

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.		070281	1	185
				②		HWY. 335-OUACHITA RIVER (S)		

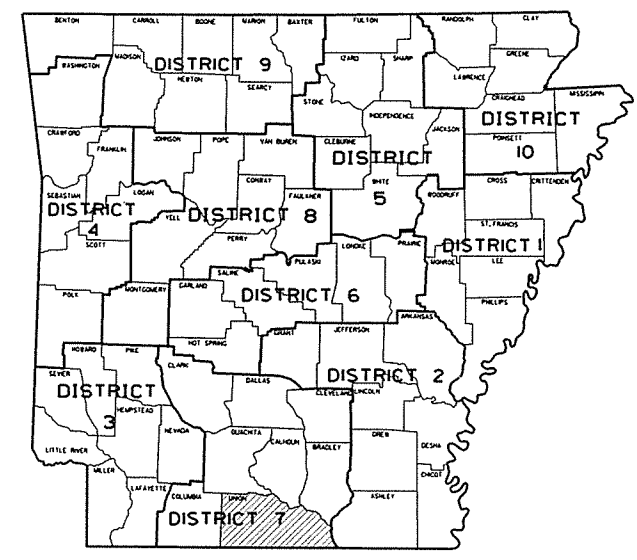
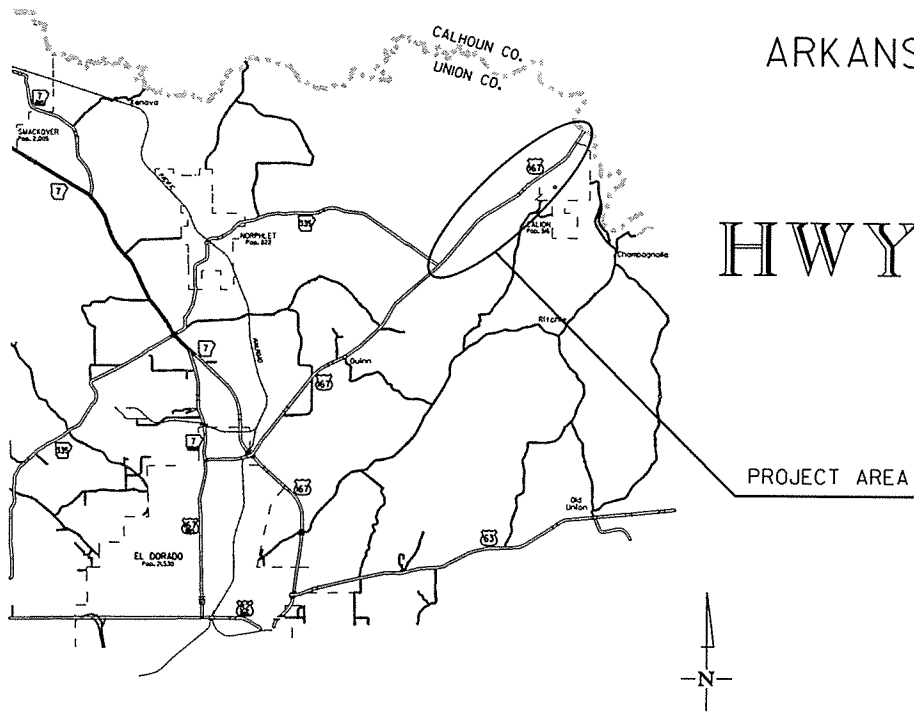
ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT  
CONSTRUCTION PLANS FOR STATE HIGHWAY

HWY. 335 - OUACHITA RIVER (S)

UNION COUNTY  
ROUTE 167 SECTION 2

FEDERAL AID PROJ. NH-STP-0070(32)

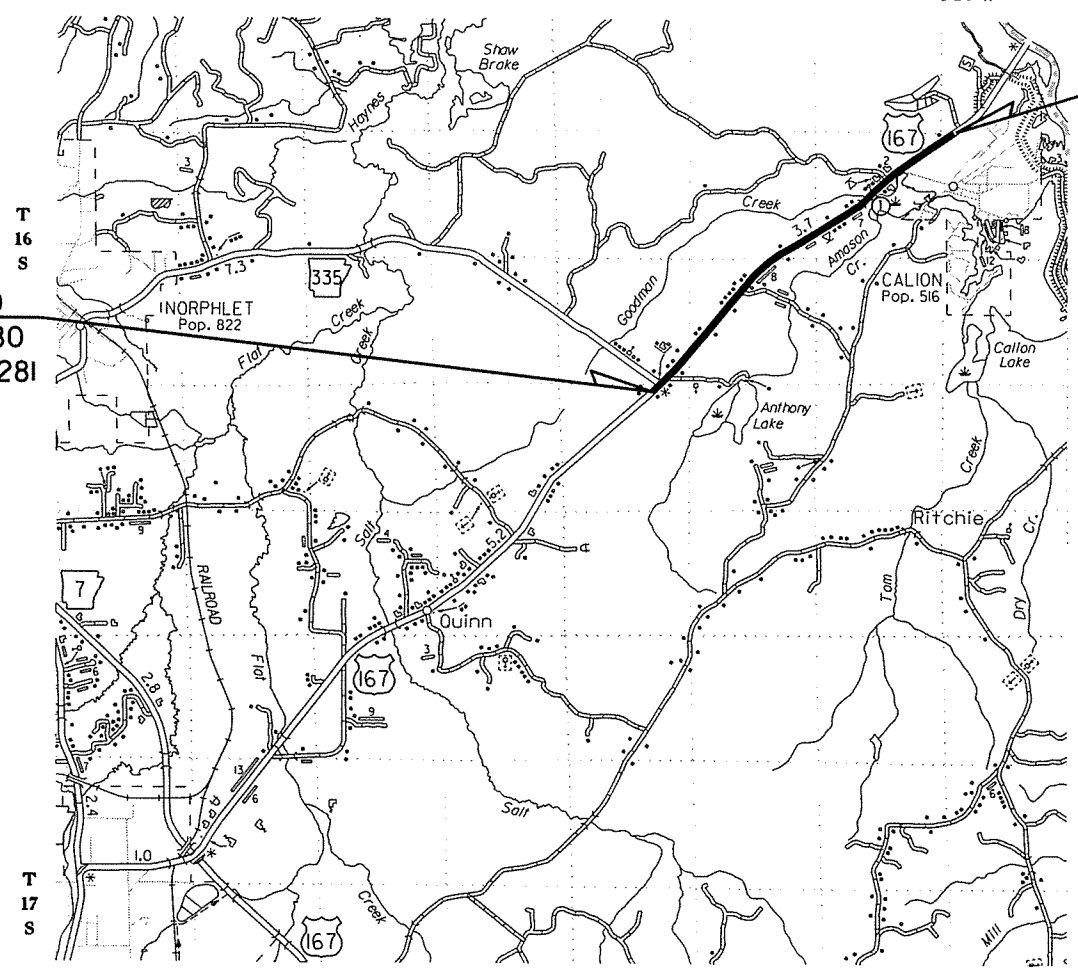
JOB 070281



ARK. HWY. DIST. NO. 7

VICINITY MAP

NOT TO SCALE



STA. 397+00.00  
END JOB 070280  
BEGIN JOB 070281  
LOG MILE 5.27

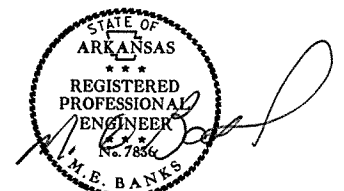
STA. 554+00.00  
END JOB 070281

DESIGN TRAFFIC DATA

DESIGN YEAR	2035
2015 ADT	5,300
2035 ADT	6,400
2035 DHV	0.704
DIRECTIONAL DISTRIBUTION	0.60
TRUCKS	18%
DESIGN SPEED	60 MPH

- STRUCTURES OVER 20' -0" SPAN
- ① STA. 518+71 - CONSTRUCT QUINT. 10' X 10' X 177' R.C. BOX CULVERT 45° RT. FWD. SKEW WITH 3:1 WINGS LT. & RT. Q50=1,200 CFS; D.A.=1,280 ACRES SPAN = 78' -9"

APPROVED



5-21-15  
DEPUTY DIRECTOR  
AND CHIEF ENGINEER

	BEGIN PROJECT	MID-POINT OF PROJECT	END PROJECT
LATITUDE	N 33°18'23"	N 33°19'28"	N 33°20'02"
LONGITUDE	W 92°35'03"	W 92°33'40"	W 92°32'42"

LENGTH OF PROJECT CALCULATED ALONG C.L.

GROSS LENGTH OF PROJECT	15700.00 FEET OR	2.973 MILES
NET ROADWAY	15621.25	2.959 MILES
NET BRIDGES	78.75	0.015 MILES
NET PROJECT	15700.00 FEET OR	2.973 MILES

P.E. JOB 070281

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				JOB NO.	070281		2	185

2 INDEX OF SHEETS, GOV. SPECS., & GEN. NOTES

INDEX OF SHEETS

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1	TITLE SHEET		
2	INDEX OF SHEETS, GOVERNING SPECIFICATIONS, AND GENERAL NOTES		
3 - 8	TYPICAL SECTIONS OF IMPROVEMENT		
9 - 17	SPECIAL DETAILS		
18 - 35	TEMPORARY EROSION CONTROL DETAILS		
36 - 45	MAINTENANCE OF TRAFFIC		
46 - 48	PERMANENT PAVEMENT MARKING DETAILS		
49 - 54	QUANTITIES		
55 - 56	SUMMARY OF QUANTITIES AND REVISIONS		
57 - 63	SURVEY CONTROL DETAILS		
64 - 74	PLAN AND PROFILE SHEETS		
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76	CURBING DETAILS	CG-1	11-29-07
77	DETAILS OF DRIVEWAYS & ISLANDS	DR-1	2-27-14
78	FLARED END SECTION	FES-1	10-18-96
79	FLARED END SECTION	FES-2	10-18-96
80	DETAILS OF DROP INLET & JUNCTION BOX (TYPE ST)	FPC-9S	7-26-12
81	MAILBOX DETAILS	MB-1	11-18-04
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84	METAL PIPE CULVERT FILL HEIGHTS & BEDDING	PCM-1	2-27-14
85	PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)	PCP-1	2-27-14
86	PLASTIC PIPE CULVERT (PVC F949)	PCP-2	2-27-14
87	PAVEMENT MARKING DETAILS	PM-1	9-12-13
88	DETAILS OF PIPE UNDERDRAIN	PU-1	4-10-03
89	REINFORCED CONCRETE BOX CULVERT DETAILS	RCB-1	7-26-12
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93	DETAILS OF SPECIAL ITEMS	SI-1	9-12-13
94	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-1	9-02-15
95	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-2	9-02-15
96	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-3	9-02-15
97	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	TC-4	2-27-14
98	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	TC-5	10-15-09
99	TEMPORARY EROSION CONTROL DEVICES	TEC-1	12-15-11
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103	CHAIN LINK FENCE	WF-3	11-17-10
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105	DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS	W-X003-1	5-10-66
106	DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS	R-100X-X1	10-10-62
107 - 185	CROSS SECTIONS		

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

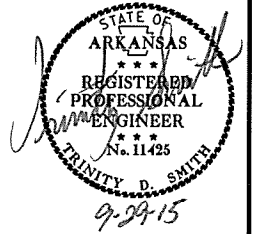
GOVERNING SPECIFICATIONS

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

NUMBER	TITLE
ERRATA	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHWA-1273	SUPPLEMENT - TRAINING PROGRAM - JOB 070281
FHWA-1273	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273	SUPPLEMENT - WAGE RATE DETERMINATION
108-1	LIQUIDATED DAMAGES
400-1	TACK COATS
410-1	CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
604-1	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
606-1	PIPE CULVERTS FOR SIDE DRAINS
620-1	MULCH COVER
JOB 070281	BIDDING REQUIREMENTS AND CONDITIONS
JOB 070281	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 070281	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 070281	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 070281	COORDINATION OF WORK
JOB 070281	CULVERT CLEAN OUT
JOB 070281	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB 070281	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 070281	MANDATORY ELECTRONIC CONTRACT
JOB 070281	NESTING SITES OF MIGRATORY BIRDS
JOB 070281	PARTNERING REQUIREMENTS
JOB 070281	PERCENT WITHIN LIMITS/PAVEMENT SMOOTHNESS
JOB 070281	PLASTIC PIPE
JOB 070281	PROSECUTION AND PROGRESS
JOB 070281	SHORING FOR CULVERTS
JOB 070281	SITE USE (A+C METHOD)
JOB 070281	SOIL STABILIZATION
JOB 070281	STORM WATER POLLUTION PREVENTION PLAN
JOB 070281	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 070281	UTILITY ADJUSTMENTS
JOB 070281	VALUE ENGINEERING
JOB 070281	WARM MIX ASPHALT
JOB 070281	WELLHEAD PROTECTION

GENERAL NOTES

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

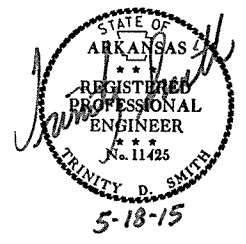


9/28/2015

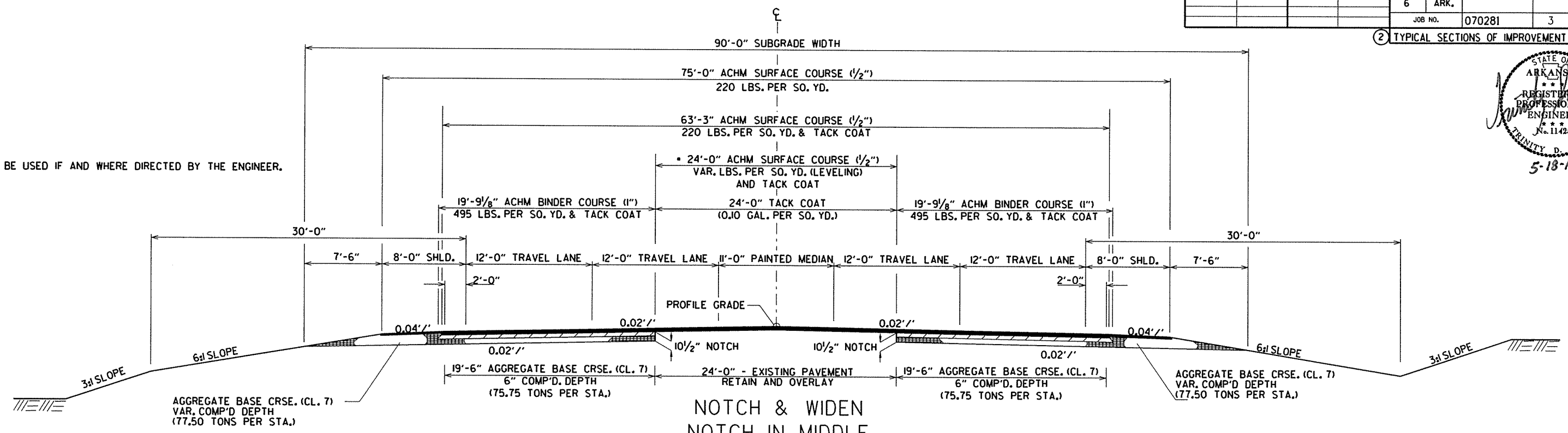
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② TYPICAL SECTIONS OF IMPROVEMENT



• TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.



NOTCH & WIDEN  
NOTCH IN MIDDLE  
TANGENT SECTION

STA. 397+00.00 - STA. 398+18.00  
STA. 540+36.00 - STA. 554+00.00

NOTES:

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

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

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

NOTES:

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

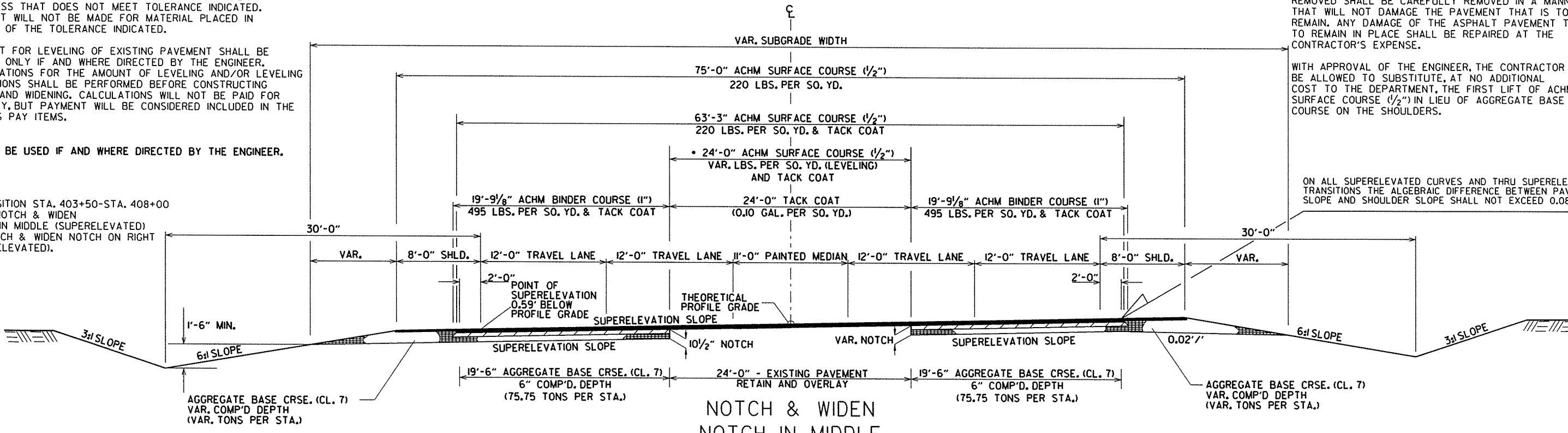
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WITH APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, THE FIRST LIFT OF ACHM SURFACE COURSE (1/2") IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.

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

• TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

I. TRANSITION STA. 403+50-STA. 408+00 FROM NOTCH & WIDEN NOTCH IN MIDDLE (SUPERELEVATED) TO NOTCH & WIDEN NOTCH ON RIGHT (SUPERELEVATED).



NOTCH & WIDEN  
NOTCH IN MIDDLE  
LEFT SUPERELEVATED SECTION

STA. 398+18.00-STA. 403+50.00'

3/26/2015 R070281.DGN

TYPICAL SECTIONS OF IMPROVEMENT

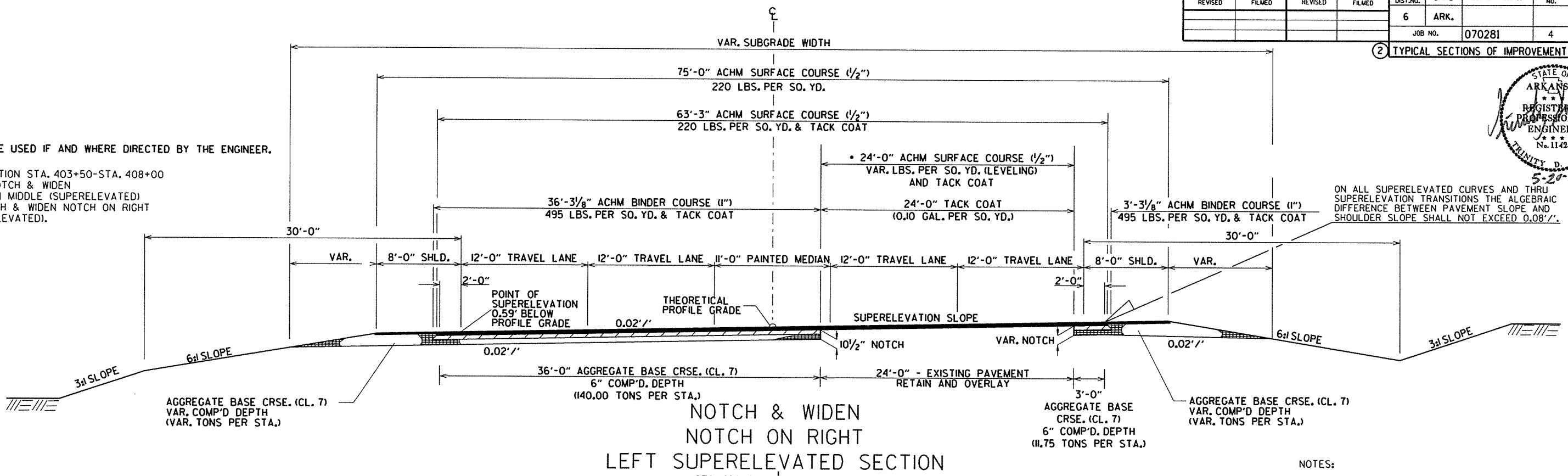
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2 TYPICAL SECTIONS OF IMPROVEMENT



• TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

1. TRANSITION STA. 403+50-STA. 408+00 FROM NOTCH & WIDEN NOTCH IN MIDDLE (SUPERELEVATED) TO NOTCH & WIDEN NOTCH ON RIGHT (SUPERELEVATED).



NOTES:  
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NOTCH & WIDEN NOTCH ON RIGHT LEFT SUPERELEVATED SECTION

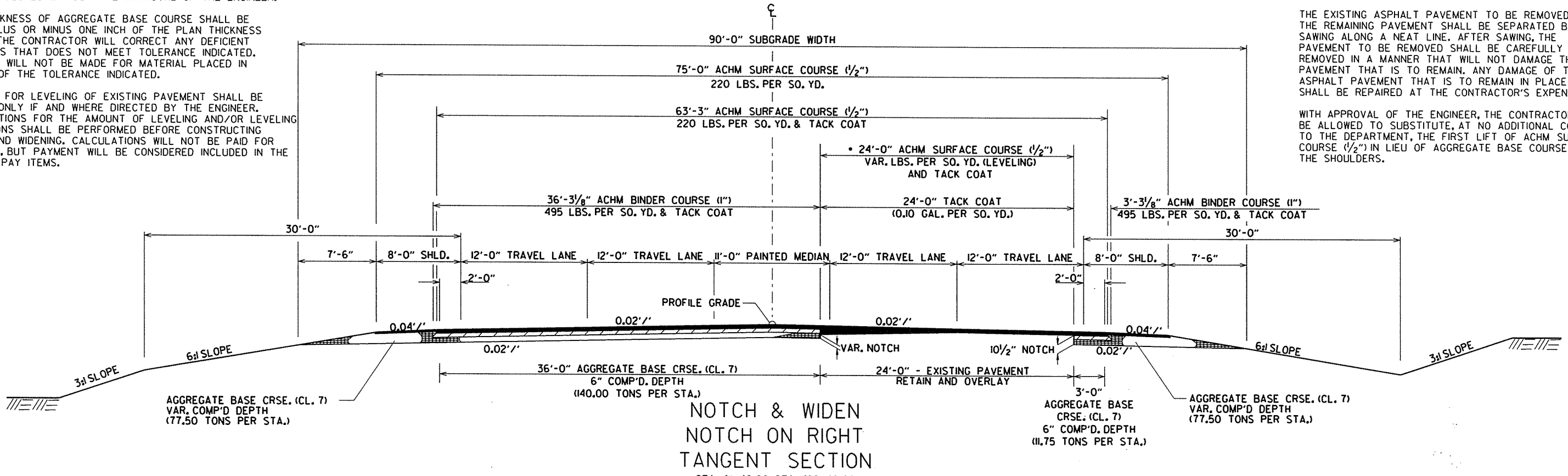
STA. 408+00.00-STA. 411+46.00  
STA. 505+22.00-STA. 518+50.00  
STA. 519+00.00-STA. 521+12.00

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

THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. AFTER SAWING, THE PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN. ANY DAMAGE OF THE ASPHALT PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

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3/26/2015



NOTCH & WIDEN NOTCH ON RIGHT TANGENT SECTION

STA. 411+46.00-STA. 422+40.00  
STA. 424+80.00-STA. 436+00.00  
STA. 445+50.00-STA. 448+61.00  
STA. 479+74.00-STA. 496+18.00  
STA. 499+00.00-STA. 505+22.00  
STA. 521+12.00-STA. 523+44.00

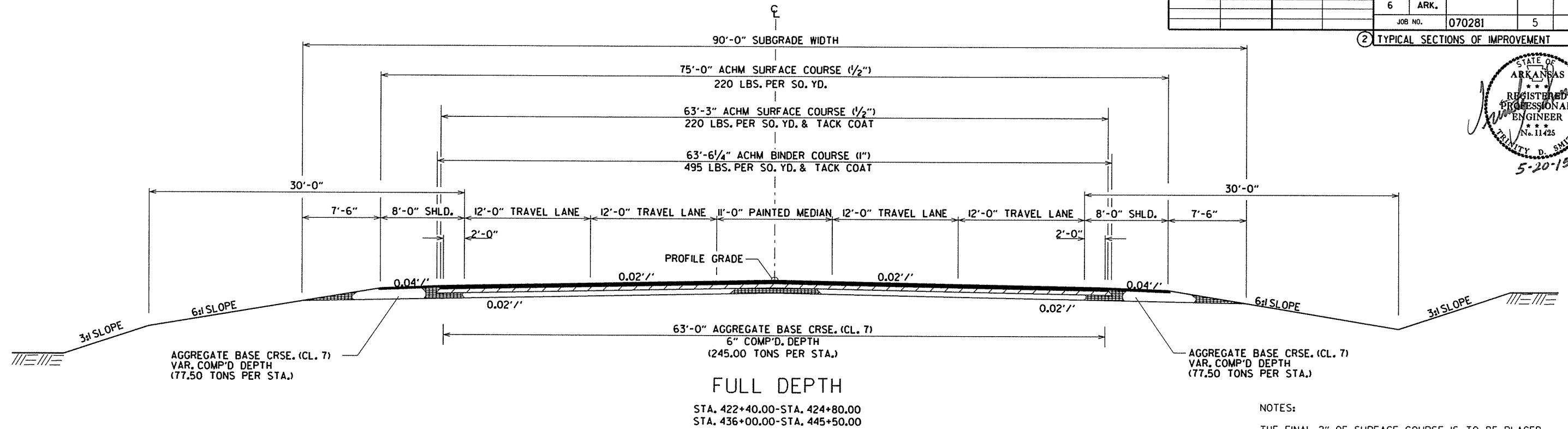
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TYPICAL SECTIONS OF IMPROVEMENT

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2 TYPICAL SECTIONS OF IMPROVEMENT



**FULL DEPTH**  
 STA. 422+40.00-STA. 424+80.00  
 STA. 436+00.00-STA. 445+50.00

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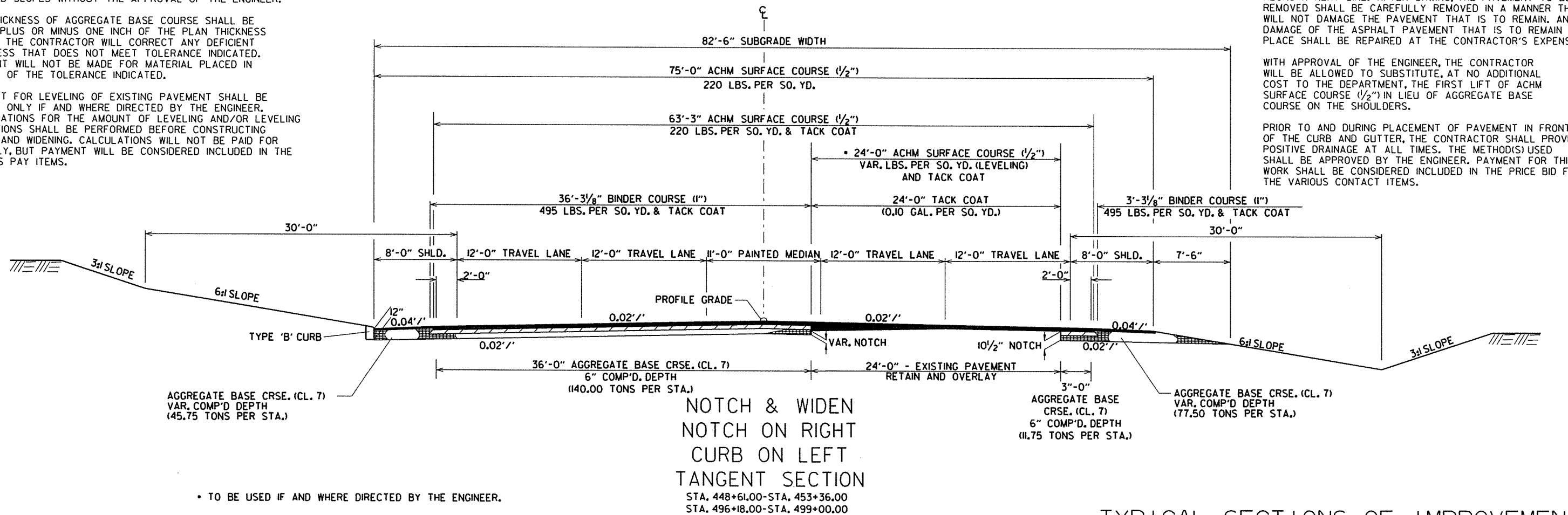
PRIOR TO AND DURING PLACEMENT OF PAVEMENT IN FRONT OF THE CURB AND GUTTER, THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES. THE METHOD(S) USED SHALL BE APPROVED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTACT ITEMS.

NOTES:

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**NOTCH & WIDEN**  
 NOTCH ON RIGHT  
 CURB ON LEFT  
 TANGENT SECTION  
 STA. 448+61.00-STA. 453+36.00  
 STA. 496+18.00-STA. 499+00.00

• TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

TYPICAL SECTIONS OF IMPROVEMENT

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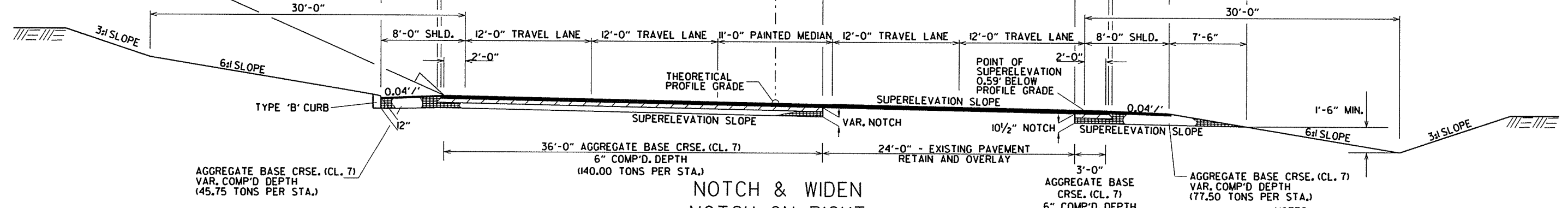
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2 TYPICAL SECTIONS OF IMPROVEMENT



• TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

ON ALL SUPERELEVATED CURVES AND THRU SUPERELEVATION TRANSITIONS THE ALGEBRAIC DIFFERENCE BETWEEN PAVEMENT SLOPE AND SHOULDER SLOPE SHALL NOT EXCEED 0.08'/'.  
 30'-0" 3:1 SLOPE 6:1 SLOPE



NOTCH & WIDEN  
 NOTCH ON RIGHT  
 RIGHT SUPERELEVATED SECTION  
 CURB ON LEFT

STA. 453+36.00-STA. 453+50.00

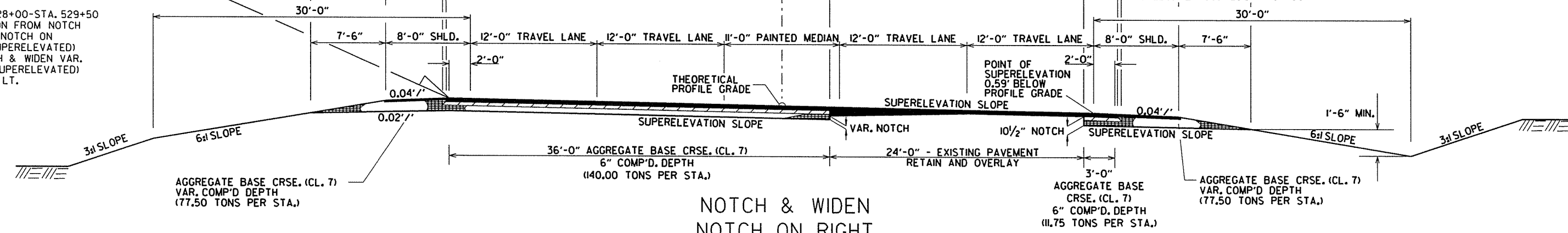
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 30'-0" 3:1 SLOPE 6:1 SLOPE

2. STA. 528+00-STA. 529+50  
 TRANSITION FROM NOTCH & WIDEN NOTCH ON RIGHT (SUPERELEVATED) TO NOTCH & WIDEN VAR. NOTCH (SUPERELEVATED) CURB ON LT.



NOTCH & WIDEN  
 NOTCH ON RIGHT  
 RIGHT SUPERELEVATED SECTION

STA. 453+50.00-STA. 472+30.00  
 STA. 476+60.00-STA. 479+74.00  
 STA. 523+44.00-STA. 528+00.00

• TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

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

THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. AFTER SAWING, THE PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN. ANY DAMAGE OF THE ASPHALT PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

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.

PRIOR TO AND DURING PLACEMENT OF PAVEMENT IN FRONT OF THE CURB AND GUTTER, THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES. THE METHOD(S) USED SHALL BE APPROVED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTACT ITEMS.

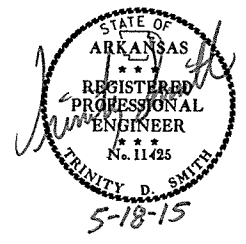
TYPICAL SECTIONS OF IMPROVEMENT

3/26/2015

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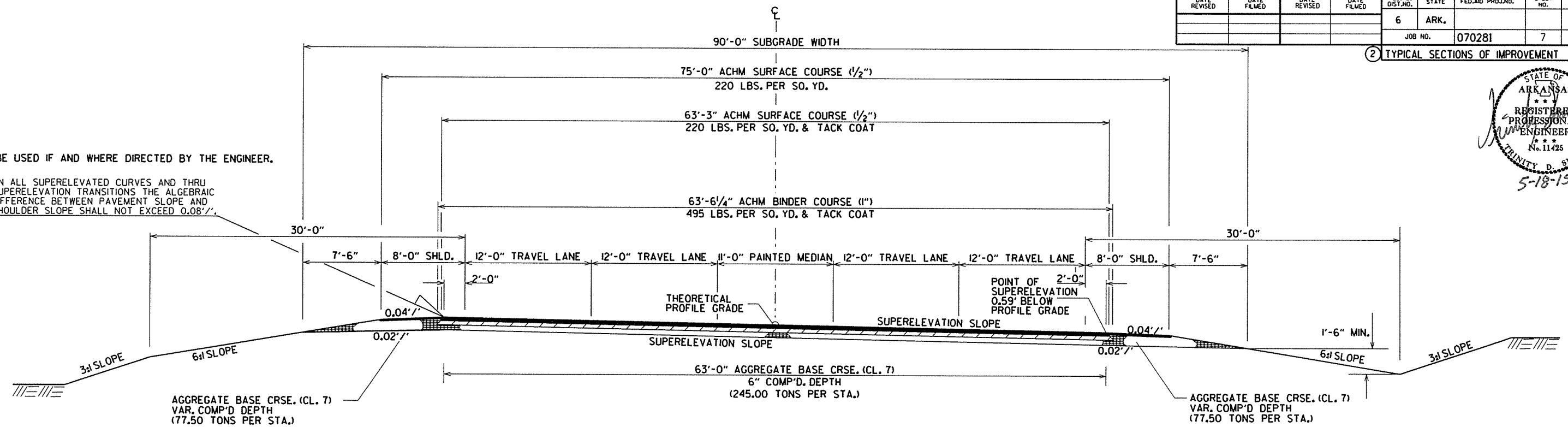
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		7	185
				JOB NO.	070281			

2 TYPICAL SECTIONS OF IMPROVEMENT



• TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

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



FULL DEPTH  
RIGHT SUPERELEVATED SECTION

STA. 472+30.00-STA. 476+60.00

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

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

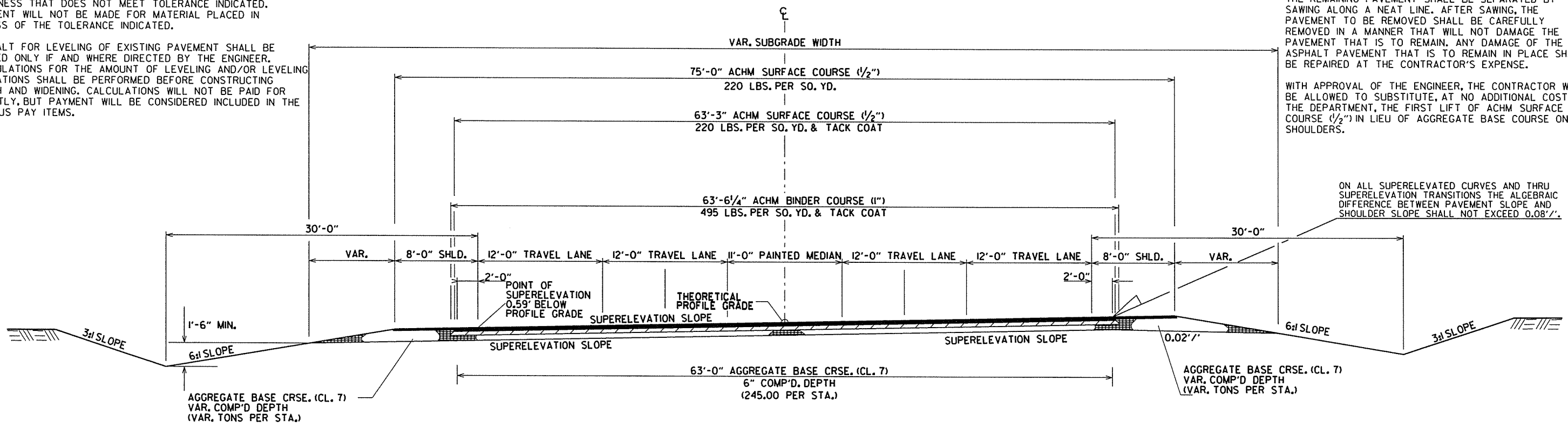
ASPHALT FOR LEVELING OF EXISTING PAVEMENT SHALL BE PLACED ONLY IF AND WHERE DIRECTED BY THE ENGINEER. CALCULATIONS FOR THE AMOUNT OF LEVELING AND/OR LEVELING OPERATIONS SHALL BE PERFORMED BEFORE CONSTRUCTING NOTCH AND WIDENING. CALCULATIONS WILL NOT BE PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED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

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

THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. AFTER SAWING, THE PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN. ANY DAMAGE OF THE ASPHALT PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

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.

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



FULL DEPTH  
LEFT SUPERELEVATED SECTION

STA. 518+50.00-STA. 519+00.00

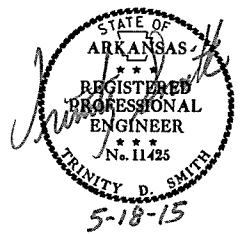
TYPICAL SECTIONS OF IMPROVEMENT

3/26/2015

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				JOB NO.	070281			

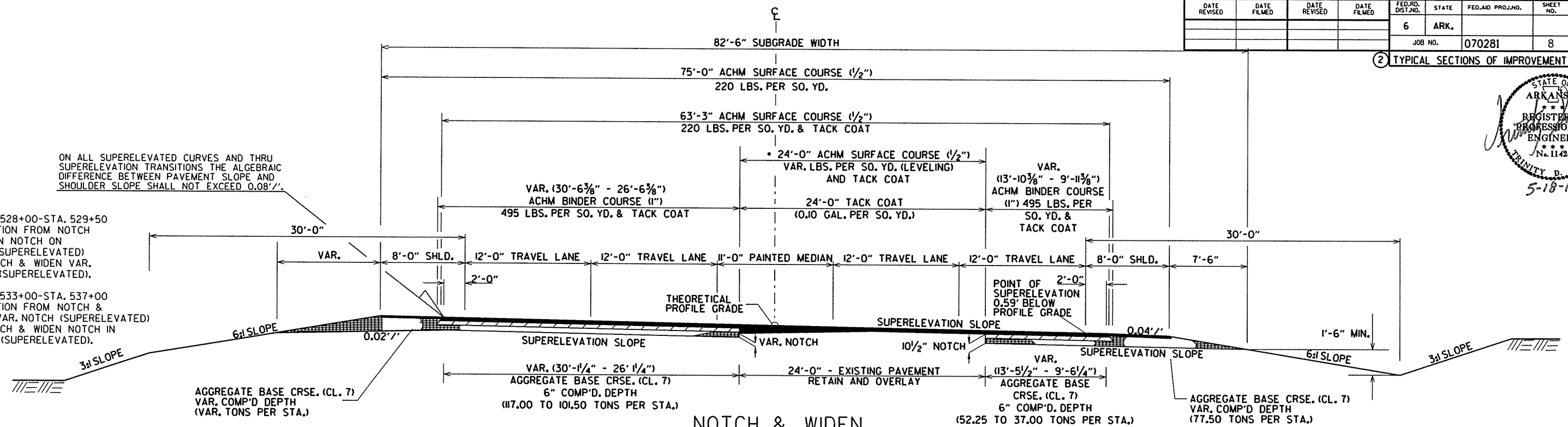
2 TYPICAL SECTIONS OF IMPROVEMENT



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

2. STA. 528+00-STA. 529+50  
TRANSITION FROM NOTCH & WIDEN NOTCH ON RIGHT (SUPERELEVATED) TO NOTCH & WIDEN VAR. NOTCH (SUPERELEVATED).

3. STA. 533+00-STA. 537+00  
TRANSITION FROM NOTCH & WIDEN VAR. NOTCH (SUPERELEVATED) TO NOTCH & WIDEN NOTCH IN MIDDLE (SUPERELEVATED).



NOTCH & WIDEN  
NOTCH TRANSITION  
RIGHT SUPERELEVATED SECTION

STA. 529+50.00<sup>2</sup> STA. 533+00.00<sup>3</sup>

NOTES: • TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

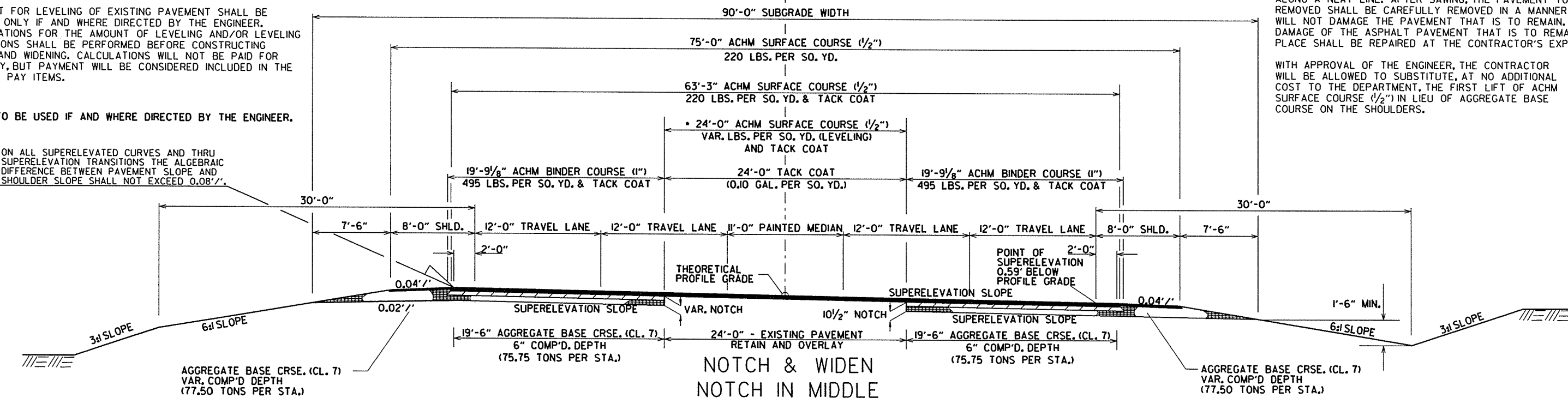
REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

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

• TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

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



NOTCH & WIDEN  
NOTCH IN MIDDLE  
RIGHT SUPERELEVATED SECTION

STA. 537+00.00<sup>2</sup> STA. 540+36.00

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

THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. AFTER SAWING, THE PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN. ANY DAMAGE OF THE ASPHALT PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

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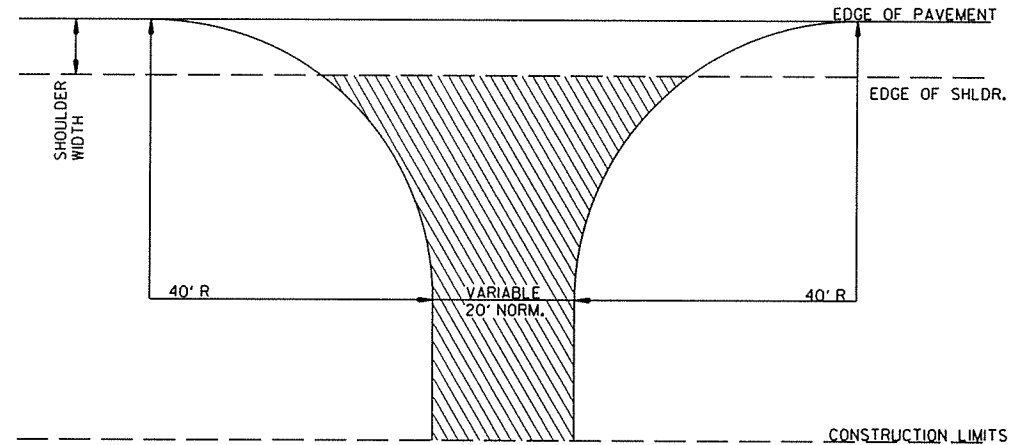
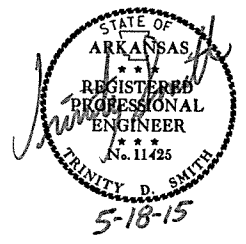
TYPICAL SECTIONS OF IMPROVEMENT

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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.		9	185
						JOB NO. 070281		

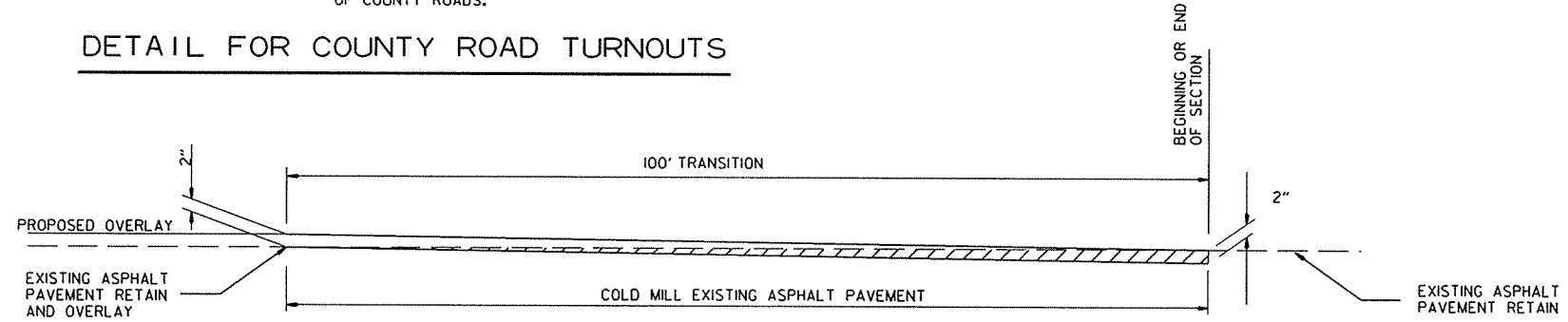
2 SPECIAL DETAILS



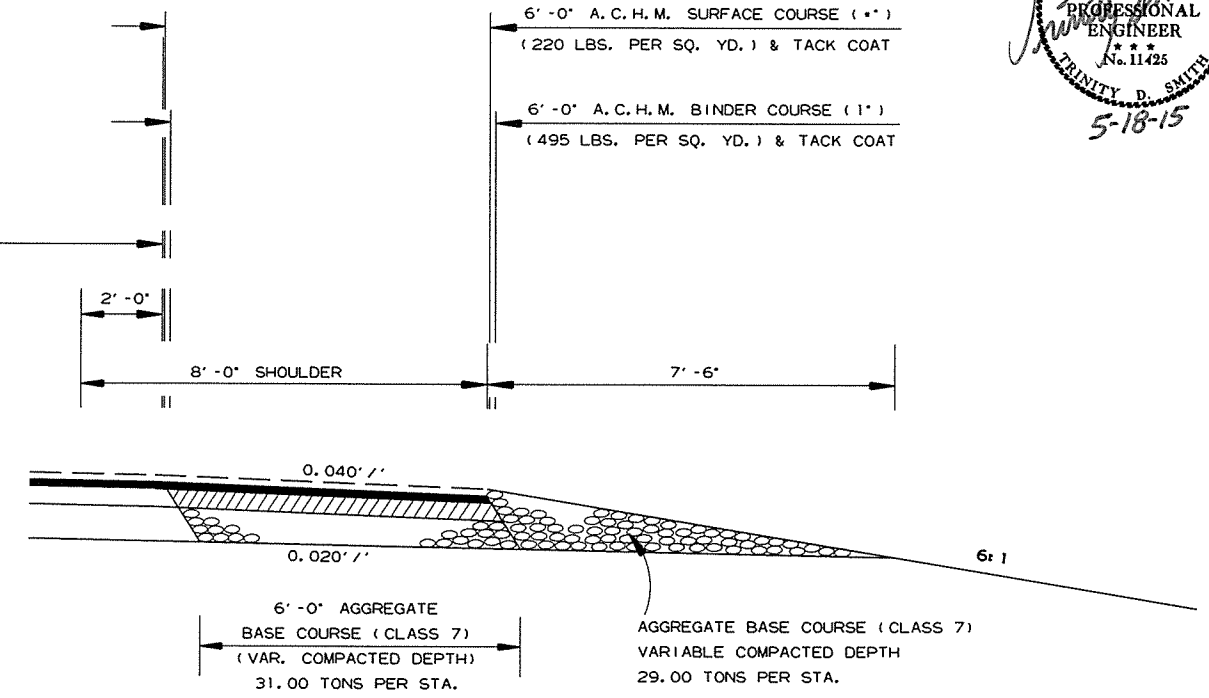
ASPHALT CONCRETE HOT MIX SURFACE COURSE (220 LBS. PER SQ. YD.) AND AGGREGATE BASE COURSE (CLASS 7) 7" COMP.

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

DETAIL FOR COUNTY ROAD TURNOUTS

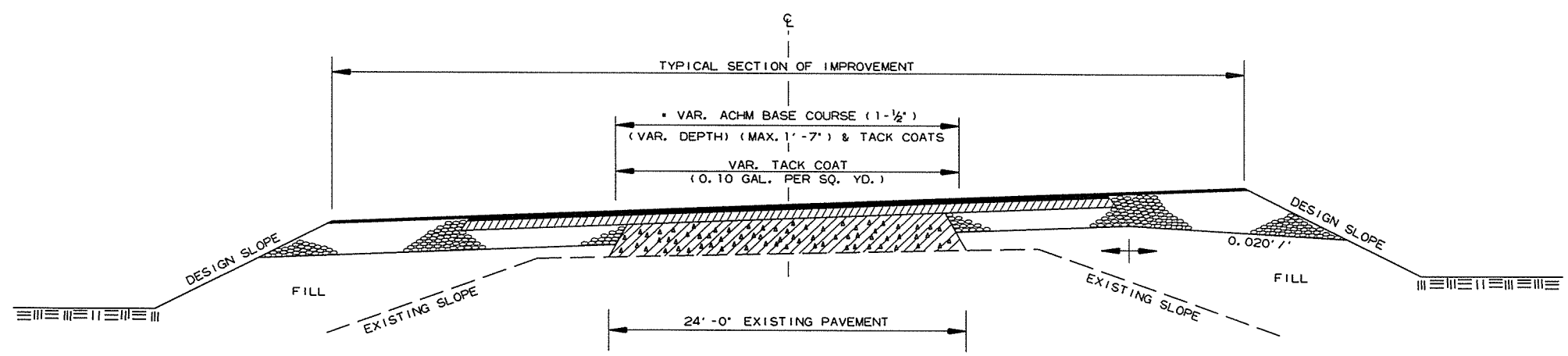


DETAIL FOR TRANSITIONS



FULL DEPTH SHOULDER FOR MAINTENANCE OF TRAFFIC

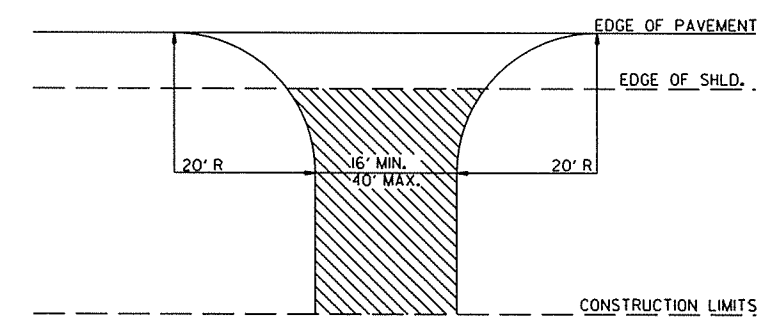
STATIONS: 402+64-407+45



METHOD OF RAISING GRADE

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

- 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.



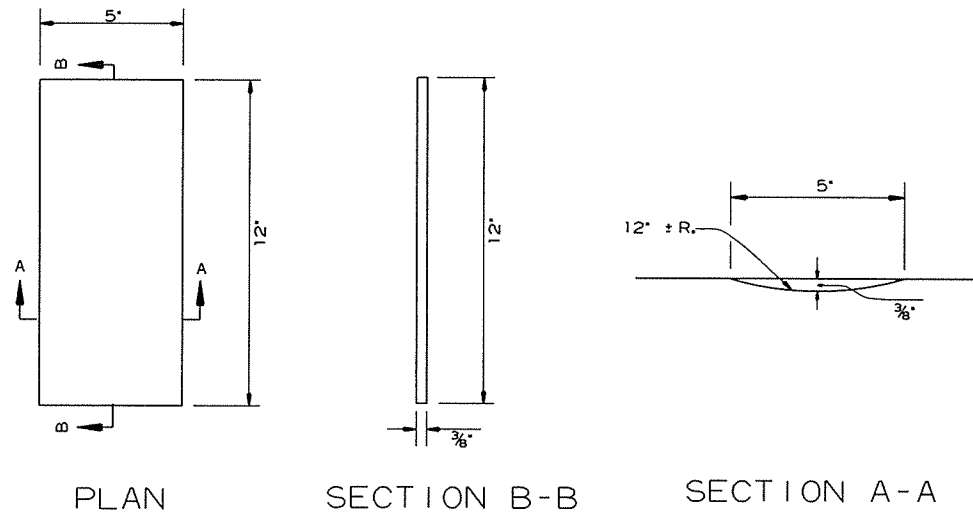
ASPHALT CONCRETE HOT MIX SURFACE COURSE (220 LBS. PER SQ. YD.)  
 AGGREGATE BASE COURSE (CLASS 7)  
 7" COMP. DEPTH IF ASPHALT DRIVE EXISTS OR  
 6" CONCRETE IF CONCRETE DRIVE EXISTS.

DETAIL FOR DRIVEWAY TURNOUTS (ARTERIALS)

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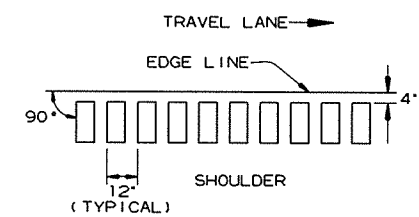
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	070281		10	185

② SPECIAL DETAILS

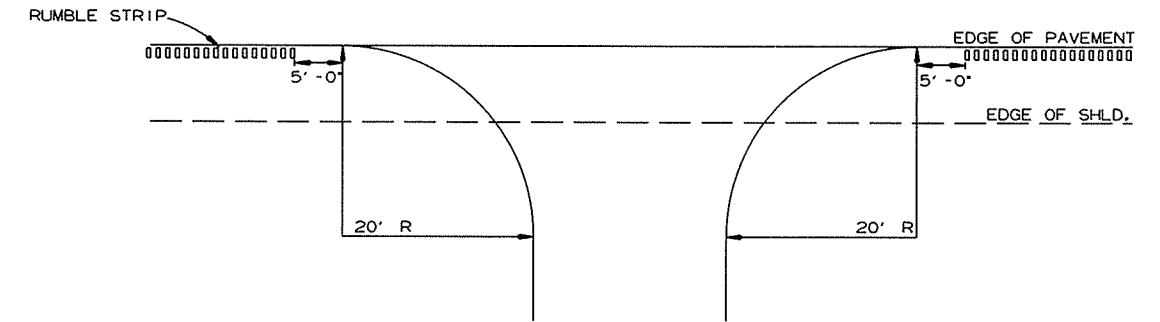


PLAN SECTION B-B SECTION A-A

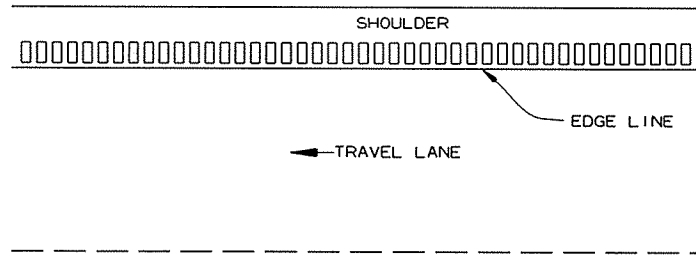
DETAILS OF RUMBLE STRIPS



LOCATION PLAN OF RUMBLE STRIPS  
LEFT OR RIGHT SHOULDER



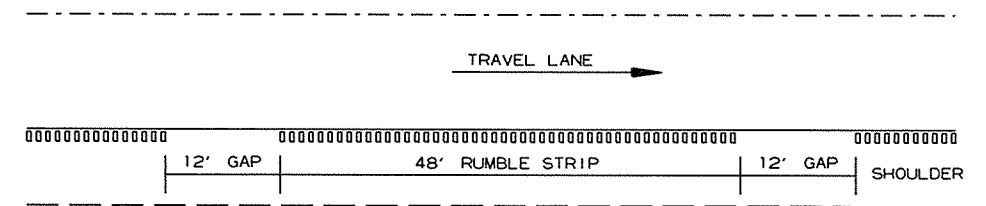
DETAIL FOR RUMBLE STRIP GAP  
AT DRIVEWAY TURNOUTS



PLAN VIEW

GENERAL NOTES

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



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

DETAIL FOR GAP PATTERN RUMBLE STRIP

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2 SPECIAL DETAILS

DIMENSIONS & QUANTITIES

SPAN	HEIGHT	MINIMUM DEPTH OF COVER	MINIMUM DEPTH OF FLOORING	MINIMUM DEPTH OF SIDEWALL	MINIMUM DEPTH OF FOOTING	LENGTH OF FOOTING	LENGTH OF WING WALL	LENGTH OF WING WALL	LENGTH OF WING WALL	CONCRETE CU YD		STEEL LB.		
										WING WALL	WING WALL	PER LINEAL FEET OF WALL	PER LINEAL FEET OF WALL	
3	H	A	D	T	C	B	W <sub>1</sub>	W <sub>2</sub>	E	2.34	184	155	17.91	8.9
2	Z	A	6'0"	6'0"	6'0"	3'-0"	3'-0"	3'-0"	3'-0"	2.65	247	164	22.77	11.1
3	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	4.10	284	223	25.43	13.4
4	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	4.76	323	251	30.24	15.6
4	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	4.76	323	251	30.24	15.6
5	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	5.42	370	289	34.56	18.6
5	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	5.42	370	289	34.56	18.6
5	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	6.08	417	327	37.87	20.0
5	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	6.08	417	327	37.87	20.0
5	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	6.74	464	372	42.18	22.3
5	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	6.74	464	372	42.18	22.3
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	7.40	511	416	46.49	24.6
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	7.40	511	416	46.49	24.6
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	8.06	558	451	50.80	26.9
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	8.06	558	451	50.80	26.9
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	8.72	605	496	55.11	29.2
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	8.72	605	496	55.11	29.2
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	9.38	652	541	59.42	31.5
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	9.38	652	541	59.42	31.5
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	10.04	699	586	63.73	33.8
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	10.04	699	586	63.73	33.8
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	10.70	746	631	68.04	36.1
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	10.70	746	631	68.04	36.1
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	11.36	793	676	72.35	38.4
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	11.36	793	676	72.35	38.4
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	12.02	840	721	76.66	40.7
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	12.02	840	721	76.66	40.7
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	12.68	887	766	80.97	43.0
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	12.68	887	766	80.97	43.0
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	13.34	934	811	85.28	45.3
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	13.34	934	811	85.28	45.3
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	14.00	981	856	89.59	47.6
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	14.00	981	856	89.59	47.6
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	14.66	1028	901	93.90	49.9
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	14.66	1028	901	93.90	49.9
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	15.32	1075	946	98.21	52.2
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	15.32	1075	946	98.21	52.2
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	15.98	1122	991	102.52	54.5
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	15.98	1122	991	102.52	54.5
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	16.64	1169	1036	106.83	56.8
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	16.64	1169	1036	106.83	56.8
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	17.30	1216	1081	111.14	59.1
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	17.30	1216	1081	111.14	59.1
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	17.96	1263	1126	115.45	61.4
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	17.96	1263	1126	115.45	61.4
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	18.62	1310	1171	119.76	63.7
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	18.62	1310	1171	119.76	63.7
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	19.28	1357	1216	124.07	66.0
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	19.28	1357	1216	124.07	66.0
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	19.94	1404	1261	128.38	68.3
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	19.94	1404	1261	128.38	68.3
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	20.60	1451	1306	132.69	70.6
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	20.60	1451	1306	132.69	70.6
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	21.26	1498	1351	137.00	72.9
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	21.26	1498	1351	137.00	72.9
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	21.92	1545	1396	141.31	75.2
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	21.92	1545	1396	141.31	75.2
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	22.58	1592	1441	145.62	77.5
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	22.58	1592	1441	145.62	77.5
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	23.24	1639	1486	149.93	79.8
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	23.24	1639	1486	149.93	79.8
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	23.90	1686	1531	154.24	82.1
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	23.90	1686	1531	154.24	82.1
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	24.56	1733	1576	158.55	84.4
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	24.56	1733	1576	158.55	84.4
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	25.22	1780	1621	162.86	86.7
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	25.22	1780	1621	162.86	86.7
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	25.88	1827	1666	167.17	89.0
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	25.88	1827	1666	167.17	89.0
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	26.54	1874	1711	171.48	91.3
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	26.54	1874	1711	171.48	91.3
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	27.20	1921	1756	175.79	93.6
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	27.20	1921	1756	175.79	93.6
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	27.86	1968	1801	180.10	95.9
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	27.86	1968	1801	180.10	95.9
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	28.52	2015	1846	184.41	98.2
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	28.52	2015	1846	184.41	98.2
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	29.18	2062	1891	188.72	100.5
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	29.18	2062	1891	188.72	100.5
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	29.84	2109	1936	193.03	102.8
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	29.84	2109	1936	193.03	102.8
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	30.50	2156	1981	197.34	105.1
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	30.50	2156	1981	197.34	105.1
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	31.16	2203	2026	201.65	107.4
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	31.16	2203	2026	201.65	107.4
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	31.82	2250	2071	205.96	109.7
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	31.82	2250	2071	205.96	109.7
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	32.48	2297	2116	210.27	112.0
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	32.48	2297	2116	210.27	112.0
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	33.14	2344	2161	214.58	114.3
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	33.14	2344	2161	214.58	114.3
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	33.80	2391	2206	218.89	116.6
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	33.80	2391	2206	218.89	116.6
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	34.46	2438	2251	223.20	118.9
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	34.46	2438	2251	223.20	118.9
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	35.12	2485	2296	227.51	121.2
6	Z	6	10'0"	7'	6'	2'-6"	3'-0"	3'-0"	3'-0"	35.12	24			

MID-SECTION

Table with columns for R.C. BOX SECTION, DESIGN FILL DEPTH, CLEAR SPAN, CLEAR HEIGHT, TOP SLAB THK., BOTTOM SLAB THK., SIDE WALL THK., INTERIOR WALL THK., OVERALL WIDTH, OVERALL HEIGHT, SECTION LENGTH, TOP SLAB REINFORCING STEEL, BOTTOM SLAB REINFORCING STEEL, SIDE WALL REINFORCING STEEL, INTERIOR WALL REINFORCING STEEL, TOP SLAB DISTRIBUTION REINFORCING STEEL, BOTTOM SLAB DISTRIBUTION REINFORCING STEEL, SIDE WALL DISTRIBUTION REINFORCING STEEL, INTERIOR WALL DISTRIBUTION REINFORCING STEEL.

Table with columns: CLASS 'S' CONCRETE, REINFORCING STEEL (GR. 60), ADTL. REINF. PER LONG. LAP LOCATION, ADTL. REINF. FOR TRANS. LAP, ADDITIONAL CONCRETE FOR HDWL, TOTAL ADTL. REINF. FOR HDWL.

SHEET 1 OF 2
DETAILS OF R.C. BOX CULVERT
QUINTUPLE BARREL BOX CULVERT
STA. 518+71
SPECIAL DETAILS

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

Table with columns: Design Fill Depth, Range of Actual Fill Depth.

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

INLET SLOPE SECTIONS(S)

Table with columns for R.C. BOX SECTION, DESIGN FILL DEPTH, CLEAR SPAN, CLEAR HEIGHT, TOP SLAB THK., BOTTOM SLAB THK., SIDE WALL THK., INTERIOR WALL THK., OVERALL WIDTH, OVERALL HEIGHT, SECTION LENGTH, TOP SLAB REINFORCING STEEL, BOTTOM SLAB REINFORCING STEEL, SIDE WALL REINFORCING STEEL, INTERIOR WALL REINFORCING STEEL, TOP SLAB DISTRIBUTION REINFORCING STEEL, BOTTOM SLAB DISTRIBUTION REINFORCING STEEL, SIDE WALL DISTRIBUTION REINFORCING STEEL, INTERIOR WALL DISTRIBUTION REINFORCING STEEL.

Table with columns: CLASS 'S' CONCRETE, REINFORCING STEEL (GR. 60), ADTL. REINF. PER LONG. LAP LOCATION, ADTL. REINF. FOR TRANS. LAP, ADDITIONAL CONCRETE FOR HDWL, TOTAL ADTL. REINF. FOR HDWL.

INLET SKEWED END SECTION

Table with columns for SKEW (DEGREE), SLOPE, DESIGN FILL DEPTH, CLEAR SPAN, CLEAR HEIGHT, SECTION LENGTH, TOP SLAB THK., HDWL THK., BOTTOM SLAB THK., SIDE WALL THK., INTERIOR WALL THK., OVERALL WIDTH, OVERALL HEIGHT, TOP SLAB REINFORCING STEEL, BOTTOM SLAB REINFORCING STEEL, SIDE WALL REINFORCING STEEL, INTERIOR WALL REINFORCING STEEL, TOP SLAB DISTRIBUTION REINFORCING STEEL, BOTTOM SLAB DISTRIBUTION REINFORCING STEEL, SIDE WALL DISTRIBUTION REINFORCING STEEL, INTERIOR WALL DISTRIBUTION REINFORCING STEEL.

Table with columns: CLASS 'S' CONCRETE, REINFORCING STEEL (GR. 60), CU. YDS., LBS.

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

INLET WINGWALL TABLE

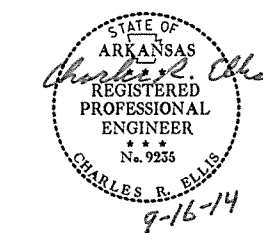
Table with columns for OVERALL WIDTH, CLEAR HEIGHT, FOOTING THK., WING WALL THK., BOX SKEW (DEG.), SLOPE, HDWL LENGTH, HEEL, WALL HEIGHT, WINGWALL ANGLE, FOOTING WIDTH AT WALL END, WIDTH OF WING FOOTINGS AT HDWL, FOOTING DIMENSION PARALLEL WITH HDWL, LENGTH OF WINGWALLS, LENGTH OF FOOTING HEEL, CLASS 'S' CONCRETE, REINFORCING STEEL.

MID-SECTION BAR LAP TABLE

Table with columns: # of Long Laps Req'd, Section Length, REINFORCING STEEL QTY. PER WING (LBS).

Table with columns: Min. Bar Lap Length, Bar Pin Dia. Table.

TABULAR DATA BY: A.M.S. DATE: 9/12/14
CHECKED BY: J.P. DATE: 9-12-14



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





DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	070281	14	185	

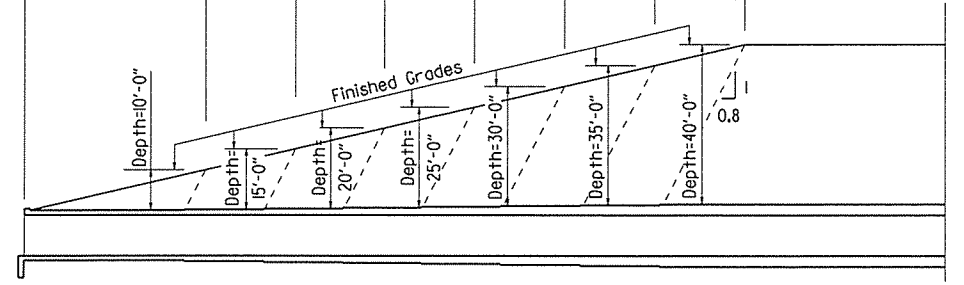
① SPECIAL DETAILS



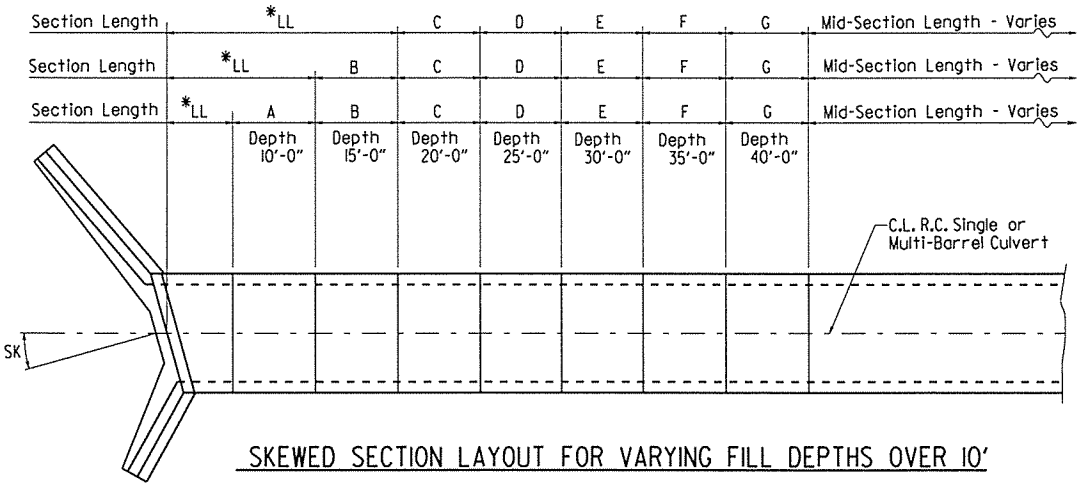
2:1 Slope	20'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"
3:1 Slope	30'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"
4:1 Slope	40'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"

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

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



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



**LONGITUDINAL SECTION LENGTH SCHEDULE FOR VARYING FILL DEPTHS OVER 10'**

Lengths for Non-Skewed Boxes

**GENERAL NOTES:**

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

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

LIVE LOADING: HL-93

All concrete shall be Class 5 with a minimum 28-day compressive strength of 3,500 psi and shall be poured in the dry. All exposed corners to have 1/4" chamfers.

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

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

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

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

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

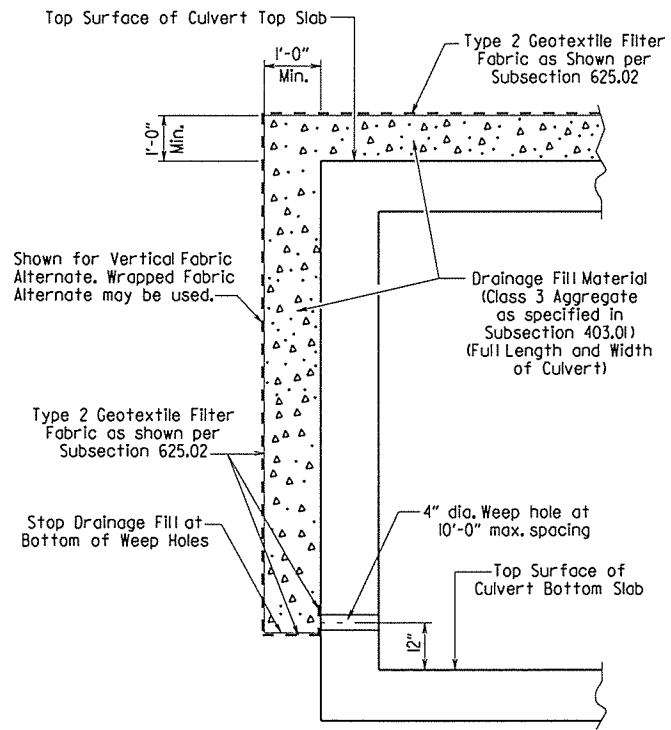
Weep Holes in wingwalls shall have a maximum horizontal spacing of 10'-0" and shall be spaced to clear all reinforcing steel. There shall be a minimum of two (2) weep holes in each wingwall. The drain opening shall be 4" diameter and shall be placed 12" above the top of the wingwall footing.

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

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

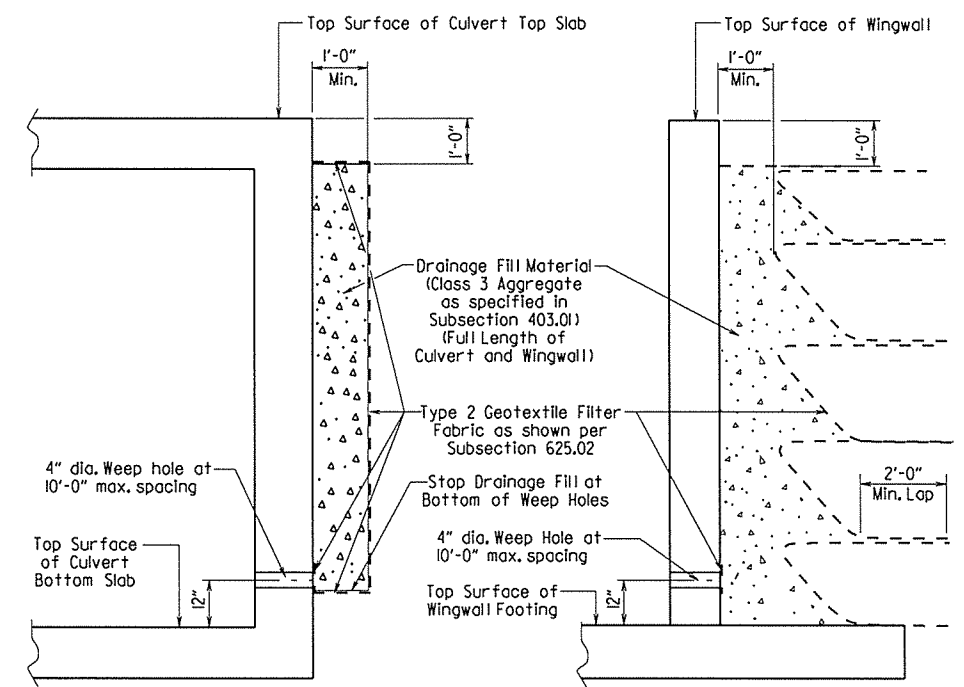
When the top slab of the box culvert serves as finished roadway surface, curing and finishing shall be in accordance with subsections 802.17 and 802.20 for bridge roadway surface and a tine finish shall be applied in accordance with subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Curing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

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



**CULVERT DRAINAGE DETAIL FOR ROCK FILL**

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



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

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

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

**WINGWALL & CULVERT DRAINAGE DETAIL**

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

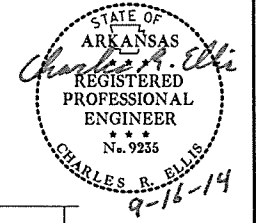
**SPECIAL DETAILS**



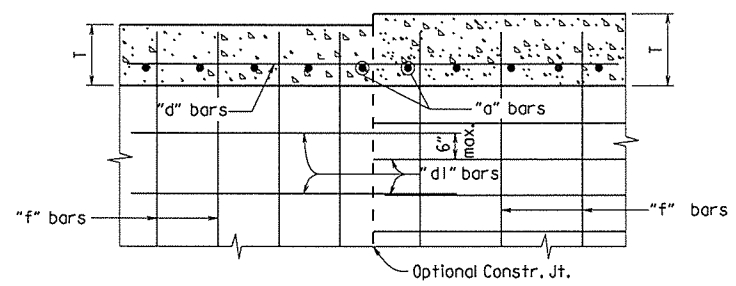
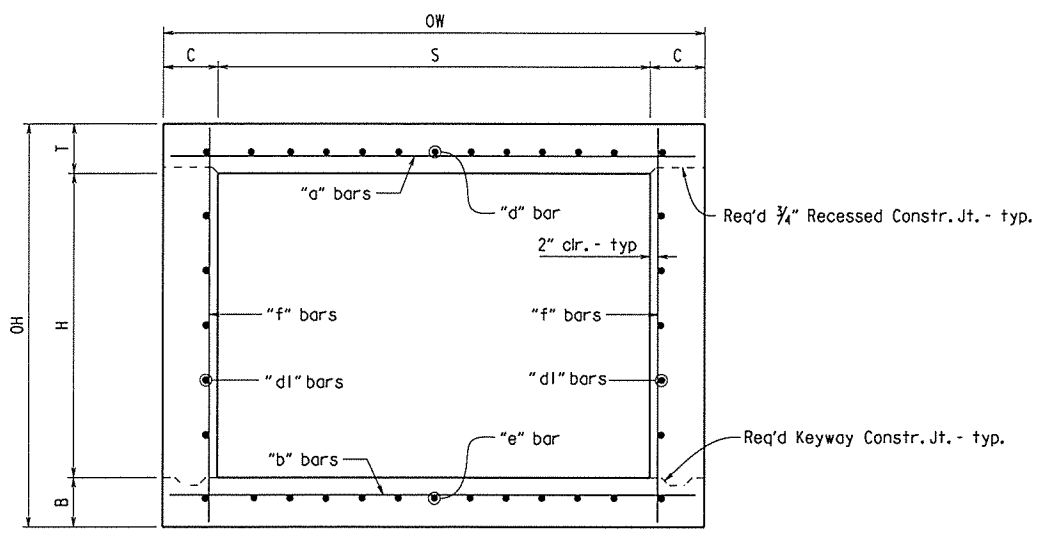
V 1114 b070281\_culvert.dgn

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. 070281	15 185

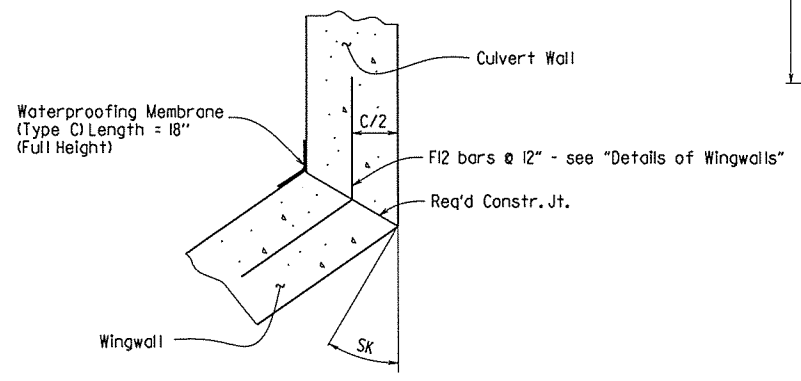
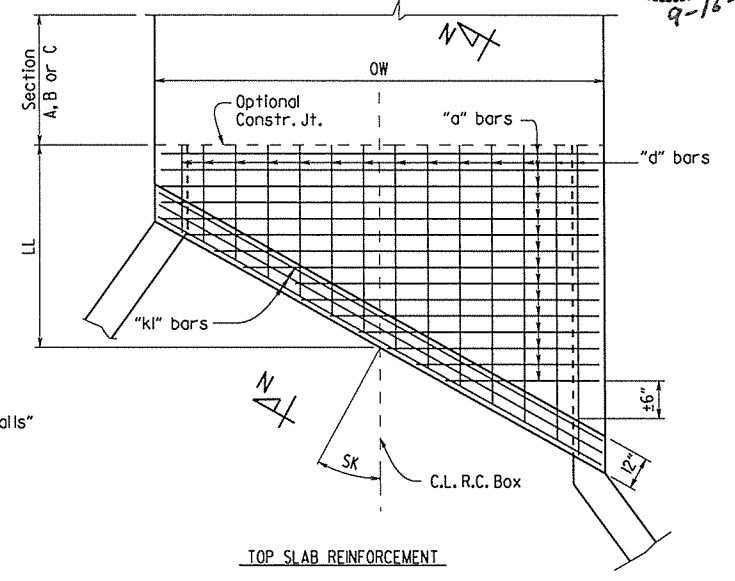
① SPECIAL DETAILS



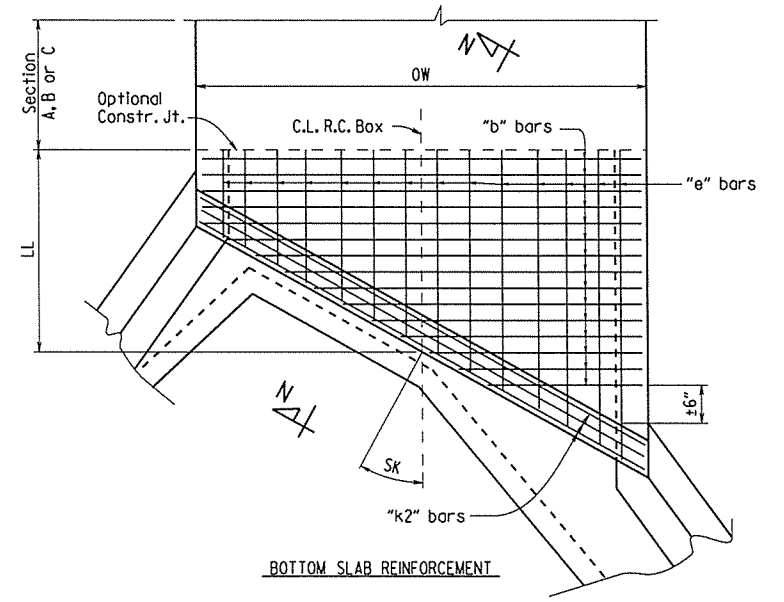
Note: When top slab of culvert serves as finished roadway surface, see General Notes on Sheet 1 of 4.



Longitudinal Bar Spacing at individual sections shall be maintained, which may result in noncontact bar laps.  
**LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS**  
 TOP SLAB SHOWN, BOTTOM SLAB SIMILAR

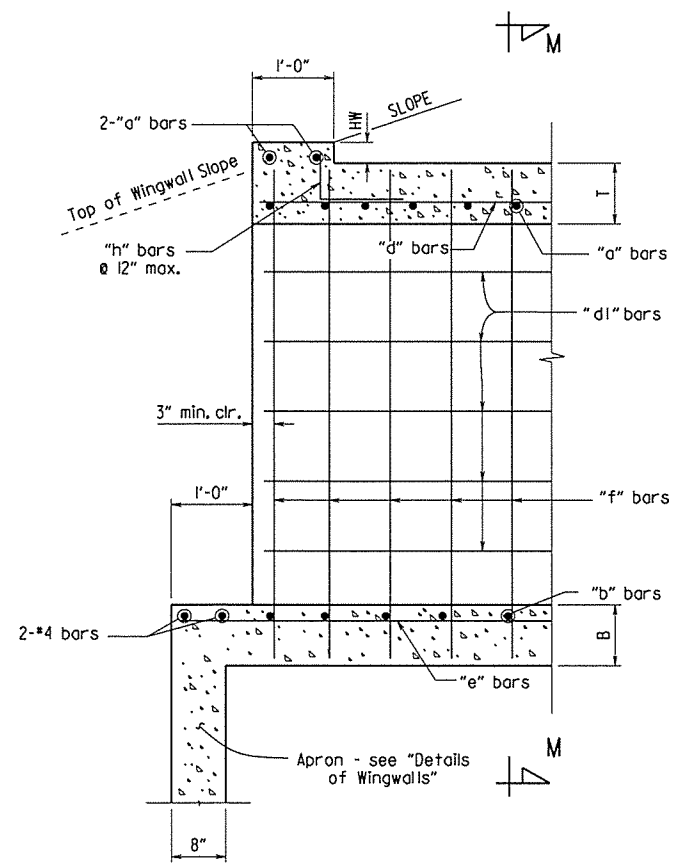
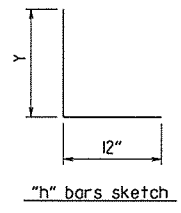


**WINGWALL ATTACHMENT**  
 See "Details of Wingwalls" for additional information and wingwall details.

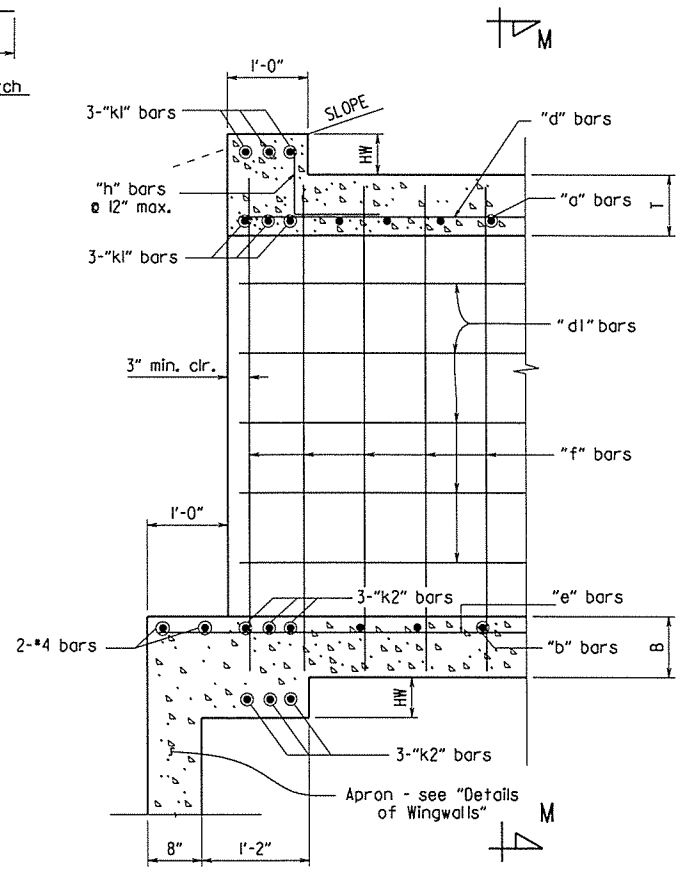


**SKewed END SECTION DETAILS**

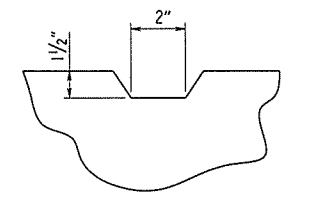
**TYPICAL SECTION M-M**



**PART LONGITUDINAL SECTION**  
 (Non-Skewed Ends)



**PART LONGITUDINAL SECTION N-N**  
 (Skewed Ends)



**TYPICAL KEYWAY DETAIL**  
 (All Construction Joints)

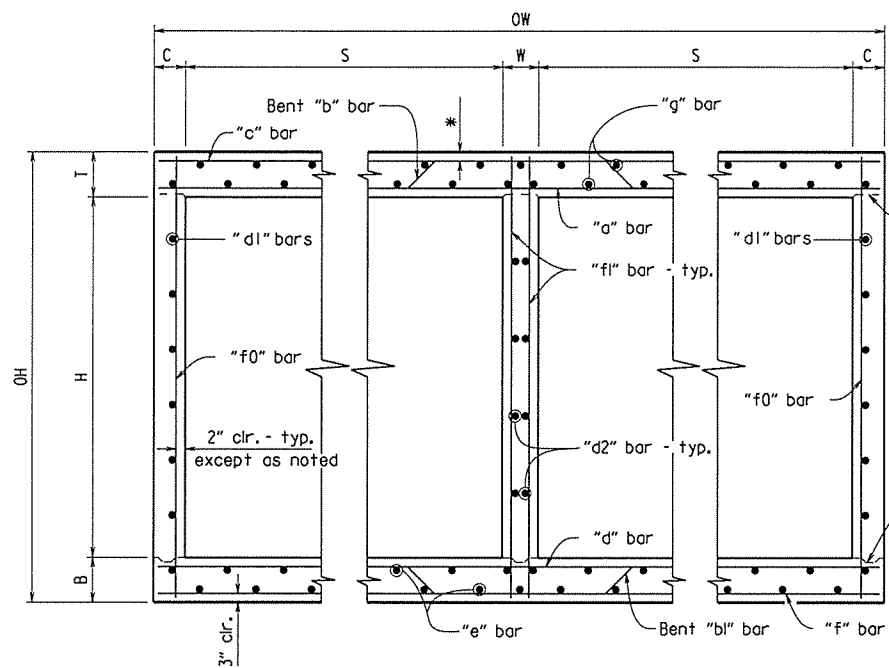
SHEET 2 OF 4  
 GENERAL DETAILS OF R.C. BOX CULVERT  
 DETAILS OF SINGLE BARREL  
 R.C. BOX CULVERT  
 SPECIAL DETAILS

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

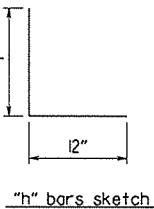
Note: When top slab of culvert serves as finished roadway surface, see General Notes on Sheet 1 of 4.



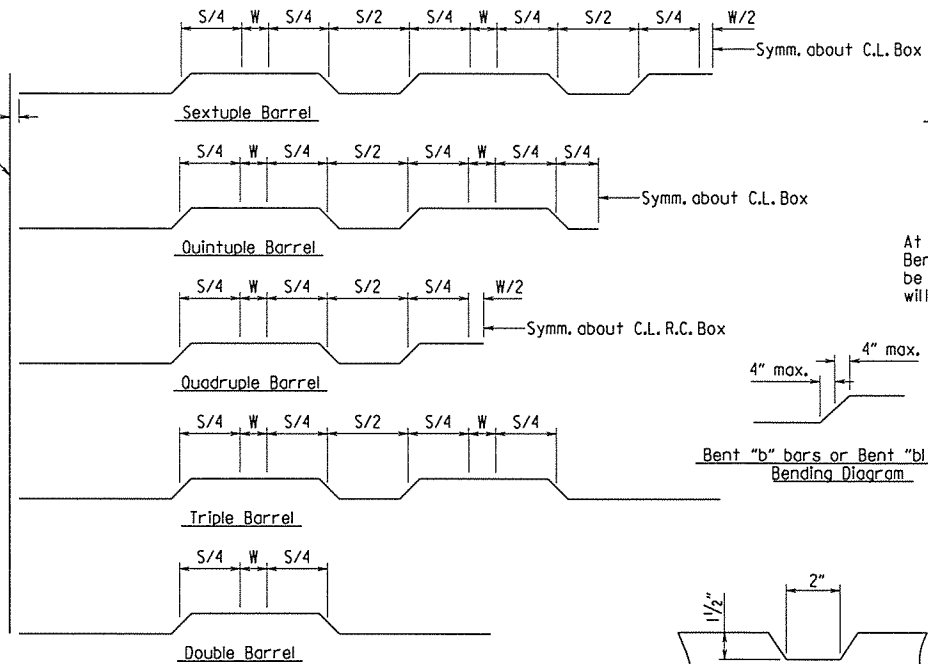
**TYPICAL SECTION M-M**

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

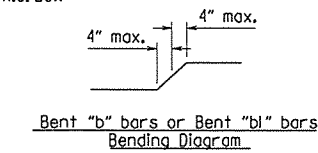
**Bottom Slab**  
 Straight "d" bars shall alternate with Bent "bl" bars in top.  
 Straight "f" bars shall alternate with Bent "bl" bars in bottom.



"h" bars sketch

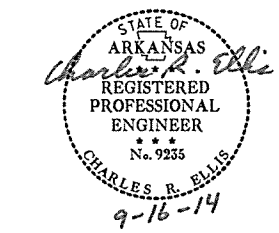


**Bent "b" bars or Bent "bl" bars sketch**



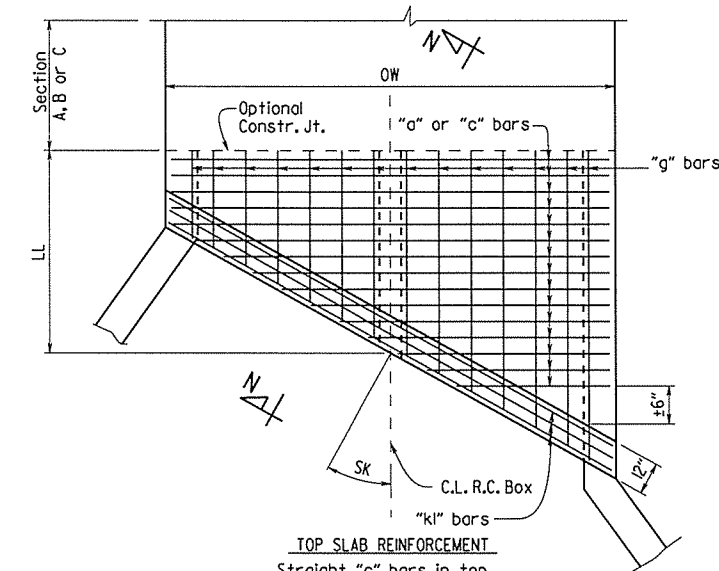
**TYPICAL KEYWAY DETAIL**  
 (All Construction Joints)

DATE REVISED	DATE FILMED	REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	070281	10	185	

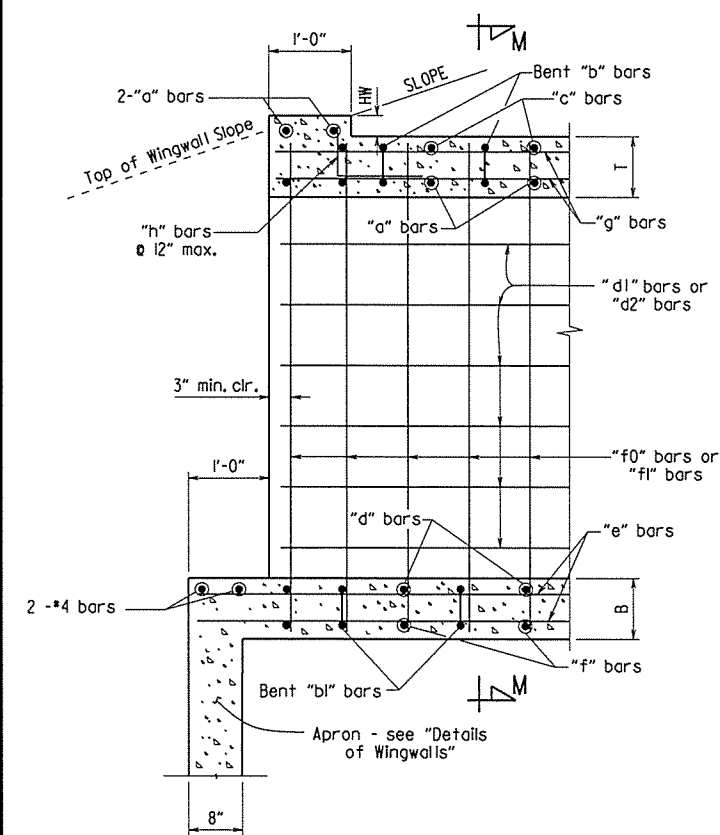


**Lap Detail**  
 For Bent "b" bars and Bent "bl" bars

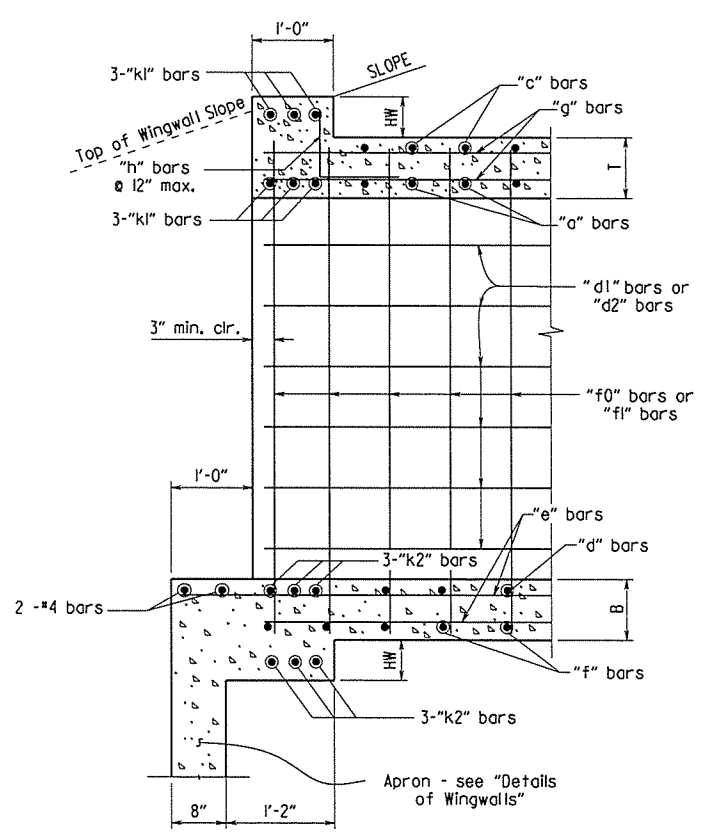
At the Contractor's option in lieu of providing Bent "b" or Bent "bl" bars, one bar top and bottom of equivalent size may be substituted for each bent bar. Payment for the reinforcing will be based on the weight of the "b" or "bl" bar.



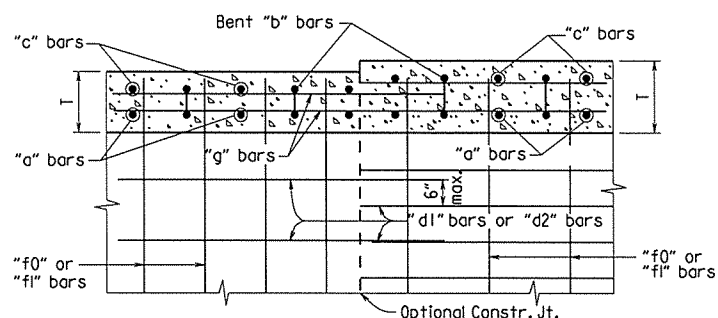
**TOP SLAB REINFORCEMENT**  
 Straight "c" bars in top.  
 Straight "a" bars in bottom.



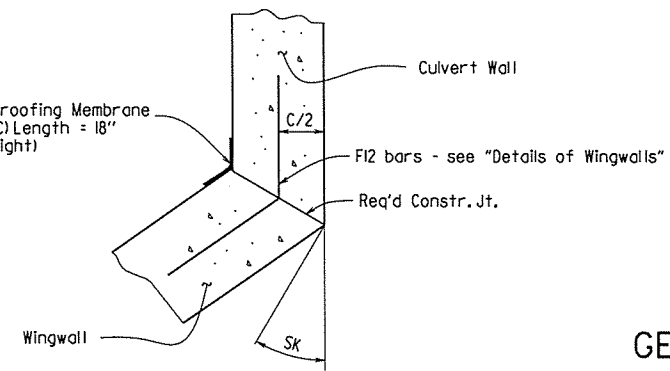
**PART LONGITUDINAL SECTION**  
 (Non-Skewed Ends)



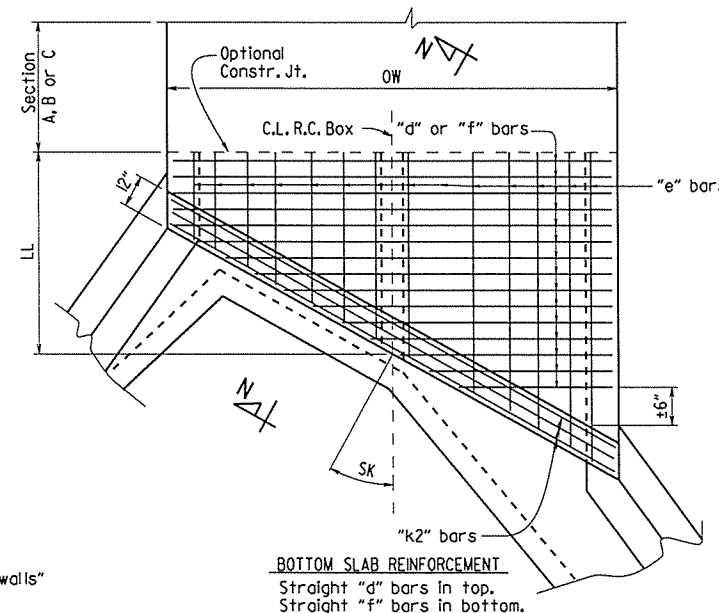
**PART LONGITUDINAL SECTION N-N**  
 (Skewed Ends)



**LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS**  
 TOP SLAB SHOWN, BOTTOM SLAB SIMILAR



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



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

**SKewed END SECTION DETAILS**

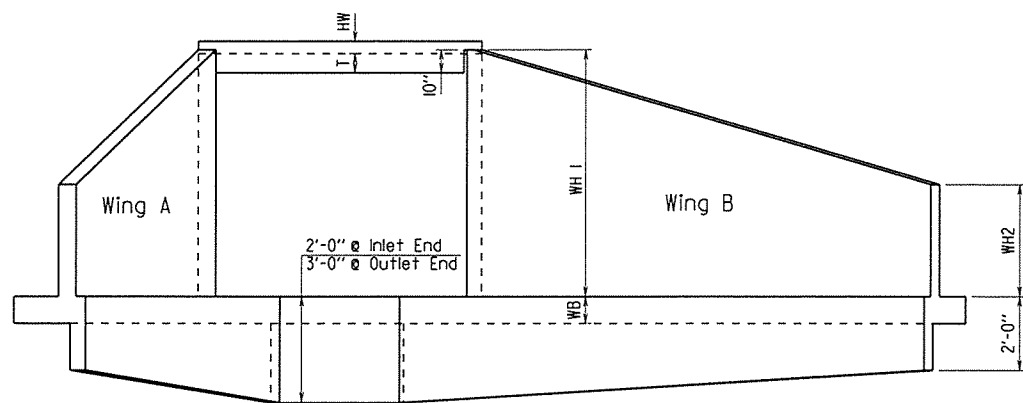
**SHEET 3 OF 4**  
**GENERAL DETAILS OF R.C. BOX CULVERT**  
**DETAILS OF MULTI-BARREL R.C. BOX CULVERT**  
**SPECIAL DETAILS**

b070281\_culvert.dgn

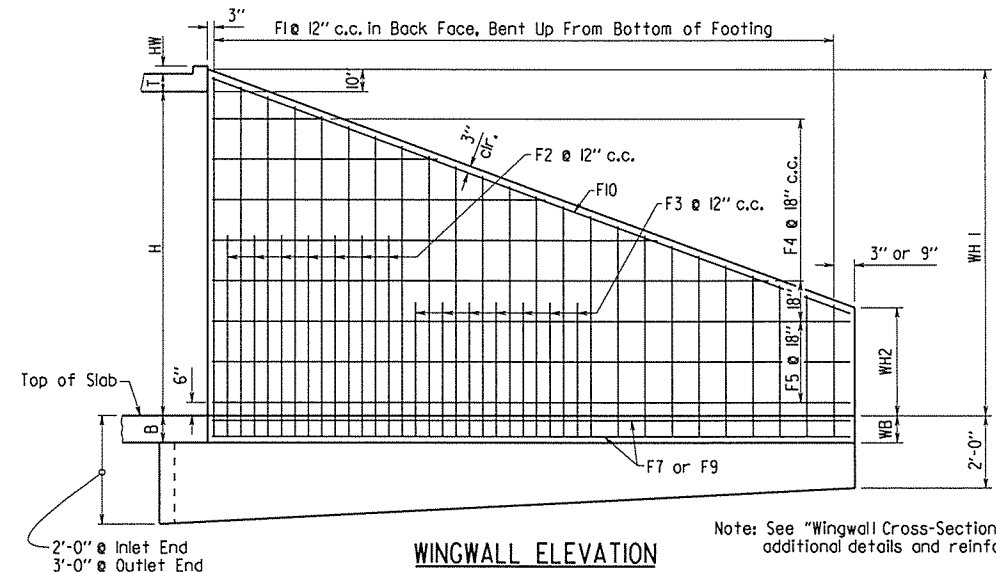
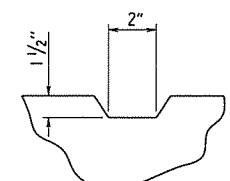


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070281	17	185

① SPECIAL DETAILS



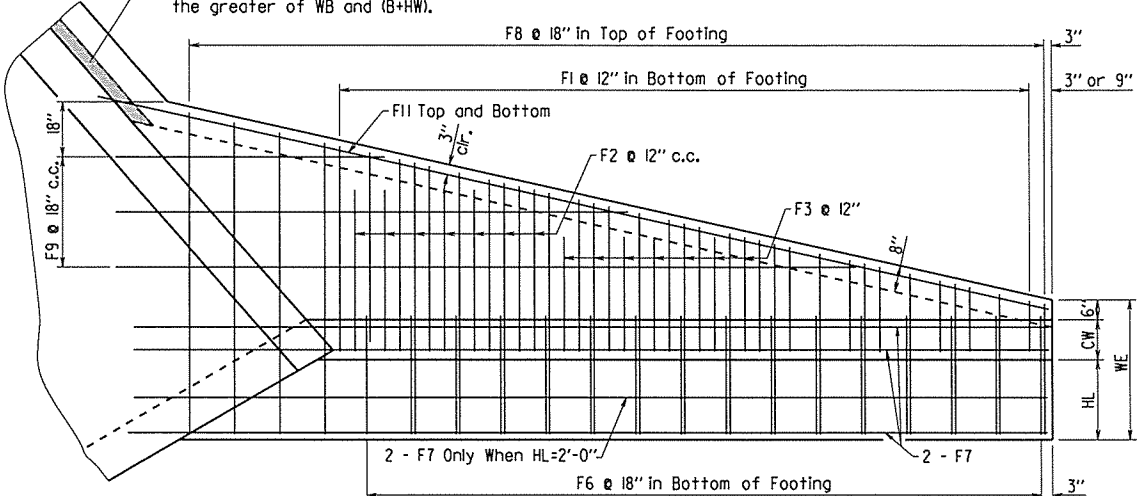
**END ELEVATION**  
Flared Wingwalls Shown



**WINGWALL ELEVATION**  
Showing Back Face Reinforcement

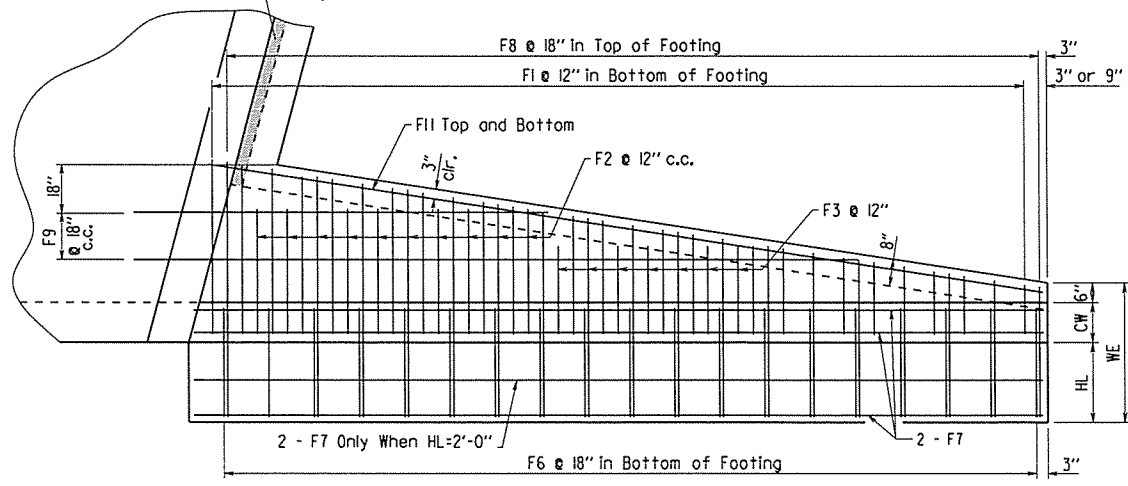
Note: See "Wingwall Cross-Section" for additional details and reinforcing

For square ends make the shaded area thickness the greater of WB and B (Bottom Slab Thickness).  
For skewed ends make the shaded area thickness the greater of WB and (B+HW).

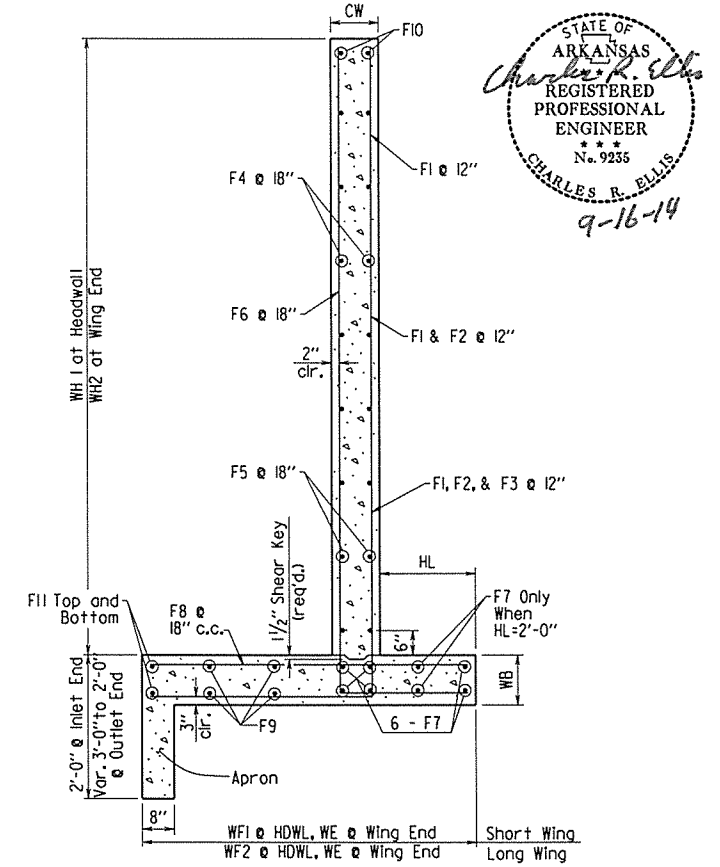


**PLAN - FLARED WINGWALLS**  
Showing Footing Reinforcement

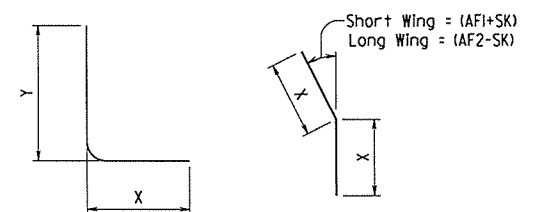
For square ends make the shaded area thickness the greater of WB and B (Bottom Slab Thickness).  
For skewed ends make the shaded area thickness the greater of WB and (B+HW).



**PLAN - PARALLEL WINGWALLS**  
Showing Footing Reinforcement

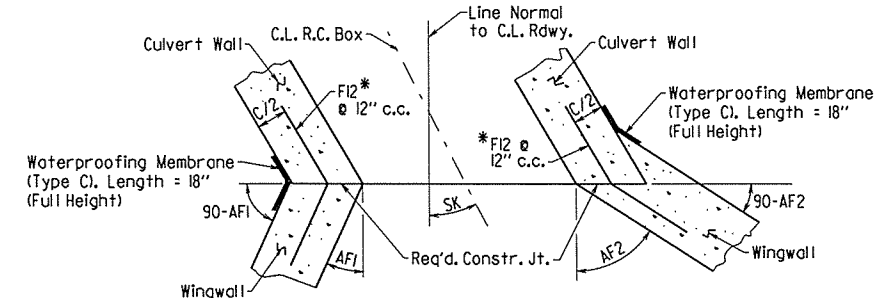


**WINGWALL SECTION P-P**



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

\*F12 is a straight bar for parallel wingwalls



**CONSTRUCTION JOINTS**  
Flared Wingwalls Shown

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

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				6	ARK.		18	185

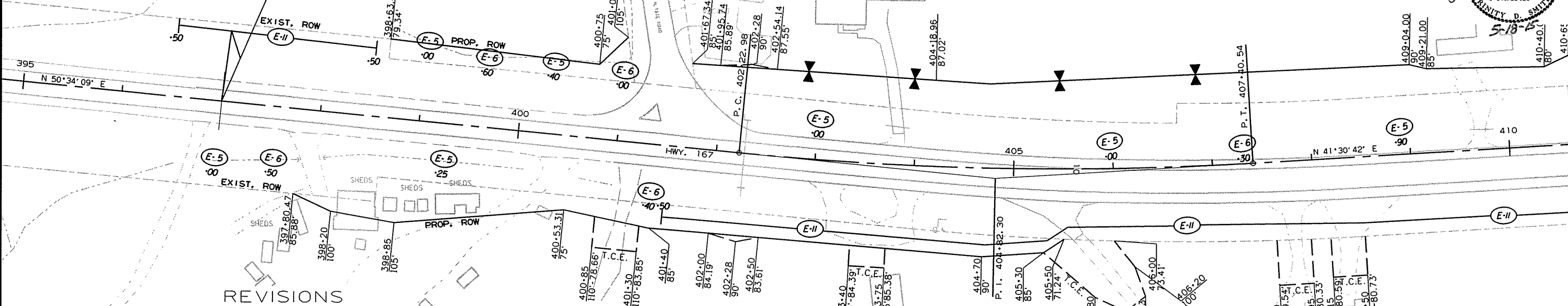
② TEMPORARY EROSION CONTROL DETAILS



STA. 396+50-STA. 398+50  
SILT FENCE = 200 LIN. FT.

STA. 397+00.00  
END JOB 070280  
BEGIN JOB 070281  
LOG MILE 5.27

HWY. 167  
PI = 404+82.30  
Δ = 09°03'27" LT.  
D = 01°45'00"  
T = 259.32'  
L = 517.57'  
PC = 402+22.98  
PT = 407+40.54  
e = 0.055' /'  
Ls = 540'



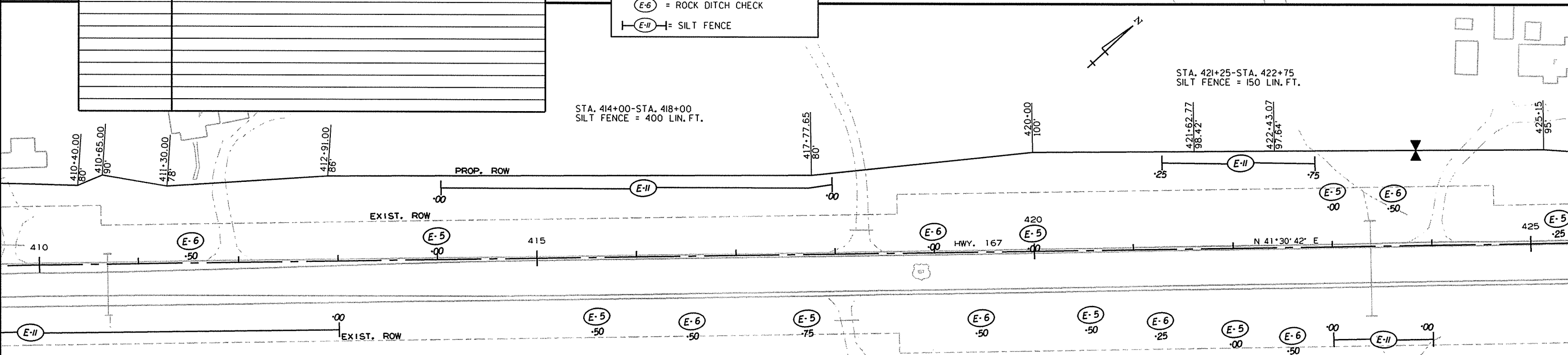
REVISIONS

DATE OF REVISION	REVISION

**LEGEND**

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

STA. 401+50-STA. 413+00  
SILT FENCE = 1150 LIN. FT.



STA. 414+00-STA. 418+00  
SILT FENCE = 400 LIN. FT.

STA. 421+25-STA. 422+75  
SILT FENCE = 150 LIN. FT.

STA. 423+00-STA. 424+00  
SILT FENCE = 100 LIN. FT.

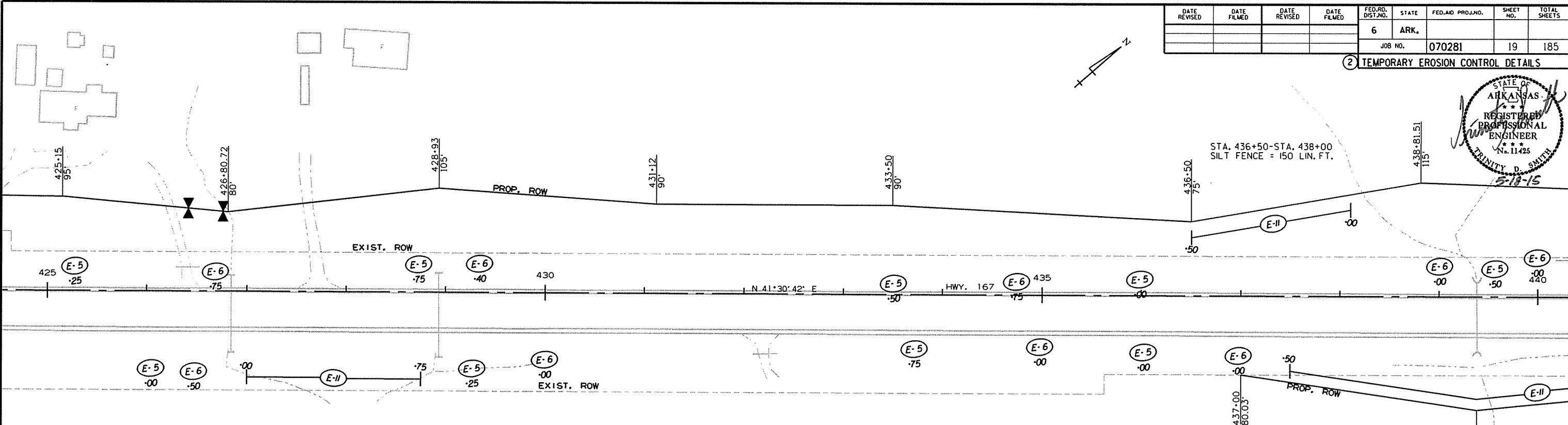
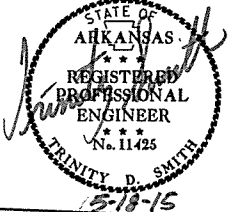
CLEARING AND GRUBBING STAGE  
TEMPORARY EROSION CONTROL DETAILS

3/26/2015

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		19	185

2 TEMPORARY EROSION CONTROL DETAILS

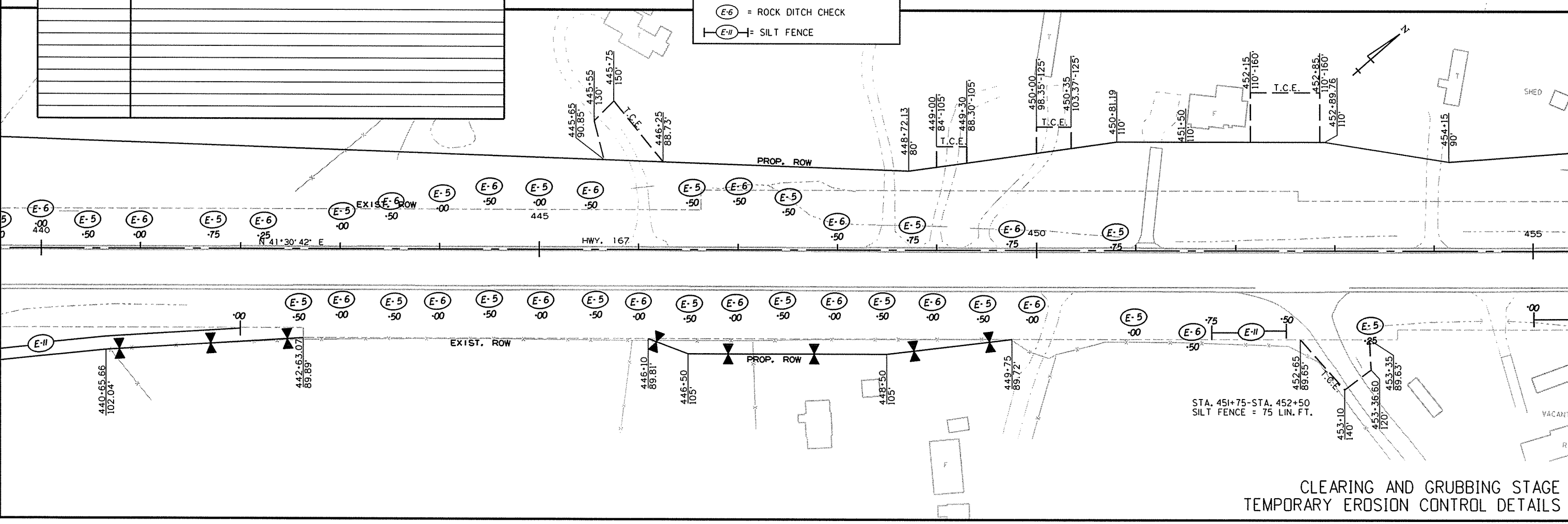


REVISIONS

DATE OF REVISION	REVISION

LEGEND

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



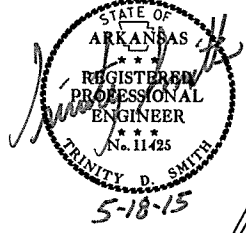
3/26/2015

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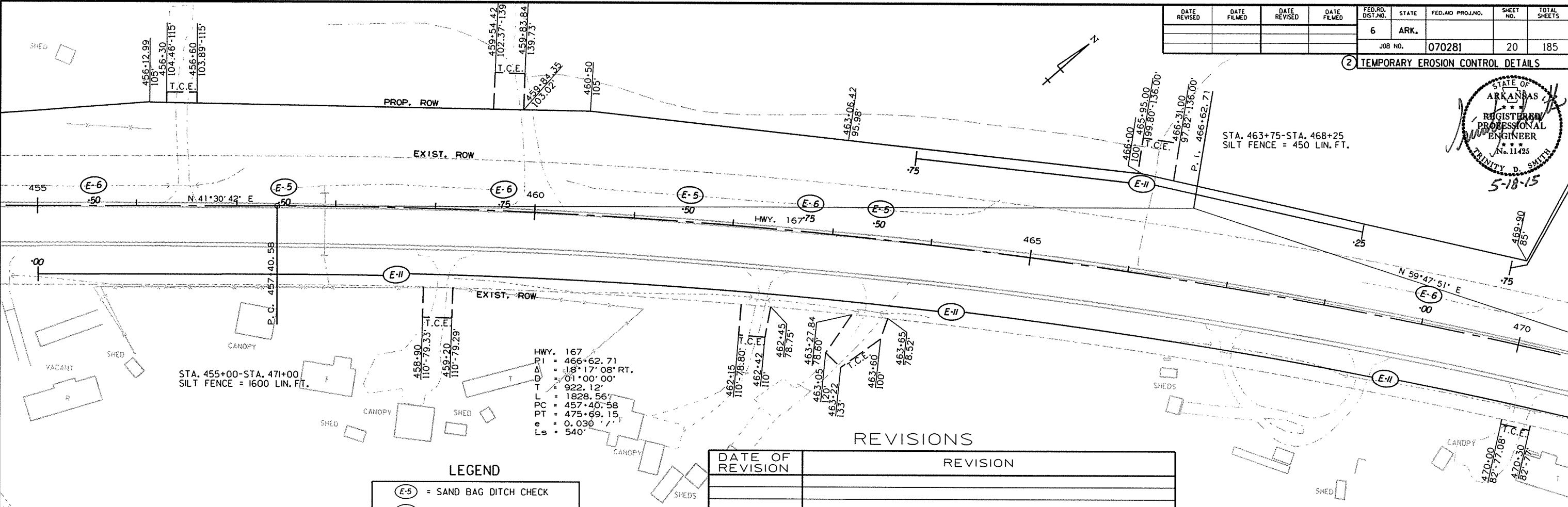
CLEARING AND GRUBBING STAGE  
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		20	185

2 TEMPORARY EROSION CONTROL DETAILS



STA. 463+75-STA. 468+25  
SILT FENCE = 450 LIN. FT.



STA. 455+00-STA. 471+00  
SILT FENCE = 1600 LIN. FT.

HWY. 167  
P.I. = 466+62.71  
Δ = 18°17'08" RT.  
D = 01°00'00"  
T = 922.12'  
L = 1828.56'  
PC = 457+40.58  
PT = 475+69.15  
e = 0.030  
Ls = 540'

REVISIONS

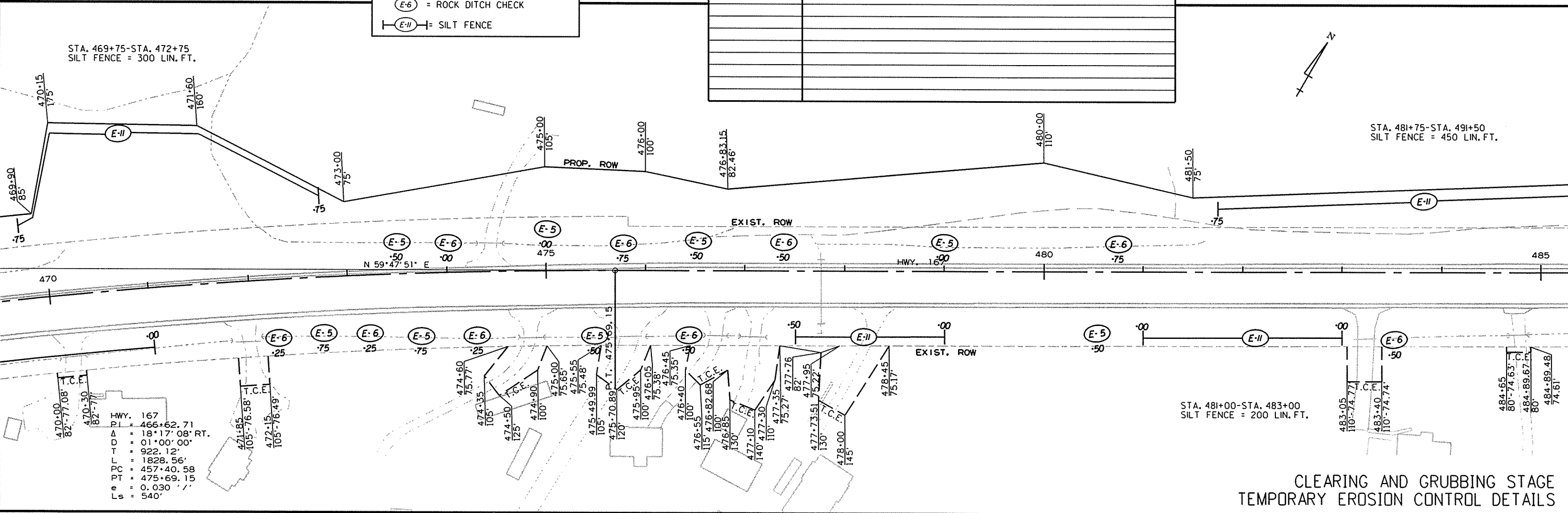
DATE OF REVISION	REVISION

**LEGEND**

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

STA. 469+75-STA. 472+75  
SILT FENCE = 300 LIN. FT.

STA. 481+75-STA. 491+50  
SILT FENCE = 450 LIN. FT.



HWY. 167  
P.I. = 466+62.71  
Δ = 18°17'08" RT.  
D = 01°00'00"  
T = 922.12'  
L = 1828.56'  
PC = 457+40.58  
PT = 475+69.15  
e = 0.030  
Ls = 540'

STA. 481+00-STA. 483+00  
SILT FENCE = 200 LIN. FT.

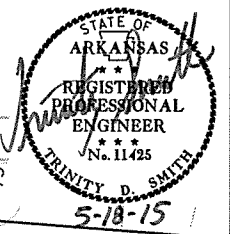
CLEARING AND GRUBBING STAGE  
TEMPORARY EROSION CONTROL DETAILS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		22	185

2 TEMPORARY EROSION CONTROL DETAILS



HWY. 167  
 P.I. = 513+18.06  
 Δ = 11°42'08" LT.  
 D = 01°30'00"  
 T = 391.44'  
 L = 780.15'  
 P.C. = 509+26.62  
 P.T. = 517+06.77  
 e = 0.049  
 Ls = 540'

HWY. 167  
 P.I. = 531+90.97  
 Δ = 08°49'10" RT.  
 D = 01°00'00"  
 T = 441.85'  
 L = 881.95'  
 P.C. = 527+49.13  
 P.T. = 536+31.07  
 e = 0.030  
 Ls = 540'

LEGEND

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

REVISIONS

DATE OF REVISION	REVISION

STA. 519+50-STA. 521+00  
 SILT FENCE = 150 LIN. FT.

STA. 519+50-STA. 522+00  
 SILT FENCE = 250 LIN. FT.

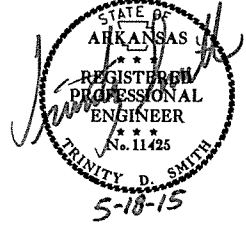
STA. 534+00-STA. 536+00  
 SILT FENCE = 200 LIN. FT.

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

CLEARING AND GRUBBING STAGE  
 TEMPORARY EROSION CONTROL DETAILS

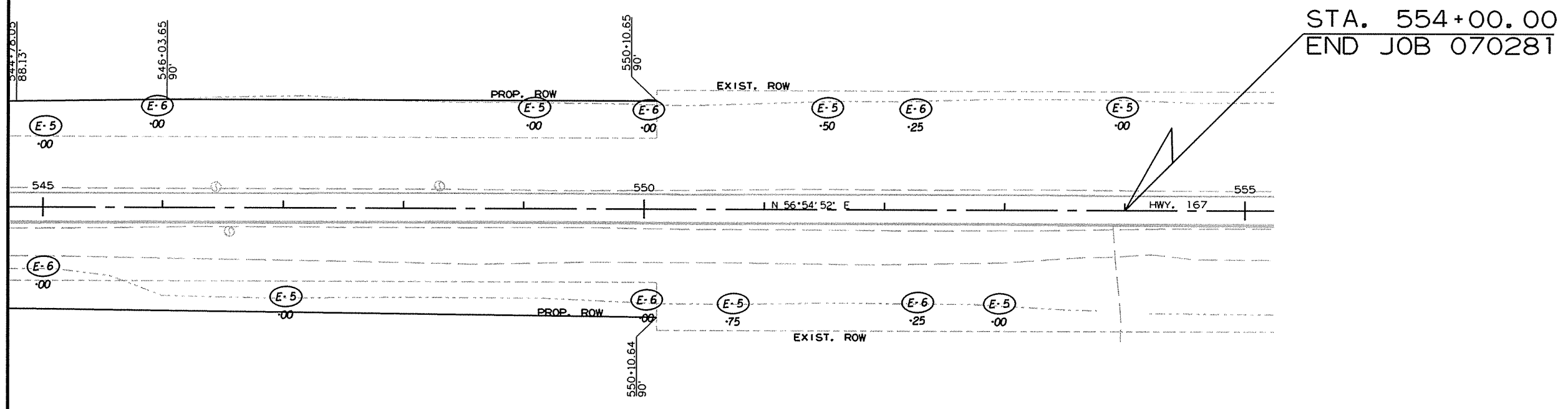
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070281	23	185

② TEMPORARY EROSION CONTROL DETAILS



**LEGEND**

	= SAND BAG DITCH CHECK
	= ROCK DITCH CHECK
	= SILT FENCE



**REVISIONS**

DATE OF REVISION	REVISION

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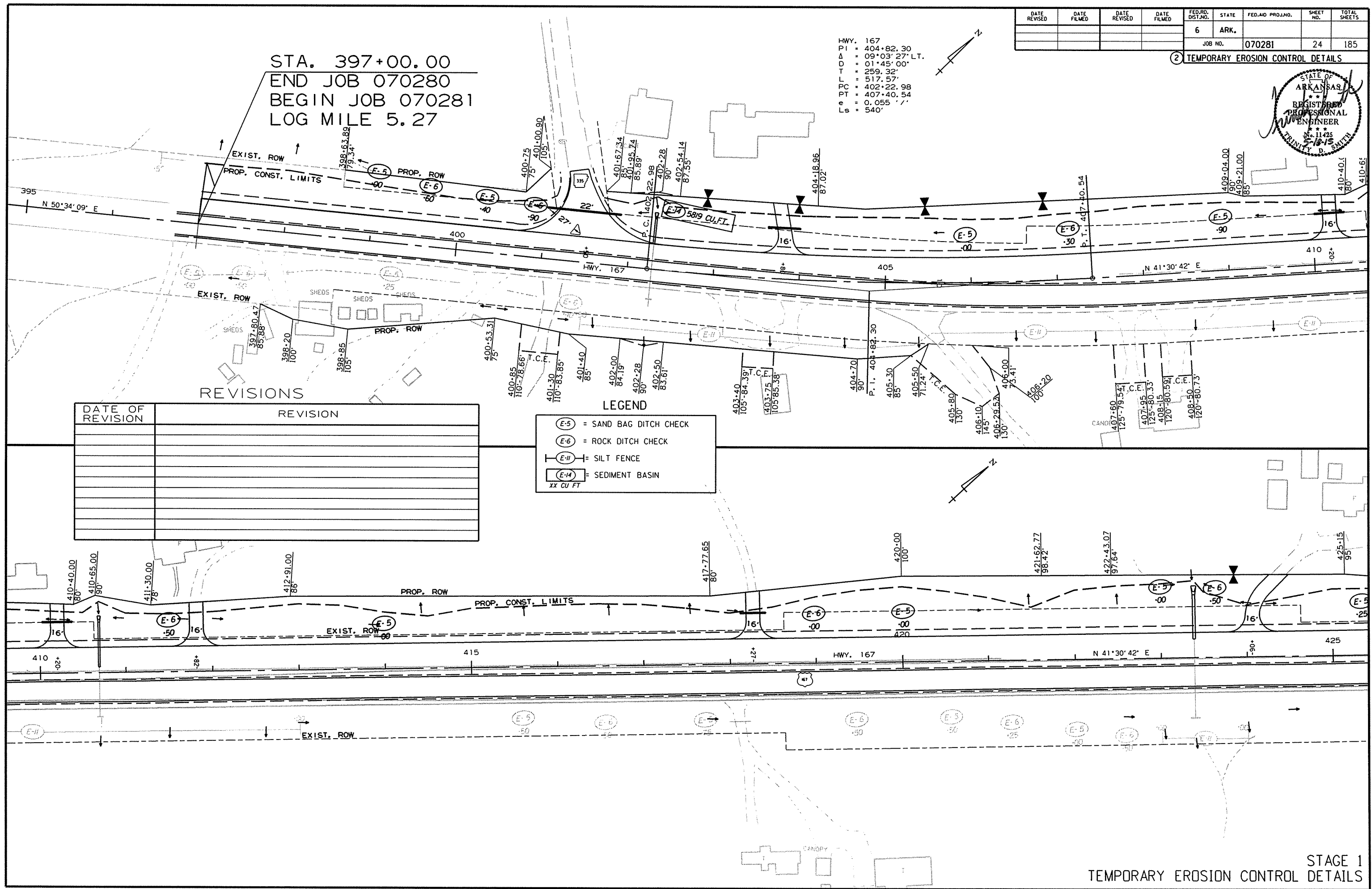
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		24	185

② TEMPORARY EROSION CONTROL DETAILS



STA. 397+00.00  
 END JOB 070280  
 BEGIN JOB 070281  
 LOG MILE 5.27

HWY. 167  
 PI = 404+82.30  
 Δ = 09°03'27" LT.  
 D = 01°45'00"  
 T = 259.32'  
 L = 517.57'  
 PC = 402+22.98  
 PT = 407+40.54  
 e = 0.055' /'  
 Ls = 540'



REVISIONS

DATE OF REVISION	REVISION

LEGEND

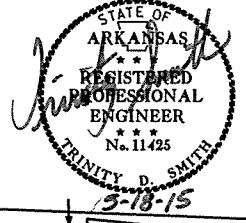
- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-11) = SILT FENCE
- (E-14) = SEDIMENT BASIN  
XX CU FT

3/26/2015  
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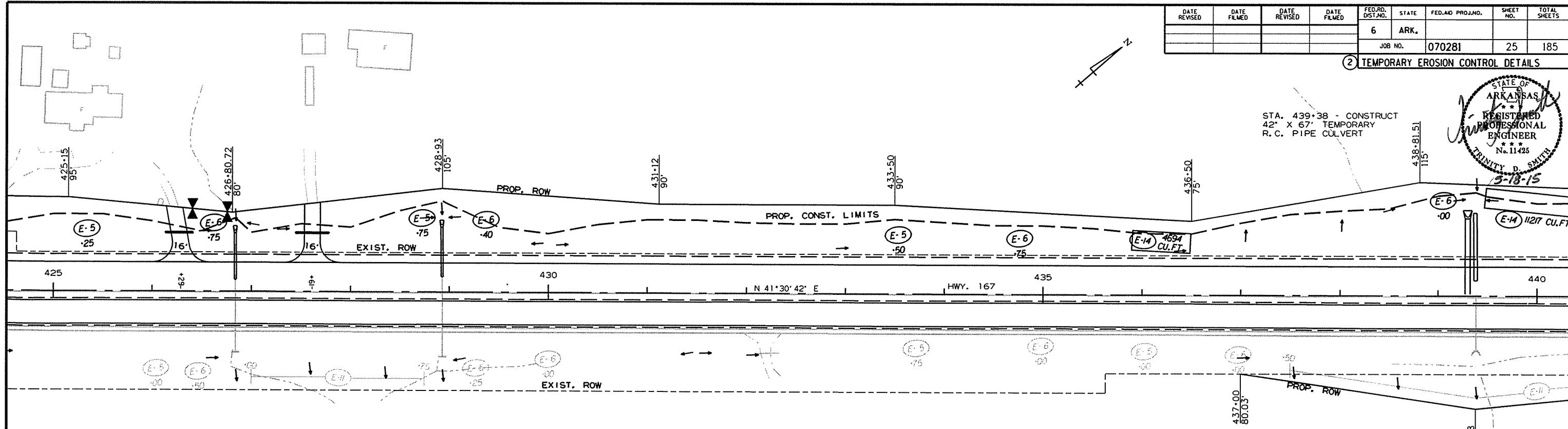


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		070281	25	185

2 TEMPORARY EROSION CONTROL DETAILS



STA. 439+38 - CONSTRUCT  
42' X 67' TEMPORARY  
R.C. PIPE CULVERT

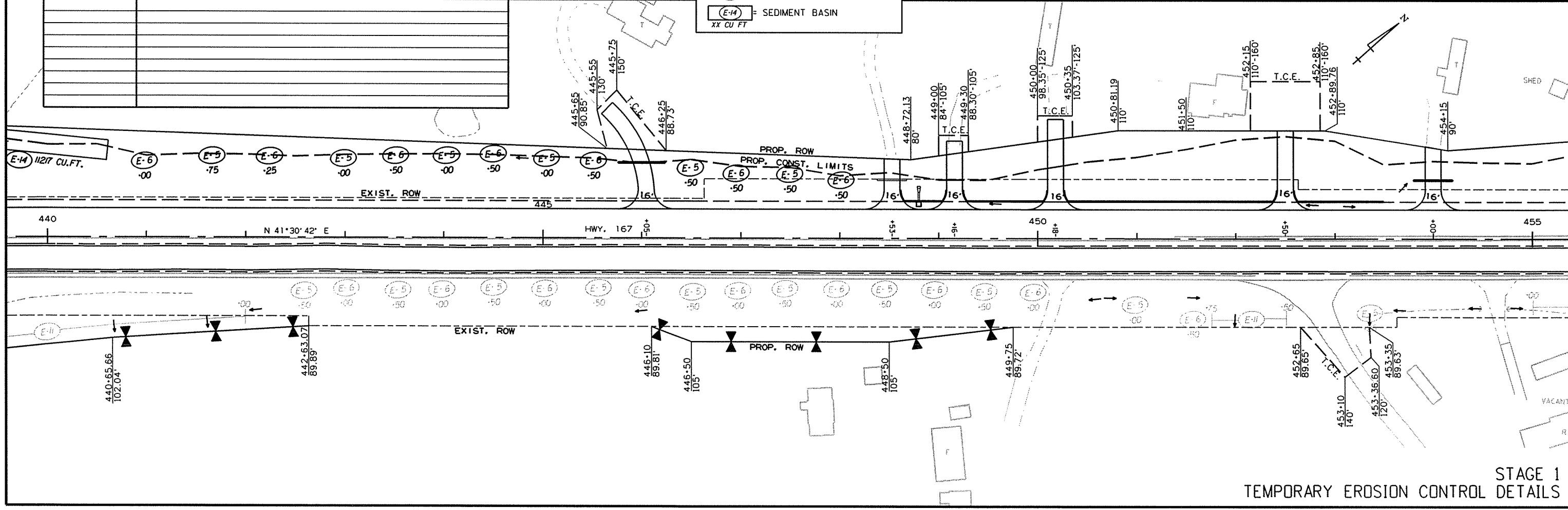


REVISIONS

DATE OF REVISION	REVISION

LEGEND

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



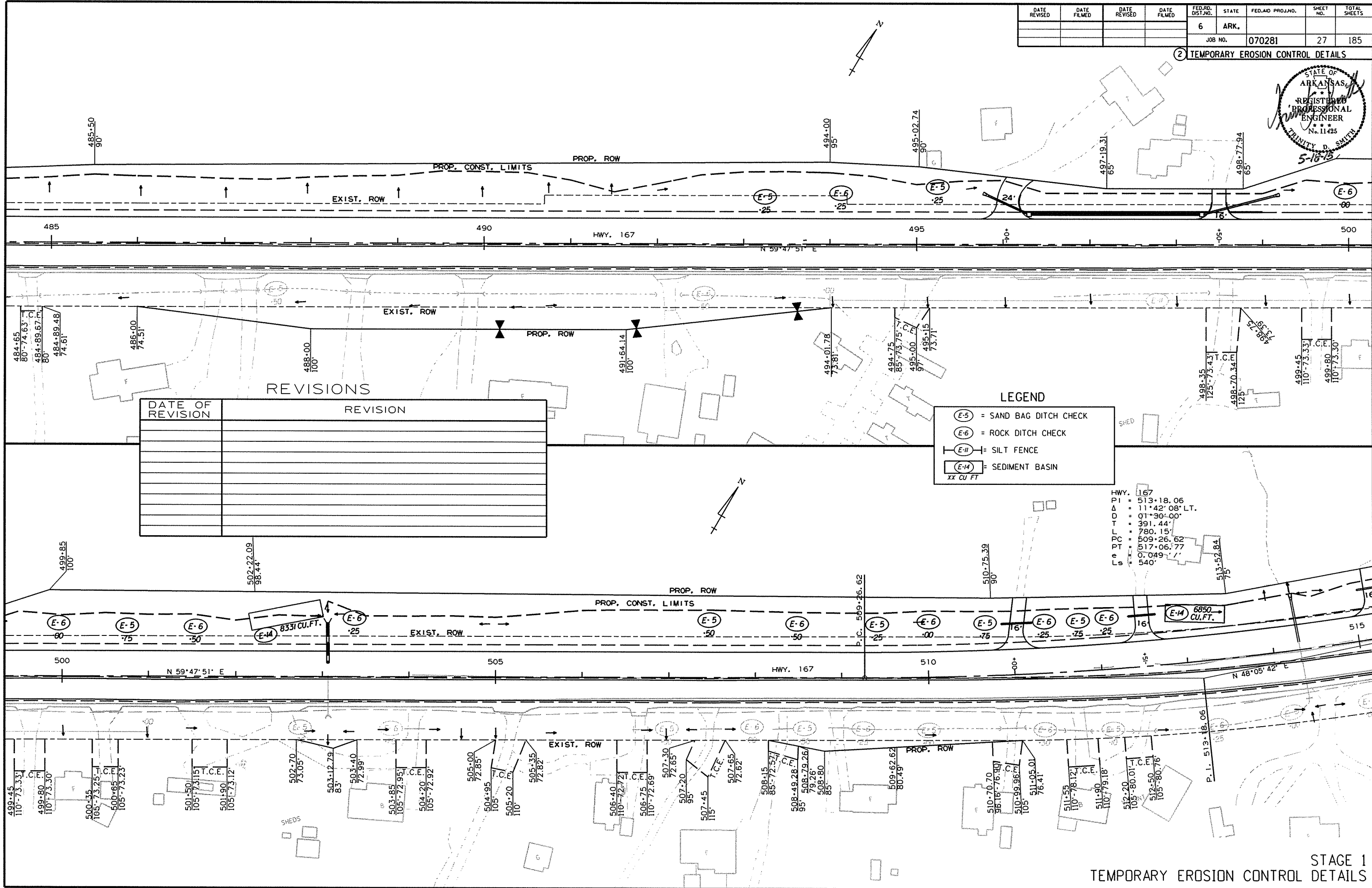
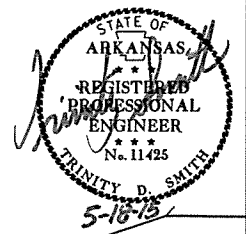
STAGE 1  
TEMPORARY EROSION CONTROL DETAILS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		27	185
				JOB NO.		070281		

2 TEMPORARY EROSION CONTROL DETAILS



REVISIONS

DATE OF REVISION	REVISION

LEGEND

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

HWY. 167  
 PI = 513+18.06  
 Δ = 11°42'08" LT.  
 D = 01°30'00"  
 T = 391.44'  
 L = 780.15'  
 PC = 509+26.62  
 PT = 517+06.77  
 Δ = 0°04'17"  
 L = 540'

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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. 070281	29	185

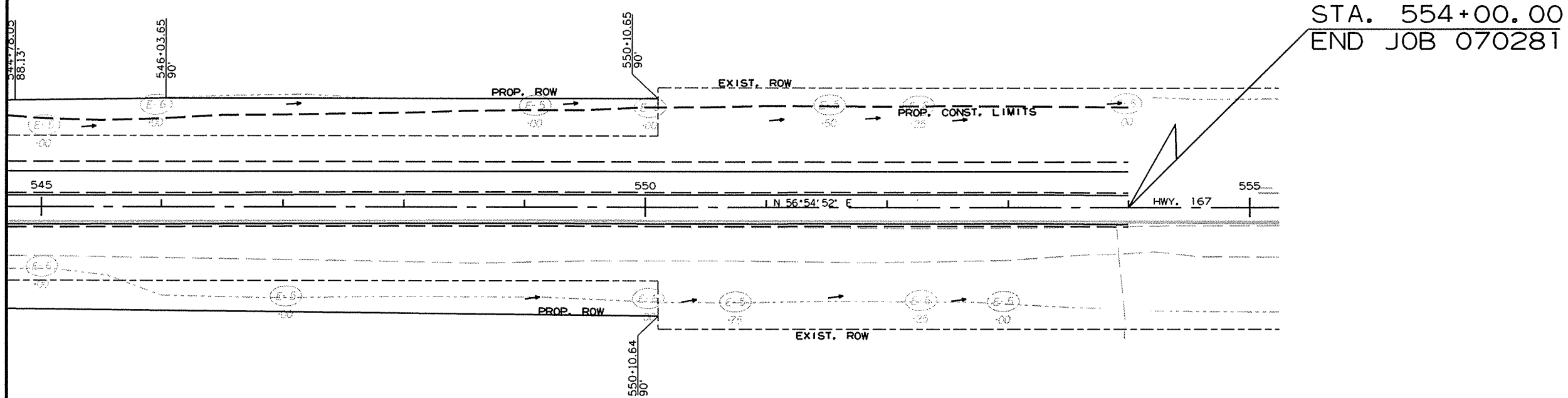
② TEMPORARY EROSION CONTROL DETAILS



LEGEND

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

XX CU FT



REVISIONS

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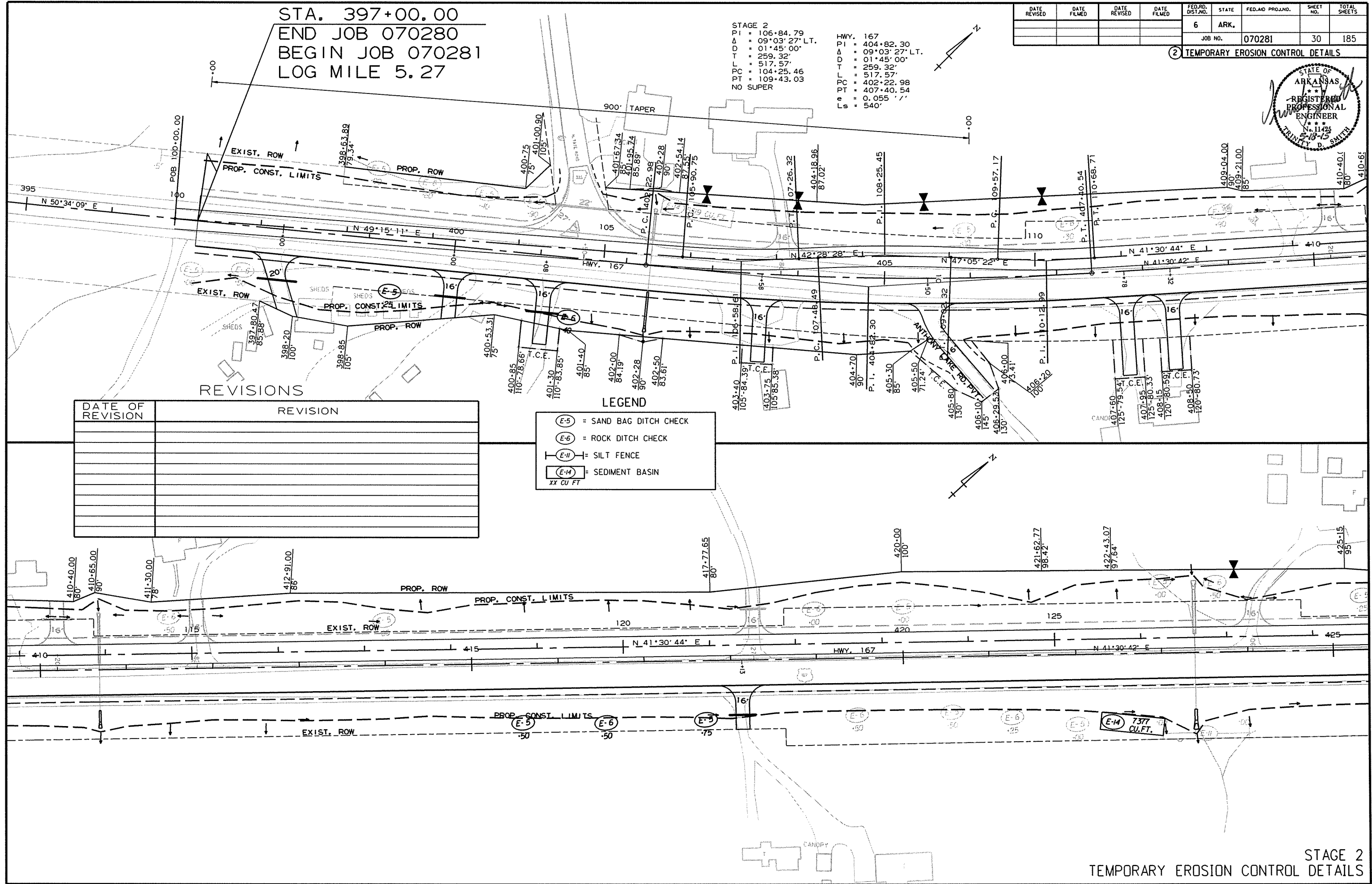
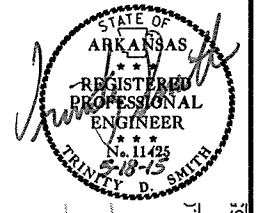
STA. 397+00.00  
 END JOB 070280  
 BEGIN JOB 070281  
 LOG MILE 5.27

STAGE 2  
 PI = 106+84.79  
 Δ = 09°03'27" LT.  
 D = 01°45'00"  
 T = 259.32'  
 L = 517.57'  
 PC = 104+25.46  
 PT = 109+43.03  
 NO SUPER

HWY. 167  
 PI = 404+82.30  
 Δ = 09°03'27" LT.  
 D = 01°45'00"  
 T = 259.32'  
 L = 517.57'  
 PC = 402+22.98  
 PT = 407+40.54  
 e = 0.055  
 Ls = 540'

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		30	185

2 TEMPORARY EROSION CONTROL DETAILS



DATE OF REVISION	REVISION

**LEGEND**

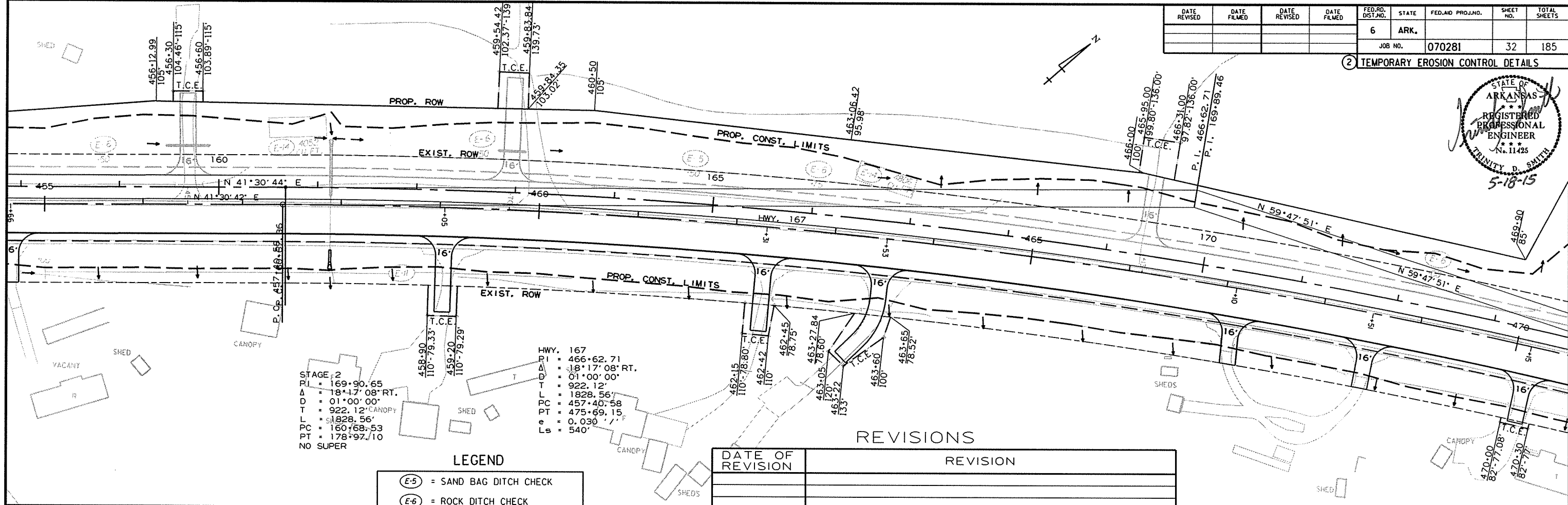
- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-11) = SILT FENCE
- (E-14) = SEDIMENT BASIN
- XX CU FT

3/26/2015  
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		32	185

2 TEMPORARY EROSION CONTROL DETAILS



STAGE 2  
 PI = 169+90.65  
 Δ = 18°17'08" RT.  
 D = 01°00'00"  
 T = 922.12' CANOPY  
 L = 1828.56'  
 PC = 160+68.53  
 PT = 178+97.10  
 NO SUPER

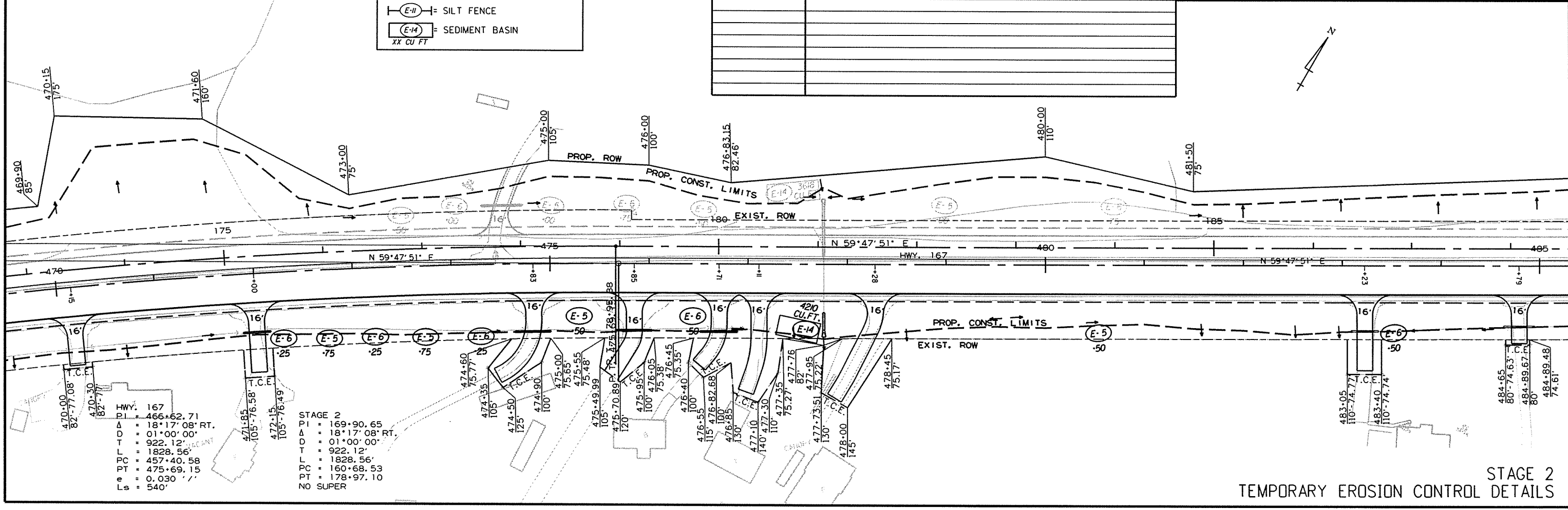
HWY. 167  
 PI = 466+62.71  
 Δ = 18°17'08" RT.  
 D = 01°00'00"  
 T = 922.12'  
 L = 1828.56'  
 PC = 457+40.58  
 PT = 475+69.15  
 e = 0.030  
 Ls = 540'

**LEGEND**

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

**REVISIONS**

DATE OF REVISION	REVISION



HWY. 167  
 PI = 466+62.71  
 Δ = 18°17'08" RT.  
 D = 01°00'00"  
 T = 922.12'  
 L = 1828.56'  
 PC = 457+40.58  
 PT = 475+69.15  
 e = 0.030  
 Ls = 540'

STAGE 2  
 PI = 169+90.65  
 Δ = 18°17'08" RT.  
 D = 01°00'00"  
 T = 922.12'  
 L = 1828.56'  
 PC = 160+68.53  
 PT = 178+97.10  
 NO SUPER

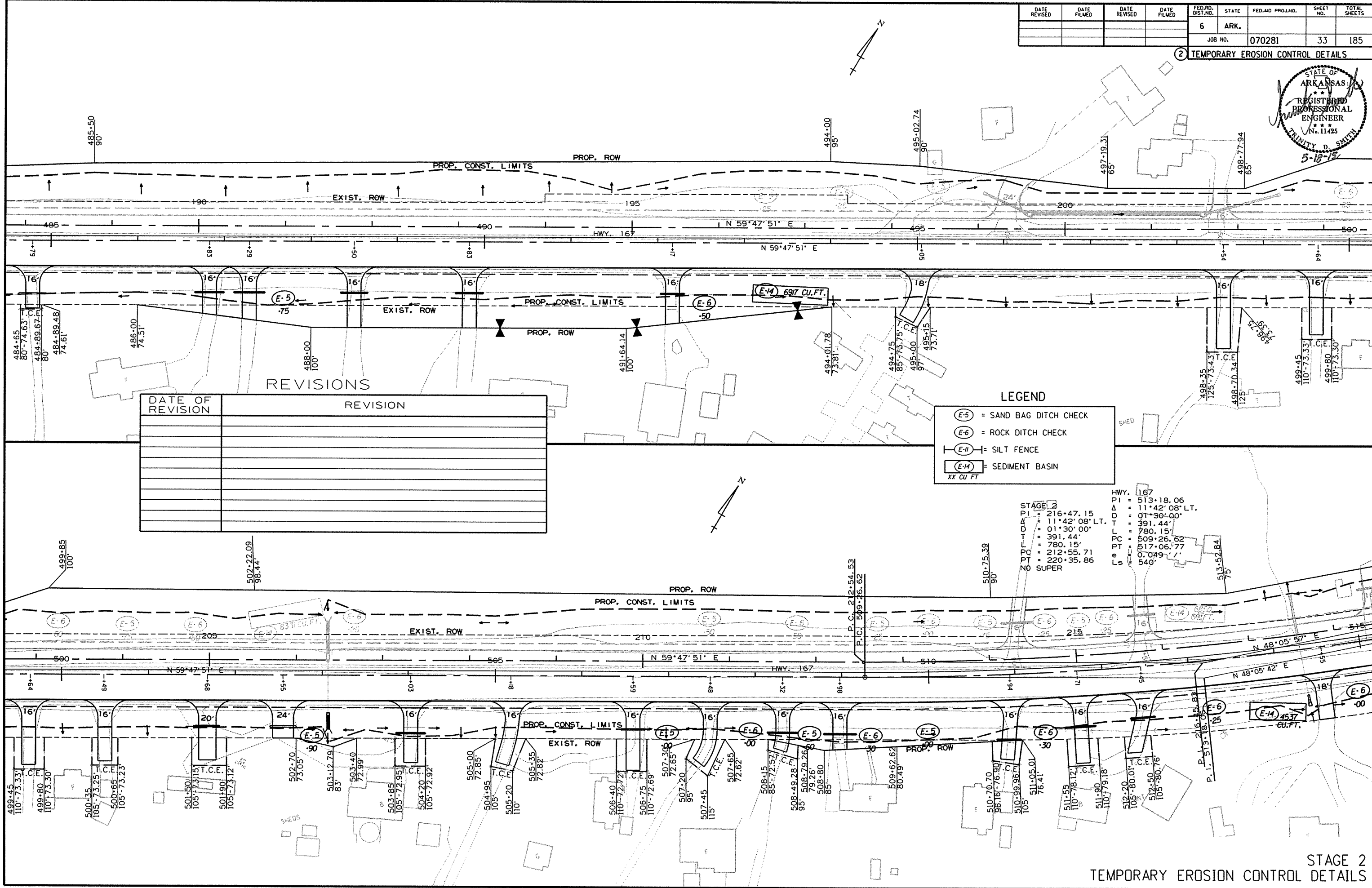
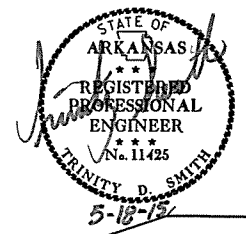
STAGE 2  
 TEMPORARY EROSION CONTROL DETAILS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		33	185
				JOB NO.		070281		

② TEMPORARY EROSION CONTROL DETAILS



REVISIONS

DATE OF REVISION	REVISION

LEGEND

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

STAGE 2

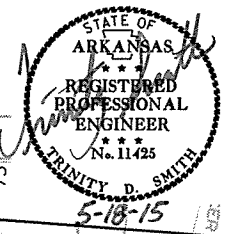
PI	= 216+47.15
Δ	= 11°42'08" LT.
D	= 01°30'00"
T	= 391.44'
L	= 780.15'
PC	= 609+26.62
PT	= 517+06.77
e	= 0°049' /'
L <sub>e</sub>	= 540'

NO SUPER

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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.		34	185

② TEMPORARY EROSION CONTROL DETAILS



HWY. 167  
 PI = 513+18.06  
 Δ = 11°42'08" LT.  
 D = 01°30'00"  
 T = 391.44'  
 L = 780.15'  
 PC = 509+26.62  
 PT = 517+06.77  
 e = 0.049  
 Ls = 540'  
 NO SUPER

HWY. 167  
 PI = 531+90.97  
 Δ = 08°49'10" RT.  
 D = 01°00'00"  
 T = 441.85'  
 L = 881.95'  
 PC = 527+49.13  
 PT = 536+31.07  
 e = 0.030  
 Ls = 540'  
 NO SUPER

LEGEND

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

REVISIONS

DATE OF REVISION	REVISION

R070281.DGN 3/26/2015

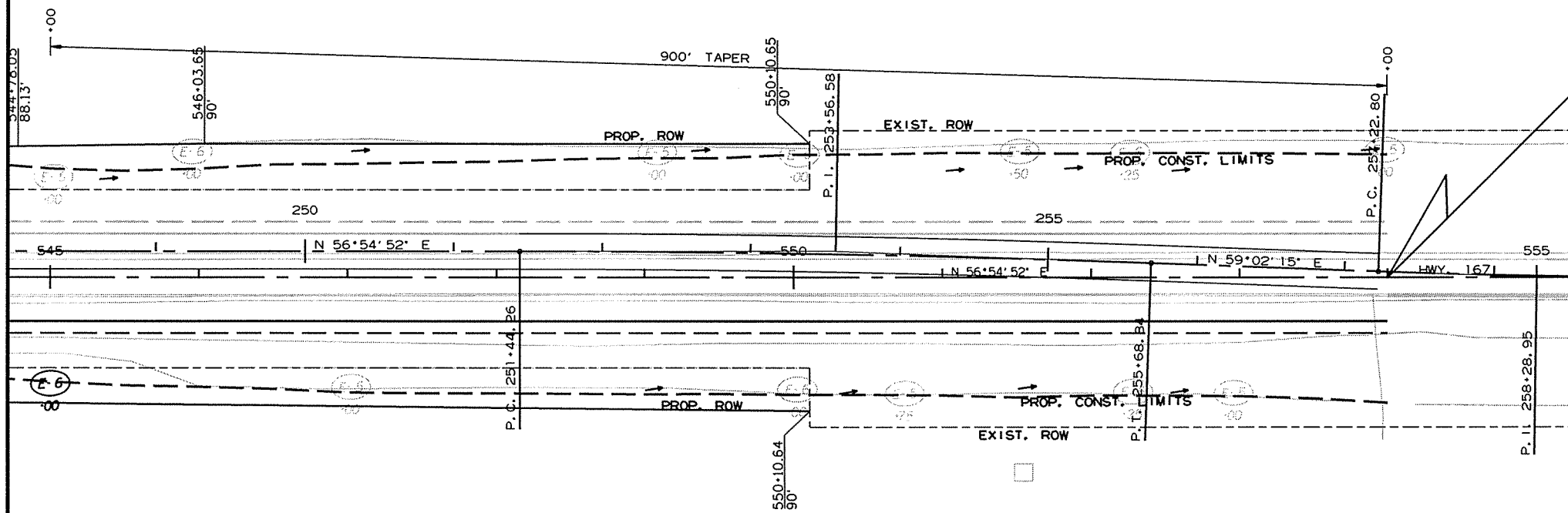
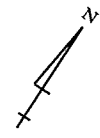
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
							JOB NO. 070281	35 185

② TEMPORARY EROSION CONTROL DETAILS



LEGEND

	= SAND BAG DITCH CHECK
	= ROCK DITCH CHECK
	= SILT FENCE
	= SEDIMENT BASIN XX CU FT



STA. 554+00.00  
END JOB 070281

REVISIONS

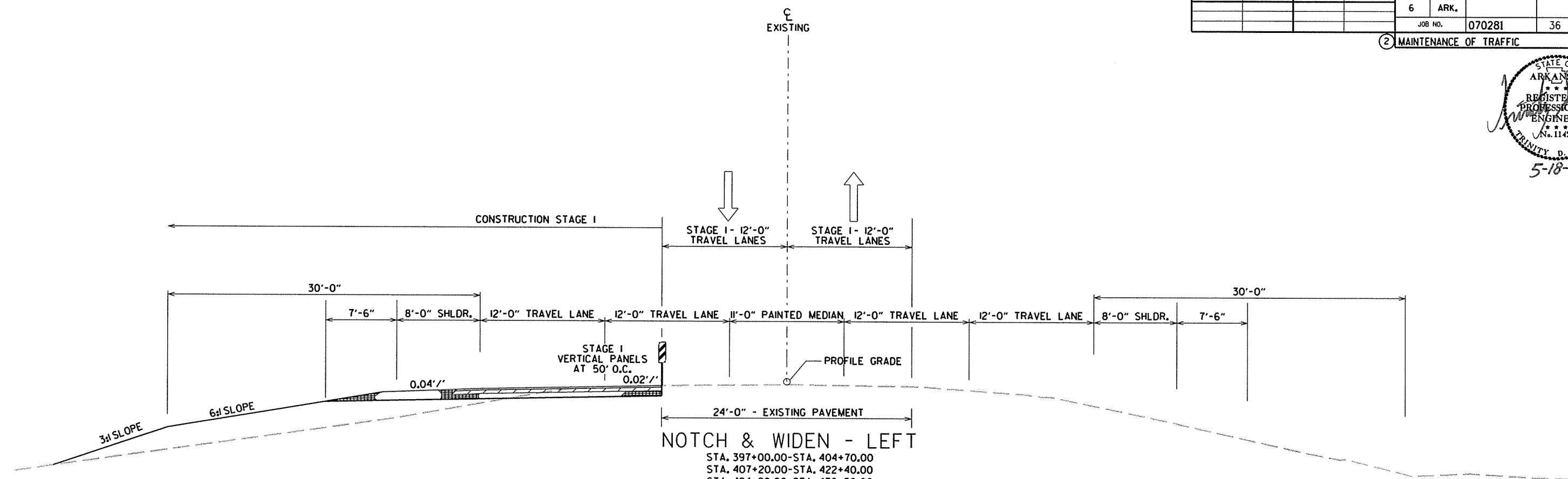
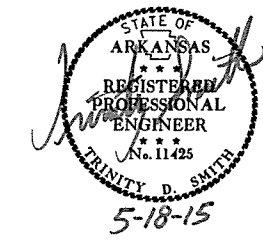
DATE OF REVISION	REVISION

3/26/2015

R070281.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. 070281	36	185

② MAINTENANCE OF TRAFFIC

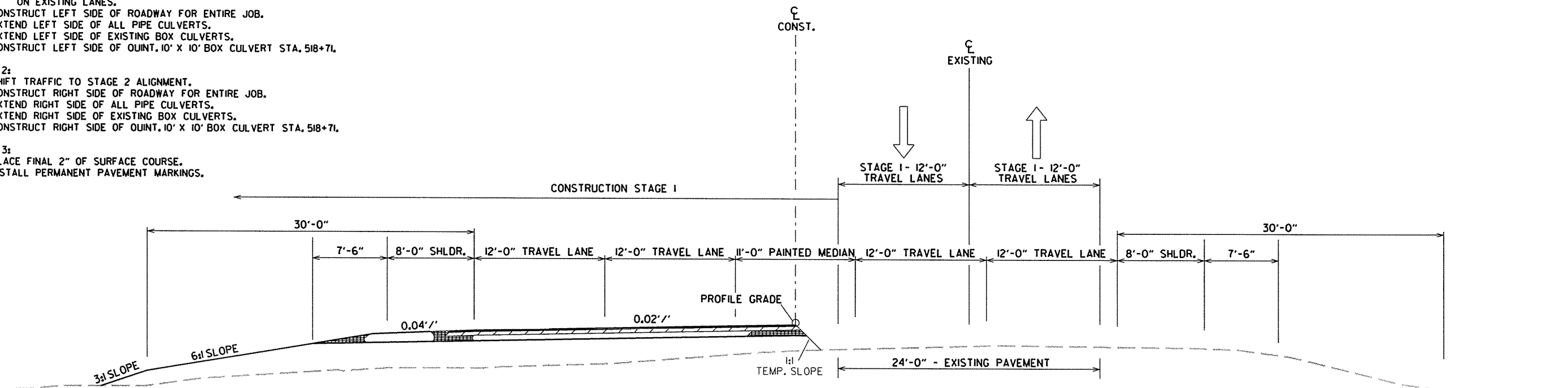


**NOTCH & WIDEN - LEFT**

- STA. 397+00.00-STA. 404+70.00
- STA. 407+20.00-STA. 422+40.00
- STA. 424+80.00-STA. 436+50.00
- STA. 445+90.00-STA. 448+61.00
- STA. 453+50.00-STA. 472+30.00
- STA. 476+60.00-STA. 496+20.00
- STA. 499+00.00-STA. 518+80.00
- STA. 519+50.00-STA. 554+00.00

**SEQUENCE OF CONSTRUCTION:**

- STAGE 1:**  
 RESTRIPE EXISTING PAVEMENT BETWEEN STATIONS 411+10 AND 505+90 TO STRIPE OUT EXISTING PASSING LANE AND MAINTAIN TRAFFIC ON EXISTING LANES.  
 CONSTRUCT LEFT SIDE OF ROADWAY FOR ENTIRE JOB.  
 EXTEND LEFT SIDE OF ALL PIPE CULVERTS.  
 EXTEND LEFT SIDE OF EXISTING BOX CULVERTS.  
 CONSTRUCT LEFT SIDE OF QUINT. 10' X 10' BOX CULVERT STA. 518+71.
- STAGE 2:**  
 SHIFT TRAFFIC TO STAGE 2 ALIGNMENT.  
 CONSTRUCT RIGHT SIDE OF ROADWAY FOR ENTIRE JOB.  
 EXTEND RIGHT SIDE OF ALL PIPE CULVERTS.  
 EXTEND RIGHT SIDE OF EXISTING BOX CULVERTS.  
 CONSTRUCT RIGHT SIDE OF QUINT. 10' X 10' BOX CULVERT STA. 518+71.
- STAGE 3:**  
 PLACE FINAL 2" OF SURFACE COURSE.  
 INSTALL PERMANENT PAVEMENT MARKINGS.



**FULL DEPTH/GRADE RAISE**

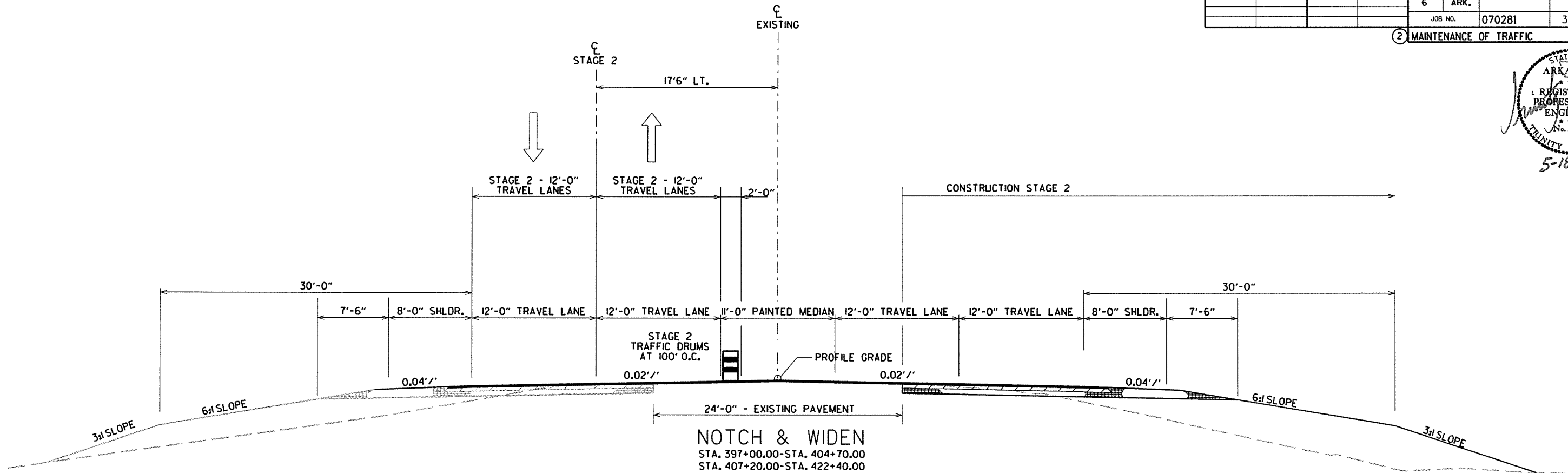
- STA. 404+70.00-STA. 407+20.00
- STA. 422+40.00-STA. 424+80.00
- STA. 436+50.00-STA. 444+90.00
- STA. 448+61.00-STA. 453+50.00
- STA. 472+30.00-STA. 476+60.00
- STA. 496+20.00-STA. 499+00.00
- STA. 518+80.00-STA. 519+50.00

STAGE 1  
MAINTENANCE OF TRAFFIC

3/26/2015  
R070281.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.	070281		37	185

② MAINTENANCE OF TRAFFIC



**NOTCH & WIDEN**

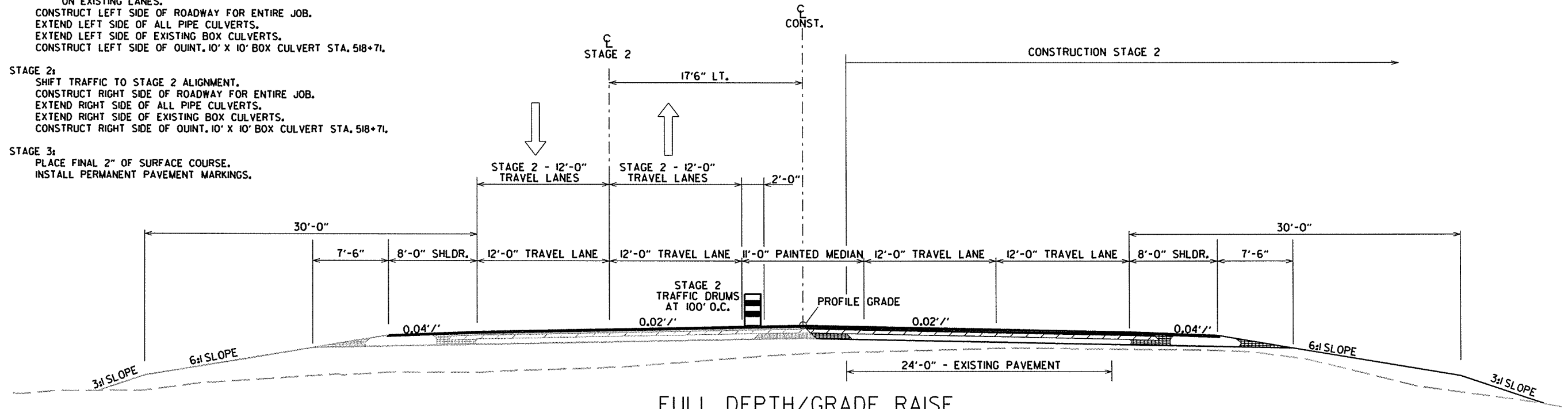
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 STA. 407+20.00-STA. 422+40.00  
 STA. 424+80.00-STA. 436+50.00  
 STA. 445+90.00-STA. 448+61.00  
 STA. 453+50.00-STA. 472+30.00  
 STA. 476+60.00-STA. 496+20.00  
 STA. 499+00.00-STA. 518+80.00  
 STA. 519+50.00-STA. 554+00.00

**SEQUENCE OF CONSTRUCTION:**

**STAGE 1:**  
 RESTRIPE EXISTING PAVEMENT BETWEEN STATIONS 411+10 AND 505+90 TO STRIPE OUT EXISTING PASSING LANE AND MAINTAIN TRAFFIC ON EXISTING LANES.  
 CONSTRUCT LEFT SIDE OF ROADWAY FOR ENTIRE JOB.  
 EXTEND LEFT SIDE OF ALL PIPE CULVERTS.  
 EXTEND LEFT SIDE OF EXISTING BOX CULVERTS.  
 CONSTRUCT LEFT SIDE OF QUINT. 10' X 10' BOX CULVERT STA. 518+71.

**STAGE 2:**  
 SHIFT TRAFFIC TO STAGE 2 ALIGNMENT.  
 CONSTRUCT RIGHT SIDE OF ROADWAY FOR ENTIRE JOB.  
 EXTEND RIGHT SIDE OF ALL PIPE CULVERTS.  
 EXTEND RIGHT SIDE OF EXISTING BOX CULVERTS.  
 CONSTRUCT RIGHT SIDE OF QUINT. 10' X 10' BOX CULVERT STA. 518+71.

**STAGE 3:**  
 PLACE FINAL 2" OF SURFACE COURSE.  
 INSTALL PERMANENT PAVEMENT MARKINGS.



**FULL DEPTH/GRADE RAISE**

STA. 404+70.00-STA. 407+20.00  
 STA. 422+40.00-STA. 424+80.00  
 STA. 436+50.00-STA. 444+90.00  
 STA. 448+61.00-STA. 453+50.00  
 STA. 472+30.00-STA. 476+60.00  
 STA. 496+20.00-STA. 499+00.00  
 STA. 518+80.00-STA. 519+50.00

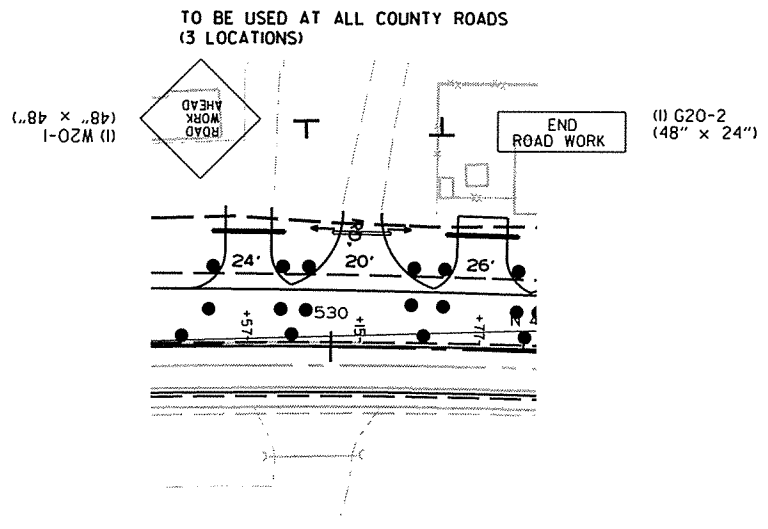
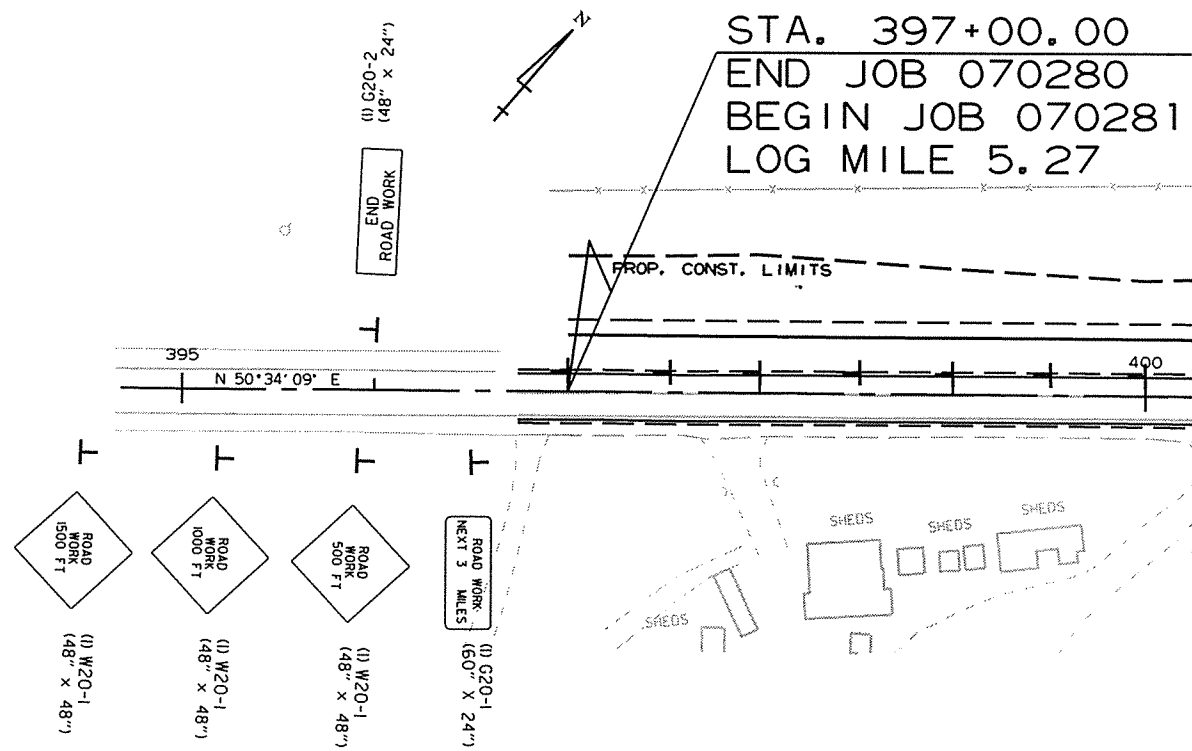
STAGE 2  
 MAINTENANCE OF TRAFFIC

3/26/2015

R070281.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		38	185
				JOB NO. 070281				

② MAINTENANCE OF TRAFFIC



(2) W8-9a (36" X 36")

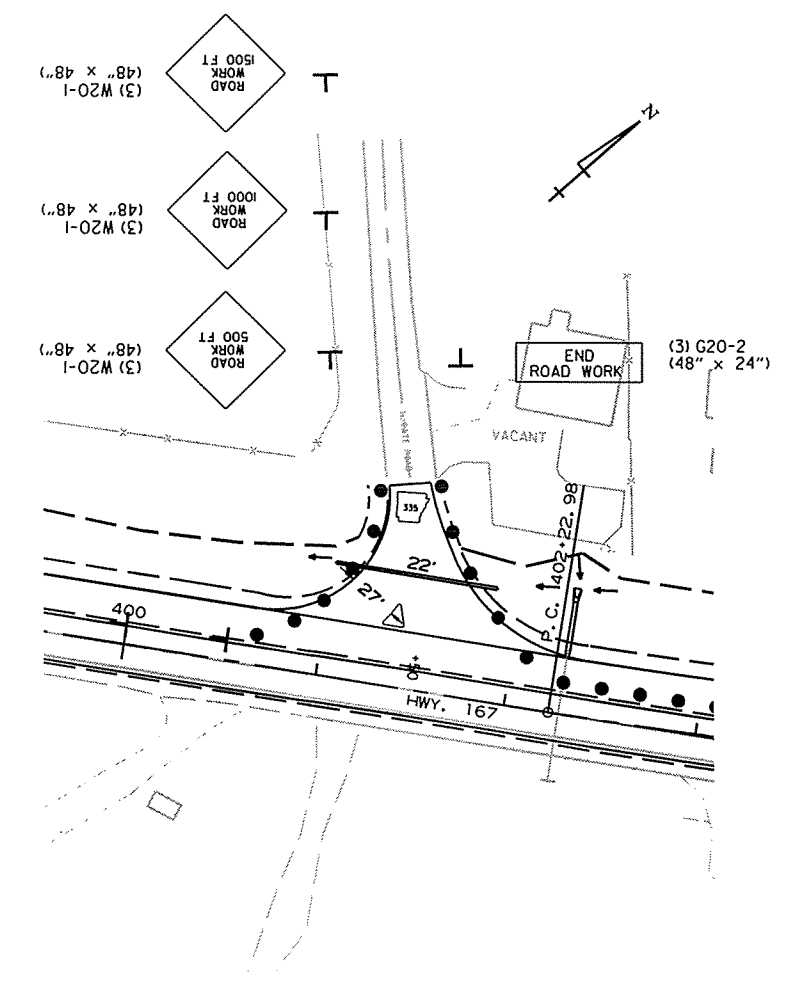
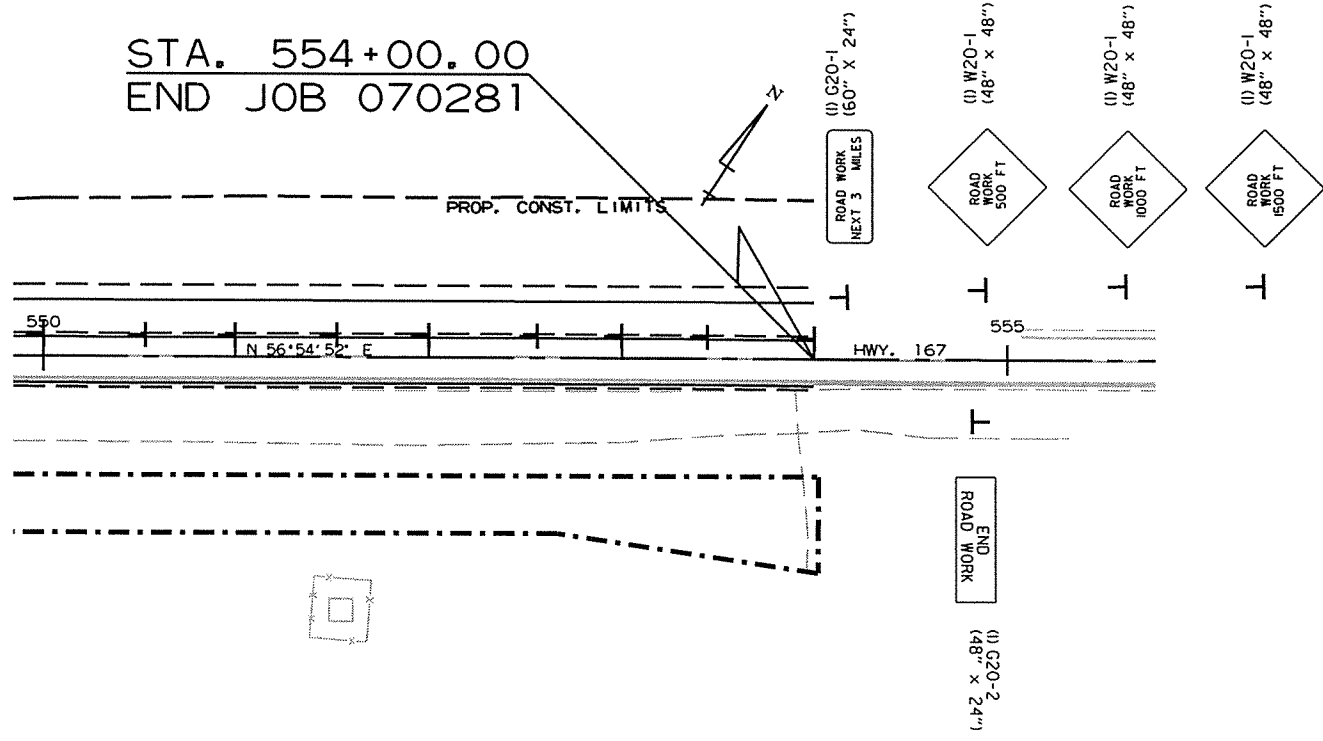
SHOULDER CLOSED (2) RSP-1 (48" X 30")

DO NOT PASS (6) R4-1 (24" X 30")

\*TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

SEQUENCE OF CONSTRUCTION:

- STAGE 1:  
 RESTRIPE EXISTING PAVEMENT BETWEEN STATIONS 411+10 AND 505+90 TO STRIPE OUT EXISTING PASSING LANE AND MAINTAIN TRAFFIC ON EXISTING LANES.  
 CONSTRUCT LEFT SIDE OF ROADWAY FOR ENTIRE JOB.  
 EXTEND LEFT SIDE OF ALL PIPE CULVERTS.  
 EXTEND LEFT SIDE OF EXISTING BOX CULVERTS.  
 CONSTRUCT LEFT SIDE OF QUINT. 10' X 10' BOX CULVERT STA. 518+71.
- STAGE 2:  
 SHIFT TRAFFIC TO STAGE 2 ALIGNMENT.  
 CONSTRUCT RIGHT SIDE OF ROADWAY FOR ENTIRE JOB.  
 EXTEND RIGHT SIDE OF ALL PIPE CULVERTS.  
 EXTEND RIGHT SIDE OF EXISTING BOX CULVERTS.  
 CONSTRUCT RIGHT SIDE OF QUINT. 10' X 10' BOX CULVERT STA. 518+71.
- STAGE 3:  
 PLACE FINAL 2" OF SURFACE COURSE.  
 INSTALL PERMANENT PAVEMENT MARKINGS.



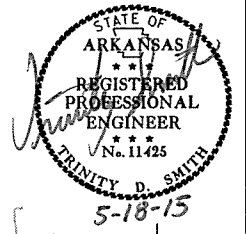
ALL STAGES MAINTENANCE OF TRAFFIC

VERTICAL PANELS AT 50' O.C. = 309 EACH  
 STA. 397+00-519+00  
 STA. 521+50-554+00

CONSTRUCTION PAVEMENT MARKINGS  
 WHITE LANE EDGES  
 STA. 397+00-518+76 = 24352 LIN. FT.  
 STA. 519+43-554+00 = 6914 LIN. FT.

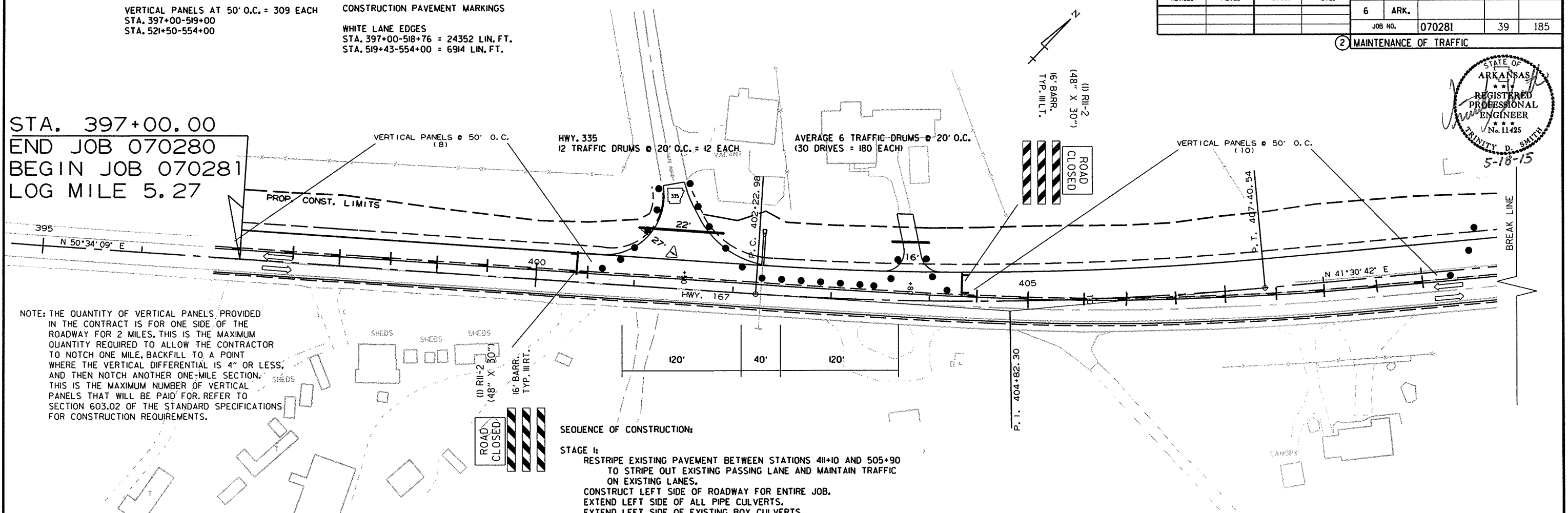
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		39	185

② MAINTENANCE OF TRAFFIC



STA. 397+00.00  
 END JOB 070280  
 BEGIN JOB 070281  
 LOG MILE 5.27

NOTE: THE QUANTITY OF VERTICAL PANELS PROVIDED IN THE CONTRACT IS FOR ONE SIDE OF THE ROADWAY FOR 2 MILES. THIS IS THE MAXIMUM QUANTITY REQUIRED TO ALLOW THE CONTRACTOR TO NOTCH ONE MILE, BACKFILL TO A POINT WHERE THE VERTICAL DIFFERENTIAL IS 4" OR LESS, AND THEN NOTCH ANOTHER ONE-MILE SECTION. THIS IS THE MAXIMUM NUMBER OF VERTICAL PANELS THAT WILL BE PAID FOR. REFER TO SECTION 603.02 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION REQUIREMENTS.



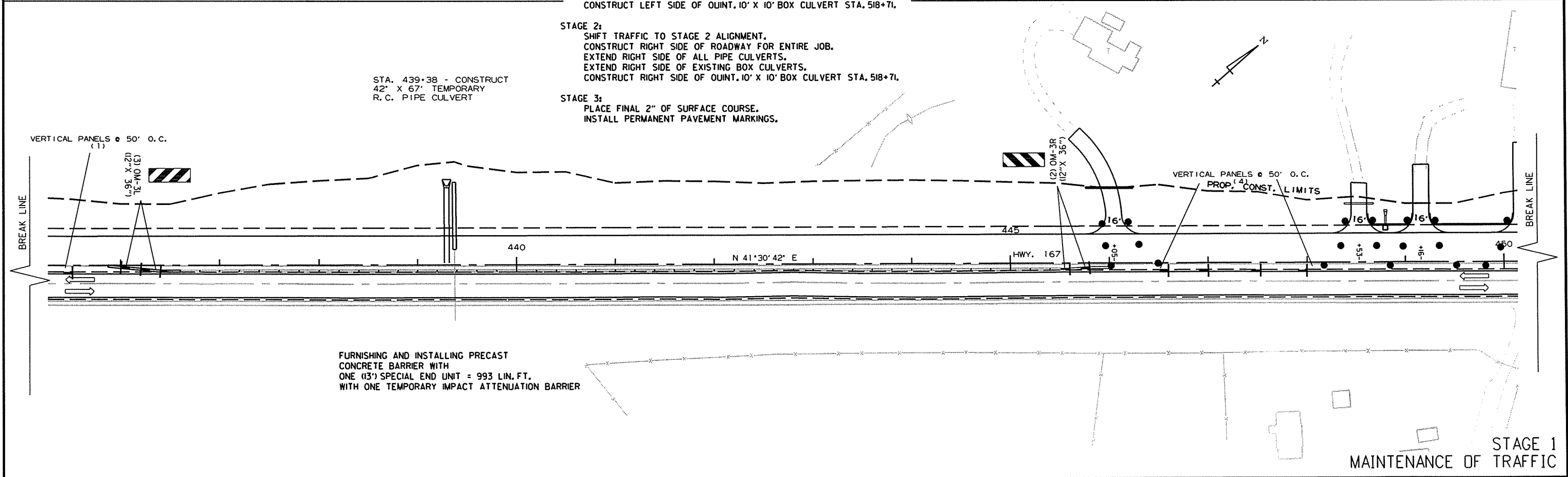
SEQUENCE OF CONSTRUCTION:

STAGE 1:  
 RESTRIPE EXISTING PAVEMENT BETWEEN STATIONS 411+10 AND 505+90 TO STRIPE OUT EXISTING PASSING LANE AND MAINTAIN TRAFFIC ON EXISTING LANES.  
 CONSTRUCT LEFT SIDE OF ROADWAY FOR ENTIRE JOB.  
 EXTEND LEFT SIDE OF ALL PIPE CULVERTS.  
 EXTEND LEFT SIDE OF EXISTING BOX CULVERTS.  
 CONSTRUCT LEFT SIDE OF QUINT. 10' X 10' BOX CULVERT STA. 518+71.

STAGE 2:  
 SHIFT TRAFFIC TO STAGE 2 ALIGNMENT.  
 CONSTRUCT RIGHT SIDE OF ROADWAY FOR ENTIRE JOB.  
 EXTEND RIGHT SIDE OF ALL PIPE CULVERTS.  
 EXTEND RIGHT SIDE OF EXISTING BOX CULVERTS.  
 CONSTRUCT RIGHT SIDE OF QUINT. 10' X 10' BOX CULVERT STA. 518+71.

STAGE 3:  
 PLACE FINAL 2" OF SURFACE COURSE.  
 INSTALL PERMANENT PAVEMENT MARKINGS.

STA. 439+38 - CONSTRUCT 42" X 67" TEMPORARY R.C. PIPE CULVERT



FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER WITH ONE (13') SPECIAL END UNIT = 993 LIN. FT. WITH ONE TEMPORARY IMPACT ATTENUATION BARRIER

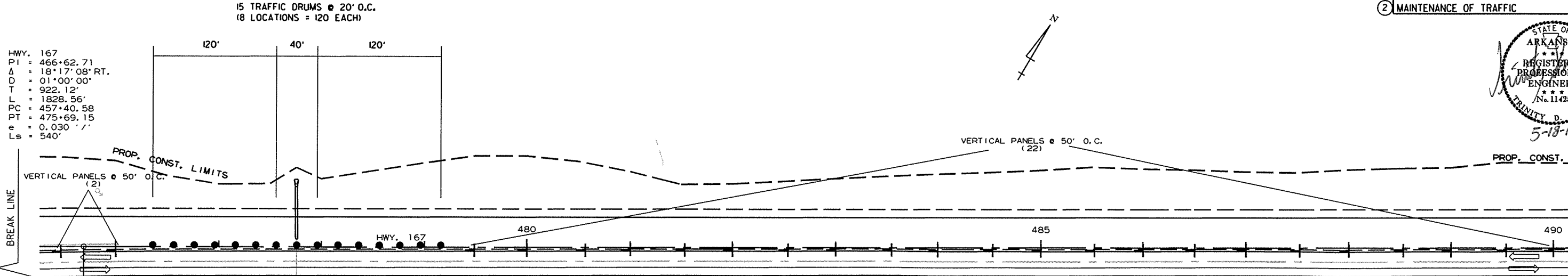
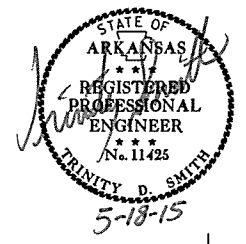
STAGE 1  
 MAINTENANCE OF TRAFFIC

3/26/2015

R070281.DGN

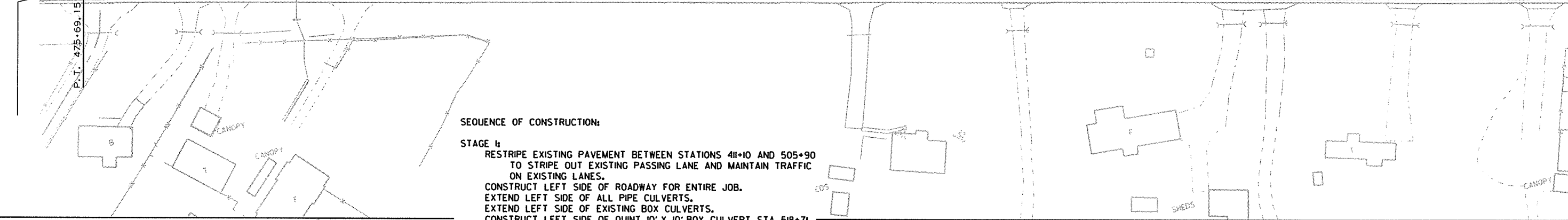
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
							JOB NO. 070281	40 / 185

② MAINTENANCE OF TRAFFIC



HWY. 167  
 PI = 466+62.71  
 Δ = 18°17'08" RT.  
 D = 01°00'00"  
 T = 922.12'  
 L = 1828.56'  
 PC = 457+40.58  
 PT = 475+69.15  
 e = 0.030' /'  
 Ls = 540'

**SEQUENCE OF CONSTRUCTION:**  
**STAGE 1:**  
 RESTRIPE EXISTING PAVEMENT BETWEEN STATIONS 411+10 AND 505+90 TO STRIPE OUT EXISTING PASSING LANE AND MAINTAIN TRAFFIC ON EXISTING LANES.  
 CONSTRUCT LEFT SIDE OF ROADWAY FOR ENTIRE JOB.  
 EXTEND LEFT SIDE OF ALL PIPE CULVERTS.  
 EXTEND LEFT SIDE OF EXISTING BOX CULVERTS.  
 CONSTRUCT LEFT SIDE OF QUINT. 10' X 10' BOX CULVERT STA. 518+71.

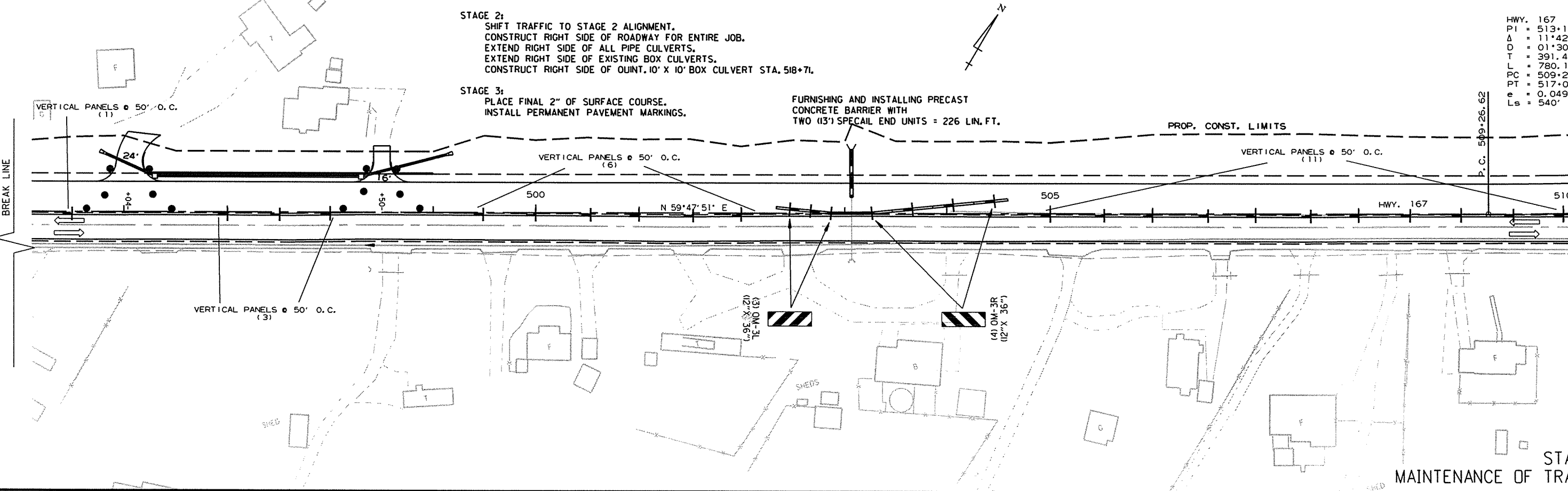


**STAGE 2:**  
 SHIFT TRAFFIC TO STAGE 2 ALIGNMENT.  
 CONSTRUCT RIGHT SIDE OF ROADWAY FOR ENTIRE JOB.  
 EXTEND RIGHT SIDE OF ALL PIPE CULVERTS.  
 EXTEND RIGHT SIDE OF EXISTING BOX CULVERTS.  
 CONSTRUCT RIGHT SIDE OF QUINT. 10' X 10' BOX CULVERT STA. 518+71.

**STAGE 3:**  
 PLACE FINAL 2" OF SURFACE COURSE.  
 INSTALL PERMANENT PAVEMENT MARKINGS.

FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER WITH TWO (13') SPECIAL END UNITS = 226 LIN. FT.

HWY. 167  
 PI = 513+18.06  
 Δ = 11°42'08" LT.  
 D = 01°30'00"  
 T = 391.44'  
 L = 780.15'  
 PC = 509+26.62  
 PT = 517+06.77  
 e = 0.049' /'  
 Ls = 540'



3/26/2015 R070281.DGN

STAGE 1  
 MAINTENANCE OF TRAFFIC



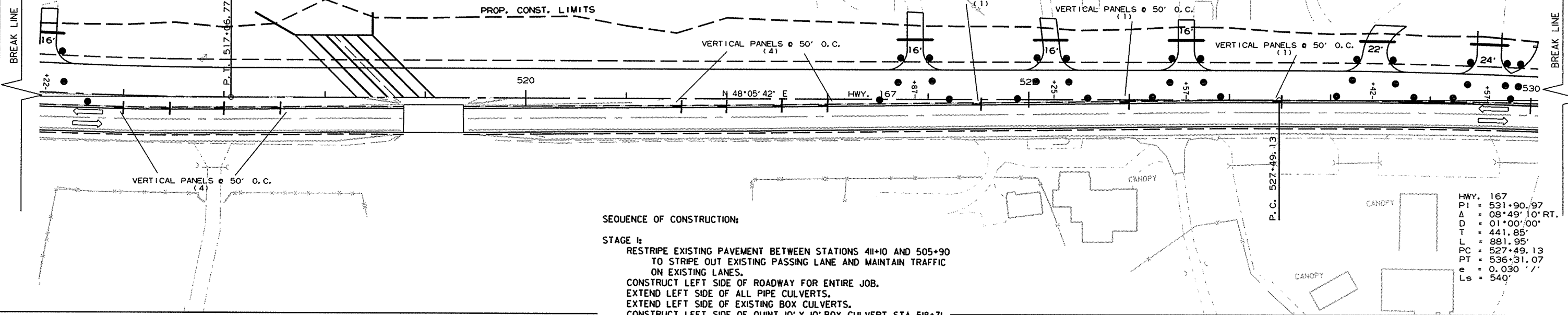
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		41	185
				JOB NO. 070281				

② MAINTENANCE OF TRAFFIC



RICKER RD.  
6 TRAFFIC DRUMS @ 20' O.C. = 6 EACH

HWY. 167  
PI = 513+18.06  
Δ = 11°42'08" LT.  
D = 01°30'00"  
T = 391.44'  
L = 780.15'  
PC = 509+26.62  
PT = 517+06.77  
e = 0.049' /'  
Ls = 540'



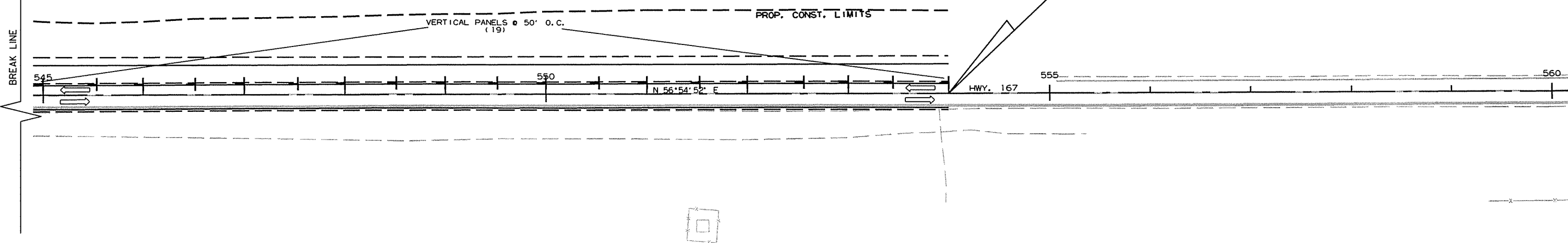
SEQUENCE OF CONSTRUCTION:

- STAGE 1:  
 RESTRIPE EXISTING PAVEMENT BETWEEN STATIONS 411+10 AND 505+90 TO STRIPE OUT EXISTING PASSING LANE AND MAINTAIN TRAFFIC ON EXISTING LANES.  
 CONSTRUCT LEFT SIDE OF ROADWAY FOR ENTIRE JOB.  
 EXTEND LEFT SIDE OF ALL PIPE CULVERTS.  
 EXTEND LEFT SIDE OF EXISTING BOX CULVERTS.  
 CONSTRUCT LEFT SIDE OF QUINT. 10' X 10' BOX CULVERT STA. 518+71.

- STAGE 2:  
 SHIFT TRAFFIC TO STAGE 2 ALIGNMENT.  
 CONSTRUCT RIGHT SIDE OF ROADWAY FOR ENTIRE JOB.  
 EXTEND RIGHT SIDE OF ALL PIPE CULVERTS.  
 EXTEND RIGHT SIDE OF EXISTING BOX CULVERTS.  
 CONSTRUCT RIGHT SIDE OF QUINT. 10' X 10' BOX CULVERT STA. 518+71.

- STAGE 3:  
 PLACE FINAL 2" OF SURFACE COURSE.  
 INSTALL PERMANENT PAVEMENT MARKINGS.

STA. 554+00.00  
END JOB 070281



STAGE 1  
MAINTENANCE OF TRAFFIC

NOTE: THE QUANTITY OF VERTICAL PANELS PROVIDED IN THE CONTRACT IS FOR ONE SIDE OF THE ROADWAY FOR 2 MILES. THIS IS THE MAXIMUM QUANTITY REQUIRED TO ALLOW THE CONTRACTOR TO NOTCH ONE MILE, BACKFILL TO A POINT WHERE THE VERTICAL DIFFERENTIAL IS 4" OR LESS, AND THEN NOTCH ANOTHER ONE-MILE SECTION. THIS IS THE MAXIMUM NUMBER OF VERTICAL PANELS THAT WILL BE PAID FOR. REFER TO SECTION 603.02 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION REQUIREMENTS.

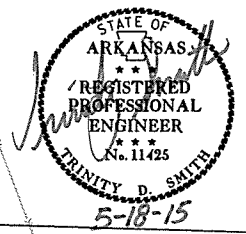
CONSTRUCTION PAVEMENT MARKINGS

WHITE LANE EDGES  
 STA. 400+00-539+00 = 27800 LIN. FT.  
 DOUBLE YELLOW CENTERLINE  
 STA. 400+00-539+00 = 27800 LIN. FT.

VERTICAL PANELS AT 50' O.C. = 309 EACH  
 STA. 397+00-519+00  
 STA. 521+50-554+00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		42	185

② MAINTENANCE OF TRAFFIC



STA. 397+00.00  
 END JOB 070280  
 BEGIN JOB 070281  
 LOG MILE 5.27

SEQUENCE OF CONSTRUCTION:

STAGE 1:

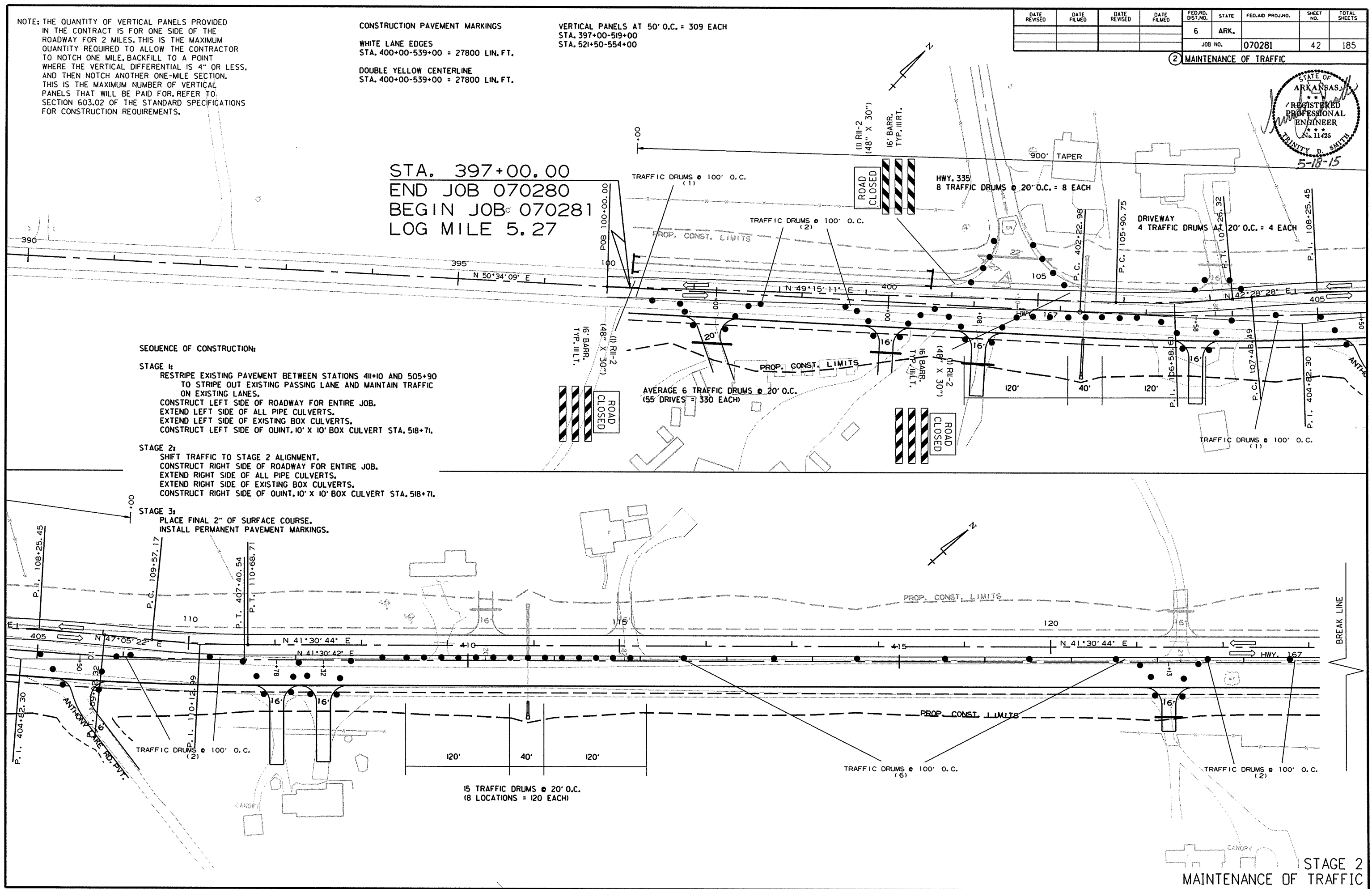
RESTRIPE EXISTING PAVEMENT BETWEEN STATIONS 411+10 AND 505+90 TO STRIPE OUT EXISTING PASSING LANE AND MAINTAIN TRAFFIC ON EXISTING LANES.  
 CONSTRUCT LEFT SIDE OF ROADWAY FOR ENTIRE JOB.  
 EXTEND LEFT SIDE OF ALL PIPE CULVERTS.  
 EXTEND LEFT SIDE OF EXISTING BOX CULVERTS.  
 CONSTRUCT LEFT SIDE OF QUINT, 10' X 10' BOX CULVERT STA. 518+71.

STAGE 2:

SHIFT TRAFFIC TO STAGE 2 ALIGNMENT.  
 CONSTRUCT RIGHT SIDE OF ROADWAY FOR ENTIRE JOB.  
 EXTEND RIGHT SIDE OF ALL PIPE CULVERTS.  
 EXTEND RIGHT SIDE OF EXISTING BOX CULVERTS.  
 CONSTRUCT RIGHT SIDE OF QUINT, 10' X 10' BOX CULVERT STA. 518+71.

STAGE 3:

PLACE FINAL 2" OF SURFACE COURSE.  
 INSTALL PERMANENT PAVEMENT MARKINGS.

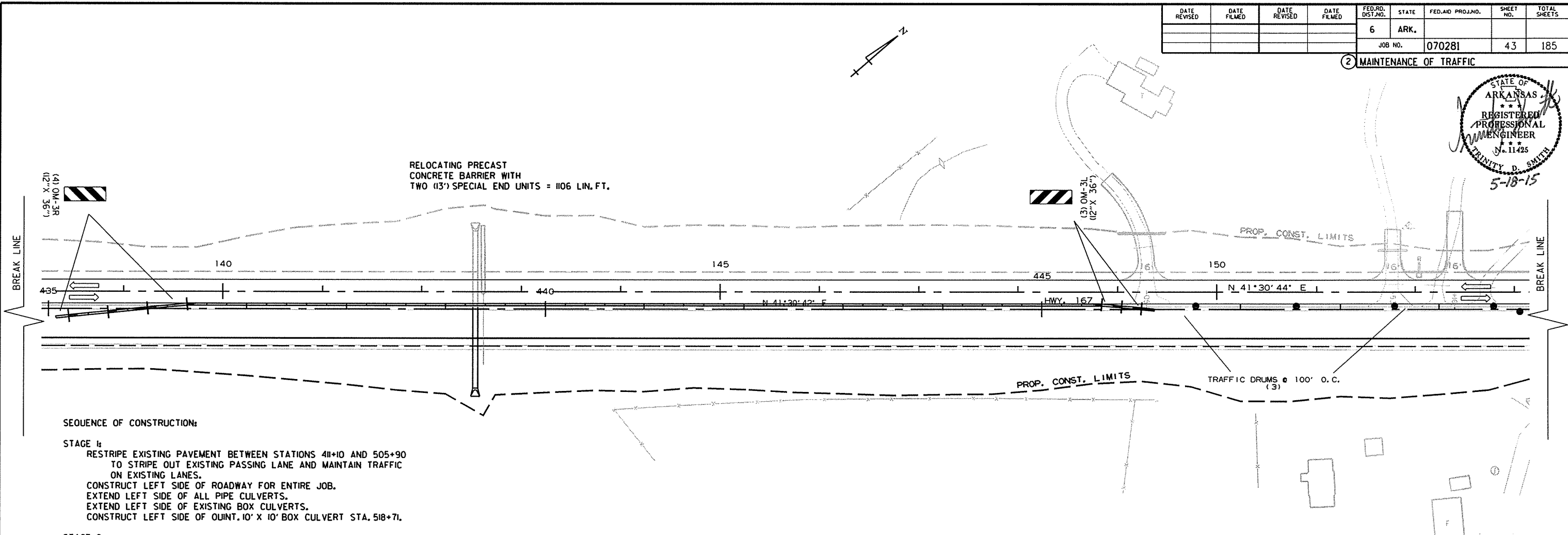
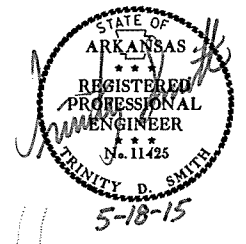


STAGE 2  
 MAINTENANCE OF TRAFFIC

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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. 070281							43	185

② MAINTENANCE OF TRAFFIC



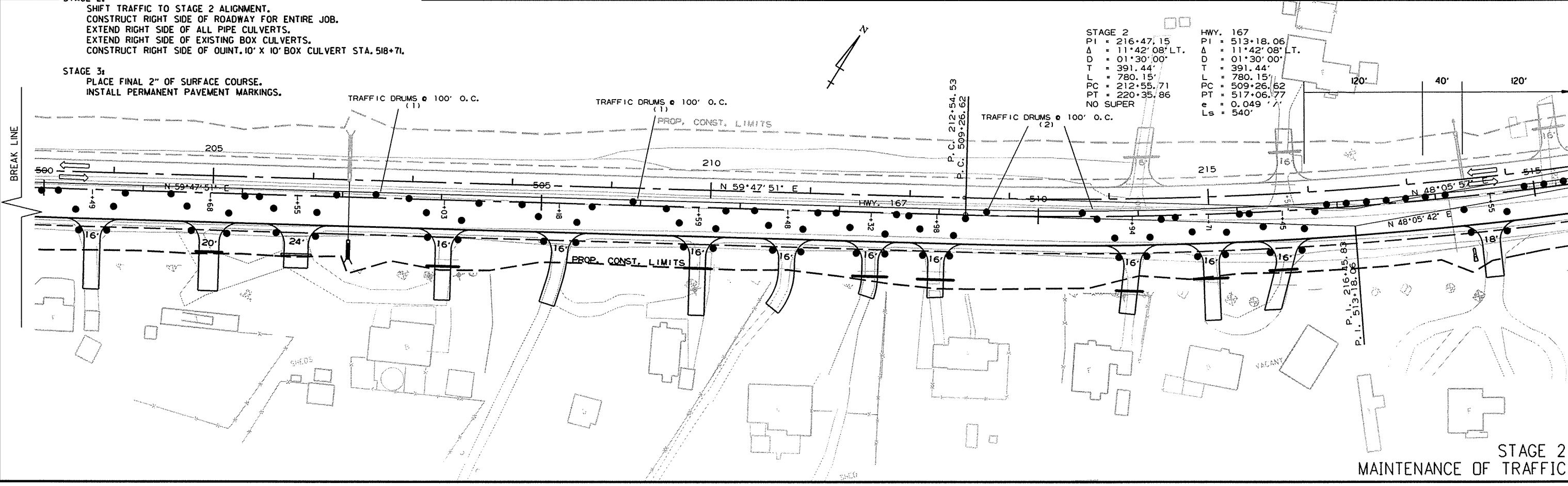
SEQUENCE OF CONSTRUCTION:

**STAGE 1:**  
 RESTRIPE EXISTING PAVEMENT BETWEEN STATIONS 411+10 AND 505+90 TO STRIPE OUT EXISTING PASSING LANE AND MAINTAIN TRAFFIC ON EXISTING LANES.  
 CONSTRUCT LEFT SIDE OF ROADWAY FOR ENTIRE JOB.  
 EXTEND LEFT SIDE OF ALL PIPE CULVERTS.  
 EXTEND LEFT SIDE OF EXISTING BOX CULVERTS.  
 CONSTRUCT LEFT SIDE OF OUINT. 10' X 10' BOX CULVERT STA. 518+71.

**STAGE 2:**  
 SHIFT TRAFFIC TO STAGE 2 ALIGNMENT.  
 CONSTRUCT RIGHT SIDE OF ROADWAY FOR ENTIRE JOB.  
 EXTEND RIGHT SIDE OF ALL PIPE CULVERTS.  
 EXTEND RIGHT SIDE OF EXISTING BOX CULVERTS.  
 CONSTRUCT RIGHT SIDE OF OUINT. 10' X 10' BOX CULVERT STA. 518+71.

**STAGE 3:**  
 PLACE FINAL 2" OF SURFACE COURSE.  
 INSTALL PERMANENT PAVEMENT MARKINGS.

<b>STAGE 2</b>	<b>HWY. 167</b>
PI = 216+47.15	PI = 513+18.06
Δ = 11°42'08" LT.	Δ = 11°42'08" LT.
D = 01°30'00"	D = 01°30'00"
T = 391.44'	T = 391.44'
L = 780.15'	L = 780.15'
PC = 212+55.71	PC = 509+26.62
PT = 220+35.86	PT = 517+06.77
NO SUPER	e = 0.049
	Ls = 540'



STAGE 2  
 MAINTENANCE OF TRAFFIC

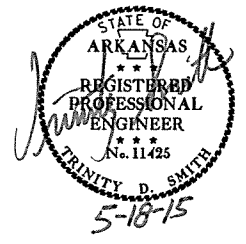
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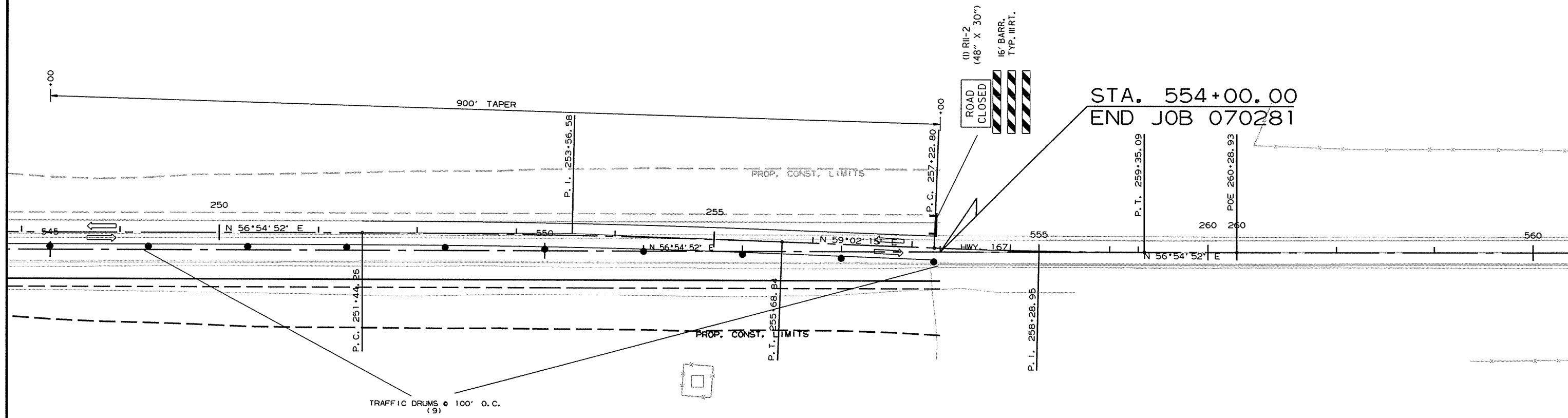
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	070281		45	185

② MAINTENANCE OF TRAFFIC



SEQUENCE OF CONSTRUCTION:

- STAGE 1:  
 RESTRIPE EXISTING PAVEMENT BETWEEN STATIONS 411+10 AND 505+90 TO STRIPE OUT EXISTING PASSING LANE AND MAINTAIN TRAFFIC ON EXISTING LANES.  
 CONSTRUCT LEFT SIDE OF ROADWAY FOR ENTIRE JOB.  
 EXTEND LEFT SIDE OF ALL PIPE CULVERTS.  
 EXTEND LEFT SIDE OF EXISTING BOX CULVERTS.  
 CONSTRUCT LEFT SIDE OF QUINT. 10' X 10' BOX CULVERT STA. 518+71.
- STAGE 2:  
 SHIFT TRAFFIC TO STAGE 2 ALIGNMENT.  
 CONSTRUCT RIGHT SIDE OF ROADWAY FOR ENTIRE JOB.  
 EXTEND RIGHT SIDE OF ALL PIPE CULVERTS.  
 EXTEND RIGHT SIDE OF EXISTING BOX CULVERTS.  
 CONSTRUCT RIGHT SIDE OF QUINT. 10' X 10' BOX CULVERT STA. 518+71.
- STAGE 3:  
 PLACE FINAL 2" OF SURFACE COURSE.  
 INSTALL PERMANENT PAVEMENT MARKINGS.



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**THERMOPLASTIC PAVEMENT MARKINGS**

4" YELLOW SOLID FOR DBL YELLOW CENTERLINE  
 STA. 397+00-STA. 401+35 = 1620 LIN. FT.  
 STA. 453+40-STA. 455+40 = 400 LIN. FT.  
 STA. 527+71-STA. 529+71 = 400 LIN. FT.  
 STA. 537+60-STA. 539+60 = 400 LIN. FT.

4" YELLOW SOLID FOR CENTER TURN LANE  
 STA. 402+00-STA. 452+40 = 10080 LIN. FT.  
 STA. 455+40-STA. 527+73 = 14466 LIN. FT.  
 STA. 530+73-STA. 536+50 = 1154 LIN. FT.  
 STA. 539+60-STA. 554+00 = 2880 LIN. FT.

4" YELLOW SKIP FOR CENTER TURN LANE  
 STA. 402+00-STA. 452+40 = 2520 LIN. FT.  
 STA. 455+40-STA. 527+73 = 3620 LIN. FT.  
 STA. 530+73-STA. 536+50 = 290 LIN. FT.  
 STA. 539+60-STA. 554+00 = 720 LIN. FT.

WORDS = 3 EACH  
 ARROWS = 4 EACH

**THERMOPLASTIC PAVEMENT MARKINGS**

4" WHITE SOLID FOR TURN LANES  
 STA. 402+00-STA. 404+00 = 200 LIN. FT.

4" WHITE SKIP FOR TURN LANE APPROACH  
 STA. 404+00-STA. 413+00 = 225 LIN. FT.

8" WHITE SOLID FOR PAINTED ISLAND  
 STA. 401+24-STA. 401+45 = 70 LIN. FT.  
 STA. 537+18-STA. 537+36 = 71 LIN. FT.

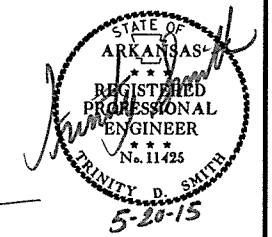
12" WHITE SOLID FOR STOP BAR  
 STA. 401+43-STA. 401+54 = 11 LIN. FT.

**REFLECTORIZED PAINTPAVEMENT MARKINGS**

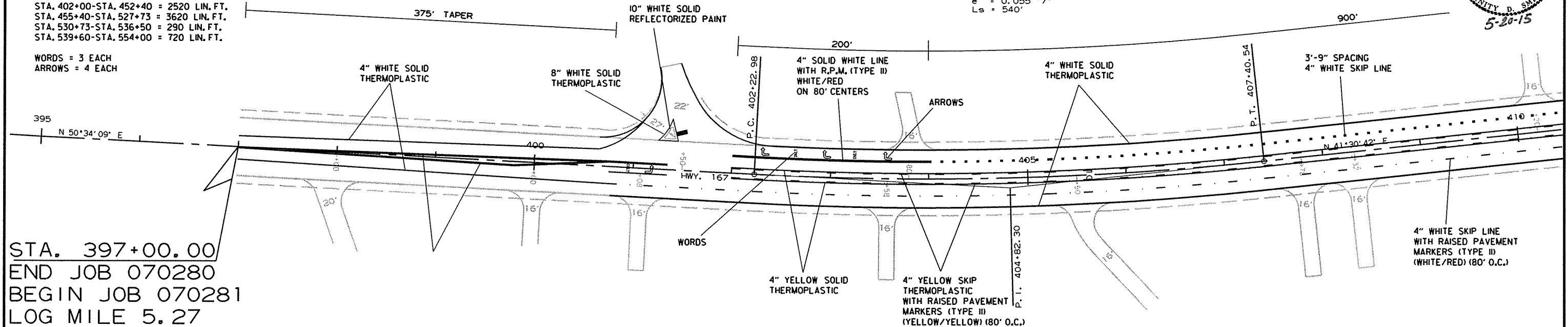
10" WHITE SOLID FOR CONCRETE ISLAND  
 STA. 401+31-STA. 401+43 = 37 LIN. FT.  
 STA. 537+22-STA. 537+33 = 38 LIN. FT.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		46	185

**PERMANENT PAVEMENT MARKING DETAILS**



HWY. 167  
 P.I. = 404+82.30  
 Δ = 09°03'27" LT.  
 D = 01°45'00"  
 T = 259.32'  
 L = 517.57'  
 PC = 402+22.98  
 PT = 407+40.54  
 e = 0.055 ' / '  
 Ls = 540'



STA. 397+00.00  
 END JOB 070280  
 BEGIN JOB 070281  
 LOG MILE 5.27

**THERMOPLASTIC PAVEMENT MARKINGS**

4" WHITE SOLID FOR EDGE LINE  
 STA. 397+00-STA. 554+00 RT. = 15700 LIN. FT.  
 STA. 397+00-STA. 401+23 LT. = 473 LIN. FT.  
 STA. 401+44-STA. 554+00 LT. = 15294 LIN. FT.

4" WHITE SKIP LINES  
 STA. 400+75-STA. 452+40 RT. = 1290 LIN. FT.  
 STA. 453+40-STA. 536+50 RT. = 2080 LIN. FT.  
 STA. 537+60-STA. 554+00 RT. = 410 LIN. FT.  
 STA. 413+00-STA. 529+71 LT. = 2920 LIN. FT.  
 STA. 530+71-STA. 554+00 LT. = 580 LIN. FT.

4" WHITE SOLID FOR TURN LANES  
 STA. 400+75-STA. 401+35 LT. = 60 LIN. FT.  
 STA. 453+40-STA. 454+40 LT. = 100 LIN. FT.  
 STA. 528+71-STA. 529+71 RT. = 100 LIN. FT.  
 STA. 537+60-STA. 538+60 LT. = 1200 LIN. FT.

4" WHITE SKIP LINE WITH RAISED PAVEMENT MARKERS (TYPE III) (WHITE/RED) (80' O.C.)

**RAISED PAVEMENT MARKERS @ 80' O.C.**

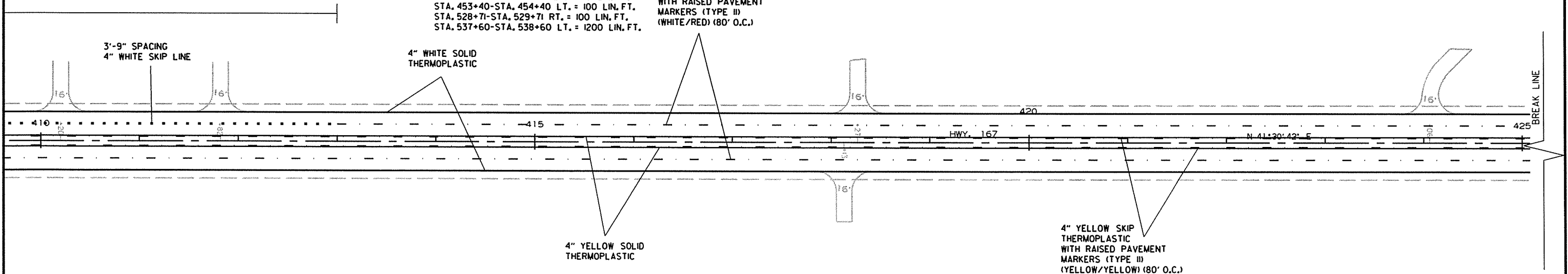
TYPE II (WHITE/RED) ON SKIP LINE  
 STA. 400+75-STA. 452+40 RT. = 65 EACH  
 STA. 453+40-STA. 536+50 RT. = 104 EACH  
 STA. 537+60-STA. 554+00 RT. = 21 EACH  
 STA. 404+00-STA. 529+71 LT. = 157 EACH  
 STA. 530+71-STA. 550+60 LT. = 25 EACH

TYPE II (WHITE/RED) ON TURN LANE LINES  
 STA. 400+75-STA. 401+35 RT. = 1 EACH  
 STA. 402+00-STA. 404+00 LT. = 3 EACH  
 STA. 453+40-STA. 454+40 LT. = 2 EACH  
 STA. 528+71-STA. 529+71 RT. = 2 EACH  
 STA. 537+60-STA. 538+60 LT. = 2 EACH

**RAISED PAVEMENT MARKERS @ 80' O.C.**

TYPE II (YELLOW/YELLOW) ON DBL YELLOW CENTERLINE  
 STA. 397+00-STA. 401+35 = 5 EACH  
 STA. 453+40-STA. 455+40 = 3 EACH  
 STA. 527+71-STA. 529+71 = 3 EACH  
 STA. 537+60-STA. 539+60 = 3 EACH

TYPE II (YELLOW/YELLOW) ON CENTER TURN LANE SKIP LINE  
 STA. 402+00-STA. 452+40 = 63 EACH  
 STA. 455+40-STA. 527+73 = 90 EACH  
 STA. 530+73-STA. 536+50 = 7 EACH  
 STA. 539+60-STA. 554+00 = 18 EACH



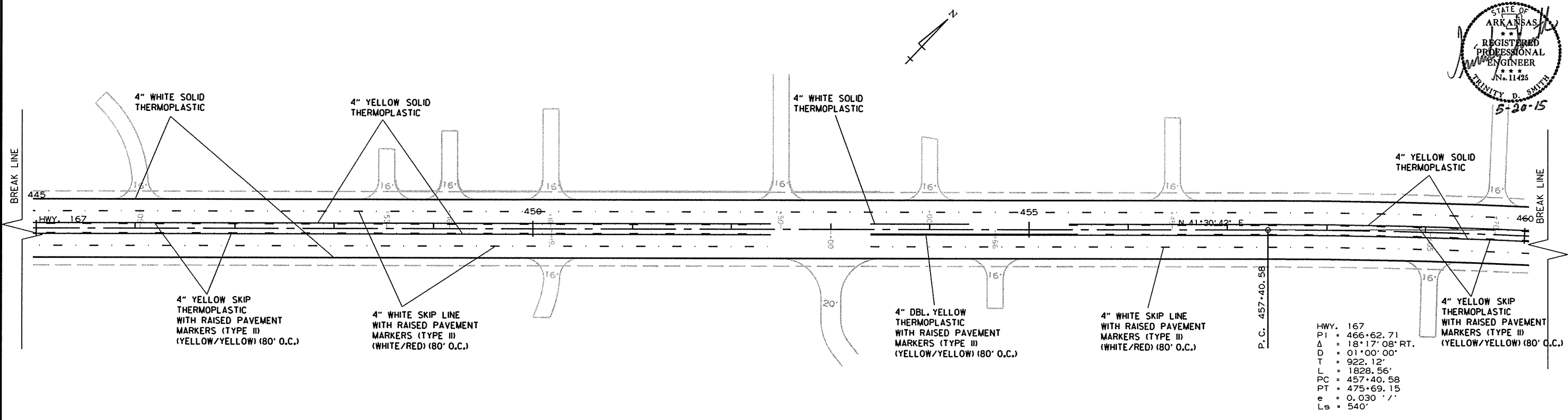
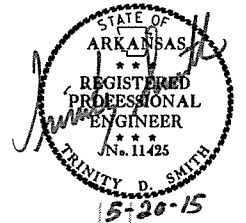
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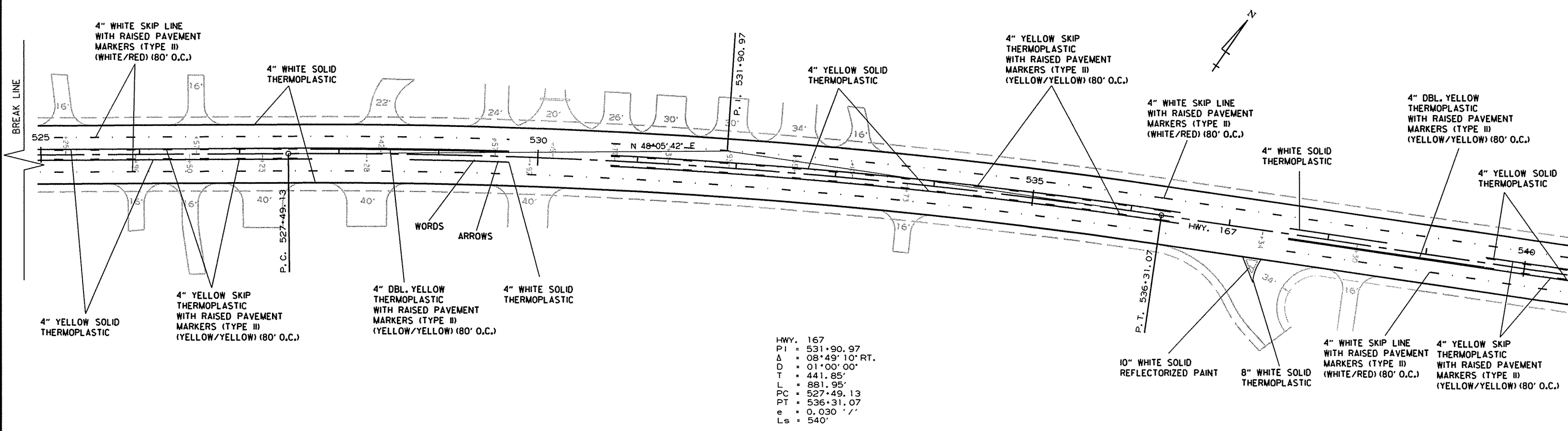
**PERMANENT PAVEMENT MARKING DETAILS**

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		47	185
				JOB NO.		070281		

② PERMANENT PAVEMENT MARKING DETAILS



HWY. 167  
 PI = 466+62.71  
 $\Delta$  = 18° 17' 08" RT.  
 D = 01° 00' 00"  
 T = 922.12'  
 L = 1828.56'  
 PC = 457+40.58  
 PT = 475+69.15  
 e = 0.030' / '  
 Ls = 540'



HWY. 167  
 PI = 531+90.97  
 $\Delta$  = 08° 49' 10" RT.  
 D = 01° 00' 00"  
 T = 441.85'  
 L = 881.95'  
 PC = 527+49.13  
 PT = 536+31.07  
 e = 0.030' / '  
 Ls = 540'

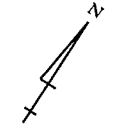
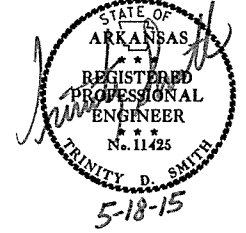
PERMANENT PAVEMENT MARKING DETAILS

3/26/2015

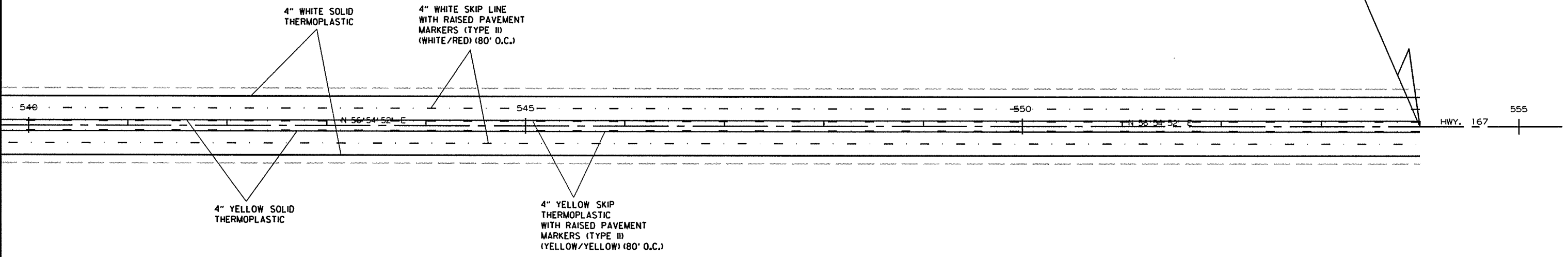
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	070281		48	185

② PERMANENT PAVEMENT MARKING DETAILS



STA. 554+00.00  
END JOB 070281



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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.		49	185
				JOB NO.		070281		

② QUANTITIES



ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	STAGE 3	END OF JOB	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		VERTICAL PANELS	TRAFFIC DRUMS	BARRICADES (TYPE III)		FURNISHING & INSTALLING PRECAST CONC. BARRIER	RELOCATING PRECAST CONCRETE BARRIER	TEMPORARY IMPACT ATTENUATION BARRIER	TEMP. IMPACT ATTEN. BARR. (REPAIR)
								NO.	SQ. FT.			RIGHT	LEFT				
W20-1	ROAD WORK 1500 FT.	48"x48"	5	5			5	5	80.0								
W20-1	ROAD WORK 1000 FT.	48"x48"	5	5			5	5	80.0								
W20-1	ROAD WORK 500 FT.	48"x48"	5	5			5	5	80.0								
W20-1	ROAD WORK AHEAD	48"x48"	1	1			1	1	16.0								
G20-2	END ROAD WORK	48"x24"	4	4			4	4	32.0								
G20-1	ROAD WORK NEXT xx MILES	60"x24"	2	2			2	2	20.0								
R11-2	ROAD CLOSED	48"x30"		2			2	2	20.0								
OM-3L	OBJECT MARKER	12"x36"	6	6			6	6	18.0								
OM-3R	OBJECT MARKER	12"x36"	6	8			8	8	24.0								
R4-1	DO NOT PASS	24"x30"	6	6			6	6	30.0								
RSP-1	SHOULDER CLOSED	48"x30"	2	2			2	2	20.0								
W8-9A	SHOULDER DROP-OFF	36"x36"	2	2			2	2	18.0								
	VERTICAL PANELS		211				211	211		211							
	TRAFFIC DRUMS		318	543			543	543			543						
	TYPE III BARRICADE-RT. (16')		1	3			3	3				48					
	TYPE III BARRICADE-LT. (16')		1	4			4	4					64				
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER		1219	93			1312						1312				
	RELOCATING PRECAST CONCRETE BARRIER			1219			1219							1219			
	TEMPORARY IMPACT ATTENUATION BARRIER			1			1								1		
	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)			1			1									1	
<b>TOTALS:</b>								<b>438.0</b>	<b>211</b>	<b>543</b>	<b>48</b>	<b>64</b>	<b>1312</b>	<b>1219</b>	<b>1</b>	<b>1</b>	

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

THE QUANTITY OF VERTICAL PANELS PROVIDED IN THE CONTRACT IS FOR ONE SIDE OF THE ROADWAY FOR 2 MILES. THIS IS THE MAXIMUM QUANTITY REQUIRED TO ALLOW THE CONTRACTOR TO NOTCH ONE MILE, BACKFILL TO A POINT WHERE THE VERTICAL DIFFERENTIAL IS 4" OR LESS, AND THEN NOTCH ANOTHER ONE-MILE SECTION. THIS IS THE MAXIMUM NUMBER OF VERTICAL PANELS THAT WILL BE PAID FOR. REFER TO SECTION 603.02 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION REQUIREMENTS.

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 1	STAGE 2	END OF JOB	CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS		THERMOPLASTIC PAVEMENT MARKING					REFLECTORIZED PAINT PAVEMENT MARKINGS	
					TYPE II (WHITE/RED)	TYPE II (YEL/YEL)	4"		8" WHITE	12" WHITE	WORDS	ARROWS	10" WHITE
							WHITE	YELLOW					
CONSTRUCTION PAVEMENT MARKINGS	30334	31446		61780									
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED)			382		382								
RAISED PAVEMENT MARKERS TYPE II (YEL/YEL)			192			192							
THERMOPLASTIC PAVEMENT MARKING WHITE (4")			40632				40632						
THERMOPLASTIC PAVEMENT MARKING YELLOW (4")			38545					38545					
THERMOPLASTIC PAVEMENT MARKING WHITE (8")			141						141				
THERMOPLASTIC PAVEMENT MARKING WHITE (12")			11							11			
THERMOPLASTIC PAVEMENT MARKING WORDS			3								3		
THERMOPLASTIC PAVEMENT MARKING ARROWS			4									4	
REFLECTORIZED PAINT PAVEMENT MARKINGS WHITE (10")			75									75	
<b>TOTALS:</b>				<b>61780</b>	<b>382</b>	<b>192</b>	<b>40632</b>	<b>38545</b>	<b>141</b>	<b>11</b>	<b>3</b>	<b>4</b>	<b>75</b>

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

CULVERT CLEAN OUT

STATION	LOCATION	EACH
402+28	HWY. 167	1
410+69	HWY. 167	1
414+30	HWY. 167	1
423+39	HWY. 167	1
428+93	HWY. 167	1
<b>TOTAL:</b>		<b>5</b>

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QUANTITIES

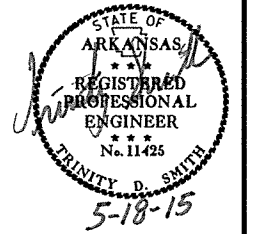
**MAILBOXES**

LOCATION	MAILBOXES		MAILBOX SUPPORTS	
		(SINGLE)	(DOUBLE)	(EACH)
ENTIRE PROJECT	60	42	9	
TOTALS:	60	42	9	

**REMOVAL OF EXISTING BRIDGE STRUCTURE**

STATION	STATION	LOCATION	LUMP SUM
518+78	519+38	HWY. 167 BRIDGE NO. 00437 (SITE NO. 1)	1.00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO. 070281		50	185	

**QUANTITIES****SOIL LOG**

STATION	LATITUDE			LONGITUDE			LOCATION	DEPTH FEET	LIQUID LIMIT	PLASTICITY INDEX	AASHTO CLASSIFICATION	COLOR
	DEG	MIN	SEC	DEG	MIN	SEC						
405+00	33	18	28.20	92	34	55.50	6'RT	0-5	ND	NP	A-4(0)	BROWN
405+00	33	18	28.20	92	34	55.40	18'RT	0-5	19	4	A-4(0)	BROWN
413+00	33	18	39.20	92	34	49.20	9'LT	0-5	ND	NP	A-4(0)	BROWN
413+00	33	18	34.30	92	34	49.30	19'LT	0-5	ND	NP	A-2-4(0)	BROWN
413+00	33	18	34.40	92	34	49.50	35'LT	0-5	ND	NP	A-4(0)	RD/BR
421+00	33	18	40.20	92	34	43.00	11'LT	0-5	ND	NP	A-2-4(0)	BROWN
421+00	33	18	40.30	92	34	43.10	25'LT	0-5	ND	NP	A-2-4(0)	BROWN
421+00	33	18	40.30	92	34	43.20	38'LT	0-5	ND	NP	A-2-4(0)	BROWN
429+00	33	18	48.10	92	34	36.80	18'LT	0-5	19	4	A-2-4(0)	RD/BR
429+00	33	18	46.20	92	34	36.90	26'LT	0-5	18	2	A-2-4(0)	RD/BR
429+00	33	18	46.30	92	34	37.10	49'LT	0-5	ND	NP	A-2-4(0)	RD/BR
437+00	33	18	52.10	92	34	30.70	18'LT	0-5	20	7	A-2-4(0)	RD/BR
437+00	33	18	52.10	92	34	30.70	26'LT	0-5	24	9	A-2-4(0)	RD/BR
437+00	33	18	52.30	92	34	30.90	46'LT	0-5	ND	NP	A-2-4(0)	RD/BR
437+00	33	18	52.30	92	34	30.90	46'LT	0-5	19	5	A-4(0)	RD/BR
444+89	33	18	58.20	92	34	24.80	37'LT	0-5	26	9	A-2-4(0)	RD/GR
445+00	33	18	58.00	92	34	24.50	18'LT	0-5	27	9	A-2-4(0)	RD/BR
445+00	33	18	58.00	92	34	29.60	26'LT	0-5	ND	NP	A-2-4(0)	RD/BR
453+00	33	19	4.00	92	34	17.80	5'RT	0-5	ND	NP	A-2-4(0)	BROWN
453+00	33	19	4.00	92	34	17.80	14'RT	0-5	ND	NP	A-2-4(0)	BROWN
461+00	33	19	10.00	92	34	11.70	18'LT	0-5	18	4	A-4(0)	BROWN
461+00	33	19	10.10	92	34	11.80	26'LT	0-5	22	5	A-2-4(0)	BROWN
461+00	33	19	10.20	92	34	11.90	46'LT	0-5	28	11	A-2-6(0)	RED
469+00	33	19	15.30	92	34	4.70	18'LT	0-5	ND	NP	A-2-4(0)	BROWN
469+00	33	19	15.30	92	34	4.80	26'LT	0-5	ND	NP	A-2-4(0)	BROWN
469+00	33	19	15.40	92	34	4.90	46'LT	0-5	ND	NP	A-3(1)	BROWN
477+00	33	19	19.60	92	33	56.80	18'LT	0-5	ND	NP	A-4(0)	BROWN
477+00	33	19	19.70	92	33	56.80	26'LT	0-5	20	6	A-4(0)	BROWN
477+00	33	19	19.90	92	33	56.90	48'LT	0-5	ND	NP	A-2-4(0)	BROWN
485+00	33	19	23.60	92	33	48.70	18'LT	0-5	ND	NP	A-2-4(0)	BROWN
485+00	33	19	23.70	92	33	48.70	26'LT	0-5	ND	NP	A-2-4(0)	BROWN
485+00	33	19	23.90	92	33	48.90	50'LT	0-5	29	14	A-6(4)	RD/GR
493+00	33	19	27.70	92	33	40.60	18'LT	0-5	ND	NP	A-4(0)	RD/BR
493+00	33	19	27.70	92	33	40.60	26'LT	0-5	22	5	A-4(0)	RD/BR
493+00	33	19	27.80	92	33	40.70	42'LT	0-5	28	9	A-4(1)	RD/BR
501+00	33	19	31.40	92	33	32.30	6'RT	0-5	25	9	A-2-4(0)	BROWN
501+00	33	19	31.40	92	33	32.30	14'RT	0-5	19	3	A-2-4(0)	BROWN
509+00	33	19	35.60	92	33	24.40	6'LT	0-5	ND	NP	A-4(0)	RD/BR
509+00	33	19	35.70	92	33	24.40	19'LT	0-5	ND	NP	A-2-4(0)	RD/BR
509+00	33	19	35.80	92	33	24.50	34'LT	0-5	19	4	A-4(0)	RD/BR
517+00	33	19	40.20	92	33	16.70	6'LT	0-5	ND	NP	A-4(0)	RD/BR
517+00	33	19	40.30	92	33	18.80	19'LT	0-5	ND	NP	A-4(0)	BROWN
517+00	33	19	40.40	92	33	17.00	35'LT	0-5	ND	NP	A-2-4(0)	BROWN
525+00	33	19	45.50	92	33	9.90	6'LT	0-5	22	8	A-4(0)	BROWN
525+00	33	19	45.60	93	33	9.90	18'LT	0-5	ND	NP	A-2-4(0)	BROWN
525+00	33	19	45.80	93	31	10.10	37'LT	0-5	ND	NP	A-4(0)	BROWN
525+00	33	19	45.80	92	33	10.10	37'LT	0-5	ND	NP	A-4(0)	BR/GR
533+00	33	19	50.80	92	33	2.70	6'LT	0-5	14	2	A-4(0)	BR/GR
533+00	33	19	50.80	92	33	2.80	17'LT	0-5	ND	NP	A-4(0)	GRAY
533+00	33	19	50.90	92	33	2.90	38'LT	0-5	18	5	A-4(0)	BROWN
541+00	33	19	55.10	92	32	54.80	5'RT	0-5	ND	NP	A-2-4(0)	BROWN
541+00	33	19	54.90	92	32	54.70	34'RT	0-5	16	3	A-4(0)	BROWN
549+00	33	19	59.50	92	32	47.10	6'LT	0-5	ND	NP	A-4(0)	BROWN
549+00	33	19	59.70	92	32	47.20	32'LT	0-5	ND	NP	A-4(0)	GR/BR

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

**REMOVAL AND DISPOSAL OF PIPE CULVERTS**

STATION	DESCRIPTION	PIPE CULVERTS		BOX CULVERTS	
		EACH		EACH	
398+00	18" X 25' CM PIPE CULVERT RT.	1			
400+00	18" X 25' CM PIPE CULVERT RT.	1			
401+08	18" X 25' CM PIPE CULVERT RT.	1			
403+73	18" X 25' CM PIPE CULVERT LT.	1			
409+73	18" X 25' CM PIPE CULVERT LT.	1			
418+13	18" X 25' CM PIPE CULVERT RT.	1			
418+27	18" X 24' CM PIPE CULVERT LT.	1			
426+29	18" X 24' CM PIPE CULVERT LT.	1			
432+36	18" X 25' CM PIPE CULVERT RT.	1			
439+38	4' X 4' X 72' RC BOX CULVERT			1	
446+05	18" X 25' CM PIPE CULVERT LT.	1			
448+53	18" X 25' CM PIPE CULVERT LT.	1			
449+16	18" X 26' CM PIPE CULVERT LT.	1			
450+18	18" X 25' CM PIPE CULVERT LT.	1			
454+66	18" X 25' CM PIPE CULVERT RT.	1			
456+45	18" X 25' CM PIPE CULVERT LT.	1			
462+31	18" X 16' CM PIPE CULVERT RT.	1			
463+53	18" X 31' CM PIPE CULVERT RT.	1			
467+10	18" X 22' CM PIPE CULVERT RT.	1			
468+51	18" X 25' CM PIPE CULVERT RT.	1			
470+15	18" X 25' CM PIPE CULVERT RT.	1			
472+00	18" X 25' CM PIPE CULVERT RT.	1			
474+45	18" X 24' CM PIPE CULVERT LT.	1			
474+83	18" X 25' CM PIPE CULVERT RT.	1			
475+85	18" X 24' CM PIPE CULVERT RT.	1			
476+71	18" X 21' CM PIPE CULVERT RT.	1			
486+83	18" X 25' CM PIPE CULVERT RT.	1			
487+29	18" X 25' CM PIPE CULVERT RT.	1			
488+50	18" X 25' CM PIPE CULVERT RT.	1			
489+83	18" X 28' CM PIPE CULVERT RT.	1			
492+17	18" X 26' CM PIPE CULVERT RT.	1			
496+04	18" X 40' CM PIPE CULVERT LT.	1			
498+50	24" X 24' CM PIPE CULVERT LT.	1			
498+54	18" X 25' CM PIPE CULVERT RT.	1			
504+03	18" X 24' CM PIPE CULVERT RT.	1			
506+59	18" X 24' CM PIPE CULVERT RT.	1			
507+48	18" X 25' CM PIPE CULVERT RT.	1			
508+32	18" X 23' CM PIPE CULVERT RT.	1			
508+98	18" X 24' CM PIPE CULVERT RT.	1			
510+94	18" X 26' CM PIPE CULVERT RT.	1			
511+00	18" X 24' CM PIPE CULVERT LT.	1			
511+71	18" X 26' CM PIPE CULVERT RT.	1			
512+45	18" X 24' CM PIPE CULVERT RT.	1			
512+51	18" X 24' CM PIPE CULVERT LT.	1			
515+22	18" X 30' CM PIPE CULVERT LT.	1			
516+91	18" X 25' CM PIPE CULVERT RT.	1			
523+87	12" X 52' RC PIPE CULVERT LT.	1			
525+25	12" X 20' RC PIPE CULVERT LT.	1			
527+23	18" X 45' CM PIPE CULVERT RT.	1			
528+28	18" X 44' CM PIPE CULVERT RT.	1			
528+42	18" X 44' RC PIPE CULVERT LT.	1			
529+57	18" X 43' RC PIPE CULVERT LT.	1			
529+92	18" X 45' CM PIPE CULVERT RT.	1			
530+15	18" X 34' STEEL PIPE CULVERT LT.	1			
530+77	18" X 35' CM PIPE CULVERT LT.	1			
531+31	18" X 35' CM PIPE CULVERT LT.	1			
531+93	24" X 40' CM PIPE CULVERT LT.	1			
532+59	24" X 40' CM PIPE CULVERT LT.	1			
533+17	24" X 40' CM PIPE CULVERT LT.	1			
533+73	24" X 30' CM PIPE CULVERT RT.	1			
TOTAL:		62		1	

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

**ACHM PATCHING OF EXISTING ROADWAY**

DESCRIPTION	TON
ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	100
TOTAL:	100

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

**EROSION CONTROL MATTING**

STATION	STATION	LOCATION	LENGTH	
			LIN. FT.	SQ. YD.
397+00.00	397+50.00	RT. OF MAIN LANES	50.00	44.44
398+00.00	400+00.00	LT. OF MAIN LANES	200.00	177.78
400+50.00	401+50.00	RT. OF MAIN LANES	100.00	88.89
402+00.00	402+50.00	LT. OF MAIN LANES	50.00	44.44
410+50.00	411+00.00	LT. OF MAIN LANES	50.00	44.44
415+00.00	417+50.00	RT. OF MAIN LANES	250.00	222.22
418+50.00	421+00.00	RT. OF MAIN LANES	250.00	222.22
421+00.00	421+50.00	LT. OF MAIN LANES	50.00	44.44
421+50.00	423+00.00	RT. OF MAIN LANES	150.00	133.33
422+50.00	423+00.00	LT. OF MAIN LANES	50.00	44.44
423+00.00	423+50.00	LT. OF MAIN LANES	50.00	44.44
424+50.00	427+00.00	RT. OF MAIN LANES	250.00	222.22
429+00.00	430+00.00	LT. OF MAIN LANES	100.00	88.89
429+00.00	430+00.00	RT. OF MAIN LANES	100.00	88.89
436+00.00	436+50.00	LT. OF MAIN LANES	50.00	44.44
436+00.00	437+50.00	RT. OF MAIN LANES	150.00	133.33
440+50.00	448+50.00	LT. OF MAIN LANES	800.00	711.11
449+50.00	450+50.00	RT. OF MAIN LANES	100.00	88.89
453+00.00	454+00.00	RT. OF MAIN LANES	100.00	88.89
454+50.00	455+00.00	RT. OF MAIN LANES	50.00	44.44
457+50.00	458+00.00	LT. OF MAIN LAN		

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
11-19-2015				6	ARK.			
							JOB NO.	070281
							SHEET NO.	51
							TOTAL SHEETS	185

2 QUANTITIES

**BENCH MARKS**

STATION	LOCATION	BENCH MARKS
		EACH
503+07	RT. OF MAIN LANES IN R.C. BOX HDWL.	1
518+71	LT. OF MAIN LANES IN R.C. BOX HDWL.	1
<b>TOTAL:</b>		<b>2</b>

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

**CLEARING AND GRUBBING**

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	STATION
397+00	473+00	HWY. 167	76	76
474+00	504+00	HWY. 167	30	30
506+00	528+00	HWY. 167	22	22
529+00	530+00	HWY. 167	1	1
534+00	554+00	HWY. 167	20	20
<b>TOTALS:</b>			<b>149</b>	<b>149</b>

**REMOVAL AND DISPOSAL OF FENCE**

STATION	STATION	LOCATION	FENCE	GATES
			LIN. FT.	EACH
400+06		RT. HWY 167		1
400+36		RT. HWY 167		1
402+54	407+42	LT. HWY 167	550	
418+63	420+07	RT. HWY 167	156	
423+74	424+03	LT. HWY 167	29	
426+38	426+81	LT. HWY 167	68	
440+70	441+40	RT. HWY 167	70	
442+55	443+06	LT. HWY 167	66	
446+15	449+72	RT. HWY 167	381	
477+50	479+64	RT. HWY 167	351	
490+11	493+85	RT. HWY 167	393	
521+44	523+66	LT. HWY 167	268	
522+25	525+12	RT. HWY 167	446	
524+56	525+45	LT. HWY 167	160	
527+21	527+21	LT. HWY 167	19	
<b>TOTALS:</b>			<b>2957</b>	<b>2</b>

**FLOWABLE SELECT MATERIAL**

STATION	LOCATION	CU. YD.
439+38	R.C. BOX CULVERT	90
<b>TOTAL:</b>		<b>90</b>

**4" PIPE UNDERDRAIN**

STATION	STATION	LOCATIONS	4" PIPE UNDERDRAINS	UNDERDRAIN OUTLET PROTECTORS
			LIN. FT.	EACH
435+00	442+00	MAIN LANES	700	4
481+00	489+00	MAIN LANES	800	5
			400	3
<b>TOTALS:</b>			<b>1900</b>	<b>12</b>

\* ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

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

**CONCRETE DITCH PAVING**

STATION	STATION	LOCATION	CONC. DITCH PAVING (TYPE B)	SOLID SODDING	WATER
			SQ. YD.	SQ. YD.	M. GAL.
ENTIRE PROJECT		TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.	1000.00	1000.00	12.60
<b>TOTALS:</b>			<b>1000.00</b>	<b>1000.00</b>	<b>12.60</b>

BASIS OF ESTIMATE:  
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING.  
\* NOTE: QUANTITIES ESTIMATED. SEE SECTION 104.03 OF THE STD. SPECS.

**FENCING**

STATION	STATION	LOCATION	WIRE FENCE (TYPE C)	* 4' CHAIN LINK FENCE	* 5' CHAIN LINK FENCE	* 16'-0" GATES
			LIN. FT.	LIN. FT.	LIN. FT.	EACH
400+06		RT. HWY. 167				1
400+36		RT. HWY. 167				1
402+54	407+42	LT. HWY 167			530	1
423+71	424+01	LT. HWY 167	30			
426+39	426+81	LT. HWY 167	42			
440+70	442+63	RT. HWY. 167	193			
446+15	449+72	RT. HWY. 167	360			
490+10	493+85	RT. HWY. 167			376	1
521+42	523+66	LT. HWY 167		224		
522+25	525+12	RT. HWY. 167	263			
<b>TOTALS:</b>			<b>888</b>	<b>224</b>	<b>906</b>	<b>4</b>

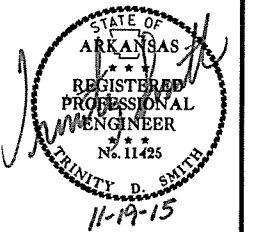
\* DENOTES ALTERNATE BID ITEM.

**EARTHWORK**

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	* SOIL STABILIZATION
			CU. YD.	CU. YD.	TON
ENTIRE PROJECT		STAGE 1-MAIN LANES	34308	78876	500
ENTIRE PROJECT		STAGE 2-MAIN LANES	9266	29817	500
ENTIRE PROJECT		APPROACHES	745	7610	
<b>TOTALS:</b>			<b>44319</b>	<b>116303</b>	<b>1000</b>

**REMOVAL AND DISPOSAL OF ITEMS**

STATION	STATION	LOCATION	CURB	CONCRETE PAVEMENT	CONCRETE ISLANDS	CONCRETE DRIVEWAYS	GUARDRAIL
			LIN. FT.	SQ. YD.	SQ. YD.	SQ. YD.	LIN. FT.
401+20	401+42	ISLAND @ HWY. 335 INTERSECTION LT.			7		
403+77	403+88	CONCRETE DRIVEWAY LT.				24	
404+22	404+25	MISC. CONCRETE RT.		1			
404+26	404+35	MISC. CONCRETE RT.		3			
451+02	451+19	CONCRETE DRIVEWAY RT.				43	
494+85	495+26	CONCRETE DRIVEWAY RT.				48	
512+31	512+58	CONCRETE DRIVEWAY LT.				47	
516+93	517+27	MISC. CONCRETE LT.		29			
517+86	519+00	GUARDRAIL RT.					114
518+36	519+00	GUARDRAIL LT.					64
519+17	521+06	GUARDRAIL LT.					189
519+18	519+82	GUARDRAIL RT.					64
521+31	521+43	GUARDRAIL LT.					12
525+21	525+40	CURB RT.	39				19
527+90	530+27	CONCRETE PARKING RT.		428			237
530+54	530+64	CURB LT.	35				
530+54	531+52	CONCRETE PARKING LT.		165			
530+89	531+16	CURB LT.	85				
531+45	531+52	CURB LT.	51				
531+74	532+84	CONCRETE PARKING LT.		193			
536+61	536+77	ISLAND @ W MAIN ST INTERSECTION RT.			4		
537+02	537+11	ISLAND @ W MAIN ST INTERSECTION RT.			10		
538+54	538+92	MISC. CONCRETE RT.		59			
<b>TOTALS:</b>			<b>210</b>	<b>878</b>	<b>21</b>	<b>162</b>	<b>699</b>



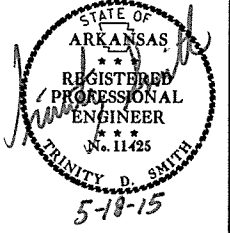
11/19/2015

R070281.DGN

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO.	070281	52

② QUANTITIES



CONCRETE CURB

STATION	STATION	LOCATION	TYPE B
			LIN. FT.
448+61	453+50	LT. OF HWY.167	489
496+18	499+00	LT. OF HWY.167	282
TOTAL:			771

RUMBLE STRIPS

STATION	STATION	LOCATION	* RUMBLE STRIPS IN ASPHALT SHOULDERS
			LIN. FT.
397+00	554+00	LT. OF MAIN LANES	10686
397+00	554+00	RT. OF MAIN LANES	9351
TOTAL:			20037

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

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	TON	TACK COAT GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	75	150
TOTALS:	75	150

NOTE: QUANTITIES 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															
ENTIRE PROJECT		STAGE 1	14.73	29.46	14.73	1502.5	14.73	14.73	300.5	1870	249	50	7200			437	
ENTIRE PROJECT		STAGE 2	12.63	25.26	12.63	1288.3	12.63	12.63	257.7	682	105			2059	2059	2125	
ENTIRE PROJECT		TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.								550	78			1455	1455	1506	
ENTIRE PROJECT		TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.								330	45	25	500			19	
TOTALS:			27.36	54.72	27.36	2790.8	27.36	27.36	558.2	3432	477	75	7700	3514	3514	4087	

BASIS OF ESTIMATE:

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

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

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

STRUCTURES

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE (CLASS III)				FLARED END SECTIONS FOR R.C. PIPE CULVERTS				* TEMPORARY CULVERT	DROP INLETS TYPE	SPAN	HEIGHT	LENGTH	CLASS S CONCRETE-ROADWAY	REINFORCED STEEL-ROADWAY (GRADE 60)	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY	SOLID SODDING	WATER	STD. DWG. NOS.
		18"	24"	36"	60"	18"	24"	36"	60"	42"	ST									
		LIN. FT.				EACH				LIN. FT.	EACH									
402+28	EXTEND R.C. PIPE CULV'T 24' LT. AND 36' RT.		64				2											16	0.20	PCC-1
410+69	EXTEND R.C. PIPE CULV'T 48' LT. AND 11' RT.		63				2											16	0.20	PCC-1
423+39	EXTEND R.C. PIPE CULV'T 48' LT. AND 9' RT.			61				2										34	0.43	PCC-1
426+84	EXTEND R.C. PIPE CULV'T 43' LT. AND 7' RT.		54				2											16	0.20	PCC-1
428+93	EXTEND R.C. PIPE CULV'T 46' LT. AND 3' RT.		53				2											16	0.20	PCC-1
439+30	CONST. 60" X 159' R.C. PIPE CULV'T				159		2		2									45	0.57	PCC-1
439+38	CONST. 42" X 37' TEMPORARY PIPE								37									23	0.29	PCC-1
448+80	CONST. DI ON LT. & 18" X 8' PIPE OUTLET		8				1				1							5	0.06	FES-1, FES-2, FPC-9S
457+89	EXTEND R.C. PIPE CULV'T 45' LT. AND 9' RT.		58				2											16	0.20	PCC-1
477+76	EXTEND R.C. PIPE CULV'T 46' LT. AND 15' RT.		65				2											16	0.20	PCC-1
496+30	CONST. DROP INLET ON LT. & 18" X 50' PIPE INLET W/ F.E.S.		50				1				1							5	0.06	FPC-9, PCC-1, PCM-1
498+30	CONST. DROP INLET ON LT. & 18" X 196' PIPE INLET & 18" X 84' PIPE OUTLET W/ F.E.S.		280				1				1							5	0.06	FPC-9, PCC-1, PCM-1
503+07	EXTEND R.C. BOX CULV'T 44' LT. AND 17' RT.											3	2	65	18.62	1913	16	3	0.04	SPECIAL DETAIL, PBC-1, RCB-1, RCB-2, RCB-3
514+30	EXTEND R.C. PIPE CULV'T 48' LT. AND 2' RT.		54				2											16	0.20	PCC-1
SUBTOTALS:			338	411	61	159	3	16	2	2	37	3			18.62	1913	16	232	2.91	
STRUCTURES OVER 20' - 0" SPAN																				
518+71	COST. QUINT. 10'X 10' X 177' BOX CULV'T 45° RT. FWD. SKEW											10	10	177	1053.08	135603	359	55	0.69	SPECIAL DETAIL, PBC-1, RCB-1, RCB-2
SUBTOTALS:															1053.08	135603	359	55	0.69	
TOTALS:			338	411	61	159	3	16	2	2	37	3			1071.70	137516	375	287	3.60	

BASIS OF ESTIMATE:

- WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING.

NOTE: FOR R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.  
NOTE: FOR C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.  
\* TEMPORARY PIPE TO BE CONSTRUCTED OF REINFORCED CONCRETE (CLASS III)

3/26/2015

RO70281.DGN

**DRIVEWAYS & TURNOUTS**

STATION	SIDE	LOCATION	WIDTH FEET	PORTLAND CEMENT CONCRETE DRIVEWAY		ACHM SURFACE COURSE (1/2") 220 LBS. PER SQ. YD. (PG 64-22)		AGGREGATE BASE COURSE (CLASS 7)		SIDE DRAINS		STANDARD DRAWINGS	
				SQ. YD.	TON	SQ. YD.	TON	TON	TON	18"   24"   22"x14"	LIN. FT.		
398+00	RT.	PRIVATE DRIVE	20		143.70	15.81	58.68			46		PCC-1, PCM-1, PCP-1, PCP-2	
400+00	RT.	PRIVATE DRIVE	16		24.70	2.72	10.09			36		PCC-1, PCM-1, PCP-1, PCP-2	
401+08	RT.	PRIVATE DRIVE	16		121.80	13.40	49.74			38		PCC-1, PCM-1, PCP-1, PCP-2	
401+50	LT.	COUNTY RD. 335	22							86		PCC-1, PCM-1, PCP-1, PCP-2	
403+58	RT.	PRIVATE DRIVE	16		119.70	13.17	48.88			38		PCC-1, PCM-1, PCP-1, PCP-2	
403+82	LT.	PRIVATE DRIVE	16	94.40									
405+50	RT.	PRIVATE DRIVE	16		118.20	13.00	48.27			30			
407+78	RT.	PRIVATE DRIVE	16		153.10	16.84	62.52						
408+32	RT.	PRIVATE DRIVE	16		147.20	16.19	60.11						
410+20	LT.	PRIVATE DRIVE	16		96.10	10.57	39.24			36		PCC-1, PCM-1, PCP-1, PCP-2	
411+82	LT.	PRIVATE DRIVE	16		91.60	10.08	37.40						
418+13	RT.	PRIVATE DRIVE	16		79.80	8.78	32.59			32		PCC-1, PCM-1, PCP-1, PCP-2	
418+27	LT.	PRIVATE DRIVE	16		86.80	9.55	35.44			30		PCC-1, PCM-1, PCP-1, PCP-2	
424+06	LT.	PRIVATE DRIVE	16		122.90	13.52	50.18			28		PCC-1, PCM-1, PCP-1, PCP-2	
426+29	LT.	PRIVATE DRIVE	16		89.30	9.82	36.46			34		PCC-1, PCM-1, PCP-1, PCP-2	
427+61	LT.	PRIVATE DRIVE	16		95.70	10.53	39.08			40		PCC-1, PCM-1, PCP-1, PCP-2	
432+36	RT.	PRIVATE DRIVE	16		114.70	12.62	46.84			48		PCC-1, PCM-1, PCP-1, PCP-2	
446+05	LT.	PRIVATE DRIVE	16		190.90	21.00	77.95			30		PCC-1, PCM-1, PCP-1, PCP-2	
448+53	LT.	PRIVATE DRIVE	16		80.10	8.81	32.71			30		PCC-1, PCM-1, PCP-1, PCP-2	
449+16	LT.	PRIVATE DRIVE	16		112.90	12.42	46.10						
450+18	LT.	PRIVATE DRIVE	16		152.30	16.75	62.19			40		PCC-1, PCM-1, PCP-1, PCP-2	
450+19	RT.	PRIVATE DRIVE	16		98.30	10.81	40.14						
452+50	LT.	PRIVATE DRIVE	16		215.80	23.74	88.12						
453+00	RT.	AMASON RD.	20		138.10	15.19	56.39						
454+00	LT.	PRIVATE DRIVE	16		101.30	11.14	41.36			40		PCC-1, PCM-1, PCP-1, PCP-2	
454+66	RT.	PRIVATE DRIVE	16		78.20	8.60	31.93			44		PCC-1, PCM-1, PCP-1, PCP-2	
456+45	LT.	PRIVATE DRIVE	16		137.90	15.17	56.31						
459+05	RT.	PRIVATE DRIVE	16		125.00	13.75	51.04						
459+70	LT.	PRIVATE DRIVE	16		176.00	19.36	71.87						
462+31	RT.	PRIVATE DRIVE	16		124.90	13.74	51.00						
463+53	RT.	PRIVATE DRIVE	16		174.70	19.22	71.34			28		PCC-1, PCM-1, PCP-1, PCP-2	
466+13	LT.	PRIVATE DRIVE	16		175.00	19.25	71.46			42		PCC-1, PCM-1, PCP-1, PCP-2	
467+10	RT.	PRIVATE DRIVE	16		75.00	8.25	30.63			36		PCC-1, PCM-1, PCP-1, PCP-2	
468+51	RT.	PRIVATE DRIVE	16		74.30	8.17	30.34			36		PCC-1, PCM-1, PCP-1, PCP-2	
470+15	RT.	PRIVATE DRIVE	16		77.00	8.47	31.44						
472+00	RT.	PRIVATE DRIVE	16		114.30	12.57	46.67			28		PCC-1, PCM-1, PCP-1, PCP-2	
474+45	LT.	PRIVATE DRIVE	16		121.00	13.31	49.41			42		PCC-1, PCM-1, PCP-1, PCP-2	
474+83	RT.	PRIVATE DRIVE	16		150.50	16.56	61.45			36		PCC-1, PCM-1, PCP-1, PCP-2	
475+85	RT.	PRIVATE DRIVE	16		149.40	16.43	61.01			36		PCC-1, PCM-1, PCP-1, PCP-2	
476+71	RT.	PRIVATE DRIVE	16		129.10	14.20	52.72			38		PCC-1, PCM-1, PCP-1, PCP-2	
477+11	RT.	PRIVATE DRIVE	16		170.10	18.71	69.46						
478+28	RT.	PRIVATE DRIVE	16		175.40	19.29	71.62						
483+23	RT.	PRIVATE DRIVE	16		125.40	13.79	51.21			28		PCC-1, PCM-1, PCP-1, PCP-2	
484+79	RT.	PRIVATE DRIVE	16		76.40	8.40	31.20			32		PCC-1, PCM-1, PCP-1, PCP-2	
486+83	RT.	PRIVATE DRIVE	16		88.00	9.68	35.93			34		PCC-1, PCM-1, PCP-1, PCP-2	
487+29	RT.	PRIVATE DRIVE	16		98.70	10.86	40.30			36		PCC-1, PCM-1, PCP-1, PCP-2	
488+50	RT.	PRIVATE DRIVE	16		114.50	12.60	46.75			32		PCC-1, PCM-1, PCP-1, PCP-2	
489+83	RT.	PRIVATE DRIVE	16		114.50	12.60	46.75			32		PCC-1, PCM-1, PCP-1, PCP-2	
492+17	RT.	PRIVATE DRIVE	16		104.10	11.45	42.51			28		PCC-1, PCM-1, PCP-1, PCP-2	
495+05	RT.	PRIVATE DRIVE	18	106.70									
496+04	LT.	PRIVATE DRIVE	24		110.30	12.13	45.04						
496+50	LT.	PRIVATE DRIVE	16		52.30	5.75	21.36						
498+54	RT.	PRIVATE DRIVE	16		151.60	16.68	61.90						
499+64	RT.	PRIVATE DRIVE	16		122.80	13.51	50.14						
500+49	RT.	PRIVATE DRIVE	16		115.00	12.65	46.96						
501+68	RT.	PRIVATE DRIVE	20		139.40	15.33	56.92			28		PCC-1, PCM-1, PCP-1, PCP-2	
502+55	RT.	PRIVATE DRIVE	24		98.20	10.80	40.10			30		PCC-1, PCM-1, PCP-1, PCP-2	
504+03	RT.	PRIVATE DRIVE	16		116.10	12.77	47.41			34		PCC-1, PCM-1, PCP-1, PCP-2	
505+18	RT.	PRIVATE DRIVE	16		119.80	13.18	48.92						
506+59	RT.	PRIVATE DRIVE	16		130.30	14.33	53.21			28		PCC-1, PCM-1, PCP-1, PCP-2	
507+48	RT.	PRIVATE DRIVE	16		117.40	12.91	47.94						
508+32	RT.	PRIVATE DRIVE	16		88.00	9.68	35.93			36		PCC-1, PCM-1, PCP-1, PCP-2	
508+98	RT.	PRIVATE DRIVE	16		86.00	9.46	35.12			38		PCC-1, PCM-1, PCP-1, PCP-2	
510+94	RT.	PRIVATE DRIVE	16		112.30	12.35	45.86			28		PCC-1, PCM-1, PCP-1, PCP-2	
511+00	LT.	PRIVATE DRIVE	16		96.00	10.56	39.20			36		PCC-1, PCM-1, PCP-1, PCP-2	
511+71	RT.	PRIVATE DRIVE	16		127.00	13.97	51.86			36		PCC-1, PCM-1, PCP-1, PCP-2	
512+45	RT.	PRIVATE DRIVE	16		117.10	12.88	47.82			28		PCC-1, PCM-1, PCP-1, PCP-2	
512+51	LT.	PRIVATE DRIVE	16	83.70						32		PCC-1, PCM-1, PCP-1, PCP-2	
514+55	RT.	PRIVATE DRIVE	18		96.00	10.56	39.20						
515+22	LT.	PRIVATE DRIVE	16		84.90	9.34	34.67			32		PCC-1, PCM-1, PCP-1, PCP-2	
516+91	RT.	PRIVATE DRIVE	16		101.30	11.14	41.36			32		PCC-1, PCM-1, PCP-1, PCP-2	
523+87	LT.	PRIVATE DRIVE	16		91.20	10.03	37.24			36		PCC-1, PCM-1, PCP-1, PCP-2	
524+68	RT.	PRIVATE DRIVE	16		91.90	10.11	37.53			44		PCC-1, PCM-1, PCP-1, PCP-2	
525+25	LT.	PRIVATE DRIVE	16		90.30	9.93	36.87			34		PCC-1, PCM-1, PCP-1, PCP-2	
525+96	RT.	PRIVATE DRIVE	16		122.00	13.42	49.82			36		PCC-1, PCM-1, PCP-1, PCP-2	
526+50	RT.	PRIVATE DRIVE	16		153.00	16.83	62.48			30		PCC-1, PCM-1, PCP-1, PCP-2	
526+57	LT.	PRIVATE DRIVE	16		78.90	8.68	32.22			36		PCC-1, PCM-1, PCP-1, PCP-2	
527+23	RT.	PRIVATE DRIVE	40		168.40	18.52	68.76			52		PCC-1, PCM-1, PCP-1, PCP-2	
528+28	RT.	PRIVATE DRIVE	40		162.60	17.89	66.40			50		PCC-1, PCM-1, PCP-1, PCP-2	
528+42	LT.	PRIVATE DRIVE	22		98.70	10.86	40.30			36		PCC-1, PCM-1, PCP-1, PCP-2	
529+57	LT.	PRIVATE DRIVE	24		96.90	10.66	39.57			38		PCC-1, PCM-1, PCP-1, PCP-2	
529+92	RT.	PRIVATE DRIVE	40		152.20	16.74	62.15			54		PCC-1, PCM-1, PCP-1, PCP-2	
530+15	RT.	COUNTY RD.	20		107.80	11.86	44.02			30		PCC-1, PCM-1, PCP-1, PCP-2	
530+77	LT.	PRIVATE DRIVE	26		95.80	10.54	39.12			38		PCC-1, PCM-1, PCP-1, PCP-2	
531+31	LT.	PRIVATE DRIVE	30		109.50	12.05	44.71			38		PCC-1, PCM-1, PCP-1, PCP-2	
531+93	LT.	PRIVATE DRIVE	30		115.90	12.75	47.33			40		PCC-1, PCM-1, PCP-1, PCP-2	
532+59	LT.	PRIVATE DRIVE	34		130.00	14.30	53.08			44		PCC-1, PCM-1, PCP-1, PCP-2	
533+17	LT.	PRIVATE DRIVE	16		65.00	7.15	26.54			28		PCC-1, PCM-1, PCP-1, PCP-2	
533+73	RT.	PRIVATE DRIVE	16		60.70	6.68	24.79						
537+34	RT.	WEST MAIN ST	45		321.00	35.31	131.08			96		PCC-1, PCM-1, PCP-1, PCP-2	
538+30	RT.	PRIVATE DRIVE	16		94.70	10.42	38.67			38		PCC-1, PCM-1, PCP-1, PCP-2	
* ENTIRE PROJECT TEMPORARY DRIVES													
TOTALS:				284.80	10232.70	1125.60	6178.43	2122	112	58			

BASIS OF ESTIMATE:  
 ACHM SURFACE COURSE (1/2").....96% MIN. AGGR.....4% 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.

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.	070281		53	185

2 QUANTITIES



SELECTED PIPE BEDDING

Table with 2 columns: LOCATION, SELECTED PIPE BEDDING. Rows include 'ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER' and 'TOTAL: 250'.

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

CONCRETE ISLAND

Table with 3 columns: STATION, LOCATION, CONCRETE ISLAND SQ.YD. Rows include '401+36 HWY. 335' and '537+28 WEST MAIN ST.'.

COLD MILLING ASPHALT PAVEMENT

Table with 5 columns: STATION, STATION, LOCATION, AVG. WIDTH FEET, COLD MILLING ASPHALT PAVEMENT SQ. YD. Rows include '554+00.00 555+70.00 MAIN LANES'.

NOTE: AVERAGE MILLING DEPTH 1".

Project information table including DATE REVISED, DATE FILMED, FED. PROJ. NO., STATE, SHEET NO., and TOTAL SHEETS.

QUANTITIES



5-20-15

BASE AND SURFACING

Main table for BASE AND SURFACING with columns for STATION, DESCRIPTION, LENGTH, and various material quantities (TON, SQ.YD., POUND) for different course types.

TOTALS:

Summary table for TOTALS showing aggregate base course, tack coat, achm base course, achm binder course, and achm surface course quantities.

BASIS OF ESTIMATE: ACHM SURFACE COURSE (1/2").....96% MIN. AGGR.....4% ASPHALT BINDER

ACHM BINDER COURSE (1").....95.5% MIN. AGGR.....4.5% ASPHALT BINDER

ACHM BASE COURSE (1 1/2").....94% MIN. AGGR.....6% ASPHALT BINDER

MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

3/26/2015

RO70281.DGN

QUANTITIES

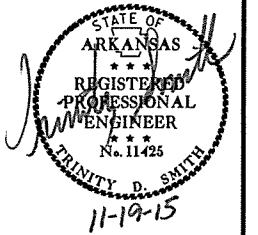
SUMMARY OF QUANTITIES (BOX 1 OF 2)

ITEM NUMBER	ITEM	QUANTITY	UNIT
201	CLEARING	149	STATION
201	GRUBBING	149	STATION
202	REMOVAL AND DISPOSAL OF CURB	210	LIN. FT.
202	REMOVAL AND DISPOSAL OF FENCE	2957	LIN. FT.
202	REMOVAL AND DISPOSAL OF GATES	2	EACH
202	REMOVAL AND DISPOSAL OF CONCRETE PAVEMENT	878	SQ. YD.
202	REMOVAL AND DISPOSAL OF CONCRETE ISLANDS	21	SQ. YD.
202	REMOVAL AND DISPOSAL OF CONCRETE DRIVEWAYS	162	SQ. YD.
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS	62	EACH
202	REMOVAL AND DISPOSAL OF BOX CULVERTS	1	EACH
202	REMOVAL AND DISPOSAL OF GUARDRAIL	699	LIN. FT.
206	FLOWABLE SELECT MATERIAL	90	CU. YD.
210	UNCLASSIFIED EXCAVATION	44319	CU. YD.
210	COMPACTED EMBANKMENT	116303	CU. YD.
SP & 210	SOIL STABILIZATION	1000	TON
303	AGGREGATE BASE COURSE (CLASS 7)	57847	TON
SS & 401	TACK COAT	12574	GAL.
SP & 405	MINERAL AGGREGATE IN ACHM BASE COURSE (1 1/2")	3641	TON
SP & 405	ASPHALT BINDER (PG 64-22) IN ACHM BASE COURSE (1 1/2")	232	TON
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	24458	TON
SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")	1152	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	31324	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")	1305	TON
412	COLD MILLING ASPHALT PAVEMENT	453	SQ. YD.
SP & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	75	TON
SP & 415	ACHM PATCHING OF EXISTING ROADWAY	100	TON
505	PORTLAND CEMENT CONCRETE DRIVEWAY	284.80	SQ. YD.
601	MOBILIZATION	1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE	1	EACH
603	MAINTENANCE OF TRAFFIC	1.00	LUMP SUM
603	42" TEMPORARY CULVERT	37	LIN. FT.
SS & 604	SIGNS	438	SQ. FT.
SS & 604	BARRICADES	112	LIN. FT.
SS & 604	TRAFFIC DRUMS	543	EACH
604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	1312	LIN. FT.
604	RELOCATING PRECAST CONCRETE BARRIER	1219	LIN. FT.
604	CONSTRUCTION PAVEMENT MARKINGS	61780	LIN. FT.
SS & 604	VERTICAL PANELS	211	EACH
605	CONCRETE DITCH PAVING (TYPE B)	1000	SQ. YD.
606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	338	LIN. FT.
606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	411	LIN. FT.
606	36" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	61	LIN. FT.
606	60" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	159	LIN. FT.
SP, SS, & 606	18" SIDE DRAIN	2122	LIN. FT.
SP, SS, & 606	24" SIDE DRAIN	112	LIN. FT.
SS & 606	22" X 14" SIDE DRAIN	58	LIN. FT.
606	18" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	3	EACH
606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	16	EACH
606	36" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	2	EACH
606	60" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	2	EACH
606	SELECTED PIPE BEDDING	250	CU. YD.
609	DROP INLETS (TYPE ST)	3	EACH
611	UNDERDRAIN OUTLET PROTECTORS	12	EACH
611	4" PIPE UNDERDRAINS	1900	LIN. FT.
619	WIRE FENCE (TYPE C)	888	LIN. FT.
619	4' STEEL CHAIN LINK FENCE (ALTERNATE NO. 1)	224	LIN. FT.
619	4' ALUMINUM CHAIN LINK FENCE (ALTERNATE NO. 2)	224	LIN. FT.
619	5' STEEL CHAIN LINK FENCE (ALTERNATE NO. 1)	906	LIN. FT.
619	5' ALUMINUM CHAIN LINK FENCE (ALTERNATE NO. 2)	906	LIN. FT.
619	16' STEEL GATES (ALTERNATE NO. 1)	4	EACH
619	16' ALUMINUM GATES (ALTERNATE NO. 2)	4	EACH
620	LIME	55	TON
620	SEEDING	27.36	ACRE
SS & 620	MULCH COVER	54.72	ACRE
620	WATER	3365.2	M.GAL.
621	TEMPORARY SEEDING	27.36	ACRE
621	SILT FENCE	7700	LIN. FT.
621	SAND BAG DITCH CHECKS	3432	BAG
621	DROP INLET SILT FENCE	75	LIN. FT.
621	SEDIMENT BASIN	3514	CU. YD.
621	OBLITERATION OF SEDIMENT BASIN	3514	CU. YD.
621	SEDIMENT REMOVAL AND DISPOSAL	4087	CU. YD.
621	ROCK DITCH CHECKS	477	CU. YD.
623	SECOND SEEDING APPLICATION	27.36	ACRE
624	SOLID SODDING	1287	SQ. YD.

\*DENOTES ALTERNATE BID ITEMS.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
11-19-2015				6	ARK.		55	185
				JOB NO.		070281		

2 SUMMARY OF QUANTITIES

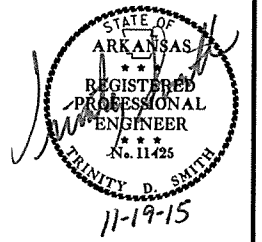


11/19/2015

R070281.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
11-19-2015				6	ARK.			
						JOB NO.	070281	56 185

2 SUMMARY OF QUANTITIES AND REVISIONS



SUMMARY OF QUANTITIES (BOX 2 OF 2)

ITEM NUMBER	ITEM	QUANTITY	UNIT
626	EROSION CONTROL MATTING (CLASS 3)	6978	SQ. YD.
632	CONCRETE ISLAND	155	SQ. YD.
634	CONCRETE CURB (TYPE B)	771	LIN. FT.
635	ROADWAY CONSTRUCTION CONTROL	1.00	LUMP SUM
637	MAILBOXES	60	EACH
637	MAILBOX SUPPORTS (SINGLE)	42	EACH
637	MAILBOX SUPPORTS (DOUBLE)	9	EACH
642	RUMBLE STRIPS IN ASPHALT SHOULDERS	20037	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10")	75	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (4")	40632	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (8")	141	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (12")	11	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING YELLOW (4")	38545	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING (WORDS)	3	EACH
719	THERMOPLASTIC PAVEMENT MARKING (ARROWS)	4	EACH
721	RAISED PAVEMENT MARKERS (TYPE II)	574	EACH
731	TEMPORARY IMPACT ATTENUATION BARRIER	1	EACH
731	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)	1	EACH
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY	16	CU. YD.
802	CLASS S CONCRETE-ROADWAY	18.62	CU. YD.
804	REINFORCING STEEL-ROADWAY (GRADE 60)	1913	POUND
SP	CULVERT CLEAN OUT	5	EACH
STRUCTURES OVER 20' SPAN			
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)	1.00	LUMP SUM
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY	359	CU. YD.
802	CLASS S CONCRETE-ROADWAY	1053.08	CU. YD.
804	REINFORCING STEEL-ROADWAY (GRADE 60)	135603	POUND

REVISIONS

DATE	REVISION	SHEET NUMBER
11/19/2015	REMOVED PAY ITEMS SELECTED MATERIAL (SM-2) AND STONE BACKFILL. REMOVED AGGREGATE BASE COURSE (CLASS 7) FROM THE EARTHWORK QUANTITY BOX. REVISED THE AGGREGATE BASE COURSE (CLASS 7) QUANTITY IN THE SUMMARY OF QUANTITIES.	51,55,56

11/19/2015

R070281.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.	070281		57	185

2 SURVEY CONTROL DETAILS



SURVEY CONTROL COORDINATES

Project Name: s070281  
 Date: 7/12/2011  
 Coordinate System: ARKANSAS STATE PLANE - SOUTH ZONE BASED ON GPS CONTROL,  
 PROJECTED TO GROUND.  
 Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
28	1545990.4302	1133508.1584	174.462	CTL	5/8" REBAR W/ 2" ALUM CAP
29	1546028.6020	1134247.8121	179.243	CTL	5/8" REBAR W/ 2" ALUM CAP
30	1546723.3278	1134974.8737	189.450	CTL	5/8" REBAR W/ 2" ALUM CAP
31	1547584.4406	1135735.5433	172.932	CTL	5/8" REBAR W/ 2" ALUM CAP
32	1548380.9178	1136439.3333	165.793	CTL	5/8" REBAR W/ 2" ALUM CAP
33	1549187.0590	1137153.7836	179.272	CTL	5/8" REBAR W/ 2" ALUM CAP
34	1549720.2743	1137626.1112	201.957	CTL	5/8" REBAR W/ 2" ALUM CAP
35	1550433.0162	1138278.8103	193.959	CTL	5/8" REBAR W/ 2" ALUM CAP
36	1551092.5569	1139101.1275	167.052	CTL	5/8" REBAR W/ 2" ALUM CAP
37	1551671.3756	1140066.9680	145.488	CTL	5/8" REBAR W/ 2" ALUM CAP
38	1552173.1032	1140931.5325	144.515	CTL	5/8" REBAR W/ 2" ALUM CAP
39	1552708.7513	1141851.7141	126.037	CTL	5/8" REBAR W/ 2" ALUM CAP
40	1553027.8288	1142491.9170	113.415	CTL	5/8" REBAR W/ 2" ALUM CAP
41	1553775.6136	1143384.6142	100.630	CTL	5/8" REBAR W/ 2" ALUM CAP
42	1554475.1038	1144198.4012	100.180	CTL	5/8" REBAR W/ 2" ALUM CAP
43	1555107.9491	1145137.5308	99.870	CTL	5/8" REBAR W/ 2" ALUM CAP
44	1555715.2790	1146067.4579	100.345	CTL	5/8" REBAR W/ 2" ALUM CAP
45	1556300.3809	1146991.5898	99.358	CTL	5/8" REBAR W/ 2" ALUM CAP
46	1556965.6172	1147762.8361	102.649	CTL	5/8" REBAR W/ 2" ALUM CAP
47	1558343.1512	1148677.8031	106.894	CTL	5/8" REBAR W/ 2" ALUM CAP
100	1538040.8741	1126213.0063	170.496	GPS	AHTD GPS 700025
101	1539705.4915	1128066.7946	194.877	GPS	AHTD GPS 700025A
102	1547669.7575	1135777.9886	169.341	GPS	AHTD GPS 700026
103	1549554.6745	1137441.2147	198.555	GPS	AHTD GPS 700026A
104	1558505.0475	1148779.7157	111.729	GPS	AHTD GPS 700022
900	1526451.5470	1113618.3876	213.579	BM	AHTD DISK L325 2009
901	1529721.7886	1116675.7478	148.673	TBM	CHL SQ IN HW
902	1532104.6451	1118579.7320	133.452	BM	K 325 2009
903	1534274.3265	1120341.9564	154.794	TBM	CHL SQ IN HW
904	1536096.0577	1122267.7583	128.286	BM	AHTD DISK J 325 2009
905	1536833.5397	1124506.2256	99999.000	TBM	CHL SQ IN HW
906	1538637.7961	1126753.5938	165.084	BM	AHTD DISK H 325 2009
907	1539612.1880	1128447.4125	199.821	BM	AHTD DISK G 325 2009
908	1541207.4221	1128973.8444	154.119	TBM	CHL SQ IN HW
909	1542393.0727	1129958.1037	178.634	BM	AHTD DISK F 325 2009
910	1544005.8904	1131738.6300	190.393	TBM	CHL SQ BASE OF TOWER
911	1546313.2028	1133788.9026	189.689	BM	AHTD DISK E 325 2009
912	1547982.7798	1136068.3707	165.130	TBM	SQ CUT CENTER HDWL
913	1549361.0892	1137526.0053	206.482	BM	USGS X 198 1960
914	1551370.3033	1139550.8576	150.711	TBM	SQ CUT IN HDWL
915	1552852.9262	1142102.0092	128.389	BM	USGS Y 198 1960
916	1554236.4036	1143977.3099	99.721	BM	D 325 2009
917	1558487.1585	1148832.4860	117.932	BM	CAP IN PARAPHET WL
918	1558498.5644	1148702.2646	105.485	BM	CAP IN BASE WATERLINE
919	1558642.9125	1147736.2825	95.613	BM	CAP SET IN CONC. BASE TOWER
920	1544852.3949	1132846.0170	161.238	BM	CHL SQ IN HW
966	1547973.0821	1152794.0779	201.560	BM	CALION RM 1
967	1547973.0821	1152794.0779	203.036	BM	CALION RM 2
968	1548037.0596	1152789.1199	204.035	BM	CALION 1952
972	1552336.6202	1151383.3105	103.647	BM	A 201 1960
973	1554141.0902	1150038.1595	90.198	BM	Z 198 1960
975	1545643.6756	1152695.6522	157.211	BM	TT 6 T 1933
981	1511424.3560	1108666.5763	273.588	BM	EL DORADO 1934
982	1510538.5251	1108436.9168	283.835	BM	Z 121 1934
983	1511129.0790	1109093.0871	276.460	BM	Y 121 1934

HWY. 167 CONST.

POINT NO.	TYPE	STATION	NORTHING	EASTING
8034	PC	402+22.98	1545998.5395	1134283.7428
8036	PT	407+40.54	1546357.4352	1134655.9161
8037	PC	457+40.58	1550101.5624	1137969.8113
8039	PT	475+69.15	1551255.9476	1139377.9161
8040	PC	509+26.62	1552944.9531	1142279.6170
8042	PT	517+06.77	1553403.3099	1142909.2483
8043	PC	527+49.13	1554099.4937	1143685.0246
8045	PT	536+31.07	1554635.7998	1144384.0747
8046	POE	569+16.64	1556429.3569	1147136.9166

\*Note - Rebar and Cap - Standard - 5/8" Rebar with 2" Aluminum Cap stamped  
 \*(standard markings common to all caps), or as indicated  
 (other markings indicated in the point description of the individual point).  
 USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT  
 A PROJECT CAF OF 0.9999933467 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 s070280gi.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

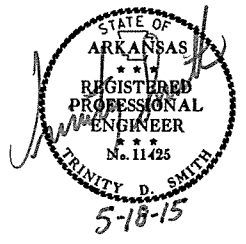
BASIS OF BEARING:  
 ARKANSAS STATE PLANE GRID BEARINGS - 0302-SOUTH ZONE  
 DETERMINED FROM GPS CONTROL POINTS:  
 700022  
 700025-700025A  
 700026-700026A  
 CONVERGENCE ANGLE: 0-17-59.06 LEFT AT LT: 33-20-31.07 LG: 092-32-07.95  
 GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

MIDPOINT:  
 LT: 33-19-28.00  
 LG: 092-33-40.05

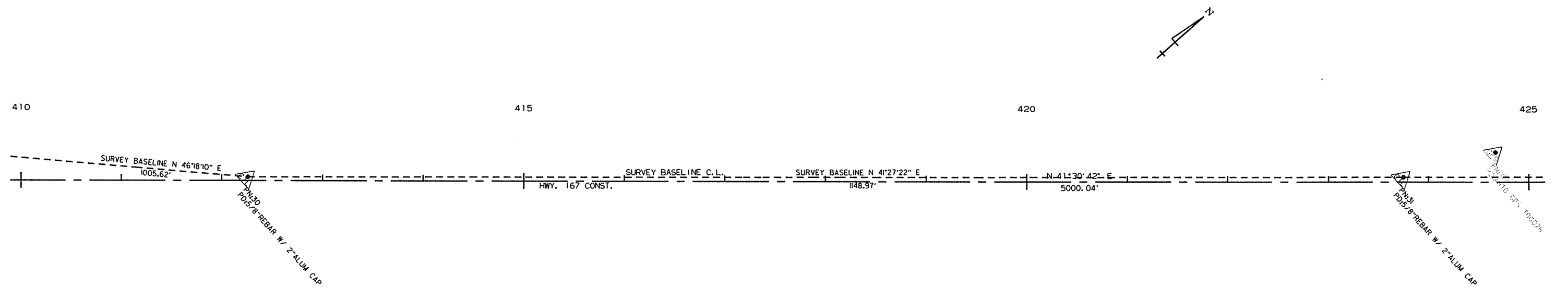
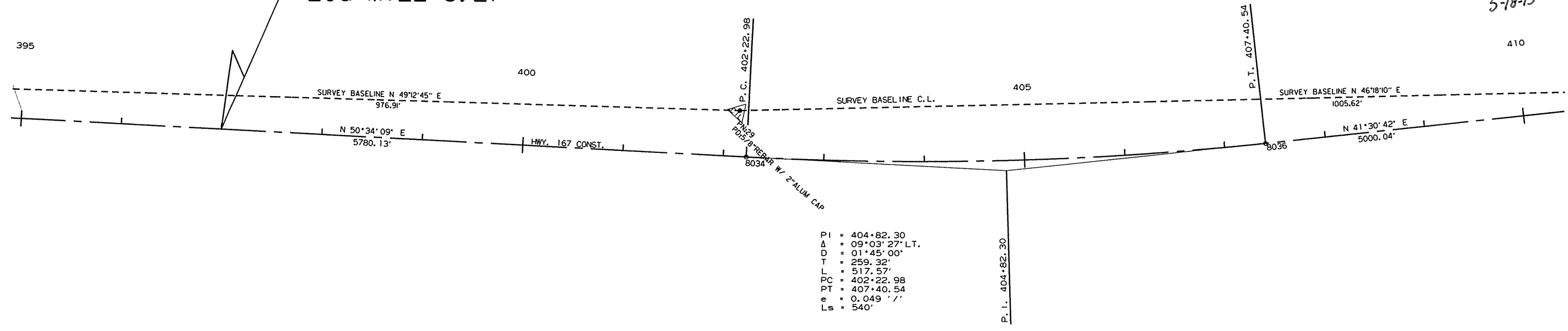
3/26/2015 R070281.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		58	185
				JOB NO. 070281				

② SURVEY CONTROL DETAILS



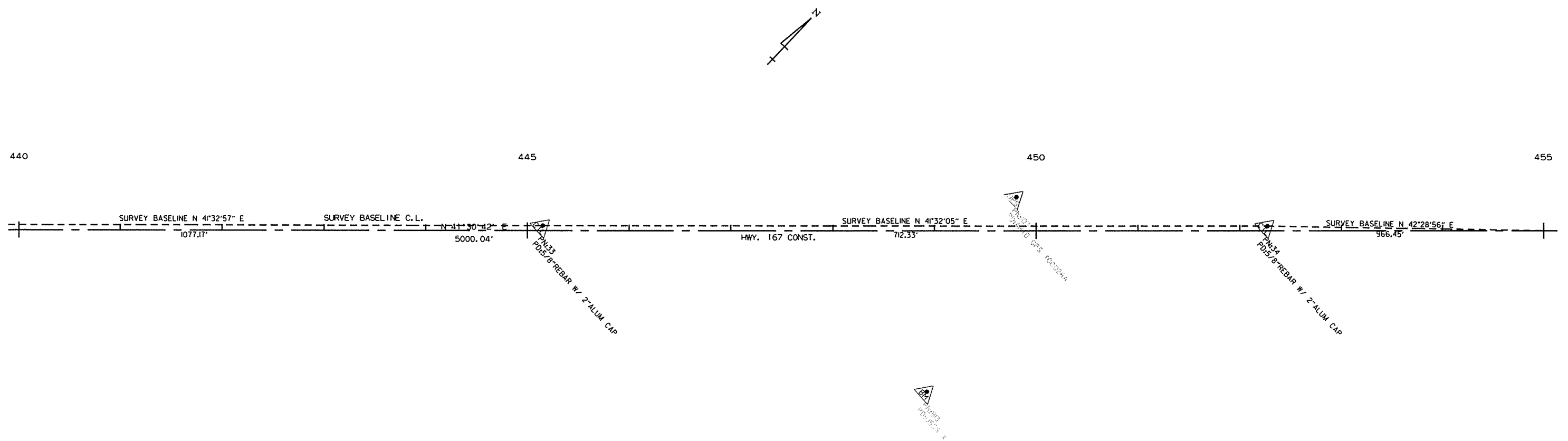
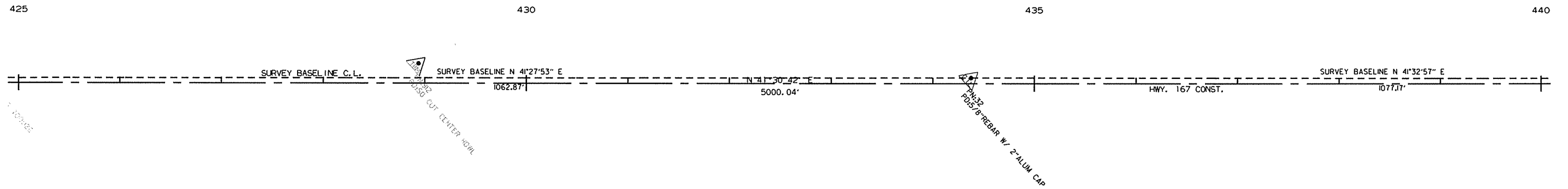
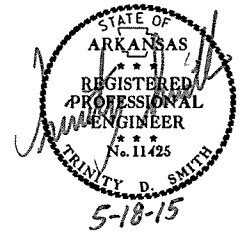
STA. 397+00.00  
 END JOB 070280  
 BEGIN JOB 070281  
 LOG MILE 5.27



3/26/2015  
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		59	185
				JOB NO.	070281			

2 SURVEY CONTROL DETAILS



SURVEY CONTROL DETAILS

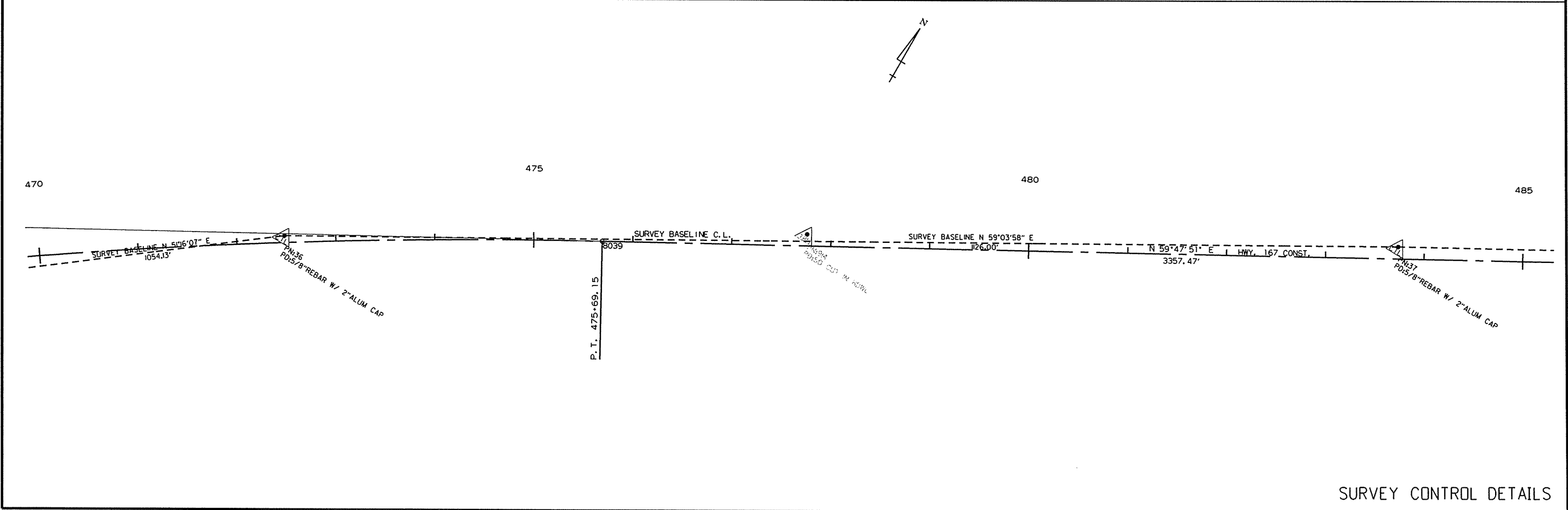
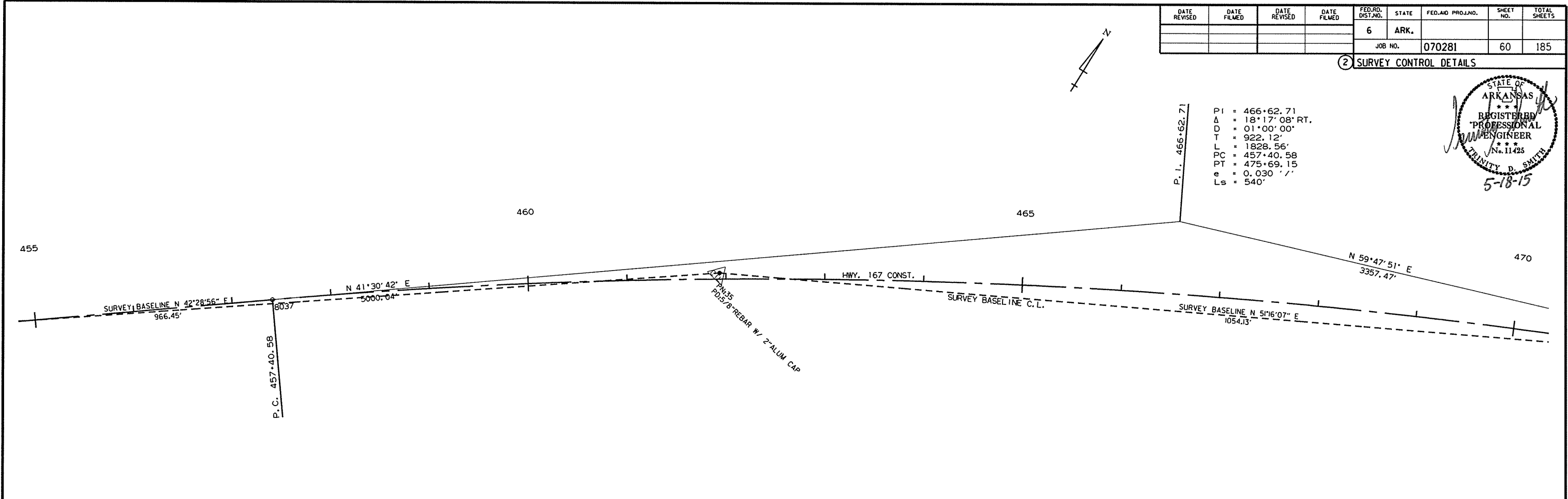
3/26/2015 R070281.DGN

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. 070281							60	185

2 SURVEY CONTROL DETAILS



P.I. = 466+62.71  
 Δ = 18°17'08" RT.  
 D = 01°00'00"  
 T = 922.12'  
 L = 1828.56'  
 PC = 457+40.58  
 PT = 475+69.15  
 e = 0.030' / '  
 Ls = 540'

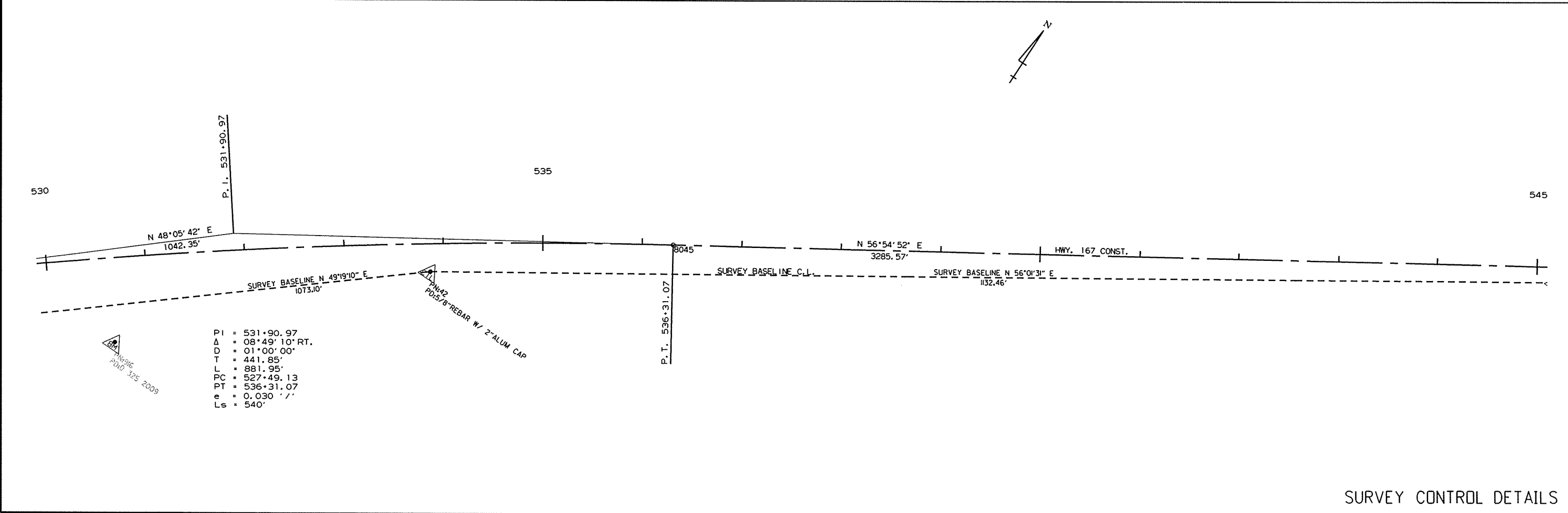
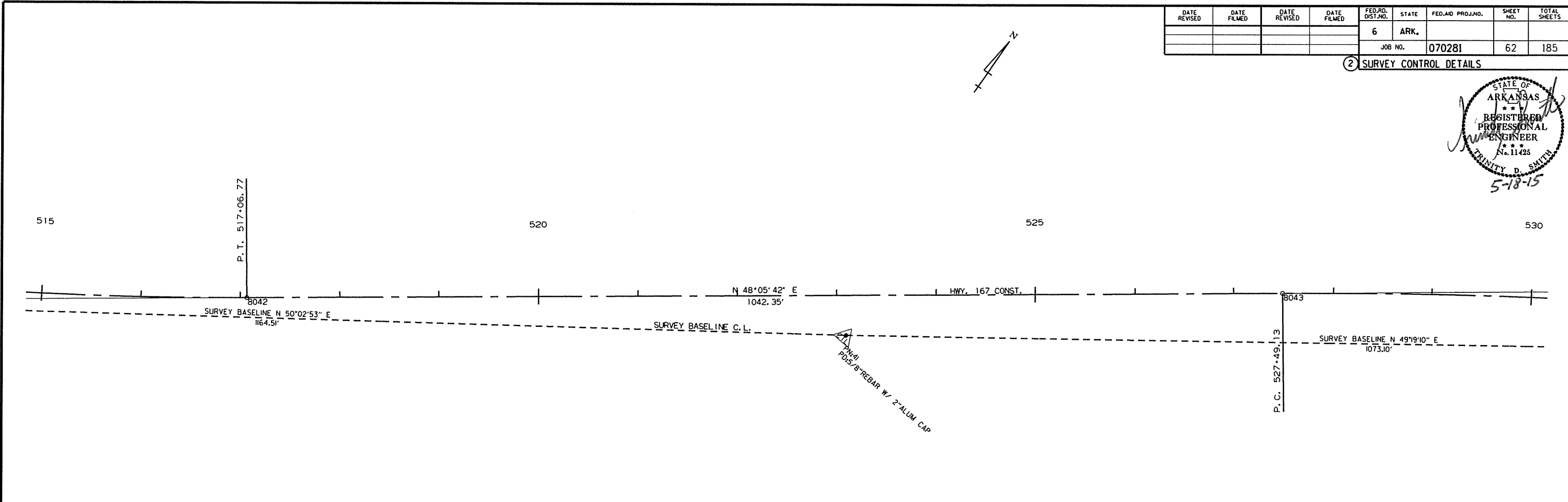


3/26/2015  
 R070281.DGN



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.	070281		62	185

② SURVEY CONTROL DETAILS



PI = 531+90.97  
 Δ = 08°49'10" RT.  
 D = 01°00'00"  
 T = 441.85'  
 L = 881.95'  
 PC = 527+49.13  
 PT = 536+31.07  
 e = 0.030' /'  
 Ls = 540'



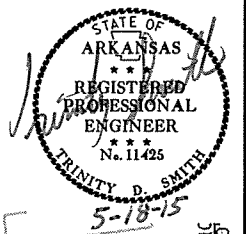
3/26/2015

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.	070281		64	185

2 PLAN AND PROFILE SHEETS



STA. 401+50 - INSTALL 18" X 86" PIPE CULVERT RT. SIDE DRAIN CONSTRUCT APPROACH = 80 CU. YDS. UNCLASSIFIED EXCAVATION = 10 CU. YDS.

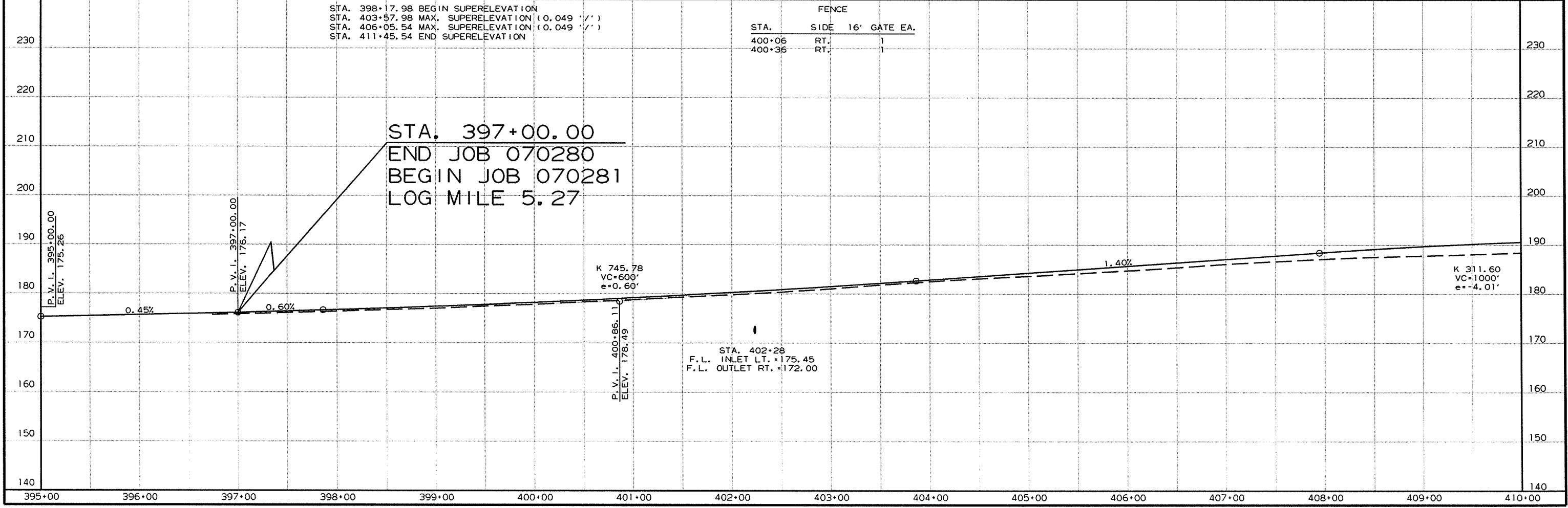
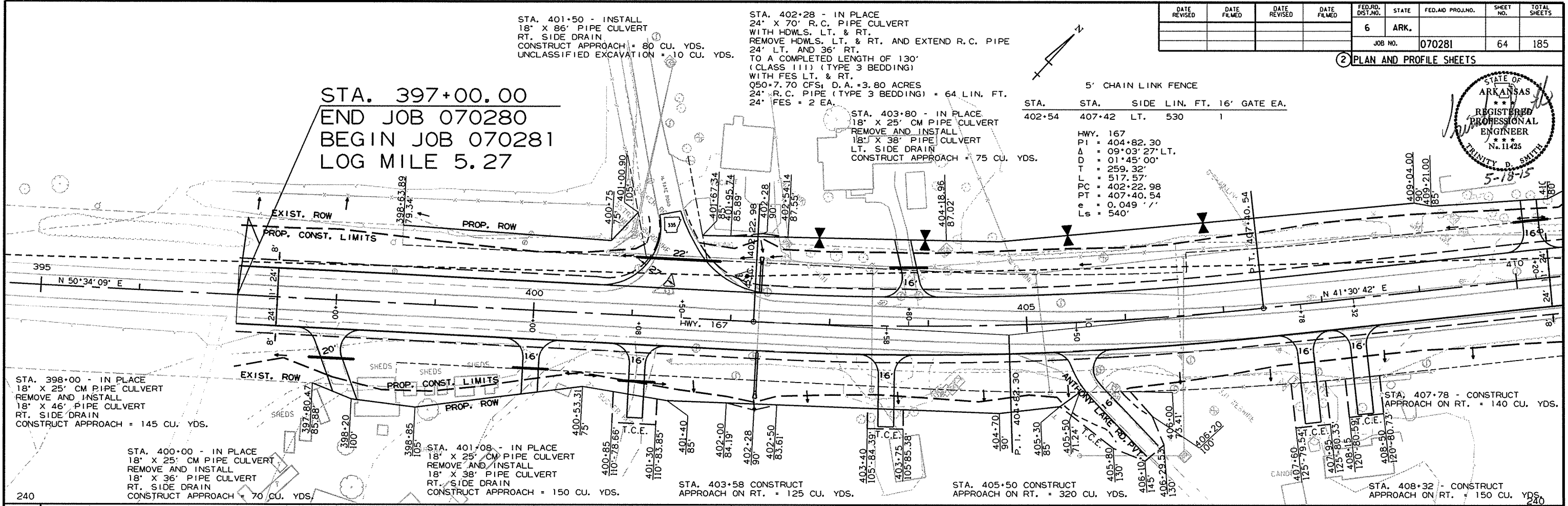
STA. 402+28 - IN PLACE 24" X 70" R.C. PIPE CULVERT WITH HDWLS. LT. & RT. REMOVE HDWLS. LT. & RT. AND EXTEND R.C. PIPE 24" LT. AND 36" RT. TO A COMPLETED LENGTH OF 130' (CLASS III) (TYPE 3 BEDDING) WITH FES LT. & RT. Q50=7.70 CFS; D.A.=3.80 ACRES 24" R.C. PIPE (TYPE 3 BEDDING) = 64 LIN. FT. 24" FES = 2 EA.

5' CHAIN LINK FENCE

STA.	STA.	SIDE	LIN. FT.	16' GATE EA.
402+54	407+42	LT.	530	1

HWY. 167  
 P.I. = 404+82.30  
 Δ = 09°03'27" LT.  
 D = 01°45'00"  
 T = 259.32'  
 L = 517.57'  
 PC = 402+22.98  
 PT = 407+40.54  
 e = 0.049 ''  
 Ls = 540'

STA. 397+00.00  
 END JOB 070280  
 BEGIN JOB 070281  
 LOG MILE 5.27



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STA. 410+69 - IN PLACE  
 24" X 62' R.C. PIPE CULVERT  
 WITH HDWLS. LT. & RT.  
 REMOVE HDWLS. LT. & RT. AND EXTEND R.C. PIPE  
 48' LT. AND 11' RT.  
 TO A COMPLETED LENGTH OF 121'  
 (CLASS III) (TYPE 3 BEDDING)  
 WITH FES LT. & RT.  
 Q50=2.00 CFS; D.A.=1.00 ACRES  
 24" R.C. PIPE (TYPE 3 BEDDING) = 63 LIN. FT.  
 24" FES = 2 EA.

STA. 409+73 - IN PLACE  
 18" X 25' CM PIPE CULVERT  
 REMOVE AND INSTALL @ 410+20  
 18" X 36' PIPE CULVERT  
 LT. SIDE DRAIN  
 CONSTRUCT APPROACH = 70 CU. YDS.

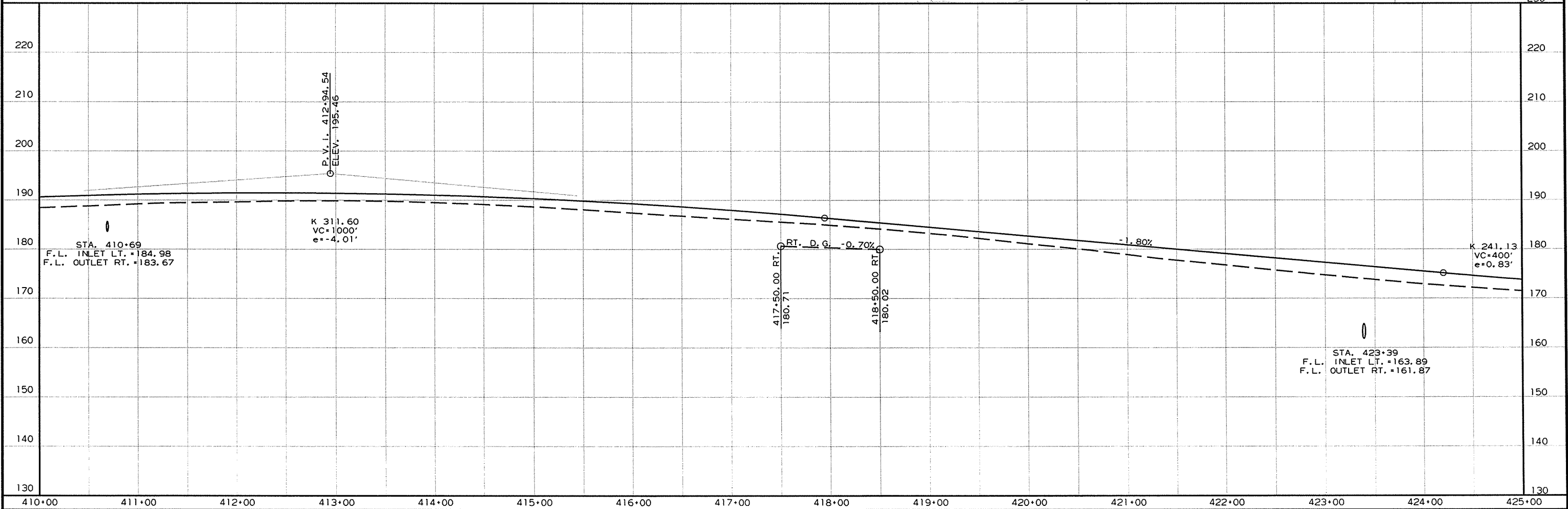
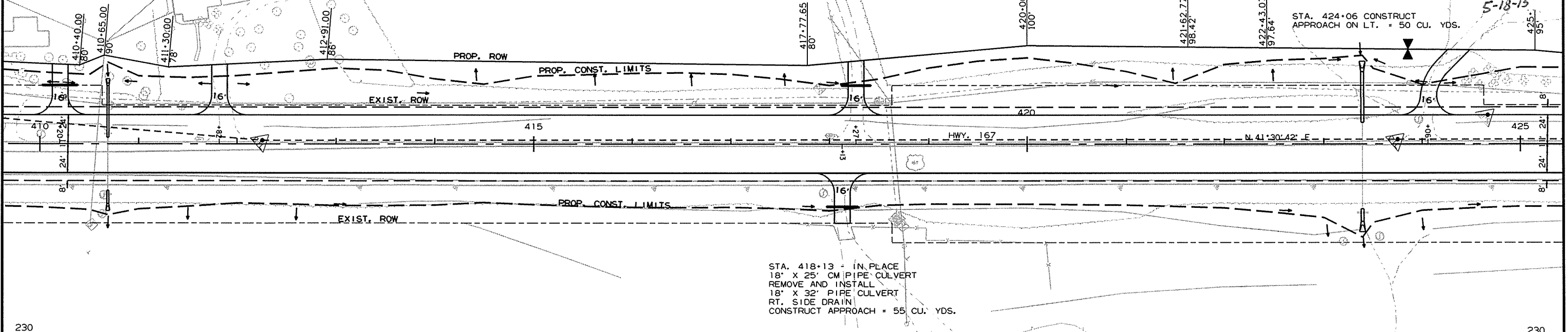
STA. 411+82 - CONSTRUCT  
 APPROACH = 60 CU. YDS.

STA. 418+27 - IN PLACE  
 18" X 24' CM PIPE CULVERT  
 REMOVE AND INSTALL  
 18" X 30' PIPE CULVERT  
 LT. SIDE DRAIN  
 CONSTRUCT APPROACH = 50 CU. YDS.

STA. 423+39 - IN PLACE  
 36" X 97' R.C. PIPE CULVERT  
 WITH HDWLS. LT. & RT.  
 REMOVE HDWLS. LT. & RT. AND EXTEND R.C. PIPE  
 48' LT. AND 9' RT.  
 TO A COMPLETED LENGTH OF 154'  
 (CLASS III) (TYPE 3 BEDDING)  
 WITH FES LT. & RT.  
 Q50 = 29.40 CFS; D.A. = 16.00 ACRES  
 36" R.C. PIPE (TYPE 3 BEDDING) = 61 LIN. FT.  
 36" FES = 2 EA.

② PLAN AND PROFILE SHEETS

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				6	ARK.		65	185
JOB NO. 070281								

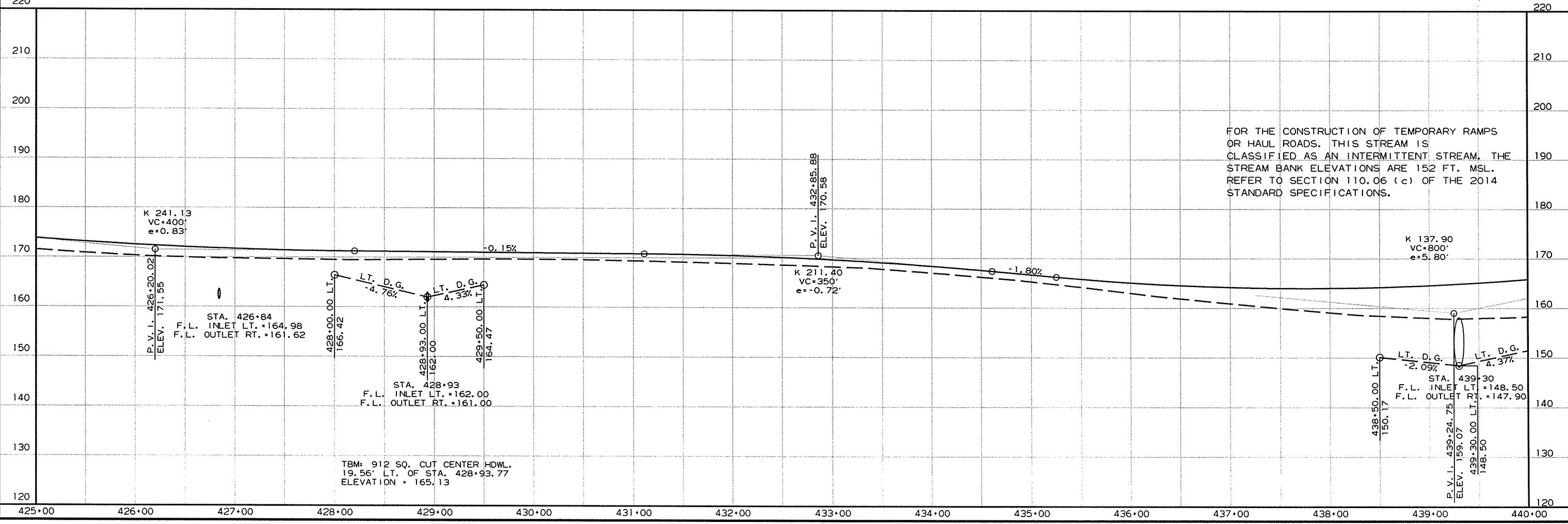
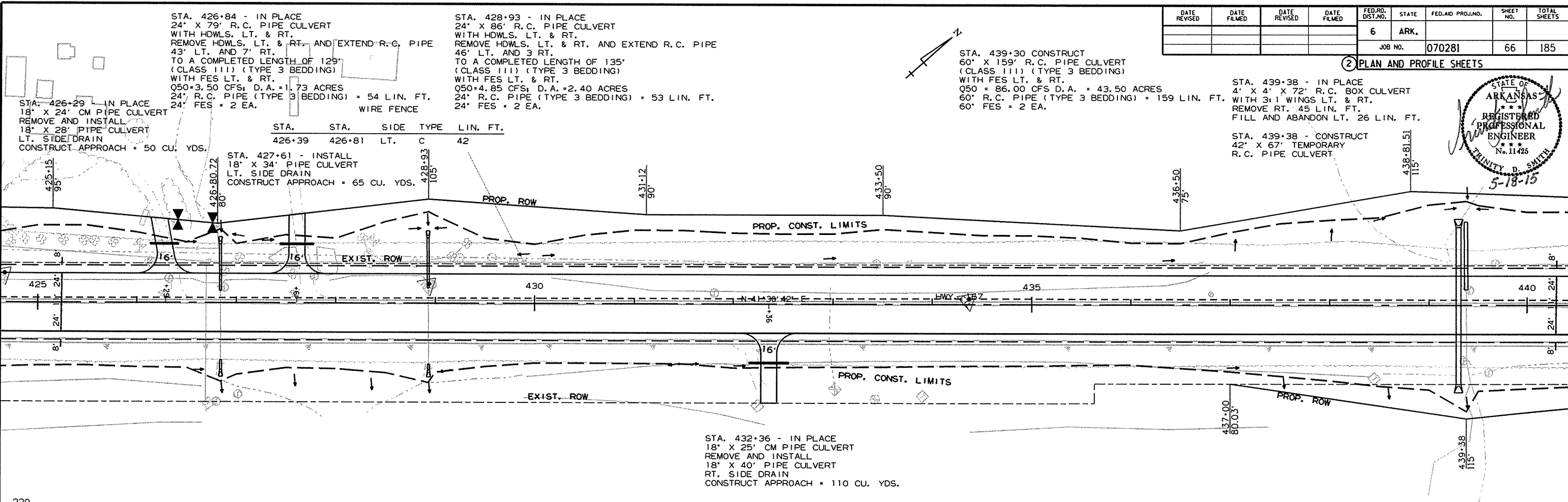
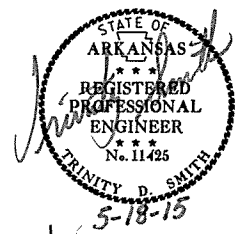


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				6	ARK.			
							JOB NO. 070281	66

2 PLAN AND PROFILE SHEETS

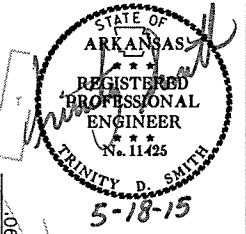


FOR THE CONSTRUCTION OF TEMPORARY RAMPS OR HAUL ROADS, THIS STREAM IS CLASSIFIED AS AN INTERMITTENT STREAM. THE STREAM BANK ELEVATIONS ARE 152 FT. MSL. REFER TO SECTION 110.06 (c) OF THE 2014 STANDARD SPECIFICATIONS.

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				6	ARK.			
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2 PLAN AND PROFILE SHEETS



STA. 446+05 - IN PLACE  
18" X 25' CM PIPE CULVERT  
REMOVE AND INSTALL  
18" X 48' PIPE CULVERT  
LT. SIDE DRAIN  
CONSTRUCT APPROACH = 435 CU. YDS.

STA. 448+53 - IN PLACE  
18" X 25' CM PIPE CULVERT  
REMOVE AND INSTALL  
18" X 30' PIPE CULVERT  
LT. SIDE DRAIN  
APPROACH ON LT. = 45 CU. YDS.

STA. 450+18 - IN PLACE  
18" X 25' CM PIPE CULVERT  
REMOVE AND CONSTRUCT  
APPROACH ON LT.  
UNCLASSIFIED EXCAVATION = 140 CU. YDS.

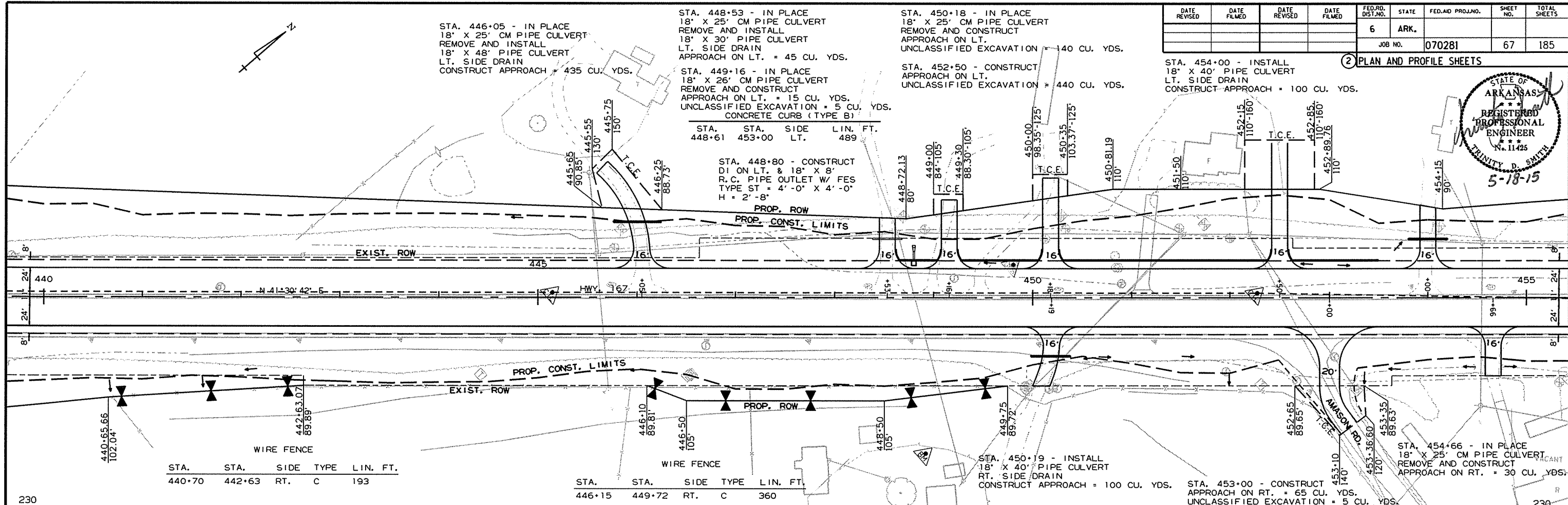
STA. 454+00 - INSTALL  
18" X 40' PIPE CULVERT  
LT. SIDE DRAIN  
CONSTRUCT APPROACH = 100 CU. YDS.

STA. 449+16 - IN PLACE  
18" X 26' CM PIPE CULVERT  
REMOVE AND CONSTRUCT  
APPROACH ON LT. = 15 CU. YDS.  
UNCLASSIFIED EXCAVATION = 5 CU. YDS.  
CONCRETE CURB (TYPE B)

STA. 452+50 - CONSTRUCT  
APPROACH ON LT.  
UNCLASSIFIED EXCAVATION = 440 CU. YDS.

STA.	STA.	SIDE	LIN. FT.
448+61	453+00	LT.	489

STA. 448+80 - CONSTRUCT  
DI ON LT. & 18" X 8'  
R.C. PIPE OUTLET W/ FES  
TYPE ST = 4'-0" X 4'-0"  
H = 2'-8"

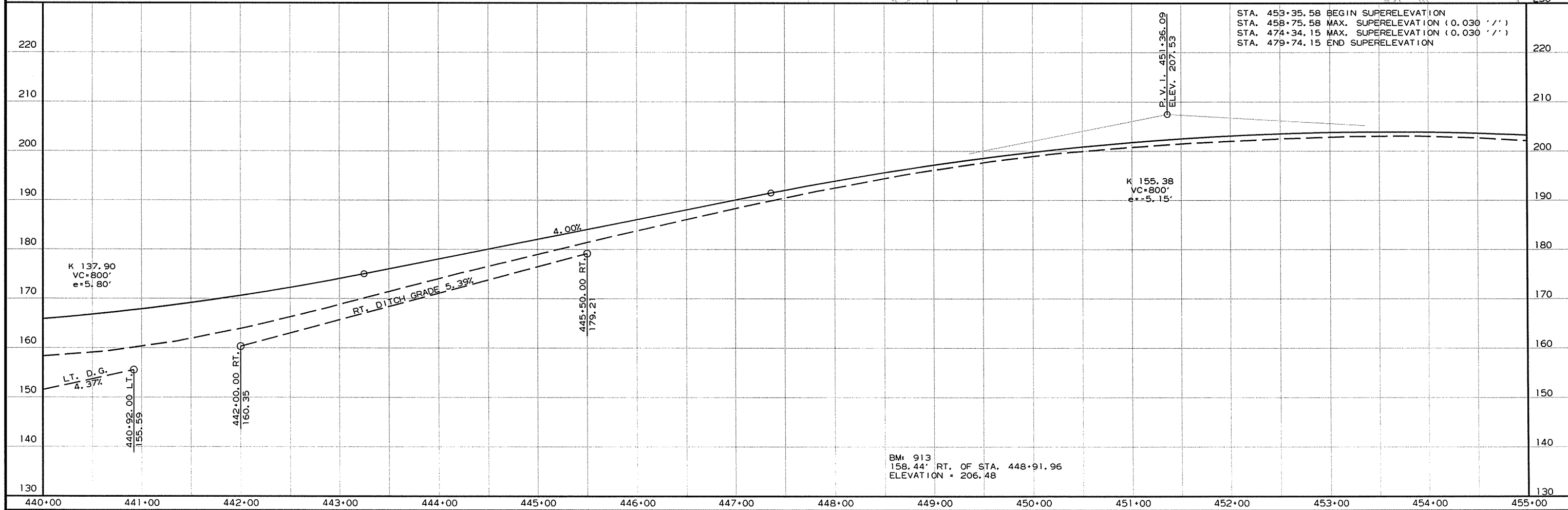


STA.	STA.	SIDE	TYPE	LIN. FT.
440+70	442+63	RT.	C	193

STA.	STA.	SIDE	TYPE	LIN. FT.
446+15	449+72	RT.	C	360

STA. 453+00 - CONSTRUCT  
APPROACH ON RT. = 65 CU. YDS.  
UNCLASSIFIED EXCAVATION = 5 CU. YDS.

STA. 454+66 - IN PLACE  
18" X 25' CM PIPE CULVERT  
REMOVE AND CONSTRUCT  
APPROACH ON RT. = 30 CU. YDS.



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STA. 456+45 - IN PLACE  
 18" X 25' CM PIPE CULVERT  
 REMOVE AND INSTALL  
 18" X 44' PIPE CULVERT  
 LT. SIDE DRAIN  
 CONSTRUCT APPROACH = 125 CU. YDS.  
 UNCLASSIFIED EXCAVATION = 40 CU. YDS.

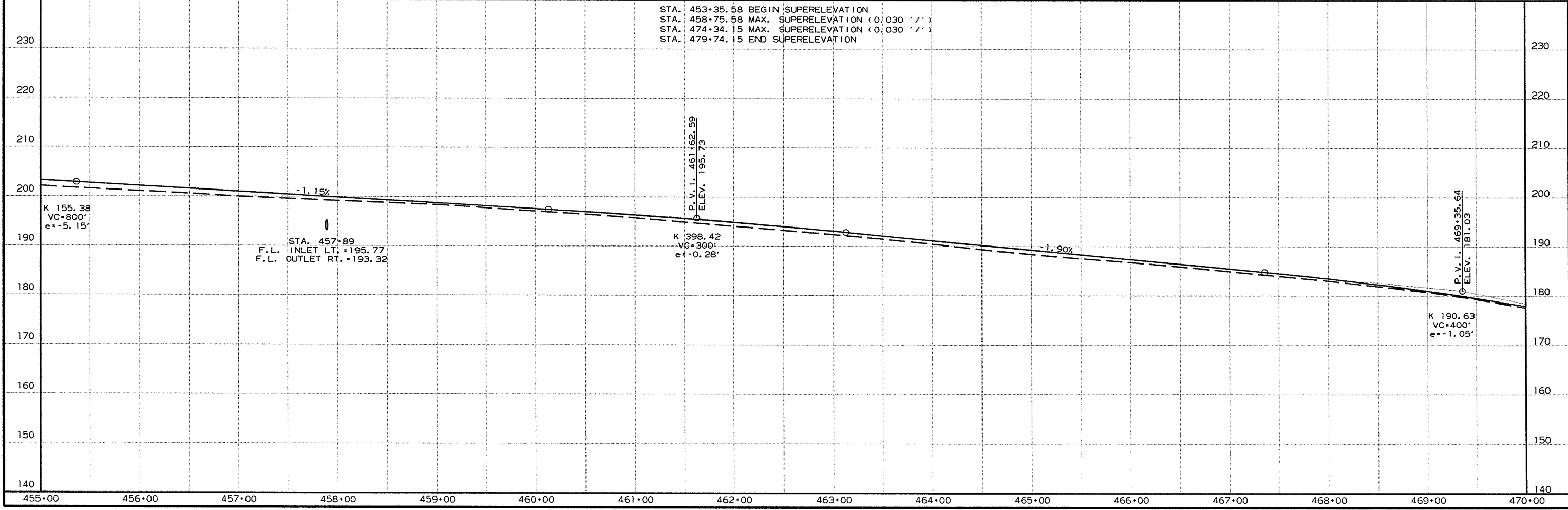
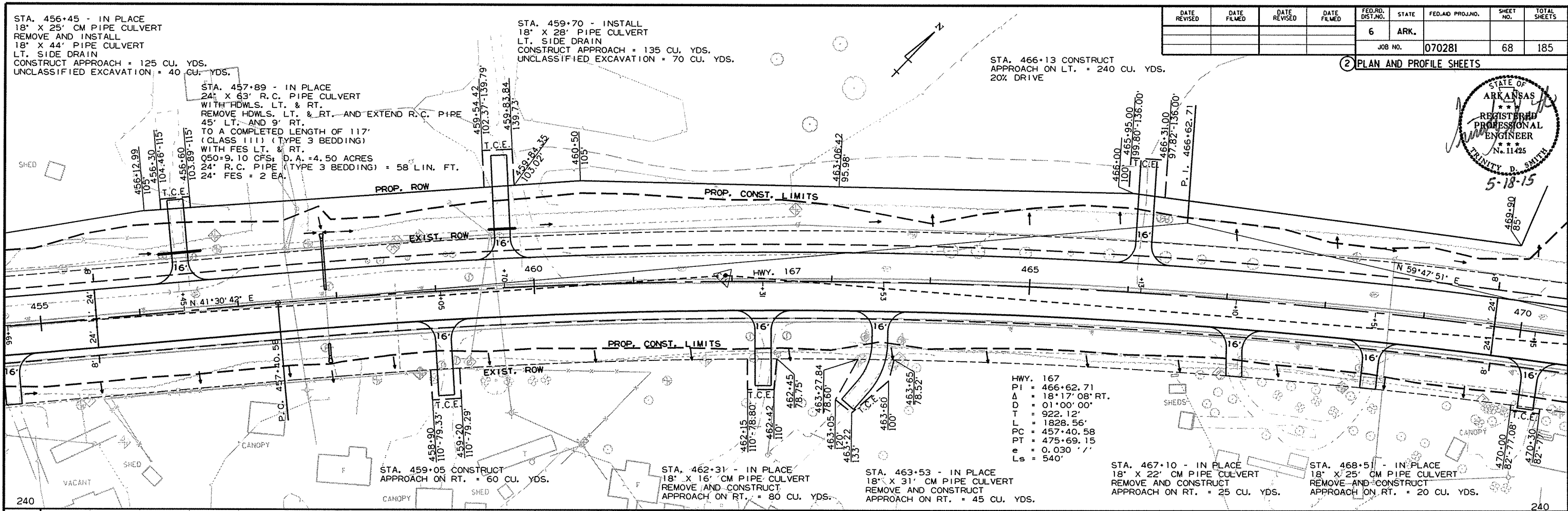
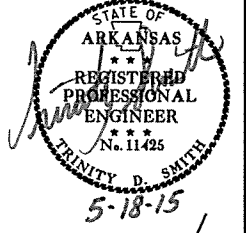
STA. 457+89 - IN PLACE  
 24" X 63' R.C. PIPE CULVERT  
 WITH HDWLS. LT. & RT.  
 REMOVE HDWLS. LT. & RT. AND EXTEND R.C. PIPE  
 45' LT. AND 9' RT.  
 TO A COMPLETED LENGTH OF 117'  
 (CLASS III) (TYPE 3 BEDDING)  
 WITH FES LT. & RT.  
 Q50=9.10 CFS, D.A.=4.50 ACRES  
 24" R.C. PIPE (TYPE 3 BEDDING) = 58 LIN. FT.  
 24" FES = 2 EA.

STA. 459+70 - INSTALL  
 18" X 28' PIPE CULVERT  
 LT. SIDE DRAIN  
 CONSTRUCT APPROACH = 135 CU. YDS.  
 UNCLASSIFIED EXCAVATION = 70 CU. YDS.

STA. 466+13 CONSTRUCT  
 APPROACH ON LT. = 240 CU. YDS.  
 20% DRIVE

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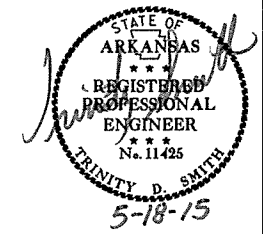
2 PLAN AND PROFILE SHEETS



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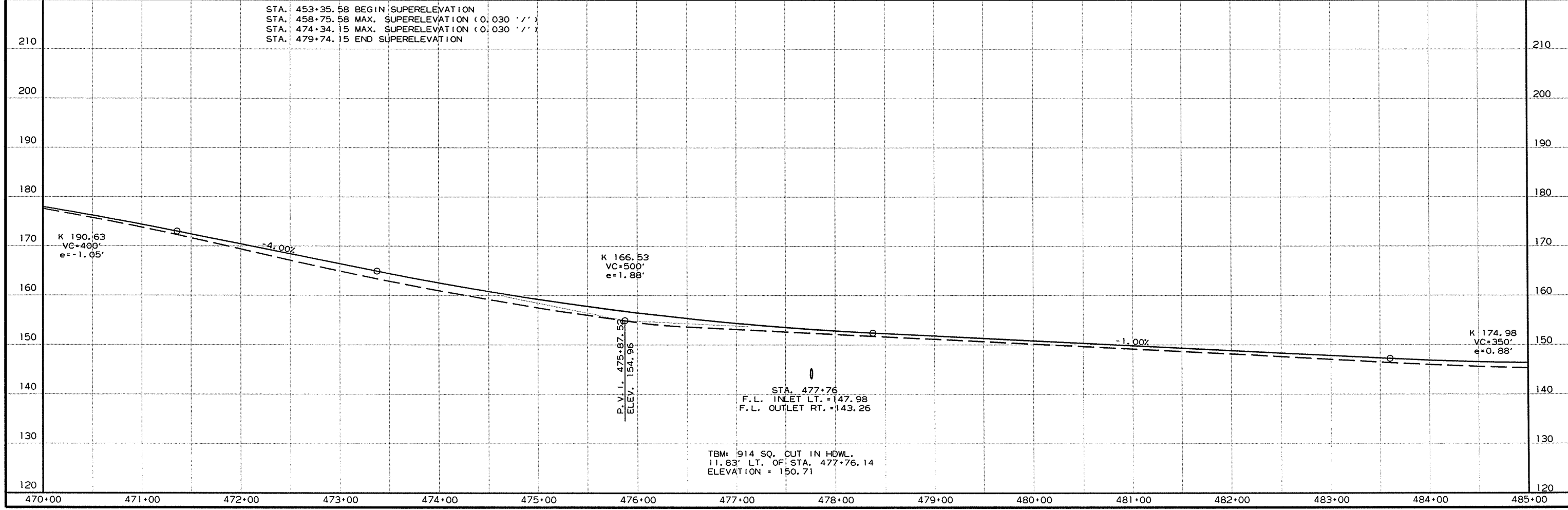
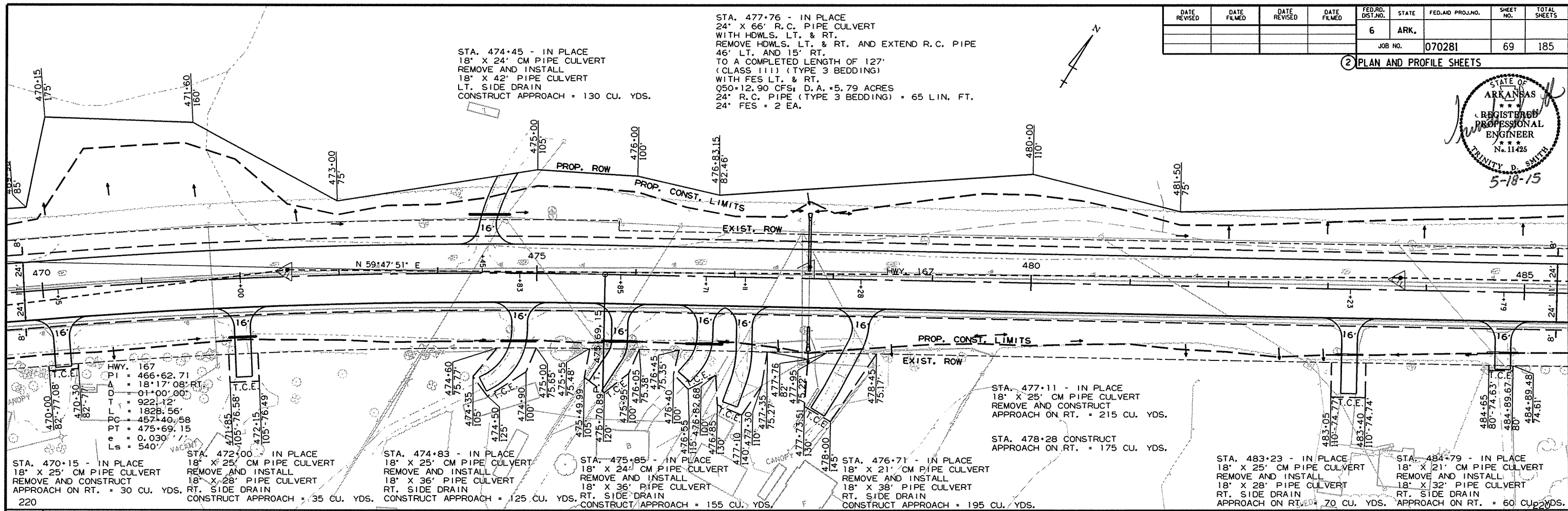
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 070281							69	185

2 PLAN AND PROFILE SHEETS



STA. 477+76 - IN PLACE  
 24" X 66' R.C. PIPE CULVERT  
 WITH HDWLS. LT. & RT.  
 REMOVE HDWLS. LT. & RT. AND EXTEND R.C. PIPE  
 46' LT. AND 15' RT.  
 TO A COMPLETED LENGTH OF 127'  
 (CLASS III) (TYPE 3 BEDDING)  
 WITH FES LT. & RT.  
 Q50=12.90 CFS; D.A.=5.79 ACRES  
 24" R.C. PIPE (TYPE 3 BEDDING) = 65 LIN. FT.  
 24" FES = 2 EA.

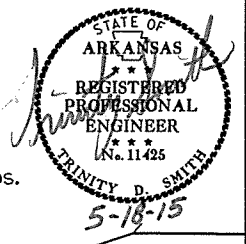
STA. 474+45 - IN PLACE  
 18" X 24' CM PIPE CULVERT  
 REMOVE AND INSTALL  
 18" X 42' PIPE CULVERT  
 LT. SIDE DRAIN  
 CONSTRUCT APPROACH = 130 CU. YDS.



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				6	ARK.			
							JOB NO. 070281	70

2 PLAN AND PROFILE SHEETS

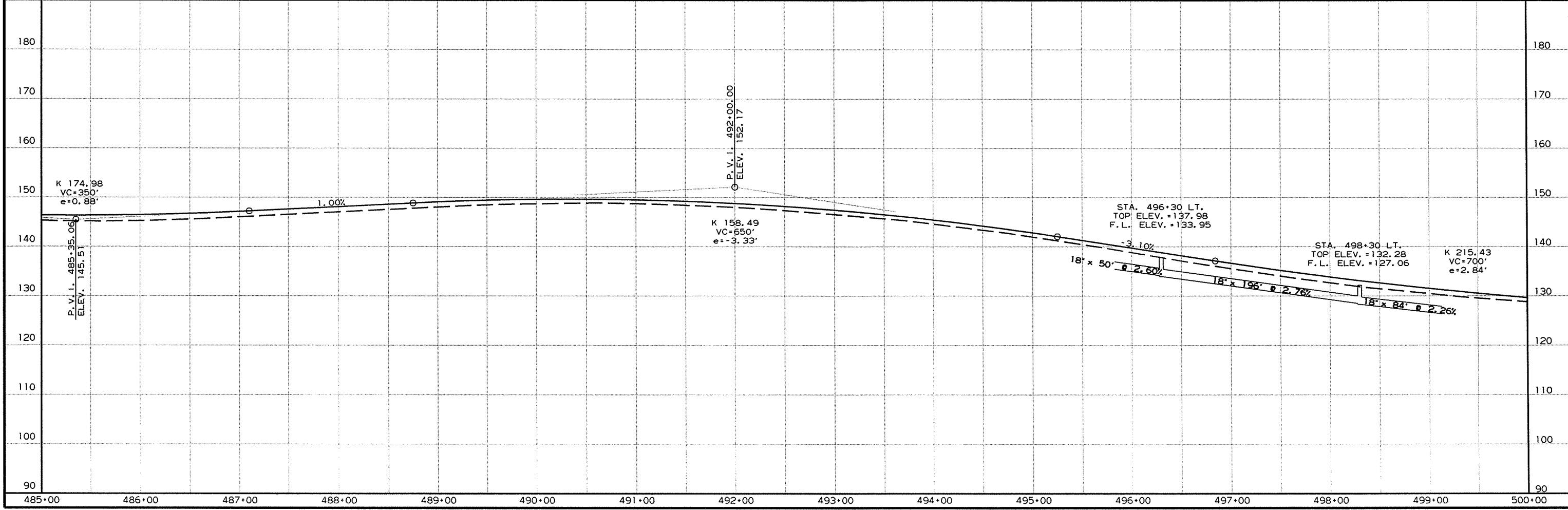
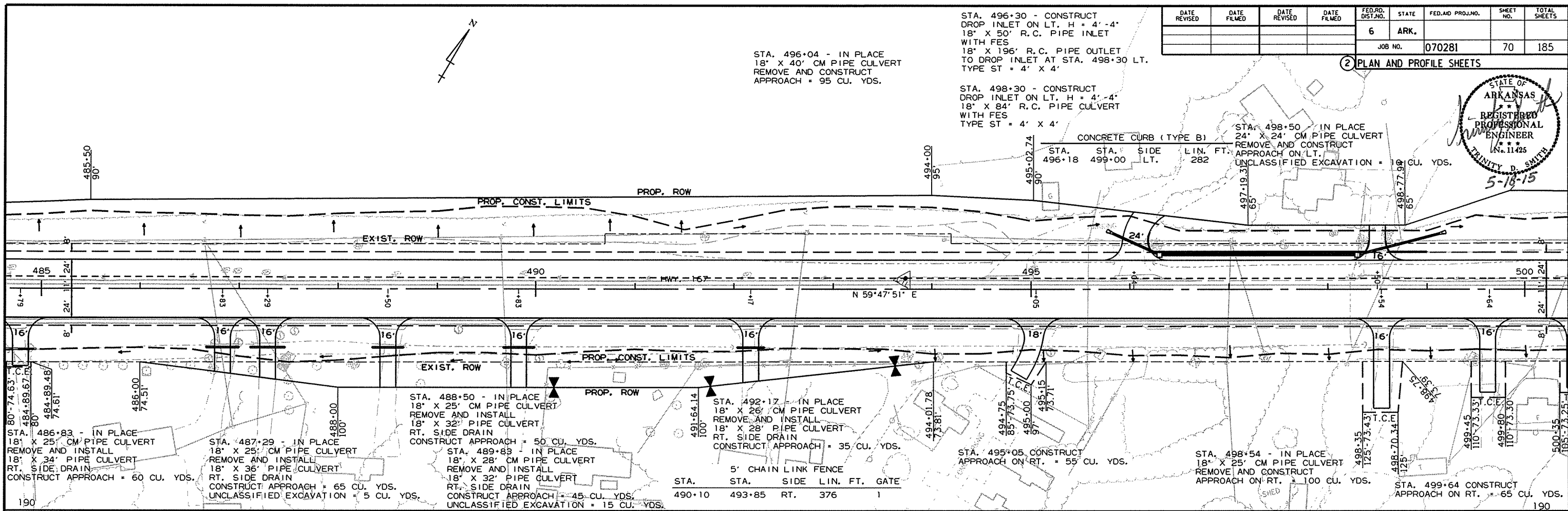


STA. 496+04 - IN PLACE  
18' X 40' CM PIPE CULVERT  
REMOVE AND CONSTRUCT  
APPROACH = 95 CU. YDS.

STA. 496+30 - CONSTRUCT  
DROP INLET ON LT. H = 4' - 4'  
18' X 50' R.C. PIPE INLET  
WITH FES  
18' X 196' R.C. PIPE OUTLET  
TO DROP INLET AT STA. 498+30 LT.  
TYPE ST = 4' X 4'

STA. 498+30 - CONSTRUCT  
DROP INLET ON LT. H = 4' - 4'  
18' X 84' R.C. PIPE CULVERT  
WITH FES  
TYPE ST = 4' X 4'

STA. 498+50 - IN PLACE  
24' X 24' CM PIPE CULVERT  
REMOVE AND CONSTRUCT  
APPROACH ON LT.  
UNCLASSIFIED EXCAVATION = 108 CU. YDS.



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STA. 503+07 - IN PLACE  
 3' X 2' X 63' R.C. BOX CULVERT  
 WITH 3:1 WINGS LT. & RT.  
 RETAIN AND EXTEND 44' LT. AND 17' RT.  
 TO A COMPLETED LENGTH OF 124'  
 Q50=11.20 CFS; D.A. =5.55 ACRES

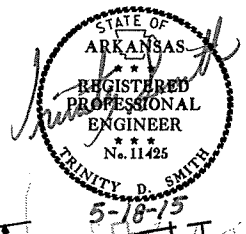
HWY. 167  
 PI = 513+18.06  
 Δ = 11°42'08" LT.  
 D = 01°30'00"  
 T = 391.44'  
 L = 780.15'  
 PC = 509+26.62  
 PT = 517+06.77  
 e = 0.043 '''  
 Ls = 540'

STA. 514+30 - IN PLACE  
 24' X 66' R.C. PIPE CULVERT  
 WITH HDWLS. LT. & RT.  
 REMOVE HDWLS. LT. & RT. AND EXTEND R.C. PIPE  
 48' LT. AND 2' RT.  
 TO A COMPLETED LENGTH OF 116'  
 (CLASS III) (TYPE 3 BEDDING)  
 WITH FES LT. & RT.  
 Q50=9.10 CFS; D.A. =4.50 ACRES  
 24' R.C. PIPE (TYPE 3 BEDDING) = 54 LIN. FT.  
 24' FES = 2 EA.

STA. 511+00 - IN PLACE  
 18' X 24' CM PIPE CULVERT  
 REMOVE AND INSTALL  
 18' X 36' PIPE CULVERT  
 LT. SIDE DRAIN  
 CONSTRUCT APPROACH = 65 CU. YDS.  
 UNCLASSIFIED EXCAVATION = 5 CU. YDS.

STA. 512+51 - IN PLACE  
 18' X 24' CM PIPE CULVERT  
 REMOVE AND INSTALL  
 18' X 32' PIPE CULVERT  
 LT. SIDE DRAIN  
 CONSTRUCT APPROACH = 50 CU. YDS.

2 PLAN AND PROFILE SHEETS



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		71	185

STA. 511+71 - IN PLACE  
 18' X 26' CM PIPE CULVERT  
 REMOVE AND INSTALL  
 18' X 36' PIPE CULVERT  
 RT. SIDE DRAIN  
 CONSTRUCT APPROACH = 130 CU. YDS.

STA. 512+45 - IN PLACE  
 18' X 24' CM PIPE CULVERT  
 REMOVE AND INSTALL  
 18' X 28' PIPE CULVERT  
 RT. SIDE DRAIN  
 CONSTRUCT APPROACH = 55 CU. YDS.

STA. 514+55 CONSTRUCT  
 APPROACH ON RT. = 70 CU. YDS.

STA. 508+32 - IN PLACE  
 18' X 23' CM PIPE CULVERT  
 REMOVE AND INSTALL  
 18' X 36' PIPE CULVERT  
 RT. SIDE DRAIN  
 CONSTRUCT APPROACH = 75 CU. YDS.

STA. 508+98 - IN PLACE  
 18' X 24' CM PIPE CULVERT  
 REMOVE AND INSTALL  
 18' X 38' PIPE CULVERT  
 RT. SIDE DRAIN  
 CONSTRUCT APPROACH = 90 CU. YDS.

STA. 510+94 - IN PLACE  
 18' X 26' CM PIPE CULVERT  
 REMOVE AND INSTALL  
 18' X 28' PIPE CULVERT  
 RT. SIDE DRAIN  
 CONSTRUCT APPROACH = 80 CU. YDS.

STA. 500+49 CONSTRUCT  
 APPROACH ON RT. = 50 CU. YDS.  
 STA. 501+68 INSTALL  
 18' X 28' PIPE CULVERT  
 RT. SIDE DRAIN  
 CONSTRUCT APPROACH = 55 CU. YDS.

STA. 502+55 - INSTALL  
 22' X 14' X 30' ARCH PIPE CULVERT  
 RT. SIDE DRAIN  
 CONSTRUCT APPROACH = 30 CU. YDS.

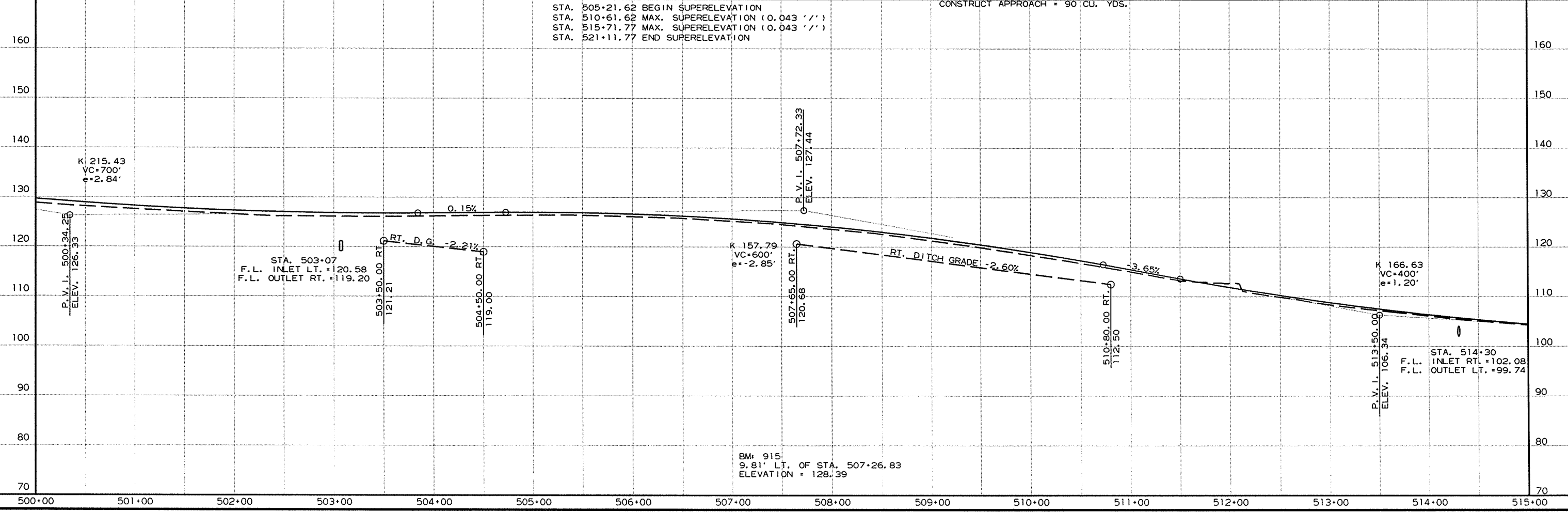
STA. 504+03 - IN PLACE  
 18' X 24' CM PIPE CULVERT  
 REMOVE AND INSTALL  
 18' X 34' PIPE CULVERT  
 RT. SIDE DRAIN  
 CONSTRUCT APPROACH = 80 CU. YDS.

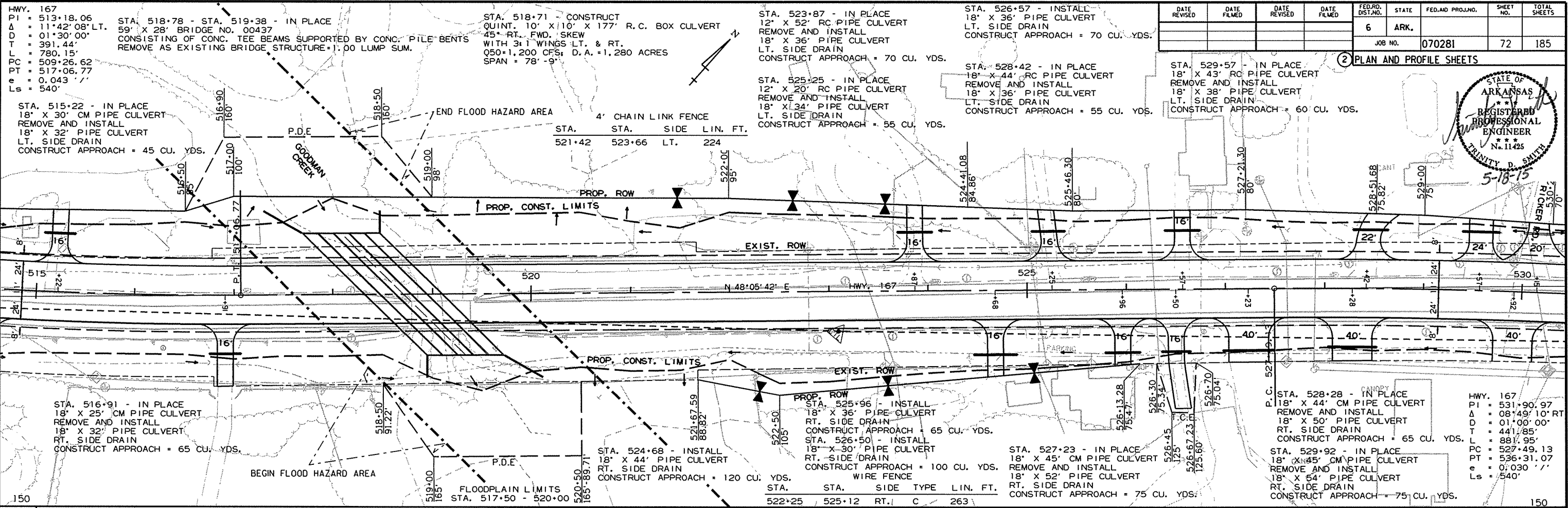
STA. 505+18 CONSTRUCT  
 APPROACH ON RT. = 60 CU. YDS.

STA. 506+59 - IN PLACE  
 18' X 24' CM PIPE CULVERT  
 REMOVE AND INSTALL  
 18' X 28' PIPE CULVERT  
 RT. SIDE DRAIN  
 CONSTRUCT APPROACH = 75 CU. YDS.

STA. 507+48 - IN PLACE  
 18' X 25' CM PIPE CULVERT  
 REMOVE AND CONSTRUCT  
 APPROACH ON RT. = 60 CU. YDS.

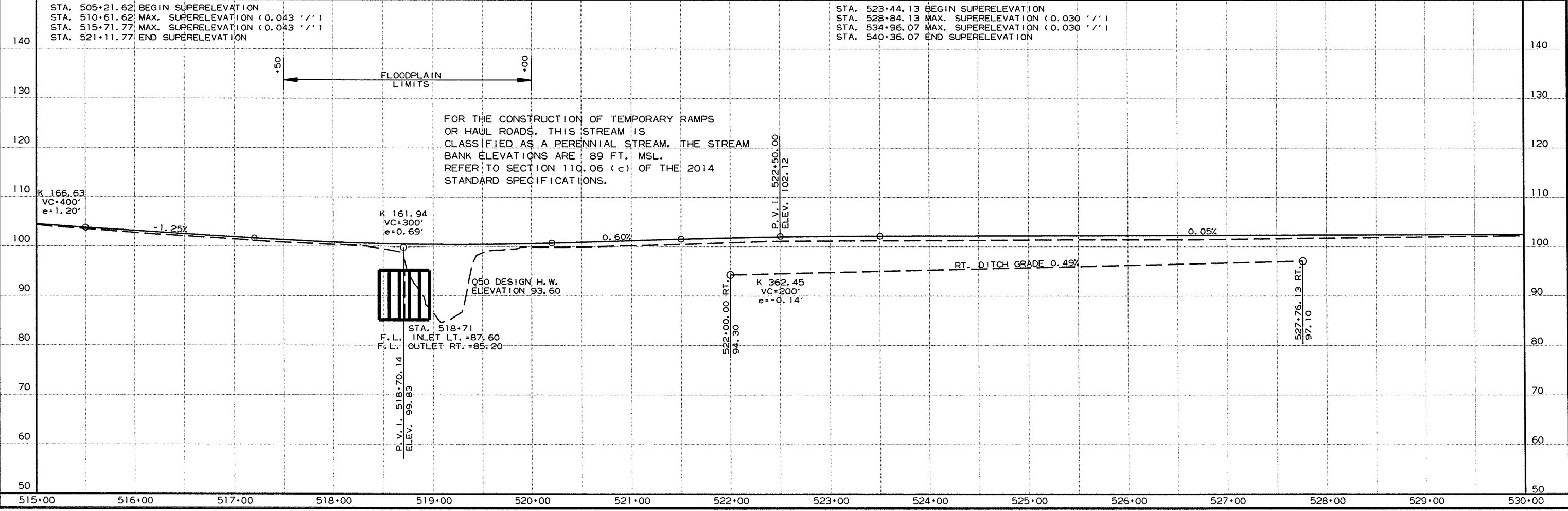
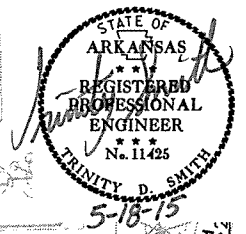
STA. 505+21.62 BEGIN SUPERELEVATION  
 STA. 510+61.62 MAX. SUPERELEVATION (0.043 '''')  
 STA. 515+71.77 MAX. SUPERELEVATION (0.043 '''')  
 STA. 521+11.77 END SUPERELEVATION





DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		72	185

② PLAN AND PROFILE SHEETS



R070281.DGN 3/26/2015



STA. 530+15 - IN PLACE  
18" X 34" STEEL PIPE CULVERT  
REMOVE AND INSTALL  
18" X 30" PIPE CULVERT  
LT. SIDE DRAIN  
CONSTRUCT APPROACH = 40 CU. YDS.

STA. 531+31 - IN PLACE  
18" X 35" CM PIPE CULVERT  
REMOVE AND INSTALL  
18" X 38" PIPE CULVERT  
LT. SIDE DRAIN  
CONSTRUCT APPROACH = 50 CU. YDS.

STA. 532+59 - IN PLACE  
24" X 40" CM PIPE CULVERT  
REMOVE AND INSTALL  
24" X 44" PIPE CULVERT  
LT. SIDE DRAIN  
CONSTRUCT APPROACH = 70 CU. YDS.

STA. 530+77 - IN PLACE  
18" X 35" CM PIPE CULVERT  
REMOVE AND INSTALL  
18" X 38" PIPE CULVERT  
LT. SIDE DRAIN  
CONSTRUCT APPROACH = 50 CU. YDS.

STA. 531+93 - IN PLACE  
24" X 40" CM PIPE CULVERT  
REMOVE AND INSTALL  
24" X 40" PIPE CULVERT  
LT. SIDE DRAIN  
CONSTRUCT APPROACH = 55 CU. YDS.

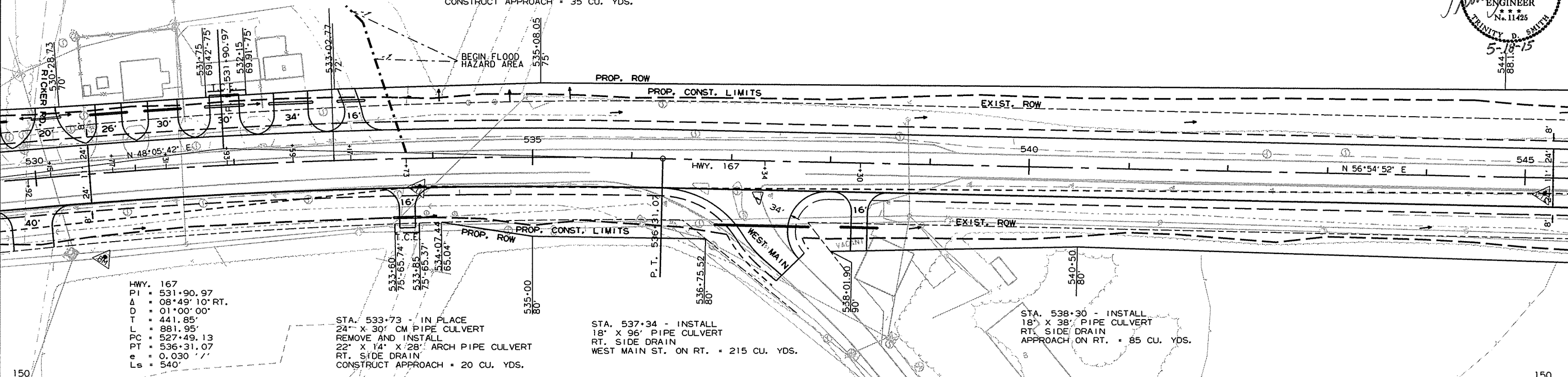
STA. 533+17 - IN PLACE  
24" X 40" CM PIPE CULVERT  
REMOVE AND INSTALL  
24" X 28" PIPE CULVERT  
LT. SIDE DRAIN  
CONSTRUCT APPROACH = 35 CU. YDS.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		73	185

2 PLAN AND PROFILE SHEETS



FLOODPLAIN LIMITS TO END OF PROJECT

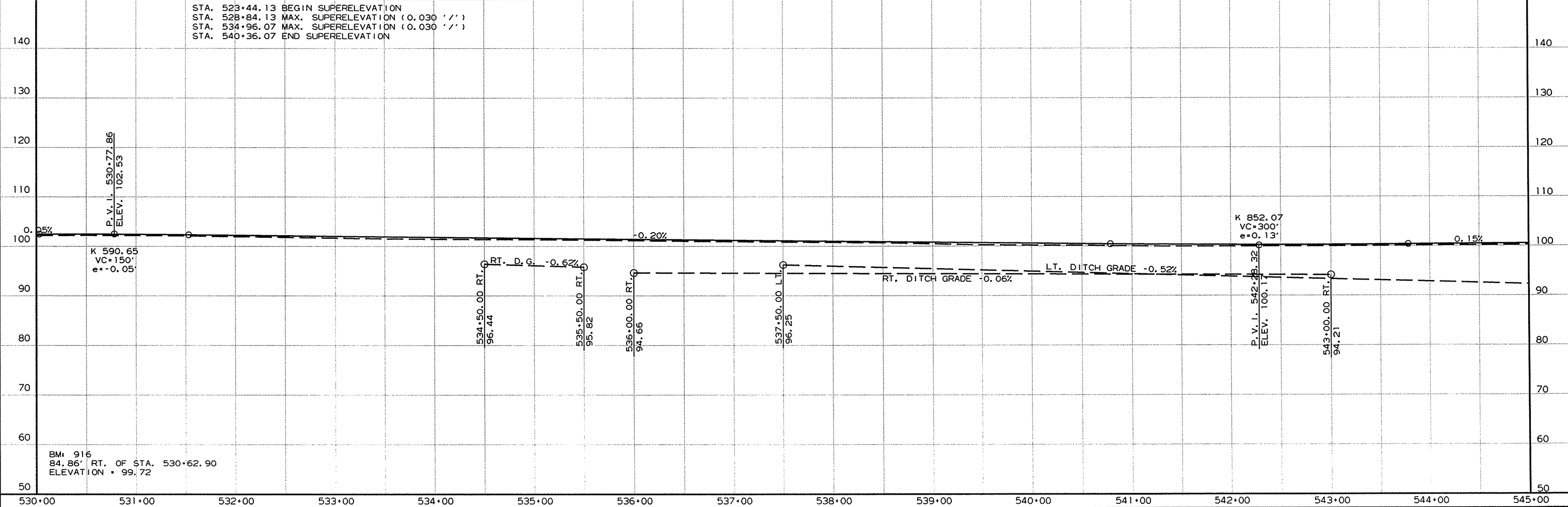


HWY. 167  
PI = 531+90.97  
Δ = 08°49'10" RT.  
D = 01°00'00"  
T = 441.85'  
L = 881.95'  
PC = 527+49.13  
PT = 536+31.07  
e = 0.030' /'  
Ls = 540'

STA. 533+73 - IN PLACE  
24" X 30" CM PIPE CULVERT  
REMOVE AND INSTALL  
22" X 14" X 28" ARCH PIPE CULVERT  
RT. SIDE DRAIN  
CONSTRUCT APPROACH = 20 CU. YDS.

STA. 537+34 - INSTALL  
18" X 96" PIPE CULVERT  
RT. SIDE DRAIN  
WEST MAIN ST. ON RT. = 215 CU. YDS.

STA. 538+30 - INSTALL  
18" X 38" PIPE CULVERT  
RT. SIDE DRAIN  
APPROACH ON RT. = 85 CU. YDS.



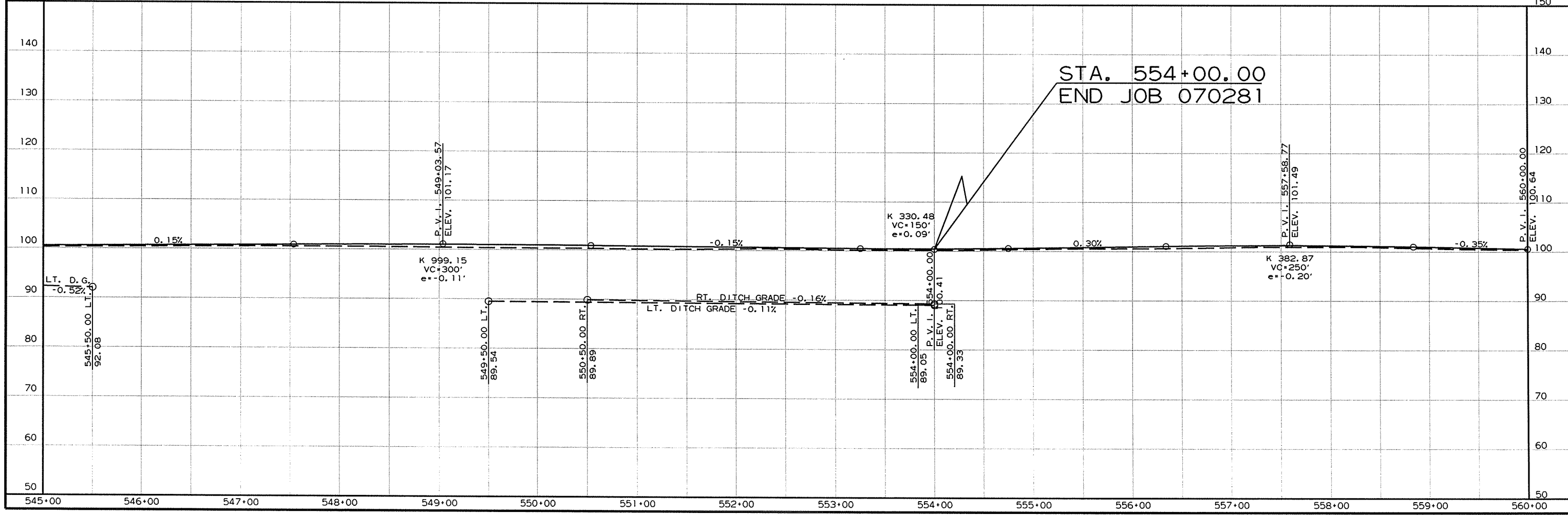
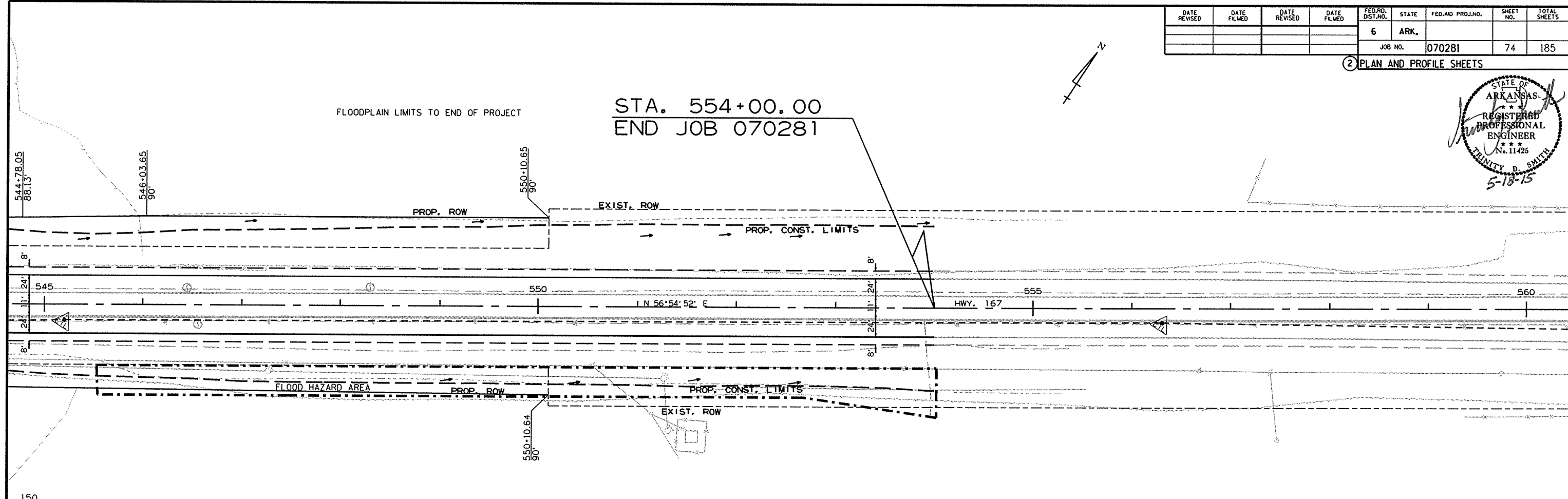
R070281.DGN 3/26/2015

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. 070281							74	185

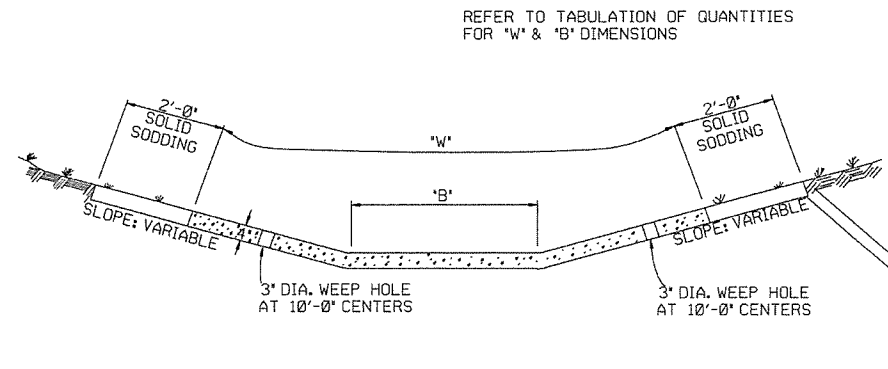
② PLAN AND PROFILE SHEETS



STA. 554+00.00  
END JOB 070281

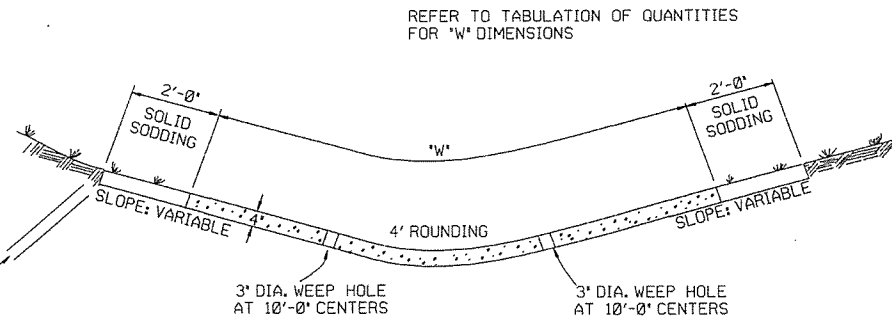


R070281.DGN 3/26/2015



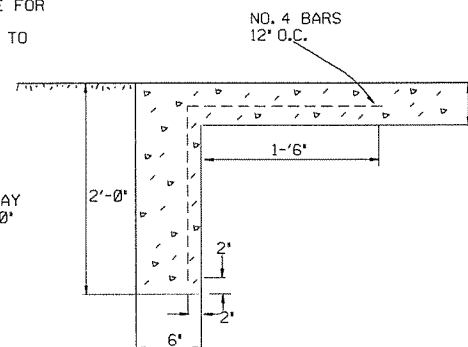
TYPE A

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

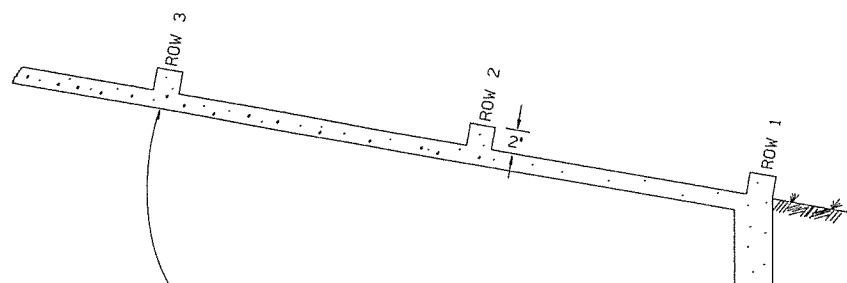


TYPE B

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

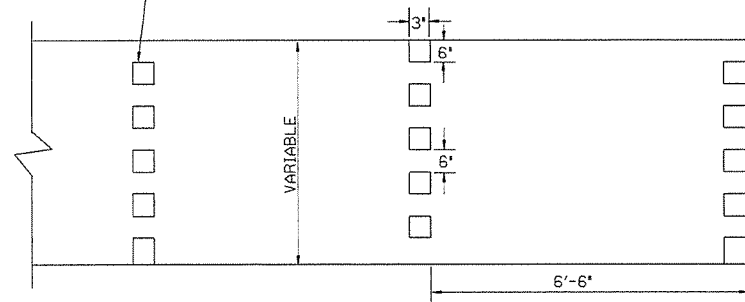


TOE WALL DETAIL FOR CONCRETE DITCH PAVING



NUMBER OF ELEMENTS PER ROW VARIES WITH WIDTH OF PAVING SPECIFIED

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



ENERGY DISSIPATORS  
(NO SCALE)

GENERAL NOTES:

THE FULL WIDTH OF EACH SECTION SHALL BE POURED MONOLITHICALLY.

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

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

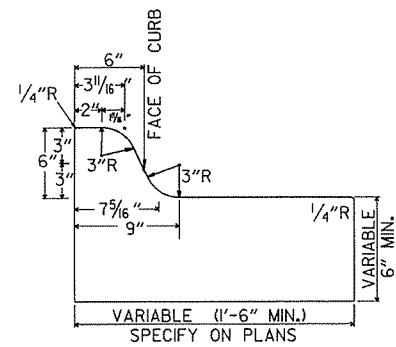
1' WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

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

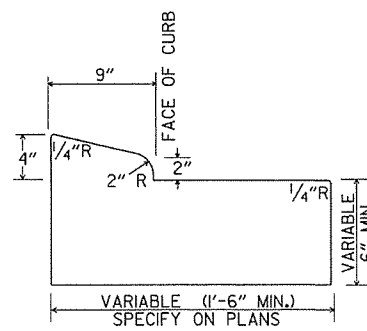
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

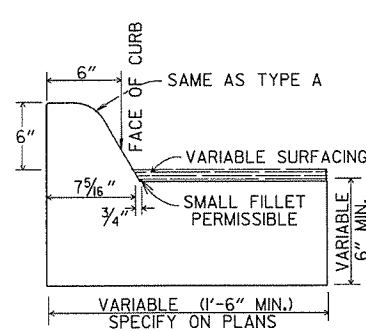
STANDARD DRAWING CDP-1



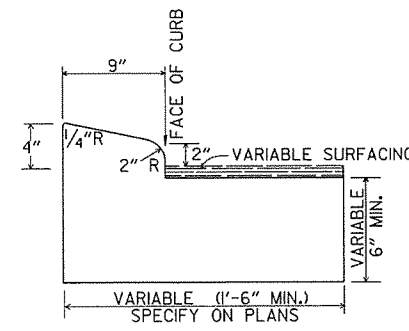
TYPE A



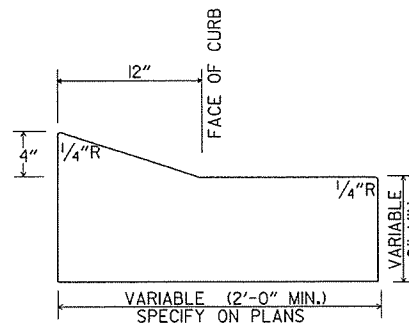
TYPE B-1



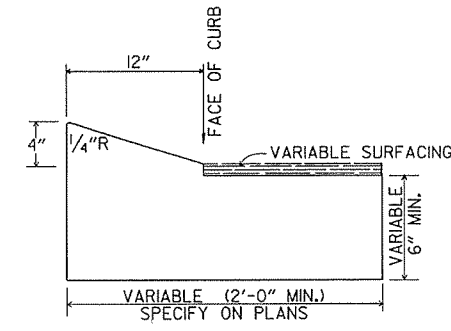
TYPE C



TYPE B-2

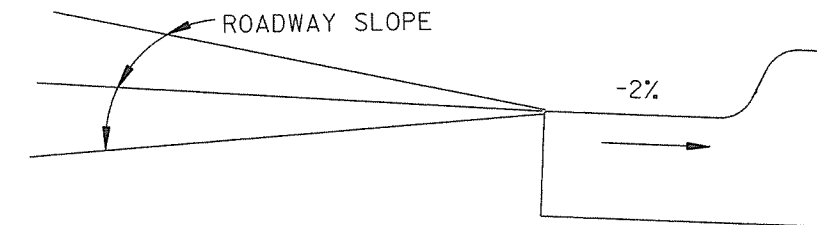


TYPE E-1

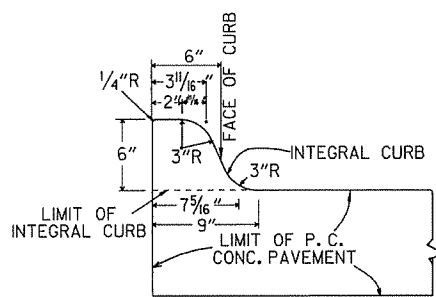


TYPE E-2

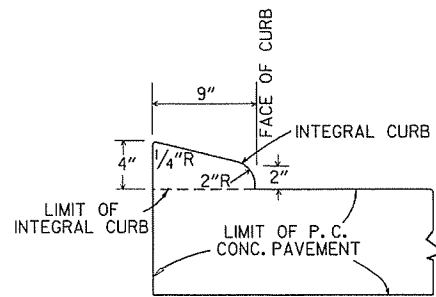
CONCRETE COMBINATION CURB AND GUTTER



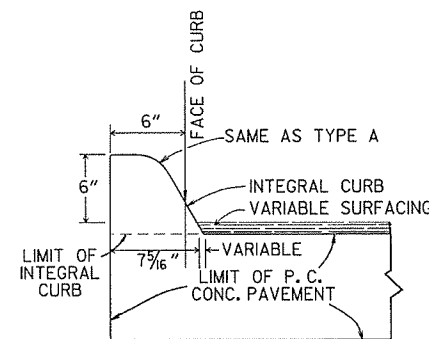
DETAIL OF GUTTER SLOPE  
GUTTER SHALL BE CONSTRUCTED ON 2% SLOPE AWAY FROM ROADWAY, REGARDLESS OF ROADWAY SLOPE.



TYPE A

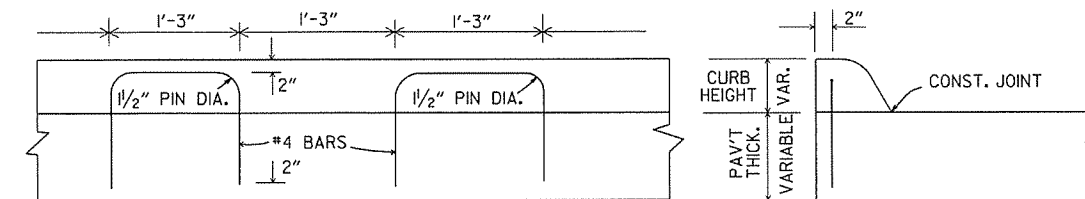


TYPE B



TYPE C

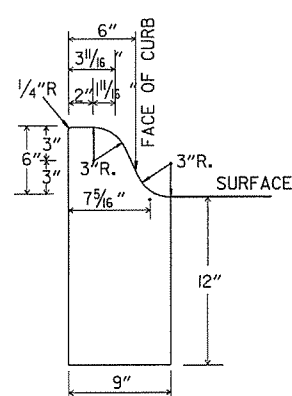
INTEGRAL CURB



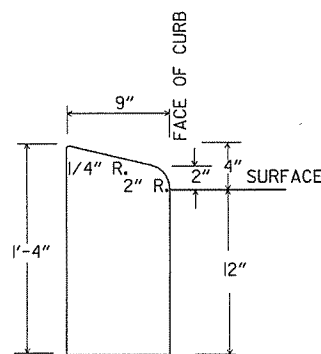
LONGITUDINAL SECTION

ELEVATION

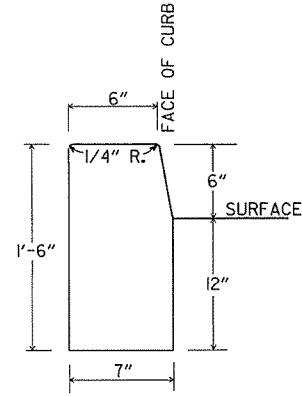
ALTERNATE CONSTRUCTION METHOD FOR INTEGRAL CURB



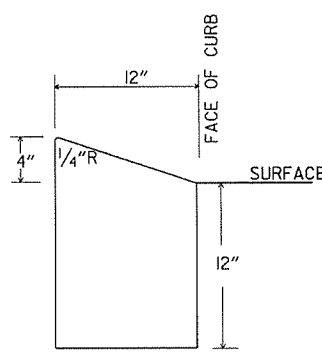
TYPE A



TYPE B

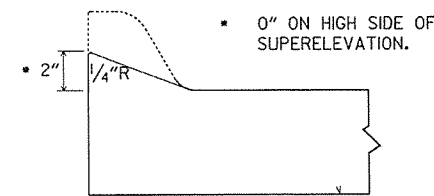


TYPE D



TYPE E

CONCRETE CURB



NOTE: USE MODIFIED CURB AS SPECIFIED ON STD. DR-1. COMPENSATION FOR MODIFIED CURB WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE TYPE OF CURB OR CURB AND GUTTER SPECIFIED.

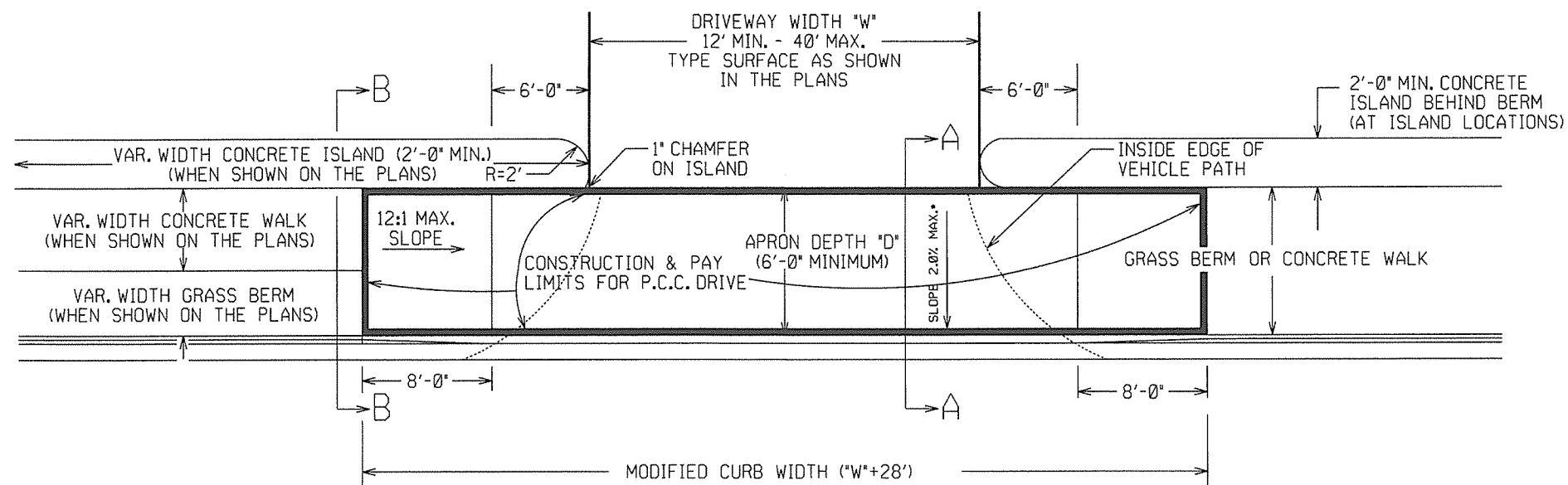
DETAILS OF MODIFIED CURB

DATE	REVISION	DATE FILMED
11-29-07	REVISED GUTTER SLOPE & MODIFIED CURB DETAILS	
11-10-05	ADDED DETAILS OF TYPE E CURBS	
11-16-01	REVISED CONCRETE CURB TYPE B	
11-18-98	REVISED MODIFIED CURB	
6-2-94	ADDED NOTE TO SPECIAL MODIFIED CURB	
8-5-93	CORRECTED GUTTER SLOPE	8-5-93
10-1-92	ADDED DETAILS OF GUTTER SLOPE	10-1-92
6-24-90	ADDED DETAILS OF MODIFIED CURB	5-24-90
11-30-88	VARIABLE DEPTH TYPE A & B 1	11-30-88
7-15-88	REVISED MODIFIED CURB	630-7-15-88
11-1-73	REVISED MODIFIED CURB	500-11-1-73
10-2-72	REVISED AND REDRAWN	512-10-2-72

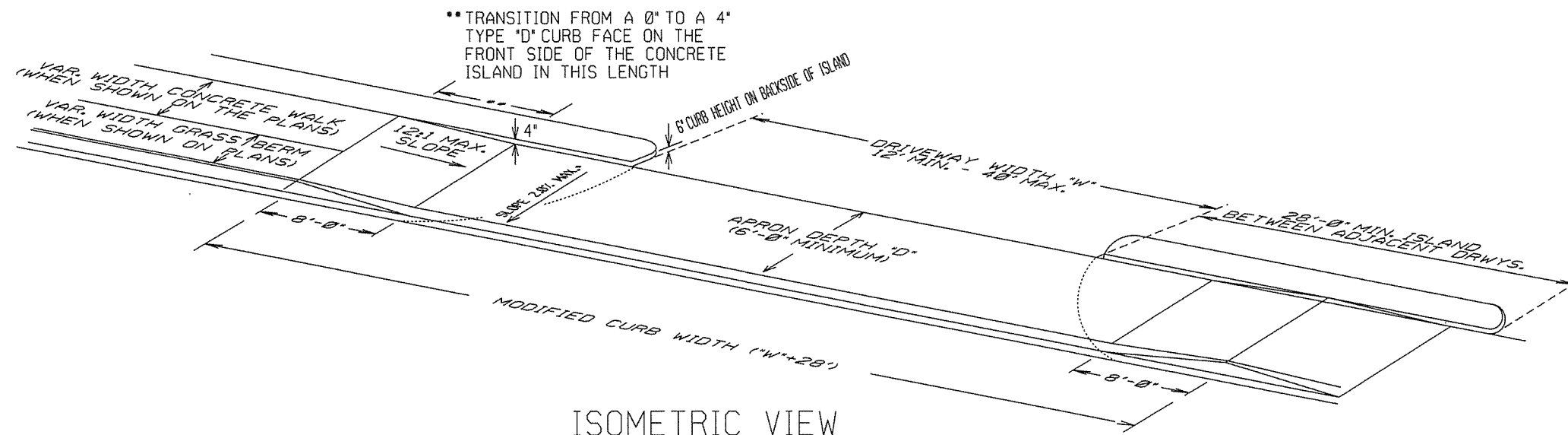
ARKANSAS STATE HIGHWAY COMMISSION

CURBING DETAILS

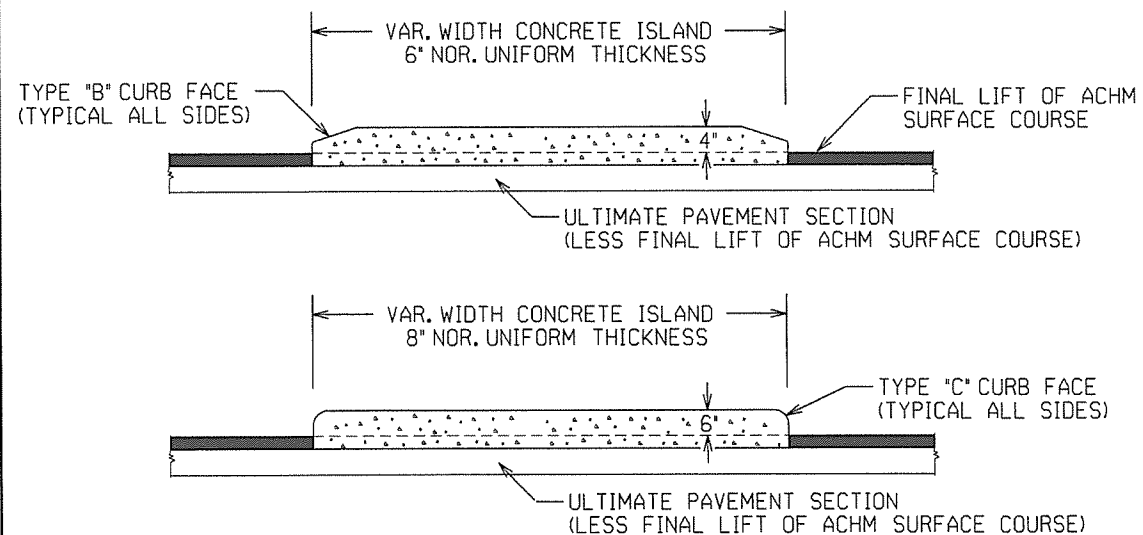
STANDARD DRAWING CG-1



PLAN VIEW

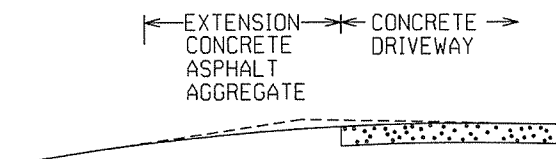


ISOMETRIC VIEW



CURBED ISLANDS FOR CHANNELIZATION

REFER TO PLANS FOR TYPE OF CURB FACE TO BE USED.  
NO DIRECT PAYMENT WILL BE MADE FOR THE CURB FACES  
SHOWN ON THE ISLAND DETAILS. PAYMENT FOR THE CURB  
FACE WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE  
ITEM "CONCRETE ISLAND".

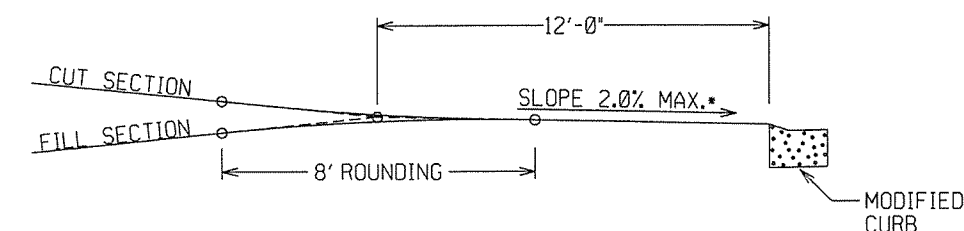


EXTENSION TYPICAL SECTIONS

- 1: CONCRETE - 6" P.C. CONCRETE DRIVEWAY
- 2: ASPHALT - 2" ACHM SURFACE COURSE (1/2")  
4" ACHM BINDER COURSE (1") OR  
4" ACHM BASE COURSE (1-1/2")
- 3: ASPHALT - 2" ACHM SURFACE COURSE (1/2")  
7" AGGREGATE BASE COURSE
- 4: AGGREGATE - 6" AGGREGATE BASE COURSE

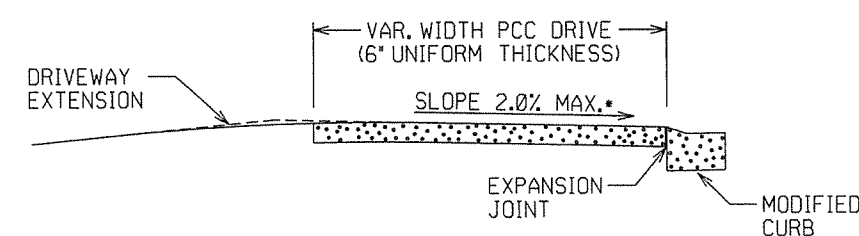
THE TYPE OF EXTENSION SHALL BE AS SHOWN IN THE PLANS.  
THE CONTRACTOR MAY, WITH THE APPROVAL OF THE ENGINEER,  
SUBSTITUTE A LOWER NUMBERED TYPE OF EXTENSION IN LIEU  
OF THE TYPE SPECIFIED IN THE PLANS, BUT AT NO ADDITIONAL  
COST TO THE DEPARTMENT.

DRIVEWAY EXTENSION DETAILS

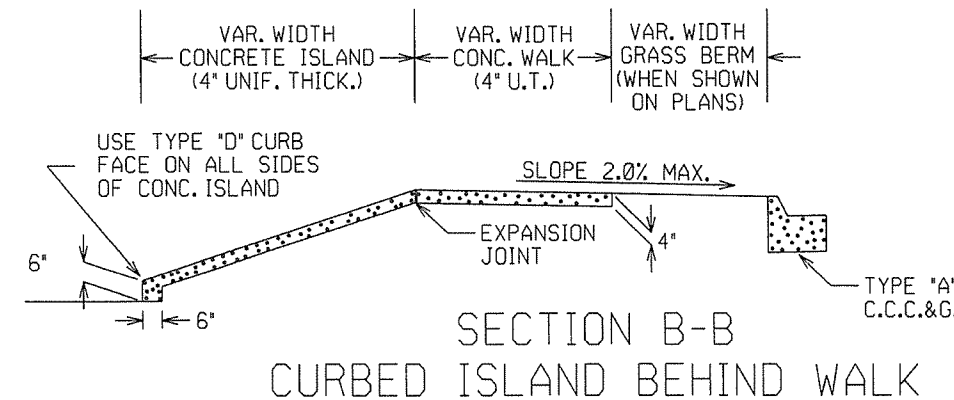


DRIVEWAY VERTICAL ALIGNMENT DETAILS

\* NOTE: DRIVEWAYS MAY NOT BE SLOPED AWAY  
FROM THE ROADWAY UNLESS APPROVED  
BY THE ENGINEER.

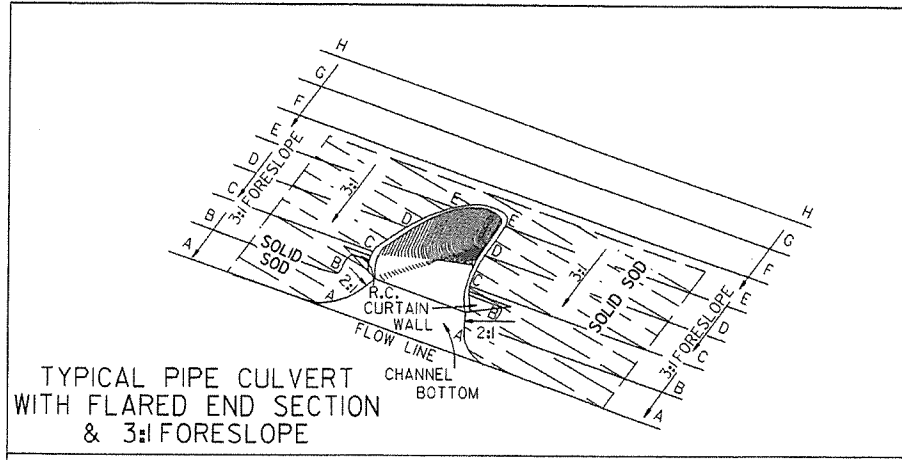


SECTION A-A

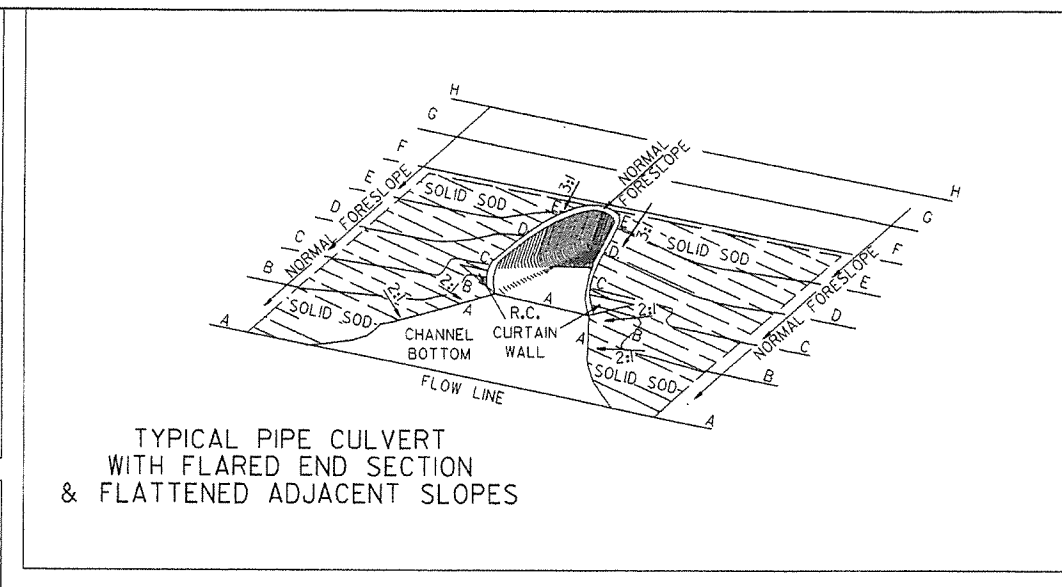


SECTION B-B  
CURBED ISLAND BEHIND WALK

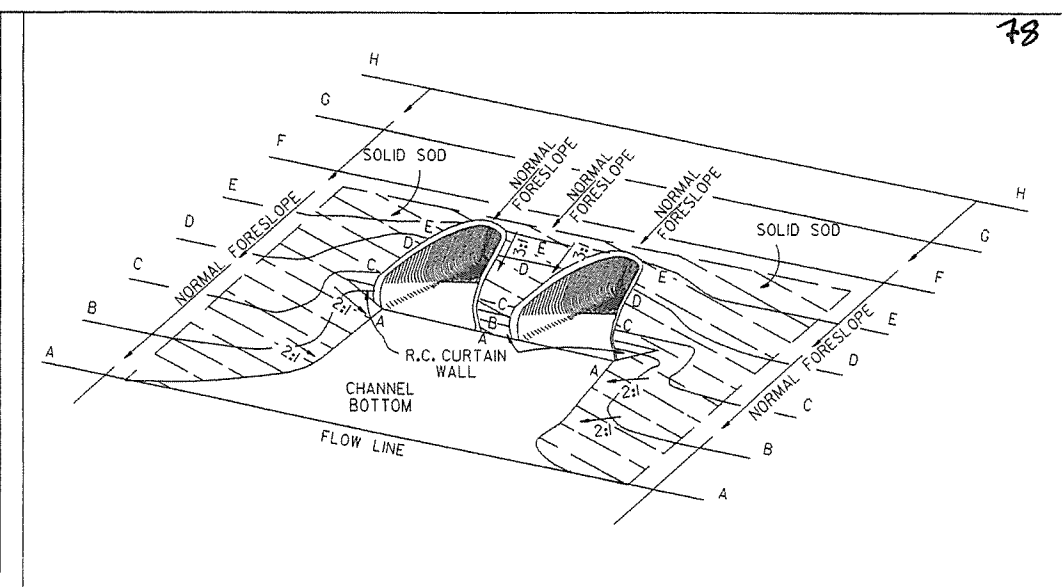
DATE	REV	DATE FILMED	DESCRIPTION
2-27-14			REVISED PLAN & ISOMETRIC VIEW
11-29-07			ADDED CHANNELIZATION ISLAND WITH TYPE C CURB FACE & REVISED DRIVEWAY SLOPE NOTE & VERTICAL ALIGNMENT DETAIL
11-10-05			REV. APRON SLOPE & DEPTH OF AGG. BASE.
8-22-02			ADDED ISLAND DETAILS & NOTES
3-30-00			REV. MOD. CURB WIDTH & TRANS. NOTE
11-19-98			REVISED NOTES
11-18-98			REDRAWN AND REISSUED



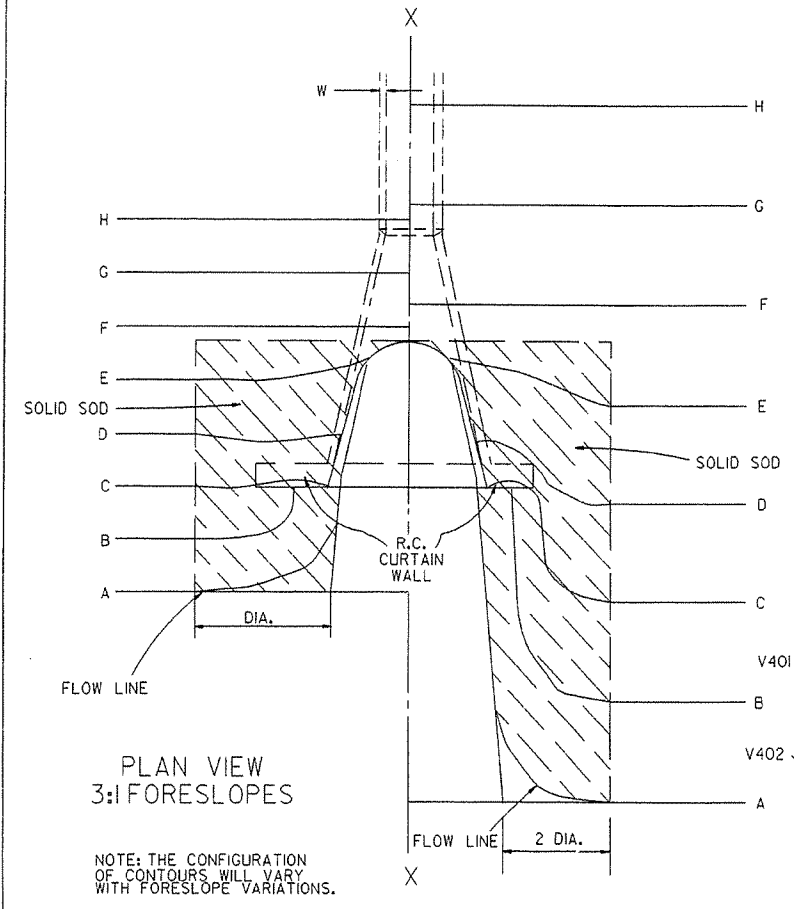
TYPICAL PIPE CULVERT WITH FLARED END SECTION & 3:1 FORESLOPE



TYPICAL PIPE CULVERT WITH FLARED END SECTION & FLATTENED ADJACENT SLOPES

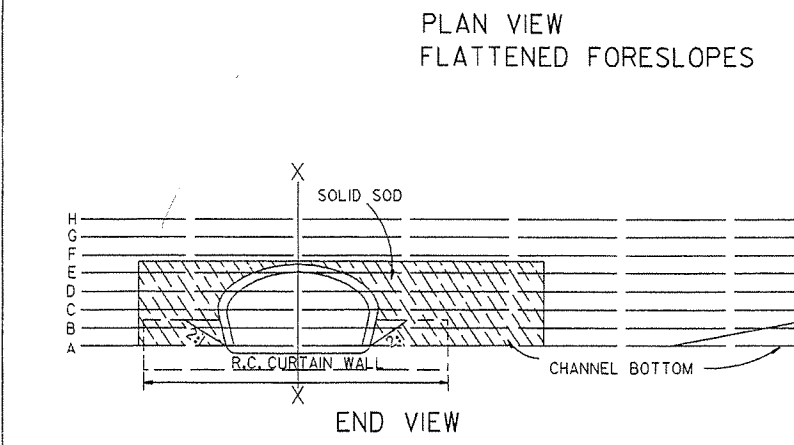


TYPICAL MULTIPLE PIPE CULVERT WITH FLARED END SECTIONS & FLATTENED ADJACENT SLOPES



PLAN VIEW 3:1 FORESLOPES

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

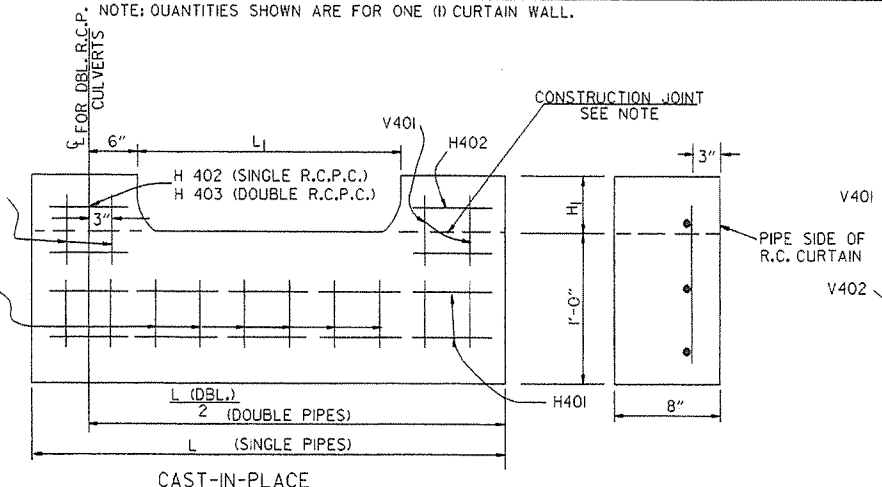


PLAN VIEW FLATTENED FORESLOPES

R.C. CURTAIN WALL DIMENSIONS & QUANTITIES

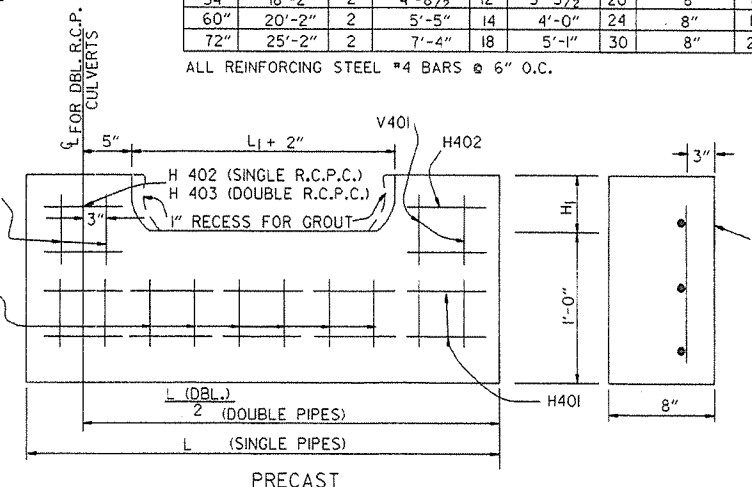
PIPE DIA.	H <sub>1</sub>	L <sub>1</sub>	L	L (DBL.) / 2	SINGLE R.C.P.C.		DOUBLE R.C.P.C.	
					CONC.	REINF. STEEL	CONC.	REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	11 1/2"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0 1/2"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3 1/2"	5'-7"	11'-0"	9'-0"	0.45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

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



R.C. CURTAIN WALL DETAILS

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



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

REINFORCING STEEL SCHEDULE

PIPE DIA.	SINGLE R.C. PIPE CULVERT								DOUBLE R.C. PIPE CULVERT									
	H401		H402		V401		V402		H401		H402		V401		V402			
	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.		
18"	7'-8"	2	1'-11 1/2"	4	1'-7 1/2"	8	8"	8	12'-2"	2	1'-11 1/2"	4	8"	2	1'-7 1/2"	10	8"	14
24"	9'-2"	2	2'-2"	4	1'-8 1/2"	10	8"	9	14'-8"	2	2'-2"	4	8"	2	1'-8 1/2"	12	8"	18
30"	10'-8"	2	2'-4 1/2"	4	1'-11 1/2"	10	8"	12	17'-8"	2	2'-4 1/2"	4	8"	2	1'-11 1/2"	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'-9 1/2"	8	2'-9 1/2"	16	8"	15	23'-8"	2	3'-9 1/2"	8	8"	4	2'-9 1/2"	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'-8 1/2"	12	3'-5 1/2"	20	8"	17	27'-8"	2	4'-9"	12	8"	6	3'-5 1/2"	22	8"	34
60"	20'-2"	2	5'-5"	14	4'-0"	24	8"	18	30'-8"	2	5'-5"	14	8"	7	4'-0"	26	8"	36
72"	25'-2"	2	7'-4"	18	5'-1"	30	8"	20	36'-8"	2	7'-4"	18	8"	9	5'-1"	33	8"	40

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

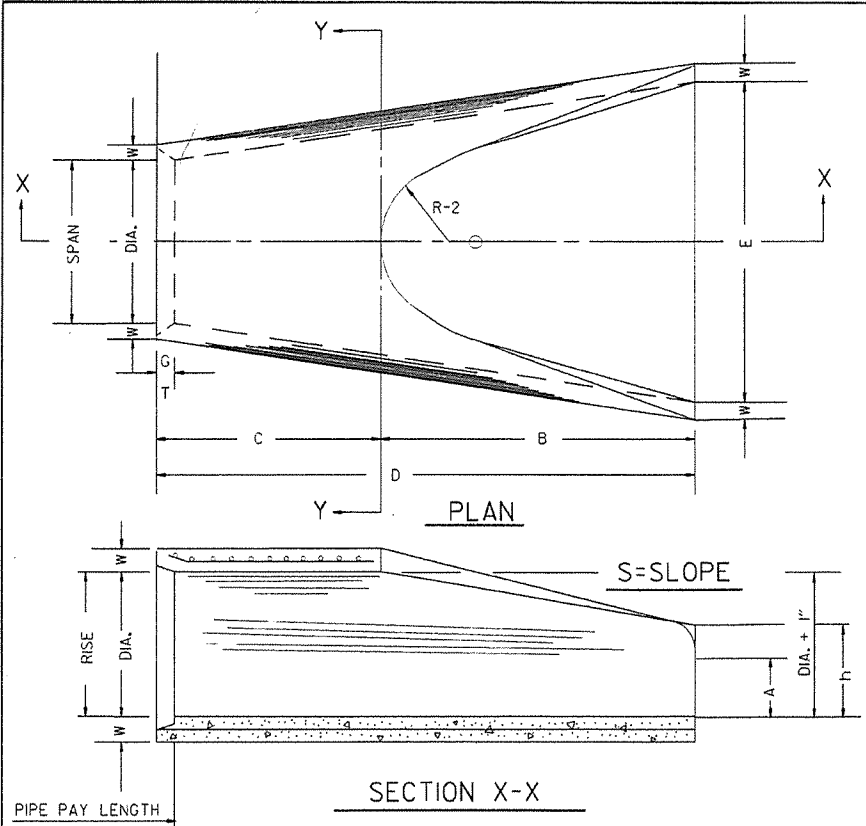
SOLID SODDING

PIPE DIA.	SINGLE R.C.P.C.						DOUBLE R.C.P.C.					
	3:1		4:1		6:1		3:1		4:1		6:1	
	SQ. YDS.						SQ. YDS.					
18"	5	7	12	19	31	6	8	13	20	33	53	
24"	8	12	19	31	50	9	13	20	33	53	87	
30"	13	18	29	47	77	14	19	30	47	77	127	
36"	17	26	41	66	108	18	26	43	66	108	177	
42"	23	35	55	89	145	25	37	57	89	145	243	
48"	29	46	74	118	192	31	48	77	118	192	315	
54"	35	57	95	153	249	37	59	97	153	249	405	
60"	45	75	124	201	327	48	77	127	201	327	540	
72"	64	92	156	261	423	67	95	159	261	423	756	

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

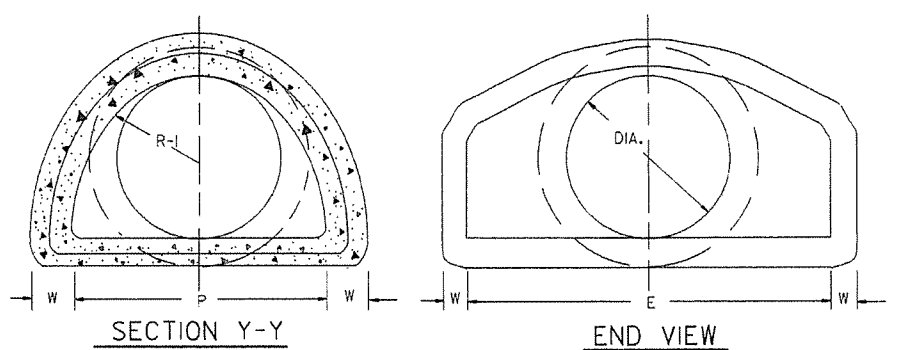
- GENERAL NOTES
- A CAST-IN-PLACE OR PRECAST CURTAIN WALL MAY BE USED. PAYMENT FOR THE CURTAIN WALL SHALL BE CONSIDERED TO BE INCLUDED IN THE UNIT PRICE BID EACH FOR FLARED END SECTIONS OF THE SEVERAL SIZES, WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS INCLUDING REINFORCING STEEL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

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



**TABLE OF DIMENSIONS**

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



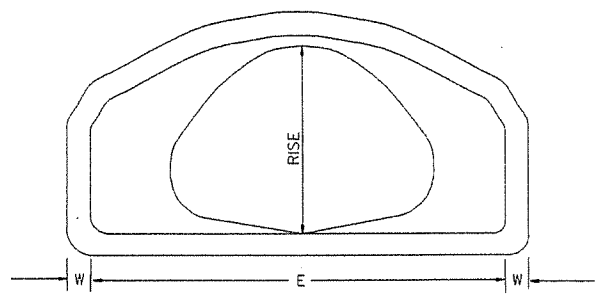
NOTE: TONGUE END ON UPSTREAM SECTION  
GROOVE END ON DOWNSTREAM SECTION

**END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS**

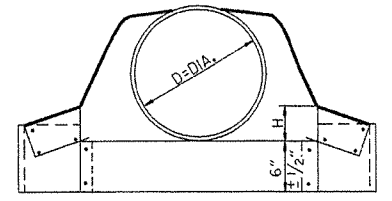
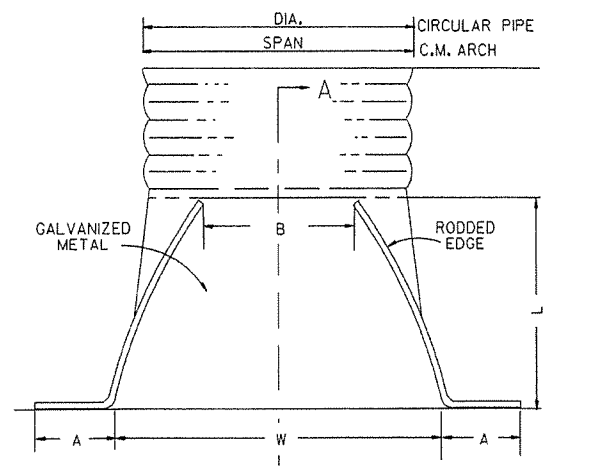
**ARCH PIPE**

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

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



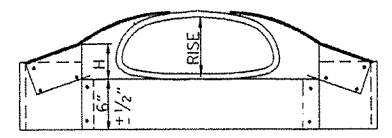
**END VIEW CONCRETE ARCH PIPE**



**CIRCULAR PIPE**

**CIRCULAR PIPE**

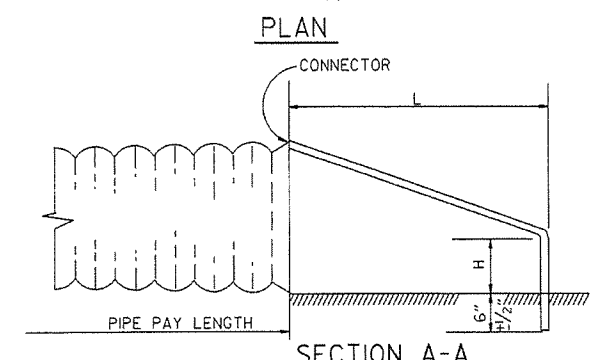
D. DIA.	GAUGE	A ±	B. MAX.	H ±	L ±	W ±	S
INCHES							
12	16	6	6	6	21	24	2 1/2:1
15	16	7	8	6	26	30	2 1/2:1
18	16	8	10	6	31	36	2 1/2:1
21	16	9	12	6	36	42	2 1/2:1
24	16	10	13	6	41	48	2 1/2:1
30	14	12	16	8	51	60	2 1/2:1
36	14	14	19	9	60	72	2 1/2:1
42	12	16	22	11	69	84	2 1/2:1
48	12	18	27	12	78	90	2 1/2:1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



**C.M. ARCH PIPE**

**C.M. ARCH PIPE**

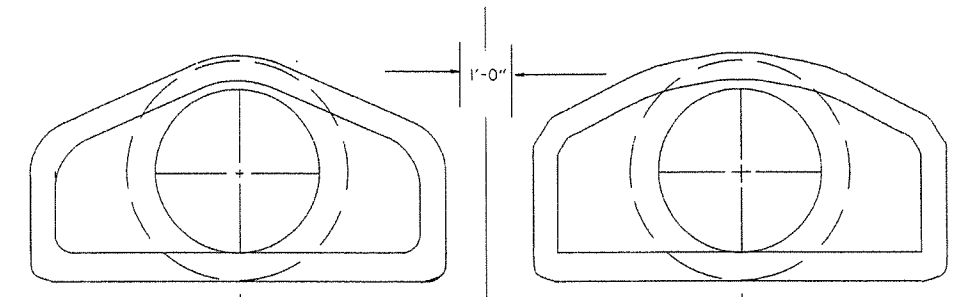
EQUIV. DIA.	SPAN	RISE	INCHES				S	GAUGE	
			A ±	B MAX.	H ±	L ±			
15"	17	13	7	9	6	19	30	2 1/2:1	16
18"	21	15	7	10	6	23	36	2 1/2:1	16
21"	24	18	8	12	6	28	42	2 1/2:1	16
24"	28	20	9	14	6	32	48	2 1/2:1	16
30"	35	24	10	16	6	39	60	2 1/2:1	14
36"	42	29	12	18	8	46	75	2 1/2:1	14
42"	49	33	13	21	9	53	85	2 1/2:1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



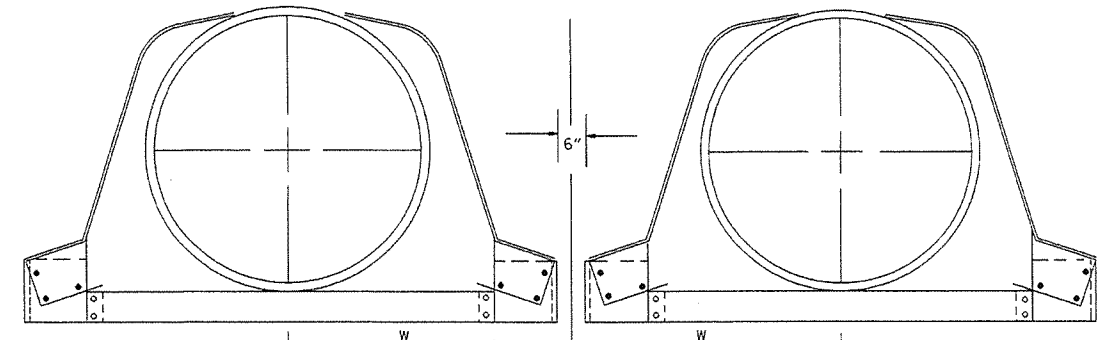
**SECTION A-A**

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

**END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS**

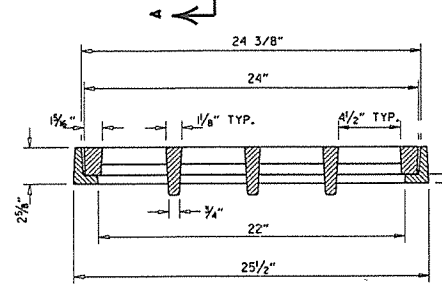
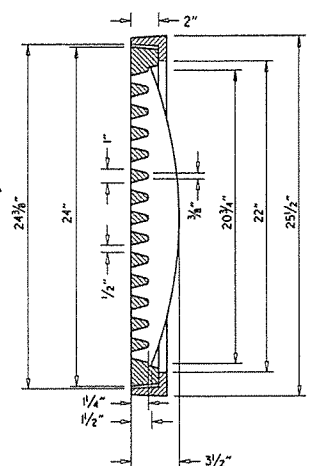
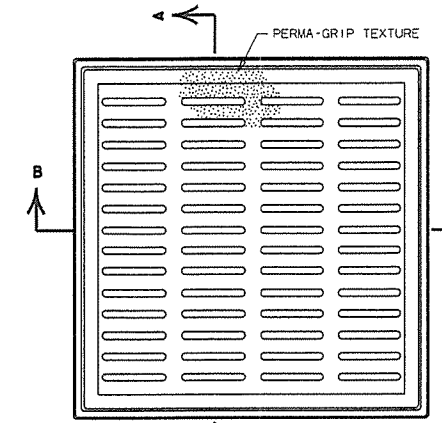


**MULTIPLE R.C. PIPE CULVERTS**



**MULTIPLE C.M. PIPE CULVERTS**

10-18-96	REVISED ASTM REF. TO AASHTO	10-18-96	ARKANSAS STATE HIGHWAY COMMISSION
5-15-80	REVISED DISTANCE BETWEEN MULTIPLE R.C.P. F.E.S.	5-15-80	
7-14-78	C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES	7-14-78	
8-22-75	ADDED MULTIPLE PIPE CULVERTS	517-8-22-75	FLARED END SECTION
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	STANDARD DRAWING FES-2
DATE	REVISION	FILED	

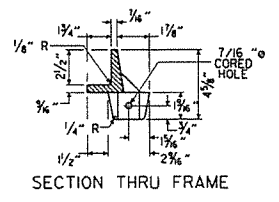
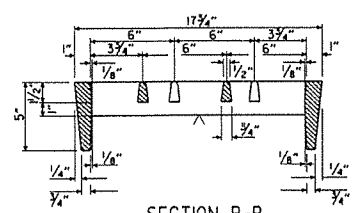


**SECTION A-A**

**GENERAL NOTES (PEDESTRIAN GRATE & FRAME)**

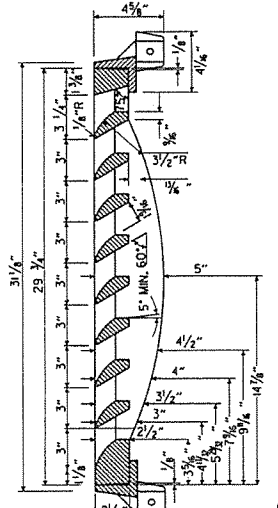
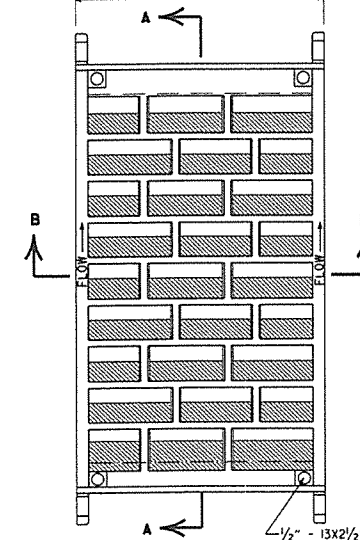
1. THE PEDESTRIAN GRATE SHALL BE ORIENTED IN THE TOP OF THE DROP INLET SO THAT THE 1/2" OPENINGS ARE PERPENDICULAR TO THE PATH OF PEDESTRIAN TRAVEL.
2. THE PEDESTRIAN GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
3. THE GRATE AND FRAME SHALL NOT BE PAINTED.
4. THE GRATE AND FRAME SHALL BE INSTALLED IN THE DROP INLET IN THE ASSEMBLED POSITION.
5. THE APPROXIMATE WEIGHT OF THE GRATE AND FRAME SHALL BE 2# LBS.
6. THE MINIMUM WATERWAY OPENING SHALL BE 122 SQ. IN.

**SECTION B-B**  
**DETAILS OF PEDESTRIAN GRATE AND FRAME**



**SECTION B-B**

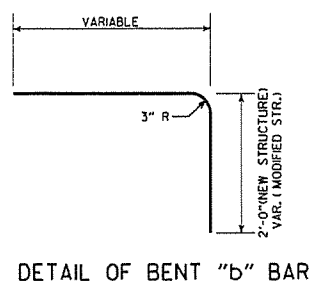
**SECTION THRU FRAME**



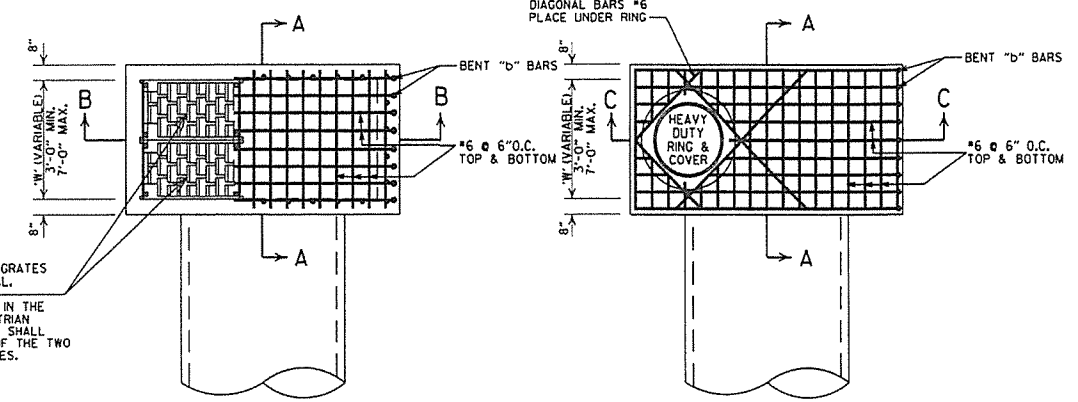
**SECTION A-A**  
**DETAILS OF RIBBED VANE GRATE AND FRAME**

**GENERAL NOTES (RIBBED VANE GRATE & FRAME)**

1. RIBBED VANE GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
2. GRATE AND FRAME SHALL NOT BE PAINTED.
3. GRATE AND FRAME SHALL BE INSTALLED IN DROP INLET IN ASSEMBLED POSITION.
4. APPROXIMATE WEIGHT OF GRATE SHALL BE 170 LBS.

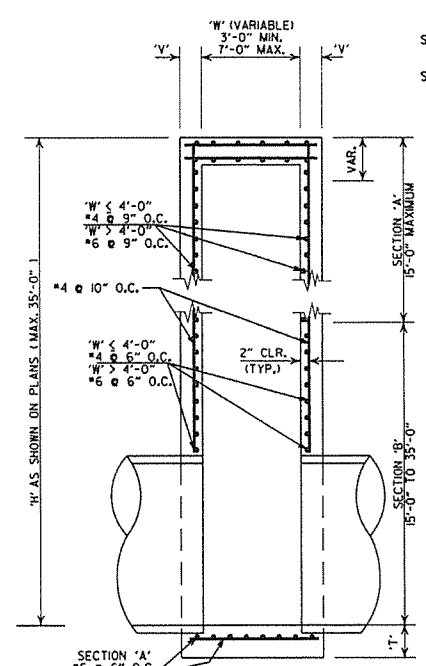


**DETAIL OF BENT "b" BAR**

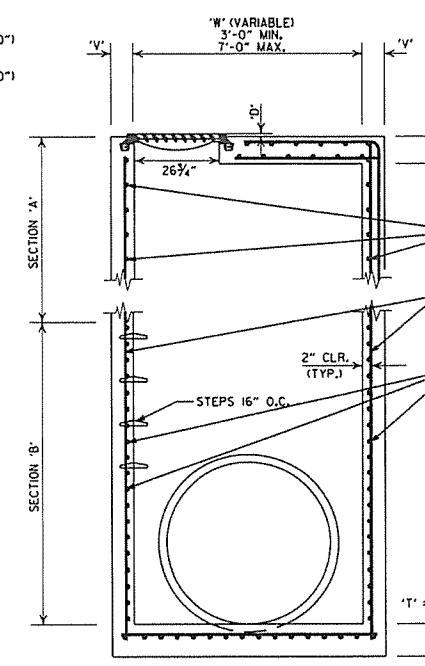


**TWO RIBBED VANE GRATES WITH FRAME NORMAL.**

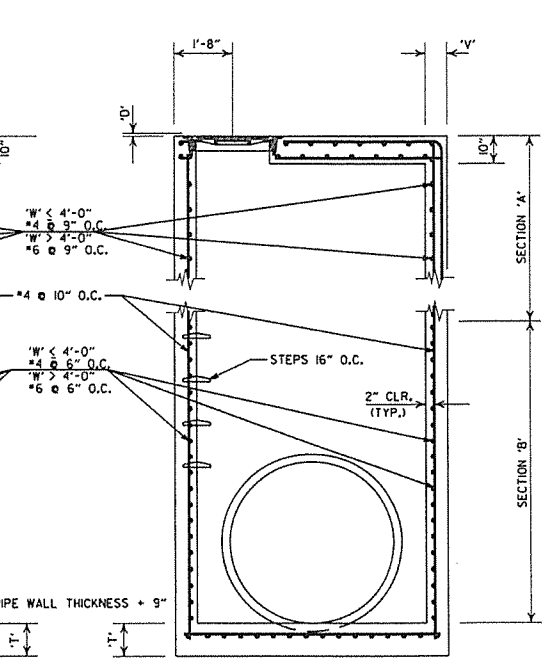
**WHEN CALLED FOR IN THE PLANS, ONE PEDESTRIAN GRATE WITH FRAME SHALL BE USED IN LIEU OF THE TWO RIBBED VANE GRATES.**



**SECTION A-A**  
**DETAILS OF DROP INLET (TYPE ST)**



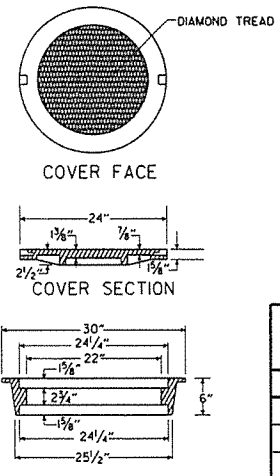
**SECTION B-B**



**SECTION C-C**  
**DETAILS OF JUNCTION BOX (TYPE ST)**

**GENERAL NOTES (TYPE ST DROP INLET & JUNCTION BOX)**

1. THE 'D' DIMENSION SHALL MATCH THE FINAL LIFT OF ACHM SURFACE COURSE SHOWN IN THE PLANS WHEN ASPHALT PAVING SURROUNDS THE GRATE OR RING COVER, AND SHALL BE 0" AT OTHER INSTALLATIONS.
2. THE STEPS SHALL BE OMITTED WHERE 'H' IS LESS THAN 4'-0".
3. ALL EXPOSED CORNERS ARE TO HAVE A 3/4" CHAMFER.



**RING SECTION**  
**HEAVY DUTY RING & COVER**  
APPROXIMATE TOTAL WEIGHT = 333 LBS.

**GENERAL NOTES (HEAVY DUTY RING & COVER):**

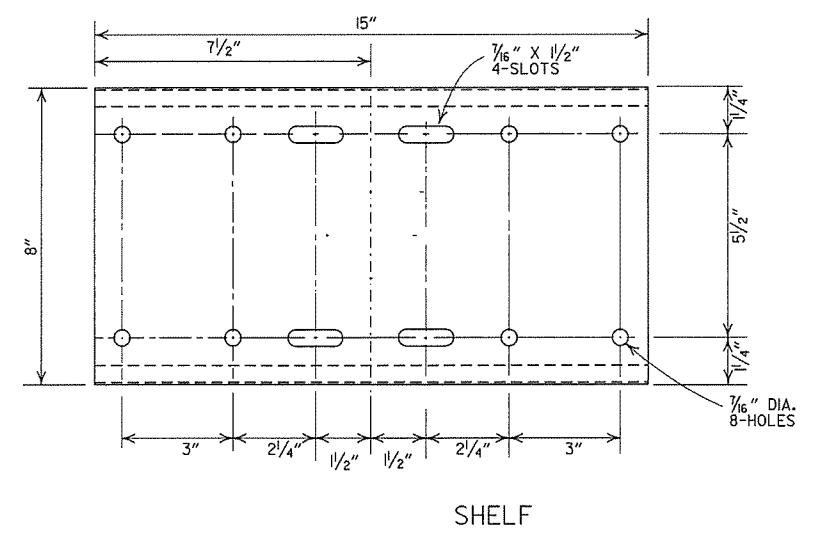
1. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
2. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
3. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
4. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER, REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

DATE REVISED	DATE FILMED	DESCRIPTION
7-26-12		REMOVED NOTE 4, REVISED 'T', REVISED BOTTOM SLAB REBAR FOR SECTION 'A', SHOWED REBAR CLEARANCE IN SECTIONS
11-16-01		ADDED NOTE 4
1-12-00		REVISED HEAVY DUTY RING & COVER
5-13-99		ADDED PEDESTRIAN FRAME & GRATE
7-02-98		REMOVED NOTE 5, REV. DIMENSIONS, ADDED HEAVY DUTY RING & COVER, ADDED AASHTO REF. REVISED GRATE
10-18-96		REVISED ASTM REF. TO AASHTO
10-1-92		REVISED & REISSUED
8-15-91	8-15-91	REVISED & REISSUED

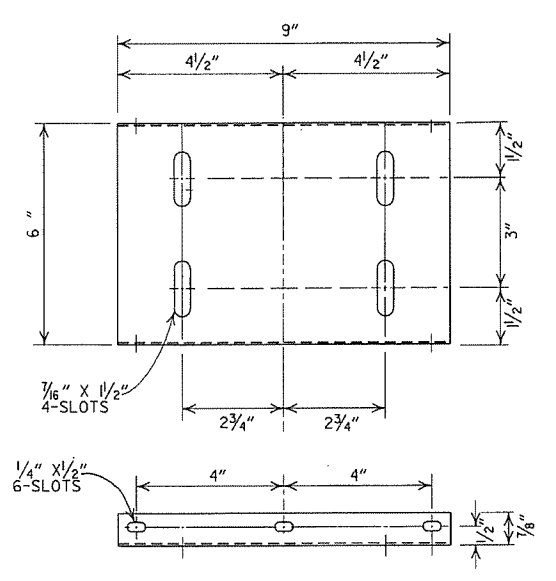
ARKANSAS STATE HIGHWAY COMMISSION  
**DETAILS OF DROP INLET & JUNCTION BOX (TYPE ST)**  
STANDARD DRAWING FPC-9S



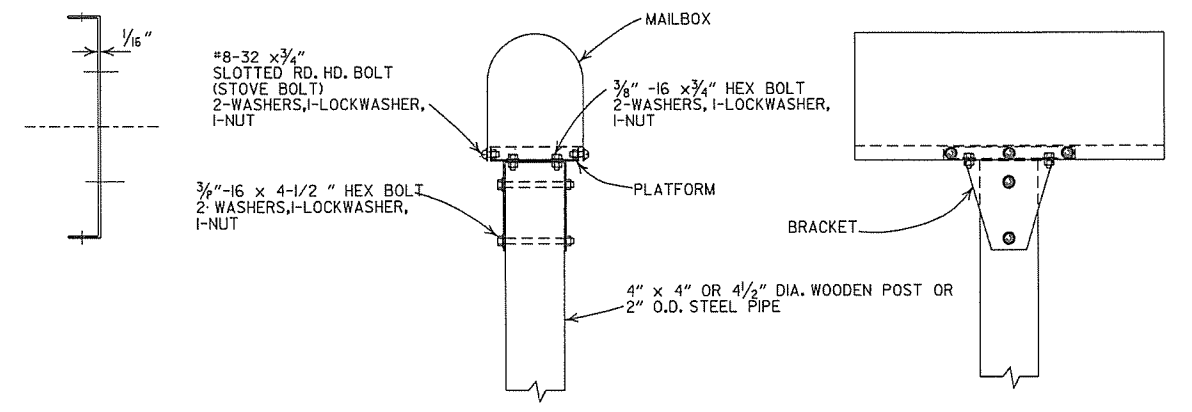




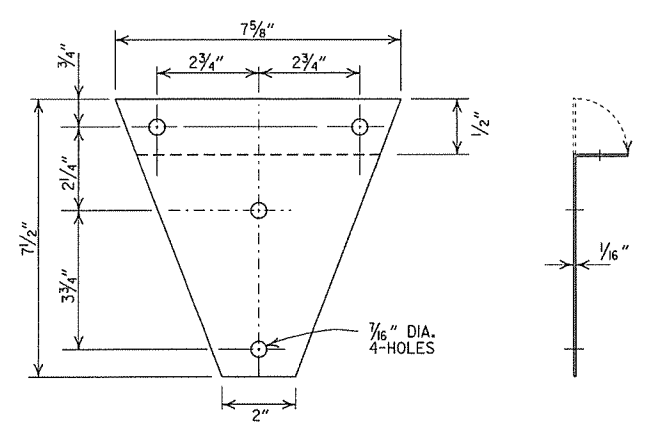
SHELF



PLATFORM

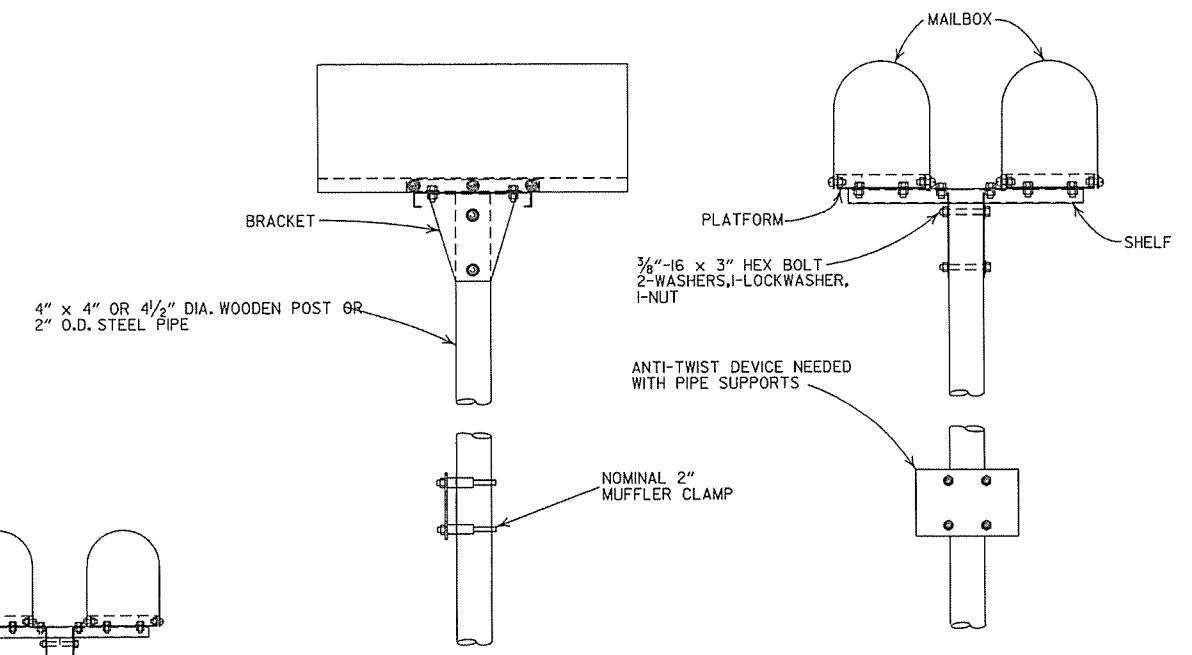


SINGLE INSTALLATION

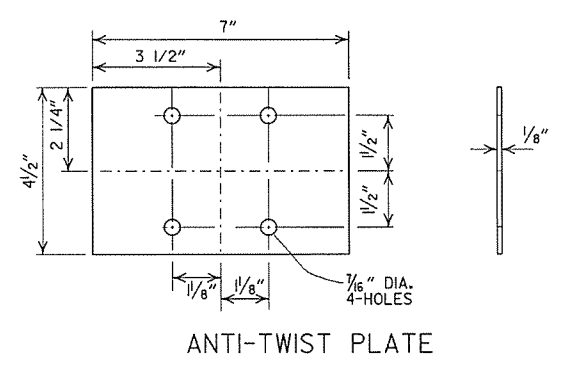


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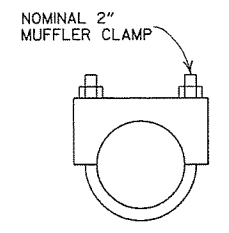
- GENERAL NOTES**
1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
  2. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
  3. MAILBOX SHELF, BRACKET & PLATFORM SHALL BE GALVANIZED OR PAINTED STEEL, HOWEVER TREATED WOOD MAY BE USED WITH WOODEN POSTS. THE WOODEN SHELF, BRACKET & PLATFORM SHALL BE A MINIMUM OF 3/4" THICK AND SHALL BE ASSEMBLED WITH BOLTS OF THE APPROPRIATE LENGTH WITH SIX 8 X 3/4" FLATHEAD WOOD SCREWS USED TO ATTACH THE MAILBOX TO THE PLATFORM.
  4. THE MAILBOX SHELF AND PLATFORM THAT IS SHOWN IS FOR STANDARD SIZE MAILBOXES. THE SHELF AND PLATFORM SIZE SHALL BE MODIFIED TO FIT MAILBOXES OF A DIFFERENT SIZE.
  5. METAL PIPE FOR MAILBOX SUPPORT SHALL BE 2" OUTSIDE DIAMETER STEEL WITH A WALL THICKNESS OF 0.145" AND A WEIGHT OF 2.72 LBS PER FT. OUTSIDE DIAMETER AND WEIGHT SHALL HAVE A TOLERANCE OF +/- 5% ACCORDING TO AASHTO M 181.
  6. MAILBOX SUPPORT SYSTEM DIFFERING FROM THOSE SHOWN MAY BE USED, PROVIDED THEY ARE ON THE AHTD QUALIFIED PRODUCTS LIST FOR MAILBOX SUPPORTS.



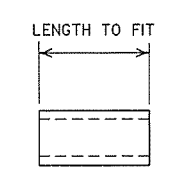
DOUBLE INSTALLATION



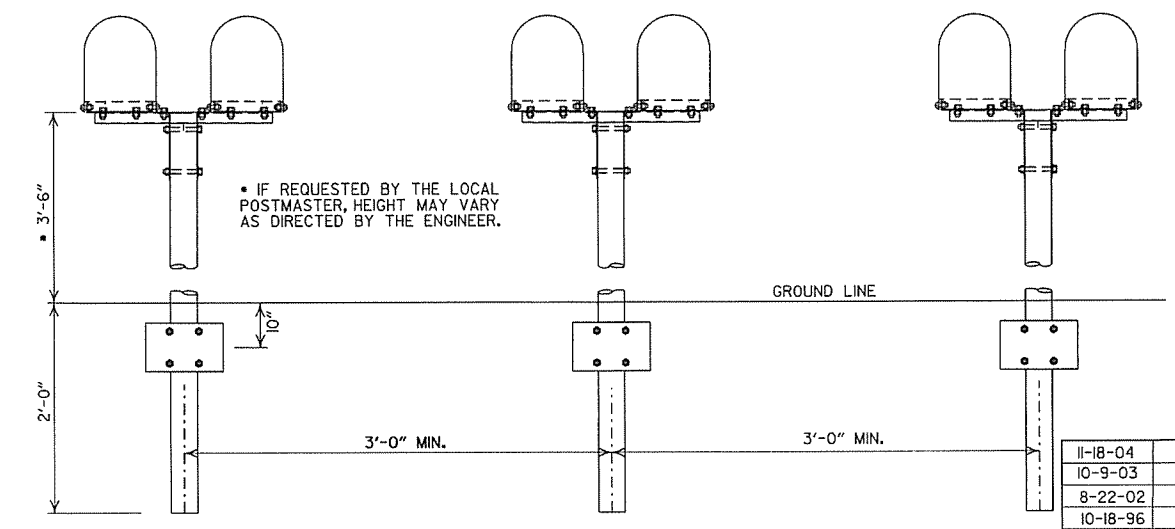
ANTI-TWIST PLATE



CLAMP



SPACER



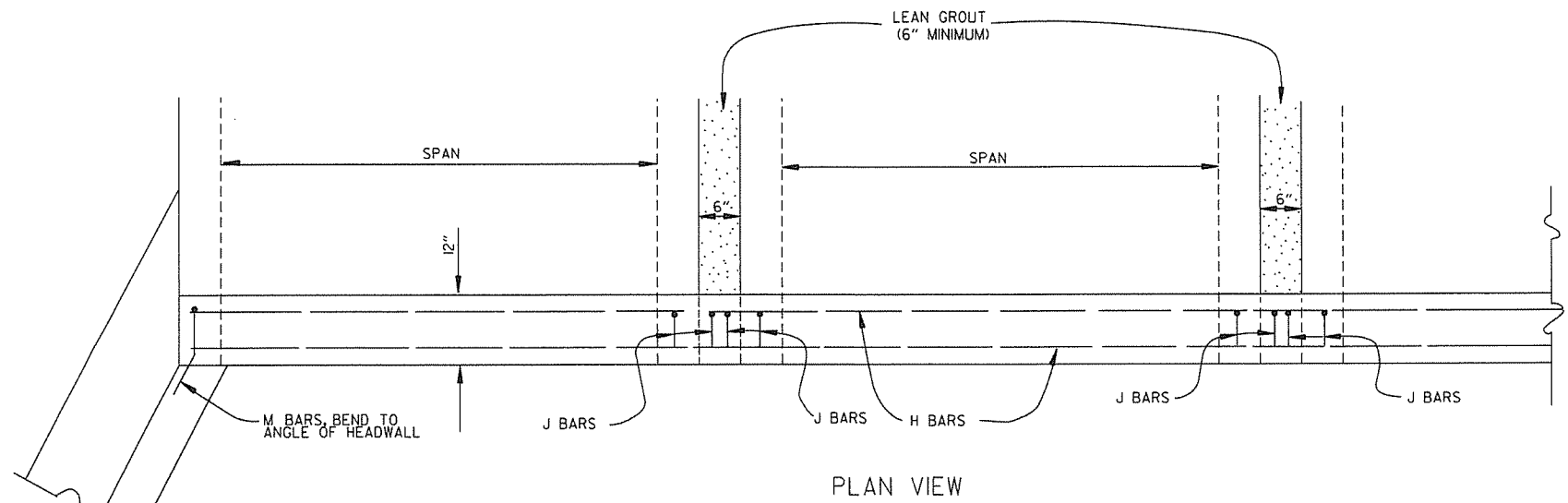
SPACING FOR MULTIPLE POST INSTALLATION

DATE	FILMED	ISSUED	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	120-7-15-88		ISSUED

ARKANSAS STATE HIGHWAY COMMISSION

MAILBOX DETAILS

STANDARD DRAWING MB-1



BAR LIST

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

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

GENERAL NOTES

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

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

ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFERS.

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.

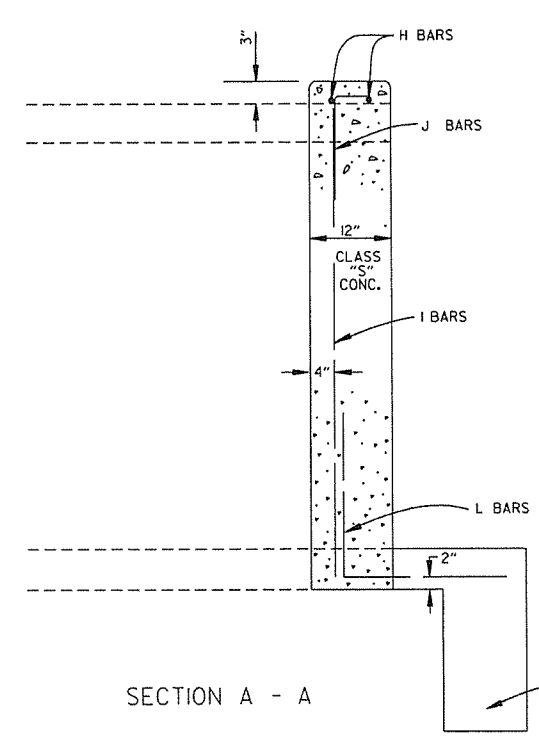
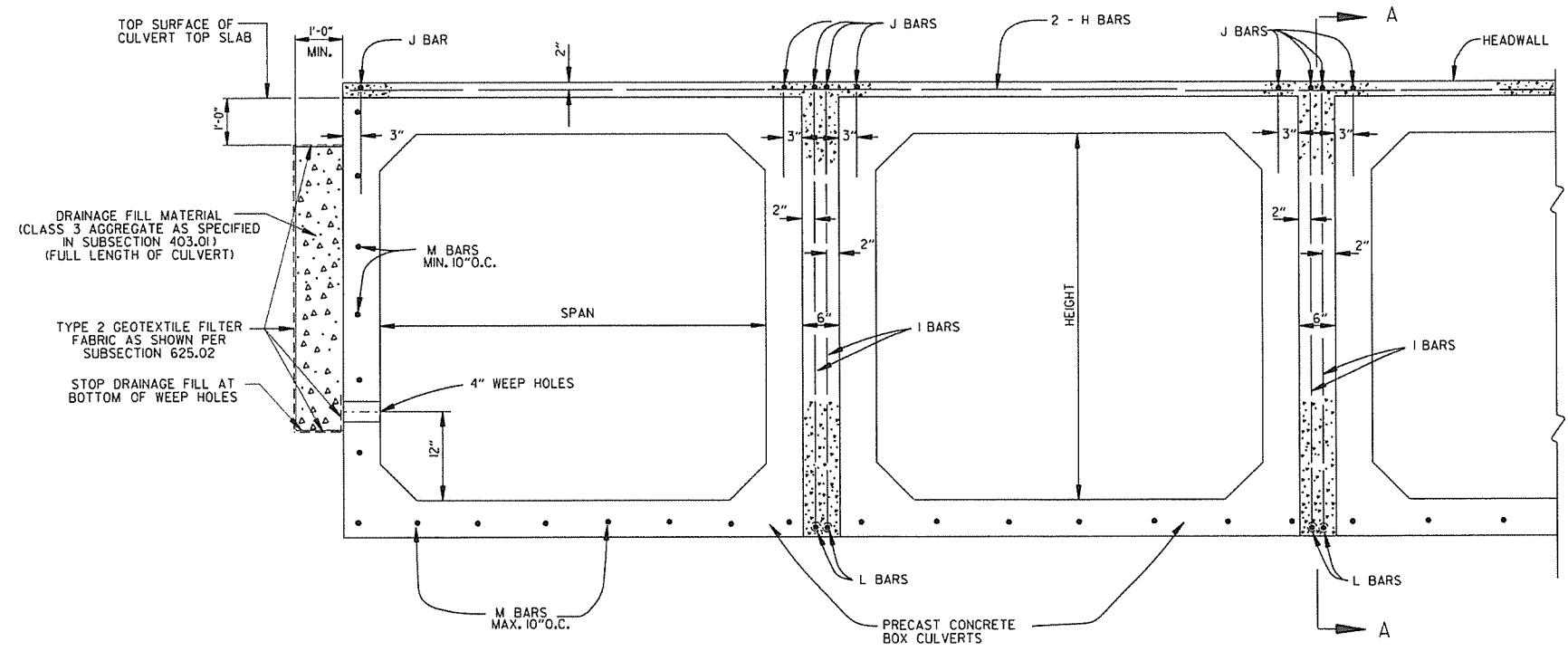
THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

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

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

ARKANSAS STATE HIGHWAY COMMISSION

PRECAST CONCRETE BOX CULVERTS

STANDARD DRAWING PBC-1

REINFORCED CONCRETE ARCH PIPE DIMENSIONS

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

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

REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE DIMENSIONS

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

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

CONSTRUCTION SEQUENCE

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

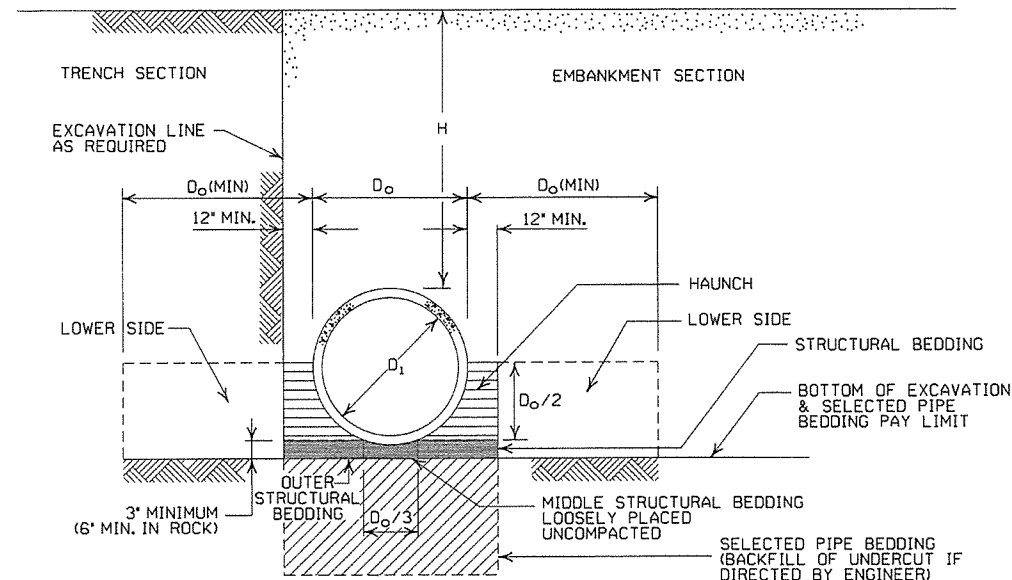
- LEGEND -

- D<sub>i</sub> = NORMAL INSIDE DIAMETER OF PIPE
- D<sub>o</sub> = OUTSIDE DIAMETER OF PIPE
- H = FILL COVER HEIGHT OVER PIPE (FEET)
- MIN. = MINIMUM
- [Symbol] = UNDISTURBED SOIL

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

\* SM-3 WILL NOT BE ALLOWED.

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



EMBANKMENT AND TRENCH INSTALLATIONS

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

GENERAL NOTES

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

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

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

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

ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE PIPE CULVERT  
FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1

CORRUGATED STEEL PIPE (ROUND)

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

CONSTRUCTION SEQUENCE

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

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

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

③ SM-3 WILL NOT BE ALLOWED.

CORRUGATED ALUMINUM PIPE (ROUND)

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

EQUIVALENT METAL THICKNESSES AND GAUGES

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

CORRUGATED METAL PIPE ARCHES

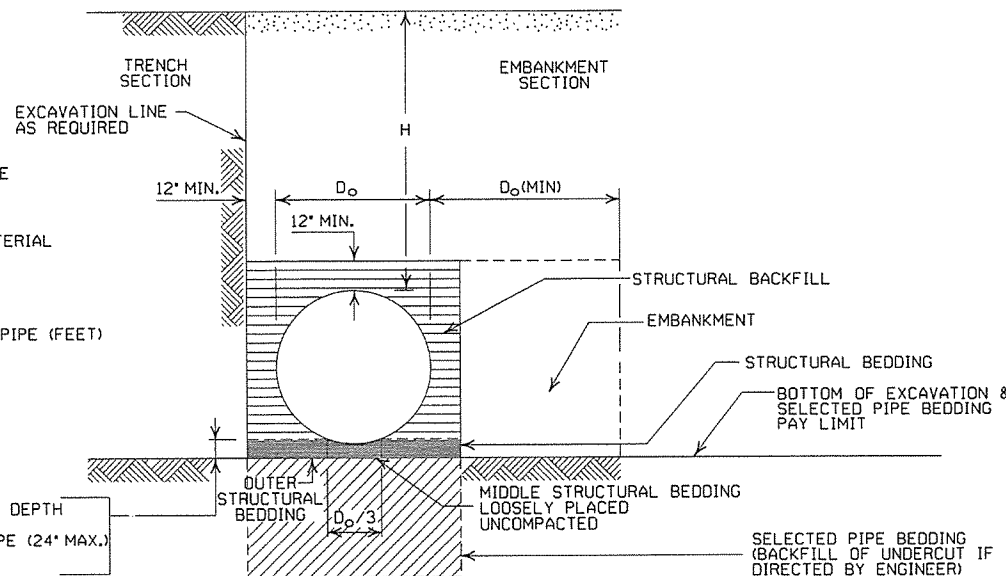
EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINIMUM CORNER RADIUS (INCHES)	STEEL				ALUMINUM			
			MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)		MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)			
				INSTALLATION TYPE 1	INSTALLATION TYPE 1		INSTALLATION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

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

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

- LEGEND -

- D<sub>o</sub> = OUTSIDE DIAMETER OF PIPE
- MAX. = MAXIMUM
- MIN. = MINIMUM
- [Symbol] = STRUCTURAL BACKFILL MATERIAL
- [Symbol] = UNDISTURBED SOIL
- [Symbol] = EQUIV. DIA. = EQUIVALENT DIAMETER
- H = FILL COVER HEIGHT OVER PIPE (FEET)



EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE (ROUND).
3. INSTALLATION TYPE 1 SHALL BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 2 3/8" x 1/2" CORRUGATION.
4. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 3" x 1" OR 5" x 1" CORRUGATION.

GENERAL NOTES

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

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

ARKANSAS STATE HIGHWAY COMMISSION

METAL PIPE CULVERT  
FILL HEIGHTS & BEDDING

STANDARD DRAWING PCM-1



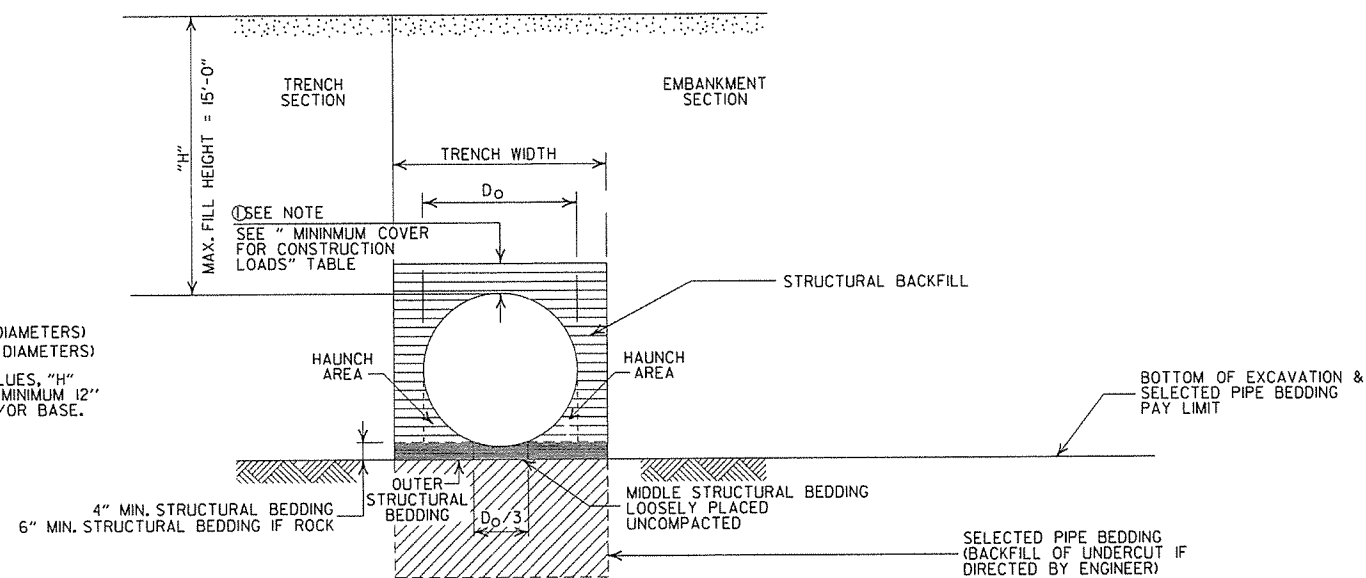
INSTALLATION TYPE	•• MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 2	•SELECTED MATERIALS (CLASS SM-1, SM-2 OR SM-4)

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

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

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

①NOTE:  
18" MIN. (18" - 30" DIAMETERS)  
24" MIN. (36" - 48" DIAMETERS)  
MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

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

MULTIPLE INSTALLATION OF HIGH DENSITY POLYETHYLENE PIPES

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

MINIMUM COVER FOR CONSTRUCTION LOADS

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

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

CONSTRUCTION SEQUENCE

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

- LEGEND -

H = FILL HEIGHT (FT.)  
D<sub>o</sub> = OUTSIDE DIAMETER OF PIPE  
MAX. = MAXIMUM  
MIN. = MINIMUM

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

GENERAL NOTES

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

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

ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT  
(HIGH DENSITY POLYETHYLENE)

STANDARD DRAWING PCP-1

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

• AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL.  
SM3 WILL NOT BE ALLOWED.

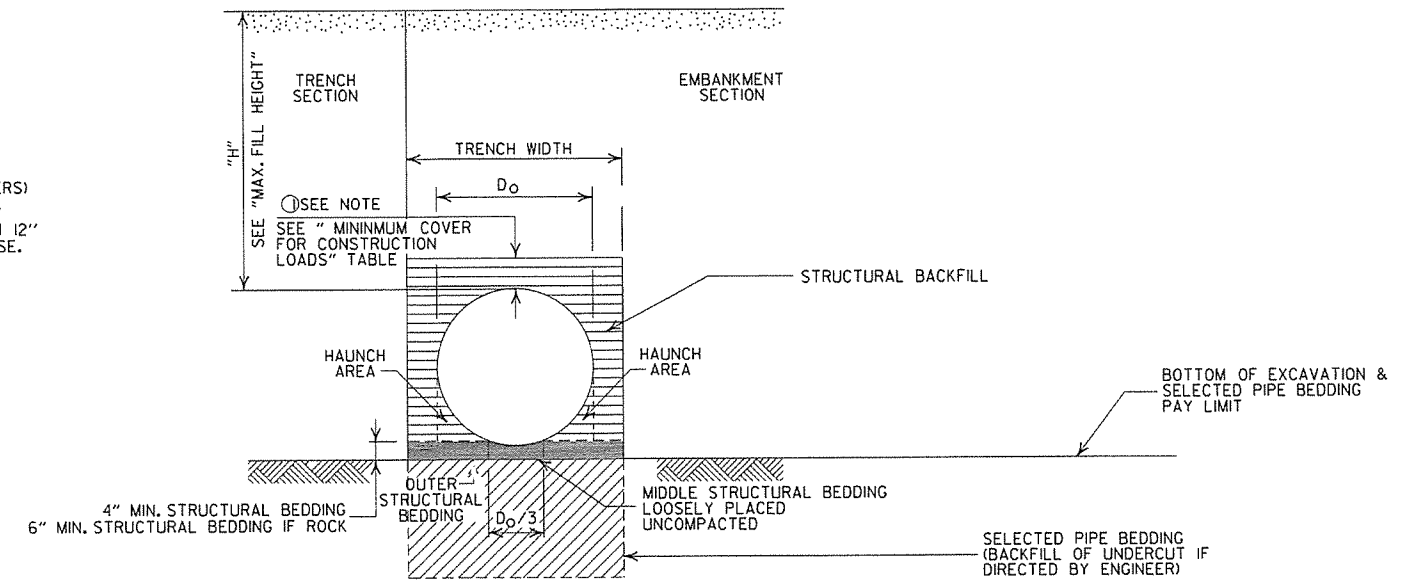
•• STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1/4 INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

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

### MAXIMUM FILL HEIGHT BASED ON STRUCTURAL BACKFILL

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

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



### TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

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

### MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

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

### MINIMUM COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS			
	18.0-50.0 (KIPS)	50.0-75.0 (KIPS)	75.0-110.0 (KIPS)	110.0-175.0 (KIPS)
18" THRU 36"	2'-0"	2'-6"	3'-0"	3'-0"

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

### MULTIPLE INSTALLATION OF PVC PIPES

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

### CONSTRUCTION SEQUENCE

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

### - LEGEND -

H = FILL HEIGHT (FT.)  
D<sub>o</sub> = OUTSIDE DIAMETER OF PIPE  
MAX. = MAXIMUM  
MIN. = MINIMUM

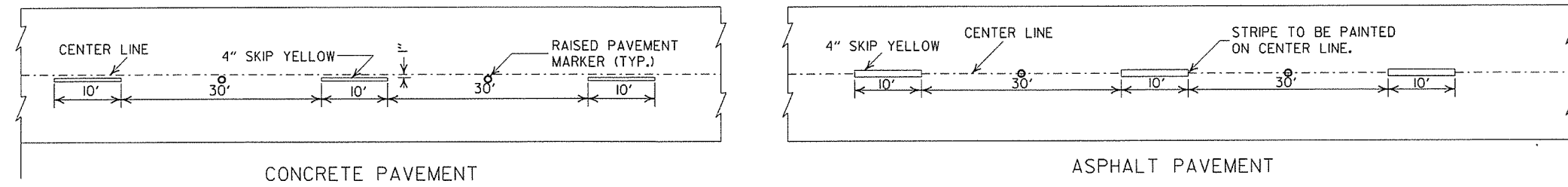
==== = STRUCTURAL BACKFILL MATERIAL  
===== = UNDISTURBED SOIL

### GENERAL NOTES

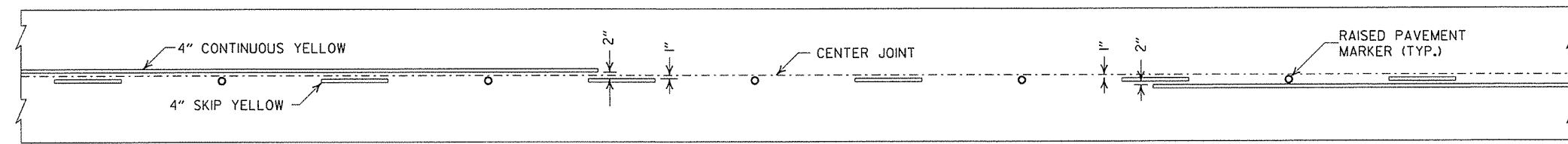
1. PIPE SHALL CONFORM TO ASTM F949, CELL CLASS I2454. INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
5. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
6. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. PVC PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR PVC PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

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

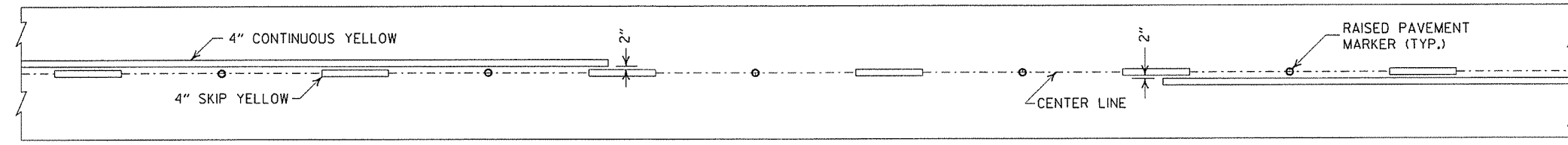
ARKANSAS STATE HIGHWAY COMMISSION	
PLASTIC PIPE CULVERT (PVC F949)	
STANDARD DRAWING	PCP-2



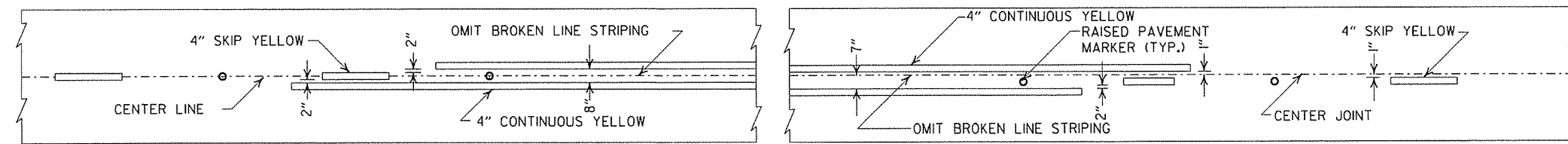
BROKEN LINE STRIPING



SOLID LINE STRIPING ON CONCRETE PAVEMENT

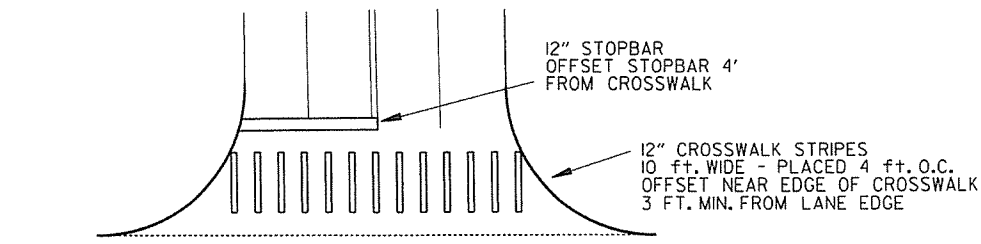


SOLID LINE STRIPING ON ASPHALT PAVEMENT



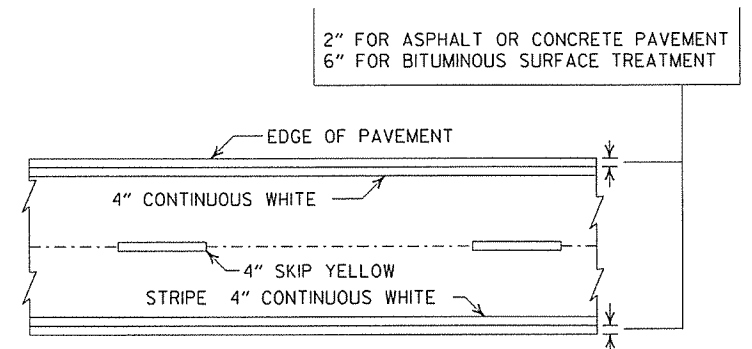
STRIPING AT ADJACENT NO PASSING LANES

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.

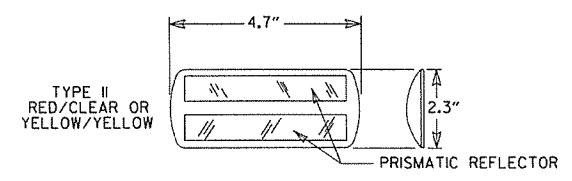


CROSSWALK AND STOPBAR DETAILS

- 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

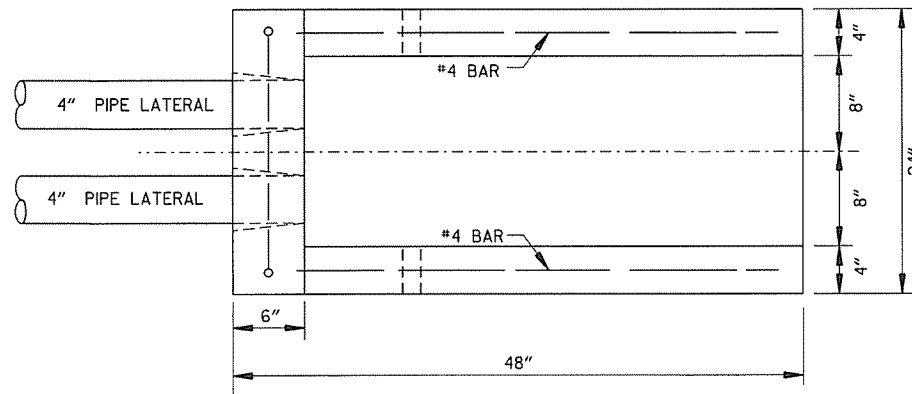
DATE	REVISION	FILMED
9-12-13	REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS	
11-17-10	REVISED GENERAL NOTES & REMOVED PLOWABLE PVMT MRKRS	
11-18-04	REVISED NOTE 2 & GENERAL NOTES	
8-22-02	ADDED CROSSWALK & STOPBAR DTLS.	
7-02-98	ADDED DETAILS OF STD. RAISED PAV'T. MARKERS	
4-26-96	REV. NOTES 3&4;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

ARKANSAS STATE HIGHWAY COMMISSION

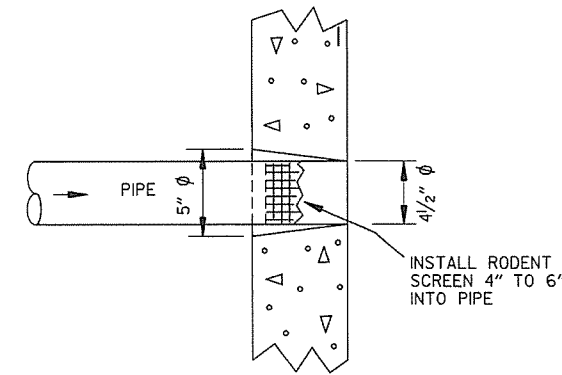
PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

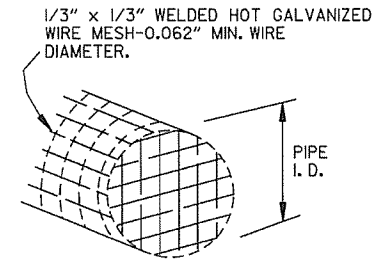
NOTE:  
 1. GRANULAR BACKFILL TO BE SUBSIDIARY TO PIPE UNDERDRAIN.  
 2. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.  
 3. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC. LAP FABRIC 12" OR THE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



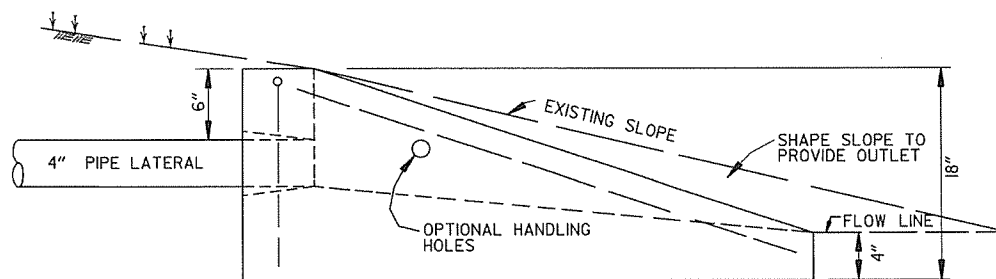
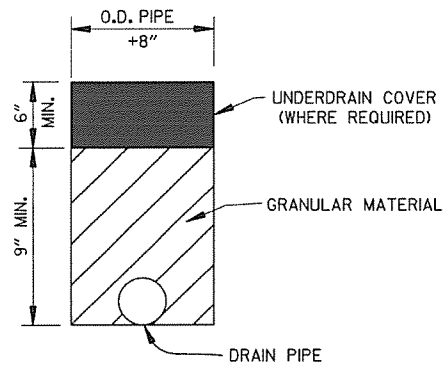
PLAN VIEW



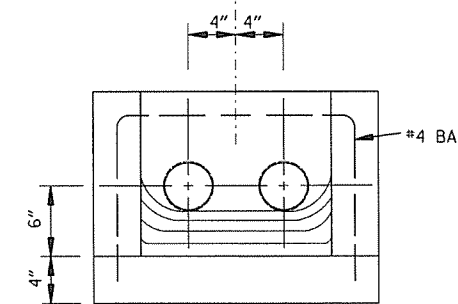
DETAIL OF HOLE FOR 4" PIPE



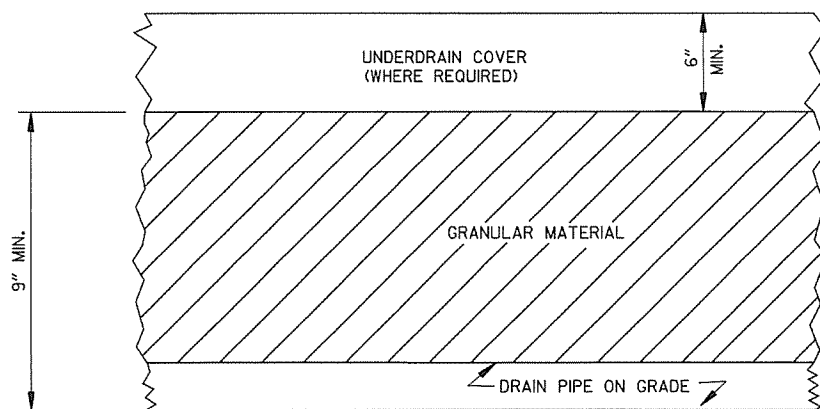
DETAIL OF RODENT SCREEN



SIDE VIEW

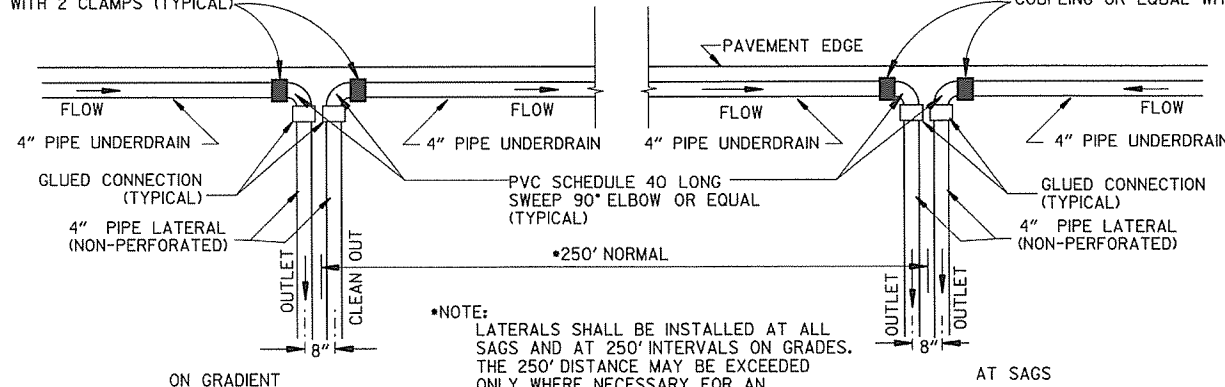


FRONT VIEW



DETAILS OF PIPE UNDERDRAIN

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



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

DETAIL OF PIPE UNDERDRAIN LATERALS WHEN PLACED ALONG PAVEMENT EDGE

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

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

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF PIPE UNDERDRAIN

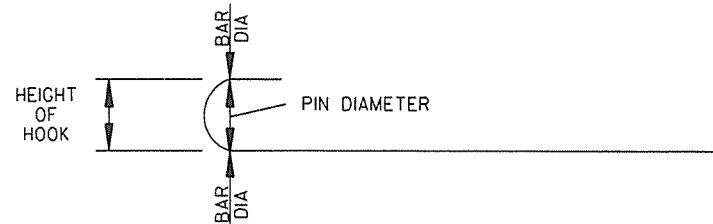
STANDARD DRAWING PU-1



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

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

IF THE OVERALL HEIGHT OF THE HOOK (SEE DIAGRAM BELOW) FOR A "b", "b1", "b2" or "b3" BENT BAR IS GREATER THAN THE CORRESPONDING TOP OR BOTTOM SLAB THICKNESS, LESS 2 3/4 INCHES, EACH BENT BAR SHALL BE REPLACED WITH ONE HOOKED BAR AND ONE STRAIGHT BAR, USING LENGTHS AS SHOWN IN THE TABLE BELOW. THE TWO BARS SHALL BE THE SAME DIAMETER AS, AND PLACED AT THE SAME SPACING AS, THE "b", "b1", "b2" OR "b3" BENT BARS THEY REPLACE.



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

OVERALL HEIGHT OF HOOKED BAR DIAGRAM

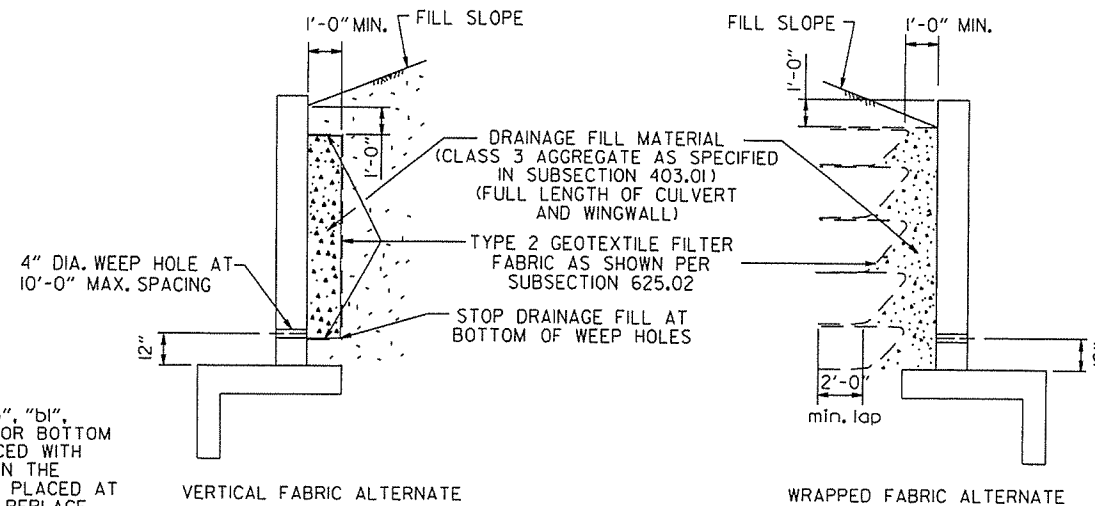
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

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

REPLACEMENT BAR LENGTHS TABLE

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

L = "OW" - 3 INCHES



WINGWALL & CULVERT DRAINAGE DETAIL

REINFORCED CONCRETE BOX CULVERT GENERAL NOTES

CONCRETE SHALL BE CLASS S WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3500 PSI. REINFORCING STEEL SHALL BE AASHTO M 31OR M 53, GRADE 60.

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

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

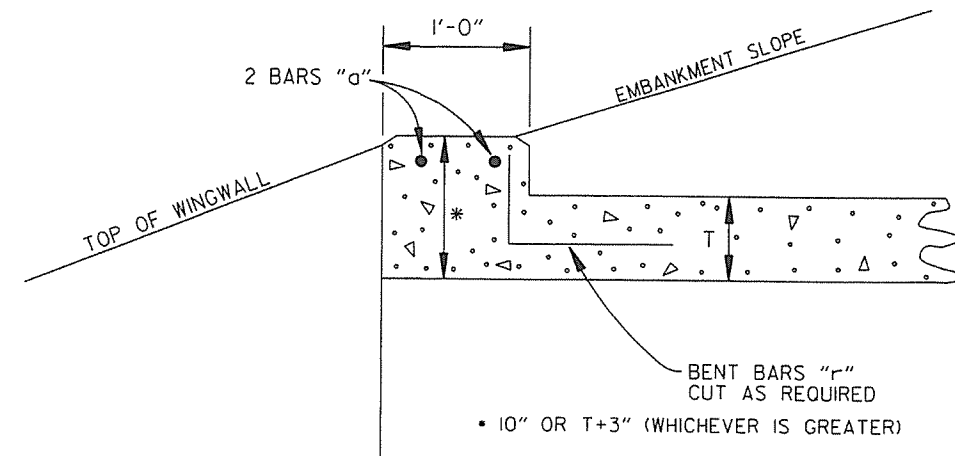
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

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

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

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

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



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

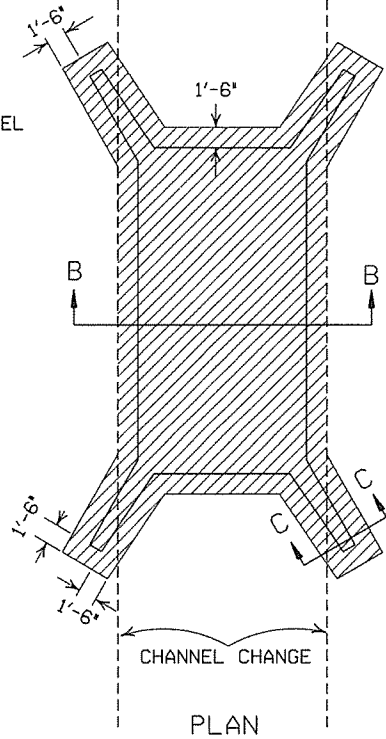
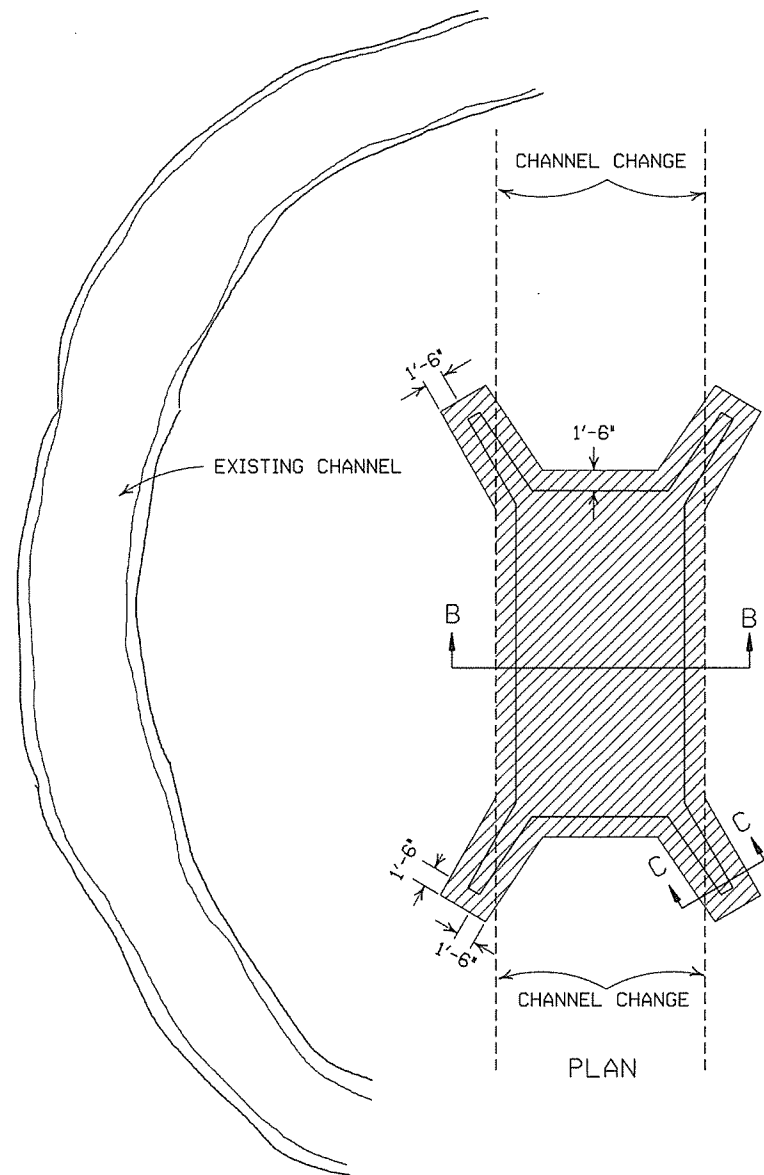
R.C. BOX CULVERT HEADWALL MODIFICATIONS

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	

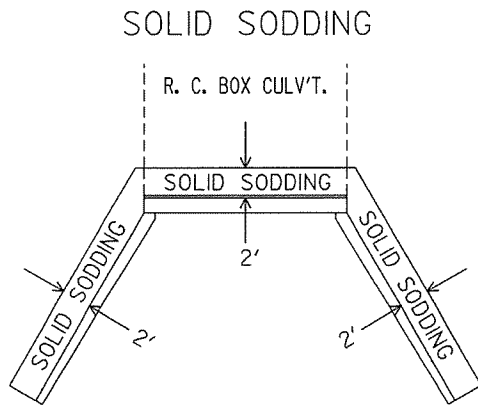
ARKANSAS STATE HIGHWAY COMMISSION

REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1



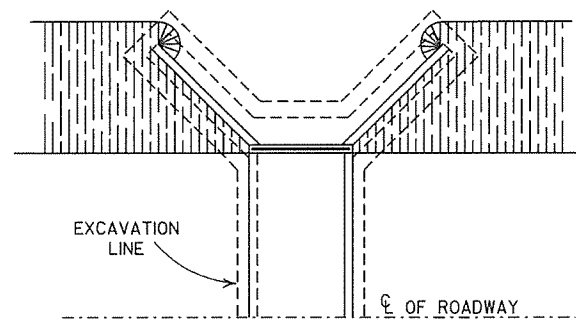
PLAN



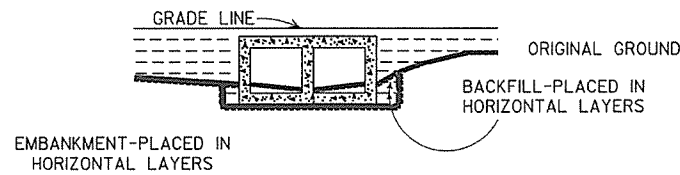
PLAN

PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

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

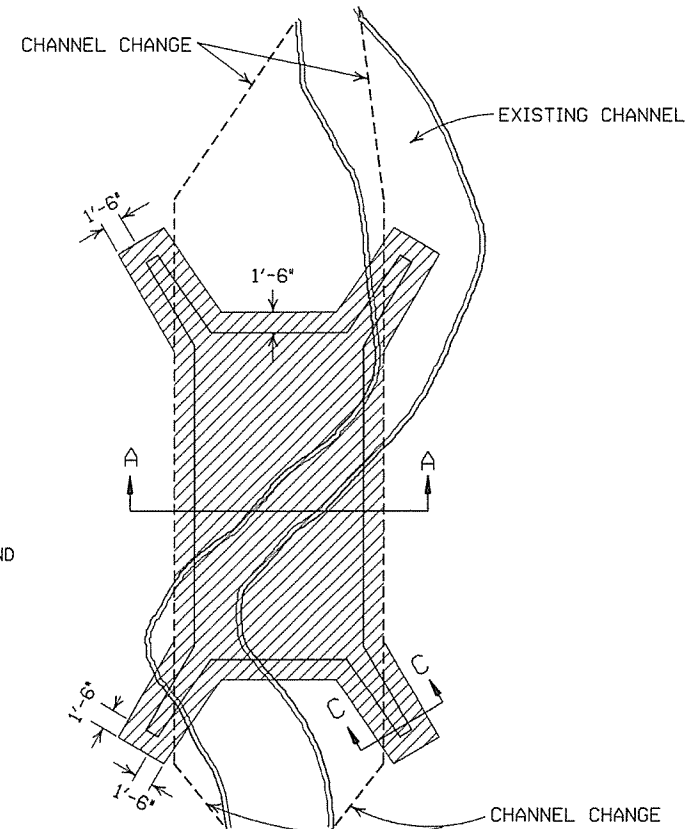


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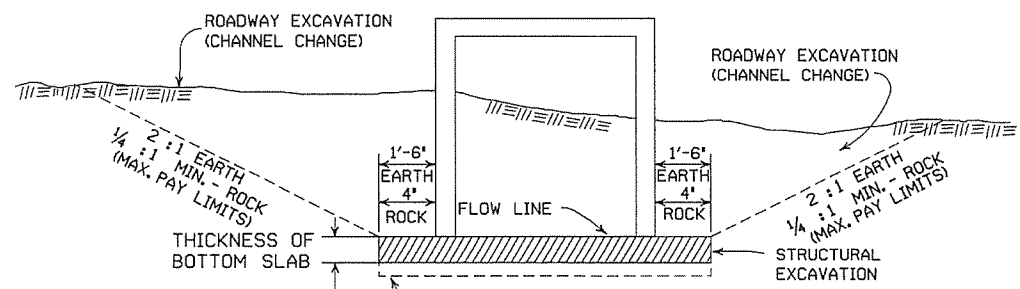


LONGITUDINAL SECTION

BACKFILL DETAILS FOR BOX CULVERT

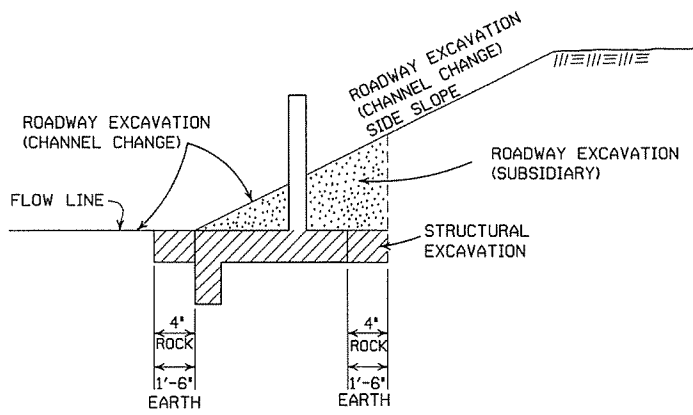


PLAN

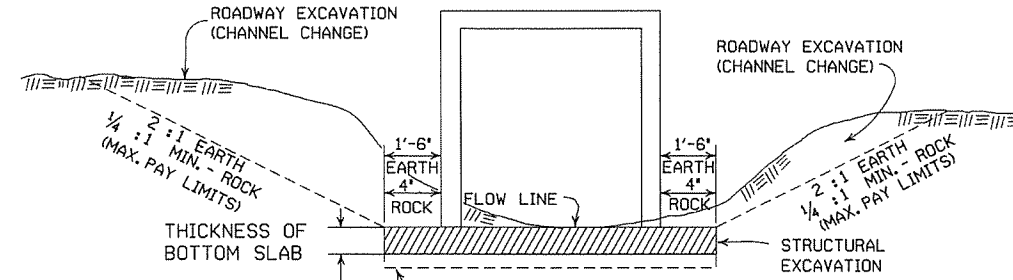


SECTION B-B  
DETAILS FOR NEW CHANNELS

UNDERCUT SHALL BE MEASURED AND PAID FOR ACCORDING TO SECTIONS 801.10 AND 801.11, RESPECTIVELY, OF THE STANDARD SPECIFICATIONS.



SECTION C-C



SECTION A-A

DETAILS THROUGH EXISTING CHANNELS

ARKANSAS STATE HIGHWAY COMMISSION

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

STANDARD DRAWING RCB-2

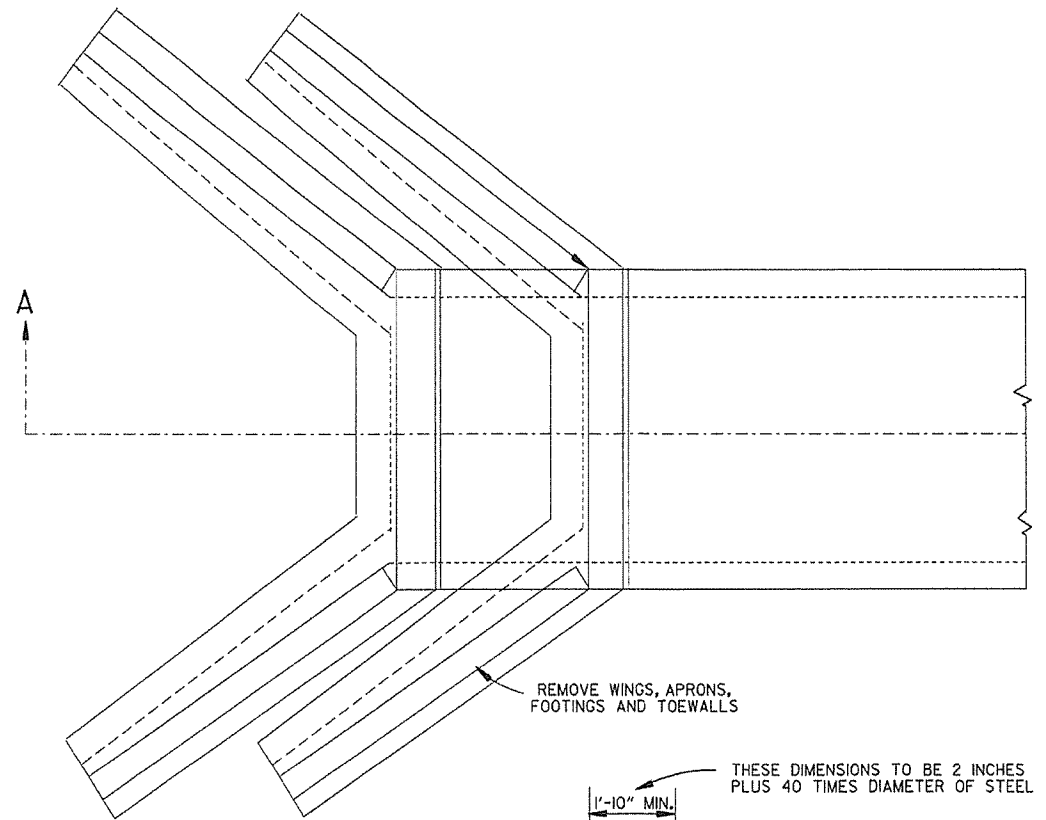
GENERAL NOTES:

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

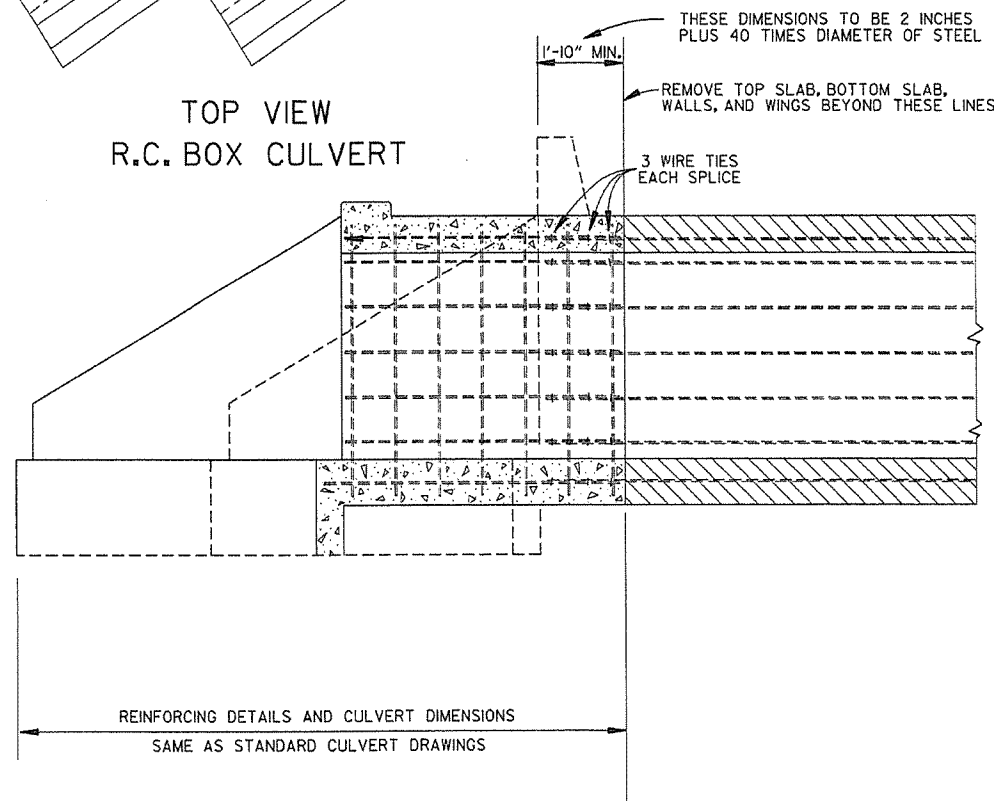
EXCAVATION FOR STRUCTURES WILL BE PAID FOR AT ALL R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS SHOWN AND SHALL BE CONFINED TO THAT PORTION OF THE INDICATED AREA THAT IS BELOW THE CHANNEL FLOW LINE.

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

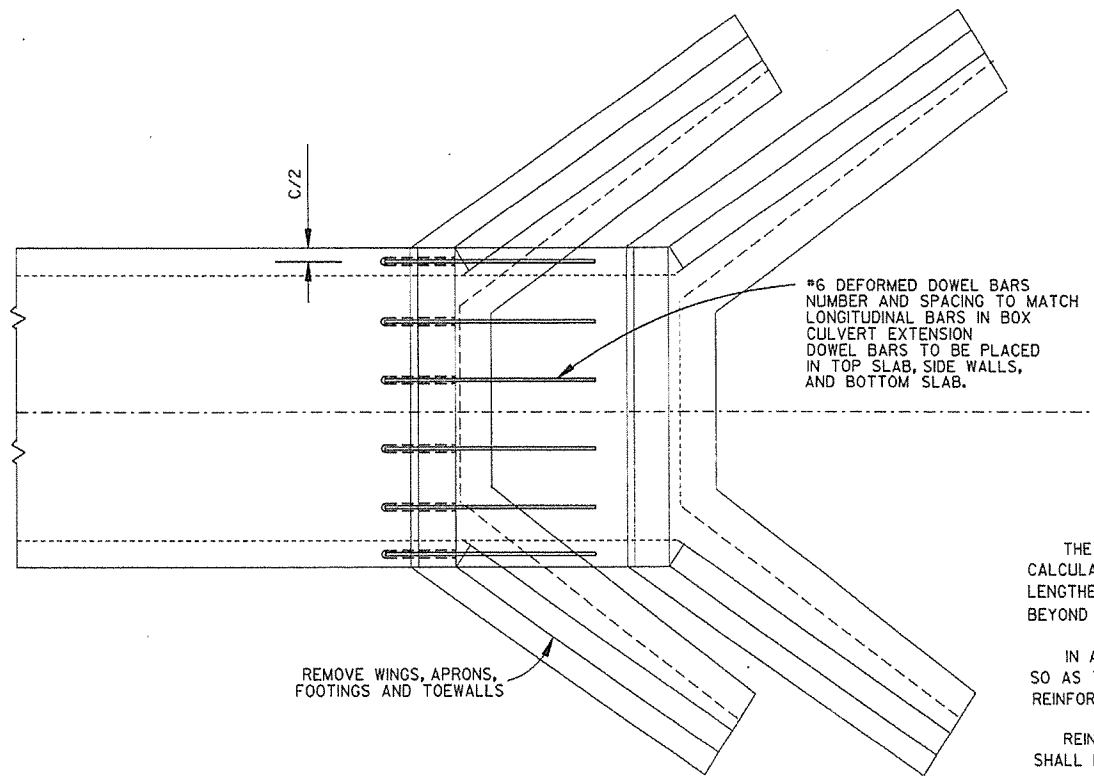
11-20-03	REVISED SECTION A-A NOTE	
8-22-02	REVISED SECTION B-B NOTE	
10-12-95	COMBINED 1891B AND 1888A	
1-4-83	REVISED GENERAL NOTES AND ADDED MAXIMUM PAY LIMIT NOTES.	674-1-4-83
2-2-76	EXCAV. PAY LIMITS	917-2-2-76
10-2-72	REVISED AND REDRAWN	564-10-16-72
DATE	REVISION	FILMED



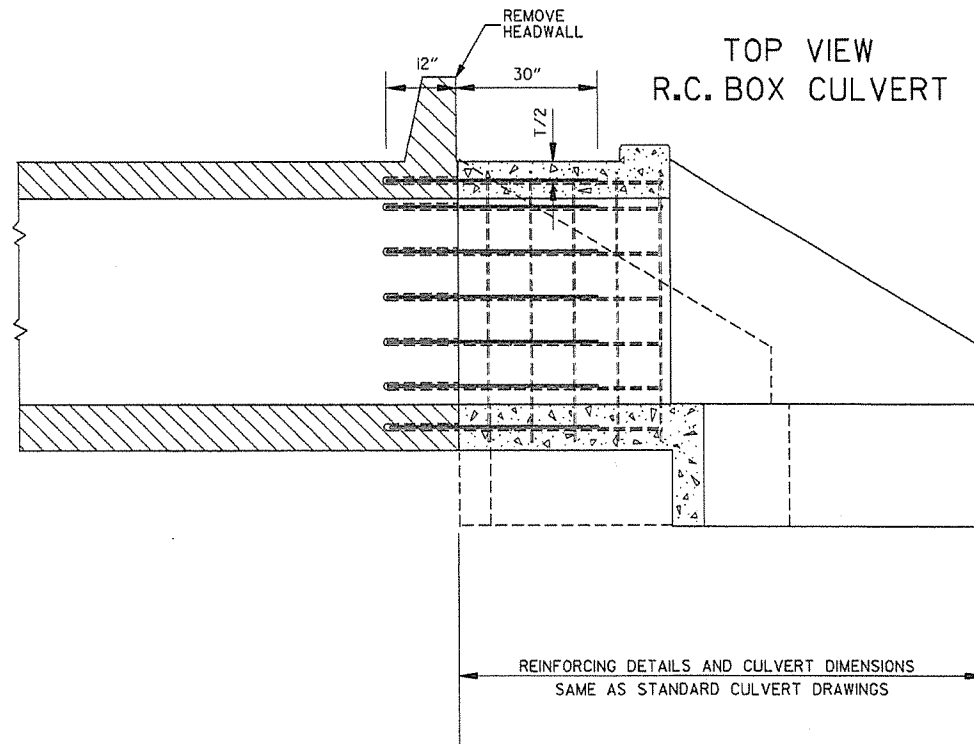
TOP VIEW  
R.C. BOX CULVERT



SECTION A-A  
METHOD 1



TOP VIEW  
R.C. BOX CULVERT



SECTION A-A  
METHOD 2

#6 DEFORMED DOWEL BARS  
NUMBER AND SPACING TO MATCH  
LONGITUDINAL BARS IN BOX  
CULVERT EXTENSION  
DOWEL BARS TO BE PLACED  
IN TOP SLAB, SIDE WALLS,  
AND BOTTOM SLAB.

GENERAL NOTES	USE FOR METHOD
THE RESIDENT ENGINEER WILL MAKE INDIVIDUAL CALCULATIONS OF QUANTITIES FOR EACH STRUCTURE LENGTHENED, MAKING NO ALLOWANCE FOR OVERBREAKAGE BEYOND THE LINES INDICATED.	1
IN ALL INSTANCES CONCRETE SHALL BE REMOVED SO AS TO PERMIT FULL 40 DIAMETER SPLICE OF REINFORCING STEEL.	1
REINFORCING STEEL REMOVED FROM EXISTING STRUCTURE SHALL NOT BE REUSED IN CONSTRUCTING EXTENSION.	1&2
ON R.C. BOX CULVERTS THAT HAVE AN EXISTING CONCRETE APRON; THE CONCRETE APRON SHALL BE REMOVED WITH THE WINGS. THE COST OF REMOVING ALL OLD CONCRETE WILL BE INCLUDED IN THE PRICE BID PER CUBIC YARD FOR NEW CONCRETE OF THE CLASS SPECIFIED AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.	1&2
MATERIALS FOR SECURING DOWEL BARS SHALL MEET THE REQUIREMENTS OF SECTION 507.02 OF THE STANDARD SPECIFICATIONS.	2
DOWEL BARS SHALL BE INSTALLED AS FOLLOWS: THE DRILLING PROCEDURE SHALL BE APPROVED BY THE ENGINEER, THE FILLING SYSTEM SHALL BE APPROVED BY THE ENGINEER AND SHALL BE AN INJECTION-TYPE SYSTEM WHICH WILL INSURE THAT SUFFICIENT MATERIAL IS INJECTED SO IT COMPLETELY SURROUNDS THE BARS AND FILLS THE HOLES.	2
THE CONTRACTOR SHALL HAVE THE OPTION OF USING EITHER METHOD 1 OR METHOD 2. REGARDLESS OF WHICH METHOD IS USED, PAY QUANTITIES WILL BE CALCULATED BASED ON METHOD 1.	1&2

NOTE:  
NO PART OF THIS STANDARD IS TO BE USED FOR ANY DETAILS RELATIVE TO NEW CONSTRUCTION.  
SEE STANDARD DRAWING LISTED IN TABULATION OF STRUCTURES FOR ALL NEW CONSTRUCTION DETAILS.

ARKANSAS STATE HIGHWAY COMMISSION		
METHOD OF EXTENDING EXISTING R.C. BOX CULVERTS		
STANDARD DRAWING RCB-3		
10-12-95	CHANGED DRAWING * FROM 144-A	
4-1-93	ADDED GENERAL NOTE	
10-1-92	ADDED ALT. METHOD OF EXTENSION	
11-30-89	REDRAWN	
1-4-83	ELIMINATED CONCRETE CLASS	
12-20-56	RETRACED	
DATE	REVISION	DATE FILM

SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

DEGREE OF CURVE	30 MPH		40 MPH		50 MPH		55 MPH		60 MPH		70 MPH	
	Ls (FT)		Ls (FT)		Ls (FT)		Ls (FT)		Ls (FT)		Ls (FT)	
	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE
0° 15'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
0° 30'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
0° 45'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
1° 00'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
1° 15'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
1° 30'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
1° 45'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
2° 00'	R.C.		R.C.		R.C.		R.C.		R.C.		R.C.	
2° 15'	R.C.		R.C.		R.C.		R.C.		R.C.		R.C.	
2° 30'	0.021		0.021		0.021		0.021		0.021		0.021	
2° 45'	0.023		0.023		0.023		0.023		0.023		0.023	
3° 00'	0.025		0.025		0.025		0.025		0.025		0.025	
3° 15'	0.027		0.027		0.027		0.027		0.027		0.027	
3° 30'	0.029		0.029		0.029		0.029		0.029		0.029	
3° 45'	0.031		0.031		0.031		0.031		0.031		0.031	
4° 00'	0.033		0.033		0.033		0.033		0.033		0.033	
4° 30'	0.037		0.037		0.037		0.037		0.037		0.037	
5° 00'	0.040		0.040		0.040		0.040		0.040		0.040	
5° 30'	0.043		0.043		0.043		0.043		0.043		0.043	
6° 00'	0.046		0.046		0.046		0.046		0.046		0.046	
6° 30'	0.049		0.049		0.049		0.049		0.049		0.049	
7° 00'	0.051		0.051		0.051		0.051		0.051		0.051	
7° 30'	0.053		0.053		0.053		0.053		0.053		0.053	
7° 45'	0.055		0.055		0.055		0.055		0.055		0.055	
8° 00'	0.057		0.057		0.057		0.057		0.057		0.057	
8° 15'	0.059		0.059		0.059		0.059		0.059		0.059	
8° 30'	0.061		0.061		0.061		0.061		0.061		0.061	
8° 45'	0.063		0.063		0.063		0.063		0.063		0.063	
9° 00'	0.065		0.065		0.065		0.065		0.065		0.065	
9° 15'	0.067		0.067		0.067		0.067		0.067		0.067	
9° 30'	0.069		0.069		0.069		0.069		0.069		0.069	
9° 45'	0.071		0.071		0.071		0.071		0.071		0.071	
10° 00'	0.073		0.073		0.073		0.073		0.073		0.073	
10° 15'	0.075		0.075		0.075		0.075		0.075		0.075	
10° 30'	0.077		0.077		0.077		0.077		0.077		0.077	
10° 45'	0.079		0.079		0.079		0.079		0.079		0.079	
11° 00'	0.081		0.081		0.081		0.081		0.081		0.081	
11° 15'	0.083		0.083		0.083		0.083		0.083		0.083	
11° 30'	0.085		0.085		0.085		0.085		0.085		0.085	
11° 45'	0.087		0.087		0.087		0.087		0.087		0.087	
12° 00'	0.089		0.089		0.089		0.089		0.089		0.089	
12° 15'	0.091		0.091		0.091		0.091		0.091		0.091	
12° 30'	0.093		0.093		0.093		0.093		0.093		0.093	
12° 45'	0.095		0.095		0.095		0.095		0.095		0.095	
13° 00'	0.097		0.097		0.097		0.097		0.097		0.097	
13° 15'	0.099		0.099		0.099		0.099		0.099		0.099	
13° 30'	0.101		0.101		0.101		0.101		0.101		0.101	
13° 45'	0.103		0.103		0.103		0.103		0.103		0.103	
14° 00'	0.105		0.105		0.105		0.105		0.105		0.105	
14° 15'	0.107		0.107		0.107		0.107		0.107		0.107	
14° 30'	0.109		0.109		0.109		0.109		0.109		0.109	
14° 45'	0.111		0.111		0.111		0.111		0.111		0.111	
15° 00'	0.113		0.113		0.113		0.113		0.113		0.113	
15° 15'	0.115		0.115		0.115		0.115		0.115		0.115	
15° 30'	0.117		0.117		0.117		0.117		0.117		0.117	
15° 45'	0.119		0.119		0.119		0.119		0.119		0.119	
16° 00'	0.121		0.121		0.121		0.121		0.121		0.121	
16° 15'	0.123		0.123		0.123		0.123		0.123		0.123	
16° 30'	0.125		0.125		0.125		0.125		0.125		0.125	
16° 45'	0.127		0.127		0.127		0.127		0.127		0.127	
17° 00'	0.129		0.129		0.129		0.129		0.129		0.129	
17° 15'	0.131		0.131		0.131		0.131		0.131		0.131	
17° 30'	0.133		0.133		0.133		0.133		0.133		0.133	
17° 45'	0.135		0.135		0.135		0.135		0.135		0.135	
18° 00'	0.137		0.137		0.137		0.137		0.137		0.137	
18° 15'	0.139		0.139		0.139		0.139		0.139		0.139	
18° 30'	0.141		0.141		0.141		0.141		0.141		0.141	
18° 45'	0.143		0.143		0.143		0.143		0.143		0.143	
19° 00'	0.145		0.145		0.145		0.145		0.145		0.145	
19° 15'	0.147		0.147		0.147		0.147		0.147		0.147	
19° 30'	0.149		0.149		0.149		0.149		0.149		0.149	
19° 45'	0.151		0.151		0.151		0.151		0.151		0.151	
20° 00'	0.153		0.153		0.153		0.153		0.153		0.153	
20° 15'	0.155		0.155		0.155		0.155		0.155		0.155	
20° 30'	0.157		0.157		0.157		0.157		0.157		0.157	
20° 45'	0.159		0.159		0.159		0.159		0.159		0.159	
21° 00'	0.161		0.161		0.161		0.161		0.161		0.161	
21° 15'	0.163		0.163		0.163		0.163		0.163		0.163	
21° 30'	0.165		0.165		0.165		0.165		0.165		0.165	
21° 45'	0.167		0.167		0.167		0.167		0.167		0.167	
22° 00'	0.169		0.169		0.169		0.169		0.169		0.169	
22° 15'	0.171		0.171		0.171		0.171		0.171		0.171	
22° 30'	0.173		0.173		0.173		0.173		0.173		0.173	
22° 45'	0.175		0.175		0.175		0.175		0.175		0.175	
23° 00'	0.177		0.177		0.177		0.177		0.177		0.177	
23° 15'	0.179		0.179		0.179		0.179		0.179		0.179	
23° 30'	0.181		0.181		0.181		0.181		0.181		0.181	
23° 45'	0.183		0.183		0.183		0.183		0.183		0.183	
24° 00'	0.185		0.185		0.185		0.185		0.185		0.185	

D MAX = 24' 45'

ABBREVIATIONS

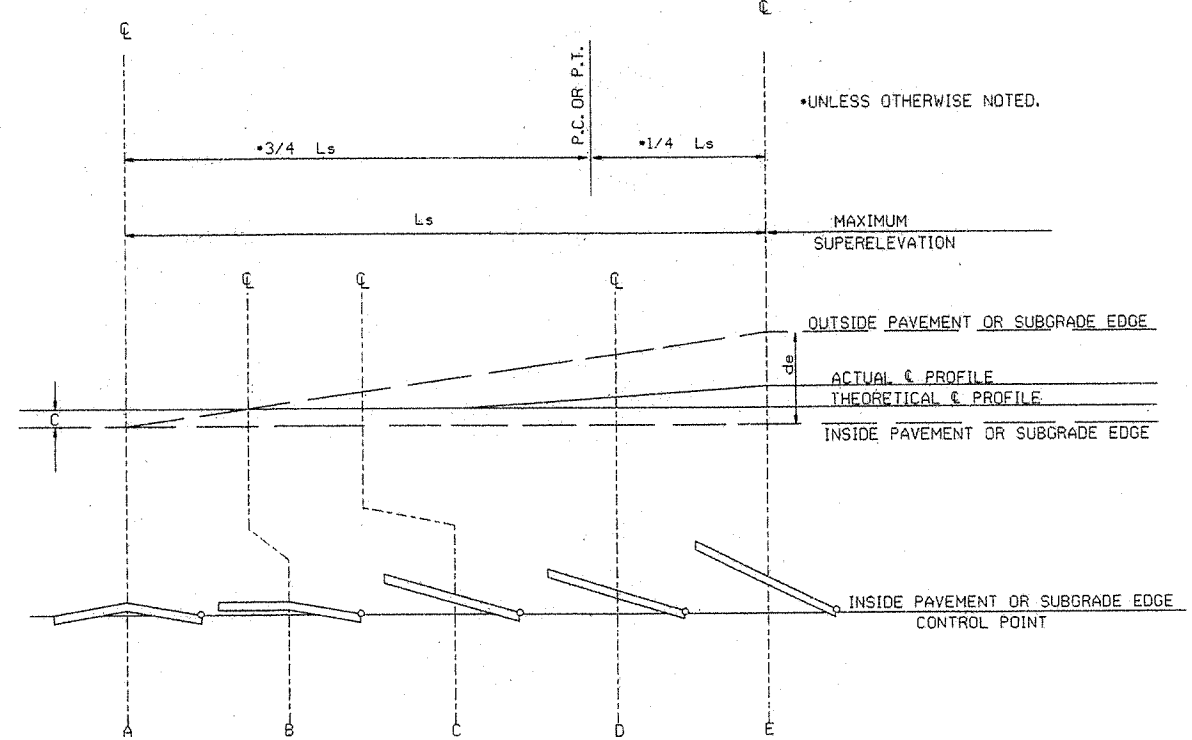
- NC - NORMAL CROWN
- RC - REVERSE CROWN, SUPERELEVATION AT NORMAL CROWN SLOPE
- e - RATE OF SUPERELEVATION (FT. PER FT.)
- Ls - LENGTH OF SUPERELEVATION TRANSITION (FT.)
- L - DISTANCE FROM BEGINNING OF SUPERELEVATION TRANSITION TO ANY POINT (FT.)
- d - WIDTH OF PAVEMENT (FT.) OR WIDTH OF SUBGRADE (FT.)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

GENERAL NOTES

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

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

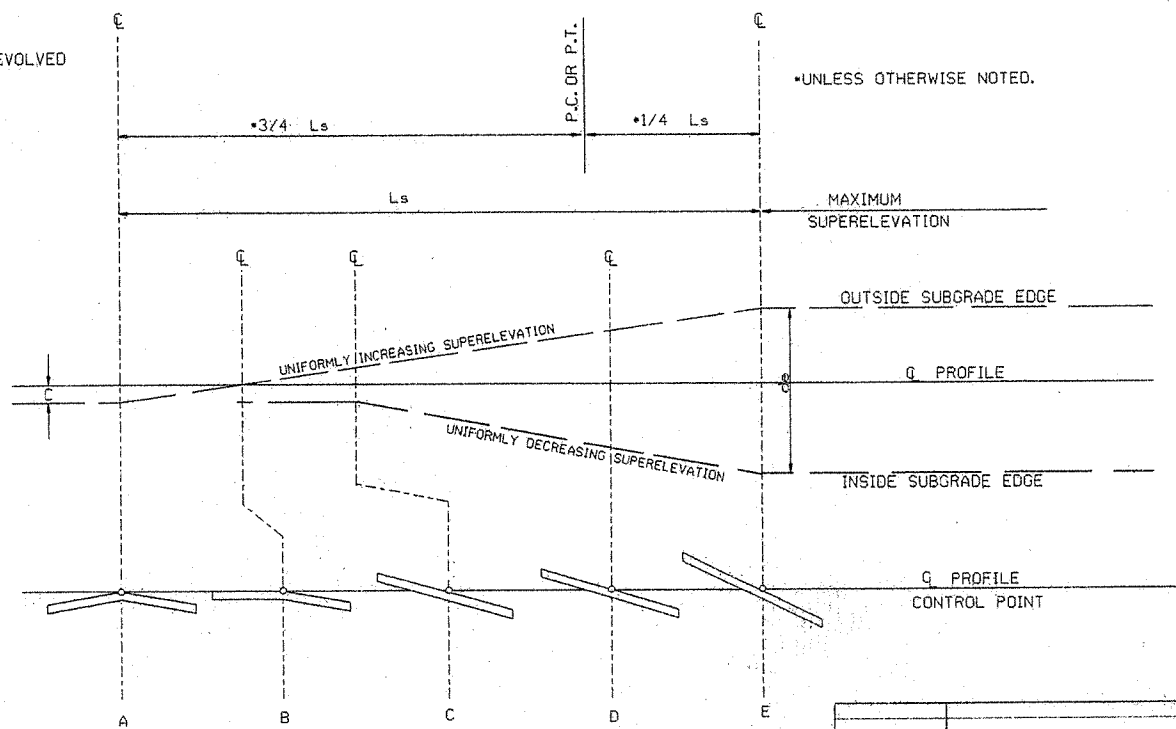
NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.  
RATE OF SUPERELEVATION SHALL BE COMPUTED ON STRAIGHT LINE METHOD USING APPLICABLE Ls.



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

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

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



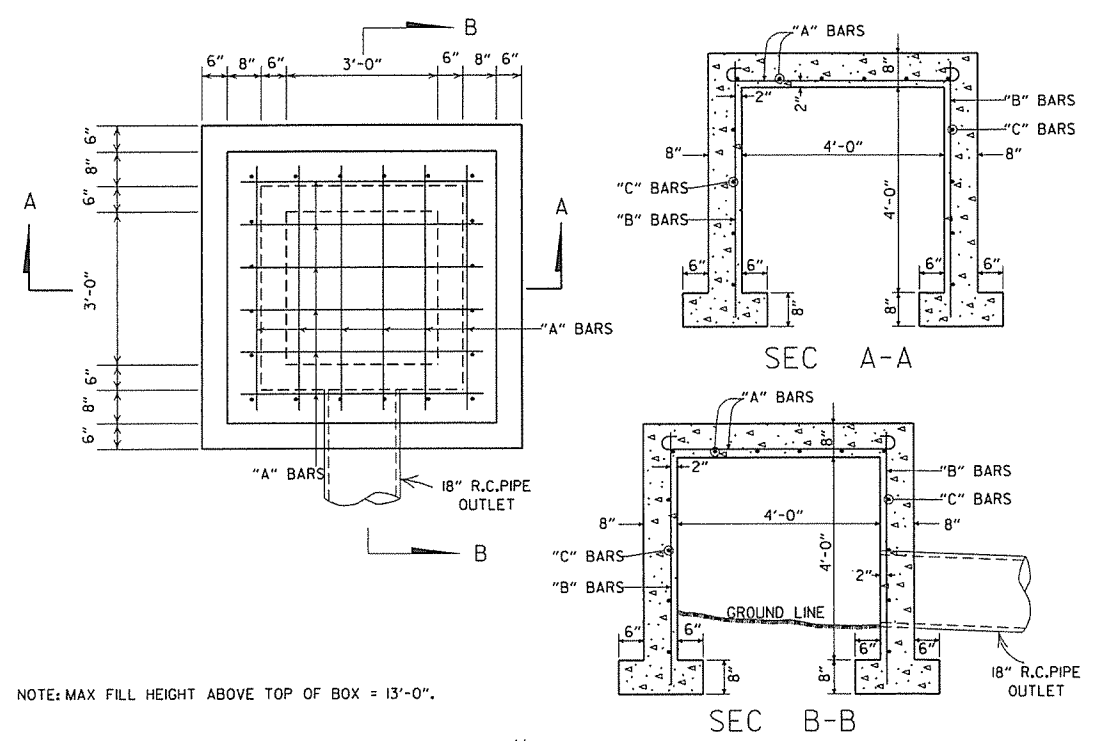
STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE

ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

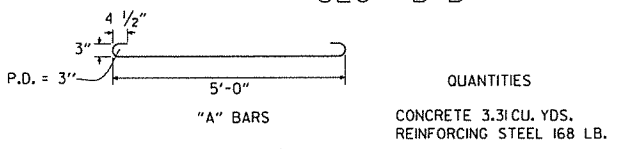
STANDARD DRAWING SE-2

10-18-96	ADDED FORMULA	10-18-96
01-09-87	ISSUED	534-1-9-87
DATE	REVISION	DATE FILLED



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

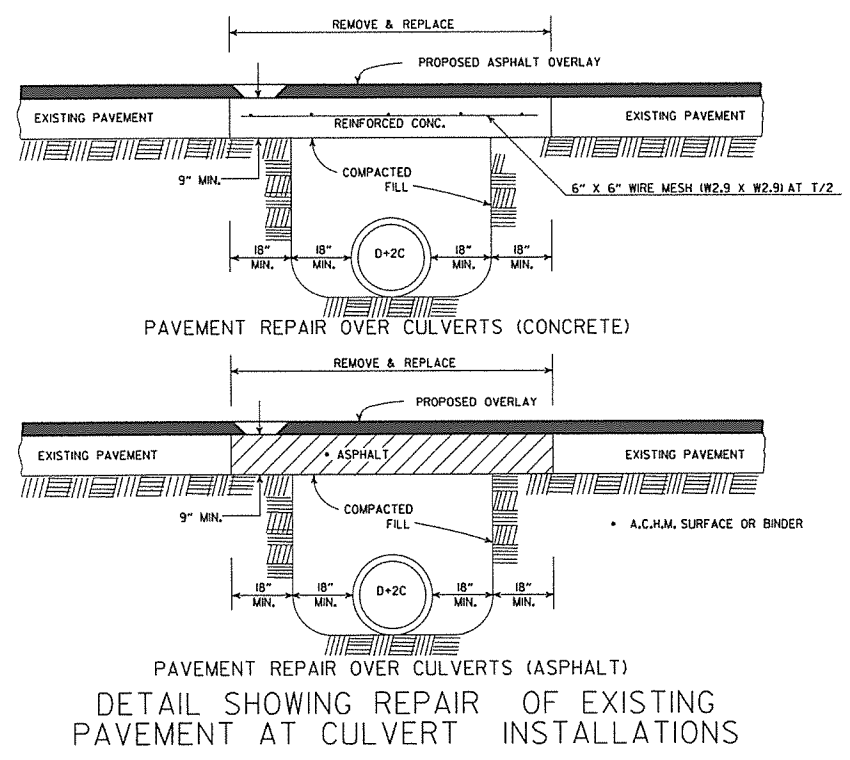
STEEL SCHEDULE			
BARS	NUMBER	LENGTH	SPACING
"A"	12	6'-0"	10"
"B"	20	5'-0"	10 1/2"
"C"	16	5'-0"	12"



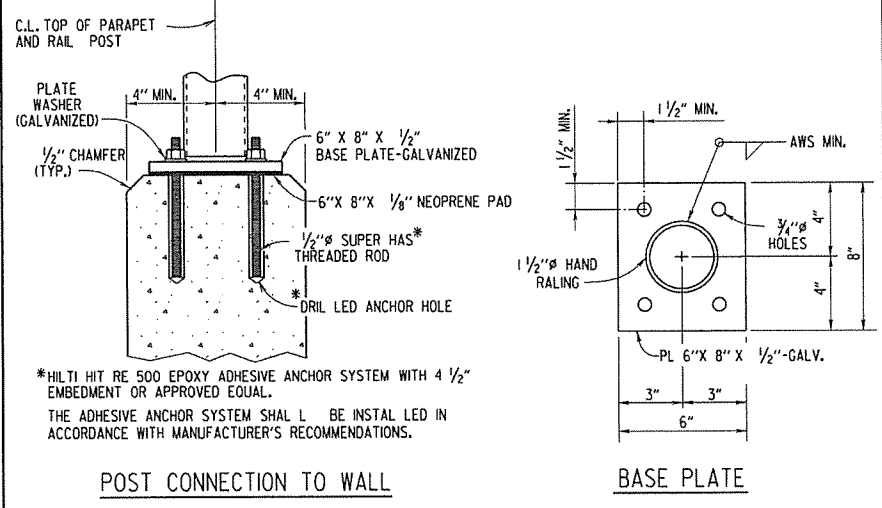
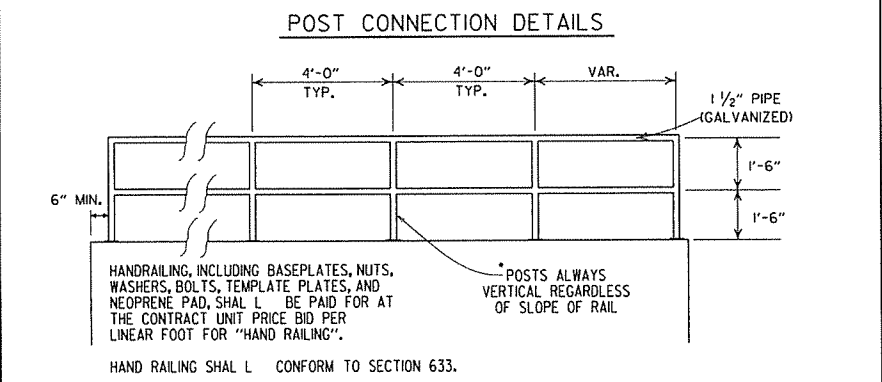
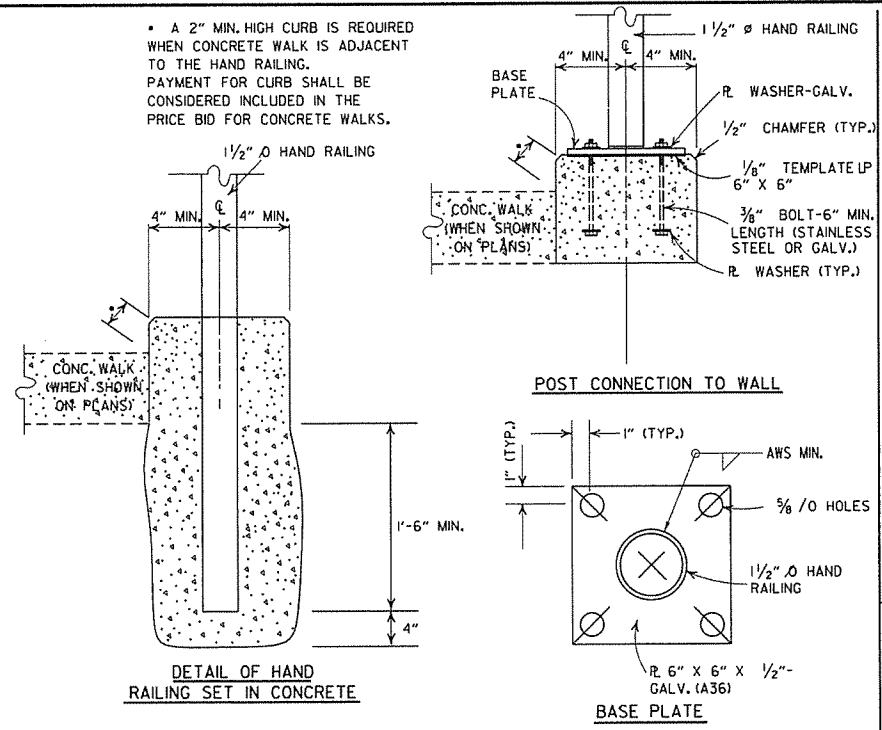
QUANTITIES  
 CONCRETE 3.31 CU. YDS.  
 REINFORCING STEEL 168 LB.

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

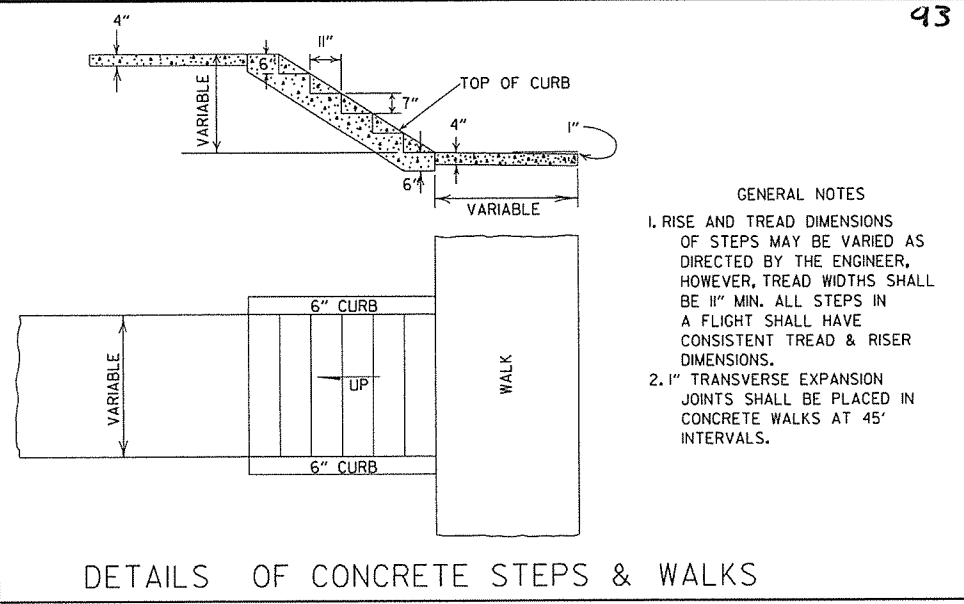
REINFORCED CONCRETE SPRING BOX



DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS



DETAILS OF ALTERNATE POST ANCHOR SYSTEM (EPOXY ADHESIVE ANCHORS)  
 HAND RAILING DETAILS


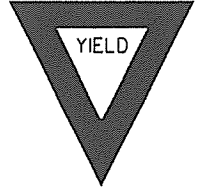

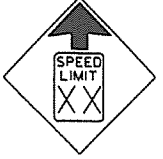

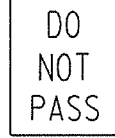
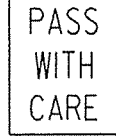


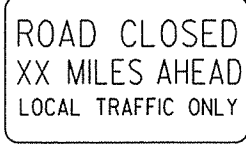
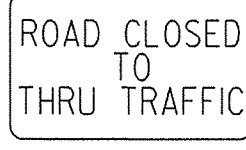
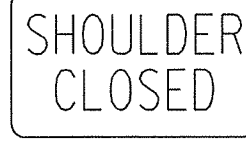
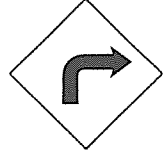

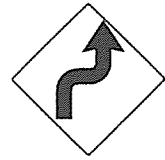

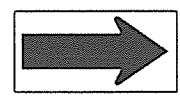

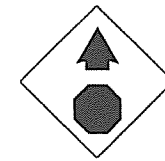
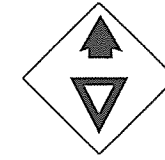
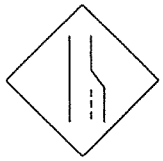

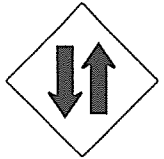


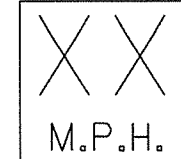





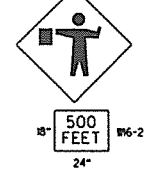


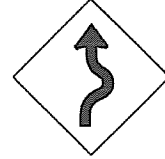
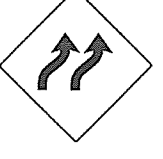


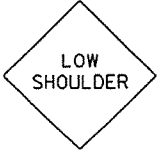
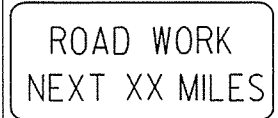
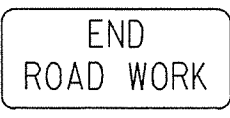
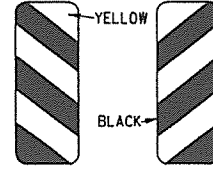


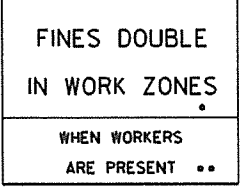


GENERAL NOTES  
 1. RISE AND TREAD DIMENSIONS OF STEPS MAY BE VARIED AS DIRECTED BY THE ENGINEER, HOWEVER, TREAD WIDTHS SHALL BE 11" MIN. ALL STEPS IN A FLIGHT SHALL HAVE CONSISTENT TREAD & RISER DIMENSIONS.  
 2. 1" TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE WALKS AT 45' INTERVALS.

DETAILS OF CONCRETE STEPS & WALKS

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

ARKANSAS STATE HIGHWAY COMMISSION  
 DETAILS OF SPECIAL ITEMS  
 STANDARD DRAWING SI-1

<p>RI-1</p>  <p>STANDARD 30"x30" EXPRESSWAY 36"x36" SPECIAL 48"x48"</p>	<p>RI-2</p>  <p>STD. 36"x36"x36" EXPWY. 48"x48"x48" FWY. 60"x60"x60"</p>	<p>R2-1</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	<p>W3-5</p>  <p>STD. 36"x36" EXPWY. 48"x48" FWY. 48"x48"</p>	<p>W3-5a</p>  <p>STD. 36"x36" EXPWY. 48"x48" FWY. 48"x48"</p>	<p>R4-1</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	<p>R4-2</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	
<p>R5-1</p>  <p>STD. 30"x30" EXPWY. 36"x36" SPECIAL 48"x48"</p>	<p>R11-2</p>  <p>48"x30"</p>	<p>R11-3A</p>  <p>60"x30"</p>	<p>R11-4</p>  <p>60"x30"</p>	<p>RSP-1</p>  <p>48"x30"</p>	<p>W1-1</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W1-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	
<p>W1-3</p>  <p>STD. 48"x48"</p>	<p>W1-4</p>  <p>STD. 48"x48"</p>	<p>W1-6</p>  <p>STD. 48"x24" SPECIAL 60"x30"</p>	<p>W1-8</p>  <p>STD. 18"x24" SPECIAL 24"x30" EXPWY. 30"x36" FWY. 36"x48"</p>	<p>W3-1</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p>	<p>W3-2</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p>	<p>W4-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	
<p>W5-1</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p>	<p>W6-3</p>  <p>EXPWY. 36"x36" SPECIAL 48"x48"</p>	<p>W8-7</p>  <p>EXPWY. 36"x36" FWY. 48"x48"</p>	<p>W9-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W13-1</p>  <p>STD. 24"x24"</p>	<p>W20-1</p>  <p>STD. 48"x48"</p>	<p>W20-2</p>  <p>STD. 48"x48"</p>	<p>W20-3</p>  <p>STD. 48"x48"</p>
<p>W20-4</p>  <p>STD. 48"x48"</p>	<p>W20-5</p>  <p>STD. 48"x48"</p>	<p>W20-7a</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W21-2</p>  <p>STD. 30"x30" SPECIAL 36"x36"</p>	<p>W21-5</p>  <p>STD. 30"x30" SPECIAL 36"x36"</p>	<p>W24-1</p>  <p>STD. 36"x36"</p>	<p>W1-4b</p>  <p>STD. 48"x48"</p>	<p>R56-1</p>  <p>STD. 18"x18"</p>
<p>W8-11</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W8-9</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>G20-1</p>  <p>60"x24"</p>	<p>G20-2</p>  <p>48"x24"</p>	<p>OM-3L OM-3R</p>  <p>12"x36"</p>	<p>M4-9</p>  <p>STD. 30"x24" SPECIAL 48"x36" SPECIAL 60"x48"</p>	<p>M4-10</p>  <p>48"x18"</p>	<p>R55-1</p>  <p>36"x60"</p> <p>• USE 6" C LETTERS •• USE 4" D LETTERS</p>

ADVANCE DISTANCES (XXXX)

500 FT	1/2 MILE
1000 FT	3/4 MILE
1500 FT	1 MILE AHEAD

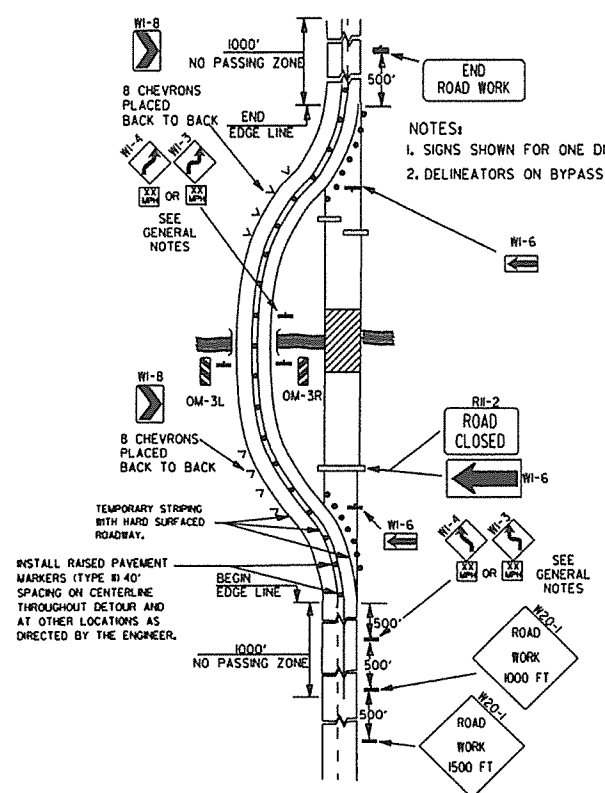
GENERAL NOTES:

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

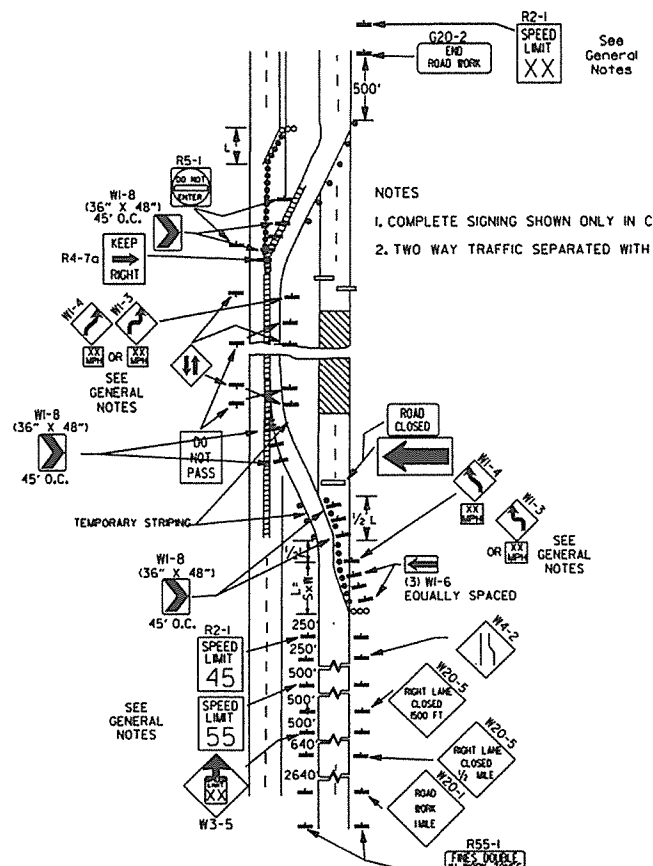
\* NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY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

9-2-15	REVISED REDUCED SPEED LIMIT AHEAD SIGNS REVISED ROAD WORK NEXT XX MILES	
12-15-4	REVISED W24-1	
1-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
1-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
1-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
1-18-98	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	
8-15-9	DRAWN AND PLACED IN USE	
DATE	REVISION	FILED

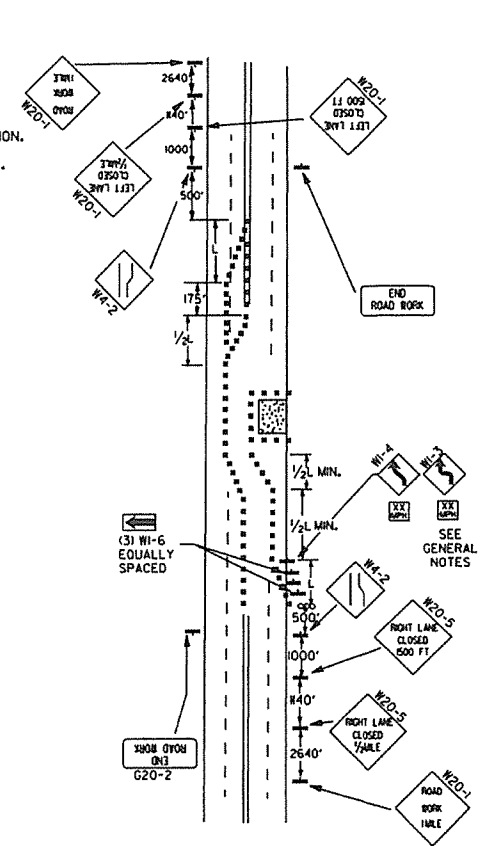
ARKANSAS STATE HIGHWAY COMMISSION  
STANDARD TRAFFIC CONTROLS  
FOR HIGHWAY CONSTRUCTION  
STANDARD DRAWING TC-1



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

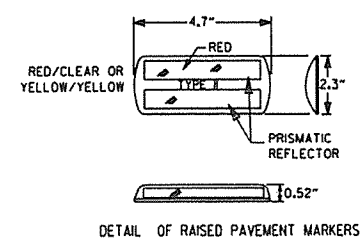


(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.

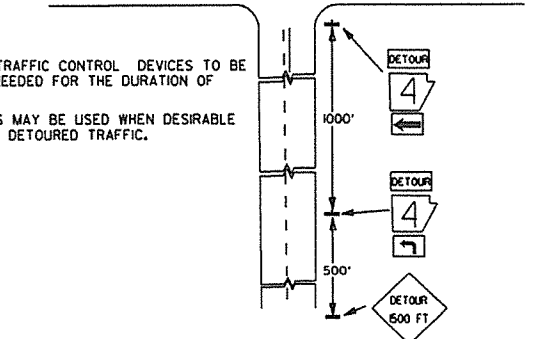
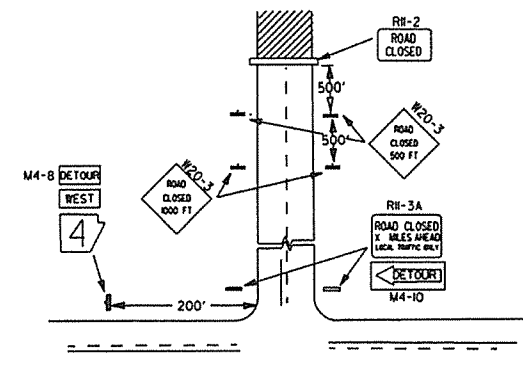


(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.

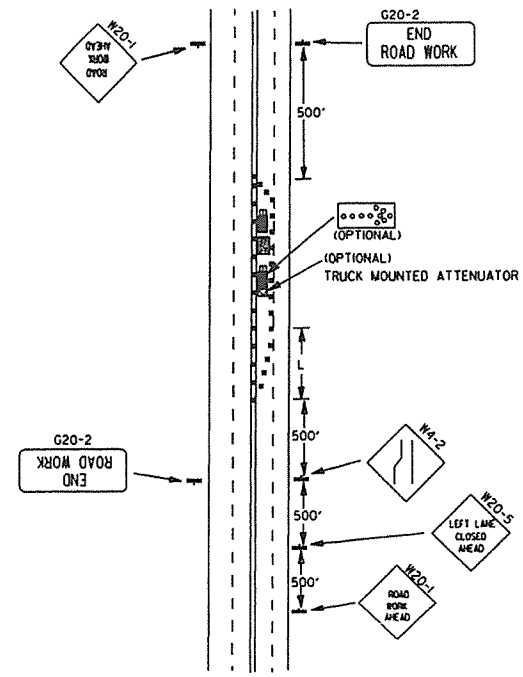
- KEY:
- FLAGGER
  - POSITIVE BARRIER
  - ARROW PANEL (IF REQUIRED)
  - TYPE III BARRICADE
  - CHANNELIZING DEVICE
  - TRAFFIC DRUM
  - RAISED PAVEMENT MARKER



TAPER FORMULAE:  
L=SW FOR SPEEDS OF 45MPH OR MORE.  
L= WS<sup>2</sup> / 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.



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



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

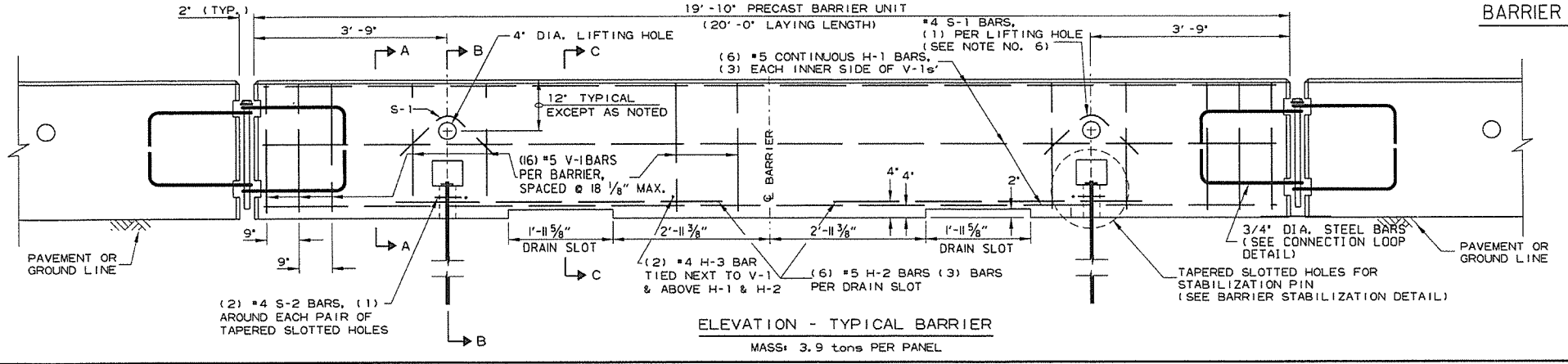
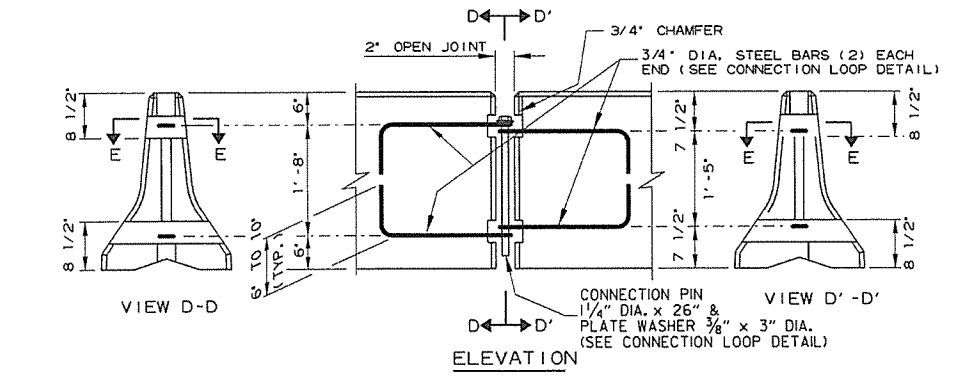
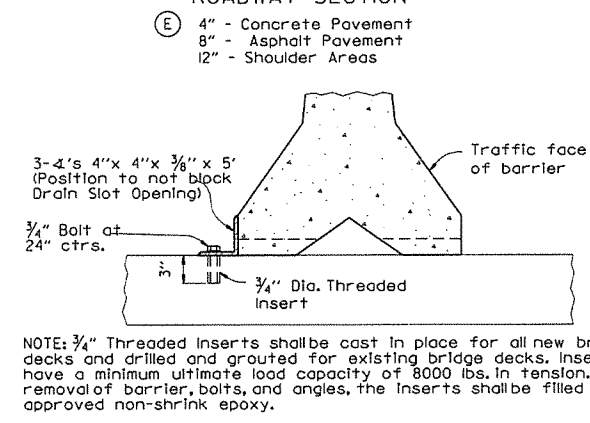
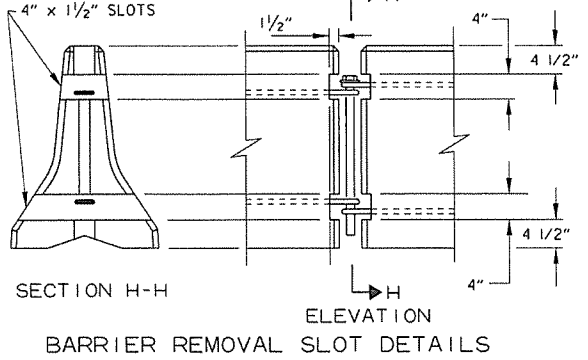
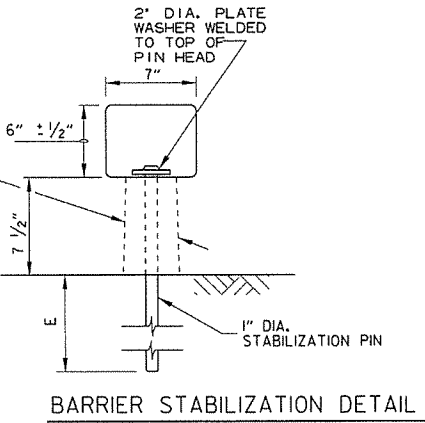
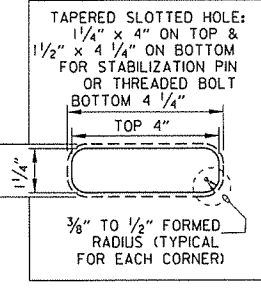
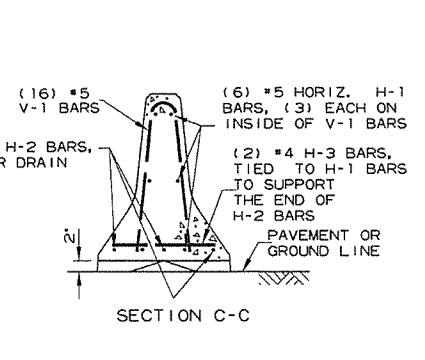
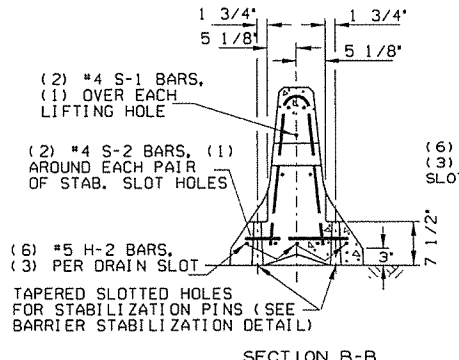
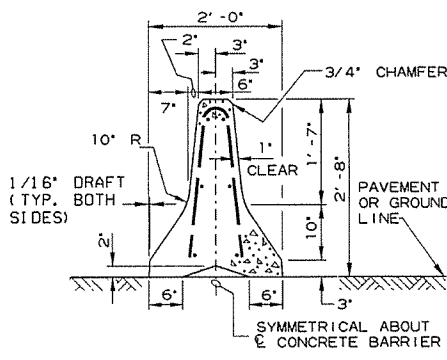
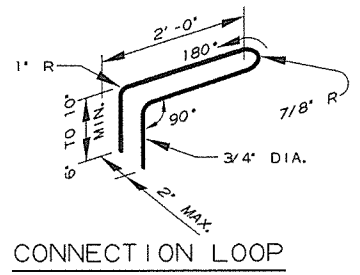
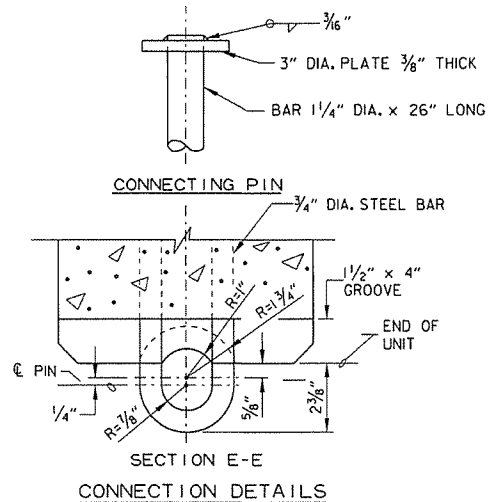
DATE	REVISION	FLMED
9-2-15	REVISED NOTE 2, ADDED NOTE 8, REVISED DRAWING (A) & REPLACED R2-5A WITH W3-5	
9-12-13	REVISED DETAIL OF RAISED PAVEMENT MARKERS	
3-4-10	ADDED (AFAD)	
8-20-08	REVISED SIGN DESIGNATIONS	
8-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (a) BEHIND G20-2	
6-8-95	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





REINFORCING BAR TABLE PER BARRIER UNIT			
MARK	LOCATION	BAR SIZE	(NO. BARS)
H-1	HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS	#5	(6)
H-2	CENTERED ABOVE DRAIN SLOTS LONG. & TRANSVERSELY	#5	(6)
H-3	TIED ABOVE H-1 BARS TO SUPPORT H-2, TIED TO V-1	#4	(2)
S-1	OVER LIFT HOLES	#4	(2)
S-2	HORIZ. AROUND SLOTS BETWEEN V-1'S & DRAIN SLOTS	#4	(2)
V-1	VERTICAL IN BARRIER (3) EACH END & (2) AT EACH DRAIN SLOTS	#5	(16)

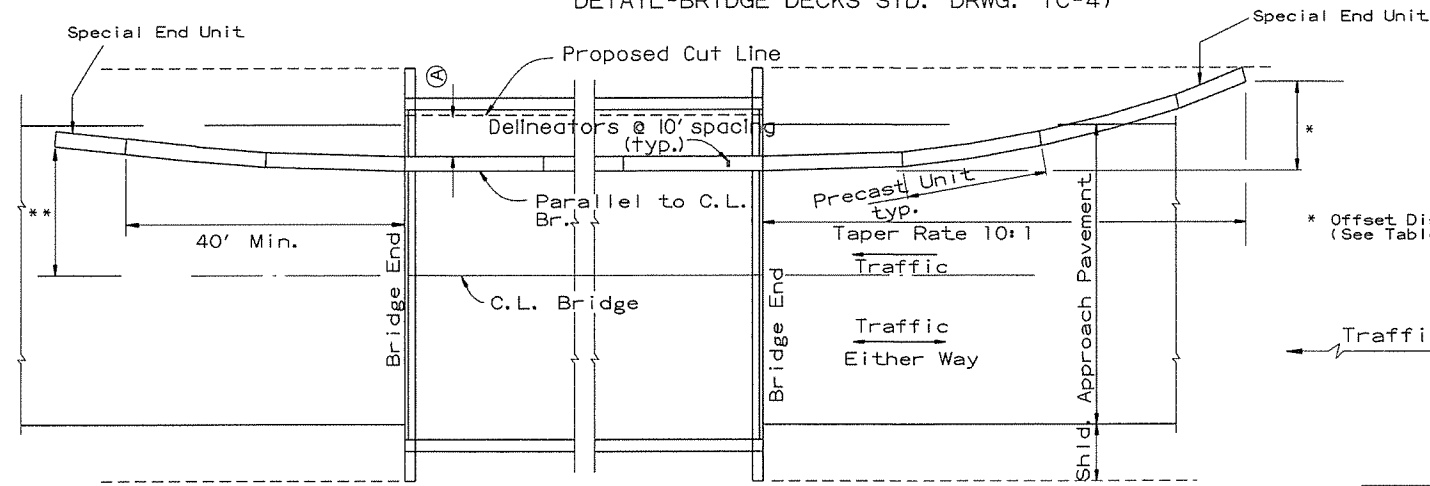


- General Notes**
- The contractor shall furnish the Precast Concrete Barrier Units and shall be responsible for the manufacture, shipment, storage, placement and removal. At the completion of the project, the precast units will remain the property of the contractor.
  - Materials shall meet the following minimum requirements:  
 Concrete: 2500 psi compressive strength at 28 days.  
 Reinforcing Steel: AASHTO M 31 or M 53, Grade 60  
 Structural Steel: AASHTO-M270 Grade 36 shall be used for the Connection Pin, Connection Loops, and Stabilization Pins. A One Piece Pin with a 3" rounded top may be used in place of the detailed Connection Pin. Delineators: Delineators shall be mounted at 10' spacing on top of precast barrier.  
 In applications where barrier walls within 6 feet of a traffic lane, additional delineators shall be placed on the barrier at 10' spacing approximately one (1) foot from the top of the barrier. Delineators shall be on the AHTD Qualified Products List for Construction Concrete Barrier Markers. Delineator color shall be in accordance with the Manual on Uniform Traffic Control Devices.  
 Payment for delineators shall be considered included in the price bid per Lin. Ft. for "Furnishing and installing Precast Concrete Barrier". The contractor shall certify to the Engineer that the material and the design used in the precast barrier units meets the requirements as shown in this standard drawing.
  - Other Precast Concrete Barriers that have been crash tested and approved by the Federal Highway Administration to meet the requirements of NCHRP-350 test level 3 or Manual For Assessing Safety Hardware (MASH) will be accepted in lieu of the barrier shown. Drain slots shall be provided as needed or as directed by the Engineer. The Contractor shall furnish a certification of NCHRP Report 350 or Manual For Assessing Safety Hardware (MASH) compliance for any other types of precast barrier to be used. The certification shall state that the precast concrete barrier meets the requirements of NCHRP Report 350 or Manual For Assessing Safety Hardware (MASH) and include a copy of the Federal Highway Administration's (FHWA) approval letter with all attachments. Precast concrete barrier units shall be fabricated and installed in accordance with crash testing and documentation provided in the FHWA approval letter. Mixing of shapes will not be allowed in a continuous line of units.
  - Dowel holes in pavement or bridge slabs that are to remain in place shall be filled. Holes in concrete pavement and bridge slabs shall be filled with an approved non-shrink epoxy grout. Holes in asphalt pavement shall be filled with an approved asphalt joint filler. Payment for drilling and filling holes to be included in the price for various barrier items.
  - Attach Units To Roadway Surface with Stabilization Pins and to Deck Slabs using bolts when required.
  - A 4" White PVC Sleeve may be used to form the Lifting Hole and if used the Sleeve is to be left in place.

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

ARKANSAS STATE HIGHWAY COMMISSION  
 STANDARD TRAFFIC CONTROLS  
 FOR HIGHWAY CONSTRUCTION -  
 TEMPORARY PRECAST BARRIER  
 STANDARD DRAWING TC-4

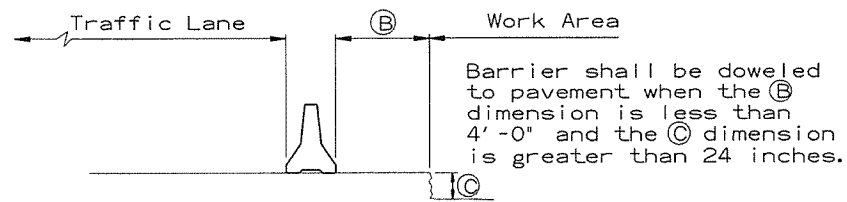
(A) 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)



BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

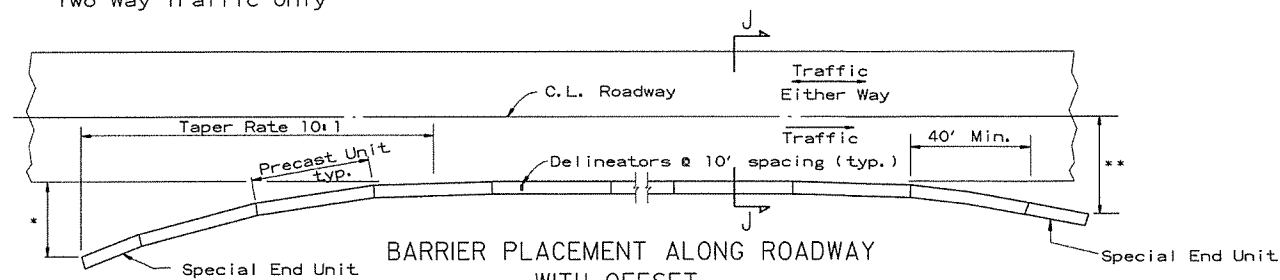
No Scale

\*\* Offset Distance for Two Way Traffic Only



SECTION J-J

No Scale



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

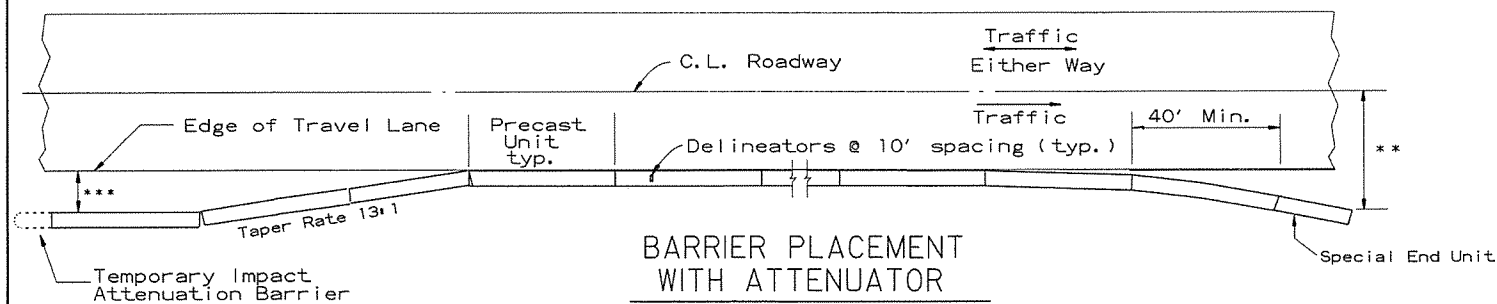
No Scale

\* Offset Distance (See Table)

\*\* Offset Distance For Two Way Traffic Only

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

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

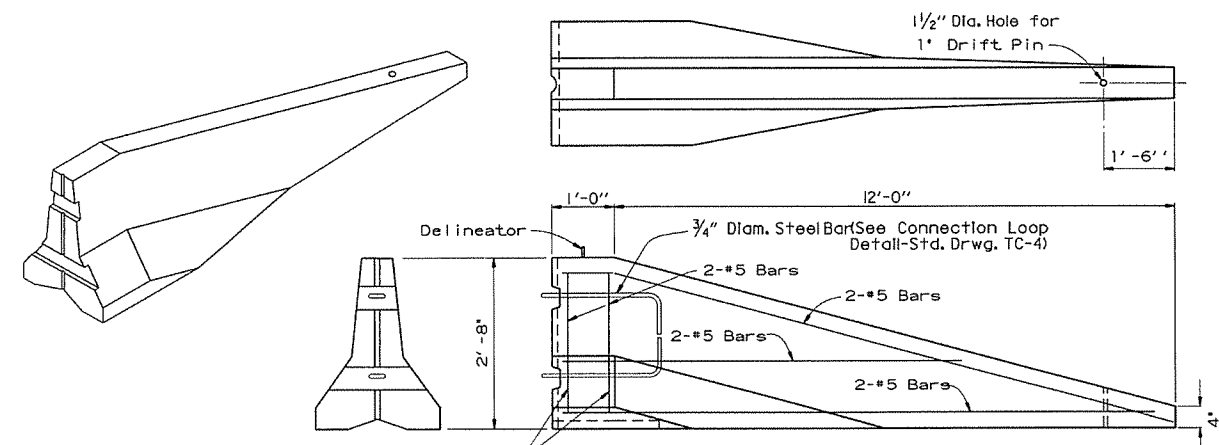


BARRIER PLACEMENT WITH ATTENUATOR

No Scale

\*\* Offset Distance For Two Way Traffic Only

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



SPECIAL END UNIT

No Scale

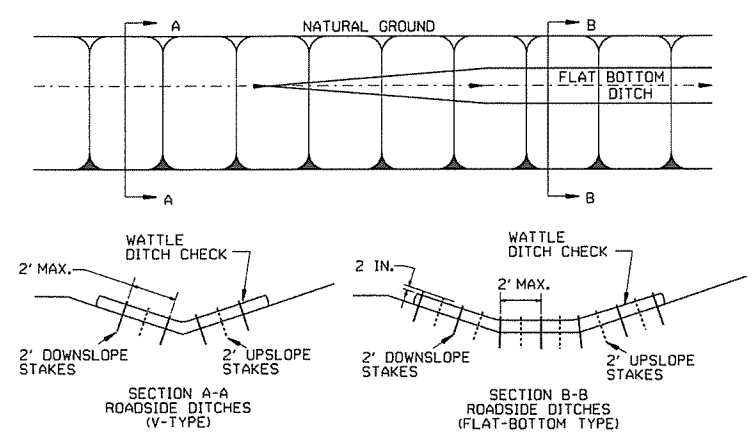
General Notes

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

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

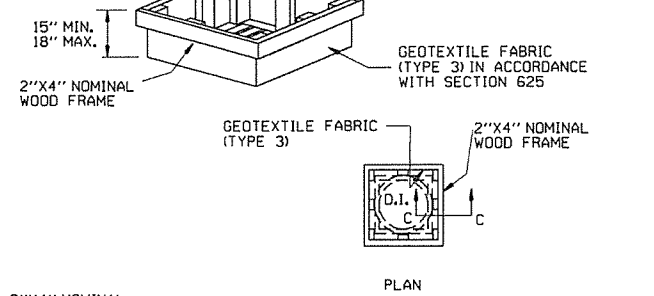
GENERAL NOTES

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



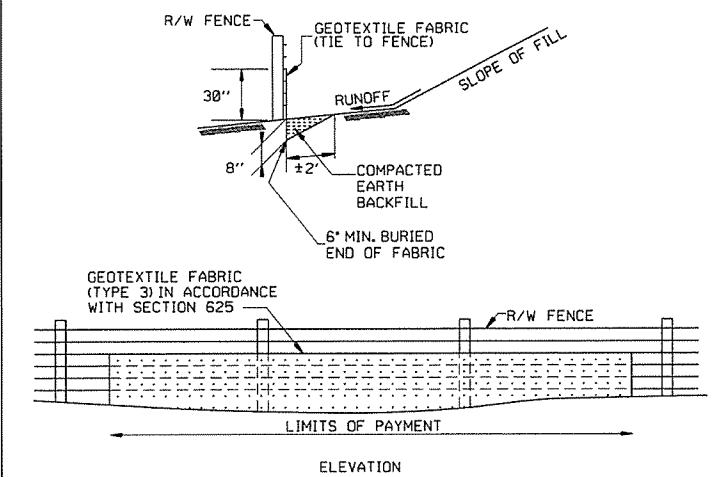
WATTLE DITCH CHECK (E-1)

2"x4" NOMINAL WOOD POSTS 3'MAX. SPACING EMBED 12" MIN.



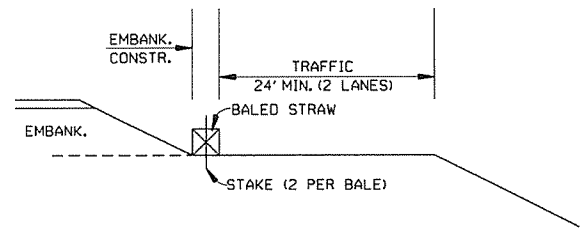
15" MIN. 18" MAX.  
2"x4" NOMINAL WOOD FRAME  
GEOTEXTILE FABRIC (TYPE 3) IN ACCORDANCE WITH SECTION 625  
GEOTEXTILE FABRIC (TYPE 3)  
2"x4" NOMINAL WOOD FRAME  
PLAN  
2"x4" NOMINAL WOOD POSTS 3'MAX. SPACING EMBED 12" MIN.  
2"x4" NOMINAL WOOD FRAME  
GEOTEXTILE FABRIC; APPROX. 8" BURIED IN TRENCH  
D.I.  
TRENCH APPROX. 4" DEEP X 4" WIDE; FILL TRENCH TO ANCHOR BOTTOM OF CLOTH; COMPACT THOROUGHLY.  
SECTION C-C

DROP INLET SILT FENCE (E-7)



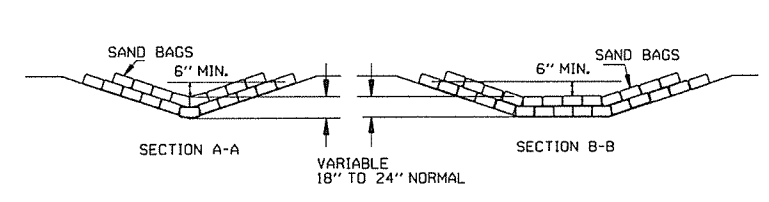
R/W FENCE  
30"  
8"  
1±2'  
SLOPE OF FILL  
RUNOFF  
GEOTEXTILE FABRIC (TIE TO FENCE)  
COMPACTED EARTH BACKFILL  
6" MIN. BURIED END OF FABRIC  
GEOTEXTILE FABRIC (TYPE 3) IN ACCORDANCE WITH SECTION 625  
R/W FENCE  
LIMITS OF PAYMENT  
ELEVATION  
SILT FENCE ON R/W FENCE (E-4)  
GENERAL NOTES  
GEOTEXTILE 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.



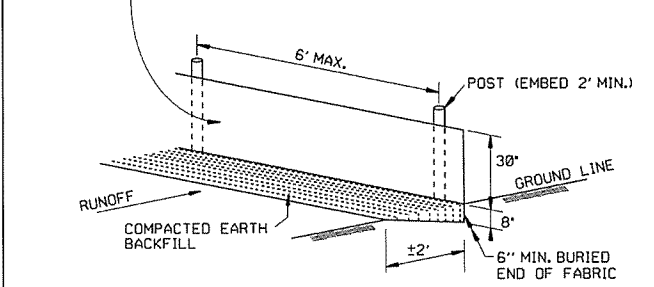
BALED STRAW FILTER BARRIER (E-2)

NUMBER OF SAND BAGS AND ARRANGEMENT VARIABLE WITH ON-SITE CONDITIONS.  
WATER LEVEL  
DITCH CHECK  
FLOW LINE OF DITCH  
PLACE SAND BAGS AT BASE OF DITCH CHECK IN AREA OF OVERFLOW



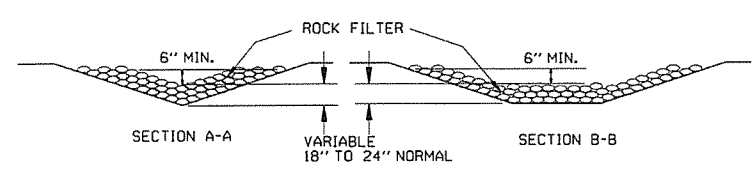
SAND BAG DITCH CHECK (E-5)

GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625



6' MAX.  
30"  
GROUND LINE  
RUNOFF  
POST (EMBED 2' MIN.)  
8"  
6" MIN. BURIED END OF FABRIC  
COMPACTED EARTH BACKFILL  
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.

APPROX. 2:1 SLOPE  
WATER LEVEL  
DITCH CHECK  
FLOW LINE OF DITCH  
PLACE ROCK AT BASE OF DITCH CHECK IN AREA OF OVERFLOW  
6" MIN.  
2' MIN.



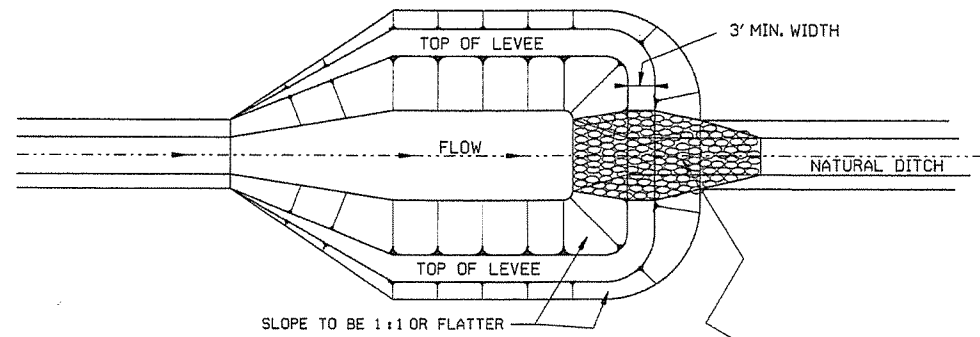
ROCK DITCH CHECK (E-6)

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
DATE	REVISION	FILMED

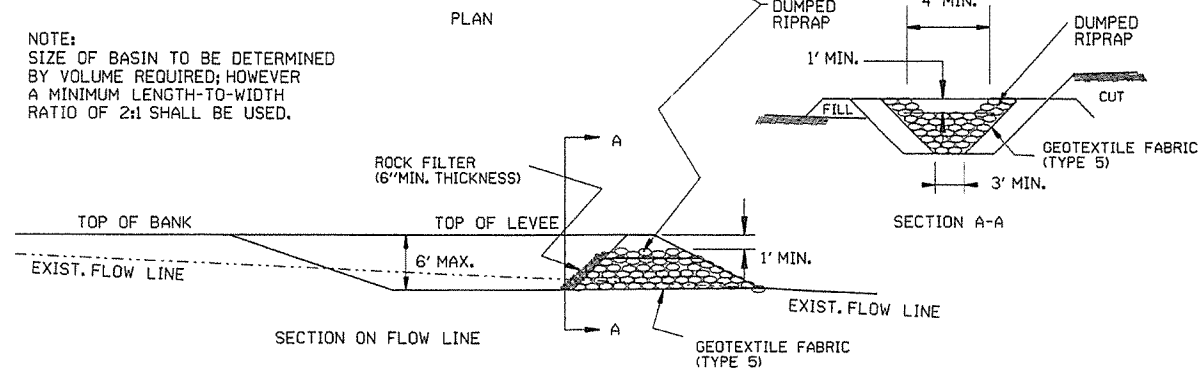
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

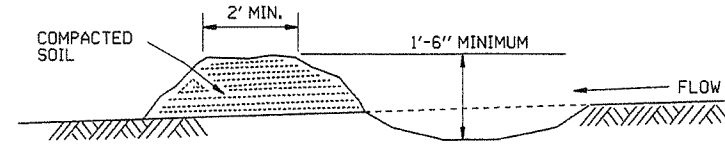
STANDARD DRAWING TEC-1



NOTE:  
SIZE OF BASIN TO BE DETERMINED  
BY VOLUME REQUIRED; HOWEVER  
A MINIMUM LENGTH-TO-WIDTH  
RATIO OF 2:1 SHALL BE USED.

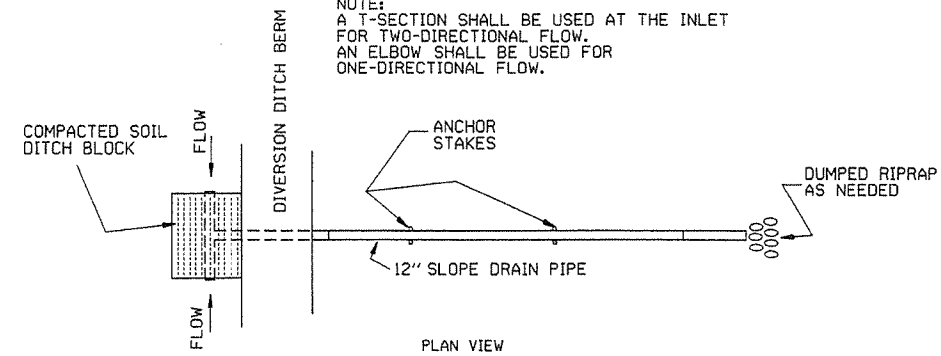


SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)

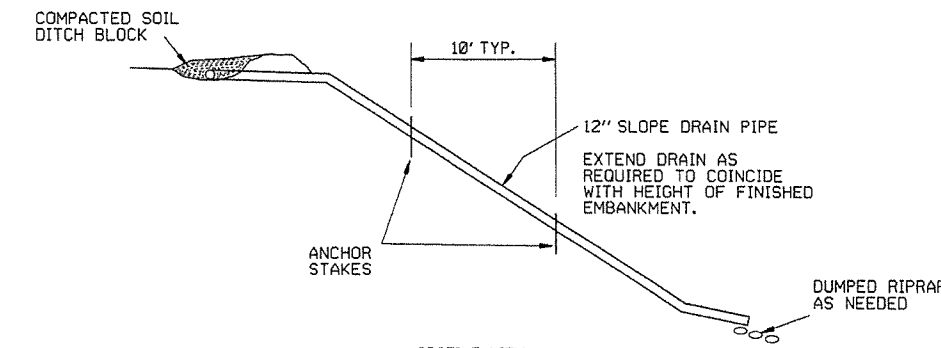


DIVERSION DITCH (E-8)

NOTE:  
A T-SECTION SHALL BE USED AT THE INLET  
FOR TWO-DIRECTIONAL FLOW.  
AN ELBOW SHALL BE USED FOR  
ONE-DIRECTIONAL FLOW.

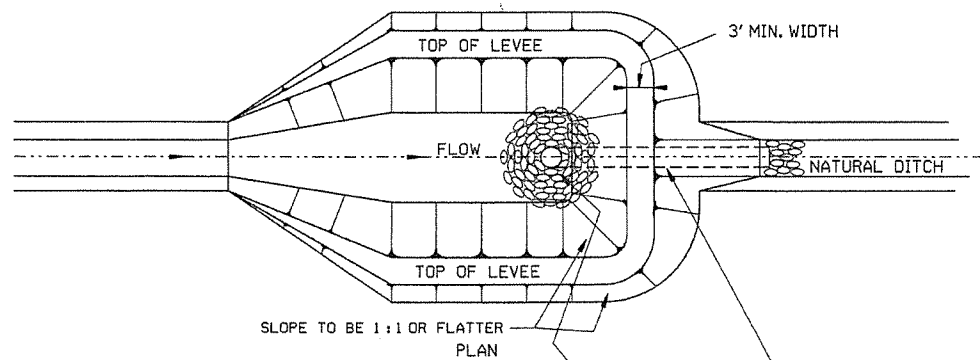


PLAN VIEW

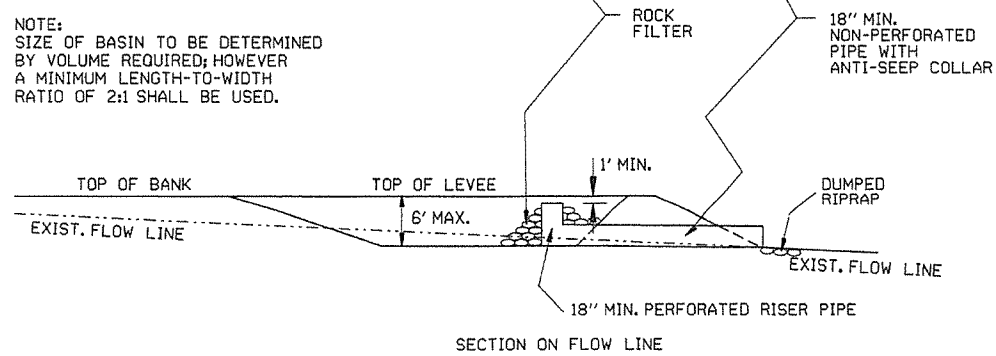


PROFILE VIEW

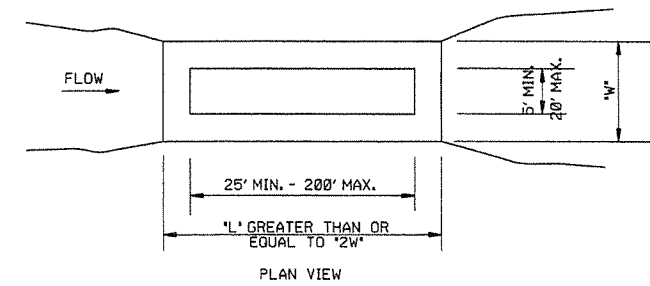
SLOPE DRAIN (E-12)



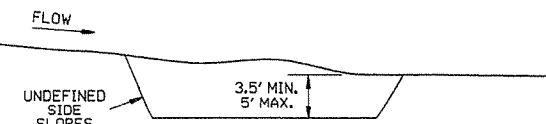
NOTE:  
SIZE OF BASIN TO BE DETERMINED  
BY VOLUME REQUIRED; HOWEVER  
A MINIMUM LENGTH-TO-WIDTH  
RATIO OF 2:1 SHALL BE USED.



SEDIMENT BASIN WITH PIPE OUTLET (E-10)



PLAN VIEW



PROFILE

SEDIMENT BASIN (E-14)

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

ARKANSAS STATE HIGHWAY COMMISSION

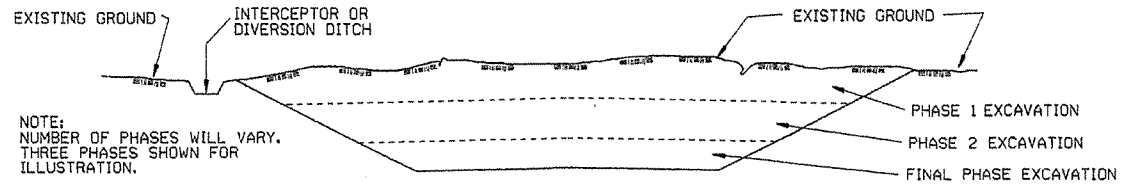
TEMPORARY EROSION  
CONTROL DEVICES

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



NOTE:  
NUMBER OF PHASES WILL VARY.  
THREE PHASES SHOWN FOR  
ILLUSTRATION.

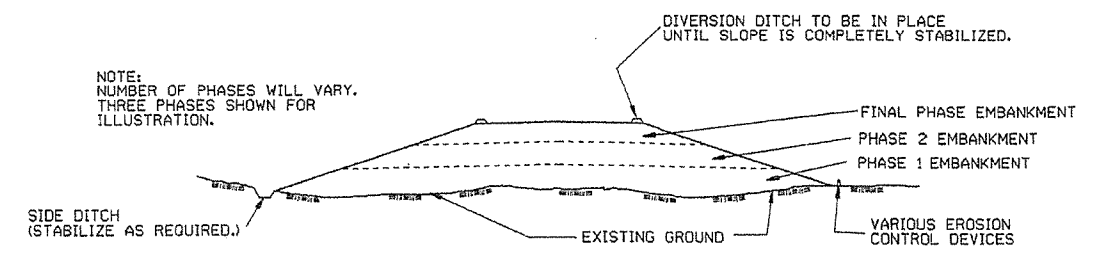
GENERAL NOTE

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



NOTE:  
NUMBER OF PHASES WILL VARY.  
THREE PHASES SHOWN FOR  
ILLUSTRATION.

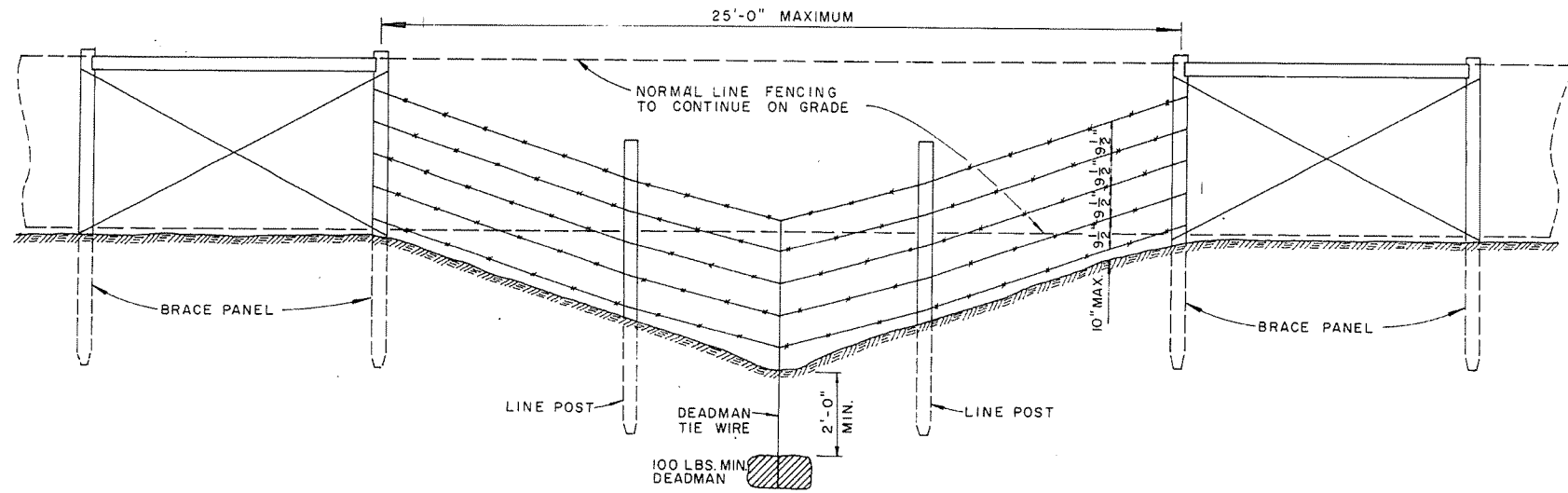
GENERAL NOTE

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

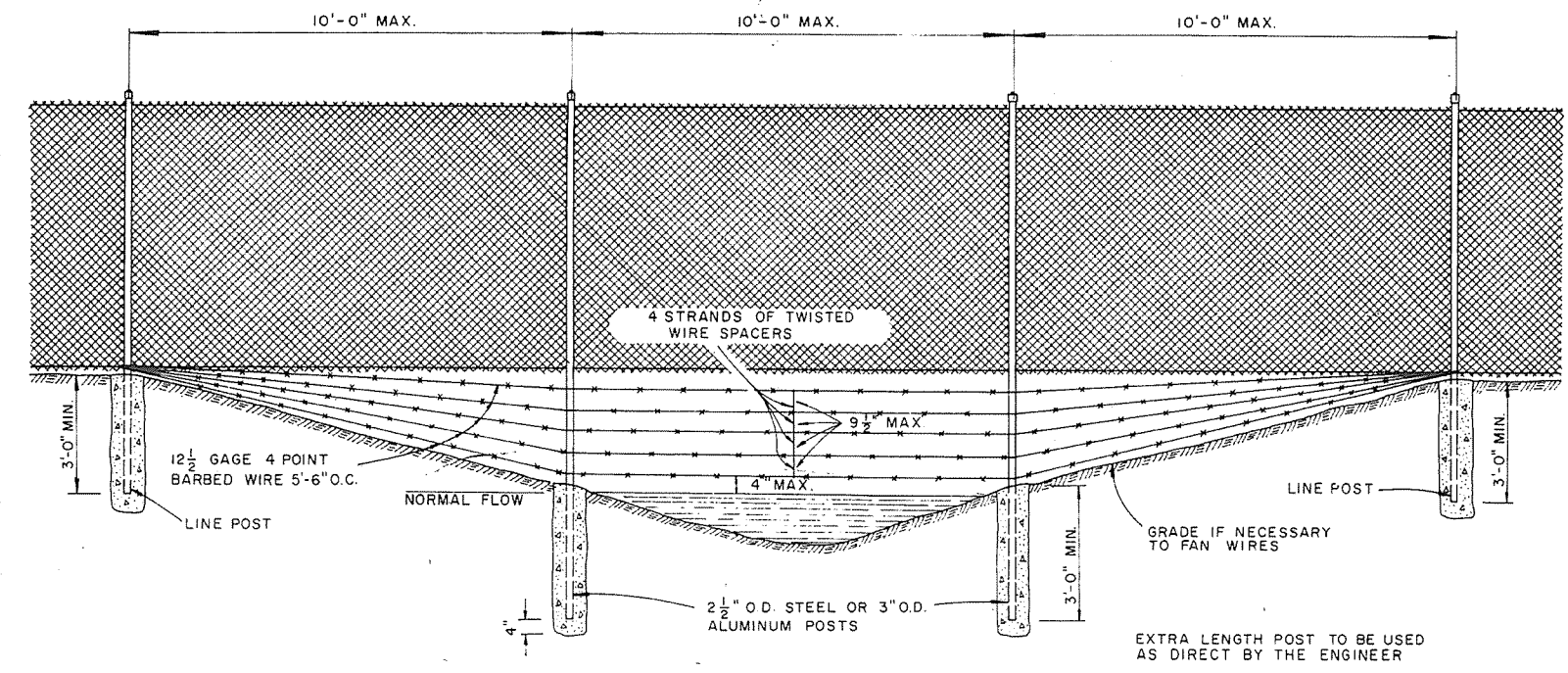
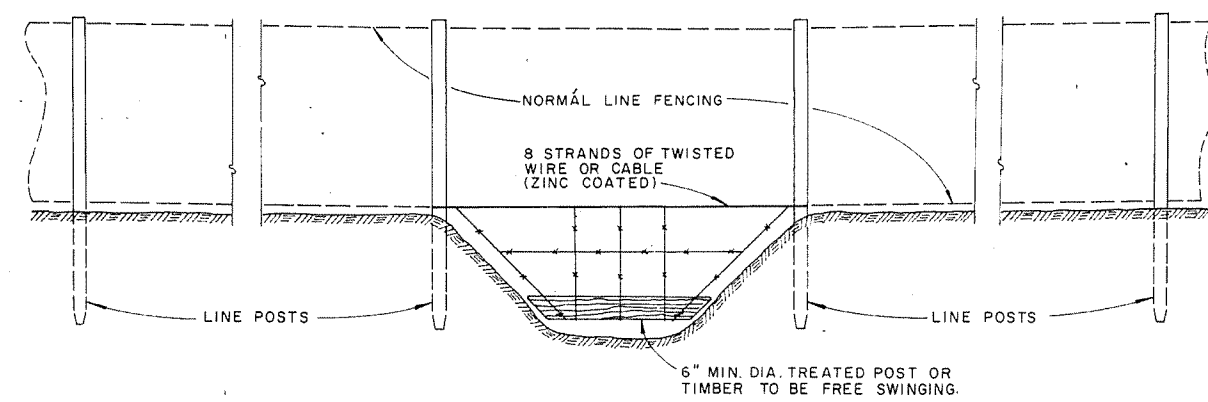
CONSTRUCTION SEQUENCE

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

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

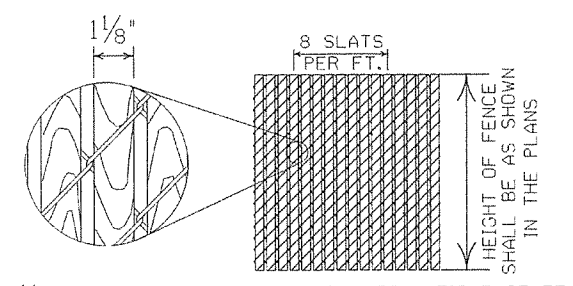
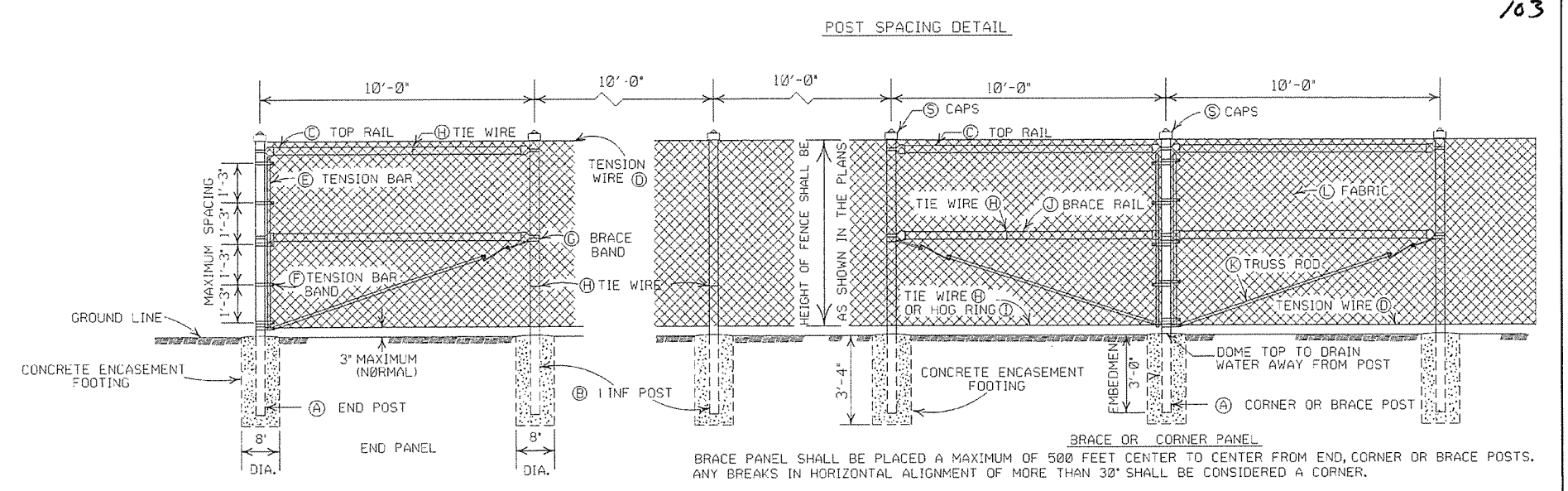
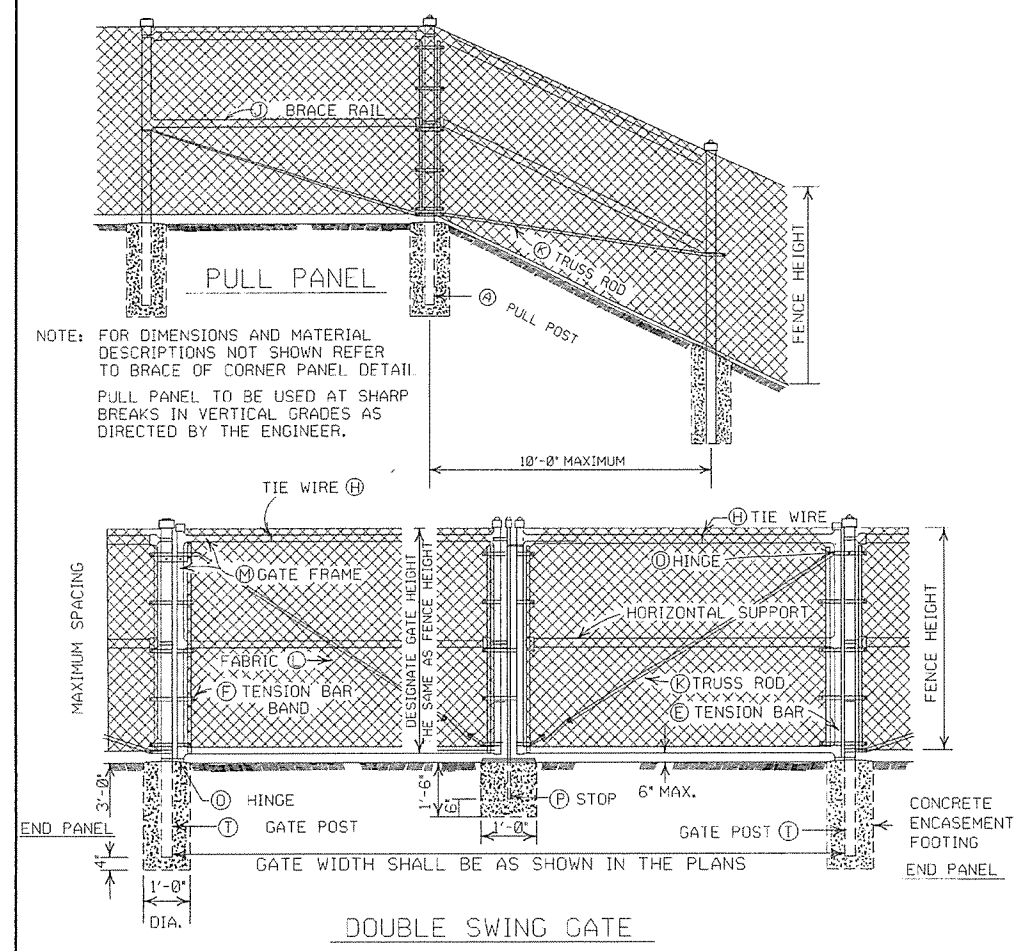


GENERAL NOTES:  
 THESE INSTALLATIONS TO BE USED WHERE NORMAL FENCING INSTALLATION WOULD CAUSE THE COLLECTING OF DRIFT IN THE CHANNEL OR THE DEPRESSION WILL NOT PERMIT NORMAL INSTALLATION. INSTALLATIONS WILL BE MADE ONLY WHERE DIRECTED BY THE ENGINEER.  
 WHEN A FENCE LINE APPROACHES A DITCH, GULLY OR 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.



ARKANSAS STATE HIGHWAY COMMISSION		
WIRE FENCE WATER GAPS		
STANDARD DRAWING		
4-20-79	REVISED TOP RAIL & TENSION WIRE	696-4-20-79
10-2-72	REVISED & REDRAWN	529-10-2-72
DATE	REVISION	DATE FILMD

WF-2



- GENERAL NOTES:**
- (C) CHAIN LINK FENCE BEING PLACED ON PRIVATE PROPERTY SHALL INCLUDE A TOP RAIL. ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER LIN. FT. OF CHAIN LINK FENCE.
  - (D) TENSION WIRE: SHALL BE SECURED TO ALL TERMINAL, PULL, BRACE OR CORNER POSTS WITH TENSION BAR BANDS.
  - (J) BRACE RAIL: BRACE RAILS SHALL BE PROVIDED AT ALL TERMINAL, PULL, BRACE OR CORNER POSTS HALFWAY BETWEEN THE TOP RAIL AND GROUND LEVEL WHEN TOPRAIL IS SPECIFIED AND TWELVE INCHES (12") DOWN FROM TOP OF FABRIC WHEN TOP TENSION WIRE IS SPECIFIED. BRACE RAIL SHALL EXTEND FROM SUCH POST TO THE FIRST ADJACENT LINE POST.
  - (L) FABRIC: SHALL CONFORM TO THE SPECIFICATIONS.
  - (M) GATE FRAMES: SHALL BE CONSTRUCTED OF TUBULAR MEMBERS ASSEMBLED BY USE OF HEAVY PRESSED STEEL, MALLEABLE FITTINGS OR BY WELDING. ALL GATES SHALL HAVE ONE HORIZONTAL SUPPORT EXTENDING THE WIDTH OF THE GATE AT THE MIDPOINTS OF VERTICAL FRAME MEMBERS. THE COMPLETE FRAME SHALL BE RIGID AND HAVE AMPLE STRENGTH TO BE FREE FROM SAG AND TWIST.
  - (N) HINGES: SHALL BE OF HEAVY PATTERN, OF ADEQUATE STRENGTH FOR GATE, AND WITH LARGE BEARING SURFACES FOR CLAMPING IN POSITION. THE HINGE SHALL BE OF THE PROPER TYPE TO ALLOW FOR THE DESIGNATED DEGREE OF SWING. THE HINGE SHALL NOT TWIST OR TURN UNDER THE ACTION OF THE GATE. THE GATES SHALL BE CAPABLE OF BEING OPENED AND CLOSED EASILY BY ONE PERSON.
  - (P) LATCHES AND STOPS: SHALL BE PROVIDED FOR ALL GATES. GATES SHALL HAVE A DROP BAR LATCH. LATCHES SHALL BE ARRANGED FOR LOCKING. THE STOP FOR DROP BAR LATCHES SHALL BE SET IN CONCRETE AND ENGAGE THE PLUNGER OF THE BAR LATCH.
  - (S) CAPS: ALL POSTS, EXCEPT ROLL FORMED POSTS AND \*T\* POSTS SHALL BE CAPPED OVER THE EXTERIOR OF THE POST, AND SHALL CONFORM TO ASTM F626.

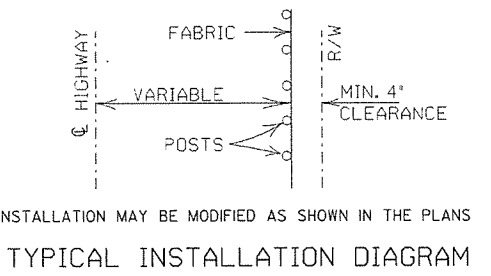
HEIGHT OF FENCE FABRIC	(A) END, PULL CORNER OR BRACE POST		(B) LINE POSTS		(C) TOP RAIL			(D) TENSION WIRE		(E) TENSION BAR		(F) TENSION BAR BAND		(G) BRACE BAND		
	SIZE	TIE WIRE	SIZE	TIE SPACING	SIZE	TIE SPACING	MIN. LENGTH	SIZE	TIE SPACING	SIZE	LENGTH	SIZE	BOLT SIZE	SPACING	SIZE	BOLT SIZE
6' AND LESS	2 1/2" O.D.	1 TIE EVERY 1'-2"	2" O.D.	1 TIE EVERY 2'-0"	1 5/8" O.D.	1 TIE EVERY 2'-0"	10'-0"	7 GAUGE COIL SPRING WIRE	1 TIE EVERY 1'-0"	MIN. OF 3/8" X 3/4"	MIN. OF 2" LESS THAN FABRIC HEIGHT	MIN. OF 3/4" X 1/2"	1 BAND AT TOP AND BOTTOM 15" MAX. INTERVAL BETWEEN BANDS	MIN. OF 3/4" X 1/2"	MIN. OF 3/4" X 1/2"	3/8" X 1/4"
OVER 6' TO 12' INCL.	3" O.D.	1 TIE EVERY 1'-2" OF FABRIC HEIGHT	2 1/2" O.D.	1 TIE EVERY 2'-0"	1 5/8" O.D.	1 TIE EVERY 2'-0"	10'-0"	7 GAUGE COIL SPRING WIRE	1 TIE EVERY 1'-0"	MIN. OF 3/8" X 3/4"	MIN. OF 2" LESS THAN FABRIC HEIGHT	MIN. OF 3/4" X 1/2"	1 BAND AT TOP AND BOTTOM 15" MAX. INTERVAL BETWEEN BANDS	MIN. OF 3/4" X 1/2"	MIN. OF 3/4" X 1/2"	3/8" X 1/4"

HEIGHT OF FENCE FABRIC	(H) TIE WIRE	(I) HOG RING	(J) BRACE RAIL		(K) TRUSS ROD	(L) FABRIC			(M) GATE FRAME		(N) HORIZONTAL SUPPORT		(O) HINGE TYPE	(P) GATE POST	
	SIZE	TIE SPACING	SIZE	TIE SPACING	SIZE	SIZE	MESH	SELVAGE	SIZE	TIE SPACING	SIZE	TIE SPACING	180° SWING	GATE WIDTH	GATE WIDTH OVER
6' AND LESS	MIN. OF 12 GA. STEEL OR 9 GA. ALUM.	SAME GAUGE AS FABRIC	1 5/8" O.D.	1 TIE EVERY 2'-0"	MIN. OF 3/8" ROUND WITH TIGHTENERS AND FITTINGS	9 GA.	2"	KNUCKLING AND/OR TWISTING	2" O.D.	1 TIE EVERY 1'-0"	2" O.D.	1 TIE EVERY 1'-0"	OFFSET	3' O.D.	12' AND LESS
OVER 6' TO 12' INCL.	MIN. OF 12 GA. STEEL OR 9 GA. ALUM.	SAME GAUGE AS FABRIC	1 5/8" O.D.	1 TIE EVERY 2'-0"	MIN. OF 3/8" ROUND WITH TIGHTENERS AND FITTINGS	9 GA.	2"	KNUCKLING AND/OR TWISTING	2" O.D.	1 TIE EVERY 1'-0"	2" O.D.	1 TIE EVERY 1'-0"	OFFSET	4' O.D.	12' AND LESS

NOTE: POST SIZES SHOWN ARE FOR STEEL. WHERE ALUMINUM IS PROVIDED, LINE POSTS SHALL HAVE AN OUT SIDE DIAMETER OF 2 1/2" FOR FENCE HEIGHT OF 6' AND LESS, AN OUTSIDE DIAMETER OF 3" FOR FENCE HEIGHT OF 6' TO 12'. END, PULL, CORNER OR BRACE POSTS SHALL HAVE AN OUTSIDE DIAMETER OF 3" FOR FENCE HEIGHT OF 6' AND LESS; AN OUTSIDE DIAMETER OF 3 1/2" FOR FENCE HEIGHTS OF 6' TO 12'. GATE POSTS WHERE GATE WIDTH IS 12' AND LESS SHALL HAVE AN OUTSIDE DIAMETER OF 3 1/2" FOR FENCE HEIGHT OF 6' AND LESS. ALUMINUM TENSION WIRE SHALL BE 0.192" IN DIAMETER. MINIMUM THICKNESS OF MATERIAL FROM WHICH EXPANSION SLEEVES SHALL BE MADE WILL BE 0.078". POSTS AND RAILS MAY HAVE ANY CROSS-SECTIONAL SHAPE THAT WILL MEET THE SPECIFICATIONS.

OTHER DETAILS APPLY TO BOTH STEEL AND ALUMINUM FENCE.

ALL MISCELLANEOUS FITTINGS AND HARDWARE SHALL MEET THE REQUIREMENTS AND PRODUCTION TOLERANCES AS SET FORTH IN THE SPECIFICATIONS. 9 GAUGE ALUMINUM WIRE SHALL BE ACCEPTABLE FOR TIEING FABRIC TO TUBULAR AND ROLL FORMED MEMBERS OF STEEL FENCE.



POSTS AND RAILS

SIZE O.D.	GRADE 1 AND ALUMINUM ALLOY				GRADE 2		
	O.D. INCHES	WALL THICKNESS	LBS. PER LINEAR FT.		O.D. INCHES	WALL THICKNESS	LBS. PER LINEAR FT.
			STEEL	ALUMINUM			
1 1/2	1.660	0.140	2.27	0.786	1.660	0.111	1.84
2	1.900	0.145	2.72	0.940	1.900	0.120	2.28
2 1/2	2.375	0.154	3.65	1.264	2.375	0.130	3.11
3	2.875	0.203	5.79	2.004	2.875	0.160	4.64
3 1/2	3.500	0.216	7.58	2.621	3.500	0.160	5.71
4	4.000	0.226	9.11	3.151	4.000	0.160	6.56

TOLERANCES ON DIMENSIONS AND WEIGHTS ACCORDING TO AASHTO M 181

DATE	REVISION	FILMED
11-17-10	REVISED TRUSS ROD	
12-10-09	REVISED POSTS & RAILS TABLE	
5-21-09	ADDED TABLE & GEN. NOTE (C)	
8-22-02	REVISED NOTES, REMOVED TABLE, & REMOVED FENCE ALTERNATE	
4-3-97	REVISED BRACE RAIL NOTE	
10-10-96	REVISED AASHTO & ASTM REF.	
11-3-94	REVISED NOTE (L)	
10-1-92	DELETED ALTERNATE POST	10-1-92
8-15-91	DELETED ROLL FORMED POST DETAIL & ADDED NOTE	8-15-91
11-30-89	DELETED CLASS CONCRETE	11-30-89
11-17-88	REVISED O.D. SIZES	668-11-17-88
10-30-87	GENERAL REVISIONS	648-10-30-87
4-20-79	REVISED TOP RAIL & TENSION WIRE	696-4-20-79
10-2-72	REVISED AND REDRAWN	530-10-2-72

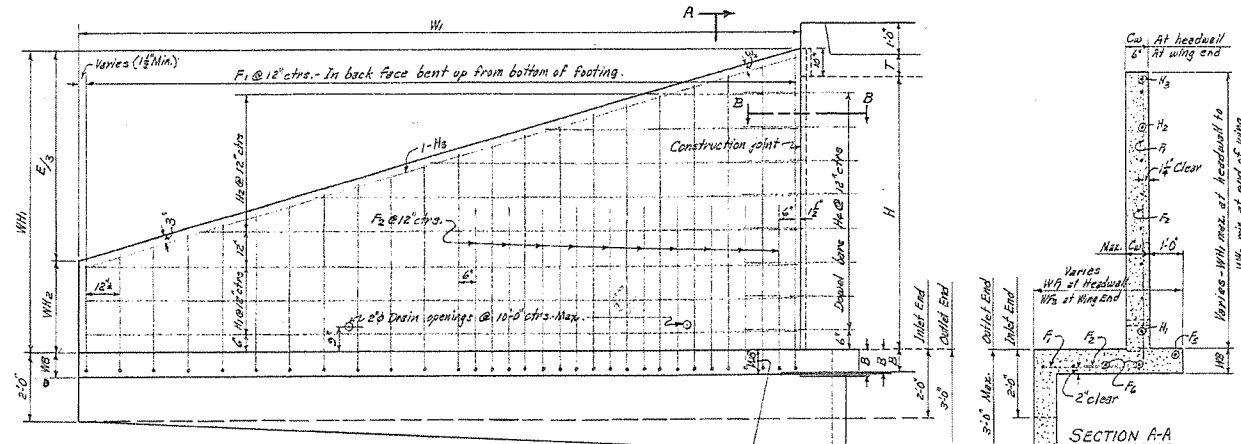
ARKANSAS STATE HIGHWAY COMMISSION

**CHAIN LINK FENCE**

STANDARD DRAWING WF-3







REAR ELEVATION OF WING - SHOWING BACK FACE REINF.

WING DIMENSIONS

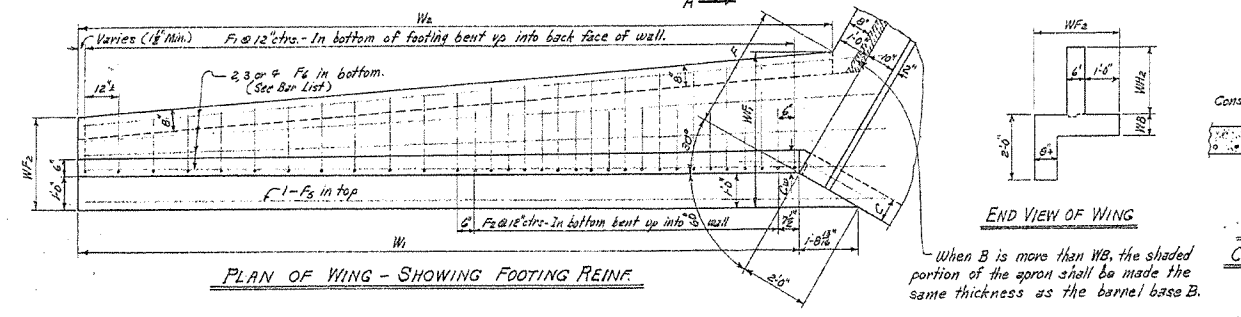
CLEAR HEIGHT OF BOX THICKNESS OF WING FOOTING	WING WALL HEIGHTS		WIDTHS OF WING FOOTINGS		PERPENDICULAR DIMENSIONS		PERPENDICULAR DIST. FROM HEAD TO END OF WING		LENGTH OF WING WALLS		INSIDE FOOTING DIMENSION	QUANTITY PER WING CLASS S CONCRETE
	AT HEADWALL	AT END OF WING	AT HEADWALL	AT END OF WING	PERPENDICULAR	PERPENDICULAR	PERPENDICULAR	PERPENDICULAR	PERPENDICULAR	PERPENDICULAR		
2'	1'-11 1/2"	3'-0"	9'-8"	7'-2 1/2"	14'-4"	12'-3 1/2"	19'-0"	17'-3 1/2"	23'-0"	21'-3 1/2"	27'-0"	2.70
3'	2'-8 1/2"	3'-0"	9'-8"	7'-2 1/2"	14'-4"	12'-3 1/2"	19'-0"	17'-3 1/2"	23'-0"	21'-3 1/2"	27'-0"	2.70
4'	3'-4"	3'-0"	9'-8"	7'-2 1/2"	14'-4"	12'-3 1/2"	19'-0"	17'-3 1/2"	23'-0"	21'-3 1/2"	27'-0"	2.70
5'	4'-3 1/2"	3'-0"	9'-8"	7'-2 1/2"	14'-4"	12'-3 1/2"	19'-0"	17'-3 1/2"	23'-0"	21'-3 1/2"	27'-0"	2.70
6'	5'-0 1/2"	3'-0"	9'-8"	7'-2 1/2"	14'-4"	12'-3 1/2"	19'-0"	17'-3 1/2"	23'-0"	21'-3 1/2"	27'-0"	2.70
7'	5'-8 1/2"	3'-0"	9'-8"	7'-2 1/2"	14'-4"	12'-3 1/2"	19'-0"	17'-3 1/2"	23'-0"	21'-3 1/2"	27'-0"	2.70
8'	6'-5 1/2"	3'-0"	9'-8"	7'-2 1/2"	14'-4"	12'-3 1/2"	19'-0"	17'-3 1/2"	23'-0"	21'-3 1/2"	27'-0"	2.70
9'	7'-2 1/2"	3'-0"	9'-8"	7'-2 1/2"	14'-4"	12'-3 1/2"	19'-0"	17'-3 1/2"	23'-0"	21'-3 1/2"	27'-0"	2.70
10'	7'-10 1/2"	3'-0"	9'-8"	7'-2 1/2"	14'-4"	12'-3 1/2"	19'-0"	17'-3 1/2"	23'-0"	21'-3 1/2"	27'-0"	2.70
11'	8'-6 1/2"	3'-0"	9'-8"	7'-2 1/2"	14'-4"	12'-3 1/2"	19'-0"	17'-3 1/2"	23'-0"	21'-3 1/2"	27'-0"	2.70
12'	9'-3 1/2"	3'-0"	9'-8"	7'-2 1/2"	14'-4"	12'-3 1/2"	19'-0"	17'-3 1/2"	23'-0"	21'-3 1/2"	27'-0"	2.70

APRON DIMENSION W3

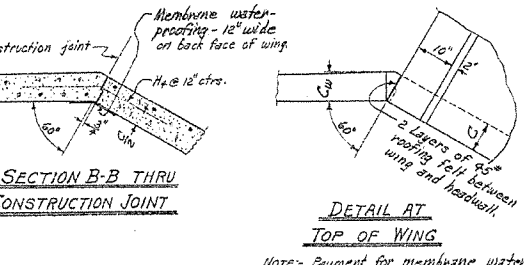
CLEAR SPAN	CLEAR HEIGHT	2 X DIMENSION	W3 = (OW - 2F)								
			SINGLE BARREL CULVERT	DOUBLE BARREL CULVERT	TRIPLE BARREL CULVERT	QUADRUPLE BARREL CULVERT	QUINTUPLE BARREL CULVERT				
2'	1'-11 1/2"	3'-0"	9'-8"	7'-2 1/2"	14'-4"	12'-3 1/2"	19'-0"	17'-3 1/2"	23'-0"	21'-3 1/2"	27'-0"
3'	2'-8 1/2"	3'-0"	9'-8"	7'-2 1/2"	14'-4"	12'-3 1/2"	19'-0"	17'-3 1/2"	23'-0"	21'-3 1/2"	27'-0"
4'	3'-4"	3'-0"	9'-8"	7'-2 1/2"	14'-4"	12'-3 1/2"	19'-0"	17'-3 1/2"	23'-0"	21'-3 1/2"	27'-0"
5'	4'-3 1/2"	3'-0"	9'-8"	7'-2 1/2"	14'-4"	12'-3 1/2"	19'-0"	17'-3 1/2"	23'-0"	21'-3 1/2"	27'-0"
6'	5'-0 1/2"	3'-0"	9'-8"	7'-2 1/2"	14'-4"	12'-3 1/2"	19'-0"	17'-3 1/2"	23'-0"	21'-3 1/2"	27'-0"
7'	5'-8 1/2"	3'-0"	9'-8"	7'-2 1/2"	14'-4"	12'-3 1/2"	19'-0"	17'-3 1/2"	23'-0"	21'-3 1/2"	27'-0"
8'	6'-5 1/2"	3'-0"	9'-8"	7'-2 1/2"	14'-4"	12'-3 1/2"	19'-0"	17'-3 1/2"	23'-0"	21'-3 1/2"	27'-0"
9'	7'-2 1/2"	3'-0"	9'-8"	7'-2 1/2"	14'-4"	12'-3 1/2"	19'-0"	17'-3 1/2"	23'-0"	21'-3 1/2"	27'-0"
10'	7'-10 1/2"	3'-0"	9'-8"	7'-2 1/2"	14'-4"	12'-3 1/2"	19'-0"	17'-3 1/2"	23'-0"	21'-3 1/2"	27'-0"
11'	8'-6 1/2"	3'-0"	9'-8"	7'-2 1/2"	14'-4"	12'-3 1/2"	19'-0"	17'-3 1/2"	23'-0"	21'-3 1/2"	27'-0"
12'	9'-3 1/2"	3'-0"	9'-8"	7'-2 1/2"	14'-4"	12'-3 1/2"	19'-0"	17'-3 1/2"	23'-0"	21'-3 1/2"	27'-0"

QUANTITIES CLASS S CONCRETE - 4 WINGS

CLEAR SPAN	CLEAR HEIGHT	THICKNESS OF WING AT HEADWALL	THICKNESS OF WING FOOTING	REINFORCING STEEL - 4 WINGS							
				SINGLE BARREL CULVERT	DOUBLE BARREL CULVERT	TRIPLE BARREL CULVERT	QUADRUPLE BARREL CULVERT	QUINTUPLE BARREL CULVERT			
2'	1'-11 1/2"	3'-0"	9'-8"	7'-2 1/2"	14'-4"	12'-3 1/2"	19'-0"	17'-3 1/2"	23'-0"	21'-3 1/2"	27'-0"
3'	2'-8 1/2"	3'-0"	9'-8"	7'-2 1/2"	14'-4"	12'-3 1/2"	19'-0"	17'-3 1/2"	23'-0"	21'-3 1/2"	27'-0"
4'	3'-4"	3'-0"	9'-8"	7'-2 1/2"	14'-4"	12'-3 1/2"	19'-0"	17'-3 1/2"	23'-0"	21'-3 1/2"	27'-0"
5'	4'-3 1/2"	3'-0"	9'-8"	7'-2 1/2"	14'-4"	12'-3 1/2"	19'-0"	17'-3 1/2"	23'-0"	21'-3 1/2"	27'-0"
6'	5'-0 1/2"	3'-0"	9'-8"	7'-2 1/2"	14'-4"	12'-3 1/2"	19'-0"	17'-3 1/2"	23'-0"	21'-3 1/2"	27'-0"
7'	5'-8 1/2"	3'-0"	9'-8"	7'-2 1/2"	14'-4"	12'-3 1/2"	19'-0"	17'-3 1/2"	23'-0"	21'-3 1/2"	27'-0"
8'	6'-5 1/2"	3'-0"	9'-8"	7'-2 1/2"	14'-4"	12'-3 1/2"	19'-0"	17'-3 1/2"	23'-0"	21'-3 1/2"	27'-0"
9'	7'-2 1/2"	3'-0"	9'-8"	7'-2 1/2"	14'-4"	12'-3 1/2"	19'-0"	17'-3 1/2"	23'-0"	21'-3 1/2"	27'-0"
10'	7'-10 1/2"	3'-0"	9'-8"	7'-2 1/2"	14'-4"	12'-3 1/2"	19'-0"	17'-3 1/2"	23'-0"	21'-3 1/2"	27'-0"
11'	8'-6 1/2"	3'-0"	9'-8"	7'-2 1/2"	14'-4"	12'-3 1/2"	19'-0"	17'-3 1/2"	23'-0"	21'-3 1/2"	27'-0"
12'	9'-3 1/2"	3'-0"	9'-8"	7'-2 1/2"	14'-4"	12'-3 1/2"	19'-0"	17'-3 1/2"	23'-0"	21'-3 1/2"	27'-0"



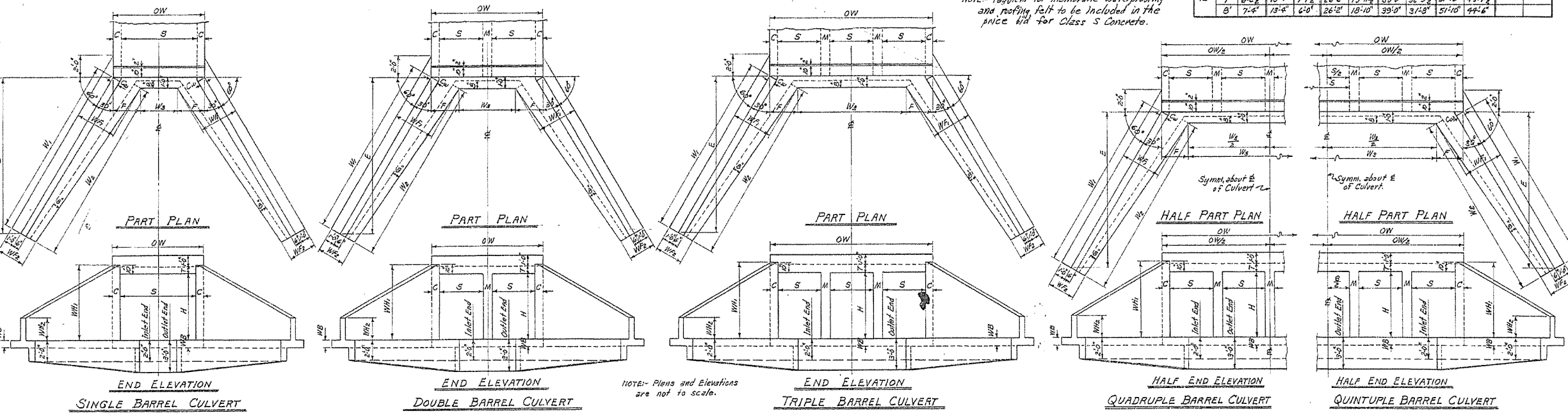
PLAN OF WING - SHOWING FOOTING REINF.



SECTION B-B THRU CONSTRUCTION JOINT

DETAIL AT TOP OF WING

Note: Payment for membrane waterproofing and roofing felt to be included in the price bid for Class S Concrete.



GENERAL NOTES:

- CONCRETE: All concrete to be Class S, and shall be poured in the dry. All exposed corners to have 3/4" chamfers.
- REINFORCING STEEL: Reinforcing steel to be deformed bars of intermediate or hard grade.
- CONSTRUCTION JOINTS: Construction joints between wingwall, footings and sidewalls shall be only where shown on plans.
- SPECIFICATIONS: Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.
- UNIT STRESSES: Class S Concrete (n=10) 1200<sup>7/8</sup> Reinforcing Steel 20,000<sup>7/8</sup>

NOTE: This drawing to be used in conjunction with Standard Barrel Sections, Drawing Nos. as listed below.

SINGLES	DOUBLES	TRIPLES	QUADRUPLES	QUINTUPLES
R-100X-0	R-200X-0	R-300X-0	R-400X-0	R-500X-0
R-100X-1	R-200X-1	R-300X-1	R-400X-1	R-500X-1
R-100X-2	R-200X-2	R-300X-2	R-400X-2	R-500X-2
	R-200X-3	R-300X-3		

BAR LIST FOR ONE WING - 4 REQUIRED

CLEAR HEIGHT	F1 BENT		F2 BENT		F3 STRAIGHT		F4 STRAIGHT		H1 BENT		H2 BENT		QUANTITY REINFORCING STEEL PER WING	BAR BENDING DIAGRAMS
	SIZE	SPACING	SIZE	SPACING	SIZE	SPACING	SIZE	SPACING	SIZE	SPACING	SIZE	SPACING		
	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.		
2'	12	10	10	10	10	10	10	10	10	10	10	10	27.0	
3'	12	10	10	10	10	10	10	10	10	10	10	10	41.1	
4'	12	10	10	10	10	10	10	10	10	10	10	10	63.7	
5'	12	10	10	10	10	10	10	10	10	10	10	10	89.5	
6'	12	10	10	10	10	10	10	10	10	10	10	10	145.8	
7'	12	10	10	10	10	10	10	10	10	10	10	10	226.7	
8'	12	10	10	10	10	10	10	10	10	10	10	10	356.4	

MEMBRANE: A membrane waterproofing 12" wide, consisting of three moppings of waterproofing asphalt and two alternate layers of treated cotton fabric shall be applied to the back face of wing to cover the construction joints in wings.

REVISIONS: Membrane added. 5-10-66 W.C.H.

ARKANSAS STATE HIGHWAY COMMISSION  
 DETAILS OF STANDARD WINGS  
 FOR  
 REINFORCED CONCRETE BOX CULVERTS  
 4', 5', 6', 7', 8', 9', 10', 11' & 12' SPANS  
 3:1 SLOPES  
 SINGLES, DOUBLES, TRIPLES, ALL DEPTHS OF COVER  
 QUADRUPLES & QUINTUPLES. FOR H=8'-0" OR LESS  
 STANDARD DRAWING NO. W-X003-1

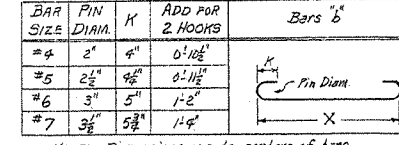
Designed By: W.C.H. 8-20-62. Checked By: R.M.S. 1-9-63  
 Drawn By: W.C.H. 12-4-62. Checked By: R.M.S. 1-31-63  
 Quantities By: W.C.H. 12-14-62. Checked By: R.M.S. 3-27-63

BAR LIST FOR VARIOUS SECTIONS OF BARREL

Table with columns for SECTION, LENGTH OF SECTIONS, DEPTH OF COVER, CLEAR SPAN, CLEAR HEIGHT, STRAIGHT bars, BENT bars, and VERTICAL bars. Includes sub-sections A through G for various depths and spans.

DIMENSIONS QUANTITIES

Table with columns for MAX. DESIGN DEPTH OF COVER, CLEAR SPAN, CLEAR HEIGHT, OVERALL WIDTH, THICKNESS OF TOP SLAB, THICKNESS OF SIDEWALLS, THICKNESS OF BOTTOM SLAB, OVERALL HEIGHT, CLASS 5 CONCRETE PER LIN. FT. OF BARREL, PER LAP, and TWD HEADWALLS & APPROX.



DOWEL BARS FOR TWO HEADWALLS

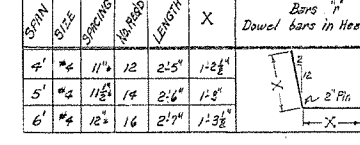
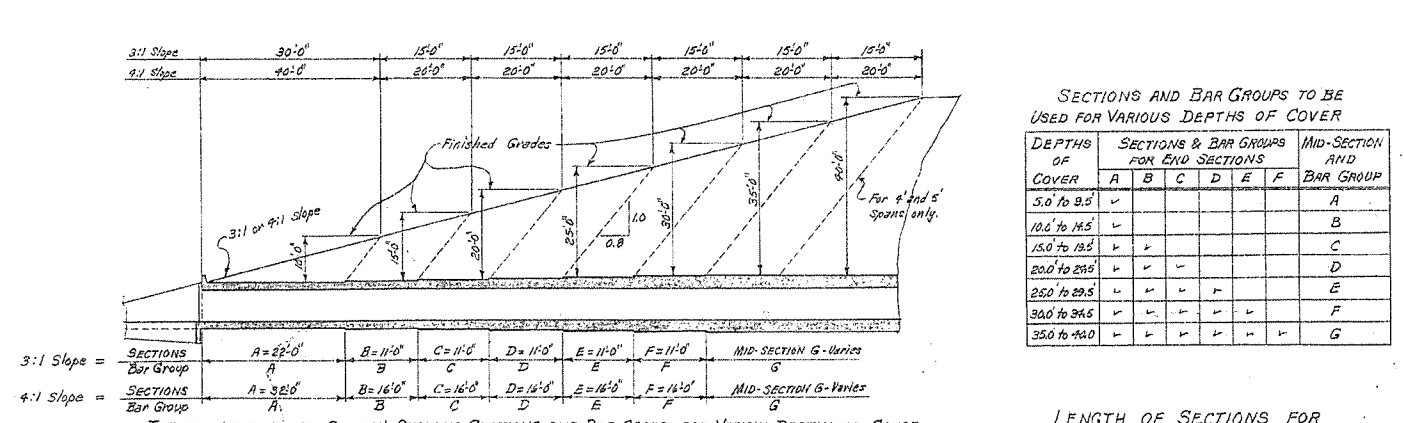
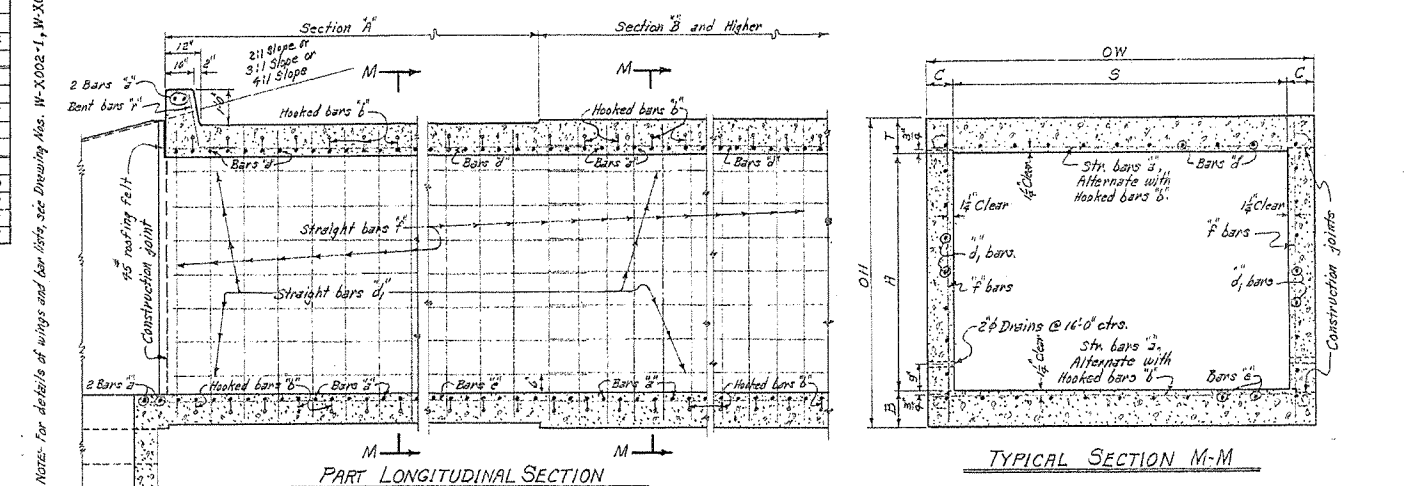


Table with columns: FED. ROAD NO. (6), STATE (ARK.), FED. AID PROJECT, FISCAL YEAR, SHEET NO. (106), TOTAL SHEETS.



SECTIONS AND BAR GROUPS TO BE USED FOR VARIOUS DEPTHS OF COVER. Table with columns: DEPTHS OF COVER, SECTIONS AND BAR GROUPS (A, B, C, D, E, F), MID-SECTION AND BAR GROUP.

LENGTH OF SECTIONS FOR SKEWED CULVERTS. Table with columns: SKEW ANGLE, SEC. OF SKEW ANGLE, 3:1 SLOPES (A, B, C, D, E, F), 4:1 SLOPES (A, B, C, D, E, F).

GENERAL NOTES: CONCRETE- All concrete to be Class S, and shall be poured in the dry. ALL EXPOSED CORNERS TO HAVE 1/4" CHAMFERS. REINFORCING STEEL- Reinforcing to be deformed bars of intermediate or hard grade. BAR LAP- In computing the quantities of steel from the tables add one lap for each additional 33'-0" length of barrel over 32'-0". LAP LONGITUDINAL BARS 30 DIAMETERS. CONSTRUCTION JOINTS- Construction joints between wingwalls, side walls and slabs shall be only where shown on plans. SPECIFICATIONS- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.

DESIGN LIVE LOAD H20-S16 LOADING A.A.S.H.O. 1961 AND SPECIAL MILITARY LOADING Two 22,000 Lb. Axles @ 9'-3" cty.

UNIT STRESSES: Class 5 Concrete (n=10) 1200 psi Reinforcing Steel 20,000 psi

NOTE: This drawing to be used in conjunction with Standard Drawing Nos. W-X002-1, W-X003-1 and W-X004-1.

ARKANSAS STATE HIGHWAY COMMISSION DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS 4', 5' & 6' SPANS SINGLES 3:1 OR 4:1 SLOPES OVER 5'-0" COVER STANDARD DRAWING NO. R-100X-X1

Designed By: M.C.H. 9-5-62 Checked By: R.H.S. 11-8-62 Drawn By: M.C.H. 10-10-62 Checked By: J.L.M. 11-12-62 Quantities By: M.C.H. 11-7-62 Checked By: J.M. 11-16-62

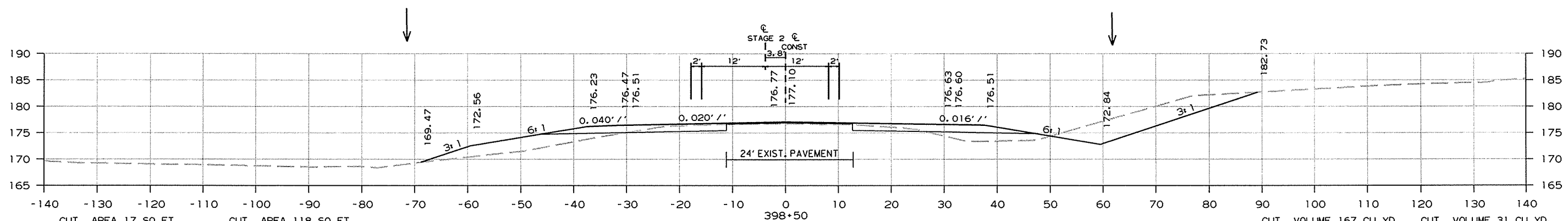
STAGE 1

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.	070281	107
						2 CROSS SECTIONS		

STAGE 2

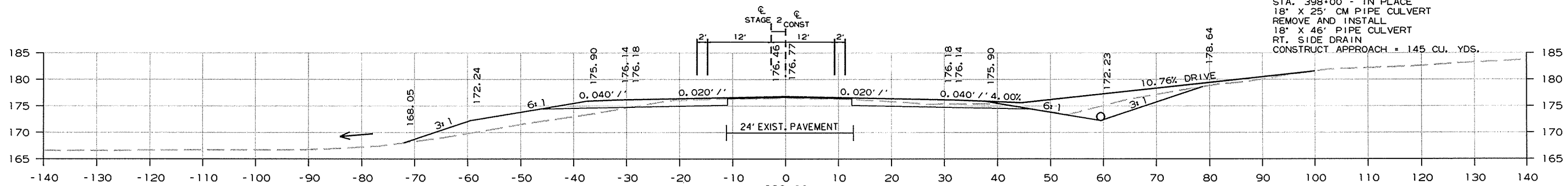
STAGE 1



CUT AREA 17 SQ. FT.  
FILL AREA 62 SQ. FT.

CUT AREA 118 SQ. FT.  
FILL AREA 28 SQ. FT.

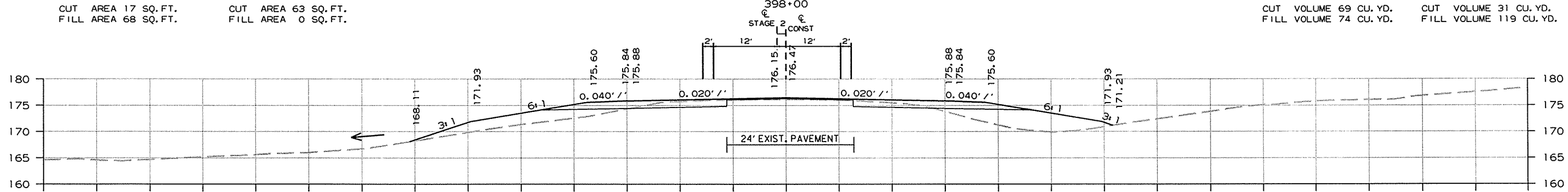
CUT VOLUME 167 CU. YD.  
FILL VOLUME 26 CU. YD.  
STA. 398+00 - IN PLACE  
18" X 25' CM PIPE CULVERT  
REMOVE AND INSTALL  
18" X 46' PIPE CULVERT  
RT. SIDE DRAIN  
CONSTRUCT APPROACH = 145 CU. YDS.



CUT AREA 17 SQ. FT.  
FILL AREA 68 SQ. FT.

CUT AREA 63 SQ. FT.  
FILL AREA 0 SQ. FT.

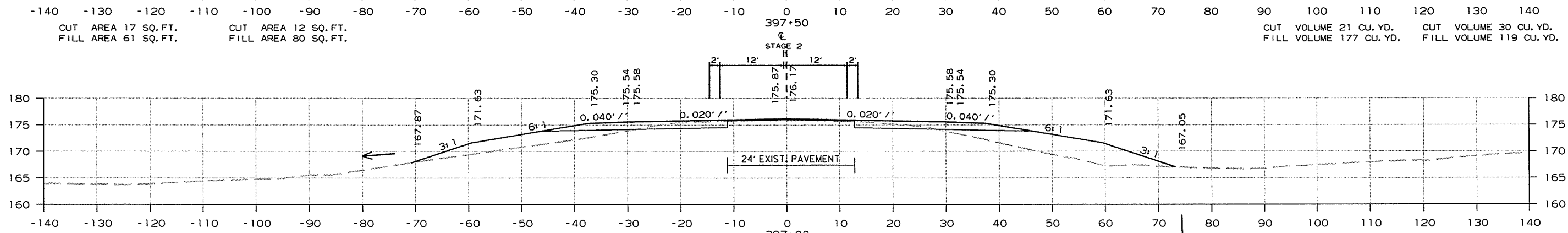
CUT VOLUME 69 CU. YD.  
FILL VOLUME 74 CU. YD.



CUT AREA 17 SQ. FT.  
FILL AREA 61 SQ. FT.

CUT AREA 12 SQ. FT.  
FILL AREA 80 SQ. FT.

CUT VOLUME 21 CU. YD.  
FILL VOLUME 177 CU. YD.



CUT AREA 16 SQ. FT.  
FILL AREA 67 SQ. FT.

CUT AREA 12 SQ. FT.  
FILL AREA 111 SQ. FT.

CUT VOLUME 0 CU. YD.  
FILL VOLUME 0 CU. YD.

BEGIN JOB 070281 - STA. 397+00  
HWY. 167  
END JOB 070280

CROSS SECTION STA. 397+00 TO STA. 398+50

R070281.DGN 5/1/2015

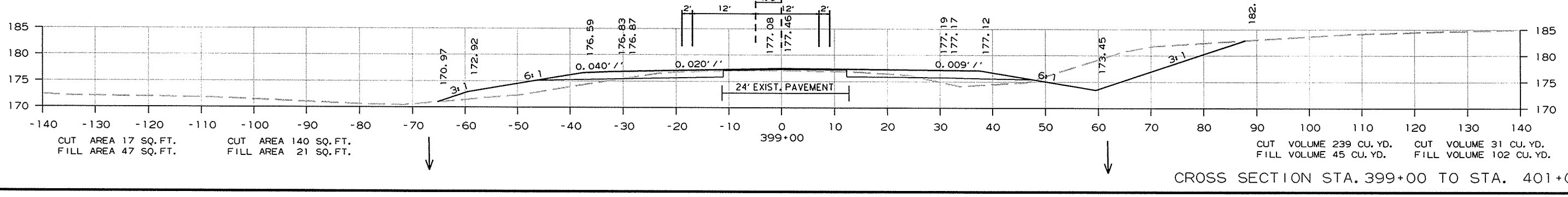
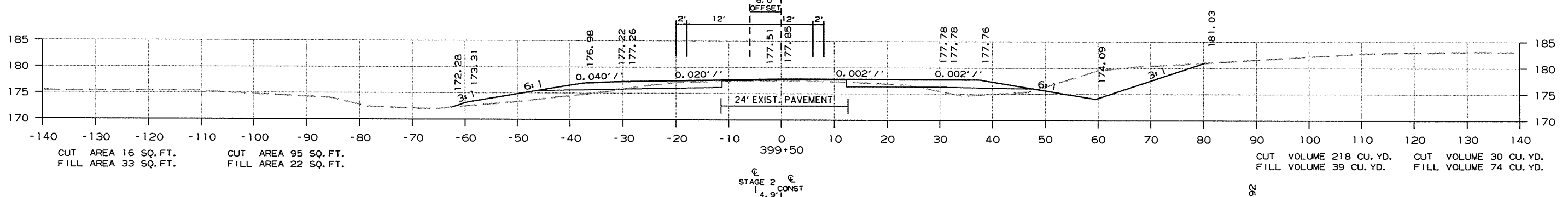
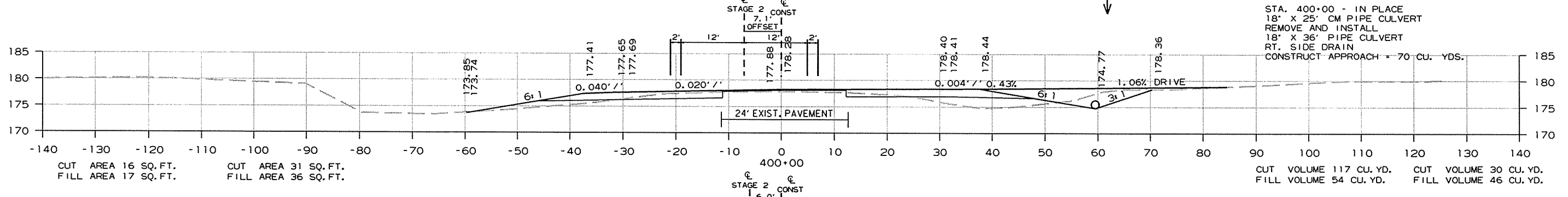
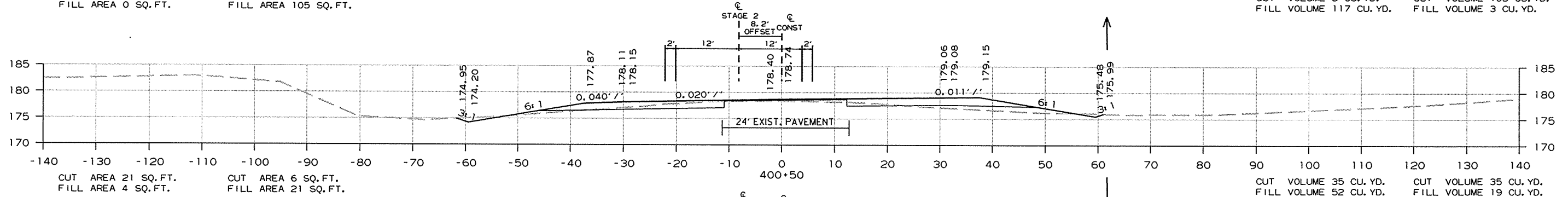
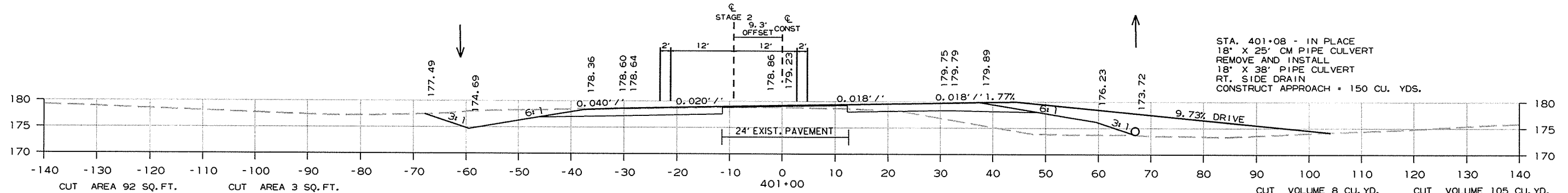
STAGE 1      STAGE 2

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. 070281							108	185

② CROSS SECTIONS

STAGE 2      STAGE 1

STA. 401+08 - IN PLACE  
18" X 25' CM PIPE CULVERT  
REMOVE AND INSTALL  
18" X 38' PIPE CULVERT  
RT. SIDE DRAIN  
CONSTRUCT APPROACH = 150 CU. YDS.



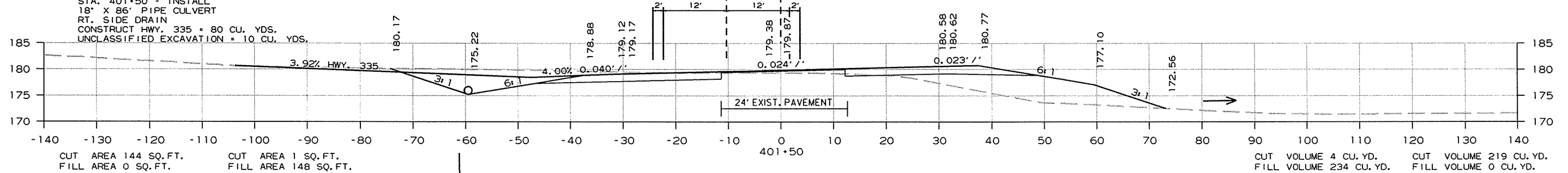
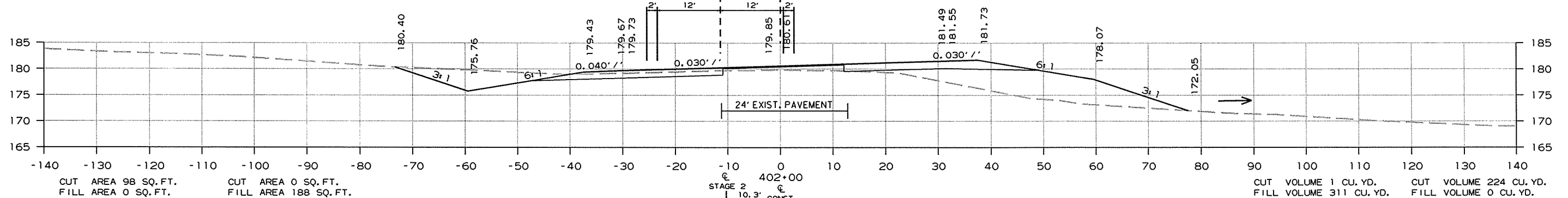
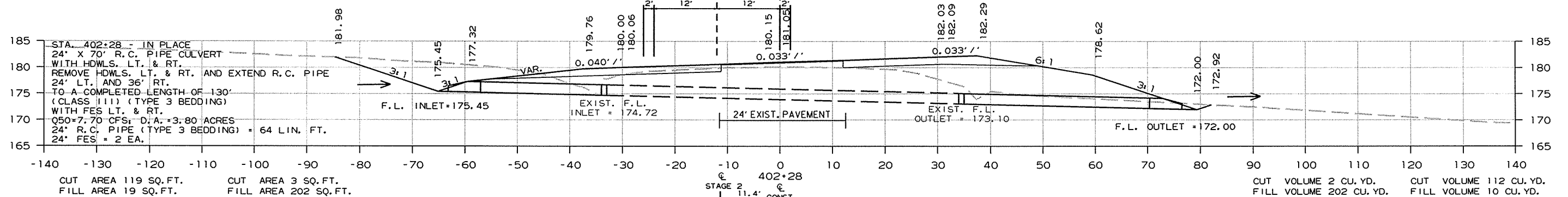
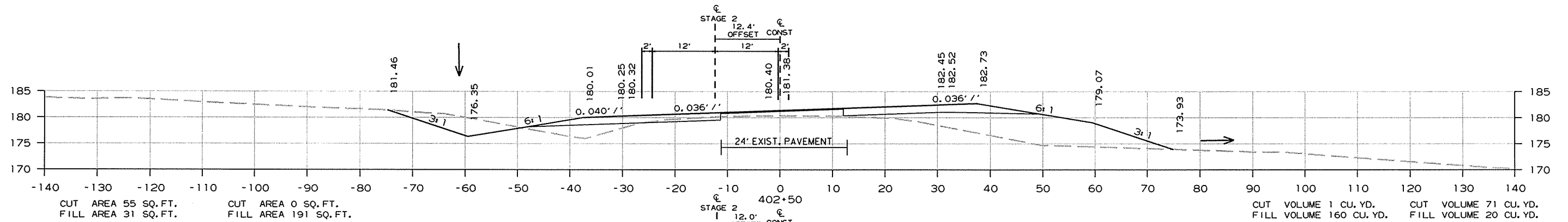
CROSS SECTION STA. 399+00 TO STA. 401+00

STAGE 1      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.			
						070281	109	185

② CROSS SECTIONS

STAGE 2      STAGE 1



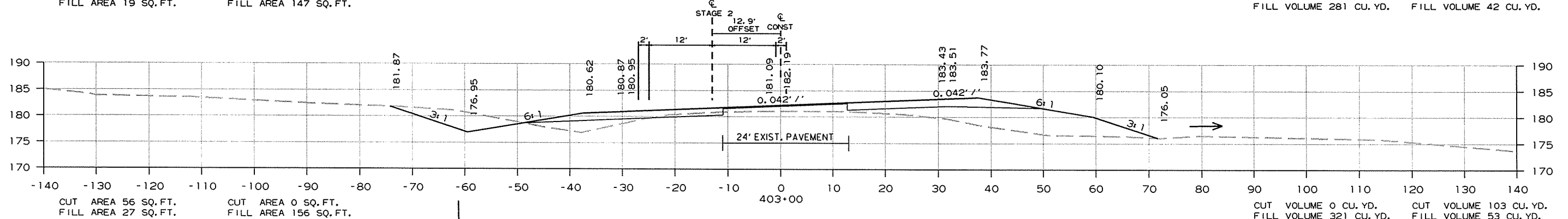
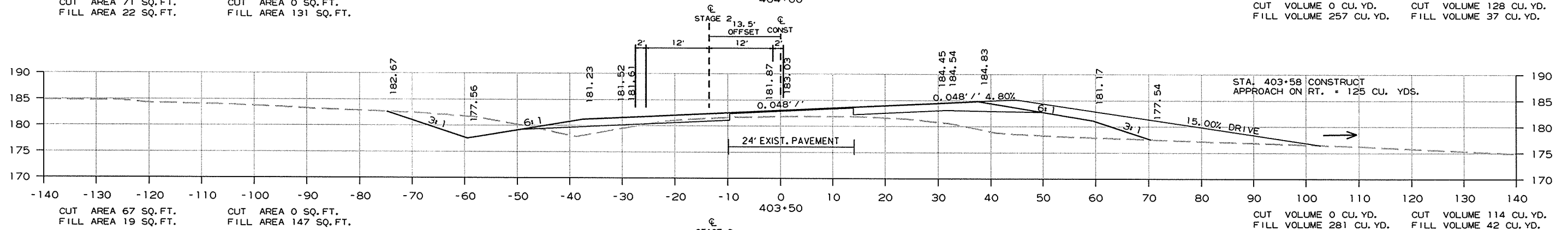
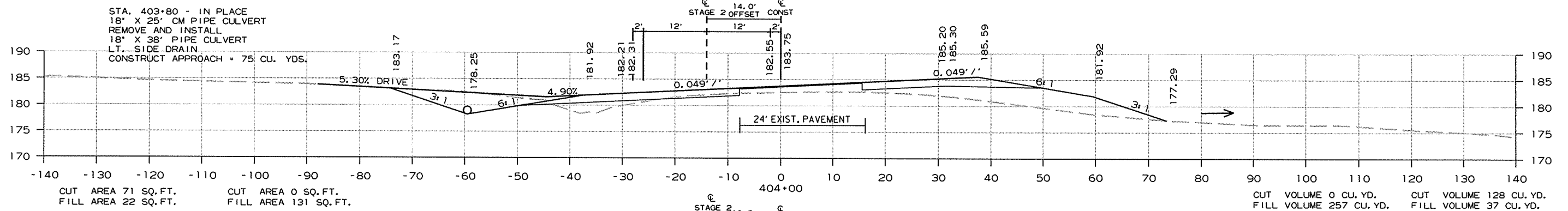
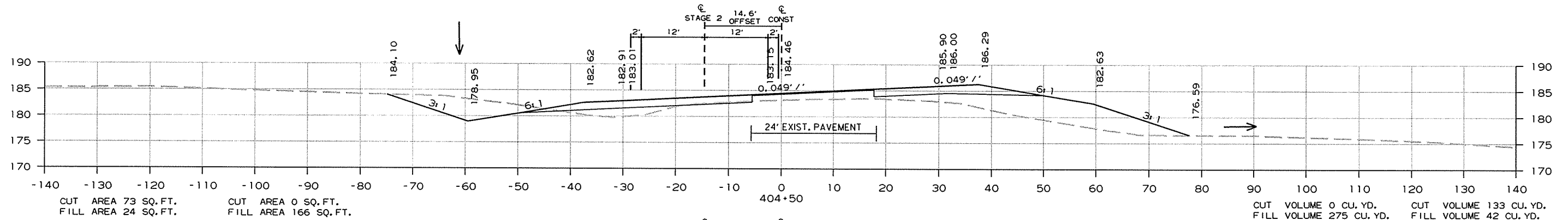
CROSS SECTION STA. 401+50 TO STA. 402+50

STAGE 1      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.		110	185
						JOB NO. 070281		

② CROSS SECTIONS

STAGE 2      STAGE 1



CROSS SECTION STA. 403+00 TO STA. 404+50

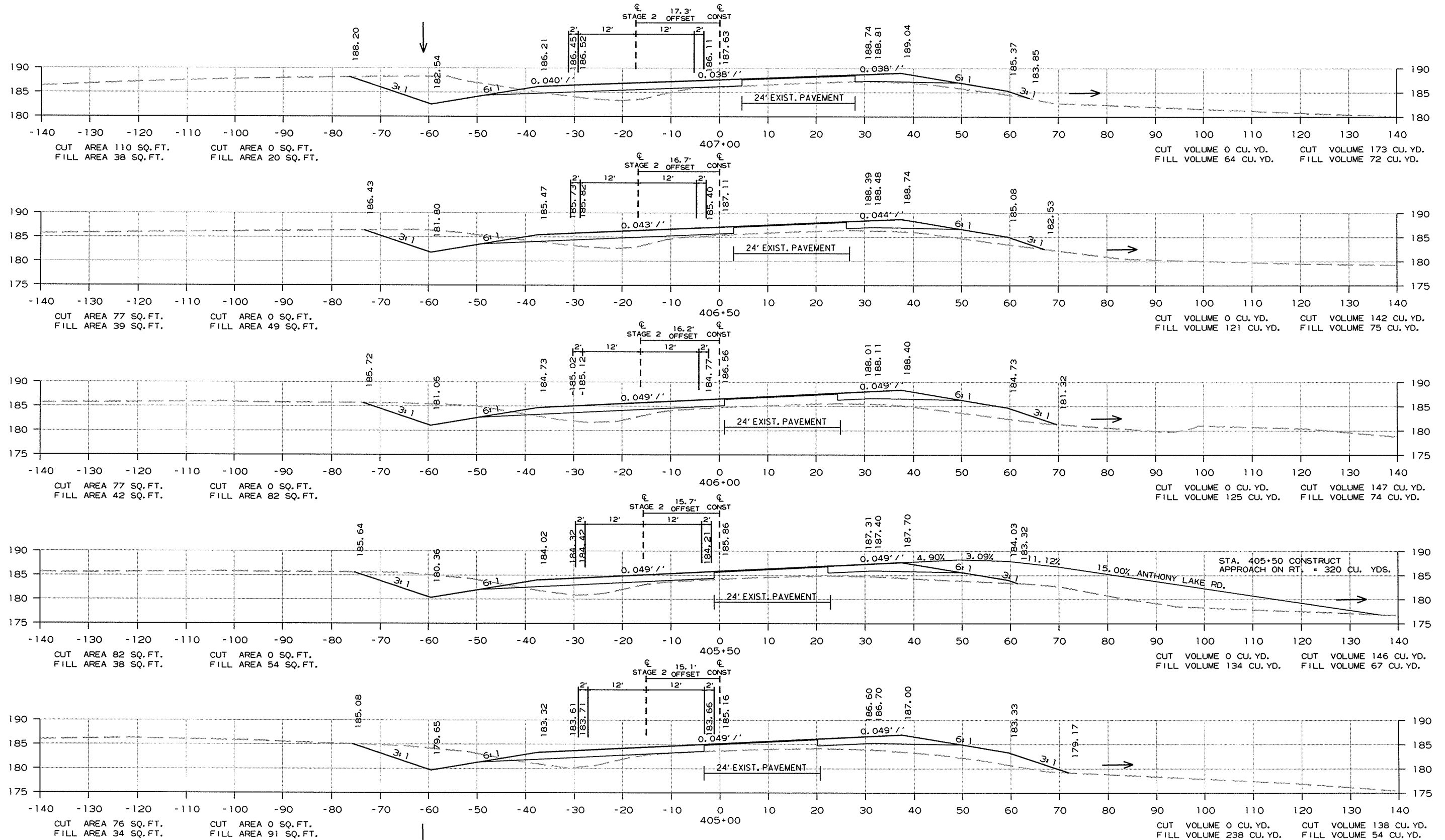
R070281.DGN 5/1/2015

STAGE 1      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.	070281
								111
								185

② CROSS SECTIONS

STAGE 2      STAGE 1



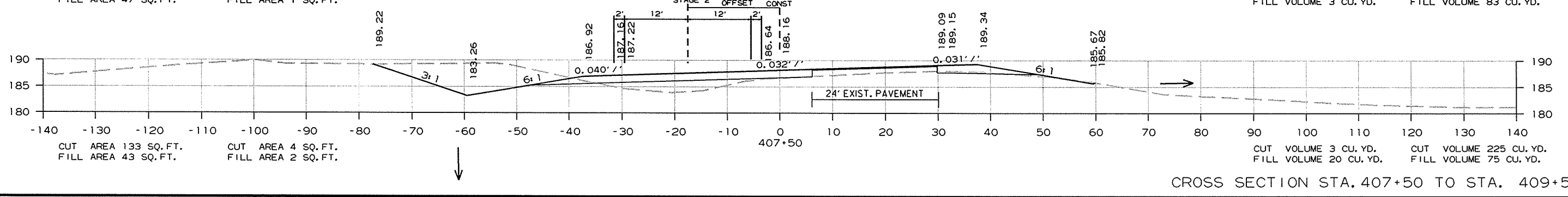
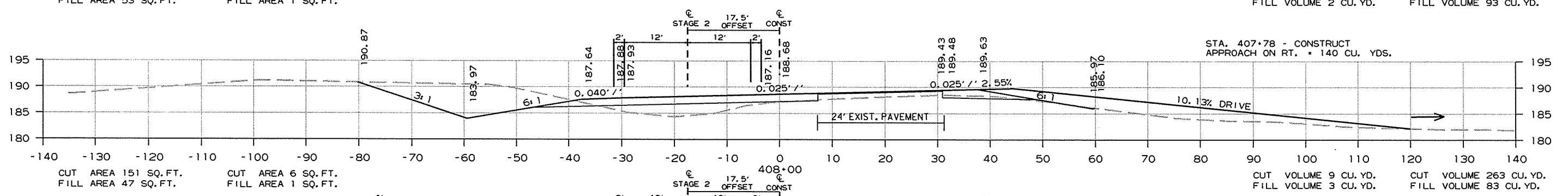
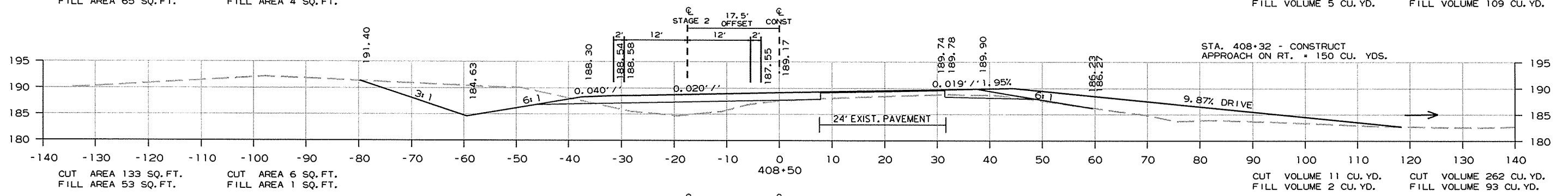
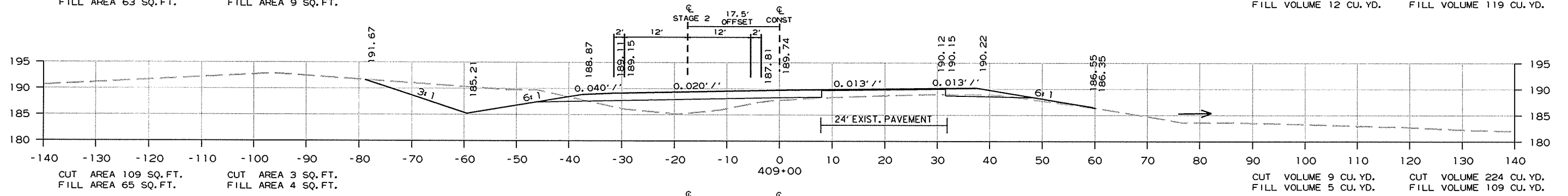
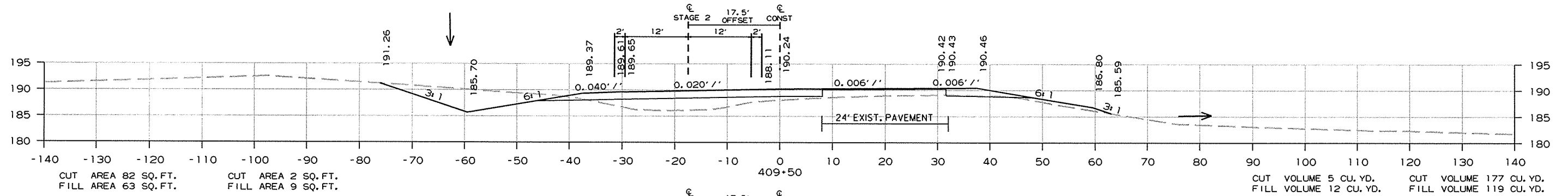
CROSS SECTION STA. 405+00 TO STA. 407+00

STAGE 1      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. 070281			112	185

② CROSS SECTIONS

STAGE 2      STAGE 1



CROSS SECTION STA. 407+50 TO STA. 409+50

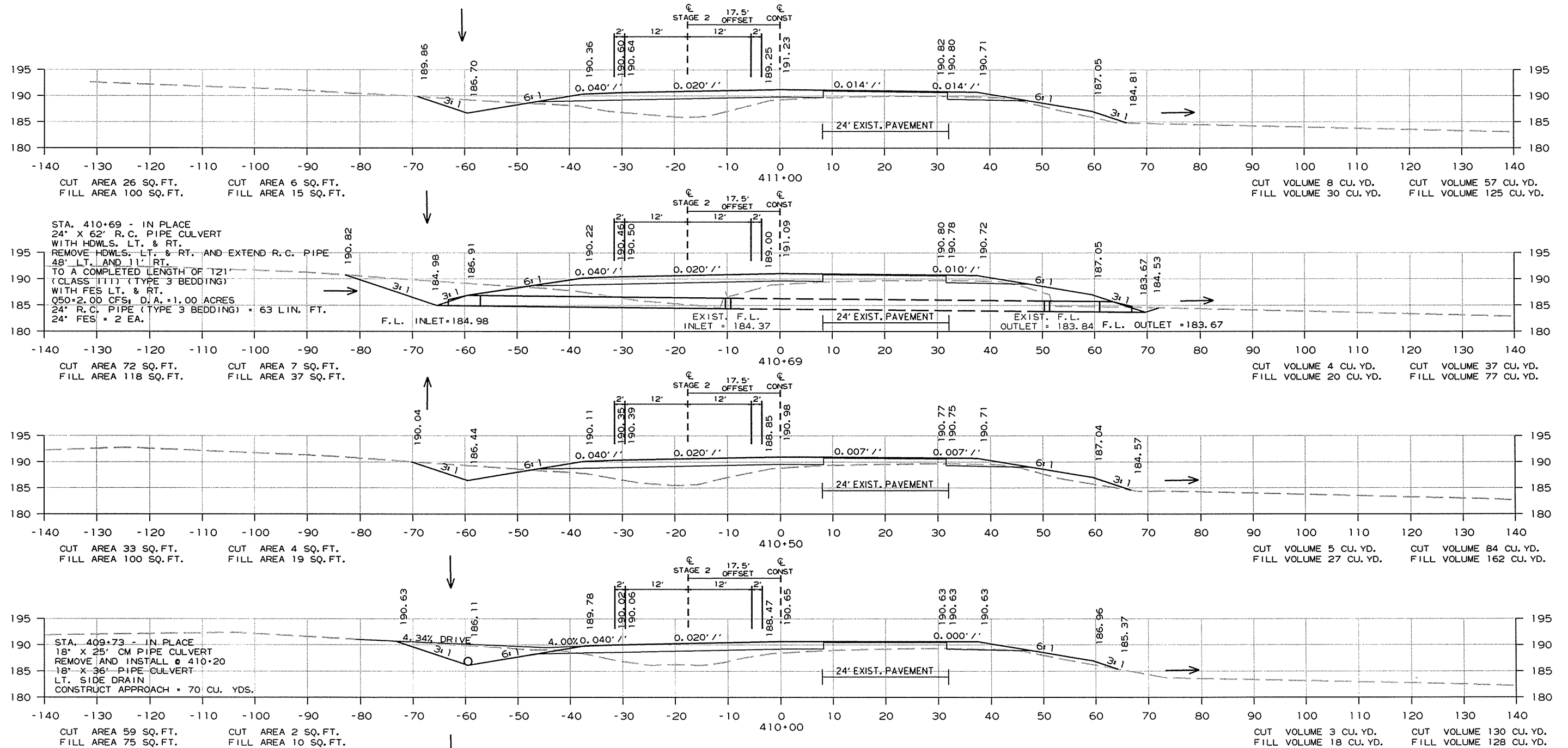


STAGE 1      STAGE 2

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. 070281							113	185

② CROSS SECTIONS

STAGE 2      STAGE 1



CROSS SECTION STA. 410+00 TO STA. 411+00

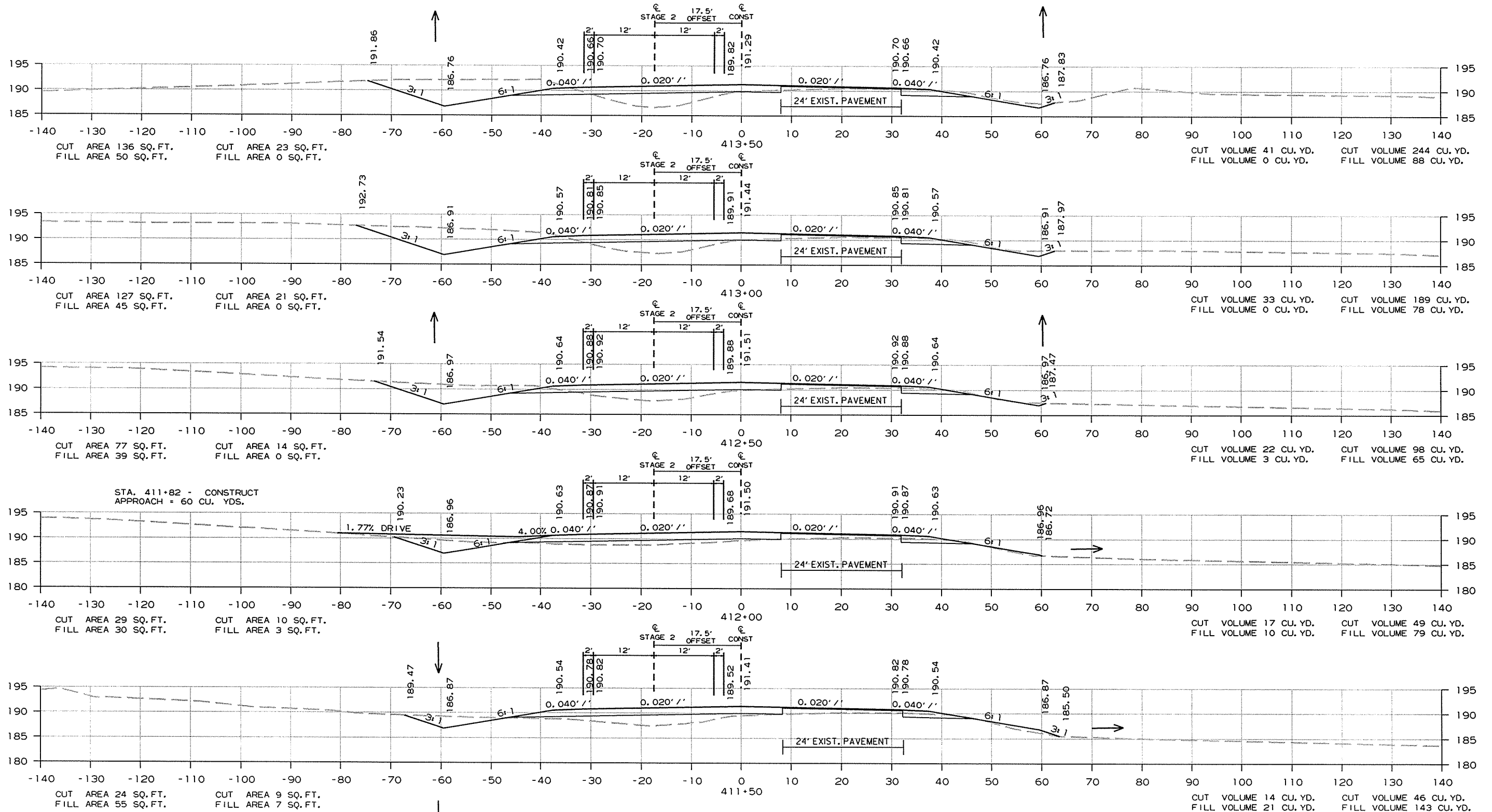
R070281.DGN 5/1/2015

STAGE 1      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.	070281	114
								185

② CROSS SECTIONS

STAGE 2      STAGE 1



CROSS SECTION STA. 411+50 TO STA. 413+50

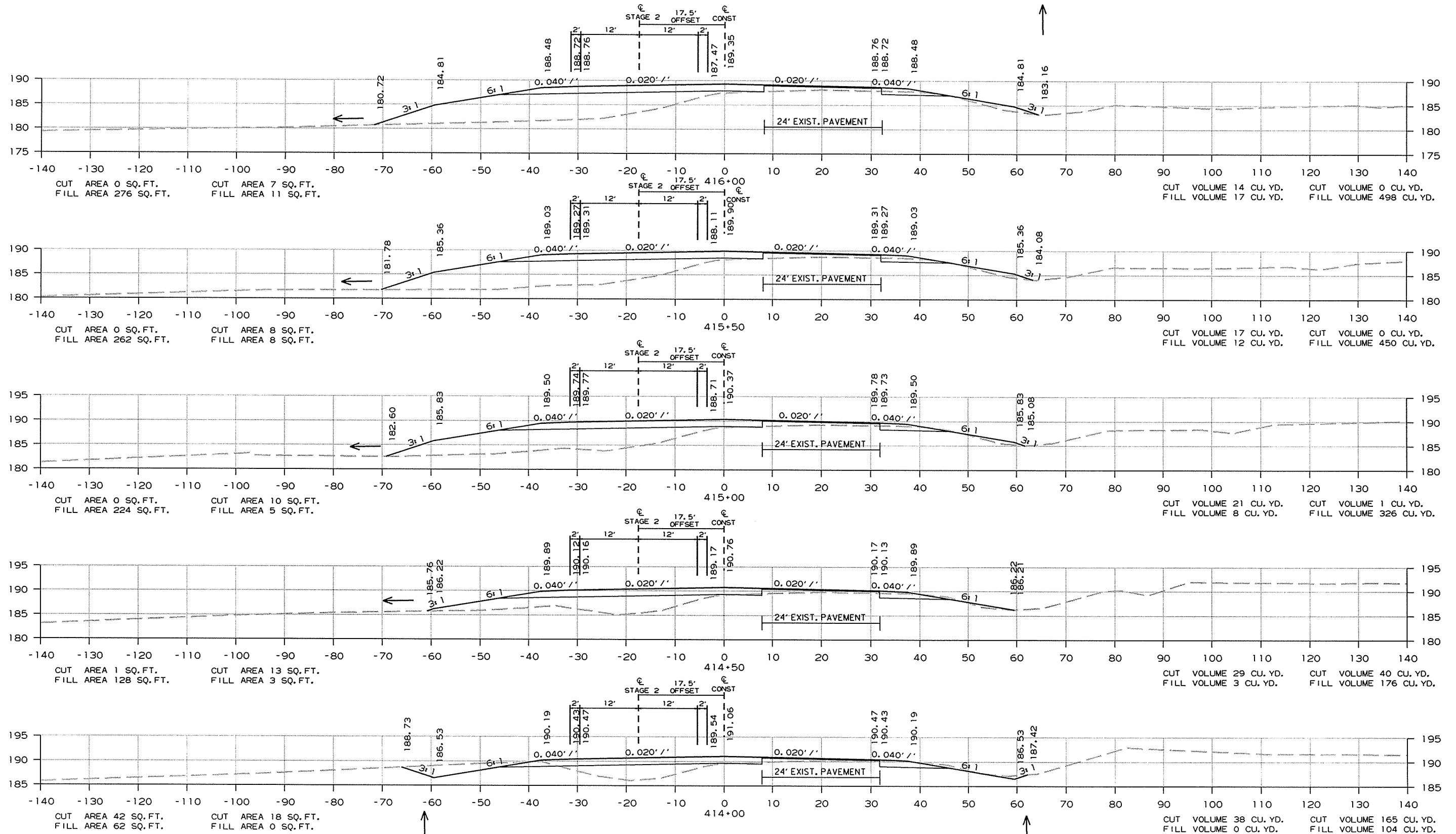
R070281.DGN 5/1/2015

STAGE 1      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. 070281							115	185

② CROSS SECTIONS

STAGE 2      STAGE 1



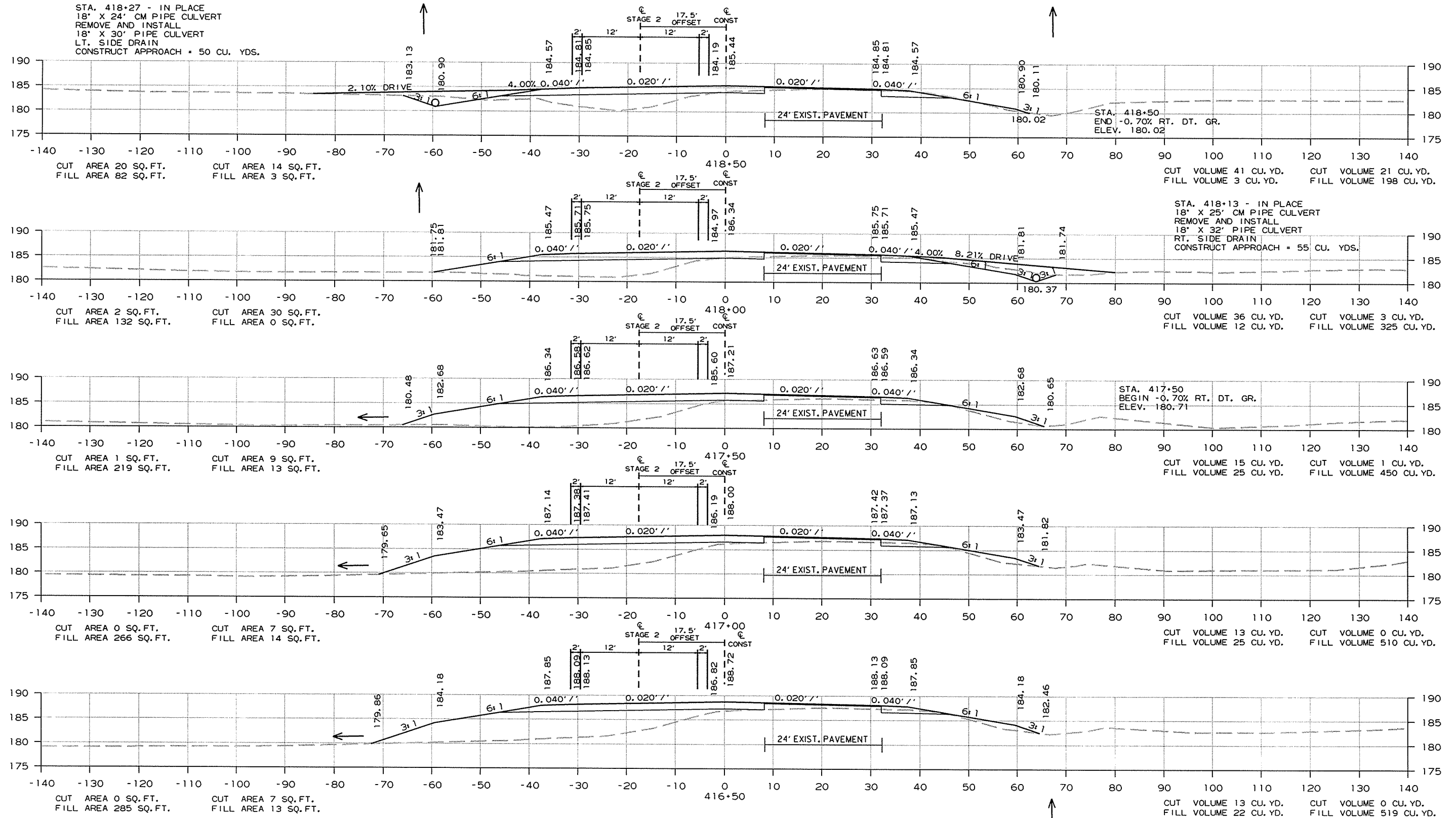
CROSS SECTION STA. 414+00 TO STA. 416+00

STAGE 1      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. 070281							116	185

② CROSS SECTIONS

STAGE 2      STAGE 1



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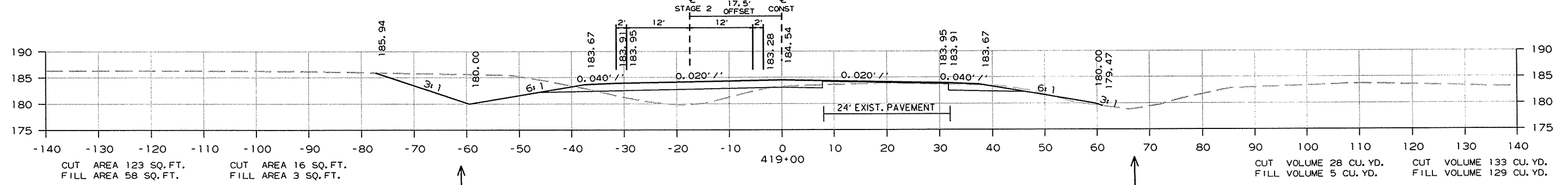
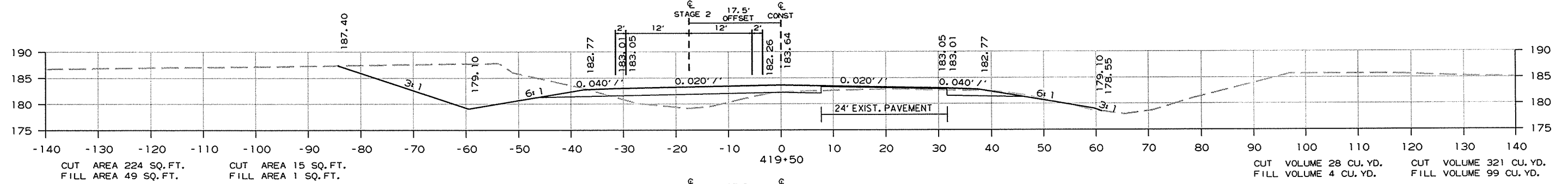
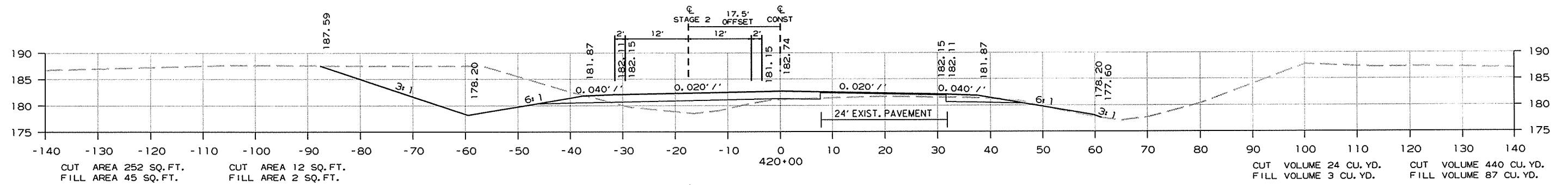
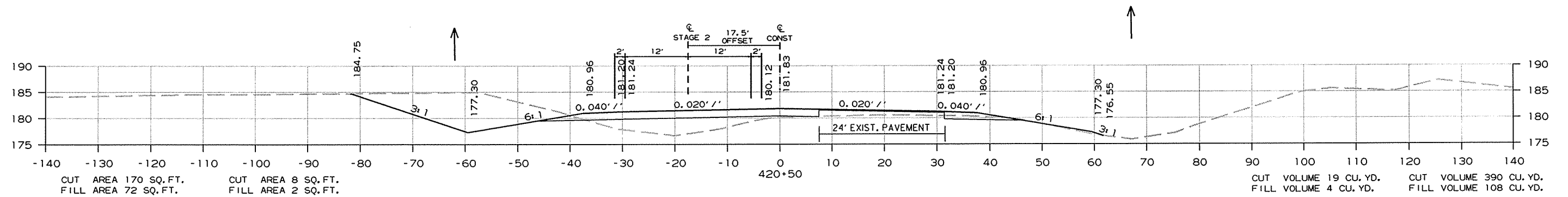
CROSS SECTION STA. 416+50 TO STA. 418+50

STAGE 1      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. 070281							117	185

② CROSS SECTIONS

STAGE 2      STAGE 1



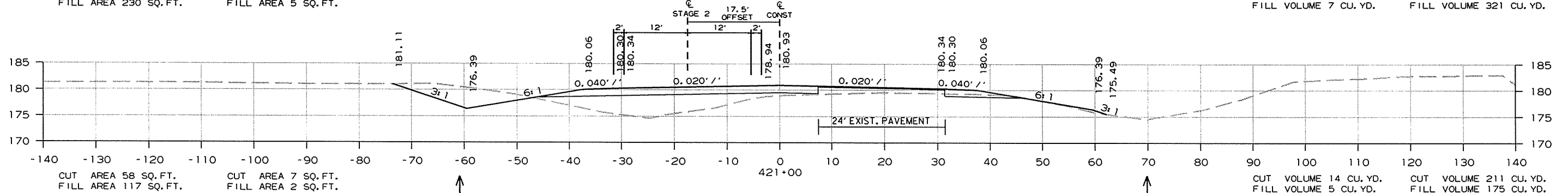
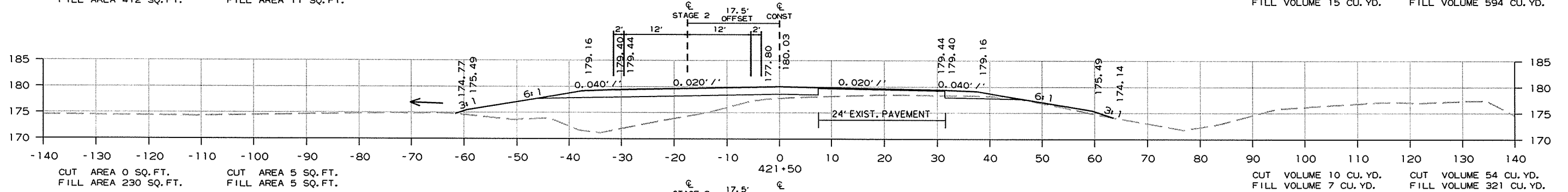
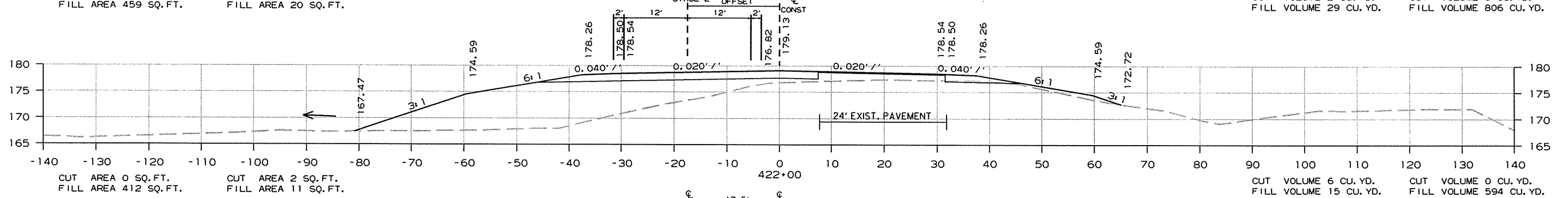
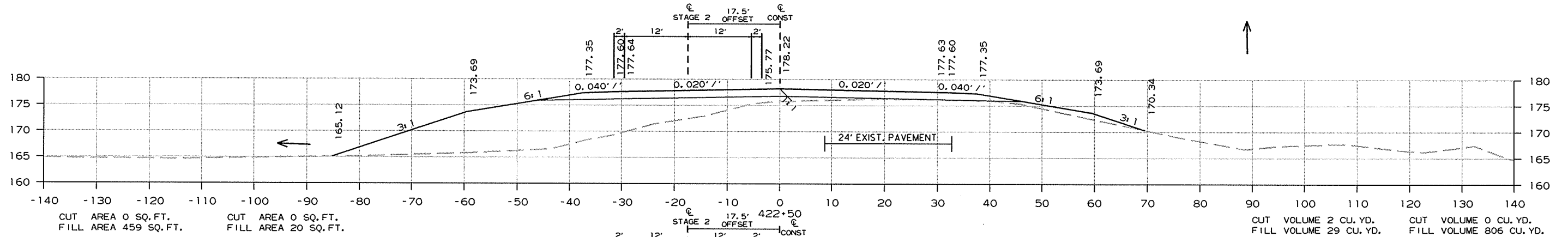
CROSS SECTION STA. 419+00 TO STA. 420+50

STAGE 1      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. 070281							118	185

② CROSS SECTIONS

STAGE 2      STAGE 1



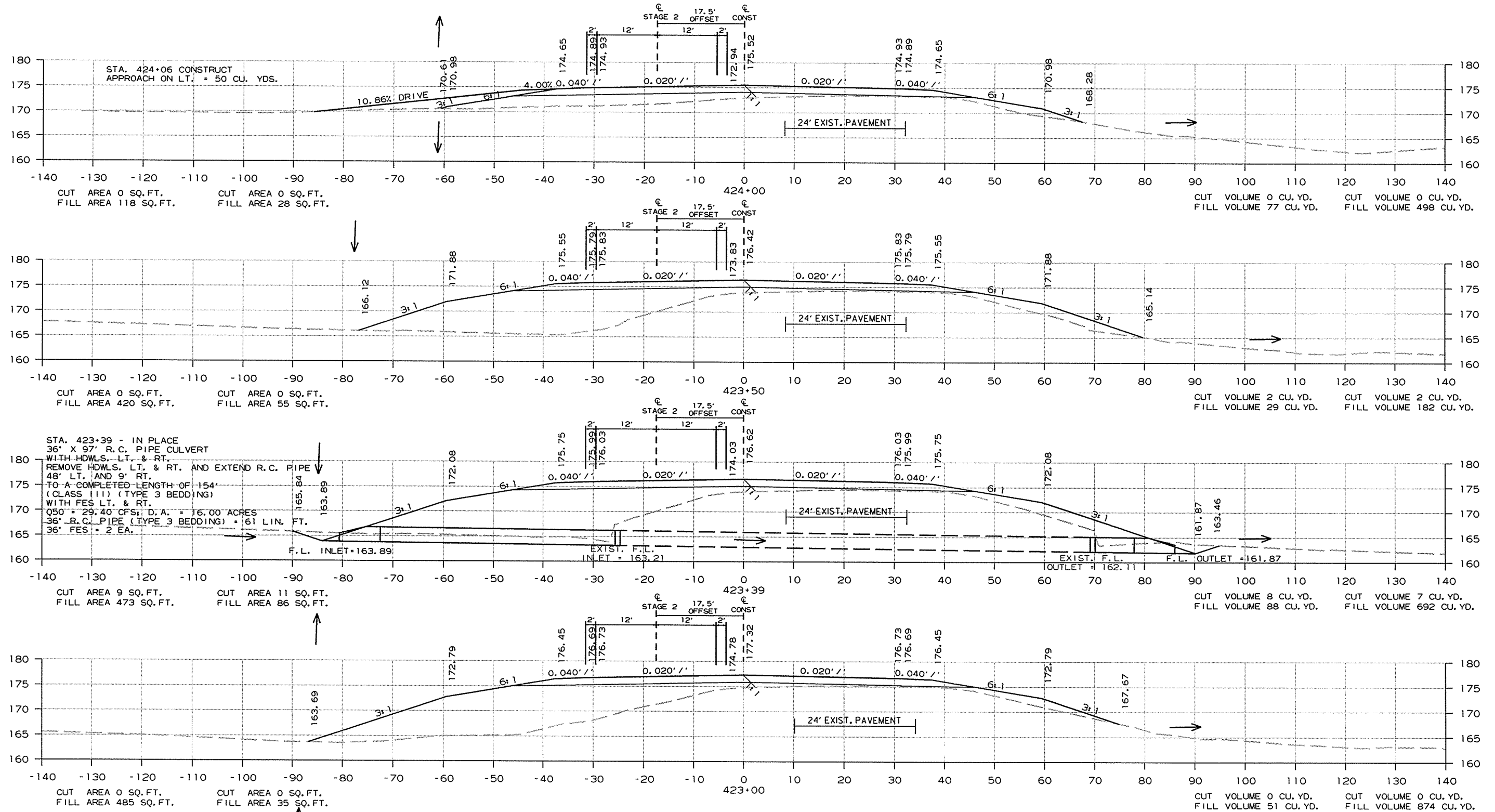
CROSS SECTION STA. 421+00 TO STA. 422+50

STAGE 1      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.	070281
								119
								185

② CROSS SECTIONS

STAGE 2      STAGE 1



CROSS SECTION STA. 423+00 TO STA. 424+00

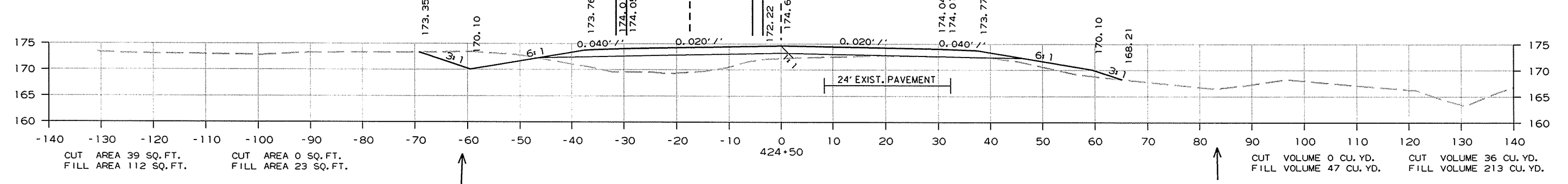
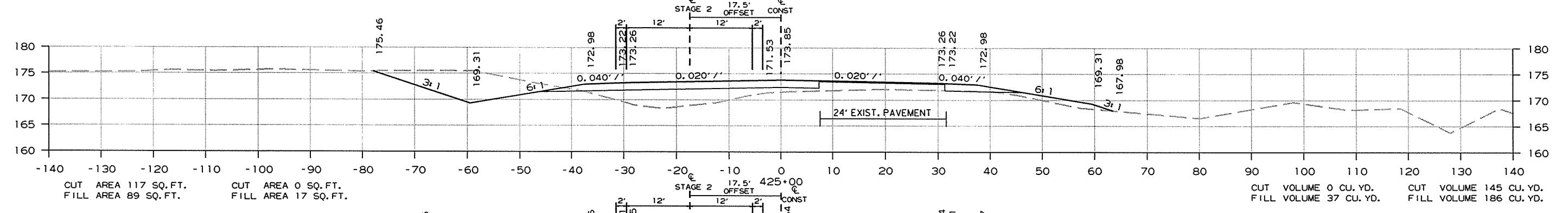
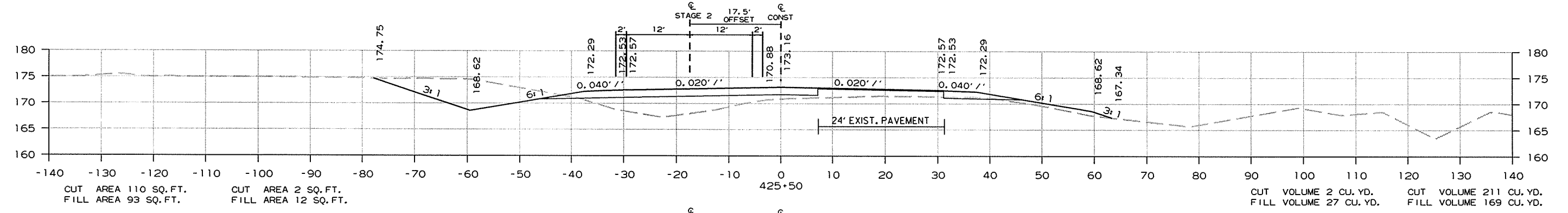
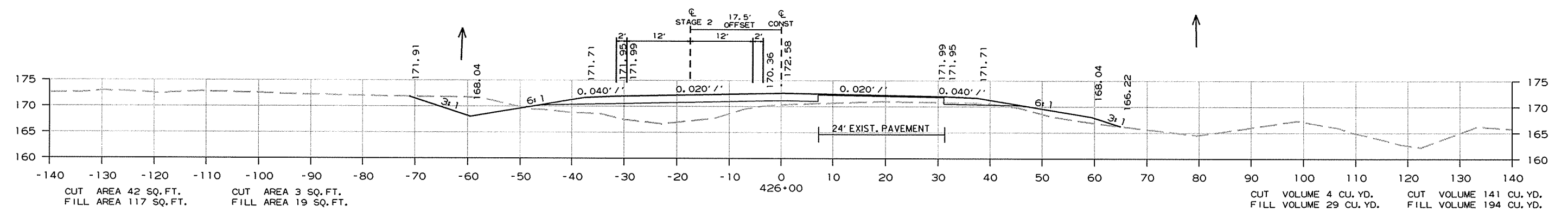
R070281.DGN 5/1/2015

STAGE 1      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.	070281
								120
								185

② CROSS SECTIONS

STAGE 2      STAGE 1



CROSS SECTION STA. 424+50 TO STA. 426+00

R070281.DGN 5/1/2015

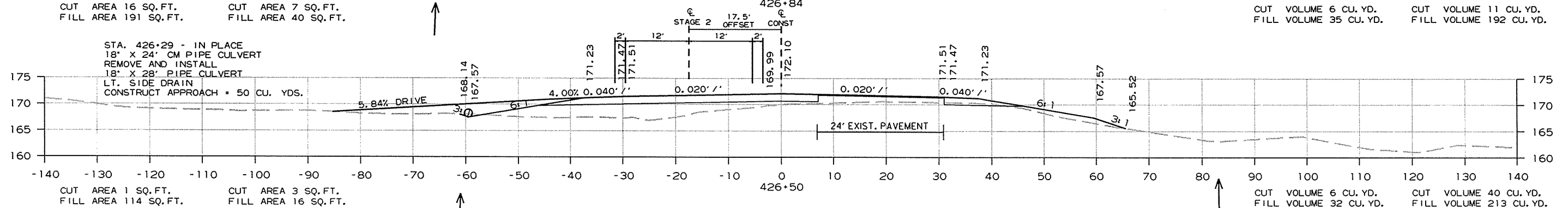
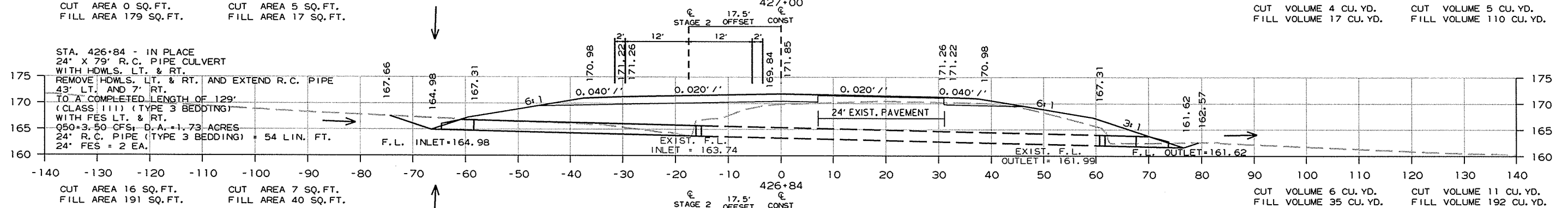
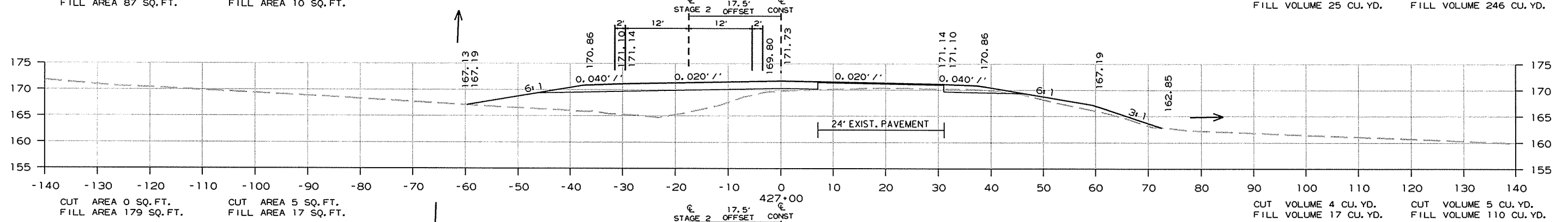
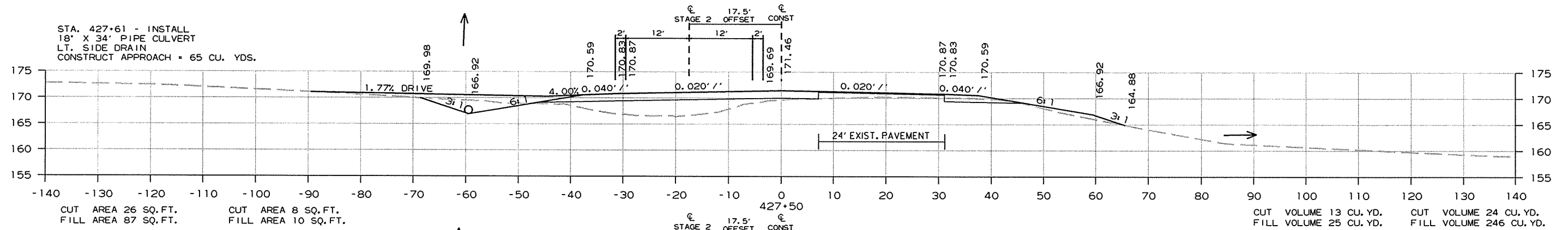


STAGE 1      STAGE 2

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. 070281							121	185

② CROSS SECTIONS

STAGE 2      STAGE 1



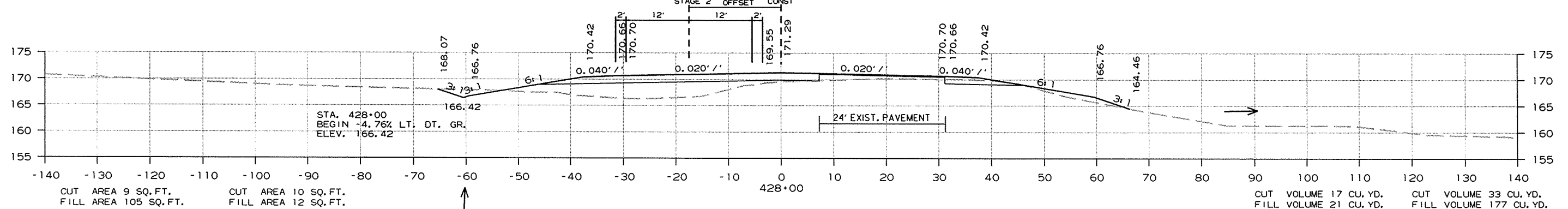
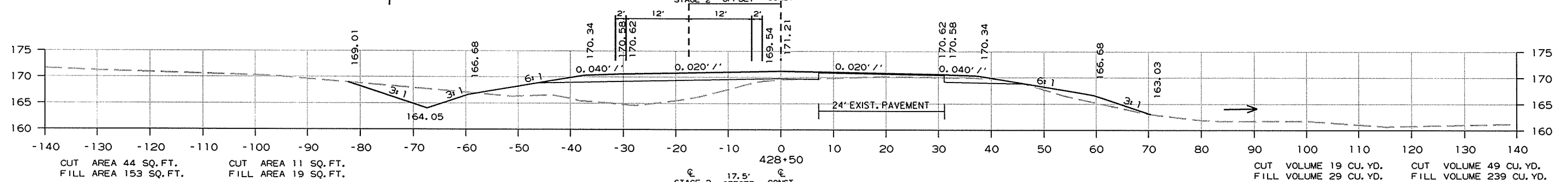
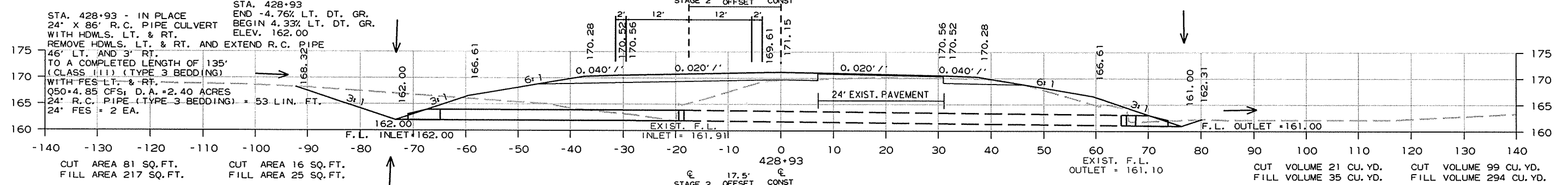
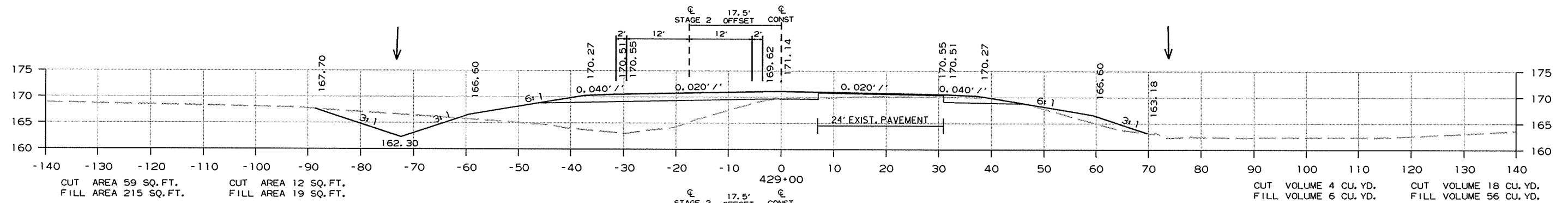
CROSS SECTION STA. 426+50 TO STA. 427+50

STAGE 1      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. 070281	122	185

② CROSS SECTIONS

STAGE 2      STAGE 1



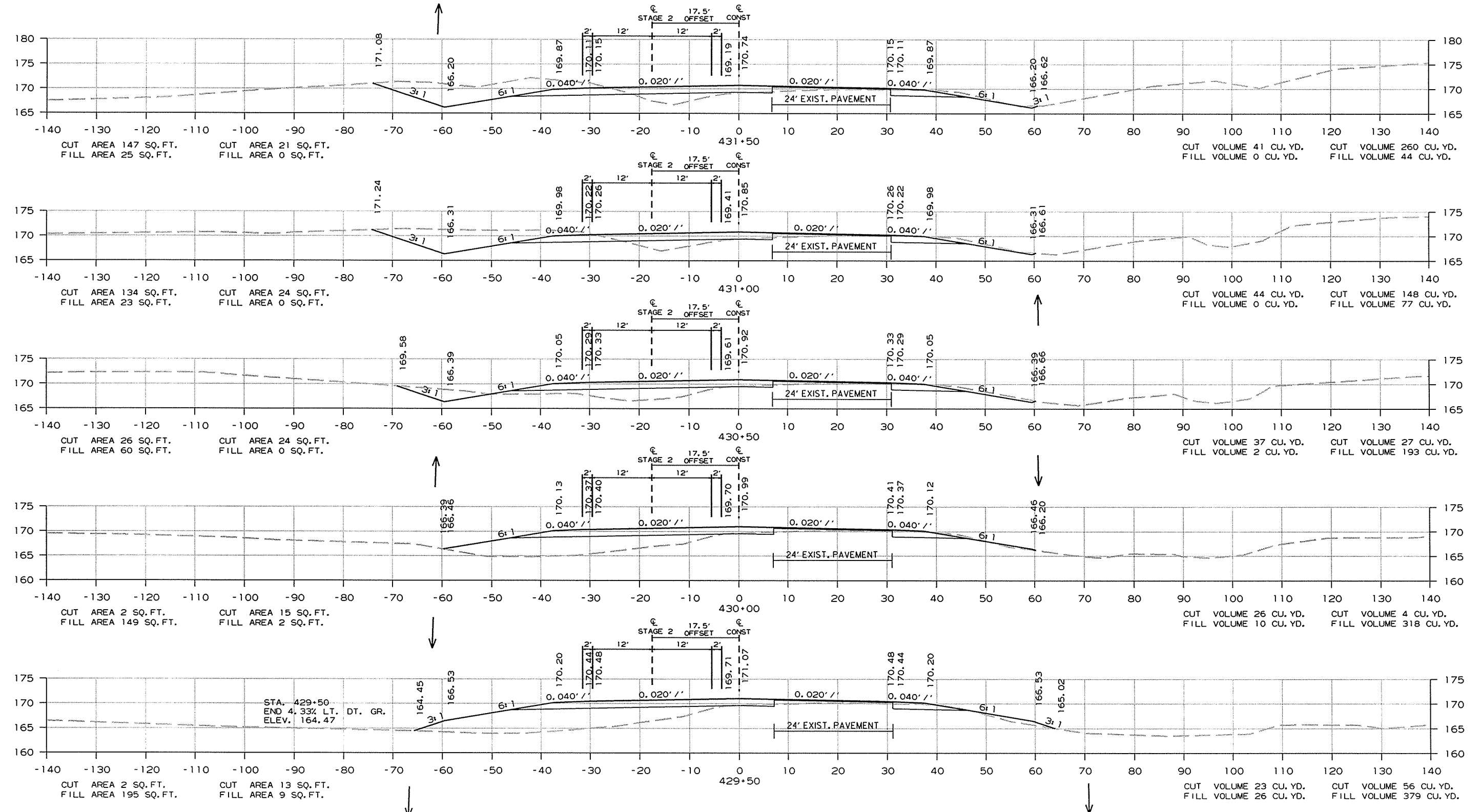
CROSS SECTION STA. 428+00 TO STA. 429+00

STAGE 1      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. 070281	123	185

② CROSS SECTIONS

STAGE 2      STAGE 1



CROSS SECTION STA. 429+50 TO STA. 431+50

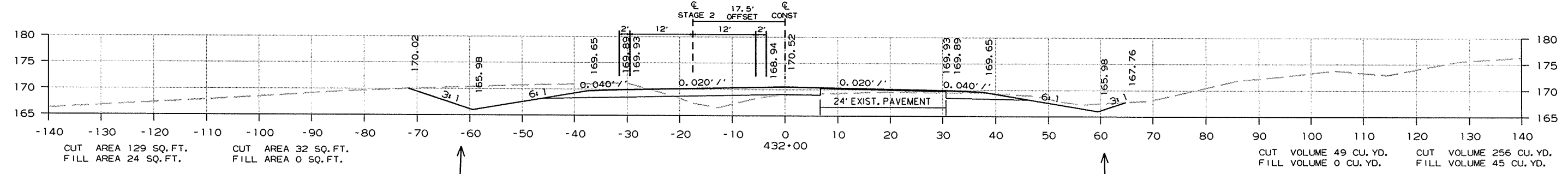
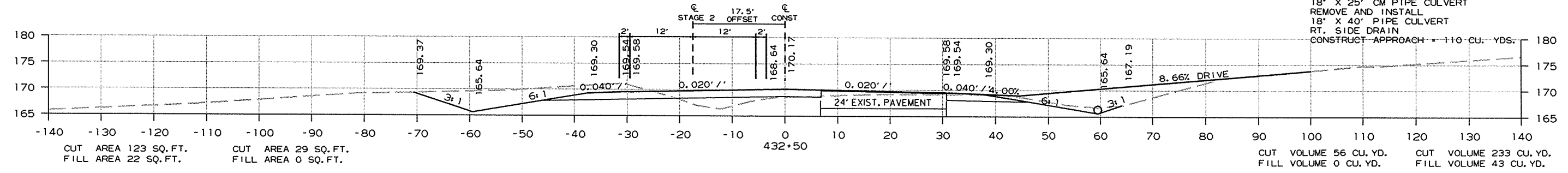
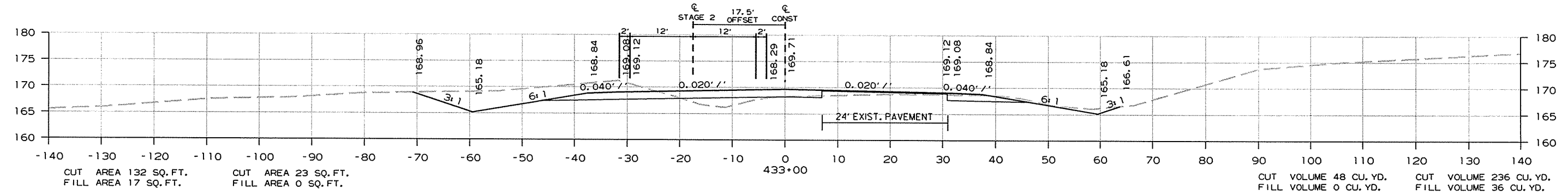
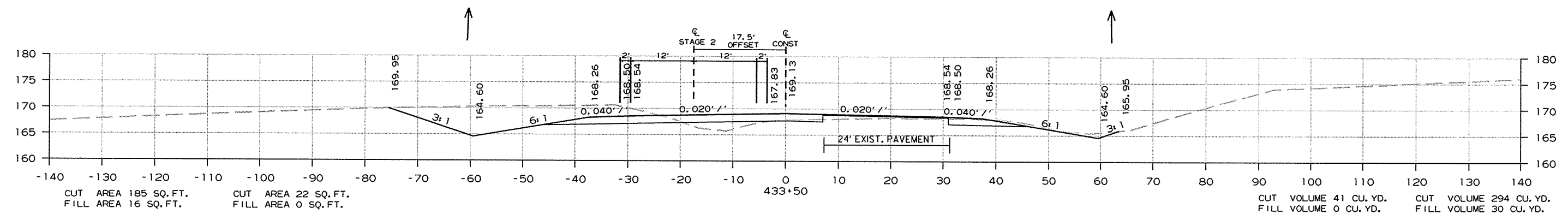
R070281.DGN 5/1/2015

STAGE 1      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. 070281							124	185

② CROSS SECTIONS

STAGE 2      STAGE 1



CROSS SECTION STA. 432+00 TO STA. 433+50

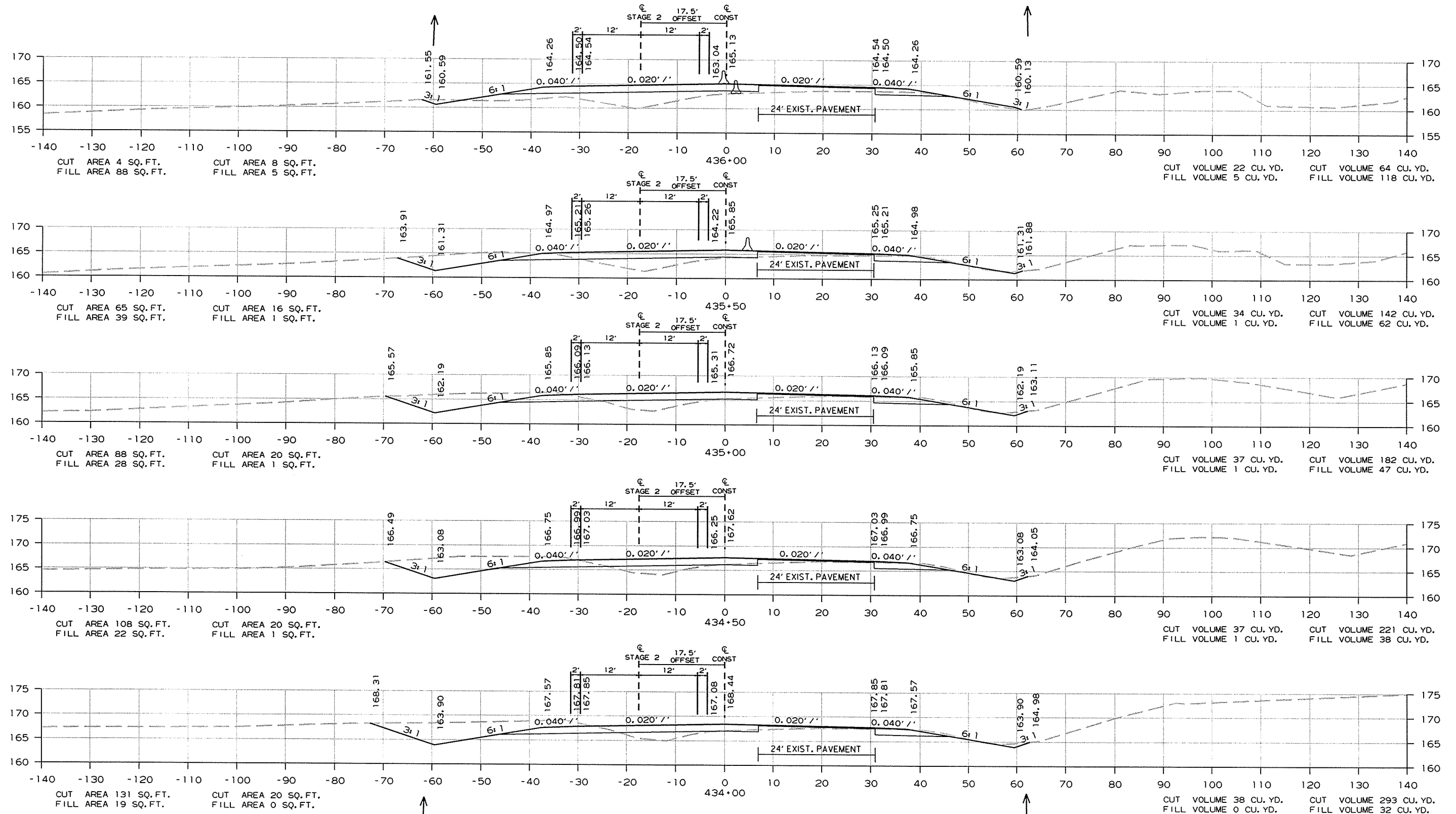
R070281.DGN 5/1/2015

STAGE 1      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. 070281	125	185

② CROSS SECTIONS

STAGE 2      STAGE 1



CROSS SECTION STA. 434+00 TO STA. 436+00

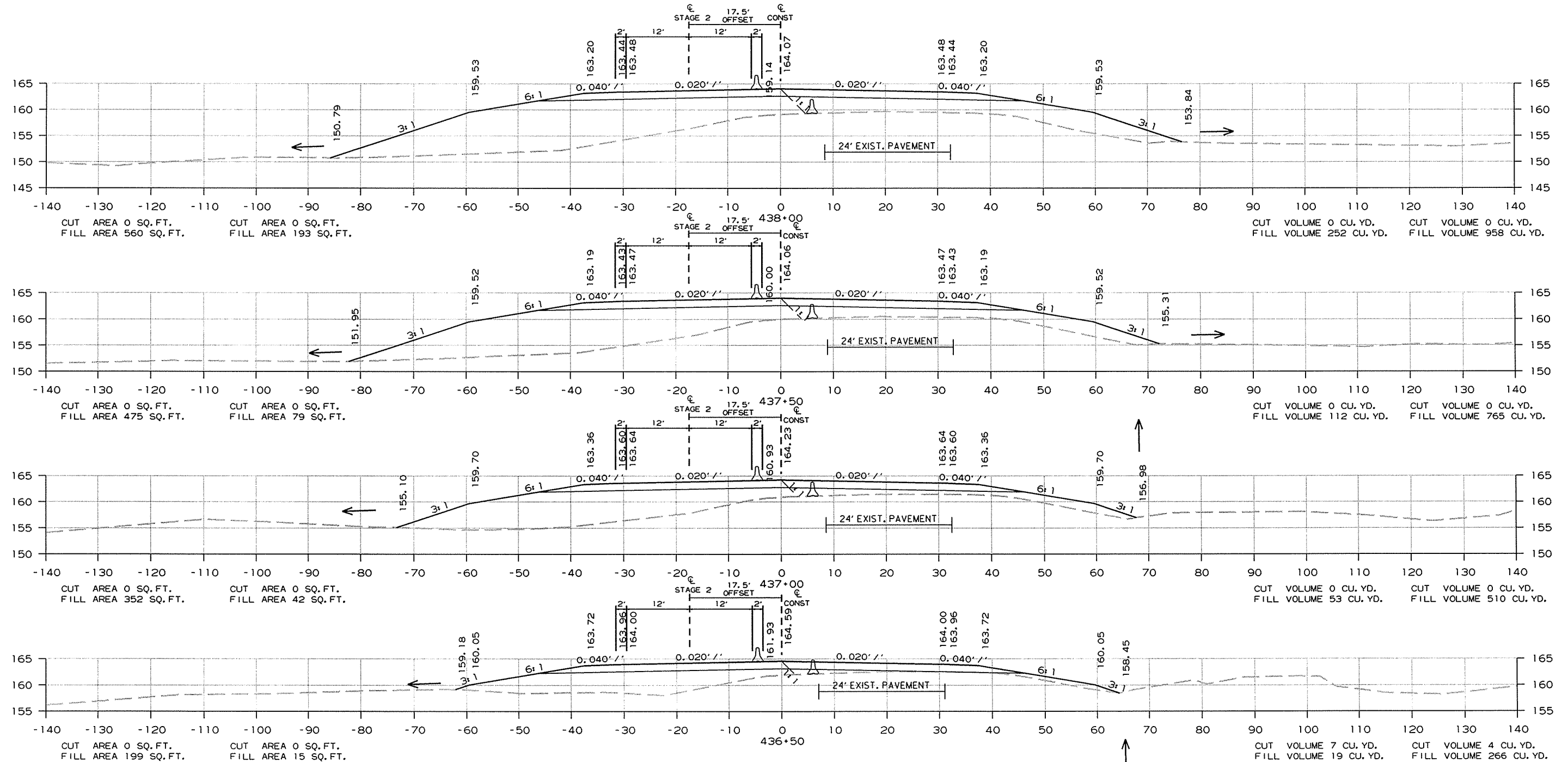
R070281.DGN 5/1/2015

STAGE 1      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. 070281	126	185

② CROSS SECTIONS

STAGE 2      STAGE 1



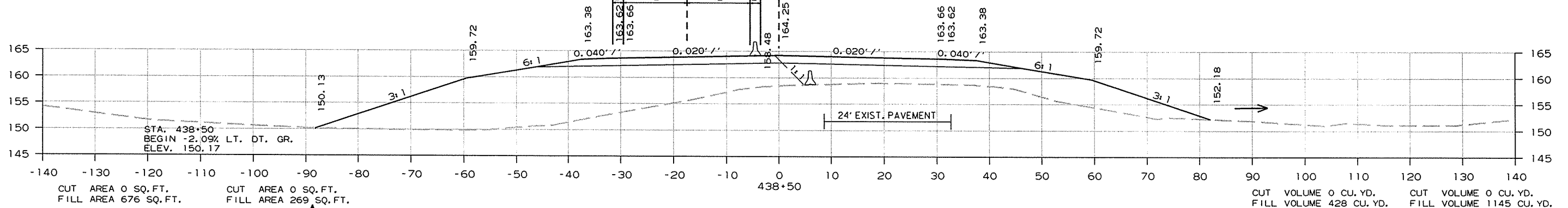
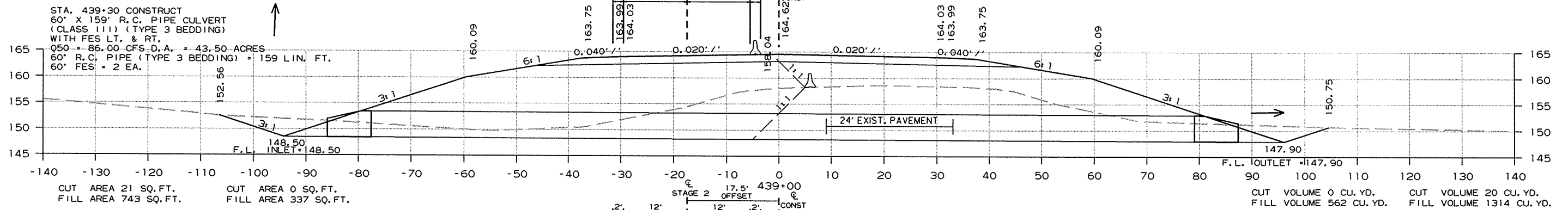
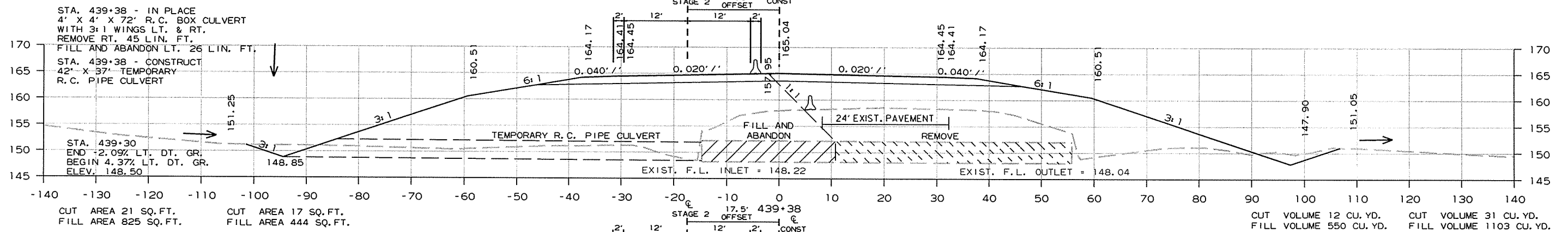
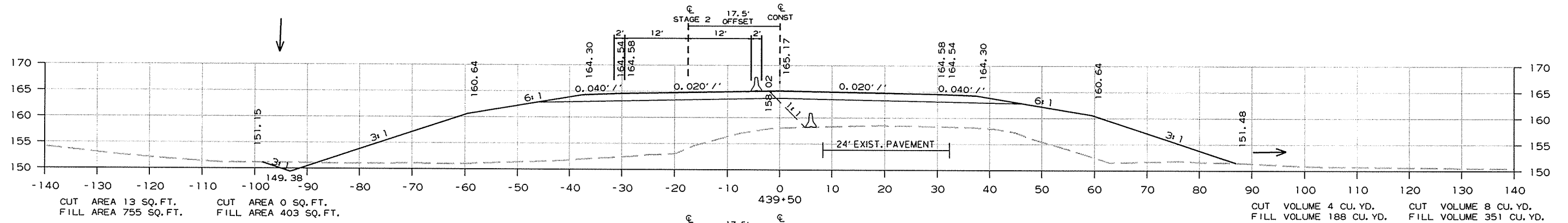
CROSS SECTION STA. 436+50 TO STA. 438+00

STAGE 1      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. 070281	127	185

② CROSS SECTIONS

STAGE 2      STAGE 1



CROSS SECTION STA. 438+50 TO STA. 439+50

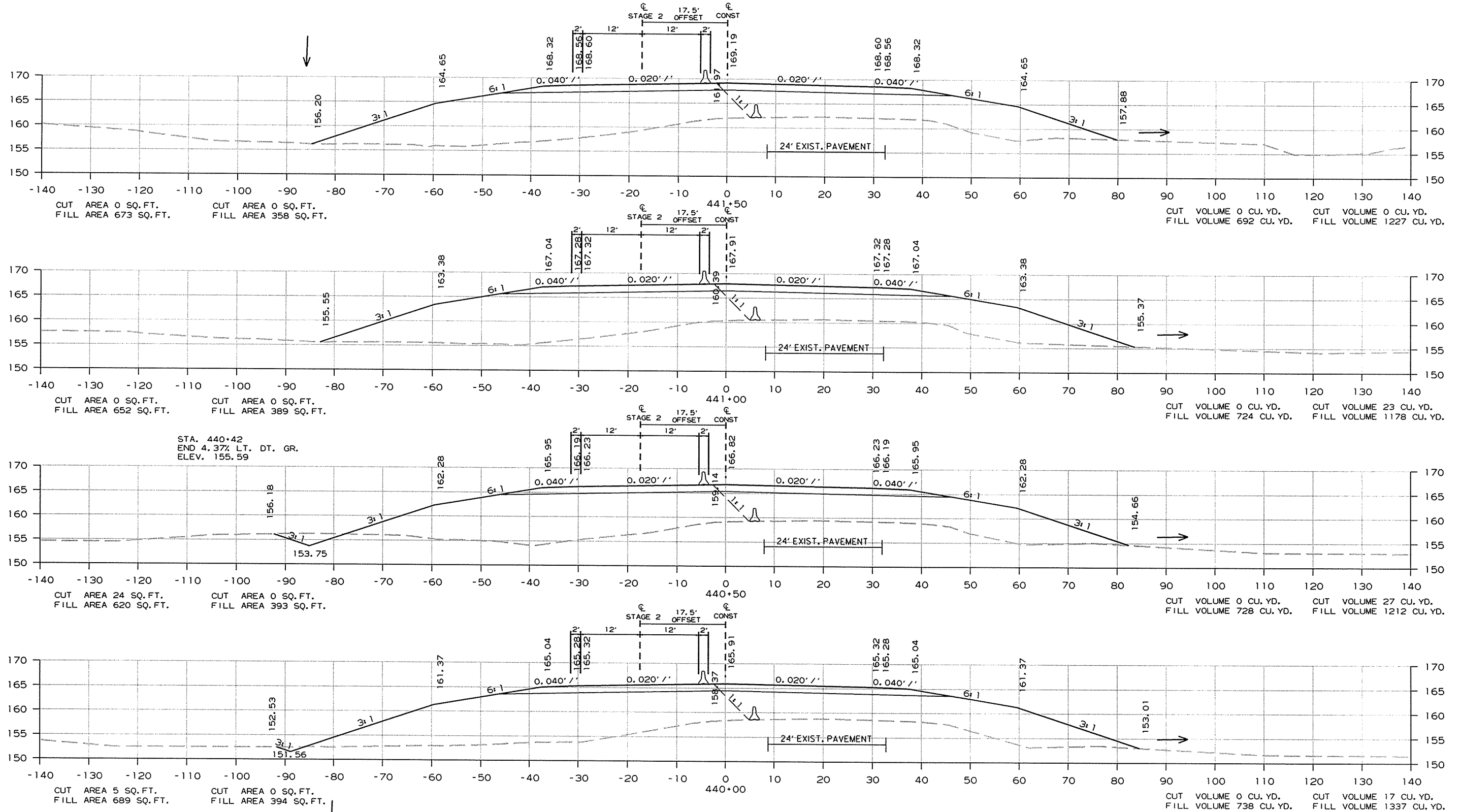
R070281.DGN 5/1/2015

STAGE 1      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.	070281
							128	185

② CROSS SECTIONS

STAGE 2      STAGE 1



STA. 440+42  
END 4.37% LT. DT. GR.  
ELEV. 155.59

CROSS SECTION STA. 440+00 TO STA. 441+50

R070281.DGN 5/1/2015

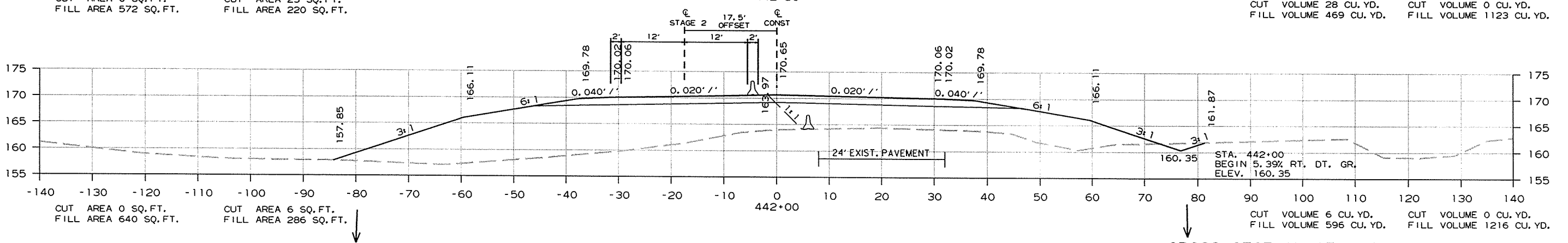
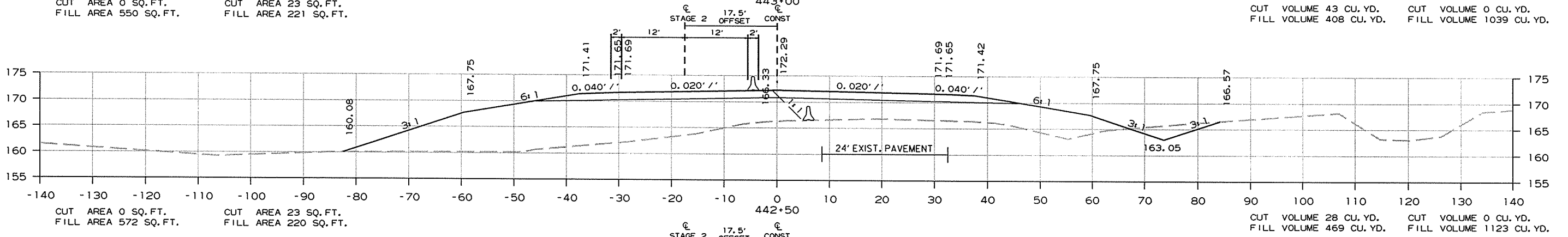
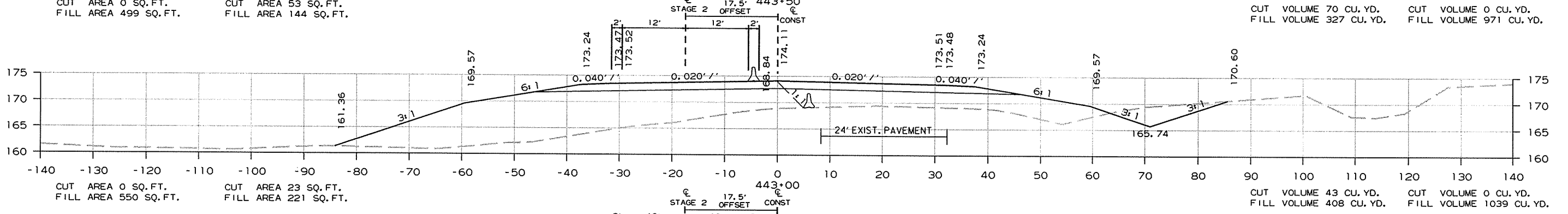
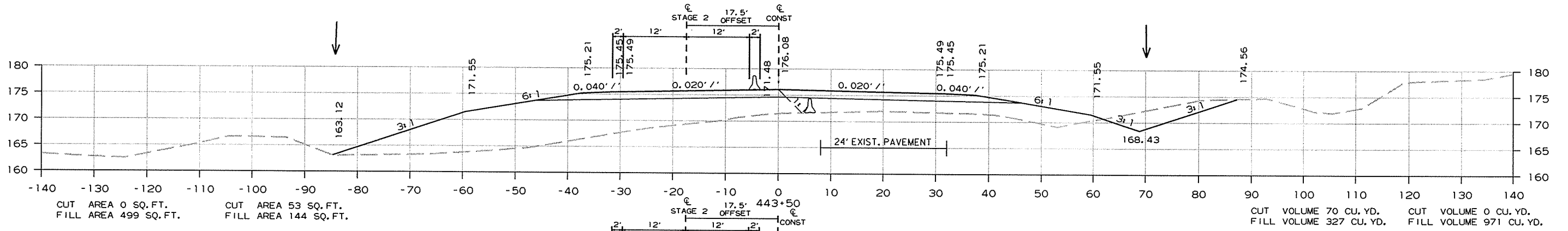


STAGE 1      STAGE 2

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. 070281	129	185

② CROSS SECTIONS

STAGE 2      STAGE 1



CROSS SECTION STA. 442+00 TO STA. 443+50

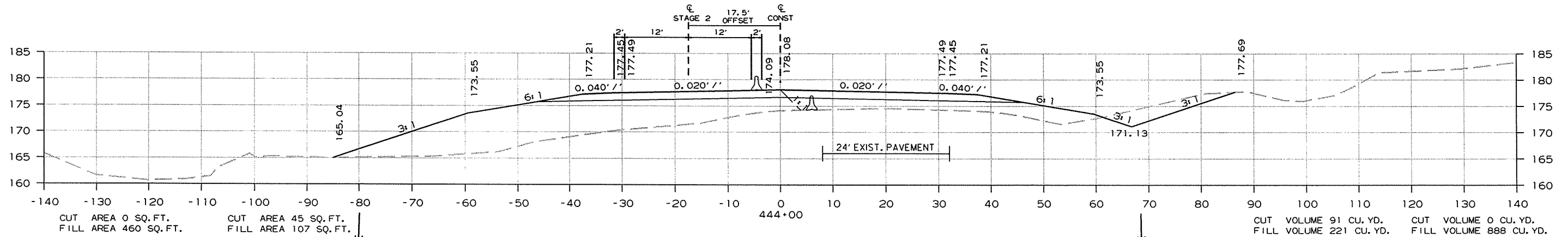
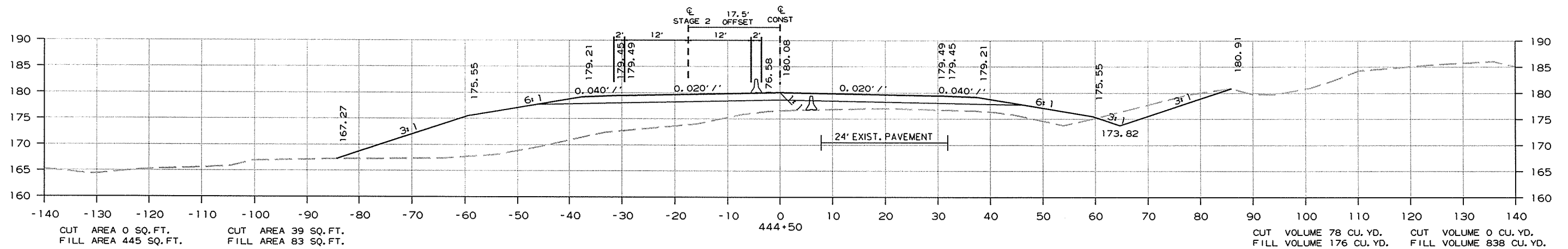
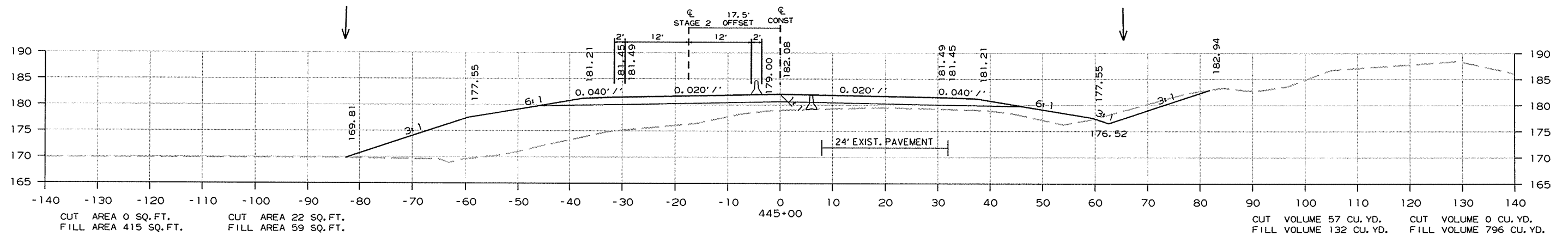
R070281.DGN 5/1/2015

STAGE 1      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. 070281							130	185

② CROSS SECTIONS

STAGE 2      STAGE 1



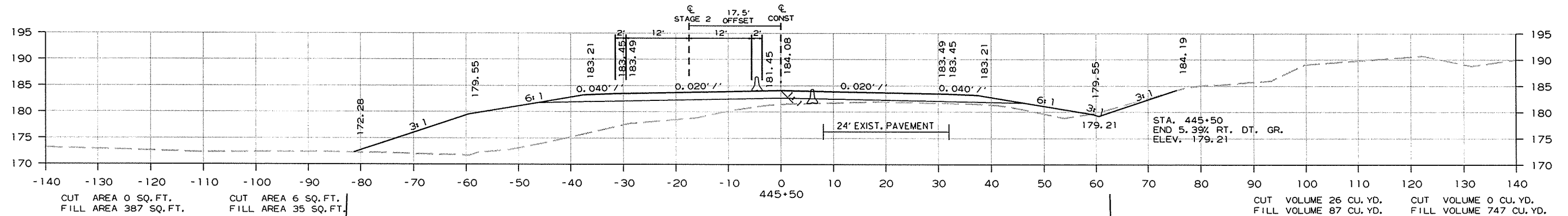
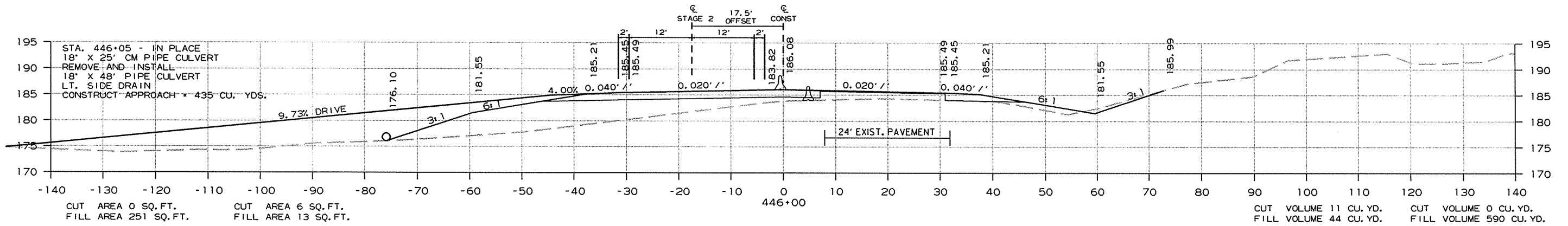
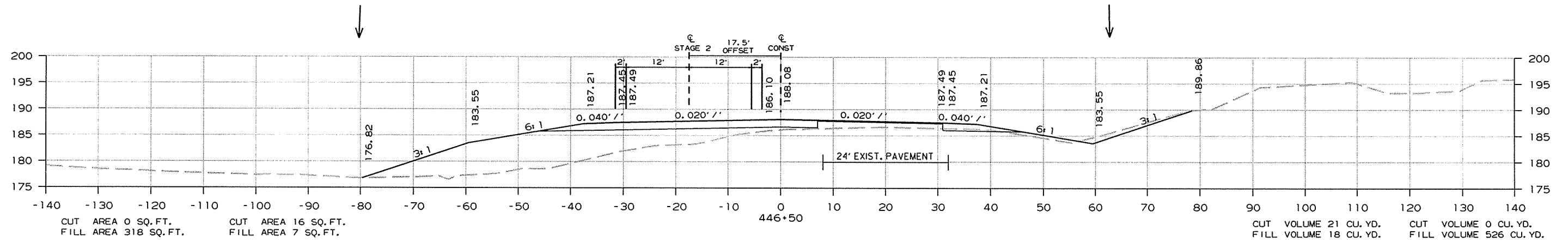
CROSS SECTION STA. 444+00 TO STA. 445+00

STAGE 1      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.		070281	131	185

② CROSS SECTIONS

STAGE 2      STAGE 1



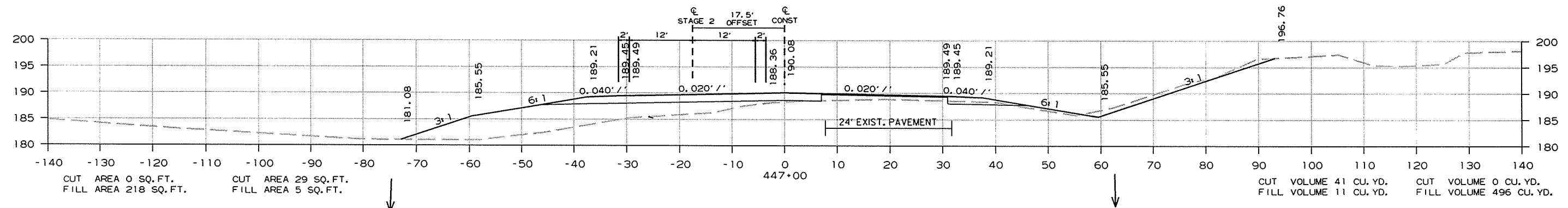
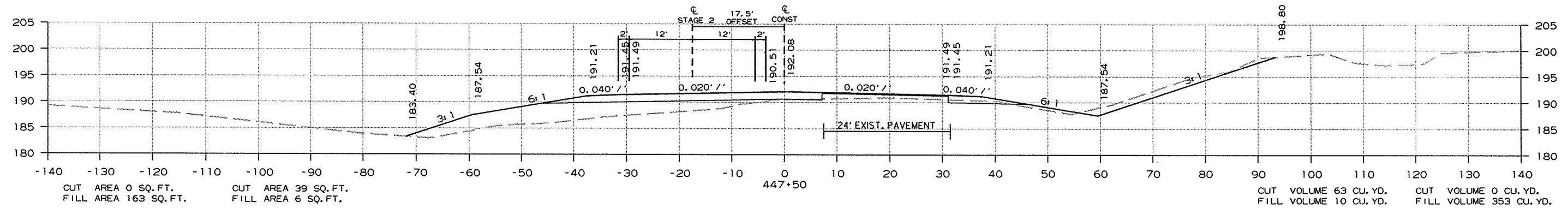
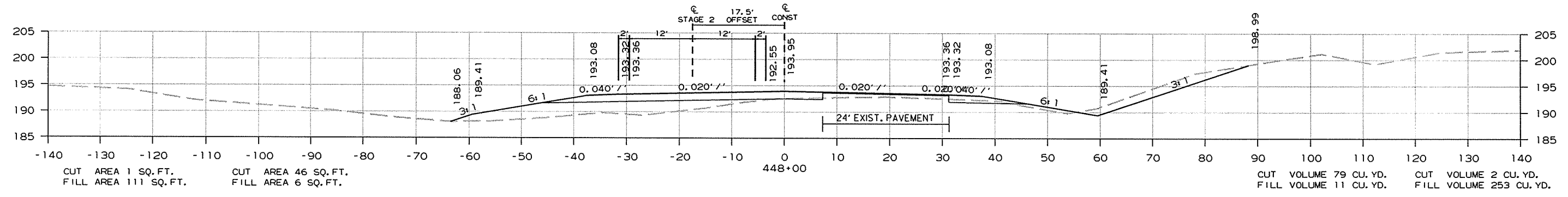
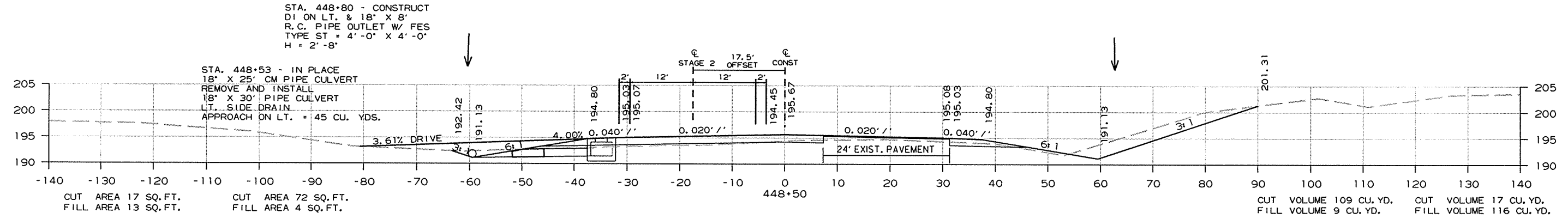
CROSS SECTION STA. 445+50 TO STA. 446+50

STAGE 1      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. 070281	132	185

② CROSS SECTIONS

STAGE 2      STAGE 1



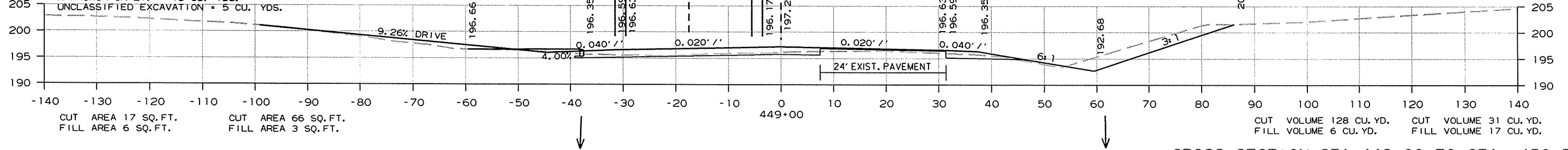
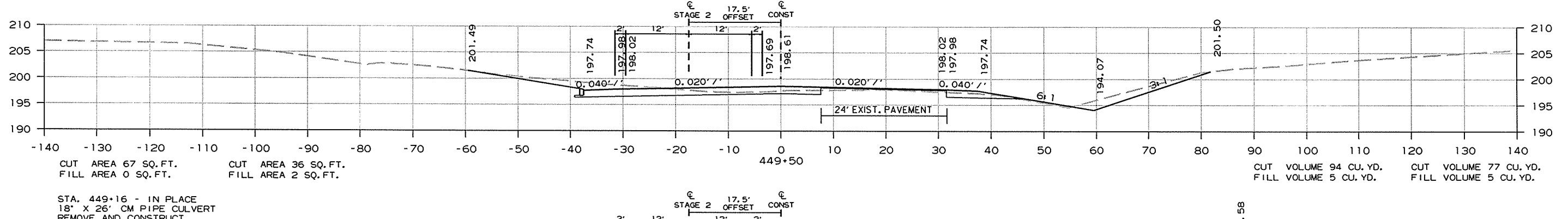
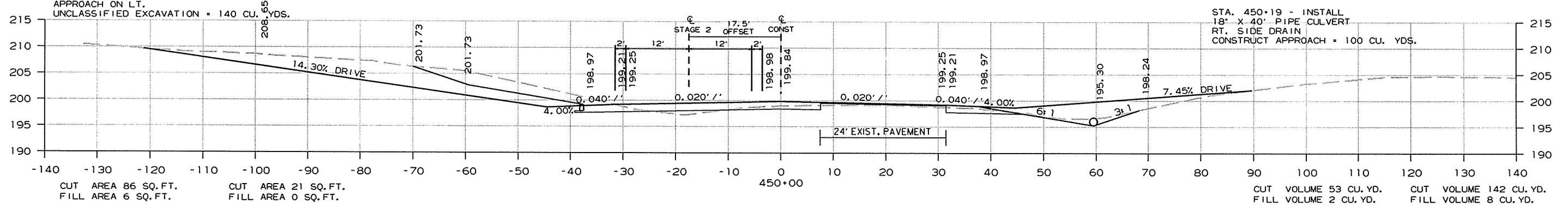
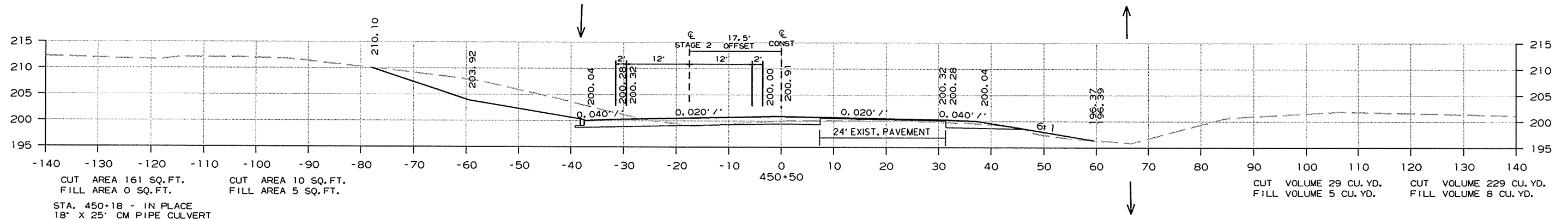
CROSS SECTION STA. 447+00 TO STA. 448+50

STAGE 1      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.		133	185
				JOB NO. 070281				

② CROSS SECTIONS

STAGE 2      STAGE 1



CROSS SECTION STA. 449+00 TO STA. 450+50

STAGE 1

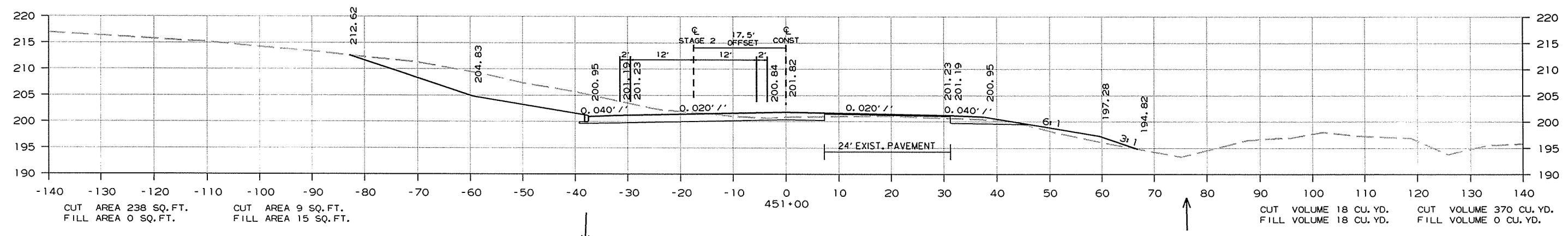
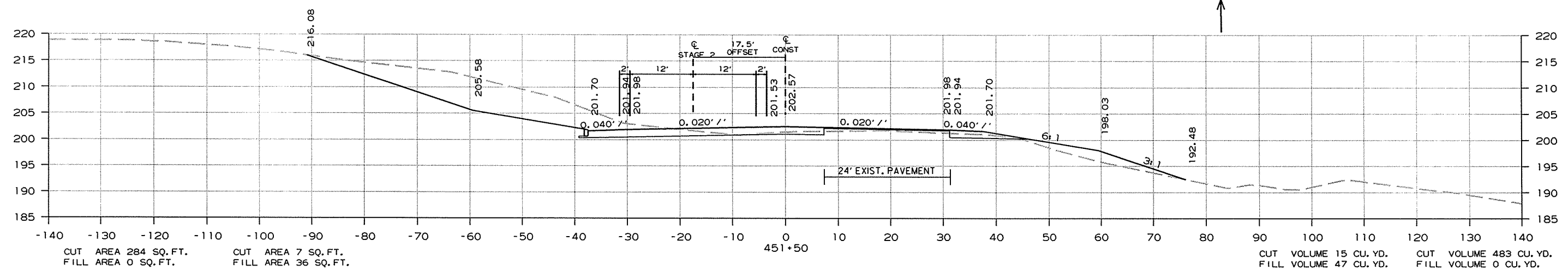
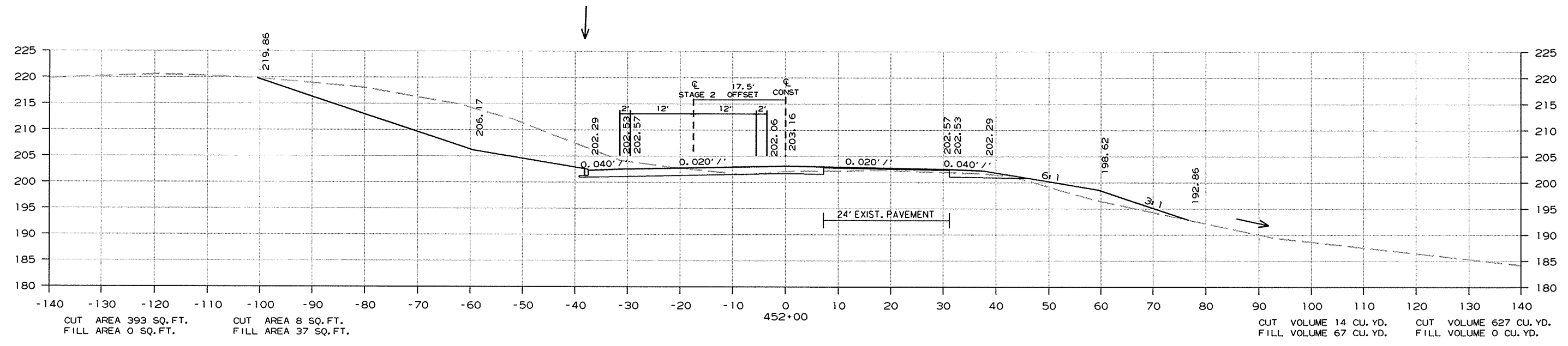
STAGE 2

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. 070281							134	185

② CROSS SECTIONS

STAGE 2

STAGE 1



CROSS SECTION STA. 451+00 TO STA. 452+00

R070281.DGN 5/1/2015

STAGE 1

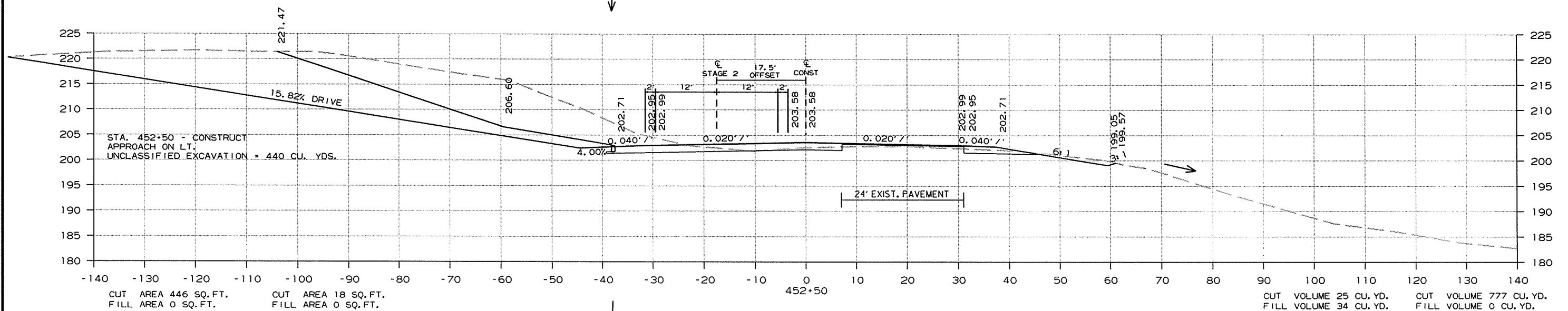
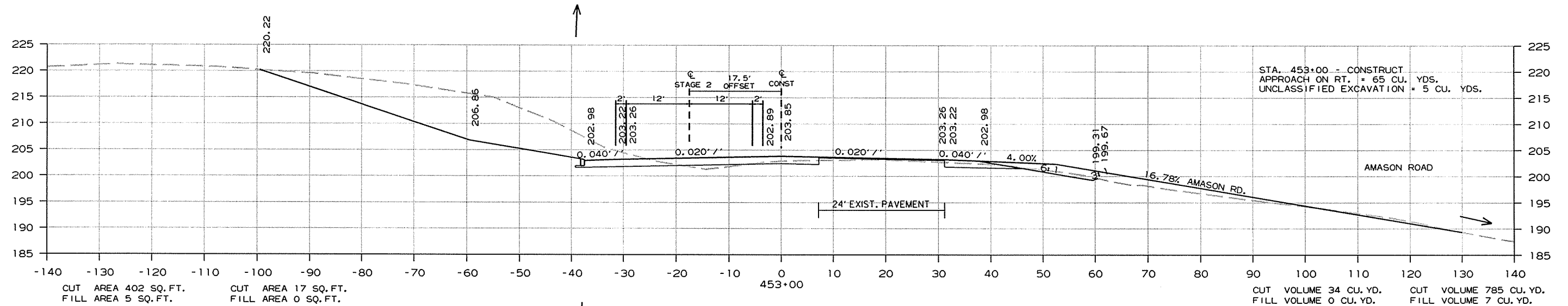
STAGE 2

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. 070281	135	185

② CROSS SECTIONS

STAGE 2

STAGE 1



CROSS SECTION STA. 452+50 TO STA. 453+00

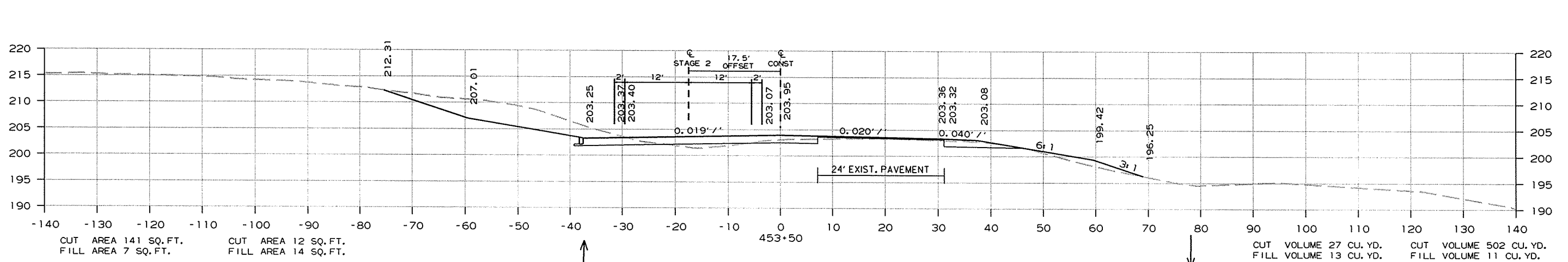
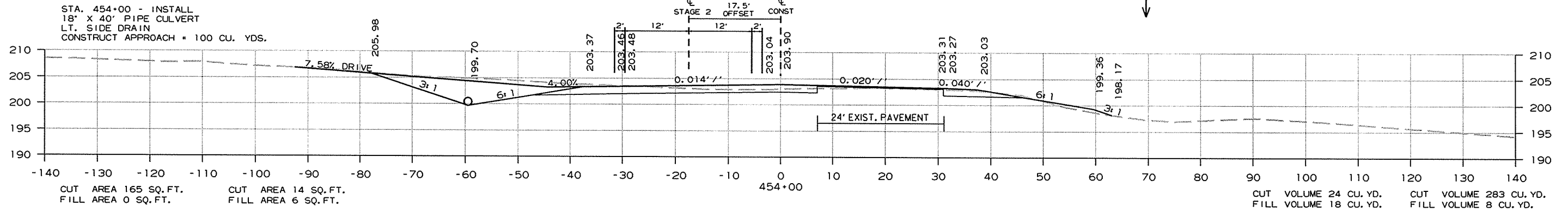
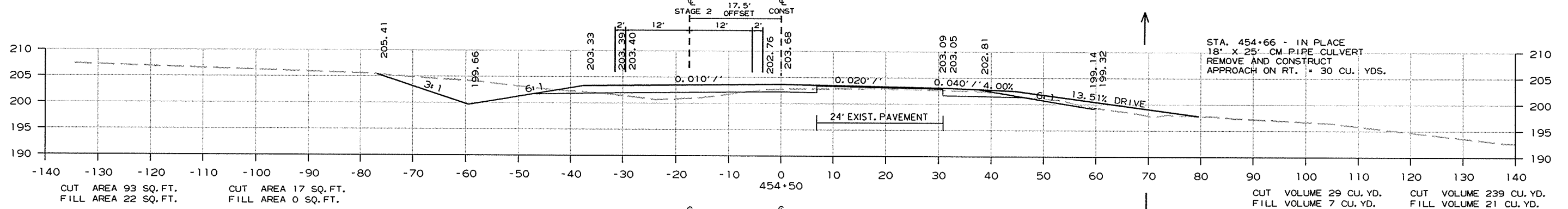
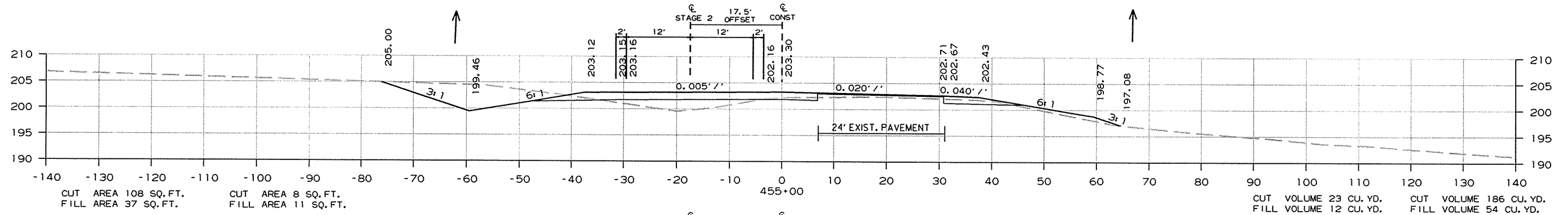
R070281.DGN 5/1/2015

STAGE 1      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. 070281							136	185

② CROSS SECTIONS

STAGE 2      STAGE 1



CROSS SECTION STA. 453+50 TO STA. 455+00

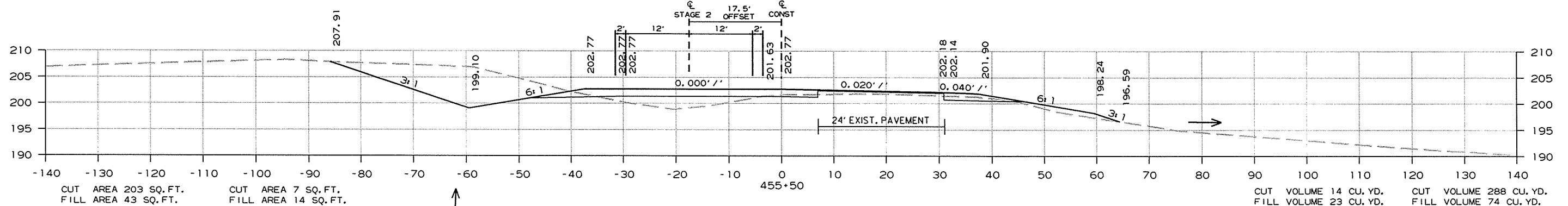
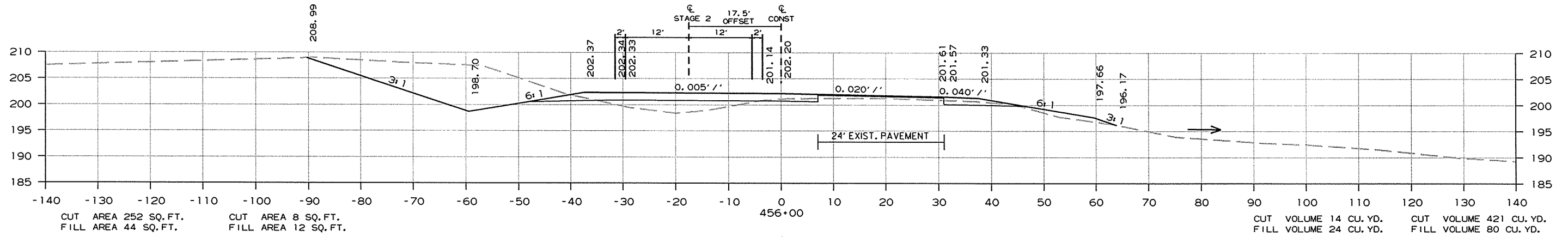
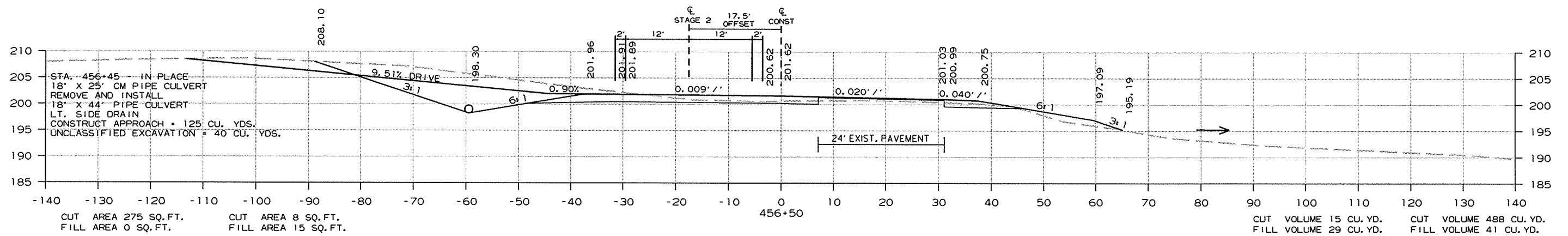
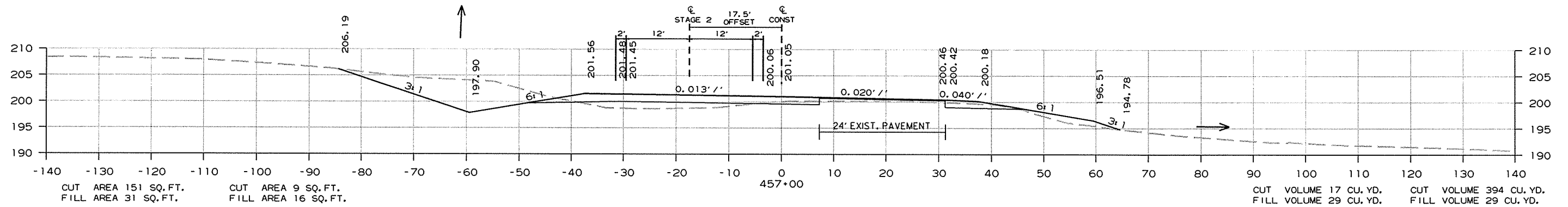


STAGE 1      STAGE 2

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO.	070281	137
							185	

② CROSS SECTIONS

STAGE 2      STAGE 1



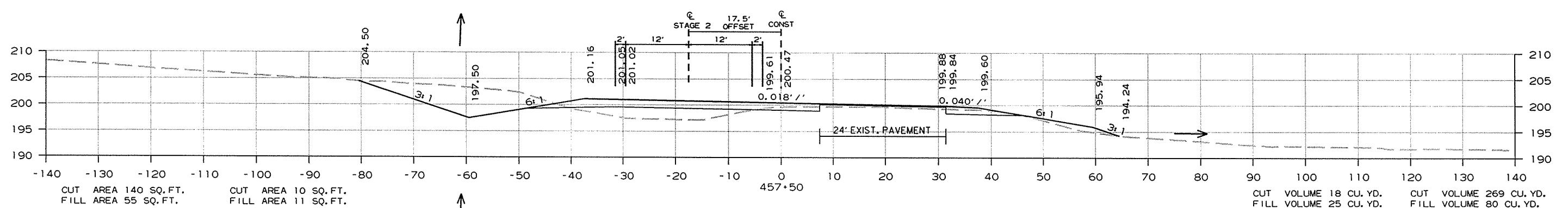
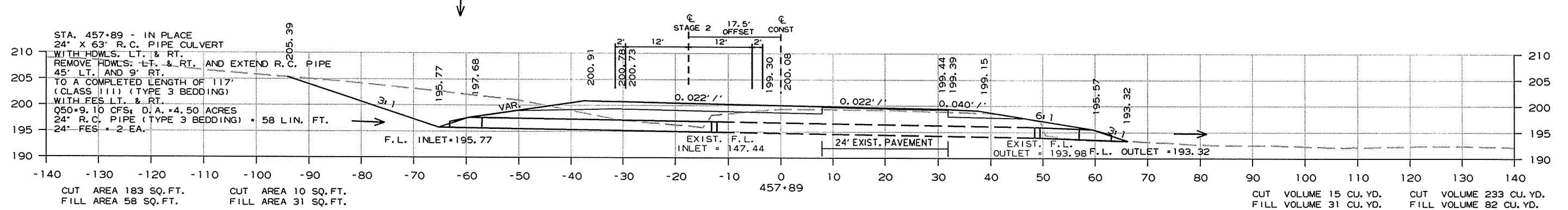
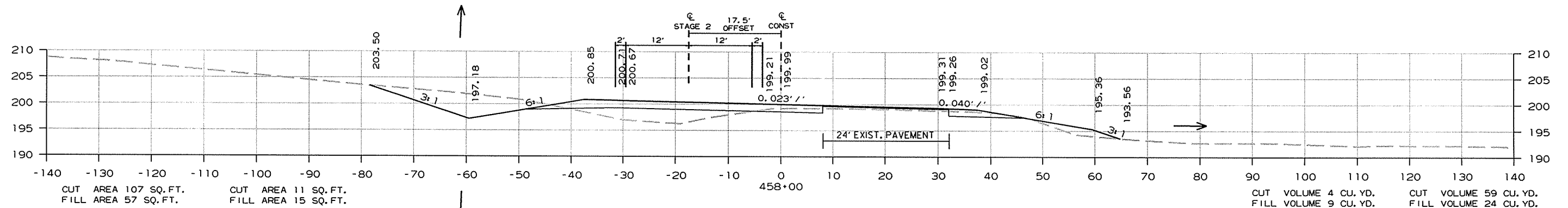
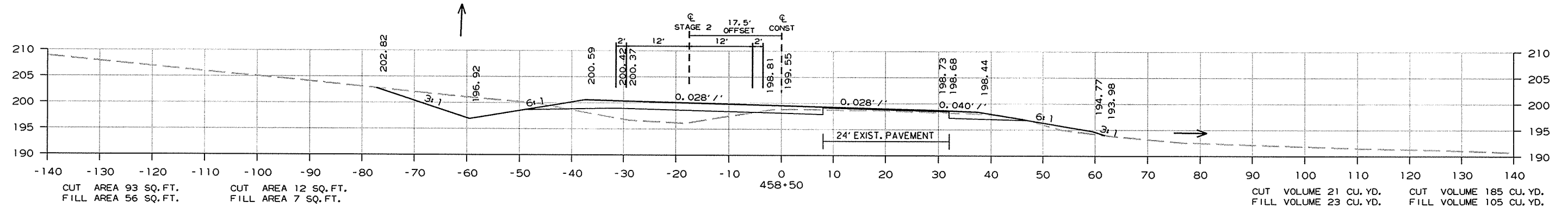
CROSS SECTION STA. 455+50 TO STA. 457+00

STAGE 1      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. 070281							138	185

2 CROSS SECTIONS

STAGE 2      STAGE 1



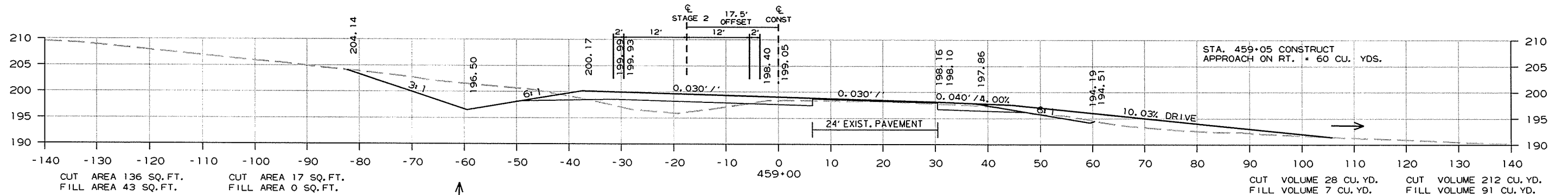
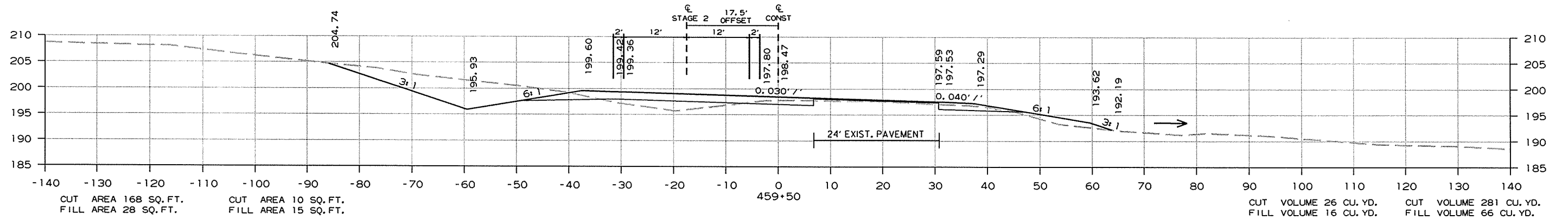
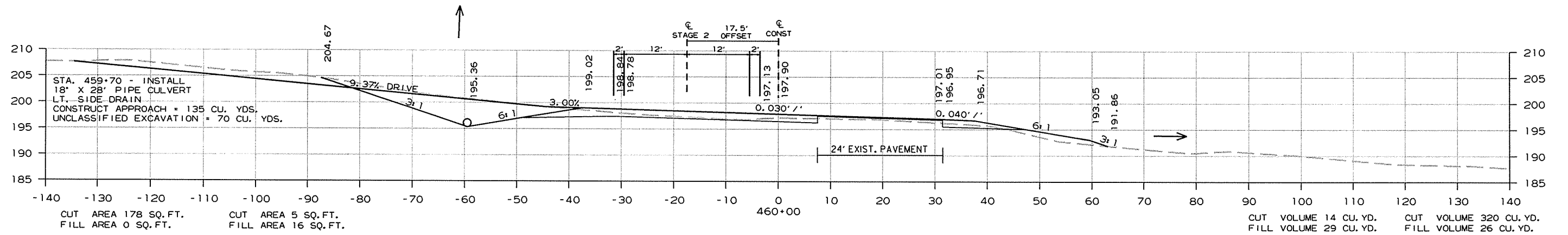
CROSS SECTION STA. 457+50 TO STA. 458+50

STAGE 1      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. 070281							139	185

② CROSS SECTIONS

STAGE 2      STAGE 1



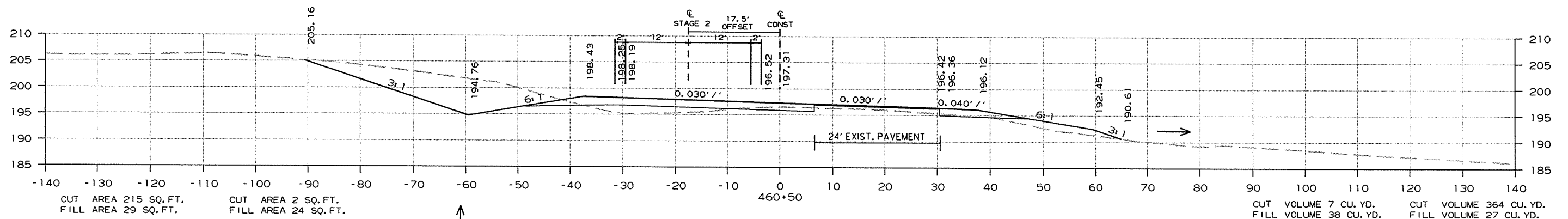
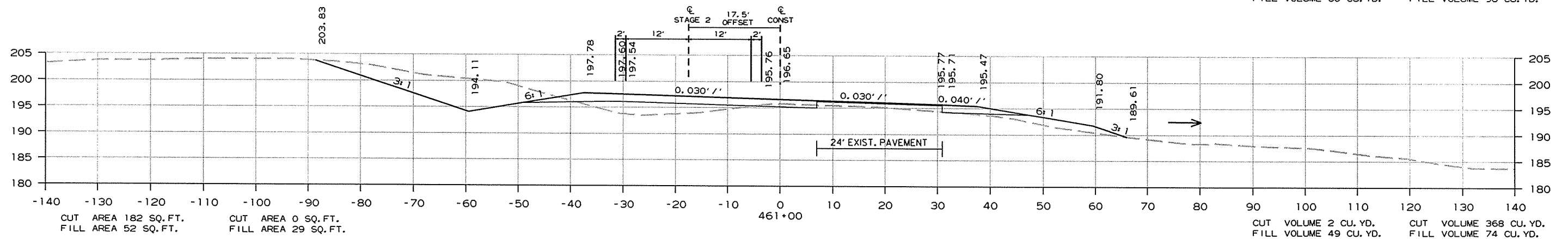
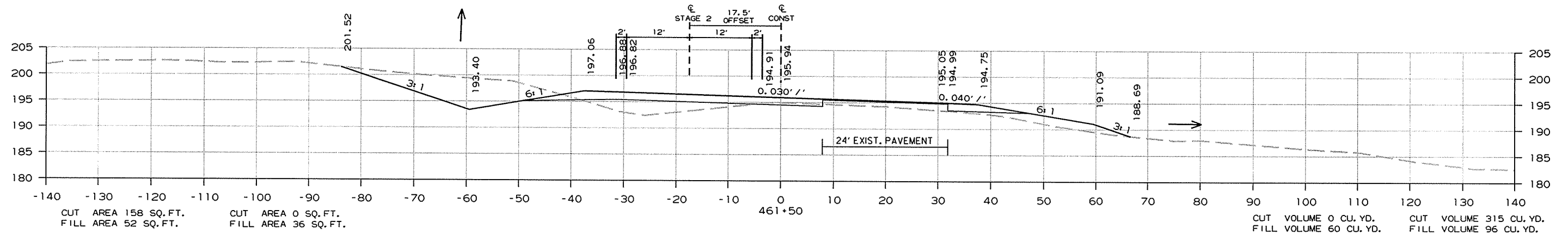
CROSS SECTION STA. 459+00 TO STA. 460+00

STAGE 1      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. 070281							140	185

② CROSS SECTIONS

STAGE 2      STAGE 1



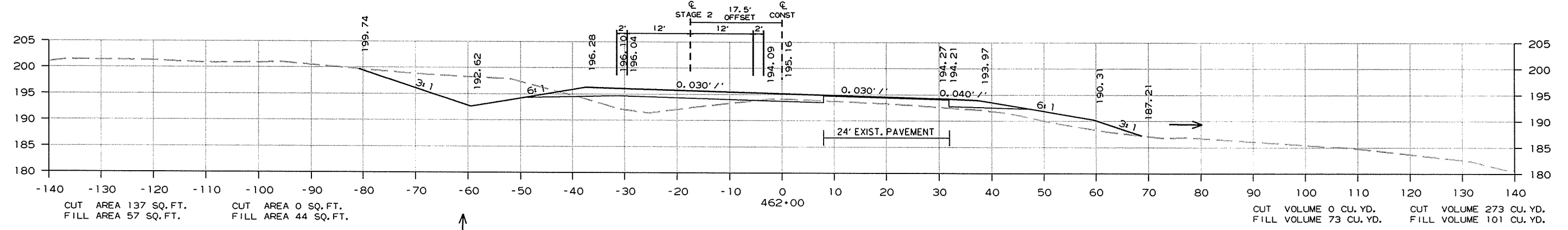
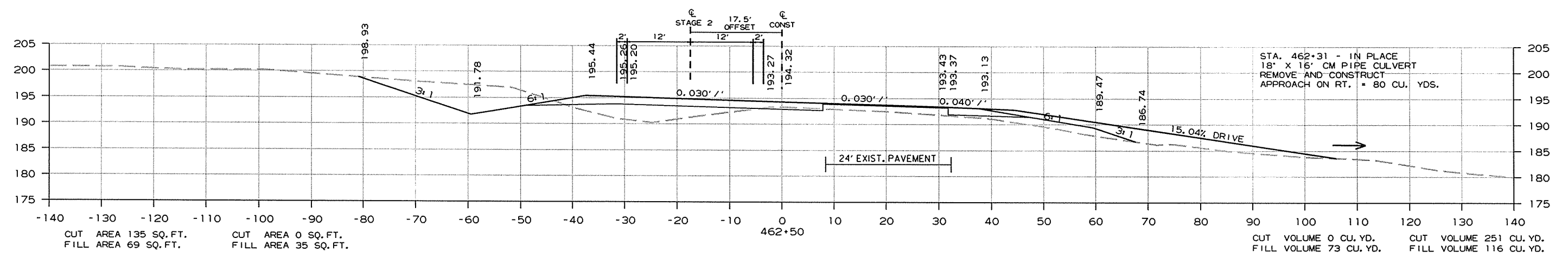
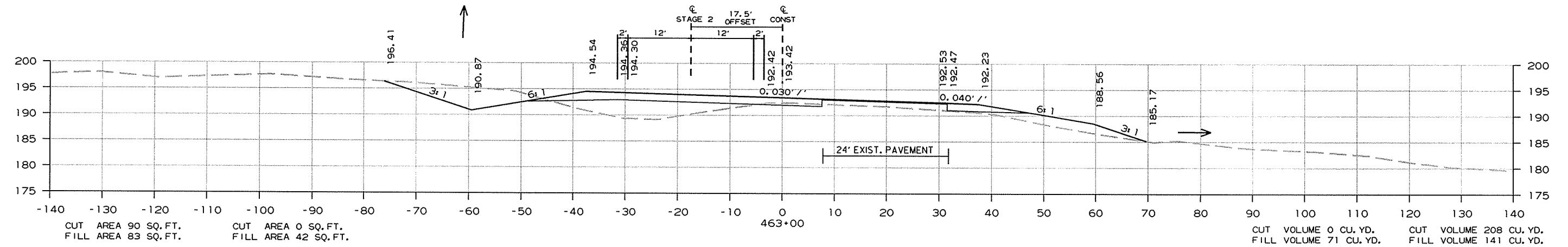
CROSS SECTION STA. 460+50 TO STA. 461+50

STAGE 1      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. 070281	141	185

② CROSS SECTIONS

STAGE 2      STAGE 1



CROSS SECTION STA. 462+00 TO STA. 463+00

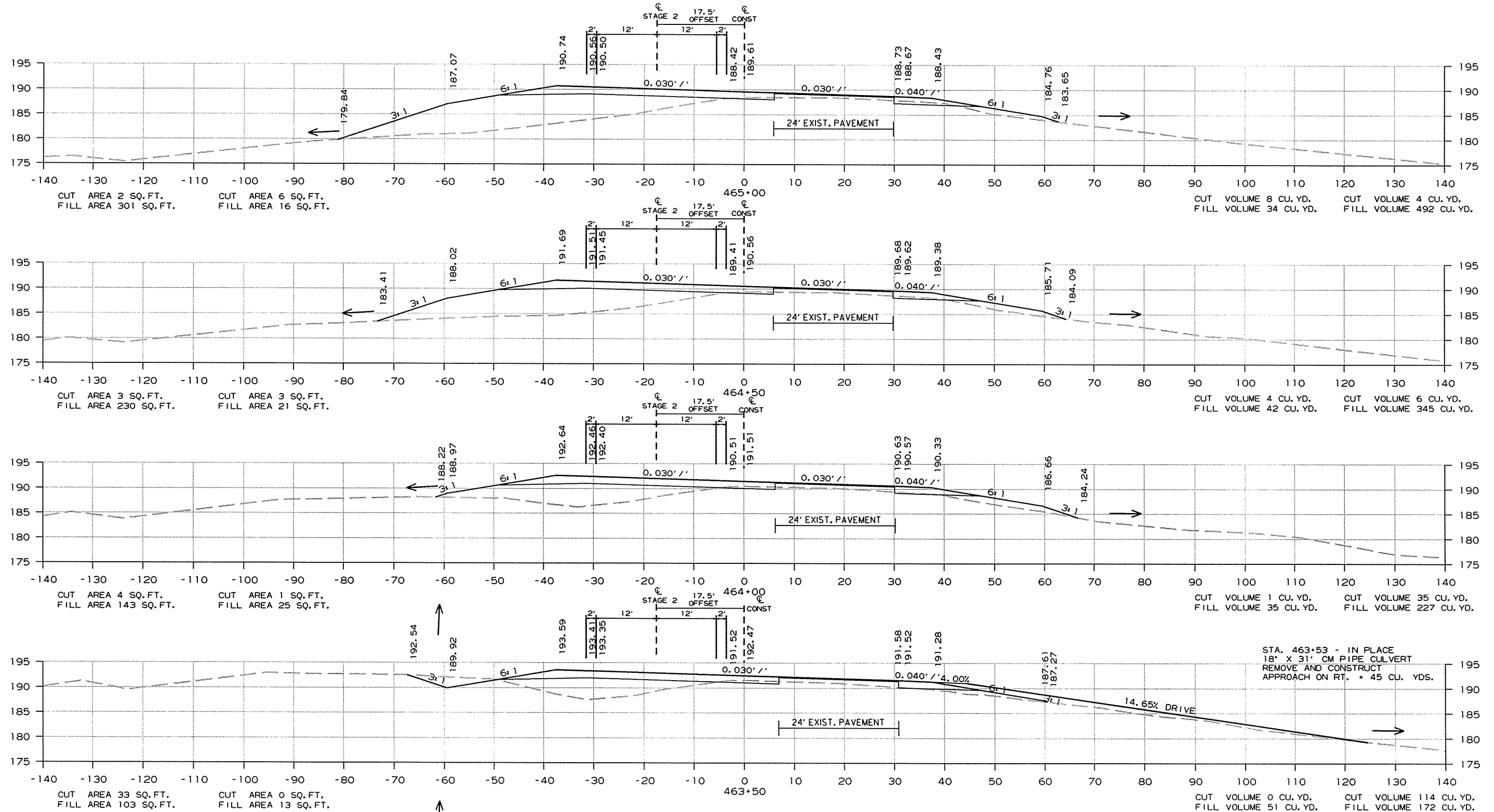
R070281.DGN 5/1/2015

STAGE 1      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. 070281	142	185

② CROSS SECTIONS

STAGE 2      STAGE 1



CROSS SECTION STA. 463+50 TO STA. 465+00

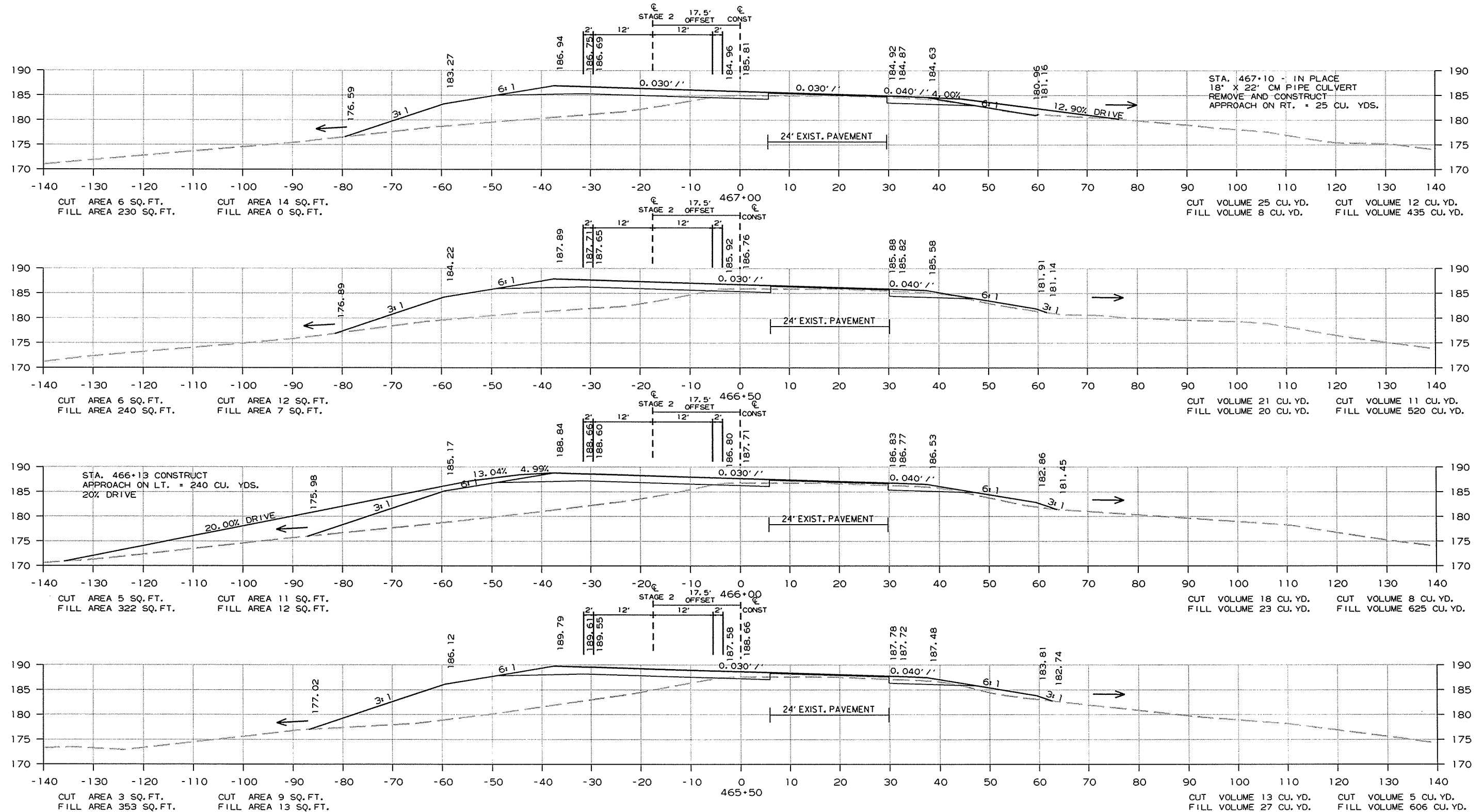
R070281.DGN 5/1/2015

STAGE 1      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. 070281							143	185

② CROSS SECTIONS

STAGE 2      STAGE 1



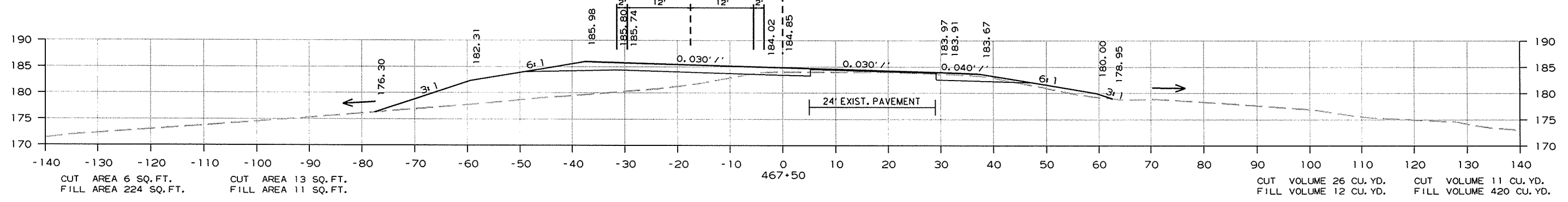
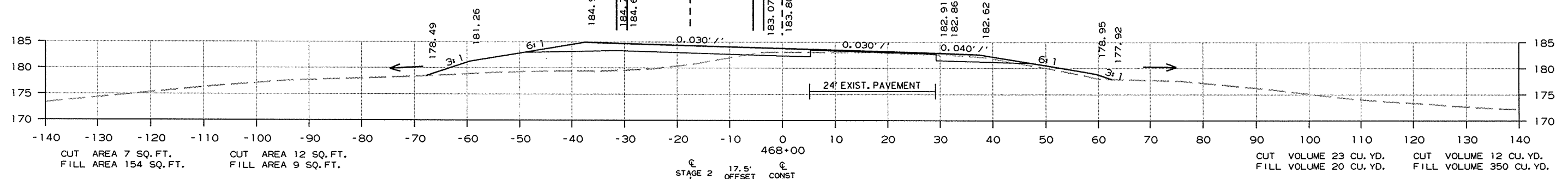
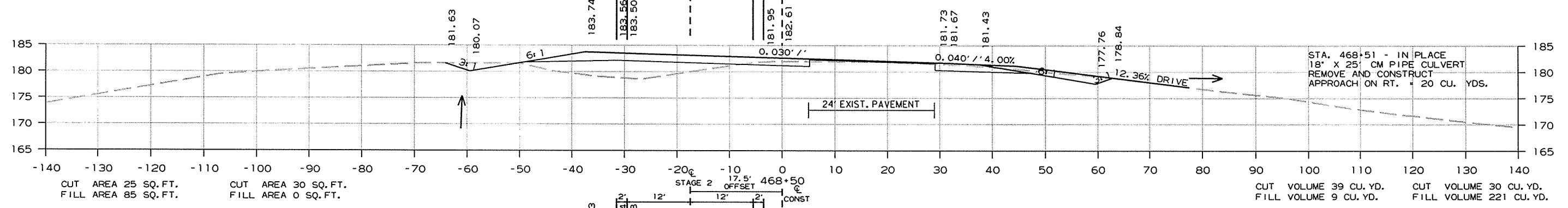
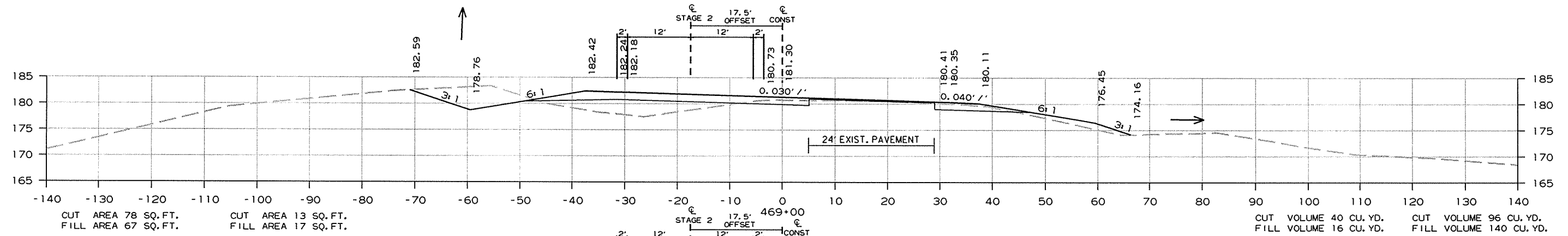
CROSS SECTION STA. 465+50 TO STA. 467+00

STAGE 1      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. 070281	144	185

② CROSS SECTIONS

STAGE 2      STAGE 1



CROSS SECTION STA. 467+50 TO STA. 469+00

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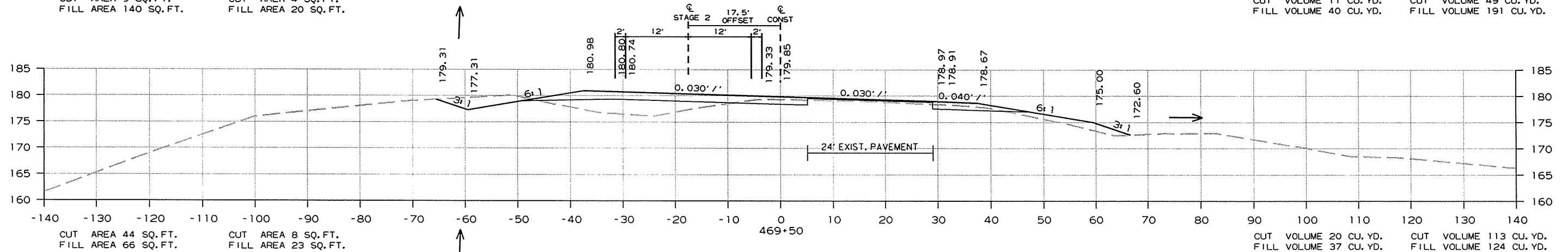
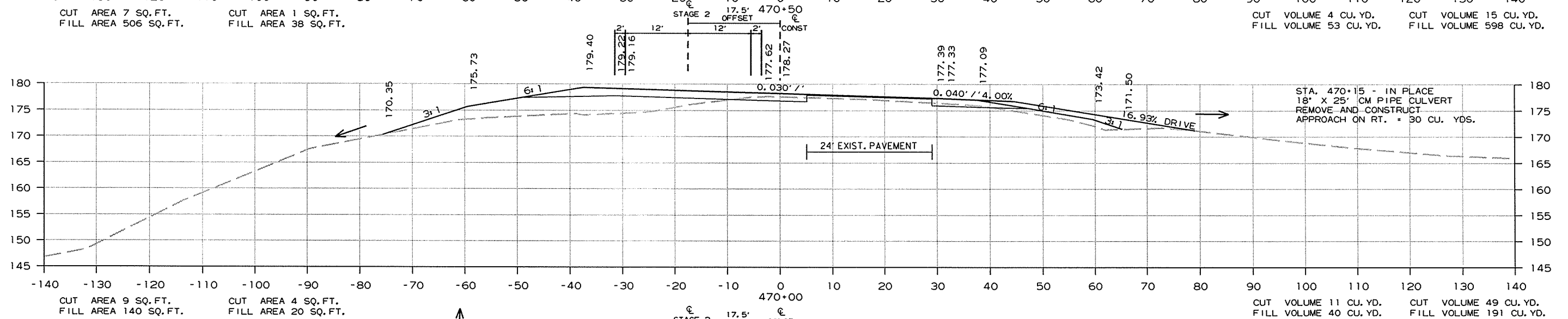
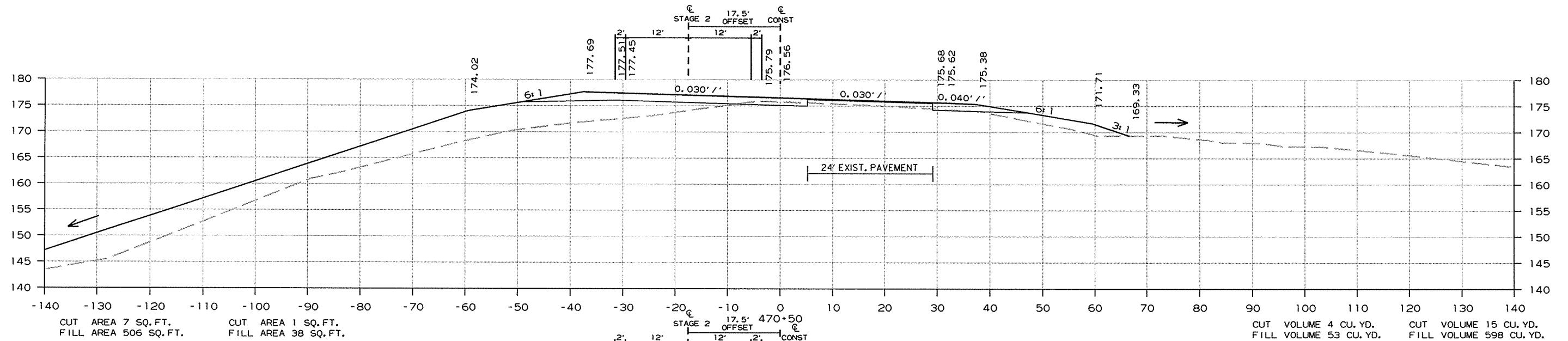


STAGE 1      STAGE 2

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.	070281	145

② CROSS SECTIONS

STAGE 2      STAGE 1



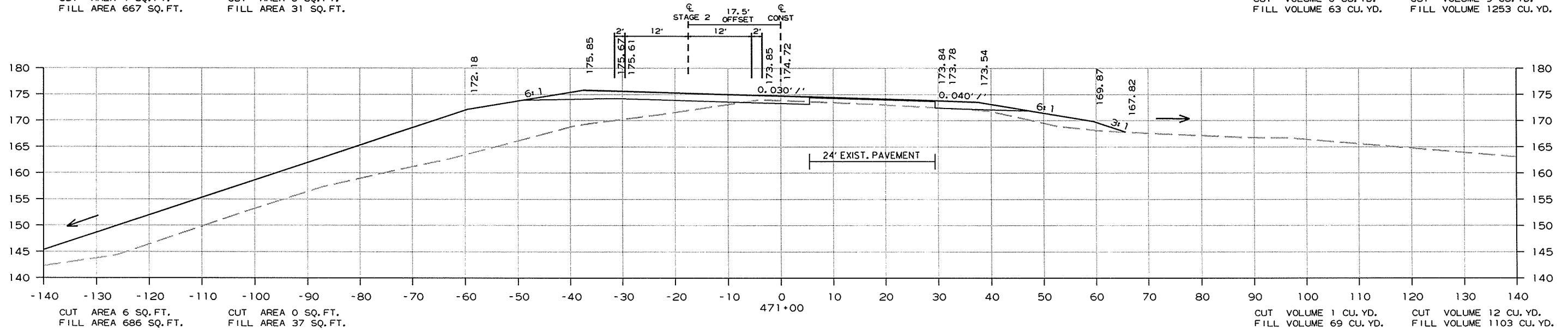
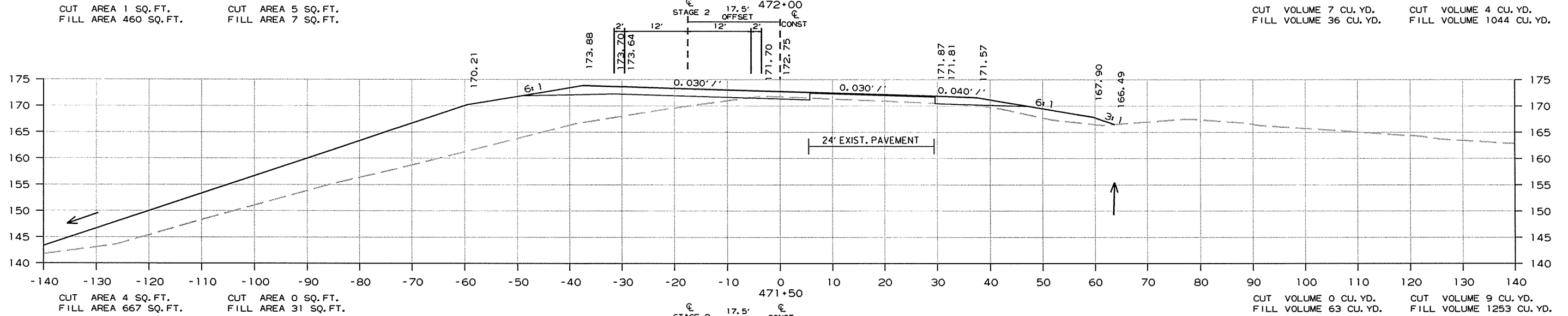
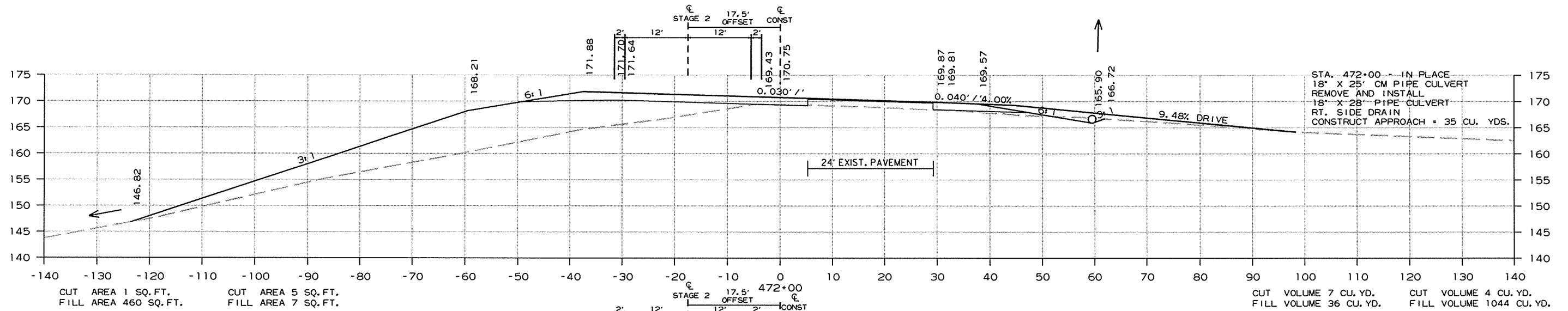
CROSS SECTION STA. 469+50 TO STA. 470+50

STAGE 1      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. 070281							146	185

② CROSS SECTIONS

STAGE 2      STAGE 1



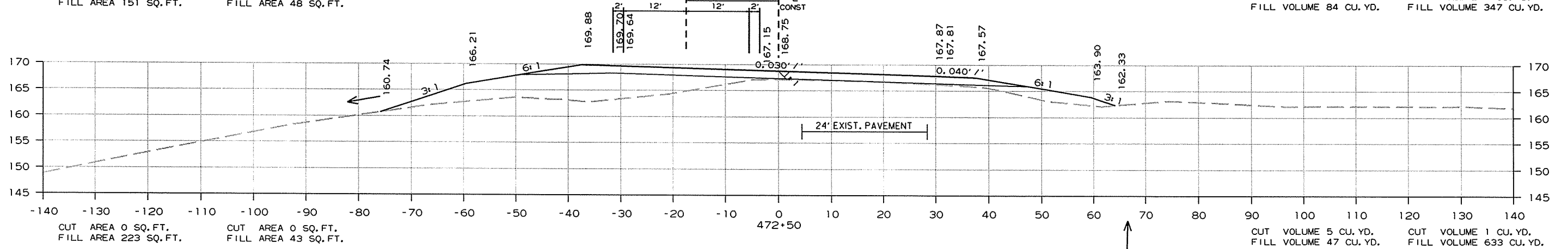
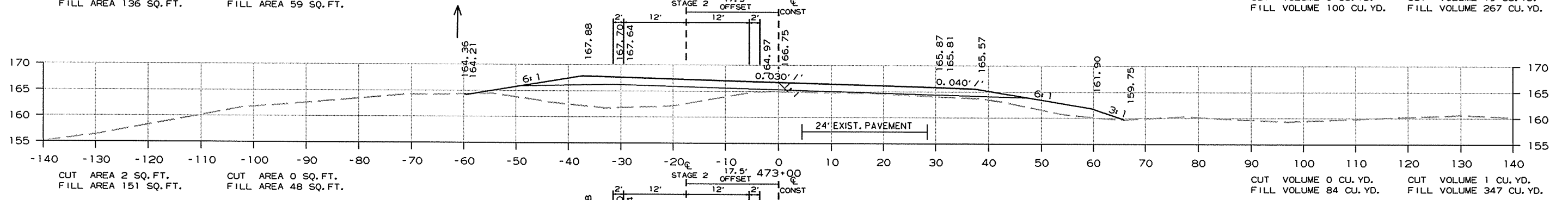
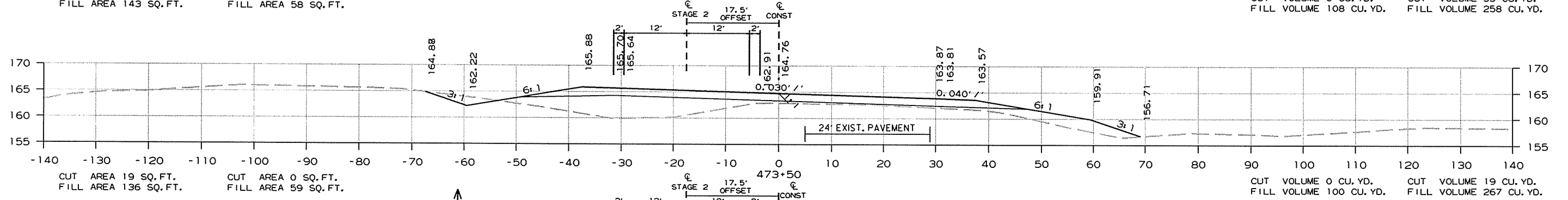
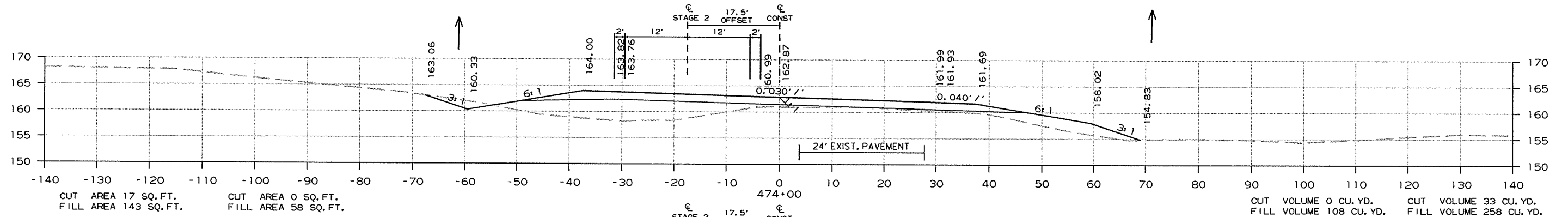
CROSS SECTION STA. 471+00 TO STA. 472+00

STAGE 1      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. 070281							147	185

② CROSS SECTIONS

STAGE 2      STAGE 1



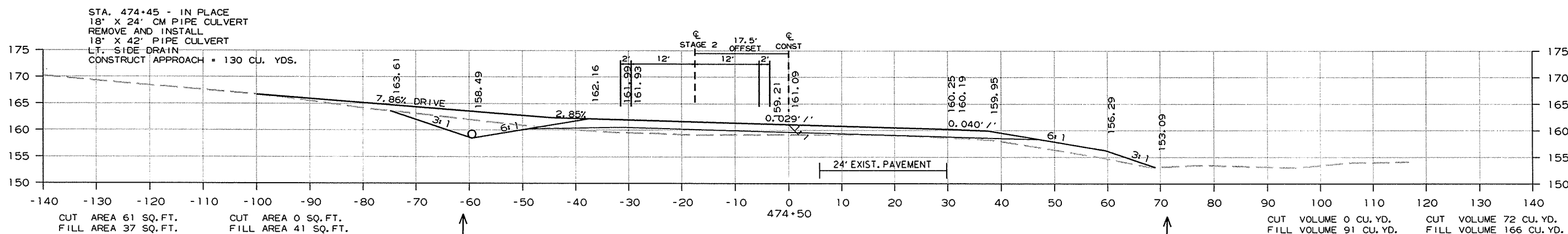
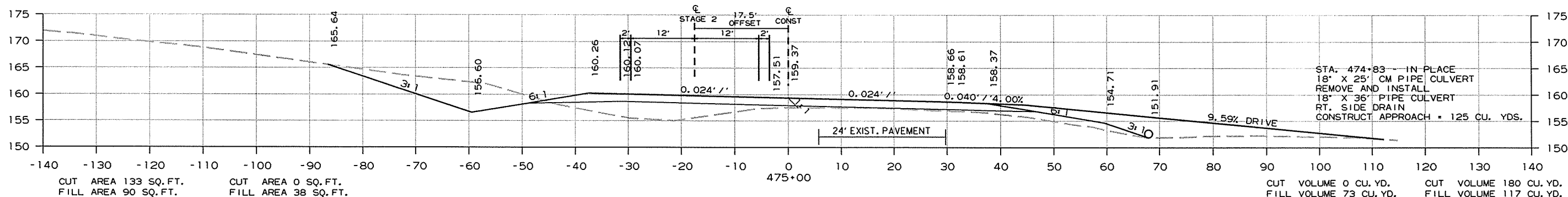
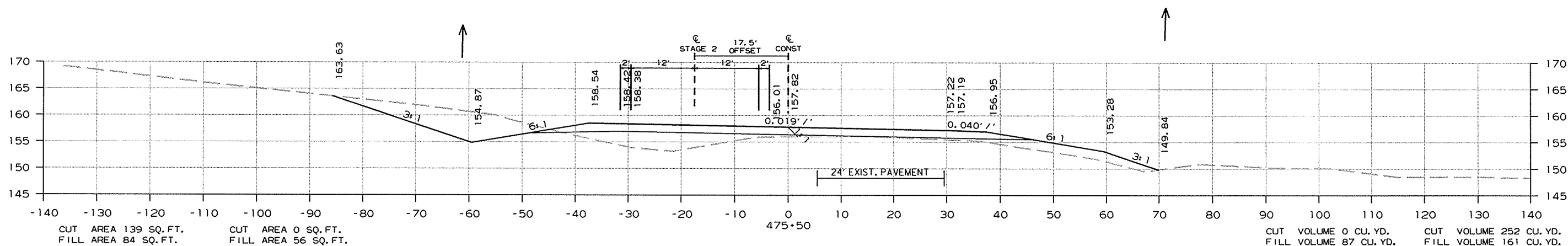
CROSS SECTION STA. 472+50 TO STA. 474+00

STAGE 1      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. 070281							148	185

② CROSS SECTIONS

STAGE 2      STAGE 1



CROSS SECTION STA. 474+50 TO STA. 475+50

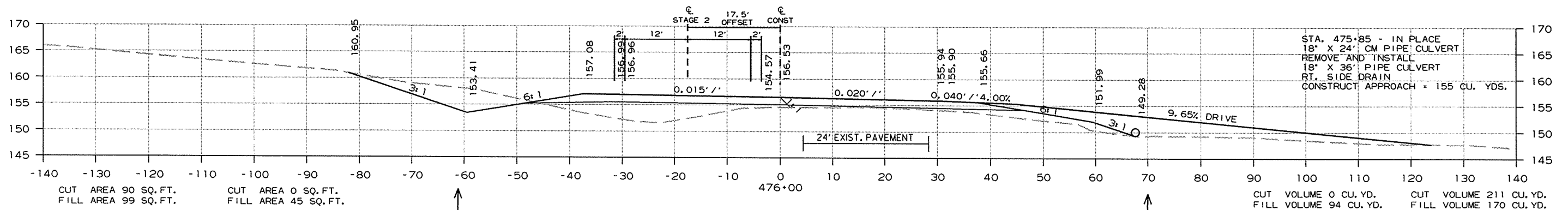
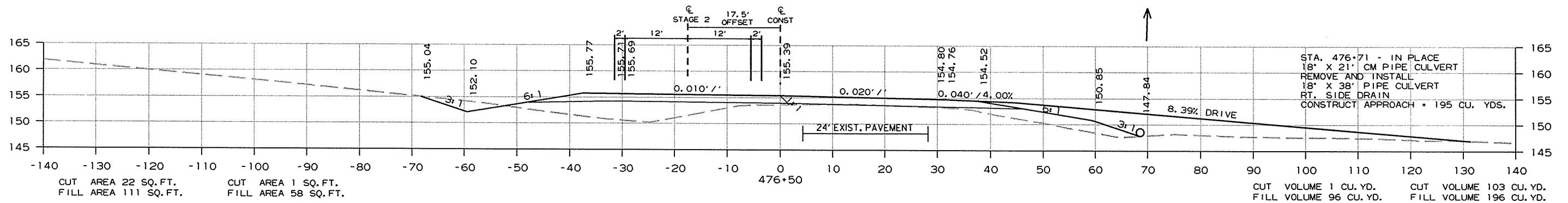
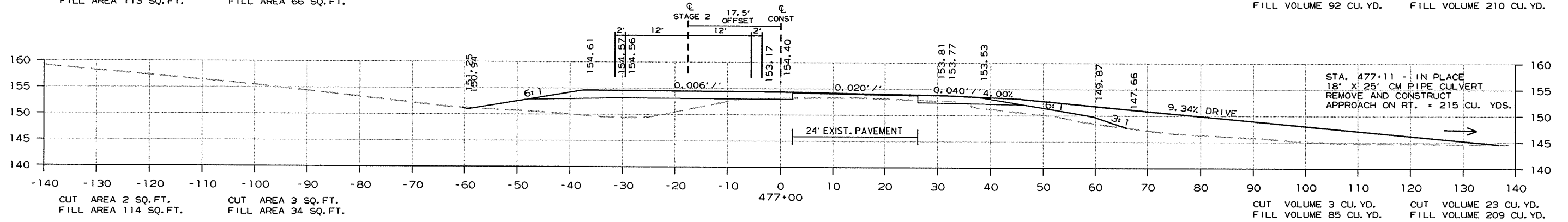
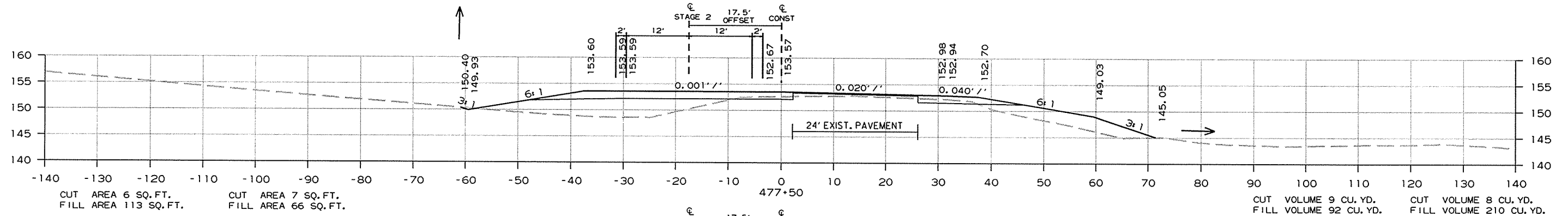
R070281.DGN 5/1/2015

STAGE 1      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. 070281	149	185

② CROSS SECTIONS

STAGE 2      STAGE 1



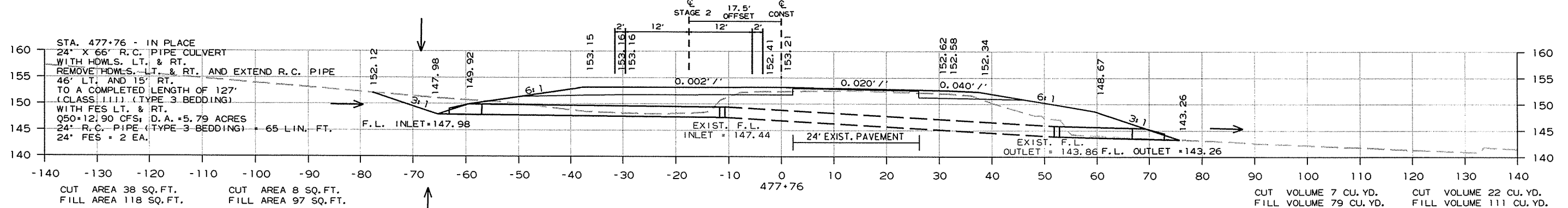
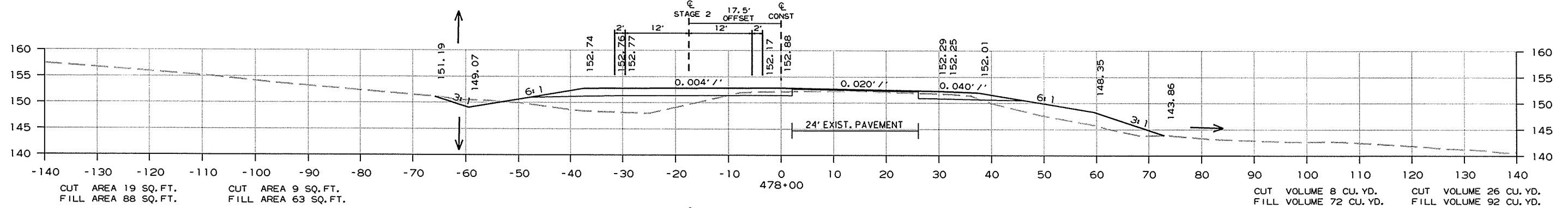
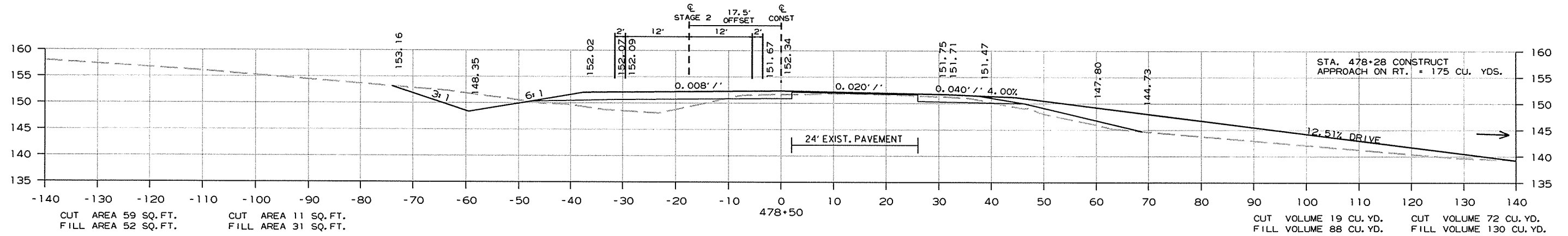
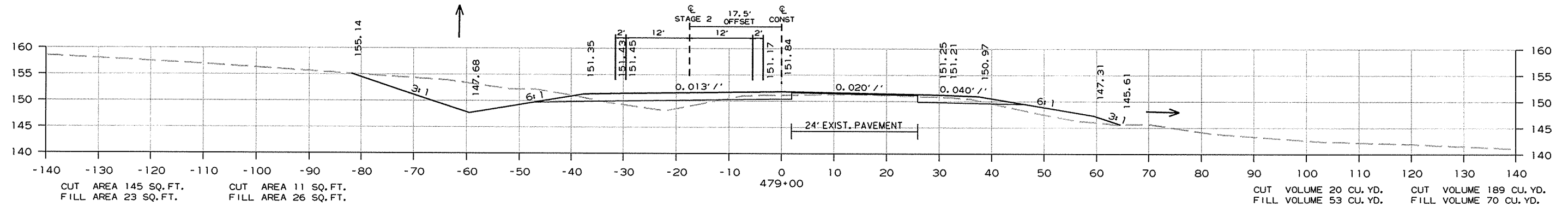
CROSS SECTION STA. 476+00 TO STA. 477+50

STAGE 1      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. 070281							150	185

2 CROSS SECTIONS

STAGE 2      STAGE 1



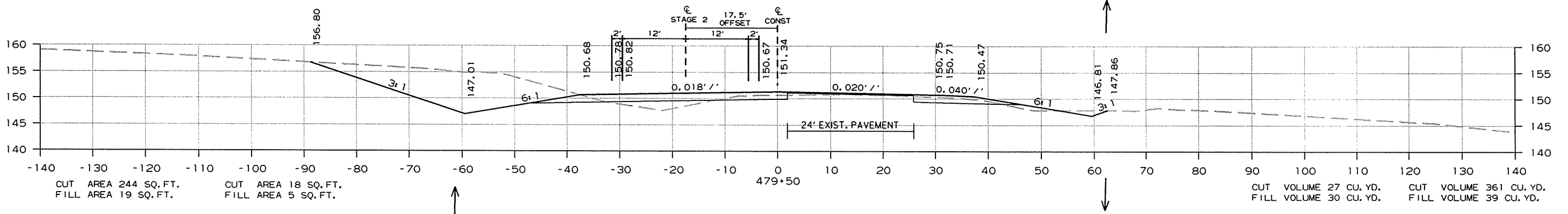
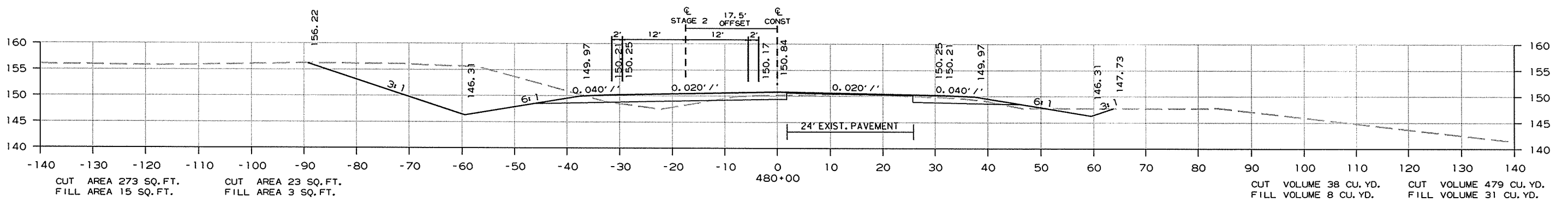
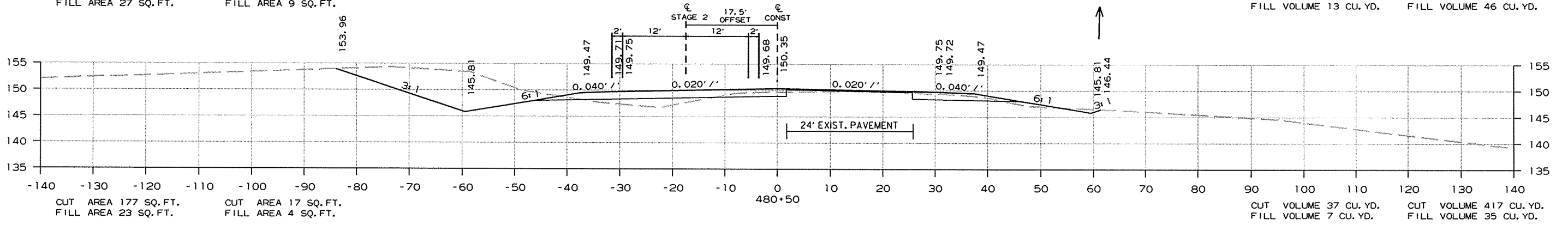
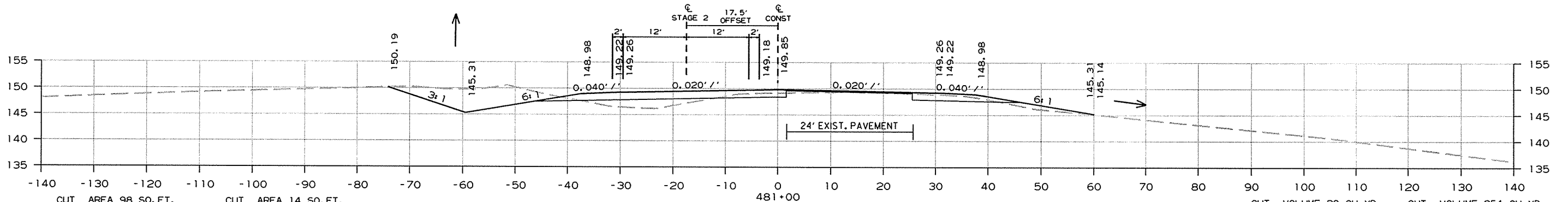
CROSS SECTION STA. 477+76 TO STA. 479+00

STAGE 1      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. 070281							151	185

② CROSS SECTIONS

STAGE 2      STAGE 1



CROSS SECTION STA. 479+50 TO STA. 481+00

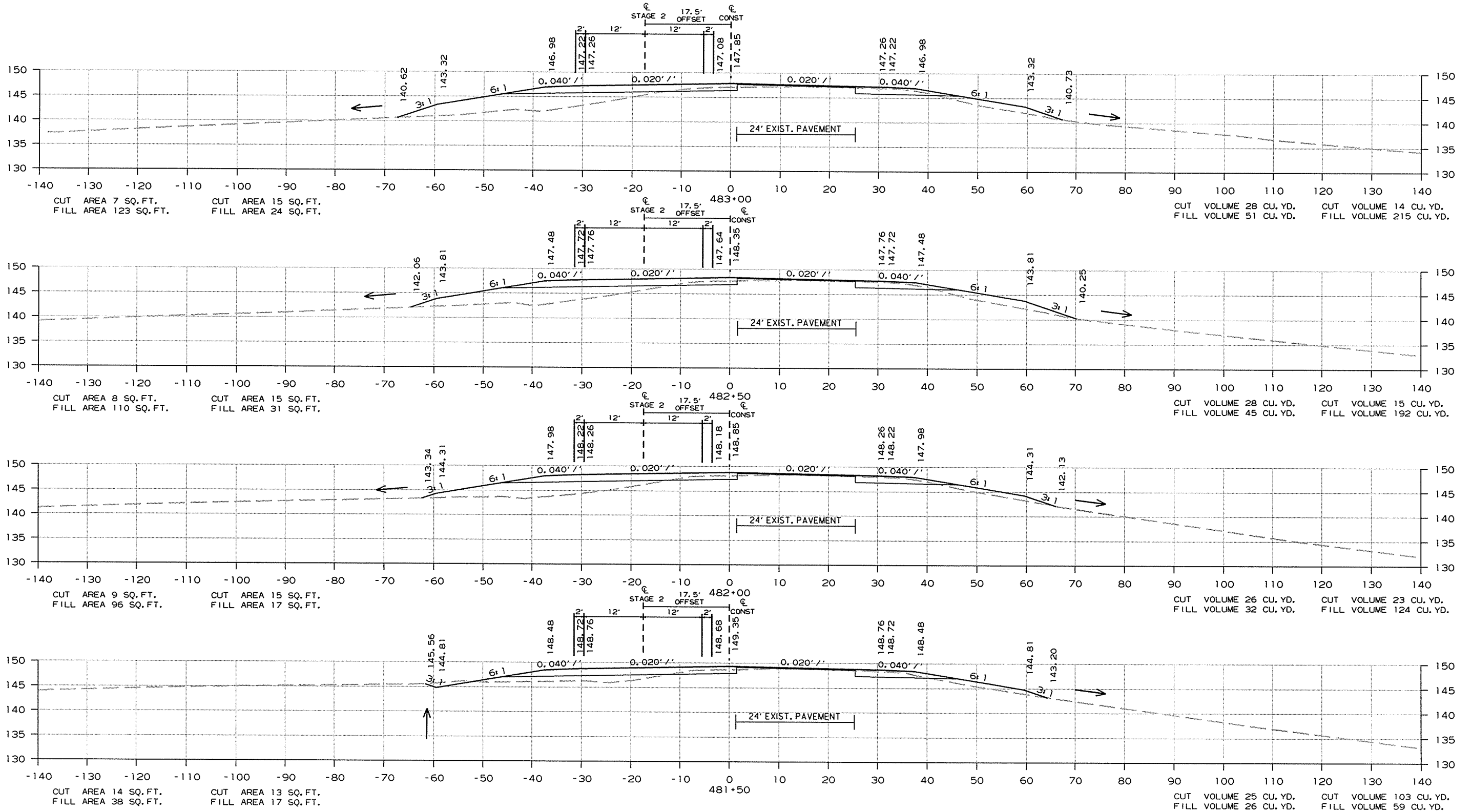
R070281.DGN 5/1/2015

STAGE 1      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. 070281	152	185

② CROSS SECTIONS

STAGE 2      STAGE 1



CROSS SECTION STA. 481+50 TO STA. 483+00

R070281.DGN 5/1/2015

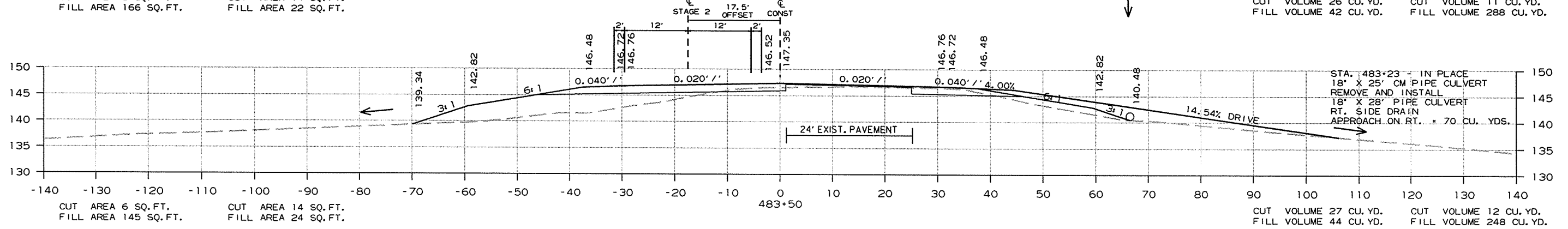
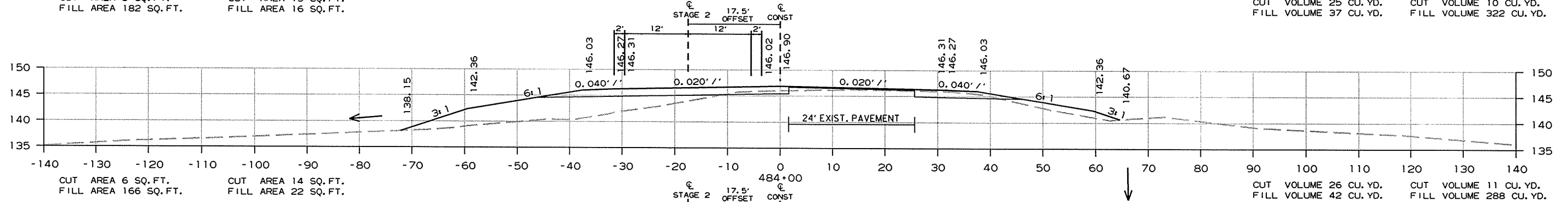
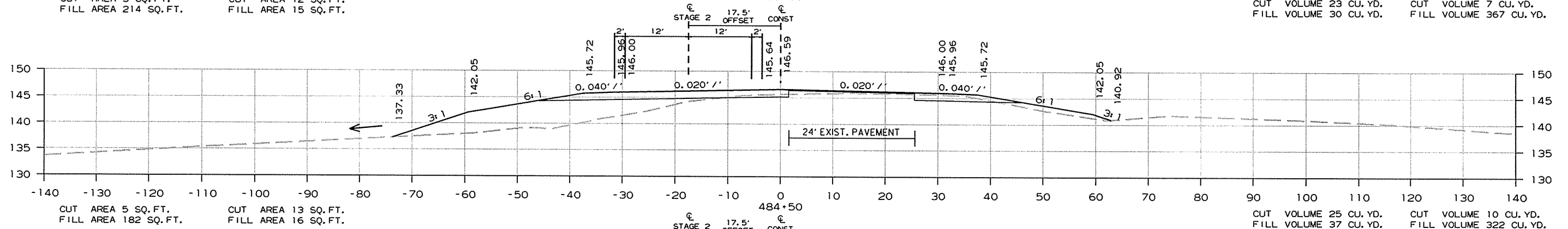
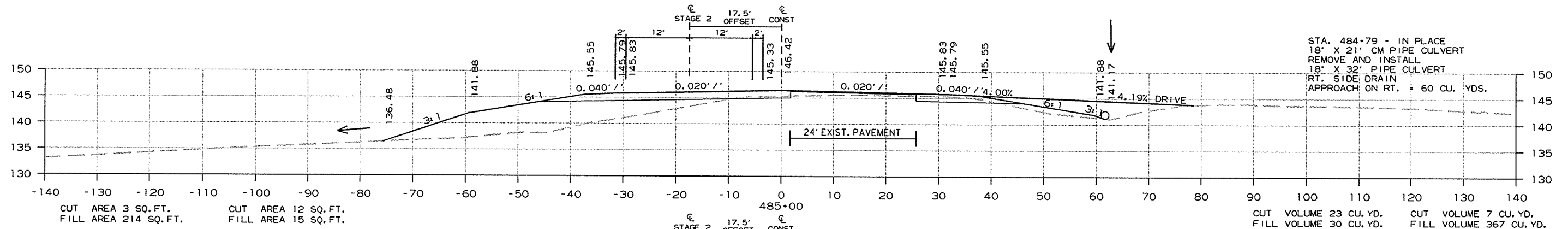


STAGE 1      STAGE 2

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. 070281							153	185

② CROSS SECTIONS

STAGE 2      STAGE 1



CROSS SECTION STA. 483+50 TO STA. 485+00

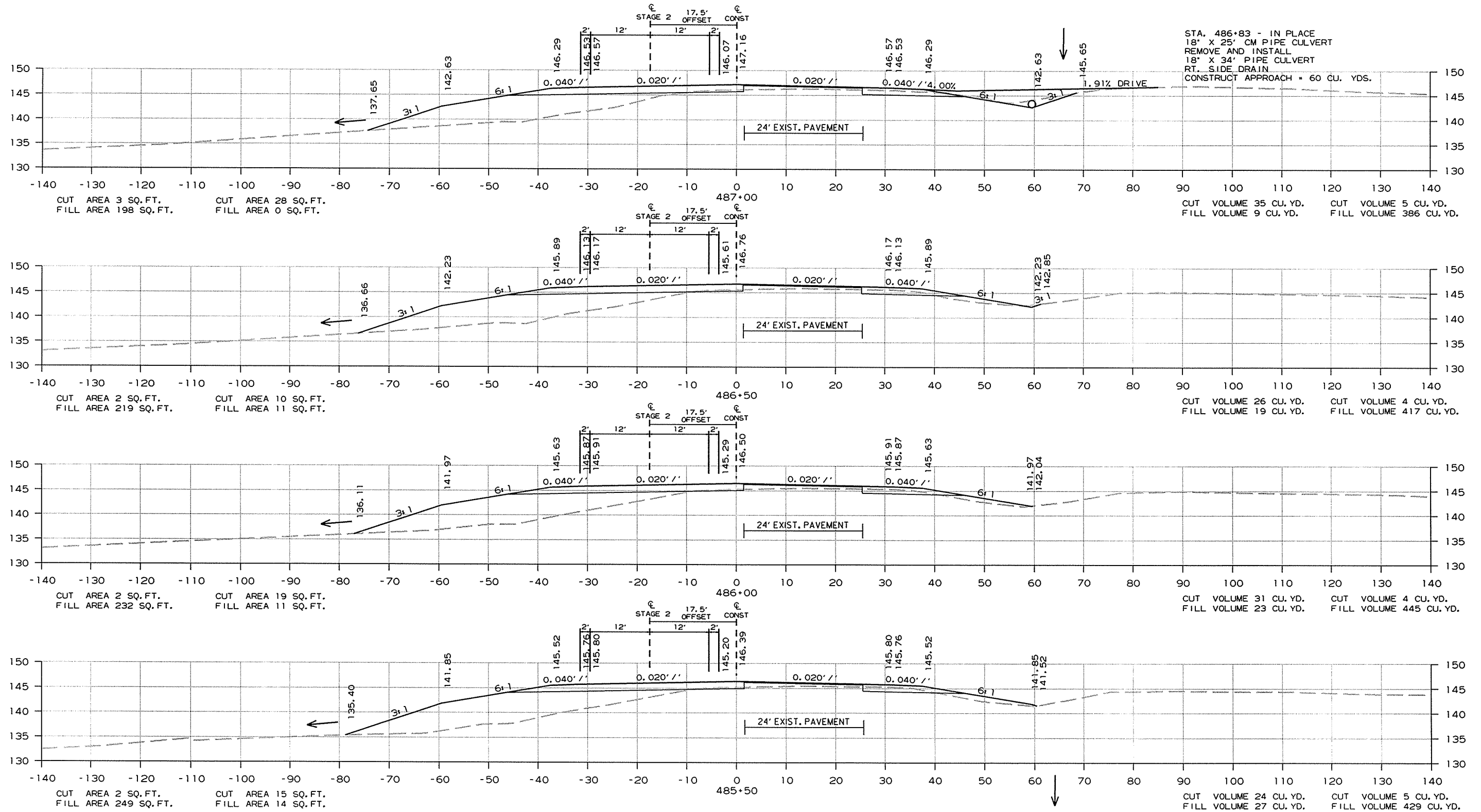
R070281.DGN 5/1/2015

STAGE 1      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. 070281							154	185

② CROSS SECTIONS

STAGE 2      STAGE 1



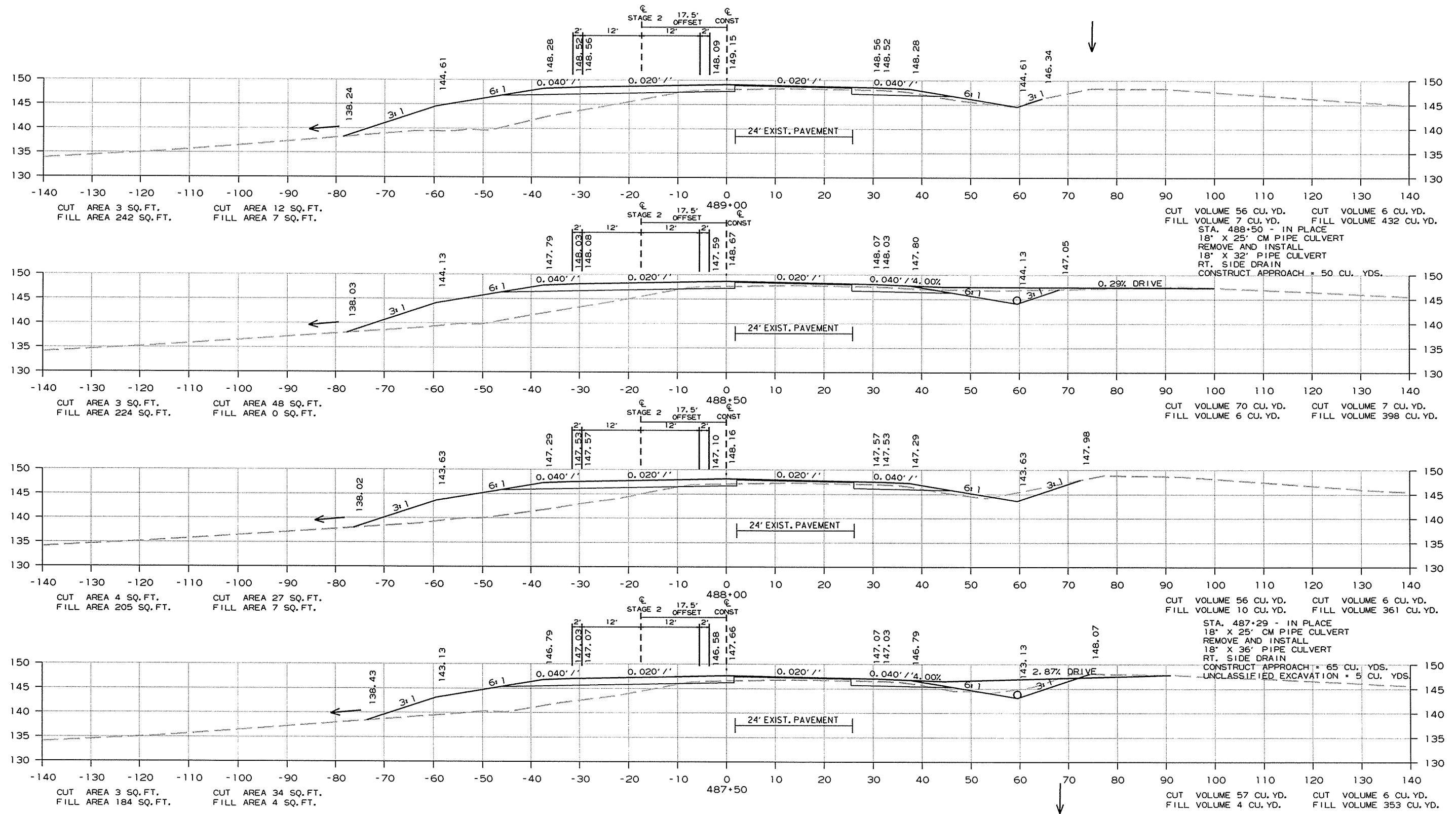
CROSS SECTION STA. 485+50 TO STA. 487+00

STAGE 1      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. 070281							155	185

② CROSS SECTIONS

STAGE 2      STAGE 1



CROSS SECTION STA. 487+50 TO STA. 489+00

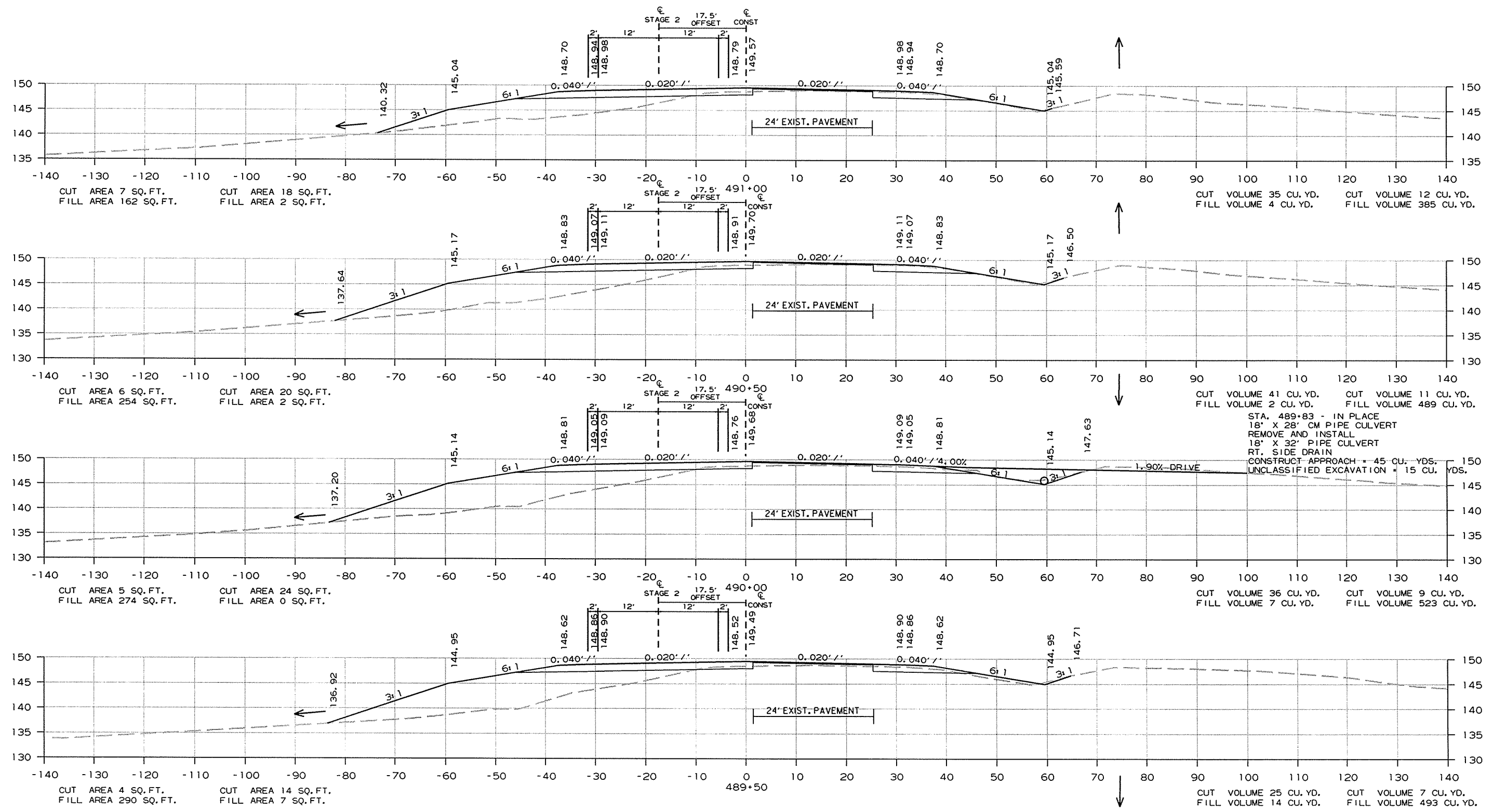
R070281.DGN 5/1/2015

STAGE 1      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.	070281	156
								185

② CROSS SECTIONS

STAGE 2      STAGE 1



CROSS SECTION STA. 489+50 TO STA. 491+00

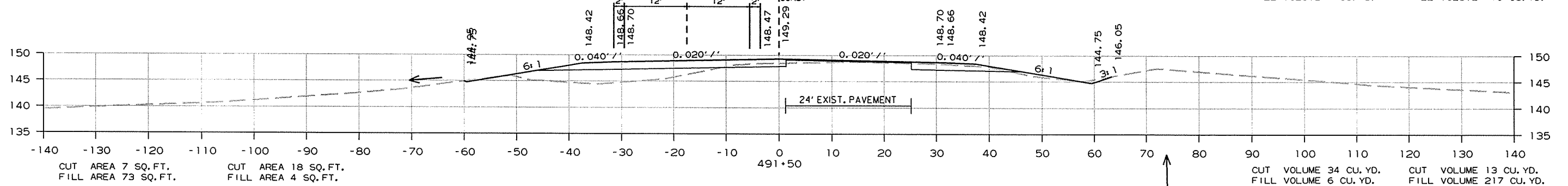
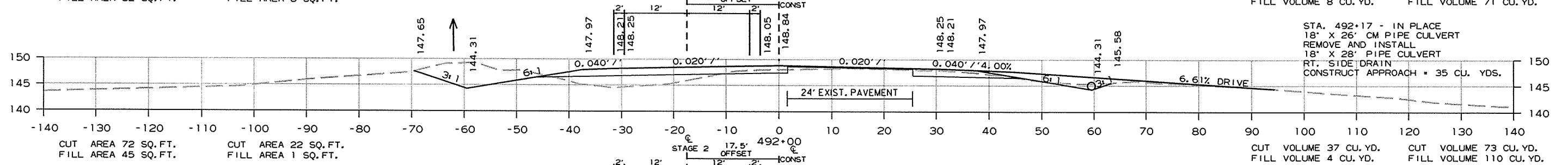
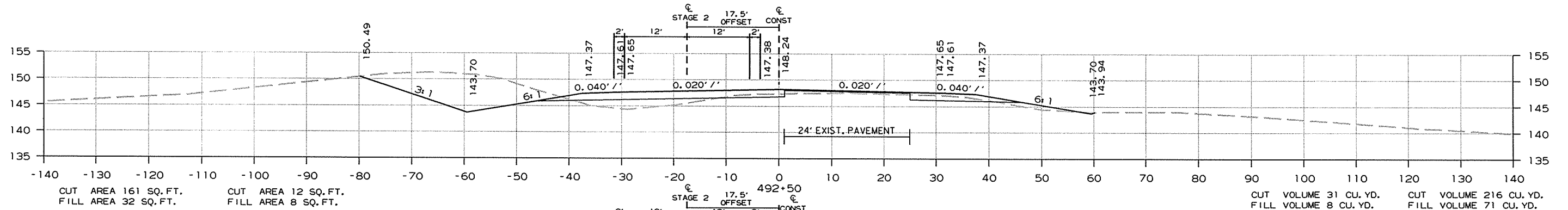
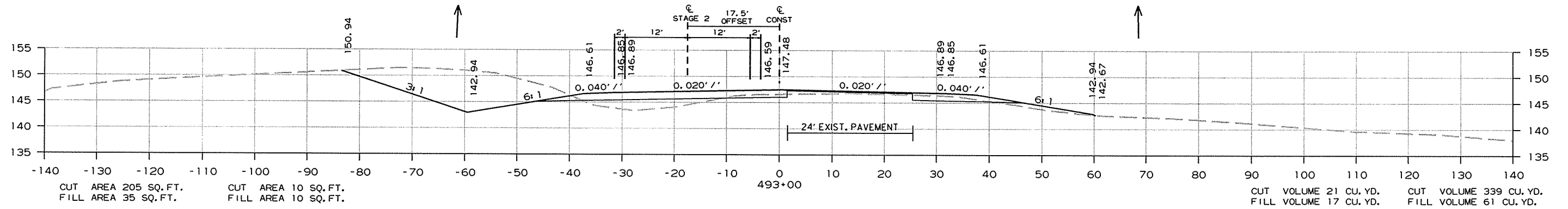
R070281.DGN 5/1/2015

STAGE 1      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. 070281							157	185

② CROSS SECTIONS

STAGE 2      STAGE 1



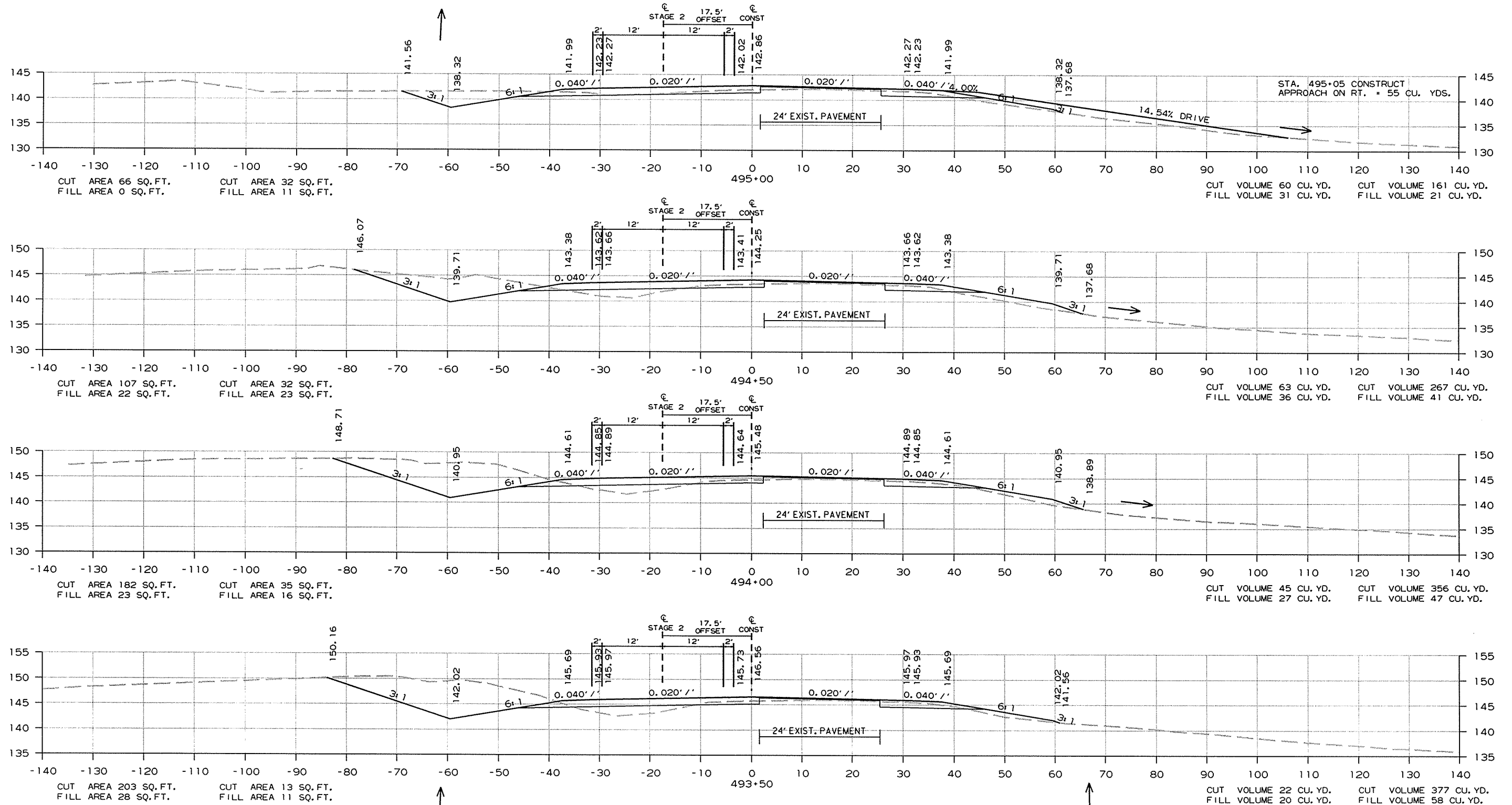
CROSS SECTION STA. 491+50 TO STA. 493+00

STAGE 1      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. 070281							158	185

② CROSS SECTIONS

STAGE 2      STAGE 1



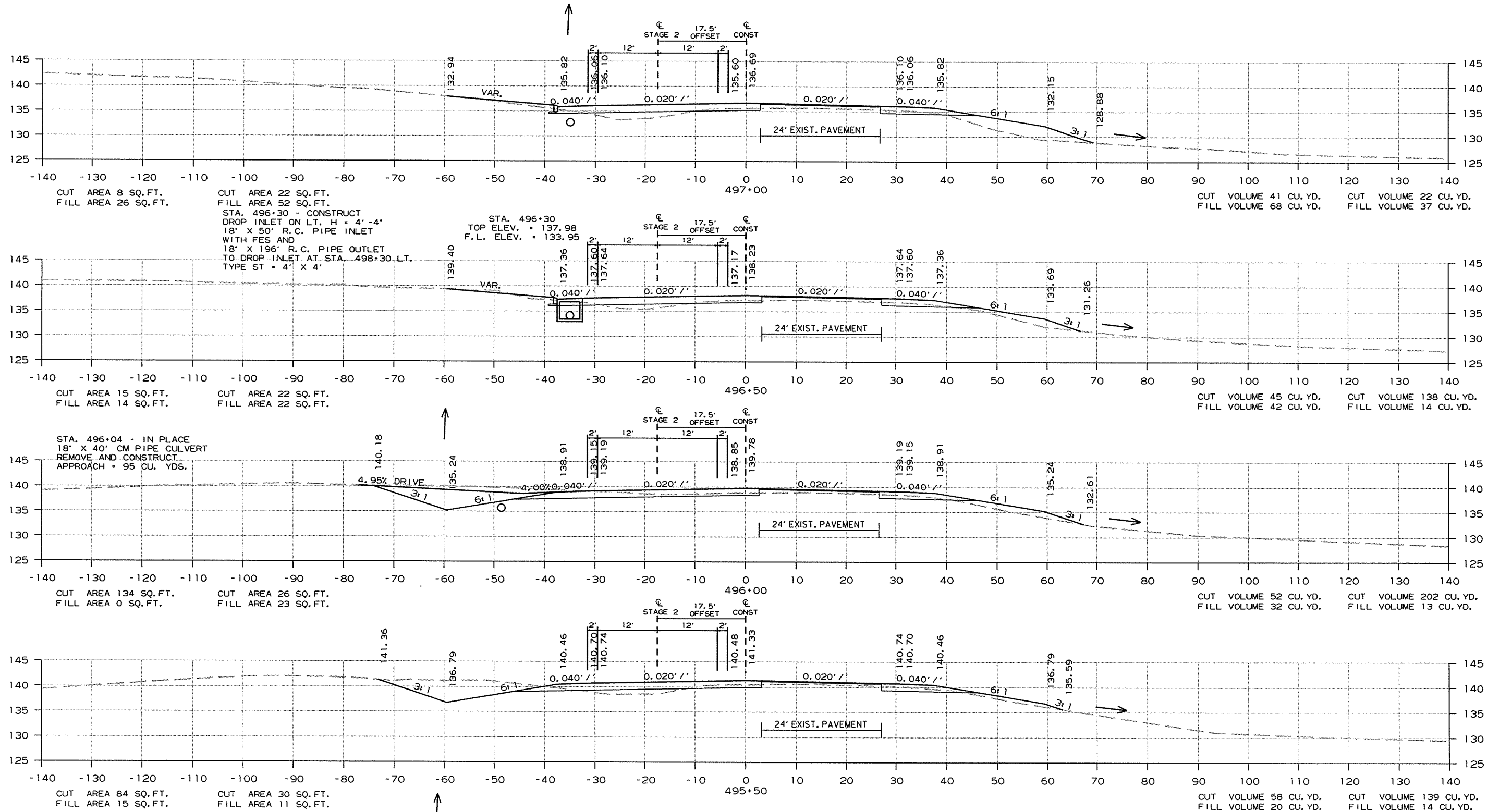
CROSS SECTION STA. 493+50 TO STA. 495+00

STAGE 1      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. 070281	159	185

② CROSS SECTIONS

STAGE 2      STAGE 1



CROSS SECTION STA. 495+50 TO STA. 497+00

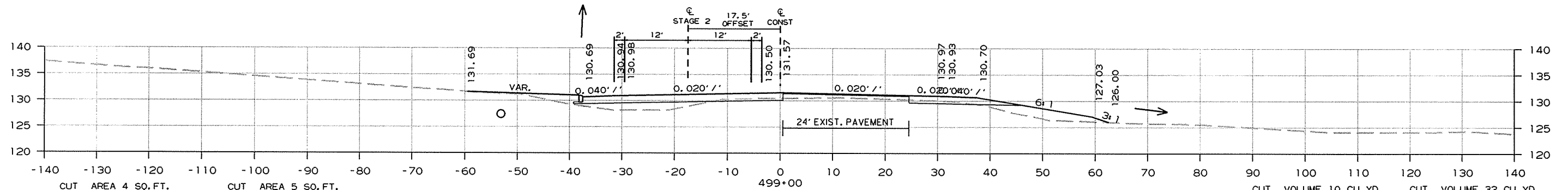
R070281.DGN 5/1/2015

STAGE 1      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. 070281	160	185

② CROSS SECTIONS

STAGE 2      STAGE 1



CUT AREA 4 SQ. FT.  
FILL AREA 40 SQ. FT.

CUT AREA 5 SQ. FT.  
FILL AREA 31 SQ. FT.

CUT VOLUME 10 CU. YD.  
FILL VOLUME 42 CU. YD.

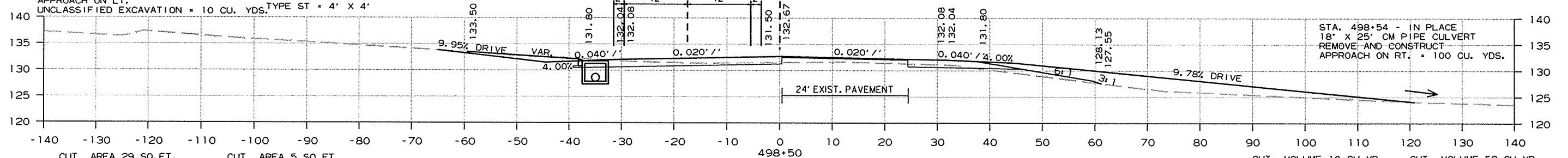
CUT VOLUME 32 CU. YD.  
FILL VOLUME 40 CU. YD.

STA. 498+50 - IN PLACE  
24' X 24' CM PIPE CULVERT  
REMOVE AND CONSTRUCT  
APPROACH ON LT.  
UNCLASSIFIED EXCAVATION = 10 CU. YDS.

STA. 498+30 - CONSTRUCT  
DROP INLET ON LT. H = 4' - 4"  
18' X 84' R.C. PIPE CULVERT  
WITH FES  
TYPE ST = 4' X 4'

STA. 498+30  
TOP ELEV. = 132.28  
F.L. ELEV. = 127.06

STA. 498+54 - IN PLACE  
18' X 25' CM PIPE CULVERT  
REMOVE AND CONSTRUCT  
APPROACH ON RT. = 100 CU. YDS.

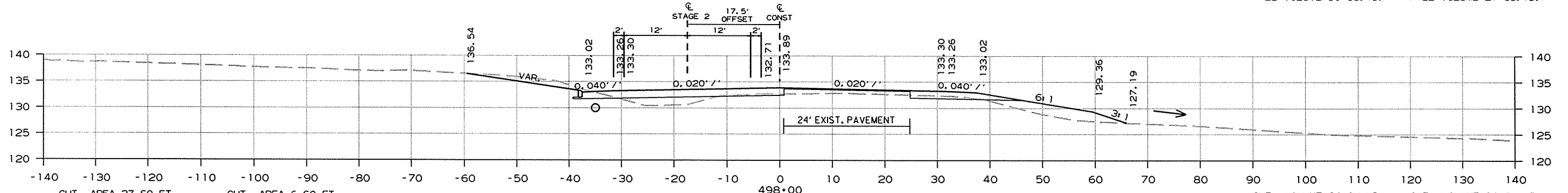


CUT AREA 29 SQ. FT.  
FILL AREA 2 SQ. FT.

CUT AREA 5 SQ. FT.  
FILL AREA 14 SQ. FT.

CUT VOLUME 10 CU. YD.  
FILL VOLUME 50 CU. YD.

CUT VOLUME 52 CU. YD.  
FILL VOLUME 21 CU. YD.

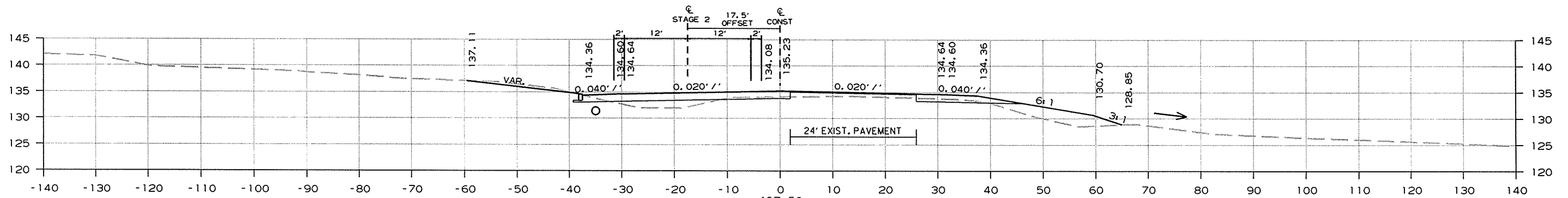


CUT AREA 27 SQ. FT.  
FILL AREA 20 SQ. FT.

CUT AREA 6 SQ. FT.  
FILL AREA 40 SQ. FT.

CUT VOLUME 24 CU. YD.  
FILL VOLUME 77 CU. YD.

CUT VOLUME 34 CU. YD.  
FILL VOLUME 44 CU. YD.



CUT AREA 10 SQ. FT.  
FILL AREA 28 SQ. FT.

CUT AREA 20 SQ. FT.  
FILL AREA 43 SQ. FT.

CUT VOLUME 38 CU. YD.  
FILL VOLUME 88 CU. YD.

CUT VOLUME 17 CU. YD.  
FILL VOLUME 50 CU. YD.

CROSS SECTION STA. 497+50 TO STA. 499+00

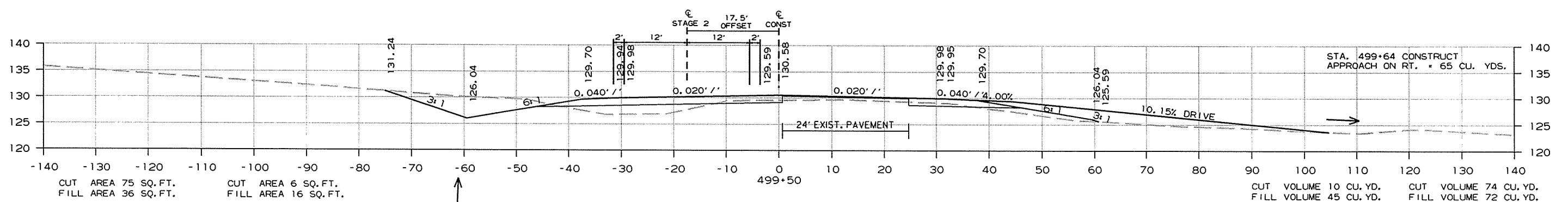
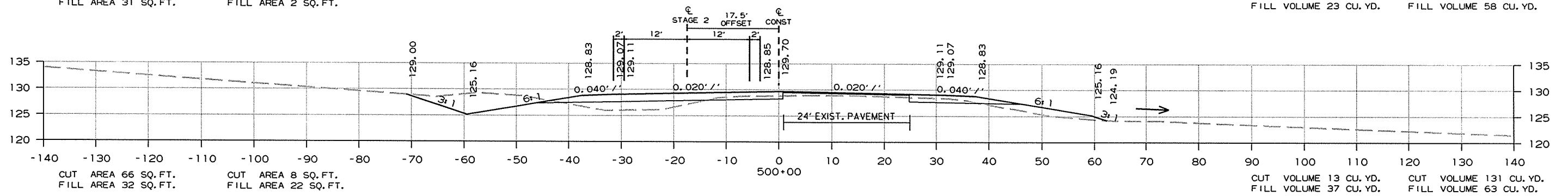
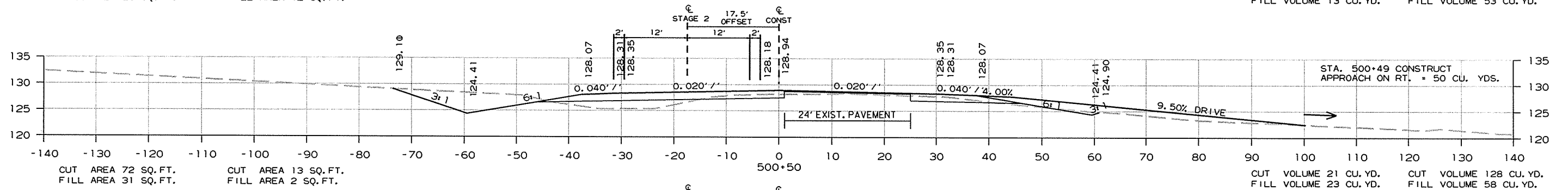
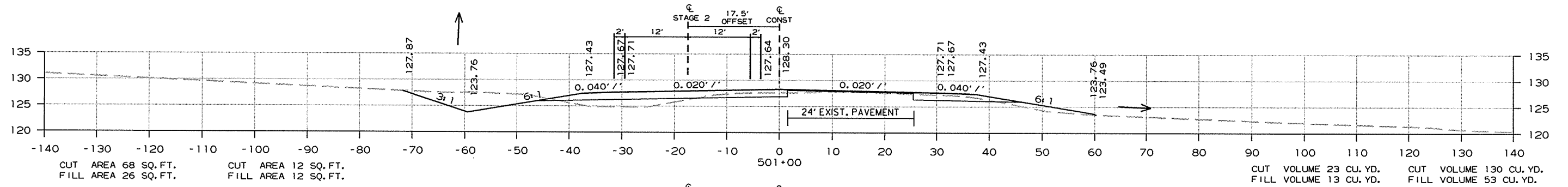


STAGE 1      STAGE 2

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. 070281	161	185

② CROSS SECTIONS

STAGE 2      STAGE 1



CROSS SECTION STA. 499+50 TO STA. 501+00

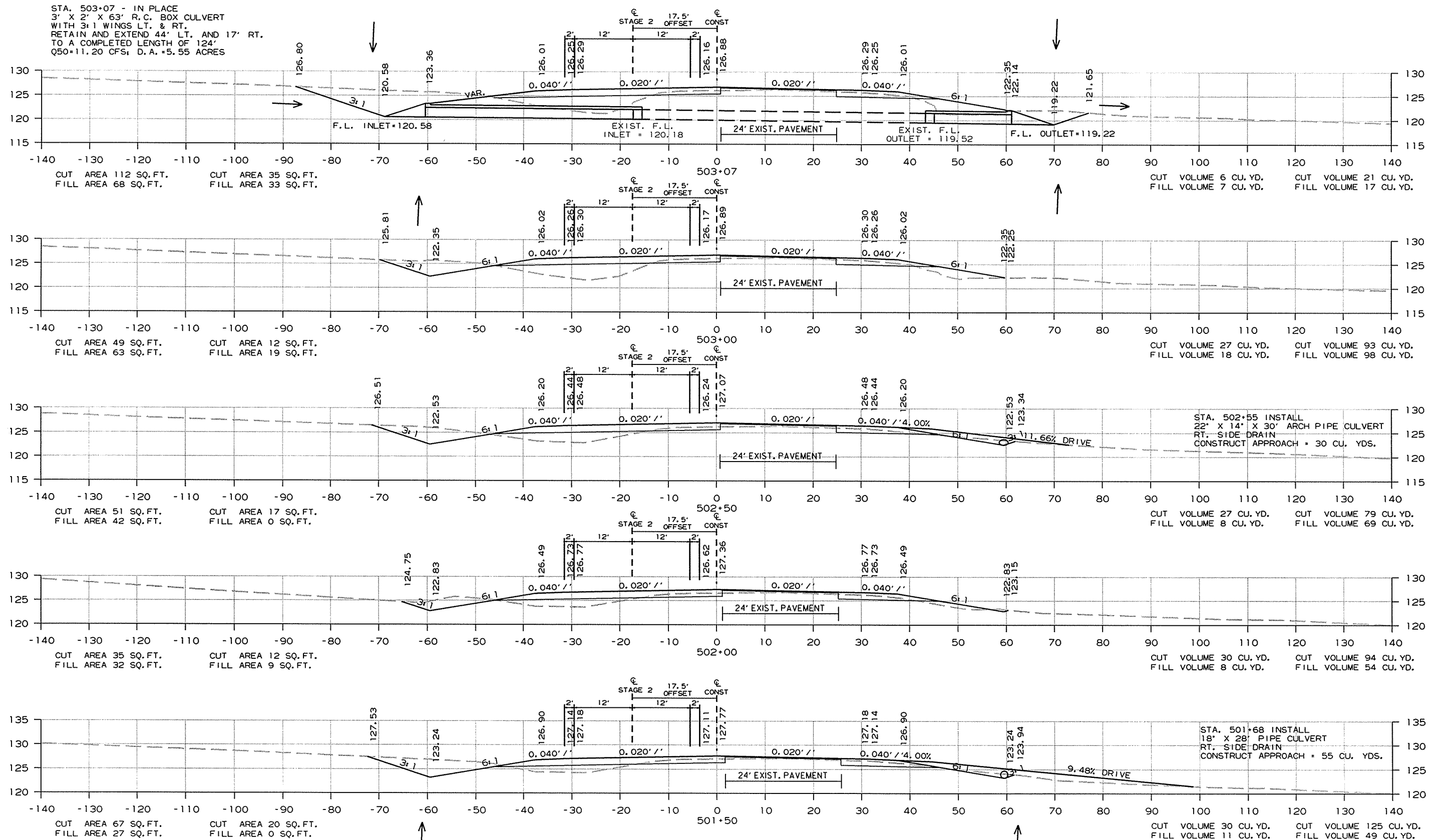
R070281.DGN 5/1/2015

STAGE 1      STAGE 2

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	070281		162	185

② CROSS SECTIONS

STAGE 2      STAGE 1



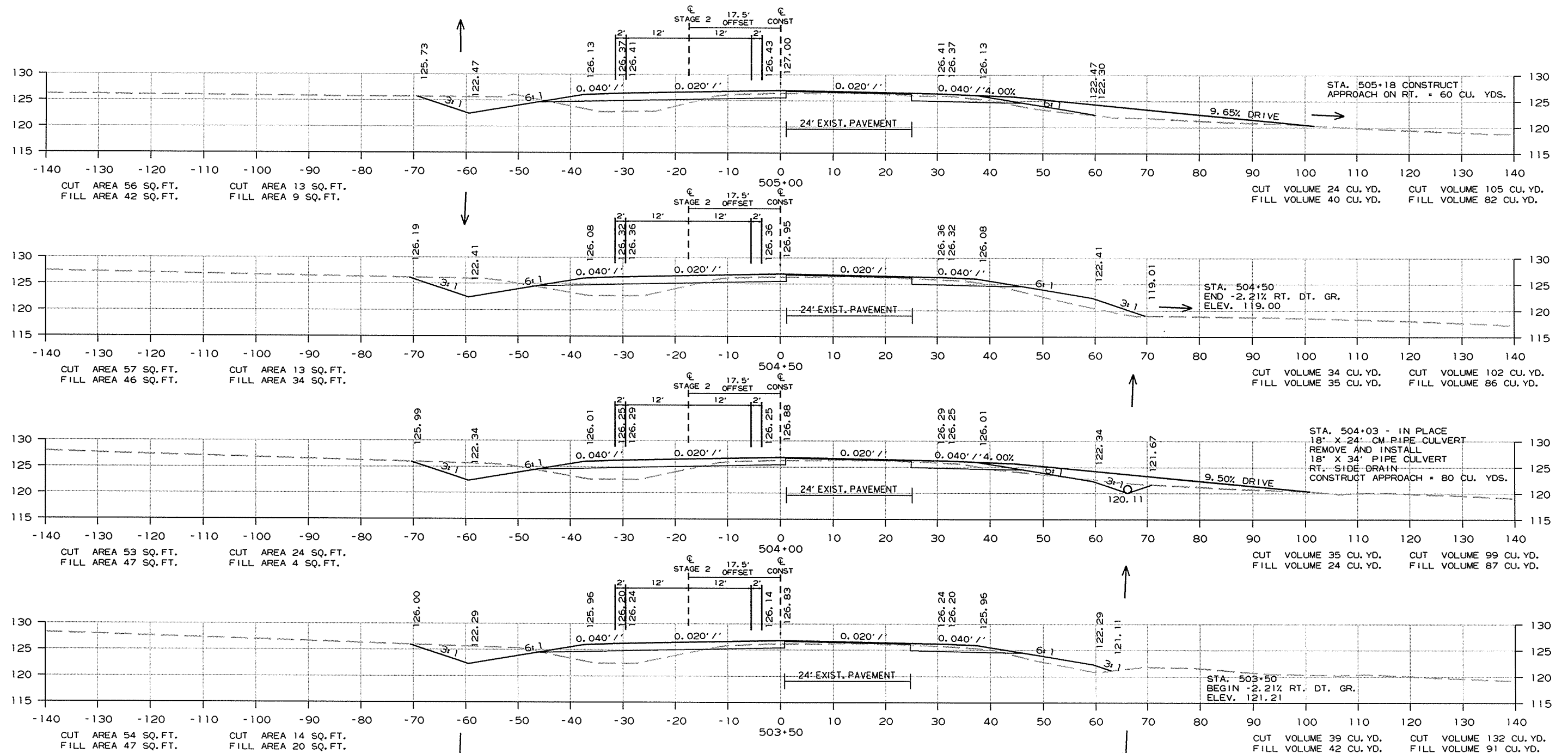
CROSS SECTION STA. 501+50 TO STA. 503+07

STAGE 1      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. 070281							163	185

② CROSS SECTIONS

STAGE 2      STAGE 1



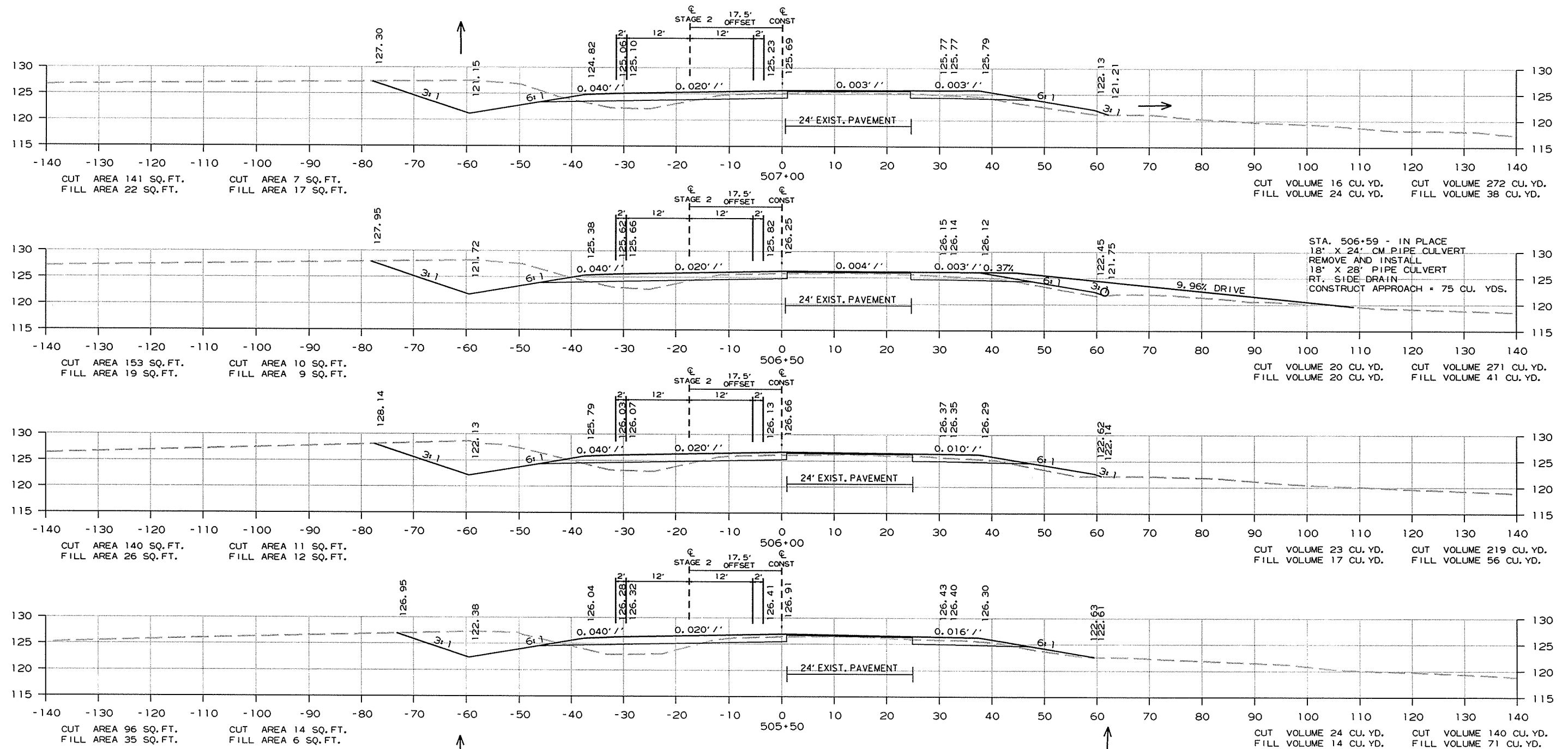
CROSS SECTION STA. 503+50 TO STA. 505+00

STAGE 1      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. 070281							164	185

② CROSS SECTIONS

STAGE 2      STAGE 1



CROSS SECTION STA. 505+50 TO STA. 507+00

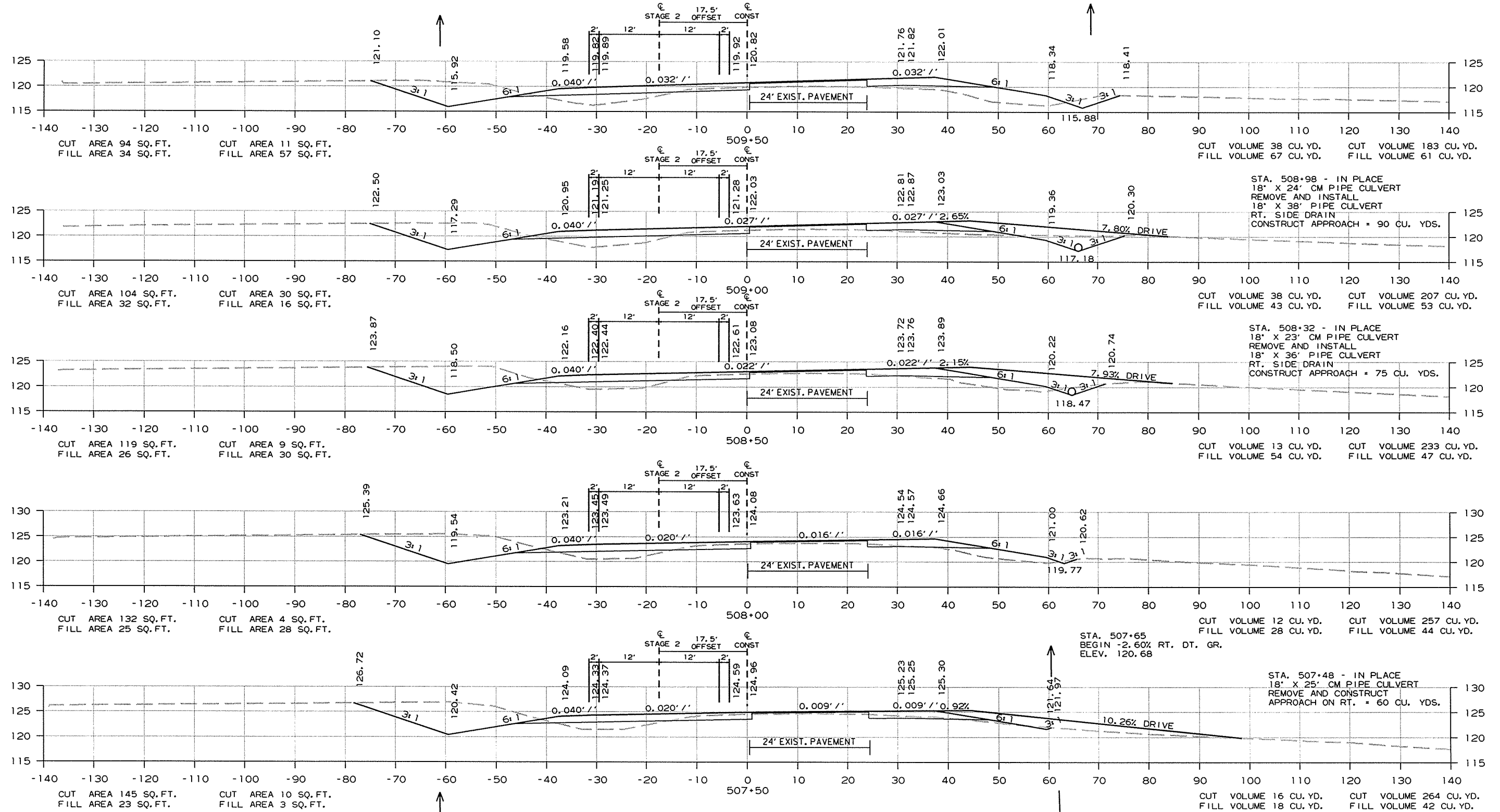
R070281.DGN 5/1/2015

STAGE 1      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. 070281							165	185

2 CROSS SECTIONS

STAGE 2      STAGE 1



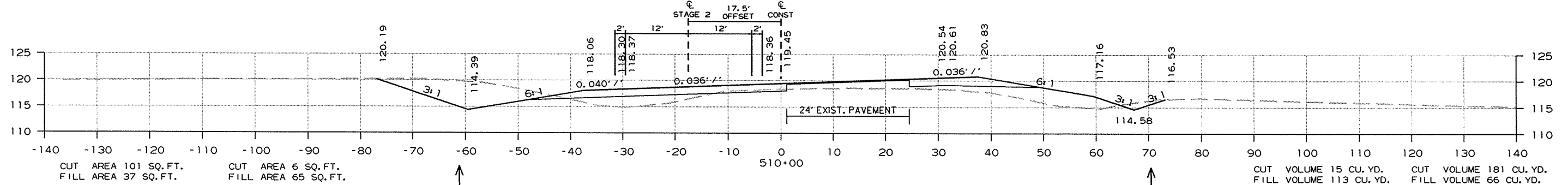
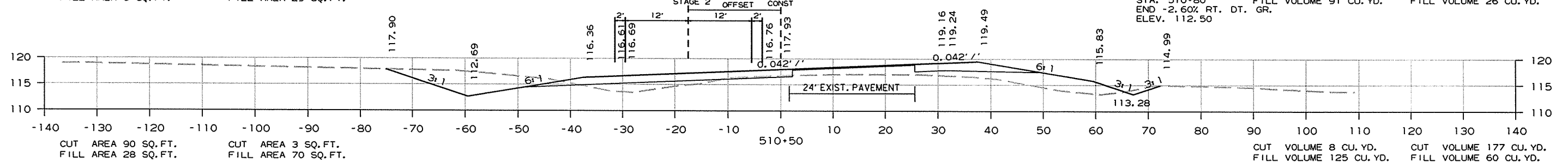
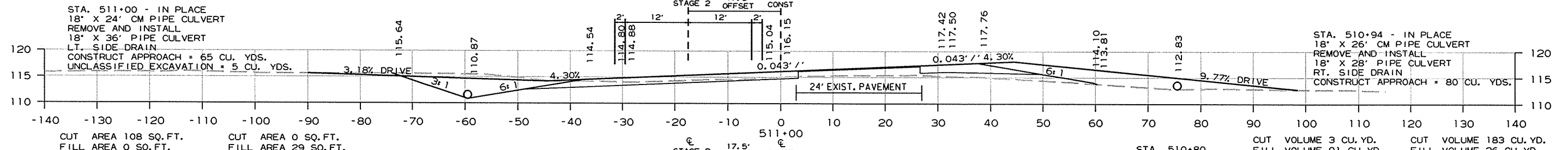
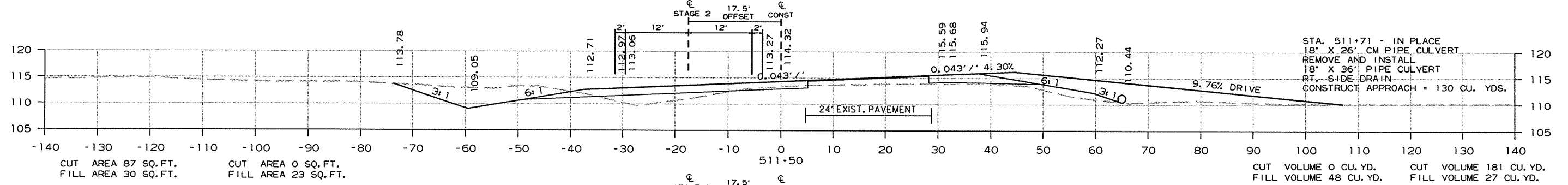
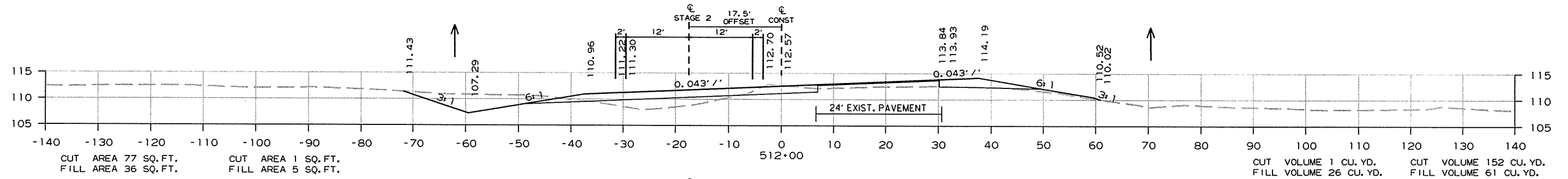
CROSS SECTION STA. 507+50 TO STA. 509+50

STAGE 1      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.	070281		166	185

② CROSS SECTIONS

STAGE 2      STAGE 1



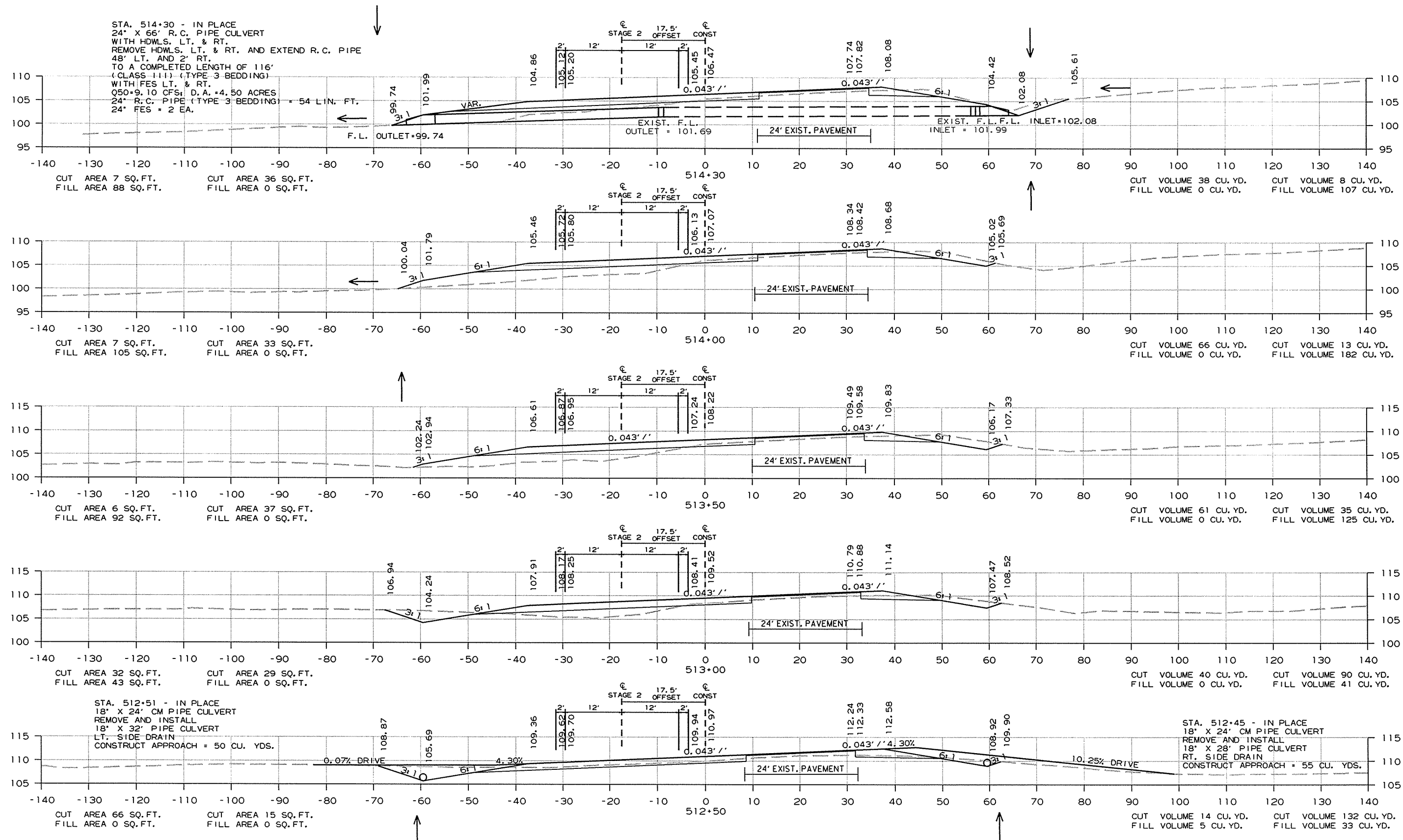
CROSS SECTION STA. 510+00 TO STA. 512+00

STAGE 1      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. 070281							167	185

② CROSS SECTIONS

STAGE 2      STAGE 1



CROSS SECTION STA. 512+50 TO STA. 514+30

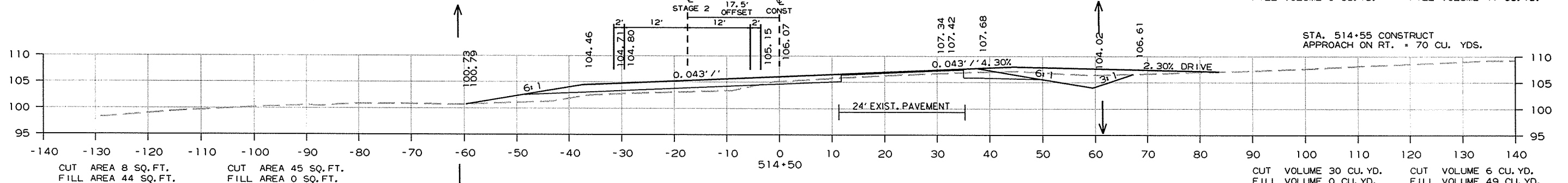
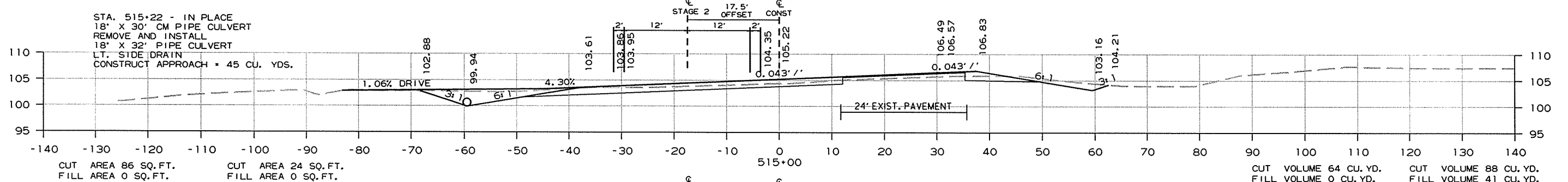
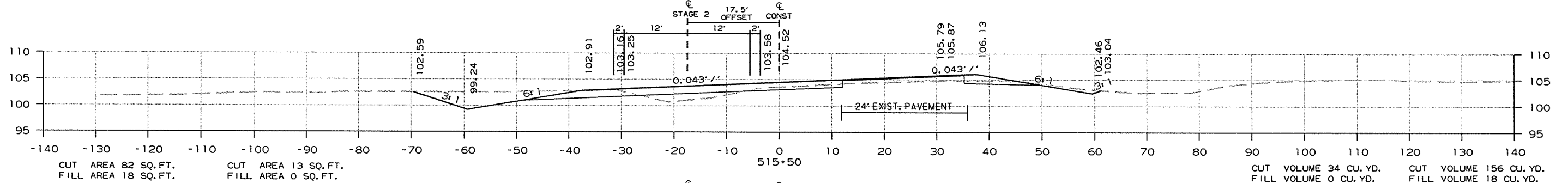
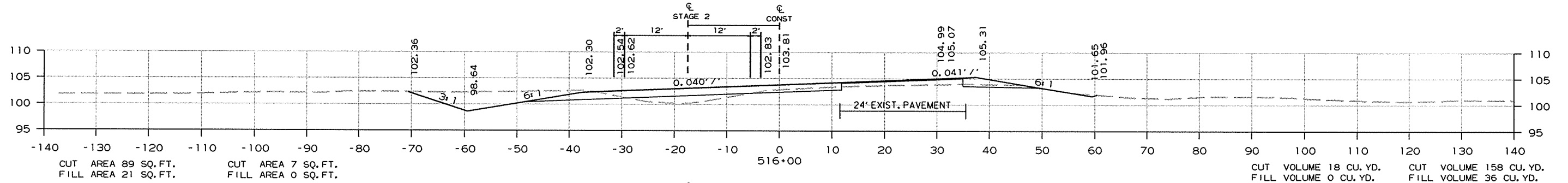
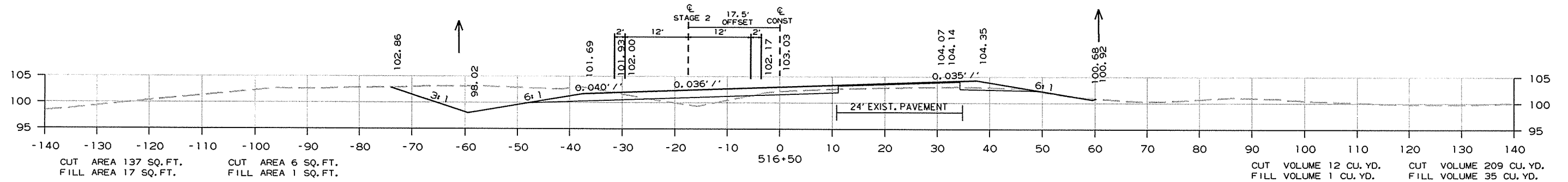
R070281.DGN 5/1/2015

STAGE 1      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. 070281							168	185

② CROSS SECTIONS

STAGE 2      STAGE 1



CROSS SECTION STA. 514+50 TO STA. 516+50

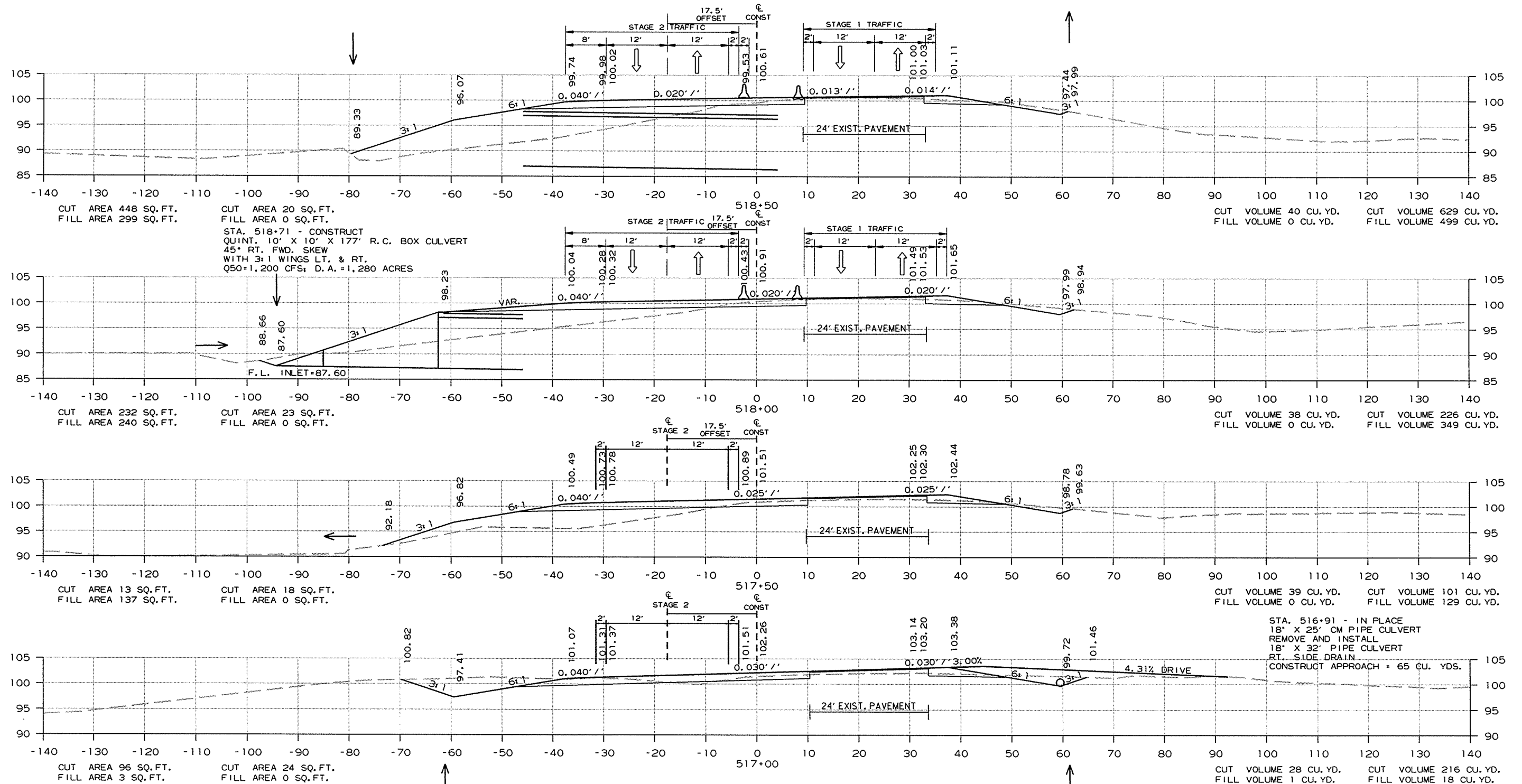


STAGE 1      STAGE 2

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. 070281							169	185

② CROSS SECTIONS

STAGE 2      STAGE 1



CROSS SECTION STA. 517+00 TO STA. 518+50

R070281.DGN 5/1/2015

STAGE 1

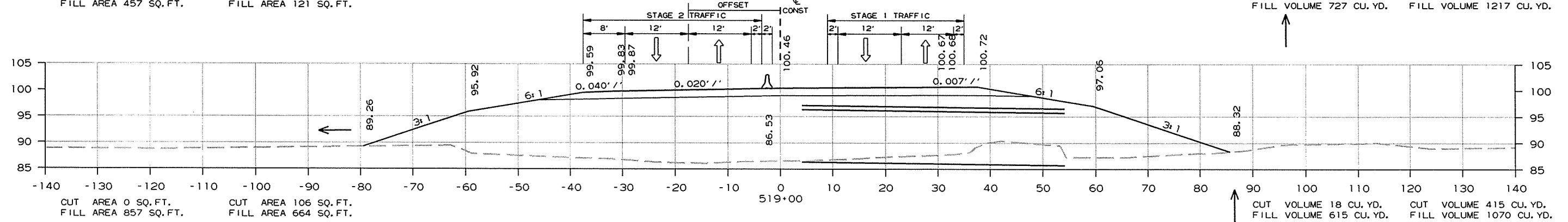
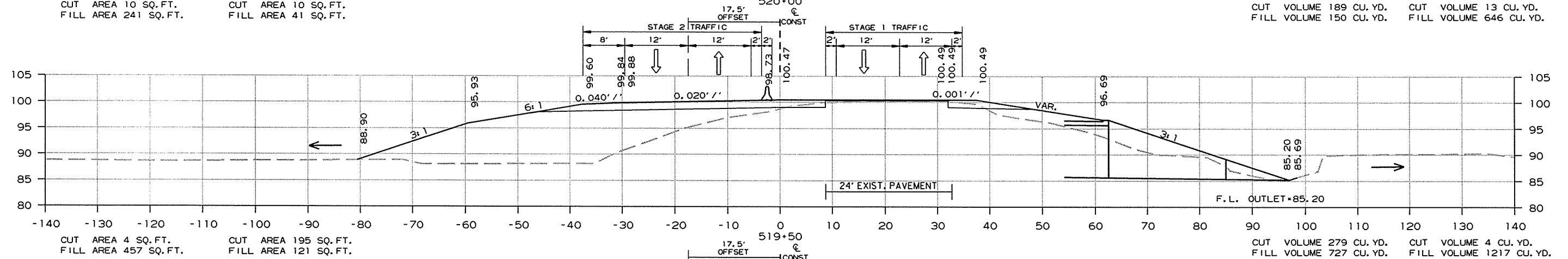
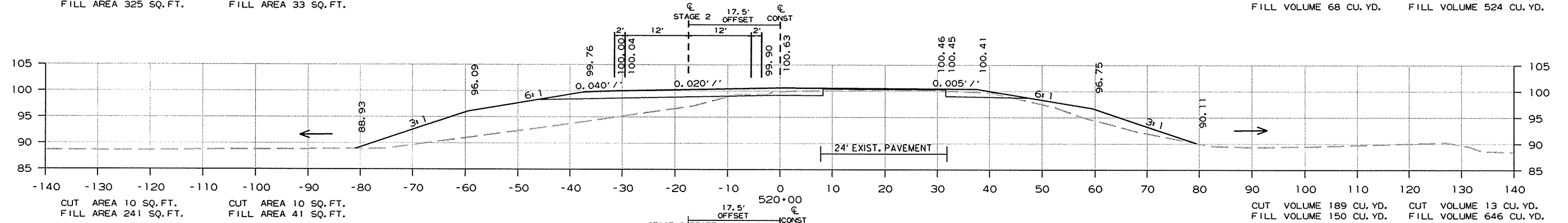
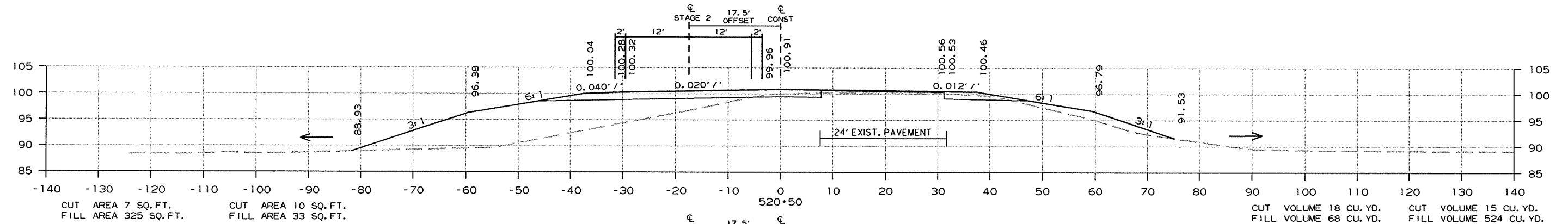
STAGE 2

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 070281							170	185

2 CROSS SECTIONS

STAGE 2

STAGE 1



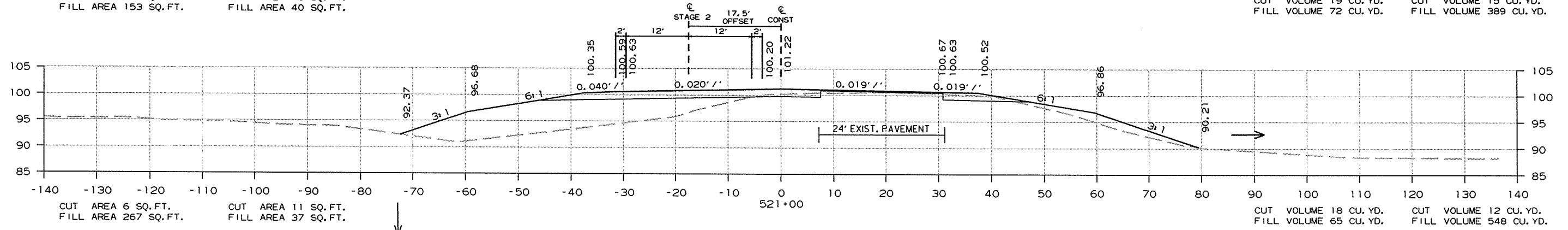
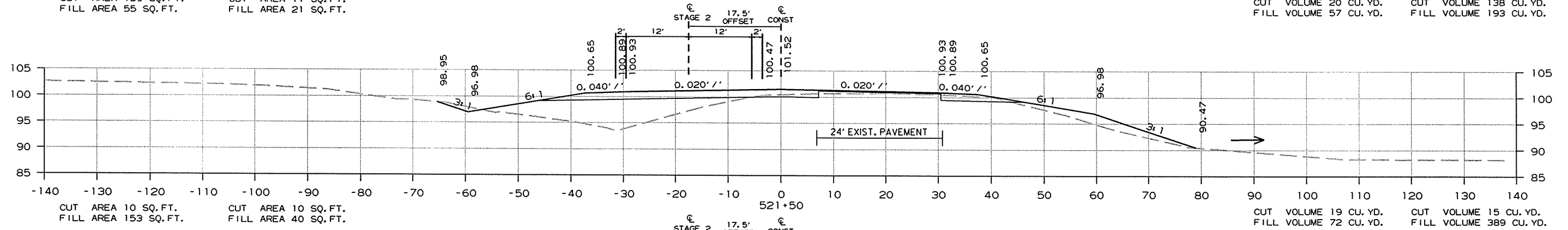
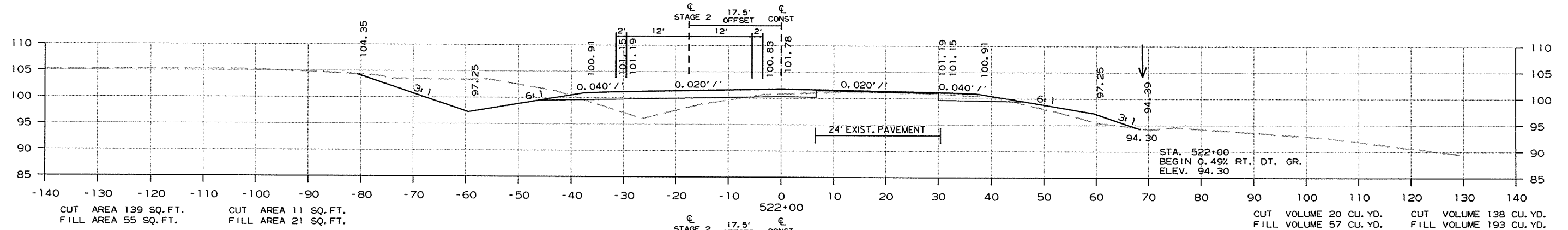
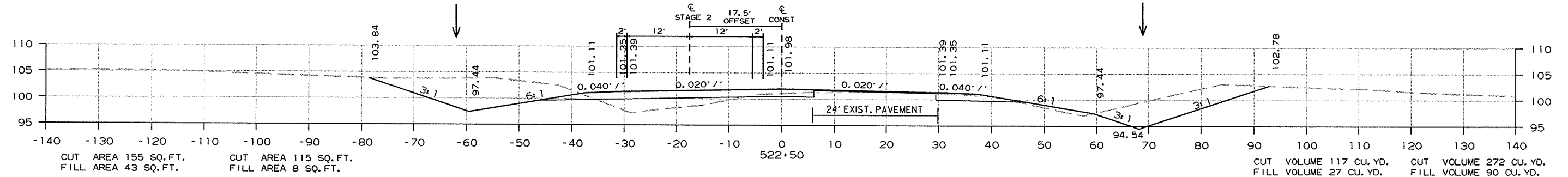
CROSS SECTION STA. 519+00 TO STA. 520+50

STAGE 1      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. 070281							171	185

② CROSS SECTIONS

STAGE 2      STAGE 1



CROSS SECTION STA. 521+00 TO STA. 522+50

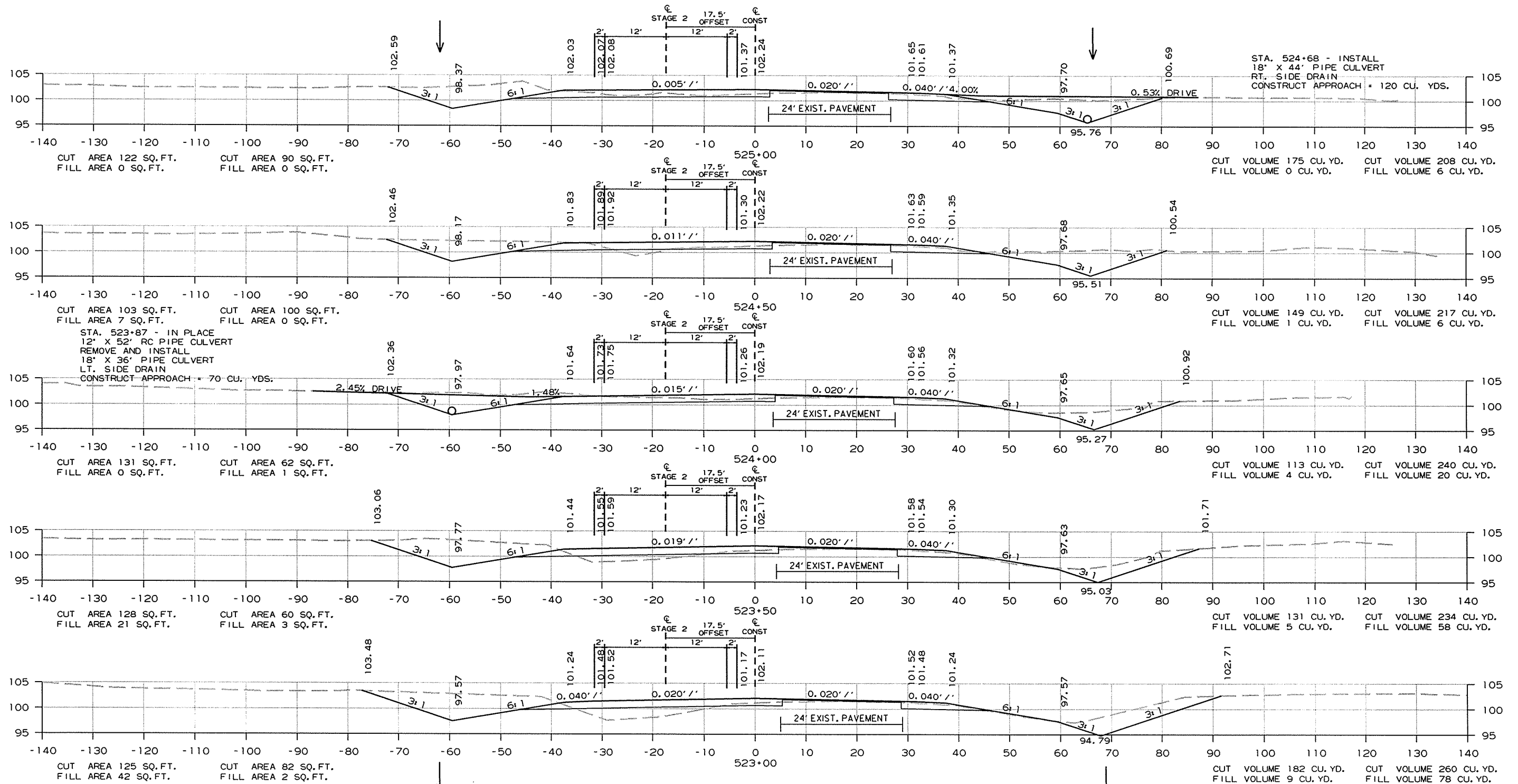
R070281.DGN 5/1/2015

STAGE 1      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.	070281
								172
								185

② CROSS SECTIONS

STAGE 2      STAGE 1



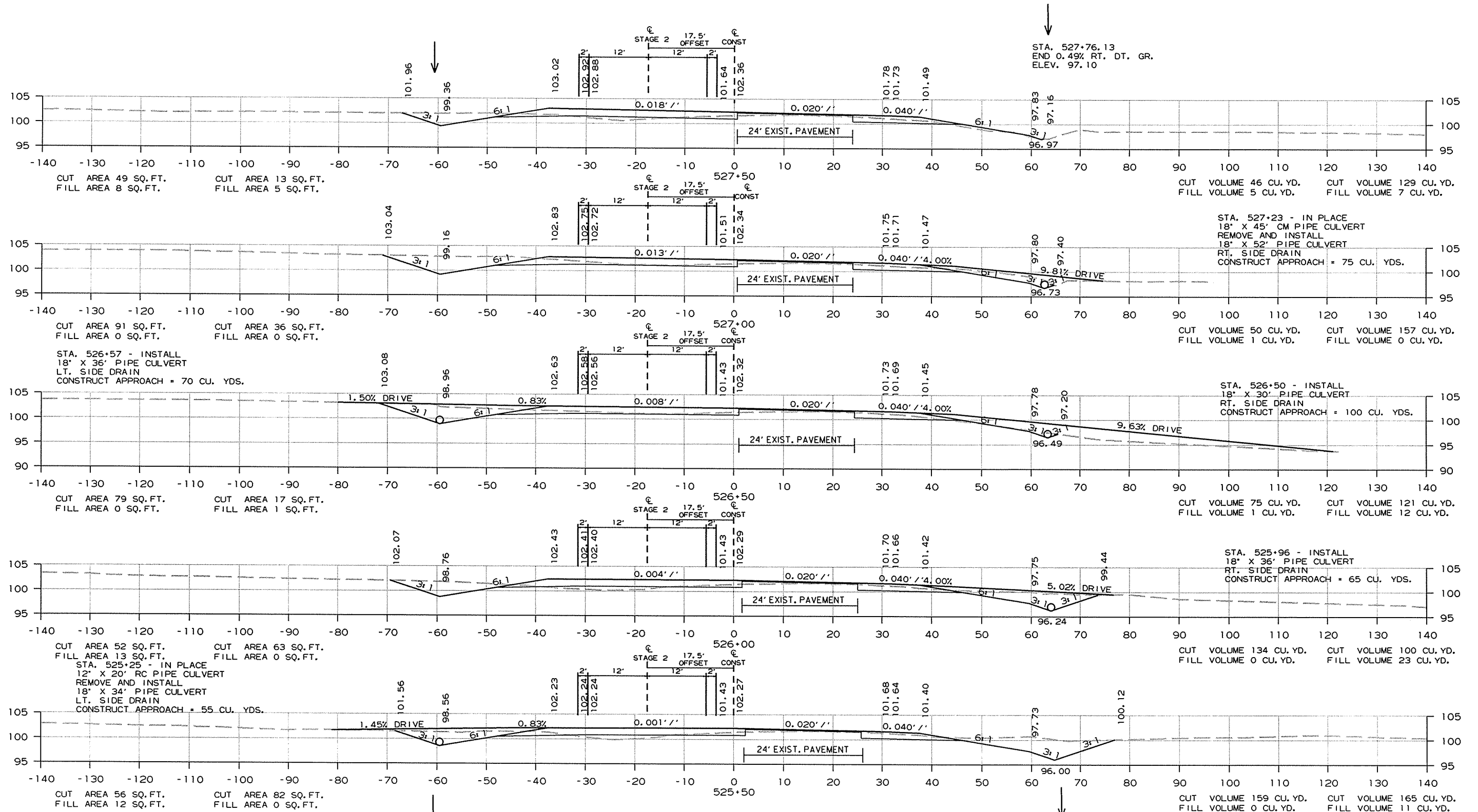
CROSS SECTION STA. 523+00 TO STA. 525+00

STAGE 1      STAGE 2

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	
				6	ARK.				
JOB NO.							070281	173	185

② CROSS SECTIONS

STAGE 2      STAGE 1



CROSS SECTION STA. 525+50 TO STA. 527+50

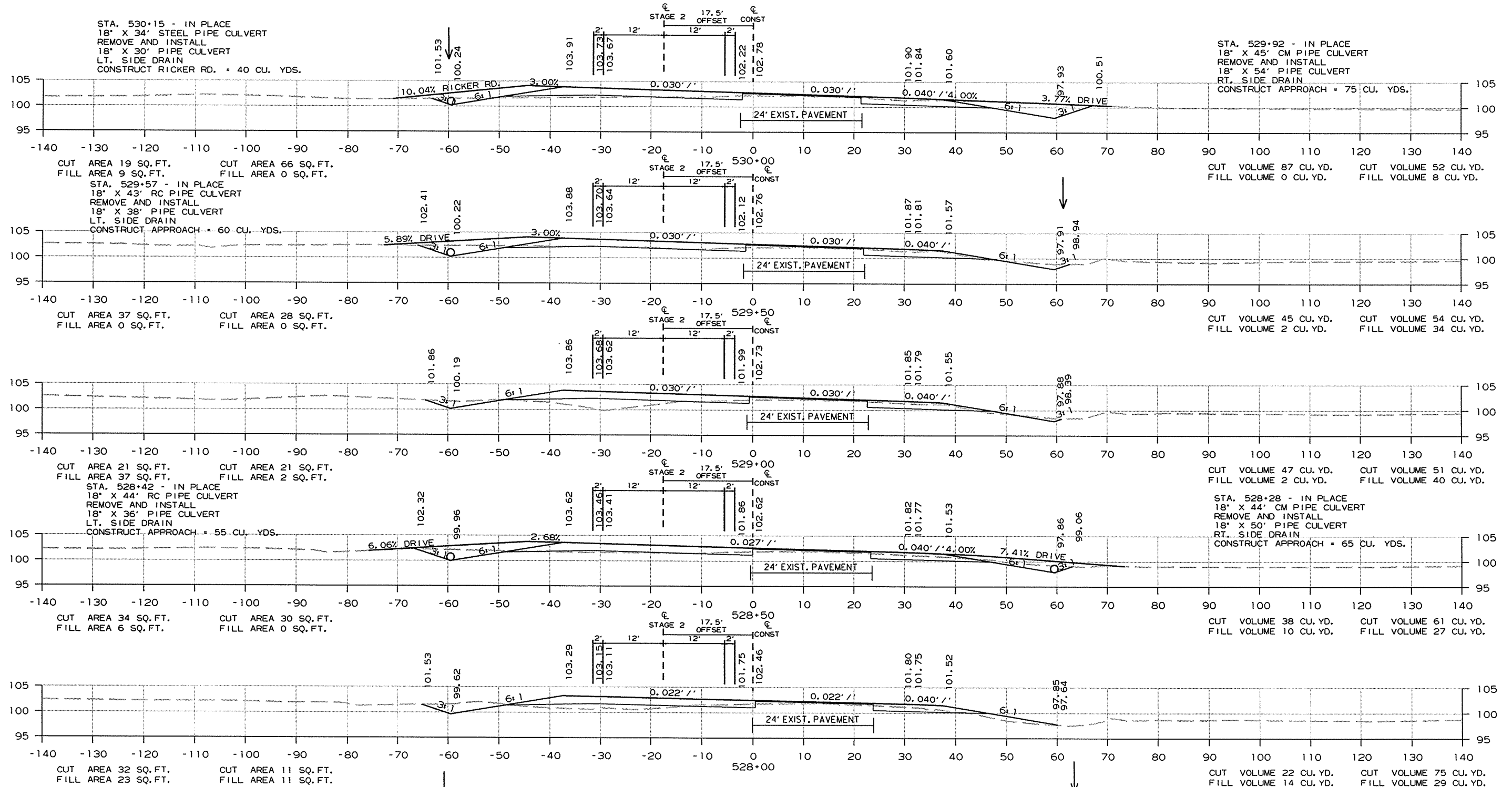
R070281.DGN 5/1/2015

STAGE 1      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.	070281
								174
								185

② CROSS SECTIONS

STAGE 2      STAGE 1



CROSS SECTION STA. 528+00 TO STA. 530+00

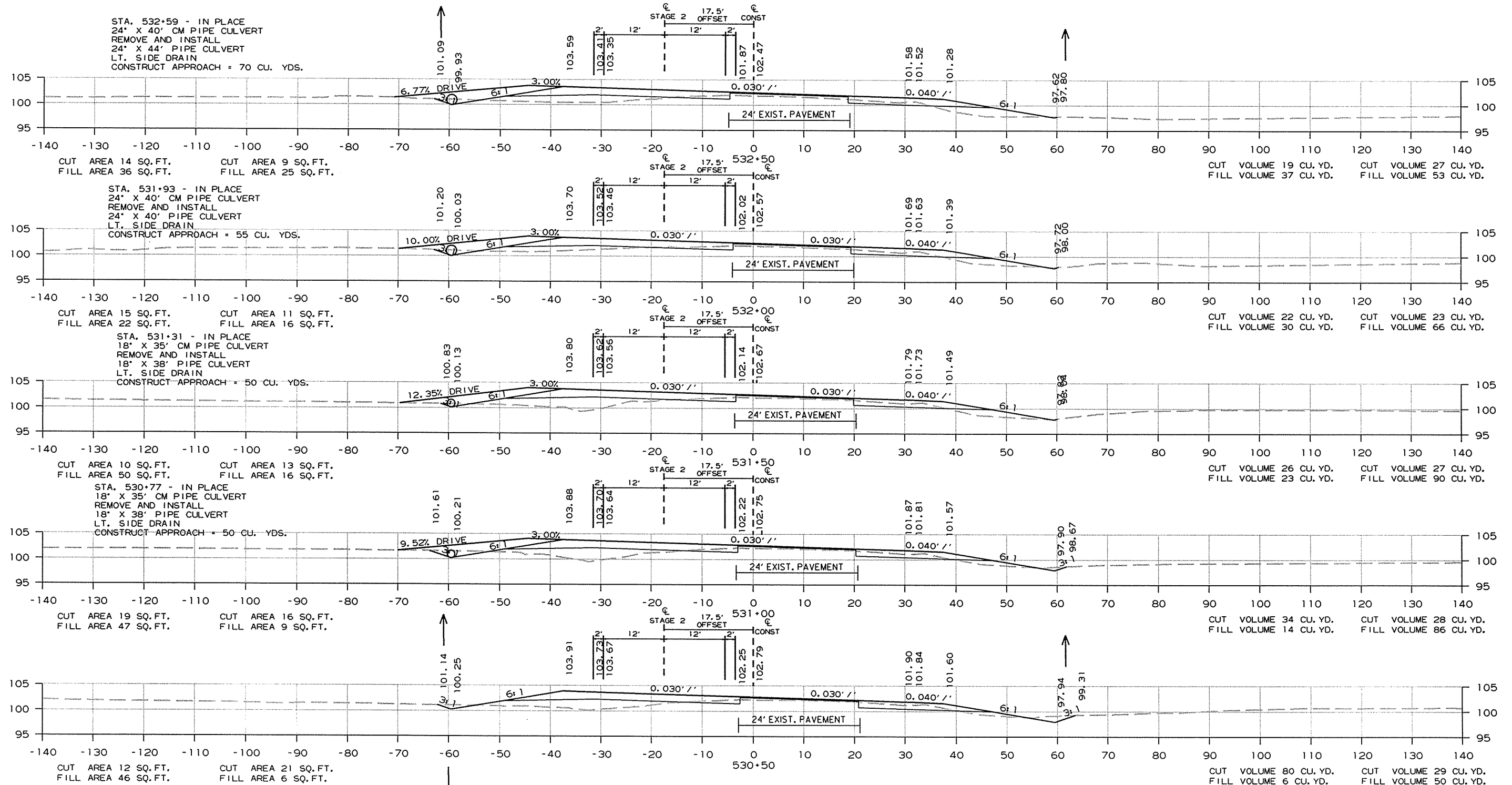
R070281.DGN 5/1/2015

STAGE 1      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. 070281							175	185

② CROSS SECTIONS

STAGE 2      STAGE 1



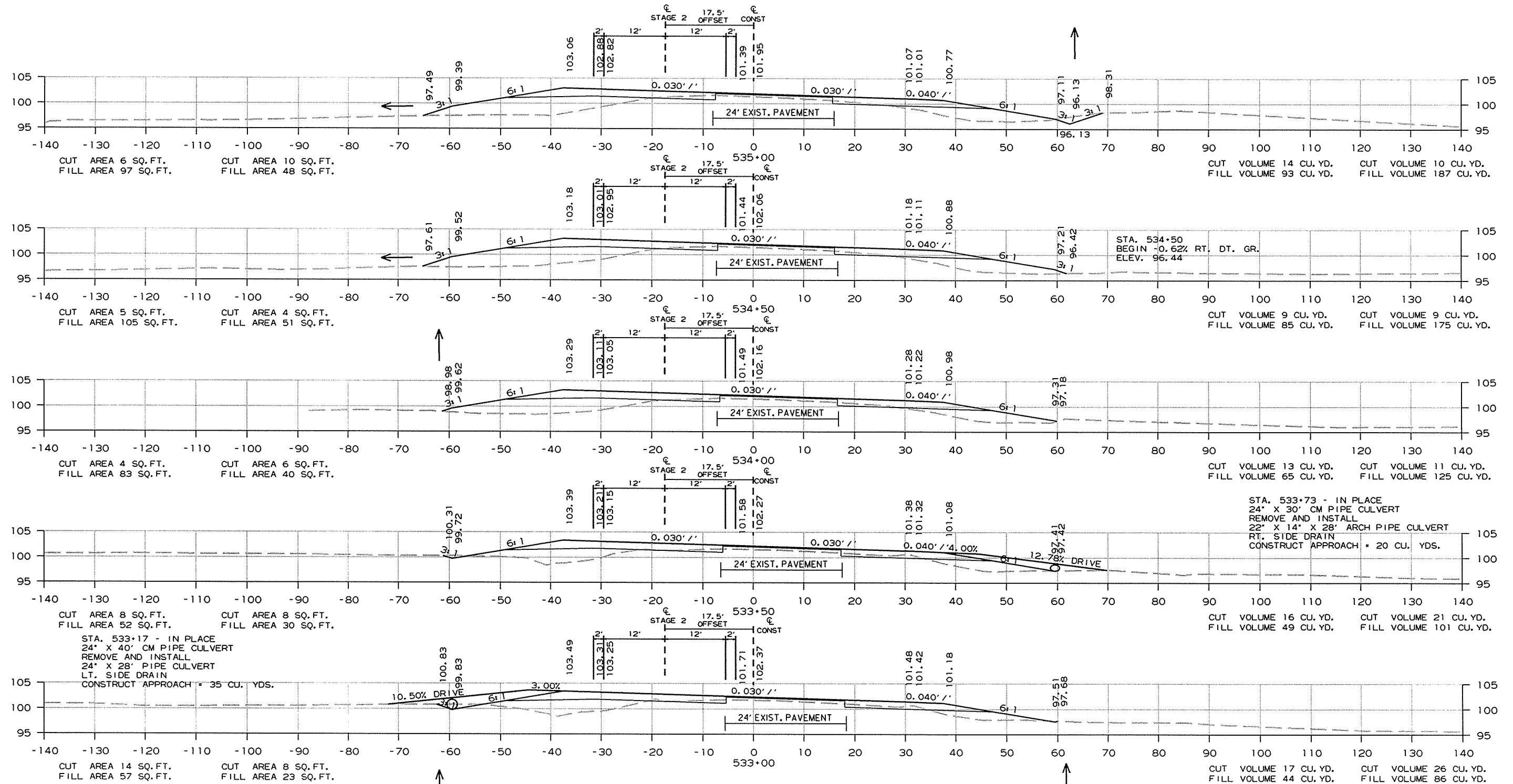
CROSS SECTION STA. 530+50 TO STA. 532+50

STAGE 1      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. 070281							176	185

② CROSS SECTIONS

STAGE 2      STAGE 1



CROSS SECTION STA. 533+00 TO STA. 535+00

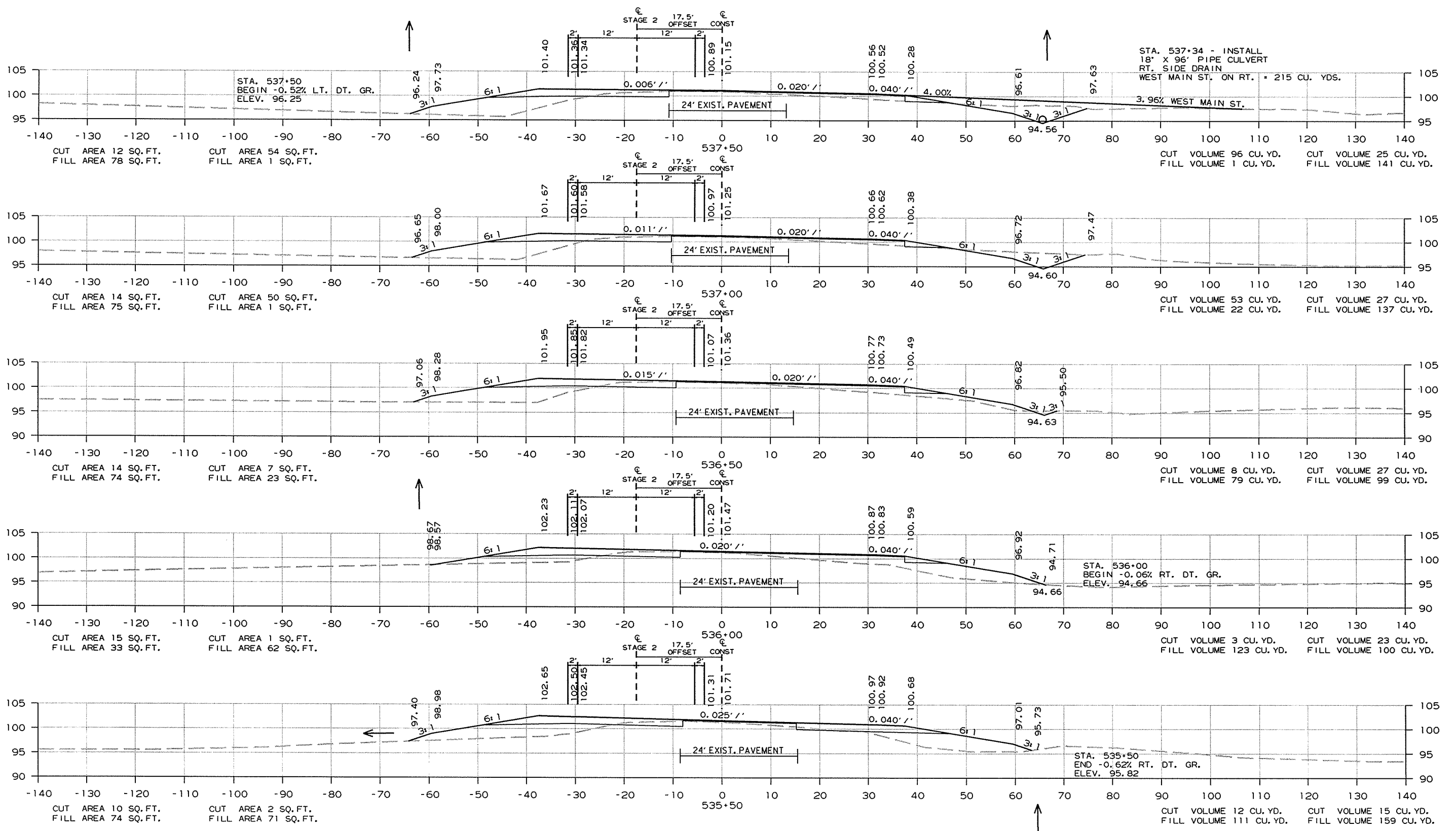


STAGE 1      STAGE 2

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. 070281	177	185

② CROSS SECTIONS

STAGE 2      STAGE 1



CROSS SECTION STA. 535+50 TO STA. 537+50

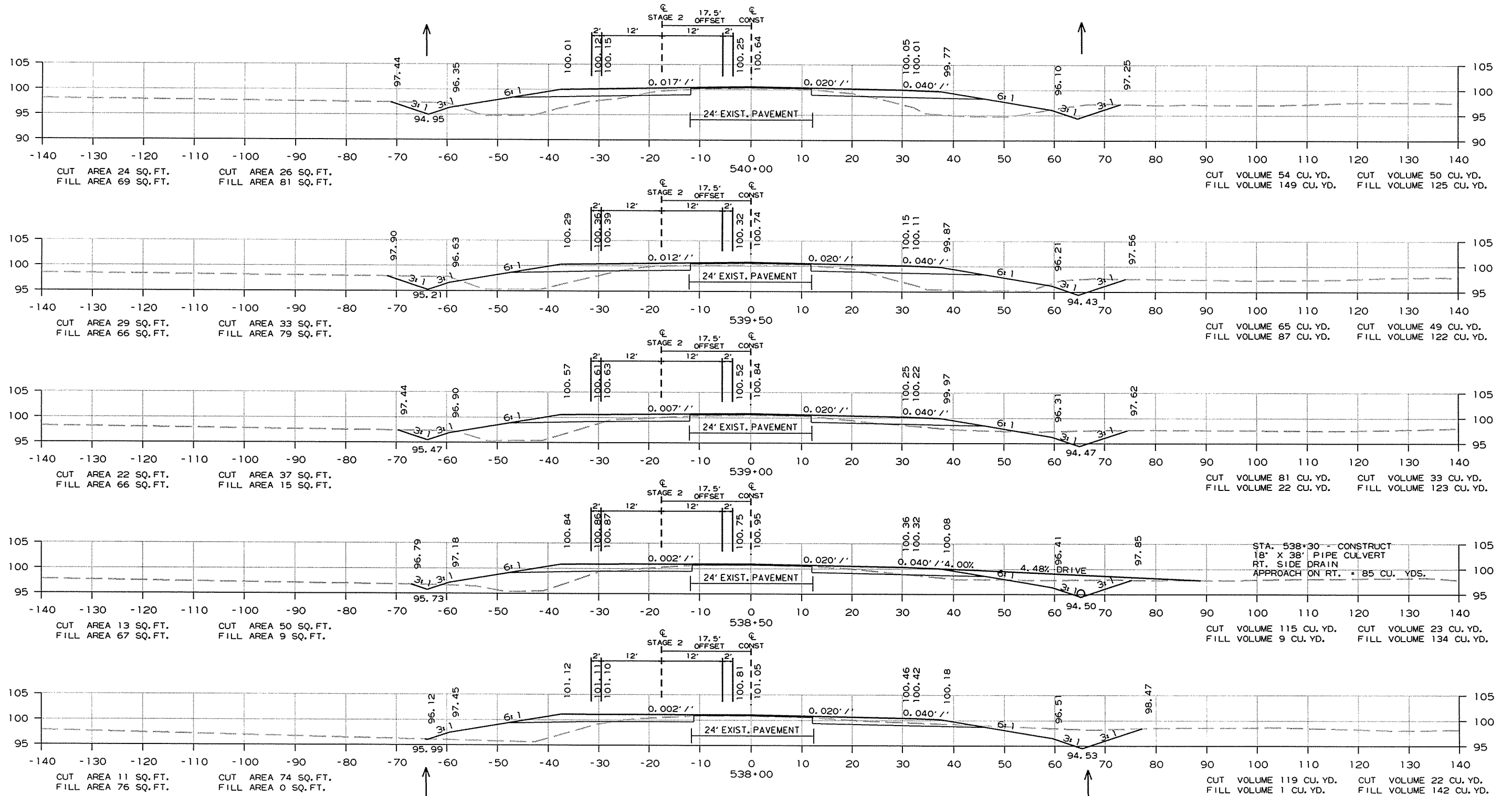
R070281.DGN 5/1/2015

STAGE 1      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. 070281	178	185

② CROSS SECTIONS

STAGE 2      STAGE 1



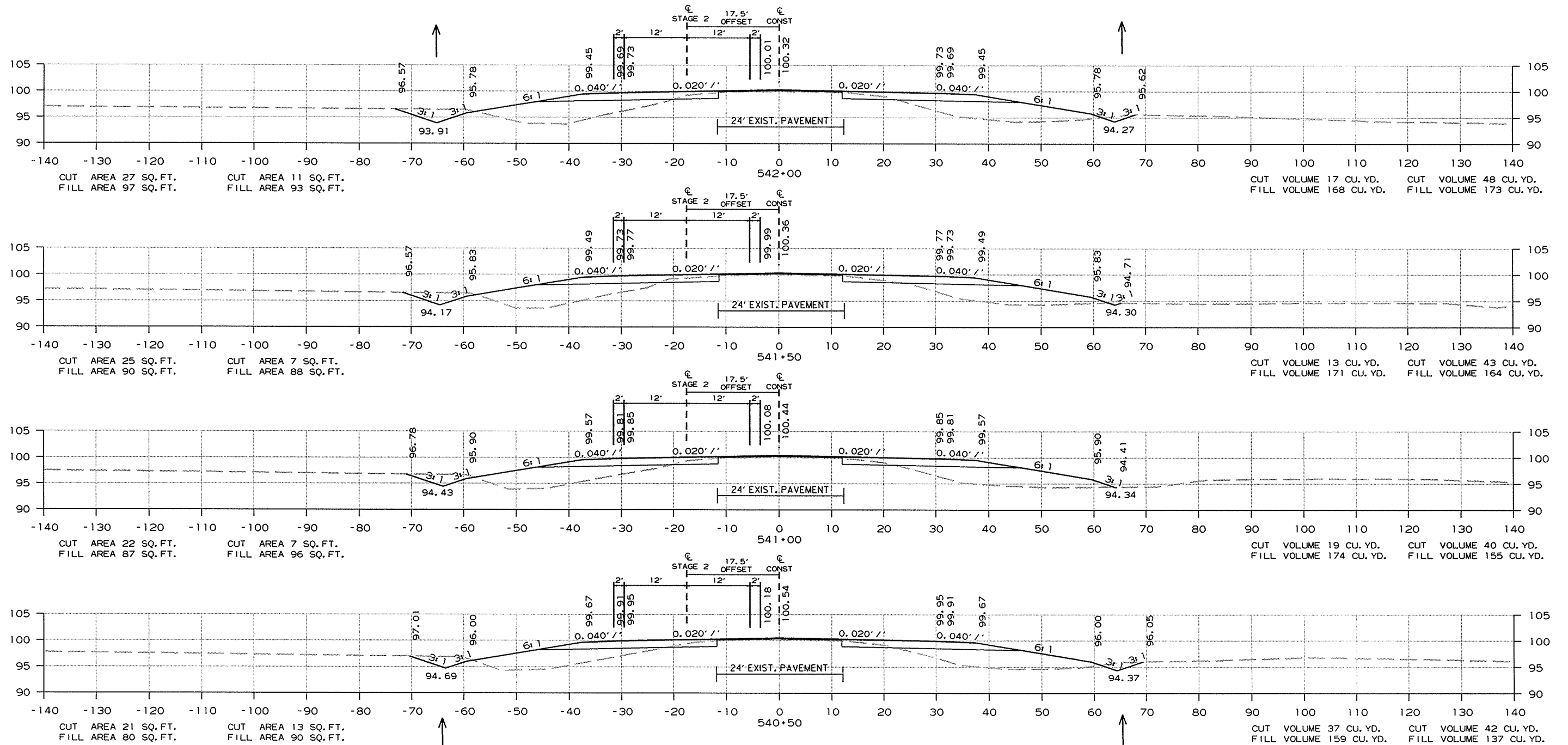
CROSS SECTION STA. 538+00 TO STA. 540+00

STAGE 1      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. 070281							179	185

② CROSS SECTIONS

STAGE 2      STAGE 1



CROSS SECTION STA. 540+50 TO STA. 542+00

STAGE 1

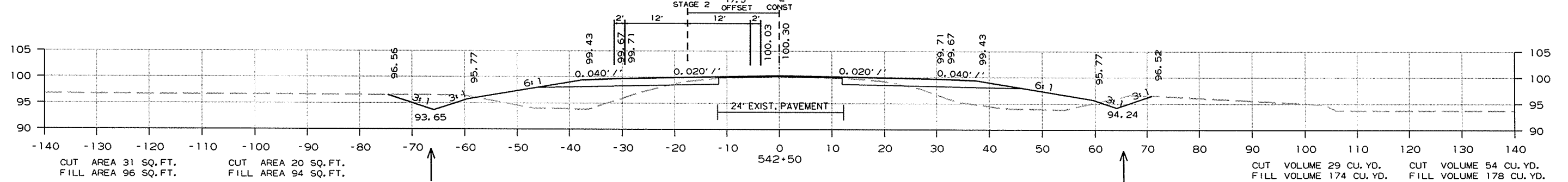
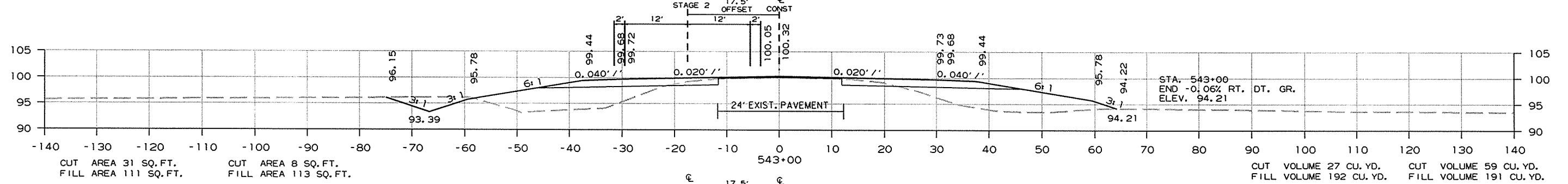
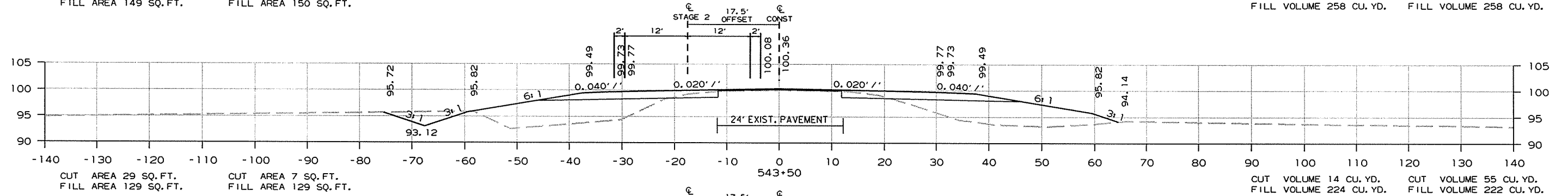
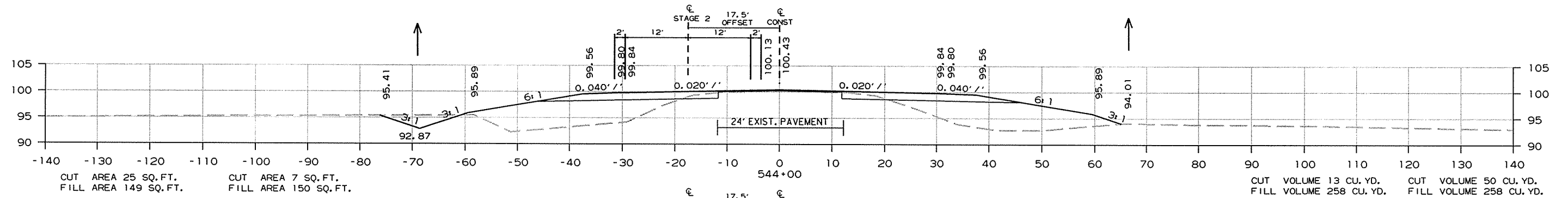
STAGE 2

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. 070281							180	185

2 CROSS SECTIONS

STAGE 2

STAGE 1



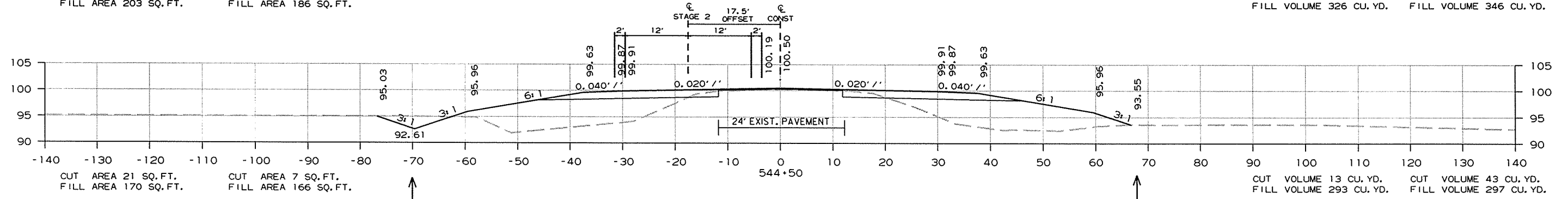
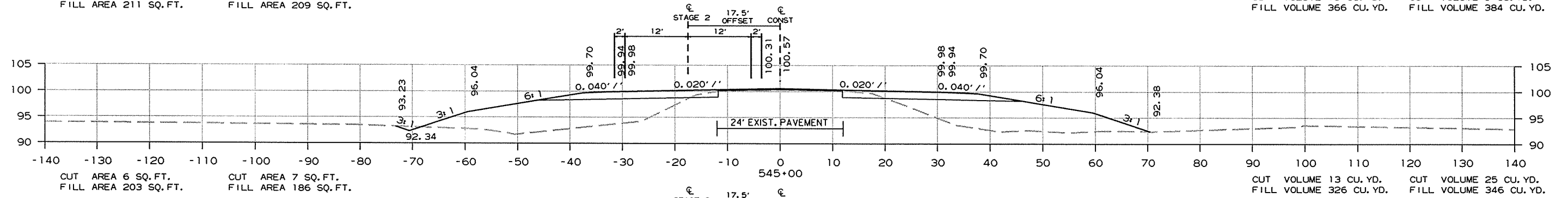
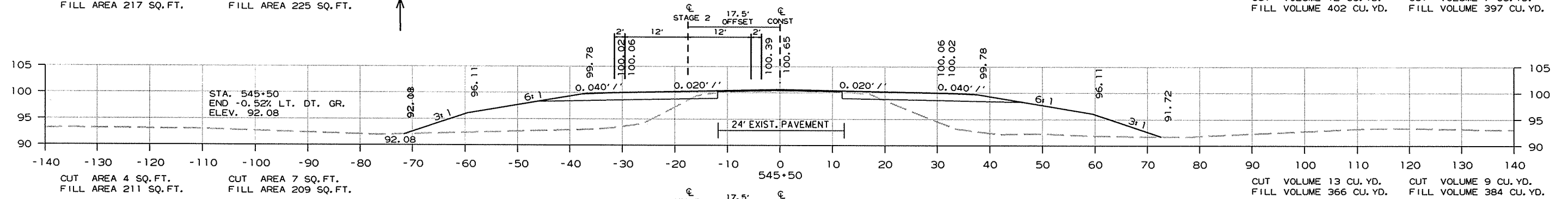
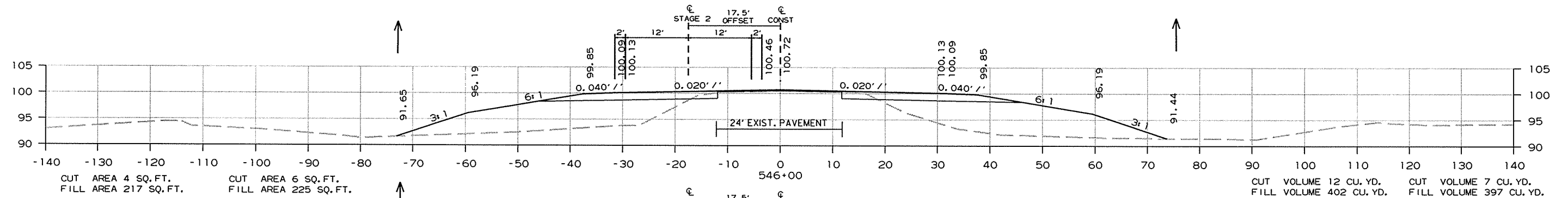
CROSS SECTION STA. 542+50 TO STA. 544+00

STAGE 1      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. 070281							181	185

② CROSS SECTIONS

STAGE 2      STAGE 1



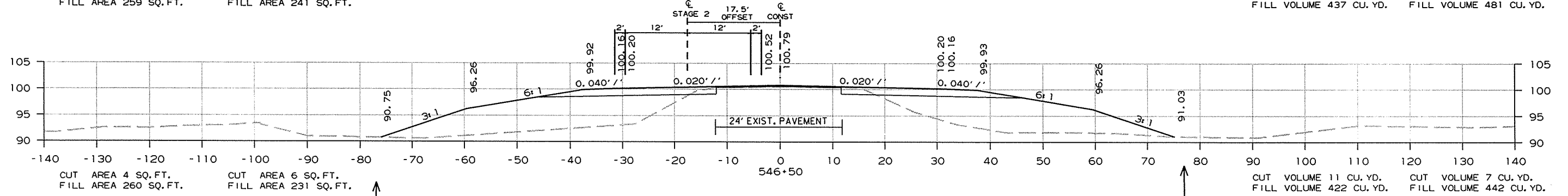
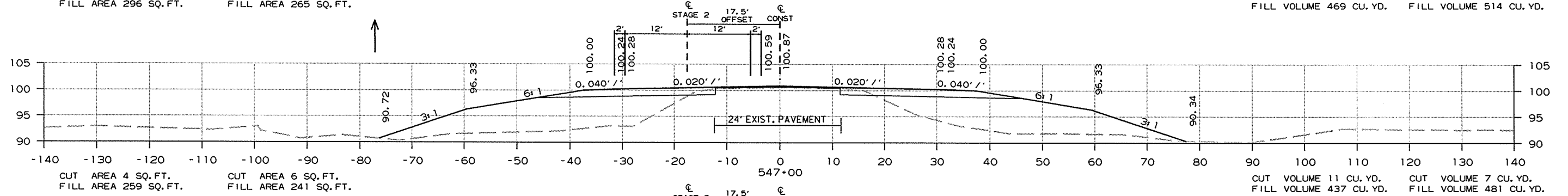
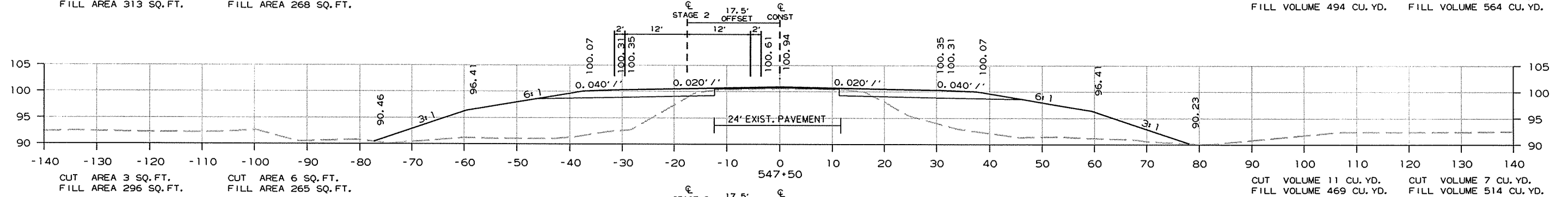
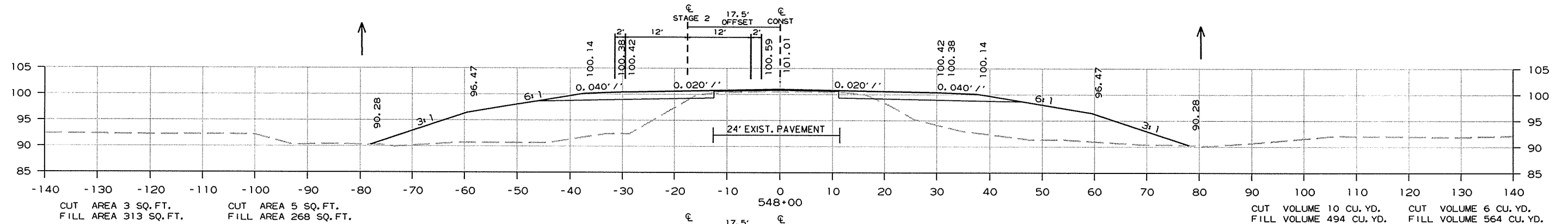
CROSS SECTION STA. 544+50 TO STA. 546+00

STAGE 1      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. 070281							182	185

② CROSS SECTIONS

STAGE 2      STAGE 1



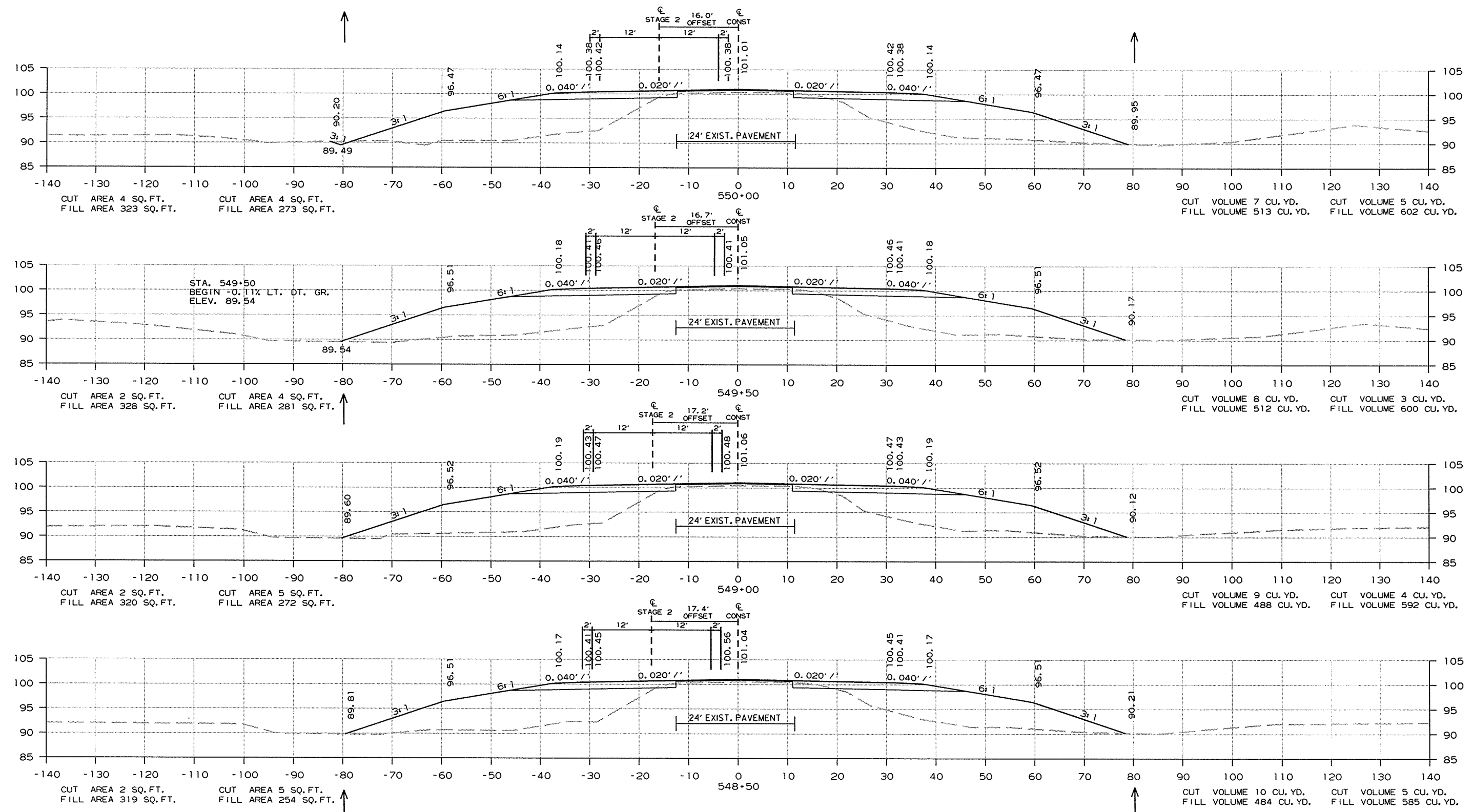
CROSS SECTION STA. 546+50 TO STA. 548+00

STAGE 1      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. 070281							183	185

② CROSS SECTIONS

STAGE 2      STAGE 1



CROSS SECTION STA. 548+50 TO STA. 550+00

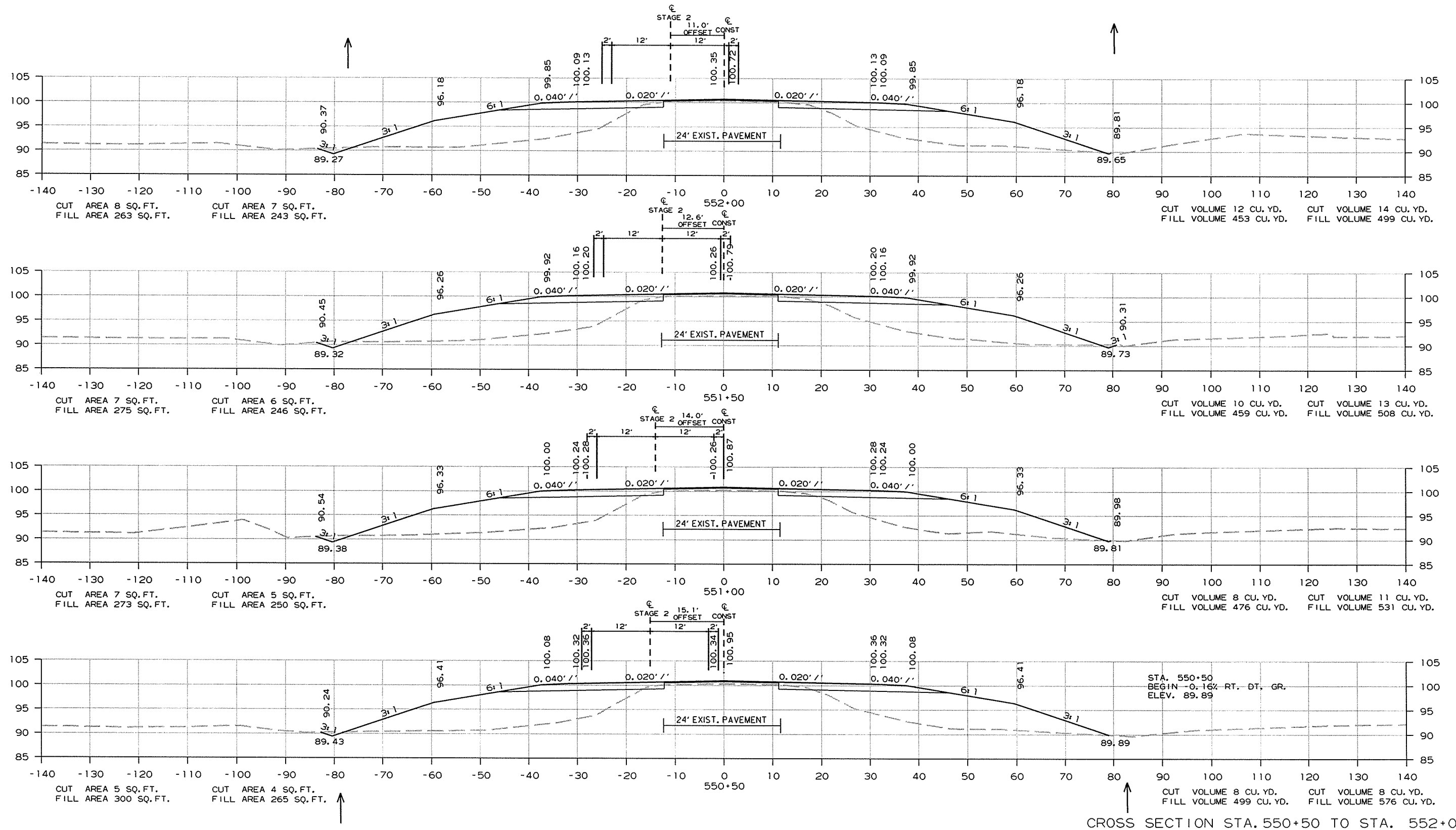
R070281.DGN 5/1/2015

STAGE 1      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.	070281
								184
								185

② CROSS SECTIONS

STAGE 2      STAGE 1



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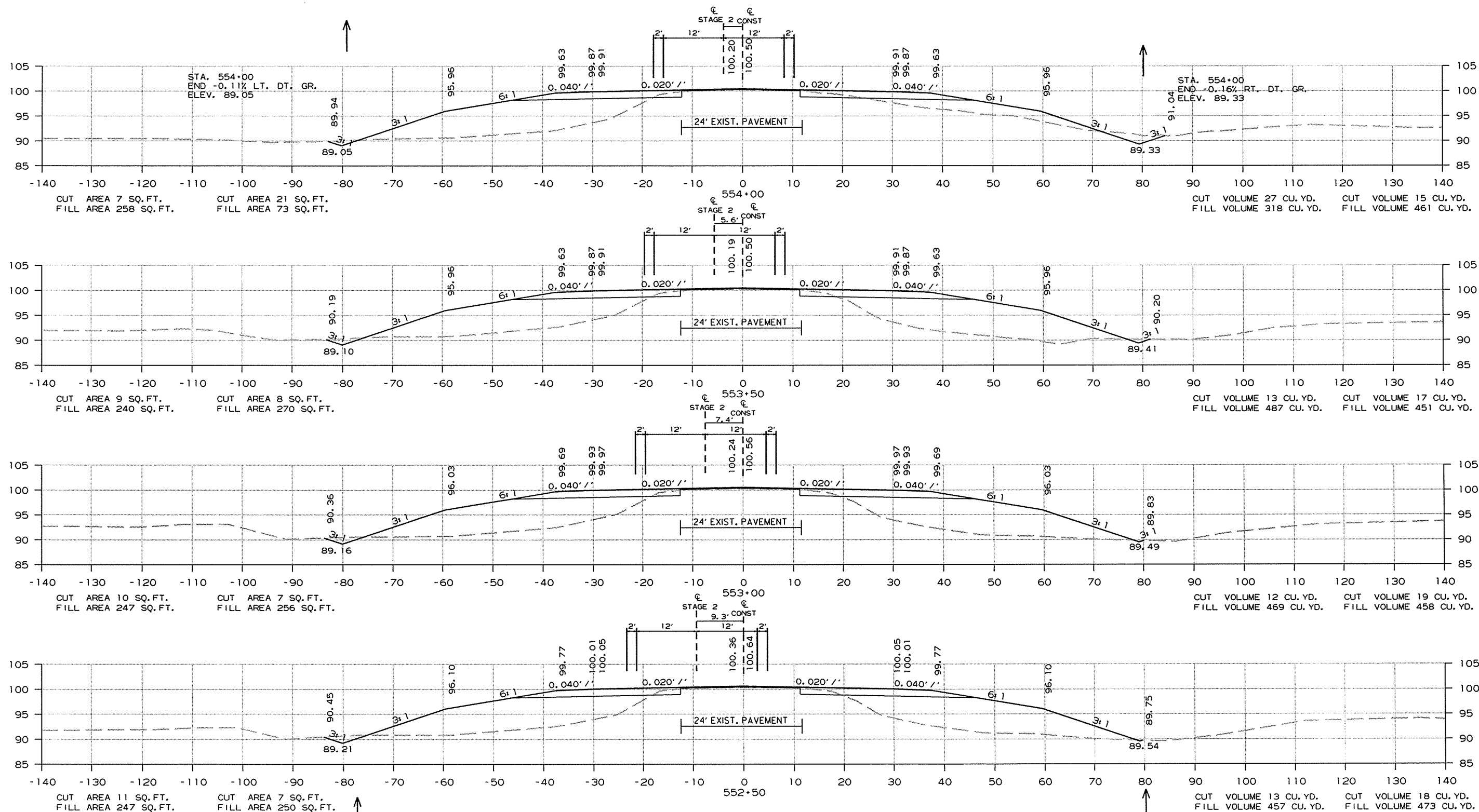
STAGE 1      STAGE 2

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. 070281	185

2 CROSS SECTIONS

STAGE 2      STAGE 1

END JOB 070281 - STA. 554+00  
HWY. 167



CROSS SECTION STA. 552+50 TO STA. 554+00