DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100667	1	123
				(2)	CASH BYPASS-EAST (S)			

"A PARTIALLY CONTROLLED ACCESS FACILITY"

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

CONSTRUCTION PLANS FOR STATE HIGHWAY

CASH BYPASS-EAST (S)

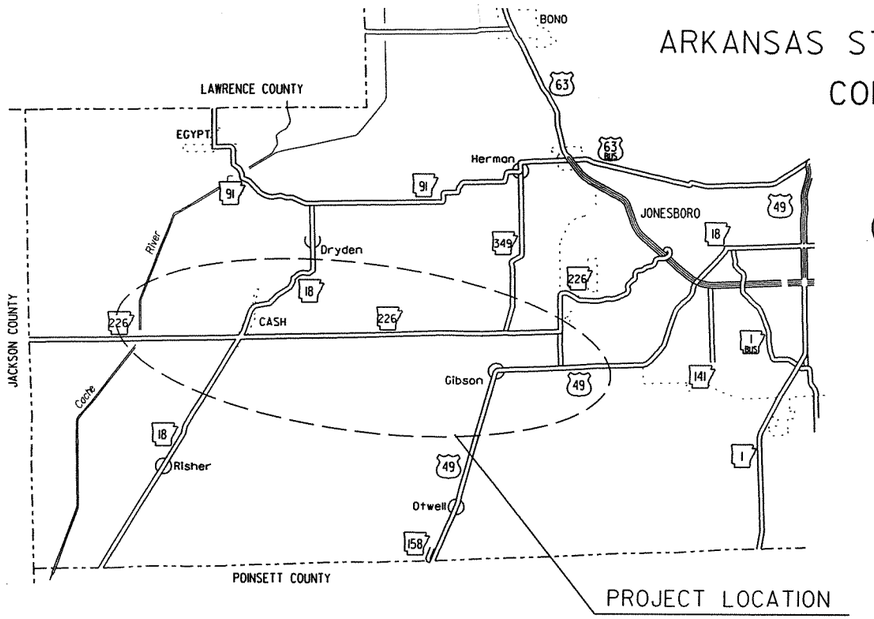
CRAIGHEAD COUNTY

ROUTE 226 SECTION 2

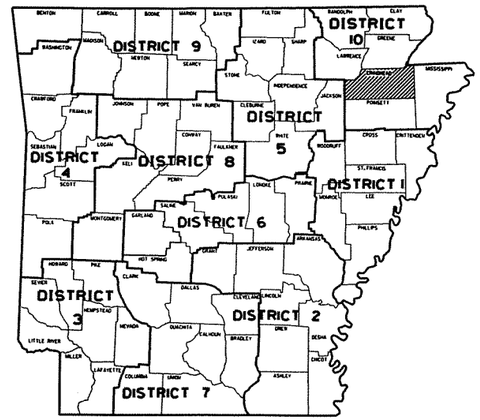
FED. AID PROJECT NH-0016(53)

JOB 100667

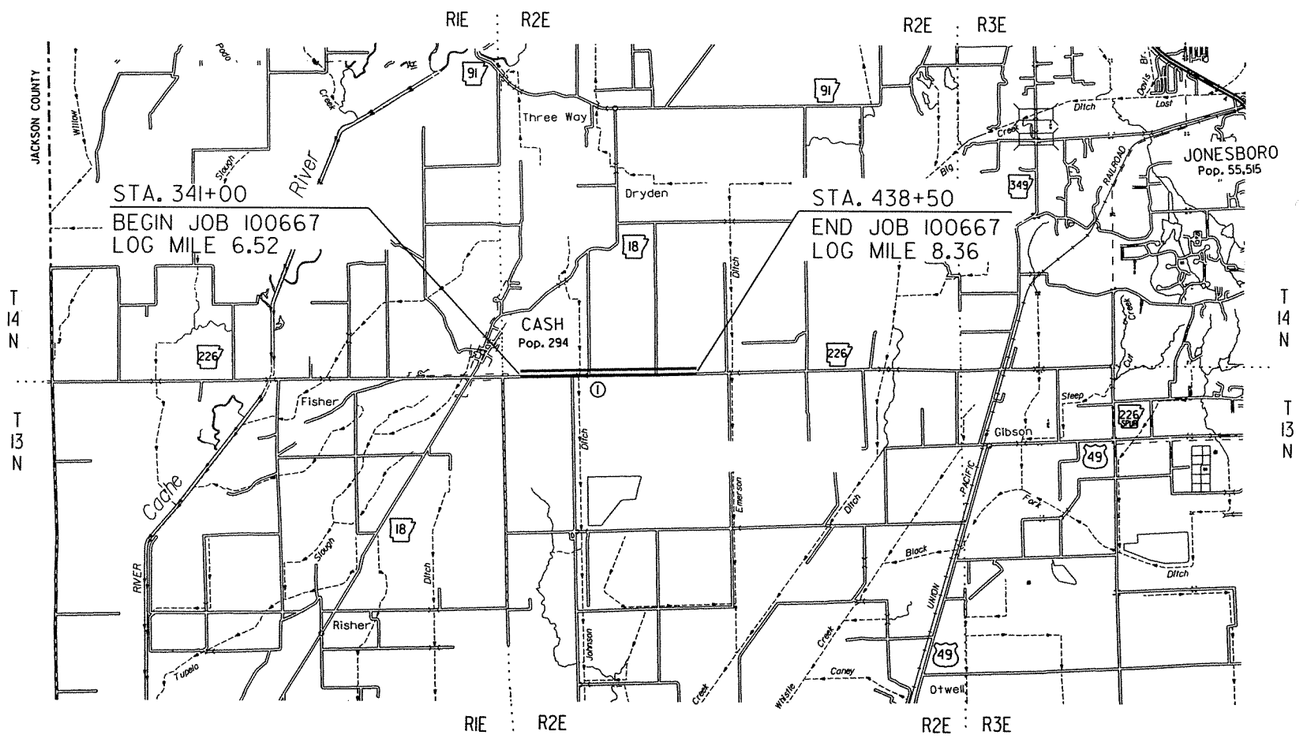
0 1 2 MILE



VICINITY MAP



ARK. HWY. DIST. NO. 10



DESIGN TRAFFIC DATA

DESIGN YEAR	2012
2012 ADT	5000
2032 ADT	6500
2032 DHV	715
DIRECTIONAL DISTRIBUTION	0.60
TRUCKS	17%
DESIGN SPEED	60 MPH

N

STRUCTURES OVER 20'-0" SPAN

① STA. 368+50 - CONSTRUCT QUINT. 10' x 9' x 179' R.C. BOX CULV'T. (15° LT. FWD. SKEW(55'-10" SPAN) WITH 3:1 WINGS LT. & RT. Q50 = 990 cfs; DA = 2880 ac

APPROVED

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 3917 FRANK VOZEL

10/4/13

DEPUTY DIRECTOR AND CHIEF ENGINEER

BEGIN PROJECT		MID-POINT OF PROJECT		END PROJECT	
LATITUDE	35° 47' 40" N	LATITUDE	35° 47' 39" N	LATITUDE	35° 47' 38" N
LONGITUDE	90° 55' 11" W	LONGITUDE	90° 54' 12" W	LONGITUDE	90° 53' 13" W

GROSS LENGTH OF PROJECT	9750.00	FEET OR	1.847	MILES	
NET	ROADWAY	9694.17		1.836	
NET	BRIDGES	55.83		0.011	
NET	PROJECT	9750.00		1.847	

P.E. 100412

NON-PART.

r100667.dgn 10/29/2009

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100667	2	123

(2) INDEX OF SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12

INDEX OF SHEETS

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52	SUMMARY OF QUANTITIES AND REVISIONS		
53 - 57	SURVEY CONTROL DETAILS		
58	SOIL BORING LOG		
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68	FLARED END SECTION	FES-2	10-18-96
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74	DETAILS OF PIPE UNDERDRAIN	PU-1	4-10-03
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76	EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS	RCB-2	11-20-03
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78	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-2	3-11-10
79	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-3	10-15-09
80	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	TC-4	10-15-09
81	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	TC-5	10-15-09
82	TEMPORARY EROSION CONTROL DEVICES	TEC-1	12-15-11
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84	TEMPORARY EROSION CONTROL DEVICES	TEC-3	11-03-94
85	WIRE FENCE TYPE A AND B	WF-1	8-22-02
86	WIRE FENCE WATER GAPS	WF-2	4-20-79
87	WIRE FENCE TYPE C AND D	WF-4	8-22-02
88 - 123	CROSS SECTIONS		

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

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				6	ARK.			
				JOB NO.		100667	3	123
				(2) GOVERNING SPECIFICATIONS AND GENERAL NOTES				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12

GOVERNING SPECIFICATIONS

ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2003, 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 100667
FHWA-1273__	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273__	SUPPLEMENT - WAGE RATE DETERMINATION
100-2_____	MANUAL FOR ASSESSING SAFETY HARDWARE (MASH)
102-1_____	BIDDING REQUIREMENTS AND CONDITIONS
103-1_____	DETERMINATION OF DBE PARTICIPATION
105-1_____	CONSTRUCTION CONTROL MARKINGS
105-2_____	EQUIPMENT AND MATERIAL STORAGE ON BRIDGE STRUCTURES
105-3_____	CONTROL OF WORK
107-1_____	WORKER VISIBILITY
108-1_____	LIQUIDATED DAMAGES
110-1_____	PROTECTION OF WATER QUALITY AND WETLANDS
303-1_____	AGGREGATE BASE COURSE
404-1_____	PRODUCTION VERIFICATION OF ASPHALT CONCRETE HOT MIX
404-2_____	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
409-1_____	MINERAL AGGREGATES
410-3_____	DENSITY TESTING FOR ACHM LEVELING COURSES AND BOND BREAKERS
600-1_____	WATER FOR VEGETATION
603-1_____	MAINTENANCE OF TRAFFIC
604-1_____	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
604-2_____	INSPECTION OF TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
606-1_____	PIPE CULVERTS FOR SIDE DRAINS
606-2_____	PIPE CULVERTS
719-2_____	THERMOPLASTIC PAVEMENT MARKING MATERIAL
804-1_____	INSTALLATION OF DOWEL BARS AND TIE BARS
JOB 100667__	ASPHALT CONCRETE HOT MIX SURFACE COURSE SURFACE TOLERANCE AND INCENTIVE PAYMENTS
JOB 100667__	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 100667__	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 100667__	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 100667__	COORDINATION OF WORK
JOB 100667__	EXCAVATION AND EMBANKMENT (SELECT MATERIAL)
JOB 100667__	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 100667__	INTERNET BIDDING
JOB 100667__	LRFD PRECAST REINFORCED CONCRETE BOX CULVERTS
JOB 100667__	NESTING SITES OF MIGRATORY BIRDS
JOB 100667__	PARTNERING REQUIREMENTS
JOB 100667__	PLASTIC PIPE
JOB 100667__	SITE USE (A + C METHOD)
JOB 100667__	SOIL STABILIZATION
JOB 100667__	STORM WATER POLLUTION PREVENTION PLAN
JOB 100667__	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 100667__	TEMPORARY IMPACT ATTENUATION BARRIER
JOB 100667__	TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES LEFT IN PLACE
JOB 100667__	UTILITY ADJUSTMENTS
JOB 100667__	VALUE ENGINEERING
JOB 100667__	WARM MIX ASPHALT

GENERAL NOTES

1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
2. ALL PIPE LINES, POWER, TELEPHONE AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
3. ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
4. 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.
5. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
6. 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.
7. 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.
8. THIS PROJECT IS COVERED UNDER AN INDIVIDUAL SECTION 404 PERMIT. REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS, EDITION OF 2003, FOR PERMIT REQUIREMENTS.
9. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.

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GOVERNING SPECIFICATIONS AND GENERAL NOTES

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				6	ARK.			
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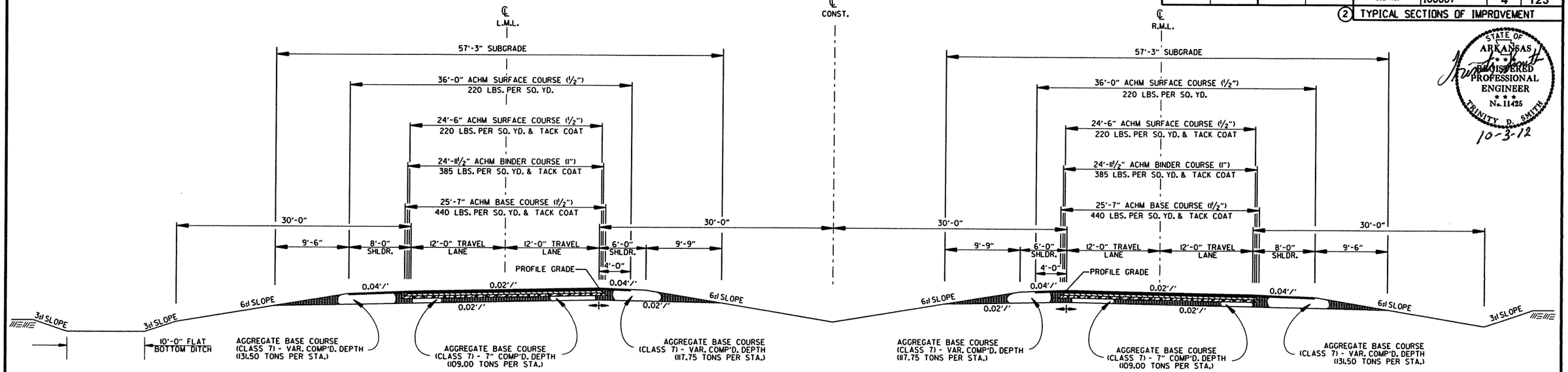
(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12



HWY. 226 - 4 LANE DIVIDED
FULL DEPTH SECTION

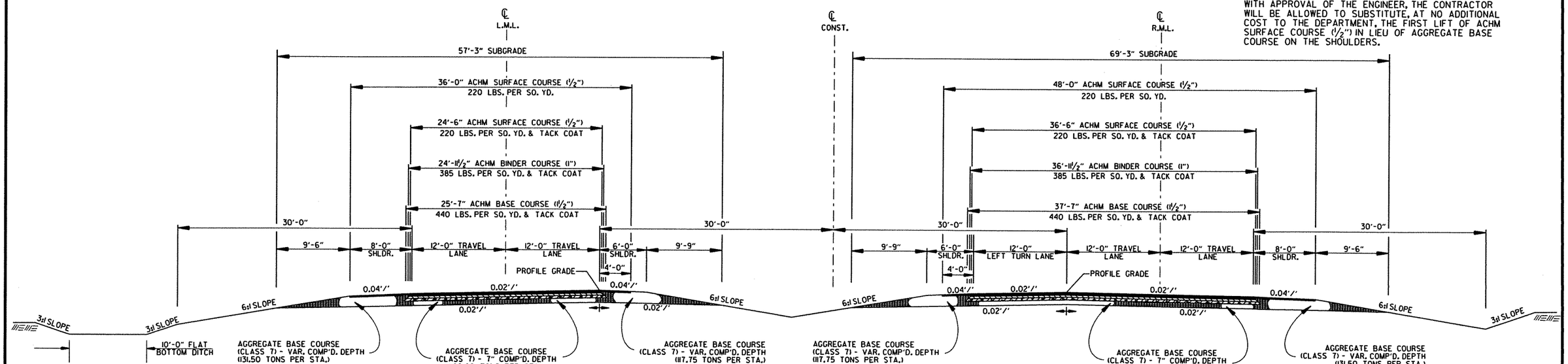
STA. 341+00.00 TO STA. 362+84.00
STA. 371+92.00 TO STA. 390+16.00
STA. 399+24.00 TO STA. 417+56.00
STA. 426+64.00 TO STA. 438+50.00

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

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

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 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.



HWY. 226 - 4 LANE DIVIDED
RT. MAIN LANES W./ LEFT TURN LANE

STA. 364+84.00 TO STA. 366+94.00
STA. 392+16.00 TO STA. 394+26.00
STA. 419+56.00 TO STA. 421+66.00

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TYPICAL SECTIONS OF IMPROVEMENT

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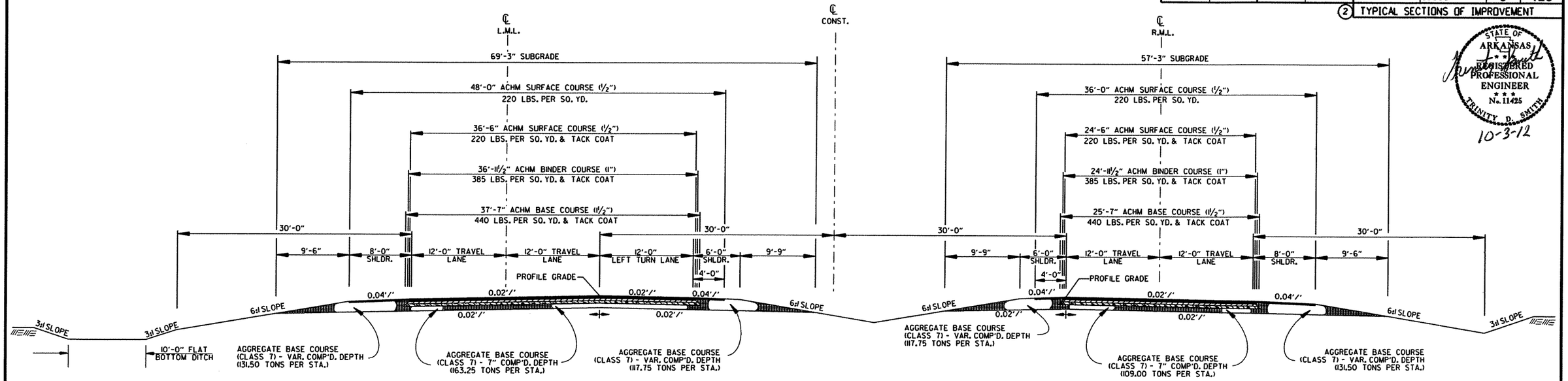
(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12



HWY. 226 - 4 LANE DIVIDED
LT. MAIN LANES W./ LEFT TURN LANE

STA. 369+92.00 TO STA. 371+92.00
STA. 397+24.00 TO STA. 399+24.00
STA. 424+64.00 TO STA. 426+64.00

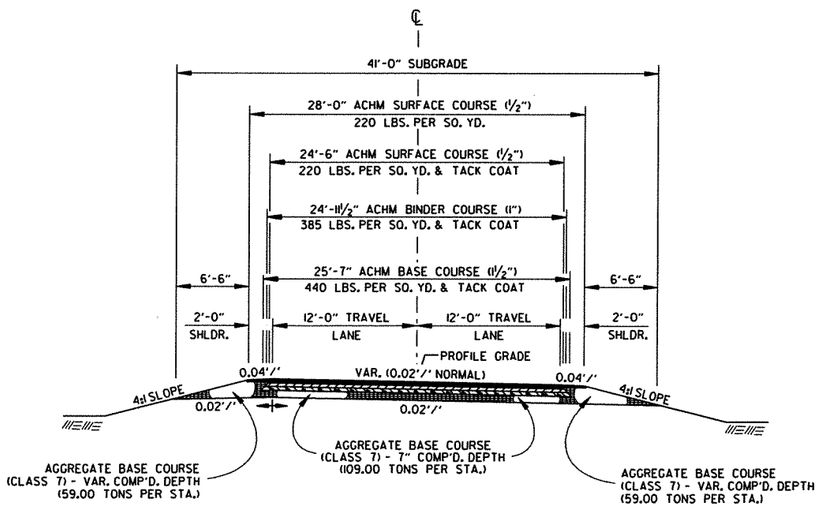
NOTES:

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

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

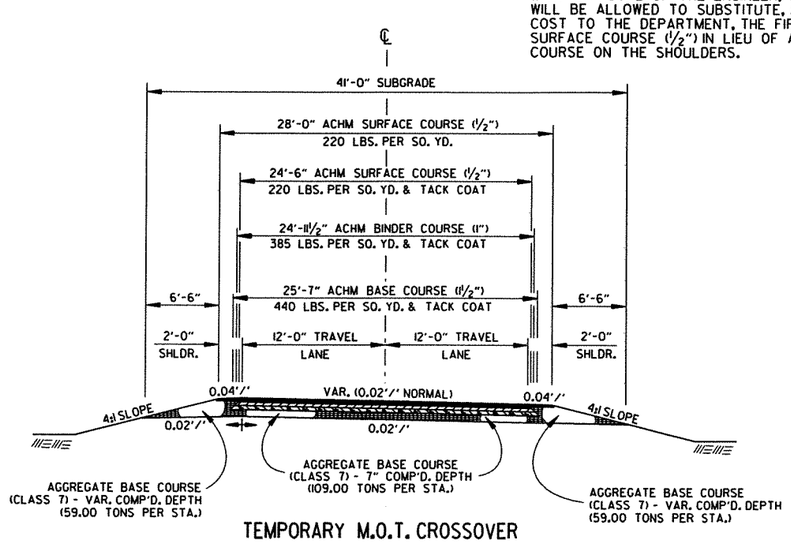
THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAID. LONGITUDINAL JOINTS SHALL BE AT LANE LINES.

WITH 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.



TEMPORARY GRADE RAISE

STA. 336+00.00 TO STA. 341+00.00
STA. 438+50.00 TO STA. 443+50.00



TEMPORARY M.O.T. CROSSOVER

STA. 342+00.00 TO STA. 350+00.00
STA. 430+00.00 TO STA. 438+50.00

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				6	ARK.			
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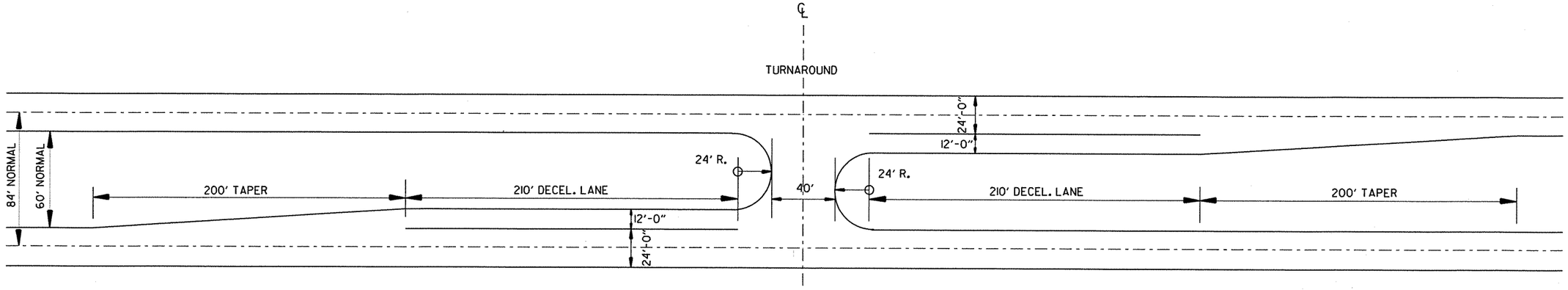
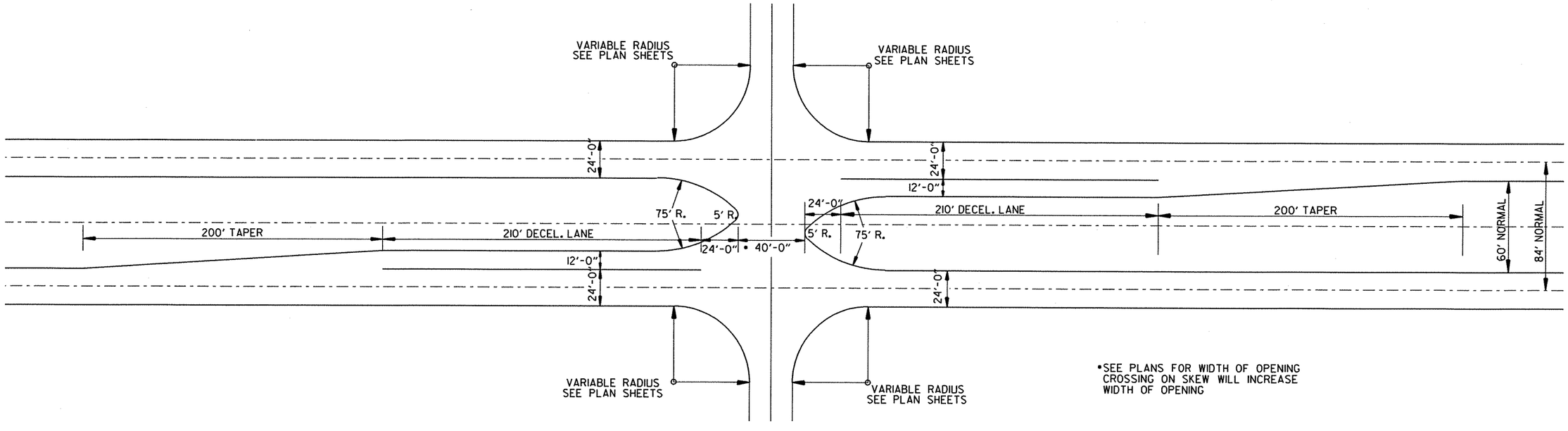
(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12



PLAN OF MEDIAN TURNAROUND



DETAIL OF HIGHWAY OR COUNTY ROAD CROSSING

9/11/2012

R100667.DGN

SPECIAL DETAILS

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) SPECIAL DETAILS

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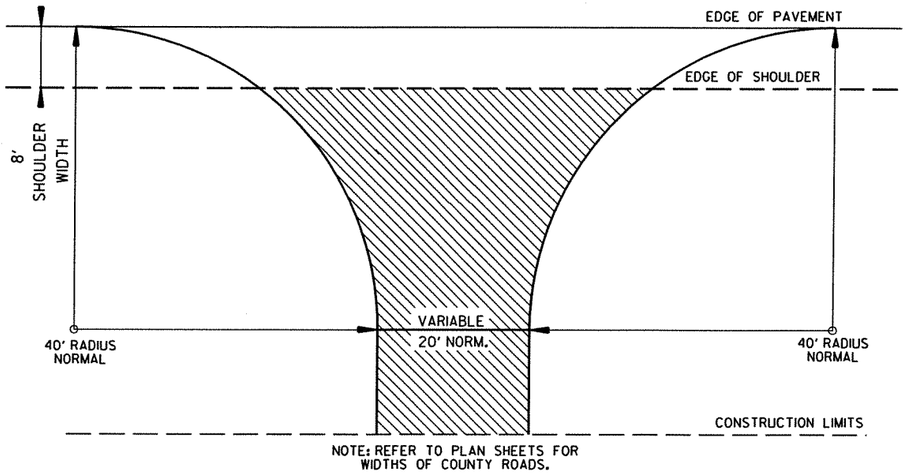
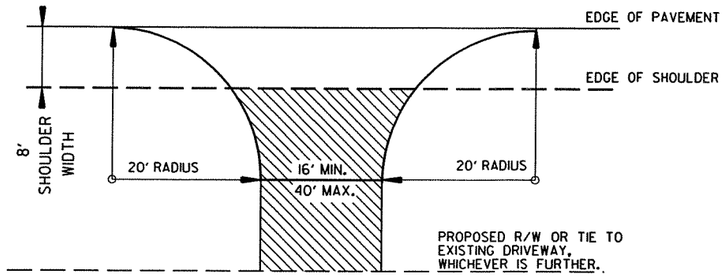


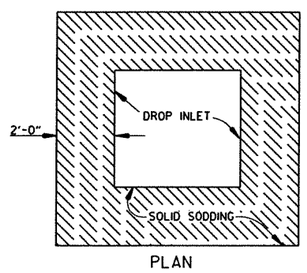
NOTE: REFER TO PLAN SHEETS FOR WIDTHS OF COUNTY ROADS.

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; OR 6" CONCRETE IF CONCRETE DRIVE EXISTING.

DETAIL FOR COUNTY ROAD TURNOUTS

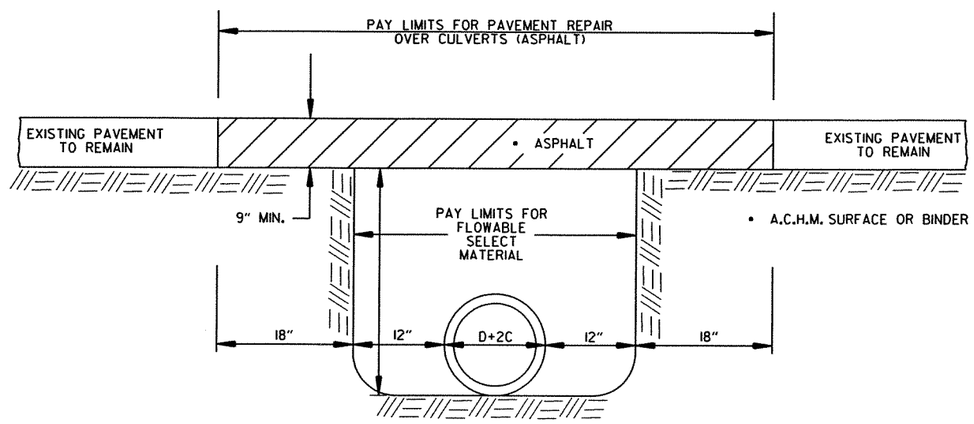


DETAIL FOR DRIVEWAY TURNOUTS



PLAN

DETAIL OF SOLID SODDING AROUND DROP INLET



PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

9/11/2012

R100667.DGN

SPECIAL DETAILS

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(2) SPECIAL DETAILS

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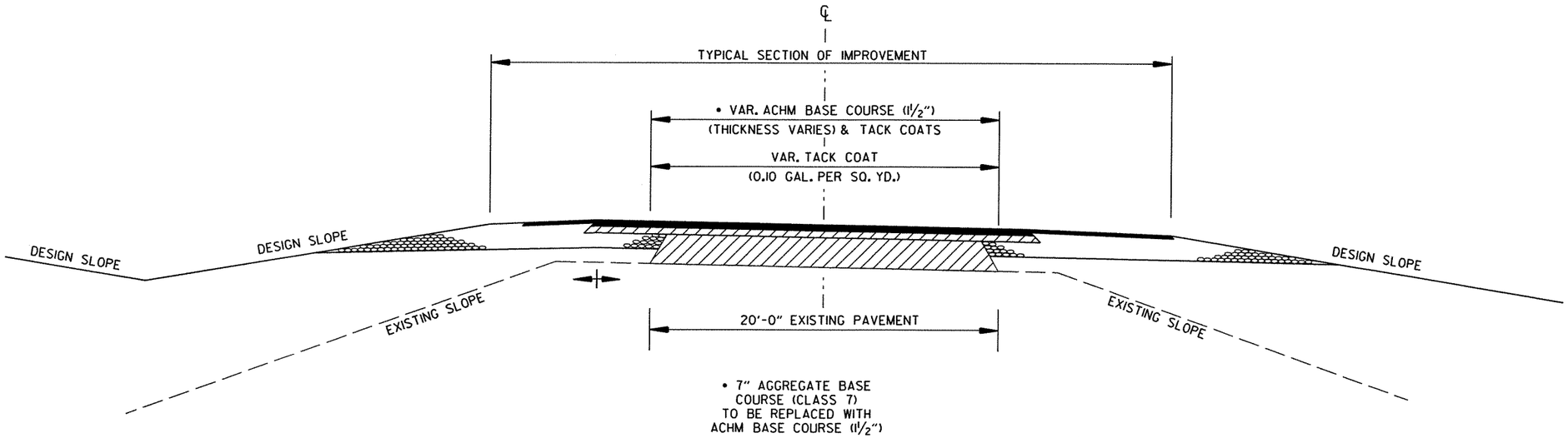

METHOD OF RAISING GRADE

NOTES:

1. THIS DETAIL TO BE USED ONLY WHERE DIRECTED BY THE ENGINEER.
2. QUANTITIES FOR METHOD OF GRADE RAISE USING ASPHALT WERE CALCULATED ON THIS PROJECT AT LOCATIONS WHERE THE DISTANCE BETWEEN THE EXISTING ASPHALT ROADWAY AND THE PROPOSED SUBGRADE WAS ONE FOOT OR LESS.
3. IN LOCATIONS WHERE THE DISTANCE BETWEEN THE PROPOSED SUBGRADE AND THE EXISTING ASPHALT ROADWAY IS MORE THAN ONE FOOT, SCARIFICATION OF THE EXISTING ASPHALT ROADWAY WILL BE REQUIRED AS STATED IN SECTION 210, SUBSECTION 210.09 OF THE STANDARD SPECIFICATIONS, EDITION OF 2003.

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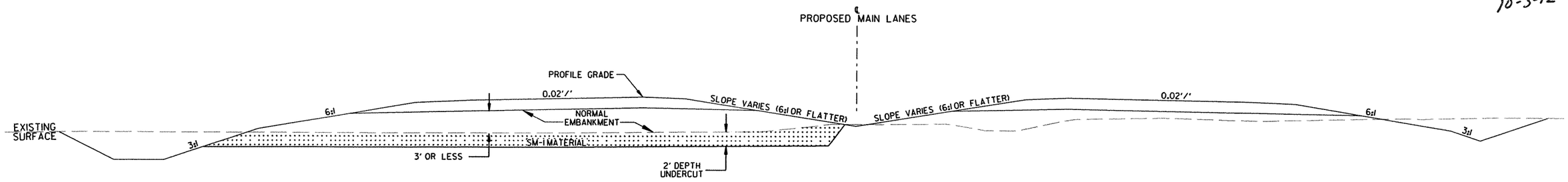
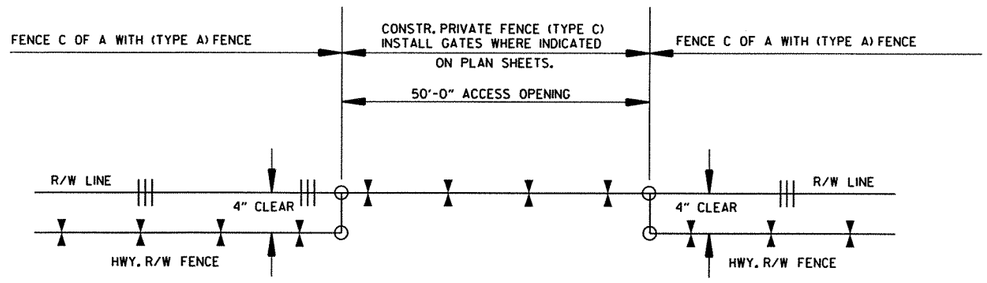


DETAIL OF EMBANKMENTS (3 FEET OR LESS)



DETAIL OF ACCESS OPENINGS

(NO SCALE)

9/11/2012

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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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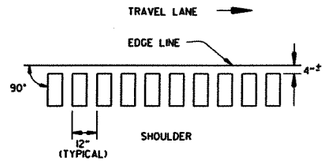
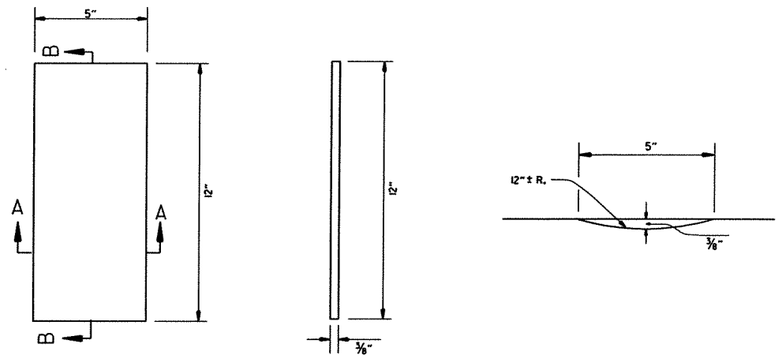
(2) SPECIAL DETAILS

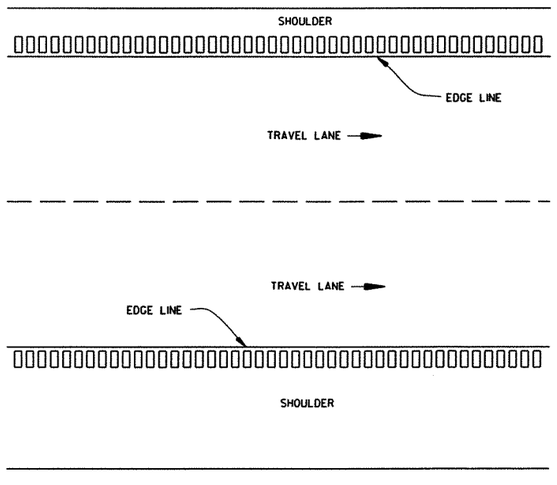


LOCATION PLAN OF RUMBLE STRIPS
LEFT OR RIGHT SHOULDER

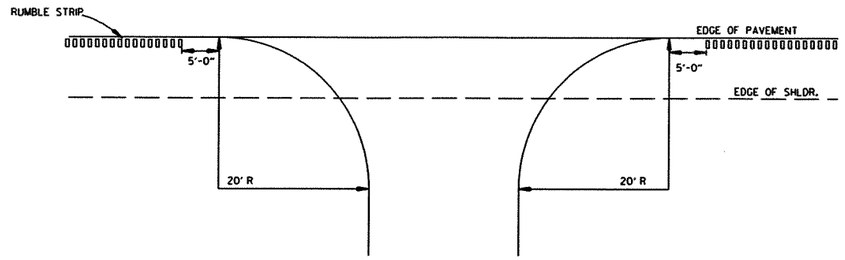


PLAN SECTION B-B SECTION A-A

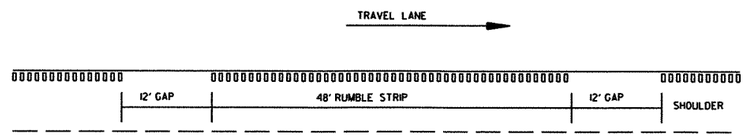
DETAILS OF RUMBLE STRIPS



PLAN VIEW



DETAIL FOR RUMBLE STRIP GAP
AT DRIVEWAY TURNOUTS



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.

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.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12

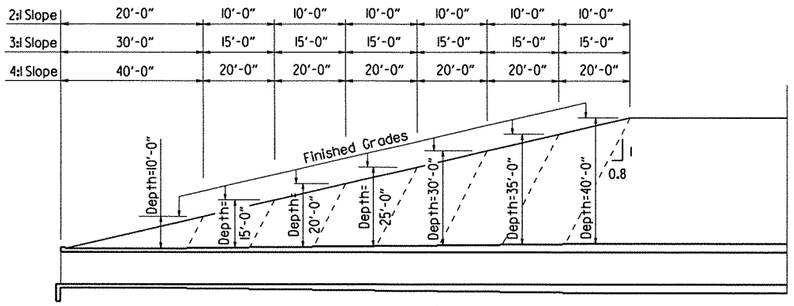
9/11/2012

R100667.DGN

SPECIAL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100667	11	123

① SPECIAL DETAILS



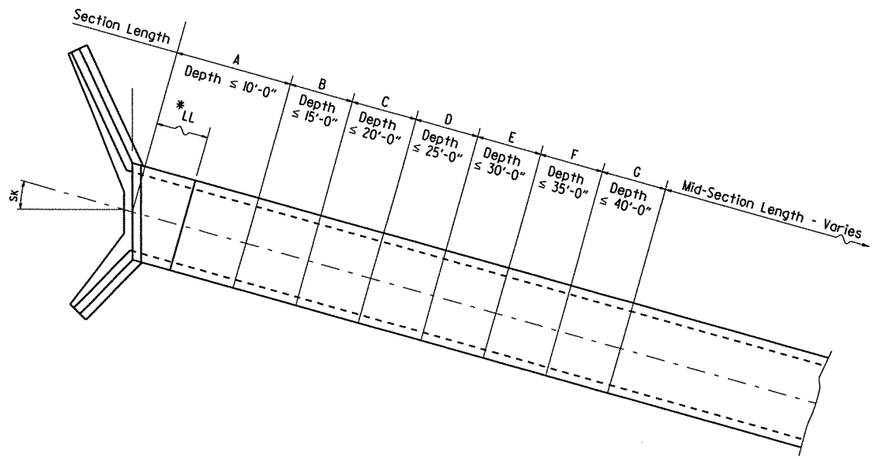
Slope Section Length @ 2:1 Slope	A=12'-0"	B=6'-0"	C=6'-0"	D=6'-0"	E=6'-0"	F=6'-0"	G=6'-0"	Mid-Section Length - Varies
Slope Section Length @ 3:1 Slope	A=22'-0"	B=11'-0"	C=11'-0"	D=11'-0"	E=11'-0"	F=11'-0"	G=11'-0"	Mid-Section Length - Varies
Slope Section Length @ 4:1 Slope	A=32'-0"	B=16'-0"	C=16'-0"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

LONGITUDINAL SECTION LENGTH SCHEDULE FOR VARYING FILL DEPTHS OVER 5'

Lengths for Non-Skewed Boxes

Note: For fill depths 5' and under, use Mid-Section full length of box culvert.

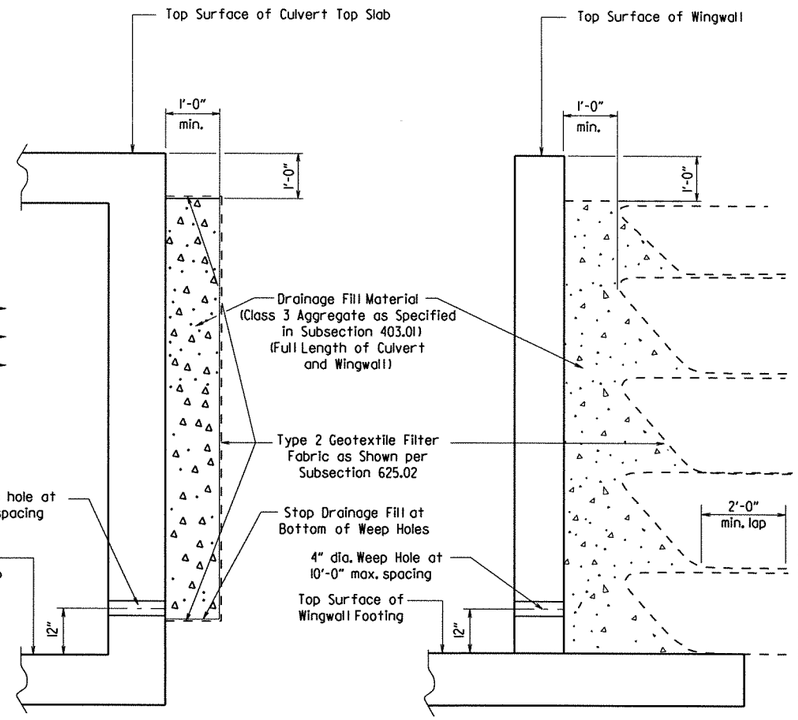
* LL = Skewed End Section Length - See "Skewed End Section Details"



SLOPE		2:1		3:1		4:1	
SECTION		A	B, C, D, E, F, G	A	B, C, D, E, F, G	A	B, C, D, E, F, G
SKEW ANGLE (SK)	15	12'-5 1/8"	6'-2 1/2"	22'-9 3/8"	11'-4 5/8"	33'-1 1/2"	16'-6 3/4"
	30	13'-10 1/4"	6'-11 1/8"	25'-4 7/8"	12'-8 3/8"	36'-11 3/8"	18'-5 3/4"
	45	16'-11 5/8"	8'-5 7/8"	31'-1 3/8"	15'-6 5/8"	45'-3"	22'-7 1/2"

LONGITUDINAL SECTION LENGTH SCHEDULE FOR VARYING FILL DEPTH OVER 5'

Lengths for Skewed Boxes



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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7511
CARL J. FUSELIER
11/13/12

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2003 edition) with applicable supplemental specifications and special provisions. Section and Subsection refer to the Standard Construction Specifications unless otherwise noted in the Plans.

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

LIVE LOADING: HL-93

All concrete shall be Class S with a minimum 28-day compressive strength of 3,500 psi and shall be poured in the dry. All exposed corners to have ¾" chamfers.

Reinforcing Steel shall be AASHTO M 31 or M 53, Grade 60.

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 of the Standard Specifications. 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.

Construction Joints between footings and walls shall be made only where shown on the Plans. The maximum length of culvert for which a continuous pour will be permitted is 75 ft. For longer culvert construction, joints shall be provided in slabs and walls at intervals not greater than 50 ft. Joints shall be normal to the centerline of barrel and shall be keyed. Longitudinal reinforcing shall be continuous through joints unless shown otherwise.

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

When 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 Special Provision "LRFD Precast Reinforced Concrete Box Culverts".

SHEET 1 OF 4

GENERAL DETAILS OF R.C. BOX CULVERT

GENERAL NOTES & LONGITUDINAL SECTION LENGTH SCHEDULE

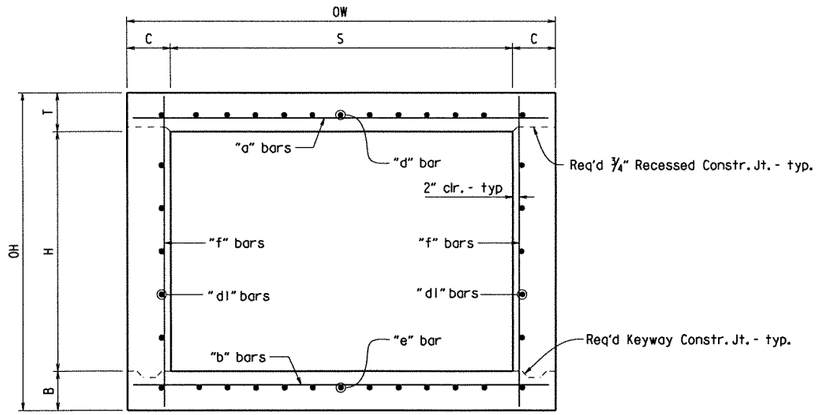
SPECIAL DETAILS

LRFD

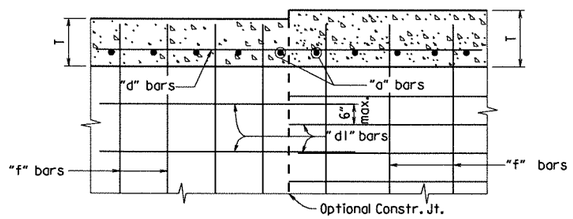
b100667_culvert.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100667	12	123

① SPECIAL DETAILS

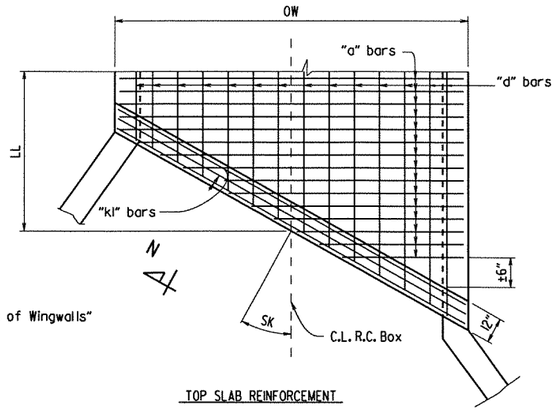


TYPICAL SECTION M-M

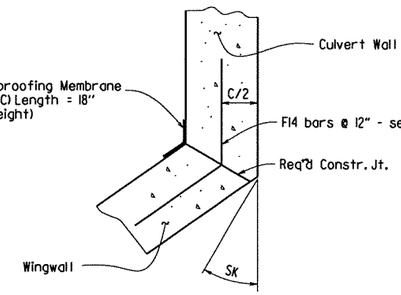


LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

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

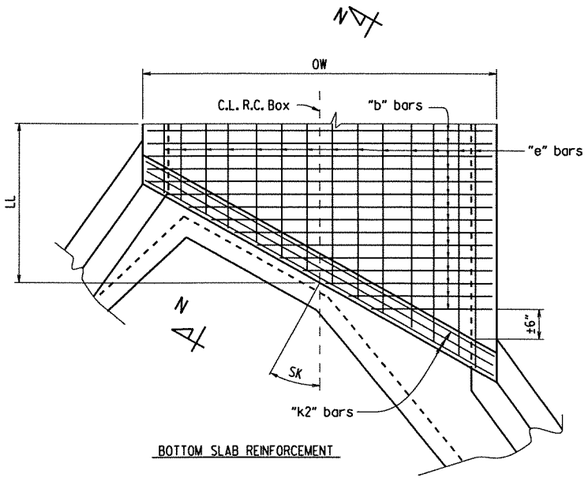


TOP SLAB REINFORCEMENT



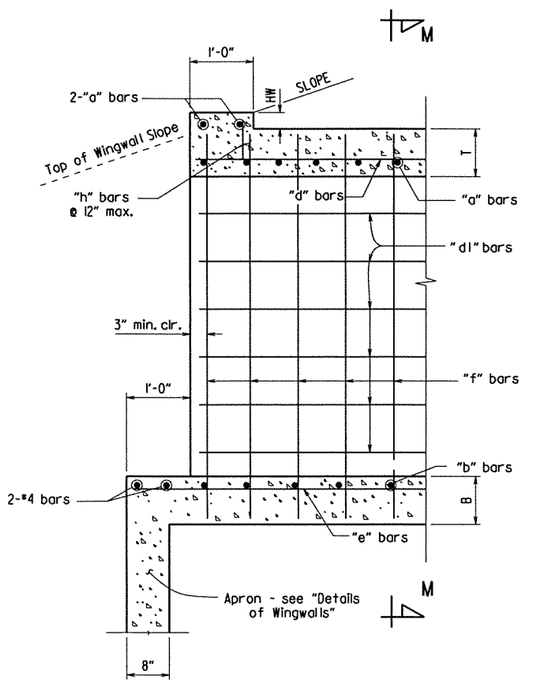
WINGWALL ATTACHMENT

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



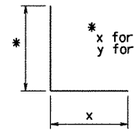
BOTTOM SLAB REINFORCEMENT

SKEWED END SECTION DETAILS

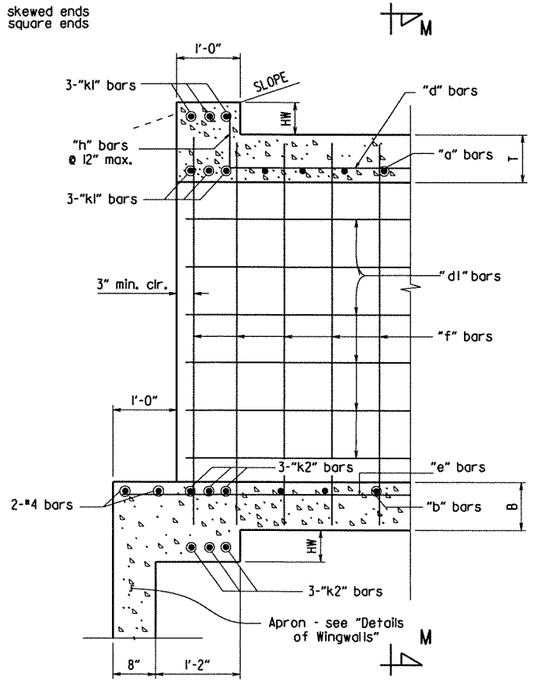


PART LONGITUDINAL SECTION

(Non-Skewed Ends)

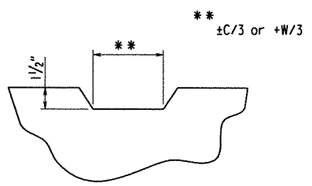


"h" bars sketch



PART LONGITUDINAL SECTION N-N

(Skewed Ends)



TYPICAL KEYWAY DETAIL

SHEET 2 OF 4

GENERAL DETAILS OF R.C. BOX CULVERT

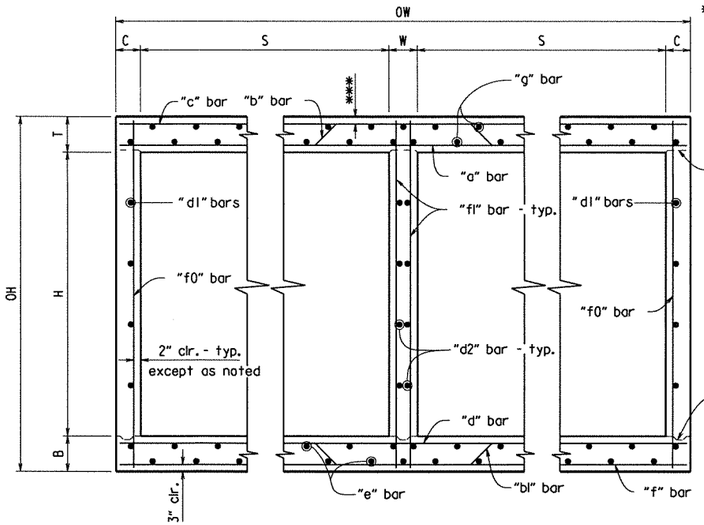
DETAILS OF SINGLE BARREL
R.C. BOX CULVERT

SPECIAL DETAILS

b100667_culvert.dgn

DATE REVISED	DATE FILMED	REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100667	13	123

① SPECIAL DETAILS

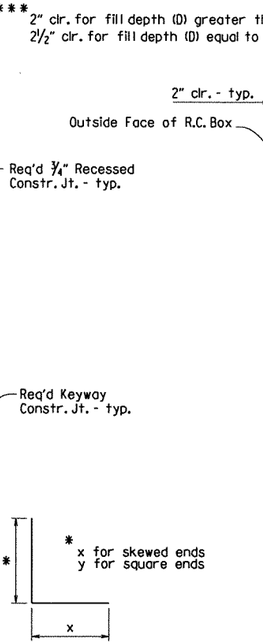


TYPICAL SECTION

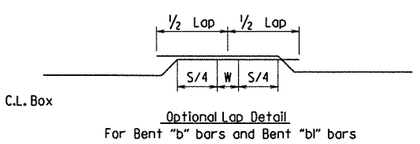
Top Slab
Straight "c" bars shall alternate with Bent "b" bars in top.
Straight "a" bars shall alternate with Bent "b" bars in bottom.

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

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

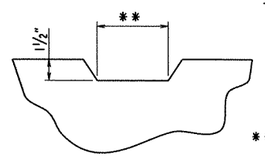


Bent "b" bars or Bent "bl" bars sketch



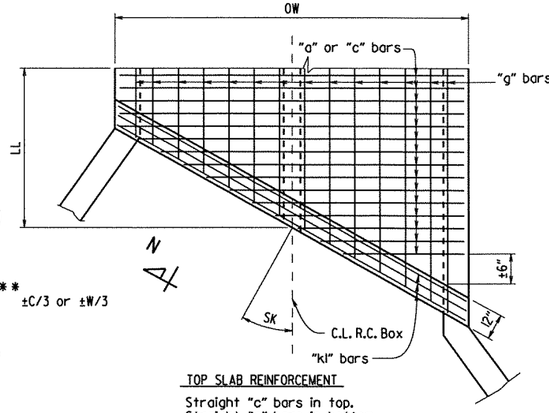
Optional Lap Detail
For Bent "b" bars and Bent "bl" bars

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.

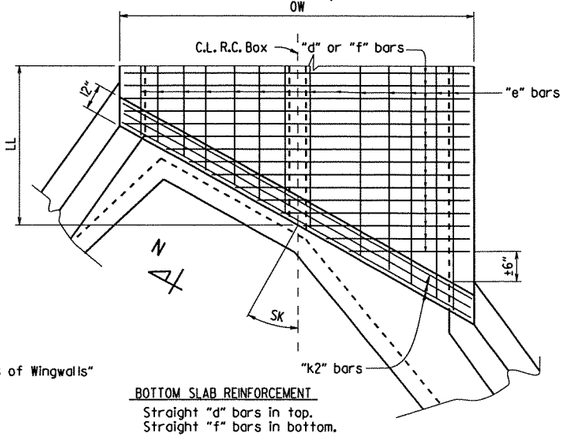


** ±C/3 or ±W/3

TYPICAL KEYWAY DETAIL



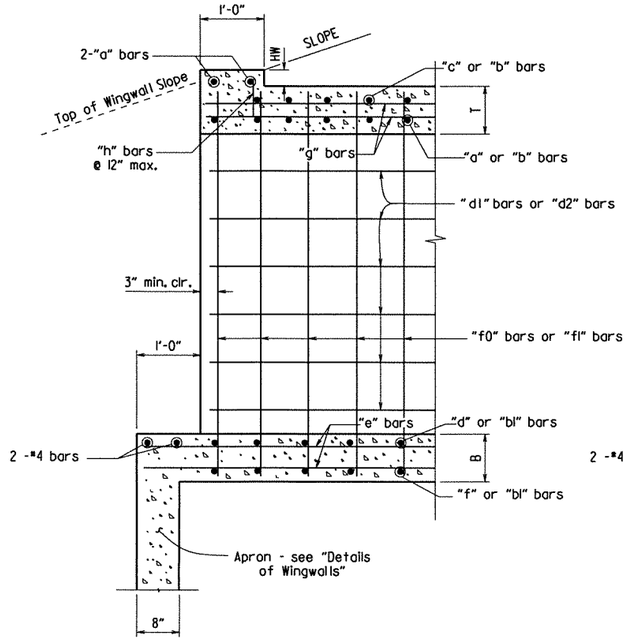
TOP SLAB REINFORCEMENT
Straight "c" bars in top.
Straight "a" bars in bottom.



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

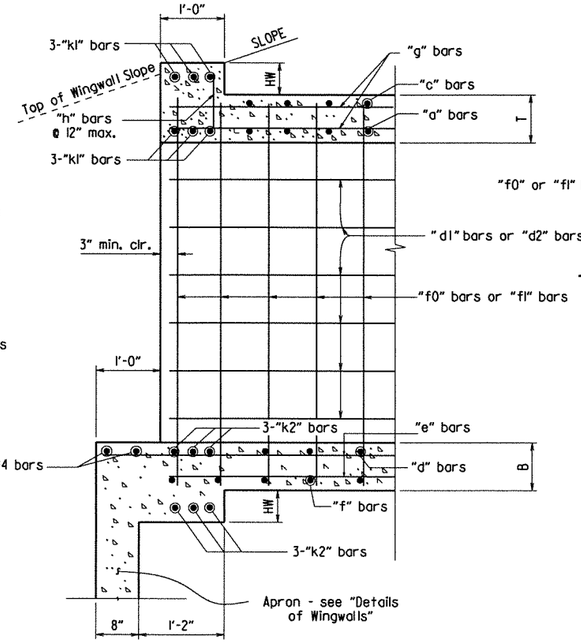
SKEWED END SECTION DETAILS

"h" bars sketch



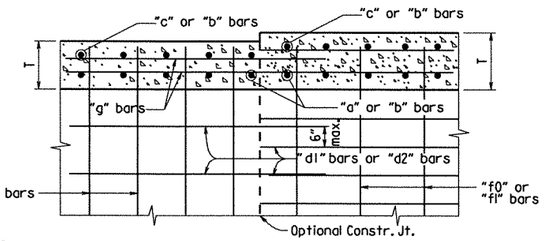
PART LONGITUDINAL SECTION

(Non-Skewed Ends)



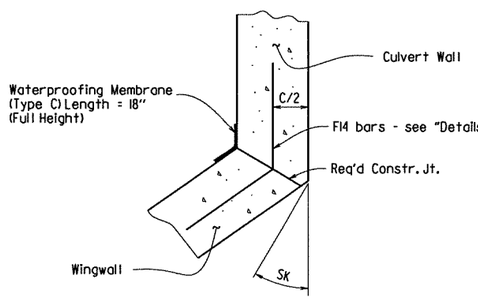
PART LONGITUDINAL SECTION N-N

(Skewed Ends)



LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

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



WINGWALL ATTACHMENT

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

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

DETAILS OF MULTI-BARREL R.C. BOX CULVERT

SPECIAL DETAILS

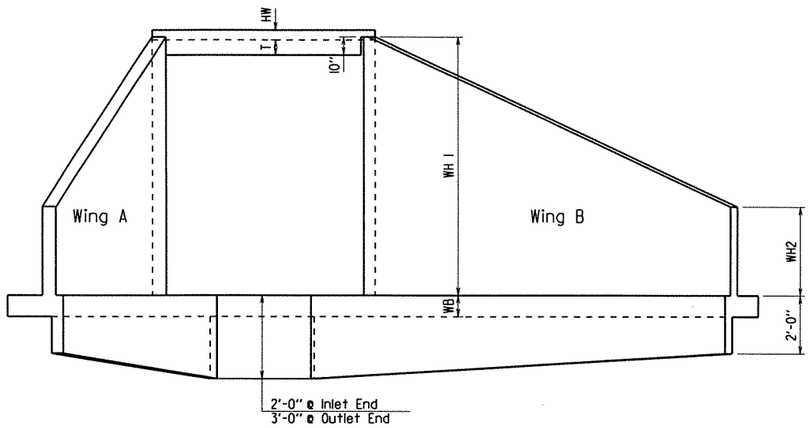
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL L. FUSSELL

b100667_culvert.dgn

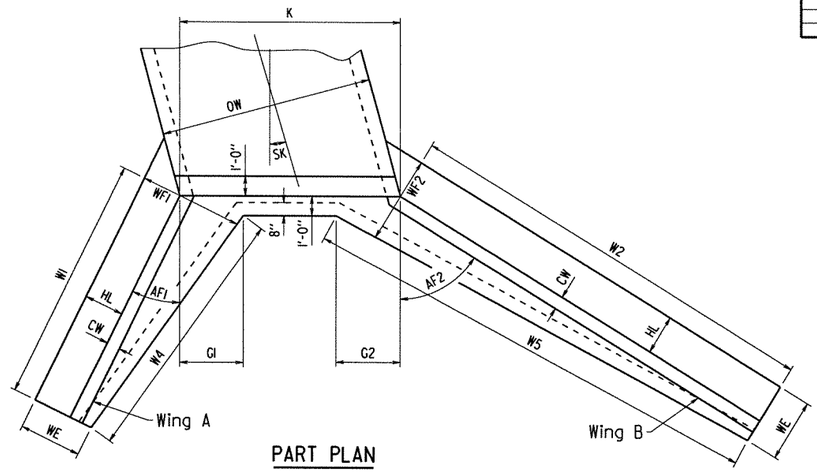
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100667	14	123

① SPECIAL DETAILS

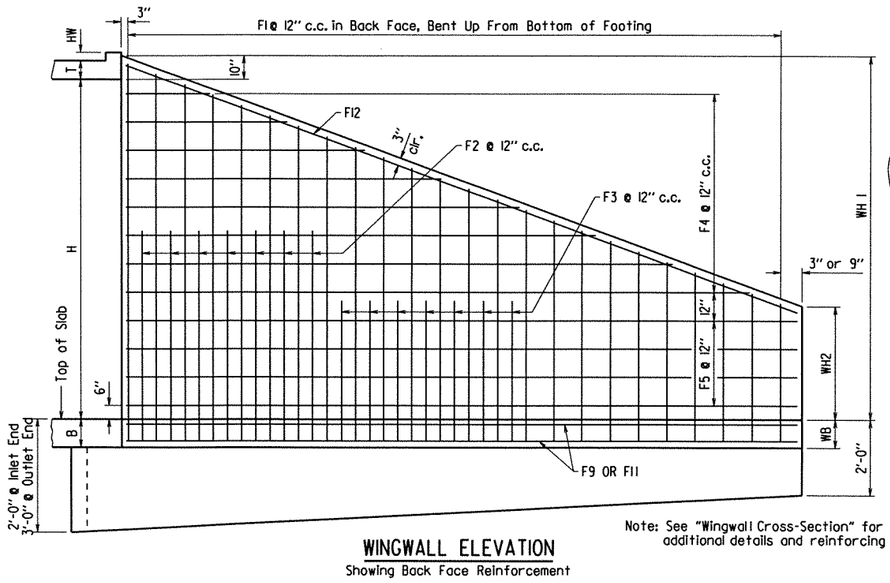
STATE OF ARKANSAS
CARL J. FUSELIER
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSELIER



END ELEVATION

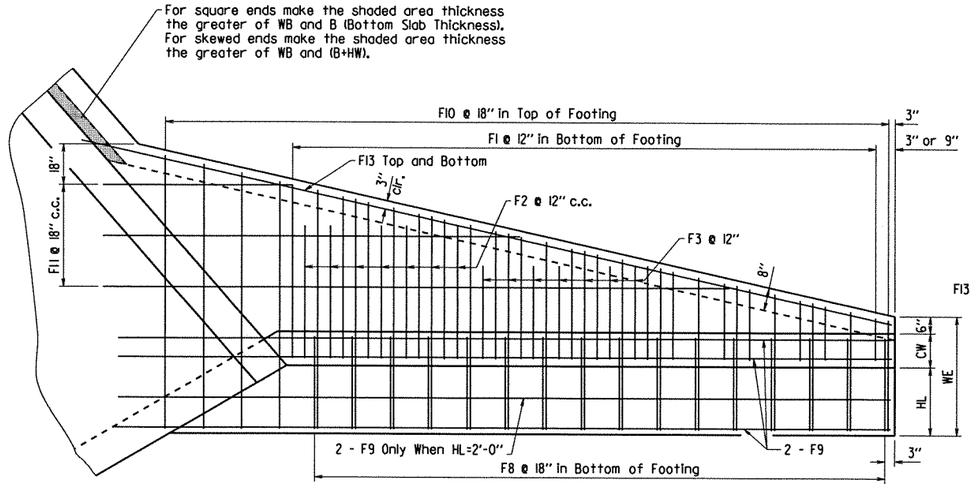


PART PLAN

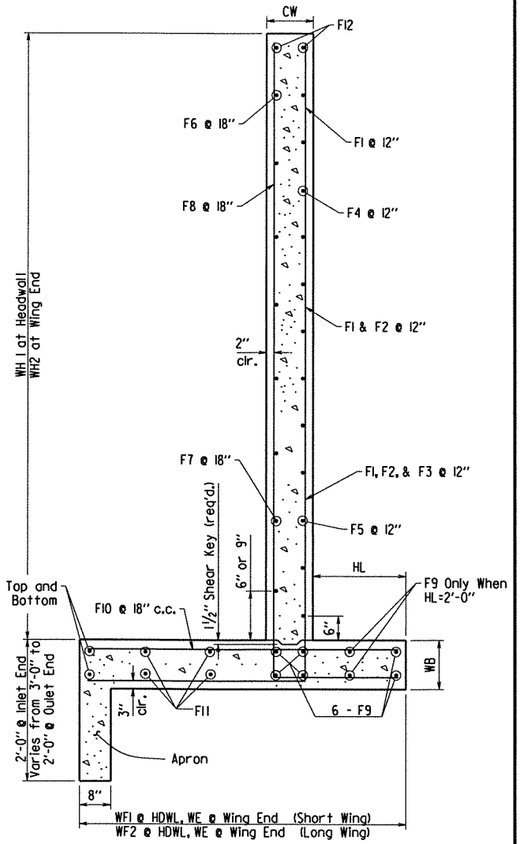


WINGWALL ELEVATION
Showing Back Face Reinforcement

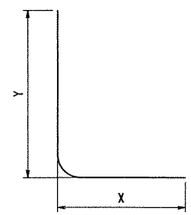
Note: See "Wingwall Cross-Section" for additional details and reinforcing



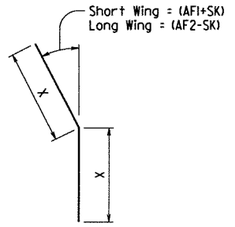
WINGWALL PLAN



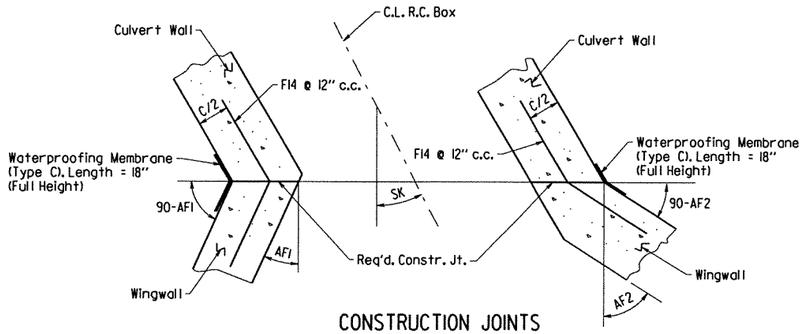
WINGWALL CROSS SECTION



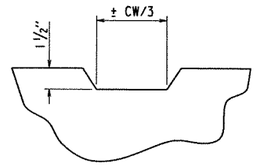
F1, F2, F3, & F8 SKETCH



F14 SKETCH



CONSTRUCTION JOINTS



TYPICAL KEYWAY DETAIL

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

bl00667_culvert.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100667	15	123

INLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (deg.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (deg.) WING A	WINGWALL ANGLE (deg.) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	INSIDE FOOTING DIMENSIONS WING A	INSIDE FOOTING DIMENSIONS WING B
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W4	W5
53'-11"	9'-0"	0'-10"	0'-9"	15	3:1	55'-10"	2'-0"	9'-10"	3'-0"	15	45	3'-3"	4'-7"	5'-1"	2'-4 5/8"	3'-8 1/4"	21'-0"	28'-6"	20'-8 1/4"	30'-4 1/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
INLET	INLET
CU.YD	LBS.
19.85	1757

WING	BAR SIZE	MAX. SPACING	NO. REQ'D	F1 LENGTHS VARY			F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS			F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS			F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY			F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS
WING A	4	12	21	L	Min	4'-4"	4	12	10	L	6'-1"		-	-	-	L	-		4	12	6		Min		4	12	3	20'-8"
					Max	12'-2"																	3'-5"					
				X	Min	0'-10"				X	1'-7"					X	-					Max					
					Max	2'-2"																	18'-9"					
				Y	Min	3'-7"				Y	4'-7"					Y	-					Min					
					Max	10'-1"																	3'-5"					
WING B	4	12	29	L	Min	4'-2"	4	12	13	L	6'-4"		-	-	-	L	-		4	12	6		Min		4	12	3	28'-2"
					Max	12'-8"																	4'-8"					
				X	Min	0'-10"				X	1'-10"					X	-					Max					
					Max	2'-8"																	25'-7"					
				Y	Min	3'-5"				Y	4'-7"					Y	-					Min					
					Max	10'-1"																	4'-8"					

WING	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY			F7 BAR SIZE	F7 SPACING	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY			F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 SPACING	F10 NO. REQ'D	F10 LENGTHS VARY			F11 BAR SIZE	F11 SPACING	F11 NO. REQ'D	F11 LENGTHS
WING A	4	18	4		Min		4	18	2	20'-8"	4	18	14	L	Min	6'-1"	4	8	25'-4"	4	18	14		Min		4	18	2	
					Max	3'-5"									Max	12'-5"								Max	2'-9"			25'-4"
														X	Min	2'-5"												
															Max	2'-5"												
						18'-9"																						
														Y	Min	3'-9"												
					Max	17'-3"									Max	10'-1"								Max	2'-9"			25'-4"
WING B	4	18	4		Min		4	18	2	28'-2"	4	18	19	L	Min	6'-0"	4	8	32'-10"	4	18	21		Min		4	18	2	
					Max	4'-8"									Max	12'-5"								Max	2'-9"			25'-3"
														X	Min	2'-5"												
															Max	2'-5"												
						25'-7"																						
														Y	Min	3'-8"												
					Max	23'-6"									Max	10'-1"								Max	4'-8"			25'-3"

WING	F12 BAR SIZE	F12 NO. REQ'D	F12 LENGTHS	F13 BAR SIZE	F13 NO. REQ'D	F13 LENGTHS	F14 BAR SIZE	F14 SPACING	F14 NO. REQ'D	F14 LENGTHS		REINF. STEEL QTY. PER WING (LBS)
WING A	4	2	21'-7"	4	2	22'-3"	6	12	9	L	3'-4"	765
										X	1'-8"	
WING B	4	2	28'-10"	4	2	32'-2"	6	12	9	L	3'-4"	992
										X	1'-8"	

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

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"

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL L. FUSELIER
6/15/12

TABULAR DATA BY: A.M.S. DATE: 6/14/12
CHECKED BY: CWF DATE: 6/15/12

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

INLET SKEWED END SECTION

SKEW (degree)	SLOPE	DESIGN FILL DEPTH (feet)	CLEAR SPAN (feet)	CLEAR HEIGHT (feet)	SECTION LENGTH	TOP SLAB THK.	HDWL THK.	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVERALL WIDTH	OVERALL HEIGHT	TOP SLAB REINFORCING STEEL a SIZE	a SPACING	a LENGTHS VARY	a NO. REQ'D	TOP SLAB REINFORCING STEEL c SIZE	c SPACING	c LENGTHS VARY	c NO. REQ'D	BOTTOM SLAB REINFORCING STEEL d SIZE	d SPACING	d LENGTHS VARY	d NO. REQ'D	BOTTOM SLAB REINFORCING STEEL f SIZE	f SPACING	f LENGTHS VARY	f NO. REQ'D
SK	SL	D	S	H	LL	T	HW	B	C	W	OW	OH																
15	3:1	5	10	9	9'-3"	11	3	11	7.5	8	53'-11"	10'-10"	5	5	Max	31	7	6	Max	26	4	5	Max	31	4	6	Max	26
															53'-7"				53'-7"				53'-7"			53'-7"			53'-7"
															Min				Min				Min			Min			Min
															6'-0"				8'-0"				6'-0"			6'-0"			6'-0"
															53'-7"	5			53'-7"	4			53'-7"	5		53'-7"	4		53'-7"

SIDE WALL REINFORCING STEEL f0 SIZE	f0 SPACING	f0 NO. REQ'D	f0 LENGTH	INTERIOR WALL REINFORCING STEEL f1 SIZE	f1 SPACING	f1 NO. REQ'D	f1 LENGTH	TOP SLAB DISTRIBUTION REINFORCING STEEL g SIZE	g SPACING	g LENGTHS VARY	BOTTOM SLAB DISTRIBUTION REINFORCING STEEL e SIZE	e SPACING	e NO. REQ'D	e LENGTHS VARY	SIDE WALL DISTRIBUTION REINFORCING STEEL d1 SIZE	d1 SPACING	d1 NO. REQ'D	d1 LENGTH	INTERIOR WALL DISTRIBUTION REINFORCING STEEL d2 SIZE	d2 SPACING	d2 NO. REQ'D	d2 LENGTH
6	7.5	31	10'-6"	4	12	88	10'-6"	4	10	129	4	10	129	Max	4	12	9	LONG	4	12	18	LONG
										16'-3"				16'-3"				16'-3"			13'-5"
										Min				Min				SHORT				MID
										1'-10"				1'-10"			9	1'-10"			36	10'-6"
																					18	SHORT
																						4'-9"

k1 SIZE	k1 LENGTH	k1 NO. REQ'D	k2 SIZE	k2 LENGTH	k2 NO. REQ'D	h SIZE	h LENGTH	h X	h NO. REQ'D
4	28'-7"	12	4	28'-7"	12	4	1'-8"	0'-10"	57

CLASS "S" CONCRETE (Includes HDWL) CU. YDS.	① REINFORCING STEEL (GR 60) (Includes HDWL) LBS.
24.28	8486

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

INLET SLOPE SECTION(S)

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

HDWL THK. HW	ADDITIONAL REINF. FOR HDWL LBS.	"h" BARS SIZE	X	Y	LENGTH	NO. REQ'D

SIDE WALL REINFORCING STEEL "f0" SIZE	f0 SPACING	f0 NO. REQ'D	f0 LENGTH = OH - 4" LENGTH	INTERIOR WALL REINFORCING STEEL "f1" SIZE	f1 SPACING	f1 NO. REQ'D	f1 LENGTH = OH - 4" LENGTH	TOP SLAB DISTRIBUTION REINFORCING STEEL "g" SIZE	g SPACING	g NO. REQ'D	g LENGTH = SL	BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE	e SPACING	e NO. REQ'D	e LENGTH = SL	SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE	d1 SPACING	d1 NO. REQ'D	d1 LENGTH = SL	INTERIOR WALL DISTRIBUTION REINFORCING STEEL "d2" SIZE	d2 SPACING	d2 NO. REQ'D	d2 LENGTH = SL

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

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

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

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

MID-SECTION

R.C. BOX SECTION D	DESIGN FILL DEPTH (feet) D	CLEAR SPAN (feet) S	CLEAR HEIGHT (feet) H	TOP SLAB THK. T	BOTTOM SLAB THK. B	SIDE WALL THK. C	INTERIOR WALL THK. W	OVER ALL WIDTH OW	OVER ALL HEIGHT OH	SECTION LENGTH (feet) SL	TOP SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS a SIZE	a L	Bent b SIZE	Bent b L	c SIZE	c L	SPACING	NO. REQ'D	BOTTOM SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS d SIZE	d L	Bent b1 SIZE	Bent b1 L	f SIZE	f L	SPACING	NO. REQ'D
A	5	10	9	11	11	7.5	8	53'-11"	10'-10"	160.5	4	53'-7"	7	54'-10"	7	53'-7"	12	160	4	53'-7"	4	54'-8"	4	53'-7"	10	192

SIDE WALL REINFORCING STEEL "f0" SIZE	f0 SPACING	f0 NO. REQ'D	f0 LENGTH = OH - 4" LENGTH	INTERIOR WALL REINFORCING STEEL "f1" SIZE	f1 SPACING	f1 NO. REQ'D	f1 LENGTH = OH - 4" LENGTH	TOP SLAB DISTRIBUTION REINFORCING STEEL "g" SIZE	g SPACING	g NO. REQ'D	g LENGTH = SL	BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE	e SPACING	e NO. REQ'D	e LENGTH = SL	SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE	d1 SPACING	d1 NO. REQ'D	d1 LENGTH = SL	INTERIOR WALL DISTRIBUTION REINFORCING STEEL "d2" SIZE	d2 SPACING	d2 NO. REQ'D	d2 LENGTH = SL
6	7.5	512	10'-6"	4	12	1280	10'-6"	4	10	129	4	10	129	4	12	18	4	12	72

CLASS "S" CONCRETE CU. YDS. PER LIN. FT.	REINFORCING STEEL (GR. 60) LBS. PER LIN. FT.	③ ADTL. REINF. PER LONG. LAP LOCATION (S) LBS.	ADTL. REINF. FOR TRANS. LAP LBS. PER LIN. FT.
4.97	726	407	20

SHEET 1 OF 2
DETAILS OF R.C. BOX CULVERT
QUINTUPLE BARREL BOX CULVERT
STA. 368+58

SPECIAL DETAILS

bi00667_ci.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.		100667	16	123

① SPECIAL DETAILS

STATE OF ARKANSAS
Carl T. Fusselle
REGISTERED PROFESSIONAL ENGINEER
No. 7511
CARL T. FUSSELLE

TABULAR DATA BY: A.M.S. DATE: 6/14/12
CHECKED BY: KWY DATE: 6/15/12

OUTLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (deg.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (deg.) WING A	WINGWALL ANGLE (deg.) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	INSIDE FOOTING DIMENSIONS WING A	INSIDE FOOTING DIMENSIONS WING B
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W4	W5
53'-11"	9'-0"	0'-10"	0'-9"	15	3:1	55'-10"	2'-0"	9'-10"	3'-0"	15	45	3'-3"	4'-7"	5'-1"	2'-4 5/8"	3'-6 1/4"	21'-0"	28'-6"	20'-8 1/4"	30'-4 1/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
OUTLET	OUTLET
CU.YD	LBS.
21.71	1757

WING	BAR SIZE	MAX. SPACING	NO. REQ'D	F1 LENGTHS VARY			F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS			F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS			F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY		F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS
WING A	4	12	21	L	Min	4'-4"	4	12	10	L	6'-1"		-	-	L	-	4	12	6	Min	3'-5"	4	12	3	20'-8"
					Max	12'-2"														Max	18'-9"						
				X	Min	0'-10"				X	1'-7"		-	-	X	-												
					Max	2'-2"																						
				Y	Min	3'-7"				Y	4'-7"				Y	-												
					Max	10'-1"																						
WING B	4	12	29	L	Min	4'-2"	4	12	13	L	6'-4"		-	-	L	-	4	12	6	Min	4'-8"	4	12	3	28'-2"
					Max	12'-8"														Max	25'-7"						
				X	Min	0'-10"				X	1'-10"		-	-	X	-												
					Max	2'-8"																						
				Y	Min	3'-5"				Y	4'-7"				Y	-												
					Max	10'-1"																						

WING	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY	F7 BAR SIZE	F7 SPACING	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F9 BAR SIZE	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 SPACING	F10 NO. REQ'D	F10 LENGTHS VARY	F11 BAR SIZE	F11 SPACING	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 NO. REQ'D	F12 LENGTHS	F13 BAR SIZE	F13 NO. REQ'D	F13 LENGTHS	F14 BAR SIZE	F14 SPACING	F14 NO. REQ'D	F14 LENGTHS	REINF. STEEL QTY. PER WING (LBS)
WING A	4	18	4	Min 3'-5" Max 18'-9"	4	18	2	20'-8"	4	18	14	L Min 6'-1" Max 12'-5"; X Min 2'-5" Max 2'-5"; Y Min 3'-9" Max 10'-1"	4	8	25'-4"	4	18	14	Min 2'-6" Max 4'-0"	4	18	2	Min 25'-4" Max 25'-4"	4	2	21'-7"	4	2	22'-3"	6	12	9	L 3'-4"; X 1'-8"	765
WING B	4	18	4	Min 4'-8" Max 23'-6"	4	18	2	28'-2"	4	18	19	L Min 6'-0" Max 12'-5"; X Min 2'-5" Max 2'-5"; Y Min 3'-8" Max 10'-1"	4	8	32'-10"	4	18	21	Min 2'-9" Max 4'-8"	4	18	2	Min 25'-3" Max 25'-3"	4	2	28'-10"	4	2	32'-2"	6	12	9	L 3'-4"; X 1'-8"	992

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

OUTLET SKEWED END SECTION

SKEW (degree)	SLOPE	DESIGN FILL DEPTH (feet)	CLEAR SPAN (feet)	CLEAR HEIGHT (feet)	SECTION LENGTH	TOP SLAB THK.	HDWL THK.	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVERALL WIDTH	OVERALL HEIGHT	TOP SLAB REINFORCING STEEL a SIZE	a SPACING	a LENGTHS VARY	a NO. REQ'D	TOP SLAB REINFORCING STEEL c SIZE	c SPACING	c LENGTHS VARY	c NO. REQ'D	BOTTOM SLAB REINFORCING STEEL d SIZE	d SPACING	d LENGTHS VARY	d NO. REQ'D	BOTTOM SLAB REINFORCING STEEL f SIZE	f SPACING	f LENGTHS VARY	f NO. REQ'D	SIDE WALL REINFORCING STEEL f0 SIZE	f0 SPACING	f0 NO. REQ'D	f0 LENGTH	INTERIOR WALL REINFORCING STEEL f1 SIZE	f1 SPACING	f1 NO. REQ'D	f1 LENGTH	TOP SLAB DISTRIBUTION REINFORCING STEEL g SIZE	g SPACING	g NO. REQ'D	g LENGTHS VARY	BOTTOM SLAB DISTRIBUTION REINFORCING STEEL e SIZE	e SPACING	e NO. REQ'D	e LENGTHS VARY	SIDE WALL DISTRIBUTION REINFORCING STEEL d1 SIZE	d1 SPACING	d1 NO. REQ'D	d1 LENGTH	INTERIOR WALL DISTRIBUTION REINFORCING STEEL d2 SIZE	d2 SPACING	d2 NO. REQ'D	d2 LENGTH
SK	℄	D	S	H	LL	T	HW	B	C	W	OW	OH																																													
15	3:1	5	10	9	9'-3"	11	3	11	7.5	8	53'-11"	10'-10"	5	5	Max 53'-7" Min 6'-0" 53'-7"	31	7	6	Max 53'-7" Min 6'-0" 53'-7"	26	4	5	Max 53'-7" Min 6'-0" 53'-7"	31	4	6	Max 53'-7" Min 6'-0" 53'-7"	26	6	7.5	31	10'-6"	4	12	88	10'-6"	4	10	129	Max 16'-3" Min 1'-10"	4	10	129	Max 16'-3" Min 1'-10"	4	12	9	LONG 16'-3" SHORT 1'-10"	4	12	18	LONG 13'-5"
																																																								MID 10'-6"
																																																								SHORT 4'-9"

k1 SIZE	k1 LENGTH	k1 NO. REQ'D	k2 SIZE	k2 LENGTH	k2 NO. REQ'D	h SIZE	h LENGTH	h X	h NO. REQ'D
4	28'-7"	12	4	28'-7"	12	4	1'-8"	0'-10"	57

CLASS "S" CONCRETE (Includes HDWL) CU. YDS.	①REINFORCING STEEL (GR 60) (Includes HDWL) LBS.
24.28	8486

OUTLET SLOPE SECTION(S)

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

HDWL THK. HW	ADDITIONAL REINF. FOR HDWL LBS.	"h" BARS SIZE	X	Y	LENGTH	NO. REQ'D

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

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"

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 shown is for estimating purpose only. The actual number required shall be determined in field.

Unless otherwise noted, all dimensions are in inches.

SHEET 2 OF 2
DETAILS OF R.C. BOX CULVERT
QUINTUPLE BARREL BOX CULVERT
STA. 368+58

SPECIAL DETAILS

bl00667_cl.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.		100667	17	123

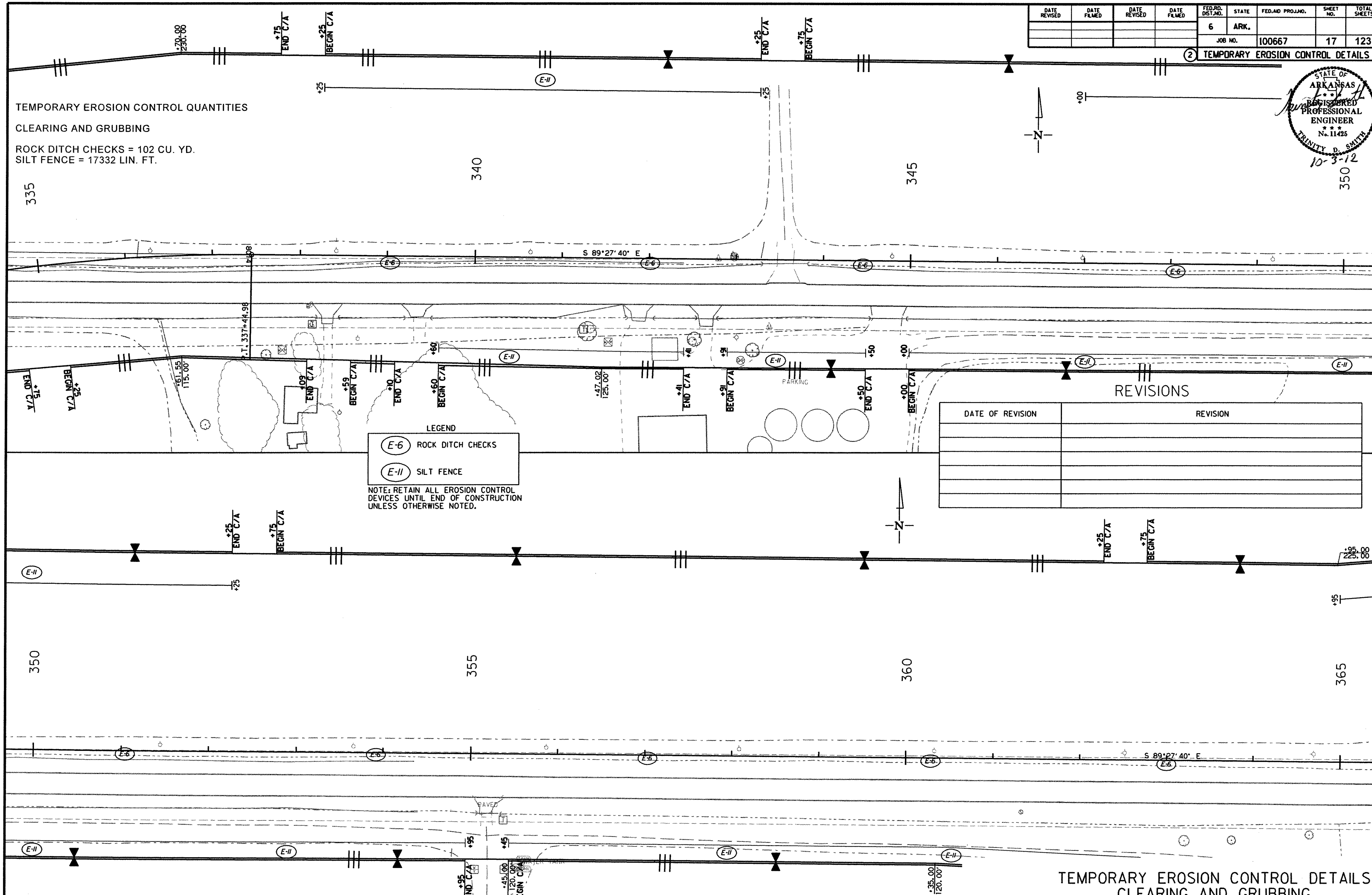
(2) TEMPORARY EROSION CONTROL DETAILS

TEMPORARY EROSION CONTROL QUANTITIES

CLEARING AND GRUBBING

ROCK DITCH CHECKS = 102 CU. YD.
SILT FENCE = 17332 LIN. FT.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH
10-3-12



LEGEND

E-6	ROCK DITCH CHECKS
E-11	SILT FENCE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

REVISIONS

DATE OF REVISION	REVISION

TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING

9/11/2012

R100667.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.		100667	18	123

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12

LEGEND

E-6 ROCK DITCH CHECKS

E-11 SILT FENCE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

REVISIONS

DATE OF REVISION	REVISION

9/11/2012

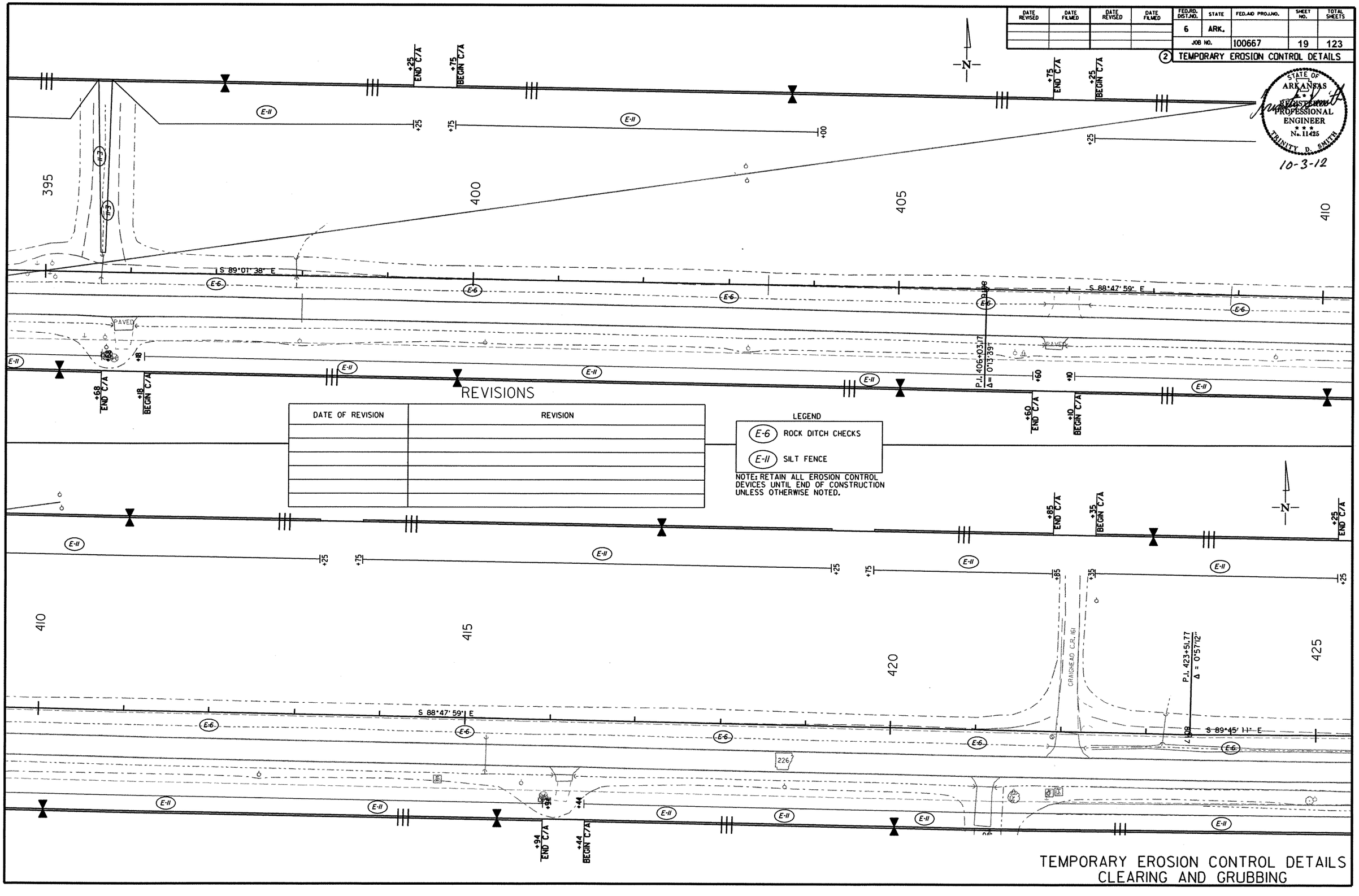
R100667.DGN

TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100667	19	123

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12



REVISIONS

DATE OF REVISION	REVISION

LEGEND

- E-6 ROCK DITCH CHECKS
- E-II SILT FENCE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

9/11/2012

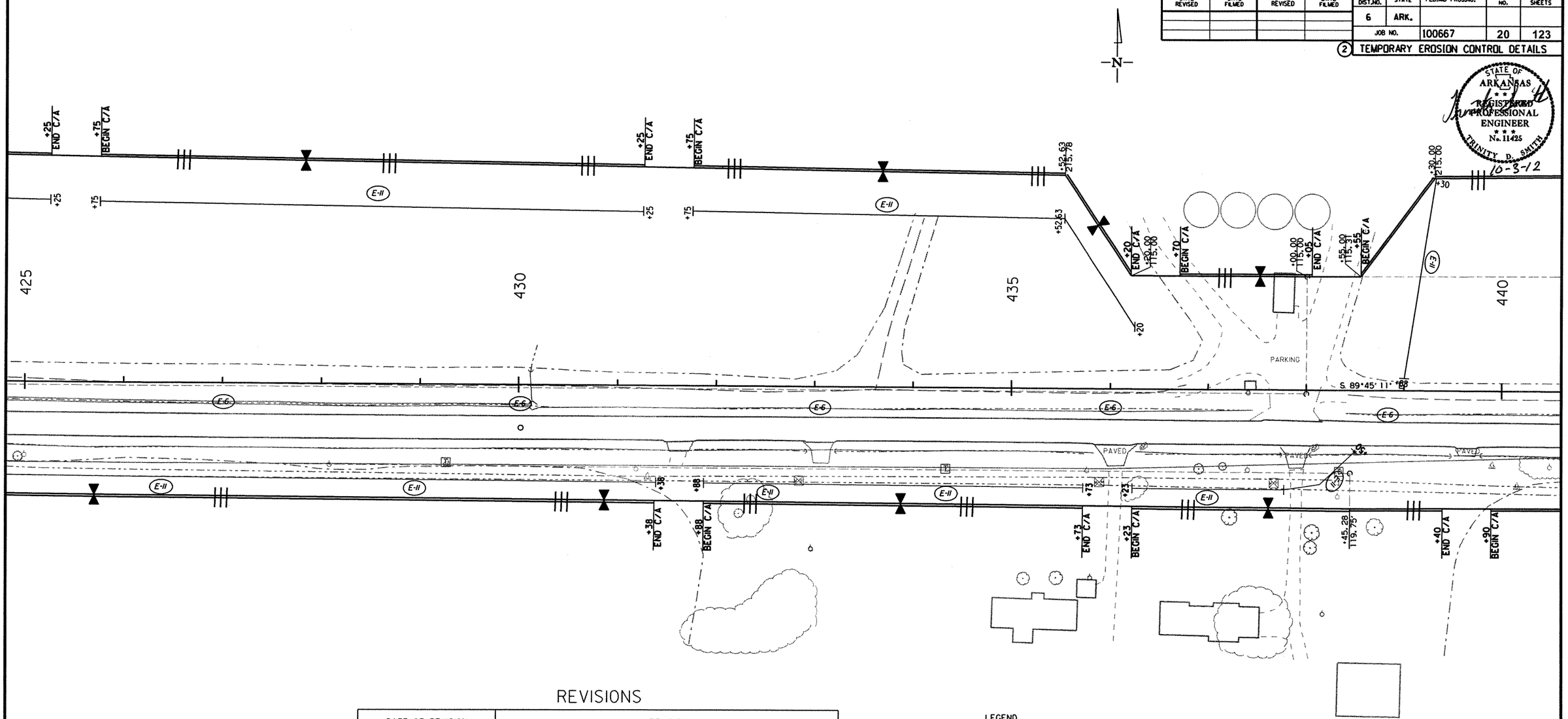
R100667.DGN

TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100667	20	123

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12



REVISIONS

DATE OF REVISION	REVISION

LEGEND

E-6	ROCK DITCH CHECKS
E-11	SILT FENCE

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

9/11/2012

R100667.DGN

TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING

TEMPORARY EROSION CONTROL QUANTITIES

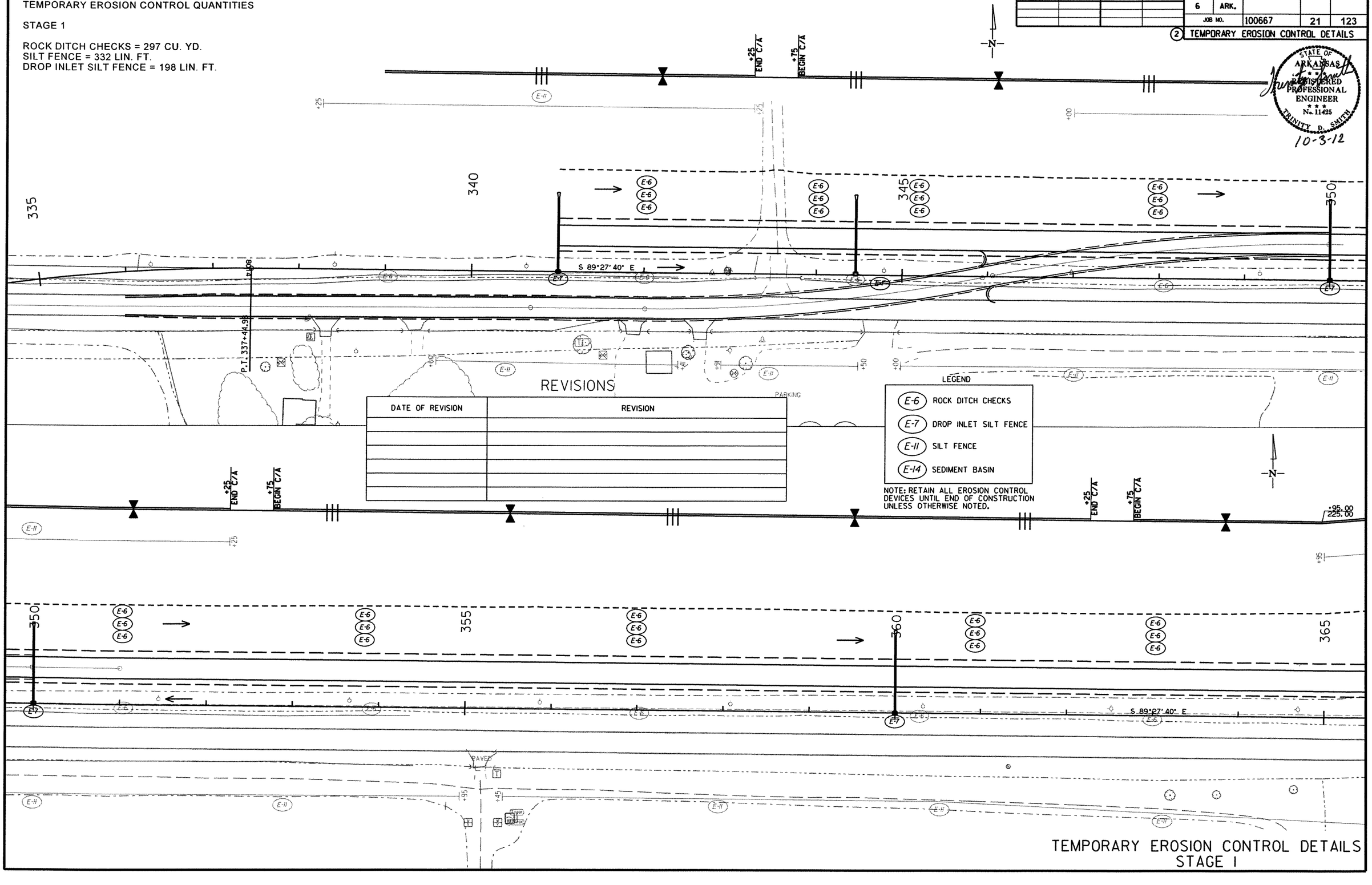
STAGE 1

ROCK DITCH CHECKS = 297 CU. YD.
SILT FENCE = 332 LIN. FT.
DROP INLET SILT FENCE = 198 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.		100667	21	123

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12



REVISIONS

DATE OF REVISION	REVISION

LEGEND

- E-6 ROCK DITCH CHECKS
- E-7 DROP INLET SILT FENCE
- E-11 SILT FENCE
- E-14 SEDIMENT BASIN

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

TEMPORARY EROSION CONTROL DETAILS
STAGE 1

9/11/2012

R100667.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.		100667	22	123

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12

+95.00 225.00 | +25 END C/A | +50.00 255.00 | +75 BEGIN C/A | +30 END C/A | +80 BEGIN C/A | +50.00 230.00 | +25 END C/A | +75 BEGIN C/A

365 | 370 | 375 | 380

E-14 11892 CU. FT. | E-14 16250 CU. FT.

16' | JOHNSON DITCH | +45

S 89°27' 40" E

PAVED | FRAIRHEAD C.R. 237 | +00

REVISIONS

DATE OF REVISION	REVISION

LEGEND

- E-6 ROCK DITCH CHECKS
- E-7 DROP INLET SILT FENCE
- E-11 SILT FENCE
- E-14 SEDIMENT BASIN

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

+25 END C/A | +75 BEGIN C/A | +25 END C/A | +75 BEGIN C/A | +25 END C/A | +75 BEGIN C/A

380 | 385 | 390 | 395

30' | +00

S 89°27' 40" E | S 89°01' 38" E

P.I. 388+69.15 Δ= 0°29'02"

PAVED

9/11/2012

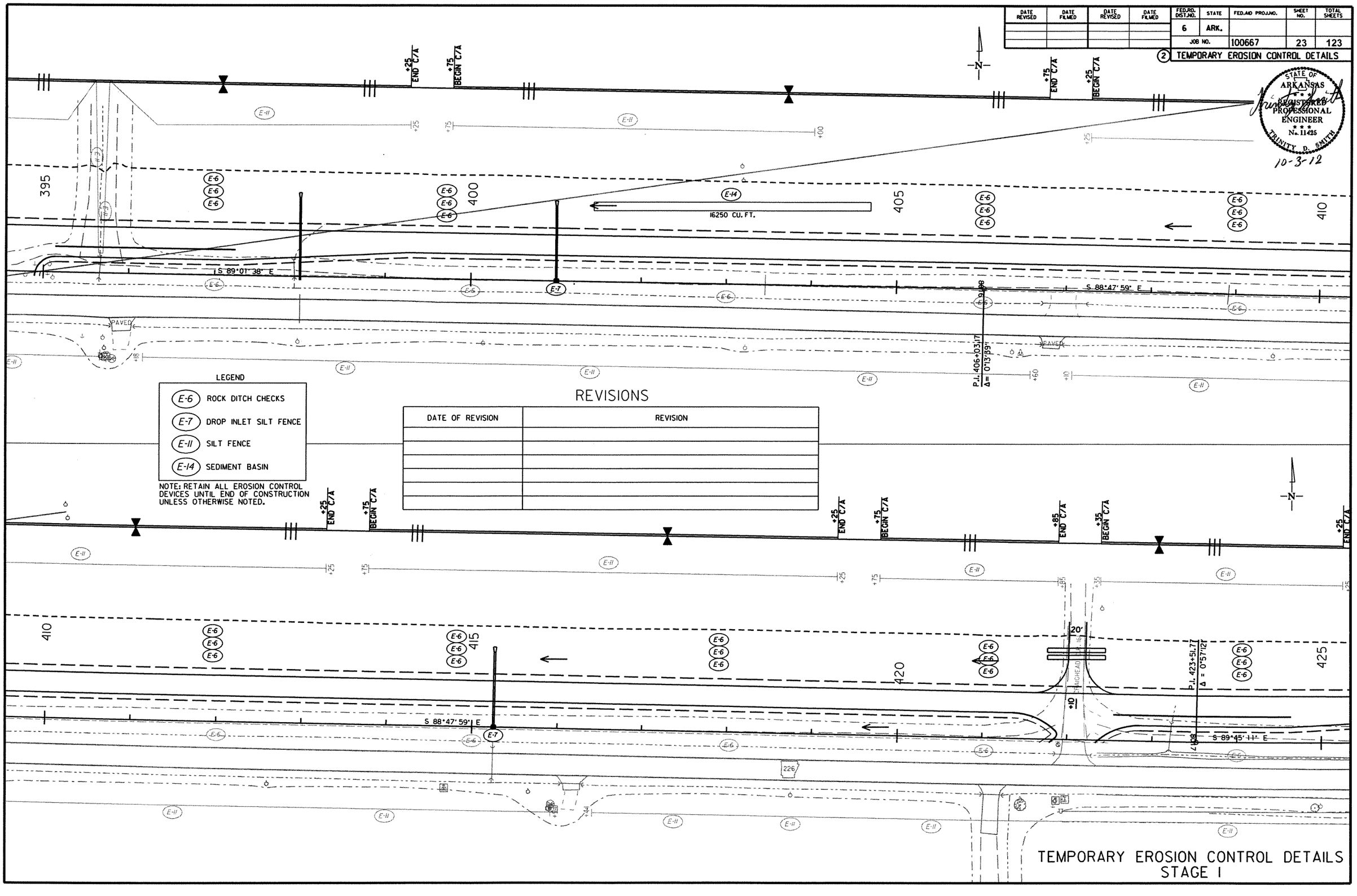
R100667.DGN

TEMPORARY EROSION CONTROL DETAILS
STAGE I

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100667	23	123

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12



LEGEND

E-6	ROCK DITCH CHECKS
E-7	DROP INLET SILT FENCE
E-11	SILT FENCE
E-14	SEDIMENT BASIN

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

REVISIONS

DATE OF REVISION	REVISION

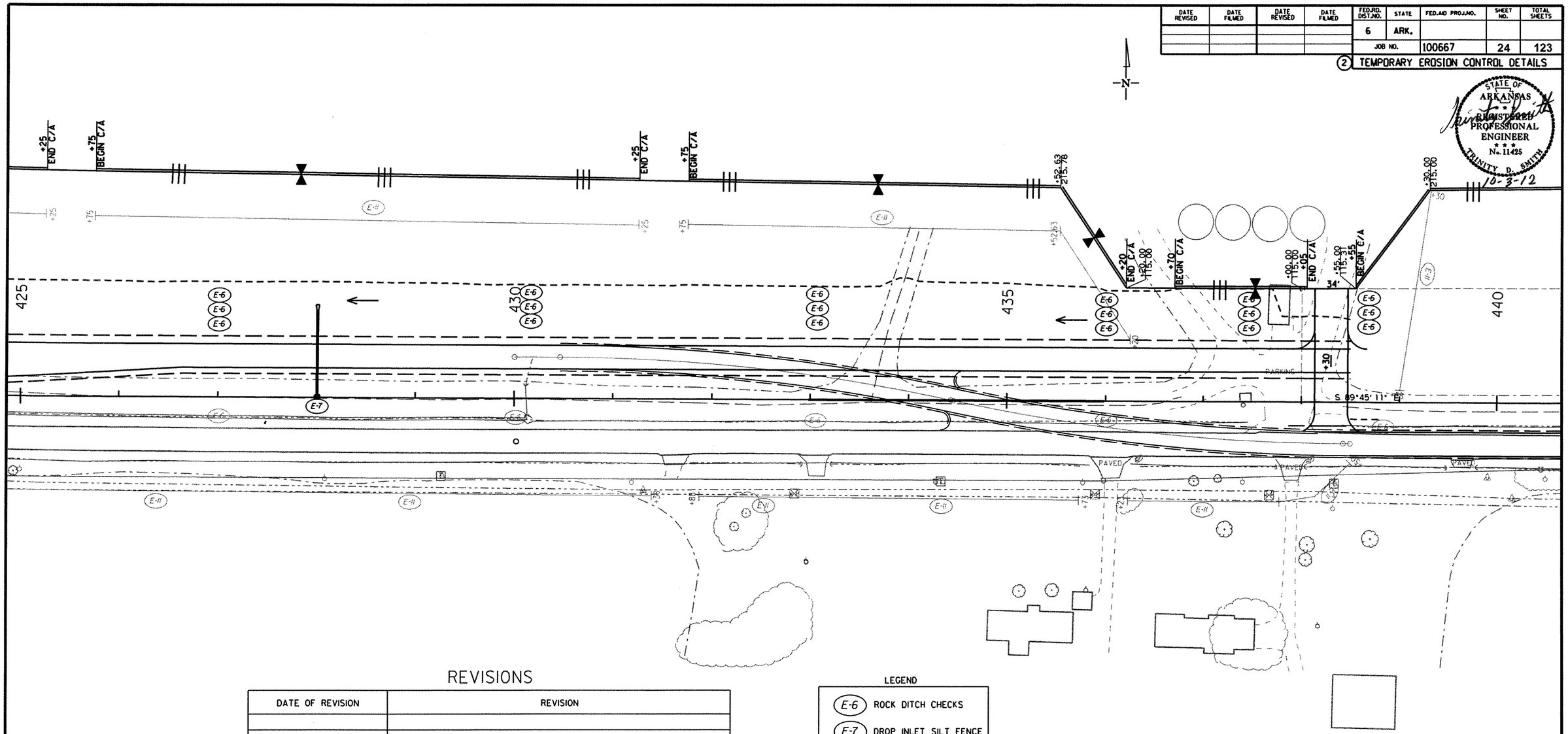
9/11/2012

R100667.DGN

TEMPORARY EROSION CONTROL DETAILS
STAGE I

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100667	24	123

(2) TEMPORARY EROSION CONTROL DETAILS



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12

REVISIONS

DATE OF REVISION	REVISION

LEGEND

E-6	ROCK DITCH CHECKS
E-7	DROP INLET SILT FENCE
E-11	SILT FENCE
E-14	SEDIMENT BASIN

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

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R100667.DGN

TEMPORARY EROSION CONTROL DETAILS
STAGE I

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100667	25	123

(2) TEMPORARY EROSION CONTROL DETAILS

TEMPORARY EROSION CONTROL QUANTITIES

STAGE 2

ROCK DITCH CHECKS = 114 CU. YD.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH

10-3-12

REVISIONS

DATE OF REVISION	REVISION

LEGEND

- E-6 ROCK DITCH CHECKS
- E-7 DROP INLET SILT FENCE
- E-11 SILT FENCE
- E-14 SEDIMENT BASIN

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

TEMPORARY EROSION CONTROL DETAILS
STAGE 2

9/11/2012

R100667.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.		100667	26	123

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12

11892 CU. FT.

16250 CU. FT.

S 89°27'40" E

S 89°01'38" E

P.I. 888+69.16
Δ= 0°29'02"

REVISIONS

DATE OF REVISION	REVISION

LEGEND

- E-6 ROCK DITCH CHECKS
- E-7 DROP INLET SILT FENCE
- E-11 SILT FENCE
- E-14 SEDIMENT BASIN

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

9/11/2012

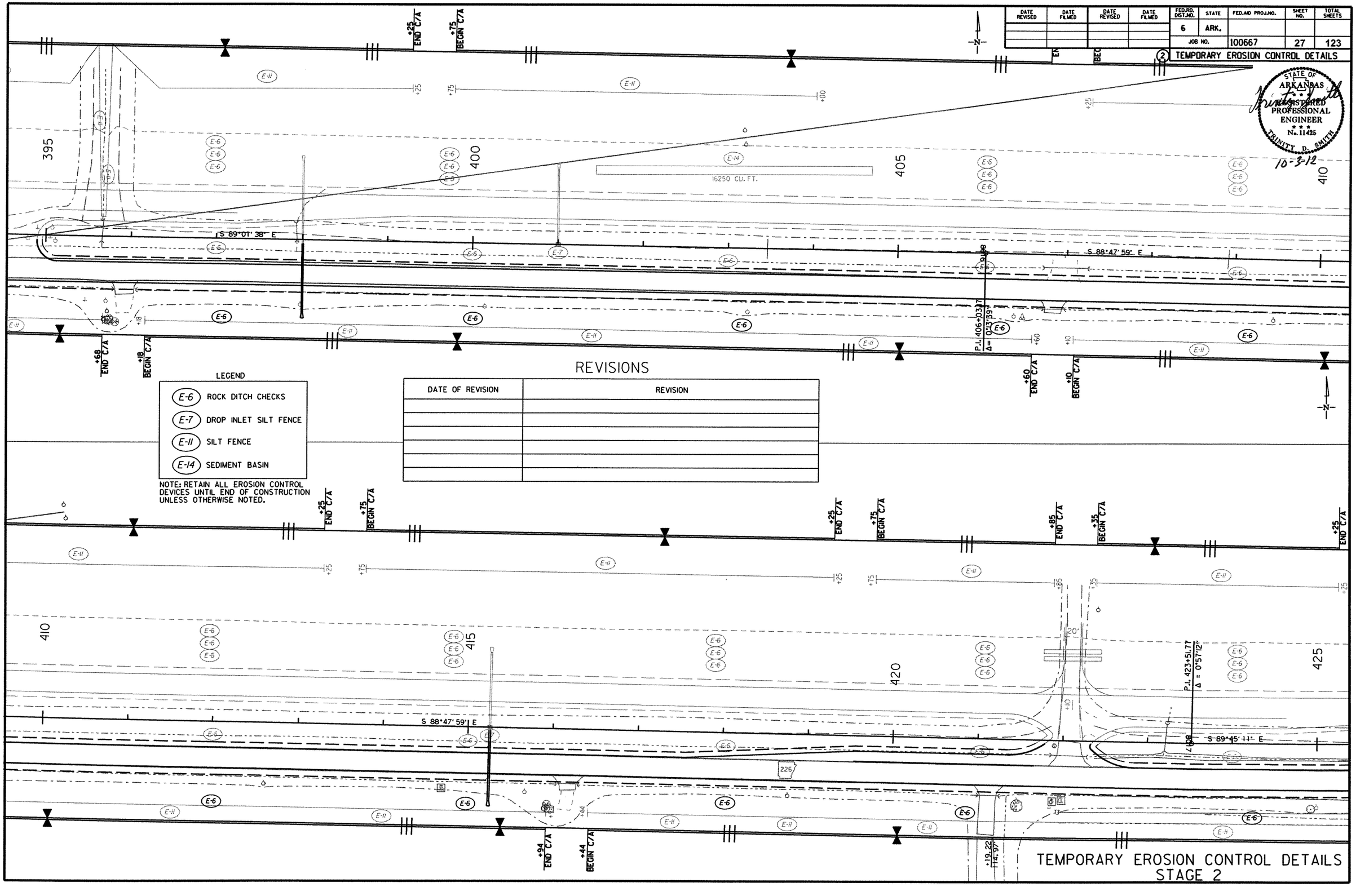
R100667.DGN

TEMPORARY EROSION CONTROL DETAILS
STAGE 2

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100667	27	123

TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12



LEGEND

E-6	ROCK DITCH CHECKS
E-7	DROP INLET SILT FENCE
E-11	SILT FENCE
E-14	SEDIMENT BASIN

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

REVISIONS

DATE OF REVISION	REVISION

9/11/2012

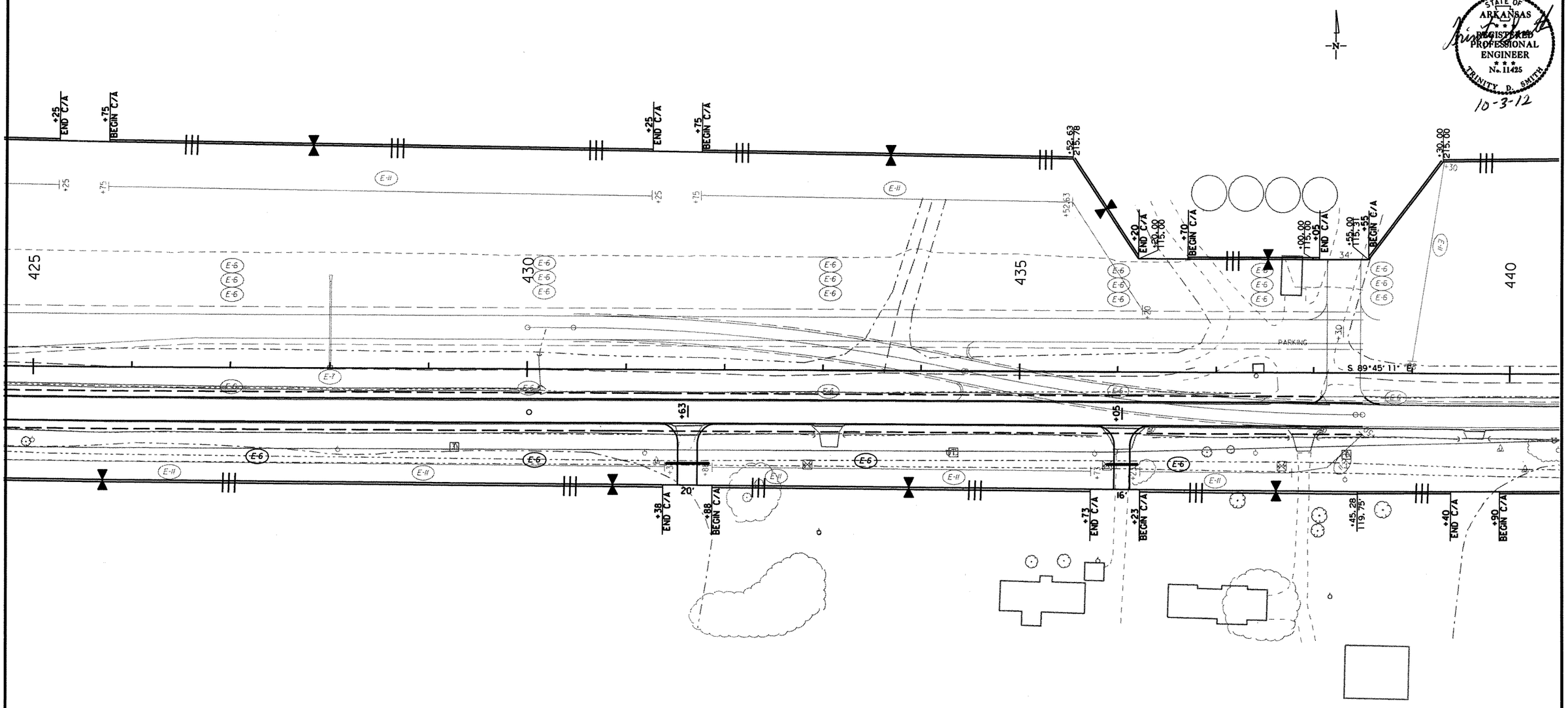
R100667.DGN

TEMPORARY EROSION CONTROL DETAILS
STAGE 2

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100667	28	123

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12



REVISIONS

DATE OF REVISION	REVISION

LEGEND

E-6	ROCK DITCH CHECKS
E-7	DROP INLET SILT FENCE
E-11	SILT FENCE
E-14	SEDIMENT BASIN

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

TEMPORARY EROSION CONTROL DETAILS STAGE 2

9/11/2012

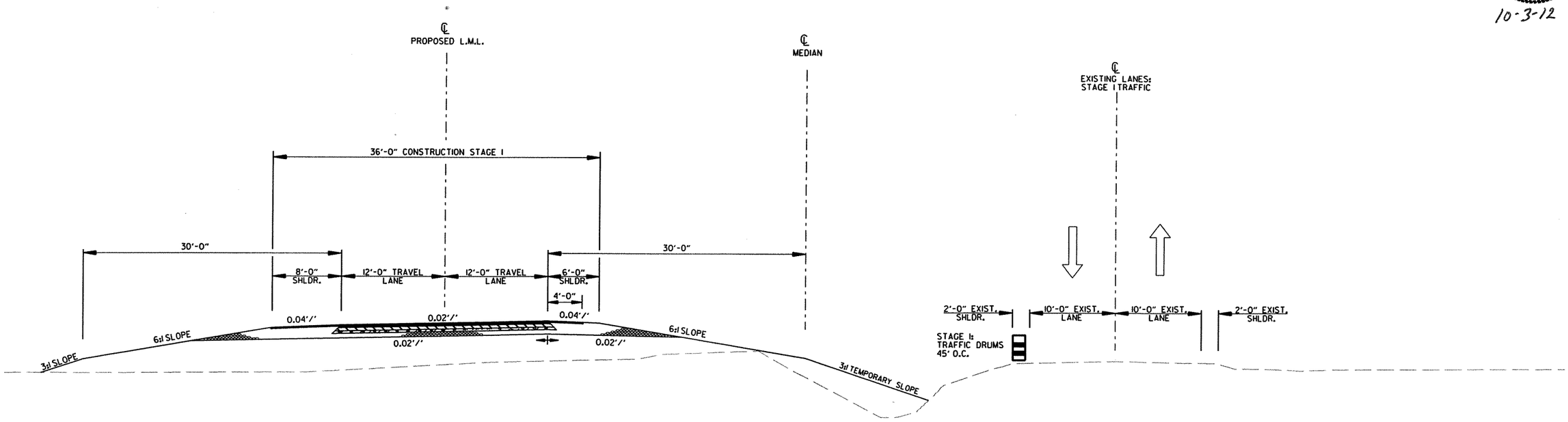
R100667.DGN

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.		100667	29	123

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH

10-3-12



HWY. 226 - 4 LANE DIVIDED
STAGE I CONSTRUCTION

NOTE:
REFER TO MAINTENANCE OF TRAFFIC PLANS FOR PLACEMENT OF TRAFFIC DRUMS. SPACING WILL VARY AT DRIVEWAYS.

SEQUENCE OF CONSTRUCTION NOTES:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING LANES. CONSTRUCT PROPOSED WESTBOUND LANES.

9/11/2012

R100667.DGN

MAINTENANCE OF TRAFFIC DETAILS
STAGE I

SEQUENCE OF CONSTRUCTION NOTES:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING LANES. CONSTRUCT PROPOSED WESTBOUND LANES.

STAGE 1B: CONSTRUCT METHOD OF RAISING GRADE AND TEMPORARY CROSSOVER AT BEGINNING OF JOB AND TEMPORARY CROSSOVER AT END OF JOB.

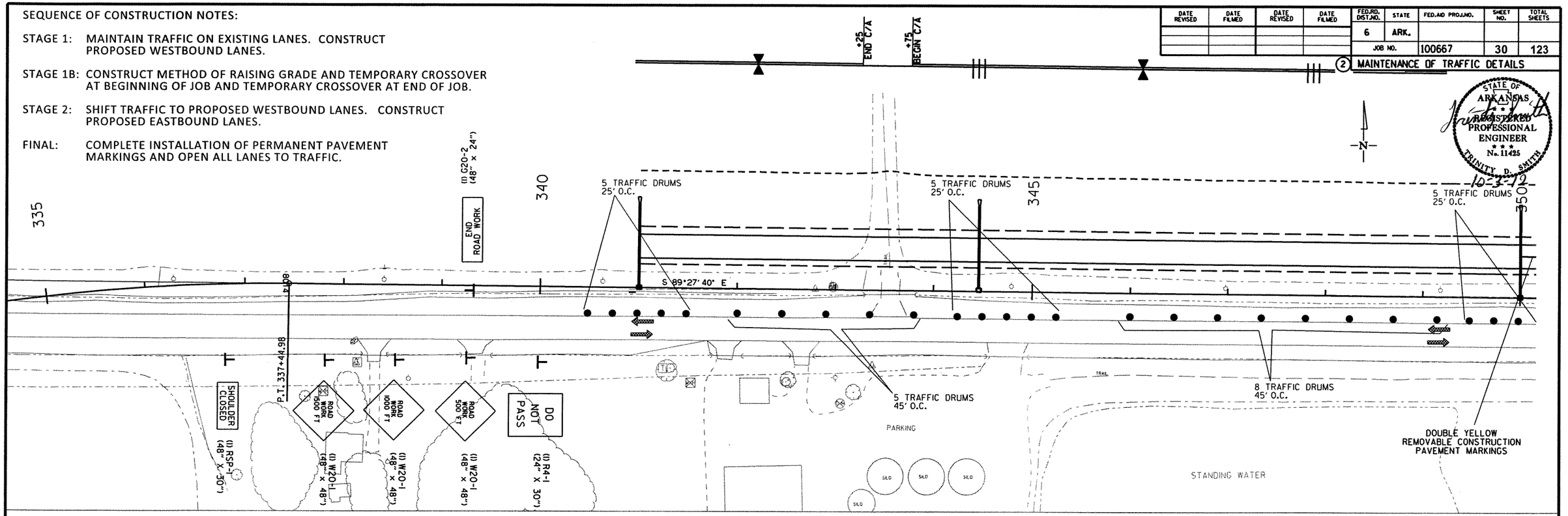
STAGE 2: SHIFT TRAFFIC TO PROPOSED WESTBOUND LANES. CONSTRUCT PROPOSED EASTBOUND LANES.

FINAL: COMPLETE INSTALLATION OF PERMANENT PAVEMENT MARKINGS AND OPEN ALL LANES TO TRAFFIC.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100667	30	123

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12



MAINTENANCE OF TRAFFIC DETAILS
STAGE 1

9/11/2012

R100667.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.		100667	31	123

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
TRINITY D. SMITH
REGISTERED PROFESSIONAL ENGINEER
No. 11425
10-3-12

+95.00 225.00 | +25 END C/A | +50.00 235.00 | +75 BEGIN C/A | +30 END C/A | +80 BEGIN C/A | +50.00 235.00 | +25 END C/A | +75 BEGIN C/A

ROAD CLOSED | (1) RII-2 (48" X 30") | 16' BARR. TYP. III RT. | 16' BARR. TYP. III LT. | (3) OM-3L (12"X 36") | (4) OM-3R (12"X 36") | JOHNSON DITCH | TRAIL

365 | 370 | 375 | 380

DOUBLE YELLOW REMOVABLE CONSTRUCTION PAVEMENT MARKINGS

WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKINGS

5 TRAFFIC DRUMS 25' O.C.

S 89°27' 40" E

PAVED | PAVED | PAVED | CRAIGHEAD C.R. 237

TEMPORARY IMPACT ATTENUATION BARRIER

4 TRAFFIC DRUMS 45' O.C.

9 TRAFFIC DRUMS 45' O.C.

12 TRAFFIC DRUMS 45' O.C.

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

ROAD WORK AHEAD | (1) W20-1 (48" x 48")

FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER = 273 LIN. FT.
INCLUDES (1) SPECIAL END UNIT

+25 END C/A | +75 BEGIN C/A | +25 END C/A | +75 BEGIN C/A | +25 END C/A | +75 BEGIN C/A

ROAD CLOSED | (1) RII-2 (48" X 30") | 16' BARR. TYP. III RT. | 30' | (1) RII-2 (48" X 30") | 16' BARR. TYP. III LT. | ROAD CLOSED

DOUBLE YELLOW REMOVABLE CONSTRUCTION PAVEMENT MARKINGS

WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKINGS

ROAD CLOSED | (1) RII-2 (48" X 30") | 16' BARR. TYP. III RT. | 16' BARR. TYP. III LT.

380 | 385 | 390 | 395

5 TRAFFIC DRUMS 25' O.C.

S 89°27' 40" E

S 89°01' 38" E

P.I. 388+69.15
Δ= 0°29'02"

5 TRAFFIC DRUMS 45' O.C.

18 TRAFFIC DRUMS 20' O.C.

7 TRAFFIC DRUMS 45' O.C.

13 TRAFFIC DRUMS 45' O.C.

5 TRAFFIC DRUMS 20' O.C.

MAINTENANCE OF TRAFFIC DETAILS STAGE I

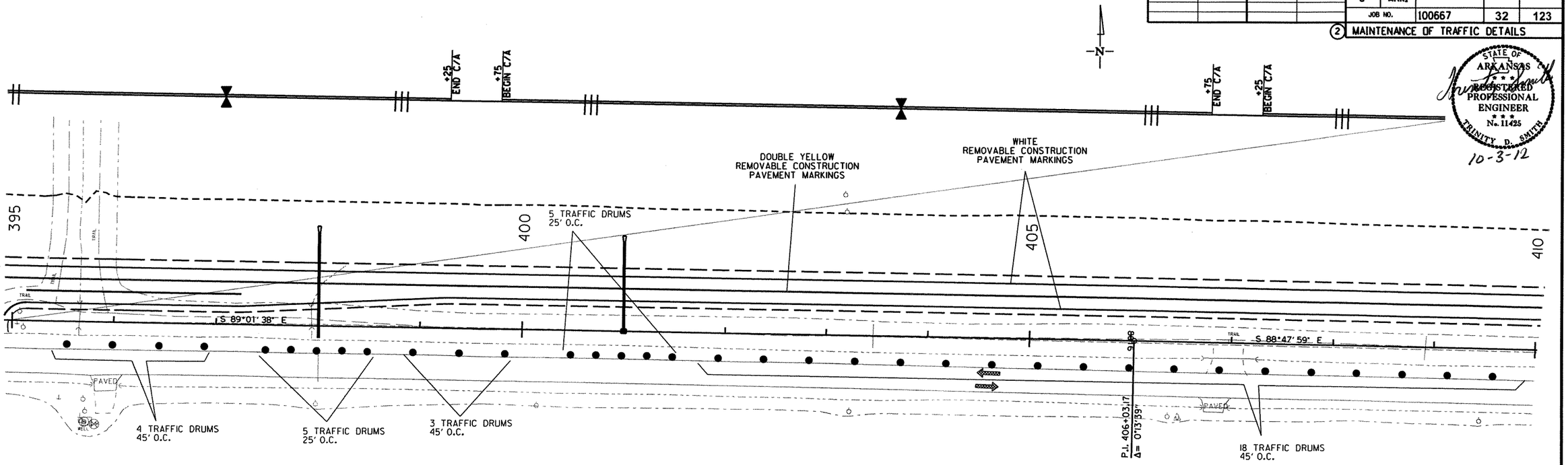
9/11/2012

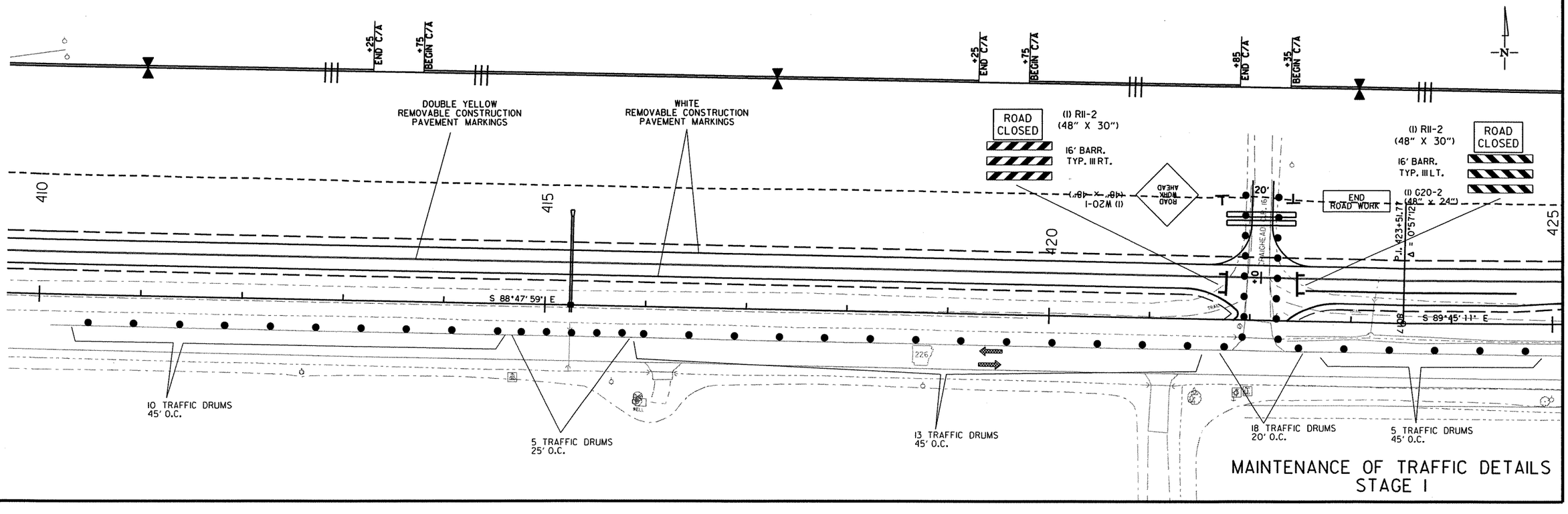
R100667.DGN

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.		100667	32	123

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12





MAINTENANCE OF TRAFFIC DETAILS STAGE I

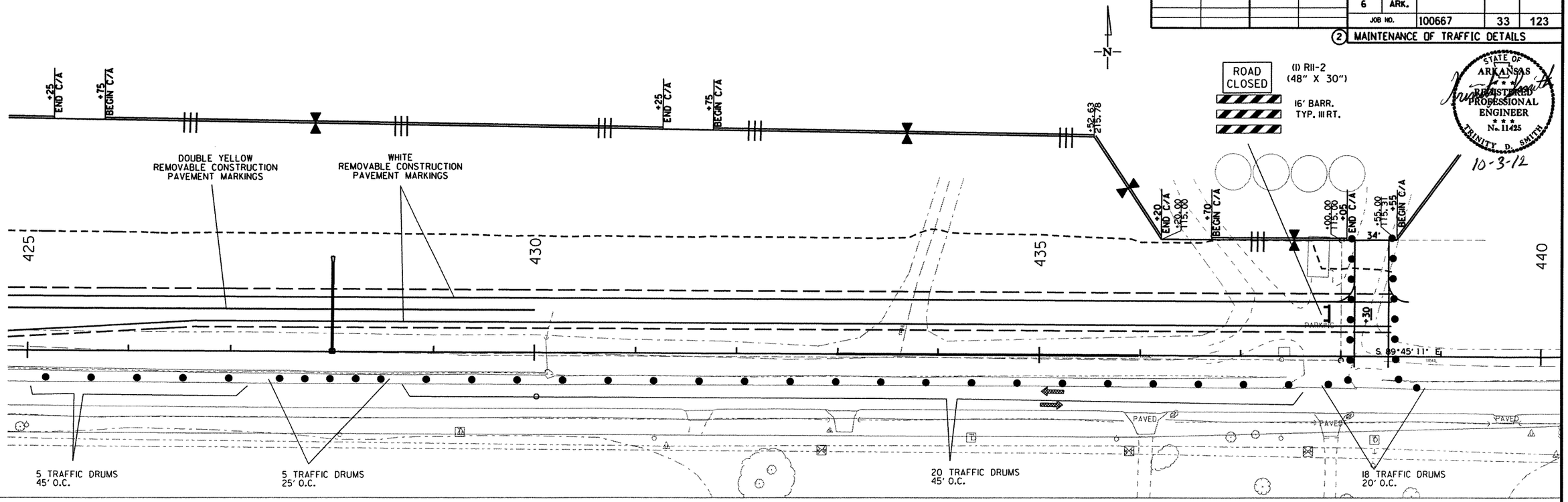
9/11/2012

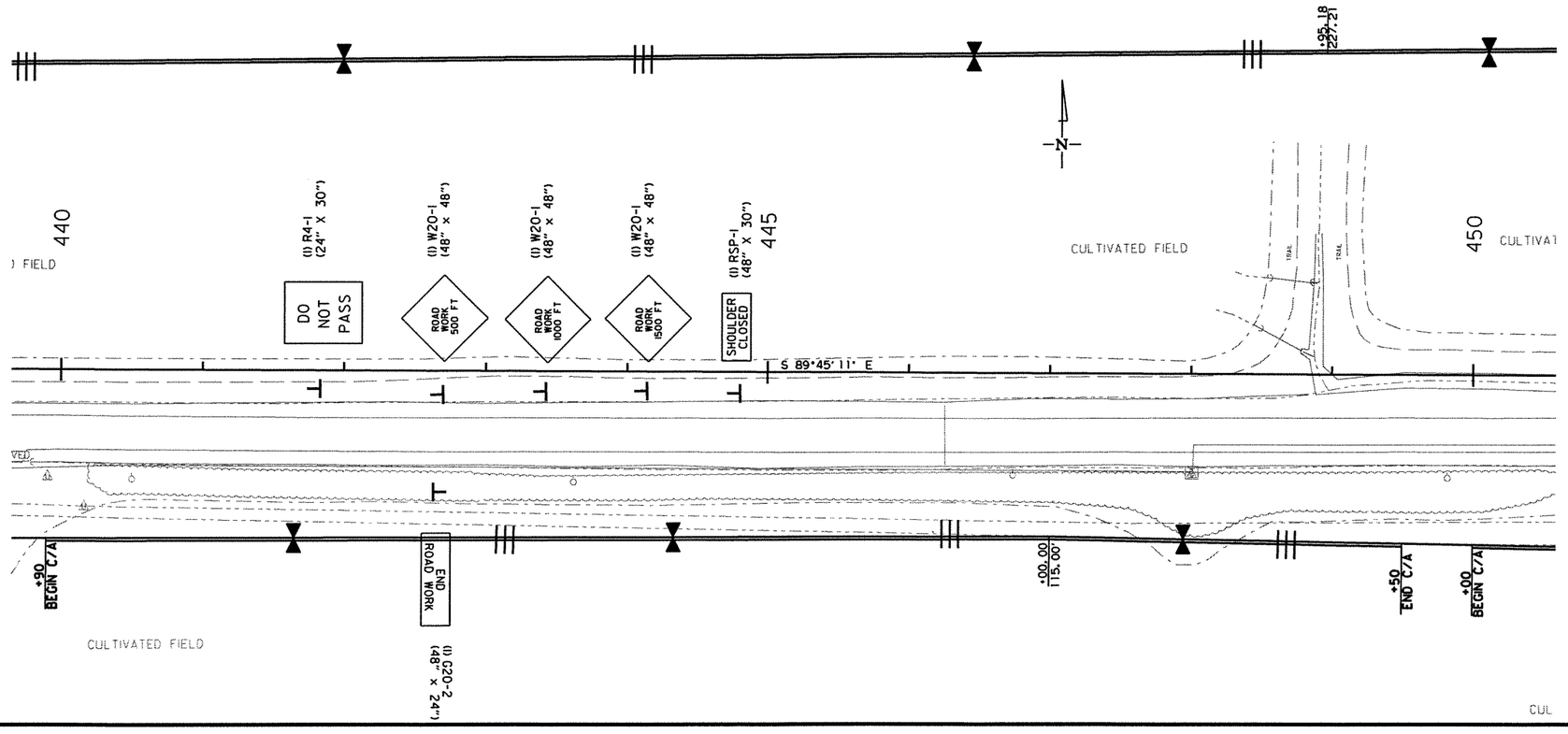
R100667.DGN

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.		100667	33	123

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12





REMOVABLE CONSTRUCTION PAVEMENT MARKINGS

YELLOW:	16000 LIN.FT.
WHITE:	16000 LIN.FT.

MAINTENANCE OF TRAFFIC DETAILS STAGE I

9/11/2012

R100667.DGN

SEQUENCE OF CONSTRUCTION NOTES:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING LANES. CONSTRUCT PROPOSED WESTBOUND LANES.

STAGE 1B: CONSTRUCT METHOD OF RAISING GRADE AND TEMPORARY CROSSOVER AT BEGINNING OF JOB AND TEMPORARY CROSSOVER AT END OF JOB.

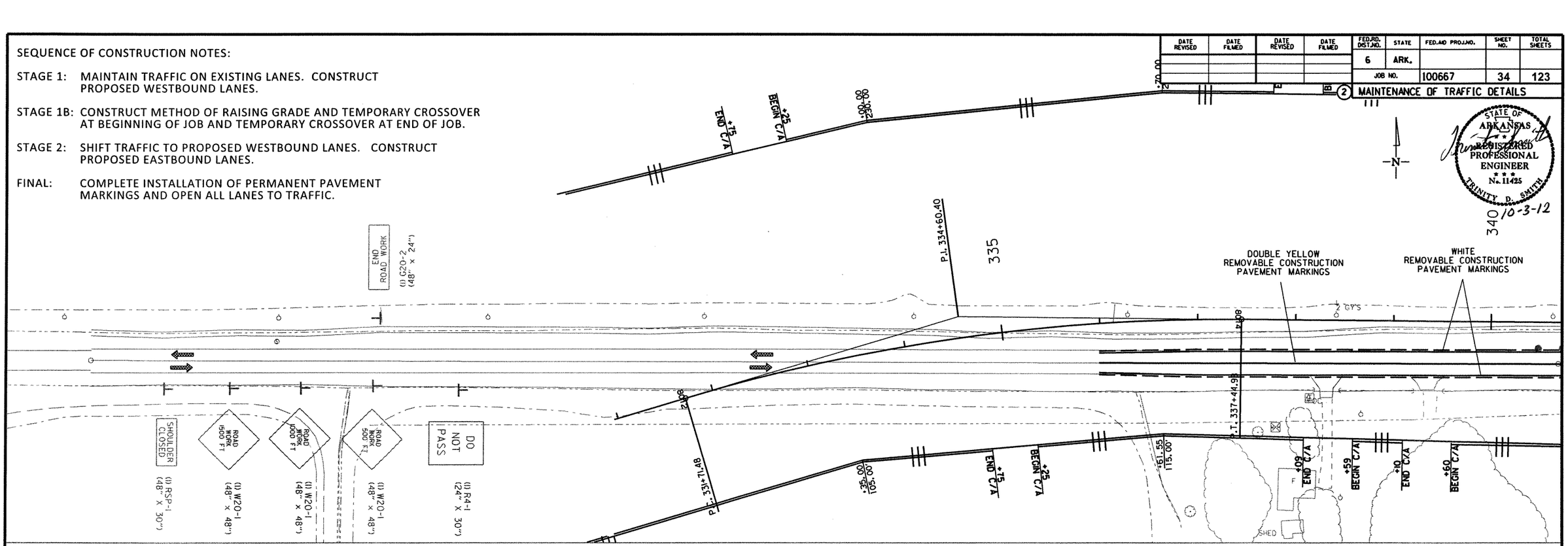
STAGE 2: SHIFT TRAFFIC TO PROPOSED WESTBOUND LANES. CONSTRUCT PROPOSED EASTBOUND LANES.

FINAL: COMPLETE INSTALLATION OF PERMANENT PAVEMENT MARKINGS AND OPEN ALL LANES TO TRAFFIC.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100667	34	123

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12



9/11/2012

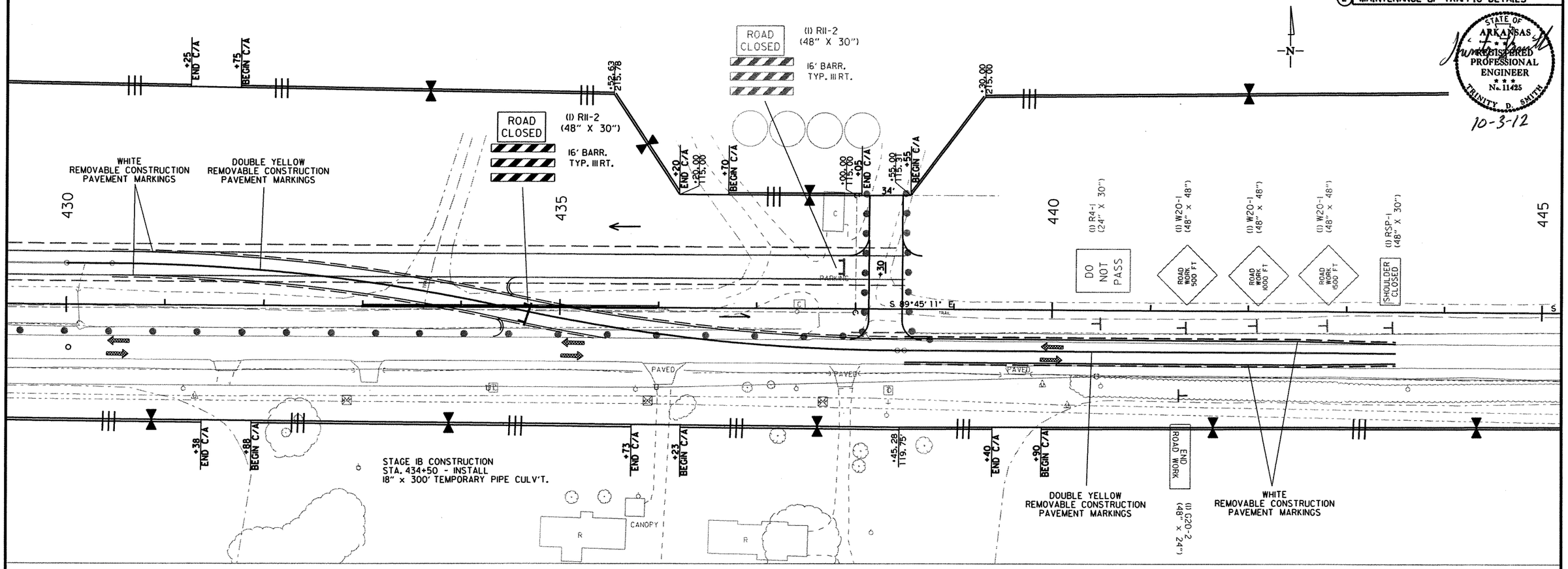
R100667.DGN

MAINTENANCE OF TRAFFIC DETAILS
STAGE IB

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100667	35	123

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12



REMOVABLE CONSTRUCTION PAVEMENT MARKINGS

YELLOW:	5500 LIN.FT.
WHITE:	4750 LIN.FT.

9/11/2012

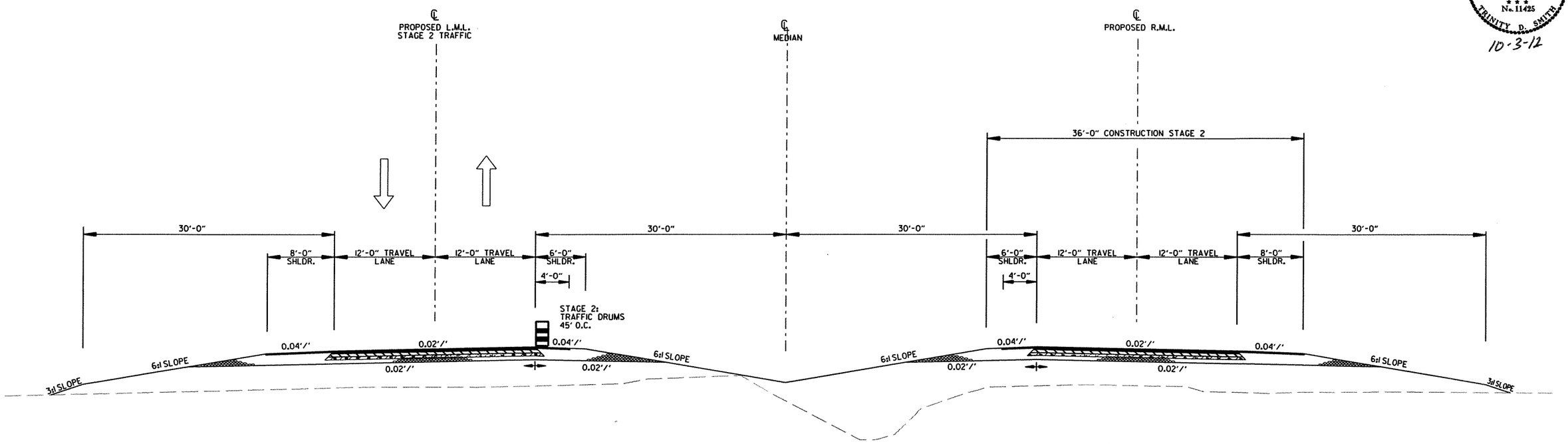
R100667.DGN

MAINTENANCE OF TRAFFIC DETAILS
STAGE IB

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100667	36	123

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12



NOTE:
REFER TO MAINTENANCE OF TRAFFIC PLANS FOR PLACEMENT OF TRAFFIC DRUMS. SPACING WILL VARY AT DRIVEWAYS.

HWY. 226 - 4 LANE DIVIDED
STAGE 2 CONSTRUCTION

STAGE 2: SHIFT TRAFFIC TO PROPOSED WESTBOUND LANES. CONSTRUCT PROPOSED EASTBOUND LANES.

9/11/2012

R100667.DGN

MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

SEQUENCE OF CONSTRUCTION NOTES:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING LANES. CONSTRUCT PROPOSED WESTBOUND LANES.

STAGE 1B: CONSTRUCT METHOD OF RAISING GRADE AND TEMPORARY CROSSOVER AT BEGINNING OF JOB AND TEMPORARY CROSSOVER AT END OF JOB.

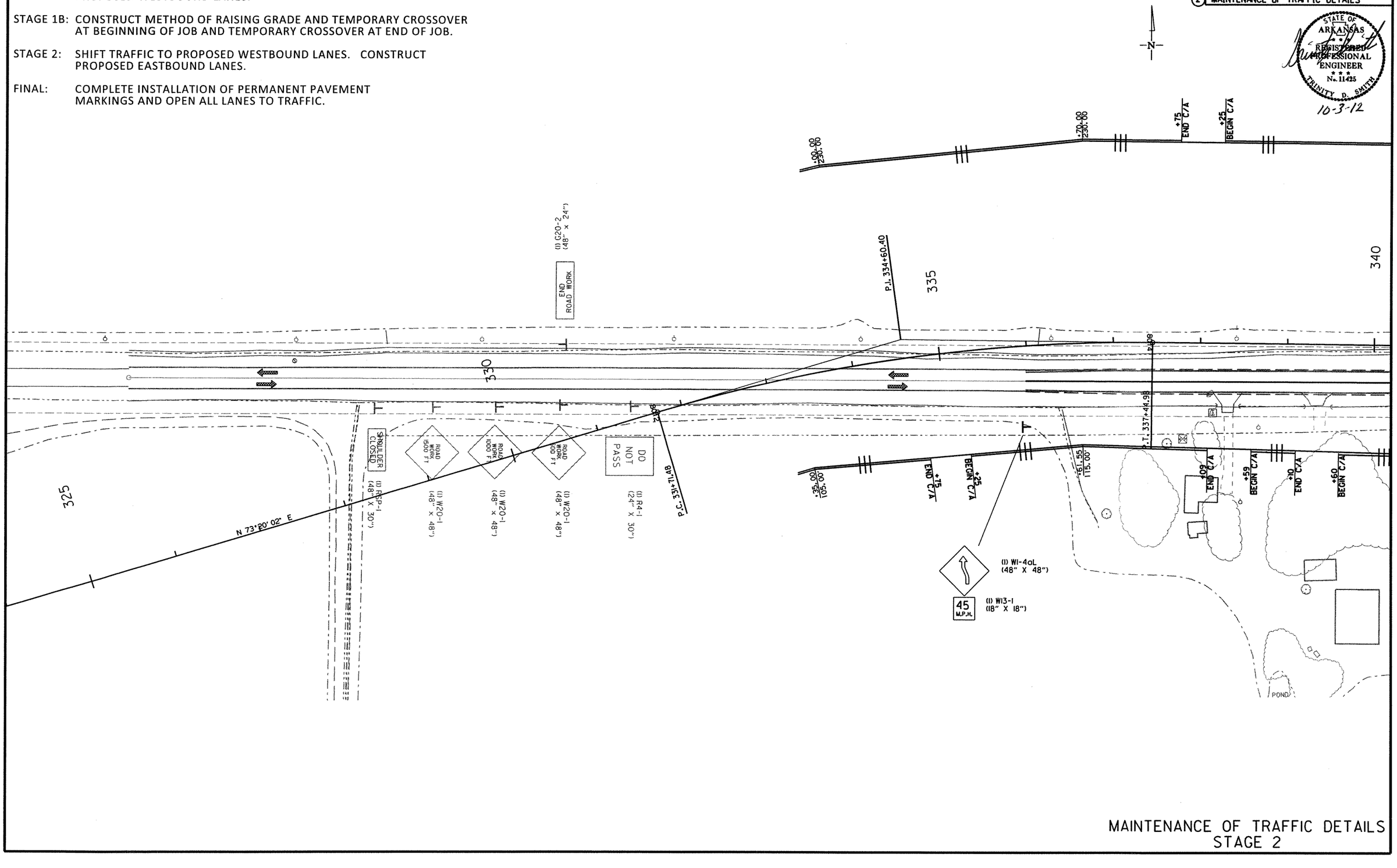
STAGE 2: SHIFT TRAFFIC TO PROPOSED WESTBOUND LANES. CONSTRUCT PROPOSED EASTBOUND LANES.

FINAL: COMPLETE INSTALLATION OF PERMANENT PAVEMENT MARKINGS AND OPEN ALL LANES TO TRAFFIC.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100667	37	123

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12



MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

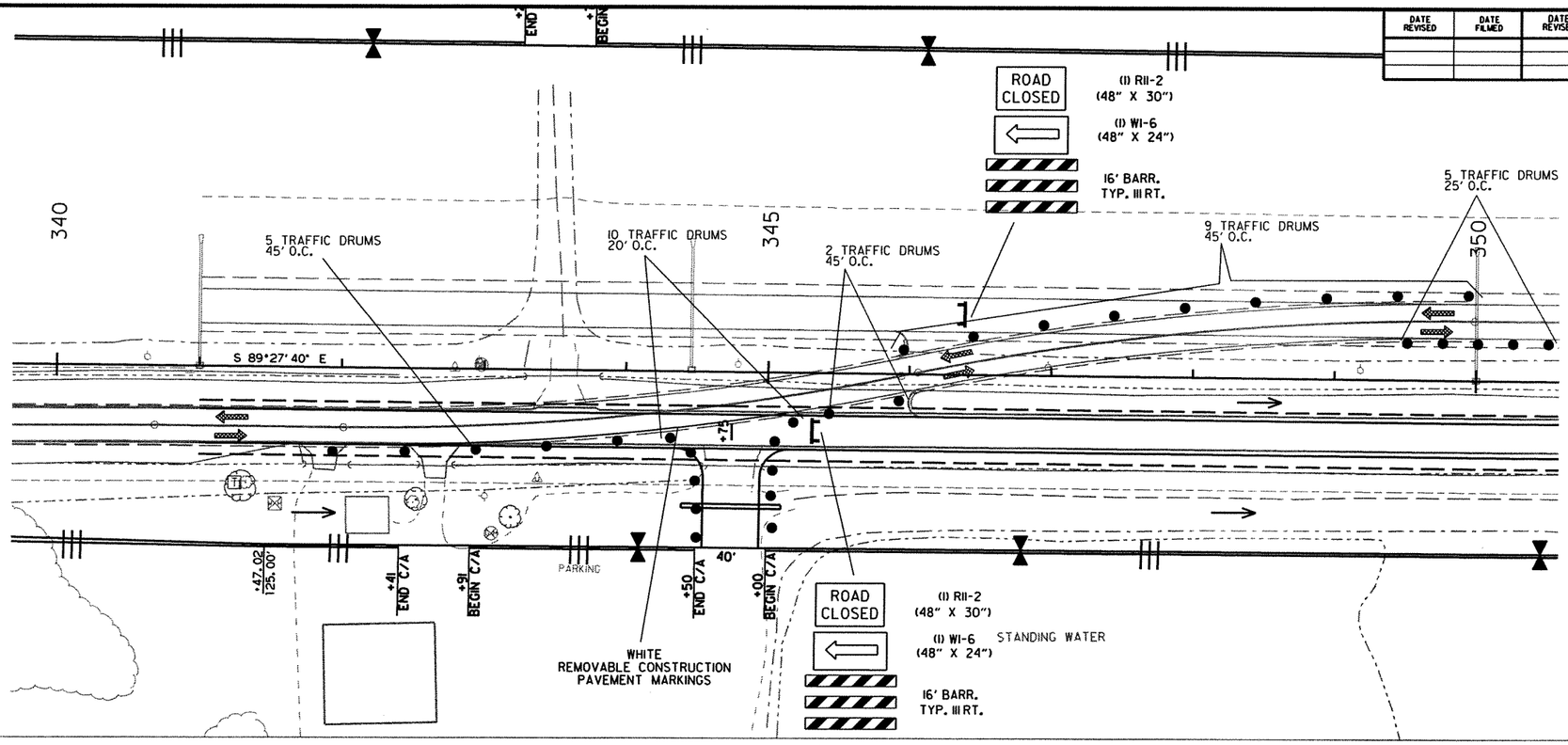
9/11/2012

R100667.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.		100667	38	123

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12



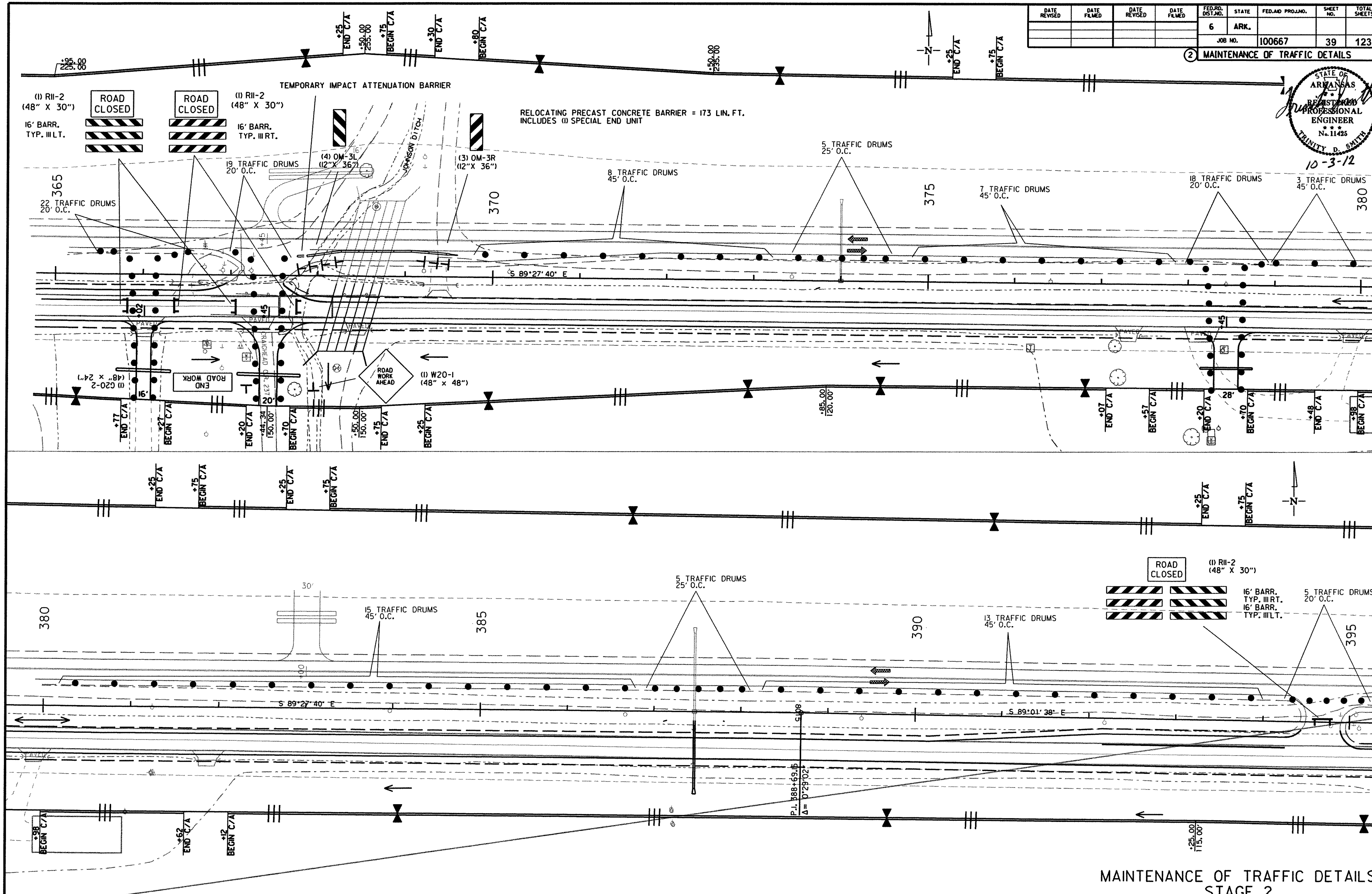
MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

9/11/2012

R100667.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.		100667	39	123

(2) MAINTENANCE OF TRAFFIC DETAILS



TEMPORARY IMPACT ATTENUATION BARRIER
(1) R11-2 (48" X 30")
ROAD CLOSED
16' BARR. TYP. III LT.
16' BARR. TYP. III RT.
(4) OM-3L (12" X 36")
(3) OM-3R (12" X 36")
RELOCATING PRECAST CONCRETE BARRIER = 173 LIN. FT. INCLUDES (1) SPECIAL END UNIT
22 TRAFFIC DRUMS 20' O.C.
19 TRAFFIC DRUMS 20' O.C.
8 TRAFFIC DRUMS 45' O.C.
5 TRAFFIC DRUMS 25' O.C.
7 TRAFFIC DRUMS 45' O.C.
18 TRAFFIC DRUMS 20' O.C.
3 TRAFFIC DRUMS 45' O.C.
JOHNSON DITCH
S 89°27'40" E
ROAD WORK AHEAD
(1) W20-1 (48" x 48")
END ROAD WORK
(1) G20-2 (48" x 24")
CRAIGHEAD CO. RD. 237
365
370
375
380
15 TRAFFIC DRUMS 45' O.C.
5 TRAFFIC DRUMS 25' O.C.
13 TRAFFIC DRUMS 45' O.C.
5 TRAFFIC DRUMS 20' O.C.
16' BARR. TYP. III RT.
16' BARR. TYP. III LT.
S 89°01'38" E
P.I. 388+69.10
Δ= 0°29'02"
385
390
395
END C/A
BEGIN C/A

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH

10-3-12

MAINTENANCE OF TRAFFIC DETAILS STAGE 2

9/11/2012

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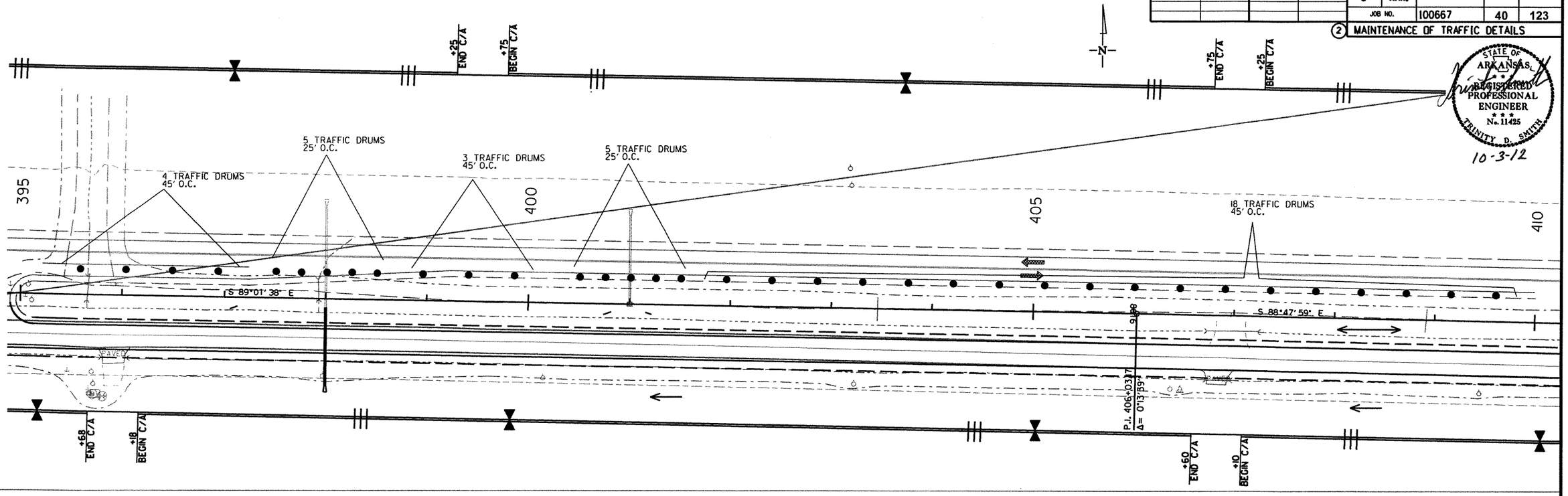
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100667	40	123

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12



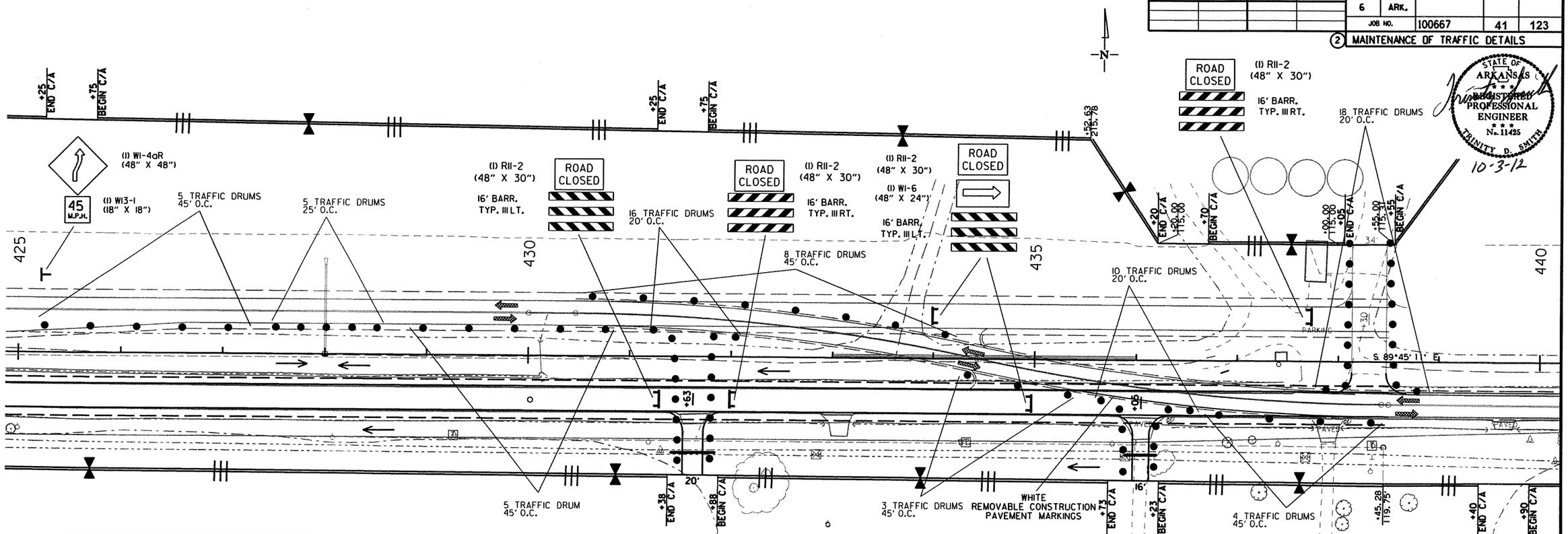
9/11/2012

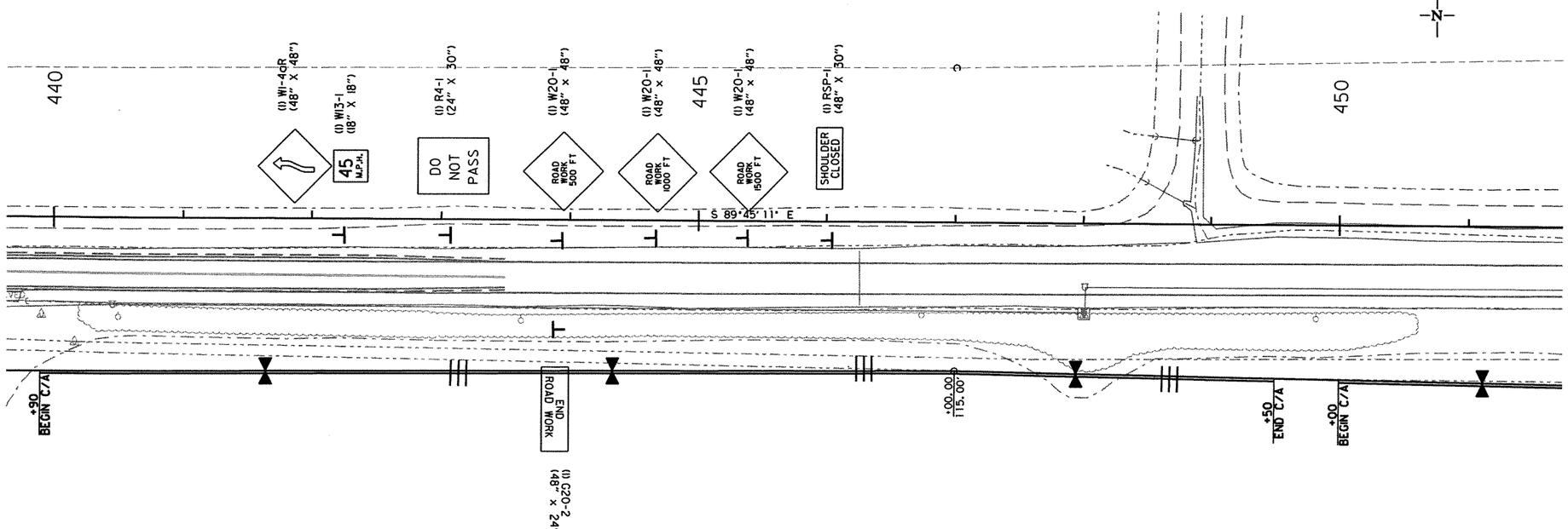
R100667.DGN

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.		100667	41	123

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12





REMOVABLE CONSTRUCTION PAVEMENT MARKINGS

YELLOW:	400 LIN.FT.
WHITE:	350 LIN.FT.

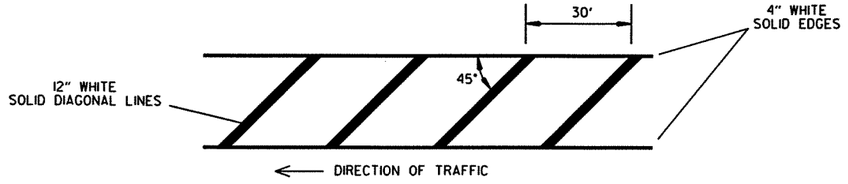
MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

9/11/2012

R100667.DGN

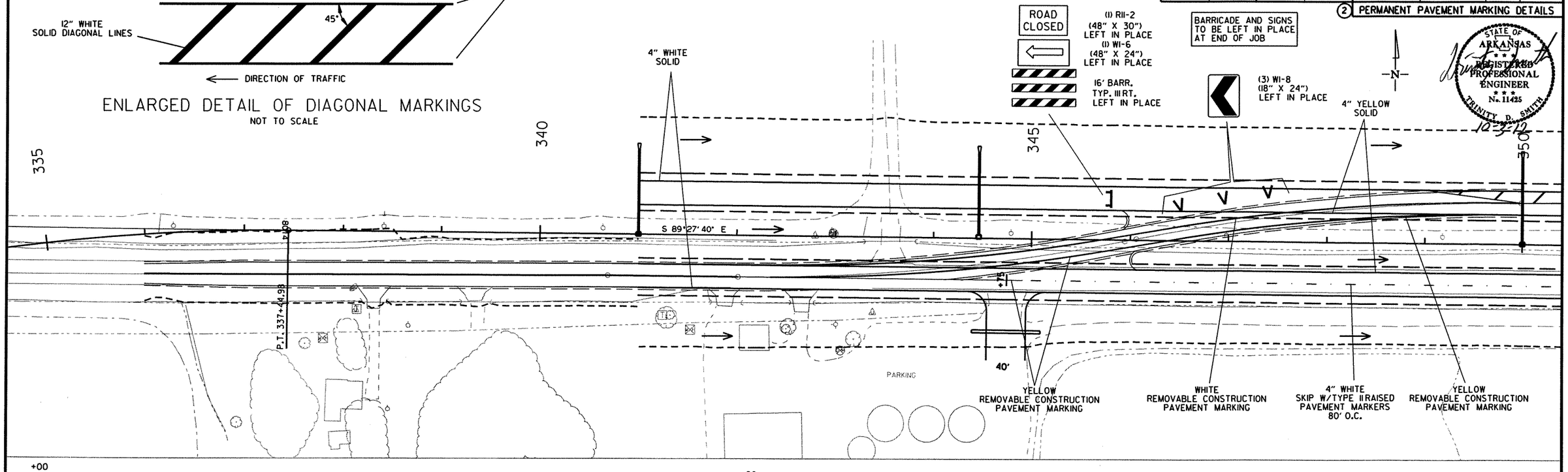
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100667	42	123

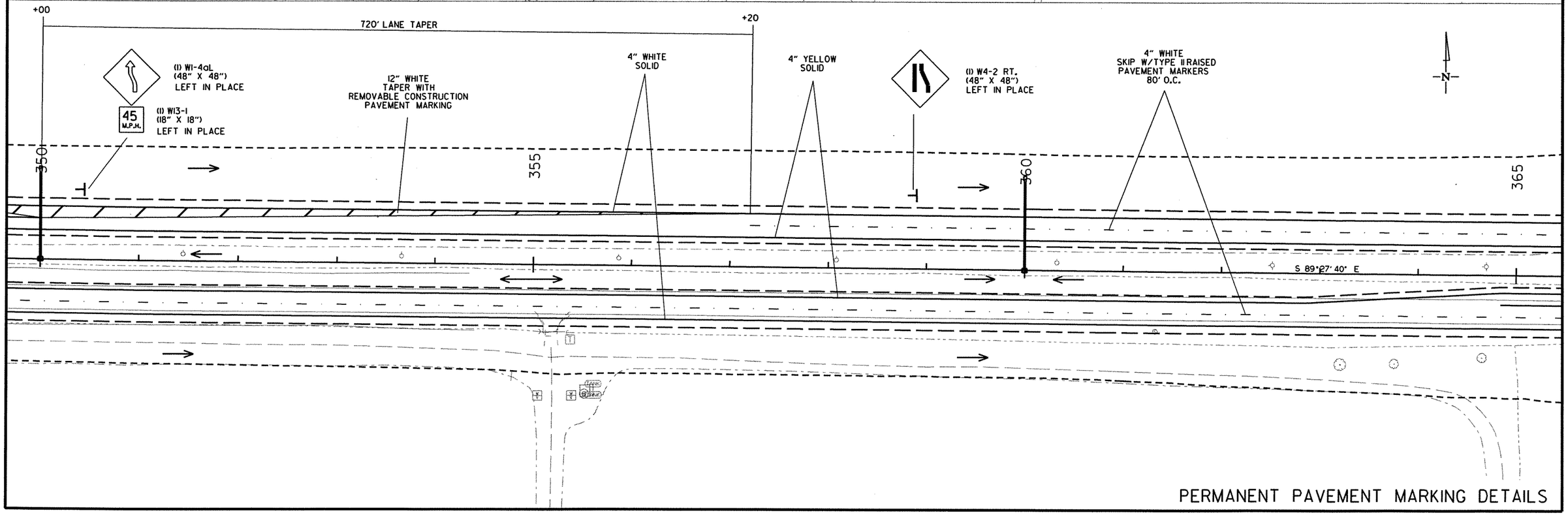
(2) PERMANENT PAVEMENT MARKING DETAILS



ENLARGED DETAIL OF DIAGONAL MARKINGS
NOT TO SCALE

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 10-3-12





9/11/2012

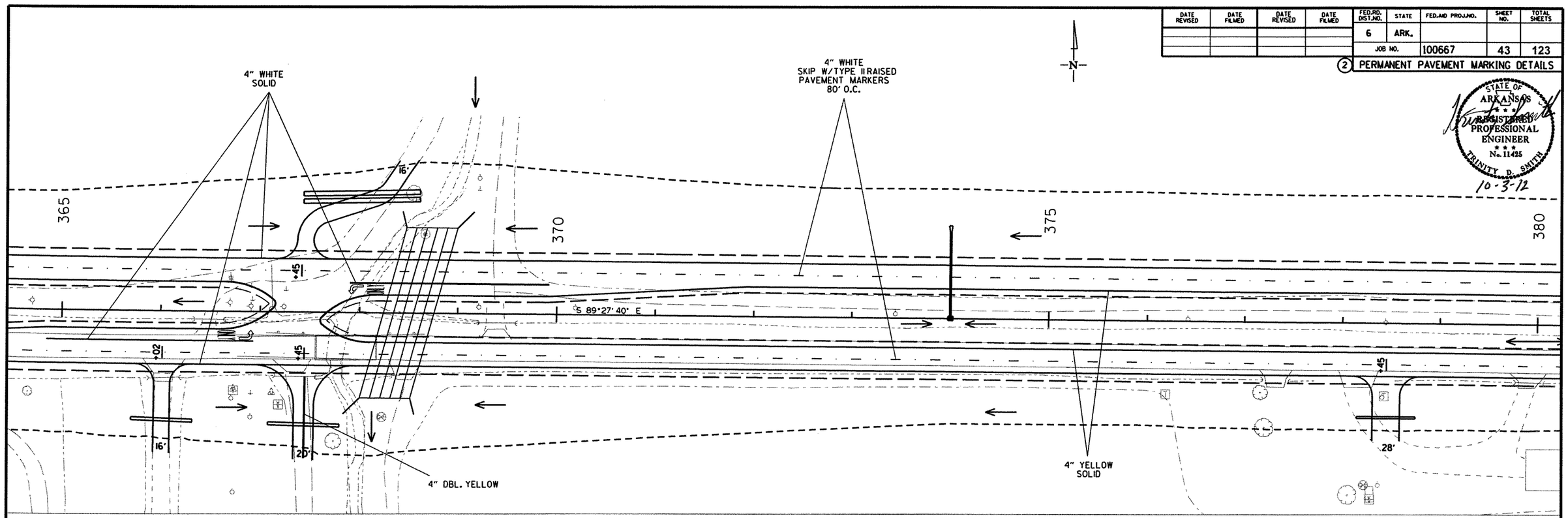
R100667.DGN

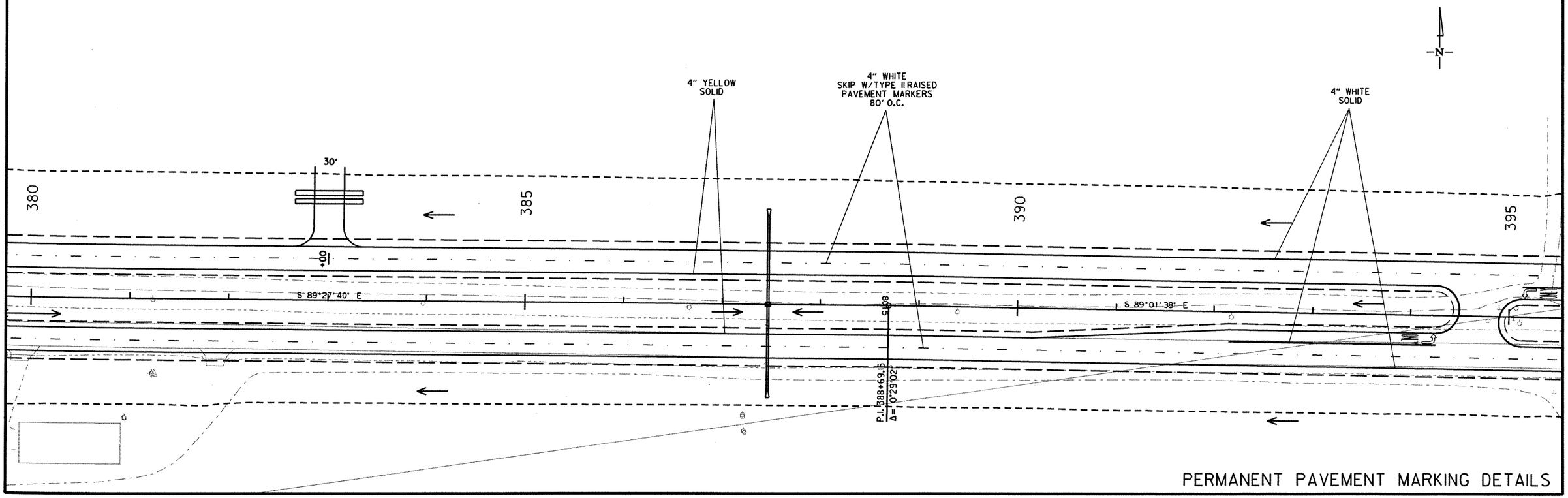
PERMANENT PAVEMENT MARKING DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100667	43	123

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12





9/11/2012

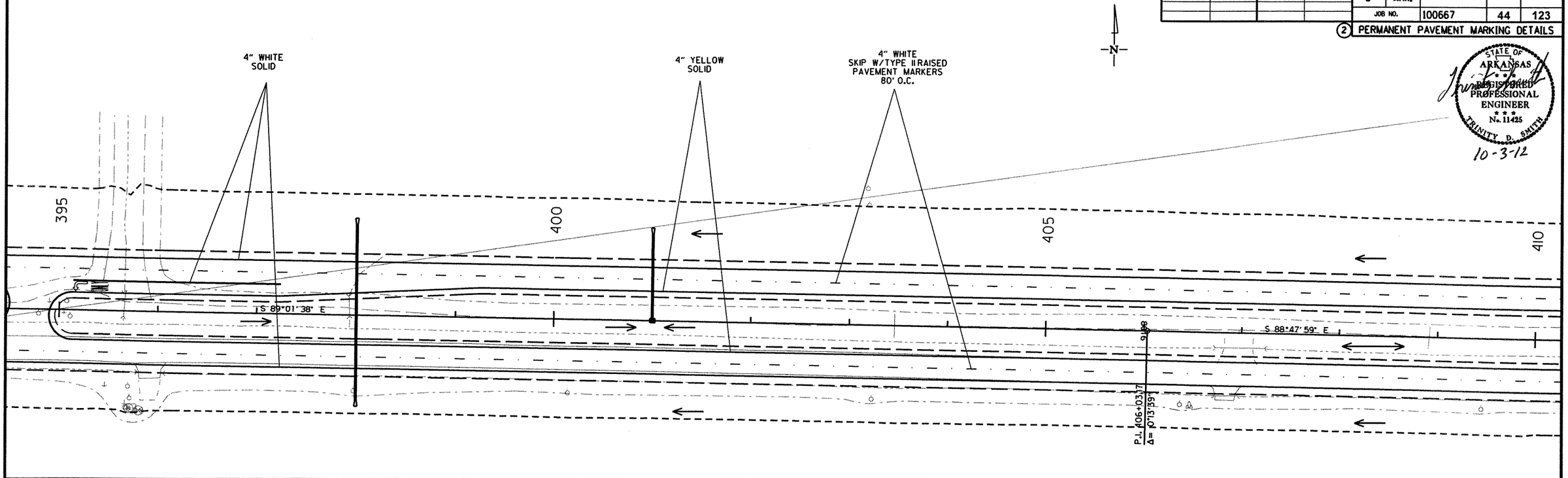
R100667.DGN

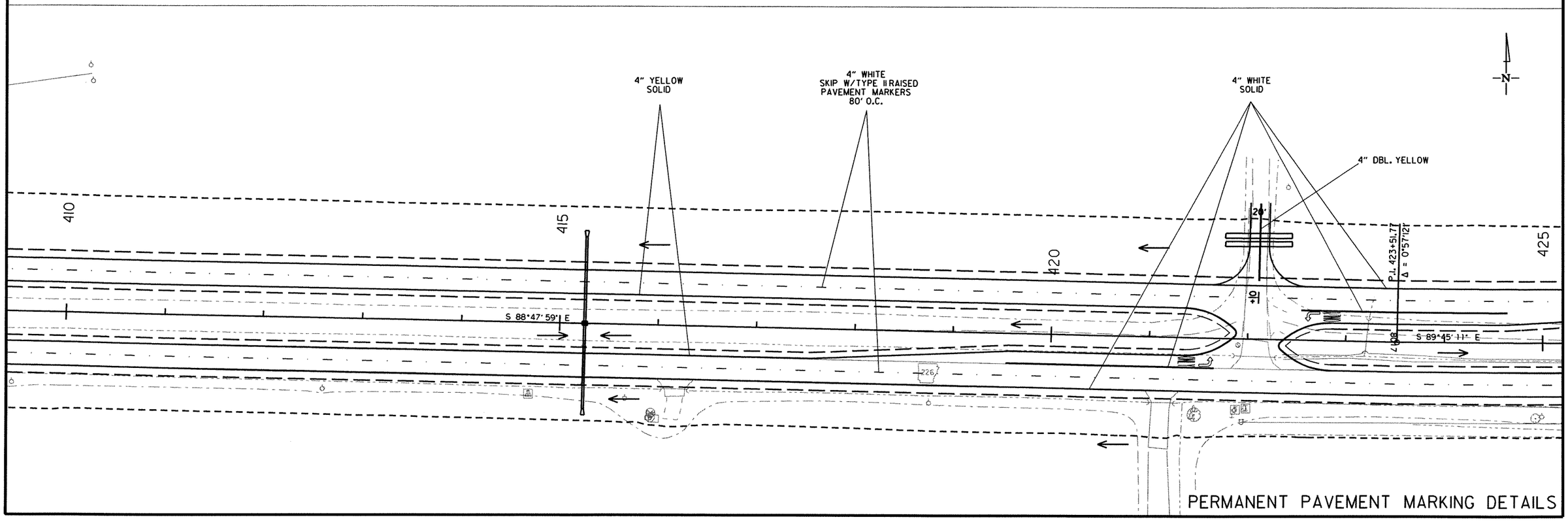
PERMANENT PAVEMENT MARKING DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100667	44	123

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12





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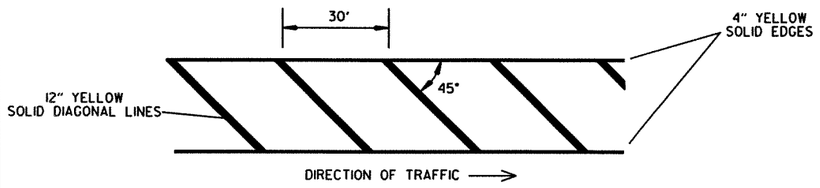
PERMANENT PAVEMENT MARKING DETAILS

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.		100667	45	123

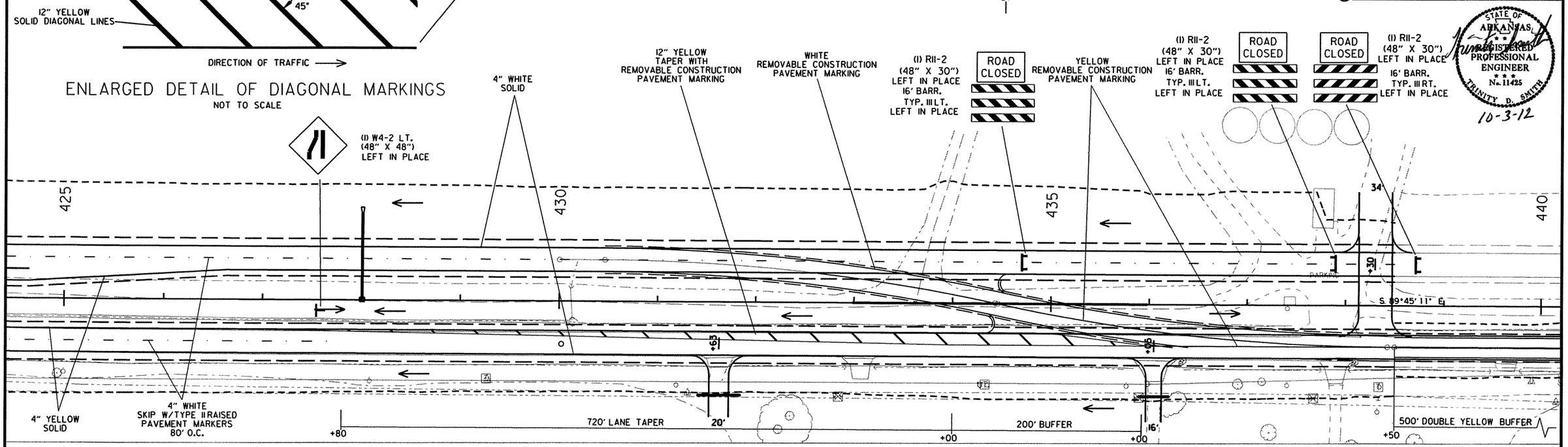
(2) PERMANENT PAVEMENT MARKING DETAILS

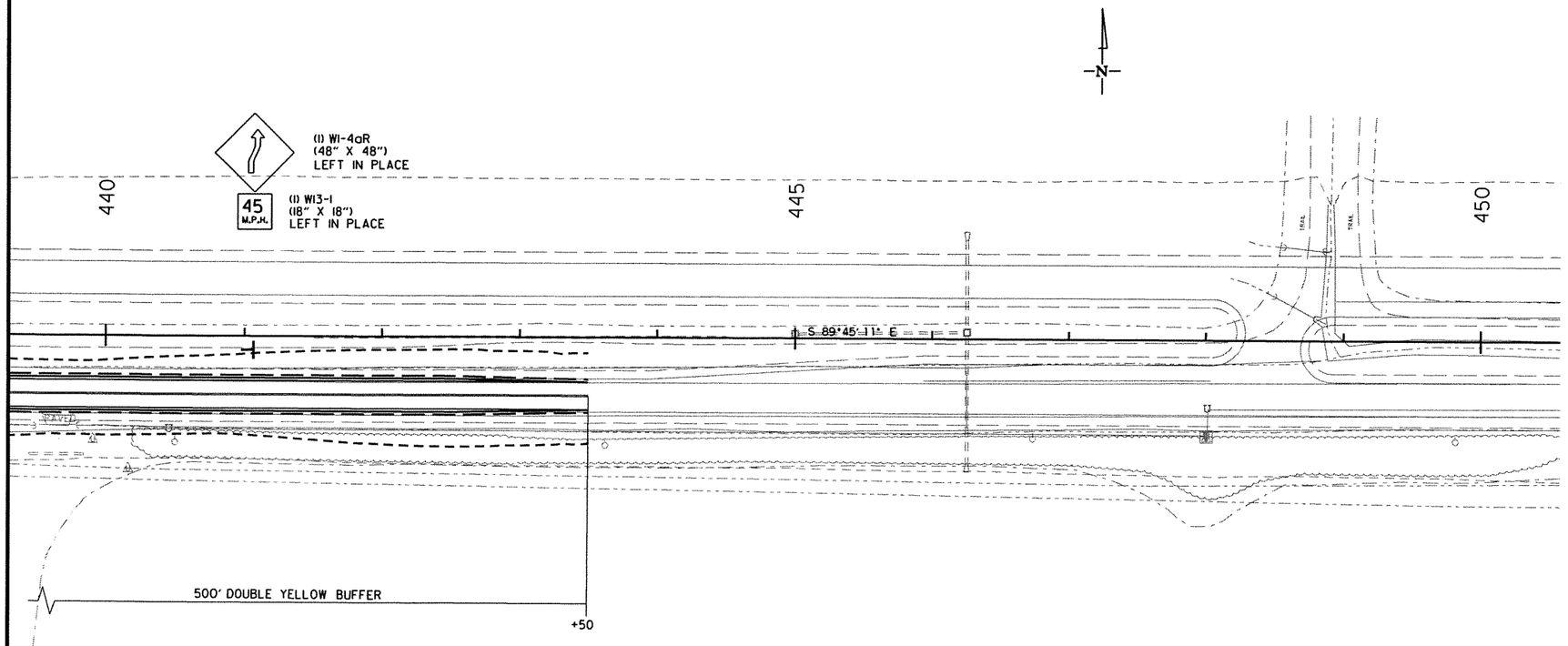
BARRICADE AND SIGNS TO BE LEFT IN PLACE AT END OF JOB



ENLARGED DETAIL OF DIAGONAL MARKINGS
NOT TO SCALE

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12





THERMOPLASTIC PAVEMENT MARKINGS

4" YELLOW:	13919 LIN.FT.
4" WHITE:	25038 LIN.FT.
WORDS:	6 EACH
ARROWS:	6 EACH

RAISED PAVEMENT MARKERS

TYPE II (WHITE/RED):	213 EACH
TYPE II (YEL/YEL):	13 EACH

REMOVABLE CONSTRUCTION PAVEMENT MARKINGS

YELLOW:	4197 LIN.FT.
WHITE:	3555 LIN.FT.

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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.		100667	46	123

(2) QUANTITIES

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH

10-3-12

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 1B	STAGE 2	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		TRAFFIC DRUMS	BARRICADES (TYPE III)		FURNISHING & INSTALLING PRECAST CONC. BARRIER	RELOCATING PRECAST CONCRETE BARRIER	TEMPORARY IMPACT ATTENUATION BARRIER	TEMP. IMPACT ATTEN.BARR. (REPAIR)
										RIGHT	LEFT				
			LIN. FT. - EACH				NO.	SQ. FT.	EACH	LIN. FT.				EACH	
W20-1	ROAD WORK 1500 FT.	48"x48"	2	2	2	2	2	32.0							
W20-1	ROAD WORK 1000 FT.	48"x48"	2	2	2	2	2	32.0							
W20-1	ROAD WORK 500 FT.	48"x48"	2	2	2	2	2	32.0							
W20-1	ROAD WORK AHEAD	48"x48"	2	2	2	2	2	32.0							
G20-2	END ROAD WORK	48"x24"	4	4	4	4	4	32.0							
W1-4AR	REVERSE CURVE RT.	48"x48"			2	2	2	32.0							
W1-4AL	REVERSE CURVE LT.	48"x48"			2	2	2	32.0							
W13-1	SPEED LIMIT (ADVISORY)	24"x24"			4	4	4	16.0							
R11-2	ROAD CLOSED	48"x30"	9	14	11	14	14	140.0							
OM-3L	OBJECT MARKER	12"x36"	3	3	3	3	3	9.0							
OM-3R	OBJECT MARKER	12"x36"	4	4	4	4	4	12.0							
W1-6	LARGE ARROW	48"x24"			4	4	4	32.0							
R4-1	DO NOT PASS	24"x30"	2	2	2	2	2	10.0							
RSP-1	SHOULDER CLOSED	48"x30"	2	2	2	2	2	20.0							
	TRAFFIC DRUMS		295		331	331			331						
	TYPE III BARRICADE-RT. (16')		6	7	7	7				112					
	TYPE III BARRICADE-LT. (16')		5	6	7	7					112				
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER		273			273						273			
	RELOCATING PRECAST CONCRETE BARRIER				173	173							173		
	TEMPORARY IMPACT ATTENUATION BARRIER		1	1	1	1								1	
	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)		1	1	1	1									1
TOTALS:							463.0		331	112	112	273	173	1	1

NOTE: THIS IS A HIGH TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2003 EDITION.

NO TRAFFIC CONTROL PLAN HAVING A SIGNIFICANT IMPACT ON TRAFFIC (FOR EXAMPLE: DETOURS, LANE CLOSURES, LANE WIDTH REDUCTIONS, SHOULDER CLOSURES, ETC.) SHALL BE PLACED IN OPERATION MORE THAN 72 HOURS BEFORE THE WORK REQUIRING THE TRAFFIC CONTROL CHANGES BEGIN. IF A TRAFFIC CONTROL PLAN IS PLACED IN OPERATION AND WORK DOES NOT BEGIN WITHIN 72 HOURS OR WORK BEGINS BUT IS SUBSEQUENTLY HALTED, THE ORIGINAL TRAFFIC OPERATIONS MUST BE RESTORED IF CONDITIONS ALLOW. RESTORATION(S) OF ORIGINAL TRAFFIC OPERATIONS WILL BE AT NO ADDITIONAL COST TO THE DEPARTMENT.

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 1	STAGE 1B	STAGE 2	END OF JOB	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS		THERMOPLASTIC PAVEMENT MARKINGS			
						TYPE II (WHITE/RED)	TYPE II (YEL/YEL)	4" WHITE	4" YELLOW	WORDS	ARROWS
	LIN. FT. - EACH				LIN. FT.	EACH		LIN. FT.		EACH	
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	32000	10250	750	7752	50752						
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED)				213		213					
RAISED PAVEMENT MARKERS TYPE II (YEL/YEL)				13			13				
THERMOPLASTIC PAVEMENT MARKINGS WHITE (4")				25038				25038			
THERMOPLASTIC PAVEMENT MARKINGS YELLOW (4")				14239					14239		
THERMOPLASTIC PAVEMENT MARKINGS (WORDS)				6						6	
THERMOPLASTIC PAVEMENT MARKINGS (ARROWS)				6							6
TOTALS:					50752	213	13	25038	14239	6	6

NOTE: THIS IS A HIGH TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2003 EDITION.
NOTE: THERMOPLASTIC PAVEMENT MARKINGS MAY BE SUBSTITUTED FOR INVERTED PROFILE PAVEMENT MARKINGS AT INTERSECTIONS, ISLANDS, TURNOUTS, AND OTHER SIMILAR LOCATIONS AS DIRECTED BY THE ENGINEER.

9/11/2012

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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.		100667	47	123

(2) QUANTITIES

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH

10-3-12

SIGNS AND DEVICES LEFT IN PLACE

SIGN NUMBER	DESCRIPTION	SIGN SIZE	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS LEFT IN PLACE		BARRICADES LEFT IN PLACE	
						RIGHT	LEFT
			LIN. FT. - EACH	NO.	SQ. FT.	LIN. FT.	
W1-4AL	REVERSE CURVE LT.	48"x48"	1	1	16.0		
W1-4AR	REVERSE CURVE RT.	48"x48"	1	1	16.0		
W13-1	SPEED LIMIT (ADVISORY)	24"x24"	2	2	8.0		
R11-2	ROAD CLOSED	48"x30"	4	4	40.0		
W1-6	LARGE ARROW	48"x24"	1	1	8.0		
W1-8	CHEVRONS	18"x24"	3	3	9.0		
W4-2	LANE ENDS	48"x48"	2	2	32.0		
	TYPE III BARRICADE-RT. (16')		2			32	
	TYPE III BARRICADE-LT. (16')		2				32
TOTALS:					129.0	32	32

NOTE: THIS IS A HIGH TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2003 EDITION.

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
341+00	344+00	HWY. 226	3	3
363+00	365+00	HWY. 226	2	2
367+00	369+00	HWY. 226	2	2
377+00	378+00	HWY. 226	1	1
421+00	422+00	HWY. 226	1	1
424+00	425+00	HWY. 226	1	1
436+00	439+00	HWY. 226	3	3
TOTALS:			13	13

REMOVAL OF EXISTING BRIDGE STRUCTURE

STATION	STATION	LOCATION	LUMP SUM
367+55	368+17	HWY. 226 (SITE NO. 1)	1.00

REMOVAL AND DISPOSAL OF GUARDRAIL

STATION	STATION	LOCATION	LIN. FT.
367+05	367+55	RT. C.L. HWY. 226	50
368+18	368+67	RT. C.L. HWY. 226	50
TOTAL:			100

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 PIPE CULVERTS

STATION	DESCRIPTION	EACH
341+88	36"X32' R.C. SIDE DRAIN RT	1
342+66	36"X25' R.C. SIDE DRAIN RT	1
343+30	6"X19' STEEL PIPE FIELD DRAIN LT	1
343+55	54"X52' C.M. SIDE DRAIN LT	1
344+75	36"X40' C.M. SIDE DRAIN RT	1
355+20	36"X25' R.C. SIDE DRAIN RT	1
366+02	36"X30' R.C. SIDE DRAIN RT	1
366+49	36"X30' R.C. SIDE DRAIN LT	1
367+11	18"X42' STEEL PIPE FIELD DRAIN LT	1
367+35	36"X41' R.C. SIDE DRAIN RT	1
368+48	24"X29' C.M. SIDE DRAIN RT	1
369+40	36"X37' C.M. SIDE DRAIN LT	1
379+92	24"X24' C.M. SIDE DRAIN RT	1
381+87	18"X26' C.M. SIDE DRAIN RT	1
387+46	24"X41' C.M. CROSS DRAIN	1
395+66	30"X24' STEEL FIELD DRAIN LT	1
397+93	15"X23' STEEL FIELD DRAIN LT	1
398+00	24"X34' C.M. CROSS DRAIN	1
403+46	12"X24' STEEL PIPE FIELD DRAIN LT	1
406+85	17"X13"X26' C.M. ARCH SIDE DRAIN RT	1
407+00	36"X52' SIDE DRAIN LT	1
408+91	12"X23' STEEL PIPE FIELD DRAIN LT	1
415+25	24"X41' C.M. CROSS DRAIN	1
416+19	21"X15"X25' C.M. ARCH SIDE DRAIN RT	1
421+13	17"X13"X26' C.M. ARCH SIDE DRAIN RT	1
422+08	24"X42' R.C. SIDE DRAIN LT	1
423+21	18"X30' FIELD DRAIN LT	1
430+12	18"X30' STEEL PIPE FIELD DRAIN LT	1
431+63	18"X26' STEEL PIPE SIDE DRAIN RT	1
433+07	12"X26' C.M. SIDE DRAIN RT	1
437+90	18"X26' C.M. SIDE DRAIN RT	1
TOTAL:		31

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

REMOVAL AND DISPOSAL ITEMS

STATION	STATION	LOCATION	DESCRIPTION	CONCRETE SLAB	POSTS	WELLS	SIGNS	PROPANE TANK
				SQ. YD.	EACH	EACH	EACH	EACH
342+05		RT. C.L. HWY. 226	CONCRETE SLAB	87				
342+50		RT. C.L. HWY. 226	PROPANE TANK					1
342+56	342+80	RT. C.L. HWY. 226	6" STEEL POST		2			
343+56		RT. C.L. HWY. 226	SIGN				1	
354+80		RT. C.L. HWY. 226	SIGN				1	
368+00		RT. C.L. HWY. 226	CLOSE WELL RISER			1		
368+56		RT. C.L. HWY. 226	CLOSE WELL RISER			1		
368+76		LT. C.L. HWY. 226	CLOSE WELL RISER			1		
369+46		LT. C.L. HWY. 226	CLOSE WELL RISER			1		
379+59		RT. C.L. HWY. 226	SIGN (ENCROACHING)				1	
395+63		RT. C.L. HWY. 226	RISER			1		
395+70		RT. C.L. HWY. 226	CLOSE WELL			1		
421+70		LT. C.L. HWY. 226	SIGN				1	
TOTALS:				87	2	6	4	1

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QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
11-13-12				6	ARK.			
				JOB NO.		100667	48	123

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
11-14-12

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	SELECTED MATERIAL (CLASS SM-1)	SOIL STABILIZATION
			CU. YD.			TON
ENTIRE PROJECT		HWY. 226 - MAIN LANES	52414	168689		
ENTIRE PROJECT		UNDERCUT FOR UNSUITABLE EXISTING MATERIAL	66265		66265	
ENTIRE PROJECT		APPROACHES		3055		
361+00	366+00	HWY. 226 - REMOVAL OF EXISTING PAVEMENT	197			
371+70	418+50	HWY. 226 - REMOVAL OF EXISTING PAVEMENT	1841			
432+70	438+50	HWY. 226 - REMOVAL OF EXISTING PAVEMENT	228			
336+00	341+00	TEMPORARY GRADE RAISE	24	685		
439+00	443+50	TEMPORARY GRADE RAISE		336		
341+00	350+00	MAINTENANCE OF TRAFFIC CROSSOVER	32	505		
430+46	438+50	MAINTENANCE OF TRAFFIC CROSSOVER		278		
*ENTIRE PROJECT		TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER				1000
TOTALS:			**121001**	**173548**	**66265**	**1000**

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

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL					TEMPORARY EROSION CONTROL								
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	TEMPORARY SEEDING	MULCH COVER	WATER	SAND BAG DITCH CHECKS (E-5)	ROCK DITCH CHECKS (E-6)	DROP INLET SILT FENCE (E-7)	SILT FENCE (E-11)	SEDIMENT BASIN (E-14)	OBLITERATION OF SEDIMENT BASIN	*SEDIMENT REMOVAL & DISPOSAL
			ACRE	TON	ACRE	M.GAL.	ACRE	ACRE	ACRE	M.GAL.	BAG	CU.YD.	LIN. FT.	LIN. FT.	CU.YD.	CU.YD.	CU. YD.
ENTIRE PROJECT		CLEARING AND GRUBBING										102		17332			676
ENTIRE PROJECT		STAGE 1						28.28	28.28	576.9		297	198	332	1641	1641	1760
ENTIRE PROJECT		STAGE 2						24.35	24.35	496.7		114					38
ENTIRE PROJECT		MAIN LANES	24.84	49.68	24.84	2533.7	24.84										
*ENTIRE PROJECT		TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	6.21	12.42	6.21	633.4	6.21	13.16	13.16	268.5	946	128	50	4416	300	300	465
TOTALS:			**31.05**	**62.10**	**31.05**	**3167.1**	**31.05**	**65.79**	**65.79**	**1342.1**	**946**	**641**	**248**	**22080**	**1941**	**1941**	**2939**

BASIS OF ESTIMATE:
LIME .....2 TONS / ACRE OF SEEDING
WATER.....102.0 M.G. / ACRE OF SEEDING.
WATER.....20.4 M.G. / ACRE OF TEMPORARY SEEDING.
SAND BAG DITCH CHECKS.....22 BAGS / LOCATION
ROCK DITCH CHECKS.....3 CU.YD./LOCATION

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

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

9/11/2012

R100667.DGN

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.		100667	49	123

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12

RUMBLE STRIPS IN ASPHALT SHOULDERS

STATION	STATION	LOCATION	TYPE 2
			LIN.FT.
ENTIRE PROJECT		LT. OUTSIDE SHOULDER HWY. 226	7460.0
ENTIRE PROJECT		LT. INSIDE SHOULDER HWY. 226	7390.0
ENTIRE PROJECT		RT. OUTSIDE SHOULDER HWY. 226	7320.0
ENTIRE PROJECT		RT. INSIDE SHOULDER HWY. 226	7390.0
TOTAL:			29560.0

BENCH MARKS

LOCATION	EACH
R.C. BOX CULVERT @ STA. 368+50 - PLACE ON RT. HEADWALL	1
TOTAL:	1

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

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	300	2
TOTALS:			300	2

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

MAILBOXES

STATION	LOCATION	MAILBOXES	MAILBOX SUPPORTS
		EACH	(SINGLE)
436+35	RT. HWY. 226	1	1
438+10	RT. HWY. 226	1	1
TOTALS:		2	2

FENCING

STATION	STATION	LOCATION	WIRE FENCE (TYPE A)	WIRE FENCE (TYPE C)
			LIN. FT.	
341+00	342+41	RT. HWY. 226	141	
342+41	342+91	RT. HWY. 226		50
342+91	344+50	RT. HWY. 226	159	
345+00	354+95	RT. HWY. 226	995	
354+95	355+45	RT. HWY. 226		50
355+45	365+77	RT. HWY. 226	1032	
366+27	367+20	RT. HWY. 226	93	
367+70	368+75	RT. HWY. 226	105	
368+75	369+25	RT. HWY. 226		50
369+25	377+07	RT. HWY. 226	782	
377+07	377+57	RT. HWY. 226		50
377+57	378+20	RT. HWY. 226	63	
378+70	379+48	RT. HWY. 226	78	
379+48	379+98	RT. HWY. 226		50
379+98	381+62	RT. HWY. 226	164	
381+62	382+12	RT. HWY. 226		50
382+12	395+68	RT. HWY. 226	1356	
395+68	396+18	RT. HWY. 226		50
396+18	406+60	RT. HWY. 226	1042	
406+60	407+10	RT. HWY. 226		50
407+10	415+94	RT. HWY. 226	884	
415+94	416+44	RT. HWY. 226		50
416+44	431+38	RT. HWY. 226	1494	
431+88	435+73	RT. HWY. 226	385	
436+23	438+50	RT. HWY. 226	227	
341+00	343+25	LT. HWY. 226	225	
343+25	343+75	LT. HWY. 226		50
343+75	352+25	LT. HWY. 226	850	
352+75	362+25	LT. HWY. 226	950	
362+25	362+75	LT. HWY. 226		50
362+75	368+25	LT. HWY. 226	550	
368+25	368+75	LT. HWY. 226		50
368+75	369+30	LT. HWY. 226	55	
369+30	369+80	LT. HWY. 226		50
369+80	375+25	LT. HWY. 226	545	
375+25	375+75	LT. HWY. 226		50
375+75	381+25	LT. HWY. 226	550	
381+25	381+75	LT. HWY. 226		50
381+75	382+75	LT. HWY. 226	100	
382+75	393+25	LT. HWY. 226	1050	
393+25	393+75	LT. HWY. 226		50
393+75	399+25	LT. HWY. 226	550	
399+25	399+75	LT. HWY. 226		50
399+75	406+75	LT. HWY. 226	700	
406+75	407+25	LT. HWY. 226		50
407+25	413+25	LT. HWY. 226	600	
413+25	413+75	LT. HWY. 226		50
413+75	419+25	LT. HWY. 226	550	
419+25	419+75	LT. HWY. 226		50
419+75	421+85	LT. HWY. 226	210	
422+35	425+25	LT. HWY. 226	290	
425+25	425+75	LT. HWY. 226		50
425+75	431+25	LT. HWY. 226	550	
431+25	431+75	LT. HWY. 226		50
431+75	435+53	LT. HWY. 226	378	
435+53	436+20	LT. HWY. 226	121	
436+20	436+70	LT. HWY. 226		50
436+70	438+05	LT. HWY. 226	135	
TOTALS:			17959	1150

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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.		100667	50	123

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12

SELECTED PIPE BEDDING

LOCATION	CU.YD.
ENTIRE PROJECT - TO BE USED IF	
AND WHERE DIRECTED BY THE	160
ENGINEER	
TOTAL:	**160**

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

PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

STATION	LOCATION	WIDTH	LENGTH	PAVEMENT REPAIR OVER CULVERTS (ASPHALT)	TACK COAT (0.03 GAL./SQ.YD.)	FLOWABLE SELECT MATERIAL
		FEET		TON	GALLON	CU.YD.
387+46	HWY. 226	20	7.5	8.3	1.0	16.3
398+00	HWY. 226	20	7.5	8.3	1.0	13.7
415+25	HWY. 226	20	7.5	8.3	1.0	12.7
TOTALS:				**24.9**	**3.0**	**42.7**

STRUCTURES

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT (CLASS III)		FLARED END SECTIONS FOR R.C. PIPE CULVERTS		TEMPORARY PIPE CULVERTS	DROP INLETS	SPAN	HEIGHT	LENGTH	CLASS S CONCRETE-ROADWAY	REINF. STEEL-ROADWAY (GRADE 60)	UNCL.EXC. FOR STR.-ROADWAY	SOLID SODDING	WATER	STD. DWG. NOS.
		18"	24"	18"	24"	18"	RM									
		LIN. FT.		EACH		LIN. FT.	EACH	LIN. FT.			CU.YD.	POUND	CU.YD.	SQ.YD.	M.GAL	
341+00	CONST. DROP INLET W/ PIPE OUTLET	84		1			1							5	0.06	FES-1,FPC-9D,PCC-1
344+45	CONST. DROP INLET W/ PIPE OUTLET	82		1			1							5	0.06	FES-1,FPC-9D,PCC-1
350+00	CONST. DROP INLET W/ PIPE OUTLET	82		1			1							5	0.06	FES-1,FPC-9D,PCC-1
360+00	CONST. DROP INLET W/ PIPE OUTLET	86		1			1							5	0.06	FES-1,FPC-9D,PCC-1
374+00	CONST. DROP INLET W/ PIPE OUTLET	92		1			1							5	0.06	FES-1,FPC-9D,PCC-1
387+46	CONST. DROP INLET W/ PIPE INLET & OUTLET		176		2		1							16	0.20	FES-1,FPC-9D,PCC-1
398+00	CONST. PIPE CULV'T.		176		2									16	0.20	FES-1,PCC-1
401+00	CONST. DROP INLET W/ PIPE OUTLET	90		1			1							5	0.06	FES-1,FPC-9D,PCC-1
415+25	CONST. DROP INLET W/ PIPE INLET & OUTLET		170		2		1							16	0.20	FES-1,FPC-9D,PCC-1
428+00	CONST. DROP INLET W/ PIPE OUTLET	88		1			1							5	0.06	FES-1,FPC-9D,PCC-1
434+50	INSTALL TEMPORARY PIPE CULV'T.					300										
SUBTOTALS:		**604**	**522**	**7**	**6**	**300**	**9**							**83**	**1.02**	
STRUCTURES OVER 20' - 0" SPAN																
368+50	CONST. QUINT. 10' X 9' R.C. BOX CULVT.							10	9	179	887.81	141847	387	47	0.59	RCB-1, RCB-2, SPECIAL DETAILS
SUBTOTALS:											**887.81**	**141847**	**387**	**47**	**0.59**	
TOTALS:		**604**	**522**	**7**	**6**	**300**	**9**				**887.81**	**141847**	**387**	**130**	**1.61**	

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.

9/11/2012

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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.		100667	51	123

(2) QUANTITIES

DRIVEWAYS & TURNOUTS

STATION	SIDE	LOCATION	WIDTH	ACHM SURFACE COURSE (1/2") 220 LBS. PER SQ. YD. (PG 64-22)		AGGREGATE BASE COURSE (CLASS 7)	SIDE DRAINS				STANDARD DRAWINGS
							18"	24"	36"	60"	
			FEET	SQ. YD.	TON	TON	LIN. FT.				
344+75	RT.	HWY. 226	40	277.3	30.5	113.2			70		PCC-1, PCM-1
352+50	LT.	HWY. 226	16	127.7	14.0	52.1				84	PCC-1, PCM-1
366+02	RT.	HWY. 226	16	148.5	16.3	60.6			62		PCC-1, PCM-1
367+35	RT.	HWY. 226	20	229.7	25.3	93.8			90		PCC-1, PCM-1
378+45	RT.	HWY. 226	28	182.6	20.1	74.6		58			PCC-1, PCM-1
383+00	LT.	HWY. 226	30	246.6	27.1	100.7				120	PCC-1, PCM-1
422+10	LT.	HWY. 226	20	203.1	22.3	82.9				120	PCC-1, PCM-1
431+63	RT.	HWY. 226	20	124.1	13.7	50.7	36				PCC-1, PCM-1
436+05	RT.	HWY. 226	16	104.5	11.5	42.7	38				PCC-1, PCM-1
438+30	LT.	HWY. 226	34	430.3	47.3	175.7					
* ENTIRE PROJECT		TEMPORARY DRIVES				1350.0					
TOTALS:				2074.4	**228.1**	**2197.0**	**74**	**58**	**222**	**324**	

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

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.

ACHM PATCHING OF EXISTING ROADWAY

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

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12

BASE AND SURFACING

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT				ACHM BASE COURSE (1 1/2")				ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")								TOTAL TONS
				TON / STATION	TON	AVG. WIDTH	SQ.YD.	GALLONS / SQ.YD.	GALLON	AVG. WID.	SQ.YD.	POUND / SQ. YD.	PG 64-22	AVG. WIDTH	SQ.YD.	POUND / SQ. YD.	PG 64-22	AVG. WIDTH	SQ.YD.	POUND / SQ. YD.	PG 64-22	AVG. WIDTH	SQ.YD.	POUND / SQ. YD.	PG 64-22	
			FEET			FEET				FEET			TON	FEET			TON	FEET			TON	FEET			TON	
MAIN LANES																										
341+00.00	362+84.00	HWY. 226 - 4 LN. DIVIDED FULL DEPTH	2184.00	716.50	15648.36	150.08	36419.4	0.03	1092.6	51.16	12414.8	440	2731.3	49.92	12113.9	385	2331.9	49.00	11890.7	220	1308.0	72.00	17472.0	220	1921.9	3229.9
362+84.00	364+84.00	HWY. 226 - 4 LN. DIVIDED FULL DEPTH - R.M.L. LEFT TURN LN. TAPER	200.00	743.63	1487.26	168.08	3735.1	0.03	112.1	57.16	1270.2	440	279.4	55.92	1242.7	385	239.2	55.00	1222.2	220	134.4	78.00	1733.3	220	190.7	325.1
364+84.00	366+94.00	HWY. 226 - 4 LN. DIVIDED FULL DEPTH - R.M.L. LEFT TURN LN.	210.00	770.75	1618.58	186.08	4341.9	0.03	130.3	63.16	1473.7	440	324.2	61.92	1444.8	385	278.1	61.00	1423.3	220	156.6	84.00	1960.0	220	215.6	372.2
366+94.00	367+82.00	HWY. 226 - MEDIAN TURNAROUND	88.00	VAR.	921.88	VAR.	2100.8	0.03	63.0	VAR.	1050.4	440	231.1	VAR.	1050.4	385	202.2	VAR.	1050.4	220	115.5	VAR.	1301.3	220	143.1	258.6
367+82.00	369+92.00	HWY. 226 - 4 LN. DIVIDED FULL DEPTH - L.M.L. LEFT TURN LN.	210.00	770.75	1618.58	186.08	4341.9	0.03	130.3	63.16	1473.7	440	324.2	61.92	1444.8	385	278.1	61.00	1423.3	220	156.6	84.00	1960.0	220	215.6	372.2
369+92.00	371+92.00	HWY. 226 - 4 LN. DIVIDED FULL DEPTH - L.M.L. LEFT TURN LN. TAPER	200.00	743.63	1487.26	168.08	3735.1	0.03	112.1	57.16	1270.2	440	279.4	55.92	1242.7	385	239.2	55.00	1222.2	220	134.4	78.00	1733.3	220	190.7	325.1
371+92.00	390+16.00	HWY. 226 - 4 LN. DIVIDED FULL DEPTH	1824.00	716.50	13068.96	150.08	30416.2	0.03	912.5	51.16	10368.4	440	2281.0	49.92	10117.1	385	1947.5	49.00	9930.7	220	1092.4	72.00	14592.0	220	1605.1	2697.5
390+16.00	392+16.00	HWY. 226 - 4 LN. DIVIDED FULL DEPTH - R.M.L. LEFT TURN LN. TAPER	200.00	743.63	1487.26	168.08	3735.1	0.03	112.1	57.16	1270.2	440	279.4	55.92	1242.7	385	239.2	55.00	1222.2	220	134.4	78.00	1733.3	220	190.7	325.1
392+16.00	394+26.00	HWY. 226 - 4 LN. DIVIDED FULL DEPTH - R.M.L. LEFT TURN LN.	210.00	770.75	1618.58	186.08	4341.9	0.03	130.3	63.16	1473.7	440	324.2	61.92	1444.8	385	278.1	61.00	1423.3	220	156.6	84.00	1960.0	220	215.6	372.2
394+26.00	395+14.00	HWY. 226 - MEDIAN TURNAROUND	88.00	VAR.	842.05	VAR.	1709.8	0.03	51.3	VAR.	854.9	440	188.1	VAR.	854.9	385	164.6	VAR.	854.9	220	94.0	VAR.	1099.3	220	120.9	214.9
395+14.00	397+24.00	HWY. 226 - 4 LN. DIVIDED FULL DEPTH - L.M.L. LEFT TURN LN.	210.00	770.75	1618.58	186.08	4341.9	0.03	130.3	63.16	1473.7	440	324.2	61.92	1444.8	385	278.1	61.00	1423.3	220	156.6	84.00	1960.0	220	215.6	372.2
397+24.00	399+24.00	HWY. 226 - 4 LN. DIVIDED FULL DEPTH - L.M.L. LEFT TURN LN. TAPER	200.00	743.63	1487.26	168.08	3735.1	0.03	112.1	57.16	1270.2	440	279.4	55.92	1242.7	385	239.2	55.00	1222.2	220	134.4	78.00	1733.3	220	190.7	325.1
399+24.00	417+56.00	HWY. 226 - 4 LN. DIVIDED FULL DEPTH	1832.00	716.50	13126.28	150.08	30549.6	0.03	916.5	51.16	10413.9	440	2291.1	49.92	10161.5	385	1956.1	49.00	9974.2	220	1097.2	72.00	14656.0	220	1612.2	2709.4
417+56.00	419+56.00	HWY. 226 - 4 LN. DIVIDED FULL DEPTH - R.M.L. LEFT TURN LN. TAPER	200.00	743.63	1487.26	168.08	3735.1	0.03	112.1	57.16	1270.2	440	279.4	55.92	1242.7	385	239.2	55.00	1222.2	220	134.4	78.00	1733.3	220	190.7	325.1
419+56.00	421+66.00	HWY. 226 - 4 LN. DIVIDED FULL DEPTH - R.M.L. LEFT TURN LN.	210.00	770.75	1618.58	186.08	4341.9	0.03	130.3	63.16	1473.7	440	324.2	61.92	1444.8	385	278.1	61.00	1423.3	220	156.6	84.00	1960.0	220	215.6	372.2
421+66.00	422+54.00	HWY. 226 - MEDIAN TURNAROUND	88.00	VAR.	894.12	VAR.	1964.9	0.03	58.9	VAR.	982.4	440	216.1	VAR.	982.4	385	189.1	VAR.	982.4	220	108.1	VAR.	1084.9	220	119.3	227.4
422+54.00	424+64.00	HWY. 226 - 4 LN. DIVIDED FULL DEPTH - L.M.L. LEFT TURN LN.	210.00	770.75	1618.58	186.08	4341.9	0.03	130.3	63.16	1473.7	440	324.2	61.92	1444.8	385	278.1	61.00	1423.3	220	156.6	84.00	1960.0	220	215.6	372.2
424+64.00	426+64.00	HWY. 226 - 4 LN. DIVIDED FULL DEPTH - L.M.L. LEFT TURN LN. TAPER	200.00	743.63	1487.26	168.08	3735.1	0.03	112.1	57.16	1270.2	440	279.4	55.92	1242.7	385	239.2	55.00	1222.2	220	134.4	78.00	1733.3	220	190.7	325.1
426+64.00	438+50.00	HWY. 226 - 4 LN. DIVIDED FULL DEPTH	1186.00	716.50	8497.69	150.08	19777.2	0.03	593.3	51.16	6741.8	440	1483.2	49.92	6578.3	385	1266.3	49.00	6457.1	220	710.3	72.00	9488.0	220	1043.7	1754.0
TEMPORARY GRADE RAISE																										
336+00.00	337+00.00	HWY. 226 - PROPOSED R.M.L.	100.00	217.81	217.81	69.04	767.1	0.03	23.0	24.58	273.1	440	60.1	23.96	266.2	385	51.2	22.60	251.1	220	27.6	26.00	288.9	220	31.8	59.4
337+00.00	341+00.00	HWY. 226 - PROPOSED R.M.L.	400.00	227.00	908.00	75.04	3335.1	0.03	100.1	25.58	1136.9	440	250.1	24.96	1109.3	385	213.5	24.50	1088.9	220	119.8	28.00	1244.4	220	136.9	256.7
438+50.00	442+50.00	HWY. 226 - PROPOSED R.M.L.	400.00	227.00	908.00	75.04	3335.1	0.03	100.1	25.58	1136.9	440	250.1	24.96	1109.3	385	213.5	24.50	1088.9	220	119.8	28.00	1244.4	220	136.9	256.7
442+50.00	443+50.00	HWY. 226 - PROPOSED R.M.L.	100.00	217.81	217.81	69.04	767.1	0.03	23.0	24.58	273.1	440	60.1	23.96	266.2	385	51.2	22.60	251.1	220	27.6	26.00	288.9	220	31.8	59.4
ADDITIONAL FOR METHOD OF RAISING GRADE																										
339+00.00	341+00.00	HWY. 226 - PROPOSED R.M.L.	200.00			20.00	VAR.	VAR.	71.1	20.00	VAR.	VAR.	253.4													
341+00.00	361+00.00	HWY. 226 - PROPOSED R.M.L.	2000.00			20.00	VAR.	VAR.	844.4	20.00	VAR.	VAR.	2753.0													
430+00.00	438+50.00	HWY. 226 - PROPOSED R.M.L.	850.00			20.00	VAR.	VAR.	358.8	20.00	VAR.	VAR.	1248.4													
438+50.00	441+00.00	HWY. 226 - PROPOSED R.M.L.	250.00			20.00	VAR.	VAR.	122.1	20.00	VAR.	VAR.	587.1													
TEMPORARY M.O.T. CROSSOVERS																										
342+00.00	350+00.00	HWY. 226 - TEMPORARY M.O.T. CROSSOVER	800.00	VAR.	1004.70	VAR.	2119.8	0.03	63.6	VAR.	1059.9	440	233.2	VAR.	1059.9	385	204.0	VAR.	1059.9	220	116.6	VAR.	909.7	220	100.1	216.7
430+00.00	438+50.00	HWY. 226 - TEMPORARY M.O.T. CROSSOVER	850.00	VAR.	1001.80	VAR.	2123.1	0.03	63.7	VAR.	1061.5	440	233.5	VAR.	1061.5	385	204.3	VAR.	1061.5	220	116.8	VAR.	909.9	220	100.1	216.9
TOTALS:					**75892.50**		183847.2		**6912.4**		64231.4		**18972.5**		62855.9		**12099.2**		61814.8		**6799.7**		86739.5		**9541.6**	**16341.3**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.7% MIN. AGGR.....5.3% ASPHALT BINDER
ACHM BINDER COURSE (1").....96.0% MIN. AGGR.....4.0% ASPHALT BINDER
ACHM BASE COURSE (1 1/2").....96.2% MIN. AGGR.....3.8% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

9/11/2012

R100667.DGN

QUANTITIES

SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM	QUANTITY	UNIT
201	CLEARING	13	STATION
201	GRUBBING	13	STATION
202	REMOVAL AND DISPOSAL OF WELL	6	EACH
202	REMOVAL AND DISPOSAL OF POSTS	2	EACH
202	REMOVAL AND DISPOSAL OF CONCRETE SLABS	87	SQ. YD.
202	REMOVAL AND DISPOSAL OF SIGNS	4	EACH
202	REMOVAL AND DISPOSAL OF PROPANE TANK	1	EACH
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS	31	EACH
202	REMOVAL AND DISPOSAL OF GUARDRAIL	100	LIN. FT.
206	FLOWABLE SELECT MATERIAL	43	CU. YD.
210	UNCLASSIFIED EXCAVATION	121001	CU. YD.
SP & 210	COMPACTED EMBANKMENT	173548	CU. YD.
SP & 210	SOIL STABILIZATION	1000	TON
SP & 302	SELECTED MATERIAL (CLASS SM-1)	66265	CU. YD.
SS & 303	AGGREGATE BASE COURSE (CLASS 7)	78090	TON
401	TACK COAT	6915	GAL.
SP, SS, & 405	MINERAL AGGREGATE IN ACHM BASE COURSE (1 1/2")	18252	TON
SP, SS, & 405	ASPHALT BINDER (PG 64-22) IN ACHM BASE COURSE (1 1/2")	721	TON
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	11615	TON
SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")	484	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	15691	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")	878	TON
SP, SS, & 415	ACHM PATCHING OF EXISTING ROADWAY	10	TON
601	MOBILIZATION	1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE	1	EACH
SS & 603	MAINTENANCE OF TRAFFIC	1.00	LUMP SUM
603	18" TEMPORARY CULVERT	300	LIN. FT.
SS & 604	SIGNS	463	SQ. FT.
SP, SS, & 604	SIGNS LEFT IN PLACE	129	SQ. FT.
SS & 604	BARRICADES	224	LIN. FT.
SP, SS, & 604	BARRICADES LEFT IN PLACE	64	LIN. FT.
SS & 604	TRAFFIC DRUMS	331	EACH
SS & 604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	273	LIN. FT.
SS & 604	RELOCATING PRECAST CONCRETE BARRIER	173	LIN. FT.
604	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	50752	LIN. FT.
SS & 606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	604	LIN. FT.
SS & 606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	522	LIN. FT.
SP, SS, & 606	18" SIDE DRAIN	74	LIN. FT.
SP, SS, & 606	24" SIDE DRAIN	58	LIN. FT.
SP, SS, & 606	36" SIDE DRAIN	222	LIN. FT.
SS & 606	60" SIDE DRAIN	324	LIN. FT.
606	18" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	7	EACH
606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	6	EACH
606	SELECTED PIPE BEDDING	160	CU. YD.
609	DROP INLETS (TYPE RM)	9	EACH
611	UNDERDRAIN OUTLET PROTECTORS	2	EACH
611	4" PIPE UNDERDRAINS	300	LIN. FT.
615	PAVEMENT REPAIR OVER CULVERTS (ASPHALT)	25	TON
619	WIRE FENCE (TYPE A)	17959	LIN. FT.
619	WIRE FENCE (TYPE C)	1150	LIN. FT.
620	LIME	62	TON
620	SEEDING	31.05	ACRE
620	MULCH COVER	96.84	ACRE
SS & 620	WATER	4510.8	M.GAL.
621	TEMPORARY SEEDING	65.79	ACRE
621	SILT FENCE	22080	LIN. FT.
621	SAND BAG DITCH CHECKS	946	BAG
621	DROP INLET SILT FENCE	248	LIN. FT.
621	SEDIMENT BASIN	1941	CU. YD.
621	OBLITERATION OF SEDIMENT BASIN	1941	CU. YD.
621	SEDIMENT REMOVAL AND DISPOSAL	2939	CU. YD.
621	ROCK DITCH CHECKS	641	CU. YD.
623	SECOND SEEDING APPLICATION	31.05	ACRE
624	SOLID SODDING	130	SQ. YD.
635	ROADWAY CONSTRUCTION CONTROL	1.00	LUMP SUM
637	MAILBOXES	2	EACH
637	MAILBOX SUPPORTS (SINGLE)	2	EACH
642	RUMBLE STRIPS IN ASPHALT SHOULDERS	29560	LIN. FT.
SS & 719	THERMOPLASTIC PAVEMENT MARKING WHITE (4")	25038	LIN. FT.
SS & 719	THERMOPLASTIC PAVEMENT MARKING YELLOW (4")	14239	LIN. FT.
SS & 719	THERMOPLASTIC PAVEMENT MARKING (WORDS)	6	EACH
SS & 719	THERMOPLASTIC PAVEMENT MARKING (ARROWS)	6	EACH
721	RAISED PAVEMENT MARKERS (TYPE II)	226	EACH
SP	TEMPORARY IMPACT ATTENUATION BARRIER	1	EACH
SP	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)	1	EACH
	STRUCTURES OVER 20' SPAN		
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)	1.00	LUMP SUM
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY	387	CU. YD.
802	CLASS S CONCRETE-ROADWAY	887.81	CU. YD.
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)	141847	POUND

REVISIONS

DATE	REVISION	SHEET NUMBER
11/13/2012	REVISED QUANTITIES FOR SEDIMENT BASIN, OBLITERATION OF SEDIMENT BASIN, AND SEDIMENT REMOVAL AND DISPOSAL	48 & 52

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TIMOTHY D. SMITH

11-14-12

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED
11-13-12			

ISSUED DESIGN.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.	I00667	52	123

(2) SUMMARY OF QUANTITIES AND REVISIONS

SUMMARY OF QUANTITIES AND REVISIONS

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
10	533885.8777	1604006.5166	241.763	CTL	5/8" Rebar with 2" Aluminum Cap
11	533869.9076	1605071.6633	240.587	CTL	5/8" Rebar with 2" Aluminum Cap
12	533852.3119	1606212.5228	240.711	CTL	5/8" Rebar with 2" Aluminum Cap
13	533835.5791	1607227.0847	241.246	CTL	5/8" Rebar with 2" Aluminum Cap
14	533818.3021	1608232.5536	241.097	CTL	5/8" Rebar with 2" Aluminum Cap
15	533806.2408	1609393.0025	241.063	CTL	5/8" Rebar with 2" Aluminum Cap
16	533790.7684	1610515.0489	239.944	CTL	5/8" Rebar with 2" Aluminum Cap
17	533790.1233	1611573.9150	241.374	CTL	5/8" Rebar with 2" Aluminum Cap
18	533782.3552	1612762.7185	241.147	CTL	5/8" Rebar with 2" Aluminum Cap
19	533768.8600	1613540.6041	240.136	CTL	5/8" Rebar with 2" Aluminum Cap
20	533765.5354	1614630.9721	240.742	CTL	5/8" Rebar with 2" Aluminum Cap
21	533736.9524	1615864.4039	239.974	CTL	5/8" Rebar with 2" Aluminum Cap
22	533723.4737	1616957.4919	239.898	CTL	5/8" Rebar with 2" Aluminum Cap
23	533702.1519	1617967.3834	239.328	CTL	5/8" Rebar with 2" Aluminum Cap
24	533679.3653	1619113.4602	241.023	CTL	5/8" Rebar with 2" Aluminum Cap
25	533651.5401	1620240.7353	242.260	CTL	5/8" Rebar with 2" Aluminum Cap
26	533627.4120	1621227.3049	242.211	CTL	5/8" Rebar with 2" Aluminum Cap
27	533615.9590	1621952.9022	242.268	CTL	5/8" Rebar with 2" Aluminum Cap
28	533601.5295	1622944.5000	242.711	CTL	5/8" Rebar with 2" Aluminum Cap
29	533581.6282	1624200.7396	242.985	CTL	5/8" Rebar with 2" Aluminum Cap
30	533560.1504	1625253.8630	243.585	CTL	5/8" Rebar with 2" Aluminum Cap
31	533548.8989	1626378.1614	242.998	CTL	5/8" Rebar with 2" Aluminum Cap
32	533514.9561	1627731.0375	247.911	CTL	5/8" Rebar with 2" Aluminum Cap
33	533523.6605	1628434.8243	248.794	CTL	5/8" Rebar with 2" Aluminum Cap
34	533509.1540	1629690.2926	249.353	CTL	5/8" Rebar with 2" Aluminum Cap
35	533499.1057	1630556.1290	249.518	CTL	5/8" Rebar with 2" Aluminum Cap
36	533500.2008	1631705.0811	249.454	CTL	5/8" Rebar with 2" Aluminum Cap
37	533490.7148	1632688.7760	248.513	CTL	5/8" Rebar with 2" Aluminum Cap
38	533489.1572	1633993.3326	247.320	CTL	5/8" Rebar with 2" Aluminum Cap
39	533459.1358	1635103.2571	245.352	CTL	5/8" Rebar with 2" Aluminum Cap
40	533467.8993	1636072.6029	245.367	CTL	5/8" Rebar with 2" Aluminum Cap
41	533446.9016	1636922.2134	245.213	CTL	5/8" Rebar with 2" Aluminum Cap
42	533425.7968	1638094.0713	246.003	CTL	5/8" Rebar with 2" Aluminum Cap
43	533408.8224	1639161.4861	245.906	CTL	5/8" Rebar with 2" Aluminum Cap
44	533381.1719	1640087.4799	246.656	CTL	5/8" Rebar with 2" Aluminum Cap
45	533412.8164	1643392.4657	246.426	CTL	5/8" Rebar with 2" Aluminum Cap
46	533407.6484	1644172.4141	248.243	CTL	5/8" Rebar with 2" Aluminum Cap
47	533410.9345	1645134.4474	247.940	CTL	5/8" Rebar with 2" Aluminum Cap
48	533366.9545	1645962.1648	250.061	CTL	5/8" Rebar with 2" Aluminum Cap
49	533405.4661	1647284.3494	250.366	CTL	5/8" Rebar with 2" Aluminum Cap
50	533409.4232	1648185.2243	250.241	CTL	5/8" Rebar with 2" Aluminum Cap
51	533411.8986	1649352.8260	250.736	CTL	5/8" Rebar with 2" Aluminum Cap
52	533418.0921	1650380.9718	250.337	CTL	5/8" Rebar with 2" Aluminum Cap
53	533379.5835	1653609.1588	253.834	CTL	5/8" Rebar with 2" Aluminum Cap
54	533382.1967	1654543.5737	251.723	CTL	5/8" Rebar with 2" Aluminum Cap
55	533422.2184	1655659.5637	252.896	CTL	5/8" Rebar with 2" Aluminum Cap
56	533408.7531	1656393.1439	258.129	CTL	5/8" Rebar with 2" Aluminum Cap
57	533328.4701	1657324.6234	256.731	CTL	5/8" Rebar with 2" Aluminum Cap
58	533294.0742	1658181.9484	253.708	CTL	5/8" Rebar with 2" Aluminum Cap
59	533230.6512	1659356.0443	254.550	CTL	5/8" Rebar with 2" Aluminum Cap
60	533234.4297	1660122.9707	254.518	CTL	5/8" Rebar with 2" Aluminum Cap
61	533138.0361	1661150.8527	253.394	CTL	5/8" Rebar with 2" Aluminum Cap
62	533156.2961	1662266.4828	256.539	CTL	5/8" Rebar with 2" Aluminum Cap
63	533164.2577	1663312.3536	256.809	CTL	5/8" Rebar with 2" Aluminum Cap
64	533140.8642	1664502.4744	257.656	CTL	5/8" Rebar with 2" Aluminum Cap
65	533184.1396	1665062.0045	265.094	CTL	5/8" Rebar with 2" Aluminum Cap
66	533102.0852	1666128.4078	257.659	CTL	5/8" Rebar with 2" Aluminum Cap
67	533102.8386	1667306.4401	261.594	CTL	5/8" Rebar with 2" Aluminum Cap
68	533109.0512	1668388.2136	260.822	CTL	5/8" Rebar with 2" Aluminum Cap
69	533135.4301	1669664.1468	261.658	CTL	5/8" Rebar with 2" Aluminum Cap
70	533134.2824	1670729.9592	264.428	CTL	5/8" Rebar with 2" Aluminum Cap
71	533153.2239	1672084.7771	273.500	CTL	5/8" Rebar with 2" Aluminum Cap
74	534237.4036	1598581.6389	254.802	CTL	5/8" Rebar with 2" Aluminum Cap
75	534876.8438	1598636.8475	244.456	CTL	5/8" Rebar with 2" Aluminum Cap
76	535475.6242	1598640.3721	242.282	CTL	5/8" Rebar with 2" Aluminum Cap
77	534057.9882	1611247.8694	238.372	CTL	5/8" Rebar with 2" Aluminum Cap
78	534745.7090	1611228.6605	238.003	CTL	5/8" Rebar with 2" Aluminum Cap
79	535400.8150	1611237.2881	237.892	CTL	5/8" Rebar with 2" Aluminum Cap
80	533602.8371	1614421.3900	236.092	CTL	5/8" Rebar with 2" Aluminum Cap
81	532992.5294	1614380.8071	235.621	CTL	5/8" Rebar with 2" Aluminum Cap
82	532355.9605	1614337.3860	236.103	CTL	5/8" Rebar with 2" Aluminum Cap
83	533866.0162	1619280.7712	238.827	CTL	5/8" Rebar with 2" Aluminum Cap
84	534471.5118	1619270.3061	238.927	CTL	5/8" Rebar with 2" Aluminum Cap
85	535120.1781	1619306.1857	238.924	CTL	5/8" Rebar with 2" Aluminum Cap
86	533296.6897	1635253.3796	246.512	CTL	5/8" Rebar with 2" Aluminum Cap
87	532657.0384	1635256.9269	244.924	CTL	5/8" Rebar with 2" Aluminum Cap
88	532026.6693	1635257.0908	244.738	CTL	5/8" Rebar with 2" Aluminum Cap
89	533667.2609	1640718.8090	245.292	CTL	5/8" Rebar with 2" Aluminum Cap
90	534331.6212	1640730.2701	246.336	CTL	5/8" Rebar with 2" Aluminum Cap
91	534943.3225	1640738.3673	247.483	CTL	5/8" Rebar with 2" Aluminum Cap
92	533200.3133	1645942.2895	247.226	CTL	5/8" Rebar with 2" Aluminum Cap
93	532601.5948	1645935.5342	248.323	CTL	5/8" Rebar with 2" Aluminum Cap
94	531913.3022	1645932.8911	248.882	CTL	5/8" Rebar with 2" Aluminum Cap
95	533729.0599	1651256.1029	249.950	CTL	5/8" Rebar with 2" Aluminum Cap
96	534100.7570	1651274.5768	250.361	CTL	5/8" Rebar with 2" Aluminum Cap
97	534736.3363	1651306.7902	250.292	CTL	5/8" Rebar with 2" Aluminum Cap
98	533462.1349	1665059.5417	263.146	CTL	5/8" Rebar with 2" Aluminum Cap
99	534050.6309	1665239.0715	263.484	CTL	5/8" Rebar with 2" Aluminum Cap
100	533445.9101	1640662.6166	246.637	GPS	160008 GPS
101	533359.9462	1642423.0597	247.568	GPS	160008A GPS
102	533457.7251	1651276.0473	252.669	GPS	160009A GPS
103	533450.0375	1652642.1920	252.126	GPS	160009 GPS
104	529775.0133	1663864.7028	251.983	GPS	160026 GPS
105	527888.0917	1663344.4477	251.590	BM	K-183 STD DSK
106	533377.4211	1622165.2816	242.411	GPS	160028 GPS
107	532889.2092	1620466.0898	243.486	GPS	160028A GPS
108	533964.2848	1603989.6098	245.244	GPS	160030 GPS
109	535811.9650	1603284.2999	253.002	GPS	160004A GPS
110	528280.9266	1624321.1650	247.623	GPS	160029 GPS
111	533623.4614	1672624.6200	280.913	GPS	160010 GPS
120	534551.6487	1665394.2032	263.699	CTL	5/8" Rebar with 2" Aluminum Cap
121	532912.8298	1668700.9149	261.010	CTL	5/8" Rebar with 2" Aluminum Cap
122	531597.2424	1668702.9780	254.747	CTL	5/8" Rebar with 2" Aluminum Cap
123	530591.1820	1668654.2225	254.983	CTL	5/8" Rebar with 2" Aluminum Cap
124	534204.7984	1672683.9568	288.057	CTL	5/8" Rebar with 2" Aluminum Cap
125	530733.6091	1671726.8798	262.210	CTL	5/8" Rebar with 2" Aluminum Cap
126	529583.6601	1672580.0339	263.642	CTL	5/8" Rebar with 2" Aluminum Cap
127	530665.1898	1672589.5177	266.553	CTL	5/8" Rebar with 2" Aluminum Cap
130	528059.8720	1663728.3793	251.156	CTL	5/8" Rebar with 2" Aluminum Cap
131	528018.5869	1664868.5859	251.287	CTL	5/8" Rebar with 2" Aluminum Cap
132	527976.8328	1665979.3225	251.357	CTL	5/8" Rebar with 2" Aluminum Cap
133	527990.0274	1666875.5379	251.415	CTL	5/8" Rebar with 2" Aluminum Cap
134	527952.8224	1667696.3918	250.894	CTL	5/8" Rebar with 2" Aluminum Cap
135	527955.9775	1668340.3240	251.374	CTL	5/8" Rebar with 2" Aluminum Cap
900	528669.8801	1624642.4947	247.410	BM	M246 USGS GOV BENCH
901	529868.9741	1625422.1050	244.639	BM	CH SQ IN HW
902	530907.7553	1626097.7598	244.963	BM	CH SQ IN HW
903	532139.0143	1626898.4489	246.657	BM	CH SQ IN HW
904	533472.6065	1627727.8152	251.376	BM	CH SQ IN TB PEDESTAL
905	533520.2875	1626348.6151	243.562	BM	CPS IN PP
906	533544.8077	1624630.6167	243.575	BM	CPS IN CP
907	533567.7778	1622901.9453	242.233	BM	CPS IN A CP
908	533608.6072	1622010.2771	240.465	BM	CH SQ IN HW
909	533680.1246	1620595.5126	240.724	BM	CH SQ IN HW
910	533671.6239	1618607.5509	241.008	BM	CH SQ IN BR OF FIELD ENT.
911	533719.8511	1616601.3916	238.472	BM	CHSLD SQR IN
912	533780.2910	1613620.3985	242.857	BM	CH SQ SW COR BR
913	533753.9026	1611241.3070	237.770	BM	CH SQ IN
914	533781.2953	1609032.5927	239.694	BM	CPS IN A PP
915	533854.5848	1607719.2158	241.980	BM	CH SQ IN NW
916	533888.0347	1605805.8539	242.066	BM	CH SQ IN NW
917	533929.7472	1603851.4782	241.541	BM	CH SQ W END OF HW
918	533500.1299	1629075.3156	248.219	BM	CH SQ IN TB PED.
919	533546.2370	1630312.6124	247.109	BM	TBM-919
920	533486.3795	1632334.2668	247.077	BM	CH SQ IN RCP
921	533474.1080	1634022.8001	246.104	BM	CH SQ IN RCP
923	533355.1205	1636321.9005	247.982	BM	CH SQ IN
924	533405.1077	1638069.3293	246.403	BM	CH SQ NE COR
926	533370.6017	1640081.4056	246.669	BM	CH SQ IN NW
927	533357.5275	1641608.9113	246.479	BM	CPS IN A PP
928	533411.4023	1643115.2124	244.960	BM	ON A CMP
929	533362.4278	1644091.2203	249.319	BM	CPS PP
930	533376.9641	1645967.4418	251.673	BM	TBM-930
931	533365.2610	1647110.0059	250.603	BM	CH SQ IN DW
932	533366.7648	1651175.3250	250.851	BM	TBM-932
933	533376.9794	1652410.0381	254.309	BM	CPS PP
934	533379.8320	1653642.0363	254.734	BM	CPS PP
935	533374.6226	1655129.6835	252.368	BM	CPS PP
936	533377.6557	1656473.3506	258.817	BM	CH SQ SW COR BR
937	533344.0044	1657313.0664	258.447	BM	CH SQ SE COR BR
938	533221.3071	1659393.4562	254.690	BM	CPS PP
939	533149.4943	1660796.1227	253.165	BM	CPS PP
940	533083.2207	1661796.2688	255.719	BM	CPS PP
941	533110.6057	1663429.9415	255.438	BM	CPS PP
942	533285.7903	1665050.8624	267.269	BM	CH SQ IN PED. 3FT
943	533106.3222	1667328.2947	261.863	BM	CHSLD SQ BR HW
944	533113.4028	1669295.7109	260.466	BM	CPS CP
951	528034.6853	1666051.5211	251.053	TBM	CHISLED SQR

*Note - Rebar and Cap - Standard - 5/8" Rebar with 2" Aluminum Cap stamped
*(standard markings common to all caps), or as indicated
(other markings indicated in the point description of the individual point).
ALL DISTANCES ARE GROUND.
USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT.
A PROJECT CAF OF 0.9999306892 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: S100412GI.CTL
HORIZONTAL DATUM: NAD 83 (1997)
VERTICAL DATUM: NAVD 88 POSITIONAL ACCURACY THIRD ORDER, UNLESS SPECIFIED OTHERWISE AT A SPECIFIC POINT.

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

BASIS OF BEARING:
ARKANSAS STATE PLANE GRID BEARINGS - 0301-NORTH ZONE
DETERMINED FROM GPS CONTROL POINTS: 111
CONVERGENCE ANGLE: 0-42-24.220508 RT AT LT: 35-47-37.05963 RT LG: 90-54-28.38572
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

HWY. 226 MAIN LANES

POINT NO.	TYPE	STATION	NORTHING	EASTING
8012	PC	331+71.48	533478.8642	1631670.3256
8045	PI	334+60.40	533561.7263	1631947.1125
8014	PT	337+44.98	533559.0095	1632236.0238
8015	PI	388+69.15	533510.8255	1637359.9712
8016	PI	406+03.17	533481.3862	1639093.7373
8017	PI	423+51.77	533444.7578	1640841.9597

WESTERN M.O.T. CROSSOVER

POINT NO.	TYPE	STATION	NORTHING	EASTING
8029	POB	342+00.00	533512.7327	1632690.6302
8030	PC	342+01.63	533512.7174	1632692.2583
8032	PT	345+96.95	533549.7935	1633085.1333
8033	PC	346+08.94	533552.1455	1633096.8815
8035	PT	350+04.26	533589.2216	1633489.7565
8036	POE	351+05.89	533588.2660	1633591.3803

EASTERN M.O.T. CROSSOVER

POINT NO.	TYPE	STATION	NORTHING	EASTING
8037	POB	430+00.00	533483.9630	1641490.3601
8038	PC	430+46.18	533483.7639	1641536.5349
8040	PT	434+46.18	533440.3175	1641933.4334
8041	PC	434+48.72	533439.7768	1641935.9244
8043	PT	438+48.72	533396.3303	1642332.8229
8044	POE	438+55.89	533396.2995	1642339.9901

SURVEY CONTROL DETAILS

DATE REVISED	DATE PLOTTED	DATE REVISED	DATE PLOTTED

FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.	100667	53	123

JOB NO.

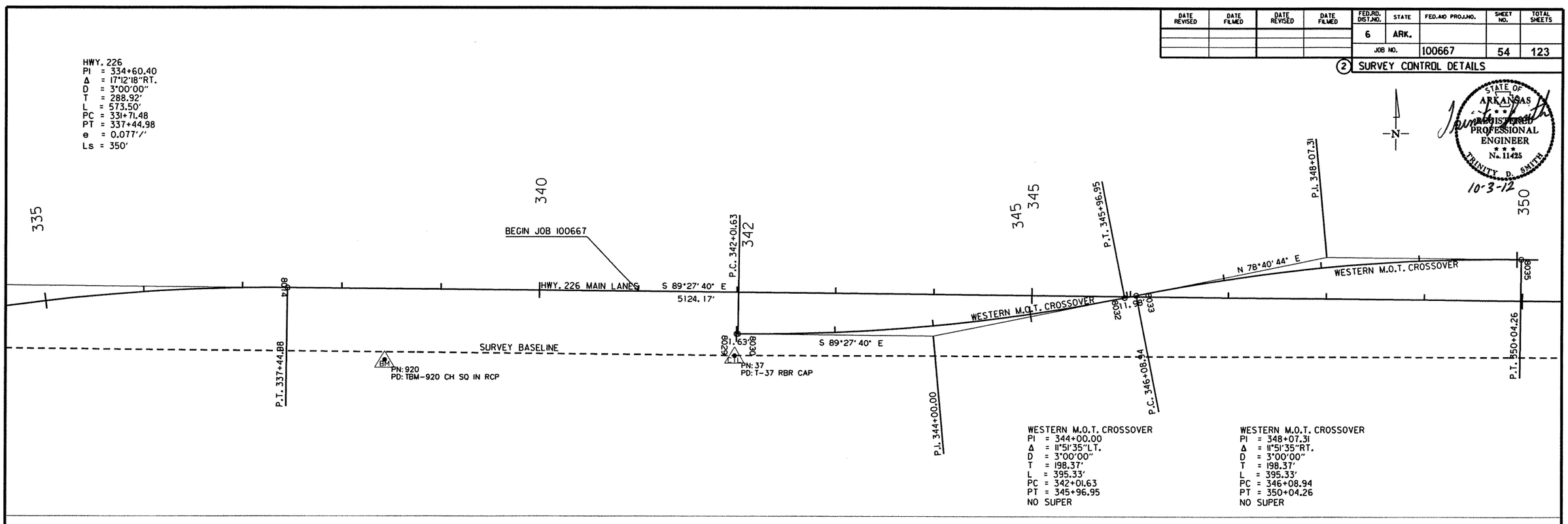
(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
JOHN D. SMITH
REGISTERED PROFESSIONAL ENGINEER
No. 11425
10-3-12

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.		100667	54	123

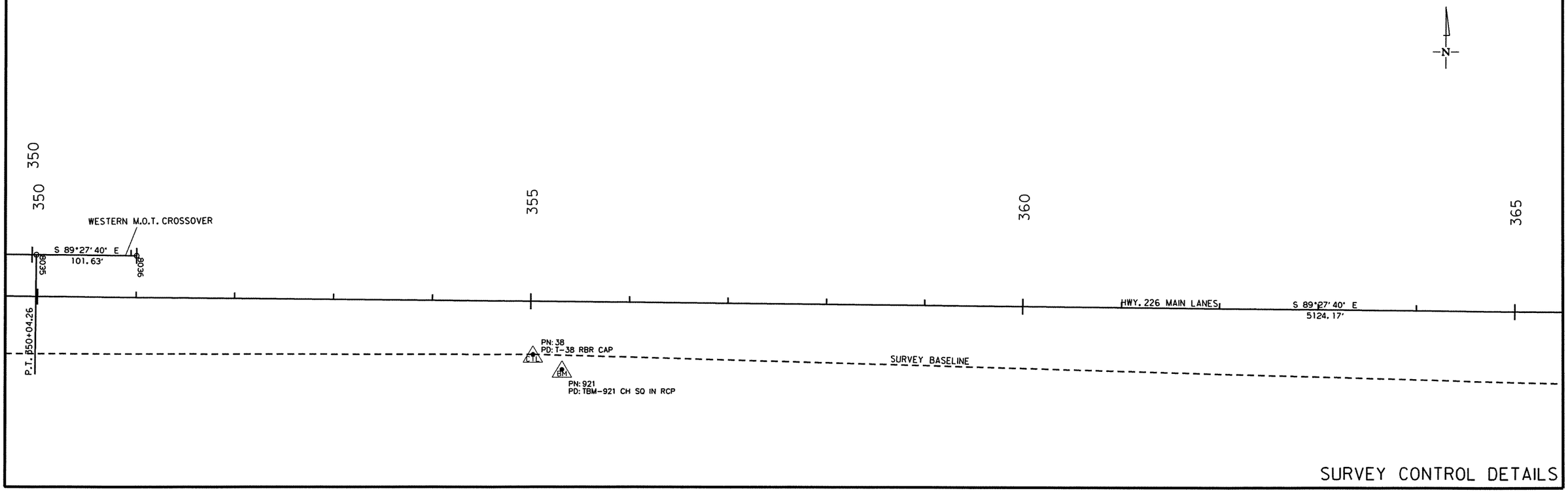
(2) SURVEY CONTROL DETAILS

HWY. 226
PI = 334+60.40
Δ = 17°12'18"RT.
D = 3°00'00"
T = 288.92'
L = 573.50'
PC = 331+71.48
PT = 337+44.98
e = 0.077'/'
Ls = 350'



WESTERN M.O.T. CROSSOVER
PI = 344+00.00
Δ = 11°51'35"LT.
D = 3°00'00"
T = 198.37'
L = 395.33'
PC = 342+01.63
PT = 345+96.95
NO SUPER

WESTERN M.O.T. CROSSOVER
PI = 348+07.31
Δ = 11°51'35"RT.
D = 3°00'00"
T = 198.37'
L = 395.33'
PC = 346+08.94
PT = 350+04.26
NO SUPER



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12

9/11/2012

R100667.DGN

SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100667	55	123

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12

365 370 375 380

S 89°27' 40" E
5124.17'

HWY. 226 MAIN LANES

BM PN: 922 PD:

SURVEY BASELINE

CTL PN: 39 PD:

CTL PN: 40 PD:

BM PN: 923 PD: TBM-923 CH SQ IN

380 385 390 395

S 89°27' 40" E
5124.17'

HWY. 226 MAIN LANES

S 89°01' 38" E
1734.02'

SURVEY BASELINE

CTL PN: 41 PD: T-41 RBR CAP

P.I. 388+68.15
Δ= 0°29'02"

9/11/2012

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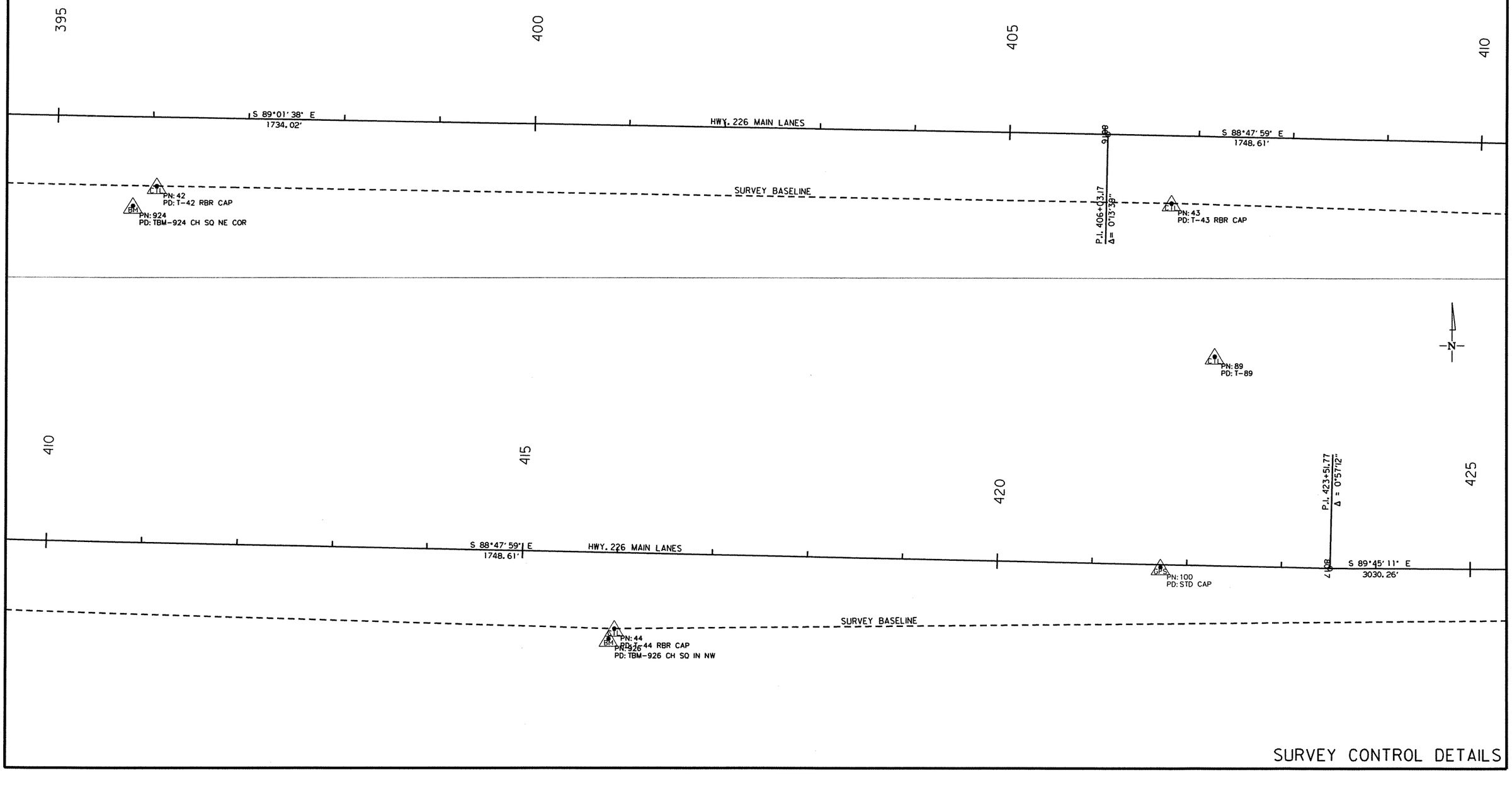
SURVEY CONTROL DETAILS

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.		100667	56	123

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12



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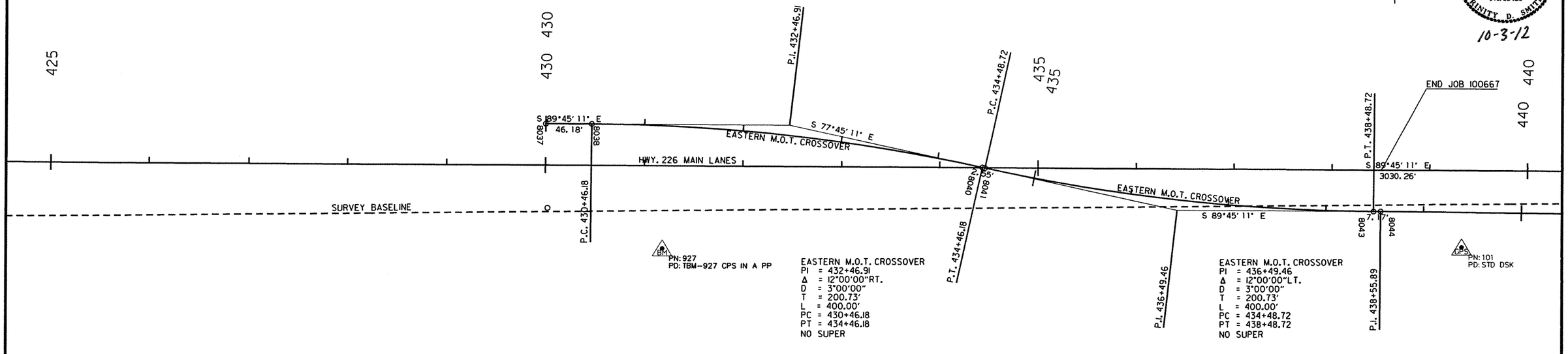
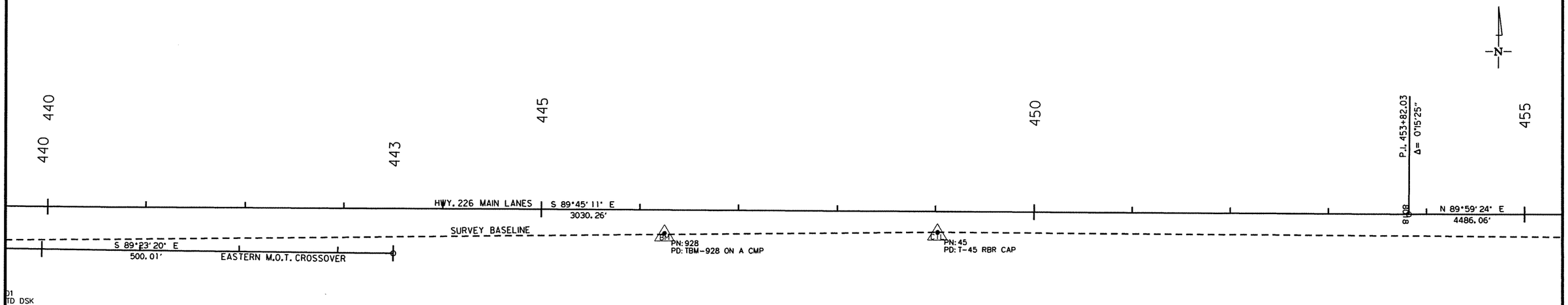
SURVEY CONTROL DETAILS

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.		100667	57	123

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12





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9/11/2012

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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.		100667	58	123

(2) SOIL BORING LOG

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12

SOIL BORING LOG

STATION	LATITUDE			LONGITUDE			LOCATION	DEPTH	LIQUID LIMIT	PLASTICITY INDEX	AASHTO CLASSIFICATION	COLOR
	DEG	MIN	SEC	DEG	MIN	SEC		FEET				
337+00	35	47	39.00	90	55	18.50	35' LT	0-5	25	11	A-6(4)	BROWN
341+00	35	47	38.60	90	55	13.60	CL	0-5	24	12	A-6(4)	BROWN
344+64	35	47	39.00	90	55	8.50	CL	0-5	42	27	A-7-(13)	BR/GR
345+00	35	47	38.50	90	55	3.90	45' LT	0-5	36	22	A-6(13)	BROWN
349+00	35	47	38.70	90	55	3.90	CL	0-5	42	26	A-7-6(24)	BR/GR
353+00	35	47	38.70	90	54	59.10	35' LT	0-5	34	17	A-6(12)	BROWN
357+00	35	47	38.30	90	54	54.20	CL	0-5	40	24	A-6(23)	BR/GR
361+00	35	47	38.70	90	54	49.40	45' LT	0-5	30	15	A-6(11)	BR/GR
365+00	35	47	38.20	90	54	44.50	CL	0-5	40	26	A-6(26)	GRAY

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

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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.		100667	59	123

(2) PLAN AND PROFILE SHEETS

WIRE FENCE STA.	STA.	SIDE	(TYPE A) LIN.FT.	(TYPE C) LIN.FT.
341+00	342+41	RT.	141	
342+41	342+91	RT.		50
342+91	344+50	RT.	159	
345+00	354+95	RT.	995	
341+00	343+25	LT.	225	
343+25	343+75	LT.		50
343+75	352+25	LT.	850	

STA. 341+00 - CONSTRUCT
DROP INLET IN MEDIAN
W/18" x 84' R.C PIPE OUTLET (CL. III)
& F.E.S. ON LT.
USE TYPE 3 BEDDING
TYPE RM = 3'-0" x 4'-0"
(H = 3'-0")

STA. 343+30 - IN PLACE
6" x 19' STEEL PIPE
FIELD DRAIN ON LT.
REMOVE

STA. 343+55 - IN PLACE
54" x 52' C.M. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE

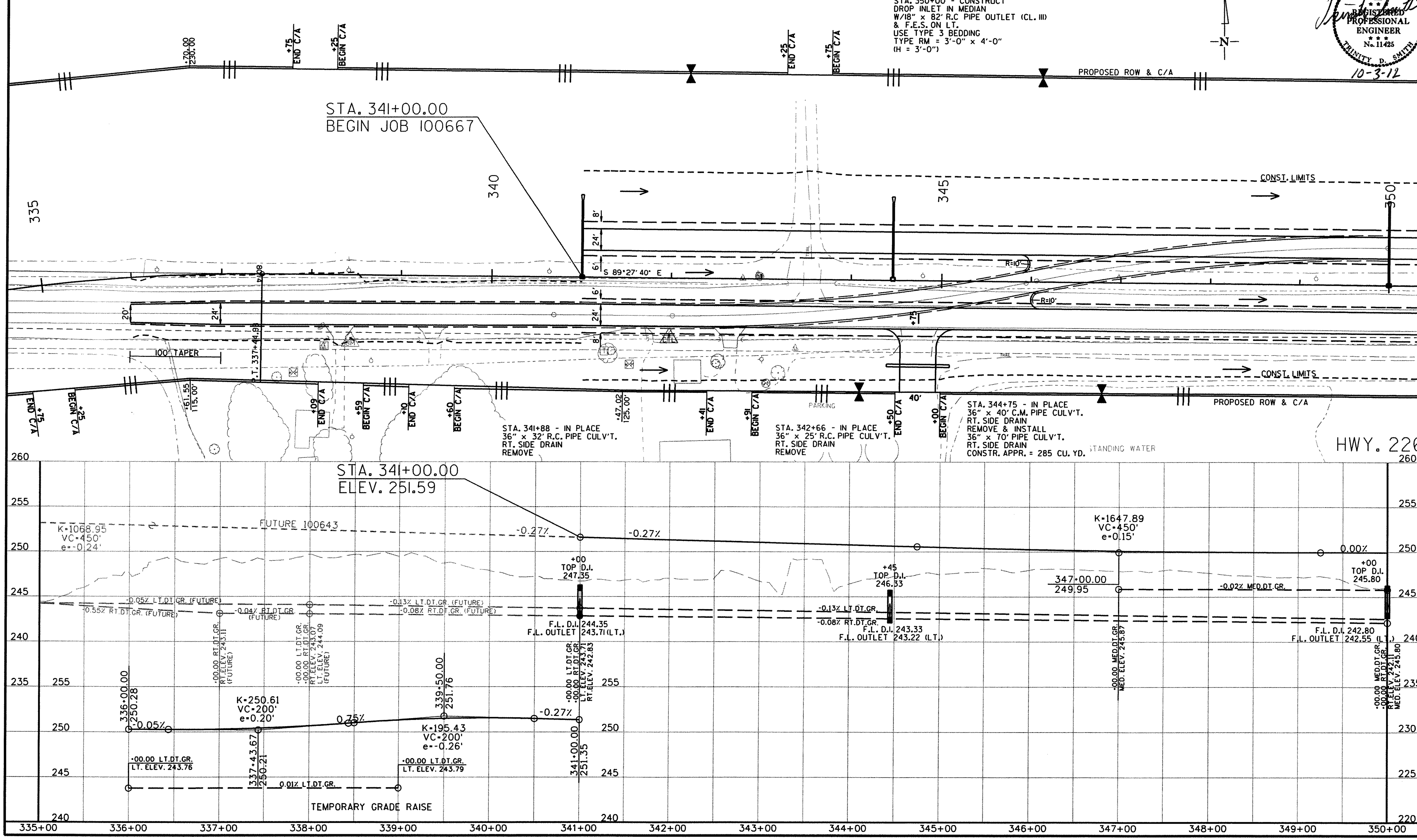
STA. 344+45 - CONSTRUCT
DROP INLET IN MEDIAN
W/18" x 82' R.C PIPE OUTLET (CL. III)
& F.E.S. ON LT.
USE TYPE 3 BEDDING
TYPE RM = 3'-0" x 4'-0"
(H = 3'-0")

STA. 350+00 - CONSTRUCT
DROP INLET IN MEDIAN
W/18" x 82' R.C PIPE OUTLET (CL. III)
& F.E.S. ON LT.
USE TYPE 3 BEDDING
TYPE RM = 3'-0" x 4'-0"
(H = 3'-0")

LIMITS OF SPECIAL FLOOD HAZARD AREA STA. 341+00 TO STA. 390+00

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH

10-3-12



N
PROPOSED ROW & C/A
STA. 341+00.00
BEGIN JOB 100667
335
340
345
350
CONST. LIMITS
S 89°27' 40" E
R=10'
100' TAPER
P.T. 337+44.98
PARKING
STA. 341+88 - IN PLACE
36" x 32' R.C. PIPE CULV'T.
RT. SIDE DRAIN
REMOVE
STA. 342+66 - IN PLACE
36" x 25' R.C. PIPE CULV'T.
RT. SIDE DRAIN
REMOVE
STA. 344+75 - IN PLACE
36" x 40' C.M. PIPE CULV'T.
RT. SIDE DRAIN
REMOVE & INSTALL
36" x 70' PIPE CULV'T.
RT. SIDE DRAIN
CONSTR. APPR. = 285 CU. YD.
STANDING WATER
HWY. 226
STA. 341+00.00
ELEV. 251.59
FUTURE 100643
K=1068.95
VC=450'
e=-0.24'
K=1647.89
VC=450'
e=0.15'
-0.27%
0.00%
TOP D.I. 247.35
F.L. D.I. 244.35
F.L. OUTLET 243.71 (LT.)
TOP D.I. 246.33
F.L. D.I. 243.33
F.L. OUTLET 243.22 (LT.)
TOP D.I. 245.80
F.L. D.I. 242.80
F.L. OUTLET 242.55 (LT.)
347+00.00
249.95
-0.02% MED.DT.GR.
K=250.61
VC=200'
e=0.20'
K=195.43
VC=200'
e=-0.26'
336+00.00 250.28
337+43.67 250.21
339+50.00 251.76
341+00.00 251.35
+00.00 LT.DT.GR.
LT. ELEV. 243.76
+00.00 LT.DT.GR.
LT. ELEV. 243.79
0.01% LT.DT.GR.
TEMPORARY GRADE RAISE
335+00
336+00
337+00
338+00
339+00
340+00
341+00
342+00
343+00
344+00
345+00
346+00
347+00
348+00
349+00
350+00

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WIRE FENCE			(TYPE A)	(TYPE C)
STA.	STA.	SIDE	LIN.FT.	LIN.FT.
354+95	355+45	RT.		50
355+45	365+77	RT.	1032	
352+75	362+25	LT.	950	
362+25	362+75	LT.		50
362+75	368+25	LT.	550	

STA. 360+00 - CONSTRUCT
DROP INLET IN MEDIAN
W/18" x 86' R.C PIPE OUTLET (CL. III)
& F.E.S. ON LT.
USE TYPE 3 BEDDING
TYPE RM = 3'-0" x 4'-0"
(H = 3'-0")

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100667	60	123

(2) PLAN AND PROFILE SHEETS

LIMITS OF SPECIAL FLOOD HAZARD AREA STA. 341+00 TO STA. 390+00

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12

+25 END C/A
+75 BEGIN C/A
PROPOSED ROW & C/A
+25 END C/A
+75 BEGIN C/A
+95.00
225.00

N

CONST. LIMITS
350
355
360
365
8'
24'
6'
6'
24'
8'
S 89°27' 40" E
6'
24'
8'
36'
200' TAPER
210' LEFT TU
+84.00
+84.00

CONST. LIMITS
TRAIL
TRAIL
TRAIL
+95 END C/A
+45.00
120.00'
BEGIN C/A
STA. 355+20 - IN PLACE
36" x 25' R.C. PIPE CULV'T.
RT. SIDE DRAIN
REMOVE
PROPOSED ROW & C/A
-35.00
120.00'

HWY. 226

260
255
250
245
240
235
230
225
220

0.00%
0.50%
K-700.00
VC-350'
e-0.22'
+00
TOP D.I.
245.80
362+50.00
249.95
-0.04% MED.DT.GR.
-0.04% MED.DT.GR.
-0.13% LT.DT.GR.
-0.10% LT.DT.GR.
-0.07% RT.DT.GR.
-0.52% RT.DT.GR.
-50.00 LT.DT.GR.
LT.ELEV. 242.36
-00.00 MED.DT.GR.
MED.ELEV. 246.00
F.L. D.I. 242.80
F.L. OUTLET 241.50 (LT.)
-00.00 MED.DT.GR.
MED.ELEV. 245.80
-10.00 RT.DT.GR.
RT.ELEV. 241.40
-00.00 LT.DT.GR.
LT.ELEV. 240.99

BM: 921 TBM-921CH SQ IN RCP
68.1 RT. OF STA. 355+32.47
ELEVATION = 246.10

350+00 351+00 352+00 353+00 354+00 355+00 356+00 357+00 358+00 359+00 360+00 361+00 362+00 363+00 364+00 365+00

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STA. 366+49 - IN PLACE
36" x 30' R.C. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE

STA. 367+11 - IN PLACE
18" x 42' STEEL PIPE
FIELD DRAIN ON LT.
REMOVE

STA. 367+45 - INSTALL
DBL. 60" x 118' PIPE CULV'T.
LT. SIDE DRAIN
CONSTR. APPR. = 180 CU. YD.

STA. 368+50 - CONSTRUCT
QUINT, 10' x 9' x 179' R.C. BOX CULV'T.
(15° LT. FWD. SKEW)
55'-10" SPAN
WITH 3:1 WINGS LT. & RT.
Q50 = 990 cfs; DA = 2880 ac

STA. 369+40 - IN PLACE
36" x 37' C.M. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE

STA. 367+55.96 - STA. 368+17.64 - IN PLACE
25.3' x 61' BRIDGE CONSISTING OF TIMBER AND STEEL
STRINGER SPANS WITH A CONCRETE
DECK SUPPORTED BY TIMBER TRESTLE PILE BENTS
REMOVE AS EXISTING BRIDGE STUCTURE (SITE NO. 1) = 1.00 LUMP SUM

STA. 374+00 - CONSTRUCT
DROP INLET IN MEDIAN
W/18" x 92' R.C PIPE OUTLET (CL. III)
& F.E.S. ON LT.
USE TYPE 3 BEDDING
TYPE RM = 3'-0" x 4'-0"
(H = 3'-0")

WIRE FENCE STA.	STA.	SIDE	(TYPE A) LIN.FT.	(TYPE C) LIN.FT.
366+27	367+20	RT.	93	
367+70	368+75	RT.	105	
368+75	369+25	RT.		50
369+25	377+07	RT.	782	
377+07	377+57	RT.		50
377+57	378+20	RT.	63	
378+70	379+48	RT.	78	
379+48	379+98	RT.		50
368+25	368+75	LT.		50
368+75	369+30	LT.	55	
369+30	369+80	LT.		50
369+80	375+25	LT.	545	
375+25	375+75	LT.		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.		100667	61	123

(2) PLAN AND PROFILE SHEETS

LIMITS OF SPECIAL FLOOD HAZARD AREA STA. 341+00 TO STA. 390+00

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12

REFER TO SHEET 6 FOR MEDIAN TURNAROUND DETAILS

210' LEFT TURN LANE
200' TAPER
JOHNSON DITCH
CONST. LIMITS
PROPOSED ROW & C/A
S 89°27'40" E
HWY. 226

STA. 366+02 - IN PLACE
36" x 30' R.C. PIPE CULV'T.
RT. SIDE DRAIN
REMOVE & INSTALL
36" x 62' PIPE CULV'T.
RT. SIDE DRAIN
CONSTR. APPR. = 425 CU. YD.

STA. 367+35 - IN PLACE
36" x 41' R.C. PIPE CULV'T.
RT. SIDE DRAIN
REMOVE & INSTALL
36" x 90' PIPE CULV'T
@ STA. 367+45 (COUNTY ROAD 237)
RT. SIDE DRAIN
CONSTR. APPR. = 725 CU. YD.

STA. 368+48 - IN PLACE
24" x 29' C.M. PIPE CULV'T.
RT. SIDE DRAIN
REMOVE

STA. 378+45 - INSTALL
24" x 58' PIPE CULV'T.
RT. SIDE DRAIN
CONSTR. APPR. = 225 CU. YD.

STA. 379+92 - IN PLACE
24" x 24' C.M. PIPE CULV'T.
RT. SIDE DRAIN
REMOVE

K-350.00
VC-350'
e=-0.44'
0.50%
-0.50%
368+00.00
252.70

K-678.60
VC-350'
e=0.23'
0.02%
373+50.00
249.95

+00 TOP D.I. 245.83
+50

-0.99% LT.DT.GR.
-0.52% RT.DT.GR.
0.78% RT.DT.GR.
0.76% LT.DT.GR.
0.09% MED.DT.GR.
0.06% RT.DT.GR.
0.02% LT.DT.GR.

-00.00 LT.DT.GR. LT. ELEV. 240.89
-19.00 RT.DT.GR. RT. ELEV. 237.18
-80.00 LT.DT.GR. LT. ELEV. 237.24
-00.00 LT.DT.GR. LT. ELEV. 239.67
-00.00 RT.DT.GR. RT. ELEV. 241.74
-00.00 MED.DT.GR. MED. ELEV. 245.80
-00.00 MED.DT.GR. MED. ELEV. 246.25

F.L. INLET 237.24 (LT.)
F.L. OUTLET 237.18 (RT.)
F.L. D.I. 242.83
F.L. OUTLET 239.71 (LT.)

NOTE:
FOR CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS, THIS STREAM IS CLASSIFIED AS AN INTERMITTENT STREAM. THE STREAM BANK ELEVATION IS 243 FT. MSL. BETWEEN STATIONS 367+65 AND 368+25. REFER TO SECTION 110.06(C) OF THE 2003 STANDARD SPECIFICATIONS.

BM: 922
23.0 RT. OF STA. 367+95.77
ELEVATION = 247.34

BM: 923 TBM-923 CH SO IN
165.46 RT. OF STA. 378+32.59
ELEVATION = 247.98

365+00 366+00 367+00 368+00 369+00 370+00 371+00 372+00 373+00 374+00 375+00 376+00 377+00 378+00 379+00 380+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.		100667	62	123
				(2) PLAN AND PLOTTING SHEETS				

STA. 383+00 - INSTALL
DBL. 60" x 60' PIPE CULV'T.
LT. SIDE DRAIN
CONSTR. APPR. = 205 CU. YD.

WIRE FENCE STA.	STA.	SIDE	(TYPE A) LIN.FT.	(TYPE C) LIN.FT.
379+98	381+62	RT.	164	
381+62	382+12	RT.		50
382+12	395+68	RT.	1356	
395+68	396+18	RT.		50
375+75	381+25	LT.	550	
381+25	381+75	LT.		50
381+75	382+75	LT.	100	
382+75	393+25	LT.	1050	
393+25	393+75	LT.		50

LIMITS OF SPECIAL FLOOD HAZARD AREA STA. 341+00 TO STA. 390+00

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REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12

REFER TO SHEET 6 FOR MEDIAN TURNAROUND DETAILS

+25 END C/A
+75 BEGIN C/A
+25 END C/A
+75 BEGIN C/A
PROPOSED ROW & C/A
+25 END C/A
+75 BEGIN C/A

30'
CONST. LIMITS
380
385
390
395
+14.00
+00
8'
24'
6'
TRAIL
6'
S 89°27'40" E
S 89°01'38" E
24'
8'
GRAVEL
CONST. LIMITS
PROPOSED ROW & C/A
+98 BEGIN C/A
+62 END C/A
+12 BEGIN C/A
STA. 381+87 - IN PLACE
18" x 26' C.M. PIPE CULV'T.
RT. SIDE DRAIN
REMOVE
STA. 387+46 - IN PLACE
24" x 41' C.M. PIPE CULV'T.
REMOVE AND CONSTRUCT
DROP INLET IN MEDIAN
W/ 24" x 84' R.C. PIPE INLET RT. (CL. III) &
24" x 92' R.C. PIPE OUTLET LT. (CL. III)
W/ F.E.S. RT. & LT.
(USE TYPE 3 BEDDING)
TYPE RM = 3'-0" x 4'-0"
(H = 4'-9")
P.I. 388+69.15
Δ = 0°29'02"
36'
8'
200' TAPER
210' LEFT TURN LANE
40'
+16.00
+16.00
+26.00
+25.00
115.00

HWY. 226

260
255
250
245
240
235
230
225
220

0.02%
+46 TOP D.I. 246.03
-0.03% MED.DT.GR.
0.08% MED.DT.GR.
0.06% RT.DT.GR.
0.02% LT.DT.GR.
0.06% LT.DT.GR.
+00.00 MED.DT.GR. MED. ELEV. 246.25
F.L. D.I. 241.28
F.L. INLET 242.48 (RT.)
F.L. OUTLET 239.98 (LT.)
+00.00 MED.DT.GR. +00.00 LT.DT.GR. LT. ELEV. 240.00 MED. ELEV. 246.00
+16.00 MED.DT.GR. MED. ELEV. 246.17

380+00 381+00 382+00 383+00 384+00 385+00 386+00 387+00 388+00 389+00 390+00 391+00 392+00 393+00 394+00 395+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.		100667	63	123

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH

10-3-12

WIRE FENCE STA.	STA.	SIDE	(TYPE A) LIN.FT.	(TYPE C) LIN.FT.
396+18	406+60	RT.	1042	
406+60	407+10	RT.		50
407+10	415+94	RT.	884	
393+75	399+25	LT.	550	
399+25	399+75	LT.		50
399+75	406+75	LT.	700	
406+75	407+25	LT.		50
407+25	413+25	LT.	600	

STA. 395+66 - IN PLACE
30" x 24' STEEL PIPE
FIELD DRAIN ON LT.
REMOVE

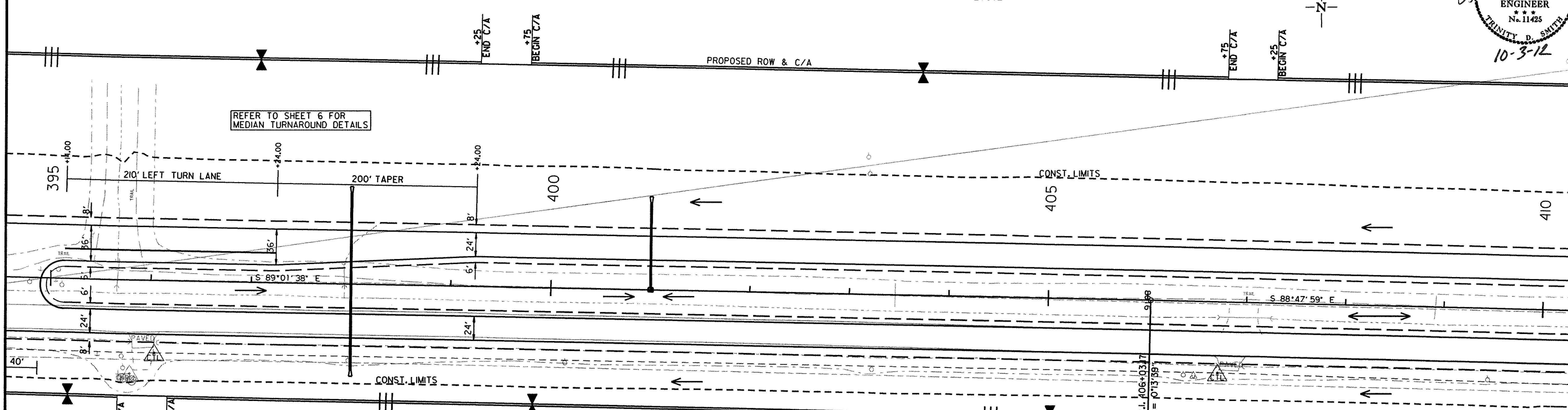
STA. 397+93 - IN PLACE
15" x 23' STEEL PIPE
FIELD DRAIN ON LT.
REMOVE

STA. 401+00 - CONSTRUCT
DROP INLET IN MEDIAN
W/18" x 90' R.C PIPE OUTLET (CL. III)
& F.E.S. ON LT.
USE TYPE 3 BEDDING
TYPE RM = 3'-0" x 4'-0"
(H = 3'-0")

STA. 403+46 - IN PLACE
12" x 24' STEEL PIPE
FIELD DRAIN ON LT.
REMOVE

STA. 407+00 - IN PLACE
36" x 52' C.M. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE

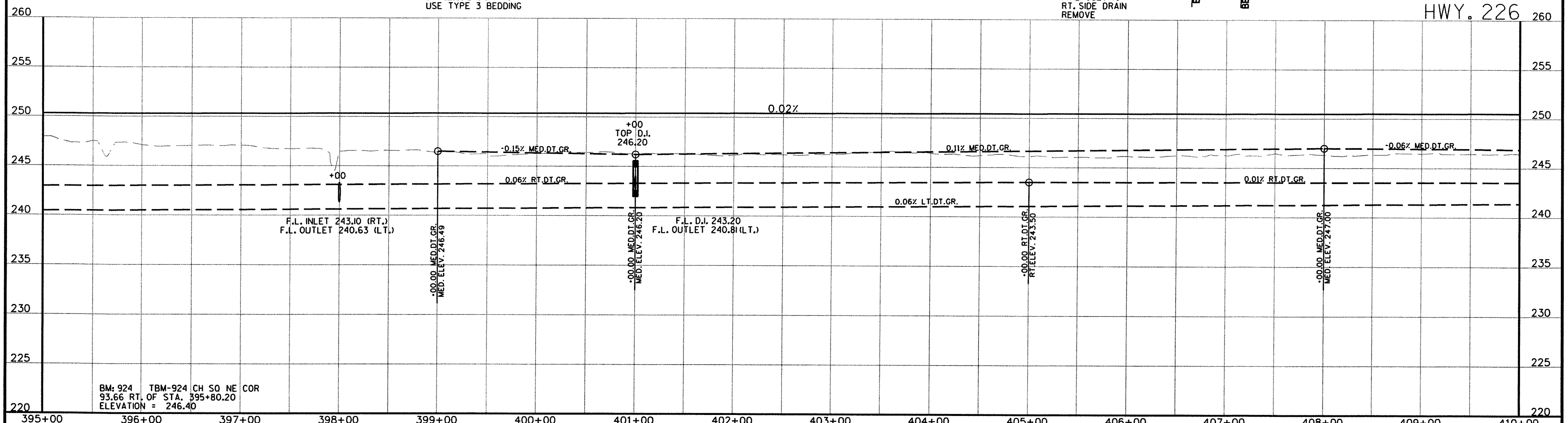
STA. 408+91 - IN PLACE
12" x 23' STEEL PIPE
FIELD DRAIN ON LT.
REMOVE



STA. 398+00 - IN PLACE
24" x 34' C.M. PIPE CULV'T.
REMOVE AND CONSTRUCT
24" x 176' R.C. PIPE OUTLET (CL. III)
& F.E.S. LT. & RT.
USE TYPE 3 BEDDING

STA. 406+85 - IN PLACE
17" x 13" x 26' C.M. ARCH
PIPE CULV'T.
RT. SIDE DRAIN
REMOVE

HWY. 226



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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.		100667	64	123

(2) PLAN AND PROFILE SHEETS

WIRE FENCE STA.	STA.	SIDE	(TYPE A) LIN.FT.	(TYPE C) LIN.FT.
415+94	416+44	RT.		50
416+44	431+38	RT.	1494	
413+25	413+75	LT.		50
413+75	419+25	LT.	550	
419+25	419+75	LT.		50
419+75	421+85	LT.	210	
422+35	425+25	LT.	290	

STA. 415+25 - IN PLACE
24" x 41' C.M. PIPE CULV'T.
REMOVE AND CONSTRUCT
24" x 82' R.C. PIPE INLET RT. (CL. III)
& 24" x 88' R.C PIPE OUTLET LT. (CL. III)
W./ F.E.S. LT. & RT.
(USE TYPE 3 BEDDING)
TYPE RM = 3'-0" x 4'-0"
(H = 3'-11")

STA. 422+08 - IN PLACE
24" x 42' R.C. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE

STA. 422+10 - INSTALL
DBL. 60" x 60' PIPE CULV'T.
LT. SIDE DRAIN
(COUNTY ROAD 161)
CONSTR. APPR. = 330 CU. YD.

STA. 423+21 - IN PLACE
18" x 30' STEEL PIPE
FIELD DRAIN ON LT.
REMOVE

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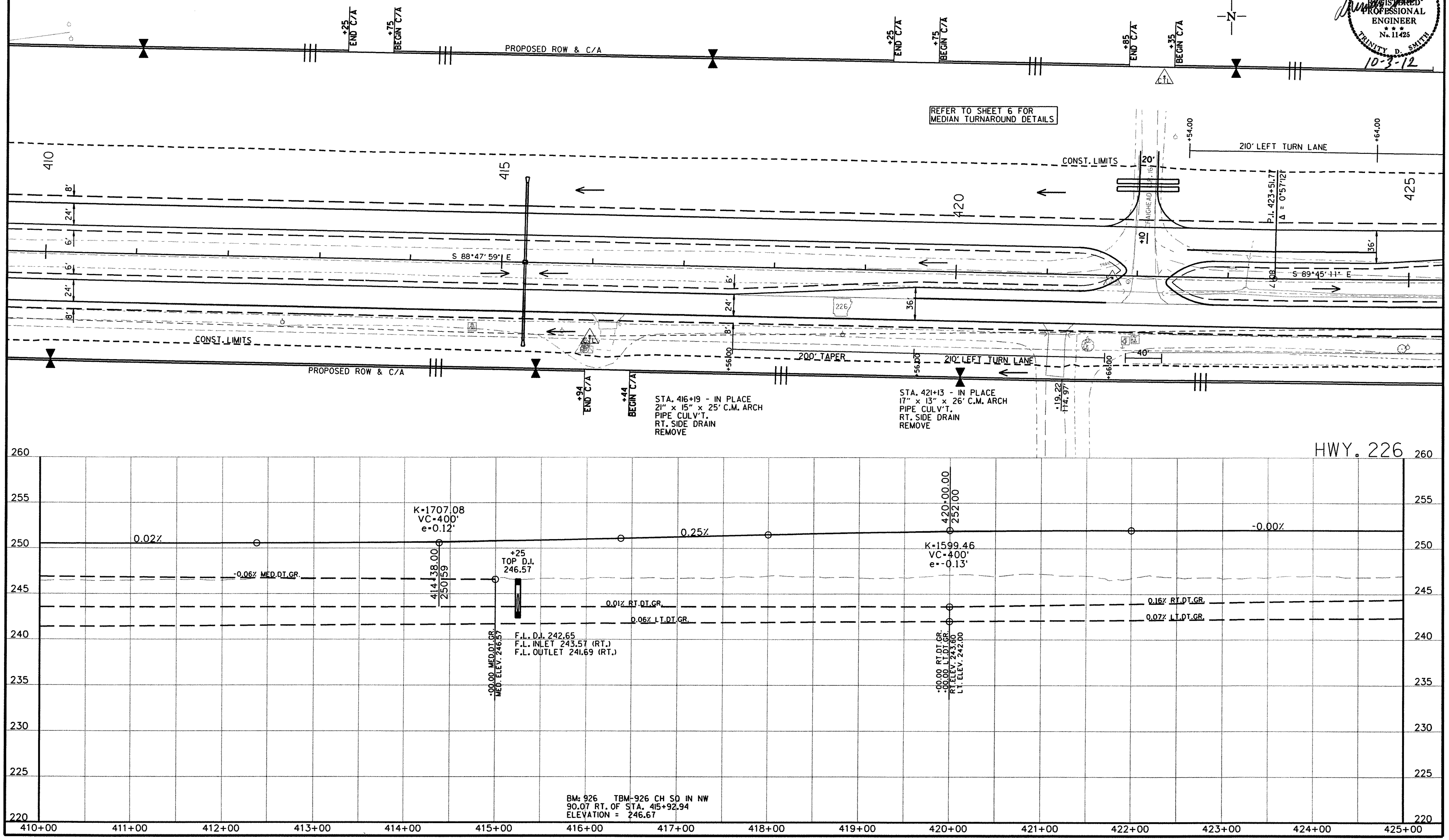

N
PROPOSED ROW & C/A
+25 END C/A
+75 BEGIN C/A
+85 END C/A
+35 BEGIN C/A
REFER TO SHEET 6 FOR MEDIAN TURNAROUND DETAILS
CONST. LIMITS
210' LEFT TURN LANE
P.I. 423+51.77
Δ = 0°57'12"
S 88°47'59" E
S 89°45'11" E
200' TAPER
210' LEFT TURN LANE
+94 END C/A
+44 BEGIN C/A
STA. 416+19 - IN PLACE
21" x 15" x 25' C.M. ARCH PIPE CULV'T.
RT. SIDE DRAIN
REMOVE
STA. 421+13 - IN PLACE
17" x 13" x 26' C.M. ARCH
PIPE CULV'T.
RT. SIDE DRAIN
REMOVE
HWY. 226
K=1707.08
VC=400'
e=0.12'
0.02%
0.25%
-0.00%
K=1599.46
VC=400'
e=-0.13'
+25
TOP D.I.
246.57
-0.06% MED.DT.GR.
0.01% RT.DT.GR.
0.06% LT.DT.GR.
0.16% RT.DT.GR.
0.07% LT.DT.GR.
F.L. D.I. 242.65
F.L. INLET 243.57 (RT.)
F.L. OUTLET 241.69 (RT.)
BM: 926 TBM-926 CH SQ IN NW
90.07 RT. OF STA. 415+92.94
ELEVATION = 246.67
410+00 411+00 412+00 413+00 414+00 415+00 416+00 417+00 418+00 419+00 420+00 421+00 422+00 423+00 424+00 425+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.		100667	65	123

(2) PLAN AND PROFILE SHEETS

WIRE FENCE			(TYPE A)	(TYPE C)
STA.	STA.	SIDE	LIN.FT.	LIN.FT.
431+88	435+73	RT.	385	
436+25	438+50	RT.	227	
425+25	425+75	LT.		50
425+75	431+25	LT.	550	
431+25	431+75	LT.		50
431+75	435+53	LT.	378	
435+53	436+20	LT.	121	
436+20	436+70	LT.		50
436+70	438+05	LT.	135	

STA. 428+00 - CONSTRUCT
DROP INLET IN MEDIAN
W/18" x 88' R.C PIPE OUTLET (CL. III)
& F.E.S. ON LT.
USE TYPE 3 BEDDING
TYPE RM = 3'-0" x 4'-0"
(H = 3'-0")

STA. 430+12 - IN PLACE
18" x 30' STEEL PIPE
FIELD DRAIN ON LT.
REMOVE

STAGE IB CONSTRUCTION
STA. 434+50 - INSTALL
18" x 300' TEMPORARY PIPE CULV'T.

STA. 438+30
CONSTR. APPR. = 480 CU. YD.

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STA. 438+50.00
END JOB 100667

HWY. 226

PROPOSED ROW & C/A

CONST. LIMITS

200' TAPER

100' TAPER

STA. 431+63 - IN PLACE
18" x 26' STEEL PIPE
RT. SIDE DRAIN
REMOVE & INSTALL
18" x 36' PIPE CULV'T.
RT. SIDE DRAIN
CONSTR. APPR. = 95 CU. YD.

STA. 433+07 - IN PLACE
12" x 26' C.M. PIPE CULV'T.
RT. SIDE DRAIN
REMOVE

STA. 436+05 - INSTALL
18" x 38' PIPE CULV'T.
RT. SIDE DRAIN
CONSTR. APPR. = 95 CU. YD.

STA. 437+90 - IN PLACE
18" x 26' C.M. PIPE CULV'T.
RT. SIDE DRAIN
REMOVE

STA. 438+50.00
ELEV. 252.00

-0.00%

FUTURE 100679

+00
TOP D.I.
247.76

0.10% MED.DT.GR.

0.16% RT.DT.GR.

0.07% LT.DT.GR.

-0.09% MED.DT.GR.

0.26% MED.DT.GR. (FUTURE)

-0.23% RT.DT.GR. (FUTURE)

-0.04% LT.DT.GR. (FUTURE)

F.L. D.I. 244.76
F.L. OUTLET 242.56 (LT.)

-00.00 MED.DT.GR.
MED. ELEV. 247.76

-00.00 MED.DT.GR.
MED. ELEV. 248.25

-75.00 LT.DT.GR.
LT. ELEV. 243.25

-50.00 LT.DT.GR.
-50.00 RT.DT.GR.
-50.00 MED.DT.GR.
LT. ELEV. 243.30
RT.ELEV. 246.50
MED. ELEV. 247.76

439+50.00
251.76

0.00%

438+50.00
251.76

K=152.25
VC=200'
e=-0.33'

BM: 927 TBM-927 CPS IN A PP
83.92 RT. OF STA. 431+19.10
ELEVATION = 246.48

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				6	ARK.			
				JOB NO.		100667	66	123

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
10-3-12

PROPOSED ROW & C/A

+95.18 227.21

+00 END C/A

+50 BEGIN C/A

N

440 445 450 455

P.I. 453+82.03
Δ= 0°15'25"

S 89°45'11" E

N 89°59'24" E

8.08

24'

20'

100' TAPER

PROPOSED ROW & C/A

+90 BEGIN C/A

+00.00 115.00'

+50 END C/A

+00 BEGIN C/A

+50 END C/A

+00 BEGIN C/A

HWY. 226

260 255 250 245 240 235 230 225 220

-0.00% FUTURE 100679

0.26% MED.DT.GR. (FUTURE)

-0.06% MED.DT.GR (FUTURE)

-00.00 MED.DT.GR. MED. ELEV. 248.40 (FUTURE)

-00.00 MED.DT.GR. MED. ELEV. 248.23 (FUTURE)

0.23% RT.DT.GR (FUTURE)

0.04% LT.DT.GR (FUTURE)

K=152.25
VC=200'
e=-0.33'

-1.31%

K=141.35
VC=200'
e=0.35'

0.10%

443+50.00
248.27

442+25.00
248.15

-0.36% RT.DT.GR.
-0.44% LT.DT.GR.

-00.00 LT.DT.GR.
-00.00 RT.DT.GR.
RT.ELEV. 245.61
LT. ELEV. 245.61

+50.00 LT.DT.GR.
+50.00 RT.DT.GR.
RT.ELEV. 244.70
LT. ELEV. 244.50

440+00 441+00 442+00 443+00 444+00 445+00 446+00 447+00 448+00 449+00 450+00 451+00 452+00 453+00 454+00 455+00

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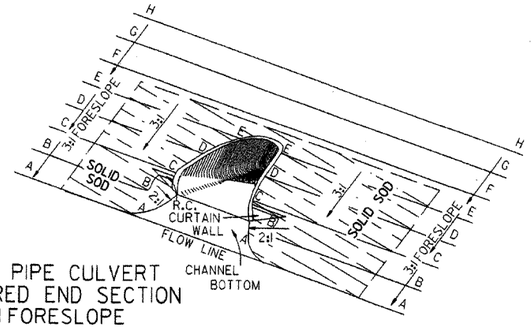
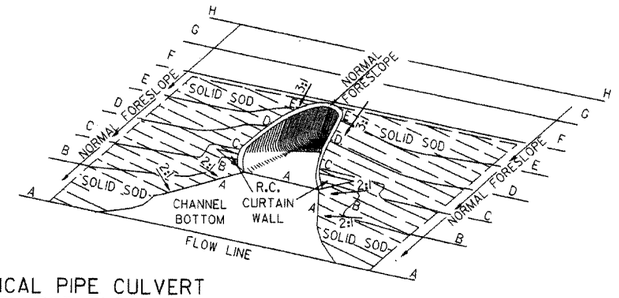
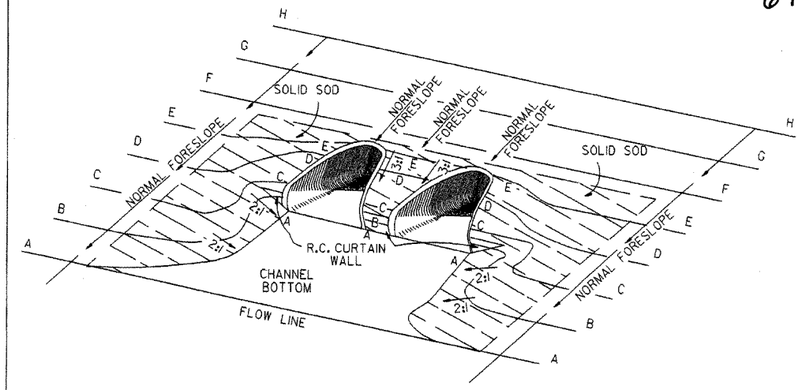


TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& 3:1 FORESLOPE



TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& FLATTENED ADJACENT SLOPES



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

R.C. CURTAIN WALL
DIMENSIONS & QUANTITIES

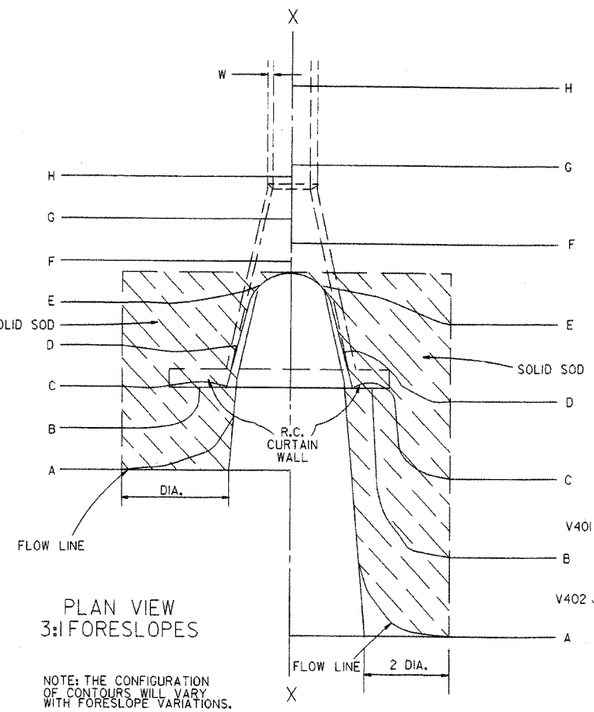
PIPE DIA.	H_1	L_1	L	L (DBL.)/2	SINGLE R.C.P.C.		DOUBLE R.C.P.C.	
					CONC.	REINF. STEEL	CONC.	REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	39.0	0.67	59.0
36"	1'-7"	6'-8"	13'-0"	10'-6"	0.58	52.6	0.83	73.9
42"	2'-1½"	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'-9½"	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.

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

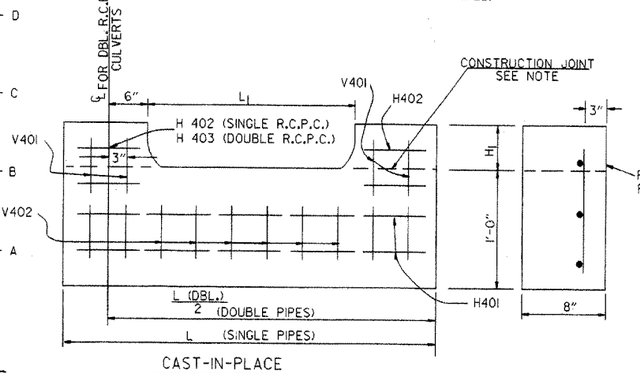
ALL REINFORCING STEEL #4 BARS @ 6" O.C.



PLAN VIEW
3:1 FORESLOPES

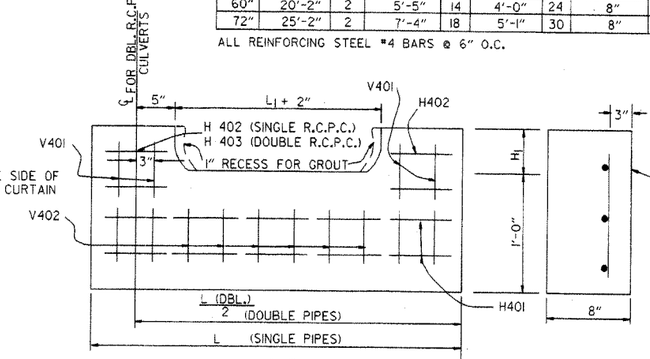
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW
FLATTENED FORESLOPES



CAST-IN-PLACE

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.



PRECAST

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.

R.C. CURTAIN WALL DETAILS

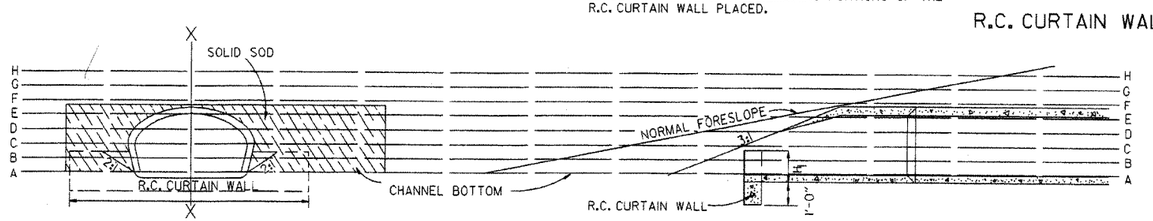
SOLID SODDING

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

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

GENERAL NOTES

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 ¾".
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 W10 x W10 MAY BE USED IN LIEU OF REINFORCING BARS.



END VIEW

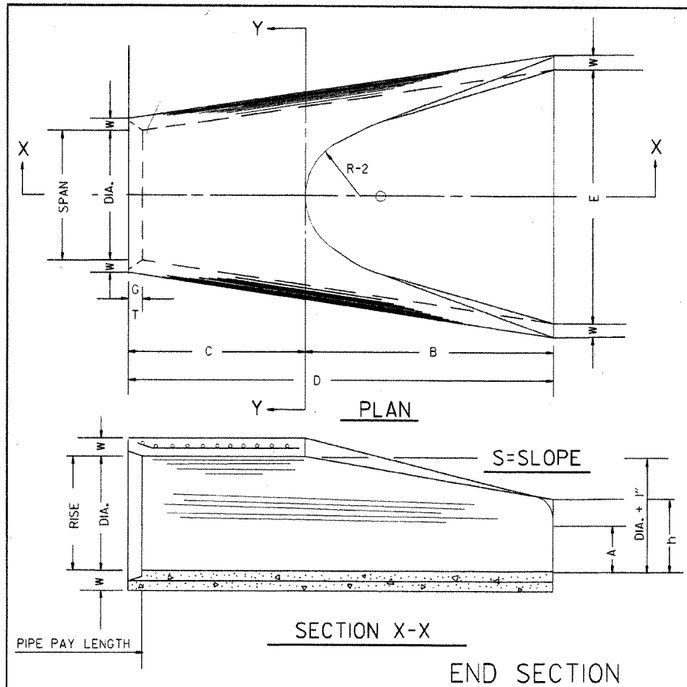
SECTIONAL VIEW "X-X"

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

ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

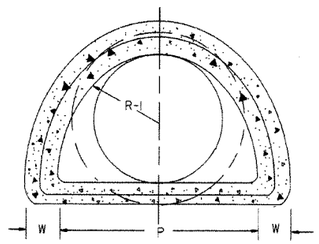
STANDARD DRAWING FES-1



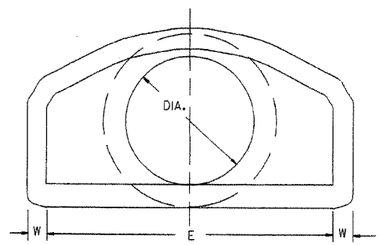
END SECTION
FOR REINFORCED CONCRETE PIPE CULVERTS

TABLE OF DIMENSIONS

DIA.	WALL	A	B	C	D	E	S	DIA. + I"	P	R-I	R-2	G-T	WT.	h
18"	2½"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3:1	19"	29"	15½"	12"	2"	1000	1'-0½"
24"	3"	9½"	3'-7½"	2'-6"	6'-11½"	4'-0"	3:1	25"	33 3/16"	16 11/16"	14"	2½"	1600	1'-1½"
30"	3½"	1'-0"	4'-6"	1'-7¾"	6'-1¾"	5'-0"	3:1	31"	37"	18½"	15"	3¼"	1940	1'-4 5/16"
36"	4"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	6'-0"	3:1	37"	47 11/16"	24 5/16"	20"	3½"	4100	1'-8"
42"	4½"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3:1	43"	53⅞"	27½"	22"	3½"	5380	2'-2½"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3:1	49"	56½"	28½"	22"	3½"	6550	2'-6"
54"	5½"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3:1	55"	65½"	33⅛"	24"	4"	8750	2'-10½"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3:1	61"	72½"	36 11/16"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3:1	73"	77 11/16"	38 15/16"	24"	5"	13250	4'-6"



SECTION Y-Y



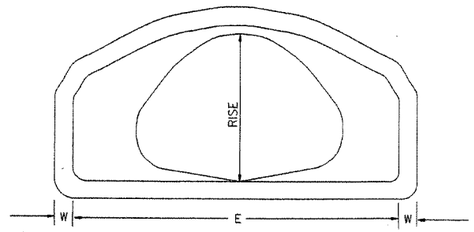
END VIEW

NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

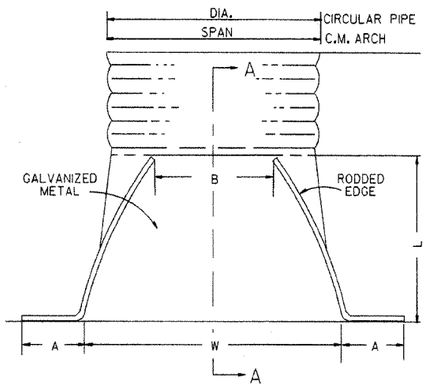
ARCH PIPE

EQUIV. DIA.	• SPAN AASHTO M 206	• SPAN AHD NOMINAL	• RISE AASHTO M 206	• RISE AHD NOMINAL	W	A	B	C	D	E	P	R2	G-T	S
	INCHES													
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1½"	2½:1
18	22	22	13½	14	2½"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32⅛"	13"	2½"	2½:1
21	26	26	15½	16	2¾"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34⅛"	14"	2½"	2½:1
24	28½	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36 5/16"	15"	2½"	2½:1
30	36¼	36	22½	23	3½"	10"	3'-1"	3'-0½"	6'-1½"	6'-0"	47 13/16"	20"	3"	2½:1
36	43¾	44	26⅝	27	4"	10½"	4'-0"	2'-11½"	6'-1½"	6'-6"	54 5/16"	22"	3½"	2½:1
42	51⅛	51	31 3/16	31	4½"	11½"	4'-7"	1-10¼"	6'-5¼"	7'-2"	59½"	23"	3¾"	2½:1
48	58½	59	36	36	5"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	7'-10"	70 5/16"	24"	4¼"	2½:1
54	65	65	40	40	5½"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72 1/16"	24"	4¾"	2¼:1
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77 13/16"	24"	5"	2¼:1

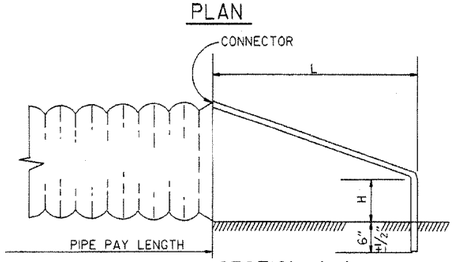
• THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.



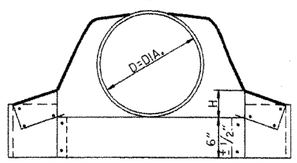
END VIEW
CONCRETE ARCH PIPE



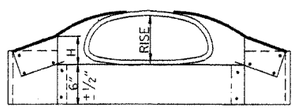
PLAN



SECTION A-A



CIRCULAR PIPE



C.M. ARCH PIPE

CIRCULAR PIPE

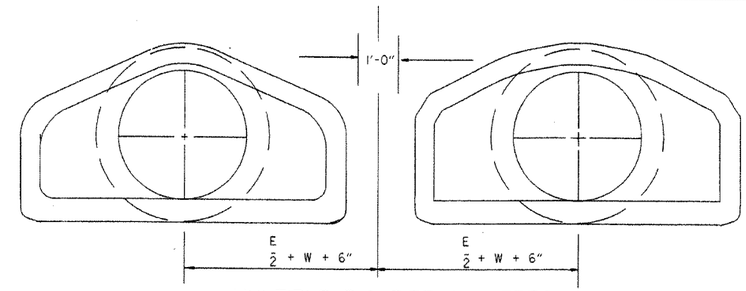
D. DIA.	GAUGE	A I" ±	B. MAX.	H I" ±	L 1½" ±	W 2" ±	S
		INCHES					
12	16	6	6	6	21	24	2½:1
15	16	7	8	6	26	30	2½:1
18	16	8	10	6	31	36	2½:1
21	16	9	12	6	36	42	2½:1
24	16	10	13	6	41	48	2½:1
30	14	12	16	8	51	60	2½:1
36	14	14	19	9	60	72	2½:1
42	12	16	22	11	69	84	2½:1
48	12	18	27	12	78	90	2½:1
54	12	18	30	12	84	102	2:1
60	12	18	33	12	87	114	1½:1
66	12	18	36	12	87	120	1½:1
72	12	18	39	12	87	126	1 1/3:1

C.M. ARCH PIPE

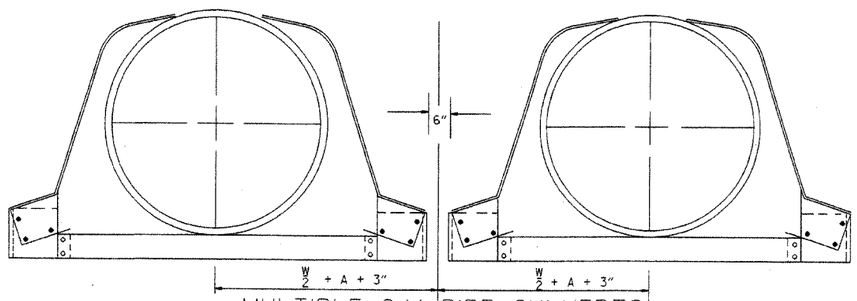
EQUIV. DIA.	SPAN	RISE	A I" ±	B MAX.	H I" ±	L 1½" ±	W 2" ±	S	GAUGE
	INCHES								
15"	17	13	7	9	6	19	30	2½:1	16
18"	21	15	7	10	6	23	36	2½:1	16
21"	24	18	8	12	6	28	42	2½:1	16
24"	28	20	9	14	6	32	48	2½:1	16
30"	35	24	10	16	6	39	60	2½:1	14
36"	42	29	12	18	8	46	75	2½:1	14
42"	49	33	13	21	9	53	85	2½:1	12
48"	57	38	18	26	12	63	90	2½:1	12
54"	64	43	18	30	12	70	102	2½:1	12
60"	71	47	18	33	12	77	114	2¼:1	12

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

END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS



MULTIPLE R.C. PIPE CULVERTS



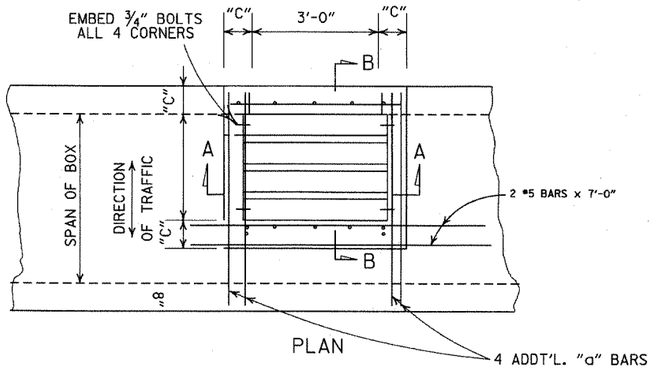
MULTIPLE C.M. PIPE CULVERTS

DATE	REVISION	FILMED
10-18-96	REVISED ASTM REF. TO AASHTO	10-18-96
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

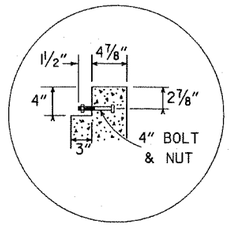
ARKANSAS STATE HIGHWAY COMMISION

FLARED END SECTION

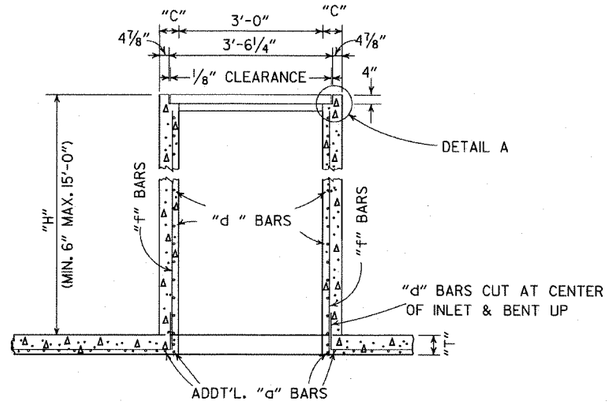
STANDARD DRAWING FES-2



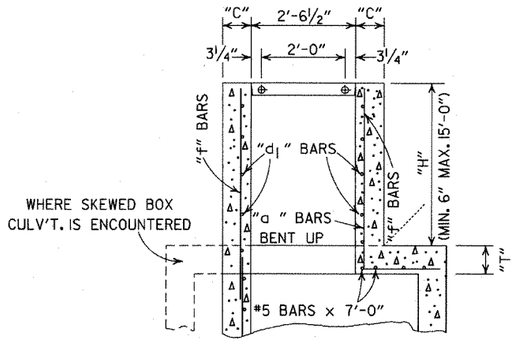
PLAN



DETAIL A



SECTION A-A

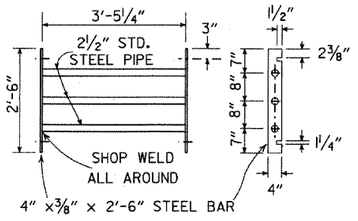


SECTION B-B

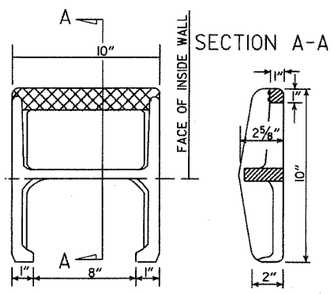
NOTE: ADDT'L.REINF. STEEL TO BE INCLUDED IN UNIT PRICE BID PER TYPE "TM" D.I.

DIMENSIONS & REINF. BARS FOR D.I. TO BE THE SAME AS THOSE SHOWN ON APPLICABLE STD. BARREL DRAWING FOR R.C. BOX CULVERTS.

DROP INLET TYPE "TM" FOR REINFORCED CONC. BOX CULVERTS



GRATE DETAIL



APPROX. WEIGHT = 11 LBS. (CAST IRON)

PLAN

NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

DETAIL OF STEP FOR DROP INLET

GENERAL NOTES:

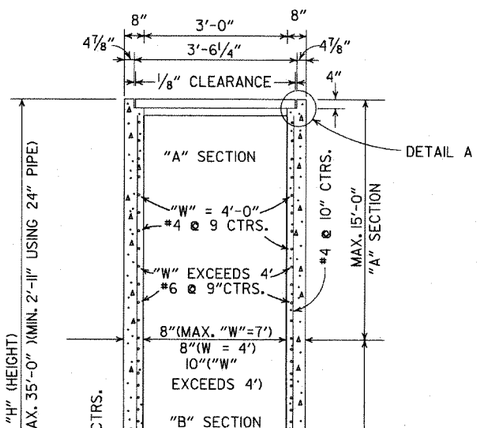
1. STEEL PIPE FOR GRATES AND BOLTS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 807. BOLTS SHALL CONFORM TO ONE OF THE FOLLOWING: ASTM A193, GRADE B8 CLASS 1 OR 2, ASTM A307 OR AASHTO M 164.
2. STEEL PIPE FOR GRATES SHALL BE "STANDARD WEIGHT" PIPE CONFORMING TO ASTM A53 NATIONAL STANDARD PIPE.
3. BOLTS, NUTS, WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M 232 OR AASHTO M 298, CLASS 40 OR 50.
4. ALL EXPOSED CORNERS TO HAVE ¾" CHAMFER.
5. ALL #4 AND #5 REINFORCING BARS TO HAVE 1½" COVER. LARGER SIZES TO HAVE 2" COVER.
6. THE COMPLETE PIPE GRATE SHALL BE PAINTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

TABLE OF "W" DIMENSIONS

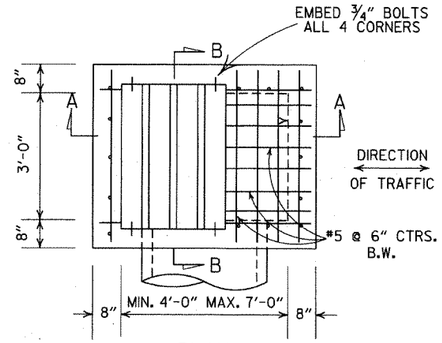
69

I.D. PIPE	SKEW OF CROSS DRAIN		
	STRAIGHT	30°	45°
	"W"	"W"	"W"
24"	4'-0"	4'-0"	4'-0"
30"	4'-0"	4'-0"	4'-5"
36"	4'-0"	4'-3"	5'-3"
42"	4'-3"	4'-11"	6'-1"
48"	4'-10"	5'-7"	6'-11"

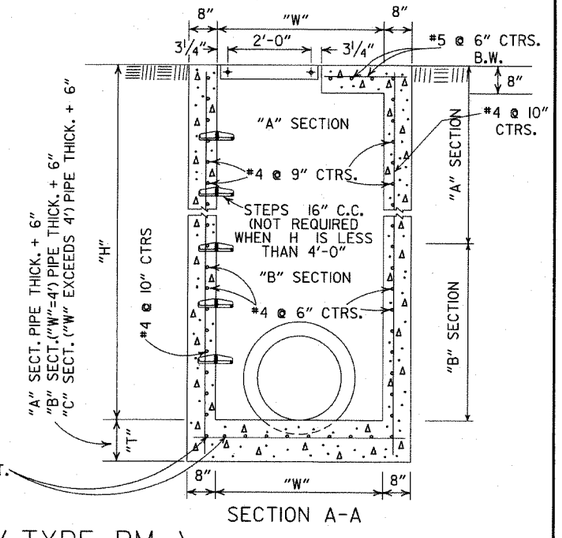
NOTE: DIMENSIONS SHOWN ABOVE ARE FOR PIPES INTERSECTING DROP INLET ON ONE SIDE ONLY. FOR SKEWED PIPES INTERSECTING BOTH SIDES OF DROP INLET, "W" WILL NEED TO BE INCREASED OR AXIS OF INTERSECTING PIPES WILL NEED TO BE SHIFTED.



SECTION B-B



PLAN



SECTION A-A

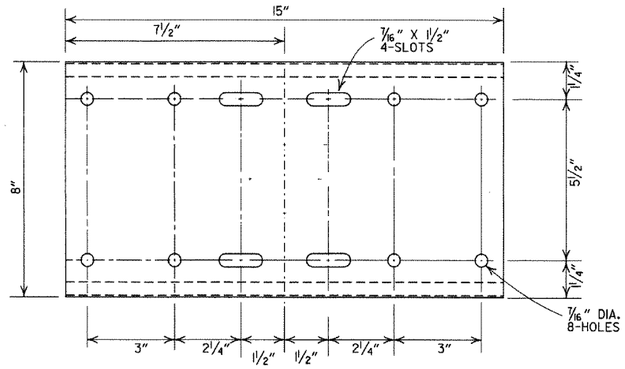
DROP INLET(TYPE RM)

8-22-02	ADDED & REVISED DIMENSION TO SECTION A-A	
1-12-00	CORRECTED DIMENSION ON SECTION B-B	
11-06-97	ADDED DIMENSION TO SECTION A-A	
10-18-96	REVISED ASTM REF. TO AASHTO AND ADDED NOTE TO TABLE OF "W" DIMENSIONS	
10-1-92	ADDED DIRECTION OF TRAFFIC	10-1-92
8-15-91	ADDED NOTE ABOUT PAINTING OF GRATE	8-15-91
11-30-89	ALTERED DETAIL A	11-30-89
7-15-88	REVISED STEP DETAIL,TM & RM D.I. & GRATE DETAIL	719-7-15-88
10-2-72	REVISED AND REDRAWN	542-10-2-72
REVISED		DATE FILMED

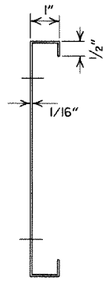
ARKANSAS STATE HIGHWAY COMMISSION

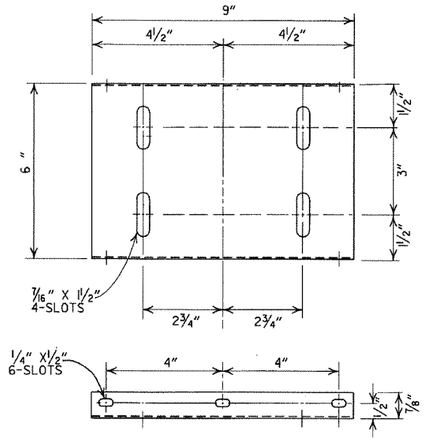
DETAILS OF DROP INLETS

STANDARD DRAWING FPC-9D

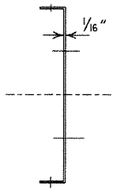


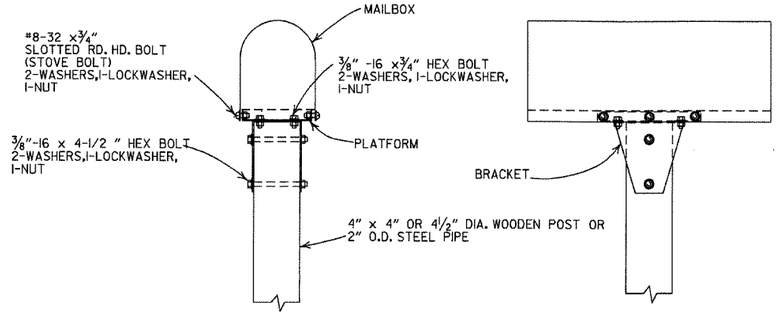
SHELF



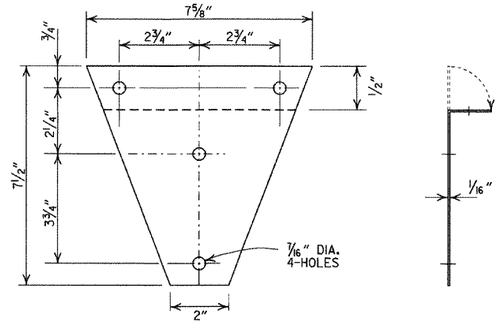


PLATFORM

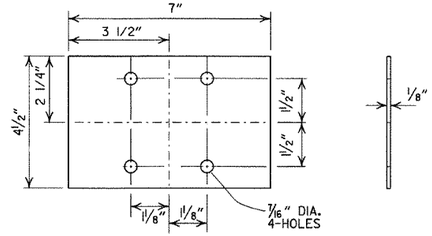




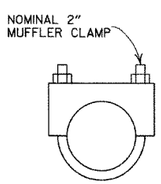
SINGLE INSTALLATION



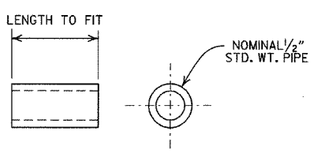
BRACKET



ANTI-TWIST PLATE



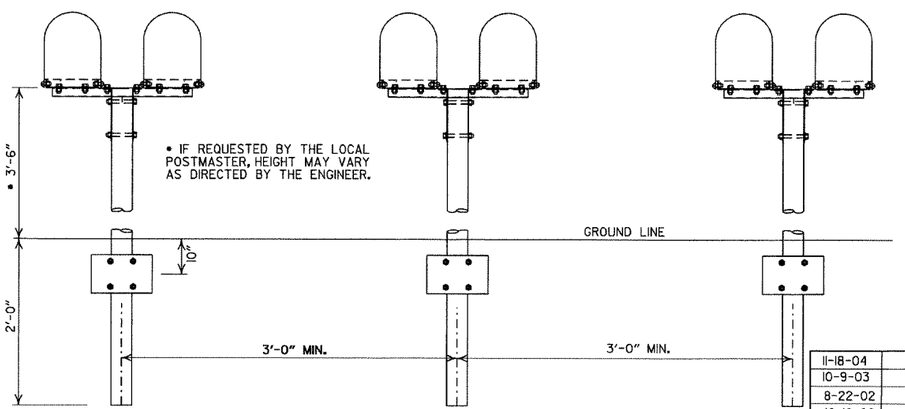
CLAMP



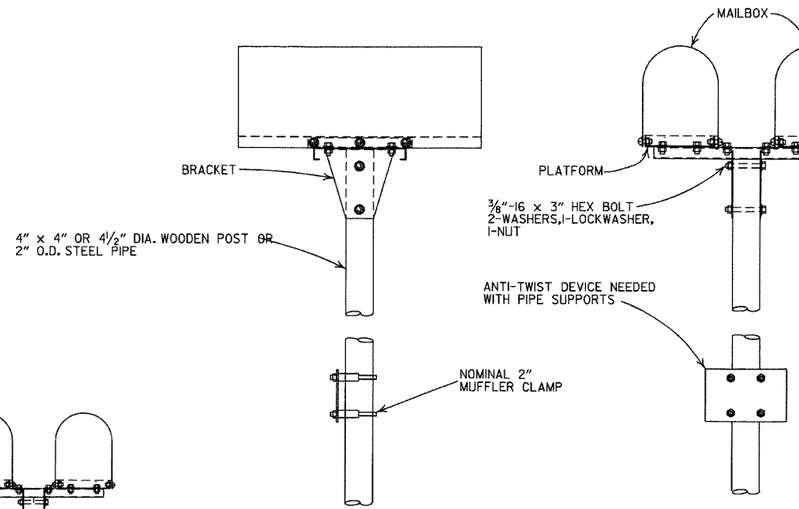
SPACER

GENERAL NOTES

1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
2. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
3. MAILBOX SHELF, BRACKET & PLATFORM SHALL BE GALVANIZED OR PAINTED STEEL, HOWEVER TREATED WOOD MAY BE USED WITH WOODEN POSTS. THE WOODEN SHELF, BRACKET & PLATFORM SHALL BE A MINIMUM OF ¾" THICK AND SHALL BE ASSEMBLED WITH BOLTS OF THE APPROPRIATE LENGTH WITH SIX 8 X¾" 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



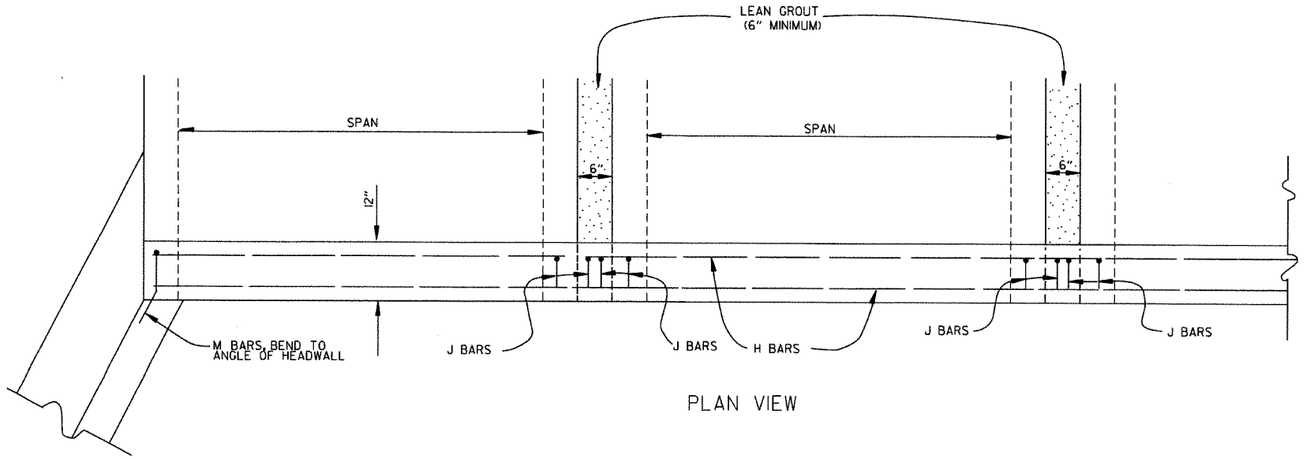
DOUBLE INSTALLATION

DATE	FILMED	REVISION
11-18-04		REVISED NOTES
10-9-03		REVISED NOTE 6
8-22-02		REVISED NOTE 6
10-18-96		CORRECTED AASHTO
10-1-92		CORRECTED SPELLING
9-26-91		NEW PHONE NUMBER
8-15-91		ADDED NOTE
11-30-89		ADJUSTED HEIGHT & ADDED NOTE
2-16-89		DELETED SLOTS FROM SHELF & PLTF
11-17-88	10-1-92	ADJUSTED DIMENSIONS OF STEEL POSTS
7-15-88	20-7-15-88	ISSUED

ARKANSAS STATE HIGHWAY COMMISSION

MAILBOX DETAILS

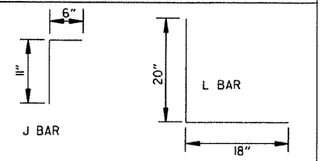
STANDARD DRAWING MB-1



PLAN VIEW

BAR LIST

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



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

GENERAL NOTES

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

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

ALL EXPOSED CORNERS TO HAVE 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.

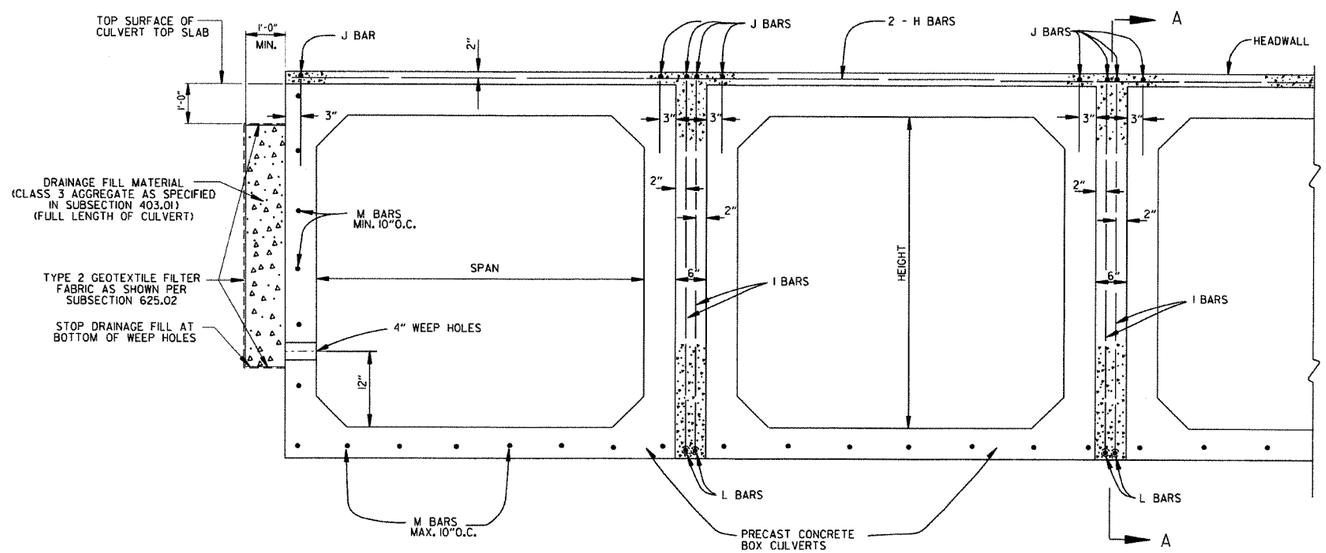
THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

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.

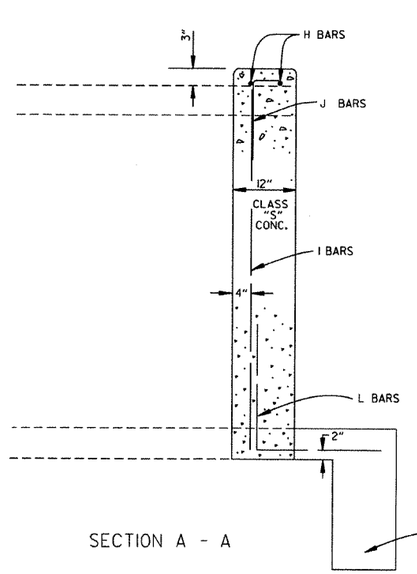
DRAINAGE FILL MATERIAL WITH GEOTEXTILE FABRIC IS REQUIRED AT THE EXTERIOR WALLS OF THE ASSEMBLED CULVERT, SEE DETAILS ON THIS DRAWING.

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.



END VIEW



SECTION A - A

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

ARKANSAS STATE HIGHWAY COMMISSION

PRECAST CONCRETE BOX CULVERTS

STANDARD DRAWING PBC-1

REINFORCED CONCRETE ARCH PIPE DIMENSIONS

EQUIV. DIA.	SPAN		RISE	
	AASHTO M 206	AHTD NOMINAL	AASHTO M 206	AHTD NOMINAL
INCHES	INCHES			
15	18	18	11	11
18	22	22	13½	14
21	26	26	15½	16
24	28½	29	18	18
30	36¼	36	22½	23
36	43⅜	44	26⅝	27
42	51⅛	51	31 7/16	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	87⅛	87
120	154	154	96⅞	97
132	168¾	169	106½	107

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

REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE DIMENSIONS

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

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

CONSTRUCTION SEQUENCE

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

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

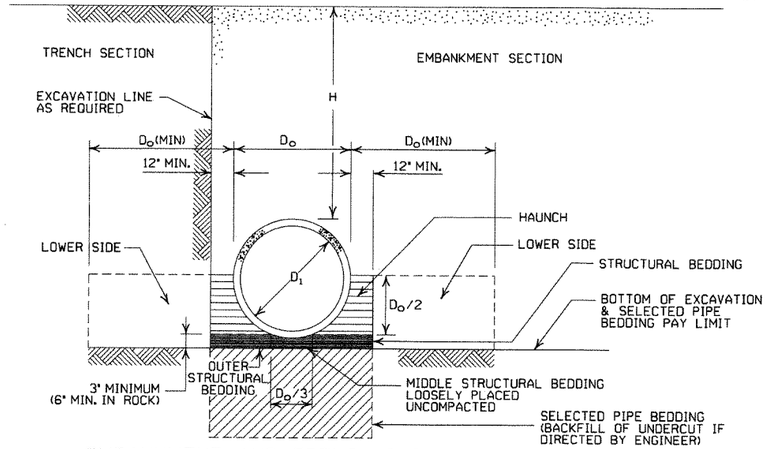
- LEGEND -

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

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

* SM-3 WILL NOT BE ALLOWED.

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



EMBANKMENT AND TRENCH INSTALLATIONS

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

GENERAL NOTES

1. CONCRETE PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2003 EDITION), WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. CONCRETE PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. ALL PIPE SHALL CONFORM TO SECTION 606. CIRCULAR R.C. PIPE CULVERTS SHALL CONFORM TO AASHTO M170, R.C. ARCH PIPE CULVERTS SHALL CONFORM TO AASHTO M206 AND HORIZONTAL ELLIPTICAL PIPE CULVERTS SHALL CONFORM TO AASHTO M207.
4. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT.
5. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS.
6. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
7. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
8. NOT MORE THAN ONE LIFTING HOLE MAY BE PROVIDED IN CONCRETE PIPE TO FACILITATE HANDLING. HOLE MAY BE CAST IN PLACE, CUT INTO THE FRESH CONCRETE AFTER FORMS ARE REMOVED, OR DRILLED. THE HOLE SHALL NOT BE MORE THAN TWO INCHES IN DIAMETER OR TWO INCHES SQUARE. CUTTING OR DISPLACEMENT OF REINFORCEMENT WILL NOT BE PERMITTED. SPALLED AREAS AROUND THE HOLE SHALL BE REPAIRED IN A WORKMANLIKE MANNER. LIFTING HOLE SHALL BE FILLED WITH MORTAR, CONCRETE, OR OTHER METHOD AS APPROVED BY THE ENGINEER.
9. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
10. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS THE HAUNCH), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."

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

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

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

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.

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

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

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

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

MAXIMUM HEIGHT OF FILL "H" OVER 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

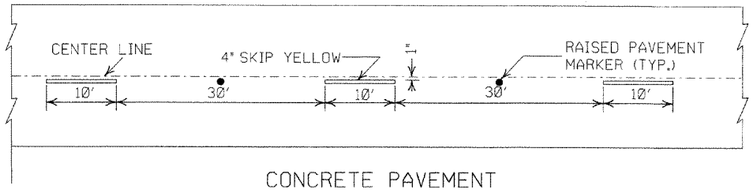
NOTE: TYPE 1 INSTALLATION WILL NOT BE ALLOWED FOR ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS.

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

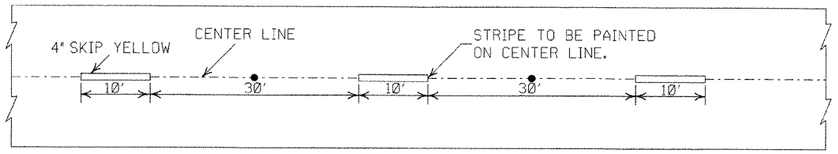
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1

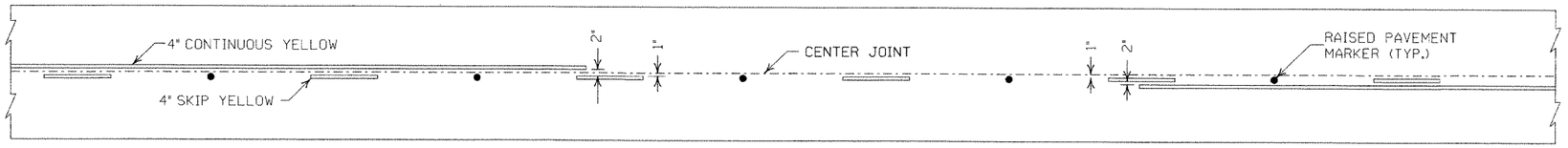


CONCRETE PAVEMENT

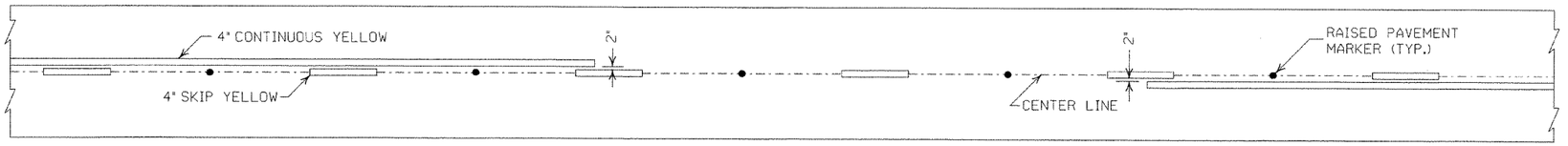


ASPHALT PAVEMENT

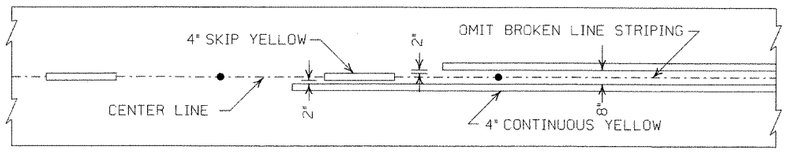
BROKEN LINE STRIPING



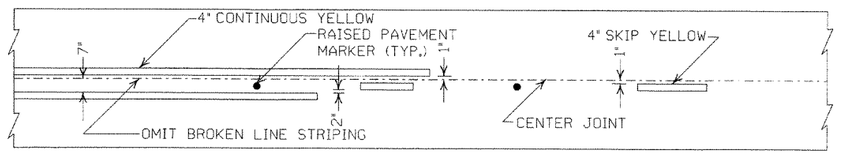
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

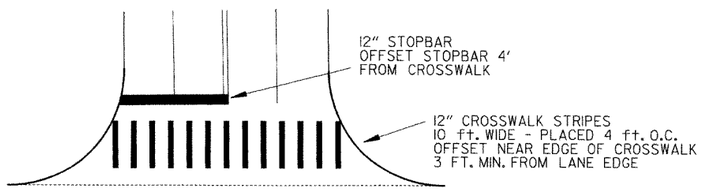


ASPHALT PAVEMENT



CONCRETE PAVEMENT

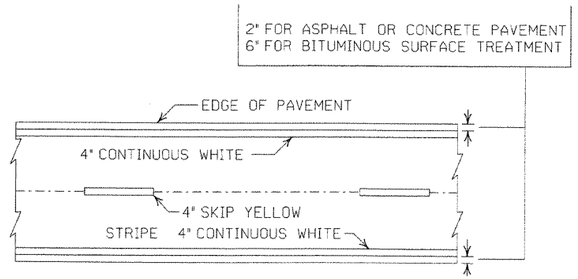
STRIPING AT ADJACENT NO PASSING LANES



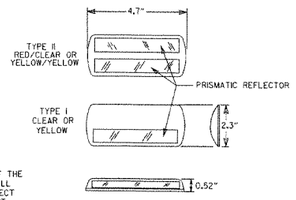
CROSSWALK AND STOPBAR DETAILS

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.



PAVEMENT EDGE LINE MARKING



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

DETAIL OF STANDARD RAISED PAVEMENT MARKERS

GENERAL NOTES:

THIS DRAWING SHOULD BE CONSIDERED AS TYPICAL ONLY AND THE FINAL LOCATION OF THE STRIPING AND RAISED PAVEMENT MARKERS SHALL BE DETERMINED BY THE ENGINEER.

THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST REVISION.

NOTE:

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

DATE	REVISION	
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

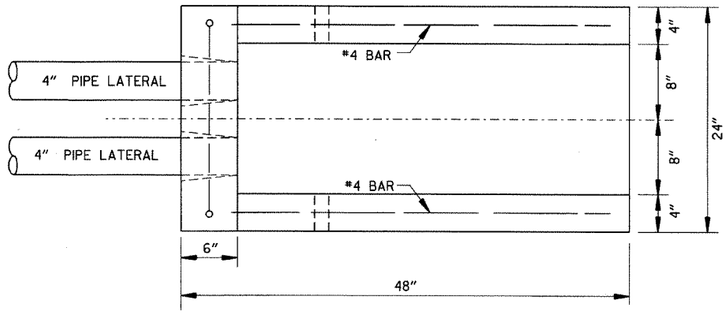
PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

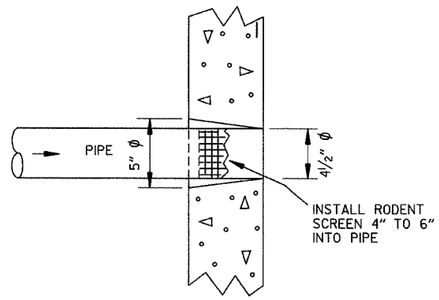
NOTE:
1. GRANULAR BACKFILL TO BE SUBSIDIARY TO PIPE UNDERDRAIN.

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

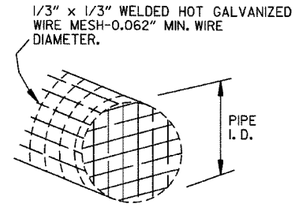
3. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC. LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.



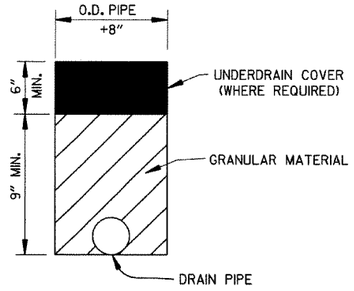
PLAN VIEW

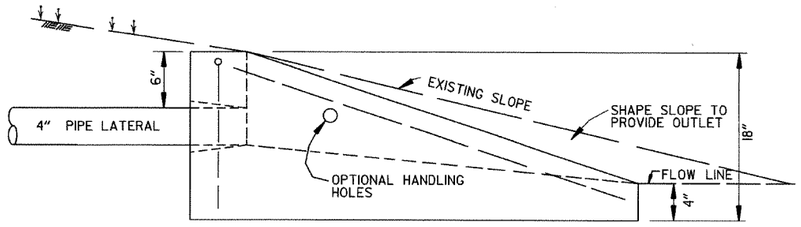


DETAIL OF HOLE FOR 4" PIPE

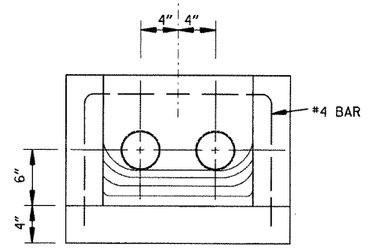


DETAIL OF RODENT SCREEN

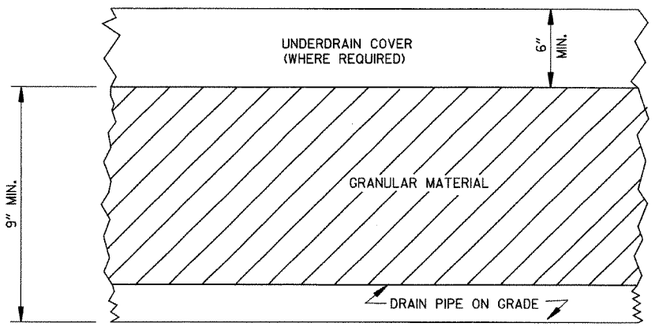




SIDE VIEW

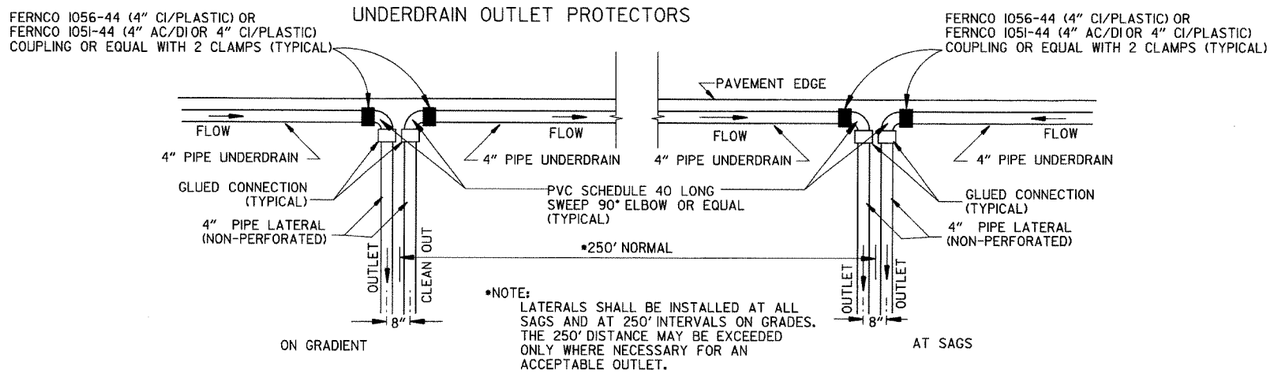


FRONT VIEW



DETAILS OF PIPE UNDERDRAIN

UNDERDRAIN OUTLET PROTECTORS



DETAIL OF PIPE UNDERDRAIN LATERALS WHEN PLACED ALONG PAVEMENT EDGE

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

DATE	REVISION	DATE FILMED
4-10-03	REVISED NOTE 3	
1-12-00	REVISED DETAIL OF UNDERDRAIN LATERALS	
11-18-98	REVISED NOTE	
10-18-96	REVISED MIN. DEPTH & GEOTEXTILE FABRIC	
4-26-96	ADDED LATERAL NOTE; 5½" TO 5"	
11-22-95	REVISED LATERALS	
7-20-95	REVISED LATERALS & ADDED NOTE	
11- 3-94	REVISED FOR DUAL LATERALS	11- 3-94
10- 1-92	SUBSTITUTED GEOTEXTILE	10- 1-92
8-15-91	ADDED POLYEDTHYLENE PIPE	8-15-91
11- 8-90	DELETED ALTERNATE NOTE	11- 8-90
1-25-90	ADDED 4" SNAP ADAPTER	1-25-90
11-30-89	DEL. (SUBGRADE); ADDED (WHERE REQUIRED)	11-30-89
7-15-88	ISSUED P.L.M.	647-7-15-88

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF PIPE UNDERDRAIN

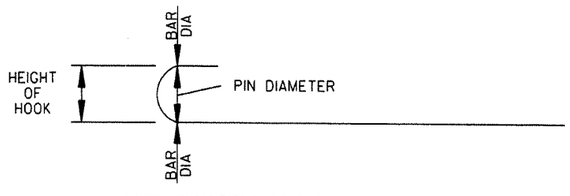
STANDARD DRAWING PU-1

7-20-95 INSTD.PUI

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

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

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



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

OVERALL HEIGHT OF HOOKED BAR DIAGRAM

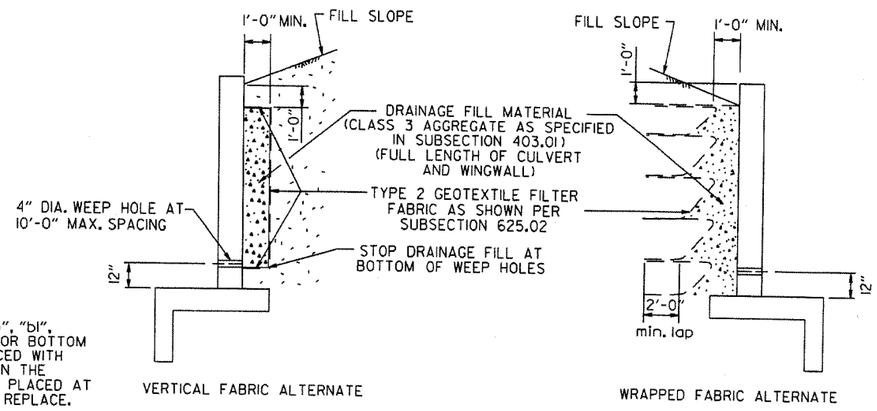
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

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

REPLACEMENT BAR LENGTHS TABLE

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

L = "OW" - 3 INCHES



WINGWALL & CULVERT DRAINAGE DETAIL

REINFORCED CONCRETE BOX CULVERT GENERAL NOTES

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

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

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

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

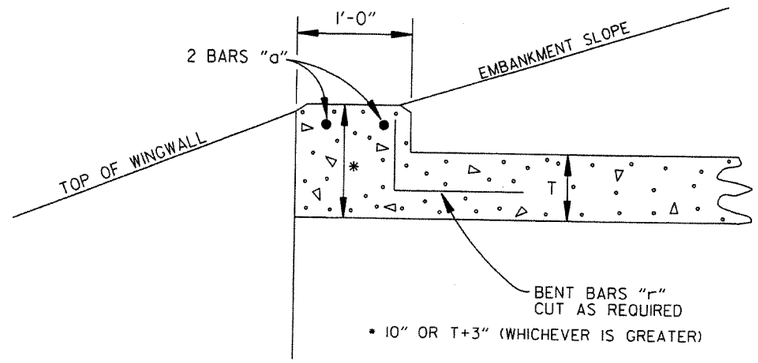
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

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

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

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

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



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

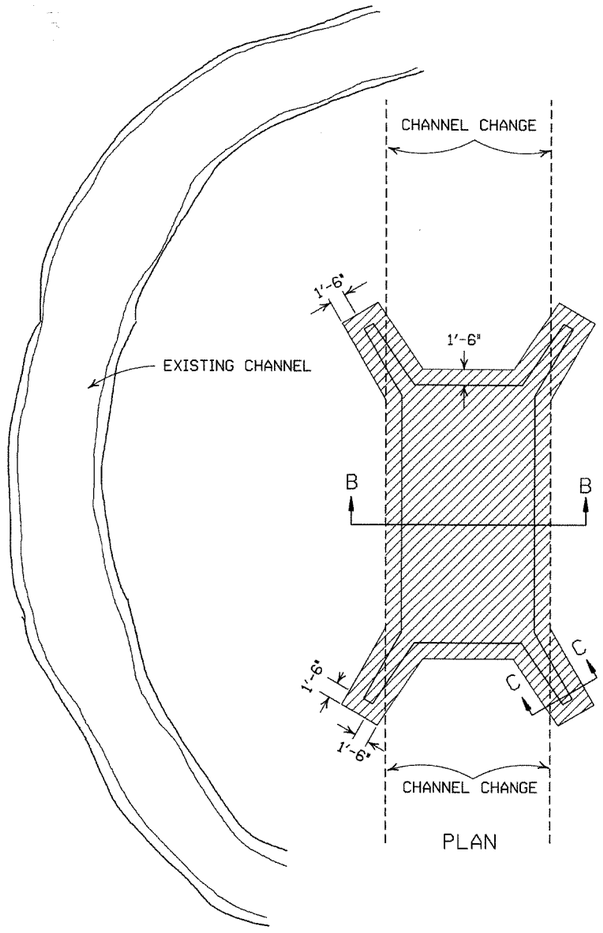
R.C. BOX CULVERT HEADWALL MODIFICATIONS

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

ARKANSAS STATE HIGHWAY COMMISSION

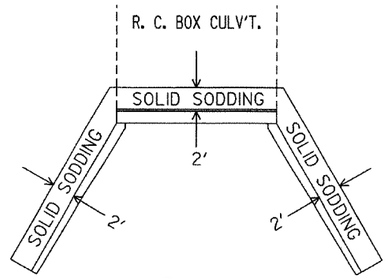
REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1



PLAN

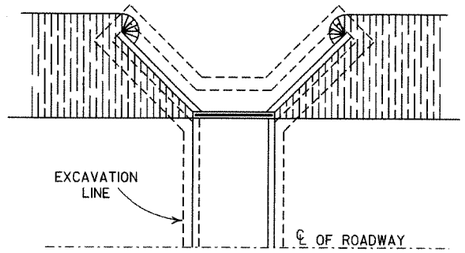
SOLID SODDING



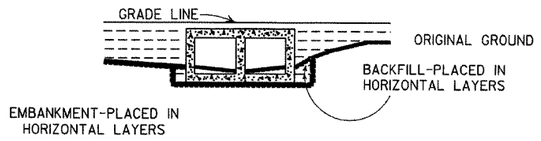
PLAN

PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

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

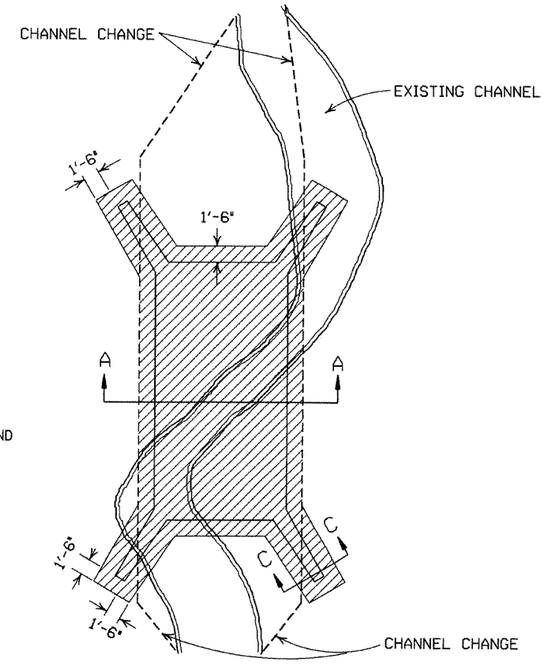


PLAN

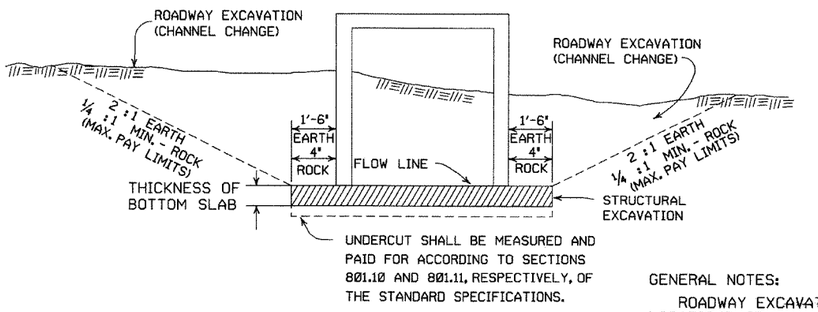


LONGITUDINAL SECTION

BACKFILL DETAILS FOR BOX CULVERT

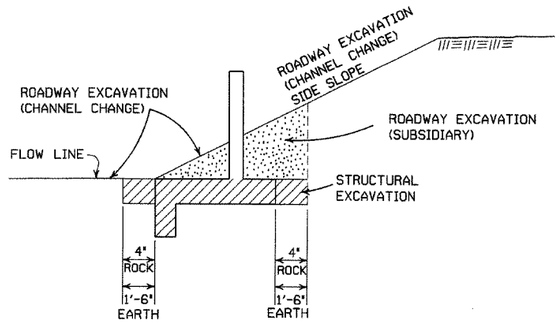


PLAN

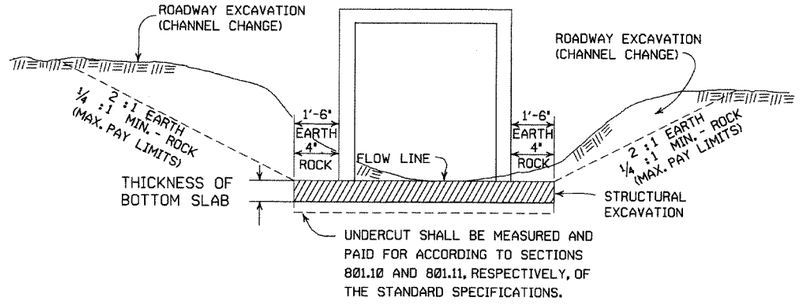


SECTION B-B

DETAILS FOR NEW CHANNELS



SECTION C-C



SECTION A-A

DETAILS THROUGH EXISTING CHANNELS

GENERAL NOTES:

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

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

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

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

ARKANSAS STATE HIGHWAY COMMISSION

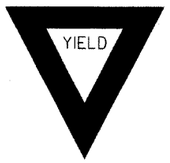
EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS

STANDARD DRAWING RCB-2

R1-1

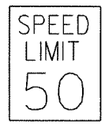
STANDARD 30"X30"
EXPRESSWAY 36"X36"
SPECIAL 48"X48"

R1-2



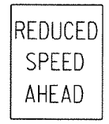
STD. 36"X36"X36"
EXPWY. 48"X48"X48"
FWY. 60"X60"X60"

R2-1



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

R2-5A



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

R2-5C

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

R4-1

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

R4-2

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

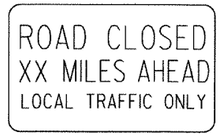
R5-1

STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

R11-2

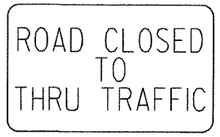
48"X30"

R11-3A



60"X30"

R11-4

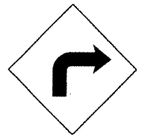


60"X30"

RSP-1

48"X30"

W1-1



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

W1-2

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

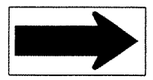
W1-3

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"

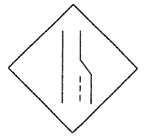
W3-1

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

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

W21-2

STD. 30"X30"
SPECIAL 36"X36"

W21-5

STD. 30"X30"
SPECIAL 36"X36"

W24-1

STD. 36"X36"

W1-4b

STD. 48"X48"

R56-1

STD. 18"X18"

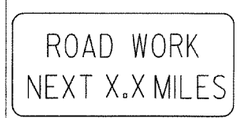
W8-11

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

W8-9

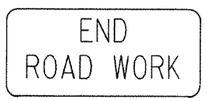
STD. 36"X36"
FWY. 48"X48"

G20-1



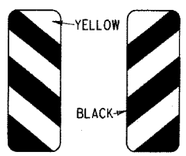
60"X24"

G20-2



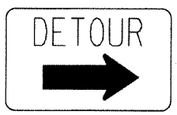
48"X24"

OM-3L OM-3R



12"X36"

M4-9



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

M4-10

48"X18"

R55-1

FINES DOUBLE
IN WORK ZONES *

WHEN WORKERS
ARE PRESENT **

36"X60"

* USE 6" C LETTERS
** USE 4" D LETTERS

ADVANCE DISTANCES
(XXXX)

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

GENERAL NOTES:

1. ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.
2. TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND REMOVED THEREAFTER.
3. EXISTING SIGNS AND CONSTRUCTION SIGNS SHALL BE KEPT IN PROPER POSITION, AND BE CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED. SIGNS THAT ARE DAMAGED, DEFACED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED.
- 4. SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SQ. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE.
- 5. SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3.
6. POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE.
7. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS.
8. FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. MOST OF THE SIGNS SHOWN ARE ORIENTED TO THE RIGHT. HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT.
10. R55-1 SIGNS SHALL BE PLACED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE SIGN SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN.

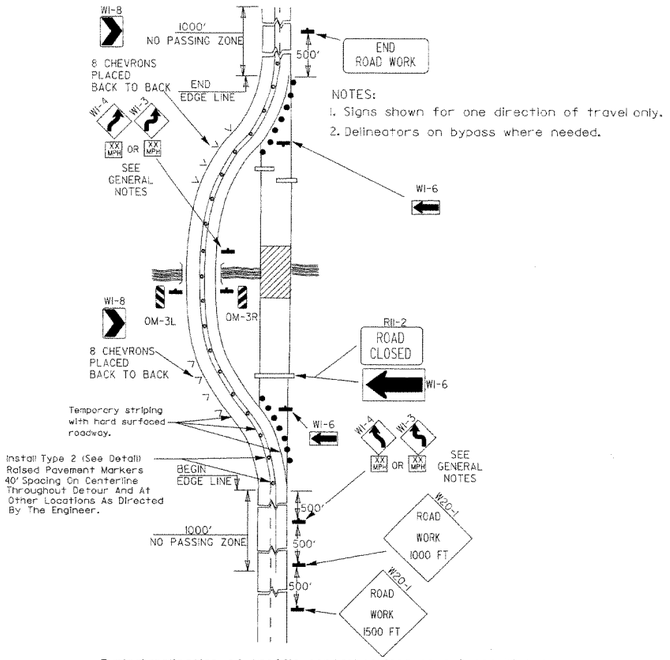
- NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED FOR ALL PROJECTS.

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

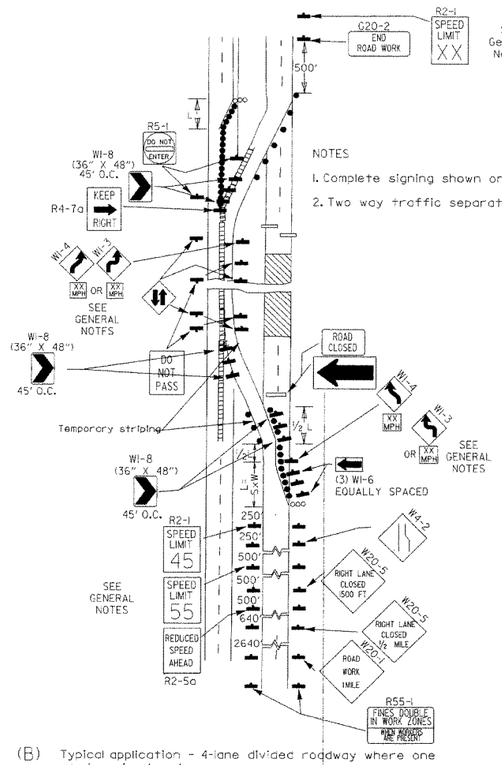
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

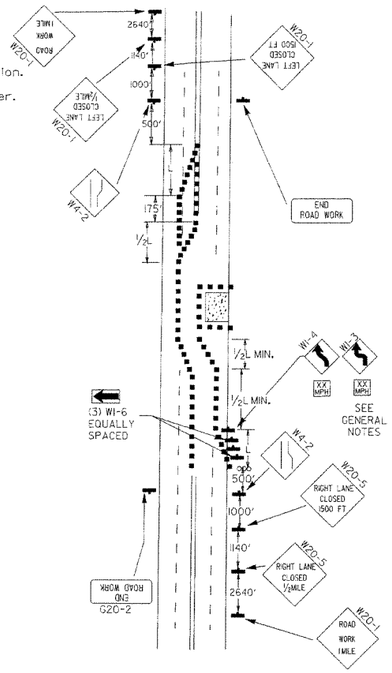
STANDARD DRAWING TC-1



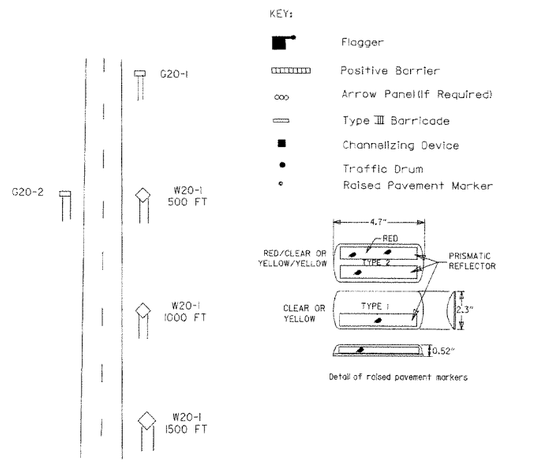
(A) Typical application of traffic control devices on a 2-lane highway where the entire roadway is closed and a bypass detour is provided.



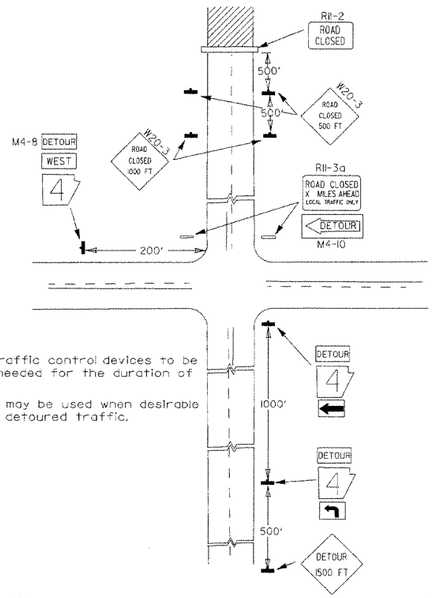
(B) Typical application - 4-lane divided roadway where one roadway is closed.



(C) Typical application - 4-lane undivided roadway where half of the roadway is closed.

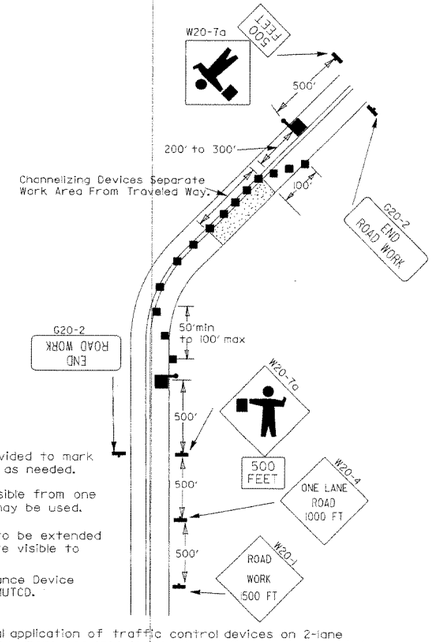


Typical advance warning sign placement



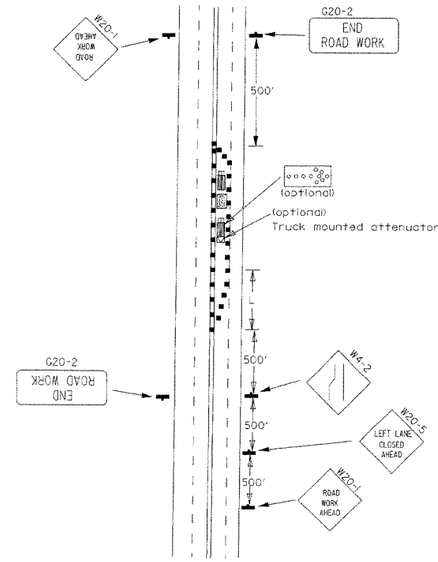
(D) Typical application - roadway closed beyond detour point.

NOTES:
1. Regulatory traffic control devices to be modified as needed for the duration of the detour.
2. Street names may be used when desirable for directing detoured traffic.



(E) Typical application of traffic control devices on 2-lane highway where one lane is closed and flagging is provided.

NOTES:
1. Flood lights should be provided to mark flagger stations at night as needed.
2. If entire work area is visible from one station, a single flagger may be used.
3. Channelizing devices are to be extended to a point where they are visible to approaching traffic.
4. Automated Flagger Assistance Device (AFAD) optional. Refer to MUTCD.



(F) Typical application - 4-lane undivided roadway with inside lane closed.

Taper formulae:

L=SxW for speeds of 45mph or more.

$L = \frac{WS^2}{60}$ for speeds of 40mph or less.

Where:
L= Minimum length of taper.
S= Numerical value of posted speed limit prior to work or 85th percentile speed.
W= Width of offset.

GENERAL NOTES:

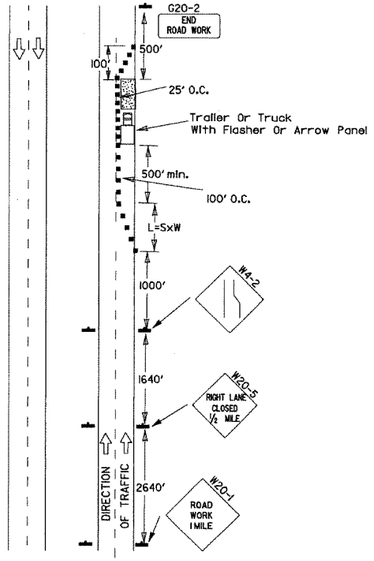
1. Advisory speed posted on W1-3 or W1-4 curve warning signs to be determined at site. Use W1-4 when speed is greater than 30mph and W1-3 when 30mph or less.
2. When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the R2-5A shall be installed at that location. Additional R2-1 45mph speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1(xx) shall be installed to match original speed limit.
3. When the existing speed limit is 65mph and the plans require a speed limit of 55mph, the R2-1(45) shall be omitted. Additional R2-1 55mph speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1(xx) shall be installed to match original speed limit.
4. The maximum spacing between channelizing devices in a taper should be approximately equal in feet to the speed limit. Beyond the taper, maximum spacing shall be two times the speed limit, or as directed by the Engineer.
5. Warning lights and/or flags may be mounted to signs or channelizing devices at night as needed.
6. Pavement markings no longer applicable which might create confusion in the minds of vehicle operators shall be removed or obliterated as soon as practicable.
7. 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.

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

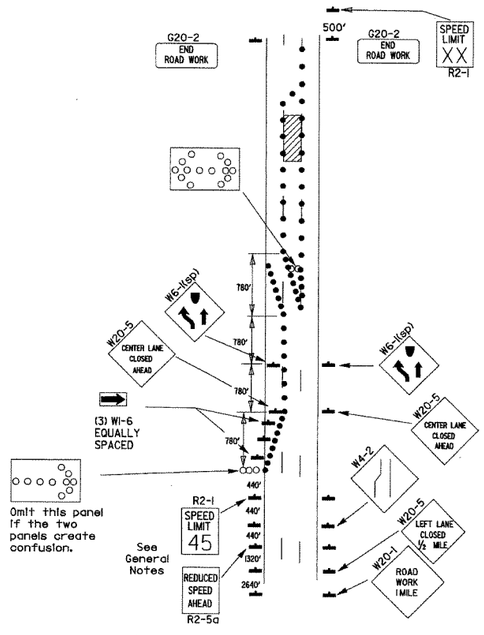
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

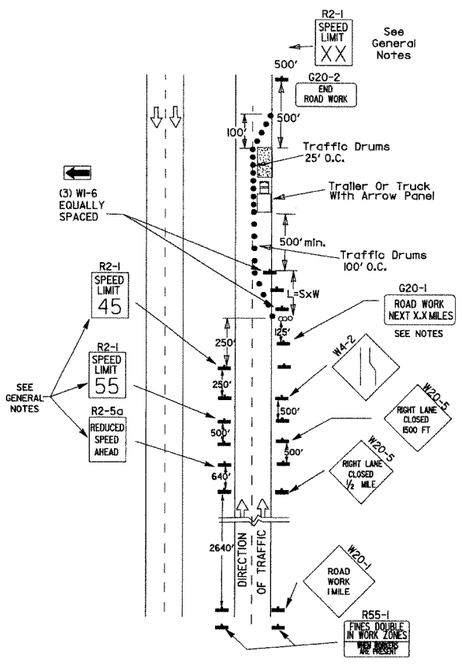
STANDARD DRAWING TC-2



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



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



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

KEY:

ooo Arrow Panel (If Required)

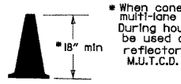
■ Channelizing Device

● Traffic drum

GENERAL NOTES:

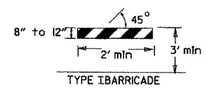
1. A speed limit reduction may be implemented ONLY when designated in the plan or when recommended by the Roadway Design Division.
2. When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the R2-5A shall be installed at that location. Additional R2-1 45mph speed limit signs shall be installed at a maximum of 1mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
3. When the existing speed limit is 65mph and the plans require a speed limit of 55mph, the R2-1(45) shall be omitted. Additional R2-1 55mph speed limit signs shall be installed at a maximum of 1mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
4. The maximum spacing between channelizing devices in a taper should be approximately equal in feet to the speed limit. Beyond the taper, maximum spacing shall be two times the speed limit or as directed by the Engineer.
5. Warning lights and/or flags may be mounted to signs or channelizing devices at night as needed.
6. Pavement markings no longer applicable which might create confusion in the minds of vehicle operators shall be removed or obliterated as soon as practicable.
7. The G20-1 sign will be required on jobs of over two miles in length. When the lane closure is not at the beginning of the project, the G20-1 sign shall be erected 125' in advance of the job limit. Additional W20-1 (1 MILE) signs are not required in advance of lane closures that begin inside the project limits.
8. Flaggers shall use STOP/SLOW paddles for controlling traffic through work zones. Flags may be used only for emergency situations.
9. All plastic drums and cones shall meet the requirements of NCHRP-350 or Manual For Assessing Safety Hardware (MASH).
10. Trailer mounted devices such as arrow panels and portable changeable message signs shall be delineated by affixing conspicuity material in a continuous line on the face of the trailer. When placed on or adjacent to the shoulder and not behind a positive barrier, these devices shall be delineated by placing five (5) traffic drums, equally spaced along the traffic side of the device.

Channelizing devices



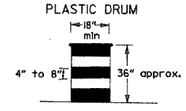
* When cones are used on freeways and multi-lane highways, they shall be 28" min. During hours of darkness, 28" cones shall be used on all roadways, and shall be reflectorized in accordance with the M.U.T.C.D.

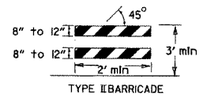
CONES



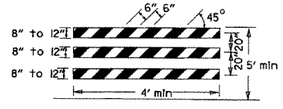
TYPE I BARRICADE

PLASTIC DRUM



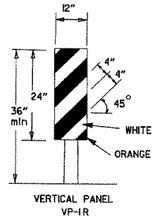


TYPE II BARRICADE



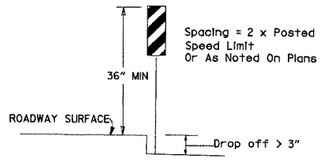
TYPE III BARRICADE

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



VERTICAL PANEL
VP-1R

VERTICAL PANEL PLACEMENT



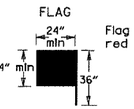
TRAFFIC CONTROL DEVICES
FOR
VERTICAL PAVEMENT DIFFERENTIALS

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-1 and 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.

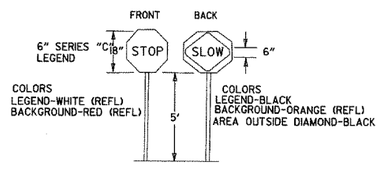
When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.

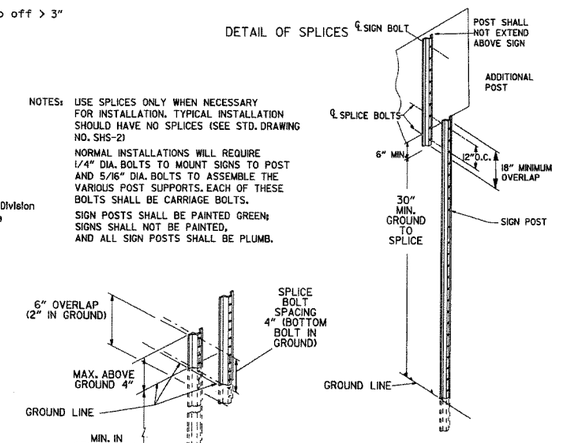
FLAG



Flag shall be of good grade red material

STOP SLOW PADDLE

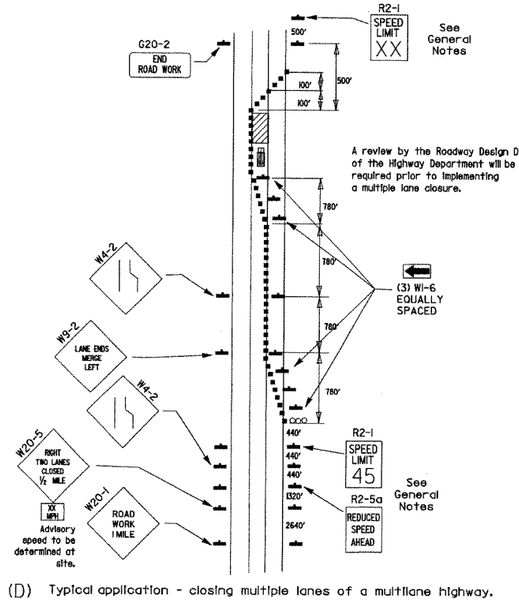




NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-2)

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

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



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

DATE	REVISION	FILMED
10-15-09	ADDED REFERENCE TO MASH	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED NOTE	
10-1-98	ADDED NOTE	
4-03-97	ADDED (SP) TO W6-1 & REVISED TRAFFIC CONTROL DEVICES NOTE	
10-18-96	ADDED R55-1	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL, TEXT	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

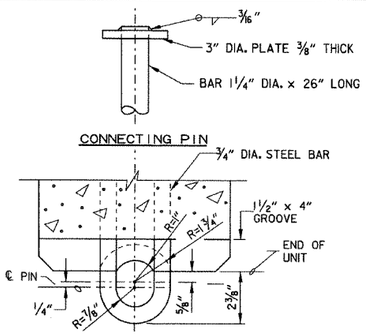
ARKANSAS STATE HIGHWAY COMMISSION

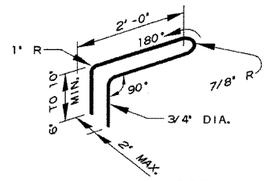
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

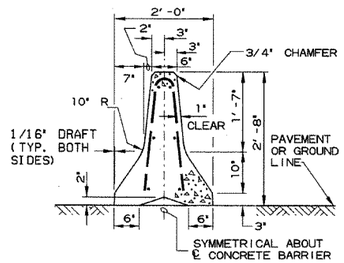
STANDARD DRAWING TC-3

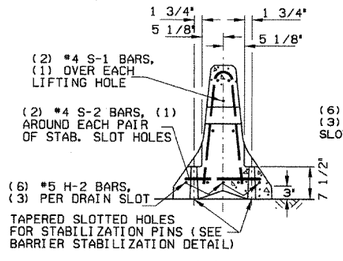
REINFORCING BAR TABLE PER BARRIER UNIT

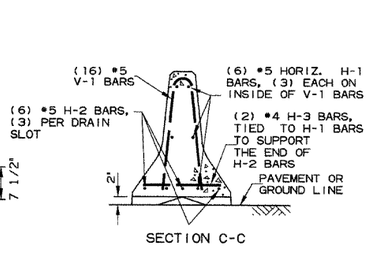
MARK	LOCATION	BAR SIZE	(NO. BARS)	SKETCH
H-1	HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS	#5	(6)	19'-3"
H-2	CENTERED ABOVE DRAIN SLOTS LONG. & TRANSVERSELY	#5	(6)	6'-6"
H-3	TIED ABOVE H-1 BARS TO SUPPORT H-2, TIED TO V-1	#4	(2)	1'-6"
S-1	OVER LIFT HOLES	#4	(2)	2'-5" LIFTING HOLE 90° 3 3/8" R
S-2	HORIZ.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

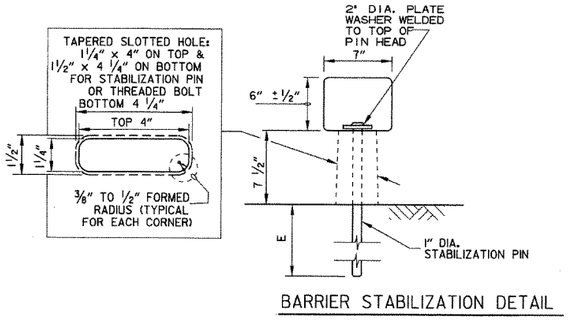


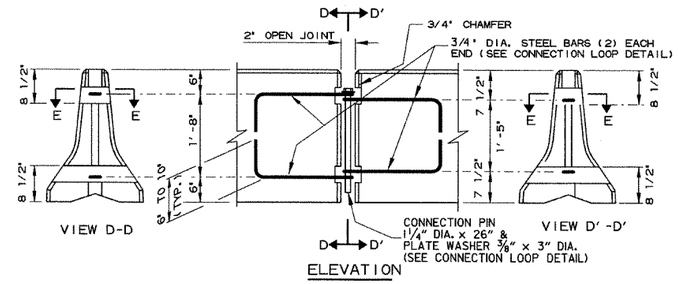


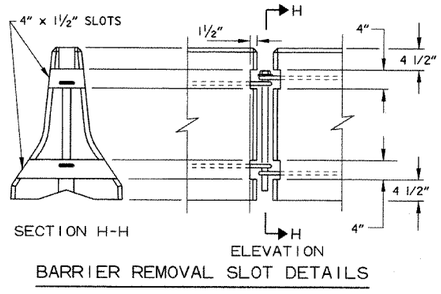


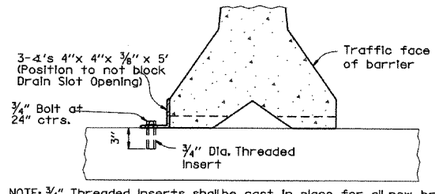






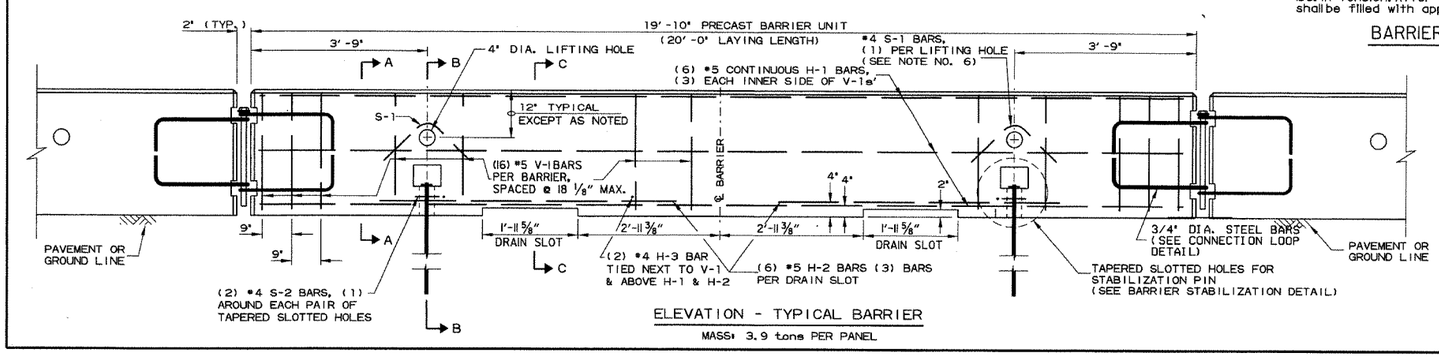






NOTE: 3/4" Threaded Inserts shall be cast in place for all new bridge decks and drilled and grouted for existing bridge decks to be retained. Inserts shall have a minimum ultimate load capacity of 8000 lbs. in tension. After removal of barrier, bolts, and angles, the inserts shall be filled with approved non-shrink epoxy.

BARRIER STABILIZATION DETAIL
BRIDGE DECKS



ELEVATION - TYPICAL BARRIER

MASS: 3.9 tons PER PANEL

General Notes

(1) The contractor shall furnish the Precast Concrete Barrier Units and shall be responsible for the manufacture, shipment, storage, placement and removal. At the completion of the project, the precast units will remain the property of the contractor.

(2) Materials shall meet the following minimum requirements:
Concrete: 2500 psi compressive strength at 28 days.
Reinforcing Steel: AASHTO M 31 or M 53, Grade 60
Structural Steel: AASHTO-M270 Grade 36 shall be used for the Connection Pin, Connection Loops, and Stabilization Pins. A One Piece Pin with a 3" rounded top may be used in place of the detailed Connection Pin.
Delineators: Delineators shall be mounted at 10' spacing on top of precast barrier.

In applications where barrier wall is within 6 feet of a traffic lane, additional delineators shall be placed on the barrier at 10' spacing approximately one (1) foot from the top of the barrier. Delineators shall be on the 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.

(3) 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.

(4) Dowel holes in pavement or bridge slabs that are to remain in place shall be filled. Holes in concrete pavement and bridge slabs shall be filled with an approved non-shrink epoxy grout. Holes in asphalt pavement shall be filled with an approved asphalt joint filler. Payment for drilling and filling holes to be included in the price for various barrier items.

(5) Attach Units To Roadway Surface with Stabilization Pins and to Deck Slabs using bolts when required.

(6) A 4" White PVC Sleeve may be used to form the Lifting Hole and if used the Sleeve is to be left in place.

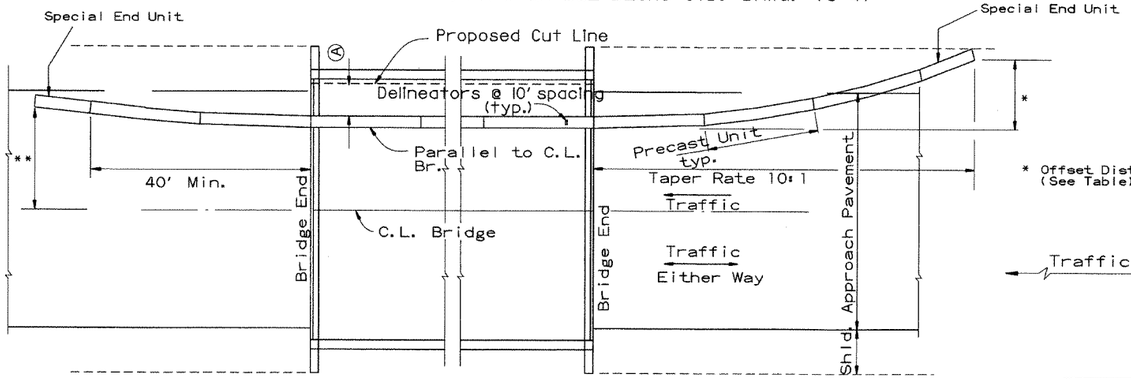
DATE	REVISION	FILMED
10-15-09	ADDED REFERENCE TO MASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02	ISSUED NEW DRAWING	

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

STANDARD DRAWING TC-4

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

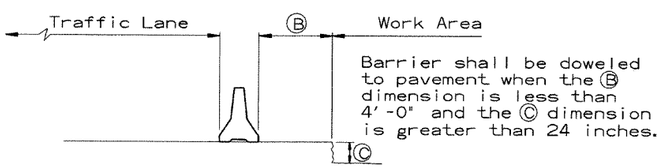


BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

* Offset Distance (See Table)

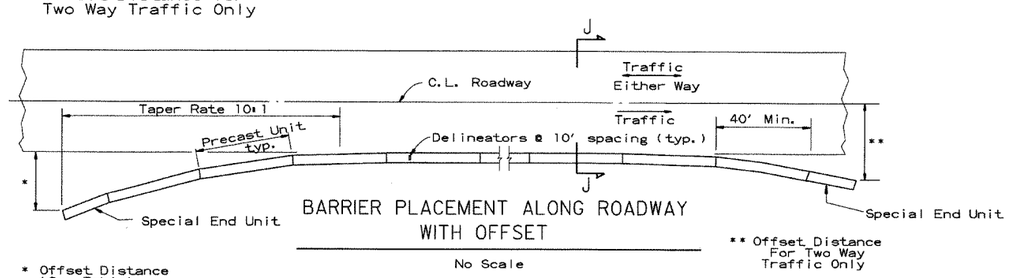
** Offset Distance for Two Way Traffic Only



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

SECTION J-J

No Scale



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

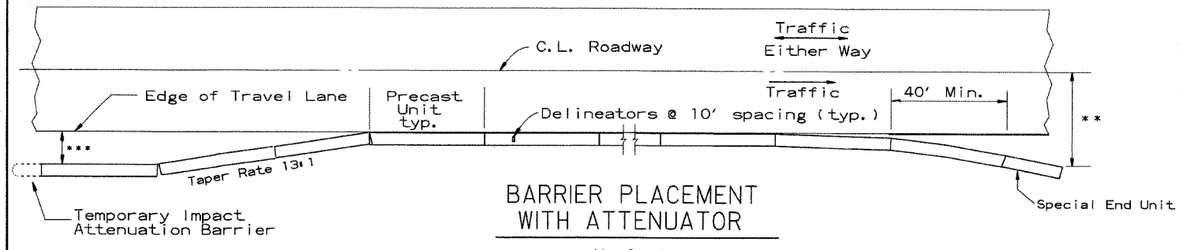
* Offset Distance (See Table)

** Offset Distance For Two Way Traffic Only

Offset Distance Table

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

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

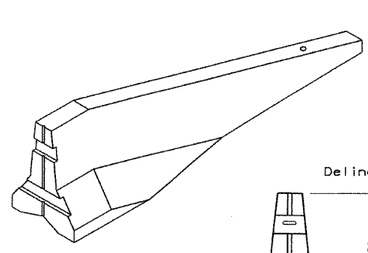


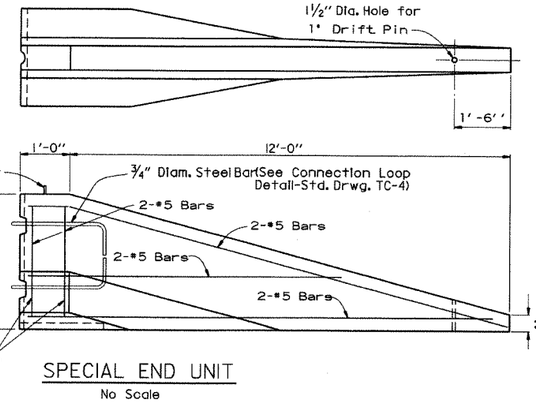
BARRIER PLACEMENT WITH ATTENUATOR

No Scale

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

** Offset Distance For Two Way Traffic Only





SPECIAL END UNIT

No Scale

General Notes

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

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

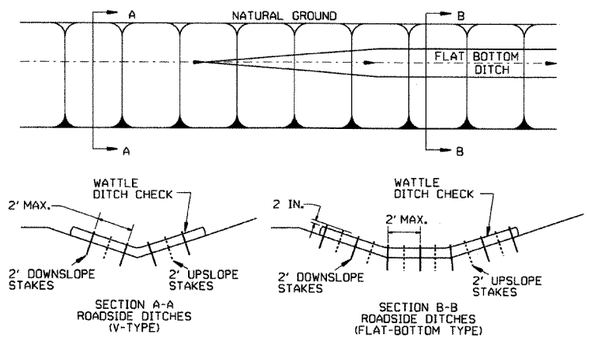
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

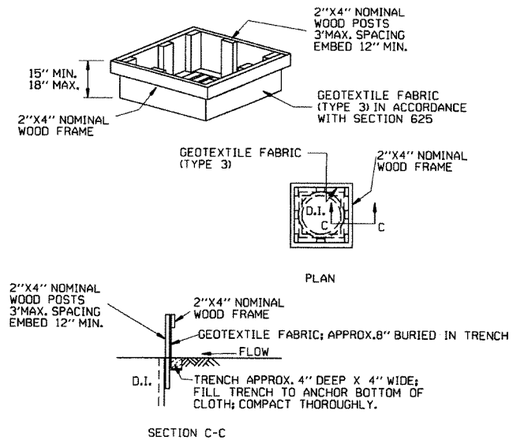
STANDARD DRAWING TC-5

GENERAL NOTES

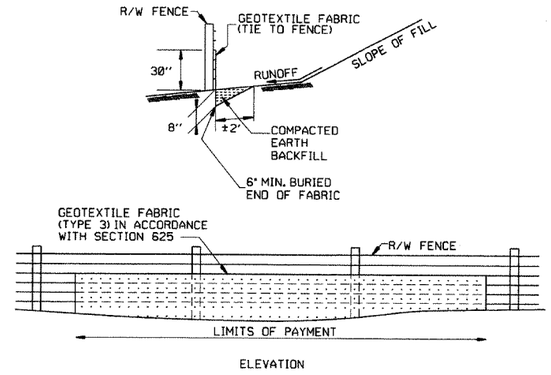
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



DROP INLET SILT FENCE (E-7)



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

GENERAL NOTES

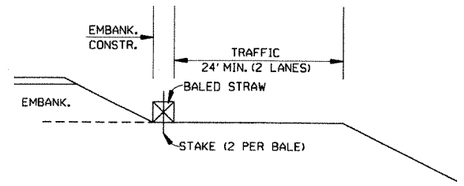
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

GENERAL NOTES

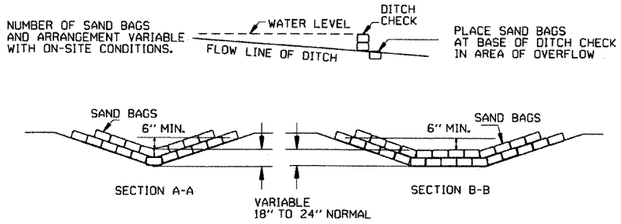
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

2. NO GAPS SHALL BE LEFT BETWEEN BALES.

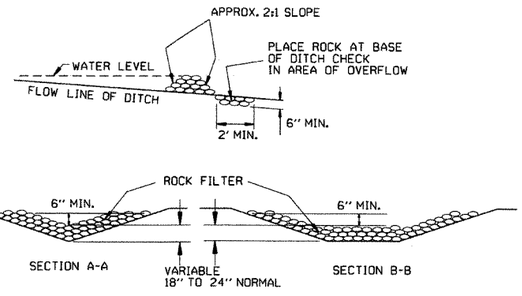
3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.



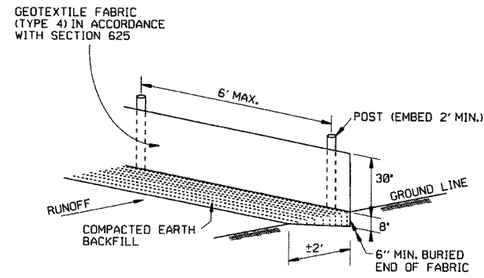
BALED STRAW FILTER BARRIER (E-2)



SAND BAG DITCH CHECK (E-5)



ROCK DITCH CHECK (E-6)



SILT FENCE (E-11)

GENERAL NOTES

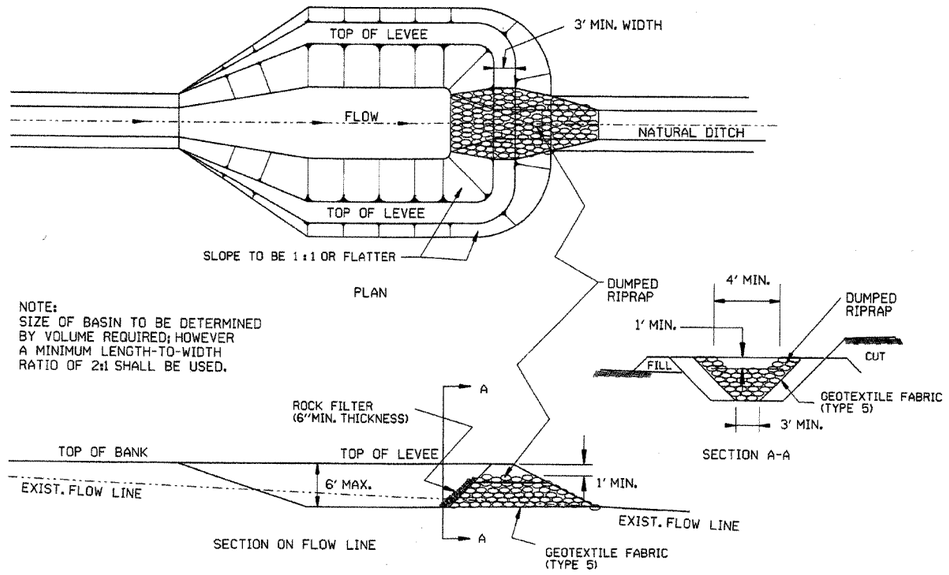
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

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

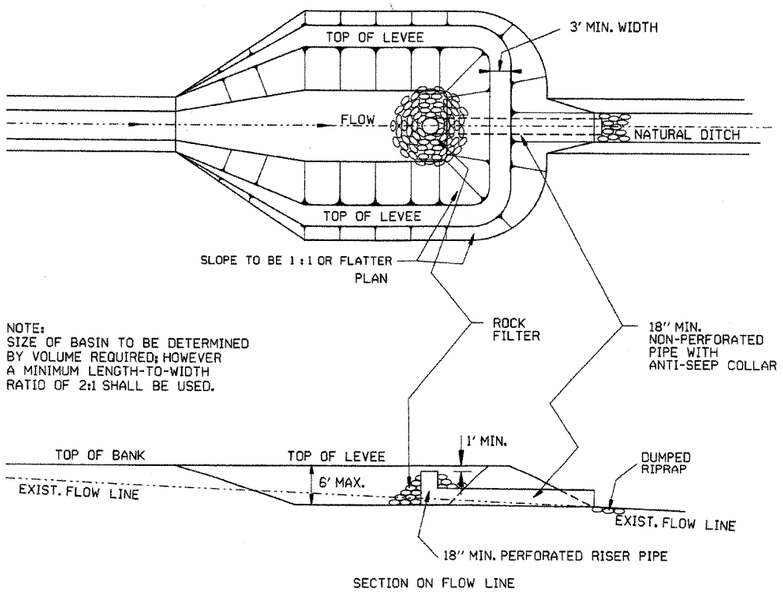
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

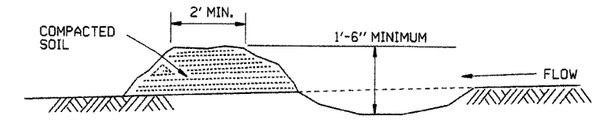
STANDARD DRAWING TEC-1



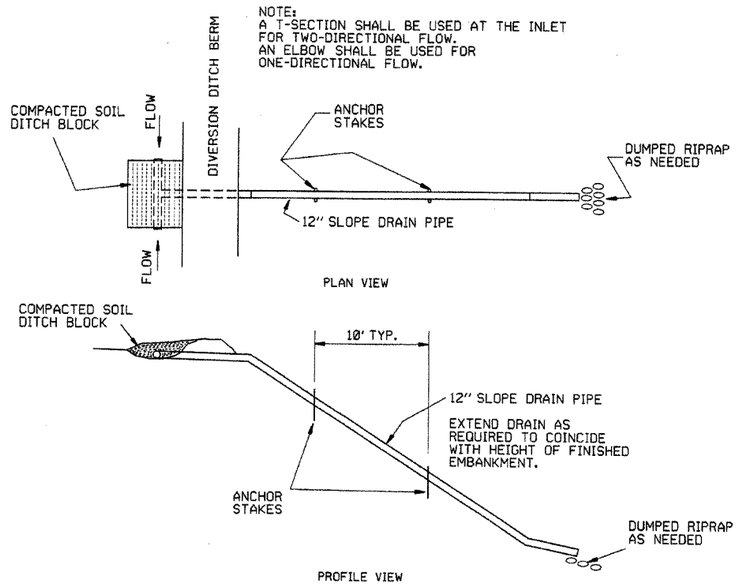
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



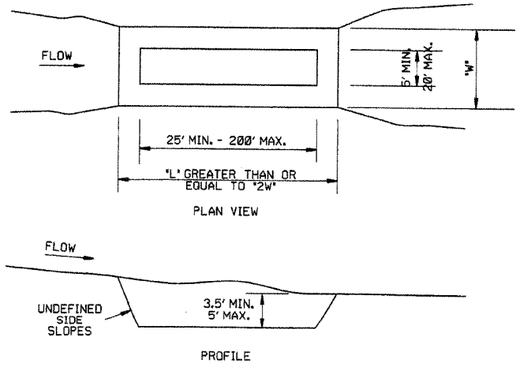
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



SEDIMENT BASIN (E-14)

DATE	REVISION	FILMED
6-2-94	Revised E-8 & E-12; Added E-14 & Deleted E-13	
4-1-93	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

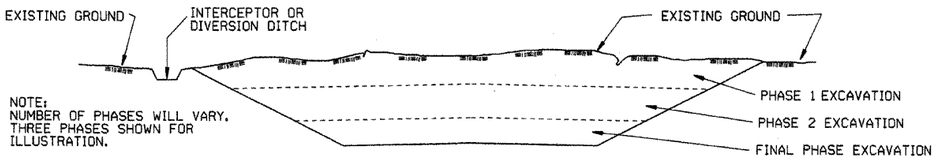
STANDARD DRAWING TEC-2

CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE

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

EXCAVATION



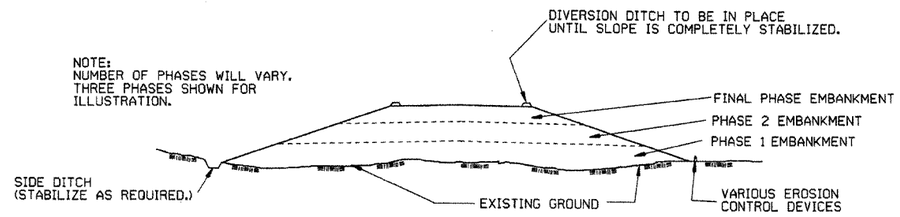
GENERAL NOTE

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

CONSTRUCTION SEQUENCE

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

EMBANKMENT



GENERAL NOTE

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

CONSTRUCTION SEQUENCE

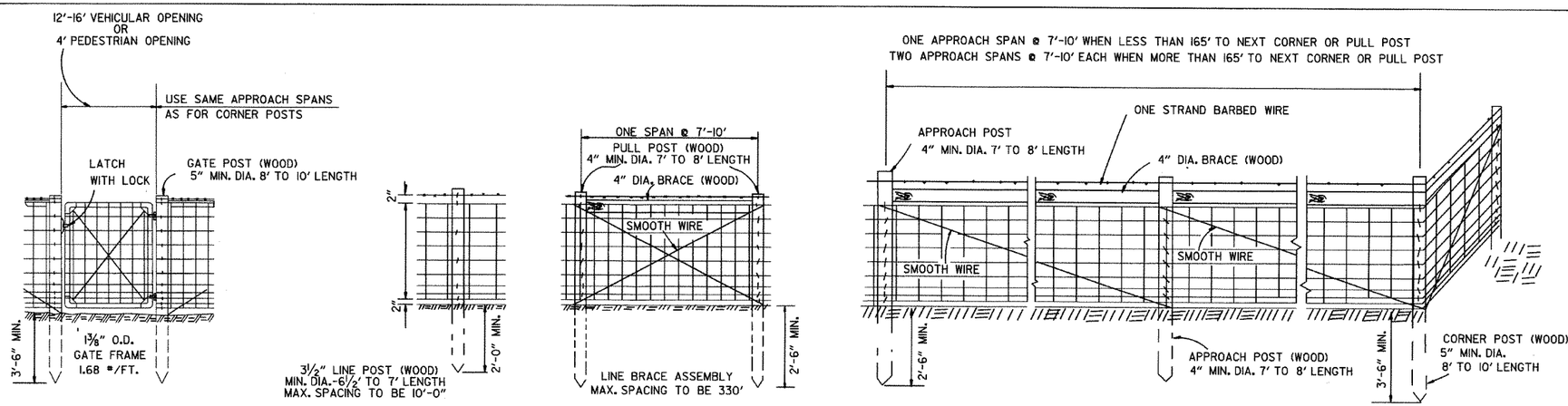
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD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

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

ARKANSAS STATE HIGHWAY COMMISSION

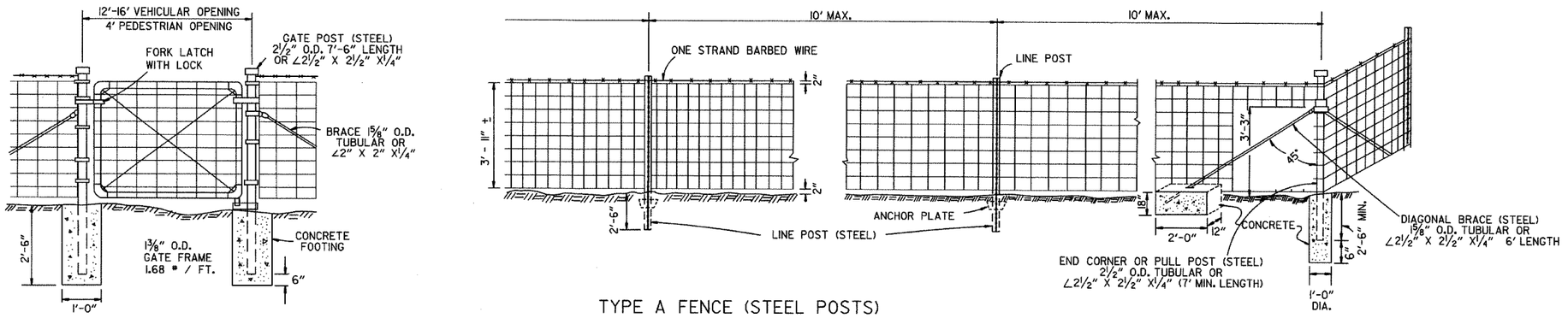
TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3

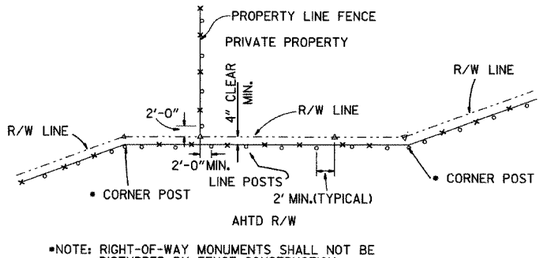


NOTE: STAPLE AT LEAST TOP, BOTTOM AND ALTERNATE WIRES OF WOVEN FABRIC FOR WOOD LINE POSTS.

TYPE A FENCE (WOOD POSTS)



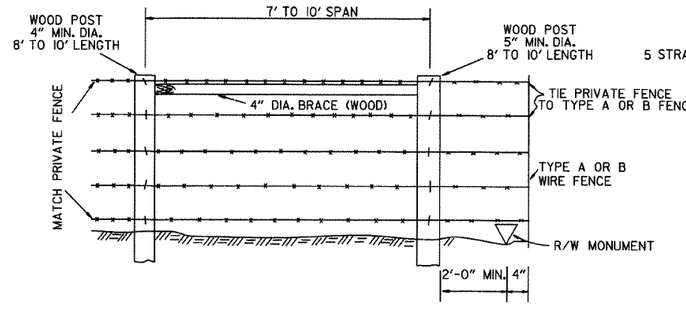
TYPE A FENCE (STEEL POSTS)



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

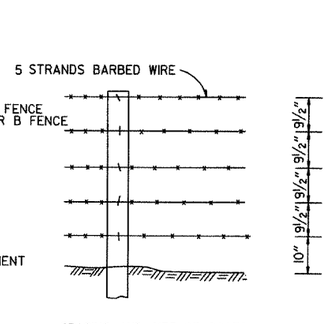
△ - R/W MONUMENTS
○ - FENCE POSTS

RIGHT-OF-WAY FENCE LOCATION



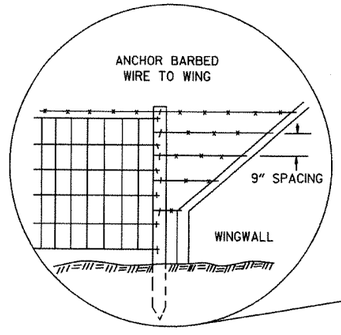
WHERE EXISTING PRIVATE FENCE CONSISTS OF STEEL POSTS, USE END POST ASSEMBLY AS SHOWN WITH TYPE A FENCE OR OTHER END POST ASSEMBLY AS APPROVED BY THE ENGINEER.

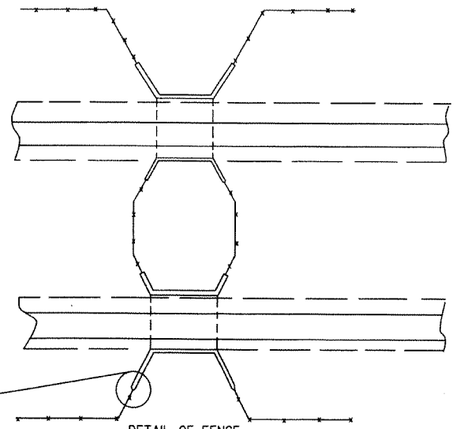
PRIVATE FENCE TERMINAL INSTALLATION



SPACING AND SIZE OF POSTS FOR TYPE B FENCE SHALL BE THE SAME AS TYPE A FENCE.

TYPE B FENCE





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

GENERAL NOTES:

STEEL LINE POSTS SHALL BE GALVANIZED, 7 FT. IN LENGTH.

TUBULAR END, CORNER, PULL, OR DIAGONAL BRACES MUST CONFORM TO THE DIMENSIONS AND WEIGHTS SPECIFIED ON STANDARD DRAWING WF-3 (CHAIN LINK).

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

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

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

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

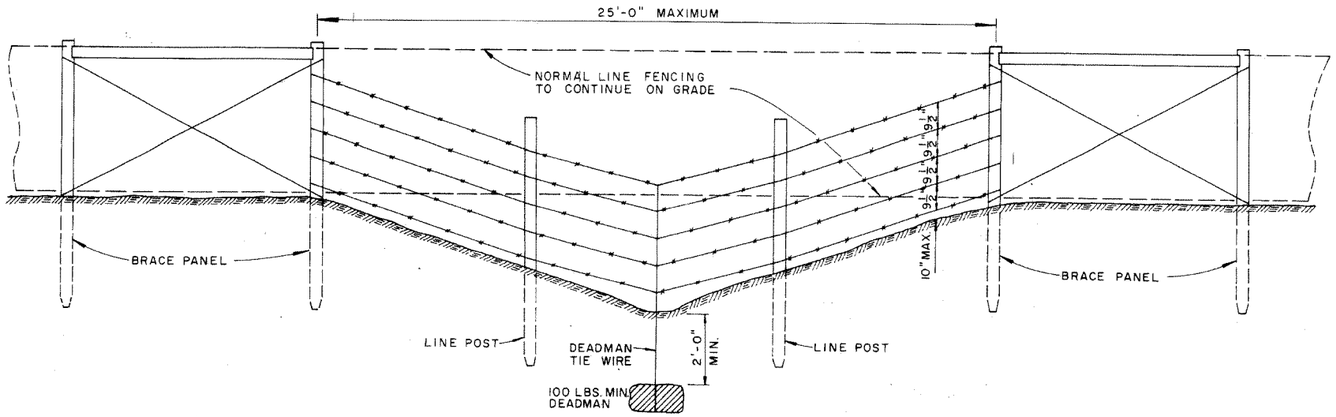
SPLICE FOR BARBED WIRE BETWEEN PULL POST ASSEMBLY SHALL BE BY THE "EYE METHOD": AS DESCRIBED AS FOLLOWS: THE ENDS OF THE BARBED WIRE SHALL BE BENT TO FORM A LOOP. THE LOOPS SHALL BE CONNECTED. AFTER THE LOOPS ARE CONNECTED THE ENDS OF THE WIRE SHALL BE WRAPPED AROUND THE PROJECTING WIRE A MINIMUM OF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

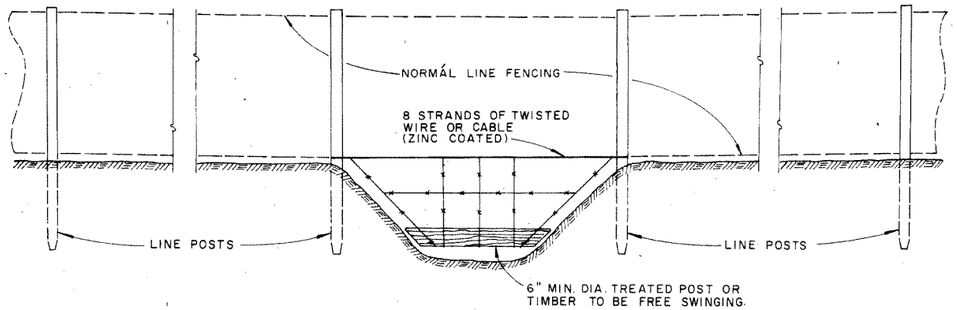
DATE	REVISION	DATE FILMED
8-22-02	REVISED GENERAL NOTES	
10-18-96	REVISED ASTM REF. TO AASHTO	
11-22-95	REVISED R-O-W LOCATION DETAIL	
6-2-94	ADDED CORNER POST NOTE	6-2-94
8-5-93	REVISED R-O-W LOCATION DETAIL	8-5-93
10-1-92	ADDED STAPLE NOTE	
8-2-90	REV'D PULL POST LENGTH	
11-30-89	DELETED CLASS CONC.	
7-15-88	ADDED SPLICE NOTES	
7-15-88	ADDED HEIGHT DIMENSION	
4-3-87	REVISED VARIOUS NOTES AND GENERAL NOTES	
11-1-84	MAX. POST SPACING	
1-4-83	MIN. DIA. LINE POST	
10-2-72	REVISED & REDRAWN	

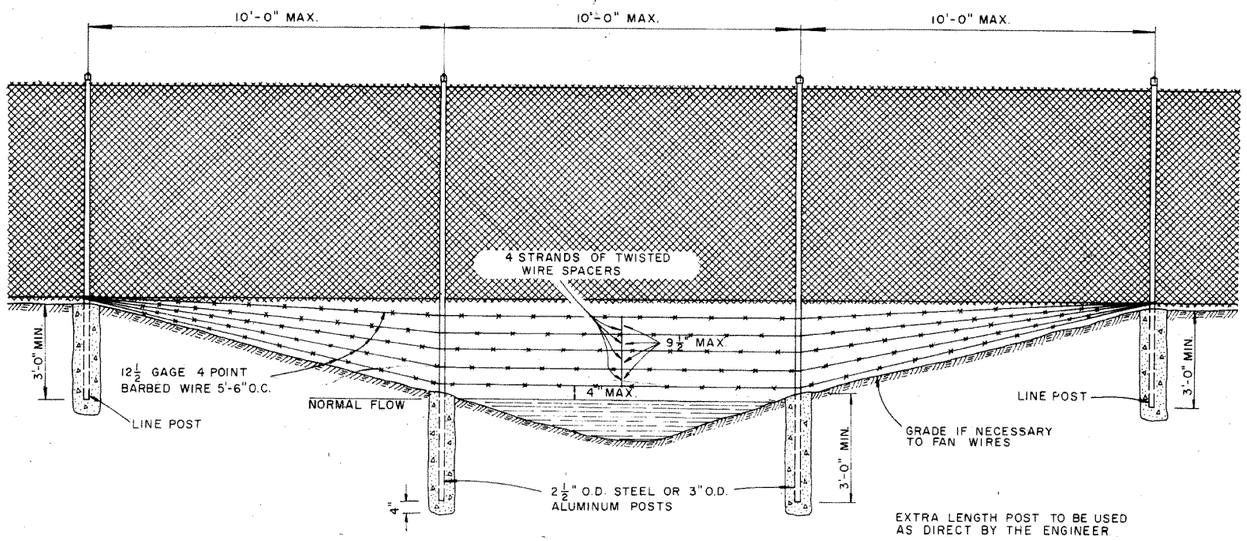
ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE
TYPE A AND B

STANDARD DRAWING WF-1







GENERAL NOTES:

THESE INSTALLATIONS TO BE USED WHERE NORMAL FENCING INSTALLATION WOULD CAUSE THE COLLECTING OF DRIFT IN THE CHANNEL OR THE DEPRESSION WILL NOT PERMIT NORMAL INSTALLATION. INSTALLATIONS WILL BE MADE ONLY WHERE DIRECTED BY THE ENGINEER.

WHEN A FENCE LINE APPROACHES A DITCH, GULLY OR DEPRESSION, THE LAST POST ON LEVEL GROUND SHALL BE PLACED CLOSE ENOUGH TO THE EDGE OF THE DROP OFF THAT THE FENCE MAY BE STRUNG TO THE POST IN THE DEPRESSION WITHOUT TOUCHING THE GROUND.

IN TERRAIN OF SUCH EXTREME IRREGULARITY THAT MINOR GRADING WILL NOT BE FEASIBLE, THE NORMAL FENCE SHALL CONTINUE ON GRADE AND THE GULLIES OR DEPRESSIONS TREATED BY AUXILIARY FENCES AS SHOWN.

PAYMENT FOR THE TYPE INSTALLATION USED WILL NOT BE MADE DIRECTLY BUT WILL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR WIRE FENCE OR CHAIN LINK FENCE.

4-20-79	REVISED TOP RAIL & TENSION WIRE.	696-4-20-79
10-2-72	REVISED & REDRAWN	529 10-2-72
DATE	REVISION	DATE FILMED

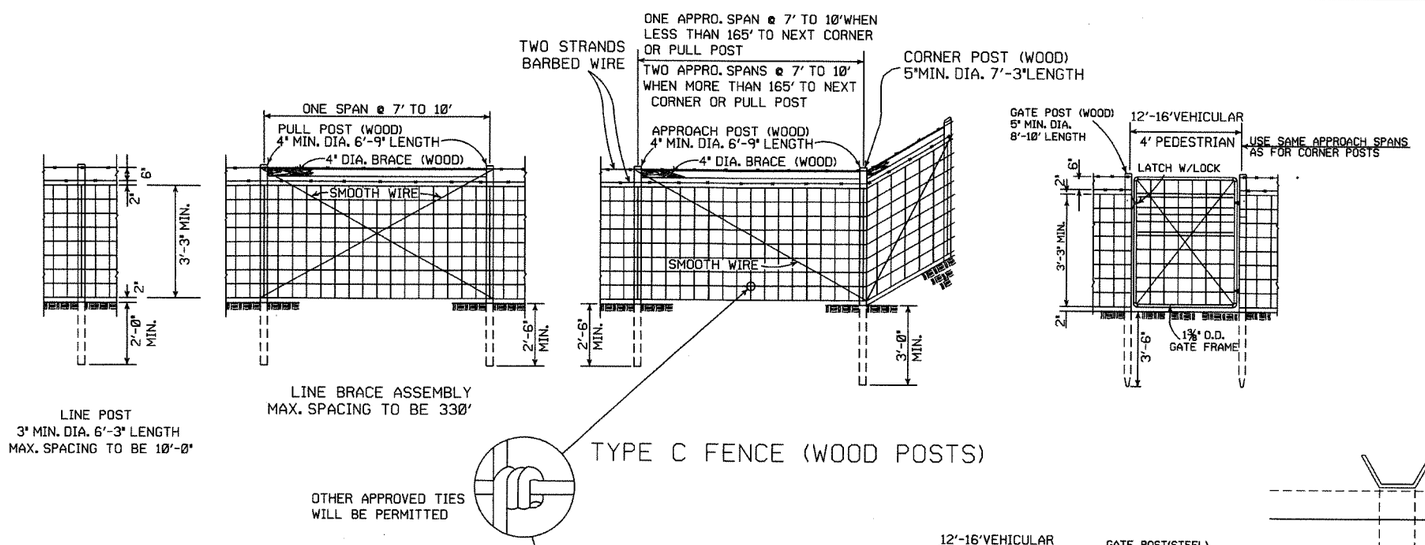
ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE WATER GAPS

STANDARD DRAWING

WF-2

1M—11-71—67001—PPASCo



NOTE: STEEL LINE POSTS SHALL BE 6'-6" MINIMUM LENGTH.

GENERAL NOTES:

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

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

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

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

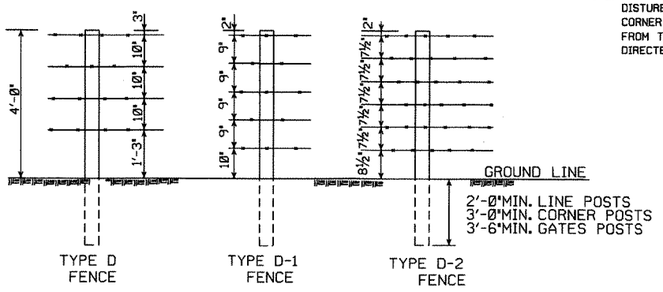
SPLICE FOR BARBED WIRE BETWEEN PULL POST ASSEMBLY SHALL BE BY THE "EYE METHOD" AS DESCRIBED AS FOLLOWS: THE ENDS OF THE BARBED WIRE SHALL BE BENT TO FORM A LOOP. THE LOOPS SHALL BE CONNECTED. AFTER THE LOOPS ARE CONNECTED THE ENDS OF THE WIRE SHALL BE WRAPPED AROUND THE PROJECTING WIRES A MINIMUM OF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

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

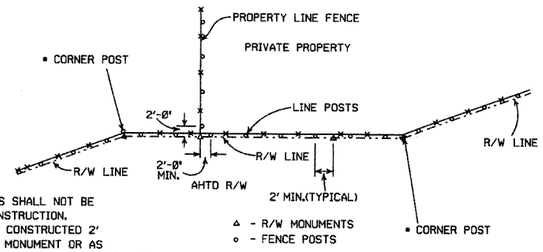
STAPLE AT LEAST TOP, BOTTOM AND ALTERNATE WIRES OF WOVEN FABRIC FOR WOOD LINE POSTS.

TYPE C FENCE (STEEL POSTS)

4 STRANDS BARBED WIRE (D)
5 STRANDS BARBED WIRE (D-1)
6 STRANDS BARBED WIRE (D-2)

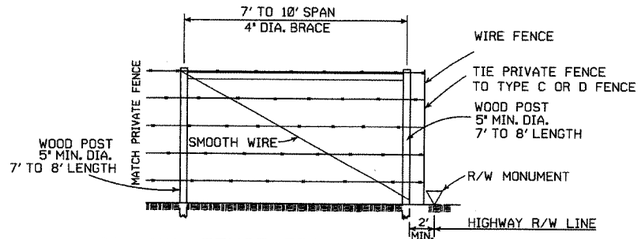


NOTE: SPACING AND SIZE (EXCEPT LENGTH) OF POSTS, APPROACH SPANS, PULL POST ASSEMBLIES, AND CORNER BRACING FOR TYPE D FENCE SHALL CONFORM TO TYPE C FENCE. USE GALVANIZED STAPLES ON WOOD POSTS AND APPROVED FASTENERS ON STEEL POSTS.

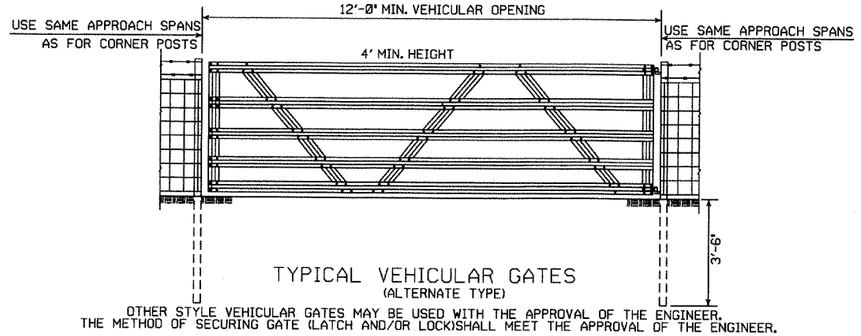


▪ NOTE: RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY FENCE CONSTRUCTION. CORNER POSTS SHALL BE CONSTRUCTED 2' FROM THE RIGHT-OF-WAY MONUMENT OR AS DIRECTED BY THE ENGINEER.

RIGHT-OF-WAY FENCE LOCATION



PRIVATE FENCE TERMINAL INSTALLATION
WHERE EXISTING FENCE CONSISTS OF STEEL POSTS, USE END POST ASSEMBLY AS SHOWN IN TYPE C FENCE OR OTHER END POST ASSEMBLY AS APPROVED BY THE ENGINEER.



TYPICAL VEHICULAR GATES
(ALTERNATE TYPE)
OTHER STYLE VEHICULAR GATES MAY BE USED WITH THE APPROVAL OF THE ENGINEER.
THE METHOD OF SECURING GATE (LATCH AND/OR LOCK)SHALL MEET THE APPROVAL OF THE ENGINEER.

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

ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE TYPE C AND D

STANDARD DRAWING WF-4

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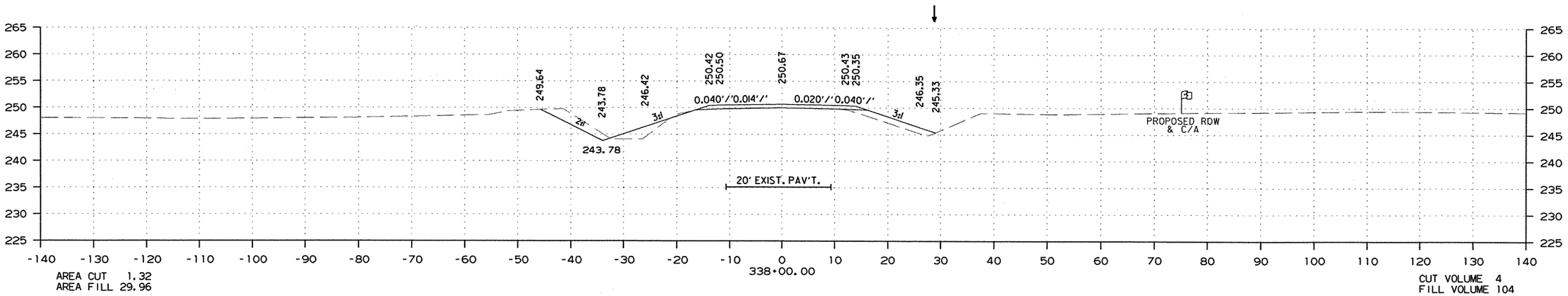
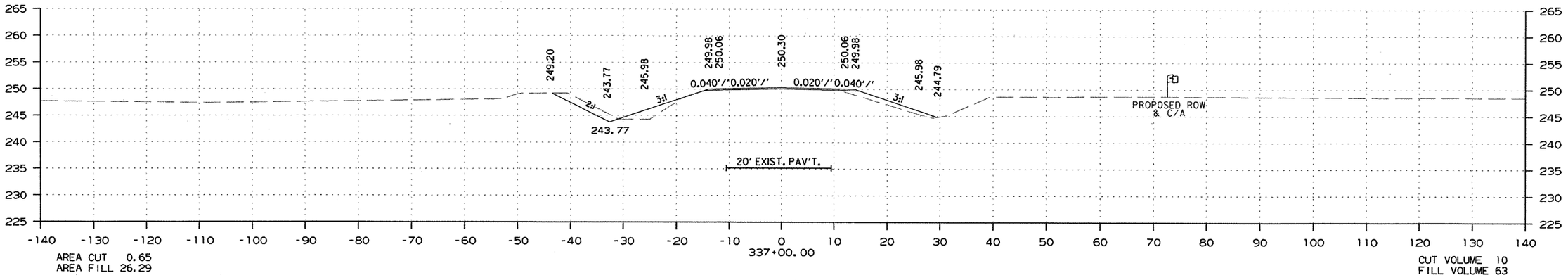
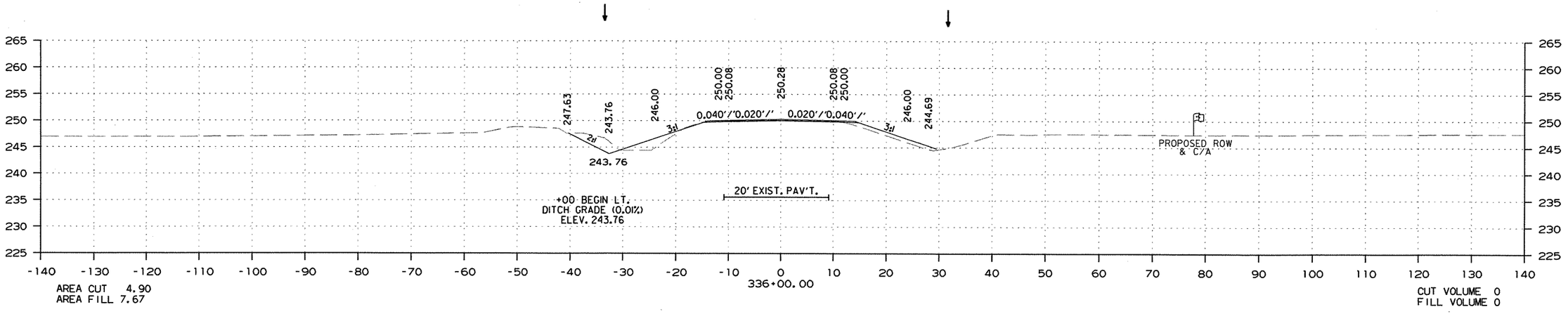
				6	ARK.			
				JOB NO.		100667	88	123

(2) CROSS SECTIONS







TEMPORARY GRADE RAISE (BEGIN JOB)

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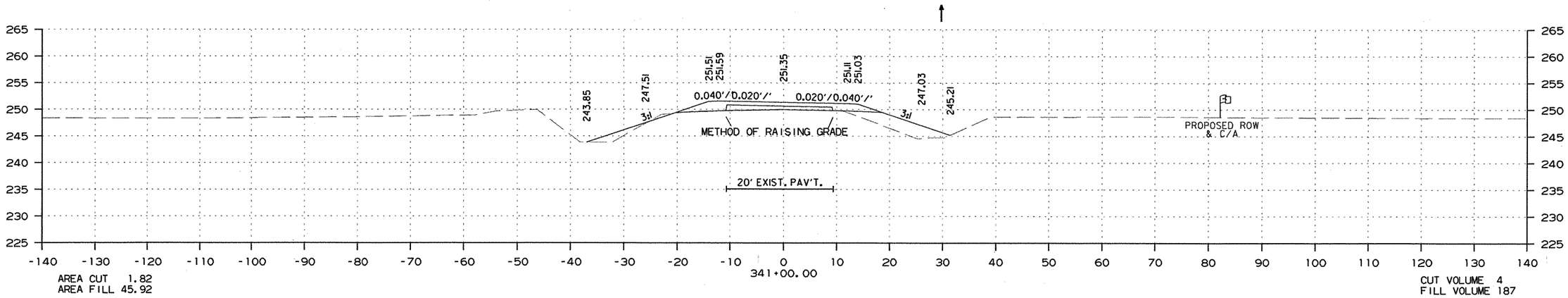
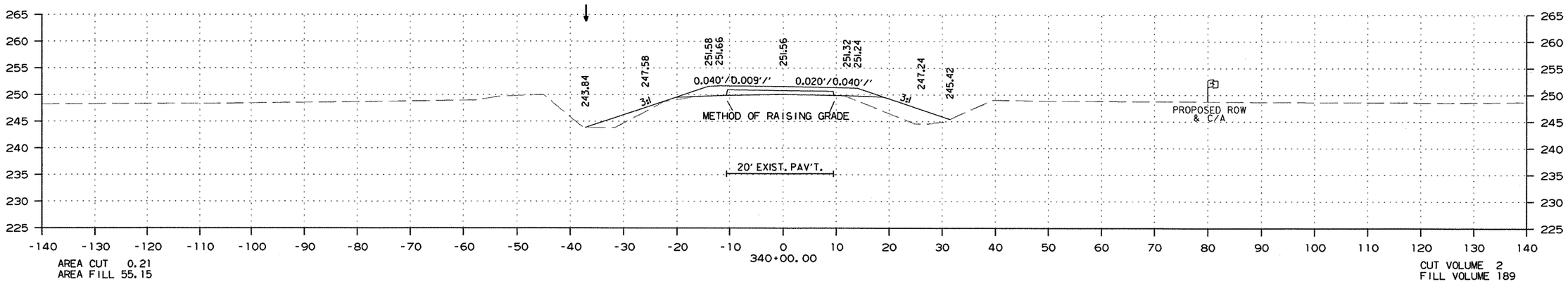
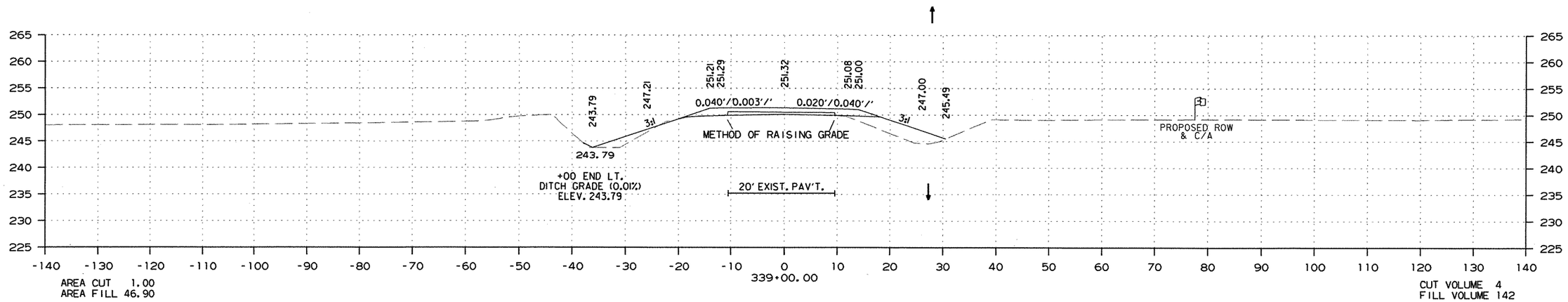
				6	ARK.			
				JOB NO.		100667	89	123

(2) CROSS SECTIONS







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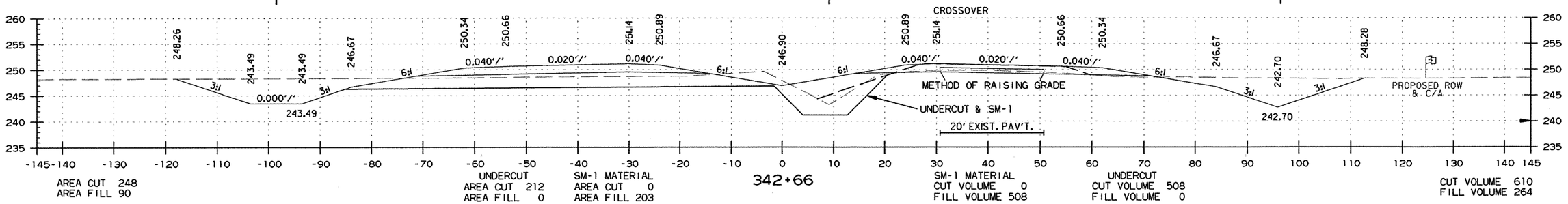
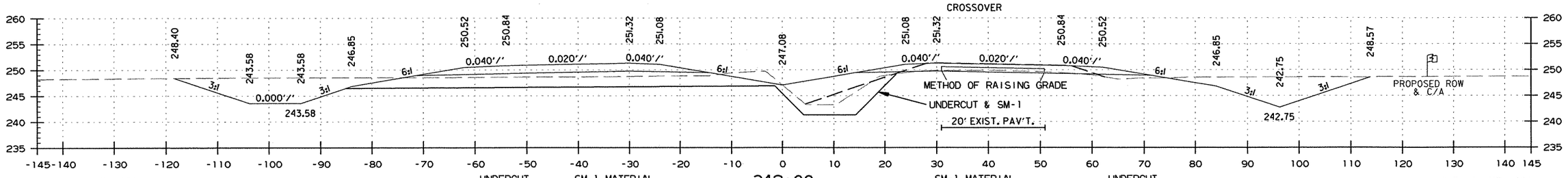
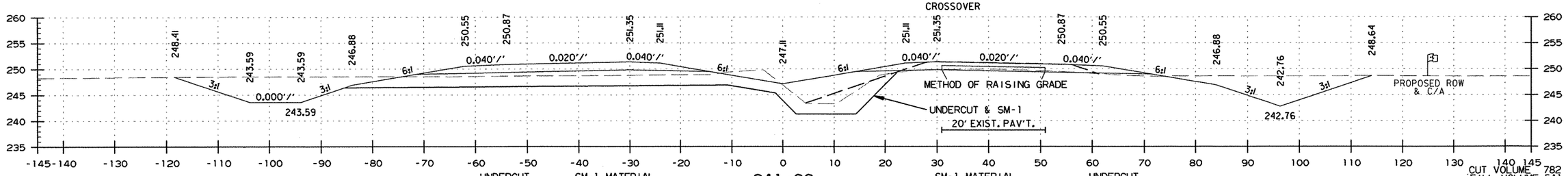
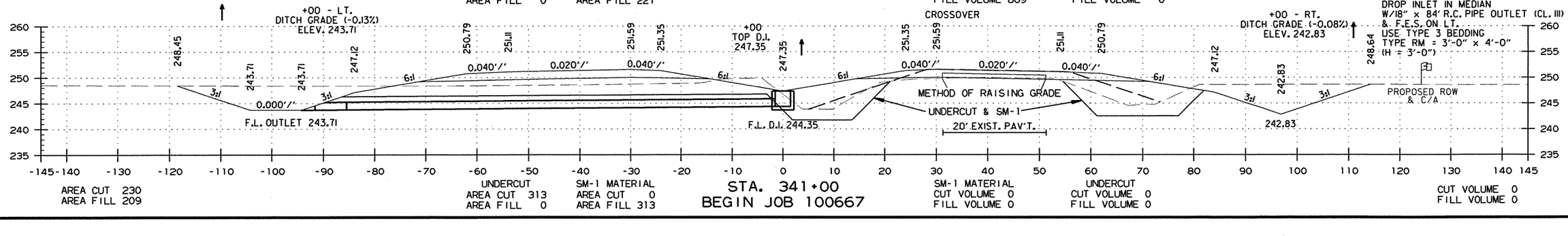
				6	ARK.			
				JOB NO.		100667	90	123

(2) CROSS SECTIONS









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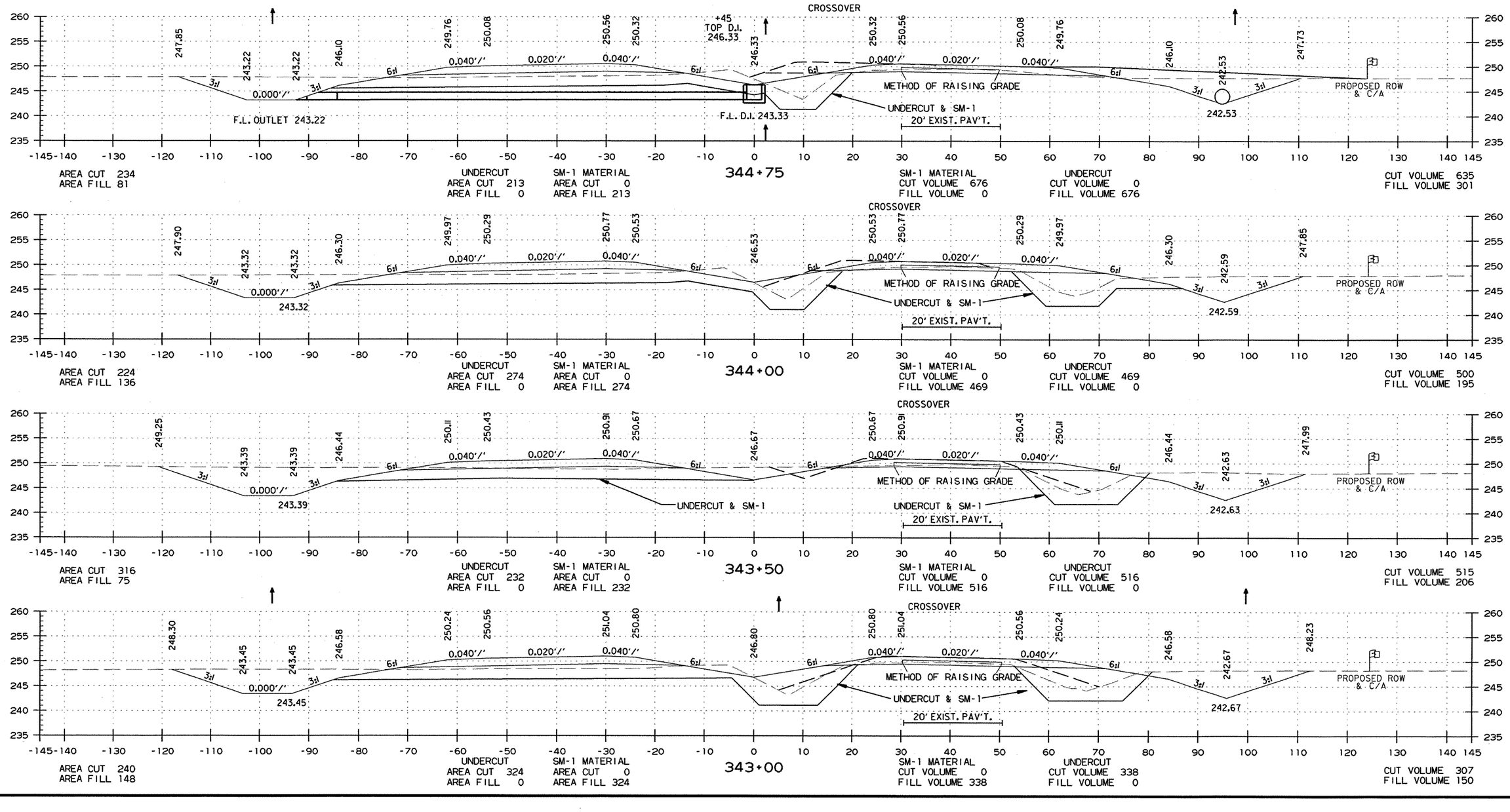
				6	ARK.			
				JOB NO.		100667	91	123

(2) CROSS SECTIONS

STA. 344+45 - CONSTRUCT
DROP INLET IN MEDIAN
W/18" x 82' R.C PIPE OUTLET (CL. III)
& F.E.S. ON LT.
USE TYPE 3 BEDDING
TYPE RM = 3'-0" x 4'-0"
(H = 3'-0")

STA. 344+75 - IN PLACE
36" x 40' C.M. PIPE CULV'T.
RT. SIDE DRAIN
REMOVE & INSTALL
36" x 70' PIPE CULV'T.
RT. SIDE DRAIN
CONSTR. APPR. = 285 CU. YD.



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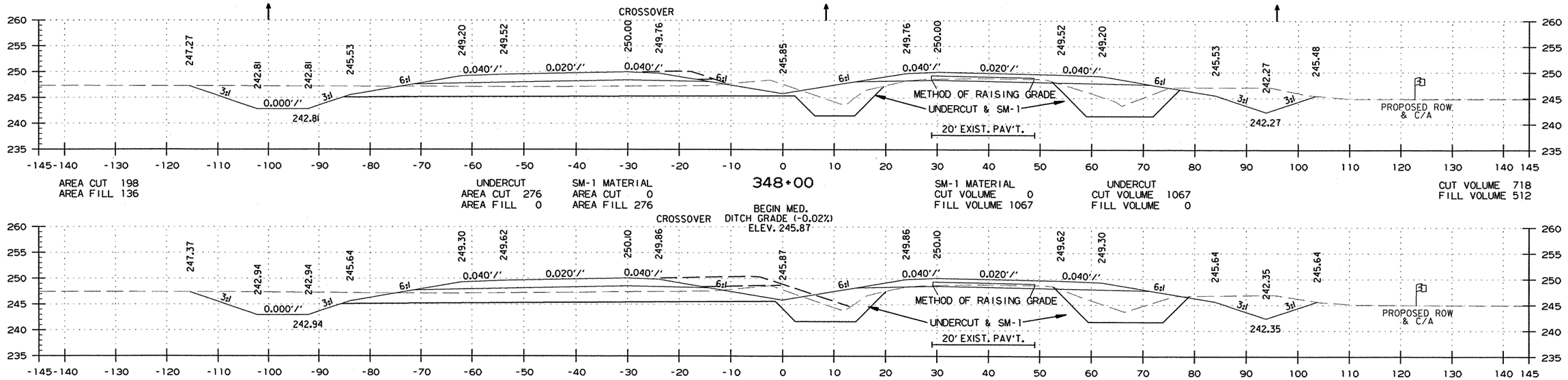
				6	ARK.			
				JOB NO.		100667	92	123

(2) CROSS SECTIONS



AREA CUT 198
AREA FILL 136

UNDERCUT
AREA CUT 276
AREA FILL 0

SM-1 MATERIAL
AREA CUT 0
AREA FILL 276

348+00

BEGIN MED. DITCH GRADE (-0.02%) ELEV. 245.87

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 1067

UNDERCUT
CUT VOLUME 1067
FILL VOLUME 0

CUT VOLUME 718
FILL VOLUME 512

AREA CUT 190
AREA FILL 141

UNDERCUT
AREA CUT 301
AREA FILL 0

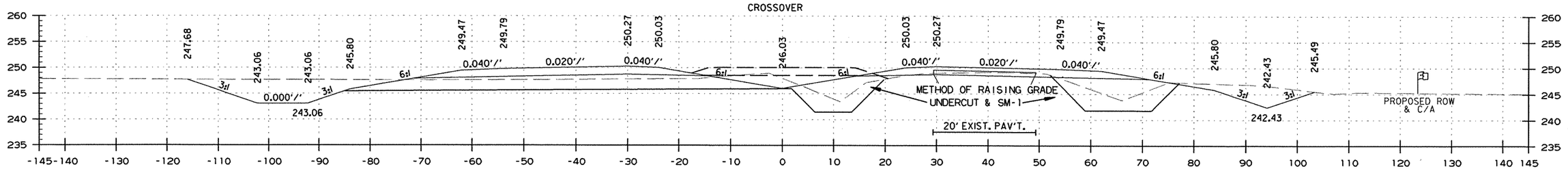
SM-1 MATERIAL
AREA CUT 0
AREA FILL 301

347+00

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 1112

UNDERCUT
CUT VOLUME 1112
FILL VOLUME 0

CUT VOLUME 720
FILL VOLUME 491



AREA CUT 199
AREA FILL 125

UNDERCUT
AREA CUT 300
AREA FILL 0

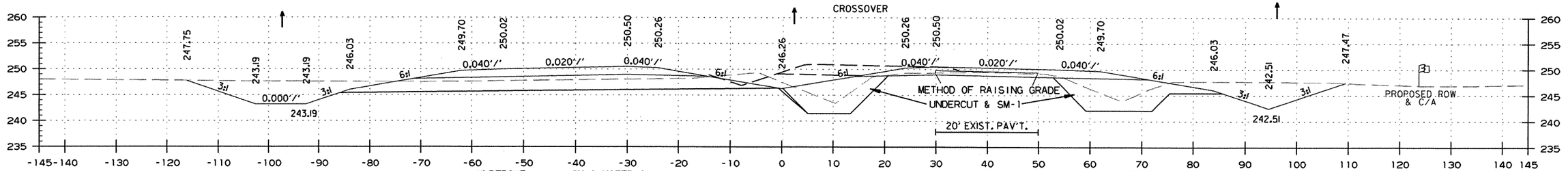
SM-1 MATERIAL
AREA CUT 0
AREA FILL 300

346+00

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 1082

UNDERCUT
CUT VOLUME 1082
FILL VOLUME 0

CUT VOLUME 790
FILL VOLUME 463



AREA CUT 228
AREA FILL 126

UNDERCUT
AREA CUT 284
AREA FILL 0

SM-1 MATERIAL
AREA CUT 0
AREA FILL 284

345+00

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 230

UNDERCUT
CUT VOLUME 230
FILL VOLUME 0

CUT VOLUME 214
FILL VOLUME 96

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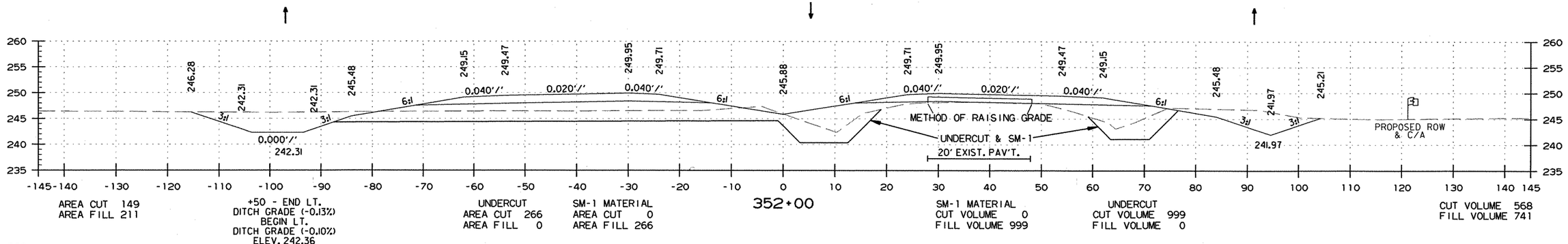
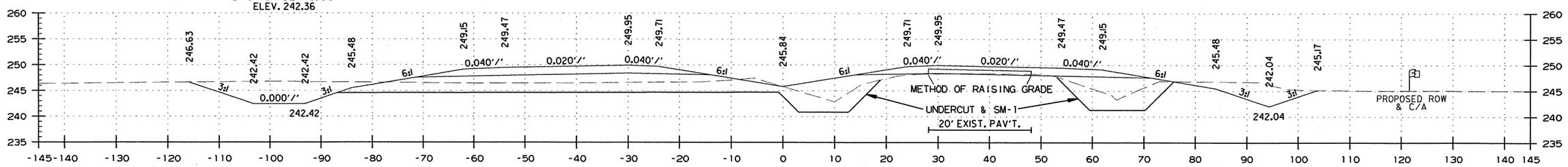
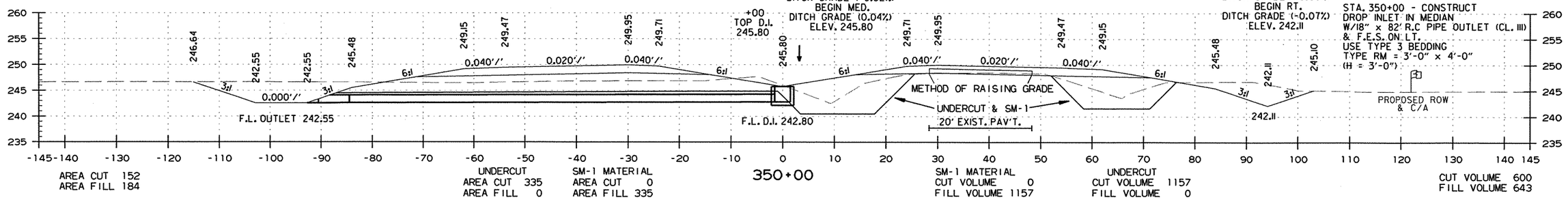
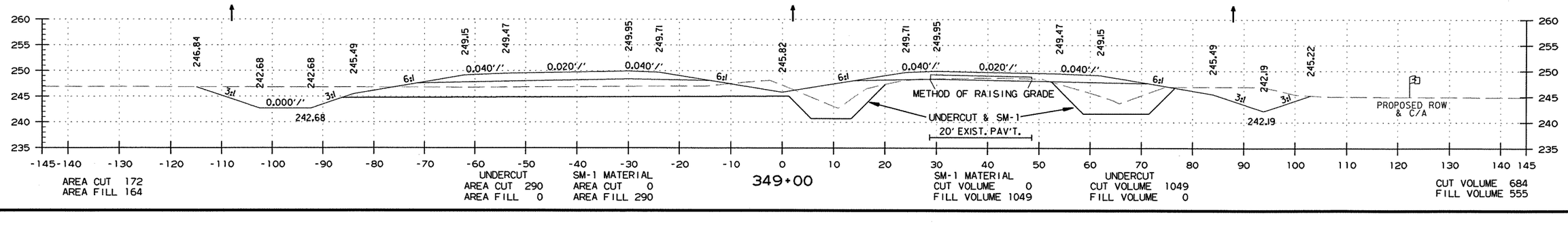
				6	ARK.			
				JOB NO.		100667	93	123

(2) CROSS SECTIONS









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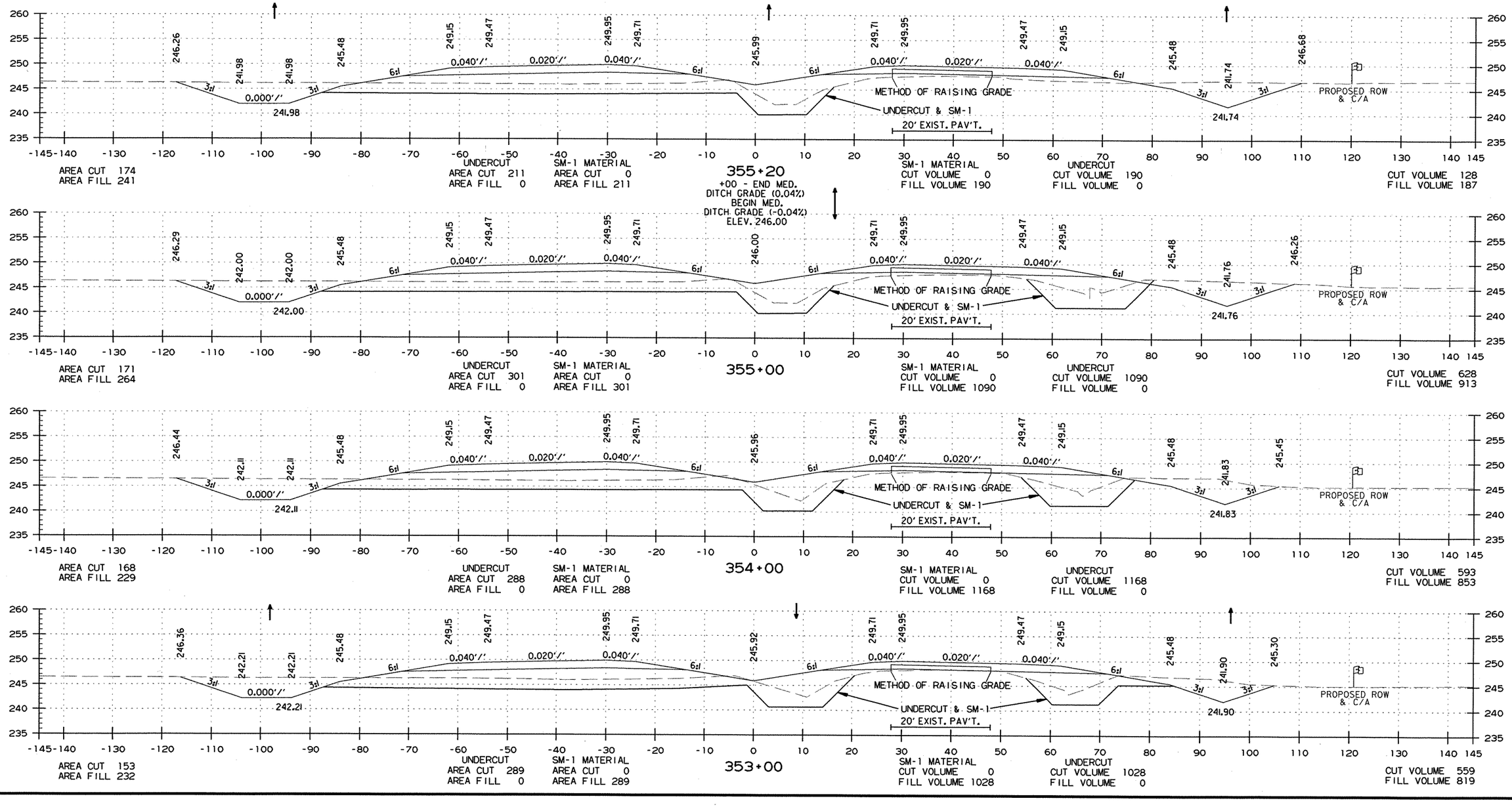
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100667	94	123

(2) CROSS SECTIONS



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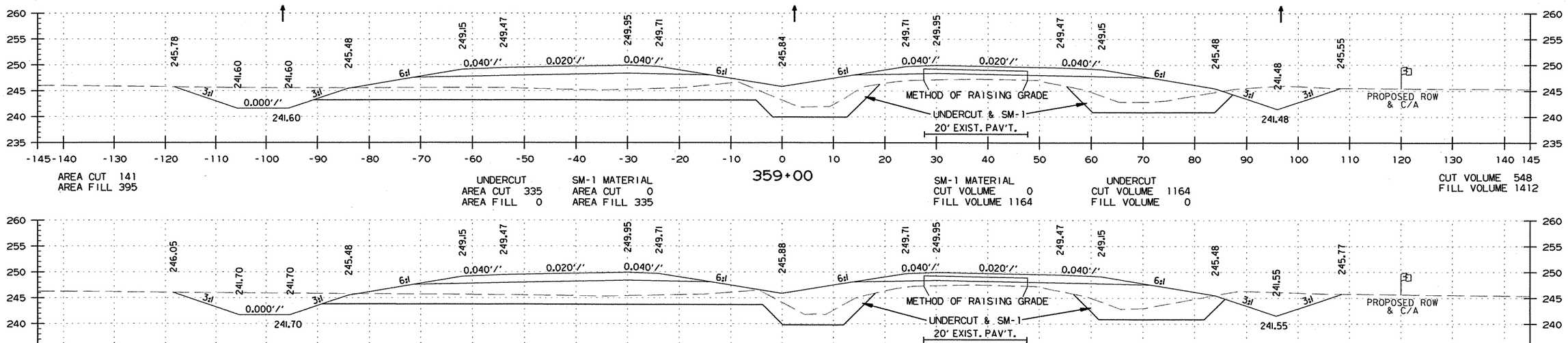
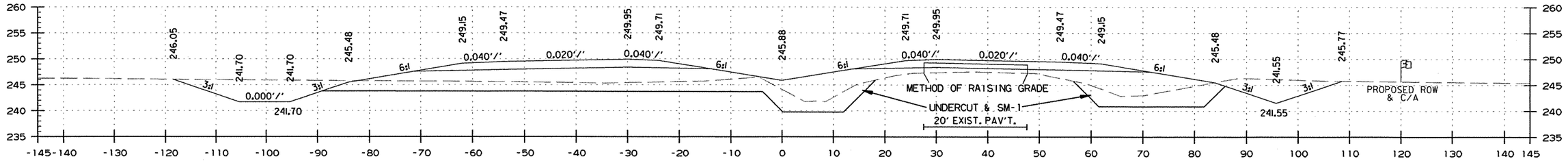
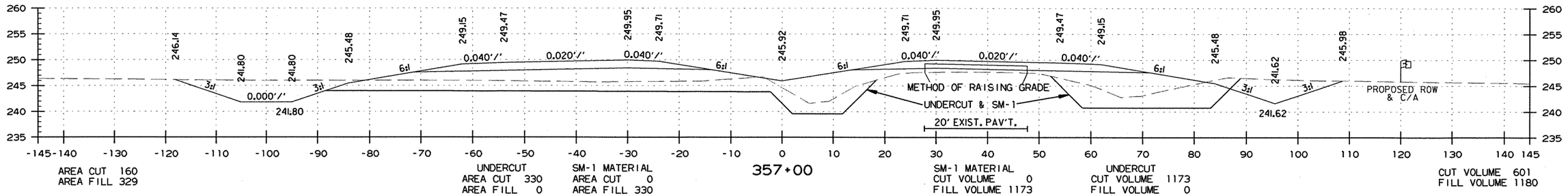
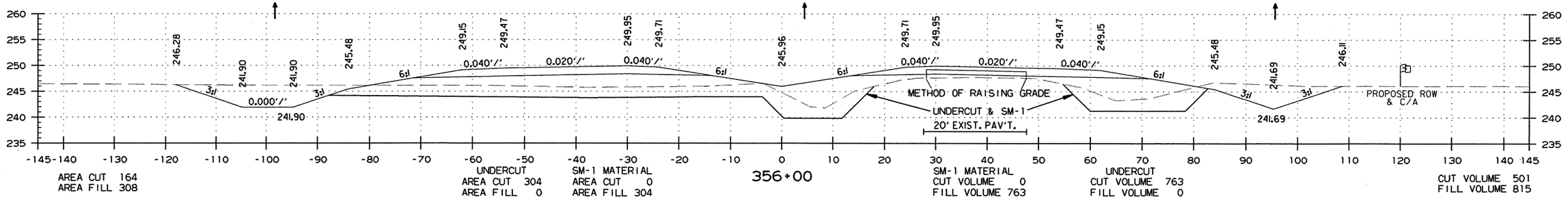
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100667	95	123

(2) CROSS SECTIONS









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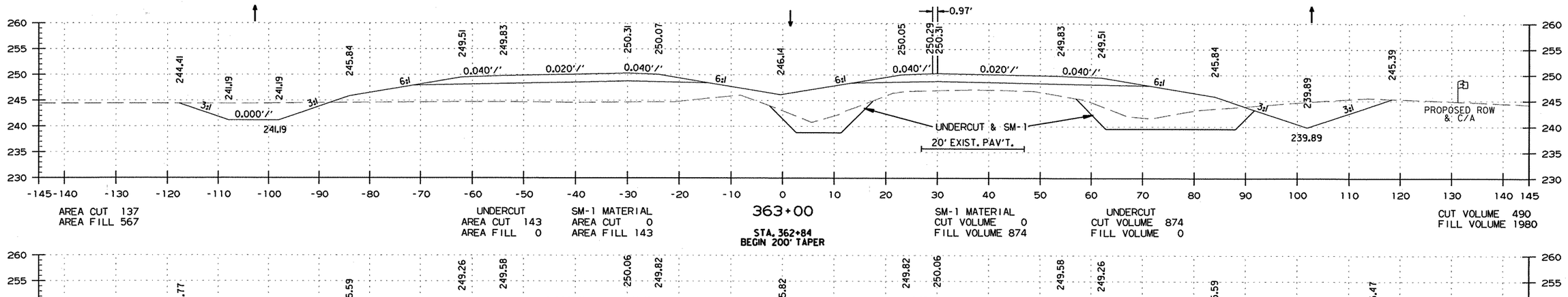
				6	ARK.			
				JOB NO.		100667	96	123

(2) CROSS SECTIONS



AREA CUT 137
AREA FILL 567

UNDERCUT
AREA CUT 143
AREA FILL 0

SM-1 MATERIAL
AREA CUT 0
AREA FILL 143

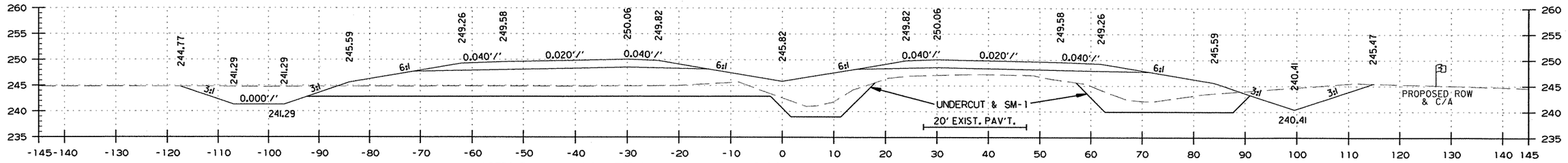
363+00

STA. 362+84
BEGIN 200' TAPER

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 874

UNDERCUT
CUT VOLUME 874
FILL VOLUME 0

CUT VOLUME 490
FILL VOLUME 1980



AREA CUT 127
AREA FILL 502

UNDERCUT
AREA CUT 329
AREA FILL 0

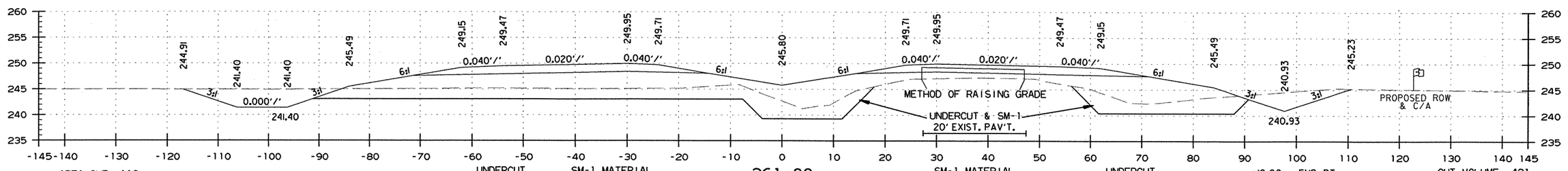
SM-1 MATERIAL
AREA CUT 0
AREA FILL 329

362+00

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 1288

UNDERCUT
CUT VOLUME 1288
FILL VOLUME 0

CUT VOLUME 444
FILL VOLUME 1771



AREA CUT 113
AREA FILL 454

UNDERCUT
AREA CUT 366
AREA FILL 0

SM-1 MATERIAL
AREA CUT 0
AREA FILL 366

361+00

+00.00 - END MED.
DITCH GRADE (-0.04%)
ELEV. 245.80

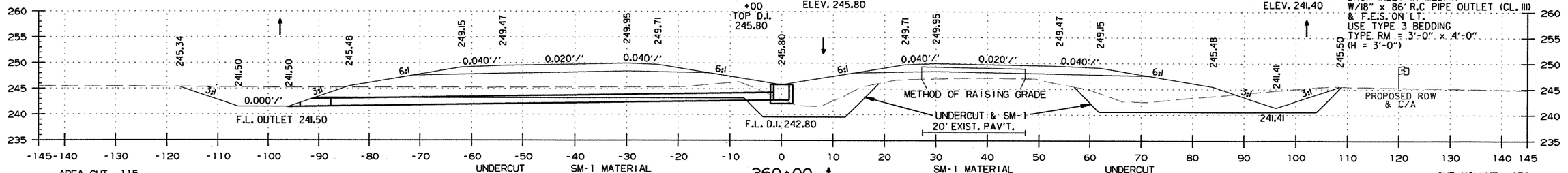
SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 1357

UNDERCUT
CUT VOLUME 1357
FILL VOLUME 0

+10.00 - END RT.
DITCH GRADE (-0.07%)
BEGIN RT.
DITCH GRADE (-0.52%)
ELEV. 241.40

STA. 360+00 - CONSTRUCT
DROP INLET IN MEDIAN
W/18" x 86' R.C PIPE OUTLET (CL. III)
& F.E.S. ON LT.
USE TYPE 3 BEDDING
TYPE RM. = 3'-0" x 4'-0"
(H = 3'-0")

CUT VOLUME 421
FILL VOLUME 1646



AREA CUT 115
AREA FILL 435

UNDERCUT
AREA CUT 366
AREA FILL 0

SM-1 MATERIAL
AREA CUT 0
AREA FILL 366

360+00

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 1299

UNDERCUT
CUT VOLUME 1299
FILL VOLUME 0

CUT VOLUME 474
FILL VOLUME 1538

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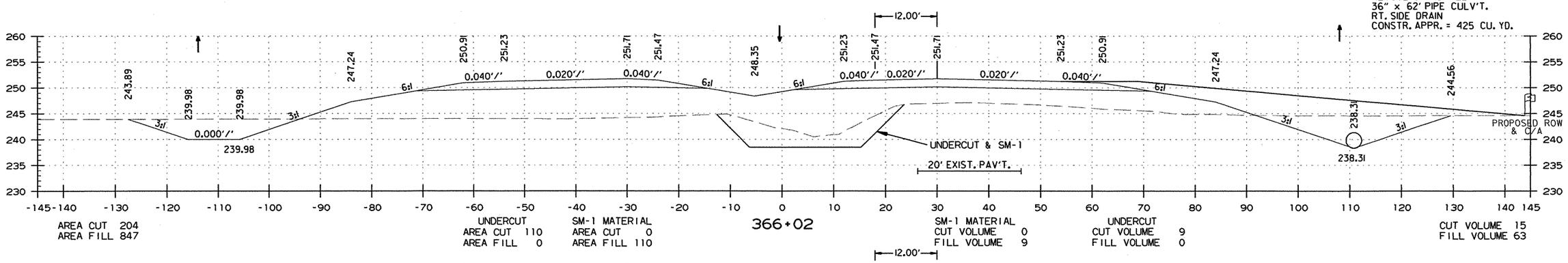
(2) CROSS SECTIONS

STA. 366+02 - IN PLACE
36" x 30' R.C. PIPE CULV'T.
RT. SIDE DRAIN
REMOVE & INSTALL
36" x 62' PIPE CULV'T.
RT. SIDE DRAIN
CONSTR. APPR. = 425 CU. YD.



AREA CUT 204
AREA FILL 847

UNDERCUT
AREA CUT 110
AREA FILL 0

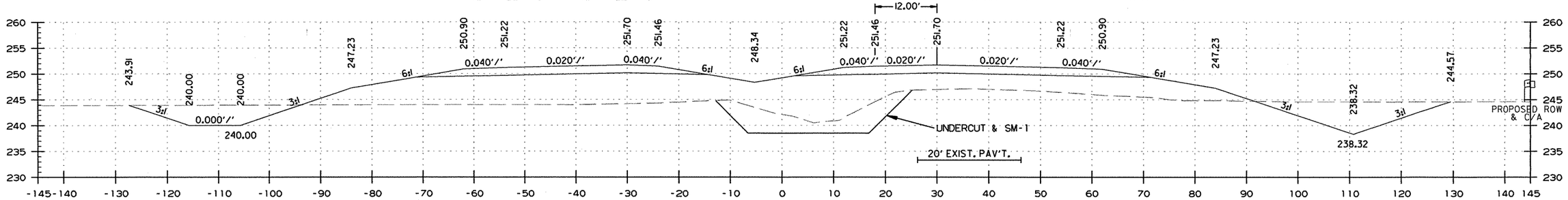
SM-1 MATERIAL
AREA CUT 0
AREA FILL 110

366+02

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 9

UNDERCUT
CUT VOLUME 9
FILL VOLUME 0

CUT VOLUME 15
FILL VOLUME 63



AREA CUT 203
AREA FILL 844

+00 - END LT.
DITCH GRADE (-0.10%)
BEGIN LT.
DITCH GRADE (-0.99%)
ELEV. 240.99

UNDERCUT
AREA CUT 125
AREA FILL 0

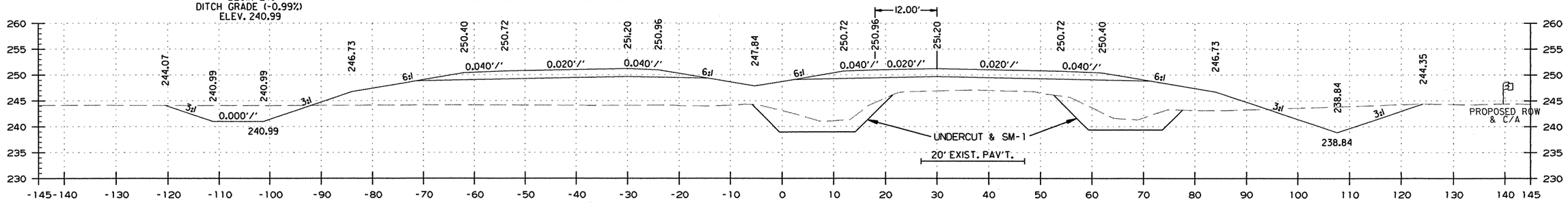
SM-1 MATERIAL
AREA CUT 0
AREA FILL 125

366+00

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 472

UNDERCUT
CUT VOLUME 472
FILL VOLUME 0

CUT VOLUME 623
FILL VOLUME 3106



AREA CUT 133
AREA FILL 833

UNDERCUT
AREA CUT 130
AREA FILL 0

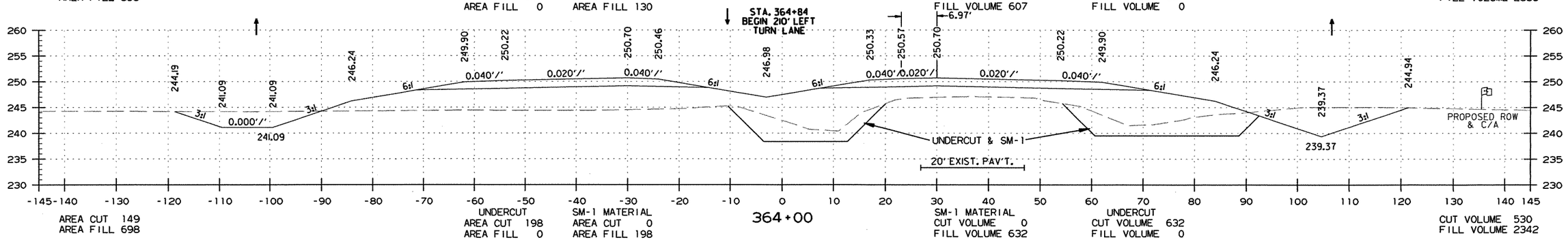
SM-1 MATERIAL
AREA CUT 0
AREA FILL 130

365+00

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 607

UNDERCUT
CUT VOLUME 607
FILL VOLUME 0

CUT VOLUME 523
FILL VOLUME 2835



AREA CUT 149
AREA FILL 698

UNDERCUT
AREA CUT 198
AREA FILL 0

SM-1 MATERIAL
AREA CUT 0
AREA FILL 198

364+00

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 632

UNDERCUT
CUT VOLUME 632
FILL VOLUME 0

CUT VOLUME 530
FILL VOLUME 2342

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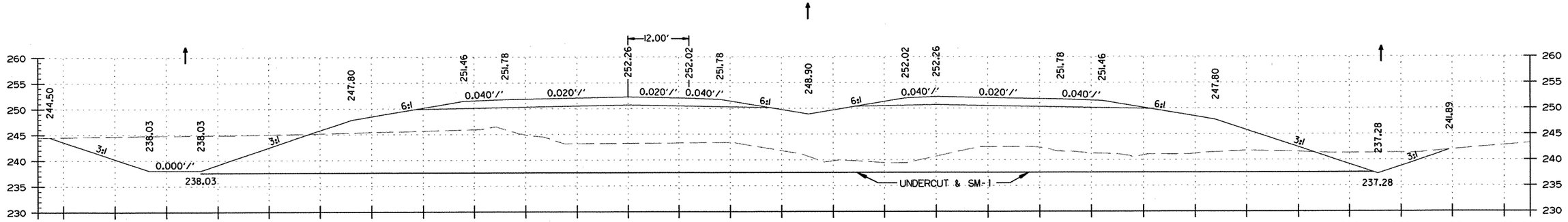
				6	ARK.			
				JOB NO.		100667	98	123

(2) CROSS SECTIONS



AREA CUT 255
AREA FILL 1312

STA. 367+45 - INSTALL
DBL. 60" x 118' PIPE CULV'T.
LT. SIDE DRAIN
CONSTR. APPR. = 180 CU. YD.

UNDERCUT
AREA CUT 1103
AREA FILL 0

SM-1 MATERIAL
AREA CUT 0
AREA FILL 1103

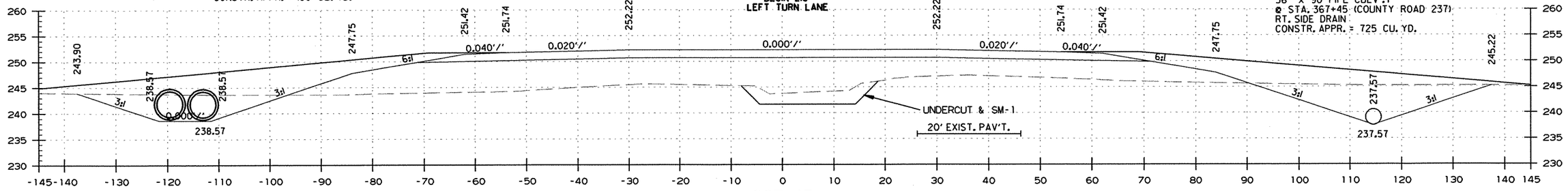
368+00

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 1183

UNDERCUT
CUT VOLUME 1183
FILL VOLUME 0

STA. 367+35 - IN PLACE
36" x 41' R.C. PIPE CULV'T.
RT. SIDE DRAIN
REMOVE & INSTALL
36" x 90' PIPE CULV'.T
@ STA. 367+45 (COUNTY ROAD 237)
RT. SIDE DRAIN
CONSTR. APPR. = 725 CU. YD.

CUT VOLUME 575
FILL VOLUME 2196



AREA CUT 309
AREA FILL 844

UNDERCUT
AREA CUT 59
AREA FILL 0

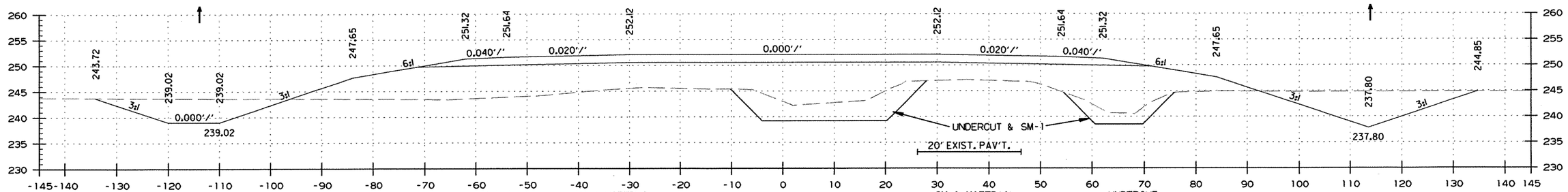
SM-1 MATERIAL
AREA CUT 0
AREA FILL 59

367+45

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 200

UNDERCUT
CUT VOLUME 200
FILL VOLUME 0

CUT VOLUME 471
FILL VOLUME 1522



AREA CUT 256
AREA FILL 982

UNDERCUT
AREA CUT 182
AREA FILL 0

SM-1 MATERIAL
AREA CUT 0
AREA FILL 182

367+00

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 530

UNDERCUT
CUT VOLUME 530
FILL VOLUME 0

CUT VOLUME 835
FILL VOLUME 3319

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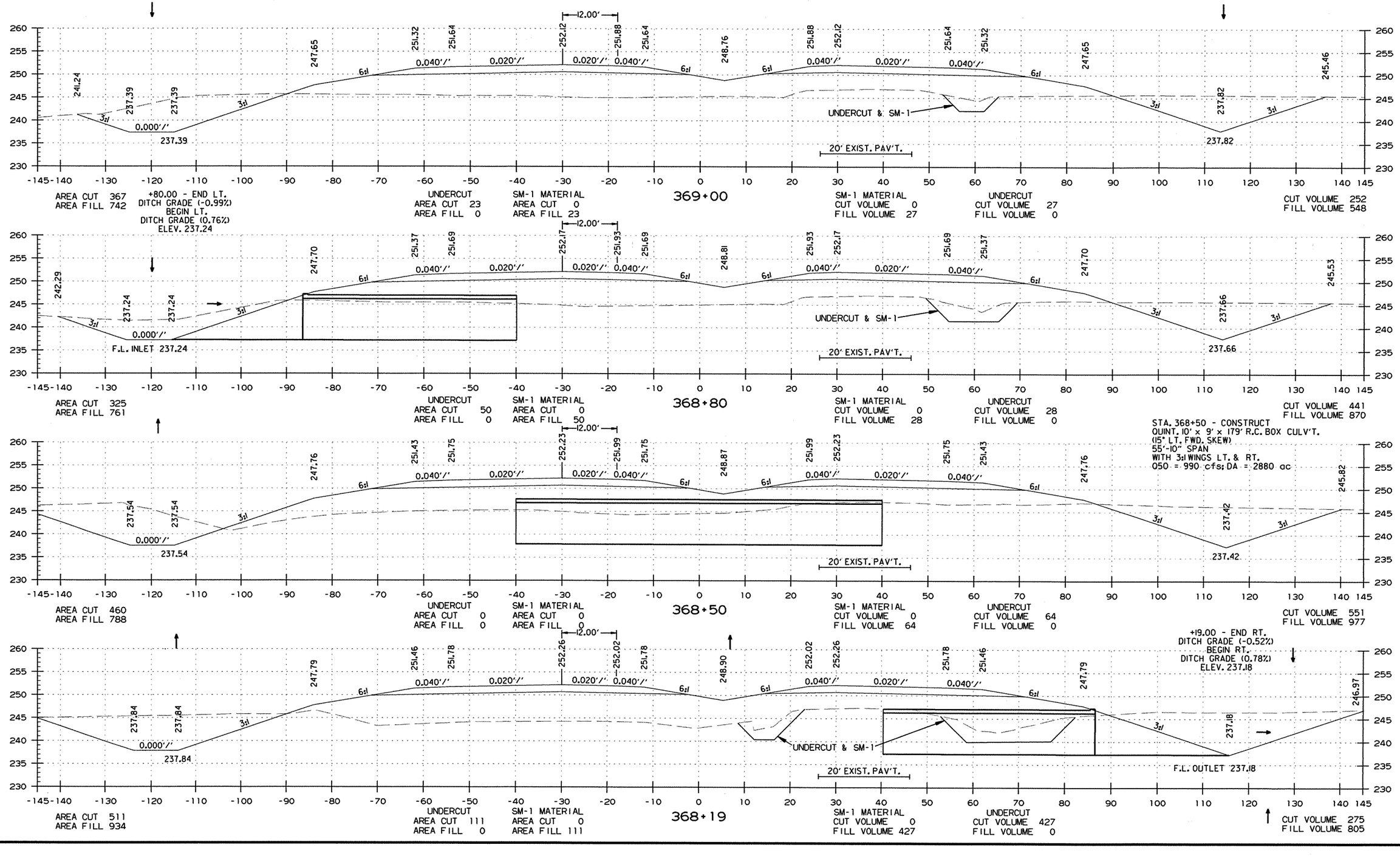
				6	ARK.			
				JOB NO.		100667	99	123

(2) CROSS SECTIONS



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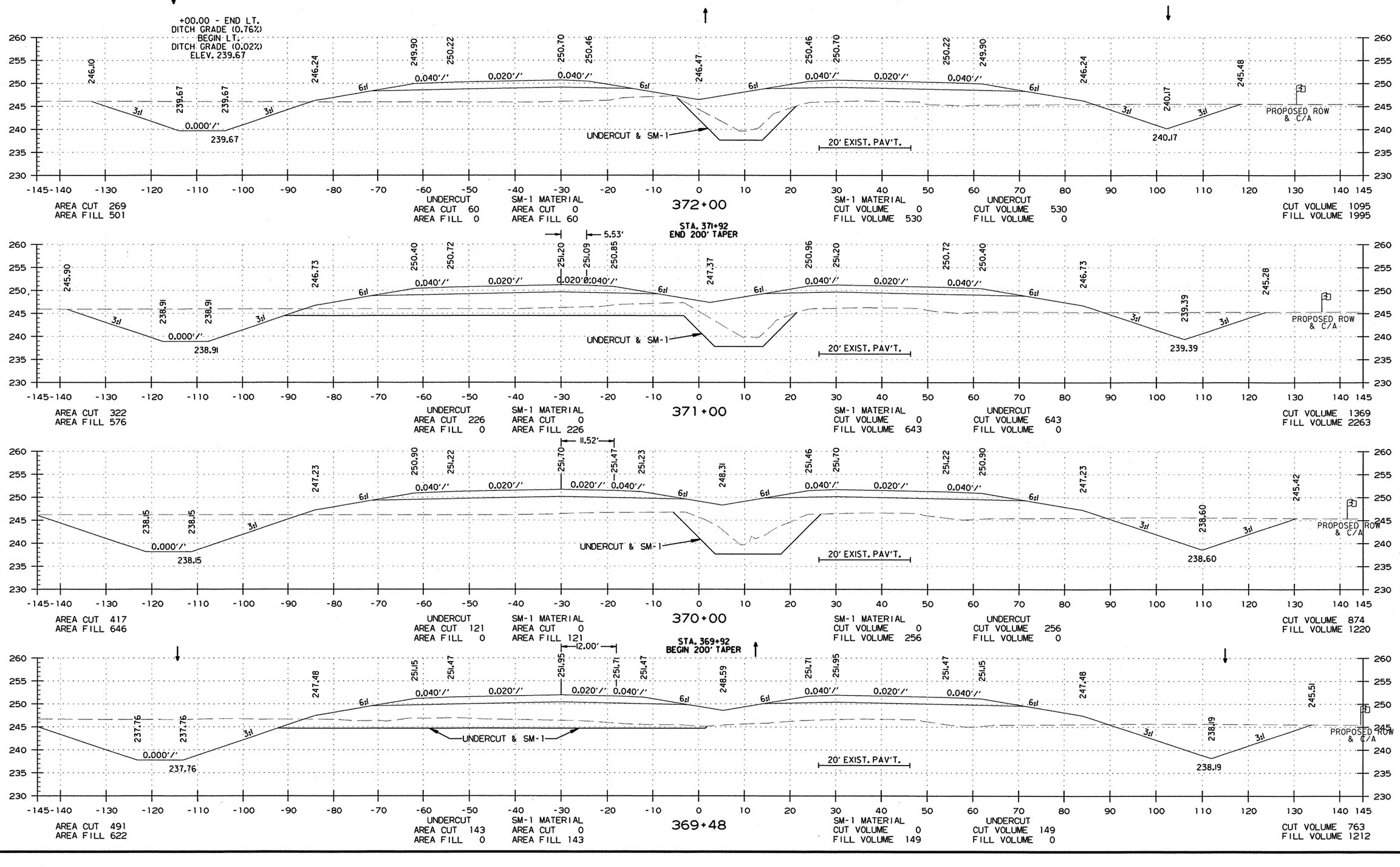
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100667	100	123

(2) CROSS SECTIONS



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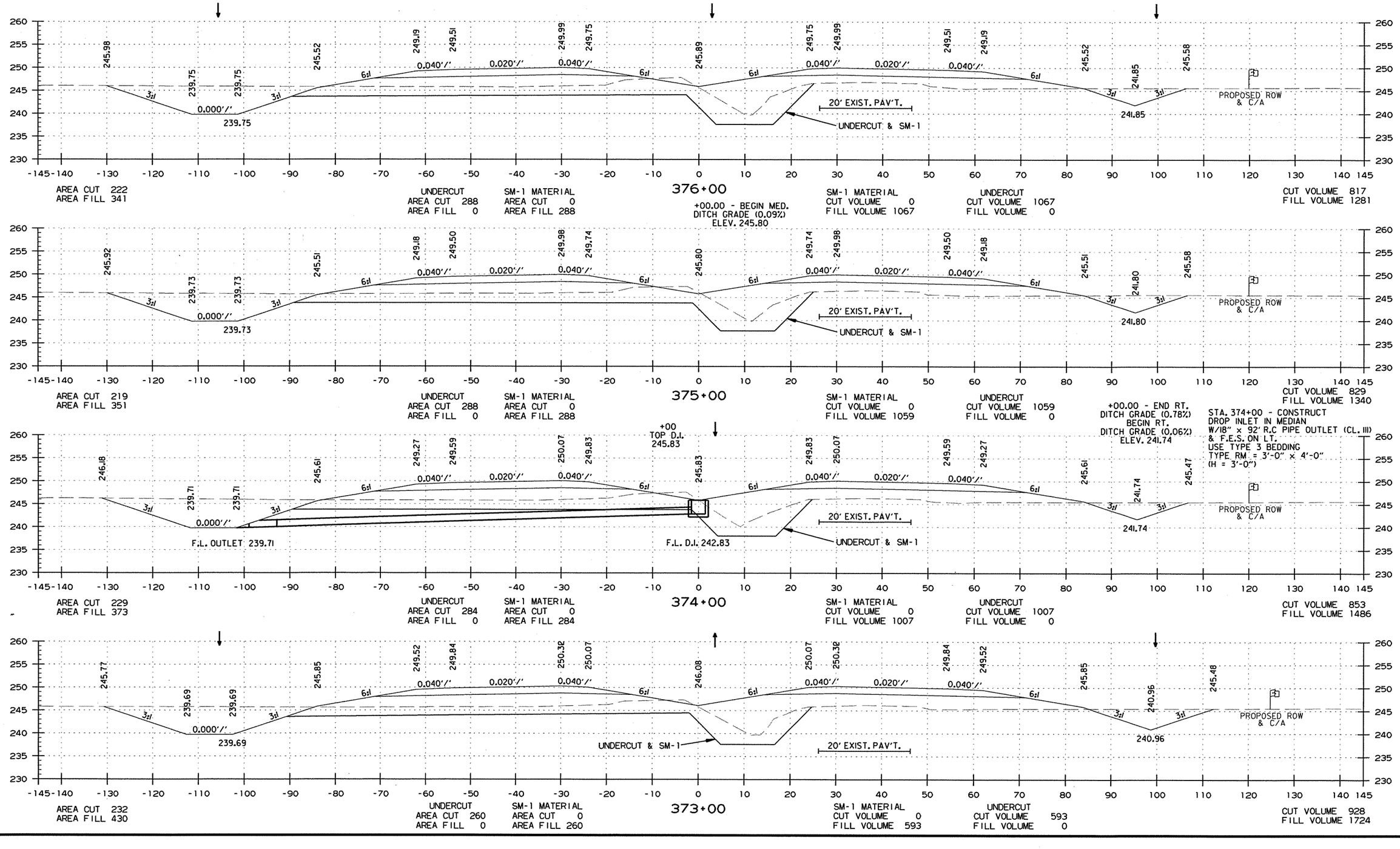
				6	ARK.			
				JOB NO.		100667	101	123

(2) CROSS SECTIONS



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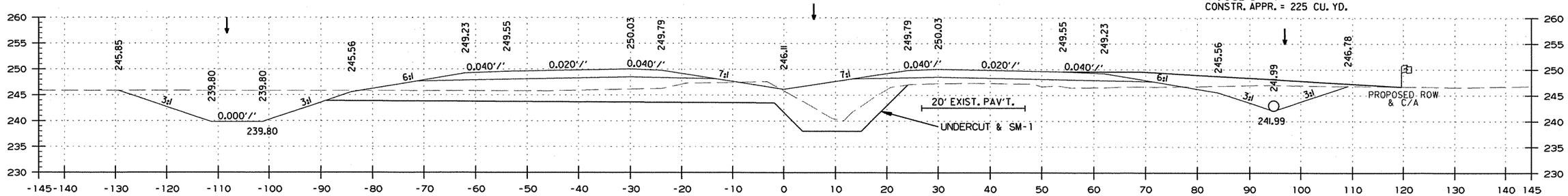
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100667	102	123

(2) CROSS SECTIONS

STA. 378+45 - INSTALL
24" x 58' PIPE CULV'T.
RT. SIDE DRAIN
CONSTR. APPR. = 225 CU. YD.



AREA CUT 246
AREA FILL 290

UNDERCUT
AREA CUT 303
AREA FILL 0

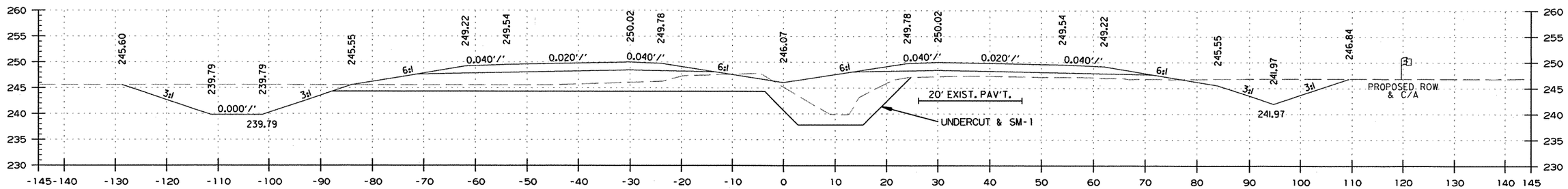
SM-1 MATERIAL
AREA CUT 0
AREA FILL 303

378+45

SM-1 MATERIAL
CUT VOLUME 453
FILL VOLUME 0

UNDERCUT
CUT VOLUME 453
FILL VOLUME 0

CUT VOLUME 402
FILL VOLUME 488



AREA CUT 236
AREA FILL 296

UNDERCUT
AREA CUT 241
AREA FILL 0

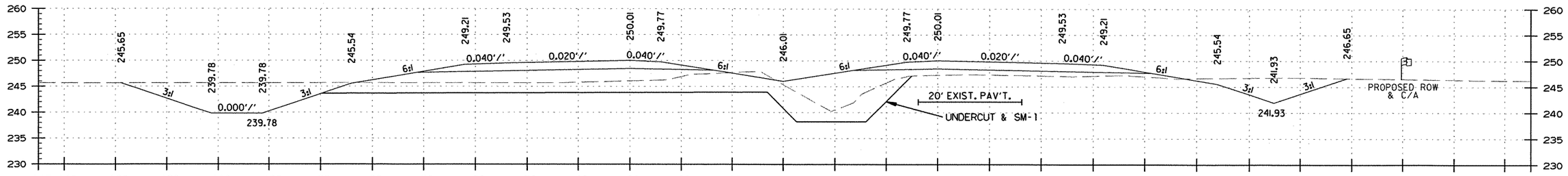
SM-1 MATERIAL
AREA CUT 0
AREA FILL 241

378+00

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 677

UNDERCUT
CUT VOLUME 677
FILL VOLUME 0

CUT VOLUME 597
FILL VOLUME 730



AREA CUT 238
AREA FILL 284

UNDERCUT
AREA CUT 297
AREA FILL 0

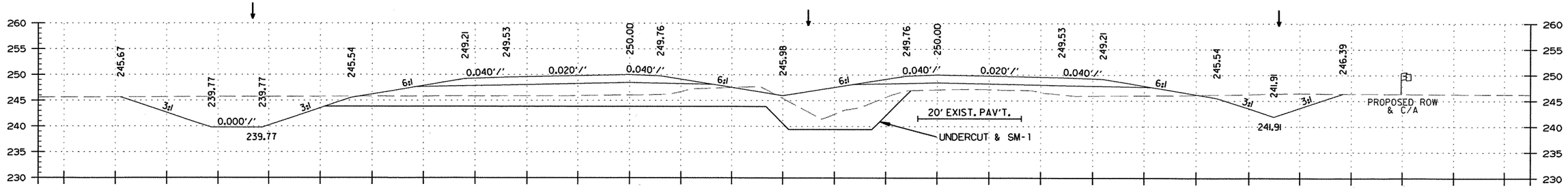
SM-1 MATERIAL
AREA CUT 0
AREA FILL 297

377+32

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 348

UNDERCUT
CUT VOLUME 348
FILL VOLUME 0

CUT VOLUME 276
FILL VOLUME 344



AREA CUT 229
AREA FILL 296

UNDERCUT
AREA CUT 291
AREA FILL 0

SM-1 MATERIAL
AREA CUT 0
AREA FILL 291

377+00

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 1073

UNDERCUT
CUT VOLUME 1073
FILL VOLUME 0

CUT VOLUME 835
FILL VOLUME 1180

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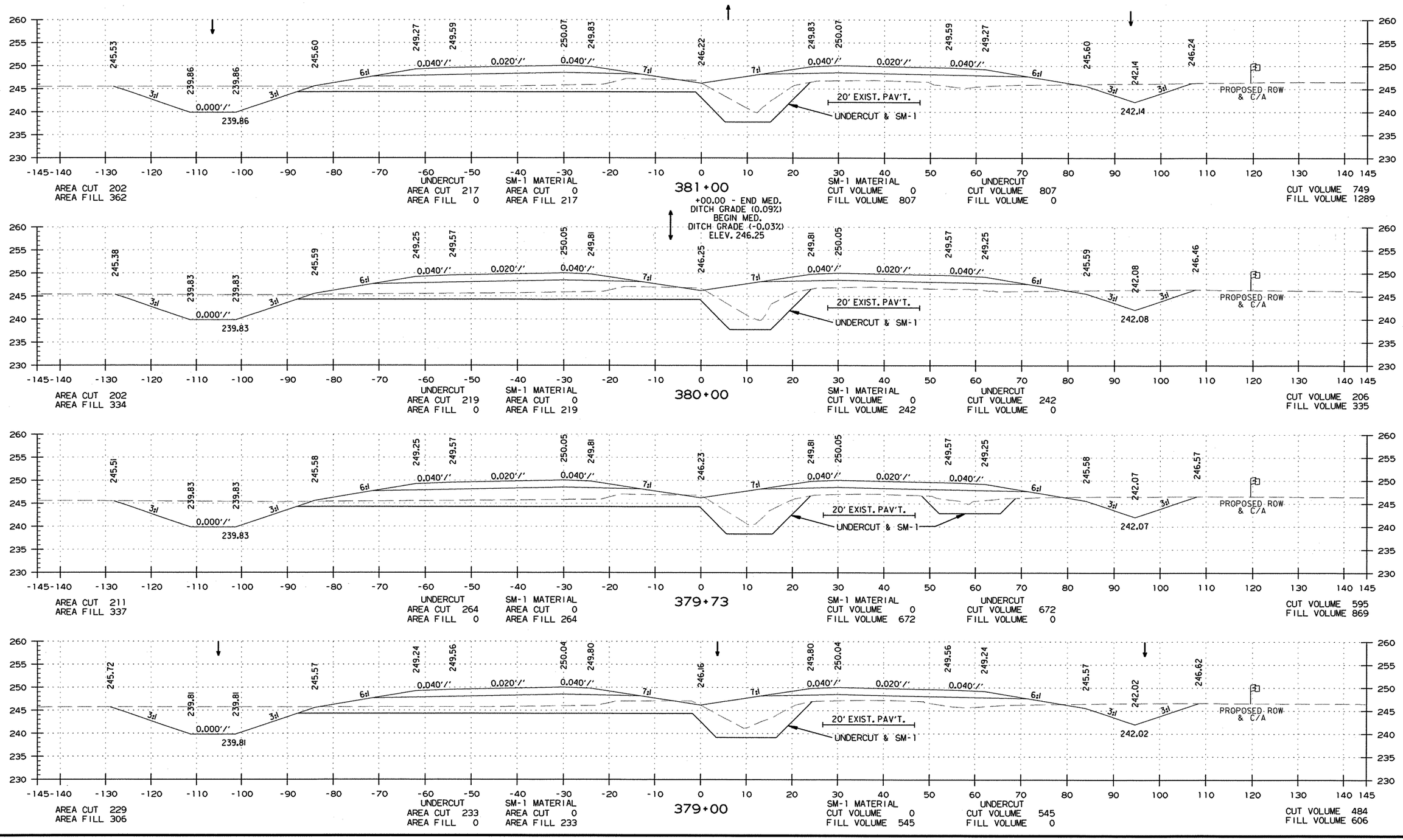
				6	ARK.			
				JOB NO.		100667	103	123

(2) CROSS SECTIONS



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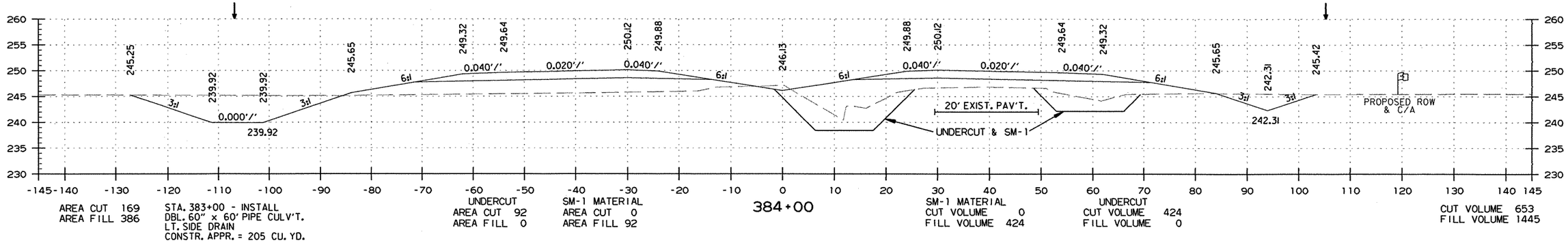
				6	ARK.			
				JOB NO.		100667	104	123

(2) CROSS SECTIONS



AREA CUT 169
AREA FILL 386

STA. 383+00 - INSTALL
DBL. 60" x 60' PIPE CULV'T.
LT. SIDE DRAIN
CONSTR. APPR. = 205 CU. YD.

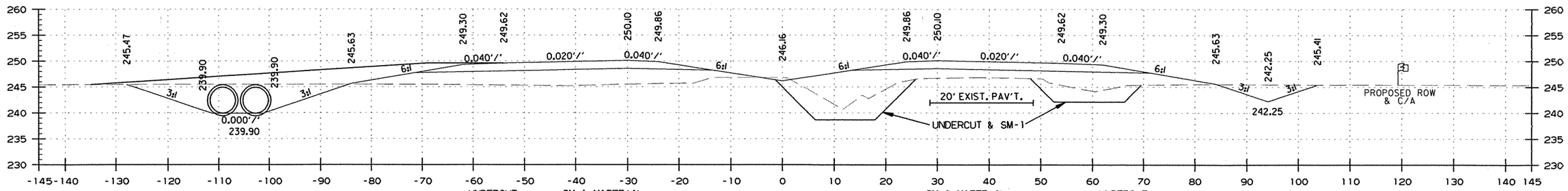
UNDERCUT
AREA CUT 92
AREA FILL 0

SM-1 MATERIAL
AREA CUT 0
AREA FILL 92

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 424

UNDERCUT
CUT VOLUME 424
FILL VOLUME 0

CUT VOLUME 653
FILL VOLUME 1445



AREA CUT 183
AREA FILL 394

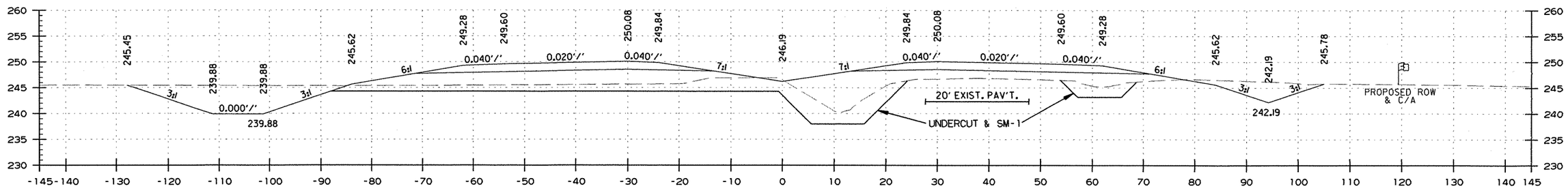
UNDERCUT
AREA CUT 137
AREA FILL 0

SM-1 MATERIAL
AREA CUT 0
AREA FILL 137

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 692

UNDERCUT
CUT VOLUME 692
FILL VOLUME 0

CUT VOLUME 701
FILL VOLUME 1406



AREA CUT 196
AREA FILL 365

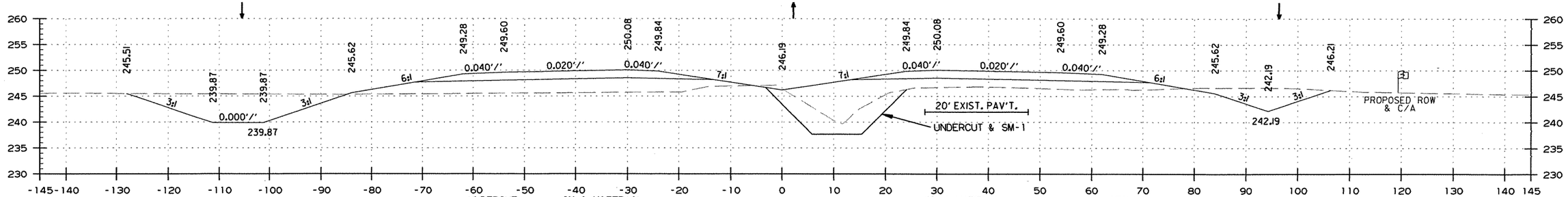
UNDERCUT
AREA CUT 237
AREA FILL 0

SM-1 MATERIAL
AREA CUT 237
AREA FILL 0

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 78

UNDERCUT
CUT VOLUME 78
FILL VOLUME 0

CUT VOLUME 97
FILL VOLUME 173



AREA CUT 208
AREA FILL 354

UNDERCUT
AREA CUT 87
AREA FILL 0

SM-1 MATERIAL
AREA CUT 0
AREA FILL 87

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 490

UNDERCUT
CUT VOLUME 490
FILL VOLUME 0

CUT VOLUME 661
FILL VOLUME 1153

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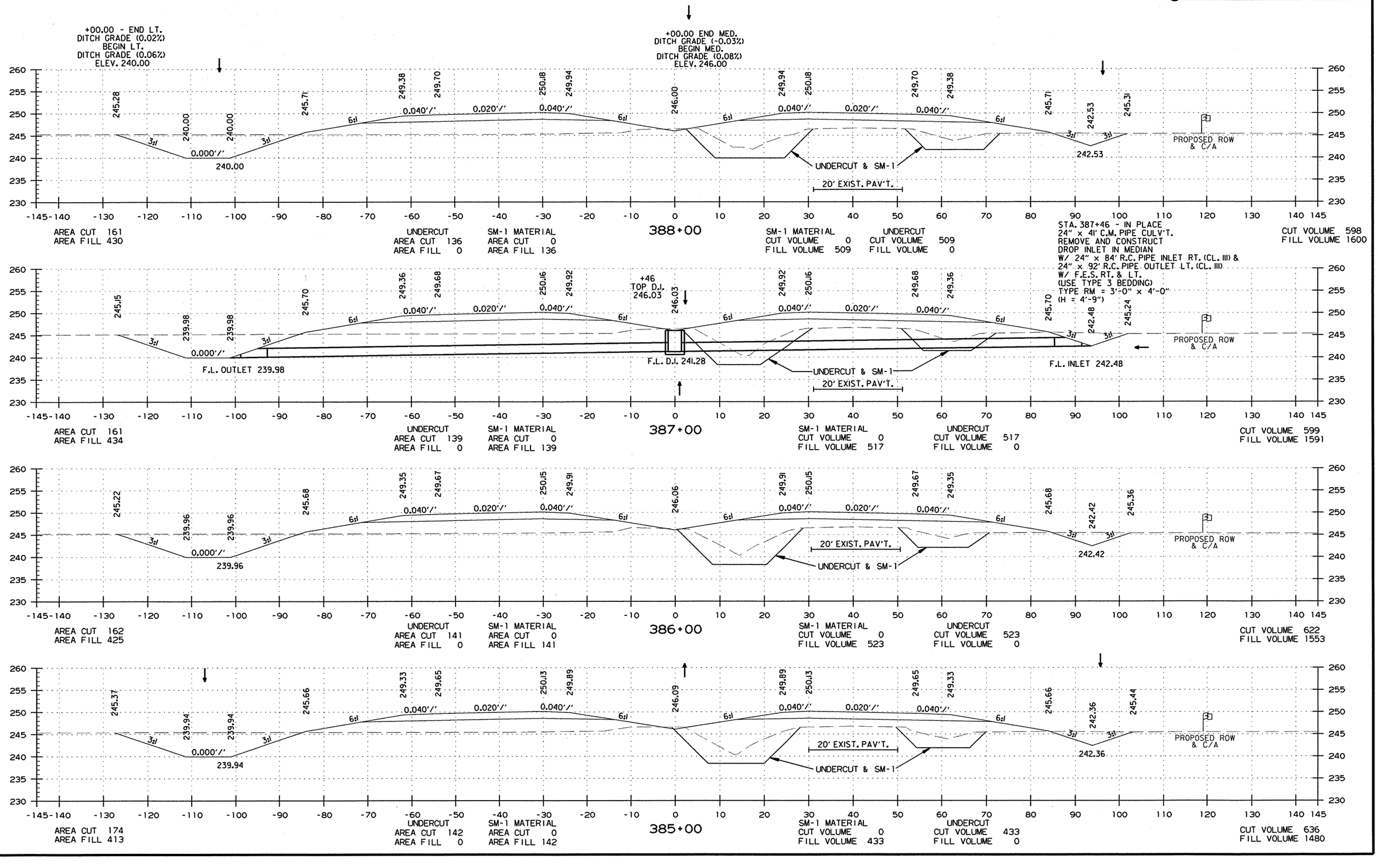
				6	ARK.			
				JOB NO.		100667	105	123

(2) CROSS SECTIONS



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				6	ARK.			
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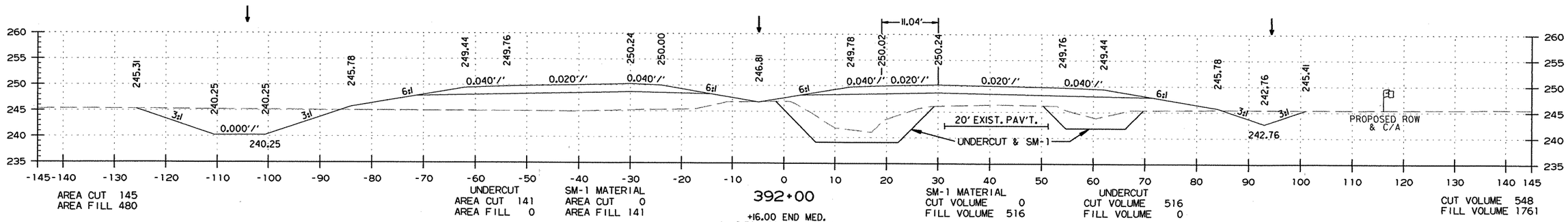
(2) CROSS SECTIONS

STA. 392+16
BEGIN 210' LEFT TURN LANE



AREA CUT 145
AREA FILL 480

UNDERCUT
AREA CUT 141
AREA FILL 0

SM-1 MATERIAL
AREA CUT 0
AREA FILL 141

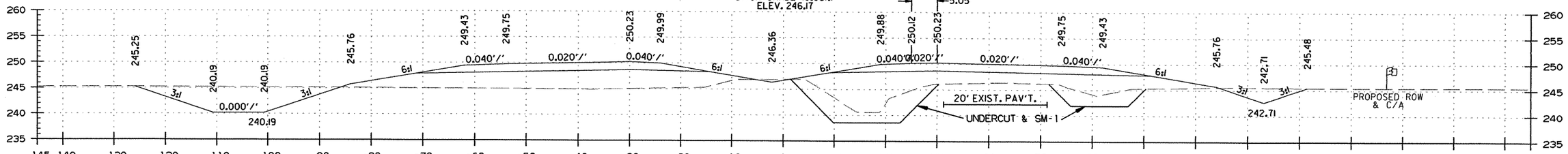
392+00

+16.00 END MED.
DITCH GRADE (0.08%)
ELEV. 246.17

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 516

UNDERCUT
CUT VOLUME 516
FILL VOLUME 0

CUT VOLUME 548
FILL VOLUME 1761



AREA CUT 151
AREA FILL 472

UNDERCUT
AREA CUT 137
AREA FILL 0

SM-1 MATERIAL
AREA CUT 0
AREA FILL 137

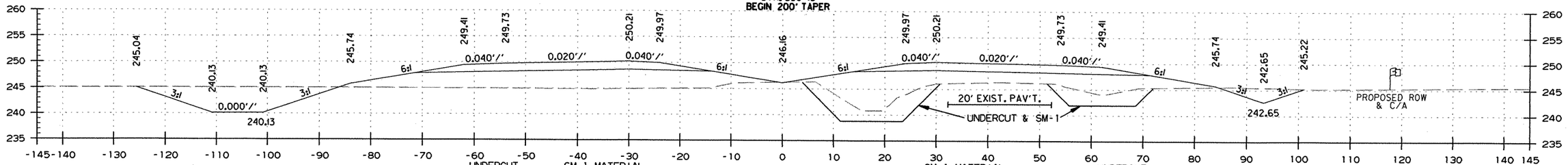
391+00

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 485

UNDERCUT
CUT VOLUME 485
FILL VOLUME 0

CUT VOLUME 547
FILL VOLUME 1765

STA. 390+16
BEGIN 200' TAPER



AREA CUT 145
AREA FILL 481

UNDERCUT
AREA CUT 125
AREA FILL 0

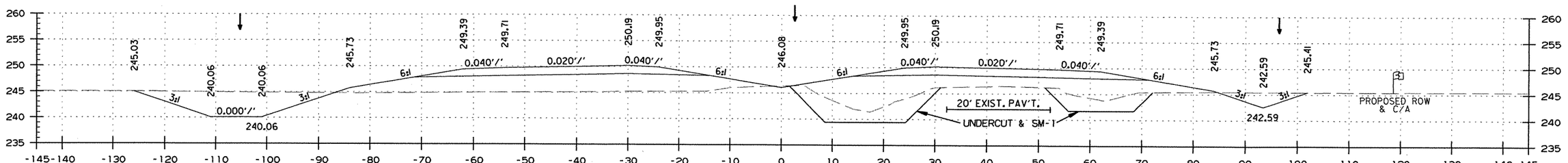
SM-1 MATERIAL
AREA CUT 0
AREA FILL 125

390+00

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 484

UNDERCUT
CUT VOLUME 484
FILL VOLUME 0

CUT VOLUME 533
FILL VOLUME 1761



AREA CUT 143
AREA FILL 470

UNDERCUT
AREA CUT 137
AREA FILL 0

SM-1 MATERIAL
AREA CUT 0
AREA FILL 137

389+00

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 506

UNDERCUT
CUT VOLUME 506
FILL VOLUME 0

CUT VOLUME 564
FILL VOLUME 1667

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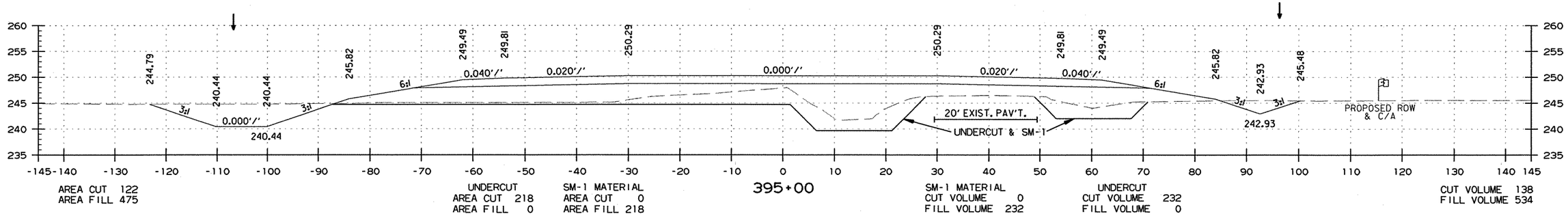
(2) CROSS SECTIONS

STA. 395+14
BEGIN 210' LEFT TURN LANE



AREA CUT 122
AREA FILL 475

UNDERCUT
AREA CUT 218
AREA FILL 0

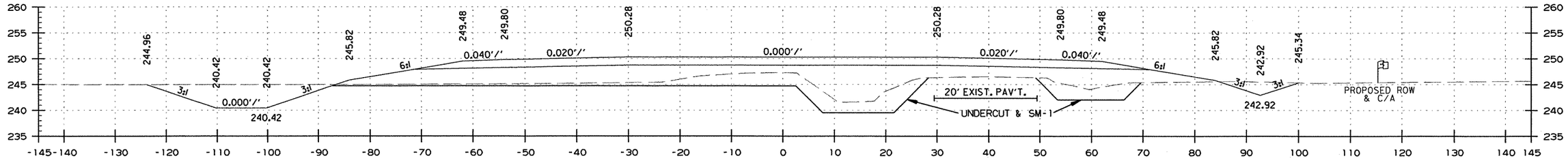
SM-1 MATERIAL
AREA CUT 0
AREA FILL 218

395+00

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 232

UNDERCUT
CUT VOLUME 232
FILL VOLUME 0

CUT VOLUME 138
FILL VOLUME 534



AREA CUT 127
AREA FILL 486

UNDERCUT
AREA CUT 199
AREA FILL 0

SM-1 MATERIAL
AREA CUT 0
AREA FILL 199

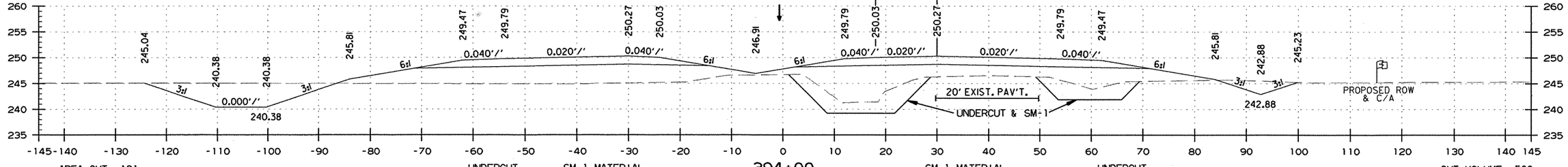
394+70

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 422

UNDERCUT
CUT VOLUME 422
FILL VOLUME 0

CUT VOLUME 334
FILL VOLUME 1258

STA. 394+26
BEGIN MEDIAN TURNAROUND



AREA CUT 131
AREA FILL 484

UNDERCUT
AREA CUT 126
AREA FILL 0

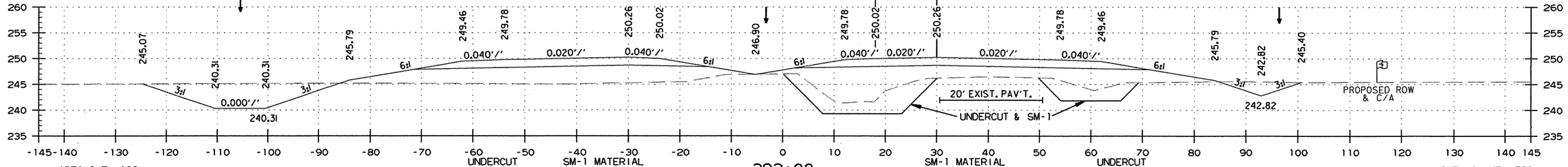
SM-1 MATERIAL
AREA CUT 0
AREA FILL 126

394+00

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 484

UNDERCUT
CUT VOLUME 484
FILL VOLUME 0

CUT VOLUME 500
FILL VOLUME 1759



AREA CUT 139
AREA FILL 465

UNDERCUT
AREA CUT 136
AREA FILL 0

SM-1 MATERIAL
AREA CUT 0
AREA FILL 136

393+00

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 513

UNDERCUT
CUT VOLUME 513
FILL VOLUME 0

CUT VOLUME 526
FILL VOLUME 1750

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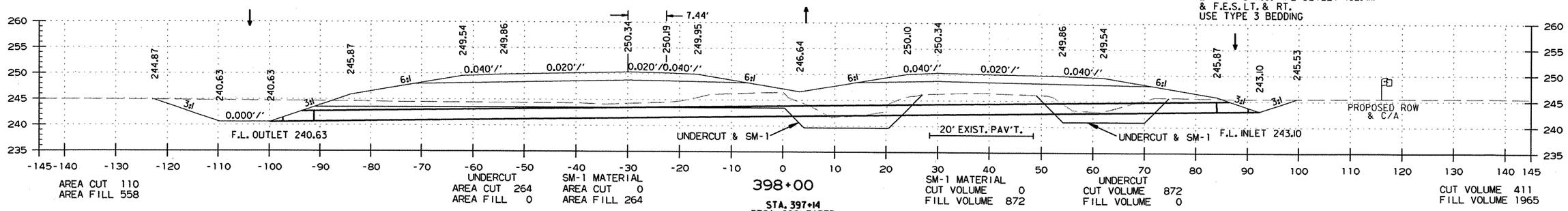
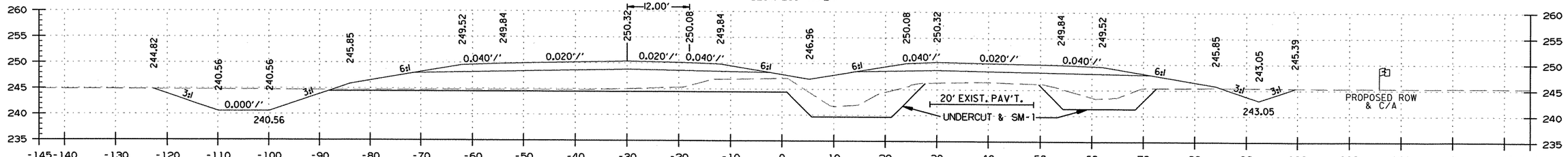
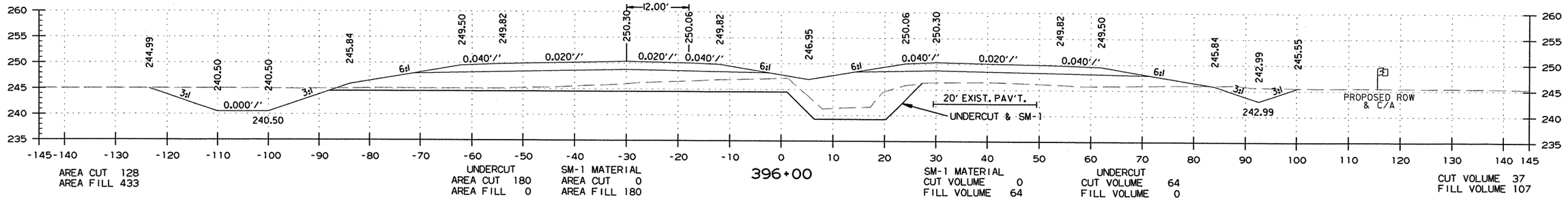
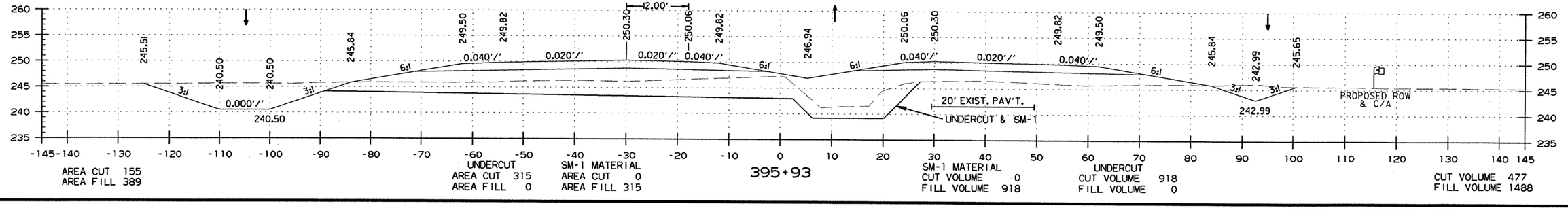
(2) CROSS SECTIONS

STA. 398+00 - IN PLACE
24" x 34' C.M. PIPE CULV'T.
REMOVE AND CONSTRUCT
24" x 176' R.C. PIPE OUTLET (CL. III)
& F.E.S. LT. & RT.
USE TYPE 3 BEDDING









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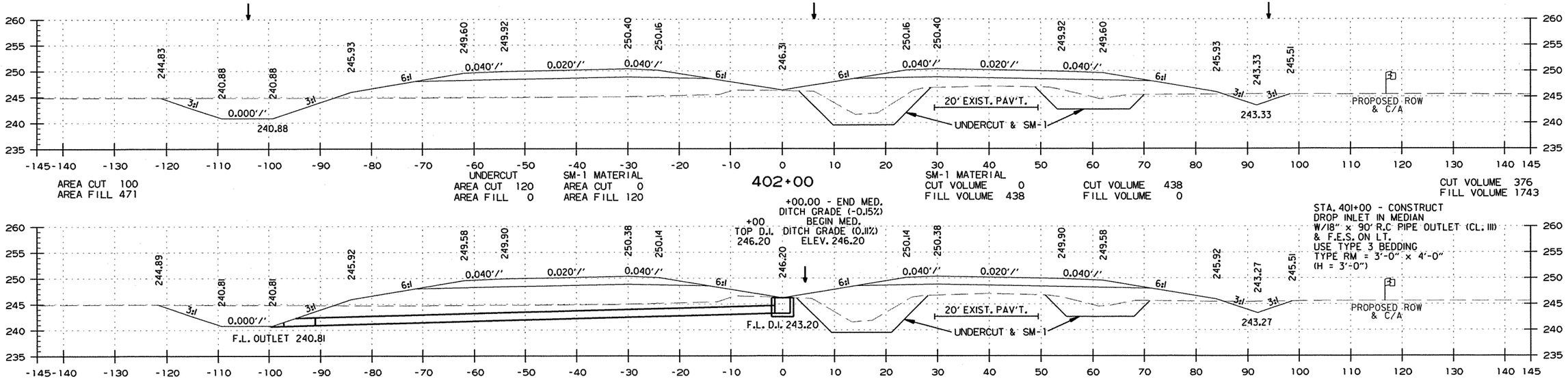
				6	ARK.			
				JOB NO.		100667	109	123

(2) CROSS SECTIONS



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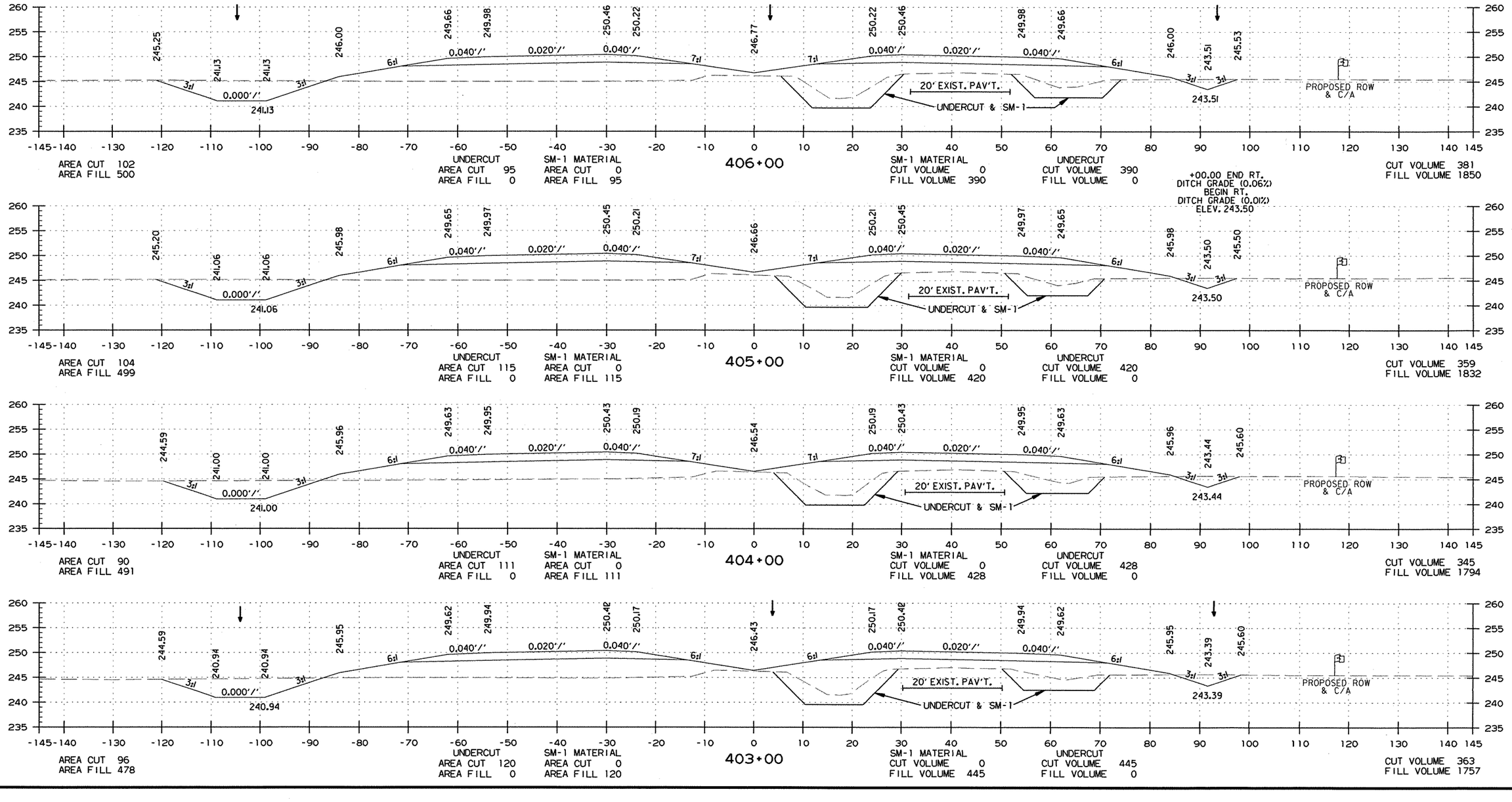
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100667	110	123

(2) CROSS SECTIONS



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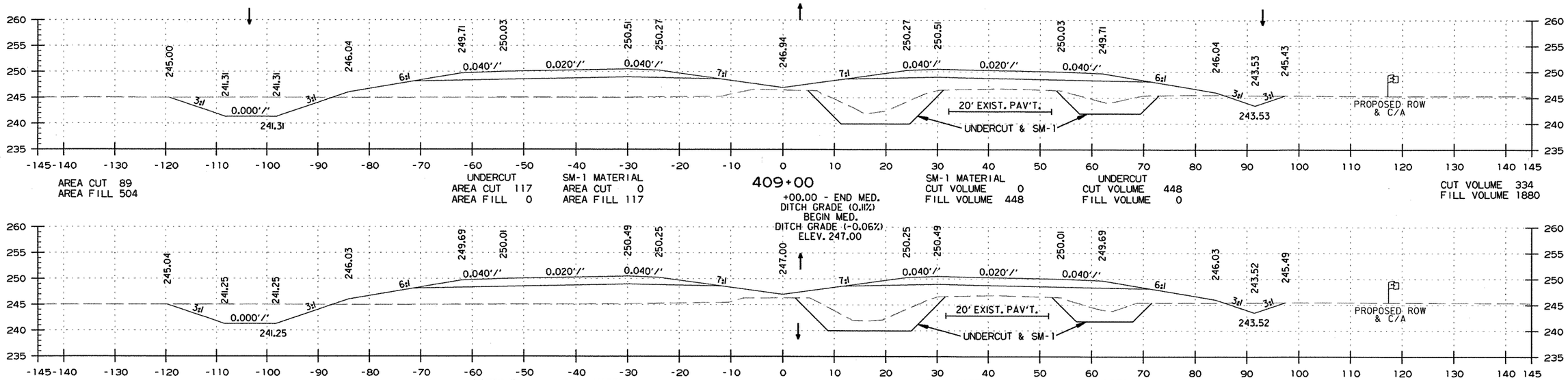
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100667	111	123

(2) CROSS SECTIONS



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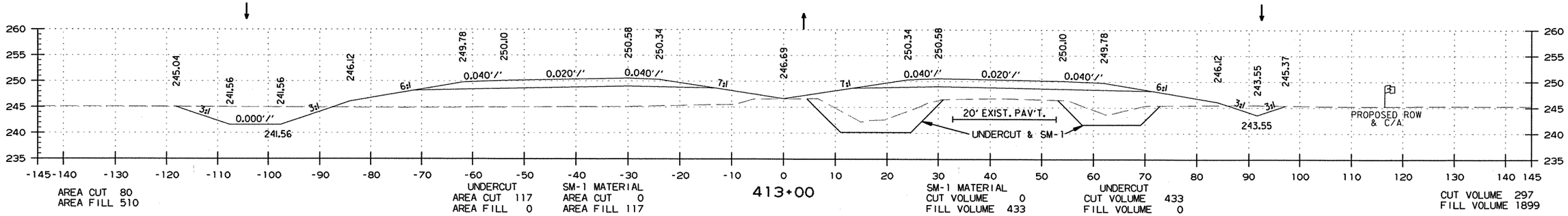
				6	ARK.			
				JOB NO.		100667	112	123

(2) CROSS SECTIONS



AREA CUT 80
AREA FILL 510

UNDERCUT
AREA CUT 117
AREA FILL 0

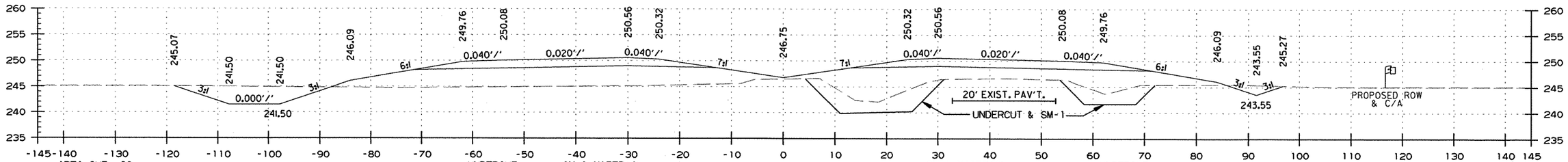
SM-1 MATERIAL
AREA CUT 0
AREA FILL 117

413+00

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 433

UNDERCUT
CUT VOLUME 433
FILL VOLUME 0

CUT VOLUME 297
FILL VOLUME 1899



AREA CUT 80
AREA FILL 515

UNDERCUT
AREA CUT 117
AREA FILL 0

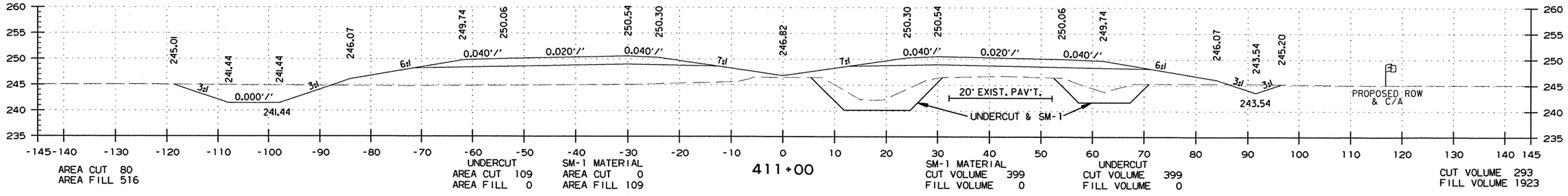
SM-1 MATERIAL
AREA CUT 0
AREA FILL 117

412+00

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 417

UNDERCUT
CUT VOLUME 417
FILL VOLUME 0

CUT VOLUME 297
FILL VOLUME 1910



AREA CUT 80
AREA FILL 516

UNDERCUT
AREA CUT 109
AREA FILL 0

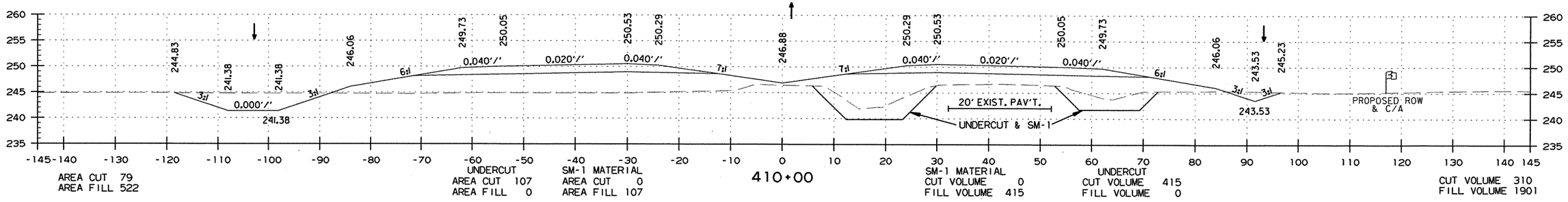
SM-1 MATERIAL
AREA CUT 0
AREA FILL 109

411+00

SM-1 MATERIAL
CUT VOLUME 399
FILL VOLUME 0

UNDERCUT
CUT VOLUME 399
FILL VOLUME 0

CUT VOLUME 293
FILL VOLUME 1923



AREA CUT 79
AREA FILL 522

UNDERCUT
AREA CUT 107
AREA FILL 0

SM-1 MATERIAL
AREA CUT 0
AREA FILL 107

410+00

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 415

UNDERCUT
CUT VOLUME 415
FILL VOLUME 0

CUT VOLUME 310
FILL VOLUME 1901

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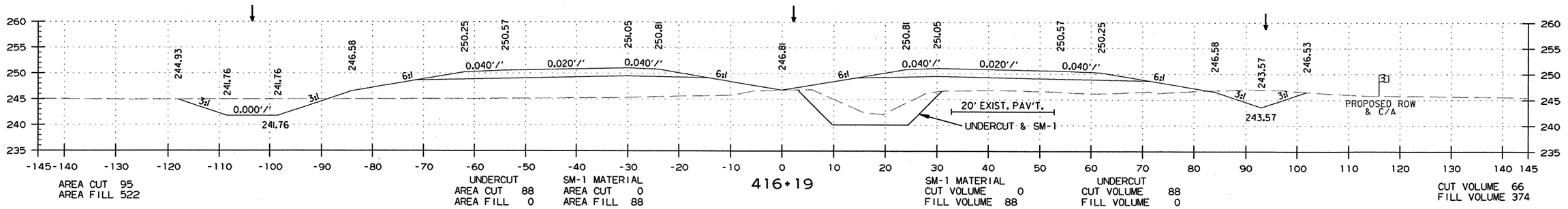
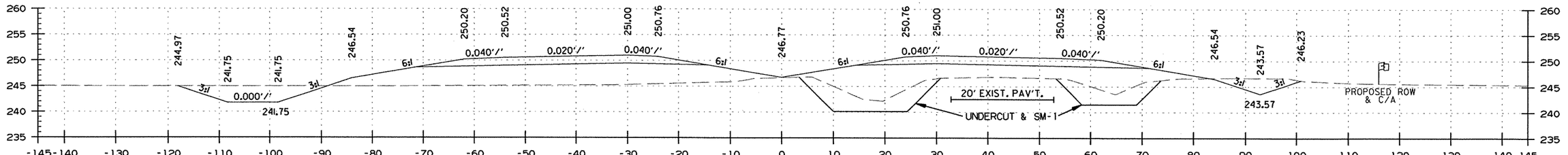
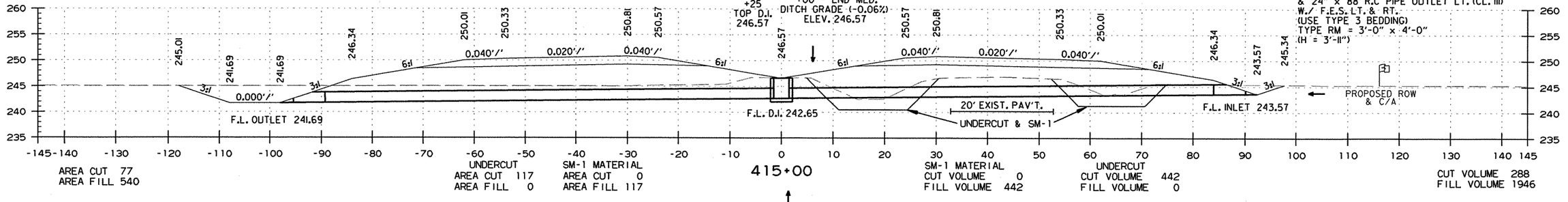
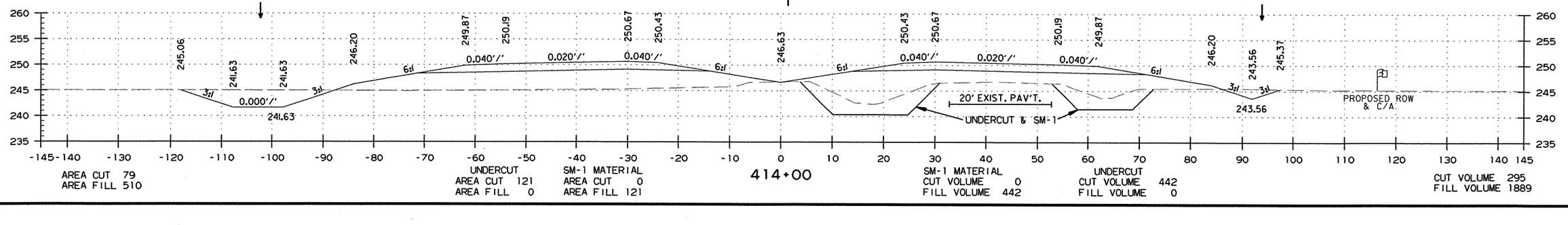
				6	ARK.			
				JOB NO.		100667	113	123

(2) CROSS SECTIONS









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(2) CROSS SECTIONS

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				6	ARK.			
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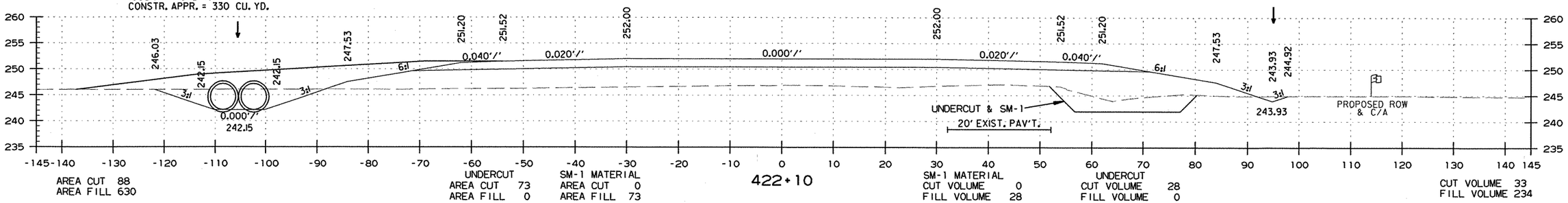
(2) CROSS SECTIONS

STA. 422+54
BEGIN 210' LEFT TURN LANE

STA. 422+10 - INSTALL
DBL. 60" x 60' PIPE CULV'T.
LT. SIDE DRAIN
(COUNTY ROAD 161)
CONSTR. APPR. = 330 CU. YD.



422+10

AREA CUT 88
AREA FILL 630

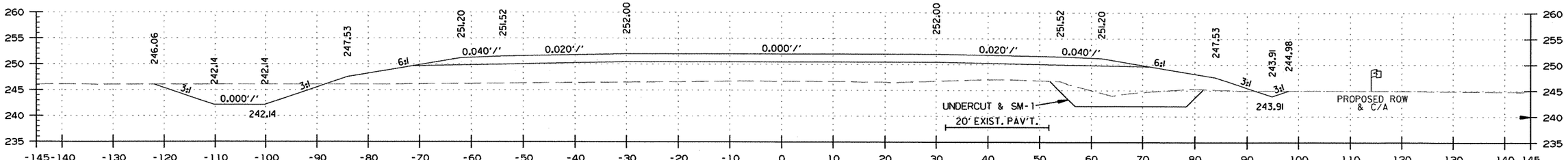
UNDERCUT
AREA CUT 73
AREA FILL 0

SM-1 MATERIAL
AREA CUT 0
AREA FILL 73

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 28

UNDERCUT
CUT VOLUME 28
FILL VOLUME 0

CUT VOLUME 33
FILL VOLUME 234



422+00

AREA CUT 89
AREA FILL 633

UNDERCUT
AREA CUT 76
AREA FILL 0

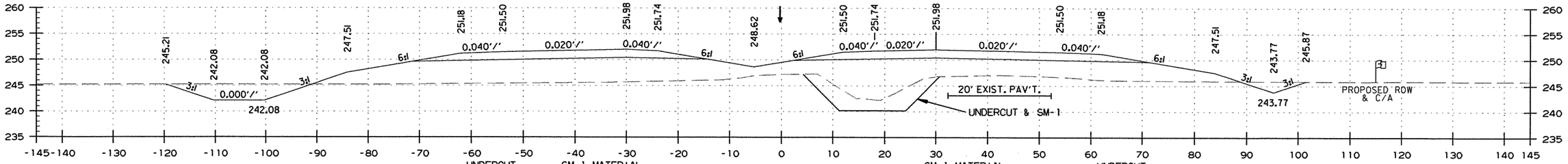
SM-1 MATERIAL
AREA CUT 0
AREA FILL 76

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 245

UNDERCUT
CUT VOLUME 245
FILL VOLUME 0

CUT VOLUME 268
FILL VOLUME 2162

STA. 421+16
BEGIN MEDIAN TURNAROUND



421+11

AREA CUT 74
AREA FILL 679

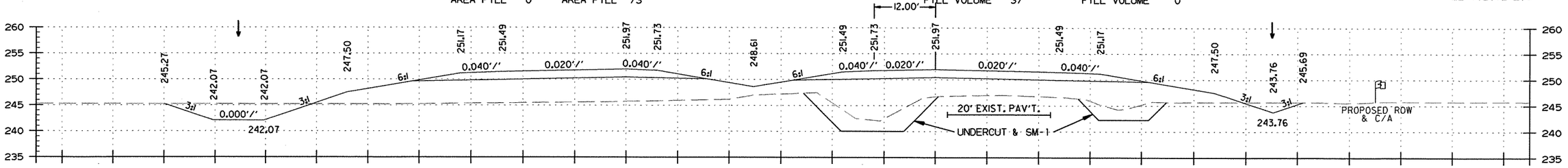
UNDERCUT
AREA CUT 73
AREA FILL 0

SM-1 MATERIAL
AREA CUT 0
AREA FILL 73

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 37

UNDERCUT
CUT VOLUME 37
FILL VOLUME 0

CUT VOLUME 30
FILL VOLUME 280



421+00

AREA CUT 73
AREA FILL 694

UNDERCUT
AREA CUT 109
AREA FILL 0

SM-1 MATERIAL
AREA CUT 0
AREA FILL 109

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 447

UNDERCUT
CUT VOLUME 447
FILL VOLUME 0

CUT VOLUME 266
FILL VOLUME 2620

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				6	ARK.			
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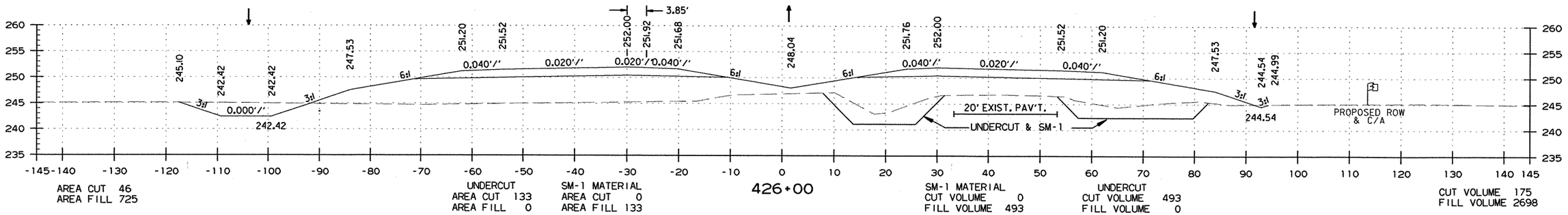
(2) CROSS SECTIONS

STA. 426+64
END 200' TAPER



AREA CUT 46
AREA FILL 725

UNDERCUT
AREA CUT 133
AREA FILL 0

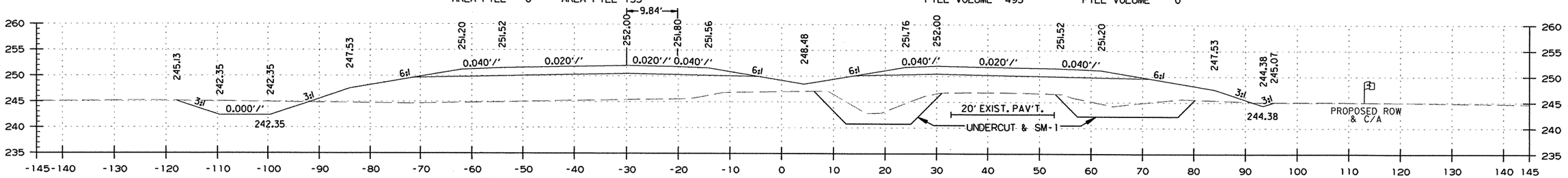
SM-1 MATERIAL
AREA CUT 0
AREA FILL 133

426+00

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 493

UNDERCUT
CUT VOLUME 493
FILL VOLUME 0

CUT VOLUME 175
FILL VOLUME 2698



AREA CUT 48
AREA FILL 732

UNDERCUT
AREA CUT 133
AREA FILL 0

SM-1 MATERIAL
AREA CUT 0
AREA FILL 133

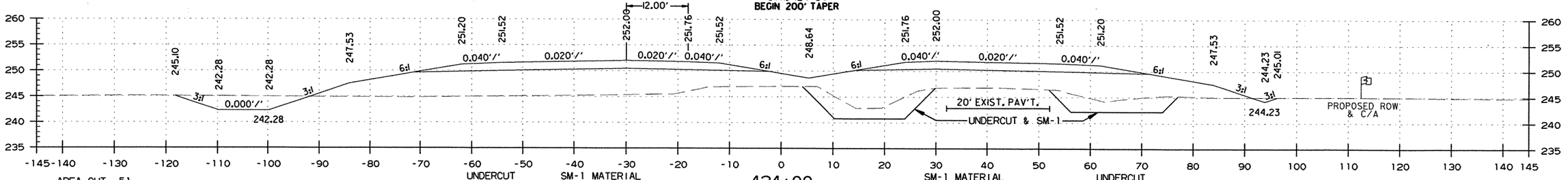
425+00

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 484

UNDERCUT
CUT VOLUME 484
FILL VOLUME 0

CUT VOLUME 185
FILL VOLUME 2726

STA. 424+64
BEGIN 200' TAPER



AREA CUT 51
AREA FILL 740

UNDERCUT
AREA CUT 128
AREA FILL 0

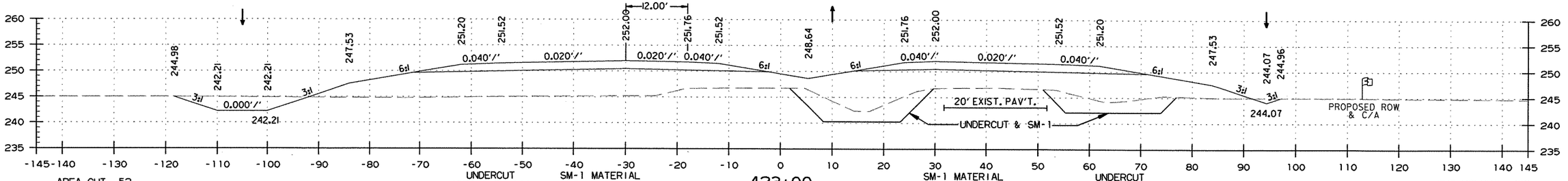
SM-1 MATERIAL
AREA CUT 0
AREA FILL 128

424+00

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 503

UNDERCUT
CUT VOLUME 503
FILL VOLUME 0

CUT VOLUME 191
FILL VOLUME 2770



AREA CUT 52
AREA FILL 756

UNDERCUT
AREA CUT 144
AREA FILL 0

SM-1 MATERIAL
AREA CUT 0
AREA FILL 144

423+00

SM-1 MATERIAL
CUT VOLUME 0
FILL VOLUME 361

UNDERCUT
CUT VOLUME 361
FILL VOLUME 0

CUT VOLUME 232
FILL VOLUME 2310

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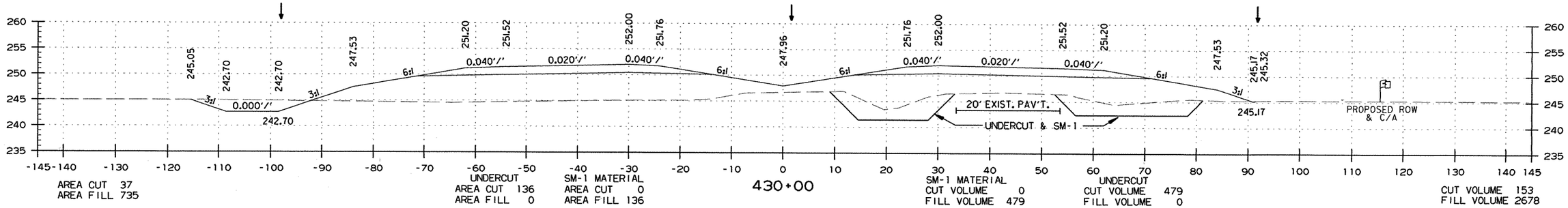
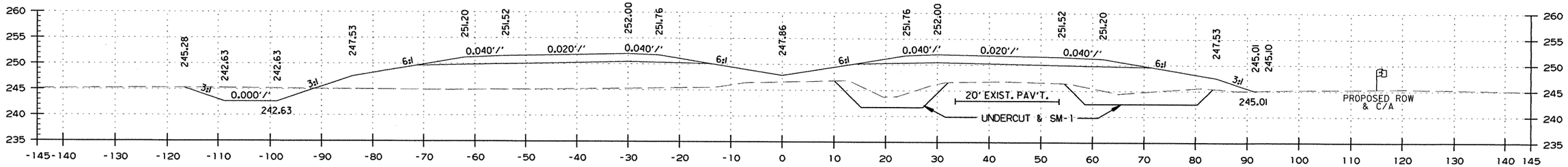
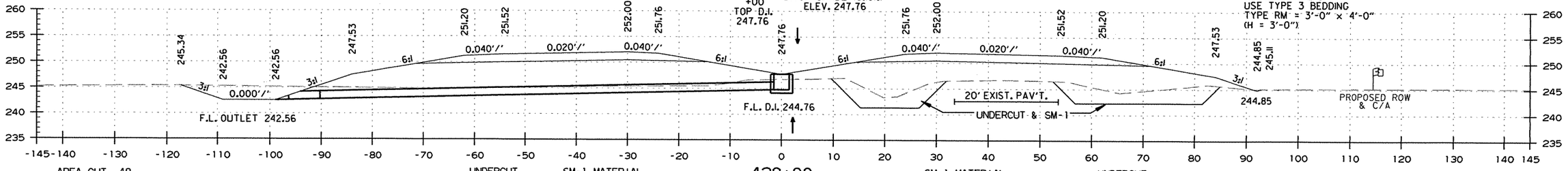
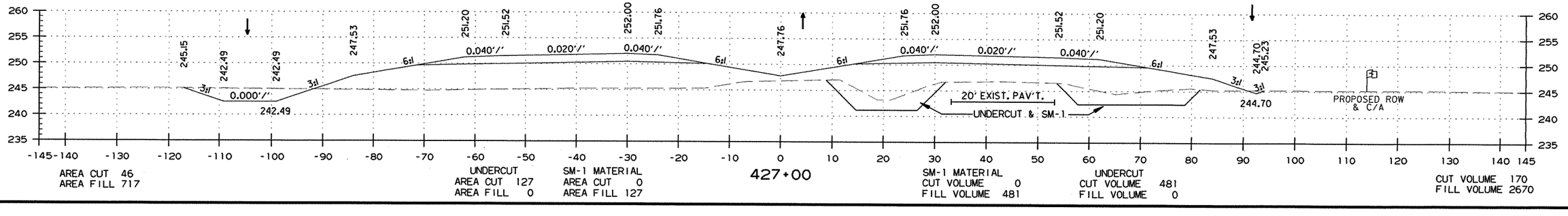
				JOB NO.		100667	117	123

(2) CROSS SECTIONS









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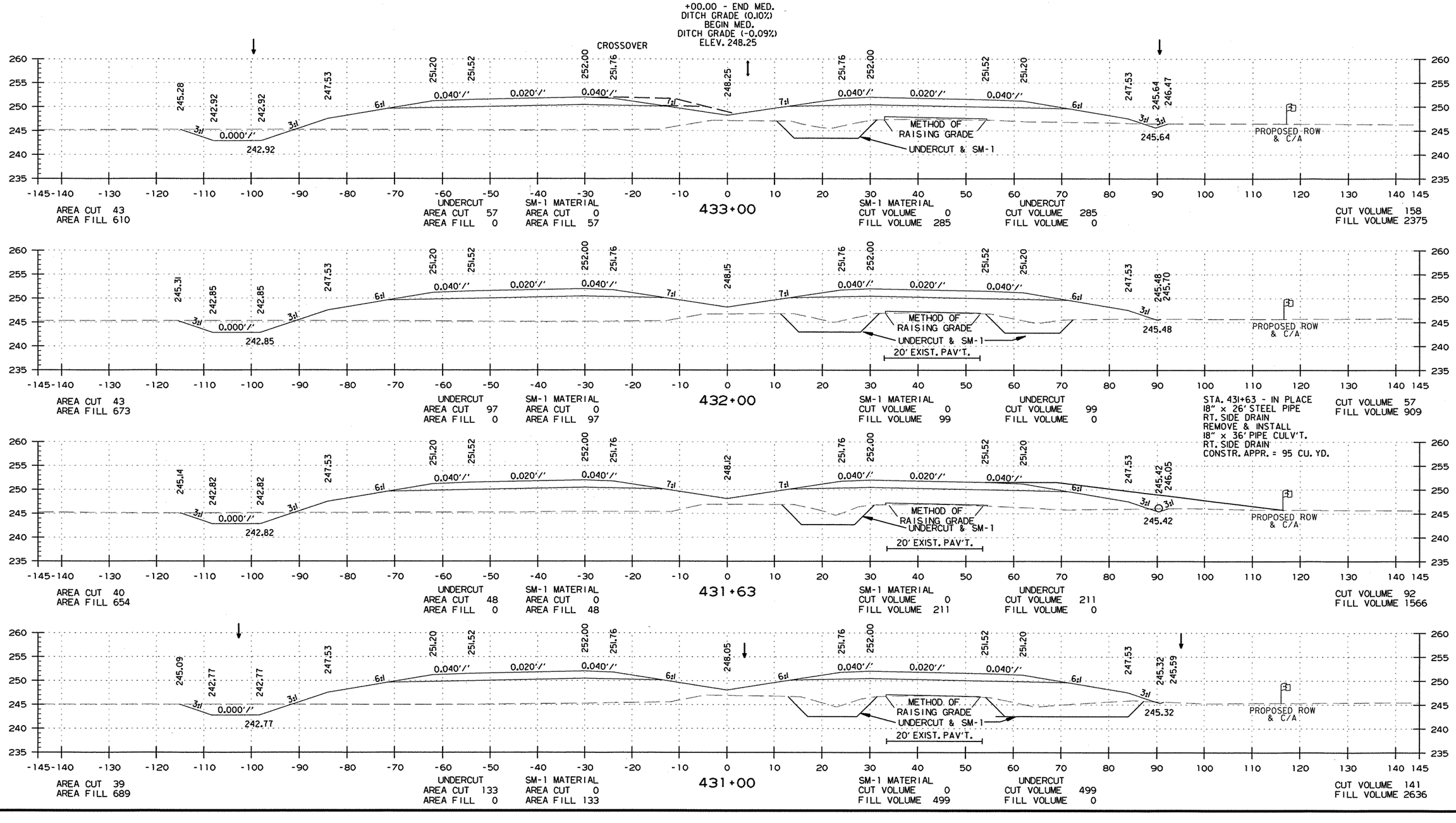
				JOB NO.		100667	118	123

(2) CROSS SECTIONS



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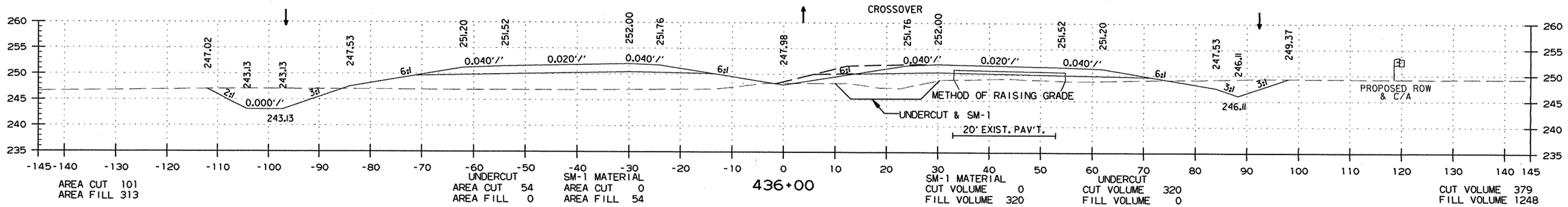
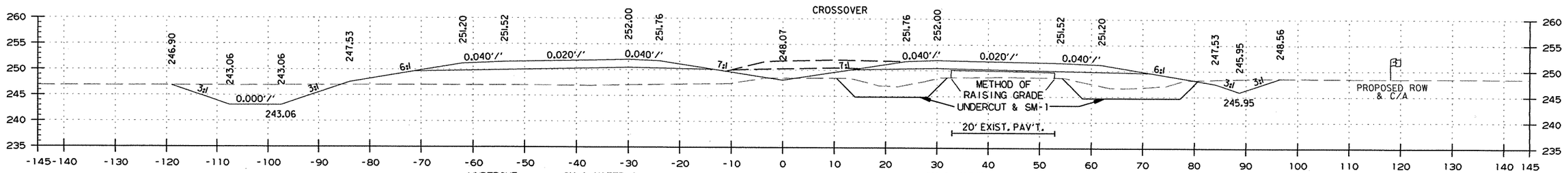
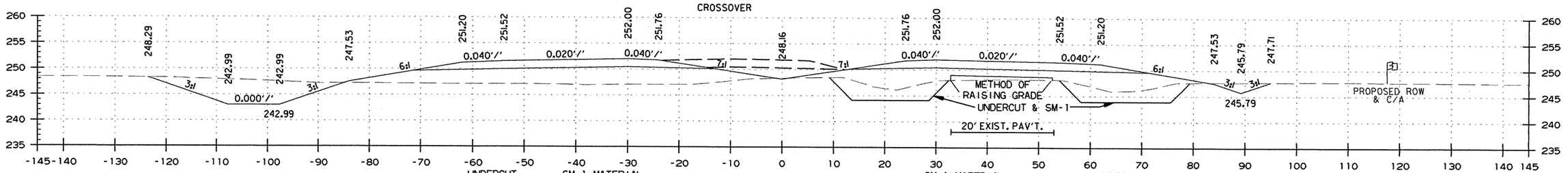
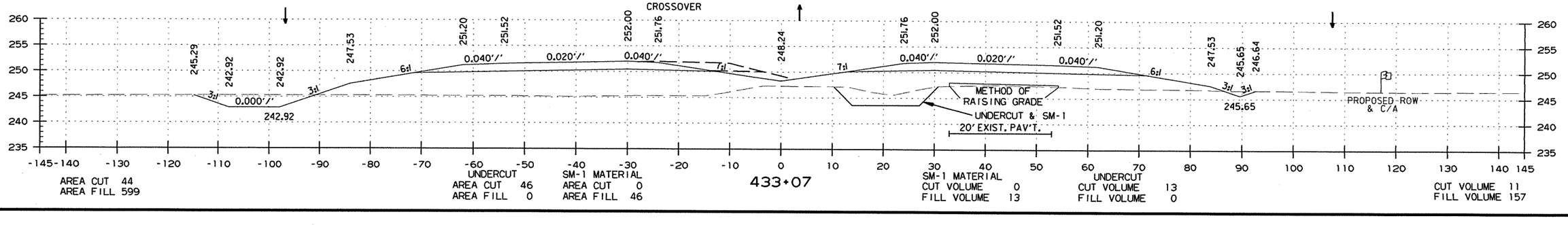
				6	ARK.			
				JOB NO.		100667	119	123

(2) CROSS SECTIONS









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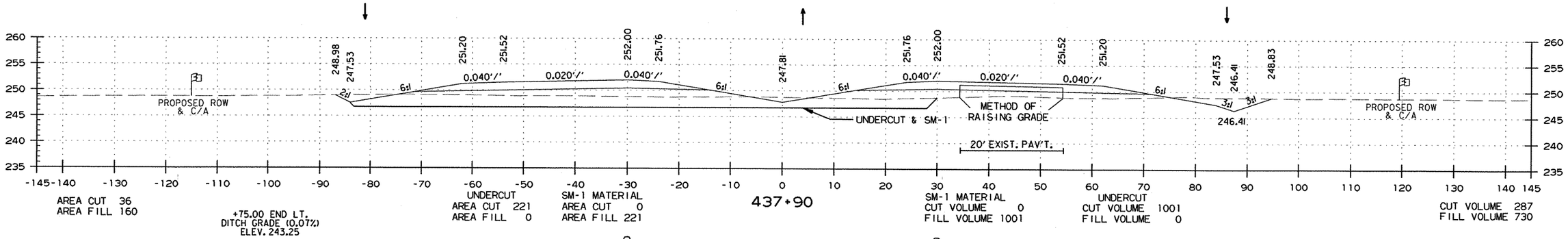
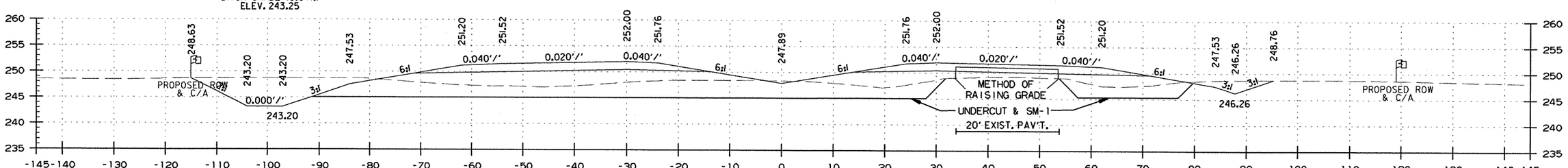
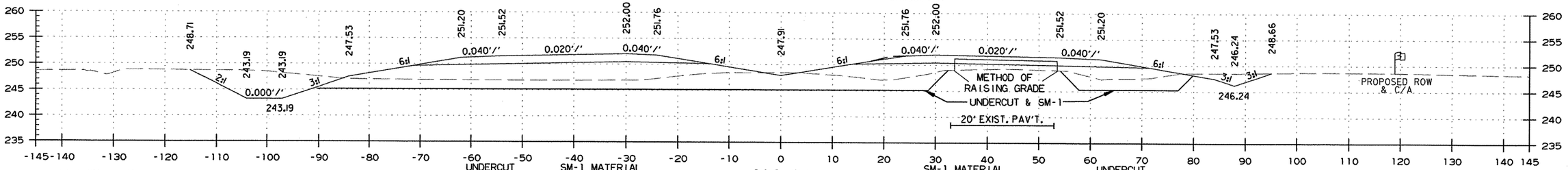
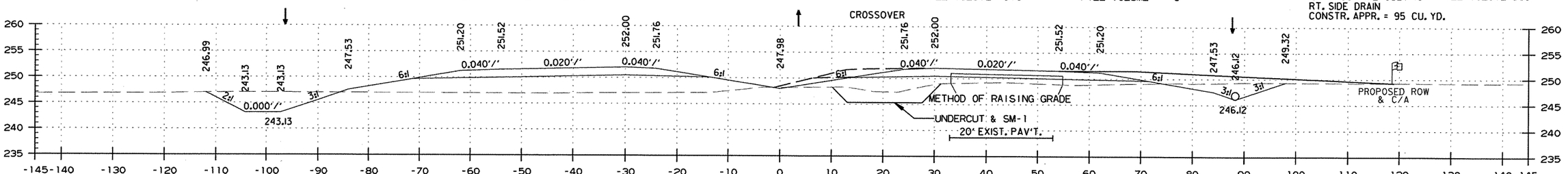
				JOB NO.		100667	120	123

(2) CROSS SECTIONS









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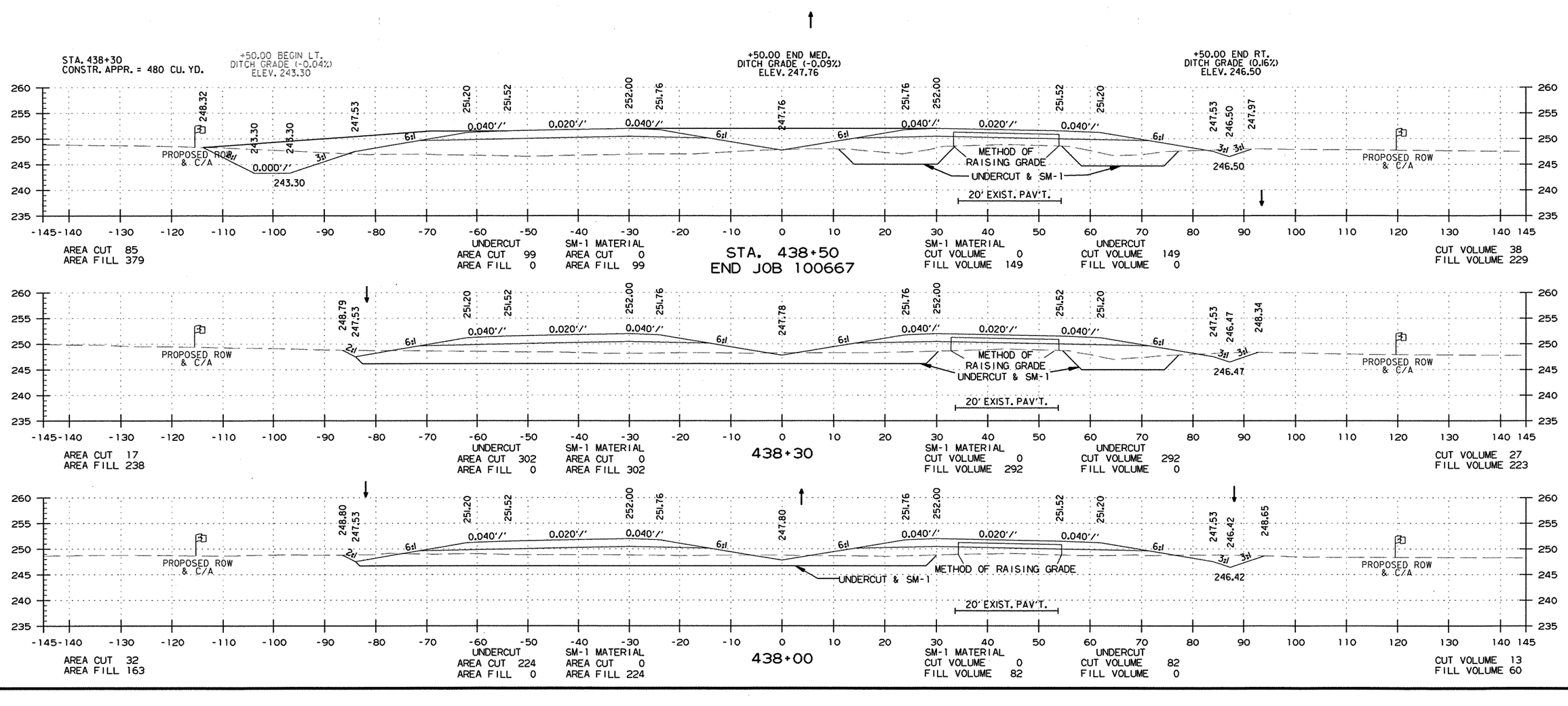
(2) CROSS SECTIONS



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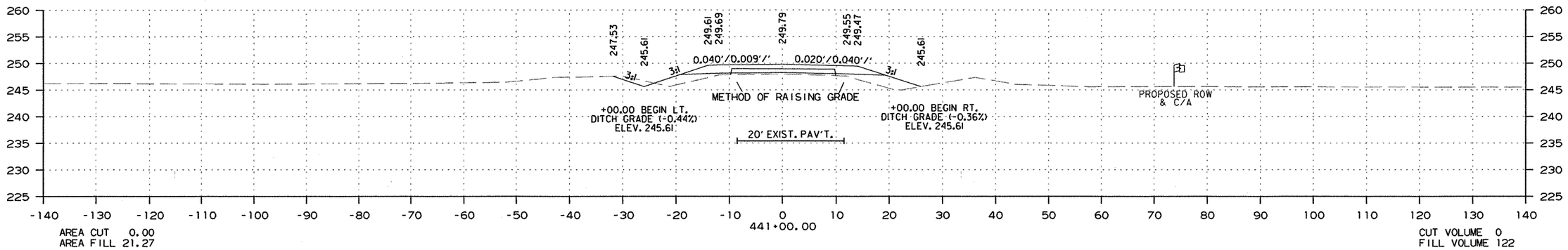
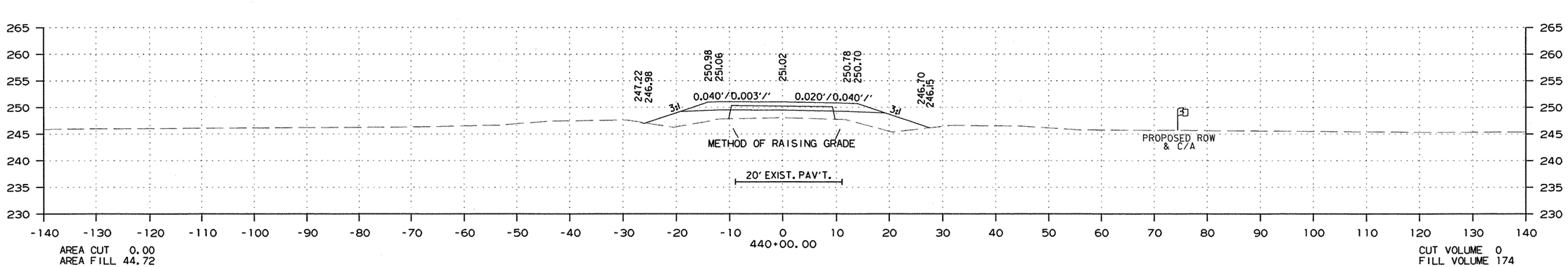
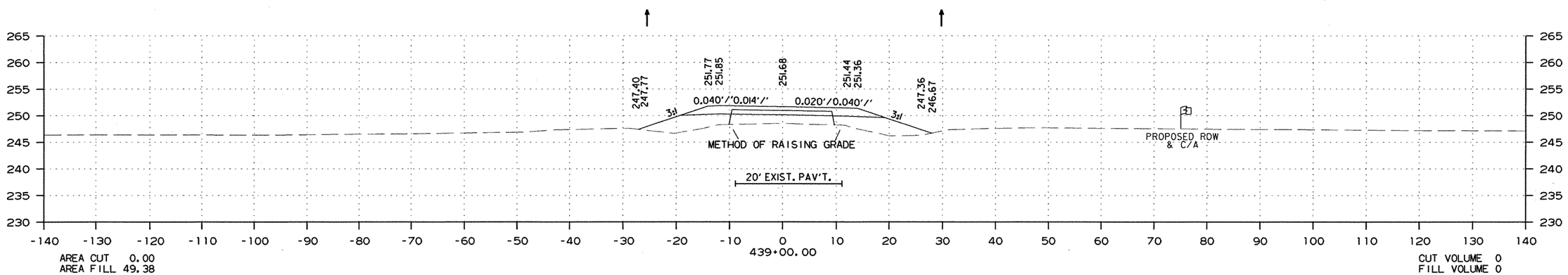
(2) CROSS SECTIONS







TEMPORARY GRADE RAISE (END JOB)

5/9/2012

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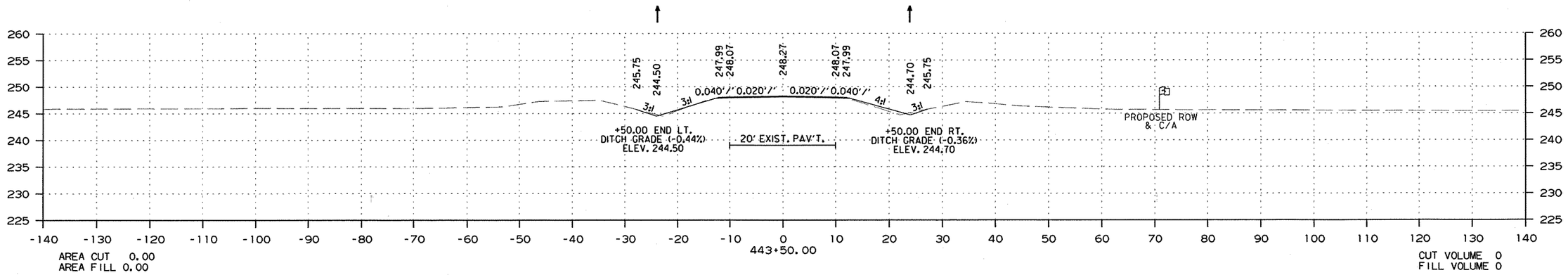

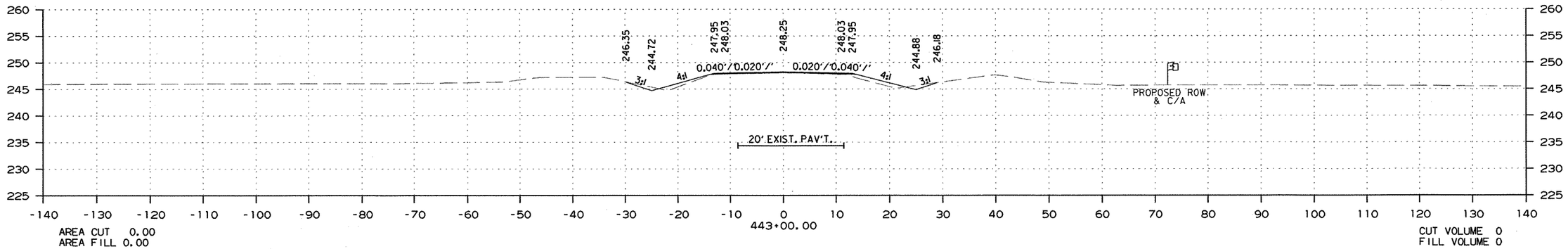

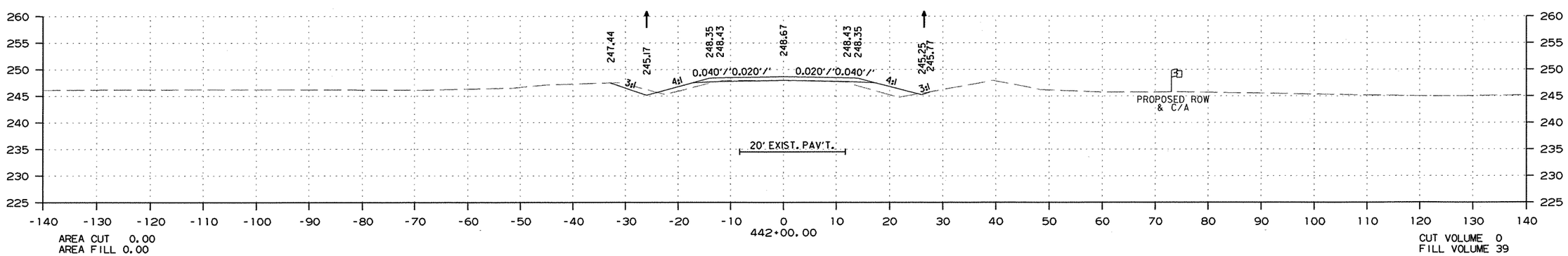

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