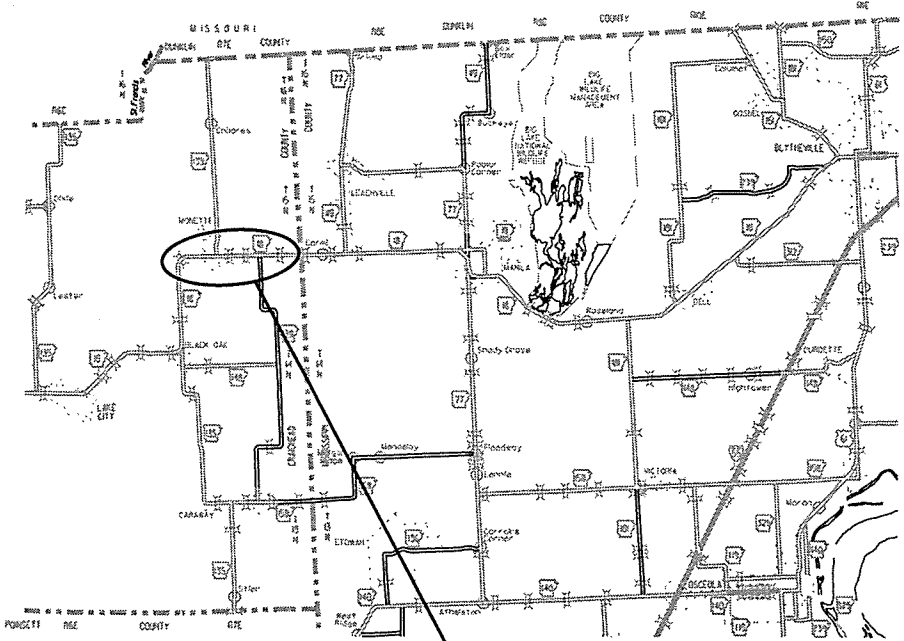


ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
CONSTRUCTION PLANS FOR STATE HIGHWAY

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. CA1001	1	283
								MONETTE BYPASS (S)



VICINITY MAP

PROJECT LOCATION

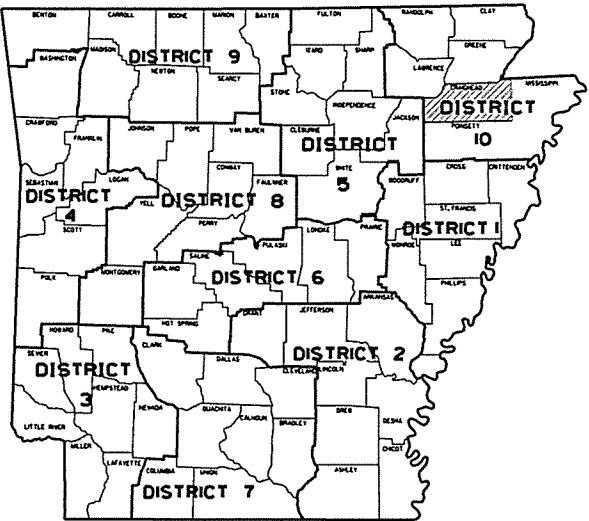
MONETTE BYPASS (S)

CRAIGHEAD COUNTY

ROUTE 18 SECTION 4

JOB CA1001

FED. AID PROJ. STPF-0016(63)



ARK. HWY. DIST. NO. 10

NOT TO SCALE

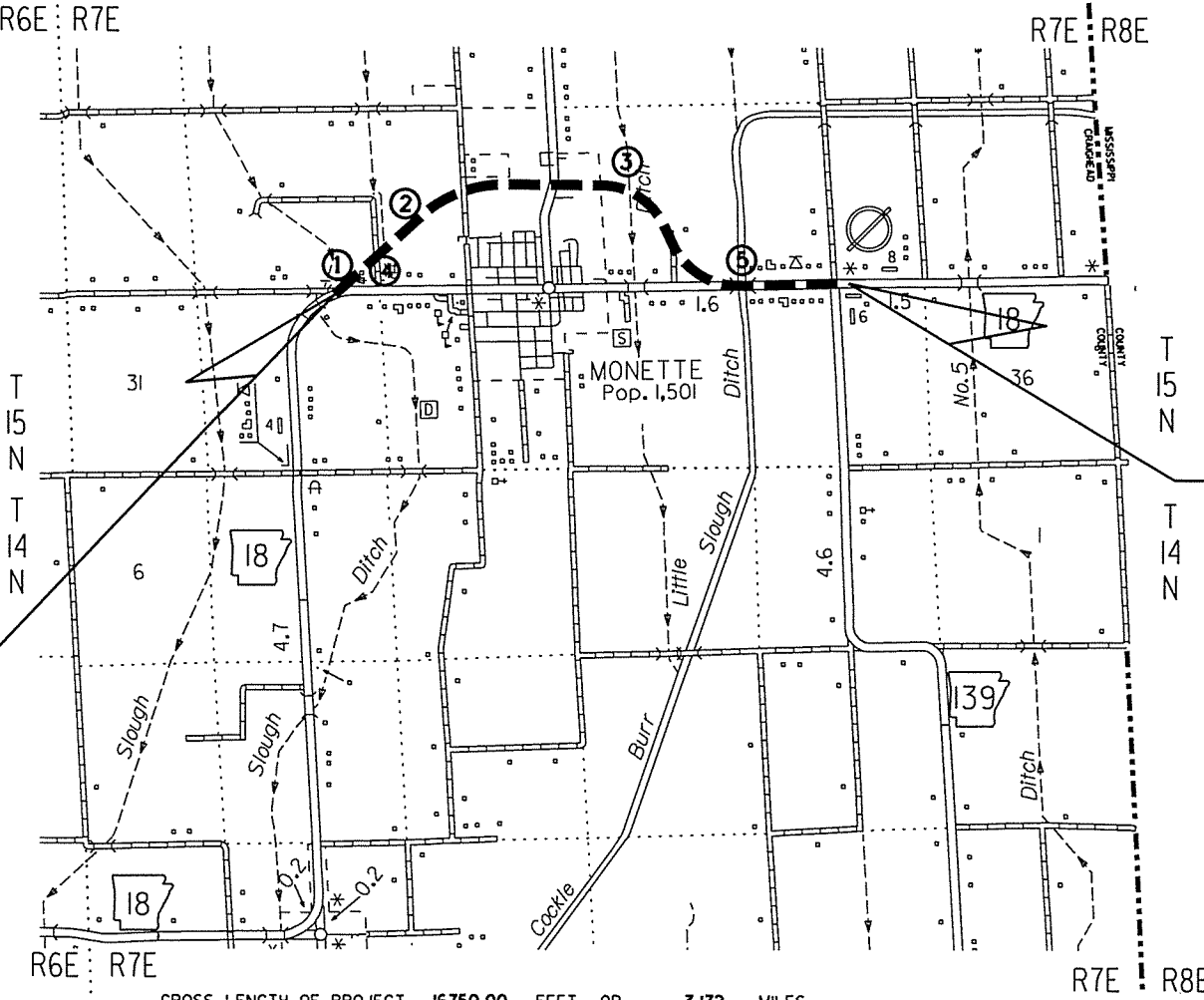
DESIGN TRAFFIC DATA

DESIGN YEAR	2035
2015 ADT	6000
2035 ADT	8000
2035 DHV	880
TRUCKS	11%
DESIGN SPEED	60 MPH

- STRUCTURES OVER 20'-0" SPAN
- STA. 473+03 CONSTRUCT
DBL. 11' X 6' X 188' R.C. BOX CULVERT
50° RT. FORWARD SKEW
W/3:1 WINGS LT. & RT.
D.A. = 1.96 SQ. MI., Q50 = 460 C.F.S.
SPAN = 23' - 9"
 - STA. 490+88 CONSTRUCT
DBL. 11' X 6' X 148' R.C. BOX CULVERT
W/3:1 WINGS LT. & RT.
35° LT. FORWARD SKEW
D.A. = 1.95 SQ. MI., Q50 = 450 C.F.S.
SPAN = 23' - 8"
 - STA. 570+82 CONSTRUCT
QUAD. 12' X 8' X 151' R.C. BOX CULVERT
W/3:1 WINGS LT. & RT.
30° RT. FORWARD SKEW
D.A. = 8.8 SQ. MI., Q50 = 950 C.F.S.
SPAN = 51' - 6"
 - STA. 46+00 CONSTRUCT - HWY. 18 WEST TIE
DBL. 11' X 6' X 110' R.C. BOX CULVERT
50° LT. FORWARD SKEW
W/3:1 WINGS LT. & RT.
CHANNEL CHANGE = 55 CU. YDS.
D.A. = 1.95 SQ. MI., Q50 = 450 C.F.S.
SPAN = 23' - 9"

- BRIDGE DATA
- BR. END STA. 613+11.92
BRIDGE NO. 07363
327' CONTINUOUS COMPOSITE W-BEAM
UNIT (60', 69', 69', 69', 60')
75'-0" CLEAR ROADWAY
329'-2" BRIDGE LENGTH
BR. END STA. 616+41.08

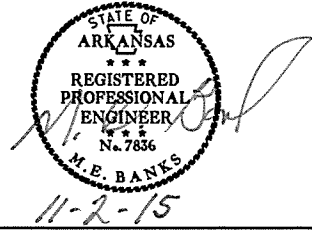
STA. 472+50.00
BEGIN JOB CA1001



STA. 640+00.00
END JOB CA1001
LOG MILE 26.89



APPROVED



DEPUTY DIRECTOR
AND CHIEF ENGINEER

BEGIN PROJECT	MID-POINT OF PROJECT	END PROJECT
N 35° 53' 28"	N 35° 53' 56"	N 35° 53' 23"
W 90° 21' 51"	W 90° 21' 01"	W 90° 18' 54"

GROSS LENGTH OF PROJECT	16750.00	FEET OR	3.172	MILES
NET " " " ROADWAY	16321.92	" " "	3.091	"
NET " " " BRIDGES	428.08	" " "	0.081	"
NET " " " PROJECT	16750.00	" " "	3.172	"

P.E. 100618

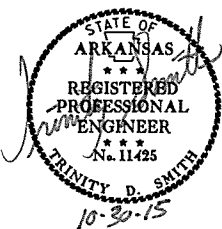
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182	TEMPORARY EROSION CONTROL DEVICES	TEC-3		11-03-94
183 - 283	CROSS SECTIONS			

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

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2 INDEX OF SHEETS



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2 GOV. SPECS. & GEN. NOTES

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 - TRAINING PROGRAM - JOB CA1001
FHWA-1273__	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273__	SUPPLEMENT - WAGE RATE DETERMINATION
108-1_____	LIQUIDATED DAMAGES
400-1_____	TACK COATS
410-1_____	CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
604-1_____	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
606-1_____	PIPE CULVERTS FOR SIDE DRAINS
620-1_____	MULCH COVER
JOB CA1001__	BIDDING REQUIREMENTS AND CONDITIONS
JOB CA1001__	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB CA1001__	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB CA1001__	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB CA1001__	COORDINATION OF WORK
JOB CA1001__	DELAY IN RIGHT OF WAY OCCUPANCY
JOB CA1001__	DIRECT TENSION INDICATORS FOR HIGH STRENGTH BOLT ASSEMBLIES
JOB CA1001__	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB CA1001__	EMPLOYMENT REPORTING
JOB CA1001__	EXTENSION FOR PIPE CULVERTS
JOB CA1001__	GEOSYNTHETIC INTERNAL REINFORCED EMBANKMENT CONSTRUCTION
JOB CA1001__	GOALS FOR ARKANSAS OWNED MINORITY BUSINESS ENTERPRISE
JOB CA1001__	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB CA1001__	HIGH PERFORMANCE PAVEMENT MARKING
JOB CA1001__	MANDATORY ELECTRONIC CONTRACT
JOB CA1001__	METAL PIPE
JOB CA1001__	NESTING SITES OF MIGRATORY BIRDS
JOB CA1001__	PARTNERING REQUIREMENTS
JOB CA1001__	PERCENT WITHIN LIMITS/PAVEMENT SMOOTHNESS
JOB CA1001__	PLASTIC PIPE
JOB CA1001__	PRICE ADJUSTMENT FOR ASPHALT BINDER
JOB CA1001__	RUMBLE STRIP REMOVAL
JOB CA1001__	SECTION 404 NATIONWIDE 14 PERMIT REQUIREMENTS
JOB CA1001__	SHORING
JOB CA1001__	SHORING FOR CULVERTS
JOB CA1001__	SOIL STABILIZATION
JOB CA1001__	STORM WATER POLLUTION PREVENTION PLAN
JOB CA1001__	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB CA1001__	UTILITY ADJUSTMENTS
JOB CA1001__	VALUE ENGINEERING
JOB CA1001__	WARM MIX ASPHALT

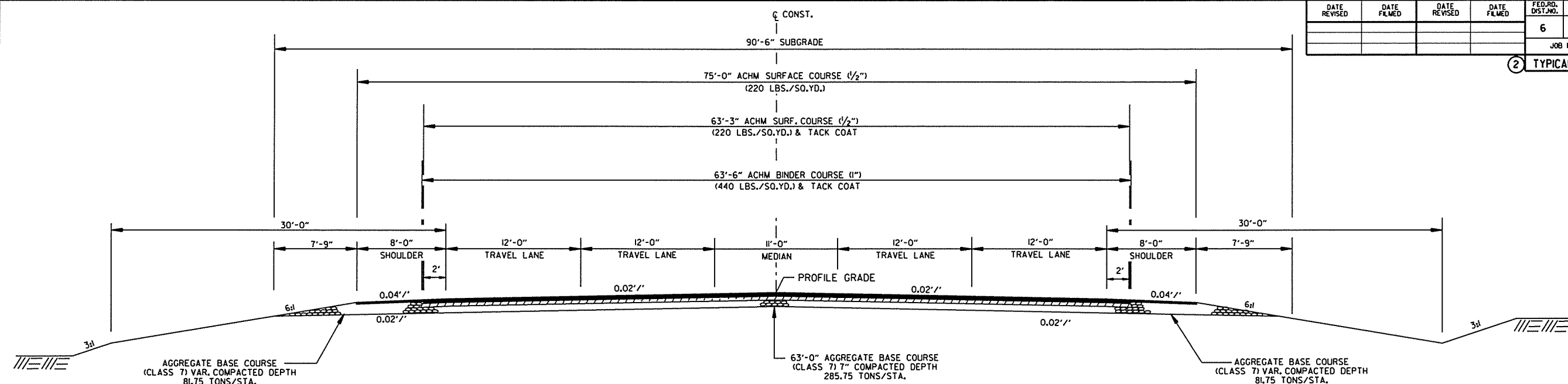
GENERAL NOTES

- GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
- ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
- ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING U. S. MAILBOXES WITHIN THE PROJECT LIMITS IN SUCH A MANNER THAT THE PUBLIC MAY RECEIVE CONTINUED MAIL SERVICE. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS BID ITEMS.
- ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
- ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED AS DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO INSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FENCE TO CONTROL LIVESTOCK IN AREAS WHERE PASTURES ARE SEVERED. WIRE FENCE MAY BE CONSTRUCTED INITIALLY, OR IN LIEU THEREOF, THE CONTRACTOR AT HIS OWN EXPENSE, MAY ELECT TO PROVIDE TEMPORARY FENCING SUITABLE TO CONTAIN LIVESTOCK.
- 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.



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2 TYPICAL SECTIONS OF IMPROVEMENT



HWY. 18
FULL DEPTH SECTION
STA. 472+50.00 - STA. 501+51.09
STA. 535+06.32 - STA. 555+73.23
STA. 617+92.00 - STA. 625+00.00

NOTES:

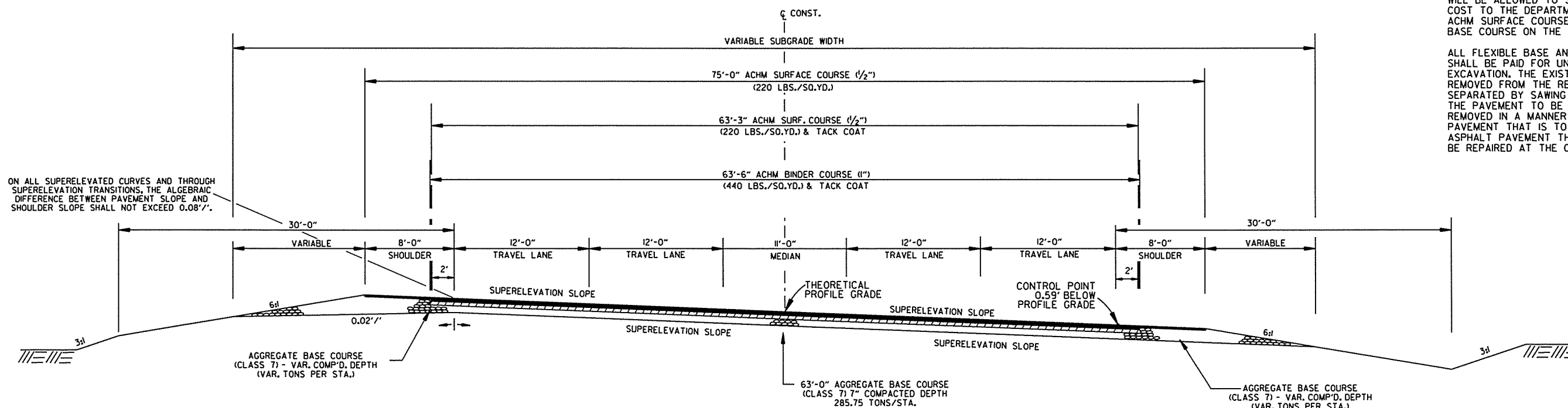
REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

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

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

WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, THE FIRST LIFT OF ACHM SURFACE COURSE (1/2") IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.

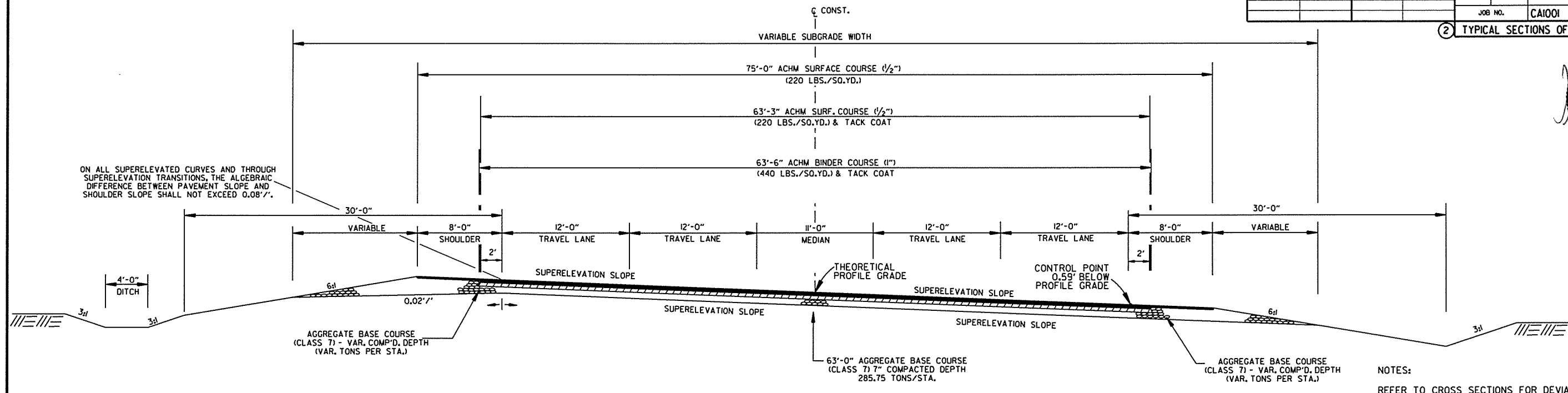
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HWY. 18
FULL DEPTH SECTION
STA. 501+51.09 - STA. 535+06.32
STA. 555+73.23 - STA. 563+00.00
STA. 570+00.00 - STA. 613+11.92
STA. 616+41.08 - STA. 617+92.00

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2 TYPICAL SECTIONS OF IMPROVEMENT



HWY. 18
FULL DEPTH SECTION W/4' FLAT BOTTOM
STA. 563+00.00 - STA. 570+00.00

NOTES:

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

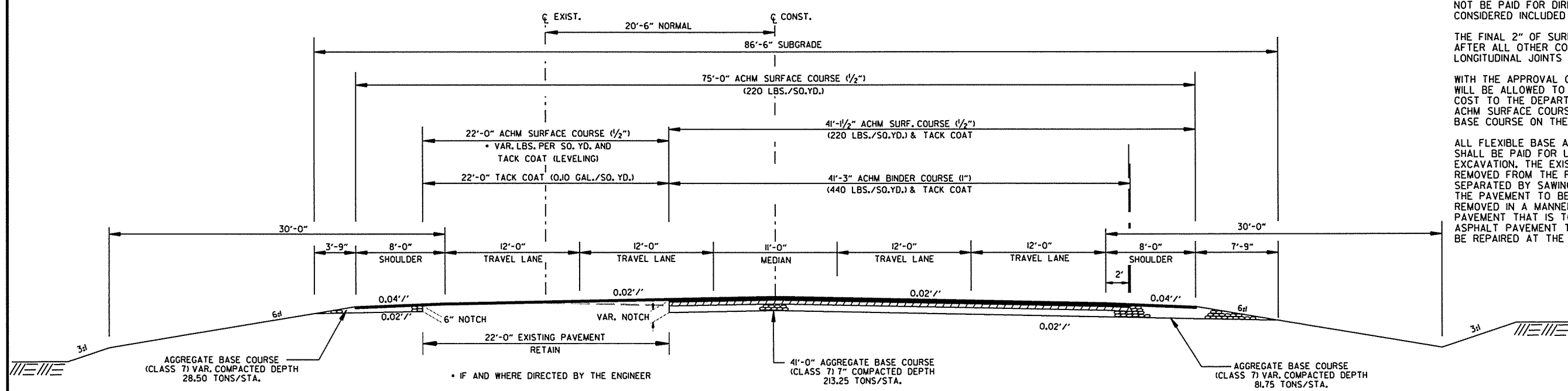
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ASPHALT FOR LEVELING OF EXISTING PAVEMENT SHALL BE PLACED ONLY IF AND WHERE DIRECTED BY THE ENGINEER. CALCULATIONS FOR THE AMOUNT OF LEVELING AND/OR LEVELING OPERATIONS SHALL BE PERFORMED BEFORE CONSTRUCTING NOTCH AND WIDENING. CALCULATIONS WILL NOT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

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

WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, THE FIRST LIFT OF ACHM SURFACE COURSE (1/2") IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.

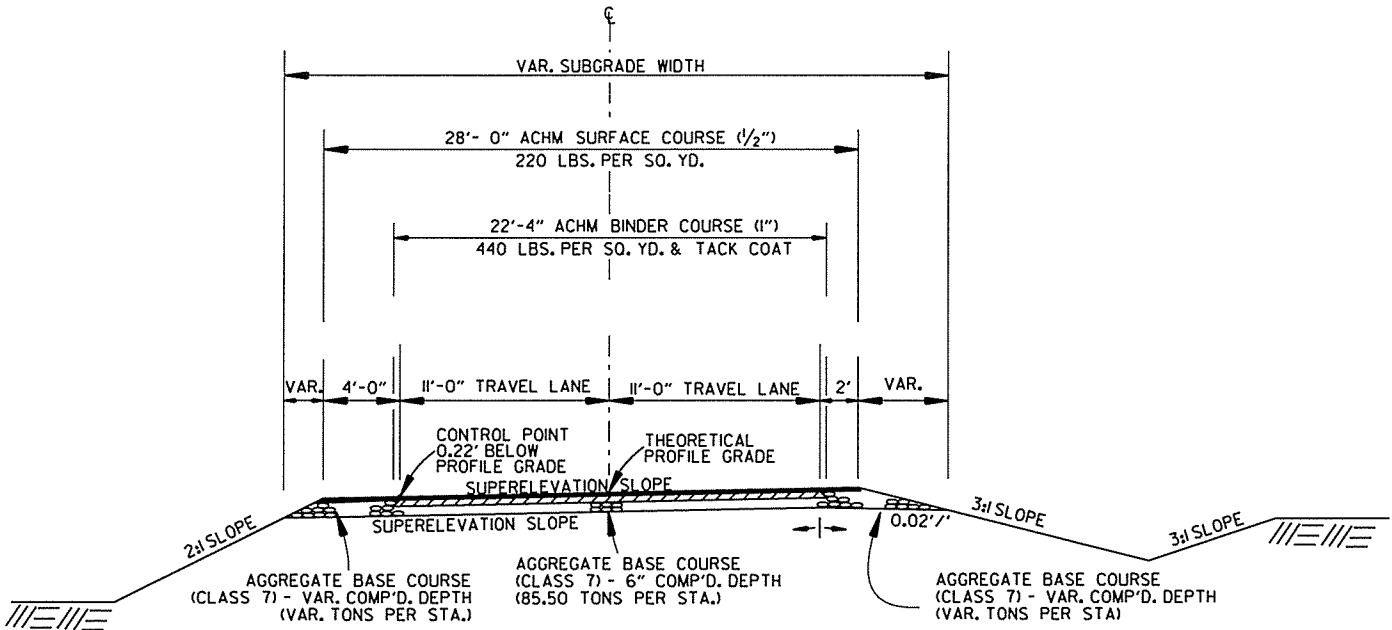
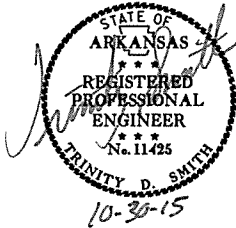
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HWY. 18
NOTCH AND WIDENING SECTION
STA. 625+00.00 - STA. 640+00.00

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2 TYPICAL SECTIONS OF IMPROVEMENT



TEMPORARY APPROACH FOR COCKLE BURR SLOUGH
STA. 801+72.65 - STA. 806+01.56

NOTES:

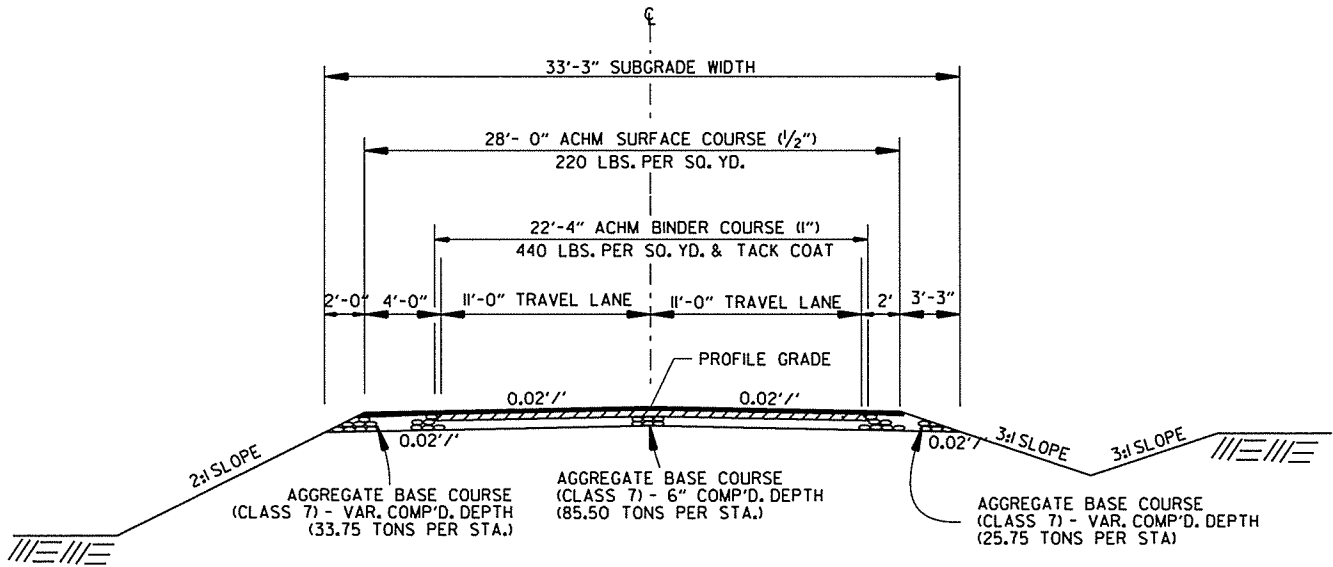
REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

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

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

WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, THE FIRST LIFT OF ACHM SURFACE COURSE (1/2") IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.

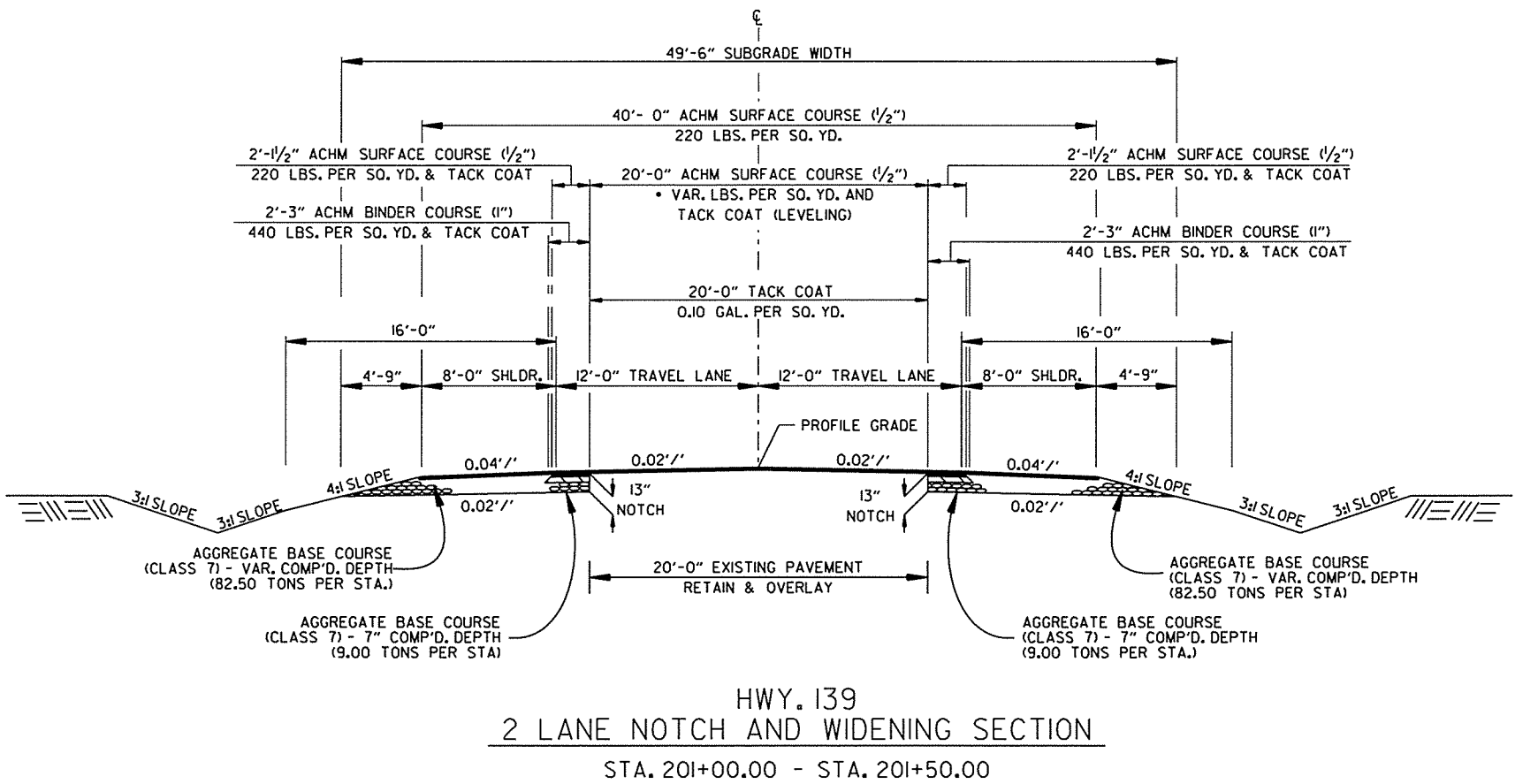
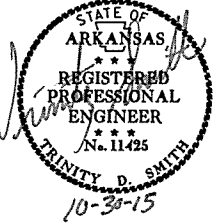
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TEMPORARY APPROACH FOR COCKLE BURR SLOUGH
STA. 797+83.19 - STA. 801+72.65

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.	CA1001		7	283

2 TYPICAL SECTIONS OF IMPROVEMENT



NOTES:

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

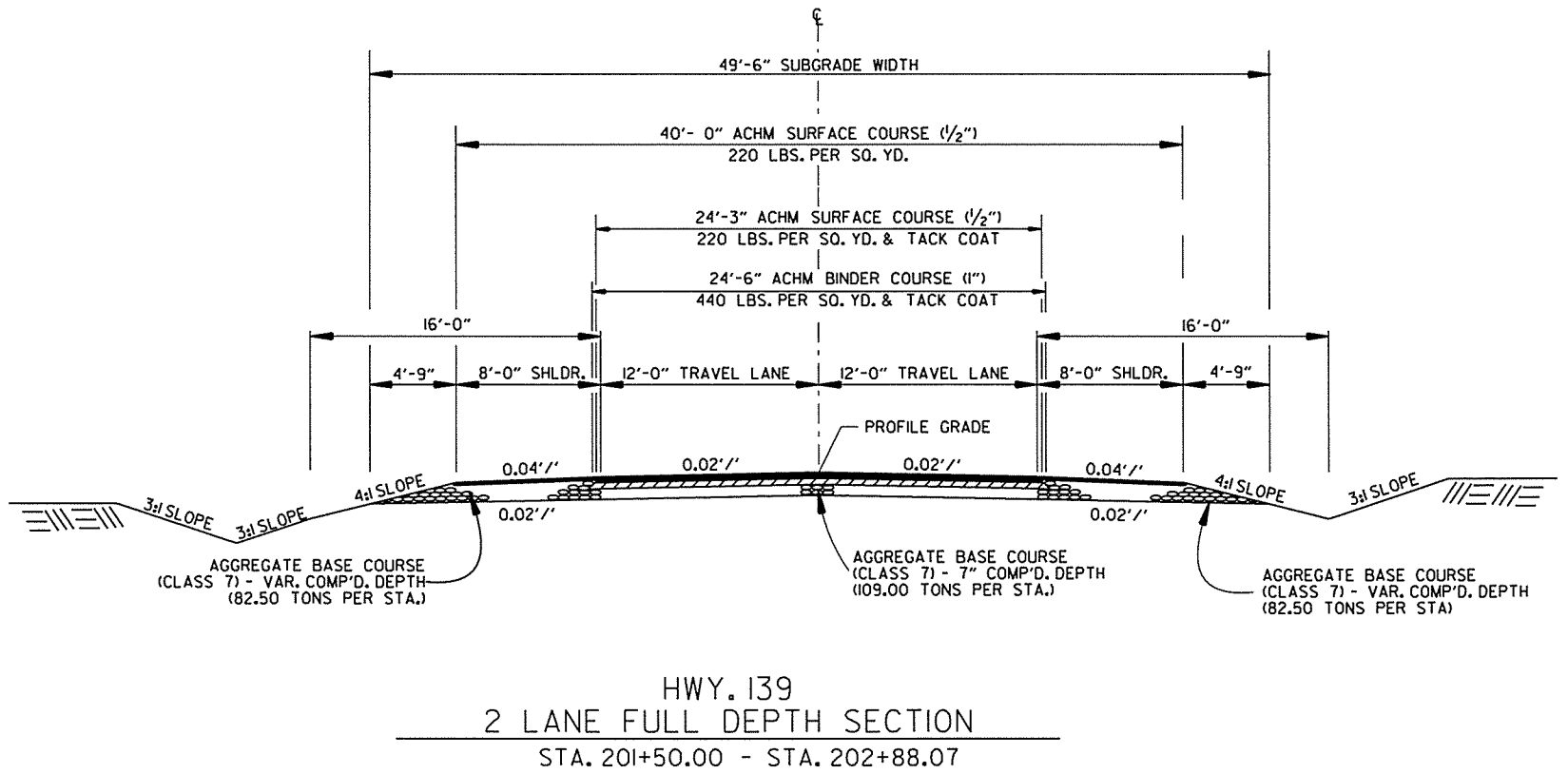
THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE.

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

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

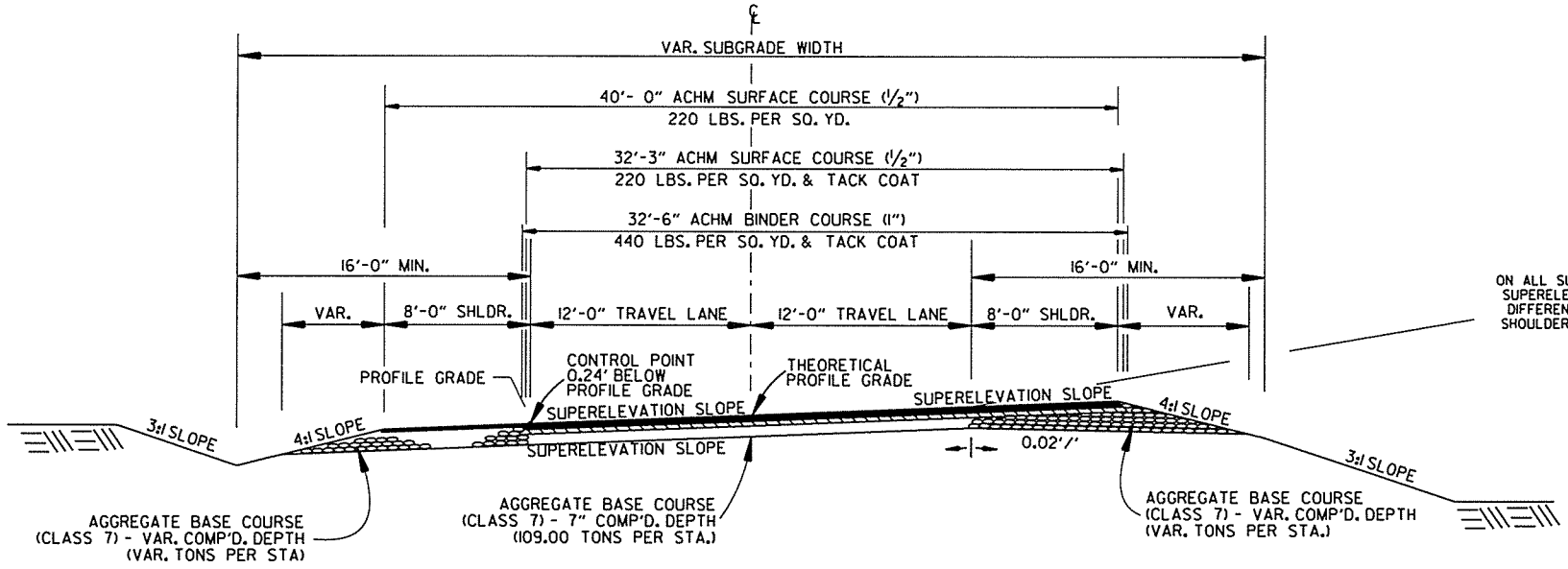
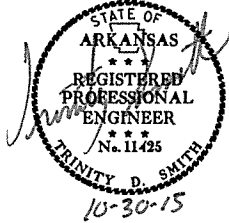
WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, THE FIRST LIFT OF ACHM SURFACE COURSE (1/2") IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.

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.



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				6	ARK.			
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2 TYPICAL SECTIONS OF IMPROVEMENT



HWY. 139
2 LANE FULL DEPTH SUPERELEVATION SECTION
STA. 202+88.07 - STA. 205+00.00

NOTES:

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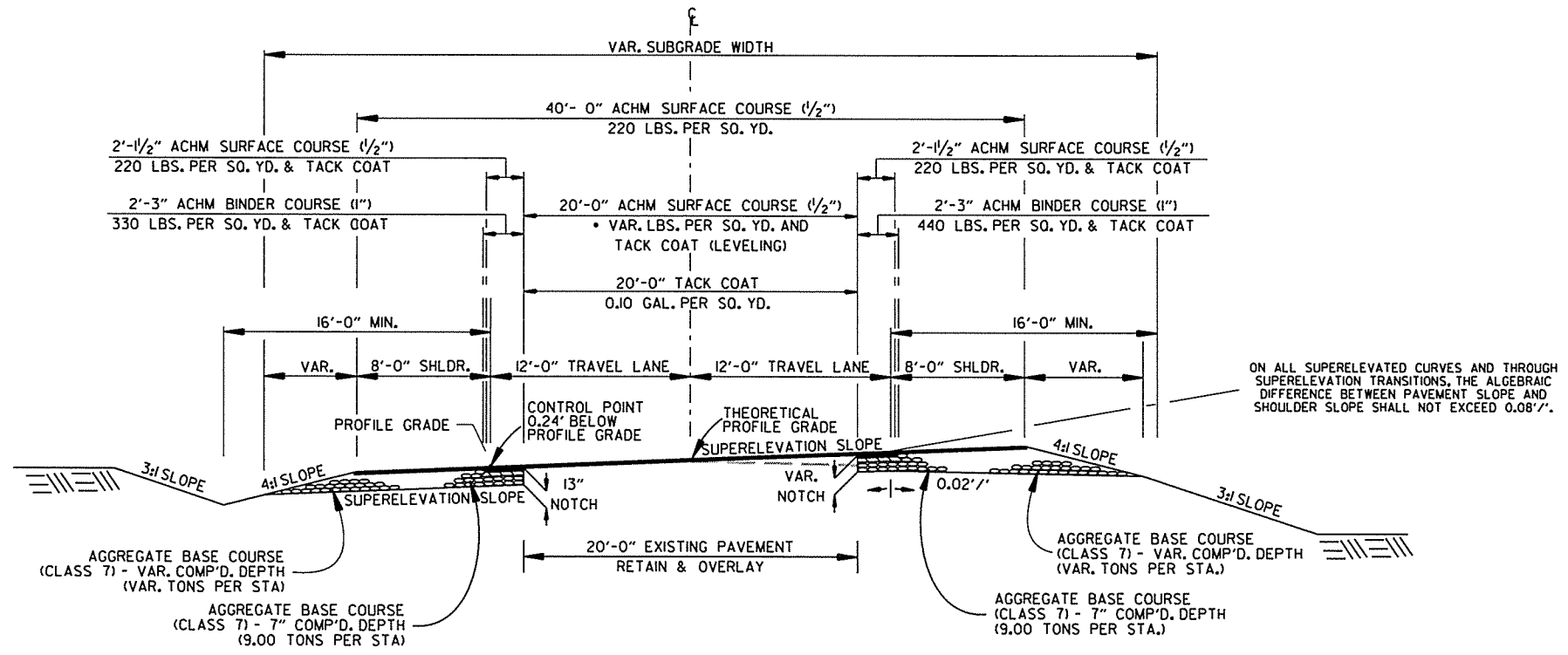
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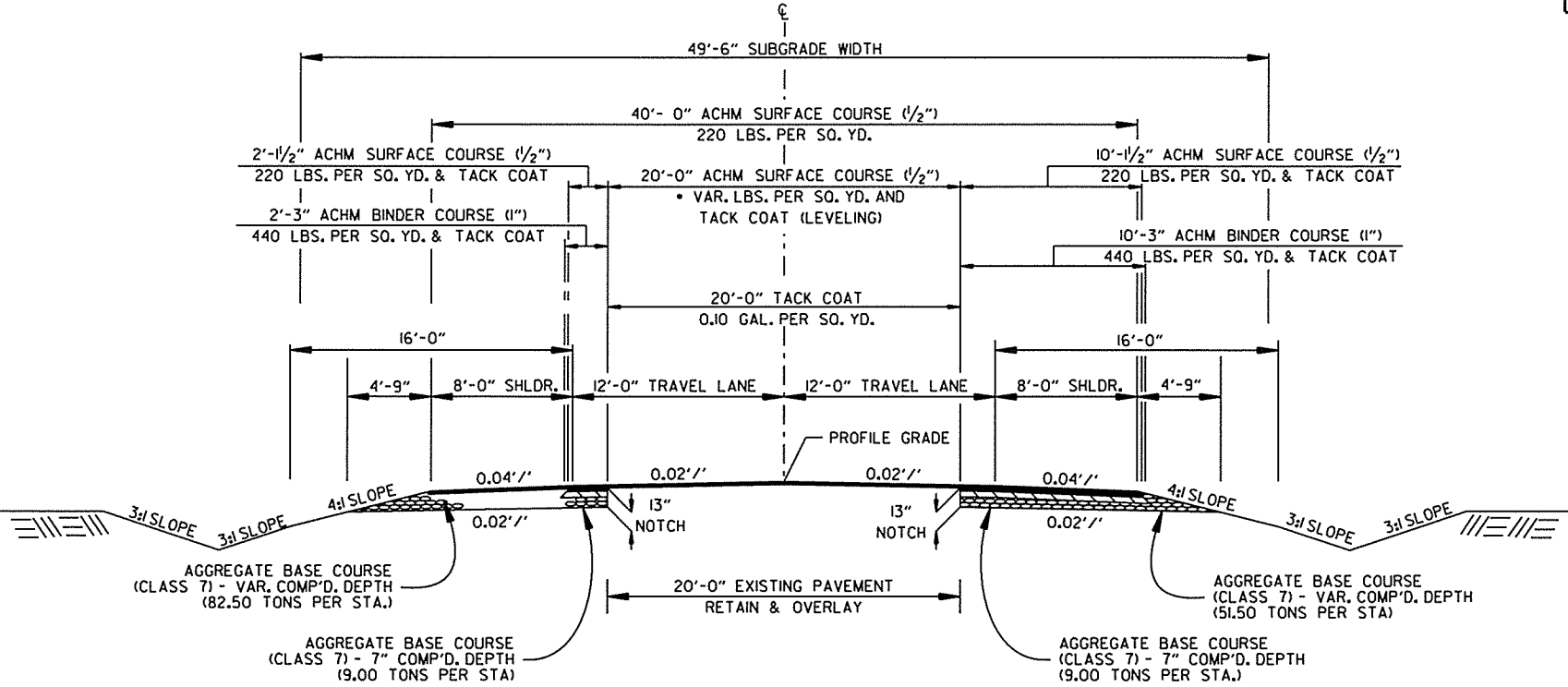
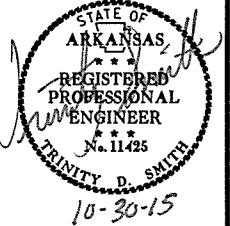
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HWY. 139
2 LANE NOTCH AND WIDENING SUPERELEVATION SECTION
STA. 205+00.00 - STA. 208+00.00

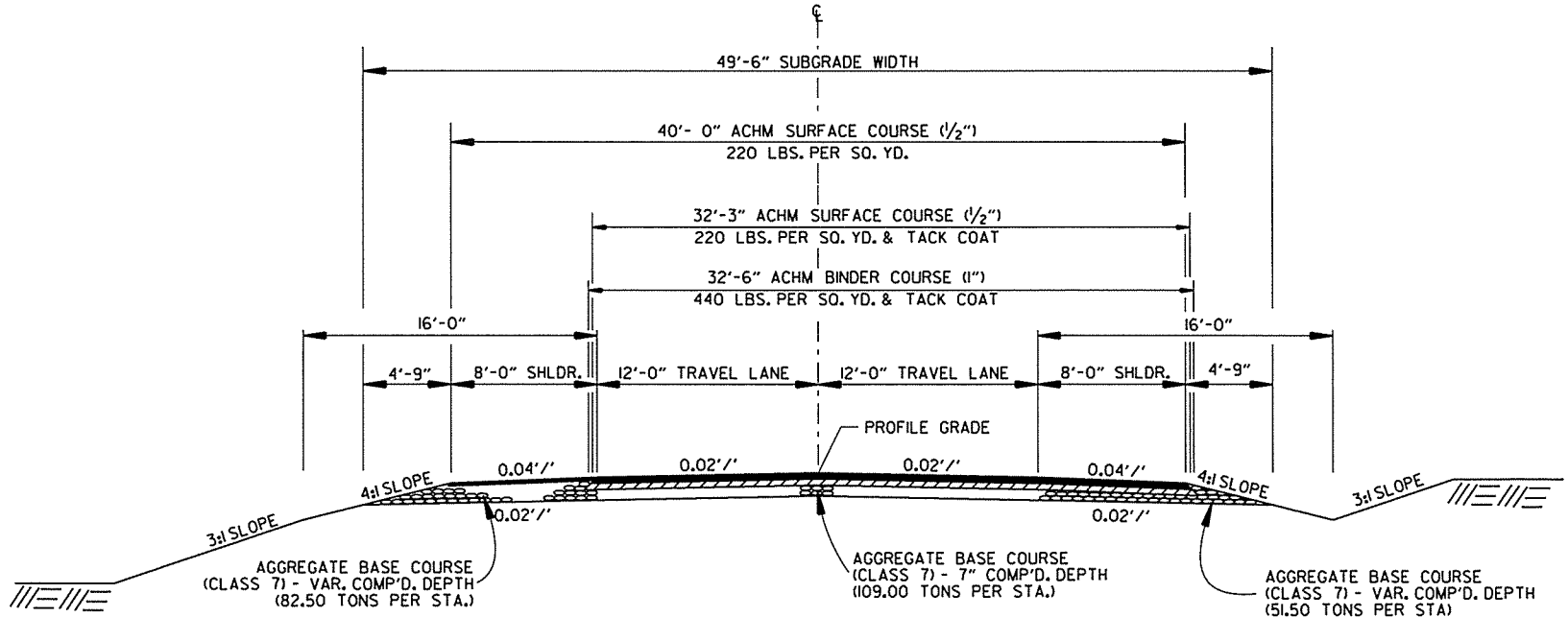
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
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2 TYPICAL SECTIONS OF IMPROVEMENT



CO. RD. 541
2 LANE NOTCH AND WIDENING SECTION

STA. 499+00.00 - STA. 500+75.00
STA. 504+75.00 - STA. 505+00.00



CO. RD. 541
2 LANE FULL DEPTH SECTION

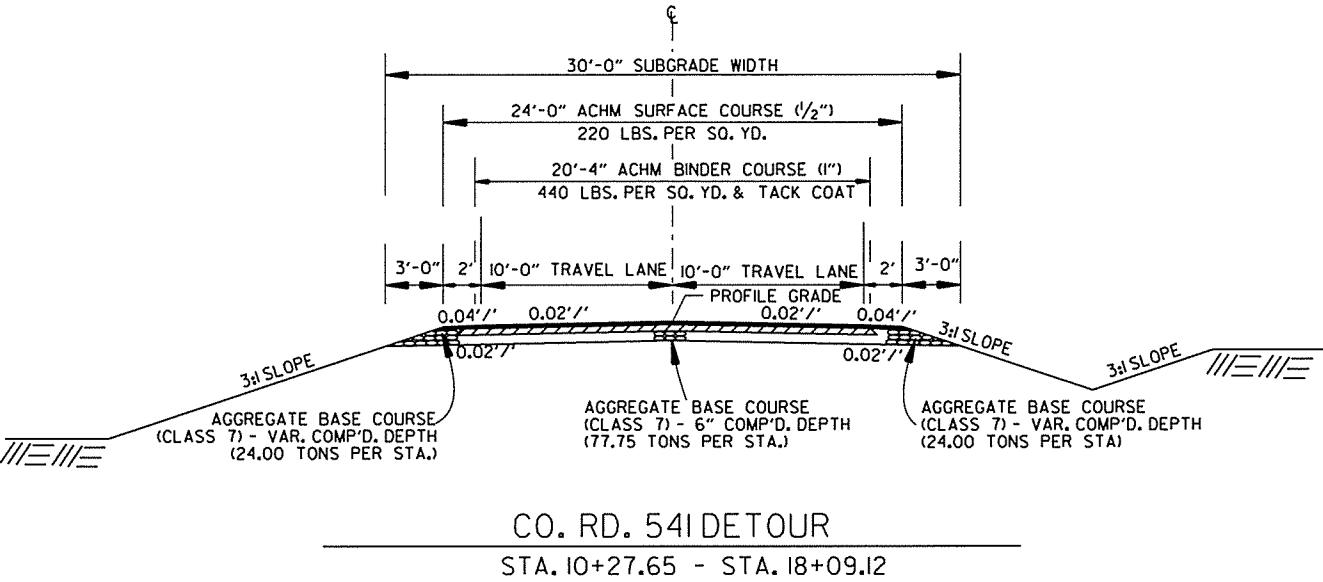
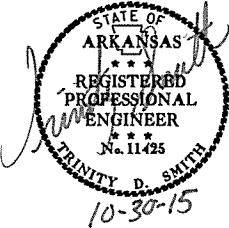
STA. 500+75.00 - STA. 504+75.00

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2 TYPICAL SECTIONS OF IMPROVEMENT



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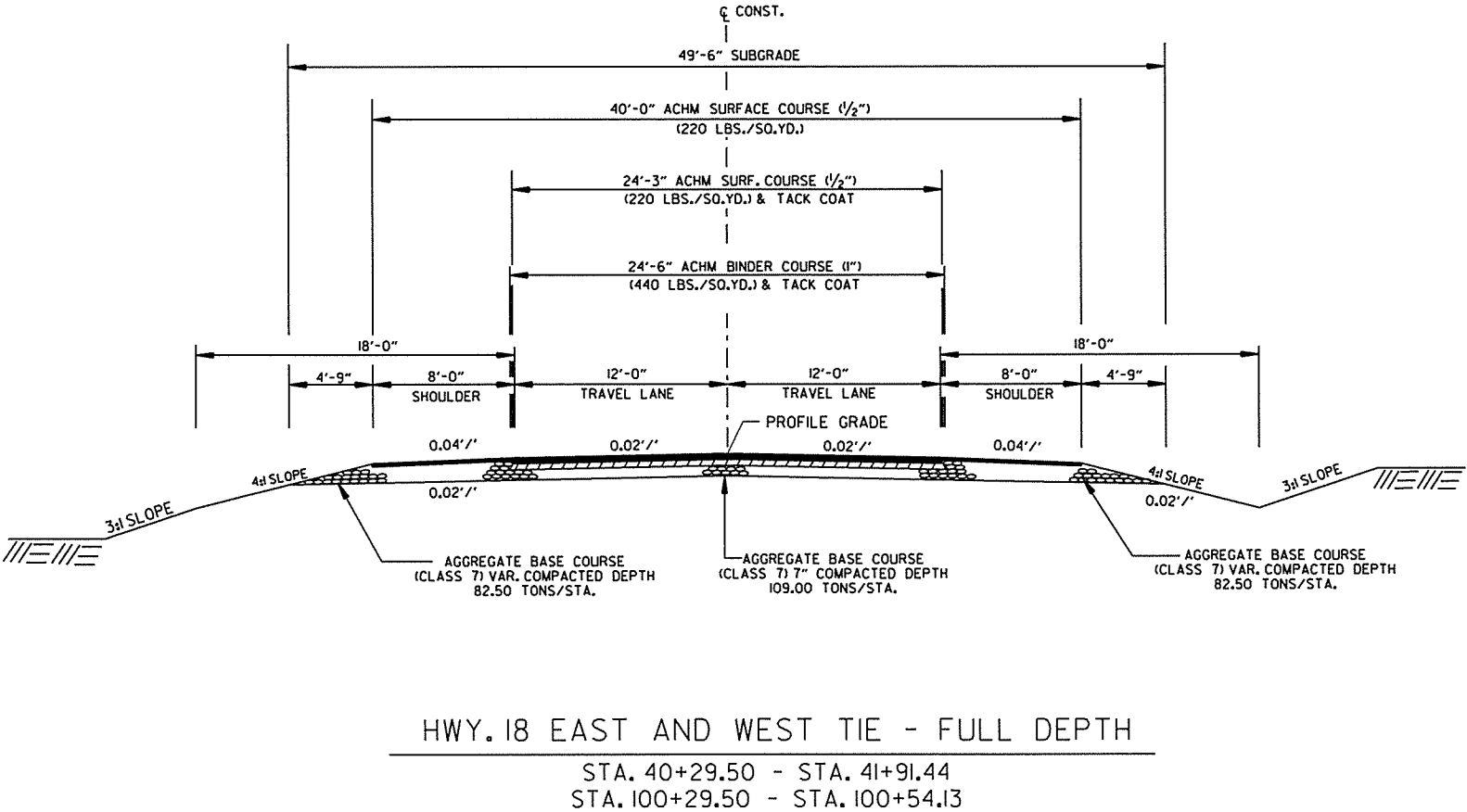
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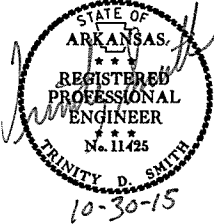
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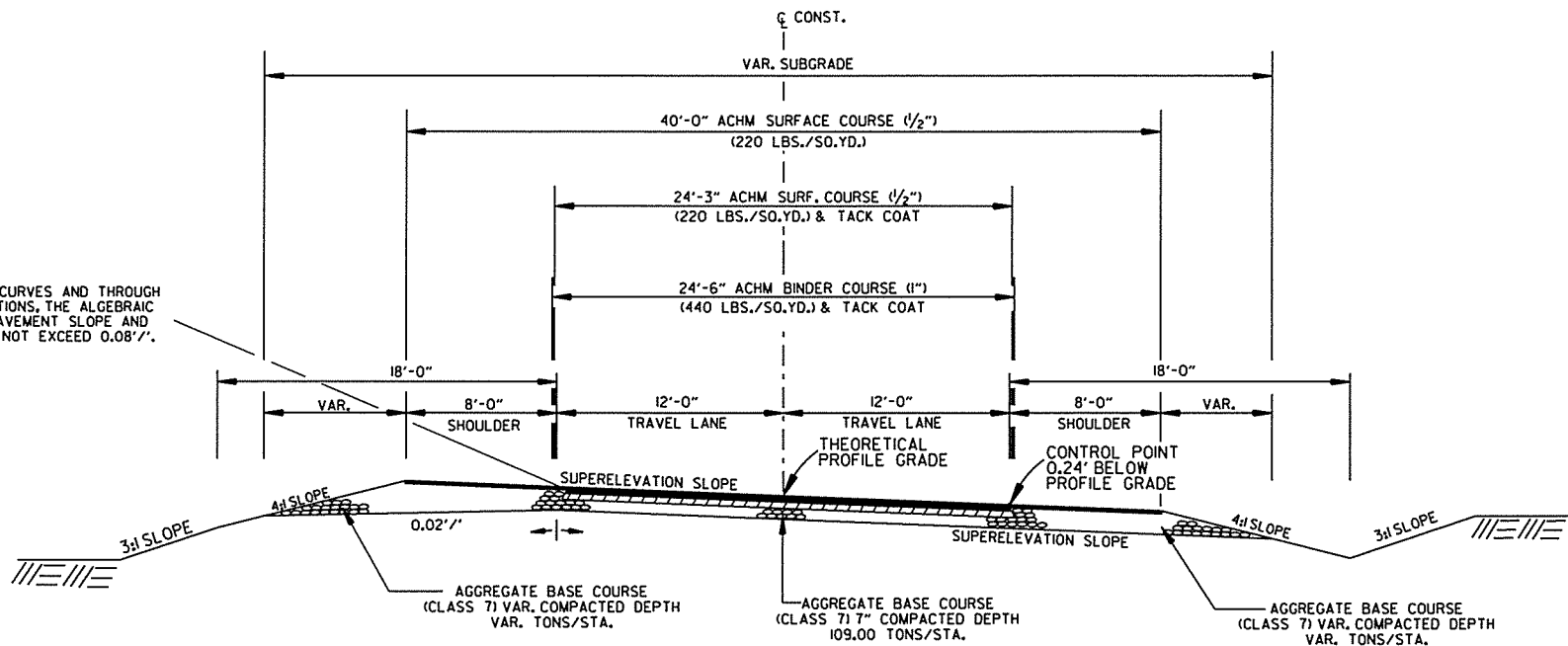
TYPICAL SECTIONS OF IMPROVEMENT

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				6	ARK.			
				JOB NO.	CA1001		11	283

2 TYPICAL SECTIONS OF IMPROVEMENT



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



HWY. 18 EAST AND WEST TIE SUPERELEVATION - FULL DEPTH

STA. 41+91.44 - STA. 47+00.00
STA. 100+54.13 - STA. 105+25.00

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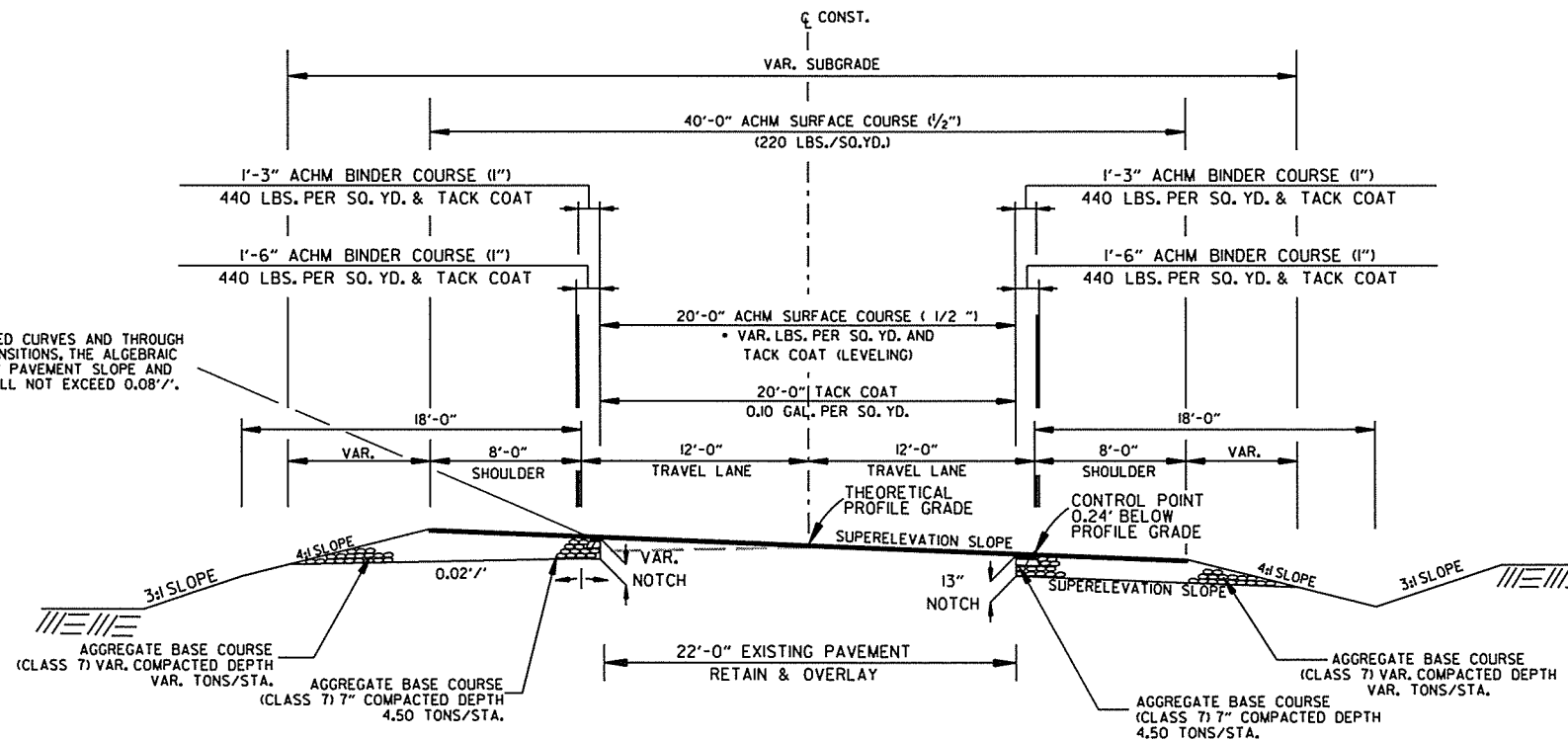
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HWY. 18 EAST AND WEST TIE SUPERELEVATION NOTCH AND WIDENING

STA. 47+00.00 - STA. 49+63.86
STA. 105+25.00 - STA. 108+44.35

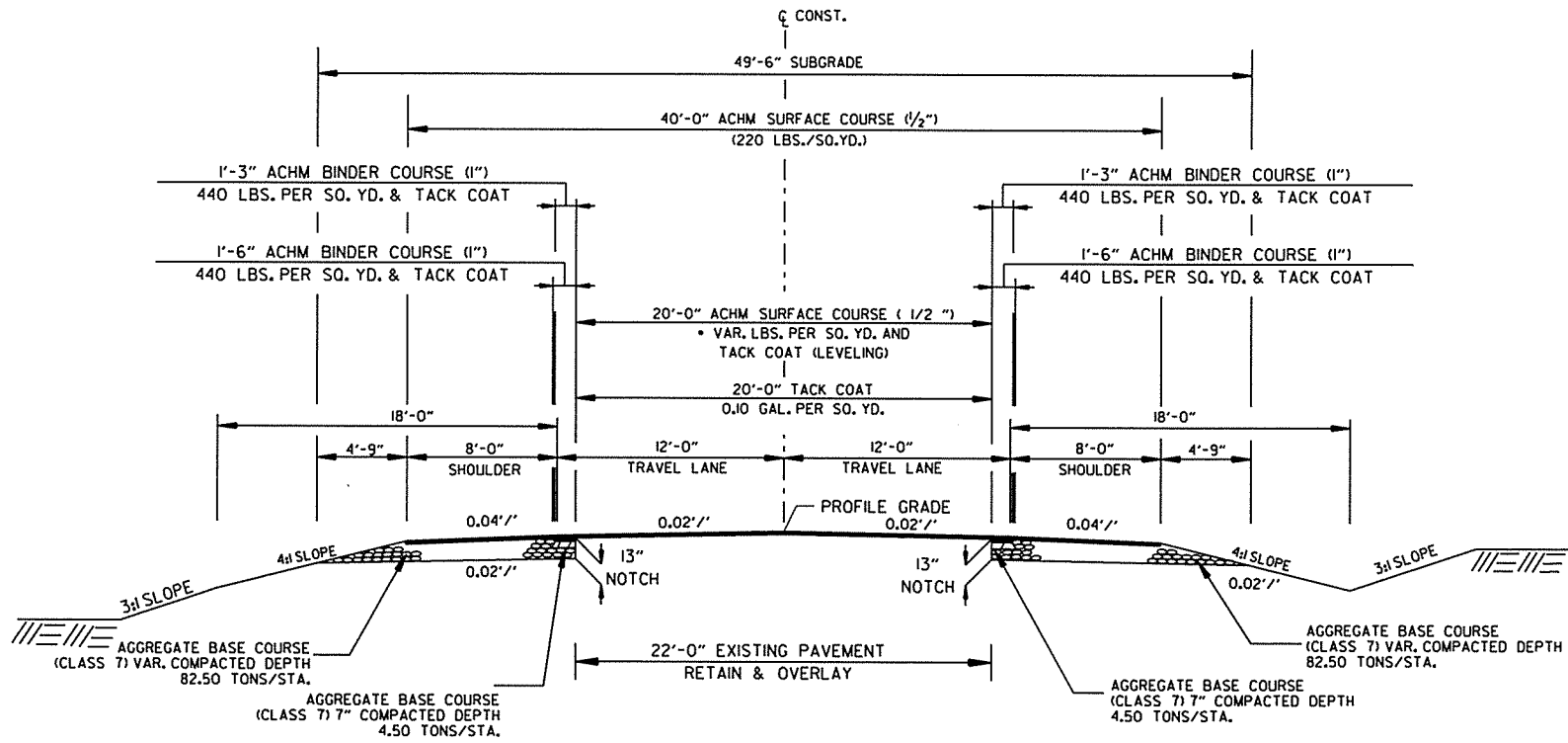
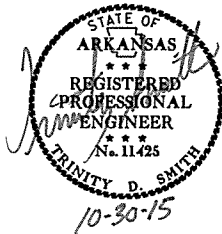
TYPICAL SECTIONS OF IMPROVEMENT

10/1/2015

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				6	ARK.			
				JOB NO.	CA1001		12	283

2 TYPICAL SECTIONS OF IMPROVEMENT



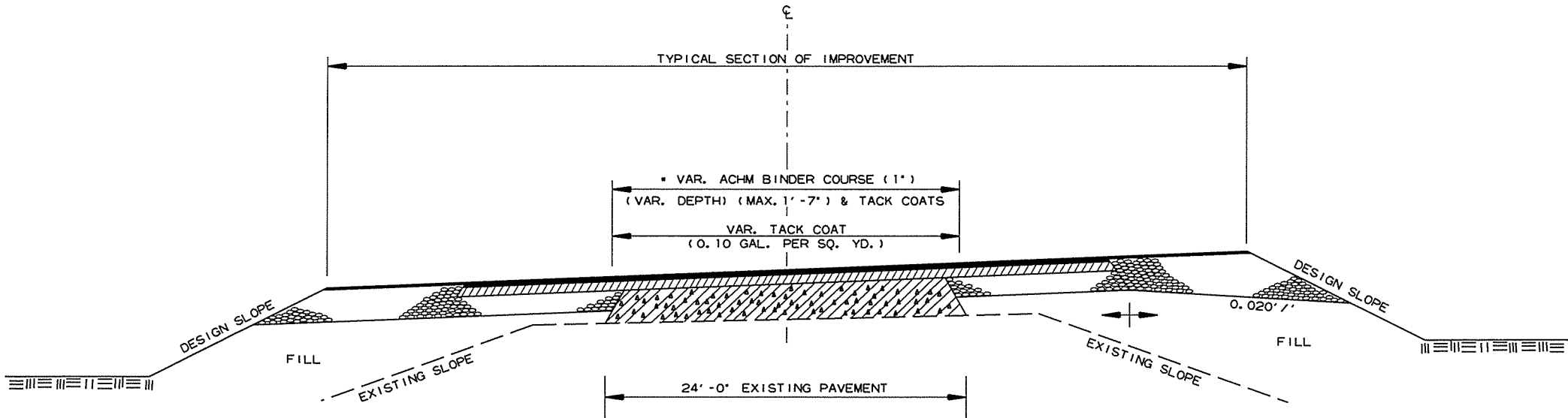
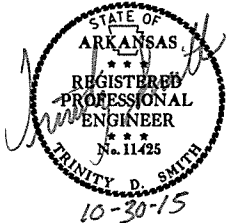
HWY. 18 EAST AND WEST TIE NOTCH AND WIDENING

STA. 49+63.86 - STA. 49+72.50
STA. 108+44.35 - STA. 110+82.58

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2 SPECIAL DETAILS

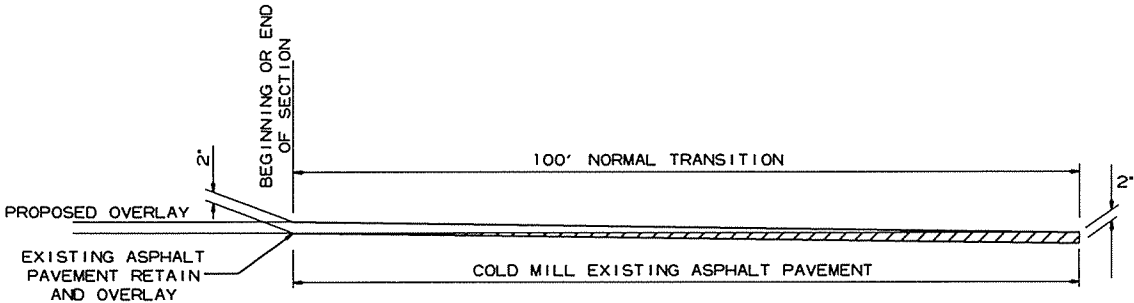


7'' AGGREGATE BASE COURSE (CLASS 7)
TO BE REPLACED WITH A.C.H.M. BASE COURSE (1-1/2'')

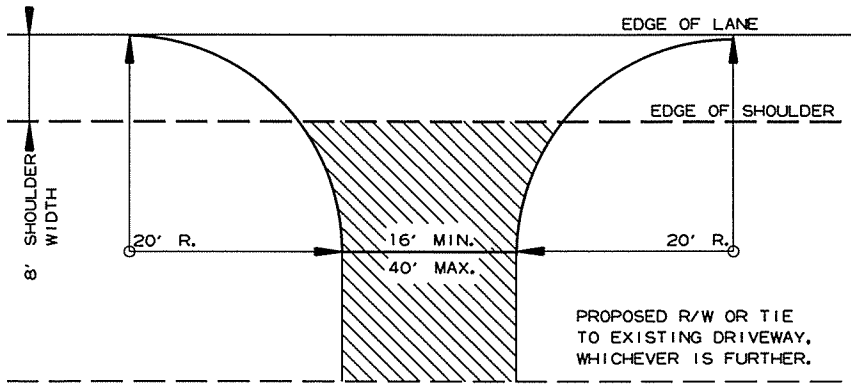
NOTES:

METHOD OF RAISING GRADE

- (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.

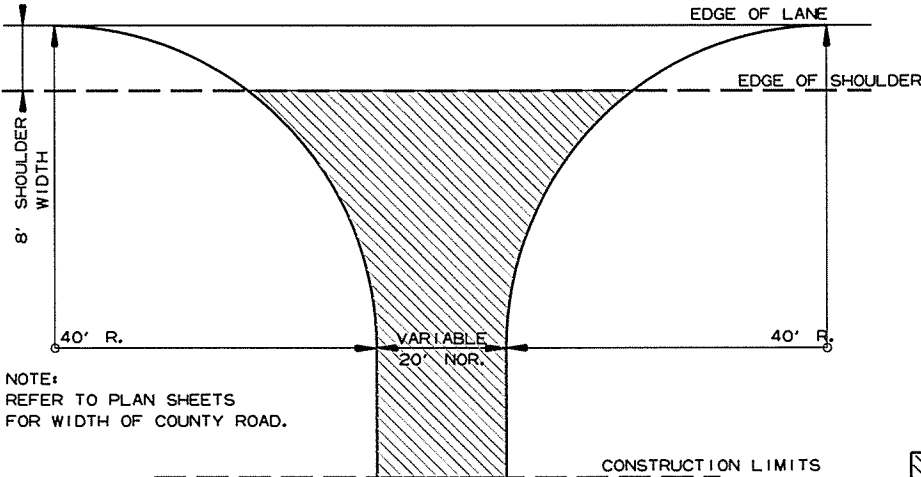


DETAIL FOR TRANSITIONS



DETAIL FOR DRIVEWAY TURNOUTS
OPEN SHOULDER SECTION
(ARTERIALS)

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.



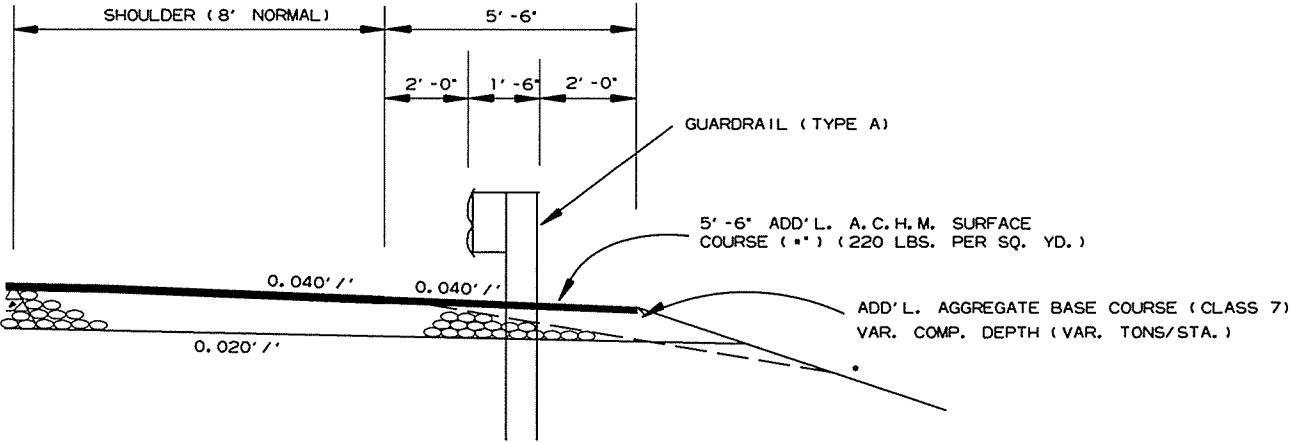
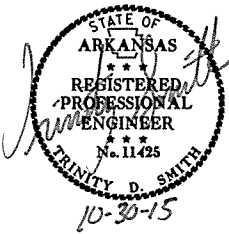
DETAIL FOR COUNTY ROAD TURNOUTS
OPEN SHOULDER SECTION

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

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

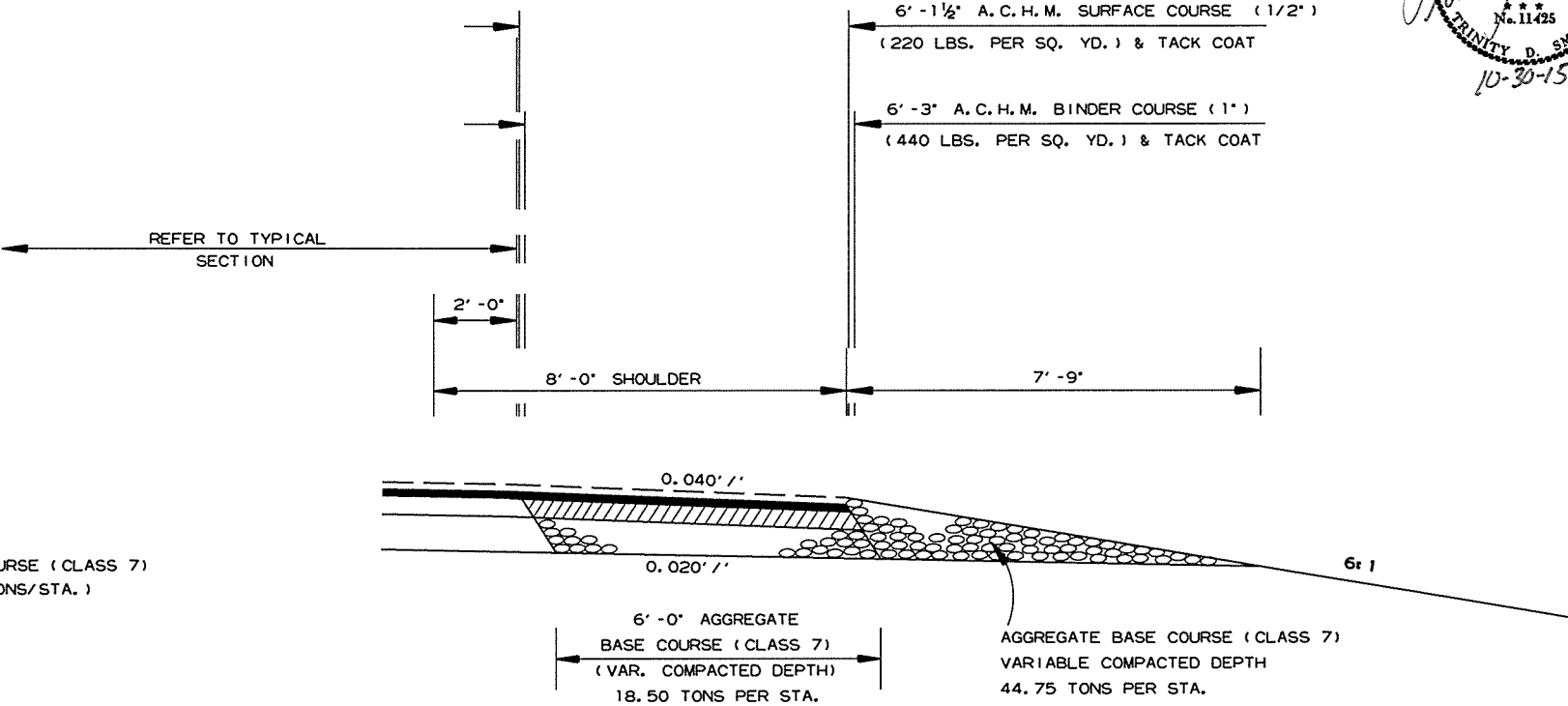
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2 SPECIAL DETAILS



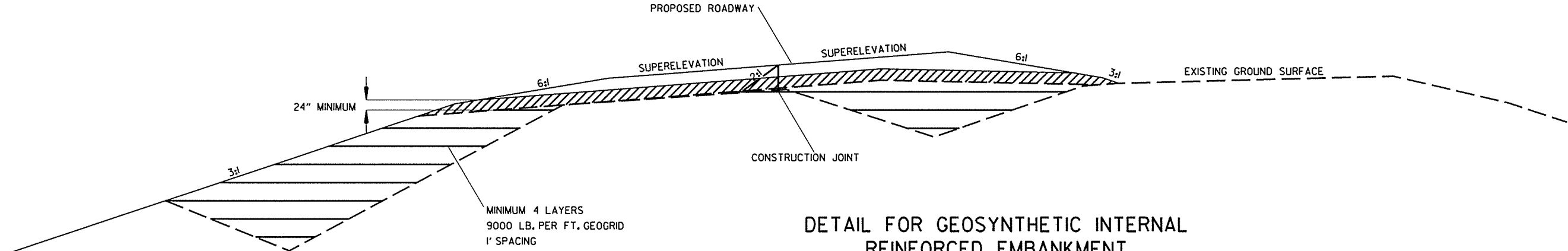
WIDENING FOR GUARDRAIL

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



FULL DEPTH SHOULDER
FOR MAINTENANCE OF TRAFFIC

STA. 600+00.00 TO STA. 613+11.92 (LT.)
STA. 616+41.08 TO STA. 640+00.00 (LT.)
STA. 616+41.08 TO STA. 623+00 (RT.)

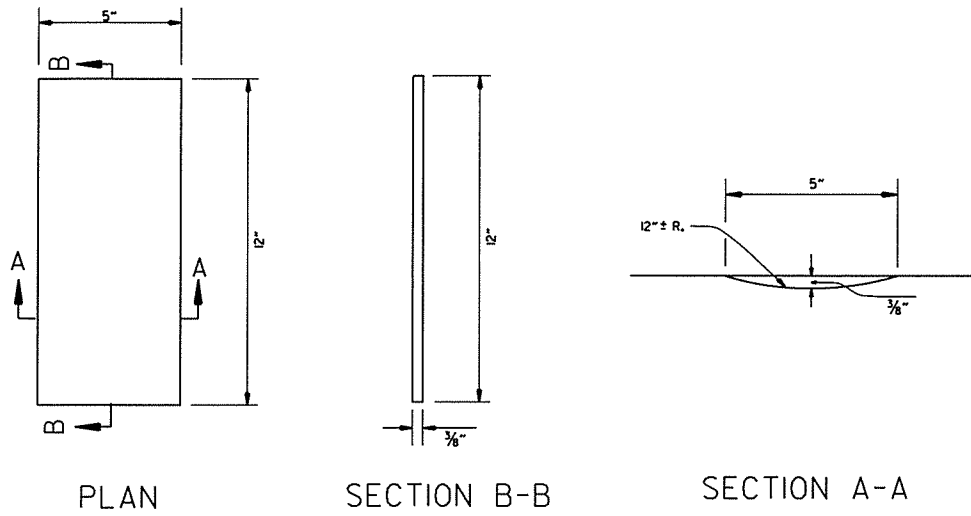
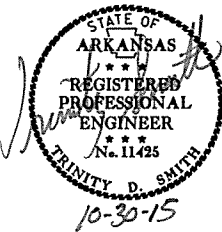


DETAIL FOR GEOSYNTHETIC INTERNAL
REINFORCED EMBANKMENT

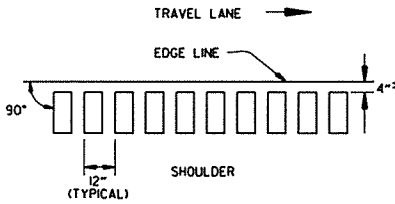
NOTE:
REFER TO "GEOSYNTHETIC INTERNAL REINFORCED EMBANKMENT CONSTRUCTION"
SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION. SEE SP FOR STATIONING.

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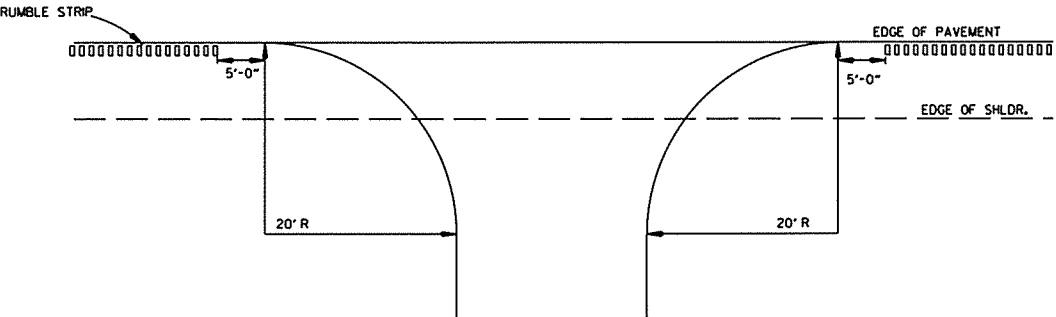
2 SPECIAL DETAILS



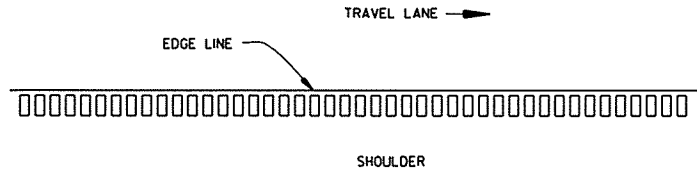
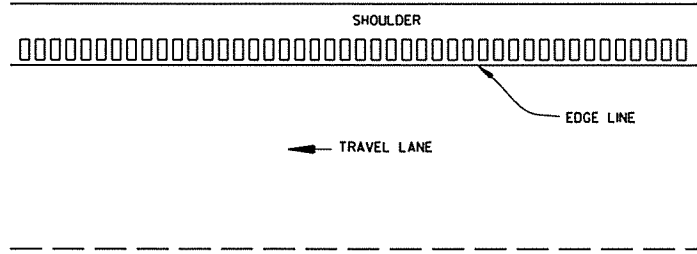
DETAILS OF RUMBLE STRIPS



LOCATION PLAN OF RUMBLE STRIPS
LEFT OR RIGHT SHOULDER



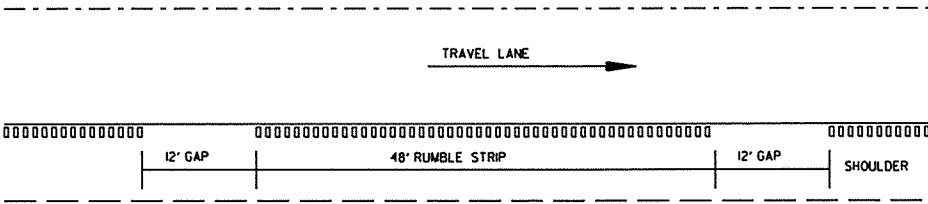
DETAIL FOR RUMBLE STRIP GAP
AT DRIVEWAY TURNOUTS



PLAN VIEW

GENERAL NOTES

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

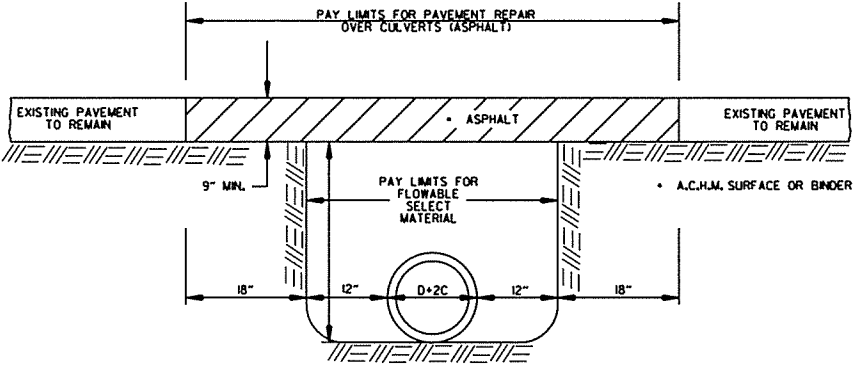
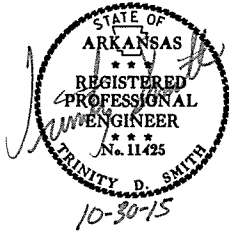


DETAIL FOR GAP PATTERN RUMBLE STRIP

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

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.	CA1001		17	283

2 SPECIAL DETAILS



PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

MID-SECTION

A	R.C. BOX SECTION								155.67	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 STEEL			INTERIOR WALL DISTRIBUTION STEEL																																		
	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.)				LENGTH = OW - 4" + BENDS								LENGTH = OW - 4" + BENDS								LENGTH = OH - 4"				LENGTH = OH - 4"				LENGTH = SL			LENGTH = SL			LENGTH = SL			LENGTH = SL		
	D	S	H	T	B	C	W	OW		OH	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																													
	5	11	6	11.0	11	6.5	8	23'-9"		7'-10"		4	23'-5"	8	23'-9"	7	23'-5"	15	124	4	23'-5"	5	23'-8"	5	23'-5"	10	186	4	4	934	7'-6"	4	12	310	7'-6"	4	10	59	4	10	59	4	12	12	4	12	12																														

INLET SLOPE SECTION(S)

[illegible]

INLET SKEWED END SECTION

SK	SL	D	S	H	L	T	HW	B	C	W	OW	OH	TOP SLAB REINFORCING STEEL								BOTTOM SLAB REINFORCING STEEL								SIDE WALL REINFORCING STEEL				INTERIOR WALL REINFORCING STEEL				TOP SLAB DISTRIBUTION REINFORCING STEEL				BOTTOM SLAB DISTRIBUTION REINFORCING STEEL				SIDE WALL DISTRIBUTION REINFORCING STEEL				INTERIOR WALL DISTRIBUTION REINFORCING STEEL				
													a				c				d				f				f0				f1				g				e				d1				d2				
													SIZE	SPACING	LENGTH VARY	NO. REQ'D	SIZE	SPACING	LENGTH VARY	NO. REQ'D	SIZE	SPACING	LENGTH VARY	NO. REQ'D	SIZE	SPACING	LENGTH VARY	NO. REQ'D	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH VARY	SIZE	SPACING	NO. REQ'D	LENGTH VARY	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH	
50	3:1	5	11	6	16'-2"	11	6.5	11	6.5	8	23'-9"	7'-10"	5	5	Max 23'-5" Min 1'-11" 23'-5"	62	6	5	Max 23'-5" Min 1'-11" 23'-5"	62	5	5	Max 23'-5" Min 1'-11" 23'-5"	62	4	6	Max 23'-5" Min 1'-11" 23'-5"	52	4	4	98	7'-6"	4	12	34	7'-6"	4		10	59	Max 30'-2" Min 1'-10"	4	10	59	Max 30'-2" Min 1'-10"	4	12	6	LONG 29'-8" SHORT 2'-3"	4	12	12	16'-0"
k1							k2					h																																									
SIZE		LENGTH			NO. REQ'D		SIZE		LENGTH			NO. REQ'D		SIZE		LENGTH			Y		NO. REQ'D																																
8		36'-6"			6		8		36'-6"			6		4		2'-1"			1'-1"		38																																

INLET WINGWALL TABLE

OVER ALL WIDTH		CLEAR HEIGHT		FOOTING THK.		WING WALL THK.		BOX SKEW (DEG.)		SLOPE		HDWL LENGTH		HEEL		WALL HEIGHT		WINGWALL ANGLE (DEGREE)		FOOTING WIDTH AT WALL END		WIDTH OF WING FOOTINGS AT HDWL		FOOTING DIMENSION PARALLEL WITH HDWL		LENGTH OF WINGWALLS		LENGTH OF FOOTING HEEL		CLASS "S" CONCRETE (Includes apron)		REINFORCING STEEL (Includes apron and laps if required)	
																AT HDWL	AT WING END																
																WING A	WING B																
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4													
23'-9"	6'-0"	0'-9"	0'-8"	50	3:1	35'-3 1/8"	2'-0"	6'-10"	2'-0"	0	60	3'-2"	3'-2"	3'-9"	0'-6"	0'-5 1/8"	14'-6"	29'-0"	16'-0 3/8"	41'-0"													

WING	F1				F2				F3				F4				F5				F6				F7		F8		F9		F10		F11		F12		REINF. STEEL QTY. PER WING (LBS)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
	BAR SIZE	MAX. SPACING	NO. REQD	LENGTHS VARY	BAR SIZE	SPACING	NO. REQD	LENGTHS	BAR SIZE	SPACING	NO. REQD	LENGTHS	BAR SIZE	SPACING	NO. REQD	LENGTHS	BAR SIZE	SPACING	NO. REQD	LENGTHS	BAR SIZE	SPACING	NO. REQD	LENGTHS	BAR SIZE	SPACING	NO. REQD	LENGTHS	BAR SIZE	SPACING	NO. REQD	LENGTHS	BAR SIZE	SPACING	NO. REQD	LENGTHS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
WING A	4	12	15	L	Min 3'-0"	-	-	-	L	-	-	-	L	-	4	18	4	Min	4	18	4	14'-2"	4	18	10	L	Min 4'-9"	4	8	16'-10"	4	18	Min	-	-	-	Min	4	2	14'-10"	4	2	15'-4"	6	12	6	L	3'-4"	360																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
				Max 7'-8"	X				-	X			-	4'-10"				X								-	Max						X														-	Max		Max 2'-4"	Max 2'-4"	Max 2'-6"	Max 7'-0"	-	-	-	Max	Max	Max	X	1'-8"																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
				Min 0'-9"	Min 2'-4"				Y	-			Y	-				Y								-	Min 2'-4"						Min 2'-6"														Min 2'-4"	Min 2'-4"		Min 4'-7"	Max 9'-3"	2'-8"	-	-	-	Max	Max	Max	-	-	-	Min	3'-4"	724																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
				Max 0'-9"	Max 7'-0"				Y	-			Y	-				Y								-	Max						Max														Max	Max		Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max		Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max

③ MID-SECTION
BAR LAP TABLE

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

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

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

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA1001	18	283
1				SPECIAL DETAILS				

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

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



TABULAR DATA BY: CJR DATE: 8/26/2015
CHECKED BY: Swf DATE: 8/27/15

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

33.94	CU. YDS.	CLASS "S" CONCRETE (Includes HDWL)
7141	LBS.	① REINFORCING STEEL (GR 60) (Includes HDWL)

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

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

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

SHEET 1 OF 2
DETAILS OF R.C. BOX CULVERT
DOUBLE BARREL BOX CULVERT
Sta. 473+03

SPECIAL DETAILS



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

33.94	CU. YDS.	CLASS "S" CONCRETE (Includes HDWL)
7141	LBS.	① REINFORCING STEEL (GR 60) (Includes HDWL)

[illegible]

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

INLET WINGWALL TABLE

[illegible]

INLET SKEWED END SECTION

SK (DEGREE)	SLOPE	FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THK.	HDWL THK.	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVER ALL WIDTH	OVER ALL HEIGHT	TOP SLAB REINFORCING STEEL								BOTTOM SLAB REINFORCING STEEL								SIDE WALL REINFORCING STEEL				INTERIOR WALL REINFORCING STEEL				TOP SLAB DISTRIBUTION REINFORCING STEEL				BOTT OM 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
35	3'-1"	2'	11	6	10'-3"	13	3	13	6	8	23'-8"	8'-2"	6	9	Max 23'-4"	20	8	7.5	Max 23'-4"	24	4	5.5	Max 23'-4"	32	4	7.5	Max 23'-4"	24	4	5.5	46	7'-10"	4	12	22	7'-10"	4	8.5	67	Max 18'-5"	4	8.5	67	Max 18'-5"	4	12	6	LONG 18'-2"	4	12	12	10'-1"
k1						k2						h																																								
SIZE		LENGTH		NO. REQ'D		SIZE		LENGTH		NO. REQ'D		SIZE		LENGTH		Y		NO. REQ'D																																		
5		28'-7"		6		5		28'-7"		6		4		2'-0"		1'-0"		30																																		

INLET SLOPE SECTION(S)

[illegible]

MID-SECTION

[illegible]

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA1001	20	283
				1 SPECIAL DETAILS				

③ MID-SECTION

BAR LAP TABLE

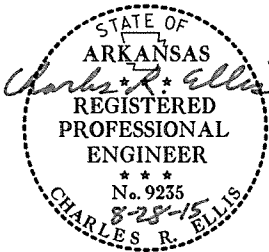
# of Long. Laps Req'd.	SL = Section Length
0	< 40.0 ft
1	>40.0 ft - 78.0 ft
2	>78.0 ft - 116.0 ft
3	>116.0 ft - 154.0 ft
4	>154.0 ft - 192.0 ft
5	>192.0 ft - 230.0 ft
6	>230.0 ft - 268.0 ft
7	>268.0 ft - 306.0 ft
8	>306.0 ft -344.0 ft

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.

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

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



TABULAR DATA BY: CJR DATE: 8/26/2015
CHECKED BY: SWP DATE: 8/27/15

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

23.92	CU. YDS.	CLASS "S" CONCRETE (Includes HDWL.)
4021	LBS.	① REINFORCING STEEL (GR 60) (Includes HDWL.)

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

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

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

SHEET 1 OF 2
DETAILS OF R.C. BOX CULVERT
DOUBLE BARREL BOX CULVERT
Sta. 490+88

SPECIAL DETAILS



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

Unless otherwise noted, all dimensions are in inches.

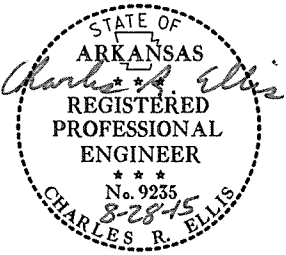
23.92	CU. YDS.	CLASS "S" CONCRETE (Includes HDWL)
4021	LBS.	① REINFORCING STEEL (GR 60) (Includes HDWL)

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

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

TABULAR DATA BY: CJR DATE: 8/26/2015
CHECKED BY: Sub DATE: 8/27/15

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



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA1001	21	283
				1 SPECIAL DETAILS				

MID-SECTION

A	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																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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INLET SLOPE SECTION(S)

R.C. BOX SECTION	DESIGN FILL DEPTH (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 "f0"				INTERIOR WALL REINFORCING STEEL "f1"				TOP SLAB DISTRIBUTION REINF. STEEL "g"			BOTTOM SLAB DISTRIBUTION REINF. STEEL "e"			SIDE WALL DISTRIBUTION REINF. STEEL "d1"			INTERIOR WALL DISTRIBUTION REINF. STEEL "d2"																																																																																																																																																																																																																																																																																																																																																																																												
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INLET SKEWED END SECTION

SK (SKEW DEGREE)	SLOPE	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THK.	HDWL THK.	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVER ALL WIDTH	OVER ALL HEIGHT	TOP SLAB REINFORCING STEEL				BOTTOM SLAB REINFORCING STEEL				SIDE WALL REINFORCING STEEL				INTERIOR WALL REINFORCING STEEL				TOP SLAB DISTRIBUTION REINFORCING STEEL				BOTTOM SLAB DISTRIBUTION REINFORCING STEEL				SIDE WALL DISTRIBUTION REINFORCING STEEL				INTERIOR WALL DISTRIBUTION REINFORCING STEEL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
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OUTLET WINGWALL TABLE

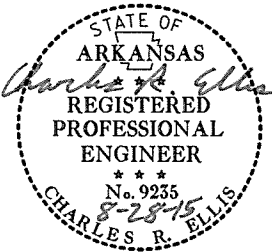
OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT		WINGWALL ANGLE (DEGREE)		FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL		FOOTING DIMENSION PARALLEL WITH HDWL		LENGTH OF WINGWALLS		LENGTH OF FOOTING HEEL		CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)																																									
								AT HDWL	AT WING END	WING A	WING B		WING A	WING B	WING A	WING B	WING A	WING B	WING A	WING B																																											
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4	CU.YD	LBS.																																									
51'-6"	8'-0"	0'-9"	0'-8"	30	3:1	57'-8 7/8"	2'-0"	8'-10"	2'-5"	0	60	3'-2"	3'-10 1/2"	4'-9 7/8"	1'-2 1/2"	2'-7"	18'-6"	37'-0"	21'-7 3/8"	40'-1 3/8"	20.93	1634																																									
WING	F1				F2				F3				F4				F5				F6				F7		F8		F9				F10		F11		F12				REINF. STEEL QTY. PER WING (LBS)																						
	BAR SIZE	MAX. SPACING	NO. REQ'D	LENGTHS VARY	BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS																											
WING A	4	12	19	L	Min 3'-8"	4	12	6	L	4'-8"	-	-	-	X	-	4	18	6	Min	4	18	4	18	13	L	Min 5'-3"	4	8	22'-5"	4	18	12	Min	-	-	-	4	2	19'-0"	4	2	19'-4"	6	12	8	L	3'-4"	549															
				Max 10'-5"	X				1'-3"	6'-4"									X						Max 2'-4"	Max 2'-4"							X													Max 3'-0"	Max 3'-0"		-	Max	Max 3'-0"	Max 3'-4"	Max 37'-9"	Max	X	1'-8"							
				Min 0'-9"	X				1'-6"	Max									Max 2'-4"						Max 3'-0"	Max 9'-0"							Min 5'-3"													Max 11'-4"	X		Min 2'-4"	Max 2'-4"	Min 3'-0"	Max 9'-0"	Min 5'-3"	Max 11'-4"	X	Min 2'-4"	Max 2'-4"	Min 3'-0"	Max 9'-1"	Min 37'-9"	Max	X	1'-8"
				Max 1'-6"	Y				3'-6"	Y									-						15'-4"	Y							-													30'-10"	Max		30'-10"	Y	Min 5'-3"	Max 11'-4"	X	Min 2'-4"	Max 2'-4"	Min 3'-0"	Max 9'-1"	Min 37'-9"	Max	X	1'-8"		
WING B	4	12	37	L	Min 3'-8"	4	12	12	L	5'-3"	-	-	-	X	-	4	18	8	Min	4	18	4	18	25	L	Min 5'-3"	4	8	40'-11"	4	18	26	Min	4	18	2	Min	4	2	37'-0"	4	2	41'-9"	6	12	8	L	3'-4"	1085														
				Max 11'-4"	X				1'-10"	3'-10"									Max						30'-10"	Y							Min 5'-3"				Max 11'-4"										X	Min 2'-4"		Max 2'-4"	Min 3'-0"	Max 9'-1"	Min 37'-9"	Max	X	1'-8"							
				Min 0'-9"	X				1'-10"	Max									Max 3'-10"						Y	-							30'-10"				Y										-	30'-10"		Y	Min 5'-3"	Max 11'-4"	X	Min 2'-4"	Max 2'-4"	Min 3'-0"	Max 9'-1"	Min 37'-9"	Max	X	1'-8"		
				Max 2'-4"	Y				3'-6"	Y									-						30'-10"	Y							-				30'-10"										Y	Min 5'-3"		Max 11'-4"	X	Min 2'-4"	Max 2'-4"	Min 3'-0"	Max 9'-1"	Min 37'-9"	Max	X	1'-8"				

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

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

TABULAR DATA BY: CJR DATE: 8/26/2015
CHECKED BY: GMP DATE: 8/27/15

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



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA1001	23	283
				SPECIAL DETAILS				

SKEW (DEGREE)	SLOPE	DESIGN FILL DEPTH (FT.)		CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THK.	HDWL THK.	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVER ALL WIDTH	OVER ALL HEIGHT	TOP SLAB REINFORCING STEEL								BOTTOM SLAB REINFORCING STEEL								SIDE WALL REINFORCING STEEL				INTERIOR WALL REINFORCING STEEL				TOP SLAB DISTRIBUTION REINFORCING STEEL				BOTTOM SLAB DISTRIBUTION REINFORCING STEEL				SIDE WALL DISTRIBUTION REINFORCING STEEL				INTERIOR WALL DISTRIBUTION REINFORCING STEEL			
		SIZE	SPACING											a				c				d				f				f0				f1				g				e				d1				d2			
														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		
30	3:1	10	12	8	16'-10"	15	3	15	9	8	51'-6"	10'-6"	4	4.5	Max 51'-2" Min 3'-3" 51'-2"	74	6	8	Max 51'-2" Min 3'-3" 51'-2"	42	5	5	Max 51'-2" Min 3'-3" 51'-2"	67	4	4.5	Max 51'-2" Min 3'-3" 51'-2"	74	7	8.5	48	10'-2"	4	12	108	10'-2"	5	11	119	Max 31'-7" Min 1'-10"	5	11	119	Max 31'-7" Min 1'-10"	4	12	8	LONG 31'-3" SHORT 2'-2"	4	12	16	LONG 24'-2" MID 16'-8" SHORT 9'-3"	
k1							k2						h																																								
SIZE		LENGTH		NO. REQ'D		SIZE		LENGTH		NO. REQ'D		SIZE		LENGTH		Y		NO. REQ'D																																			
5		30'-8"		12		5		30'-8"		12		4		2'-2"		1'-2"		61																																			

99.11	CU. YDS.	CLASS "S" CONCRETE (Includes HDWL)
14664	LBS.	① REINFORCING STEEL (GR 60) (Includes HDWL)

[illegible]

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

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

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

Unless otherwise noted, all dimensions are in inches.

SHEET 2 OF 2
DETAILS OF R.C. BOX CULVERT
QUADRUPLE BARREL BOX CULVERT
Sta. 570+82

SPECIAL DETAILS



MID-SECTION

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.)		CLEAR SPAN (FT.)		CLEAR HEIGHT (FT.)		TOP SLAB THK.		BOTTOM SLAB THK.		SIDE WALL THK.		INTERIOR WALL THK.		OVER ALL WIDTH		OVER ALL HEIGHT		SECTION LENGTH (FT.)		TOP SLAB REINFORCING STEEL								BOTTOM SLAB REINFORCING STEEL								SIDE WALL REINFORCING STEEL				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								"f0" LENGTH = OH - 4"				"f1" LENGTH = OH - 4"				"g" LENGTH = SL			"e" LENGTH = SL			"d1" LENGTH = SL			"d2" LENGTH = SL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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INLET SLOPE SECTION(S)

R.C. BOX SECTION		DESIGN FILL DEPTH (FT.)		CLEAR SPAN (FT.)		CLEAR HEIGHT (FT.)		TOP SLAB THK.	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVER ALL WIDTH	OVER ALL HEIGHT	SECTION LENGTH (FT.)	TOP SLAB REINFORCING STEEL						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						"f0" LENGTH = OH - 4"				"f1" LENGTH = OH - 4"				"g" LENGTH = SL			"e" LENGTH = SL			"d1" LENGTH = SL			"d2" LENGTH = SL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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INLET SKEWED END SECTION

SK	SLOPE	FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THK.	HDWL THK.	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVER ALL WIDTH	OVER ALL HEIGHT	TOP SLAB REINFORCING STEEL								BOTTOM SLAB REINFORCING STEEL								SIDE WALL REINFORCING STEEL				INTERIOR WALL REINFORCING STEEL				TOP SLAB DISTRIBUTION REINFORCING STEEL				BOTTOM SLAB DISTRIBUTION REINFORCING STEEL				SIDE WALL DISTRIBUTION REINFORCING STEEL				INTERIOR WALL DISTRIBUTION REINFORCING STEEL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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INLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT		WINGWALL ANGLE (DEGREE)		FOOTING WIDTH AT WALL END	WDTH 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		
23'-9"	6'-0"	0'-9"	0'-8"	50	3:1	35'-1 5/8"	2'-0"	6'-10"	2'-0"	0	60	3'-2"	3'-2"	3'-9"	0'-6"	0'-5 1/8"	14'-6"	29'-0"	15'-11 3/4"	40'-9 1/8"		

WING	F1				F2				F3				F4				F5				F6				F7		F8				F9		F10				F11				F12				REINF. STEEL QTY. PER WING (LBS)																																																																																																																																																																																																																																																																																																																																																																																																								
	BAR SIZE	MAX. SPACING	NO. REQ'D	LENGTHS VARY	BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	NO. REQ'D	LENGTHS	BAR SIZE	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS																																																																																																																																																																																																																																																																																																																																																																																																																
WING A	4	12	15	L	Min 3'-0"	-	-	-	-	-	-	-	L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

MID-SECTION
BAR LAP TABLE

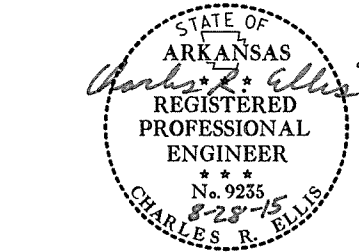
# of Long. Laps Req'd.	SL = Section Length
0	< 40.0 ft
1	>40.0 ft - 78.0 ft
2	>78.0 ft - 116.0 ft
3	>116.0 ft - 154.0 ft
4	>154.0 ft - 192.0 ft
5	>192.0 ft - 230.0 ft
6	>230.0 ft - 268.0 ft
7	>268.0 ft - 306.0 ft
8	>306.0 ft - 344.0 ft

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

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA1001	24	283
				SPECIAL DETAILS				

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

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



TABULAR DATA BY: CJR DATE: 8/26/2015
CHECKED BY: SJA DATE: 9/27/15

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

CLASS "S" CONCRETE (Includes HDWL)	REINFORCING STEEL (GR. 60) (Includes HDWL)
CU. YDS.	LBS.
34.06	7495

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

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

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

SHEET 1 OF 2
DETAILS OF R.C. BOX CULVERT
DOUBLE BARREL BOX CULVERT
Sta. 46+00
SPECIAL DETAILS

CLASS "S" CONCRETE	REINFORCING STEEL (GR. 60)	ADTL. REINF. PER LONG LAP LOCATION(S)
CU. YDS. PER LIN. FT.	LBS. PER LIN. FT.	LBS.
2.17	358	180

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

STATE OF
ARKANSAS
Charles R. Ellis
REGISTERED
PROFESSIONAL
ENGINEER

No. 9233
8-28-15
CHARLES R. ELLIS

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

34.06	CU. YDS.	CLASS "S" CONCRETE (Includes HDWL)
7495	LBS.	① REINFORCING STEEL (GR 60) (Includes HDWL)

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

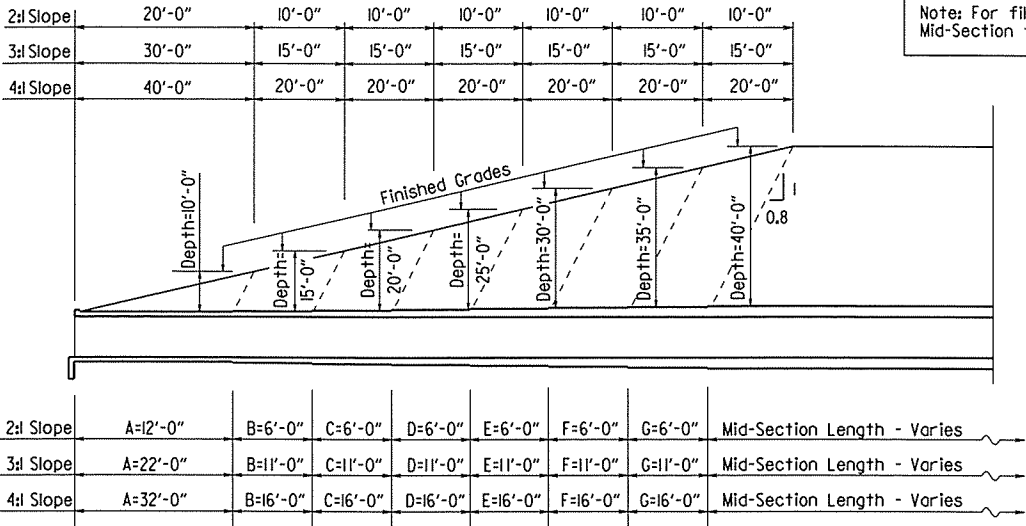
② Bar Lap - Add one long. lap for each Slope Section, and one additional long. lap for Slope Sections greater than 40'-0" in length.

Unless otherwise noted, all dimensions are in inches.

V 1114 Culvert-General.dgn

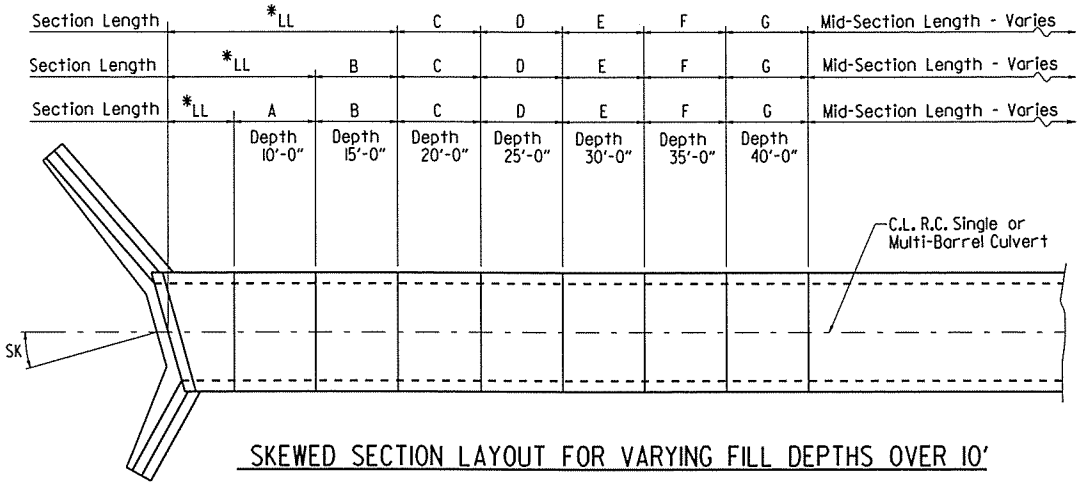
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA1001	26	283

SPECIAL DETAILS



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

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



LONGITUDINAL SECTION LENGTH SCHEDULE FOR VARYING FILL DEPTHS OVER 10'

Lengths for Non-Skewed Boxes

GENERAL NOTES:

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 edition) with applicable Supplemental Specifications and Special Provisions. Section and Subsection refer to the Standard Construction Specifications unless otherwise noted in the Plans.

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

LIVE LOADING: HL-93

All concrete shall be Class 5 with a minimum 28-day compressive strength of 3,500 psi and shall be poured in the dry. All exposed corners to have 3/4" chamfers.

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

Reinforcing Steel Tolerances: The tolerances for reinforcing steel shall meet those listed in 'Manual of Standard Practice' published by Concrete Reinforcing Steel Institute (CRSI) except that the tolerance for truss bars such as Figure 3 on page 7-4 of the CRSI Manual shall be minus zero to plus 1/2 inch.

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

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

Weep Holes in box culvert walls shall have a maximum horizontal spacing of 10'-0" and shall be spaced to clear all reinforcing steel. The drain opening shall be 4" diameter and shall be placed 12" above the top of the bottom slab.

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

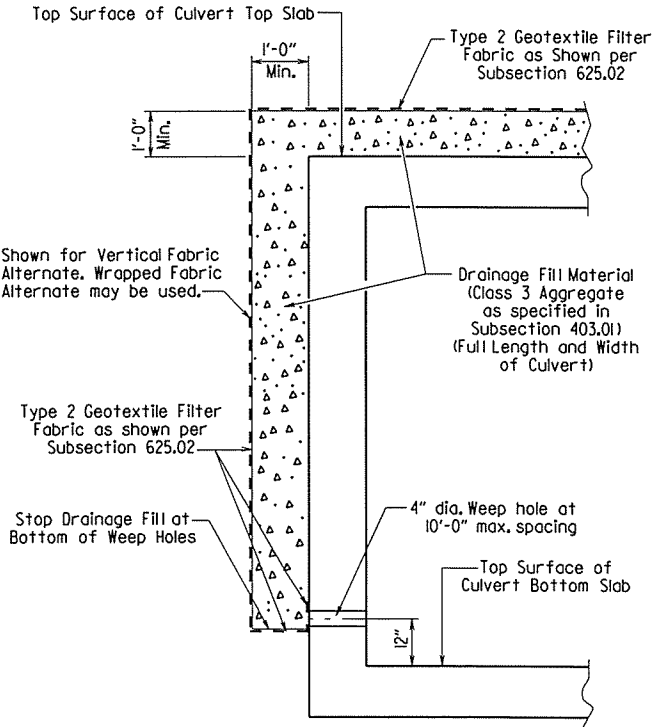
The barrel components of the culvert may be constructed using continuous pours. For longer culvert construction, the Contractor may use multiple pours with transverse construction joints spaced a minimum of 50 feet apart unless superseded by stage construction or site constraints as approved by the Engineer.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

Membrane Waterproofing, Weep Holes, Geotextile Filter Fabric, and Drainage Fill Material will not be paid for directly but shall be considered subsidiary to Class 5 Concrete.

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

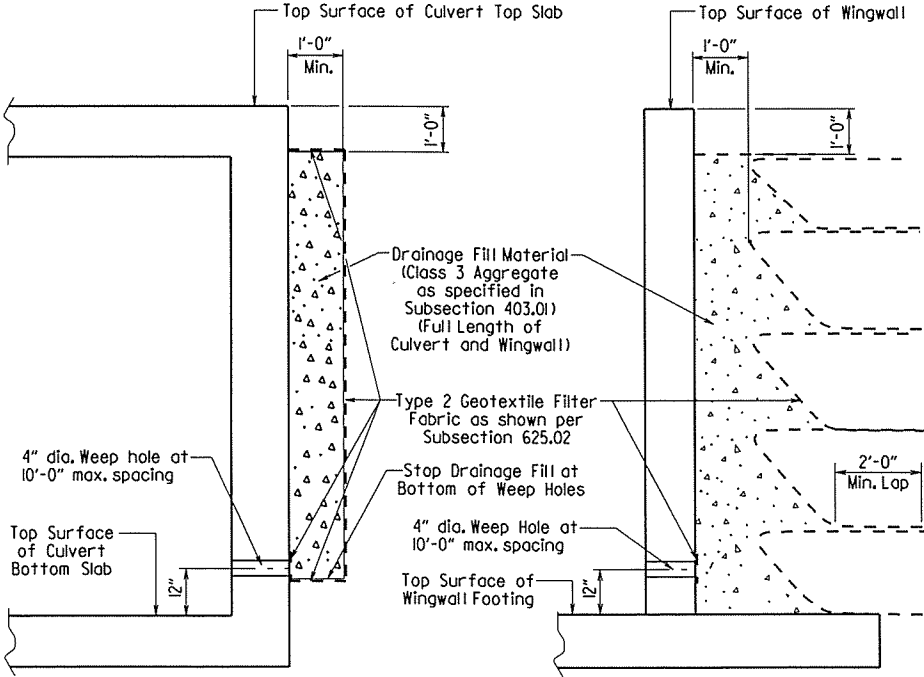
When precast reinforced concrete box culverts are substituted for cast in place box culverts, they shall be manufactured according to ASTM C 1577 and meet the requirements of Section 607. When the top slab of the box culvert serves as the finished roadway surface, a precast reinforced concrete box culvert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

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



CULVERT DRAINAGE DETAIL FOR ROCK FILL

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



VERTICAL FABRIC ALTERNATE

(Shown for Culvert, Similar for Wingwall)

WRAPPED FABRIC ALTERNATE

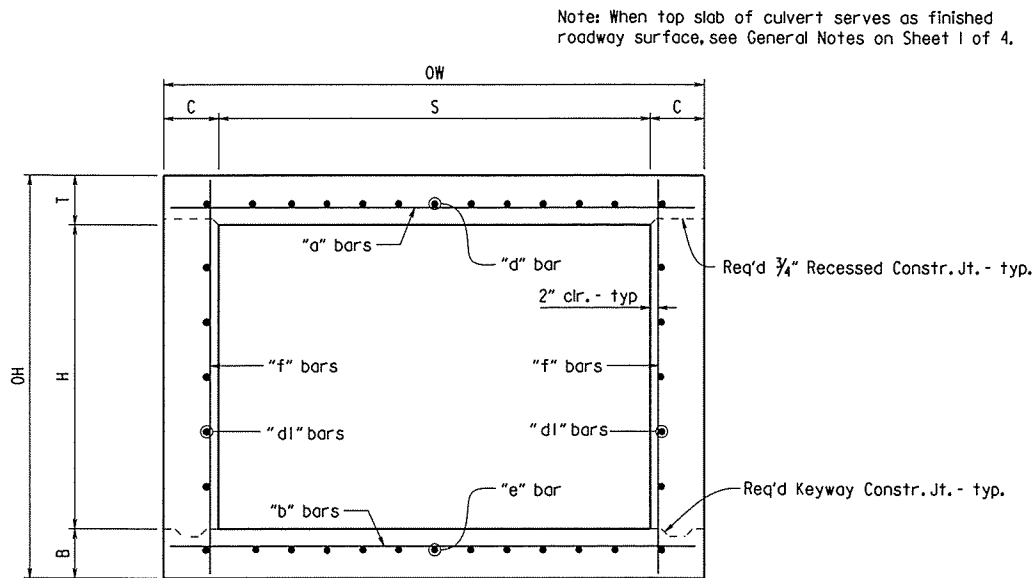
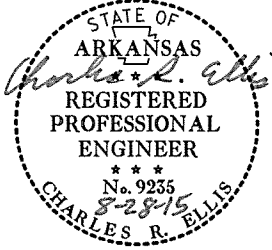
(Shown for Wingwall, Similar for Culvert)

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

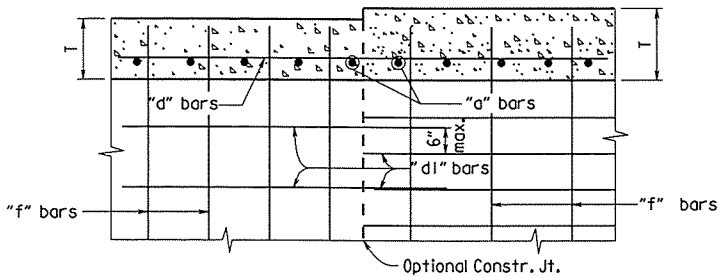
WINGWALL & CULVERT DRAINAGE DETAIL

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA1001	27	283

1 SPECIAL DETAILS

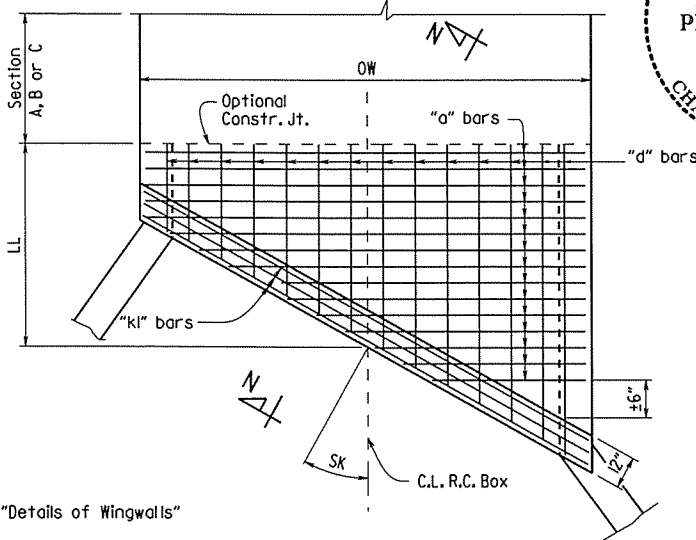


TYPICAL SECTION M-M

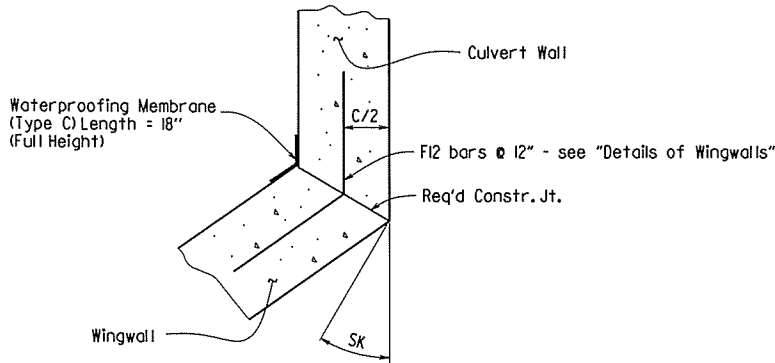


LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

TOP SLAB SHOWN, BOTTOM SLAB SIMILAR

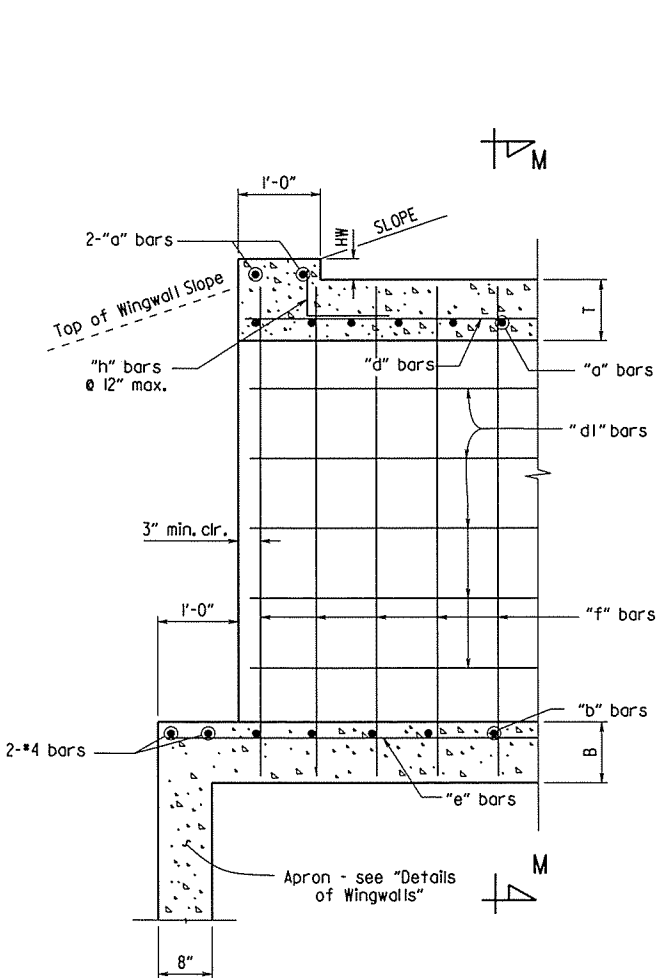


TOP SLAB REINFORCEMENT



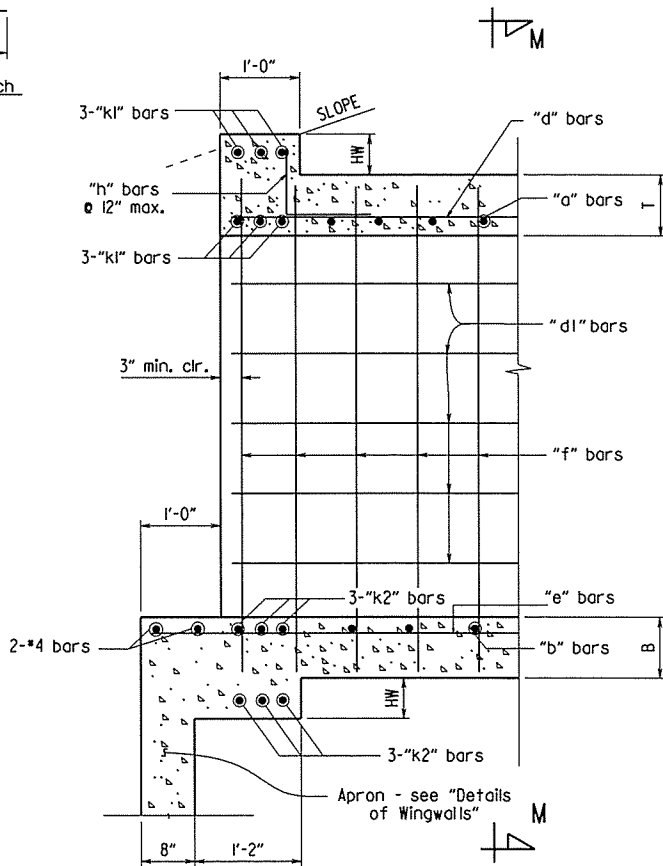
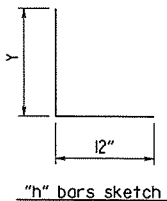
WINGWALL ATTACHMENT

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



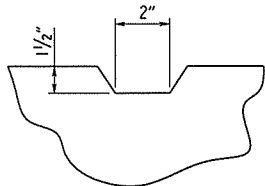
PART LONGITUDINAL SECTION

(Non-Skewed Ends)



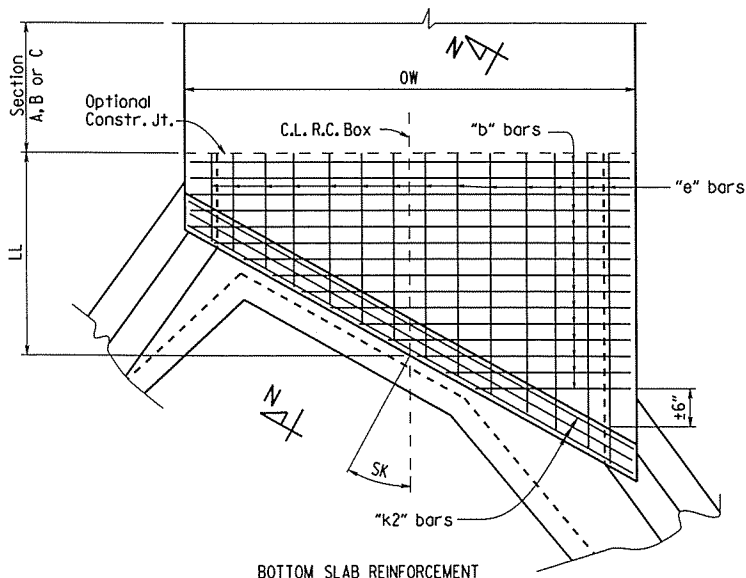
PART LONGITUDINAL SECTION N-N

(Skewed Ends)



TYPICAL KEYWAY DETAIL

(All Construction Joints)



BOTTOM SLAB REINFORCEMENT

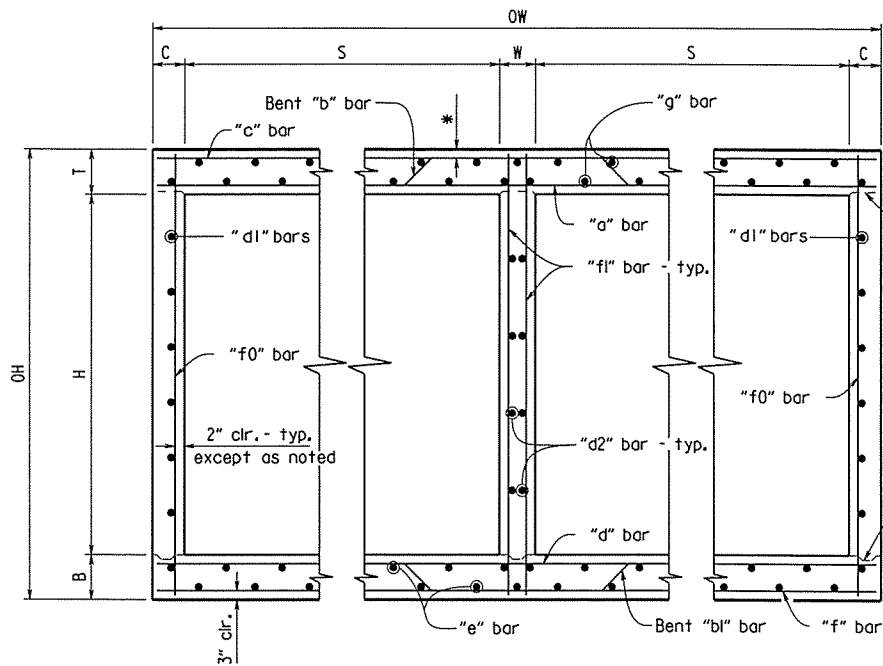
SKewed END SECTION DETAILS

SHEET 2 OF 4
GENERAL DETAILS OF R.C. BOX CULVERT
DETAILS OF SINGLE BARREL
R.C. BOX CULVERT
SPECIAL DETAILS



*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.

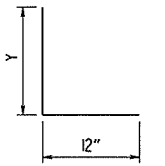
Note: When top slab of culvert serves as finished roadway surface, see General Notes on Sheet 1 of 4.



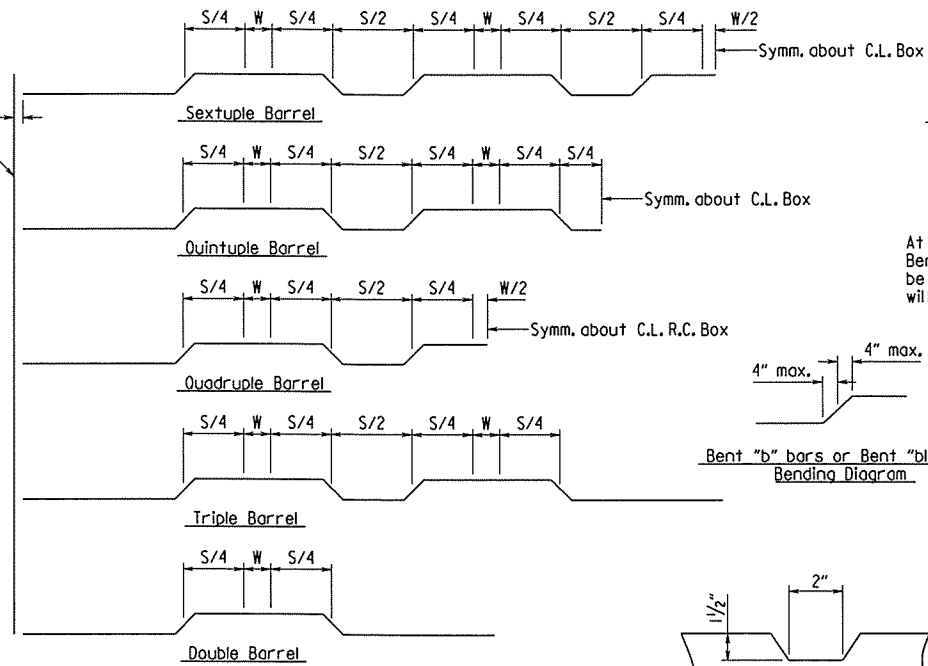
TYPICAL SECTION M-M

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

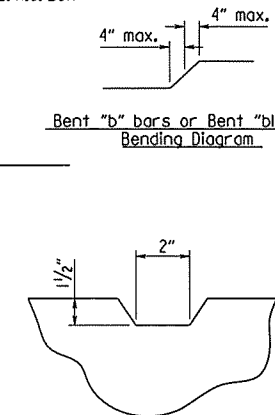
Bottom Slab
Straight "d" bars shall alternate with Bent "bl" bars in top.
Straight "f" bars shall alternate with Bent "bl" bars in bottom.



"h" bars sketch



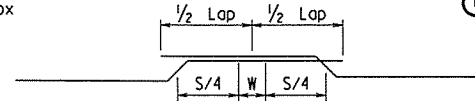
Bent "b" bars or Bent "bl" bars sketch



TYPICAL KEYWAY DETAIL
(All Construction Joints)

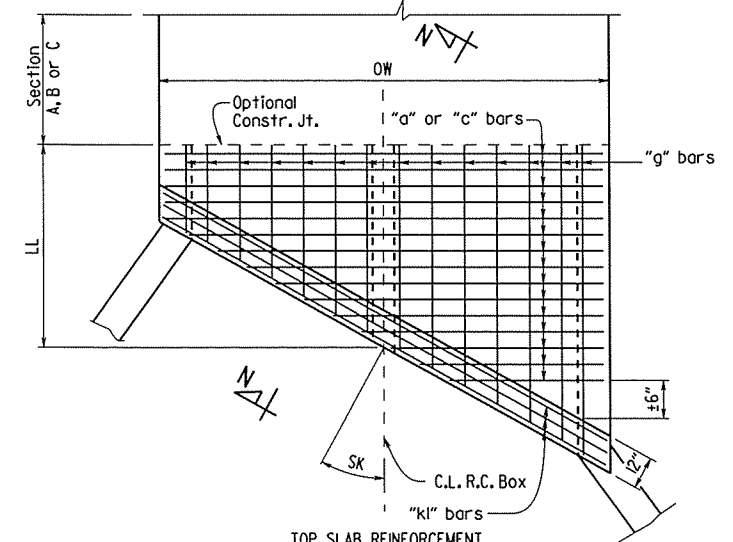
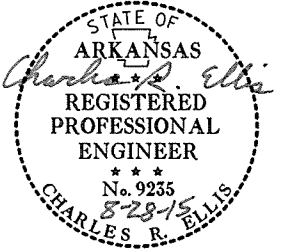
DATE REVISED	DATE FILMED	REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		28	283
				JOB NO.	CA1001			

SPECIAL DETAILS



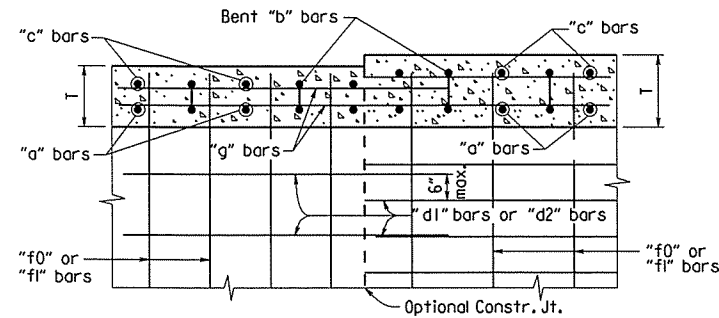
Lap Detail
For Bent "b" bars and Bent "bl" bars

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



TOP SLAB REINFORCEMENT

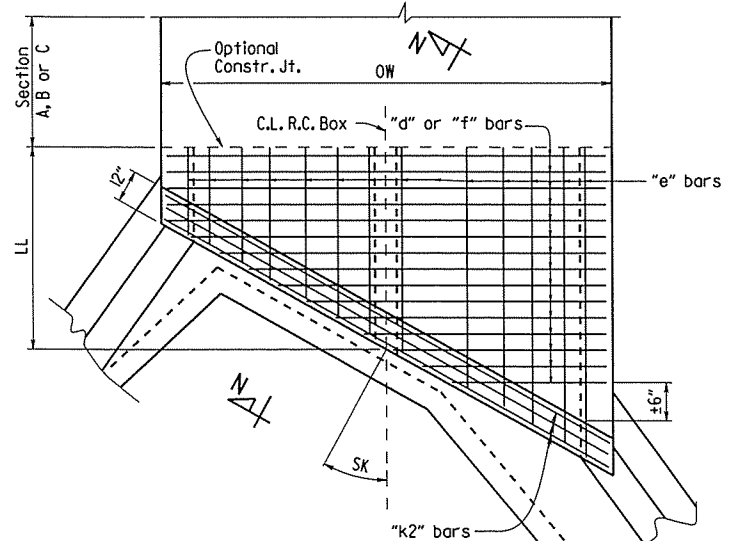
Straight "c" bars in top.
Straight "a" bars in bottom.



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

LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

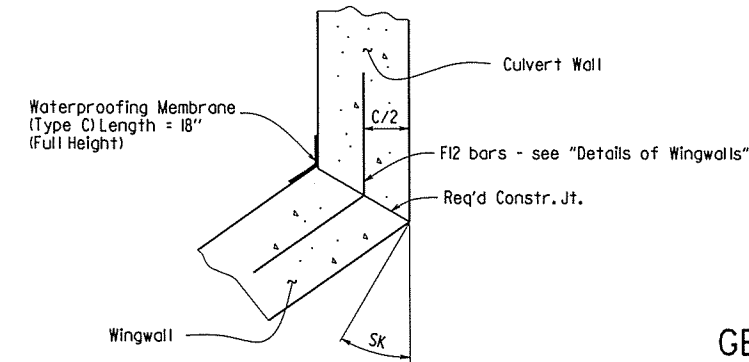
TOP SLAB SHOWN, BOTTOM SLAB SIMILAR



BOTTOM SLAB REINFORCEMENT

Straight "d" bars in top.
Straight "f" bars in bottom.

SKewed END SECTION DETAILS



WINGWALL ATTACHMENT

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

PART LONGITUDINAL SECTION

(Non-Skewed Ends)

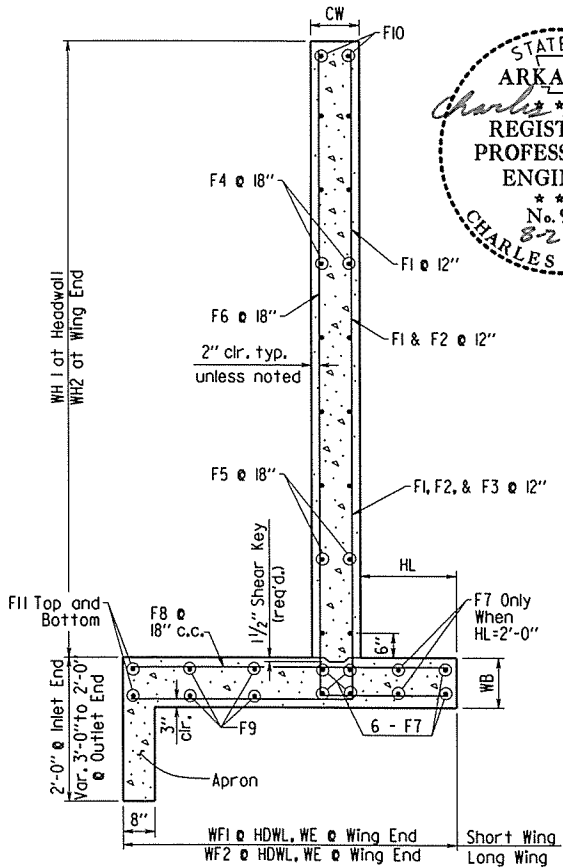
PART LONGITUDINAL SECTION N-N

(Skewed Ends)

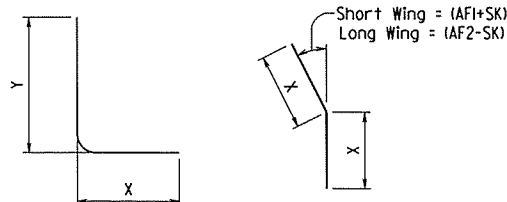
SHEET 3 OF 4
GENERAL DETAILS OF R.C. BOX CULVERT
DETAILS OF MULTI-BARREL
R.C. BOX CULVERT
SPECIAL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		29	283
				JOB NO.	CA1001			

1 SPECIAL DETAILS

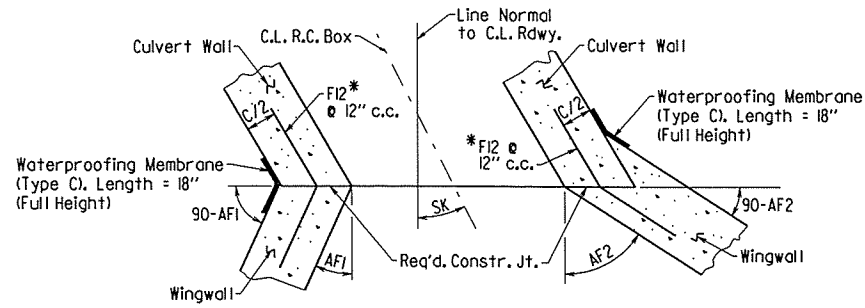


WINGWALL SECTION P-P



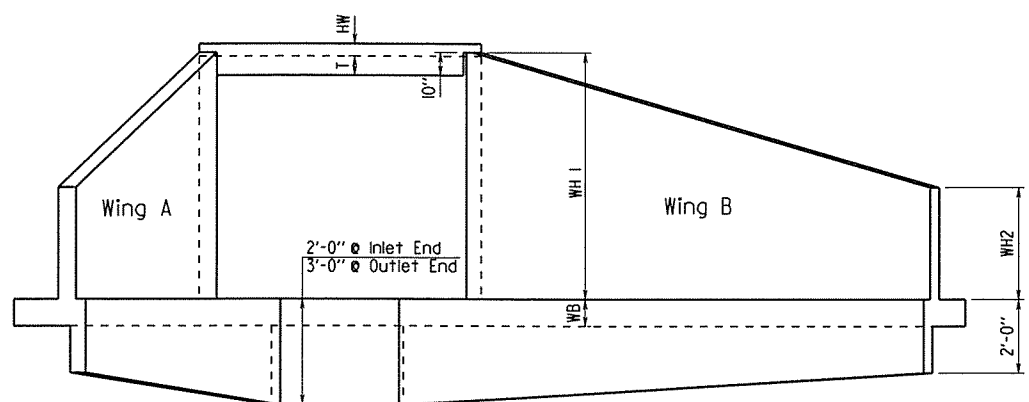
F1, F2, F3, & F6 BARS *F12 BAR

*F12 is a straight bar for parallel wingwalls

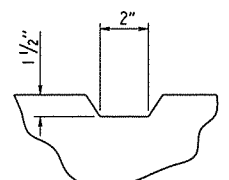


CONSTRUCTION JOINTS
Flared Wingwalls Shown

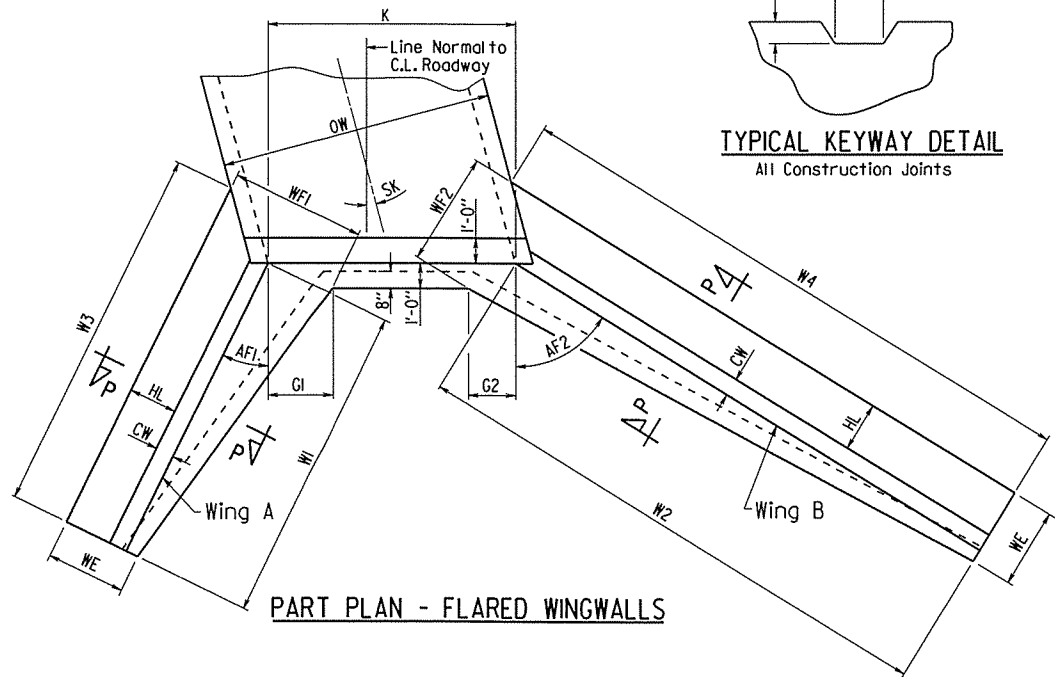
SHEET 4 OF 4
GENERAL DETAILS OF R.C. BOX CULVERT
DETAILS OF WINGWALLS
SPECIAL DETAILS



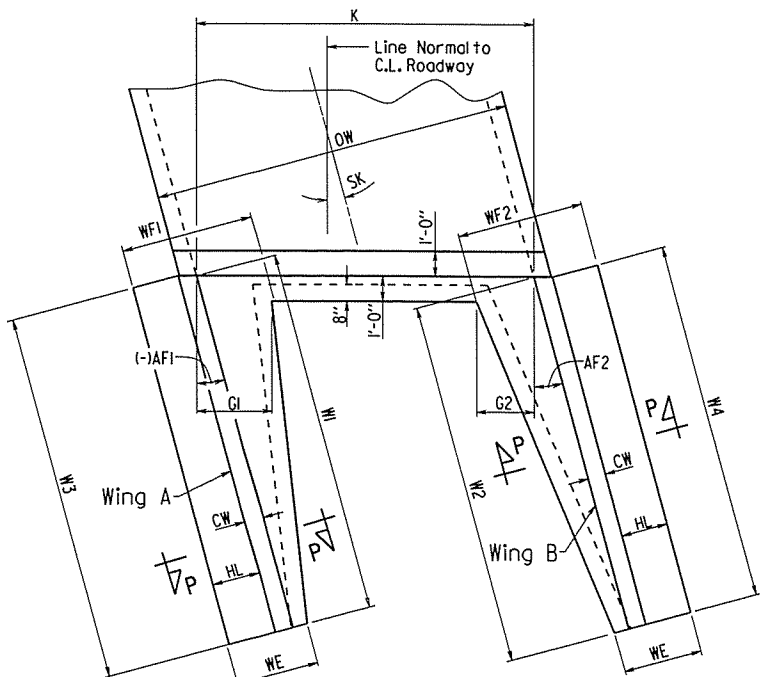
END ELEVATION
Flared Wingwalls Shown



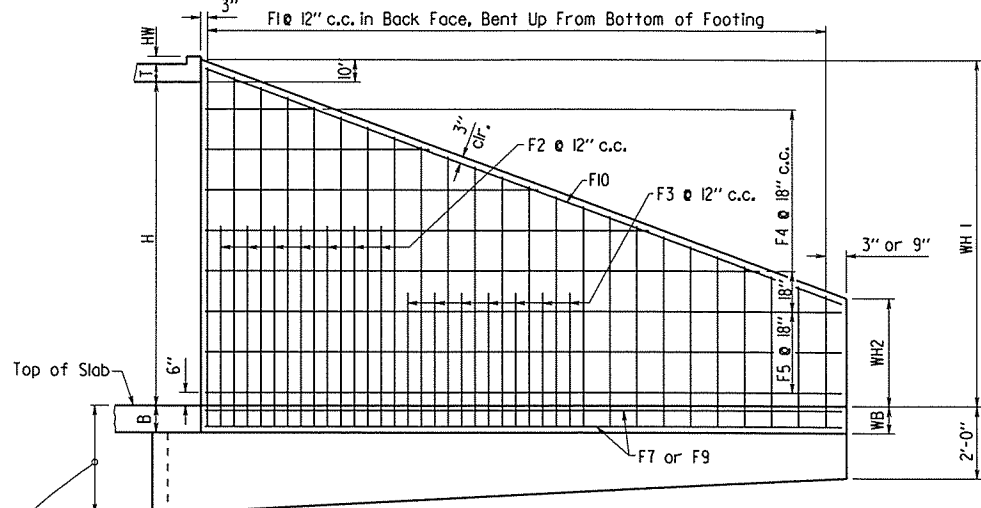
TYPICAL KEYWAY DETAIL
All Construction Joints



PART PLAN - FLARED WINGWALLS

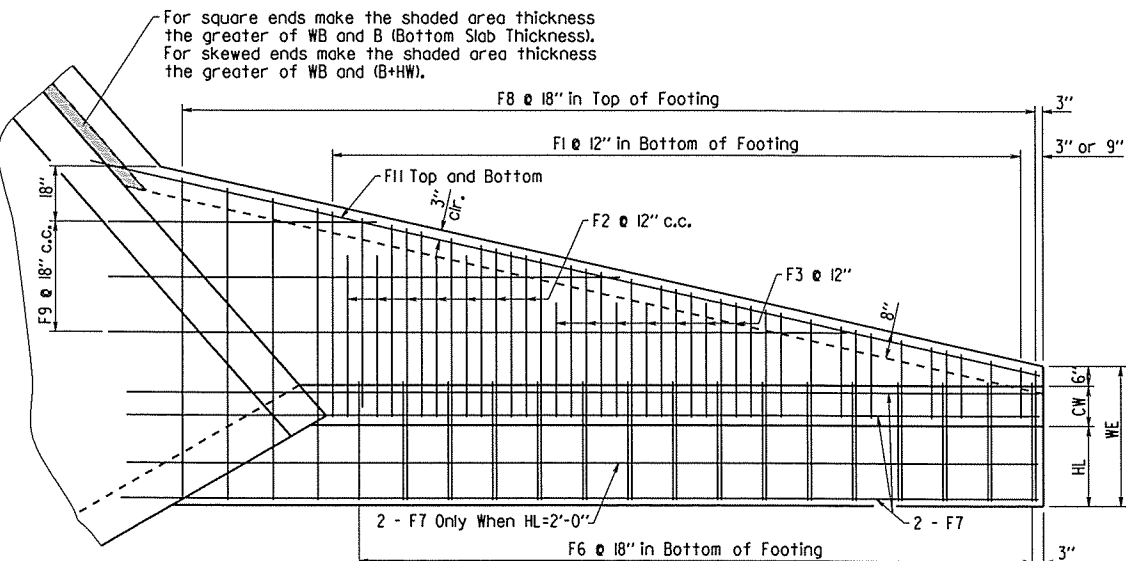


PART PLAN - PARALLEL WINGWALLS

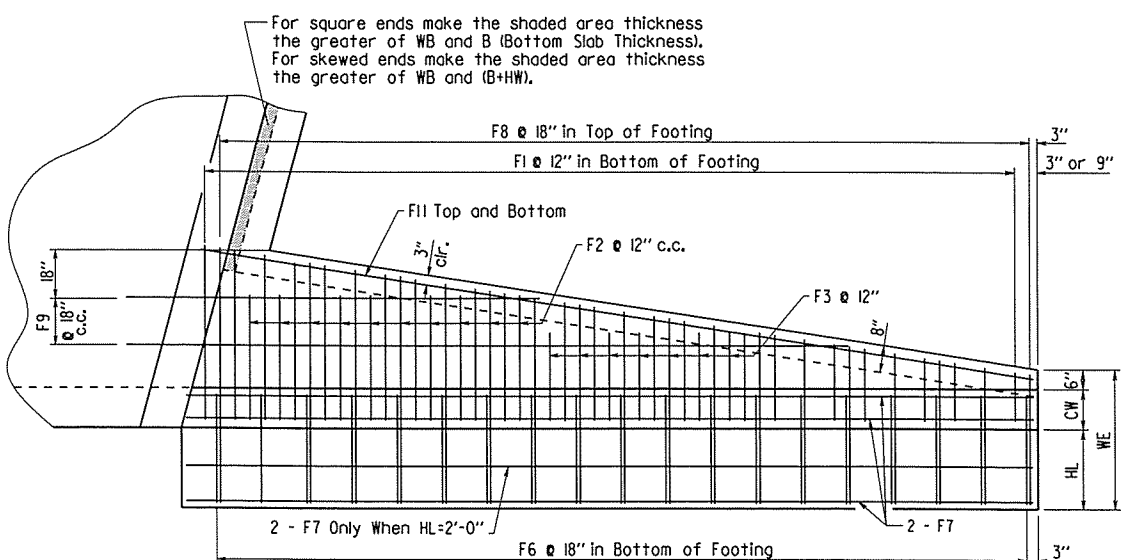


WINGWALL ELEVATION
Showing Back Face Reinforcement

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



PLAN - FLARED WINGWALLS
Showing Footing Reinforcement

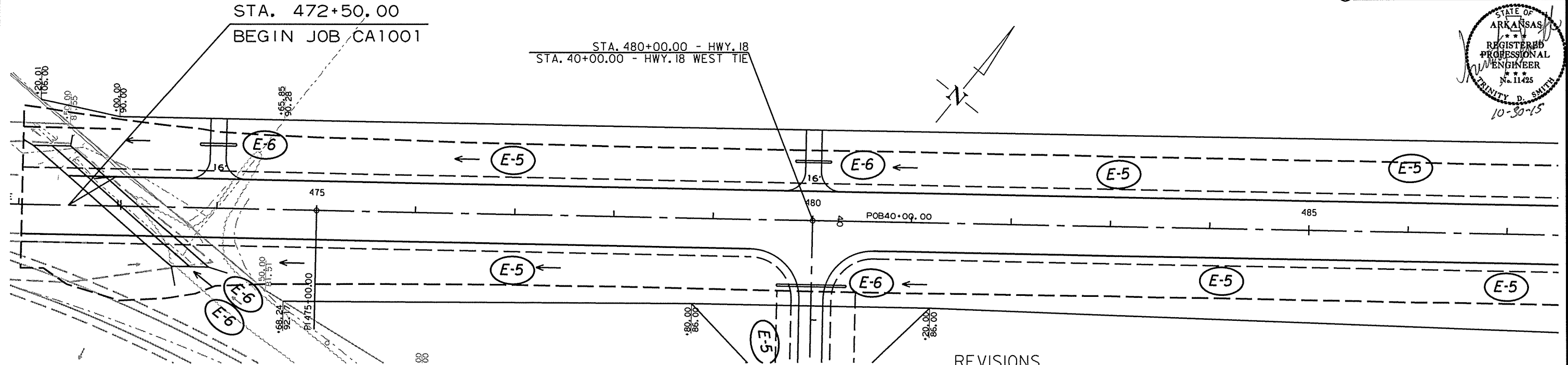
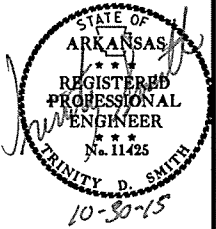


PLAN - PARALLEL WINGWALLS
Showing Footing Reinforcement

* MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

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.	CA1001		30	283

2 TEMPORARY EROSION CONTROL DETAILS



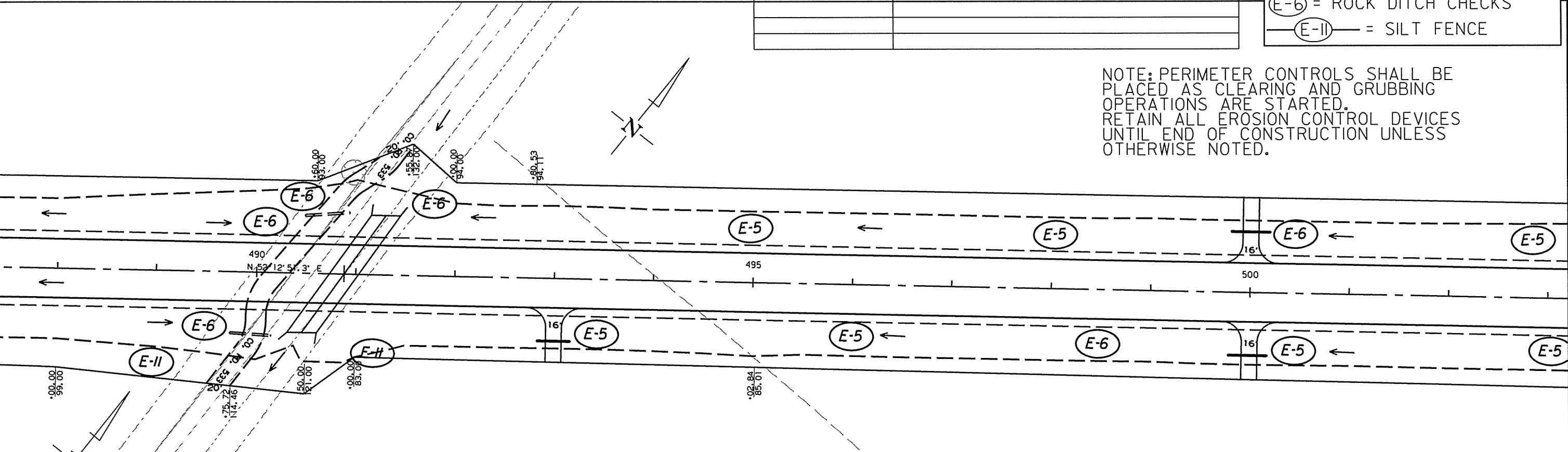
REVISIONS

DATE OF REVISION	REVISION

LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-II) = SILT FENCE

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



STA. 489+00 - STA. 491+00
INSTALL E-II = 225 LIN. FT.

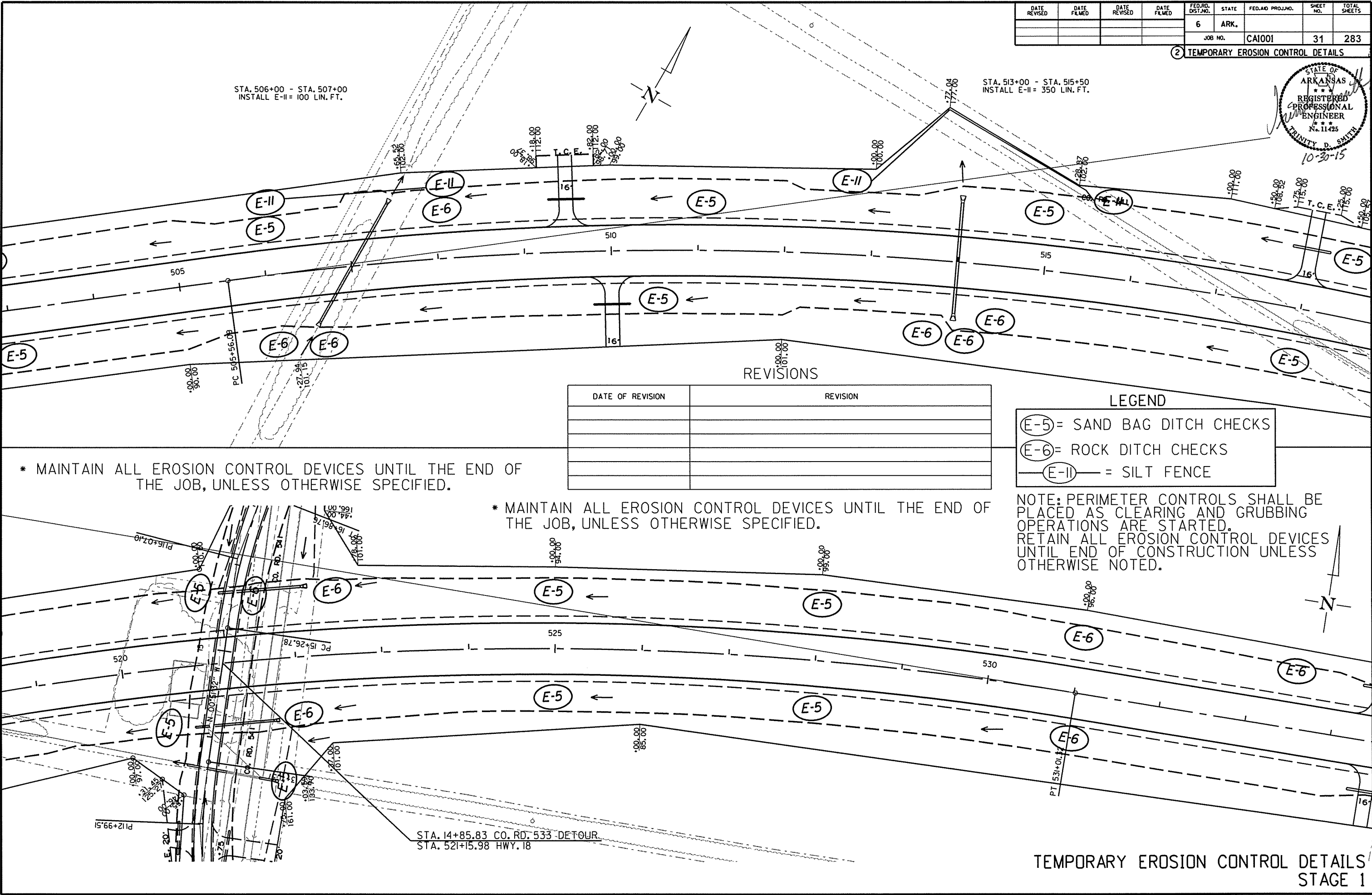
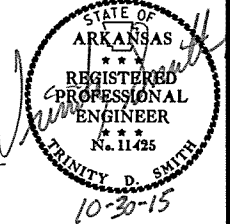
TEMPORARY EROSION CONTROL DETAILS
STAGE 1

9/30/2015

CA1001.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		31	283
				JOB NO.	CA1001		31	283

2 TEMPORARY EROSION CONTROL DETAILS



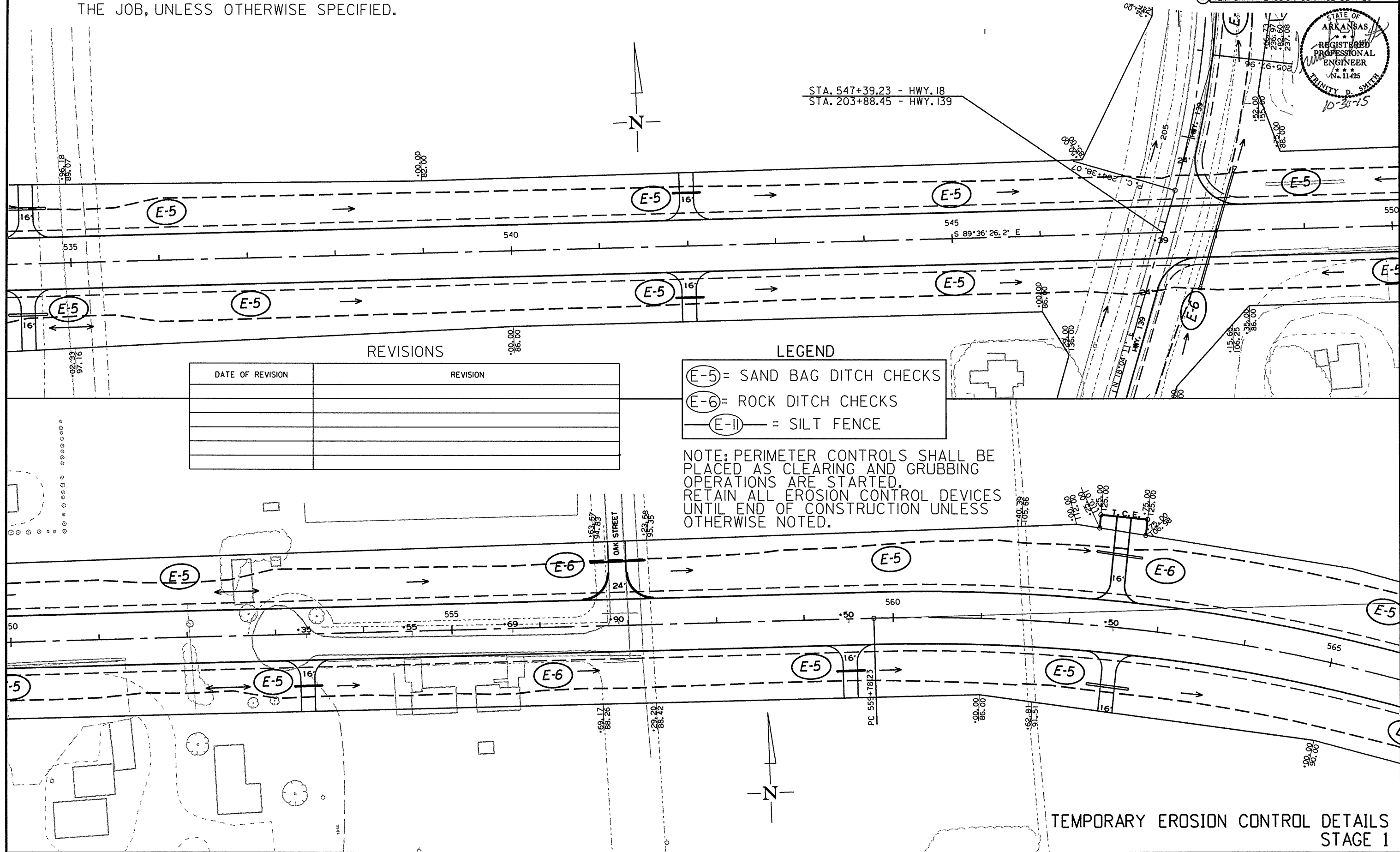
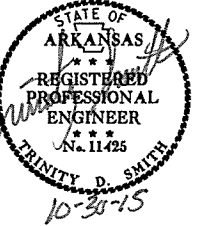
9/30/2015

CA1001.DGN

* MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

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.	CA1001		32	283

2 TEMPORARY EROSION CONTROL DETAILS



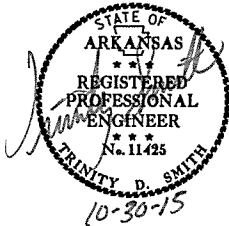
DATE OF REVISION	REVISION

- LEGEND
- E-5 = SAND BAG DITCH CHECKS
 - E-6 = ROCK DITCH CHECKS
 - E-II = SILT FENCE

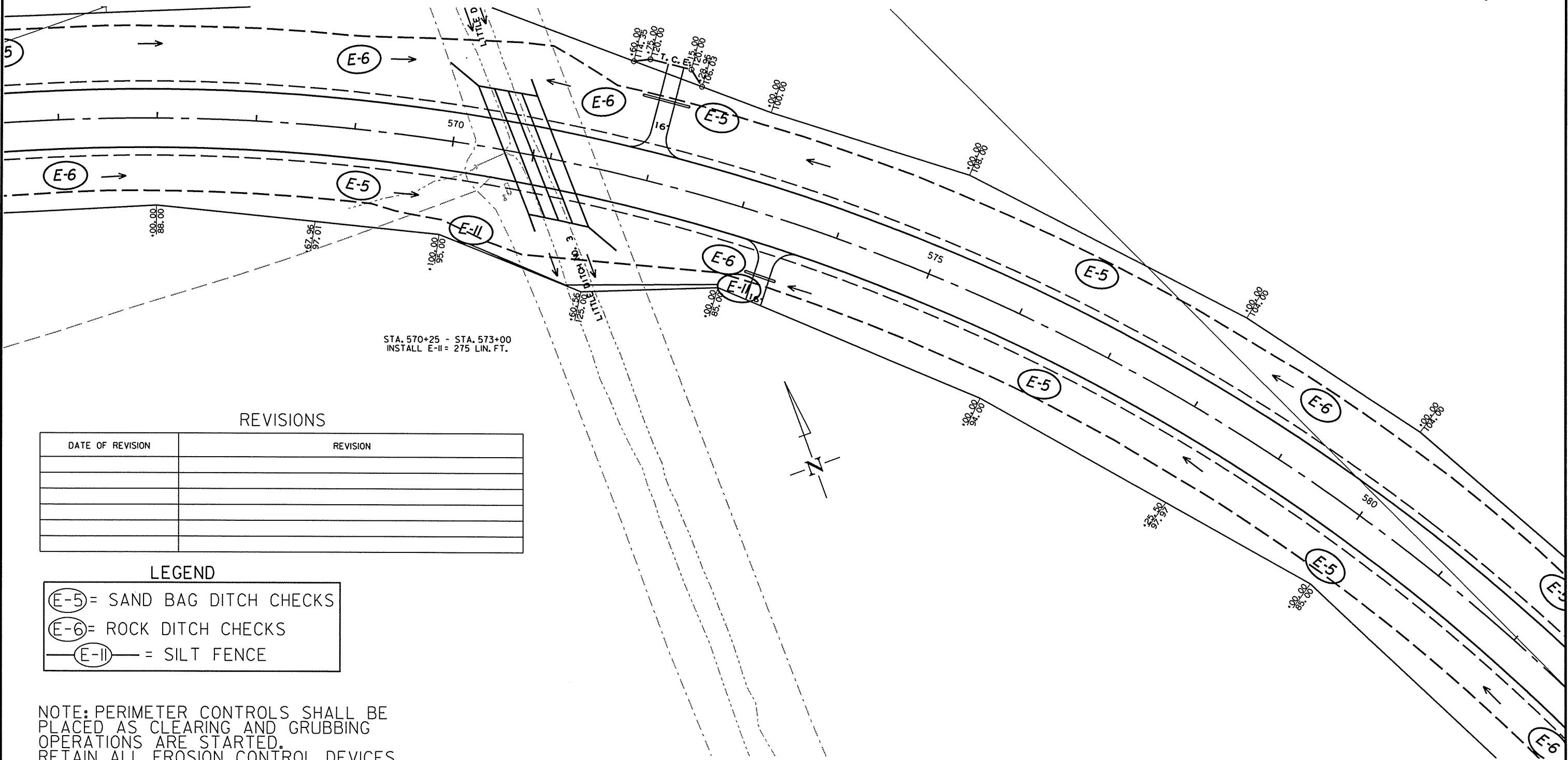
NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

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. CA1001	33	283

2 TEMPORARY EROSION CONTROL DETAILS



* MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.



REVISIONS

DATE OF REVISION	REVISION

LEGEND

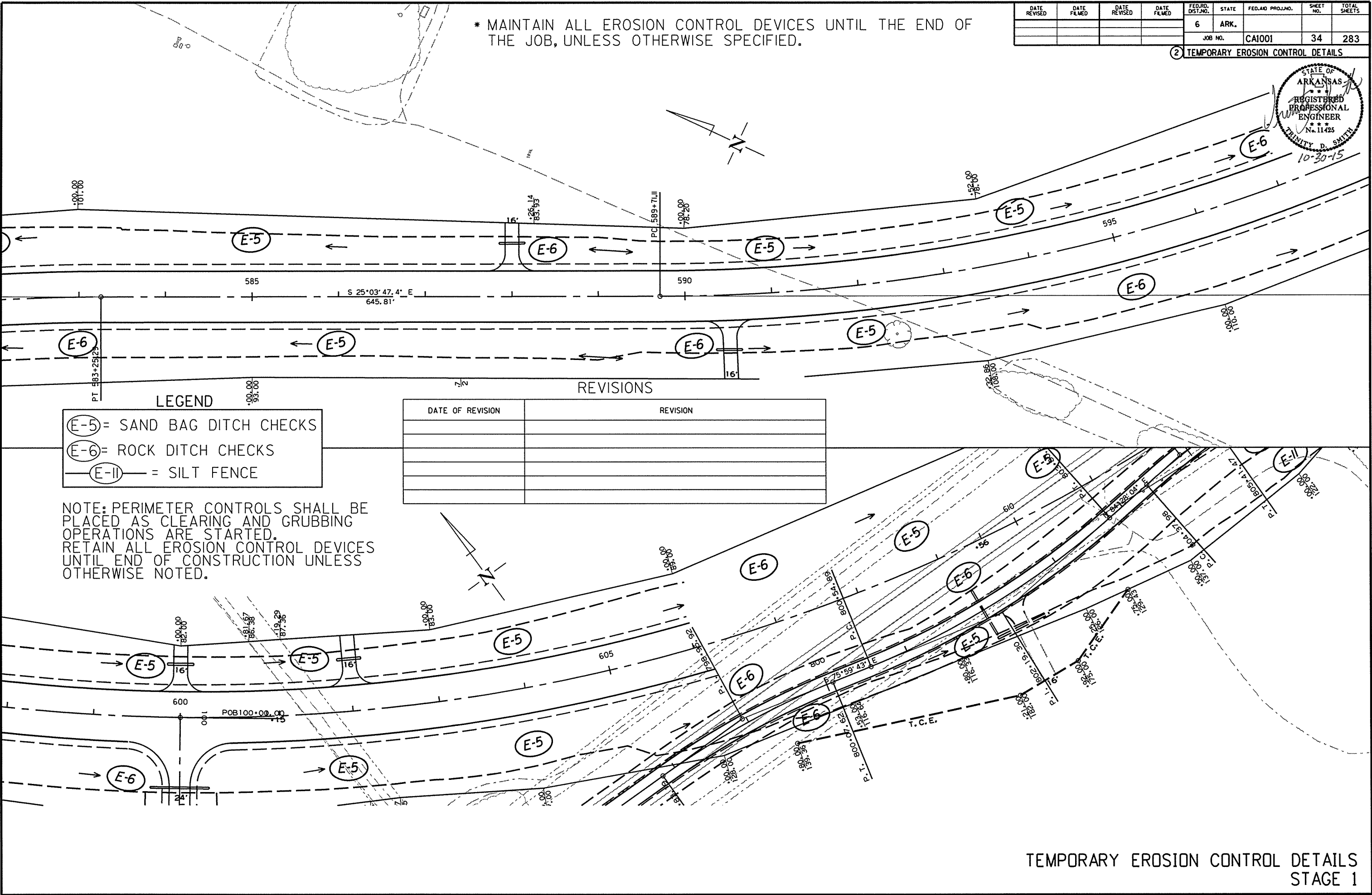
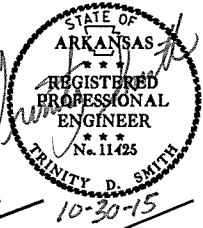
- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-II) = SILT FENCE

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

* MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		34	283
				JOB NO.	CA1001		34	283

2 TEMPORARY EROSION CONTROL DETAILS



LEGEND

- E-5 = SAND BAG DITCH CHECKS
- E-6 = ROCK DITCH CHECKS
- E-II = SILT FENCE

REVISIONS

DATE OF REVISION	REVISION

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

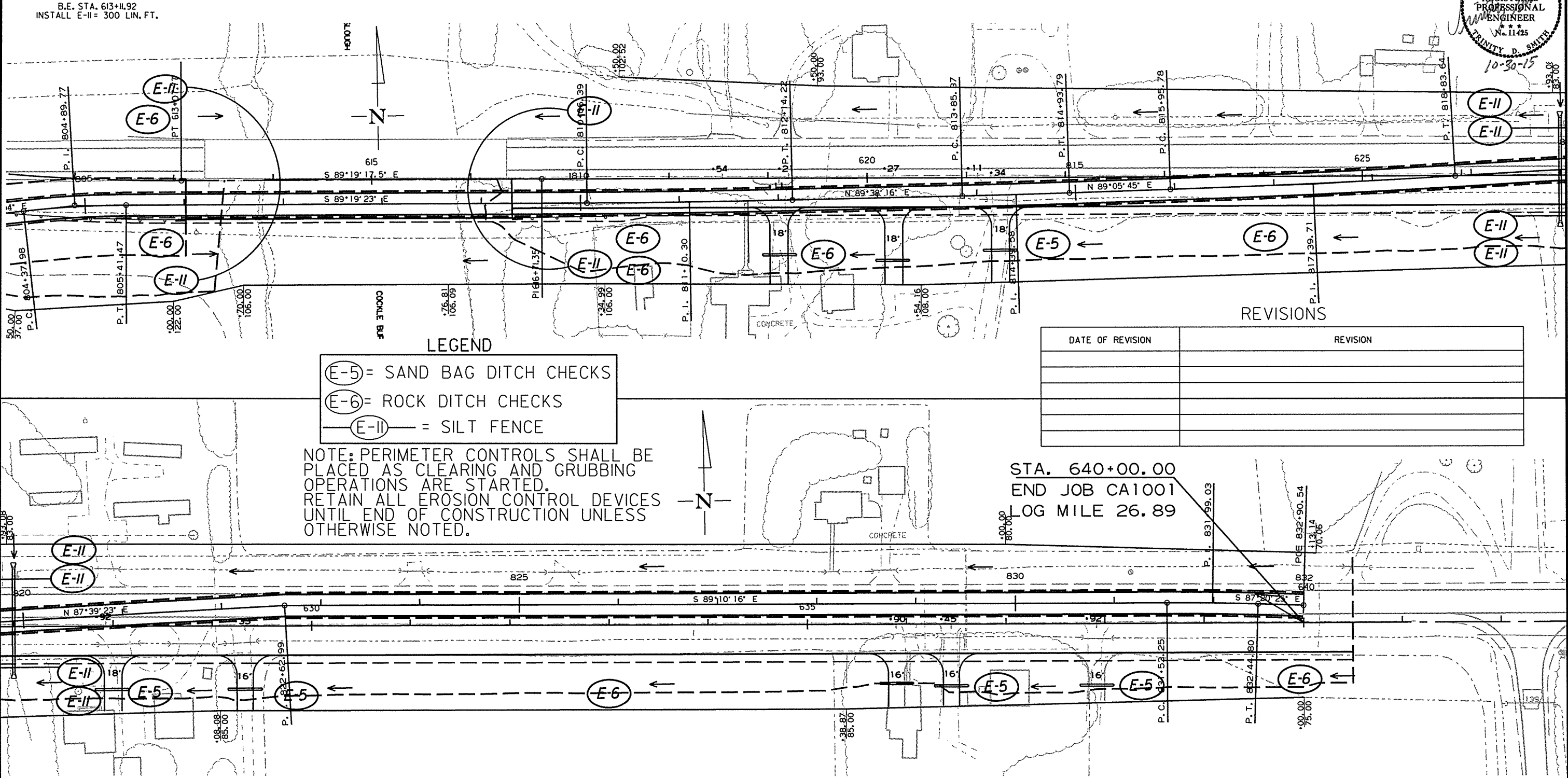
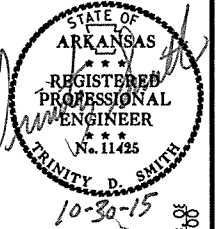
9/30/2015

CA1001.DGN

* MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

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.	CA1001		35	283

2 TEMPORARY EROSION CONTROL DETAILS



- LEGEND
- (E-5) = SAND BAG DITCH CHECKS
 - (E-6) = ROCK DITCH CHECKS
 - (E-II) = SILT FENCE

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

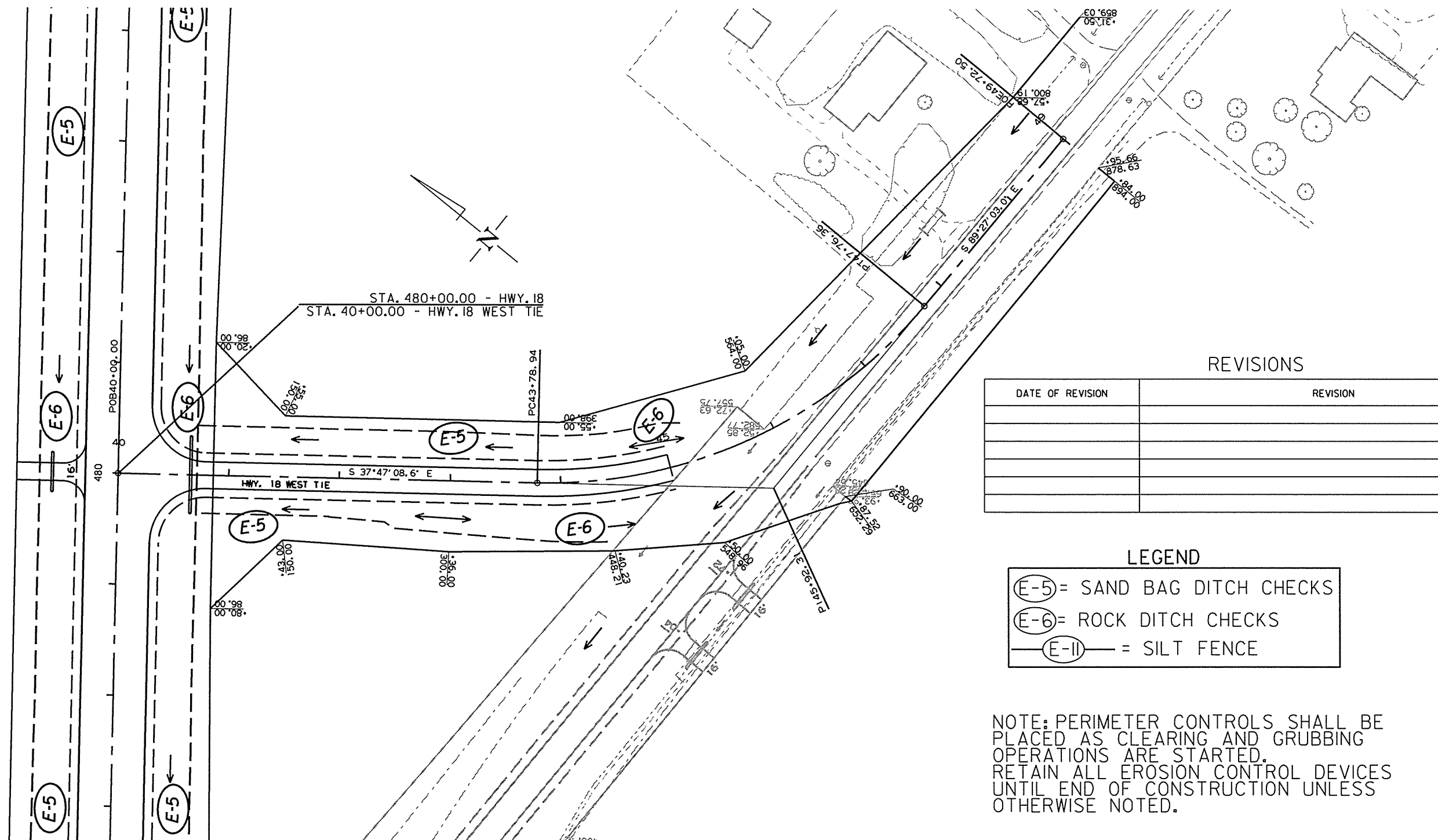
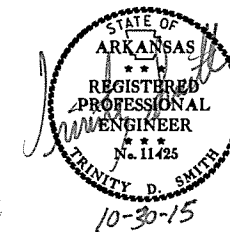
DATE OF REVISION	REVISION

STA. 640+00.00
END JOB CA1001
LOG MILE 26.89

* MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

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.	CA1001		36	283

② TEMPORARY EROSION CONTROL DETAILS



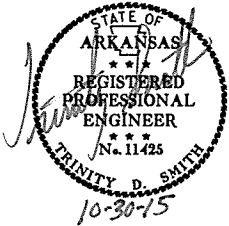
REVISIONS

DATE OF REVISION	REVISION

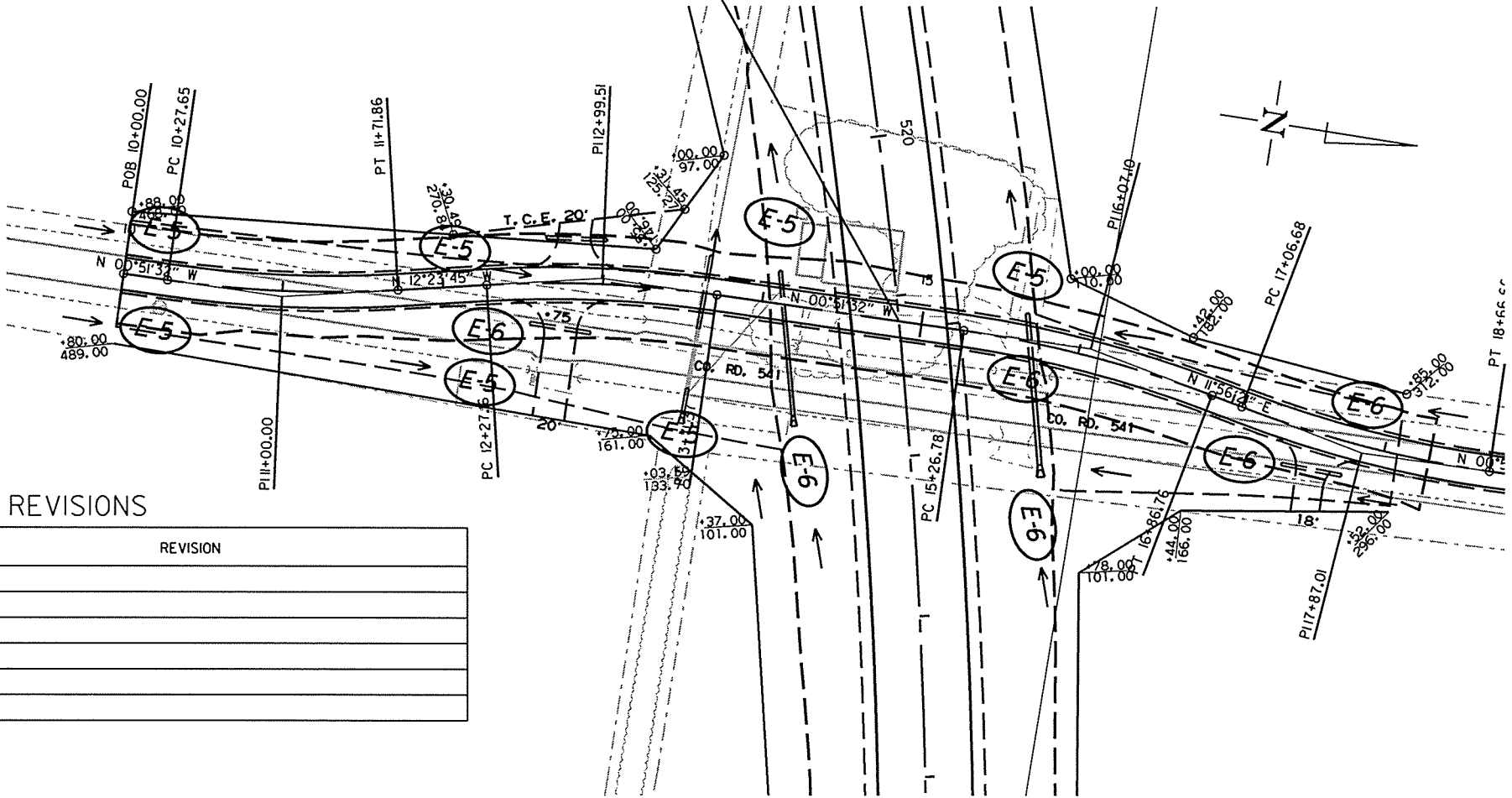
* MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

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.	CA1001		37	283

2 TEMPORARY EROSION CONTROL DETAILS



STA. 14+85.83 CO. RD. 541 DETOUR
STA. 521+15.98 HWY. 18



REVISIONS

DATE OF REVISION	REVISION

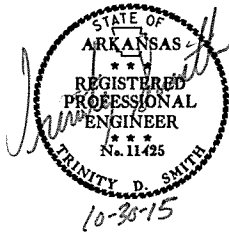
LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-II) = SILT FENCE

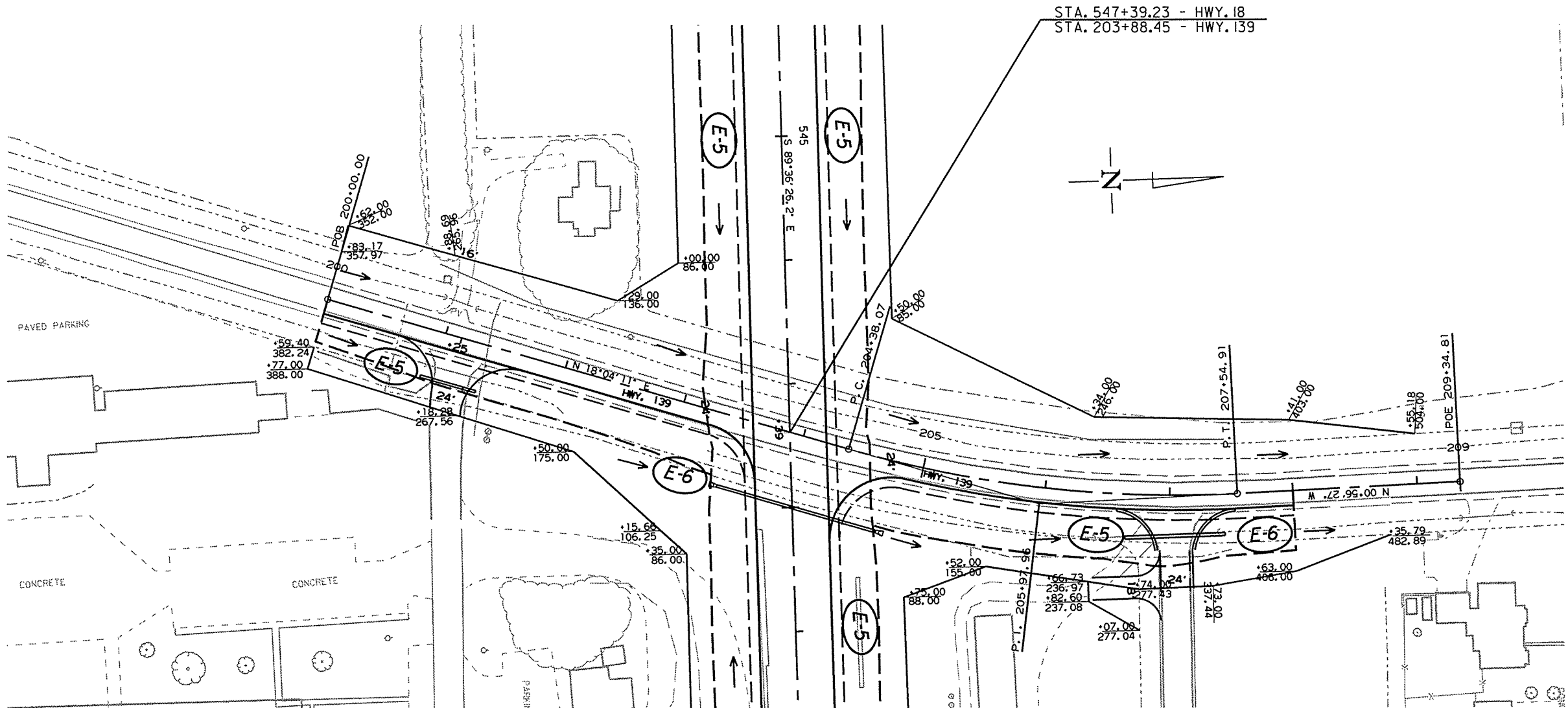
NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

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. CA1001		38	283	

2 TEMPORARY EROSION CONTROL DETAILS



* MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.



REVISIONS

DATE OF REVISION	REVISION

LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-II) = SILT FENCE

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

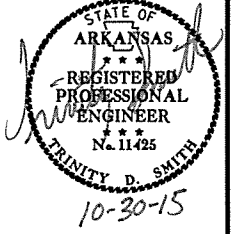
* MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

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.	CA1001		39	283

REVISIONS

② TEMPORARY EROSION CONTROL DETAILS

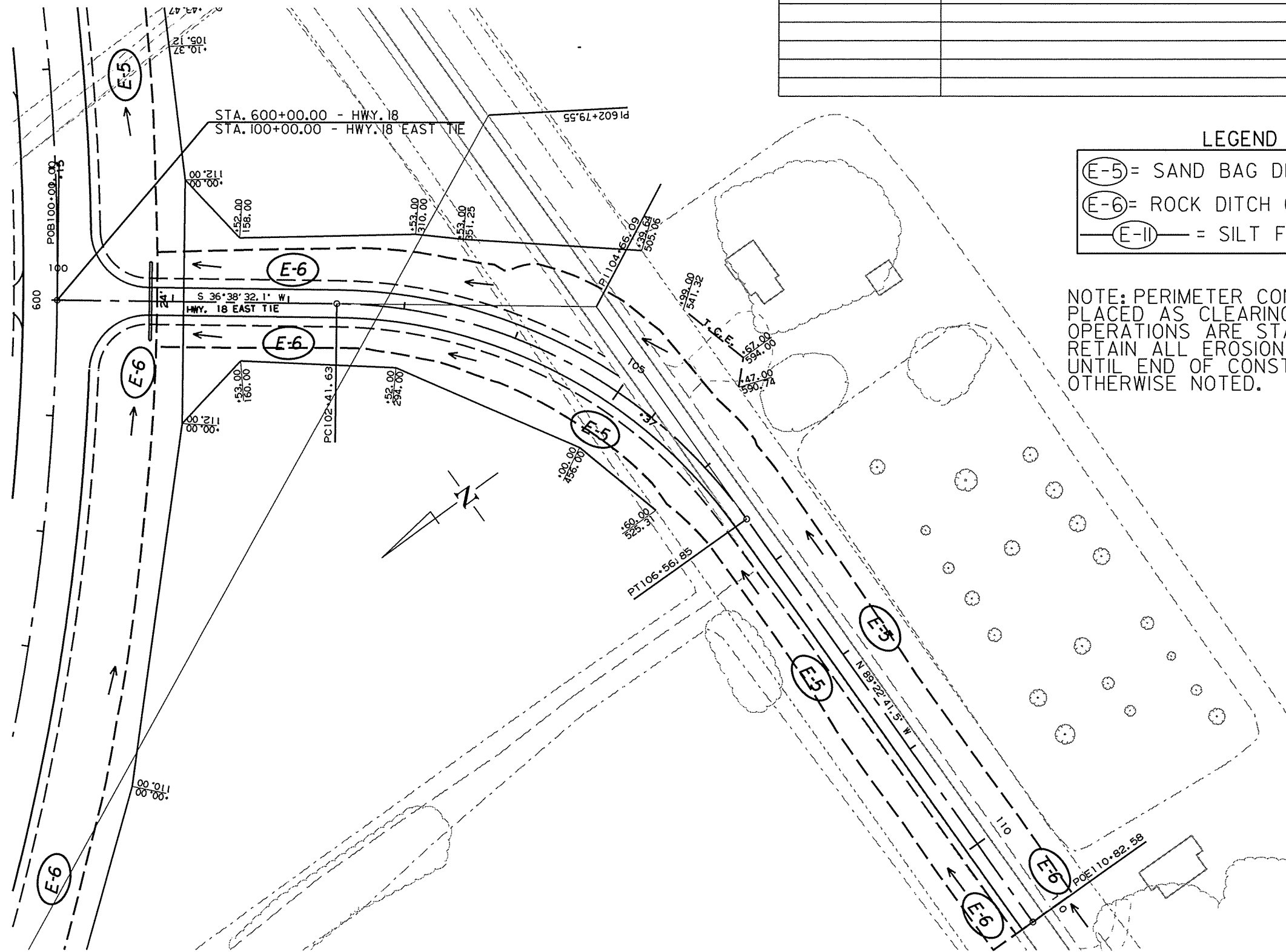
DATE OF REVISION	REVISION



LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-II) = SILT FENCE

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

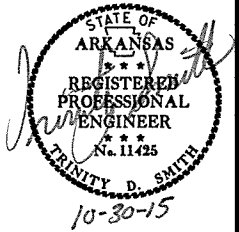


REVISIONS

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.	CA1001		40	283

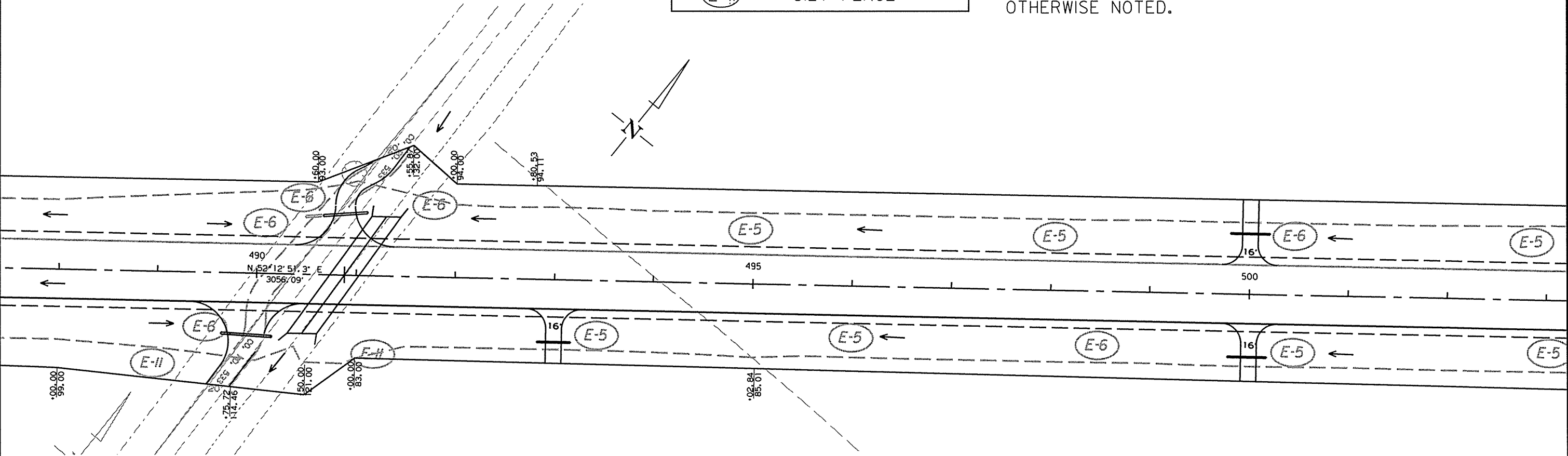
2 TEMPORARY EROSION CONTROL DETAILS



LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-11) = SILT FENCE

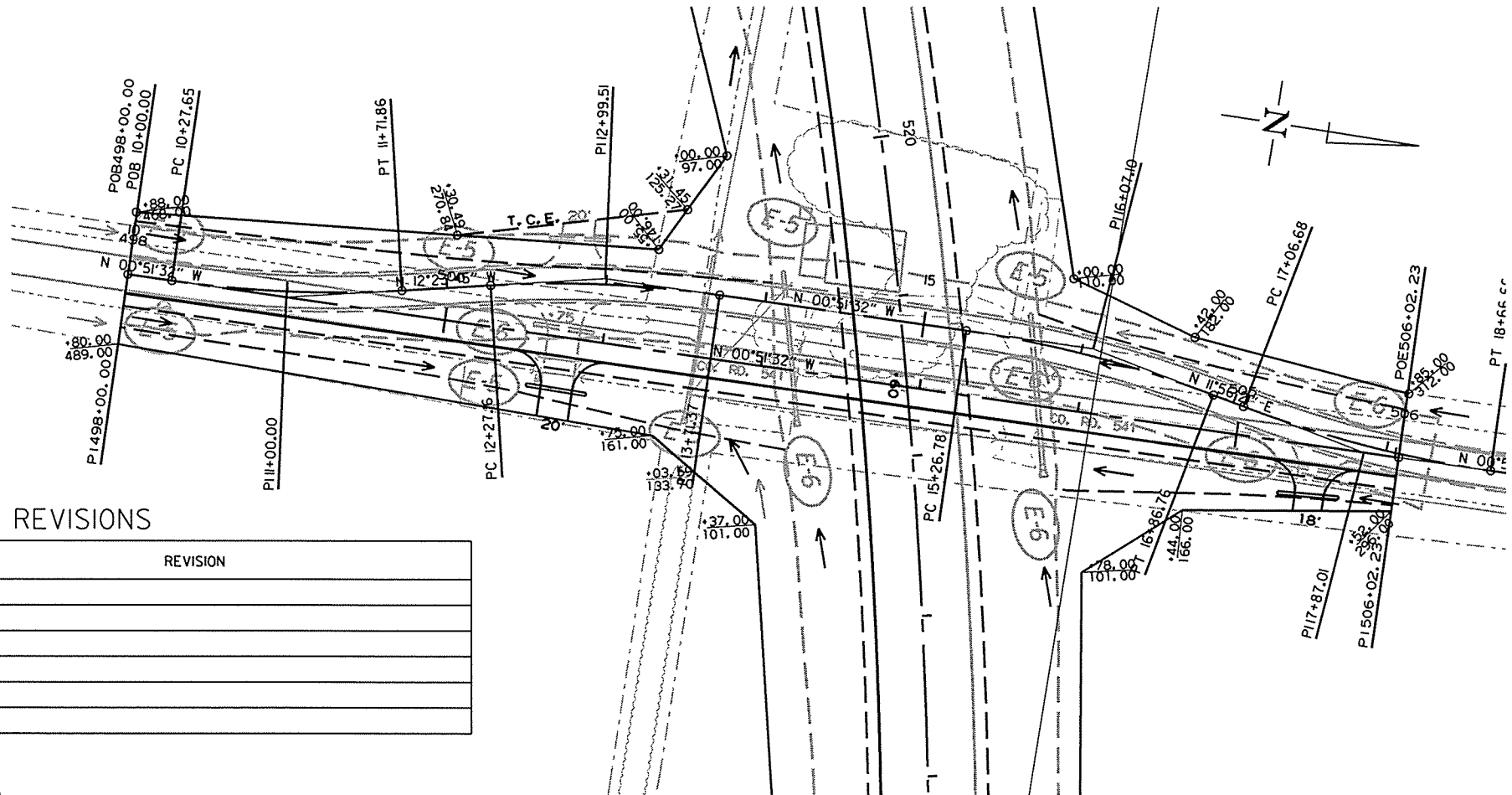
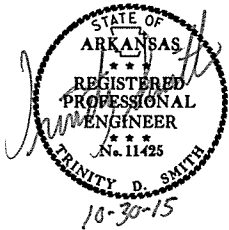
NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.



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. CA1001			41	283

* MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

2 TEMPORARY EROSION CONTROL DETAILS



REVISIONS

DATE OF REVISION	REVISION

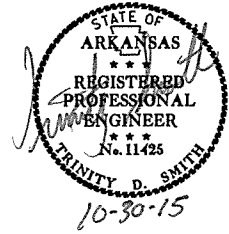
LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-11)— = SILT FENCE

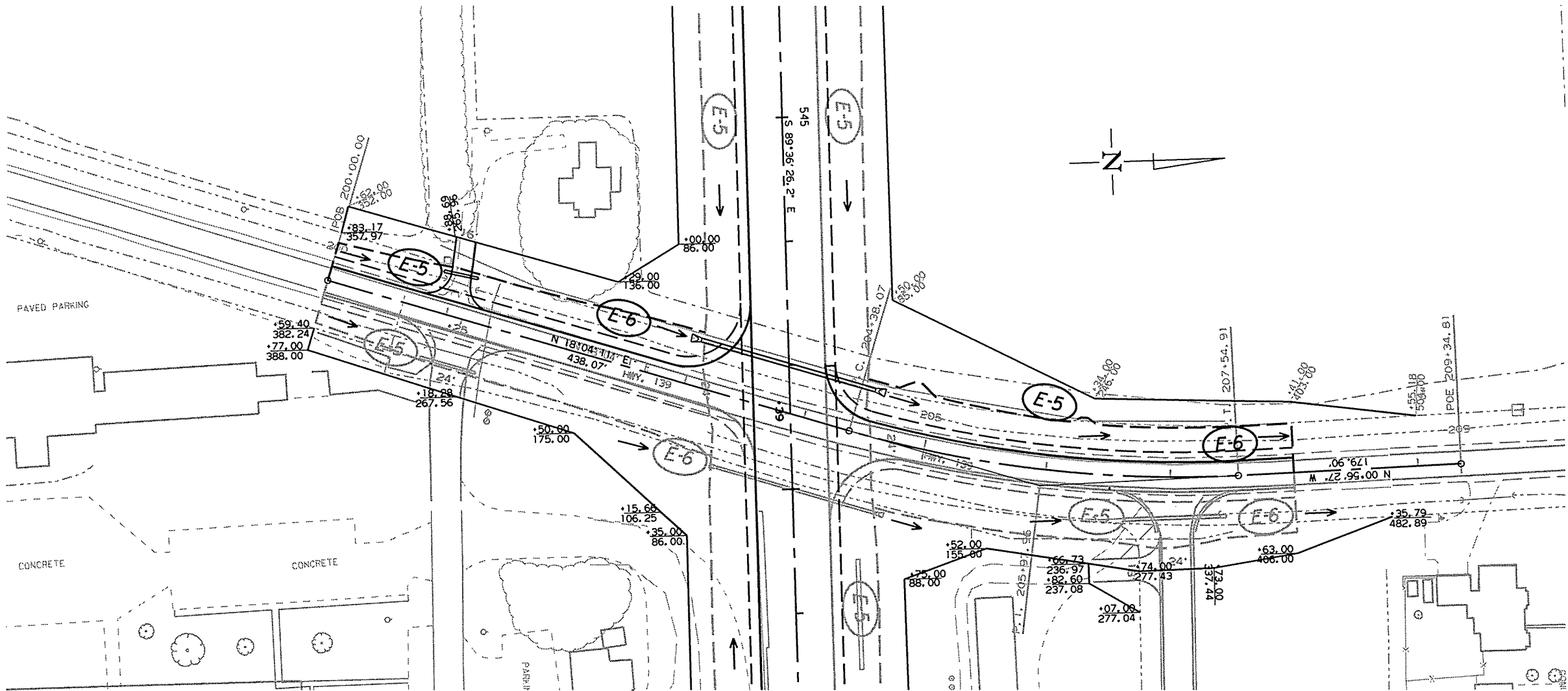
NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

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. CA1001	42	283

2 TEMPORARY EROSION CONTROL DETAILS



* MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.



REVISIONS

DATE OF REVISION	REVISION

LEGEND

- E-5 = SAND BAG DITCH CHECKS
- E-6 = ROCK DITCH CHECKS
- E-II = SILT FENCE

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

REVISIONS

DATE OF REVISION	REVISION

LEGEND

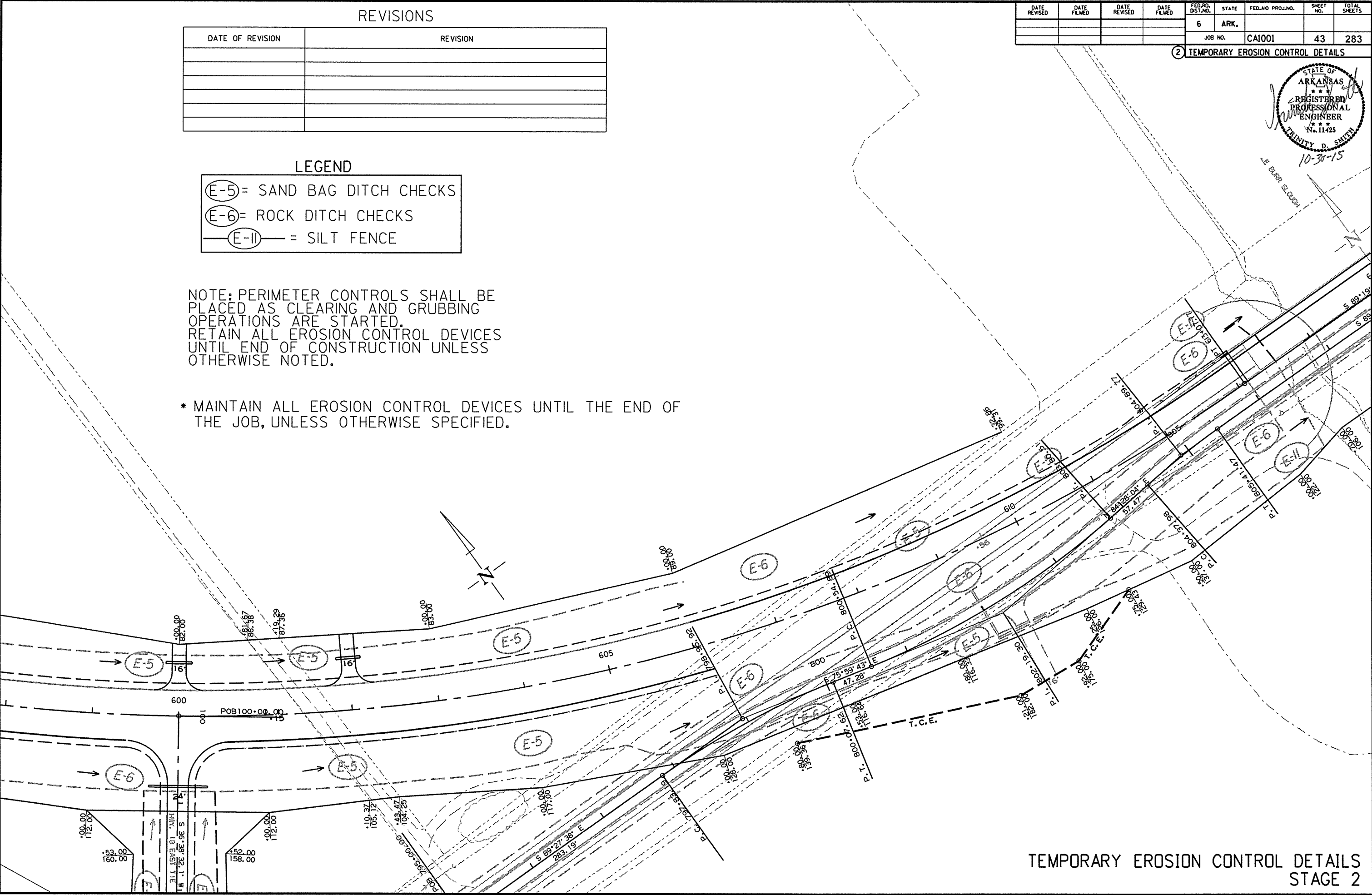
- (E-5) = SAND BAG DITCH CHECKS
(E-6) = ROCK DITCH CHECKS
(E-11) = SILT FENCE

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

* MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		43	283
				JOB NO.	CA1001			

2 TEMPORARY EROSION CONTROL DETAILS



TEMPORARY EROSION CONTROL DETAILS
STAGE 2

9/30/2015

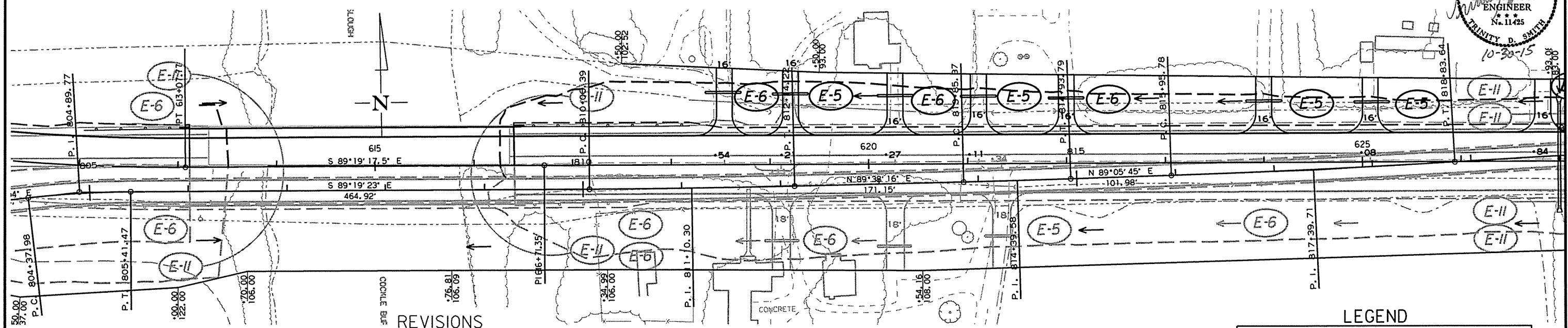
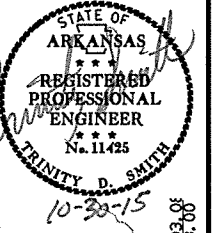
CA1001.DGN

* MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

B.E. STA. 616+41.08
INSTALL E-II = 300 LIN. FT.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	CA1001		44	283

2 TEMPORARY EROSION CONTROL DETAILS

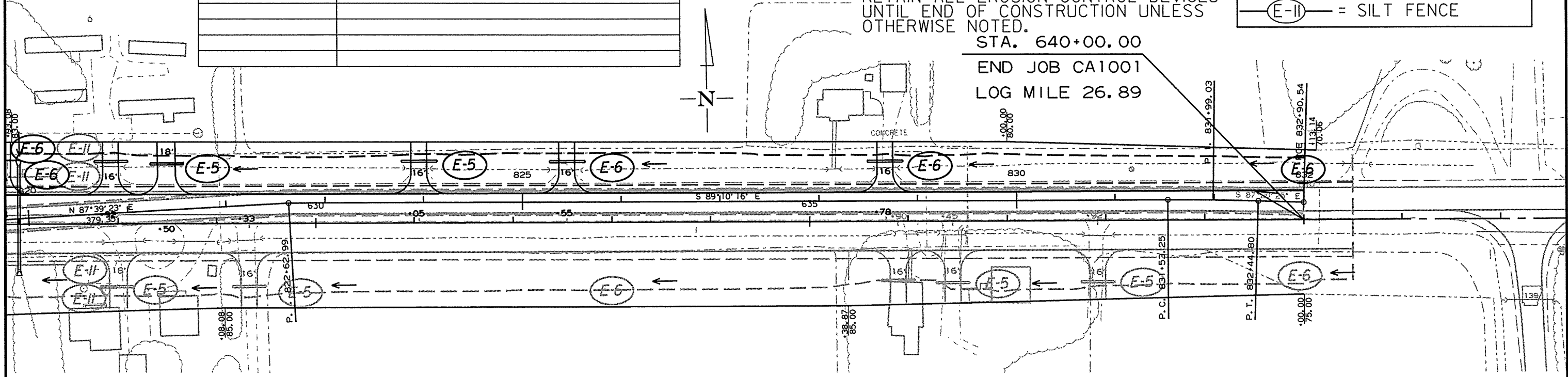


DATE OF REVISION	REVISION

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

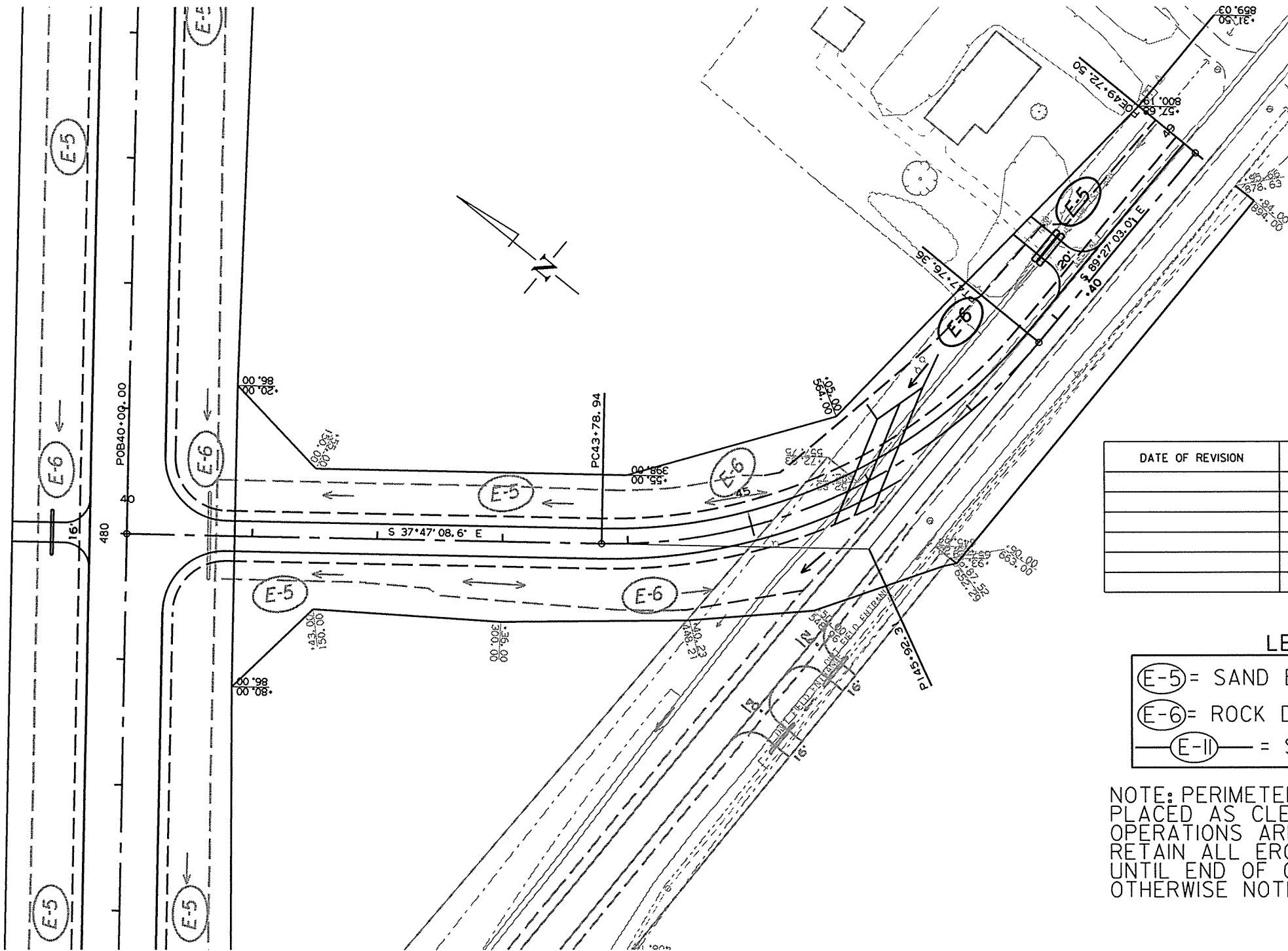
LEGEND	
(E-5)	= SAND BAG DITCH CHECKS
(E-6)	= ROCK DITCH CHECKS
(E-II)	= SILT FENCE

STA. 640+00.00
END JOB CA1001
LOG MILE 26.89



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.	CA1001		45	283

2 TEMPORARY EROSION CONTROL DETAILS



REVISIONS

DATE OF REVISION	REVISION

LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-11) = SILT FENCE

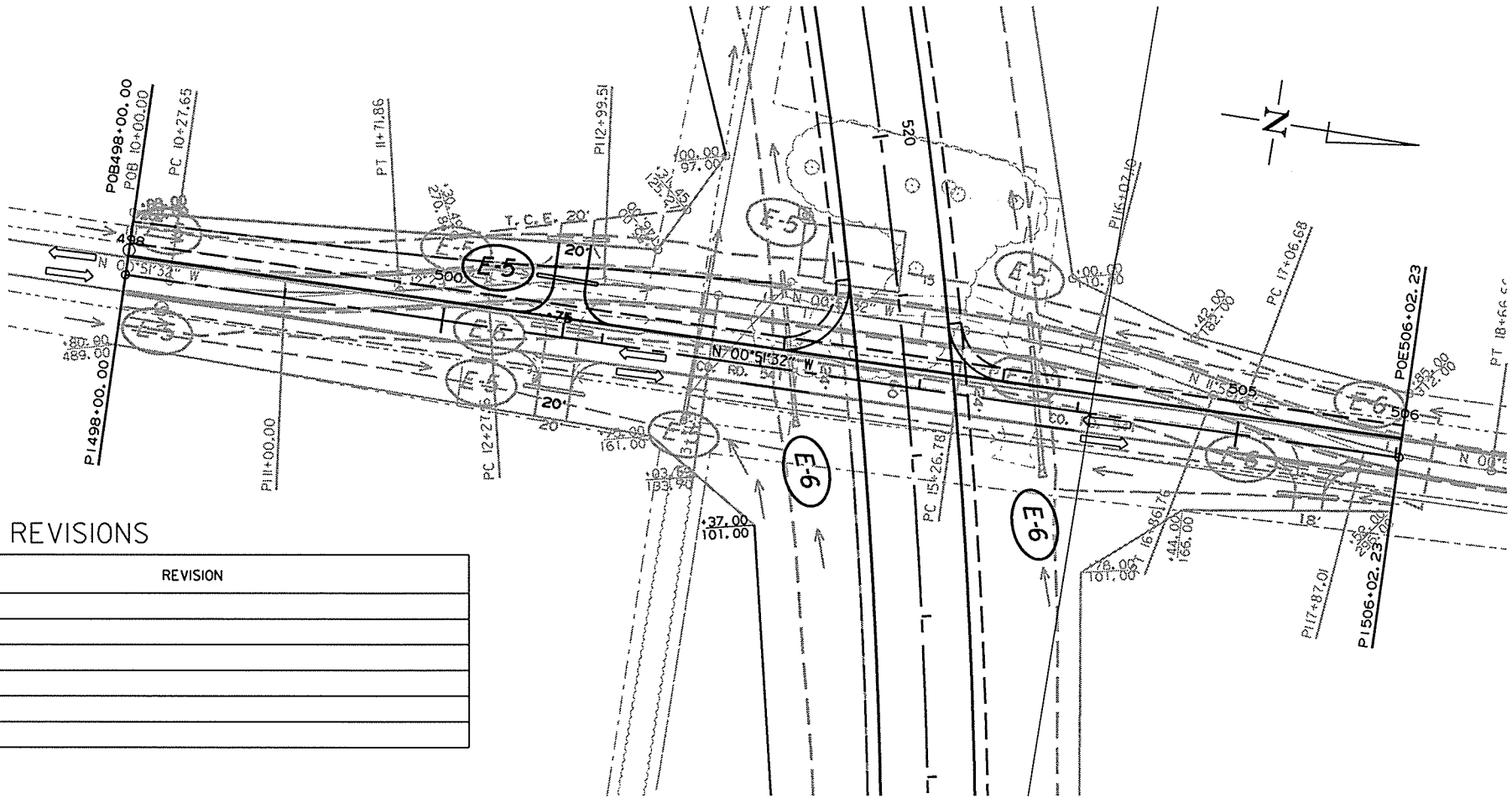
NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

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. CA1001		46	283	

2 TEMPORARY EROSION CONTROL DETAILS



* MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.



REVISIONS

DATE OF REVISION	REVISION

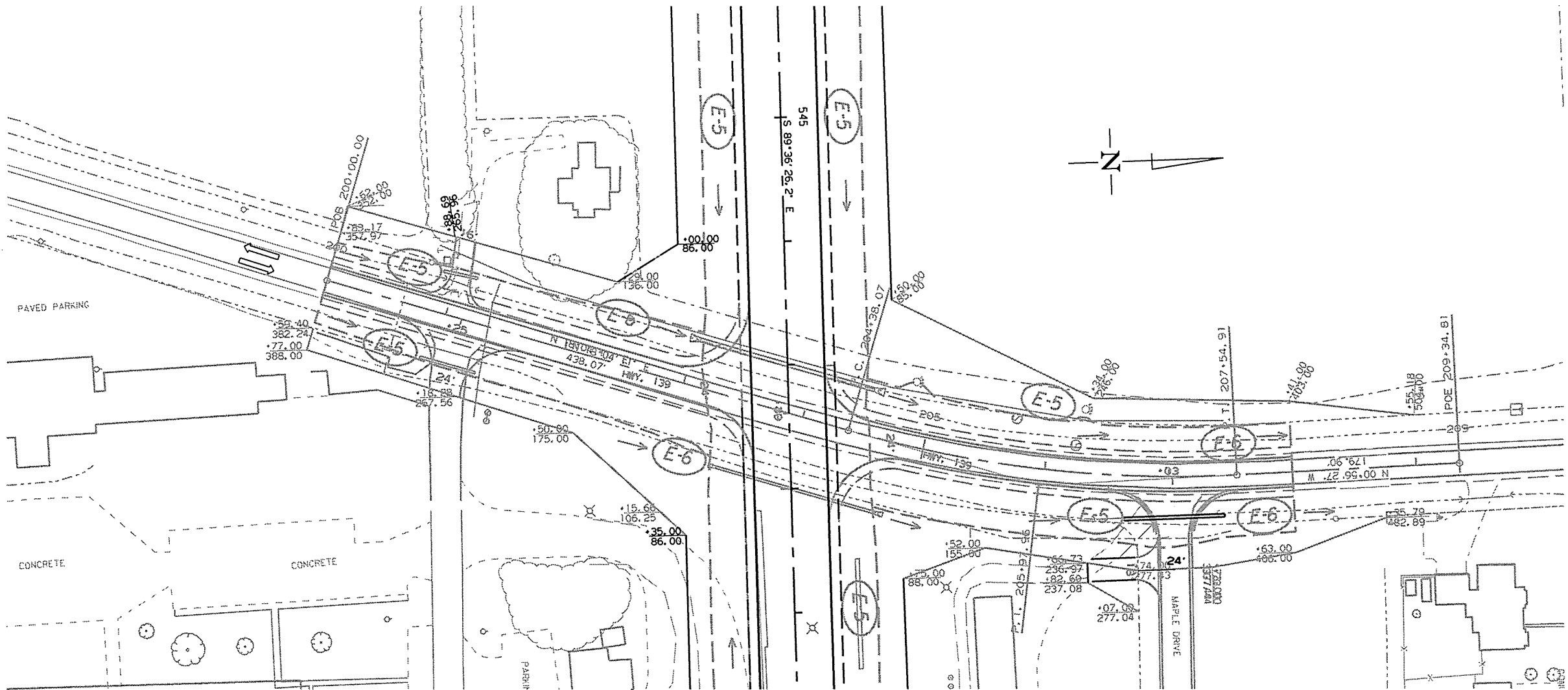
LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-II)— = SILT FENCE

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

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.	CA1001		47	283

2 TEMPORARY EROSION CONTROL DETAILS



REVISIONS

DATE OF REVISION	REVISION

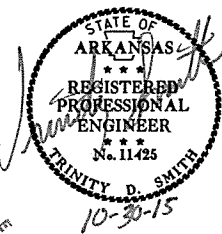
LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-11) = SILT FENCE

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

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.	CA1001		48	283

2 TEMPORARY EROSION CONTROL DETAILS



REVISIONS

DATE OF REVISION	REVISION

LEGEND

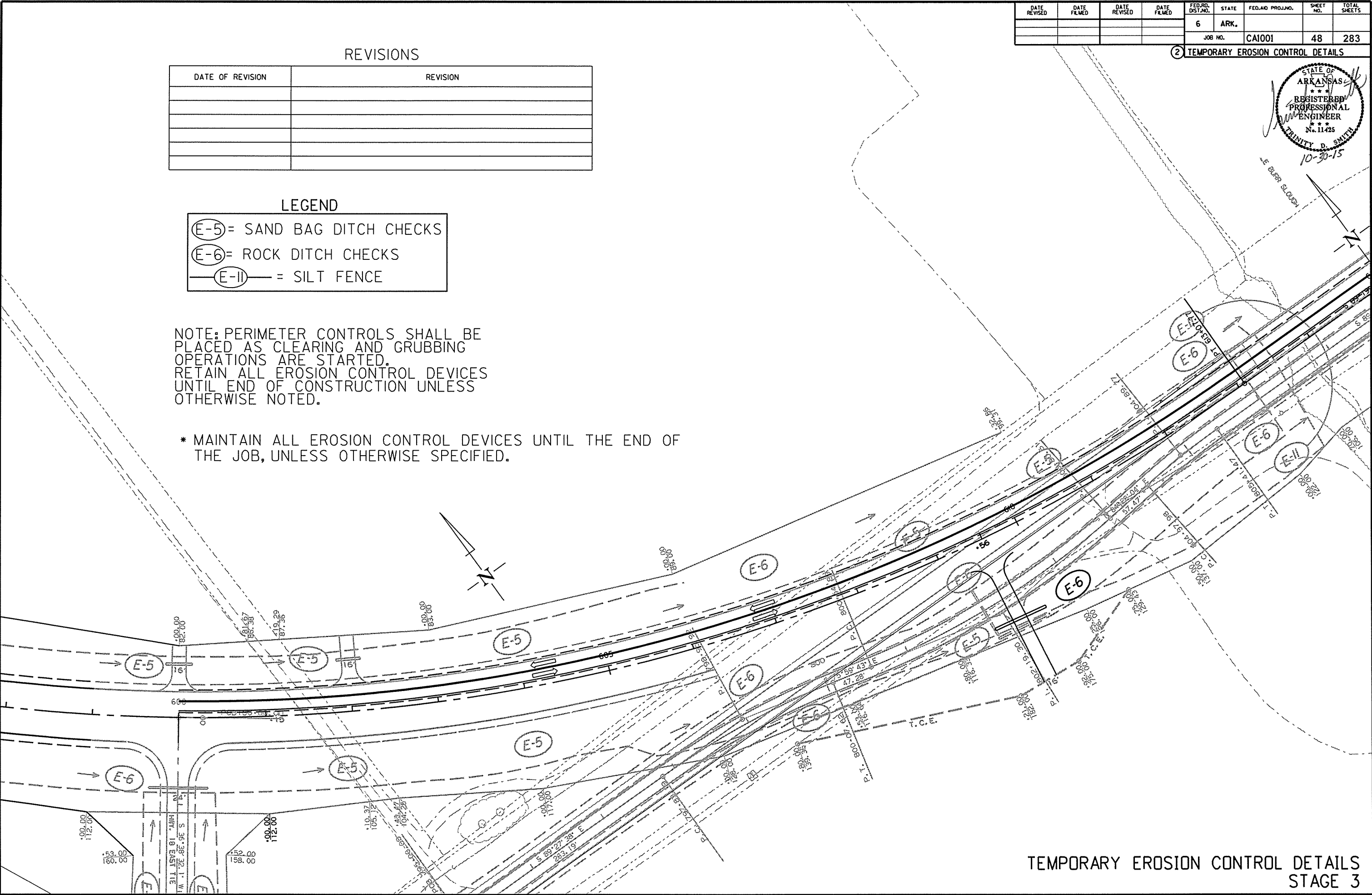
E-5= SAND BAG DITCH CHECKS

E-6= ROCK DITCH CHECKS

E-II= SILT FENCE

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

* MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

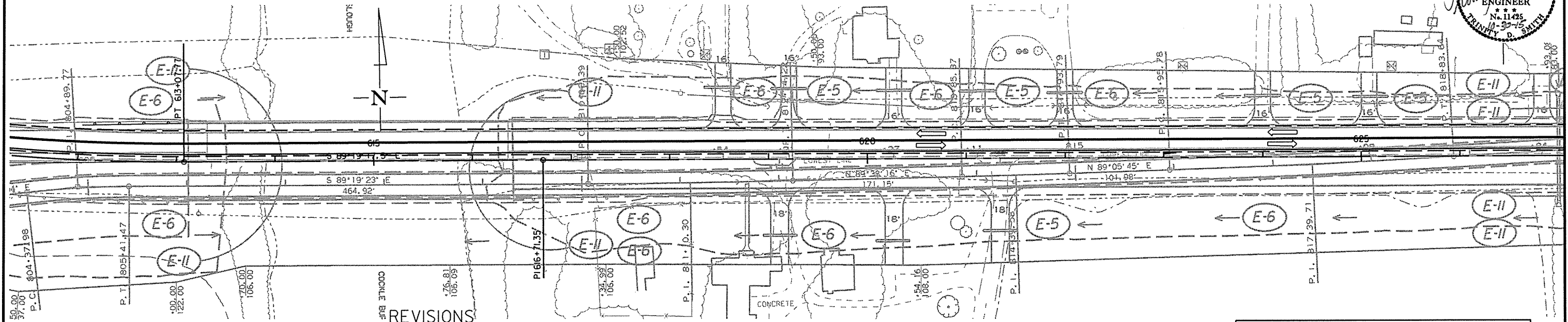


TEMPORARY EROSION CONTROL DETAILS
STAGE 3

* MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

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. CA1001	49	283

2 TEMPORARY EROSION CONTROL DETAILS



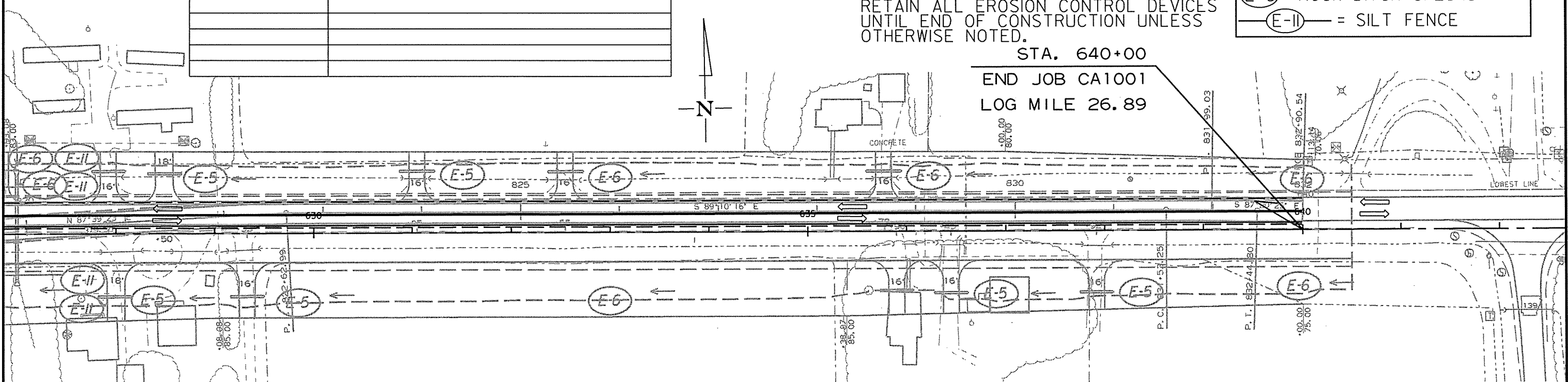
REVISIONS

DATE OF REVISION	REVISION

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

E-5	= SAND BAG DITCH CHECKS
E-6	= ROCK DITCH CHECKS
E-II	= SILT FENCE

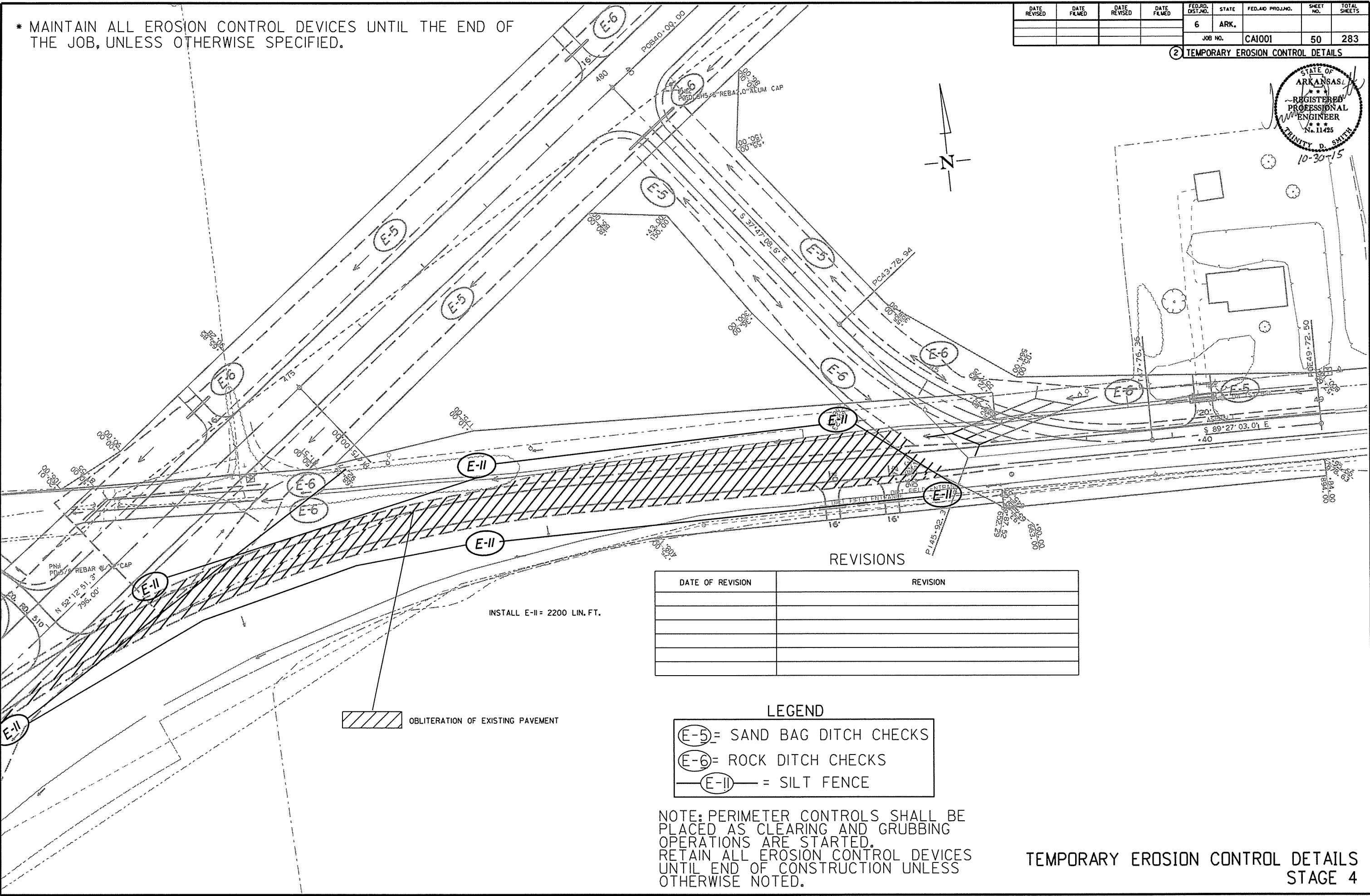
STA. 640+00
END JOB CA1001
LOG MILE 26.89



* MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

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.	CA1001		50	283

2 TEMPORARY EROSION CONTROL DETAILS



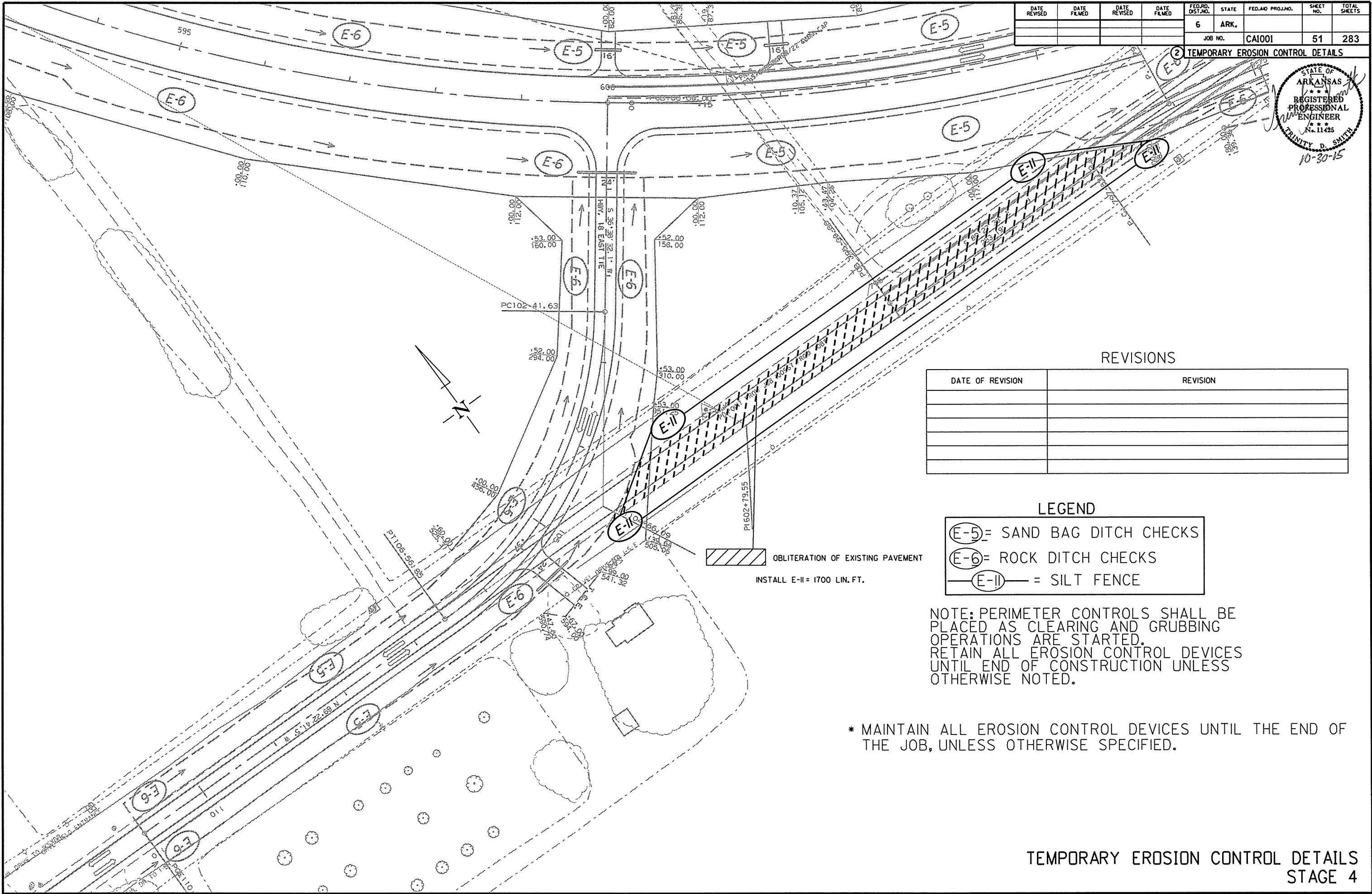
REVISIONS

DATE OF REVISION	REVISION

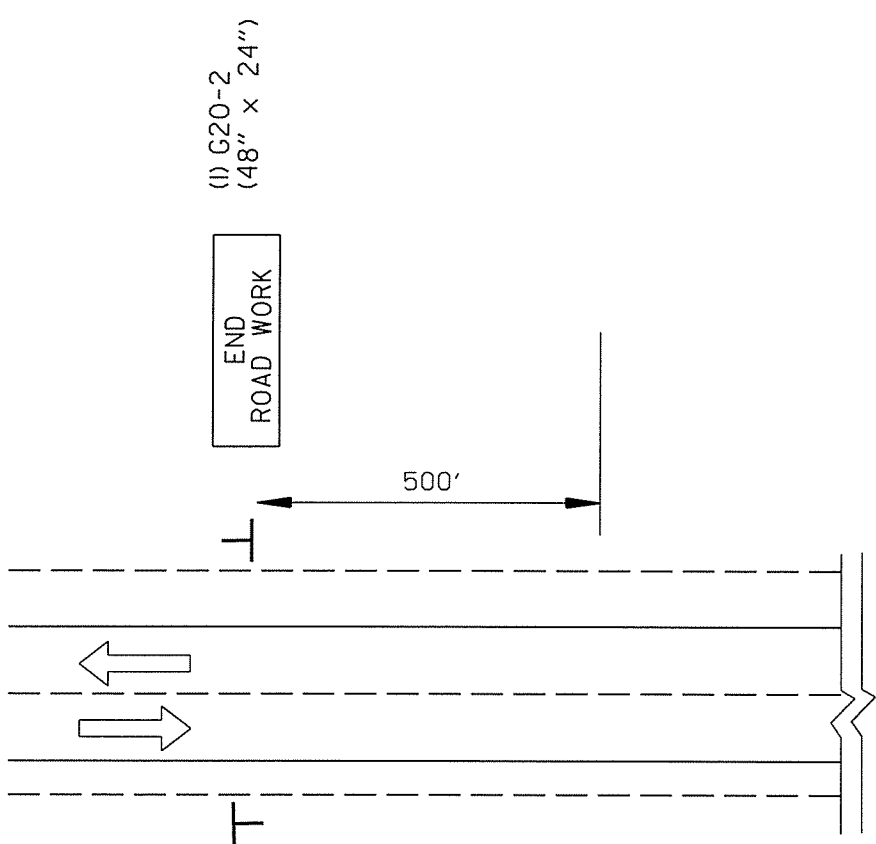
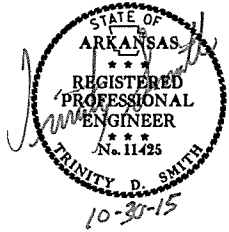
LEGEND

- E-5 = SAND BAG DITCH CHECKS
- E-6 = ROCK DITCH CHECKS
- E-II = SILT FENCE

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



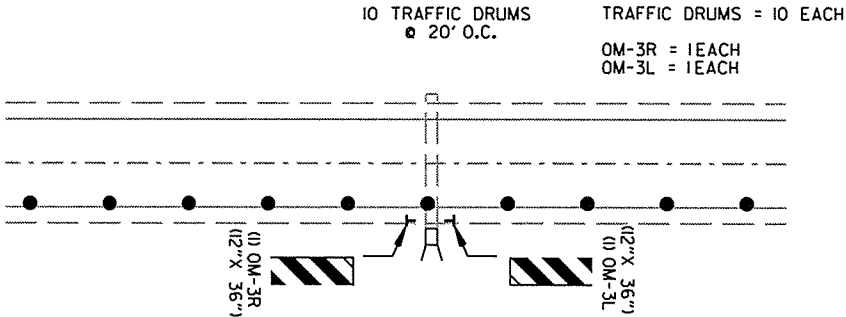
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	CA1001		52	283
② MAINTENANCE OF TRAFFIC DETAILS								



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

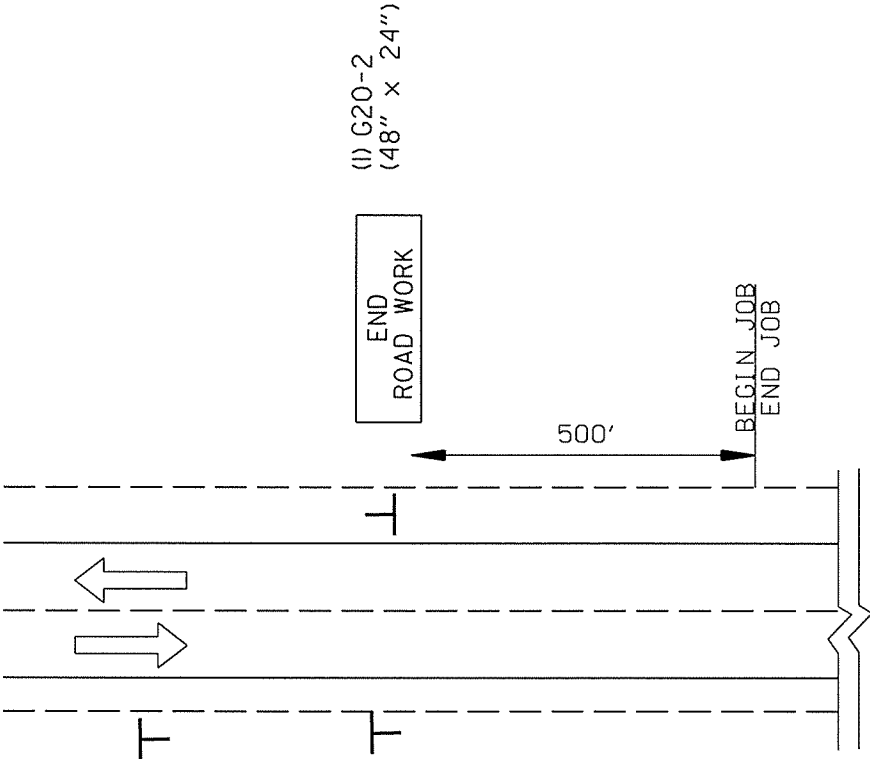
ADVANCE WARNING - SIDE ROADS
(ALL STAGES)

SIMILAR SIGNS NEEDED AT
C.R. 510 AND HWY. 18 CROSSING (2)
C.R. 543 AND HWY. 18 CROSSING (2)
HWY. 139 AND HWY. 18 CROSSING (3)



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

STA. 627+00



ROAD
WORK
1500 FT
(1) W20-1
(48" X 48")

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

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

ADVANCE WARNING (ALL STAGES)

SIMILAR SIGNS NEEDED AT
HWY. 18 - STA. 443+25 (MAIN LANES ALIGNMENT)
HWY. 18 - STA. 660+45 (MAIN LANES ALIGNMENT)
HWY. 18 - STA. 54+72.50 (HWY. 18/WEST TIE ALIGNMENT)
HWY. 18 - STA. 790+00 (STAGE 2 DETOUR ALIGNMENT)

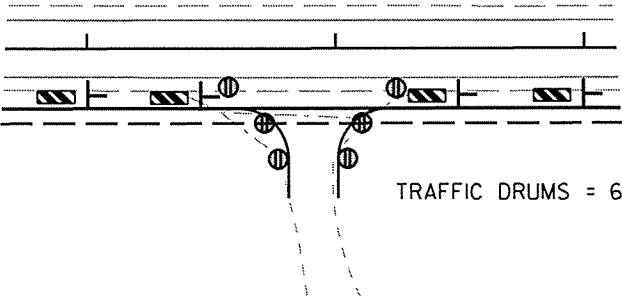
DO
NOT
PASS

(8) R4-1
(24" X 30")

SHOULDER
CLOSED

(8) RSP-1
(48" X 30")

RSP-1 AND R4-1 TO BE USED
IF AND WHERE DIRECTED BY THE ENGINEER



TRAFFIC DRUMS = 6 EACH

DRIVEWAY TRAFFIC DRUM DETAIL

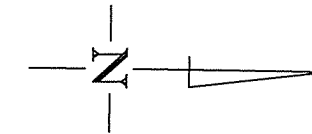
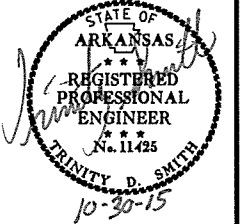
ADVANCE WARNING
MAINTENANCE OF TRAFFIC DETAILS

CONSTRUCTION PAVEMENT MARKINGS
STAGE 1 TRAFFIC OVER LEVELING - CO. RD. 541
LT. & RT. EDGE LINES + DBL. CENTERLINE = 4009 LIN. FT.

NOTE: REPLACE VERTICAL PANELS WITH TRAFFIC DRUMS
WHEN THE VERTICAL DIFFERENTIAL IS 4' OR LESS.

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.	CA1001		53	283

② MAINTENANCE OF TRAFFIC DETAILS



STA. 506+02.23
CO. RD. 541

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

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

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

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

SEQUENCE OF CONSTRUCTION

STAGE 1
MAINTAIN TRAFFIC ON EXISTING LANES
CONSTRUCT TEMPORARY APPROACHES FOR STAGE
CONSTRUCTION OF COCKLE BURR SLOUGH AND
CONSTRUCT RIGHT SIDE OF COCKLE BURR SLOUGH
BRIDGE AS SHOWN IN BRIDGE PLANS
CONSTRUCT DETOUR FOR CO. RD. 541
CONSTRUCT RT. SIDE OF HWY. 139
CONSTRUCT RIGHT SIDE OF NEW MAIN LANES HWY. 18
FROM STA. 616+41.08 TO STA. 640+00.00
CONSTRUCT GRADING AND MINOR STRUCTURES ON NEW LOCATION
AREAS OF HWY. 18 MAIN LANES FROM BEGIN JOB TO STA. 606+50
AND HWY. 18 TIE INS

MAINTENANCE OF TRAFFIC DETAILS
STAGE I

10/26/2015

CA1001.DGN

SEQUENCE OF CONSTRUCTION

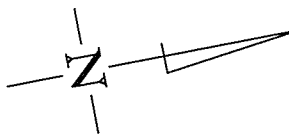
STAGE 1
 MAINTAIN TRAFFIC ON EXISTING LANES
 CONSTRUCT TEMPORARY APPROACHES FOR STAGE
 CONSTRUCTION OF COCKLE BURR SLOUGH AND
 CONSTRUCT RIGHT SIDE OF COCKLE BURR SLOUGH
 BRIDGE AS SHOWN IN BRIDGE PLANS
 CONSTRUCT DETOUR FOR CO. RD. 541
 CONSTRUCT RT. SIDE OF HWY. 139
 CONSTRUCT RIGHT SIDE OF NEW MAIN LANES HWY. 18
 FROM STA. 616+41.08 TO STA. 640+00.00
 CONSTRUCT GRADING AND MINOR STRUCTURES ON NEW LOCATION
 AREAS OF HWY. 18 MAIN LANES FROM BEGIN JOB TO STA. 606+50
 AND HWY. 18 TIE INS.

ROAD
CLOSED

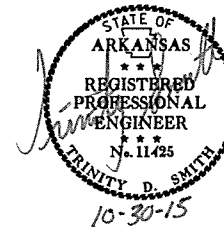
(I) RII-2
(48" X 30")

8' BARR.
TYP. III RT.
8' BARR.
TYP. III LT.

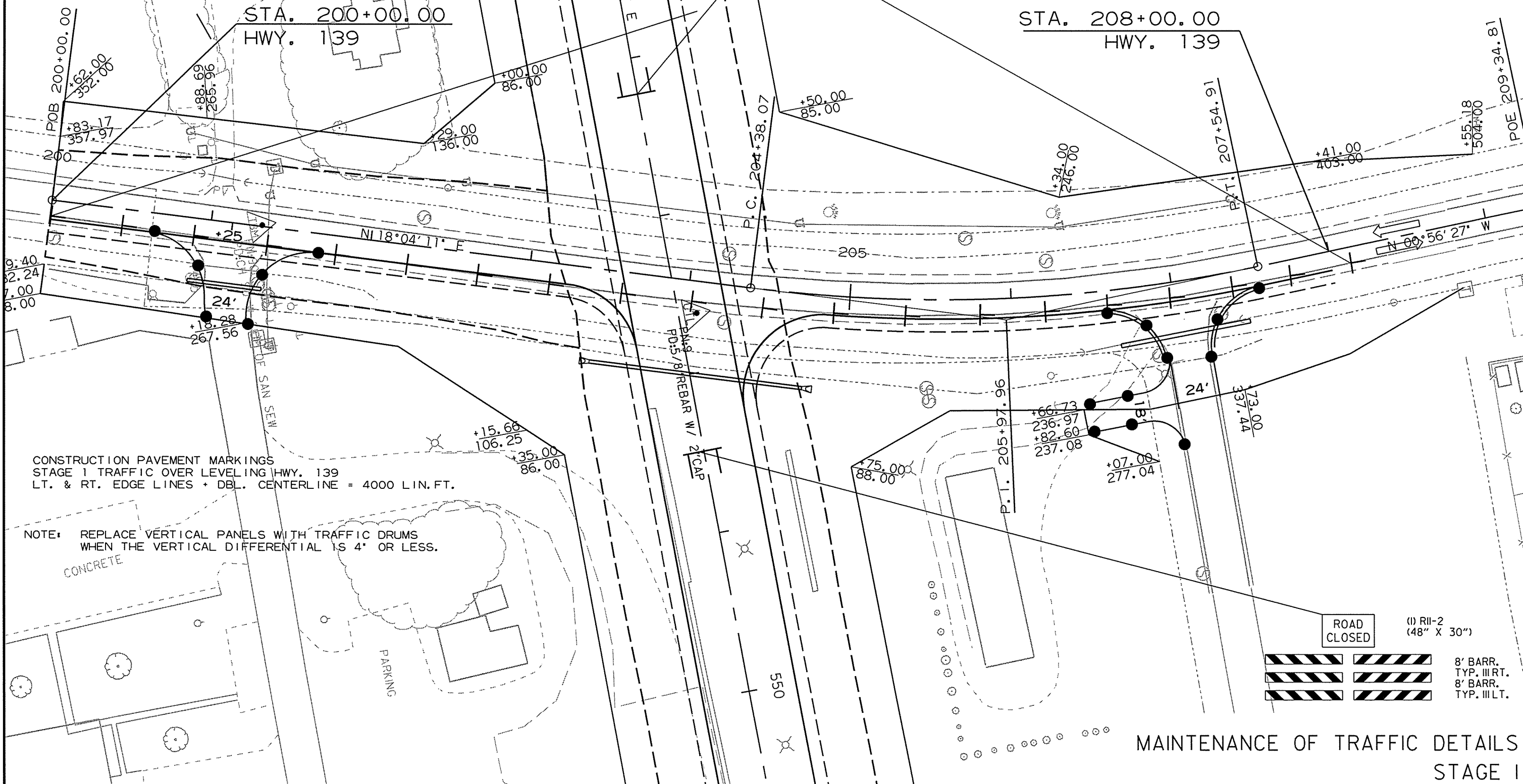
20 VERTICAL PANELS
RT. OF TRAFFIC
45' O.C.



② MAINTENANCE OF TRAFFIC DETAILS



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		54	283
				JOB NO.	CA1001			



ROAD
CLOSED

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

8' BARR.
TYP. III RT.
8' BARR.
TYP. III LT.

MAINTENANCE OF TRAFFIC DETAILS
STAGE I

10/26/2015

CA1001.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	CA1001		55	283

② MAINTENANCE OF TRAFFIC DETAILS

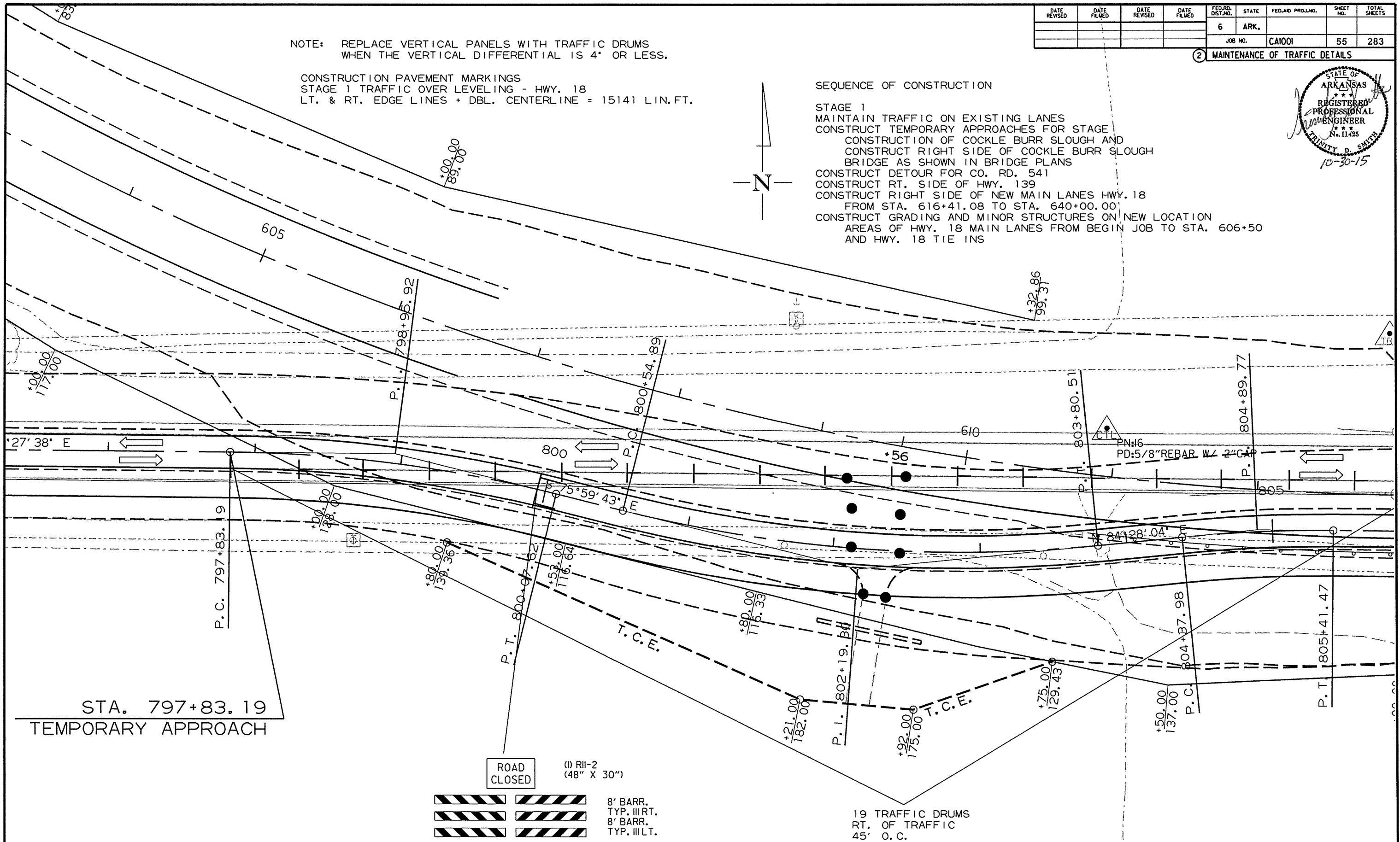


NOTE: REPLACE VERTICAL PANELS WITH TRAFFIC DRUMS
WHEN THE VERTICAL DIFFERENTIAL IS 4' OR LESS.

CONSTRUCTION PAVEMENT MARKINGS
STAGE 1 TRAFFIC OVER LEVELING - HWY. 18
LT. & RT. EDGE LINES + DBL. CENTERLINE = 15141 LIN. FT.

SEQUENCE OF CONSTRUCTION

- STAGE 1
 MAINTAIN TRAFFIC ON EXISTING LANES
 CONSTRUCT TEMPORARY APPROACHES FOR STAGE
 CONSTRUCTION OF COCKLE BURR SLOUGH AND
 CONSTRUCT RIGHT SIDE OF COCKLE BURR SLOUGH
 BRIDGE AS SHOWN IN BRIDGE PLANS
 CONSTRUCT DETOUR FOR CO. RD. 541
 CONSTRUCT RT. SIDE OF HWY. 139
 CONSTRUCT RIGHT SIDE OF NEW MAIN LANES HWY. 18
 FROM STA. 616+41.08 TO STA. 640+00.00
 CONSTRUCT GRADING AND MINOR STRUCTURES ON NEW LOCATION
 AREAS OF HWY. 18 MAIN LANES FROM BEGIN JOB TO STA. 606+50
 AND HWY. 18 TIE INS



ROAD
CLOSED

(1) RII-2
(48" X 30")

8' BARR.
TYP. III RT.
8' BARR.
TYP. III LT.

19 TRAFFIC DRUMS
RT. OF TRAFFIC
45' O.C.

MAINTENANCE OF TRAFFIC DETAILS STAGE I

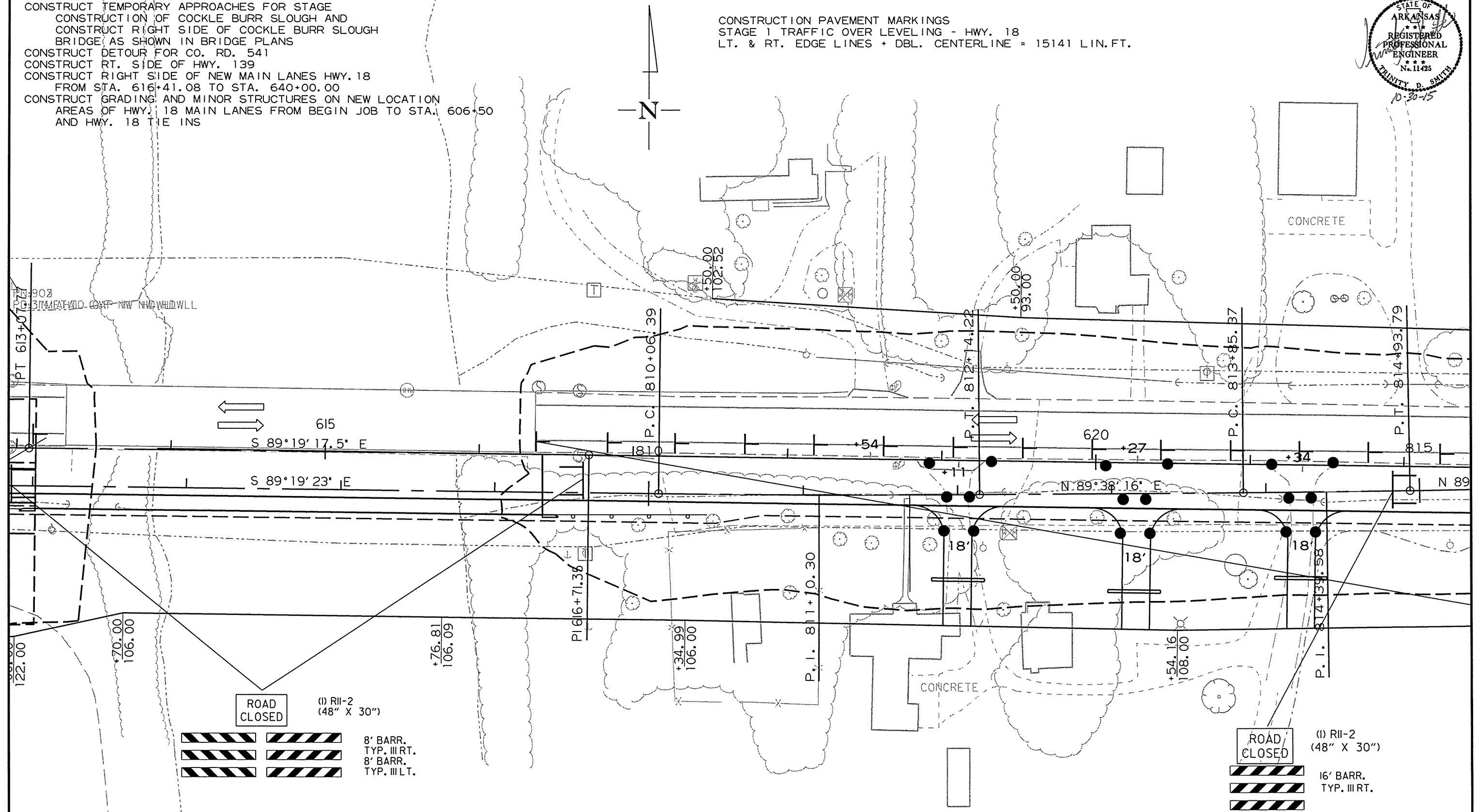
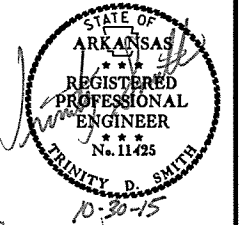
STAGE 1
MAINTAIN TRAFFIC ON EXISTING LANES
CONSTRUCT TEMPORARY APPROACHES FOR STAGE
CONSTRUCTION OF COCKLE BURR SLOUGH AND
CONSTRUCT RIGHT SIDE OF COCKLE BURR SLOUGH
BRIDGE AS SHOWN IN BRIDGE PLANS
CONSTRUCT DETOUR FOR CO. RD. 541
CONSTRUCT RT. SIDE OF HWY. 139
CONSTRUCT RIGHT SIDE OF NEW MAIN LANES HWY. 18
FROM STA. 616+41.08 TO STA. 640+00.00
CONSTRUCT GRADING AND MINOR STRUCTURES ON NEW LOCATION
AREAS OF HWY. 18 MAIN LANES FROM BEGIN JOB TO STA. 606+50
AND HWY. 18 TIE INS

NOTE: REPLACE VERTICAL PANELS WITH TRAFFIC DRUMS
WHEN THE VERTICAL DIFFERENTIAL IS 4' OR LESS.

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	CA1001		56	283

② MAINTENANCE OF TRAFFIC DETAILS

CONSTRUCTION PAVEMENT MARKINGS
STAGE 1 TRAFFIC OVER LEVELING - HWY. 18
LT. & RT. EDGE LINES + DBL. CENTERLINE = 15141 LIN.FT.

MAINTENANCE OF TRAFFIC DETAILS
STAGE I

CA1001.DGN

STAGE 1
MAINTAIN TRAFFIC ON EXISTING LANES
CONSTRUCT TEMPORARY APPROACHES FOR STAGE
CONSTRUCTION OF COCKLE BURR SLOUGH AND
CONSTRUCT RIGHT SIDE OF COCKLE BURR SLOUGH
BRIDGE AS SHOWN IN BRIDGE PLANS
CONSTRUCT DETOUR FOR CO. RD. 541
CONSTRUCT RT. SIDE OF HWY. 139
CONSTRUCT RIGHT SIDE OF NEW MAIN LANES HWY. 18
FROM STA. 616+41.08 TO STA. 640+00.00
CONSTRUCT GRADING AND MINOR STRUCTURES ON NEW LOCATION
AREAS OF HWY. 18 MAIN LANES FROM BEGIN JOB TO STA. 606+50
AND HWY. 18 TIE INS

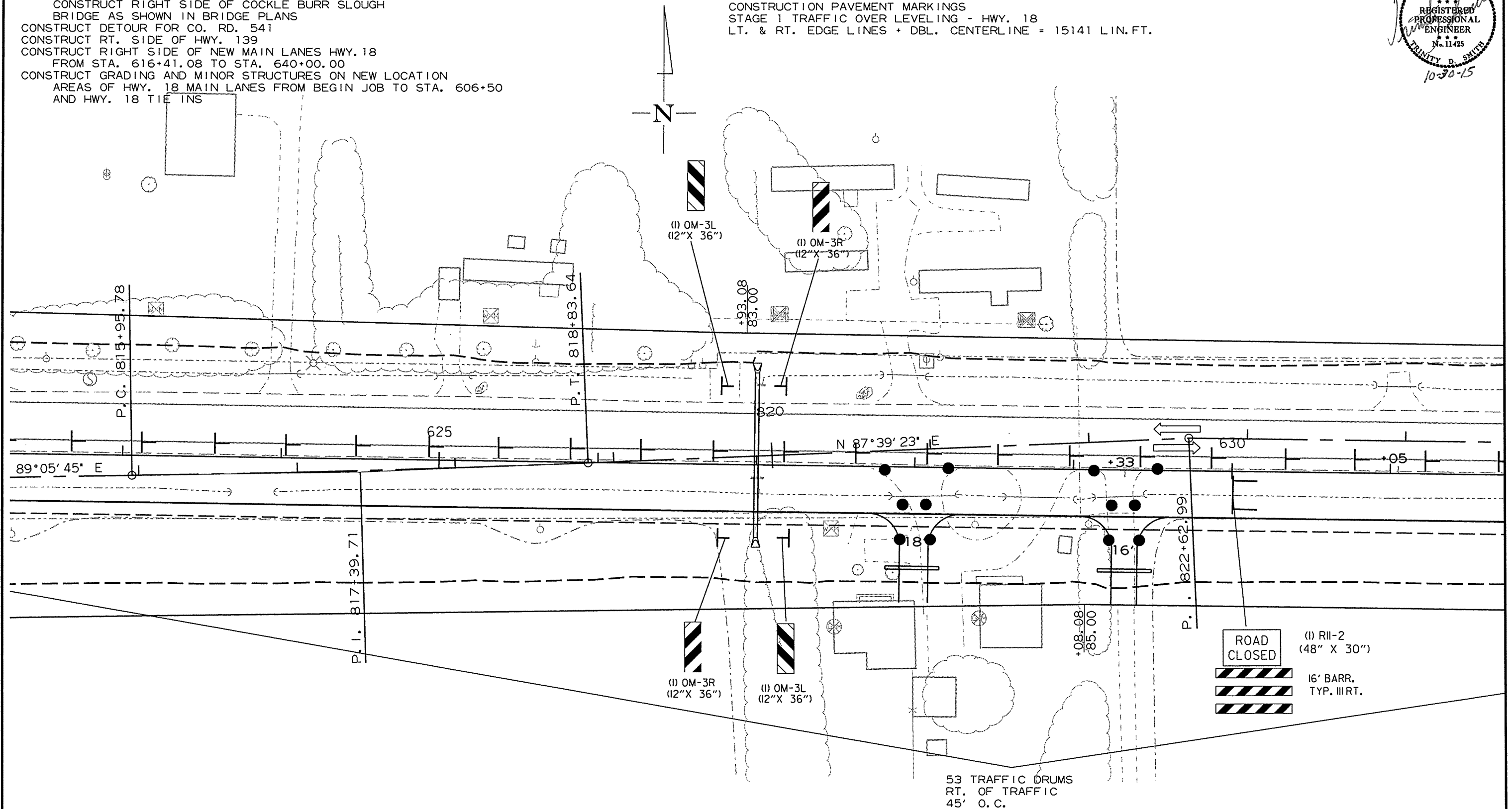
CONSTRUCTION PAVEMENT MARKINGS
STAGE 1 TRAFFIC OVER LEVELING - HWY. 18
LT. & RT. EDGE LINES + DBL. CENTERLINE = 15141 LIN.FT.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. REG. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	CA1001		57	283

STATE OF
ARKANSAS

REGISTERED
PROFESSIONAL
ENGINEER

No. 11425
TRINITY D. SMITH
10-30-15

MAINTENANCE OF TRAFFIC DETAILS
STAGE I

CA1001.DGN

STAGE 1
MAINTAIN TRAFFIC ON EXISTING LANES
CONSTRUCT TEMPORARY APPROACHES FOR STAGE
CONSTRUCTION OF COCKLE BURR SLOUGH AND
CONSTRUCT RIGHT SIDE OF COCKLE BURR SLOUGH
BRIDGE AS SHOWN IN BRIDGE PLANS
CONSTRUCT DETOUR FOR CO. RD. 541
CONSTRUCT RT. SIDE OF HWY. 139
CONSTRUCT RIGHT SIDE OF NEW MAIN LANES HWY. 18
FROM STA. 616+41.08 TO STA. 640+00.00
CONSTRUCT GRADING AND MINOR STRUCTURES ON NEW LOCATION
AREAS OF HWY. 18 MAIN LANES FROM BEGIN JOB TO STA. 606+50
AND HWY. 18 TIE INS

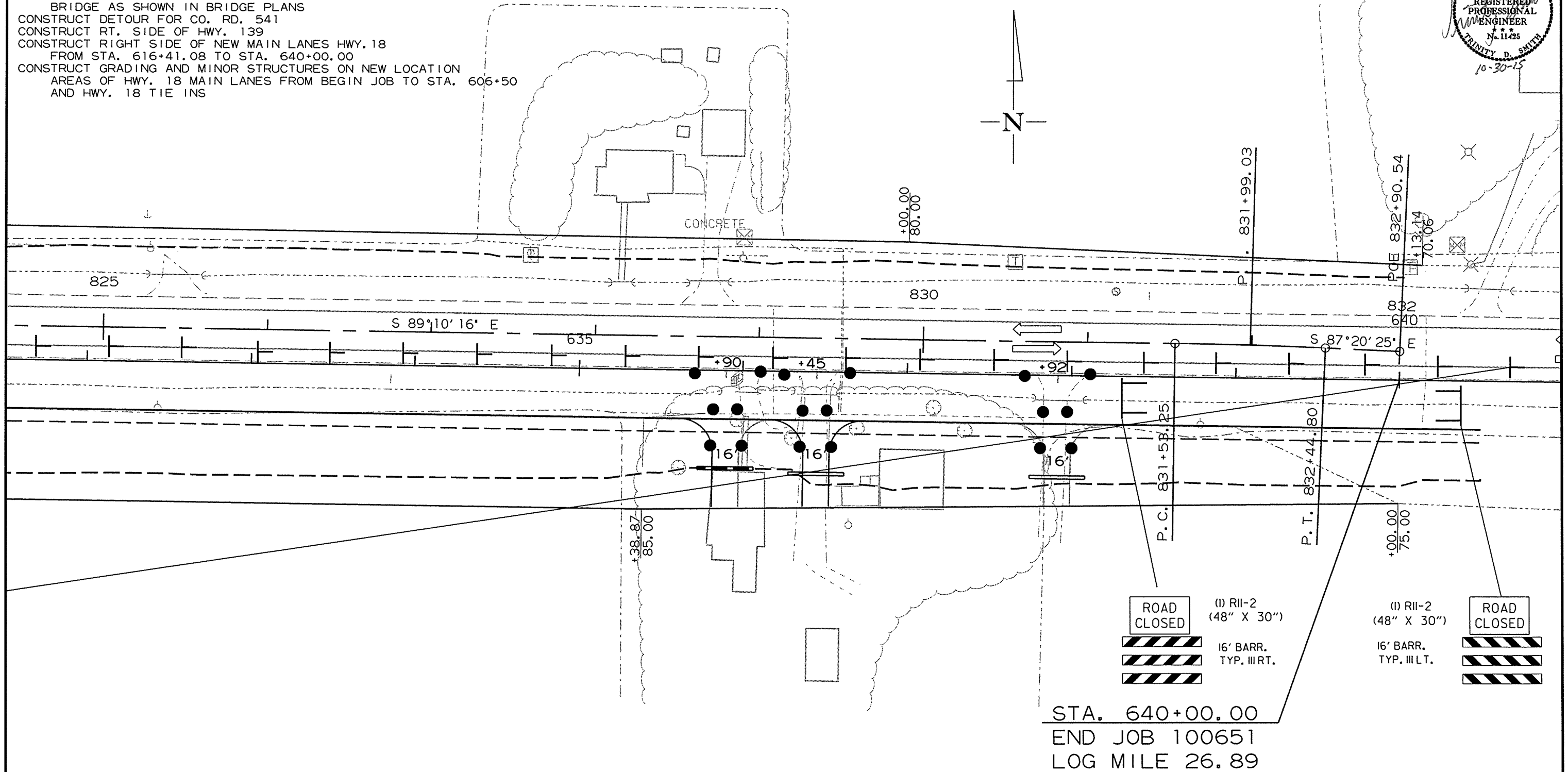
CONSTRUCTION PAVEMENT MARKINGS
STAGE 1 TRAFFIC OVER LEVELING - HWY. 18
LT. & RT. EDGE LINES + DBL. CENTERLINE = 15141 LIN.FT.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	CA1001		58	283

STATE OF
ARKANSAS

REGISTERED
PROFESSIONAL
ENGINEER

No. 11425
TRINITY D. SMITH
10-30-15

MAINTENANCE OF TRAFFIC DETAILS
STAGE I

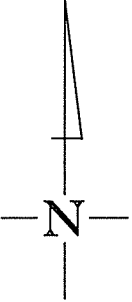
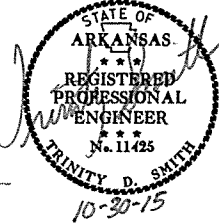
CA1001.DGN

SEQUENCE OF CONSTRUCTION

STAGE 1
MAINTAIN TRAFFIC ON EXISTING LANES
CONSTRUCT TEMPORARY APPROACHES FOR STAGE
CONSTRUCTION OF COCKLE BURR SLOUGH AND
CONSTRUCT RIGHT SIDE OF COCKLE BURR SLOUGH
BRIDGE AS SHOWN IN BRIDGE PLANS
CONSTRUCT DETOUR FOR CO. RD. 541
CONSTRUCT RT. SIDE OF HWY. 139
CONSTRUCT RIGHT SIDE OF NEW MAIN LANES HWY. 18
FROM STA. 616+41.08 TO STA. 640+00.00
CONSTRUCT GRADING AND MINOR STRUCTURES ON NEW LOCATION
AREAS OF HWY. 18 MAIN LANES FROM BEGIN JOB TO STA. 606+50
AND HWY. 18 TIE INS

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.	CA1001		59	283

② MAINTENANCE OF TRAFFIC DETAILS



ROAD
CLOSED

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

8' BARR.
TYP. III RT.
8' BARR.
TYP. III LT.

ROAD
CLOSED

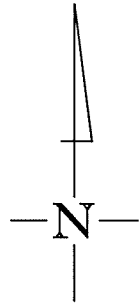
(I) RII-2
(48" X 30")

8' BARR.
TYP. III RT.
8' BARR.
TYP. III LT.

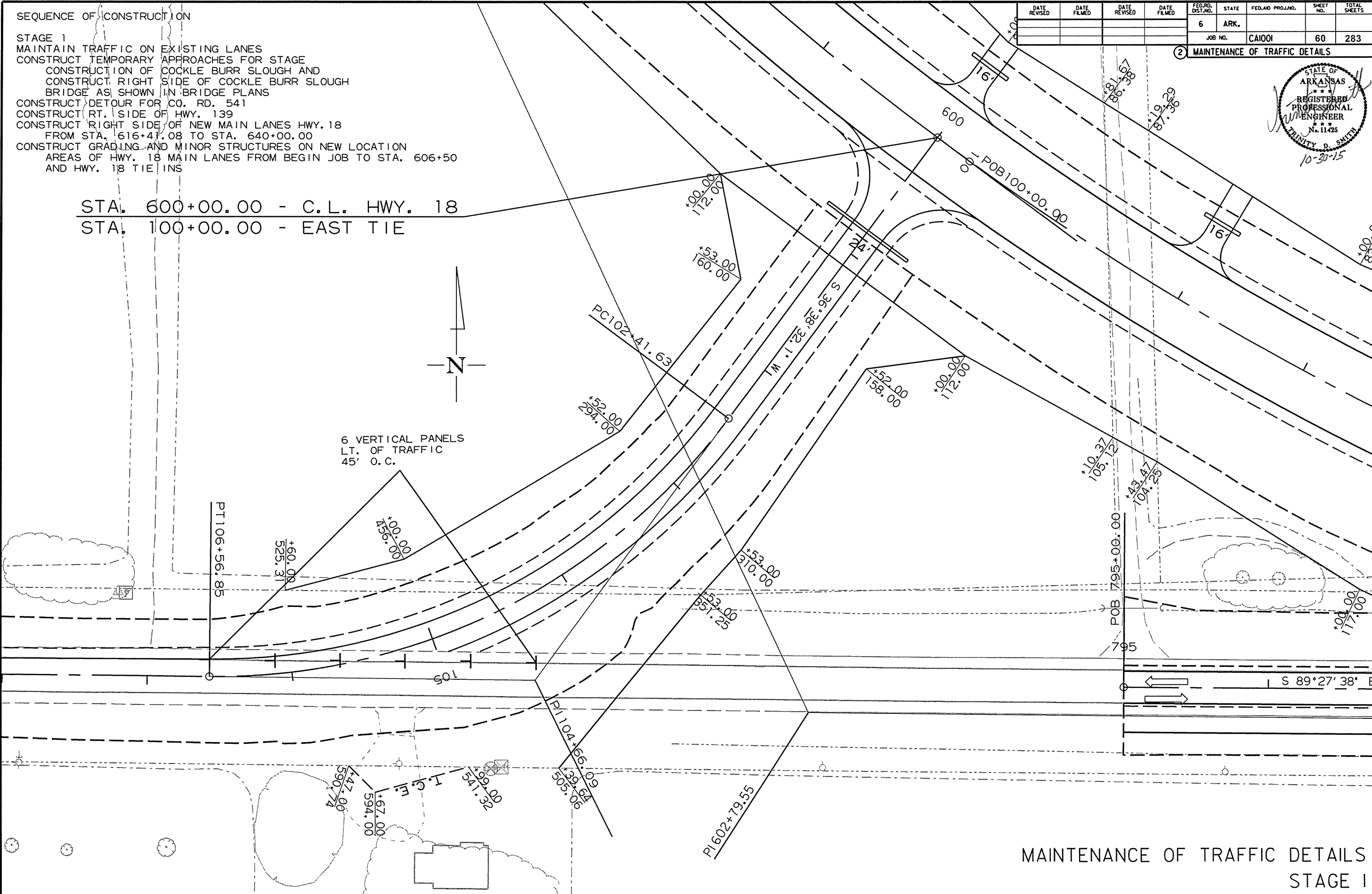
SEQUENCE OF CONSTRUCTION

STAGE 1
MAINTAIN TRAFFIC ON EXISTING LANES
CONSTRUCT TEMPORARY APPROACHES FOR STAGE
CONSTRUCTION OF COCKLE BURR SLOUGH AND
CONSTRUCT RIGHT SIDE OF COCKLE BURR SLOUGH
BRIDGE AS SHOWN IN BRIDGE PLANS
CONSTRUCT DETOUR FOR CO. RD. 541
CONSTRUCT RT. SIDE OF HWY. 139
CONSTRUCT RIGHT SIDE OF NEW MAIN LANES HWY. 18
FROM STA. 616+41.08 TO STA. 640+00.00
CONSTRUCT GRADING AND MINOR STRUCTURES ON NEW LOCATION
AREAS OF HWY. 18 MAIN LANES FROM BEGIN JOB TO STA. 606+50
AND HWY. 18 TIE INS

STA. 600+00.00 - C.L. HWY. 18
STA. 100+00.00 - EAST TIE

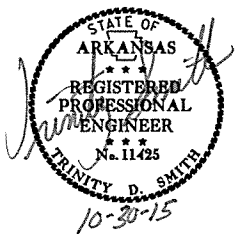


6 VERTICAL PANELS
LT. OF TRAFFIC
45' O.C.



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.	CA1001		60	283

2 MAINTENANCE OF TRAFFIC DETAILS



MAINTENANCE OF TRAFFIC DETAILS
STAGE I

10/26/2015
CA1001.DGN

SEQUENCE OF CONSTRUCTION

STAGE 1
MAINTAIN TRAFFIC ON EXISTING LANES
CONSTRUCT TEMPORARY APPROACHES FOR STAGE
CONSTRUCTION OF COCKLE BURR SLOUGH AND
CONSTRUCT RIGHT SIDE OF COCKLE BURR SLOUGH
BRIDGE AS SHOWN IN BRIDGE PLANS
CONSTRUCT DETOUR FOR CO. RD. 541
CONSTRUCT RT. SIDE OF HWY. 139
CONSTRUCT RIGHT SIDE OF NEW MAIN LANES HWY. 18
FROM STA. 616+41.08 TO STA. 640+00.00
CONSTRUCT GRADING AND MINOR STRUCTURES ON NEW LOCATION
AREAS OF HWY. 18 MAIN LANES FROM BEGIN JOB TO STA. 606+50
AND HWY. 18 TIE INS

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.	CA1001		61	283

② MAINTENANCE OF TRAFFIC DETAILS



STA. 40+00.00 - C.L. HWY. 18/WEST TIE
STA. 480+00.00 - C.L. HWY. 18

STA. 49+72.50
C.L. HWY. 18/WEST TIE

MAINTENANCE OF TRAFFIC DETAILS
STAGE I

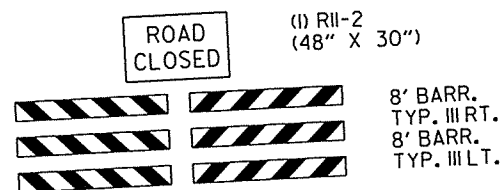
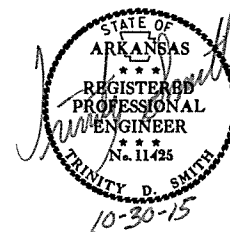
10/26/2015

CA1001.DGN

CONSTRUCTION PAVEMENT MARKINGS
CO. RD. 541 DETOUR
LT. & RT. EDGE LINES + DBL. CENTERLINE = 3556 LIN. FT.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		62	283
				JOB NO.		CA1001	62	283

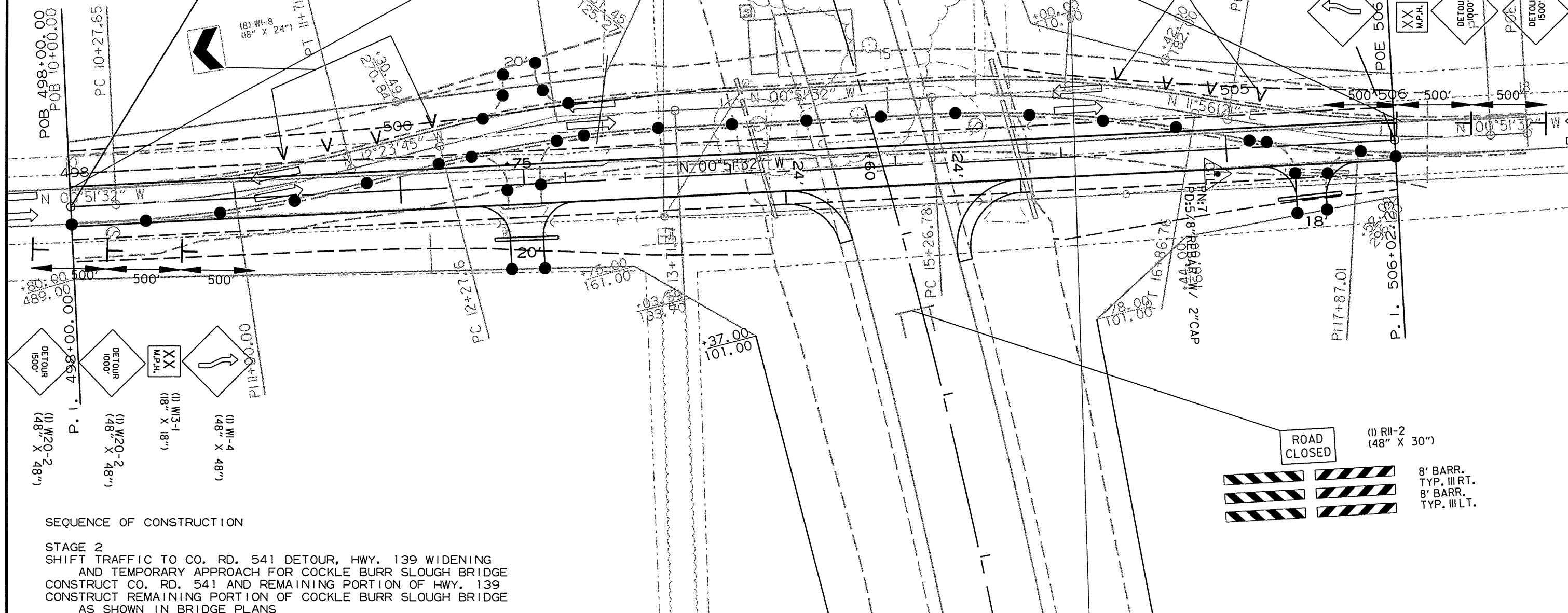
② MAINTENANCE OF TRAFFIC DETAILS



19 TRAFFIC DRUMS
RT. OF TRAFFIC
45' O.C.

STA. 506+02.23
CO. RD. 541

STA. 498+00.00
CO. RD. 541



SEQUENCE OF CONSTRUCTION

STAGE 2
SHIFT TRAFFIC TO CO. RD. 541 DETOUR, HWY. 139 WIDENING
AND TEMPORARY APPROACH FOR COCKLE BURR SLOUGH BRIDGE
CONSTRUCT CO. RD. 541 AND REMAINING PORTION OF HWY. 139
CONSTRUCT REMAINING PORTION OF COCKLE BURR SLOUGH BRIDGE
AS SHOWN IN BRIDGE PLANS
CONSTRUCT LEFT SIDE OF NEW MAIN LANES OF HWY. 18
FROM STA. 616+40.83 TO STA. 640+00.00
CONSTRUCT LEFT SIDE OF NEW MAIN LANES OF HWY. 18
FROM STA. 606+50.00 TO STA. 613+12.17

MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

10/26/2015

CA1001.DGN

CONSTRUCTION PAVEMENT MARKINGS
STATE HIGHWAY 139
LT. & RT. EDGE LINES + DBL. CENTERLINE = 4000 LIN.FT.

ROAD
CLOSED

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

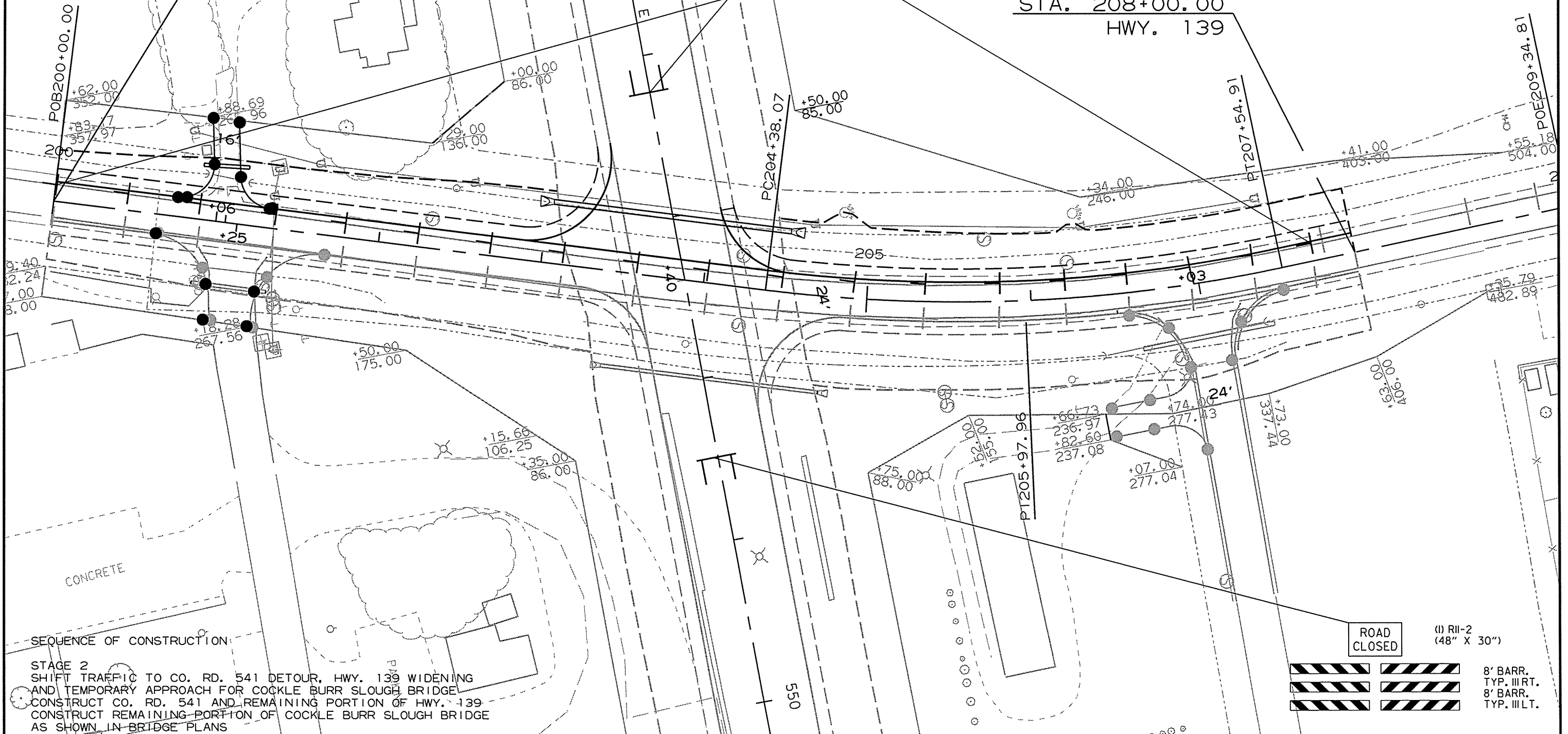
8' BARR.
TYP. III RT.
8' BARR.
TYP. III LT.

20 TRAFFIC DRUMS
LT. OF TRAFFIC
45' O.C.



STA. 208+00.00
HWY. 139

② MAINTENANCE OF TRAFFIC DETAILS



ROAD
CLOSED

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

8' BARR.
TYP. III RT.
8' BARR.
TYP. III LT.

SEQUENCE OF CONSTRUCTION
STAGE 2
SHIFT TRAFFIC TO CO. RD. 541 DETOUR, HWY. 139 WIDENING
AND TEMPORARY APPROACH FOR COCKLE BURR SLOUGH BRIDGE
CONSTRUCT CO. RD. 541 AND REMAINING PORTION OF HWY. 139
CONSTRUCT REMAINING PORTION OF COCKLE BURR SLOUGH BRIDGE
AS SHOWN IN BRIDGE PLANS
CONSTRUCT LEFT SIDE OF NEW MAIN LANES OF HWY. 18
FROM STA. 616+40.83 TO STA. 640+00.00
CONSTRUCT LEFT SIDE OF NEW MAIN LANES OF HWY. 18
FROM STA. 606+50.00 TO STA. 613+12.17

MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

10/26/2015

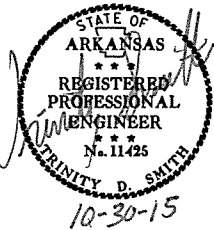
CA1001.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	CA1001		65	283

2 MAINTENANCE OF TRAFFIC DETAILS

SEQUENCE OF CONSTRUCTION

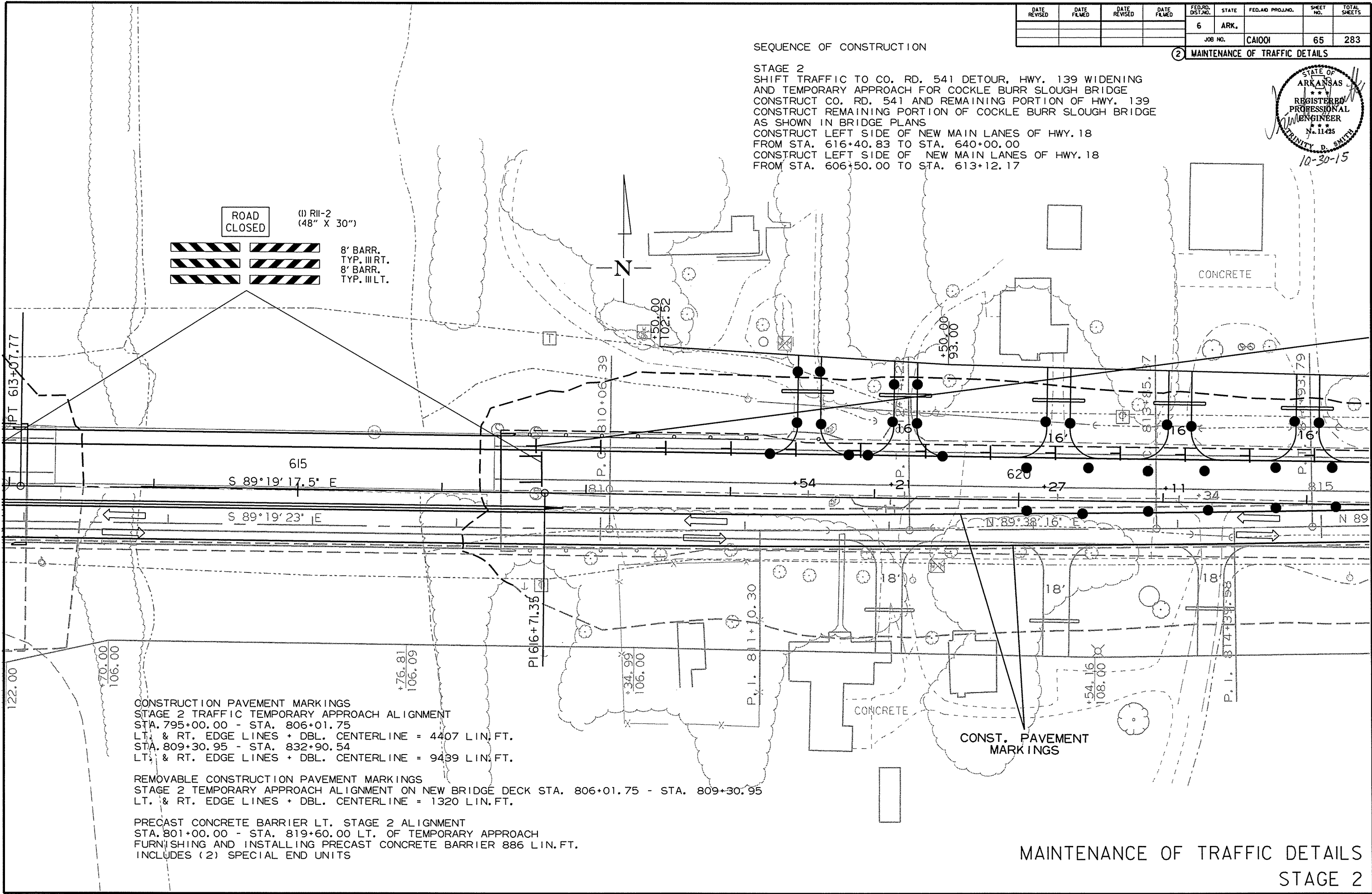
STAGE 2
 SHIFT TRAFFIC TO CO. RD. 541 DETOUR, HWY. 139 WIDENING
 AND TEMPORARY APPROACH FOR COCKLE BURR SLOUGH BRIDGE
 CONSTRUCT CO. RD. 541 AND REMAINING PORTION OF HWY. 139
 CONSTRUCT REMAINING PORTION OF COCKLE BURR SLOUGH BRIDGE
 AS SHOWN IN BRIDGE PLANS
 CONSTRUCT LEFT SIDE OF NEW MAIN LANES OF HWY. 18
 FROM STA. 616+40.83 TO STA. 640+00.00
 CONSTRUCT LEFT SIDE OF NEW MAIN LANES OF HWY. 18
 FROM STA. 606+50.00 TO STA. 613+12.17



ROAD
CLOSED

(1) RII-2
(48" X 30")

8' BARR.
TYP. III RT.
8' BARR.
TYP. III LT.



CONSTRUCTION PAVEMENT MARKINGS
 STAGE 2 TRAFFIC TEMPORARY APPROACH ALIGNMENT
 STA. 795+00.00 - STA. 806+01.75
 LT. & RT. EDGE LINES + DBL. CENTERLINE = 4407 LIN. FT.
 STA. 809+30.95 - STA. 832+90.54
 LT. & RT. EDGE LINES + DBL. CENTERLINE = 9439 LIN. FT.

REMOVABLE CONSTRUCTION PAVEMENT MARKINGS
 STAGE 2 TEMPORARY APPROACH ALIGNMENT ON NEW BRIDGE DECK STA. 806+01.75 - STA. 809+30.95
 LT. & RT. EDGE LINES + DBL. CENTERLINE = 1320 LIN. FT.

PRECAST CONCRETE BARRIER LT. STAGE 2 ALIGNMENT
 STA. 801+00.00 - STA. 819+60.00 LT. OF TEMPORARY APPROACH
 FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER 886 LIN. FT.
 INCLUDES (2) SPECIAL END UNITS

MAINTENANCE OF TRAFFIC DETAILS
 STAGE 2

10/26/2015

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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.			
						CA1001	66	283

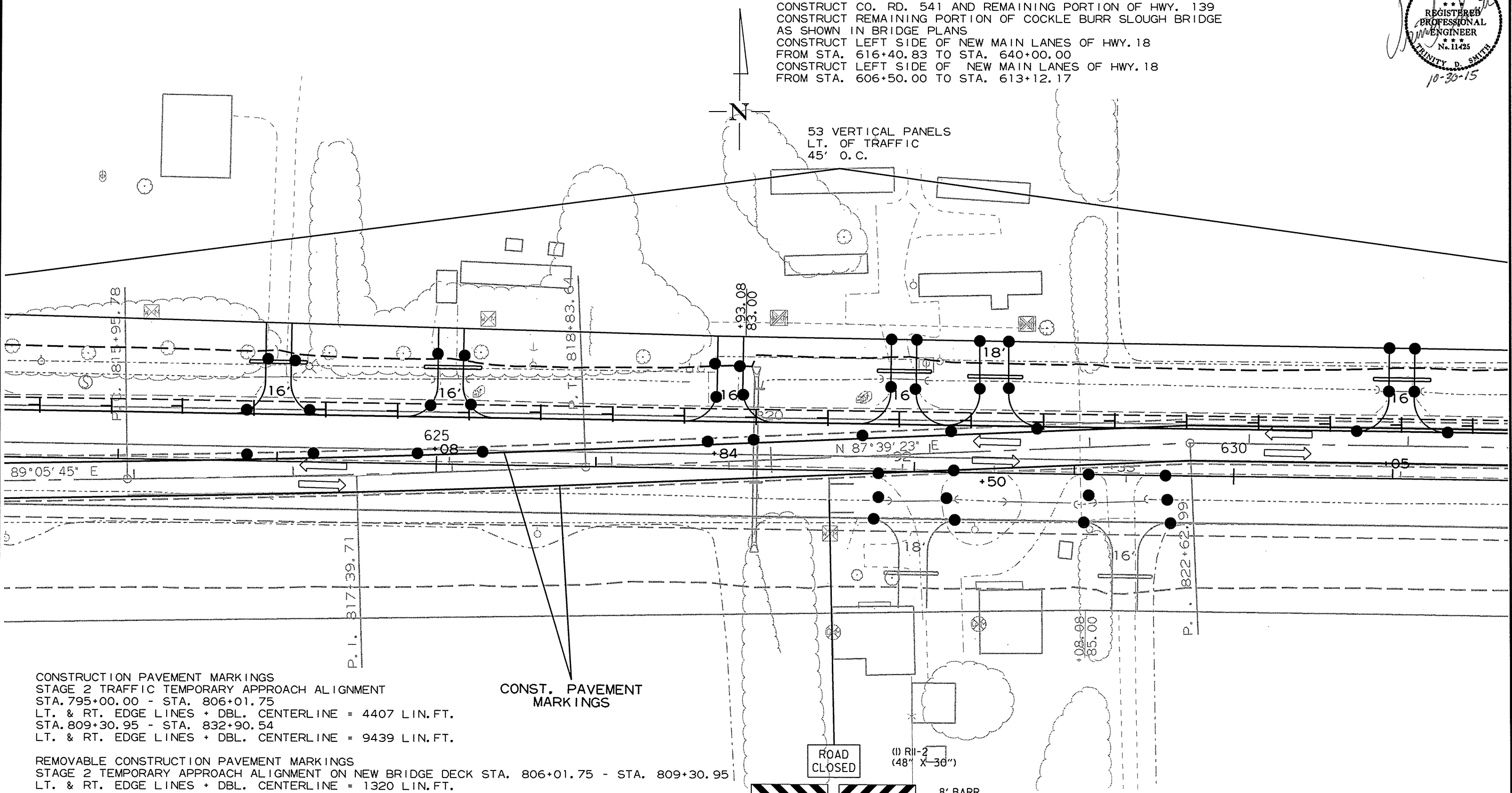
② MAINTENANCE OF TRAFFIC DETAILS

SEQUENCE OF CONSTRUCTION

STAGE 2
 SHIFT TRAFFIC TO CO. RD. 541 DETOUR, HWY. 139 WIDENING
 AND TEMPORARY APPROACH FOR COCKLE BURR SLOUGH BRIDGE
 CONSTRUCT CO. RD. 541 AND REMAINING PORTION OF HWY. 139
 CONSTRUCT REMAINING PORTION OF COCKLE BURR SLOUGH BRIDGE
 AS SHOWN IN BRIDGE PLANS
 CONSTRUCT LEFT SIDE OF NEW MAIN LANES OF HWY. 18
 FROM STA. 616+40.83 TO STA. 640+00.00
 CONSTRUCT LEFT SIDE OF NEW MAIN LANES OF HWY. 18
 FROM STA. 606+50.00 TO STA. 613+12.17



53 VERTICAL PANELS
 LT. OF TRAFFIC
 45' O.C.

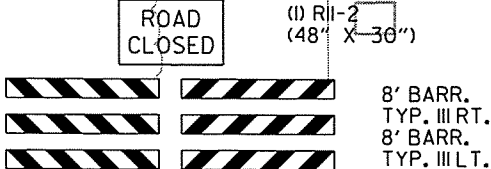


CONSTRUCTION PAVEMENT MARKINGS
 STAGE 2 TRAFFIC TEMPORARY APPROACH ALIGNMENT
 STA. 795+00.00 - STA. 806+01.75
 LT. & RT. EDGE LINES + DBL. CENTERLINE = 4407 LIN. FT.
 STA. 809+30.95 - STA. 832+90.54
 LT. & RT. EDGE LINES + DBL. CENTERLINE = 9439 LIN. FT.

REMOVABLE CONSTRUCTION PAVEMENT MARKINGS
 STAGE 2 TEMPORARY APPROACH ALIGNMENT ON NEW BRIDGE DECK STA. 806+01.75 - STA. 809+30.95
 LT. & RT. EDGE LINES + DBL. CENTERLINE = 1320 LIN. FT.

PRECAST CONCRETE BARRIER LT. STAGE 2 ALIGNMENT
 STA. 801+00.00 - STA. 819+60.00 LT. OF TEMPORARY APPROACH
 FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER 886 LIN. FT.
 INCLUDES (2) SPECIAL END UNITS

CONST. PAVEMENT
 MARKINGS



MAINTENANCE OF TRAFFIC DETAILS STAGE 2

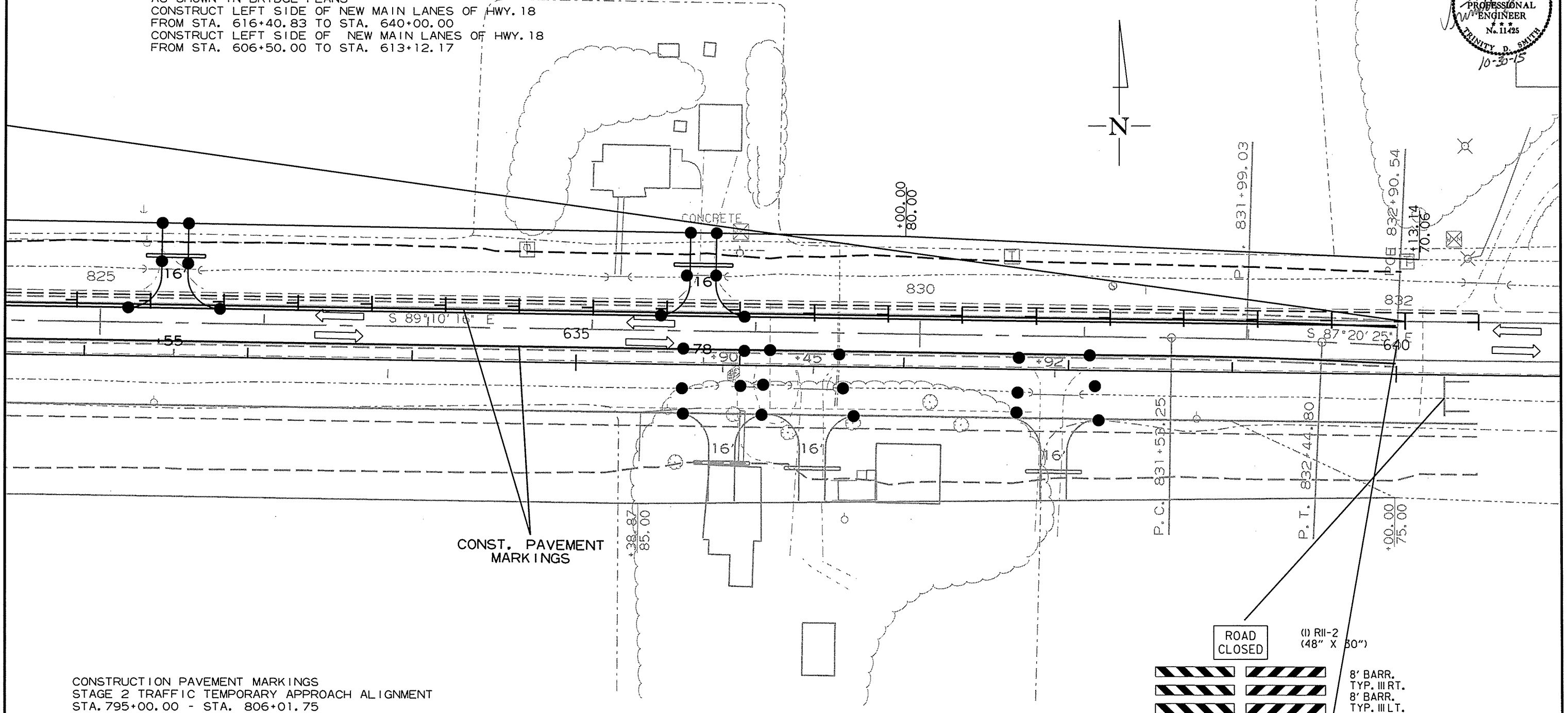
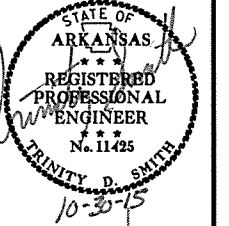
10/26/2015
 CA1001.DGN

SEQUENCE OF CONSTRUCTION

STAGE 2
SHIFT TRAFFIC TO CO. RD. 541 DETOUR, HWY. 139 WIDENING
AND TEMPORARY APPROACH FOR COCKLE BURR SLOUGH BRIDGE
CONSTRUCT CO. RD. 541 AND REMAINING PORTION OF HWY. 139
CONSTRUCT REMAINING PORTION OF COCKLE BURR SLOUGH BRIDGE
AS SHOWN IN BRIDGE PLANS
CONSTRUCT LEFT SIDE OF NEW MAIN LANES OF HWY. 18
FROM STA. 616+40.83 TO STA. 640+00.00
CONSTRUCT LEFT SIDE OF NEW MAIN LANES OF HWY. 18
FROM STA. 606+50.00 TO STA. 613+12.17

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				6	ARK.		67	283
				JOB NO. CA1001				

② MAINTENANCE OF TRAFFIC DETAILS



CONSTRUCTION PAVEMENT MARKINGS
STAGE 2 TRAFFIC TEMPORARY APPROACH ALIGNMENT
STA. 795+00.00 - STA. 806+01.75
LT. & RT. EDGE LINES + DBL. CENTERLINE = 4407 LIN. FT.
STA. 809+30.95 - STA. 832+90.54
LT. & RT. EDGE LINES + DBL. CENTERLINE = 9439 LIN. FT.

REMOVABLE CONSTRUCTION PAVEMENT MARKINGS
STAGE 2 TEMPORARY APPROACH ALIGNMENT ON NEW BRIDGE DECK STA. 806+01.75 - STA. 809+30.95
LT. & RT. EDGE LINES + DBL. CENTERLINE = 1320 LIN. FT.

PRECAST CONCRETE BARRIER LT. STAGE 2 ALIGNMENT
STA. 801+00.00 - STA. 819+60.00 LT. OF TEMPORARY APPROACH
FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER 886 LIN. FT.
INCLUDES (2) SPECIAL END UNITS

STA. 640+00.00
END JOB 100651
LOG MILE 26.89

MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

10/26/2015

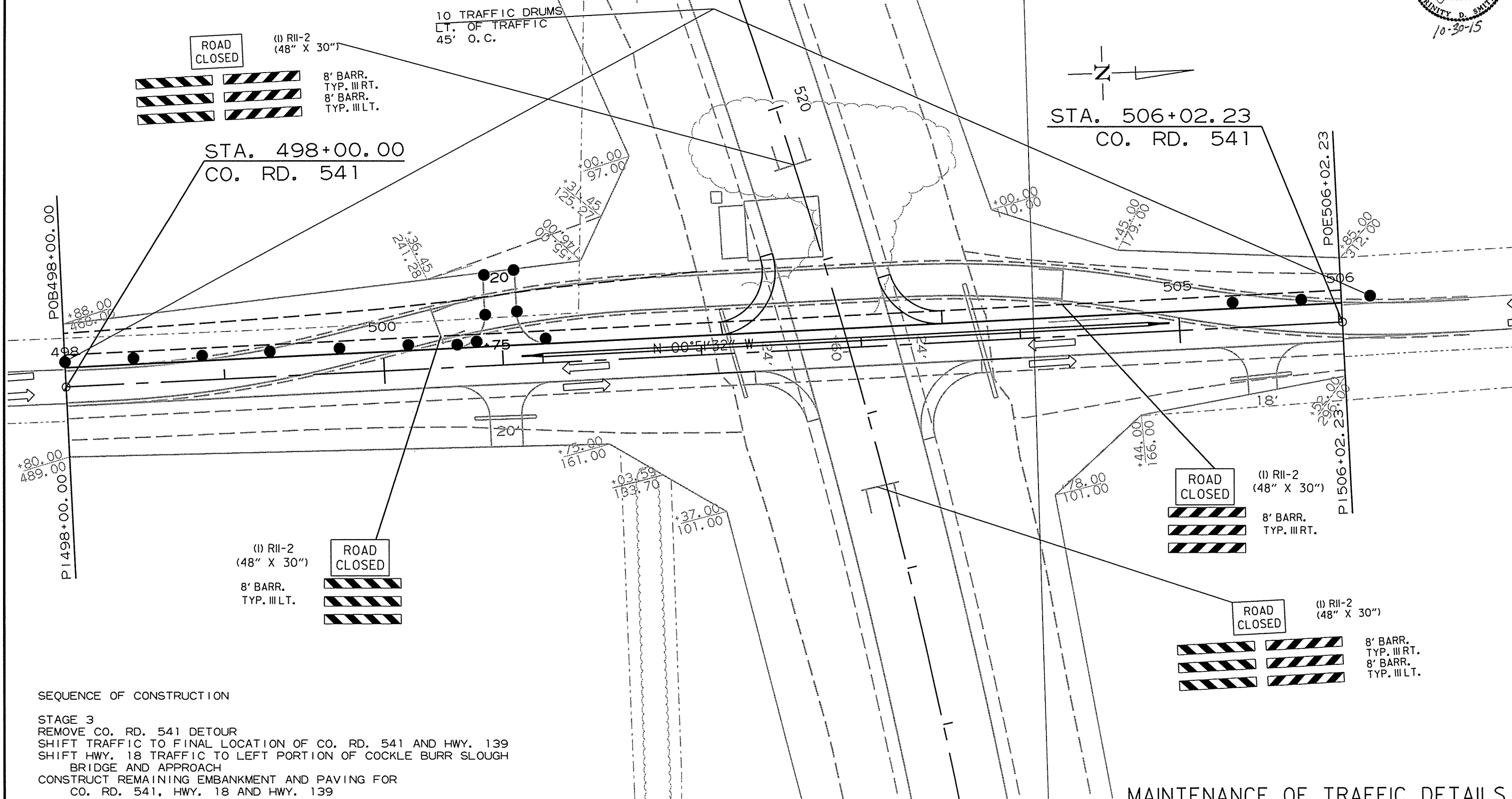
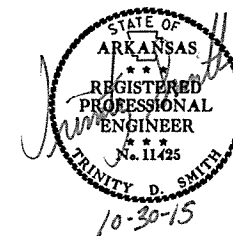
CA1001.DGN

CONSTRUCTION PAVEMENT MARKINGS
CO. RD. 541
STA. 498+00 - STA. 506+02.23
LT. & RT. EDGE LINES + DBL. CENTERLINE= 4009 LIN.FT.

PRECAST CONCRETE BARRIER LT. STAGE 3 ALIGNMENT
STA. 501+00.00 - STA. 504+80.00 LT. OF CO. RD. 541
FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER 380 LIN.FT.
INCLUDES (2) SPECIAL END UNITS

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.	CA1001		68	283

② MAINTENANCE OF TRAFFIC DETAILS



SEQUENCE OF CONSTRUCTION

STAGE 3
REMOVE CO. RD. 541 DETOUR
SHIFT TRAFFIC TO FINAL LOCATION OF CO. RD. 541 AND HWY. 139
SHIFT HWY. 18 TRAFFIC TO LEFT PORTION OF COCKLE BURR SLOUGH
BRIDGE AND APPROACH
CONSTRUCT REMAINING EMBANKMENT AND PAVING FOR
CO. RD. 541, HWY. 18 AND HWY. 139

STAGE 4
OBLITERATION OF OLD ROAD

MAINTENANCE OF TRAFFIC DETAILS
STAGE 3

10/26/2015

CA1001.DGN

SEQUENCE OF CONSTRUCTION

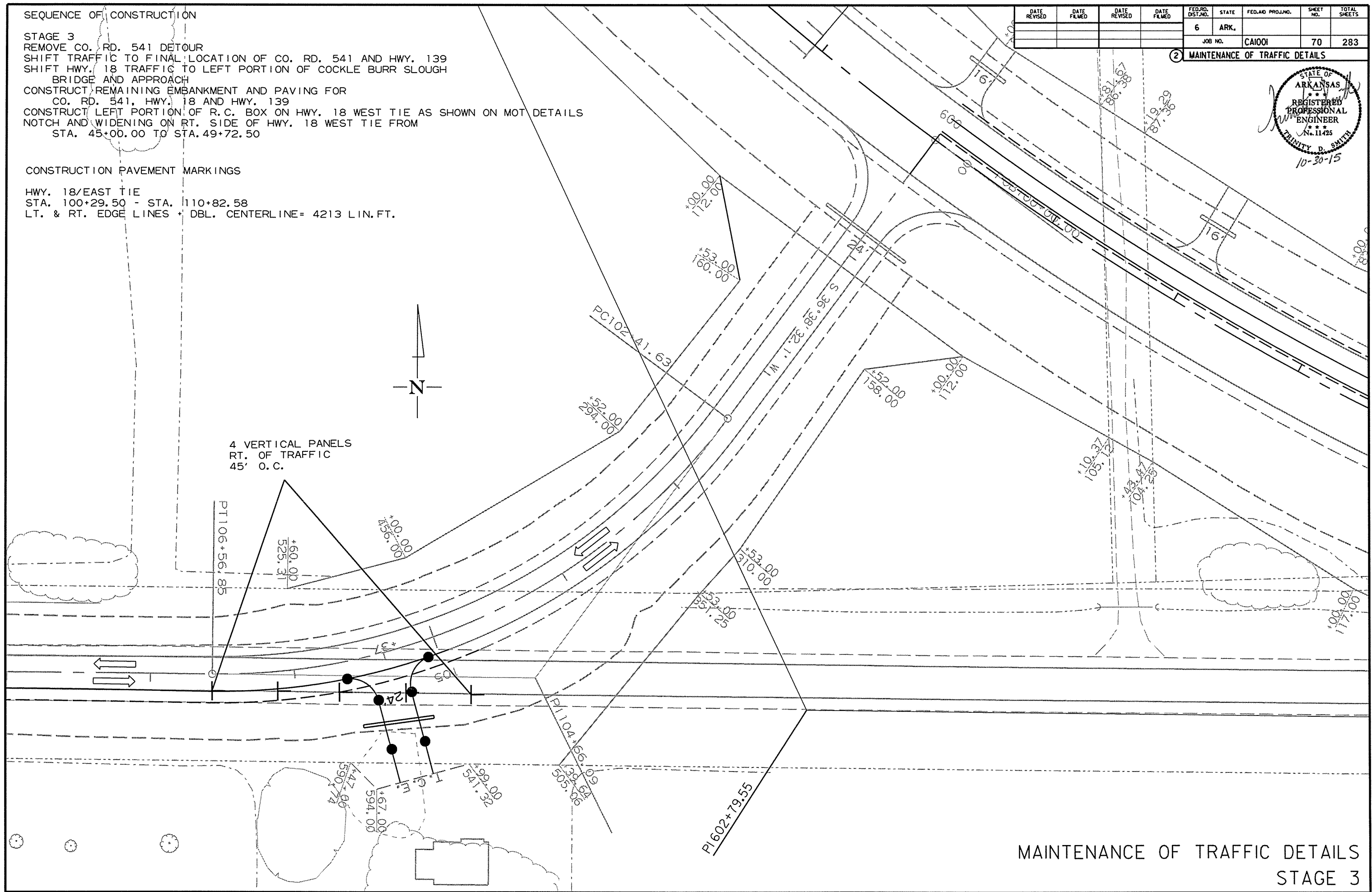
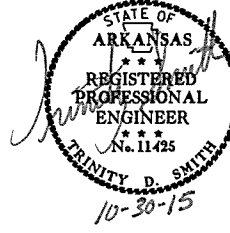
STAGE 3
REMOVE CO. RD. 541 DETOUR
SHIFT TRAFFIC TO FINAL LOCATION OF CO. RD. 541 AND HWY. 139
SHIFT HWY. 18 TRAFFIC TO LEFT PORTION OF COCKLE BURR SLOUGH
BRIDGE AND APPROACH
CONSTRUCT REMAINING EMBANKMENT AND PAVING FOR
CO. RD. 541, HWY. 18 AND HWY. 139
CONSTRUCT LEFT PORTION OF R.C. BOX ON HWY. 18 WEST TIE AS SHOWN ON MOT DETAILS
NOTCH AND WIDENING ON RT. SIDE OF HWY. 18 WEST TIE FROM
STA. 45+00.00 TO STA. 49+72.50

CONSTRUCTION PAVEMENT MARKINGS

HWY. 18/EAST TIE
STA. 100+29.50 - STA. 110+82.58
LT. & RT. EDGE LINES + DBL. CENTERLINE= 4213 LIN.FT.

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

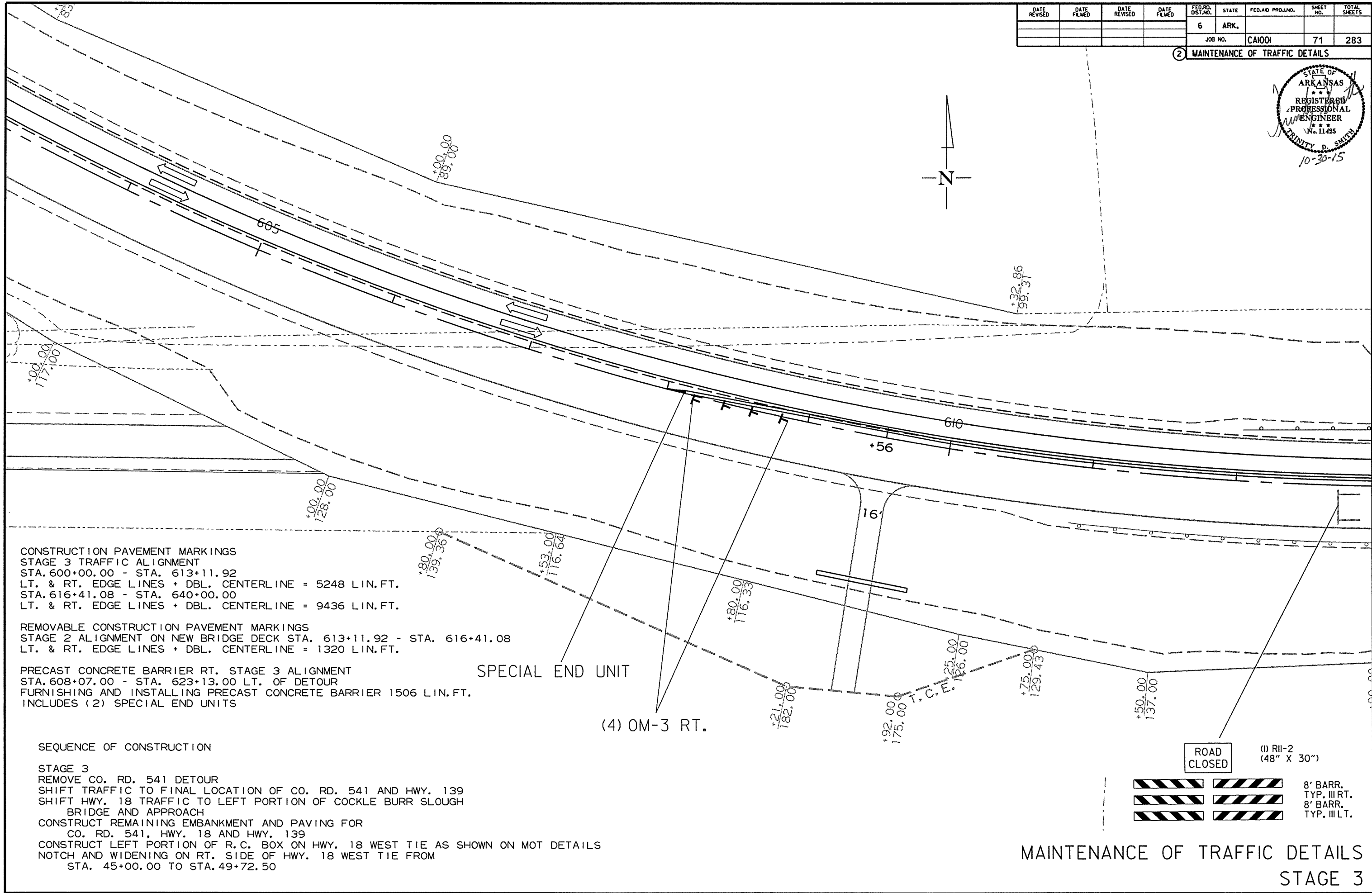
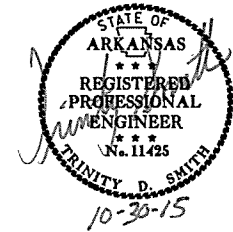
2 MAINTENANCE OF TRAFFIC DETAILS



MAINTENANCE OF TRAFFIC DETAILS
STAGE 3

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	CA1001		71	283

② MAINTENANCE OF TRAFFIC DETAILS



CONSTRUCTION PAVEMENT MARKINGS
STAGE 3 TRAFFIC ALIGNMENT
STA. 600+00.00 - STA. 613+11.92
LT. & RT. EDGE LINES + DBL. CENTERLINE = 5248 LIN. FT.
STA. 616+41.08 - STA. 640+00.00
LT. & RT. EDGE LINES + DBL. CENTERLINE = 9436 LIN. FT.

REMOVABLE CONSTRUCTION PAVEMENT MARKINGS
STAGE 2 ALIGNMENT ON NEW BRIDGE DECK STA. 613+11.92 - STA. 616+41.08
LT. & RT. EDGE LINES + DBL. CENTERLINE = 1320 LIN. FT.

PRECAST CONCRETE BARRIER RT. STAGE 3 ALIGNMENT
STA. 608+07.00 - STA. 623+13.00 LT. OF DETOUR
FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER 1506 LIN. FT.
INCLUDES (2) SPECIAL END UNITS

SEQUENCE OF CONSTRUCTION

STAGE 3
REMOVE CO. RD. 541 DETOUR
SHIFT TRAFFIC TO FINAL LOCATION OF CO. RD. 541 AND HWY. 139
SHIFT HWY. 18 TRAFFIC TO LEFT PORTION OF COCKLE BURR SLOUGH
BRIDGE AND APPROACH
CONSTRUCT REMAINING EMBANKMENT AND PAVING FOR
CO. RD. 541, HWY. 18 AND HWY. 139
CONSTRUCT LEFT PORTION OF R.C. BOX ON HWY. 18 WEST TIE AS SHOWN ON MOT DETAILS
NOTCH AND WIDENING ON RT. SIDE OF HWY. 18 WEST TIE FROM
STA. 45+00.00 TO STA. 49+72.50

ROAD
CLOSED (1) RII-2
(48" X 30")

8' BARR.
TYP. III RT.
8' BARR.
TYP. III LT.

MAINTENANCE OF TRAFFIC DETAILS
STAGE 3

10/26/2015

CA1001.DGN

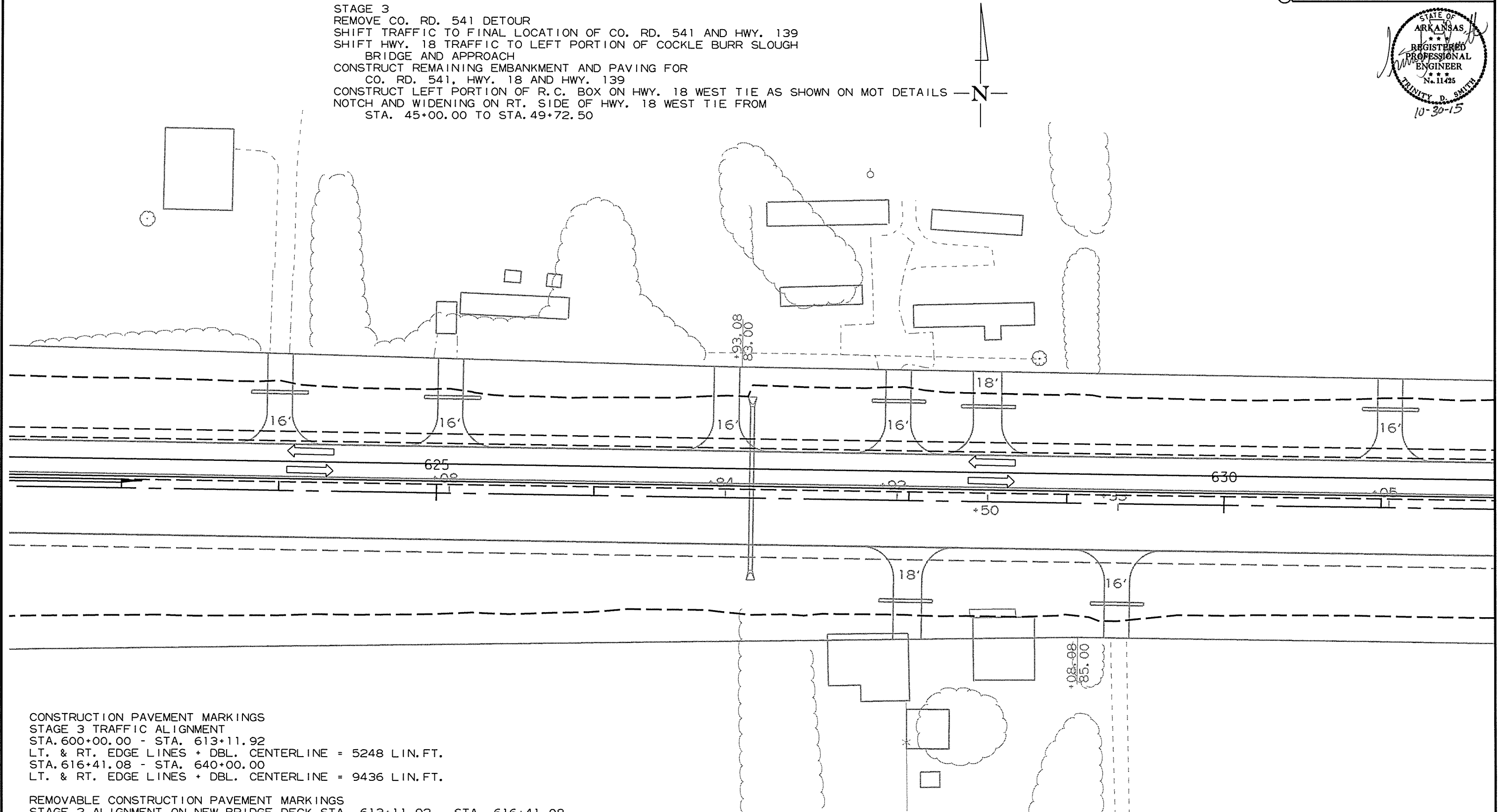
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. CA1001	73	283

② MAINTENANCE OF TRAFFIC DETAILS



SEQUENCE OF CONSTRUCTION

STAGE 3
 REMOVE CO. RD. 541 DETOUR
 SHIFT TRAFFIC TO FINAL LOCATION OF CO. RD. 541 AND HWY. 139
 SHIFT HWY. 18 TRAFFIC TO LEFT PORTION OF COCKLE BURR SLOUGH
 BRIDGE AND APPROACH
 CONSTRUCT REMAINING EMBANKMENT AND PAVING FOR
 CO. RD. 541, HWY. 18 AND HWY. 139
 CONSTRUCT LEFT PORTION OF R.C. BOX ON HWY. 18 WEST TIE AS SHOWN ON MOT DETAILS
 NOTCH AND WIDENING ON RT. SIDE OF HWY. 18 WEST TIE FROM
 STA. 45+00.00 TO STA. 49+72.50



CONSTRUCTION PAVEMENT MARKINGS
 STAGE 3 TRAFFIC ALIGNMENT
 STA. 600+00.00 - STA. 613+11.92
 LT. & RT. EDGE LINES + DBL. CENTERLINE = 5248 LIN. FT.
 STA. 616+41.08 - STA. 640+00.00
 LT. & RT. EDGE LINES + DBL. CENTERLINE = 9436 LIN. FT.

REMOVABLE CONSTRUCTION PAVEMENT MARKINGS
 STAGE 2 ALIGNMENT ON NEW BRIDGE DECK STA. 613+11.92 - STA. 616+41.08
 LT. & RT. EDGE LINES + DBL. CENTERLINE = 1320 LIN. FT.

PRECAST CONCRETE BARRIER RT. STAGE 3 ALIGNMENT
 STA. 608+07.00 - STA. 623+13.00 LT. OF DETOUR
 FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER 1506 LIN. FT.
 INCLUDES (2) SPECIAL END UNITS

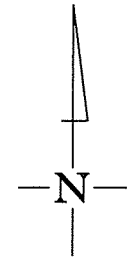
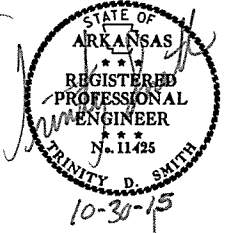
MAINTENANCE OF TRAFFIC DETAILS
 STAGE 3

10/26/2015

CA1001.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	CA1001		74	283

② MAINTENANCE OF TRAFFIC DETAILS

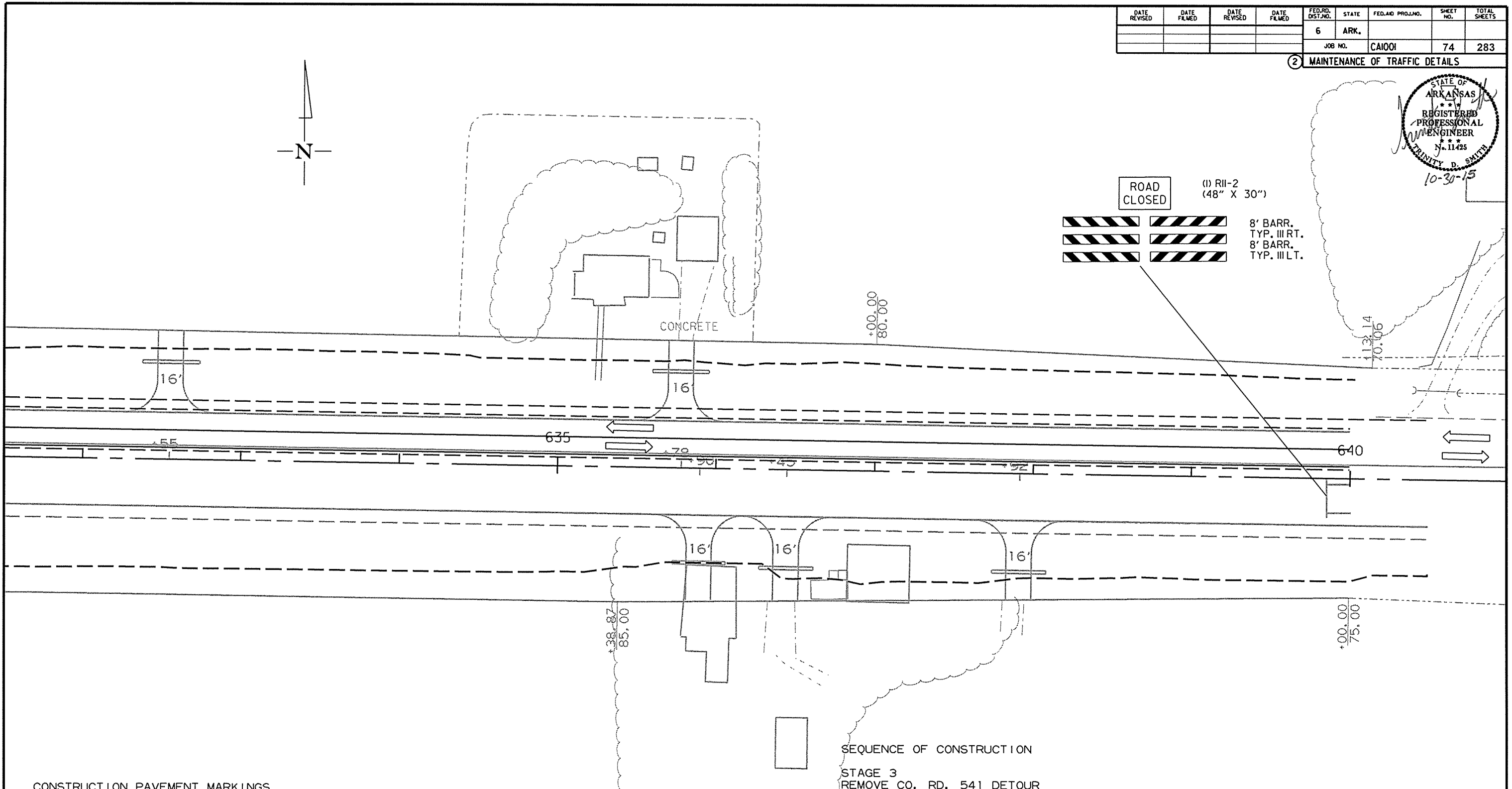


ROAD
CLOSED

(1) RII-2
(48" X 30")

8' BARR.
TYP. III RT.

8' BARR.
TYP. III LT.



CONSTRUCTION PAVEMENT MARKINGS
 STAGE 3 TRAFFIC ALIGNMENT
 STA. 600+00.00 - STA. 613+11.92
 LT. & RT. EDGE LINES + DBL. CENTERLINE = 5248 LIN.FT.
 STA. 616+41.08 - STA. 640+00.00
 LT. & RT. EDGE LINES + DBL. CENTERLINE = 9436 LIN.FT.

REMOVABLE CONSTRUCTION PAVEMENT MARKINGS
 STAGE 2 ALIGNMENT ON NEW BRIDGE DECK STA. 613+11.92 - STA. 616+41.08
 LT. & RT. EDGE LINES + DBL. CENTERLINE = 1320 LIN.FT.

PRECAST CONCRETE BARRIER RT. STAGE 3 ALIGNMENT
 STA. 608+07.00 - STA. 623+13.00 LT. OF DETOUR
 FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER 1506 LIN.FT.
 INCLUDES (2) SPECIAL END UNITS

SEQUENCE OF CONSTRUCTION

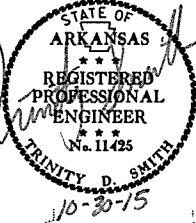
STAGE 3
 REMOVE CO. RD. 541 DETOUR
 SHIFT TRAFFIC TO FINAL LOCATION OF CO. RD. 541 AND HWY. 139
 SHIFT HWY. 18 TRAFFIC TO LEFT PORTION OF COCKLE BURR SLOUGH
 BRIDGE AND APPROACH
 CONSTRUCT REMAINING EMBANKMENT AND PAVING FOR
 CO. RD. 541, HWY. 18 AND HWY. 139
 CONSTRUCT LEFT PORTION OF R.C. BOX ON HWY. 18 WEST TIE AS SHOWN ON MOT DETAILS
 NOTCH AND WIDENING ON RT. SIDE OF HWY. 18 WEST TIE FROM
 STA. 45+00.00 TO STA. 49+72.50

MAINTENANCE OF TRAFFIC DETAILS
 STAGE 3

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 CA1001.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. CA1001	75	283

2 MAINTENANCE OF TRAFFIC DETAILS



SEQUENCE OF CONSTRUCTION
 STAGE 3
 REMOVE CO. RD. 541 DETOUR
 SHIFT TRAFFIC TO FINAL LOCATION OF CO. RD. 541 AND HWY. 139
 SHIFT HWY. 18 TRAFFIC TO LEFT PORTION OF COCKLE BURR SLOUGH
 BRIDGE AND APPROACH
 CONSTRUCT REMAINING EMBANKMENT AND PAVING FOR
 CO. RD. 541, HWY. 18 AND HWY. 139
 CONSTRUCT LEFT PORTION OF R.C. BOX ON HWY. 18 WEST TIE AS SHOWN ON MOT DETAILS
 NOTCH AND WIDENING ON RT. SIDE OF HWY. 18 WEST TIE FROM
 STA. 45+00.00 TO STA. 49+72.50



STA. 40+00.00 - C.L. HWY. 18/WEST TIE
 STA. 480+00.00 - C.L. HWY. 18

STA. 49+72.50
 C.L. HWY. 18/WEST TIE

ROAD
CLOSED

(1) RII-2
(48" X 30")

8' BARR.
TYP. III RT.

8' BARR.
TYP. III LT.

10 VERTICAL PANELS
 RT. OF TRAFFIC
 45' O.C.

MAINTENANCE OF TRAFFIC DETAILS
 STAGE 3

10/26/2015

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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.	CA1001		76	283

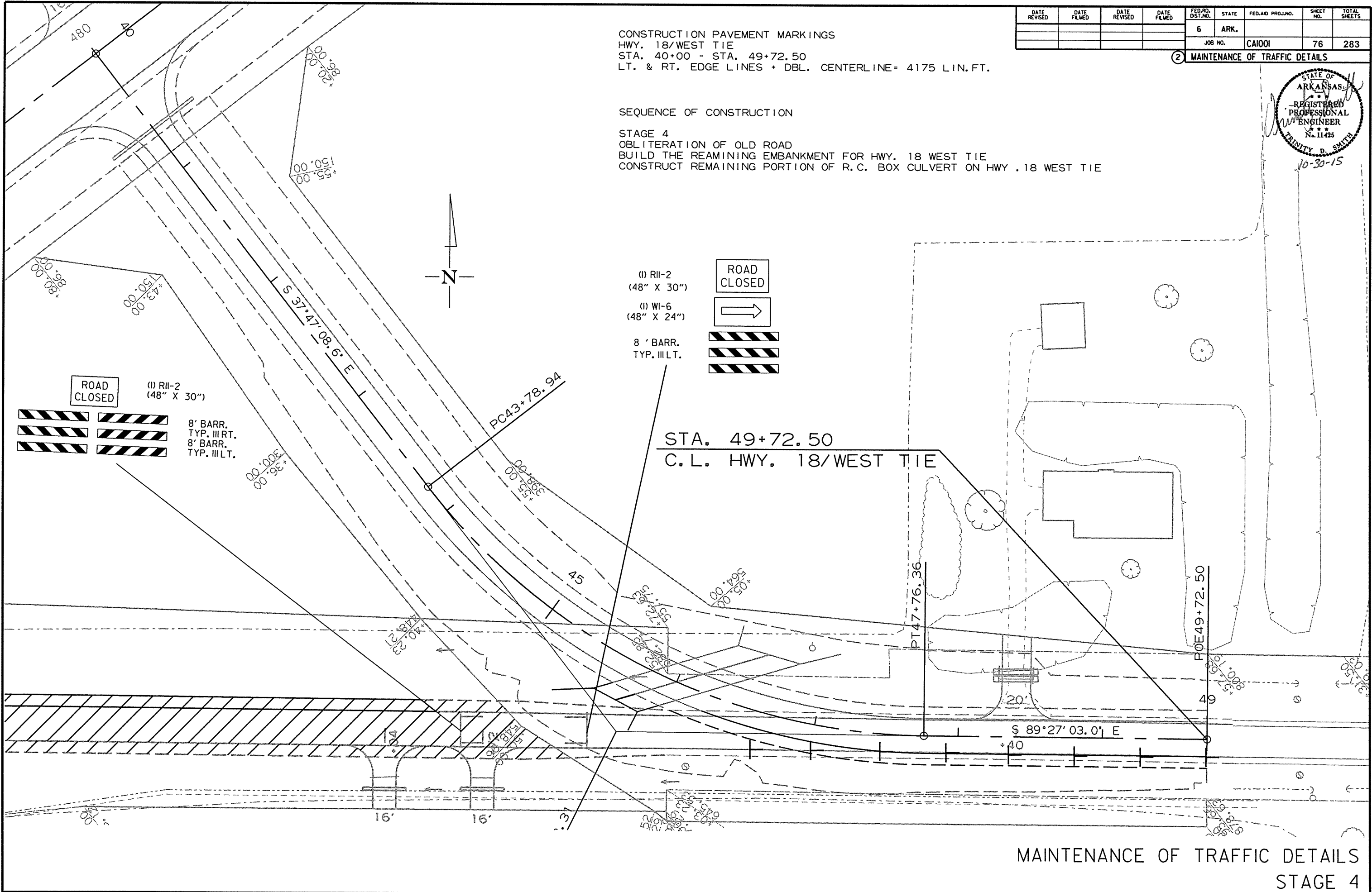
2 MAINTENANCE OF TRAFFIC DETAILS



CONSTRUCTION PAVEMENT MARKINGS
HWY. 18/WEST TIE
STA. 40+00 - STA. 49+72.50
LT. & RT. EDGE LINES + DBL. CENTERLINE= 4175 LIN. FT.

SEQUENCE OF CONSTRUCTION

STAGE 4
OBLITERATION OF OLD ROAD
BUILD THE REAMINING EMBANKMENT FOR HWY. 18 WEST TIE
CONSTRUCT REMAINING PORTION OF R.C. BOX CULVERT ON HWY. 18 WEST TIE



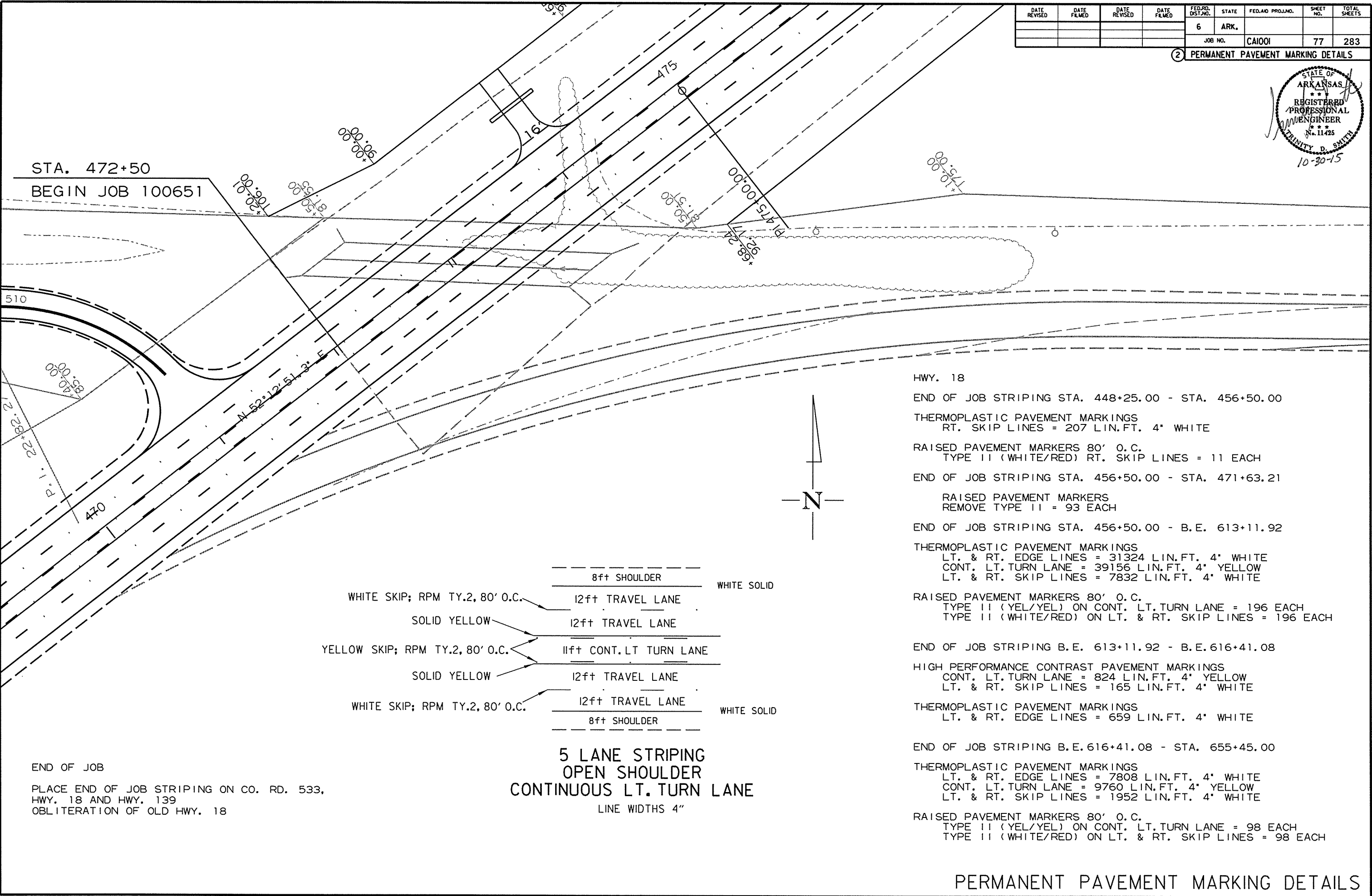
MAINTENANCE OF TRAFFIC DETAILS
STAGE 4

10/26/2015

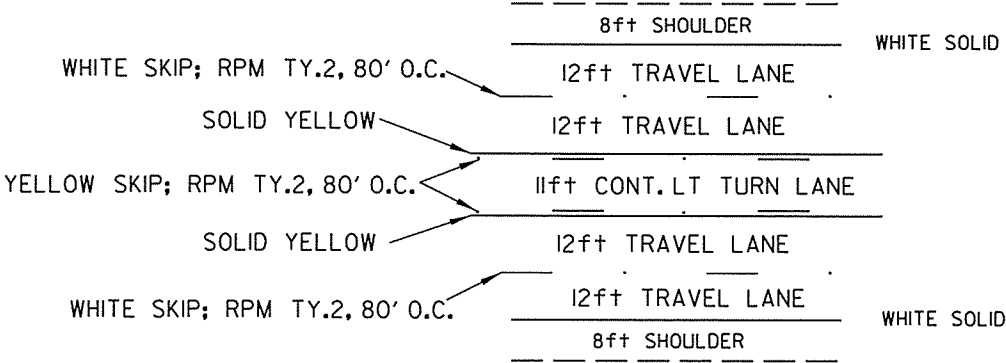
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. CA1001	77	283

2 PERMANENT PAVEMENT MARKING DETAILS



HWY. 18
END OF JOB STRIPING STA. 448+25.00 - STA. 456+50.00
THERMOPLASTIC PAVEMENT MARKINGS
RT. SKIP LINES = 207 LIN.FT. 4" WHITE
RAISED PAVEMENT MARKERS 80' O.C.
TYPE II (WHITE/RED) RT. SKIP LINES = 11 EACH
END OF JOB STRIPING STA. 456+50.00 - STA. 471+63.21
RAISED PAVEMENT MARKERS
REMOVE TYPE II = 93 EACH
END OF JOB STRIPING STA. 456+50.00 - B.E. 613+11.92
THERMOPLASTIC PAVEMENT MARKINGS
LT. & RT. EDGE LINES = 31324 LIN.FT. 4" WHITE
CONT. LT. TURN LANE = 39156 LIN.FT. 4" YELLOW
LT. & RT. SKIP LINES = 7832 LIN.FT. 4" WHITE
RAISED PAVEMENT MARKERS 80' O.C.
TYPE II (YEL/YEL) ON CONT. LT. TURN LANE = 196 EACH
TYPE II (WHITE/RED) ON LT. & RT. SKIP LINES = 196 EACH
END OF JOB STRIPING B.E. 613+11.92 - B.E. 616+41.08
HIGH PERFORMANCE CONTRAST PAVEMENT MARKINGS
CONT. LT. TURN LANE = 824 LIN.FT. 4" YELLOW
LT. & RT. SKIP LINES = 165 LIN.FT. 4" WHITE
THERMOPLASTIC PAVEMENT MARKINGS
LT. & RT. EDGE LINES = 659 LIN.FT. 4" WHITE
END OF JOB STRIPING B.E. 616+41.08 - STA. 655+45.00
THERMOPLASTIC PAVEMENT MARKINGS
LT. & RT. EDGE LINES = 7808 LIN.FT. 4" WHITE
CONT. LT. TURN LANE = 9760 LIN.FT. 4" YELLOW
LT. & RT. SKIP LINES = 1952 LIN.FT. 4" WHITE
RAISED PAVEMENT MARKERS 80' O.C.
TYPE II (YEL/YEL) ON CONT. LT. TURN LANE = 98 EACH
TYPE II (WHITE/RED) ON LT. & RT. SKIP LINES = 98 EACH

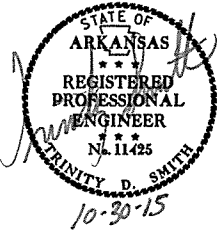


5 LANE STRIPING
OPEN SHOULDER
CONTINUOUS LT. TURN LANE
LINE WIDTHS 4"

END OF JOB
PLACE END OF JOB STRIPING ON CO. RD. 533,
HWY. 18 AND HWY. 139
OBLITERATION OF OLD HWY. 18

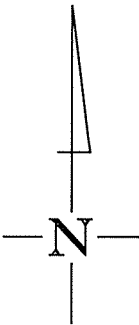
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. CA1001	78	283

2 PERMANENT PAVEMENT MARKING DETAILS



END OF JOB STRIPING - HWY. 18/WEST TIE
THERMOPLASTIC PAVEMENT MARKINGS
LT. & RT. EDGE LINES = 2086 LIN. FT. 4" WHITE
* DBL. CENTERLINE = 2086 LIN. FT. 4" YELLOW
RAISED PAVEMENT MARKERS 80' O.C.
TYPE II (YEL/YEL) ON DBL. YELLOW LINES = 13 EACH

STA. 40+00.00 - C.L. HWY. 18/WEST TIE
STA. 480+00.00 - C.L. HWY. 18

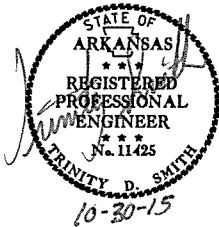


STA. 49+72.50
C.L. HWY. 18/WEST TIE

PERMANENT PAVEMENT MARKING DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. CA1001	79	283

2 PERMANENT PAVEMENT MARKING DETAILS

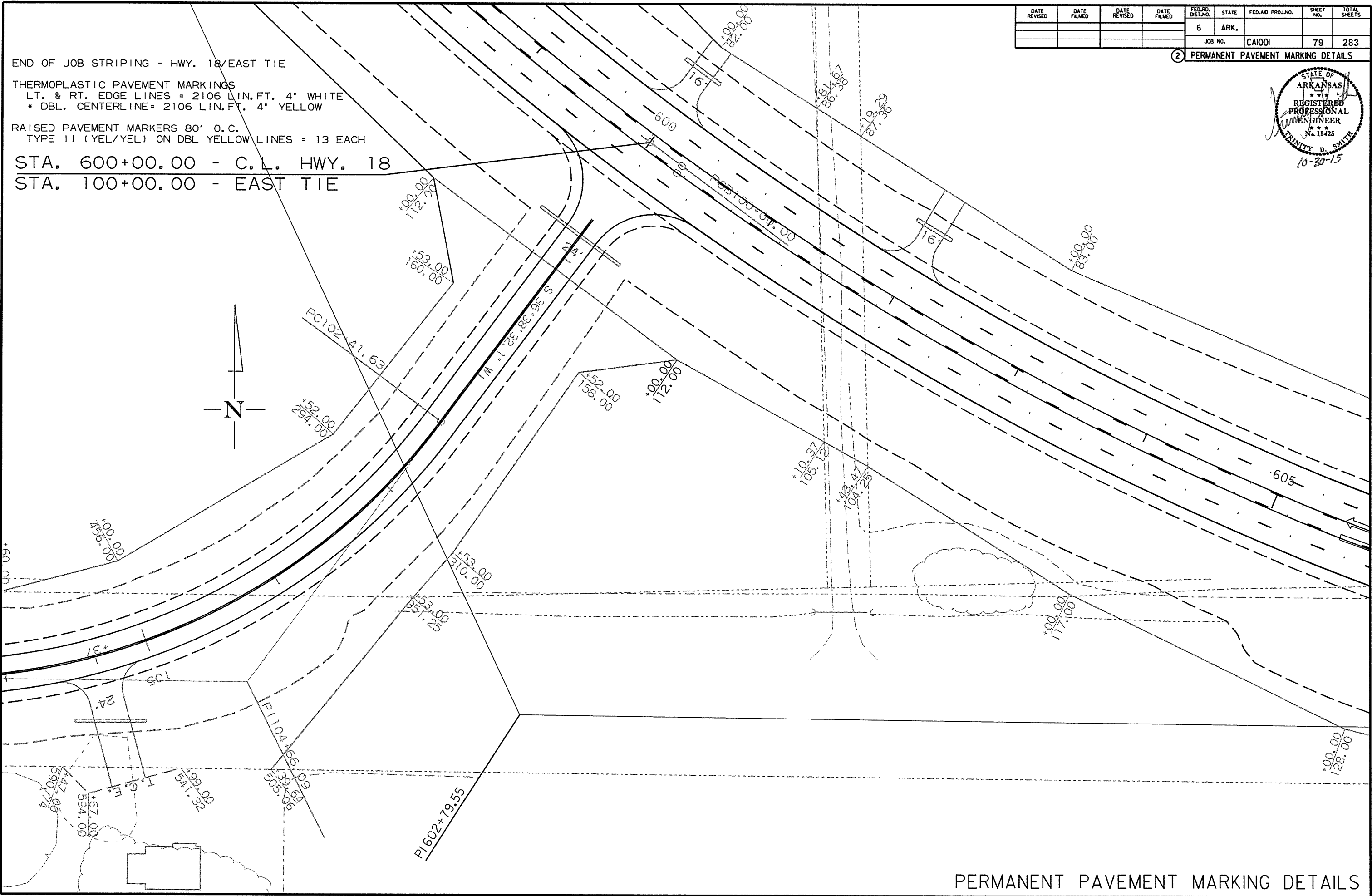


END OF JOB STRIPING - HWY. 18/EAST TIE

THERMOPLASTIC PAVEMENT MARKINGS
 LT. & RT. EDGE LINES = 2106 LIN. FT. 4" WHITE
 * DBL. CENTERLINE = 2106 LIN. FT. 4" YELLOW

RAISED PAVEMENT MARKERS 80' O.C.
 TYPE II (YEL/YEL) ON DBL YELLOW LINES = 13 EACH

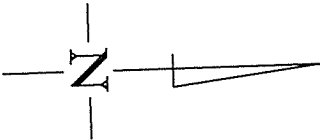
STA. 600+00.00 - C.L. HWY. 18
 STA. 100+00.00 - EAST TIE



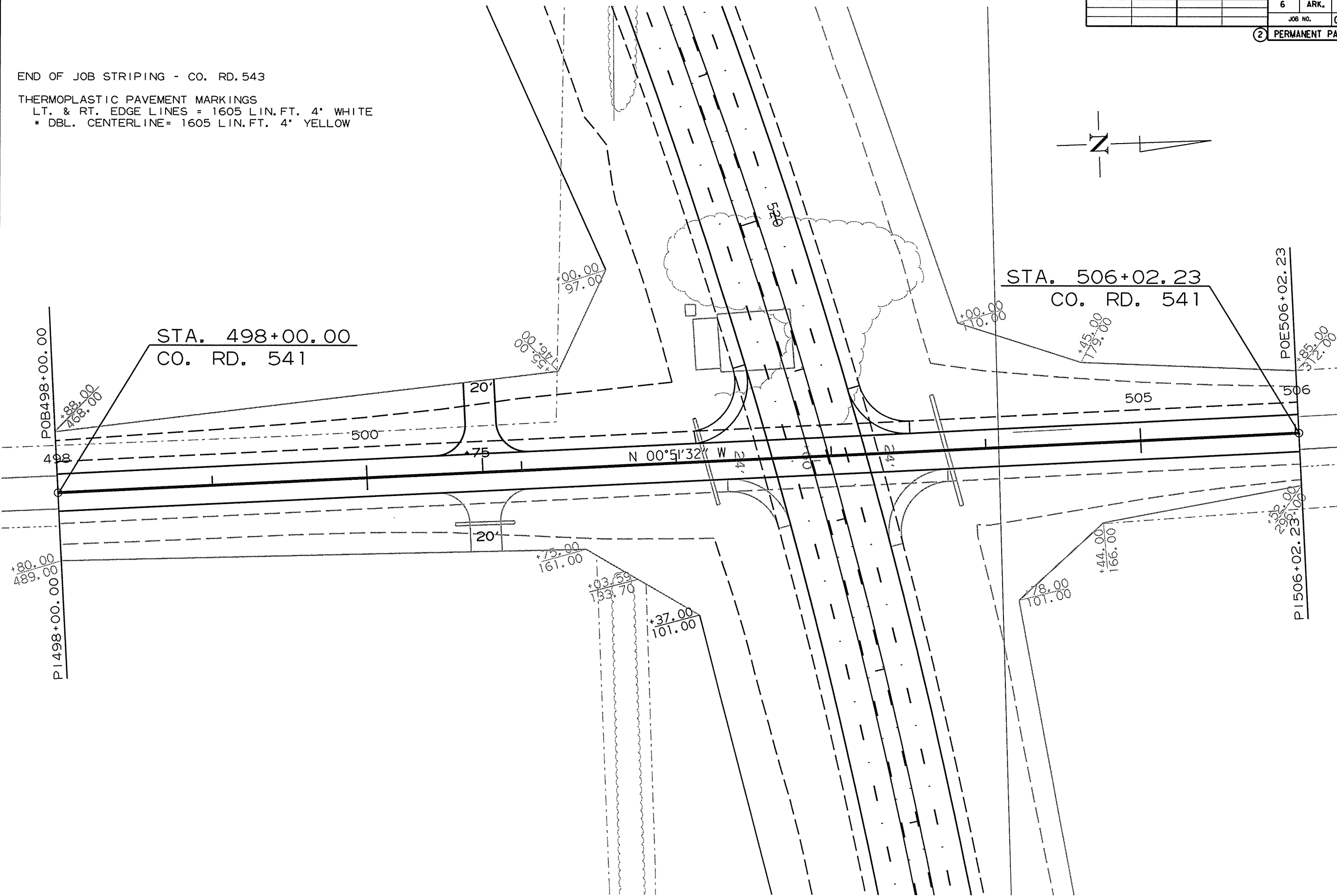
PERMANENT PAVEMENT MARKING DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. CA1001	80	283

2 PERMANENT PAVEMENT MARKING DETAILS



END OF JOB STRIPING - CO. RD. 543
 THERMOPLASTIC PAVEMENT MARKINGS
 LT. & RT. EDGE LINES = 1605 LIN. FT. 4" WHITE
 * DBL. CENTERLINE = 1605 LIN. FT. 4" YELLOW



PERMANENT PAVEMENT MARKING DETAILS

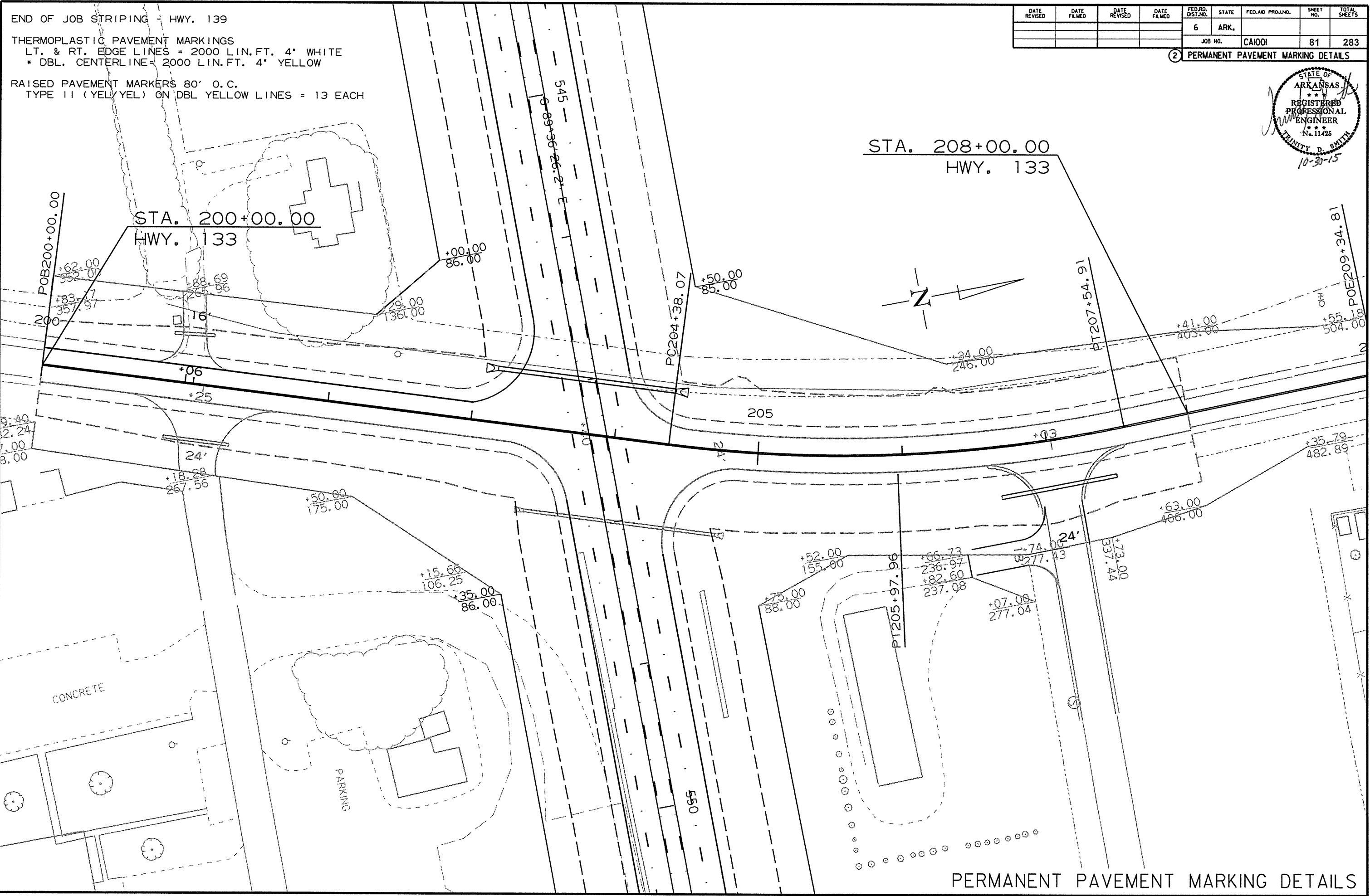
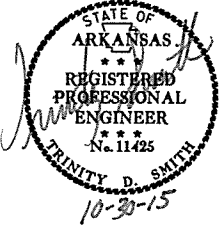
END OF JOB STRIPING - HWY. 139

THERMOPLASTIC PAVEMENT MARKINGS
LT. & RT. EDGE LINES = 2000 LIN. FT. 4" WHITE
* DBL. CENTERLINE = 2000 LIN. FT. 4" YELLOW

RAISED PAVEMENT MARKERS 80' O.C.
TYPE 11 (YEL/YEL) ON DBL YELLOW LINES = 13 EACH

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. CA1001	81	283

2 PERMANENT PAVEMENT MARKING DETAILS

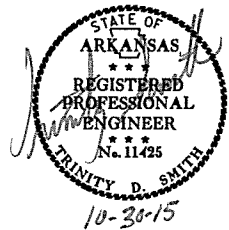


PERMANENT PAVEMENT MARKING DETAILS

10/26/2015
CA1001.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. CA1001	82	283

2 QUANTITIES



CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 1	STAGE 2	STAGE 3	STAGE 4	END OF JOB	CONSTRUCTION PAVEMENT MARKINGS	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS		THERMOPLASTIC PAVEMENT MARKING		HIGH PERFORMANCE CONTRAST PAVEMENT MARKING	
								TYPE II (WHITE/RED)	TYPE II (YEL/YEL)	4"		4"	
								EACH		WHITE	YELLOW	WHITE	YELLOW
						LIN. FT. - EACH	LIN. FT.	LIN. FT.		LIN. FT.		LIN. FT.	
CONSTRUCTION PAVEMENT MARKINGS	23150	21402	31081	4175		79808							
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS		1320	1320				2640						
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED)					305			305					
RAISED PAVEMENT MARKERS TYPE II (YEL/YEL)					333				333				
THERMOPLASTIC PAVEMENT MARKING WHITE (4")					57579					57579			
THERMOPLASTIC PAVEMENT MARKING YELLOW (4")					56713						56713		
HIGH PERFORMANCE CONTRAST PAVEMENT MARKING WHITE (4")					165							165	
HIGH PERFORMANCE CONTRAST PAVEMENT MARKING YELLOW (4")					824								824
TOTALS:						79808	2640	305	333	57579	56713	165	824

NOTE: THIS IS A HIGH TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2014 EDITION.

NOTE: THE 4" 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.

NOTE: NO PERMANENT PAVEMENT MARKINGS SHALL BE PLACED UNTIL A MINIMUM OF 3 DAYS AFTER ALL MAIN LANE PAVING HAS BEEN COMPLETED.
IN ADDITION, NO PERMANENT PAVEMENT MARKINGS SHALL BE PLACED DURING THE TIME PERIOD FROM DECEMBER 21 TO MARCH 15, INCLUSIVE.

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	STAGE 3	STAGE 4	END OF JOB	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		VERTICAL PANELS	TRAFFIC DRUMS	BARRICADES (TYPE III)		FURNISHING & INSTALLING PRECAST CONC. BARRIER	RELOCATING PRECAST CONCRETE BARRIER	TEMPORARY IMPACT ATTENUATION BARRIER	TEMP. IMPACT ATTEN.BARR. (REPAIR)
									NO.	SQ. FT.			RIGHT	LEFT				
			LIN. FT. - EACH								EACH				LIN. FT.		EACH	
W20-1	ROAD WORK 1500 FT.	48"x48"	4	4	4	4	4	4	4	64.0								
W20-1	ROAD WORK 1000 FT.	48"x48"	4	4	4	4	4	4	4	64.0								
W20-1	ROAD WORK 500 FT.	48"x48"	4	4	4	4	4	4	4	64.0								
W20-1	ROAD WORK AHEAD	48"x48"	6	6	6	6	6	6	6	96.0								
W20-2	DETOUR 1500 FT.	48"x48"		3	2			3	3	48.0								
W20-2	DETOUR 1000 FT.	48"x48"		3	2			3	3	48.0								
G20-2	END ROAD WORK	48"x24"	10	10	10	10	10	10	10	80.0								
W1-4AR	REVERSE CURVE RT.	48"x48"		2				2	2	32.0								
W1-4AL	REVERSE CURVE LT.	48"x48"		3				3	3	48.0								
W13-1	SPEED LIMIT (ADVISORY)	24"x24"		4				4	4	9.0								
R11-2	ROAD CLOSED	48"x30"	15	8	12	12		15	15	150.0								
OM-3L	OBJECT MARKER	12"x36"	2	2				2	2	6.0								
OM-3R	OBJECT MARKER	12"x36"	2	2	4	4		4	4	12.0								
W1-6	LARGE ARROW	48"x24"					1	1	1	8.0								
W1-8	CHEVRONS	18"x24"		32				32	32	96.0								
R4-1	DO NOT PASS	24"x30"	8	8	8	8	8	8	8	40.0								
RSP-1	SHOULDER CLOSED	48"x30"	8	8	8	8	8	8	8	80.0								
	VERTICAL PANELS		117	58	20	20		117	117		117							
	TRAFFIC DRUMS		197	247	67	67		247	247			247						
	TYPE III BARRICADE-RT. (8')		13	8	9	9	9	13	13				104					
	TYPE III BARRICADE-LT. (8')		11	8	10	10	10	11	11					88				
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER			860	620			1480							1480			
	RELOCATING PRECAST CONCRETE BARRIER				860			860								860		
	TEMPORARY IMPACT ATTENUATION BARRIER			2	4			6									6	
	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)			1	2			3										3
TOTALS:																		
NOTE: THIS IS A HYPOTHETICAL SCENARIO FOR ILLUSTRATION PURPOSES ONLY.										945.0	117	247	104	88	1480	860	6	3

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

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

QUANTITIES

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
472+50	613+12	MAIN LANES	12	12
616+40	640+00	MAIN LANES	24	24
40+86	49+72	HWY. 18/ WEST TIE	3	3
200+00	208+00	HWY. 139	2	2
TOTALS:			41	41

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	* SOIL STABILIZATION	COMPACTED EMBANKMENT (SPECIAL)	** GEOGRID SOIL REINFORCEMENT
			CU. YD.		TON	CU. YD.	SQ. YD.
ENTIRE	PROJECT	STAGE 1-MAIN LANES	14466	235946			
ENTIRE	PROJECT	STAGE 2-MAIN LANES	968	21274			
ENTIRE	PROJECT	STAGE 3-MAIN LANES	4110	1669			
612+05	617+48	MAIN LANES				5859	24183
ENTIRE	PROJECT	HWY. 18 WEST TIE	1054	7563			
ENTIRE	PROJECT	HWY. 18 EAST TIE	982	12816			
ENTIRE	PROJECT	HWY. 139 STAGE 1	475	1167			
ENTIRE	PROJECT	HWY. 139 STAGE 2	185	1003			
ENTIRE	PROJECT	CO. ROAD 541 STAGE 1	454	522			
ENTIRE	PROJECT	CO. ROAD 541 STAGE 2	395	2188			
ENTIRE	PROJECT	CO. ROAD 541 STAGE 3	835	1189			
ENTIRE	PROJECT	BRIDGE TEMPORARY APPROACHES	71	10944			
ENTIRE	PROJECT	BRIDGE END	305				
ENTIRE	PROJECT	APPROACHES		9193			
ENTIRE	PROJECT	TEMPORARY APPROACHES		735			
46+00	PROJECT	ADDITIONAL FOR CHANNEL CHANGE	880				
		OBLITERATION OF EXISTING ROADWAY	3858				
* ENTIRE	PROJECT	TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER			1000		
TOTALS:			29038	306209	1000	5859	24183

* QUANTITY ESTIMATED.

SEE SECTION 104.03 OF THE STD. SPECS.

** QUANTITY ESTIMATED FOR BIDDING PURPOSES ONLY. NOT FOR PAYMENT.

SEE SPECIAL PROVISION "GEOSYNTHETIC INTERNAL REINFORCED EMBANKMENT CONSTRUCTION".

REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	CURB AND GUTTER	CONCRETE PAVEMENT	CONCRETE DRIVEWAYS	WALKS	GUARDRAIL	BUILDINGS	CONCRETE SLABS
			LIN. FT.	SQ. YD.	SQ. YD.	SQ. YD.	LIN. FT.	EACH	SQ. YD.
520+74		MAIN LANES						1	
548+58	549+48	LT. OF MAIN LANES							32
548+16	551+28	RT. OF MAIN LANES							122
552+66		LT. OF MAIN LANES						1	
552+73	557+00	MAIN LANES	1150						
554+55		RT. OF MAIN LANES			84				
554+80		RT. OF MAIN LANES						1	
555+50		RT. OF MAIN LANES						1	
555+69		RT. OF MAIN LANES			73				
570+60		RT. OF MAIN LANES							
570+65		RT. OF MAIN LANES							
611+54.04	613+31.45	RT. OF EXISTING BRIDGE					175		
612+52.62	613+31.66	LT. OF EXISTING BRIDGE					75		
616+36.20	617+13.73	RT. OF EXISTING BRIDGE					75		
616+36.24	618+38.96	LT. OF EXISTING BRIDGE					200		
617+75		RT. OF MAIN LANES						1	
618+79		RT. OF MAIN LANES				28		1	
619+55		RT. OF MAIN LANES						1	
620+91		RT. OF MAIN LANES							
628+00		RT. OF MAIN LANES		9				1	
628+60		RT. OF MAIN LANES		17				1	
628+95		RT. OF MAIN LANES						1	
635+25		LT. OF MAIN LANES				10			
635+79		LT. OF MAIN LANES			62				
635+90		RT. OF MAIN LANES				11		1	
637+00		RT. OF MAIN LANES		32				1	
TOTALS:			1150	58	219	49	525	12	154

NOTE: PAYMENT FOR REMOVAL AND DISPOSAL OF GUARDRAIL SHALL INCLUDE THE REMOVAL AND DISPOSAL OF GUARDRAIL TERMINAL ANCHOR POSTS IF APPLICABLE.

REMOVAL AND DISPOSAL OF CULVERTS

STATION	DESCRIPTION	PIPE CULVERTS
		EACH
521+25	24" x 30' C.M. PIPE CULV'T.	1
521+54	24" x 30' C.M. PIPE CULV'T.	1
521+97	24" x 30' C.M. PIPE CULV'T.	1
554+55	12" x 20' R.C. PIPE CULV'T.	1
555+69	12" x 20' R.C. PIPE CULV'T.	1
556+90	18" x 40' R.C. PIPE CULV'T.	1
556+93	18" x 40' R.C. PIPE CULV'T.	1
570+41	36"x 32' R.C. PIPE CULV'T.	1
600+00	36"x 32' R.C. PIPE CULV'T.	1
611+00	36"x 32' R.C. PIPE CULV'T.	1
618+54	18"x 232' R.C. PIPE CULV'T.	1
619+11	30"x 70' R.C. PIPE CULV'T.	1
621+11	18"x 32' R.C. PIPE CULV'T.	1
621+34	30"x 24' R.C. PIPE CULV'T.	1
622+00	18"x 32' R.C. PIPE CULV'T.	1
624+00	18"x 24' R.C. PIPE CULV'T.	1
625+08	18"x 20' R.C. PIPE CULV'T.	1
627+92	24" x 24' C.M. PIPE CULV'T.	1
628+00	24" x 40' C.M. PIPE CULV'T.	1
628+75	24" x 40' C.M. PIPE CULV'T.	1
629+33	24" x 30' C.M. PIPE CULV'T.	1
631+05	24" x 24' C.M. PIPE CULV'T.	1
632+55	24" x 28' C.M. PIPE CULV'T.	1
635+25	24" x 12' R.C. PIPE CULV'T.	1
635+79	24" x 24' C.M. PIPE CULV'T.	1
635+90	24" x 22' C.M. PIPE CULV'T.	1
636+45	24" x 24' C.M. PIPE CULV'T.	1
637+92	24" x 28' C.M. PIPE CULV'T.	1
501+60	24" x 24' R.C. PIPE CULV'T.	1
502+20	24" x 22' R.C. PIPE CULV'T.	1
503+75	24" x 20' R.C. PIPE CULV'T.	1
TOTAL:		31

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

REMOVAL AND DISPOSAL OF FENCE

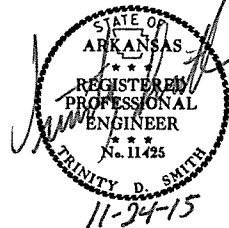
STATION	STATION	LOCATION	FENCE
			LIN. FT.
554+32	554+35	RT. OF MAIN LANES	42
617+24	618+22	RT. OF MAIN LANES	220
TOTAL:			262

GUARDRAIL

STATION	STATION	LOCATION	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)	TERMINAL ANCHOR POST (TYPE 1)
			LIN. FT.	EACH		
612+18.77	613+12.52	LT. SIDE	75	1		1
610+93.77	613+12.52	RT. SIDE OF RT. MAIN LANES	150	1	1	
616+40.48	618+09.23	LT. SIDE OF LT. MAIN LANES	100	1	1	
616+40.48	617+34.23	RT. SIDE	75	1		1
TOTALS:			400	4	2	2

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
11-24-15				6	ARK.			
					JOB NO.	CA1001	83	283

② QUANTITIES



QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	CA1001		84	283

2 QUANTITIES



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	SEDIMENT BASIN	OBLITERATION OF SEDIMENT BASIN	*SEDIMENT REMOVAL & DISPOSAL
											(E-5) BAG	(E-6) CU.YD.	(E-11) LIN. FT.	(E-14) CU.YD.		
616+41.08	640+00	STAGE 1-MAIN LANES	5.89	11.78	5.89	600.8	5.89	6.35	6.35	129.5	1584	198	1250			184
600+00.00	640+00	STAGE 2-MAIN LANES	5.69	11.38	5.69	580.4	5.69	8.31	8.31	169.5	242	39	300			35
ENTIRE	PROJECT	STAGE3-MAIN LANES	36.27	72.54	36.27	3699.5	36.27	60.31	60.31	1230.3	66	27				12
ENTIRE	PROJECT	HWY. 18 WEST TIE	1.03	2.06	1.03	105.1	1.03	1.90	1.90	38.8	66	15				8
ENTIRE	PROJECT	HWY. 18 EAST TIE	1.17	2.34	1.17	119.3	1.17	2.02	2.02	41.2	66	15				8
ENTIRE	PROJECT	HWY. 139 STAGE 1	2.27	4.54	2.27	231.5	2.27	2.27	2.27	46.3	110	9				8
ENTIRE	PROJECT	HWY. 139 STAGE 2	1.39	2.78	1.39	141.8	1.39	1.39	1.39	28.4						
ENTIRE	PROJECT	HWY. 139 STAGE 3	0.74	1.48	0.74	75.5	0.74	1.90	1.90	38.8		3				1
ENTIRE	PROJECT	CO. ROAD 541 STAGE 1	2.64	5.28	2.64	269.3	2.64	2.64	2.64	53.9	154	12				11
ENTIRE	PROJECT	CO. ROAD 541 STAGE 2	2.23	4.46	2.23	227.5	2.23	2.23	2.23	45.5						
ENTIRE	PROJECT	CO. ROAD 541 STAGE 3	0.57	1.14	0.57	58.1	0.57	0.93	0.93	19.0						
ENTIRE	PROJECT	BRIDGE DETOUR	2.45	4.90	2.45	249.9	2.45	3.11	3.11	63.4	88	12				8
ENTIRE	PROJECT	OBLITERATION OF EXISTING PAVEMENT														
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			11.96	23.92	11.96	1219.9	11.96	63.00	63.00	1285.2	473	66	388	16000	16000	16022
TOTALS:			74.30	148.60	74.30	7578.6	74.30	156.36	156.36	3189.8	2849	396	5838	16000	16000	16441

BASIS OF ESTIMATE:

LIME2 TONS / ACRE OF SEEDING
WATER.....102.0 M.G. / ACRE OF SEEDING.
WATER.....20.4 M.G. / ACRE OF TEMPORARY SEEDING.
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING.
SAND BAG DITCH CHECKS.....22 BAGS / LOCATION
ROCK DITCH CHECKS.....3 CU.YD./LOCATION

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

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

STRUCTURES

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT				FLARED END SECTIONS FOR R.C. PIPE CULVERTS			TEMPORARY CULVERTS			SPAN	HEIGHT	LENGTH	CLASS S CONCRETE-ROADWAY	REINF. STEEL-ROADWAY (GRADE 60)	UNCL.EXC. FOR STR.-ROADWAY	SOLID SODDING	WATER	STD. DWG. NOS.
		(CLASS III)			(CLASS IV)															
		24"	30"	36"	36"															
		LIN. FT.				EACH			LIN. FT.											
490+00	INSTALL 24" x 68' TEMP. PIPE CULV'T.									40										FES-1, FES-2, PCC-1, PCM-1, PCP-1, PCP-2
490+88	INSTALL 24" x 68' TEMP. PIPE CULV'T.									40										FES-1, FES-2, PCC-1, PCM-1, PCP-1, PCP-2
507+00	CONSTRUCT 30" x 204' R.C. PIPE CULV'T		204				2											26	0.33	FES-1, FES-2, PCC-1
514+00	CONSTRUCT 36" x 136' R.C. PIPE CULV'T			136				2										34	0.43	FES-1, FES-2, PCC-1
547+00	CONSTRUCT 36" x 134' R.C. PIPE CULV'T				134			2										34	0.43	FES-1, FES-2, PCC-1
548+00	CONSTRUCT 24" x 132' R.C. PIPE CULV'T	134				2												16	0.20	FES-1, FES-2, PCC-1
627+01	CONSTRUCT 30" x 116' R.C. PIPE CULV'T		122				2											26	0.33	FES-1, FES-2, PCC-1
501+60	EXTEND 24" x 84' R.C. PIPE CULV'T	70																16	0.20	FES-1, FES-2, PCC-1
502+20	CONSTRUCT 24" x 102' R.C. PIPE CULVERT	106				2												16	0.20	FES-1, FES-2, PCC-1
503+75	CONSTRUCT 36" x 102' R.C. PIPE CULVERT			106				2										34	0.43	FES-1, FES-2, PCC-1
802+00	INSTALL 24" x 68' TEMP. PIPE CULV'T.									68										FES-1, FES-2, PCC-1, PCM-1, PCP-1, PCP-2
802+55	INSTALL 30" x 72' TEMP. PIPE CULV'T.										72									FES-1, FES-2, PCC-1, PCM-1, PCP-1, PCP-2
12+78	INSTALL 18" x 32' TEMP. PIPE CULV'T.									32										FES-1, FES-2, PCC-1, PCM-1, PCP-1, PCP-2
12+78	INSTALL 24" x 30' TEMP. PIPE CULV'T.										30									FES-1, FES-2, PCC-1, PCM-1, PCP-1, PCP-2
17+56	INSTALL 18" x 32' TEMP. PIPE CULV'T.									32										FES-1, FES-2, PCC-1, PCM-1, PCP-1, PCP-2
SUBTOTALS:		310	326	242	134	6	4	6	64	178	72							202	2.55	
STRUCTURES OVER 20' - 0" SPAN																				
473+03	CONSTRUCT DBL. 11' x 6' x 188' R.C. BOX CULV'T											11	6	188	405.63	65994	195	35	0.44	RCB-1, RCB-2, PBC-1, SPECIAL DETAILS
490+88	CONSTRUCT DBL. 11' x 6' x 148' R.C. BOX CULV'T											11	6	148	362.25	49294	180	32	0.40	RCB-1, RCB-2, PBC-1, SPECIAL DETAILS
570+82	CONSTRUCT QUAD. 12' x 8' x 151' R.C. BOX CULV'T											12	8	151	919.75	119267	410	50	0.63	RCB-1, RCB-2, PBC-1, SPECIAL DETAILS
46+00	CONSTRUCT DBL. 11' x 6' x 110' R.C. BOX CULV'T											11	6	110	263.03	45141	129	35	0.44	RCB-1, RCB-2, PBC-1, SPECIAL DETAILS
SUBTOTALS:															1950.66	279696	914	152	1.91	
TOTALS:		310	326	242	134	6	4	6	64	178	72				1950.66	279696	914	354	4.46	

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

9/1/2015

CA1001.DGN

DUMPED RIPRAP AND FILTER BLANKET

STATION	LOCATION	DUMPED RIPRAP	FILTER BLANKET
		CU. YDS.	SQ. YDS.
473+03	OUTLET OF BOX CULVERT	115	230
490+88	OUTLET OF BOX CULVERT	152	303
507+00	OUTLET OF PIPE CULVERT	14	27
514+00	OUTLET OF PIPE CULVERT	38	75
570+82	OUTLET OF BOX CULVERT	461	922
627+01	OUTLET OF PIPE CULVERT	15	30
45+76	OUTLET OF BOX CULVERT	85	169
	TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	100	100
TOTALS:		980	1856

*NOTE: QUANTITIES ESTIMATED.
SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

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

SOIL LOG

STATION	LATITUDE			LONGITUDE			LOCATION	DEPTH FEET	LIQUID LIMIT	PLASTICITY INDEX	AASHTO CLASSIFICATION	COLOR
	DEG	MIN	SEC	DEG	MIN	SEC						
472+00	35	53	27.40	90	21	51.40	CL	0-5	ND	NP	A-2-4 (0)	BROWN
472+00	35	53	27.40	90	21	51.40	CL	0-5	29	15	A-6 (3)	BROWN
472+85	35	53	28.90	90	20	51.30	CL	0-5	22	8	A-4 (0)	BROWN
480+00	35	53	32.10	90	21	43.70	CL	0-5	21	3	A-4 (0)	BROWN
486+00	35	53	32.10	90	21	43.70	CL	0-2Z	43	28	A-7-6 (22)	BROWN
496+00	35	53	41.60	90	21	28.10	CL	0-5	36	17	A-6 (15)	GR/BR
504+00	35	53	46.30	90	21	20.30	CL	0-5	ND	NP	A-4 (0)	GR/BR
512+00	35	53	50.60	90	21	12.20	CL	0-5	ND	NP	A-4 (0)	GR/BR
520+00	35	53	53.50	90	21	3.10	CL	0-5	22	6	A-4 (0)	BROWN
521+60	35	53	53.90	90	21	1.20	CL	0-5	17	3	A-4 (0)	BROWN
529+00	35	53	54.70	90	20	53.50	CL	0-5	ND	NP	A-4 (0)	BROWN
536+00	35	53	54.70	90	20	43.80	CL	0-5	ND	NP	A-4 (0)	GR/BR
544+00	35	53	54.50	90	20	34.10	CL	0-5	ND	NP	A-4 (0)	BROWN
547+40	35	53	54.40	90	20	30.10	CL	0-5	ND	NP	A-2-4 (0)	BROWN
553+00	35	53	54.50	90	20	22.70	CL	0-5	ND	NP	A-4 (0)	BROWN
557+00	35	53	54.20	90	20	18.30	CL	0-5	ND	NP	A-4 (0)	BROWN
568+00	35	53	54.20	90	20	5.20	CL	0-5	33	18	A-6 (8)	BROWN
568+00	35	53	51.30	90	20	5.20	102 RT.	0-5	23	7	A-2-4 (0)	BROWN
576+00	35	53	47.80	90	20	57.30	CL	0-5	ND	NP	A-4 (0)	BROWN
584+00	35	53	41.20	90	19	52.00	CL	0-5	ND	NP	A-2-4 (0)	BROWN
592+00	35	53	34.10	90	19	47.90	CL	0-5	ND	NP	A-2-4 (0)	BROWN
600+00	35	53	28.20	90	19	41.50	CL	0-5	ND	NP	A-4 (0)	BROWN
605+00	35	53	25.70	90	19	36.30	CL	0-3Z	44	23	A-7-6 (7)	BROWN
618+00	35	53	24.20	90	19	20.80	24 LT.	0-5	ND	NP	A-4 (0)	BROWN
618+00	35	53	24.20	90	19	20.80	33 LT.	0-5	ND	NP	A-4 (0)	BROWN
618+15	35	53	24.40	90	19	20.60	53 LT.	0-5	ND	NP	A-4 (0)	BROWN
626+00	35	53	23.60	90	19	11.30	15 LT.	0-5	ND	NP	A-4 (0)	BROWN
626+00	35	53	23.40	90	19	11.30	3 LT.	0-5	ND	NP	A-2-4 (0)	BROWN
626+00	35	53	23.20	90	19	11.30	12 LT.	0-5	ND	NP	A-2-4 (0)	BROWN
634+00	35	53	23.60	90	19	6.10	24 LT.	0-5	ND	NP	A-2-4 (0)	BROWN
634+00	35	53	23.70	90	19	1.40	34 LT.	0-5	ND	NP	A-4 (0)	BROWN
634+00	35	53	23.80	90	19	1.40	49 LT.	0-5	ND	NP	A-4 (0)	BROWN
641+00	35	53	23.20	90	18	55.40	15 LT.	0-5	19	3	A-4 (0)	BROWN
641+00	35	53	23.10	90	18	52.90	4 LT.	0-5	ND	NP	A-2-4 (0)	BROWN
641+00	35	53	23.00	90	18	52.90	10 RT.	0-5	ND	NP	A-4 (0)	BROWN
641+00	35	53	23.00	90	18	52.90	10 RT.	0-5	ND	NP	A-2-4 (0)	BROWN

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.
Z- AUGER REFUSAL
NP - NON-PLASTIC
ND - NOT DETERMINABLE

SELECTED PIPE BEDDING

LOCATION	SELECTED PIPE BEDDING
	CU.YD.
ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	290
TOTAL:	290

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

BENCH MARKS

STATION	LOCATION	BENCH MARKS
		EACH
473+03	HEADWALL OF BOX CULVERT	1
490+88	HEADWALL OF BOX CULVERT	1
570+82	HEADWALL OF BOX CULVERT	1
616+41	BRIDGE END	1
45+76	HEADWALL OF BOX CULVERT	1
TOTAL:		5

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

MAILBOXES

LOCATION	MAILBOXES	MAILBOX SUPPORTS (SINGLE)
	EACH	
ENTIRE PROJECT	9	9
TOTALS:	9	9

EROSION CONTROL MATTING

STATION	STATION	LOCATION	LENGTH	CLASS 3
			LIN. FT.	SQ. YD.
473+03	474+14	RT. DITCH - HWY. 18	111.0	98.7
472+65	474+03	LT. DITCH - HWY. 18	138.0	122.7
490+88	492+00	LT. DITCH - HWY. 18	112.0	99.6
45+00	48+00	RT. DITCH - HWY. 18 WEST TIE	300.0	266.7
45+00	46+30	LT. DITCH - HWY. 18 WEST TIE	130.0	115.6
617+00	618+00	RT. DITCH - MAIN LANES	100.0	88.9
617+00	619+00	LT. DITCH - MAIN LANES	200.0	177.8
45+90	46+50	RT. DITCH - WEST TIE	60.0	53.3
TOTAL:				1023.3

NOTE: AVERAGE WIDTH = 8'-0"

CONCRETE DITCH PAVING

STATION	STATION	LOCATION	LENGTH	"W"	CONC. DITCH PAVING (TYPE B)	SOLID SODDING	WATER
			LIN. FT.	FEET	SQ. YD.	SQ. YD.	M. GAL.
470+80	472+00	LT. OF HWY. 18	120.00	9	120.00	53.33	0.67
472+42	473+03	RT. OF HWY. 18	61.00	9	61.00	27.11	0.34
490+88	491+50	RT. OF HWY. 18	62.00	9	62.00	27.56	0.35
570+00	571+50	RT. OF HWY. 18	150.00	9	150.00	66.67	0.84
570+00	571+50	LT. OF HWY. 18	150.00	9	150.00	66.67	0.84
TOTALS:					543.00	241.34	3.04

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

PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

STATION	LOCATION	WIDTH	LENGTH	TON
		FEET		
627+01	HWY. 18	9.08	24	16
TOTAL:				16

AVG. DEPTH = 12"

4" PIPE UNDERDRAIN

STATION	STATION	LOCATIONS	4" PIPE UNDERDRAINS	UNDERDRAIN OUTLET PROTECTORS
			LIN. FT.	EACH
* ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER			2000	8
TOTALS:			2000	8

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

APPROACH GUTTERS AND SLABS

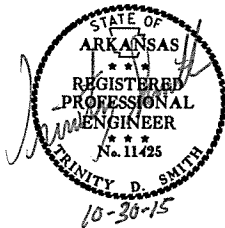
STATION	STATION	LOCATION	APPROACH GUTTER (TYPE A)	APPROACH SLABS	REINFORCING STEEL-RDWY. (GR. 60)	AGGREGATE BASE CRS. (CLASS 7)
			CU.YD.	CU.YD.		TON
612+75.42	613+11.92	RT. SIDE	14.70		2230	
612+75.42	613+11.92	LT. SIDE	14.70		2230	
612+75.42	613+11.92	MAIN LANES		120.48	15940	106.8
616+41.08	616+77.58	MAIN LANES		120.48	15940	106.8
616+41.08	616+77.58	RT. SIDE	14.70		2230	
616+41.08	616+77.58	LT. SIDE	14.70		2230	
TOTALS:			58.80	240.96	40800	213.6

NOTE: USE T =15" FOR 8' SHOULDER.

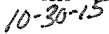
QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO. CA1001			85	283

2 QUANTITIES



② QUANTITIES



BASE AND SURFACING

BASIS OF ESTIMATE:

ACHM SURFACE COURSE (1/2").....	94.7% MIN. AGGR.....	5.3% ASPHALT BINDER
ACHM BINDER COURSE (1").....	95.9% MIN. AGGR.....	4.1% ASPHALT BINDER

MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

QUANTITIES |

DRIVEWAYS & TURNOUTS														
STATION	SIDE	LOCATION	WIDTH	PORTLAND CEMENT CONCRETE DRIVEWAY	ACHM SURFACE COURSE (1/2") 220 LBS. PER SQ. YD. (PG 64-22)		AGGREGATE BASE COURSE (CLASS 7)	SIDE DRAINS					STANDARD DRAWINGS	
					FEET	SQ. YD.		SQ. YD.	TON	TON	18"	24"		30"
								LIN. FT.						
474+00	LT.	HWY. 18	16		97.10	10.68	39.65			36			PCC-1, PCM-1, PCP-1, PCP-2	
480+00	LT.	HWY. 18	16		98.80	10.87	40.34		36				PCC-1, PCM-1, PCP-1, PCP-2	
480+00	RT.	HWY. 18	24						70				PCC-1, PCM-1, PCP-1, PCP-2	
490+00	RT.	HWY. 18	20		273.30	30.06	111.60		64				PCC-1, PCM-1, PCP-1, PCP-2	
490+88	LT.	HWY. 18	20		272.00	29.92	111.07		74				PCC-1, PCM-1, PCP-1, PCP-2	
493+00	RT.	HWY. 18	16		86.00	9.46	35.12	34					PCC-1, PCM-1, PCP-1, PCP-2	
500+00	LT.	HWY. 18	16		105.90	11.65	43.24	38					PCC-1, PCM-1, PCP-1, PCP-2	
500+00	RT.	HWY. 18	16		92.30	10.15	37.69	38					PCC-1, PCM-1, PCP-1, PCP-2	
509+50	LT.	HWY. 18	16		135.70	14.93	55.41			60			PCC-1, PCM-1, PCP-1, PCP-2	
510+00	RT.	HWY. 18	16		133.00	14.63	54.31		40				PCC-1, PCM-1, PCP-1, PCP-2	
518+00	LT.	HWY. 18	16		141.20	15.53	57.66			44			PCC-1, PCM-1, PCP-1, PCP-2	
521+57	LT.	HWY. 18	24		294.40	32.38	120.21			72			PCC-1, PCM-1, PCP-1, PCP-2	
521+57	RT.	HWY. 18	24		240.80	26.49	98.33		56				PCC-1, PCM-1, PCP-1, PCP-2	
533+35	LT.	HWY. 18	24		150.10	16.51	61.29		44				PCC-1, PCM-1, PCP-1, PCP-2	
534+50	RT.	HWY. 18	16		111.50	12.27	45.53		48				PCC-1, PCM-1, PCP-1, PCP-2	
542+00	RT.	HWY. 18	16		89.60	9.86	36.59		30				PCC-1, PCM-1, PCP-1, PCP-2	
542+00	LT.	HWY. 18	16		84.60	9.31	34.55	32					PCC-1, PCM-1, PCP-1, PCP-2	
547+40	LT.	HWY. 18	24											
547+40	RT.	HWY. 18	24											
553+35	RT.	HWY. 18	16		92.00	10.12	37.57		42				PCC-1, PCM-1, PCP-1, PCP-2	
559+50	RT.	HWY. 18	16		95.00	10.45	38.79		30				PCC-1, PCM-1, PCP-1, PCP-2	
556+90	LT.	HWY. 18	24		166.80	18.35	68.11	62					PCC-1, PCM-1, PCP-1, PCP-2	
562+50	LT.	HWY. 18	16		158.10	17.39	64.56		82				PCC-1, PCM-1, PCP-1, PCP-2	
562+50	RT.	HWY. 18	16		107.20	11.79	43.77			48			PCC-1, PCM-1, PCP-1, PCP-2	
572+00	LT.	HWY. 18	16		150.40	16.54	61.41		78				PCC-1, PCM-1, PCP-1, PCP-2	
573+40	RT.	HWY. 18	16		93.90	10.33	38.34		46				PCC-1, PCM-1, PCP-1, PCP-2	
588+00	LT.	HWY. 18	16		87.60	9.64	35.77		38				PCC-1, PCM-1, PCP-1, PCP-2	
590+50	RT.	HWY. 18	16		109.70	12.07	44.79		52				PCC-1, PCM-1, PCP-1, PCP-2	
600+00	RT.	HWY. 18	24						74				PCC-1, PCM-1, PCP-1, PCP-2	
600+00	LT.	HWY. 18	16		82.00	9.02	33.48		30				PCC-1, PCM-1, PCP-1, PCP-2	
602+00	LT.	HWY. 18	16		91.50	10.07	37.36			28			PCC-1, PCM-1, PCP-1, PCP-2	
609+56	RT.	HWY. 18	16		220.60	24.27	90.08			72			PCC-1, PCM-1, PCP-1, PCP-2	
618+54	LT.	HWY. 18	16		115.90	12.75	47.33	44					PCC-1, PCM-1, PCP-1, PCP-2	
619+11	RT.	HWY. 18	16		140.40	15.44	57.33				56		PCC-1, PCM-1, PCP-1, PCP-2	
619+21	LT.	HWY. 18	16		109.30	12.02	44.63	48					PCC-1, PCM-1, PCP-1, PCP-2	
620+27	LT.	HWY. 18	16		100.80	11.09	41.16	44					PCC-1, PCM-1, PCP-1, PCP-2	
620+27	RT.	HWY. 18	18		144.10	15.85	58.84					52	PCC-1, PCM-1, PCP-1, PCP-2	
621+11	LT.	HWY. 18	16	98.40				40					PCC-1, PCM-1, PCP-1, PCP-2	
621+34	RT.	HWY. 18	18		135.90	14.95	55.49				48		PCC-1, PCM-1, PCP-1, PCP-2	
622+00	LT.	HWY. 18	16		96.00	10.56	39.20	38					PCC-1, PCM-1, PCP-1, PCP-2	
624+00	LT.	HWY. 18	16		90.50	9.96	36.95	36					PCC-1, PCM-1, PCP-1, PCP-2	
625+08	LT.	HWY. 18	16		87.50	9.63	35.73	32					PCC-1, PCM-1, PCP-1, PCP-2	
626+84	LT.	HWY. 18	16		82.90	9.12	33.85							
627+92	LT.	HWY. 18	16		82.40	9.06	33.65		34				PCC-1, PCM-1, PCP-1, PCP-2	
628+00	RT.	HWY. 18	18		99.30	10.92	40.55		38				PCC-1, PCM-1, PCP-1, PCP-2	
628+50	LT.	HWY. 18	18		93.40	10.27	38.14		36				PCC-1, PCM-1, PCP-1, PCP-2	
629+33	RT.	HWY. 18	16		88.40	9.72	36.10		38				PCC-1, PCM-1, PCP-1, PCP-2	
631+05	LT.	HWY. 18	16		81.00	8.91	33.08		30				PCC-1, PCM-1, PCP-1, PCP-2	
632+55	LT.	HWY. 18	16		80.30	8.83	32.79		32				PCC-1, PCM-1, PCP-1, PCP-2	
635+79	LT.	HWY. 18	16	78.90				32					PCC-1, PCM-1, PCP-1, PCP-2	
635+90	RT.	HWY. 18	16		84.10	9.25	34.34		32				PCC-1, PCM-1, PCP-1, PCP-2	
636+45	RT.	HWY. 18	16		82.20	9.04	33.57		34				PCC-1, PCM-1, PCP-1, PCP-2	
637+92	RT.	HWY. 18	16		77.20	8.49	31.52		30				PCC-1, PCM-1, PCP-1, PCP-2	
201+06	LT.	HWY. 139	16		79.50	8.75	32.46	36					PCC-1, PCM-1, PCP-1, PCP-2	
201+25	RT.	HWY. 139	24		143.30	15.76	58.51		48				PCC-1, PCM-1, PCP-1, PCP-2	
207+03	RT.	HWY. 139	24		206.20	22.68	84.20		82				PCC-1, PCM-1, PCP-1, PCP-2	
207+03	RT.	HWY. 139	18		97.60	10.74	39.85							
500+75	RT.	REEVS STREET	20		72.40	7.96	29.56		36				PCC-1, PCM-1, PCP-1, PCP-2	
500+75	LT.	REEVS STREET	20		90.20	9.92	36.83		40				PCC-1, PCM-1, PCP-1, PCP-2	
505+50	RT.	REEVS STREET	18		45.40	4.99	18.54	28					PCC-1, PCM-1, PCP-1, PCP-2	
105+37	LT.	EAST TIE	24		200.60	22.07	81.91		54				PCC-1, PCM-1, PCP-1, PCP-2	
48+40	LT.	WEST TIE	20		114.00	12.54	46.55					92	PCC-1, PCM-1, PCP-1, PCP-2	
ENTIRE PROJECT TEMPORARY DRIVES							460.00							
TOTALS:				177.30	6781.90	746.01	3229.28	550	1530	360	156	92		

BASIS OF ESTIMATE:

ACHM SURFACE COURSE (1/2").....94.7% MIN. AGGR.....5.3% ASPHALT BINDER

MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

* QUANTITY ESTIMATED

SEE SECTION 104.03 OF THE STD. SPECS.

TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

** FOR INFORMATION ONLY

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

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

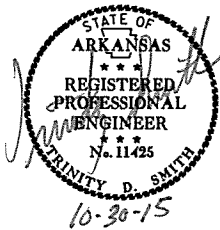
NOTE: THE CONTRACTOR, WITH THE APPROVAL OF THE ENGINEER, WILL BE ALLOWED TO SUBSTITUTE

A HIGHER PERFORMANCE GRADE ASPHALT SURFACE COURSE FOR DRIVEWAYS AND MINOR

SIDE STREET CONSTRUCTION AT NO ADDITIONAL COST TO THE DEPARTMENT.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	CA1001		87	283

2 QUANTITIES



RUMBLE STRIPS IN ASPHALT SHOULDERS

STATION	STATION	LOCATION	* RUMBLE STRIPS IN ASPHALT SHOULDERS
			LIN. FT.
100+62.50	110+82.58	LT. SIDE OF HWY. 18/ EAST TIE	955
100+62.50	110+82.58	RT. SIDE OF HWY. 18/ EAST TIE	1020
200+00.00	208+00.00	RT. SIDE OF HWY. 139	419
200+00.00	208+00.00	LT. SIDE OF HWY. 139	563
40+83.29	49+72.50	RT. SIDE OF HWY. 18/ WEST TIE	889
40+83.29	49+72.50	LT. SIDE OF HWY. 18/WEST TIE	820
467+04.00	655+50.00	RT. SIDE OF HWY. 18	16214
467+04.00	655+50.00	LT. SIDE OF HWY. 18	15825
TOTAL:			36705

* QUANTITY ESTIMATED.

SEE SECTION 104.03 OF THE STD. SPECS.

TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	TON	TACK COAT
		GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	24	48
TOTALS:		24 48

NOTE: QUANTITIES ESTIMATED.

SEE SECTION 104.03 OF THE STD. SPECS.

BASIS OF ESTIMATE: 25 TON/MILE ASPHALT PATCHING.

50 GALLON/MILE TACK COAT.

ACHM PATCHING OF EXISTING ROADWAY

DESCRIPTION	TON
ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	50
TOTAL:	50

NOTE: QUANTITY ESTIMATED.

SEE SECTION 104.03 OF THE STD. SPECS.

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
497+00	498+00	CO. RD. 541	22	244.44
506+02.23	507+02.23	CO. RD. 541	22	244.44
199+00	200+00	HWY. 139	20	222.22
209+00	210+00	HWY. 139	20	222.22
640+00	641+00	HWY. 18	24	266.67
TOTAL:				1199.99

NOTE: AVERAGE MILLING DEPTH 1".

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	CA1001		88	283

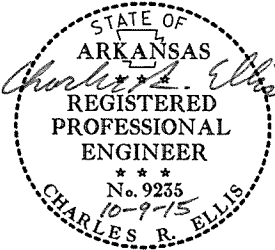
① 07363 - QUANTITIES - 57613

SCHEDULE OF BRIDGE QUANTITIES - JOB NO. CA1001

BRIDGE NO.	NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NO.	205	801	802	802	803	804	804	805	805	805	SP & 807	808	809	812	816	816
			ITEM	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO.)	UNCLASSIFIED EXCAVATION FOR STRUCTURES- BRIDGE	CLASS S CONCRETE - BRIDGE	CLASS S(AE) CONCRETE - BRIDGE	CLASS 1 PROTECTIVE SURFACE TREATMENT	REINFORCING STEEL - BRIDGE (GRADE 60)	EPOXY COATED REINFORCING STEEL (GRADE 60)	① STEEL SHELL PILING (18' ' DIA.)	① STEEL SHELL PILING (24' ' DIA.)	① PILE ENCASEMENT	STRUCTURAL STEEL IN BEAM SPANS (M 270, GRADE 50W)	ELASTOMERIC BEARINGS	SILICONE JOINT SEALANT	BRIDGE NAME PLATE (TYPE D)	FILTER BLANKET	DUMPED RIPRAP
			UNIT	LUMP SUM	CU. YD.	CU. YD.	CU. YD.	GAL.	LB.	LB.	LIN. FT.	LIN. FT.	LIN. FT.	LB.	CU. IN.	LIN. FT.	EACH	SQ. YD.	CU. YD.
07363	COCKLE BURR SLOUGH																		
		BENT 1		45	64.30		0.30	9,335	991	495			1,918	3,670			525	281	
		BENTS 2 - 5			141.84			13,463	1,528	3,060	687								
		BENT 6		55	63.26		0.30	9,162	991	585			1,918	3,670			300	165	
		327' -0' ' CONT. COMP. W-BM. UNIT				782.90	59.20		165,130				499,074		156	1			
EXIST. BR. NO. 03963 (SITE NO. 1)			② 1																
TOTALS FOR JOB NO. CA1001				100	269.40	782.90	59.80	31,960	168,640	1,080	3,060	687	502,910	7,340	156	1	825	446	

- ① PILES AND PILE ENCASEMENT SHALL CONFORM TO DWG. NO. 57624.
STEEL SHELL PILES SHALL USE ONLY CONICAL OR VANED PILE TIPS.
- ② THIS ITEM INCLUDES THE REMOVAL OF REMNANTS OF TIMBER PILING
LEFT IN PLACE FROM A PREVIOUS STRUCTURE(S) AS DIRECTED BY
THE ENGINEER.

STEVEN PEYTON
DESIGN SECTION SUPERVISOR



SCHEDULE OF BRIDGE QUANTITIES
MONETTE BYPASS (S)
CRAIGHEAD COUNTY

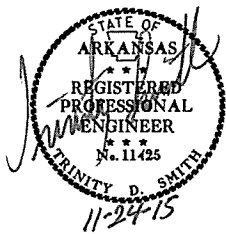
ROUTE 18 SEC. 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 8-28-15 FILENAME: bcd1001.qldgn
CHECKED BY: *[Signature]* DATE: 10-7-15 SCALE: NONE
DESIGNED BY: -- DATE: --
BRIDGE NO. 07363 DRAWING NO. 57613

*DENOTES ALTERNATE BID ITEMS.

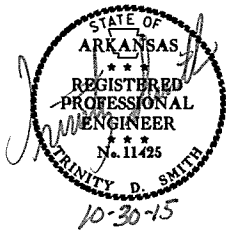
REVISIONS

2 SUMMARY OF QUANTITIES AND REVISIONS



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. CA1001	90	283

2 SURVEY CONTROL DETAILS



SURVEY CONTROL COORDINATES

Project Name: s100651
Date: 11/3/2011
Coordinate System: ARKANSAS STATE PLANE - NORTH ZONE BASED ON GPS CONTROL,
PROJECTED TO GROUND.
Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
1	571018.7618	1796841.8700	232.792	CTL	5/8" REBAR W/ 2" CAP
2	571487.1444	1797620.4924	230.236	CTL	DLSH 5/8" REBAR 2.0" ALUM CAP
3	571949.2871	1798394.3139	234.466	CTL	24" X 5/8" REBAR 2.0" ALUM CAP
4	572355.4487	1798894.9463	232.288	CTL	5/8" REBAR W/ 2" CAP
5	573178.0966	1799675.3080	232.450	CTL	5/8" REBAR W/ 2" CAP
6	573609.3330	1800653.4578	232.428	CTL	5/8" REBAR W/ 2" CAP
7	573949.5978	1801015.9906	234.270	CTL	5/8" REBAR W/ 2" CAP
8	573946.5879	1802316.7153	235.383	CTL	5/8" REBAR W/ 2" CAP
9	573857.1263	1803601.8896	237.246	CTL	5/8" REBAR W/ 2" CAP
10	573832.6504	1804542.8518	234.142	CTL	5/8" REBAR W/ 2" CAP
11	573702.6666	1805268.1050	230.224	CTL	5/8" REBAR W/ 2" CAP
12	573603.2053	1805830.5627	231.730	CTL	5/8" REBAR W/ 2" CAP
13	572895.5598	1806606.2070	231.208	CTL	5/8" REBAR W/ 2" CAP
14	572061.5040	1807055.5267	231.542	CTL	5/8" REBAR W/ 2" CAP
15	571205.1424	1807740.0371	229.702	CTL	5/8" REBAR W/ 2" CAP
16	570897.0630	1808615.2117	235.356	CTL	5/8" REBAR W/ 2" CAP
100	558917.4050	1795983.5846	232.608	GPS	AHTD GPS 160022
101	570878.1536	1806011.5136	236.378	GPS	AHTD GPS 160023
900	571059.8353	1796627.0875	236.388	TBM	CH SQ SE BR COR CO RD 510
901	573601.9569	1803497.0757	236.525	TBM	CH SQ W SIDE OF SAN SEW
902	570961.2325	1808808.4972	237.620	TBM	3IN AHTD CAP IN NW HDWLL
903	570961.2325	1808808.4972	237.596	TBM	3" METAL CAP NW HDWLL
990	570467.6565	1803549.8598	236.478	TBM	NGS MARK H 186

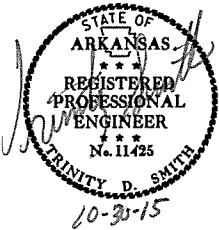
*Note - Rebar and Cap - Standard - 5/8" Rebar with 2" Aluminum Cap stamped
*(standard markings common to all caps), or as indicated
(other markings indicated in the point description of the individual point).
USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT
A PROJECT CAF OF 0.9999411667 HAS BEEN USED TO COMPUTE 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 s100651gi.ct1
HORIZONTAL DATUM: NAD 83 (1997)
VERTICAL DATUM: NAVD 88 POSITIONAL ACCURACY THIRD ORDER, UNLESS SPECIFIED OTHERWISE
AT A SPECIFIC POINT.

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

BASIS OF BEARING:
ARKANSAS STATE PLANE GRID BEARINGS - 0301-NORTH ZONE
DETERMINED FROM GPS CONTROL POINTS: 160022 - 160023
CONVERGENCE ANGLE: 00-57-45 RIGHT AT LT: 35-53-55.6 LG: 090-20-45.2
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. CA1001	91	283

2 SURVEY CONTROL DETAILS



HWY. 18 MAIN LANES

POINT NO.	TYPE	STATION	NORTHING	EASTING
8000	POB	410+00.00	565224.5057	1795847.3683
8001	PI	413+67.88	565592.2766	1795856.3273
8002	PC	416+67.30	565891.6125	1795863.6192
8004	PT	422+61.74	566485.9788	1795862.6791
8005	PC	449+10.97	569134.2032	1795789.7848
8007	PT	467+04.00	570696.1296	1796528.7303
8008	PI	475+00.00	571183.8484	1797157.8167
8009	PC	505+56.09	573056.3475	1799573.0686
8011	PT	531+01.32	573857.2242	1801939.6310
8012	PC	559+78.23	573837.5054	1804816.4761
8014	PT	583+25.29	572636.6707	1806689.5004
8015	PC	589+71.11	572051.6669	1806963.0778
8017	PT	613+07.77	570850.9292	1808825.7119
8018	PI	616+71.35	570846.6241	1809189.2622
8019	POE	646+85.85	570803.4967	1812203.4565

CO. RD. 541

POINT NO.	TYPE	STATION	NORTHING	EASTING
8034	POB	498+00.00	573255.4027	1801011.5667
8035	POE	506+02.23	574057.5467	1800999.5418

TEMPORARY APPROACHES FOR STAGE COCKLE BURR SLOUGH BRIDGE

POINT NO.	TYPE	STATION	NORTHING	EASTING
8113	POB	795+00.00	570883.5629	1807734.6830
8114	PC	797+83.19	570880.8971	1808017.8616
8116	PT	800+07.62	570852.5546	1808239.9685
8117	PC	800+54.89	570841.1129	1808285.8421
8119	PT	803+80.51	570817.1759	1808608.9983
8120	PC	804+37.98	570822.7164	1808666.2008
8122	PT	805+41.47	570827.0976	1808769.5437
8093	PC	810+06.39	570821.6045	1809234.4305
8095	PT	812+14.22	570821.0336	1809442.2577
8096	PC	813+85.37	570822.1155	1809613.4038
8098	PT	814+93.79	570823.3138	1809721.8214
8099	PC	815+95.78	570824.9233	1809823.7930
8101	PT	818+83.64	570833.0810	1810111.5322
8102	PI	822+62.99	570848.5936	1810490.5654
8103	PC	831+53.25	570835.7163	1811380.7310
8105	PT	832+44.80	570832.9297	1811472.2359
8106	POE	832+90.54	570830.8072	1811517.9242

CR 510

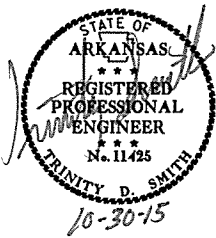
POINT NO.	TYPE	STATION	NORTHING	EASTING
8082	POB	5+00.00	571036.8299	1796585.0484
8083	PC	6+04.07	571035.2638	1796689.1063
8086	PT	7+50.79	570971.8822	1796816.0180
8087	POE	8+35.35	570905.0537	1796867.8288

HWY. 139

POINT NO.	TYPE	STATION	NORTHING	EASTING
8020	POB	200+00.00	573476.7025	1803457.0083
8021	PC	204+38.07	573893.1660	1803592.8868
8023	PT	207+54.91	574205.0409	1803639.8559
8024	POE	209+34.81	574384.9186	1803636.9021

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. CA1001	92	283

2 SURVEY CONTROL DETAILS



CO. RD. 541 DETOUR

POINT NO.	TYPE	STATION	NORTHING	EASTING
8034	POB	10+00.00	573255.4027	1801011.5667
8036	PC	10+27.65	573283.0483	1801011.1523
8038	PT	11+71.86	573426.0546	1800994.5367
8039	PC	12+27.16	573480.0645	1800982.6660
8041	PT	13+71.37	573623.0706	1800966.0505
8042	PC	15+26.78	573778.4613	1800963.7210
8044	PT	16+86.76	573937.3603	1800979.1338
8045	PC	17+06.68	573956.8571	1800983.2564
8047	PT	18+66.66	574115.7558	1800998.6692
8075	POE	18+88.94	574138.0274	1800998.3353

HWY. 18 TIE/EAST

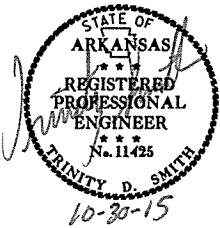
POINT NO.	TYPE	STATION	NORTHING	EASTING
8029	POB	100+00.00	571262.5261	1807606.9251
8030	PC	102+41.63	571068.6512	1807462.7190
8032	PT	106+56.85	570890.9795	1807104.2986
8033	POE	110+82.58	570895.5998	1806678.5929

HWY. 18/WEST TIE

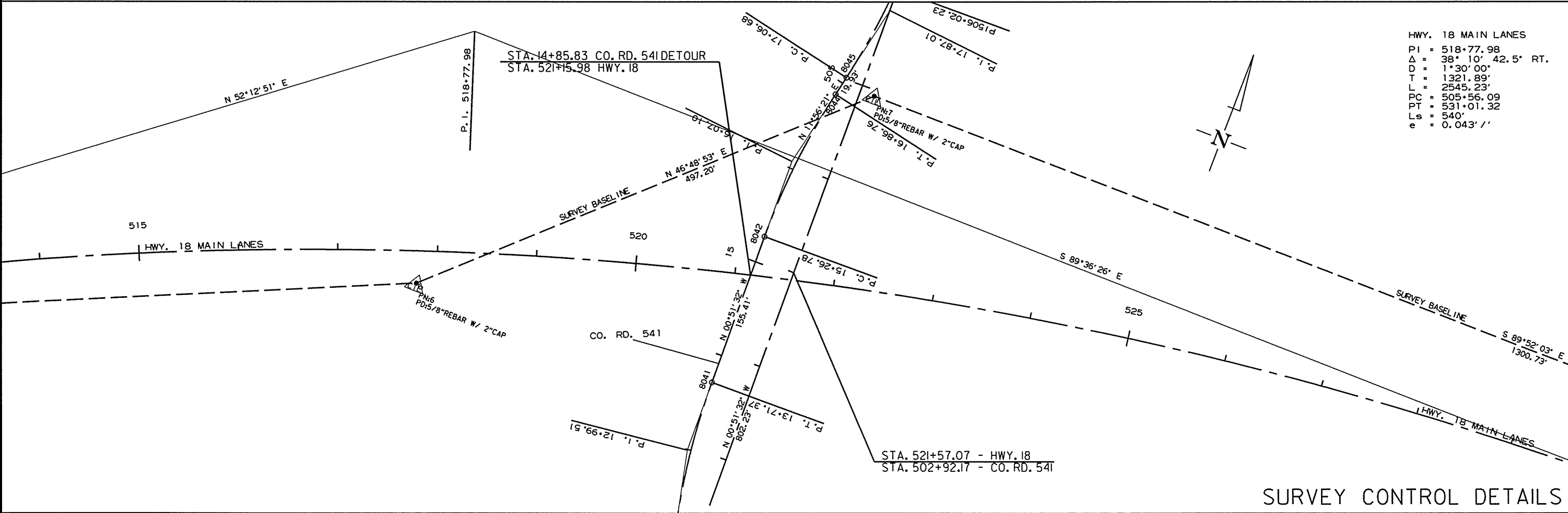
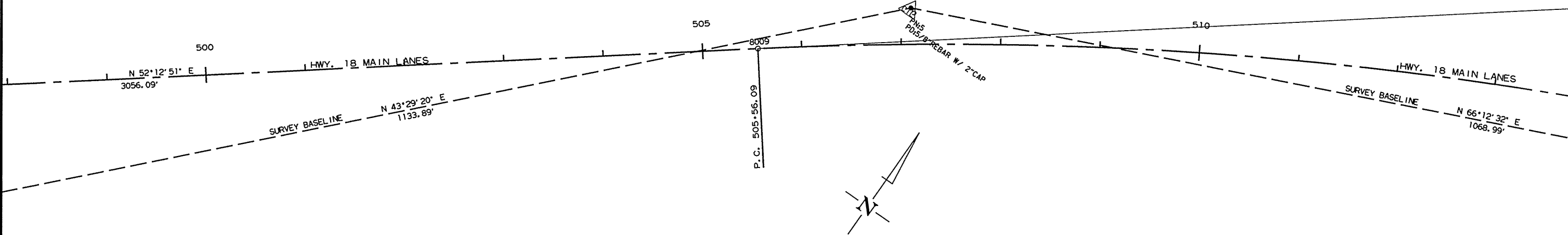
POINT NO.	TYPE	STATION	NORTHING	EASTING
8085	POB	40+00.00	571490.2036	1797552.9704
8025	PC	43+78.94	571190.7247	1797785.1506
8027	PT	47+76.36	571020.0522	1798129.2440
8028	POE	49+72.50	571018.1723	1798325.3698

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. CA1001	94	283

2 SURVEY CONTROL DETAILS



HWY. 18 MAIN LANES
PI = 518+77.98
Δ = 38° 10' 42.5" RT.
D = 1°30' 00"
T = 1321.89'
L = 2545.23'
PC = 505+56.09
PT = 531+01.32
e = 0.043' /'
Ls = 540'



9/30/2015

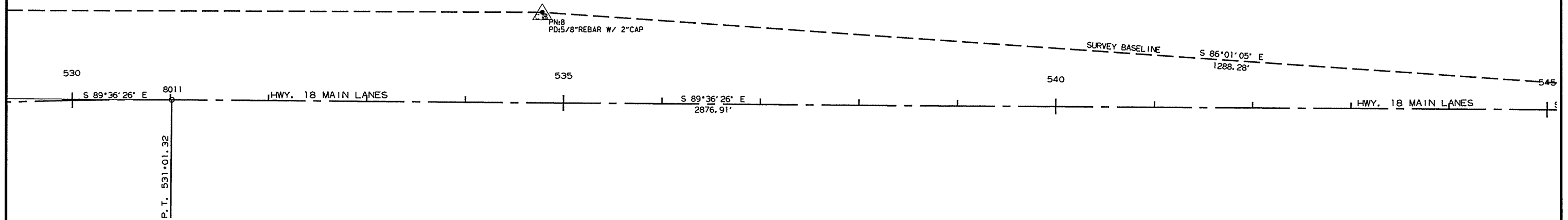
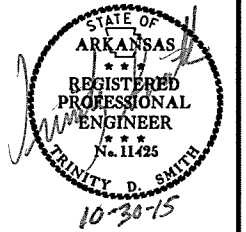
CA1001.DGN

SURVEY CONTROL DETAILS

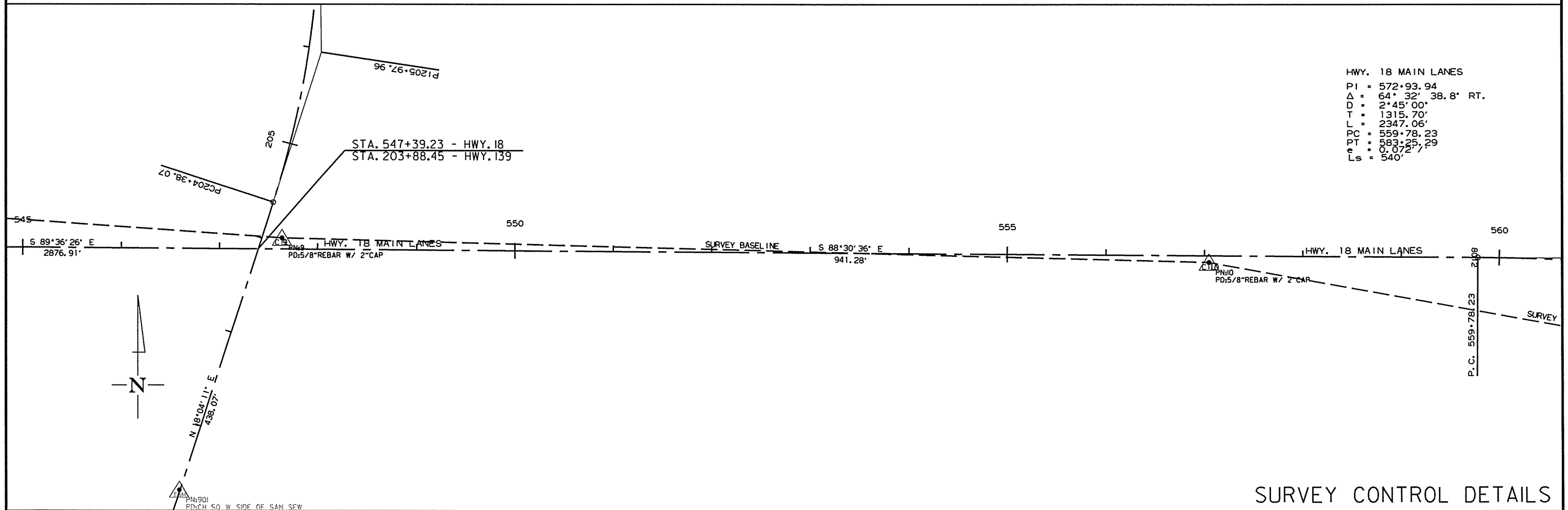
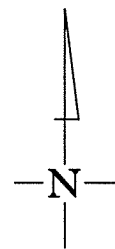
HWY. 18 MAIN LANES
PI = 518+77.98
Δ = 38° 10' 42.5" RT.
D = 1°30'00"
T = 1321.89'
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e = 0.043' /'
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO. CA1001			95	283

2 SURVEY CONTROL DETAILS



HWY. 18 MAIN LANES
PI = 572+93.94
Δ = 64° 32' 38.8" RT.
D = 2°45'00"
T = 1315.70'
L = 2347.06'
PC = 559+78.23
PT = 583+25.29
e = 0.072' /'
Ls = 540'



SURVEY CONTROL DETAILS

9/30/2015

CA1001.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. CA1001	97	283

2 SURVEY CONTROL DETAILS

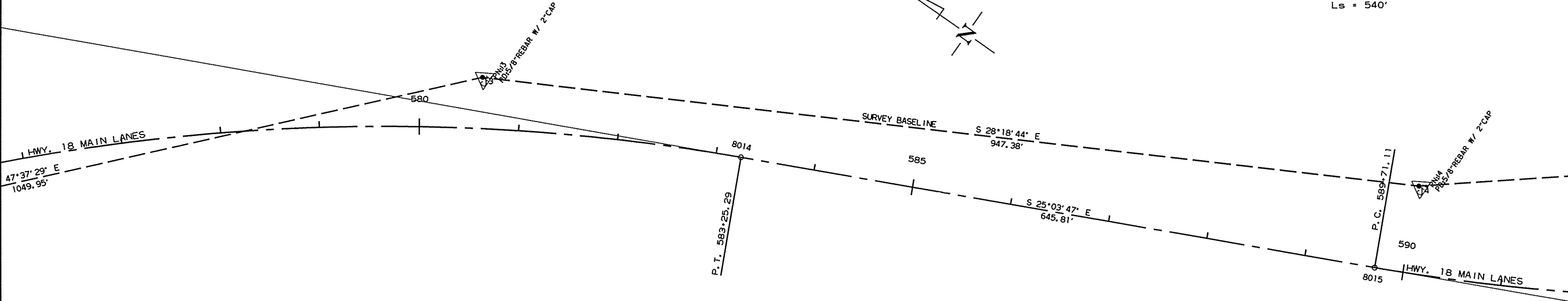
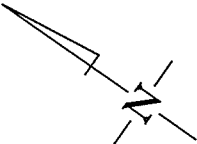


HWY. 18 MAIN LANES

PI = 572+93.94
Δ = 64° 32' 38.8" RT.
D = 2°45' 00"
T = 1315.70'
L = 2347.06'
PC = 559+78.23
PT = 583+25.29
e = 0.072'
Ls = 540'

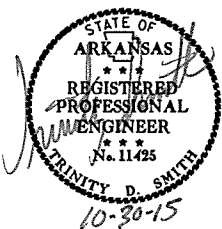
HWY. 18 MAIN LANES

PI = 602+79.55
Δ = 64° 15' 30.1" LT.
D = 2°45' 00"
T = 1308.45'
L = 2336.67'
PC = 589+71.11
PT = 613+07.77
e = 0.072'
Ls = 540'



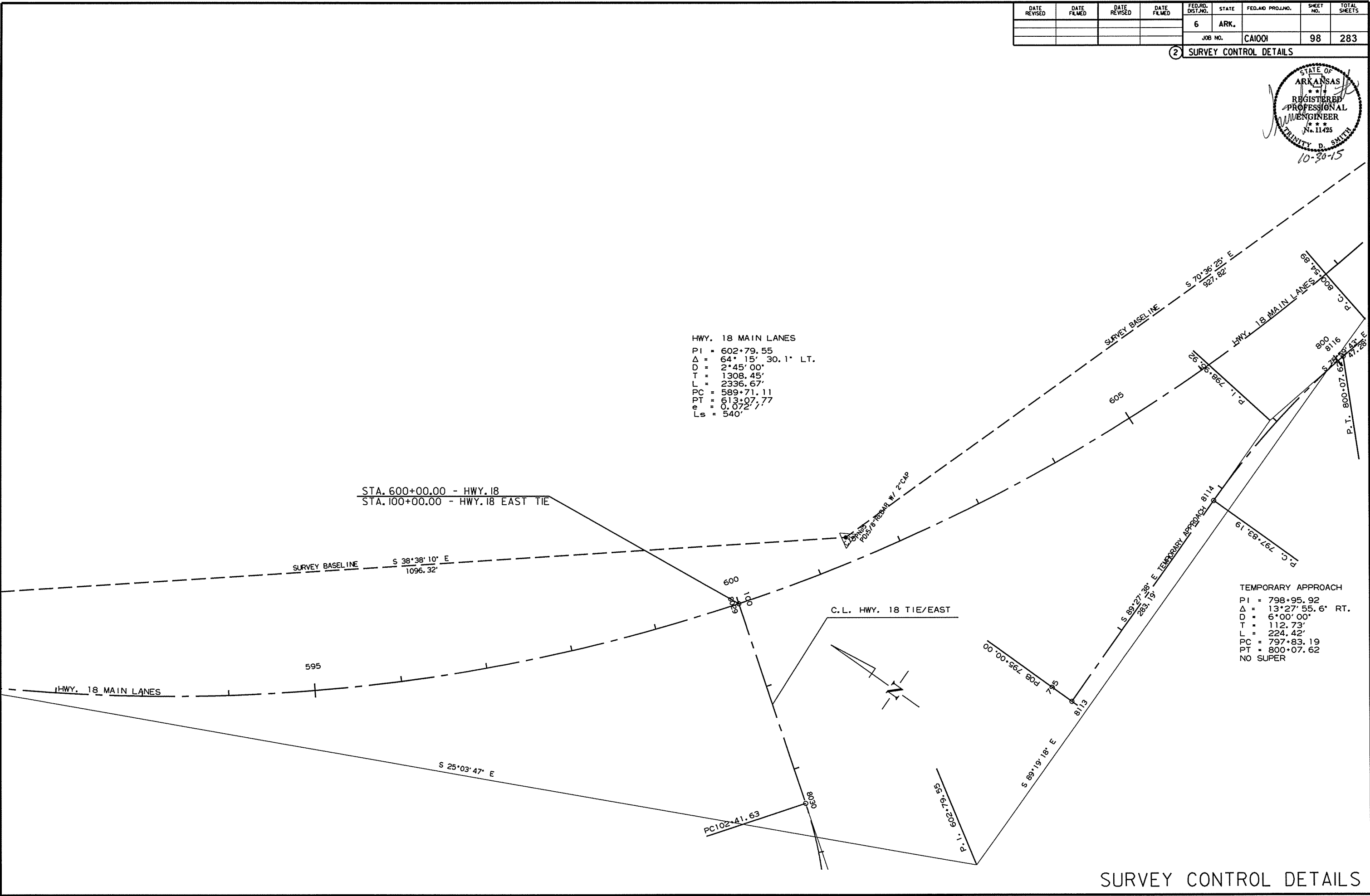
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	CA1001		98	283

2 SURVEY CONTROL DETAILS



HWY. 18 MAIN LANES
PI = 602+79.55
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PC = 589+71.11
PT = 613+07.77
e = 0.072'
Ls = 540'

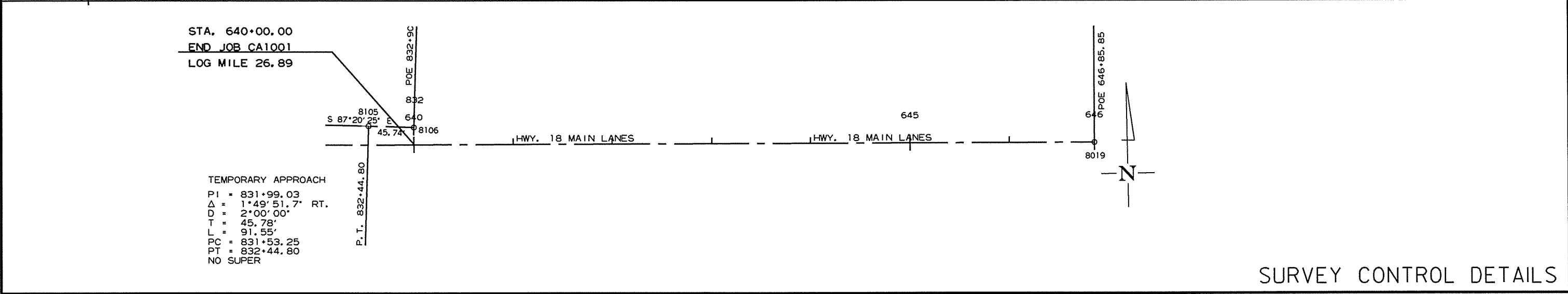
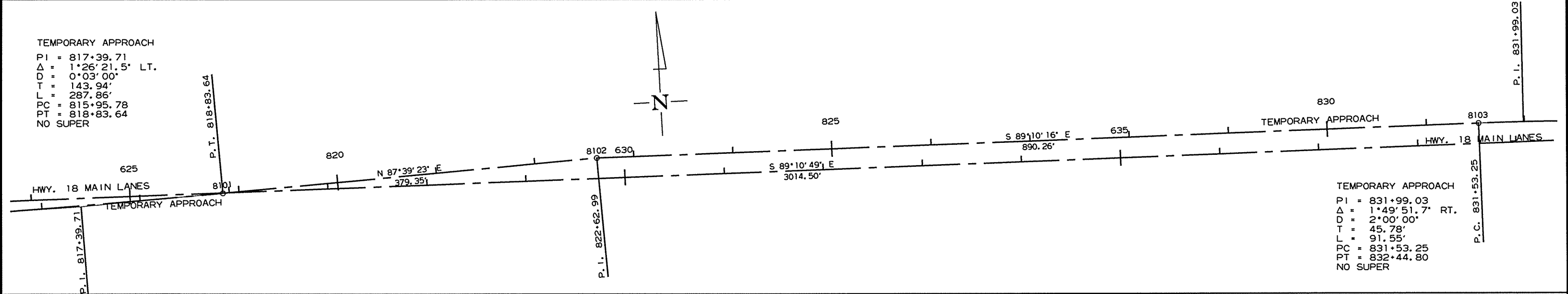
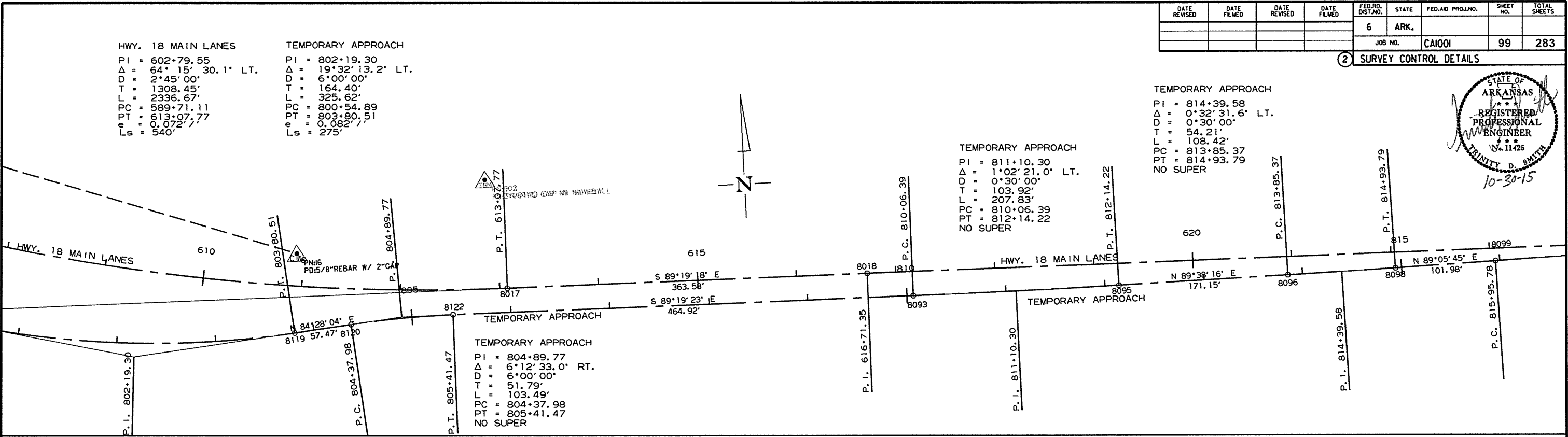
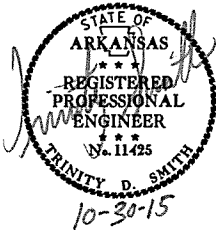
TEMPORARY APPROACH
PI = 798+95.92
Δ = 13° 27' 55.6" RT.
D = 6° 00' 00"
T = 112.73'
L = 224.42'
PC = 797+83.19
PT = 800+07.62
NO SUPER



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. CA1001	99	283

2 SURVEY CONTROL DETAILS



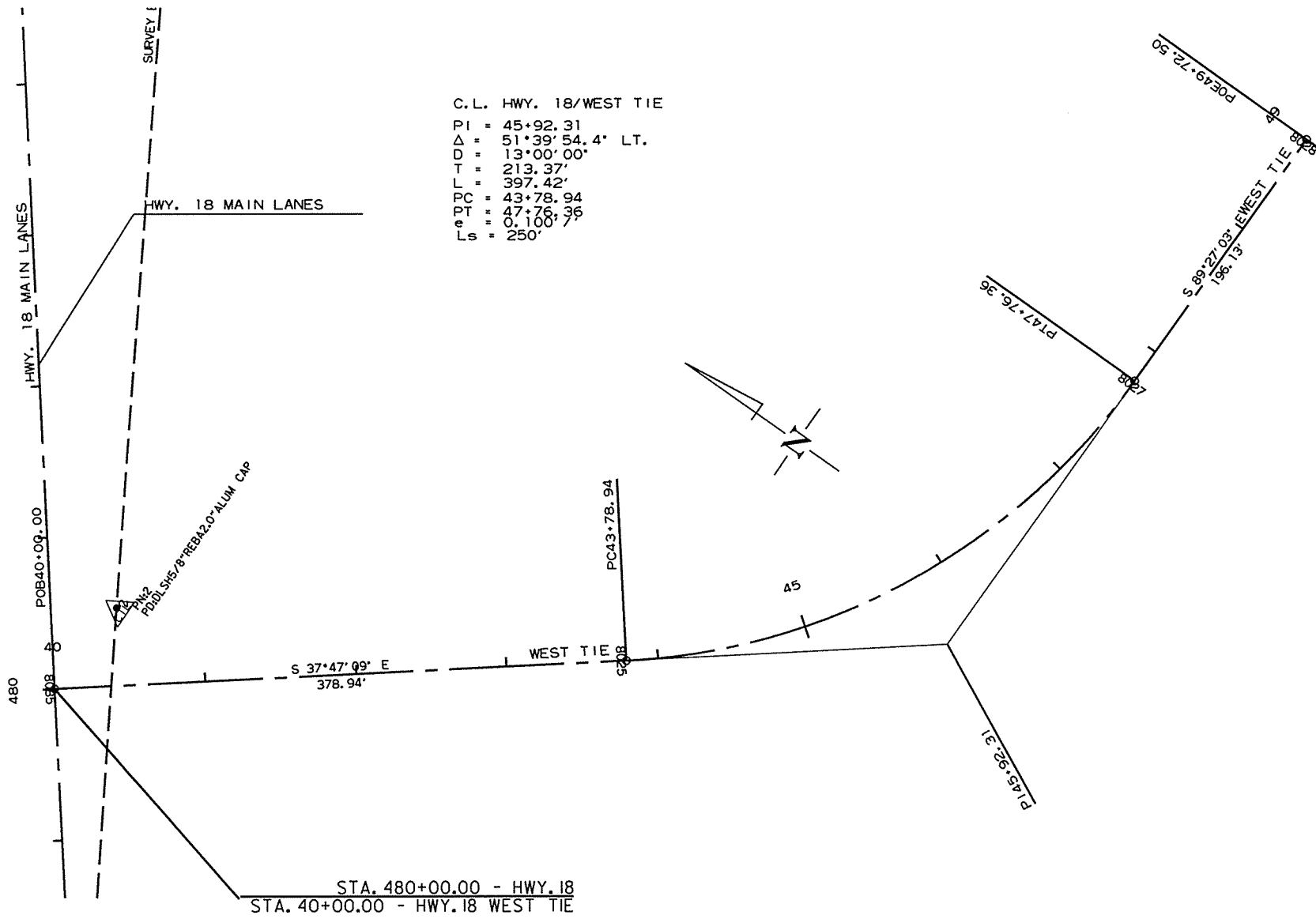
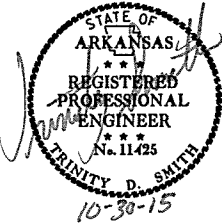
SURVEY CONTROL DETAILS

9/30/2015

CA1001.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO. CA1001		100	283	

2 SURVEY CONTROL DETAILS



STA. 472+50.00
BEGIN JOB CA1001
END JOB 100567

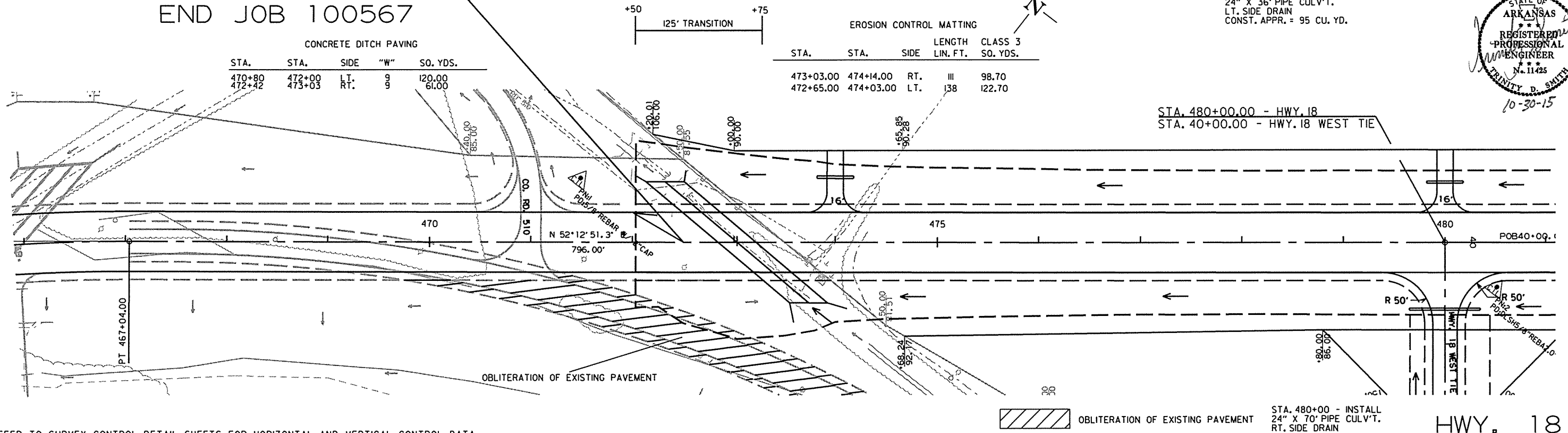
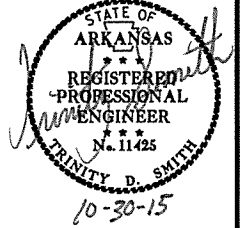
STA. 473+03 CONSTRUCT
DBL. 11" X 6' X 188" R.C. BOX CULVERT
50° RT. FORWARD SKEW
W/34 WINGS LT. & RT.
D.A. = 1.96 SQ. MI., 050 = 460 C.F.S.

STA. 474+00 - INSTALL
30" X 36' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 105 CU. YD.

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.	CA1001		104	283

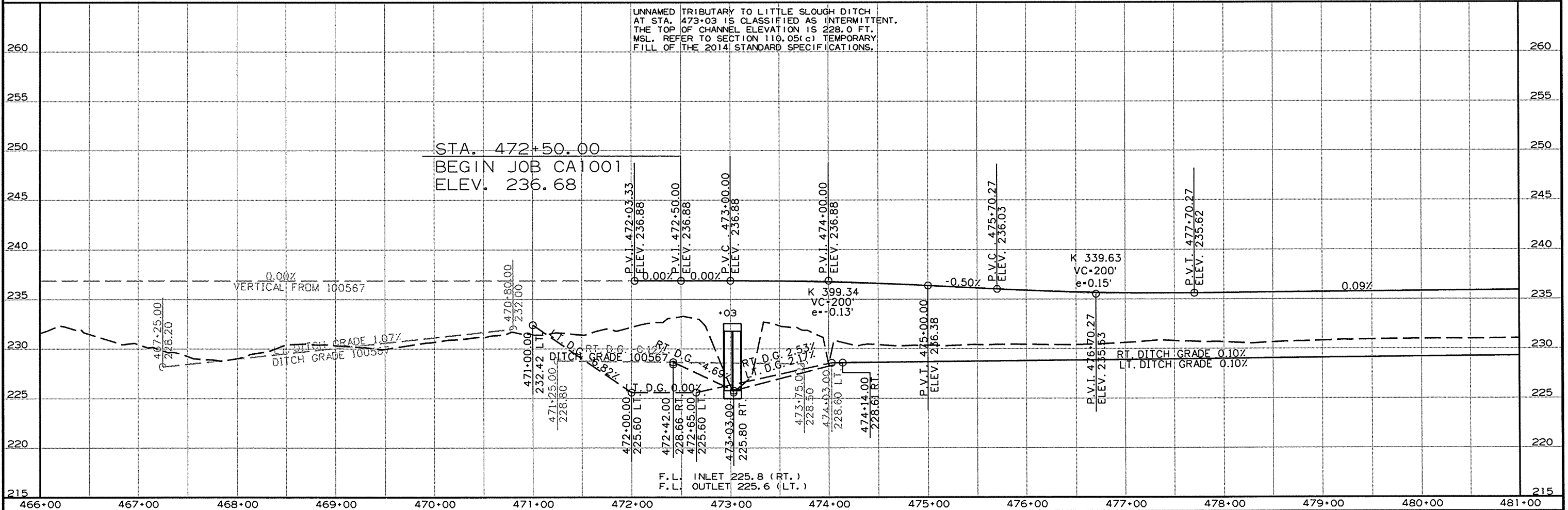
② PLAN AND PROFILE SHEETS

STA. 480+00 - INSTALL
24" X 36' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 95 CU. YD.



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

UNNAMED TRIBUTARY TO LITTLE SLOUGH DITCH
AT STA. 473+03 IS CLASSIFIED AS INTERMITTENT.
THE TOP OF CHANNEL ELEVATION IS 228.0 FT.
MSL. REFER TO SECTION 110.05(c) TEMPORARY
FILL OF THE 2014 STANDARD SPECIFICATIONS.

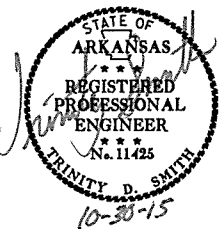


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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	CAI001		105	283

2 PLAN AND PROFILE SHEETS

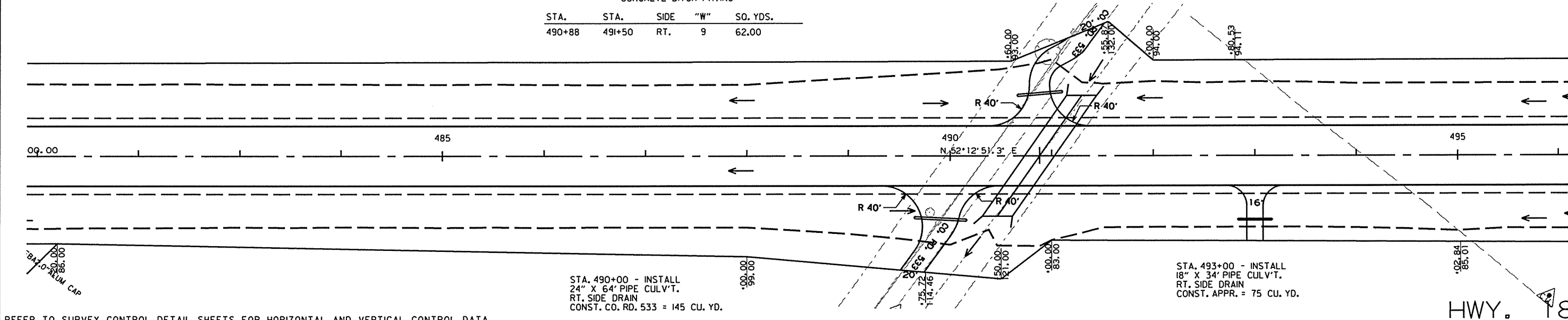


STA. 490+88 CONSTRUCT
DBL. 11" X 6' X 148" R.C. BOX CULVERT
W/3rd WINGS LT. & RT.
35° LT. FORWARD SKEW
D.A. = 1.95 SO. MI., 050 = 450 C.F.S.

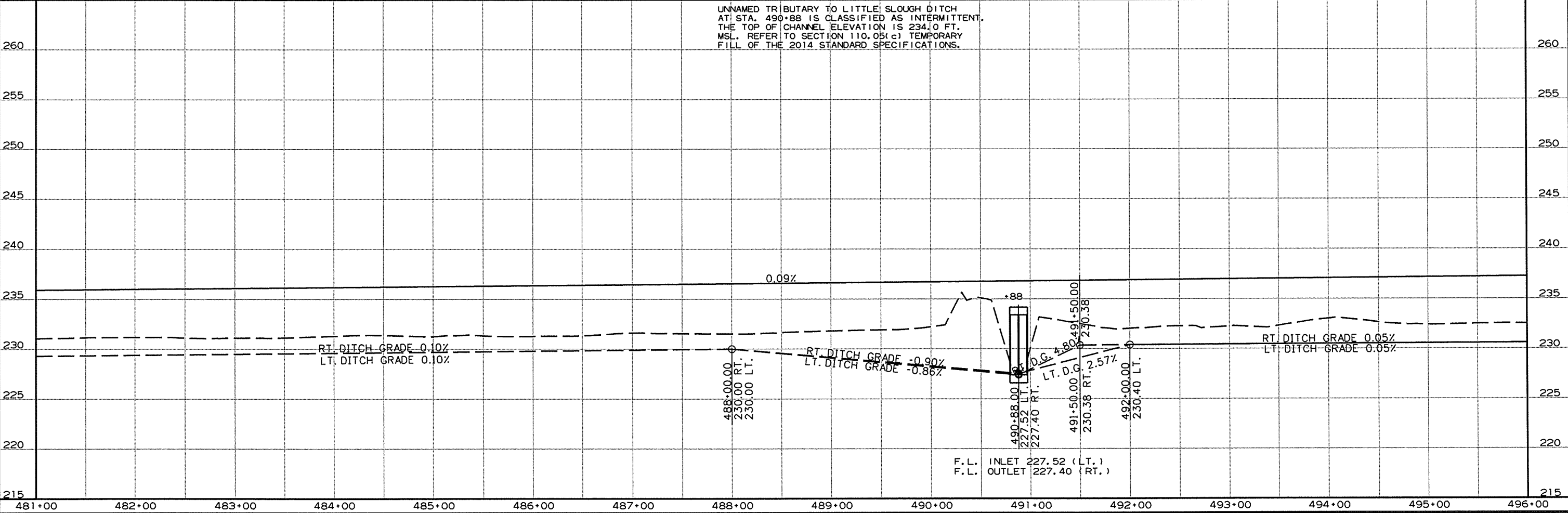
STA. 490+88 - INSTALL
24" X 74' PIPE CULV'T.
LT. SIDE DRAIN
CONST. CO. RD. 533 = 375 CU. YD.

EROSION CONTROL MATTING				
STA.	STA.	SIDE	LENGTH LIN. FT.	CLASS 3 SQ. YDS.
490+88.00	492+00.00	LT.	112	99.60

CONCRETE DITCH PAVING				
STA.	STA.	SIDE	"W"	SQ. YDS.
490+88	491+50	RT.	9	62.00



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



HWY. 18 MAIN LANES

PI = 518+77.98
Δ = 38°10'42.5" RT.
D = 1°30'00"
T = 1321.89'
L = 2545.23'
PC = 505+56.09
PT = 531+01.32
e = 0.043' /
Ls = 540'

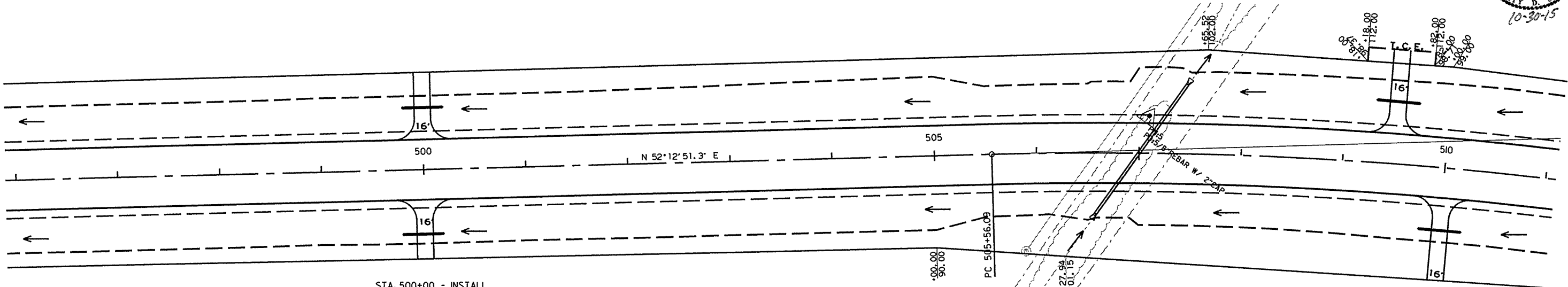
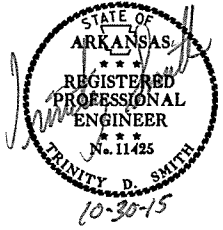
STA. 500+00 - INSTALL
18" X 38" PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 110 CU. YD.

STA. 507+00 CONSTRUCT
30" X 156" R.C. PIPE CULVERT
35° LT. FORWARD SKEW
(CLASS III) (TYPE 3 BEDDING) WITH
FES LT. & RT.
D.A. = 32 AC., 050 = 28 C.F.S.
30" R.C. PIPE = 156 LIN. FT.
30" FES = 2 EACH

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STA. 509+50 - INSTALL
30" X 60" PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 240 CU. YD.



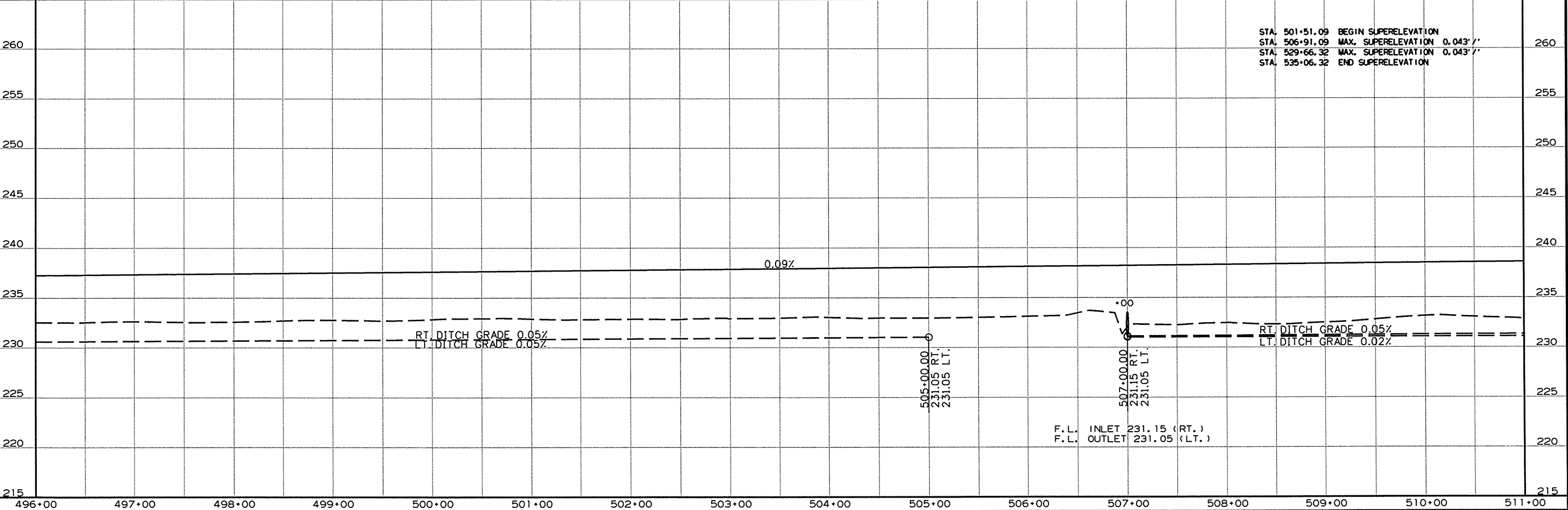
STA. 500+00 - INSTALL
18" X 38" PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 95 CU. YD.

STA. 510+00 - INSTALL
24" X 40" PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 165 CU. YD.

HWY. 18

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

STA. 501+51.09 BEGIN SUPERELEVATION
STA. 506+91.09 MAX. SUPERELEVATION 0.043' /
STA. 529+66.32 MAX. SUPERELEVATION 0.043' /
STA. 535+06.32 END SUPERELEVATION



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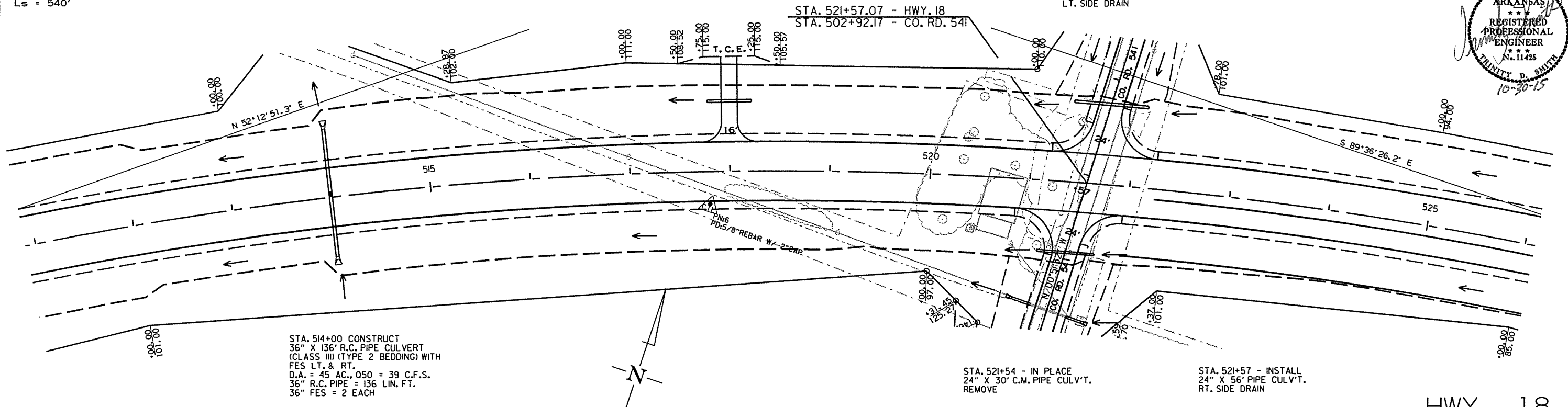
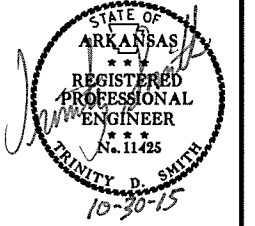
HWY. 18 MAIN LANES
PI = 518+77.98
Δ = 38°10'42.5" RT.
D = 1°30'00"
T = 1321.89'
L = 2545.23'
PC = 505+56.09
PT = 531+01.32
e = 0.043' /'
Ls = 540'

STA. 518+00 - INSTALL
30" X 44' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 225 CU. YD.

STA. 521+97 - IN PLACE
24" X 30' C.M. PIPE CULV'T.
REMOVE

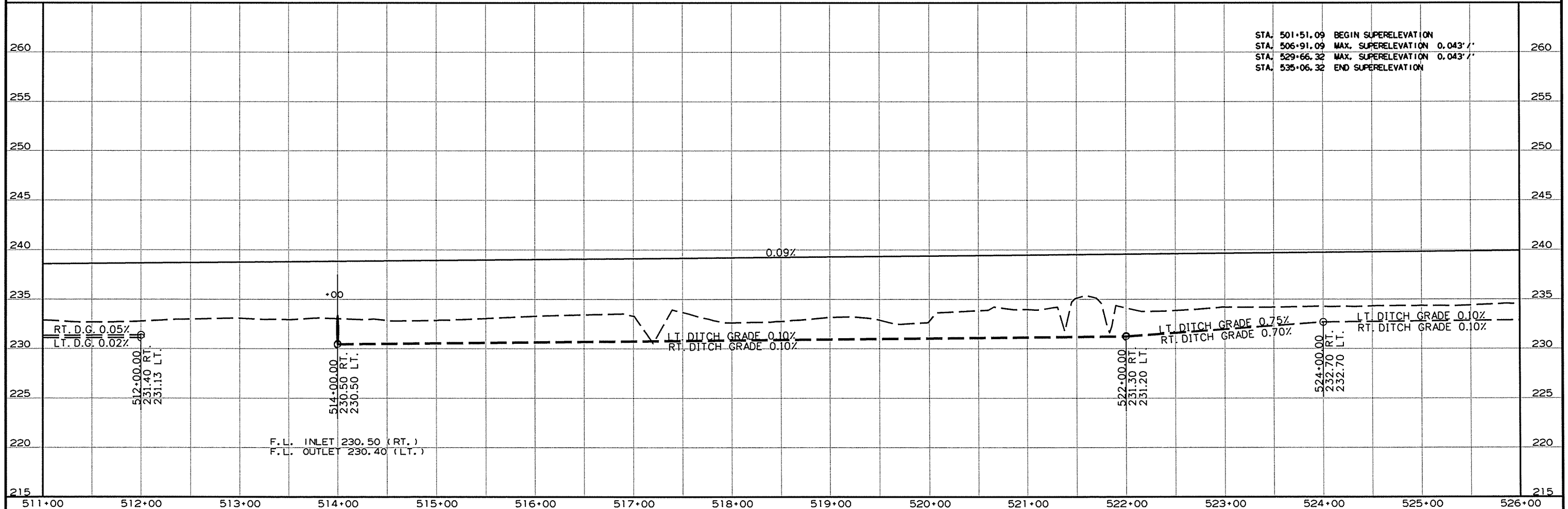
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO. CA1001		107	283	

2 PLAN AND PROFILE SHEETS



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

HWY. 18



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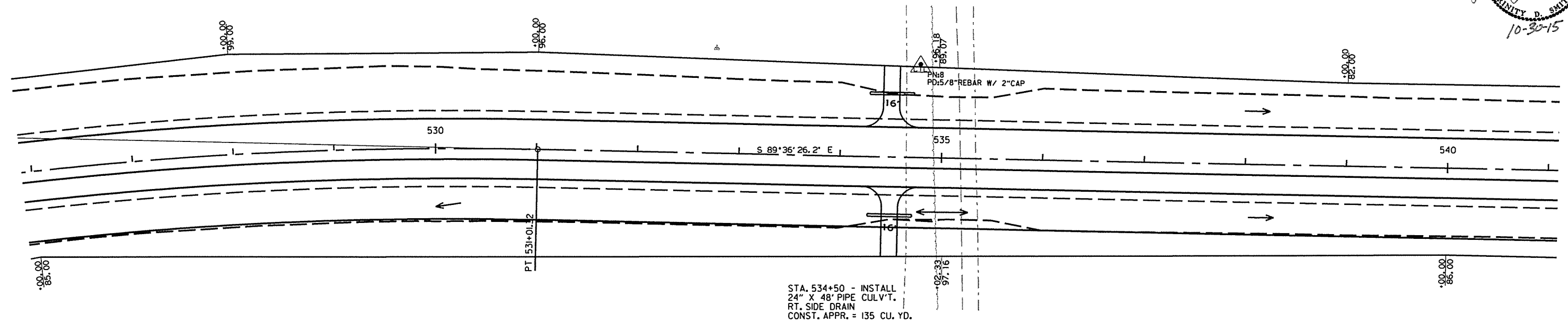
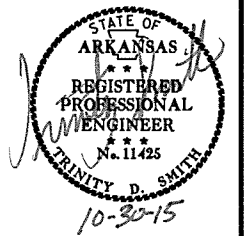
CA1001.DGN

HWY. 18 MAIN LANES
PI = 518+77.98
Δ = 38°10'42.5" RT.
D = 1°30'00"
T = 1321.89'
L = 2545.23'
PC = 505+56.09
PT = 531+01.32
e = 0.043' / 1
Ls = 540'

STA. 534+50 - INSTALL
24" X 44" PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 145 CU. YD.

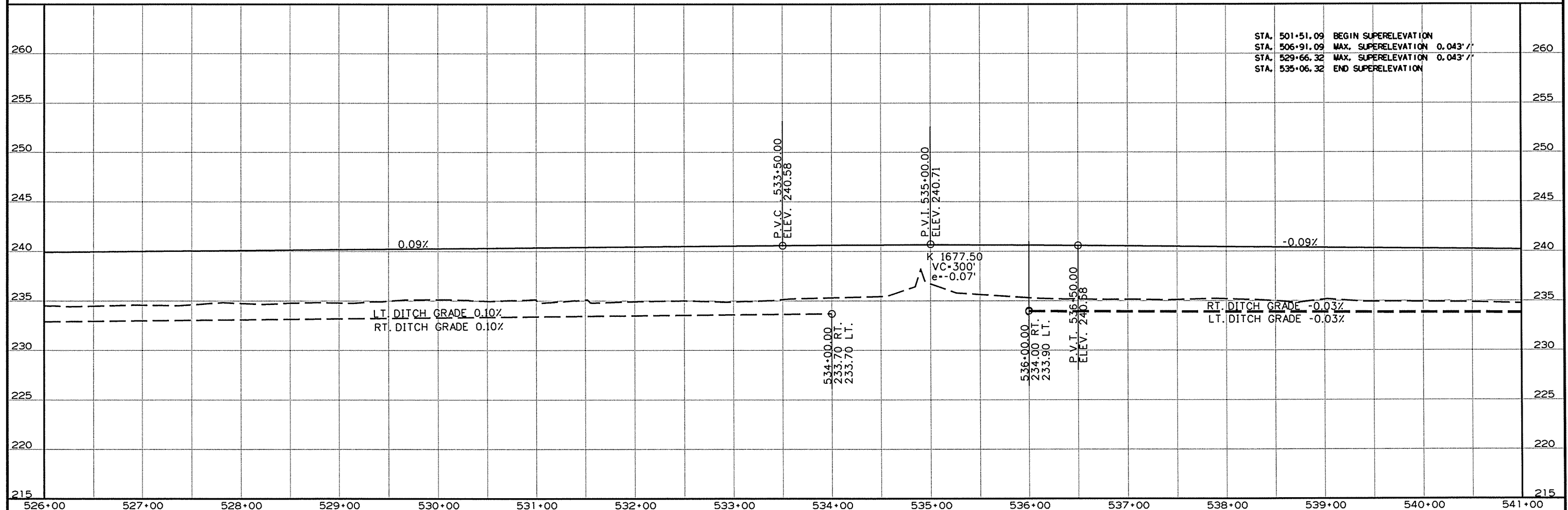
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
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② PLAN AND PROFILE SHEETS



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

HWY. 18



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STA. 542+00 - INSTALL
18" X 32" PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 65 CU. YD.

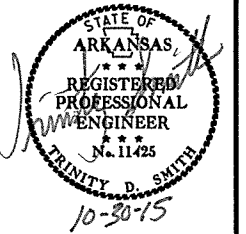
STA. 547+00 CONSTRUCT
36" X 134" R.C. PIPE CULVERT
(CLASS IV) (TYPE 3 BEDDING) WITH
FES LT. & RT.
18" LT. FORWARD SKEW
D.A. = 32 AC., 050 = 27 C.F.S.
36" R.C. PIPE = 134 LIN. FT.
36" FES = 2 EACH

STA. 547+39 - CONSTRUCT
CONST. APPR. = 90 CU. YD.

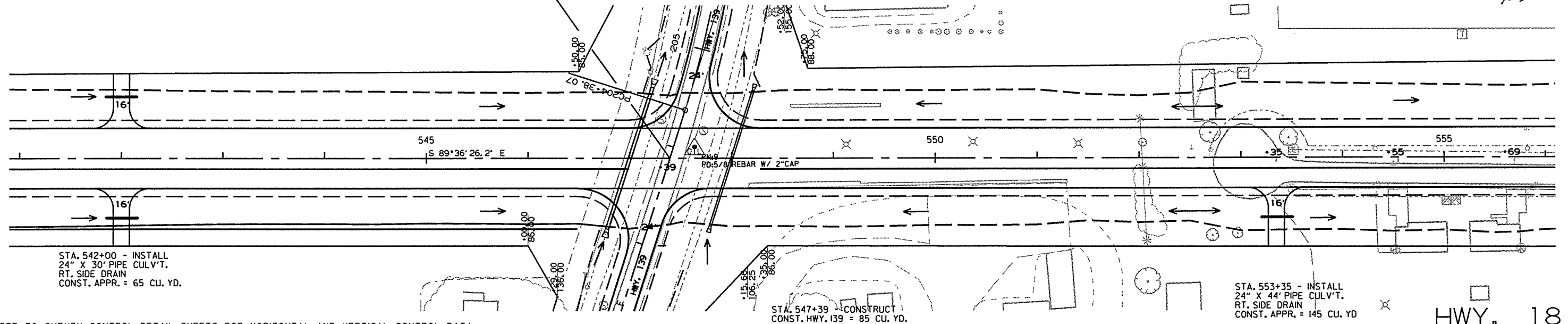
STA. 548+00 CONSTRUCT
24" X 132" R.C. PIPE CULVERT
(CLASS III) (TYPE 3 BEDDING) WITH
FES LT. & RT.
18" LT. FORWARD SKEW
D.A. = 18 AC., 050 = 16 C.F.S.
24" R.C. PIPE = 132 LIN. FT.
24" FES = 2 EACH

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				6	ARK.			
				JOB NO.	CA1001		109	283

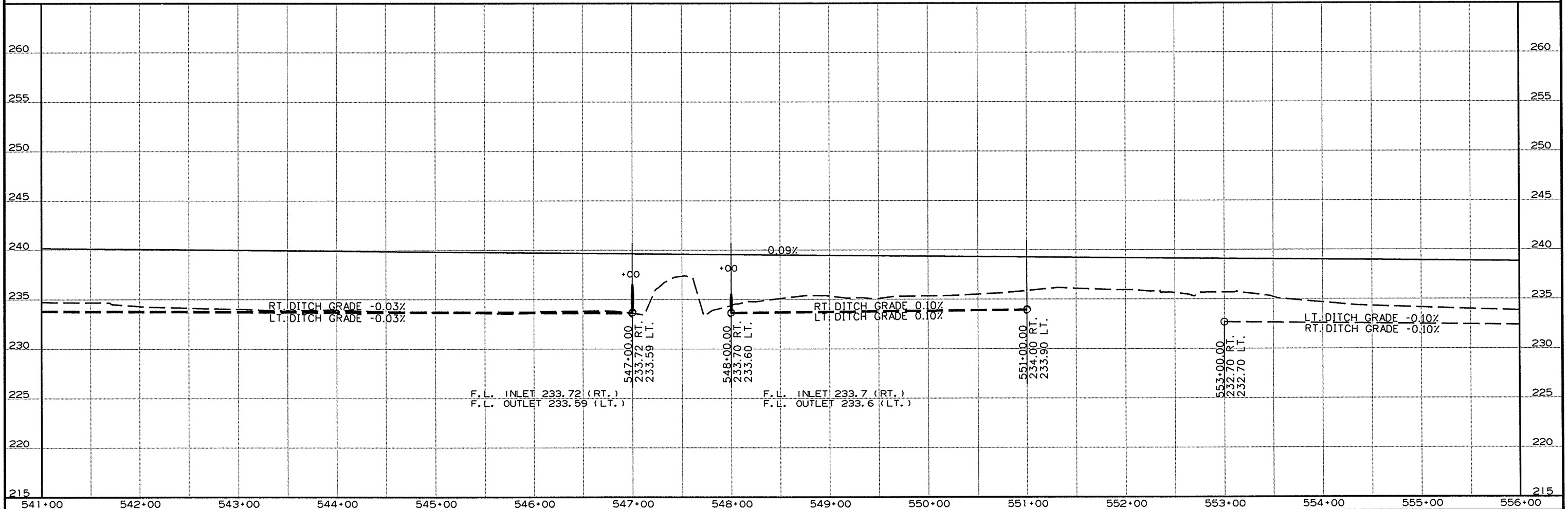
2 PLAN AND PROFILE SHEETS



Sta. 547+39.23 on HWY. 18
Sta. 203+88.45 on HWY. 139



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



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HWY. 18 MAIN LANES

PI = 572+93.94
Δ = 64°32'38.8" RT.
D = 2°45'00"
T = 1315.70'
L = 2347.06'
PC = 559+78.23
PT = 583+25.29
e = 0.0727
Ls = 540'

STA. 556+90 - IN PLACE
18" X 40' R.C. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 62' PIPE CULV'T.
LT. SIDE DRAIN
CONST. OAK STREET = 235 CU. YD.

STA. 562+50 - INSTALL
24" X 82' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 430 CU. YD.

STA. 562+50 - INSTALL
30" X 48' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 125 CU. YD.

STA. 559+50 - INSTALL
24" X 30' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 60 CU. YD.

STA. 556+93 - IN PLACE
18" X 40' R.C. PIPE CULV'T.
RT. SIDE DRAIN
REMOVE

STA. 570+41 - IN PLACE
36" X 32' R.C. PIPE CULV'T.
REMOVE

STA. 570+82 CONSTRUCT
QUAD. 12' X 8' X 15' R.C. BOX CULVERT
W/3:1 WINGS LT. & RT.
30' RT. FORWARD SKEW
D.A. = 8.8 SO. MI., 050 = 950 C.F.S.

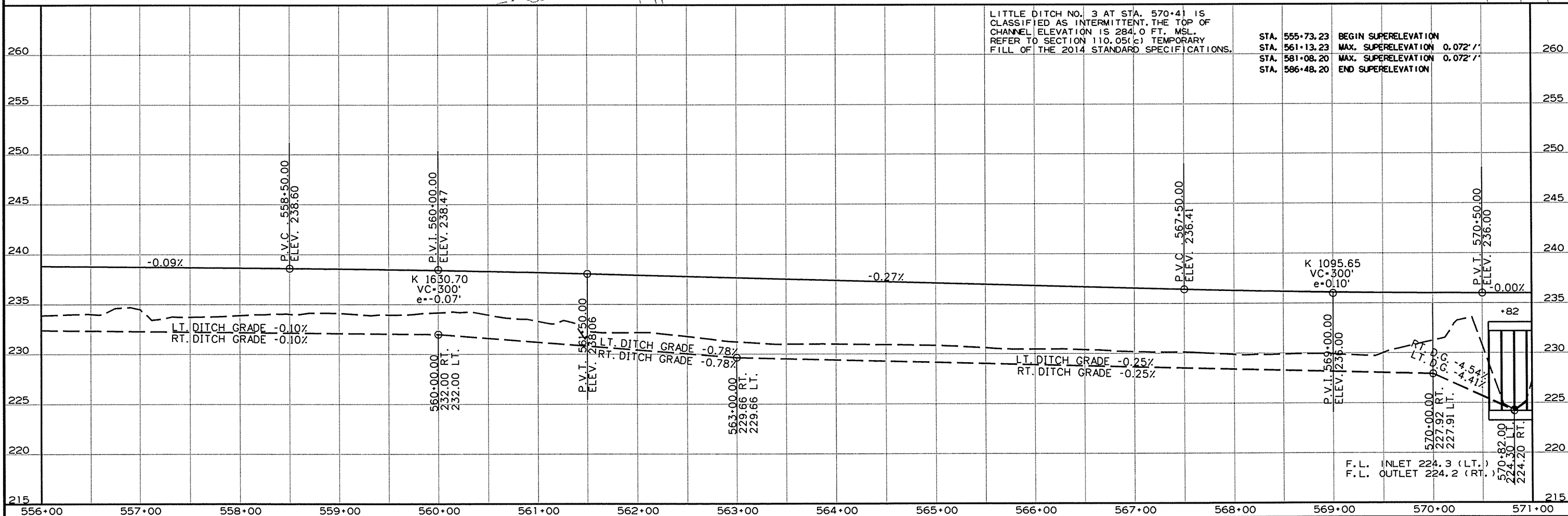
CONCRETE DITCH PAVING

STA.	STA.	SIDE	"W"	SQ. YDS.
570+00	571+50.00	RT.	9	150.00
570+00	571+50.00	LT.	9	150.00

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

LITTLE DITCH NO. 3 AT STA. 570+41 IS
CLASSIFIED AS INTERMITTENT. THE TOP OF
CHANNEL ELEVATION IS 284.0 FT. MSL.
REFER TO SECTION 110.05(c) TEMPORARY
FILL OF THE 2014 STANDARD SPECIFICATIONS.

STA. 555+73.23 BEGIN SUPERELEVATION
STA. 561+13.23 MAX. SUPERELEVATION 0.072' /'
STA. 581+08.20 MAX. SUPERELEVATION 0.072' /'
STA. 586+48.20 END SUPERELEVATION



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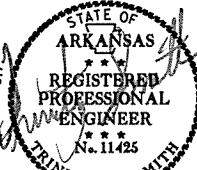
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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2 PLAN AND PROFILE SHEETS

JOB NO. CAI001

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HWY. 18 MAIN LANES

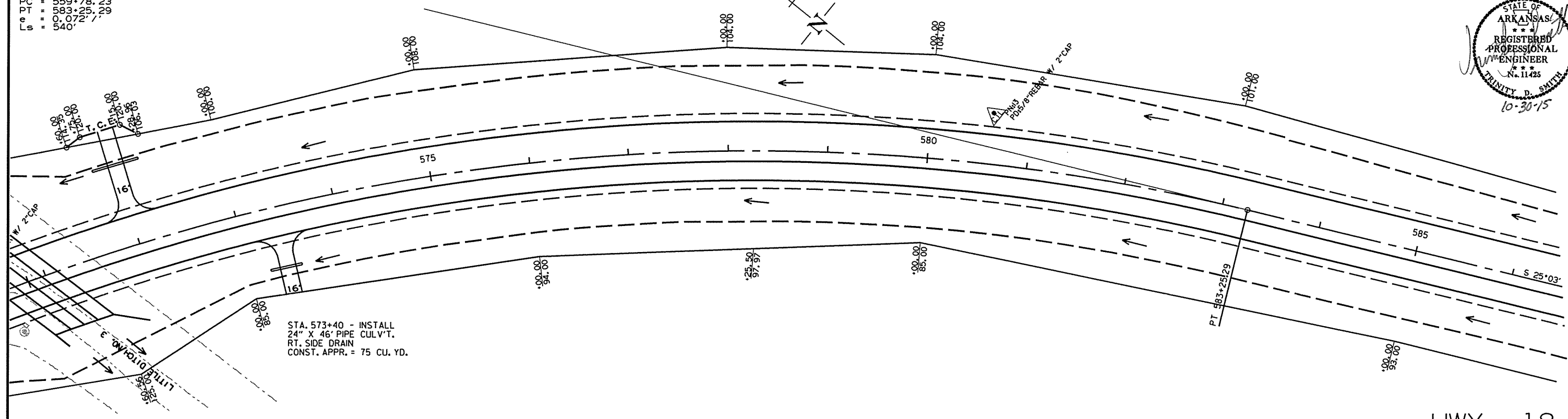
PI = 572+93.94
Δ = 64°32'38.8" RT.
D = 2°45'00"
T = 1315.70'
L = 2347.06'
PC = 559+78.23
PT = 583+25.29
e = 0.072' /'
Ls = 540'

STA. 572+00 - INSTALL
24" X 78' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 390 CU. YD.

CONCRETE DITCH PAVING

STA.	STA.	SIDE	"W"	SO. YDS.
570+00	571+50.00	RT.	9	150.00
570+00	571+50.00	LT.	9	150.00

STA. 573+40 - INSTALL
24" X 46' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 75 CU. YD.

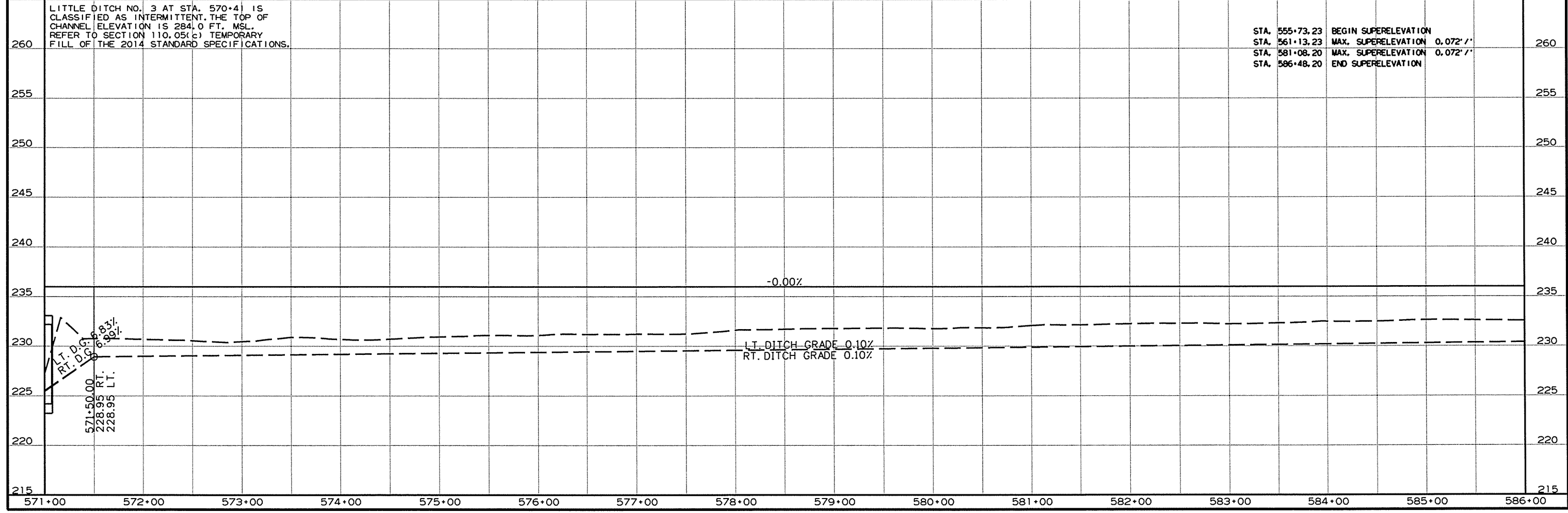


REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

HWY. 18

LITTLE DITCH NO. 3 AT STA. 570+41 IS CLASSIFIED AS INTERMITTENT. THE TOP OF CHANNEL ELEVATION IS 284.0 FT. MSL. REFER TO SECTION 110.05(c) TEMPORARY FILL OF THE 2014 STANDARD SPECIFICATIONS.

STA. 555+73.23 BEGIN SUPERELEVATION
STA. 561+13.23 MAX. SUPERELEVATION 0.072' /'
STA. 581+08.20 MAX. SUPERELEVATION 0.072' /'
STA. 586+48.20 END SUPERELEVATION

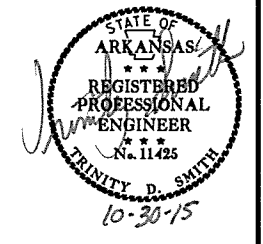


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				JOB NO.		CA1001		

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HWY. 18 MAIN LANES

PI = 602+79.55
Δ = 64°15'30.1" LT.
D = 2°45'00"
L = 1308.45'
PC = 589+71.11
PT = 613+07.77
e = 0.072' /'
Ls = 540'

STA. 588+00 - INSTALL
24" X 38' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 75 CU. YD.

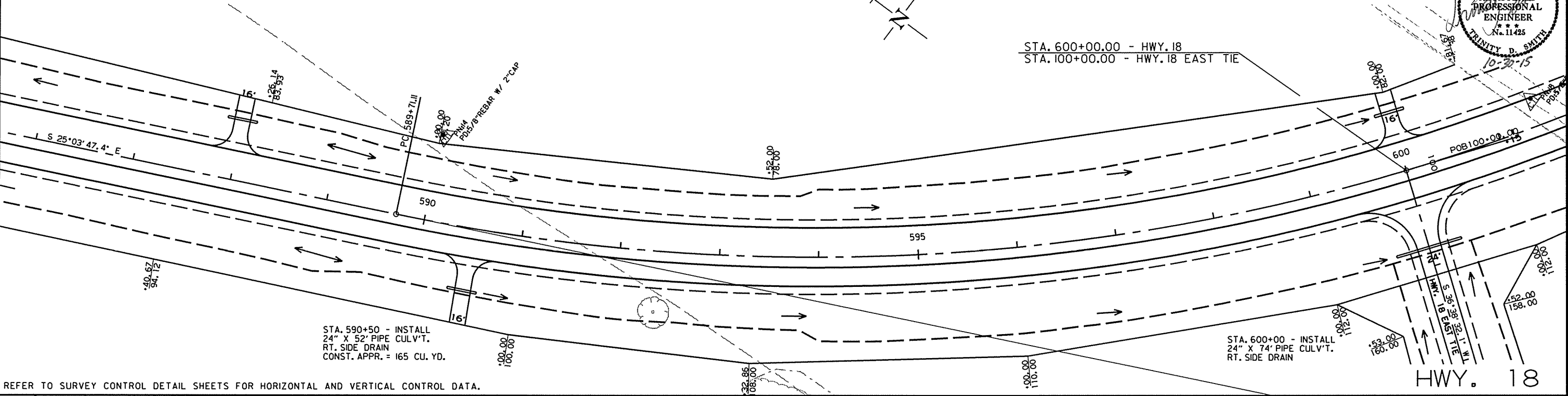
STA. 590+50 - INSTALL
24" X 52' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 165 CU. YD.

STA. 600+00 - INSTALL
30" X 30' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 50 CU. YD.

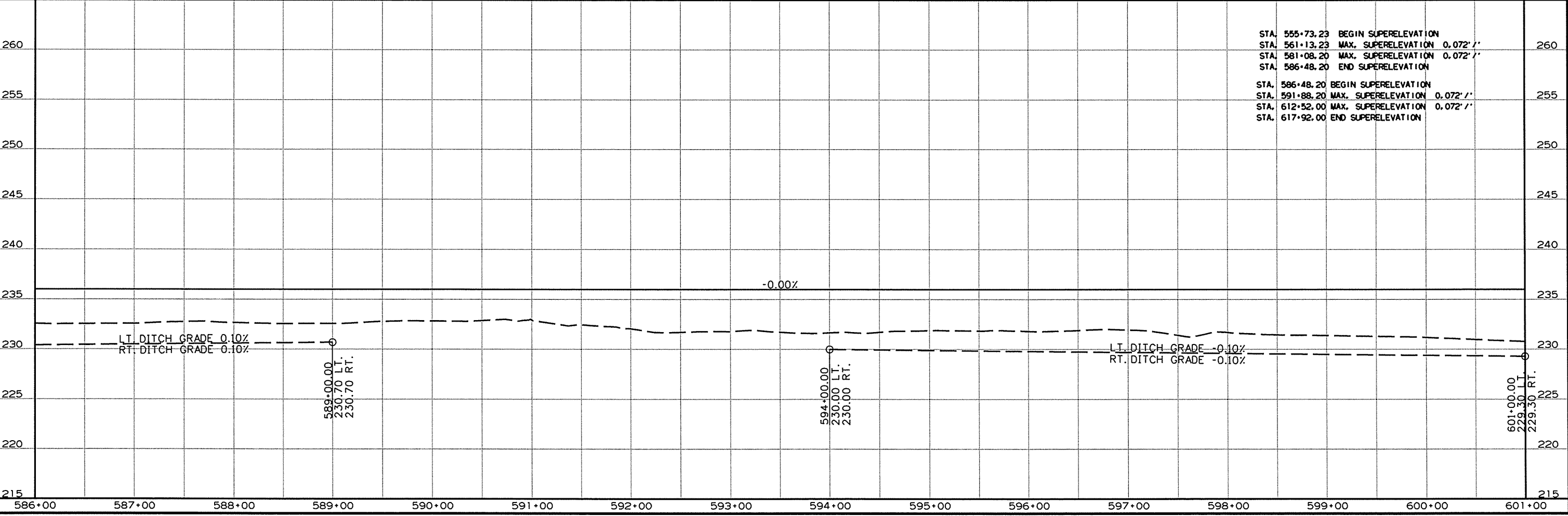
2 PLAN AND PROFILE SHEETS



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



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STA.	STA.	LOCATION	GUARDRAIL (TYPE A)	THREE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)	GUARDRAIL TERMINAL (TYPE 1)
612+18.77	613+12.52	LT. OF C.L. HWY. 18	75 LIN. FT.			
610+93.77	613+12.52	RT. OF C.L. HWY. 18	150 LIN. FT.			
616+40.48	618+09.23	LT. OF C.L. HWY. 18	100 LIN. FT.			
616+40.48	617+34.23	RT. OF C.L. HWY. 18	75 LIN. FT.			

STA. 602+00 - INSTALL
30" X 28' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 55 CU. YD.

HWY. 18 MAIN LANES
PI = 602+79.55
Δ = 64°15'30.1" LT.
D = 2°45'00"
T = 1308.45'
L = 2336.67'
PC = 589+71.11
PT = 613+07.77
e = 0.072'
Ls = 540'

STA. 613+11.92 TO STA. 616+41.08 CONSTRUCT
162'-58/8" X 75' CLEAR ROADWAY BRIDGE NO. 07363
327' CONTINUOUS COMPOSITE W-BEAM UNIT
(60', 69', 69', 69', 60')

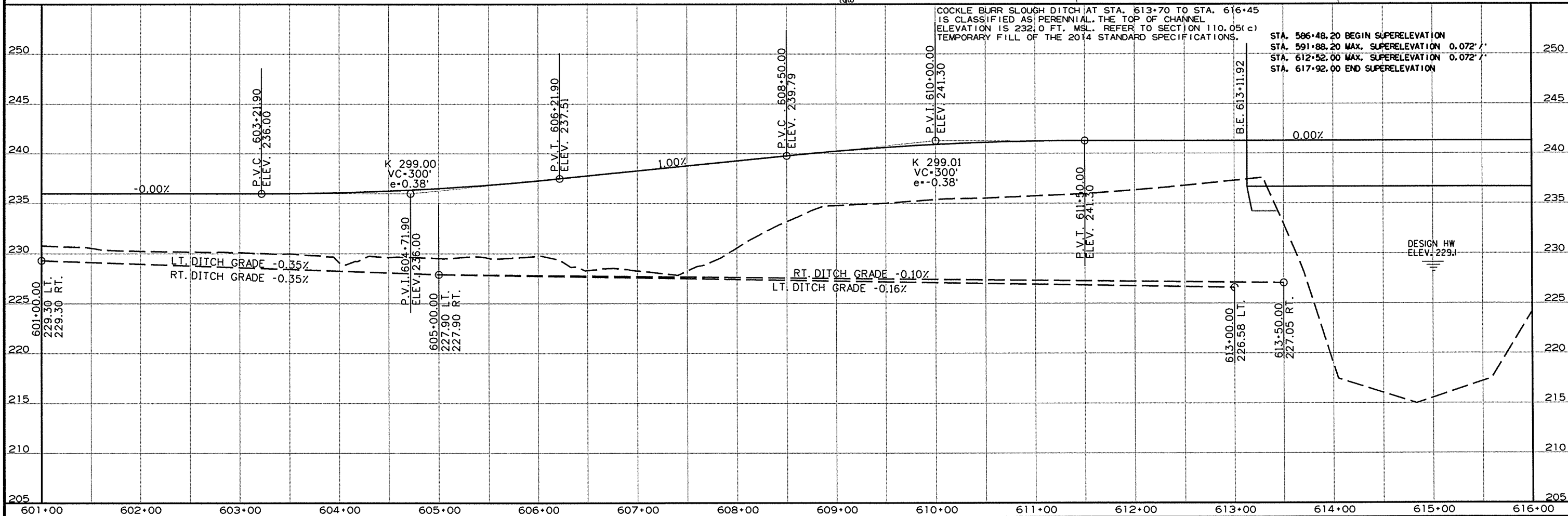
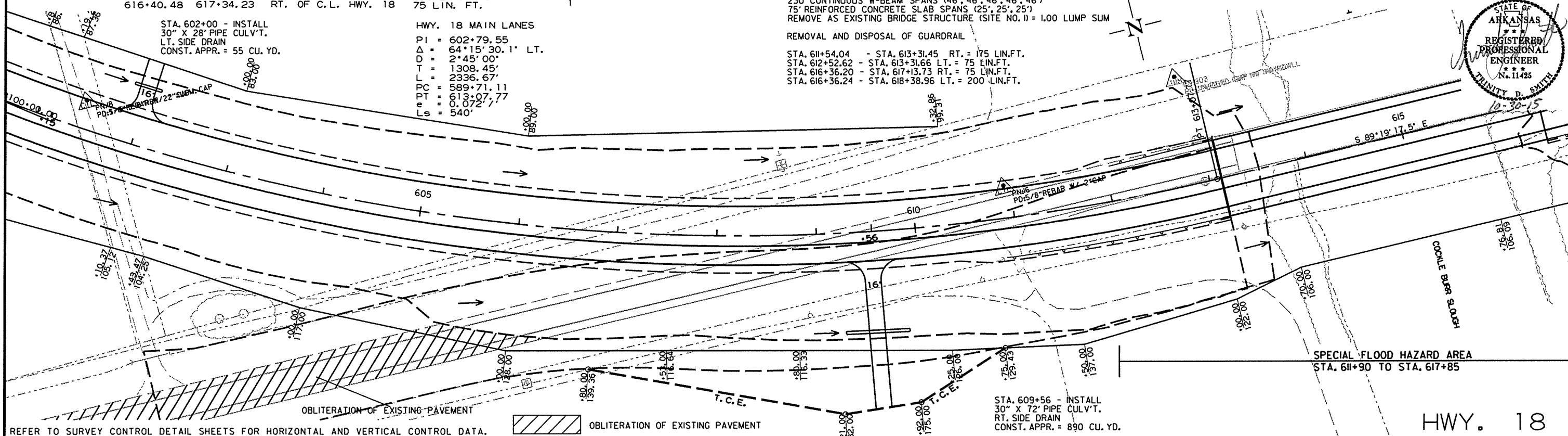
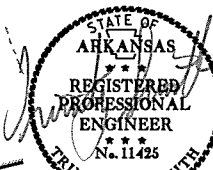
STA. 613+31.44 TO STA. 616+36.20 IN PLACE
306'-00" X 42' CLEAR ROADWAY BRIDGE NO. 03963
230' CONTINUOUS W-BEAM SPANS (46', 46', 46', 46', 46')
75' REINFORCED CONCRETE SLAB SPANS (25', 25', 25')
REMOVE AS EXISTING BRIDGE STRUCTURE (SITE NO. 1) = 1.00 LUMP SUM

REMOVAL AND DISPOSAL OF GUARDRAIL

STA. 611+54.04 - STA. 613+31.45 RT. = 175 LIN. FT.
STA. 612+52.62 - STA. 613+31.66 LT. = 75 LIN. FT.
STA. 616+36.20 - STA. 617+13.73 RT. = 75 LIN. FT.
STA. 616+36.24 - STA. 618+38.96 LT. = 200 LIN. FT.

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STA. 618+54 - IN PLACE
18" x 232' C.M. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
24" x 44' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 155 CU. YD.

STA. 619+19 - INSTALL
18" x 48' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 175 CU. YD.

STA. 620+27 - INSTALL
18" x 44' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 135 CU. YD.

STA. 621+11 - IN PLACE
18" x 32' C.M. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 40' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 115 CU. YD.

STA. 622+00 - IN PLACE
18" x 32' C.M. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 38' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 100 CU. YD.

STA. 624+00 - IN PLACE
18" x 24' C.M. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 36' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 75 CU. YD.

STA. 625+08 - IN PLACE
18" x 20' C.M. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 32' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 65 CU. YD.

STA. 626+84 - CONSTRUCT
CONST. APPR. = 55 CU. YD.

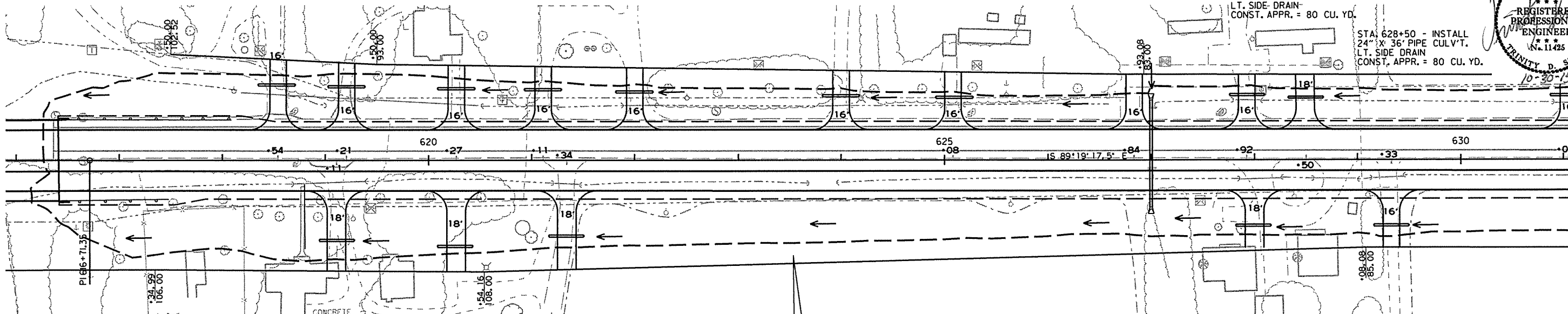
STA. 627+01 - IN PLACE
24" x 94' R.C. PIPE CULVERT
UNDER MAIN LANES W. HDWLS. LT & RT.
REMOVE AND CONSTRUCT
30" x 116' R.C. PIPE CULVERT
CLASS III TYPE II BEDDING W/FES
30" R.C. PIPE = 116 LIN. FT.
30" FES = 2 EA.

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.	CA1001			

2 PLAN AND PROFILE SHEETS

STA. 627+92 - IN PLACE
24" x 24' C.M. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
24" x 34' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 80 CU. YD.

STA. 628+50 - INSTALL
24" x 36' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 80 CU. YD.



SPECIAL FLOOD HAZARD AREA
STA. 611+90 TO STA. 617+85

STA. 619+11 - IN PLACE
30" x 70' C.M. PIPE CULV'T.
RT. SIDE DRAIN
REMOVE AND INSTALL
36" x 48' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 215 CU. YD.

STA. 620+27 - INSTALL
36" x 52' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 275 CU. YD.

STA. 621+34 - IN PLACE
30" x 24' R.C. PIPE CULV'T.
RT. SIDE DRAIN
REMOVE AND INSTALL
36" x 48' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 215 CU. YD.

STA. 628+00 - IN PLACE
24" x 40' C.M. PIPE CULV'T.
RT. SIDE DRAIN
REMOVE AND INSTALL
24" x 38' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 100 CU. YD.

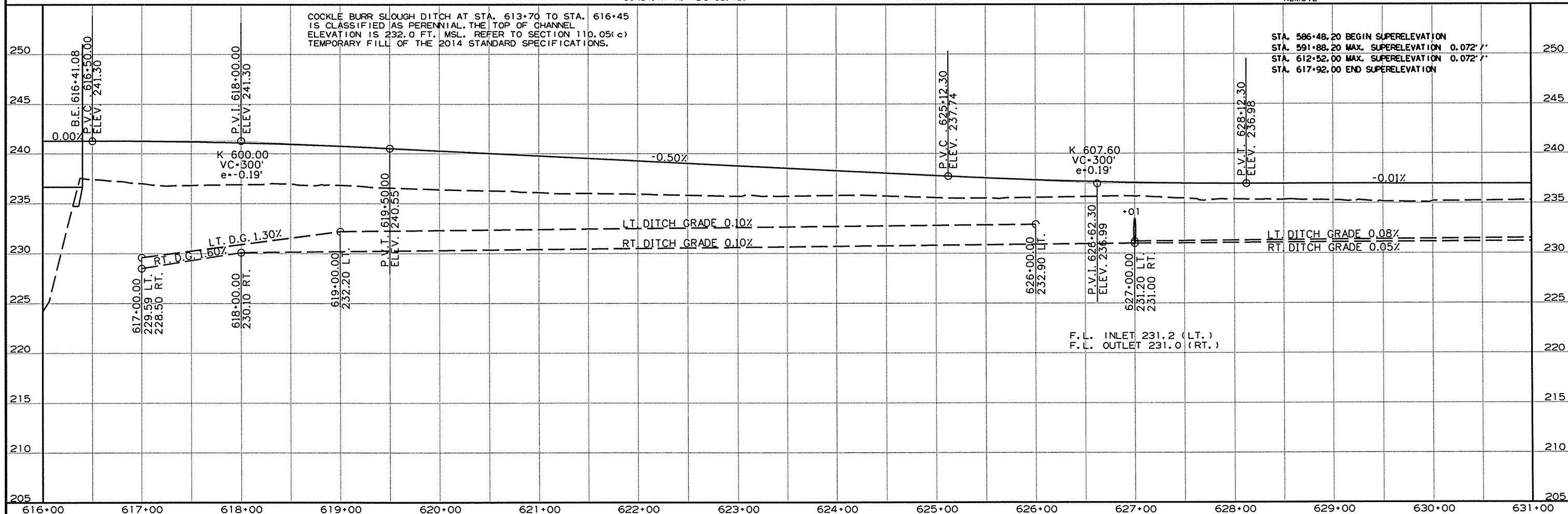
STA. 628+75 - IN PLACE
24" x 40' C.M. PIPE CULV'T.
RT. SIDE DRAIN
REMOVE

STA. 629+33 - IN PLACE
24" x 30' C.M. PIPE CULV'T.
RT. SIDE DRAIN
REMOVE AND INSTALL
24" x 38' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 95 CU. YD.

HWY. 18

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

COCKLE BURR SLOUGH DITCH AT STA. 613+70 TO STA. 616+45
IS CLASSIFIED AS PERENNIAL. THE TOP OF CHANNEL
ELEVATION IS 232.0 FT. MSL. REFER TO SECTION 110.05(c)
TEMPORARY FILL OF THE 2014 STANDARD SPECIFICATIONS.



9/22/2015

CA1001.DGN

STA. 631+05 - IN PLACE
24" x 24' C.M. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
24" x 30' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 60 CU. YD.

STA. 632+55 - IN PLACE
24" x 28' C.M. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
24" x 32' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 60 CU. YD.

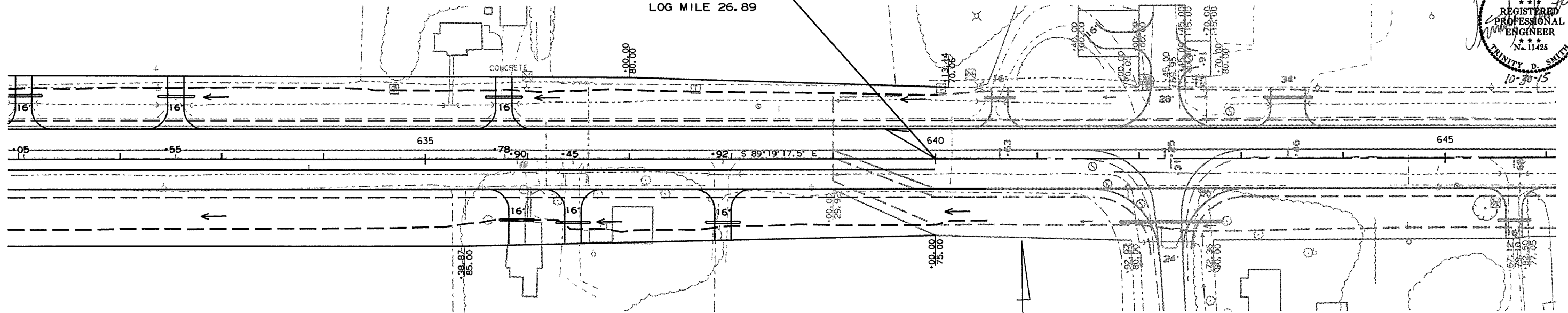
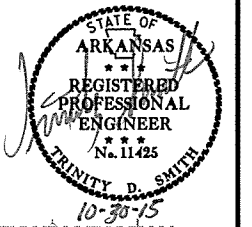
STA. 635+25 - IN PLACE
24" x 12' R.C. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE

STA. 635+79 - IN PLACE
24" x 24' C.M. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
24" x 32' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 60 CU. YD.

STA. 640+00.00
END JOB CA1001
BEGIN JOB 100653
LOG MILE 26.89

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.	CA1001		115	283

2 PLAN AND PROFILE SHEETS



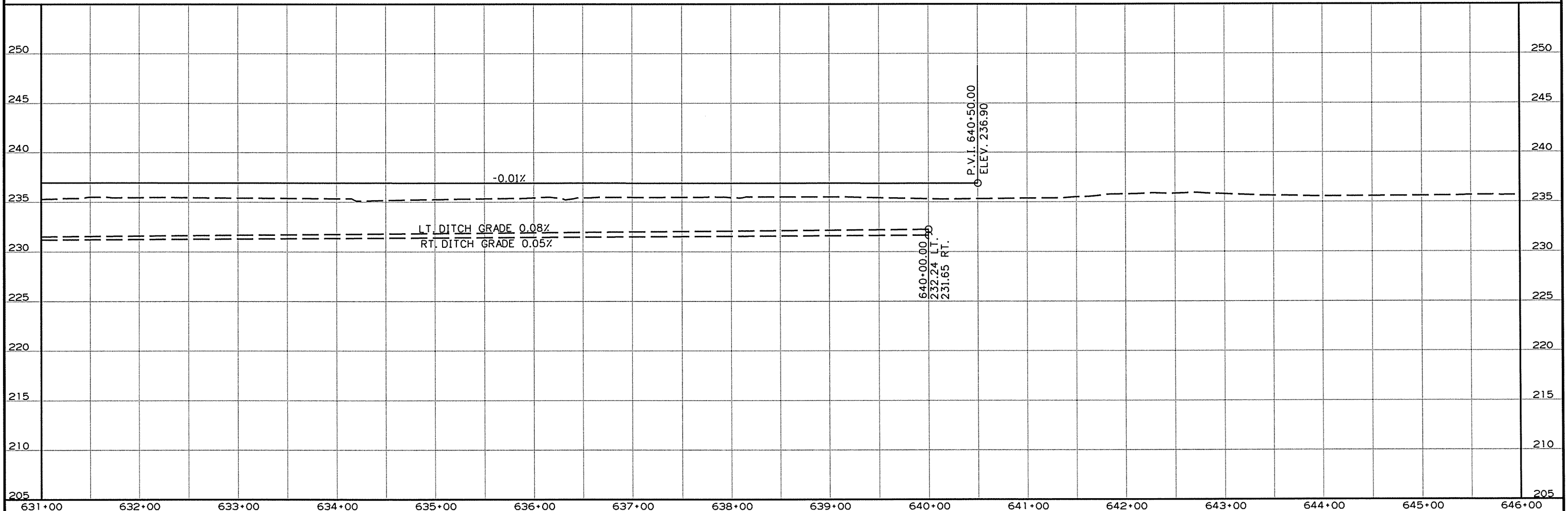
STA. 635+90 - IN PLACE
24" x 28' C.M. PIPE CULV'T.
RT. SIDE DRAIN
REMOVE AND INSTALL
24" x 32' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 70 CU. YD.

STA. 636+45 - IN PLACE
24" x 24' C.M. PIPE CULV'T.
RT. SIDE DRAIN
REMOVE AND INSTALL
24" x 34' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 70 CU. YD.

STA. 637+92 - IN PLACE
24" x 28' C.M. PIPE CULV'T.
RT. SIDE DRAIN
REMOVE AND INSTALL
24" x 30' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 55 CU. YD.

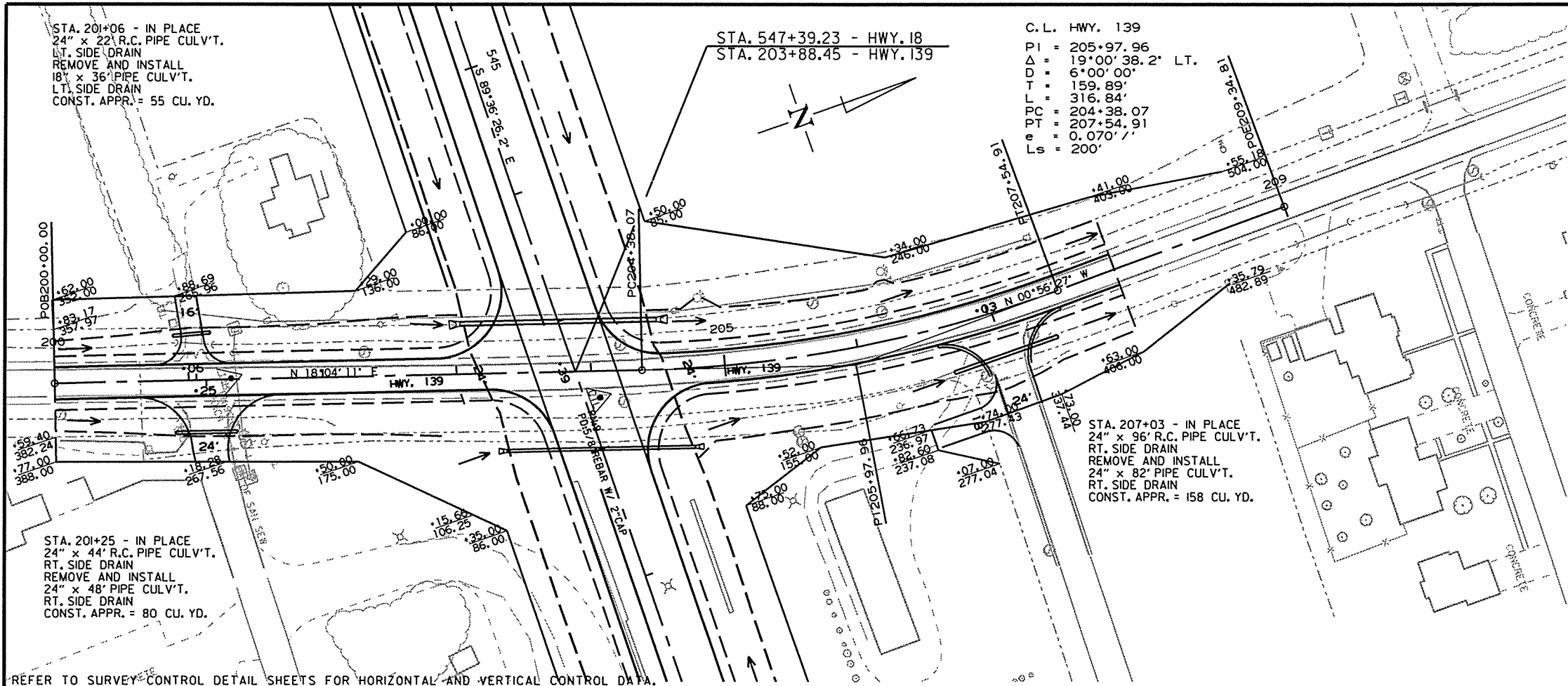
REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

HWY. 18



9/22/2015

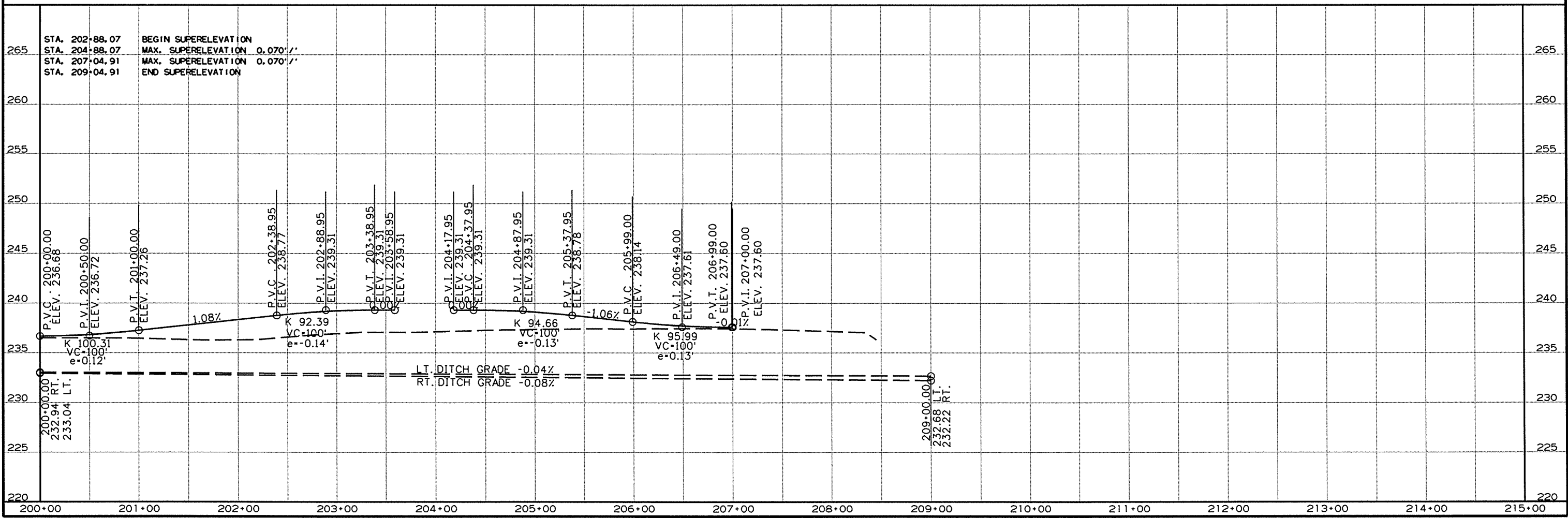
CA1001.DGN



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	CA1001		116	283
2 PLAN AND PROFILE SHEETS								



HWY. 139

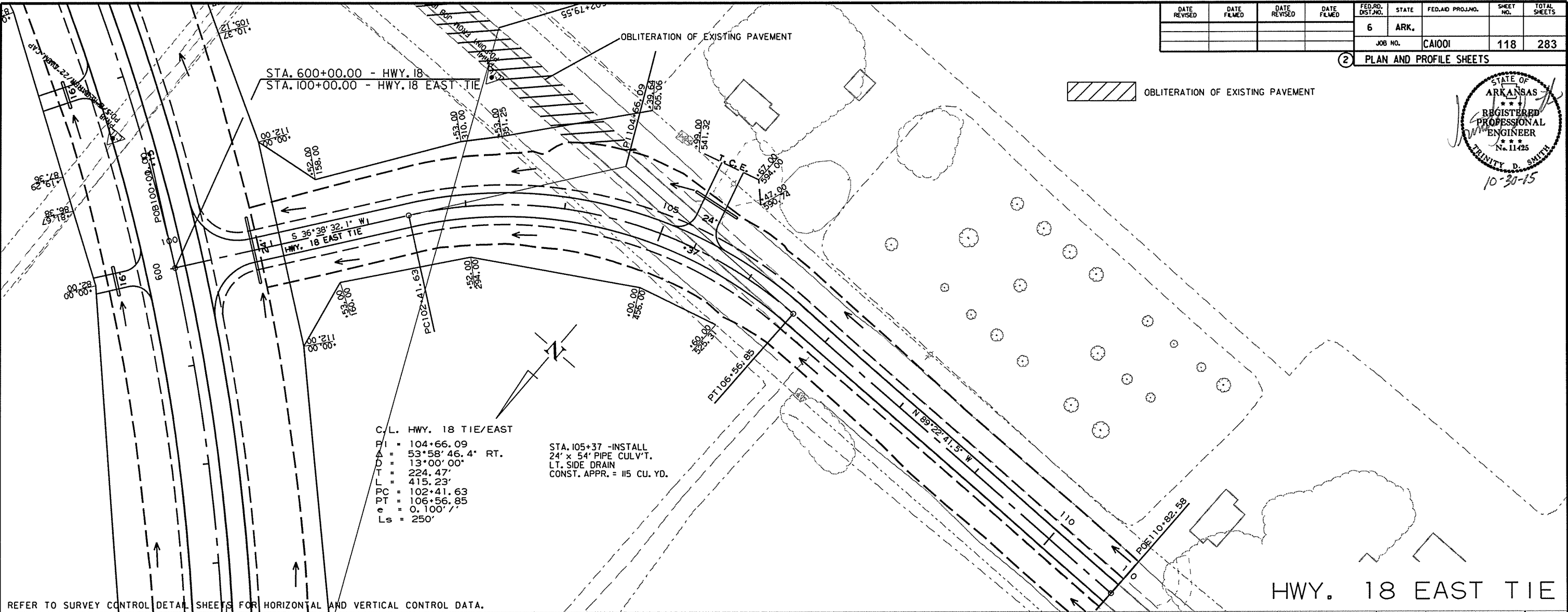
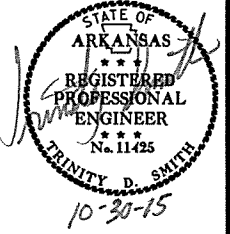


9/22/2015

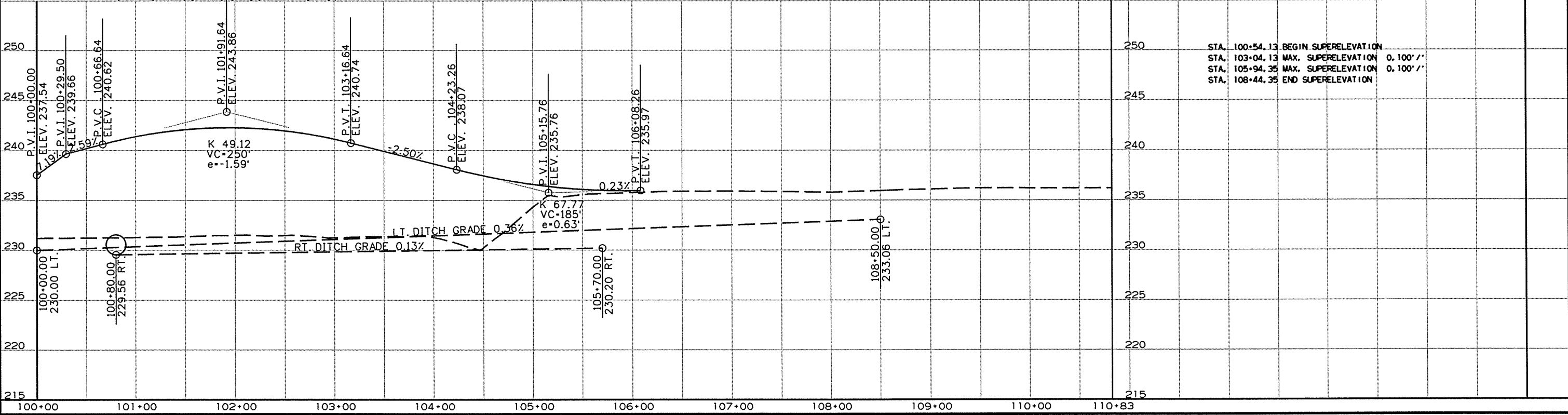
CA1001.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. CA1001	118	283

2 PLAN AND PROFILE SHEETS



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

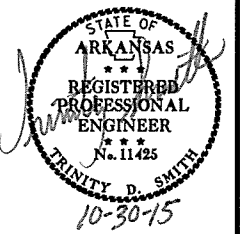


9/22/2015

CA1001.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	CA1001		119	283

2 PLAN AND PROFILE SHEETS



STA. 500+75 - INSTALL
24" x 40' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. = 45 CU. YD.
STA. 501+60 - IN PLACE
24" x 84' R.C. PIPE CULV'T.
RETAIN AND EXTEND
24" R.C. PIPE CULVERT 42' LT.
24" R.C. PIPE CULVERT 16' RT.
CLASS III TYPE II BEDDING W/FES
24" R.C. PIPE = 66 LIN.FT.
24" FES = 2 EA.
STA. 502+20 CONSTRUCT
24" x 102' R.C. PIPE CULVERT
(CLASS III) (TYPE 2 BEDDING) WITH
FES LT. & RT.
24" R.C. PIPE = 102 LIN. FT.
24" FES = 1 EACH

STA. 502+20 - IN PLACE
24" X 102' R.C. PIPE CULV'T.
RETAIN AND REMOVE
24" R.C. PIPE CULVERT 21' RT.
CLASS III TYPE II BEDDING W/ FES
24" R.C. PIPE= 4 LIN.FT.
24" FES= 1EA.

STA. 521+57.07 - HWY. 18
/ STA. 502+92.17 - CO. RD. 541

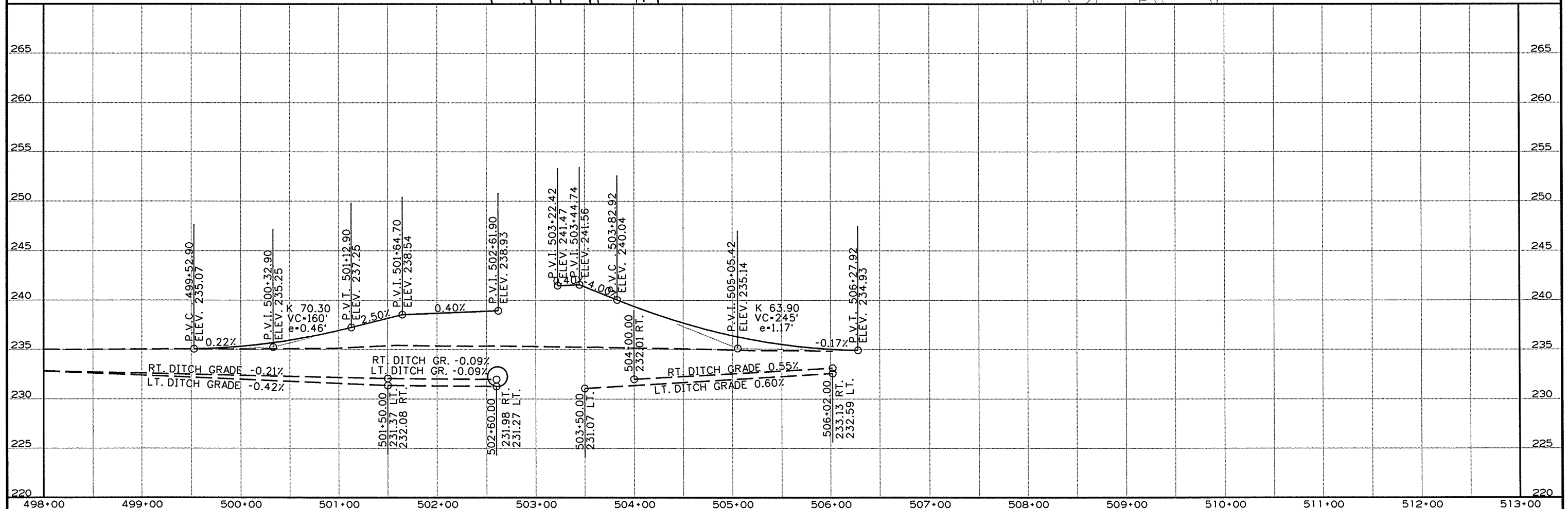
STA. 503+75 INPLACE
36" X 102' R.C. PIPE CULV'T.
RETAIN AND REMOVE
36" R.C. PIPE CULVERT 14' RT.
CLASS III TYPE II BEDDING W/ FES
36" R.C. PIPE= 4 LIN.FT.
36" FES= 1EA.

STA. 500+75 - IN PLACE
24" x 32' R.C. PIPE CULV'T.
RT. SIDE DRAIN
REMOVE AND INSTALL
24" x 36' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 60 CU. YD.

STA. 505+50 - INSTALL
18" X 28' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPR. = 15 CU. YD.

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

CO. RD. 541

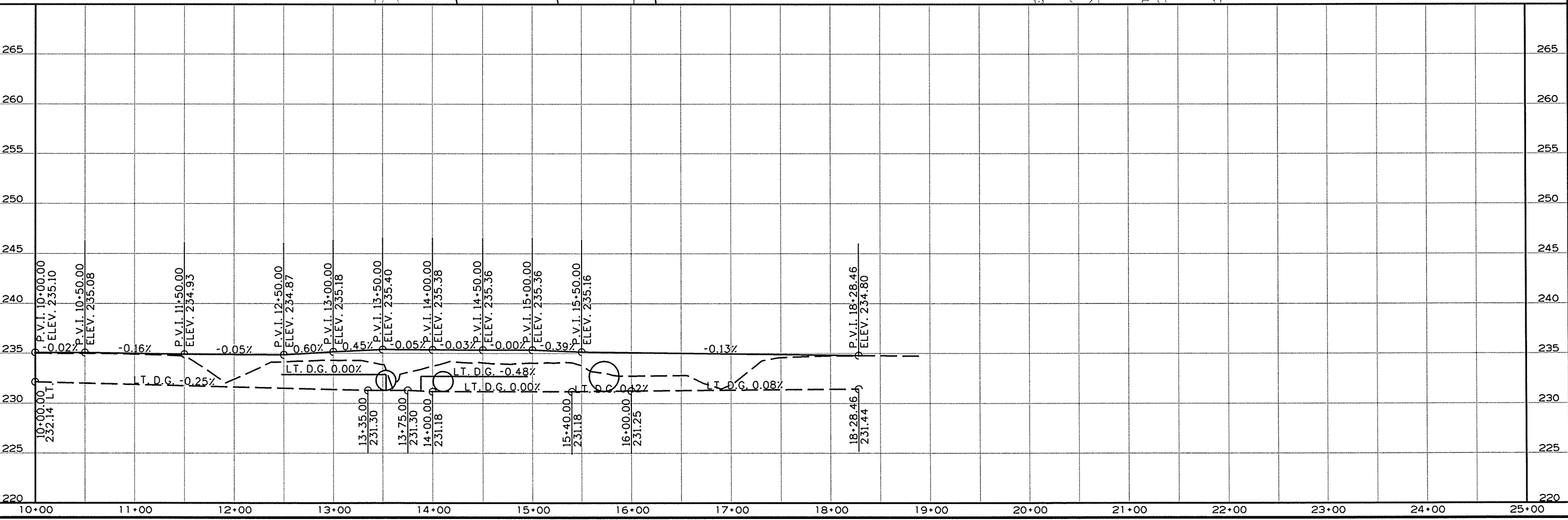
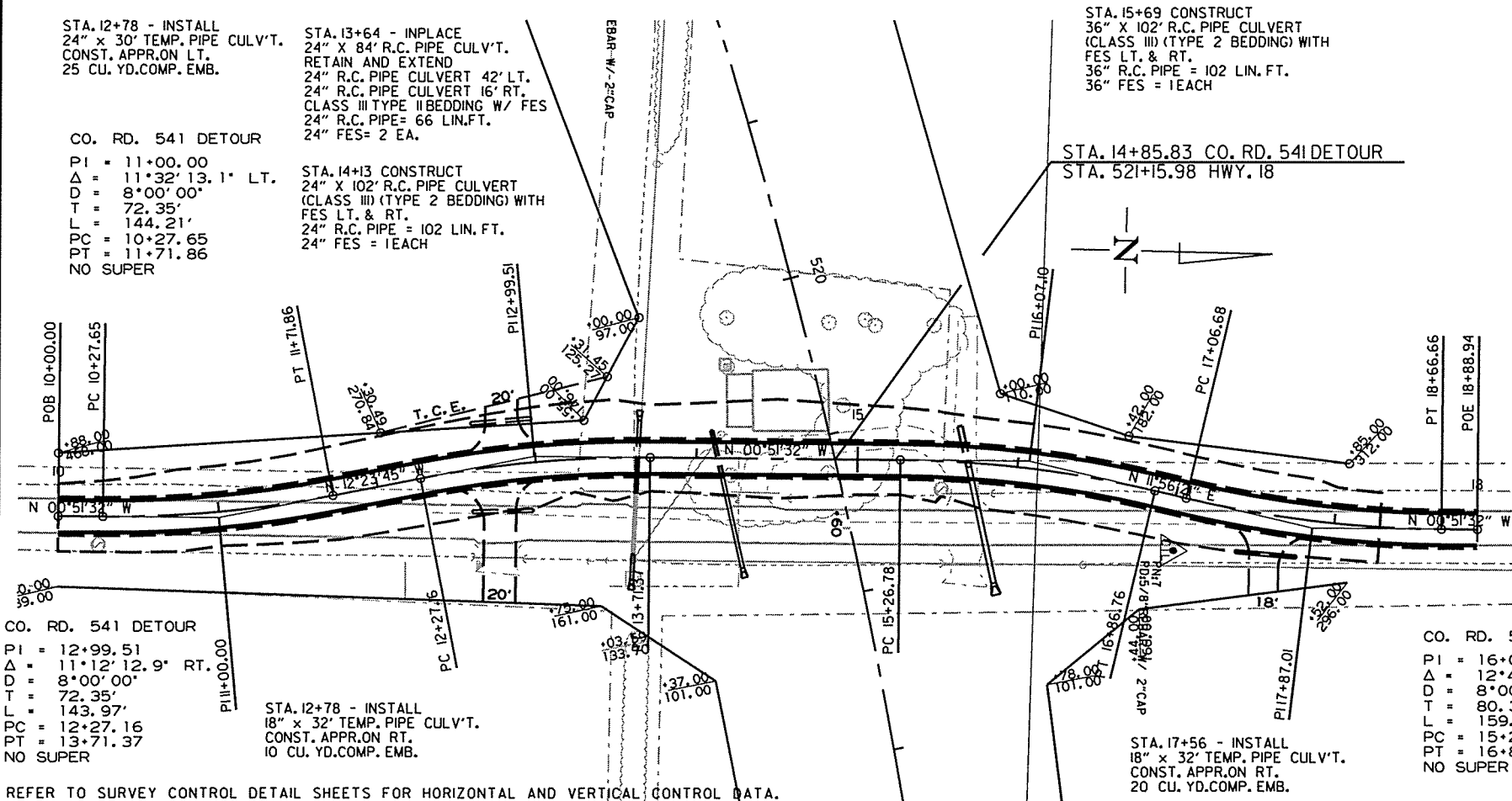
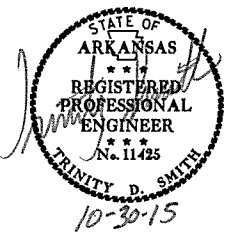


9/22/2015

CA1001.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. CA1001	120	283

2 PLAN AND PROFILE SHEETS



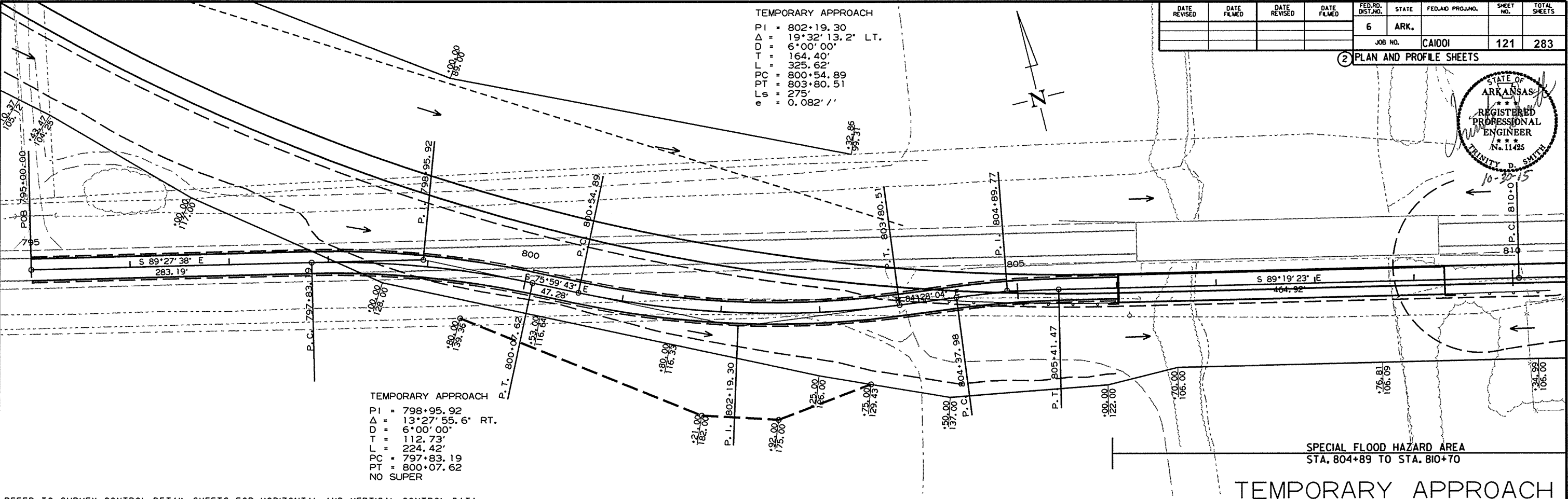
9/22/2015

CA1001.DGN

TEMPORARY APPROACH
PI = 802+19.30
Δ = 19°32'13.2" LT.
D = 6°00'00"
T = 164.40'
L = 325.62'
PC = 800+54.89
PT = 803+80.51
LS = 275'
e = 0.082' /'

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		121	283
				JOB NO.		CA1001	121	283

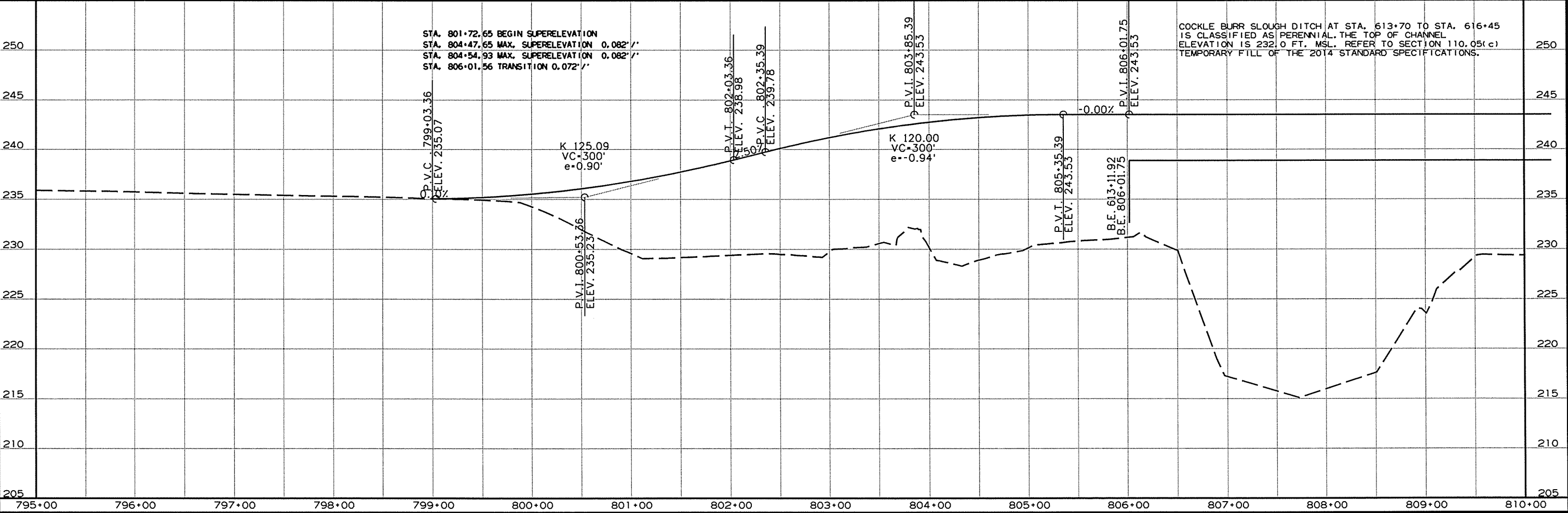
2 PLAN AND PROFILE SHEETS



TEMPORARY APPROACH
PI = 798+95.92
Δ = 13°27'55.6" RT.
D = 6°00'00"
T = 112.73'
L = 224.42'
PC = 797+83.19
PT = 800+07.62
NO SUPER

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

TEMPORARY APPROACH



STA. 801+72.65 BEGIN SUPERELEVATION
STA. 804+47.65 MAX. SUPERELEVATION 0.082' /'
STA. 804+54.93 MAX. SUPERELEVATION 0.082' /'
STA. 806+01.56 TRANSITION 0.072' /'

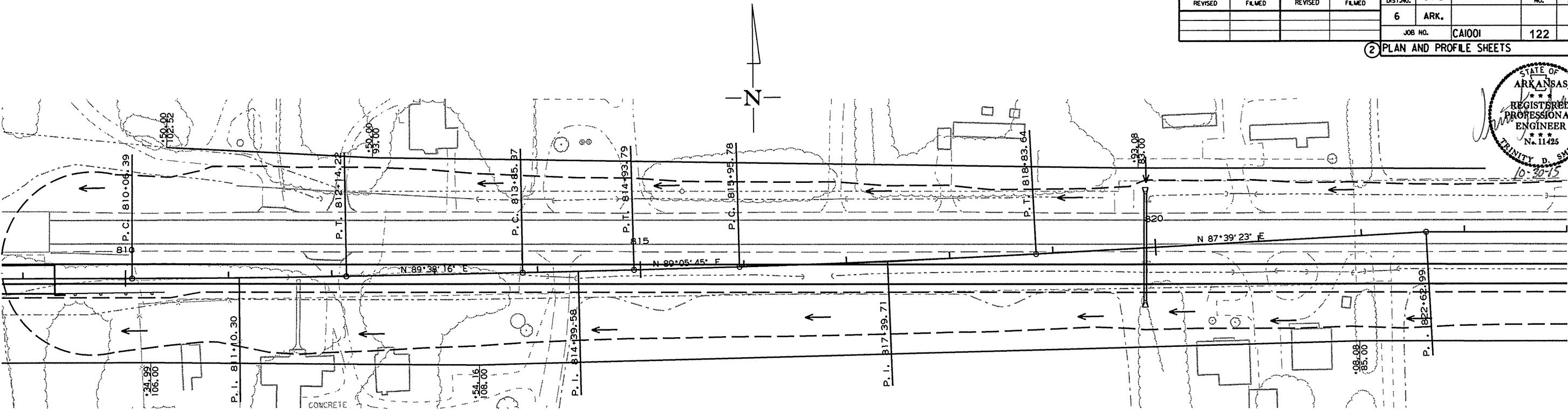
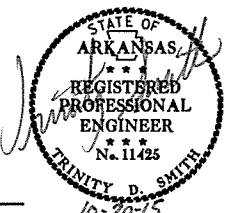
COCKLE BURR SLOUGH DITCH AT STA. 613+70 TO STA. 616+45
IS CLASSIFIED AS PERENNIAL. THE TOP OF CHANNEL
ELEVATION IS 232.0 FT. MSL. REFER TO SECTION 110.05(c)
TEMPORARY FILL OF THE 2014 STANDARD SPECIFICATIONS.

9/22/2015

CA1001.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		122	283
				JOB NO.	CA1001		122	283

2 PLAN AND PROFILE SHEETS



TEMPORARY APPROACH
PI = 804+89.77
Δ = 6°12'33.0" RT.
D = 6'00'00"
T = 51.79'
L = 103.49'
PC = 804+37.98
PT = 805+41.47
NO SUPER

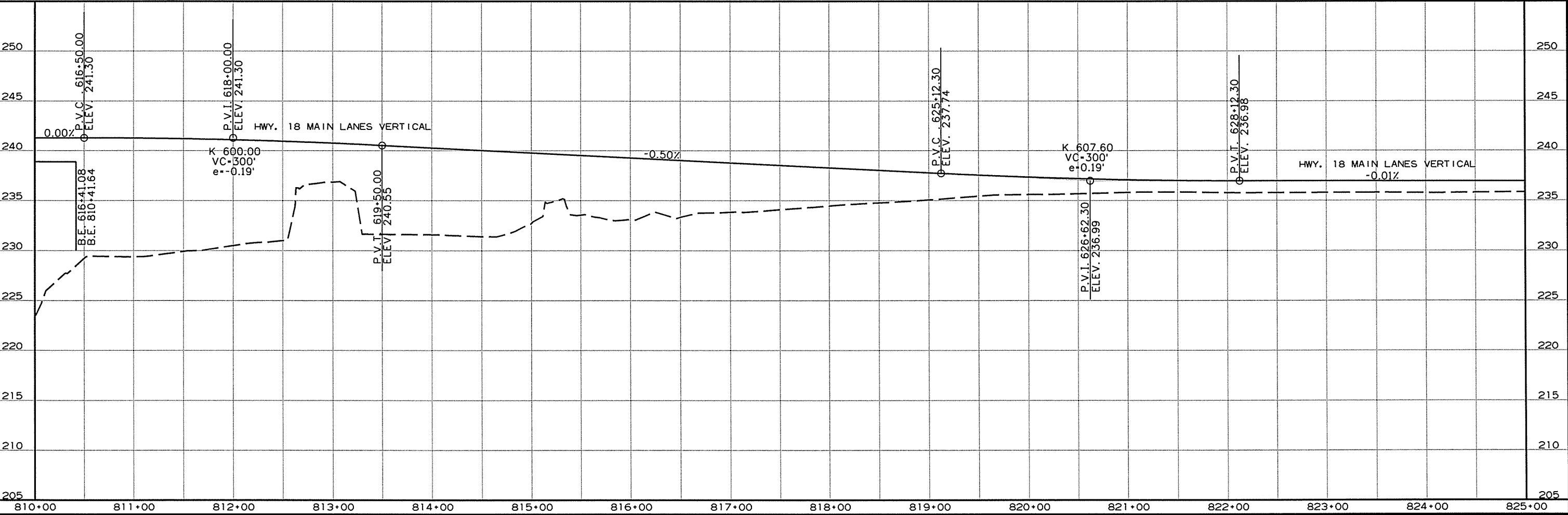
TEMPORARY APPROACH
PI = 811+10.30
Δ = 1°02'21.0" LT.
D = 0°30'00"
T = 103.92'
L = 207.83'
PC = 810+06.39
PT = 812+14.22
NO SUPER

TEMPORARY APPROACH
PI = 814+39.58
Δ = 0°32'31.6" LT.
D = 0°30'00"
T = 54.21'
L = 108.42'
PC = 813+85.37
PT = 814+93.79
NO SUPER

TEMPORARY APPROACH
PI = 817+39.71
Δ = 1°26'21.5" LT.
D = 0°03'00"
T = 143.94'
L = 287.86'
PC = 815+95.78
PT = 818+83.64
NO SUPER

TEMPORARY APPROACH

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

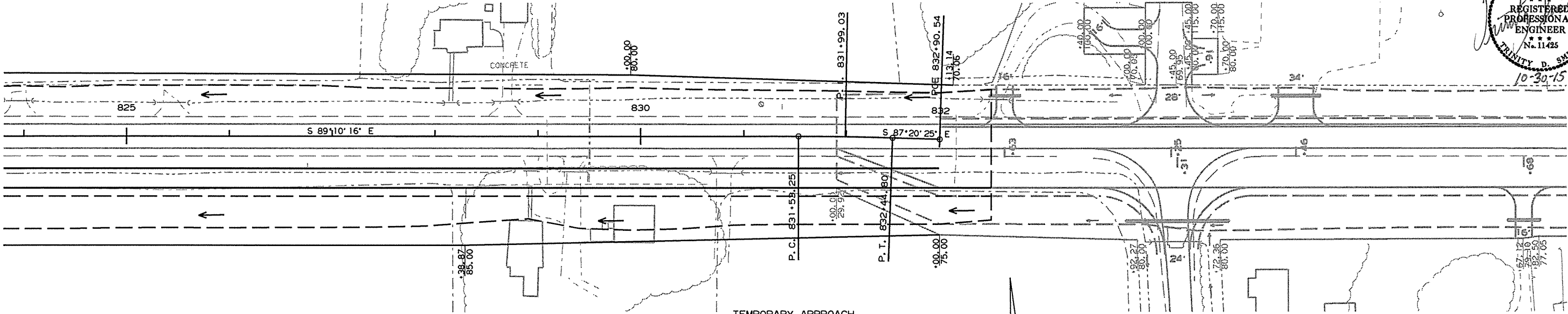


9/22/2015

CA1001.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. CA1001	123	283

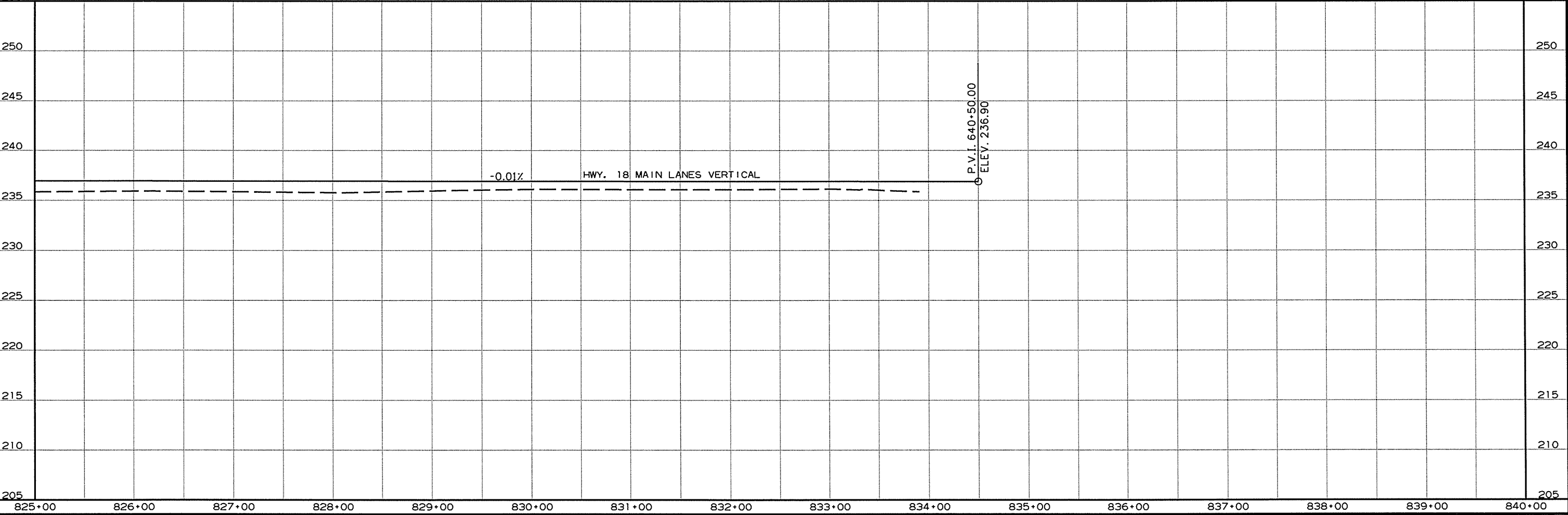
2 PLAN AND PROFILE SHEETS



TEMPORARY APPROACH
PI = 831+99.03
Δ = 1°49'51.7" RT.
D = 2°00'00"
T = 45.78'
L = 91.55'
PC = 831+53.25
PT = 832+44.80
NO SUPER

TEMPORARY APPROACH

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



9/22/2015

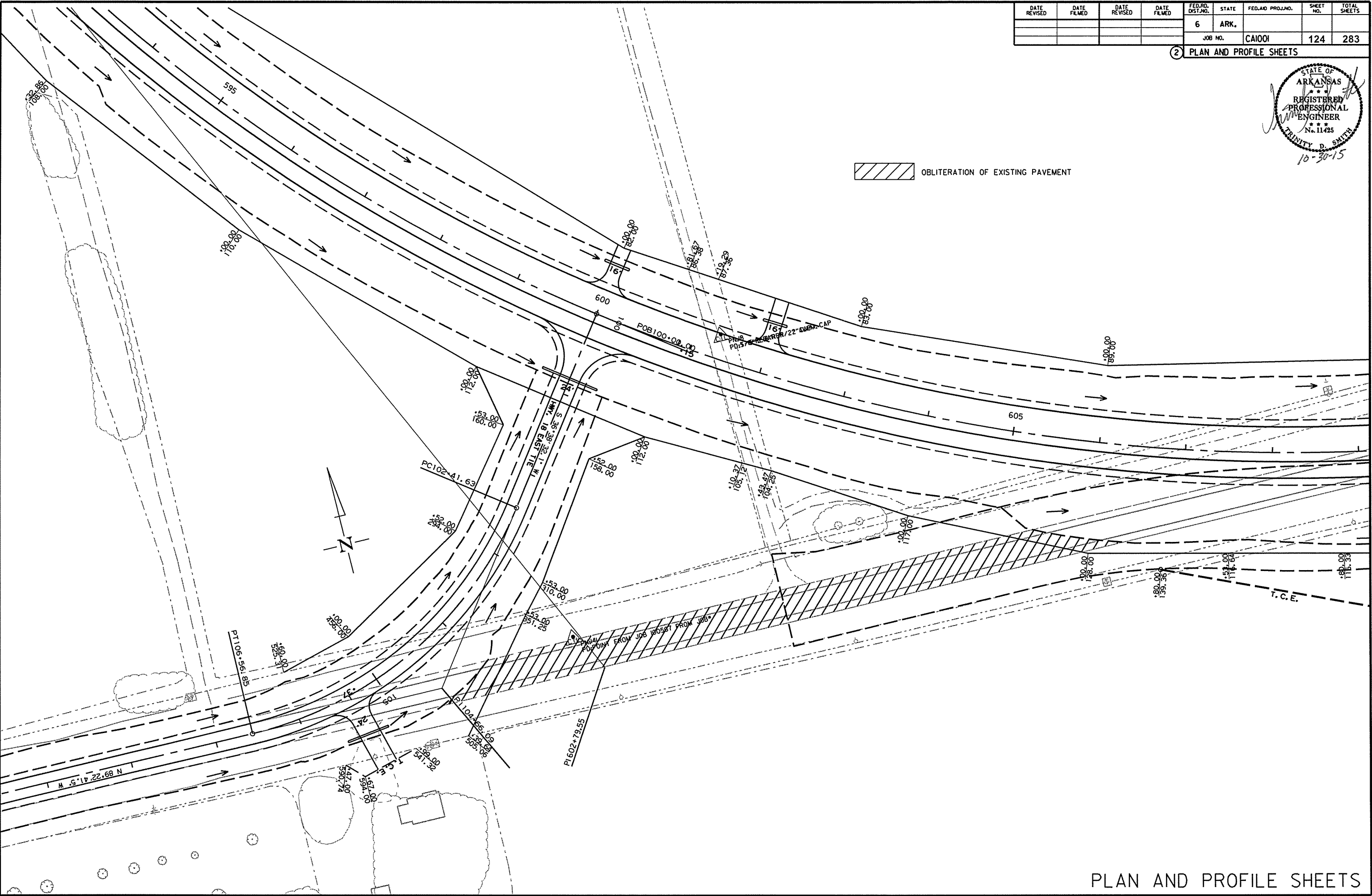
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO. CA1001		124	283	

2 PLAN AND PROFILE SHEETS

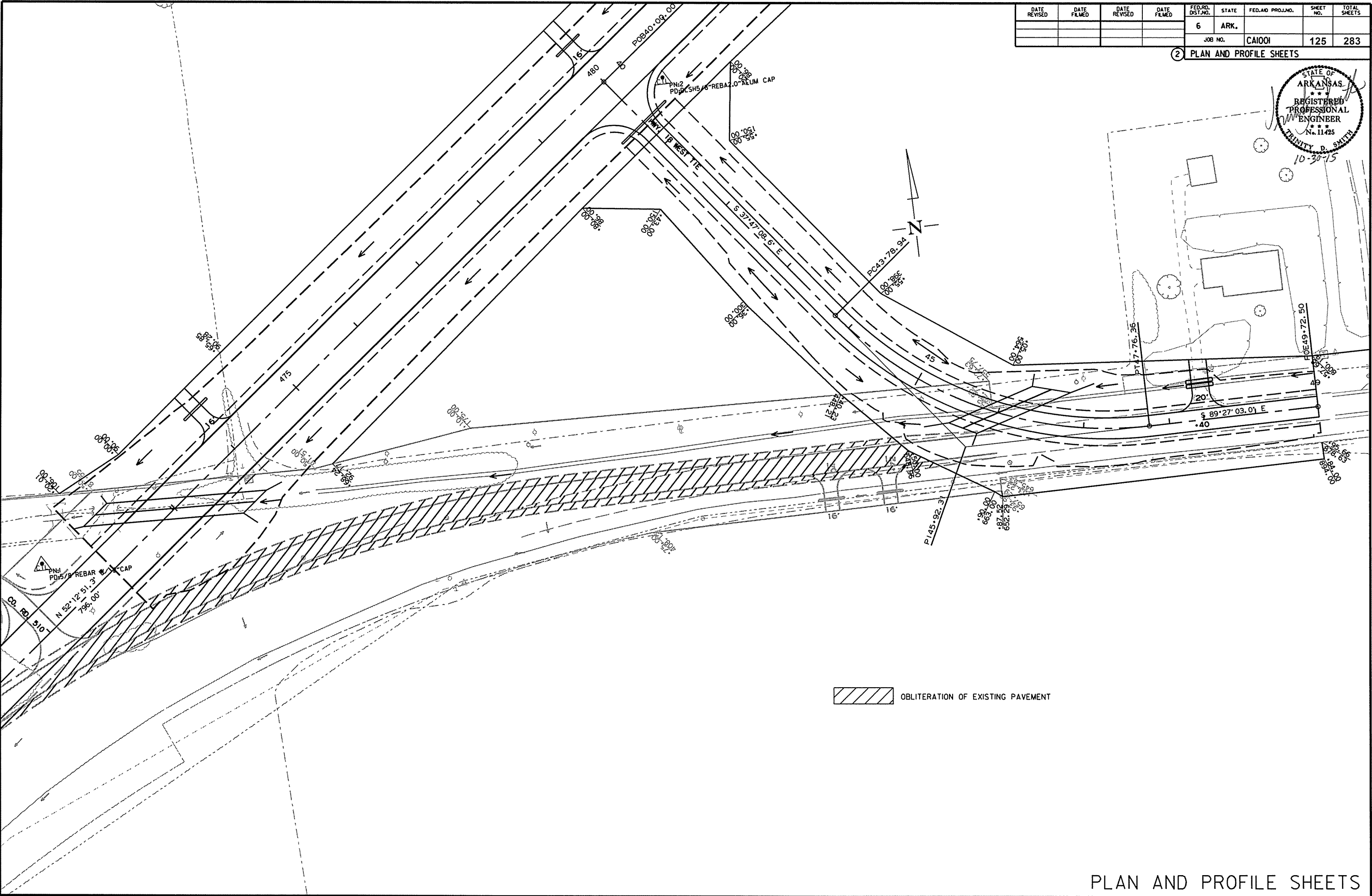
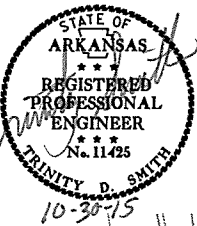


OBLITERATION OF EXISTING PAVEMENT

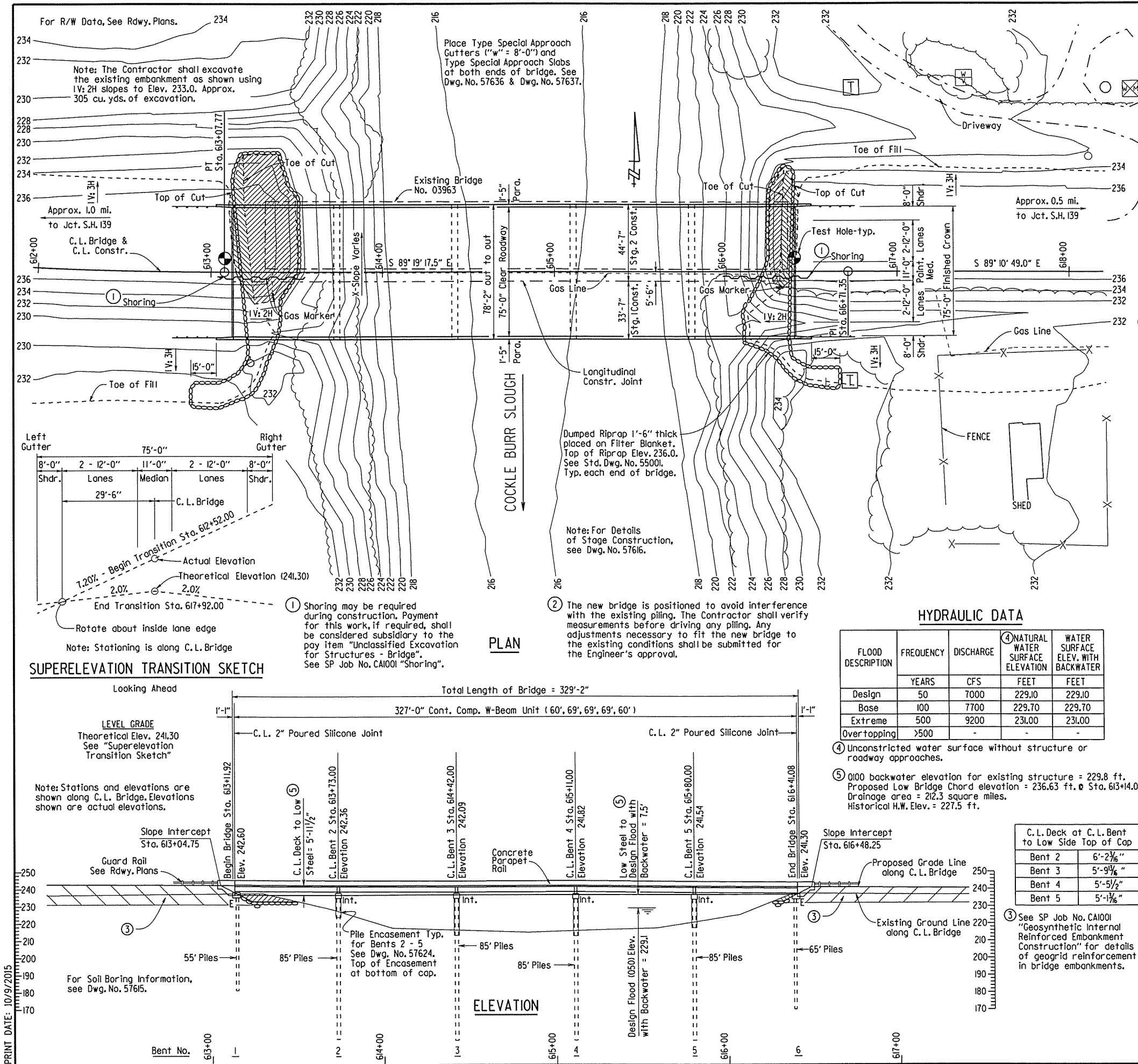


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				6	ARK.			
				JOB NO. CA1001			125	283

2 PLAN AND PROFILE SHEETS



PLAN AND PROFILE SHEETS



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA1001	1016	283
				07363 - LAYOUT				57614

GENERAL NOTES

BENCH MARK: Vertical Control Data is shown in the Survey Control Data Sheets.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition) with applicable Supplemental Specifications and Special Provisions. Section and Subsection refer to the Standard Construction Specification unless otherwise noted in the Plans.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Sixth Edition (2012).

LIVE LOADING: HL-93

SEISMIC ZONE: 4

MATERIALS AND STRENGTHS:

Class (S/AE) Concrete (superstructure)
Class 5 Concrete (substructure)
Reinforcing Steel (Grade 60, AASHTO M 31 or M 322, Type A)
Structural Steel (AASHTO M 270, Gr. 36)
Structural Steel (AASHTO M 270, Gr. 50W)

f'c = 4,000 psi
f'c = 3,500 psi
fy = 60,000 psi
fy = 36,000 psi
fy = 50,000 psi

BORING LOGS: Boring logs may be obtained from the Construction Contract Procurement Section of the Program Management Division.

- ② STEEL SHELL PILING: Piling in Bents 1 & 6 shall be 18" diameter concrete filled steel shell piles and shall be driven to a minimum ultimate bearing capacity of 205 tons per pile. Piling in Bents 2 thru 5 shall be 24" diameter concrete filled steel shell piles and shall be driven to a minimum ultimate bearing capacity of 350 tons per pile. All piling shall be driven with an approved air, steam, or diesel hammer. Piling in end bents shall be driven after embankment to bottom of cap is in place. Piling at Bent 1 shall have a tip elevation of 182 or lower. Piling at Bents 2 thru 5 shall have a tip elevation of 152 or lower. Piling at Bent 6 shall have a tip elevation of 172 or lower.

Lengths of piling shown are assumed for estimating quantities only. Actual lengths are to be determined in the field. No additional payment will be made for cut-off or build-up. Test piles are not required but may be driven for the Contractor's information in accordance with Subsection 805.08(g). No piles will be paid for as Test Piles.

Water jetting, preboring, or other methods as approved by the Engineer may be needed to achieve the minimum tip elevation. Any cost associated with achieving the minimum tip elevation shall be included in the item "Steel Shell Piling".

DRIVING SYSTEM: The driving system approval and ultimate bearing capacity determination for piling shall be based on the requirements of Subsection 805.09(b) "Method B - Wave Equation Analysis (WEAP)". It is estimated that a minimum rated hammer energy of 27,000 ft. lbs. per blow will be required to obtain the ultimate bearing capacity at Bent Nos. 1 and 6. It is estimated that a minimum rated hammer energy of 66,000 ft. lbs. per blow will be required to obtain the ultimate bearing capacity at Bent Nos. 2 through 5.

PILE ENCASEMENTS: Pile encasements are required for Bents 2 thru 5. See Dwg. No. 57624. Pile encasements shall extend from 3'-0" below the ground to the bottom of the cap.

BRIDGE DECK: The concrete bridge deck shall be given a fine finish as specified for final finishing in Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish.

DETAIL DRAWINGS:

End Bents
Int. Bents
Concrete Filled Steel Shell Piles & Pile Encasement
327' Cont. Comp. W-Beam Unit
Elastomeric Bearings
Type Special Approach Gutters
Type Special Approach Slab

DRAWING NO.
57617-57619, 57621-57623
57620
57624
57625-57634
57635
57636
57637

EXISTING BRIDGE: Existing Bridge No. 03963 (log mile 26.38) is 42' wide and 306' long and consists of five 46' W-beam spans supporting a concrete slab and three 25' reinforced concrete slab spans (with voids). The superstructure is supported by concrete trestle pile bents. The existing bridge occupies the same location as the proposed new bridge.

REMOVAL AND SALVAGE: After Stage I Construction of the new bridge is opened to traffic, the existing bridge No. 03963 shall be removed in accordance with Section 205. In addition, the Contractor shall remove the remnants of timber piling left in place from a previous structure(s) as directed by the Engineer. Payment for this work will be subsidiary to the item "Removal of Existing Bridge Structure". This material and all material from the existing bridge shall become the property of the Contractor.

MAINTENANCE OF TRAFFIC: See Roadway Plans.

HYDRAULIC DATA

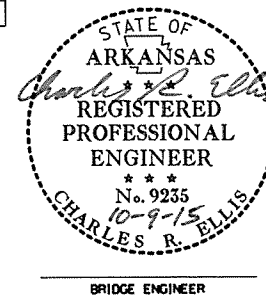
FLOOD DESCRIPTION	FREQUENCY	DISCHARGE	NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEV. WITH BACKWATER
	YEARS	CFS	FEET	FEET
Design	50	7000	229.10	229.10
Base	100	7700	229.70	229.70
Extreme	500	9200	231.00	231.00
Overtopping	>500	-	-	-

- ④ Unconstricted water surface without structure or roadway approaches.

- ⑤ 0100 backwater elevation for existing structure = 229.8 ft.
Proposed Low Bridge Chord elevation = 236.63 ft. @ Sta. 613+14.00.
Drainage area = 212.3 square miles.
Historical H.W. Elev. = 227.5 ft.

C.L. Deck at C.L. Bent to Low Side Top of Cap	
Bent 2	6'-2 3/8"
Bent 3	5'-9 1/8"
Bent 4	5'-5 1/2"
Bent 5	5'-1 1/8"

- ③ See SP Job No. CA1001 "Geosynthetic Internal Reinforced Embankment Construction" for details of geogrid reinforcement in bridge embankments.



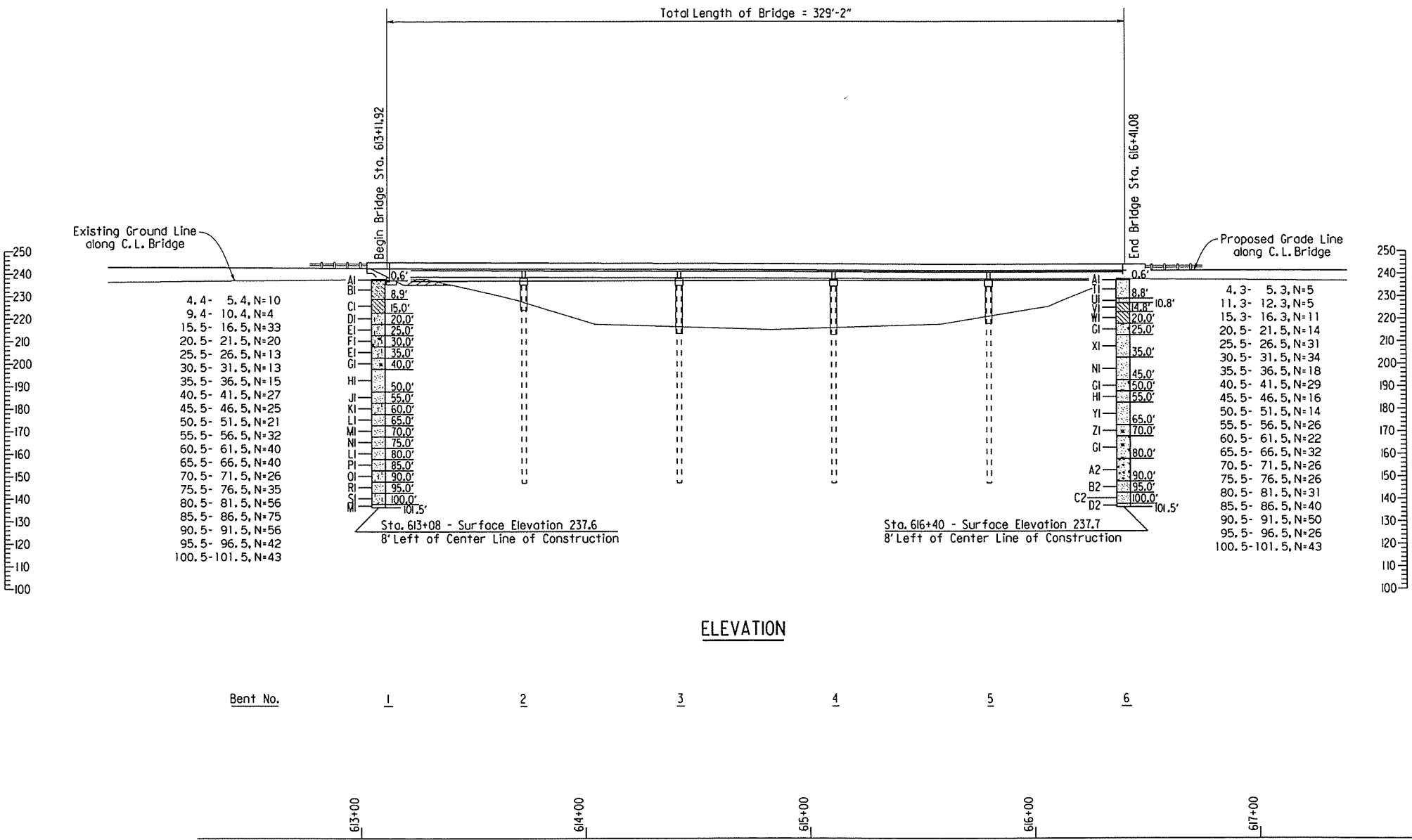
LAYOUT OF BRIDGE OVER COCKLE BURR SLOUGH MONETTE BYPASS (S) CRAIGHEAD COUNTY

ROUTE 18 SEC. 4
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

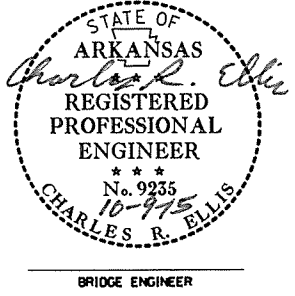
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CHECKED BY: CDR DATE: 9/11/15 SCALE: 1" = 30'
DESIGNED BY: CDR DATE: 4/12
BRIDGE NO. 07363 DRAWING NO. 57614

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA1001	127	283
				07363	SOIL BORINGS		- 57615	



BORING LEGEND

- A1-Concrete Pavement (7")
- B1-Moist, Loose, Brown Sand with Clay and some Organic Matter
- C1-Moist, Soft, Brown Sandy Clay with some Organic Matter
- D1-Wet, Dense, Gray Silty Sand
- E1-Wet, Medium Dense, Gray Sand with Silt
- F1-Wet, Medium Dense, Gray Sand with Silt and Organic Matter
- G1-Wet, Medium Dense, Gray Sand with Organic Matter
- H1-Wet, Medium Dense, Gray Sand
- J1-Wet, Medium Dense, Gray Sand with some Gravel and Organic Matter
- K1-Wet, Dense, Gray Sand with Silt and some Gravel
- L1-Wet, Dense, Gray Sand with some Gravel
- M1-Wet, Dense, Gray Sand
- N1-Wet, Medium Dense, Gray Sand with Trace of Organic Matter
- P1-Wet, Very Dense, Gray Sand
- Q1-Wet, Very Dense, Gray Sand with Silt, some Gravel and Trace of Organic Matter
- R1-Wet, Very Dense, Gray Sand with some Gravel and Trace of Organic Matter
- S1-Wet, Dense, Gray Sand with Silt and Trace of Gravel
- T1-Moist, Loose, Brown Sand with some Organic Matter
- U1-Moist, Loose, Brown Silty Sand
- V1-Moist, Medium Stiff, Brown and Gray Clay
- W1-Moist, Stiff, Brown and Gray Clay
- X1-Wet, Dense, Gray Sand with Trace of Organic Matter
- Y1-Wet, Medium Dense, Brown and Gray Sand
- Z1-Wet, Dense, Brown and Gray Sand with Organic Matter
- A2-Wet, Dense, Gray Sand with Gravel
- B2-Wet, Dense, Brown and Gray Sand with Trace of Gravel
- C2-Wet, Medium Dense, Gray Sand with Trace of Gravel
- D2-Wet, Dense, Gray Sand with Trace of Gravel



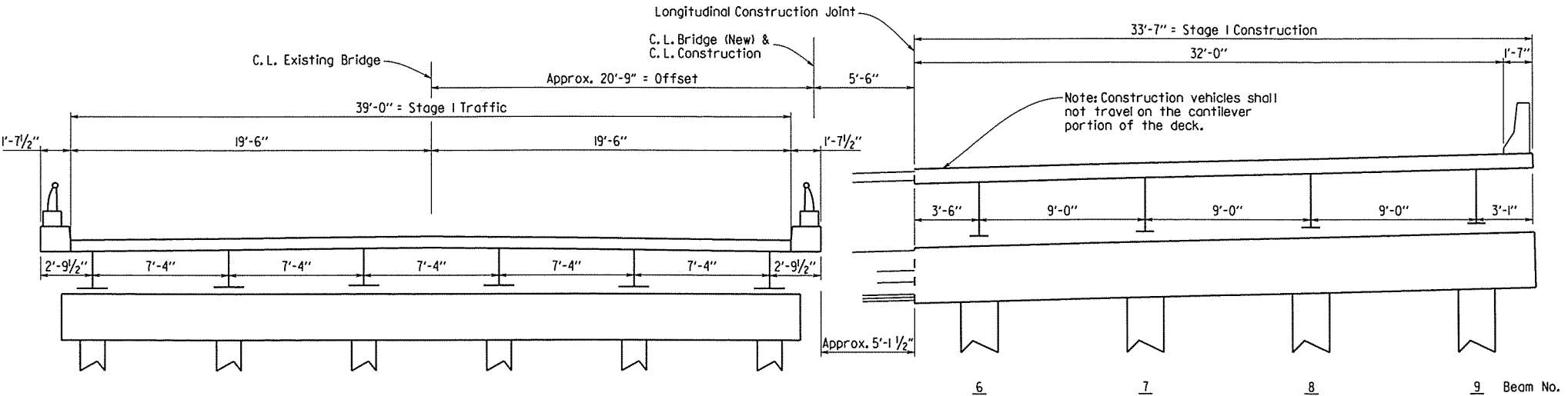
SOIL BORINGS
BRIDGE OVER
COCKLE BURR SLOUGH
MONETTE BYPASS (S)
CRAIGHEAD COUNTY

ROUTE 18 SEC. 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

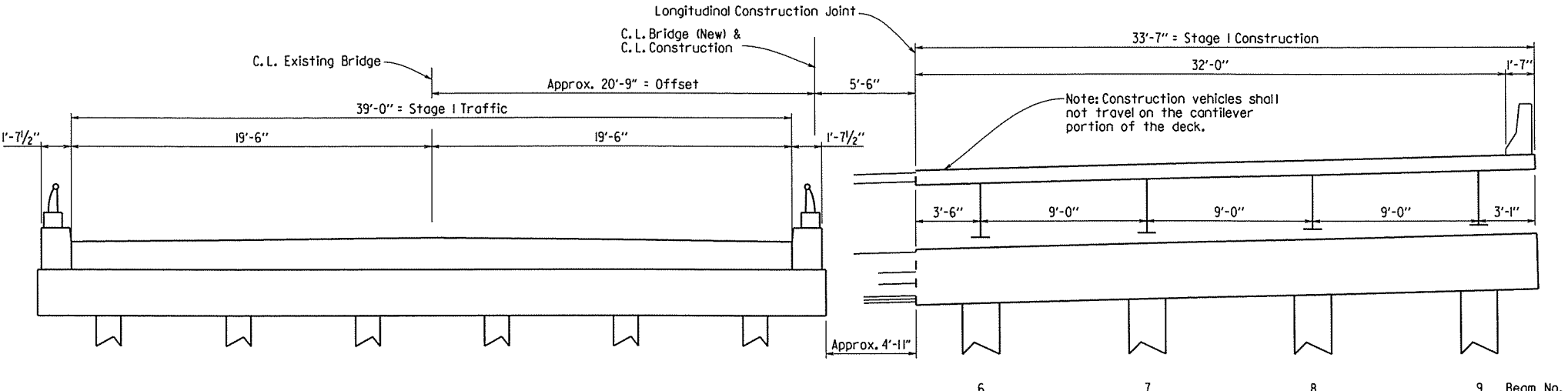
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DESIGNED BY: CSE DATE: 4/1/12
BRIDGE NO. 07363 DRAWING NO. 57615

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	CA1001	128	283	

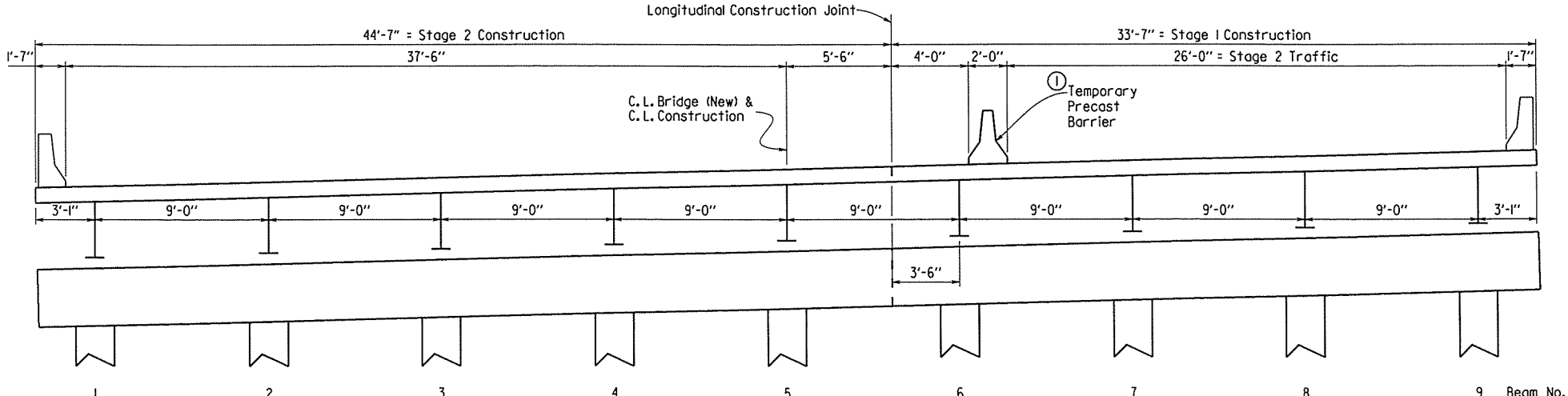
07363 - STAGE CONSTRUCTION - 57616



STAGE 1
Looking Ahead
Bents 2, 3, & 4



STAGE 1
Looking Ahead
Bent 5



STAGE 2
Looking Ahead

Remove existing structure after Stage 1
Construction has been opened to traffic.

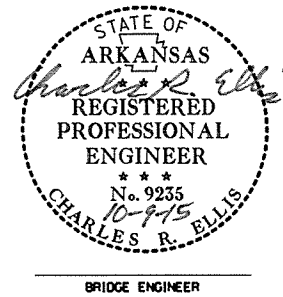
See Roadway Plans for additional details of
Stage Construction and Maintenance of traffic.

① For Details of Temporary Precast Barrier,
see Std. Dwg. No. TC-4. (Do not connect
to new deck)

DETAILS OF STAGE CONSTRUCTION
COCKLE BURR SLOUGH
MONETTE BYPASS (S)
CRAIGHEAD COUNTY

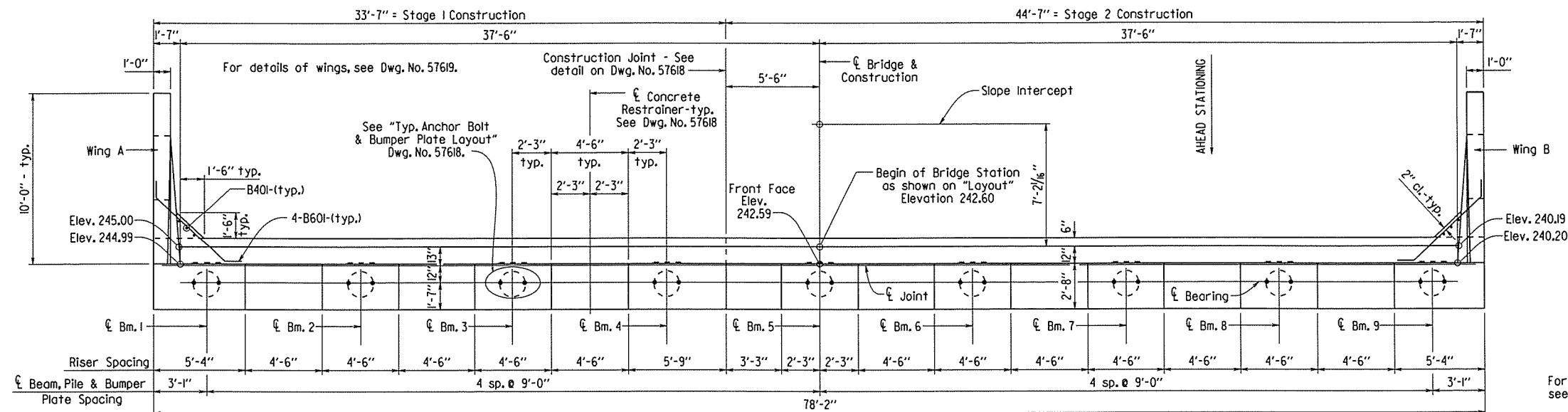
ROUTE 18 SEC. 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ADN DATE: 6-22-12 FILENAME: bcol001.sc.dgn
CHECKED BY: CSR DATE: 7/1/12 SCALE: 1/4" = 1'-0"
DESIGNED BY: CSR DATE: 4/1/12
BRIDGE NO. 07363 DRAWING NO. 57616

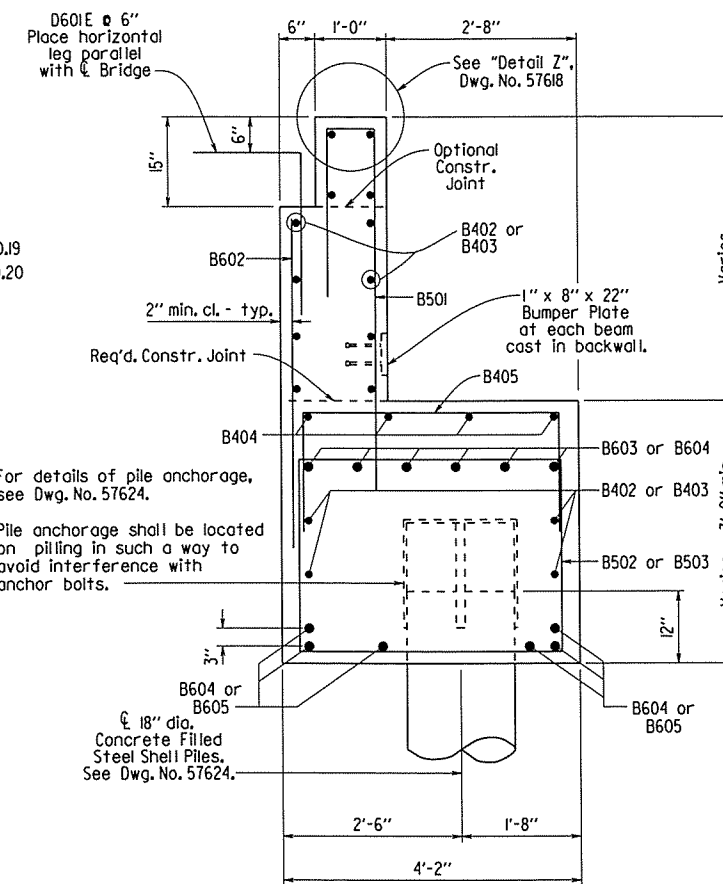


NOTE: Class I Protective Surface Treatment shall be applied to the top of the backwall and to the roadway face and top of the wing rails.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA1001	129	283
				07363 -	END BENT			57617



PLAN
Scale: 1/4" = 1'-0"



SECTION A-A
Scale: 3/4" = 1'-0"

GENERAL NOTES

All concrete shall be Class "S" and be poured in the dry. All exposed corners to be chamfered 3/4" unless otherwise noted.

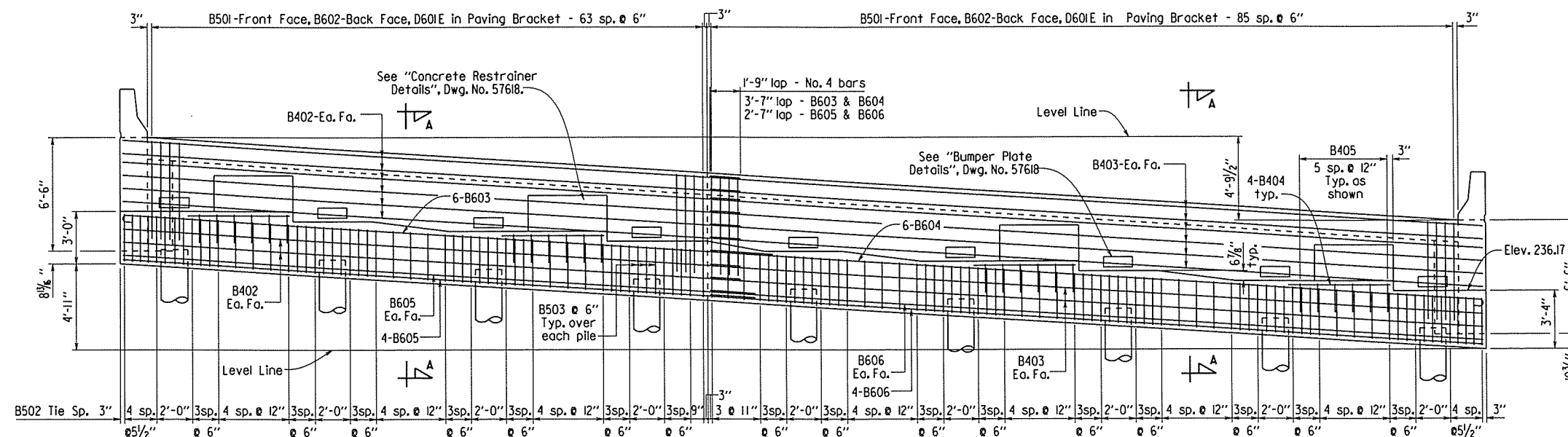
All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

Structural steel in end bents shall be AASHTO M 270, Gr. 50W, and shall be paid for as "Structural Steel in Beam Spans (M 270, Gr. 50W)".

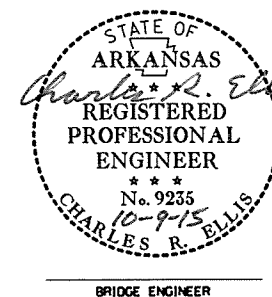
If anchor bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

No portion of the backwall shall be poured until the beams are in place. Refer to "Expansion Device Installation at End Bents" note, Dwg. No. 57634.

For additional information, see Layout.



ELEVATION
Looking Back
Scale: 1/4" = 1'-0"

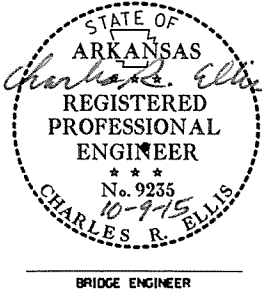
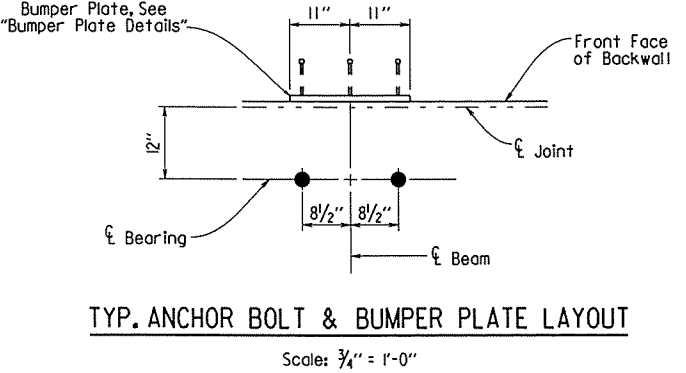
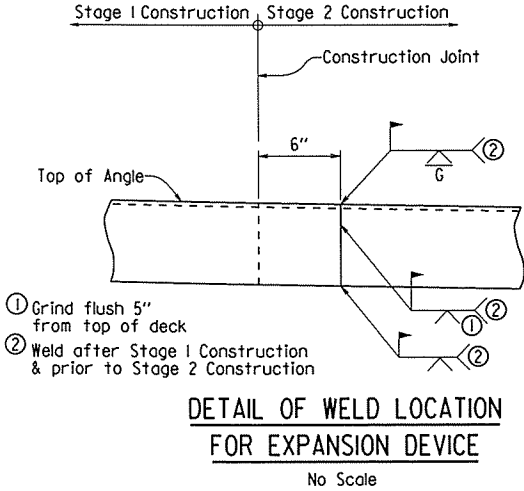
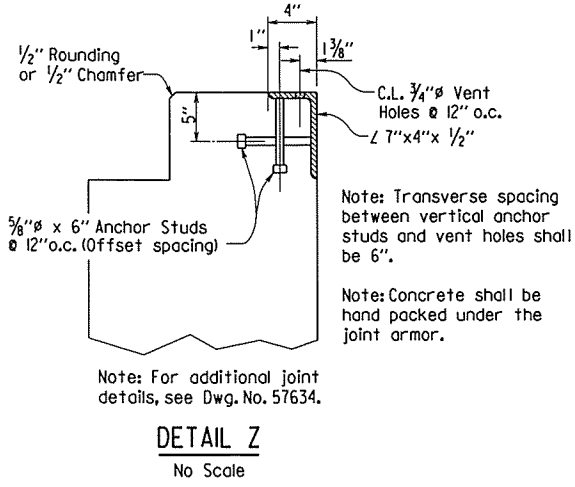
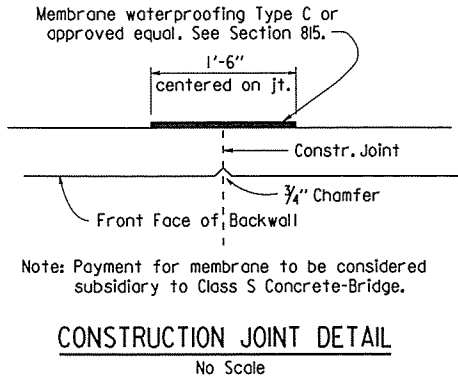
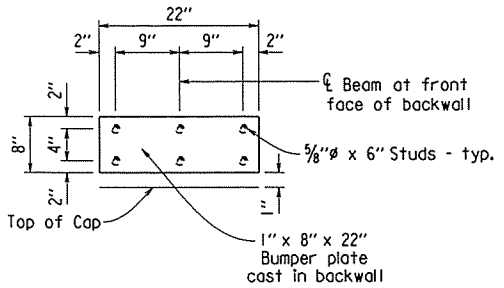
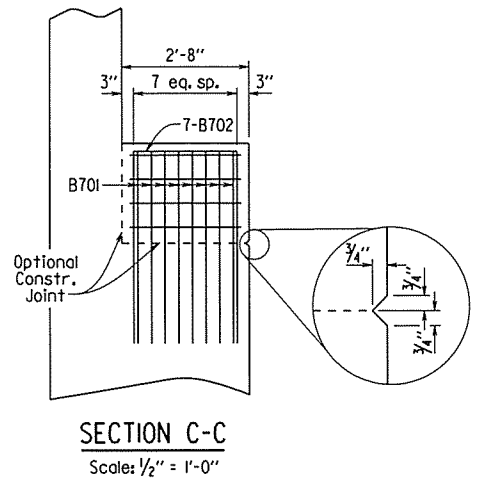
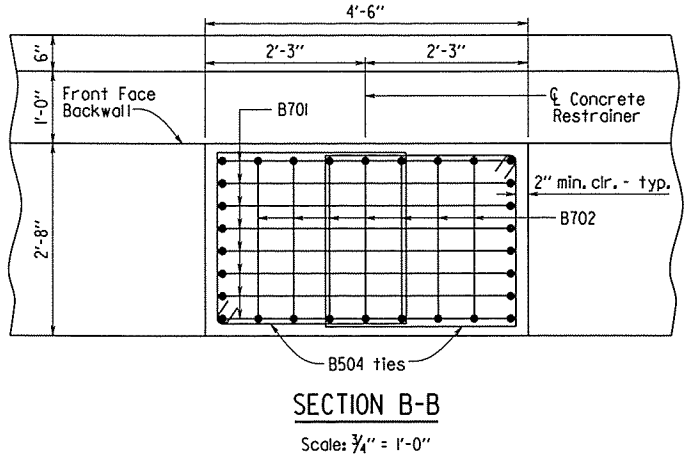
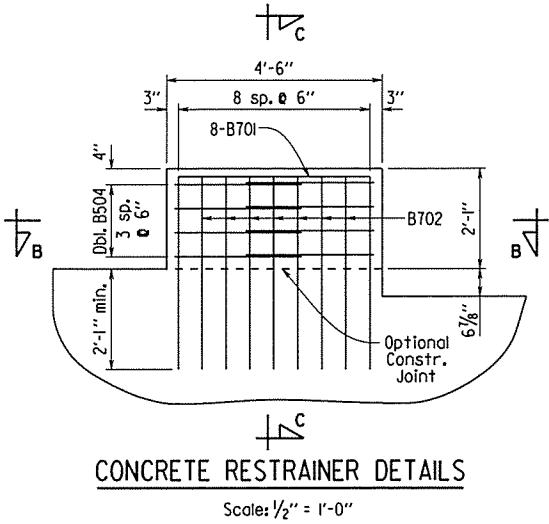


SHEET 1 OF 3
DETAILS OF BENT 1
COCKLE BURR SLOUGH

ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 9-24-13 FILENAME: bca1001.bl.dgn
CHECKED BY: DBS DATE: 10/7/13 SCALE: AS NOTED
DESIGNED BY: ADN DATE: 12/12
BRIDGE NO. 07363 DRAWING NO. 57617

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA1001	130	383
				07363		END BENT		57618



SHEET 2 OF 3
DETAILS OF BENT 1
COCKLE BURR SLOUGH

ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 9-24-13 FILENAME: bcal001.bl.dgn
CHECKED BY: DGS DATE: 10/5/13 SCALE: AS NOTED
DESIGNED BY: ADJ DATE: 12/12
BRIDGE NO. 07363 DRAWING NO. 57618



①

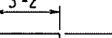
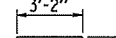
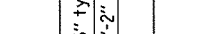


Cor



① Minimum lap lengths:
3'-7" lap-No. 6 bars-top
2'-7" lap-No. 6 bars-bottom
1'-9" lap-No. 4 bars

Bent No.	"A"	"B"	"C"
2	4'-4 1/4"	236.18	5.59%
3	3'-7 1/4"	236.27	4.67%
4	2'-11 3/4"	236.36	3.75%
5	2'-2 1/4"	236.44	2.83%

MARK	NO. REQ'D.	LENGTH	P.D.	BENDING DIAGRAMS
B40I	4	35'-4"	Str.	Dimensions are out to out of bars.
B402	4	44'-3"	Str.	
B403E	140	4'-1"	Str.	
B50I	97	13'-2"	2 1/2"	  B50I B502
B502	36	9'-4"	2 1/2"	
B60I	6	37'-10"	4 1/2"	  B60I B602
B602	6	44'-11"	4 1/2"	
B603	6	36'-2"	Str.	
B604	6	44'-3"	Str.	

6 1/2" x 6 1/2"

2'-0"

8"

B403E

Bearing

1 1/2" x 23" Galv. Anchor Bolt

B601 or B602

2" cl. typ.

B401 or B402

B501 or B502

15" typ.

B603 or B604

3'-6"

24" ϕ Concrete Filled Steel Shell Piles

See Dwg. No. 57624

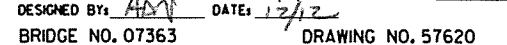
1'-9"

1'-9"

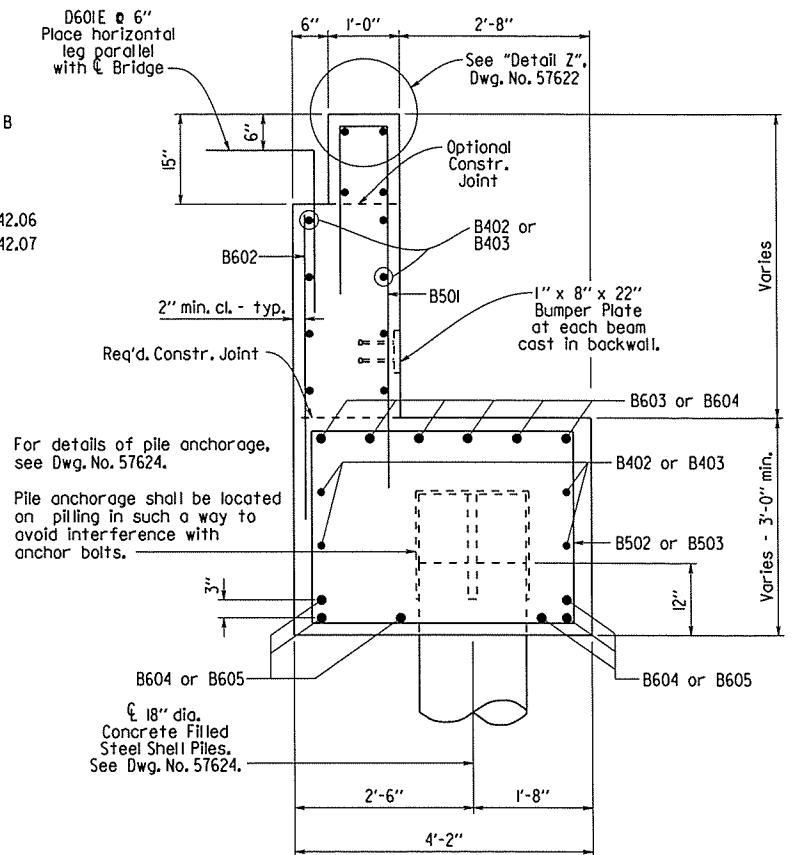
3'-6"

Scale: $\frac{3}{4}" = 1'-0"$

For additional information, see Layout.



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA1001	133	283
				① 07363 -	END BENT		- 57621	



Scale: $\frac{3}{4}'' = 1'-0''$



All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

If anchor bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

For additional information, see Layout.

Looking Ahead
Scale: $\frac{1}{4}'' = 1'-0''$



ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION

DRAWN BY: KDH DATE: 9-25-13 FILENAME: bcal001.b6.dgn
 CHECKED BY: DBS DATE: 10/5/13 SCALE: AS NOTED
 DESIGNED BY: ADJ DATE: 12/12
 BRIDGE NO. 07363 DRAWING NO. 57621

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	CAIOOI	135	283	
				07363 -	END BENT	-	57623	

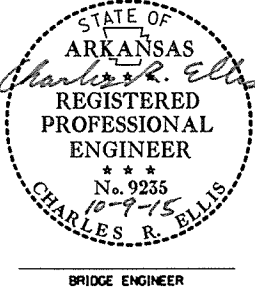
BAR LIST

MARK	NO.	REQ'D.	LENGTH	P.D.	BENDING DIAGRAMS
B401	6	4'-8"	Str.		
B402	16	35'-4"	Str.		
B403	16	44'-3"	Str.		
R401	8	3'-11"	2"		
R402	8	4'-0"	2"		
R403	12	9'-8"	Str.		
W401	8	8'-7"	2"		
W402	8	8'-11"	Str.		
W403-W406	2 each	Var. 3'-5" to 7'-1"	2"		
W407-W410	2 each	Var. 4'-8" to 8'-3"	Str.		
W411	6	6'-9"	2"		
B501	150	8'-6"	2 1/2"		
B502	99	13'-6"	2 1/2"		
B503	27	8'-11"	2 1/2"		
B504	32	10'-8"	3 3/4"		
D501E	16	6'-2"	3 3/4"		
B601	8	7'-3"	4 1/2"		
B602	150	4'-5"	4 1/2"		
B603	6	37'-10"	4 1/2"		
B604	6	44'-11"	Str.		
B605	6	36'-2"	Str.		
B606	6	44'-3"	Str.		
R601	20	4'-5"	Str.		
R602	6	5'-0"	Str.		
D601E	150	4'-0"	4 1/2"		
B701	32	12'-1"	5 1/4"		
B702	28	10'-1"	5 1/4"		
W701	12	9'-8"	Str.		
W702	4	6'-8"	Str.		
W703	4	6'-1"	Str.		
W704	4	5'-5"	Str.		
W705	4	4'-10"	Str.		
W706	4	4'-2"	Str.		
W707	4	11'-4"	5 1/4"		

Note: Bars with an "E" Suffix to be Epoxy Coated.

TABLE OF VARIABLES

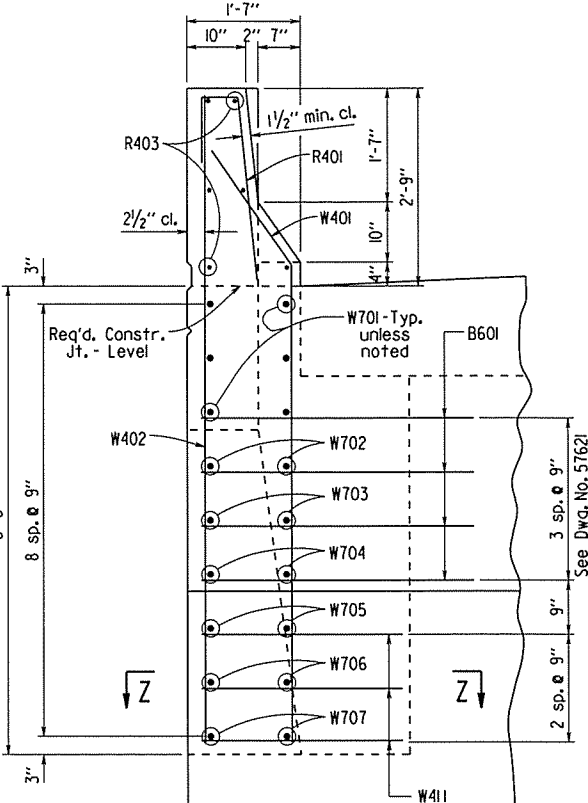
WING	Elev. "A"	"B"	"C"
A	240.55	9 9/16"	4'-6"
B	242.01	8 9/16"	4'-5 1/4"



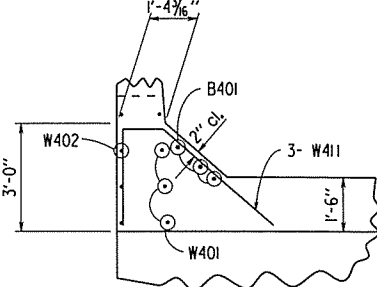
SHEET 3 OF 3
DETAILS OF BENT 6
COCKLE BURR SLOUGH

ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

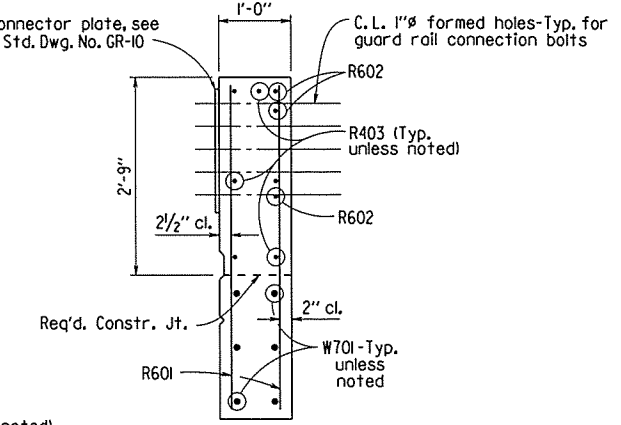
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DESIGNED BY: ADW DATE: 12/2/12
BRIDGE NO. 07363 DRAWING NO. 57623



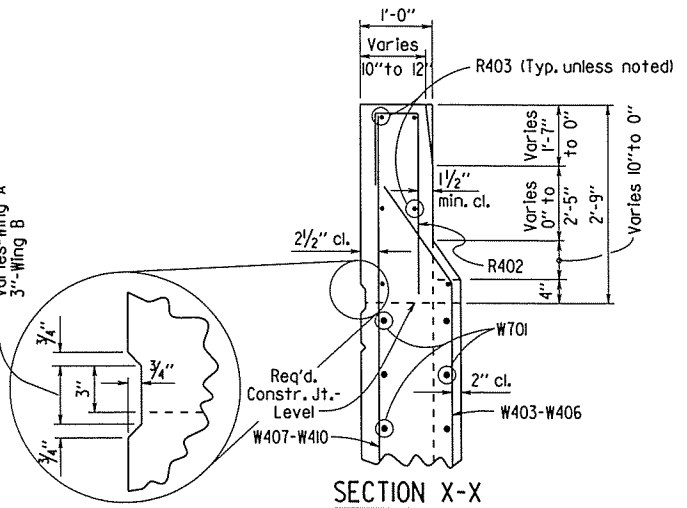
VIEW W-W
Scale: 3/4" = 1'-0"



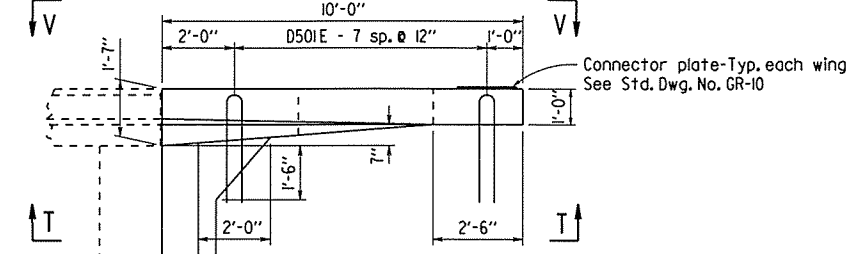
SECTION Z-Z
Scale: 3/8" = 1'-0"



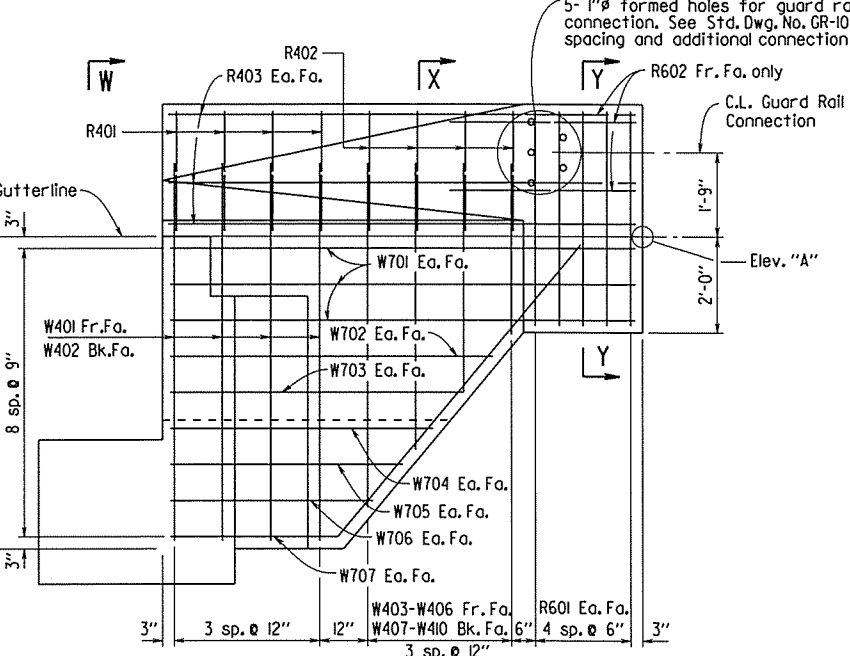
SECTION Y-Y
Scale: 3/4" = 1'-0"



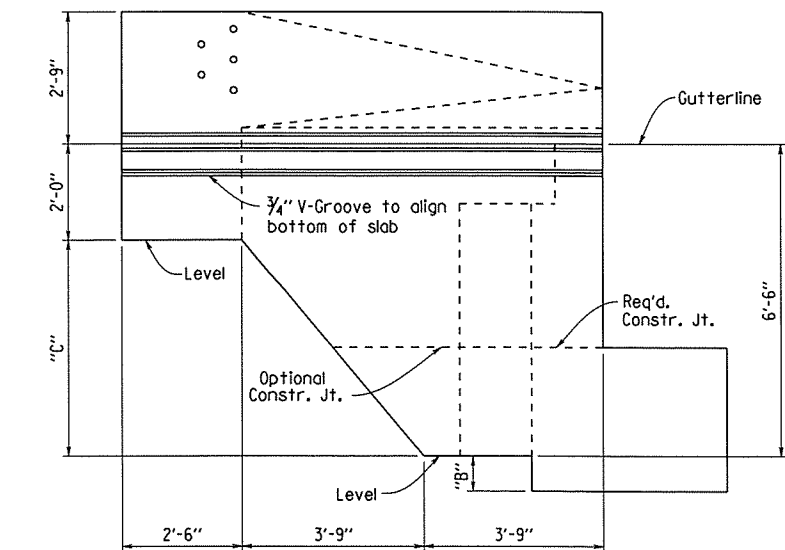
SECTION X-X
Scale: 3/4" = 1'-0"



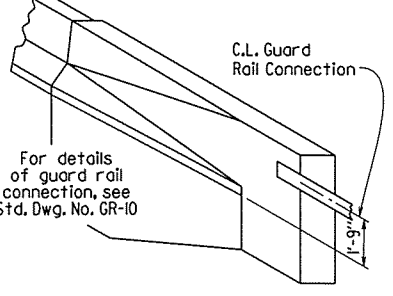
PLAN OF RAIL
Scale: 3/8" = 1'-0"



VIEW T-T
Scale: 1/2" = 1'-0"

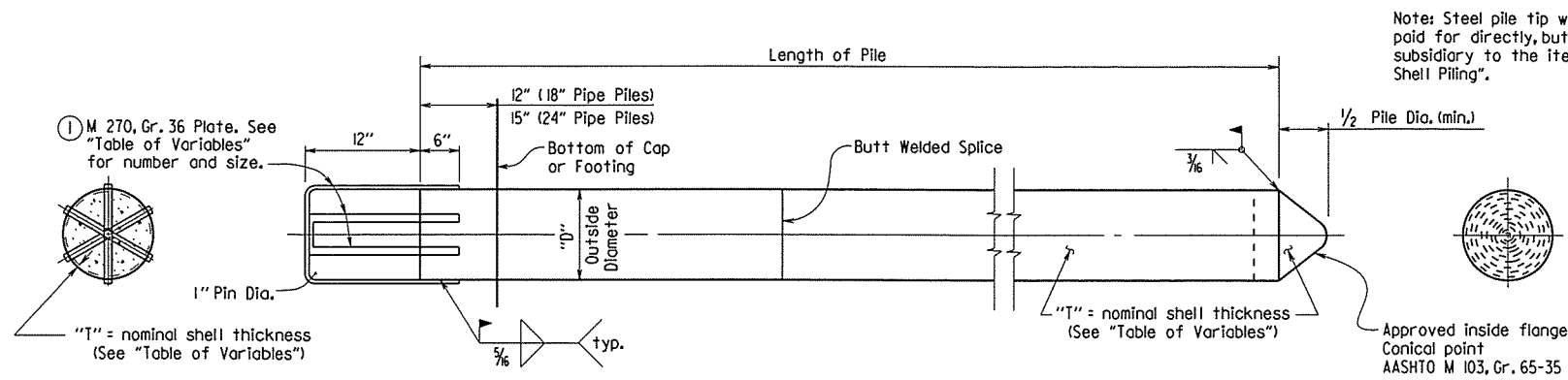


VIEW V-V
Scale: 1/2" = 1'-0"



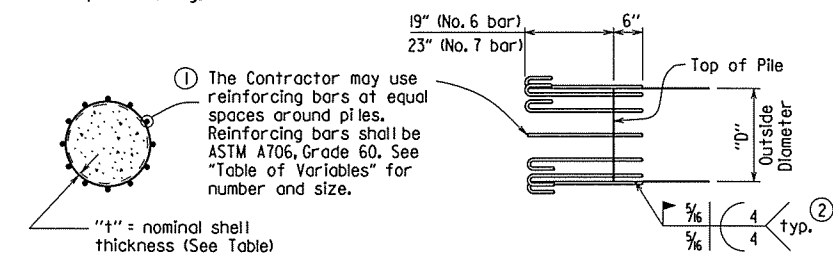
THREE DIMENSIONAL VIEW OF RAIL
No Scale

PRINT DATE: 9/30/2015



① Pile anchorage shall be placed to minimize interference with anchor bolts and reinforcing in cap or footing.

CONCRETE FILLED STEEL SHELL PILE



GENERAL NOTES FOR CONCRETE FILLED STEEL SHELL PILES:

Steel shells shall conform ASTM A252, Grade 3 (Fy = 45,000 psi.).

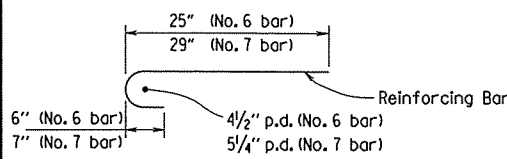
Concrete used for filling of steel shell shall be Class S with a minimum 28-day compressive strength, f'c = 3,500 psi. and shall be poured in the dry.

Steel shell piling that extends above the ground and is not protected by pile encasement shall be painted in accordance with Subsection 805.02.

See Bridge Layout for size and estimated length of steel shell piles and for additional driving information.

Concrete, structural steel, reinforcing steel (including welding), and painting will not be paid for separately, but will be considered subsidiary to the item "Steel Shell Piling".

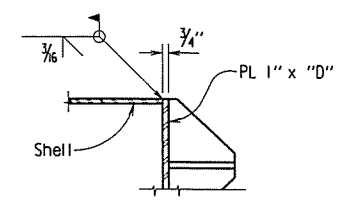
ALTERNATE PILE ANCHORAGE DETAIL



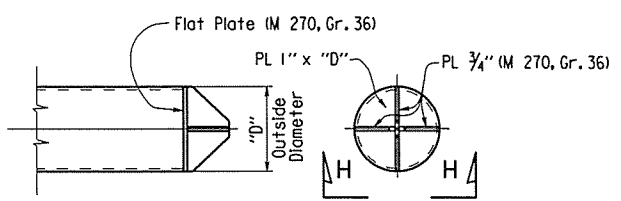
HOOKED BAR DETAIL

TABLE OF VARIABLES

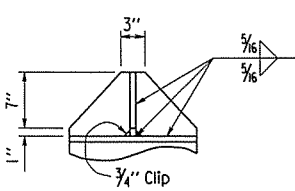
OUTSIDE DIAMETER "D"	NOMINAL SHELL THICKNESS "t"	PILE STRAPS	
		PLATE	REINFORCING
18"	0.50"	2 @ 1/2" x 1 3/8"	6 - No. 6
24"	0.50"	3 @ 1/2" x 2"	8 - No. 7



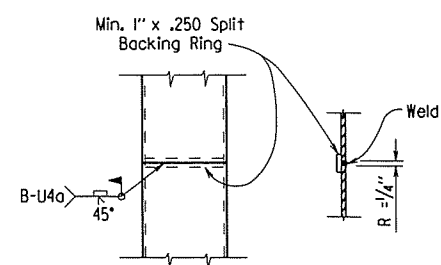
PART SECTION



ELEVATION



VIEW H-H



TYPICAL SPLICE DETAILS

GENERAL NOTES FOR PILE ENCASEMENTS:

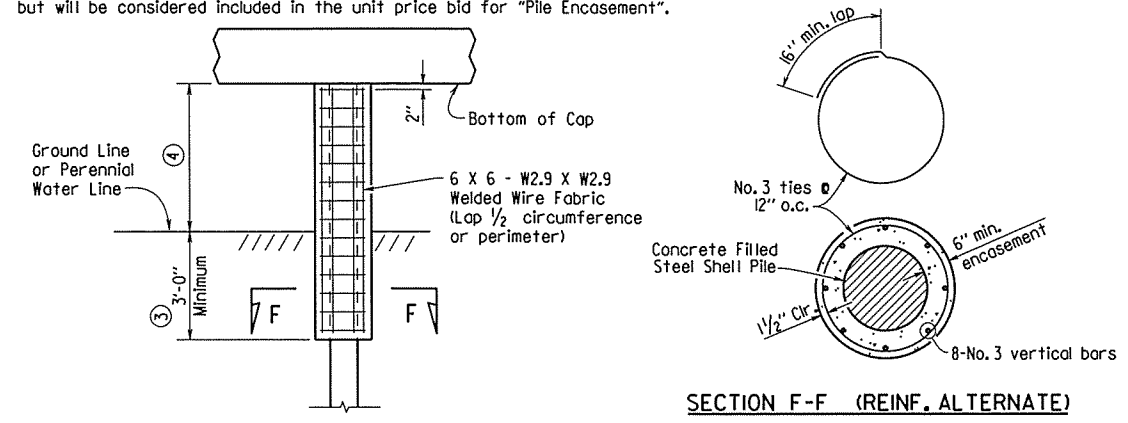
See Bridge Layout for required location of pile encasements. Only interior trestle pile bents shall have pile encasements.

Concrete shall be Class S with a minimum 28-day compressive strength, f'c = 3,500 psi. If concrete cannot be placed in the dry, Seal Concrete may be used from top to bottom of encasement.

Reinforcing steel shall conform to AASHTO M 31 or M 322, Type A with mill test reports.

Welded wire fabric shall conform to AASHTO M 55 or M 221.

Concrete and welded wire fabric or reinforcing steel will not be paid for separately, but will be considered included in the unit price bid for "Pile Encasement".



SECTION F-F (REINF. ALTERNATE)

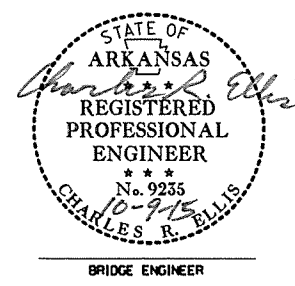
PILE ENCASEMENT DETAIL FOR STEEL SHELL PILES

(Shown with Encasement to Bottom of Cap) ⑤

③ Unless otherwise noted on Bridge Layout.

④ See Bridge Layout for height of pile encasement (3'-0" Minimum).

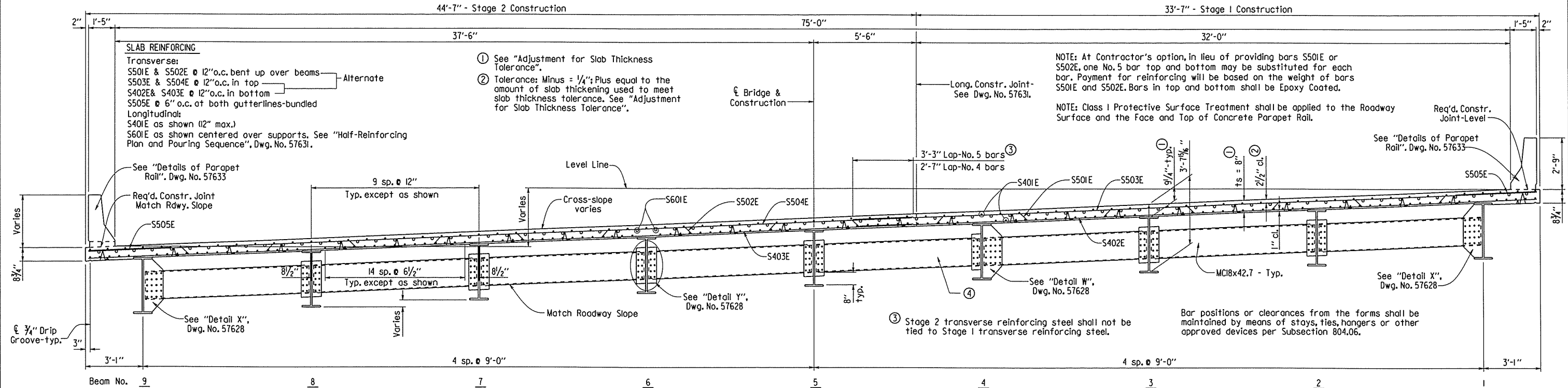
⑤ Pile encasement, when not extended to bottom of cap, shall have 2" concrete taper for water runoff as shown in the detail for partial height encasement.



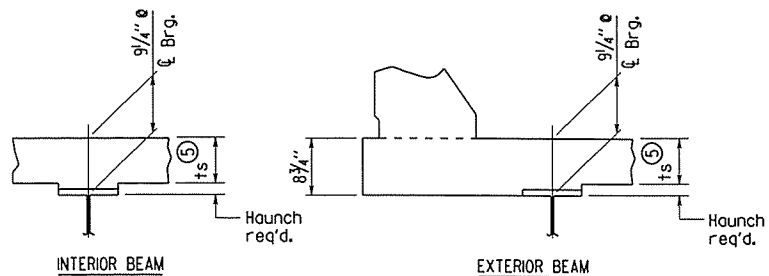
DETAILS OF
CONCRETE FILLED STEEL SHELL PILES
AND PILE ENCASEMENTS
COCKLE BURR SLOUGH
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 10-14-13 FILENAME: bca001-ssp.dgn
CHECKED BY: DJS DATE: 10/15/13 SCALE: NONE
DESIGNED BY: ADN DATE: 12/12
BRIDGE NO. 07363 DRAWING NO. 57624

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA1001	137	283
				①	07363 - 327 FT. UNIT - 57625			



TYP. ROADWAY SECTION
 Looking Ahead
 Scale: 3/8" = 1'-0"



⑤ Tolerance when removable deck forming is used is +1/2", -1/4". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

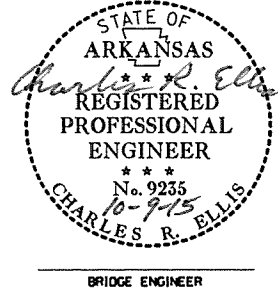
Note: ts = slab thickness as shown on superstructure detail drawings.

Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance: Minimum - occurs when top flange contacts bottom reinforcing steel; Maximum - top flange thickness plus 1 1/4". No increase in concrete and structural steel quantities will be made to maintain tolerances.

Tolerances shown are applicable only when removable deck forming is used. See Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

No Scale



SHEET 1 OF 10
 DETAILS OF 327'-0" CONTINUOUS
 COMPOSITE W-BEAM UNIT
 COCKLE BURR SLOUGH

ROUTE SEC.
 ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

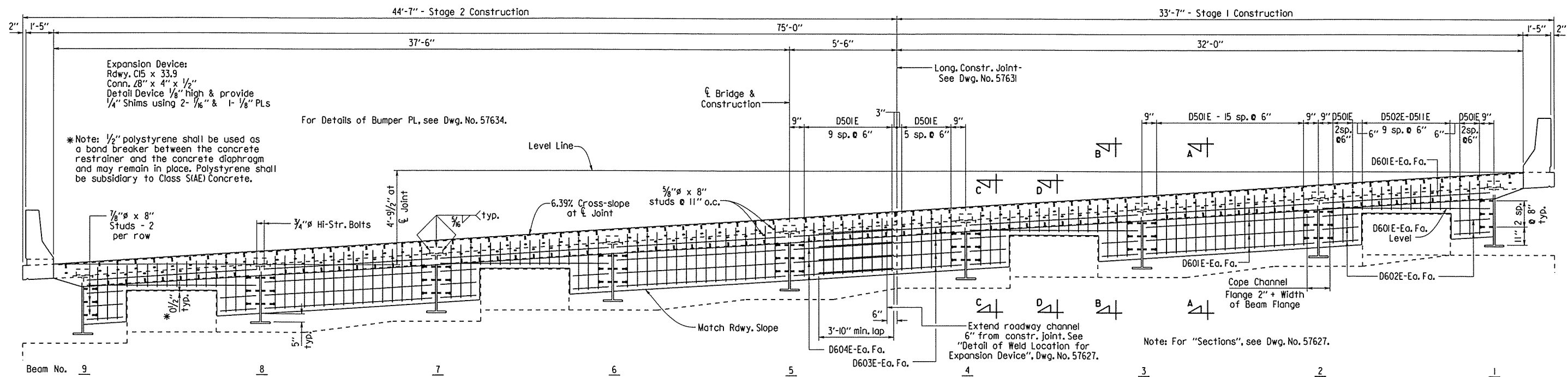
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CHECKED BY: DBJ DATE: 10/5/13 SCALE: AS NOTED

DESIGNED BY: ADAN DATE: 8/12

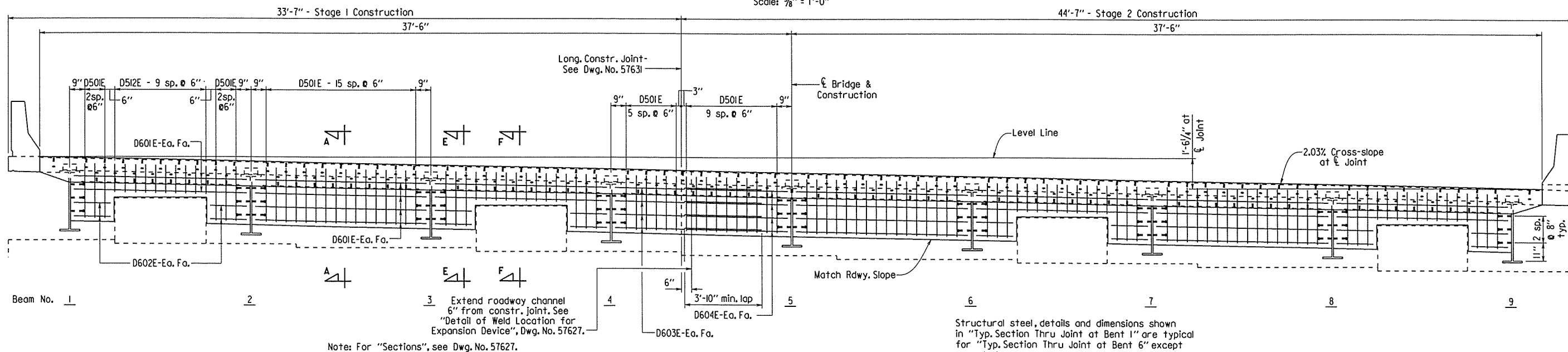
BRIDGE NO. 07363 DRAWING NO. 57625

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA1001	138	283
07363 - 327 FT. UNIT - 57626								



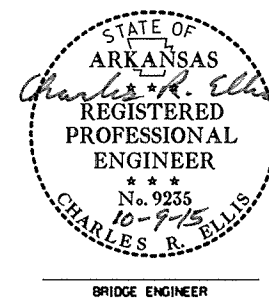
TYP. SECTION THRU JOINT AT BENT 1

Looking Ahead
Scale: 3/8" = 1'-0"



TYP. SECTION THRU JOINT AT BENT 6

Looking Back
Scale: 3/8" = 1'-0"



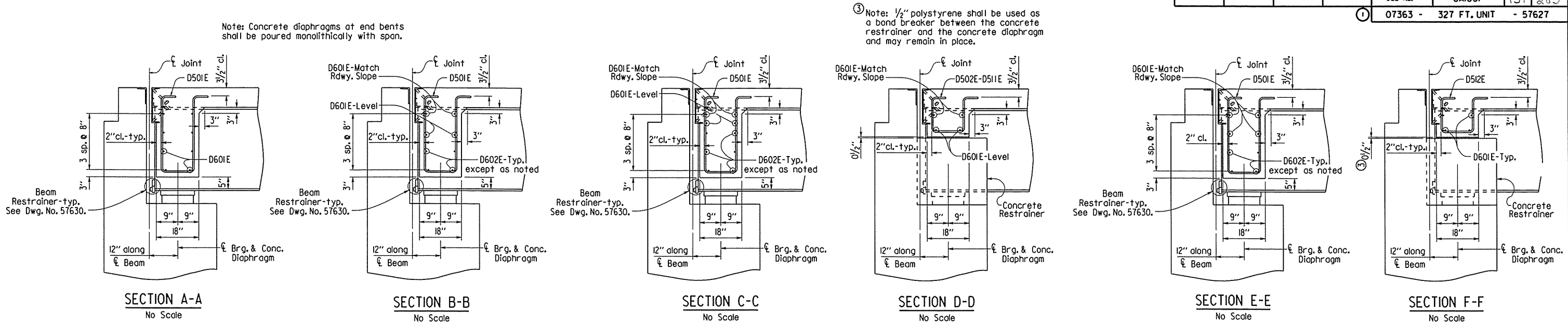
SHEET 2 OF 10
DETAILS OF 327'-0" CONTINUOUS
COMPOSITE W-BEAM UNIT
COCKLE BURR SLOUGH

ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 8-29-13 FILENAME: bcal001.sldgn
CHECKED BY: DBS DATE: 10/5/15 SCALE: AS NOTED
DESIGNED BY: ADW DATE: 8/12
BRIDGE NO. 07363 DRAWING NO. 57626

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA1001	139	283
						07363 - 327 FT. UNIT		57627



GENERAL NOTES

CONSTRUCTION SPECIFICATIONS:
Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition) with applicable Supplemental Specifications and Special Provisions.

DESIGN SPECIFICATIONS:
AASHTO LRFD Bridge Design Specifications (Sixth Edition 2012).

MATERIALS AND STRENGTHS:
Class S(AE) Concrete
Reinforcing Steel (Grade 60, AASHTO M 31 or M 322, Type A)
Structural Steel (AASHTO M 270, Gr. 50W)
Structural Steel (AASHTO M 270, Gr. 36)

$f'_c = 4,000$ psi
 $f_y = 60,000$ psi
 $F_y = 50,000$ psi
 $F_y = 36,000$ psi

CONCRETE :
All concrete shall be Class S(AE) with a minimum 28 day compressive strength, $f'_c = 4,000$ psi. Concrete shall be poured in the dry and all exposed corners to be chamfered $\frac{3}{4}$ " unless otherwise noted.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurement of Class S(AE) Concrete. See Std. Dwg. No. 55005 for allowable modifications and for tolerances when Permanent Steel Bridge Deck Forms are used.

Removable forms shall be used for concrete diaphragms.

Concrete in bridge superstructure shall be placed, consolidated and screeded off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

The concrete deck shall be given a fine finish in accordance with Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the beam. If a longitudinal strike-off is used, a vertical camber adjustment must be made in the strike-off to account for the future dead load deflection due to the rolling. A minimum of 72 hours shall elapse between completion of the slab and the pouring of the parapet railing.

REINFORCING STEEL :
All reinforcing steel shall be Grade 60 (yield Strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports. The reinforcing steel is to be accurately located in the forms and firmly held in place by steel wire supports, sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly, but will be considered subsidiary to the item "Epoxy Coated Reinforcing Steel (Grade 60)".

STRUCTURAL STEEL :
All structural steel shall be AASHTO M 270, Grade 50W unless otherwise noted and shall be paid for as "Structural Steel in Beam Spans (M 270, Gr. 50W)". Grade 50W steel shall not be painted. All exposed surfaces shall be cleaned in accordance with Subsection 807.84(e) unless otherwise noted. Structural steel completely embedded in concrete may be AASHTO M 270, Gr. 36, Gr. 50 or Gr. 50W unless otherwise noted.

Drawings show general features of design only. Shop drawings shall be made in accordance with the specifications, submitted and approval secured before fabrication is begun.

Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on the approved shop drawings. Payment will be based on the basis of shapes and materials shown in the plans, and no additional compensation will be made for any adjustments due to substitutions.

Beams and field splice plates are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in Subsection 807.05. This work and material will not be paid for directly, but shall be considered subsidiary to the item "Structural Steel in Beam Spans (M 270, Gr. 50W)".

All beams shall be blocked in their true position in the shop with the webs horizontal. The camber, length of sections, distance between bearings and openings of joints shall be measured with the beams in their true position and this information shall become part of the permanent records for this job. The component parts shall be match marked in this assembly and these marks shall be shown on the erection diagram. All beam dimensions are based on a temperature of 60 degrees F. A tolerance of $\frac{1}{4}$ " +/- is allowed for camber.

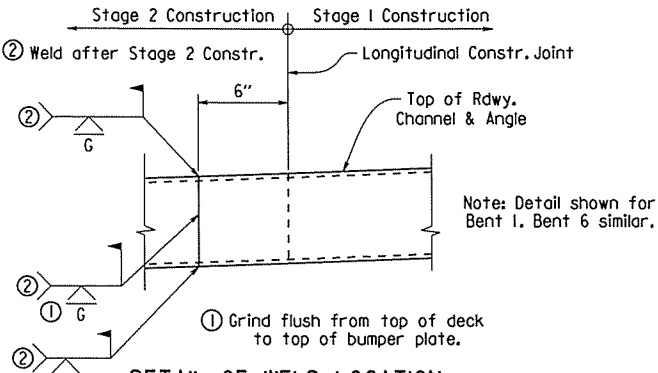
Flange field splice plates shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, whether permanent or temporary, a formal request with detailed drawings shall be submitted to the Engineer for approval; however, additional welds used for attaching falsework support devices or screed rail supports to the structural steel that do not exceed the limitations of Subsection 802.13 will not require approval prior to construction. All welding shall conform to Subsection 807.26.

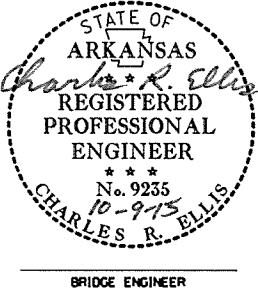
Field connections shall be bolted with high-strength bolts and shall be $\frac{3}{4}$ " ϕ bolts unless otherwise noted. Open Holes shall be $\frac{1}{8}$ " ϕ unless otherwise noted. Holes for $\frac{3}{4}$ " ϕ high-strength bolts may be $\frac{5}{8}$ " ϕ if a washer is supplied for use under both the nut and head of the bolt. Bolts shall be placed with heads on the outside face of the exterior beam webs and on the bottom of the beam flanges.

Steel diaphragms shall be installed as beams are erected. All bolts in diaphragms and field splices shall be installed and tightened in accordance with Subsection 807.71 prior to pouring the concrete deck unless otherwise noted.

All stud shear connectors shall be granular flux filled, solid fluxed, or equal and shall be automatically end welded in accordance with recommendations of the manufacturer.



**DETAIL OF WELD LOCATION
FOR EXPANSION DEVICE**
No Scale

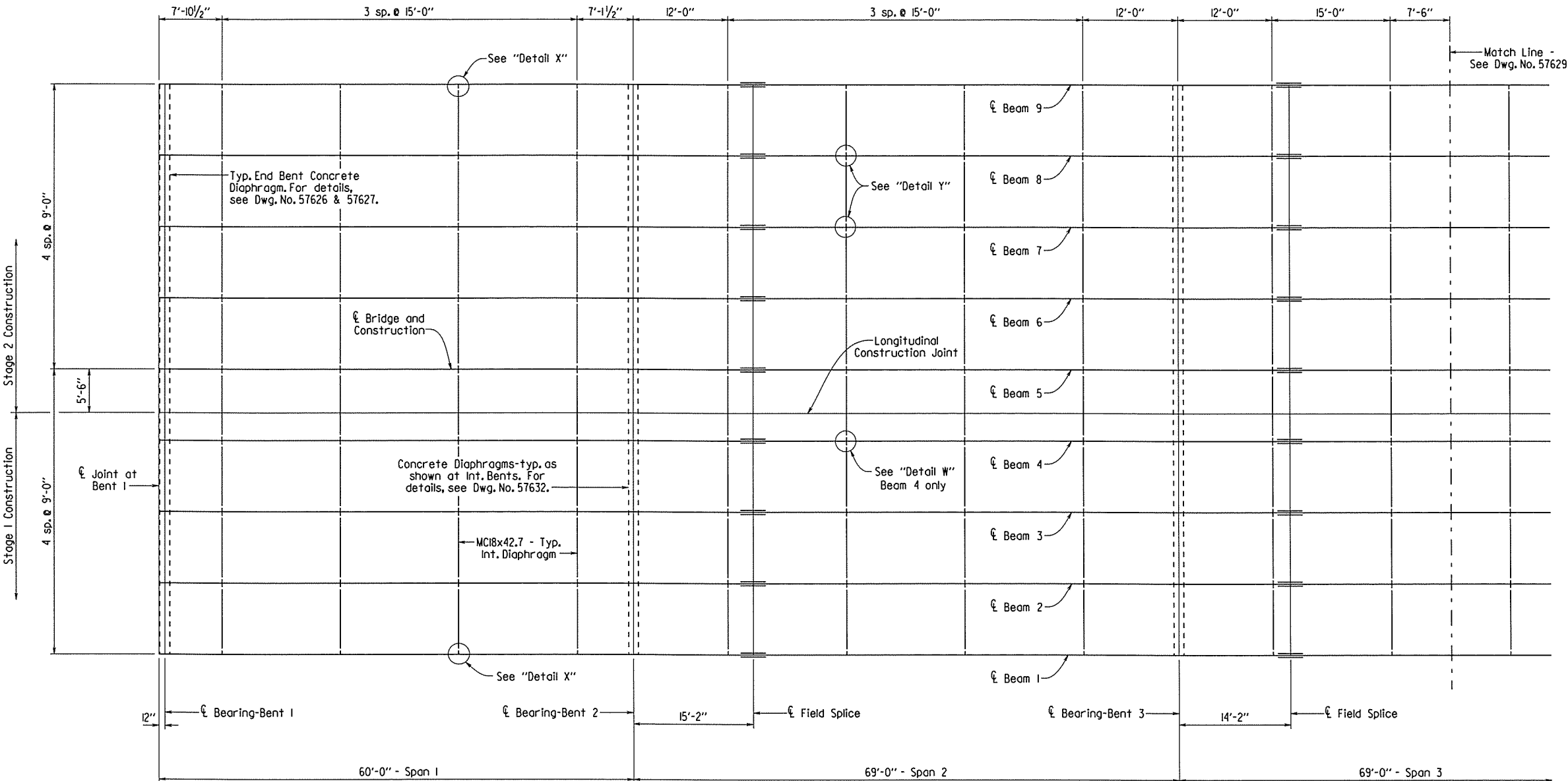


SHEET 3 OF 10
DETAILS OF 327'-0" CONTINUOUS
COMPOSITE W-BEAM UNIT
COCKLE BURR SLOUGH

ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 9-12-13 FILENAME: bcd1001.sl.dgn
CHECKED BY: DJS DATE: 10/5/15 SCALE: AS NOTED
DESIGNED BY: ADN DATE: 8/12
BRIDGE NO. 07363 DRAWING NO. 57627

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA1001	140	283
07363 - 327 FT. UNIT - 57628								

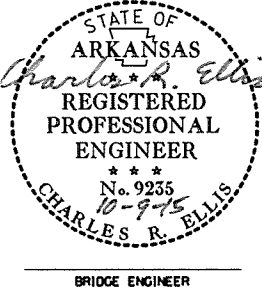
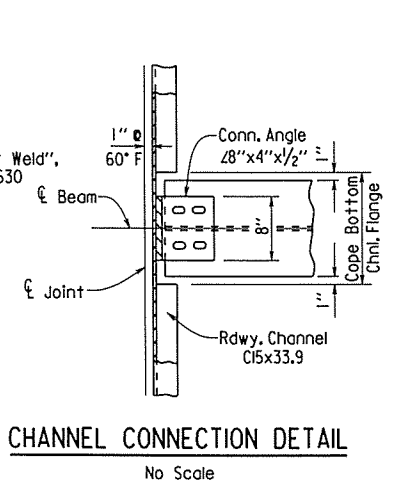
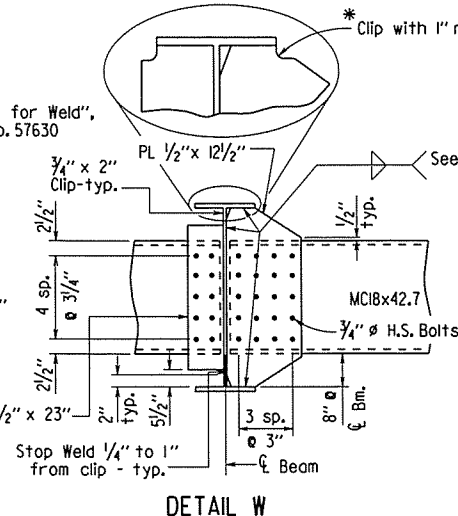
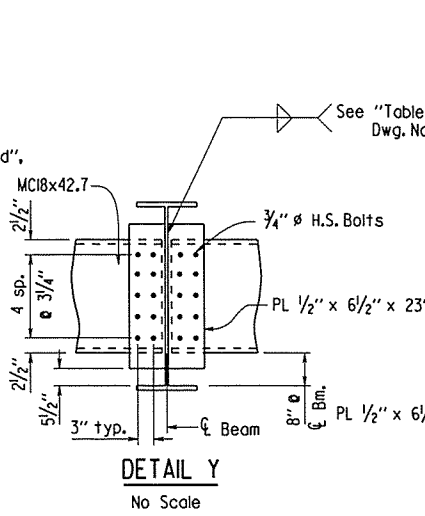
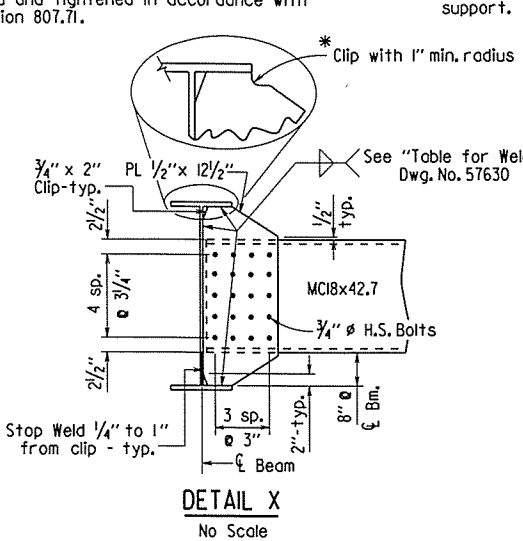


FRAMING PLAN

Scale: 1/8" = 1'-0"

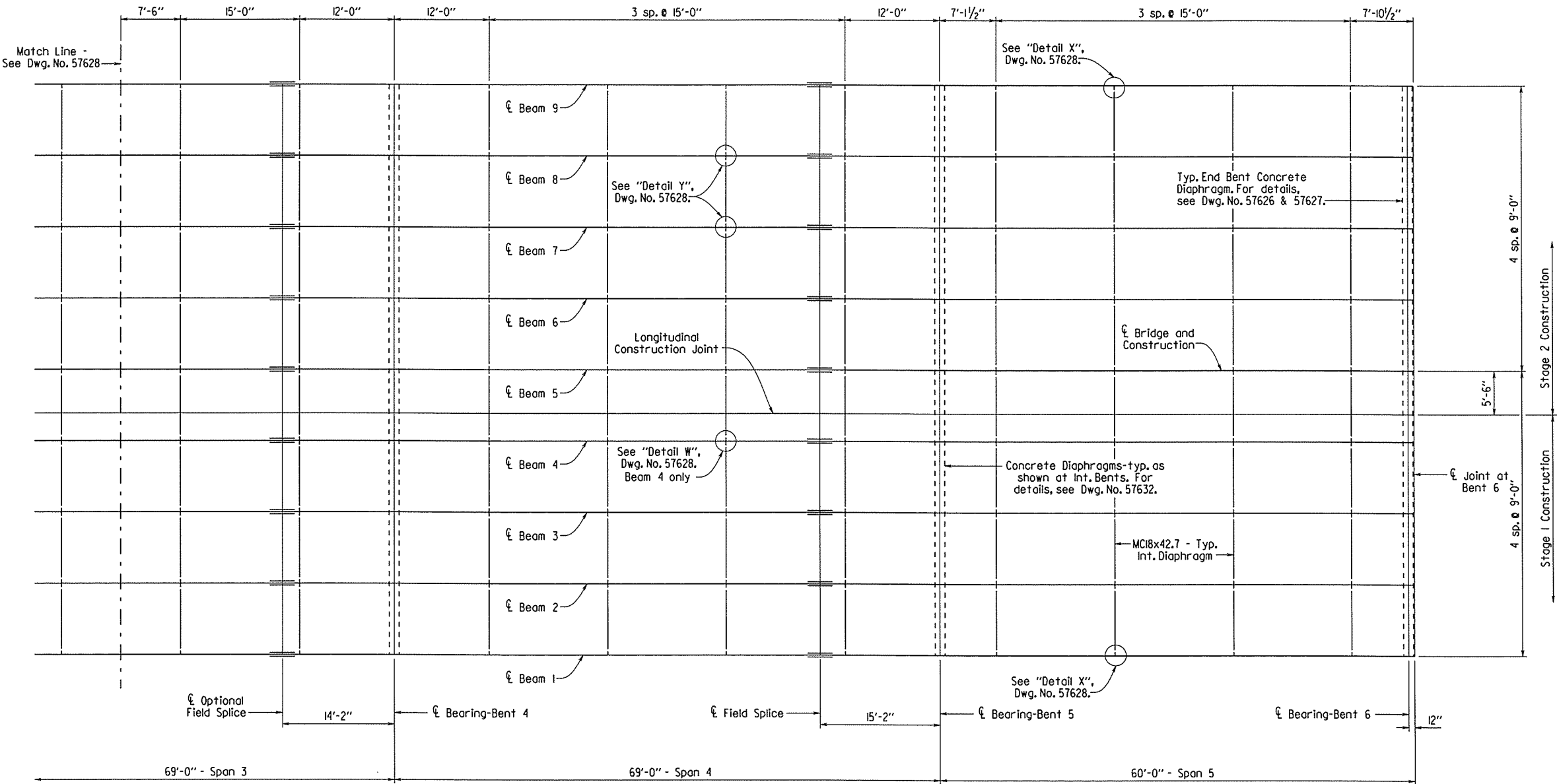
Note: Bolts in connections shall be properly installed and tightened in accordance with Subsection 807.71.

* If permanent steel bridge deck forms are used, the fabricator shall clip the plate as necessary to accommodate the deck form support.

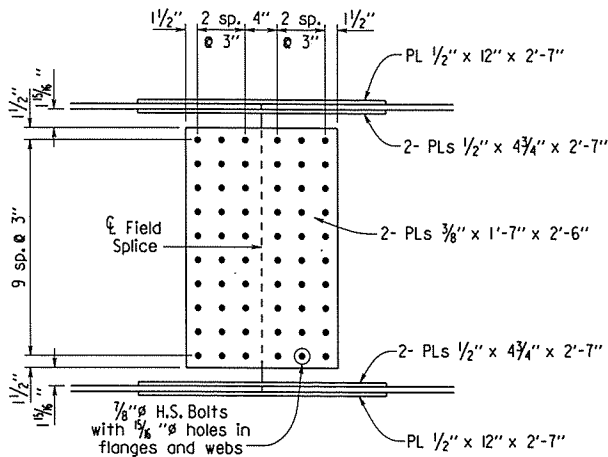


SHEET 4 OF 10
DETAILS OF 327'-0" CONTINUOUS
COMPOSITE W-BEAM UNIT
COCKLE BURR SLOUGH
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: KDH DATE: 9-6-13 FILENAME: bcal001.sldgn
CHECKED BY: DBS DATE: 10/5/15 SCALE: AS NOTED
DESIGNED BY: ADN DATE: 8/12
BRIDGE NO. 07363 DRAWING NO. 57628

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	CA1001		141	283
				① 07363 - 327 FT. UNIT - 57629				

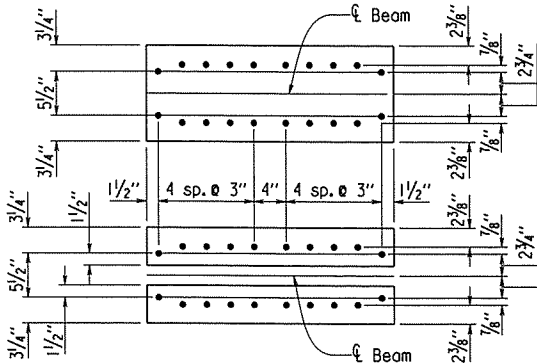


FRAMING PLAN
Scale: 1/8" = 1'-0"



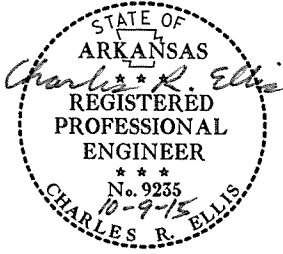
WEB SPlice

FIELD SPlice DETAILS
Scale: 1 1/2" = 1'-0"



FLANGE SPlice

Note: All field splice plates shall be AASHTO M 270, Gr. 50W.



SHEET 5 OF 10
DETAILS OF 327'-0" CONTINUOUS
COMPOSITE W-BEAM UNIT
COCKLE BURR SLOUGH

ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 9-6-13 FILENAME: bcal001.sldgn
CHECKED BY: DBS DATE: 10/5/13 SCALE: AS NOTED
DESIGNED BY: ADW DATE: 8/12
BRIDGE NO. 07363 DRAWING NO. 57629

Note: Bolted field splices may be eliminated or shop welded splices may be substituted with the approval of the Engineer. Payment will be made on the basis of plan quantities.

* At the Contractor's option, a field splice may be provided at this location. Payment will be at the Contractor's expense.

* If the optional field splice is used, eliminate the shear connectors in this region.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA1001	142	283
07363 - 327 FT. UNIT - 57630								

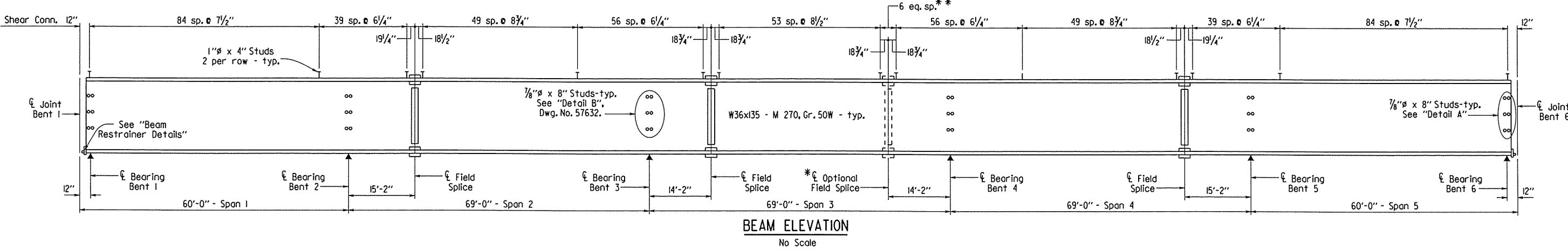
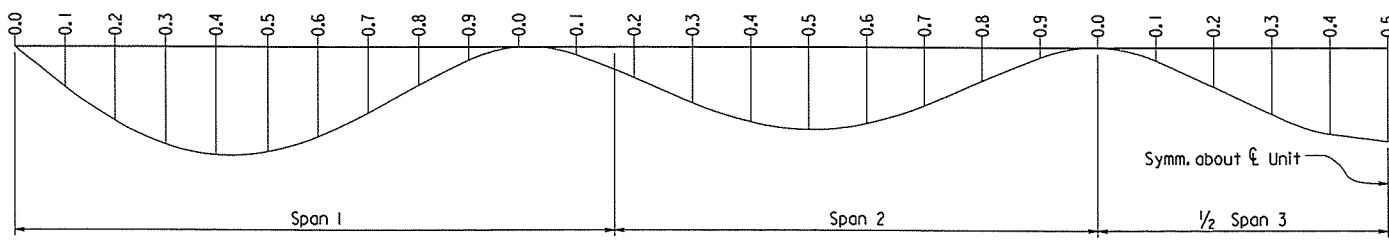


TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

Span	Point of Deflection	Structural Steel		Structural Steel + Slab		Structural Steel + Slab + Parapet	
		Int. Beams	Ext. Beams	Int. Beams	Ext. Beams	Int. Beams	Ext. Beams
1	0	0	0	0	0	0	0
	0.1	0.033	0.030	0.214	0.189	0.222	0.197
	0.2	0.060	0.056	0.395	0.349	0.410	0.365
	0.3	0.079	0.073	0.520	0.460	0.540	0.481
	0.4	0.088	0.081	0.577	0.510	0.599	0.533
	0.5	0.086	0.079	0.561	0.497	0.582	0.519
	0.6	0.073	0.068	0.481	0.426	0.499	0.445
	0.7	0.054	0.050	0.353	0.312	0.366	0.326
	0.8	0.031	0.029	0.204	0.180	0.212	0.188
	0.9	0.011	0.010	0.070	0.062	0.073	0.065
2	0	0	0	0	0	0	0
	0.1	0.006	0.006	0.042	0.037	0.044	0.039
	0.2	0.025	0.023	0.163	0.145	0.169	0.151
	0.3	0.045	0.042	0.299	0.264	0.310	0.276
	0.4	0.061	0.057	0.400	0.354	0.415	0.370
	0.5	0.067	0.062	0.440	0.390	0.457	0.407
	0.6	0.062	0.058	0.408	0.361	0.423	0.377
	0.7	0.048	0.044	0.312	0.276	0.324	0.288
	0.8	0.027	0.025	0.179	0.158	0.186	0.165
	0.9	0.008	0.008	0.054	0.047	0.056	0.049
1/2 Span 3	0	0	0	0	0	0	0
	0.1	0.011	0.010	0.069	0.061	0.072	0.064
	0.2	0.032	0.030	0.210	0.186	0.218	0.194
	0.3	0.054	0.050	0.356	0.315	0.369	0.329
	0.4	0.070	0.065	0.462	0.409	0.479	0.427
1/2 Unit	0.5	0.076	0.071	0.500	0.443	0.519	0.463

Note: Table is symmetrical about Unit



DEAD LOAD DEFLECTIONS DIAGRAM (TYP.)

Note: Camber for Dead Load Deflection plus Vertical curve $\pm 1/4$ " tolerance. Deflections shown are from a chord from Unit Bearing to Unit Bearing. Vertical curve corrections not included. Negative sign (-) indicates point above chord.

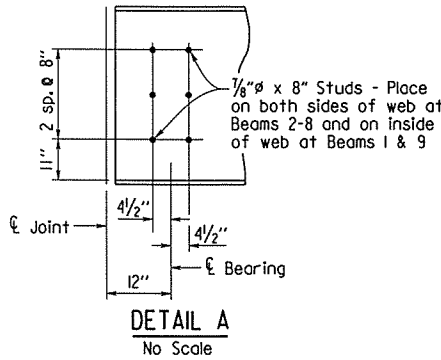
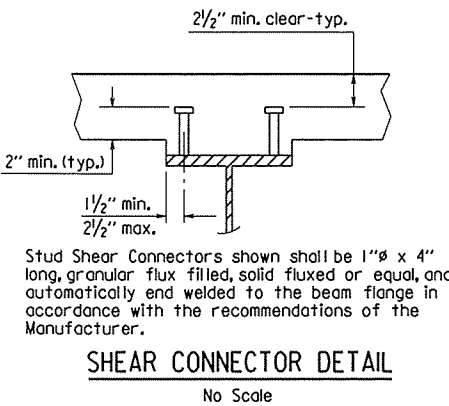
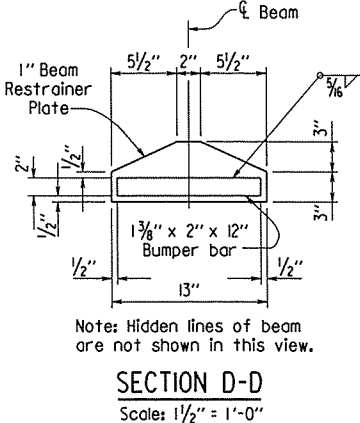
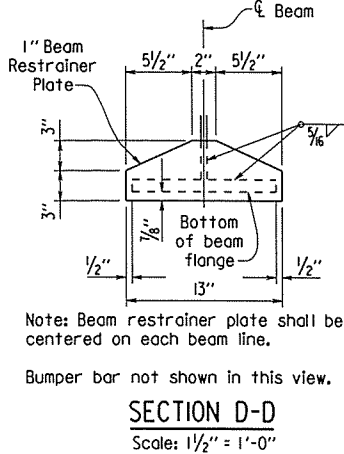
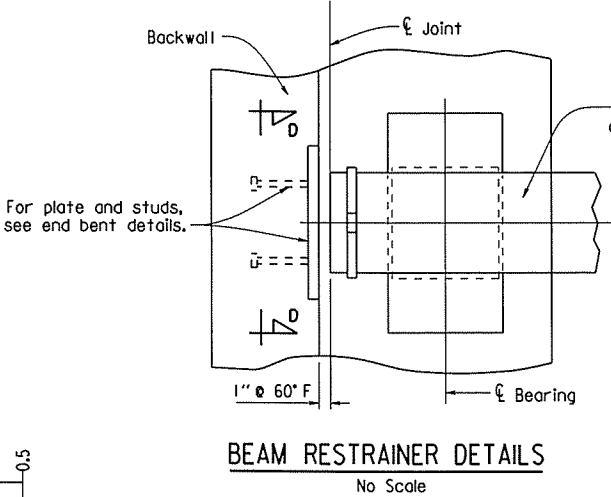


TABLE FOR WELD

Material Thickness of Thicker Part Joined (Inches)	Minimum Size of Fillet Weld (Inches)	Single Pass Weld Must Be Used
To 3/4" Inclusive	1/4"	
Over 3/4"	5/16"	

Note: When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
10-9-15
CHARLES R. ELLIS
BRIDGE ENGINEER

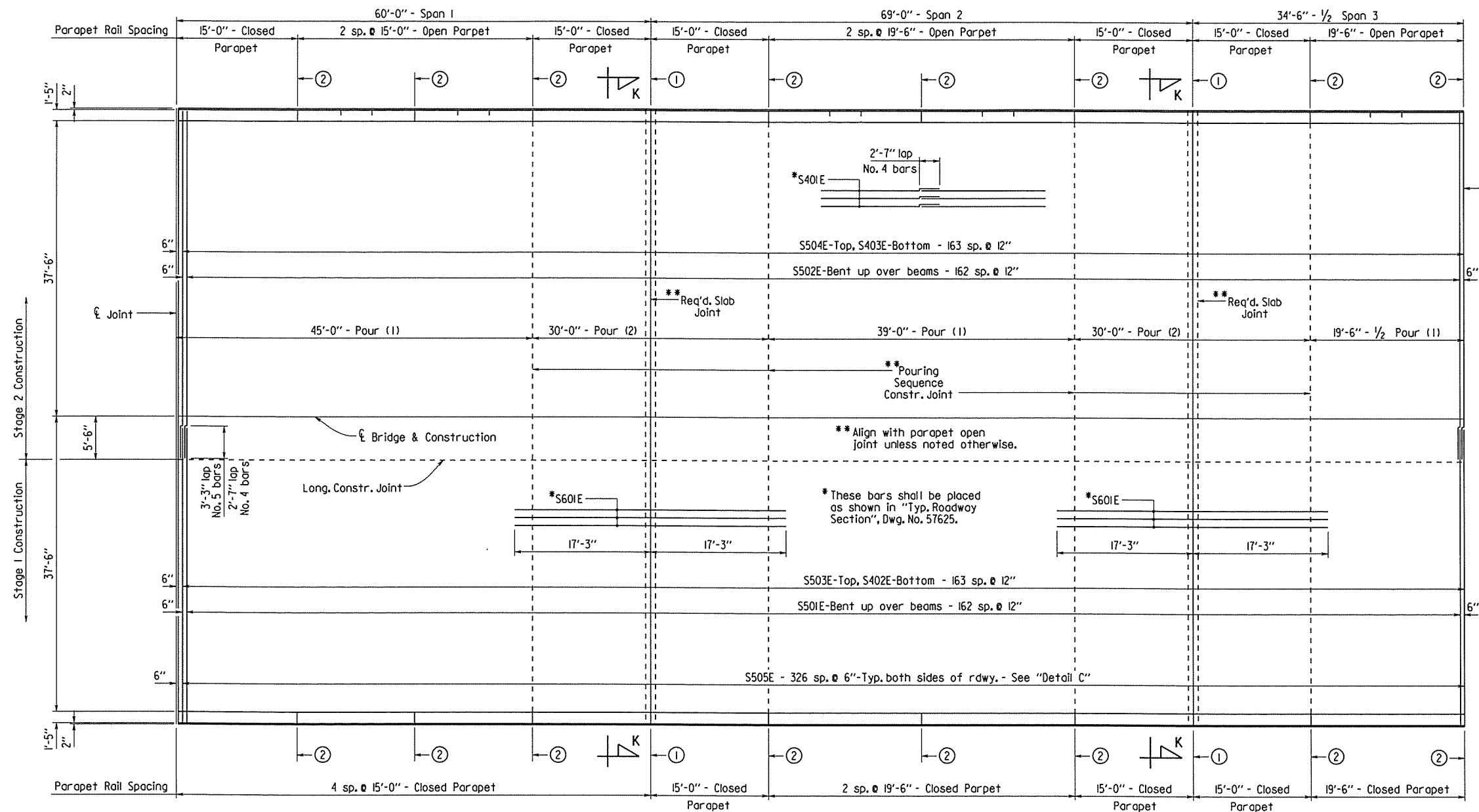
SHEET 6 OF 10
DETAILS OF 327'-0" CONTINUOUS COMPOSITE W-BEAM UNIT
COCKLE BURR SLOUGH

ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 9-8-13 FILENAME: bcal001.sl.dgn
CHECKED BY: DBS DATE: 10/5/13 SCALE: AS NOTED
DESIGNED BY: ADW DATE: 8/1/12
BRIDGE NO. 07363 DRAWING NO. 57630

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA1001	143	283

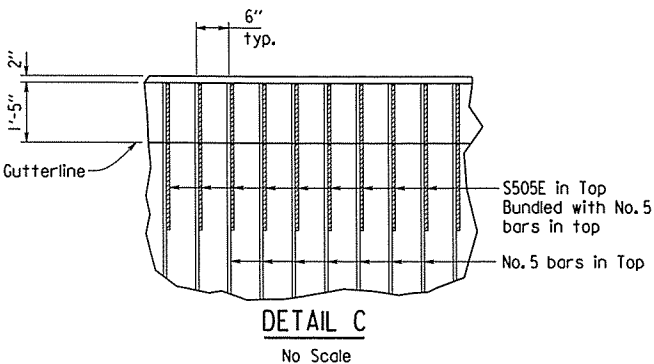
① 07363 - 327 FT. UNIT - 57631



- ① Full-Depth Parapet Joint (1/4" to 1" max.), Stop 4" from top of slab. See Dwg. No. 57633.
- ② Partial-Depth Parapet Joint (1/4" to 1" max.), Stop 1'-2" from top of slab. See Dwg. No. 57633.

Note: For each stage of construction, pours with the same number may be placed simultaneously or separately. All Pours (1) must be placed before Pours (2) can be placed. 48 hours shall elapse between the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of an adjacent pour. Any rolling pours made before the entire slab unit for each stage has been placed must be approved by the Engineer. The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

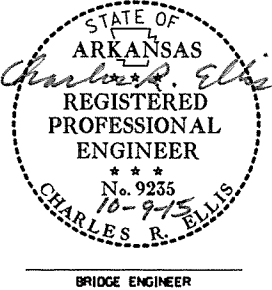
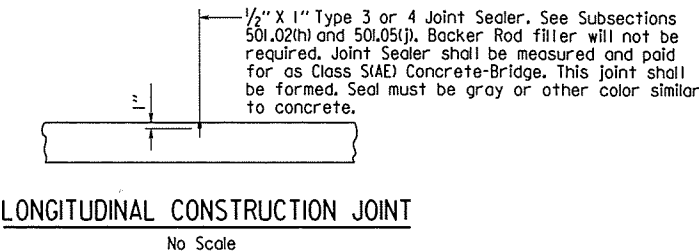
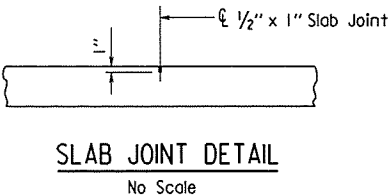
If the concrete diaphragms at intermediate bents are poured separately, a minimum of 48 hours shall elapse between the diaphragm pour and the slab pour.



HALF-REINFORCING PLAN AND POURING SEQUENCE
Scale: 1/8" = 1'-0"

Note: For "View K-K", see Dwg. No. 57632.

Use Type 3 or 4 Joint Sealer. See Subsections 501.02(h) and 501.05(j). Backer Rod filler will not be required. Joint Sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations. The joint sealer shall extend across the deck slab (gutterline to gutterline). Slab joints shall align with parapet open joints.

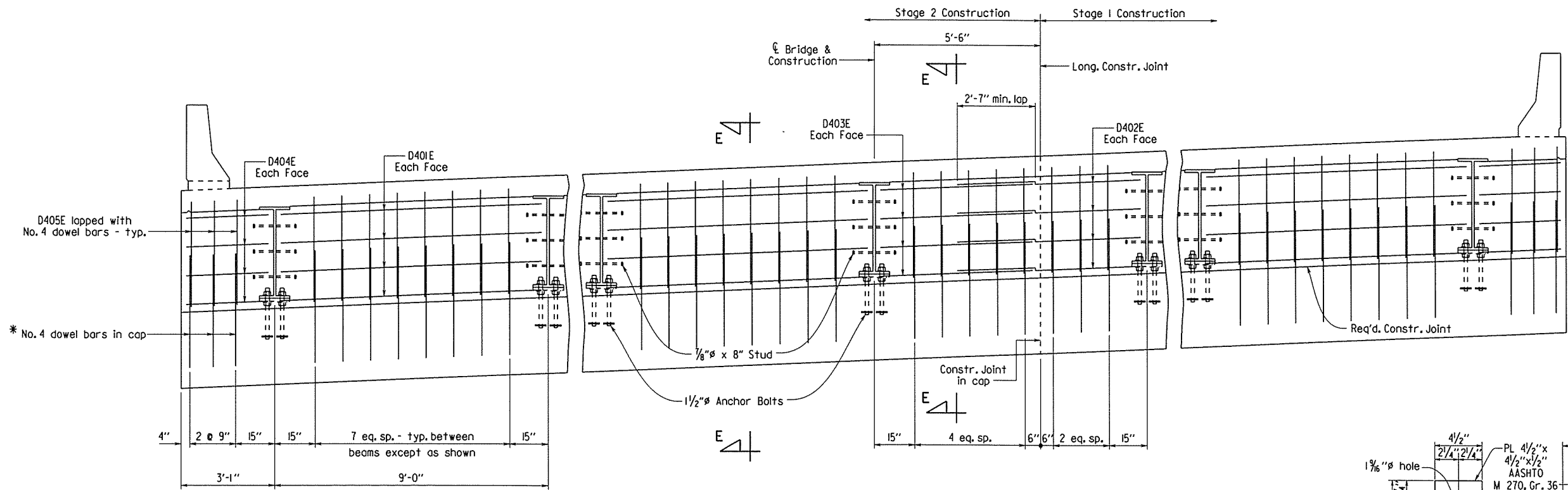


SHEET 7 OF 10
DETAILS OF 327'-0" CONTINUOUS
COMPOSITE W-BEAM UNIT
COCKLE BURR SLOUGH

ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

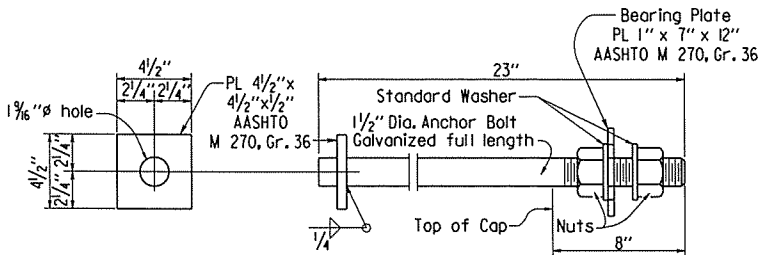
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DESIGNED BY: ADN DATE: 8/1/12
BRIDGE NO. 07363 DRAWING NO. 57631

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA1001	144	283
① 07363 - 327 FT. UNIT - 57632								



* See Dwg. No. 57620 for reinforcing details and placement.

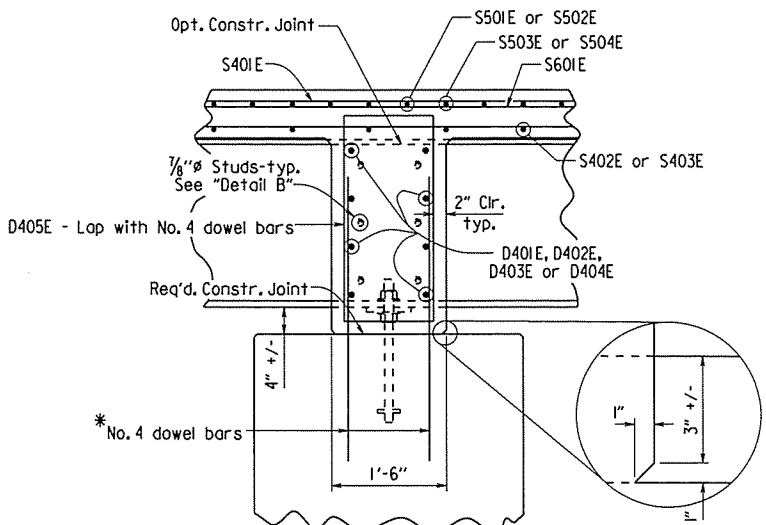
VIEW K-K
Looking Ahead at
Bents 2 - 5
No Scale



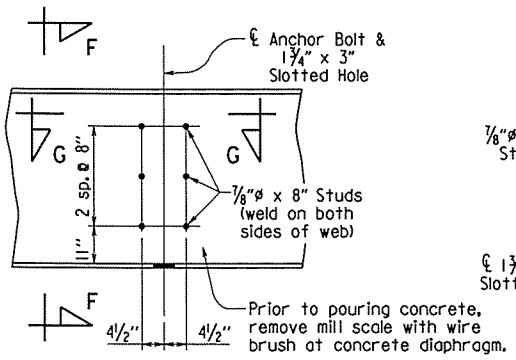
ANCHOR BOLT DETAIL
At Bents 2 - 5
No Scale

Anchor bolts shall comply with AASHTO M 314, Grade 55, with Supplementary Requirement S1, and galvanized according to Subsection 807.07. Nuts for bolts shall be as specified in Subsection 807.07. Plates, anchor bolts, nuts and washers shall be paid for at the unit price bid for "Structural Steel in Beam Spans (M 270, Gr. 50W)"

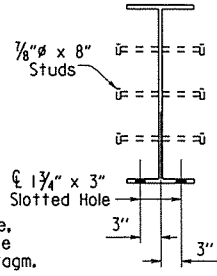
Use lower nut and washer to adjust to grade. Snug tight top nut and washer after grade is adjusted.



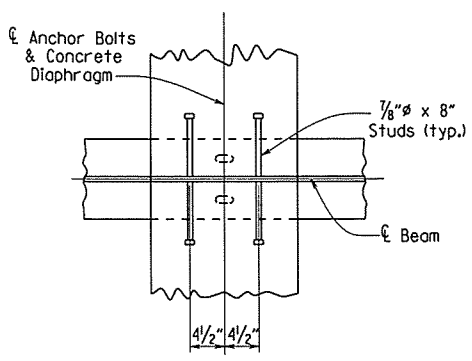
SECTION E-E
No Scale



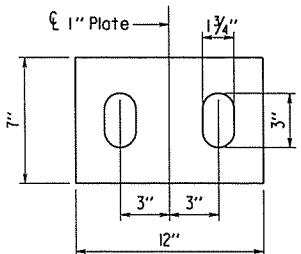
DETAIL B
No Scale



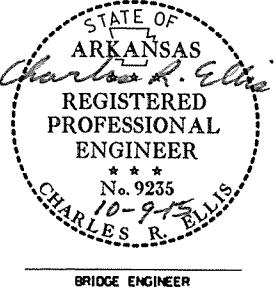
VIEW F-F
No Scale



SECTION G-G
No Scale



BEARING PLATE DETAIL
At Bents 2 - 5
No Scale

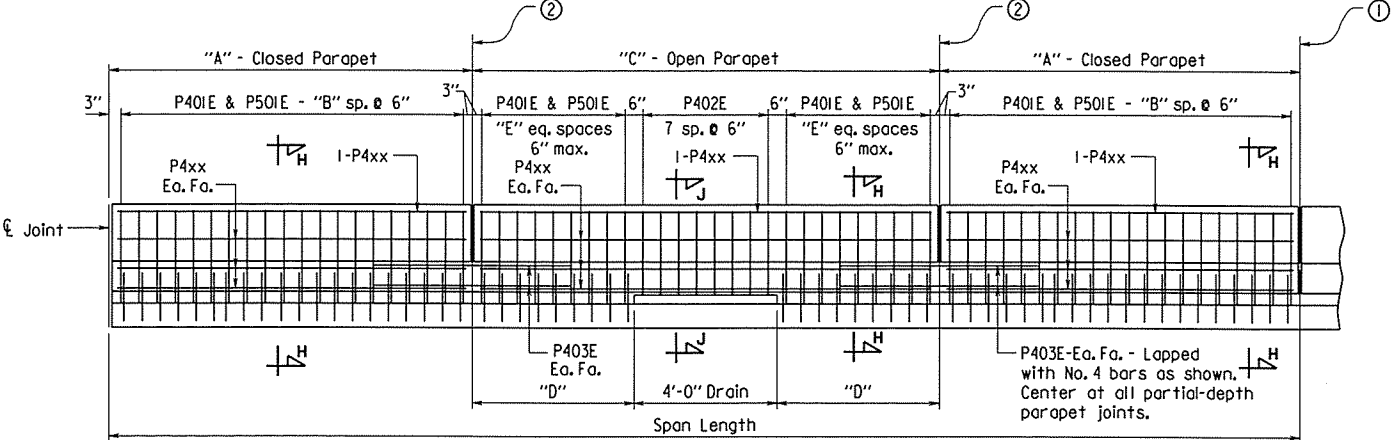


SHEET 8 OF 10
DETAILS OF 327'-0" CONTINUOUS
COMPOSITE W-BEAM UNIT
COCKLE BURR SLOUGH

ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 9-11-13 FILENAME: bcal001.sl.dgn
CHECKED BY: DBS DATE: 10/5/15 SCALE: AS NOTED
DESIGNED BY: ABN DATE: 8/12 BRIDGE NO. 07363 DRAWING NO. 57632



① Full-Depth Parapet Joint (1/4" to 1" max.) as shown in "Half-Reinforcing Plan and Pouring Sequence", Dwg. No. 5763L. Stop 4" from top of slab.

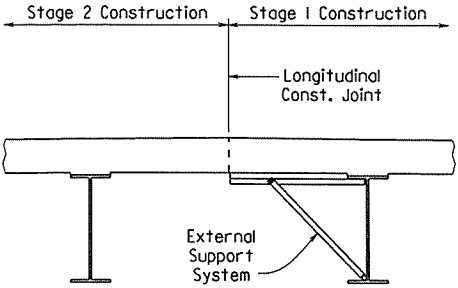
DETAILS OF PARAPET RAIL
No Scale

② Partial-Depth Parapet Joint (1/4" to 1" max.) as shown in "Half-Reinforcing Plan and Pouring Sequence", Dwg. No. 5763L. Stop 1'-2" from top of slab.

TABLE OF PARAPET RAIL VARIABLES

"A" Closed Parapet	"B"	P4xx Bar	"C" Open Parapet	"D"	"E"	P4xx Bar
15'-0"	29	P404E	15'-0"	5'-6"	10	P404E
19'-6"	38	P405E	19'-6"	7'-9"	15	P405E

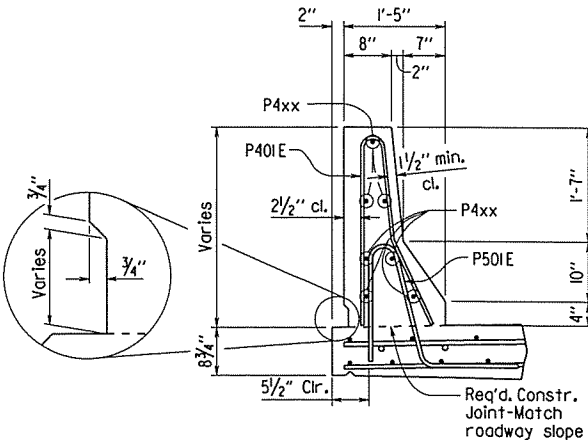
Note: For location of Open and Closed Parapet panels, see "Half-Reinforcing Plan and Pouring Sequence", Dwg. No. 5763L.



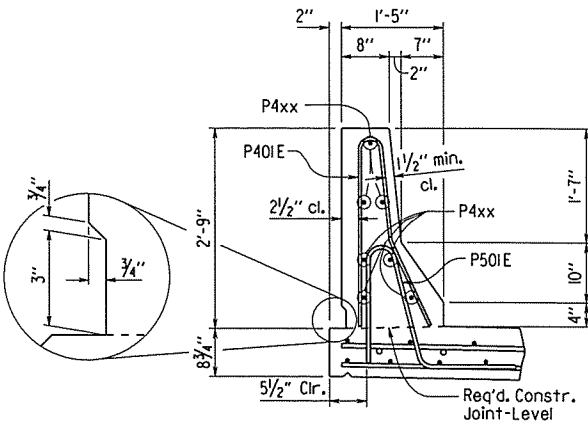
Stage 1 external supports in this bay shall remain in place until after completion of the Stage 2 deck pour. See Subsection 802.15 for additional information regarding their removal.

DECK SUPPORT AT LONGITUDINAL CONSTRUCTION JOINT

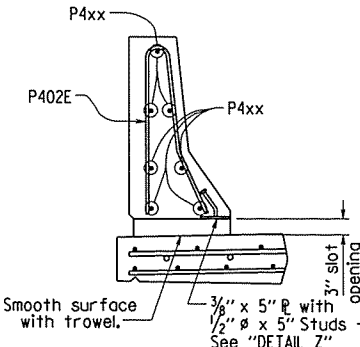
Looking Ahead
No Scale



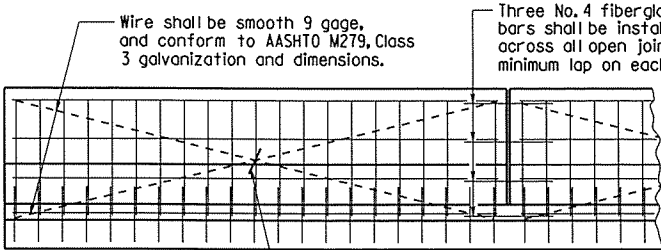
SECTION H-H
Low Side
Scale: 3/4" = 1'-0"



SECTION H-H
High Side
Scale: 3/4" = 1'-0"



SECTION J-J
Low Side Only
Scale: 3/4" = 1'-0"



Wire shall be smooth 9 gage, and conform to AASHTO M279, Class 3 galvanization and dimensions. Three No. 4 fiberglass reinforcing bars shall be installed as shown across all open joints with a 20" minimum lap on each steel bar.

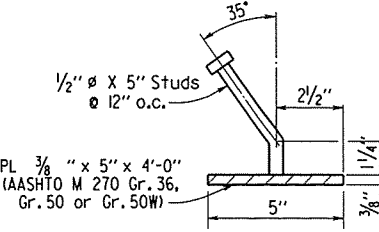
Bar to tighten smooth wire shall be fiberglass. All panels shall be braced as required to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of 1/4". To control cracking before sawing all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

All smooth wire bracing shall be placed on the inside faces of the reinforcing. For actual placement of reinforcing steel, see parapet details.

The extruded parapet shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and texture. Exposed surfaces may be given a light brush finish or a Class 3, Textured Coating Finish, in place of the Class 2, Rubbed Finish.

DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL

No Scale

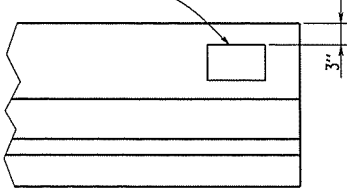


DETAIL Z
No Scale

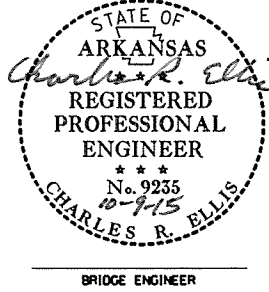
NOTE: The surfaces of the 3/8" plates which will not be in contact with concrete shall be painted with aluminum epoxy paint in accordance with Section 638, or as approved by the Engineer. Only one coat is required and shall be applied in the fabricator's shop. Painting will not be paid for directly, but will be considered subsidiary to "Structural Steel in Beam Spans (M 270 Gr. 50W)."

Parapet studs shall be 5" long, granular flux filled, solid fluxed or equal, and automatically end welded to the plate. Studs and plates shall meet the requirements of Section 807 and shall be measured and paid for as "Structural Steel in Beam Spans (M 270, Gr. 50W)."

Place Type D Bridge Name Plate on front face of span rail approx. 2'-0" from front face of backwall on right side beginning of bridge.



NAME PLATE DETAIL
No Scale



SHEET 9 OF 10
DETAILS OF 327'-0" CONTINUOUS
COMPOSITE W-BEAM UNIT
COCKLE BURR SLOUGH

ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION

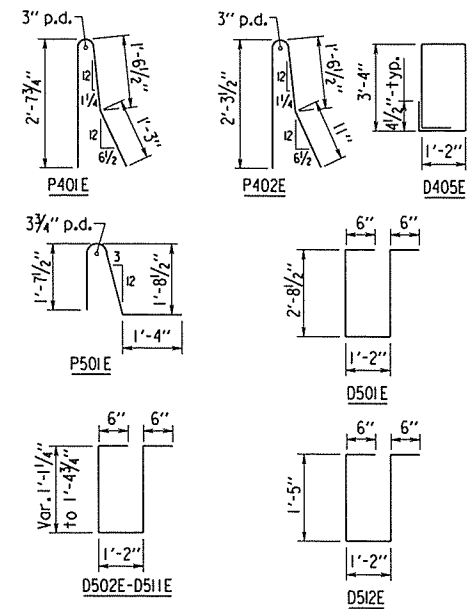
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 9-12-13 FILENAME: bcal001.sl.dgn
CHECKED BY: DBS DATE: 10/5/15 SCALE: AS NOTED
DESIGNED BY: ADN DATE: 8/12
BRIDGE NO. 07363 DRAWING NO. 57633

BAR LIST

BENDING DIAGRAMS

Dimensions are out to out of bars.



Perpendicular to $\odot$ Joint
No Scale

Bent Number	"A" Width Perpendicular to Joint at 24 Hour Average Temperature ①0f:			"B" Perpendicular to Joint at 60°F	Bumper Bar Size	"D"
	40°F	60°F	80°F			
1 & 6	2¼"	2"	1¾"	2⅜"	1" x 1"	5"

- ① The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature. Interpolation of the table may be necessary.

Notes: The temperature limitations recommended by the sealant manufacturer shall be observed.

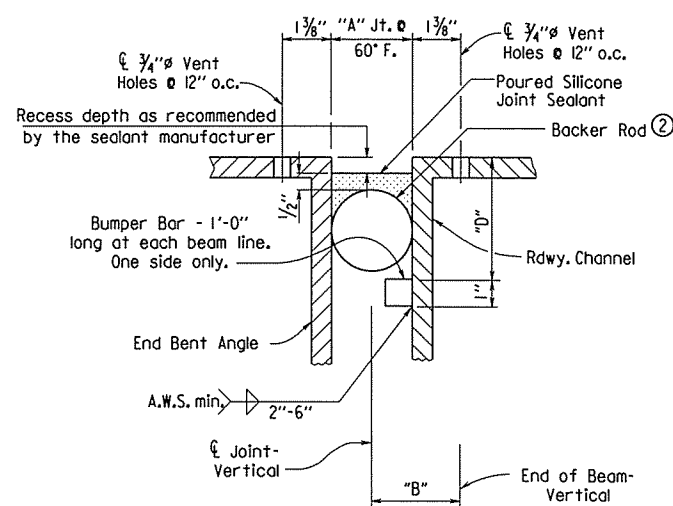
The sealant shall be installed only when the average 24 hour air temperature is between 40° and 80°F.

- ② BACKER ROD NOTE:

Use an appropriately sized backer rod at the depth shown in the manufacturer's literature based on the joint width at the time of sealing.

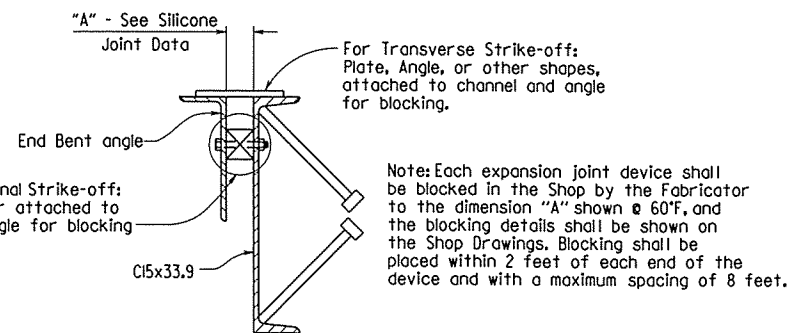
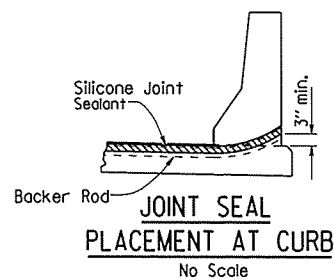
Except as noted, do not install more backer rod that can be sealed in the same day.

The Contractor shall verify separation of the backer rod from the joint material after the joint material has set.



DETAIL OF POURED SILICONE JOINT SEAL

No Scale



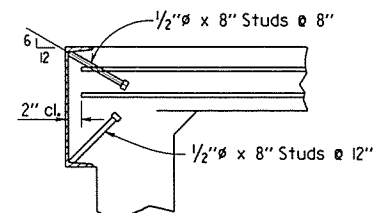
DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

No Scale

EXPANSION DEVICE INSTALLATION AT END BENTS

The Contractor may elect to install the expansion device for the end bents using one of the following two alternatives:

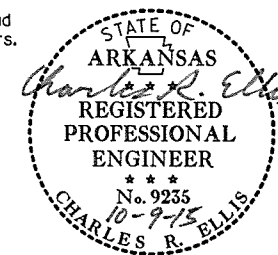
- 1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the beams erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed, the opening adjusted for temperature, and the backwall constructed.
- 2) The backwall shall be poured to the optional construction joint after beams are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature. **Backfill shall not be placed behind the backwall until the deck concrete on the adjacent span has been placed.**



Note: As an alternate to $\frac{5}{8}" \phi$ studs, $\frac{1}{2}" \phi \times 8"$ studs spaced as shown may be used. Use weight of $\frac{5}{8}" \phi$ stud as basis of measurement of structural steel in anchors.

DETAILS OF ALTERNATE ANCHORS

No Scale



BRIDGE ENGINEER

SHEET 10 OF 10
DETAILS OF 327'-0" CONTINUOUS
COMPOSITE W-BEAM UNIT
COCKLE BURR SLOUGH

ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

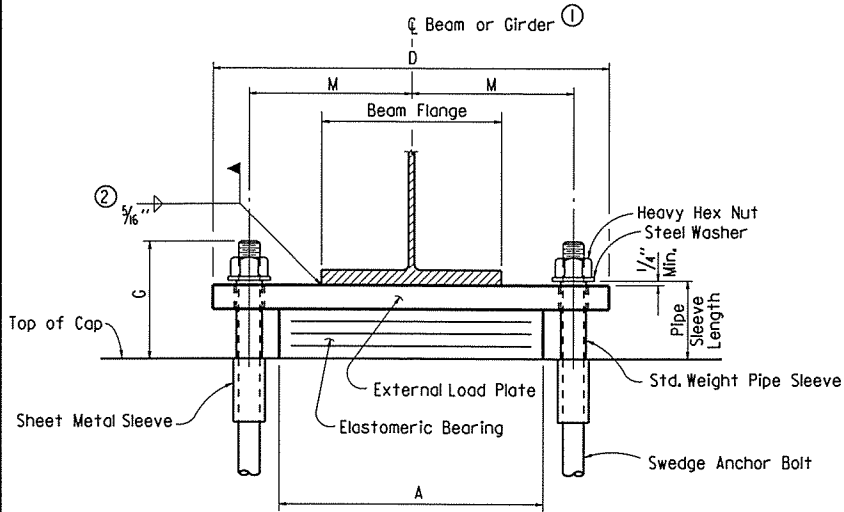
DRAWN BY: KDH DATE: 9-12-13 FILENAME: bcd1001_sl.dgn
CHECKED BY: DBS DATE: 10/5/15 SCALE: AS NOTED

BRIDGE NO. 07363

DRAWING NO. 57634

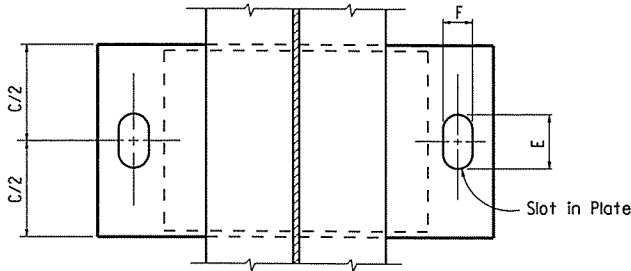
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	CA1001	147	283	

07363 - ELASTO. BRGS. - 57635

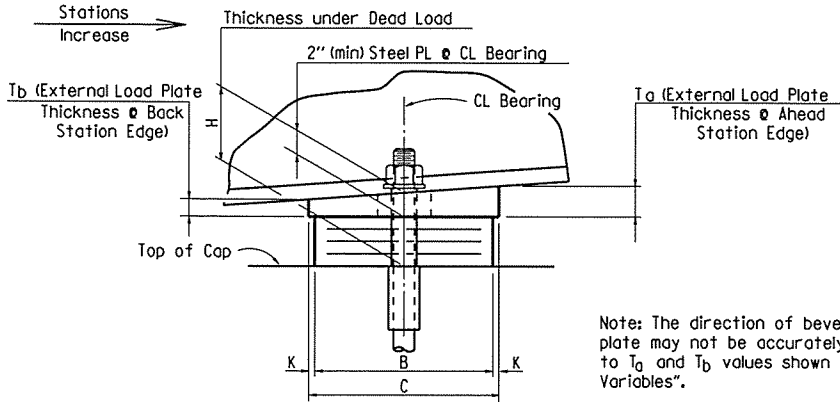


FRONT VIEW

1 C.L. Elastomeric Pad shall be aligned with C.L. Beam or Girder.

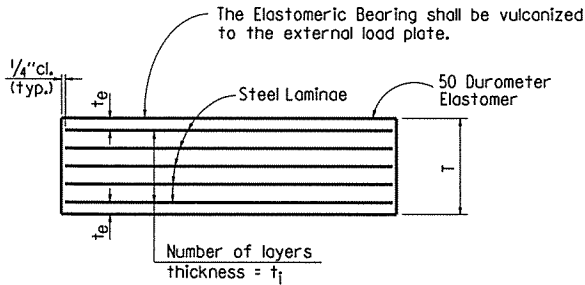


PLAN VIEW



SIDE VIEW

Note: The direction of bevel of the external load plate may not be accurately depicted with respect to T_a and T_b values shown in "Table of Fabricator Variables".

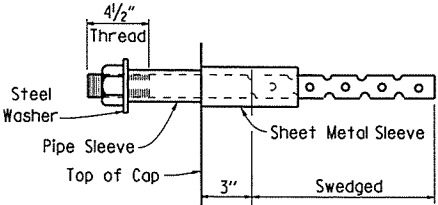


t_e = thickness of elastomer cover on top and bottom of pad
 t_i = thickness of elastomer between steel laminae
 N = number of elastomer layers of thickness t_i

ELASTOMERIC BEARING

2 Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the beam or girder will be allowed only when: 1) the approximate average air temperature during the 24 hour period immediately preceding welding is between 40° F and 80° F; and 2) the slots in the external load plate are positioned to center on the anchor bolts; and 3) no horizontal deformation of the elastomeric pad is evident. If welding at other temperatures is required, the Engineer will provide adjustment data.

Care shall be taken to ensure that the external load plate is in full and complete contact with the beam or girder flange before welding begins.



ANCHOR BOLT DETAIL

NOTE: Anchor Bolts may be cast in place or drilled and grouted into place. If Anchor Bolts are to be cast in place, the Galvanized Sheet Metal Sleeves will not be required.

If Anchor Bolts are to be drilled and grouted in place, the Galvanized Sheet Metal Sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of Structural Steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the masonry. Bolts placed in drilled holes shall be accurately set and fixed using a OPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized Sheet Metal Sleeves will not be paid for directly, but will be considered subsidiary to the item "Structural Steel in Beam Spans, (M 270, Gr. 50W)"

GENERAL NOTES

Elastomeric Bearings shall conform to Section 808 and shall be paid for at the unit price bid for "Elastomeric Bearings".

External load plates shall conform to AASHTO M 270, Grade 50W. Pipe sleeves shall be ASTM A500, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or ASTM B695, Class 50.

External load plates shall be completely fabricated (including bevel and bolt holes) and shall be cleaned before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be cleaned in accordance with Subsection 808.03. Other surfaces shall be blast cleaned in accordance with Subsection 807.84(b) for painted steel and 807.84(e) for unpainted Grade 50W steel.

Anchor Bolts, Washers and Nuts shall conform to Subsection 807.07. The anchor bolt grade of steel shall be as specified in the "Table of Fabricator Variables". Indentations shall be circular with rounded bottoms and staggered as shown in the details.

Pipe Sleeves, Anchor Bolts, Washers and Nuts shall be paid for at the unit price bid for "Structural Steel in Beam Spans (M 270, Gr. 50W)". External load plates will not be measured and paid for separately, but will be considered incidental to the unit price bid for "Elastomeric Bearings".

Bearings shall be seated in accordance with Subsection 808.08. This work and materials are considered subsidiary to the item "Elastomeric Bearings" and will not be paid for directly.

TABLE OF FABRICATOR VARIABLES

TABLE OF FABRICATOR VARIABLES								ELASTOMERIC PAD						EXTERNAL LOAD PLATE								ANCHOR BOLT					
BRIDGE NO.	LOCATION		BEARING TYPE	NO. of BEARINGS EACH BENT	* MAXIMUM DESIGN LOAD (KIPS)	G	H	A	B	N	t _i	t _e	NO. & THICKNESS OF STEEL LAMINAE	T	C	D	E	F	K	M	T _a	T _b	ANCHOR BOLT		PIPE SLEEVE SIZE (ø x L)	SHEET METAL SLEEVE SIZE (ø x L)	STEEL WASHER SIZE (O.D.)
	BENT NO(S).	BEAM NO.																					(ø x L)	GRADE			
07363	1 & 6	1 & 2	Exp.	2	101	8½"	5⅝"	12½"	9"	5	½"	¼"	6 @ 12 Gauge	3⅝"	10"	22½"	4⅞"	2¼"	½"	8½"	1.96"	2.04"	1½" x 25"	55	1½" x 6"	3" x 6"	3"
	1 & 6	3 & 4	Exp.	2	101	8½"	5⅝"	12½"	9"	5	½"	¼"	6 @ 12 Gauge	3⅝"	10"	22½"	4⅞"	2¼"	½"	8½"	1.97"	2.03"	1½" x 25"	55	1½" x 6"	3" x 6"	3"
	1 & 6	5	Exp.	1	101	8½"	5⅝"	12½"	9"	5	½"	¼"	6 @ 12 Gauge	3⅝"	10"	22½"	4⅞"	2¼"	½"	8½"	1.98"	2.02"	1½" x 25"	55	1½" x 6"	3" x 6"	3"
	1 & 6	6 & 7	Exp.	2	101	8½"	5⅝"	12½"	9"	5	½"	¼"	6 @ 12 Gauge	3⅝"	10"	22½"	4⅞"	2¼"	½"	8½"	1.99"	2.01"	1½" x 25"	55	1½" x 6"	3" x 6"	3"
	1 & 6	8 & 9	Exp.	2	101	8½"	5⅝"	12½"	9"	5	½"	¼"	6 @ 12 Gauge	3⅝"	10"	22½"	4⅞"	2¼"	½"	8½"	2.00"	2.00"	1½" x 25"	55	1½" x 6"	3" x 6"	3"

* Maximum Design Load = Service I Limit State



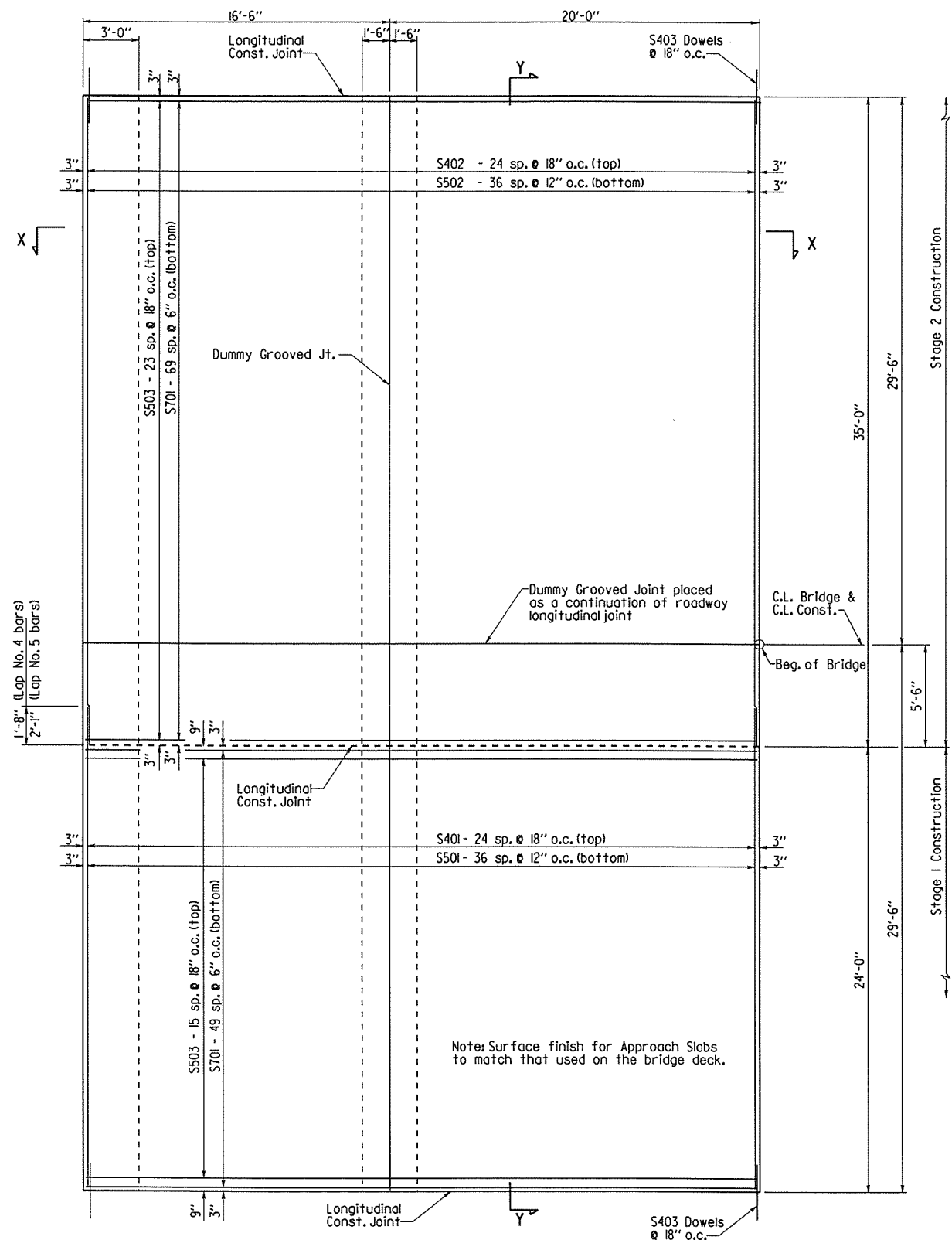
DETAILS OF ELASTOMERIC BEARINGS COCKLE BURR SLOUGH

ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 9-24-13 FILENAME: bcal001.el.dgn
CHECKED BY: DBS DATE: 10/5/13 SCALE: NONE
DESIGNED BY: ADW DATE: 8/1/12

BRIDGE NO. 07363 DRAWING NO. 57635

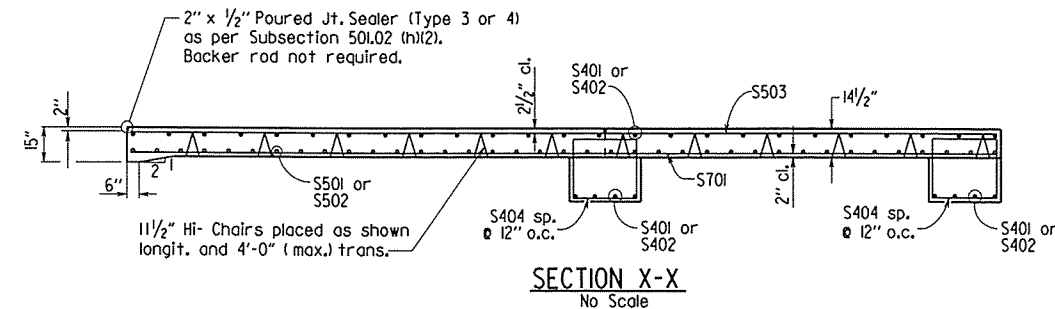
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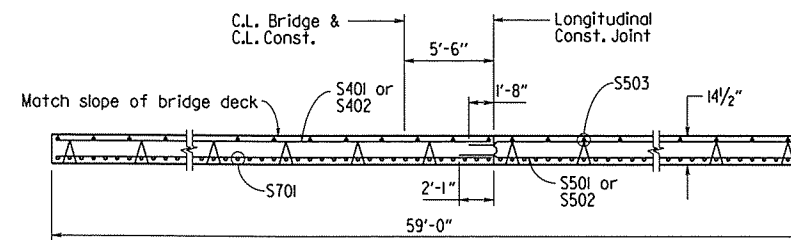
PLAN-APPROACH SLAB

Scale: 1/4" = 1'-0"

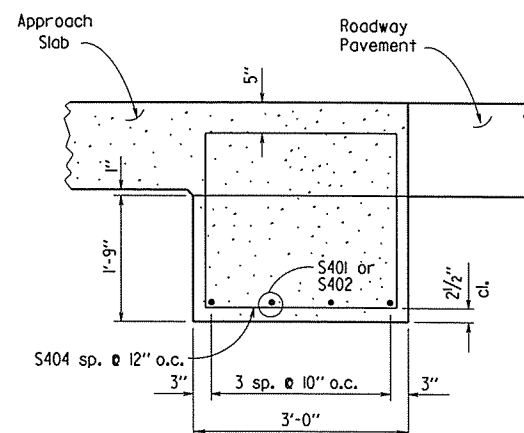
Note: Approach Slab Shown for Beg. of Bridge. End of Bridge similar.



SECTION X-X
No Scale

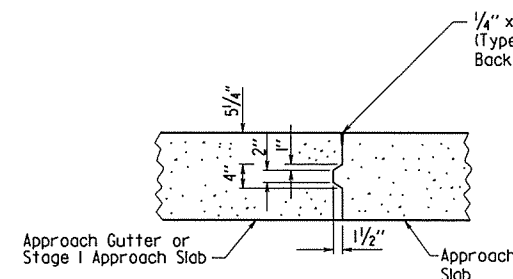


SECTION Y-Y
No Scale



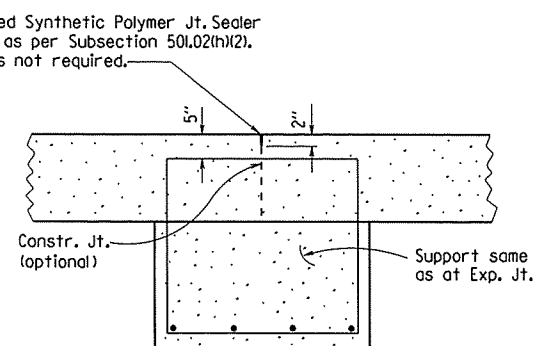
DETAILS OF SUPPORT
AT EXPANSION JOINT

Scale: 3/4" = 1'-0"



DETAILS OF LONGITUDINAL
CONSTRUCTION JOINT

Scale: 3/4" = 1'-0"



DETAILS OF DUMMY
GROOVED JOINT

Scale: 3/4" = 1'-0"

TABLE OF QUANTITIES FOR
ONE APPROACH SLAB

Reinforcing Steel (lb.)	Concrete (Cu. Yds.)
15940	120.48

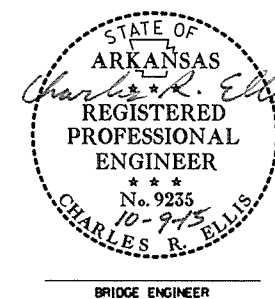
GENERAL NOTES

Concrete shall be Class (SAC) (f'c = 4,000 psi).

Reinforcing steel shall Grade 60 (yield strength = 60,000 psi.) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

Approach Slabs will be measured and paid for in accordance with Section 504.

Joint sealer shown is subsidiary to the pay item "Approach Slab".

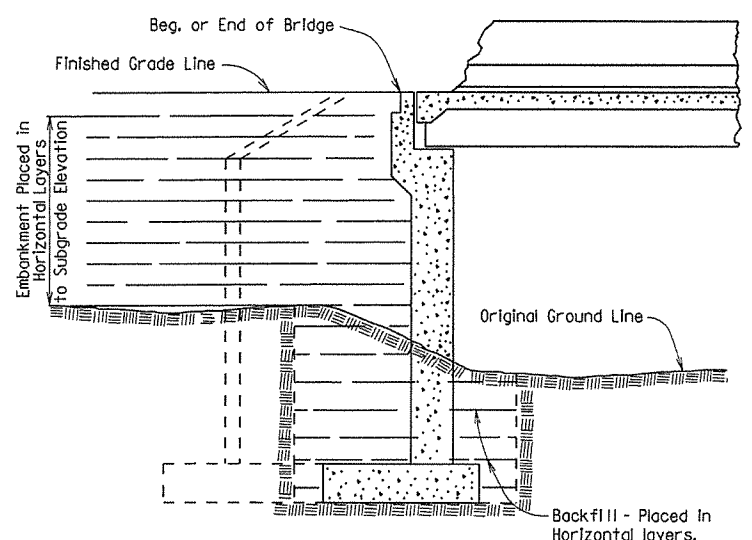


DETAILS OF TYPE SPECIAL
APPROACH SLABS
COCKLE BURR SLOUGH

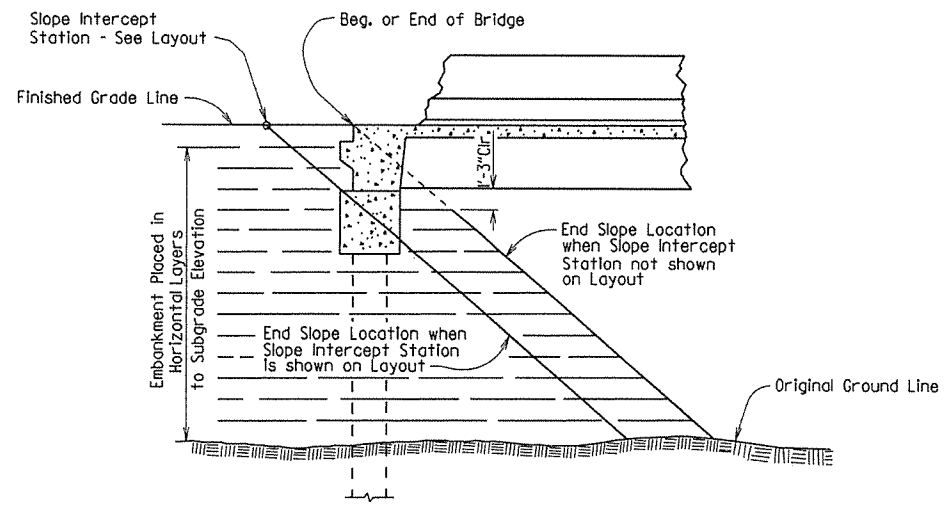
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 10-30-13 FILENAME: bcal001.as.dgn
CHECKED BY: DRS DATE: 10/5/13 SCALE: AS NOTED
DESIGNED BY: ADW DATE: 8/12
BRIDGE NO. 07363 DRAWING NO. 57637

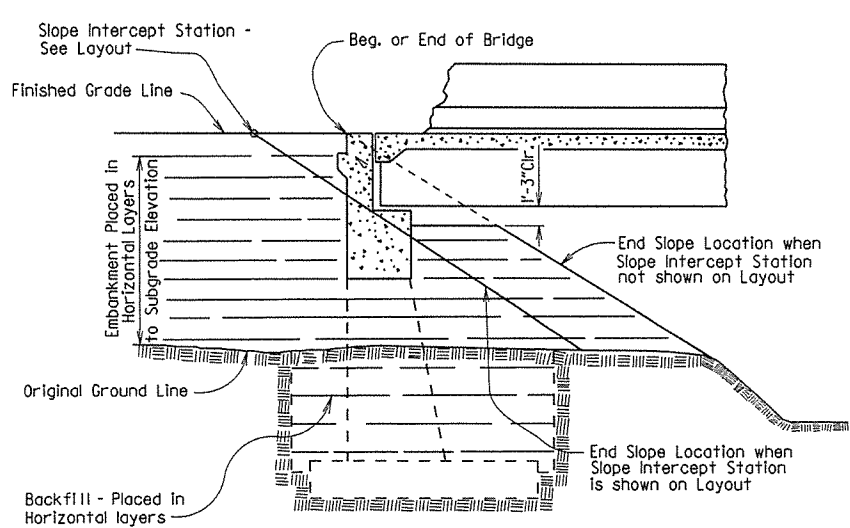
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		150	
				JOB NO.				
				① EMBANKMENT & BACKFILL		55000		



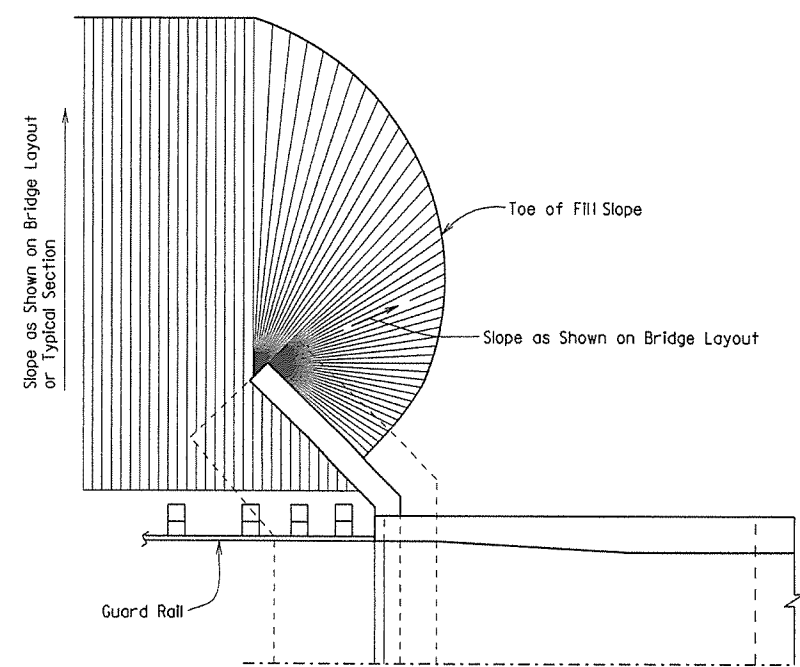
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL
AT VERTICAL WALL ABUTMENTS



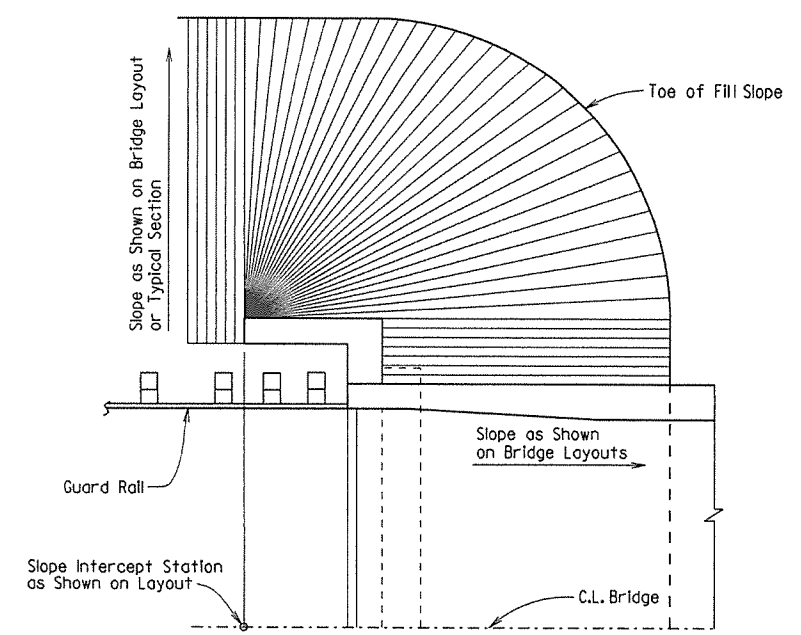
EMBANKMENT CONSTRUCTION AT SPILL-THROUGH
PILE END BENTS



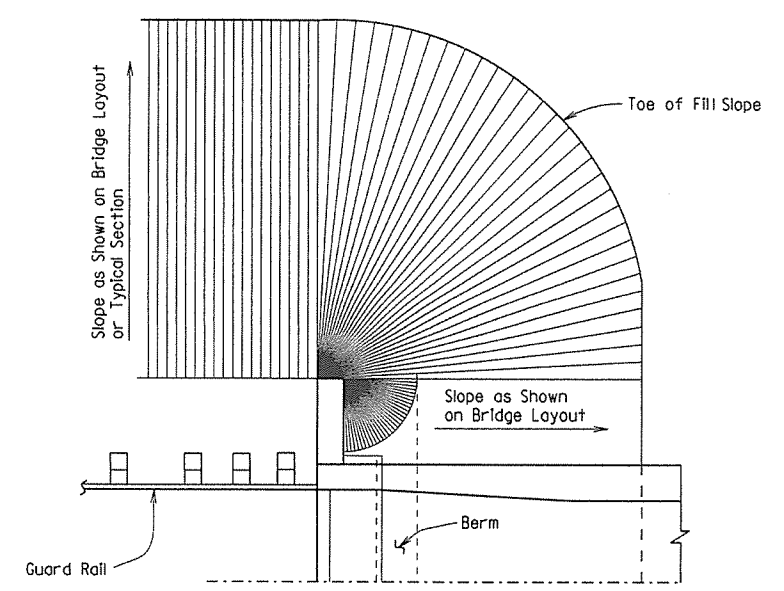
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL
AT SPILL-THROUGH END BENTS



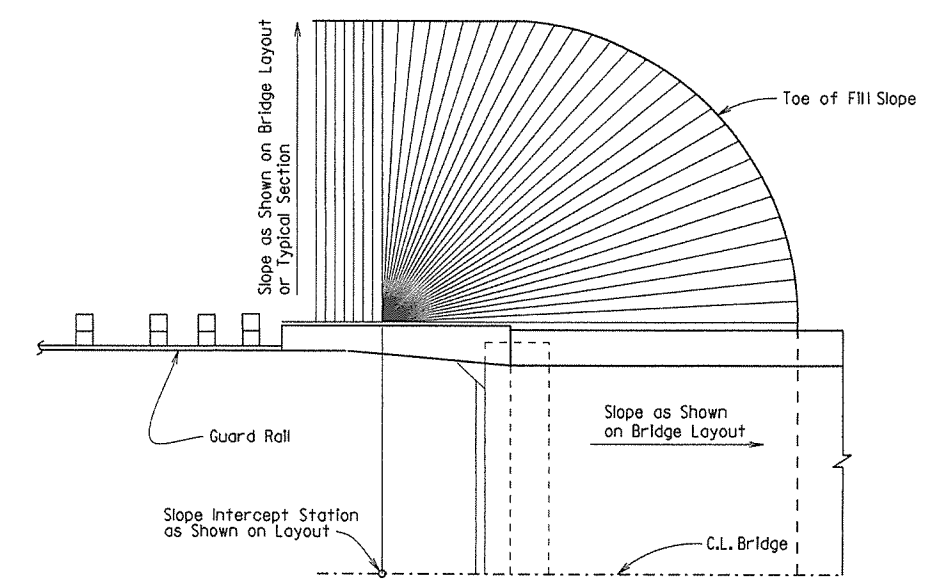
VERTICAL WALL ABUTMENTS



SPILL-THROUGH END BENTS WITH TURNBACK WING



SPILL-THROUGH END BENTS WITH STUB WING



SPILL-THROUGH END BENTS WITH TRANSITION WING

METHOD OF DETERMINING FILL SLOPE LOCATION AT BRIDGE ENDS

GENERAL NOTES

The Bridge End Embankment shall be defined as a section of embankment, not less than 20 feet long adjacent to the bridge end, together with the side slopes and slopes under the bridge end including around the end of wingwalls. Embankment adjacent to structures shall be constructed in 6 inch horizontal layers (loose measure) and compacted by the use of mechanical equipment to the satisfaction of the Engineer. Refer to Subsections 210.09, 210.10 and 801.08 for construction requirements.

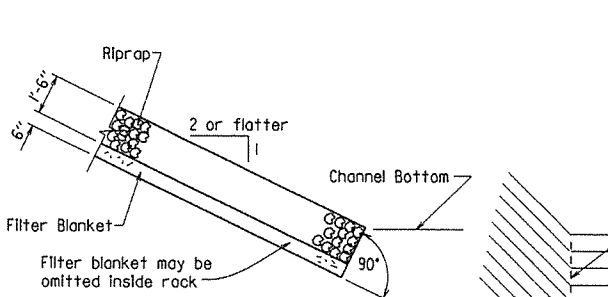
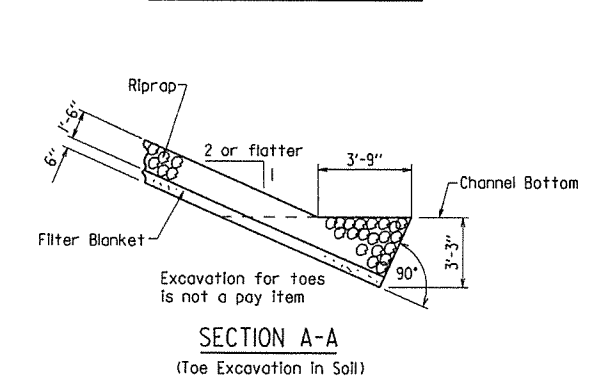
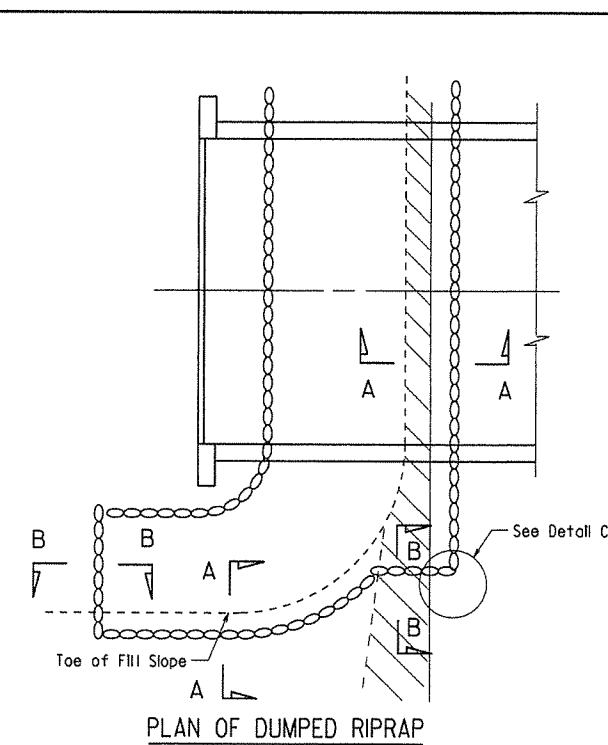
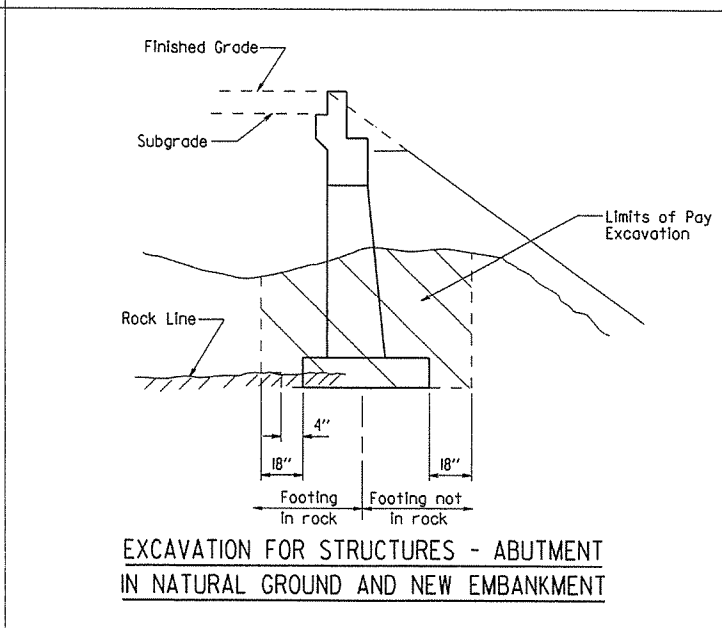
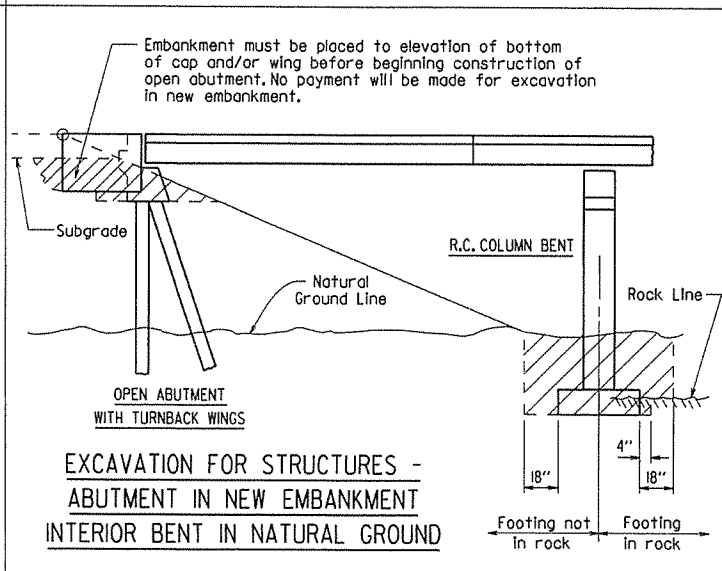
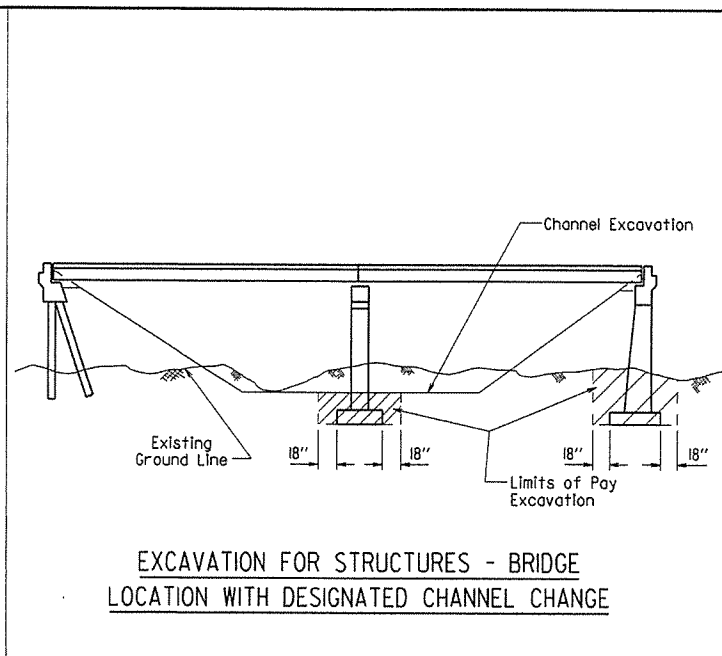
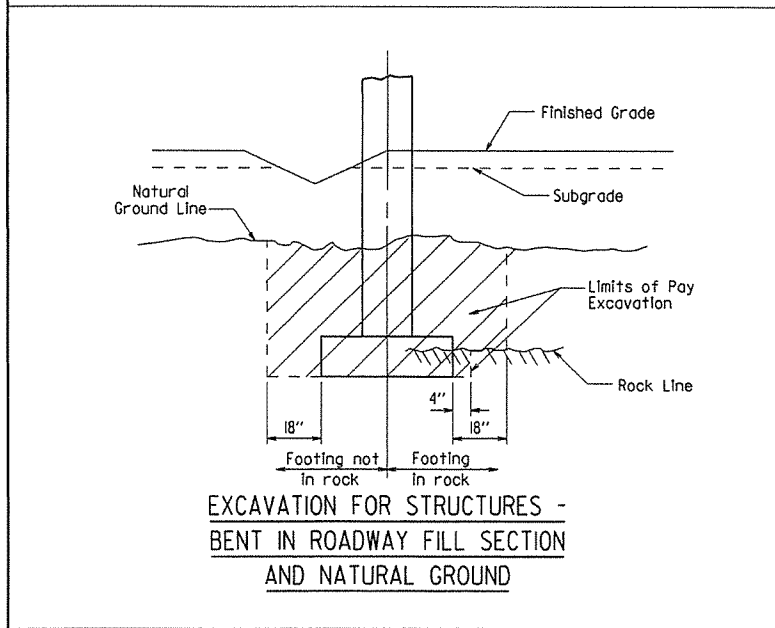
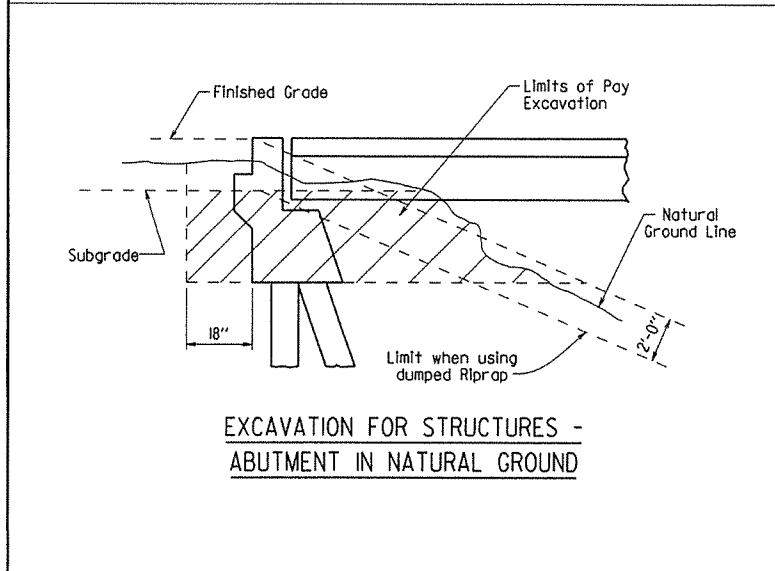
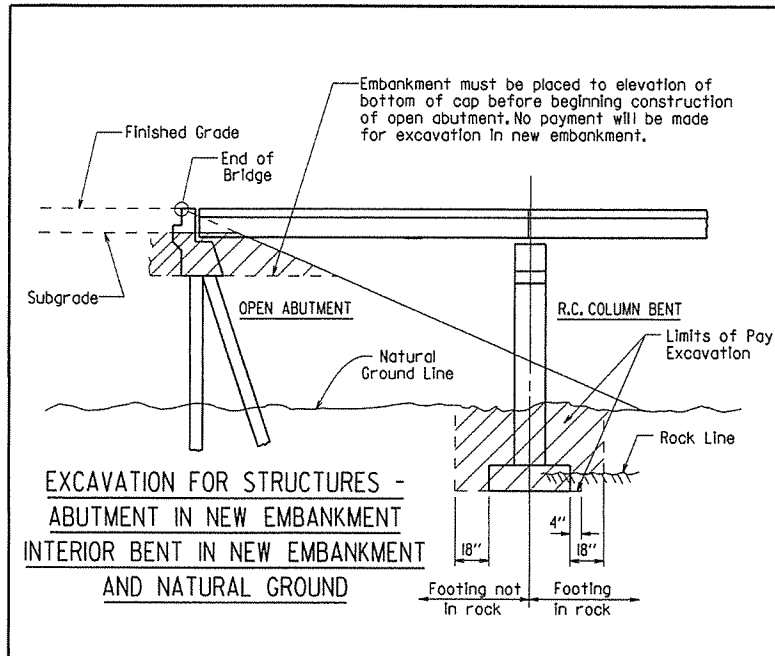
STANDARD DETAILS FOR
EMBANKMENT CONSTRUCTION AND
BACKFILL AT BRIDGE ENDS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55000.dgn
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE
DESIGNED BY: STD. DATE: -

DRAWING NO. 55000



DETAIL C

Excavated Channel Width

Riprap Area

Excavated Channel Width

Note: Use this type of toe when rock is encountered which is in a stable condition.

Note: In lieu of an aggregate filter blanket, a synthetic fiber geotextile fabric complying with the requirements of Subsection 816.02(e) may be used.

Note: Details for computing excavation for structures are included for information as to how plan quantities were calculated and for use when adjusting quantities when changing footing elevation.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		151	
				JOB NO.		RIPRAP & EXCAV. 55001		

ELEVATION OF RIPRAP BERME WITH RIPRAP

Beg. Bridge

Berme

1'-3" Clear

Width of Channel Excavation in Riprap Area

Width of Channel Excavation outside Riprap Area

Channel Bottom

ELEVATION OF RIPRAP BERME WITHOUT RIPRAP

Beg. Bridge

Berme

1'-3" Clear

Width of Channel Excavation in Riprap Area

Width of Channel Excavation outside Riprap Area

Channel Bottom

SECTION B-B

Riprap

Filter Blanket

1'-6"

6"

Grade Elevation

OPEN ABUTMENT WITH TURNBACK WINGS

Theoretical Begin of Slope

Beg. Bridge

Width of Channel Excavation in Riprap Area

Width of Channel Excavation outside Riprap Area

Channel Bottom

STANDARD DETAILS FOR DUMPED RIPRAP AND FILTER BLANKET AND COMPUTING EXCAVATION FOR STRUCTURES

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

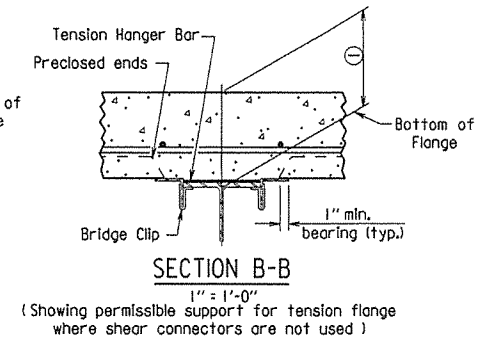
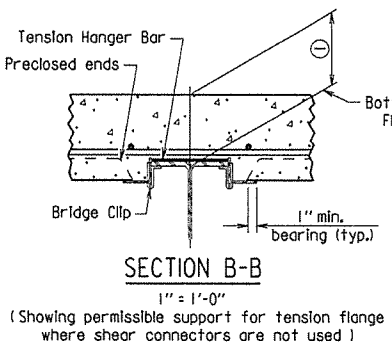
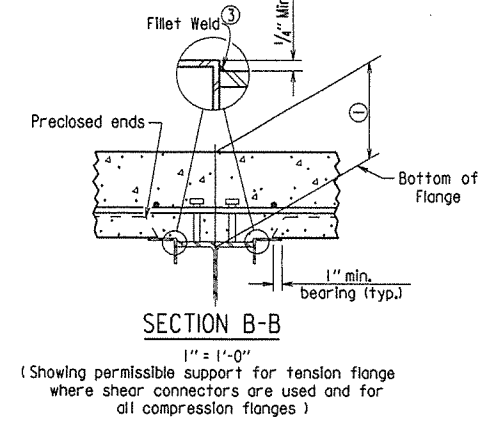
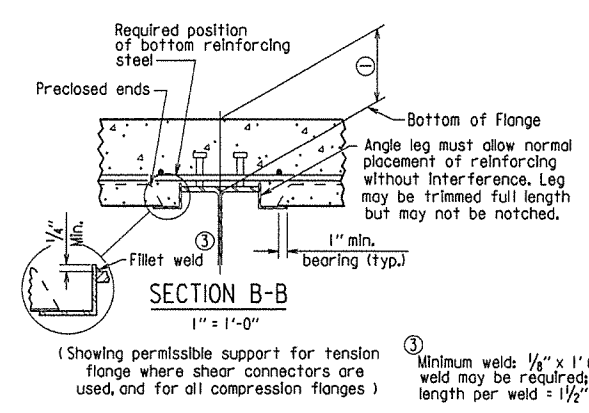
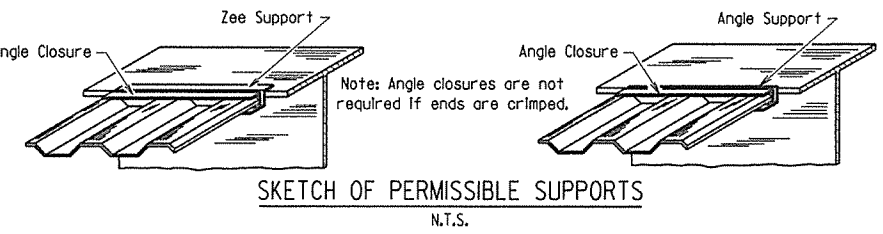
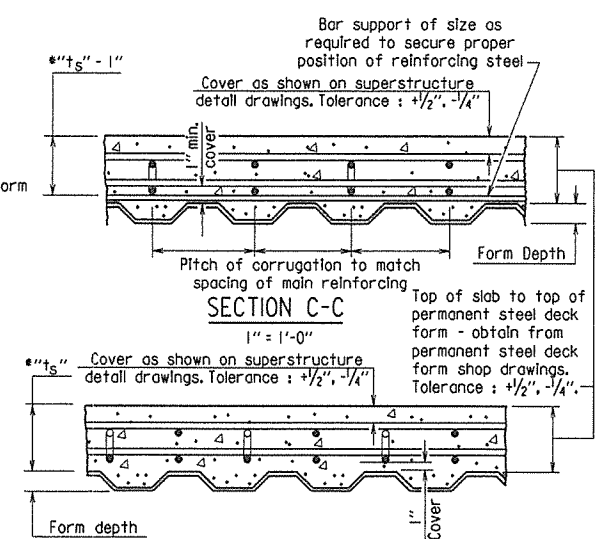
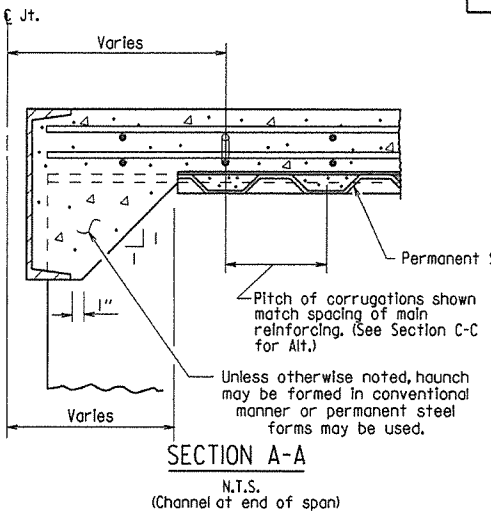
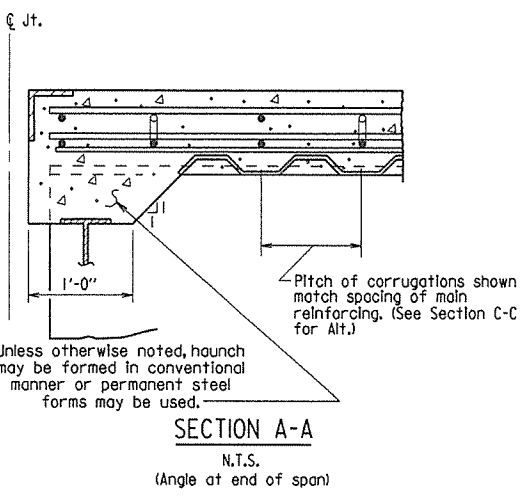
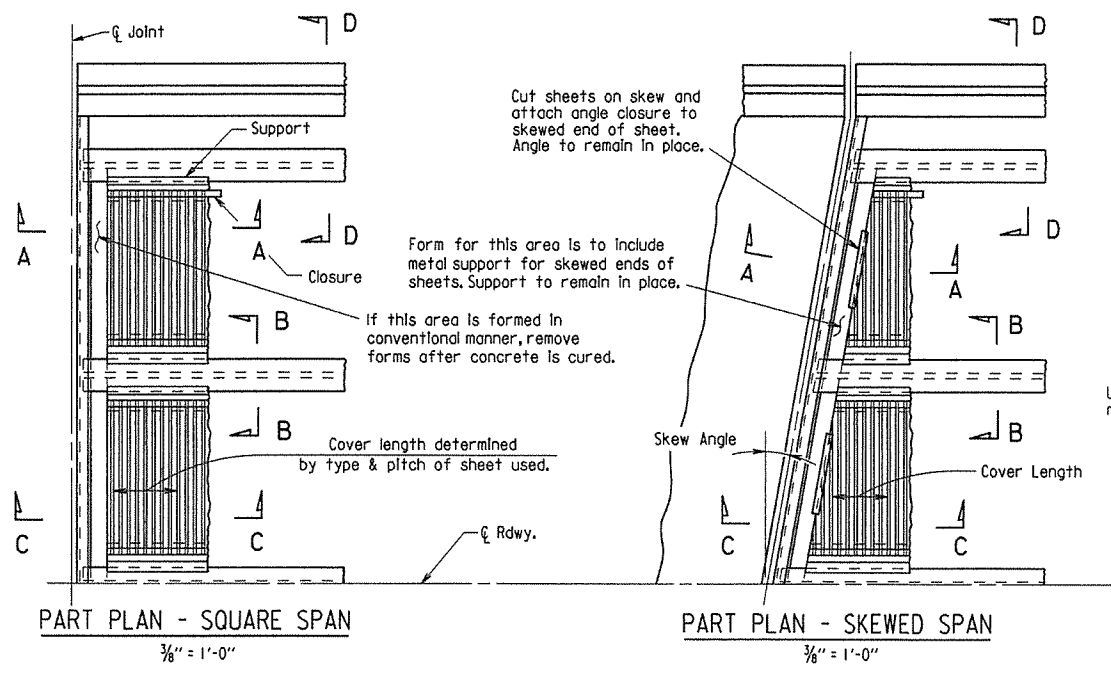
DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55001.dgn

CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE

DESIGNED BY: STD. DATE:

DRAWING NO. 55001

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		152	
				JOB NO.				
				BRIDGE DECK FORMS		55005		



*_{ts} = slab thickness as shown on superstructure detail drawings.

GENERAL NOTES

Permanent steel deck forms may be used at the Contractor's option and shall be at no additional cost to the Department. Such use may result in changes to the dead load deflection of the girder. Any cost for adjustments due to a change in the dead load deflection will be borne by the Contractor. Payment for deck concrete and structural steel will not be increased due to use of permanent steel deck forms.

Permanent steel deck forms shall conform to Subsection 802.14(b). Detailed plans, including detailed calculations and manufacturer's technical brochure, shall be submitted to and approved by the Engineer before work of forming the bridge deck is started.

Welding of form supports to the tension flange of steel girders will be permitted only in areas where shear connectors are used. When welding is not allowed, the method of fastening Z or L supports to the flange must be approved by the Engineer.

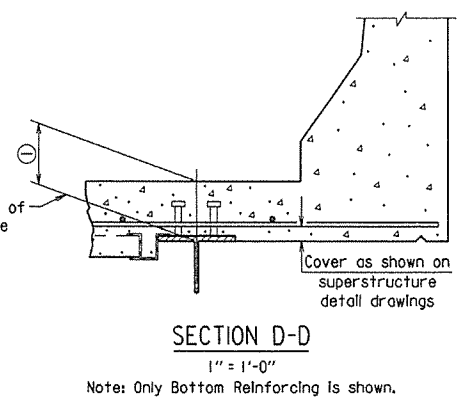
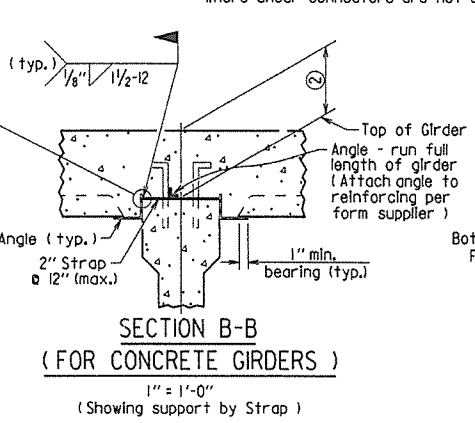
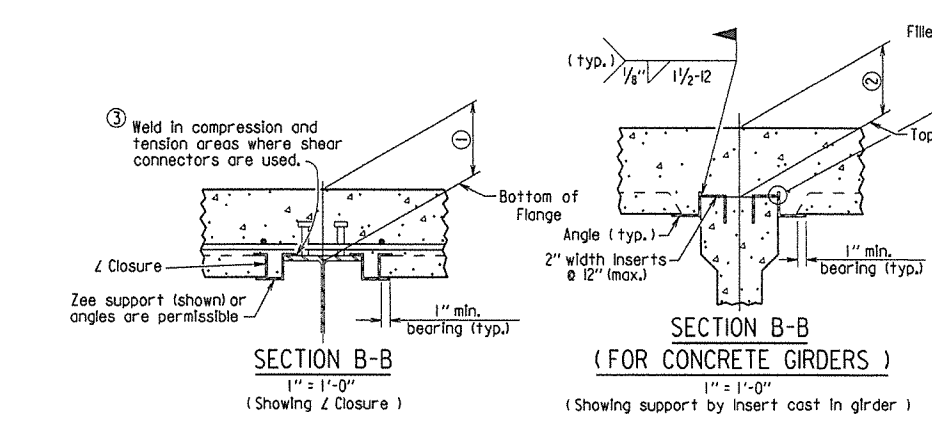
Form sheets shall be fastened to supporting members and to each other with galvanized metal screws sufficient in size and number to provide a secure attachment. Alternate methods of attachment must be approved by the Engineer.

When the pitch of form corrugations match the reinforcing spacing, transversely align form sheets across the bridge to maintain the correct orientation of continuous reinforcing bars in the corrugations.

Bar support rods, when used, shall be sized and spaced to adequately support the bottom reinforcing mat at the required position.

High chairs shall be sized to support the top mat of reinforcing at the proper position. High chairs shall be placed at locations shown on the detail drawings.

Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition), with applicable Supplemental Specifications and Special Provisions.



STANDARD DETAILS FOR PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55005.dgn
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NONE
DESIGNED BY: STD. DATE: —

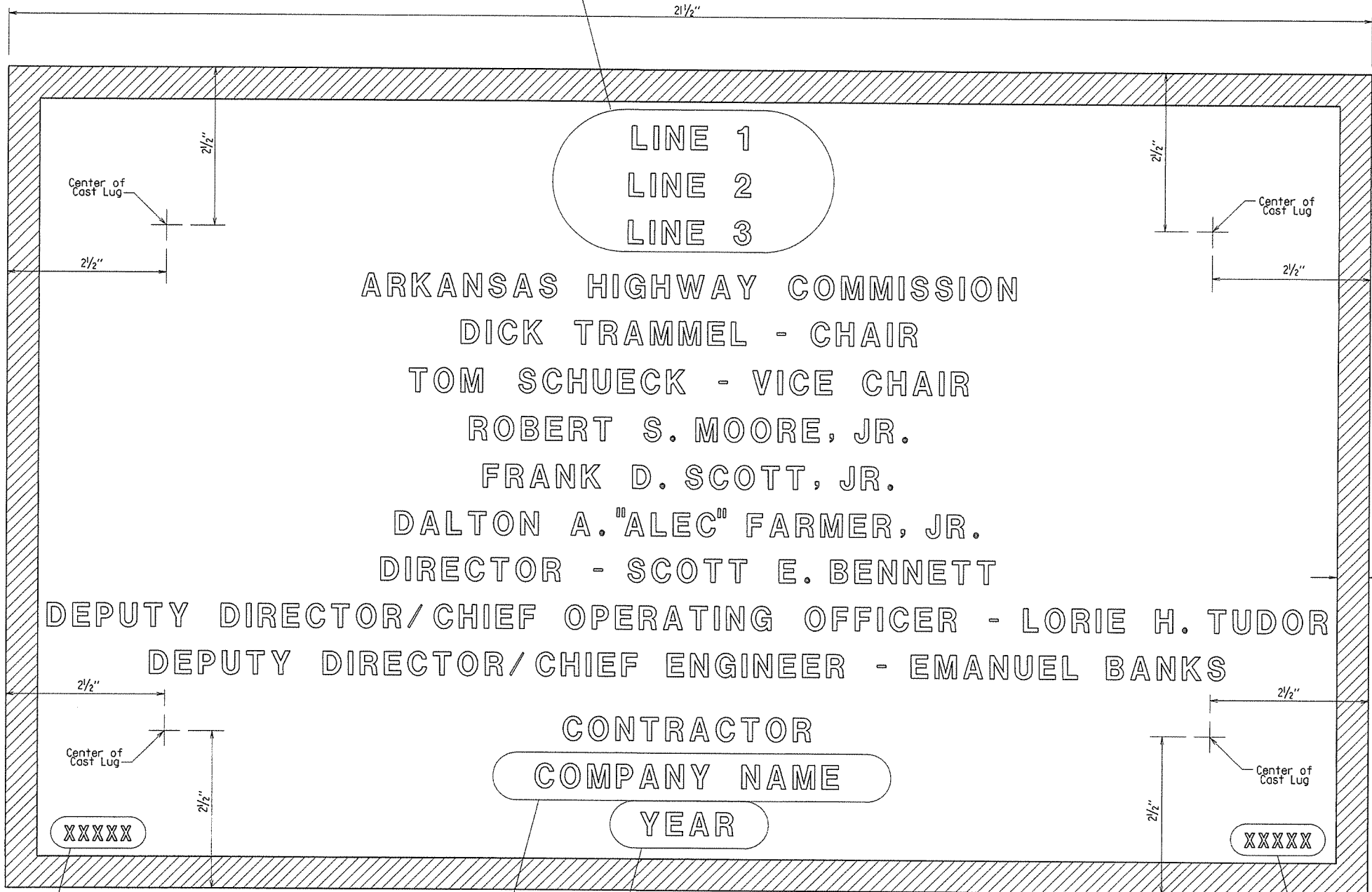
DRAWING NO. 55005

- Distance from top of slab to bottom of top flange as measured at centerline girder and as shown on superstructure detail drawings. This dimension may vary within the following limits to maintain the grade and slab thickness tolerances: Minimum - occurs when either the top flange or the support angle leg contacts the bottom reinforcing steel; Maximum = $t_s + 1\frac{1}{4}"$ + flange thickness. See Section C-C for slab thickness tolerance between adjacent girder flanges.
- Distance from top of slab to top of girder as measured at centerline girder and as shown on superstructure detail drawings. This dimension may vary within the following limits to maintain the grade and slab thickness tolerances: Minimum - occurs when either the top of girder or the support angle leg contacts the bottom reinforcing steel; Maximum - value shown on the superstructure detail drawings when removable forms are used. See Section C-C for slab thickness tolerance between adjacent girder flanges.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
12-1-14				6	ARK.		153	
1-14-15								
				JOB NO.				
				TYPE D NAME PLATE			55010	

The name of the bridge as shown on the plans shall be placed on Lines 1 - 3 using 1/8" raised letters and numerals 3/8" high.

Line	Example 1	Example 2	Example 3	Example 4
Line 1	Red River	Southern	Saline	
Line 2	Relief	Railroad	River	Highway 5
Line 3		Overpass	Relief	



GENERAL NOTES

Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, (2014 Edition) with applicable Supplemental Specifications and Special Provisions.

Name plates shall be cast bronze and shall meet the material requirements as specified in Section 812.

Body of plate shall be 1/4" thick and shall include four tapering cone lugs 3/8" to 5/8" x 2" long. The border and all lettering shall be raised 1/8" above the face of plate and shall be polished.

All lettering shall be plain gothic, square cut and not tapered.

The number of plates required and the location and name on the plate for each bridge shall be as designated on the plans.

- Revised Chair and Vice Chair Added New Commissioner
1-14-15 KDH Checked By: CRE
- Revised Deputy Director/Chief Engineer Added Deputy Director/Chief Operating Officer
12-1-14 KDH Checked By: CRE

STANDARD DETAILS FOR TYPE D BRIDGE NAME PLATE

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55010.dgn
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE
DESIGNED BY: STD. DATE: _____

DRAWING NO. 55010

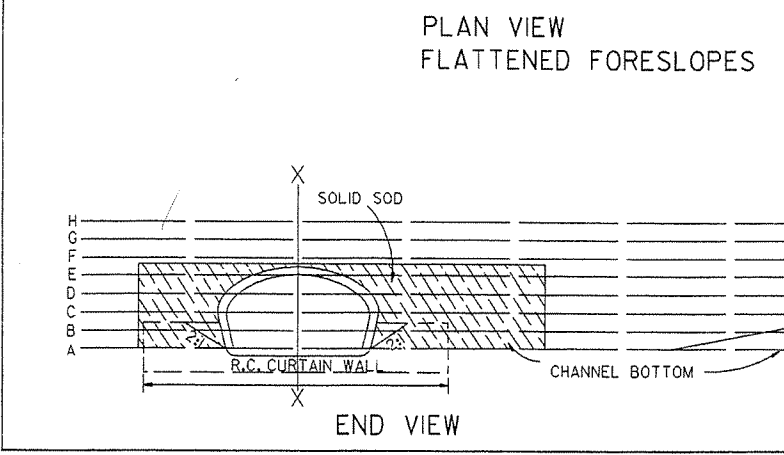
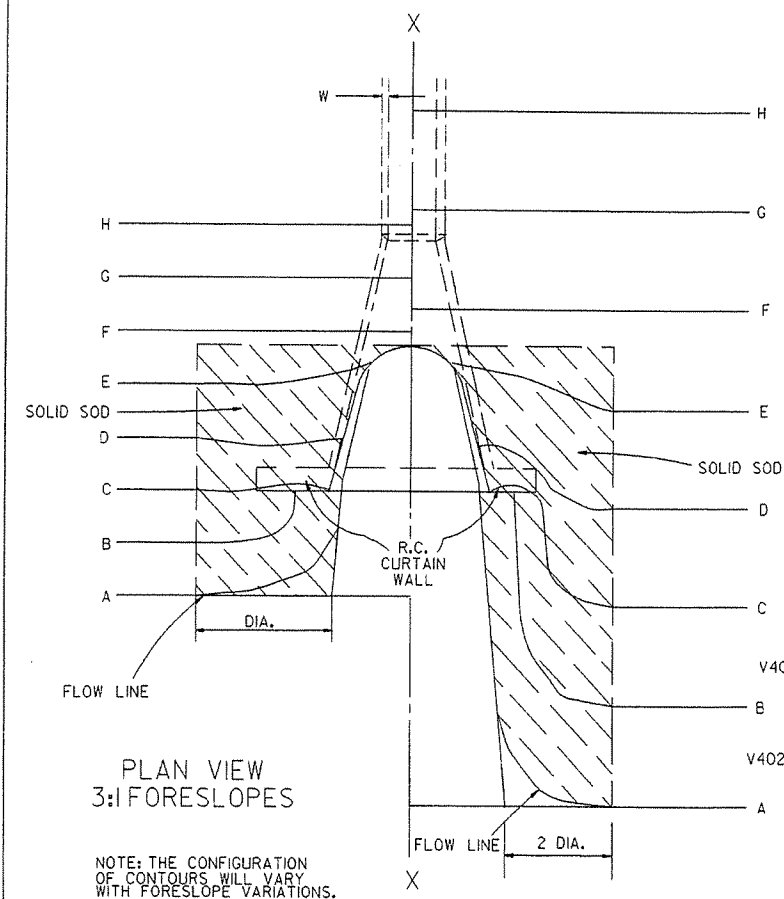
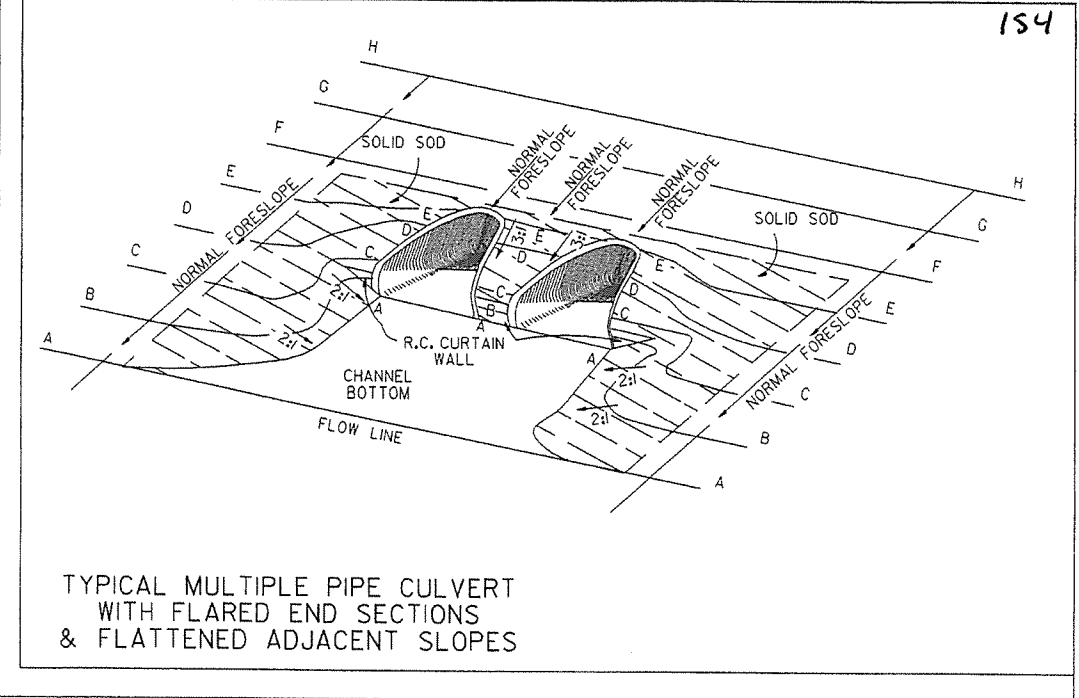
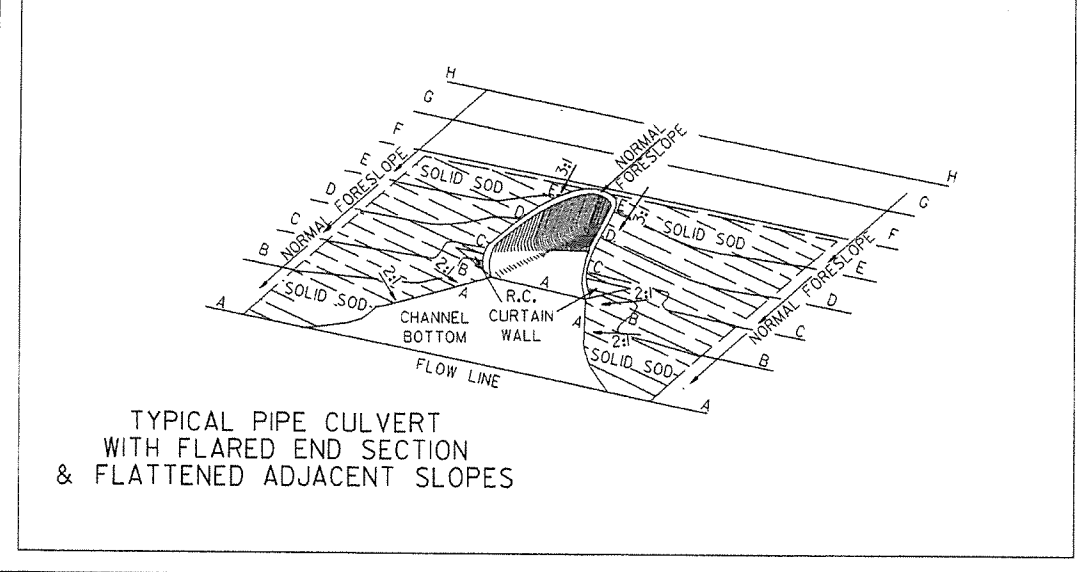
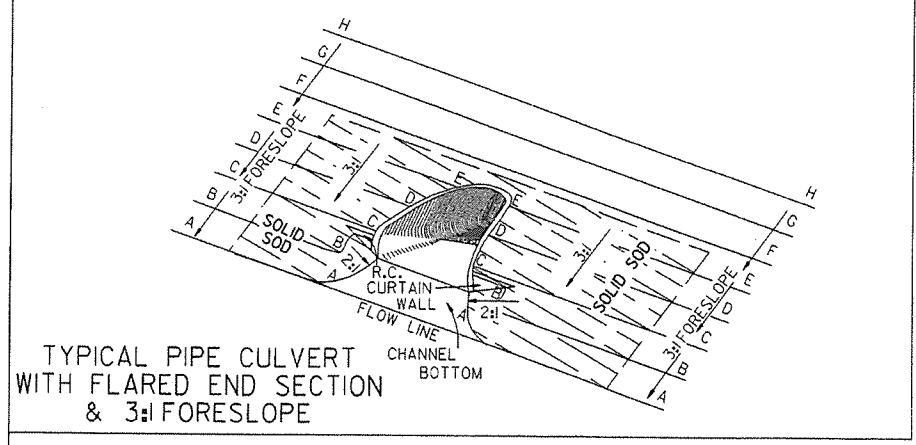
Place the design live loading here using 1/8" raised letters and numerals 1/4" high. Examples: HS 20 HL-93

Place the Year in which Contract was awarded here using 1/8" raised numerals 3/8" high. Example: 2001

Place the name of the company awarded the construction contract here using 1/8" raised letters and numerals 3/8" high. Example: ABCD CONSTRUCTION, INC.

Place the Bridge number here using 1/8" raised letters and numerals 1/4" high. Examples: A1234 05432

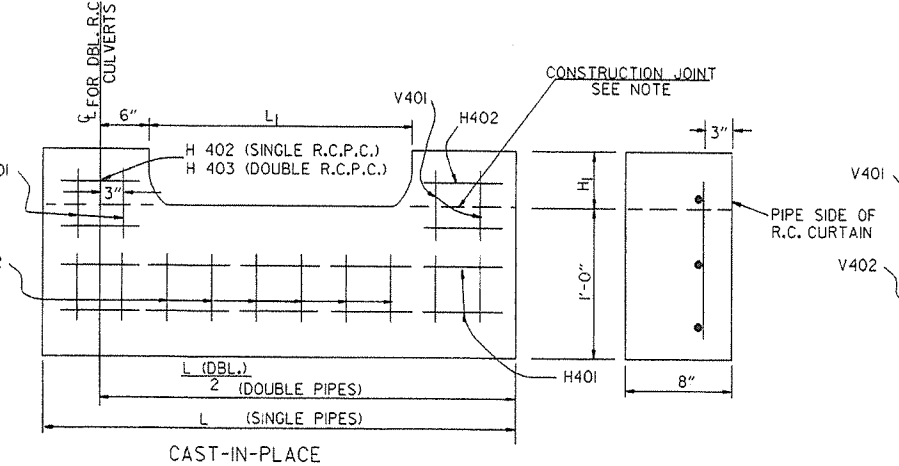
TYPICAL BRIDGE NAME PLATE



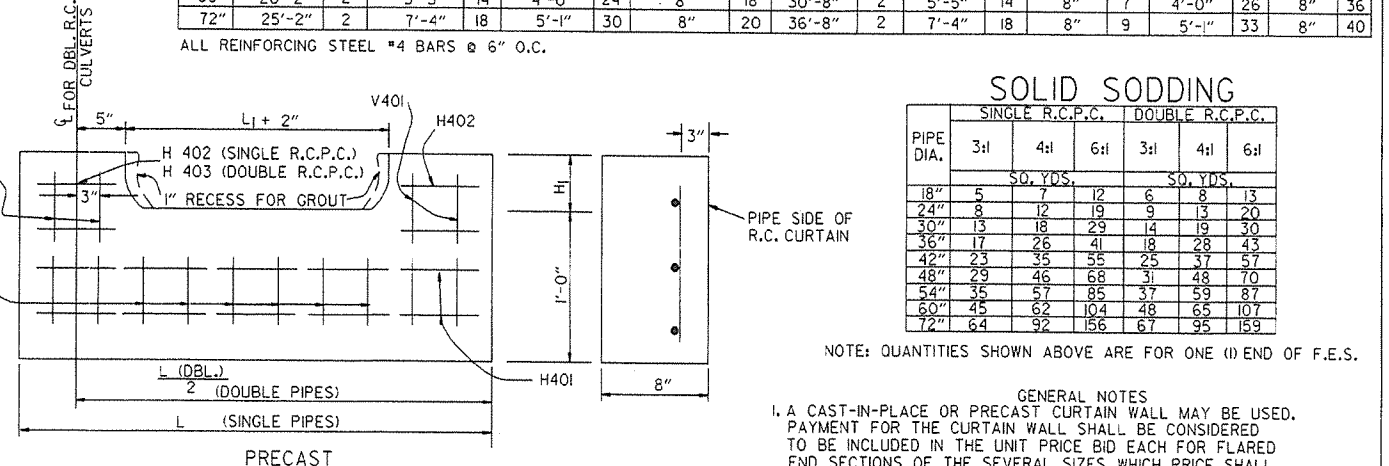
**R.C. CURTAIN WALL
DIMENSIONS & QUANTITIES**

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.



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.

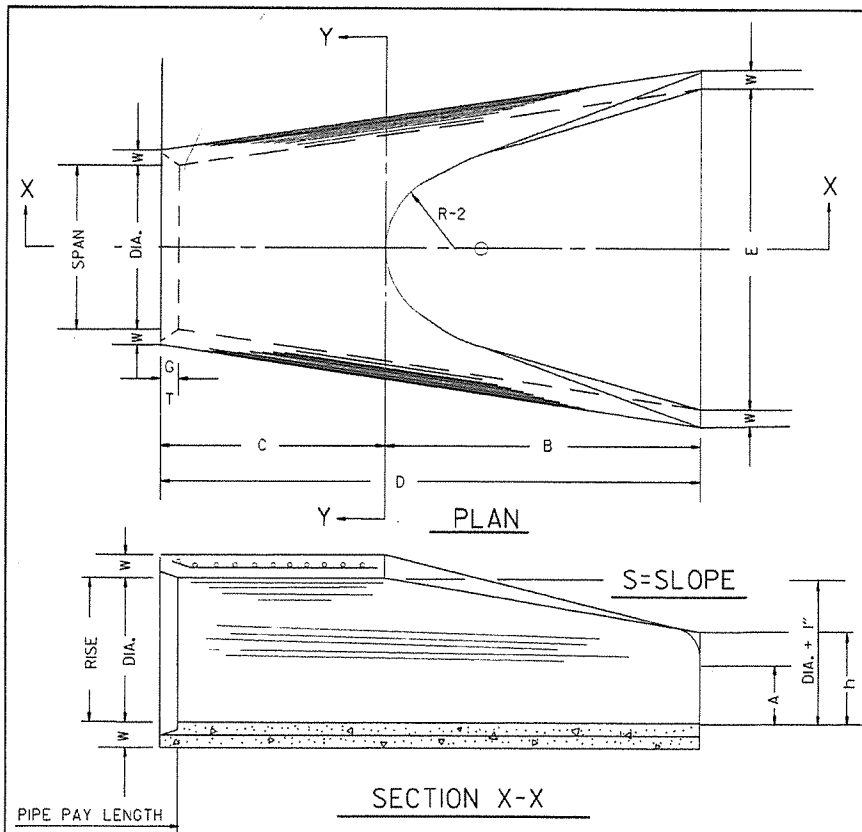
SOLID SODDING

PIPE DIA.	SINGLE R.C.P.C.						DOUBLE R.C.P.C.					
	3:1			4:1			3:1			4:1		
	SO. YDS.	CU. YDS.	LBS.	SO. YDS.	CU. YDS.	LBS.	SO. YDS.	CU. YDS.	LBS.	SO. YDS.	CU. YDS.	LBS.
18"	5	12	19	6	13	20	5	12	19	6	13	20
24"	8	18	29	9	19	30	8	18	29	9	19	30
30"	13	26	41	14	28	43	13	26	41	14	28	43
36"	17	35	55	18	37	57	17	35	55	18	37	57
42"	23	46	68	24	48	70	23	46	68	24	48	70
48"	29	57	85	30	59	87	29	57	85	30	59	87
54"	36	70	104	37	72	107	36	70	104	37	72	107
60"	45	87	129	46	89	132	45	87	129	46	89	132
72"	64	129	195	67	135	199	64	129	195	67	135	199

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

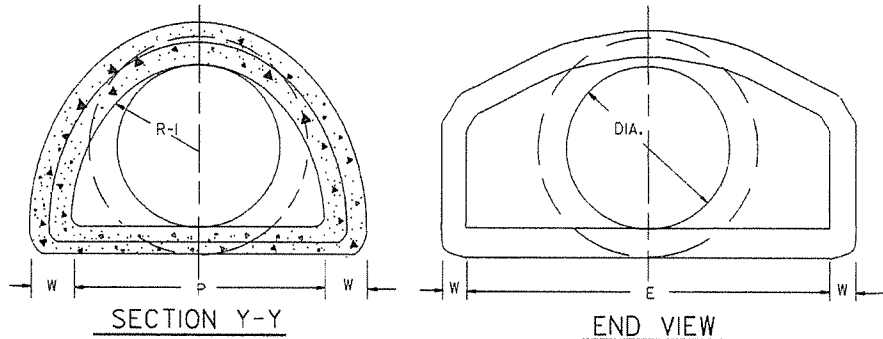
- GENERAL NOTES**
1. A CAST-IN-PLACE OR PRECAST CURTAIN WALL MAY BE USED. PAYMENT FOR THE CURTAIN WALL SHALL BE CONSIDERED TO BE INCLUDED IN THE UNIT PRICE BID EACH FOR FLARED END SECTIONS OF THE SEVERAL SIZES, WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS INCLUDING REINFORCING 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 W10 MAY BE USED IN LIEU OF REINFORCING BARS.

10-18-98	ADDED NOTE TO SOLID SODDING	10-18-98	ARKANSAS STATE HIGHWAY COMMISSION
10-12-98	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



END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS

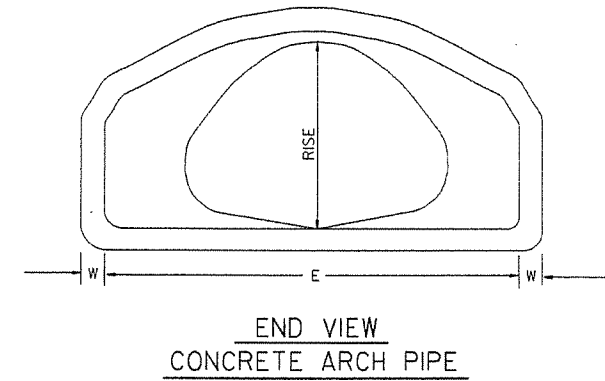
TABLE OF DIMENSIONS														
DIA.	WALL	A	B	C	D	E	S	DIA.	P	R-1	R-2	G-T	WT.	h
18"	2 1/2"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3:1	19"	29"	15 1/2"	12"	2"	1000	1'-0 1/2"
24"	3"	9 1/2"	3'-7 1/2"	2'-6"	6'-1 1/2"	4'-0"	3:1	25"	33 3/8"	16 3/8"	14"	2 1/2"	1600	1'-1 1/2"
30"	3 1/2"	1'-0"	4'-6"	1'-7 3/4"	6'-1 3/4"	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 5/8"	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 1/4"	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 3/8"	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"



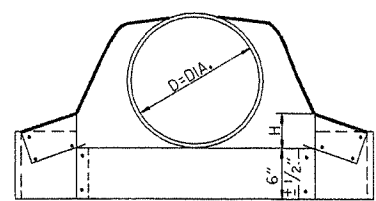
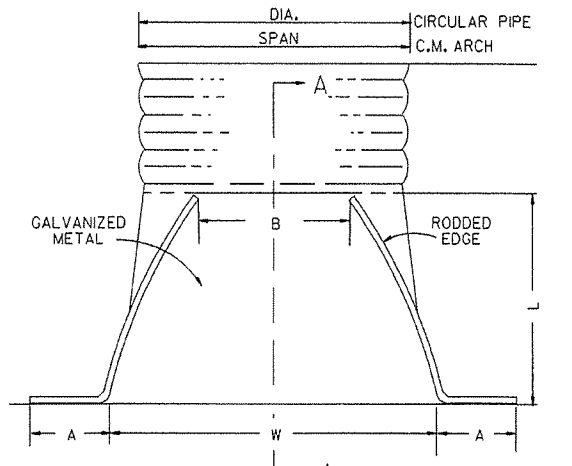
NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

ARCH PIPE														
EQUIV. DIA.	• SPAN		• RISE		W	A	B	C	D	E	P	R2	G-T	S
	AASHTO	AHD	AASHTO	AHD										
	M 206	NOMINAL	M 206	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'-11 1/2"	6'-1 1/2"	6'-6"	54 3/8"	22"	3 1/2"	2 1/2:1
42	51 1/8	51	31 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 3/8"	24"	4 1/4"	2 1/2:1
54	65	65	40	40	5 1/2"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72 1/8"	24"	4 3/4"	2 1/2:1
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77 1/8"	24"	5"	2 1/2:1

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

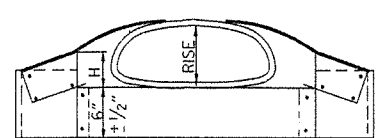


END VIEW CONCRETE ARCH PIPE



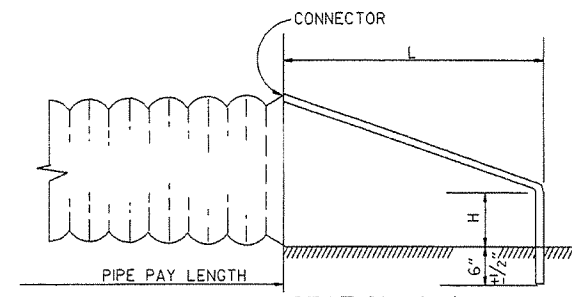
CIRCULAR PIPE

CIRCULAR PIPE								
D. DIA.	GAUGE	A 1" ±	B. MAX.	H 1" ±	L 1 1/2" ±	W 2" ±	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

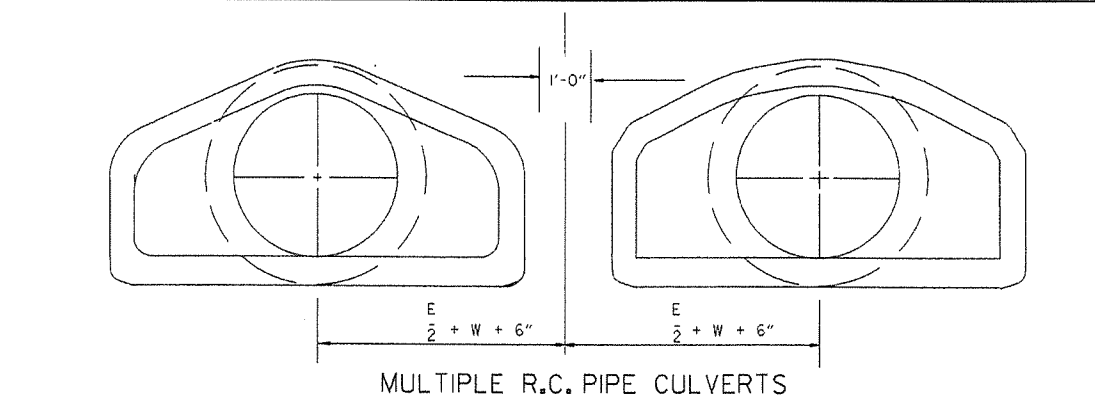
C.M. ARCH PIPE									
EQUIV. DIA.	SPAN	RISE	A 1" ±	B. MAX.	H 1" ±	L 1 1/2" ±	W 2" ±	S	GAUGE
INCHES									
15"	17	13	7	9	6	19	30	2 1/2:1	16
18"	21	15	7	10	6	23	36	2 1/2:1	16
21"	24	18	8	12	6	28	42	2 1/2:1	16
24"	28	20	9	14	6	32	48	2 1/2:1	16
30"	35	24	10	16	6	39	60	2 1/2:1	14
36"	42	29	12	18	8	46	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



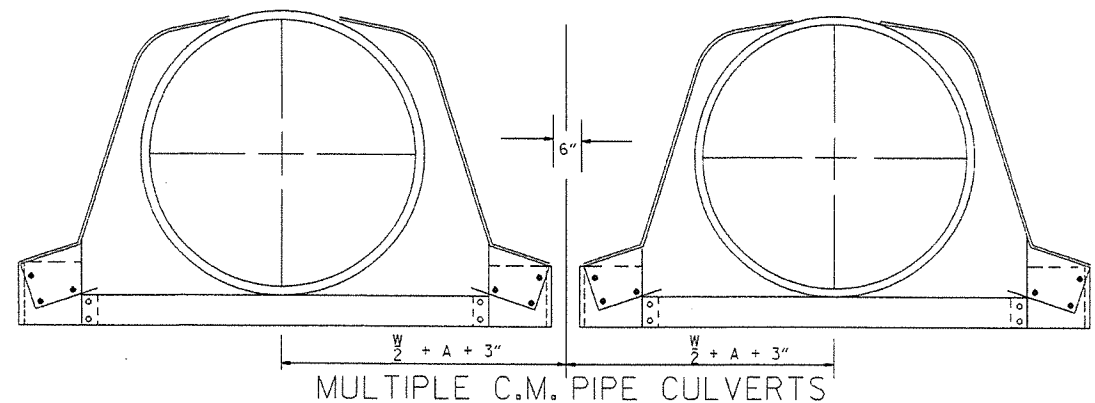
SECTION A-A

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

END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS



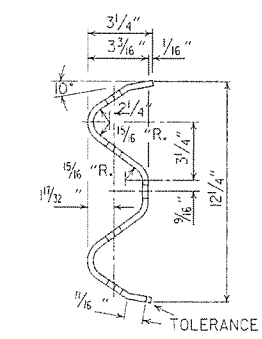
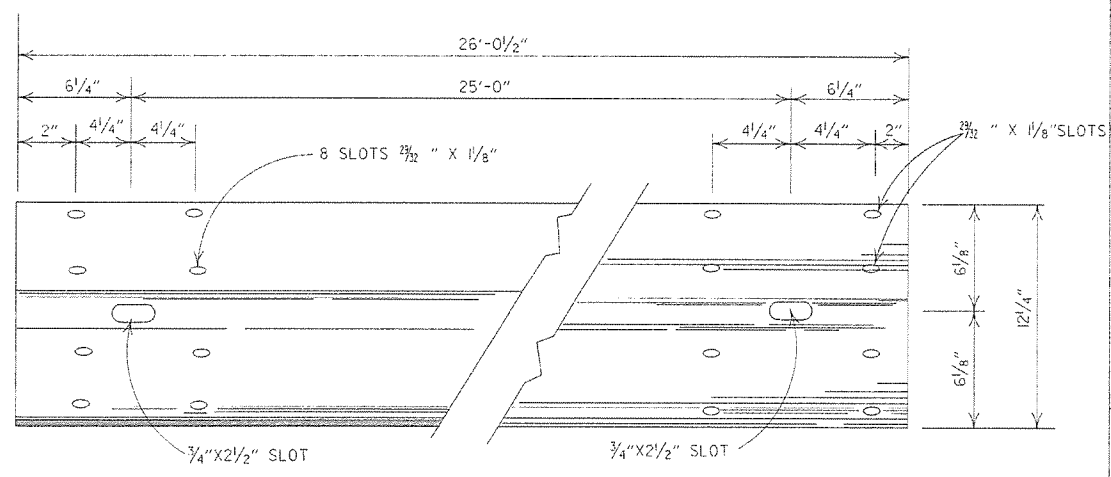
MULTIPLE R.C. PIPE CULVERTS



MULTIPLE C.M. PIPE CULVERTS

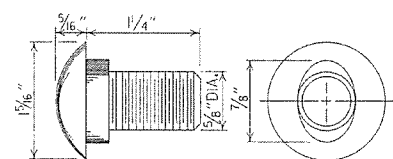
10-18-96	REVISED ASTM REF. TO AASHTO	10-18-96	ARKANSAS STATE HIGHWAY COMMISSION
5-15-80	REVISED DISTANCE BETWEEN MULTIPLE R.C.P. F.E.S.	664-5-15-80	
7-14-78	C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES	752-7-14-78	
8-22-75	ADDED MULTIPLE PIPE CULVERTS	517-8-22-75	
12-5-74	REMOVED NOTE RE REINF. FOR R.C.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

FLARED END SECTION
STANDARD DRAWING FES-2

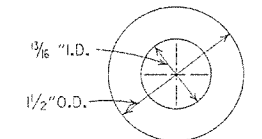


DETAILS OF W-BEAM GUARD RAIL

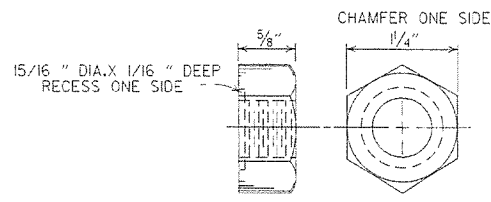
RAIL SECTION OF CLOSELY SIMILAR DIMENSIONS AND COMPARABLE STRENGTH MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.



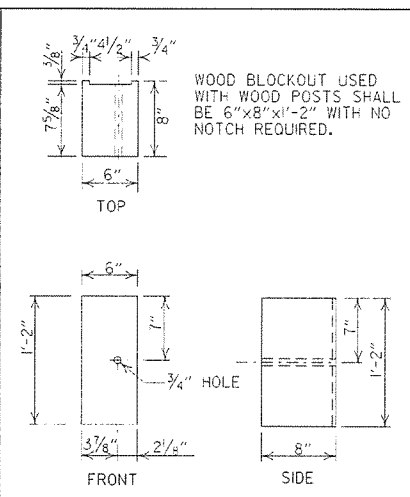
SPLICE BOLT
POST BOLT - SAME EXCEPT LENGTH



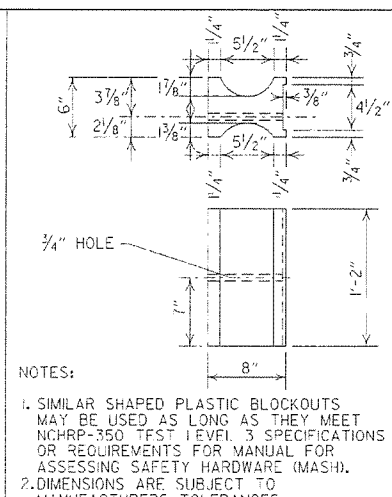
CUT STEEL WASHER



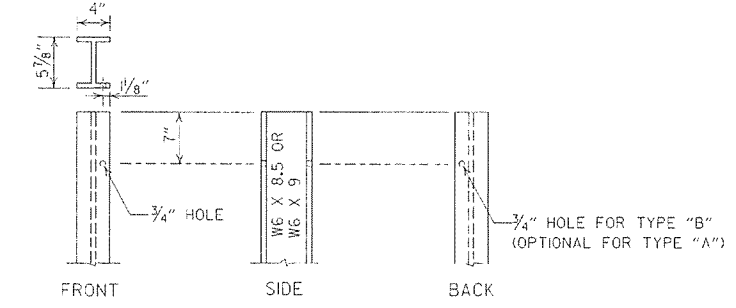
NUT



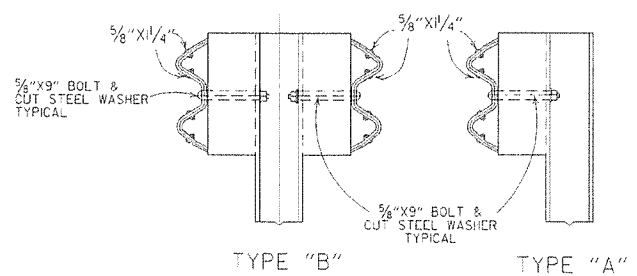
WOOD BLOCKOUT (W-BEAM)



PLASTIC BLOCKOUT (W-BEAM)



STEEL POST



DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)

-GENERAL NOTES-

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN 3/4" BEYOND IT.

WHERE W-BEAM GUARD RAIL CONTINUES, THE INTERMEDIATE SECTIONS SHALL HAVE A POST SPACING OF 6'-3" UNLESS OTHERWISE NOTED.

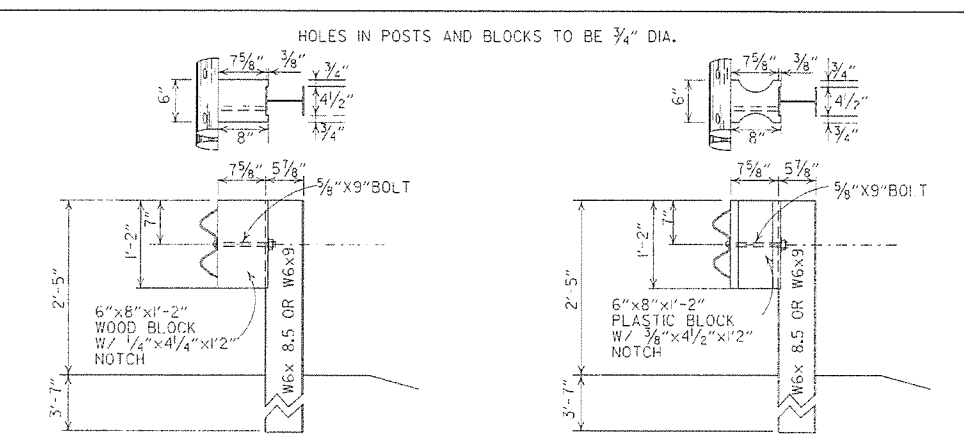
W-BEAM GUARD RAIL REPRESENTING INTERMEDIATE SECTIONS WILL BE MEASURED ALONG THE ROADWAY FACE FROM CENTERLINE OF POST TO CENTERLINE OF POST.

USE W-BEAM GUARD RAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB. FOR EXTENSIONS OR MODIFICATION OF EXISTING GUARD RAIL, W-BEAM GUARD RAIL COMPONENTS OF THE SAME TYPE AS THOSE EXISTING SHALL BE USED.

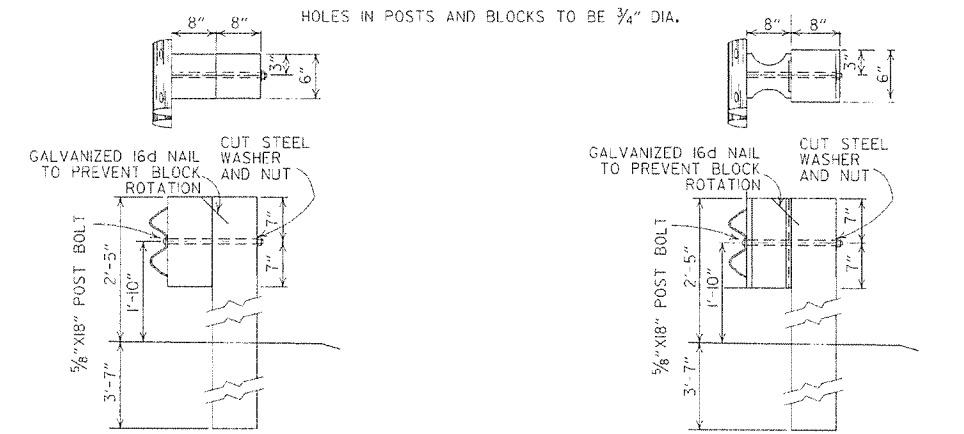
ANY BACKFILLING UNDER OR AROUND POST SHALL BE DAMP SAND THOROUGHLY TAMPED IN PLACE.

WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7F (1400 F) OR NO. 1 350 F SOUTHERN PINE.

CONTRACTOR SHALL HAVE THE OPTION OF USING WOOD BLOCKOUTS FOR W-BEAM GUARD RAIL OR PLASTIC BLOCKOUTS, AS LONG AS BLOCKOUT USED MEETS NCHRP-350 TEST LEVEL 3 SPECIFICATIONS OR REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) FOR W-BEAM GUARD RAIL.



DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)



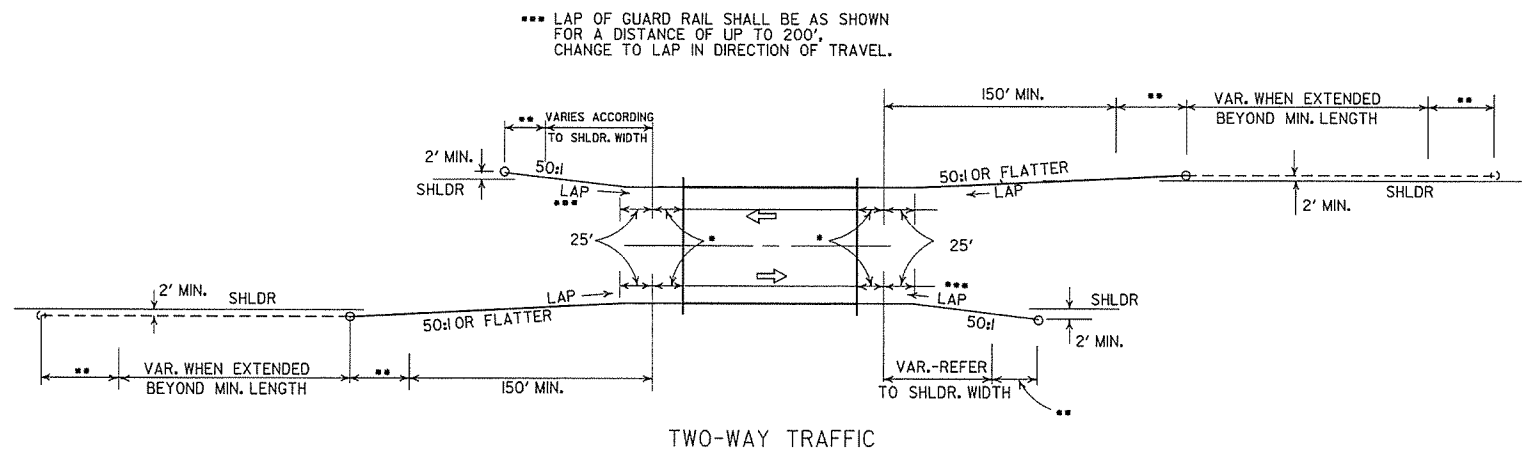
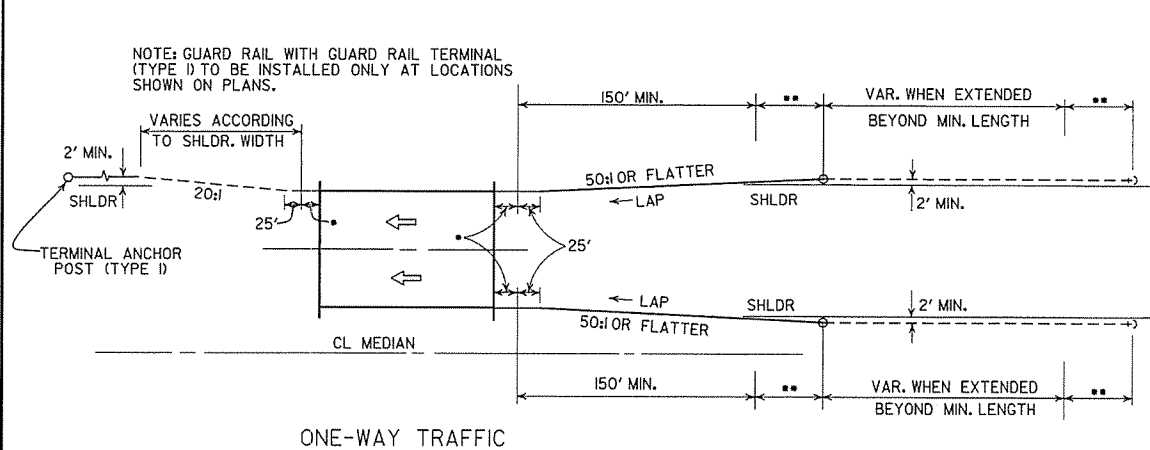
DETAILS OF WOOD LINE POST CONNECTIONS (W-BEAM)

7-4-10	RAISED HEIGHT OF GUARD RAIL 1"	
0-15-09	ADDED REFERENCE TO MASH	
4-10-03	REVISED GENERAL NOTES	
8-22-02	REVISED DIMENSION ON WOOD & PLASTIC BLOCKOUT CONNECTIONS & ON STEEL POST	
11-16-01	REVISED WOOD BLOCKOUT & DETAILS OF WOOD LINE POST CONNECTIONS	
3-30-00	REMOVED GUARD RAIL AT BRIDGE ENDS	
1-12-00	ADDED PLASTIC BLOCKOUT	
8-12-98	REV. BLOCKOUTS TO WOOD, DELETED CONC. POST & REV. GENERAL NOTE, DELETED DET. OF GUARD RAIL REPLACE, BEHIND CURB & DET. OF POST PLACE IN SOLID ROCK, & ADDED DETAILS OF STEEL LINE POST CONN. REMOVED BACK-UP PLATE, REVISED HOLES IN STEEL POLES	
4-3-97	REMOVED "LAP IN DIRECTION OF TRAFFIC" NOTE & PLACED ARROWS ON WASHERS	
10-18-96	REVISED WOOD POST NOTE	
6-2-94	ADDED ALT. STEEL POST SIZE	
8-5-93	REVISED STEEL POST SIZE	8-5-93
10-1-92	REDRAWN & REVISED	10-1-92
8-15-91	REVISED WASHER NOTE	8-15-91
8-2-90	REV. GEN. NOTE & DEPTH OF ANC. POST IN ROCK	8-2-90
7-15-88	REVISED SECTION 3 & GENERAL NOTES	
3-4-88	REV. ANCHOR POST, ELEV. NOTES & POST IN ROCK	780-3-4-88
10-30-87	REVISED WOOD LINE POST DETAIL	546-10-30-87
0-9-87	REDRAWN & REVISED	802-0-9-87
DATE	REVISION	DATE FILM

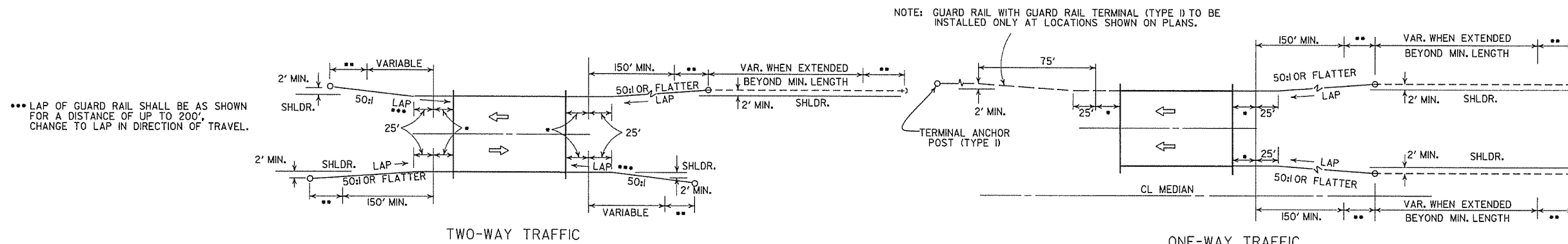
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

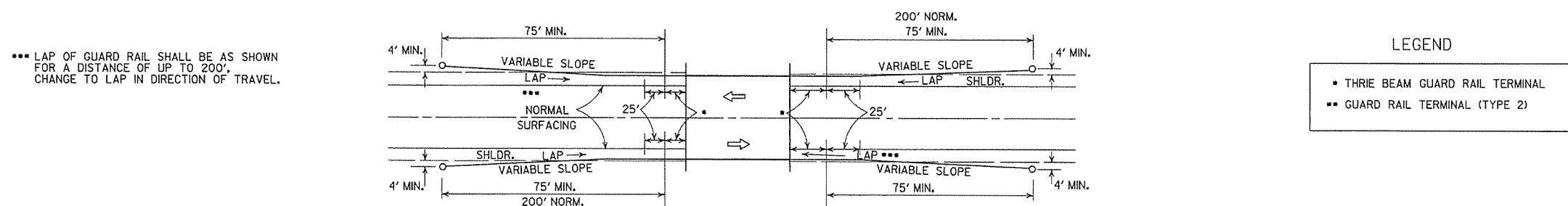
STANDARD DRAWING GR-8



METHODS OF INSTALLATION OF GUARD RAIL AT LESS THAN FULL SHOULDER WIDTH BRIDGES USING GUARD RAIL TERMINAL (TYPE 2)

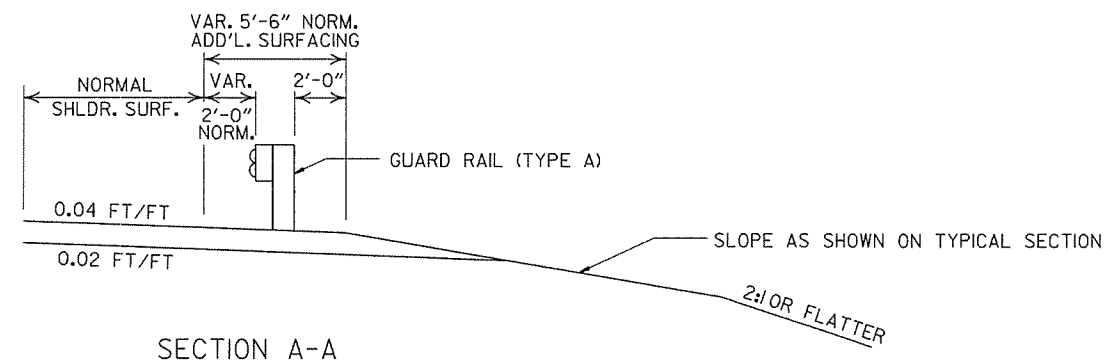
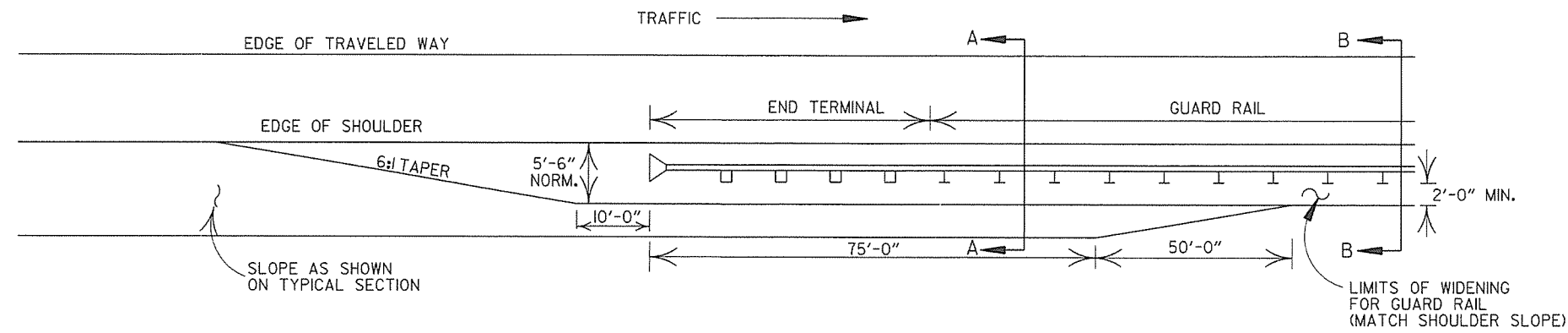


METHOD OF INSTALLATION OF GUARD RAIL AT FULL SHOULDER WIDTH BRIDGES USING GUARD RAIL TERMINAL (TYPE 2)

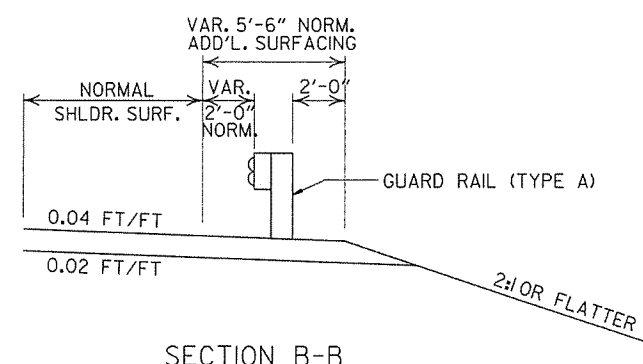


METHOD OF INSTALLATION OF GUARD RAIL USING GUARD RAIL TERMINAL (TYPE 1) (FULL SHOULDER WIDTH OR LESS BRIDGES)

ARKANSAS STATE HIGHWAY COMMISSION		
GUARD RAIL DETAILS		
STANDARD DRAWING GR-9		
4-17-08	REVISED LAYOUTS	
11-10-05	REMOVED GUARD RAIL NOTES AND DETAILS	
11-16-01	DELETED NOTE-METHOD OF INSTALLATION OF GUARD RAIL USING GUARD RAIL TERM. (TY. 1)	
1-12-00	ADDED CONSTRUCTION NOTE	1-12-00
6-26-97	REVISED LAYOUT	
10-1-92	REDRAWN & REVISED	10-1-92
10-9-87	ADDED NOTE	
DATE	REVISION	DATE FILM

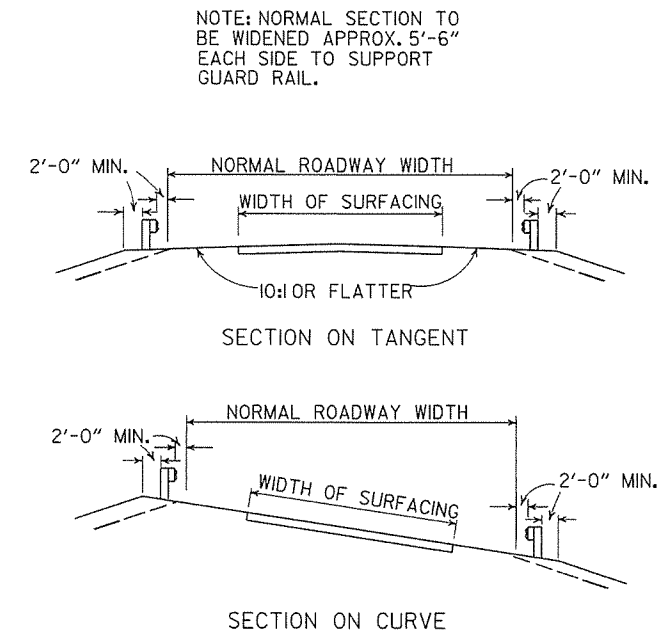


SECTION A-A

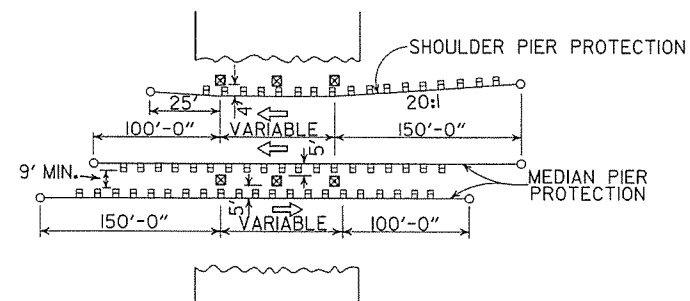


SECTION B-B

DETAILS OF WIDENING FOR GUARD RAIL

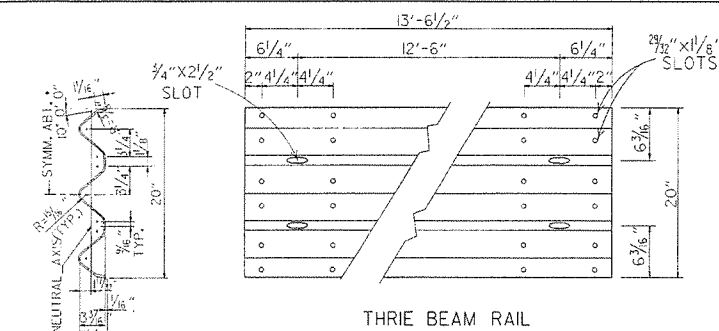


DETAILS SHOWING POSITION OF GUARD RAIL ON HIGHWAY

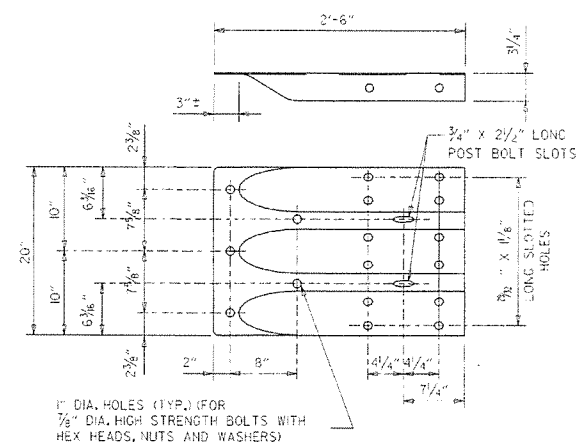


METHOD OF INSTALLATION OF GUARD RAIL AT FIXED OBSTACLE

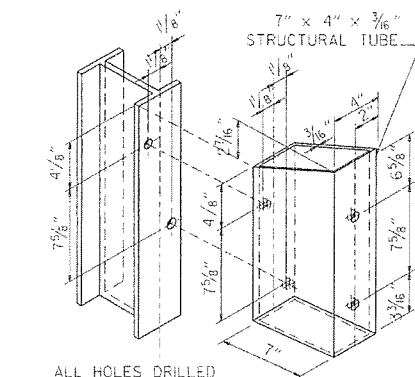
			ARKANSAS STATE HIGHWAY COMMISSION
			GUARD RAIL DETAILS
4-17-08	MINOR REVISION		
11-10-05	DRAWN		
DATE	REVISION	DATE FILM	STANDARD DRAWING GR-9A



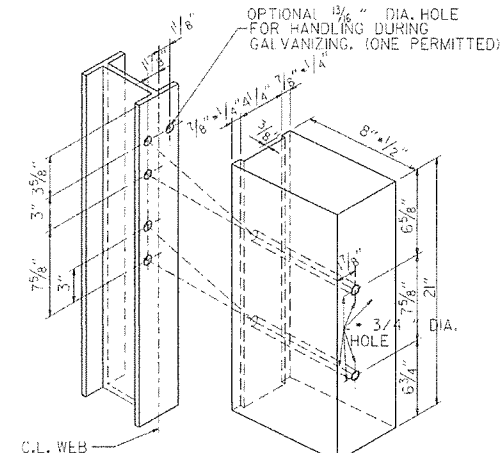
SECTION THRU
THREE BEAM RAIL



SPECIAL END SHOE



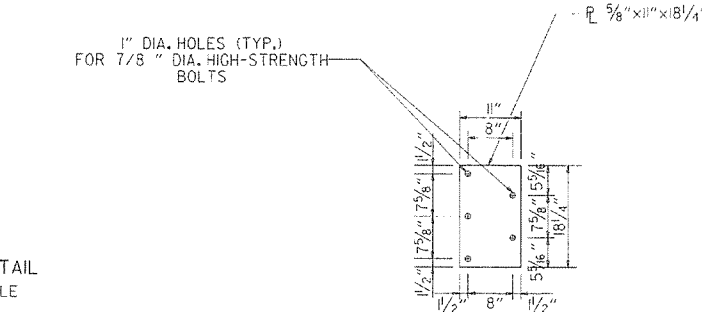
STRUCTURAL STEEL TUBING BLOCKOUT DETAIL



ALL HOLES $\frac{13}{16}$ " DIAMETER EXCEPT AS NOTED

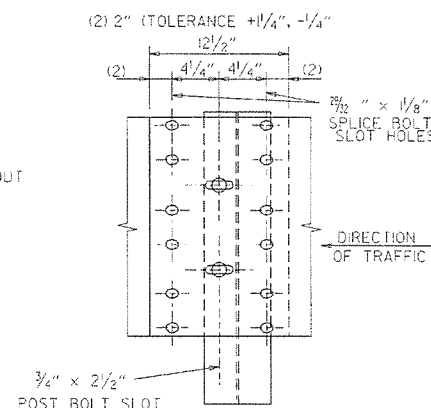
HOLE PUNCHING DETAIL
FOR STEEL POST & WOOD
OR PLASTIC BLOCKOUTS

NOTE: BLOCKS SHALL BE THE SAME TYPE THROUGHOUT THE PROJECT LIMITS.

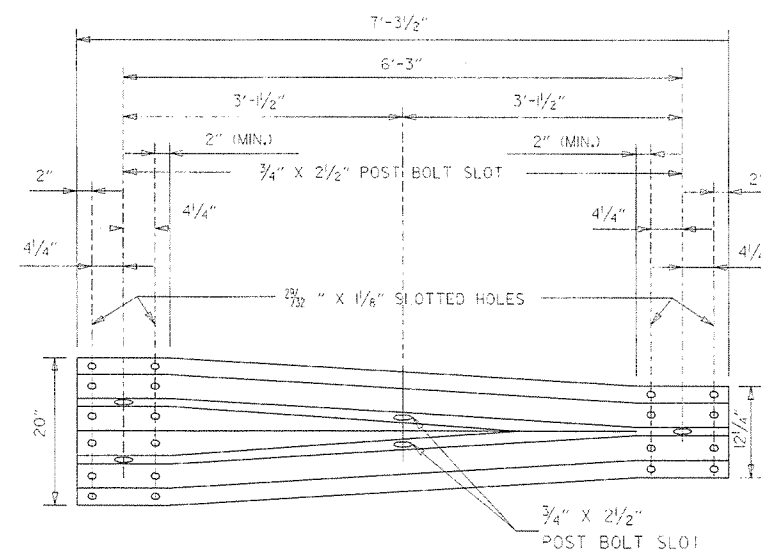


CONNECTOR PLATE

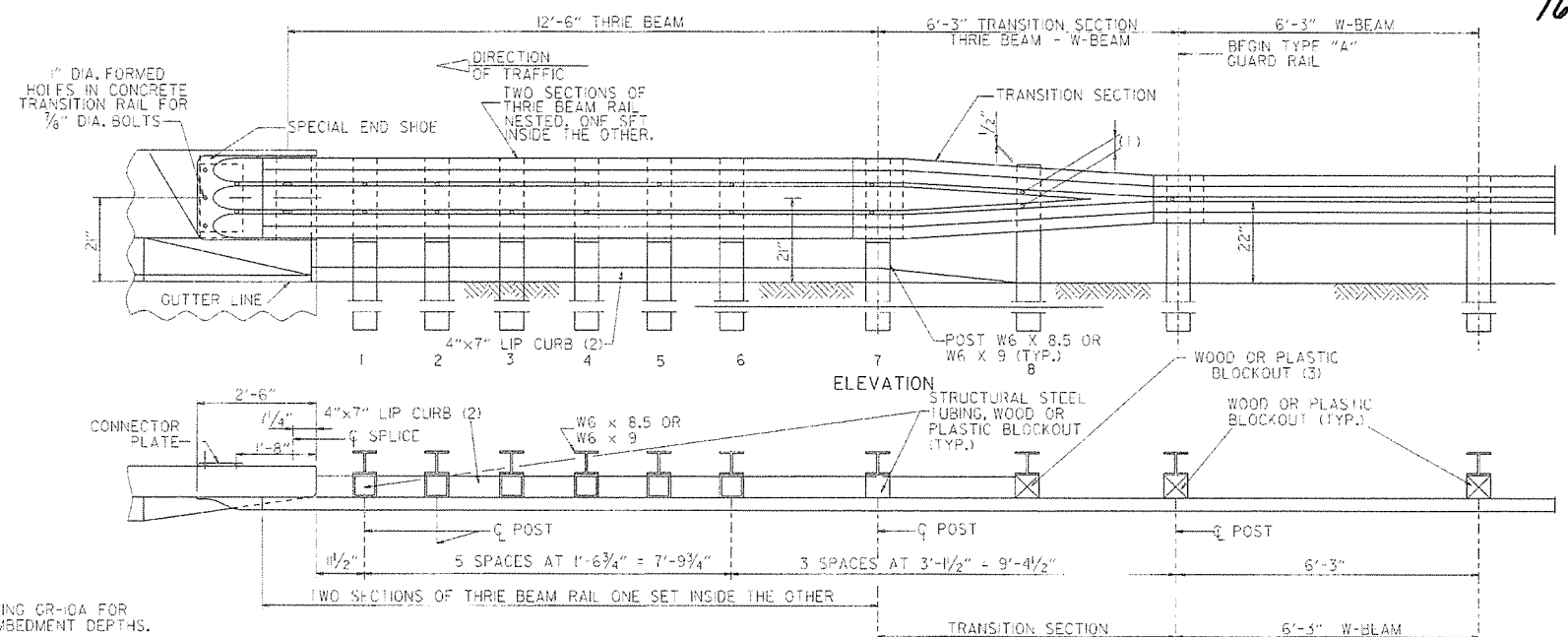
CONNECTOR PLATE SHALL BE AASHTO M270, GR. 36 AND SHALL BE GALVANIZED AFTER FABRICATION. GALVANIZING SHALL CONFORM TO SUBSECTION 807.19 OF THE STANDARD SPECIFICATIONS. CONNECTOR PLATE TO BE BOLTED TO SPECIAL END SHOE USING 3/8" DIA. HIGH STRENGTH BOLTS, WITH THE HEADS PLACED ON THE TRAFFIC FACE. WASHERS SHALL BE USED UNDER THE HEAD AND NUT. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AND SHALL CONFORM TO SUBSECTION 807.06.



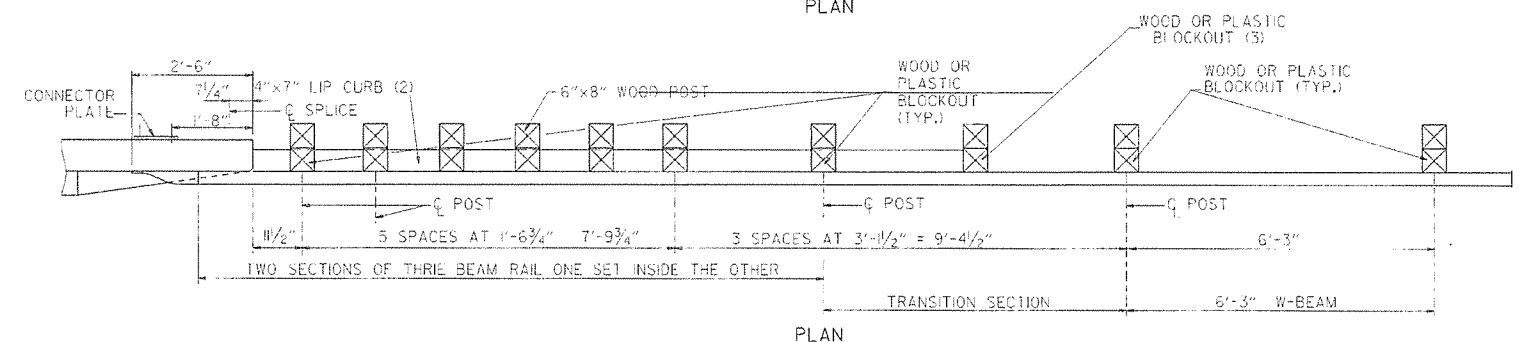
THRIE BEAM RAIL
SPLICE AT POST



TRANSITION SECTION



PLAN



PLAN

- (1) VERIFY BOLT SPACING FROM RAIL TRANSITION PRODUCER.
- (2) REFER TO APPROACH GUTTER DETAILS.
- (3) LENGTH OF BLOCKOUT ON POST 8 TO BE MODIFIED TO FIT RAIL WIDTH.

THREE BEAM GUARD RAIL CONNECTION AT BRIDGE ENDS

GENERAL NOTES:

THE THREE BEAM RAIL, SPECIAL END SHOE, AND THE TRANSITION SECTION SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE. ZINC COATING SHALL BE TYPE I. RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN $\frac{3}{4}$ " BEYOND IT.

ALL LAP SPICES, INCLUDING SPECIAL END SHOES, SHALL BE MADE IN THE DIRECTION SHOWN ON STANDARD DRAWINGS GR-9 & GR-II.

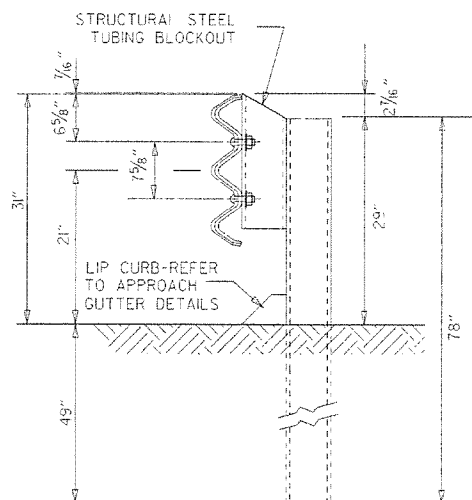
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7F (1400 F) OR NO. 1 1350 F SOUTHERN PINE.

REFER TO STD. DRWG. GR-10A FOR POST DETAILS.

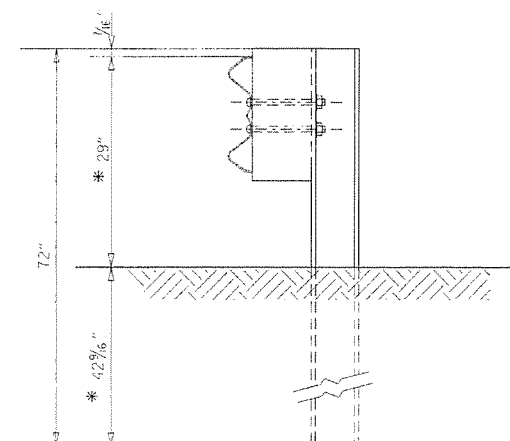
USE THREE BEAM GUARD RAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB.

THREE BEAM POSTS SHALL BE SAME MATERIAL AS W BEAM POSTS FOR ENTIRE JOB.

7-14-10	RAISED HEIGHT OF W-BEAM 1"		ARKANSAS STATE HIGHWAY COMMISSION
11-29-07	ADDED PLASTIC BLOCKOUTS		GUARD RAIL DETAILS
11-10-05	ADDED NOTE FOR ATTACHING STEEL BLOCKOUT		
11-18-04	REVISED GENERAL NOTES		STANDARD DRAWING GR-10
10-9-03	REVISED GENERAL NOTES		
4-10-03	REVISED GENERAL NOTES		
8-22-02	REVISED NOTE (2)		
6-29-00	MOVED DIMENSION LINES		
5-18-00	ADDED NOTE		
3-30-00	DRAWN & ISSUED		
DATE	REVISION	DATE FILED	

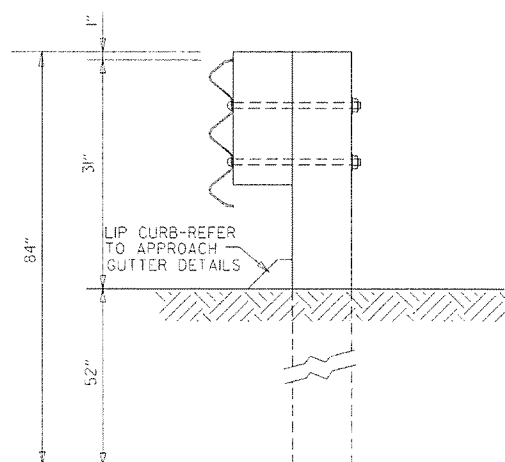


THRIE BEAM RAIL WITH STEEL TUBING BLOCKOUT
AND STEEL POST
POSTS 1-7

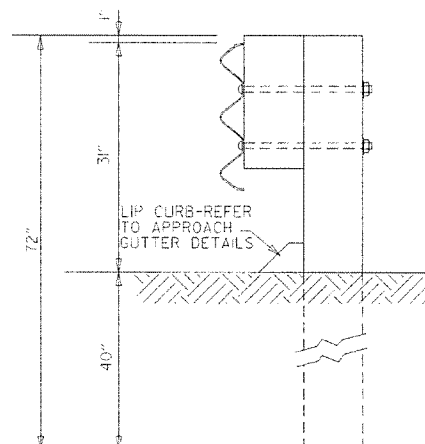


W-BEAM TO THRIE BEAM TRANSITION RAIL
WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST
POST 8

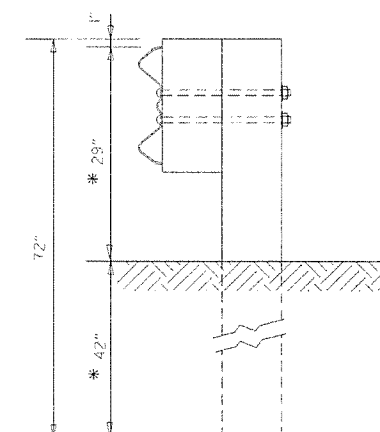
* NOTE:
THESE DIMENSIONS WILL NEED TO BE ADJUSTED
IN THE FIELD TO MAKE THE TRANSITION FROM
21" MID POINT OF THRIE BEAM TO 22" MID POINT
OF W-BEAM.



THRIE BEAM RAIL
WITH WOOD OR PLASTIC
BLOCKOUTS & WOOD POSTS
POSTS 1-6



THRIE BEAM RAIL
WITH WOOD OR PLASTIC
BLOCKOUT & WOOD POST
POST 7

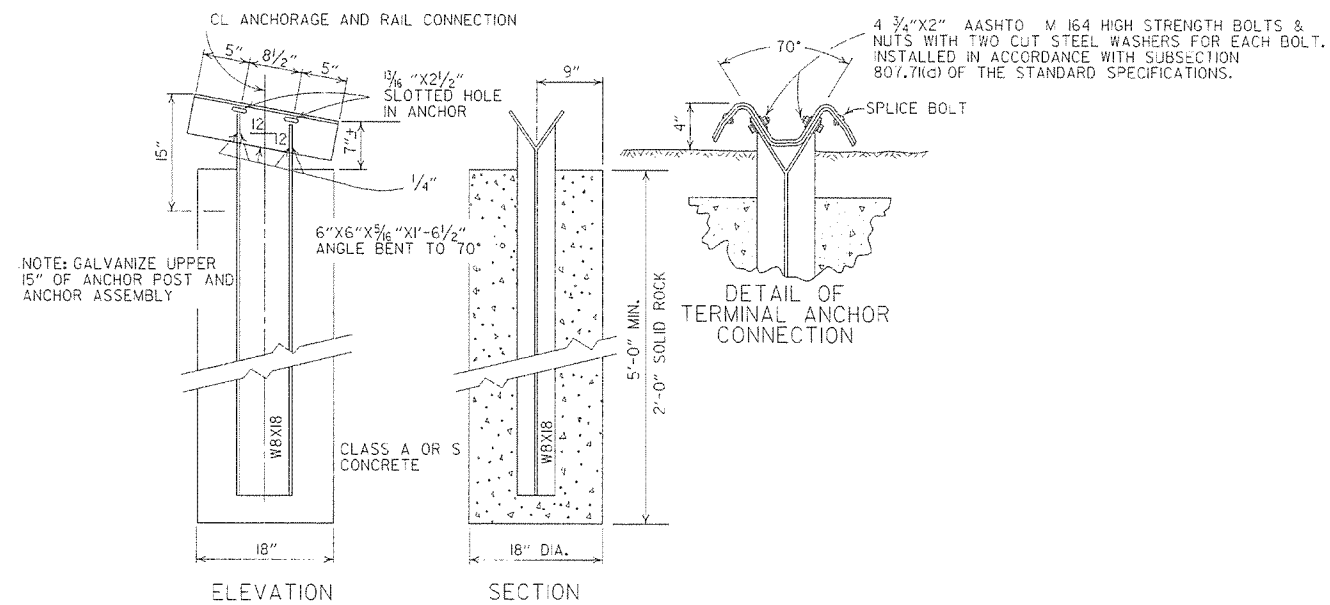
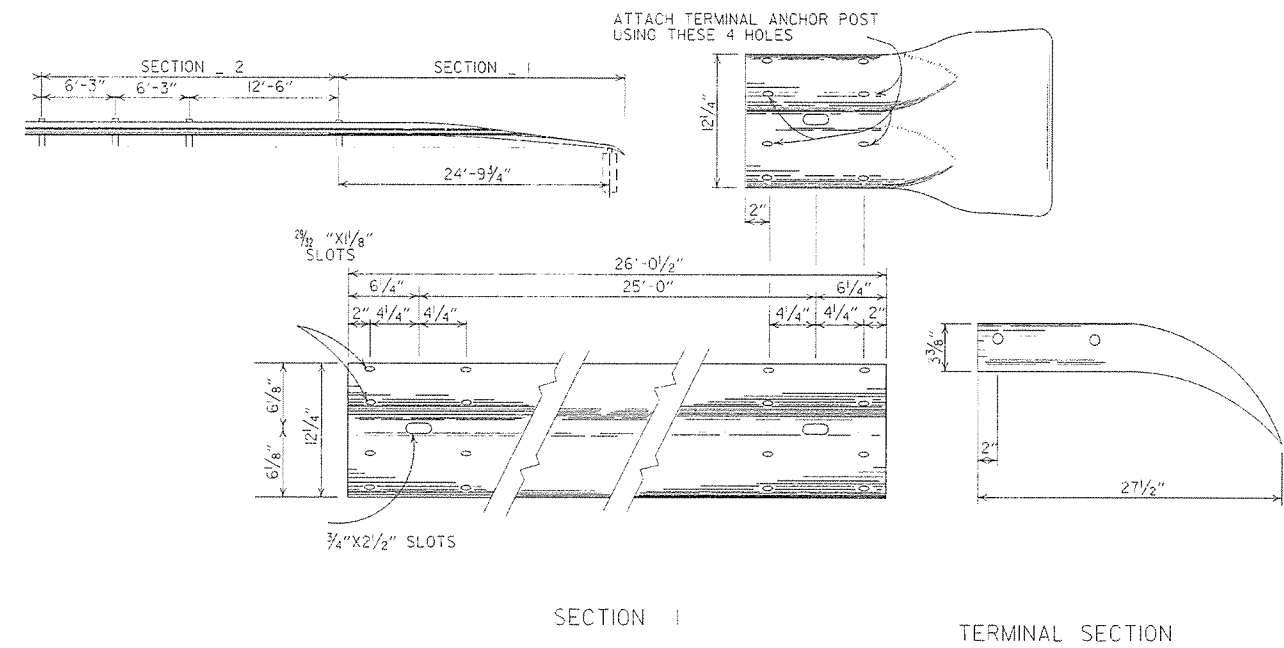
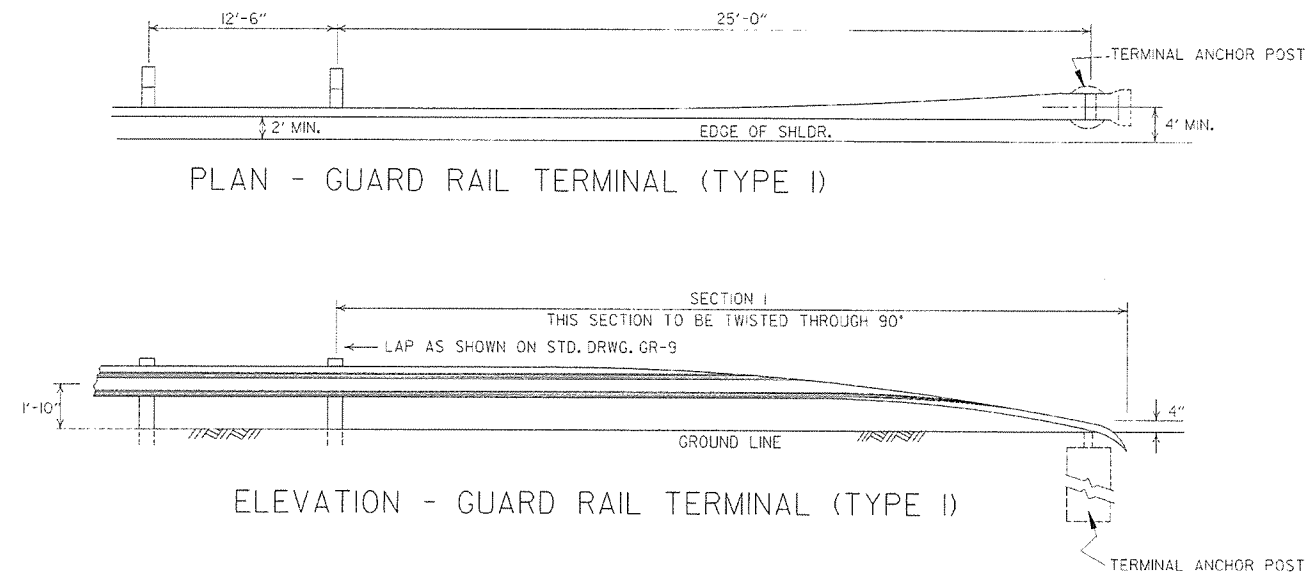


W-BEAM TO THRIE BEAM
TRANSITION RAIL WITH WOOD OR
PLASTIC BLOCKOUT & WOOD POST
POST 8

GENERAL NOTES:
RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND
VERTICALLY IN CROSS SECTION.
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR
BETTER 9.7 F (1400 F) OR NO. 1 (350 F) SOUTHERN PINE.

DATE	REVISION	DATE FILM
7-14-10	REVISED POST 8 DIMENSIONS	
11-29-07	ADDED PLASTIC BLOCKOUTS	
8-22-02	REVISED LIP CURB NOTE	
3-30-00	DRAWN & ISSUED	

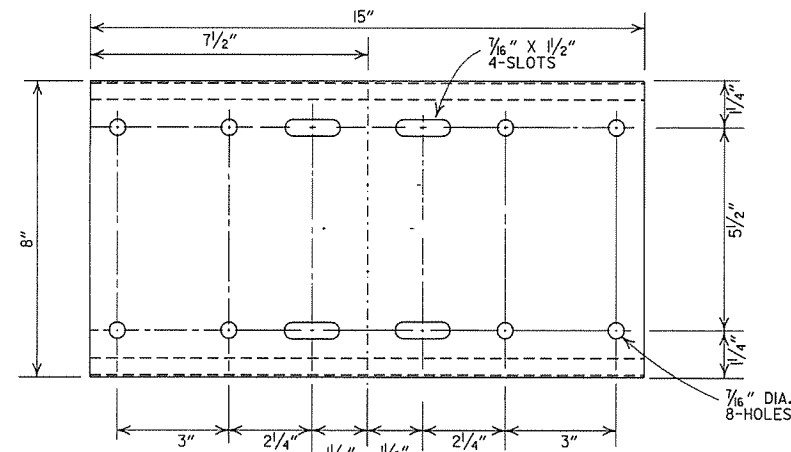
ARKANSAS STATE HIGHWAY COMMISSION
GUARD RAIL DETAILS
STANDARD DRAWING GR-10A



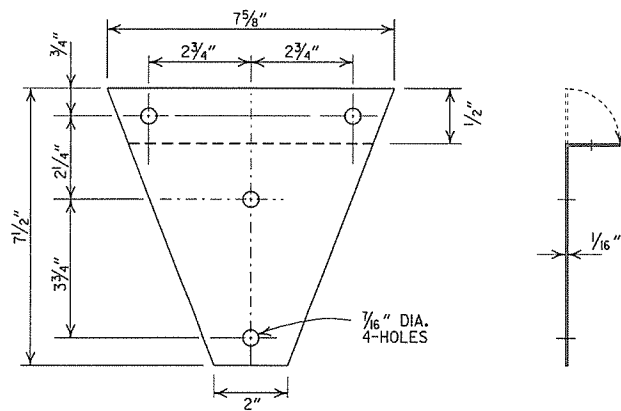
NOTE: RAIL MEMBERS MAY BE BOLTED TO ANGLE AT TERMINAL ANCHOR AND THE TWO ASSEMBLIES POSITIONED TO PROPER ALIGNMENT PRIOR TO PLACING CONCRETE AROUND 8 WF 17 POST IF CONTRACTOR SO DESIRES.

DETAIL OF TERMINAL
ANCHOR POST (TYPE I)

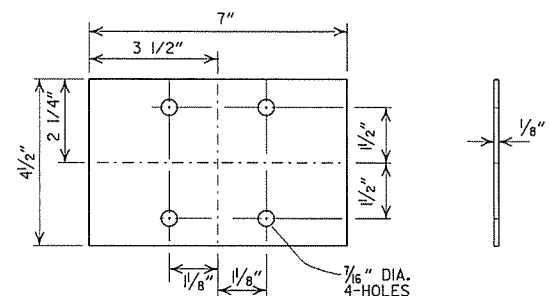
			ARKANSAS STATE HIGHWAY COMMISSION
7-14-90	RAISED HEIGHT OF GUARD RAIL "		GUARD RAIL DETAILS
6-26-97	REVISED LAP NOTE		
10-18-96	REVISED ASTM REF. TO AASHTO		
11-3-94	DIMENSION TERMINAL DETAIL		
11-11-92	ADDED NOTE FOR PAYMENT	11-11-92	
10-1-92	DRAWN & ISSUED	10-1-92	
DATE	REVISION	DATE	STANDARD DRAWING GRT-1



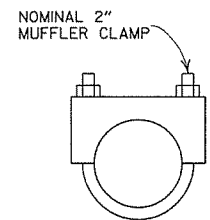
SHELF



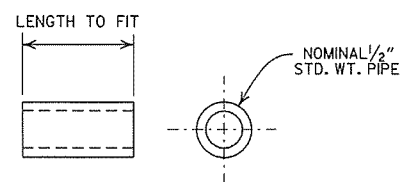
BRACKET



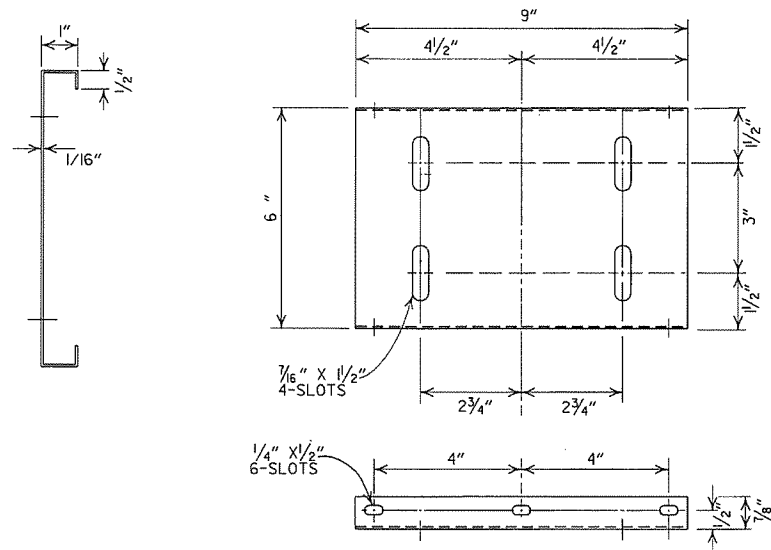
ANTI-TWIST PLATE



CLAMP



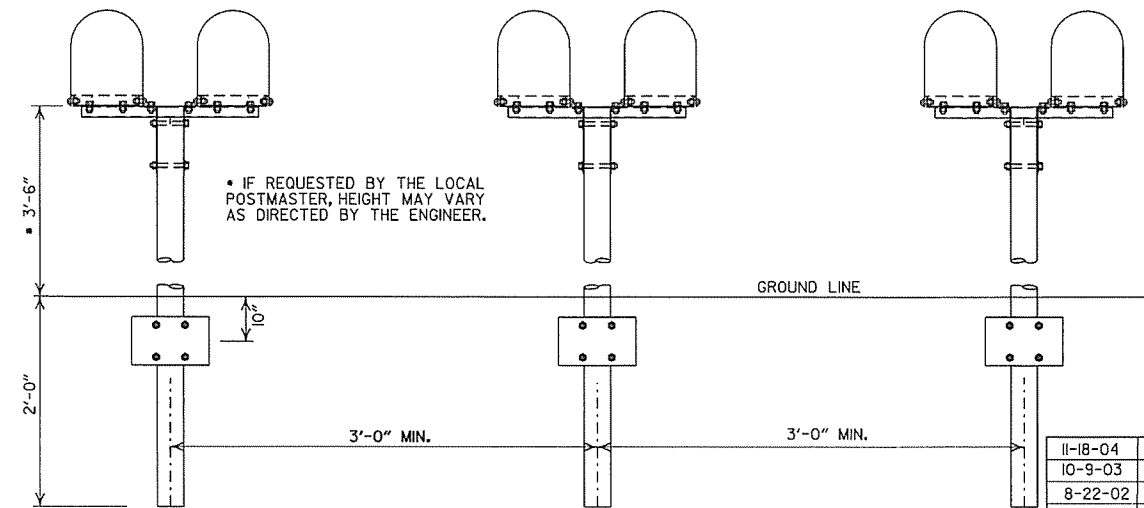
SPACER



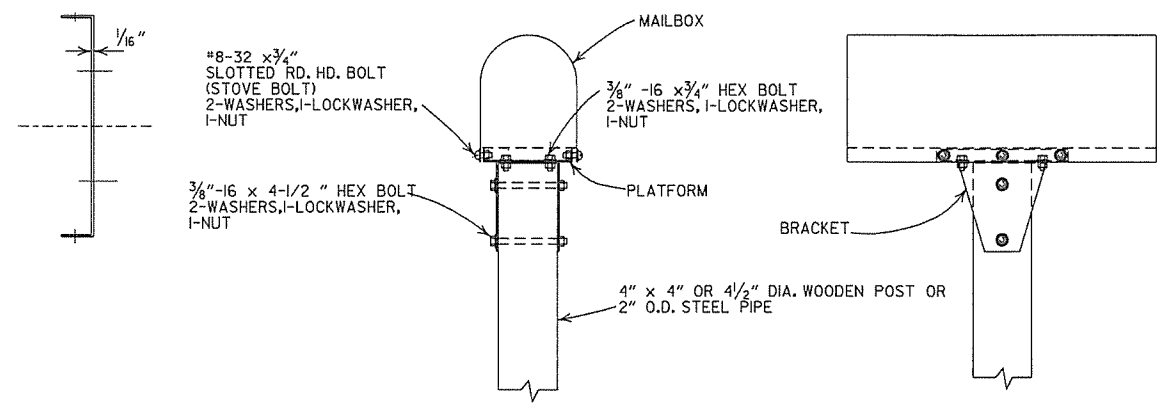
PLATFORM

GENERAL NOTES

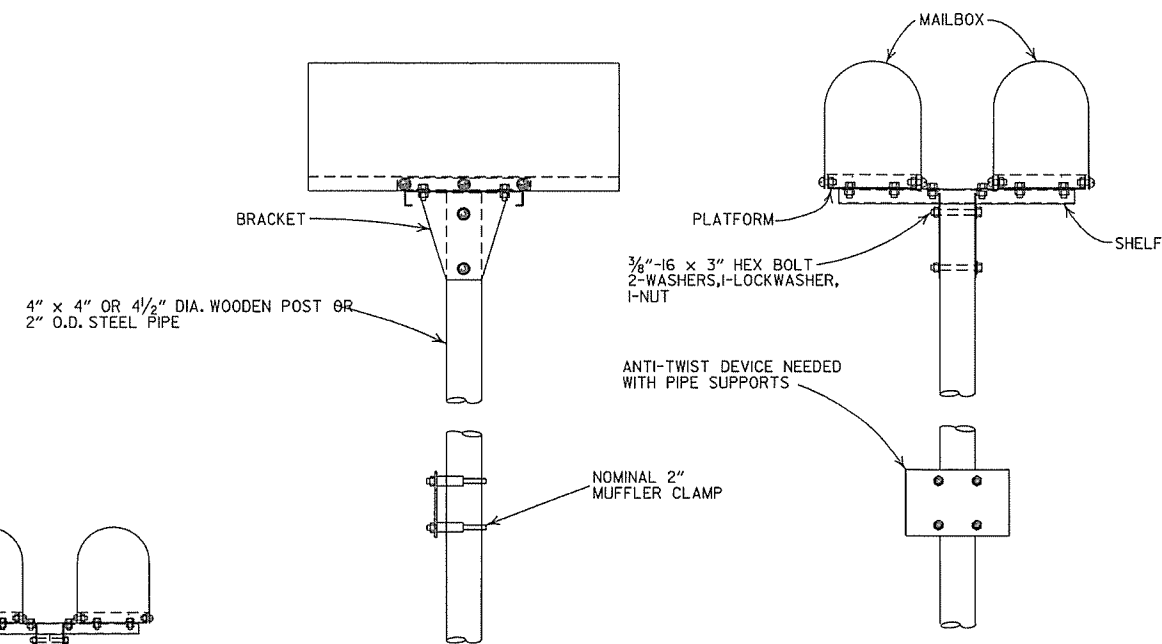
1. MAILBOX SUPPORTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
2. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
3. MAILBOX SHELF, BRACKET & PLATFORM SHALL BE GALVANIZED OR PAINTED STEEL, HOWEVER TREATED WOOD MAY BE USED WITH WOODEN POSTS. THE WOODEN SHELF, BRACKET & PLATFORM SHALL BE A MINIMUM OF 3/4" THICK AND SHALL BE ASSEMBLED WITH BOLTS OF THE APPROPRIATE LENGTH WITH SIX 8 X 3/4" FLATHEAD WOOD SCREWS USED TO ATTACH THE MAILBOX TO THE PLATFORM.
4. THE MAILBOX SHELF AND PLATFORM THAT IS SHOWN IS FOR STANDARD SIZE MAILBOXES. THE SHELF AND PLATFORM SIZE SHALL BE MODIFIED TO FIT MAILBOXES OF A DIFFERENT SIZE.
5. METAL PIPE FOR MAILBOX SUPPORT SHALL BE 2" OUTSIDE DIAMETER STEEL WITH A WALL THICKNESS OF 0.145" AND A WEIGHT OF 2.72 LBS PER FT. OUTSIDE DIAMETER AND WEIGHT SHALL HAVE A TOLERANCE OF +/- 5% ACCORDING TO AASHTO M 181.
6. MAILBOX SUPPORT SYSTEM DIFFERING FROM THOSE SHOWN MAY BE USED, PROVIDED THEY ARE ON THE AHTD QUALIFIED PRODUCTS LIST FOR MAILBOX SUPPORTS.



SPACING FOR MULTIPLE POST INSTALLATION



SINGLE INSTALLATION

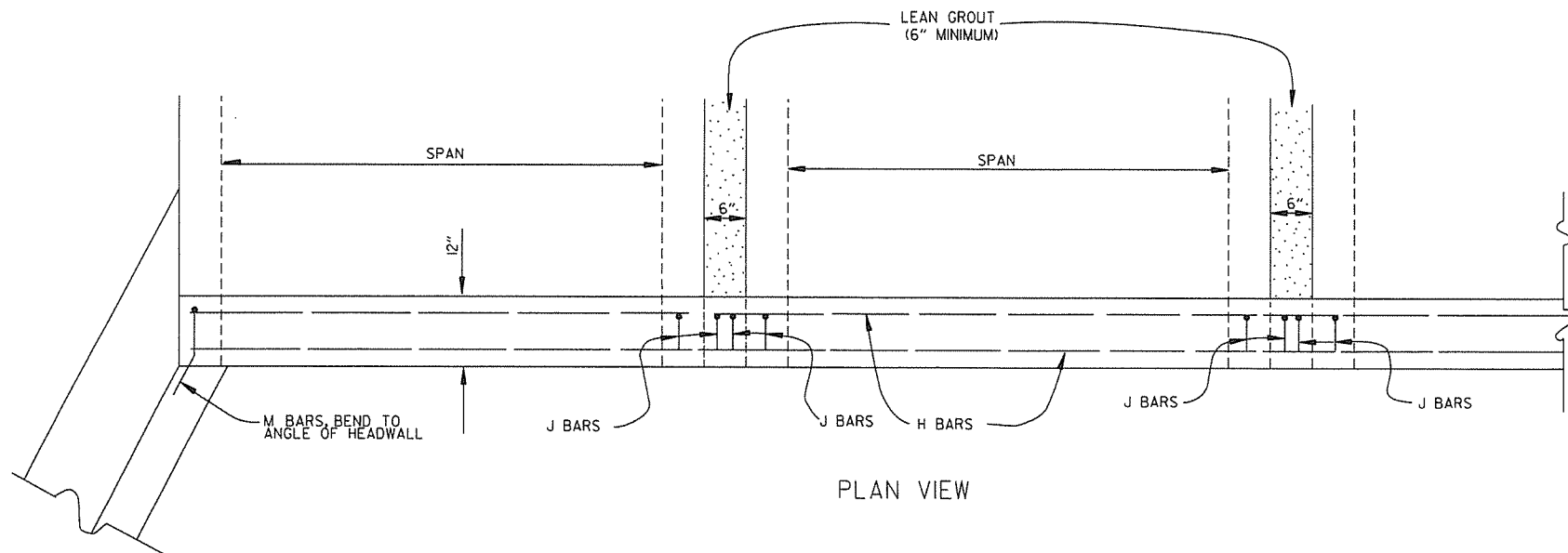


DOUBLE INSTALLATION

11-18-04	REVISED NOTES
10-9-03	REVISED NOTE 6
8-22-02	REVISED NOTE 6
10-18-96	CORRECTED AASHTO
10-1-92	CORRECTED SPELLING
9-26-91	NEW PHONE NUMBER
8-15-91	ADDED NOTE
11-30-89	ADJUSTED HEIGHT & ADDED NOTE
2-16-89	DELETED SLOTS FROM SHELF & PLTF
11-17-88	ADJUSTED DIMENSIONS OF STEEL POSTS
7-15-88	ISSUED
DATE	FILMED
	REVISION

ARKANSAS STATE HIGHWAY COMMISSION

MAILBOX DETAILS
STANDARD DRAWING MB-1



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

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

GENERAL NOTES

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

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

ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFERS.

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

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

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

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

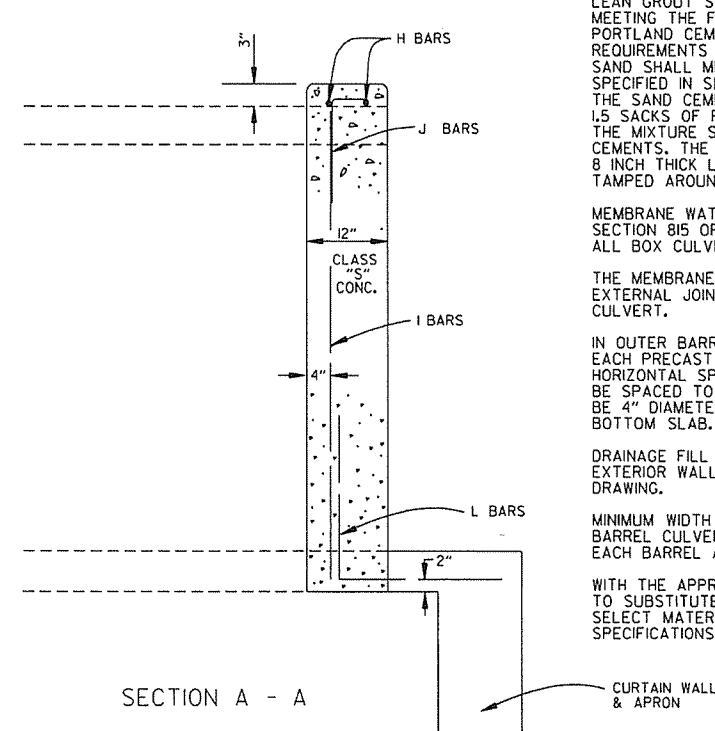
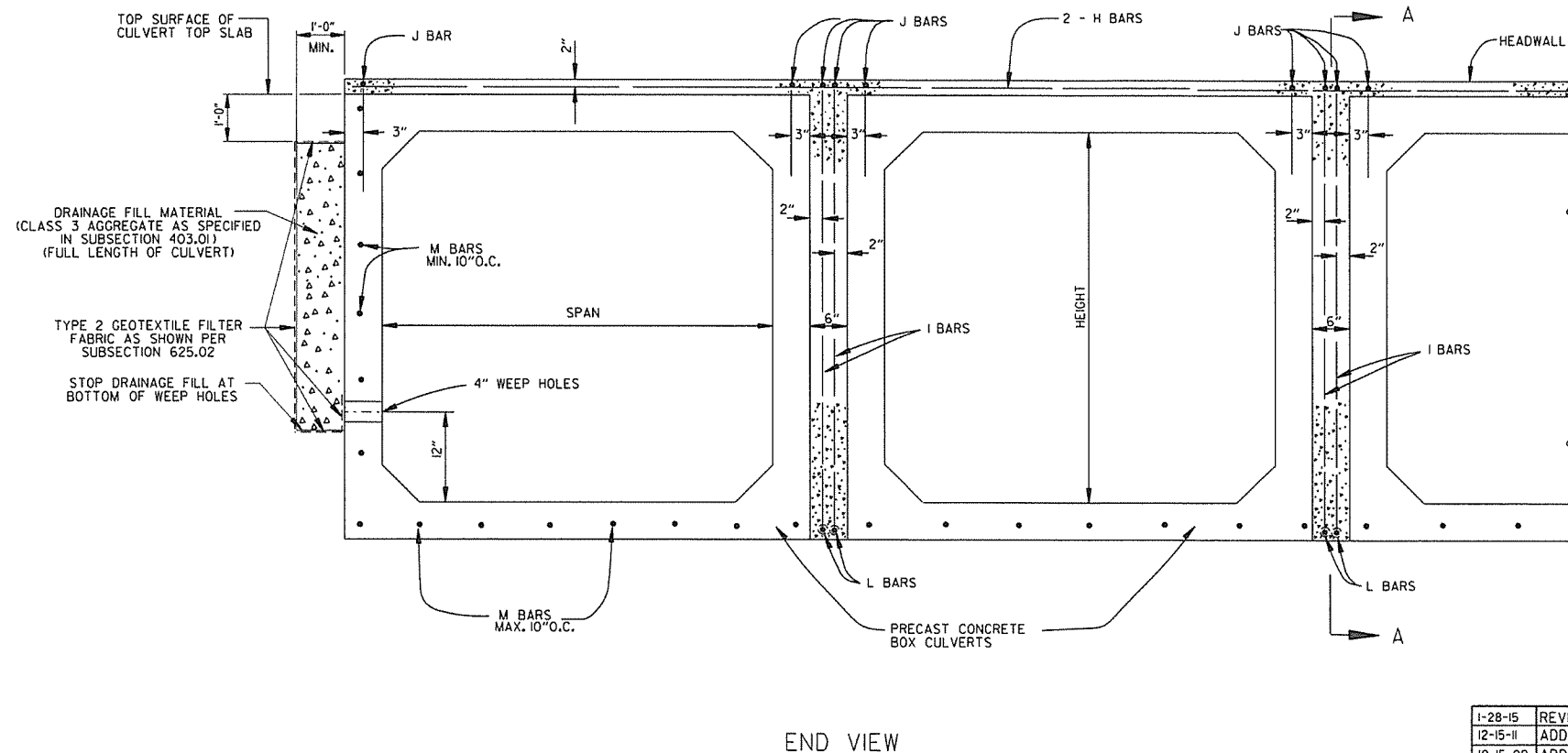
THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

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

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

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

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



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

ARKANSAS STATE HIGHWAY COMMISSION

PRECAST CONCRETE BOX CULVERTS

STANDARD DRAWING PBC-1

REINFORCED CONCRETE
ARCH PIPE DIMENSIONS

EQUIV. DIA.	SPAN		RISE	
	AASHTO M 206	AHTD NOMINAL	AASHTO M 206	AHTD NOMINAL
INCHES	INCHES			
15	18	18	11	11
18	22	22	13½	14
21	26	26	15½	16
24	28½	29	18	18
30	36¼	36	22½	23
36	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)(ii).

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

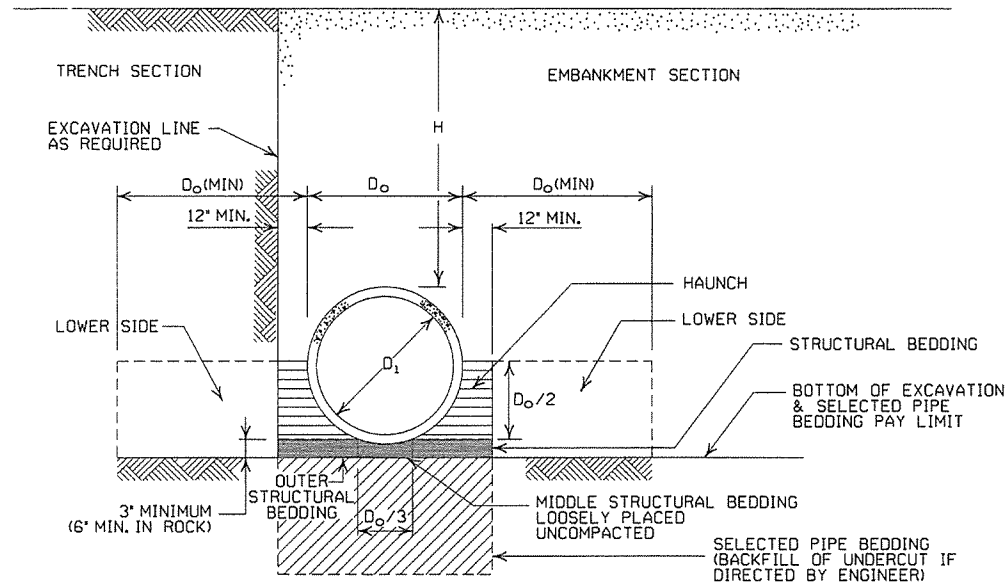
- LEGEND -

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

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

* SM-3 WILL NOT BE ALLOWED.

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



EMBANKMENT AND TRENCH INSTALLATIONS

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

GENERAL NOTES

1. CONCRETE PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (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), BOPROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."

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

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

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

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

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

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

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.

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.

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 3/8 INCH BY 1/2 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM						
12	1	84	91			
15	1	67	73			
18	1	56	61			
24	1	42	46	59		
30	2	34	36	47		
36	2		30	39	41	
42	2		43	67	70	73
48	2		37	58	61	64
② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, BOLTED, OR HELICAL LOCK-SEAM						
36	1	48	60	88	111	118
42	1	41	51	72	90	102
48	1	36	45	64	77	85
54	2	32	40	59	71	79
60	2	29	36	53	64	71
66	2	26	33	47	58	64
72	2	24	30	44	53	59
78	2		28	41	49	54
84	2		26	38	45	51
90	2		24	35	43	45
96	2		22	33	40	44
102	2			31	38	42
108	2			30	35	39
114	2			28	34	37
120	2			27	32	35

CONSTRUCTION SEQUENCE

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

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

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

③ SM-3 WILL NOT BE ALLOWED.

CORRUGATED ALUMINUM PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINIMUM COVER TOP OF PIPE TO TOP OF GROUND “H” (FEET)	MAX. FILL HEIGHT “H” ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS IN INCHES				
		0.060	0.075	0.105	0.135	0.164
		2 1/8 INCH BY 1/2 INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM				
12	1	45	45			
18	2	30	30	52		
24	2	22	22	39	41	
30	2		18	31	32	34
36	2,5		15	26	27	28
42	2			43	43	44
48	2			40	41	43
54	2			35	37	38
60	2				33	34
66	2					31
72	2					29

EQUIVALENT METAL THICKNESSES AND GAUGES

METAL THICKNESS IN INCHES			GAUGE NUMBER
STEEL		ALUMINUM	
ZINC COATED	UNCOATED		
0.064	0.0598		
0.079	0.0747	0.060	16
0.109	0.1046	0.075	28
0.138	0.1345	0.105	12
0.168	0.1644	0.135	10
		0.164	8

CORRUGATED METAL PIPE ARCHES

STEEL								ALUMINUM				
EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINIMUM CORNER RADIUS (INCHES)	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 3/8 INCH BY 1/2 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM					2 3/8 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		0.135	3		15	
66	77x52	8	0.168	3		15		0.164	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								
				INSTALLATION				INSTALLATION				
				TYPE 2		TYPE 1		TYPE 2		TYPE 1		
36	40x31	5	0.079	3	2	12	15					
42	46x36	6	0.079	3	2	13	15					
48	53x41	7	0.079	3	2	13	15					
54	60x46	8	0.079	3	2	13	15					
60	66x51	9	0.079	3	2	13	15					
66	73x55	12	0.079	3	2	15	15					
72	81x59	14	0.079	3	2	15	15					
78	87x63	14	0.079	3	2	15	15					
84	95x67	16	0.109	3	2	15	15					
90	103x71	16	0.109	3	2	15	15					
96	112x75	18	0.109	3	2	15	15					
102	117x79	18	0.109	3	2	15	15					
108	128x83	18	0.138	3	2	15	15					

① FOR MINIMUM COVER VALUES, "H" SHALL

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

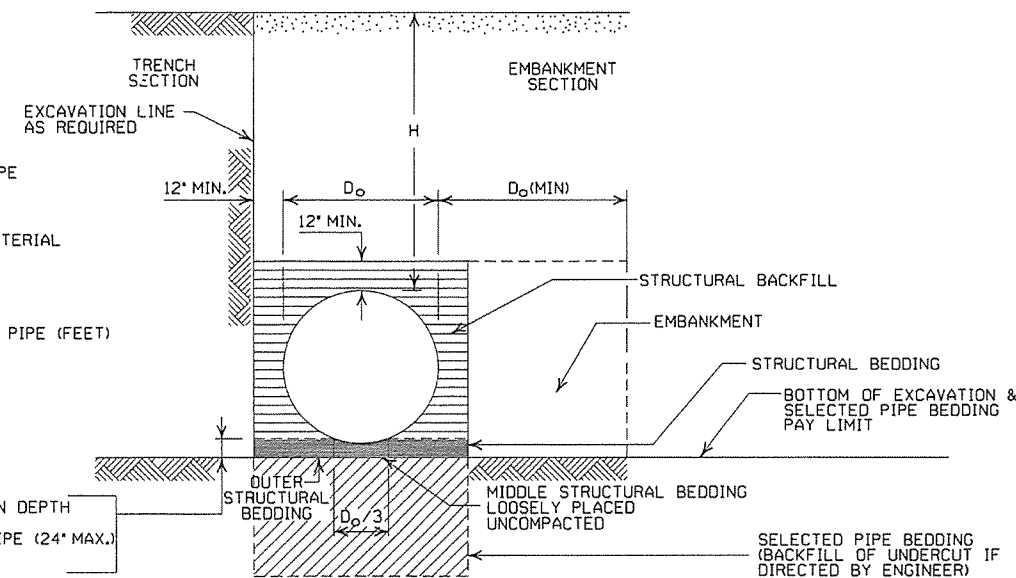
① FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

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.

- 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 3/8" x 1/2" CORRUGATION.
4. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 3" x 1" OR 5" x 1" CORRUGATION.

GENERAL NOTES

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

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

ARKANSAS STATE HIGHWAY COMMISSION

METAL PIPE CULVERT
FILL HEIGHTS & BEDDING

STANDARD DRAWING PCM-1



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

- AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL.
SM3 WILL NOT BE ALLOWED.
- STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1/4 INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.
STRUCTURAL BACKFILL AND STRUCTURAL BEDDING 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" >OR= 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"
42"	7'-0"	10'-6"
48"	8'-0"	12'-0"

①NOTE:
18" MIN. (18" - 30" DIAMETERS)
24" MIN. (36" - 48" DIAMETERS)
MINIMUM COVER VALUES, "H"
SHALL INCLUDE A MINIMUM 12"
OF PAVEMENT AND/OR BASE.

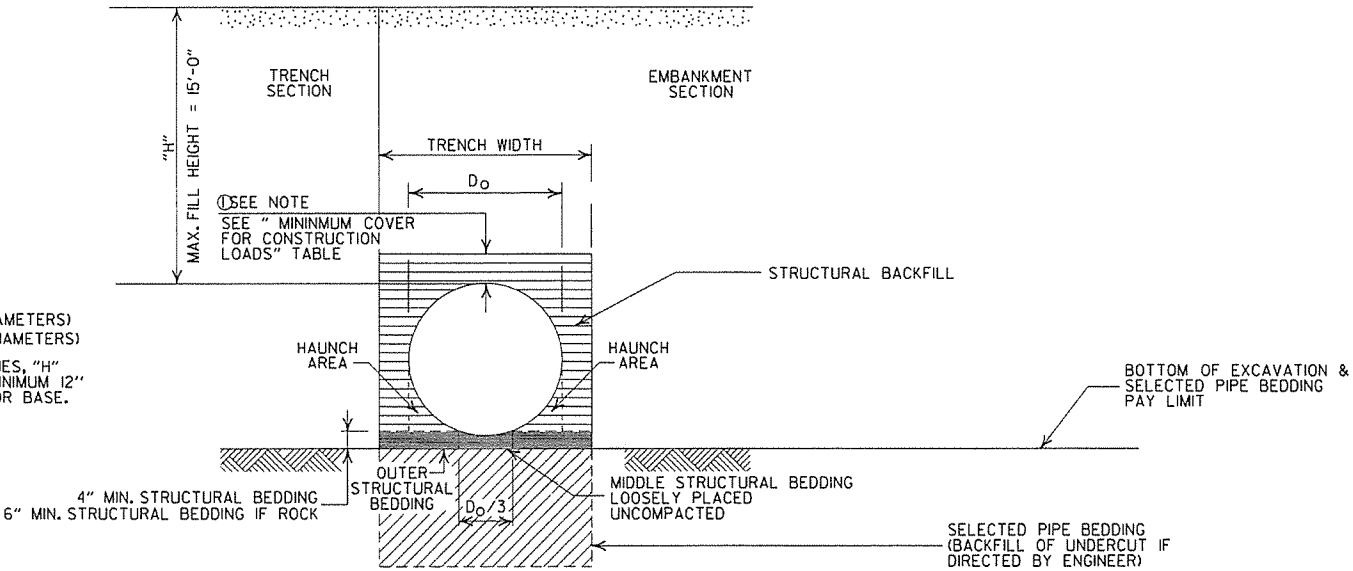
MULTIPLE INSTALLATION OF
HIGH DENSITY POLYETHYLENE PIPES

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

MINIMUM COVER FOR
CONSTRUCTION LOADS

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

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



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

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

CONSTRUCTION SEQUENCE

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

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

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" >OR= 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"

MULTIPLE INSTALLATION OF
PVC PIPES

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

MAXIMUM FILL HEIGHT
BASED ON STRUCTURAL BACKFILL

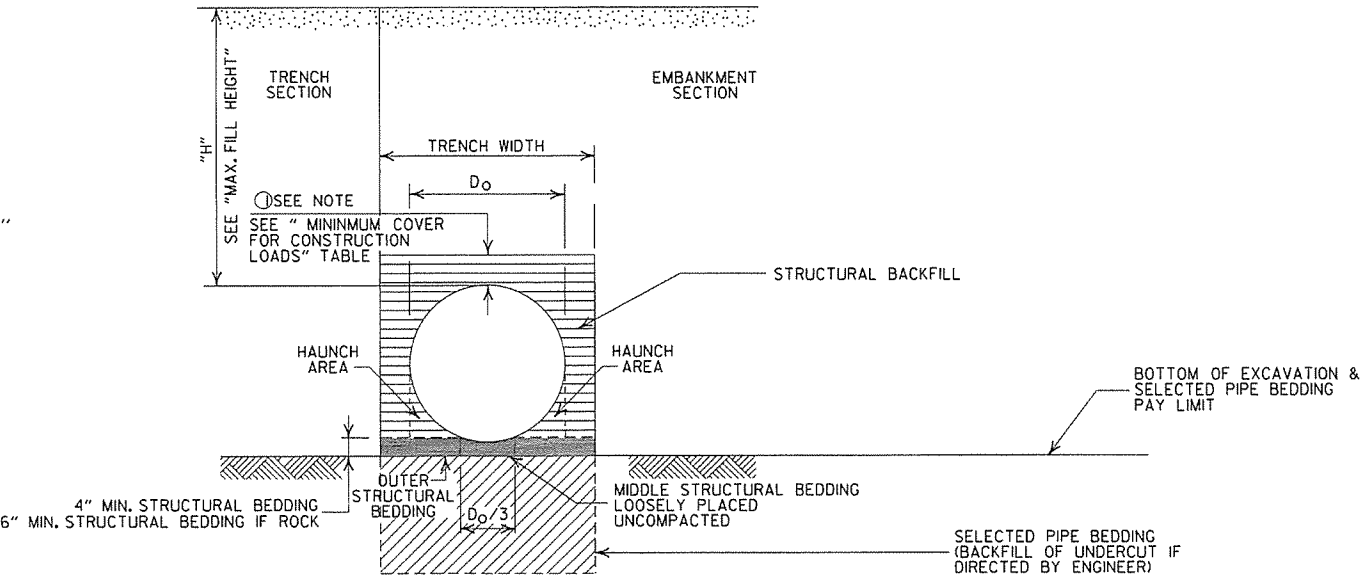
PIPE DIAMETER	"H"
18"	45'-0"
24"	45'-0"
30"	40'-0"
36"	40'-0"

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

MINIMUM COVER FOR
CONSTRUCTION LOADS

PIPE DIAMETER	② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS			
	18.0-50.0 (KIPS)	50.0-75.0 (KIPS)	75.0-110.0 (KIPS)	110.0-175.0 (KIPS)
18" THRU 36"	2'-0"	2'-6"	3'-0"	3'-0"

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



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

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

CONSTRUCTION SEQUENCE

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

- LEGEND -

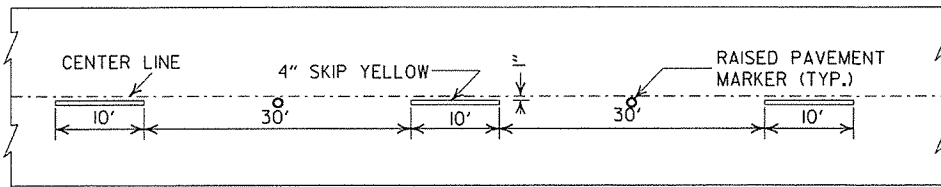
H = FILL HEIGHT (FT.)
D_o = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

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

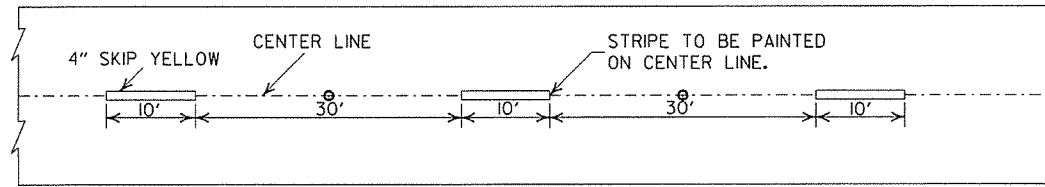
GENERAL NOTES

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 AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
5. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
6. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. PVC PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR PVC PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

ARKANSAS STATE HIGHWAY COMMISSION		
PLASTIC PIPE CULVERT (PVC F949)		
STANDARD DRAWING PCP-2		
2-27-14	REVISED GENERAL NOTE I.	
12-15-11	REV GENERAL NOTES & MINIMUM COVER NOTE; DELETED SM3 MATERIAL	
11-17-10	ISSUED	
DATE	REVISION	DATE FILMED

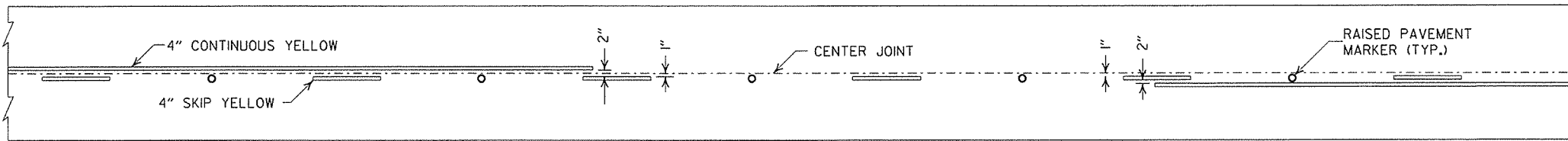


CONCRETE PAVEMENT

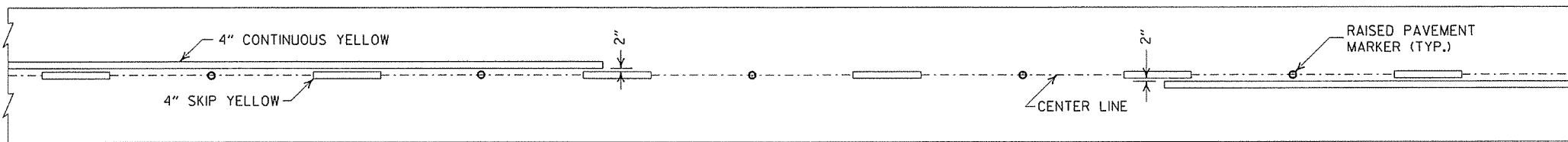


ASPHALT PAVEMENT

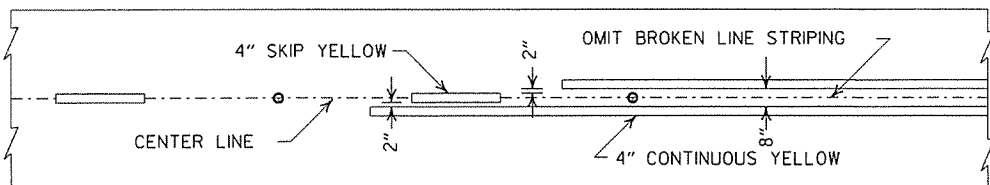
BROKEN LINE STRIPING



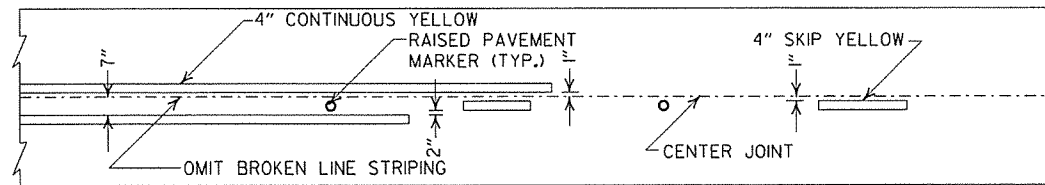
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

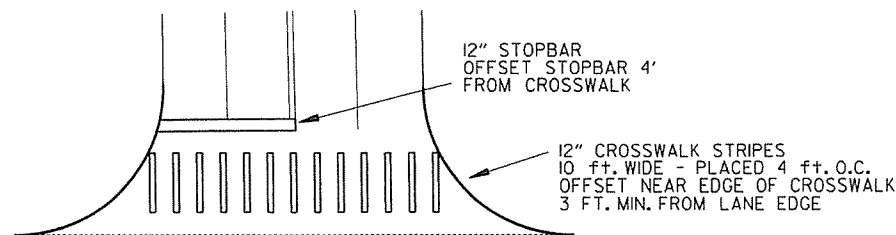


ASPHALT PAVEMENT



CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

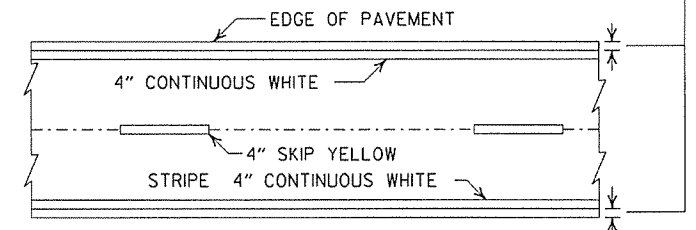


CROSSWALK AND STOPBAR DETAILS

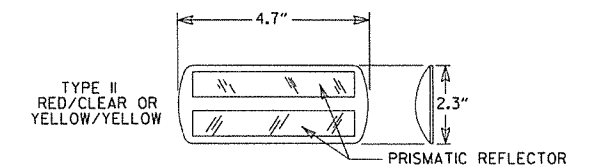
NOTES:

1. ALL LINES SHALL HAVE A WIDTH OF 4 INCHES.
2. THE THICKNESS AND RATE OF PAINT APPLICATION SHALL BE AS SPECIFIED IN SECTION 718 OF THE STANDARD SPECIFICATIONS.
3. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
4. RAISED PAVEMENT MARKERS SHALL BE CENTERED BETWEEN SKIP LINES ON 40 FEET SPACING UNLESS OTHERWISE SHOWN ON THE PLANS.

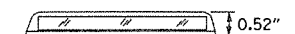
2" FOR ASPHALT OR CONCRETE PAVEMENT
6" FOR BITUMINOUS SURFACE TREATMENT



PAVEMENT EDGE LINE MARKING



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



DETAIL OF STANDARD RAISED PAVEMENT MARKERS

GENERAL NOTES:
THIS DRAWING SHOULD BE CONSIDERED AS TYPICAL ONLY AND THE FINAL LOCATION OF THE STRIPING AND RAISED PAVEMENT MARKERS SHALL BE DETERMINED BY THE ENGINEER.

THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST REVISION.

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

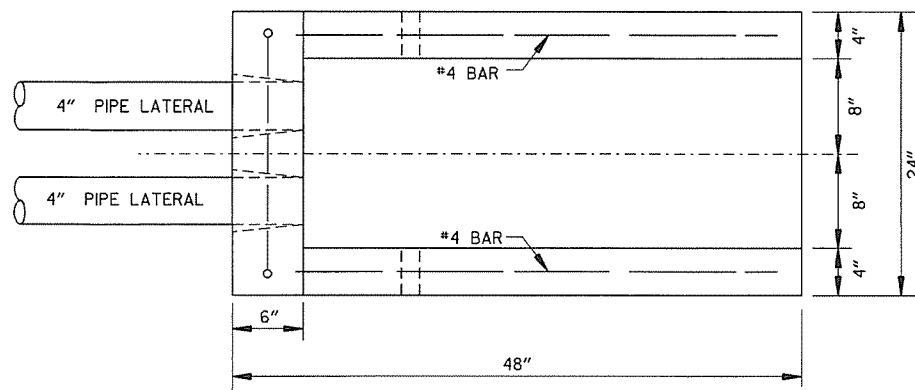
9-12-13	REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS	
11-17-10	REVISED GENERAL NOTES & REMOVED PLOWABLE PVMT MRKRS	
11-18-04	REVISED NOTE 2 & GENERAL NOTES	
8-22-02	ADDED CROSSWALK & STOPBAR DTLS.	
7-02-98	ADDED DETAILS OF STD. RAISED PAV'T. MARKERS	
4-26-96	REV. NOTES 3&4; ADDED R.P.M.	
9-30-80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

ARKANSAS STATE HIGHWAY COMMISSION

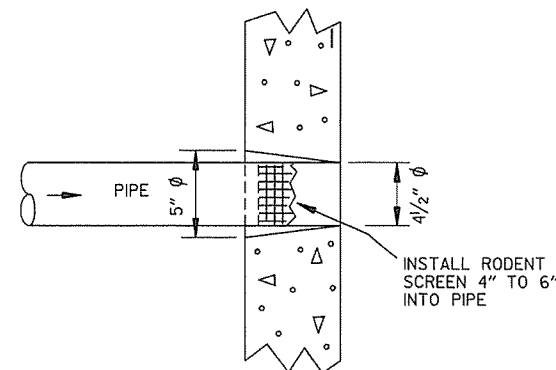
PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

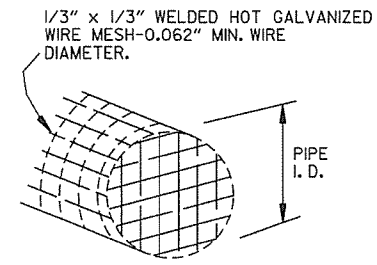
NOTE:
1. GRANULAR BACKFILL TO BE SUBSIDIARY TO PIPE UNDERDRAIN.
2. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.
3. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC, LAP FABRIC 12" OR THE WIDTH OF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



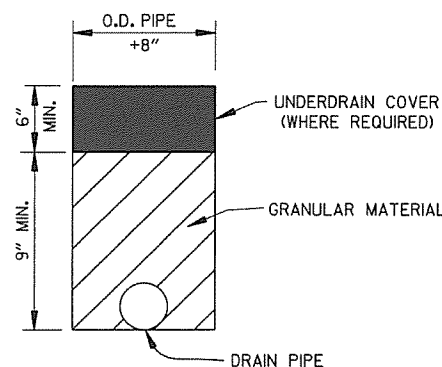
PLAN VIEW



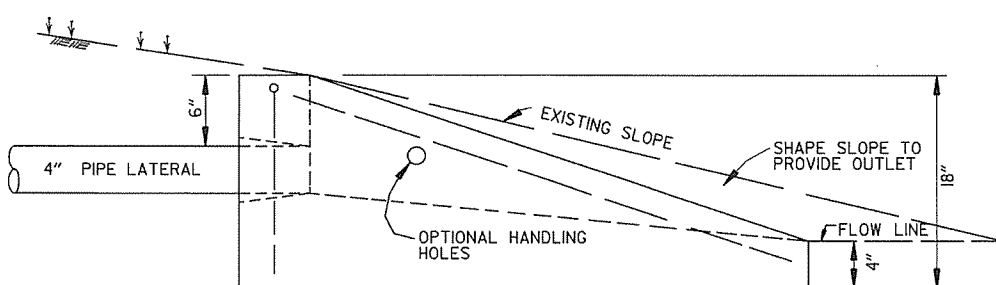
DETAIL OF HOLE FOR 4" PIPE



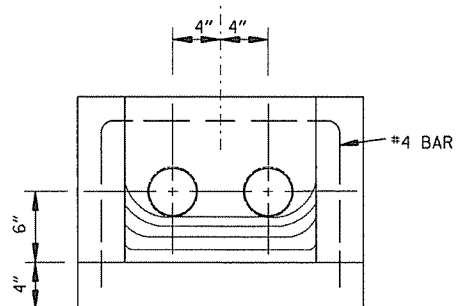
DETAIL OF RODENT SCREEN



DETAILS OF PIPE UNDERDRAIN



SIDE VIEW

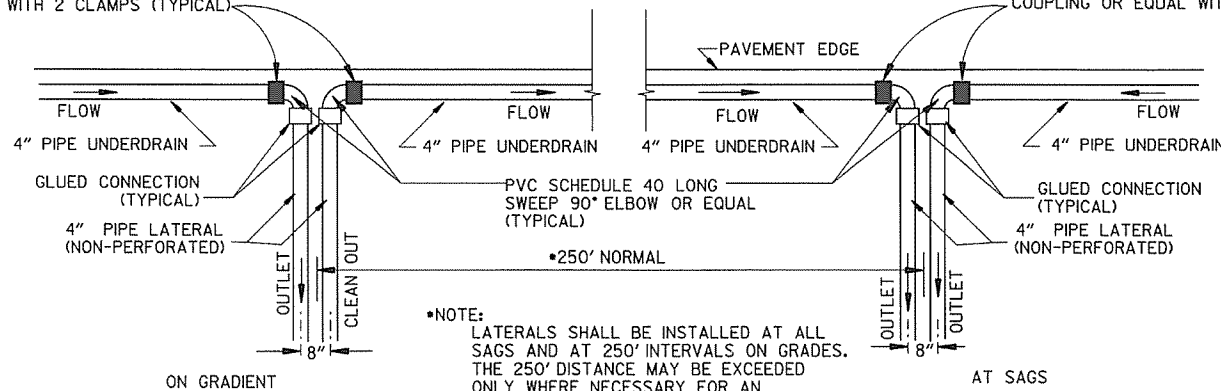


FRONT VIEW

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

UNDERDRAIN OUTLET PROTECTORS

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



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

DETAIL OF PIPE UNDERDRAIN LATERALS WHEN PLACED ALONG PAVEMENT EDGE

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

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

ARKANSAS STATE HIGHWAY COMMISSION

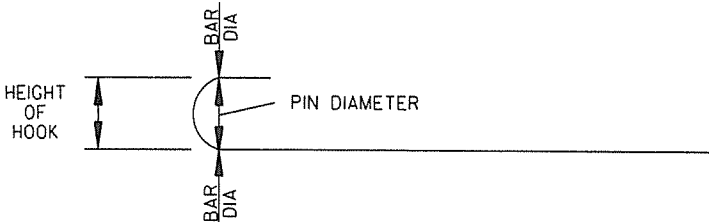
DETAILS OF PIPE UNDERDRAIN

STANDARD DRAWING PU-1

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

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

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



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

OVERALL HEIGHT OF HOOKED BAR DIAGRAM

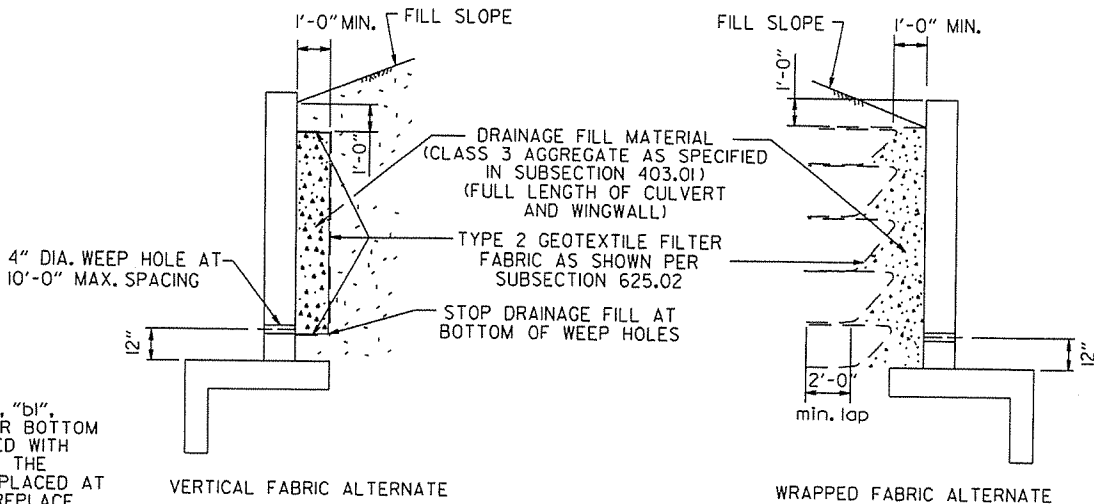
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

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

REPLACEMENT BAR LENGTHS TABLE

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

L = "OW" - 3 INCHES



WINGWALL & CULVERT DRAINAGE DETAIL

REINFORCED CONCRETE BOX CULVERT GENERAL NOTES

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

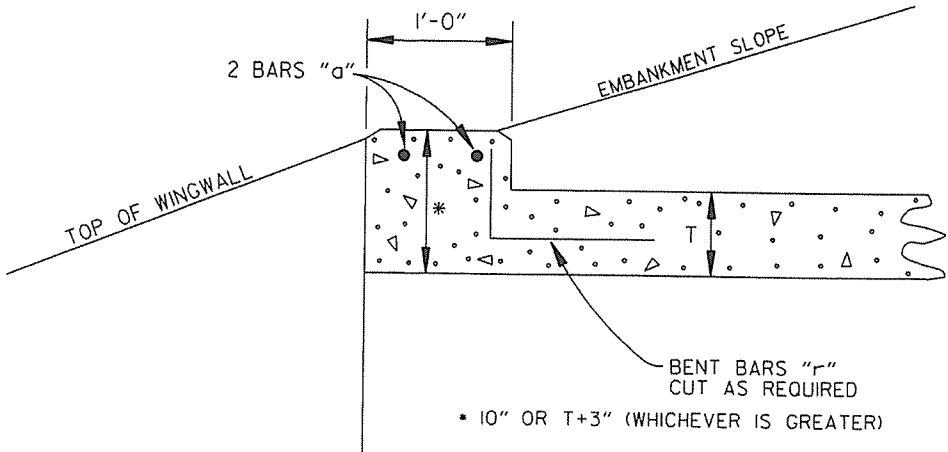
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

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 CRSI MANUAL SHALL BE MINUS ZERO TO PLUS 1/2 INCH.

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

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

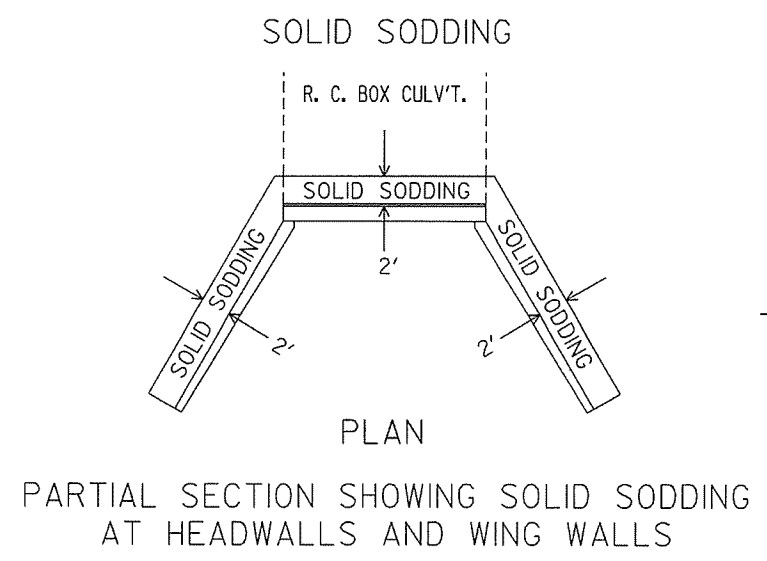
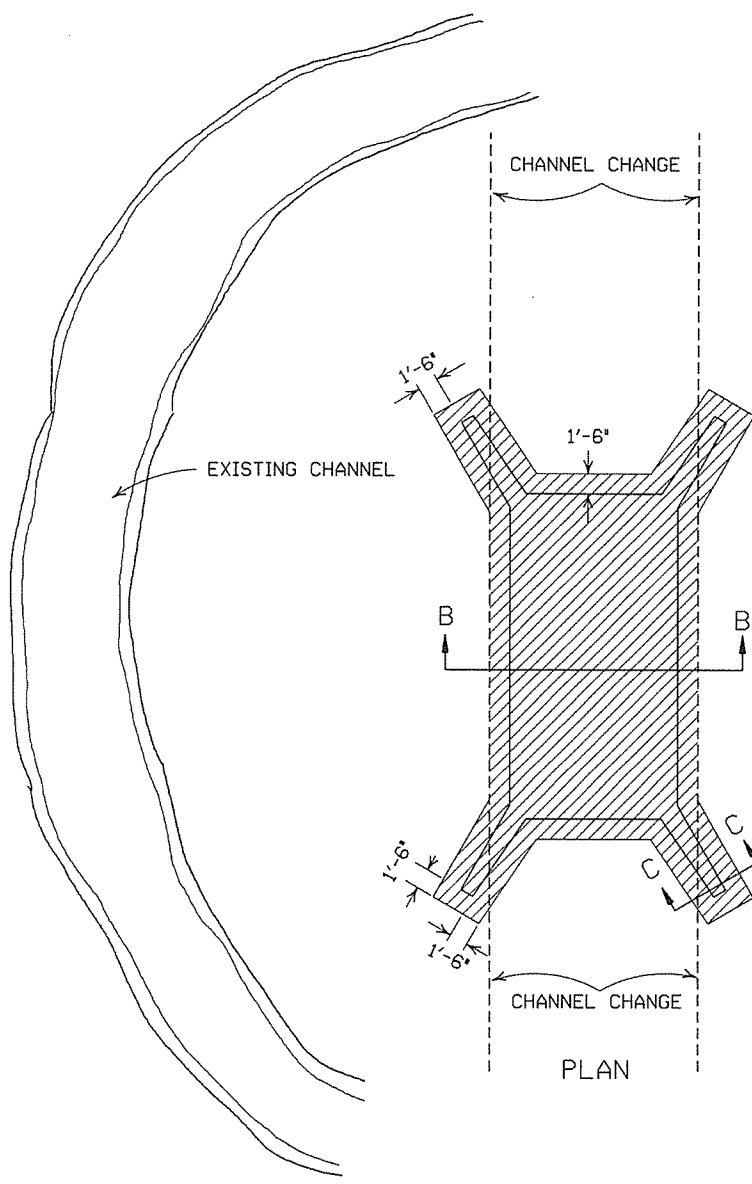
THE REQUIREMENTS SHOWN ON THIS DRAWING SHALL SUPERCEDE THE CORRESPONDING REQUIREMENTS ON ALL REINFORCED CONCRETE BOX CULVERT STANDARD DRAWINGS.



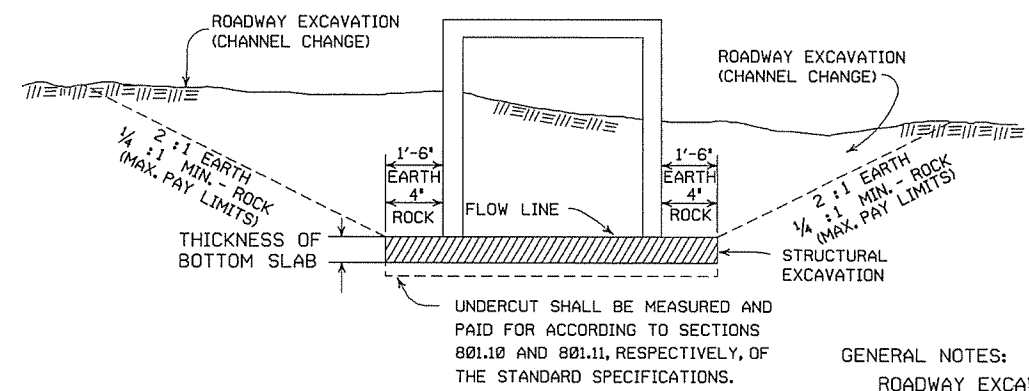
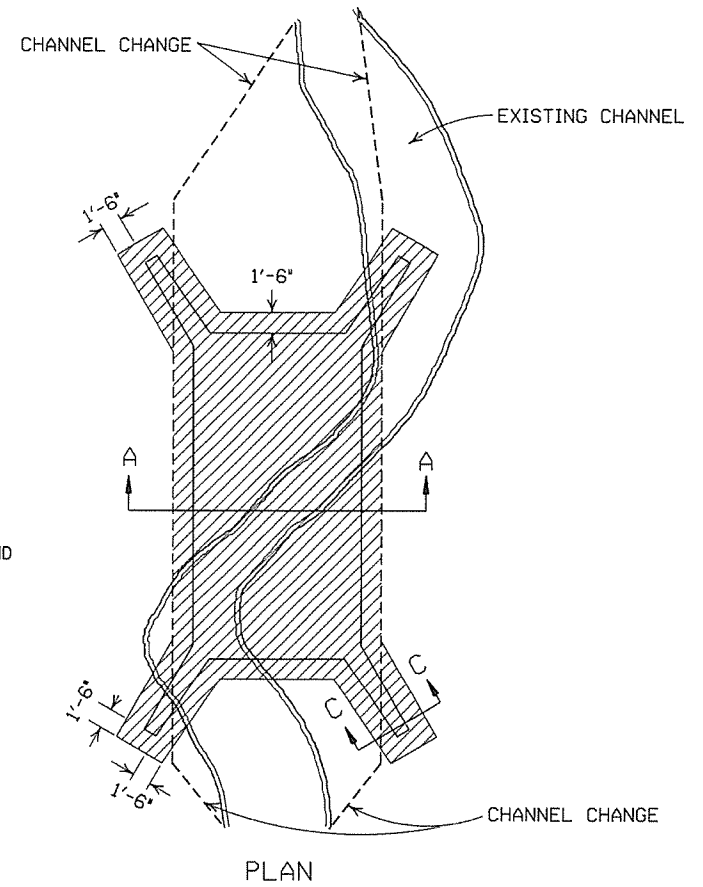
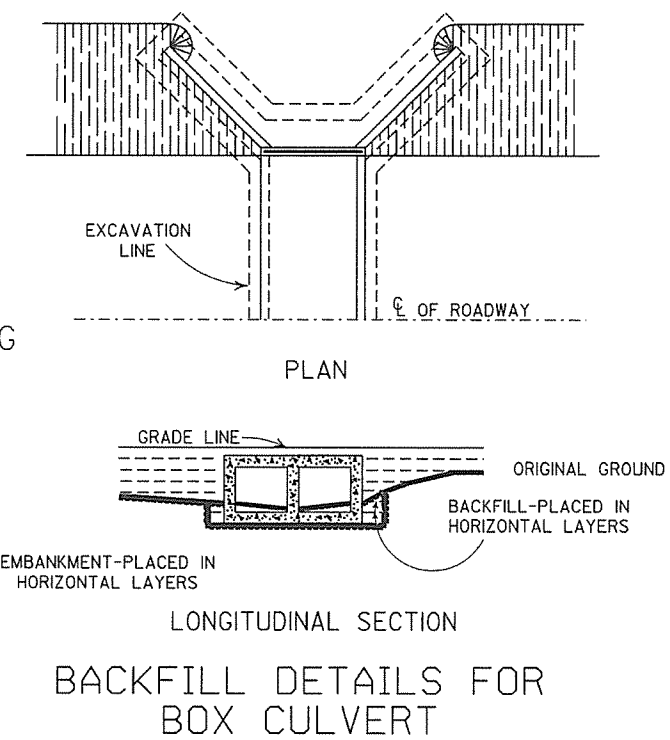
NOTE: FOR ALL SKEWED R.C. BOX CULVERTS THE LENGTH "K" OF THE MODIFIED HEADWALL SHALL BE EQUAL TO THE ROADWAY LENGTH "RL". THE ENDS OF THE HEADWALL SHALL BE CONSTRUCTED PARALLEL TO THE SKEW ANGLE OF THE BOX CULVERT.

R.C. BOX CULVERT HEADWALL MODIFICATIONS

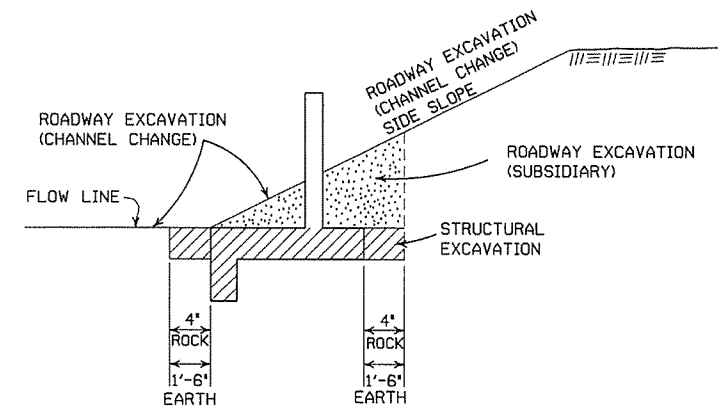
7/26/12	REV. DRAINAGE FILL MATERIAL & DETAIL		ARKANSAS STATE HIGHWAY COMMISSION
12/15/11	REQUIRE WEEP HOLES IN BOX CULVERT WALLS		
5-25-06	REV. GEN. NOTES AND DETAILS FOR WEEP HOLES; BAR DIAGRAM		
11-16-01	ADDED WINGWALL DRAINAGE DETAIL/EDITED GEN. NOTES		REINFORCED CONCRETE BOX CULVERT DETAILS
10-18-96	REV. ASTM REF. TO AASHTO & ADDED BAR DIAGRAM		
10-12-95	MOVED SOLID SODDING DETAIL TO RCB-2		
6-2-94	ADDED SOLID SODDING PLAN DETAIL		STANDARD DRAWING RCB-1
8-5-93	REVISED PIN DIAMETER TO SPECS.		
8-15-91	DRAWN AND ISSUED		
DATE	REVISION	DATE FILMED	



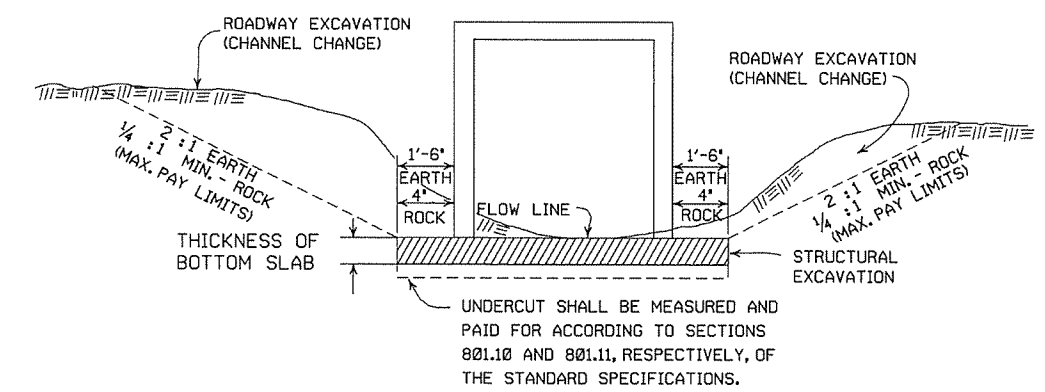
NOTE: LENGTH MEASURED ALONG THE CENTER OF 2' STRIP OF SOLID SODDING.



SECTION B-B
DETAILS FOR NEW CHANNELS



SECTION C-C



SECTION A-A
DETAILS THROUGH EXISTING CHANNELS

GENERAL NOTES:
ROADWAY EXCAVATION (CHANNEL CHANGE) WILL BE PAID FOR AT R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS ACTUALLY CUT AND WILL BE CONFINED TO THAT PORTION OF THE INDICATED AREA THAT IS ABOVE THE FLOW LINE. ROADWAY EXCAVATION (CHANNEL CHANGE) SHALL BE MEASURED BY CROSS SECTIONS AND VOLUMES COMPUTED BY AVERAGE END AREA METHOD. ALL CHANNEL CHANGES SHALL BE BROUGHT TO GRADE PRIOR TO MAKING ANY EXCAVATION FOR STRUCTURES.
EXCAVATION FOR STRUCTURES WILL BE PAID FOR AT ALL R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS SHOWN AND SHALL BE CONFINED TO THAT PORTION OF THE INDICATED AREA THAT IS BELOW THE CHANNEL FLOW LINE.
ROADWAY EXCAVATION SHOWN IN SECTION C-C ABOVE AS SUBSIDIARY WILL NOT BE MEASURED OR PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION.

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

ARKANSAS STATE HIGHWAY COMMISSION

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

STANDARD DRAWING RCB-2

SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

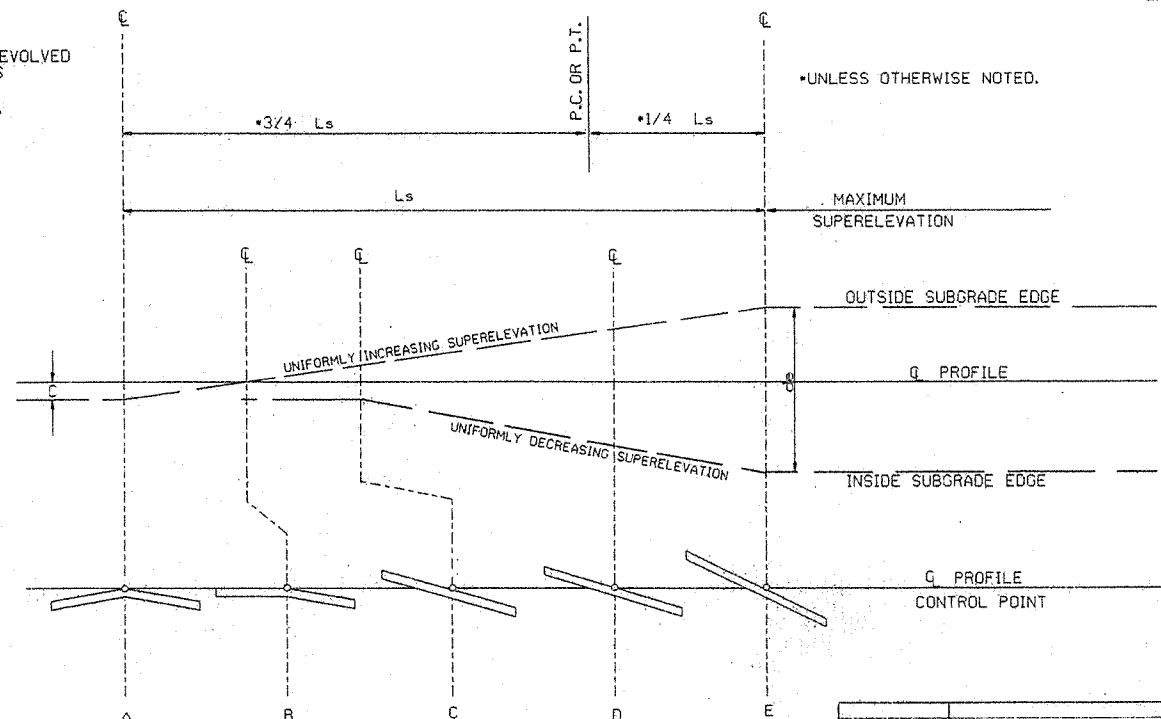
DEGREE OF CURVE	30 MPH		40 MPH		50 MPH		55 MPH		60 MPH		70 MPH	
	Ls (FT)		Ls (FT)		Ls (FT)		Ls (FT)		Ls (FT)		Ls (FT)	
	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE
0° 15'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
0° 30'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
0° 45'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
1° 00'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
1° 15'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
1° 30'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
1° 45'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
2° 00'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
2° 15'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
2° 30'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
2° 45'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
3° 00'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
3° 15'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
3° 30'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
3° 45'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
4° 00'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
4° 15'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
4° 30'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
4° 45'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
5° 00'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
5° 15'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
5° 30'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
5° 45'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
6° 00'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
6° 15'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
6° 30'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
6° 45'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
7° 00'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
7° 15'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
7° 30'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
7° 45'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
8° 00'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
8° 15'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
8° 30'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
8° 45'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
9° 00'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
9° 15'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
9° 30'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
9° 45'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
10° 00'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
10° 15'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
10° 30'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
10° 45'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
11° 00'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
11° 15'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
11° 30'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
11° 45'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
12° 00'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
12° 15'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
12° 30'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
12° 45'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
13° 00'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
13° 15'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
13° 30'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
13° 45'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
14° 00'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
14° 15'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
14° 30'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
14° 45'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
15° 00'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
15° 15'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
15° 30'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
15° 45'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
16° 00'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
16° 15'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
16° 30'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
16° 45'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
17° 00'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
17° 15'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
17° 30'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
17° 45'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
18° 00'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
18° 15'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
18° 30'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
18° 45'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
19° 00'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
19° 15'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
19° 30'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
19° 45'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
20° 00'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
20° 15'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
20° 30'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
20° 45'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
21° 00'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
21° 15'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
21° 30'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
21° 45'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
22° 00'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
22° 15'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
22° 30'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
22° 45'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
23° 00'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
23° 15'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
23° 30'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
23° 45'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
24° 00'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	

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.)

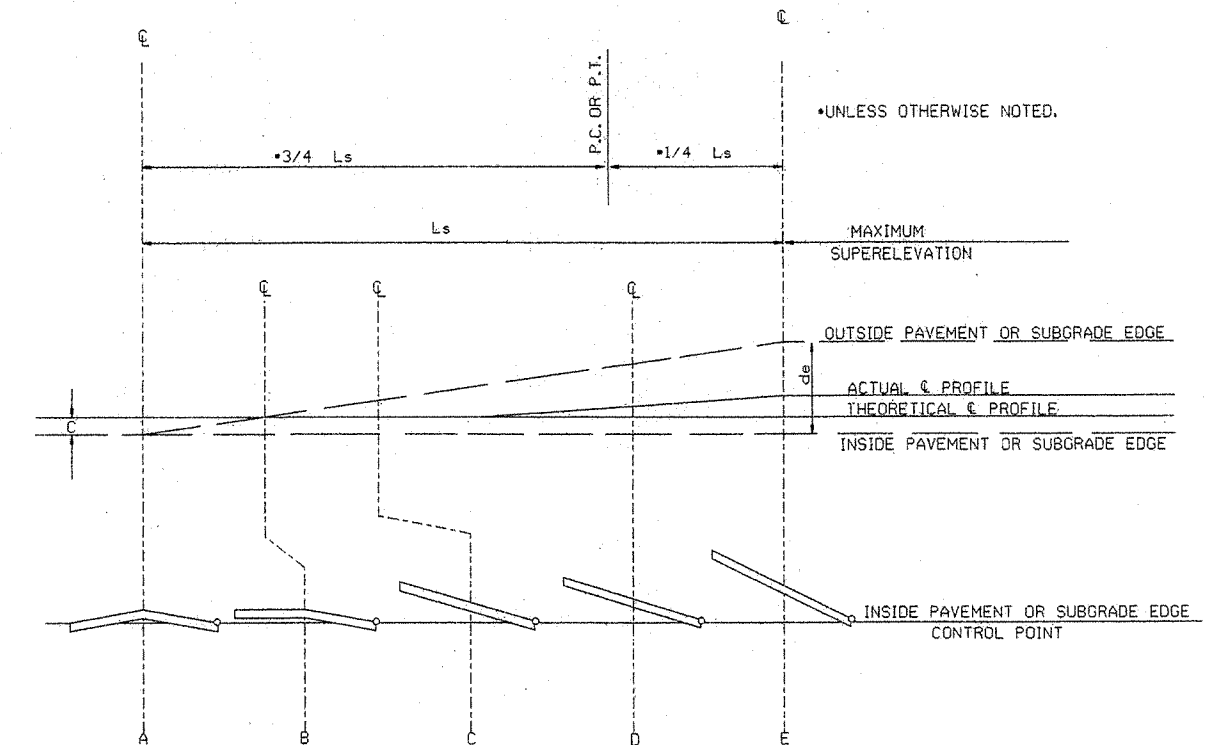
GENERAL NOTES

- 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.



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE



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

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

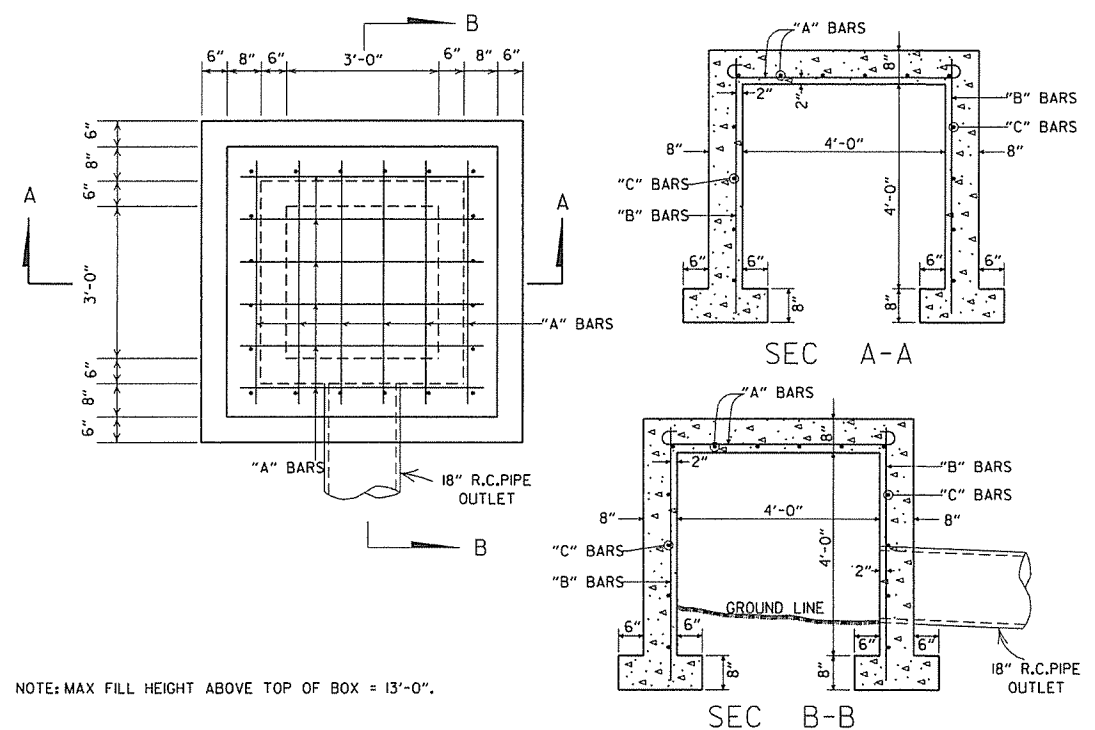
SUPERELEVATION FORMULA = $\frac{Lde}{Ls}$

ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

STANDARD DRAWING SE-2

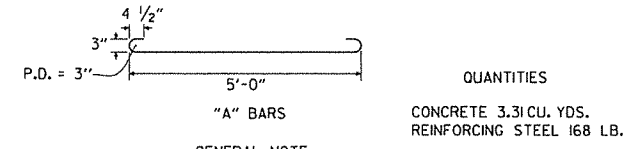
10-18-96	ADDED FORMULA	10-18-96
01-09-87	ISSUED	534-1-9-87
DATE	REVISION	DATE FILMED



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

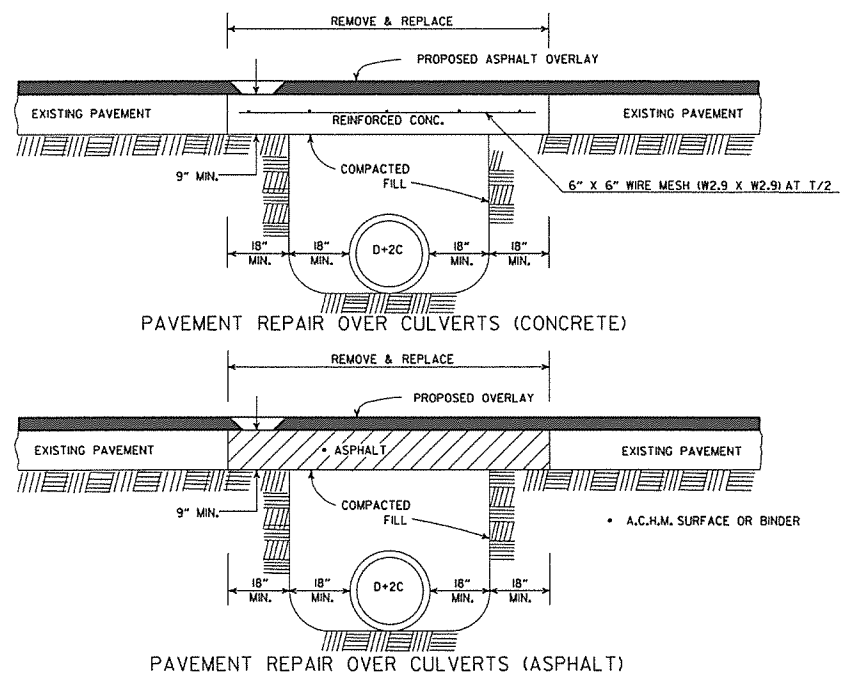
STEEL SCHEDULE			
BAR	NUMBER	LENGTH	SPACING
"A"	12	6'-0"	10"
"B"	20	5'-0"	10 1/2"
"C"	16	5'-0"	12"

ALL STEEL TO BE #4 BARS

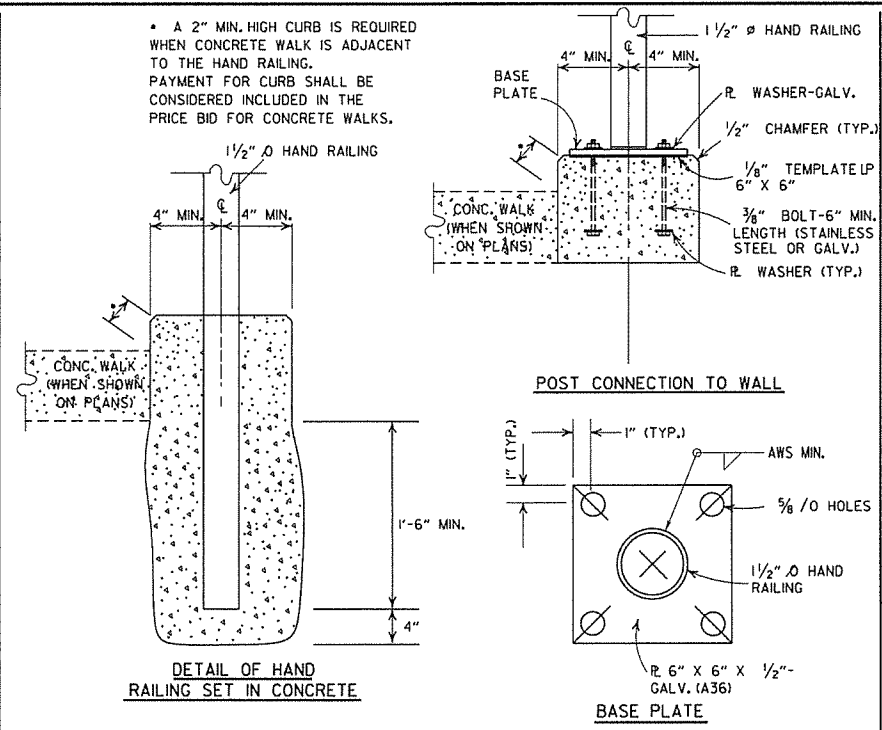


GENERAL NOTE:
THE PAY ITEMS FOR REINFORCED CONCRETE SPRING BOXES SHALL BE FOR THE QUANTITIES OF CONCRETE OF THE CLASS SPECIFIED, REINFORCING STEEL, EXCAVATION FOR STRUCTURES AND 18" R.C. PIPE CULVERT.

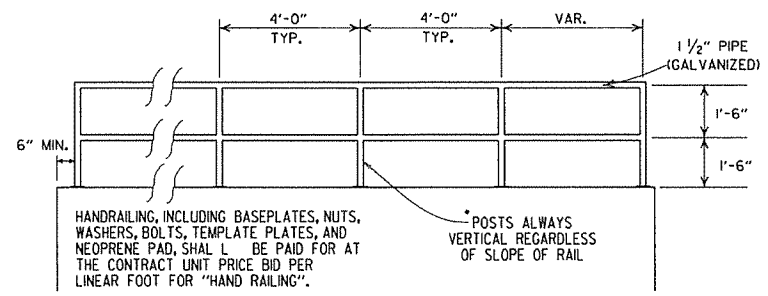
REINFORCED CONCRETE SPRING BOX



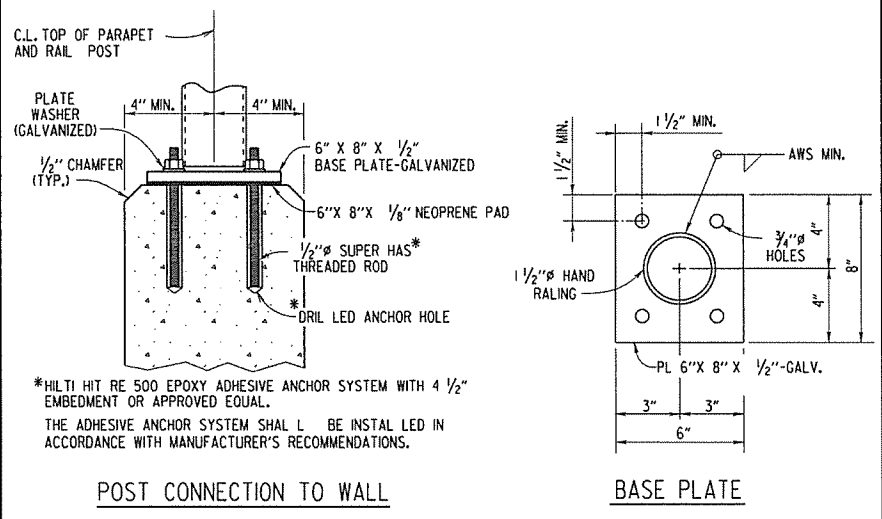
DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS



POST CONNECTION DETAILS



HAND RAILING SHALL CONFORM TO SECTION 633.

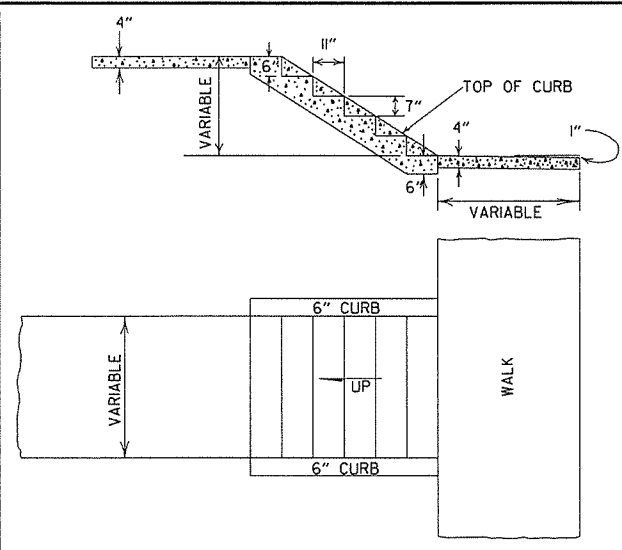


POST CONNECTION TO WALL

BASE PLATE

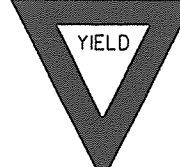
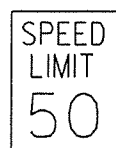
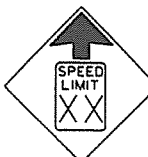
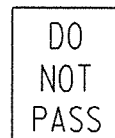
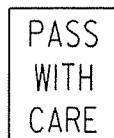
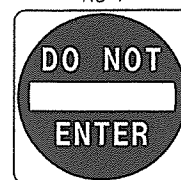
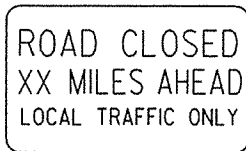
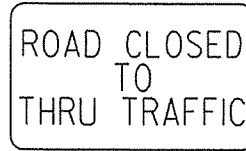
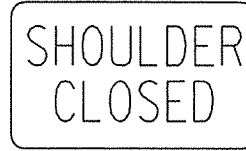
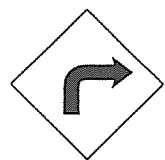
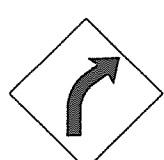
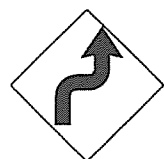
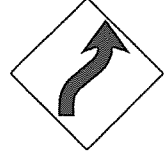
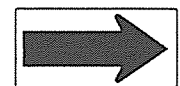
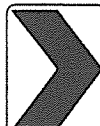
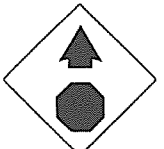
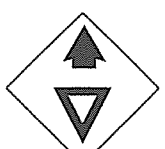
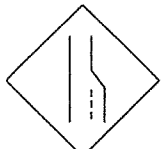
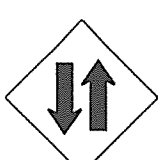
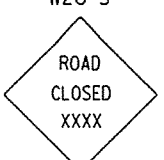
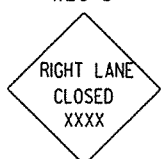
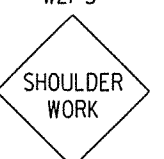
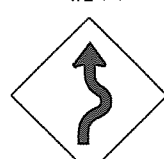
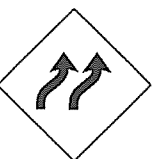
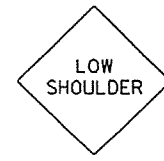
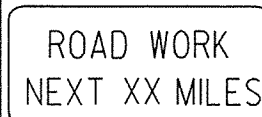
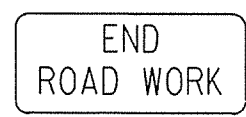
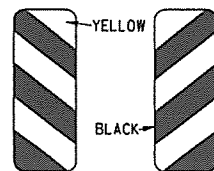
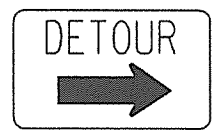
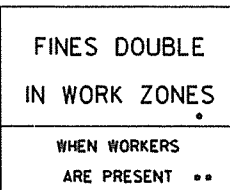
DETAILS OF ALTERNATE POST ANCHOR SYSTEM (EPOXY ADHESIVE ANCHORS)

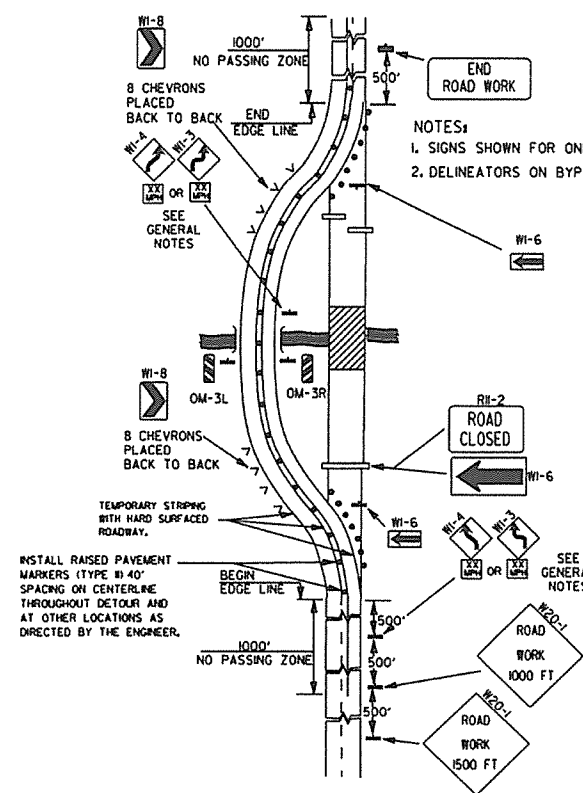
HAND RAILING DETAILS



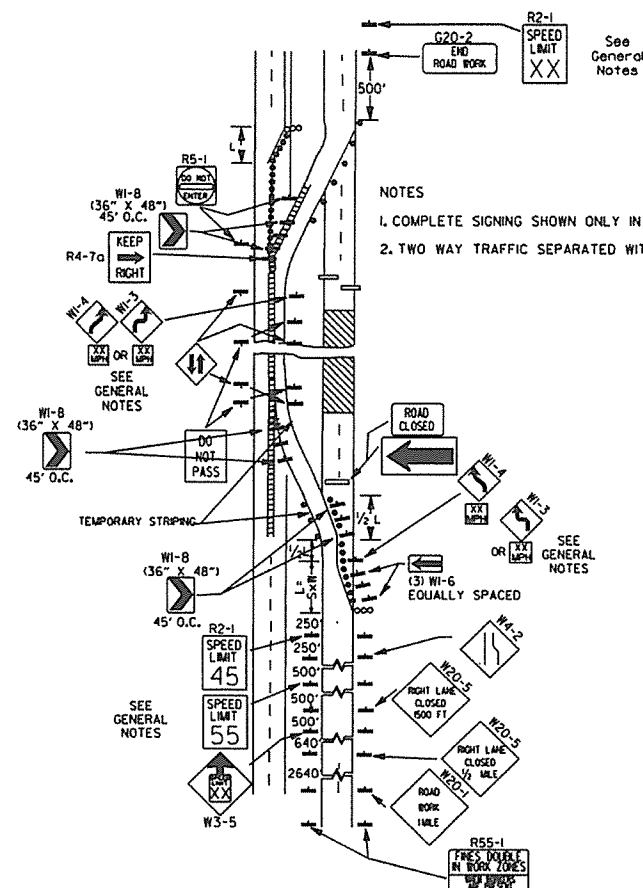
DETAILS OF CONCRETE STEPS & WALKS

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

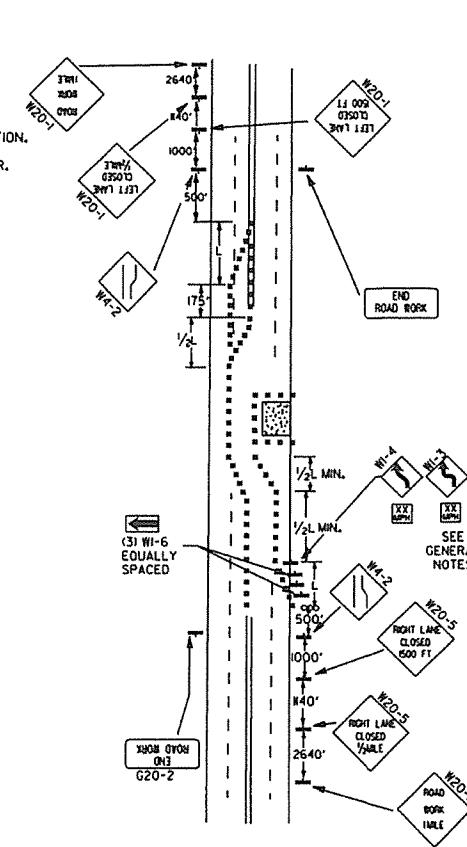
RI-1  STANDARD 30"x30" EXPRESSWAY 36"x36" SPECIAL 48"x48"	RI-2  STD. 36"x36"x36" EXPWY. 48"x48"x48" FWY. 60"x60"x60"	R2-1  STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"	W3-5  STD. 36"x36" EXPWY. 48"x48" FWY. 48"x48"	W3-5a  STD. 36"x36" EXPWY. 48"x48" FWY. 48"x48"	R4-1  STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"	R4-2  STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"	ADVANCE DISTANCES (XXXX) 500 FT 1/2 MILE 1000 FT 3/4 MILE 1500 FT 1 MILE AHEAD 175 GENERAL NOTES: 1. ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION. 2. TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND REMOVED THEREAFTER. 3. EXISTING SIGNS AND CONSTRUCTION SIGNS SHALL BE KEPT IN PROPER POSITION, AND BE CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED. SIGNS THAT ARE DAMAGED, DEFACED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED. 4. SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SQ. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE. 5. SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3. 6. POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE. 7. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE, EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS. 8. FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS. 9. MOST OF THE SIGNS SHOWN ARE ORIENTED TO THE RIGHT, HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT. 10. R55-1 SIGNS SHALL BE PLACED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE SIGN SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN. • NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED FOR ALL PROJECTS.
R5-1  STD. 30"x30" EXPWY. 36"x36" SPECIAL 48"x48"	R11-2  48"x30"	R11-3A  60"x30"	R11-4  60"x30"	RSP-1  48"x30"	W1-1  STD. 36"x36" FWY. 48"x48"	W1-2  STD. 36"x36" FWY. 48"x48"	
W1-3  STD. 48"x48"	W1-4  STD. 48"x48"	W1-6  STD. 48"x24" SPECIAL 60"x30"	W1-8  STD. 18"x24" SPECIAL 24"x30" EXPWY. 30"x36" FWY. 36"x48"	W3-1  STD. 36"x36" SPECIAL 48"x48"	W3-2  STD. 36"x36" SPECIAL 48"x48"	W4-2  STD. 36"x36" FWY. 48"x48"	
W5-1  STD. 36"x36" SPECIAL 48"x48"	W6-3  EXPWY. 36"x36" SPECIAL 48"x48"	W8-7  EXPWY. 36"x36" FWY. 48"x48"	W9-2  STD. 36"x36" FWY. 48"x48"	W13-1  STD. 24"x24"	W20-1  STD. 48"x48"	W20-2  STD. 48"x48"	W20-3  STD. 48"x48"
W20-4  STD. 48"x48"	W20-5  STD. 48"x48"	W20-7a  500 FEET 24" W6-2 STD. 36"x36" FWY. 48"x48"	W21-2  STD. 30"x30" SPECIAL 36"x36"	W21-5  STD. 30"x30" SPECIAL 36"x36"	W24-1  STD. 36"x36"	W1-4b  STD. 48"x48"	R56-1  STD. 18"x18"
W8-II  STD. 36"x36" FWY. 48"x48"	W8-9  STD. 36"x36" FWY. 48"x48"	G20-1  60"x24"	G20-2  48"x24"	OM-3L OM-3R  12"x36"	M4-9  STD. 30"x24" SPECIAL 48"x36" SPECIAL 60"x48"	M4-10  48"x18"	R55-1  36"x60" • USE 6" C LETTERS •• USE 4" D LETTERS



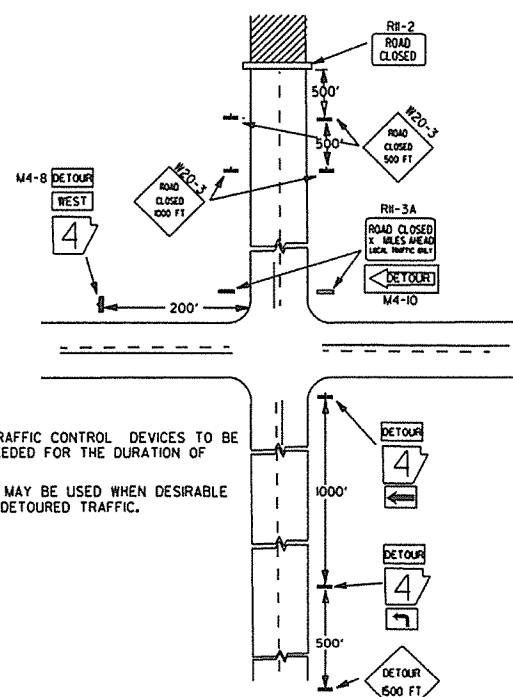
(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.



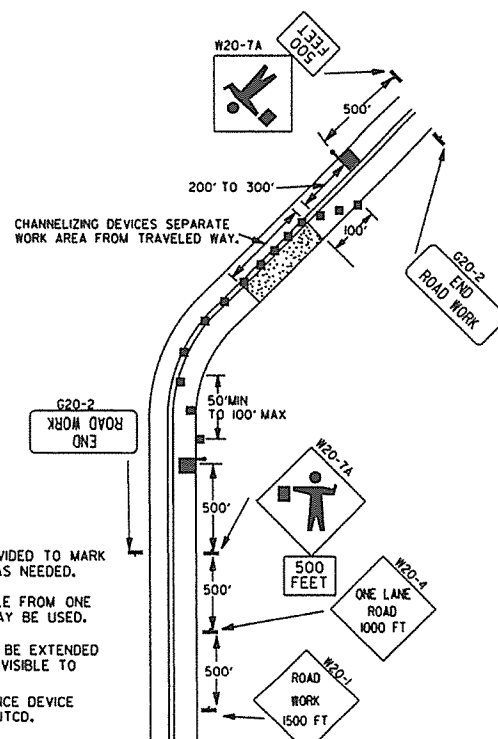
(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.



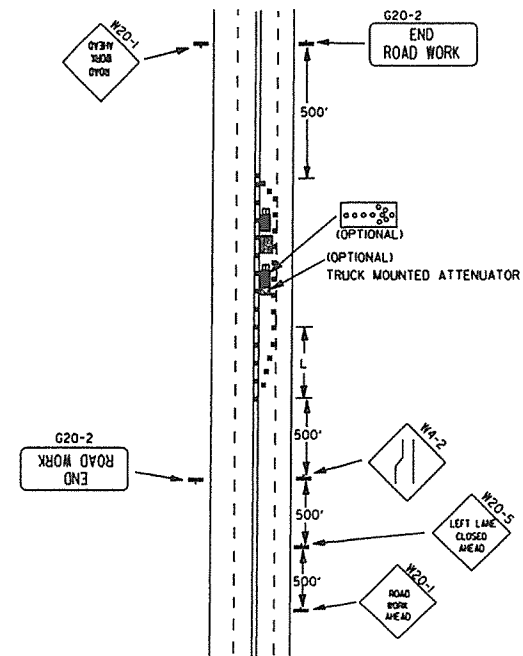
(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



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

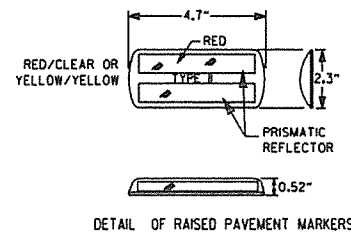


(E) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON 2-LANE HIGHWAY WHERE ONE LANE IS CLOSED AND FLAGGING IS PROVIDED.



(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:

$L = S \times W$ FOR SPEEDS OF 45MPH OR MORE.

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

WHERE:

L = MINIMUM LENGTH OF TAPER.

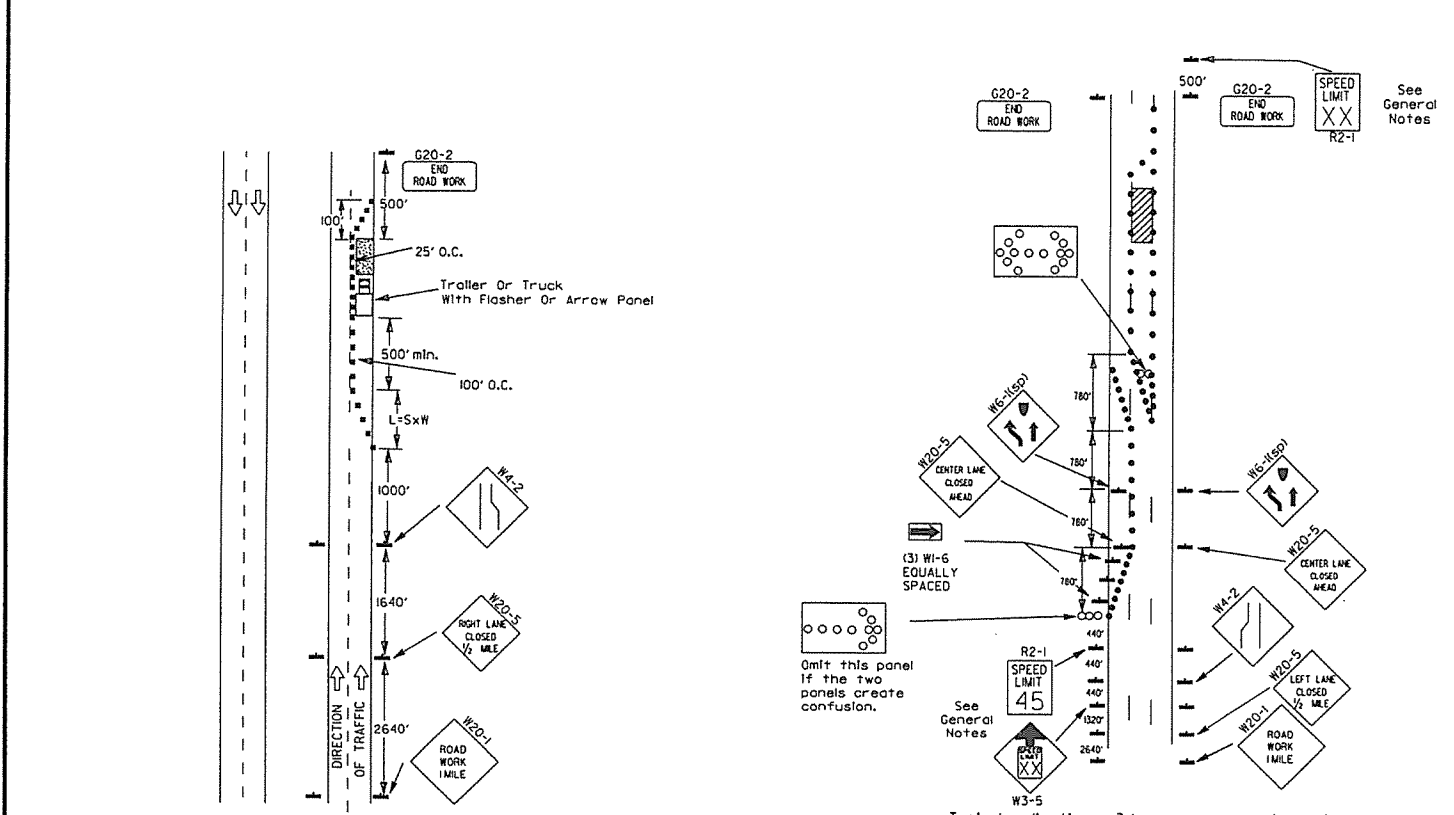
S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.

W = WIDTH OF OFFSET.

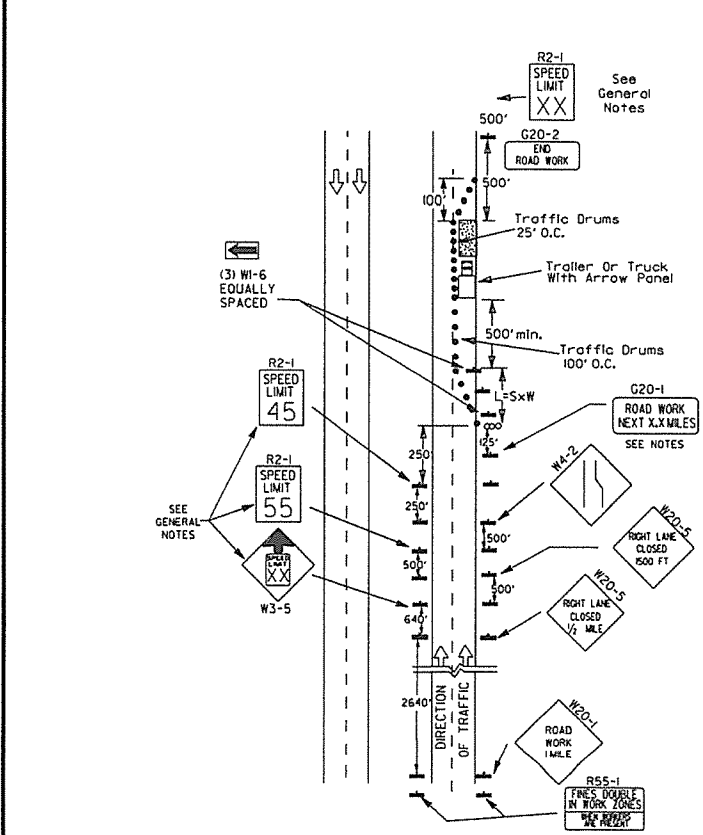
1. ADVISORY SPEED POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS TO BE DETERMINED AT SITE. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-(155) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1/4 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-(1X1) 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-(145) SHALL BE OMITTED. ADDITIONAL R2-155MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1/4 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-(1X1) 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 CAUSE 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.
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 AHTD QUALIFIED PRODUCTS LIST.

9-2-15	REVISED NOTE 2, ADDED NOTE 8, REVISED DRAWING (A) & REPLACED R2-5A WITH R3-5	
9-12-13	REVISED DETAIL OF RAISED PAVEMENT MARKERS	
3-8-10	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 DETAIL 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

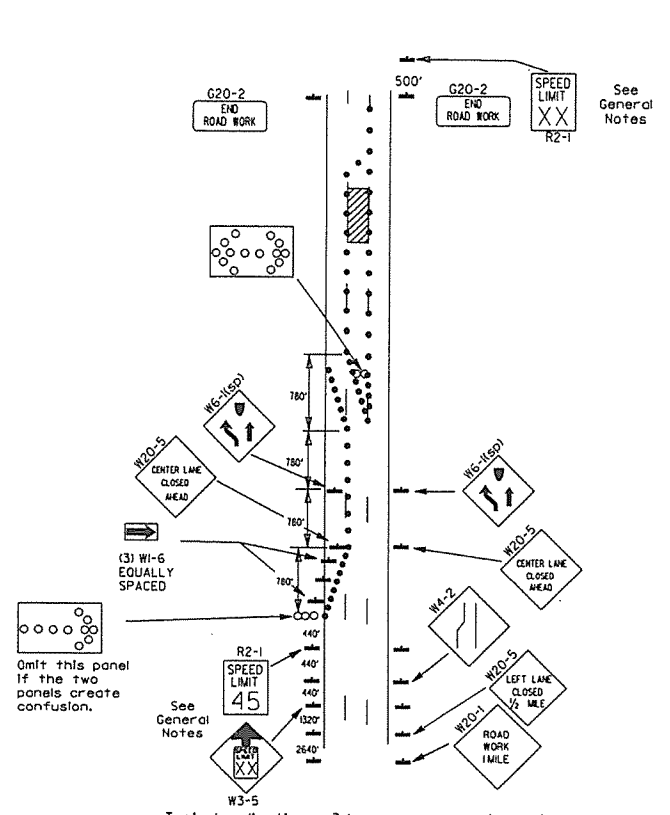
ARKANSAS STATE HIGHWAY COMMISSION
STANDARD TRAFFIC CONTROLS
FOR HIGHWAY CONSTRUCTION
STANDARD DRAWING TC-2



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

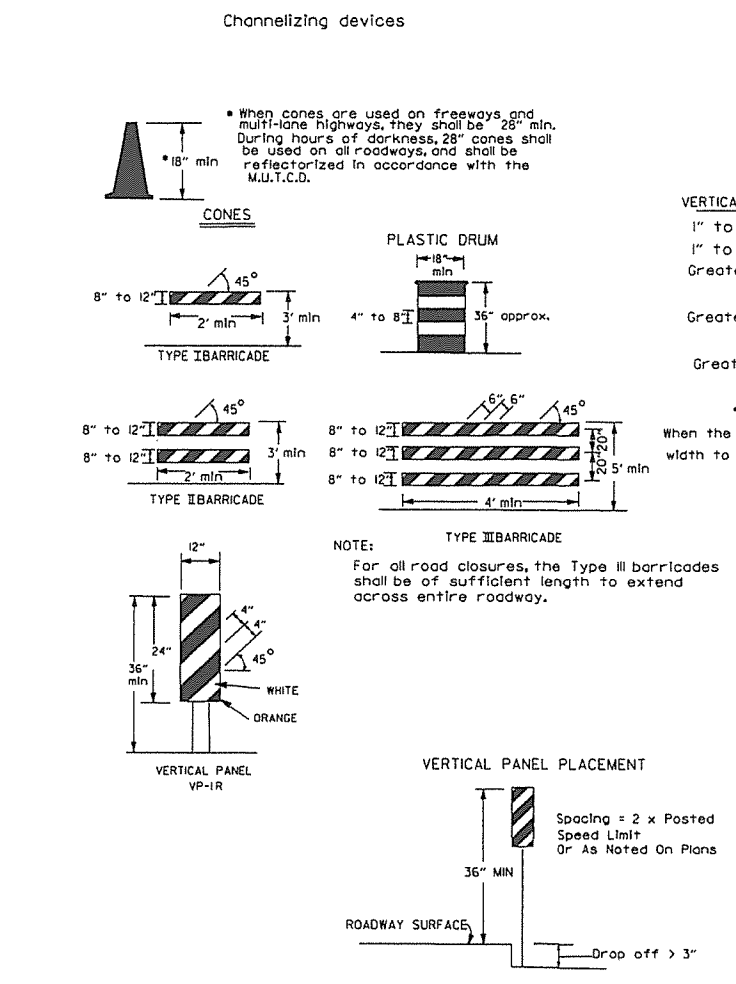


(C) Typical application - construction operations of intermediate to long term duration on a 4-lane divided roadway where half of the roadway is closed.



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

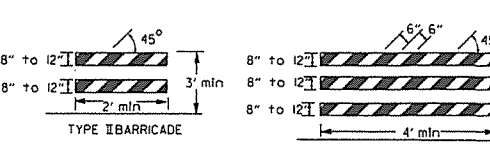
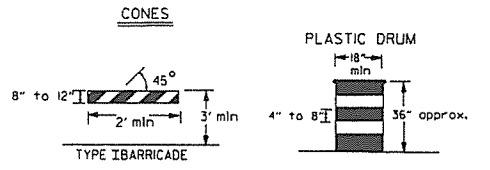
- KEY:
- Arrow Panel (if Required)
 - Channelizing Device
 - Traffic drum
- GENERAL NOTES:
- A speed limit reduction may be implemented ONLY when designated in the plan or when recommended by the Roadway Design Division.
 - When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the W3-5 shall be installed at that location. Additional R2-1(45) speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
 - When the existing speed limit is 65mph and the plans require a speed limit of 45mph, the R2-1(65) shall be omitted. Additional R2-1(55) speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
 - The maximum spacing between channelizing devices in a taper should be approximately equal in feet to the speed limit. Beyond the taper, maximum spacing shall be two times the speed limit or as directed by the Engineer.
 - Warning lights and/or flags may be mounted to signs or channelizing devices at night as needed.
 - Pavement markings no longer applicable which might create confusion in the minds of vehicle operators shall be removed or obliterated as soon as practicable.
 - The G20-1 sign will be required on jobs of over two miles in length. When the lane closure is not at the beginning of the project, the G20-1 sign shall be erected 125' in advance of the job limit. Additional W20-1(1 MILE) signs are not required in advance of lane closures that begin inside the project limits.
 - Flaggers shall use STOP/SLOW paddles for controlling traffic through work zones. Flags may be used only for emergency situations.
 - All plastic drums and cones shall meet the requirements of NCHRP-350 or Manual for Assessing Safety Hardware (MASH).
 - Trailer mounted devices such as arrow panels and portable changeable message signs shall be delineated by affixing conspicuity material in a continuous line on the face of the trailer. When placed on or adjacent to the shoulder and not behind a positive barrier, these devices shall be delineated by placing five (5) traffic drums, equally spaced along the traffic side of the device.



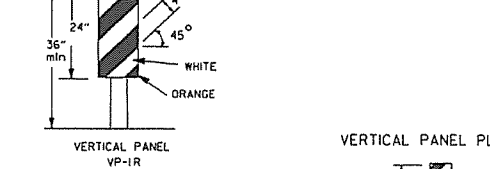
(D) Typical application - closing multiple lanes of a multilane highway.

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.



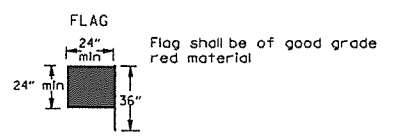
NOTE: For all road closures, the Type III barricades shall be of sufficient length to extend across entire roadway.



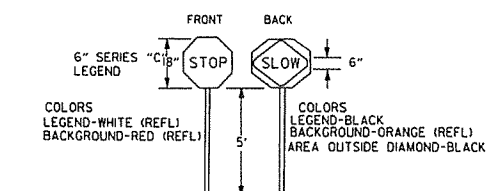
TRAFFIC CONTROL DEVICES FOR VERTICAL PAVEMENT DIFFERENTIALS

VERTICAL DIFFERENTIAL	LOCATIONS	TRAFFIC CONTROL
1" to 3"	Centerline, lane lines	W8-11
1" to 3"	Edge of shoulder	W8-9
Greater than 3"	Lane lines	Standard lane closure required
Greater than 3"	Edge of traveled lane	*RSP-land vertical panels, drums or concrete barrier
Greater than 3"	Edge of shoulder	*Vertical panels, drums or concrete barrier

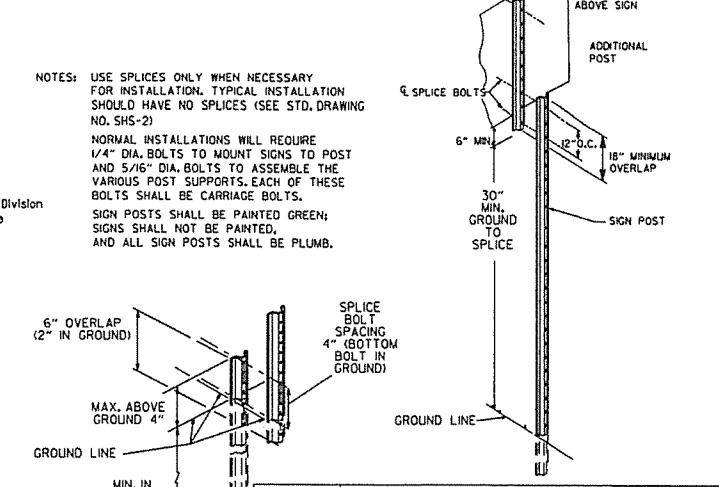
* When shown on the plans concrete barrier will be used. When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.



STOP SLOW PADDLE



DETAIL OF SPLICES

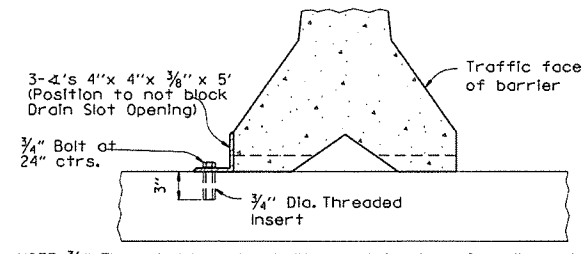
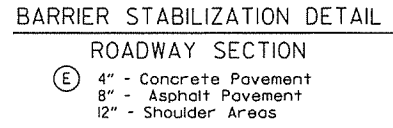
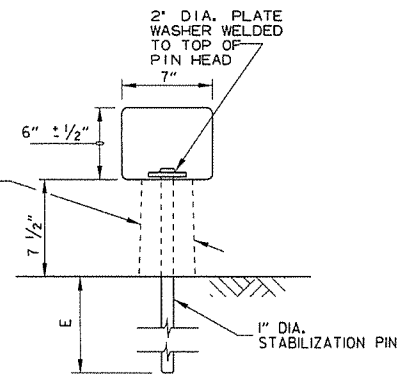
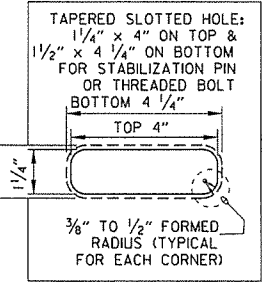
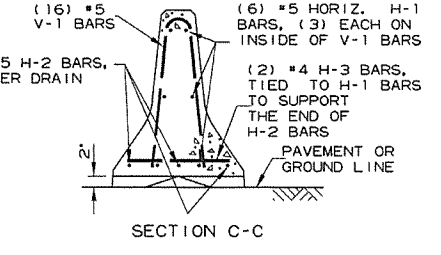
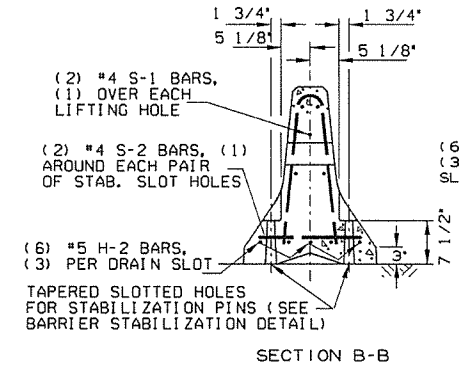
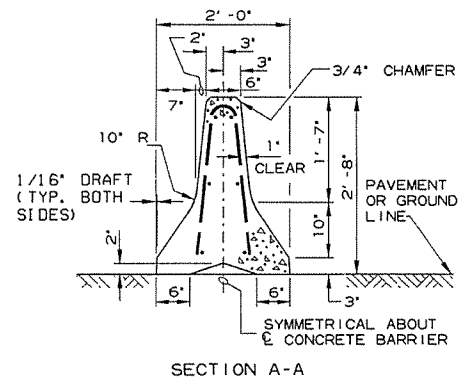
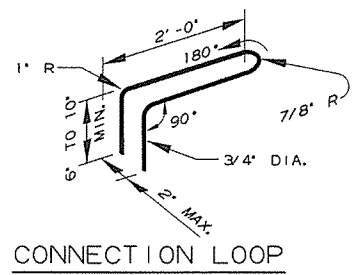
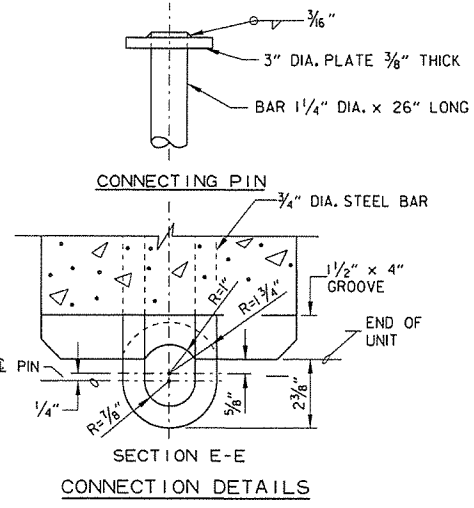


NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-2). NORMAL INSTALLATIONS WILL REQUIRE 1/4" DIA. BOLTS TO MOUNT SIGNS TO POST AND 5/16" DIA. BOLTS TO ASSEMBLE THE VARIOUS POST SUPPORTS. EACH OF THESE BOLTS SHALL BE CARRIAGE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

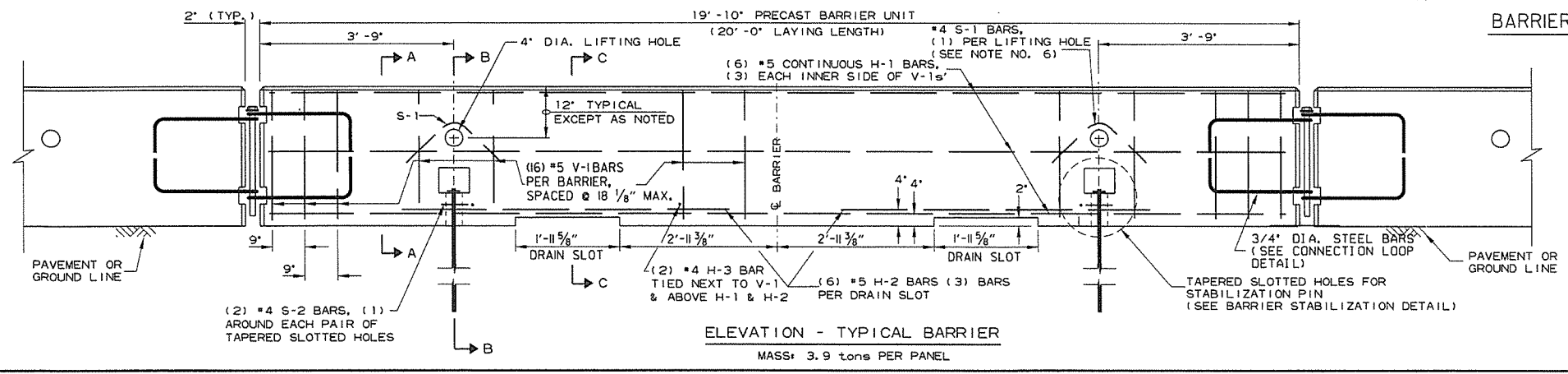
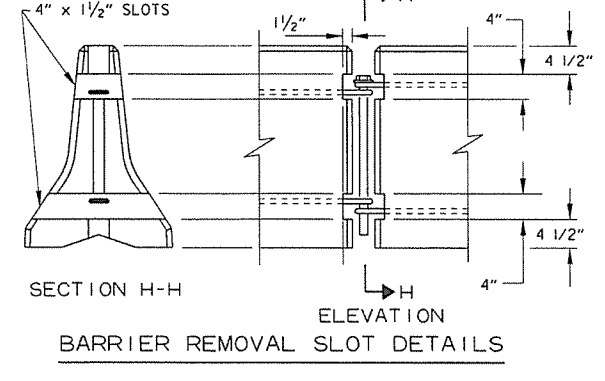
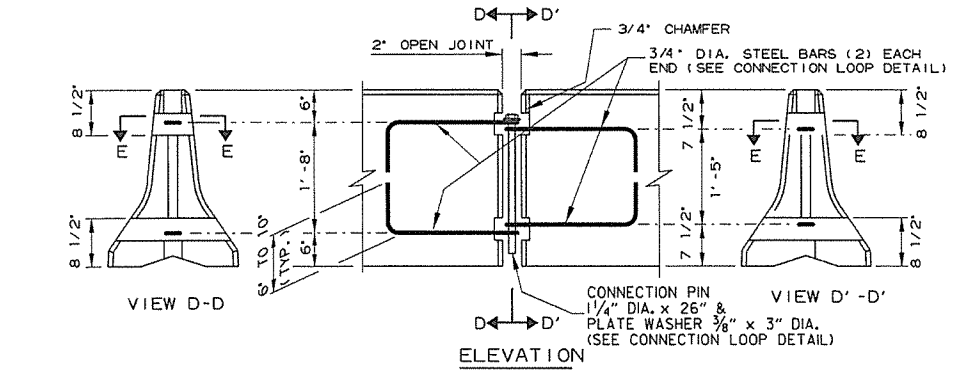
DATE	REVISION	FILED
9-2-15	REVISED NOTE 2 & REPLACED R2-5A WITH W3-5	
10-15-09	ADDED REFERENCE TO MASH	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED NOTE	
10-1-98	ADDED NOTE	
4-03-97	ADDED (SP) TO W6-1 & REVISED TRAFFIC CONTROL DEVICES NOTE	
10-18-96	ADDED R55-1	
10-12-95	MOVED UPPER SPLICE	
6-8-95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

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

REINFORCING BAR TABLE PER BARRIER UNIT				
MARK	LOCATION	BAR SIZE	(NO. BARS)	SKETCH
H-1	HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS	#5	(6)	19'-3"
H-2	CENTERED ABOVE DRAIN SLOTS LONG. & TRANSVERSELY	#5	(6)	6'-6"
H-3	TIED ABOVE H-1 BARS TO SUPPORT H-2, TIED TO V-1	#4	(2)	1'-6"
S-1	OVER LIFT HOLES	#4	(2)	
S-2	HORIZ. AROUND SLOTS BETWEEN V-1'S & DRAIN SLOTS	#4	(2)	
V-1	VERTICAL IN BARRIER (3) EACH END & (2) AT EACH DRAIN SLOTS	#5	(16)	



NOTE: 3/4" Threaded Inserts shall be cast in place for all new bridge decks and drilled and grouted for existing bridge decks. Inserts shall have a minimum ultimate load capacity of 8000 lbs. in tension. After removal of barrier, bolts, and angles, the inserts shall be filled with approved non-shrink epoxy.



- General Notes
- The contractor shall furnish the Precast Concrete Barrier Units and shall be responsible for the manufacture, shipment, storage, placement and removal. At the completion of the project, the precast units will remain the property of the contractor.
 - Materials shall meet the following minimum requirements:
Concrete: 2500 psi compressive strength at 28 days.
Reinforcing Steel: AASHTO M 31 or M 53, Grade 60
Structural Steel: AASHTO-M270 Grade 36 shall be used for the Connection Pin, Connection Loops, and Stabilization Pins. A One Piece Pin with a 3" rounded top may be used in place of the detailed Connection Pin.
Delineators: Delineators shall be mounted at 10' spacing on top of precast barrier.

In applications where barrier walls within 6 feet of a traffic lane, additional delineators shall be placed on the barrier at 10' spacing approximately one (1) foot from the top of the barrier. Delineators shall be on the AHTD Qualified Products List for Construction Concrete Barrier Markers. Delineator color shall be in accordance with the Manual on Uniform Traffic Control Devices.
Payment for delineators shall be considered included in the price bid per Lin. Ft. for "Furnishing and Installing Precast Concrete Barrier". The contractor shall certify to the Engineer that the material and the design used in the precast barrier units meets the requirements as shown on this standard drawing.
 - Other Precast Concrete Barriers that have been crash tested and approved by the Federal Highway Administration to meet the requirements of NCHRP-350 test level 3 or Manual For Assessing Safety Hardware (MASH) will be accepted in lieu of the barrier shown. Drain slots shall be provided as needed or as directed by the Engineer. The Contractor shall furnish a certification of NCHRP Report 350 or Manual For Assessing Safety Hardware (MASH) compliance for any other types of precast barrier to be used. The certification shall state that the precast concrete barrier meets the requirements of NCHRP Report 350 or Manual For Assessing Safety Hardware (MASH) and include a copy of the Federal Highway Administration's (FHWA) approval letter with all attachments. Precast concrete barrier units shall be fabricated and installed in accordance with crash testing and documentation provided in the FHWA approval letter. Mixing of shapes will not be allowed in a continuous line of units.
 - Dowel holes in pavement or bridge slabs that are to remain in place shall be filled. Holes in concrete pavement and bridge slabs shall be filled with an approved non-shrink epoxy grout. Holes in asphalt pavement shall be filled with an approved asphalt joint filler. Payment for drilling and filling holes to be included in the price for various barrier items.
 - Attach Units To Roadway Surface with Stabilization Pins and to Deck Slabs using bolts when required.
 - A 4" White PVC Sleeve may be used to form the Lifting Hole and if used the Sleeve is to be left in place.

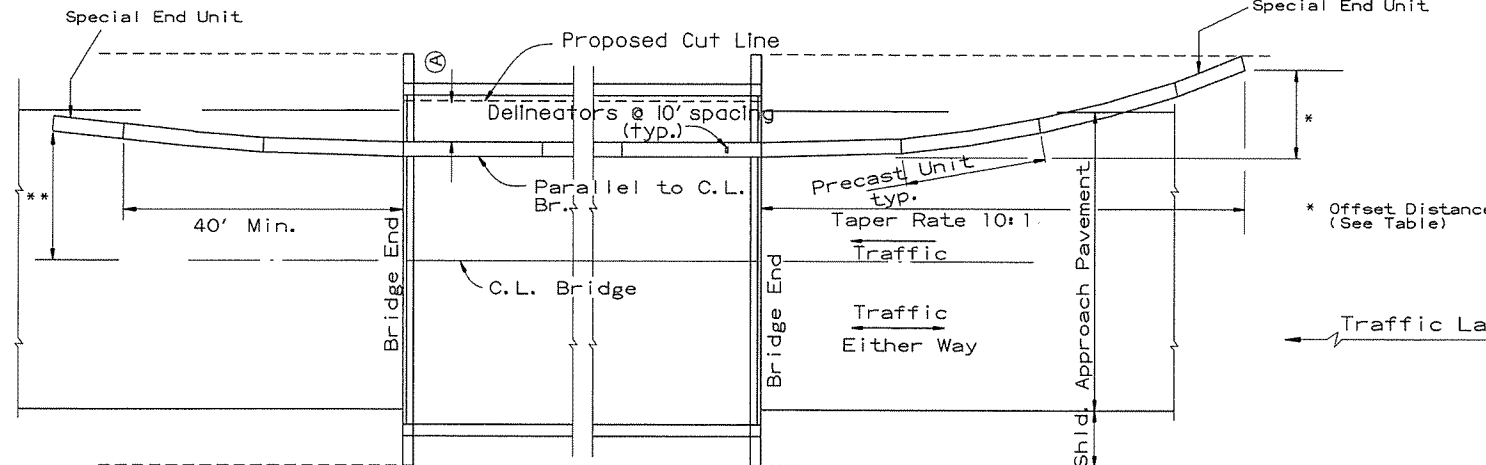
2-27-14	REVISED BARRIER STABILIZATION DETAIL	
10-15-09	ADDED REFERENCE TO MASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02	ISSUED NEW DRAWING	
DATE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

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS
FOR HIGHWAY CONSTRUCTION -
TEMPORARY PRECAST BARRIER

STANDARD DRAWING TC-4

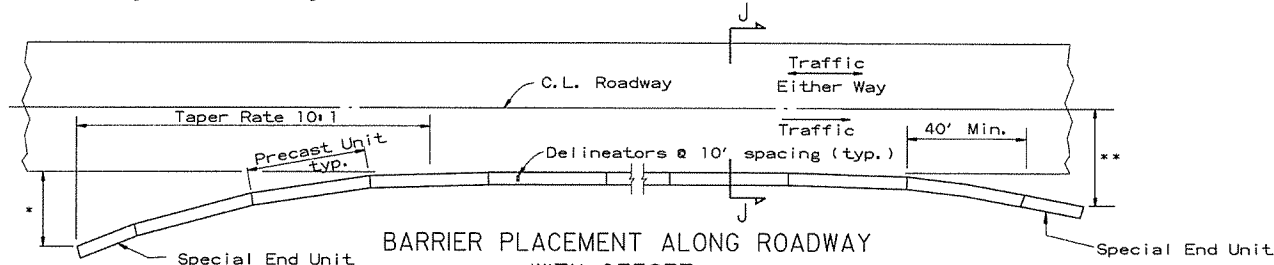
(A) 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)



BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

** Offset Distance for Two Way Traffic Only



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

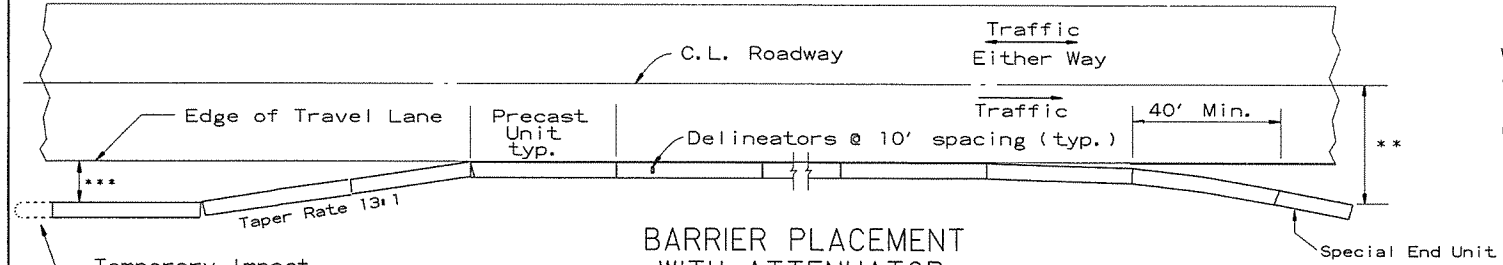
No Scale

** Offset Distance For Two Way Traffic Only

* Offset Distance (See Table)

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.



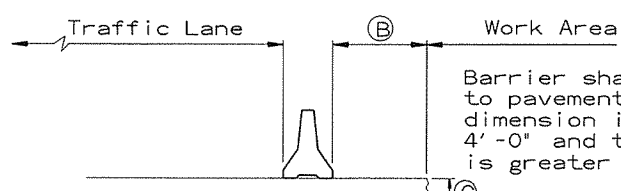
BARRIER PLACEMENT WITH ATTENUATOR

No Scale

** Offset Distance For Two Way Traffic Only

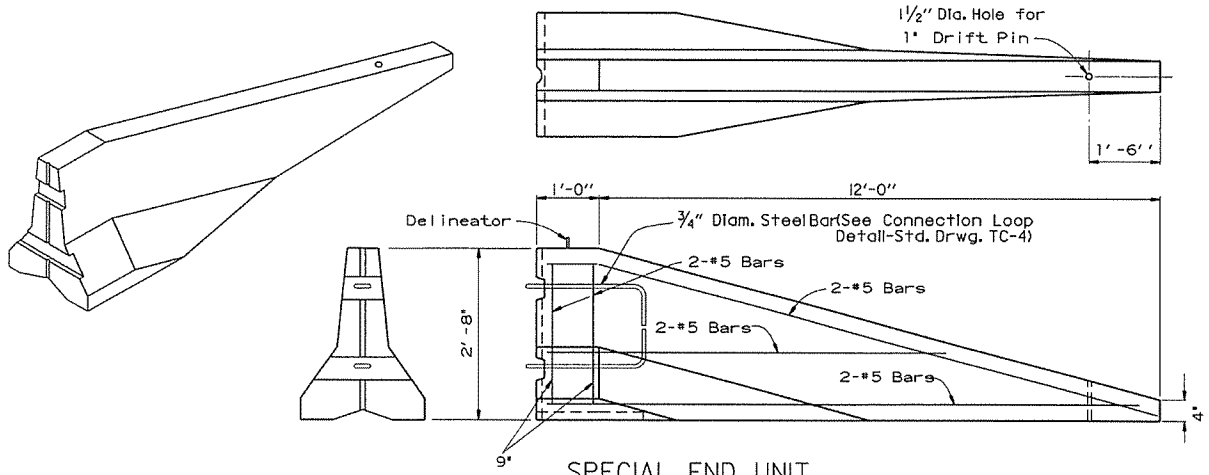
***Min. 3'-0" From Edge of Travel Lane to Nearest Edge of Attenuator

* Offset Distance (See Table)



SECTION J-J

No Scale



SPECIAL END UNIT

No Scale

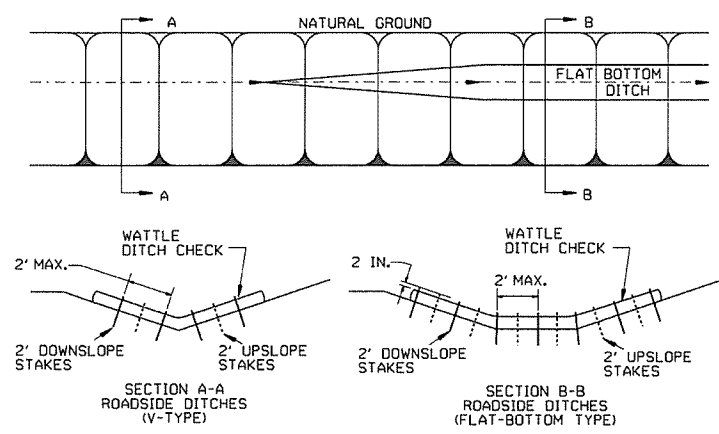
General Notes

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

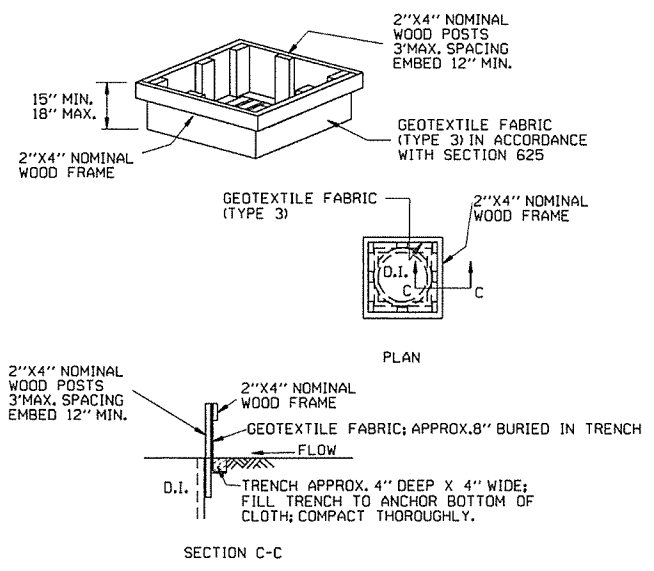
ARKANSAS STATE HIGHWAY COMMISSION		
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER		
10-15-09	ADDED REFERENCE TO MASH	
5-25-06	REVISED BARRIER PLACEMENT	
8-22-02	ISSUED NEW DRAWING	
DATE	REVISION	FILMED

GENERAL NOTES

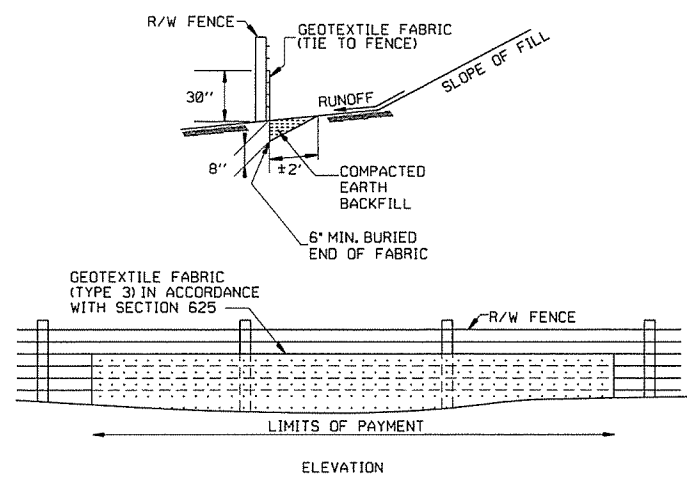
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



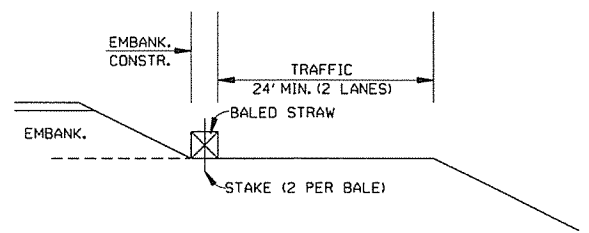
DROP INLET SILT FENCE (E-7)



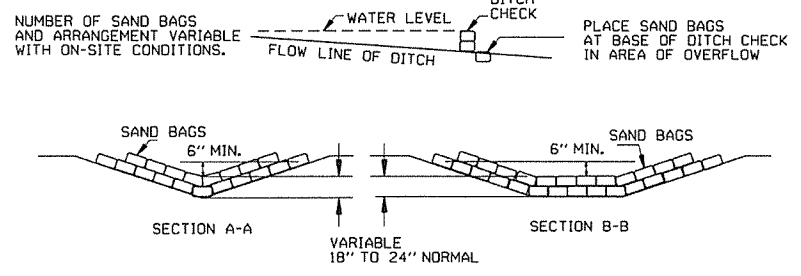
SILT FENCE ON R/W FENCE (E-4)

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

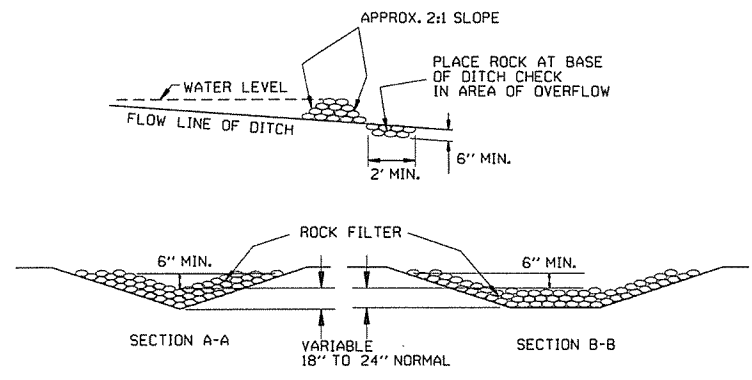
- GENERAL NOTES
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.
 2. NO GAPS SHALL BE LEFT BETWEEN BALES.
 3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.



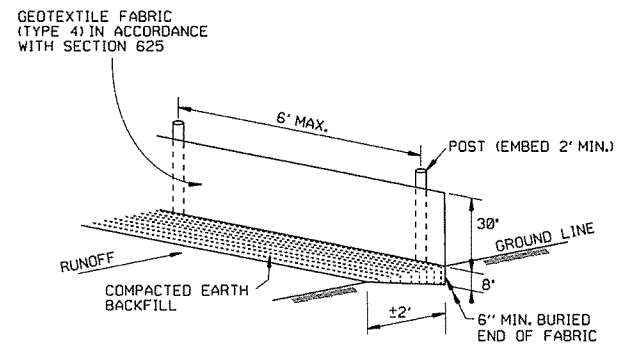
BALED STRAW FILTER BARRIER (E-2)



SAND BAG DITCH CHECK (E-5)



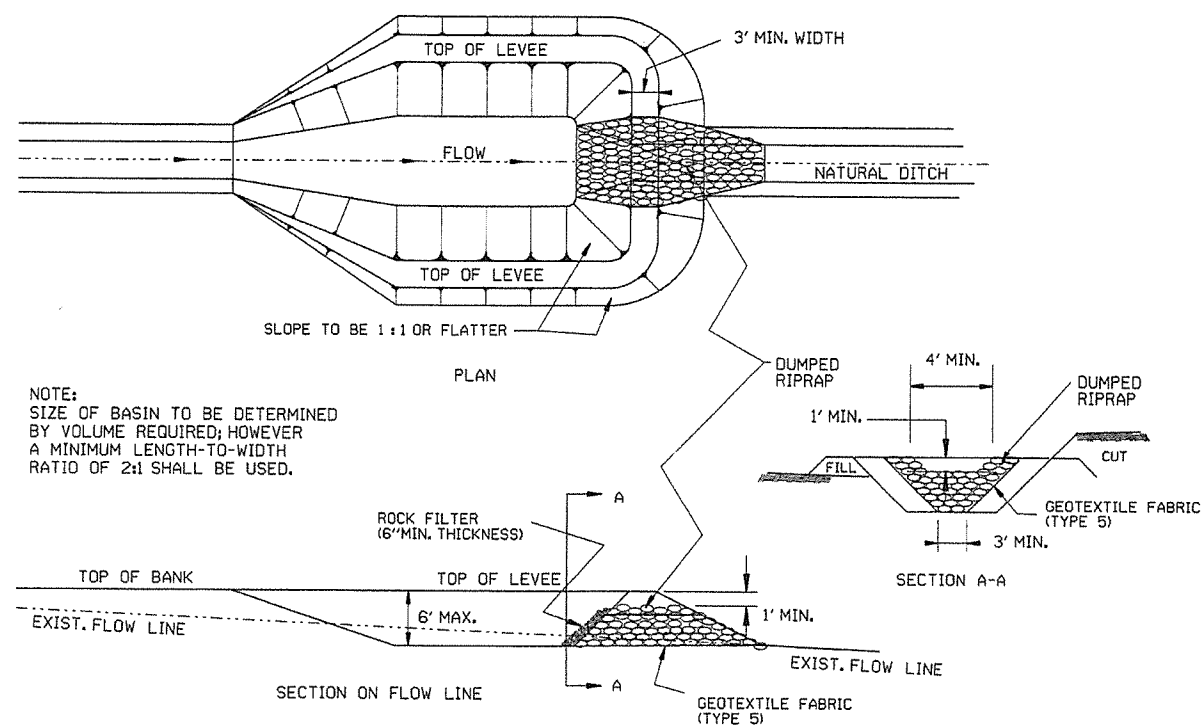
ROCK DITCH CHECK (E-6)



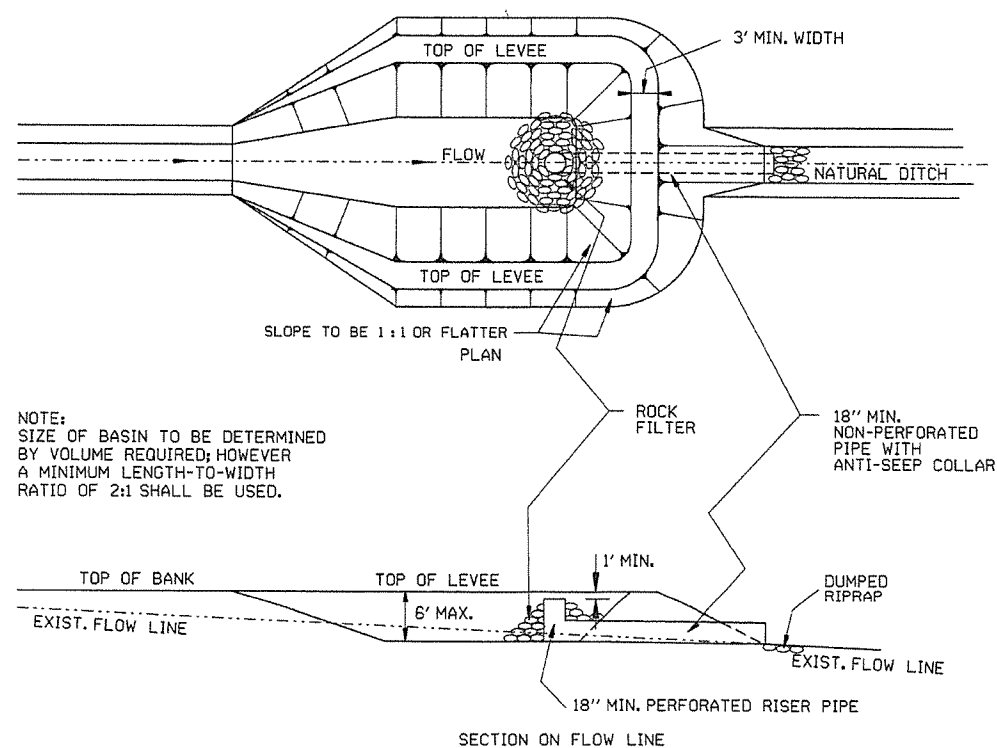
SILT FENCE (E-11)

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

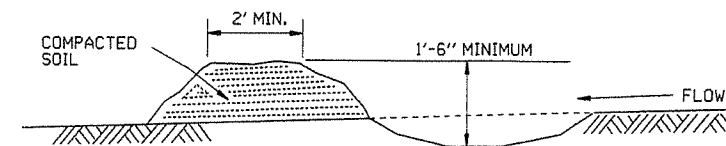
12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK		ARKANSAS STATE HIGHWAY COMMISSION
11-18-98	ADDED NOTES		
7-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)		
7-20-95	REVISED SILT FENCE E-4 AND E-11	7-20-95	
7-15-94	REV. E-4 & E-11 MIN. 13" BURIED END OF FABRIC		
6-2-94	REVISED E-1, 4,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



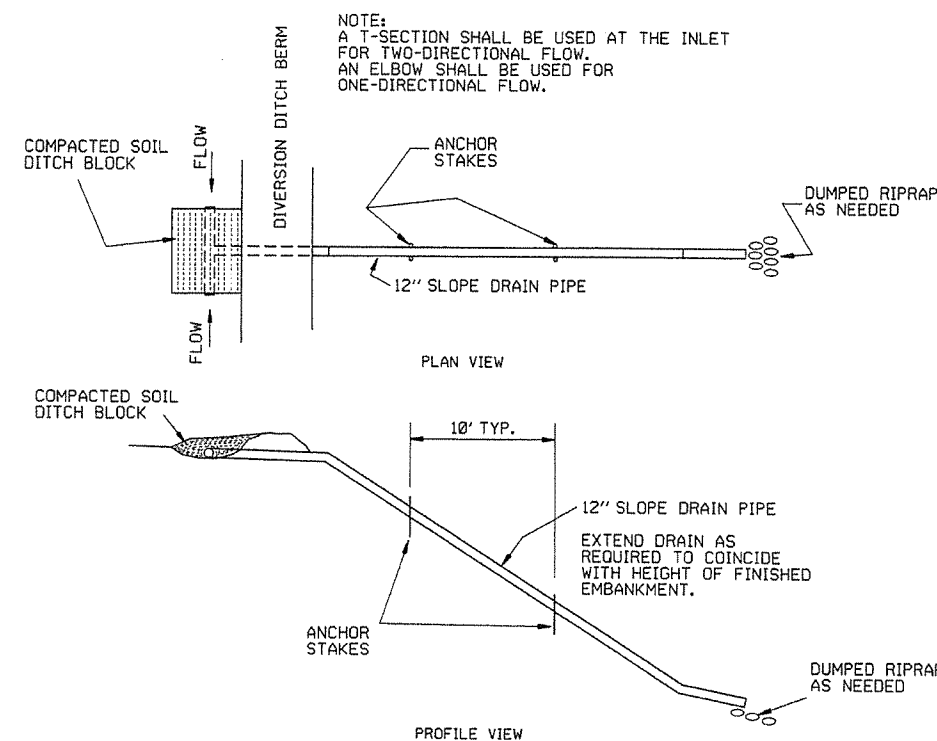
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



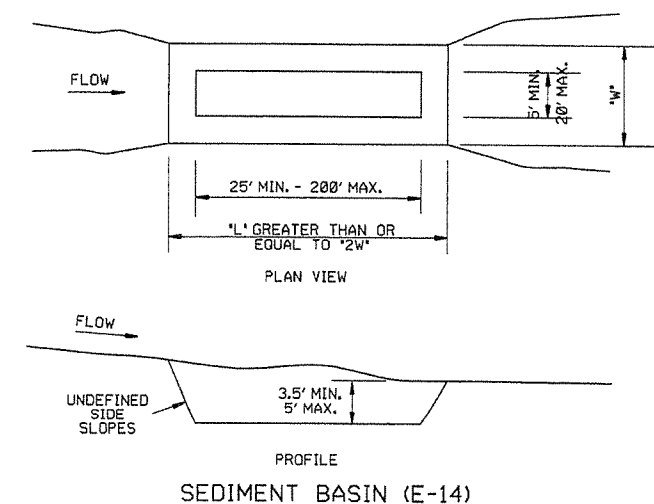
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



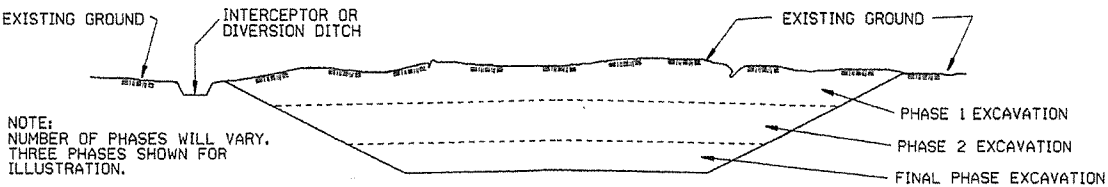
SEDIMENT BASIN (E-14)

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

CLEARING AND GRUBBING

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

EXCAVATION

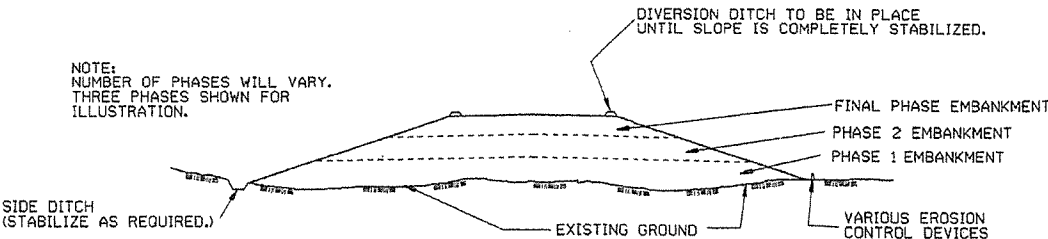


GENERAL NOTE

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

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

EMBANKMENT



GENERAL NOTE

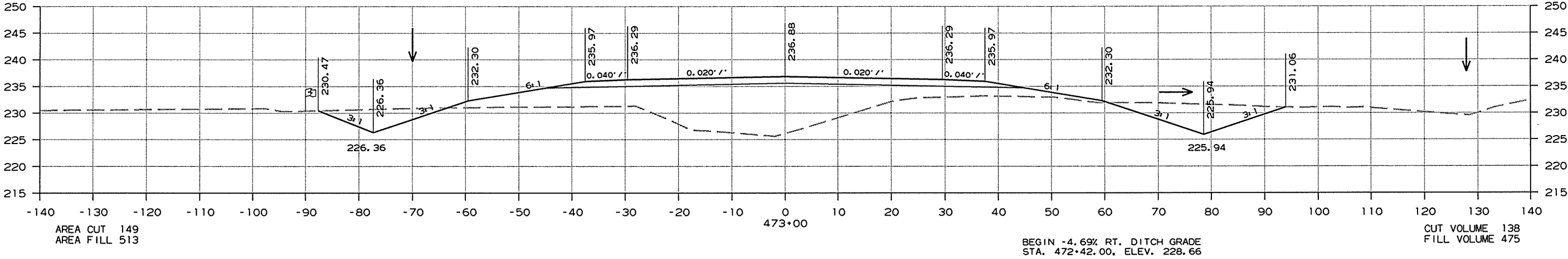
ALL EMBANKMENT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE CONSTRUCTED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

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

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

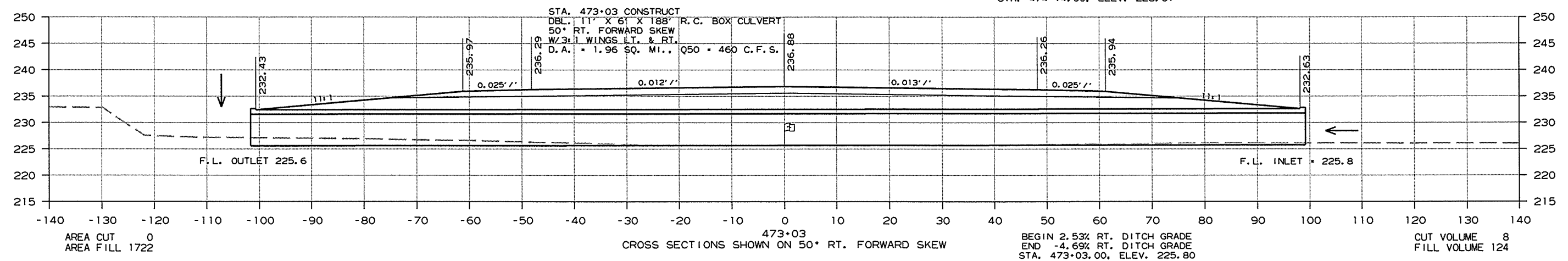
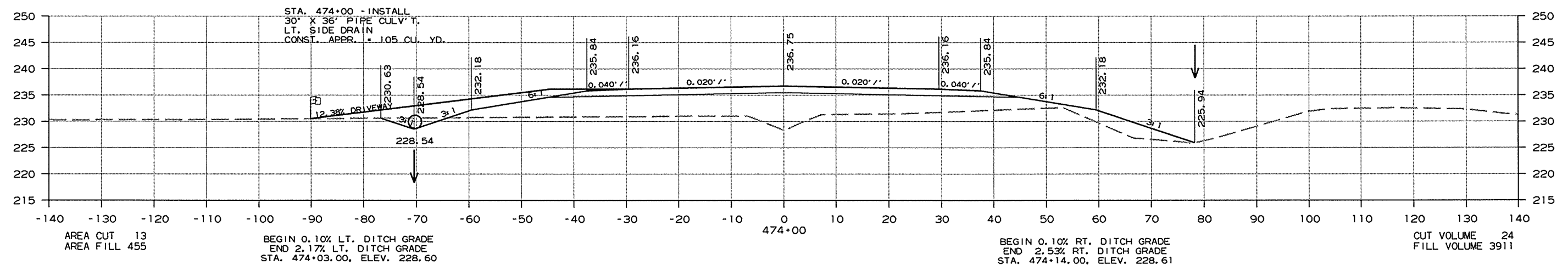
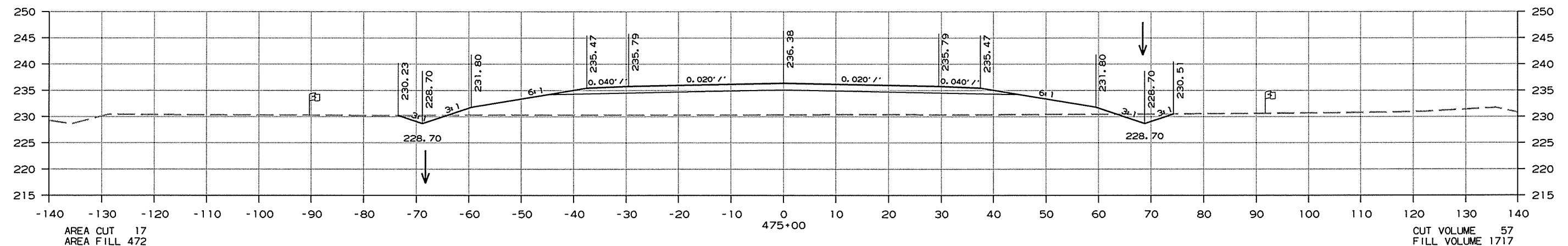
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO. CA1001			183	283

2 CROSS SECTIONS



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.	CA1001		184	283

② CROSS SECTIONS



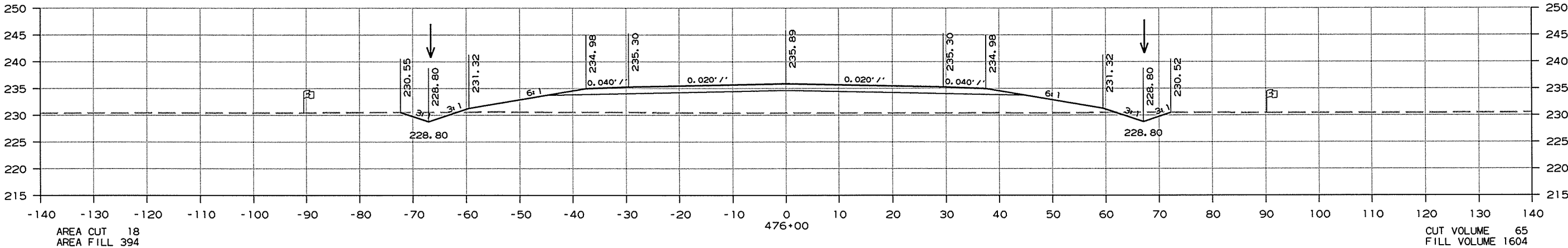
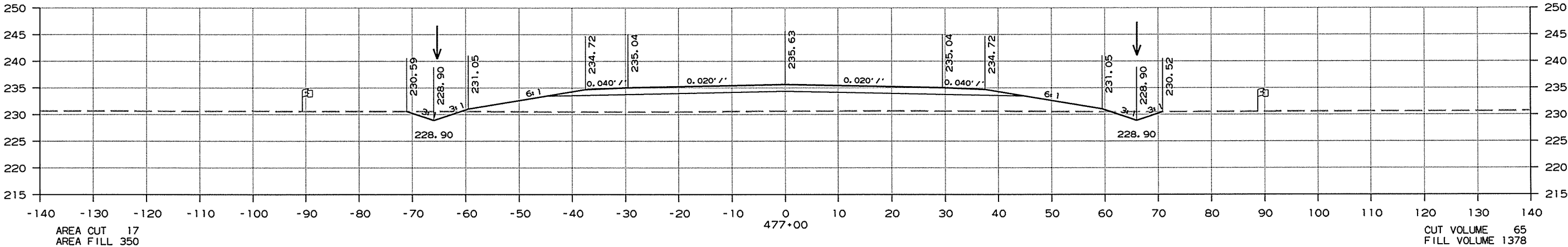
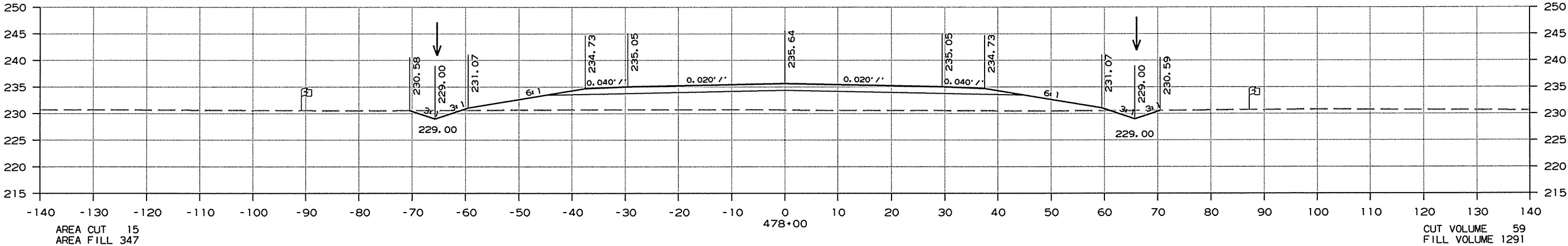
CROSS SECTIONS STA. 473+03 TO STA. 475+00

10/1/2015

CA1001.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA1001	185	283

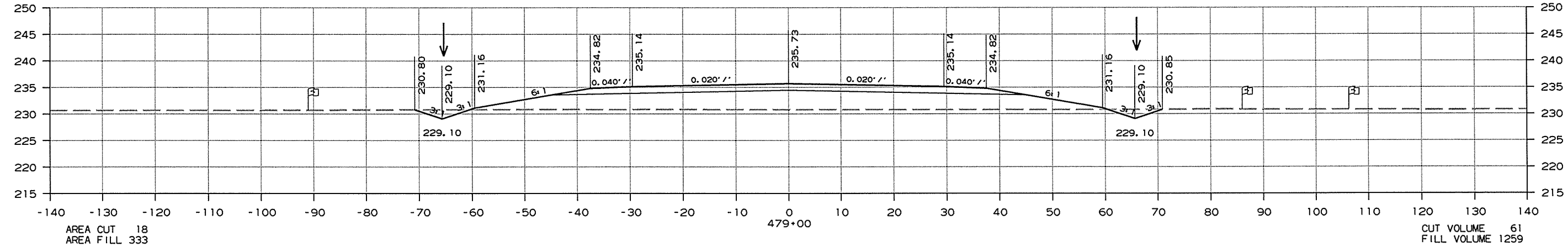
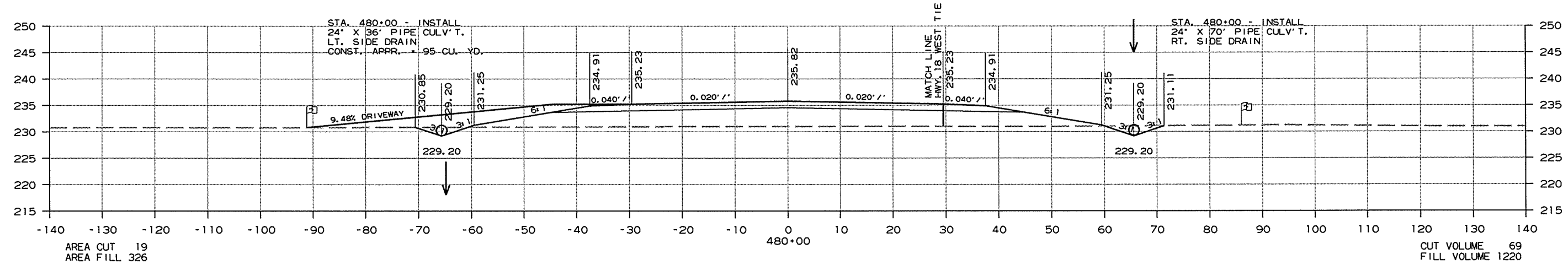
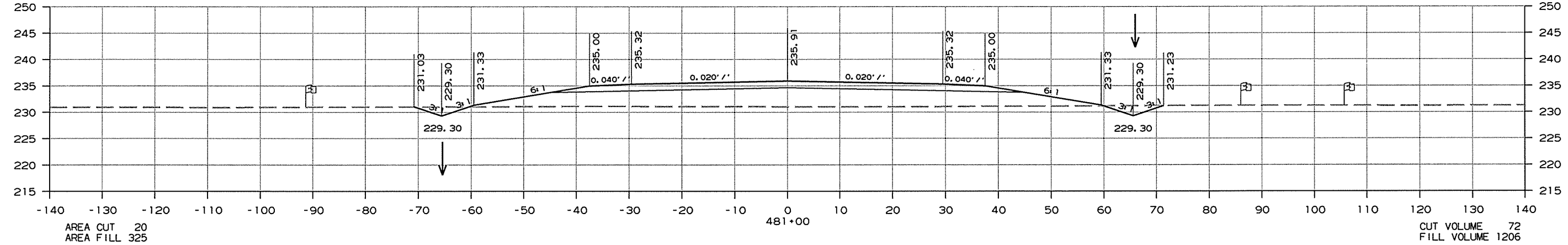
2 CROSS SECTIONS



CROSS SECTIONS STA. 476+00 TO STA. 478+00

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. CA1001			186	283

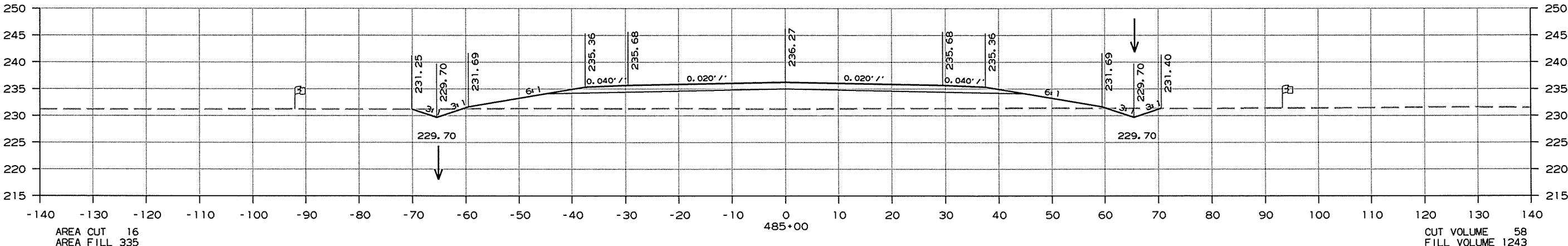
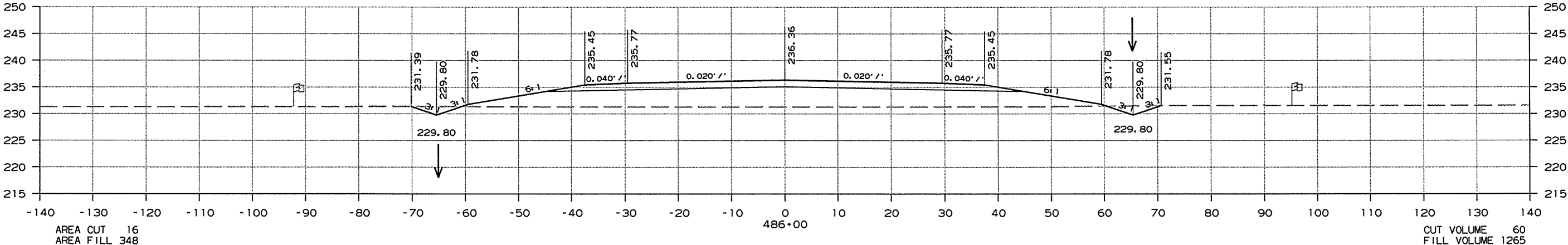
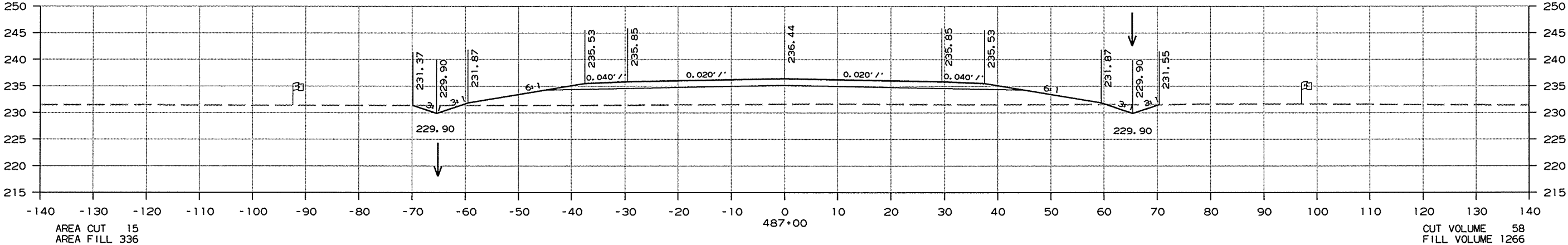
2 CROSS SECTIONS



CROSS SECTIONS STA. 479+00 TO STA. 481+00

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. CA1001			188	283

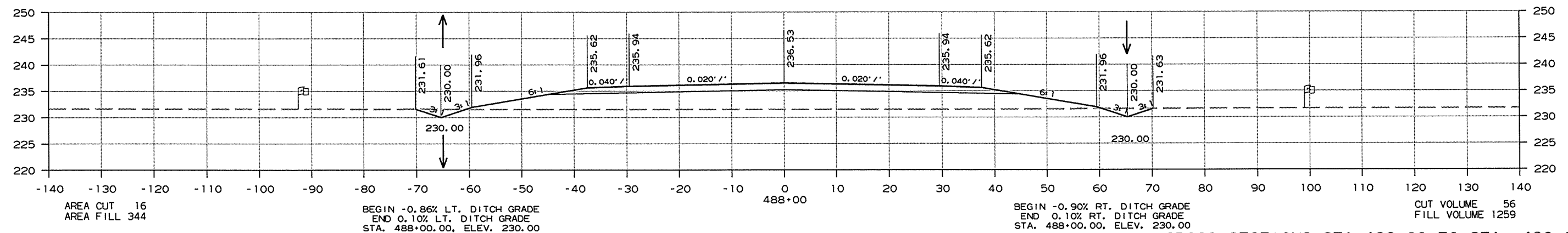
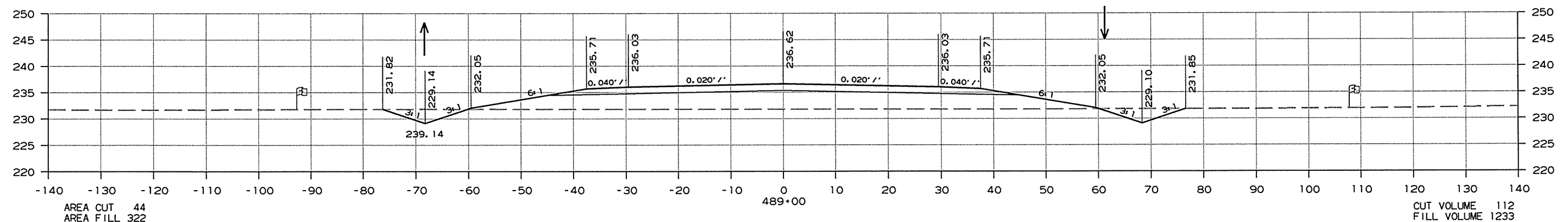
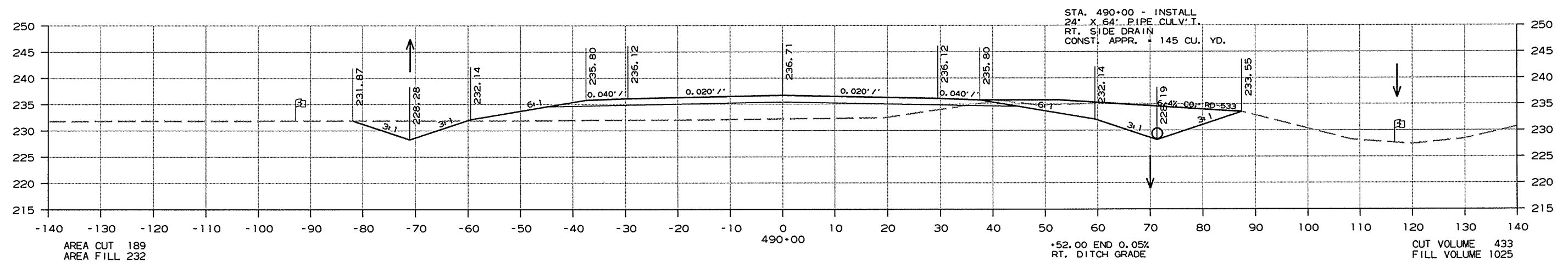
2 CROSS SECTIONS



CROSS SECTIONS STA. 485+00 TO STA. 487+00

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.	CAI001		189	283

② CROSS SECTIONS



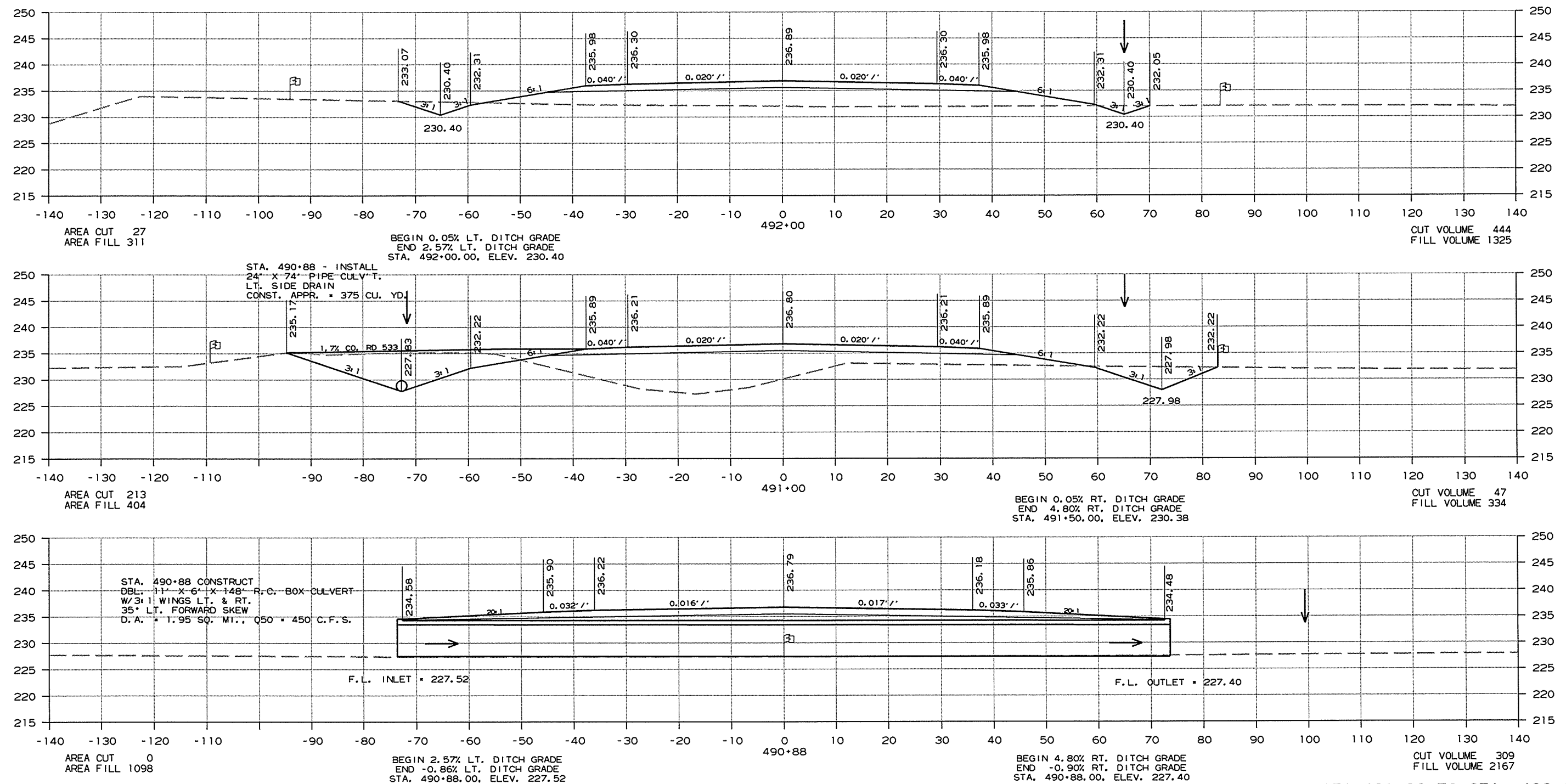
CROSS SECTIONS STA. 488+00 TO STA. 490+00

10/1/2015

CAI001.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO. CA1001			190	283

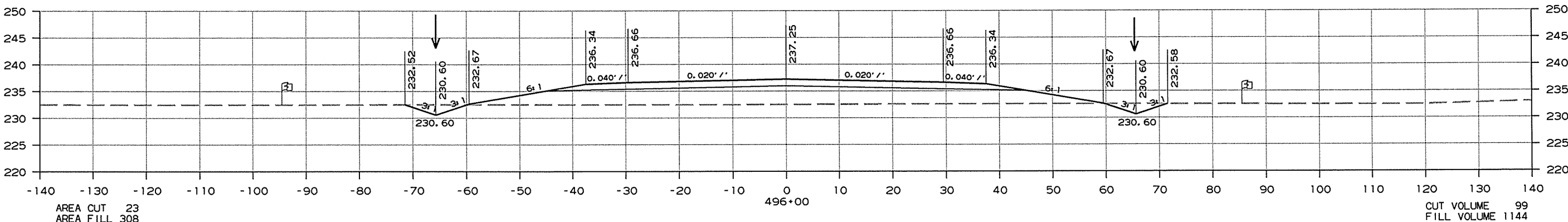
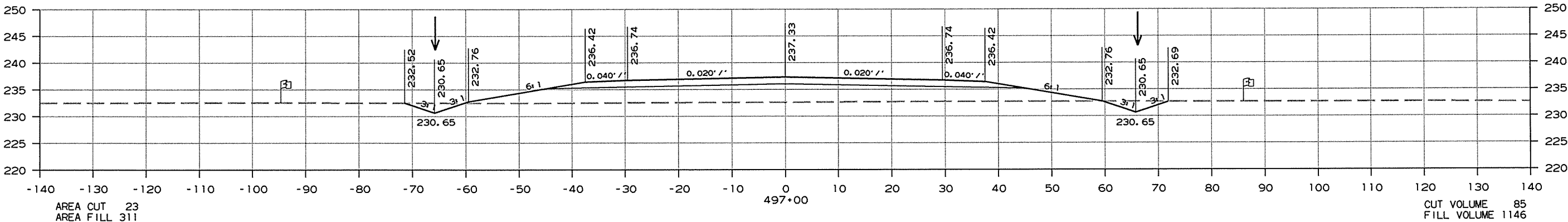
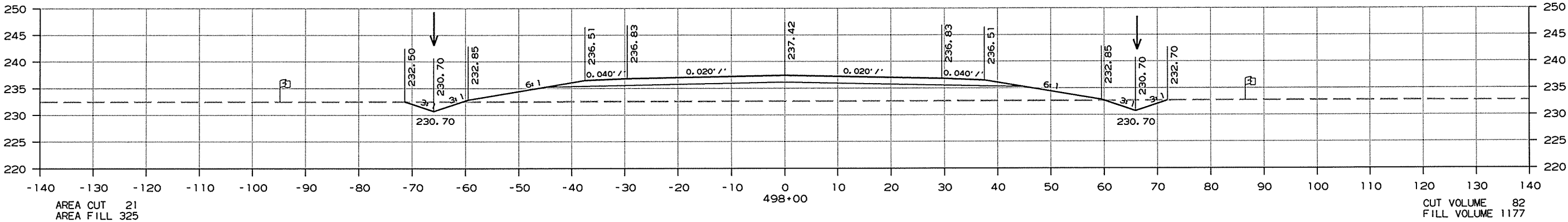
2 CROSS SECTIONS



CROSS SECTIONS STA. 490+88 TO STA. 492+00

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. CA1001			192	283

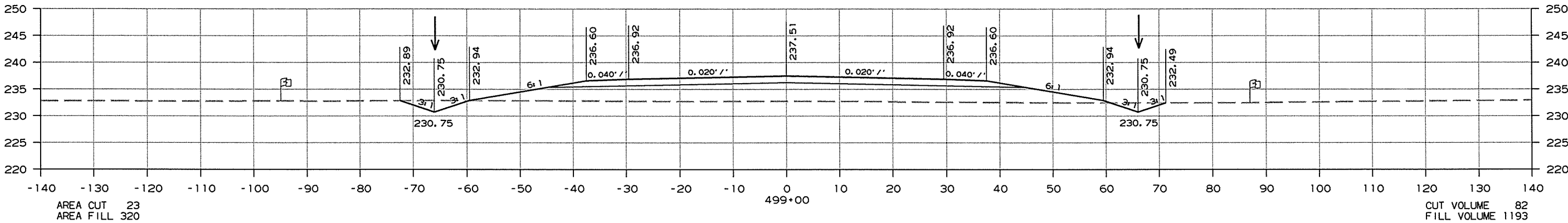
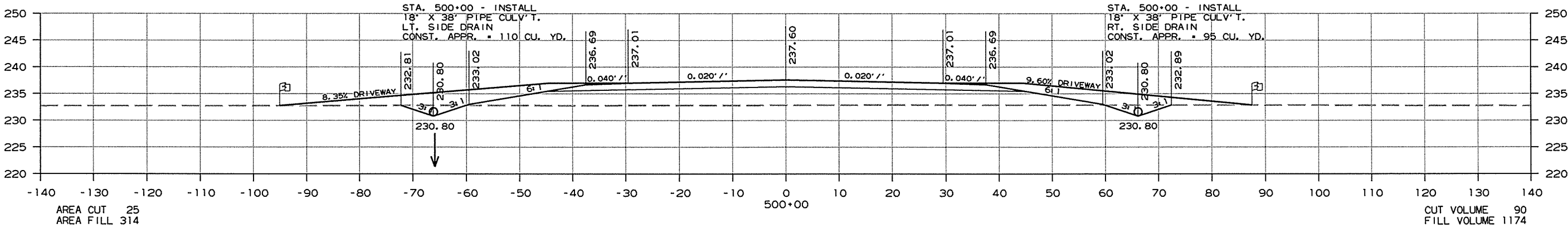
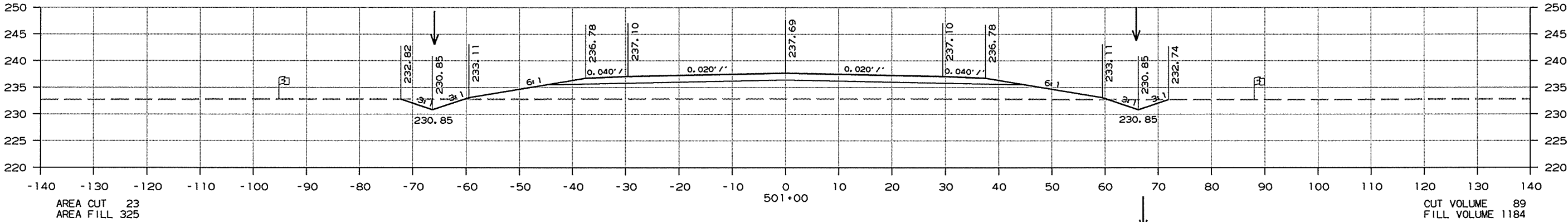
2 CROSS SECTIONS



CROSS SECTIONS STA. 496+00 TO STA. 498+00

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. CA1001	193	283

2 CROSS SECTIONS



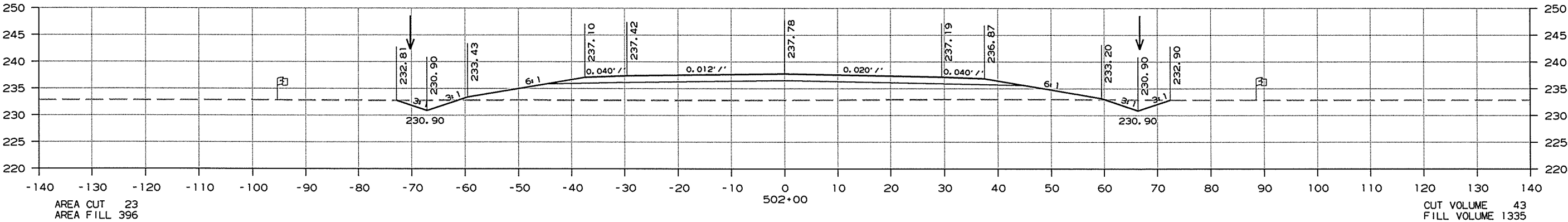
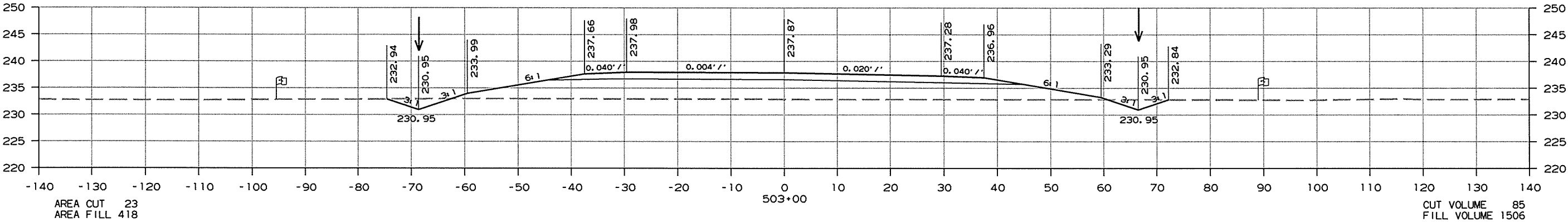
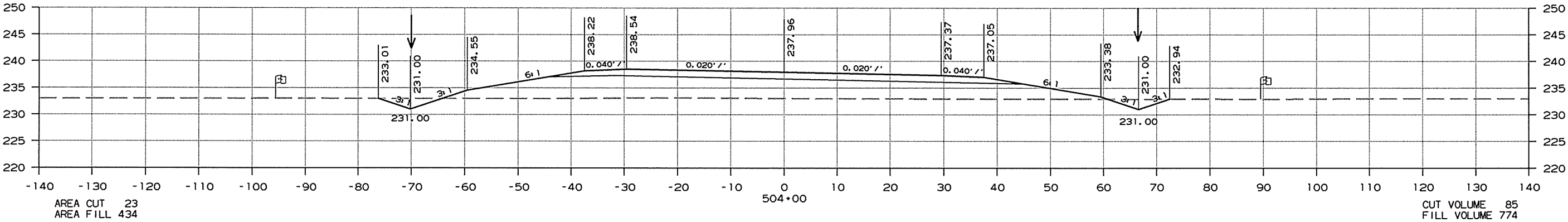
CROSS SECTIONS STA. 499+00 TO STA. 501+00

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CA1001.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA1001	194	283

2 CROSS SECTIONS

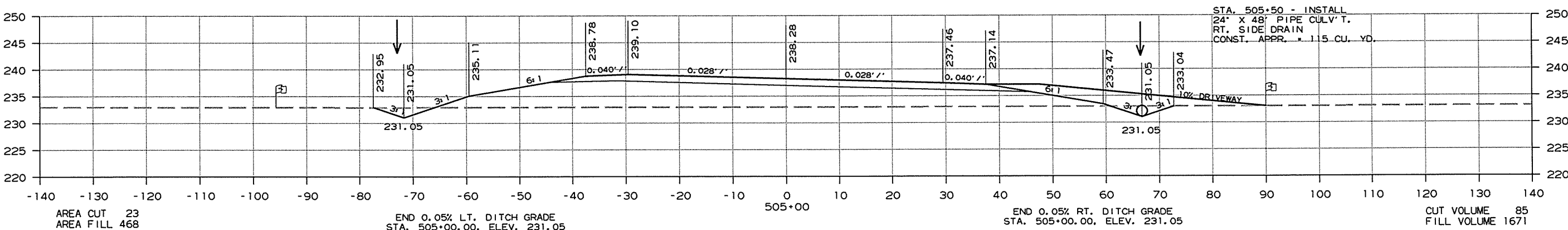
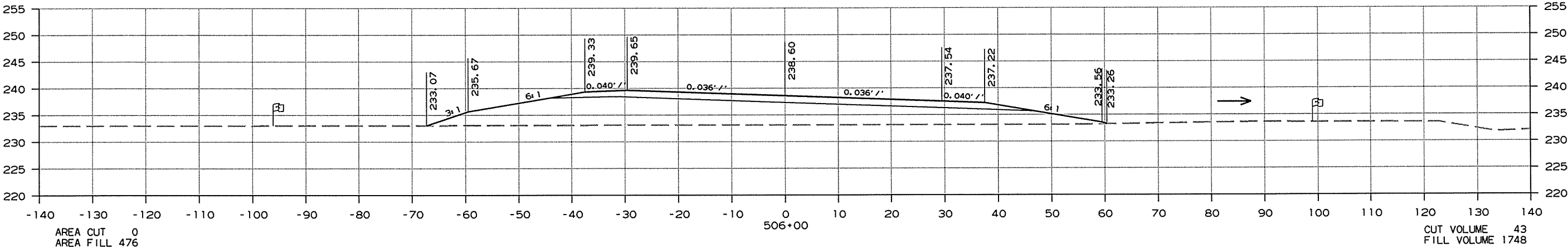
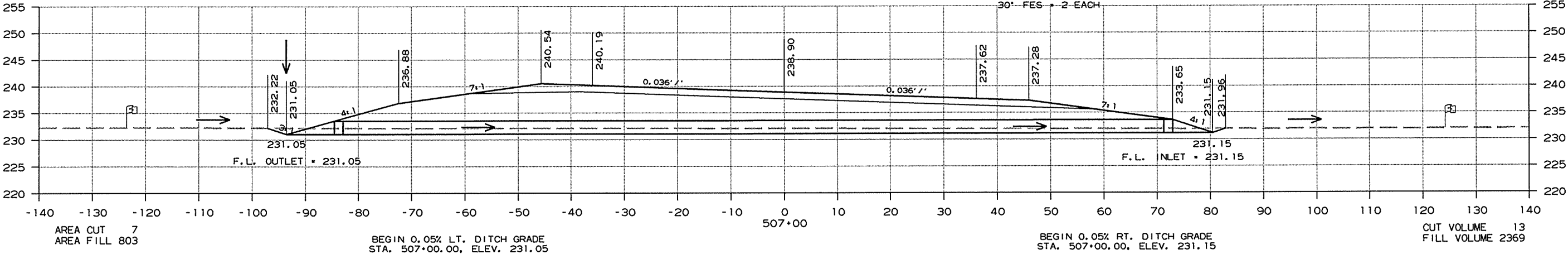


CROSS SECTIONS STA. 502+00 TO STA. 504+00

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. CA1001	195	283

2 CROSS SECTIONS

STA. 507+00 CONSTRUCT
30' X 204' R.C. PIPE CULVERT
35' LT. FORWARD SKEW
(CLASS III)(TYPE 3 BEDDING) WITH
FES LT. & RT.
D.A. = 132 AC., Q50 = 28 C.F.S.
30" R.C. PIPE = 204 LIN. FT.
30" FES = 2 EACH



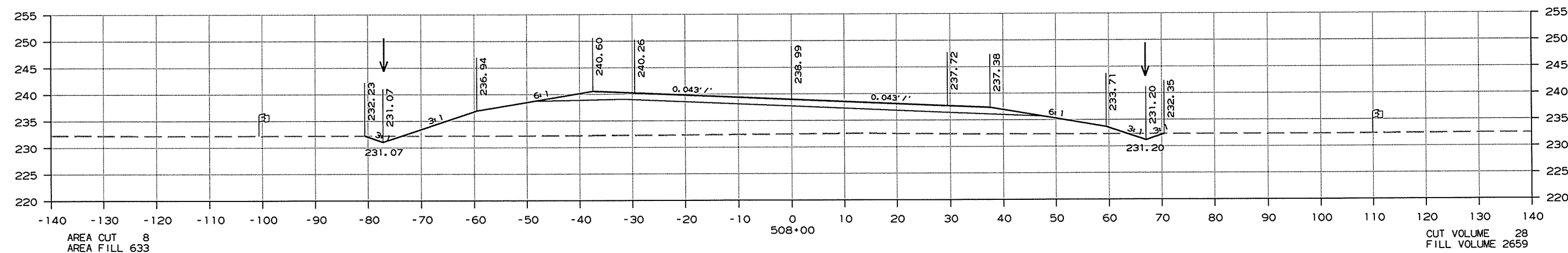
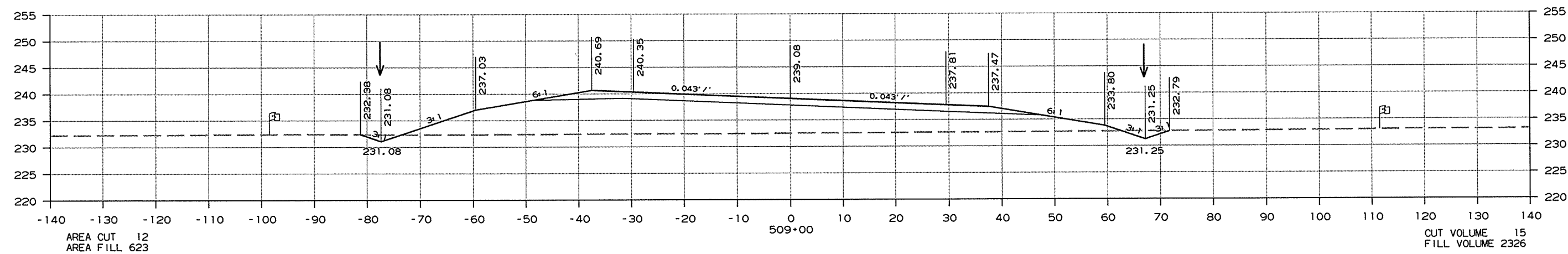
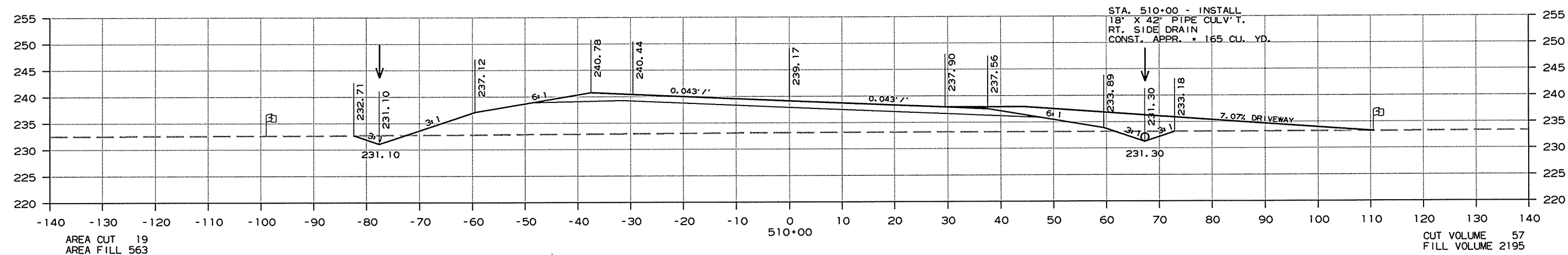
CROSS SECTIONS STA. 505+00 TO STA. 507+00

10/1/2015

CA1001.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO. CA1001		196	283	

2 CROSS SECTIONS



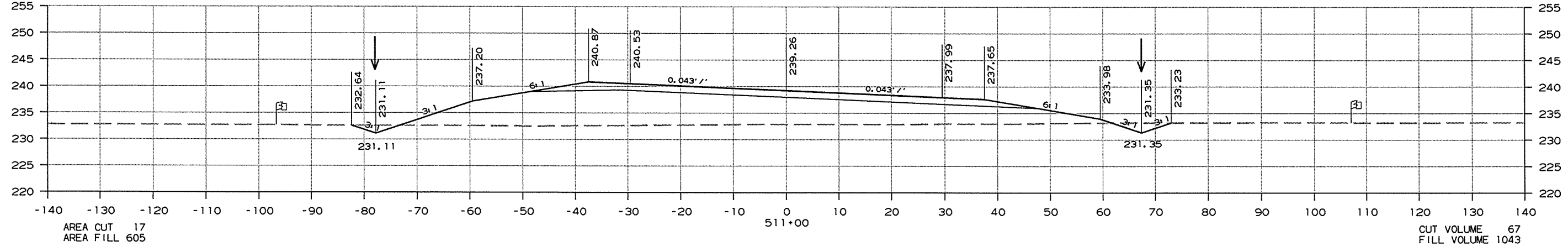
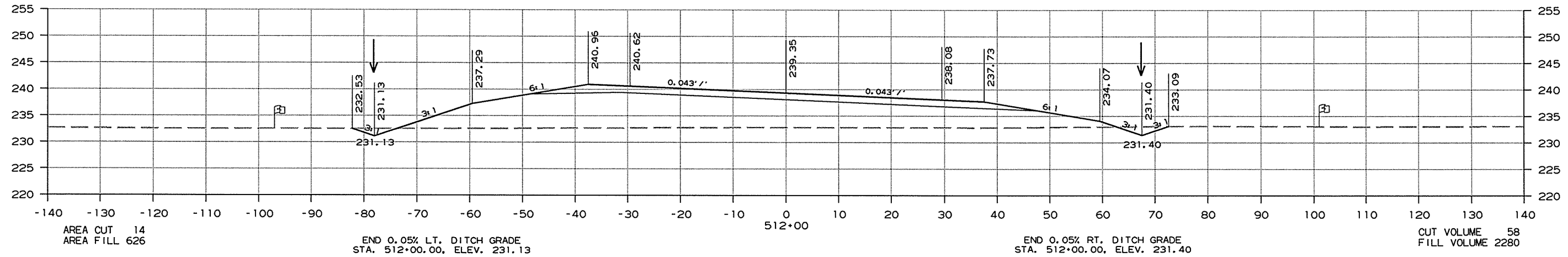
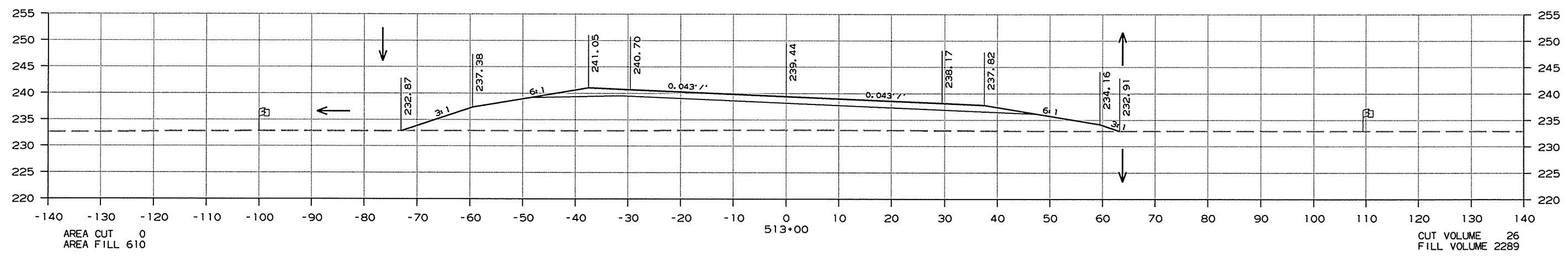
CROSS SECTIONS STA. 508+00 TO STA. 510+00

10/1/2015

CA1001.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. CA1001	197	283

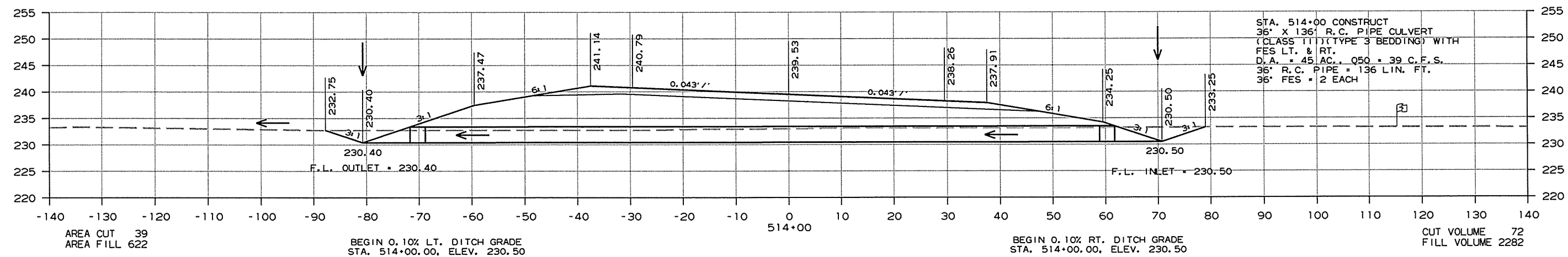
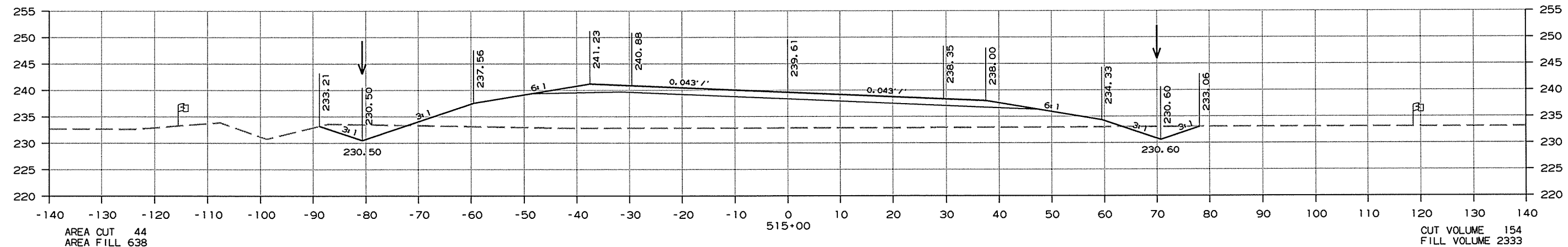
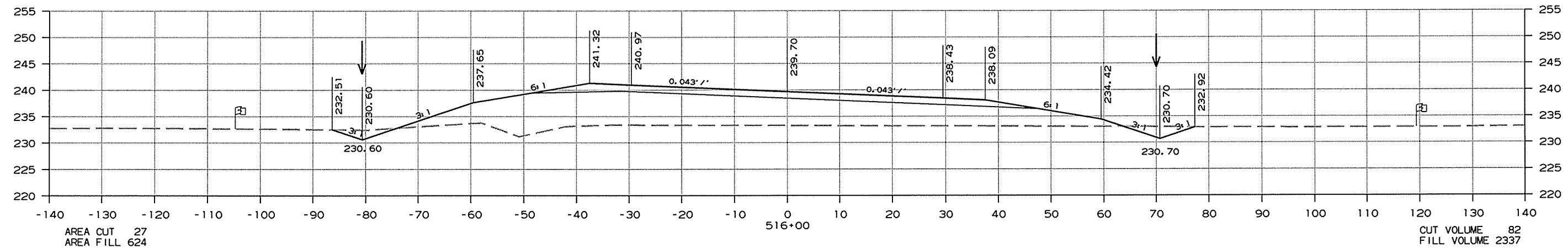
2 CROSS SECTIONS



CROSS SECTIONS STA. 511+00 TO STA. 513+00

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.	CA1001		198	283

2 CROSS SECTIONS



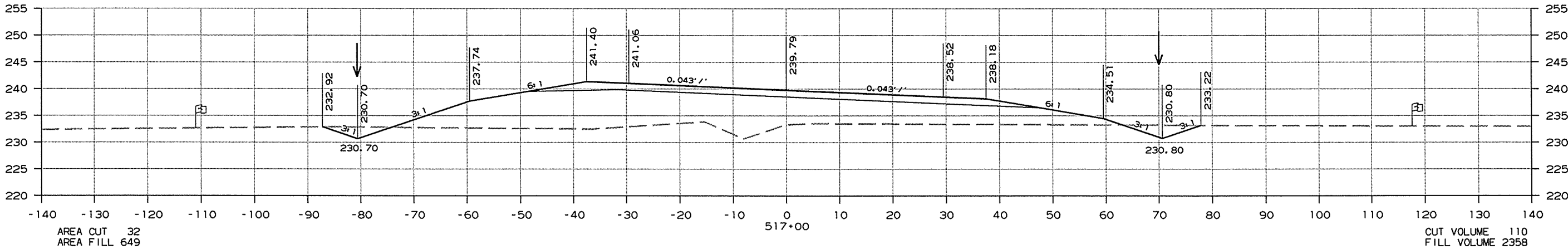
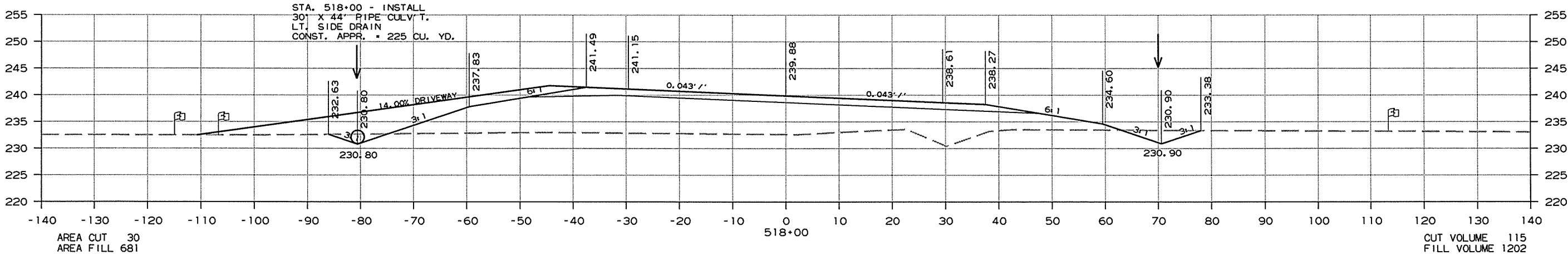
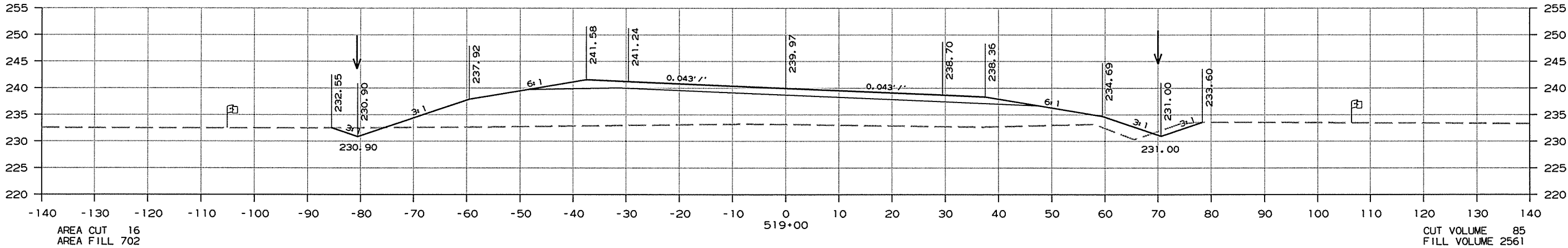
CROSS SECTIONS STA. 514+00 TO STA. 516+00

10/1/2015

CA1001.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						CA1001	199	283

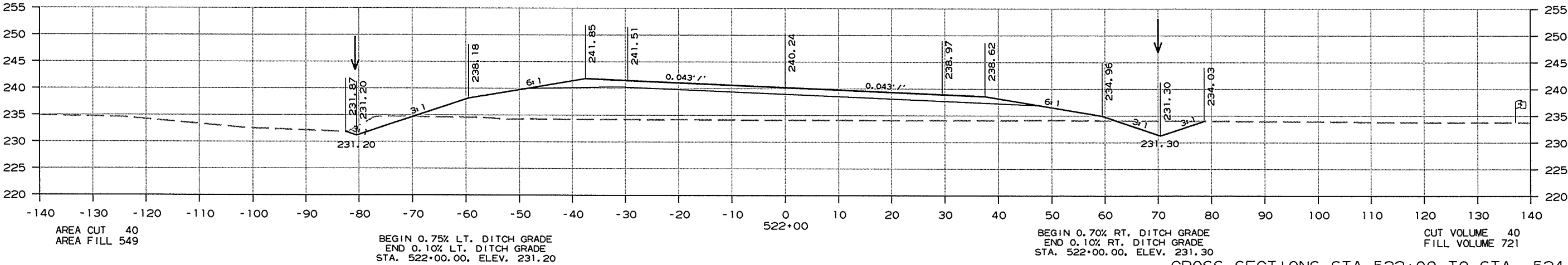
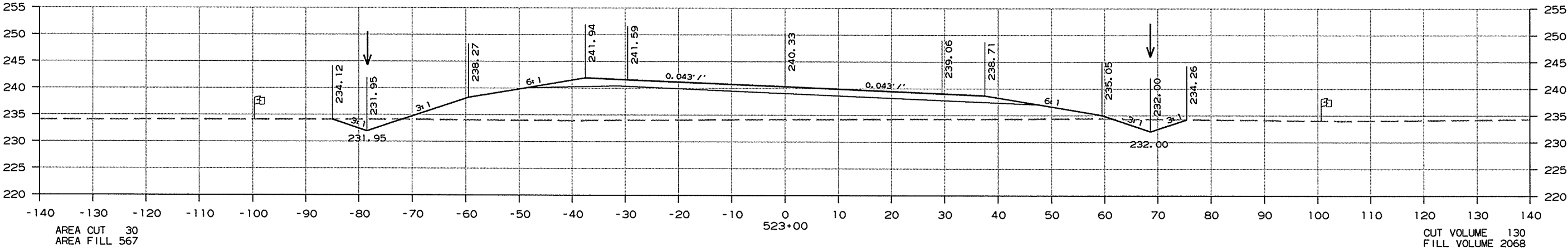
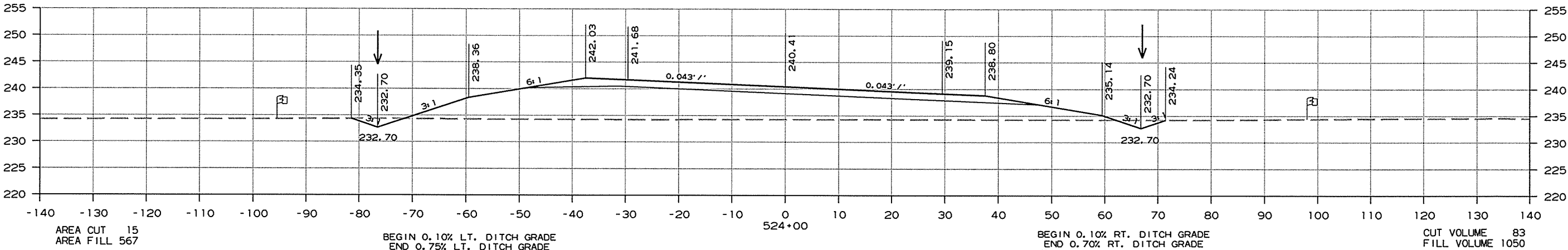
2 CROSS SECTIONS



CROSS SECTIONS STA. 517+00 TO STA. 519+00

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. CA1001			201	283

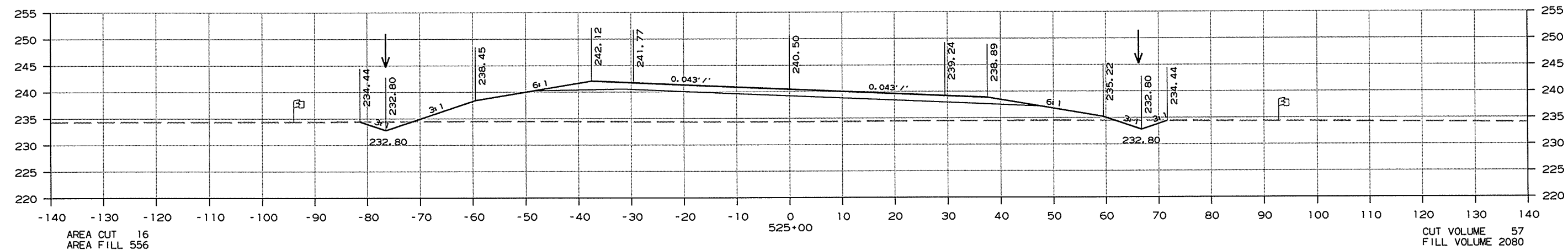
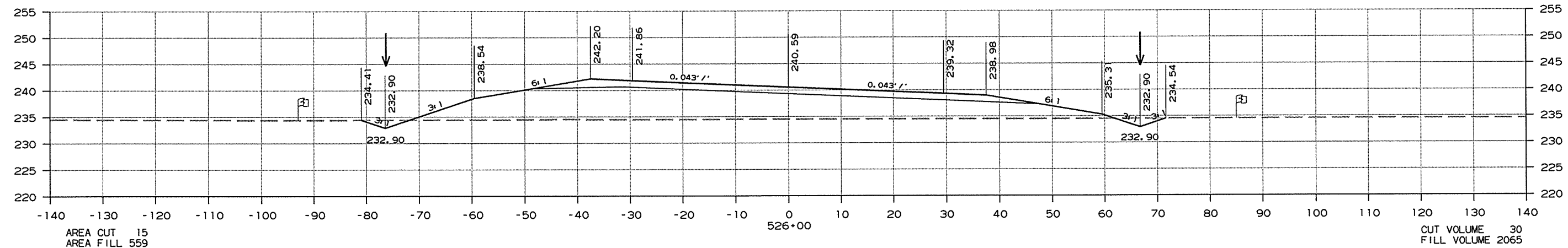
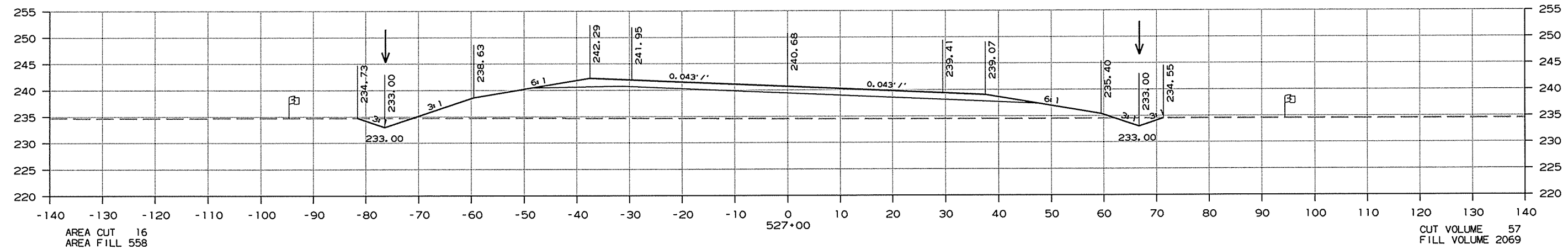
2 CROSS SECTIONS



CROSS SECTIONS STA. 522+00 TO STA. 524+00

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. CA1001			202	283

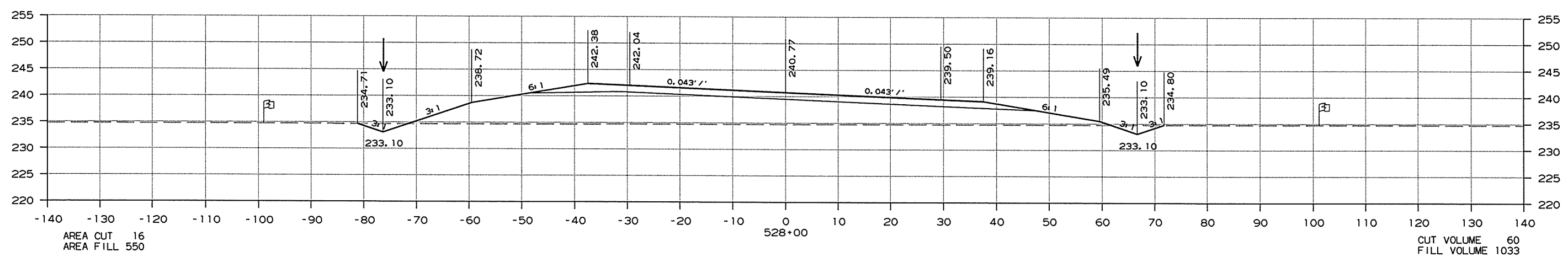
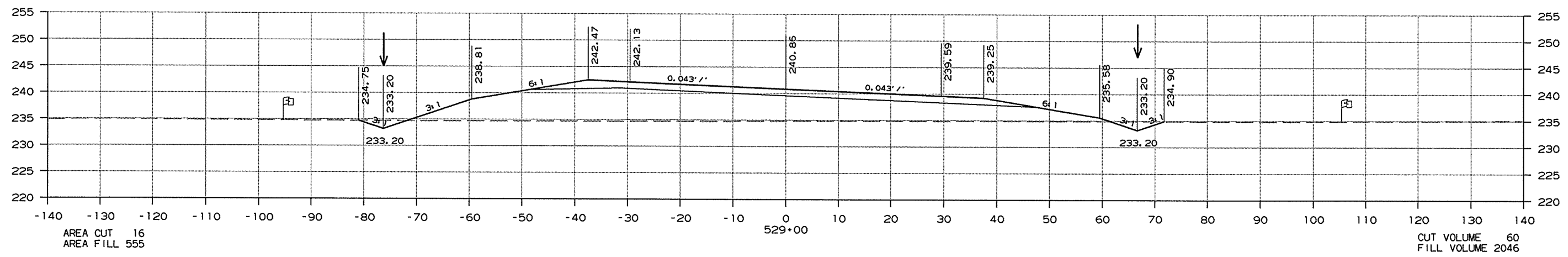
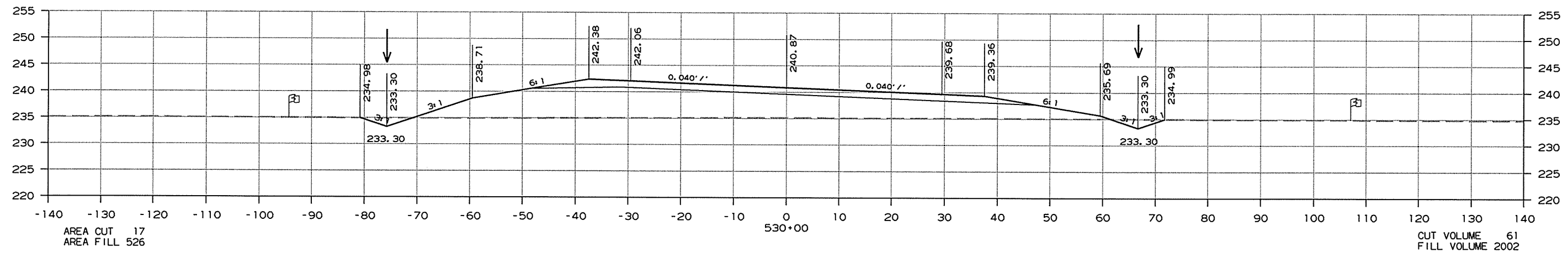
2 CROSS SECTIONS



CROSS SECTIONS STA. 525+00 TO STA. 527+00

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. CA1001			203	283

2 CROSS SECTIONS



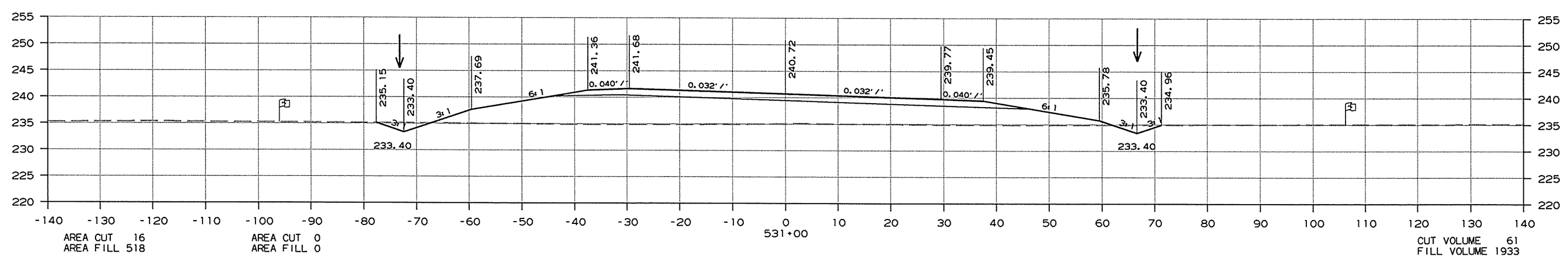
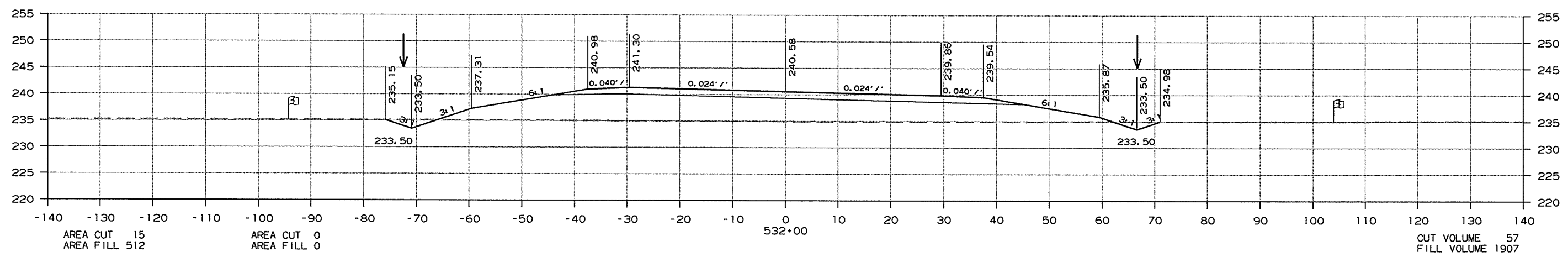
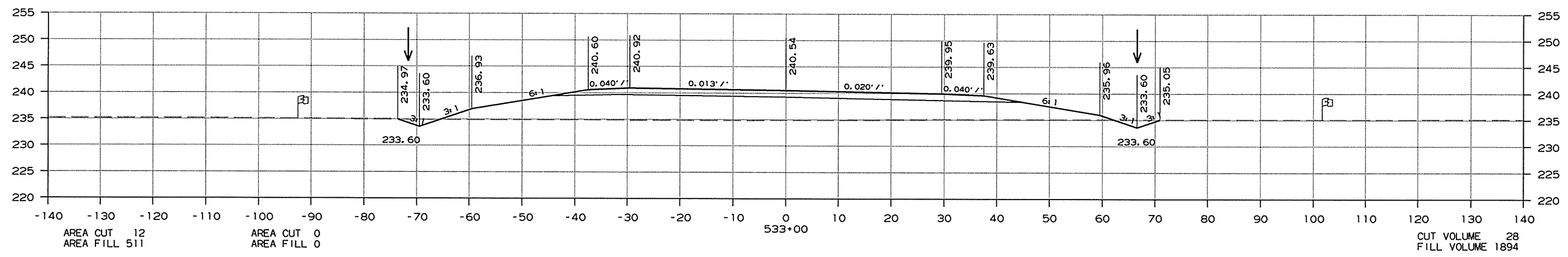
CROSS SECTIONS STA. 528+00 TO STA. 530+00

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CA1001.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO. CA1001			204	283

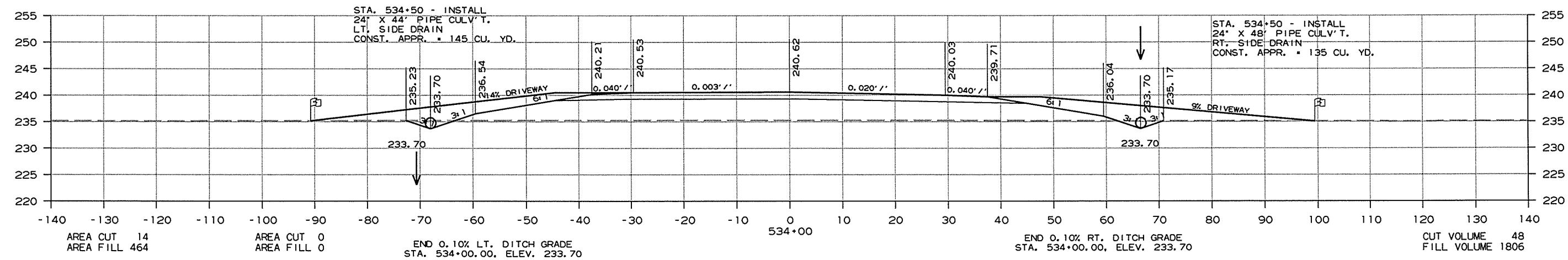
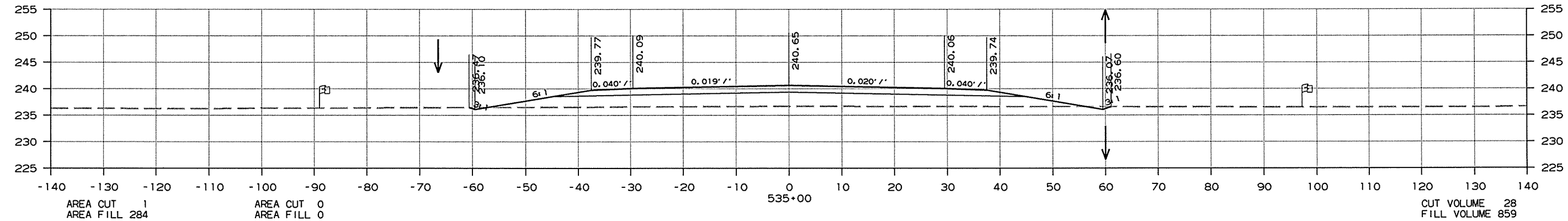
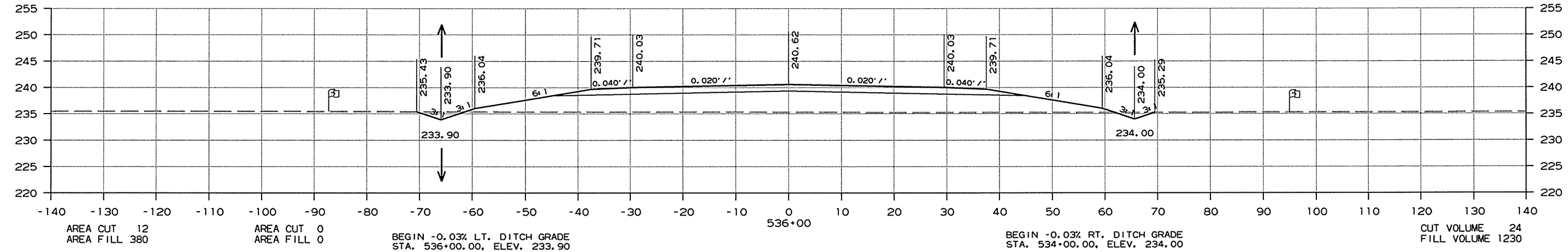
2 CROSS SECTIONS



CROSS SECTIONS STA. 531+00 TO STA. 533+00

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. CA1001	205	283

2 CROSS SECTIONS



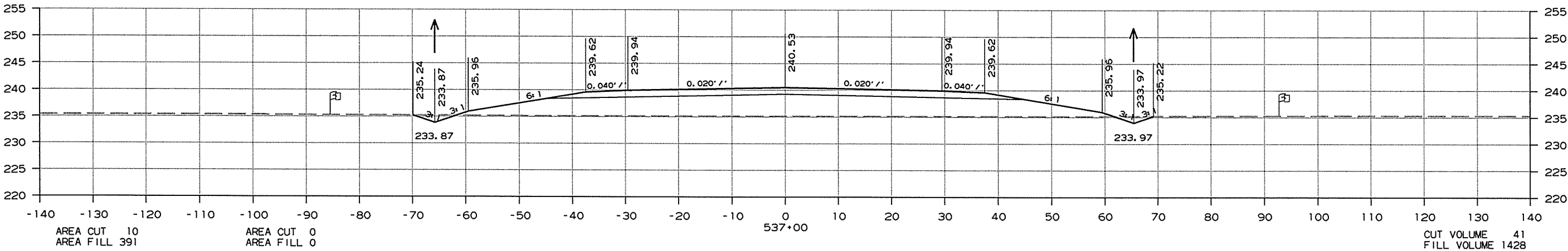
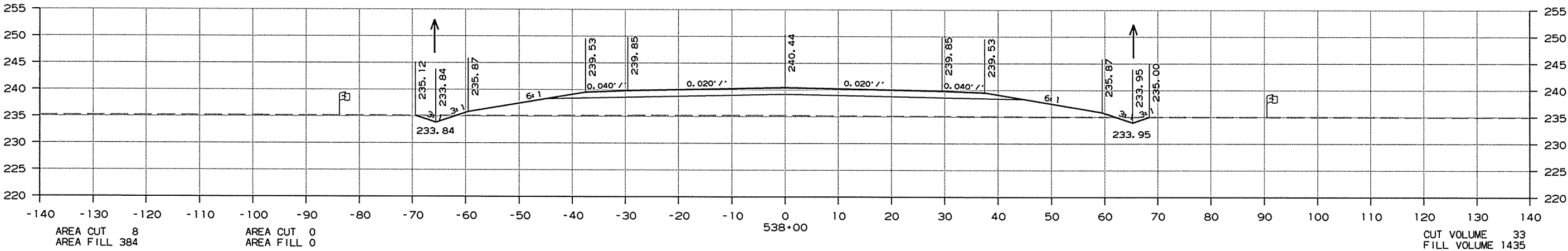
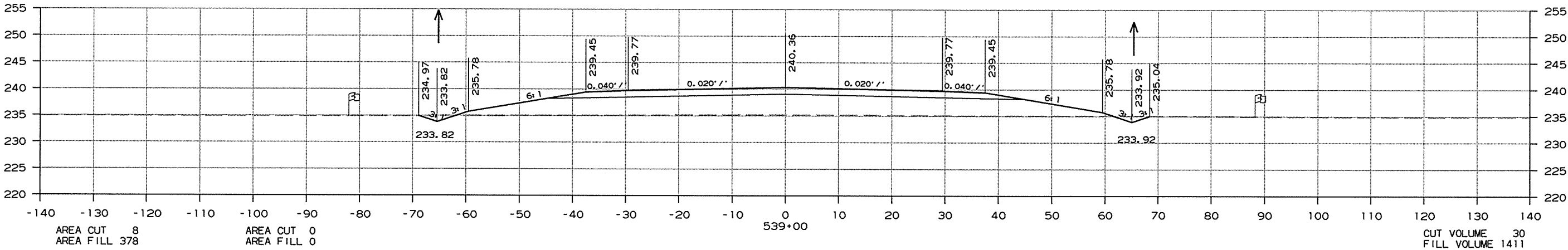
CROSS SECTIONS STA. 534+00 TO STA. 536+00

10/1/2015

CA1001.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO. CA1001			206	283

2 CROSS SECTIONS



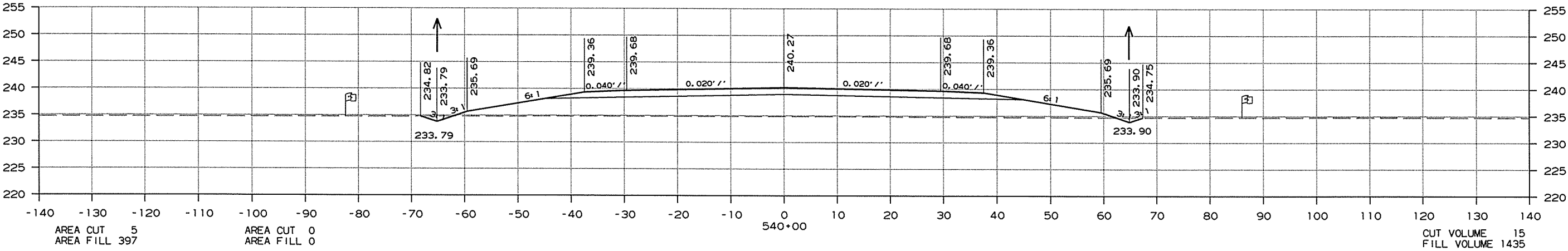
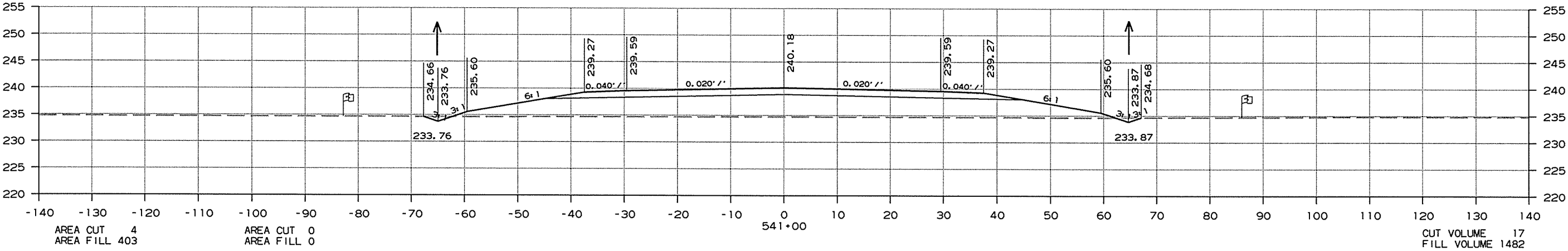
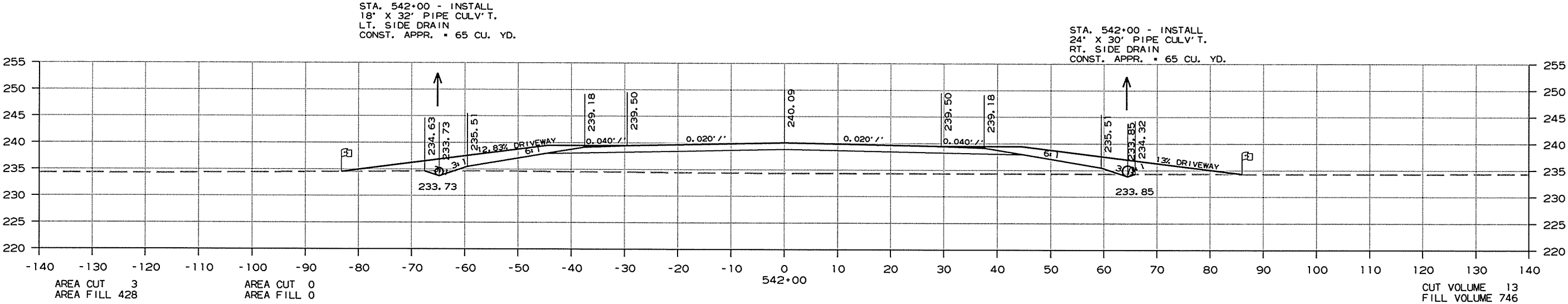
CROSS SECTIONS STA. 537+00 TO STA. 539+00

10/1/2015

CA1001.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. CA1001	207	283

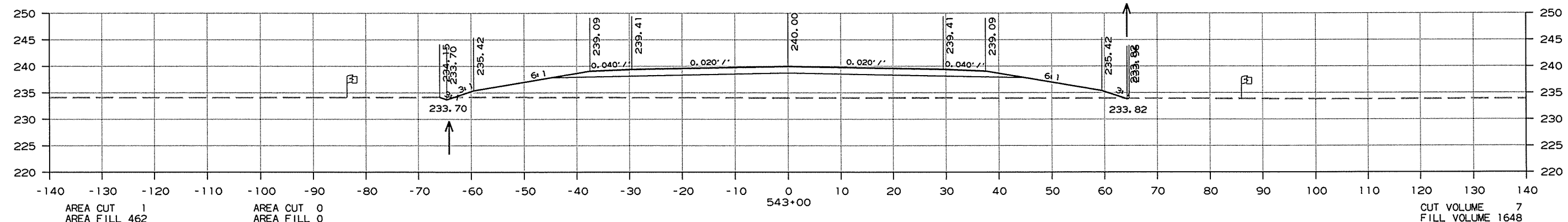
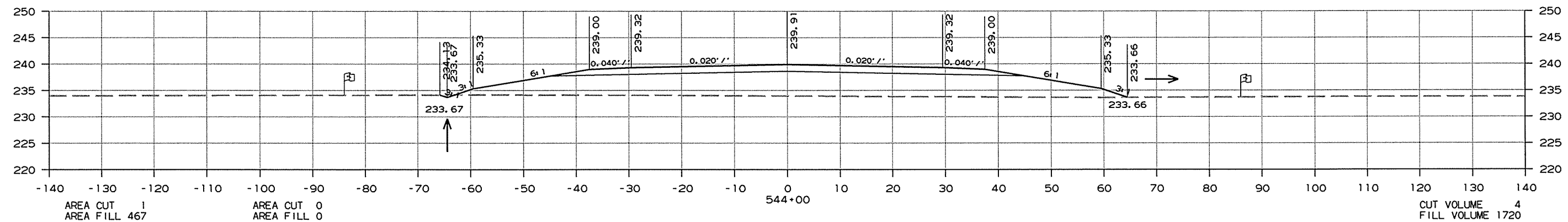
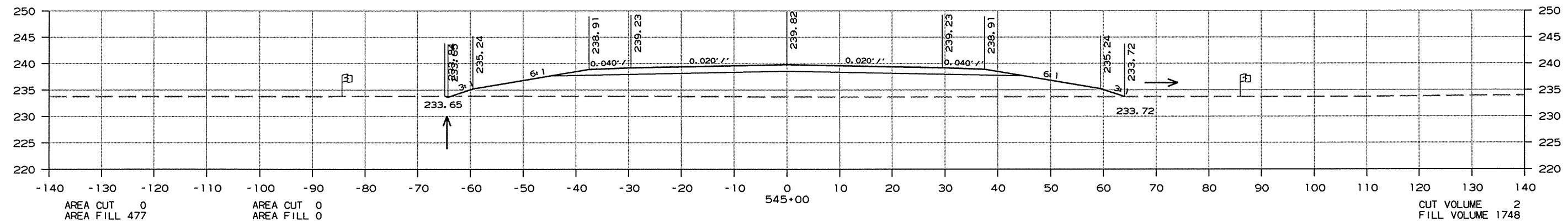
2 CROSS SECTIONS



CROSS SECTIONS STA. 540+00 TO STA. 542+00

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. CA1001			208	283

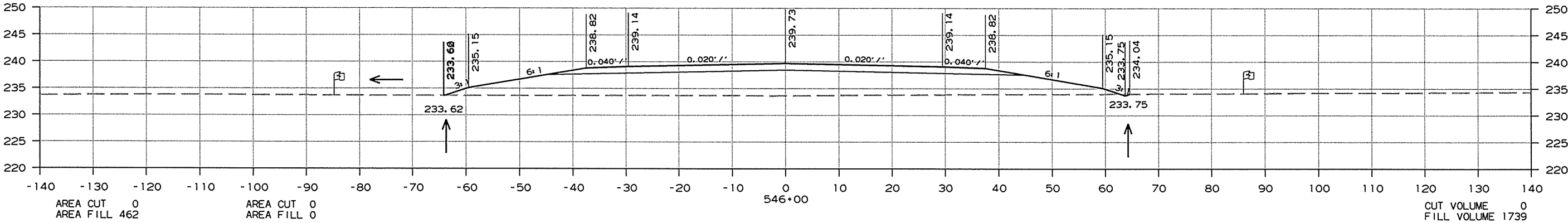
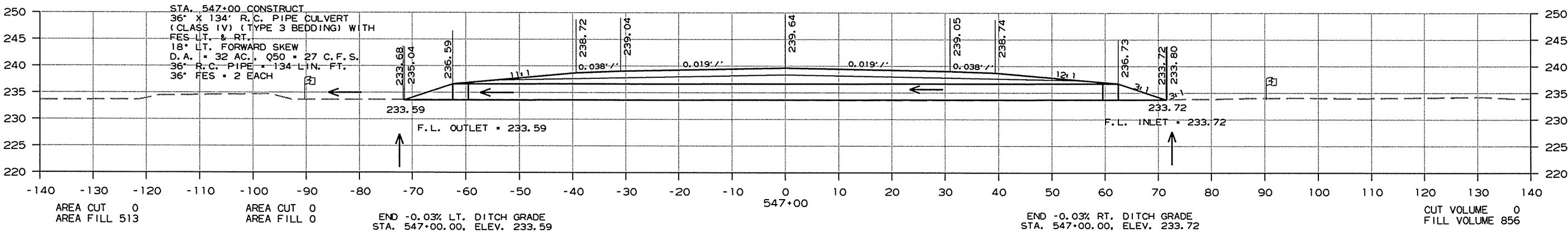
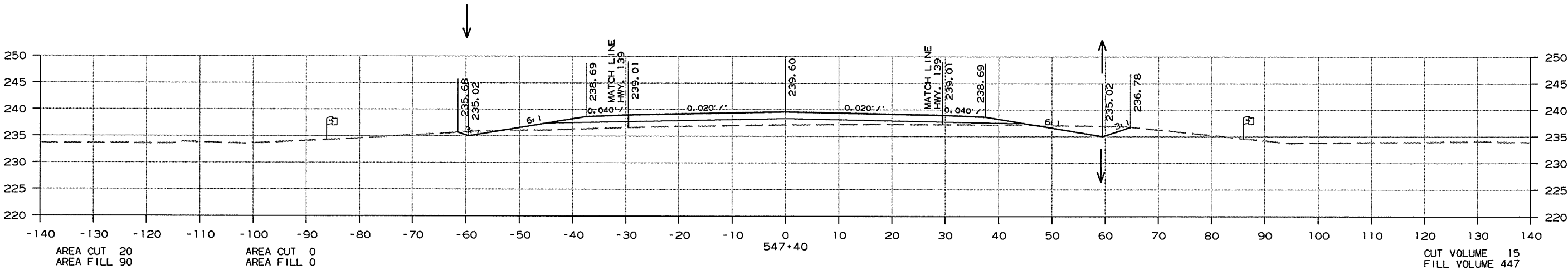
2 CROSS SECTIONS



CROSS SECTIONS STA. 543+00 TO STA. 545+00

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. CA1001	209	283

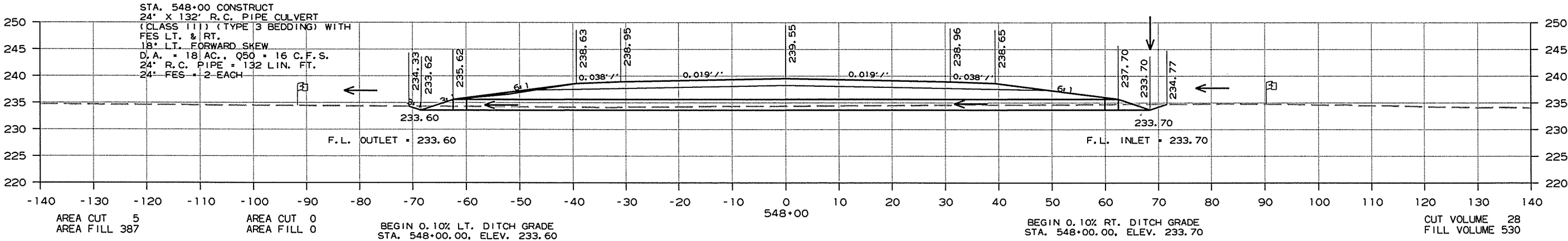
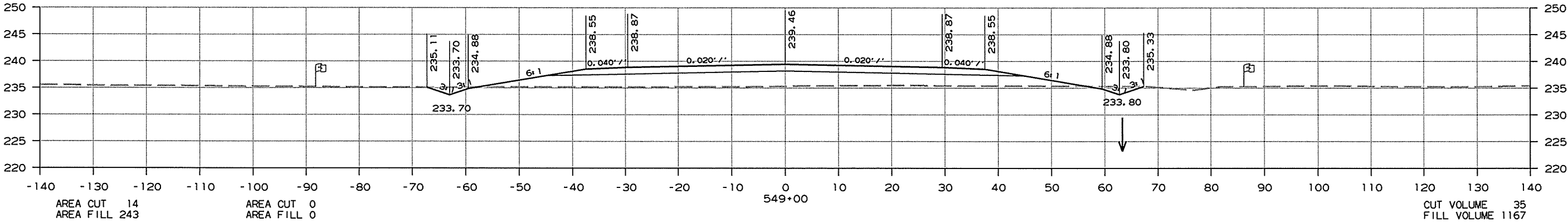
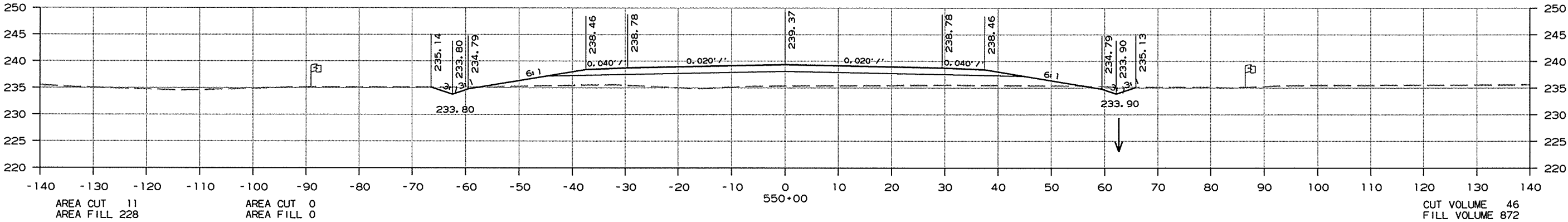
2 CROSS SECTIONS



CROSS SECTIONS STA. 546+00 TO STA. 547+40

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. CA1001	210	283

2 CROSS SECTIONS



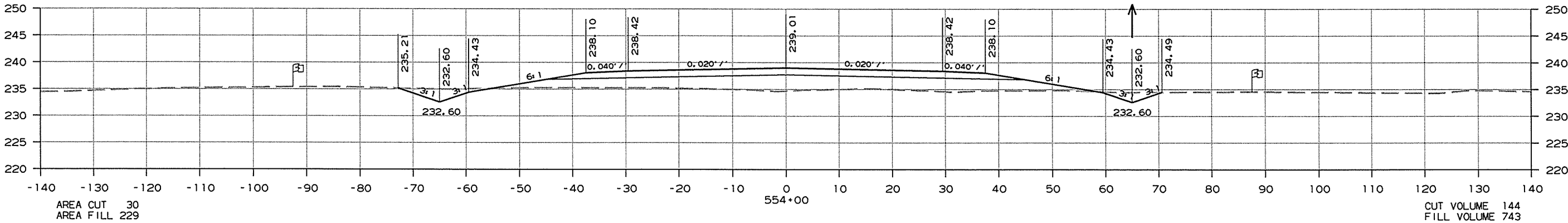
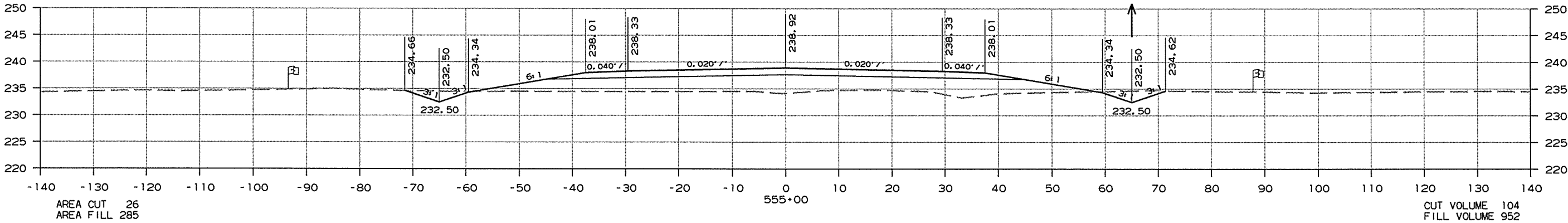
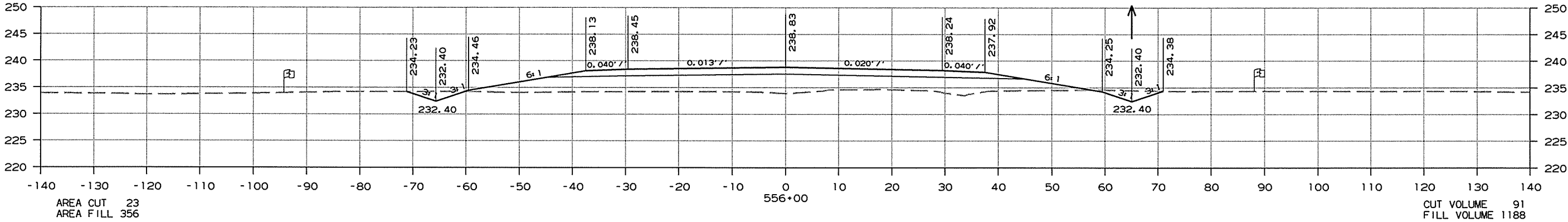
CROSS SECTIONS STA. 548+00 TO STA. 550+00

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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. CA1001			212	283

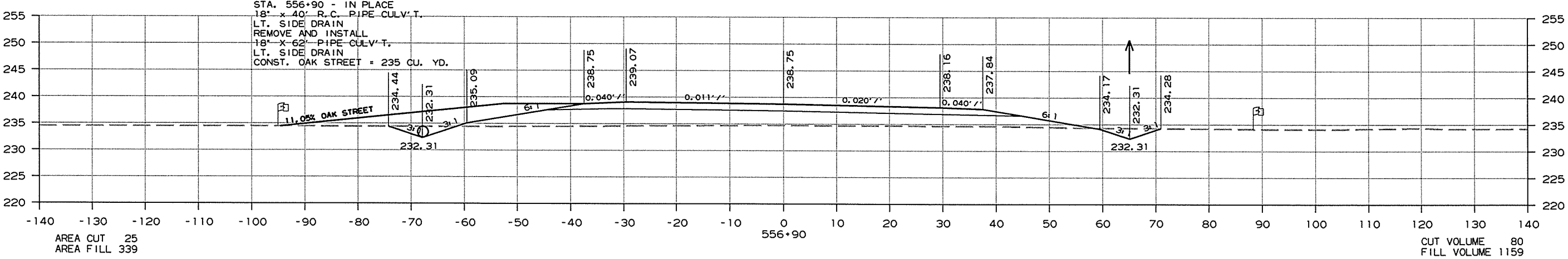
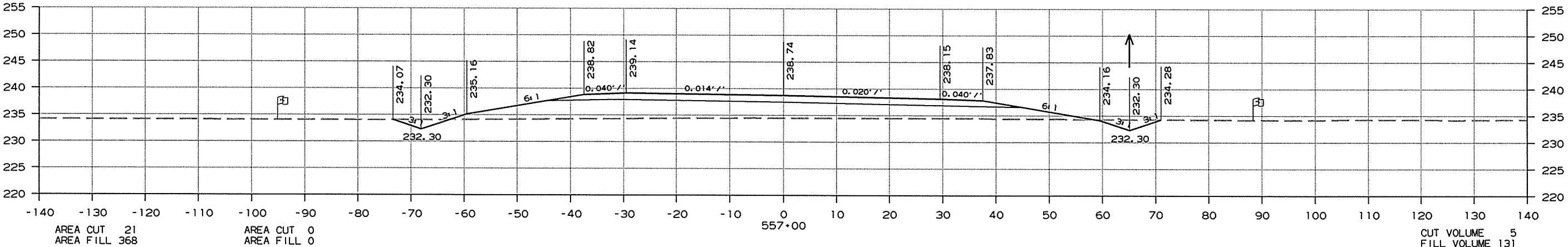
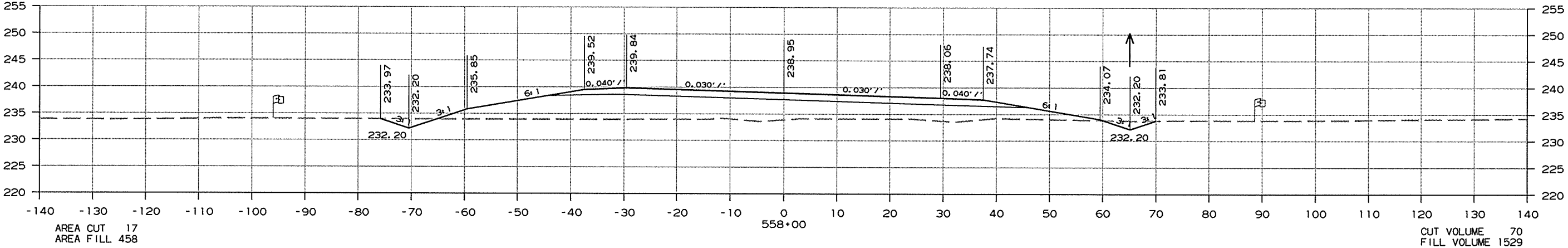
2 CROSS SECTIONS



CROSS SECTIONS STA. 554+00 TO STA. 556+00

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.	CA1001		213	283

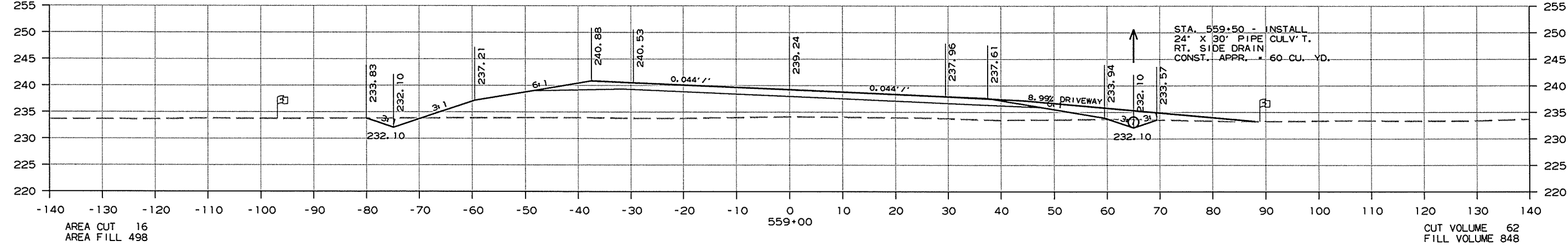
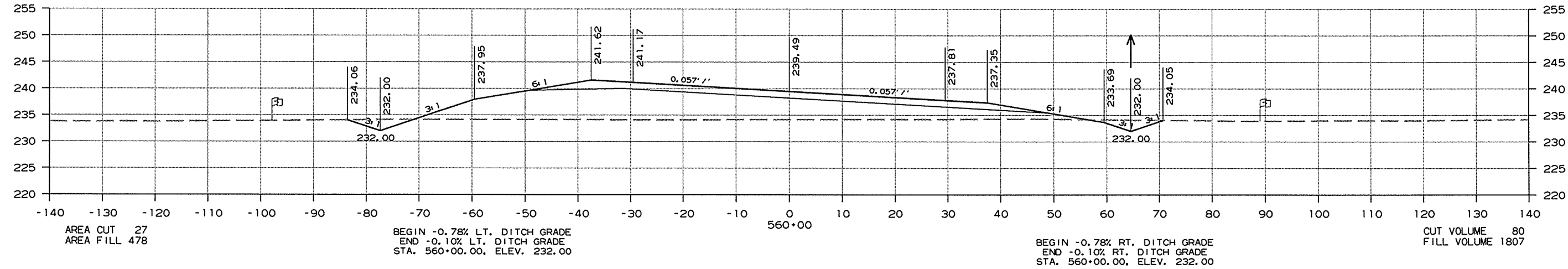
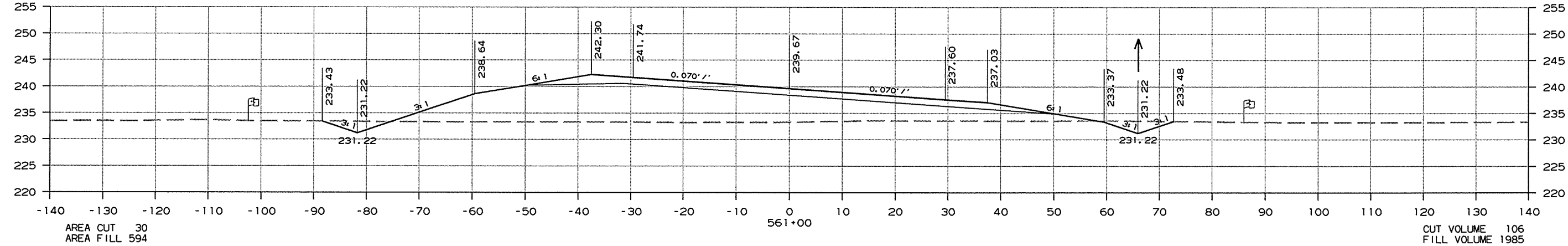
2 CROSS SECTIONS



CROSS SECTIONS STA. 556+90 TO STA. 558+00

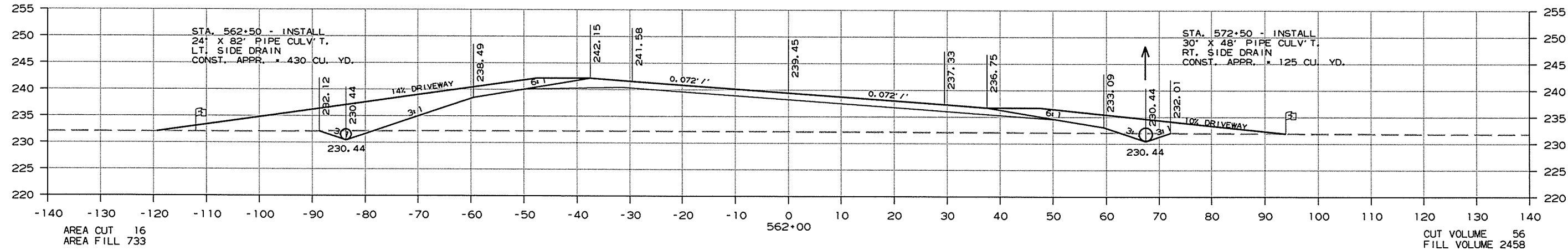
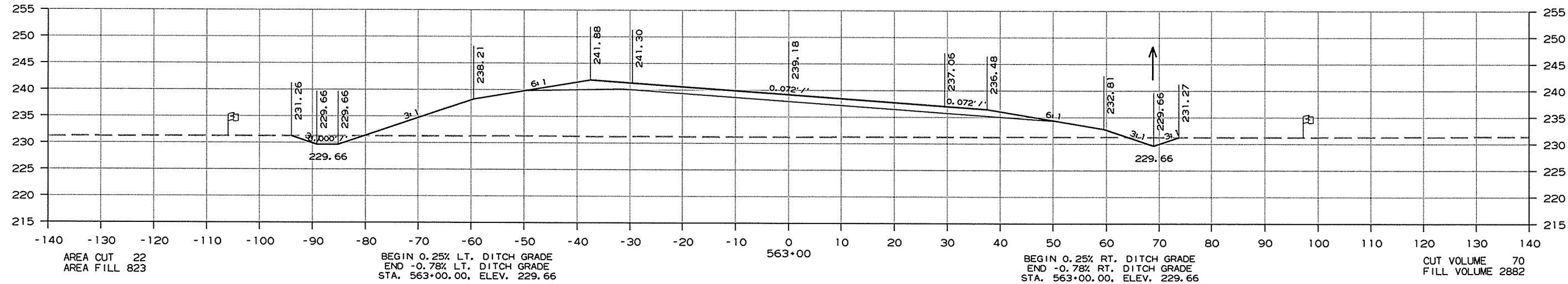
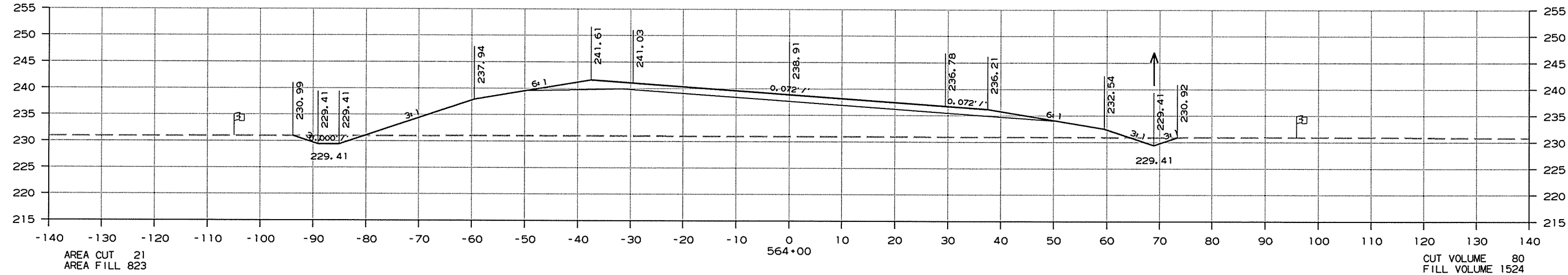
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO. CA1001			214	283

2 CROSS SECTIONS



CROSS SECTIONS STA. 559+00 TO STA. 561+00

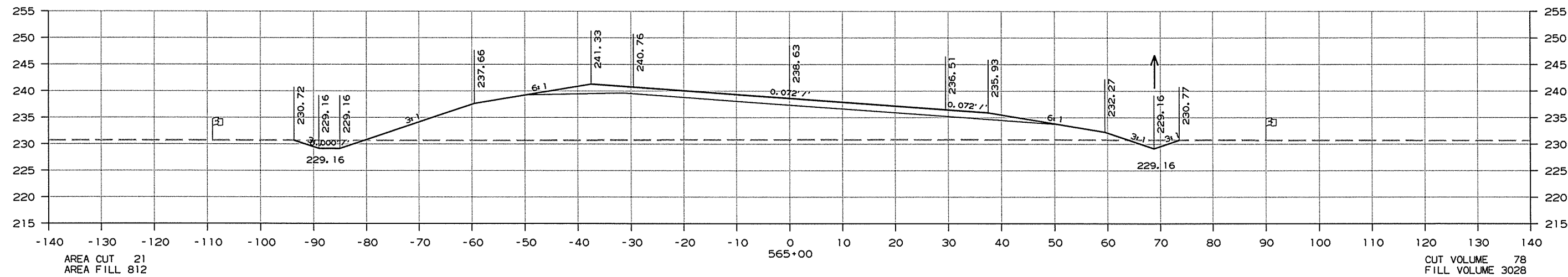
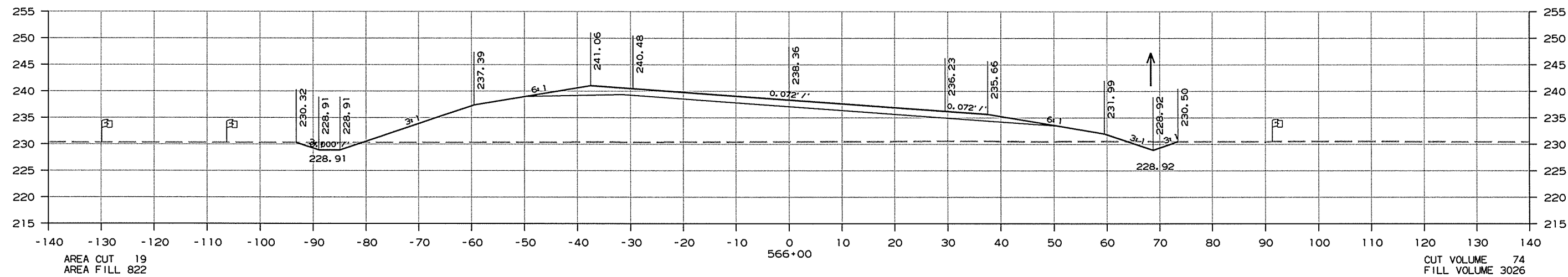
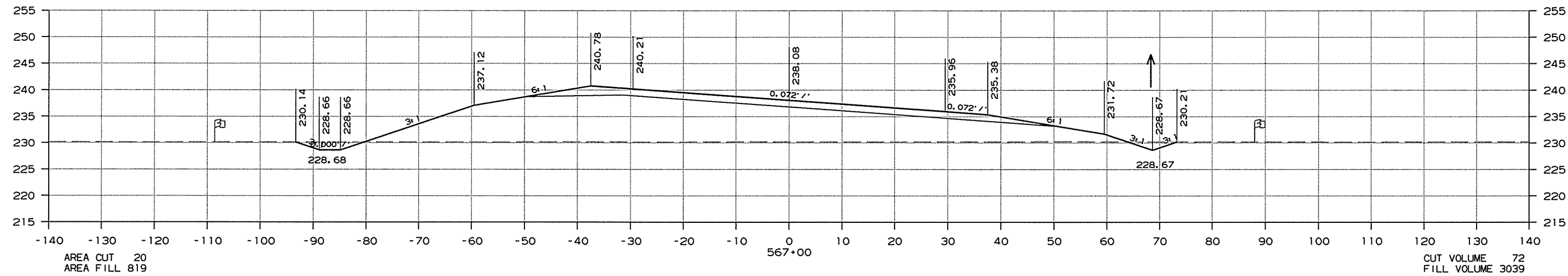
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. CA1001	215	283
2 CROSS SECTIONS								



CROSS SECTIONS STA. 562+00 TO STA. 564+00

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.		CA1001	216	283

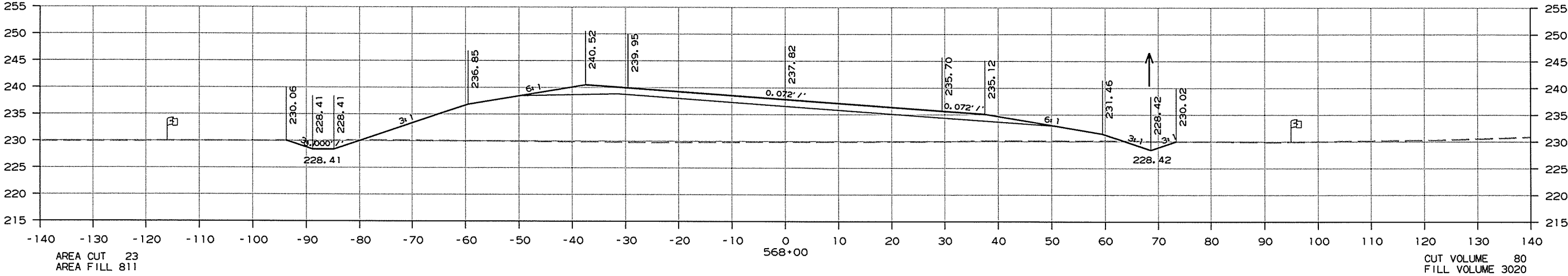
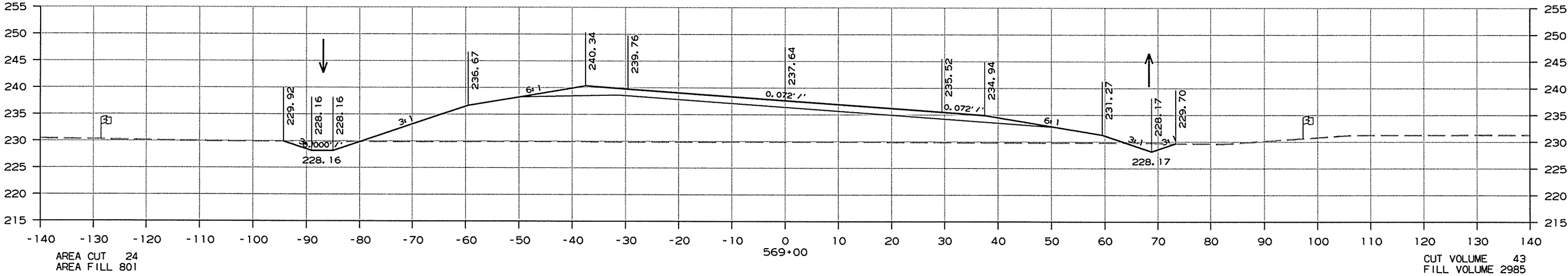
2 CROSS SECTIONS



CROSS SECTIONS STA. 565+00 TO STA. 567+00

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.		CA1001	217	283

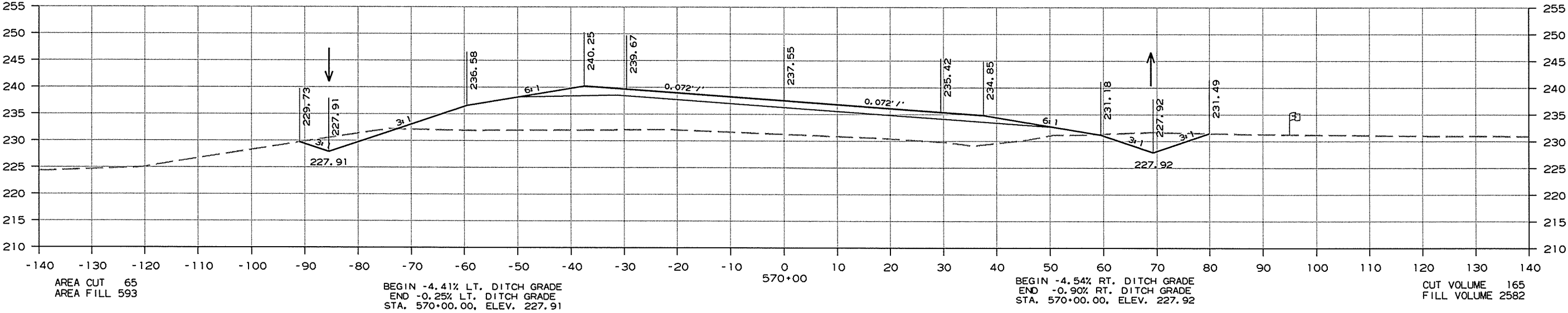
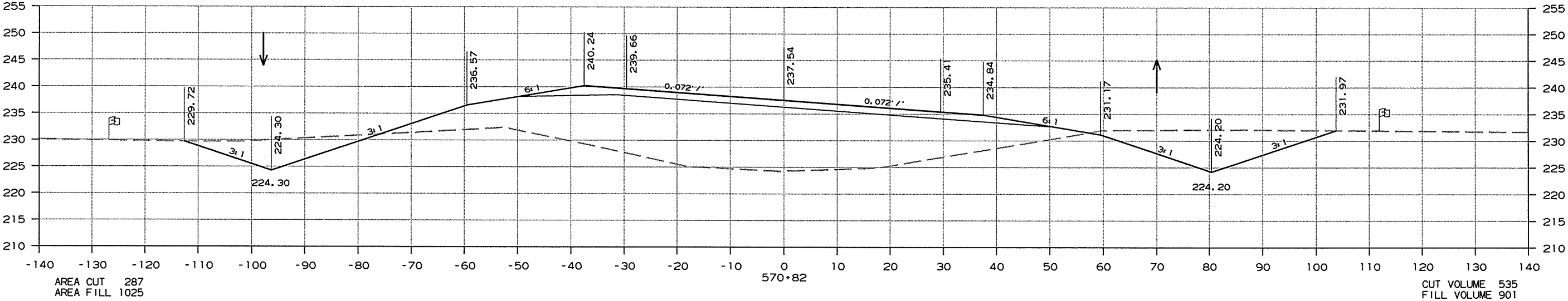
2 CROSS SECTIONS



CROSS SECTIONS STA. 568+00 TO STA. 569+00

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.		CA1001	218	283

2 CROSS SECTIONS

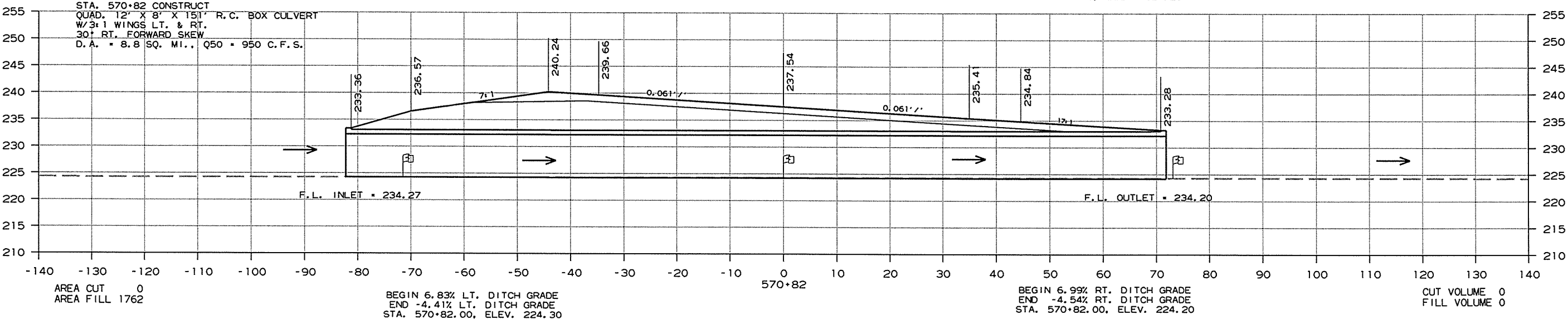
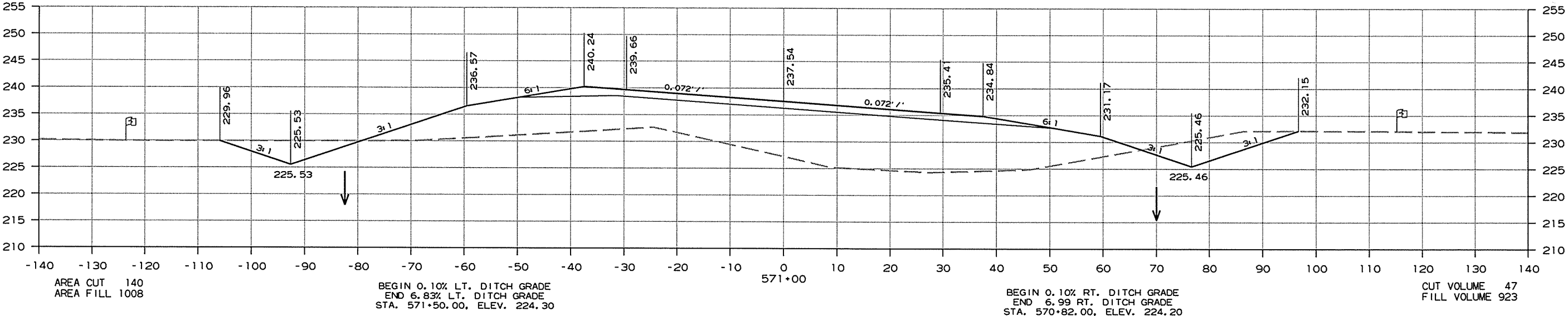


CROSS SECTIONS STA. 570+00 TO STA. 570+82

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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.		CA1001	219	283
② CROSS SECTIONS								



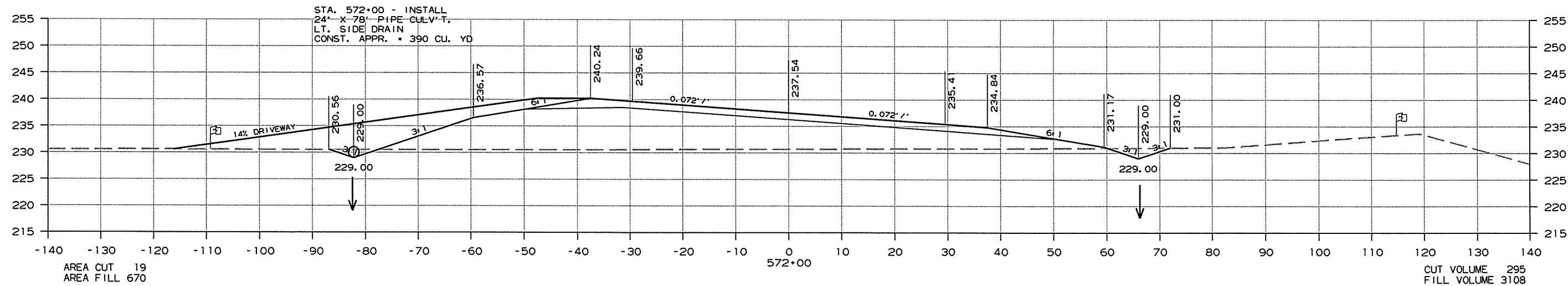
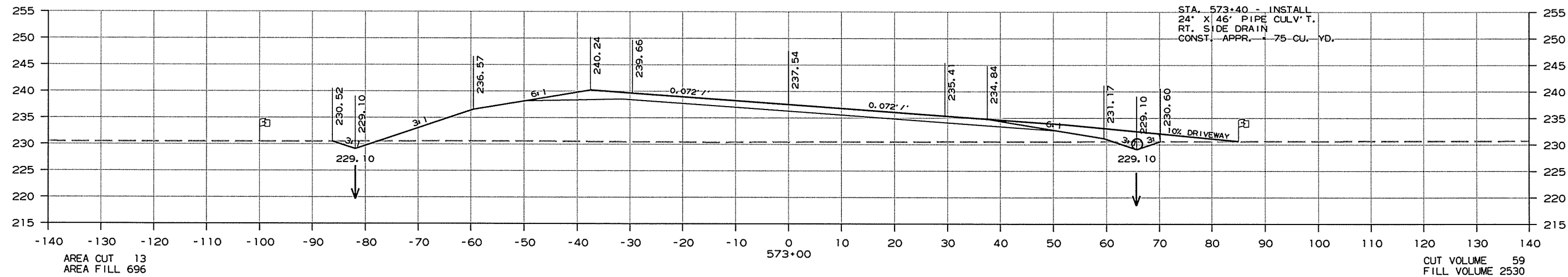
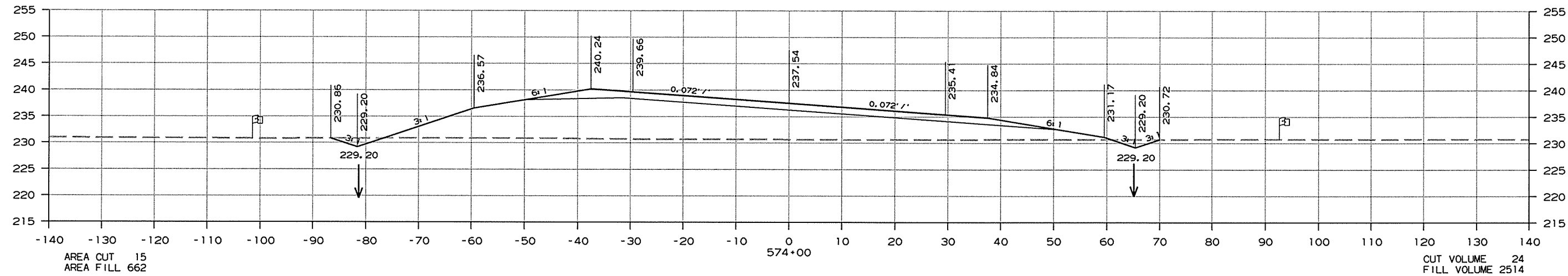
CROSS SECTIONS STA. 570+82 TO STA. 571+00

10/1/2015

CA1001.DGN

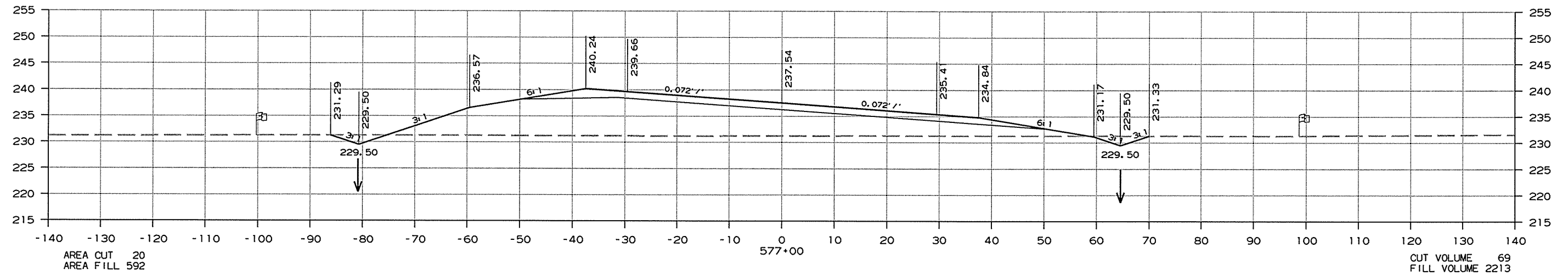
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO. CA1001		220	283	

2 CROSS SECTIONS



CROSS SECTIONS STA. 572+00 TO STA. 574+00

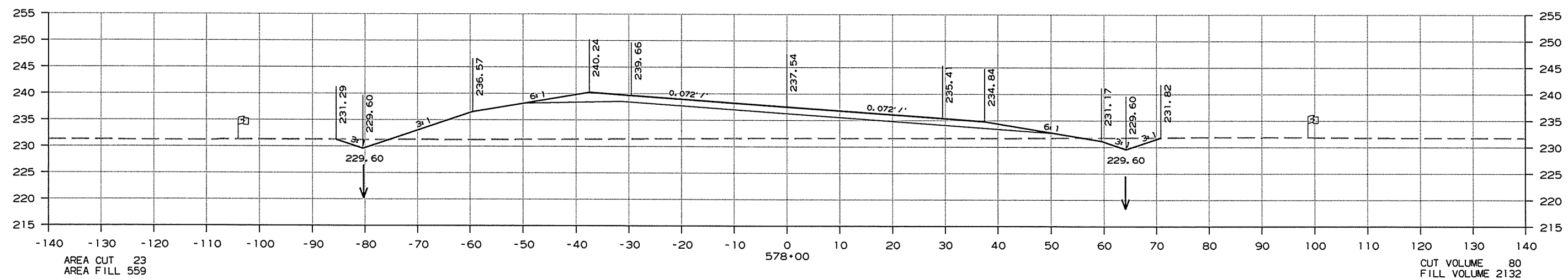
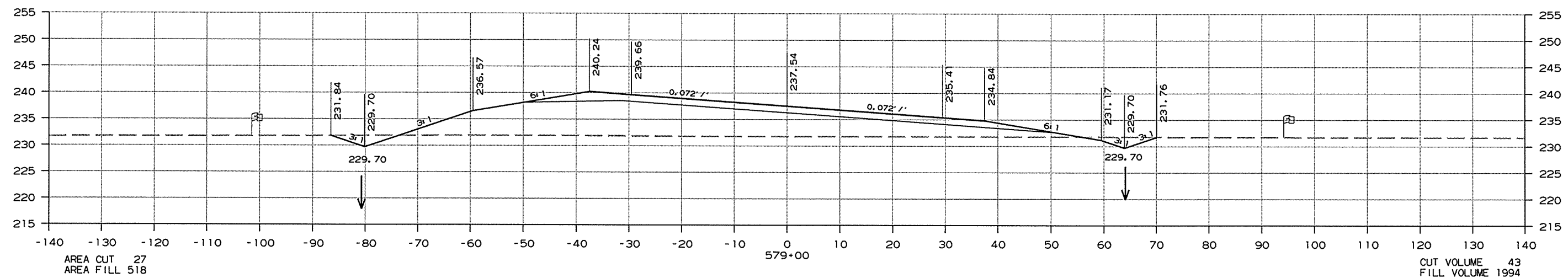
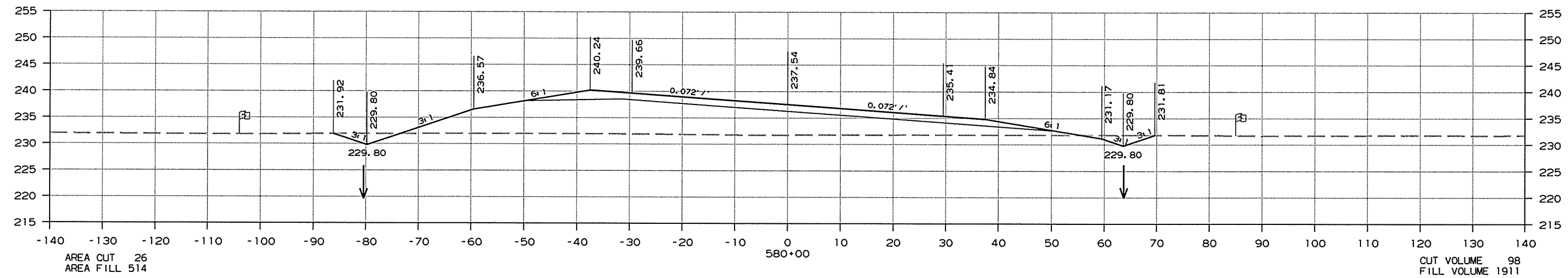
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA1001	221	283



CROSS SECTIONS STA. 575+00 TO STA. 577+00

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.	CA1001		222	283

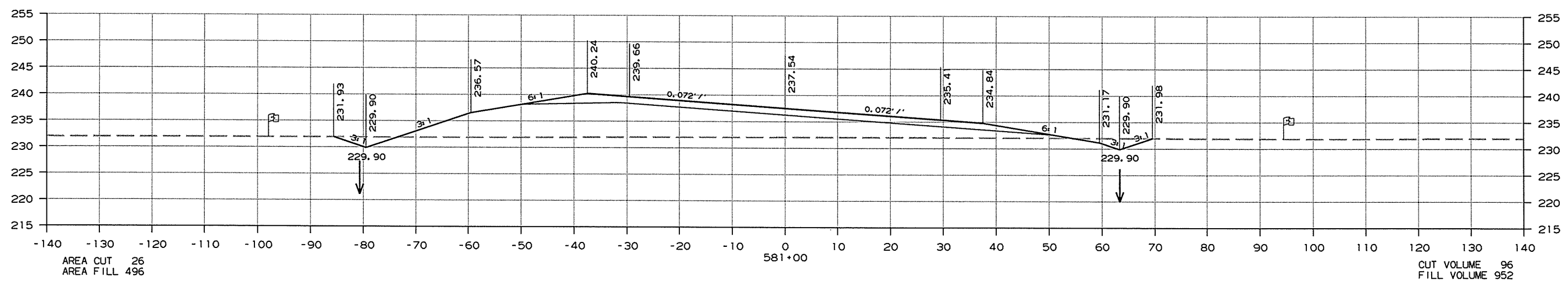
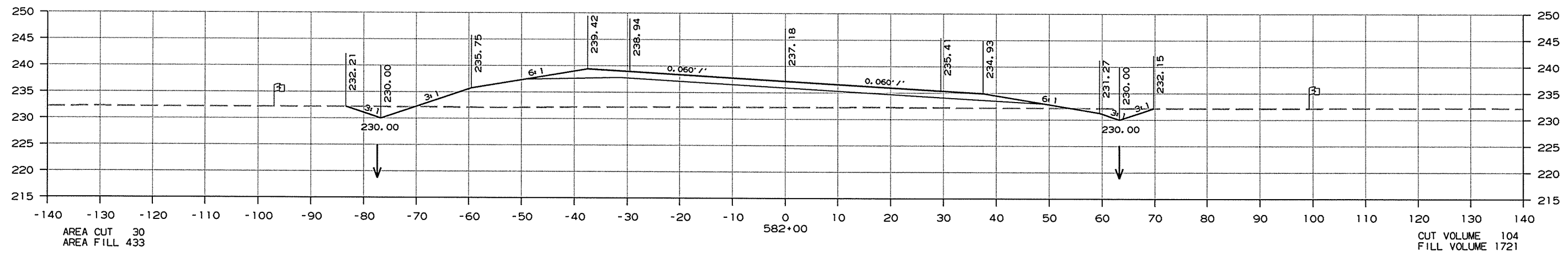
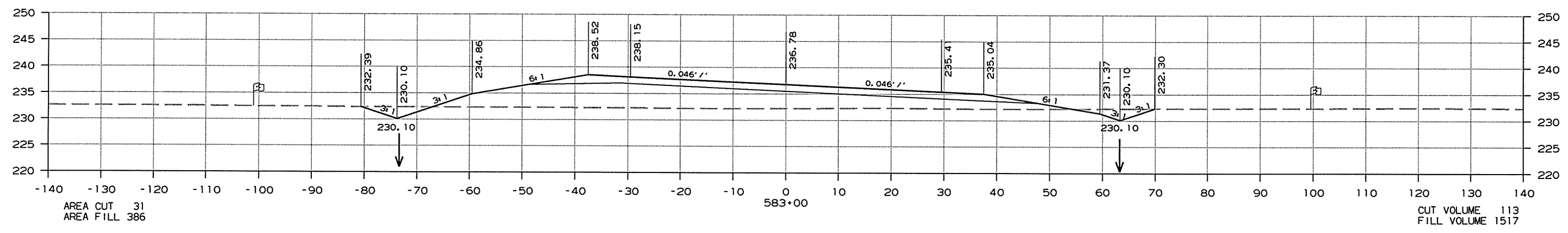
2 CROSS SECTIONS



CROSS SECTIONS STA. 578+00 TO STA. 580+00

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.	CA1001	223	283

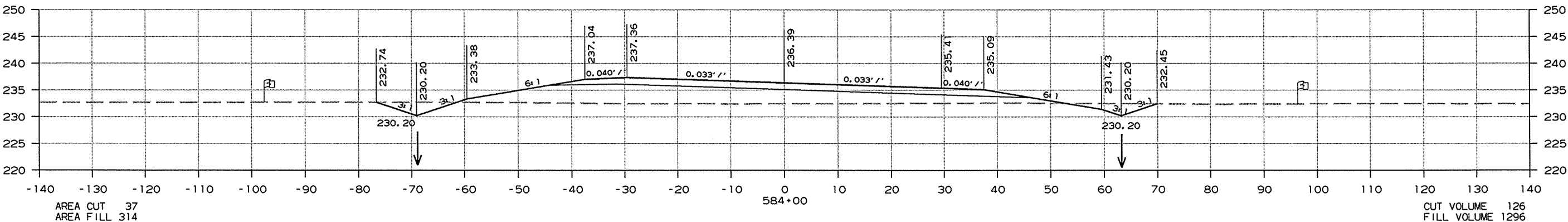
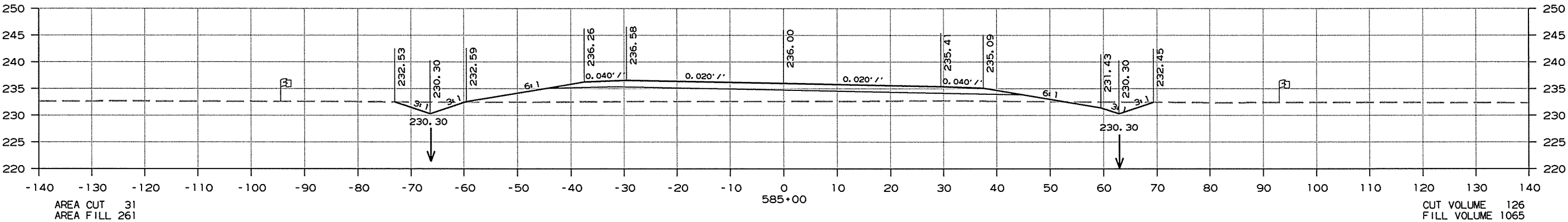
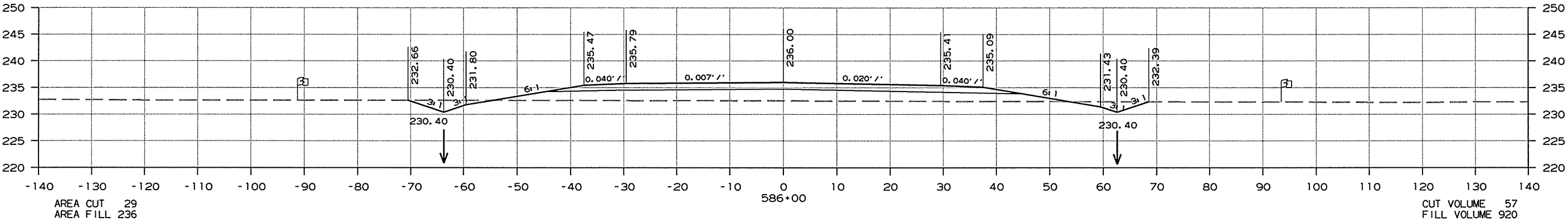
2 CROSS SECTIONS



CROSS SECTIONS STA. 581+00 TO STA. 583+00

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. CA1001			224	283

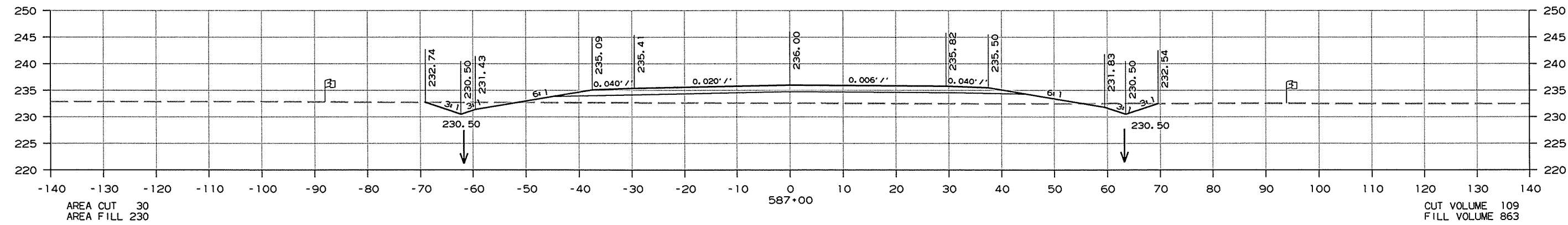
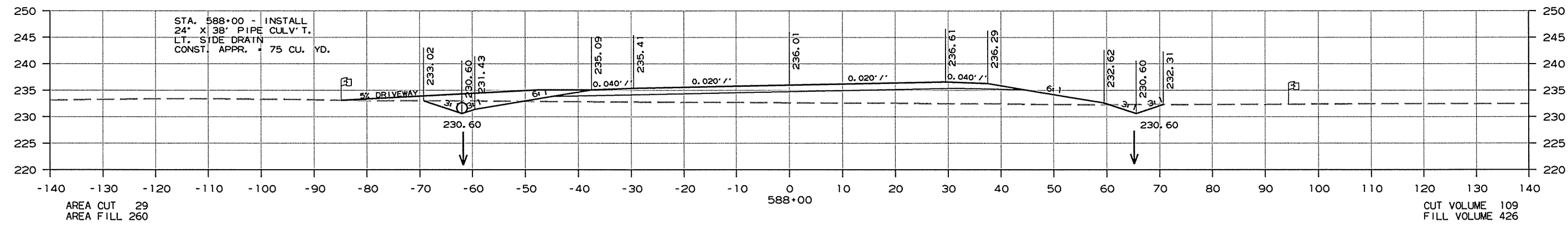
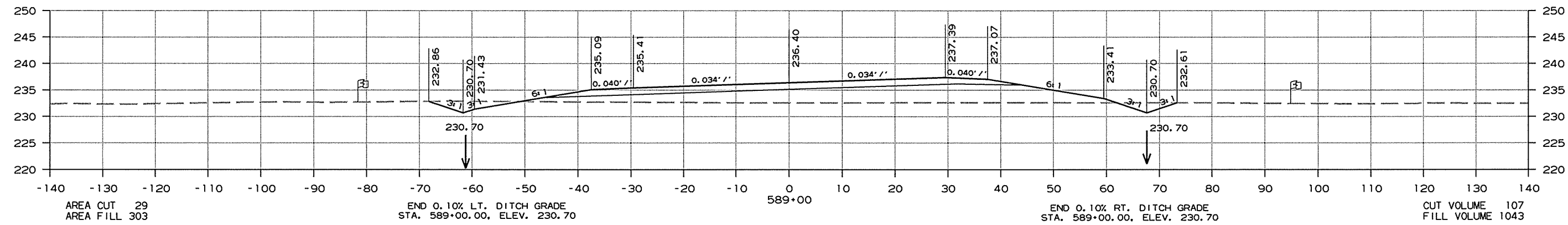
2 CROSS SECTIONS



CROSS SECTIONS STA. 584+00 TO STA. 586+00

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. CA1001	225	283

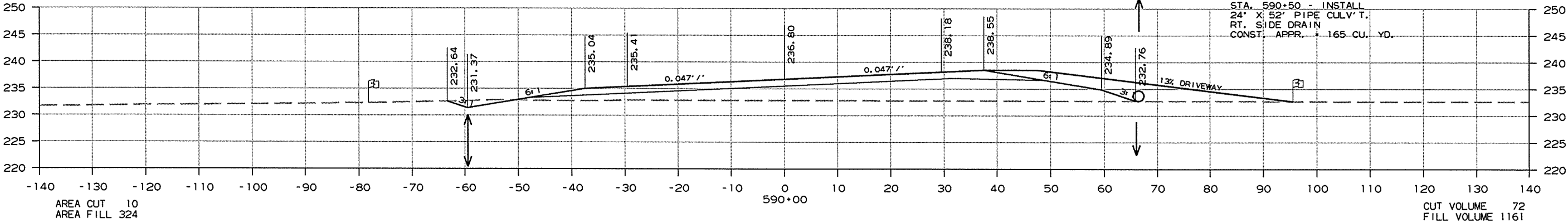
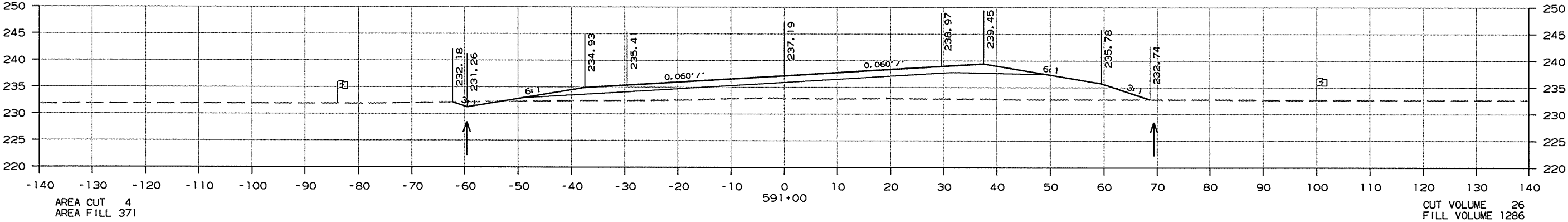
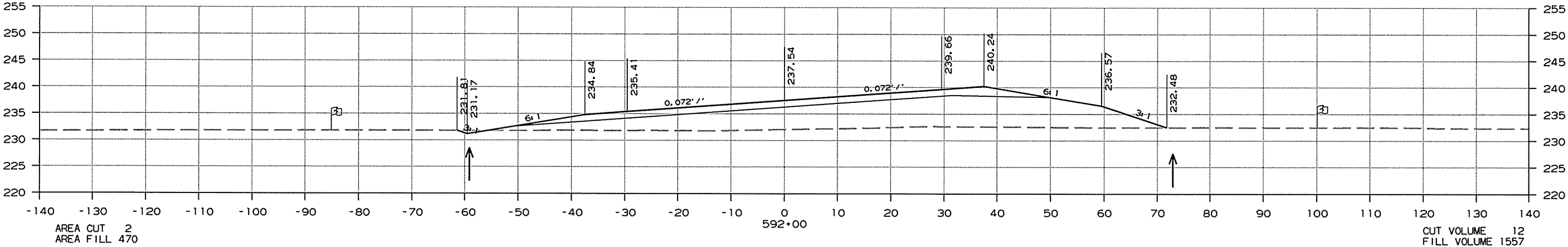
2 CROSS SECTIONS



CROSS SECTIONS STA. 587+00 TO STA. 589+00

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. CA1001	226	283

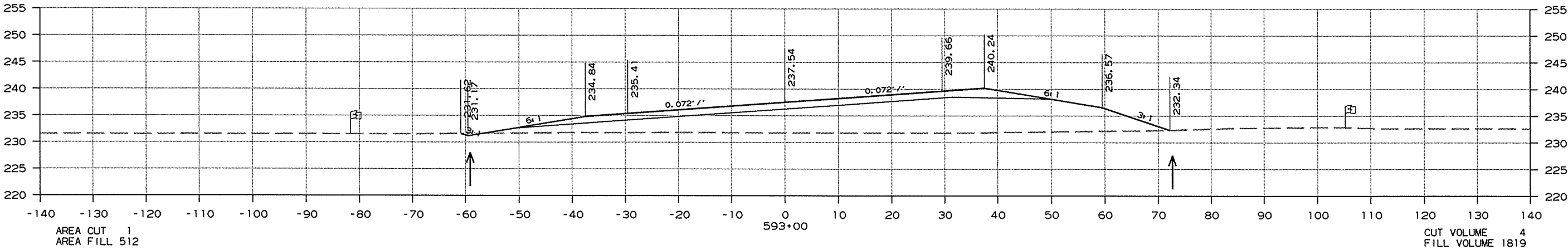
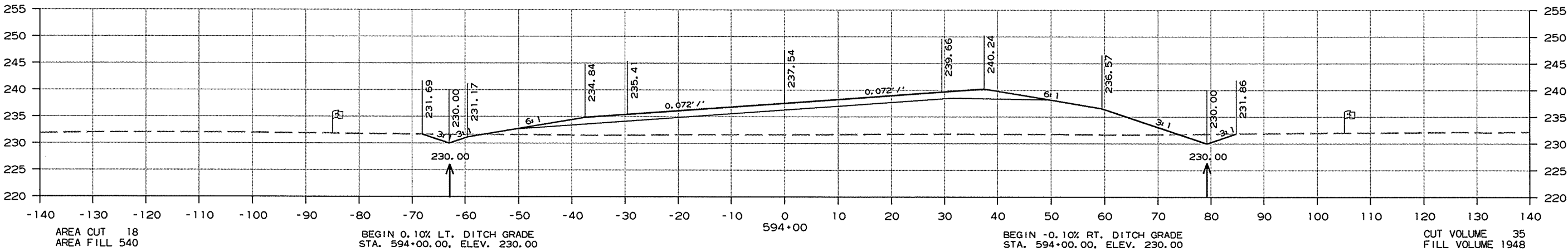
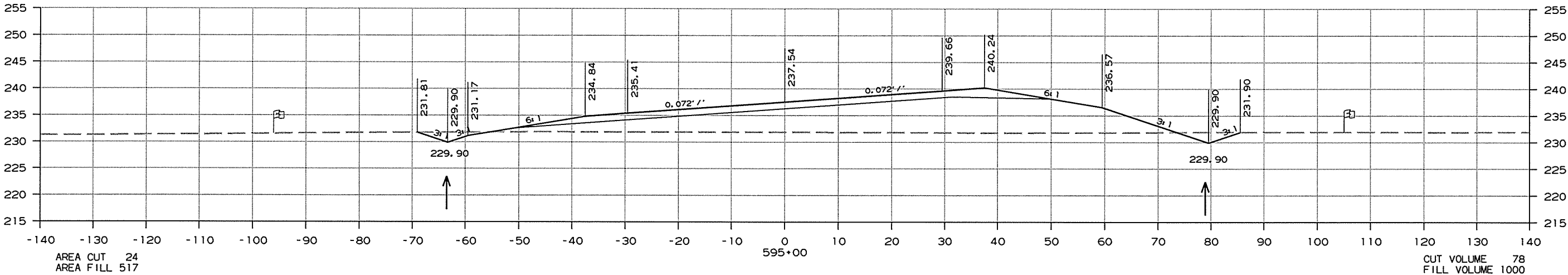
2 CROSS SECTIONS



CROSS SECTIONS STA. 590+00 TO STA. 592+00

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.		CA1001	227	283

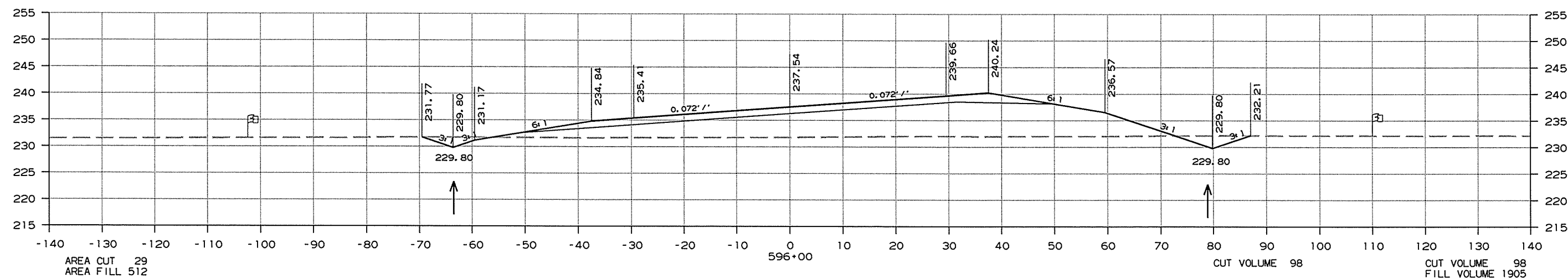
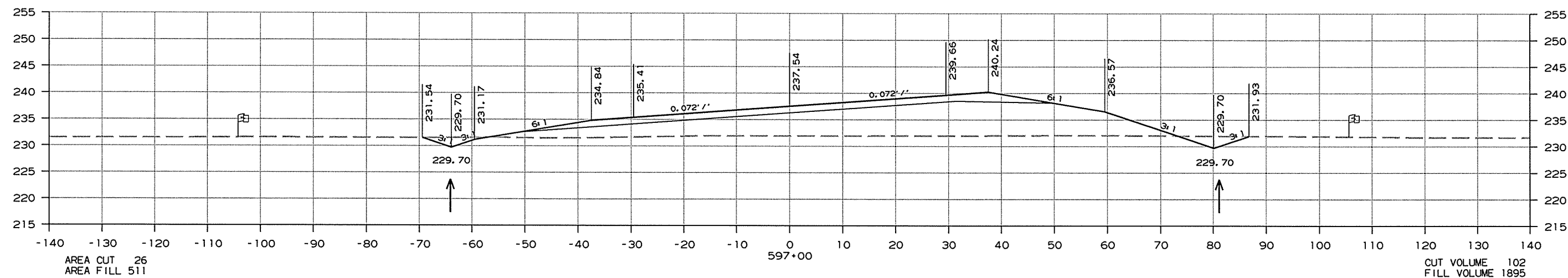
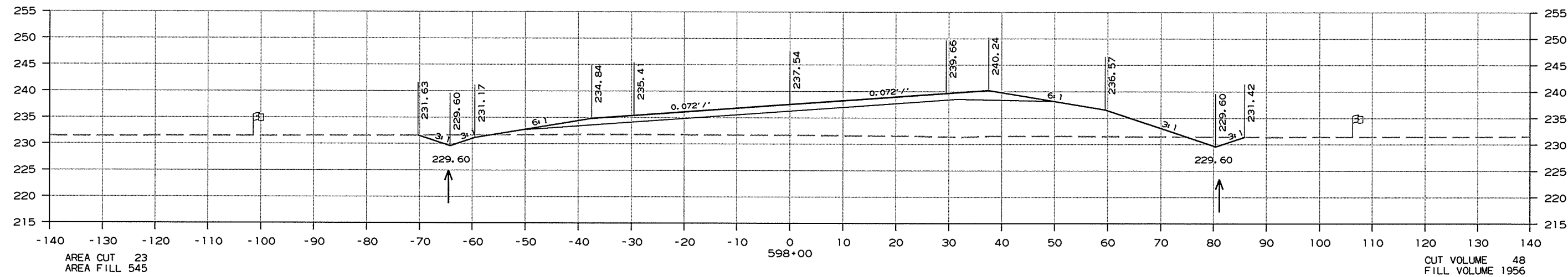
2 CROSS SECTIONS



CROSS SECTIONS STA. 593+00 TO STA. 595+00

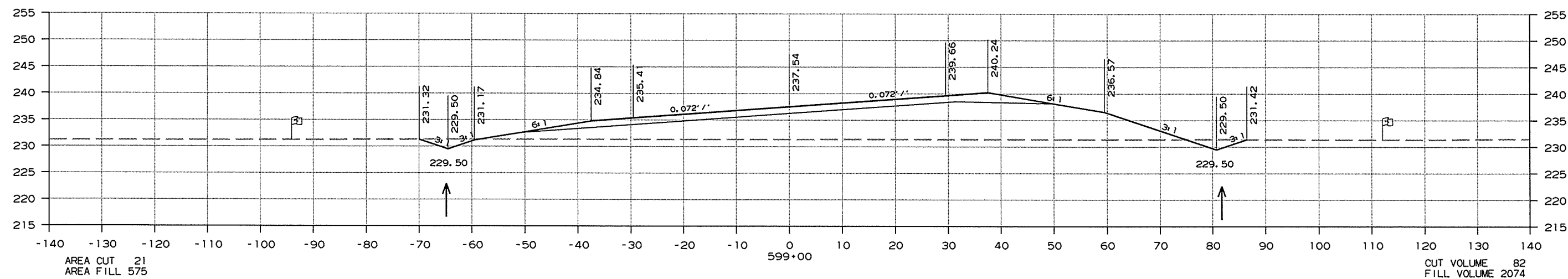
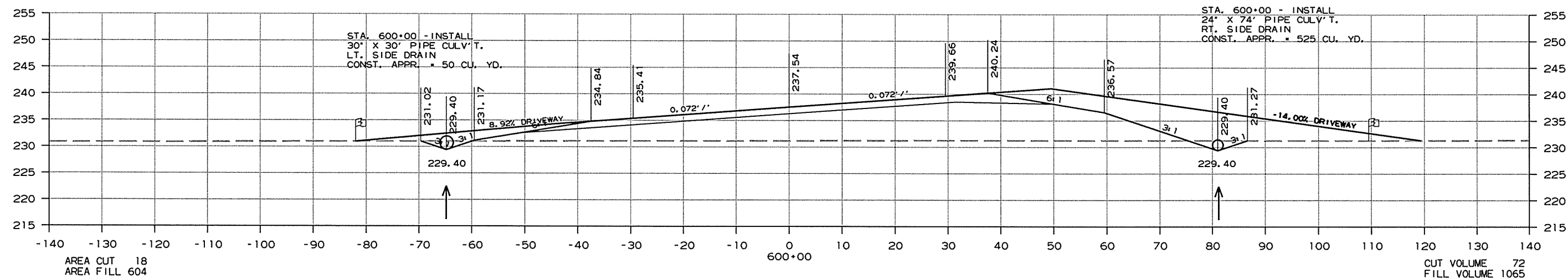
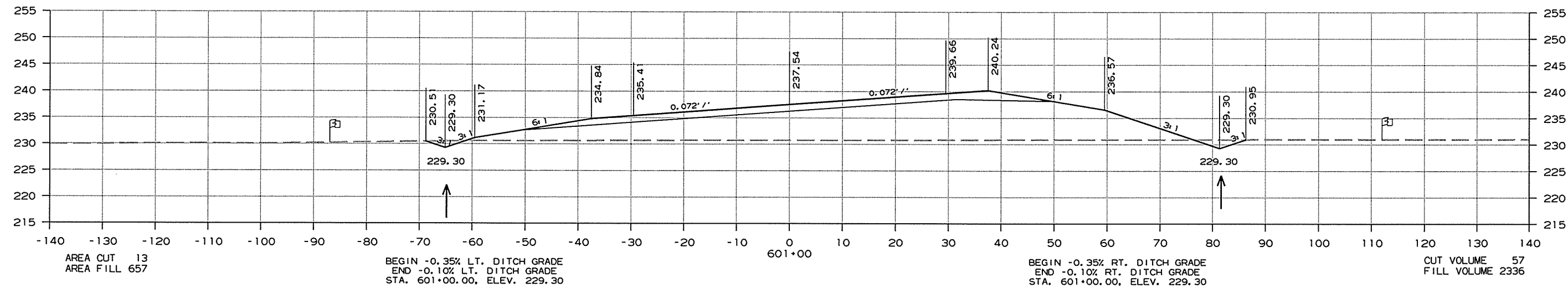
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
					JOB NO.	CA1001	228	283

2 CROSS SECTIONS



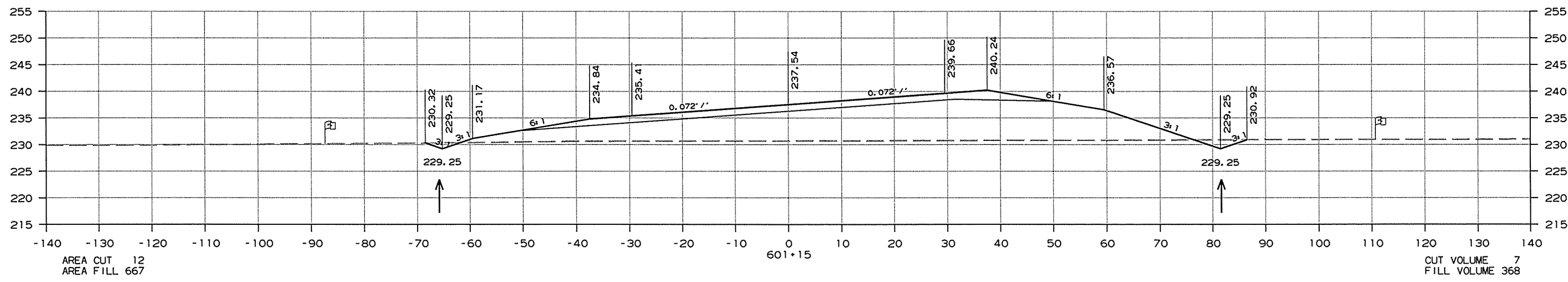
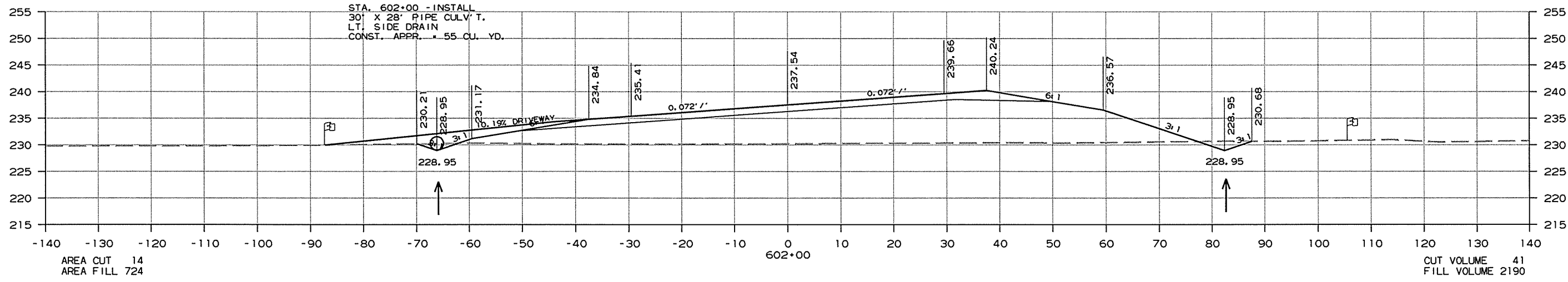
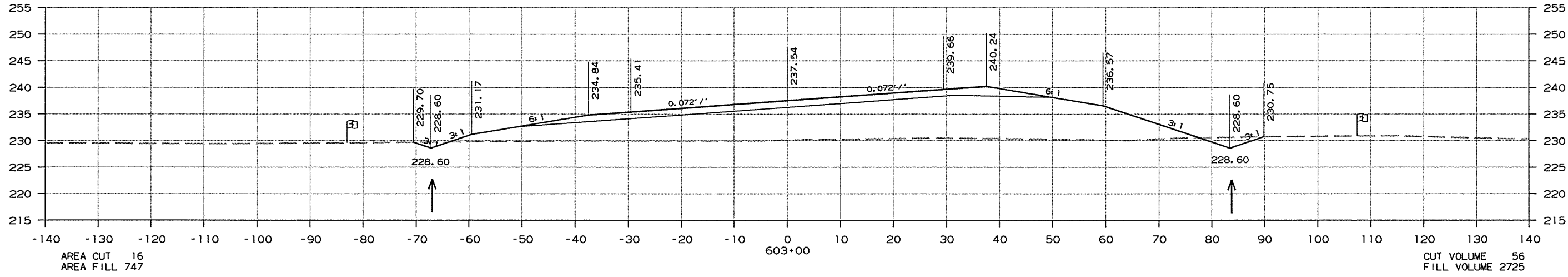
CROSS SECTIONS STA. 596+00 TO STA. 598+00

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.	CA1001	229	283	
2 CROSS SECTIONS								



CROSS SECTIONS STA. 599+00 TO STA. 601+00

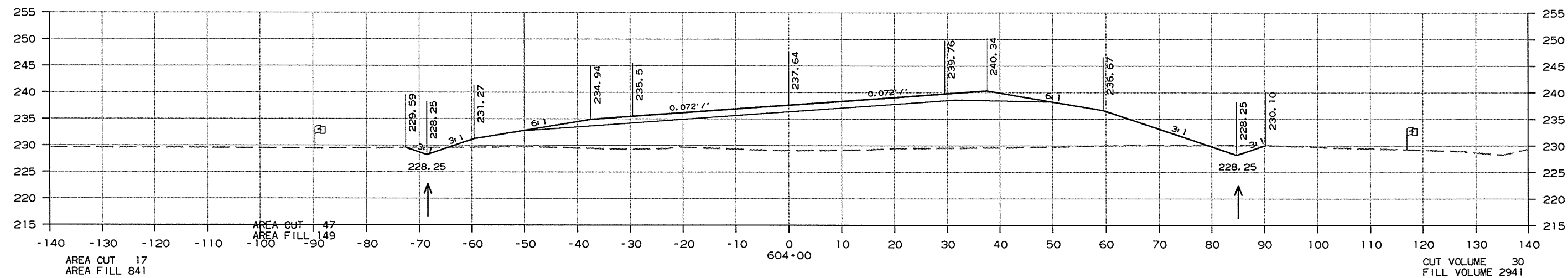
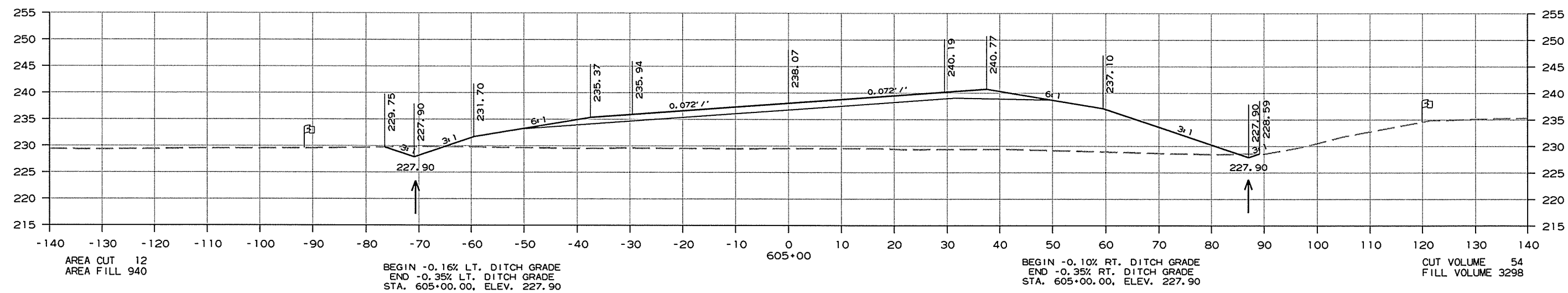
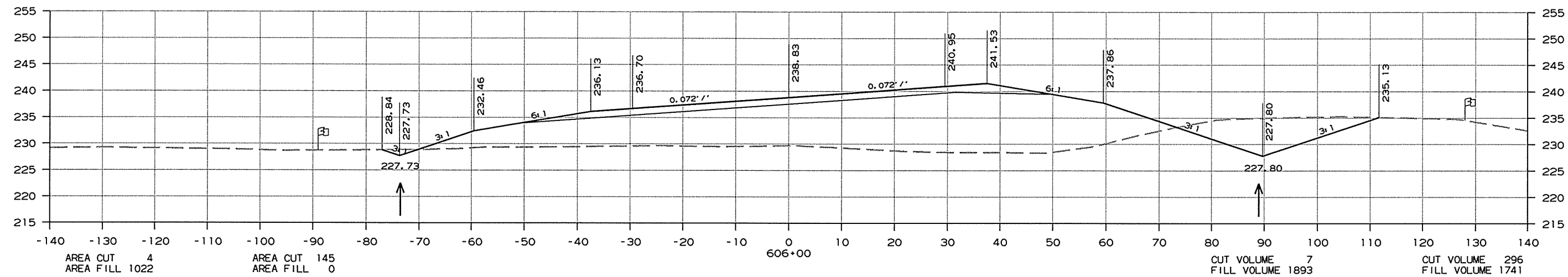
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	CA1001		230	283
② CROSS SECTIONS								



CROSS SECTIONS STA. 601+15 TO STA. 603+00

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. CA1001		231	283	

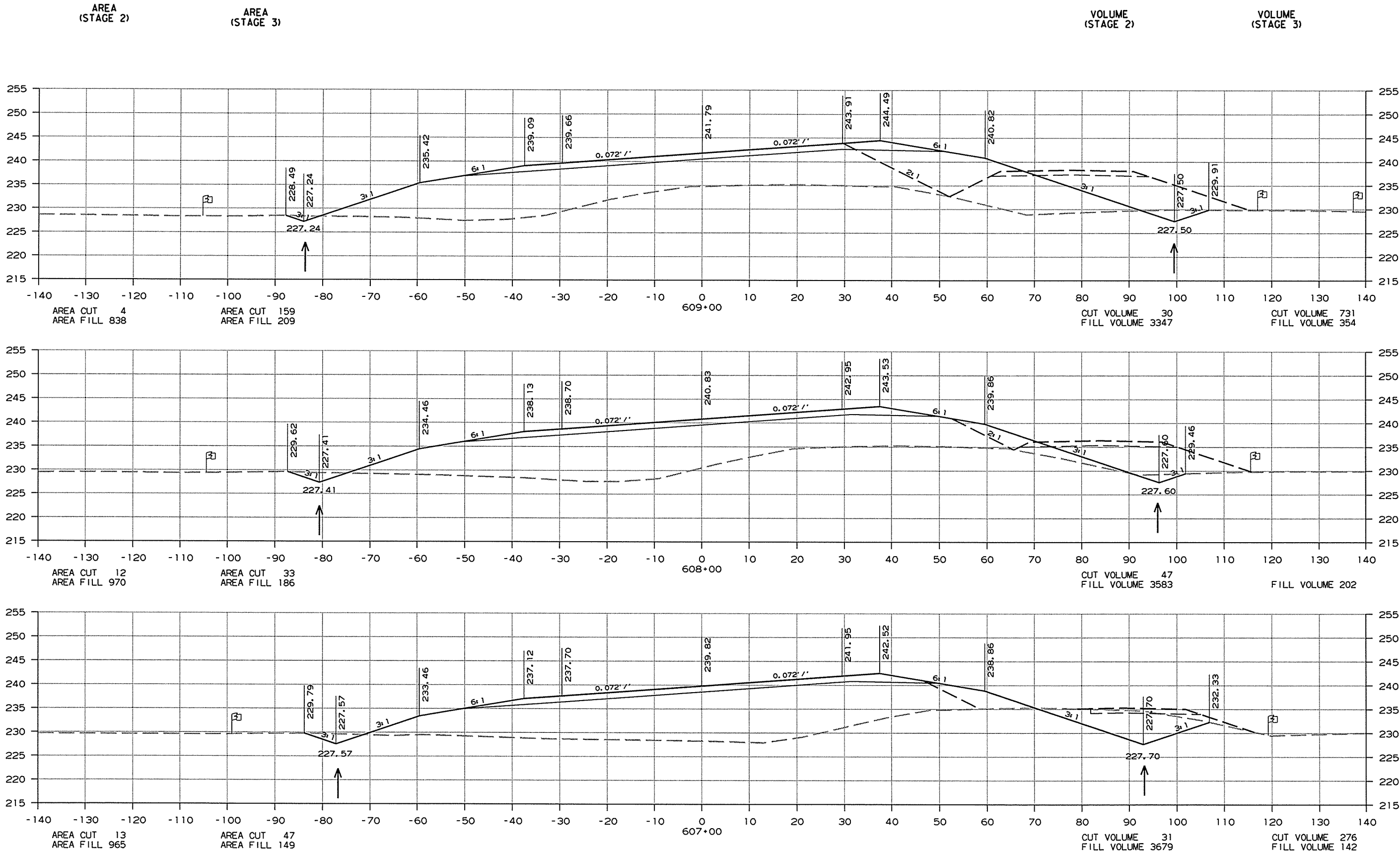
2 CROSS SECTIONS



CROSS SECTIONS STA. 604+00 TO STA. 606+00

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.	CA1001	232	283

2 CROSS SECTIONS



CROSS SECTIONS STA. 607+00 TO STA. 609+00

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.		CA1001	233	283

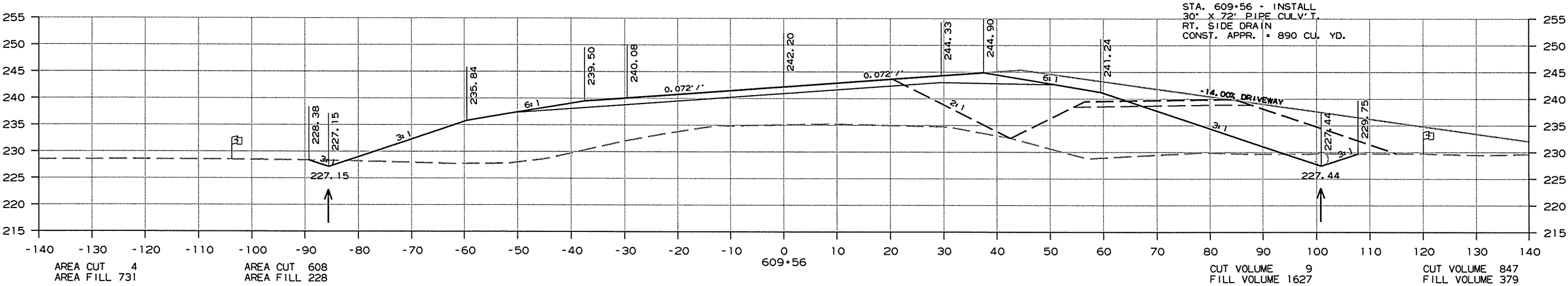
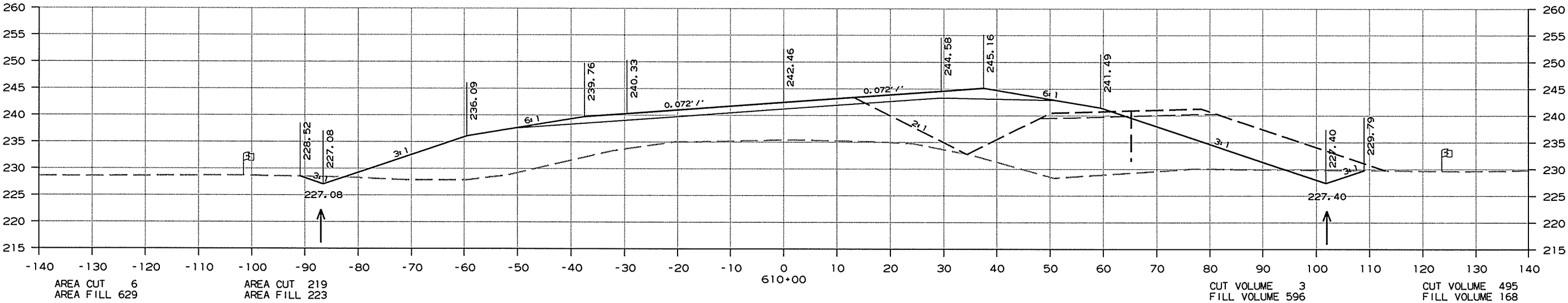
2 CROSS SECTIONS

AREA
(STAGE 2)

AREA
(STAGE 3)

VOLUME
(STAGE 2)

VOLUME
(STAGE 3)



CROSS SECTIONS STA. 609+56 TO STA. 610+00

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.	CA1001	234	283

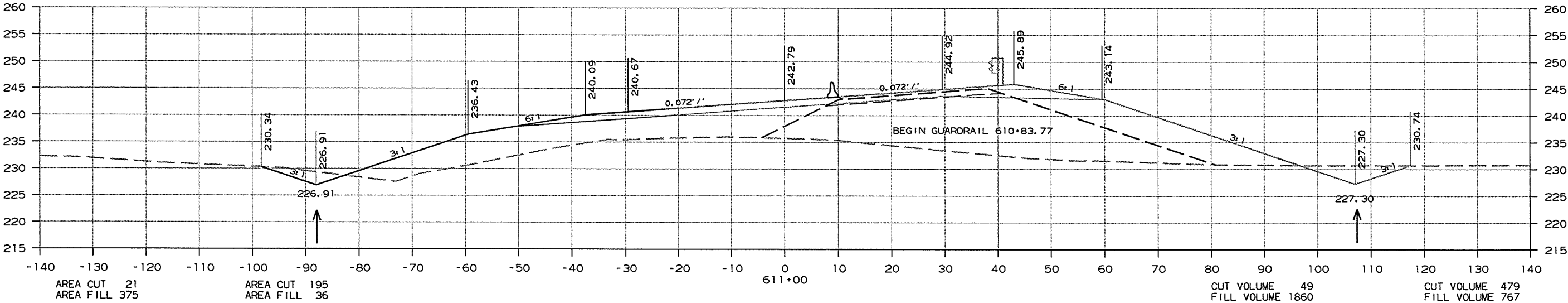
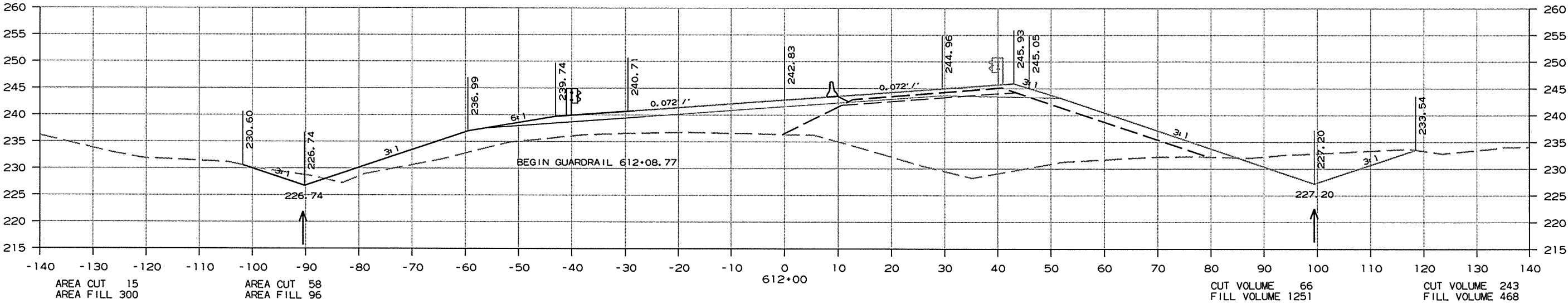
2 CROSS SECTIONS

AREA
(STAGE 2)

AREA
(STAGE 3)

VOLUME
(STAGE 2)

VOLUME
(STAGE 3)



CROSS SECTIONS STA. 611+00 TO STA. 612+00

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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.		CA1001	235	283

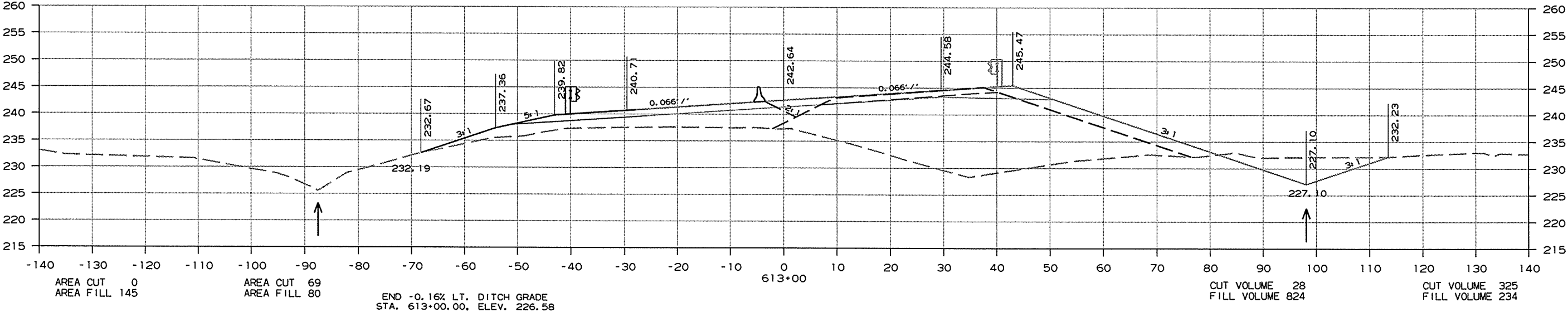
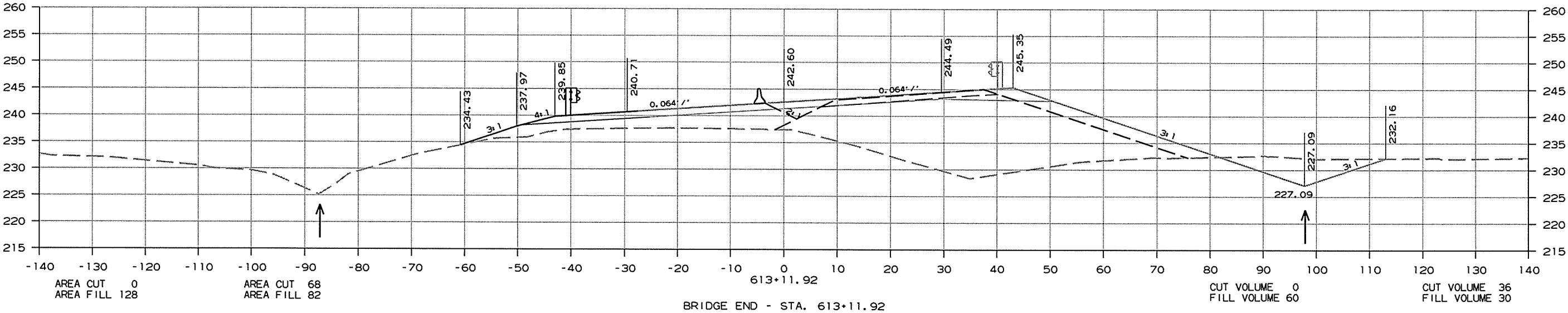
2 CROSS SECTIONS

AREA
(STAGE 2)

AREA
(STAGE 3)

VOLUME
(STAGE 2)

VOLUME
(STAGE 3)



CROSS SECTIONS STA. 613+00 TO STA. 613+12

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA1001	236	283

2 CROSS SECTIONS

AREA
(STAGE 2)

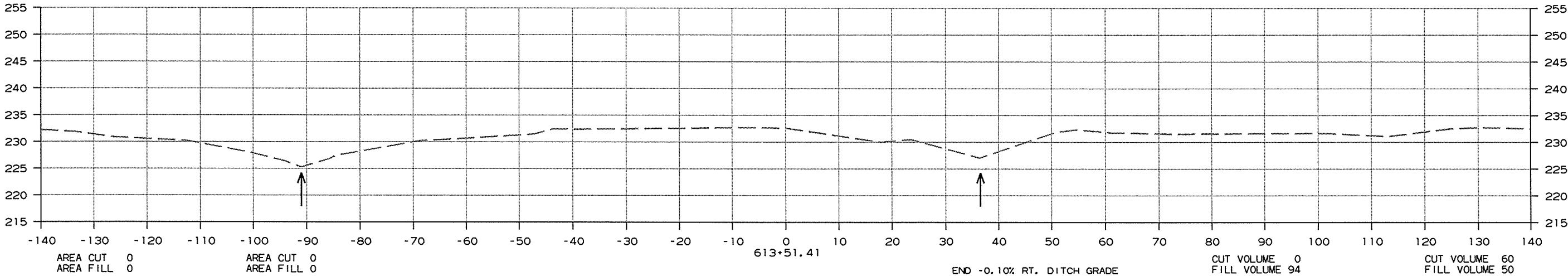
AREA
(STAGE 3)

VOLUME
(STAGE 2)

VOLUME
(STAGE 3)

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CROSS SECTIONS STA. 613+51.41 TO STA. 613+51.41

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.		CA1001	237	283

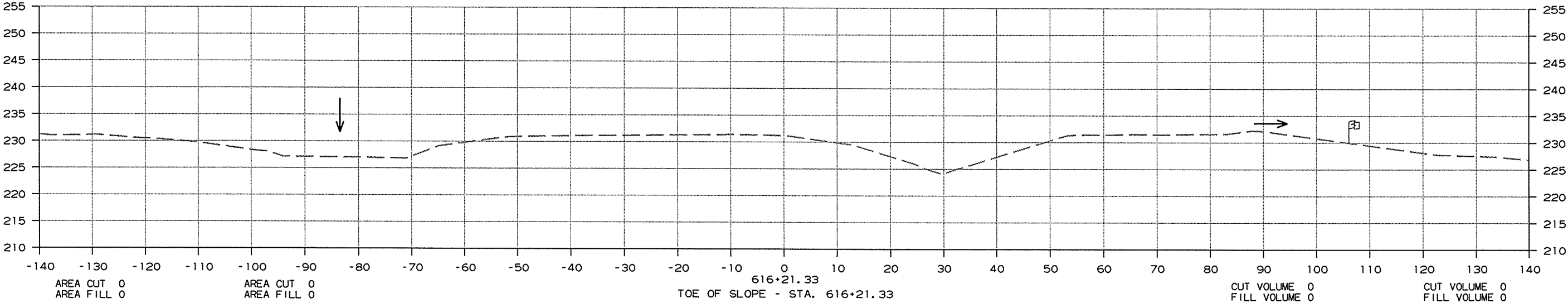
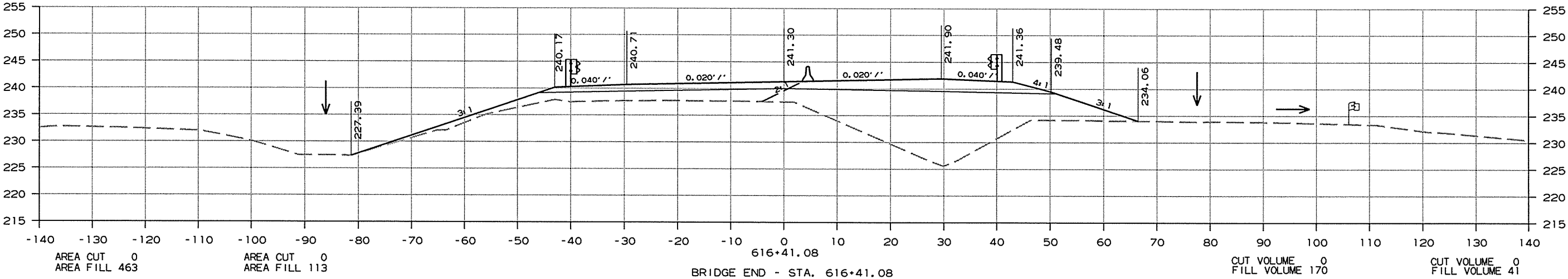
2 CROSS SECTIONS

AREA
(STAGE 1)

AREA
(STAGE 2)

VOLUME
(STAGE 1)

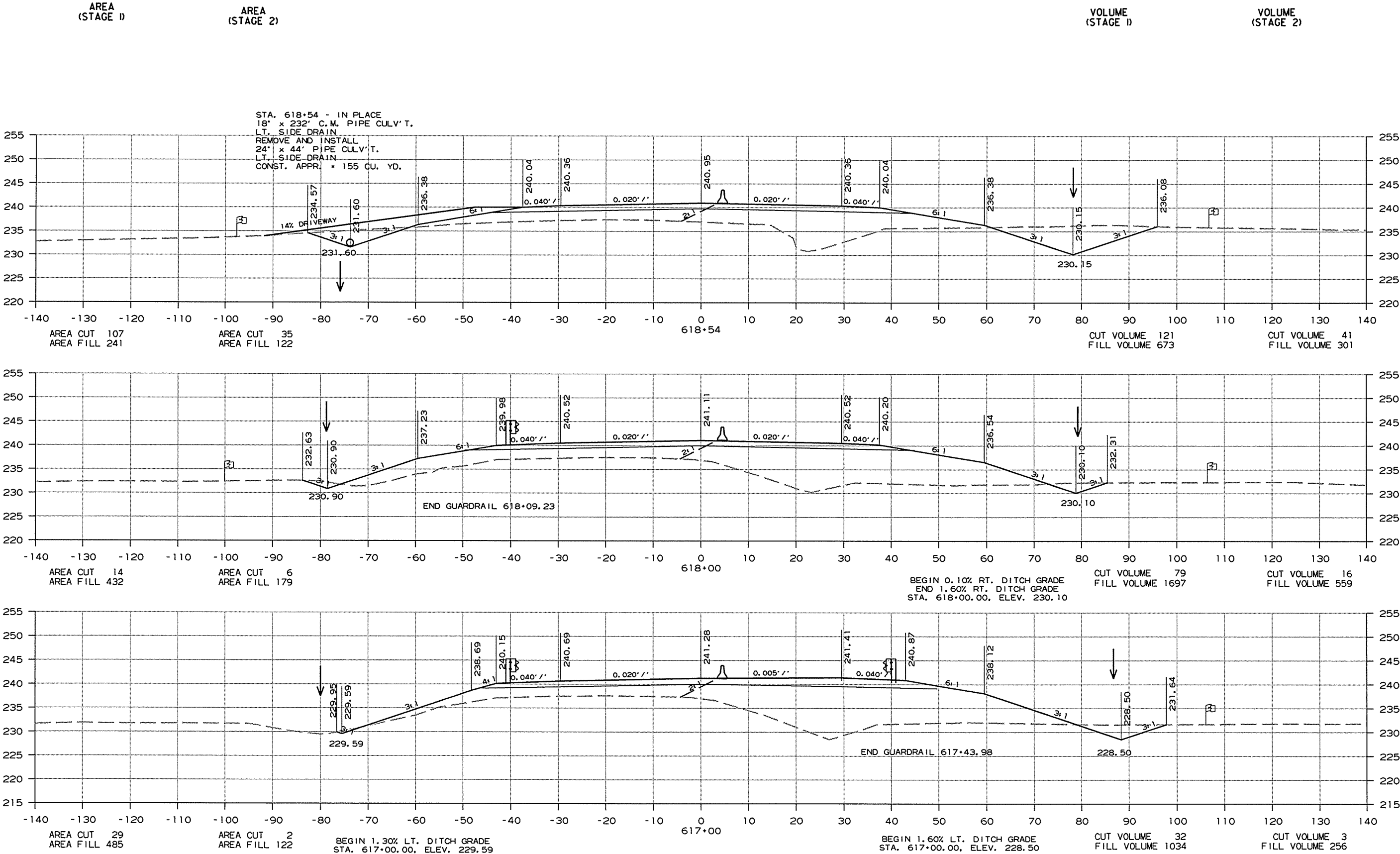
VOLUME
(STAGE 2)



CROSS SECTIONS STA. 616+21 TO STA. 616+41

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.	CA1001	238	283

2 CROSS SECTIONS



CROSS SECTIONS STA. 617+00 TO STA. 618+54

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.	CAI001	239	283

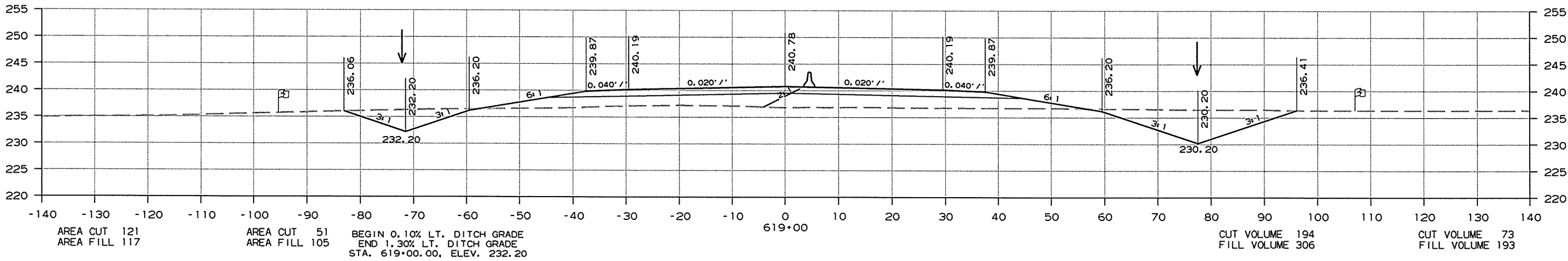
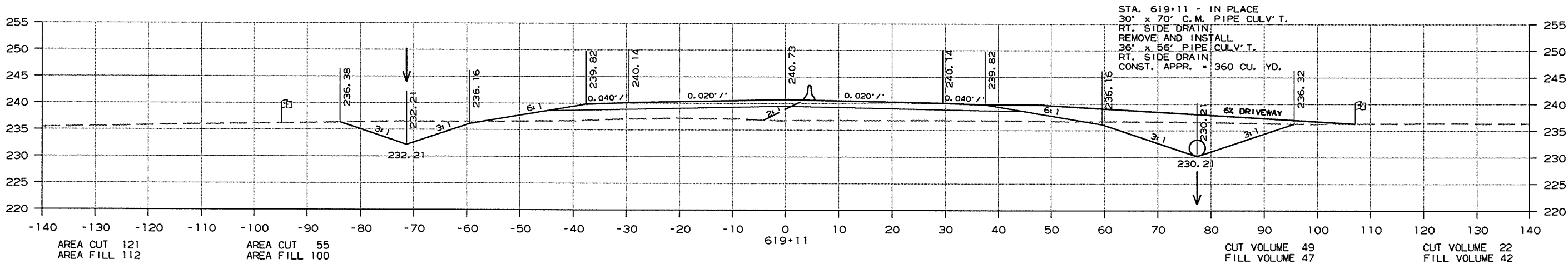
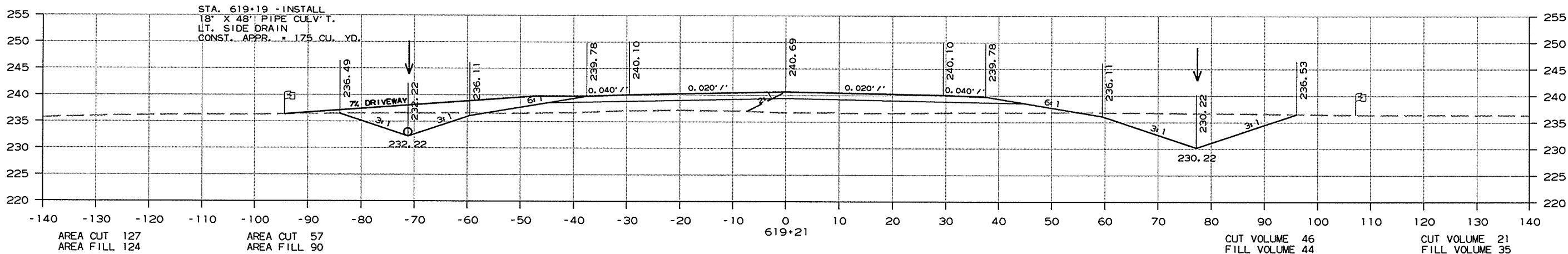
2 CROSS SECTIONS

AREA
(STAGE 1)

AREA
(STAGE 2)

VOLUME
(STAGE 1)

VOLUME
(STAGE 2)



CROSS SECTIONS STA. 619+00 TO STA. 619+21

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. CA1001	240	283

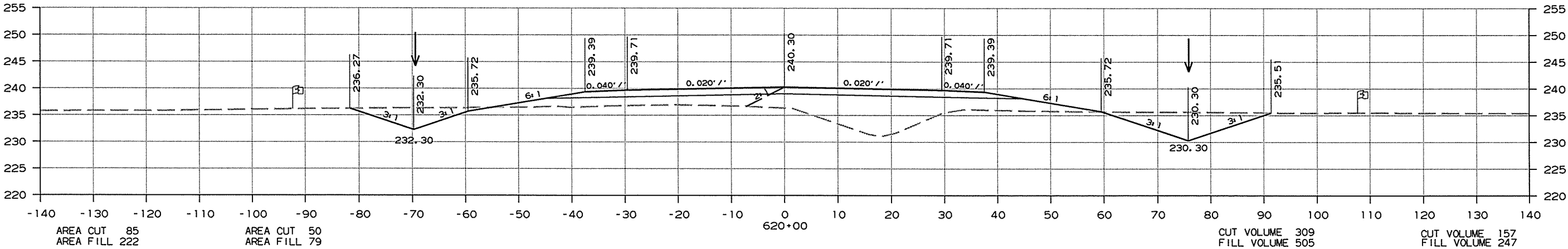
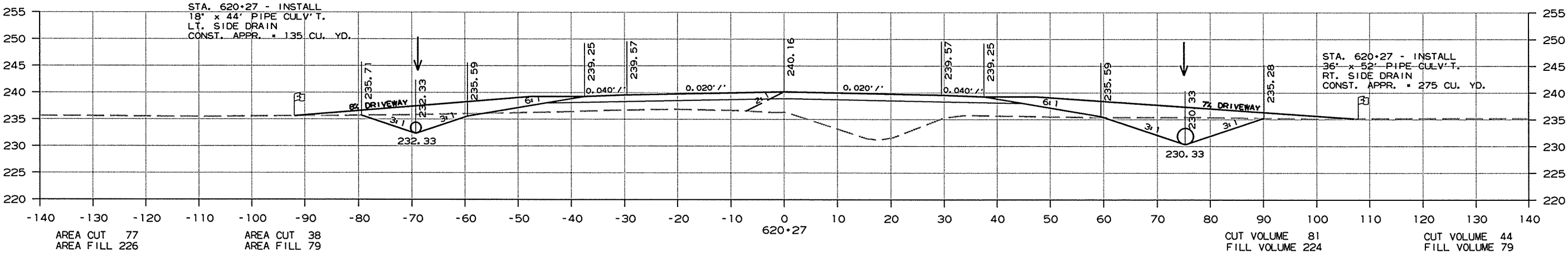
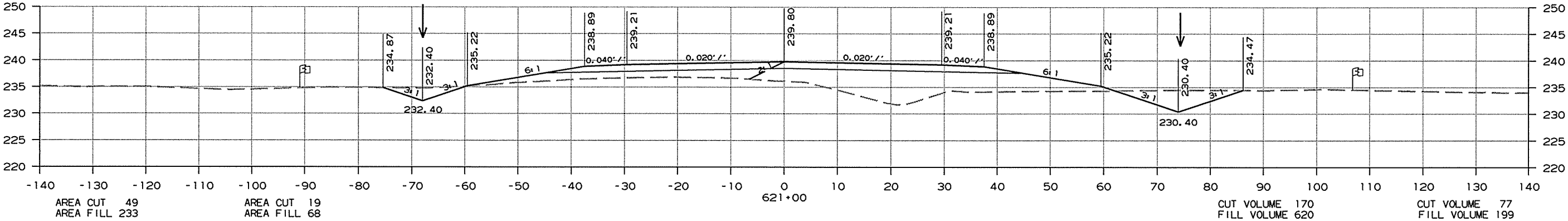
2 CROSS SECTIONS

AREA
(STAGE 1)

AREA
(STAGE 2)

VOLUME
(STAGE 1)

VOLUME
(STAGE 2)



CROSS SECTIONS STA. 620+00 TO STA. 621+00

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. CA1001	241	283

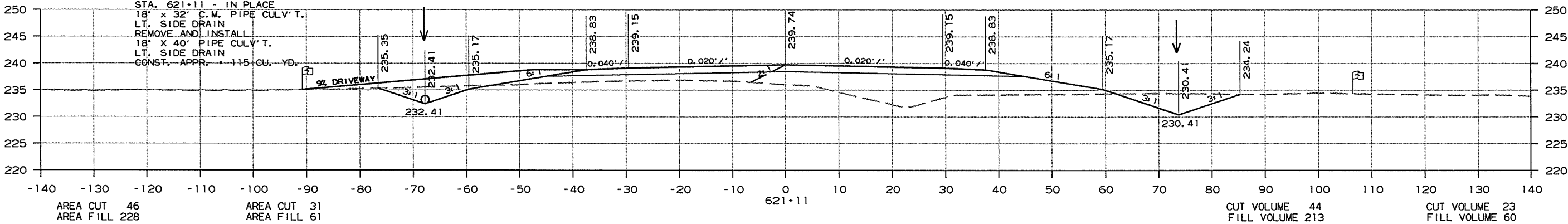
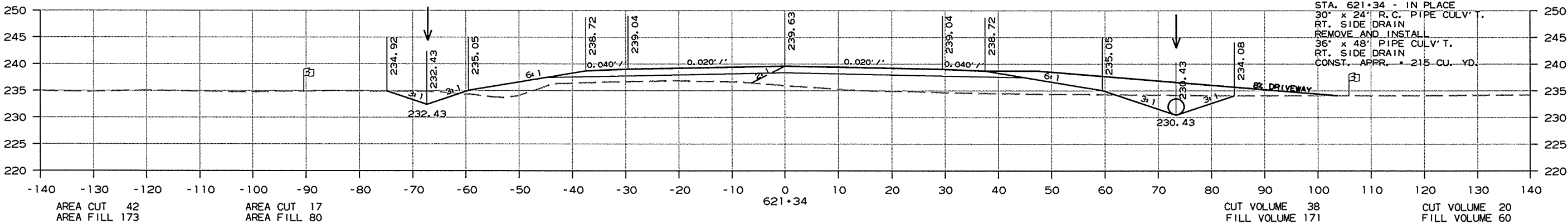
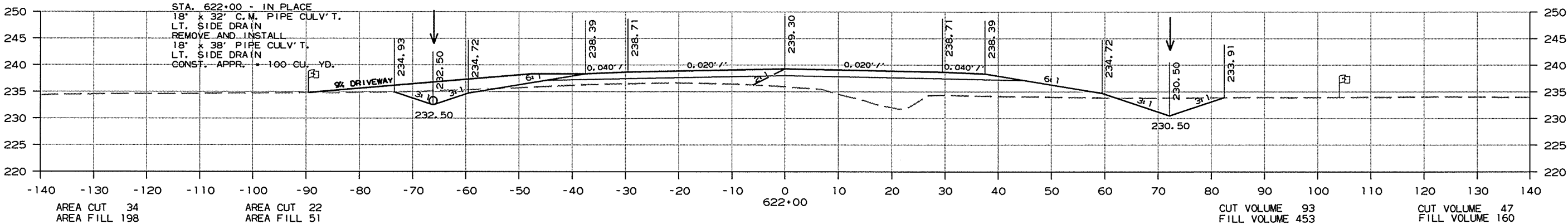
2 CROSS SECTIONS

AREA
(STAGE 1)

AREA
(STAGE 2)

VOLUME
(STAGE 1)

VOLUME
(STAGE 2)



CROSS SECTIONS STA. 621+11 TO STA. 622+00

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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.	CA1001	242	283

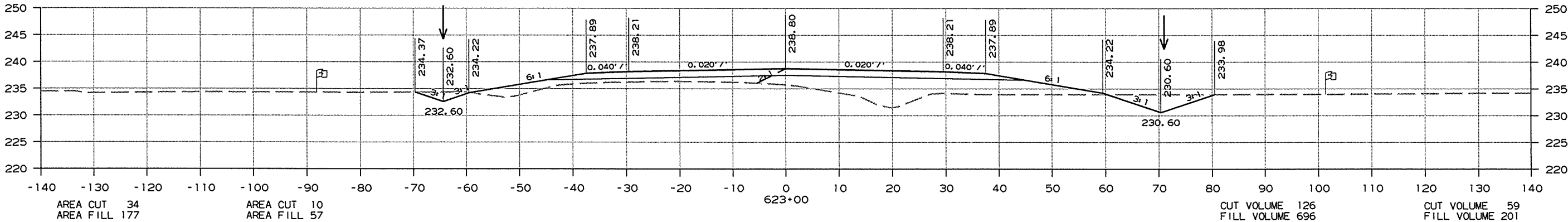
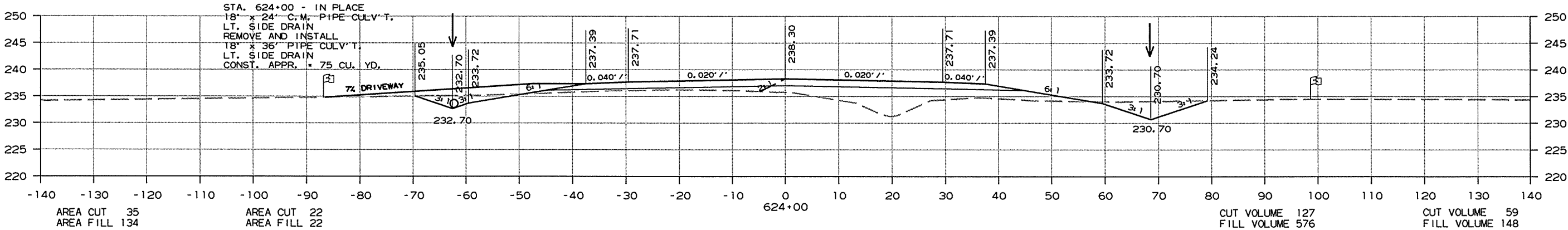
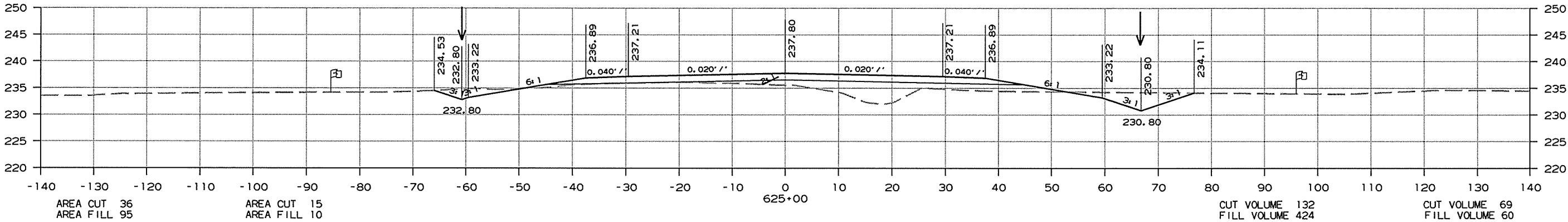
2 CROSS SECTIONS

AREA
(STAGE 1)

AREA
(STAGE 2)

VOLUME
(STAGE 1)

VOLUME
(STAGE 2)



CROSS SECTIONS STA. 623+00 TO STA. 625+00

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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. CA1001	244	283

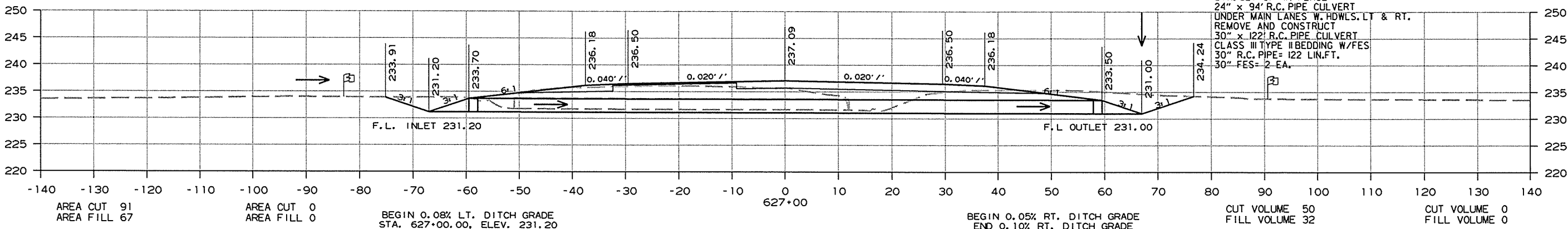
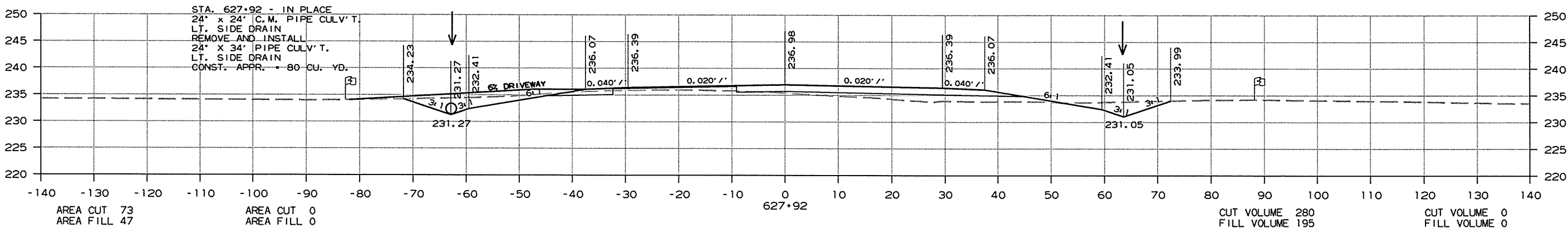
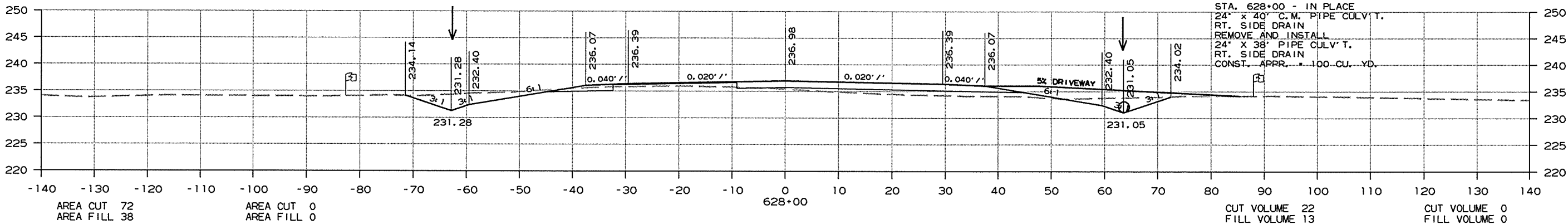
2 CROSS SECTIONS

AREA
(STAGE 1)

AREA
(STAGE 2)

VOLUME
(STAGE 1)

VOLUME
(STAGE 2)



CROSS SECTIONS STA. 627+00 TO STA. 628+00

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.		CA1001	245	283

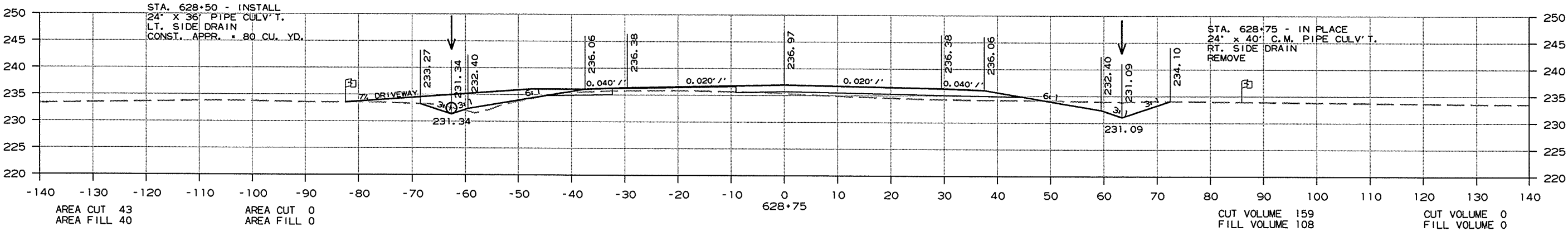
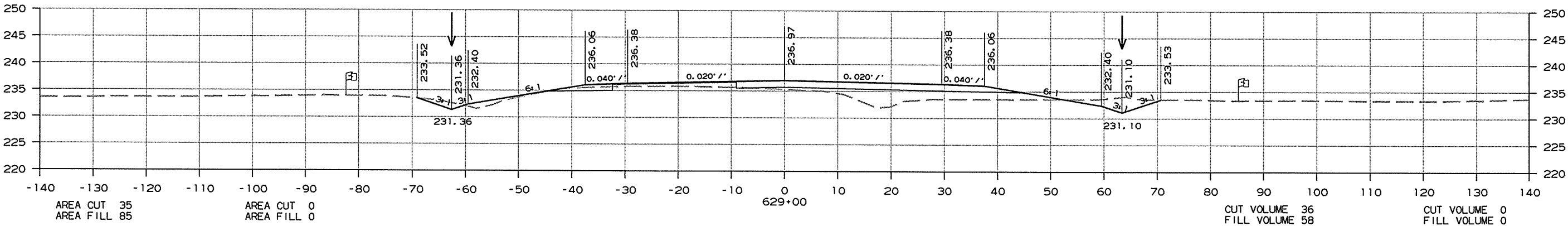
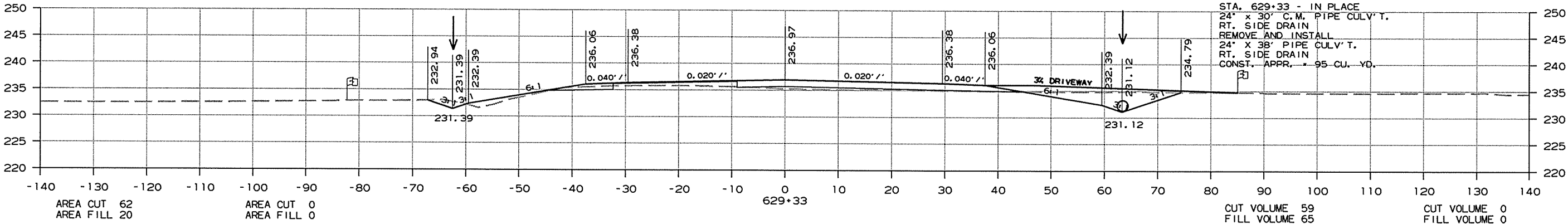
2 CROSS SECTIONS

AREA
(STAGE 1)

AREA
(STAGE 2)

VOLUME
(STAGE 1)

VOLUME
(STAGE 2)



CROSS SECTIONS STA. 628+75 TO STA. 629+33

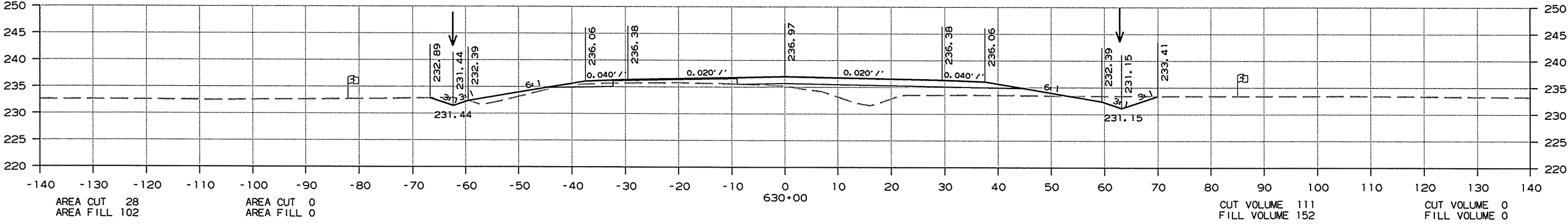
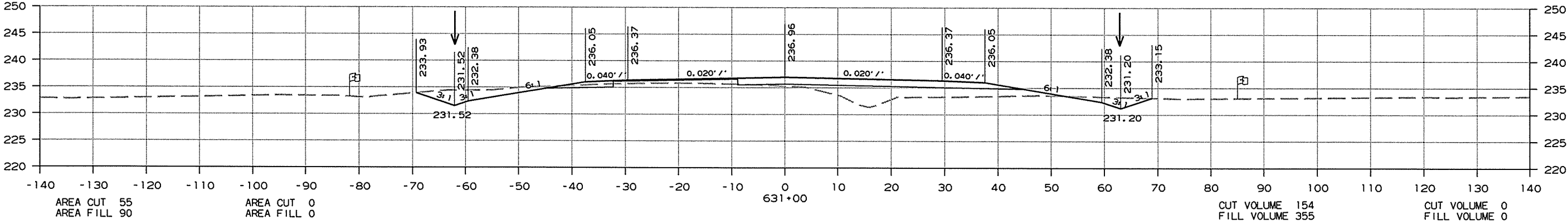
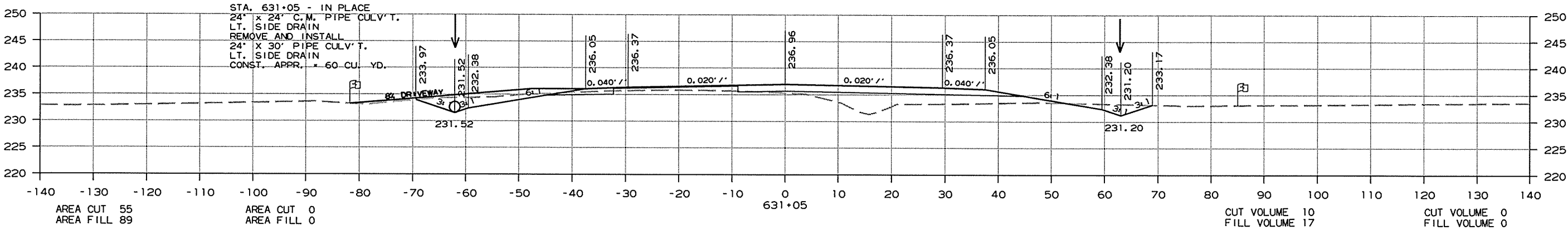
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. CA1001	246	283
2 CROSS SECTIONS								

AREA
(STAGE 1)

AREA
(STAGE 2)

VOLUME
(STAGE 1)

VOLUME
(STAGE 2)



CROSS SECTIONS STA. 630+00 TO STA. 631+05

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. CA1001	247	283

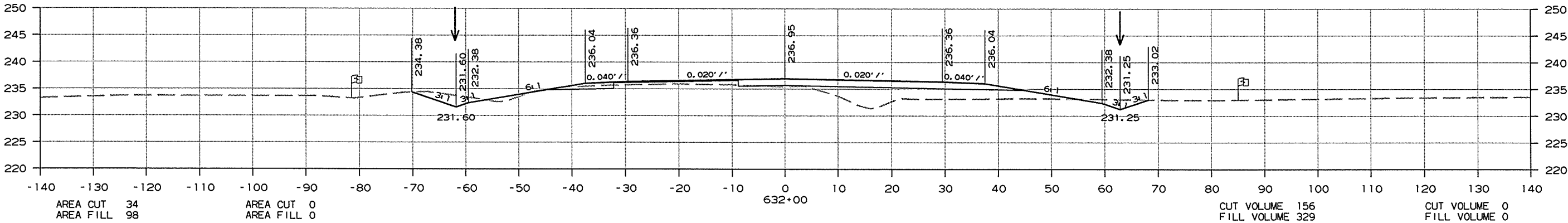
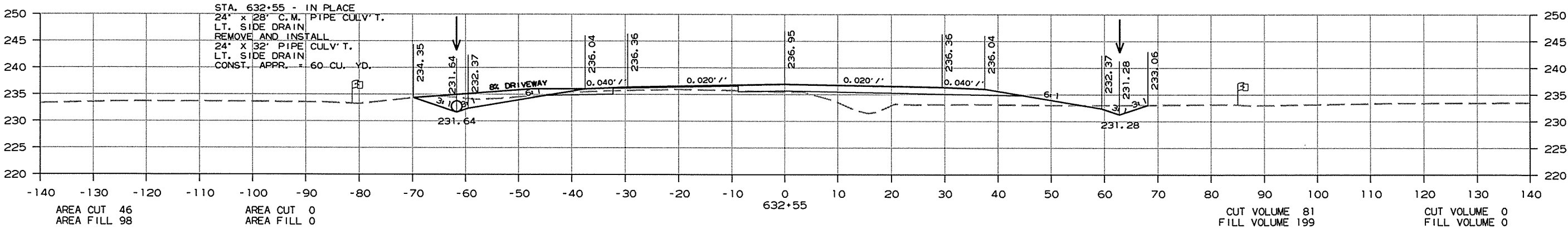
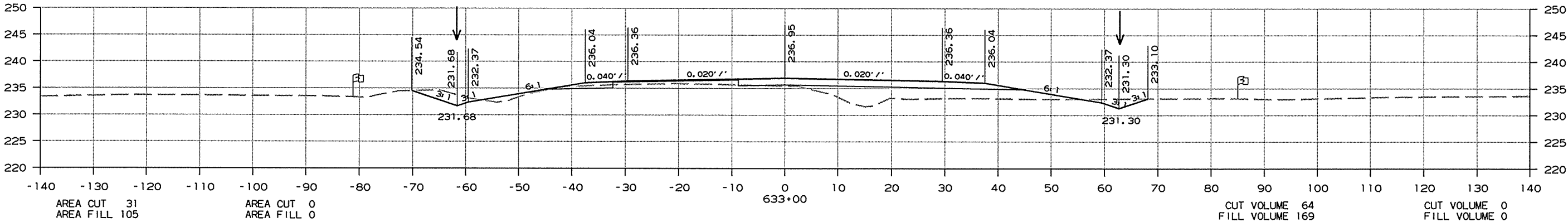
2 CROSS SECTIONS

AREA
(STAGE 1)

AREA
(STAGE 2)

VOLUME
(STAGE 1)

VOLUME
(STAGE 2)



CROSS SECTIONS STA. 632+00 TO STA. 633+00

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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. CA1001	248	283

2 CROSS SECTIONS

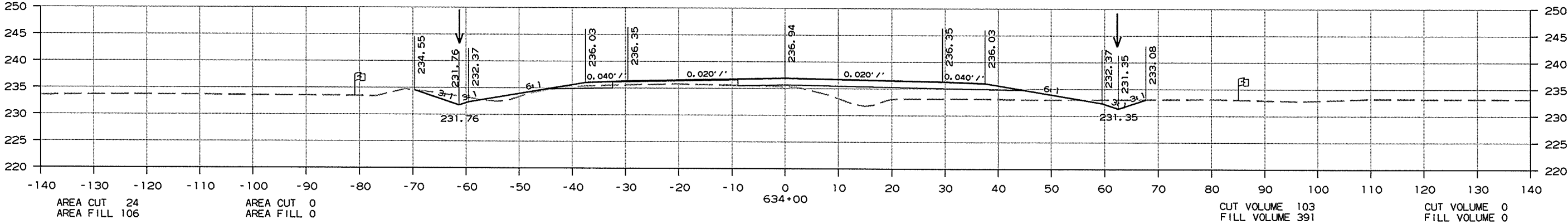
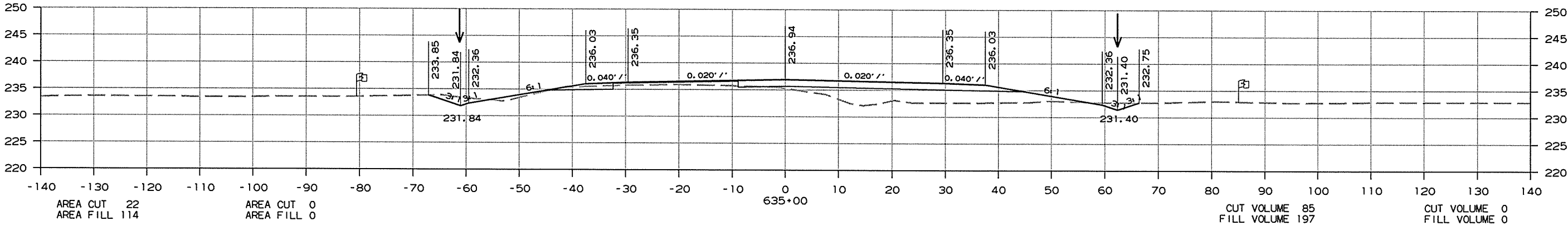
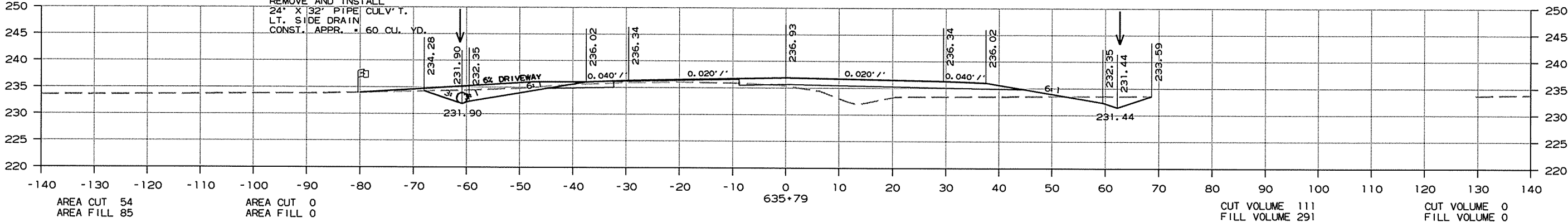
AREA
(STAGE 1)

AREA
(STAGE 2)

VOLUME
(STAGE 1)

VOLUME
(STAGE 2)

STA. 635+79 - IN PLACE
24' x 24' C.M. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
24' x 32' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. 60 CU. YD.



CROSS SECTIONS STA. 634+00 TO STA. 635+79

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.	CA1001	249	283

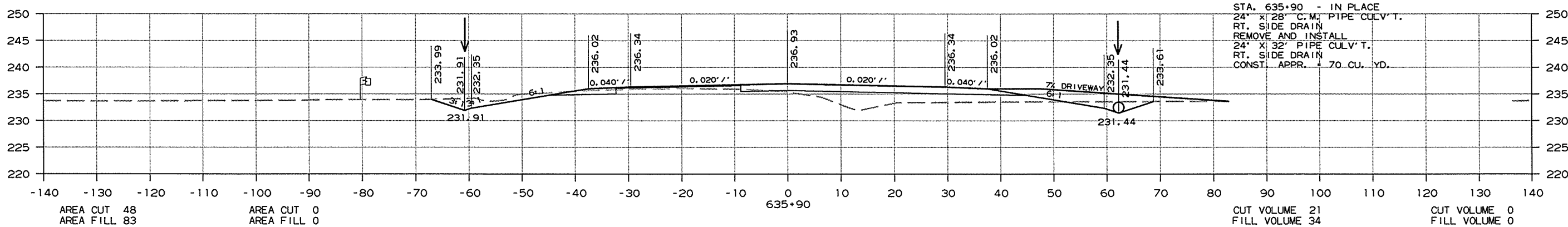
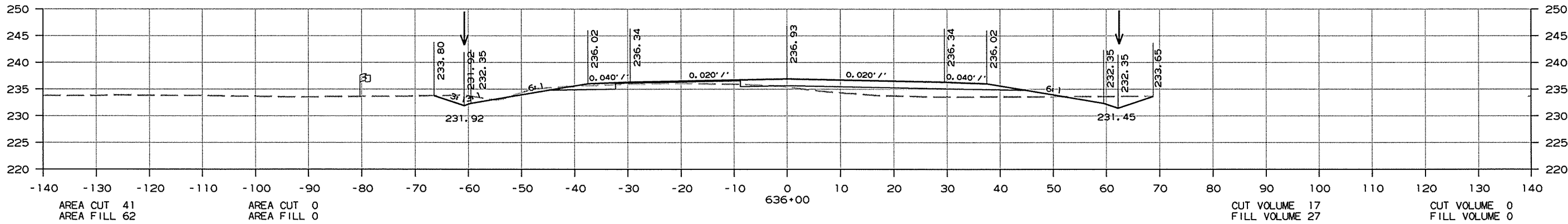
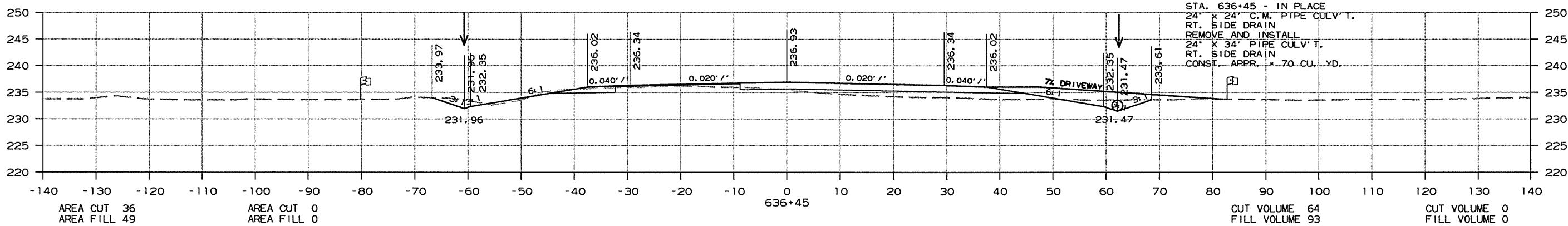
2 CROSS SECTIONS

AREA
(STAGE 1)

AREA
(STAGE 2)

VOLUME
(STAGE 1)

VOLUME
(STAGE 2)



CROSS SECTIONS STA. 635+90 TO STA. 636+45

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.	CA1001	250	283

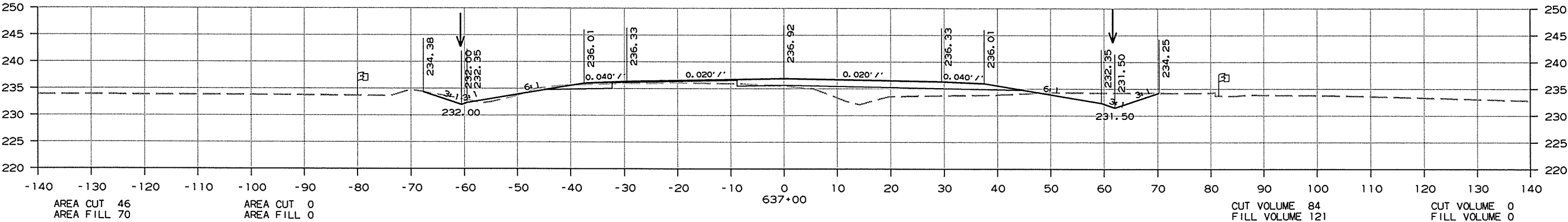
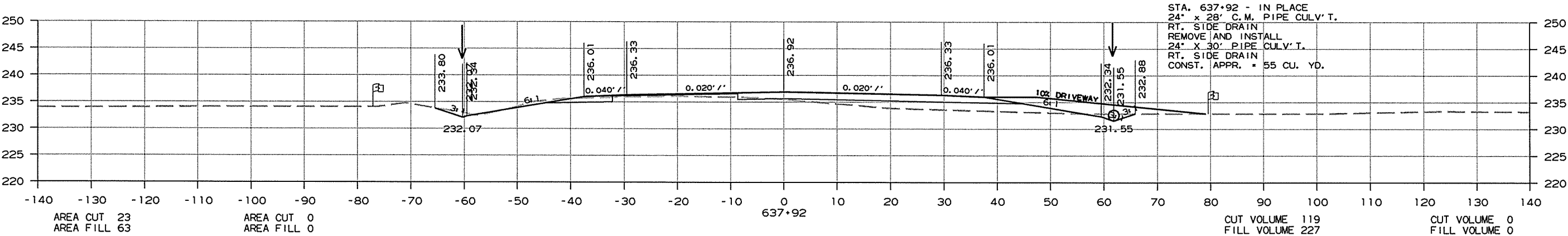
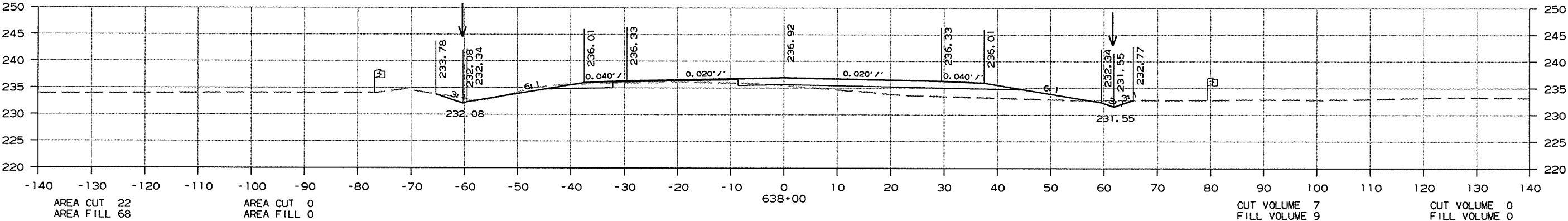
2 CROSS SECTIONS

AREA
(STAGE 1)

AREA
(STAGE 2)

VOLUME
(STAGE 1)

VOLUME
(STAGE 2)



CROSS SECTIONS STA. 637+00 TO STA. 638+00

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.		CA1001	251	283

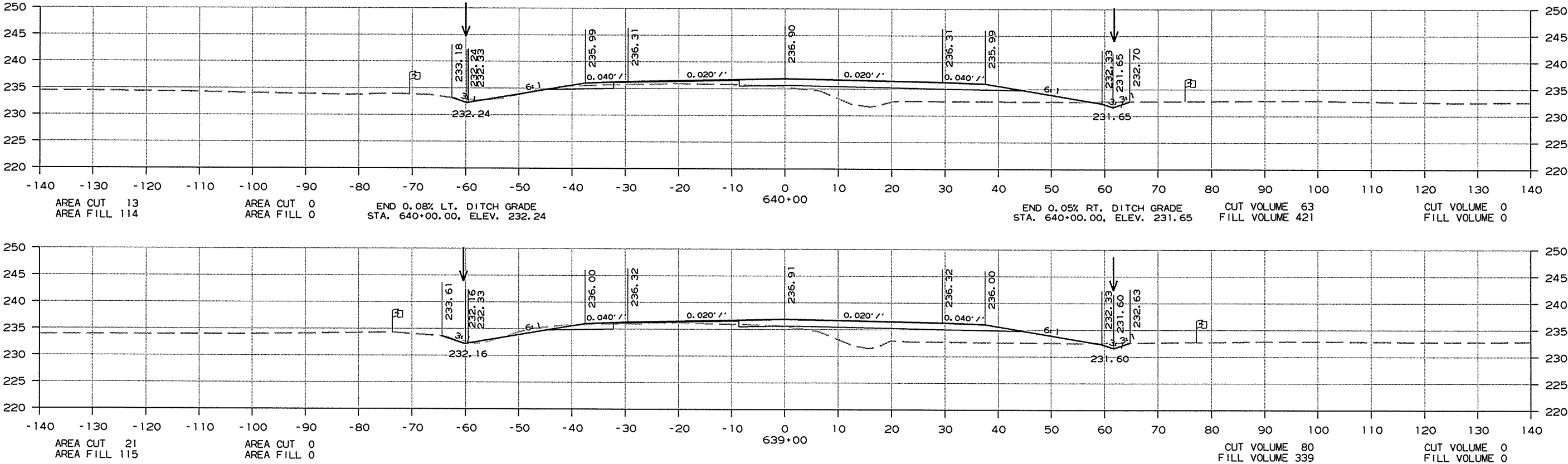
2 CROSS SECTIONS

AREA
(STAGE 1)

AREA
(STAGE 2)

VOLUME
(STAGE 1)

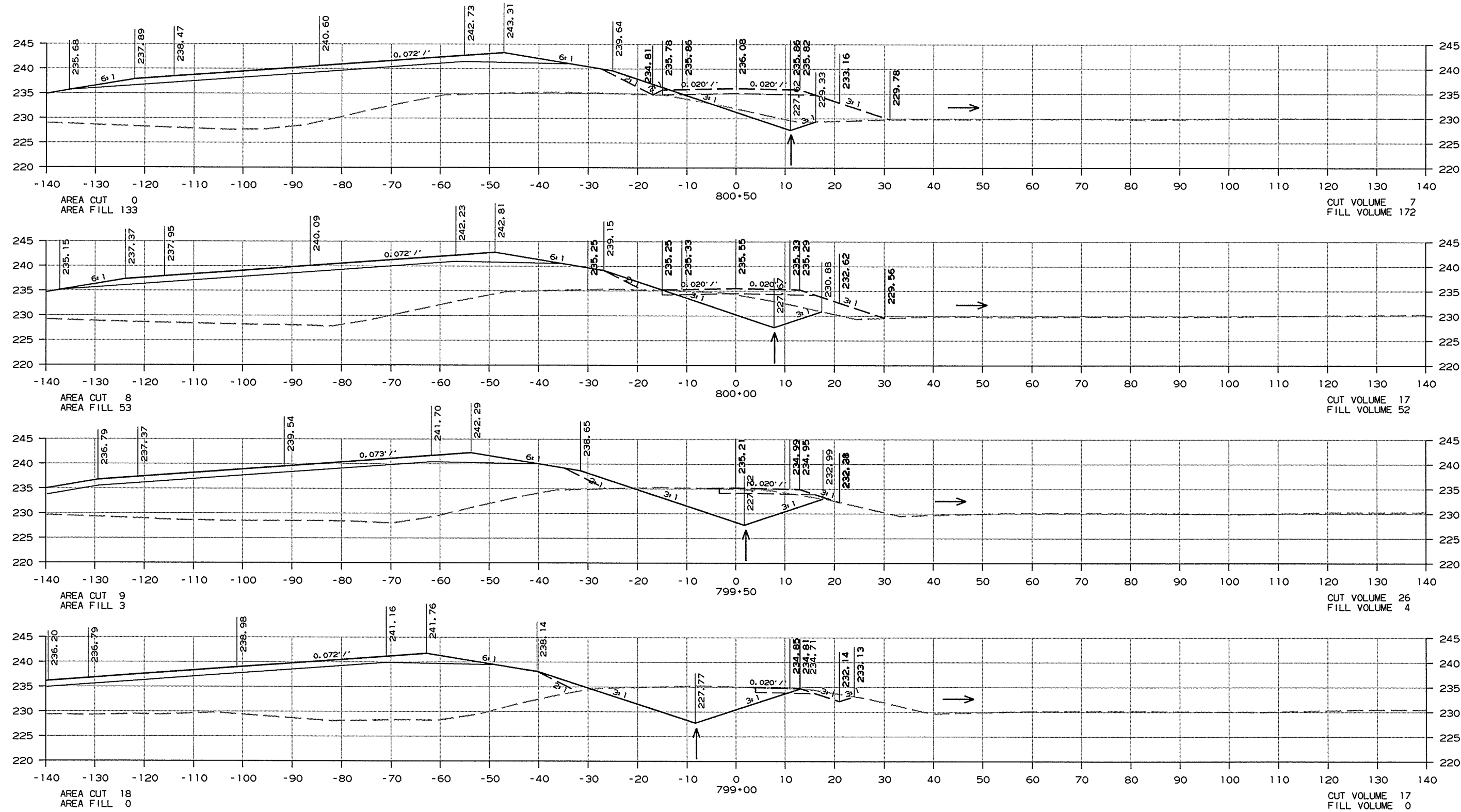
VOLUME
(STAGE 2)



CROSS SECTIONS STA. 639+00 TO STA. 640+00

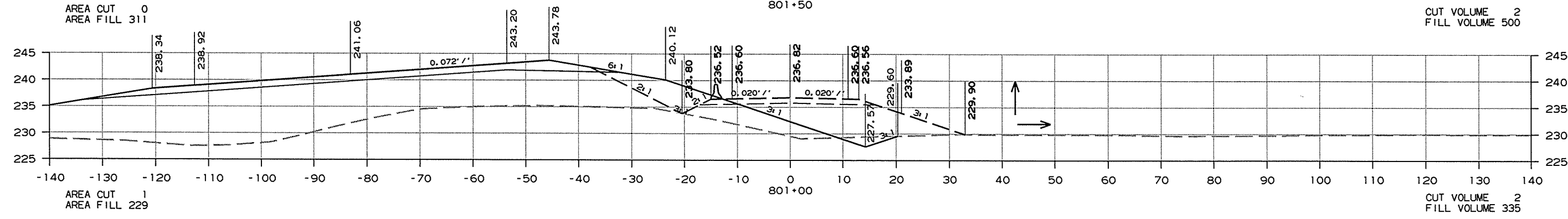
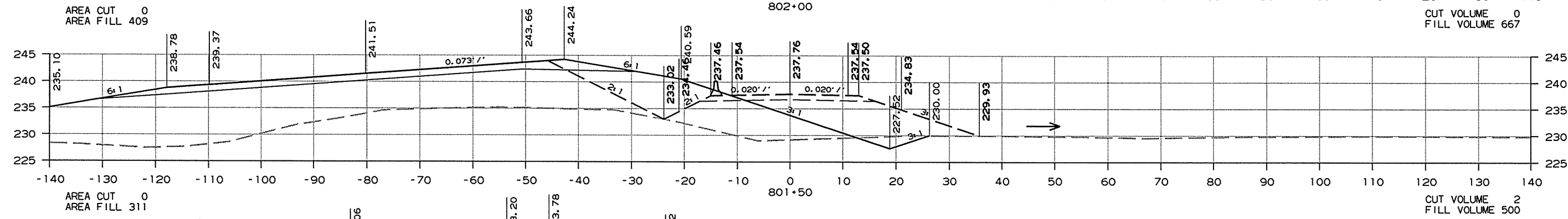
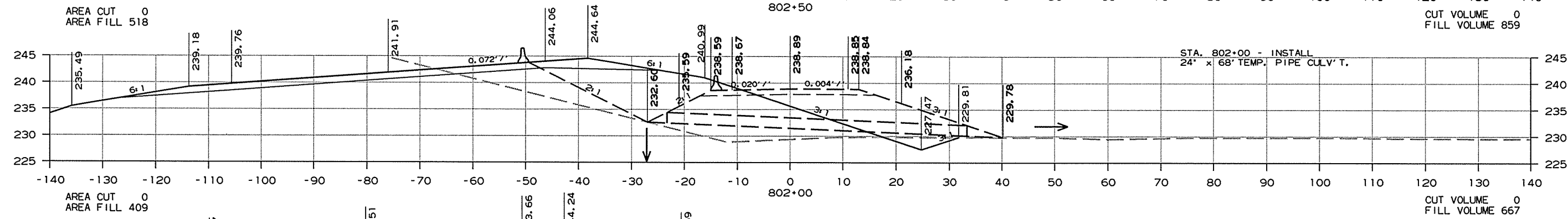
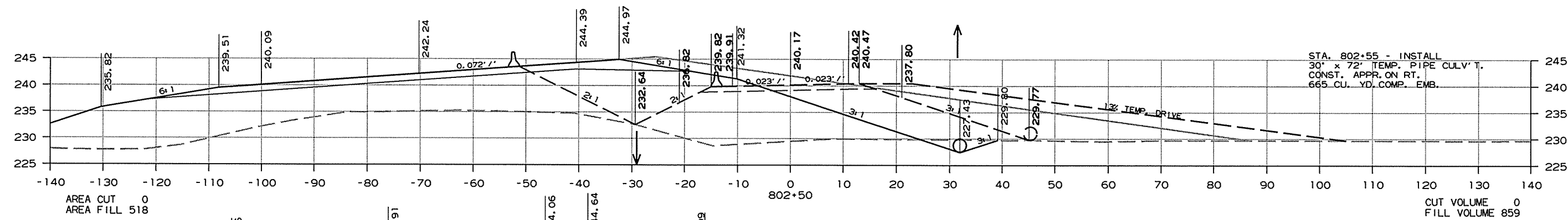
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO. CA1001		252	283	

2 CROSS SECTIONS - TEMPORARY APPROACH



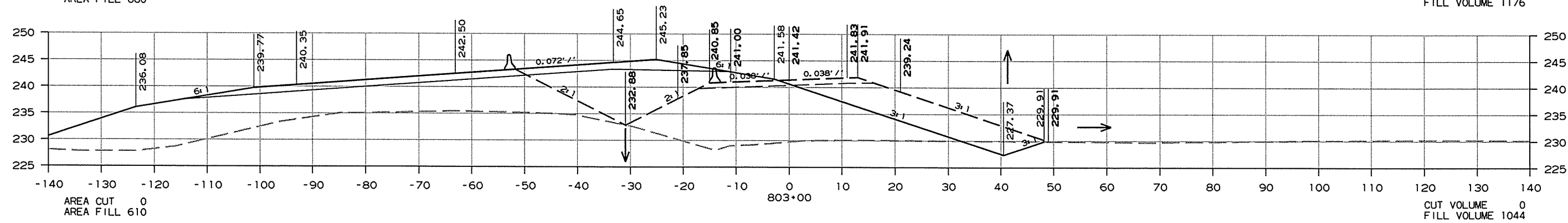
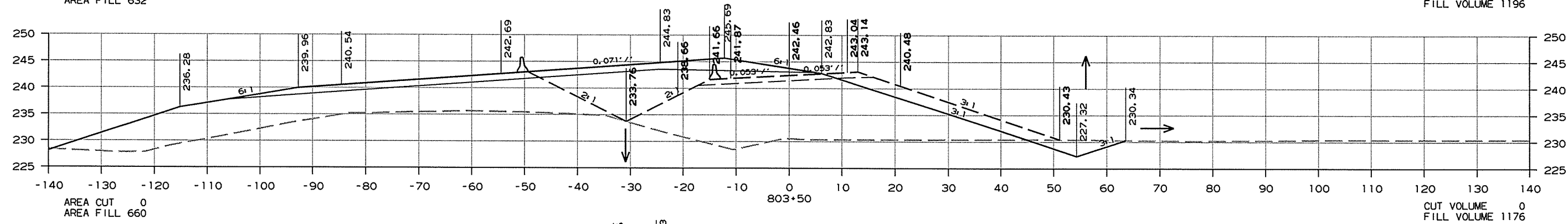
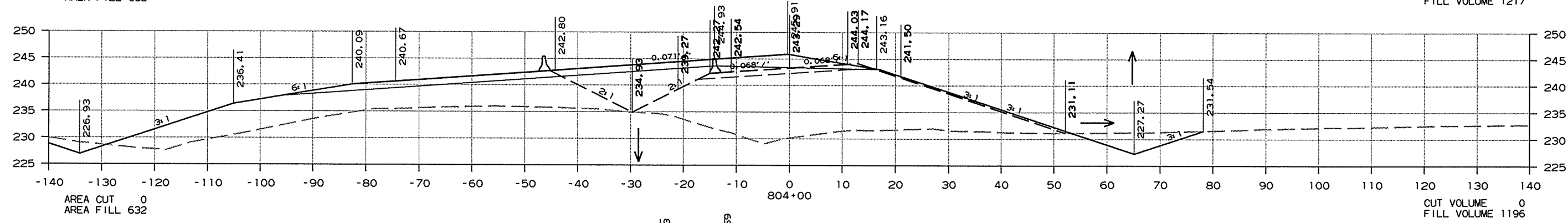
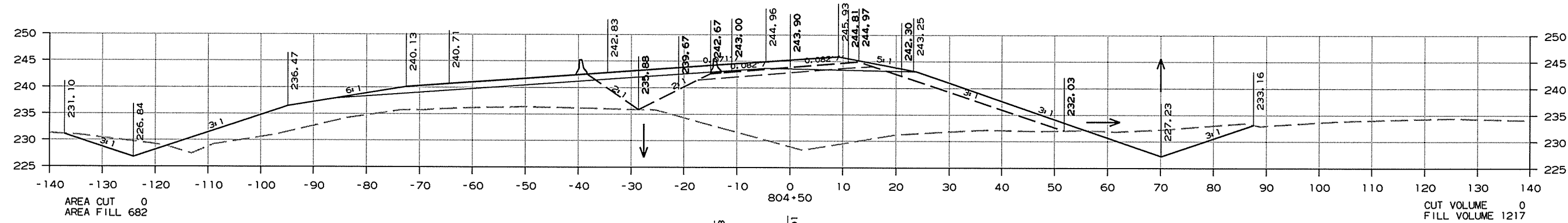
CROSS SECTIONS STA. 799+00 TO STA. 800+50

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.	CA1001	253	283
2 CROSS SECTIONS - TEMPORARY APPROACH								



CROSS SECTIONS STA. 801+00 TO STA. 802+50

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.	CA1001	254	283	
2 CROSS SECTIONS - TEMPORARY APPROACH								



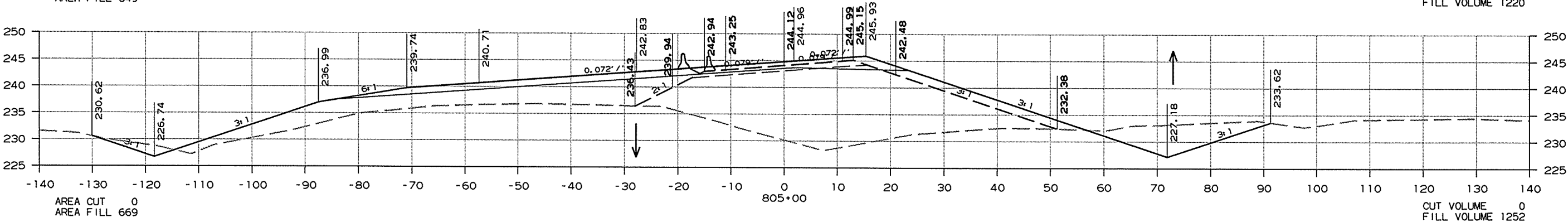
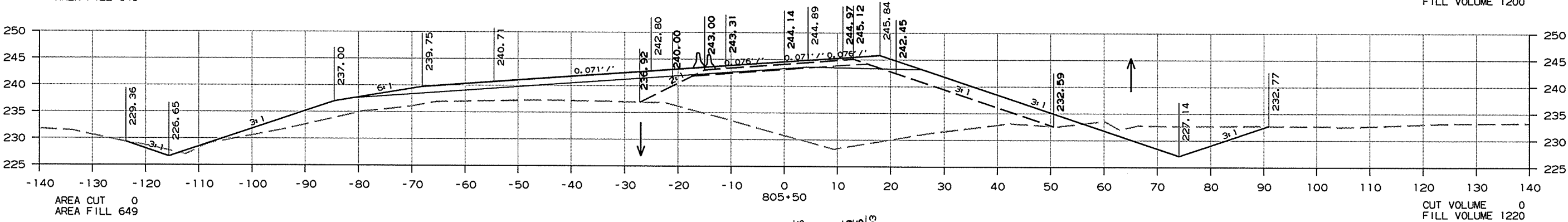
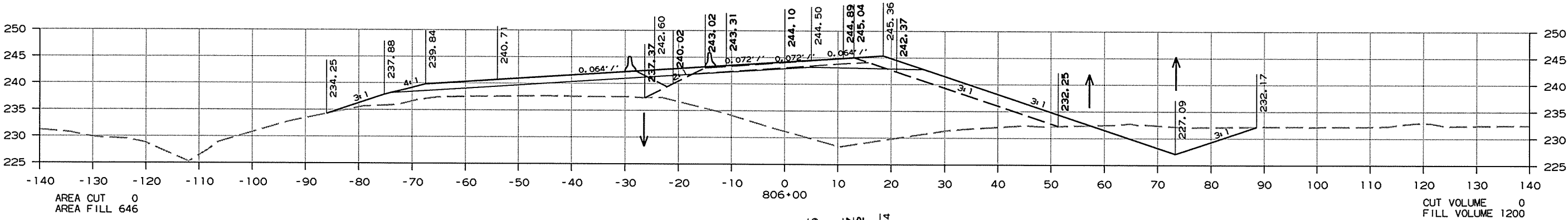
CROSS SECTIONS STA. 803+00 TO STA. 804+50

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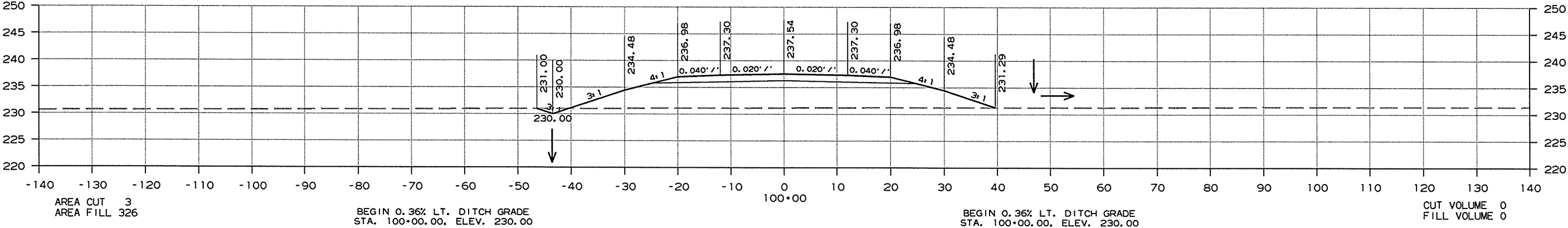
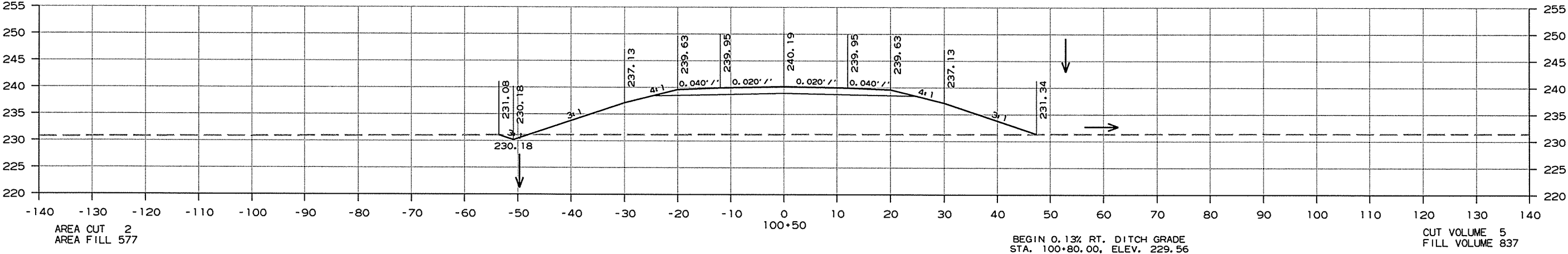
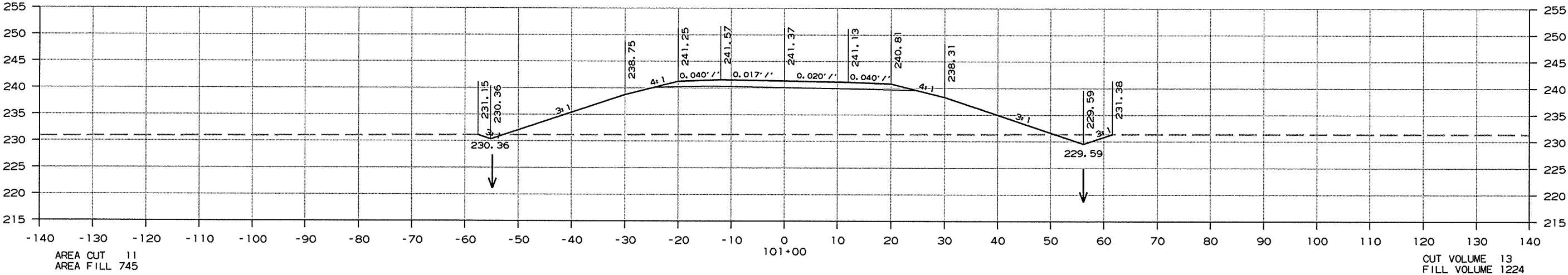
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO. CA1001		255	283	

2 CROSS SECTIONS - TEMPORARY APPROACH



CROSS SECTIONS STA. 805+00 TO STA. 806+50

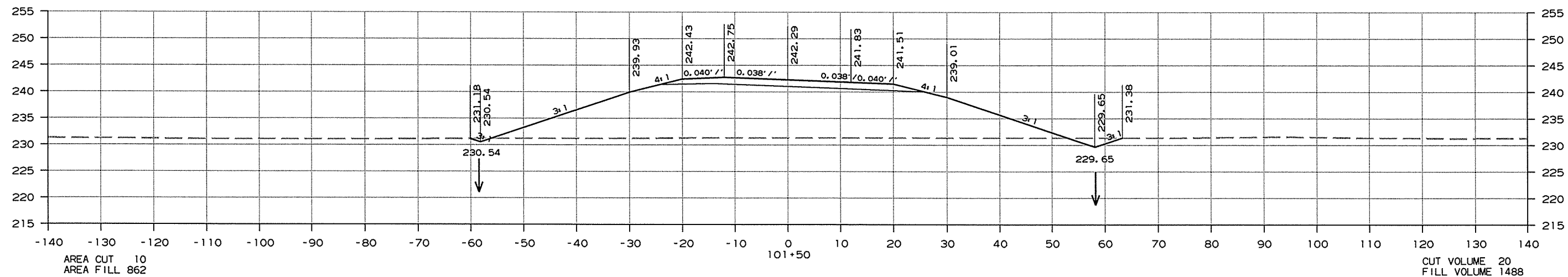
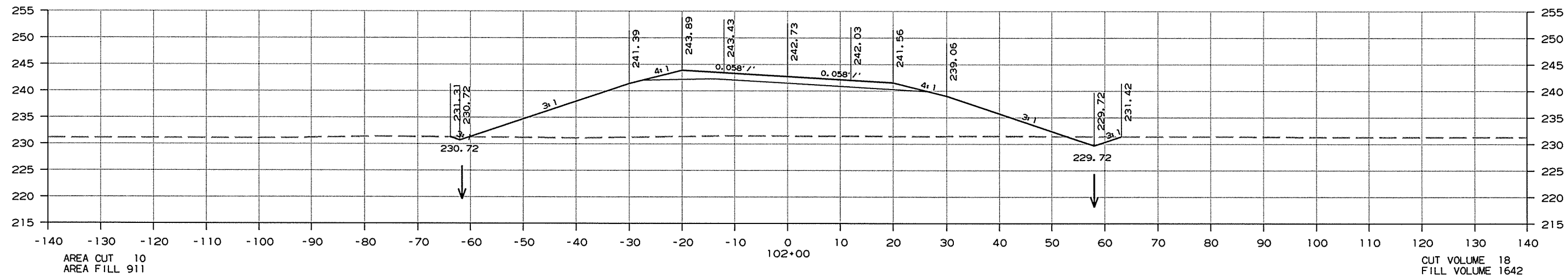
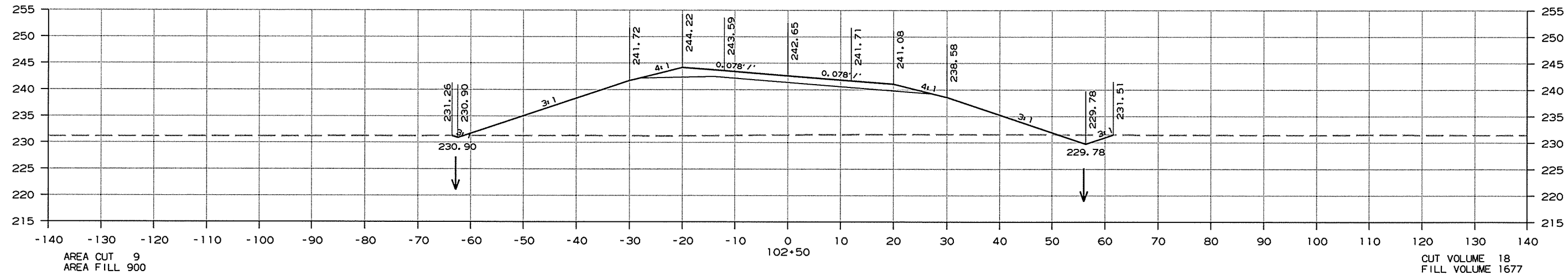
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. CA1001	256	283
2 CROSS SECTIONS - HWY. 18 EAST TIE								



CROSS SECTIONS STA. 100+00 TO STA. 101+00

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. CA1001		257	283	

2 CROSS SECTIONS - HWY. 18 EAST TIE



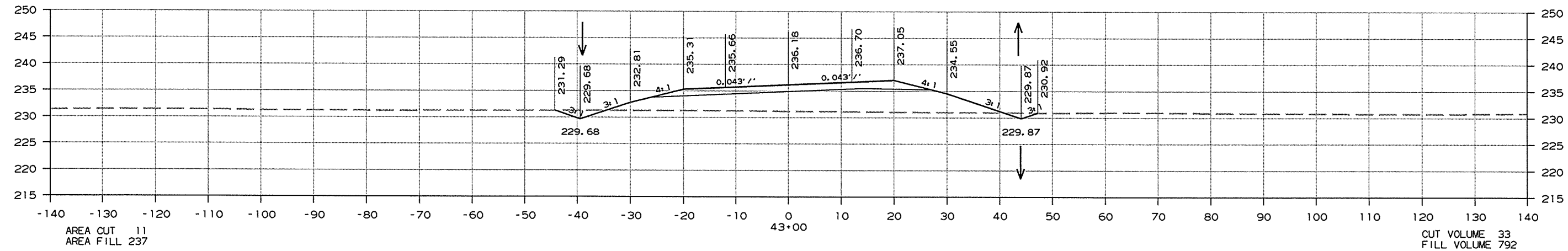
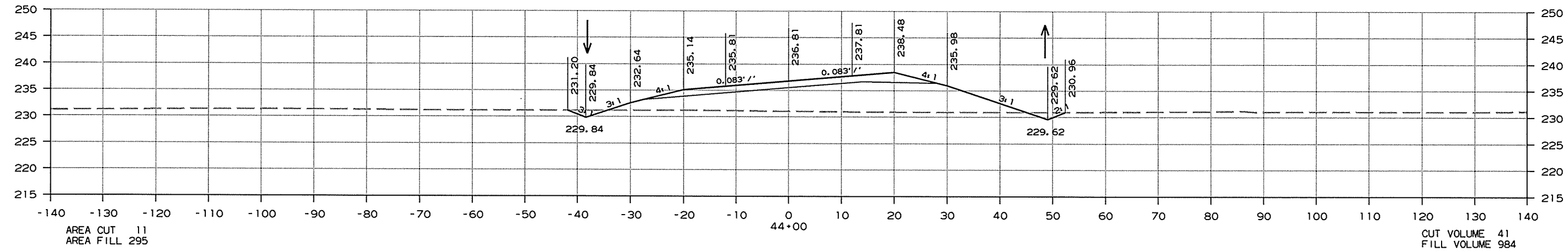
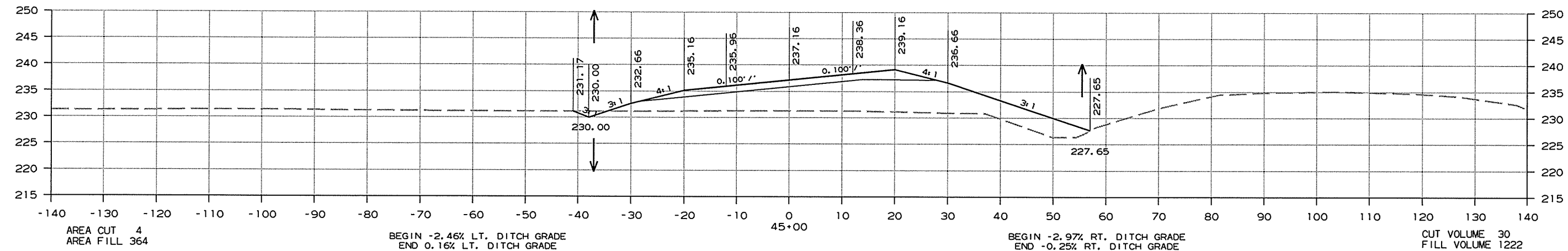
CROSS SECTIONS STA. 101+50 TO STA. 102+50

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CA1001.DGN

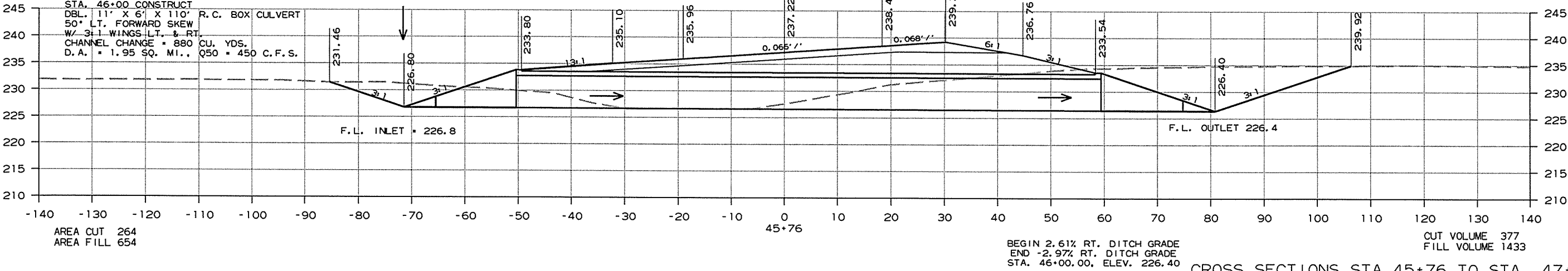
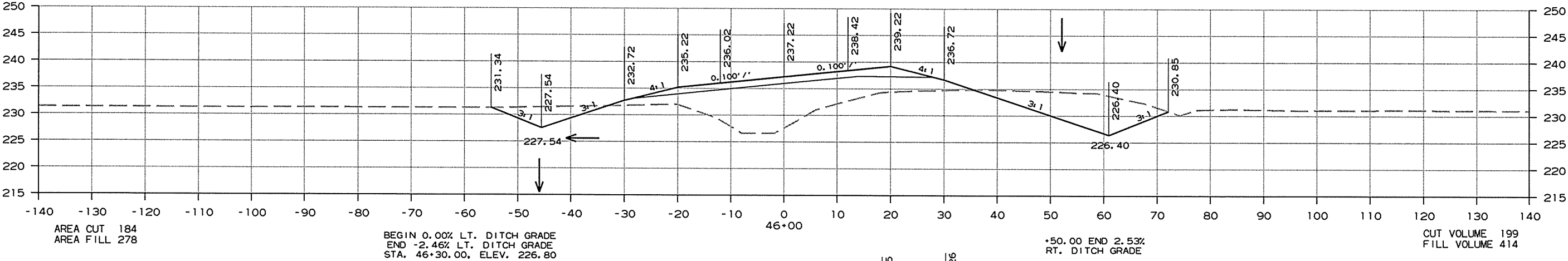
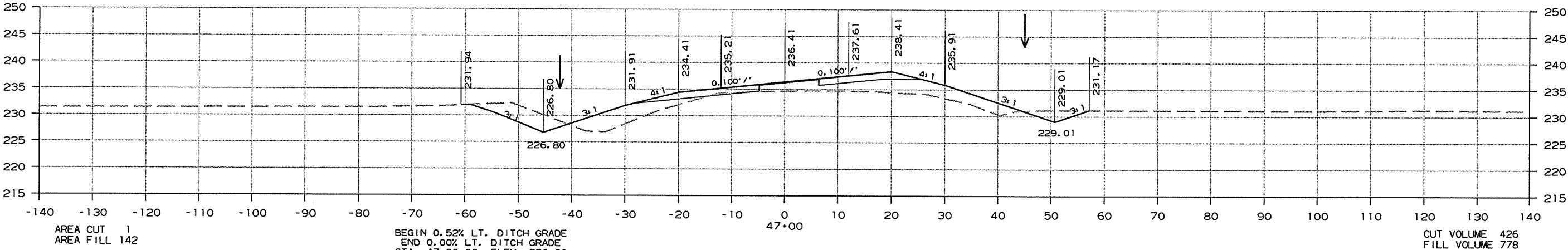
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	CA1001		259	283

2 CROSS SECTIONS - HWY. 18 WEST TIE



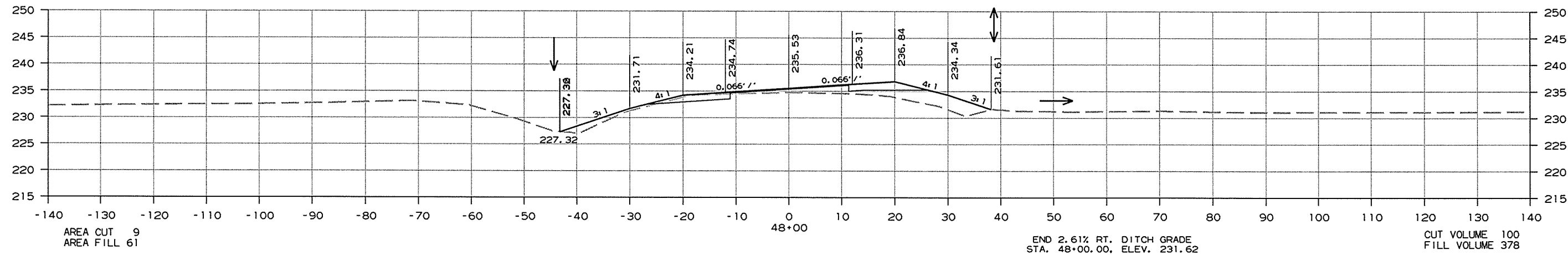
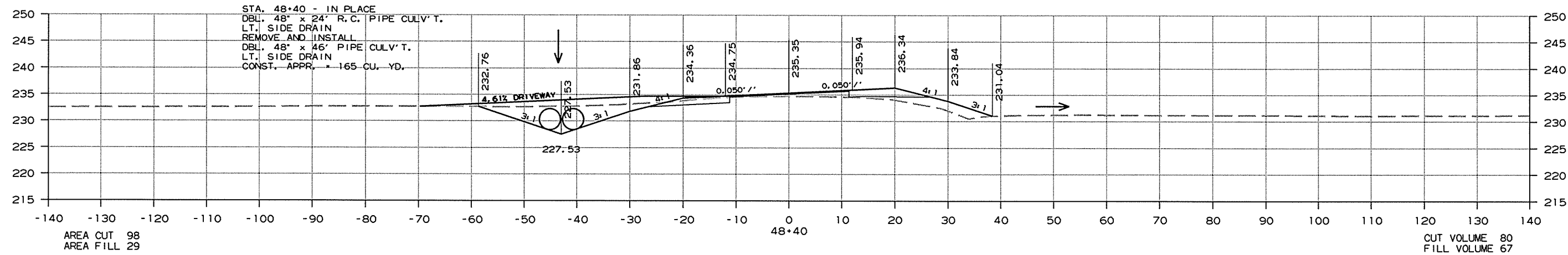
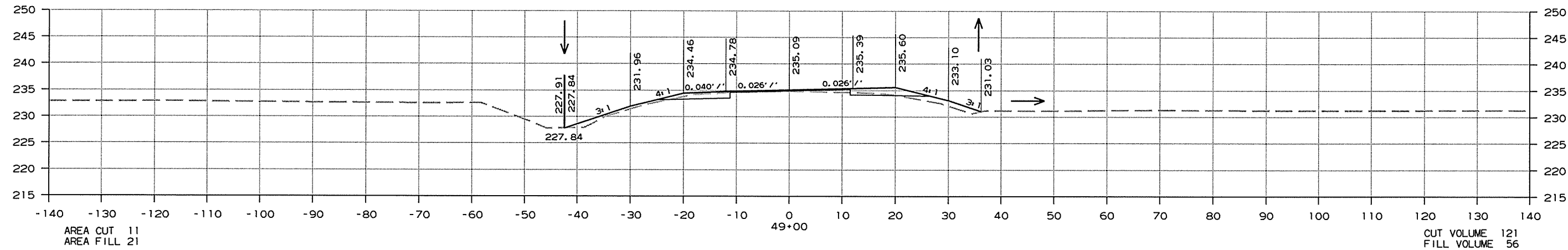
CROSS SECTIONS STA. 43+00 TO STA. 45+00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						CA1001	260	283
2 CROSS SECTIONS - HWY. 18 WEST TIE								



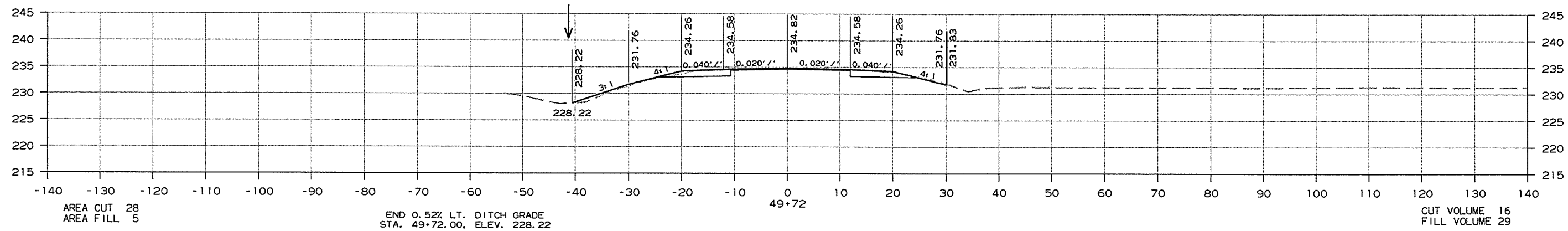
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
					JOB NO.	CA1001	261	283

2 CROSS SECTIONS - HWY. 18 WEST TIE



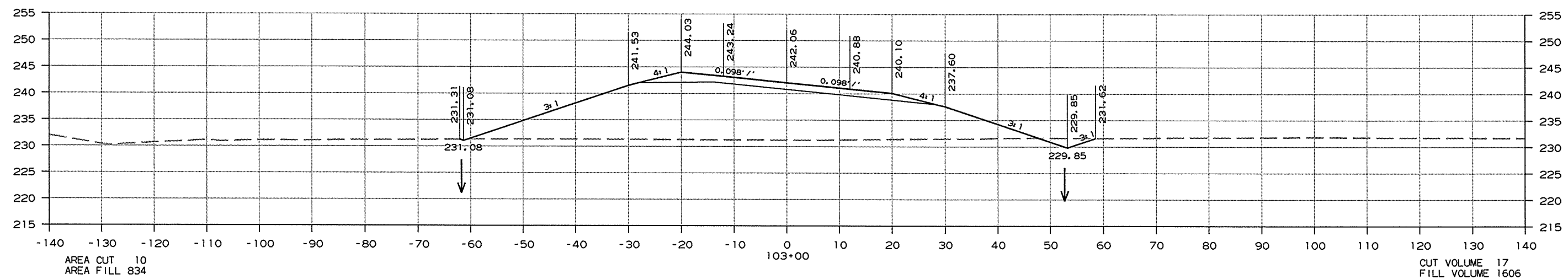
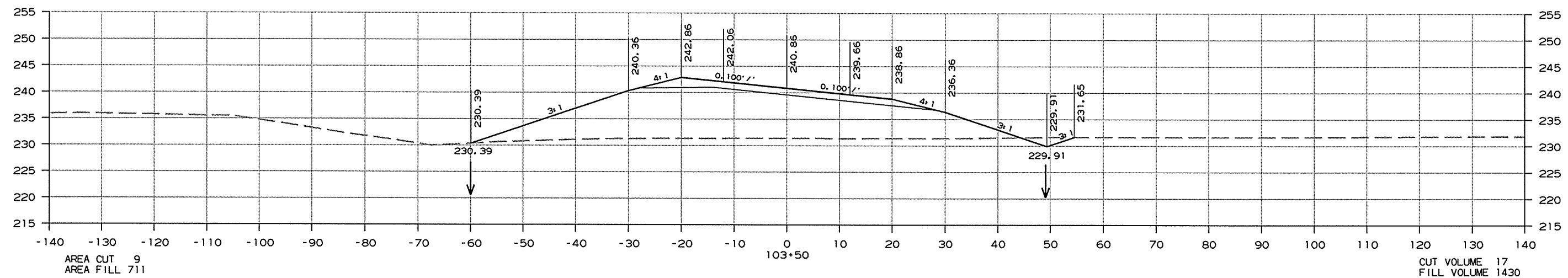
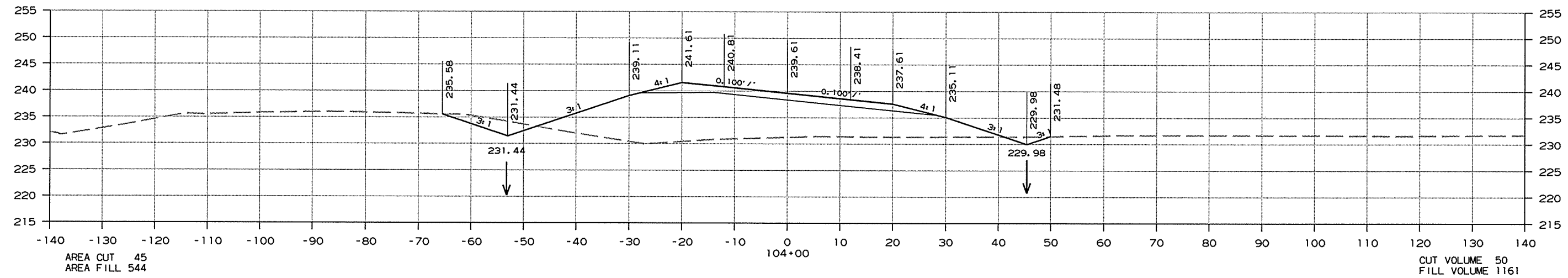
CROSS SECTIONS STA. 48+00 TO STA. 49+00

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.		CA1001	262	283
② CROSS SECTIONS - HWY. 18 WEST TIE								



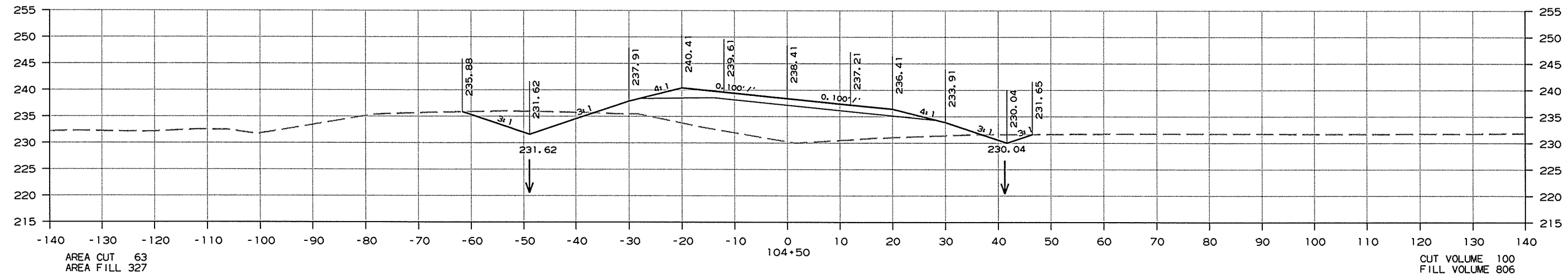
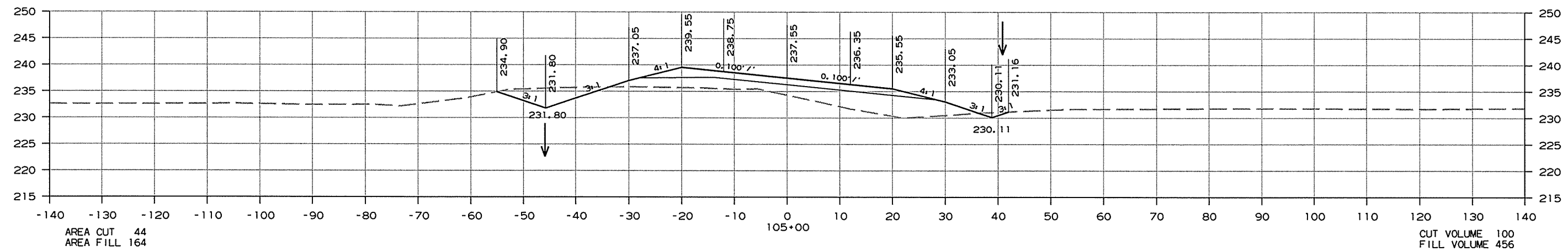
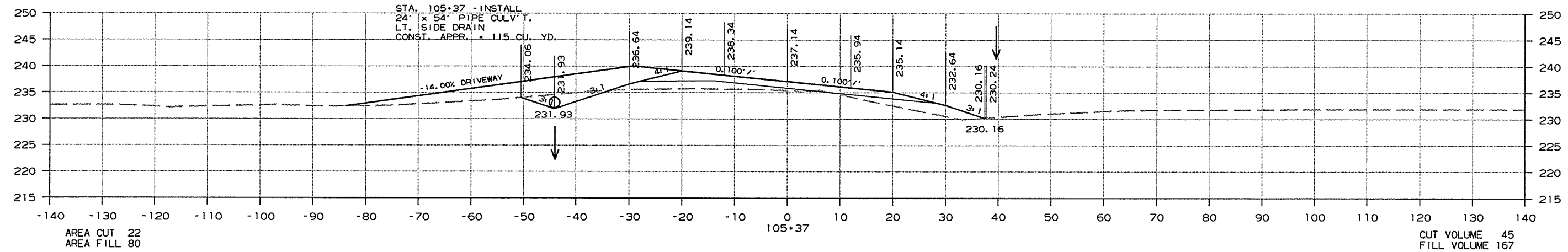
CROSS SECTIONS STA. 49+72 TO STA. 49+72

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.		CA1001	263	283
② CROSS SECTIONS - HWY. 18 EAST TIE								



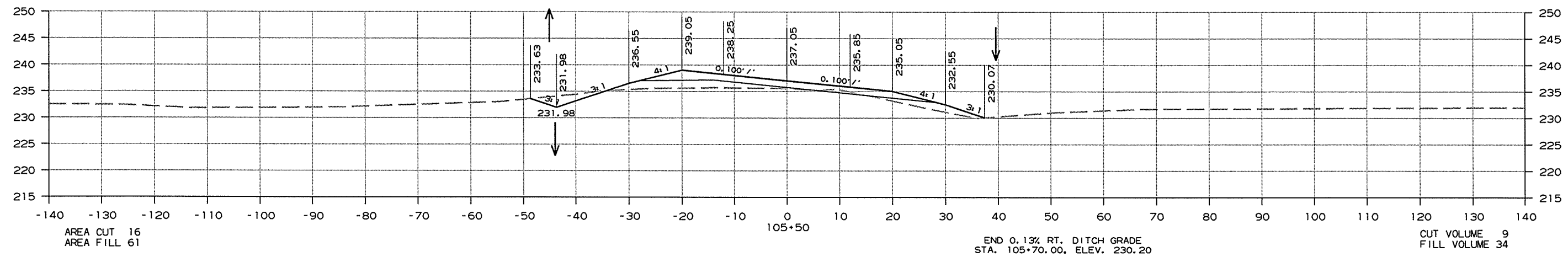
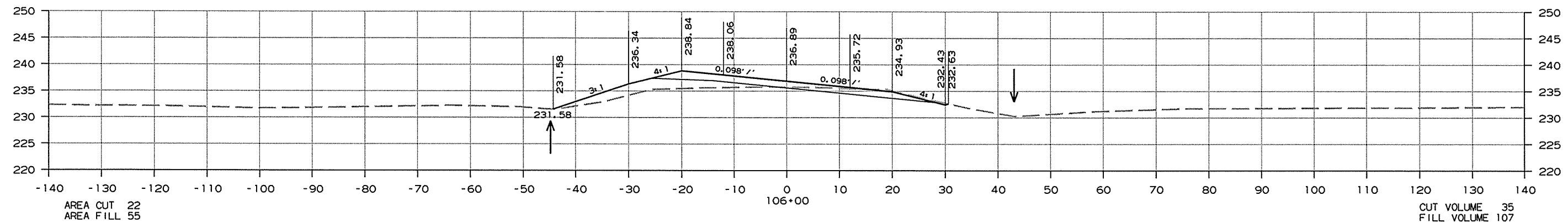
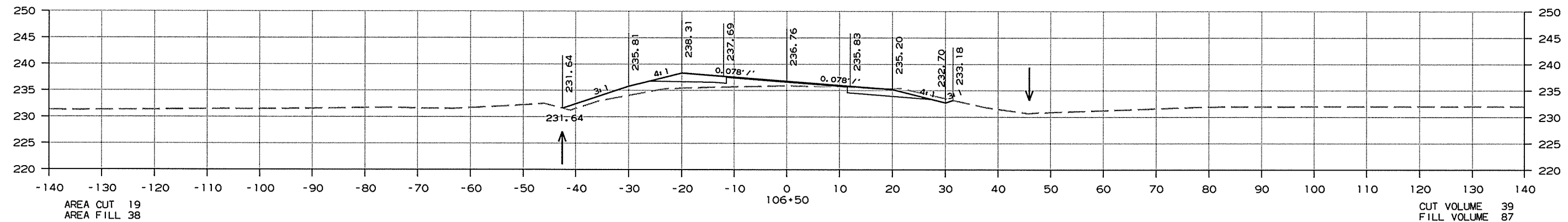
CROSS SECTIONS STA. 103+00 TO STA. 104+00

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. CA1001	264	283
2 CROSS SECTIONS - HWY. 18 EAST TIE								



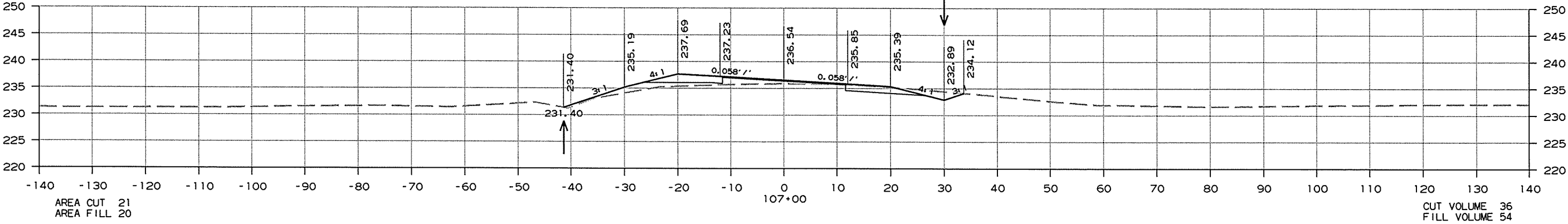
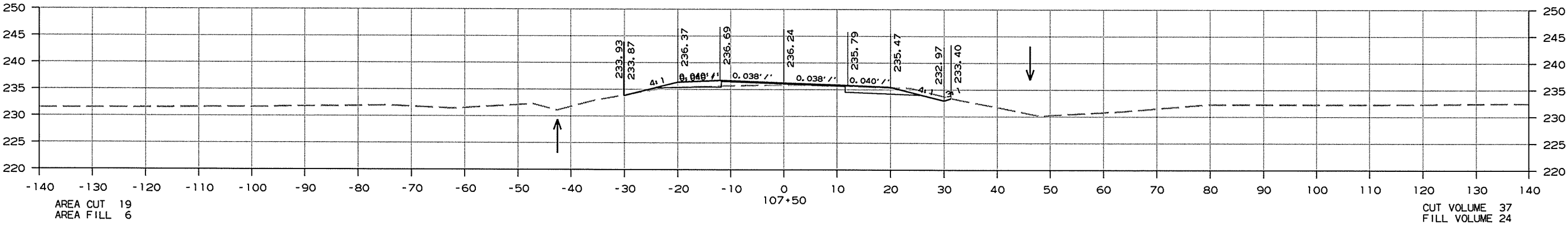
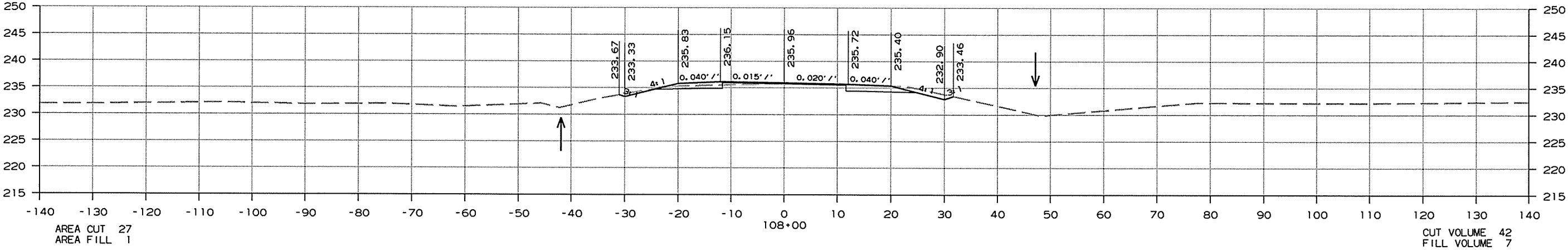
CROSS SECTIONS STA. 104+50 TO STA. 105+37

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. CA1001	265	283
2 CROSS SECTIONS - HWY. 18 EAST TIE								



CROSS SECTIONS STA. 105+50 TO STA. 106+50

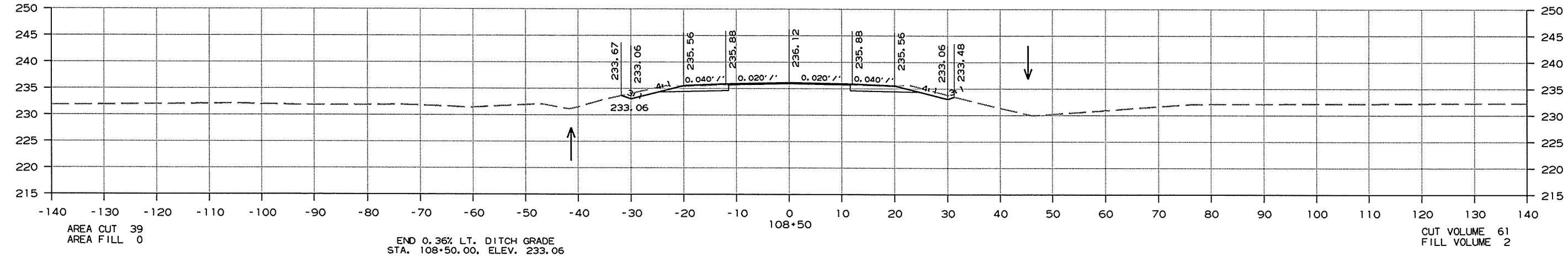
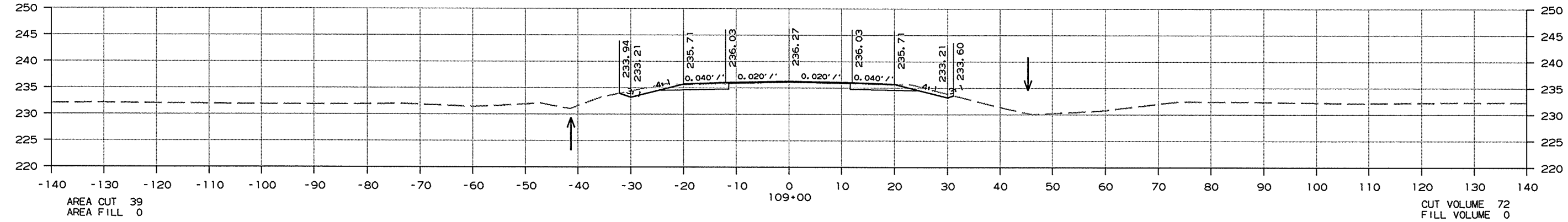
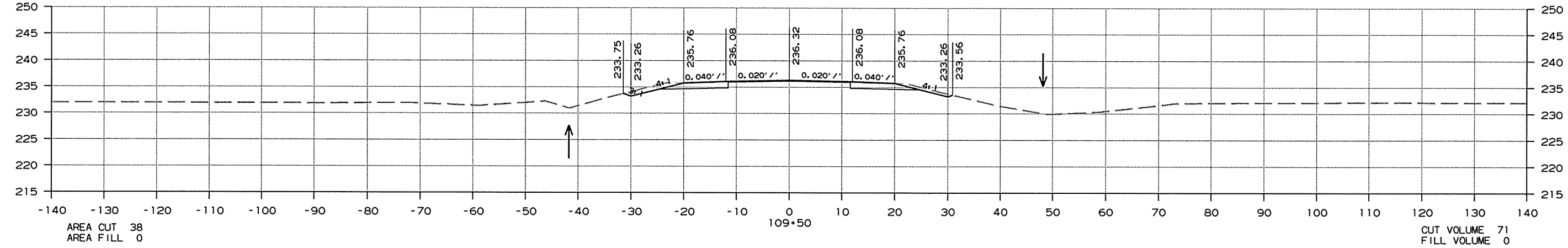
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA1001	266	283
② CROSS SECTIONS - HWY. 18 EAST TIE								



CROSS SECTIONS STA. 107+00 TO STA. 108+00

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. CA1001	267	283

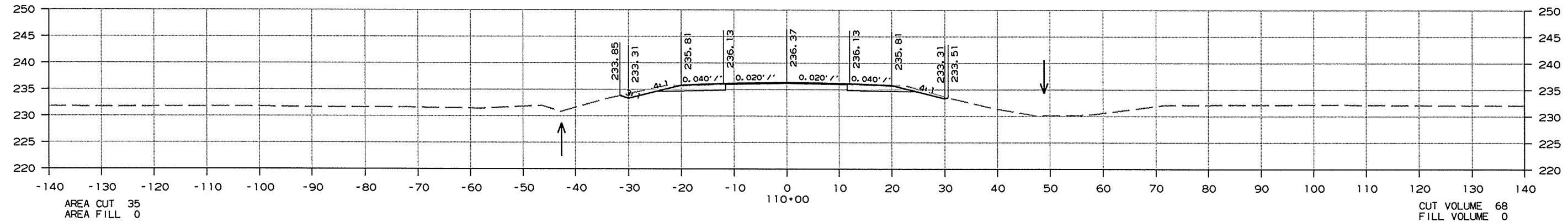
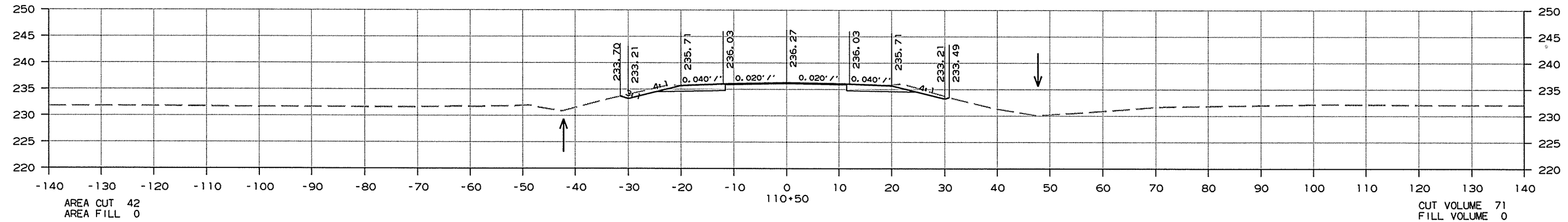
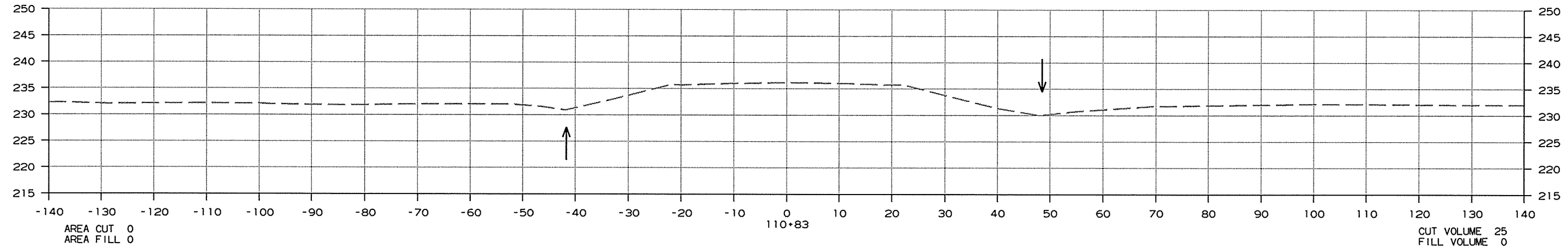
2 CROSS SECTIONS - HWY. 18 EAST TIE



CROSS SECTIONS STA. 108+50 TO STA. 109+50

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.	CA1001	268	283

② CROSS SECTIONS - HWY. 18 EAST TIE



CROSS SECTIONS STA. 110+00 TO STA. 110+83

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CA1001.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. CA1001	269	283

2 CROSS SECTIONS - CO. RD. 541

AREA STAGE 1

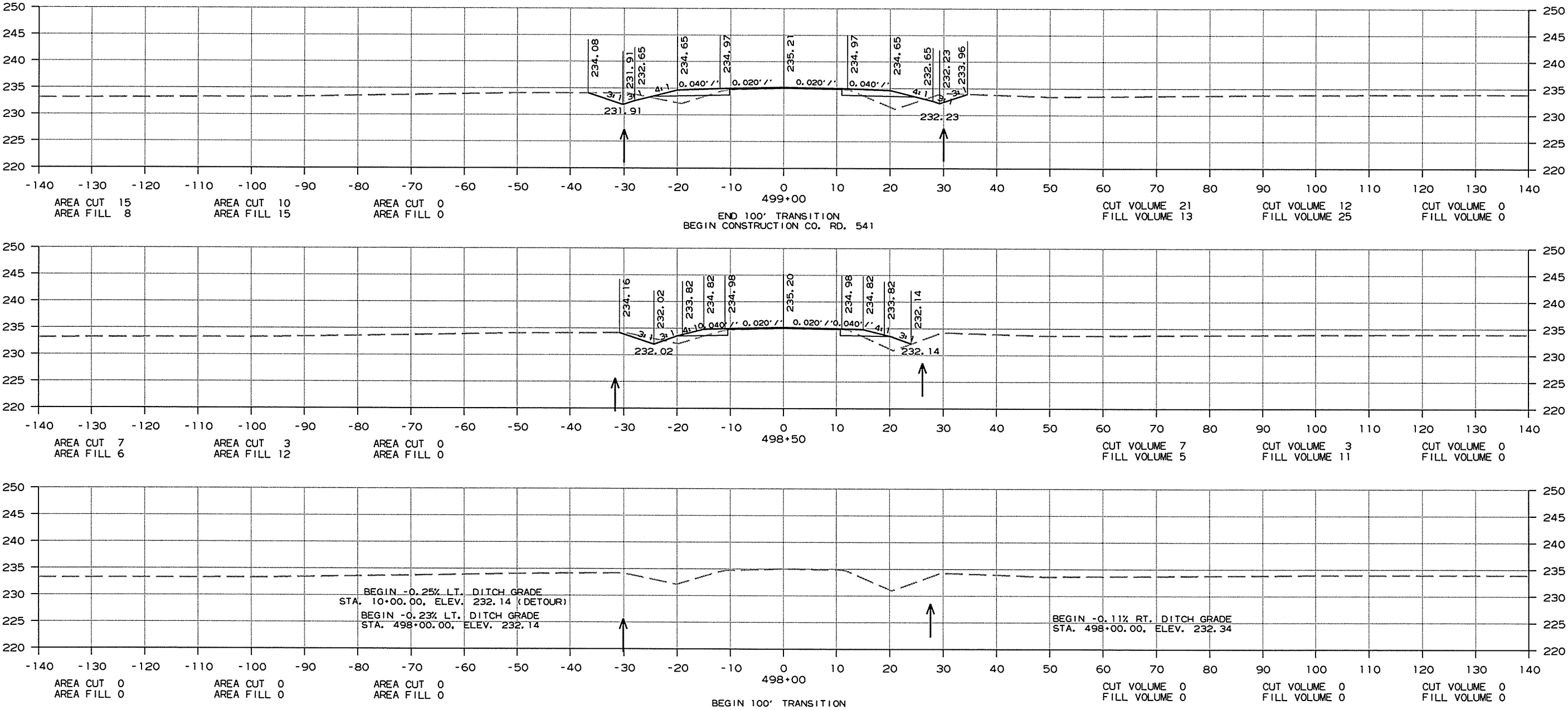
AREA STAGE 2

AREA STAGE 3

VOLUME STAGE 1

VOLUME STAGE 2

VOLUME STAGE 3



CROSS SECTIONS STA. 498+00 TO STA. 499+00

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. CA1001	270	283

2 CROSS SECTIONS - CO. RD. 541

AREA STAGE 1

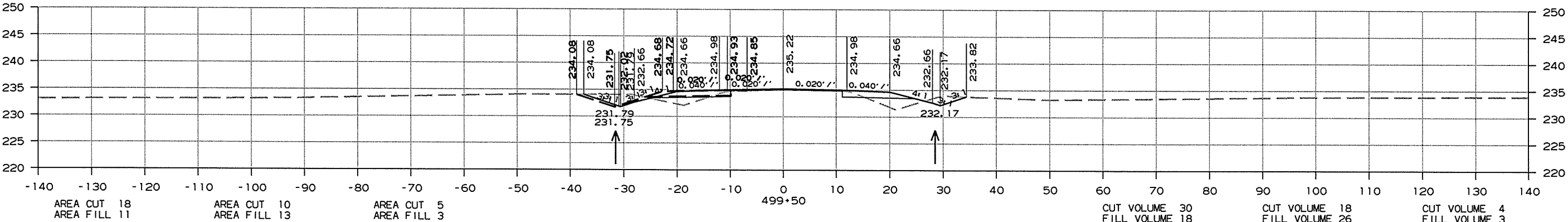
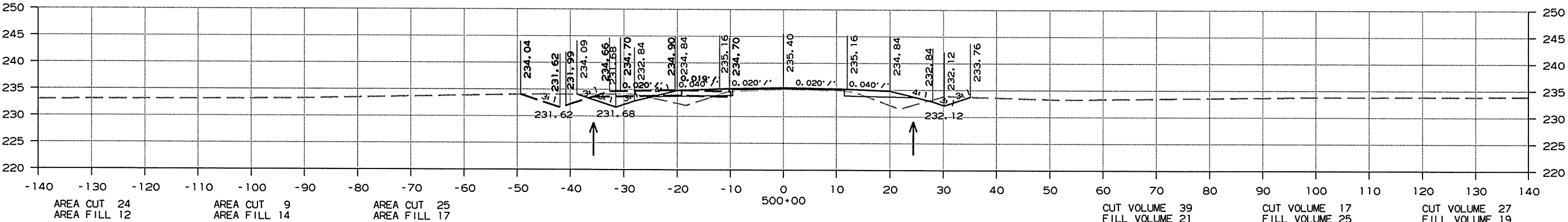
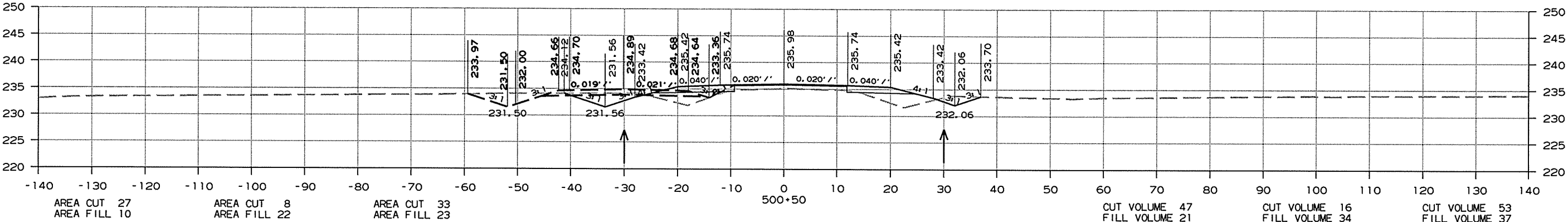
AREA STAGE 2

AREA STAGE 3

VOLUME STAGE 1

VOLUME STAGE 2

VOLUME STAGE 3



CROSS SECTIONS STA. 499+50 TO STA. 500+50

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CA1001.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. CA1001	271	283

2 CROSS SECTIONS - CO. RD. 541

AREA STAGE 1

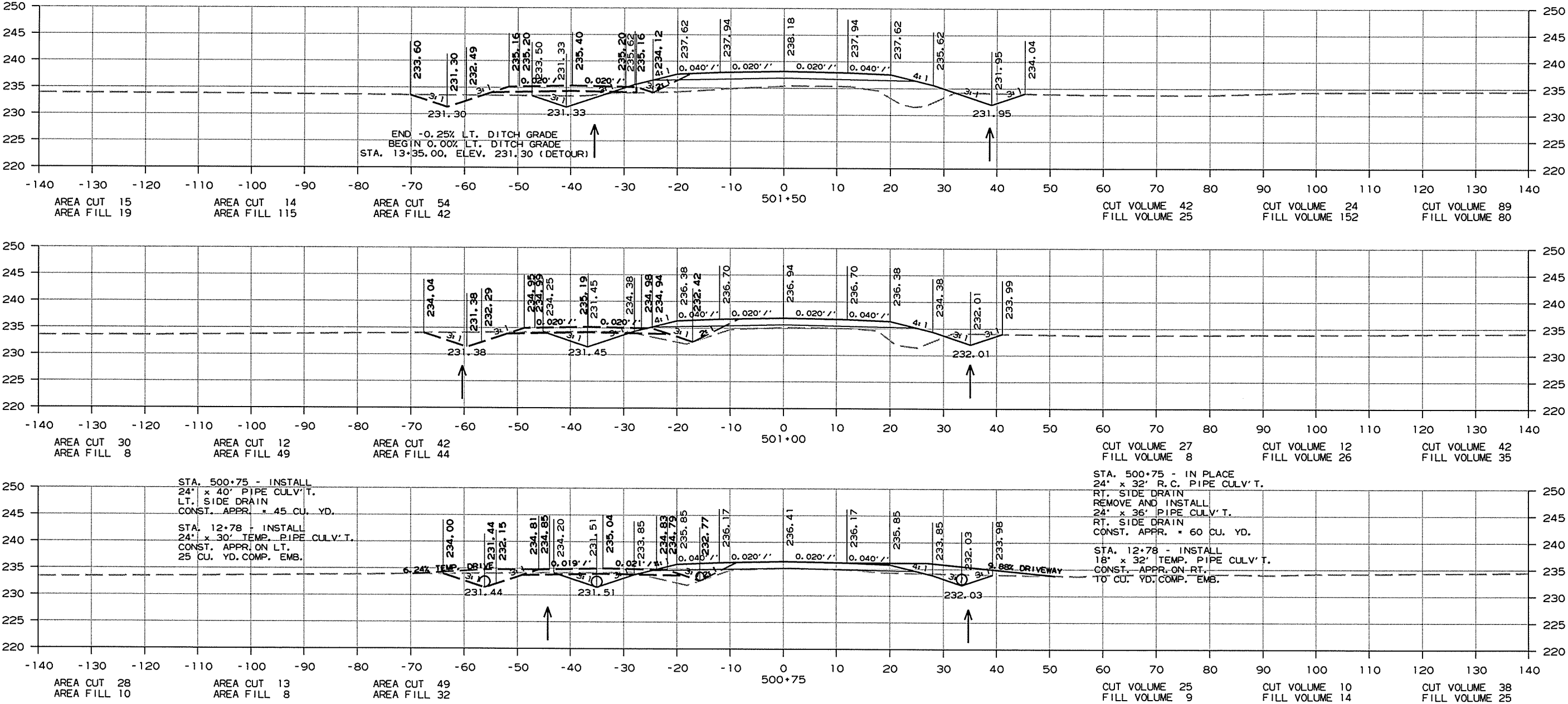
AREA STAGE 2

AREA STAGE 3

VOLUME STAGE 1

VOLUME STAGE 2

VOLUME STAGE 3



10/1/2015

CA1001.DGN

CROSS SECTIONS STA. 500+75 TO STA. 501+50

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. CA1001	272	283

2 CROSS SECTIONS - CO. RD. 541

AREA STAGE 1

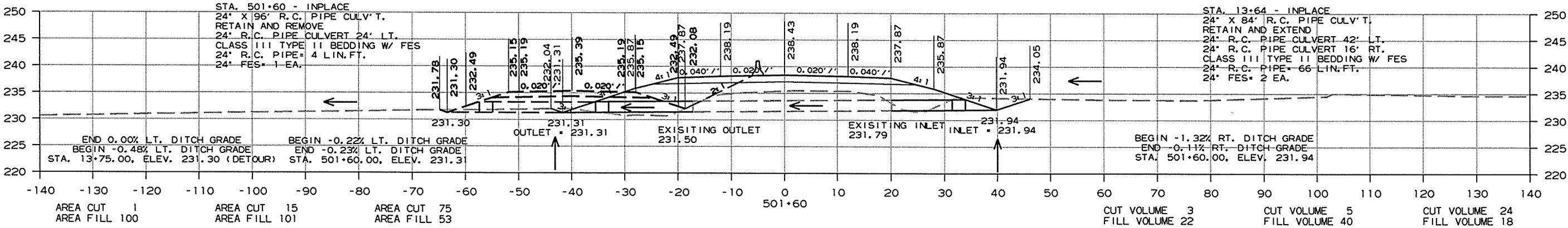
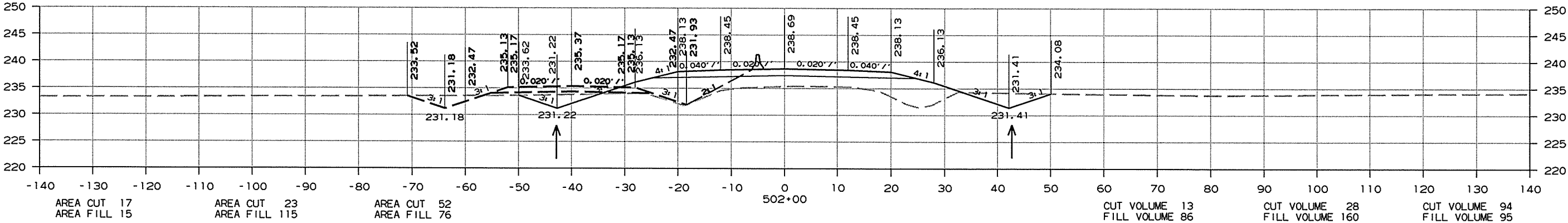
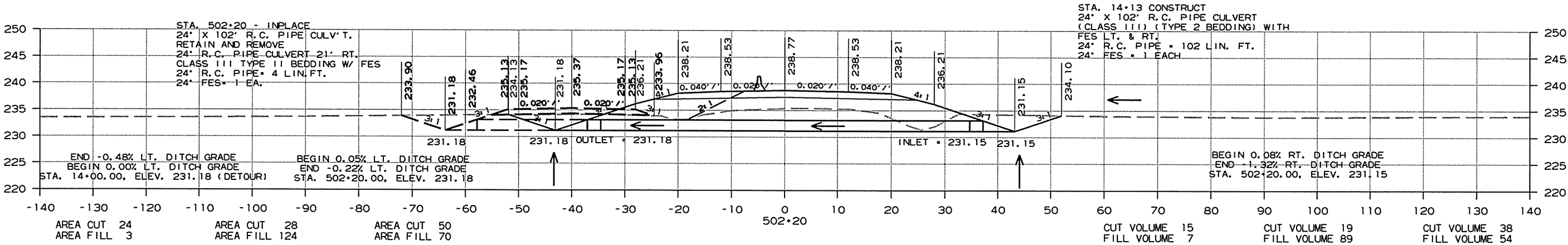
AREA STAGE 2

AREA STAGE 3

VOLUME STAGE 1

VOLUME STAGE 2

VOLUME STAGE 3



CROSS SECTIONS STA. 501+60 TO STA. 502+20

10/1/2015

CA1001.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA1001	273	283
② CROSS SECTIONS - CO. RD. 541								

AREA STAGE 1

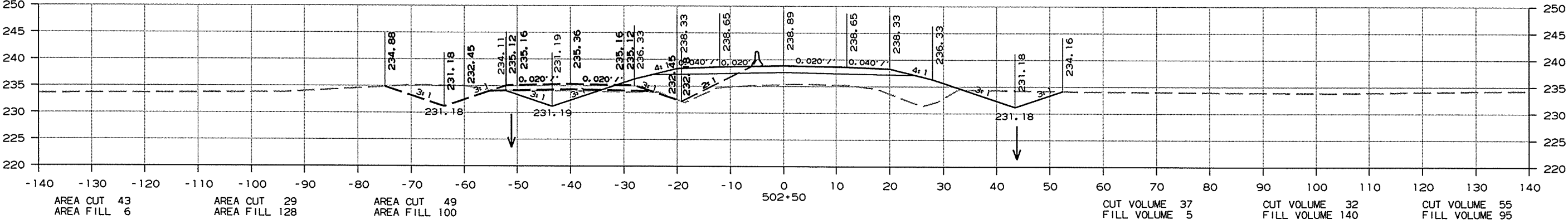
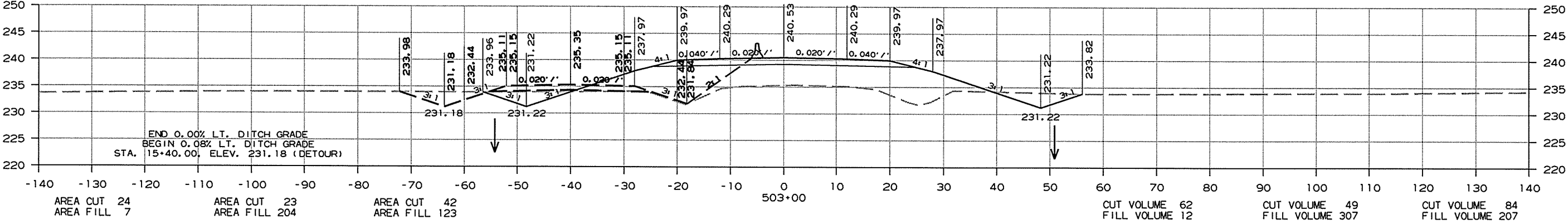
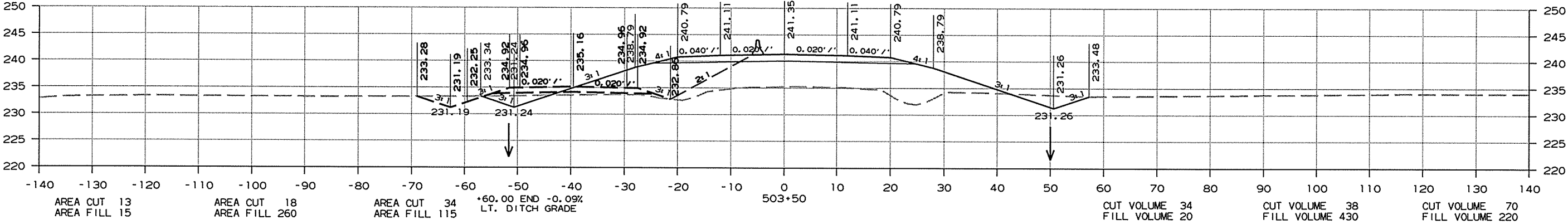
AREA STAGE 2

AREA STAGE 3

VOLUME STAGE 1

VOLUME STAGE 2

VOLUME STAGE 3



CROSS SECTIONS STA. 502+50 TO STA. 503+50

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. CA1001	274	283

2 CROSS SECTIONS - CO. RD. 541

AREA STAGE 1

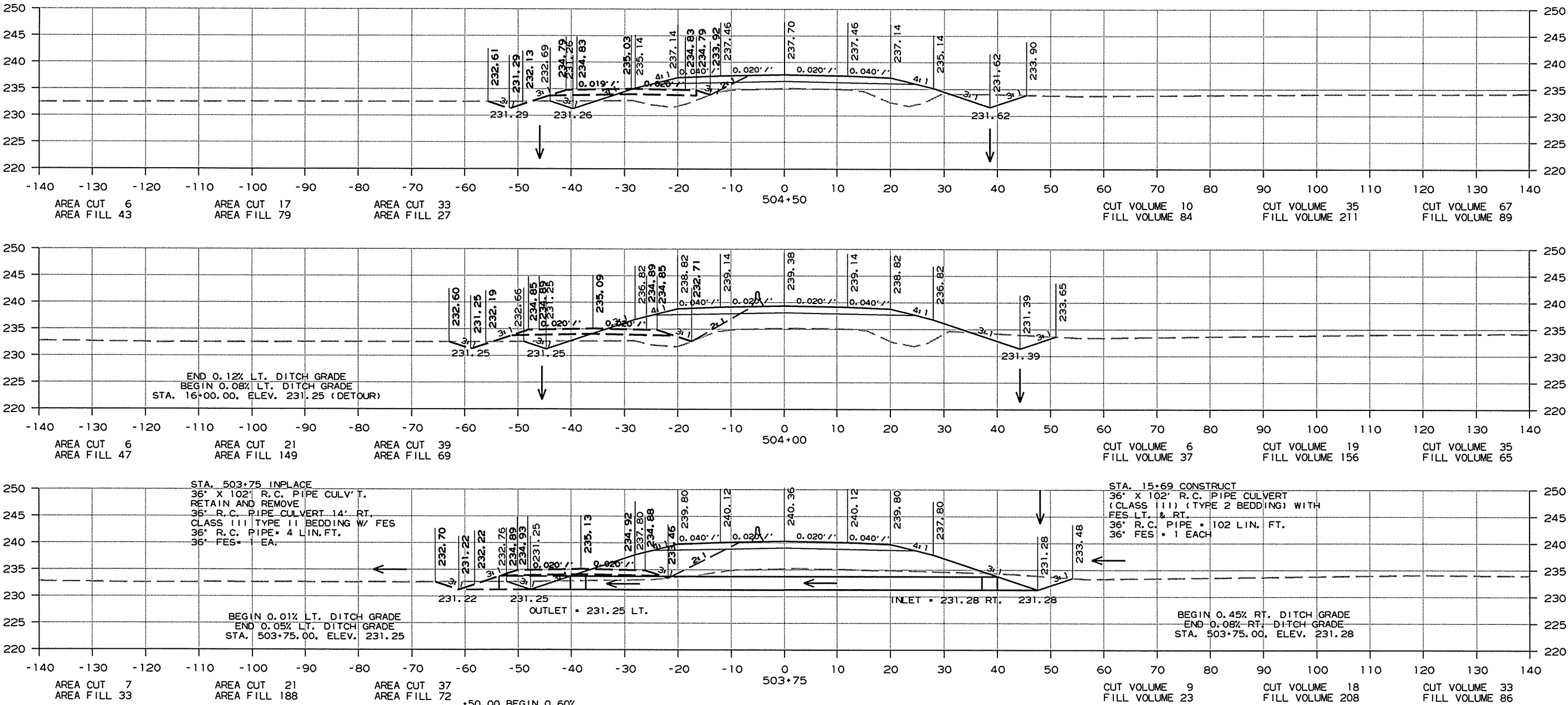
AREA STAGE 2

AREA STAGE 3

VOLUME STAGE 1

VOLUME STAGE 2

VOLUME STAGE 3



END 0.12% LT. DITCH GRADE
BEGIN 0.08% LT. DITCH GRADE
STA. 16+00.00, ELEV. 231.25 (DETOUR)

STA. 503+75 INPLACE
36" X 102" R.C. PIPE CULV'T.
RETAIN AND REMOVE
36" R.C. PIPE CULVERT 14' RT.
CLASS III TYPE II BEDDING W/ FES
36" R.C. PIPE 4 LIN. FT.
36" FES 1 EA.

BEGIN 0.01% LT. DITCH GRADE
END 0.05% LT. DITCH GRADE
STA. 503+75.00, ELEV. 231.25

+50.00 BEGIN 0.60%
LT. DITCH GRADE

STA. 15+69 CONSTRUCT
36" X 102" R.C. PIPE CULVERT
(CLASS III) (TYPE 2 BEDDING) WITH
FES LT. & RT.
36" R.C. PIPE 102 LIN. FT.
36" FES 1 EACH

BEGIN 0.45% RT. DITCH GRADE
END 0.08% RT. DITCH GRADE
STA. 503+75.00, ELEV. 231.28

CROSS SECTIONS STA. 503+75 TO STA. 504+50

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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.		CA1001	275	283
② CROSS SECTIONS - CO. RD. 541								

AREA STAGE 1

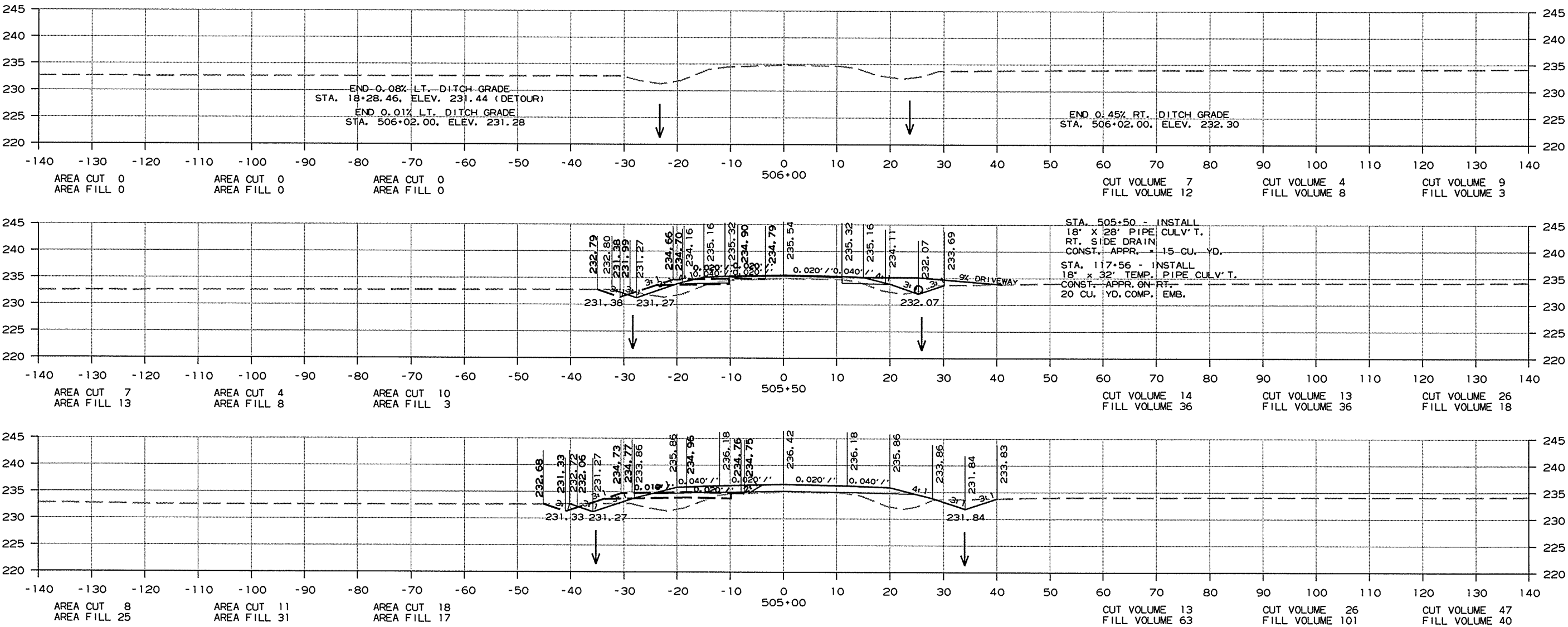
AREA STAGE 2

AREA STAGE 3

VOLUME STAGE 1

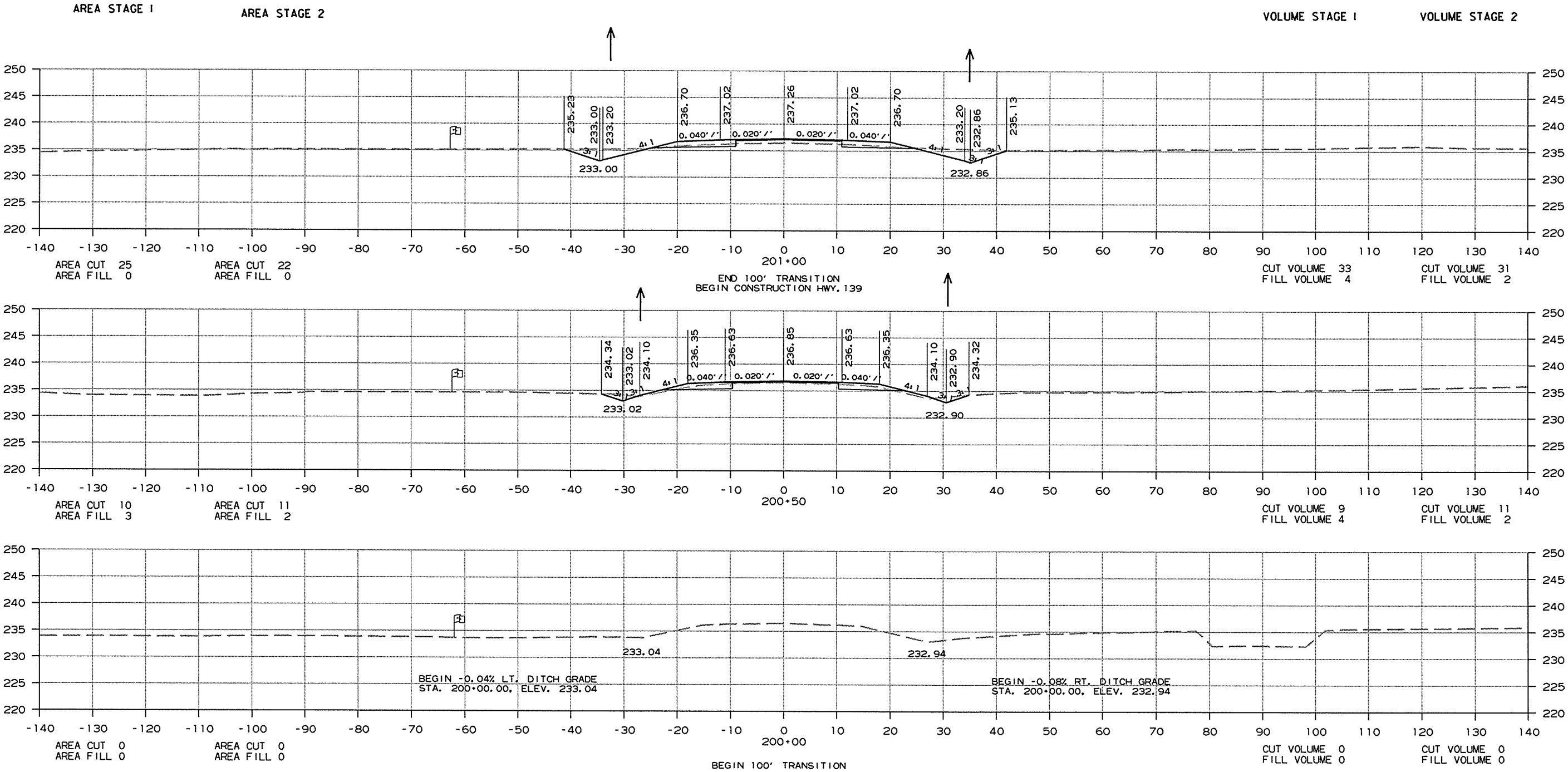
VOLUME STAGE 2

VOLUME STAGE 3



CROSS SECTIONS STA. 505+00 TO STA. 506+02

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.		CA1001	276	283
② CROSS SECTIONS - HWY. 139								



CROSS SECTIONS STA. 200+00 TO STA. 201+00

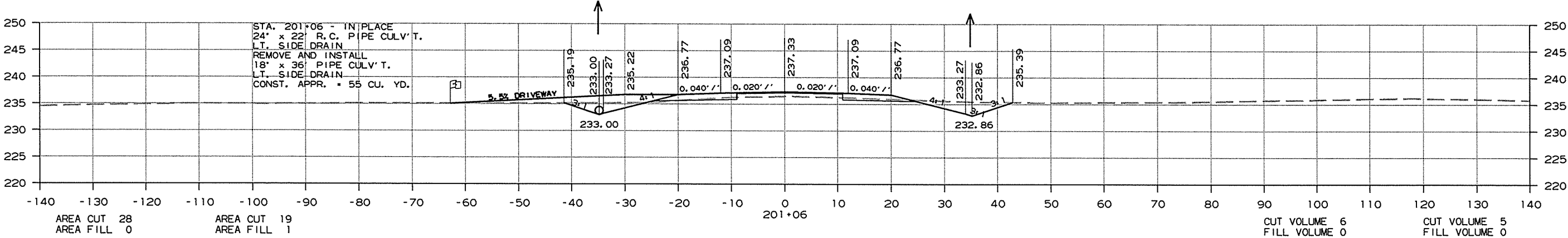
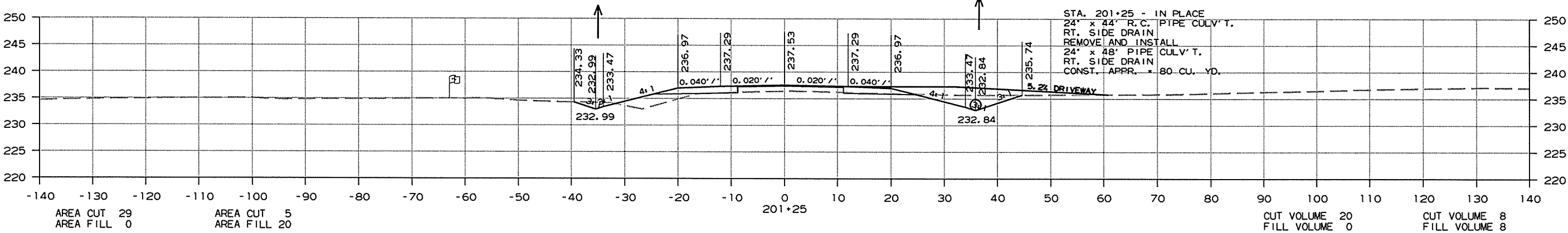
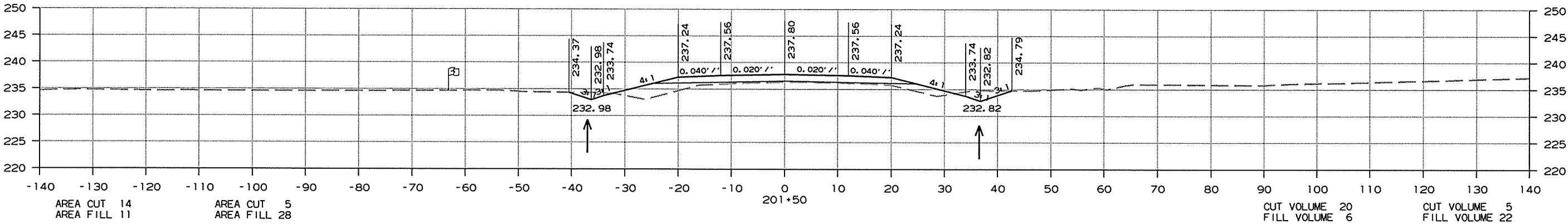
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. CA1001	277	283
2 CROSS SECTIONS - HWY. 139								

AREA STAGE 1

AREA STAGE 2

VOLUME STAGE 1

VOLUME STAGE 2



CROSS SECTIONS STA. 201+06 TO STA. 201+50

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. CA1001	278	283

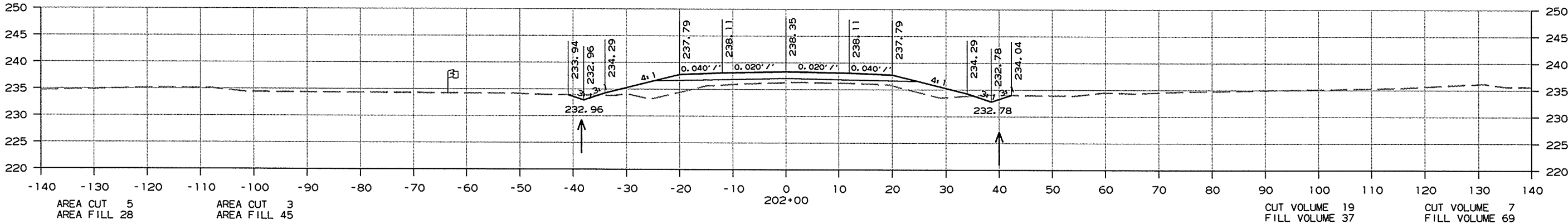
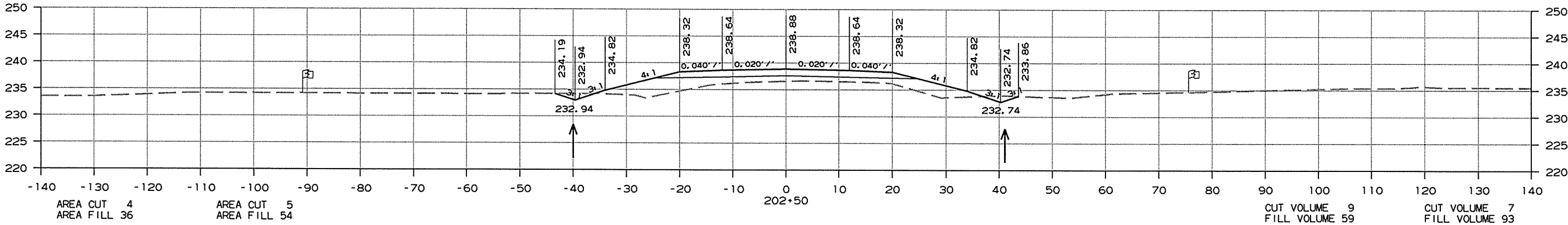
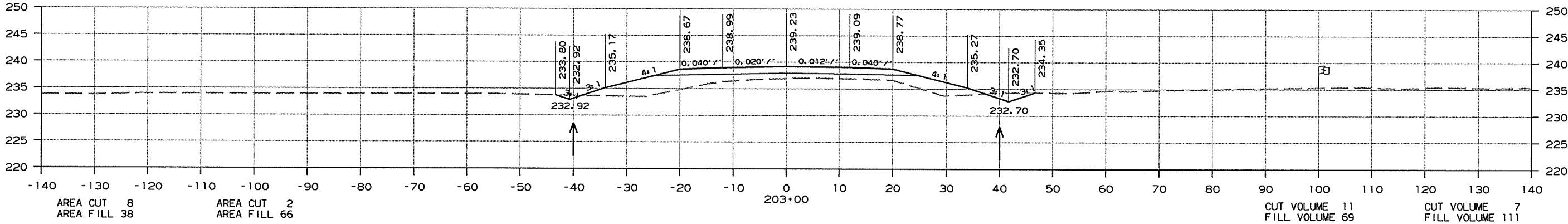
2 CROSS SECTIONS - HWY. 139

AREA STAGE 1

AREA STAGE 2

VOLUME STAGE 1

VOLUME STAGE 2



CROSS SECTIONS STA. 202+00 TO STA. 203+00

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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. CA1001	279	283

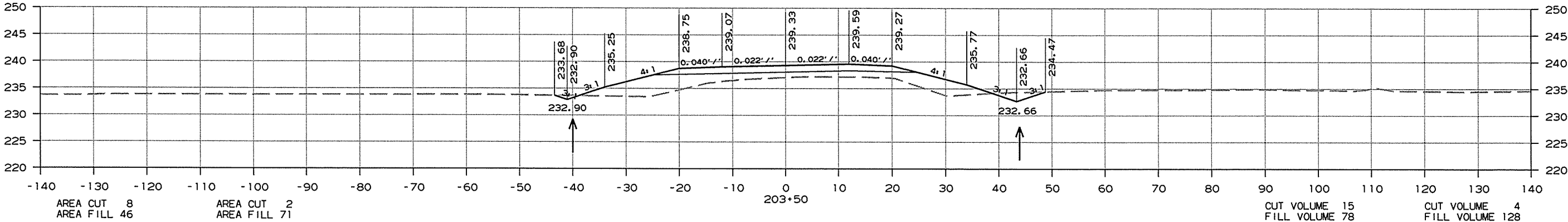
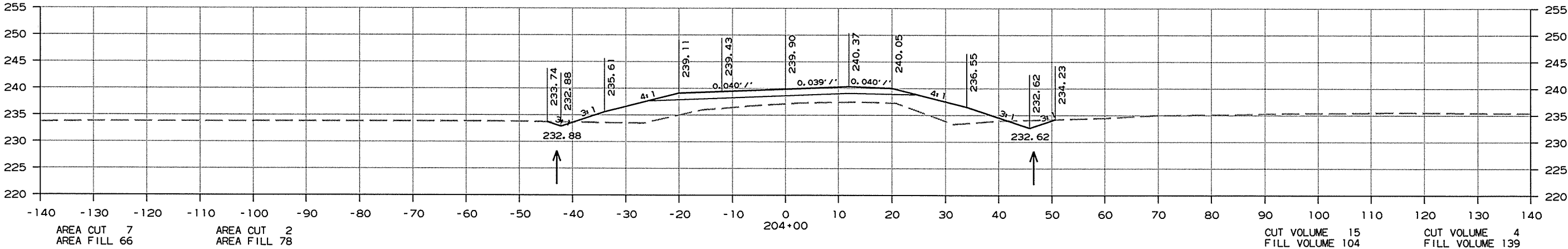
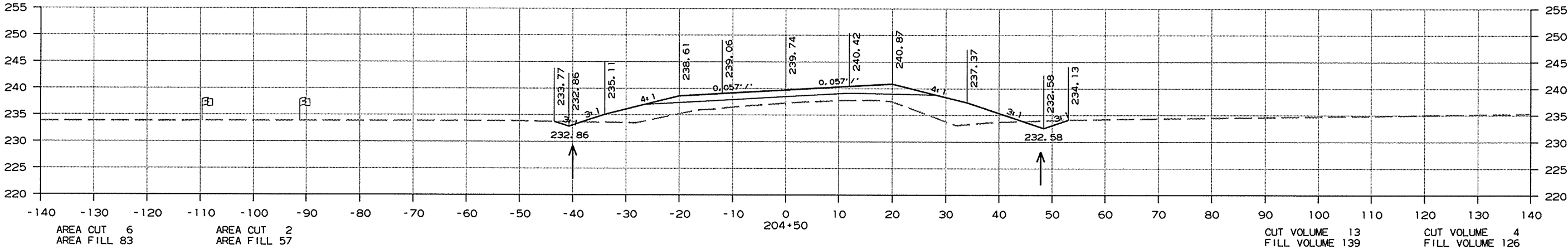
2 CROSS SECTIONS - HWY. 139

AREA STAGE 1

AREA STAGE 2

VOLUME STAGE 1

VOLUME STAGE 2



CROSS SECTIONS STA. 203+50 TO STA. 204+50

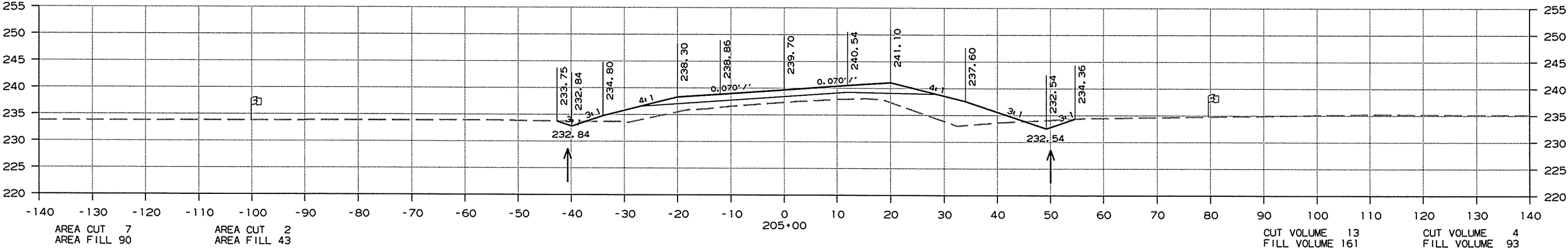
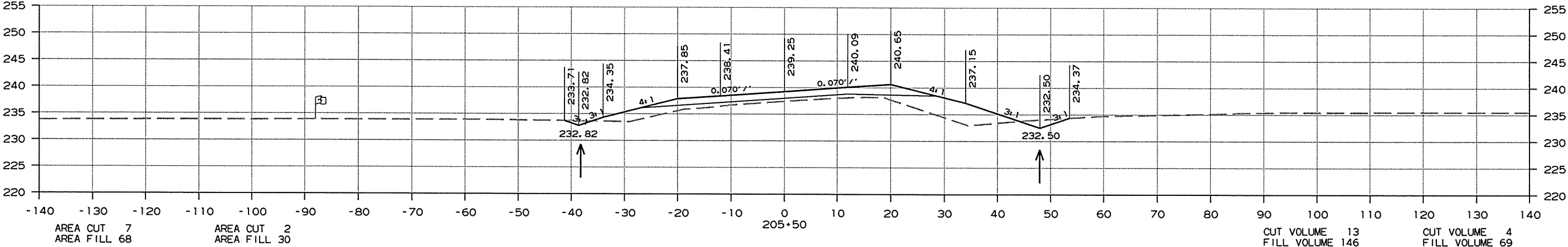
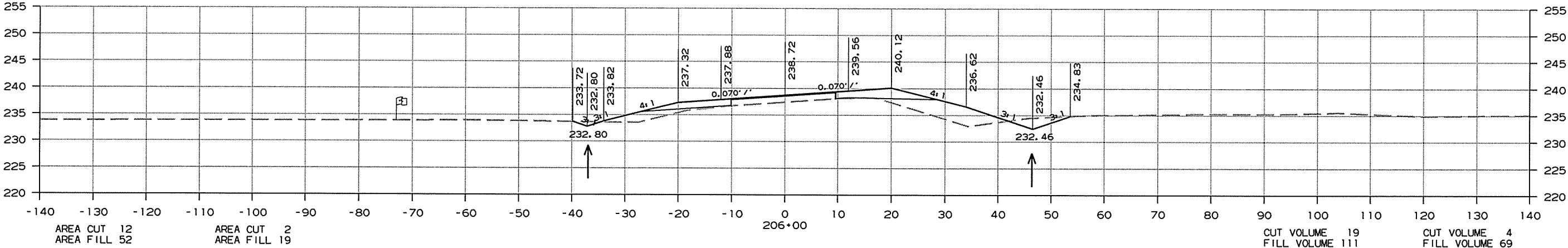
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA1001	280	283
② CROSS SECTIONS - HWY. 139								

AREA STAGE 1

AREA STAGE 2

VOLUME STAGE 1

VOLUME STAGE 2



CROSS SECTIONS STA. 205+00 TO STA. 206+00

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. CA1001	281	283

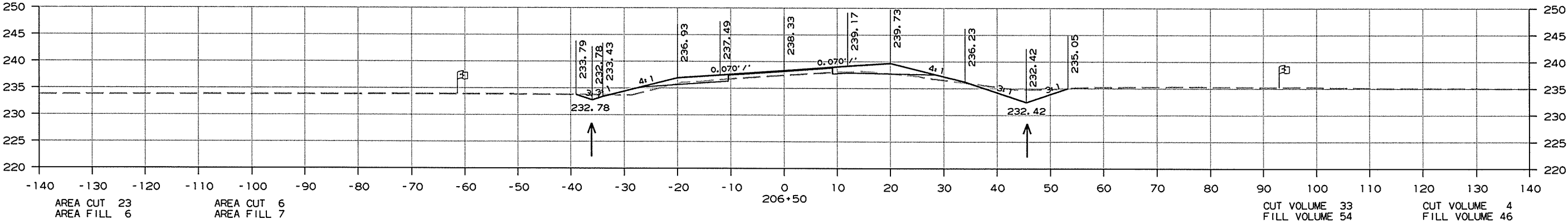
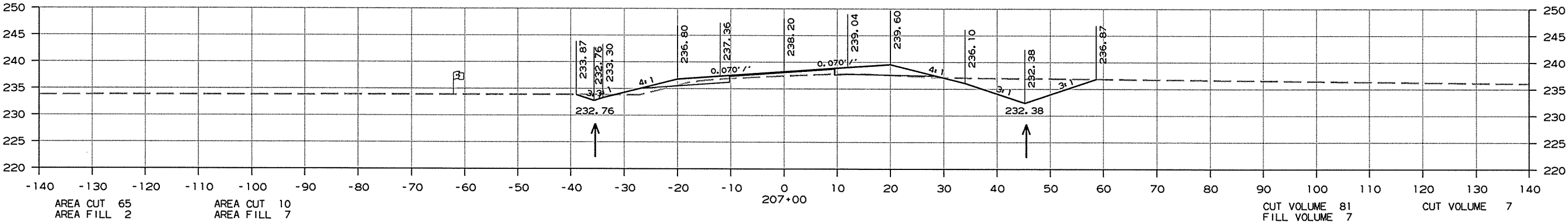
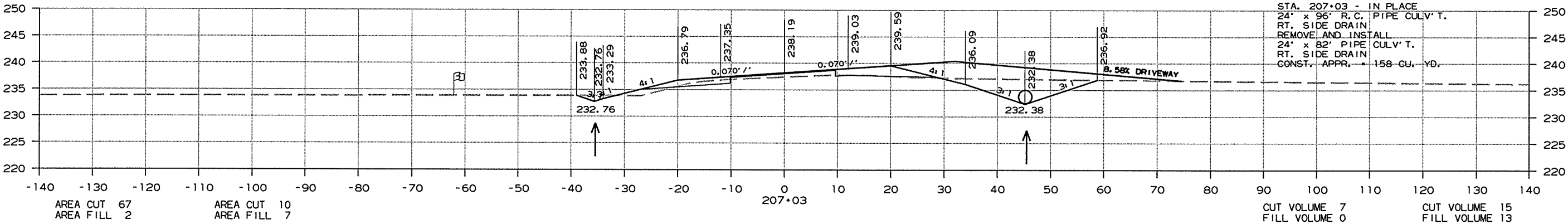
2 CROSS SECTIONS - HWY. 139

AREA STAGE 1

AREA STAGE 2

VOLUME STAGE 1

VOLUME STAGE 2



CROSS SECTIONS STA. 206+50 TO STA. 207+03

10/1/2015

CA1001.DGN

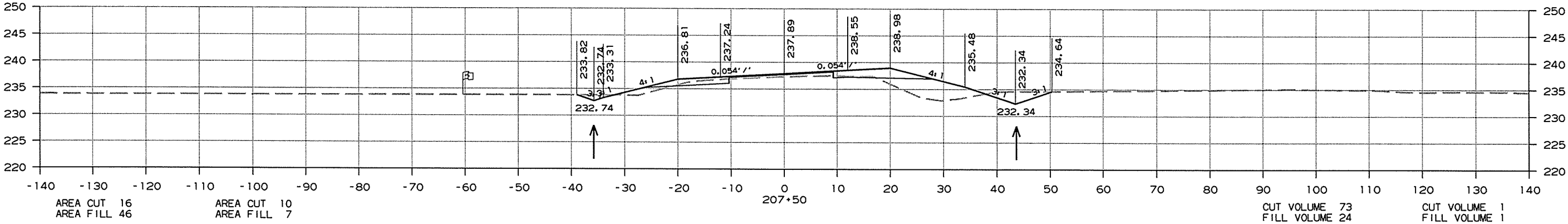
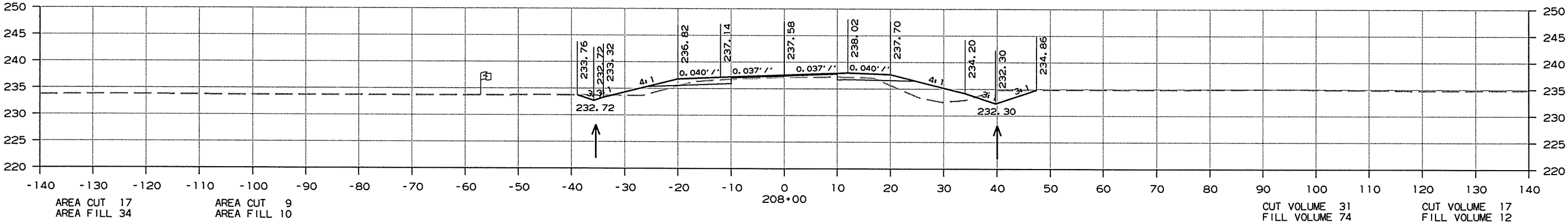
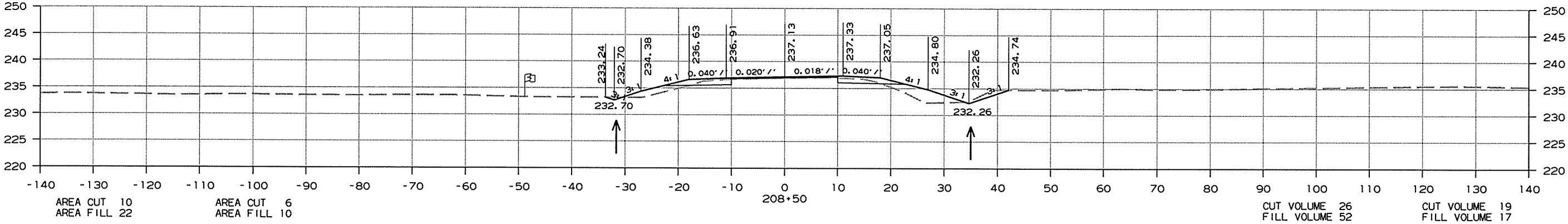
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. CA1001	282	283
2 CROSS SECTIONS - HWY. 139								

AREA STAGE 1

AREA STAGE 2

VOLUME STAGE 1

VOLUME STAGE 2



CROSS SECTIONS STA. 207+50 TO STA. 208+50

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. CA1001	283	283

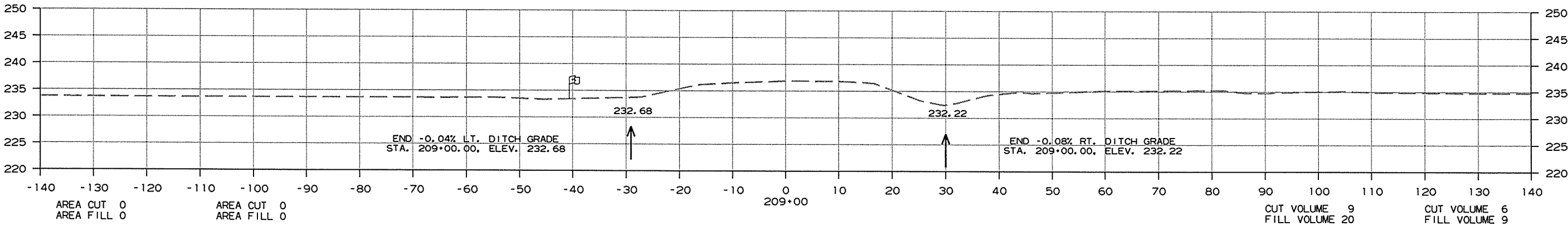
2 CROSS SECTIONS - HWY. 139

AREA STAGE 1

AREA STAGE 2

VOLUME STAGE 1

VOLUME STAGE 2



CROSS SECTIONS STA. 209+00 TO STA. 209+35

10/1/2015

CA1001.DGN