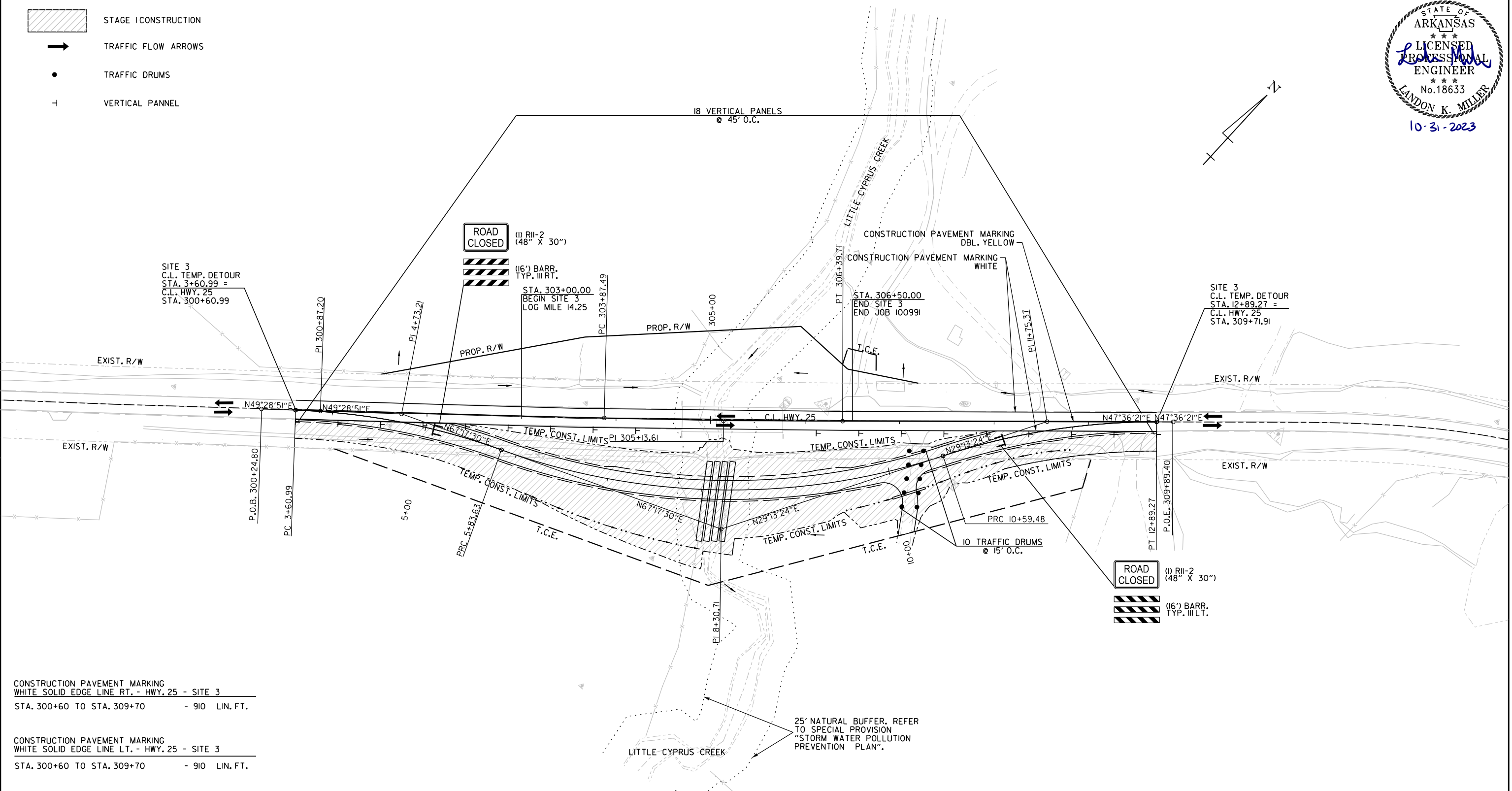
HWY. 25 - SITE 2
STAGE 3
MAINTENANCE OF TRAFFIC DETAILS

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REVIS DATE: **REVIS DATE**

LEGEND

- TYPE 3 BARRICADE
- STAGE I CONSTRUCTION
- TRAFFIC FLOW ARROWS
- TRAFFIC DRUMS
- VERTICAL PANNEL

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	100991	47	90	
2 MAINTENANCE OF TRAFFIC DETAILS								



CONSTRUCTION PAVEMENT MARKING
WHITE SOLID EDGE LINE RT. - HWY. 25 - SITE 3
STA. 300+60 TO STA. 309+70 - 910 LIN. FT.

CONSTRUCTION PAVEMENT MARKING
WHITE SOLID EDGE LINE LT. - HWY. 25 - SITE 3
STA. 300+60 TO STA. 309+70 - 910 LIN. FT.

CONSTRUCTION PAVEMENT MARKING
CONTINUOUS DOUBLE YELLOW. - HWY. 25 - SITE 3
STA. 300+60 TO STA. 309+70 - 1820 LIN. FT.

RAISED PAVEMENT MARKERS (TY. II)
(YEL./YEL.) @ 40' O.C. - 23 EACH
IF AND WHERE DIRECTED
BY THE ENGINEER

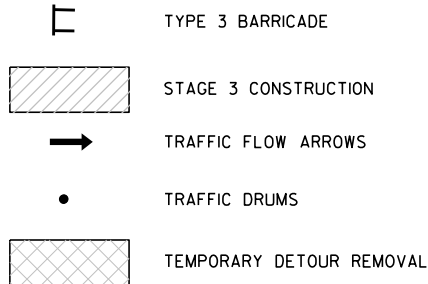
HWY. 25 - SITE 2 - STAGE I - QUANTITIES (STA. 300+61.00 TO STA. 309+73.00)

TRAFFIC DRUMS	10 EACH
VERTICAL PANNELS	18 EACH
CONSTRUCTION PAVEMENT MARKINGS (BASED ON DBL. YELLOW C.L. & WHITE LT. & RT.)	3640 LIN. FT.
RAISED PAVEMENT MARKERS (TY. III) (Y/Y) @ 40' O.C. ARE USED IF AND WHERE DIRECTED BY THE ENGINEER - QUANTITY ESTIMATED:	23 EACH

HWY. 25 - SITE 3
STAGE I
MAINTENANCE OF TRAFFIC DETAILS

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LEGEND



HWY. 25 - SITE 2 -STAGE 1- QUANTITIES (STA. 300+61.00 TO STA. 309+73.00)

TRAFFIC DRUMS 34 EACH

CONSTRUCTION PAVEMENT MARKINGS
(BASED ON DBL. YELLOW C.L.
& WHITE EDGE LINES LT. & RT.) 3640 LIN. FT.

RAISED PAVEMENT MARKERS (TY. II)
(Y/Y) @ 40' O.C. TO BE USED IF AND WHERE
DIRECTED BY THE ENGINEER - QUANTITY ESTIMATED: 23 EACH

CONSTRUCTION PAVEMENT MARKING
WHITE SOLID EDGE LINE RT. - HWY. 25 - SITE 3

STA. 300+60 TO STA. 309+70 - 910 LIN. FT.

CONSTRUCTION PAVEMENT MARKING
WHITE SOLID EDGE LINE LT. - HWY. 25 - SITE 3

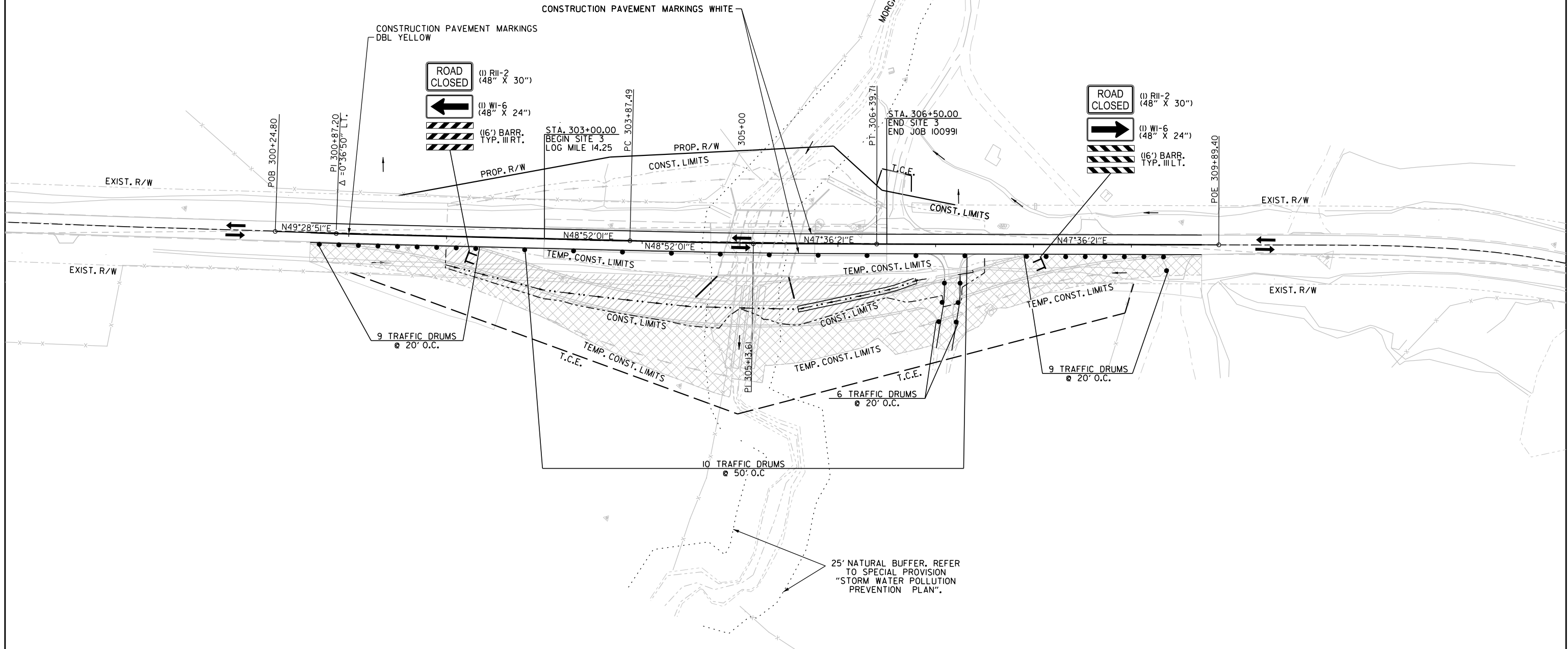
STA. 300+60 TO STA. 309+70 - 910 LIN. FT.

CONSTRUCTION PAVEMENT MARKING
CONTINUOUS DOUBLE YELLOW. - HWY. 25 - SITE 3

STA. 300+60 TO STA. 309+70 - 1820 LIN. FT.

RAISED PAVEMENT MARKERS (TY. II)
(YEL./YEL.) @ 40' O.C.
IF AND WHERE DIRECTED
BY THE ENGINEER - 23 EACH

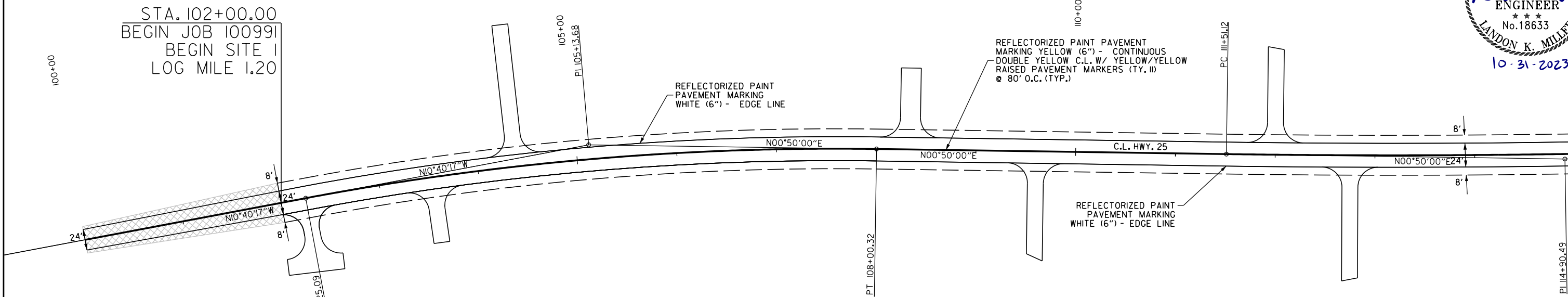
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				6	ARK.			
				JOB NO.	100991		49	90
② MAINTENANCE OF TRAFFIC DETAILS								



HWY. 25 - SITE 3
STAGE 3
MAINTENANCE OF TRAFFIC DETAILS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	100991	50	90	
2 PERMANENT PAVEMENT MARKINGS DETAILS								



REFLECTORIZED PAINT PAVEMENT MARKING
YELLOW (6") - CONTINUOUS DOUBLE YELLOW
C.L. W/ YELLOW/YELLOW RAISED PAVEMENT
MARKERS (TY. II) @ 80' O.C. (TYP.) - HWY. 25

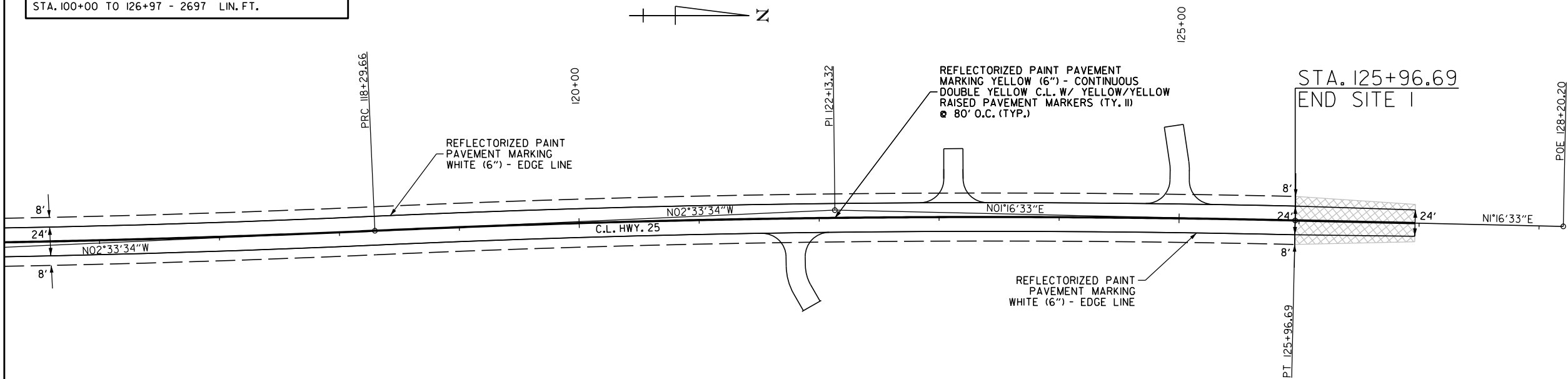
STA. 100+00 TO 126+97 - 5394 LIN. FT. - 34 R.P.M.

REFLECTORIZED PAINT PAVEMENT MARKING
WHITE (6") - EDGE LINE RT. - HWY. 25

STA. 100+00 TO 126+97 - 2697 LIN. FT.

REFLECTORIZED PAINT PAVEMENT MARKING
WHITE (6") - EDGE LINE LT. - HWY. 25

STA. 100+00 TO 126+97 - 2697 LIN. FT.



PROJECT QUANTITY TOTALS:

REFLECTORIZED PAINT PAVEMENT MARKING
WHITE (6") - EDGE = 9216 LIN. FT.
YELLOW (6") - C.L. = 9216 LIN. FT.
RAISED PAVEMENT MARKERS (TY. II) = 58 EACH

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 PROJECT.

HWY. 25 - SITE 1
PERMANENT PAVEMENT MARKINGS DETAILS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100991	53	90

2 QUANTITIES



SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	STAGE 3	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		VERTICAL PANELS	TRAFFIC DRUMS	BARRICADES (TYPE III)		FURNISHING & INSTALLING PRECAST CONC. BARRIER	TEMPORARY IMPACT ATTENUATION BARRIER	TEMP. IMPACT ATTEN.BARR. (REPAIR)
							NO.	SQ. FT.			EACH	RIGHT			
			LIN. FT. - EACH												
W20-1	ROAD WORK 1500 FT.	48"x48"	6	6	4	6	6	96.0							
W20-1	ROAD WORK 1000 FT.	48"x48"	6	6	4	6	6	96.0							
W20-1	ROAD WORK 500 FT.	48"x48"	6	6	4	6	6	96.0							
G20-2	END ROAD WORK	48"x24"	6	6	4	6	6	48.0							
W13-1	SPEED LIMIT (ADVISORY)	24"x24"		4		4	4	16.0							
R11-2	ROAD CLOSED	48"x30"	6	10	4	10	10	100.0							
W1-6	LARGE ARROW	48"x24"		8	4	8	8	64.0							
W1-8	CHEVRONS	18"x24"		32		32	32	96.0							
R4-1	DO NOT PASS	24"x30"	3	3	3	3	3	15.0							
W21-5a	RIGHT SHOULDER CLOSED	36"x36"	3	3	3	3	3	27.0							
W8-1	BUMP	30"x30"	6	6	6	6	6	37.5							
W24-1R	DOUBLE REVERSE CURVE RT.	36"x36"		2		2	2	18.0							
W24-1L	DOUBLE REVERSE CURVE LT.	36"x36"		2		2	2	18.0							
	VERTICAL PANELS		68			68			68						
	TRAFFIC DRUMS		56	138	66	138				138					
	TYPE III BARRICADE-RT. (8')			2		2					16				
	TYPE III BARRICADE-LT. (8')			2		2						16			
	TYPE III BARRICADE-RT. (16')		3	3	2	3					48				
	TYPE III BARRICADE-LT. (16')		3	4	2	4						64			
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER			499		499							499		
	TEMPORARY IMPACT ATTENUATION BARRIER			3		3								3	
	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)			3		3									3
	IF AND WHERE DIRECTED BY THE ENGINEER								10	20			160		
TOTALS:								727.5	78	158	64	80	659	3	3

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.

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
100+00	127+00	SITE 1 C.L. HWY. 25	27	27
196+00	206+00	SITE 2 C.L. HWY. 25	10	10
300+00	310+00	SITE 3 C.L. HWY. 25	10	10
TOTALS:			47	47

REMOVAL AND DISPOSAL OF FENCE

STATION	STATION	LOCATION	FENCE	GATES
			LIN. FT.	EACH
100+00	104+20	SITE 1 C.L. HWY. 25 LT.	446	
104+46	106+00	SITE 1 C.L. HWY. 25 RT.	206	
104+52	105+60	SITE 1 C.L. HWY. 25 LT.	131	
106+00	109+37	SITE 1 C.L. HWY. 25 RT.	425	
109+65	110+93	SITE 1 C.L. HWY. 25 LT.	206	
111+26	111+42	SITE 1 C.L. HWY. 25 LT.	73	
111+30	120+88	SITE 1 C.L. HWY. 25 RT.	1116	
111+58	113+47	SITE 1 C.L. HWY. 25 LT.	187	
120+49	121+00	SITE 1 C.L. HWY. 25 LT.	52	
121+00	123+00	SITE 1 C.L. HWY. 25 LT.	214	
123+25	124+83	SITE 1 C.L. HWY. 25 LT.	180	
196+94	200+51	SITE 2 C.L. HWY. 25 LT.	368	
200+10	200+48	SITE 2 C.L. HWY. 25 RT.	89	
201+10	203+70	SITE 2 C.L. HWY. 25 RT.	267	
201+97	204+54	SITE 2 C.L. HWY. 25 LT.	267	
301+02	304+77	SITE 3 C.L. HWY. 25 RT.	413	
301+50	305+30	SITE 3 C.L. HWY. 25 LT.	407	
305+91	309+02	SITE 3 C.L. HWY. 25 RT.	319	1
TOTALS:			5366	1

REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	RETAINING WALLS	GUARDRAIL
			LIN. FT.	LIN. FT.
110+24	110+65	SITE 1 C.L. HWY. 25 RT.		41
110+25	110+65	SITE 1 C.L. HWY. 25 LT.		40
111+28	111+38	SITE 1 C.L. HWY. 25 LT.		16
111+29	111+69	SITE 1 C.L. HWY. 25 RT.		40
113+34	113+75	SITE 1 C.L. HWY. 25 RT.		41
113+36	113+77	SITE 1 C.L. HWY. 25 LT.		41
114+23	114+64	SITE 1 C.L. HWY. 25 RT.		41
114+24	114+65	SITE 1 C.L. HWY. 25 LT.		41
201+16	201+20	SITE 2 C.L. HWY. 25 LT.	16	
TOTAL:			16	301

NOTE: THE QUANTITY SHOWN ABOVE FOR THE REMOVAL AND DISPOSAL OF GUARDRAIL SHALL INCLUDE THE REMOVAL AND DISPOSAL OF ALL GUARDRAIL TERMINALS AND TERMINAL ANCHOR POSTS.

REMOVAL AND DISPOSAL OF CULVERTS

STATION	DESCRIPTION	PIPE CULVERTS
		EACH
102+25	SITE 1 C.L. HWY. 25 RT.	1
103+54	SITE 1 C.L. HWY. 25 RT.	1
104+38	SITE 1 C.L. HWY. 25 LT.	1
108+34	SITE 1 C.L. HWY. 25 LT.	1
109+60	SITE 1 C.L. HWY. 25 RT.	1
121+80	SITE 1 C.L. HWY. 25 RT.	1
123+12	SITE 1 C.L. HWY. 25 LT.	1
198+85	SITE 2 C.L. HWY. 25 RT.	1
307+17	SITE 3 C.L. HWY. 25 RT.	1
TOTAL:		9

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

BENCH MARKS

STATION	LOCATION	BENCH MARKS
		EACH
111+00	SITE 1- BOX CULVERT HEADWALL	1
114+00	SITE 1- BOX CULVERT HEADWALL	1
201+00	SITE 2- BOX CULVERT HEADWALL	1
305+23	SITE 3- BOX CULVERT HEADWALL	1

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

MAILBOXES

LOCATION	MAILBOXES	MAILBOX SUPPORTS	
		(SINGLE)	(DOUBLE)
		EACH	
ENTIRE PROJECT	5	1	2
TOTALS:	5	1	2

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	REFLECTORIZED PAINT PAVEMENT MARKING	
									TYPE II	6"	
									(YELLOW/YELLOW) EACH	WHITE LIN. FT.	YELLOW LIN. FT.
LIN. FT. - EACH					LIN. FT.		LIN. FT.	LIN. FT.			
REMOVAL OF PERMANENT PAVEMENT MARKINGS	14744	4711	1250		5961	40060					
CONSTRUCTION PAVEMENT MARKINGS		17676	7640								
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS			684				684				
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS		800						800			
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW)	94	117	48	58					317		
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")				9216						9216	
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")				9216							9216
IF AND WHERE DIRECTED BY THE ENGINEER								4000			
TOTALS:					5961	40060	684	4800	317	9216	9216

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.

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
100+00.00	102+00.00	SITE 1- HWY. 25 - TRANSITION	24.00	533.33
125+96.69	126+96.69	SITE 1- HWY. 25 - TRANSITION	24.00	266.67
196+00.00	197+00.00	SITE 2- HWY. 25 - TRANSITION	20.00	222.22
205+00.00	206+00.00	SITE 2- HWY. 25 - TRANSITION	20.00	222.22
302+00.00	303+00.00	SITE 3- HWY. 25 - TRANSITION	20.00	222.22
306+50.00	307+50.00	SITE 3- HWY. 25 - TRANSITION	20.00	222.22
TOTAL:				1688.88

NOTES: COORDINATE COLD MILLING STOCK PILE LOCATIONS WITH DISTRICT ENGINEER.
STOCKPILE LOCATIONS SHALL BE NO FURTHER THAN FIVE MILES FROM EACH SITE.

REMOVAL OF EXISTING BRIDGE STRUCTURE

STATION	STATION	LOCATION	LUMP SUM
110+67	111+27	C.L. HWY. 25 - BR. STR. 1 (SITE NO. 1)	1.00
113+77	114+22	C.L. HWY. 25 - BR. STR. 2 (SITE NO. 1)	1.00
200+50	201+11	C.L. HWY. 25 - BR. STR. 3 (SITE NO. 2)	1.00
304+70	305+76	C.L. HWY. 25 - BR. STR. 4 (SITE NO. 3)	1.00

QUANTITIES

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				6	ARK.			
				JOB NO.		100991	54	90

2

QUANTITIES



10-3-2023

ACHM PATCHING OF EXISTING ROADWAY

DESCRIPTION	TON
ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	10
TOTAL:	10

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

SELECTED PIPE BEDDING

LOCATION	SELECTED PIPE BEDDING
	CU.YD.
ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	70
TOTAL:	70

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

SOIL STABILIZATION

STATION	STATION	LOCATION / DESCRIPTION	SOIL STABILIZATION TON
ENTIRE	PROJECT	TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	400
TOTAL:			400

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

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL					TEMPORARY EROSION CONTROL									
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	TEMPORARY SEEDING	MULCH COVER	WATER	SAND BAG DITCH CHECKS	ROCK DITCH CHECKS	SILT FENCE	FILTER SOCKS (18")	SEDIMENT BASIN	OBLITERATION OF SEDIMENT BASIN	*SEDIMENT REMOVAL & DISPOSAL
			ACRE	TON	ACRE	M.GAL.	ACRE	ACRE	ACRE	M.GAL.	(E-5) BAG	(E-6) CU.YD.	(E-11) LIN. FT.	(E-13) LIN. FT.	(E-14) CU.YD.		
ENTIRE	PROJECT	SITE 1 C.L. HWY. 25 - CLEARING AND GRUBBING						7.68	7.68	156.7	528	63	5589		1390		1642
ENTIRE	PROJECT	SITE 1 C.L. HWY. 25 - STAGE 1	4.89	9.78	4.89	498.8	4.89	9.78	9.78	199.5	286	18	86	106	1390	1390	1416
ENTIRE	PROJECT	SITE 1 C.L. HWY. 25 - STAGE 2	3.09	6.18	3.09	315.2	3.09	6.18	6.18	126.1	154	6	81	20	166	1556	179
ENTIRE	PROJECT	SITE 2 C.L. HWY. 25 - CLEARING AND GRUBBING						2.44	2.44	49.8	110	30	2107		619		712
ENTIRE	PROJECT	SITE 2 C.L. HWY. 25 - STAGE 1						1.11	1.11	22.6	44	6	106		476	333	484
ENTIRE	PROJECT	SITE 2 C.L. HWY. 25 - STAGE 2	1.09	2.18	1.09	111.2	1.09	2.18	2.18	44.5	110	6	104		143	143	154
ENTIRE	PROJECT	SITE 2 C.L. HWY. 25 - STAGE 3	1.39	2.78	1.39	141.8	1.39	2.78	2.78	56.7	22	9	181		476	1238	487
ENTIRE	PROJECT	SITE 3 C.L. HWY. 25 - CLEARING AND GRUBBING						1.60	1.60	32.6		24	1848		264		340
ENTIRE	PROJECT	SITE 3 C.L. HWY. 25 - STAGE 1						0.61	0.61	12.4	66	12	149		178	178	191
ENTIRE	PROJECT	SITE 3 C.L. HWY. 25 - STAGE 2	0.56	1.12	0.56	57.1	0.56	1.12	1.12	22.8	44	6	80		86	86	93
ENTIRE	PROJECT	SITE 3 C.L. HWY. 25 - STAGE 3	0.88	1.76	0.88	89.8	0.88	1.76	1.76	35.9	44	6	153		178	442	188
ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			3.00	6.00	3.00	306.0	3.00	9.31	9.31	189.9	352	48	2621	32	1342	1342	1472
TOTALS:			14.90	29.80	14.90	1519.9	14.90	46.55	46.55	949.5	1760	234	13105	158	6708	6708	7358

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
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.

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT
			CU.YD.	
102+00.00	125+96.69	SITE 1 C.L. HWY. 25 - STAGE 1	9011	10903
102+00.00	125+96.69	SITE 1 C.L. HWY. 25 - STAGE 2	5498	1432
198+00.00	203+00.00	SITE 2 C.L. HWY. 25 - STAGE 1	1089	2789
198+00.00	203+00.00	SITE 2 C.L. HWY. 25 - STAGE 2	686	2868
* 196+00.00	198+00.00	SITE 2 C.L. HWY. 25 - STAGE 3	25	444
198+00.00	203+00.00	SITE 2 C.L. HWY. 25 - STAGE 3	4079	911
* 203+00.00	206+00.00	SITE 2 C.L. HWY. 25 - STAGE 3	83	162
303+00.00	306+50.00	SITE 3 C.L. HWY. 25 - STAGE 1	764	6339
303+00.00	306+50.00	SITE 3 C.L. HWY. 25 - STAGE 2	682	1956
303+00.00	306+50.00	SITE 3 C.L. HWY. 25 - STAGE 3	7552	445
ENTIRE	PROJECT	APPROACHES	45	2775
* ENTIRE	PROJECT	TEMPORARY APPROACHES	10	200
		SITE 1 C.L. HWY. 25 - CHANNEL CHANGE	5673	10
		SITE 2 C.L. HWY. 25 - CHANNEL CHANGE	1053	87
		SITE 3 C.L. HWY. 25 - CHANNEL CHANGE	1638	16
TOTALS:			37888	31337

* QUANTITY ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.
NOTE: EARTHWORK QUANTITIES SHOWN ABOVE SHALL BE PAID AS PLAN QUANTITY.

4" PIPE UNDERDRAIN

STATION	STATION	LOCATIONS	4" PIPE UNDERDRAINS	UNDERDRAIN OUTLET PROTECTORS
*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.

STRUCTURES

STATION	DESCRIPTION	PIPE CULVERT ALTERNATES		FLARED END SECTION ALTERNATES FOR PIPE CULVERT ALTERNATES	TEMPORARY CULVERTS			JUNCT. BOXES	SPAN	HEIGHT	LENGTH	CLASS S CONCRETE - ROADWAY	REINF. STEEL- ROADWAY (GRADE 60)	UNCL.EXC. FOR STR.- ROADWAY	SOLID SODDING	WATER	STD. DWG. NOS.		
		ALT. 1 (CLASS III)	ALT. 2 (WITH CLASS III ALT. 1)		18"	24"	60"											84"	(TYPE E)
		LIN. FT.			18"	LIN. FT.					EACH							LIN. FT.	
102+25	SITE 1 C.L. HWY. 25 LT.	504	510	2			272	1							10	0.13	FPC-9, PCC-1, PCM-1, FES 1, FES 2		
24+76	SITE 2 C.L. TEMP. DETOUR - MORGAN CREEK																PCC-1, PCM-1, PCP-1, PCP-2, PCP-3		
8+17	SITE 3 C.L. TEMP. DETOUR - LITTLE CYPRESS CREEK					340											PCC-1, PCM-1, PCP-1, PCP-2, PCP-3		
10+10	SITE 3 C.L. TEMP. DETOUR - TEMP. DRIVEWAY					34													
SUBTOTALS:		504	510	2	34	340	272	1							10	0.13			
STRUCTURES OVER 20' - 0" SPAN																			
111+00	SITE 1 C.L. HWY. 25 - QUINTUPLE R.C. BOX CULVERT								12	12	76	652.14	74587	285	56	0.71	PCB-1, RCB-1, RCB-2, RCB-3, SPECIAL DETAILS		
114+00	SITE 1 C.L. HWY. 25 - QUADRUPLE R.C. BOX CULVERT								10	8	72	332.75	40011	155	38	0.48	PCB-1, RCB-1, RCB-2, RCB-3, SPECIAL DETAILS		
201+00	SITE 2 C.L. HWY. 25 - QUADRUPLE R.C. BOX CULVERT								10	8	103	489.94	72336	231	44	0.55	PCB-1, RCB-1, RCB-2, SPECIAL DETAILS		
305+23	SITE 3 C.L. HWY. 25 - SEXTUPLE R.C. BOX CULVERT								11	10	71	587.52	77320	262	56	0.71	PCB-1, RCB-1, RCB-2, SPECIAL DETAILS		
SUBTOTALS:												2062.35	264254	933	194	2.45			
TOTALS:		504	510	2	34	340	272	1				2062.35	264254	933	204	2.58			

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

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

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

QUANTITIES

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REVISED DATE: **REDATE**

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
5-15-2024				6	ARK.			
5-20-2024								
				JOB NO.		100991	56	90

2 SUMMARY OF QUANTITIES AND REVISIONS

ITEM NUMBER	ITEM	QUANTITY	UNIT
201	CLEARING	47	STATION
201	GRUBBING	47	STATION
202	REMOVAL AND DISPOSAL OF FENCE	5366	LIN. FT.
202	REMOVAL AND DISPOSAL OF GATES	1	EACH
202	REMOVAL AND DISPOSAL OF RETAINING WALLS	16	LIN. FT.
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS	9	EACH
202	REMOVAL AND DISPOSAL OF GUARDRAIL	301	LIN. FT.
SP, SS, & 210	UNCLASSIFIED EXCAVATION	37888	CU. YD.
SP & 210	COMPACTED EMBANKMENT	31337	CU. YD.
SP & 210	SOIL STABILIZATION	400	TON
SP, SS, & 303	AGGREGATE BASE COURSE (CLASS 7)	13125	TON
SS & 401	TACK COAT	1865	GAL.
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	1325	TON
SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")	57	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	3185	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")	189	TON
SP & 412	COLD MILLING ASPHALT PAVEMENT	1689	SQ. YD.
SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	14	TON
SP, SS, & 415	ACHM PATCHING OF EXISTING ROADWAY	10	TON
601	MOBILIZATION	1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE	1	EACH
SS & 603	MAINTENANCE OF TRAFFIC	1.00	LUMP SUM
603	24" TEMPORARY CULVERT	34	LIN. FT.
603	60" TEMPORARY CULVERT	340	LIN. FT.
603	84" TEMPORARY CULVERT	272	LIN. FT.
SS & 604	SIGNS	728	SQ. FT.
SS & 604	BARRICADES	144	LIN. FT.
SS & 604	TRAFFIC DRUMS	158	EACH
SS & 604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	659	LIN. FT.
604	CONSTRUCTION PAVEMENT MARKINGS	40060	LIN. FT.
604	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	4800	LIN. FT.
604	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	684	LIN. FT.
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS	5961	LIN. FT.
SS & 604	VERTICAL PANELS	78	EACH
SP, SS, & 605	CONCRETE DITCH PAVING (TYPE B)	1360	SQ. YD.
* SS & 606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	(ALTERNATE NO. 1) 504	LIN. FT.
* SS & 606	18" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE	(ALTERNATE NO. 2) 510	LIN. FT.
SP, SS, & 606	18" SIDE DRAIN	274	LIN. FT.
SP, SS, & 606	24" SIDE DRAIN	284	LIN. FT.
* SS & 606	18" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	(ALTERNATE NO. 1) 2	EACH
* SS & 606	18" FLARED END SECTIONS FOR CORRUGATED STEEL PIPE CULVERTS	(ALTERNATE NO. 2) 2	EACH
SS & 606	SELECTED PIPE BEDDING	70	CU. YD.
SS & 609	JUNCTION BOXES (TYPE E)	1	EACH
SS & 611	UNDERDRAIN OUTLET PROTECTORS	2	EACH
SS & 611	4" PIPE UNDERDRAINS	100	LIN. FT.
SS & 619	WIRE FENCE (TYPE C)	4632	LIN. FT.
* SS & 619	16" STEEL GATES	(ALTERNATE NO. 1) 3	EACH
* SS & 619	16" ALUMINUM GATES	(ALTERNATE NO. 2) 3	EACH
620	LIME	30	TON
620	SEEDING	14.90	ACRE
SS & 620	MULCH COVER	61.45	ACRE
620	WATER	2483.4	M. GAL.
621	TEMPORARY SEEDING	46.55	ACRE
621	SILT FENCE	13105	LIN. FT.
621	SAND BAG DITCH CHECKS	1760	BAG
621	SEDIMENT BASIN	6708	CU. YD.
621	OBLITERATION OF SEDIMENT BASIN	6708	CU. YD.
621	SEDIMENT REMOVAL AND DISPOSAL	7358	CU. YD.
621	ROCK DITCH CHECKS	234	CU. YD.
SS & 621	FILTER SOCK (18")	158	LIN. FT.
623	SECOND SEEDING APPLICATION	14.90	ACRE
624	SOLID SODDING	1111	SQ. YD.
635	ROADWAY CONSTRUCTION CONTROL	1.00	LUMP SUM
637	MAILBOXES	5	EACH
637	MAILBOX SUPPORTS (SINGLE)	1	EACH
637	MAILBOX SUPPORTS (DOUBLE)	2	EACH
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")	9216	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")	9216	LIN. FT.
721	RAISED PAVEMENT MARKERS (TYPE II)	317	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER	3	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)	3	EACH
STRUCTURES OVER 20' SPAN			
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)	1.00	LUMP SUM
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 2)	1.00	LUMP SUM
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 3)	1.00	LUMP SUM
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 4)	1.00	LUMP SUM
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY	933	CU. YD.
SP, SS, & 802	CLASS S CONCRETE-ROADWAY	2062.35	CU. YD.
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)	264254	POUND

* DENOTES ALTERNATE BID ITEMS.

REVISIONS

DATE	REVISION	SHEET NUMBER
5/15/2024	REMOVED SPECIAL PROVISIONS "ASSESSMENT OF WORKING DAYS - MAINTENANCE OF TRAFFIC", "ESTABLISHING CONTRACT TIME - WORKING DAY CONTRACT", AND "FLEXIBLE BEGINNING OF WORK. ADDED SPECIAL PROVISION "FLEXIBLE BEGINNING OF WORK - CALENDAR DAY CONTRACT". CHANGED PAY ITEM 72" TEMPORARY CULVERT TO 84" TEMPORARY CULVERT. REMOVED PRELIMINARY STAMP FROM SHEET 62.	3, 56, & 62
5/20/2024	ADDED SPECIAL PROVISION "WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER FOR TREE CLEARING"	3 & 56



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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100991	57	90
				2 SURVEY CONTROL DETAILS				



ALIGNMENT NAME: SITE 1 - HWY. 25

POINT	STATION	TYPE	NORTHING	EASTING
8001	98+81.05	POB	572213.7657	1522671.2094
8002	102+25.09	PC	572551.8546	1522607.5015
8004	108+00.32	PT	573124.0108	1522558.2589
8005	111+51.12	PC	573474.7701	1522563.3609
8007	118+29.66	PRC	574153.1383	1522553.1421
8009	125+96.69	PT	574919.9680	1522544.5516
8010	128+20.20	POE	575143.4263	1522549.5278

ALIGNMENT NAME: SITE 2 - HWY. 25

POINT	STATION	TYPE	NORTHING	EASTING
8011	189+00.00	POB	607045.8129	1530991.7336
8012	190+99.03	PC	607202.8004	1531114.0755
8014	193+97.62	PT	607428.3347	1531309.5465
8015	198+65.29	PC	607765.3086	1531633.8399
8017	201+02.89	PT	607943.1380	1531791.3110
8018	206+66.36	POE	608380.1101	1532147.0554

ALIGNMENT NAME: SITE 3 - HWY. 25

POINT	STATION	TYPE	NORTHING	EASTING
8019	300+24.80	POB	622594.3315	1544573.8877
8020	300+87.20	PI	622634.8730	1544621.3235
8021	303+87.49	PC	622832.4121	1544847.5035
8023	306+39.71	PT	623000.4005	1545035.6290
8024	309+89.40	POE	623236.1692	1545293.8819

ALIGNMENT NAME: SITE 2 - TEMP. DETOUR

POINT	STATION	TYPE	NORTHING	EASTING
8025	19+00.00	POB	607574.1577	1531449.8821
8026	19+04.39	PC	607577.3194	1531452.9249
8028	21+73.48	PRC	607801.3199	1531599.1603
8030	26+38.34	PRC	608146.1907	1531898.6210
8032	28+93.51	PT	608311.5187	1532091.2143
8033	29+15.58	POE	608328.6314	1532105.1460

ALIGNMENT NAME: SITE 3 - TEMP. DETOUR

POINT	STATION	TYPE	NORTHING	EASTING
8034	3+60.99	PC	622617.8473	1544601.4025
8036	5+83.63	PRC	622734.0825	1544790.2386
8038	10+59.48	PRC	623045.1047	1545138.8014
8040	12+89.27	PT	623224.3770	1545280.9651

SURVEY CONTROL COORDINATES

Project Name: s100991
Date: 3/25/2020
Coordinate System: ARKANSAS STATE PLANE - NORTH ZONE BASED ON GPS CONTROL. 380016 - 380016A,
380017 - 380017A, & 16 - 17 PROJECTED TO GROUND. STATIC GPS DERIVED ELEV
Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
1	606898.6250	1530895.6413	318.705	CTL	ARDOT STD. MON. STAMPED PN: 1
2	607780.2362	1531667.4102	301.387	CTL	ARDOT STD. MON. STAMPED PN: 2
3	608332.5173	1532128.7281	299.702	CTL	ARDOT STD. MON. STAMPED PN: 3
4	608798.2124	1532499.0568	316.762	CTL	ARDOT STD. MON. STAMPED PN: 4
5	609405.6974	1532958.0862	350.550	CTL	ARDOT STD. MON. STAMPED PN: 5
6	622359.9447	1544321.7190	290.980	CTL	ARDOT STD. MON. STAMPED PN: 6
7	623302.1624	1545384.5559	299.414	CTL	ARDOT STD. MON. STAMPED PN: 7
8	623512.5769	1545632.8890	315.430	CTL	ARDOT STD. MON. STAMPED PN: 8
9	575063.3768	1522563.5120	269.575	CTL	ARDOT STD. MON. STAMPED PN: 9
10	574473.3894	1522519.4958	257.876	CTL	ARDOT STD. MON. STAMPED PN: 10
11	573823.6424	1522541.5871	255.226	CTL	ARDOT STD. MON. STAMPED PN: 11
12	573129.5765	1522495.7772	259.451	CTL	ARDOT STD. MON. STAMPED PN: 12
13	572745.9811	1522554.4784	274.295	CTL	ARDOT STD. MON. STAMPED PN: 13
14	572352.5458	1522661.2010	288.534	CTL	ARDOT STD. MON. STAMPED PN: 14
15	571922.8660	1522742.0208	303.164	CTL	ARDOT STD. MON. STAMPED PN: 15
16	577935.3548	1522589.0460	275.743	CTL	ARDOT STD. MON. STAMPED PN: 16
17	578752.6929	1522414.5244	270.701	CTL	ARDOT STD. MON. STAMPED PN: 17
100	606182.3085	1530291.2879	336.546	GPS	ARDOT GPS #380017A
101	607448.5748	1531297.6845	322.544	GPS	ARDOT GPS #380017
102	621893.2155	1543784.4573	313.464	GPS	ARDOT GPS #380016A
103	623002.0294	1545010.2769	287.942	GPS	ARDOT GPS #380016
900	607153.4139	1531125.3133	310.653	TBM	
901	607942.9837	1531804.3876	301.335	TBM	CHISELED SQUARE NE CNR OF BR
903	609438.0106	1532942.5578	351.837	TBM	CHISELED SQUARE 16.4' NW OF CL HWY 25
904	622117.4244	1543970.9172	303.015	TBM	CHISELED SQUARE 27.2' NW OF CL HWY 25
905	575154.7954	1522531.5140	268.763	TBM	2X2 CHISELED SQUARE
906	573745.6830	1522513.2332	256.187	TBM	2X2 CHISELED SQUARE
907	573390.6265	1522532.3707	256.201	TBM	2X2 CHISELED SQUARE

*Note - Rebar and Cap - Standard - 5/8" Rebar with 2" Aluminum Cap stamped
*(standard markings common to all caps), or as indicated
(other markings indicated in the point description of the individual point).
ALL DISTANCES ARE GROUND.
USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT.
A PROJECT CAF OF .9999540509 HAS BEEN USED TO COMPUTE THE ABOVE GROUND COORDINATES.
THIS CAF IS INTENDED FOR USE WITHIN THE PROJECT LIMITS.
GRID DISTANCE = GROUND DISTANCE X CAF.
GRID COORDINATES ARE STORED UNDER FILE NAME s100991gi.CTL
HORIZONTAL DATUM: NAD 83 (2011)
VERTICAL DATUM: NAVD 88 POSITIONAL ACCURACY THIRD ORDER, UNLESS SPECIFIED OTHERWISE
AT A SPECIFIC POINT.

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

BASIS OF BEARING:
ARKANSAS STATE PLANE GRID BEARINGS - 0301-NORTH ZONE
DETERMINED FROM GPS CONTROL POINTS: 380016 - 380016A, 380017 - 380017A, & 16 - 17
CONVERGENCE ANGLE: 0-25-52.8369 RIGHT AT PN: 2 LT: N 36-00-02.7943 LG: W 091-15-31.4329
CONVERGENCE ANGLE: 0-27-28.1849 RIGHT AT PN: 103 LT: N 36-02-32.2932 LG: W 091-12-47.5763
CONVERGENCE ANGLE: 0-24-46.1202 RIGHT AT PN: 12 LT: N 35-54-20.8069 LG: W 091-17-26.0862
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

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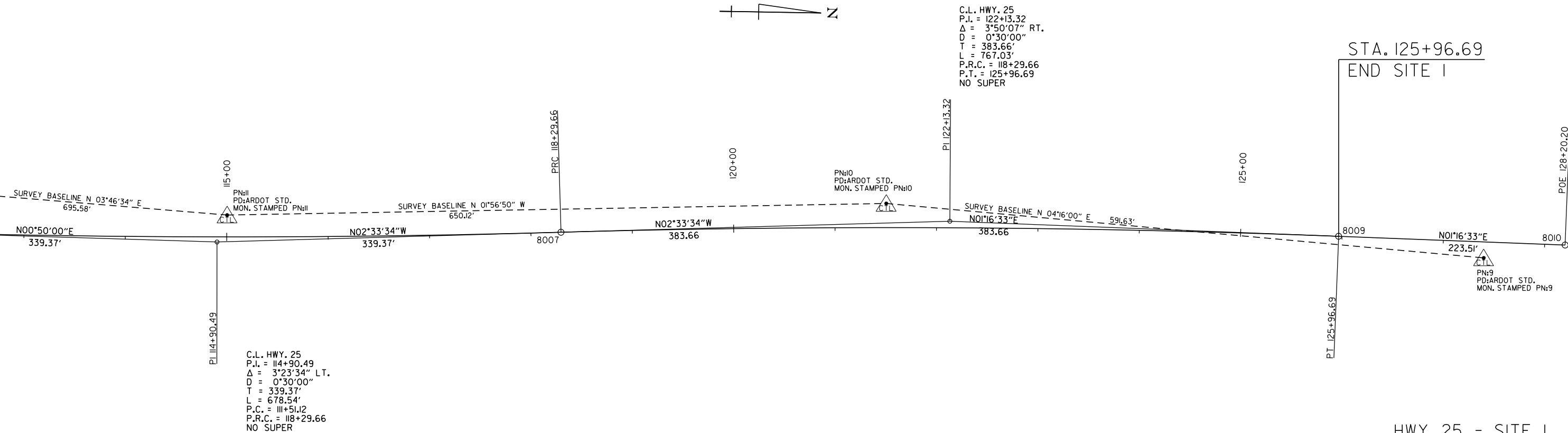
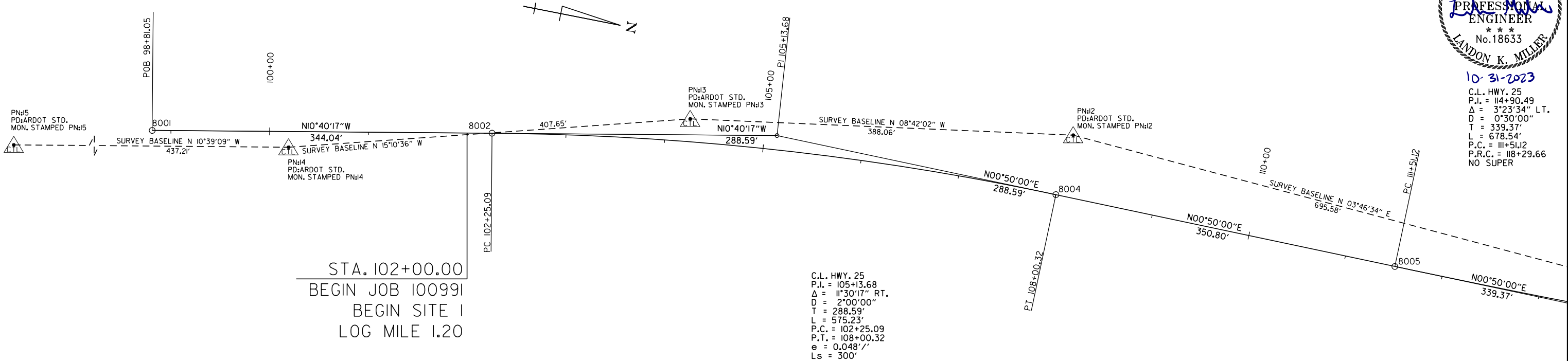
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				6	ARK.			

2 SURVEY CONTROL DETAILS



10-31-2023

C.L. HWY. 25
P.I. = 114+90.49
 Δ = 3°23'34" LT.
D = 0°30'00"
T = 339.37'
L = 678.54'
P.C. = 111+51.12
P.R.C. = 118+29.66
NO SUPER



HWY. 25 - SITE 1
SURVEY CONTROL DETAILS

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STA. 200+00.00
BEGIN SITE 2
LOG MILE 10.48

C.L. HWY. 25
P.I. = 199+84.16
 Δ = 04°45'07" LT.
D = 2°00'00"
T = 118.87'
L = 237.60'
P.C. = 198+65.29
P.T. = 201+02.89
e = 0.048'/'
Ls = 300'

SITE 2
C.L. TEMP. DETOUR
STA. 28+93.51 =
C.L. HWY. 25
STA. 205+77.91

HWY. 25 - SITE 2
SURVEY CONTROL DETAILS

C.L. TEMP. DETOUR SITE 2
P.I. = 24+14.43
 Δ = 37°11'19" RT.
D = 8°00'00"
T = 240.95'
L = 464.86'
P.R.C. = 21+73.48
P.R.C. = 26+38.34
e = 0.094'/'
Ls = 300'

C.L. TEMP. DETOUR SITE 2
P.I. = 27+67.29
 Δ = 20°24'49" LT.
D = 8°00'00"
T = 128.95'
L = 255.17'
P.R.C. = 26+38.34
P.T. = 28+93.51
NO SUPER

PN:4
PD:ARDOT STD.
MON. STAMPED PN:4

PN:5
PD:ARDOT STD.
MON. STAMPED PN:5

PN:2
PD:ARDOT STD.
MON. STAMPED PN:2

PN:3
PD:ARDOT STD.
MON. STAMPED PN:3

SITE 2
C.L. TEMP. DETOUR
STA. 19+04.39 =
C.L. HWY. 25
STA. 196+04.39

C.L. HWY. 25
P.I. = 199+84.16
 Δ = 04°45'07" LT.
D = 2°00'00"
T = 118.87'
L = 237.60'
P.C. = 198+65.29
P.T. = 201+02.89
e = 0.048'/'
Ls = 300'

C.L. TEMP. DETOUR SITE 2
P.I. = 20+40.54
 Δ = 21°31'37" LT.
D = 8°00'00"
T = 136.15'
L = 269.09'
P.C. = 19+04.39
P.R.C. = 21+73.48
NO SUPER

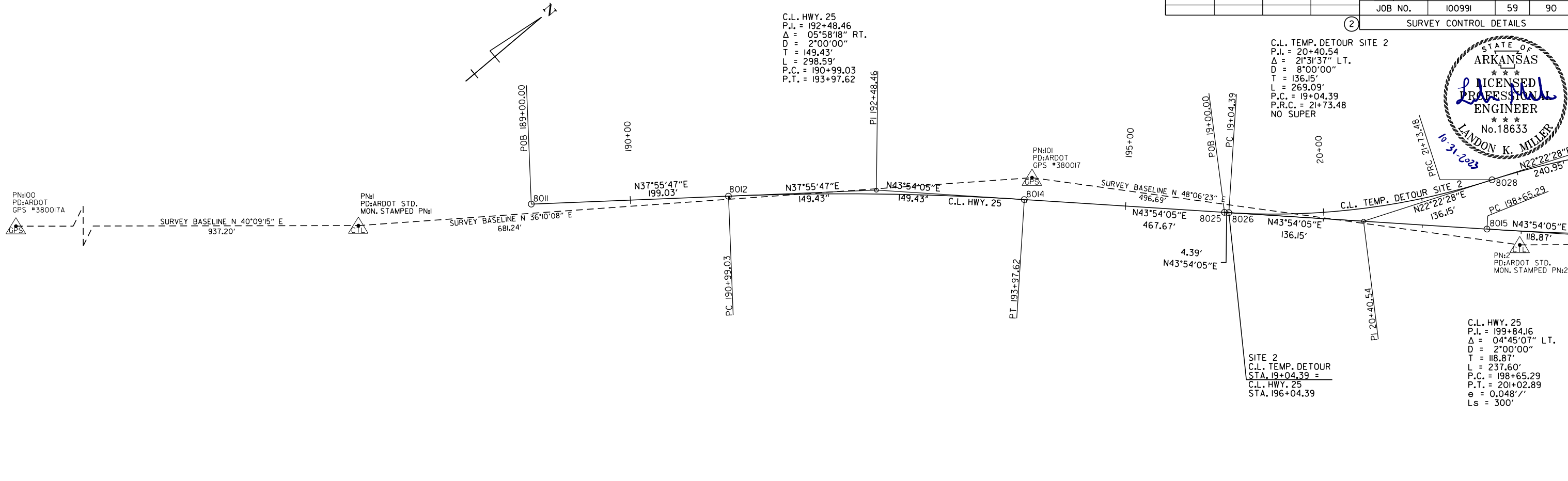
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ARKANSAS

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PROFESSIONAL
ENGINEER

No. 18633
LONDON K. MILLER
10-31-2023

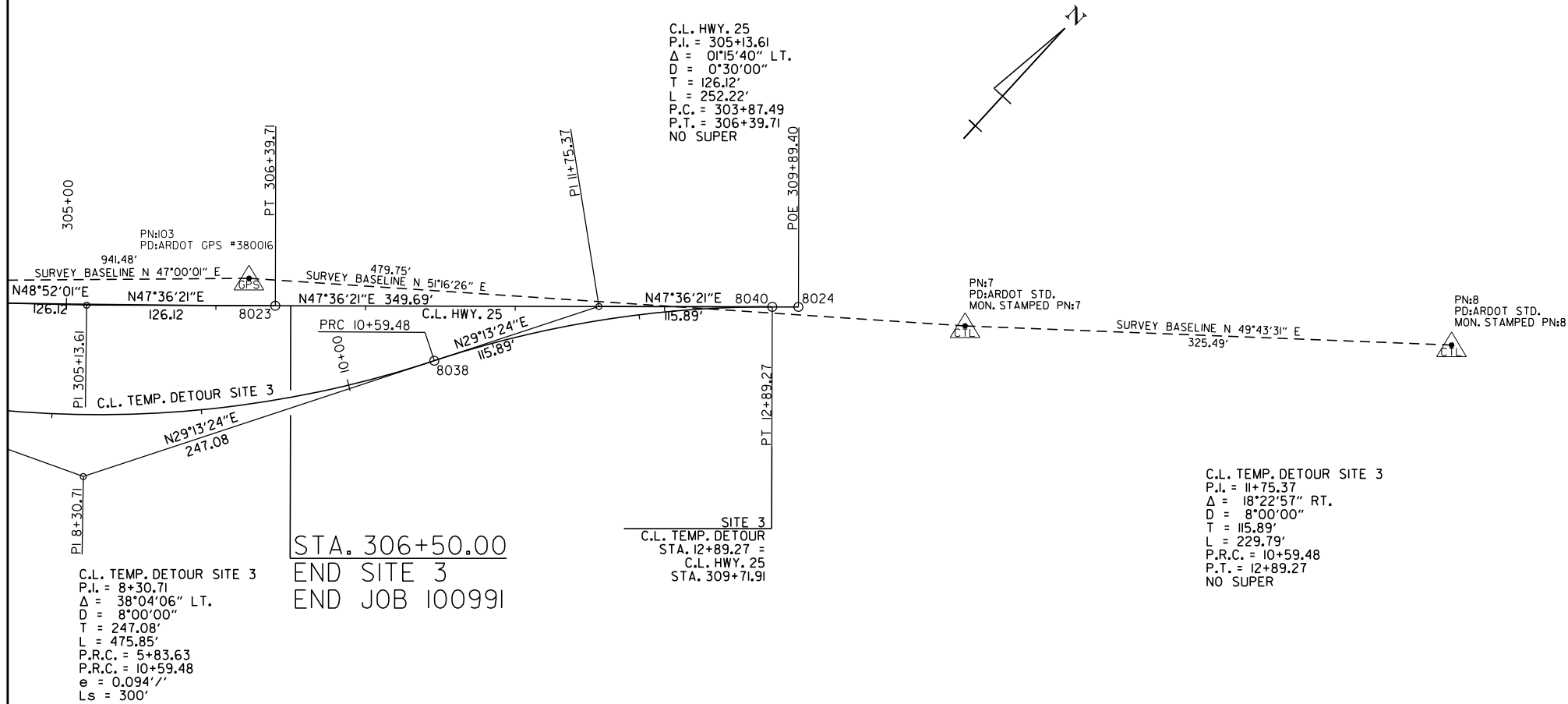
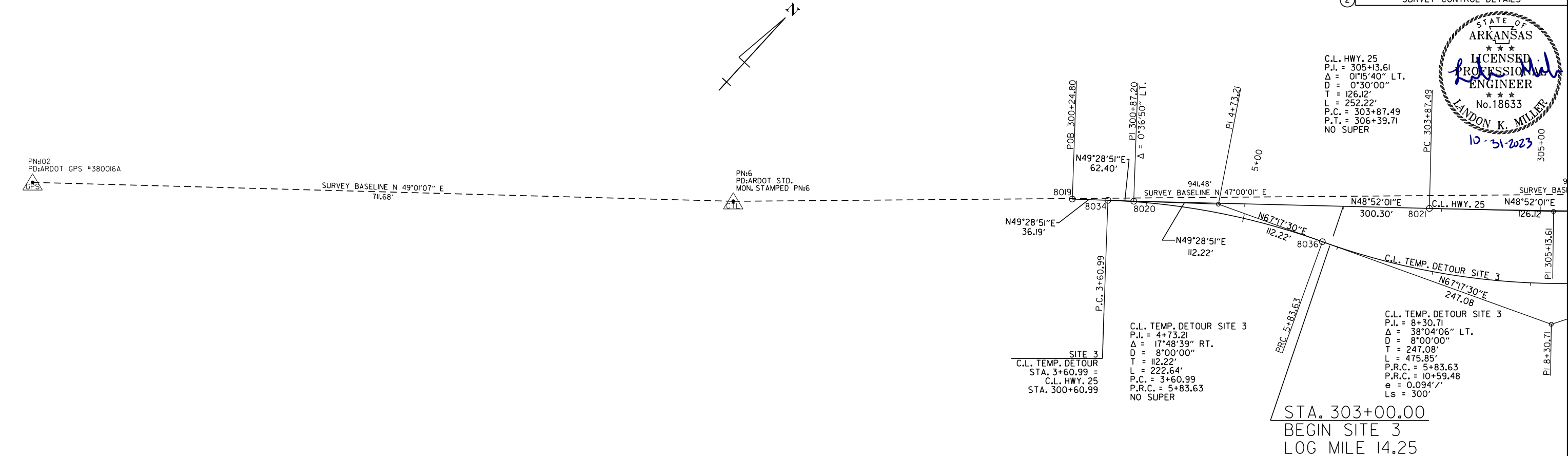
2 SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100991	59	90



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						JOB NO.	100991	60
								90
2 SURVEY CONTROL DETAILS								



HWY. 25 - SITE 3
SURVEY CONTROL DETAILS

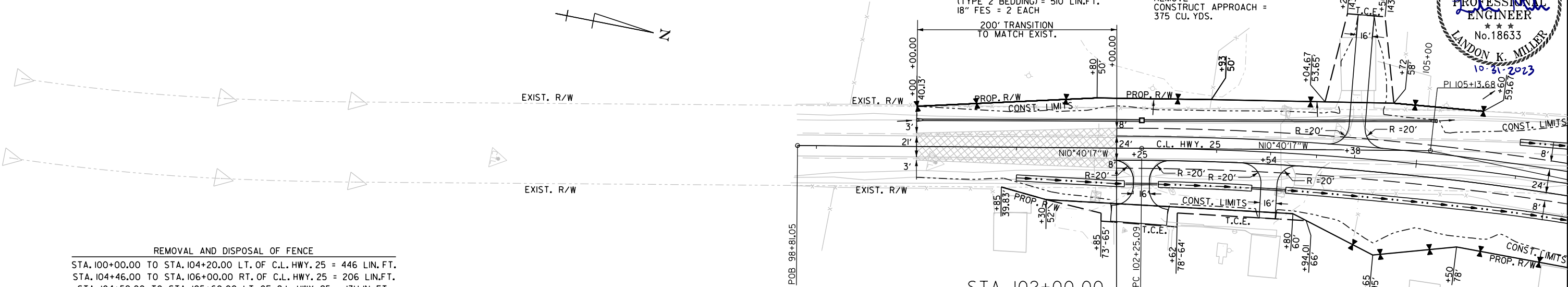
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LEGEND



PAVEMENT
TRANSITION

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100991	61	90
PLAN AND PROFILE SHEETS								



REMOVAL AND DISPOSAL OF FENCE
STA. 100+00.00 TO STA. 104+20.00 LT. OF C.L. HWY. 25 = 446 LIN. FT.
STA. 104+46.00 TO STA. 106+00.00 RT. OF C.L. HWY. 25 = 206 LIN. FT.
STA. 104+52.00 TO STA. 105+60.00 LT. OF C.L. HWY. 25 = 131 LIN. FT.

STA.	STA.	LOCATION	FENCE (TYPE C)	16'-0" GATE
100+00.00	104+30.00	LT. OF C.L. HWY. 25 =	432 LIN. FT.	
104+43.00	106+00.00	RT. OF C.L. HWY. 25 =	153 LIN. FT.	
104+45.00	105+60.00	LT. OF C.L. HWY. 25 =	115 LIN. FT.	1 EACH

STA.	STA.	SIDE	LENGTH	"W"	SO. YDS.
101+00	102+08	RT.	108 LIN. FT.	6'-0"	72.00
102+42	103+37	RT.	95 LIN. FT.	6'-0"	63.33
103+71	106+00	RT.	229 LIN. FT.	6'-0"	152.67

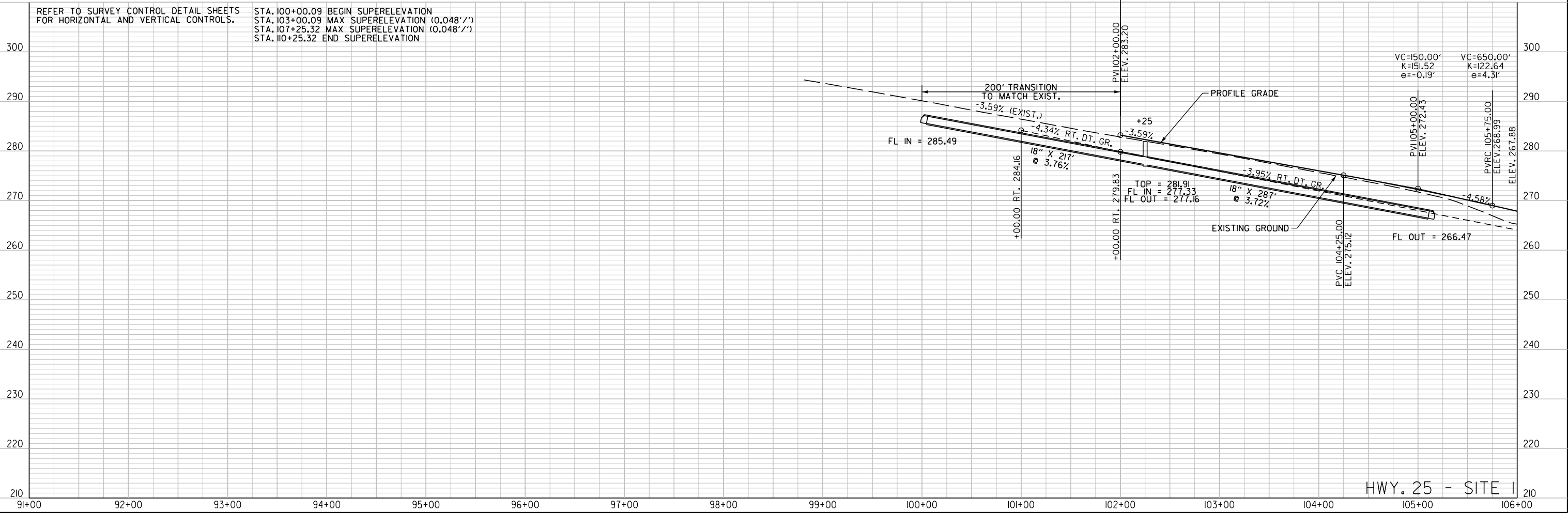
STA. 102+00.00
BEGIN JOB 100991
BEGIN SITE 1
LOG MILE 1.20

STA. 102+25.00 IN PLACE
18" X 24' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 32' RT. SIDE DRAIN
CONSTRUCT APPROACH =
45 CU. YDS. COMP. EMB.
5 CU. YDS. UNCL. EXC.

STA. 103+54.00 IN PLACE
18" X 33' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 34' RT. SIDE DRAIN
CONSTRUCT APPROACH =
55 CU. YDS. COMP. EMB.
5 CU. YDS. UNCL. EXC.

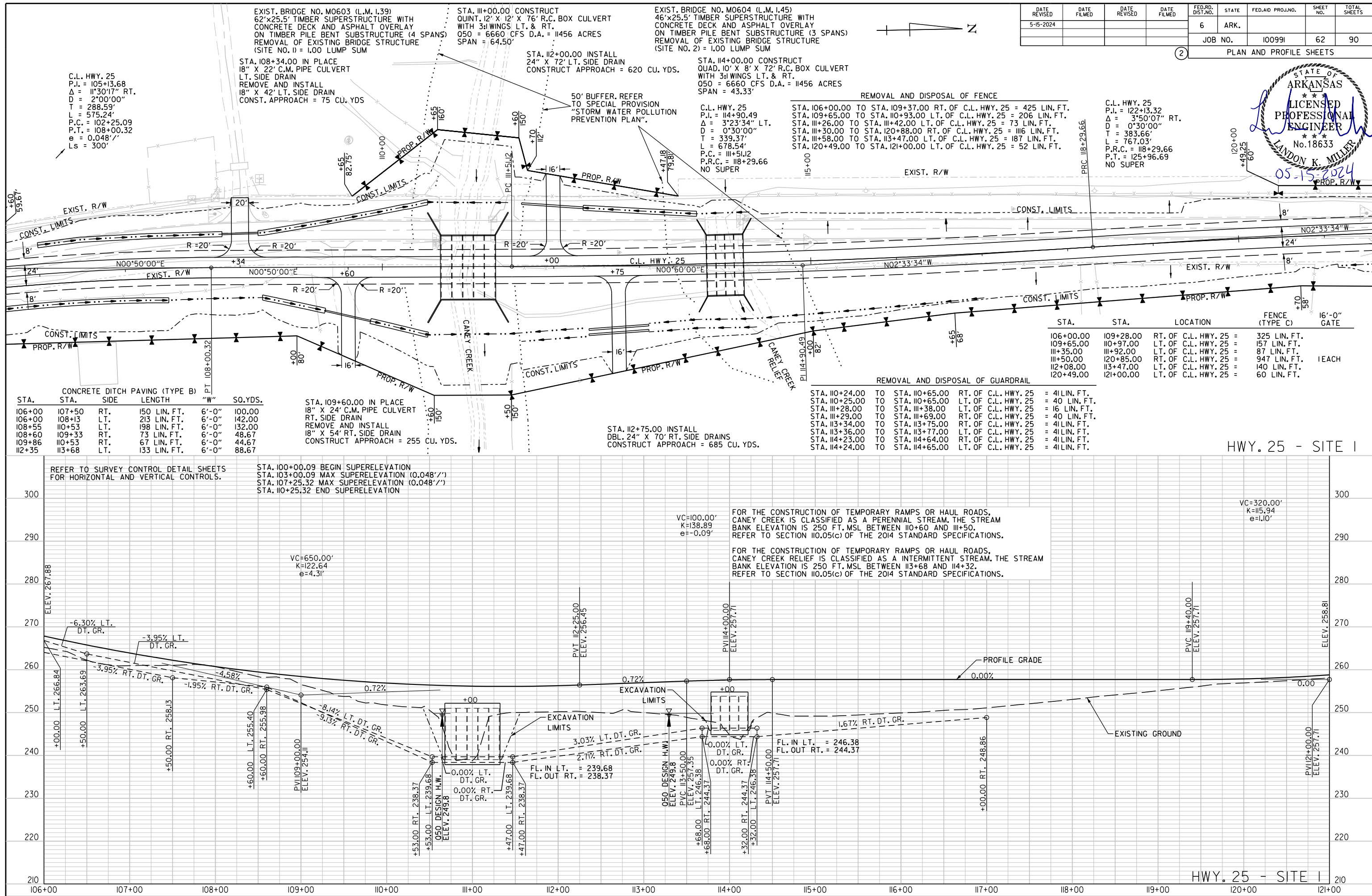
C.L. HWY. 25
P.I. = 105+13.68
 $\Delta = 11^{\circ}30'17''$ RT.
D = 2'00'00"
T = 288.59'
L = 575.23'
P.C. = 102+25.09
P.T. = 108+00.32
 $e = 0.048'/'$
Ls = 300'

HWY. 25 - SITE 1



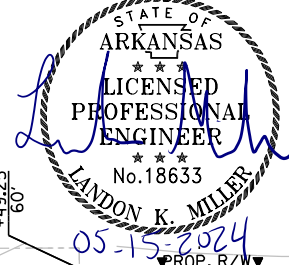
HWY. 25 - SITE 1

London Miller
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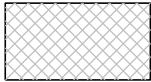
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PLAN AND PROFILE SHEETS



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REVISED DATE: **REDATE**

LEGEND



PAVEMENT
TRANSITION

C.L. HWY. 25
P.I. = 192+48.46
 Δ = 5°58'18" RT.
D = 2°00'00"
T = 149.43'
L = 298.59'
P.C. = 190+99.03
P.T. = 193+97.62

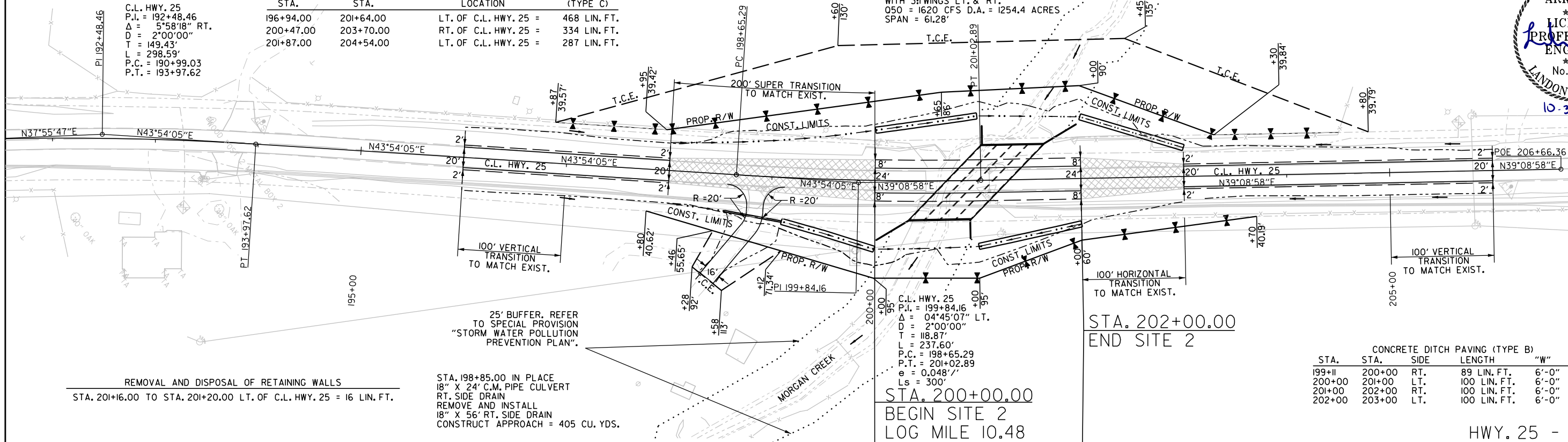
REMOVAL AND DISPOSAL OF FENCE

STA. 196+94.00 TO STA. 200+51.00 LT. OF C.L. HWY. 25 = 368 LIN. FT.
STA. 200+10.00 TO STA. 200+48.00 RT. OF C.L. HWY. 25 = 89 LIN. FT.
STA. 201+10.00 TO STA. 203+70.00 RT. OF C.L. HWY. 25 = 267 LIN. FT.
STA. 201+97.00 TO STA. 204+54.00 LT. OF C.L. HWY. 25 = 267 LIN. FT.

STA.	STA.	LOCATION	FENCE (TYPE C)
196+94.00	201+64.00	LT. OF C.L. HWY. 25 =	468 LIN. FT.
200+47.00	203+70.00	RT. OF C.L. HWY. 25 =	334 LIN. FT.
201+87.00	204+54.00	LT. OF C.L. HWY. 25 =	287 LIN. FT.

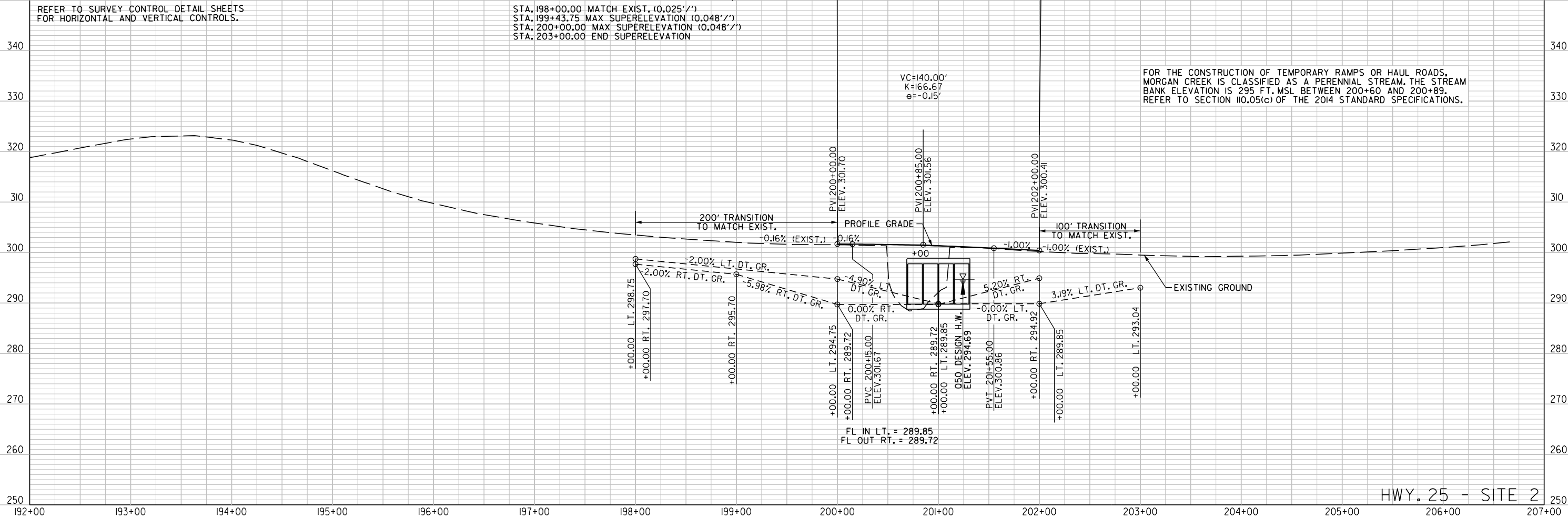
EXIST. BRIDGE NO. M0611 (L.M. 10.50)
62'x22.5' STEEL I-BEAM SUPER STRUCTURE WITH
CONCRETE DECK AND ASPHALT OVERLAY
ON TIMBER PILE BEN SUBSTRUCTURE (1 SPAN)
REMOVAL OF EXISTING BRIDGE STRUCTURE
(SITE NO. 3) = 1.00 LUMP SUM
STA. 201+00.00 CONSTRUCT
QUAD. 10' X 8' X 103' R.C. BOX CULVERT
WITH 45° LT. FWD. SKEW
WITH 3:1 WINGS LT. & RT.
Q50 = 1620 CFS D.A. = 1254.4 ACRES
SPAN = 61.28'

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	100991	64	90	
PLAN AND PROFILE SHEETS								



CONCRETE DITCH PAVING (TYPE B)				
STA.	STA.	SIDE	LENGTH	SO.YDS.
199+11	200+00	RT.	89 LIN. FT.	59.33
200+00	201+00	LT.	100 LIN. FT.	66.67
201+00	202+00	RT.	100 LIN. FT.	66.67
202+00	203+00	LT.	100 LIN. FT.	66.67

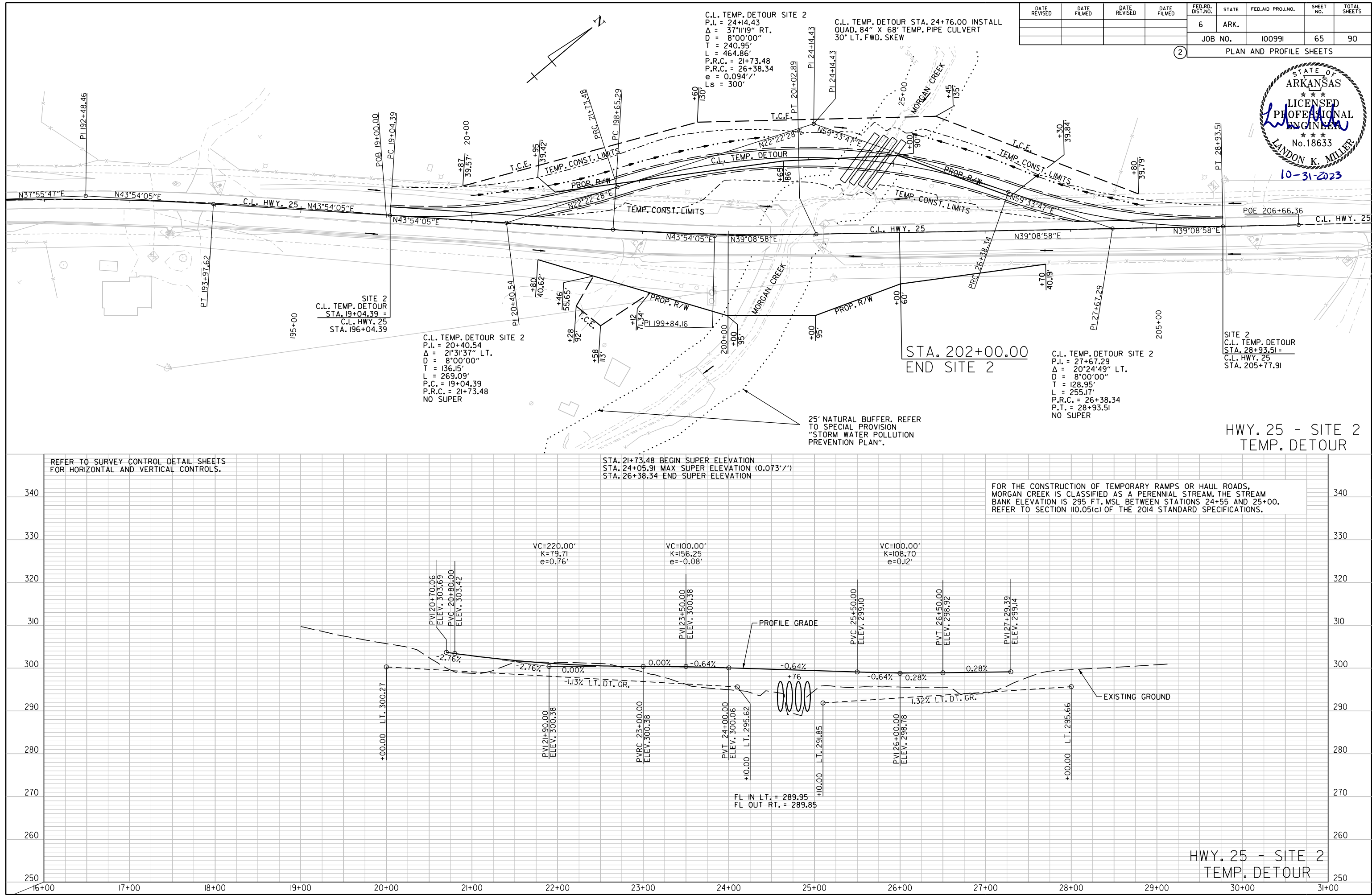
HWY. 25 - SITE 2



FOR THE CONSTRUCTION OF TEMPORARY RAMPS OR HAUL ROADS,
MORGAN CREEK IS CLASSIFIED AS A PERENNIAL STREAM, THE STREAM
BANK ELEVATION IS 295 FT. MSL BETWEEN 200+60 AND 200+89.
REFER TO SECTION 110.05(c) OF THE 2014 STANDARD SPECIFICATIONS.

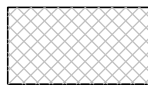
HWY. 25 - SITE 2

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LEGEND



PAVEMENT
TRANSITION

EXIST. BRIDGE NO. M3317 (L.M. 14.30)
107' X 28.2' TIMBER SUPERSTRUCTURE WITH
CONCRETE DECK AND ASPHALT OVERLAY
ON TIMBER PILE BENT SUBSTRUCTURE (6 SPANS)
(15'-19'-19'-19'-19'-15')
REMOVAL OF EXISTING BRIDGE STRUCTURE
(SITE NO. 4) = 1.00 LUMP SUM

STA. 305+23.00 CONSTRUCT
SEXT. 11' X 10' X 71' R.C. BOX CULVERT
WITH 15' LT. FWD. SKEW
WITH 31' WINGS LT. & RT.
O50 = 2610 CFS D.A. = 2266 ACRES
SPAN = 73.33'

STA. 306+56.00 CONSTRUCT
TURNOUT ON LT. = 45 CU. YDS.

STA.	STA.	LOCATION	FENCE (TYPE C)	16'-0" GATES
301+02.00	304+75.00	RT. OF C.L. HWY. 25 =	380 LIN. FT.	
305+18.00	307+07.00	RT. OF C.L. HWY. 25 =	194 LIN. FT.	
307+25.00	309+02.00	RT. OF C.L. HWY. 25 =	182 LIN. FT.	1 EACH

2

PLAN AND PROFILE SHEETS



REMOVAL AND DISPOSAL OF FENCE
STA. 301+02.00 TO STA. 304+77.00 RT. OF C.L. HWY. 25 = 413 LIN. FT.
STA. 301+50.00 TO STA. 305+30.00 LT. OF C.L. HWY. 25 = 407 LIN. FT.
STA. 305+91.00 TO STA. 309+02.00 RT. OF C.L. HWY. 25 = 319 LIN. FT. & 1 GATE

STA.	STA.	CONCRETE DITCH PAVING (TYPE B)	LENGTH	"W"	SO. YDS.
305+60	306+80	RT.	120 LIN. FT.	6'-0"	80.00
305+90	306+45	LT.	55 LIN. FT.	6'-0"	36.67

STA. 303+00.00
BEGIN SITE 3
LOG MILE 14.25

25' NATURAL BUFFER. REFER
TO SPECIAL PROVISION
"STORM WATER POLLUTION
PREVENTION PLAN".

STA. 306+50.00
END SITE 3
END JOB 100991

STA. 307+17.00 IN PLACE
18" X 28' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
24" X 38' RT. SIDE DRAIN
CONST. APPROACH = 70 CU. YDS.

STA. 309+00 RT.
A HISTORIC PROPERTY HAS BEEN IDENTIFIED AS ELIGIBLE
FOR INCLUSION TO THE NATIONAL REGISTER OF HISTORIC PLACES.
IMPACTS TO THIS PROPERTY SHOULD BE AVOIDED.

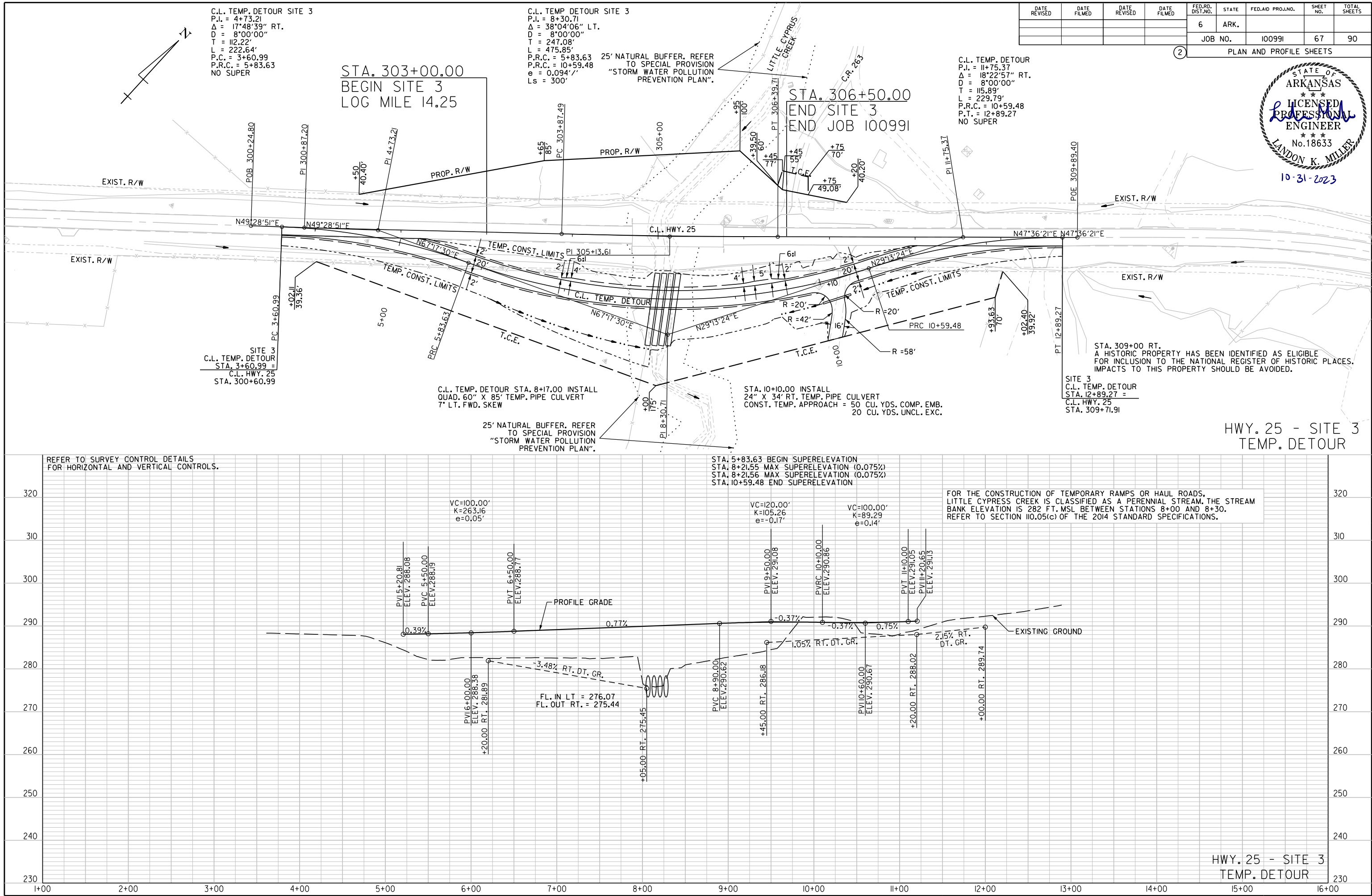
HWY. 25 - SITE 3

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

FOR THE CONSTRUCTION OF TEMPORARY RAMPS OR HAUL ROADS,
LITTLE CYPRESS CREEK IS CLASSIFIED AS A PERENNIAL STREAM. THE STREAM
BANK ELEVATION IS 282 FT. MSL BETWEEN 304+40 AND 305+95.
REFER TO SECTION 110.05(k) OF THE 2014 STANDARD SPECIFICATIONS.

HWY. 25 - SITE 3

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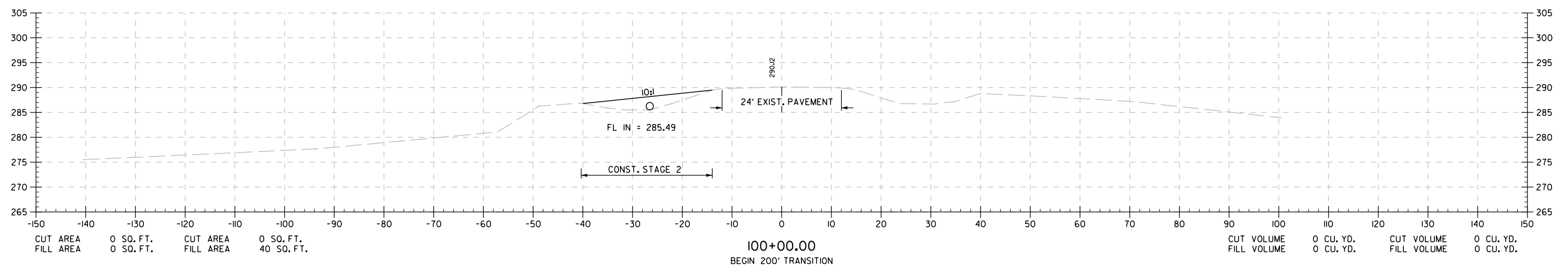
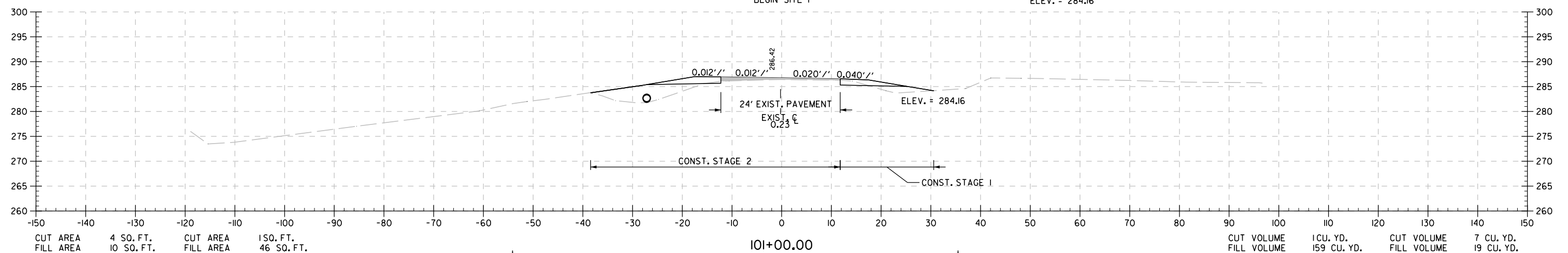
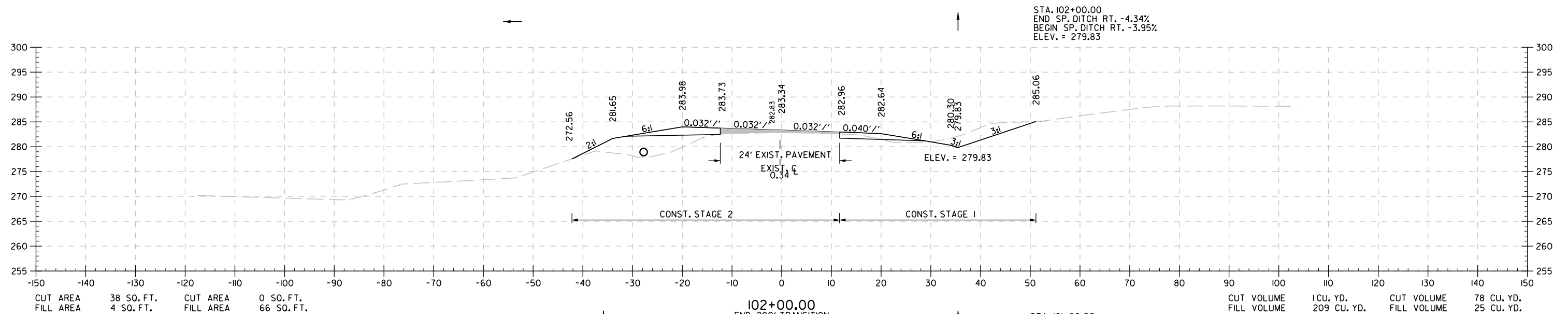
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				JOB NO.		100991	68	90
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STAGE I

STAGE 2

STAGE 2

STAGE I



HWY. 25 - SITE 1
STA. 100+00 TO STA. 102+00

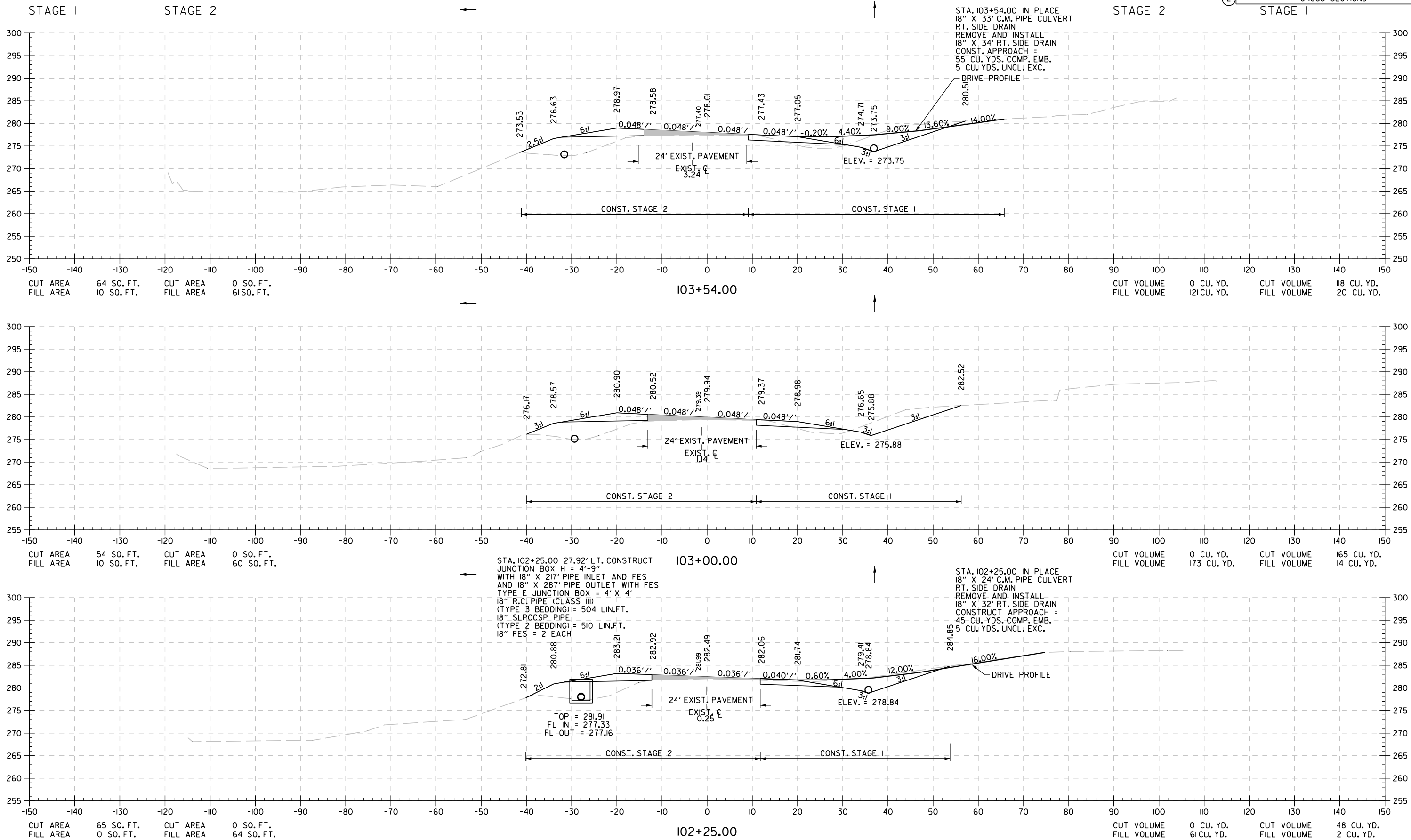
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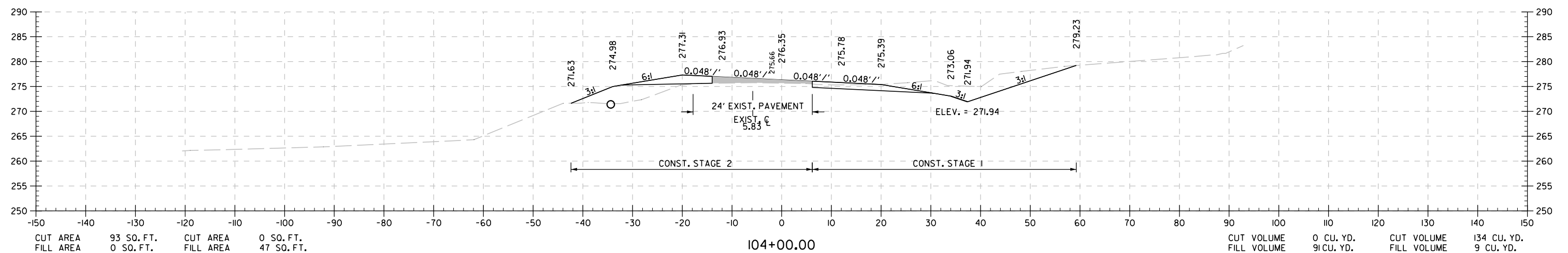
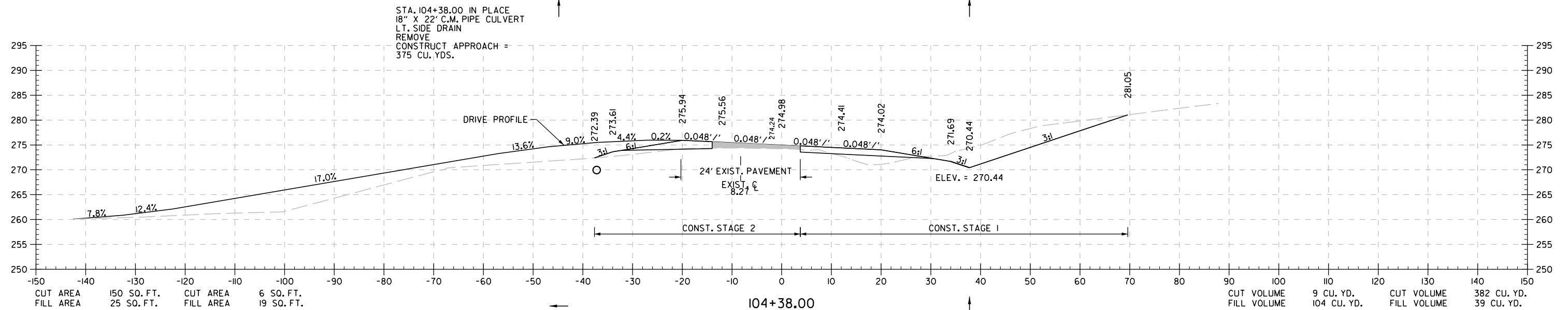
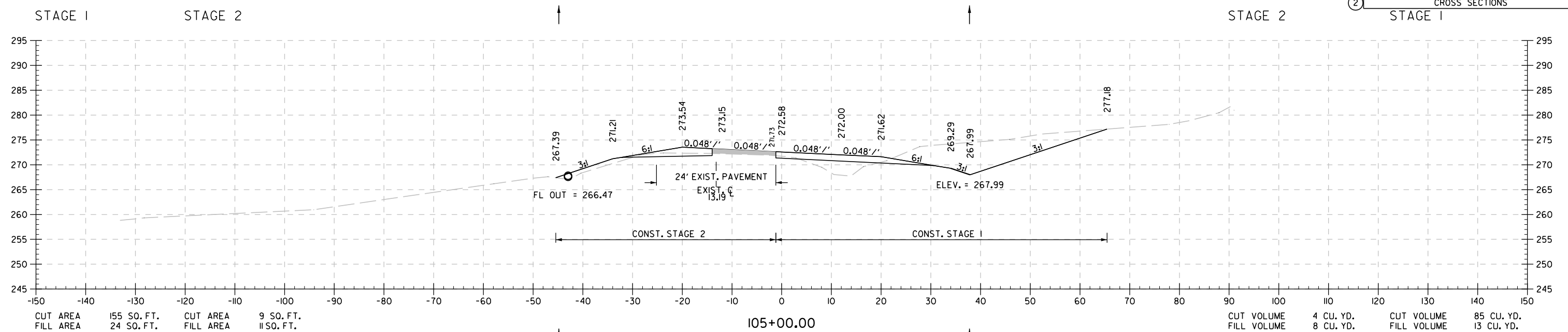
CROSS SECTIONS



HWY. 25 - SITE I

STA. 102+25 TO STA. 103+54

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HWY. 25 - SITE 1

STA. 104+00 TO STA. 105+00

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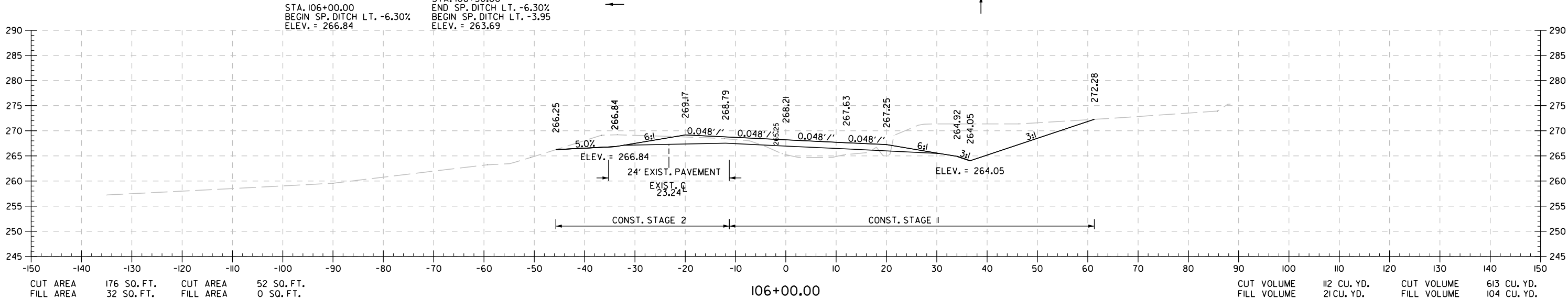
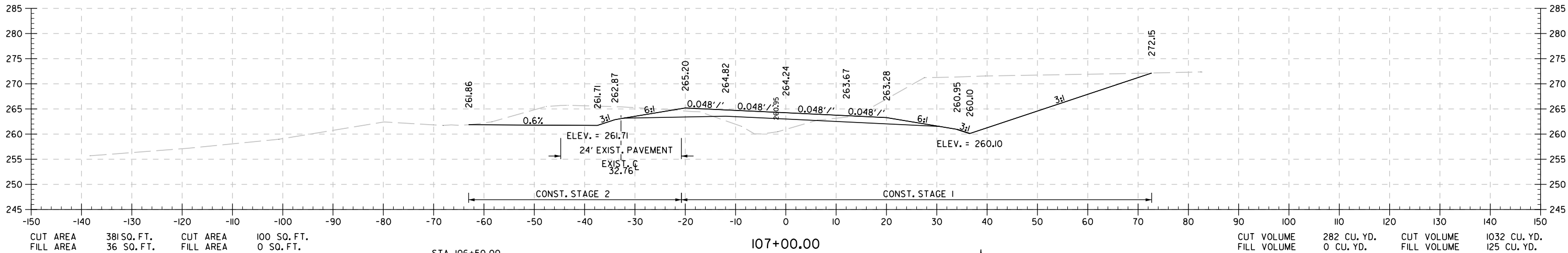
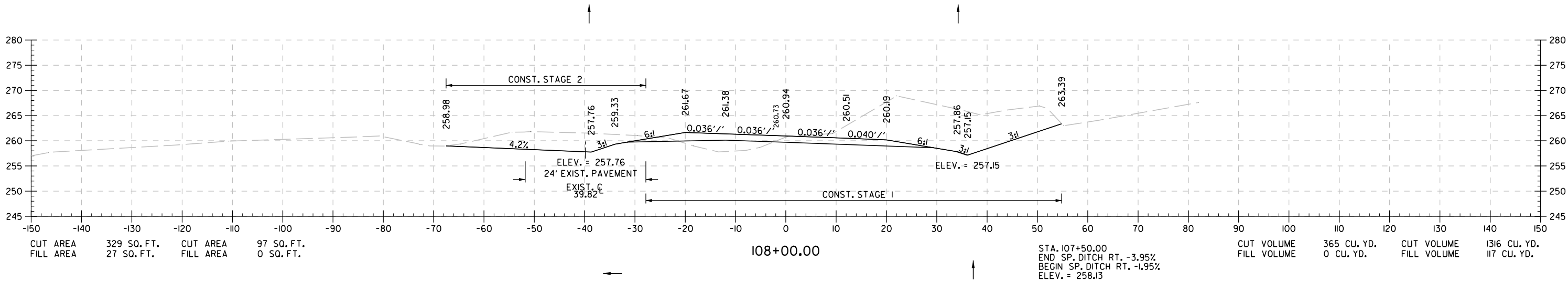
STAGE I

STAGE 2

STAGE 2

2

STAGE I



HWY. 25 - SITE I
STA. 106+00 TO STA. 108+00

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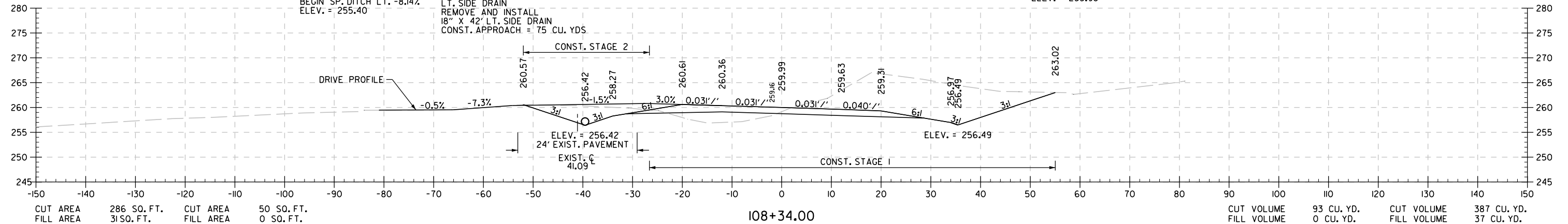
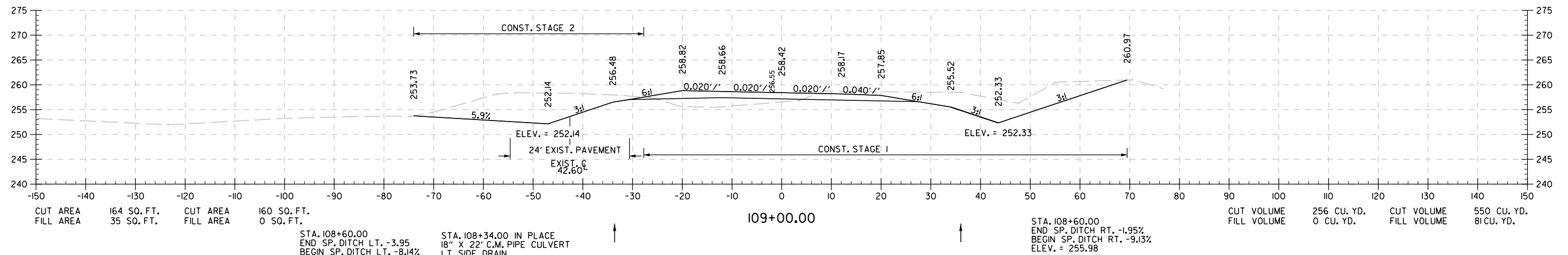
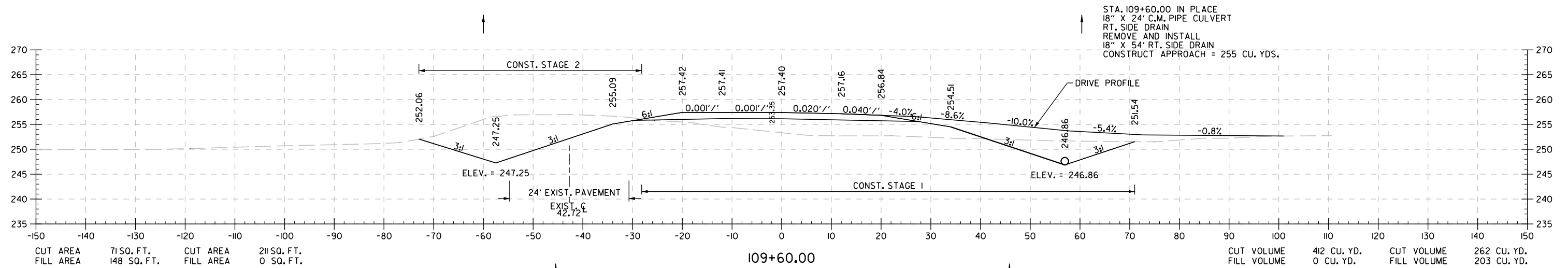
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				JOB NO.	100991		72	90
CROSS SECTIONS								

STAGE 1

STAGE 2

STAGE 2

STAGE 1



HWY. 25 - SITE 1
STA. 108+34 TO STA. 109+60

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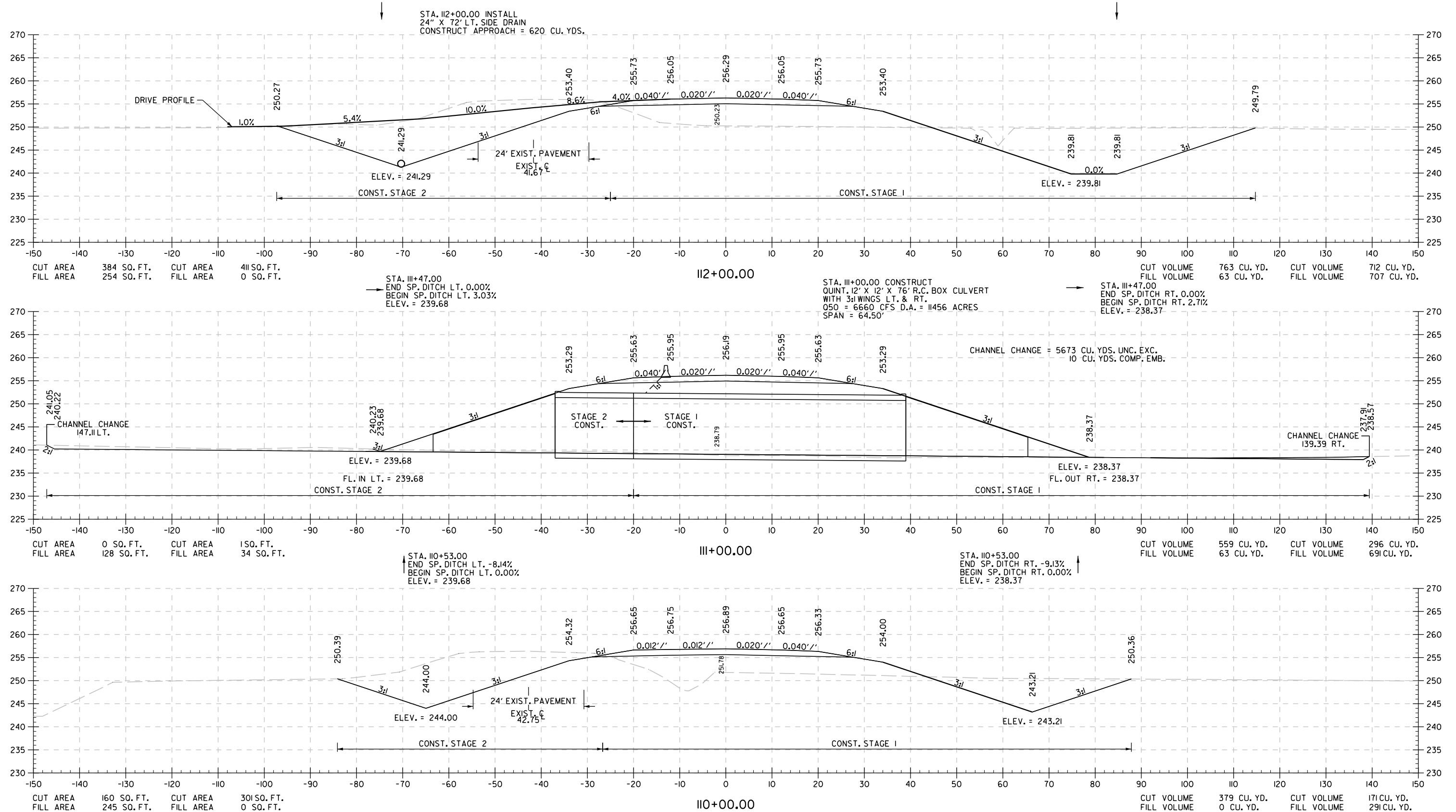
2 CROSS SECTIONS

STAGE I

STAGE 2

STAGE 2

STAGE I



HWY. 25 - SITE I
STA. 110+00 TO STA. 112+00

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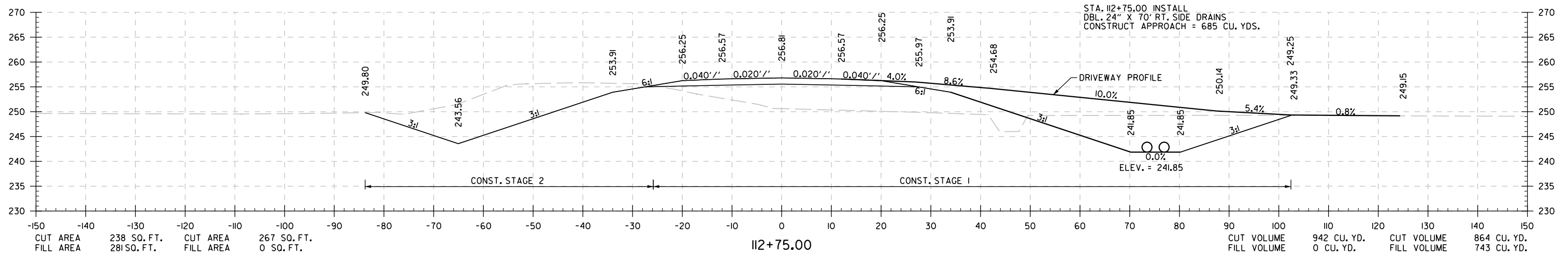
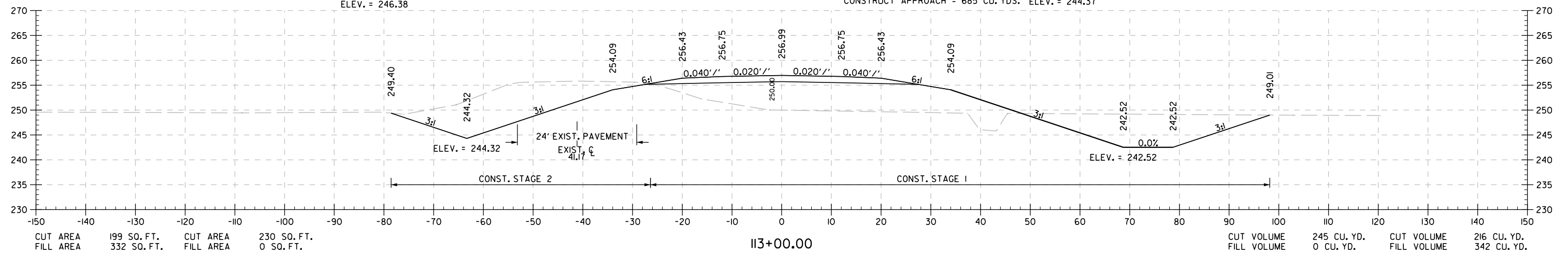
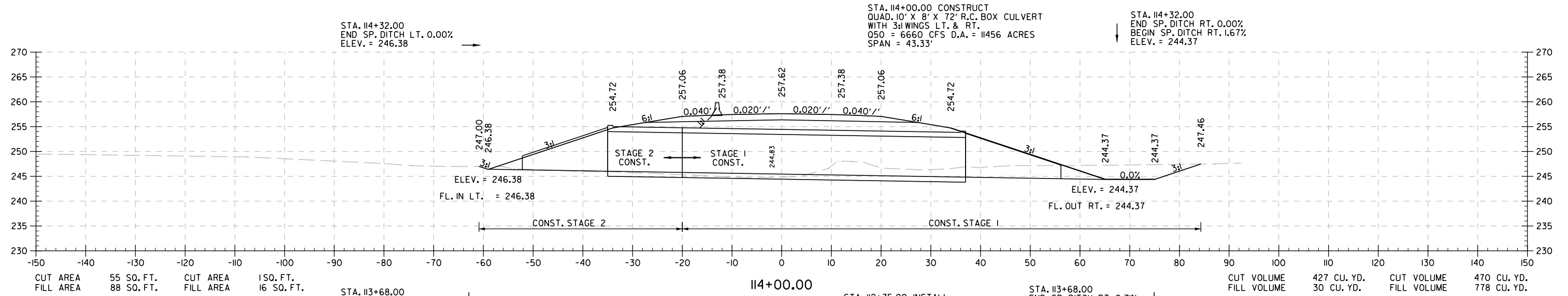
CROSS SECTIONS

STAGE 1

STAGE 2

STAGE 2

STAGE 1



HWY. 25 - SITE 1
STA. 112+75 TO STA. 114+05

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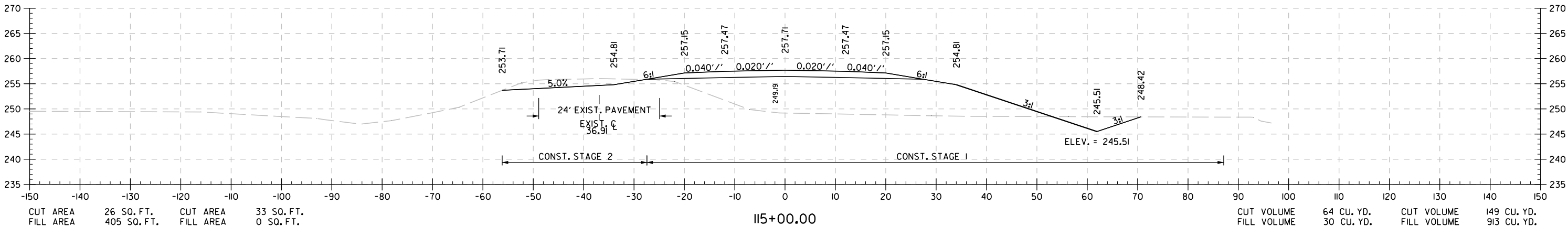
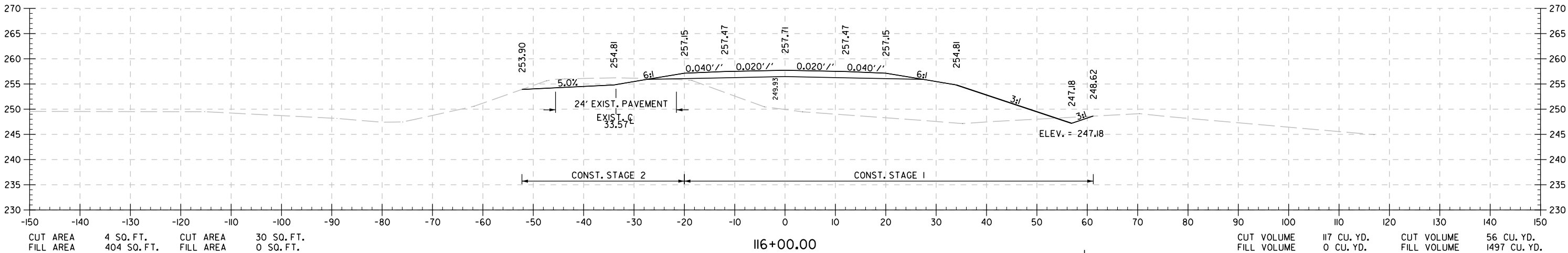
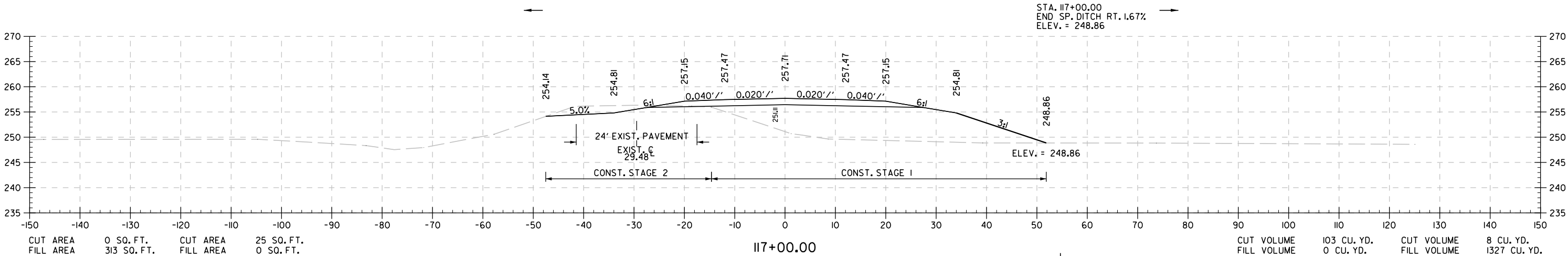
STAGE 1

STAGE 2

STAGE 2

2

STAGE 1



HWY. 25 - SITE 1
STA. 115+00 TO STA. 117+00

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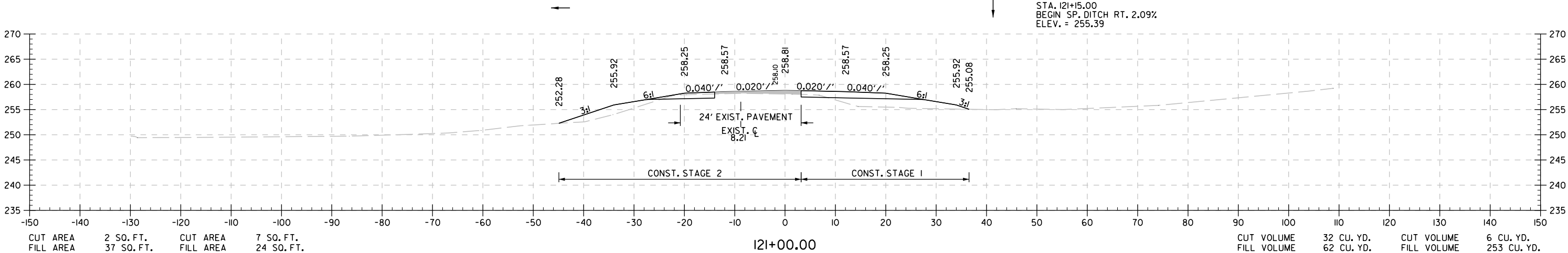
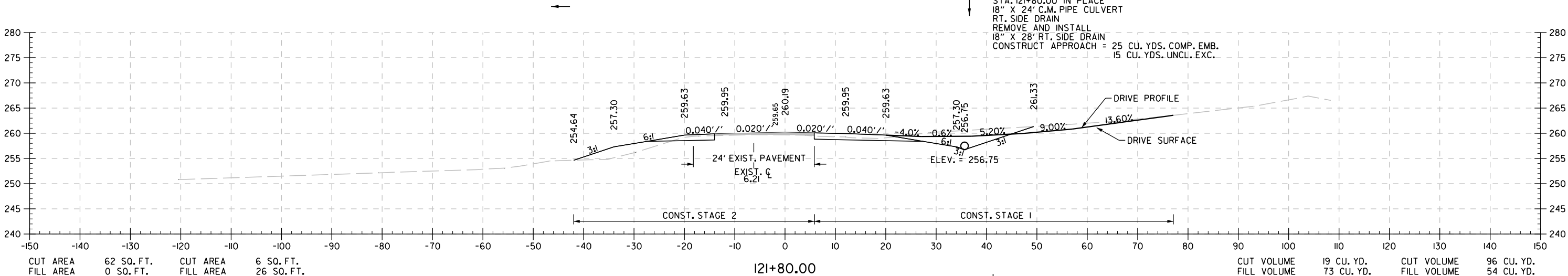
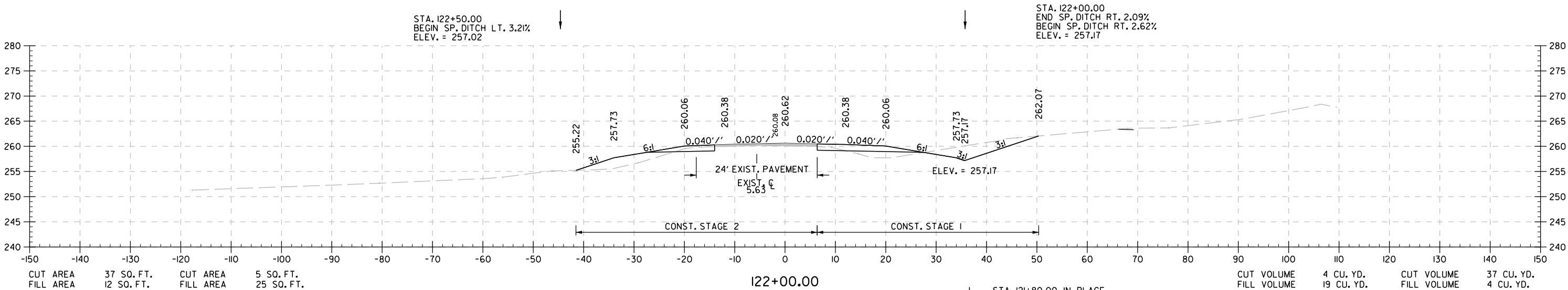
CROSS SECTIONS

STAGE 1

STAGE 2

STAGE 2

STAGE 1



HWY. 25 - SITE 1

STA. I21+00 TO STA. I22+00

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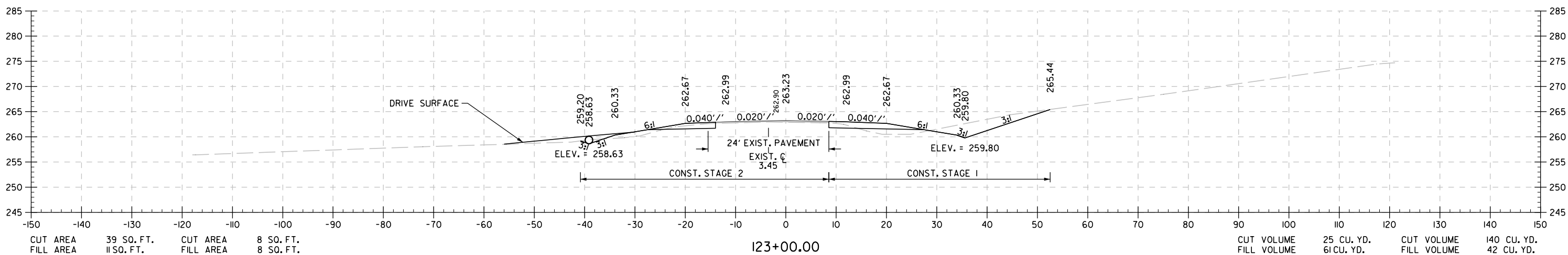
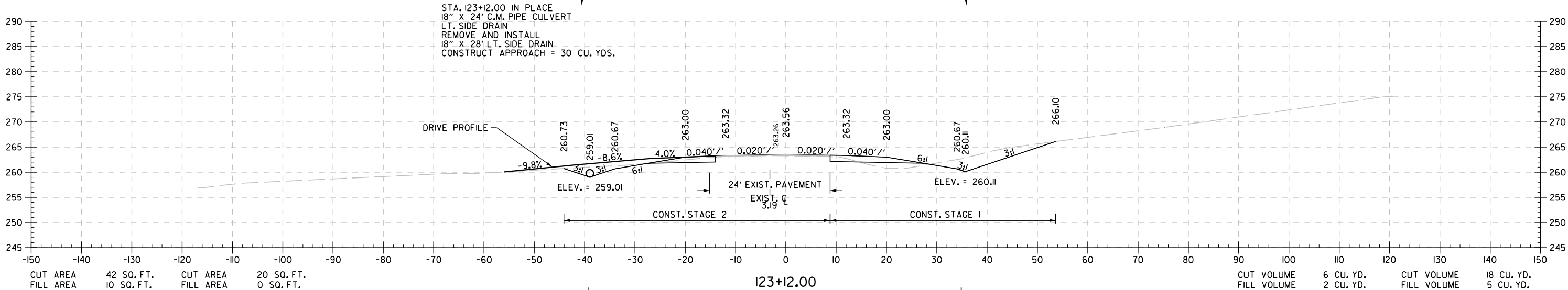
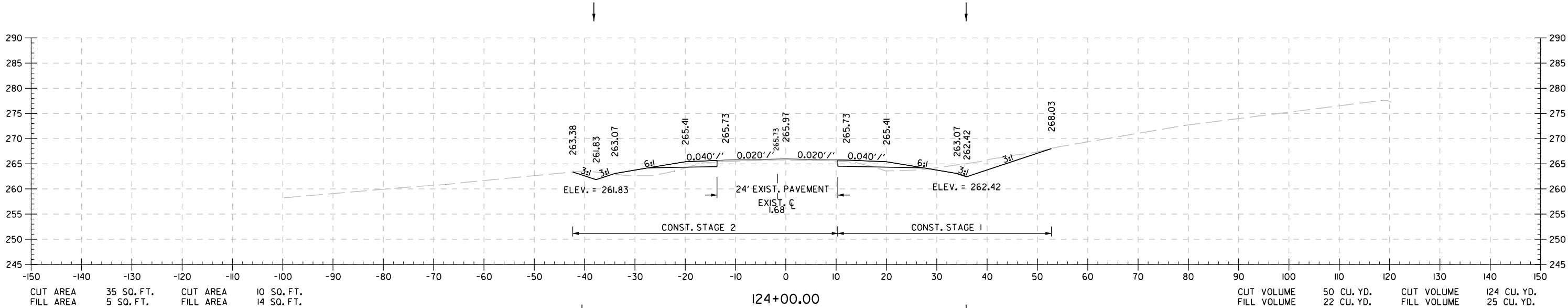
CROSS SECTIONS

STAGE 1

STAGE 2

STAGE 2

STAGE 1



HWY. 25 - SITE 1
STA. 123+00 TO STA. 124+00

Stephane.Bessis 10/18/2023 155654 PM
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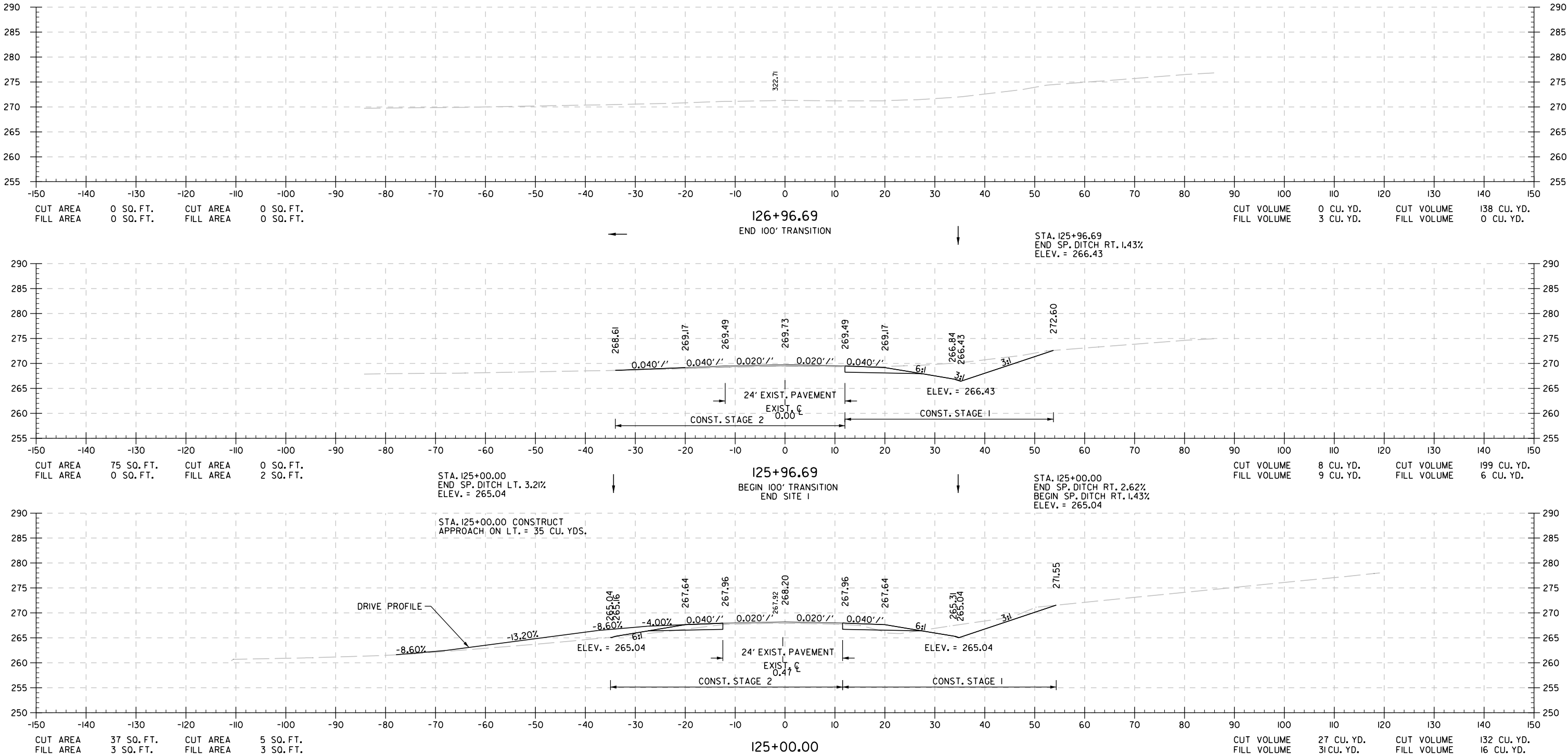
CROSS SECTIONS

STAGE 1

STAGE 2

STAGE 2

STAGE 1

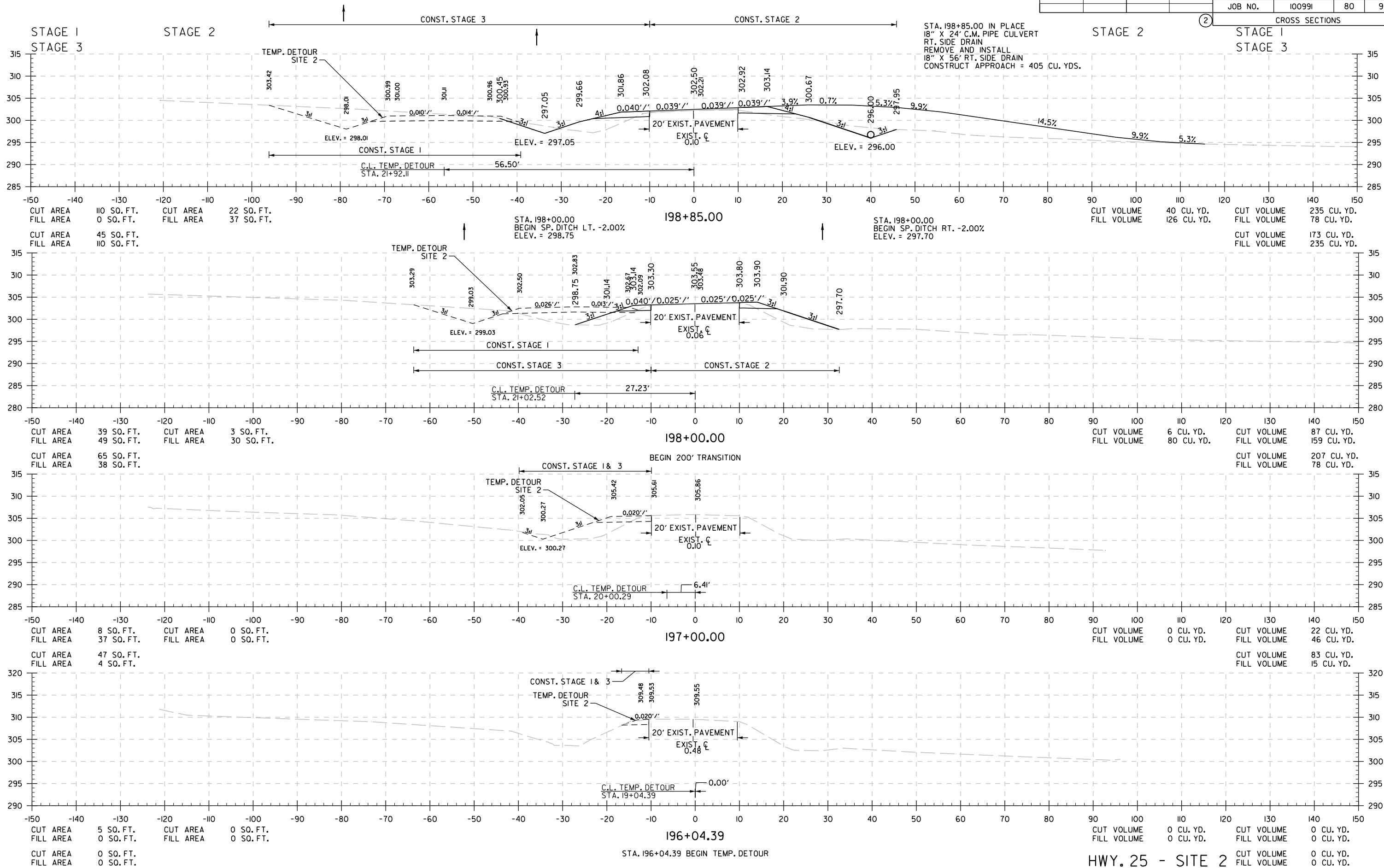


HWY. 25 - SITE 1
STA. 125+00 TO STA. 126+97

Stephane.Bessis 10/18/2023 15:55:54 PM
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REVISED DATE: **REVIDATE**

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100991	80	90

2 CROSS SECTIONS



HWY. 25 - SITE 2
STA. 196+04 TO STA. 198+85

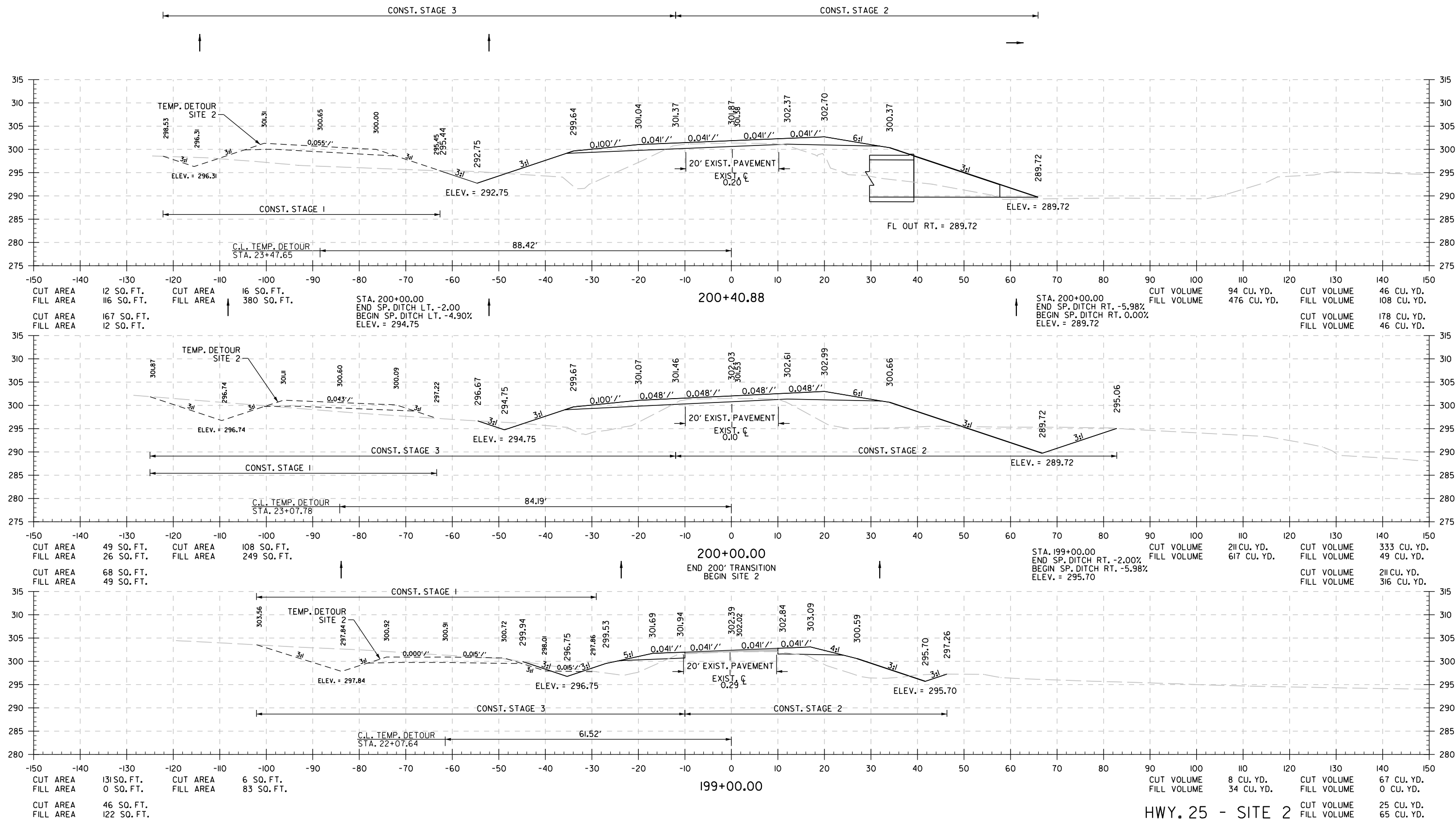
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				6	ARK.			
				JOB NO.		100991	81	90

② CROSS SECTIONS
STAGE 1
STAGE 3

STAGE 1
STAGE 3

STAGE 2

STAGE 2



HWY. 25 - SITE 2
STA. 199+00 TO STA. 200+41

Stephane Bessie 10/18/2023 15:55:55 PM
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100991	82	90

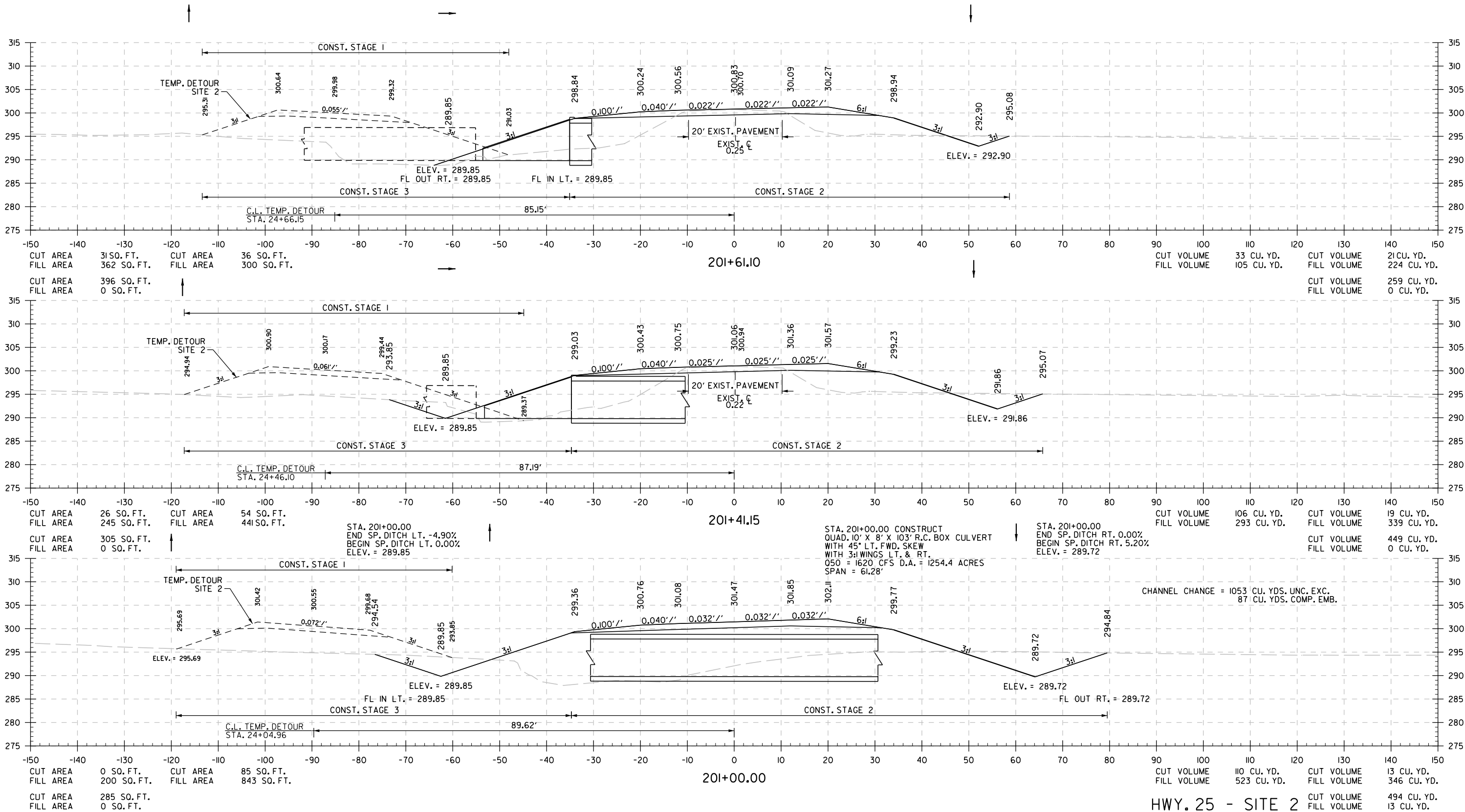
2 CROSS SECTIONS

STAGE 1
STAGE 3

STAGE 2

STAGE 2

STAGE 1
STAGE 3



HWY. 25 - SITE 2
STA. 201+00 TO STA. 201+61

Stephane.Bessis 10/18/2023 15:55:55 PM
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REVISED DATE: **REVIDATE**

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100991	83	90

2

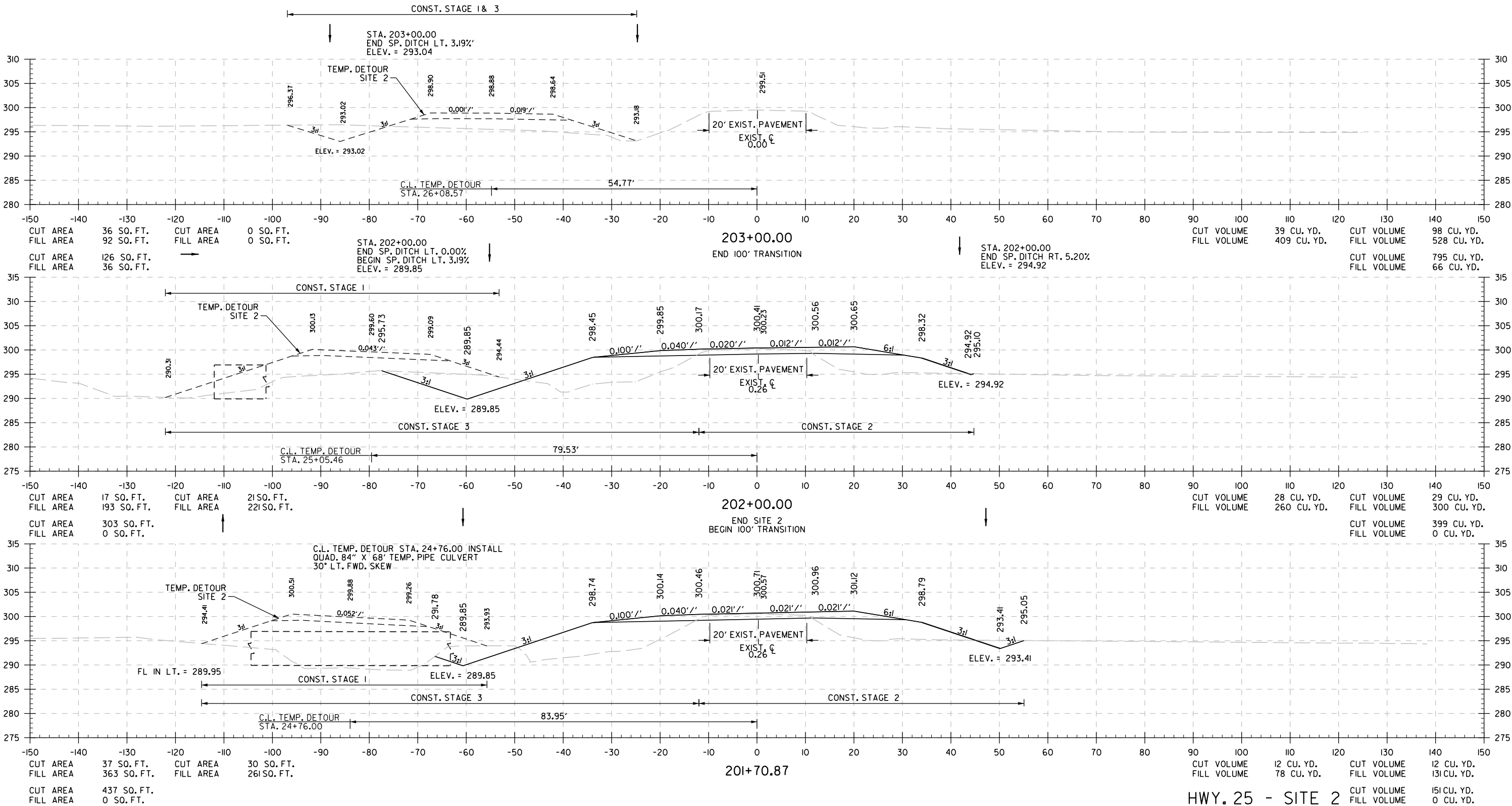
CROSS SECTIONS

STAGE 1
STAGE 3

STAGE 2

STAGE 2

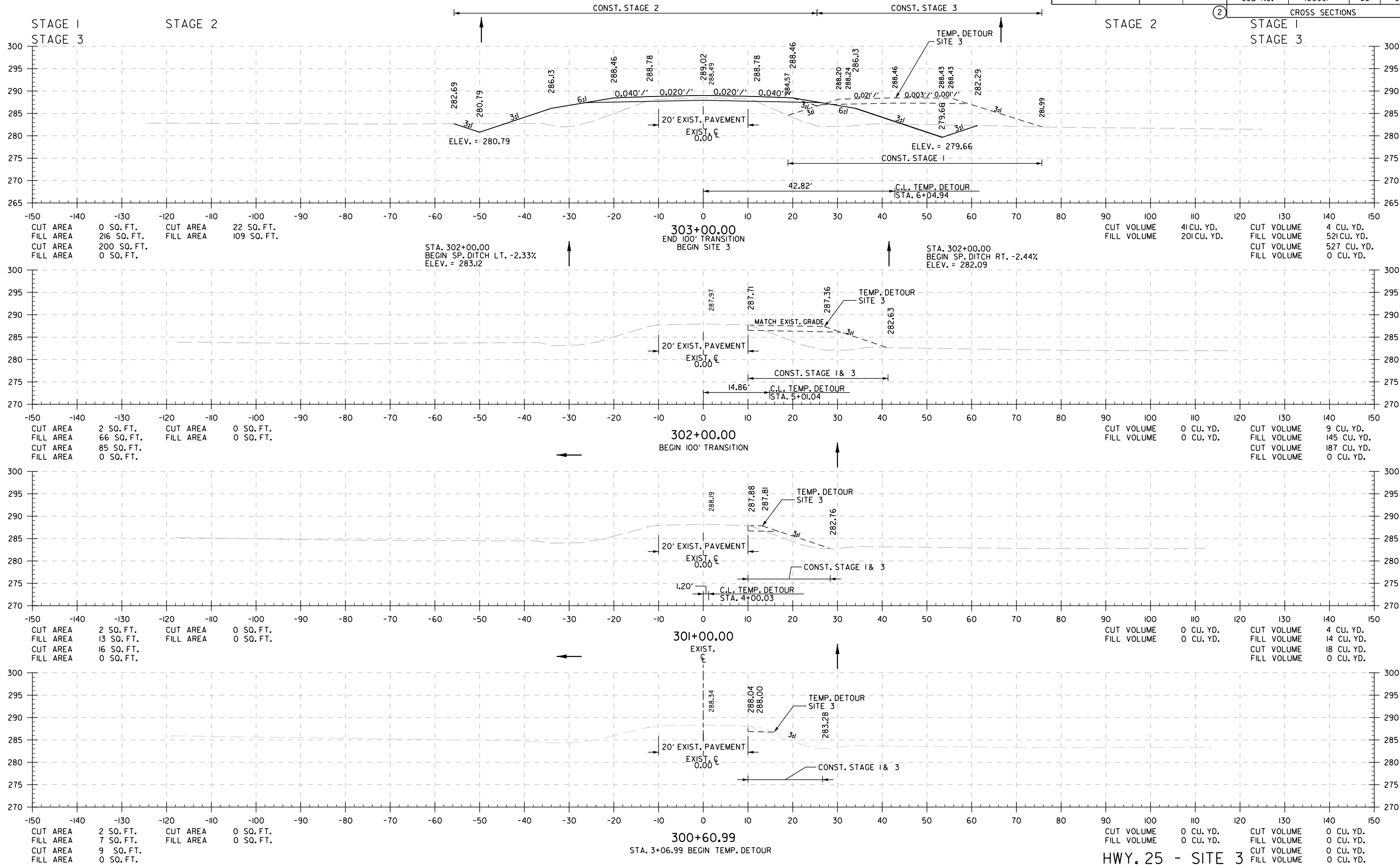
STAGE 1
STAGE 3



HWY. 25 - SITE 2
STA. 201+71 TO STA. 203+00

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REVIS DATE: **REVIS DATE**

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100991	85	90
CROSS SECTIONS								



HWY. 25 - SITE 3

STA. 300+61 TO STA. 303+00

Stephane Bessis 10/18/2023 15:56:56 PM
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REVISED DATE: **REVIDATE**

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100991	86	90

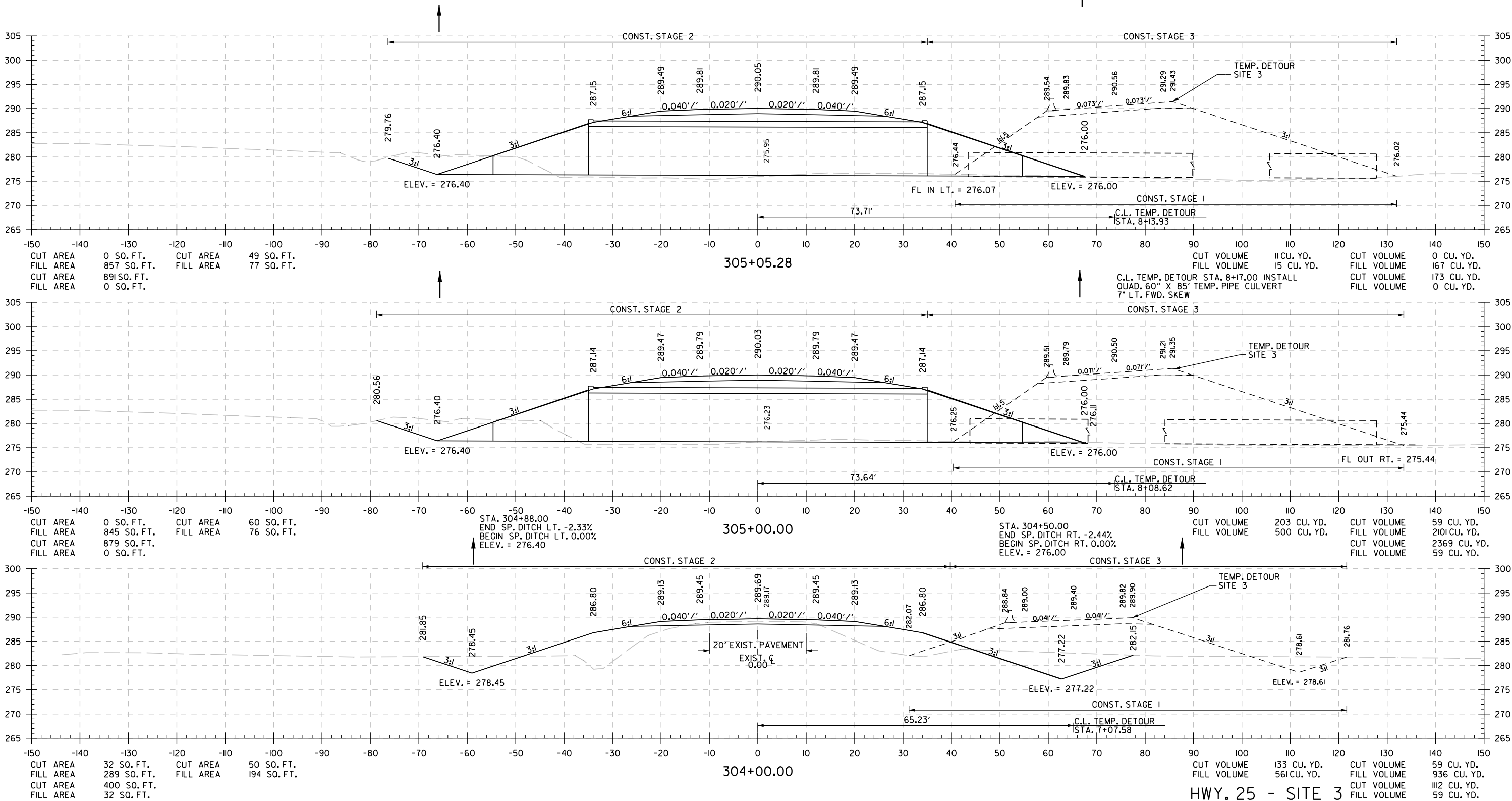
2 CROSS SECTIONS

STAGE 1
STAGE 3

STAGE 2

STAGE 2

STAGE 1
STAGE 3



HWY. 25 - SITE 3

STA. 304+00 TO STA. 305+05

Stephane Bessie 10/18/2023 15:55:57 PM
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100991	87	90

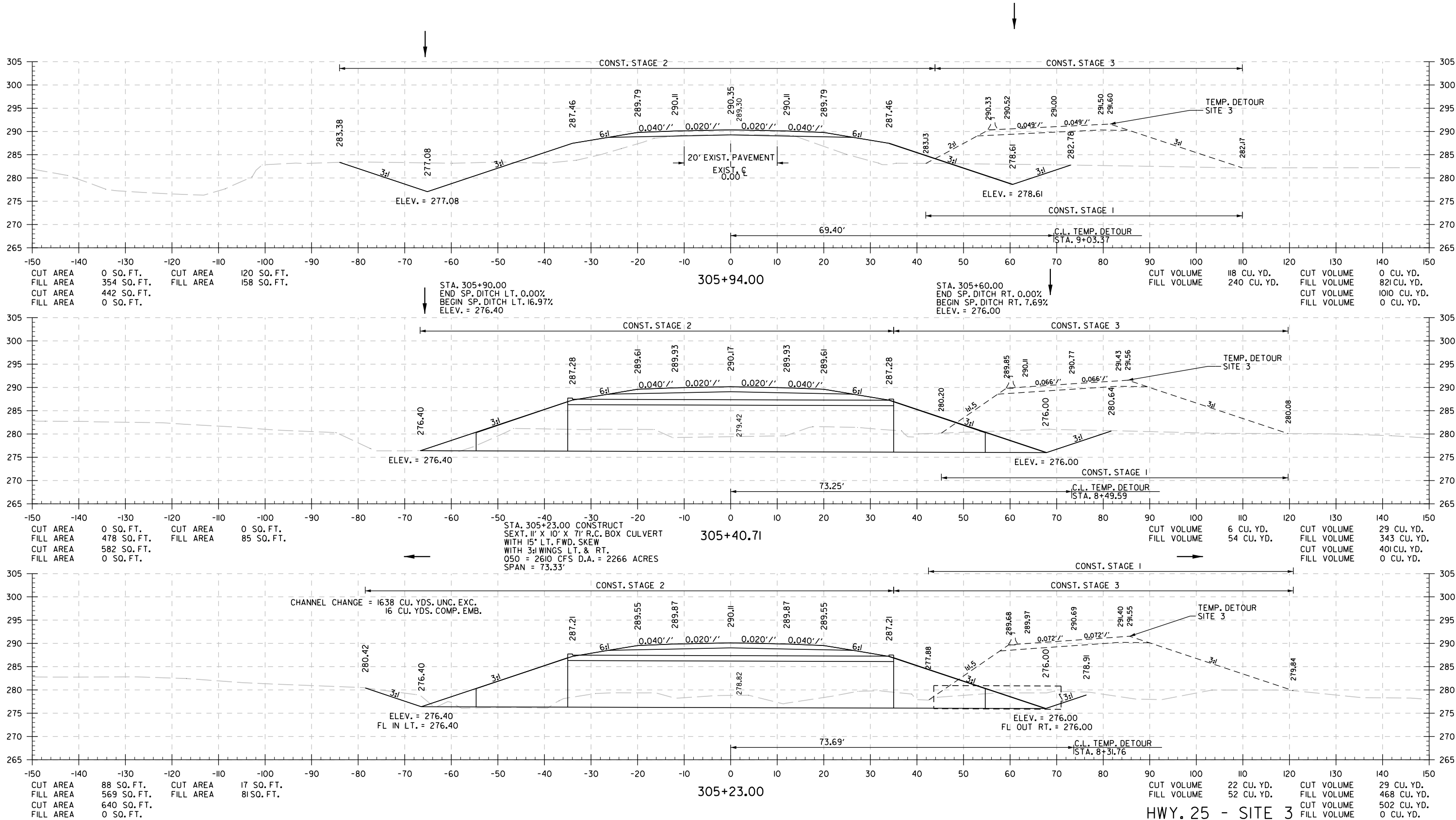
2 CROSS SECTIONS

STAGE 1
STAGE 3

STAGE 2

STAGE 2

STAGE 1
STAGE 3



HWY. 25 - SITE 3

STA. 305+23 TO STA. 305+94

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100991	88	90

2

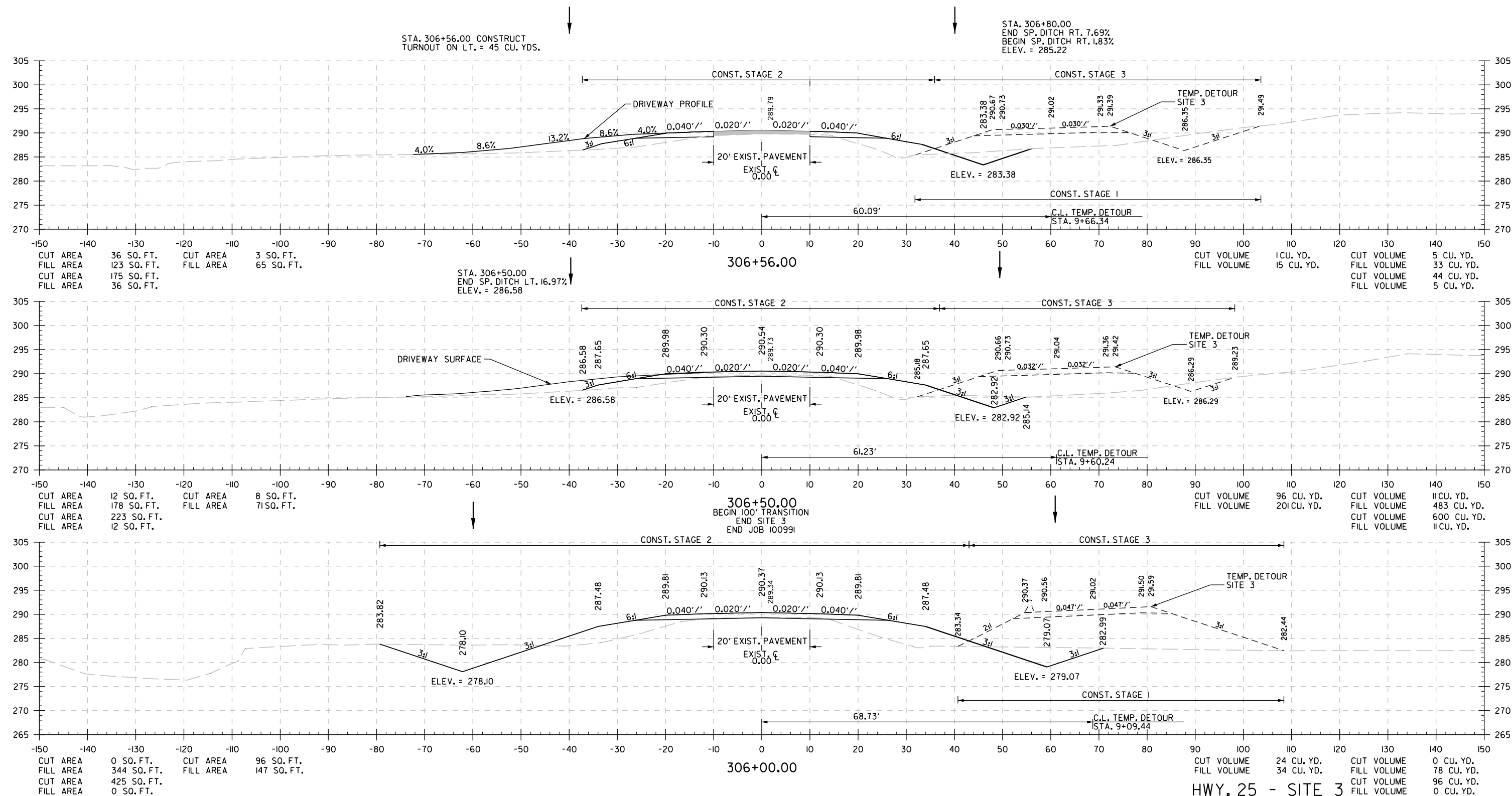
CROSS SECTIONS

STAGE 1
STAGE 3

STAGE 2

STAGE 2

STAGE 1
STAGE 3



HWY. 25 - SITE 3

STA. 306+00 TO STA. 306+56

Stephane.Bessis 10/18/2023 15:55:57 PM
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REVISD DATE: **REVDATE**

STAGE 1
STAGE 3

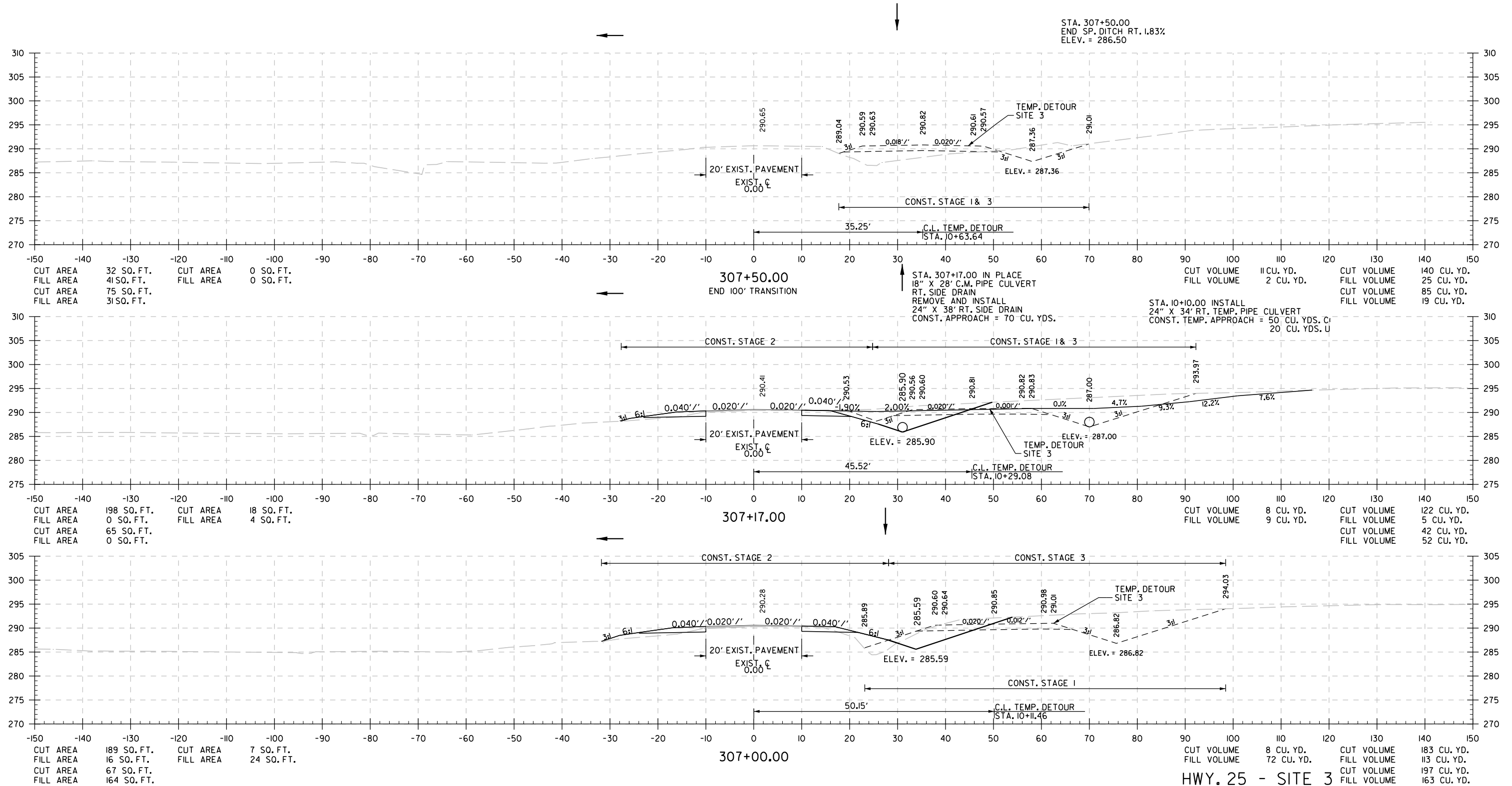
STAGE 2

STAGE 2

STAGE 1
STAGE 3

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100991	89	90

2 CROSS SECTIONS



HWY. 25 - SITE 3

STA. 307+00 TO STA. 307+50

Stephane.Bessis 10/18/2023 15:55:58 PM
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REVISED DATE: **REVDATE**

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100991	90	90

2

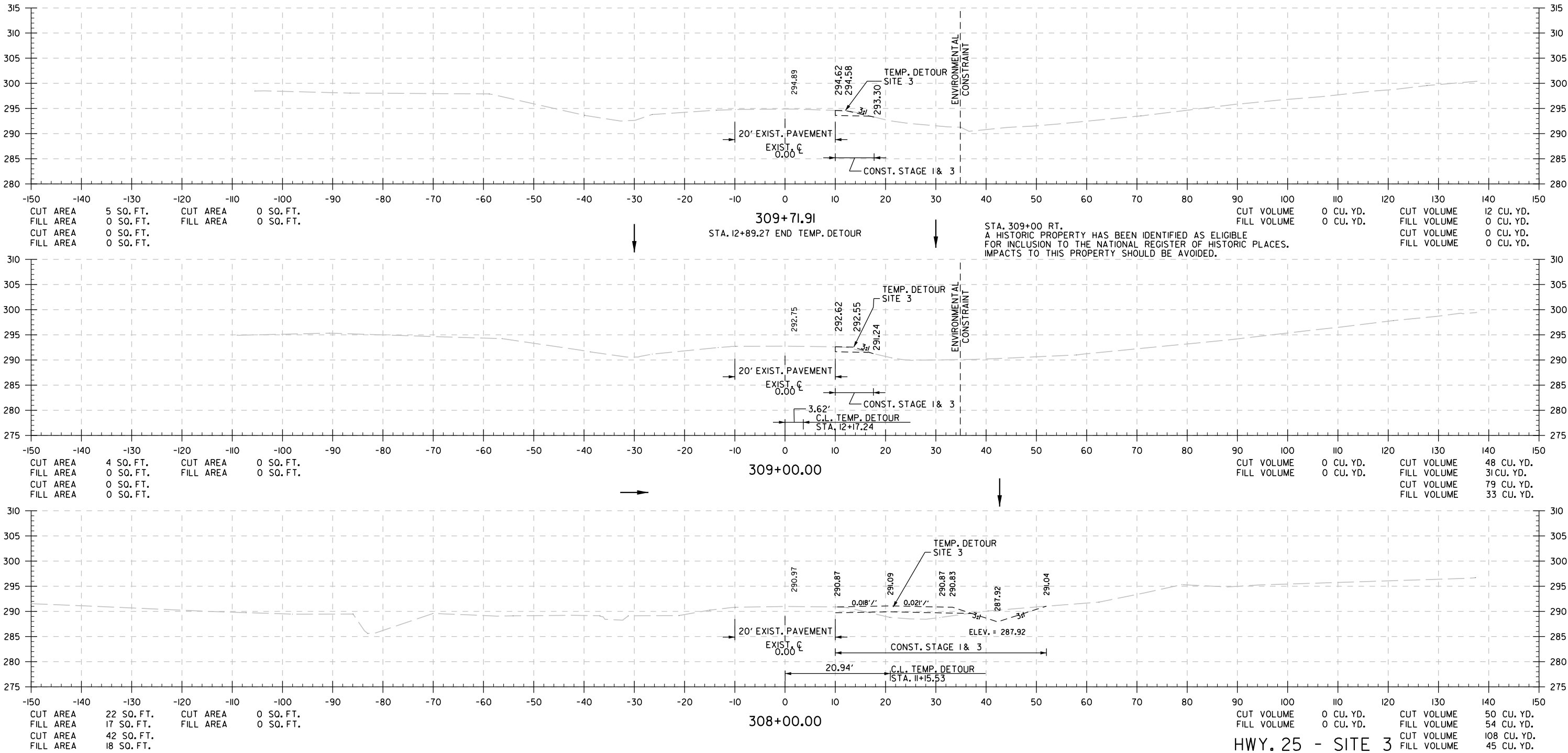
CROSS SECTIONS

STAGE 1
STAGE 3

STAGE 2

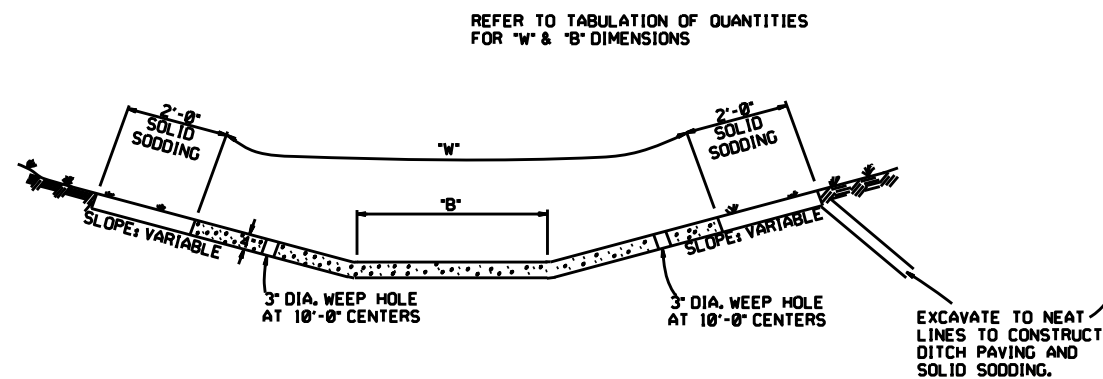
STAGE 2

STAGE 1
STAGE 3

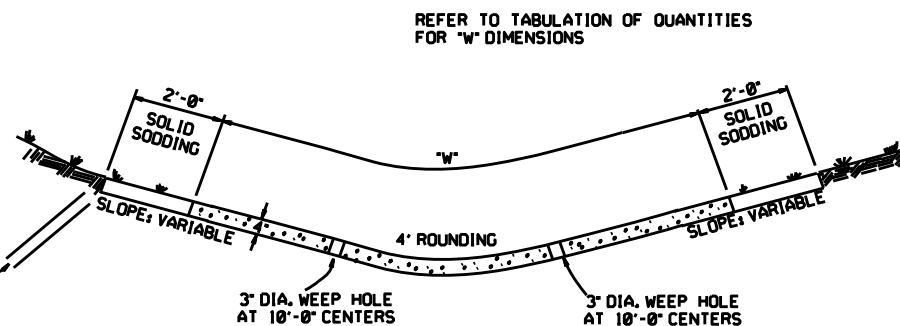


HWY. 25 - SITE 3

STA. 308+00 TO STA. 309+72

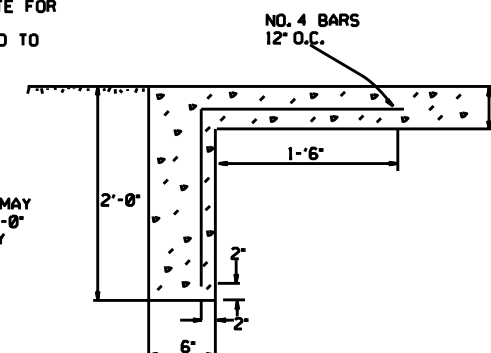


TYPE A

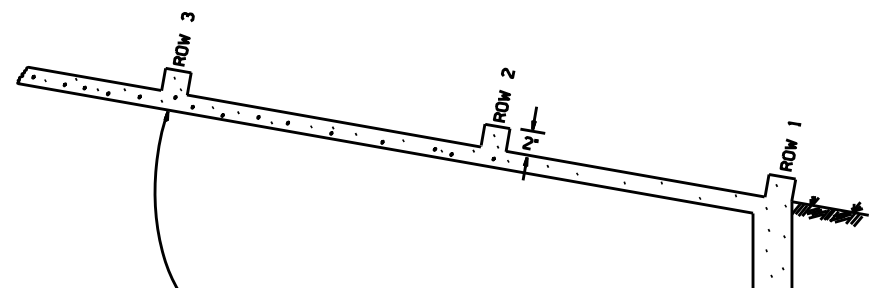


TYPE B

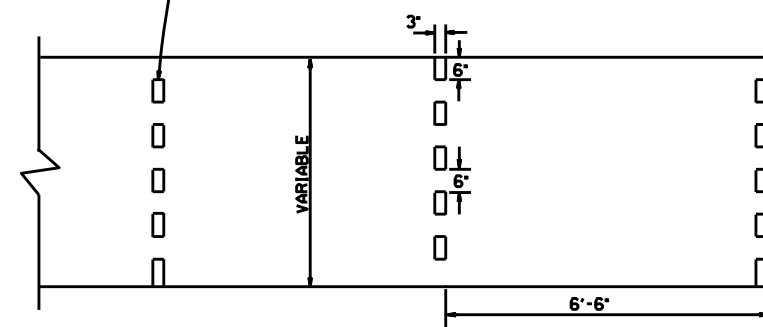
THE STEEL AND ADDITIONAL CONCRETE FOR THE WALLS SHALL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR "CONCRETE DITCH PAVING."



TOE WALL DETAIL FOR CONCRETE DITCH PAVING



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

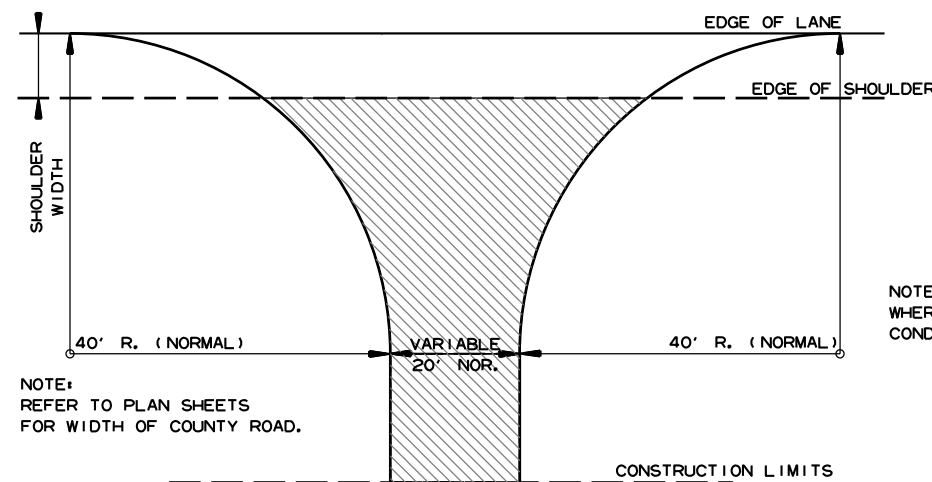
1' WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

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	
11-30-88	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.	632-1-9-87
11-3-86	ADDED NOTE TO ENERGY DISS.	639-12-1-86
11-1-84	ENERGY DISSIPATOR DETAILS ADDED	508-11-1-84
11-1-84	EXCAVATION DETAILS ADDED	
10-2-72	TYPED A & B	
	REVISED AND REDRAWN	508-10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

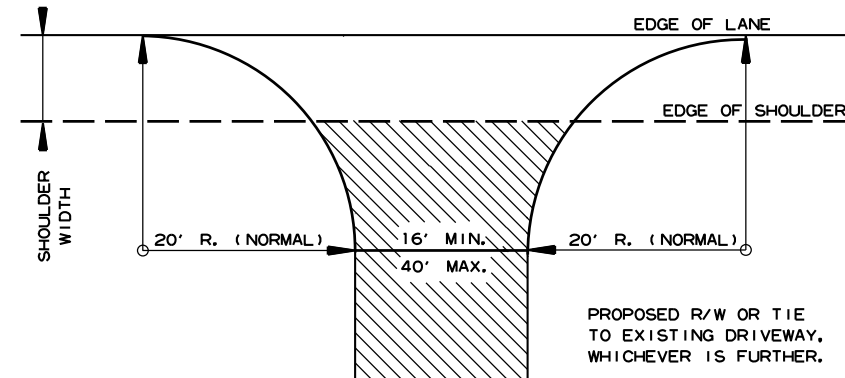
CONCRETE DITCH PAVING

STANDARD DRAWING CDP-1



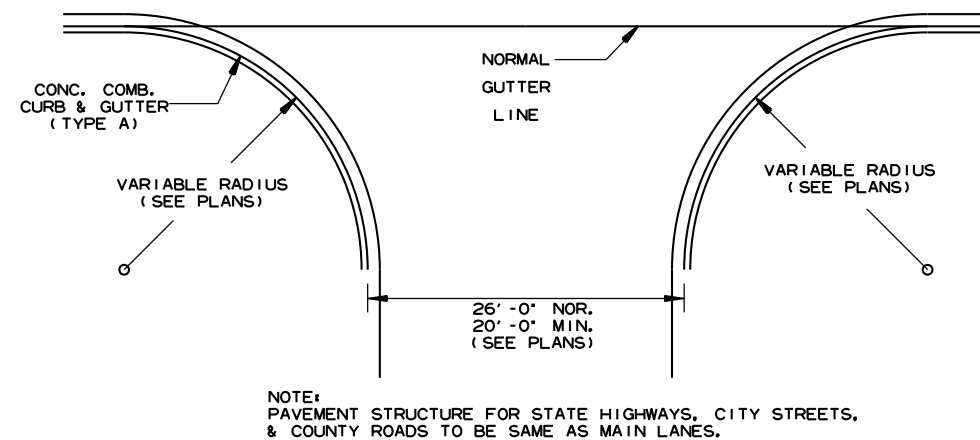
DETAIL FOR COUNTY ROAD TURNOUTS
OPEN SHOULDER SECTION

ACHM SURFACE COURSE (1/2")
(220 LBS. PER SQ. YD.) AND
AGGREGATE BASE COURSE (CLASS 7)
7" COMP. DEPTH, UNLESS OTHERWISE
SPECIFIED IN PLANS.

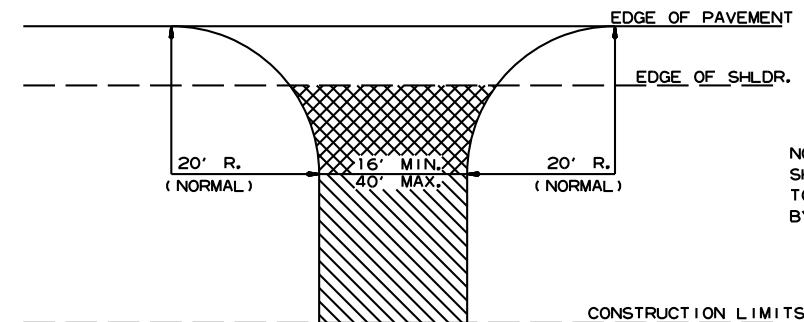


DETAIL FOR DRIVEWAY TURNOUTS
OPEN SHOULDER SECTION
(ARTERIALS)

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



DETAIL OF TURNOUTS, ASPHALT STREETS,
COUNTY ROADS & STATE HIGHWAYS
CURB & GUTTER SECTION



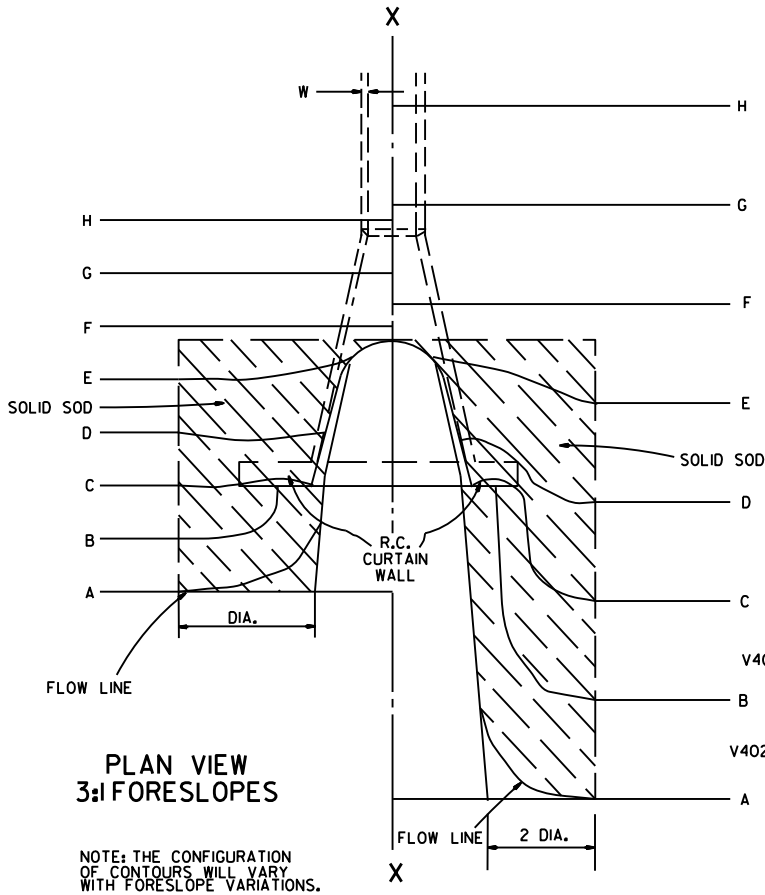
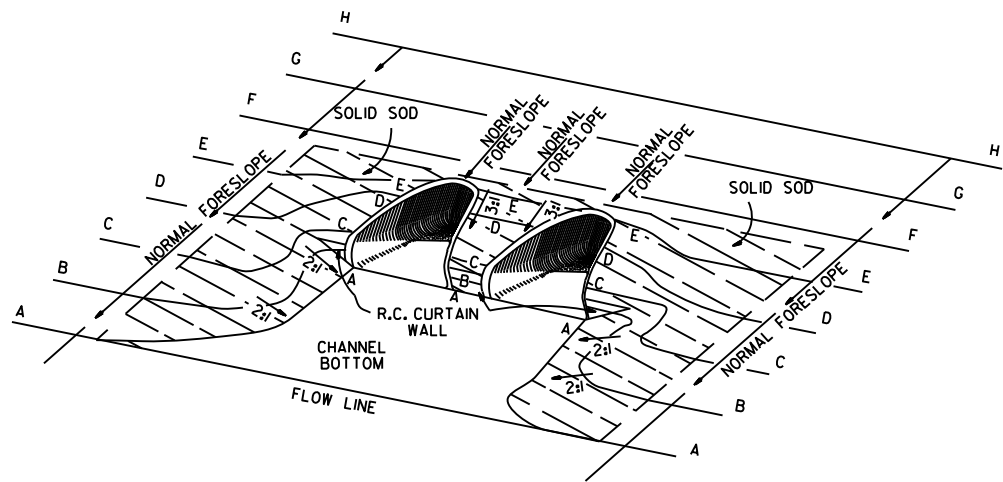
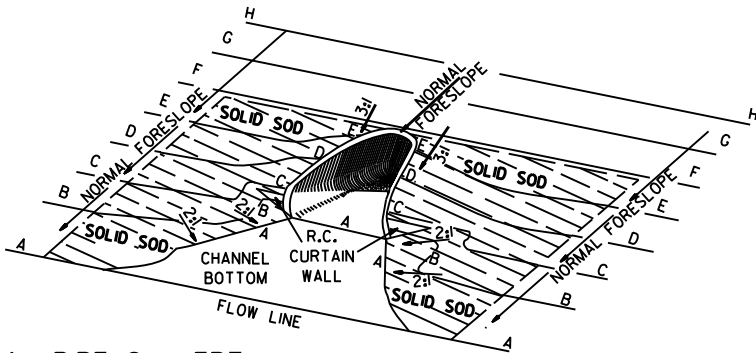
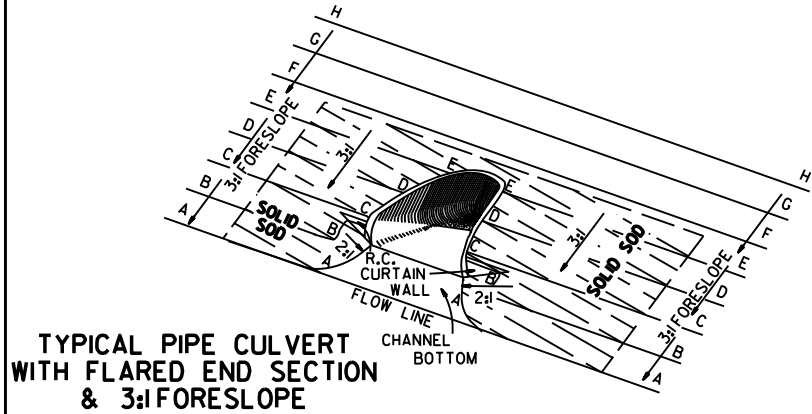
ASPHALT CONCRETE HOT MIX SURFACE
COURSE (220 LBS. PER SQ. YD.)
AGGREGATE BASE COURSE (CLASS 7)
7" COMP. DEPTH IF ASPHALT DRIVE EXIST OR
6" CONCRETE IF CONCRETE DRIVE EXIST.

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

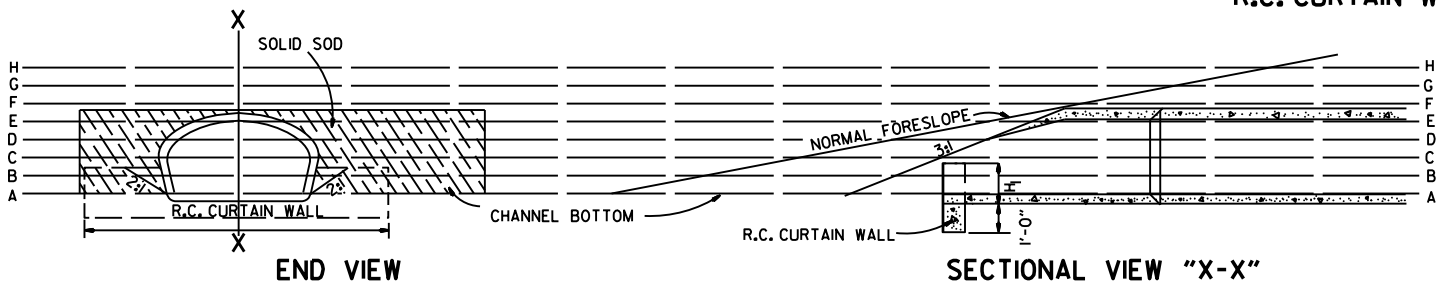
DETAIL FOR DRIVEWAY TURNOUTS
(COLLECTORS)

5-19-22		ISSUED
DATE REV	DATE FILMED	DESCRIPTION

ARKANSAS STATE HIGHWAY COMMISSION
DETAILS OF DRIVEWAYS & STREET
TURNOUTS
STANDARD DRAWING DR-2



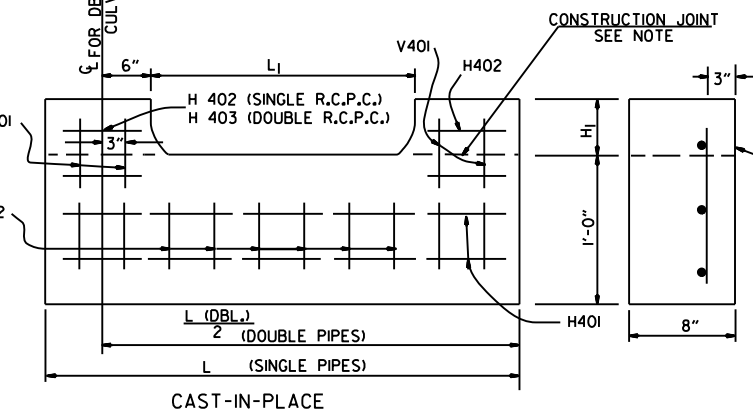
PLAN VIEW
FLATTENED FORESLOPES



R.C. CURTAIN WALL
DIMENSIONS & QUANTITIES

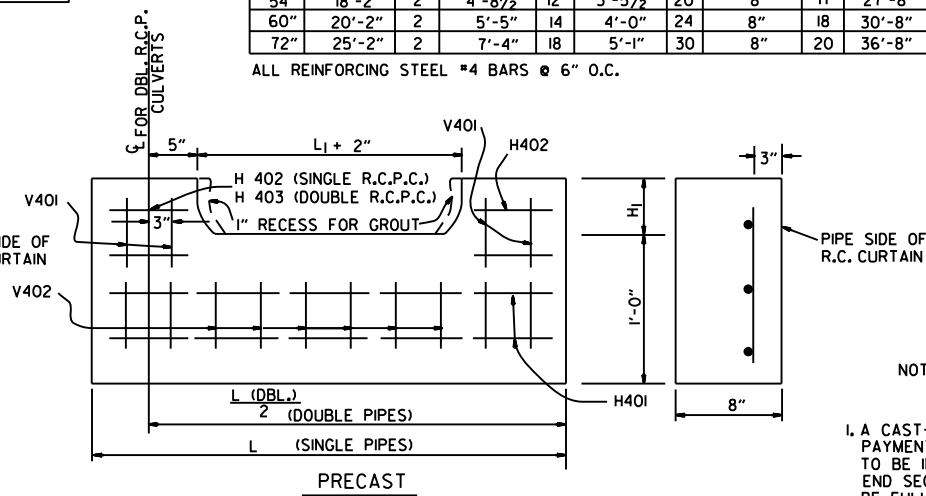
PIPE DIA.	H ₁	L ₁	L	L (DBL.) 2	SINGLE R.C.P.C.		DOUBLE R.C.P.C.	
					CONC.	REINF. STEEL	CONC.	REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	11 1/2"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0 1/2"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3 1/2"	5'-7"	11'-0"	9'-0"	0.45	39.0	0.67	59.0
36"	1'-7"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

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



NOTE: THE PORTION OF THE R.C. CURTAIN WALL BENEATH THE FLARED END SECTION (LOWER 1'-0") SHALL BE PLACED MONOLITHICALLY. THE FLARED END SECTION SHALL THEN BE SET IN PLACE & THE REMAINING PORTIONS OF THE R.C. CURTAIN WALL PLACED.

R.C. CURTAIN WALL DETAILS



NOTE: THE PRECAST CURTAIN WALL WILL BE SET AND BACKFILLED WITH COMPACTED MATERIAL. THE FLARED END SECTION SHALL THEN BE SET IN PLACE AND THE 1" RECESS FILLED WITH GROUT. WHERE "L" EXCEEDS 11' THE CURTAIN WALL MAY BE CAST IN TWO (2) OR MORE SECTIONS. THE METHOD OF JOINING THE SECTIONS FOR INSTALLATION SHALL BE APPROVED BY THE ENGINEER.

REINFORCING STEEL SCHEDULE

PIPE DIA.	SINGLE R.C. PIPE CULVERT								DOUBLE R.C. PIPE CULVERT									
	H401		H402		V401		V402		H401		H402		H403		V401		V402	
	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.
18"	7'-8"	2	1'-11½"	4	1'-7½"	8	8"	8	12'-2"	2	1'-11½"	4	8"	2	1'-7½"	10	8"	14
24"	9'-2"	2	2'-2"	4	1'-8½"	10	8"	9	14'-8"	2	2'-2"	4	8"	2	1'-8½"	12	8"	18
30"	10'-8"	2	2'-4½"	4	1'-11½"	10	8"	12	17'-8"	2	2'-4½"	4	8"	2	1'-11½"	14	8"	22
36"	12'-8"	2	2'-10"	6	2'-3"	12	8"	14	20'-8"	2	2'-10"	6	8"	3	2'-3"	14	8"	28
42"	15'-2"	2	3'-9½"	8	2'-9½"	16	8"	15	23'-8"	2	3'-9½"	8	8"	4	2'-9½"	18	8"	30
48"	16'-8"	2	4'-3"	10	3'-1"	18	8"	16	25'-8"	2	4'-3"	10	8"	5	3'-1"	20	8"	32
54"	18'-2"	2	4'-8½"	12	3'-5½"	20	8"	17	27'-8"	2	4'-9"	12	8"	6	3'-5½"	22	8"	34
60"	20'-2"	2	5'-5"	14	4'-0"	24	8"	18	30'-8"	2	5'-5"	14	8"	7	4'-0"	26	8"	36
72"	25'-2"	2	7'-4"	18	5'-1"	30	8"	20	36'-8"	2	7'-4"	18	8"	9	5'-1"	33	8"	40

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

SOLID SODDING

PIPE DIA.	SINGLE R.C.P.C.						DOUBLE R.C.P.C.					
	3:1	4:1	6:1	3:1	4:1	6:1	3:1	4:1	6:1	3:1	4:1	6:1
	SQ. YDS.						SQ. YDS.					
18"	5	7	12	6	8	13	5	7	12	6	8	13
24"	8	12	19	9	13	20	8	12	19	9	13	20
30"	13	18	29	14	19	30	13	18	29	14	19	30
36"	17	26	41	18	28	43	17	26	41	18	28	43
42"	23	35	55	25	37	57	23	35	55	25	37	57
48"	29	46	68	31	48	70	29	46	68	31	48	70
54"	35	57	85	37	59	87	35	57	85	37	59	87
60"	45	62	104	48	65	107	45	62	104	48	65	107
72"	64	92	156	67	95	159	64	92	156	67	95	159

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

- GENERAL NOTES
1. A CAST-IN-PLACE OR PRECAST CURTAIN WALL MAY BE USED. PAYMENT FOR THE CURTAIN WALL SHALL BE CONSIDERED TO BE INCLUDED IN THE UNIT PRICE BID EACH FOR FLARED END SECTIONS OF THE SEVERAL SIZES, WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS INCLUDING REINFORCING STEEL AND CONCRETE; FOR FORMS, MIXING AND PLACING; FOR EXCAVATION AND BACKFILL, AND FOR ALL LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.
 2. ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4".
 3. CONCRETE FOR CURTAIN WALL SHALL MEET THE REQUIREMENTS FOR CLASS A OR S CONCRETE AS PROVIDED IN SECTION 802 OF THE STANDARD SPECIFICATIONS OR FOR PAVING CONCRETE AS PROVIDED IN SECTION 501 OF THE STANDARD SPECIFICATIONS.
 4. WELDED WIRE MESH 3 x 3 W/10 x W/10 MAY BE USED IN LIEU OF REINFORCING BARS.

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

FLARED END SECTION

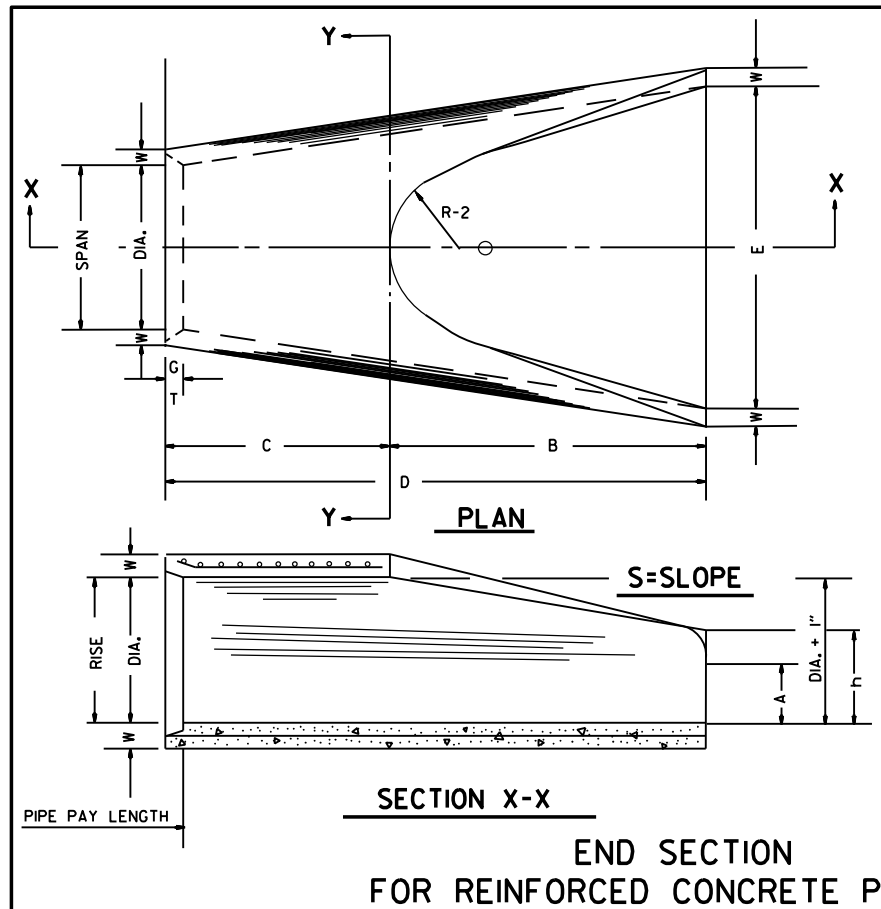
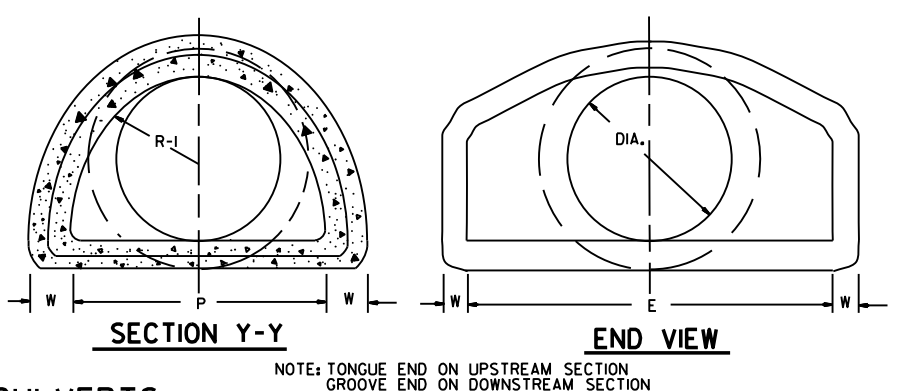
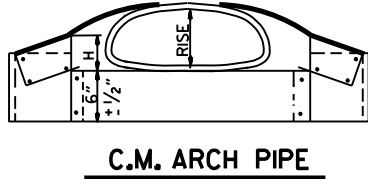
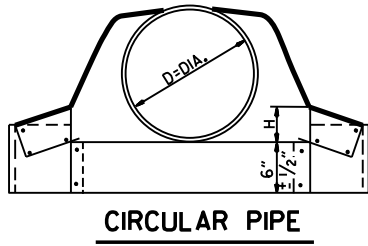
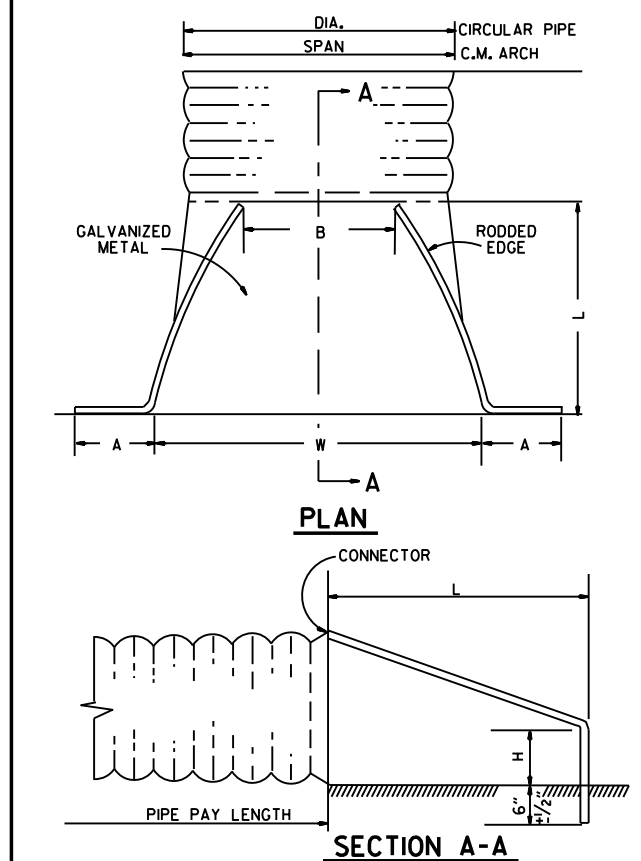
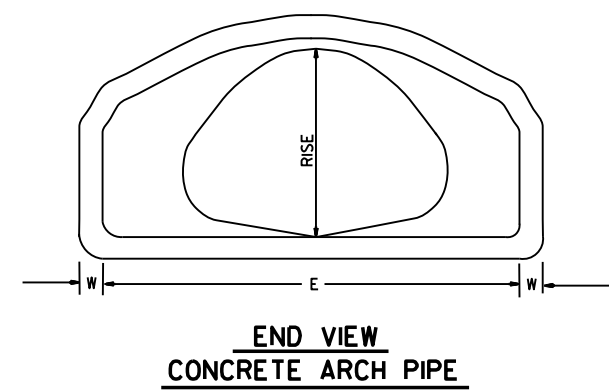


TABLE OF DIMENSIONS														
DIA.	WALL	A	B	C	D	E	S	DIA. + 1"	P	R-1	R-2	G-T	WT.	h
18"	2 1/2"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3:1	19"	29"	15 1/2"	12"	2"	1000	1'-0 1/2"
24"	3"	9 1/2"	3'-7 1/2"	2'-6"	6'-1 1/2"	4'-0"	3:1	25"	33 3/8"	16 1/8"	14"	2 1/2"	1600	1'-1 1/2"
30"	3 1/2"	1'-0"	4'-6"	1'-7 3/4"	6'-1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



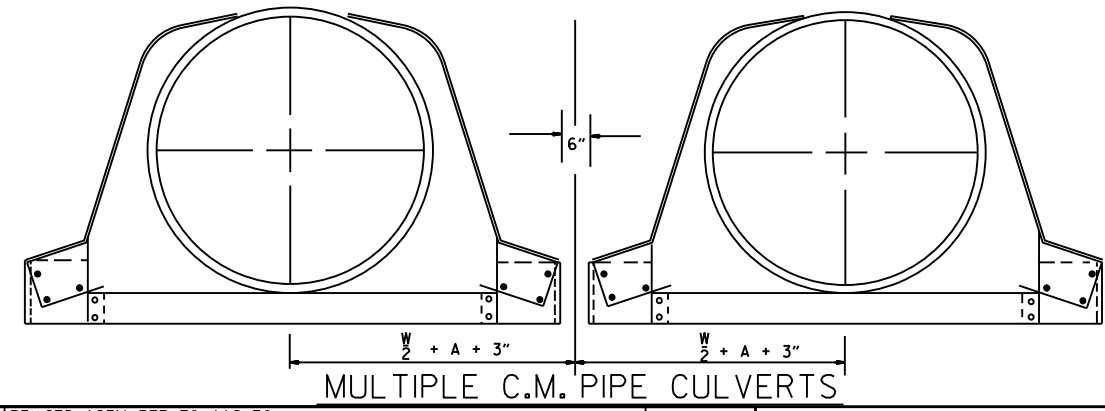
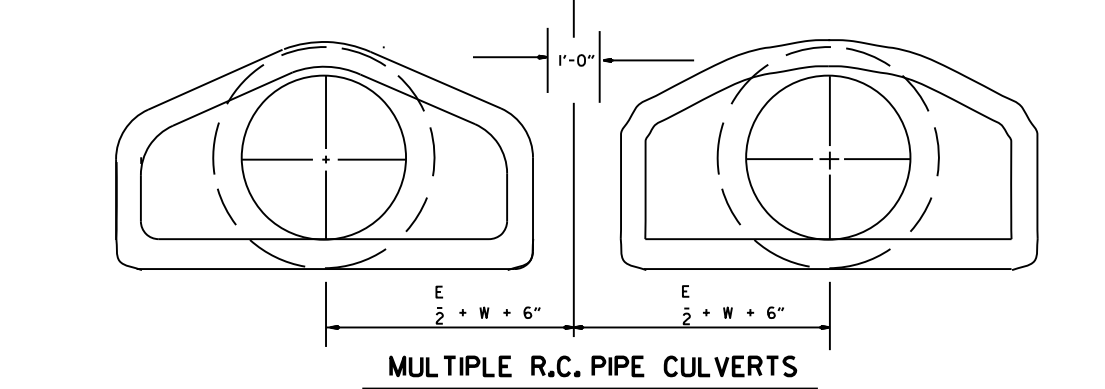
ARCH PIPE														
EQUIV. DIA.	• SPAN		• RISE		W	A	B	C	D	E	P	R2	G-T	S
	AASHTO M 206	AHD NOMINAL	AASHTO M 206	AHD NOMINAL										
INCHES														
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1 1/2"	2 1/2:1
18	22	22	13 1/2	14	2 1/2"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32 1/8"	13"	2 1/2"	2 1/2:1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

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



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

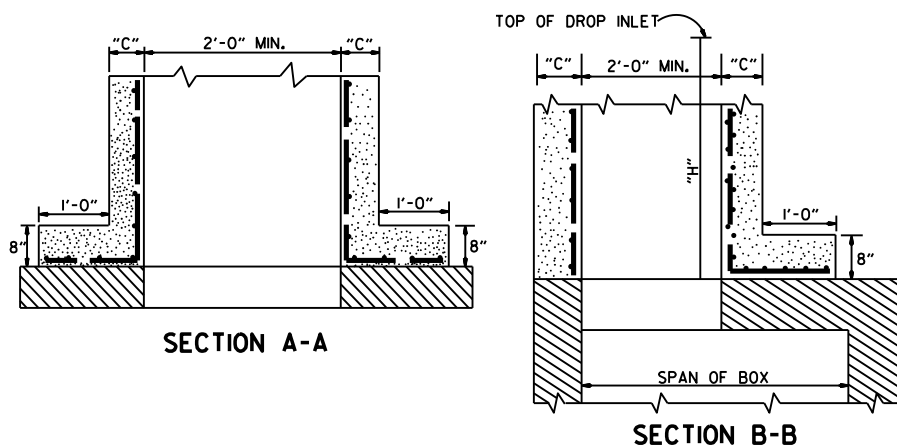
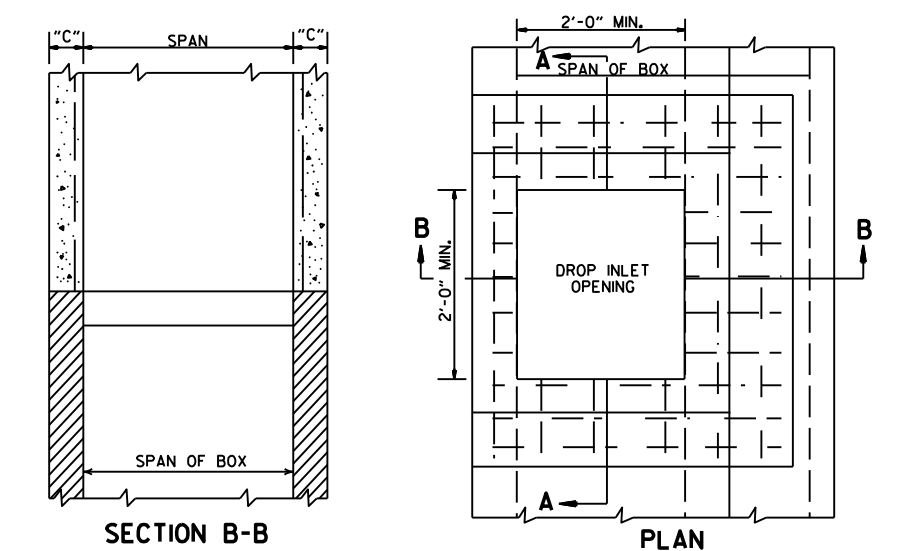
C.M. ARCH PIPE									
EQUIV. DIA.	SPAN	RISE	A 1" $\pm$	B. MAX.	H 1" $\pm$	L 1 1/2" $\pm$	W 2" $\pm$	S	GAUGE
INCHES									
15"	17	13	7	9	6	19	30	2 1/2:1	16
18"	21	15	7	10	6	23	36	2 1/2:1	16
21"	24	18	8	12	6	28	42	2 1/2:1	16
24"	28	20	9	14	6	32	48	2 1/2:1	16
30"	35	24	10	16	6	39	60	2 1/2:1	14
36"	42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



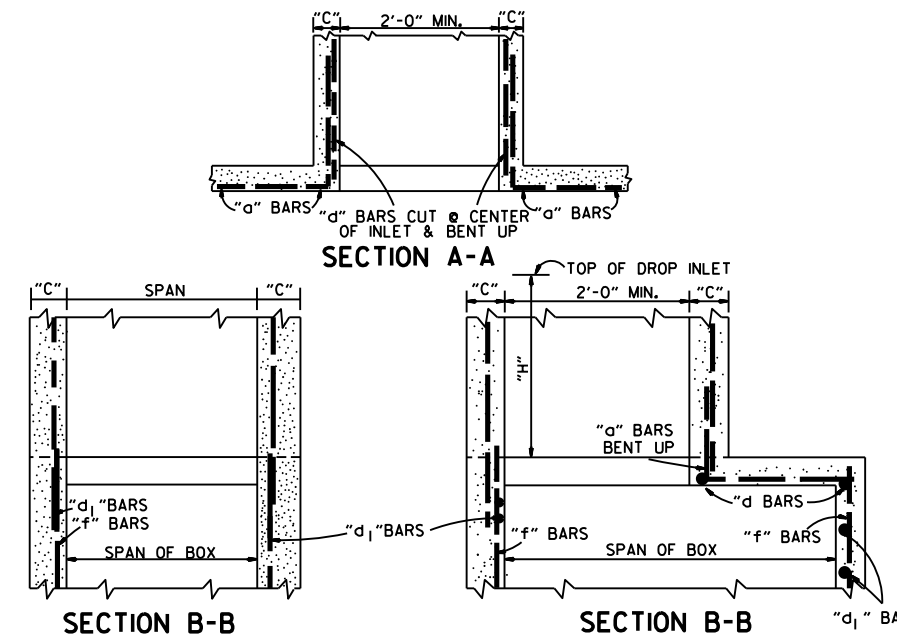
NOTE: ALTERNATE CONNECTIONS TO THE PIPE CULVERTS, IN ACCORDANCE WITH MANUFACTURER'S STANDARD PRACTICES, MAY BE MADE SUBJECT TO THE APPROVAL OF THE ENGINEER.

END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS

10-18-96	REVISED ASTM REF. TO AASHTO	664-5-15-80	ARKANSAS STATE HIGHWAY COMMISSION
5-15-80	REVISED DISTANCE BETWEEN MULTIPLE R.C.P. F.E.S.	752-7-14-78	
7-14-78	C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES	517-8-22-75	
8-22-75	ADDED MULTIPLE PIPE CULVERTS	500-12-5-74	
12-5-74	REMOVED NOTE RE REINF. FOR R.C. F.E.S.	627-5-24-73	
5-24-73	CMP END SECTION, SHOW PIPE PAY LENGTH	760-10-2-72	STANDARD DRAWING FES-2
10-2-72	REVISED AND REDRAWN	FILMED	
DATE	REVISION		

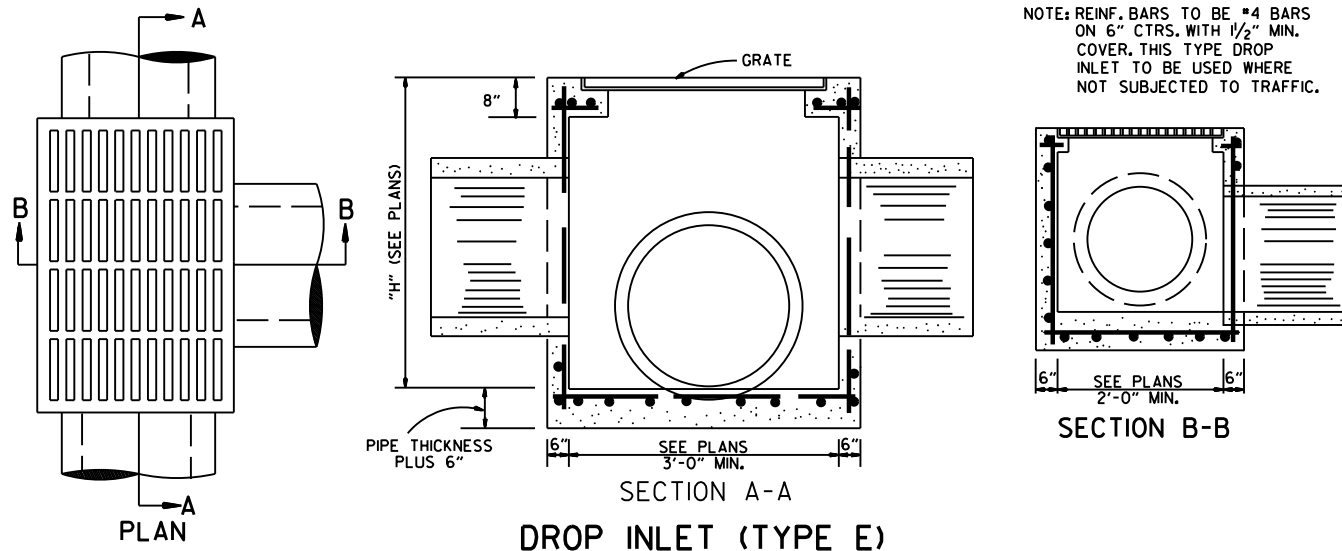


METHOD OF CONSTRUCTING DROP INLET ON EXISTING R.C. BOX CULVERT

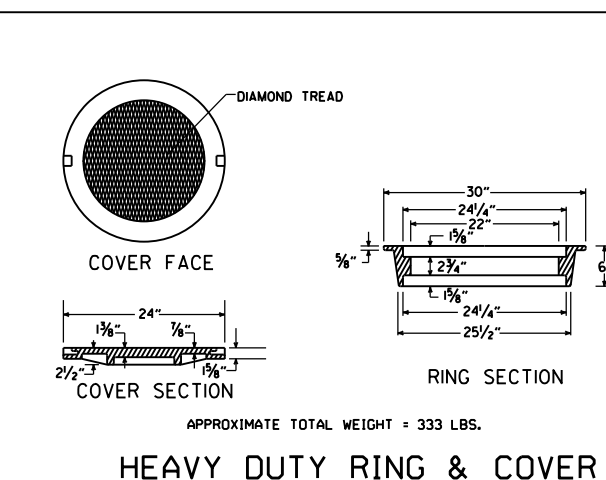


METHOD OF CONSTRUCTING DROP INLET ON NEW R.C. BOX CULVERT

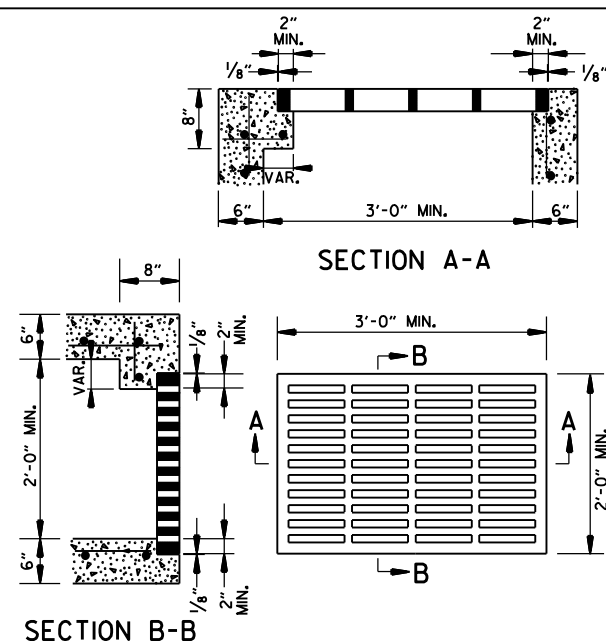
NOTE: "C" DIMENSIONS AND REINFORCING BAR SIZES, SHALL CONFORM TO THOSE SHOWN ON STANDARD DRAWING FOR DROP INLET.



DROP INLET (TYPE E)

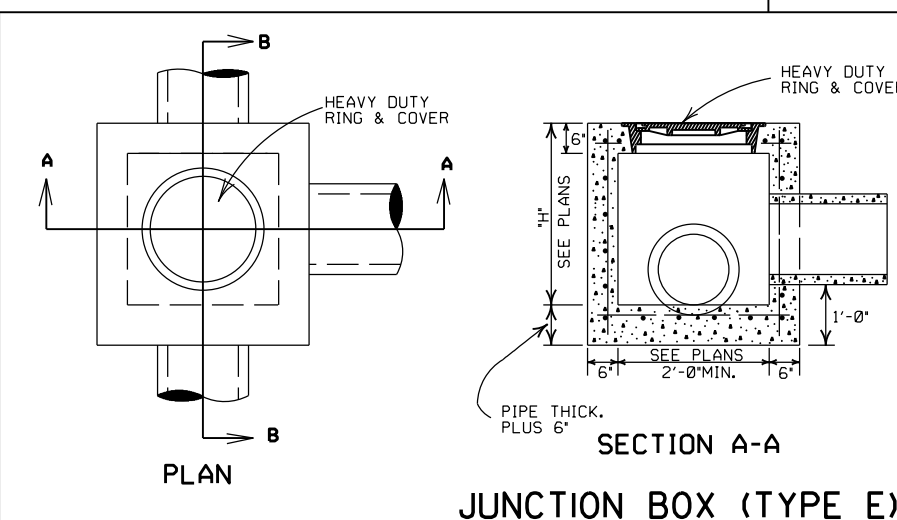


HEAVY DUTY RING & COVER

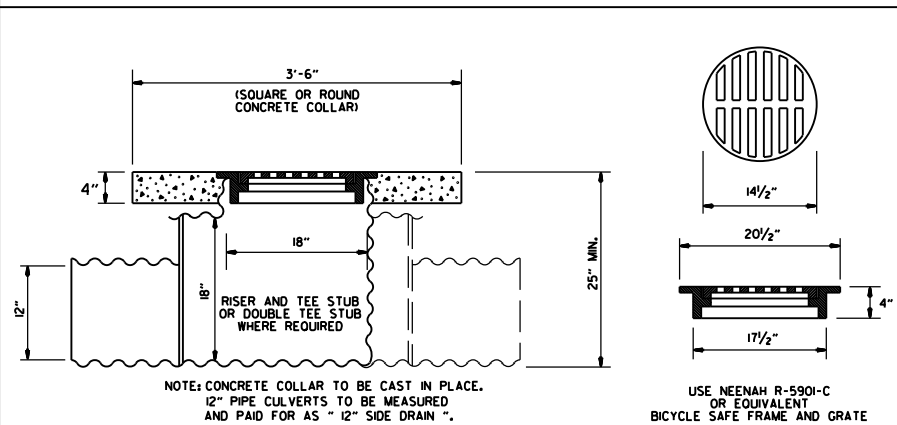


APPROXIMATE MINIMUM WATERWAY OPENING = 260 SQ. IN.

GRATE FOR TYPE E DROP INLET



JUNCTION BOX (TYPE E)

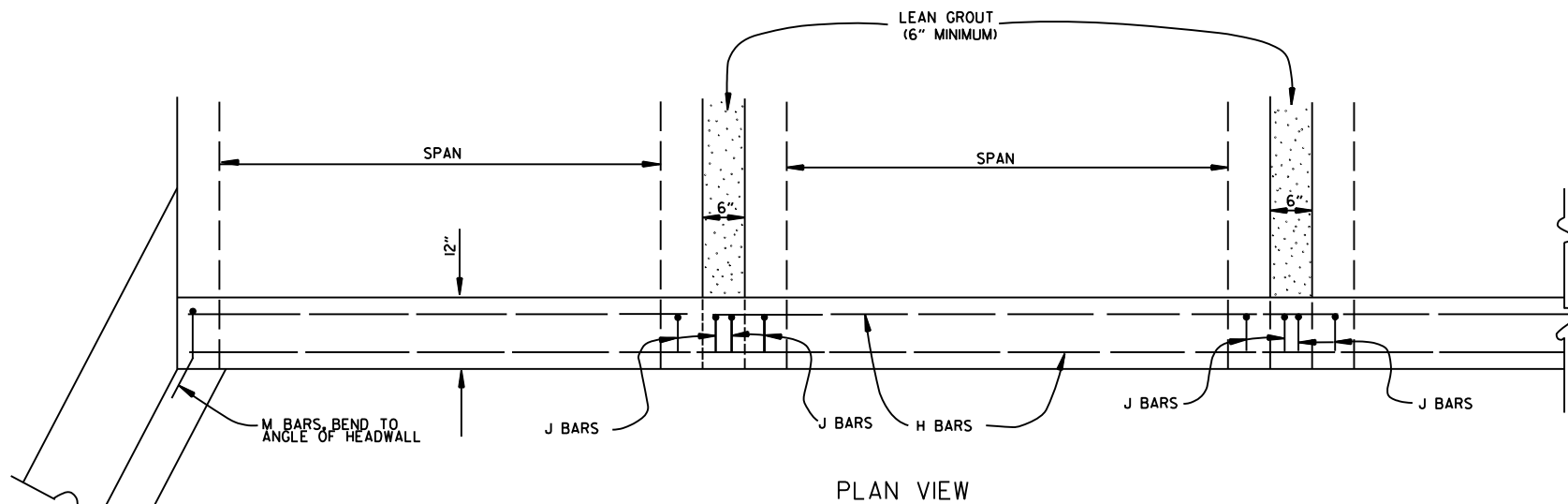


11-16-01	ADDED NOTE 10		
1-12-00	REVISED HEAVY DUTY RING & COVER		
7-02-98	CHANGED GRATE DETAIL, DELETED D (TYPE D), REPLACED RING & COVER W/ HEAVY DUTY RING & COVER, ADDED JUNCTION BOX (TYPE E)		
6-26-97	ADDED DIMENSION TO TYPE IV-A		
10-18-96	ADDED DETAIL OF YARD DRAIN		
8-15-91	DELETE TYPE IV GRATE		
7-15-88	REVISED STEP DETAIL		
5-20-83	REVISED DETAILS OF GRATES (TYPE IV & IV-A)		
2-4-83	ADDED GENERAL NOTE NO. 4		
3-2-81	ADDED TYPE IV-A GRATE		
5-22-74	DELETED INLET (TYPE F) & GRATE (TYPE III)		
10-2-72	REVISED AND REDRAWN		
DATE REV.	REVISION	DATE FILMED	

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS & JUNCTION BOXES

STANDARD DRAWING FPC-9



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 $\frac{3}{4}$ " CHAMFERS.

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

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

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

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

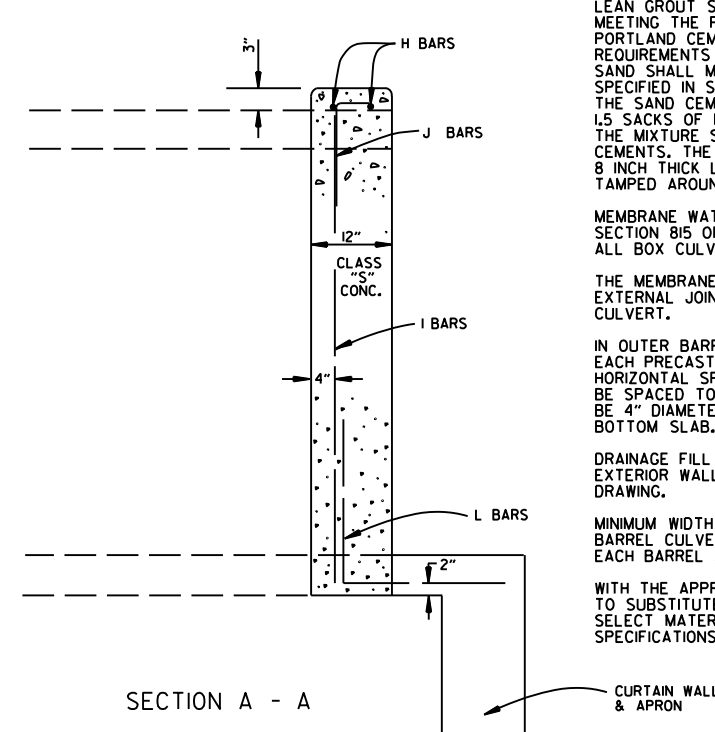
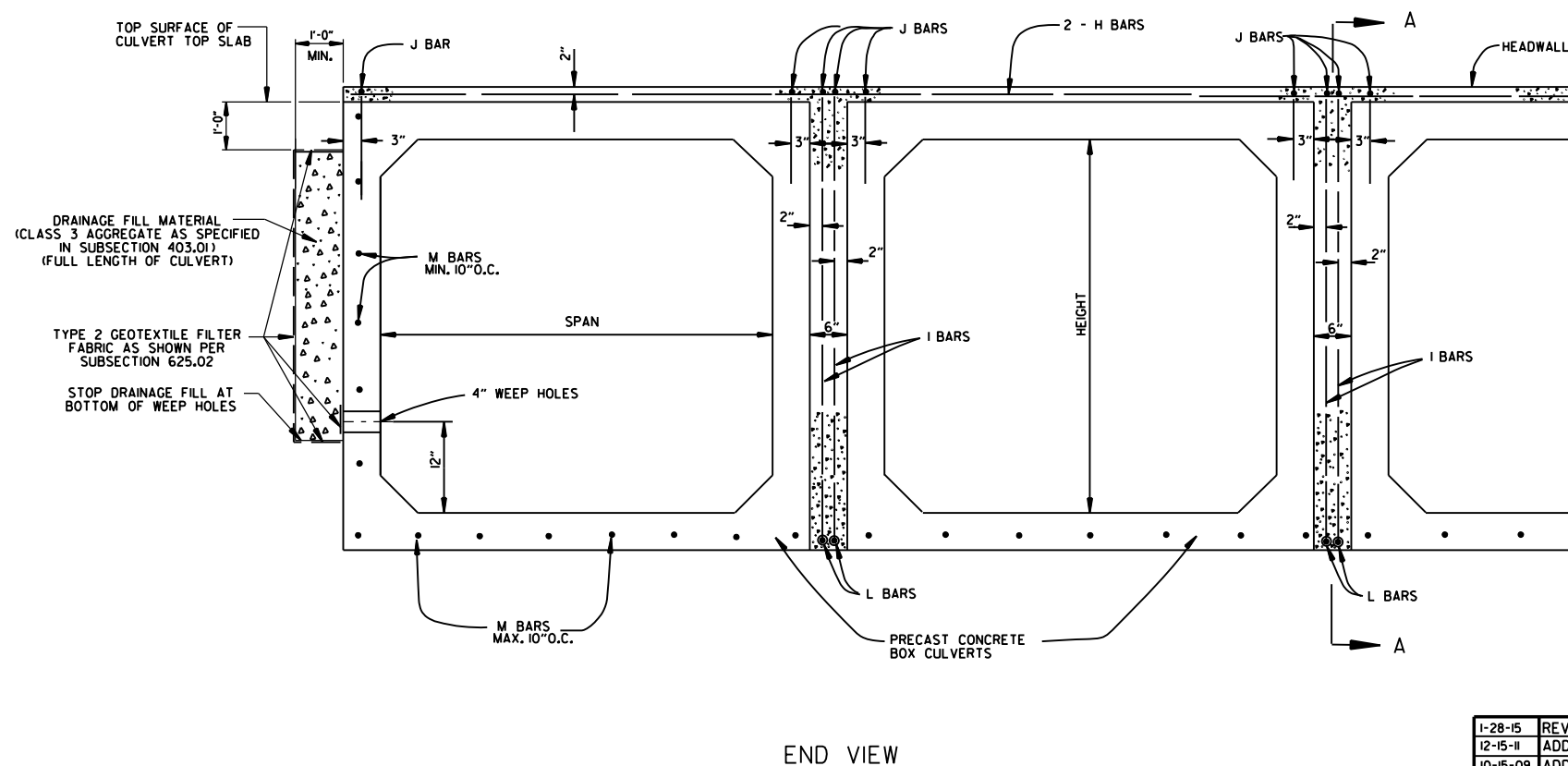
THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

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

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

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

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



DATE	REVISION	DATE FILMED
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

REINFORCED CONCRETE
ARCH PIPE DIMENSIONS

EQUIV. DIA.	SPAN		RISE	
	AASHTO M 206	ARDOT NOMINAL	AASHTO M 206	ARDOT NOMINAL
INCHES	INCHES			
15	18	18	11	11
18	22	22	13½	14
21	26	26	15½	16
24	28½	29	18	18
30	36¼	36	22½	23
36	43¾	44	26¾	27
42	51½	51	31¾	31
48	58½	59	36	36
54	65	65	40	40
60	73	73	45	45
72	88	88	54	54
84	102	102	62	62
90	115	115	72	72
96	122	122	77½	77
108	138	138	87½	87
120	154	154	96¾	97
132	168¾	169	106½	107

THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PERCENT FROM THE VALUES SPECIFIED BY AASHTO M206.

REINFORCED CONCRETE
HORIZONTAL ELLIPTICAL
PIPE DIMENSIONS

EQUIV. DIA.	AASHTO M 207	
	SPAN	RISE
INCHES	INCHES	
18	23	14
24	30	19
27	34	22
30	38	24
33	42	27
36	45	29
39	49	32
42	53	34
48	60	38
54	68	43
60	76	48
66	83	53
72	91	58
78	98	63
84	106	68

THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PERCENT FROM THE VALUES SPECIFIED BY AASHTO M207.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. PLACE AND COMPACT THE HAUNCH AREA UP TO THE MIDDLE OF THE PIPE.
5. COMPLETE BACKFILL ACCORDING TO SUBSECTION 606.03.(F)(1).

NOTE: HAUNCH AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF CONCRETE PIPE.

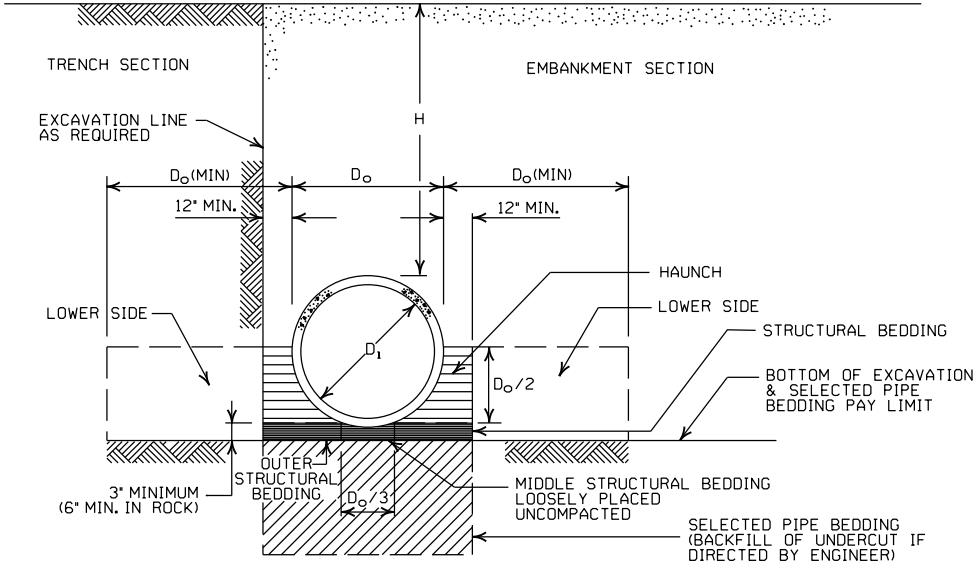
- LEGEND -

D_i = NORMAL INSIDE DIAMETER OF PIPE
D_o = OUTSIDE DIAMETER OF PIPE
H = FILL COVER HEIGHT OVER PIPE (FEET)
MIN. = MINIMUM
= UNDISTURBED SOIL

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

* SM-3 WILL NOT BE ALLOWED.

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



EMBANKMENT AND TRENCH INSTALLATIONS

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

GENERAL NOTES

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

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

	CLASS OF PIPE			
	CLASS III		CLASS IV	CLASS V
INSTALLATION TYPE	TYPE 1 OR 2	TYPE 3	ALL	ALL
PIPE ID (IN.)	FEET			
12-15	2	2.5	2	1
18-24	2.5	3	2	1
27-33	3	4	2	1
36-42	3.5	5	2	1
48	4.5	5.5	2	1
54-60	5	7	2	1
66-78	6	8	2	1
84-108	7.5	8	2	1

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

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

INSTALLATION TYPE	CLASS OF PIPE	
	CLASS III	CLASS IV
	FEET	
TYPE 2 OR TYPE 3	2.5	1.5

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

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

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

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

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

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

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

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

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

ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE PIPE CULVERT
FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1



CORRUGATED STEEL PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINIMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS (INCHES)				
		0.064	0.079	0.109	0.138	0.168
2 3/4 INCH BY 1/2 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM						
12	1	84	91			
15	1	67	73			
18	1	56	61			
24	1	42	46	59		
30	2	34	36	47		
36	2		30	39	41	
42	2		43	67	70	73
48	2		37	58	61	64
② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, BOLTED, OR HELICAL LOCK-SEAM						
36	1	48	60	88	111	118
42	1	41	51	72	90	102
48	1	36	45	64	77	85
54	2	32	40	59	71	79
60	2	29	36	53	64	71
66	2	26	33	47	58	64
72	2	24	30	44	53	59
78	2		28	41	49	54
84	2		26	38	45	51
90	2		24	35	43	45
96	2		22	33	40	44
102	2			31	38	42
108	2			30	35	39
114	2			28	34	37
120	2			27	32	35

CORRUGATED ALUMINUM PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINIMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS IN INCHES				
		0.060	0.075	0.105	0.135	0.164
		2 3/4 INCH BY 1/2 INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM				
12	1	45	45			
18	2	30	30	52		
24	2	22	22	39	41	
30	2		18	31	32	34
36	2.5		15	26	27	28
42	2			43	43	44
48	2			40	41	43
54	2			35	37	38
60	2				33	34
66	2					31
72	2					29

CORRUGATED METAL PIPE ARCHES

EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINIMUM CORNER RADIUS (INCHES)	STEEL				ALUMINUM		
			MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)	MAX. HEIGHT OF FILL, "H" (FT.)	MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)	MAX. HEIGHT OF FILL, "H" (FT.)	
				INSTALLATION	INSTALLATION		INSTALLATION	INSTALLATION	
				TYPE 1	TYPE 1		TYPE 1	TYPE 1	
			2 3/4 INCH BY 1/2 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM				2 3/4 INCH BY 1/2 INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM		
15	17x13	3	0.064	2	15	0.060	2	15	
18	21x15	3	0.064	2	15	0.060	2	15	
21	24x18	3	0.064	2.25	15	0.060	2.25	15	
24	28x20	3	0.064	2.5	15	0.075	2.5	15	
30	35x24	3	0.079	3	12	0.075	3	12	
36	42x29	3 1/2	0.079	3	12	0.105	3	12	
42	49x33	4	0.079	3	12	0.105	3	12	
48	57x38	5	0.109	3	13	0.135	3	13	
54	64x43	6	0.109	3	14	0.135	3	14	
60	71x47	7	0.138	3	15	0.164	3	15	
66	77x52	8	0.168	3	15				
72	83x57	9	0.168	3	15				
			② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM				① FOR MINIMUM COVER VALUES, "H" SHALL ② WHERE THE STANDARD 2 2/3"x 1/2" COR WITH A 3' x 1' OR 5' x 1' CORRUGATION OR GREATER THAN THE MAXIMUM FILL		
			INSTALLATION		INSTALLATION				
			TYPE 2	TYPE 1	TYPE 2	TYPE 1			
36	40x31	5	0.079	3	2	12	15		
42	46x36	6	0.079	3	2	13	15		
48	53x41	7	0.079	3	2	13	15		
54	60x46	8	0.079	3	2	13	15		
60	66x51	9	0.079	3	2	13	15		
66	73x55	12	0.079	3	2	15	15		
72	81x59	14	0.079	3	2	15	15		
78	87x63	14	0.079	3	2	15	15		
84	95x67	16	0.109	3	2	15	15		
90	103x71	16	0.109	3	2	15	15		
96	112x75	18	0.109	3	2	15	15		
102	117x79	18	0.109	3	2	15	15		
108	128x83	18	0.138	3	2	15	15		

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. COMPLETE STRUCTURAL BACKFILL OPERATION BY WORKING FROM SIDE TO SIDE OF THE PIPE. THE SIDE TO SIDE STRUCTURAL BACKFILL DIFFERENTIAL SHALL NOT EXCEED 24 INCHES OR 1/3 THE SIZE OF THE PIPE, WHICHEVER IS LESS.

NOTE: STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF METAL PIPE.

INSTALLATION TYPE	MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 1	AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7)
TYPE 2	SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4) OR TYPE 1 INSTALLATION MATERIAL ③

③ SM-3 WILL NOT BE ALLOWED.

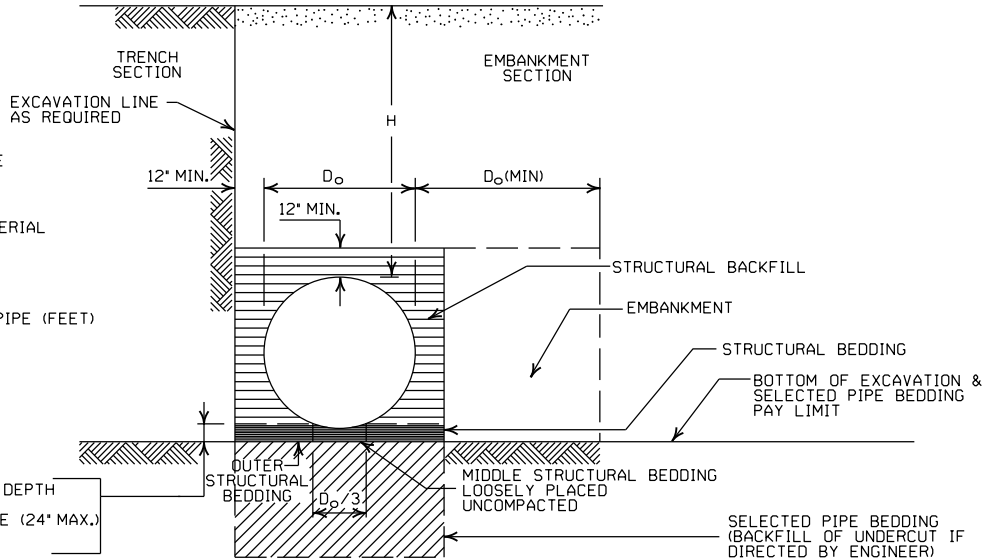
EQUIVALENT METAL THICKNESSES AND GAUGES

METAL THICKNESS IN INCHES			GAUGE NUMBER
STEEL			
ZINC COATED	UNCOATED	ALUMINUM	
0.064	0.0598	0.060	16
0.079	0.0747	0.075	14
0.109	0.1046	0.105	12
0.138	0.1345	0.135	10
0.168	0.1644	0.164	8

- LEGEND -

- D_o = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM
===== = STRUCTURAL BACKFILL MATERIAL
||||||| = UNDISTURBED SOIL
EQUIV. DIA. = EQUIVALENT DIAMETER
H = FILL COVER HEIGHT OVER PIPE (FEET)

IN SOIL-MIN. EQUALS TWICE CORRUGATION DEPTH
IN ROCK-MIN. EQUALS GREATER OF:
1/2" PER FOOT OF FILL OVER PIPE (24" MAX.)
TWICE CORRUGATION DEPTH



EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE (ROUND).
3. INSTALLATION TYPE 1 SHALL BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 2 3/4" X 1/2" CORRUGATION.
4. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 3" X 1" OR 5" X 1" CORRUGATION.

GENERAL NOTES

1. METAL PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION), WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. METAL PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. METAL PIPE CULVERT MATERIALS AND INSTALLATIONS SHALL CONFORM TO SECTION 606 AND JOB SPECIAL PROVISION "METAL PIPE".
4. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT.
5. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS.
6. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
7. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
8. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
9. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."

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

② WHERE THE STANDARD 2 2/3" X 1/2" CORRUGATION AND GAUGE IS SPECIFIED FOR A GIVEN DIAMETER, A PIPE OF THE SAME DIAMETER WITH A 3" X 1" OR 5" X 1" CORRUGATION MAY BE SUBSTITUTED, PROVIDING IT IS GAUGED FOR A FILL HEIGHT CONDITION EQUAL TO OR GREATER THAN THE MAXIMUM FILL HEIGHT CONDITION FOR THE SPECIFIED GAUGE AND CORRUGATION.

2-27-14	REVISED GENERAL NOTE 1	
12-15-11	REVISED FOR LRFD DESIGN SPECS	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	
DATE	REVISION	DATE FILMED

ARKANSAS STATE HIGHWAY COMMISSION

METAL PIPE CULVERT
FILL HEIGHTS & BEDDING

STANDARD DRAWING PCM-1



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

- AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL.
 - SM3 WILL NOT BE ALLOWED.
 - STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1/2 INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.
- STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF HDPE PIPE.

MINIMUM TRENCH WIDTH
BASED ON FILL HEIGHT "H"

PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" ≥ 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"
42"	7'-0"	10'-6"
48"	8'-0"	12'-0"

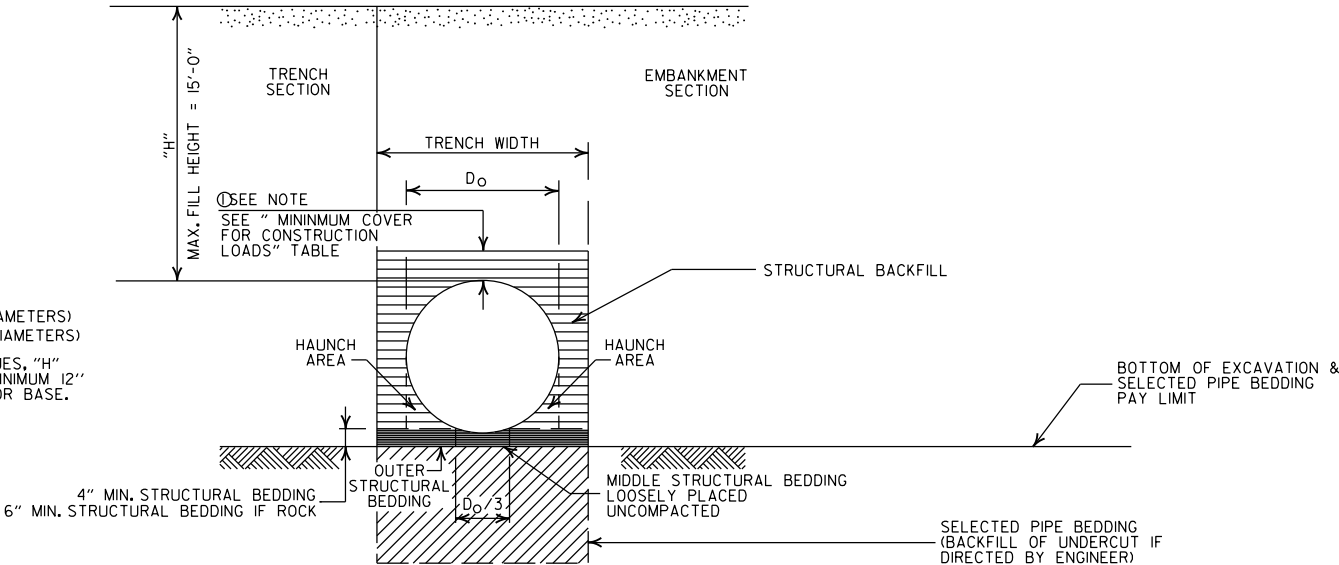
NOTE:
18" MIN. (18" - 30" DIAMETERS)
24" MIN. (36" - 48" DIAMETERS)
MINIMUM COVER VALUES, "H"
SHALL INCLUDE A MINIMUM 12"
OF PAVEMENT AND/OR BASE.

MULTIPLE INSTALLATION OF
HIGH DENSITY POLYETHYLENE PIPES

PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"
42"	3'-6"
48"	4'-0"

PIPE DIAMETER	MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS			
	18.0-50.0 (KIPS)	50.0-75.0 (KIPS)	75.0-110.0 (KIPS)	110.0-175.0 (KIPS)
36" OR LESS	2'-0"	2'-6"	3'-0"	3'-0"
42" OR GREATER	3'-0"	3'-0"	3'-6"	4'-0"

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



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

- STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

CONSTRUCTION SEQUENCE

- PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
- INSTALL PIPE TO GRADE.
- COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
- THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
- PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

- LEGEND -

- H = FILL HEIGHT (FT.)
D_o = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM
- ===== = STRUCTURAL BACKFILL MATERIAL
===== = UNDISTURBED SOIL

GENERAL NOTES

- PIPE SHALL CONFORM TO AASHTO M294, TYPE S. INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
- PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
- THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
- IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
- WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
- WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."
- FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
- HIGH DENSITY POLYETHYLENE PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
- JOINTS FOR HDPE PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

			ARKANSAS STATE HIGHWAY COMMISSION
			PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)
			STANDARD DRAWING PCP-1
2-27-14	REVISED GENERAL NOTE 1.		
12-15-11	REVISED GENERAL NOTES & MINIMUM COVER NOTE		
11-17-10	ISSUED		
DATE	REVISION	DATE FILMED	

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

• AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL.

SM3 WILL NOT BE ALLOWED.

•• STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1/4 INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF PVC PIPE.

MINIMUM TRENCH WIDTH
BASED ON FILL HEIGHT "H"

PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" ≥ 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"

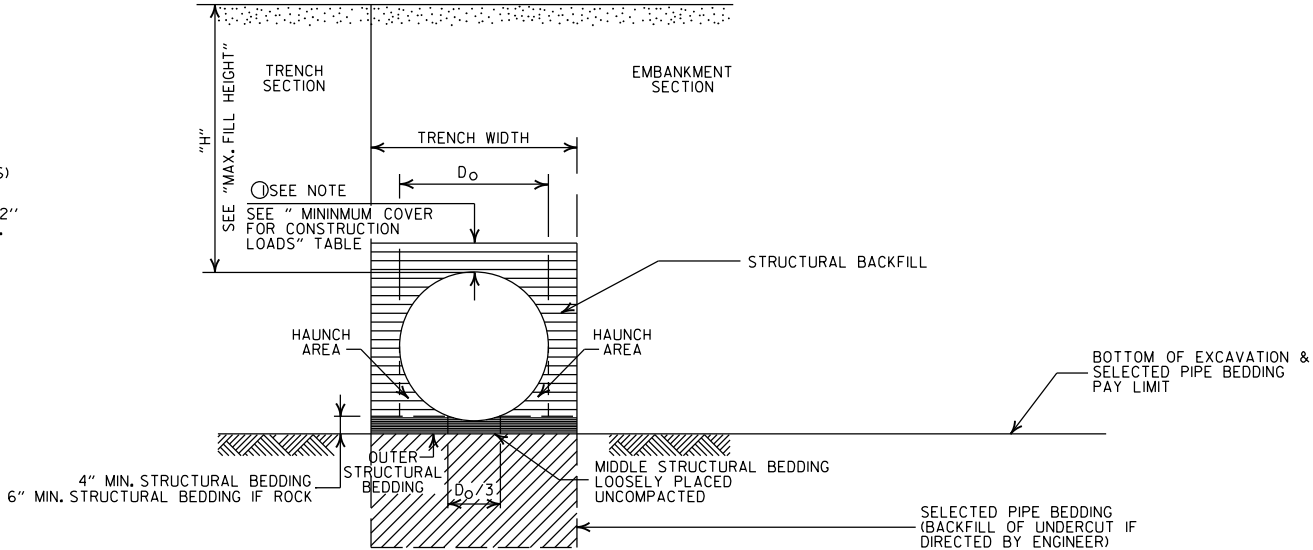
MULTIPLE INSTALLATION OF
PVC PIPES

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

MAXIMUM FILL HEIGHT
BASED ON STRUCTURAL BACKFILL

PIPE DIAMETER	"H"
18"	45'-0"
24"	45'-0"
30"	40'-0"
36"	40'-0"

① NOTE:
12" MIN. (18" - 36" DIAMETERS)
MINIMUM COVER VALUE, "H"
SHALL INCLUDE A MINIMUM 12"
OF PAVEMENT AND/OR BASE.



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

- LEGEND -

H = FILL HEIGHT (FT.)
D_o = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

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

GENERAL NOTES

1. PIPE SHALL CONFORM TO ASTM F949, CELL CLASS 12454. INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
5. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
6. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. PVC PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR PVC PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REV GENERAL NOTES & MINIMUM COVER NOTE; DELETED SM3 MATERIAL	
11-17-10	ISSUED	
DATE	REVISION	DATE FILMED

ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT
(PVC F949)

STANDARD DRAWING PCP-2



INSTALLATION TYPE	**MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 1	AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7)
TYPE 2	*SELECTED MATERIALS (CLASS SM-1, SM-2 OR SM-4) OR TYPE 1 INSTALLATION MATERIAL

* SM3 WILL NOT BE ALLOWED.

** STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1 INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF POLYPROPYLENE PIPE.

MULTIPLE INSTALLATION OF POLYPROPYLENE PIPES

PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"
42"	3'-6"
48"	4'-0"
60"	5'-0"

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

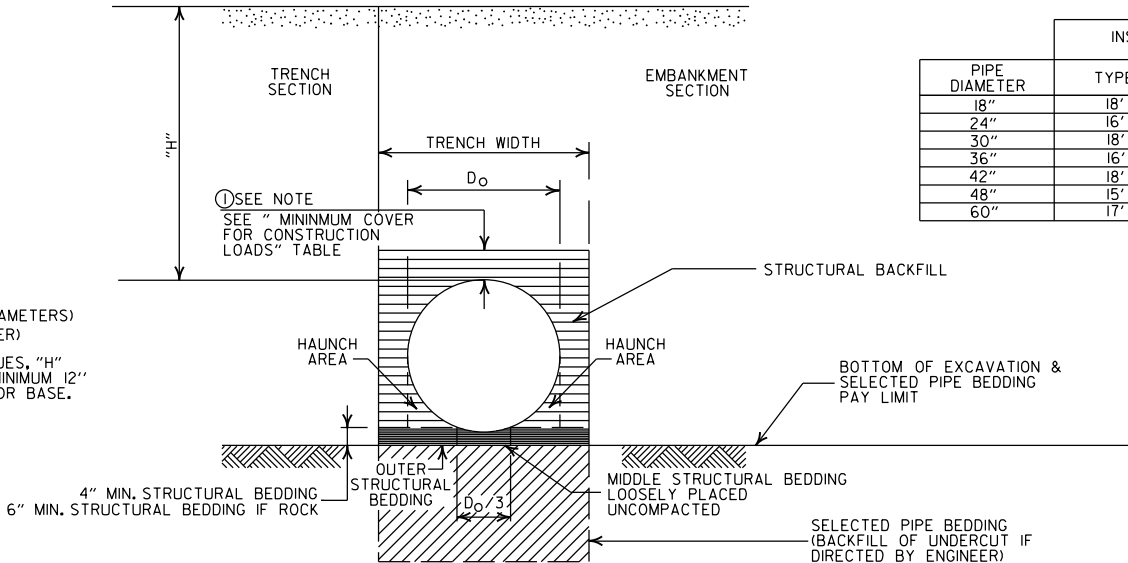
PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" >OR= 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"
42"	7'-0"	10'-6"
48"	8'-0"	12'-0"
60"	10'-0"	15'-0"

① NOTE:
12" MIN. (18" - 42" DIAMETERS)
24" MIN. (60" DIAMETER)
MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

MINIMUM COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS			
	18.0-50.0 (KIPS)	50.0-75.0 (KIPS)	75.0-110.0 (KIPS)	110.0-150.0 (KIPS)
36" OR LESS	2'-0"	2'-6"	3'-0"	3'-0"
42" OR GREATER	3'-0"	3'-0"	3'-6"	4'-0"

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



EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

GENERAL NOTES

1. PIPE SHALL CONFORM TO AASHTO M330, TYPE S. INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SIXTH EDITION (2012) WITH 2013 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
5. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
6. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE, IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. POLYPROPYLENE PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR POLYPROPYLENE PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN SECTION 26.4.2.4 AND 30.4.2 OF THE AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS 3RD EDITION (2010) WITH 2012 INTERIMS. JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

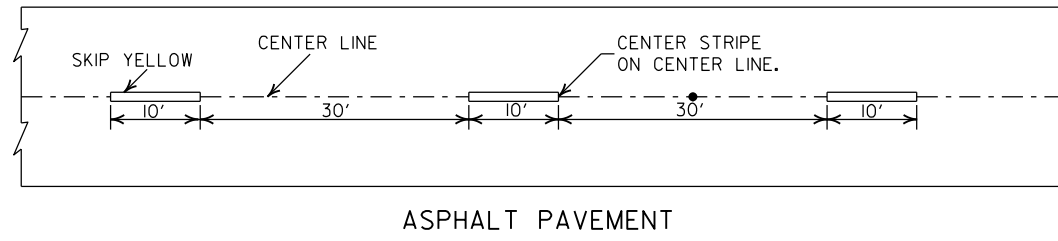
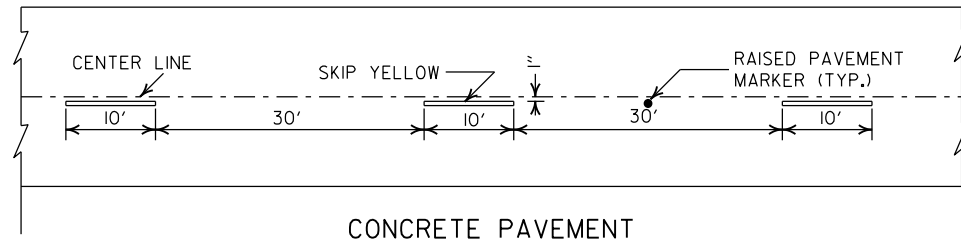
- LEGEND -

H = FILL HEIGHT (FT.)
D_o = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

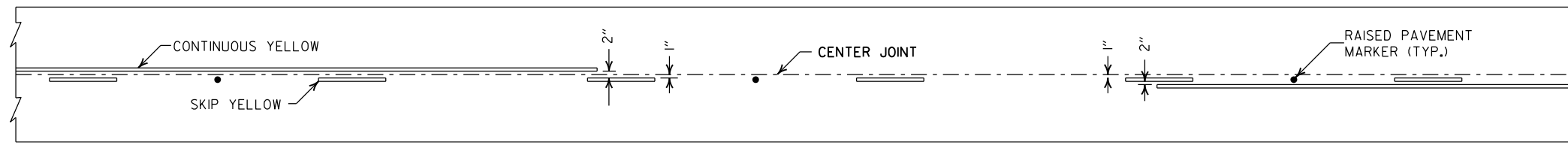
===== STRUCTURAL BACKFILL MATERIAL
XXXXXX UNDISTURBED SOIL

02-27-20	REVISED	
11-07-19	ISSUED	
DATE	REVISION	DATE FILMED

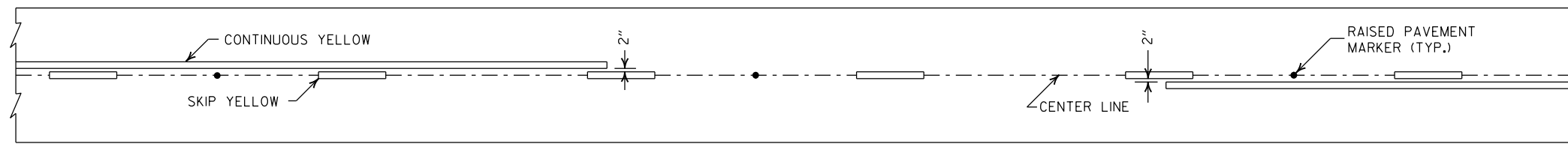
ARKANSAS STATE HIGHWAY COMMISSION	
PLASTIC PIPE CULVERT (POLYPROPYLENE)	
STANDARD DRAWING	PCP-3 



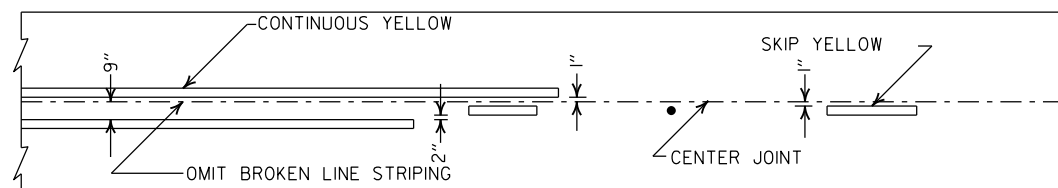
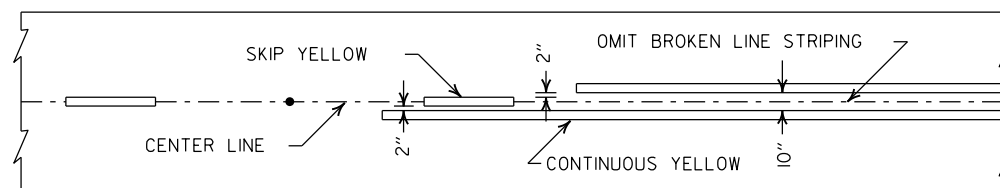
BROKEN LINE STRIPING



SOLID LINE STRIPING ON CONCRETE PAVEMENT



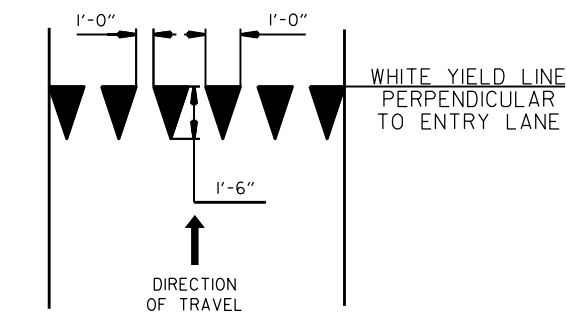
SOLID LINE STRIPING ON ASPHALT PAVEMENT



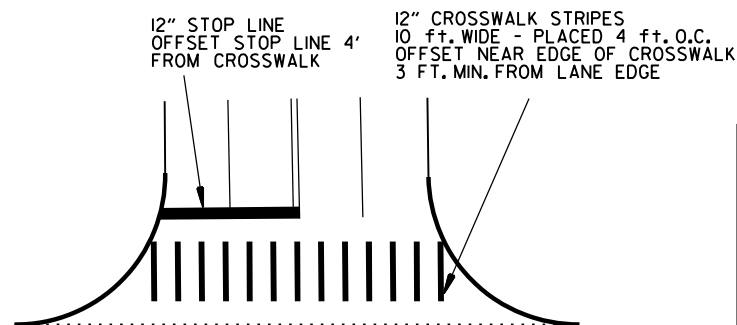
ASPHALT PAVEMENT

CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES



YIELD LINE DETAIL

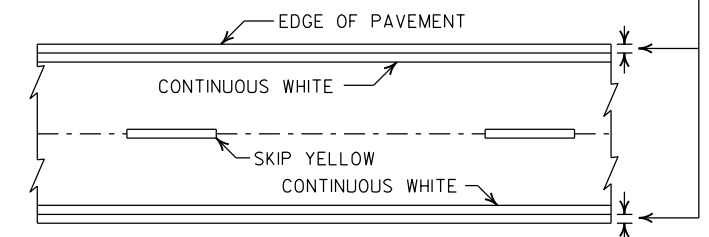


CROSSWALK AND STOP LINE DETAILS

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.

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

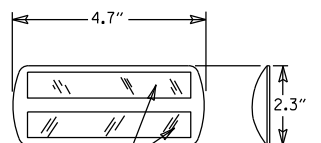


PAVEMENT EDGE LINE MARKING

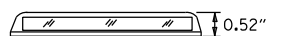
NOTE:
THE RED LENS OF THE
TYPE II R.P.M. SHALL
FACE THE INCORRECT
TRAFFIC MOVEMENT.

TYPE II
RED/CLEAR OR
YELLOW/YELLOW

PRISMATIC REFLECTOR



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

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

ARKANSAS STATE HIGHWAY COMMISSION

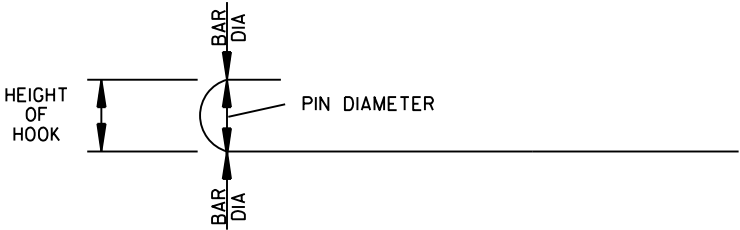
PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

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

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

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



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

OVERALL HEIGHT OF HOOKED BAR DIAGRAM

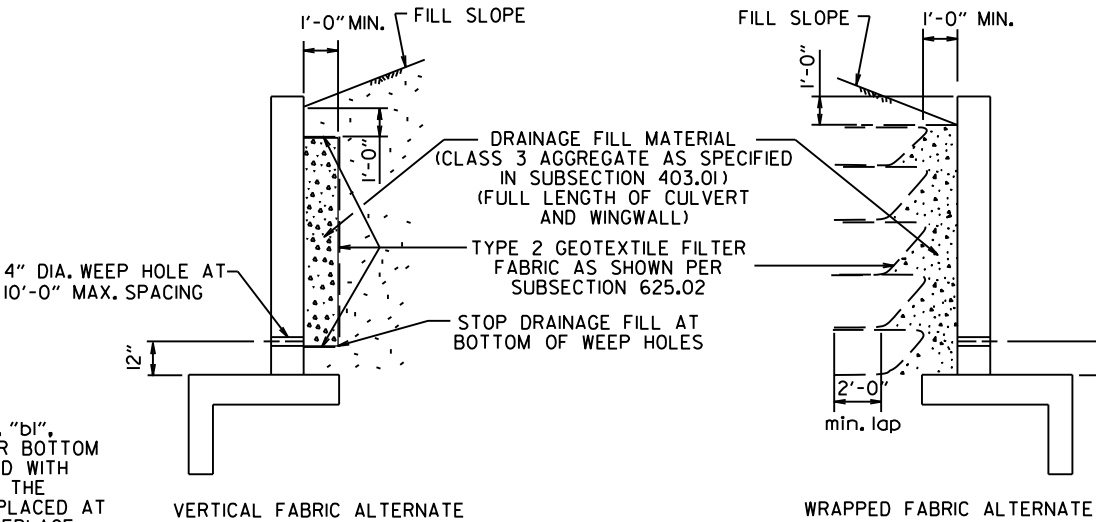
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

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

REPLACEMENT BAR LENGTHS TABLE

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

L = "OW" - 3 INCHES



WINGWALL & CULVERT DRAINAGE DETAIL

REINFORCED CONCRETE BOX CULVERT GENERAL NOTES

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

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

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

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

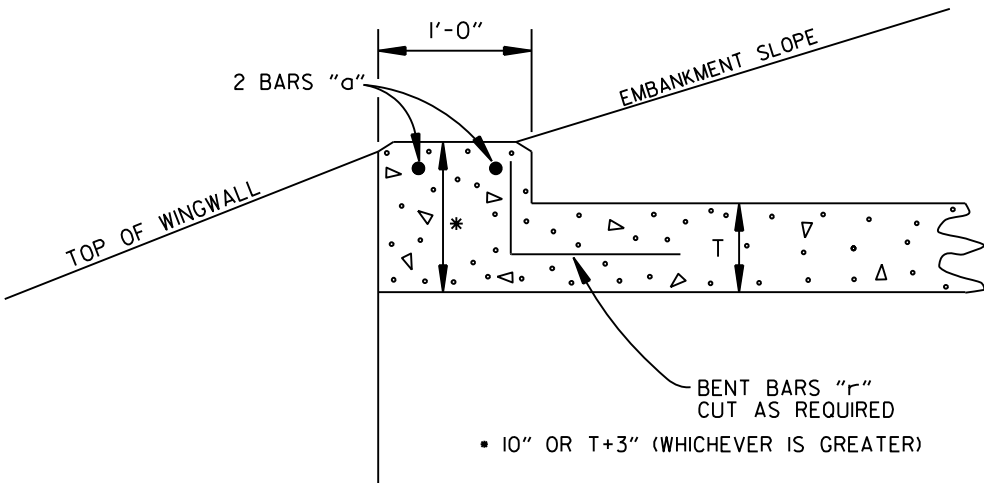
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

REINFORCING STEEL TOLERANCES: THE TOLERANCES FOR REINFORCING STEEL SHALL MEET THOSE LISTED IN "MANUAL OF STANDARD PRACTICE" PUBLISHED BY CONCRETE REINFORCING STEEL INSTITUTE (CRSI) EXCEPT THAT THE TOLERANCE FOR TRUSS BARS SUCH AS FIGURE 3 ON PAGE 7-4 OF THE CRSIMANUAL SHALL BE MINUS ZERO TO PLUS 1/2 INCH.

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

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

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



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

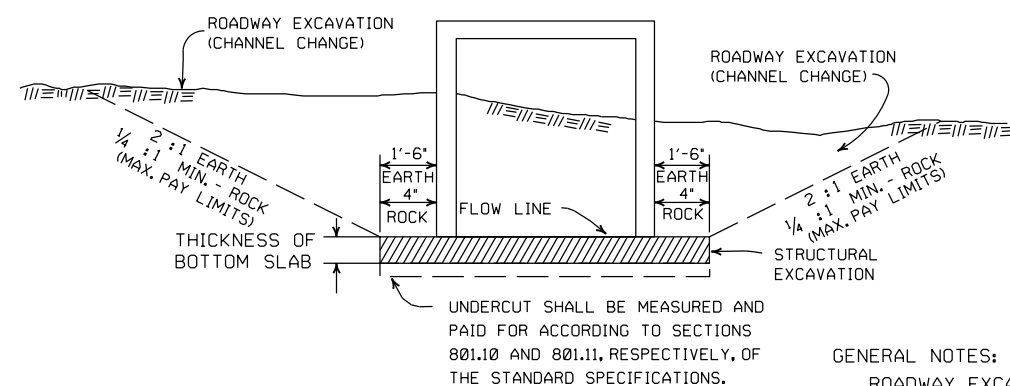
R.C. BOX CULVERT HEADWALL MODIFICATIONS

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

ARKANSAS STATE HIGHWAY COMMISSION

REINFORCED CONCRETE BOX
CULVERT DETAILS

STANDARD DRAWING RCB-1



SOLID SODDING

R. C. BOX CULV'T.

SOLID SODDING

SOLID SODDING

SOLID SODDING

2'

2'

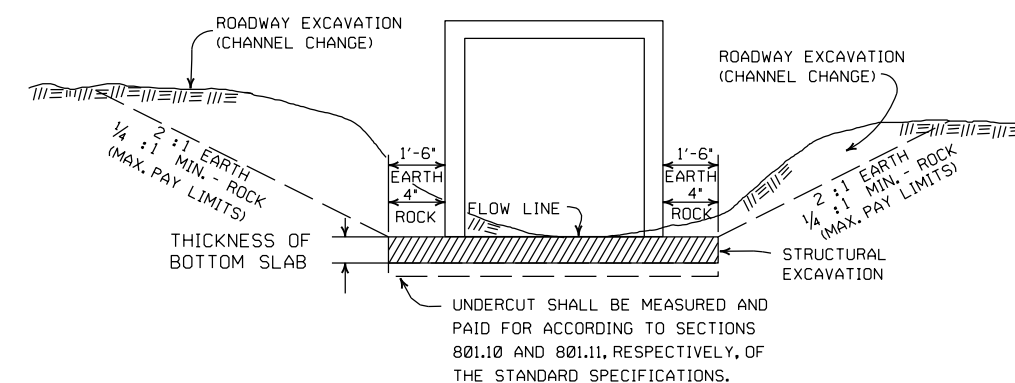
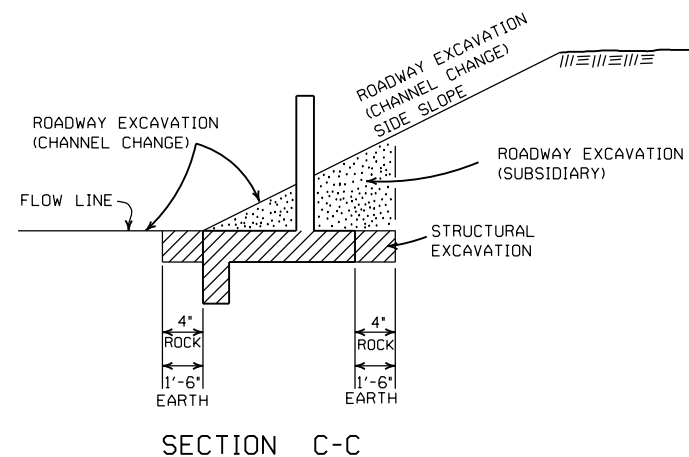
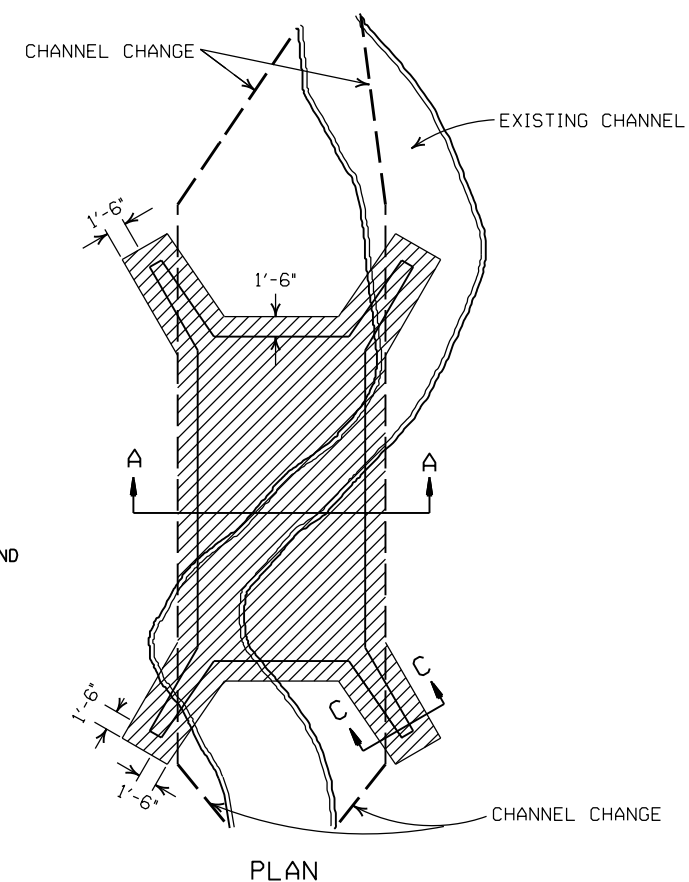
PLAN

PARTIAL SECTION SHOWING SOLID SODDING
AT HEADWALLS AND WING WALLS

PLAN

LONGITUDINAL SECTION

BACKFILL DETAILS FOR BOX CULVERT



SECTION A-A
DETAILS THROUGH EXISTING CHANNELS

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.

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

ARKANSAS STATE HIGHWAY COMMISSION

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

STANDARD DRAWING RCB-2

SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

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

ABBREVIATIONS

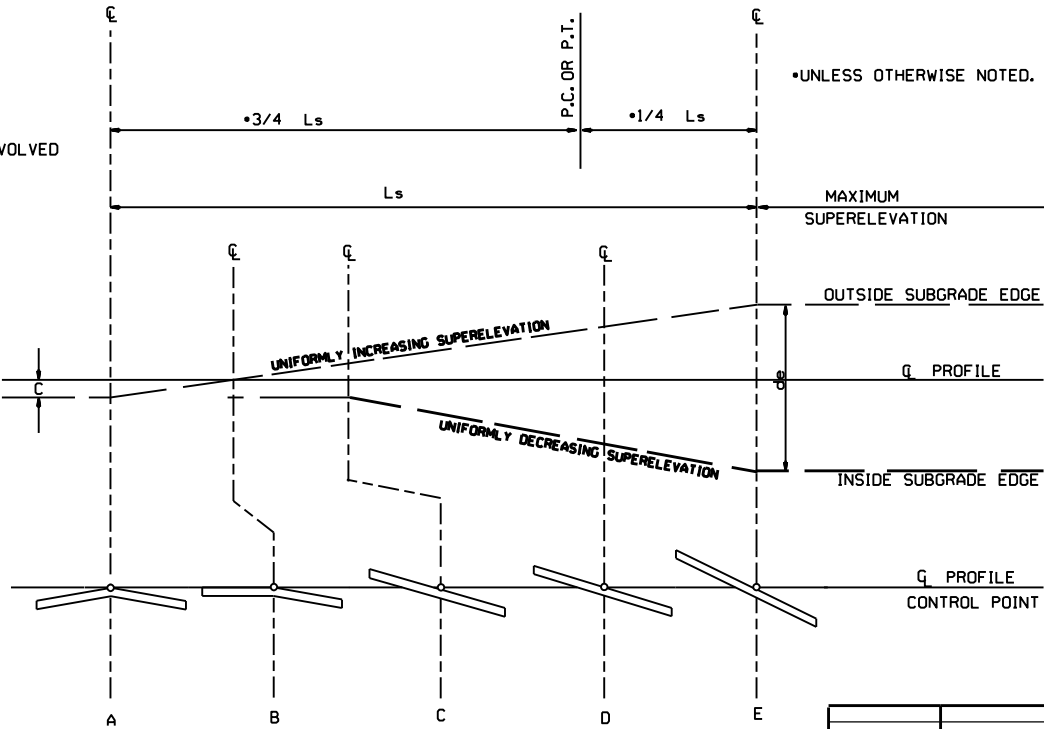
NC - NORMAL CROWN
RC - REVERSE CROWN, SUPERELEVATION AT NORMAL CROWN SLOPE
e - RATE OF SUPERELEVATION (FT. PER FT.)
Ls - LENGTH OF SUPERELEVATION TRANSITION (FT.)
L - DISTANCE FROM BEGINNING OF SUPERELEVATION TRANSITION TO ANY POINT (FT.)
d - WIDTH OF PAVEMENT (FT.) OR WIDTH OF SUBGRADE (FT.)
C - NORMAL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

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

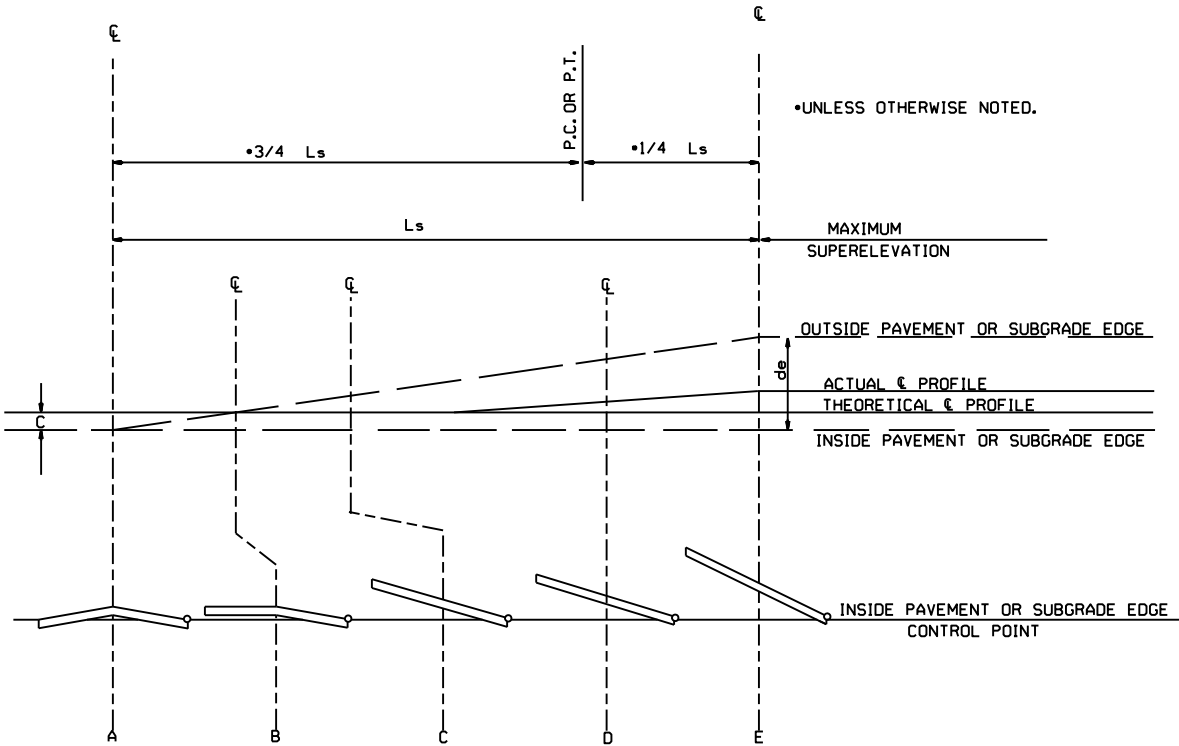
3 LANE UNDIVIDED - - - - +20%
4 LANE UNDIVIDED - - - - +50%
5 LANE UNDIVIDED - - - - +80%
6 LANE UNDIVIDED - - - - +100%

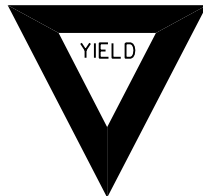
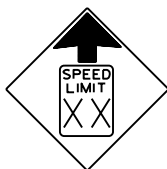
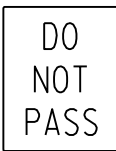
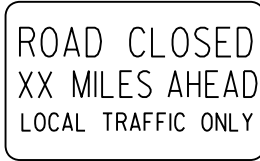
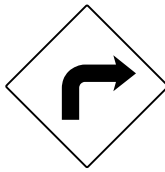
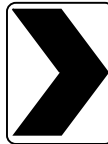
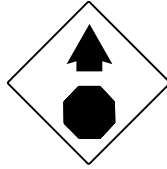
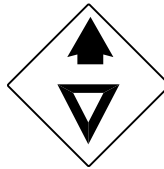
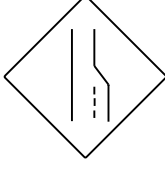
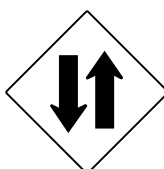
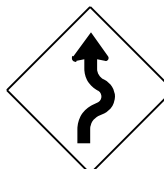
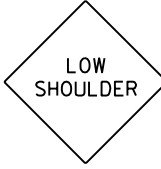
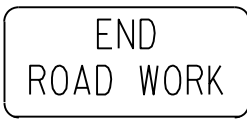
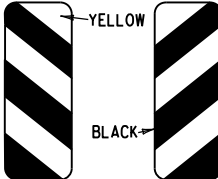
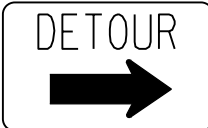
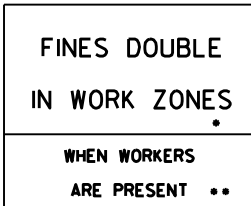
NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.
RATE OF SUPERELEVATION SHALL BE COMPUTED ON STRAIGHT LINE METHOD USING APPLICABLE Ls.

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



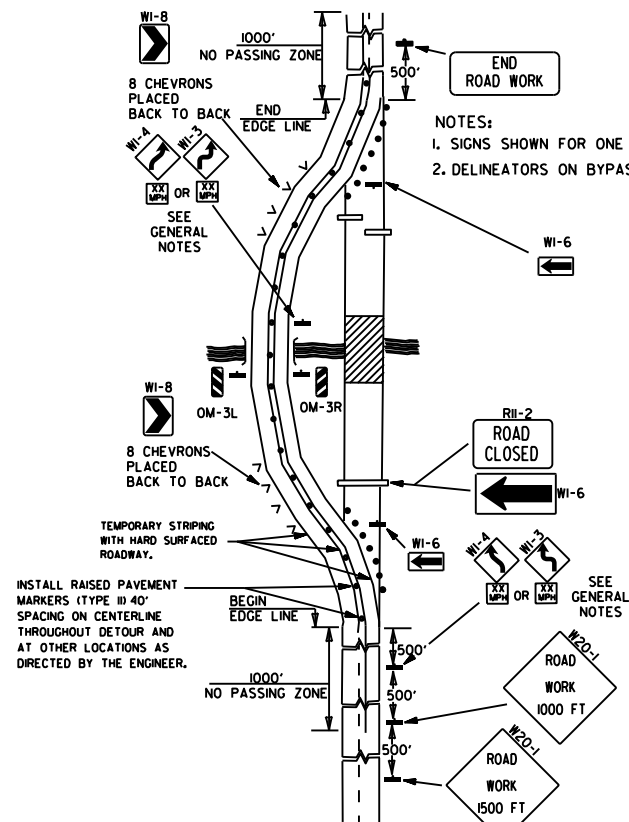
STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE



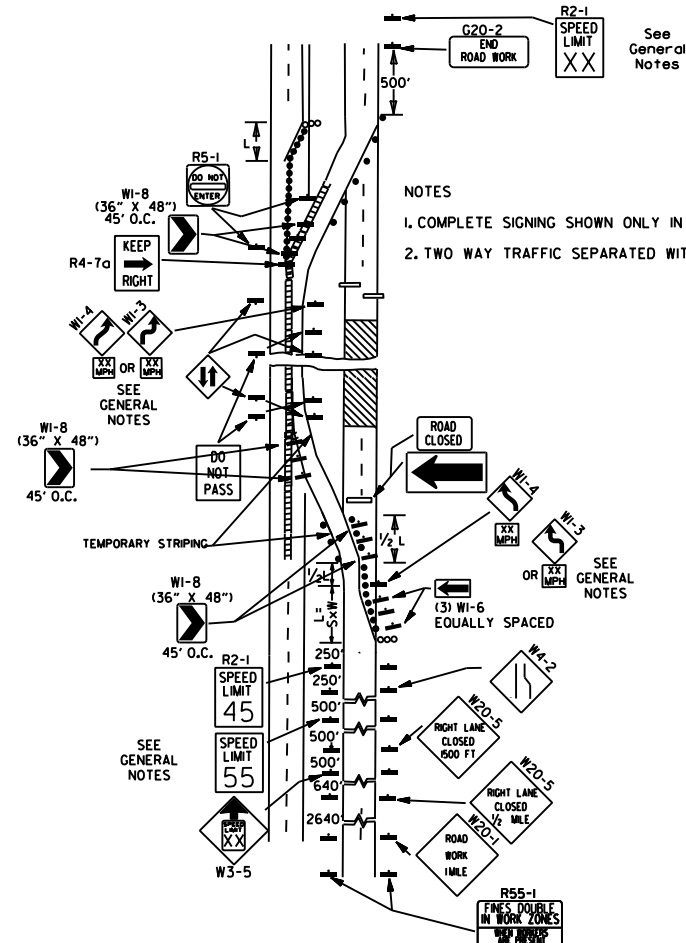
RI-I  STANDARD 30"x30" EXPRESSWAY 36"x36" SPECIAL 48"x48"	RI-2  STD. 36"x36"x36" EXPWY. 48"x48"x48" FWY. 60"x60"x60"	R2-I  STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"	W3-5  STD. 36"x36" EXPWY. 48"x48" FWY. 48"x48"	W3-5a  STD. 36"x36" EXPWY. 48"x48" FWY. 48"x48"	R4-I  STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"	R4-2  STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"	ADVANCE DISTANCES (XXXX) 500 FT 1/2 MILE 1000 FT 3/4 MILE 1500 FT 1 MILE AHEAD GENERAL NOTES: 1. ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION. 2. TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND REMOVED THEREAFTER. 3. EXISTING SIGNS AND CONSTRUCTION SIGNS SHALL BE KEPT IN PROPER POSITION, AND BE CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED. SIGNS THAT ARE DAMAGED, DEFACED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED. 4. SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 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.
R5-I  STD. 30"x30" EXPWY. 36"x36" SPECIAL 48"x48"	R1I-2  48"x30"	R1I-3A  60"x30"	R1I-4  60"x30"	W2I-5a  STD. 36"x36" FWY. 48"x48"	WI-I  STD. 36"x36" FWY. 48"x48"	WI-2  STD. 36"x36" FWY. 48"x48"	
WI-3  STD. 48"x48"	WI-4  STD. 48"x48"	WI-6  STD. 48"x24" SPECIAL 60"x30"	WI-8  STD. 18"x24" SPECIAL 24"x30" EXPWY. 30"x36" FWY. 36"x48"	W3-I  STD. 36"x36" SPECIAL 48"x48"	W3-2  STD. 36"x36" SPECIAL 48"x48"	W4-2  STD. 36"x36" FWY. 48"x48"	
W5-I  STD. 36"x36" SPECIAL 48"x48"	W6-3  EXPWY. 36"x36" SPECIAL 48"x48"	W8-7  EXPWY. 36"x36" FWY. 48"x48"	W9-2  STD. 36"x36" FWY. 48"x48"	WI3-I  STD. 24"x24"	W20-I  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  18" 500 FEET 24" W16-2 STD. 36"x36" FWY. 48"x48"	W2I-2  STD. 30"x30" SPECIAL 36"x36"	W2I-5  STD. 30"x30" SPECIAL 36"x36"	W24-I  STD. 36"x36"	WI-4b  STD. 48"x48"	R56-I  STD. 18"x18"
W8-II  STD. 36"x36" FWY. 48"x48"	W8-9  STD. 36"x36" FWY. 48"x48"	G20-I  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-I  36"x60" • USE 6" C LETTERS •• USE 4" D LETTERS

11-07-19	REVISED FOR MASH	
4-13-17	DELETED RSP-1 & ADDED W2I-5a	
9-2-15	REVISED REDUCED SPEED LIMIT AHEAD SIGNS REVISED ROAD WORK NEXT XX MILES	
12-15-11	REVISED W24-1	
11-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
11-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
11-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
11-18-98	ADDED NOTE	
6-26-97	REVISED NOTE 5	
4-03-97	REVISED NOTE 5	
10-18-96	ADDED CONTROLLED ACCESS HWY. SIGN & TO NOTE 7	
10-12-95	ADDED R55-1	
6-8-95	REVISED TO CORRECT SIGN ILLUSTRATIONS	6-8-95
2-2-95	REVISED PER PART VI, MUTCD SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	
DATE	REVISION	FILMED

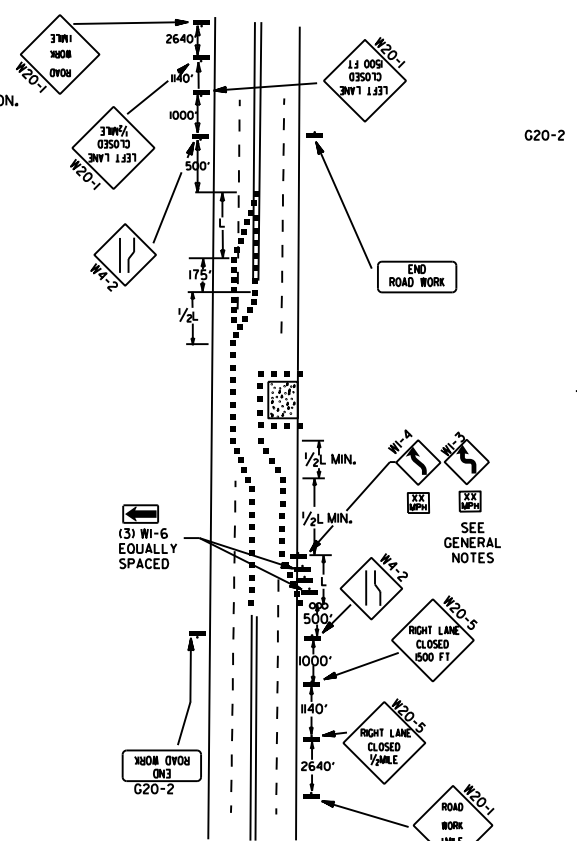
ARKANSAS STATE HIGHWAY COMMISSION
STANDARD TRAFFIC CONTROLS
FOR HIGHWAY CONSTRUCTION
STANDARD DRAWING TC-1



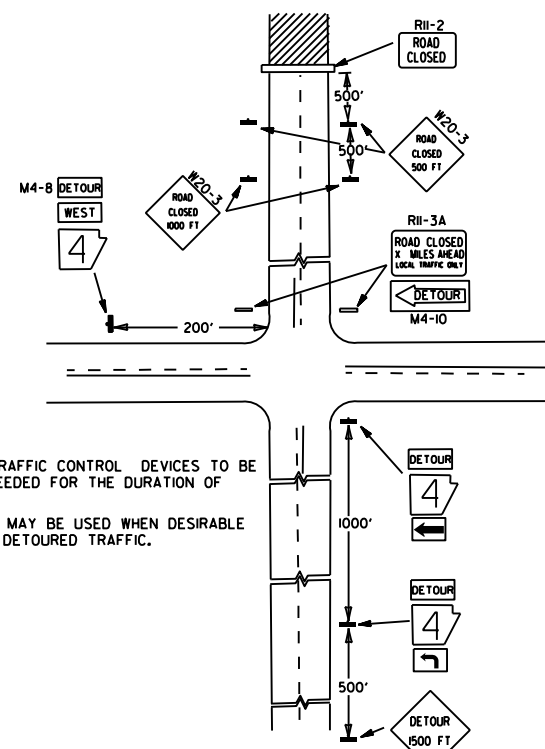
(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.



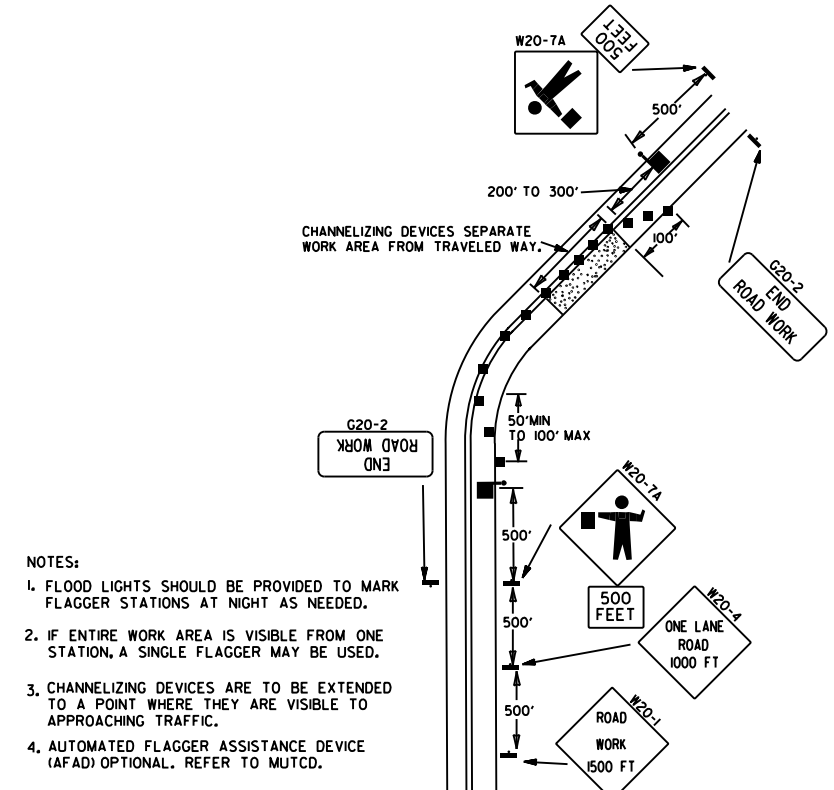
(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.



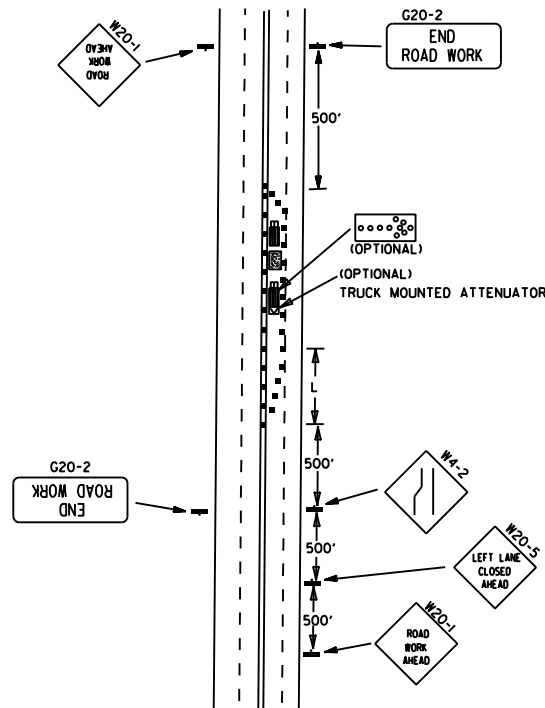
(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



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

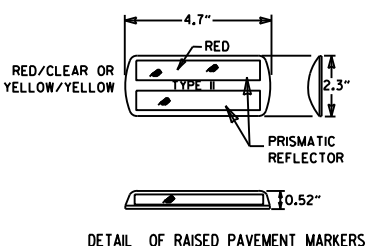


(E) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON 2-LANE HIGHWAY WHERE ONE LANE IS CLOSED AND FLAGGING IS PROVIDED.



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

- KEY:
- FLAGGER
 - POSITIVE BARRIER
 - ARROW PANEL (IF REQUIRED)
 - TYPE III BARRICADE
 - CHANNELIZING DEVICE
 - TRAFFIC DRUM
 - RAISED PAVEMENT MARKER



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(45)MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
 3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(65) SHALL BE OMITTED. ADDITIONAL R2-1(55)MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
 4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
 5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
 6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
 7. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE. PAYMENT FOR TRAFFIC DRUMS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR VARIOUS TRAILER MOUNTED DEVICES.
 8. DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE ARDOT QUALIFIED PRODUCTS LIST.
 9. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).

05-20-21	REVISED NOTE 7	
11-07-19	REVISED NOTE 1, ADDED NOTE 9	
9-2-15	REVISED NOTE 2, ADDED NOTE 8, REVISED DRAWING (A) & REPLACED R2-5A WITH W3-5	
9-12-13	REVISED DETAIL OF RAISED PAVEMENT MARKERS	
3-11-10	ADDED (AFAD)	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (a) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON W1-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	
DATE	REVISION	FILMED

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

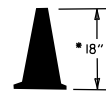
STANDARD DRAWING TC-2

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

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

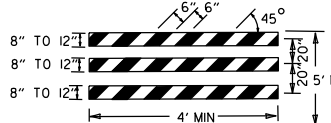
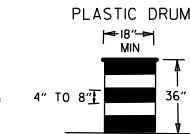
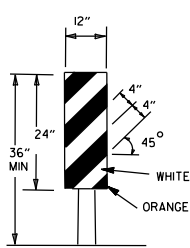
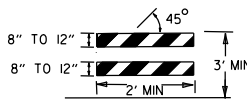
(B) TYPICAL APPLICATION - 3-LANE ONEWAY ROADWAY WHERE CENTER LANE IS CLOSED.

CHANNELIZING DEVICES



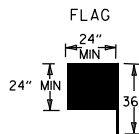
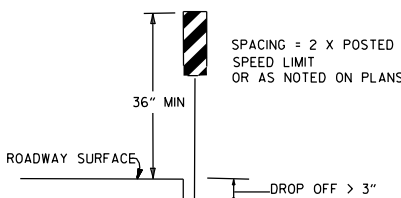
• WHEN CONES ARE USED ON FREEWAYS AND MULTI-LANE HIGHWAYS, THEY SHALL BE 28" MIN. DURING HOURS OF DARKNESS, 28" CONES SHALL BE USED ON ALL ROADWAYS, AND SHALL BE REFLECTORIZED IN ACCORDANCE WITH THE M.U.T.C.D.

CONES



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

VERTICAL PANEL PLACEMENT



FLAG SHALL BE OF GOOD GRADE RED MATERIAL

KEY:

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

GENERAL NOTES:

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

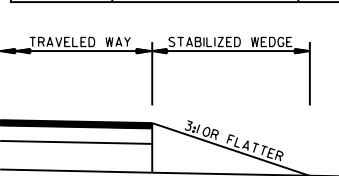
(D) TYPICAL APPLICATION - CLOSING MULTIPLE LANES OF A MULTILANE HIGHWAY.

TRAFFIC CONTROL DEVICES

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

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

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



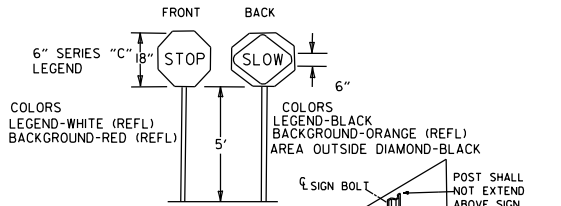
STABILIZED WEDGE

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

GENERAL NOTES:

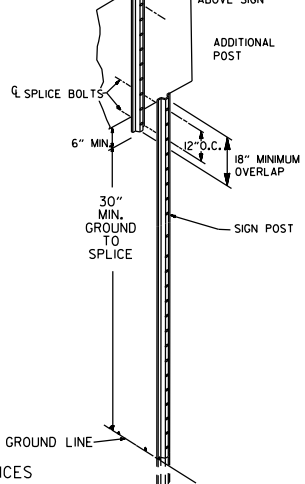
- WHEN THE SHOULDER AREA IS USED AS PART OF THE TRAVELED LANE AND THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, THEN VERTICAL PANELS SHALL BE USED.
- WHEN THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, A STABILIZED WEDGE SHALL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

STOP SLOW PADDLE



6" SERIES "C" LEGEND
COLORS
LEGEND-WHITE (REFL)
BACKGROUND-RED (REFL)

COLORS
LEGEND-BLACK
BACKGROUND-ORANGE (REFL)
AREA OUTSIDE DIAMOND-BLACK



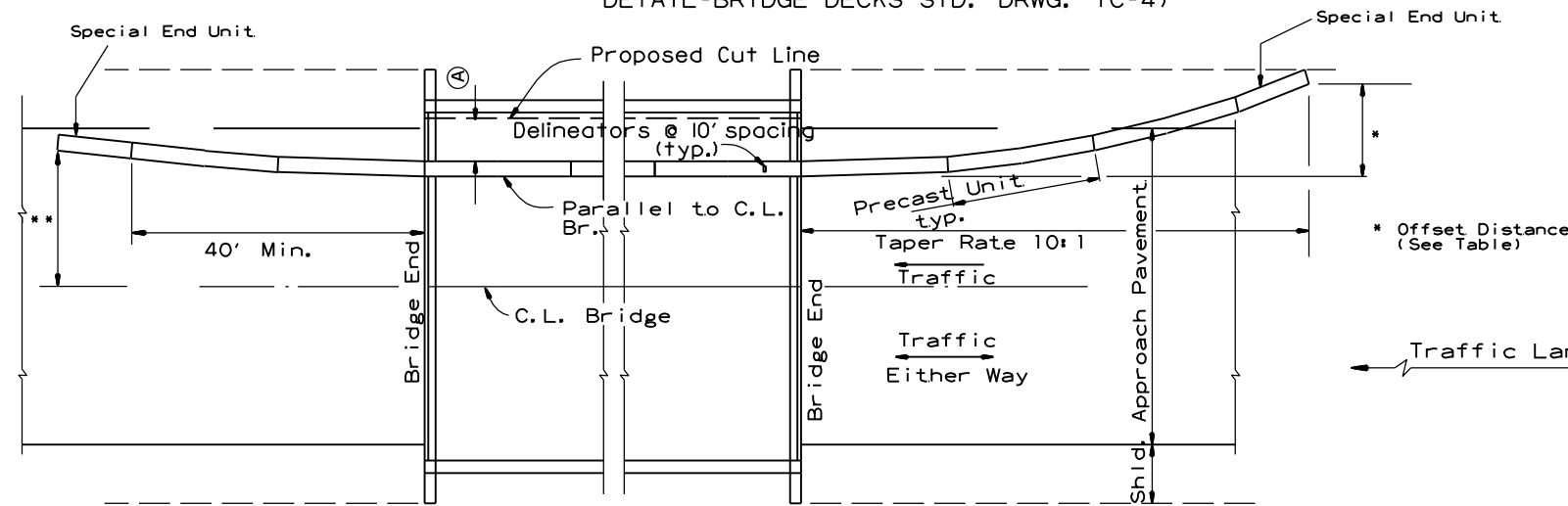
DETAIL OF SPLICES

DATE	REVISION	FILED
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 W6-18 & REVISED TRAFFIC CONTROL DEVICES NOTE	
10-18-96	ADDED R55-1	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL, TEXT	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

ARKANSAS STATE HIGHWAY COMMISSION
STANDARD TRAFFIC CONTROLS
FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-3

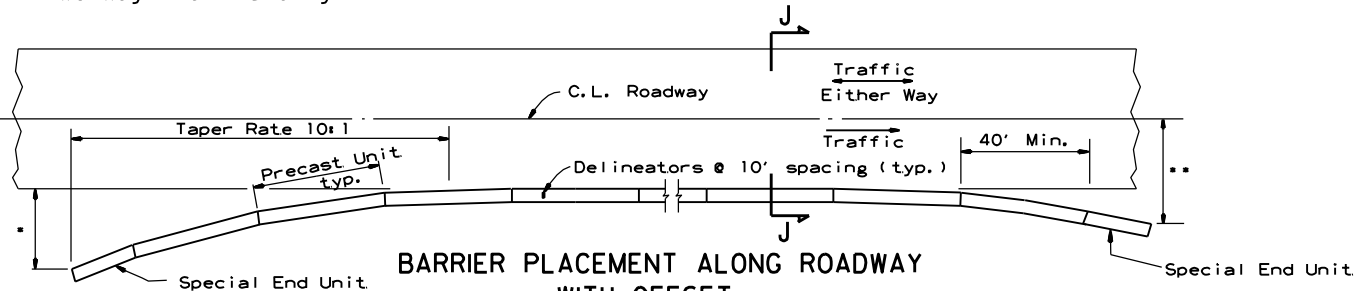
(A) 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)



BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

** Offset Distance for Two Way Traffic Only



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

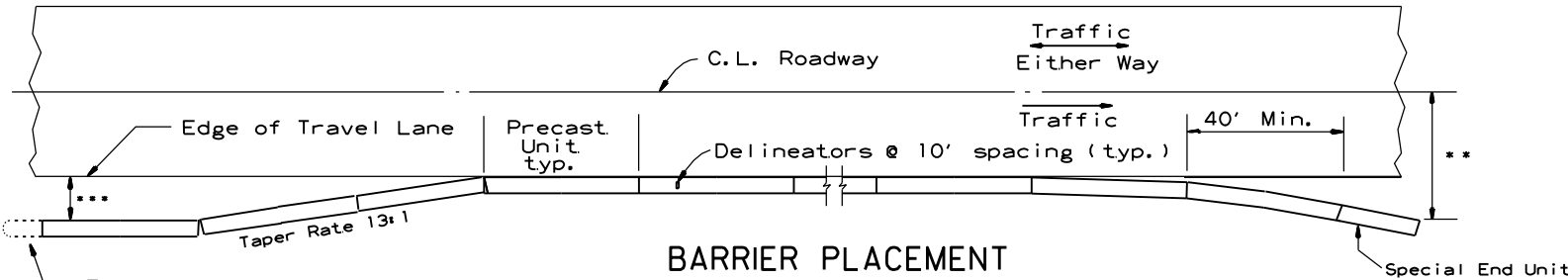
* Offset Distance (See Table)

** 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.

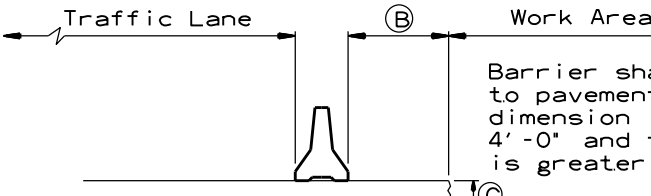


BARRIER PLACEMENT WITH ATTENUATOR

No Scale

** Offset Distance For Two Way Traffic Only

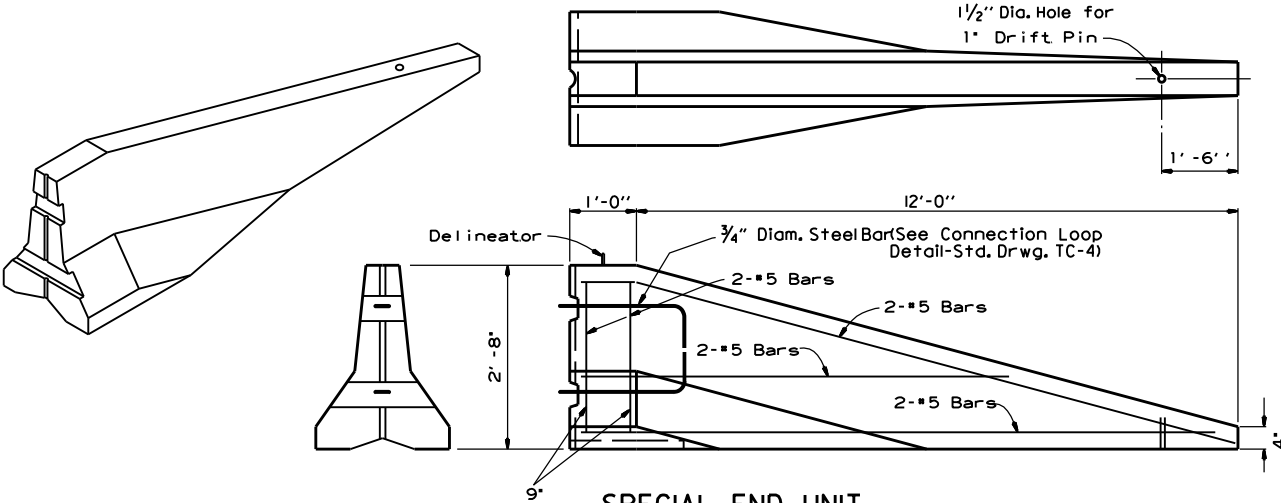
***Min. 3'-0" From Edge of Travel Lane to Nearest Edge of Attenuator



SECTION J-J

No Scale

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



SPECIAL END UNIT

No Scale

General Notes

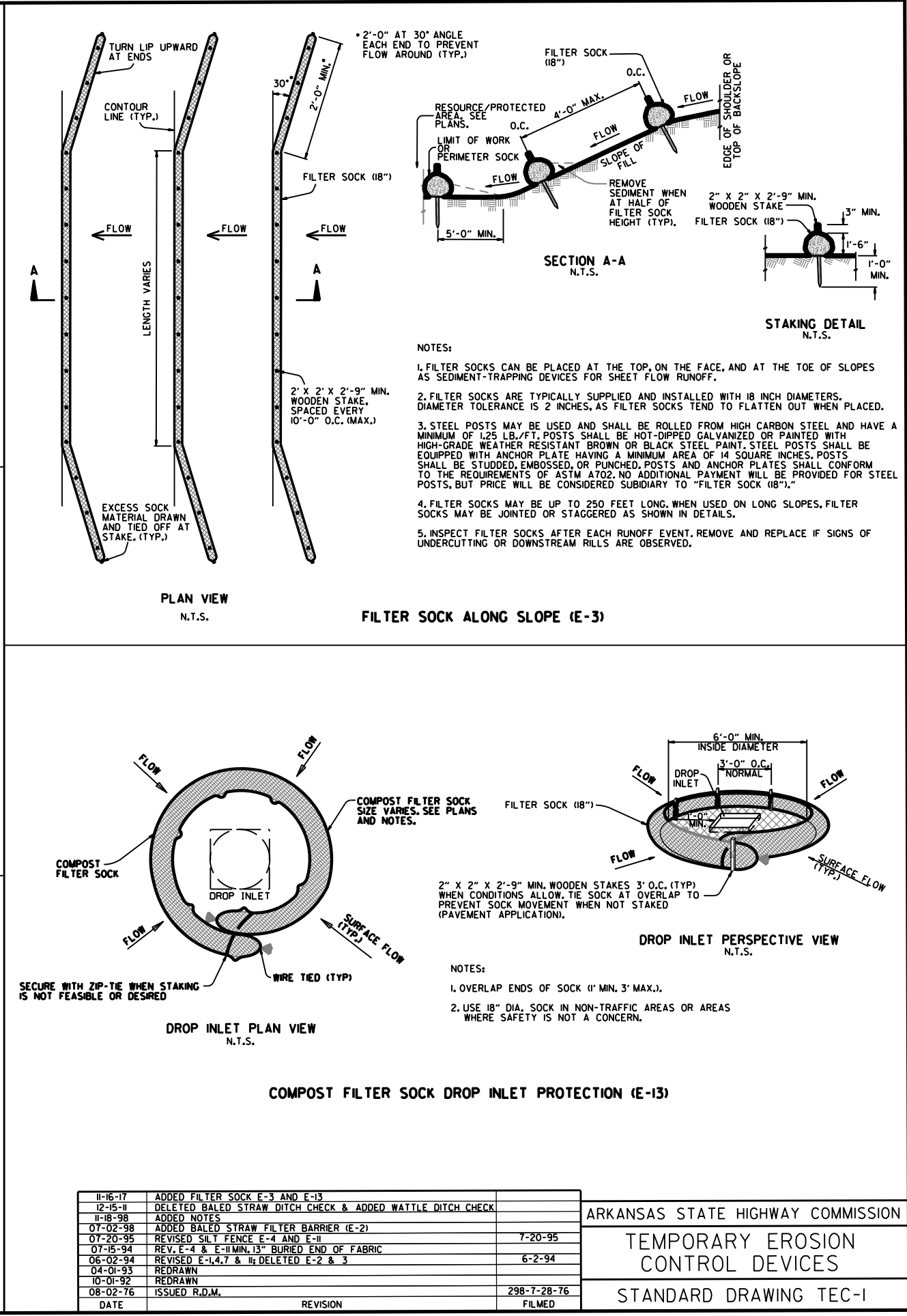
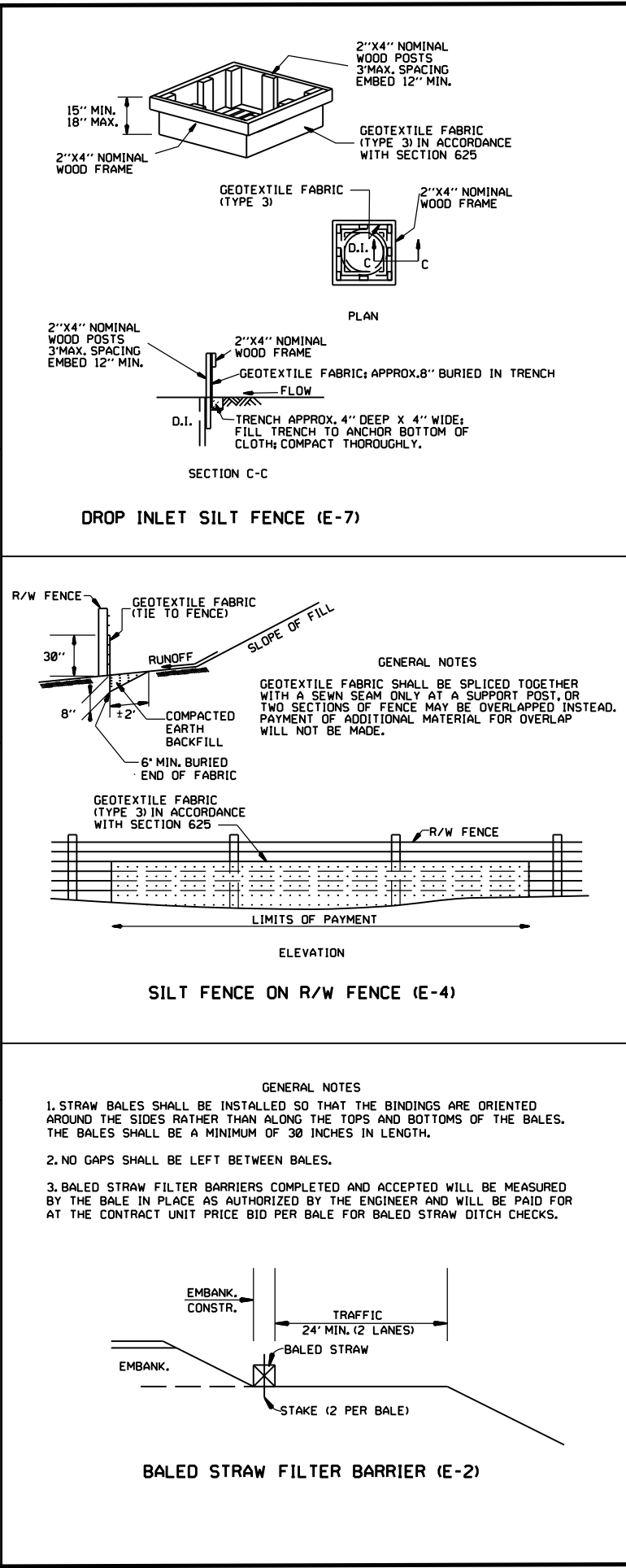
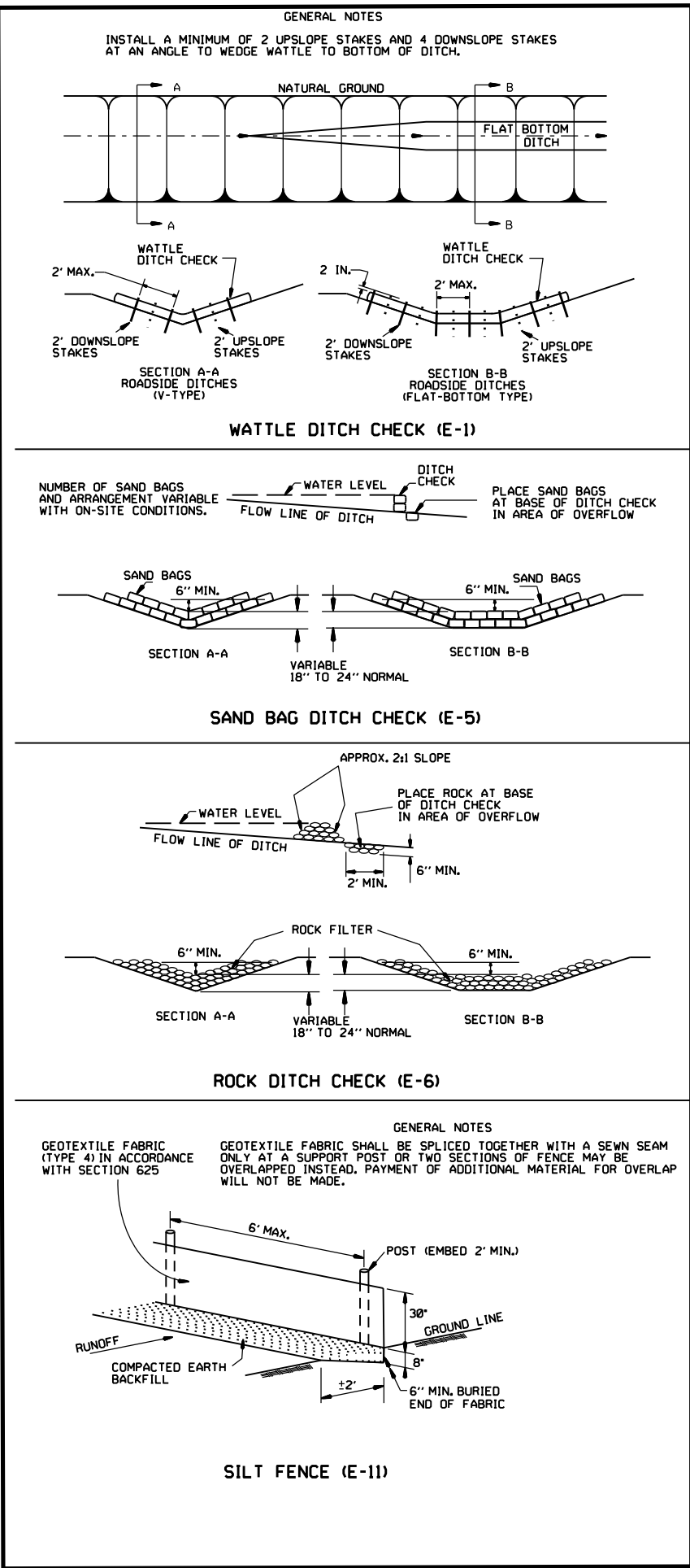
When shown on the Plans, the ends of the Temporary Precast Concrete Barrier shall be protected with a Manual For Assessing Safety Hardware (MASH) approved Crash Cushion. Payment for Crash Cushions shall be made under the item of "Temporary Impact Attenuation Barrier."

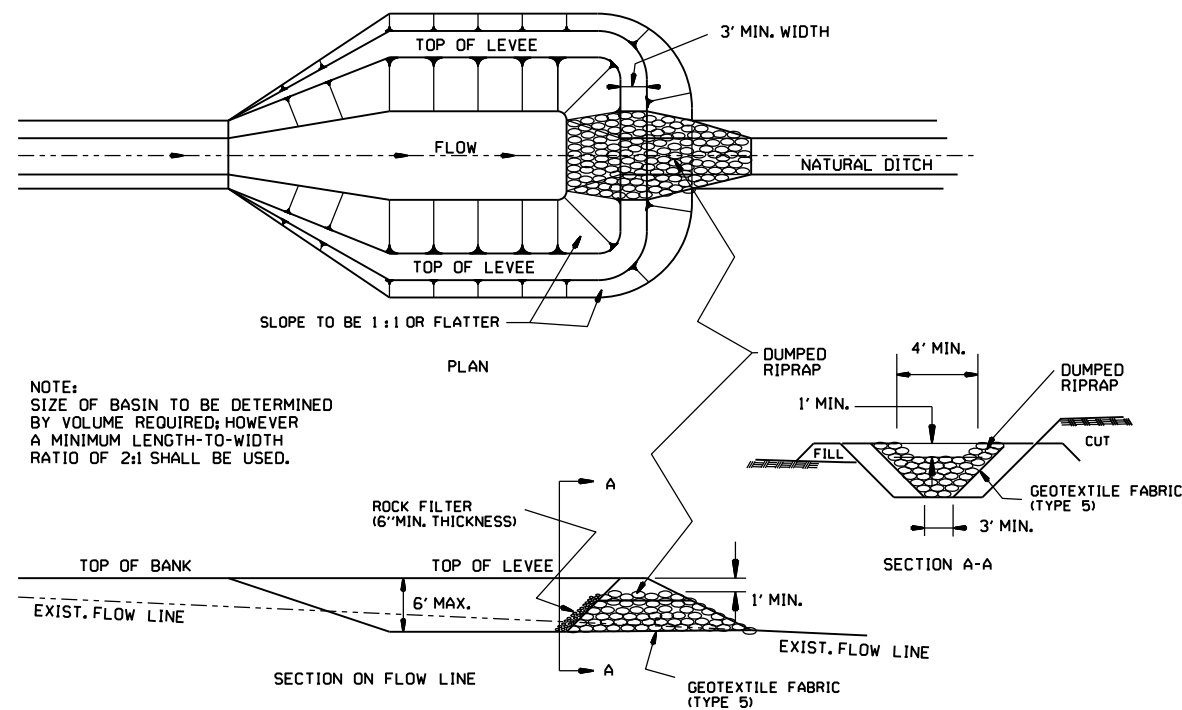
DATE	REVISION	FILMED
11-07-19	REVISED NOTE	
10-15-09	ADDED REFERENCE TO MASH	
5-25-06	REVISED BARRIER PLACEMENT	
8-22-02	ISSUED NEW DRAWING	

ARKANSAS STATE HIGHWAY COMMISSION

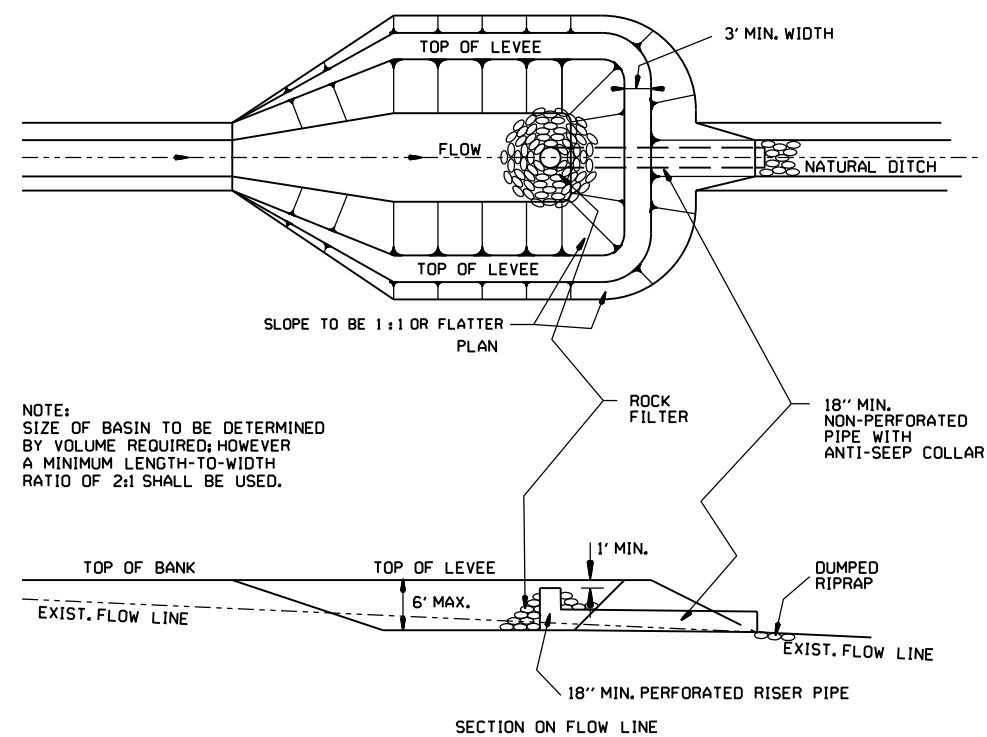
**STANDARD TRAFFIC CONTROLS
FOR HIGHWAY CONSTRUCTION -
TEMPORARY PRECAST BARRIER**

STANDARD DRAWING TC-5

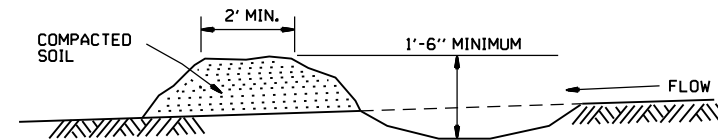




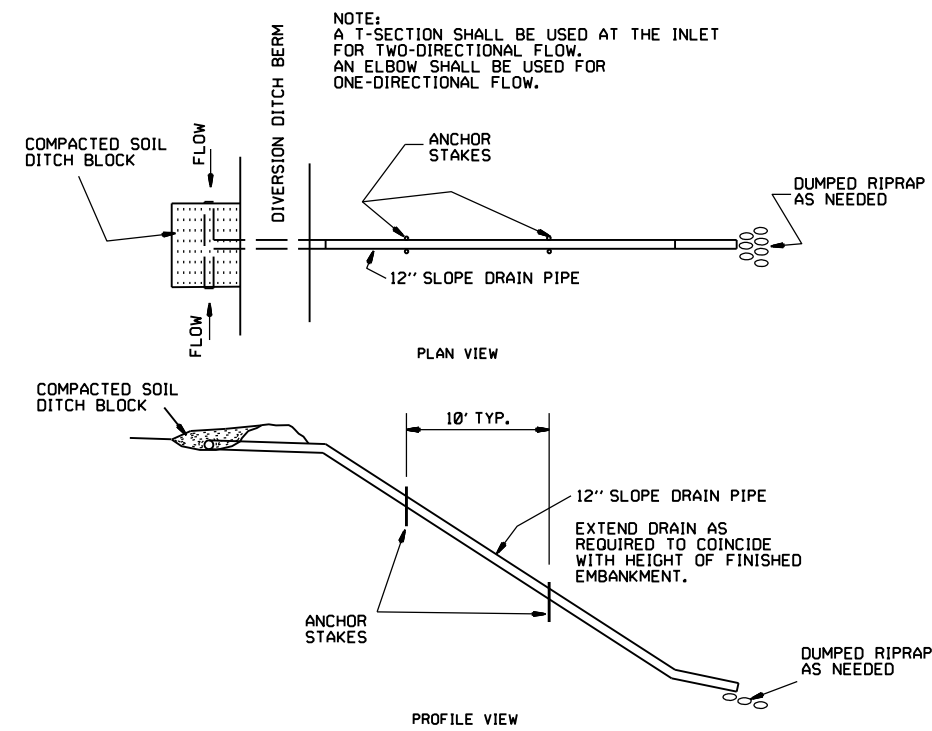
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



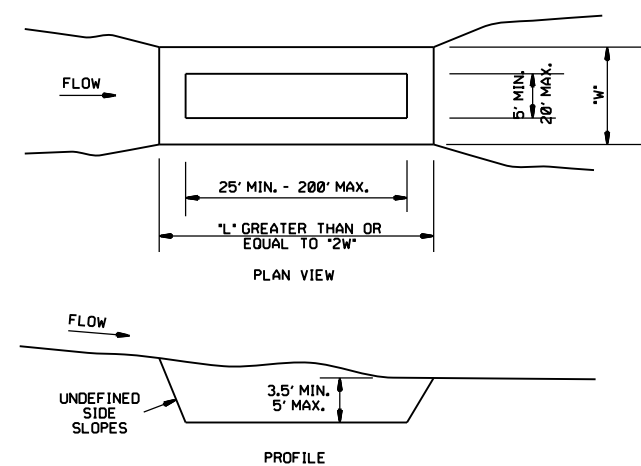
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



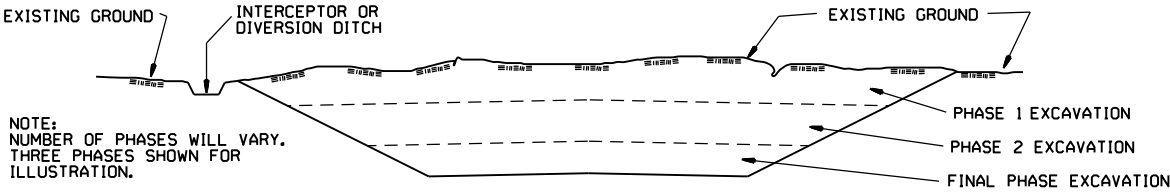
SEDIMENT BASIN (E-14)

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

CLEARING AND GRUBBING

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

EXCAVATION

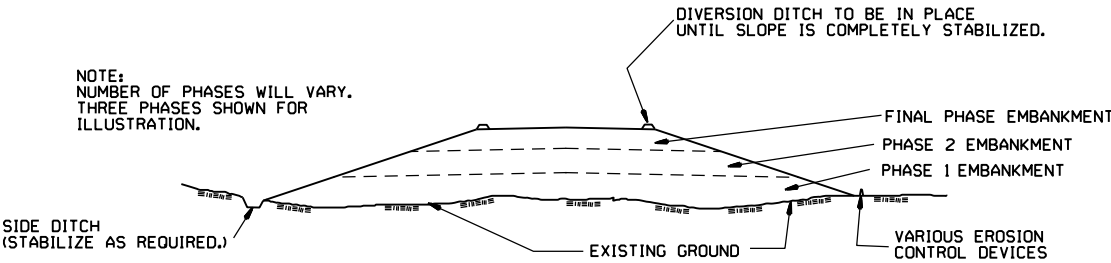


GENERAL NOTE

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

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

EMBANKMENT

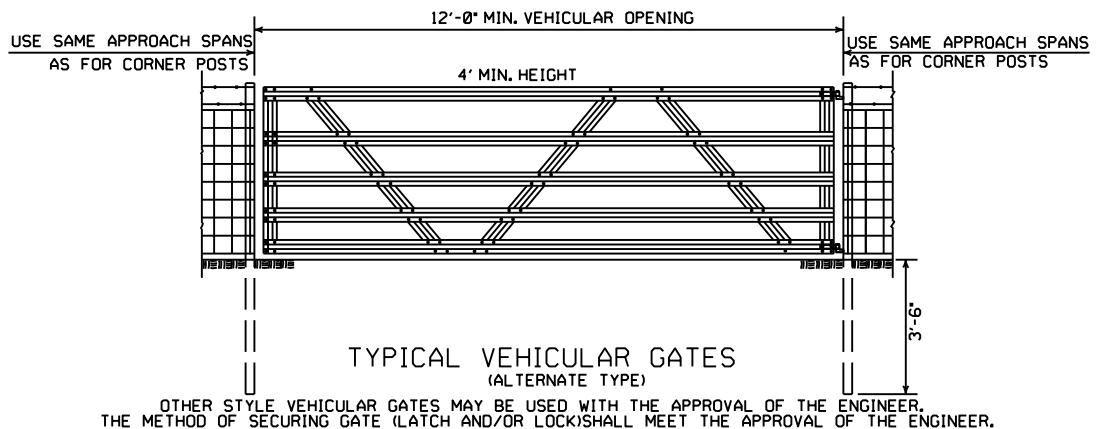
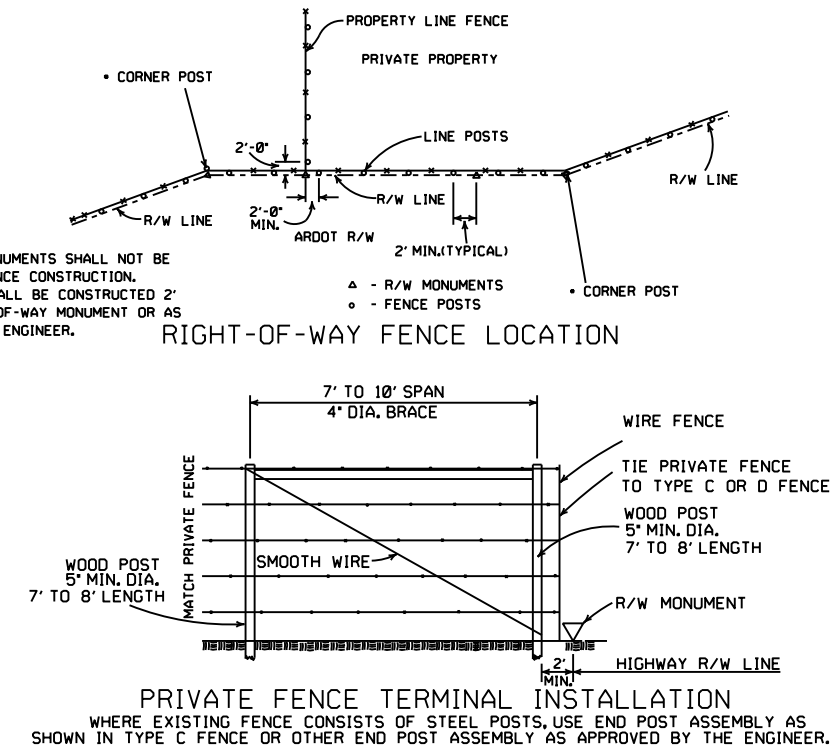
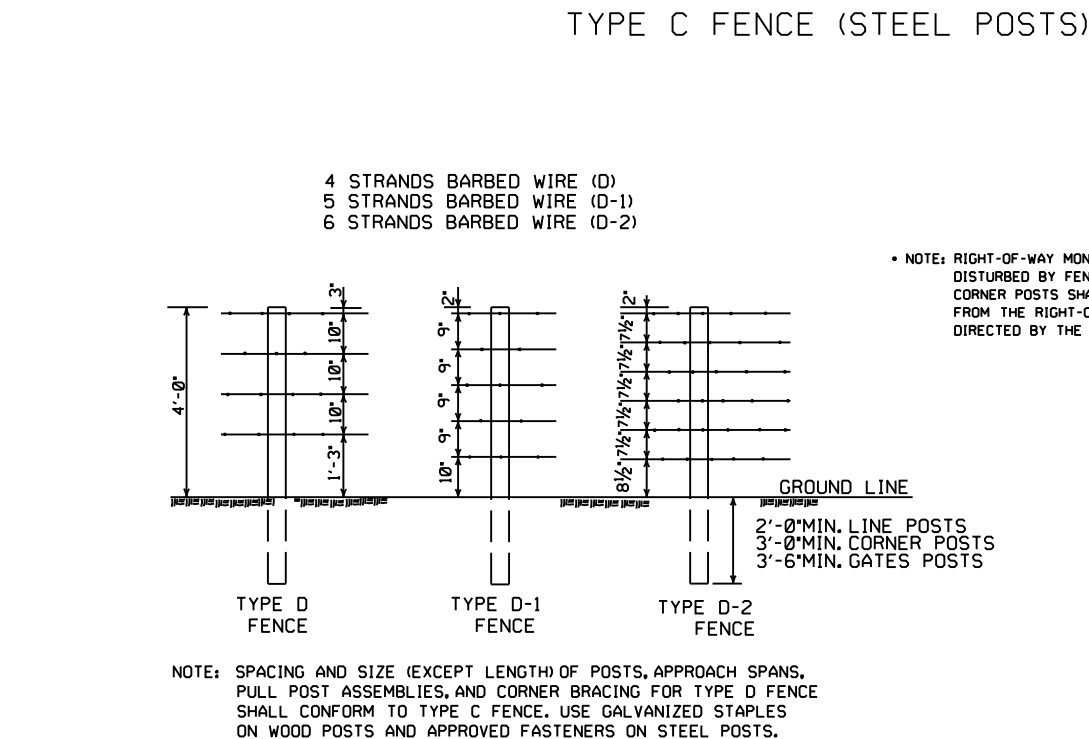
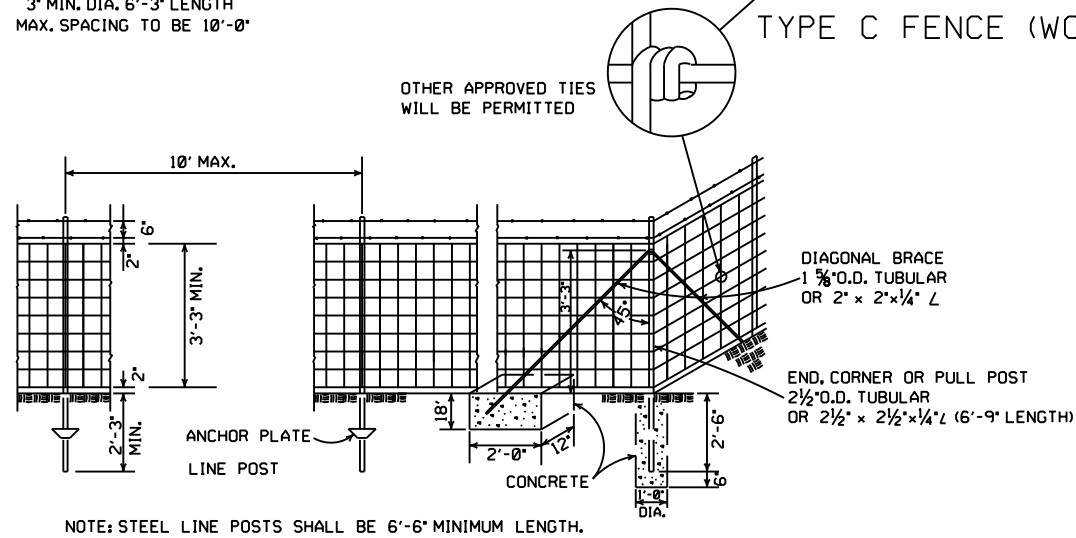
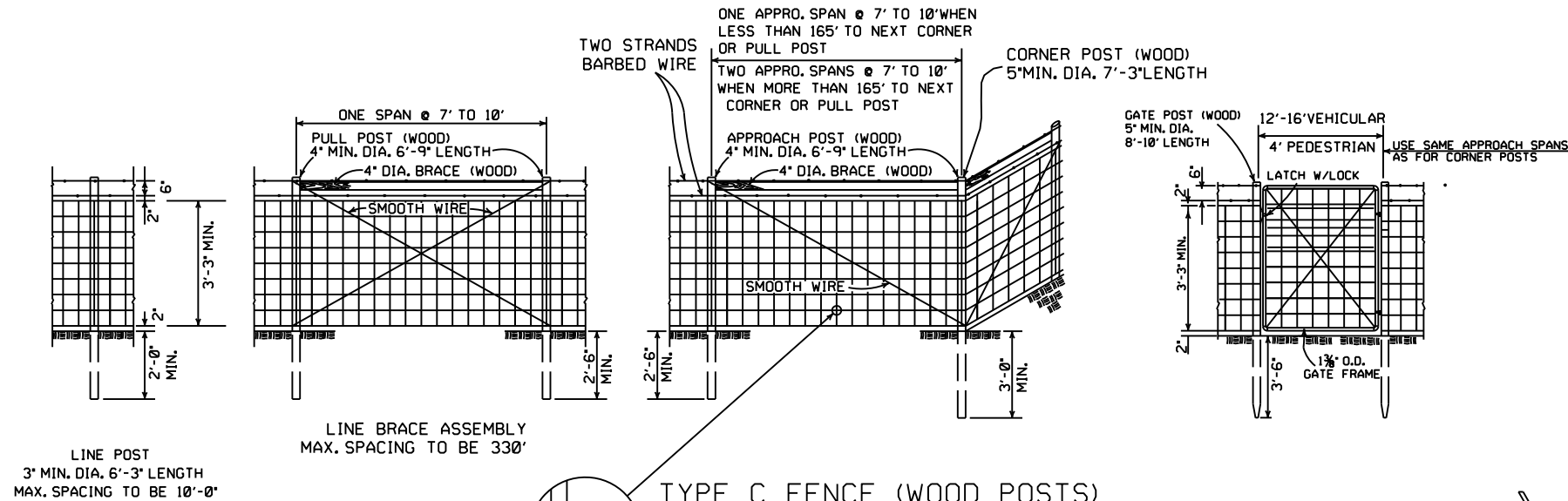


GENERAL NOTE

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

- CONSTRUCTION SEQUENCE
- 1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
 - 2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.
 - 3. PLACE PHASE 2 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.
 - 4. PLACE FINAL PHASE OF EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PLACE DIVERSION DITCHES AND SLOPE DRAINS AND MAINTAIN UNTIL ENTIRE SLOPE IS STABILIZED.

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



8-22-02	REVISED GENERAL NOTES	
10-18-96	REVISED AASHTO	
11-22-95	REVISED R-O-W LOCATION DETAIL	
6-2-94	REVISED BARB WIRE AND	6-2-94
	ADDED CORNER POST NOTES	
8-5-93	REVISED R/W INSTALLATION FENCE	8-5-93
10-1-92	ADDED STAPLE NOTE	10-1-92
8-15-91	ADDED TYPE D-2 FENCE	8-15-91
11-30-89	DELETED CLASS CONCRETE	11-30-89
7-15-88	ADDED SPICE NOTE	700-7-15-88
10-30-87	GENERAL REVISIONS	549-10-30-87
11-1-84	MAX. POST SPACING MIN. WIRE GAUGE	507-11-1-84
1-4-83	MIN. DIA. LINE POST	648-1-4-83
3-2-81	TOLERANCE FOR POST LENGTH	722-3-2-81
12-1-72	ADDED D-1 & FENCE INSTALLATION	564-12-1-72
10-2-72	REVISED AND REDRAWN	540-10-2-72
DATE	REVISION	FILMED

ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE
TYPE C AND D

STANDARD DRAWING WF-4

GENERAL NOTES:

STEEL LINE POSTS SHALL BE PAINTED OR GALVANIZED. TUBULAR END, CORNER, PULL, OR DIAGONAL BRACES MUST CONFORM TO THE DIMENSIONS AND WEIGHTS SPECIFIED ON STANDARD DRAWING WF-3 (CHAIN LINK). APPROVED ALTERNATES ARE ACCEPTABLE.

AN ACCEPTABLE TOLERANCE IN LENGTH OF TUBULAR OR WOODEN POSTS SHALL BE - 1" TO +2".

TUBULAR POSTS MUST BE PAINTED OR GALVANIZED.

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

DRIVEWAY GATES, EITHER SINGLE 12' TO 16' OR DOUBLE 6' TO 8' OPENING OF THE SAME TYPE AS THE PEDESTRIAN GATE, SHALL BE INSTALLED ON THE RIGHT SIDE OF EACH THROUGH LANE ROAD AT LARGE CULVERTS OR BRIDGE CROSS FENCE, FOR USE OF MAINTENANCE EQUIPMENT. LOCATION OF GATES TO BE SHOWN ON PLANS OR AS DESIGNATED BY THE ENGINEER.

AT STREAM CROSSINGS, THE FENCE SHALL NOT BE CONSTRUCTED ACROSS LARGE STREAMS. WHERE CLEARANCE IS SUFFICIENT FROM THE TOP OF THE BANK TO THE BRIDGE STRUCTURE A CROSS CONNECTION SHALL BE CONSTRUCTED BETWEEN THE FENCE ON EACH SIDE OF THE ROAD. WHERE THE CLEARANCE IS NOT SUFFICIENT, THE FENCE SHALL BE TERMINATED WITH CROSS CONNECTIONS AND END POSTS ADJACENT TO BRIDGE ABUTMENTS OR CULVERT WINGWALLS.

SPLICE FOR BARBED WIRE BETWEEN PULL POST ASSEMBLY SHALL BE BY THE 'EYE METHOD' AS DESCRIBED AS FOLLOWS: THE ENDS OF THE BARBED WIRE SHALL BE BENT TO FORM A LOOP. THE LOOPS SHALL BE CONNECTED. AFTER THE LOOPS ARE CONNECTED THE ENDS OF THE WIRE SHALL BE WRAPPED AROUND THE PROJECTING WIRES A MINIMUM OF 4 TIMES FOR EACH WIRE LOOP.

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

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