DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	1	282
				(2) CO. RD. 914-WEST (S)				

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
CONSTRUCTION PLANS FOR STATE HIGHWAY

CO. RD. 914-WEST (S)

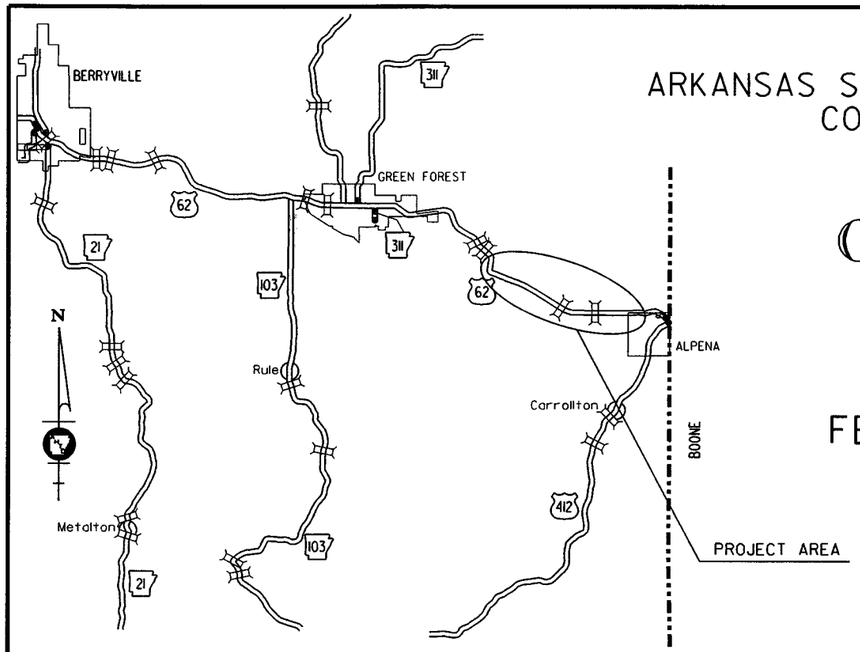
CARROLL COUNTY

ROUTE 62 SECTION 5

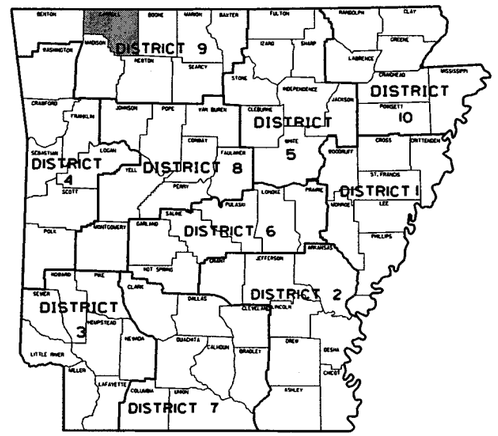
FEDERAL AID PROJ. STPF-0008(34)

JOB 090230

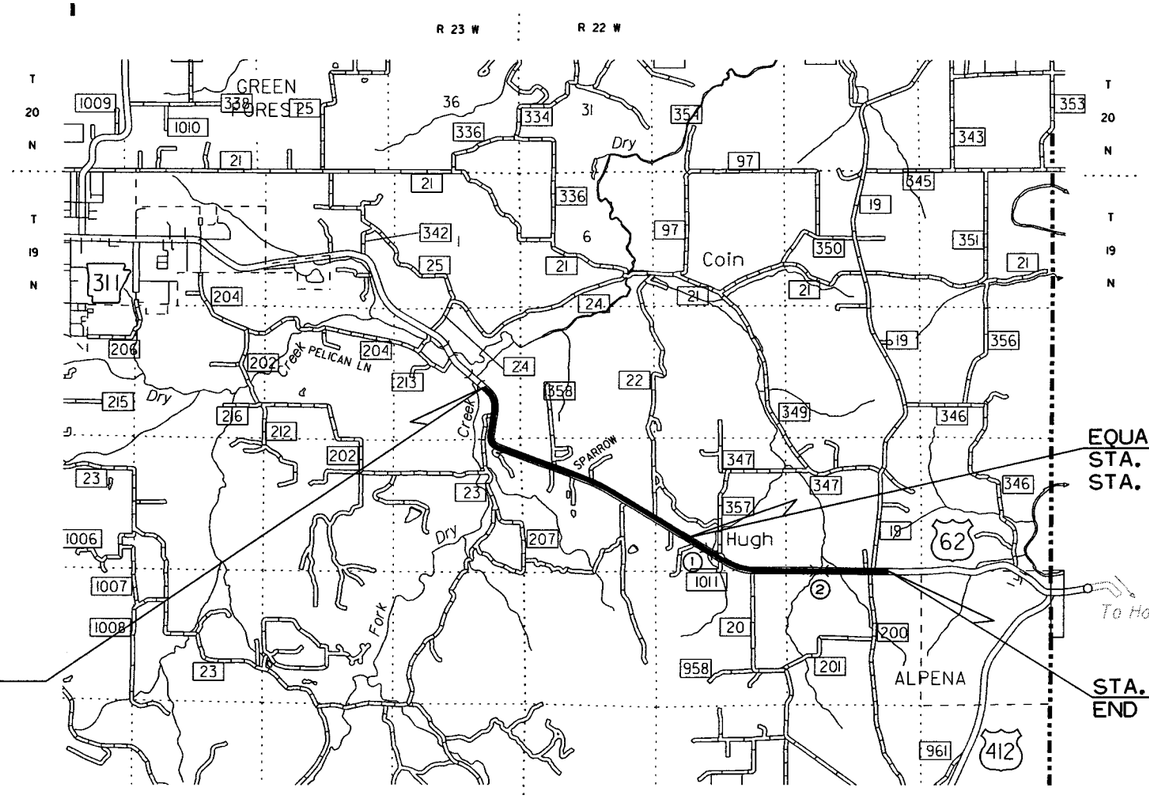
NOT TO SCALE



VICINITY MAP



ARK. HWY. DIST. NO. 9



STRUCTURES OVER 20'-0" SPAN

(1) STA. 475+45 CONSTRUCT
TRI. 10' X 7' X 175' R.C. BOX CULVERT
30° RT. FWD. SKEW
WITH 3:1 WINGS LT. & RT.
Q50= 630 CFS D.A.= 320 ACRES
TOTAL SPAN = 37'-6"

(2) STA. 519+29 CONSTRUCT
TRI. 10' X 7' X 276' R.C. BOX CULVERT
ON A 40° LT. FWD. SKEW
WITH 3:1 WINGS LT. & RT.
Q50= 2040 CFS D.A.= 1408 ACRES
TOTAL SPAN = 42'-5"

STA. 350+00.00
BEGIN JOB 090230
LOG MILE 12.05

EQUATION
STA. 434+96.69 BK. =
STA. 435+00.00 AHD.

STA. 547+54.00
END JOB 090230

DESIGN TRAFFIC DATA

DESIGN YEAR	2036
2016 ADT	5300
2036 ADT	7200
2036 DHV	792
DIRECTIONAL DISTRIBUTION	0.60
TRUCKS	9%
DESIGN SPEED	60 MPH

	BEGIN PROJECT	MID-POINT OF PROJECT	END PROJECT
LATITUDE	N 36°19'06"	N 36°18'11"	N 36°17'48"
LONGITUDE	W 93°22'32"	W 93°21'05"	W 93°19'11"

LENGTH OF PROJECT CALCULATED ALONG C.L.

GROSS LENGTH OF PROJECT			19750.69	FEET OR	3.741	MILES
NET	:	:	ROADWAY	19670.77	:	3.726 MILES
NET	:	:	BRIDGES	79.92	:	0.015 MILES
NET	:	:	PROJECT	19750.69	:	3.741 MILES

P.E. JOB 090219

APPROVED

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7836
M.B. BANES

8-22-16

DEPUTY DIRECTOR
AND CHIEF ENGINEER

2/11/2015

R090230.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.		090230	2	282

(2) INDEX OF SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-23-16

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54 - 76	MAINTENANCE OF TRAFFIC DETAILS		
77 - 83	PERMANENT PAVEMENT MARKING DETAILS		
84 - 92	QUANTITIES		
93 - 94	SUMMARY OF QUANTITIES AND REVISIONS		
95 - 103	SURVEY CONTROL DETAILS		
104 - 118	PLAN AND PROFILE SHEETS		
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120	CURBING DETAILS	CG-1	11-29-07
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123	FLARED END SECTION	FES-2	10-18-96
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NOTE: CROSS SECTIONS NOT NORMALLY INCLUDED IN PLANS SOLD TO PROSPECTIVE BIDDERS, BUT MAY BE HAD UPON REQUEST.

12/17/2013

R090230.DGN

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				6	ARK.			
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(2) GOVERNING SPECIFICATIONS AND GEN. NOTES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16

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 090230
FHWA-1273__ SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273__ SUPPLEMENT - WAGE RATE DETERMINATION
100-3_____ CONTRACTOR'S LICENSE
108-1_____ LIQUIDATED DAMAGES
108-2_____ WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER
303-1_____ AGGREGATE BASE COURSE
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 090230__ BIDDING REQUIREMENTS AND CONDITIONS
JOB 090230__ BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 090230__ BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 090230__ CARGO PREFERENCE ACT REQUIREMENTS
JOB 090230__ CAVE DISCOVERY
JOB 090230__ COMPACTED EMBANKMENT
JOB 090230__ CULVERT CLEAN OUT
JOB 090230__ DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB 090230__ GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 090230__ ISSUANCE OF PROPOSALS
JOB 090230__ MANDATORY ELECTRONIC CONTRACT
JOB 090230__ MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB 090230__ NESTING SITES OF MIGRATORY BIRDS
JOB 090230__ OFF-SITE RESTRAINING CONDITIONS FOR INDIANA AND NORTHERN LONG-EARED BATS
JOB 090230__ PARTNERING REQUIREMENTS
JOB 090230__ PERCENT WITHIN LIMITS/PAVEMENT SMOOTHNESS
JOB 090230__ PLASTIC PIPE
JOB 090230__ PROSECUTION AND PROGRESS - CALENDAR DAY CONTRACT WITH CPM
JOB 090230__ SHORING FOR CULVERTS
JOB 090230__ SITE USE (A+C METHOD) - CALENDAR DAY CONTRACT
JOB 090230__ SOIL STABILIZATION
JOB 090230__ STORM WATER POLLUTION PREVENTION PLAN
JOB 090230__ SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 090230__ TEMPORARY RETAINING WALLS
JOB 090230__ UTILITY ADJUSTMENTS
JOB 090230__ VALUE ENGINEERING
JOB 090230__ WARM MIX ASPHALT

GENERAL NOTES

1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
2. ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
3. ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING U. S. MAILBOXES WITHIN THE PROJECT LIMITS IN SUCH A MANNER THAT THE PUBLIC MAY RECEIVE CONTINUED MAIL SERVICE. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS BID ITEMS.
5. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
6. ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED AS DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO INSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FENCE TO CONTROL LIVESTOCK IN AREAS WHERE PASTURES ARE SEVERED. WIRE FENCE MAY BE CONSTRUCTED INITIALLY, OR IN LIEU THEREOF, THE CONTRACTOR AT HIS OWN EXPENSE, MAY ELECT TO PROVIDE TEMPORARY FENCING SUITABLE TO CONTAIN LIVESTOCK.
8. THIS PROJECT IS COVERED UNDER A SECTION 404 NATIONWIDE 14 PERMIT. REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS, EDITION OF 2014, FOR PERMIT REQUIREMENTS.
9. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
10. 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.

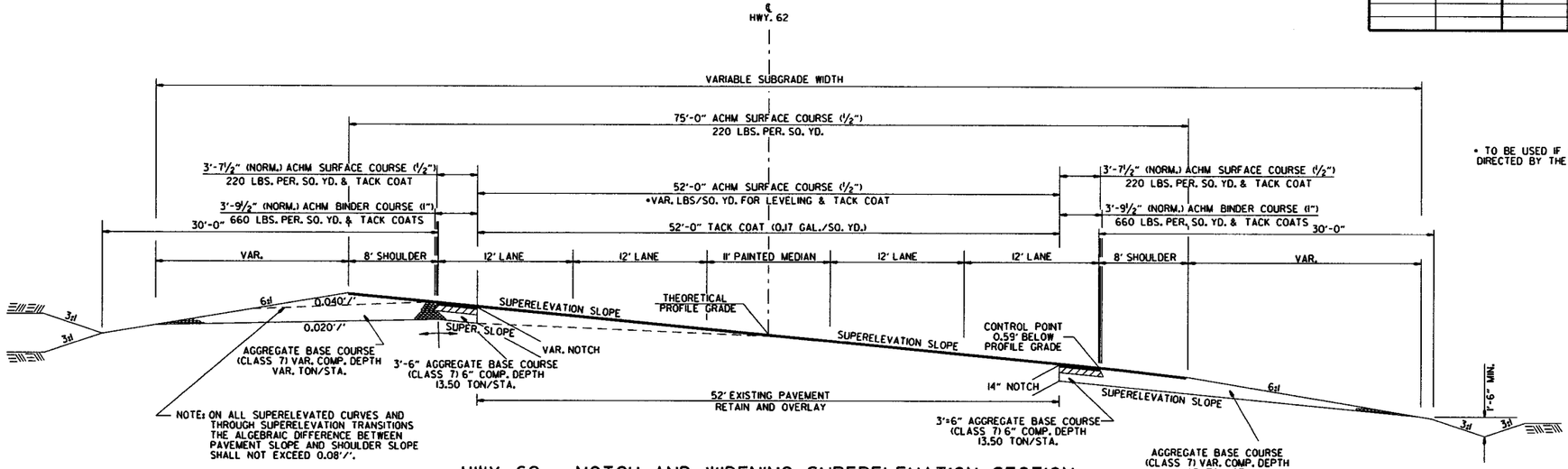
12/17/2013

R090230.DGN

GOVERNING SPECIFICATIONS AND GENERAL NOTES

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				6	ARK.			
				JOB NO.		090230	4	282

(2) TYPICAL SECTIONS OF IMPROVEMENT



HWY. 62 - NOTCH AND WIDENING SUPERELEVATION SECTION

STA. 350+00 TO STA. 355+00

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16

NOTES:

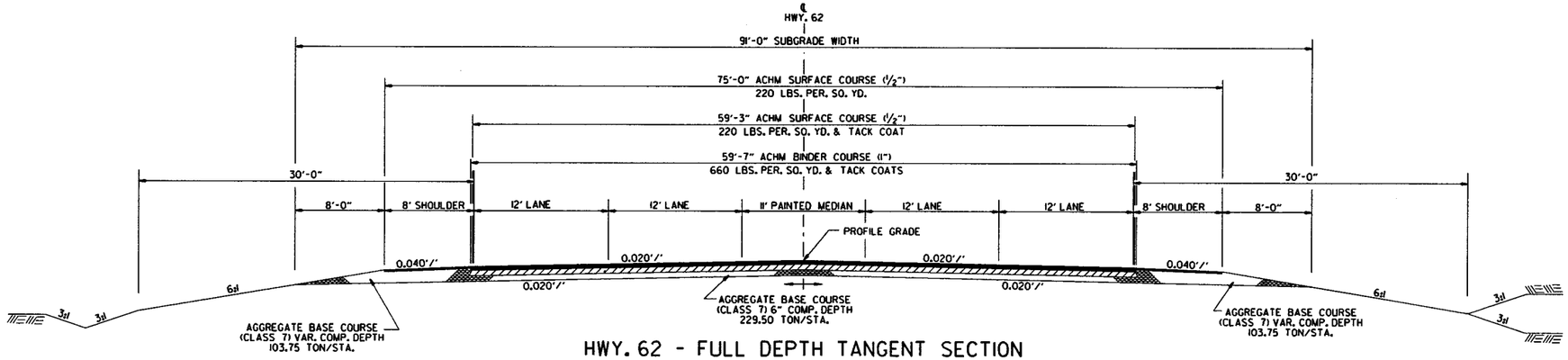
REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

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

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

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

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



HWY. 62 - FULL DEPTH TANGENT SECTION

STA. 355+00 TO STA. 361+00
STA. 364+00 TO STA. 389+45
STA. 391+00 TO STA. 394+00
STA. 403+00 TO STA. 407+00
STA. 415+00 TO STA. 418+00
STA. 419+00 TO STA. 424+00
STA. 425+00 TO STA. 444+00
STA. 448+00 TO STA. 459+00
STA. 462+00 TO STA. 533+00
STA. 535+00 TO STA. 543+00

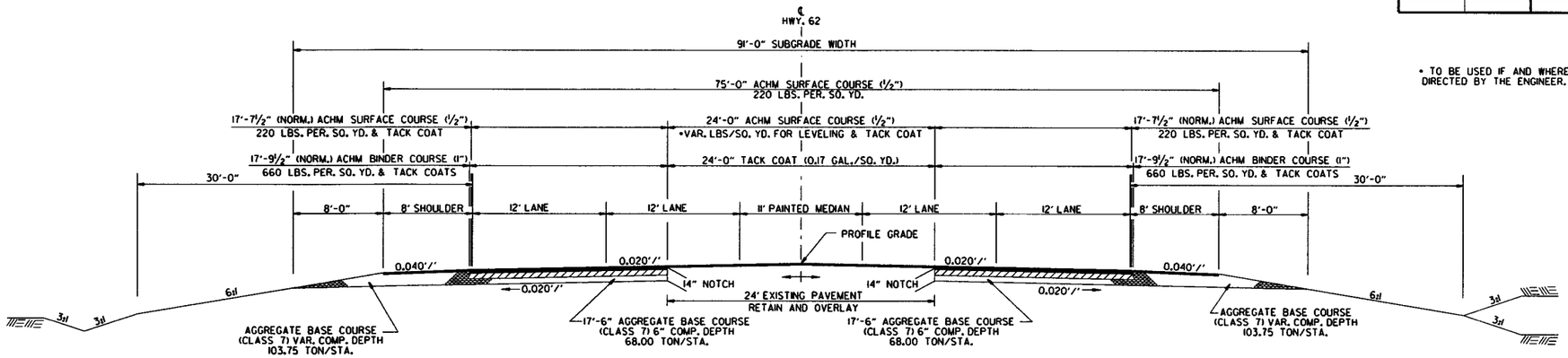
5/15/2015

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TYPICAL SECTIONS OF IMPROVEMENT

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(2) TYPICAL SECTIONS OF IMPROVEMENT



HWY. 62 - NOTCH AND WIDENING TANGENT SECTION

STA. 361+00 TO STA. 364+00
STA. 389+45 TO STA. 391+00
STA. 394+00 TO STA. 403+00
STA. 407+00 TO STA. 415+00
STA. 418+00 TO STA. 419+00
STA. 424+00 TO STA. 425+00
STA. 444+00 TO STA. 448+00
STA. 459+00 TO STA. 462+00
STA. 533+00 TO STA. 535+00
STA. 543+00 TO STA. 547+54

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16

NOTES:

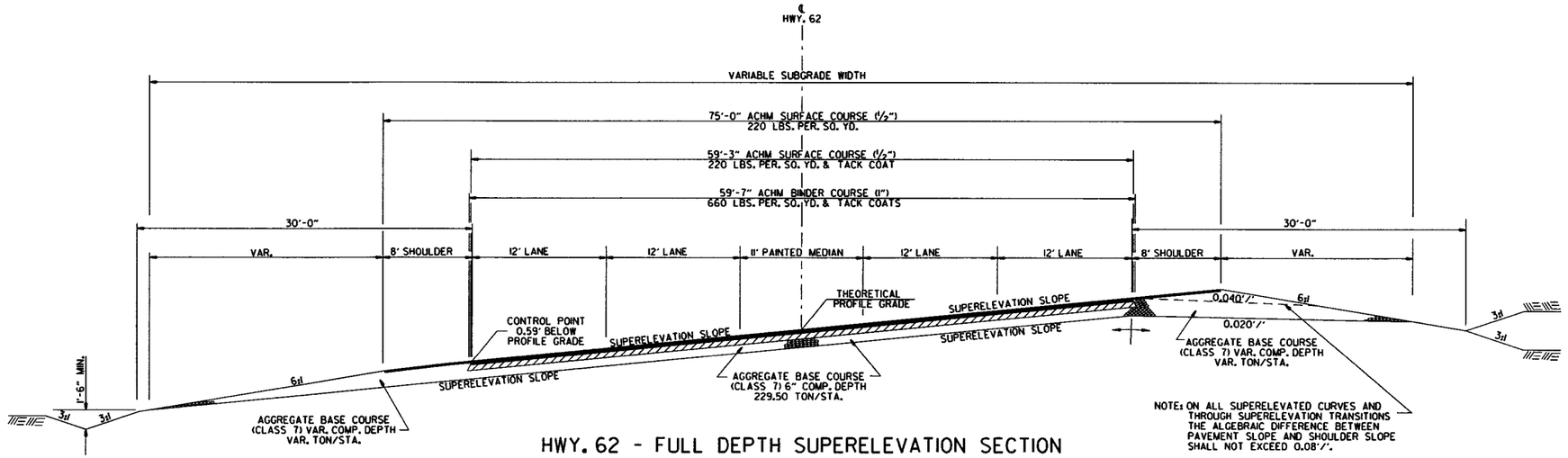
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HWY. 62 - FULL DEPTH SUPERELEVATION SECTION

5/15/2015

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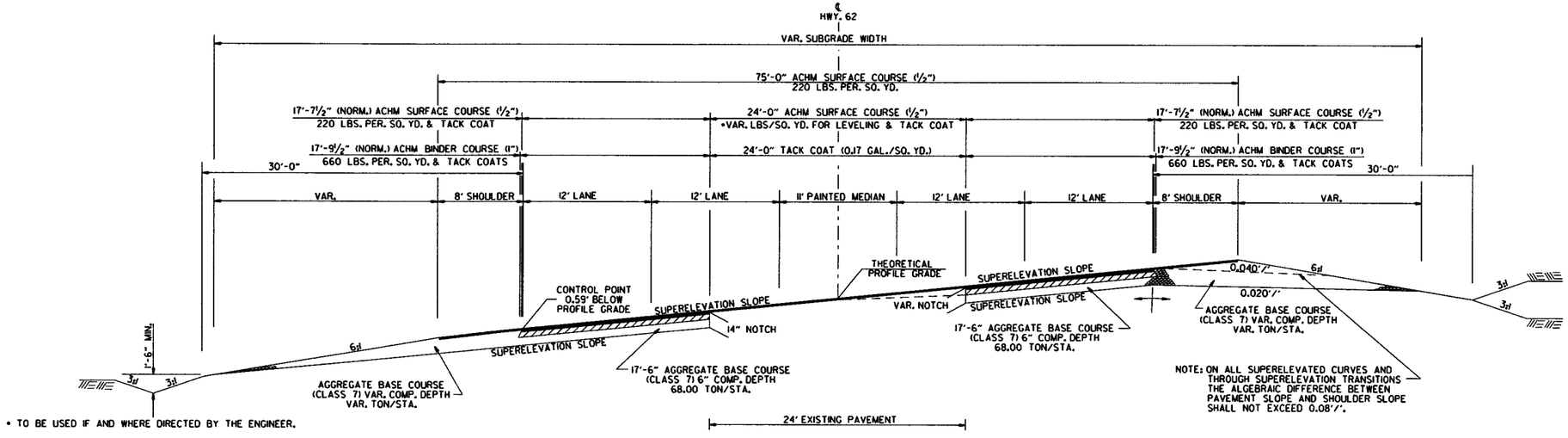
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(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16

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



HWY. 62 - NOTCH AND WIDENING SUPERELEVATION SECTION

NOTES:

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5/15/2015

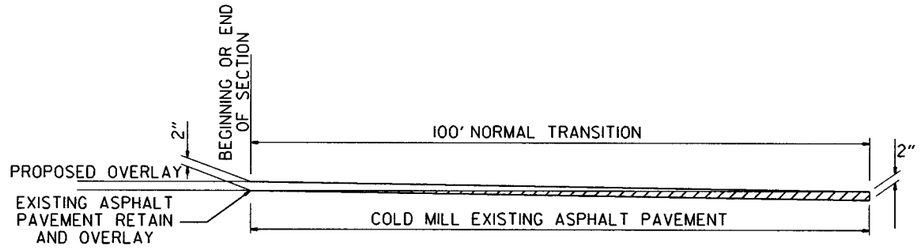
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TYPICAL SECTIONS OF IMPROVEMENT

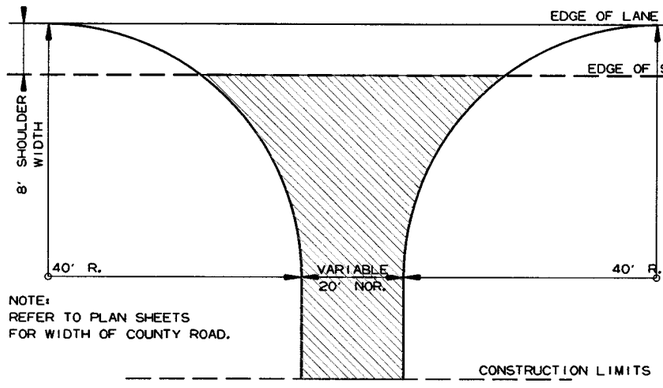
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(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16



DETAIL FOR TRANSITIONS

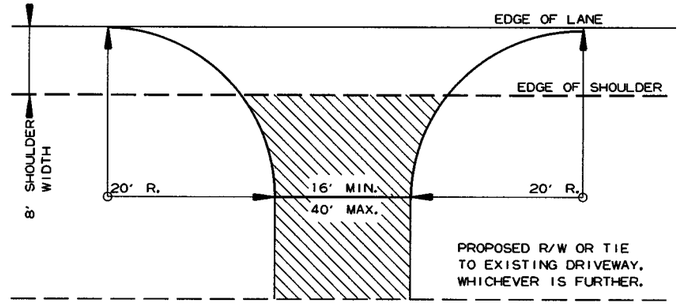


NOTE:
REFER TO PLAN SHEETS FOR WIDTH OF COUNTY ROAD.

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

ACHM SURFACE COURSE (1/2") (220 LBS. PER SQ. YD.) AND AGGREGATE BASE COURSE (CLASS 7) 7" COMP. DEPTH

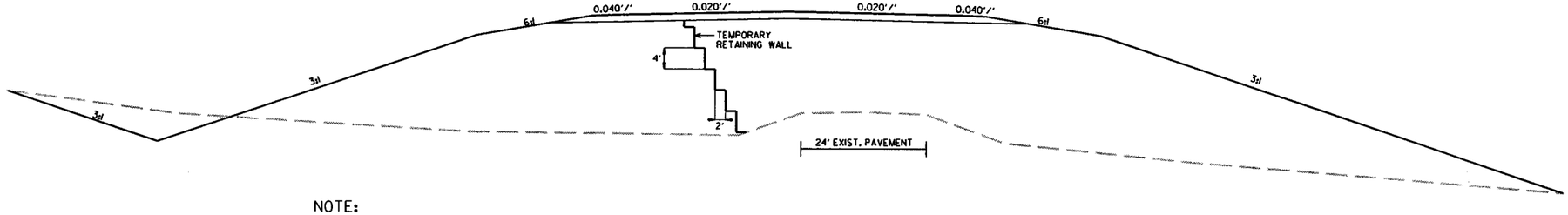
DETAIL FOR COUNTY ROAD TURNOUTS
OPEN SHOULDER SECTION



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

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

DETAIL FOR DRIVEWAY TURNOUTS
OPEN SHOULDER SECTION



NOTE:
REFER TO TEMPORARY RETAINING WALL SPECIAL PROVISION FOR ADDITIONAL INFORMATION

TEMPORARY RETAINING WALL

STA. 474+50 TO STA. 476+50
STA. 510+00 TO STA. 521+50
STA. 526+76 TO STA. 530+50
STA. 536+00 TO STA. 541+00

12/11/2013

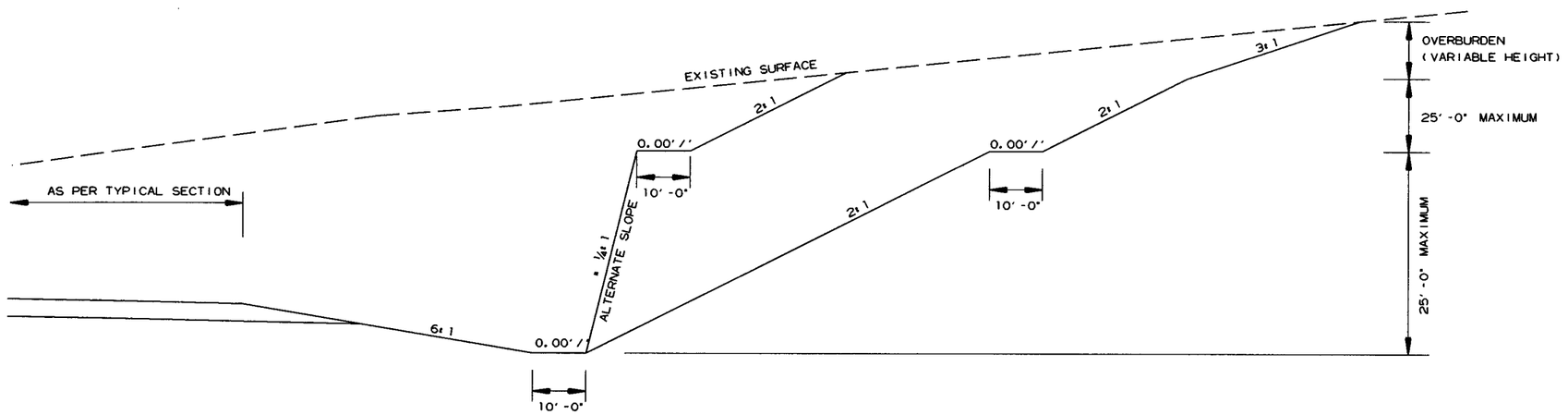
R090230.DGN

SPECIAL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	8	282

(2) SPECIAL DETAILS

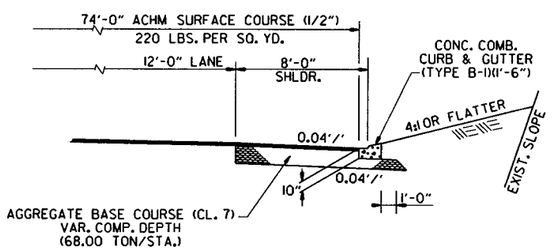
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-22-16



DETAIL FOR BENCHING

STA. 367+00 TO STA. 379+00
STA. 496+00 TO STA. 510+00

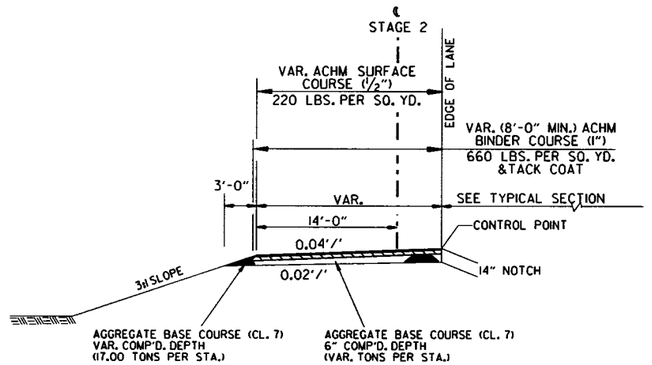
* IN SOLID ROCK (IF AND WHERE DIRECTED BY THE ENGINEER).



DETAIL FOR CONCRETE CURB AND GUTTER

STA. 385+45 TO STA. 389+45 RT.
STA. 434+42 TO STA. 440+28 RT.
STA. 469+00 TO STA. 472+60 LT.

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 CONTRACT ITEMS.



DETAIL FOR TEMPORARY WIDENING

STA. 362+00 TO STA. 372+93
STA. 379+00 TO STA. 414+78
STA. 426+00 TO STA. 435+00
STA. 440+00 TO STA. 460+68
STA. 465+00 TO STA. 484+92
STA. 499+50 TO STA. 543+81

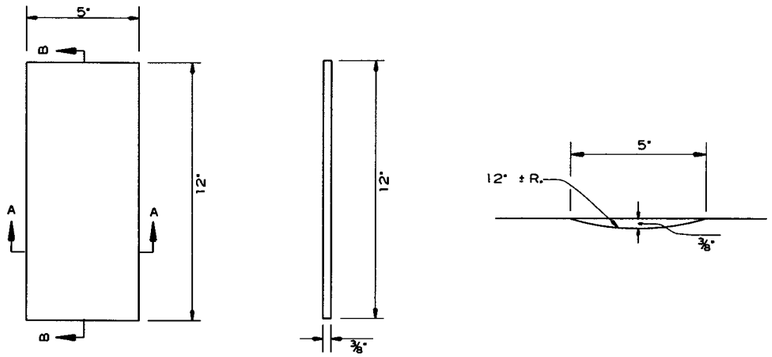
12/11/2013

R090230.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.		090230	9	282

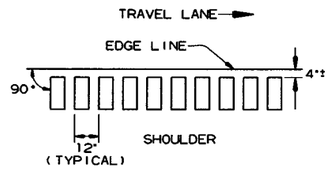
(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16

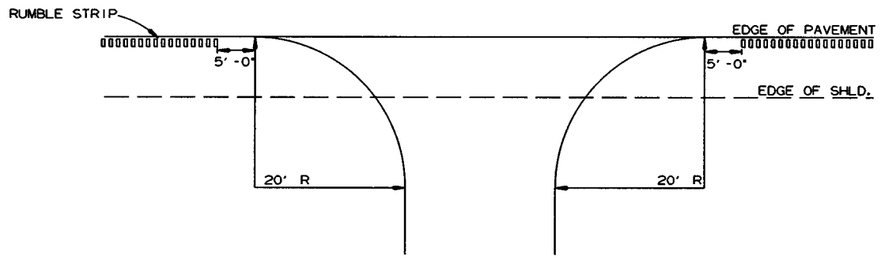


PLAN SECTION B-B SECTION A-A

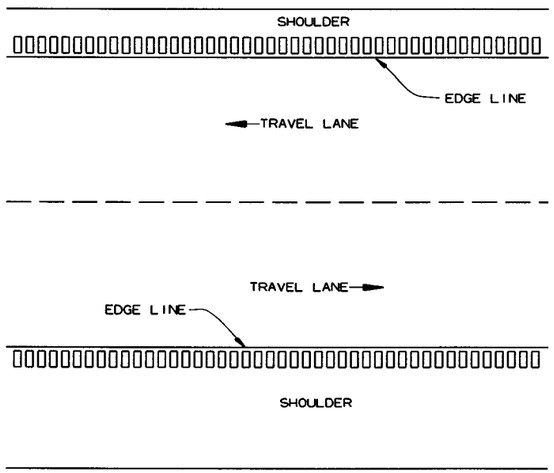
DETAILS OF RUMBLE STRIPS



LOCATION PLAN OF RUMBLE STRIPS
LEFT OR RIGHT SHOULDER



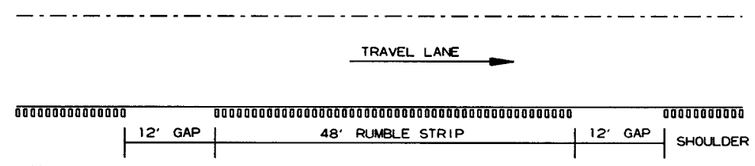
DETAIL FOR RUMBLE STRIP GAP
AT DRIVEWAY TURNOUTS



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

12/11/2013

R090230.DGN

SPECIAL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	10	282

① SPECIAL DETAILS

INLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	LENGTH OF FOOTING HEEL WING A	LENGTH OF FOOTING HEEL WING B	CLASS "S" CONCRETE (Includes apron) INLET	REINFORCING STEEL (Includes apron and laps if required) INLET
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4	CU.YD	LBS.
7'-1"	6'-0"	0'-9"	0'-8"	0	3:1	6'-0"	2'-0"	6'-10"	2'-0"	30	30	3'-2"	3'-4 7/8"	3'-4 7/8"	0'-3 1/4"	0'-3 1/4"	16'-6"	16'-6"	20'-0 3/8"	20'-0 3/8"	8.10	782

| WING | F1 BAR SIZE | F1 MAX. SPACING | F1 NO. REQ'D | F1 LENGTHS VARY | | | F2 BAR SIZE | F2 SPACING | F2 NO. REQ'D | F2 LENGTHS | | | F3 BAR SIZE | F3 SPACING | F3 NO. REQ'D | F3 LENGTHS | | | F4 BAR SIZE | F4 SPACING | F4 NO. REQ'D | F4 LENGTHS VARY | | | F5 BAR SIZE | F5 SPACING | F5 NO. REQ'D | F5 LENGTHS | | | F6 BAR SIZE | F6 SPACING | F6 NO. REQ'D | F6 LENGTHS VARY | | | F7 BAR SIZE | F7 NO. REQ'D | F7 LENGTHS | F8 BAR SIZE | F8 SPACING | F8 NO. REQ'D | F8 LENGTHS VARY | | | F9 BAR SIZE | F9 SPACING | F9 NO. REQ'D | F9 LENGTHS | | | F10 BAR SIZE | F10 NO. REQ'D | F10 LENGTHS | F11 BAR SIZE | F11 NO. REQ'D | F11 LENGTHS | F12 BAR SIZE | F12 SPACING | F12 NO. REQ'D | F12 LENGTHS | | REINF. STEEL QTY. PER WING (LBS) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---

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.		090230	11	282

① SPECIAL DETAILS

STATE OF ARKANSAS
CHARLES R. ELLIS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
6-10-15

TABULAR DATA BY: EOR DATE: 06/01/2015
CHECKED BY: ACP DATE: 6-4-15

OUTLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	LENGTH OF FOOTING HEEL WING A	LENGTH OF FOOTING HEEL WING B
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4
7'-1"	6'-0"	0'-9"	0'-8"	0	3:1	6'-0"	2'-0"	6'-10"	2'-0"	30	30	3'-2"	3'-4 7/8"	3'-4 7/8"	0'-3 1/4"	0'-3 1/4"	16'-6"	16'-6"	20'-0 3/8"	20'-0 3/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
OUTLET	OUTLET
CU.YD	LBS.
8.62	782

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY			F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS			F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS			F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY
WING A	4	12	17	L	Min	3'-0"	-	-	-	L	-		-	-	-	L	-		4	18	4	Min
					Max	7'-11"																5'-6"
				X	Min	0'-9"				X	-					X	-					Max
					Max	1'-0"																10'-8"
				Y	Min	2'-4"				Y	-					Y	-					
					Max	7'-0"																
WING B	4	12	17	L	Min	3'-0"	-	-	-	L	-		-	-	-	L	-		4	18	4	Min
					Max	7'-11"																5'-6"
				X	Min	0'-9"				X	-					X	-					Max
					Max	1'-0"																10'-8"
				Y	Min	2'-4"				Y	-					Y	-					
					Max	7'-0"																

WING	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY			F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY			F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS			F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS			REINF. STEEL QTY. PER WING (LBS)
WING A	4	18	4	16'-2"	4	18	11	L	Min	4'-10"	4	8	20'-10"	4	18	11	L	Min	2'-8"	-	-	-	Min	2'-8"	4	2	16'-9"	4	2	17'-9"	6	12	6	L	3'-4"	391
									Max	9'-3"								Max	2'-11"				Max	-										X	1'-8"	
								X	Min	2'-4"							X	Min																		
									Max	2'-4"								Max																		
								Y	Min	2'-7"							Y	Min																		
									Max	7'-0"								Max																		
WING B	4	18	4	16'-2"	4	18	11	L	Min	4'-10"	4	8	20'-10"	4	18	11	L	Min	2'-8"	-	-	-	Min	2'-8"	4	2	16'-9"	4	2	17'-9"	6	12	6	L	3'-4"	391
									Max	9'-3"								Max	2'-11"				Max	-										X	1'-8"	
								X	Min	2'-4"							X	Min																		
									Max	2'-4"								Max																		
								Y	Min	2'-7"							Y	Min																		
									Max	7'-0"								Max																		

OUTLET SKEW END SECTION

SKEW (DEGREE)	SLOPE	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THICKNESS	BOTTOM SLAB THK.	SIDE WALL THICKNESS	HEADWALL HEIGHT	OVER ALL WIDTH	OVER ALL HEIGHT	TOP SLAB REINFORCING STEEL "a" SIZE	"a" SPACING	"a" LENGTHS VARY	"a" NO. REQ'D	BOTTOM SLAB REINFORCING STEEL "b" SIZE	"b" SPACEING	"b" LENGTHS VARY	"b" NO. REQ'D	SIDE WALL REINFORCING STEEL "f" SIZE	"f" SPACING	"f" NO. REQ'D	"f" LENGTH	TOP SLAB DISTRIBUTION REINFORCING STEEL "d" SIZE	"d" SPACING	"d" NO. REQ'D	"d" LENGTHS VARY	BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY	SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH	HDWL "k1", "k2" & "h" BAR	HDWL SIZE	HDWL NO. REQ'D	HDWL LENGTH
SK	SL	D	S	H	℄	T	B	C	HW	OW	OH			Max				Max									Max				Max			LONG	k1			
																																			k2			
														Min				Min									Min				Min			SHORT	h			Y

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

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

OUTLET SLOPE SECTIONS)

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.) D	CLEAR SPAN (FT.) S	CLEAR HEIGHT (FT.) H	TOP SLAB THICKNESS T	BOTTOM SLAB THK. B	SIDE WALL THICKNESS C	OVER ALL WIDTH OW	OVER ALL HEIGHT OH	SECTION LENGTH (FT.) ℄	TOP SLAB REINFORCING STEEL "a" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH	BOTTOM SLAB REINFORCING STEEL "b" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH	SIDE WALL REINFORCING STEEL "f" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH	TOP SLAB DISTRIBUTION REINF. STEEL "d" LENGTH = SL SIZE	SPACING	NO. REQ'D	BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE	SPACING	NO. REQ'D	SIDE WALL DISTRIBUTION REINF. STEEL "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D
	10	6	6																											

CLASS "S" CONCRETE CU. YDS. PER LIN. FT.	REINFORCING STEEL (GR. 50) LBS. PER LIN. FT.	② ADTL. REINF. PER LONG. LAP LOCATION LBS.	ADDITIONAL CONCRETE FOR HDWL CU. YDS.	TOTAL ADDITIONAL REINF. FOR HDWL LBS.
			0.07	19

HDWL THK. HW	ADDITIONAL REINF. FOR HDWL LBS	"h" bars SIZE	Y	LENGTH	NO. REQ'D
3"	9	4	0'-7"	1'-7"	9

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

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

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

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

Unless otherwise noted, all dimensions are in inches.

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

SINGLE BARREL BOX CULVERT
Sta. 431+36

SPECIAL DETAILS

Ver. LI14 b090230_cl.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.		090230	12	282

① SPECIAL DETAILS

STATE OF ARKANSAS
CHARLES R. ELLIS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-10-15

TABULAR DATA BY: EOR DATE: 06/01/2015
CHECKED BY: ACP DATE: 6-4-15

INLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	LENGTH OF FOOTING HEEL WING A	LENGTH OF FOOTING HEEL WING B	CLASS "S" CONCRETE (Includes apron) INLET	REINFORCING STEEL (Includes apron and laps if required) INLET
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4	CU.YD	LBS.
5'-0"	3'-0"	0'-9"	0'-8"	0	3:1	4'-0"	1'-0"	3'-10"	1'-0"	30	30	2'-2"	2'-2"	2'-2"	0'-0"	0'-0"	9'-6"	9'-6"	11'-4 5/8"	11'-4 5/8"	3.09	322

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY			F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS	F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS	F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY			F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS		REINF. STEEL QTY. PER WING (LBS)
WING A	4	12	10	L	Min	2'-0"				L	-				L	-										L	Min	2'-7"							Min				Min											
					Max	4'-8"																							Max	5'-3"						1'-8"				-											
				X	Min	0'-9"				X	-				X	-	4	18	2	Min	4	18	2	9'-2"	4	18	7	X	Min	1'-4"	4	6	12'-3"	4	18	6	Min	-	-	-	Max	4	2	9'-5"	4	2	10'-7"	6	12	3	L	3'-4"	161
					Max	0'-9"	-	-	-			-	-	-				5'-5"										Max	1'-4"																					
				Y	Min	1'-4"				Y	-				Y	-				Max								Y	Min	1'-4"						1'-8"				-									X	1'-8"	
					Max	4'-0"																							Max	4'-0"																				
WING B	4	12	10	L	Min	2'-0"				L	-				L	-										L	Min	2'-7"							Min				Min											
					Max	4'-8"																							Max	5'-3"						1'-8"				-											
				X	Min	0'-9"				X	-				X	-	4	18	2	Min	4	18	2	9'-2"	4	18	7	X	Min	1'-4"	4	6	12'-3"	4	18	6	Min	-	-	-	Max	4	2	9'-5"	4	2	10'-7"	6	12	3	L	3'-4"	161
					Max	0'-9"	-	-	-			-	-	-				5'-5"										Max	1'-4"																					
				Y	Min	1'-4"				Y	-				Y	-				Max								Y	Min	1'-4"						1'-8"				-									X	1'-8"	
					Max	4'-0"																							Max	4'-0"																				

INLET SKEWED END SECTION

SKEW (DEGREE)	SLOPE	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THICKNESS	BOTTOM SLAB THK.	SIDE WALL THICKNESS	HEADWALL HEIGHT	OVER ALL WIDTH	OVER ALL HEIGHT	TOP SLAB REINFORCING STEEL "a" SIZE	"a" SPACING	"a" LENGTHS VARY	"a" NO. REQ'D	BOTTOM SLAB REINFORCING STEEL "b" SIZE	"b" SPACING	"b" LENGTHS VARY	"b" NO. REQ'D	SIDE WALL REINFORCING STEEL "f" SIZE	"f" SPACING	"f" NO. REQ'D	"f" LENGTH	TOP SLAB DISTRIBUTION REINFORCING STEEL "d" SIZE	"d" SPACING	"d" NO. REQ'D	"d" LENGTHS VARY	BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY	SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH	HDWL "k1", "k2" & "h" BAR	HDWL SIZE	HDWL NO. REQ'D	HDWL LENGTH
SK	SL	D	S	H	LL	T	B	C	HW	OW	OH			Max				Max									Max						LONG	k1			
																																	k2			
														Min				Min									Min						SHORT				
																																	h			Y

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

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

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 2 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'DETAILS OF SINGLE-BARREL R.C. BOX CULVERT',
SHEET 4 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'DETAILS OF WINGWALLS', and
STANDARD DRAWING RCB-2.
For additional information and outlet sections, see Sheet 2 of 2.

INLET SLOPE SECTION(S)

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.) D	CLEAR SPAN (FT.) S	CLEAR HEIGHT (FT.) H	TOP SLAB THICKNESS T	BOTTOM SLAB THK. B	SIDE WALL THICKNESS C	OVER ALL WIDTH OW	OVER ALL HEIGHT OH	SECTION LENGTH (FT.) SL	TOP SLAB REINFORCING STEEL "a" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH	BOTTOM SLAB REINFORCING STEEL "b" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH	SIDE WALL REINFORCING STEEL "f" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH	TOP SLAB DISTRIBUTION REINF. STEEL "d" LENGTH = SL SIZE	SPACING	NO. REQ'D	BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE	SPACING	NO. REQ'D	SIDE WALL DISTRIBUTION REINF. STEEL "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D
	10	4	3																										

HDWL THK.	ADDITIONAL REINF. FOR HDWL	"h" bars SIZE	Y	LENGTH	NO. REQ'D
HW	LBS				
3"	6	4	0'-7"	1'-7"	6

CLASS "S" CONCRETE CU. YDS. PER LIN. FT.	REINFORCING STEEL (GR. 50) LBS. PER LIN. FT.	② ADTL. REINF. PER LONG. LAP LOCATION LBS.	ADDITIONAL CONCRETE FOR HDWL CU. YDS.	TOTAL ADDITIONAL REINF. FOR HDWL LBS.
			0.05	13

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

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

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

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

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

MID-SECTION

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.) D	CLEAR SPAN (FT.) S	CLEAR HEIGHT (FT.) H	TOP SLAB THK. T	BOTTOM SLAB THK. B	SIDE WALL THK C	OVER ALL WIDTH OW	OVER ALL HEIGHT OH	SECTION LENGTH (FT.) SL	TOP SLAB REINFORCING STEEL "a" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH	BOTTOM SLAB REINFORCING STEEL "b" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH	SIDE WALL REINFORCING STEEL "f" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH	TOP SLAB DISTRIBUTION REINF. STEEL "d" LENGTH = SL SIZE	SPACING	NO. REQ'D	BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE	SPACING	NO. REQ'D	SIDE WALL DISTRIBUTION REINF. STEEL "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D
A	10	4	3	8	9	6	5'-0"	4'-5"	141.00	4	10	169	4'-8"	4	11	153	4'-8"	4	9	376	4'-1"	4	12	5	4	12	5	4	12	6

CLASS "S" CONCRETE CU. YDS. PER LIN. FT.	REINFORCING STEEL (Gr. 60) LBS. PER LIN. FT.	③ ADTL. REINF. PER LONG. LAP LOCATION(S) LBS.
0.37	25	19

③ MID-SECTION BAR LAP TABLE

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

SHEET 1 OF 2
DETAILS OF R.C. BOX CULVERT
SINGLE BARREL BOX CULVERT
Sta. 453+75

SPECIAL DETAILS

Ver. LJ14 b090230_c2.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.		090230	13	262

① SPECIAL DETAILS

STATE OF ARKANSAS
CHARLES R. ELLIS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-10-15

TABULAR DATA BY: EOR DATE: 06/01/2015
CHECKED BY: ACP DATE: 6-4-15

OUTLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	LENGTH OF FOOTING HEEL WING A	LENGTH OF FOOTING HEEL WING B	CLASS "S" CONCRETE (Includes apron) OUTLET	REINFORCING STEEL (Includes apron and laps if required) OUTLET
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4	CU.YD	LBS.
5'-0"	3'-0"	0'-9"	0'-8"	0	3:1	4'-0"	1'-0"	3'-10"	1'-0"	30	30	2'-2"	2'-2"	2'-2"	0'-0"	0'-0"	9'-6"	9'-6"	11'-4 5/8"	11'-4 5/8"	3.40	322

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY			F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS		F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS		F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY			F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS		F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS		REINF. STEEL QTY. PER WING (LBS)
WING A	4	12	10	L	Min	2'-0"	-	-	-	L	-	-	-	-	L	-	4	18	2	Min	4	18	2	9'-2"	4	18	7	L	Min	2'-7"	4	6	12'-3"	4	18	6	Min	-	-	-	Min	-	4	2	9'-5"	4	2	10'-7"	6	12	3	L	3'-4"	161
					Max	4'-8"														5'-5"								Max	5'-3"								1'-8"			Max										X	1'-8"	
				X	Min	0'-9"				X	-				X	-				Min								Min	1'-4"																							
					Max	0'-9"																							Max	1'-4"								1'-8"													
				Y	Min	1'-4"				Y	-				Y	-				5'-5"								Min	1'-4"																							
					Max	4'-0"																							Max	4'-0"																							
WING B	4	12	10	L	Min	2'-0"	-	-	-	L	-	-	-	-	L	-	4	18	2	Min	4	18	2	9'-2"	4	18	7	L	Min	2'-7"	4	6	12'-3"	4	18	6	Min	-	-	-	Min	-	4	2	9'-5"	4	2	10'-7"	6	12	3	L	3'-4"	161
					Max	4'-8"														5'-5"								Max	5'-3"								1'-8"			Max										X	1'-8"	
				X	Min	0'-9"				X	-				X	-				Min								Min	1'-4"																							
					Max	0'-9"																							Max	1'-4"								1'-8"													
				Y	Min	1'-4"				Y	-				Y	-				5'-5"								Min	1'-4"																							
					Max	4'-0"																							Max	4'-0"																							

OUTLET SKEWED END SECTION

SKEW (DEGREE)	SLOPE	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THICKNESS	BOTTOM SLAB THK.	SIDE WALL THICKNESS	HEADWALL HEIGHT	OVER ALL WIDTH	OVER ALL HEIGHT	TOP SLAB REINFORCING STEEL "a" SIZE	"a" SPACING	"a" LENGTHS VARY	"a" NO. REQ'D	BOTTOM SLAB REINFORCING STEEL "b" SIZE	"b" SPACING	"b" LENGTHS VARY	"b" NO. REQ'D	SIDE WALL REINFORCING STEEL "f" SIZE	"f" SPACING	"f" NO. REQ'D	"f" LENGTH	TOP SLAB DISTRIBUTION REINFORCING STEEL "d" SIZE	"d" SPACING	"d" NO. REQ'D	"d" LENGTHS VARY	BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY	SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH	HDWL "k1", "k2" & "h" BAR	"k1", "k2" & "h" SIZE	"k1", "k2" & "h" NO. REQ'D	"k1", "k2" & "h" LENGTH
SK	SL	D	S	H	LL	T	B	C	HW	OW	OH			Max				Max									Max				Max		LONG	k1			
																																	k2			
														Min				Min									Min				Min		SHORT	h			Y

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

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

OUTLET SLOPE SECTION(S)

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	TOP SLAB THICKNESS	BOTTOM SLAB THK.	SIDE WALL THICKNESS	OVER ALL WIDTH	OVER ALL HEIGHT	SECTION LENGTH (FT.)	TOP SLAB REINFORCING STEEL "a" LENGTH = OW - 4" SIZE	"a" SPACING	"a" NO. REQ'D	"a" LENGTH	BOTTOM SLAB REINFORCING STEEL "b" LENGTH = OW - 4" SIZE	"b" SPACING	"b" NO. REQ'D	"b" LENGTH	SIDE WALL REINFORCING STEEL "f" LENGTH = OH - 4" SIZE	"f" SPACING	"f" NO. REQ'D	"f" LENGTH	TOP SLAB DISTRIBUTION REINF. STEEL "d" LENGTH = SL SIZE	"d" SPACING	"d" NO. REQ'D	BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE	"e" SPACING	"e" NO. REQ'D	SIDE WALL DISTRIBUTION REINF. STEEL "d1" LENGTH = SL SIZE	"d1" SPACING	"d1" NO. REQ'D
	D	S	H	T	B	C	OW	OH	SL																					
	10	4	3																										

CLASS "S" CONCRETE CU. YDS. PER LIN. FT.	REINFORCING STEEL (GR. 50) LBS. PER LIN. FT.	② ADTL. REINF. PER LONG. LAP LOCATION LBS.	ADDITIONAL CONCRETE FOR HDWL CU. YDS.	TOTAL ADDITIONAL REINF. FOR HDWL LBS.
			0.05	13

HDWL THK.	ADDITIONAL REINF. FOR HDWL	"h" bars			
HW	LBS	SIZE	Y	LENGTH	NO. REQ'D
3"	6	4	0'-7"	1'-7"	6

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

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

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

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

Unless otherwise noted, all dimensions are in inches.

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

SINGLE BARREL BOX CULVERT
Sta. 453+75

SPECIAL DETAILS

Ver. LJM b090230_c2.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.		090230	14	282

① SPECIAL DETAILS

INLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	LENGTH OF FOOTING HEEL WING A	LENGTH OF FOOTING HEEL WING B
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4
32'-6"	7'-0"	0'-9"	0'-8"	30	3:1	36'-2 1/8"	2'-0"	7'-10"	2'-4"	0	60	3'-2"	3'-5 3/4"	4'-2 1/4"	0'-9 3/4"	1'-3 5/8"	16'-6"	33'-0"	19'-11 3/8"	36'-5 3/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
INLET	INLET
CU.YD	LBS.
14.83	1342

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY	F1	F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS	F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS	F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY	F6	F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS	REINF. STEEL QTY. PER WING (LBS)
WING A	4	12	17	L	Min	3'-4"	4	12	3	L	3'-5"				L	-		4	18	6	Min	4	18	4	16'-2"	L	4	18	11	Min	5'-3"	4	8	20'-9"	4	18	11	Min	-	-	-	Min	4	2	16'-11"	4	2	17'-4"	6	12	7	L	3'-4"	446
					Max	9'-0"															3'-4"									Max	10'-3"							2'-8"												X	1'-8"	
				X	Min	0'-9"			X	1'-0"	-	-	-	X	-						Max					X				Min	2'-4"							Max													
					Max	1'-1"															12'-4"									Max	2'-4"							3'-0"													
				Y	Min	2'-8"			Y	2'-6"				Y	-						Min					Y				Min	3'-0"							Min	-	-	-										
					Max	8'-0"															Max									Max	8'-0"							Max													
WING B	4	12	33	L	Min	3'-4"	4	12	6	L	4'-0"				L	-		4	18	6	Min	4	18	4	32'-8"	L	4	8	37'-3"	4	18	23	Min	4	18	2	Min	4	2	33'-0"	4	2	36'-7"	6	12	7	L	3'-4"	896
					Max	9'-8"															6'-10"									Max	10'-3"							2'-8"												X	1'-8"	
				X	Min	0'-9"			X	1'-7"	-	-	-	X	-						Max					X				Min	2'-4"							Max	52'-2"												
					Max	1'-9"															24'-10"									Max	2'-4"							3'-8"													
				Y	Min	2'-8"			Y	2'-6"				Y	-						Min					Y				Min	2'-10"							Min	52'-2"												
					Max	8'-0"															Max									Max	8'-0"							Max													

MID-SECTION BAR LAP TABLE

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

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

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

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
4-7-16
CHARLES R. ELLIS

TABULAR DATA BY: EOR DATE: 03/29/2016
CHECKED BY: AMS DATE: 4/4/16

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

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

INLET SKEWED END SECTION

SKEW (DEGREE) SK	SLOPE SL	DESIGN FILL DEPTH (FT.) D	CLEAR SPAN (FT.) S	CLEAR HEIGHT (FT.) H	SECTION LENGTH LL	TOP SLAB THK. T	HDWL DEPTH HD	BOTTOM SLAB THK. B	SIDE WALL THK. C	INTERIOR WALL THK. W	OVER ALL WIDTH OW	OVER ALL HEIGHT OH
30	3:1	10	10	7	11'-5"	9	3	10.5	7	8	32'-6"	8'-7 1/2"

TOP SLAB REINFORCING STEEL "a" SIZE	"a" SPACING	"a" LENGTHS VARY	"a" LENGTH	"a" NO. REQ'D	"c" SIZE	"c" SPACING	"c" LENGTHS VARY	"c" LENGTH	"c" NO. REQ'D
5	6	Max	32'-2"	34	7	7	Max	32'-2"	29
		Min	3'-1"				Min	3'-1"	
			32'-2"	4				32'-2"	4

BOTTOM SLAB REINFORCING STEEL "d" SIZE	"d" SPACING	"d" LENGTHS VARY	"d" LENGTH	"d" NO. REQ'D	"f" SIZE	"f" SPACING	"f" LENGTHS VARY	"f" LENGTH	"f" NO. REQ'D
5	4.5	Max	32'-2"	45	5	7	Max	32'-2"	29
		Min	3'-1"				Min	3'-1"	
			32'-2"	6				32'-2"	4

SIDE WALL REINFORCING STEEL "f0" SIZE	"f0" SPACING	"f0" NO. REQ'D	"f0" LENGTH
6	7.5	38	8'-4"

INTERIOR WALL REINFORCING STEEL "f1" SIZE	"f1" SPACING	"f1" NO. REQ'D	"f1" LENGTH
4	12	50	8'-4"

TOP SLAB DISTRIBUTION REINFORCING STEEL "g" SIZE	"g" SPACING	"g" NO. REQ'D	"g" LENGTHS VARY	"g" LENGTH
4	12	65	Max	20'-7"
			Min	1'-10"

BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY	"e" LENGTH
4	10	65	Max	20'-0"
			Min	1'-10"

SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH
4	12	7	LONG 20'-4"
		7	SHORT 2'-1"

INTERIOR WALL DISTRIBUTION REINFORCING STEEL "d2" SIZE	"d2" SPACING	"d2" NO. REQ'D	"d2" LENGTH
4	12	14	LONG 14'-4"
		14	SHORT 8'-2"

CLASS "S" CONCRETE (Includes HDWL) CU. YDS.	① REINFORCING STEEL (GR 60) (Includes HDWL) LBS.
30.39	6147

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

"k1" HDWL BARS SIZE	"k1" LENGTH	"k1" NO. REQ'D	"k2" HDWL BARS SIZE	"k2" LENGTH	"k2" NO. REQ'D	"h" HDWL BARS SIZE	"h" LENGTH	"h" Y	"h" NO. REQ'D
4	37'-2"	6	4	37'-2"	6	4	1'-8"	0'-8"	39

INLET SLOPE SECTION(S)

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.) D	CLEAR SPAN (FT.) S	CLEAR HEIGHT (FT.) H	TOP SLAB THK. T	BOTTOM SLAB THK. B	SIDE WALL THK. C	INTERIOR WALL THK. W	OVER ALL WIDTH OW	OVER ALL HEIGHT OH	SECTION LENGTH (FT.) SL

TOP SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS "a" SIZE	"a" L	Bent "b" SIZE	Bent "b" L	"c" SIZE	"c" L	"c" SPACING	"c" NO. REQ'D

BOTTOM SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS "d" SIZE	"d" L	Bent "b1" SIZE	Bent "b1" L	"f" SIZE	"f" L	"f" SPACING	"f" NO. REQ'D

SIDE WALL REINFORCING STEEL "f0" LENGTH = OH - 4" SIZE	"f0" SPACING	"f0" NO. REQ'D	"f0" LENGTH

INTERIOR WALL REINFORCING STEEL "f1" LENGTH = OH - 4" SIZE	"f1" SPACING	"f1" NO. REQ'D	"f1" LENGTH

TOP SLAB DISTRIBUTION REINFORCING STEEL "g" LENGTH = SL SIZE	"g" SPACING	"g" NO. REQ'D

BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" LENGTH = SL SIZE	"e" SPACING	"e" NO. REQ'D

SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" LENGTH = SL SIZE	"d1" SPACING	"d1" NO. REQ'D

INTERIOR WALL DISTRIBUTION REINFORCING STEEL "d2" LENGTH = SL SIZE	"d2" SPACING	"d2" NO. REQ'D

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

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

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

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

MID-SECTION

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.) D	CLEAR SPAN (FT.) S	CLEAR HEIGHT (FT.) H	TOP SLAB THK. T	BOTTOM SLAB THK. B	SIDE WALL THK. C	INTERIOR WALL THK. W	OVER ALL WIDTH OW	OVER ALL HEIGHT OH	SECTION LENGTH (FT.) SL
A	10	10	7	10	11	9.5	8	32'-11"	8'-9"	152.17

TOP SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS "a" SIZE	"a" L	Bent "b" SIZE	Bent "b" L	"c" SIZE	"c" L	"c" SPACING	"c" NO. REQ'D
4	32'-7"	8	33'-1"	7	32'-7"	14	130

BOTTOM SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS "d" SIZE	"d" L	Bent "b1" SIZE	Bent "b1" L	"f" SIZE	"f" L	"f" SPACING	"f" NO. REQ'D
4	32'-7"	7	33'-1"	4	32'-7"	9	202

SIDE WALL REINFORCING STEEL "f0" LENGTH = OH - 4" SIZE	"f0" SPACING	"f0" NO. REQ'D	"f0" LENGTH
5	7	520	8'-5"

INTERIOR WALL REINFORCING STEEL "f1" LENGTH = OH - 4" SIZE	"f1" SPACING	"f1" NO. REQ'D	"f1" LENGTH
4	12	608	8'-5"

TOP SLAB DISTRIBUTION REINF. STEEL "g" LENGTH = SL SIZE	"g" SPACING	"g" NO. REQ'D
4	11	71

BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE	"e" SPACING	"e" NO. REQ'D
4	10	77

SIDE WALL DISTRIBUTION REINF. STEEL "d1" LENGTH = SL SIZE	"d1" SPACING	"d1" NO. REQ'D
4	11	16

INTERIOR WALL DISTRIBUTION REINF. STEEL "d2" LENGTH = SL SIZE	"d2" SPACING	"d2" NO. REQ'D
4	12	28

CLASS "S" CONCRETE CU. YDS.	REINFORCING STEEL (GR. 60) LBS.
439.71	73790

SHEET 1 OF 2
DETAILS OF R.C. BOX CULVERT
TRIPLE BARREL BOX CULVERT
Sta. 475+45

SPECIAL DETAILS

Ver. LI14 b090230_c3.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.		090230	15	282

① SPECIAL DETAILS

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
4-7-16
CHARLES R. ELLIS

TABULAR DATA BY: EOR DATE: 03/29/2016
CHECKED BY: AMS DATE: 4/4/16

OUTLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	LENGTH OF FOOTING HEEL WING A	LENGTH OF FOOTING HEEL WING B
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4
32'-6"	7'-0"	0'-9"	0'-8"	30	3:1	36'-2 1/8"	2'-0"	7'-10"	2'-4"	0	60	3'-2"	3'-5 3/4"	4'-2 1/4"	0'-9 3/4"	1'-3 5/8"	16'-6"	33'-0"	19'-11 3/8"	36'-5 3/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
OUTLET	OUTLET
CU.YD	LBS.
16.28	1342

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY	F1 LENGTHS	F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS	F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS	F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY	F6 LENGTHS	F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS	REINF. STEEL QTY. PER WING (LBS)
WING A	4	12	17	L Min	3'-4"	4	12	3	L 3'-5"	-	-	-	L -	4	18	6	Min	4	18	4	16'-2"	4	18	11	L Min	5'-3"	4	8	20'-9"	4	18	11	Min	-	-	-	Min	4	2	16'-11"	4	2	17'-4"	6	12	7	L 3'-4"	446
				L Max	9'-0"												3'-4"								Max 10'-3"							2'-8"				-										X 1'-8"	
				X Min	0'-9"				X 1'-0"				X -				Min 2'-4"																													
				X Max	1'-1"												Max 2'-4"								Max 3'-0"							Max				Max										
				Y Min	2'-8"				Y 2'-6"				Y -				Min 3'-0"								Min 8'-0"							3'-0"				-										
				Y Max	8'-0"												Max 12'-4"																													
WING B	4	12	33	L Min	3'-4"	4	12	6	L 4'-0"	-	-	-	L -	4	18	6	Min	4	18	4	32'-8"	4	18	22	L Min	5'-1"	4	8	37'-3"	4	18	23	Min	4	18	2	Min	4	2	33'-0"	4	2	36'-7"	6	12	7	L 3'-4"	896
				L Max	9'-8"												6'-10"								Max 10'-3"							2'-8"				52'-2"										
				X Min	0'-9"				X 1'-7"				X -				Min 2'-4"								Min 2'-4"							Max				Max										
				X Max	1'-9"												Max 2'-4"																													
				Y Min	2'-8"				Y 2'-6"				Y -				Min 2'-10"								Min 2'-10"							3'-8"				52'-2"										
				Y Max	8'-0"												Max 24'-10"								Max 8'-0"																						

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

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

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

OUTLET SKEWED END SECTION

SKEW (DEGREE)	SLOPE	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THK.	HDWL DEPTH	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVER ALL WIDTH	OVER ALL HEIGHT
SK	SL	D	S	H	LL	T	HD	B	C	W	OW	OH
30	3:1	10	10	7	11'-5"	9	3	10.5	7	8	32'-6"	8'-7 1/2"

TOP SLAB REINFORCING STEEL "a" SIZE	"a" SPACING	"a" LENGTHS VARY	"a" NO. REQ'D	"c" SIZE	"c" SPACING	"c" LENGTHS VARY	"c" NO. REQ'D
5	6	Max 32'-2"	34	7	7	Max 32'-2"	29
		Min 3'-1"				Min 3'-1"	
		32'-2"	4			32'-2"	4

BOTTOM SLAB REINFORCING STEEL "d" SIZE	"d" SPACING	"d" LENGTHS VARY	"d" NO. REQ'D	"f" SIZE	"f" SPACING	"f" LENGTHS VARY	"f" NO. REQ'D
5	4.5	Max 32'-2"	45	5	7	Max 32'-2"	29
		Min 3'-1"				Min 3'-1"	
		32'-2"	6			32'-2"	4

SIDE WALL REINFORCING STEEL "f0" SIZE	"f0" SPACING	"f0" NO. REQ'D	"f0" LENGTH
6	7.5	38	8'-4"

INTERIOR WALL REINFORCING STEEL "f1" SIZE	"f1" SPACING	"f1" NO. REQ'D	"f1" LENGTH
4	12	50	8'-4"

TOP SLAB DISTRIBUTION REINFORCING STEEL "g" SIZE	"g" SPACING	"g" NO. REQ'D	"g" LENGTHS VARY
4	12	65	Max 20'-7"
			Min 1'-10"

BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY
4	10	65	Max 20'-7"
			Min 1'-10"

SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH
4	12	7	LONG 20'-4"
		7	SHORT 2'-1"

INTERIOR WALL DISTRIBUTION REINFORCING STEEL "d2" SIZE	"d2" SPACING	"d2" NO. REQ'D	"d2" LENGTH
4	12	14	LONG 14'-4"
		14	SHORT 8'-2"

CLASS "S" CONCRETE (Includes HDWL) CU. YDS.	①REINFORCING STEEL (GR 60) (Includes HDWL) LBS.
30.39	6147

"k1" HDWL BARS SIZE	"k1" LENGTH	"k1" NO. REQ'D	"k2" HDWL BARS SIZE	"k2" LENGTH	"k2" NO. REQ'D	"h" HDWL BARS SIZE	"h" LENGTH	"h" Y	"h" NO. REQ'D
4	37'-2"	6	4	37'-2"	6	4	1'-8"	0'-8"	39

OUTLET SLOPE SECTION(S)

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	TOP SLAB THK.	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVER ALL WIDTH	OVER ALL HEIGHT	SECTION LENGTH (FT.)
	D	S	H	T	B	C	W	OW	OH	SL

LENGTH = OW - 4" + BENDS "a" SIZE	"a" L	Bent "b" SIZE	Bent "b" L	"c" SIZE	"c" L	SPACING	NO. REQ'D

BOTTOM SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS "d" SIZE	"d" L	Bent "b1" SIZE	Bent "b1" L	"f" SIZE	"f" L	SPACING	NO. REQ'D

SIDE WALL REINFORCING STEEL "f0" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH

INTERIOR WALL REINFORCING STEEL "f1" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH

TOP SLAB DISTRIBUTION REINFORCING STEEL "g" LENGTH = SL SIZE	SPACING	NO. REQ'D

BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" LENGTH = SL SIZE	SPACING	NO. REQ'D

SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D

INTERIOR WALL DISTRIBUTION REINFORCING STEEL "d2" LENGTH = SL SIZE	SPACING	NO. REQ'D

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

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

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

Unless otherwise noted, all dimensions are in inches.

SHEET 2 OF 2
DETAILS OF R.C. BOX CULVERT
TRIPLE BARREL BOX CULVERT
Sta. 475+45

SPECIAL DETAILS

LRD

Ver. 1.14 b090230_c3.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.		090230	16	282

① SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
6-10-15

TABULAR DATA BY: EOR DATE: 06/01/2015
CHECKED BY: ACP DATE: 6-4-15

INLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	LENGTH OF FOOTING HEEL WING A	LENGTH OF FOOTING HEEL WING B	CLASS "S" CONCRETE (Includes apron) INLET	REINFORCING STEEL (Includes apron and laps if required) INLET
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4	CU.YD	LBS.
6'-0"	3'-0"	0'-9"	0'-8"	0	3:1	5'-0"	1'-0"	3'-10"	1'-0"	30	30	2'-2"	2'-2"	2'-2"	0'-0"	0'-0"	9'-6"	9'-6"	11'-4 5/8"	11'-4 5/8"	3.14	324

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY			F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS	F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS	F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY			F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS		REINF. STEEL QTY. PER WING (LBS)
WING A	4	12	10	L	Min	2'-0"	-	-	-	-	-	-	-	-	4	18	2	Min	4	18	2	9'-2"	4	18	7	L	Min	2'-7"	4	6	12'-3"	4	18	6	Min	-	-	-	Min	4	2	9'-5"	4	2	10'-7"	6	12	3	L	3'-4"	162
					Max	4'-8"												5'-5"									Max	5'-3"							1'-8"				Max									
				X	Min	0'-9"				X				X				Min								X	Min	1'-4"							-				-							X	1'-8"	
					Max	0'-9"												5'-5"									Max	1'-4"							1'-8"													
				Y	Min	1'-4"				Y				Y				Min								Y	Min	1'-4"							Min				Min									
					Max	4'-0"												5'-5"									Max	4'-0"							1'-8"				-									
WING B	4	12	10	L	Min	2'-0"	-	-	-	-	-	-	-	-	4	18	2	Min	4	18	2	9'-2"	4	18	7	L	Min	2'-7"	4	6	12'-3"	4	18	6	Min	-	-	-	Min	4	2	9'-5"	4	2	10'-7"	6	12	3	L	3'-4"	162
					Max	4'-8"												5'-5"									Max	5'-3"							1'-8"				Max									
				X	Min	0'-9"				X				X				Min								X	Min	1'-4"							-				-							X	1'-8"	
					Max	0'-9"												5'-5"									Max	1'-4"							1'-8"													
				Y	Min	1'-4"				Y				Y				Min								Y	Min	1'-4"							Min				Min									
					Max	4'-0"												5'-5"									Max	4'-0"							1'-8"				-									

INLET SKEWED END SECTION

SKEW (DEGREE)	SLOPE	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THICKNESS	BOTTOM SLAB THK.	SIDE WALL THICKNESS	HEADWALL HEIGHT	OVER ALL WIDTH	OVER ALL HEIGHT	TOP SLAB REINFORCING STEEL "a" SIZE	"a" SPACING	"a" LENGTHS VARY	"a" NO. REQ'D	BOTTOM SLAB REINFORCING STEEL "b" SIZE	"b" SPACING	"b" LENGTHS VARY	"b" NO. REQ'D	SIDE WALL REINFORCING STEEL "f" SIZE	"f" SPACING	"f" NO. REQ'D	"f" LENGTH	TOP SLAB DISTRIBUTION REINFORCING STEEL "d" SIZE	"d" SPACING	"d" NO. REQ'D	"d" LENGTHS VARY	BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY	SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH	HDWL "k1", "k2" & "h" BAR	HDWL SIZE	HDWL NO. REQ'D	HDWL LENGTH
SK	SL	D	S	H	LL	T	B	C	HW	OW	OH			Max				Max									Max				LONG	k1			
																																			k2			
														Min				Min									Min				SHORT				
																																		h			Y

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

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

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 2 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'DETAILS OF SINGLE-BARREL R.C. BOX CULVERT',
SHEET 4 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'DETAILS OF WINGWALLS', and
STANDARD DRAWING RCB-2.
For additional information and outlet sections, see Sheet 2 of 2.

INLET SLOPE SECTION(S)

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	TOP SLAB THICKNESS	BOTTOM SLAB THK.	SIDE WALL THICKNESS	OVER ALL WIDTH	OVER ALL HEIGHT	SECTION LENGTH (FT.)	TOP SLAB REINFORCING STEEL "a" LENGTH = OW - 4" SIZE	"a" SPACING	"a" NO. REQ'D	"a" LENGTH	BOTTOM SLAB REINFORCING STEEL "b" LENGTH = OW - 4" SIZE	"b" SPACING	"b" NO. REQ'D	"b" LENGTH	SIDE WALL REINFORCING STEEL "f" LENGTH = OH - 4" SIZE	"f" SPACING	"f" NO. REQ'D	"f" LENGTH	TOP SLAB DISTRIBUTION REINF. STEEL "d" LENGTH = SL SIZE	"d" SPACING	"d" NO. REQ'D	BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE	"e" SPACING	"e" NO. REQ'D	SIDE WALL DISTRIBUTION REINF. STEEL "d1" LENGTH = SL SIZE	"d1" SPACING	"d1" NO. REQ'D
	D	S	H	T	B	C	OW	OH	SL																					
	10	5	3																										

HDWL THK.	ADDITIONAL REINF. FOR HDWL LBS	"h" bars SIZE	Y	LENGTH	NO. REQ'D
HW					
3"	8	4	0'-7"	1'-7"	7

CLASS "S" CONCRETE CU. YDS. PER LIN. FT.	REINFORCING STEEL (GR. 50) LBS. PER LIN. FT.	② ADTL. REINF. PER LONG. LAP LOCATION LBS.	ADDITIONAL CONCRETE FOR HDWL CU. YDS.	TOTAL ADDITIONAL REINF. FOR HDWL LBS.
			0.06	15

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

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

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

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

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

MID-SECTION

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	TOP SLAB THK.	BOTTOM SLAB THK.	SIDE WALL THK	OVER ALL WIDTH	OVER ALL HEIGHT	SECTION LENGTH (FT.)	TOP SLAB REINFORCING STEEL "a" LENGTH = OW - 4" SIZE	"a" SPACING	"a" NO. REQ'D	"a" LENGTH	BOTTOM SLAB REINFORCING STEEL "b" LENGTH = OW - 4" SIZE	"b" SPACING	"b" NO. REQ'D	"b" LENGTH	SIDE WALL REINFORCING STEEL "f" LENGTH = OH - 4" SIZE	"f" SPACING	"f" NO. REQ'D	"f" LENGTH	TOP SLAB DISTRIBUTION REINF. STEEL "d" LENGTH = SL SIZE	"d" SPACING	"d" NO. REQ'D	BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE	"e" SPACING	"e" NO. REQ'D	SIDE WALL DISTRIBUTION REINF. STEEL "d1" LENGTH = SL SIZE	"d1" SPACING	"d1" NO. REQ'D
A	10	5	3	8	9	6	6'-0"	4'-5"	131.00	4	7.5	209	5'-8"	4	8	196	5'-8"	4	9	348	4'-1"	4	12	6	4	12	6	4	12	6

CLASS "S" CONCRETE CU. YDS. PER LIN. FT.	REINFORCING STEEL (Gr. 60) LBS. PER LIN. FT.	③ ADTL. REINF. PER LONG. LAP LOCATION(S) LBS.
0.43	31	21

③ MID-SECTION BAR LAP TABLE

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

SHEET 1 OF 2
DETAILS OF R.C. BOX CULVERT
SINGLE BARREL BOX CULVERT
Sta. 491+68

SPECIAL DETAILS

Ver. LJ14 b090230_c4.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.		090230	17	282

① SPECIAL DETAILS

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
6-10-15

TABULAR DATA BY: EOR DATE: 06/01/2015
CHECKED BY: ACP DATE: 6-4-15

OUTLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	LENGTH OF FOOTING HEEL WING A	LENGTH OF FOOTING HEEL WING B	CLASS "S" CONCRETE (Includes apron) OUTLET	REINFORCING STEEL (Includes apron and laps if required) OUTLET
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4	CU.YD	LBS.
6'-0"	3'-0"	0'-9"	0'-8"	0	3:1	5'-0"	1'-0"	3'-10"	1'-0"	30	30	2'-2"	2'-2"	2'-2"	0'-0"	0'-0"	9'-6"	9'-6"	11'-4 5/8"	11'-4 5/8"	3.48	324

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY	F1 LENGTHS	F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS	F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS	F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY	F6 LENGTHS	F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F8 LENGTHS	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS	REINF. STEEL QTY. PER WING (LBS)
WING A	4	12	10	L Min	2'-0"	-	-	-	-	-	-	-	L -	4	18	2	Min	4	18	2	9'-2"	4	18	7	L Min	2'-7"	4	6	12'-3"	4	18	6	Min	-	-	-	-	4	2	9'-5"	4	2	10'-7"	6	12	3	L	3'-4"	162
				L Max	4'-8"								L -				5'-5"								Max	5'-3"							1'-8"				Max									
				X Min	0'-9"				X -				X -				Min								X Min	1'-4"							-				-							X	1'-8"	
				Max	0'-9"												Max								Max	1'-4"							1'-8"				-									
				Y Min	1'-4"				Y -				Y -				5'-5"								Y Min	1'-4"							Min				Min							L	3'-4"	
				Max	4'-0"																				Max	4'-0"							1'-8"				-									
WING B	4	12	10	L Min	2'-0"	-	-	-	-	-	-	-	L -	4	18	2	Min	4	18	2	9'-2"	4	18	7	L Min	2'-7"	4	6	12'-3"	4	18	6	Min	-	-	-	-	4	2	9'-5"	4	2	10'-7"	6	12	3	L	3'-4"	162
				L Max	4'-8"								L -				5'-5"								Max	5'-3"							1'-8"				Max									
				X Min	0'-9"				X -				X -				Min								X Min	1'-4"							-				-							X	1'-8"	
				Max	0'-9"												Max								Max	1'-4"							1'-8"				-									
				Y Min	1'-4"				Y -				Y -				5'-5"								Y Min	1'-4"							Min				Min							L	3'-4"	
				Max	4'-0"																				Max	4'-0"							1'-8"				-									

OUTLET SKEWED END SECTION

SKEW (DEGREE)	SLOPE	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THICKNESS	BOTTOM SLAB THK.	SIDE WALL THICKNESS	HEADWALL HEIGHT	OVER ALL WIDTH	OVER ALL HEIGHT	TOP SLAB REINFORCING STEEL "a" SIZE	"a" SPACING	"a" LENGTHS VARY	"a" NO. REQ'D	BOTTOM SLAB REINFORCING STEEL "b" SIZE	"b" SPACING	"b" LENGTHS VARY	"b" NO. REQ'D	SIDE WALL REINFORCING STEEL "f" SIZE	"f" SPACING	"f" NO. REQ'D	"f" LENGTH	TOP SLAB DISTRIBUTION REINFORCING STEEL "d" SIZE	"d" SPACING	"d" NO. REQ'D	"d" LENGTHS VARY	BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY	SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH	HDWL "k1", "k2" & "h" BAR	HDWL SIZE	HDWL NO. REQ'D	HDWL LENGTH
SK	SL	D	S	H	LL	T	B	C	HW	OW	OH																														
														Max				Max									Max				Max			Max			LONG	k1			
																																						k2			
														Min				Min									Min				Min			Min			SHORT				
																																						h			Y

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

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

OUTLET SLOPE SECTION(S)

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	TOP SLAB THICKNESS	BOTTOM SLAB THK.	SIDE WALL THICKNESS	OVER ALL WIDTH	OVER ALL HEIGHT	SECTION LENGTH (FT.)	TOP SLAB REINFORCING STEEL "a" LENGTH = OW - 4" SIZE	"a" SPACING	"a" NO. REQ'D	"a" LENGTH	BOTTOM SLAB REINFORCING STEEL "b" LENGTH = OW - 4" SIZE	"b" SPACING	"b" NO. REQ'D	"b" LENGTH	SIDE WALL REINFORCING STEEL "f" LENGTH = OH - 4" SIZE	"f" SPACING	"f" NO. REQ'D	"f" LENGTH	TOP SLAB DISTRIBUTION REINF. STEEL "d" LENGTH = SL SIZE	"d" SPACING	"d" NO. REQ'D	BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE	"e" SPACING	"e" NO. REQ'D	SIDE WALL DISTRIBUTION REINF. STEEL "d1" LENGTH = SL SIZE	"d1" SPACING	"d1" NO. REQ'D
	D	S	H	T	B	C	OW	OH	SL																				
	10	5	3																										

HDWL THK.	ADDITIONAL REINF. FOR HDWL	"h" bars			
HW	LBS	SIZE	Y	LENGTH	NO. REQ'D
3"	8	4	0'-7"	1'-7"	7

CLASS "S" CONCRETE CU. YDS. PER LIN. FT.	REINFORCING STEEL (GR. 50) LBS. PER LIN. FT.	②ADTL. REINF. PER LONG. LAP LOCATION LBS.	ADDITIONAL CONCRETE FOR HDWL CU. YDS.	TOTAL ADDITIONAL REINF. FOR HDWL LBS.
			0.06	15

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

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

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

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

Unless otherwise noted, all dimensions are in inches.

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

SINGLE BARREL BOX CULVERT
Sta. 491+68

SPECIAL DETAILS

Ver. LJ14 b090230_c4.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.		090230	18	282

① SPECIAL DETAILS

INLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	LENGTH OF FOOTING HEEL WING A	LENGTH OF FOOTING HEEL WING B	CLASS 'S' CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4	INLET	INLET
32'-6"	7'-0"	0'-9"	0'-8"	40	3:1	40'-10 7/8"	2'-0"	7'-10"	2'-4"	0	60	3'-2"	3'-5 3/4"	4'-2 1/4"	0'-9 3/4"	1'-3 5/8"	16'-6"	33'-0"	18'-9 1/4"	38'-7 1/2"	CU.YD	LBS.
																					15.14	1368

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY		F1 LENGTHS	F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS		F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS	F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS
WING A	4	12	17	L	Min	3'-4"	4	12	3	L	3'-5"	-	-	-	L -	4	18	6	Min	4	18	4	16'-2"
					Max	9'-0"													3'-4"				
				X	Min	0'-9"				X	1'-0"				X -				Max				
					Max	1'-1"													12'-4"				
				Y	Min	2'-8"				Y	2'-6"				Y -				Min				
					Max	8'-0"													3'-0"				
WING B	4	12	33	L	Min	3'-4"	4	12	6	L	4'-0"	-	-	-	L -	4	18	6	Min	4	18	4	32'-8"
					Max	9'-8"													6'-10"				
				X	Min	0'-9"				X	1'-7"				X -				Max				
					Max	1'-9"													24'-10"				
				Y	Min	2'-8"				Y	2'-6"				Y -				Min				
					Max	8'-0"													3'-8"				

WING	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY		F6 LENGTHS	F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS		REINF. STEEL QTY. PER WING (LBS)
WING A	4	18	11	L	Min	5'-3"	4	8	19'-7"	4	18	11	Min	-	-	-	Min	4	2	16'-11"	4	2	17'-4"	6	12	7	L	3'-4"	445
					Max	10'-3"							2'-8"				-												
				X	Min	2'-4"							Max				Max											X	1'-8"	
					Max	2'-4"																							
				Y	Min	3'-0"							3'-0"				-												
					Max	8'-0"																							
WING B	4	18	22	L	Min	5'-1"	4	8	39'-6"	4	18	23	Min	4	18	2	Min	4	2	33'-0"	4	2	36'-7"	6	12	7	L	3'-4"	923
					Max	10'-3"							2'-8"				52'-2"												
				X	Min	2'-4"							Max				Max											X	1'-8"	
					Max	2'-4"																							
				Y	Min	2'-10"							3'-8"				52'-2"												
					Max	8'-0"																							

③ MID-SECTION BAR LAP TABLE

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

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

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
6-10-15

TABULAR DATA BY: EOR DATE: 06/01/2015
CHECKED BY: ACP DATE: 6-4-15

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

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

INLET SKEWED END SECTION

SKEW (DEGREE)	SLOPE	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THK.	HDWL THK.	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVER ALL WIDTH	OVER ALL HEIGHT
SK	SL	D	S	H	LL	T	HW	B	C	W	OW	OH
40	3:1	10	10	7	28'-9"	9	3	10.5	7	8	32'-6"	8'-7 1/2"

TOP SLAB REINFORCING STEEL a SIZE	a SPACING	a LENGTHS VARY	a NO. REQ'D	c SIZE	c SPACING	c LENGTHS VARY	c NO. REQ'D
5	6	Max 32'-2" / Min 2'-5"	50	7	7	Max 32'-2" / Min 2'-5"	43
		32'-2"	31			32'-2"	26

BOTTOM SLAB REINFORCING STEEL d SIZE	d SPACING	d LENGTHS VARY	d NO. REQ'D	f SIZE	f SPACING	f LENGTHS VARY	f NO. REQ'D
5	4.5	Max 32'-2" / Min 2'-5"	67	5	7	Max 32'-2" / Min 2'-5"	43
		32'-2"	41			32'-2"	26

SIDE WALL REINFORCING STEEL f0 SIZE	f0 SPACING	f0 NO. REQ'D	f0 LENGTH
6	7.5	93	8'-4"

INTERIOR WALL REINFORCING STEEL f1 SIZE	f1 SPACING	f1 NO. REQ'D	f1 LENGTH
4	12	120	8'-4"

TOP SLAB DISTRIBUTION REINFORCING STEEL g SIZE	g SPACING	g NO. REQ'D	g LENGTHS VARY
4	12	65	Max 42'-2" / Min 14'-11"

BOTTOM SLAB DISTRIBUTION REINFORCING STEEL e SIZE	e SPACING	e NO. REQ'D	e LENGTHS VARY
4	10	65	Max 42'-2" / Min 14'-11"

SIDE WALL DISTRIBUTION REINFORCING STEEL d1 SIZE	d1 SPACING	d1 NO. REQ'D	d1 LENGTH
4	12	7	LONG 41'-10"
		7	SHORT 15'-3"

INTERIOR WALL DISTRIBUTION REINFORCING STEEL d2 SIZE	d2 SPACING	d2 NO. REQ'D	d2 LENGTH
4	12	14	LONG 33'-0"
		14	SHORT 24'-1"

k1 SIZE	k1 LENGTH	k1 NO. REQ'D	k2 SIZE	k2 LENGTH	k2 NO. REQ'D	h SIZE	h LENGTH	h Y	h NO. REQ'D
6	42'-1"	6	6	42'-1"	6	4	1'-8"	0'-8"	44

CLASS 'S' CONCRETE (Includes HDWL) CU. YDS.	①REINFORCING STEEL (GR 60) (Includes HDWL) LBS.
75.64	15322

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

INLET SLOPE SECTION(S)

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	TOP SLAB THK.	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVER ALL WIDTH	OVER ALL HEIGHT	SECTION LENGTH (FT.)
D	S	H	T	B	C	W	OW	OH	SL
B	15	10	7	12	13	8.5	8	32'-9"	9'-1"	14.3284

TOP SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS a SIZE	a L	Bent b SIZE	Bent b L	c SIZE	c L	SPACING	NO. REQ'D
4	32'-5"	8	33'-4"	7	32'-5"	15	11

BOTTOM SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS d SIZE	d L	Bent b1 SIZE	Bent b1 L	f SIZE	f L	SPACING	NO. REQ'D
4	32'-5"	8	33'-4"	4	32'-5"	9	19

SIDE WALL REINFORCING STEEL "f0" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH
7	10	34	8'-9"

INTERIOR WALL REINFORCING STEEL "f1" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH
4	12	56	8'-9"

TOP SLAB DISTRIBUTION REINFORCING STEEL "g" LENGTH = SL SIZE	SPACING	NO. REQ'D
4	9	89

BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" LENGTH = SL SIZE	SPACING	NO. REQ'D
4	8.5	95

SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D
4	12	14

INTERIOR WALL DISTRIBUTION REINFORCING STEEL "d2" LENGTH = SL SIZE	SPACING	NO. REQ'D
4	12	28

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

CLASS 'S' CONCRETE CU. YDS. PER LIN. FT.	REINFORCING STEEL (GR. 60) LBS. PER LIN. FT.	②ADTL. REINF. PER LONG. LAP LOCATION LBS.	ADDITIONAL CONCRETE FOR HDWL CU. YDS.	TOTAL ADTL. REINF. FOR HDWL LBS.
3.24	535	264		

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

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

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

MID-SECTION

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	TOP SLAB THK.	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVER ALL WIDTH	OVER ALL HEIGHT	SECTION LENGTH (FT.)
D	S	H	T	B	C	W	OW	OH	SL
C	20	10	7	15	16	12	8	33'-4"	9'-7"	189.84

TOP SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS a SIZE	a L	Bent b SIZE	Bent b L	c SIZE	c L	SPACING	NO. REQ'D
4	33'-0"	8	34'-0"	8	33'-0"	15	151

BOTTOM SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS d SIZE	d L	Bent b1 SIZE	Bent b1 L	f SIZE	f L	SPACING	NO. REQ'D
4	33'-0"	7	34'-0"	7	33'-0"	10	227

SIDE WALL REINFORCING STEEL "f0" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH
5	6	758	9'-3"

INTERIOR WALL REINFORCING STEEL "f1" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH
4	12	756	9'-3"

TOP SLAB DISTRIBUTION REINF. STEEL "g" LENGTH = SL SIZE	SPACING	NO. REQ'D
5	11	71

BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE	SPACING	NO. REQ'D
4	6.5	119

SIDE WALL DISTRIBUTION REINF. STEEL "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D
4	9	20

INTERIOR WALL DISTRIBUTION REINF. STEEL "d2" LENGTH = SL SIZE	SPACING	NO. REQ'D
4	12	28

CLASS 'S' CONCRETE CU. YDS. PER LIN. FT.	REINFORCING STEEL (GR. 60) LBS PER LIN. FT.	③ADTL. STEEL PER LONG. LAP LOCATION (S) LBS.
4.05	600	356

SHEET 1 OF 2
DETAILS OF R.C. BOX CULVERT
TRIPLE BARREL BOX CULVERT
Sta. 519+29

SPECIAL DETAILS

Ver. LI14 b090230_c5.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.		090230	14	282

① SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
6-10-15

TABULAR DATA BY: EOR DATE: 06/01/2015
CHECKED BY: ACP DATE: 6-4-15

OUTLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	LENGTH OF FOOTING HEEL WING A	LENGTH OF FOOTING HEEL WING B	CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4	OUTLET	OUTLET
32'-6"	7'-0"	0'-9"	0'-8"	40	3:1	40'-10 7/8"	2'-0"	7'-10"	2'-4"	0	60	3'-2"	3'-5 3/4"	4'-2 1/4"	0'-9 3/4"	1'-3 5/8"	16'-6"	33'-0"	18'-9 1/4"	38'-7 1/2"	CU.YD	LBS.
																					16.70	1368

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY	F1 LENGTHS	F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS	F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS	F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY	F6 LENGTHS	F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS	REINF. STEEL QTY. PER WING (LBS)
WING A	4	12	17	X Min	3'-4"	4	12	3	X 1'-0"	-	-	-	X -	4	18	6	Min	4	18	4	16'-2"	4	18	11	X Min	5'-3"	4	8	19'-7"	4	18	11	Min	-	-	-	Min	4	2	16'-11"	4	2	17'-4"	6	12	7	L 3'-4"	445
				X Max	1'-1"												3'-4"								Max	10'-3"							2'-8"													X 1'-8"	
				Y Min	2'-8"				Y 2'-6"				Y -				Max								X Min	2'-4"							Max													
				Y Max	8'-0"												12'-4"								Y Min	3'-0"							3'-0"													
																									Y Max	8'-0"																				
WING B	4	12	33	X Min	3'-4"	4	12	6	X 1'-7"	-	-	-	X -	4	18	6	Min	4	18	4	32'-8"	4	18	22	X Min	5'-1"	4	8	39'-6"	4	18	23	Min	-	-	-	Min	4	2	33'-0"	4	2	36'-7"	6	12	7	L 3'-4"	923
				X Max	1'-9"												6'-10"								Max	10'-3"							2'-8"													X 1'-8"	
				Y Min	2'-8"				Y 2'-6"				Y -				Max								X Min	2'-4"							Max													
				Y Max	8'-0"												24'-10"								Y Min	2'-10"							3'-8"													
																									Y Max	8'-0"																				

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

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

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

OUTLET SKEWED END SECTION

SKEW (DEGREE)	SLOPE	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THK.	HDWL THK.	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVER ALL WIDTH	OVER ALL HEIGHT	TOP SLAB REINFORCING STEEL a SIZE	a SPACING	a LENGTHS VARY	a NO. REQ'D	TOP SLAB REINFORCING STEEL c SIZE	c SPACING	c LENGTHS VARY	c NO. REQ'D	BOTTOM SLAB REINFORCING STEEL d SIZE	d SPACING	d LENGTHS VARY	d NO. REQ'D	BOTTOM SLAB REINFORCING STEEL f SIZE	f SPACING	f LENGTHS VARY	f NO. REQ'D	SIDE WALL REINFORCING STEEL f0 SIZE	f0 SPACING	f0 NO. REQ'D	f0 LENGTH	INTERIOR WALL REINFORCING STEEL f1 SIZE	f1 SPACING	f1 NO. REQ'D	f1 LENGTH	TOP SLAB DISTRIBUTION REINFORCING STEEL g SIZE	g SPACING	g NO. REQ'D	g LENGTHS VARY	BOTTOM SLAB DISTRIBUTION REINFORCING STEEL e SIZE	e SPACING	e NO. REQ'D	e LENGTHS VARY	SIDE WALL DISTRIBUTION REINFORCING STEEL d1 SIZE	d1 SPACING	d1 NO. REQ'D	d1 LENGTH	INTERIOR WALL DISTRIBUTION REINFORCING STEEL d2 SIZE	d2 SPACING	d2 NO. REQ'D	d2 LENGTH
SK	SL	D	S	H	LL	T	HW	B	C	W	OW	OH																																												
40	3:1	10	10	7	28'-9"	9	3	10.5	7	8	32'-6"	8'-7 1/2"	5	6	Max 32'-2" Min 2'-5"	50		7	7	Max 32'-2" Min 2'-5"	43	5	4.5	Max 32'-2" Min 2'-5"	67		5	7	Max 32'-2" Min 2'-5"	43	6	7.5	93	8'-4"	4	12	120	8'-4"	4	12	65	Max 42'-2" Min 14'-11"	4	10	65	Max 42'-2" 14'-11"	4	12	7	LONG 41'-10" SHORT 15'-3"	4	12	14	LONG 33'-0" SHORT 24'-1"
															32'-2"	31				32'-2"	26			32'-2"	41				32'-2"	26																													

CLASS "S" CONCRETE (Includes HDWL)	① REINFORCING STEEL (GR 60) (Includes HDWL)
CU. YDS.	LBS.
75.64	15322

k1 SIZE	k1 LENGTH	k1 NO. REQ'D	k2 SIZE	k2 LENGTH	k2 NO. REQ'D	h SIZE	h LENGTH	h Y	h NO. REQ'D
6	42'-1"	6	6	42'-1"	6	4	1'-8"	0'-8"	44

OUTLET SLOPE SECTION(S)

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.) D	CLEAR SPAN (FT.) S	CLEAR HEIGHT (FT.) H	TOP SLAB THK. T	BOTTOM SLAB THK. B	SIDE WALL THK. C	INTERIOR WALL THK. W	OVER ALL WIDTH OW	OVER ALL HEIGHT OH	SECTION LENGTH (FT.) SL	TOP SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS a SIZE	a L	Bent b SIZE	b L	c SIZE	c L	SPACING	NO. REQ'D	BOTTOM SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS d SIZE	d L	Bent b1 SIZE	b1 L	f SIZE	f L	SPACING	NO. REQ'D	SIDE WALL REINFORCING STEEL "f0" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH	INTERIOR WALL REINFORCING STEEL "f1" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH	TOP SLAB DISTRIBUTION REINFORCING STEEL "g" LENGTH = SL SIZE	SPACING	NO. REQ'D	BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" LENGTH = SL SIZE	SPACING	NO. REQ'D	SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D	INTERIOR WALL DISTRIBUTION REINFORCING STEEL "d2" LENGTH = SL SIZE	SPACING	NO. REQ'D
B	15	10	7	12	13	8.5	8	32'-9"	9'-1"	14.3284	4	32'-5"	8	33'-4"	7	32'-5"	15	11	4	32'-5"	8	33'-4"	4	32'-5"	9	19	7	10	34	8'-9"	4	12	56	8'-9"	4	9	89	4	8.5	95	4	12	14	4	12	28

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

CLASS "S" CONCRETE CU. YDS. PER LIN. FT.	REINFORCING STEEL (GR. 60) LBS. PER LIN. FT.	② ADTL. REINF. PER LONG. LAP LOCATION LBS.	ADDITIONAL CONCRETE FOR HDWL CU. YDS.	TOTAL ADTL. REINF. FOR HDWL LBS.
3.24	535	264		

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

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

Unless otherwise noted, all dimensions are in inches.

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

TRIPLE BARREL BOX CULVERT
Sta. 519+29

SPECIAL DETAILS

Ver. Ll14 b090230_c5.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.		090230	20	282

① SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

TABULAR DATA BY: EOR DATE: 03/29/2016
CHECKED BY: AMS DATE: 4/4/16

INLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	LENGTH OF FOOTING HEEL WING A	LENGTH OF FOOTING HEEL WING B	CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4	INLET	INLET
11'-1"	6'-0"	0'-9"	0'-8"	30	3:1	11'-5 3/8"	2'-0"	6'-10"	2'-0"	0	60	3'-2"	3'-2"	3'-9"	0'-6"	0'-5 1/8"	14'-6"	29'-0"	17'-11 3/8"	32'-5 3/8"	CU.YD	LBS.
																					10.92	1007

| WING | F1 BAR SIZE | F1 MAX. SPACING | F1 NO. REQ'D | F1 LENGTHS VARY | | | F2 BAR SIZE | F2 SPACING | F2 NO. REQ'D | F2 LENGTHS | | | F3 BAR SIZE | F3 SPACING | F3 NO. REQ'D | F3 LENGTHS | | | F4 BAR SIZE | F4 SPACING | F4 NO. REQ'D | F4 LENGTHS VARY | F5 BAR SIZE | F5 SPACING | F5 NO. REQ'D | F5 LENGTHS | F6 BAR SIZE | F6 SPACING | F6 NO. REQ'D | F6 LENGTHS VARY | | | F7 BAR SIZE | F7 NO. REQ'D | F7 LENGTHS | F8 BAR SIZE | F8 SPACING | F8 NO. REQ'D | F8 LENGTHS VARY | F9 BAR SIZE | F9 SPACING | F9 NO. REQ'D | F9 LENGTHS | | | F10 BAR SIZE | F10 NO. REQ'D | F10 LENGTHS | F11 BAR SIZE | F11 NO. REQ'D | F11 LENGTHS | F12 BAR SIZE | F12 SPACING | F12 NO. REQ'D | F12 LENGTHS | | | REINF. STEEL QTY. PER WING (LBS) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---

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.		090230	21	282

① SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
4-7-16
CHARLES R. ELLIS

TABULAR DATA BY: EOR DATE: 03/29/2016
CHECKED BY: AMS DATE: 4/4/16

OUTLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	LENGTH OF FOOTING HEEL WING A	LENGTH OF FOOTING HEEL WING B	CLASS "S" CONCRETE (Includes apron) OUTLET	REINFORCING STEEL (Includes apron and laps if required) OUTLET
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4	CU.YD	LBS.
11'-1"	6'-0"	0'-9"	0'-8"	30	3:1	11'-5 3/8"	2'-0"	6'-10"	2'-0"	0	60	3'-2"	3'-2"	3'-9"	0'-6"	0'-5 1/8"	14'-6"	29'-0"	17'-11 3/8"	32'-5 3/8"	11.70	1007

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY	F1 LENGTHS	F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS	F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS	F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY	F6 LENGTHS	F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F8 LENGTHS	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS	REINF. STEEL QTY. PER WING (LBS)
WING A	4	12	15	L Min	3'-0"	-	-	-	-	-	-	-	L -	4	18	4	Min	4	18	4	14'-2"	4	18	10	L Min	4'-9"	4	8	18'-9"	4	18	10	Min	-	-	-	-	4	2	14'-10"	4	2	15'-4"	6	12	6	L 3'-4"	354
				L Max	7'-8"												4'-10"								Max	9'-3"							2'-8"												X 1'-8"	
				X Min	0'-9"				X -				X -				Max								X Min	2'-4"							Max													
				X Max	0'-9"												9'-4"								Max	2'-4"							2'-8"													
				Y Min	2'-4"				Y -				Y -												Y Min	2'-6"																				
				Y Max	7'-0"																				Max	7'-0"																				
WING B	4	12	29	L Min	3'-0"	-	-	-	-	-	-	-	L -	4	18	4	Min	4	18	4	28'-8"	4	18	20	L Min	4'-7"	4	8	33'-3"	4	18	20	Min	-	-	-	-	4	2	28'-11"	4	2	31'-9"	6	12	6	L 3'-4"	653
				L Max	8'-3"												9'-10"								Max	9'-3"							2'-8"												X 1'-8"	
				X Min	0'-9"				X -				X -				Max								X Min	2'-4"							Max													
				X Max	1'-4"												18'-10"								Max	2'-4"							3'-3"													
				Y Min	2'-4"				Y -				Y -												Y Min	2'-4"																				
				Y Max	7'-0"																				Max	7'-0"																				

OUTLET SKEWED END SECTION

SKEW (DEGREE)	SLOPE	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THICKNESS	BOTTOM SLAB THK.	SIDEWALL THICKNESS	HEADWALL DEPTH	OVER ALL WIDTH	OVER ALL HEIGHT	TOP SLAB REINFORCING STEEL "a" SIZE	"a" SPACING	"a" LENGTHS VARY	"a" NO. REQ'D	BOTTOM SLAB REINFORCING STEEL "b" SIZE	"b" SPACING	"b" LENGTHS VARY	"b" NO. REQ'D	SIDE WALL REINFORCING STEEL "f" SIZE	"f" SPACING	"f" NO. REQ'D	"f" LENGTH	TOP SLAB DISTRIBUTION REINFORCING STEEL "d" SIZE	"d" SPACING	"d" NO. REQ'D	"d" LENGTHS VARY	BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY	SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH	HDWL "k1", "k2" & "h" BAR	HDWL SIZE	HDWL NO. REQ'D	HDWL LENGTH	CLASS "S" CONCRETE (Includes HDWL) CU. YDS.	① REINFORCING STEEL (GR. 60) (Includes HDWL) LBS.
SK	SL	D	S	H	LL	T	B	C	HD	OW	OH																																
30	3:1	10	10	6	5'-2"	9	9.5	6.5	3	11'-1"	7'-6 1/2"	6	5	Max 10'-9" Min 3'-1"	11	6	5	Max 10'-9" Min 3'-1"	11	5	7	19	7'-3"	4	12	11	Max 10'-9" Min 8'-3" Min 1'-10"	4	11	12	Max 10'-9" Min 8'-3" Min 1'-10"	4	12	6 LONG 6 SHORT	12'-6" 8'-3" 1'-10"	"k1" "k2" "h"	4	6 14	12'-6" 12'-6" 1'-8" Y 0'-8"	4.80	767

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

OUTLET SLOPE SECTION(S)

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	TOP SLAB THICKNESS	BOTTOM SLAB THK.	SIDE WALL THICKNESS	OVER ALL WIDTH	OVER ALL HEIGHT	SECTION LENGTH (FT.)	TOP SLAB REINFORCING STEEL "a" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH	BOTTOM SLAB REINFORCING STEEL "b" LENGTH = OW - 4" SIZE	SPACING	NO. REQ'D	LENGTH	SIDE WALL REINFORCING STEEL "f" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH	TOP SLAB DISTRIBUTION REINF. STEEL "d" LENGTH = SL SIZE	SPACING	NO. REQ'D	BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE	SPACING	NO. REQ'D	SIDE WALL DISTRIBUTION REINF.STEEL "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D
D	S	H	T	B	C	OW	OH	SL																								

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

CLASS "S" CONCRETE	REINFORCING STEEL (GR. 50)
CU. YDS.	LBS.
TOTAL	

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

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

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

Unless otherwise noted, all dimensions are in inches.

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

SINGLE BARREL BOX CULVERT
Sta. 527+24

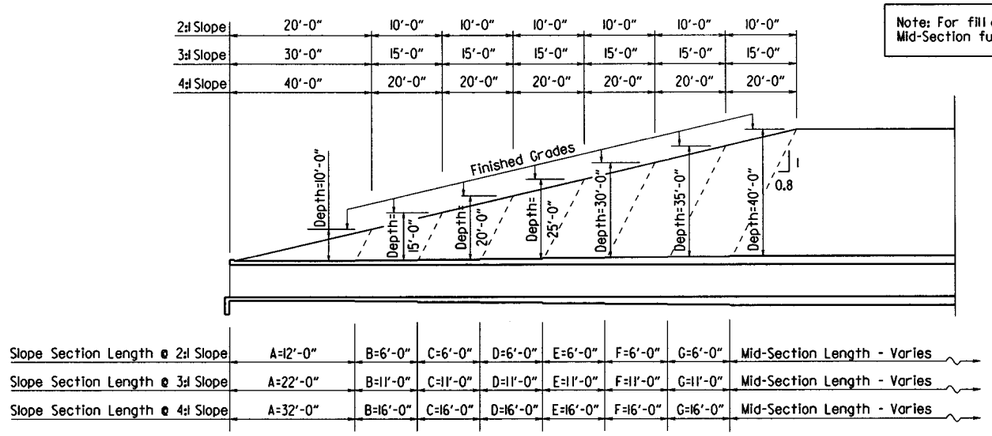
SPECIAL DETAILS

LRFD

Ver. 1.14 b090230_c6.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.		090230	22	282

1 SPECIAL DETAILS



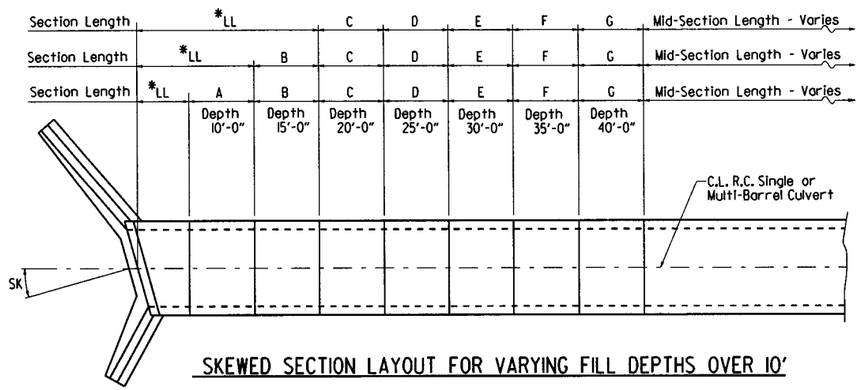
Note: For fill depths 10' and under, use Mid-Section full length of box culvert.

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'

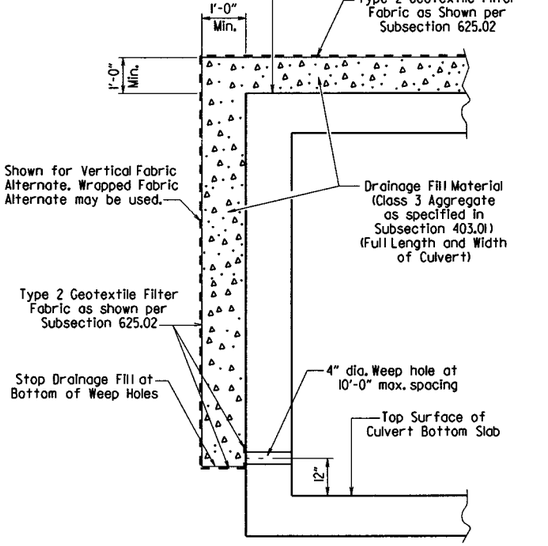
Lengths for Non-Skewed Boxes

*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.



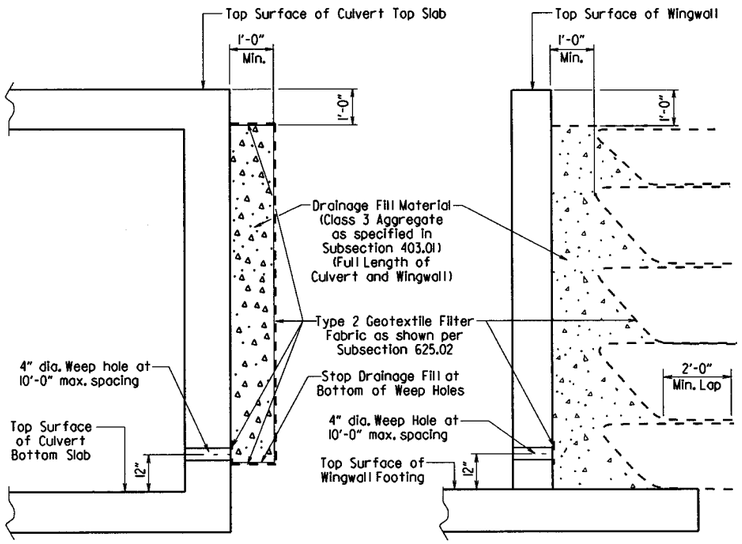
SKEWED SECTION LAYOUT FOR VARYING FILL DEPTHS OVER 10'

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
6-10-15



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

GENERAL NOTES:

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

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

LIVE LOADING: HL-93

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

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

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

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

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

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

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

The barrel components of the culvert may be constructed using continuous pours. For longer culvert construction, the Contractor may use multiple pours with transverse construction joints spaced a minimum of 50 feet apart unless superseded by stage construction or site constraints as approved by the Engineer. Construction joints between footings and walls shall be made only where shown in the Plans. Joints shall be 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 S Concrete.

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

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

SHEET 1 OF 4

GENERAL DETAILS OF R.C. BOX CULVERT

GENERAL NOTES &
LONGITUDINAL SECTION LENGTH SCHEDULE

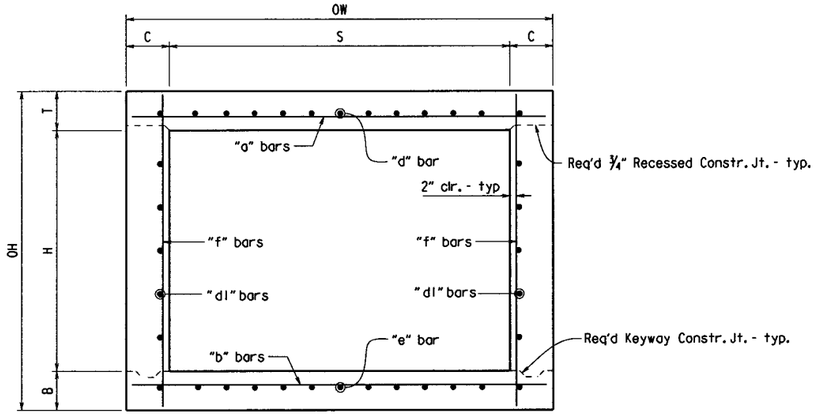
SPECIAL DETAILS

V LJ14 b090230_culvert.dgn

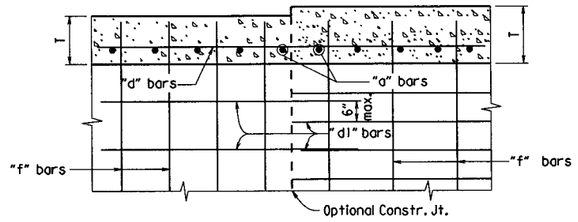
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				6	ARK.			
				JOB NO.		090230	23	282

1 SPECIAL DETAILS

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



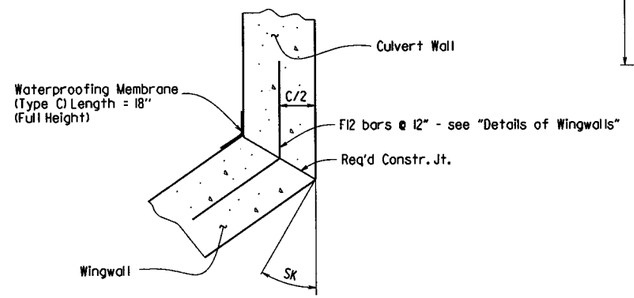
TYPICAL SECTION M-M



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

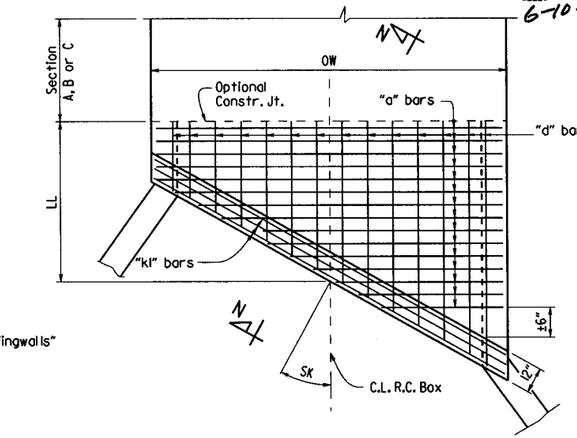
LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

TOP SLAB SHOWN, BOTTOM SLAB SIMILAR

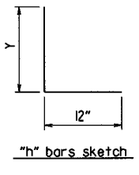


WINGWALL ATTACHMENT

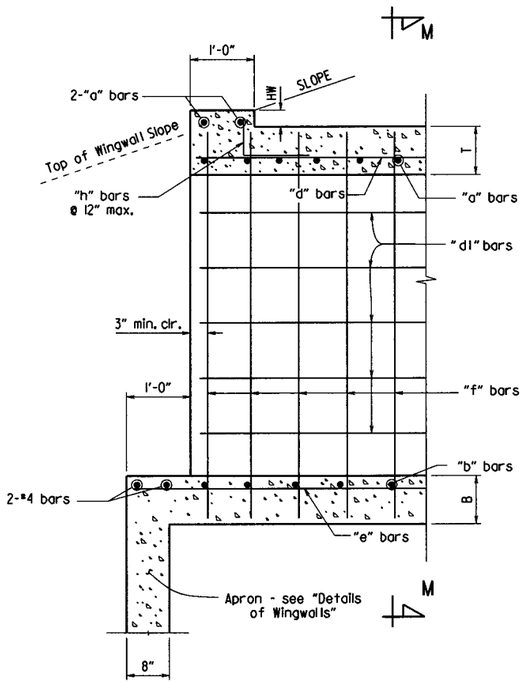
See "Details of Wingwalls" for additional information and wingwall details.



TOP SLAB REINFORCEMENT

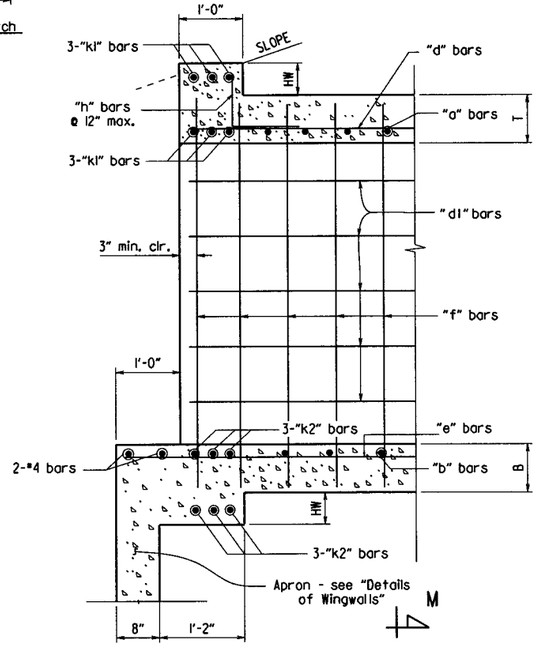


"h" bars sketch



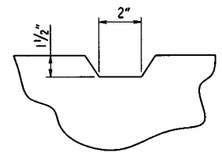
PART LONGITUDINAL SECTION

(Non-Skewed Ends)



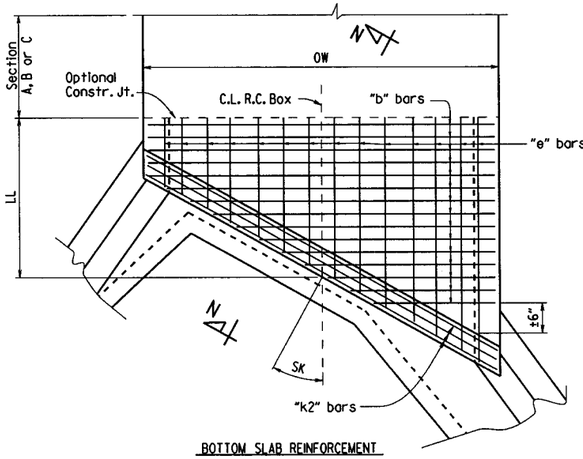
PART LONGITUDINAL SECTION N-N

(Skewed Ends)



TYPICAL KEYWAY DETAIL

(All Construction Joints)



BOTTOM SLAB REINFORCEMENT

SKEWED END SECTION DETAILS

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

DETAILS OF SINGLE BARREL
R.C. BOX CULVERT

SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
6-10-15

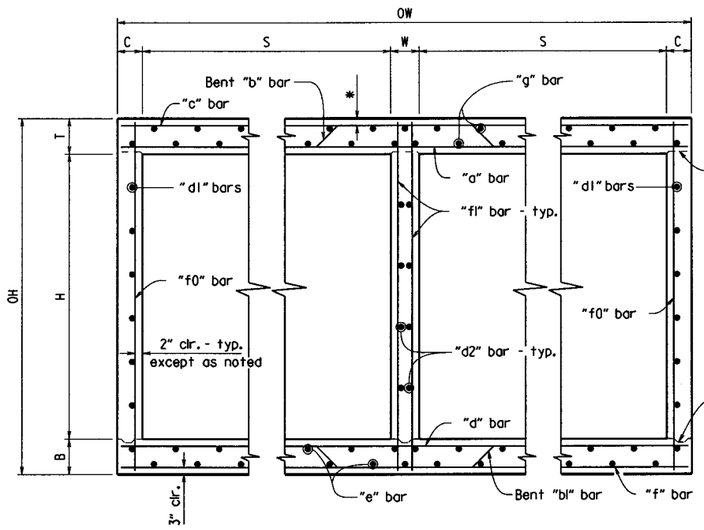
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DATE REVISED	DATE FILMED	REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	24	282

1 SPECIAL DETAILS

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

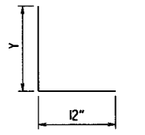
Note: When top slab of culvert serves as finished roadway surface, see General Notes on Sheet 1 of 4.



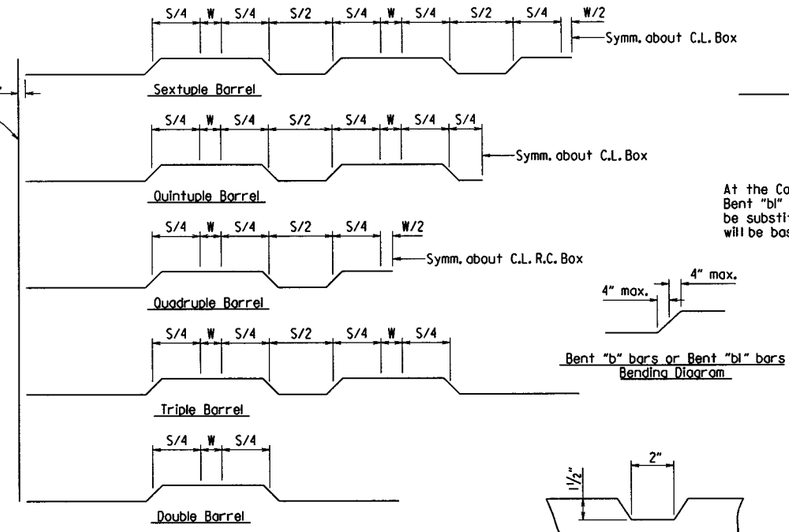
TYPICAL SECTION M-M

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

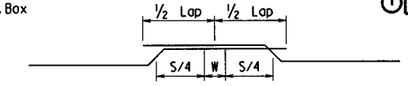
Bottom Slab
Straight "d" bars shall alternate with Bent "bl" bars in top.
Straight "f" bars shall alternate with Bent "bl" bars in bottom.



"h" bars sketch



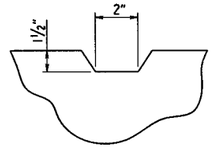
Bent "b" bars or Bent "bl" bars sketch



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

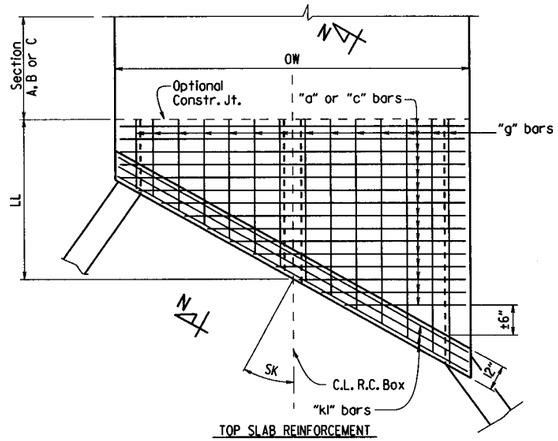
At the Contractor's option in lieu of providing Bent "b" or Bent "bl" bars, one bar top and bottom of equivalent size may be substituted for each bent bar. Payment for the reinforcing will be based on the weight of the "b" or "bl" bar.

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

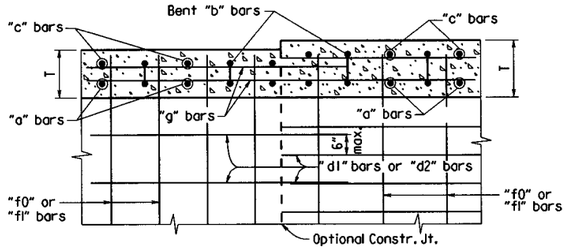


TYPICAL KEYWAY DETAIL

(All Construction Joints)



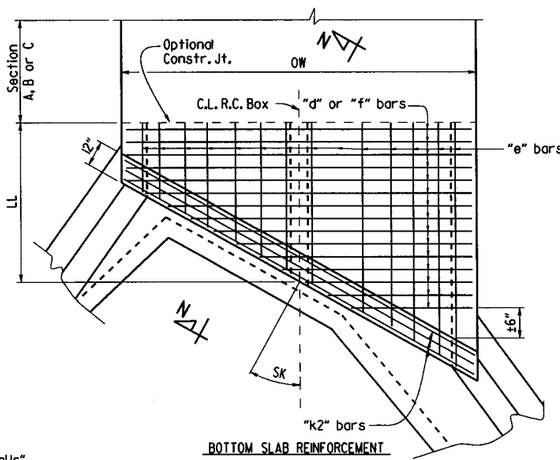
TOP SLAB REINFORCEMENT
Straight "c" bars in top.
Straight "a" bars in bottom.



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

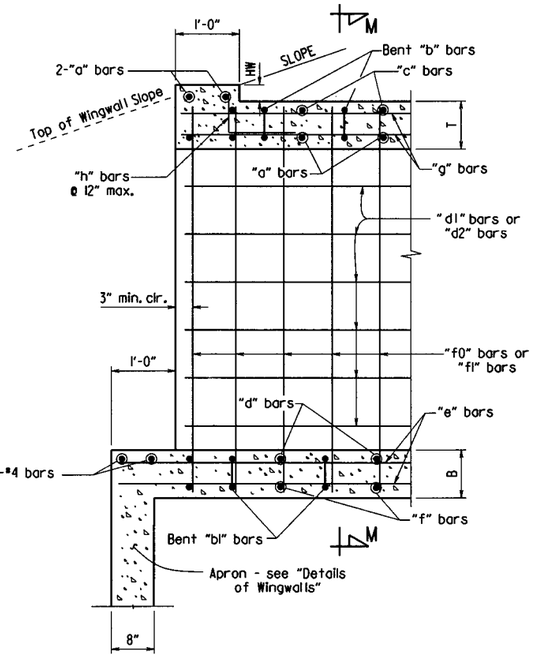
LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

TOP SLAB SHOWN, BOTTOM SLAB SIMILAR



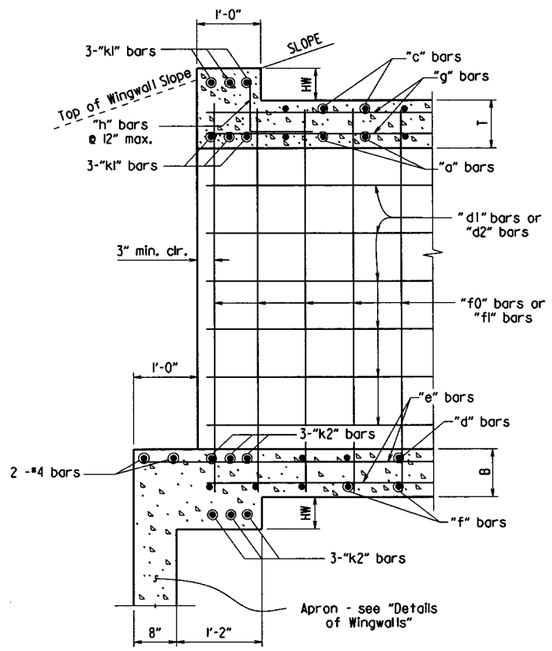
BOTTOM SLAB REINFORCEMENT
Straight "d" bars in top.
Straight "f" bars in bottom.

SKEWED END SECTION DETAILS



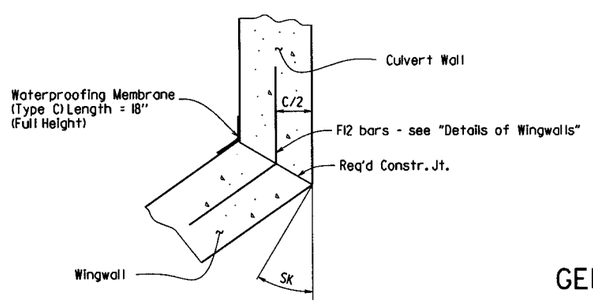
PART LONGITUDINAL SECTION

(Non-Skewed Ends)



PART LONGITUDINAL SECTION N-N

(Skewed Ends)



WINGWALL ATTACHMENT

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

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

DETAILS OF MULTI-BARREL R.C. BOX CULVERT

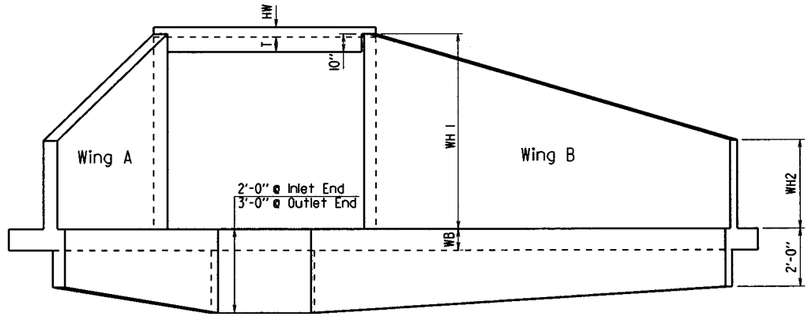
SPECIAL DETAILS

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
6-10-15

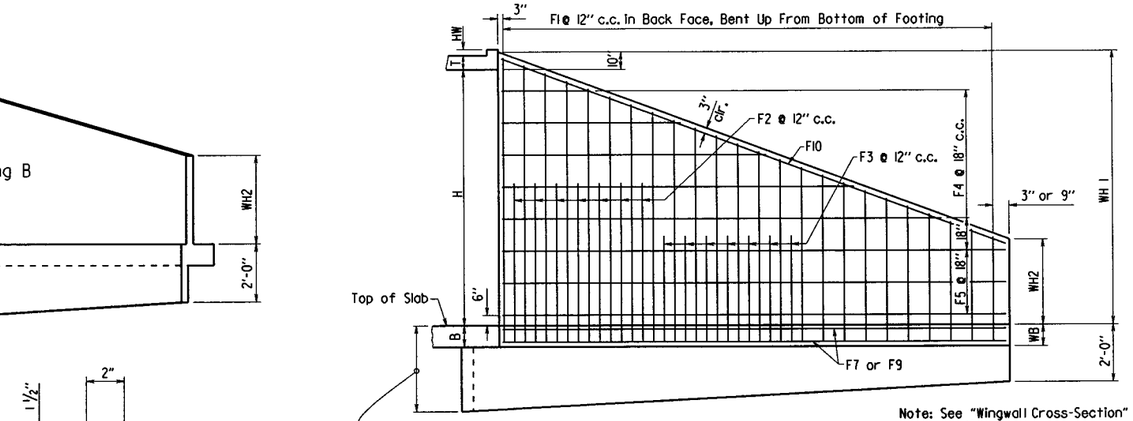
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	25	282

(1) SPECIAL DETAILS

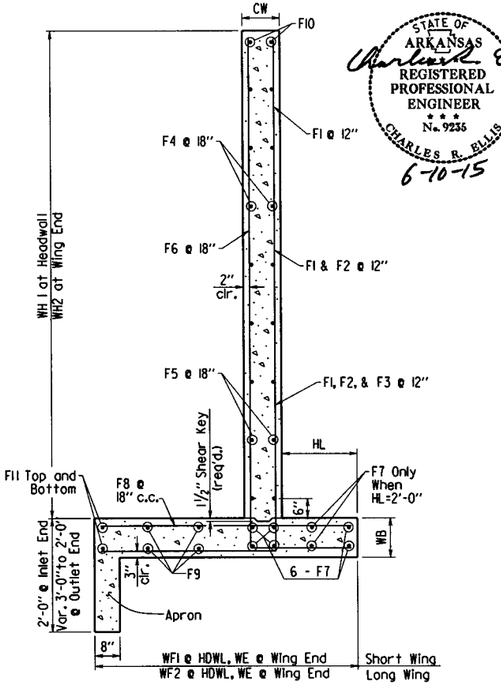


END ELEVATION
Flared Wingwalls Shown

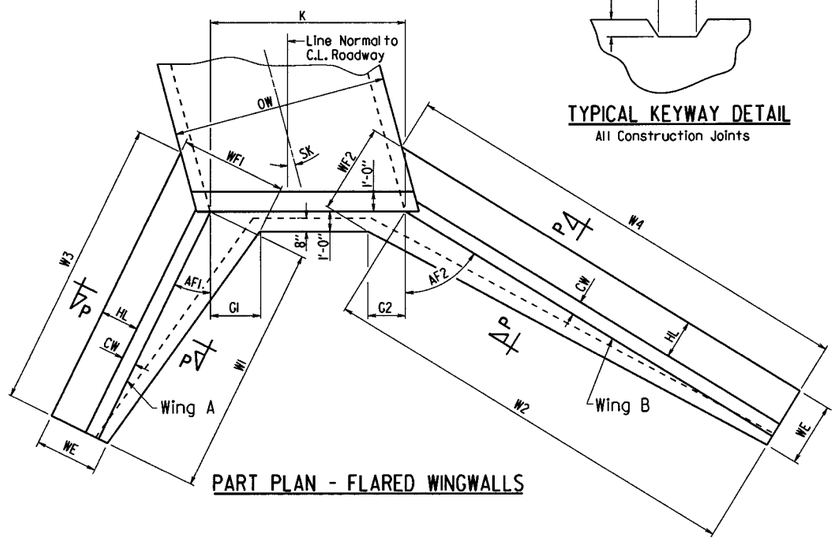


WINGWALL ELEVATION
Showing Back Face Reinforcement

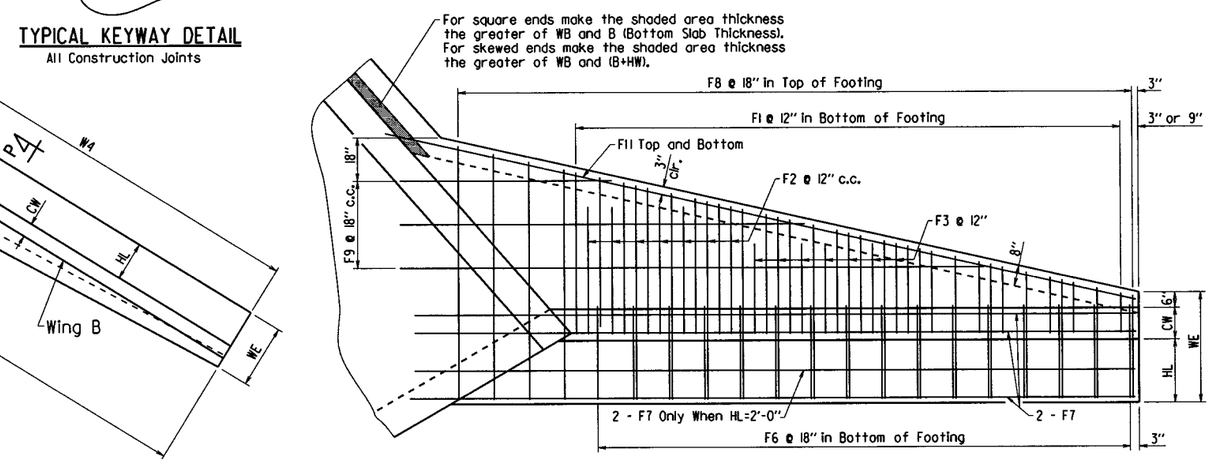
Note: See "Wingwall Cross-Section" for additional details and reinforcing



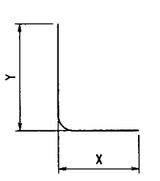
WINGWALL SECTION P-P



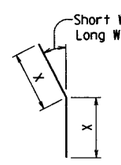
PART PLAN - FLARED WINGWALLS



PLAN - FLARED WINGWALLS
Showing Footing Reinforcement



F1, F2, F3, & F6 BARS

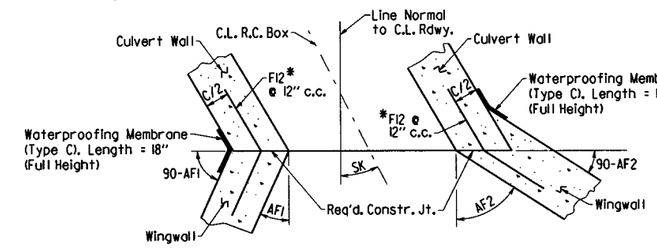


*F12 BAR

*F12 is a straight bar for parallel wingwalls

PART PLAN - PARALLEL WINGWALLS

PLAN - PARALLEL WINGWALLS
Showing Footing Reinforcement



CONSTRUCTION JOINTS
Flared Wingwalls Shown

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
6-10-15

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

b090230_culvert.dgn

TEMPORARY EROSION CONTROL GENERAL NOTES:

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

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

EROSION CONTROL QUANTITIES - CLEARING AND GRUBBING

ROCK DITCH CHECKS (E-6) = 1122 CU. YD.
SILT FENCE (E-11) = 17053 LIN. FT.
SEDIMENT REMOVAL AND DISPOSAL = 632 CU. YD.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	26	282

2 TEMPORARY EROSION CONTROL DETAILS

STA. 350+00.00
BEGIN JOB 090230
LOG MILE 12.05

EXIST. ROW
S 48°14'16" E
S 47°32'29" E
S 10°45'47" W
PROP. ROW
EXIST. ROW
PROP. ROW
EXIST. ROW
CONCRETE
PAVED
PAVED
T.C.E.
CASWELL COUNTY
345
350
355
360
365
370
375
443 LIN. FT.
50 LIN. FT.
43 LIN. FT.
74 LIN. FT.
106 LIN. FT.
159 LIN. FT.
538 LIN. FT.
305 LIN. FT.
159 LIN. FT.
392 LIN. FT.
266 LIN. FT.
P.I. 348+00.00
PC353+06.33
P.I. 359+15.07
PC368+01.34
P.I. 364+15.89
PC10+50.56
POB10+00.00
P.I. 13+23.36
P.I. 13+37.19
POE14+61.51
P.I. 12+02.33
N 81°35'11" E
N 19°03'49" E
N 16°43'41" E
Δ = 41°47'

REVISIONS

DATE	REVISION

LEGEND

E-6 ROCK DITCH CHECKS
E-11 SILT FENCE

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16

8/18/2016

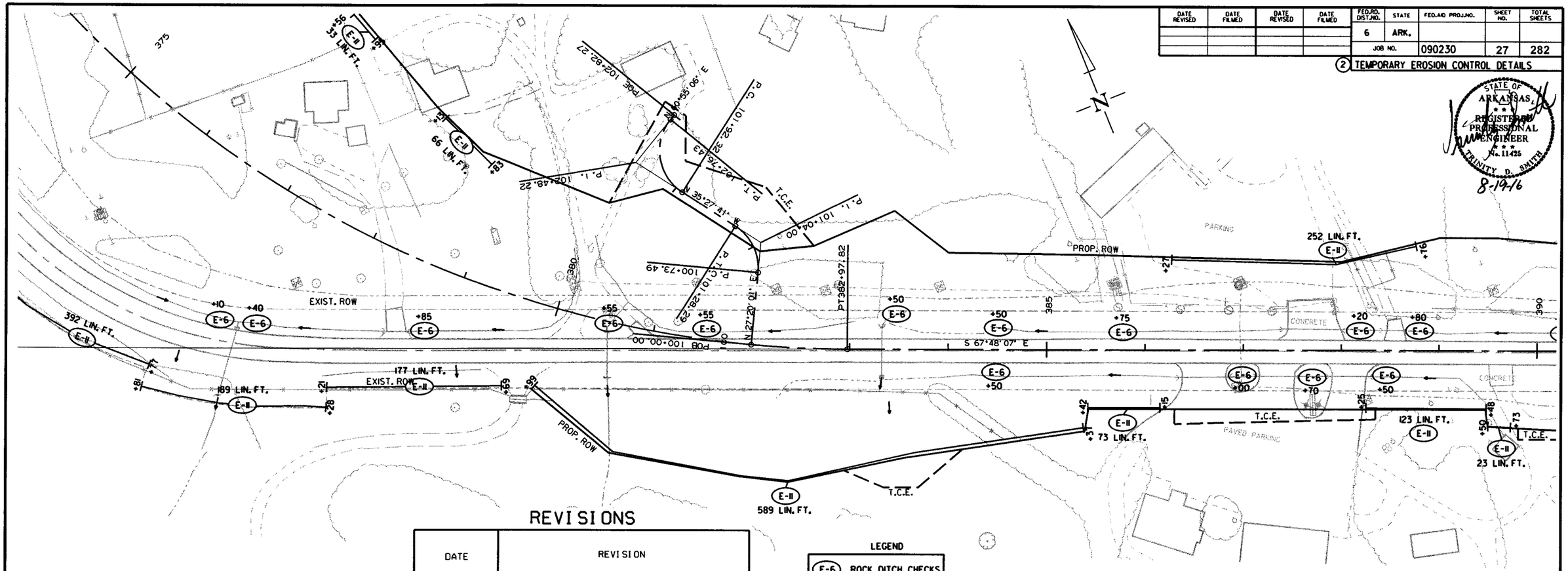
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CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

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.		090230	27	282

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16



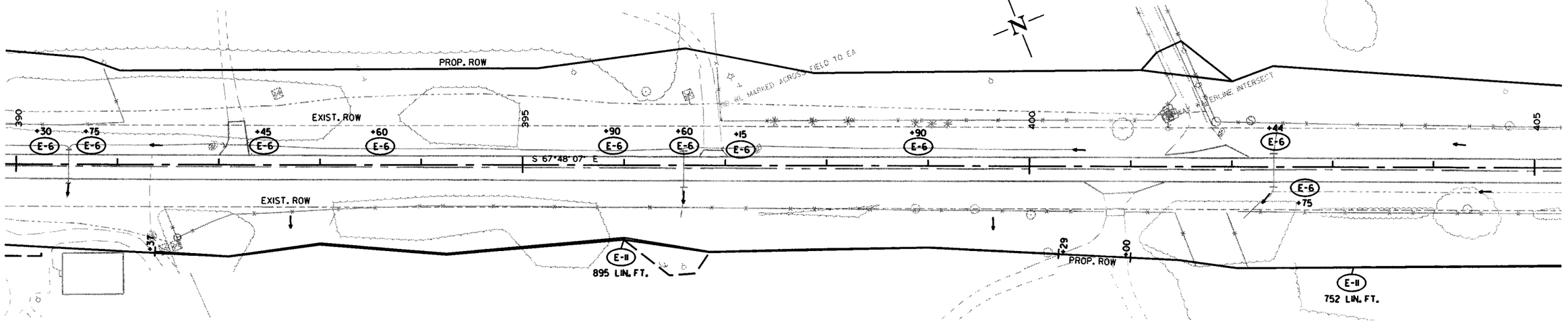
REVISIONS

DATE	REVISION

LEGEND

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

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



CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

8/18/2016

R090230.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.		090230	28	282

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16

N

405 410 415 420 425 430 435

PROP. ROW
EXIST. ROW
PROP. ROW
EXIST. ROW
PROP. ROW

P.C. 413+00.00
P.T. 419+17.86
PC409+31.70
PT416+68.05
PC417+05.38
PT421+30.23
PC427+67.79
P.T. 430+96.87
PT434+25.77

462 LIN. FT. E-11
213 LIN. FT. E-11
752 LIN. FT. E-11
213 LIN. FT. E-11
309 LIN. FT. E-11
143 LIN. FT. E-11
20 LIN. FT. E-11
10 LIN. FT. E-11
68 LIN. FT. E-11
774 LIN. FT. E-11
22 LIN. FT. E-11
40 LIN. FT. E-11

S 67°48'07" E
S 64°07'18" E
S. 60°56'02" E
S 60°56'02" E
S 57°38'38" E

E-6 +75 +10 +70 +20 +20 +55 +05 +15 +55 +10 +55 +70 +60 +20 +45 +95 +00 +85 +25 +55 +25

PARKING
PARKING
CONCRETE
T.C.E.
T.C.E.

EQUATION
STA. 434+96.69'
STA. 435+00.00

REVISIONS

DATE	REVISION

LEGEND

E-6 ROCK DITCH CHECKS
E-11 SILT FENCE

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

8/18/2016

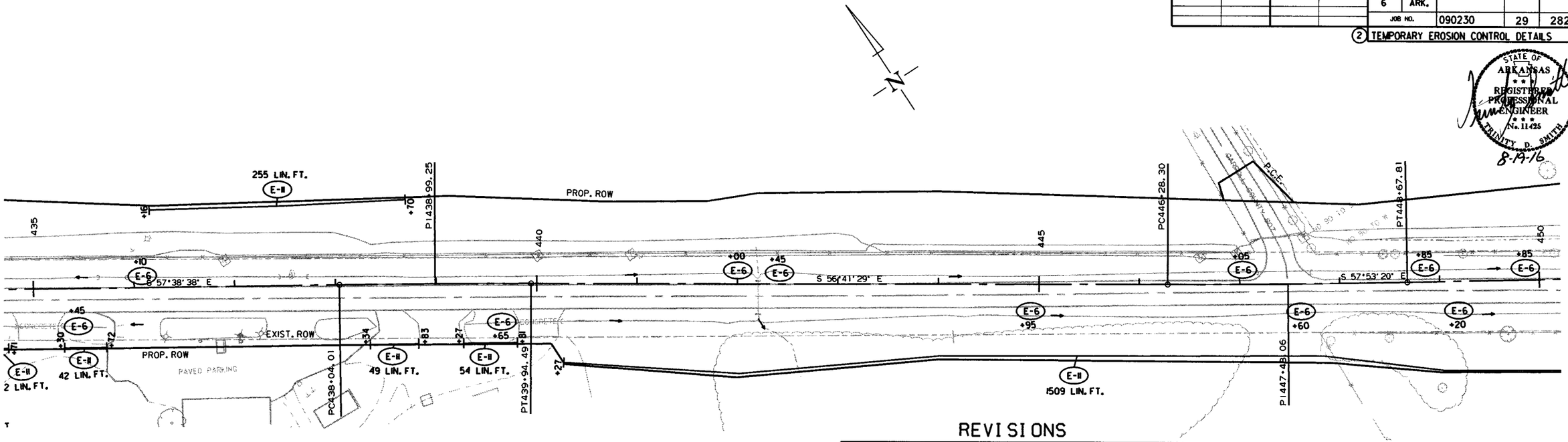
R090230.DGN

CLEARING AND GRUBBING
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.		090230	29	282

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16



REVISIONS

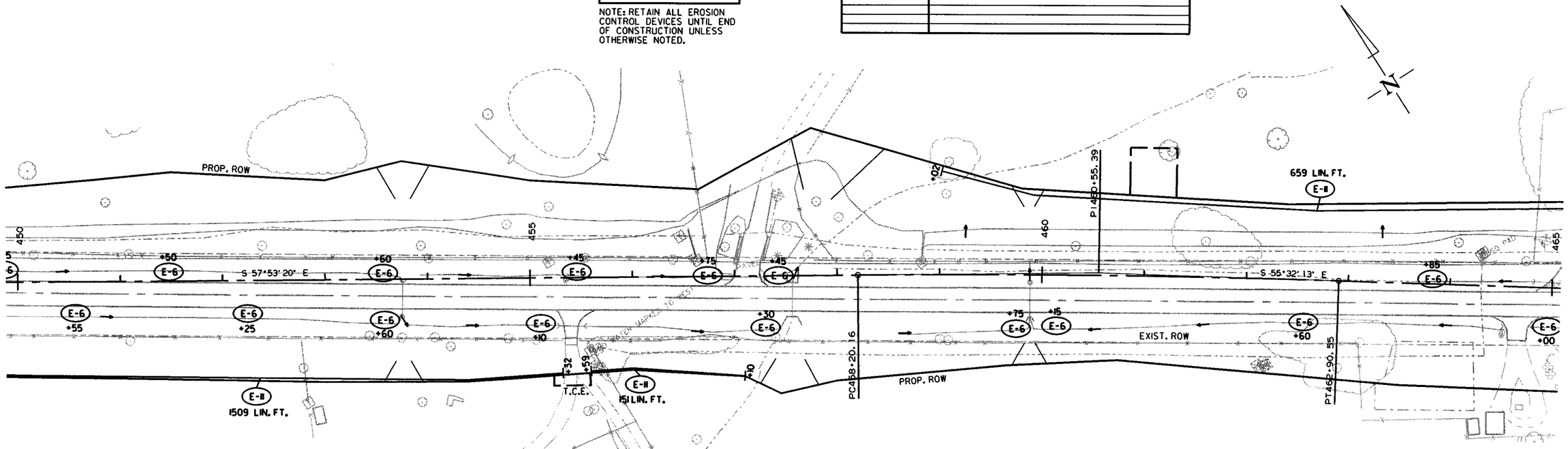
DATE	REVISION

LEGEND

E-6 ROCK DITCH CHECKS

E-II SILT FENCE

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



8/18/2016

R090230.DGN

CLEARING AND GRUBBING
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.		090230	30	282

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16

659 LIN. FT. E-II
383 LIN. FT. E-II
282 LIN. FT. E-II
75 LIN. FT. E-II
65 LIN. FT. E-II
239 LIN. FT. E-II
164 LIN. FT. E-II
148 LIN. FT. E-II
65 LIN. FT. E-II
239 LIN. FT. E-II
902 LIN. FT. E-II
20 LIN. FT. E-II
120 LIN. FT. E-II

PROP. ROW
EXIST. ROW
T.C.E.
P.C.E.
PARKING
CONCRETE
PAVED
P.C. 469+30.11
P.I. 472+32.69
PT 475+35.14
PC 481+11.71
P.I. 487+21.91
PT 493+00.37
S 55°32' 13" E
S 58°33' 44" E
S 86°55' 20" E

REVISIONS

DATE	REVISION

LEGEND

E-6 ROCK DITCH CHECKS
E-II SILT FENCE

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

8/18/2016

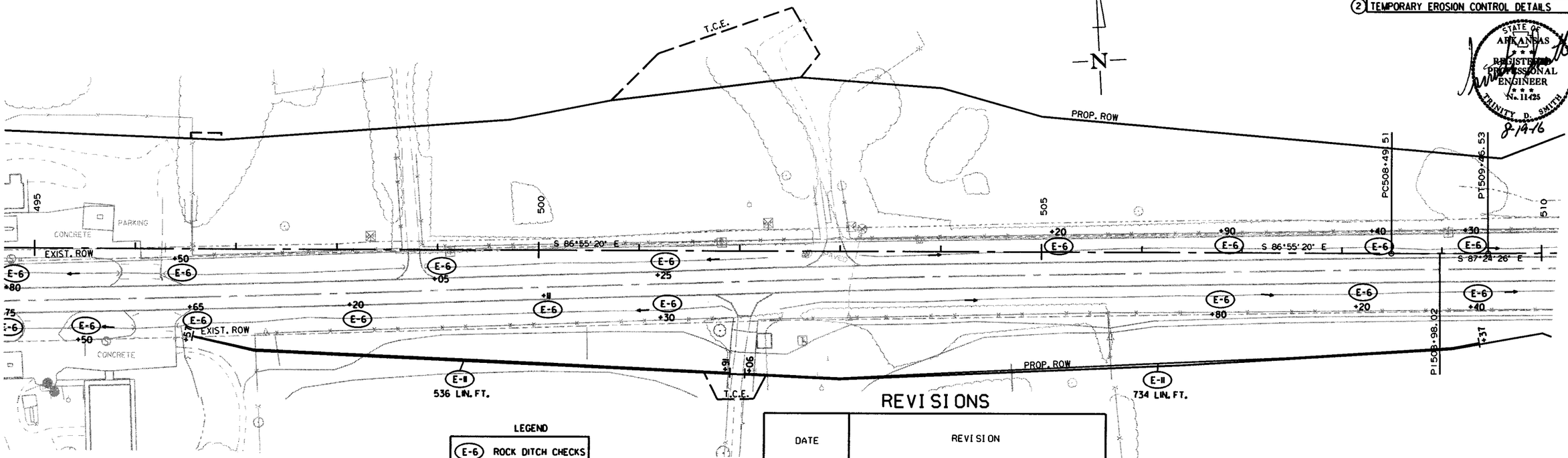
R090230.DGN

CLEARING AND GRUBBING
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.		090230	31	282

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16



REVISIONS

DATE	REVISION

LEGEND

E-6 ROCK DITCH CHECKS

E-11 SILT FENCE

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

CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

8/18/2016

R090230.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.		090230	32	282

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16

110 LIN. FT. E-11
580 LIN. FT. E-11
T.C.E.
PROP. ROW
EXIST. ROW
S 87°24'26" E
610 LIN. FT. E-11
525 530 535 540
E-6 +70 +80 +45 +10 +65 +45 +90 +80 +05 +15 +90 +45
+67 +58 +36 +35

N

REVISIONS

DATE	REVISION

LEGEND
E-6 ROCK DITCH CHECKS
E-11 SILT FENCE

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

STA. 547+54.00
END JOB 090230

36 LIN. FT. E-11
143 LIN. FT. E-11
75 LIN. FT. E-11
494 LIN. FT. E-11
84 LIN. FT. E-11
PI 543+47.27
Δ = 39°52'
PC 545+47.86
PI 548+68.17
PI 552+21.26
PT 551+48.38
PROP. ROW
EXIST. ROW
P.C.E.
CONCRETE
PARKING
S 87°24'26" E
S 88°04'18" E
S 85°16'08" E
S 89°32'31" E
540 545 550 555
E-6 +72 +08 +35 +33 +65 +30 +55 +07 +81 +82 +18 +30 +45 +10 +70 +93 +15
+49 +65

N

CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

8/18/2016
R090230.DGN

TEMPORARY EROSION CONTROL GENERAL NOTES:

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

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

EROSION CONTROL QUANTITIES - STAGE 1

ROCK DITCH CHECKS (E-6) = 507 CU. YD.
SILT FENCE (E-11) = 947 LIN. FT.
SEDIMENT BASIN (E-14) = 2554 CU. YD.
SEDIMENT REMOVAL AND DISPOSAL = 2589 CU. YD.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	33	282

(2) TEMPORARY EROSION CONTROL DETAILS

STA. 350+00.00
BEGIN JOB 090230
LOG MILE 12.05

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16

REVISIONS

DATE	REVISION

LEGEND

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

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

STAGE 1
TEMPORARY EROSION CONTROL DETAILS

FINAL TECR090230S-18-16.DGN 9/19/2016

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		090230	34	282

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16

REVISIONS

DATE	REVISION

LEGEND

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

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

STAGE I
TEMPORARY EROSION CONTROL DETAILS

FINAL TECR0902308-18-16.DGN 9/19/2016

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	35	282

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16

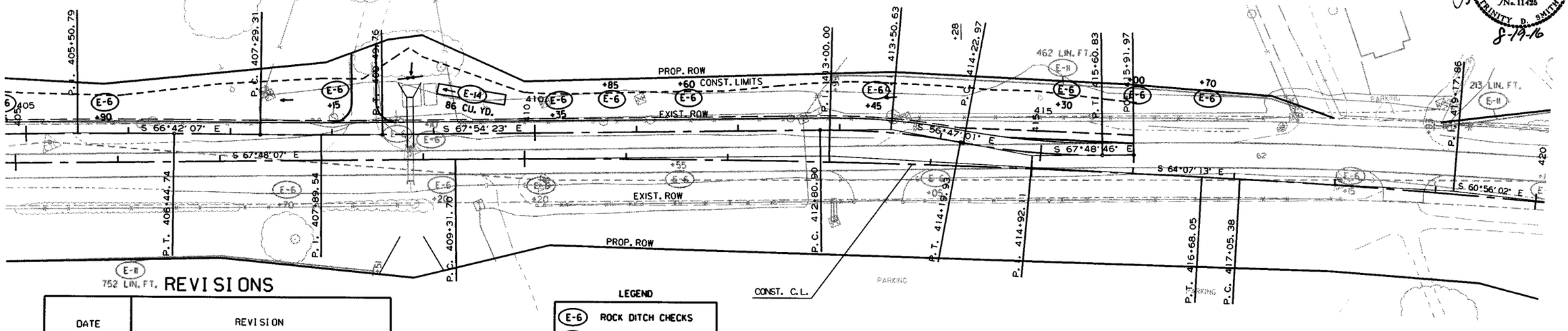
REVISIONS

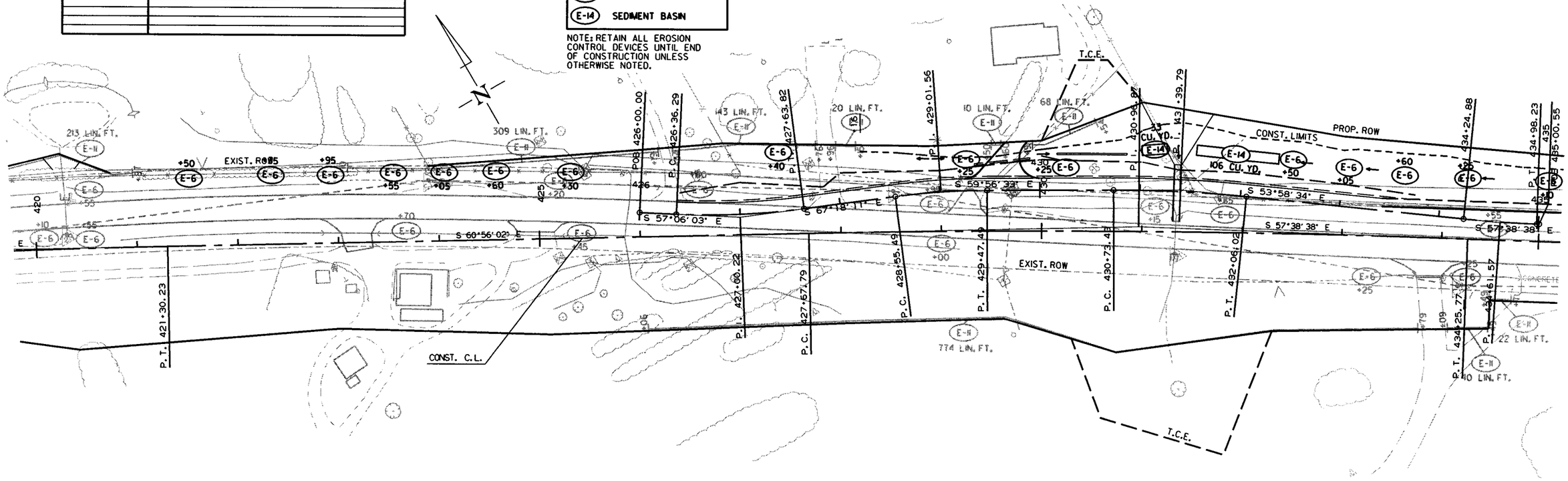
DATE	REVISION

LEGEND

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

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





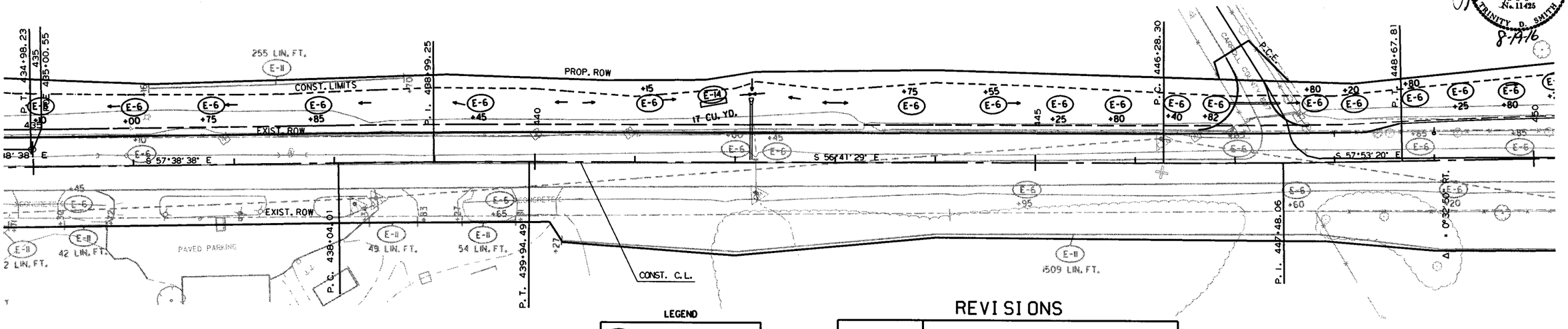
STAGE I
TEMPORARY EROSION CONTROL DETAILS

FINAL TECR0902308-18-16.DGN 8/19/2016

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	36	282

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-9-16



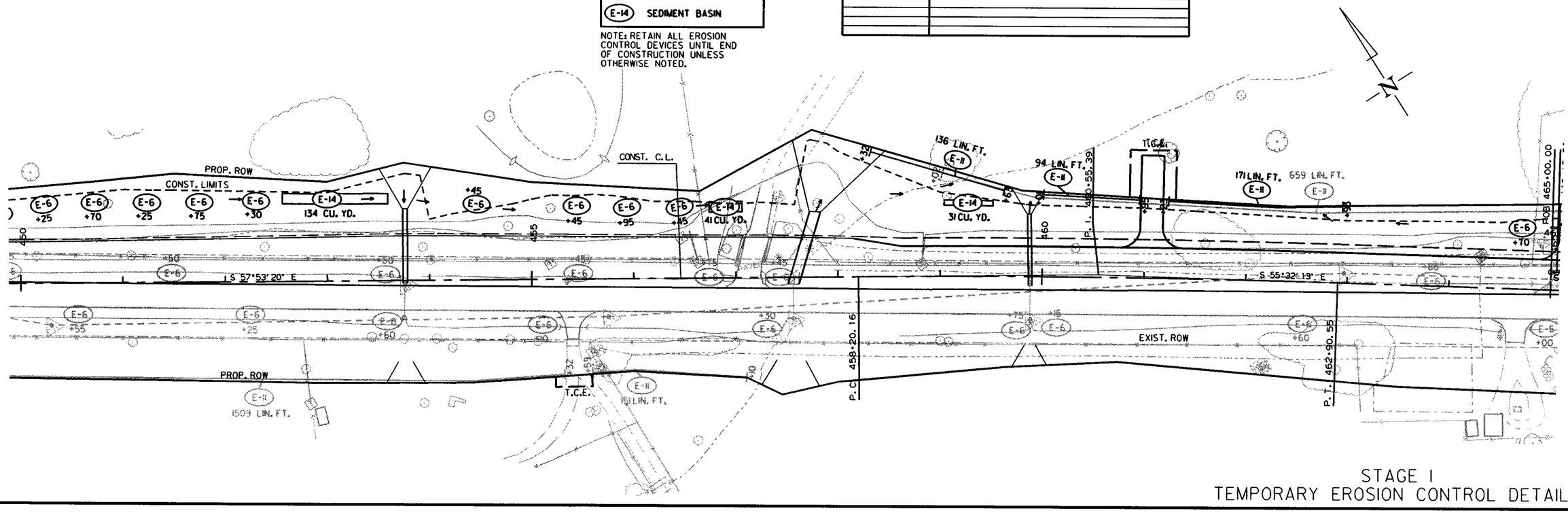
LEGEND

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

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

REVISIONS

DATE	REVISION



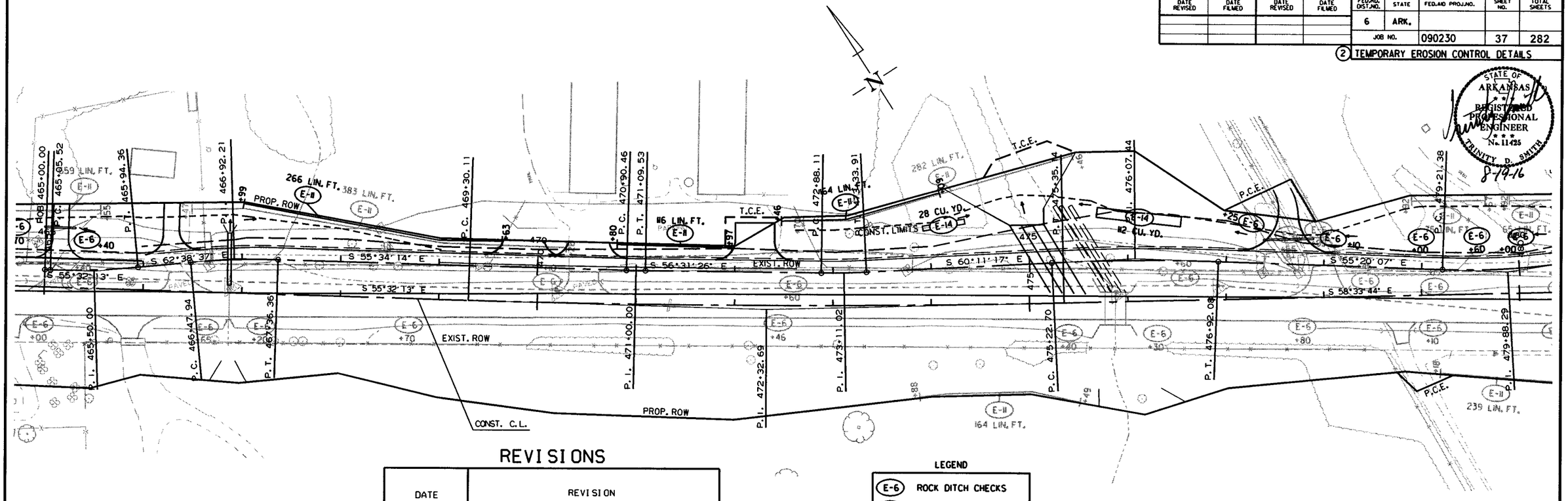
STAGE I
TEMPORARY EROSION CONTROL DETAILS

FINAL TECR0902308-18-16.DGN 8/19/2016

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	37	282

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16



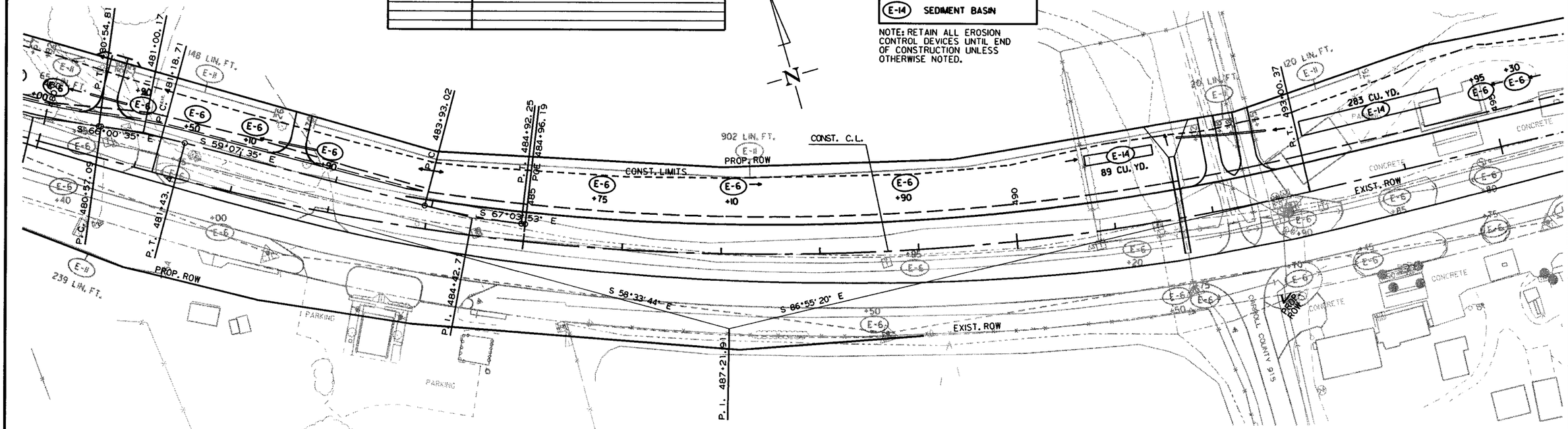
REVISIONS

DATE	REVISION

LEGEND

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

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



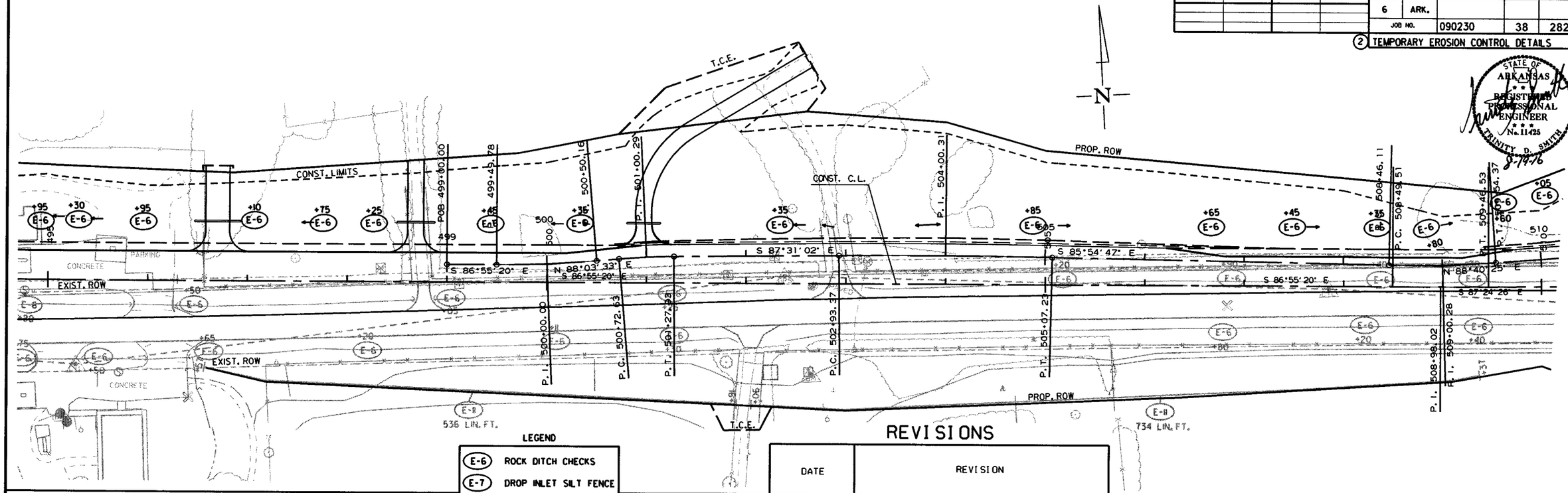
STAGE I
TEMPORARY EROSION CONTROL DETAILS

FINAL TECR0902308-18-16.DGN 8/19/2016

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	38	282

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16



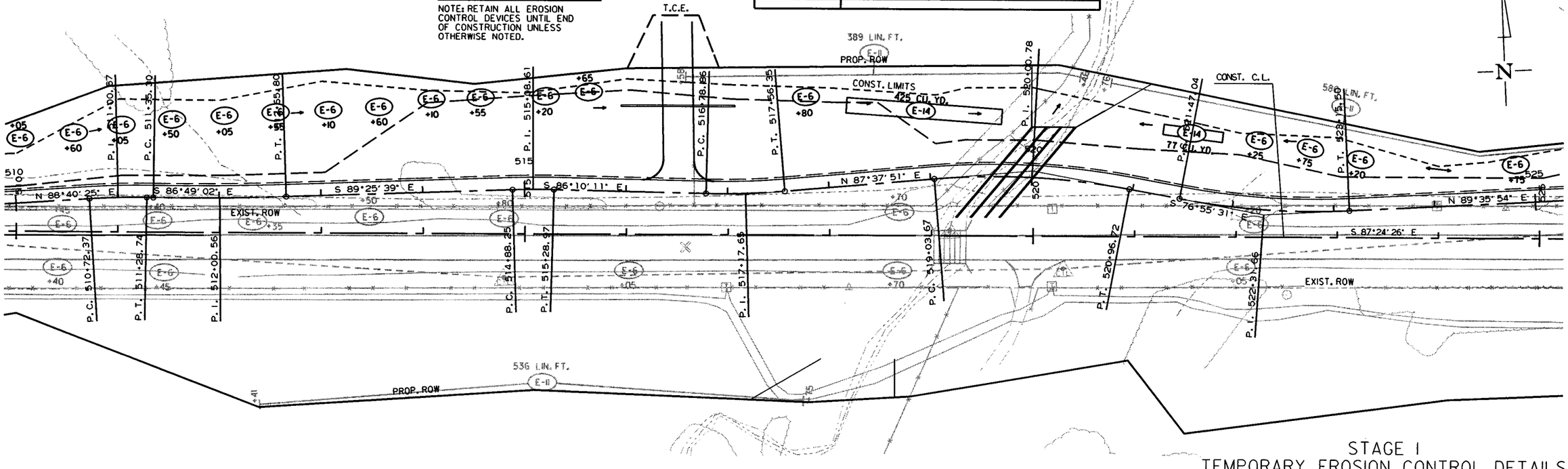
LEGEND

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

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

REVISIONS

DATE	REVISION



STAGE I
TEMPORARY EROSION CONTROL DETAILS

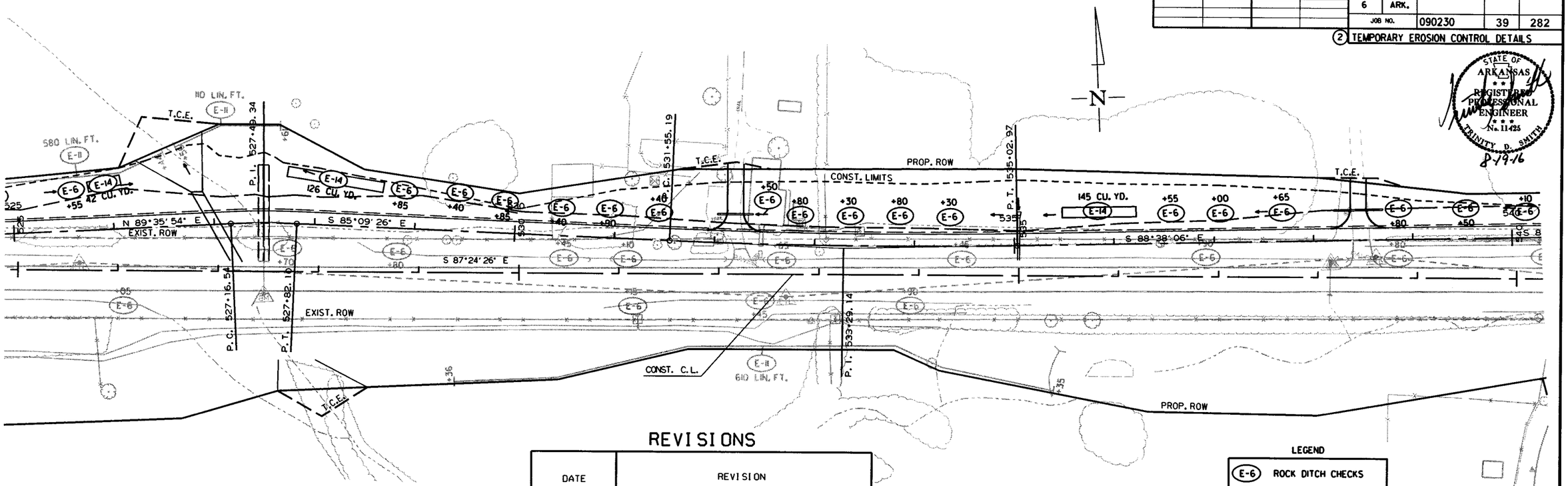
FINAL TECR0902308-18-16.DGN 9/19/2016

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		090230	39	282

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16



REVISIONS

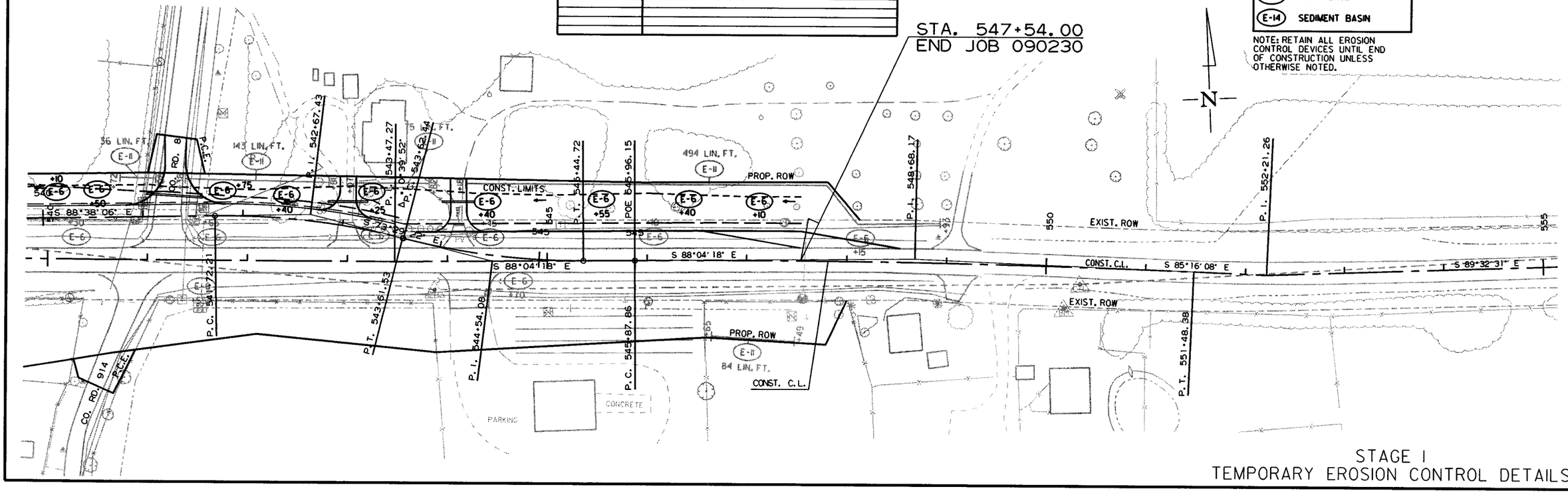
DATE	REVISION

STA. 547+54.00
END JOB 090230

LEGEND

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

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



STAGE I
TEMPORARY EROSION CONTROL DETAILS

FINAL TECR0902308-18-16.DGN 9/19/2016

TEMPORARY EROSION CONTROL GENERAL NOTES:

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

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

EROSION CONTROL QUANTITIES - STAGE 2

ROCK DITCH CHECKS (E-6) = 450 CU. YD.
DROP INLET SILT FENCE (E-7) = 66 LIN. FT.
SILT FENCE (E-11) = 2385 LIN. FT.
SEDIMENT BASIN (E-14) = 2285 CU. YD.
SEDIMENT REMOVAL AND DISPOSAL = 2376 CU. YD.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	40	282

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16

STA. 350+00.00
BEGIN JOB 090230
LOG MILE 12.05

EXIST. ROW
CONST. LIMITS
S 48°14'16" E
S 47°32'29" E
P.I. 348+00.00
Δ = 0°41'47"
PC353+06.33
S 10°45'47" W
PROP. ROW
CONST. C.L.
EXIST. ROW
P.I. 359+15.07

REVISIONS

DATE	REVISION

LEGEND

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

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

T.C.E.
CONST. LIMITS
PROP. ROW
E-14 187 CU. YD.
EXIST. ROW
P.I. 364+16.89
CONST. C.L.
762 LIN. FT.
E-14 233 CU. YD.
PC368+01.34
PROP. ROW
S 10°45'47" W
E-14 117 CU. YD.
EXIST. ROW
PC10+50.56
POB10+00.00
E-14 96 CU. YD.
EXIST. ROW
N 81°35'11" E
N 19°03'49" E
N 16°43'41" E
PT13+23.36
Δ 113°37'19"
POE14+61.51

STAGE 2 C.L.
P.I. = 371+94.72
Δ = 11°55'14" LT.
D = 8°0'00.0"
T = 74.77'
L = 149.00'
P.C. = 371+19.95
P.T. = 372+68.95
NO SUPER
P.I. 12+02.33

OBLITERATION OF EXISTING PAVEMENT

STAGE 2
TEMPORARY EROSION CONTROL DETAILS

8/18/2016
R090230.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.		090230	41	282

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16

OBLITERATION OF EXISTING PAVEMENT

EXIST. ROW

PROP. ROW

CONST. LIMITS

CONST. C.L.

T.C.E.

PAVED PARKING

PARKING

P.C. 102+82.27

P.T. 102+76.43

P.C. 101+92.32

P.T. 101+48.22

N 35°27'41" W

P.C. 101+04.00

P.T. 382+97.82

N 27°20' 01" E

P.O.B. 100+00.00

S 67°48'07" E

41 CU. YD.

104 CU. YD.

180 LIN. FT.

78 LIN. FT.

185 LIN. FT.

83 LIN. FT.

REVISIONS

DATE	REVISION

LEGEND

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

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

PROP. ROW

CONST. LIMITS

EXIST. ROW

CONST. C.L.

T.C.E.

76 CU. YD.

66 CU. YD.

68 CU. YD.

95 CU. YD.

590 LIN. FT.

245 LIN. FT.

S 67°48'07" E

8/18/2016

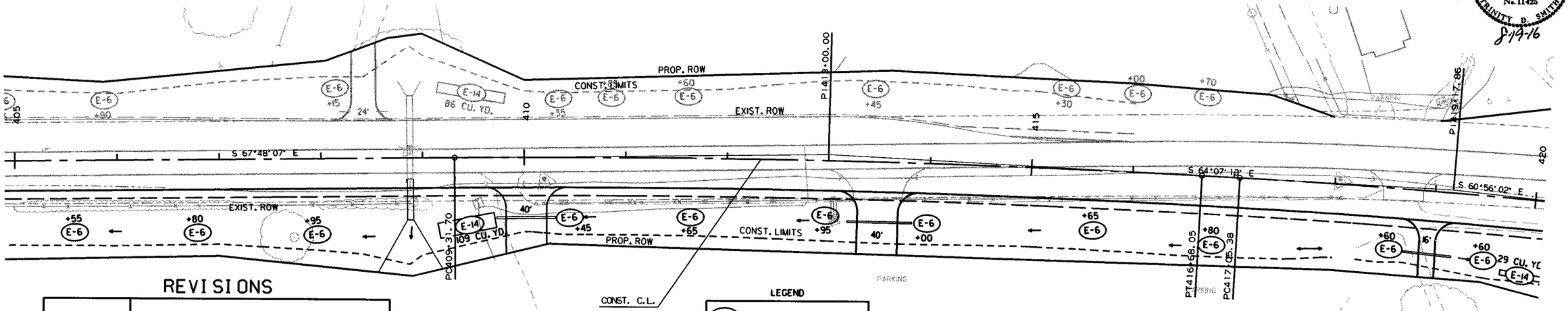
R090230.DGN

STAGE 2
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.		090230	42	282

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16



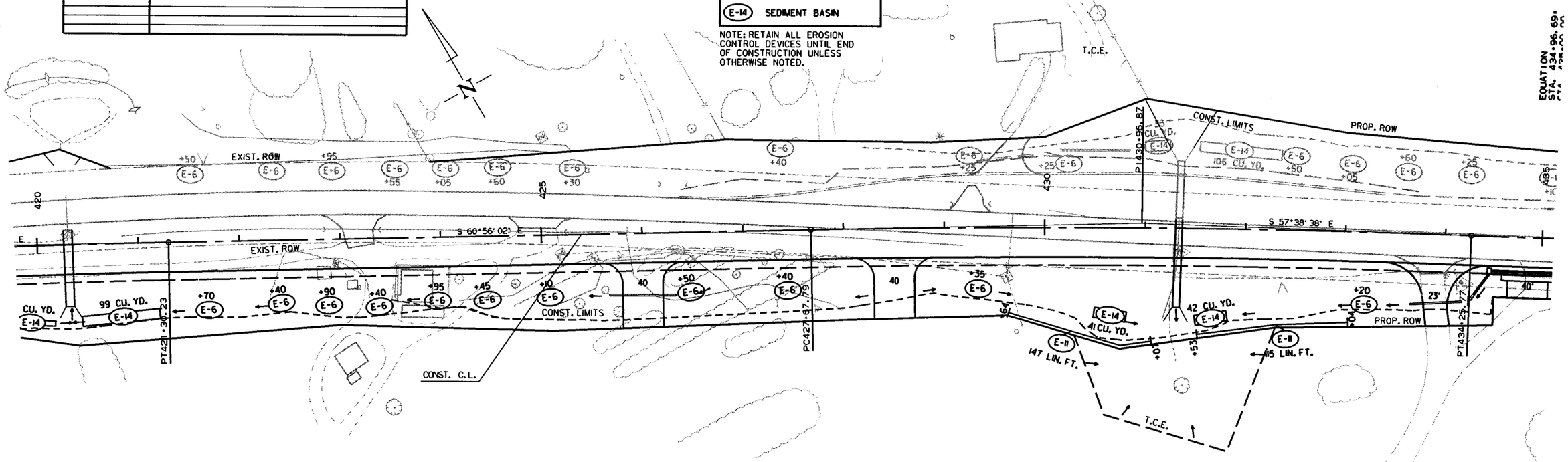
REVISIONS

DATE	REVISION

LEGEND

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

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



STAGE 2
TEMPORARY EROSION CONTROL DETAILS

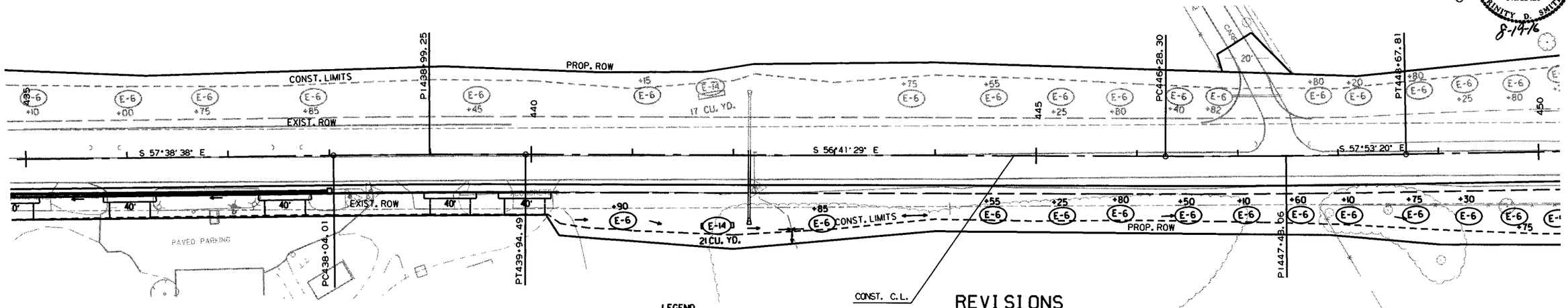
8/18/2016

R090230.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.		090230	43	282

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-14-16



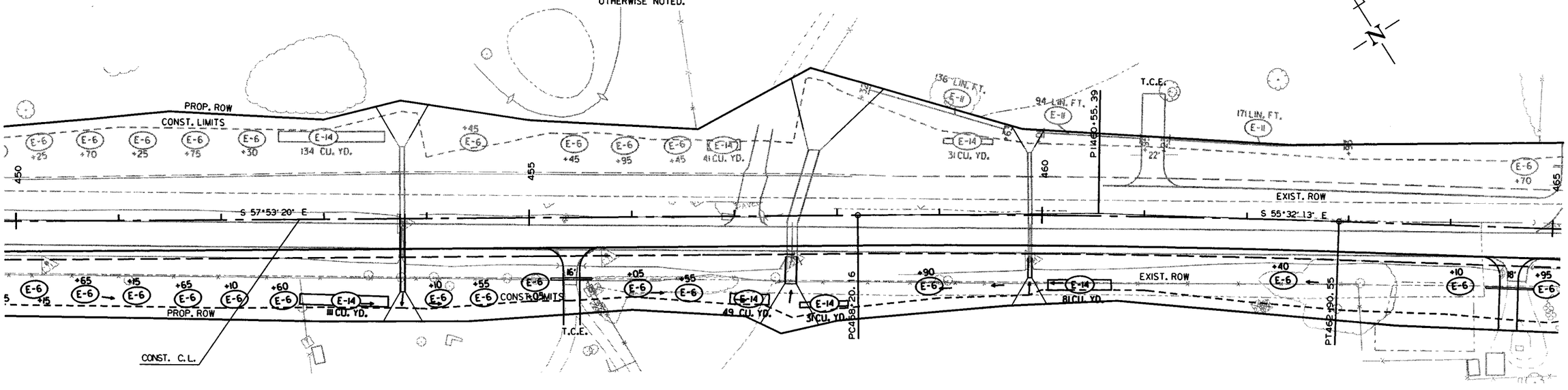
LEGEND

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

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

REVISIONS

DATE	REVISION



STAGE 2
TEMPORARY EROSION CONTROL DETAILS

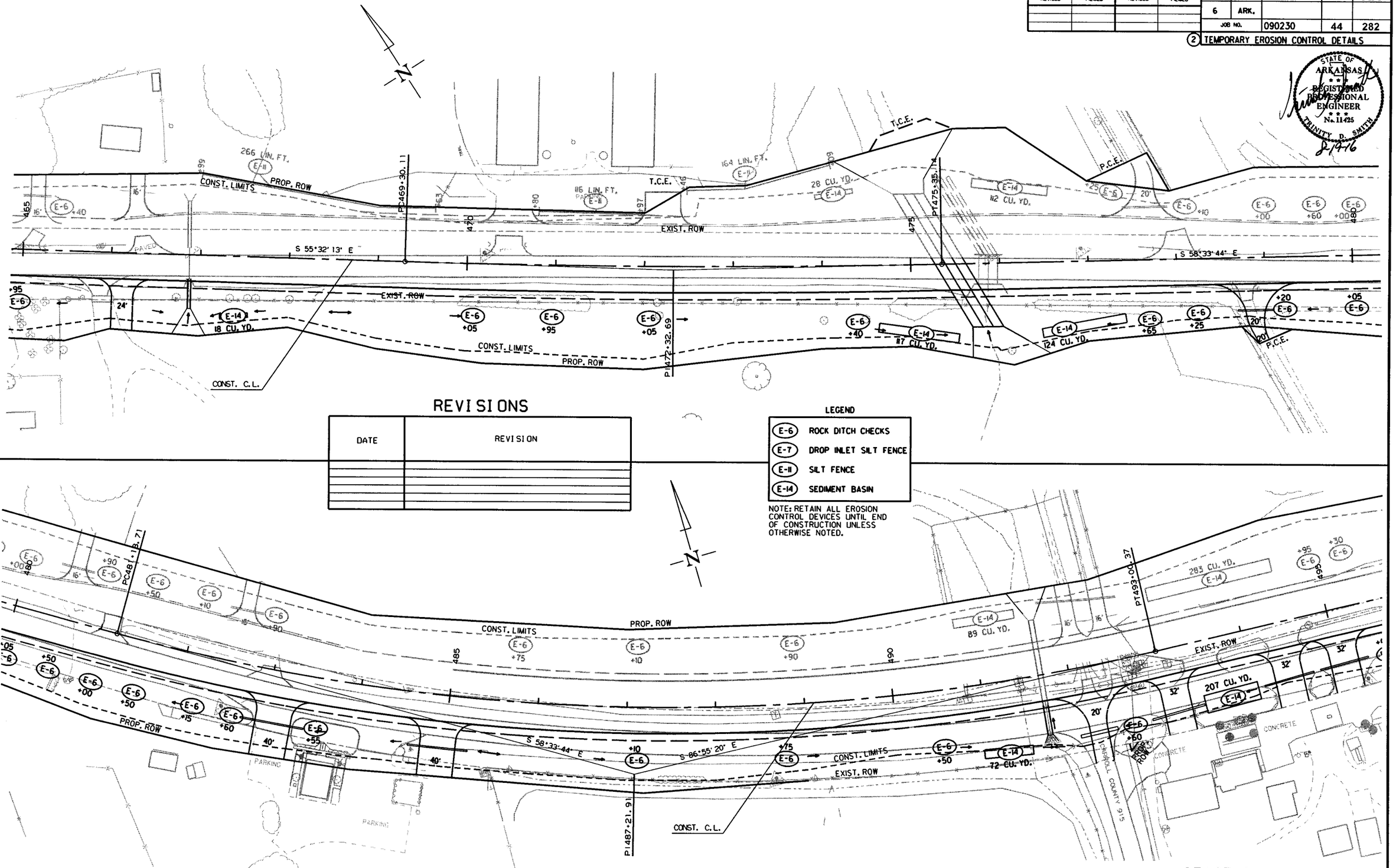
8/18/2016

R090230.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.		090230	44	282

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
2/4/16



REVISIONS

DATE	REVISION

LEGEND

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

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

8/18/2016

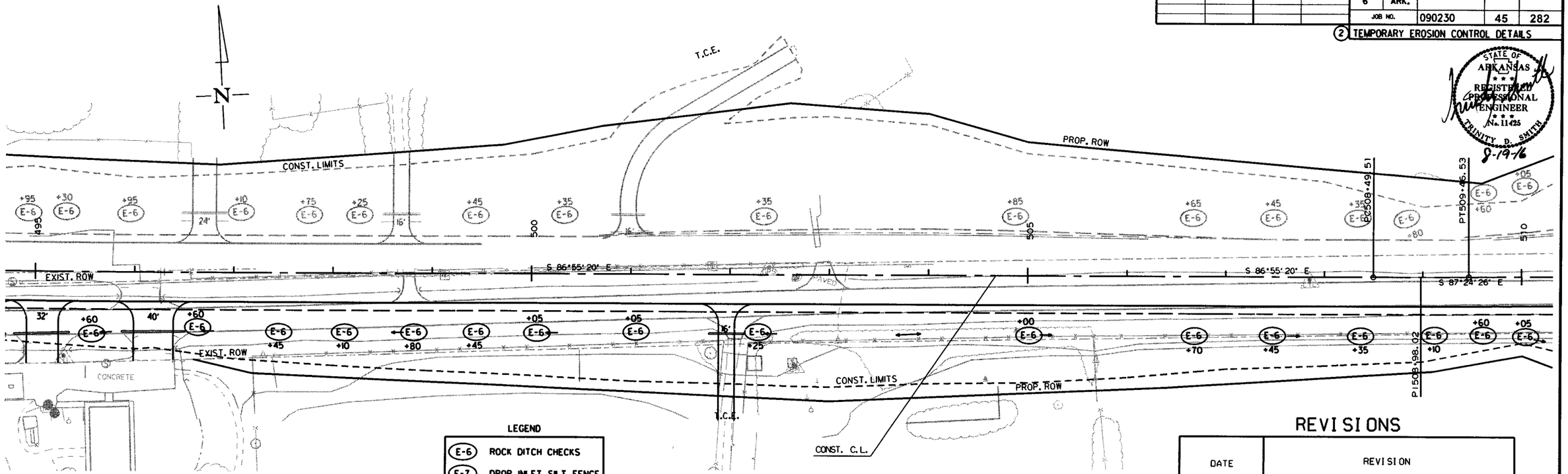
R090230.DGN

STAGE 2
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.		090230	45	282

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16



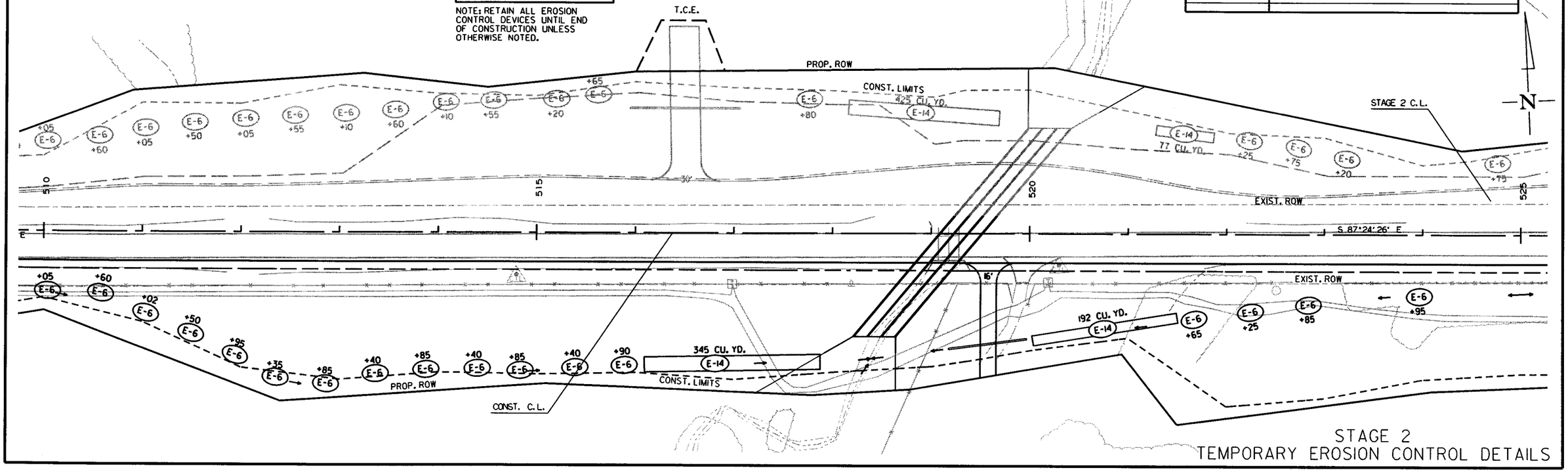
LEGEND

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

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

REVISIONS

DATE	REVISION



STAGE 2
TEMPORARY EROSION CONTROL DETAILS

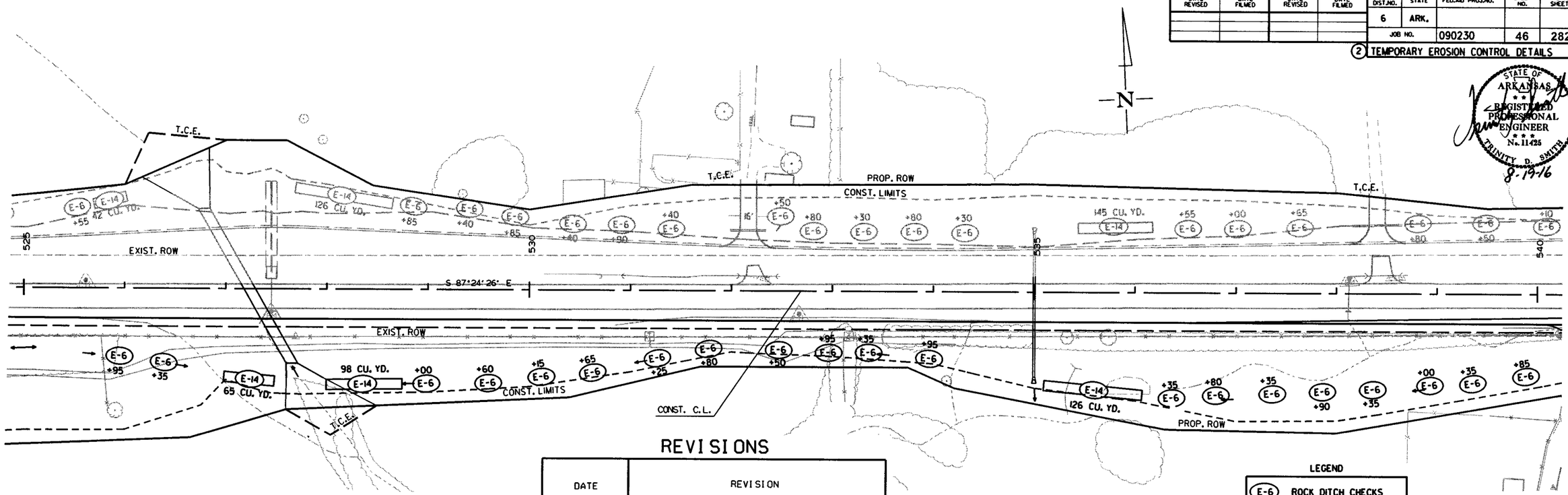
8/18/2016

R090230.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.		090230	46	282

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16



REVISIONS

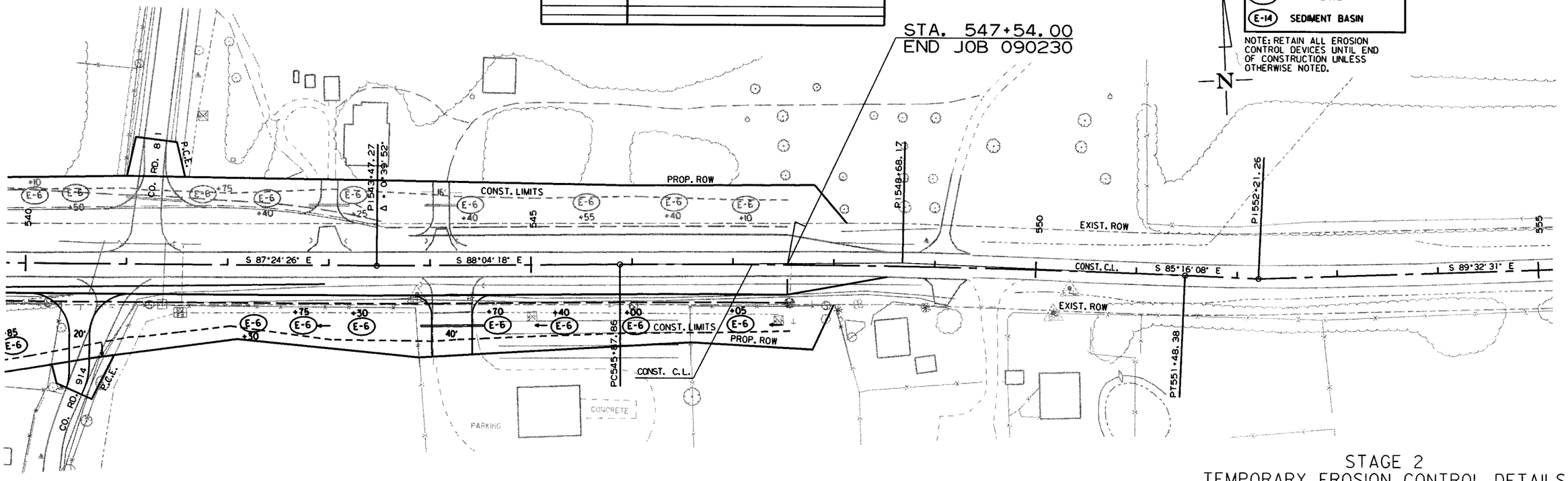
DATE	REVISION

LEGEND

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

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

STA. 547+54.00
END JOB 090230



STAGE 2
TEMPORARY EROSION CONTROL DETAILS

8/18/2016

R090230.DGN

TEMPORARY EROSION CONTROL GENERAL NOTES:

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

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

EROSION CONTROL QUANTITIES - STAGE 3

ROCK DITCH CHECKS (E-6) = 408 CU. YD.
DROP INLET SILT FENCE (E-7) = 44 LIN. FT.
SILT FENCE (E-11) = 546 LIN. FT.
SEDIMENT BASIN (E-14) = 1903 CU. YD.
SEDIMENT REMOVAL AND DISPOSAL = 1925 CU. YD.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	47	282

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-18-16

STA. 350+00.00
BEGIN JOB 090230
LOG MILE 12.05

EXIST. ROW
S 48°14'16" E
S 47°32'29" E
P.I. 348+00.00
Δ = 0°41'47"
CONST. C.L.
CONST. LIMITS
P.C. 353+06.33
P.T. 359+15.07
PROP. ROW
EXIST. ROW

REVISIONS

DATE	REVISION

LEGEND

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

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

T.C.E.
CONST. C.L.
PROP. ROW
P.T. 364+16.89
P.C. 368+01.34
762 LIN. FT.
P.O.B. 10+00.00
P.C. 10+50.56
EXIST. ROW
P.T. 13+23.36
P.I. 13+37.19
N 81°35'11.0" E
N 19°03'49.2" E
187 CU. YD.
12 CU. YD.
231 CU. YD.
96 CU. YD.

STAGE 3
TEMPORARY EROSION CONTROL DETAILS

8/18/2016

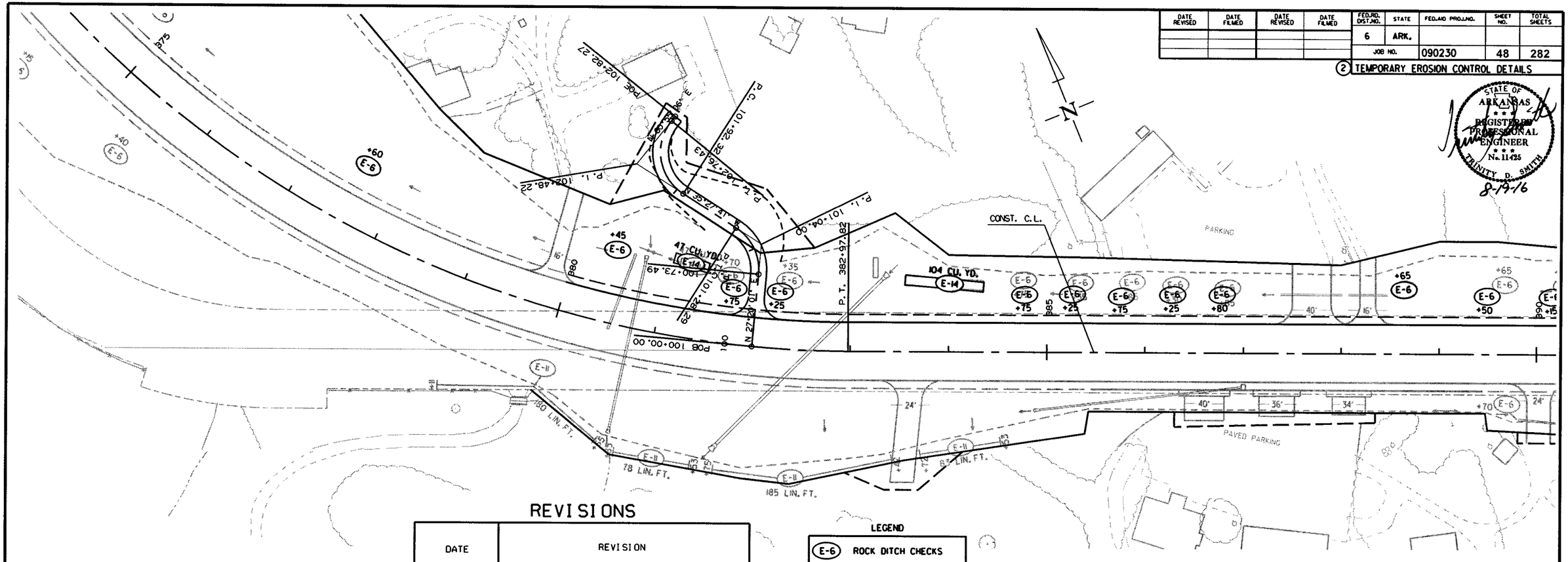
R090230.DGN

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.		090230	48	282

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16



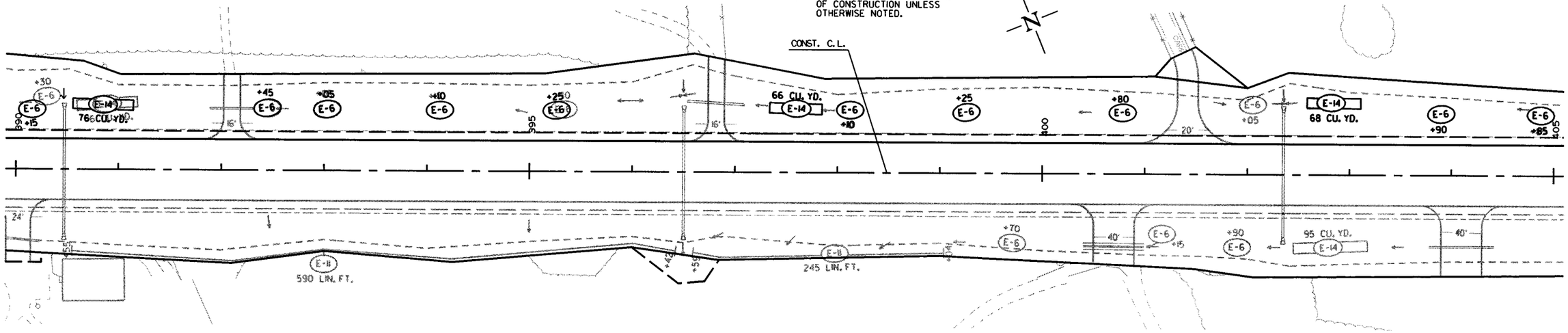
REVISIONS

DATE	REVISION

LEGEND

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

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



8/18/2016

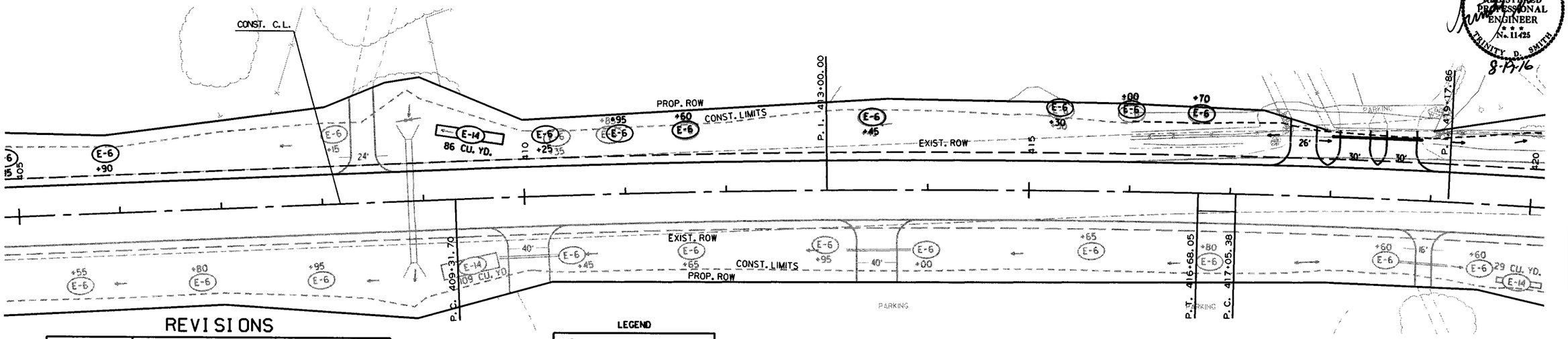
R090230.DGN

STAGE 3
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.		090230	49	282

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-18-16



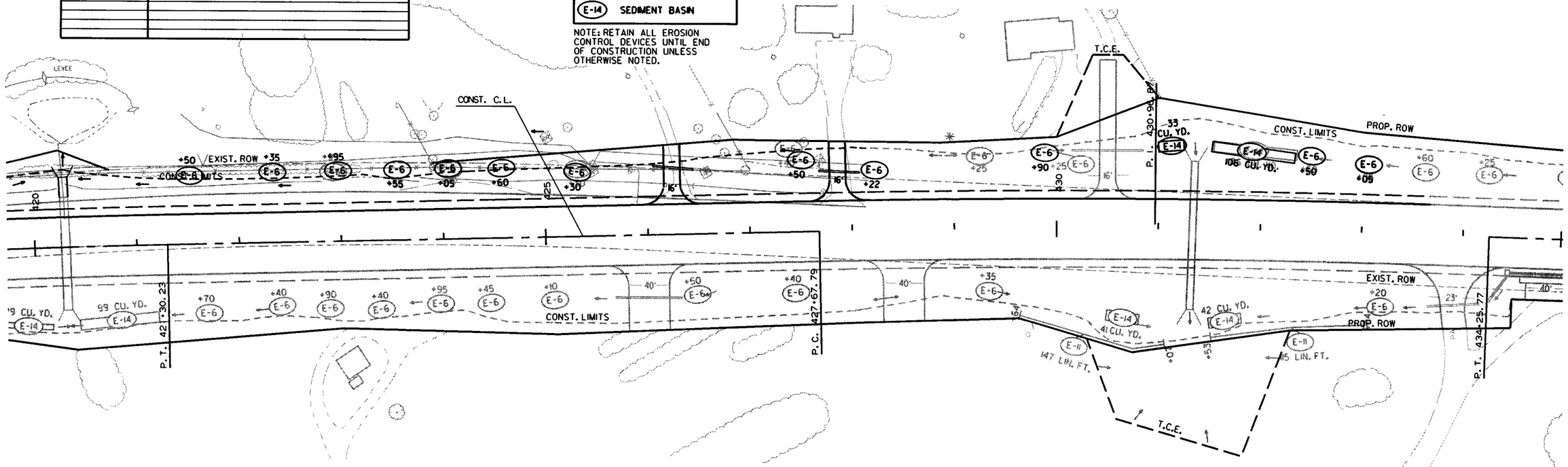
REVISIONS

DATE	REVISION

LEGEND

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

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



STAGE 3
TEMPORARY EROSION CONTROL DETAILS

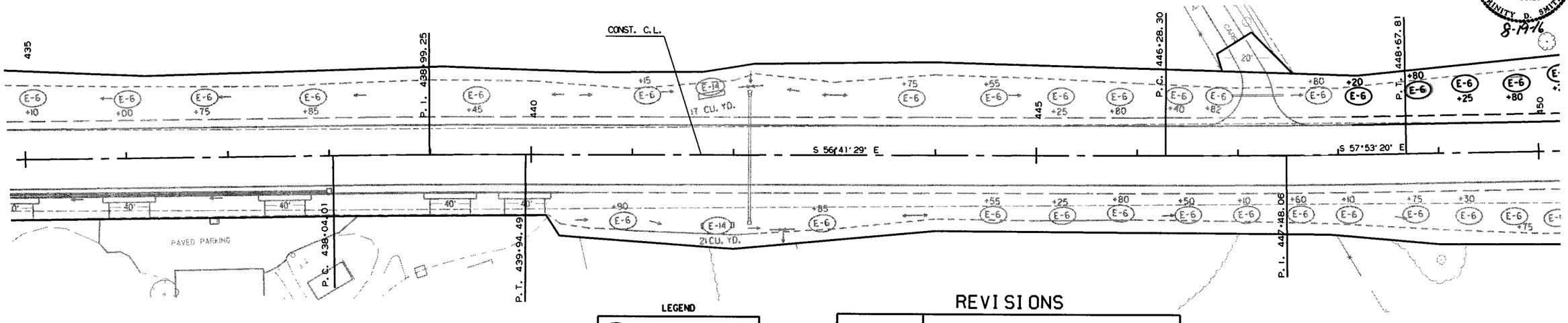
8/18/2016

R090230.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.		090230	50	282

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16



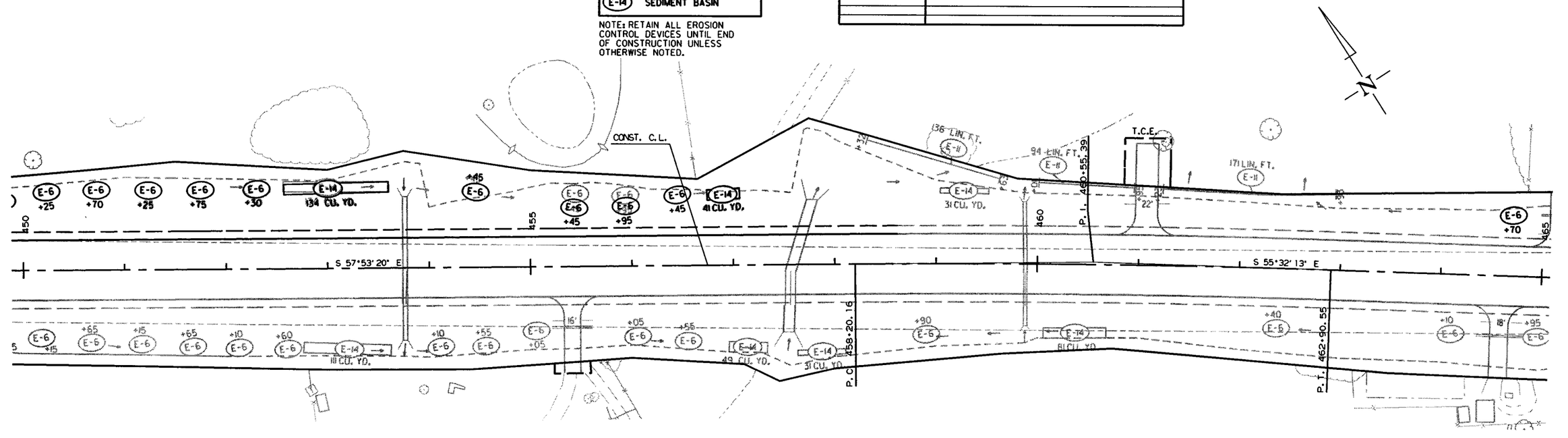
LEGEND

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

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

REVISIONS

DATE	REVISION



STAGE 3
TEMPORARY EROSION CONTROL DETAILS

8/18/2016

R090230.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.		090230	51	282

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16

CONST. C.L.
266 LIN. FT. E-11
PROP. ROW
CONST. LIMITS
P.C. 469+30.11
164 LIN. FT. E-11
116 LIN. FT. E-11
T.C.E.
28 CU. YD. E-14
P.T. 475+35.14
P.C.E.
42 CU. YD. E-14
EXIST. ROW
P.I. 472+32.69
18 CU. YD. E-14
87 CU. YD. E-14
124 CU. YD. E-14

REVISIONS

DATE	REVISION

LEGEND

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

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

CONST. C.L.
P.C. 481+18.71
CONST. LIMITS
PROP. ROW
S 58°33' 40" E
S 86°55' 20" E
P.I. 487+21.91
P.T. 493+00.37
283 CU. YD. E-14
207 CU. YD. E-14
89 CU. YD. E-14
72 CU. YD. E-14
EXIST. ROW
PARKING
CONCRETE
OLD COUNTY 915

8/18/2016

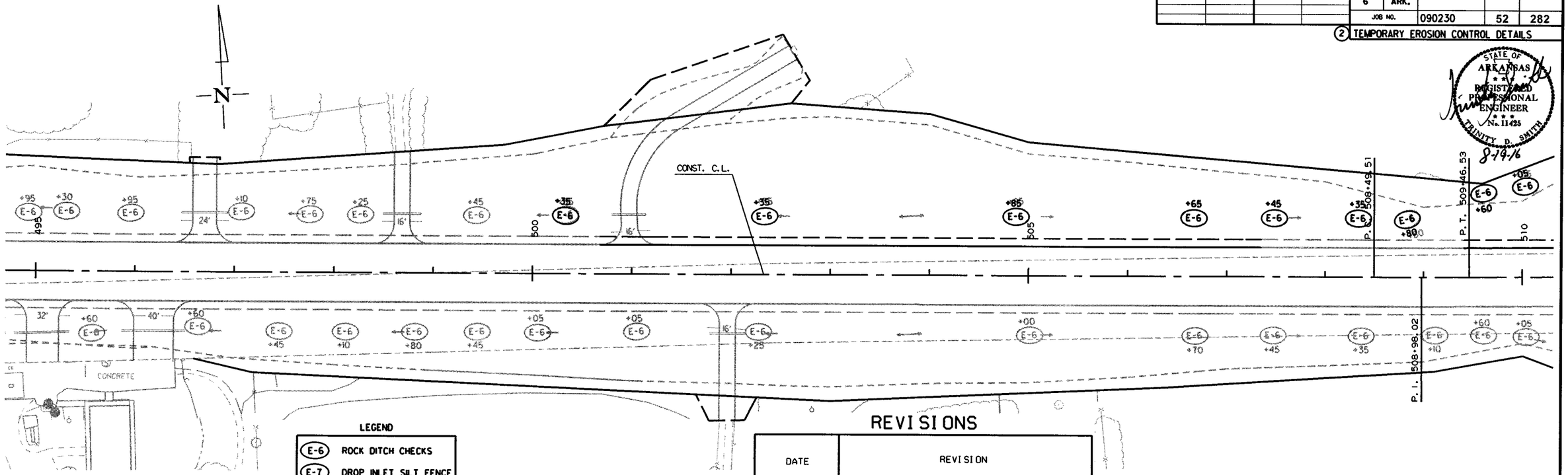
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STAGE 3
TEMPORARY EROSION CONTROL DETAILS

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.		090230	52	282

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16



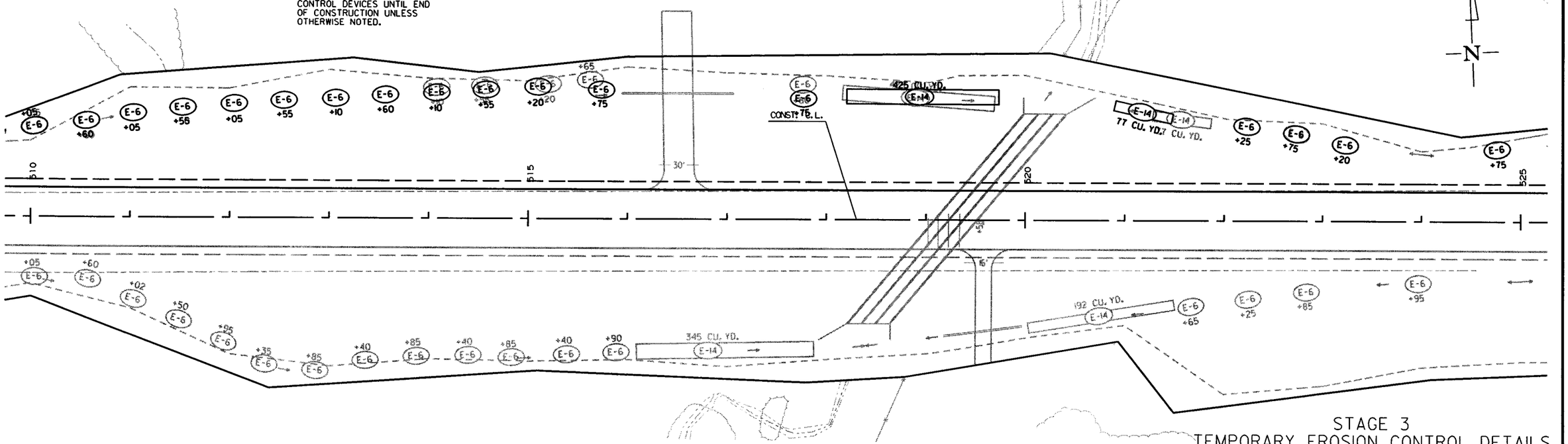
LEGEND

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

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

REVISIONS

DATE	REVISION



8/18/2016

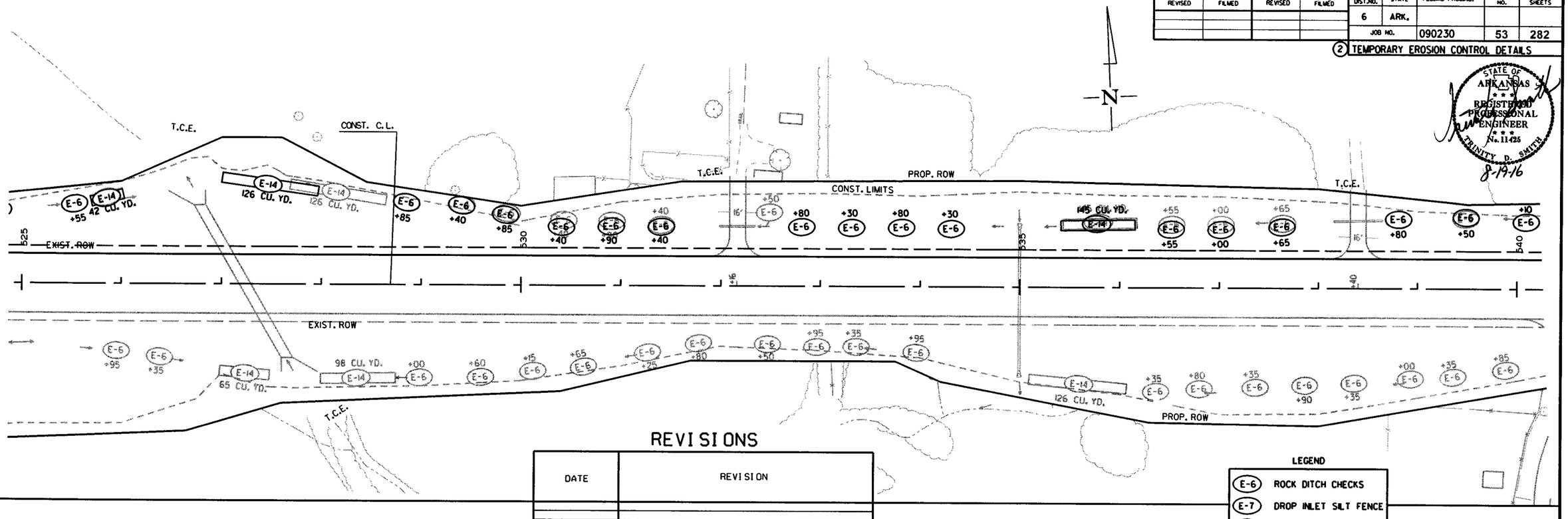
R090230.DGN

STAGE 3
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.		090230	53	282

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16



REVISIONS

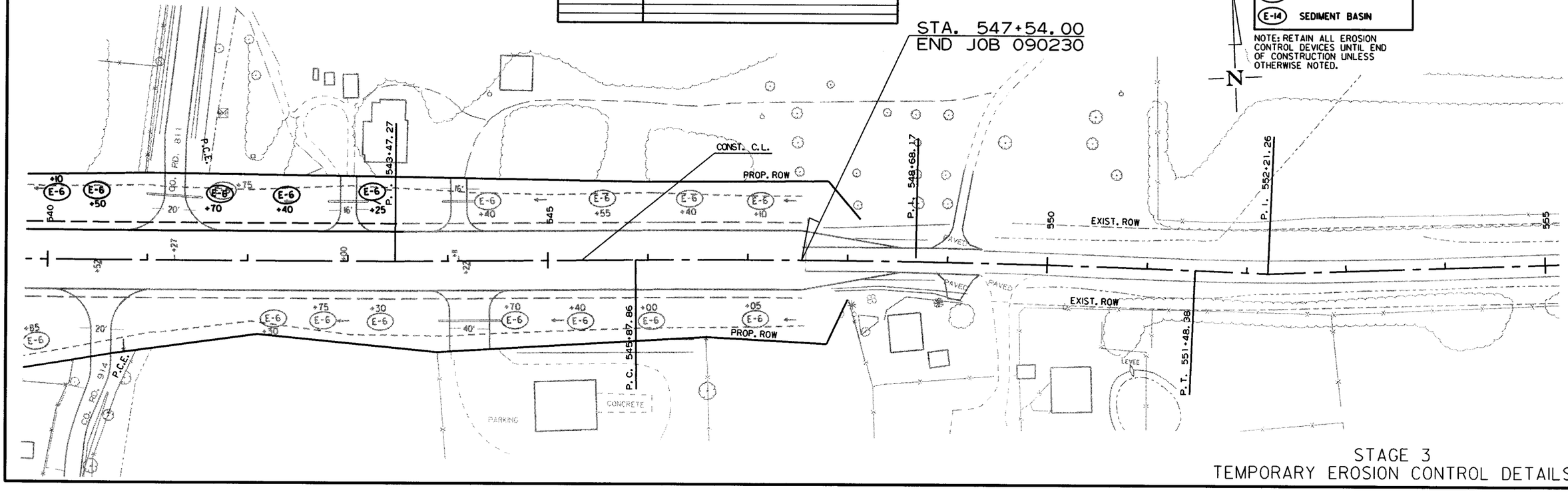
DATE	REVISION

LEGEND

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

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

STA. 547+54.00
END JOB 090230



STAGE 3
TEMPORARY EROSION CONTROL DETAILS

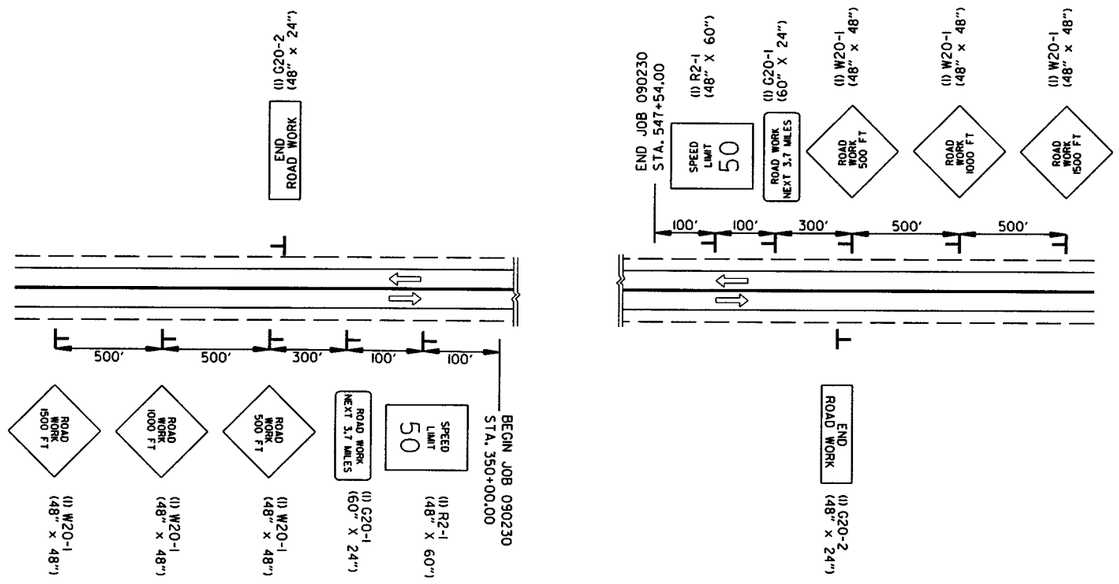
8/18/2016

R090230.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.		090230	54	282

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-14-16



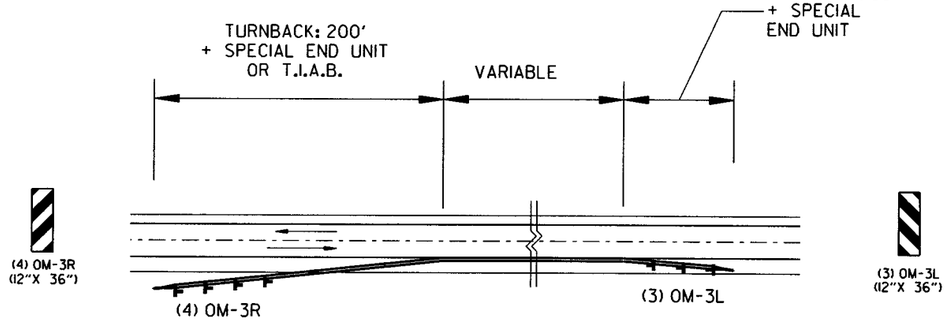
ADVANCE WARNING (ALL STAGES)

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

DO NOT PASS — (2) R4-1 (24" X 30")

BUMP — (8) W8-1 (30" X 30")

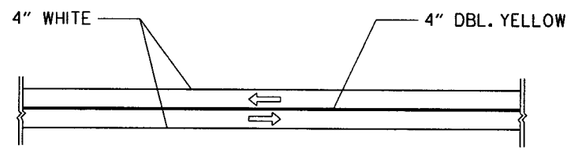
ALL STAGES TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.



REFER ALSO TO STANDARD DRAWING TC-5 FOR DETAILS OF PLACEMENT OF PCCB TURNBACKS.

NOTE: OM-3L & OM-3R SIGNS SHALL BE EQUALLY SPACED ALONG P.C.C.B. TURNBACK.

DETAIL OF OBJECT MARKERS AT PRECAST CONCRETE BARRIER TURNBACKS



CONSTRUCTION PAVEMENT MARKING DETAIL

9/30/2015

R090230.DGN

ADVANCE WARNING
MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	55	282

(2) MAINTENANCE OF TRAFFIC DETAILS

STAGE 1:

INSTALL ADVANCE WARNING SIGNS

INSTALL CONSTRUCTION PAVEMENT MARKINGS
TO MAINTAIN TRAFFIC ON EXISTING ROADWAY.

CONSTRUCT TEMPORARY RETAINING WALL AT THE FOLLOWING LOCATIONS:
STA. 474+50 TO 476+50
STA. 510+00 TO 521+50
STA. 526+76 TO 530+50
STA. 536+00 TO 541+00

CONSTRUCT LEFT SIDE OF HWY. 62.
CONSTRUCT FULL DEPTH SHOULDERS AND TEMPORARY WIDENING
OFF THE PROPOSED MAIN LANES ON LEFT SIDE
AT THE FOLLOWING LOCATIONS:
STA. 362+76 TO STA. 371+35
STA. 380+15 TO STA. 389+98
STA. 427+00 TO STA. 432+42
STA. 466+13 TO STA. 483+73
STA. 500+96 TO STA. 506+22
STA. 509+72 TO STA. 543+52

INSTALL TEMPORARY PRECAST CONCRETE BARRIER WALL.
CONSTRUCT R.C. BOX CULVERTS, CROSS DRAINS, AND MINOR DRAINAGE STRUCTURES ON LEFT.

DELINEATE THE WORK ZONE USING VERTICAL PANELS AT 50' O.C.

DELINEATE CITY STREETS AND DRIVEWAYS THROUGHOUT THE PROJECT
USING TRAFFIC DRUMS (6 PER TURNOUT) ON THE SIDE BEING WIDENED.

STAGE 2:

REMOVE THE CONFLICTING PAVEMENT MARKINGS AND STRIPE THE LEFT SIDE OF HWY. 62
USING A DBL. YELLOW LINE AND LEFT AND RIGHT EDGE LINES AS SHOWN.

RELOCATE THE TEMPORARY PRECAST CONCRETE BARRIER FOR STAGE 2 TRAFFIC
AND SHIFT TRAFFIC ONTO LEFT SIDE OF HWY. 62.

CONSTRUCT THE RIGHT SIDE OF HWY. 62 DELINEATING THE WORK ZONE USING
VERTICAL PANELS AT 50' O.C. ON THE SIDE BEING WIDENED AND
TRAFFIC DRUMS AT 100' O.C. SPACING AT EXISTING LANE EDGE ON LEFT.

CONSTRUCT THE REMAINDER OF THE PROPOSED R.C. BOX CULVERTS, CROSS DRAINS,
AND MINOR DRAINAGE STRUCTURES ON THE RIGHT SIDE OF HWY. 62.

DELINEATE CITY STREETS AND DRIVEWAYS THROUGHOUT THE PROJECT
USING TRAFFIC DRUMS (6 PER TURNOUT) ON THE SIDE BEING WIDENED.

STAGE 3:

SHIFT TRAFFIC TO RIGHT SIDE OF HWY. 62 AND CONSTRUCT LEFT SIDE FROM
STA. 416+00 TO STA. 429+00 AND STA. 469+00 TO STA. 472+63.

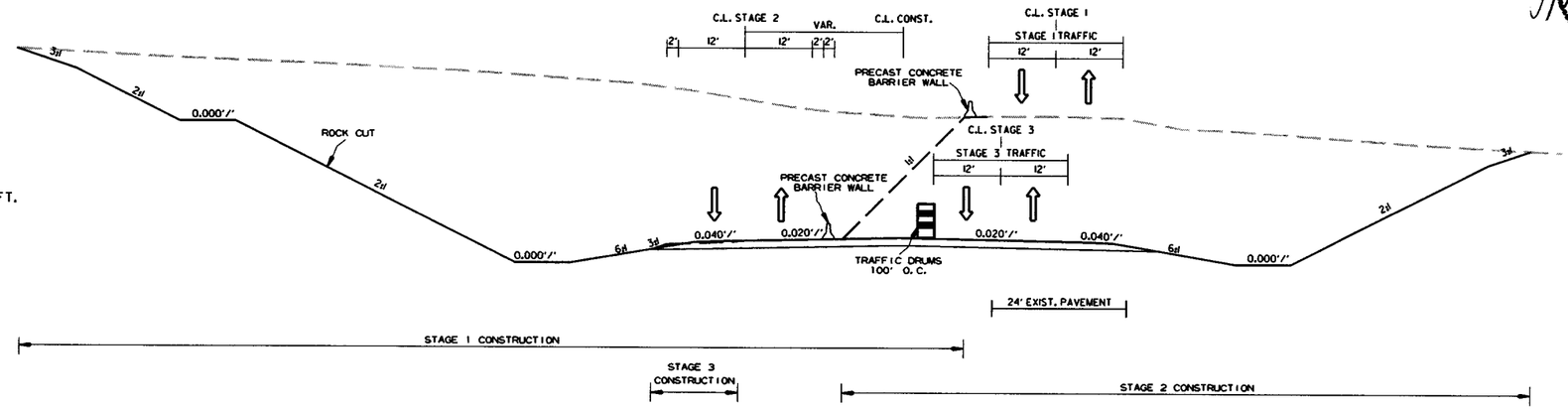
REMOVE DETOUR.

DELINEATE CITY STREETS AND DRIVEWAYS THROUGHOUT THE PROJECT
USING TRAFFIC DRUMS (6 PER TURNOUT) ON THE SIDE BEING WIDENED.

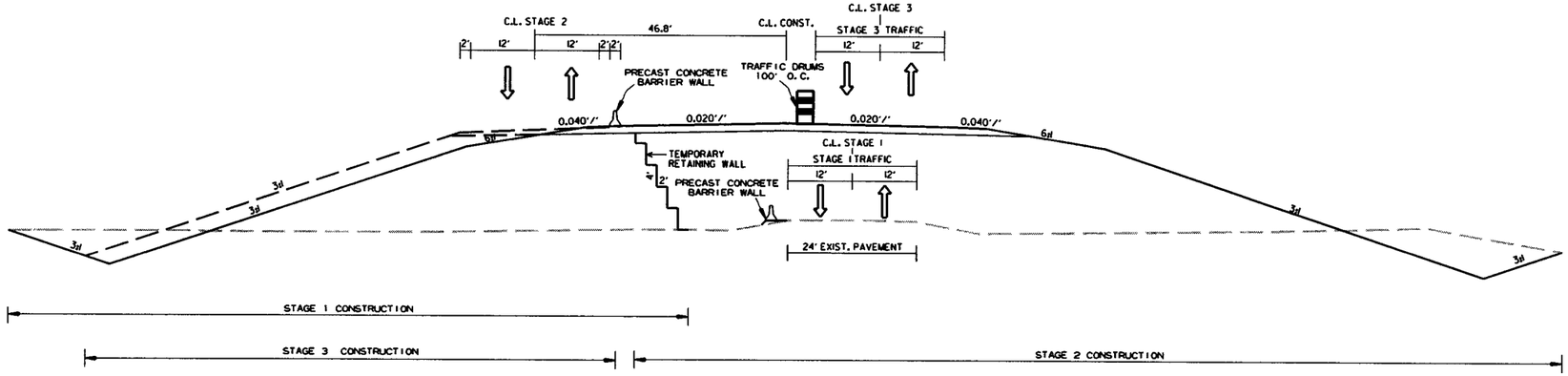
APPLY THE FINAL 2" OF ACHM SURFACE AFTER ALL WIDENING HAS BEEN
COMPLETED.

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.

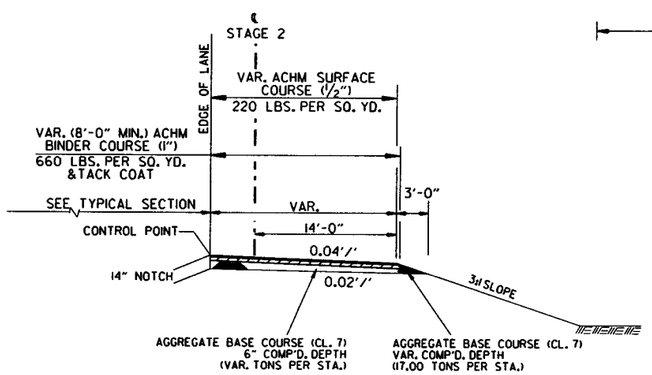
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8/12/16



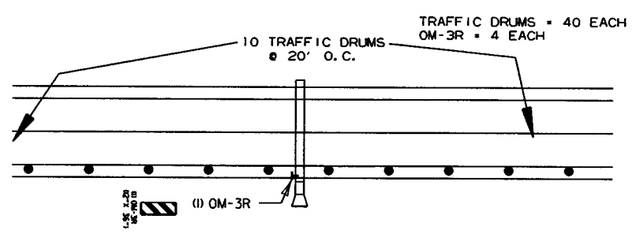
DETAIL FOR STAGE CONSTRUCTION (CUT)



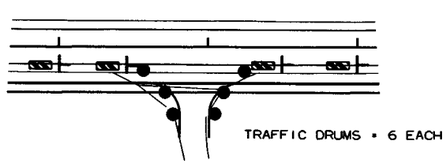
DETAIL FOR STAGE CONSTRUCTION (FILL)



DETAIL FOR TEMPORARY WIDENING
(SHOWN IN THE DIRECTION OF TRAFFIC)



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



DRIVEWAY/TRAFFIC DRUM DETAIL

ADVANCE WARNING
MAINTENANCE OF TRAFFIC DETAILS

9/30/2015

R090230.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.		090230	56	282

(2) MAINTENANCE OF TRAFFIC DETAILS

STAGE I QUANTITIES:
SIGNS = 664 SQ. FT.
CONSTRUCTION PAVEMENT MARKINGS = 79870 LIN. FT.
TRAFFIC DRUMS = 345 EACH
VERTICAL PANEL = 141 EACH
TEMPORARY PRECAST CONCRETE BARRIER = 5205 LIN. FT.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16

STA. 350+00.00
BEGIN JOB 090230
LOG MILE 12.05

EXIST. ROW
CONST. LIMITS
PAVED
S 48°14'16" E
S 47°32'29" E
P.I. 348+00.00
Δ = 6°41'47"
DO NOT PASS
(1) R4-1 (24" X 30")
SHOULDER CLOSED
(1) RSP-1 (48" X 30")
CONCRETE
800' LANE DROP
C.L. STAGE 1
P.C. 353+06.33
C.L. HWY. 62
PROP. ROW
PARKING
VERTICAL PANEL AT 50' O.C.
P.I. 359+15.07
S 10°45'47" W

C.L. HWY. 62
P.I. = 359+15.07
Δ = 58°18'16" RT.
D = 5°15'00.0"
T = 608.74'
L = 1110.56'
P.C. = 353+06.33
P.T. = 364+16.89
e = 0.100'/'
Ls = 630'

STA. 361+50.90 HWY. 62=
STA. 361+50.00 C.L. STAGE 2
20.43' OFFSET

C.L. STAGE 2
P.I. = 363+56.17
Δ = 12°55'19" RT.
D = 8°0'00.0"
T = 81.11'
L = 161.52'
P.C. = 362+75.06
P.T. = 364+36.58
NO SUPER

STA. 364+30.56 HWY. 62=
STA. 364+36.58 C.L. STAGE 2
35.29' OFFSET

STA. 367+15.63 HWY. 62=
STA. 367+21.90 C.L. STAGE 2
46.87' OFFSET

C.L. STAGE 2
P.I. = 367+96.70
Δ = 2°59'29" RT.
D = 2°0'00.0"
T = 74.80'
L = 149.57'
P.C. = 367+21.90
P.T. = 368+71.47
NO SUPER

ROAD CLOSED
(1) R11-2 (48" X 30")
T.C.E.
8' BARR. TYP. III LT.
8' BARR. TYP. III LT.

STA. 373+00.00 HWY. 62=
STA. 372+92.54 C.L. STAGE 2
17.50' OFFSET

C.L. HWY. 62
CONST. LIMITS
STA. 372+76.03 HWY. 62=
STA. 372+68.95 C.L. STAGE 2
18.32' OFFSET

POB 361+50.00
P.C. 361+62.71
P.T. 362+37.36
S 2°26'54" W
S 3°31'26" E
S 9°23'53" W
S 8°07'40" W
S 11°07'09" W
S 10°45'47" W
S 10°52'15" E
S 12°47'29" E
TEMP. CONST. LIMITS
EXIST. ROW
PROP. ROW
P.I. 362+00.07
P.C. 362+75.06
P.T. 364+36.58
P.I. 363+56.17
P.C. 364+98.11
P.T. 365+13.98
P.I. 365+06.05
P.C. 364+16.89
P.T. 364+36.58
P.I. 365+06.05
P.C. 367+21.90
P.T. 368+71.47
P.I. 367+96.70
P.C. 368+01.34
P.I. 369+25.11
P.C. 369+25.11
P.T. 370+74.99
P.I. 370+00.33
P.C. 370+78.95
P.T. 372+92.54
P.I. 371+94.72
P.C. 371+19.95
P.T. 372+68.95

STA. 365+07.93 HWY. 62=
STA. 365+13.98 C.L. STAGE 2
37.31' OFFSET

STA. 364+92.06 HWY. 62=
STA. 364+98.11 C.L. STAGE 2
36.75' OFFSET

C.L. STAGE 2
P.I. = 362+00.07
Δ = 5°58'20" LT.
D = 8°0'00.0"
T = 37.36'
L = 74.65'
P.C. = 361+62.71
P.T. = 362+37.36
NO SUPER

C.L. STAGE 2
P.I. = 365+06.05
Δ = 1°16'13" LT.
D = 8°0'00.0"
T = 7.94'
L = 15.87'
P.C. = 364+98.11
P.T. = 365+13.98
NO SUPER

STA. 368+68.12 HWY. 62=
STA. 368+71.47 C.L. STAGE 2
47.89' OFFSET

STA. 369+23.86 HWY. 62=
STA. 369+25.11 C.L. STAGE 2
42.91' OFFSET

STA. 370+78.22 HWY. 62=
STA. 370+74.99 C.L. STAGE 2
30.24' OFFSET

STA. 371+24.28 HWY. 62=
STA. 371+19.95 C.L. STAGE 2
27.02' OFFSET

C.L. STAGE 1

C.L. HWY. 62
P.I. = 359+15.07
Δ = 58°18'16" RT.
D = 5°15'00.0"
T = 608.74'
L = 1110.56'
P.C. = 353+06.33
P.T. = 364+16.89
e = 0.100'/'
Ls = 630'

C.L. STAGE 2
P.I. = 370+00.33
Δ = 11°59'24" LT.
D = 8°0'00.0"
T = 75.22'
L = 149.88'
P.C. = 369+25.11
P.T. = 370+74.99
NO SUPER

C.L. HWY. 62
P.I. = 376+94.04
Δ = 78°33'54" LT.
D = 5°15'00.0"
T = 892.70'
L = 1496.48'
P.C. = 368+01.34
P.T. = 382+97.82
e = 0.100'/'
Ls = 630'

C.L. STAGE 2
P.I. = 371+94.72
Δ = 11°55'14" LT.
D = 8°0'00.0"
T = 74.77'
L = 149.00'
P.C. = 371+19.95
P.T. = 372+68.95
NO SUPER

9/30/2015

R090230.DGN

STAGE I
MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	57	282

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-14-15

STA. 379+00.00 HWY. 62=
STA. 379+00.00 C.L. STAGE 2
17.50' OFFSET

STA. 379+01.46 HWY. 62=
STA. 379+01.44 C.L. STAGE 2
17.56' OFFSET

C.L. HWY. 62
P.I. = 376+94.04
Δ = 78°33'54" LT.
D = 5°15'00.0"
T = 892.70'
L = 1496.48'
P.C. = 368+01.34
P.T. = 382+97.82
e = 0.100'/'
Ls = 630'

C.L. STAGE 2
P.I. = 379+98.36
Δ = 15°24'52" LT.
D = 8°0'00.0"
T = 96.92'
L = 192.68'
P.C. = 379+01.44
P.T. = 380+94.12
NO SUPER

C.L. STAGE 2
P.I. = 383+22.19
Δ = 2°04'23" LT.
D = 4°0'00.0"
T = 25.91'
L = 51.82'
P.C. = 382+96.28
P.T. = 383+48.10
NO SUPER

C.L. STAGE 2
P.I. = 387+89.23
Δ = 0°41'02" RT.
D = 0°45'00.0"
T = 45.59'
L = 91.18'
P.C. = 387+43.64
P.T. = 388+34.82
NO SUPER

C.L. STAGE 2
P.I. = 389+39.94
Δ = 2°11'44" RT.
D = 8°00'00.0"
T = 13.72'
L = 27.44'
P.C. = 389+26.22
P.T. = 389+53.66
NO SUPER

STA. 380+97.76 HWY. 62=
STA. 380+97.76 C.L. STAGE 2
34.72' OFFSET

STA. 383+07.81 HWY. 62=
STA. 382+96.28 C.L. STAGE 2
42.39' OFFSET

STA. 383+58.91 HWY. 62=
STA. 383+48.10 C.L. STAGE 2
40.75' OFFSET

STA. 387+54.41 HWY. 62=
STA. 387+43.61 C.L. STAGE 2
35.41' OFFSET

STA. 388+45.58 HWY. 62=
STA. 383+48.10 C.L. STAGE 2
33.64' OFFSET

STA. 389+36.95 HWY. 62=
STA. 389+26.22 C.L. STAGE 2
31.32' OFFSET

STA. 389+64.36 HWY. 62=
STA. 389+53.66 C.L. STAGE 2
30.09' OFFSET

STA. 390+14.82 HWY. 62=
STA. 390+04.23 C.L. STAGE 2
26.87' OFFSET

ROAD CLOSED

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

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

STA. 380+27 - STA. 385+00 - FURNISHING AND INSTALLING
TEMPORARY PRECAST CONCRETE BARRIER
WITH ONE (13') SPECIAL END UNITS = 473' L.F.
TEMPORARY IMPACT ATTENUATION BARRIER = 1 EACH.

VERTICAL PANEL AT 50' O.C.

STA. 390+89.22 HWY. 62=
STA. 390+78.66 C.L. STAGE 2
26.00' OFFSET

C.L. STAGE 2
P.I. = 391+45.73
Δ = 2°36'08" RT.
D = 2°0'00.0"
T = 65.07'
L = 130.11'
P.C. = 390+80.66
P.T. = 392+10.77
NO SUPER

STA. 392+21.29 HWY. 62=
STA. 392+10.77 C.L. STAGE 2
28.35' OFFSET

TRAFFIC DRUMS
10 @ 10' SPACING

C.L. STAGE 2
P.I. = 390+41.48
Δ = 5°57'18" LT.
D = 8°0'00.0"
T = 37.25'
L = 74.43'
P.C. = 390+04.23
P.T. = 390+78.66
NO SUPER

STA. 390+91.21 HWY. 62=
STA. 390+80.66 C.L. STAGE 2
26.08' OFFSET

C.L. STAGE 1

C.L. HWY. 62
P.I. = 398+89.49
Δ = 0°26'19" LT.

STA. 399+00.00 HWY. 62=
STA. 398+89.49 C.L. STAGE 2
24.80' OFFSET

C.L. STAGE 2
P.I. = 402+89.49
Δ = 0°38'25" LT.

STA. 403+00.00 HWY. 62=
STA. 402+89.49 C.L. STAGE 2
25.77' OFFSET

C.L. STAGE 2
P.I. = 405+50.79
Δ = 1°52'45" RT.
D = 1°0'00.0"
T = 93.96'
L = 187.91'
P.C. = 404+56.83
P.T. = 406+44.74
NO SUPER

STA. 404+67.32 HWY. 62=
STA. 404+56.83 C.L. STAGE 2
28.05' OFFSET

VERTICAL PANEL AT 50' O.C.

STAGE 1
MAINTENANCE OF TRAFFIC DETAILS

9/30/2015

R090230.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.		090230	58	282

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-15

STA. 408+78 - STA. 409+58 - FURNISHING AND INSTALLING
TEMPORARY PRECAST CONCRETE BARRIER = 80' L.F.
TEMPORARY IMPACT ATTENUATION BARRIER = 2 EACH.

C.L. STAGE 2
P. I. = 405+50.79
Δ = 1°52' 45" RT.
D = 1°0' 00. 0"
T = 93. 96'
L = 187. 91'
P. C. = 404+56. 83
P. T. = 406+44. 74
NO SUPER

STA. 406+55.23 HWY. 62=
STA. 406+44.74 C.L. STAGE 2
27.52' OFFSET

STA. 407+39.78 HWY. 62=
STA. 407+29.31 C.L. STAGE 2
25.90' OFFSET

STA. 408+60.23 HWY. 62=
STA. 408+49.76 C.L. STAGE 2
24.85' OFFSET

C.L. HWY. 62
P. I. = 413+00.00
Δ = 3°40' 54" RT.
D = 0°30' 00. 0"
T = 368. 30'
L = 736. 35'
P. C. = 409+31. 70
P. T. = 416+68. 05
NO SUPER

C.L. STAGE 2
P. I. = 413+50.63
Δ = 11°07' 22" RT.
D = 8°0' 00. 0"
T = 69. 73'
L = 139. 03'
P. C. = 412+80. 90
P. T. = 414+19. 93
NO SUPER

STA. 412+90.44 HWY. 62=
STA. 412+80.90 C.L. STAGE 2
31.27' OFFSET

STA. 415+68.96 HWY. 62=
STA. 415+60.83 C.L. STAGE 2
16.39' OFFSET

C.L. HWY. 62
P. I. = 419+17.86
Δ = 3°11' 10. 9" RT.
D = 0°45' 00. 0"
T = 212. 48'
L = 424. 85'
P. C. = 417+05. 38
P. T. = 421+30. 23
e = 0. 023' /'
Ls = 540. 00'

STA. 416+00.00 HWY. 62=
STA. 415+91.97 C.L. STAGE 2
18.17' OFFSET

C.L. STAGE 2
P. I. = 407+89.54
Δ = 1°12' 16" LT.
D = 1°0' 00. 0"
T = 60. 23'
L = 120. 45'
P. C. = 407+29. 31
P. T. = 408+49. 76
NO SUPER

VERTICAL PANEL AT 50' O.C.

C.L. HWY. 62

STA. 414+28.70 HWY. 62=
STA. 414+19.93 C.L. STAGE 2
23.23' OFFSET

STA. 414+34.69 HWY. 62=
STA. 414+22.97 C.L. STAGE 2
22.78' OFFSET

C.L. STAGE 2
P. I. = 414+92.11
Δ = 11°01' 45" LT.
D = 8°0' 00. 0"
T = 69. 14'
L = 137. 86'
P. C. = 414+22. 97
P. T. = 415+60. 83
NO SUPER

C.L. STAGE 1

PROP. ROW
CONST. LIMITS
EXIST. ROW
PROP. ROW
PARKING
PARKING
PARKING
CONCRETE

S 66°42' 07" E
S 67°48' 07" E
S 67°54' 23" E
S 56°47' 01" E
S 67°48' 46" E
S 64°07' 13" E
S 60°56' 02" E

P. T. 406+44. 74
P. I. 407+89. 54
P. C. 407+29. 31
P. T. 408+49. 76
P. C. 409+31. 70
P. I. 412+80. 90
P. T. 414+19. 93
P. I. 414+92. 11
P. C. 414+22. 97
P. T. 415+60. 83
POE 415+91. 97
P. I. 413+00. 00
P. I. 413+50. 63
P. I. 419+17. 86
P. C. 417+05. 38
P. T. 416+68. 05

405
410
415
420

C.L. STAGE 2
P. I. = 429+01. 56
Δ = 7°21' 38" RT.
D = 8°0' 00. 0"
T = 46. 07'
L = 92. 00'
P. C. = 428+55. 49
P. T. = 429+47. 49
NO SUPER

STA. 429+45.86 HWY. 62=
STA. 429+47.49 C.L. STAGE 2
40.46' OFFSET

C.L. STAGE 2
P. I. = 431+39. 79
Δ = 5°57' 59" RT.
D = 4°30' 00. 0"
T = 66. 36'
L = 132. 59'
P. C. = 430+73. 43
P. T. = 432+06. 02
NO SUPER

STA. 435+00.00 HWY. 62=
STA. 435+00.55 C.L. STAGE 2
17.50' OFFSET

STA. 434+94.38 HWY. 62=
STA. 464+98.23 C.L. STAGE 2
17.50' OFFSET

STA. 426+00.00 HWY. 62=
STA. 426+00.00 C.L. STAGE 2
24.20' OFFSET

STA. 427+63.54 HWY. 62=
STA. 427+63.82 C.L. STAGE 2
24.59' OFFSET

C.L. STAGE 2

T.C.E.
T.C.E.
EXIST. ROW
PROP. ROW
CONST. LIMITS
TEMP. CONST. LIMITS
TEMP. CONST. LIMITS
EXIST. ROW
CONCRETE

S 57°06' 03" E
S 67°08' 11" E
S 59°56' 33" E
S 53°58' 34" E
S 57°38' 38" E
S 57°38' 38" E
S 60°56' 02" E

P. T. 421+30. 23
P. C. 426+36. 29
P. I. 427+00. 22
P. C. 427+67. 79
P. T. 427+63. 82
P. C. 428+55. 49
P. T. 429+47. 49
P. I. 430+96. 87
P. C. 430+73. 43
P. T. 432+06. 02
P. I. 431+39. 79
P. C. 434+24. 88
P. T. 434+98. 23
POE 435+00. 55
P. T. 434+25. 77
P. I. 434+61. 57

420
425
430
435

STA. 426+36.21 HWY. 62=
STA. 426+36.29 C.L. STAGE 2
21.77' OFFSET

C.L. HWY. 62

C.L. STAGE 1

STA. 428+54.38 HWY. 62=
STA. 428+55.49 C.L. STAGE 2
35.09' OFFSET

STA. 430+71.36 HWY. 62=
STA. 430+73.43 C.L. STAGE 2
40.93' OFFSET

STA. 432+03.35 HWY. 62=
STA. 432+06.02 C.L. STAGE 2
36.01' OFFSET

STA. 434+21.08 HWY. 62=
STA. 434+24.88 C.L. STAGE 2
19.85' OFFSET

C.L. STAGE 2
P. I. = 427+00. 22
Δ = 10°12' 08" LT.
D = 8°0' 00. 0"
T = 63. 93'
L = 127. 53'
P. C. = 426+36. 29
P. T. = 427+63. 82
NO SUPER

C.L. HWY. 62
P. I. = 430+96. 87
Δ = 3°17' 24" RT.
D = 0°30' 00. 0"
T = 329. 08'
L = 657. 98'
P. C. = 427+67. 79
P. T. = 434+25. 77
NO SUPER

VERTICAL PANEL AT 50' O.C.

STA. 430+71 - STA. 432+04 - FURNISHING AND INSTALLING
TEMPORARY PRECAST CONCRETE BARRIER
WITH ONE (13') SPECIAL END UNITS = 133' L.F.
TEMPORARY IMPACT ATTENUATION BARRIER = 1 EACH.

C.L. STAGE 2
P. I. = 434+61. 57
Δ = 3°40' 04" LT.
D = 5°0' 00. 0"
T = 36. 69'
L = 73. 35'
P. C. = 434+24. 88
P. T. = 434+98. 23
NO SUPER

STAGE I
MAINTENANCE OF TRAFFIC DETAILS

9/30/2015

R090230.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.		090230	59	282

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-17-15

C.L. STAGE 2
P.I. = 434+61.57
Δ = 3°40'04" LT.
D = 5°0'00.0"
T = 36.69'
L = 73.35'
P.C. = 434+24.88
P.T. = 434+98.23
NO SUPER

C.L. HWY. 62
P.I. = 438+99.25
Δ = 0°57'09" RT.
D = 0°30'00.0"
T = 95.24'
L = 190.48'
P.C. = 438+04.01
P.T. = 439+94.49
NO SUPER

C.L. STAGE 2
P.I. = 441+25.20
Δ = 2°41'17" RT.
D = 5°0'00.0"
T = 26.89'
L = 53.76'
P.C. = 440+98.31
P.T. = 441+52.07
NO SUPER

STA. 439+80.45 HWY. 62=
STA. 439+80.33 C.L. STAGE 2
17.43' OFFSET

STA. 440+19.56 HWY. 62=
STA. 440+19.47 C.L. STAGE 2
18.25' OFFSET

STA. 440+98.35 HWY. 62=
STA. 440+98.31 C.L. STAGE 2
21.25' OFFSET

STA. 441+52.10 HWY. 62=
STA. 441+52.07 C.L. STAGE 2
22.03' OFFSET

STA. 439+00.24 HWY. 62=
STA. 439+00.00 C.L. STAGE 2
17.50' OFFSET

TRAFFIC DRUMS
10 @ 10' SPACING

ROAD CLOSED
(I) R11-2 (48" X 30")
8' BARR. TYP. III RT.

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

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

STA. 447+06.52 HWY. 62=
STA. 447+06.39 C.L. STAGE 2
22.57' OFFSET

C.L. STAGE 2
P.I. = 444+99.99
Δ = 1°19'43" LT.
D = 2°0'00.0"
T = 33.21'
L = 66.42'
P.C. = 444+66.78
P.T. = 445+33.20
NO SUPER

C.L. STAGE 2
P.I. = 446+70.21
Δ = 1°26'50" LT.
D = 2°0'00.0"
T = 36.19'
L = 72.37'
P.C. = 446+34.02
P.T. = 447+06.39
NO SUPER

C.L. HWY. 62
P.I. = 447+48.06
Δ = 1°11'51" LT.
D = 0°30'00.0"
T = 119.76'
L = 239.51'
P.C. = 446+28.30
P.T. = 448+67.81
NO SUPER

STA. 444+66.79 HWY. 62=
STA. 444+66.78 C.L. STAGE 2
19.25' OFFSET

STA. 446+34.03 HWY. 62=
STA. 446+34.02 C.L. STAGE 2
20.88' OFFSET

STA. 445+33.21 HWY. 62=
STA. 445+33.20 C.L. STAGE 2
19.44' OFFSET

STA. 449+00.21 HWY. 62=
STA. 448+99.79 C.L. STAGE 2
27.32' OFFSET

C.L. STAGE 2
P.I. = 439+99.90
Δ = 1°57'24" LT.
D = 5°0'00.0"
T = 19.57'
L = 39.14'
P.C. = 439+80.33
P.T. = 440+19.47
NO SUPER

VERTICAL PANEL AT 50' O.C.

PROP. ROW
CONST. LIMITS
EXIST. ROW
TEMP. CONST. LIMITS
PAVED PARKING
CONCRETE
C.L. STAGE 2
C.L. STAGE 1
C.L. HWY. 62
T.C.E.

C.L. STAGE 2
P.I. = 453+75.55
Δ = 1°15'37" RT.
D = 2°0'00.0"
T = 31.51'
L = 63.01'
P.C. = 453+44.04
P.T. = 454+07.05
NO SUPER

C.L. STAGE 2
P.I. = 457+99.63
Δ = 1°52'50" RT.
D = 3°0'00.0"
T = 31.35'
L = 62.69'
P.C. = 457+68.28
P.T. = 458+30.97
NO SUPER

STA. 459+25 - STA. 460+58 - FURNISHING AND INSTALLING
TEMPORARY PRECAST CONCRETE BARRIER
WITH ONE (13') SPECIAL END UNITS = 133' L.F.
TEMPORARY IMPACT ATTENUATION BARRIER = 1 EACH.

C.L. HWY. 62
P.I. = 460+55.39
Δ = 2°21'07" RT.
D = 0°30'00.0"
T = 235.23'
L = 470.39'
P.C. = 458+20.16
P.T. = 462+90.55
NO SUPER

STA. 458+34.28 HWY. 62=
STA. 458+30.97 C.L. STAGE 2
24.81' OFFSET

STA. 460+59.37 HWY. 62=
STA. 460+59.60 C.L. STAGE 2
17.49' OFFSET

STA. 460+68.30 HWY. 62=
STA. 460+68.54 C.L. STAGE 2
17.50' OFFSET

STA. 453+44.43 HWY. 62=
STA. 453+44.04 C.L. STAGE 2
31.39' OFFSET

STA. 454+07.45 HWY. 62=
STA. 454+07.05 C.L. STAGE 2
31.28' OFFSET

STA. 457+68.65 HWY. 62=
STA. 457+68.28 C.L. STAGE 2
26.64' OFFSET

STA. 460+10.85 HWY. 62=
STA. 460+10.99 C.L. STAGE 2
18.18' OFFSET

C.L. STAGE 2
P.I. = 460+35.30
Δ = 1°27'30" LT.
D = 3°0'00.0"
T = 24.31'
L = 48.61'
P.C. = 460+10.99
P.T. = 460+59.60
NO SUPER

VERTICAL PANEL AT 50' O.C.

STA. 453+12 - STA. 454+45 - FURNISHING AND INSTALLING
TEMPORARY PRECAST CONCRETE BARRIER
WITH ONE (13') SPECIAL END UNITS = 133' L.F.
TEMPORARY IMPACT ATTENUATION BARRIER = 1 EACH.

STA. 456+49 - STA. 458+29 - FURNISHING AND INSTALLING
TEMPORARY PRECAST CONCRETE BARRIER = 80' L.F.
TEMPORARY IMPACT ATTENUATION BARRIER = 2 EACH.

STAGE 1
MAINTENANCE OF TRAFFIC DETAILS

9/30/2015

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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.		090230	60	282

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16

STA. 465+00.00 HWY. 62=
STA. 465+00.00 C.L. STAGE 2
17.50' OFFSET

STA. 465+05.53 HWY. 62=
STA. 465+05.52 C.L. STAGE 2
17.50' OFFSET

STA. 465+94.13 HWY. 62=
STA. 465+94.36 C.L. STAGE 2
23.00' OFFSET

STA. 466+80 - STA. 467+60 - FURNISHING AND INSTALLING
TEMPORARY PRECAST CONCRETE BARRIER = 80' L.F.
TEMPORARY IMPACT ATTENUATION BARRIER = 2 EACH.

C.L. STAGE 2
P. I. = 466+92.21
Δ = 7°4' 23" RT.
D = 8°0' 00. 0"
T = 44. 27'
L = 88. 42'
P. C. = 466+47. 94
P. T. = 467+36. 36
NO SUPER

STA. 467+35.49 HWY. 62=
STA. 467+36.36 C.L. STAGE 2
35.13' OFFSET

STA. 470+90.08 HWY. 62=
STA. 470+90.46 C.L. STAGE 2
34.23' OFFSET

STA. 471+09.20 HWY. 62=
STA. 471+09.53 C.L. STAGE 2
34.11' OFFSET

STA. 472+88.31 HWY. 62=
STA. 472+88.11 C.L. STAGE 2
33.00' OFFSET

STA. 475+23.50 HWY. 62=
STA. 475+22.70 C.L. STAGE 2
40.84' OFFSET

C.L. STAGE 2
P. I. = 476+07.44
Δ = 4°51' 10" RT.
D = 2°51' 54. 0"
T = 84. 74'
L = 169. 38'
P. C. = 475+22. 70
P. T. = 476+92. 08
NO SUPER

TEMPORARY RETAINING WALL

(I) W20-1 (48" X 48")

END ROAD WORK

(I) G20-2 (48" X 24")

STA. 476+92.86 HWY. 62=
STA. 476+92.08 C.L. STAGE 2
38.48' OFFSET

STA. 479+21.80 HWY. 62=
STA. 479+21.38 C.L. STAGE 2
25.57' OFFSET

C.L. STAGE 2
P. I. = 479+88.29
Δ = 10°40' 28" LT.
D = 8°0' 00. 0"
T = 66. 91'
L = 133. 43'
P. C. = 479+21. 38
P. T. = 480+54. 81
NO SUPER

STA. 466+47.30 HWY. 62=
STA. 466+47.94 C.L. STAGE 2
29.63' OFFSET

C.L. STAGE 2
P. I. = 465+50. 00
Δ = 7°6' 24" LT.
D = 8°0' 00. 0"
T = 44. 48'
L = 88. 84'
P. C. = 465+05. 52
P. T. = 465+94. 36
NO SUPER

C.L. STAGE 1

C.L. HWY. 62

VERTICAL PANEL AT 50' O.C.

C.L. STAGE 2
P. I. = 471+00. 00
Δ = 0°57' 12" LT.
D = 5°0' 00. 0"
T = 9. 54'
L = 19. 07'
P. C. = 470+90. 46
P. T. = 471+09. 53
NO SUPER

C.L. HWY. 62
P. I. = 472+32. 69
Δ = 3°01' 31" LT.
D = 0°30' 00. 0"
T = 302. 58'
L = 605. 03'
P. C. = 469+30. 11
P. T. = 475+35. 14
NO SUPER

C.L. STAGE 2
P. I. = 473+11. 02
Δ = 3°39' 51" LT.
D = 8°0' 00. 0"
T = 22. 91'
L = 45. 80'
P. C. = 472+88. 11
P. T. = 473+33. 91
NO SUPER

STA. 473+34.23 HWY. 62=
STA. 473+33.91 C.L. STAGE 2
33.73' OFFSET

STA. 474+00 - STA. 476+73 - FURNISHING AND INSTALLING
TEMPORARY PRECAST CONCRETE BARRIER
WITH ONE (13') SPECIAL END UNITS = 273' L.F.
TEMPORARY IMPACT ATTENUATION BARRIER = 1 EACH.

STA. 480+54.94 HWY. 62=
STA. 480+54.81 C.L. STAGE 2
30.48' OFFSET

C.L. STAGE 2
P. I. = 481+00. 17
Δ = 6°53' 00" RT.
D = 8°0' 00. 0"
T = 43. 08'
L = 86. 05'
P. C. = 480+57. 09
P. T. = 481+43. 14
NO SUPER

STA. 483+96.18 HWY. 62=
STA. 483+93.02 C.L. STAGE 2
23.29' OFFSET

STA. 484+96.03 HWY. 62=
STA. 484+92.25 C.L. STAGE 2
17.54' OFFSET

STA. 485+00.00 HWY. 62=
STA. 484+96.19 C.L. STAGE 2
17.50' OFFSET

STA. 480+57.20 HWY. 62=
STA. 480+57.09 C.L. STAGE 2
30.77' OFFSET

STA. 481+43.37 HWY. 62=
STA. 481+43.14 C.L. STAGE 2
36.66' OFFSET

C.L. STAGE 2
P. I. = 479+88.29
Δ = 10°40' 28" LT.
D = 8°0' 00. 0"
T = 66. 91'
L = 133. 43'
P. C. = 479+21. 38
P. T. = 480+54. 81
NO SUPER

C.L. STAGE 2
P. I. = 484+42. 71
Δ = 7°56' 18" LT.
D = 8°0' 00. 0"
T = 49. 69'
L = 99. 23'
P. C. = 483+93. 02
P. T. = 484+92. 25
NO SUPER

C.L. HWY. 62
P. I. = 487+21. 91
Δ = 28°21' 36" LT.
D = 2°24' 00. 0"
T = 603. 20'
L = 1181. 66'
P. C. = 481+18. 71
P. T. = 493+00. 37
e = 0. 065'/'
Ls = 540. 00'

VERTICAL PANEL AT 50' O.C.

STA. 491+05 - STA. 492+38 - FURNISHING AND INSTALLING
TEMPORARY PRECAST CONCRETE BARRIER
WITH ONE (13') SPECIAL END UNITS = 133' L.F.
TEMPORARY IMPACT ATTENUATION BARRIER = 1 EACH.

END ROAD WORK

(I) G20-2 (48" X 24")

(I) W20-1 (48" X 48")

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STAGE 1
MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	61	282

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-14-16

C.L. STAGE 2
P.I. = 501+00.29
Δ = 4°25'25" RT.
D = 8°0'00.0"
T = 27.66'
L = 55.30'
P.C. = 500+72.63
P.T. = 501+27.93
NO SUPER

C.L. STAGE 2
P.I. = 504+00.31
Δ = 1°36'15" RT.
D = 0°45'00.0"
T = 106.94'
L = 213.86'
P.C. = 502+93.37
P.T. = 505+07.23
NO SUPER

STA. 499+49.78 HWY. 62=
STA. 499+49.78 C.L. STAGE 2
17.50' OFFSET

STA. 500+72.42 HWY. 62=
STA. 500+72.63 C.L. STAGE 2
23.86' OFFSET

STA. 509+54.13 HWY. 62=
STA. 509+54.37 C.L. STAGE 2
24.28' OFFSET

STA. 499+00.00 HWY. 62=
STA. 499+00.00 C.L. STAGE 2
17.50' OFFSET

STA. 501+27.64 HWY. 62=
STA. 501+27.93 C.L. STAGE 2
26.57' OFFSET

STA. 508+45.74 HWY. 62=
STA. 508+46.11 C.L. STAGE 2
21.54' OFFSET

STA. 500+50.03 HWY. 62=
STA. 500+50.16 C.L. STAGE 2
21.89' OFFSET

STA. 502+93.07 HWY. 62=
STA. 502+93.37 C.L. STAGE 2
28.28' OFFSET

STA. 505+06.92 HWY. 62=
STA. 505+07.23 C.L. STAGE 2
27.51' OFFSET

C.L. STAGE 2
P.I. = 500+00.00
Δ = 5°1'7" LT.
D = 5°0'00.0"
T = 50.22'
L = 100.38'
P.C. = 499+49.78
P.T. = 500+50.16
NO SUPER

STA. 499+05 - STA. 500+65 - FURNISHING AND INSTALLING
TEMPORARY PRECAST CONCRETE BARRIER = 160' L.F.
TEMPORARY IMPACT ATTENUATION BARRIER = 2 EACH.

STA. 500+35 - STA. 516+13 - FURNISHING AND INSTALLING
TEMPORARY PRECAST CONCRETE BARRIER = 1578' L.F.
TEMPORARY IMPACT ATTENUATION BARRIER = 2 EACH.

C.L. HWY. 62
P.I. = 508+98.02
Δ = 0°29'06" LT.
D = 0°30'00.0"
T = 48.51'
L = 97.02'
P.C. = 508+49.51
P.T. = 509+46.53
NO SUPER

C.L. STAGE 2
P.I. = 509+00.28
Δ = 5°24'48" LT.
D = 5°0'00.0"
T = 54.17'
L = 108.26'
P.C. = 508+46.11
P.T. = 509+54.37
NO SUPER

VERTICAL PANEL AT 50' O.C.

C.L. STAGE 2
P.I. = 511+00.57
Δ = 4°30'33" RT.
D = 8°0'00.0"
T = 28.20'
L = 56.37'
P.C. = 510+72.37
P.T. = 511+28.74
NO SUPER

C.L. STAGE 2
P.I. = 515+08.61
Δ = 3°15'28" RT.
D = 8°0'00.0"
T = 20.36'
L = 40.72'
P.C. = 514+88.25
P.T. = 515+28.97
NO SUPER

TEMPORARY RETAINING WALL

STA. 516+78.10 HWY. 62=
STA. 516+78.86 C.L. STAGE 2
40.42' OFFSET

STA. 517+55.52 HWY. 62=
STA. 517+56.35 C.L. STAGE 2
42.94' OFFSET

STA. 521+44.01 HWY. 62=
STA. 521+47.04 C.L. STAGE 2
37.26' OFFSET

C.L. STAGE 2
P.I. = 520+00.78
Δ = 15°26'38" RT.
D = 8°0'00.0"
T = 97.11'
L = 193.05'
P.C. = 519+03.67
P.T. = 520+96.72
NO SUPER

STA. 523+11.71 HWY. 62=
STA. 523+15.50 C.L. STAGE 2
26.29' OFFSET

STA. 511+34.74 HWY. 62=
STA. 511+35.30 C.L. STAGE 2
33.91' OFFSET

STA. 514+87.53 HWY. 62=
STA. 514+88.25 C.L. STAGE 2
43.88' OFFSET

STA. 515+28.24 HWY. 62=
STA. 515+28.97 C.L. STAGE 2
43.66' OFFSET

STA. 519+02.28 HWY. 62=
STA. 519+03.67 C.L. STAGE 2
55.68' OFFSET

STA. 520+94.52 HWY. 62=
STA. 520+96.72 C.L. STAGE 2
46.41' OFFSET

STA. 510+69.36 HWY. 62=
STA. 510+72.37 C.L. STAGE 2
32.17' OFFSET

STA. 511+28.18 HWY. 62=
STA. 511+28.74 C.L. STAGE 2
33.98' OFFSET

STA. 512+65.22 HWY. 62=
STA. 512+65.80 C.L. STAGE 2
35.54' OFFSET

C.L. STAGE 2
P.I. = 517+17.65
Δ = 6°11'58" LT.
D = 8°0'00.0"
T = 38.79'
L = 77.49'
P.C. = 516+78.86
P.T. = 517+56.35
NO SUPER

C.L. STAGE 2
P.I. = 522+31.66
Δ = 13°28'35" LT.
D = 8°0'00.0"
T = 84.62'
L = 168.46'
P.C. = 521+47.04
P.T. = 523+15.50
NO SUPER

C.L. STAGE 2
P.I. = 512+00.56
Δ = 2°36'37" LT.
D = 2°0'00.0"
T = 65.26'
L = 130.50'
P.C. = 511+35.30
P.T. = 512+65.80
NO SUPER

STA. 516+93 - STA. 520+53 - FURNISHING AND INSTALLING
TEMPORARY PRECAST CONCRETE BARRIER = 360' L.F.
TEMPORARY IMPACT ATTENUATION BARRIER = 2 EACH.

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STAGE I
MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	62	282

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-14-15

C.L. STAGE 2
P.I. = 527+49.34
Δ = 5°14'40" RT.
D = 8°0'00.0"
T = 32.80'
L = 65.56'
P.C. = 527+16.54
P.T. = 527+82.10
NO SUPER

C.L. STAGE 2
P.I. = 533+29.14
Δ = 3°28'40" LT.
D = 1°0'00.0"
T = 173.95'
L = 347.78'
P.C. = 531+55.19
P.T. = 535+02.97
NO SUPER

STA. 531+50.55 HWY. 62=
STA. 531+55.19 C.L. STAGE 2
33.01' OFFSET

STA. 534+98.26 HWY. 62=
STA. 535+02.97 C.L. STAGE 2
29.91' OFFSET

STA. 527+12.21 HWY. 62=
STA. 527+16.54 C.L. STAGE 2
47.24' OFFSET

STA. 527+77.74 HWY. 62=
STA. 527+82.10 C.L. STAGE 2
47.66' OFFSET

N 89°35'54" E
S 85°09'26" E
S 87°24'26" E
S 88°38'06" E
EXIST. ROW
PROP. ROW
CONST. LIMITS
TEMP. CONST. LIMITS
TEMPORARY RETAINING WALL
T.C.E.
C.L. STAGE 2
C.L. STAGE 1
C.L. HWY. 62
P.I. 527+49.34
P.C. 527+16.54
P.T. 527+82.10
P.C. 531+55.19
P.T. 535+02.97
P.I. 533+29.14

VERTICAL PANEL AT 50' O.C.

STA. 526+58 - STA. 527+91 - FURNISHING AND INSTALLING TEMPORARY PRECAST CONCRETE BARRIER WITH ONE (13') SPECIAL END UNITS = 133' L.F.
TEMPORARY IMPACT ATTENUATION BARRIER = 1 EACH.

STA. 530+00 - STA. 531+83 - FURNISHING AND INSTALLING TEMPORARY PRECAST CONCRETE BARRIER WITH ONE (13') SPECIAL END UNITS = 183' L.F.
TEMPORARY IMPACT ATTENUATION BARRIER = 1 EACH.

STA. 532+50 - STA. 538+10 - FURNISHING AND INSTALLING TEMPORARY PRECAST CONCRETE BARRIER = 560' L.F.
TEMPORARY IMPACT ATTENUATION BARRIER = 2 EACH.

STA. 547+54.00
END JOB 090230

(1) W20-1 (48" X 48")
ROAD WORK AHEAD
END ROAD WORK
(1) G20-2 (48" X 24")
ROAD CLOSED
(1) R11-2 (48" X 30")
8' BARR. TYP. III RT.
(4) OM-3R (12"X 36")
SHOULDER CLOSED
(1) RSP-1 (48" X 30")
DO NOT PASS
(1) R4-1 (24" X 30")

C.L. STAGE 2
P.I. = 542+67.43
Δ = 15°08'44" RT.
D = 8°0'00.0"
T = 95.22'
L = 189.32'
P.C. = 541+72.21
P.T. = 543+61.53
NO SUPER

C.L. HWY. 62
P.I. = 548+68.17
Δ = 2°48'10" RT.
D = 0°30'00.0"
T = 280.31'
L = 560.52'
P.C. = 545+87.86
P.T. = 551+48.38
NO SUPER

C.L. STAGE 2
P.I. = 544+54.08
Δ = 14°34'56" LT.
D = 8°0'00.0"
T = 91.64'
L = 182.28'
P.C. = 543+62.44
P.T. = 545+44.72
NO SUPER

STA. 543+56.11 HWY. 62=
STA. 543+62.44 C.L. STAGE 2
23.07' OFFSET

STA. 545+36.43 HWY. 62=
STA. 545+44.72 C.L. STAGE 2
0.00' OFFSET

STA. 545+87.86 HWY. 62=
STA. 545+96.15 C.L. STAGE 2
0.00' OFFSET

STA. 541+67.35 HWY. 62=
STA. 541+72.21 C.L. STAGE 2
44.25' OFFSET

STA. 543+55.23 HWY. 62=
STA. 543+61.53 C.L. STAGE 2
23.30' OFFSET

S 88°28'06" E
S 88°04'18" E
S 85°16'08" E
S 89°32'31" E
EXIST. ROW
PROP. ROW
CONST. LIMITS
TEMP. CONST. LIMITS
C.L. HWY. 62
C.L. STAGE 1
CONCRETE
CO. RD. 914
P.I. 542+67.43
P.C. 543+47.27
P.T. 543+62.44
P.I. 544+54.08
P.C. 545+87.86
P.I. 545+44.72
P.T. 545+96.15
P.I. 548+68.17
P.T. 551+48.38
P.I. 552+21.26

VERTICAL PANEL AT 50' O.C.

STA. 538+75 - STA. 541+15 - FURNISHING AND INSTALLING TEMPORARY PRECAST CONCRETE BARRIER = 240' L.F.
TEMPORARY IMPACT ATTENUATION BARRIER = 2 EACH.

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STAGE 1
MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	63	282

(2) MAINTENANCE OF TRAFFIC DETAILS

STA. 350+00.00
BEGIN JOB 090230
LOG MILE 12.05

STAGE 2 QUANTITIES:
SIGNS = 702 SQ. FT.
CONSTRUCTION PAVEMENT MARKINGS = 79870 LIN. FT.
TRAFFIC DRUMS = 319 EACH
TEMPORARY PRECAST CONCRETE BARRIER = 1631 LIN. FT.
RELOCATING TEMPORARY PRECAST CONCRETE BARRIER = 5205 LIN. FT.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16

EXIST. ROW
CONST. LIMITS
S 48°14' 16" E
S 47°32' 29" E
345
350
355
38'
30' CONCRETE
P.I. 348+00.00
Δ = 0°41' 47"
P.C. 353+06.33
P.I. 359+15.07
S 10°45' 47" W
C.L. STAGE 2
800' LANE DROP
PROP. ROW
C.L. HWY. 62
.70
DO NOT PASS
(I) R4-1 (24" X 30")
SHOULDER CLOSED
(I) RSP-1 (48" X 30")
PARKING
TRAFFIC DRUMS 10'-0" C/C SPACING

C.L. HWY. 62
P.I. = 359+15.07
Δ = 58°18' 16" RT.
D = 5°15' 00.0"
T = 608.74'
L = 1110.56'
P.C. = 353+06.33
P.T. = 364+16.89
e = 0.100'/'
Ls = 630'

C.L. STAGE 2
P.I. = 363+56.17
Δ = 12°55' 19" RT.
D = 8°0' 00.0"
T = 81.11'
L = 161.52'
P.C. = 362+75.06
P.T. = 364+36.58
NO SUPER

C.L. STAGE 2
P.I. = 362+00.07
Δ = 5°58' 20" LT.
D = 8°0' 00.0"
T = 37.36'
L = 74.65'
P.C. = 361+62.71
P.T. = 362+37.36
NO SUPER

C.L. STAGE 2
P.I. = 365+06.05
Δ = 1°16' 13" LT.
D = 8°0' 00.0"
T = 7.94'
L = 15.87'
P.C. = 364+98.11
P.T. = 365+13.98
NO SUPER

C.L. STAGE 2
P.I. = 367+96.70
Δ = 2°59' 29" RT.
D = 2°0' 00.0"
T = 74.80'
L = 149.57'
P.C. = 367+21.90
P.T. = 368+71.47
NO SUPER

C.L. STAGE 2
P.I. = 370+00.33
Δ = 11°59' 24" LT.
D = 8°0' 00.0"
T = 75.22'
L = 149.88'
P.C. = 369+25.11
P.T. = 370+74.99
NO SUPER

C.L. STAGE 2
P.I. = 371+94.72
Δ = 11°55' 14" LT.
D = 8°0' 00.0"
T = 74.77'
L = 149.00'
P.C. = 371+19.95
P.T. = 372+68.95
NO SUPER

C.L. HWY. 62
P.I. = 376+94.04
Δ = 78°33' 54" LT.
D = 5°15' 00.0"
T = 892.70'
L = 1496.48'
P.C. = 368+01.34
P.T. = 382+97.82
e = 0.100'/'
Ls = 630'

CO. RD. 916 C.L.
P.I. = 12+02.33
Δ = 62°31' 22" LT.
D = 22°55' 06"
T = 151.77'
L = 272.80'
P.C. = 10+50.56
P.T. = 13+23.36
NO SUPER

C.L. HWY. 62
P.I. = 359+15.07
Δ = 58°18' 16" RT.
D = 5°15' 00.0"
T = 608.74'
L = 1110.56'
P.C. = 353+06.33
P.T. = 364+16.89
e = 0.100'/'
Ls = 630'

OBLITERATION OF EXISTING PAVEMENT

ROAD CLOSED
(I) R11-2 (48" X 30")
8' BARR. TYP. III LT.
8' BARR. TYP. III RT.

STA. 372+00.00 HWY. 62=
STA. 10+00.00 CO. RD. 916 C.L.
0.00' OFFSET

STA. 372+00.00 HWY. 62=
STA. 10+50.56 CO. RD. 916 C.L.
50.56' OFFSET

STA. 373+09.47 HWY. 62=
STA. 13+37.39 CO. RD. 916 C.L.
290.04' OFFSET

STA. 373+00.46 HWY. 62=
STA. 13+23.36 CO. RD. 916 C.L.
282.16' OFFSET

STA. 373+88.20 HWY. 62=
STA. 14+61.51 CO. RD. 916 C.L.
360.87' OFFSET

STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	64	282

(2) MAINTENANCE OF TRAFFIC DETAILS

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OBLITERATION OF EXISTING PAVEMENT

C.L. HWY. 62
P.I. = 376+94.04
Δ = 78°35'54" LT.
D = 5°15'00.0"
T = 892.70'
L = 1496.48'
P.C. = 368+01.34
P.T. = 382+97.82
e = 0.100'/'
Ls = 630'

C.L. STAGE 2
P.I. = 379+98.36
Δ = 15°24'52" LT.
D = 8°0'00.0"
T = 96.92'
L = 192.68'
P.C. = 379+01.44
P.T. = 380+94.12
NO SUPER

C.L. STAGE 2
P.I. = 383+22.19
Δ = 2°04'23" LT.
D = 4°0'00.0"
T = 25.91'
L = 51.82'
P.C. = 382+96.28
P.T. = 383+48.10
NO SUPER

C.L. STAGE 2
P.I. = 387+89.23
Δ = 0°41'02" RT.
D = 0°45'00.0"
T = 45.59'
L = 91.18'
P.C. = 387+43.64
P.T. = 388+34.82
NO SUPER

C.L. STAGE 2
P.I. = 389+39.94
Δ = 2°11'44" RT.
D = 8°00'00.0"
T = 13.72'
L = 27.44'
P.C. = 389+26.22
P.T. = 389+53.66
NO SUPER

(4) OM-3R (12"X 36")

(3) OM-3L (12"X 36")

STA. 378+83 - STA. 383+40 - FURNISHING AND INSTALLING RELOCATING TEMPORARY PRECAST CONCRETE BARRIER WITH TWO (13') SPECIAL END UNITS = 460' L.F.
TEMPORARY IMPACT ATTENUATION BARRIER = 1 EACH.

C.L. STAGE 2
P.I. = 391+45.73
Δ = 2°36'08" RT.
D = 2°0'00.0"
T = 65.07'
L = 130.11'
P.C. = 390+80.66
P.T. = 392+10.77
NO SUPER

C.L. STAGE 2
P.I. = 390+41.48
Δ = 5°57'18" LT.
D = 8°0'00.0"
T = 37.25'
L = 74.43'
P.C. = 390+04.23
P.T. = 390+78.66
NO SUPER

C.L. STAGE 2
P.I. = 405+50.79
Δ = 1°52'45" RT.
D = 1°0'00.0"
T = 93.96'
L = 187.91'
P.C. = 404+56.83
P.T. = 406+44.74
NO SUPER

TRAFFIC DRUMS 10 @ 10' SPACING

TRAFFIC DRUMS 10 @ 10' SPACING

TRAFFIC DRUMS 10 @ 10' SPACING

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STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	65	282

(2) MAINTENANCE OF TRAFFIC DETAILS

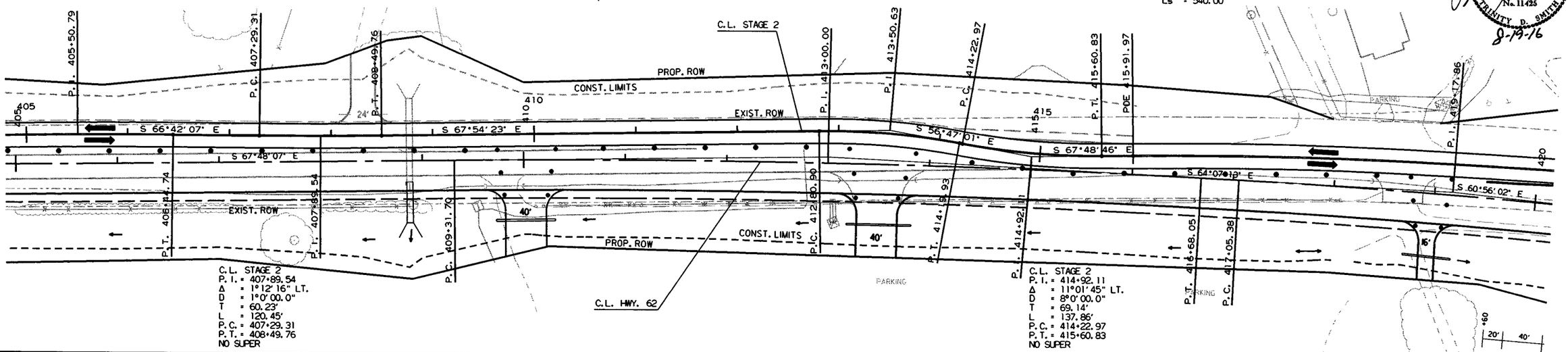
STATE OF ARKANSAS
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No. 11425
TRINITY D. SMITH
8-19-16

C.L. STAGE 2
P.I. = 405+50.79
Δ = 1°52'45" RT.
D = 1°0'00.0"
T = 93.96'
L = 187.91'
P.C. = 404+56.83
P.T. = 406+44.74
NO SUPER

C.L. HWY. 62
P.I. = 413+00.00
Δ = 3°40'54" RT.
D = 0°30'00.0"
T = 368.30'
L = 736.35'
P.C. = 409+31.70
P.T. = 416+68.05
NO SUPER

C.L. STAGE 2
P.I. = 413+50.63
Δ = 11°07'22" RT.
D = 8°0'00.0"
T = 69.73'
L = 139.03'
P.C. = 412+80.90
P.T. = 414+19.93
NO SUPER

C.L. HWY. 62
P.I. = 419+17.86
Δ = 3°11'10.9" RT.
D = 0°45'00.0"
T = 212.48'
L = 424.85'
P.C. = 417+05.38
P.T. = 421+30.23
e = 0.023'/'
Ls = 540.00'



C.L. STAGE 2
P.I. = 407+89.54
Δ = 1°12'16" LT.
D = 1°0'00.0"
T = 60.23'
L = 120.45'
P.C. = 407+29.31
P.T. = 408+49.76
NO SUPER

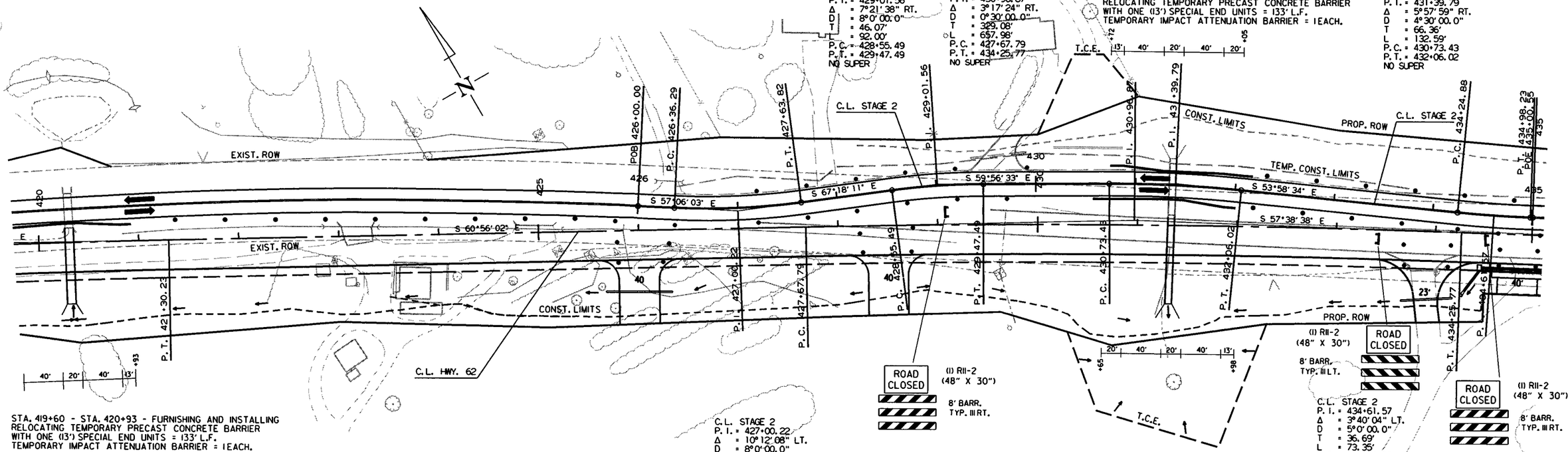
C.L. STAGE 2
P.I. = 414+92.11
Δ = 11°01'45" LT.
D = 8°0'00.0"
T = 69.14'
L = 137.86'
P.C. = 414+22.97
P.T. = 415+60.83
NO SUPER

C.L. STAGE 2
P.I. = 429+01.56
Δ = 7°21'38" RT.
D = 8°0'00.0"
T = 46.07'
L = 92.00'
P.C. = 428+55.49
P.T. = 429+47.49
NO SUPER

C.L. HWY. 62
P.I. = 430+96.87
Δ = 3°17'24" RT.
D = 0°30'00.0"
T = 329.08'
L = 657.98'
P.C. = 427+67.79
P.T. = 434+25.77
NO SUPER

STA. 430+72 - STA. 432+05 - FURNISHING AND INSTALLING
RELOCATING TEMPORARY PRECAST CONCRETE BARRIER
WITH ONE (13') SPECIAL END UNITS = 133' L.F.
TEMPORARY IMPACT ATTENUATION BARRIER = 1 EACH.

C.L. STAGE 2
P.I. = 431+39.79
Δ = 5°57'59" RT.
D = 4°30'00.0"
T = 66.36'
L = 132.59'
P.C. = 430+73.43
P.T. = 432+06.02
NO SUPER



STA. 419+60 - STA. 420+93 - FURNISHING AND INSTALLING
RELOCATING TEMPORARY PRECAST CONCRETE BARRIER
WITH ONE (13') SPECIAL END UNITS = 133' L.F.
TEMPORARY IMPACT ATTENUATION BARRIER = 1 EACH.

C.L. STAGE 2
P.I. = 427+00.22
Δ = 10°12'08" LT.
D = 8°0'00.0"
T = 63.93'
L = 127.53'
P.C. = 426+36.29
P.T. = 427+63.82
NO SUPER

• TRAFFIC DRUMS AT 50' O.C.

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

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

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

STA. 430+65 - STA. 431+98 - FURNISHING AND INSTALLING
RELOCATING TEMPORARY PRECAST CONCRETE BARRIER
WITH ONE (13') SPECIAL END UNITS = 133' L.F.
TEMPORARY IMPACT ATTENUATION BARRIER = 1 EACH.

C.L. STAGE 2
P.I. = 434+61.57
Δ = 3°40'04" LT.
D = 5°0'00.0"
T = 36.69'
L = 73.35'
P.C. = 434+24.88
P.T. = 434+98.23
NO SUPER

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STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	66	282

(2) MAINTENANCE OF TRAFFIC DETAILS

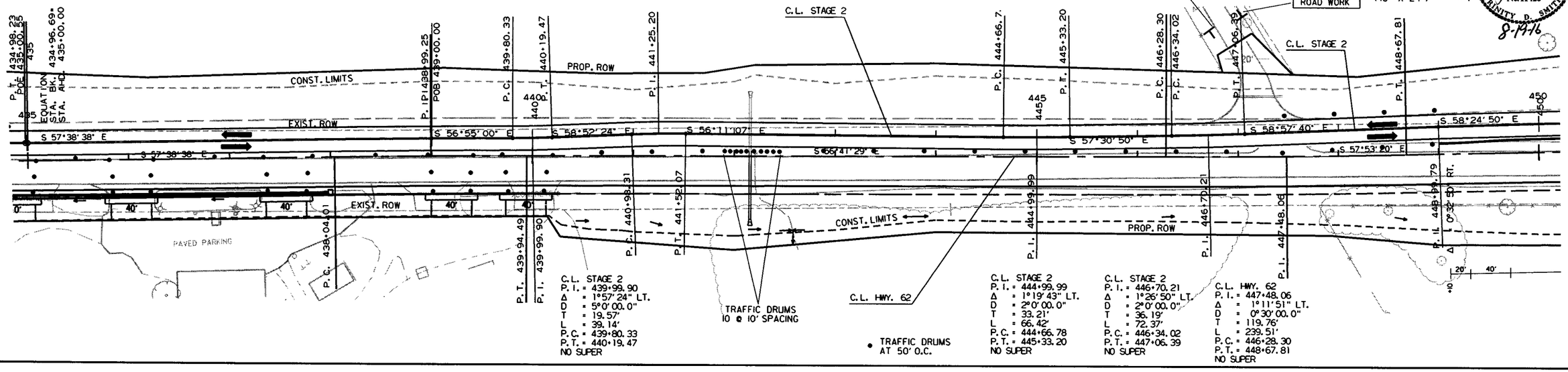
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C.L. HWY. 62
P.I. = 438+99.25
Δ = 0°57'09" RT.
D = 0°30'00.0"
T = 95.24'
L = 190.48'
P.C. = 438+04.01
P.T. = 439+94.49
NO SUPER

C.L. STAGE 2
P.I. = 441+25.20
Δ = 2°41'17" RT.
D = 5°0'00.0"
T = 26.89'
L = 53.76'
P.C. = 440+98.31
P.T. = 441+52.07
NO SUPER

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

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



C.L. STAGE 2
P.I. = 439+99.90
Δ = 1°57'24" LT.
D = 5°0'00.0"
T = 19.57'
L = 39.14'
P.C. = 439+80.33
P.T. = 440+19.47
NO SUPER

TRAFFIC DRUMS AT 50' O.C.

C.L. STAGE 2
P.I. = 444+99.99
Δ = 1°19'43" LT.
D = 2°0'00.0"
T = 33.21'
L = 66.42'
P.C. = 444+66.78
P.T. = 445+33.20
NO SUPER

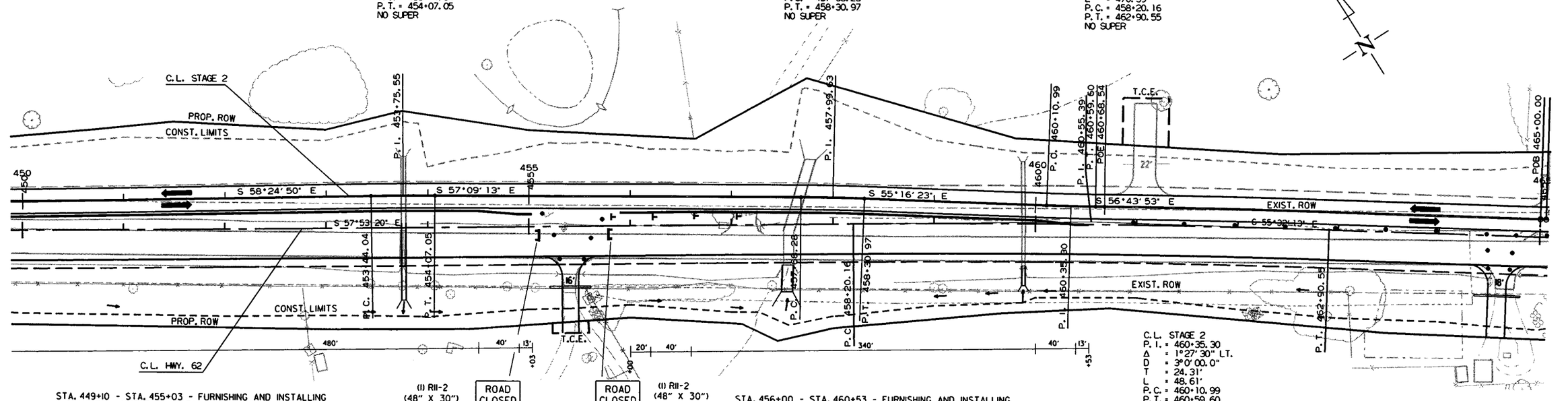
C.L. STAGE 2
P.I. = 446+70.21
Δ = 1°26'50" LT.
D = 2°0'00.0"
T = 36.19'
L = 72.37'
P.C. = 446+34.02
P.T. = 447+06.39
NO SUPER

C.L. HWY. 62
P.I. = 447+48.06
Δ = 1°11'51" LT.
D = 0°30'00.0"
T = 119.76'
L = 239.51'
P.C. = 446+28.30
P.T. = 448+67.81
NO SUPER

C.L. STAGE 2
P.I. = 453+75.55
Δ = 1°15'37" RT.
D = 2°0'00.0"
T = 31.51'
L = 63.01'
P.C. = 453+44.04
P.T. = 454+07.05
NO SUPER

C.L. STAGE 2
P.I. = 457+99.63
Δ = 1°52'50" RT.
D = 3°0'00.0"
T = 31.35'
L = 62.69'
P.C. = 457+68.28
P.T. = 458+30.97
NO SUPER

C.L. HWY. 62
P.I. = 460+55.39
Δ = 2°21'07" RT.
D = 0°30'00.0"
T = 235.23'
L = 470.39'
P.C. = 458+20.16
P.T. = 462+90.55
NO SUPER



STA. 449+10 - STA. 455+03 - FURNISHING AND INSTALLING RELOCATING TEMPORARY PRECAST CONCRETE BARRIER WITH ONE (13') SPECIAL END UNITS = 593' L.F.
TEMPORARY IMPACT ATTENUATION BARRIER = 1 EACH.

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

ROAD CLOSED

ROAD CLOSED

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

STA. 456+00 - STA. 460+53 - FURNISHING AND INSTALLING RELOCATING TEMPORARY PRECAST CONCRETE BARRIER WITH ONE (13') SPECIAL END UNITS = 453' L.F.
TEMPORARY IMPACT ATTENUATION BARRIER = 1 EACH.

C.L. STAGE 2
P.I. = 460+35.30
Δ = 1°27'30" LT.
D = 3°0'00.0"
T = 24.31'
L = 48.61'
P.C. = 460+10.99
P.T. = 460+59.60
NO SUPER

STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	67	282

(2) MAINTENANCE OF TRAFFIC DETAILS

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C.L. STAGE 2
P.I. = 466+92.21
Δ = 7°4'23" RT.
D = 8°0'00.0"
T = 44.27'
L = 88.42'
P.C. = 466+47.94
P.T. = 467+36.36
NO SUPER

C.L. STAGE 2
P.I. = 476+07.44
Δ = 4°51'10" RT.
D = 2°51'54.0"
T = 84.74'
L = 169.38'
P.C. = 475+22.70
P.T. = 476+92.08
NO SUPER

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

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

C.L. STAGE 2
P.I. = 465+50.00
Δ = 7°6'24" LT.
D = 8°0'00.0"
T = 44.48'
L = 88.84'
P.C. = 465+05.52
P.T. = 465+94.36
NO SUPER

C.L. STAGE 2
P.I. = 471+00.00
Δ = 0°57'12" LT.
D = 5°0'00.0"
T = 9.54'
L = 19.07'
P.C. = 470+90.46
P.T. = 471+09.53
NO SUPER

C.L. HWY. 62
P.I. = 472+32.69
Δ = 3°01'31" LT.
D = 0°30'00.0"
T = 302.58'
L = 605.03'
P.C. = 469+30.11
P.T. = 475+35.14
NO SUPER

C.L. STAGE 2
P.I. = 473+11.02
Δ = 3°39'51" LT.
D = 8°0'00.0"
T = 22.91'
L = 45.80'
P.C. = 472+88.11
P.T. = 473+33.91
NO SUPER

C.L. STAGE 2
P.I. = 479+88.29
Δ = 10°40'28" LT.
D = 8°0'00.0"
T = 66.91'
L = 133.43'
P.C. = 479+21.38
P.T. = 480+54.81
NO SUPER

• TRAFFIC DRUMS AT 50' O.C.

STA. 473+10 - STA. 478+03 - FURNISHING AND INSTALLING RELOCATING TEMPORARY PRECAST CONCRETE BARRIER WITH ONE (13') SPECIAL END UNITS = 493' L.F.
TEMPORARY IMPACT ATTENUATION BARRIER = 1 EACH.

C.L. STAGE 2
P.I. = 481+00.17
Δ = 6°53'00" RT.
D = 8°0'00.0"
T = 43.08'
L = 86.05'
P.C. = 480+57.09
P.T. = 481+43.14
NO SUPER

C.L. STAGE 2
P.I. = 479+88.29
Δ = 10°40'28" LT.
D = 8°0'00.0"
T = 66.91'
L = 133.43'
P.C. = 479+21.38
P.T. = 480+54.81
NO SUPER

C.L. STAGE 2
P.I. = 484+42.71
Δ = 7°56'18" LT.
D = 8°0'00.0"
T = 49.69'
L = 99.23'
P.C. = 483+93.02
P.T. = 484+92.25
NO SUPER

C.L. HWY. 62
P.I. = 487+21.91
Δ = 28°21'36" LT.
D = 2°24'00.0"
T = 603.20'
L = 1181.66'
P.C. = 481+18.71
P.T. = 493+00.37
e. = 0.065'/'
Ls = 540.00'

(1) R11-2 (48" X 30")
8' BARR. TYP. III LT.
ROAD CLOSED

(1) R11-2 (48" X 30")
8' BARR. TYP. III RT.
ROAD CLOSED

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

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

STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

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				6	ARK.			
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(2) MAINTENANCE OF TRAFFIC DETAILS

STA. 499+00 - STA. 501+60 - FURNISHING AND INSTALLING
RELOCATING TEMPORARY PRECAST CONCRETE BARRIER = 260' L.F.
TEMPORARY IMPACT ATTENUATION BARRIER = 2 EACH.

STA. 502+40 - STA. 522+53 - FURNISHING AND INSTALLING
RELOCATING TEMPORARY PRECAST CONCRETE BARRIER
WITH ONE (13') SPECIAL END UNITS = 2013' L.F.
TEMPORARY IMPACT ATTENUATION BARRIER = 1 EACH.

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C.L. STAGE 2
P.I. = 501+00.29
Δ = 4°25'25" RT.
D = 8°0'00.0"
T = 27.66'
L = 55.30'
P.C. = 500+72.63
P.T. = 501+27.93
NO SUPER

C.L. STAGE 2
P.I. = 504+00.31
Δ = 1°36'15" RT.
D = 0°45'00.0"
T = 106.94'
L = 213.86'
P.C. = 502+93.37
P.T. = 505+07.23
NO SUPER

C.L. STAGE 2
P.I. = 500+00.00
Δ = 5°1'7" LT.
D = 5°0'00.0"
T = 50.22'
L = 100.38'
P.C. = 499+49.78
P.T. = 500+50.16
NO SUPER

C.L. HWY. 62
P.I. = 508+98.02
Δ = 0°29'06" LT.
D = 0°30'00.0"
T = 48.51'
L = 97.02'
P.C. = 508+49.51
P.T. = 509+46.53
NO SUPER

C.L. STAGE 2
P.I. = 509+00.28
Δ = 5°24'48" LT.
D = 5°0'00.0"
T = 54.17'
L = 108.26'
P.C. = 508+46.11
P.T. = 509+54.37
NO SUPER

C.L. STAGE 2
P.I. = 511+00.57
Δ = 4°30'33" RT.
D = 8°0'00.0"
T = 28.20'
L = 56.37'
P.C. = 510+72.37
P.T. = 511+28.74
NO SUPER

C.L. STAGE 2
P.I. = 515+08.61
Δ = 3°15'28" RT.
D = 8°0'00.0"
T = 20.36'
L = 40.72'
P.C. = 514+88.25
P.T. = 515+28.97
NO SUPER

C.L. STAGE 2
P.I. = 520+00.78
Δ = 15°26'38" RT.
D = 8°0'00.0"
T = 97.11'
L = 193.05'
P.C. = 519+03.67
P.T. = 520+96.72
NO SUPER

C.L. STAGE 2
P.I. = 512+00.56
Δ = 2°36'37" LT.
D = 2°0'00.0"
T = 65.26'
L = 130.50'
P.C. = 511+35.30
P.T. = 512+65.80
NO SUPER

C.L. STAGE 2
P.I. = 517+17.65
Δ = 6°11'58" LT.
D = 8°0'00.0"
T = 38.79'
L = 77.49'
P.C. = 516+78.86
P.T. = 517+56.35
NO SUPER

C.L. STAGE 2
P.I. = 522+31.66
Δ = 13°28'35" LT.
D = 8°0'00.0"
T = 84.62'
L = 168.46'
P.C. = 521+47.04
P.T. = 523+15.50
NO SUPER

ROAD CLOSED

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

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

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STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	69	282

(2) MAINTENANCE OF TRAFFIC DETAILS

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No. 11425
TRINITY D. SMITH
8/19/16

STA. 526+00 - STA. 528+93 - FURNISHING AND INSTALLING TEMPORARY PRECAST CONCRETE BARRIER WITH ONE (13') SPECIAL END UNITS = 293' L.F.
TEMPORARY IMPACT ATTENUATION BARRIER = 1 EACH.

C.L. STAGE 2
P.I. = 527+49.34
Δ = 5°14'40" RT.
D = 8°0'00.0"
T = 32.80'
L = 65.56'
P.C. = 527+16.54
P.T. = 527+82.10
NO SUPER

C.L. STAGE 2
P.I. = 533+29.14
Δ = 3°28'40" LT.
D = 1°0'00.0"
T = 173.95'
L = 347.78'
P.C. = 531+55.19
P.T. = 535+02.97
NO SUPER

STA. 526+92 - STA. 542+05 - FURNISHING AND INSTALLING TEMPORARY PRECAST CONCRETE BARRIER WITH ONE (13') SPECIAL END UNITS = 1513' L.F.
TEMPORARY IMPACT ATTENUATION BARRIER = 1 EACH.

C.L. STAGE 2
P.I. = 542+67.43
Δ = 15°08'44" RT.
D = 8°0'00.0"
T = 95.22'
L = 189.32'
P.C. = 541+72.21
P.T. = 543+61.53
NO SUPER

C.L. HWY. 62
P.I. = 548+68.17
Δ = 2°48'10" RT.
D = 0°30'00.0"
T = 280.31'
L = 560.52'
P.C. = 545+87.86
P.T. = 551+48.38
NO SUPER

C.L. STAGE 2
P.I. = 544+54.08
Δ = 14°34'56" LT.
D = 8°0'00.0"
T = 91.64'
L = 182.28'
P.C. = 543+62.44
P.T. = 545+44.72
NO SUPER

STA. 547+54.00
END JOB 090230

STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	70	282

(2) MAINTENANCE OF TRAFFIC DETAILS

STAGE 3 QUANTITIES:
SIGNS = 372 SQ. FT.
CONSTRUCTION PAVEMENT MARKINGS = 10000 LIN. FT.
TRAFFIC DRUMS = 488 EACH

STA. 350+00.00
BEGIN JOB 090230
LOG MILE 12.05

C.L. STAGE 3
P.I. = 353+15.89
Δ = 10°03'32" RT.
D = 8°0'00.0"
T = 63.03'
L = 125.73'
P.C. = 352+52.86
P.T. = 353+78.59
NO SUPER

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EXIST. ROW
345
S 48°14'16" E
350
S 47°32'29" E
POB 352+00.00
P.I. 348+00.00
Δ = 0°41'47"
EXIST. ROW
S 47°25'57" E
P.I. 353+15.89
38'
30'
600' LANE DROP
P.C. 352+52.86
P.C. 353+06.33
P.T. 353+78.59
70'
CONST. LIMITS
POE 354+98.44
355
S 37°22'25" E
C.L. STAGE 3
C.L. HWY. 62
16'
P.I. 359+15.07
S 10°45'47" W
TRAFFIC DRUMS 10 @ 10' SPACING
PROP. ROW
15'
50'

STA. 352+00.00 HWY. 62=
STA. 352+00.00 C.L. STAGE 3
1.86' OFFSET

STA. 352+52.86 HWY. 62=
STA. 352+52.86 C.L. STAGE 3
1.96' OFFSET

STA. 353+78.70 HWY. 62=
STA. 353+78.59 C.L. STAGE 3
10.83' OFFSET

STA. 355+00.00 HWY. 62=
STA. 354+98.44 C.L. STAGE 3
17.50' OFFSET

TRAFFIC DRUMS AT 50' O.C.

N
T.C.E.
C.L. HWY. 62
PROP. ROW
P.C. 368+01.94
865
870
S 10°45'47" W
P.T. 364+16.89
EXIST. ROW
PROP. ROW
C.L. STAGE 3
P.O.B. 10+00.00
P.C. 10+50.56
EXIST. ROW
20'
N 18°11'32" E
P.I. 11+02.33
N 19°03'49.2" E
P.T. 13+23.36
P.I. 13+37.19
375

STAGE 3
MAINTENANCE OF TRAFFIC DETAILS

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				6	ARK.			
				JOB NO.		090230	71	282

(2) MAINTENANCE OF TRAFFIC DETAILS

DRIVEWAY STA. 382+00 C.L.
P. I. = 102+48.22
Δ = 96°22'47" RT.
D = 114°35'16"
T = 55.90'
L = 84.11'
P.C. = 101+92.32
P.T. = 102+76.43

DRIVEWAY STA. 382+00 C.L.
P. I. = 101+04.00
Δ = 62°47'42.0" LT.
D = 114°35'22"
T = 30.51'
L = 54.80'
P.C. = 100+73.49
P.T. = 101+28.29

STA. 380+71.82 HWY. 62=
STA. 102+76.43 DRIVEWAY STA. 382+00 C.L.
213.31' OFFSET

STA. 380+75.12 HWY. 62=
STA. 102+82.27 DRIVEWAY STA. 382+00 C.L.
218.51' OFFSET

STA. 381+03.05 HWY. 62=
STA. 101+92.32 DRIVEWAY STA. 382+00 C.L.
117.58' OFFSET

STA. 381+69.58 HWY. 62=
STA. 101+28.29 DRIVEWAY STA. 382+00 C.L.
117.58' OFFSET

STA. 382+00.00 HWY. 62=
STA. 100+73.49 DRIVEWAY STA. 382+00 C.L.
73.49' OFFSET

STA. 372+00.00 HWY. 62=
STA. 100+00.00 CO. RD. 916 C.L.
0.00' OFFSET

C.L. HWY. 62

C.L. STAGE 3

PARKING

PAVED PARKING

S 67°48'07" E

P.T. 382+97.82

P.C. 101+92.32

P.T. 102+76.43

P.I. 102+48.22

P.C. 101+73.49

P.I. 101+04.00

P.I. 102+82.27

POB 100+00.00

N 27°11'53" E

B75 B80 B85 B90 B95 B105

16' 24' 34' 36' 40'

STATE OF ARKANSAS
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TRAFFIC DRUMS AT 50' O.C.

C.L. HWY. 62

C.L. STAGE 3

S 67°48'07" E

B90 B95 200 B105

16' 20' 24' 40'

9/30/2015

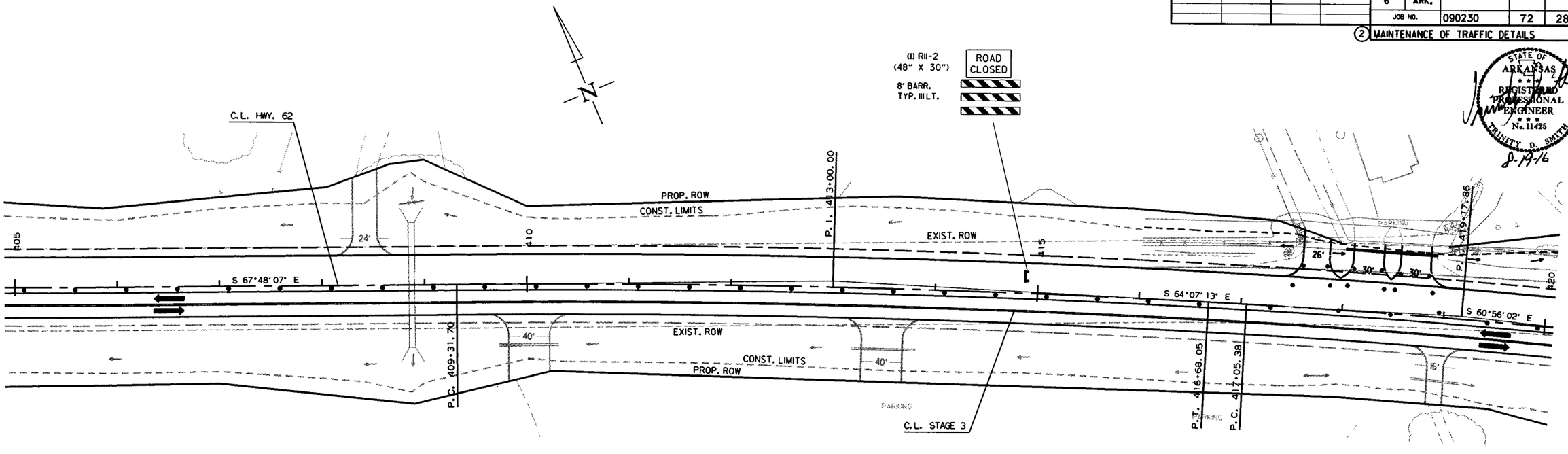
R090230.DGN

STAGE 3
MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	72	282

(2) MAINTENANCE OF TRAFFIC DETAILS

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TRINITY D. SMITH
9-19-16



STAGE 3
MAINTENANCE OF TRAFFIC DETAILS

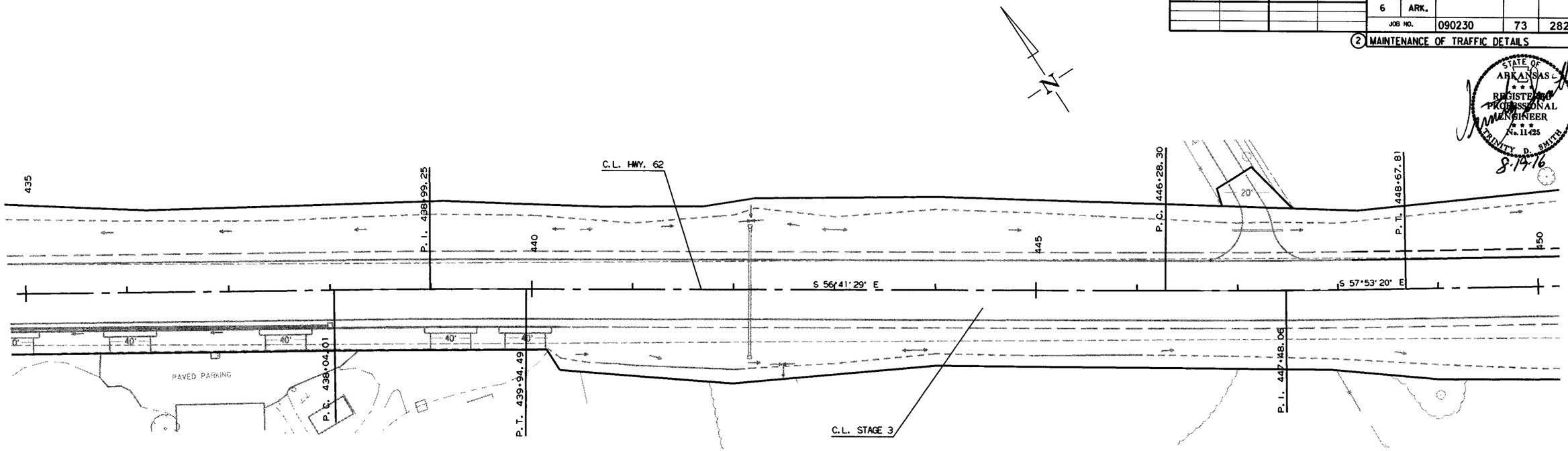
9/30/2015

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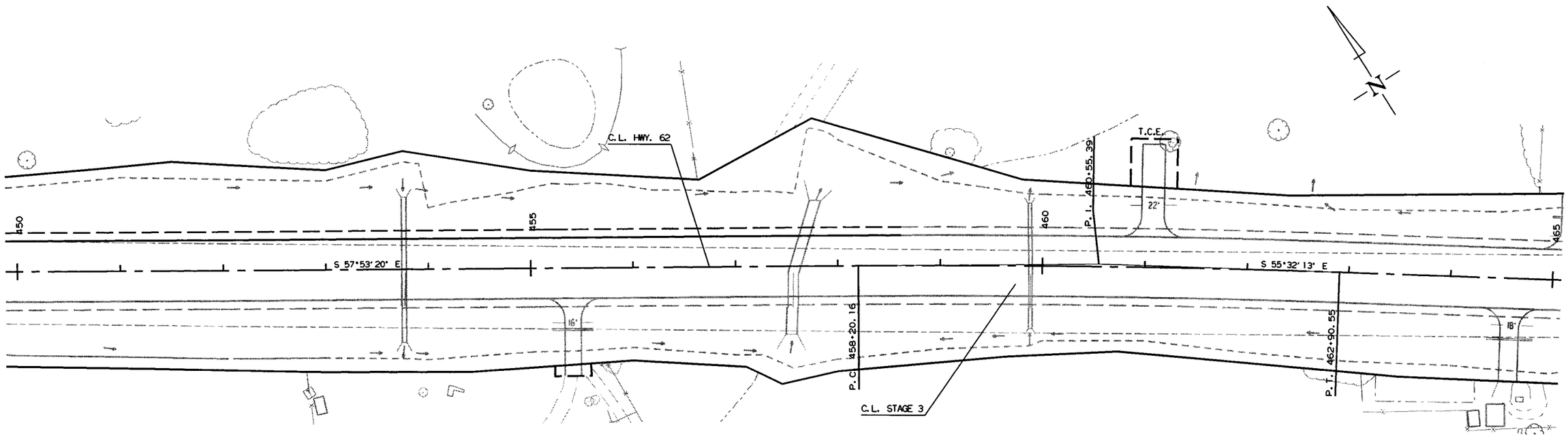
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				6	ARK.			
				JOB NO.		090230	73	282

(2) MAINTENANCE OF TRAFFIC DETAILS

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No. 11425
TRINITY D. SMITH
8-14-16



• TRAFFIC DRUMS AT 50' O.C.



STAGE 3
MAINTENANCE OF TRAFFIC DETAILS

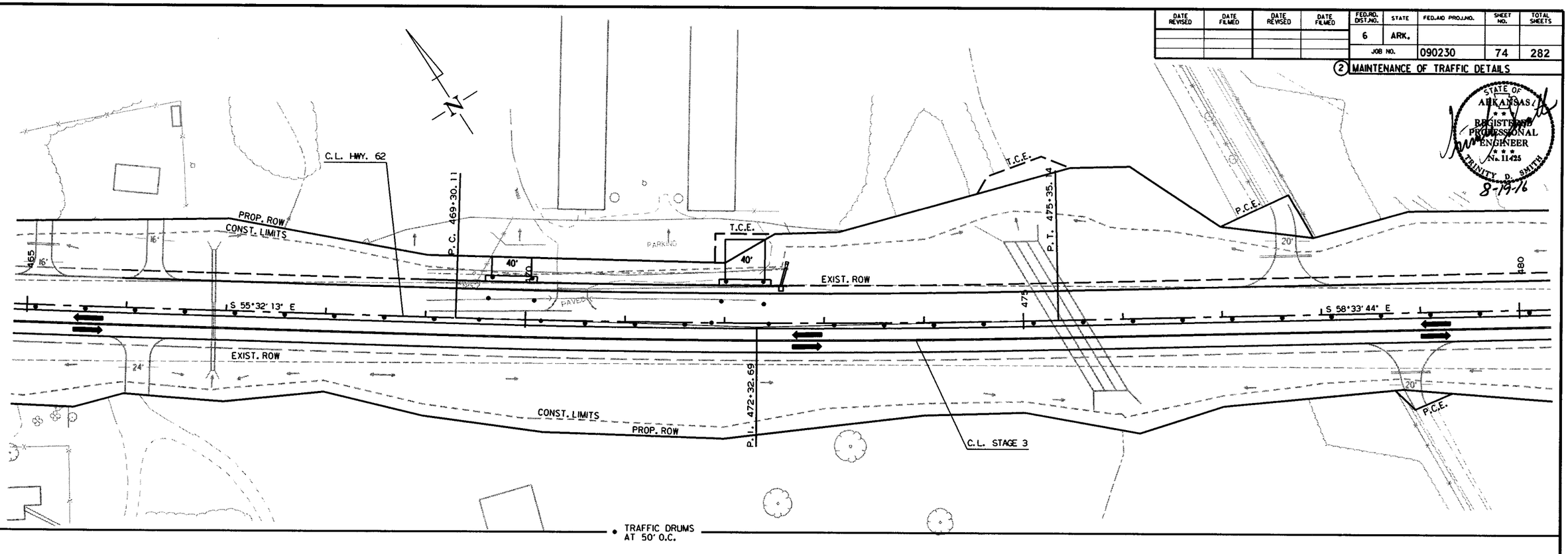
9/30/2015

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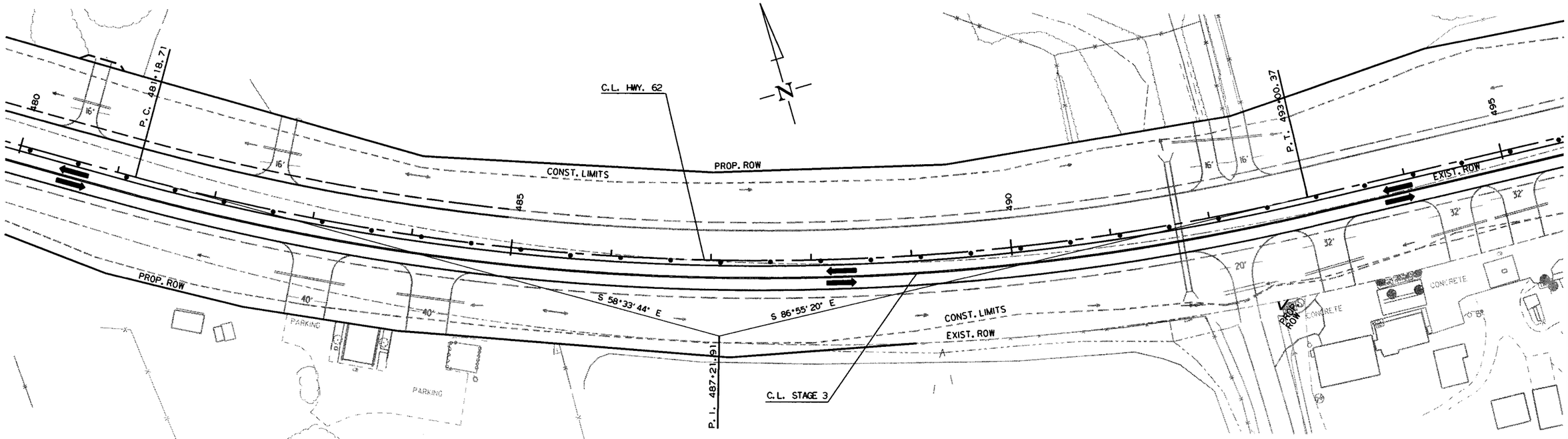
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				6	ARK.			
				JOB NO.		090230	74	282

(2) MAINTENANCE OF TRAFFIC DETAILS

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TRINITY D. SMITH
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• TRAFFIC DRUMS AT 50' O.C.



STAGE 3
MAINTENANCE OF TRAFFIC DETAILS

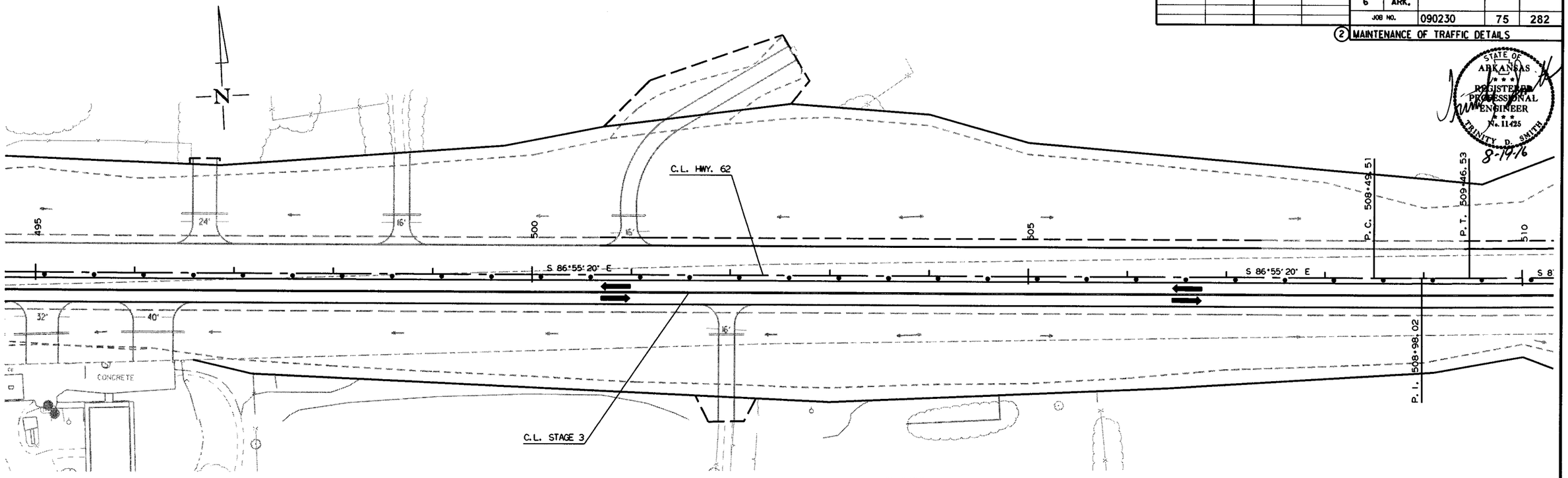
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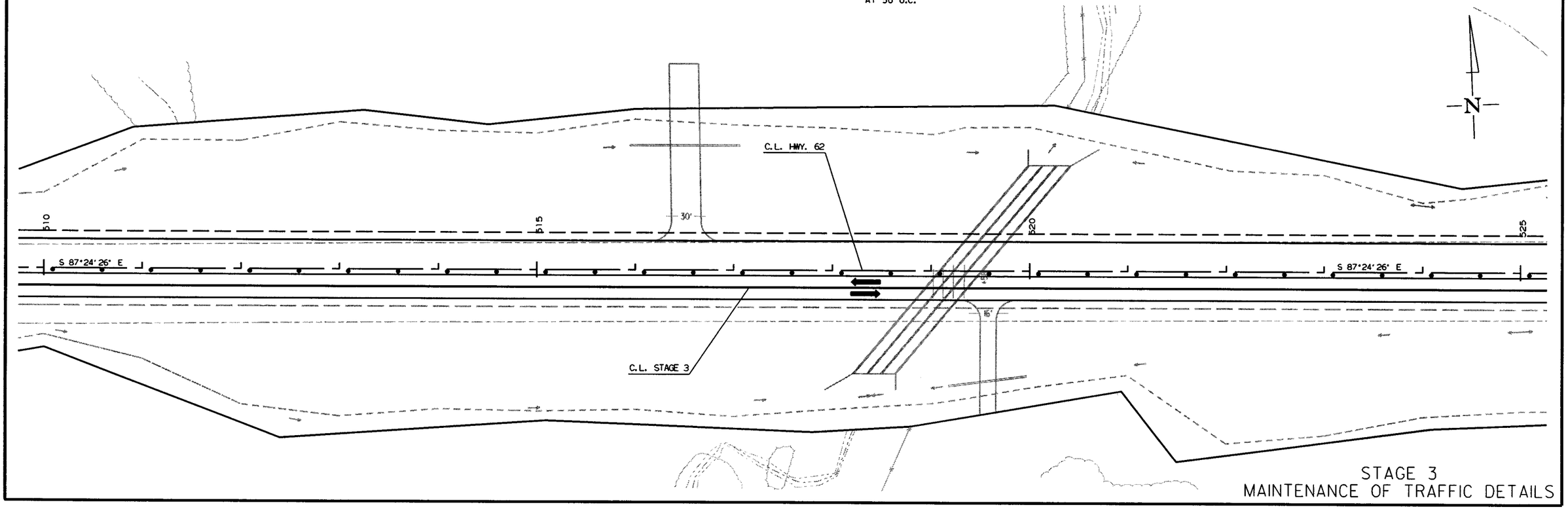
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	75	282

(2) MAINTENANCE OF TRAFFIC DETAILS

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TRINITY D. SMITH
8-19-16



• TRAFFIC DRUMS AT 50' O.C. •



9/30/2015

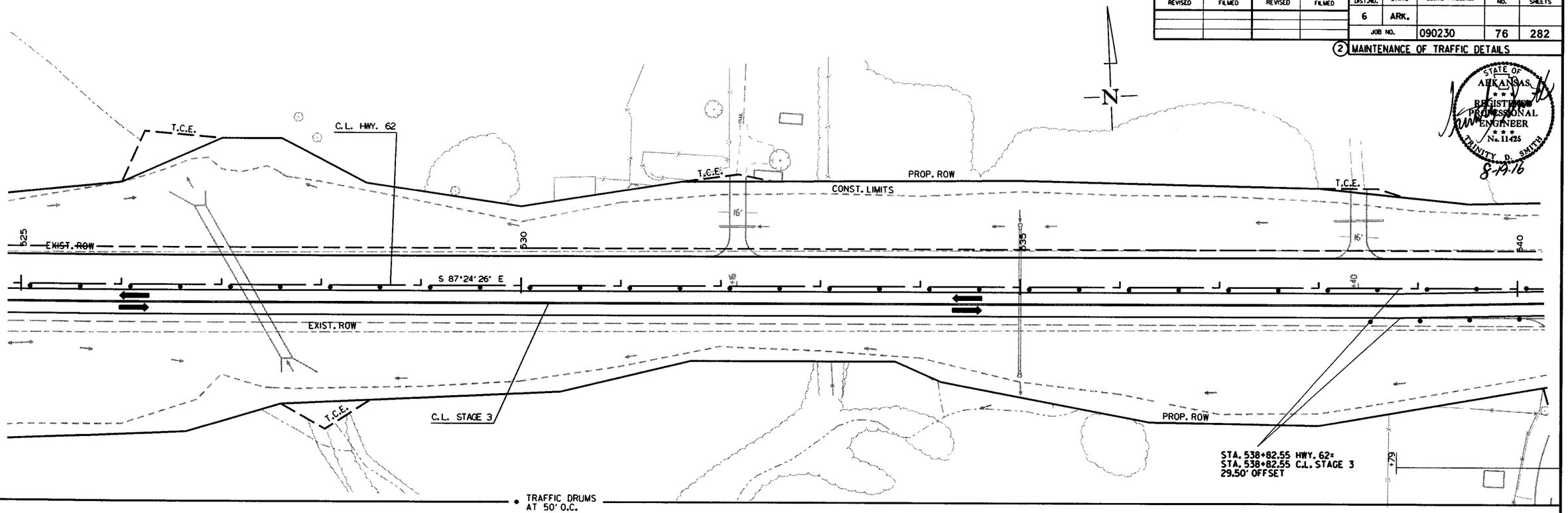
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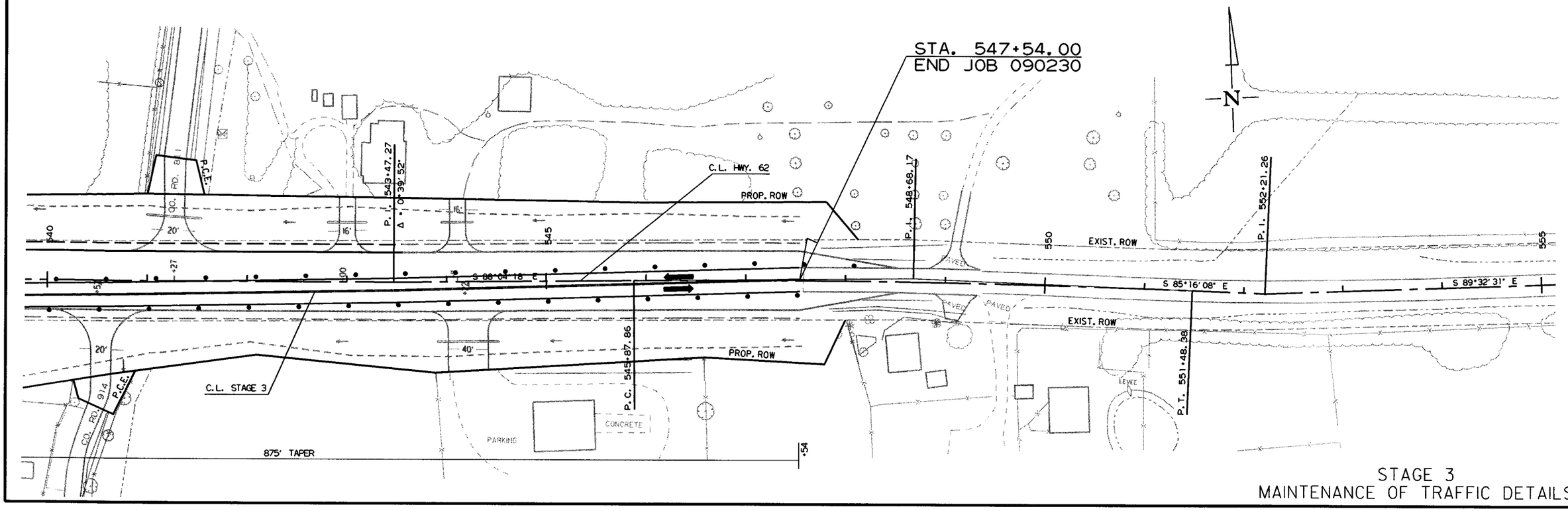
STAGE 3
MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	76	282

(2) MAINTENANCE OF TRAFFIC DETAILS

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STAGE 3
MAINTENANCE OF TRAFFIC DETAILS

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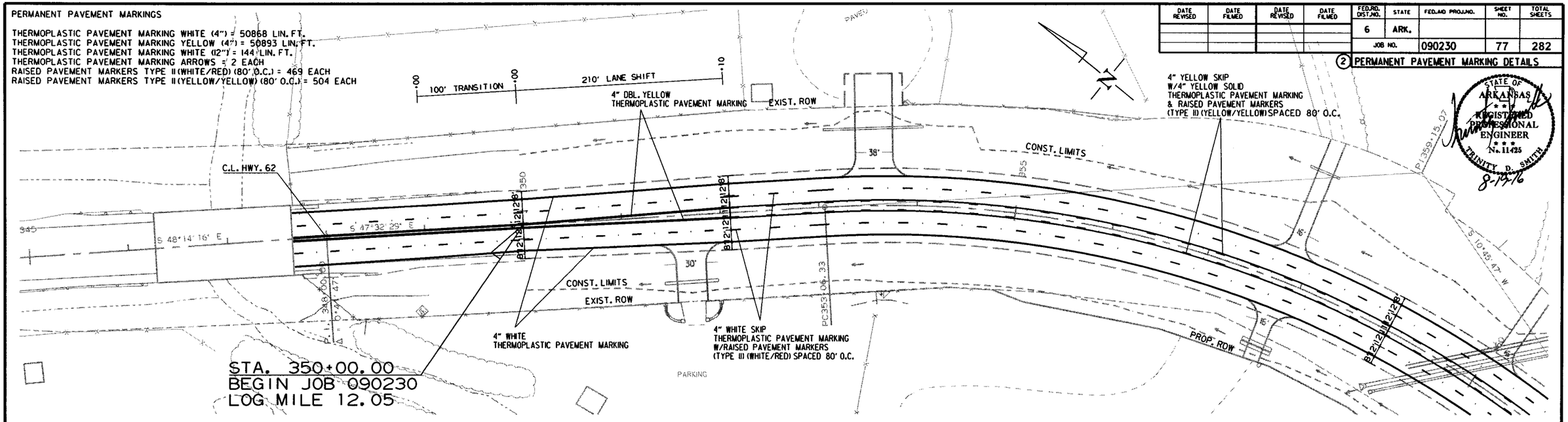
PERMANENT PAVEMENT MARKINGS

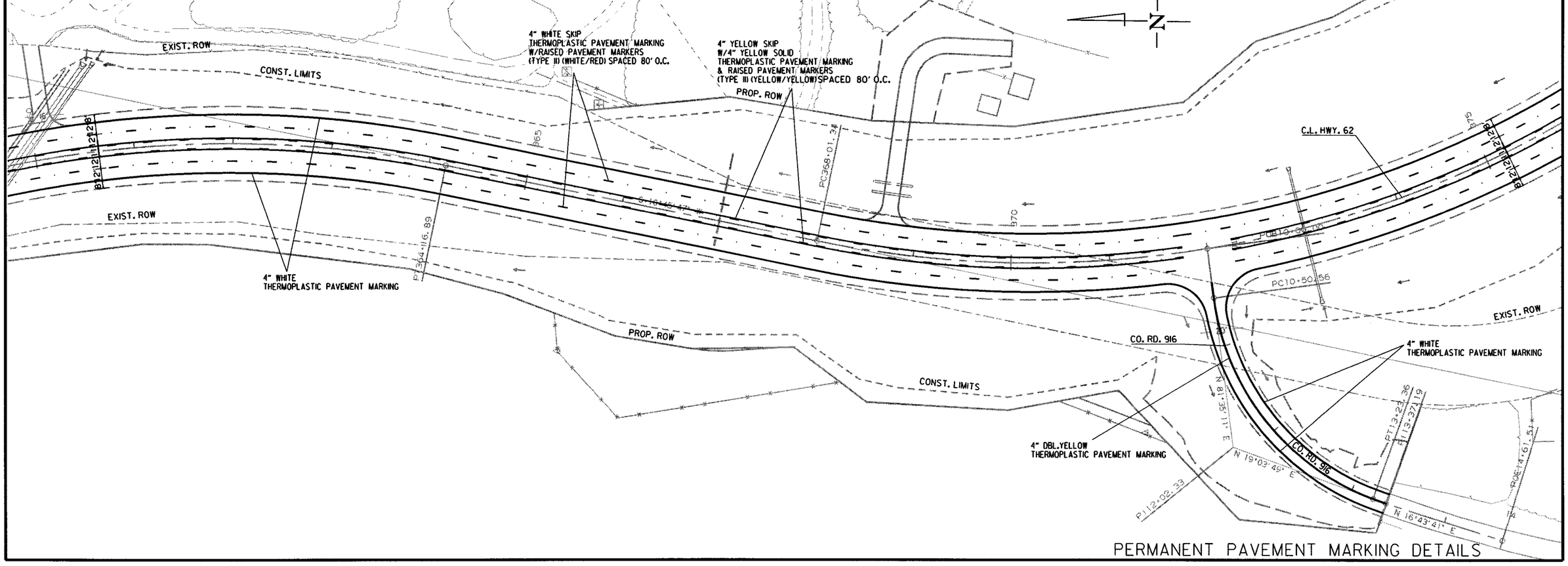
THERMOPLASTIC PAVEMENT MARKING WHITE (4") = 50868 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING YELLOW (4") = 50893 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING WHITE (12") = 144 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING ARROWS = 2 EACH
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) (80' O.C.) = 469 EACH
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW) (80' O.C.) = 504 EACH

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	77	282

(2) PERMANENT PAVEMENT MARKING DETAILS

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PERMANENT PAVEMENT MARKING DETAILS

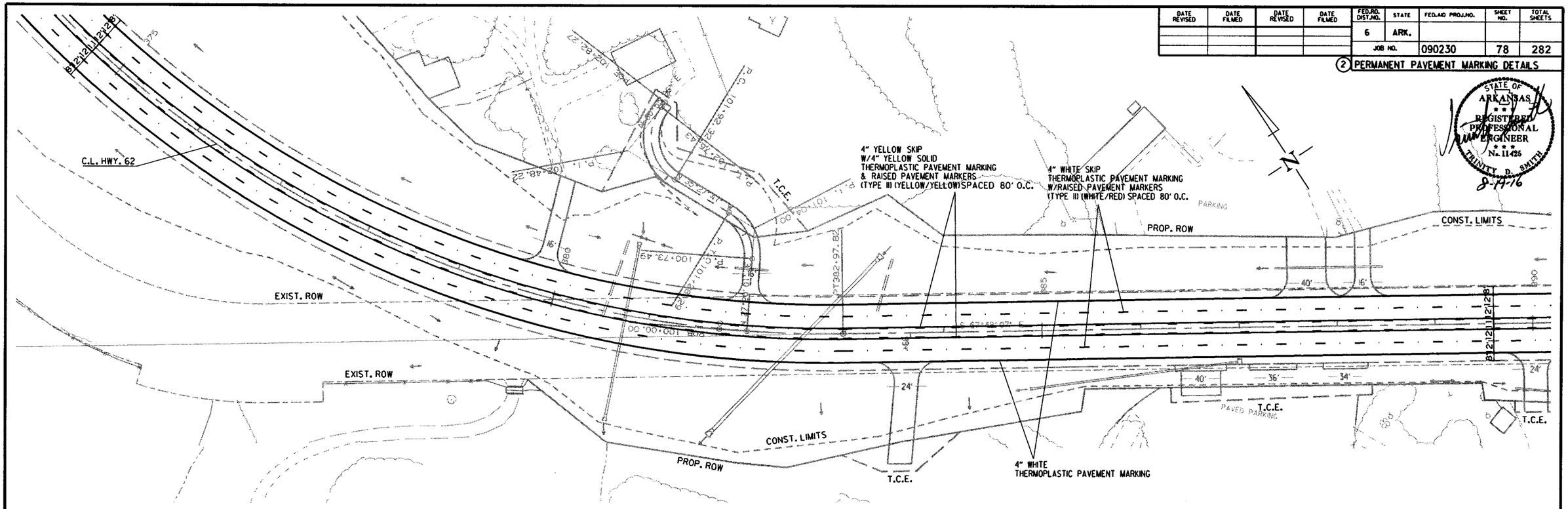
12/17/2013

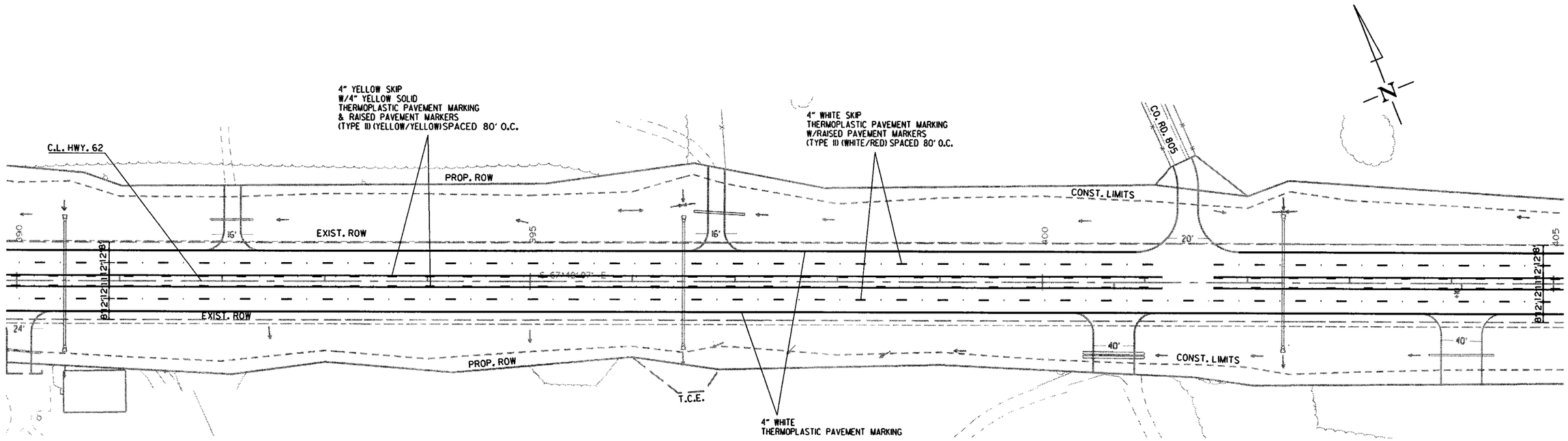
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	78	282

(2) PERMANENT PAVEMENT MARKING DETAILS

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12/17/2013

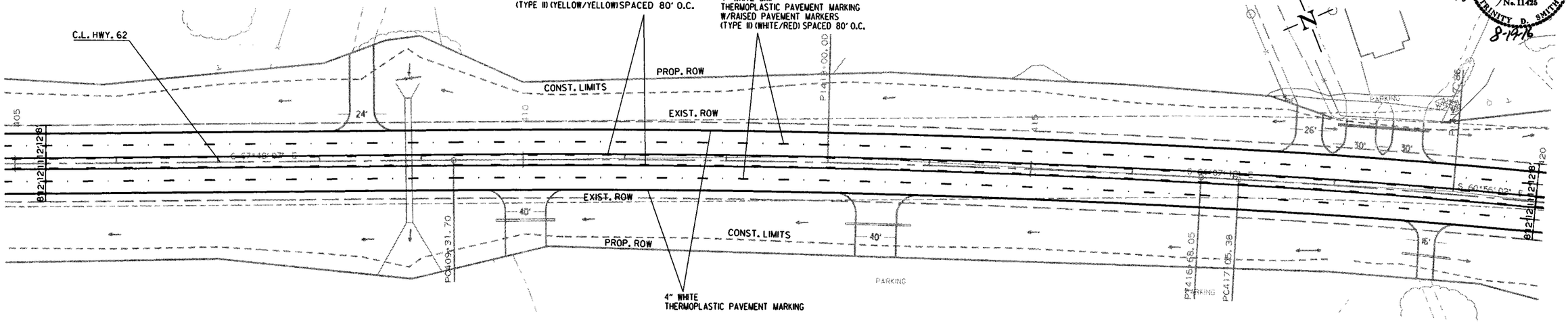
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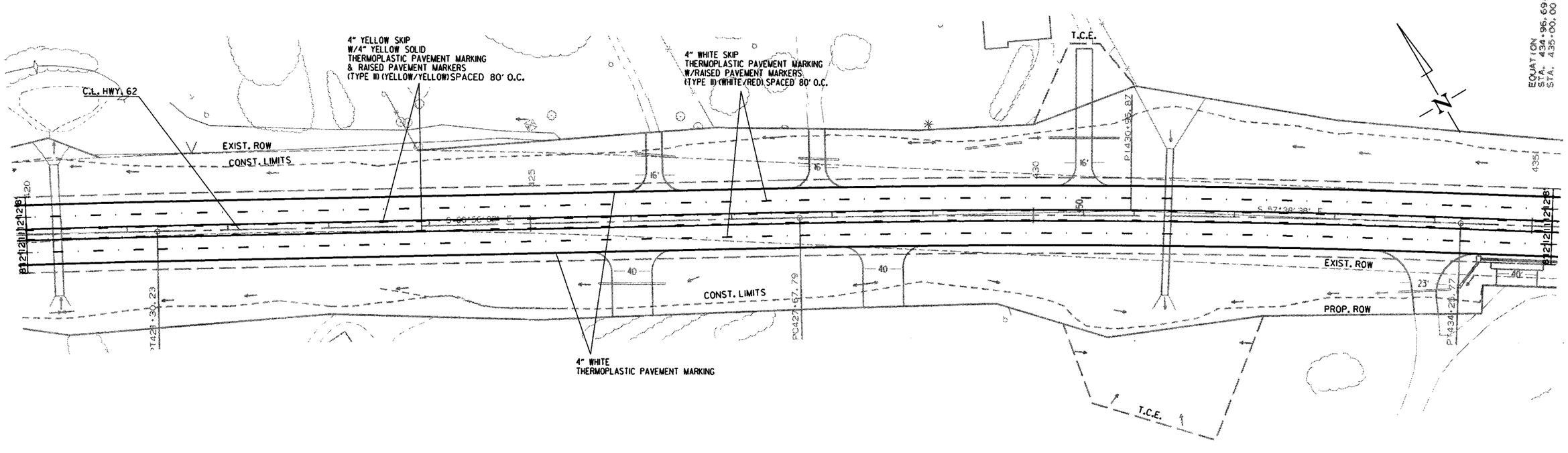
PERMANENT PAVEMENT MARKING DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	79	282

(2) PERMANENT PAVEMENT MARKING DETAILS

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PERMANENT PAVEMENT MARKING DETAILS

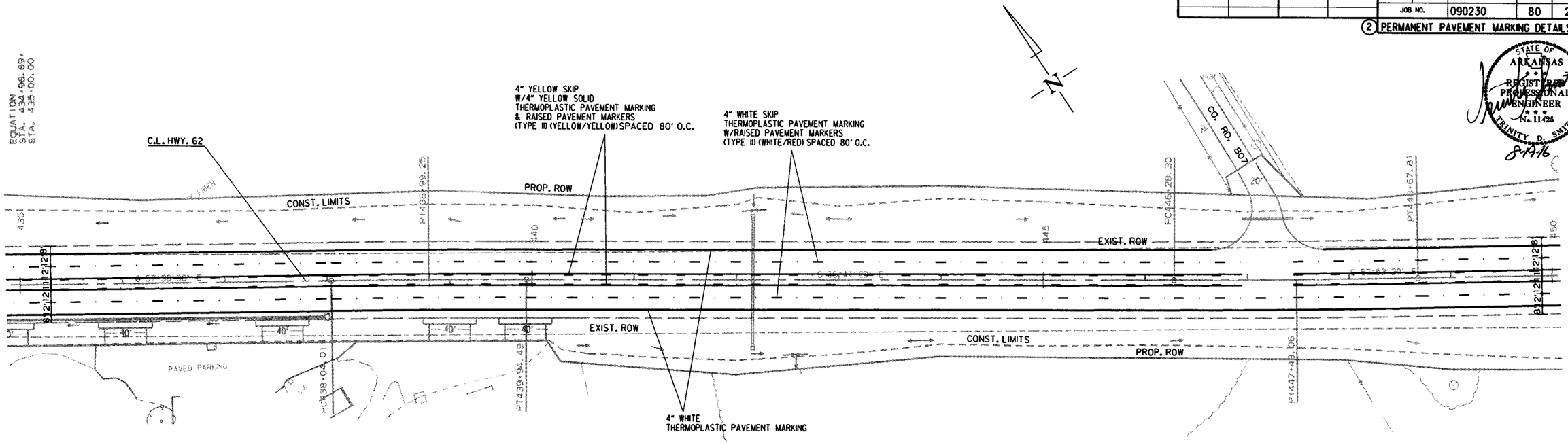
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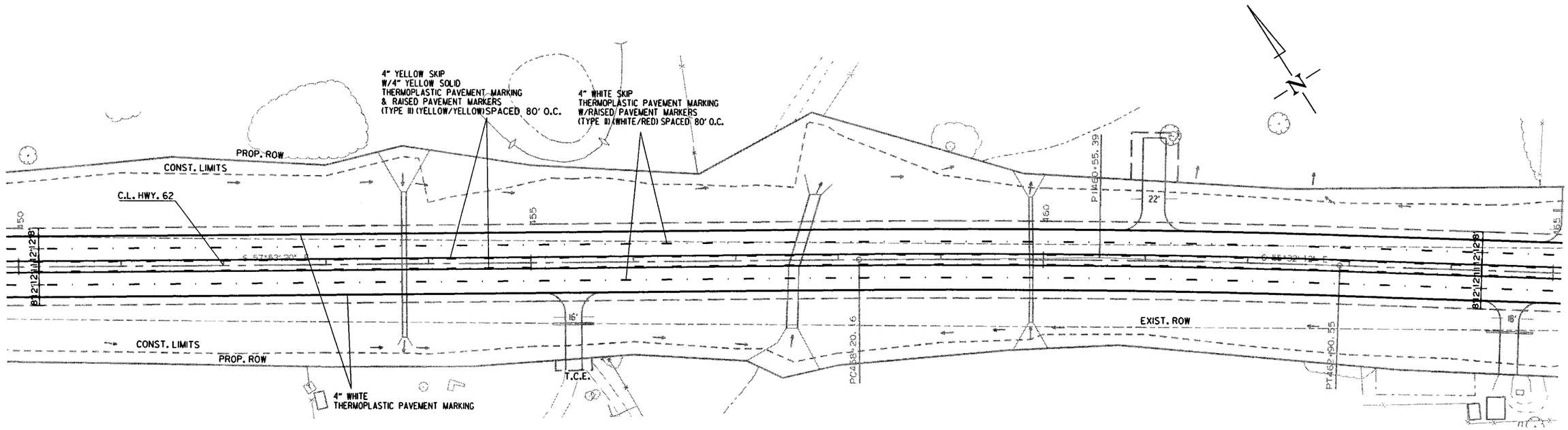
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	80	282

(2) PERMANENT PAVEMENT MARKING DETAILS

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TRINITY D. SMITH
8/19/16





12/17/2013

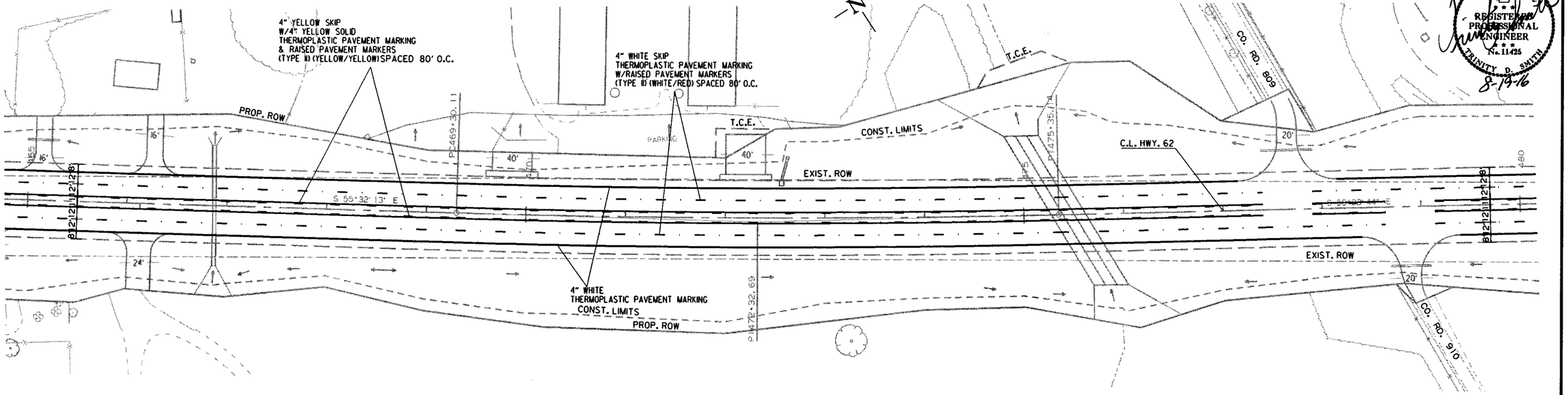
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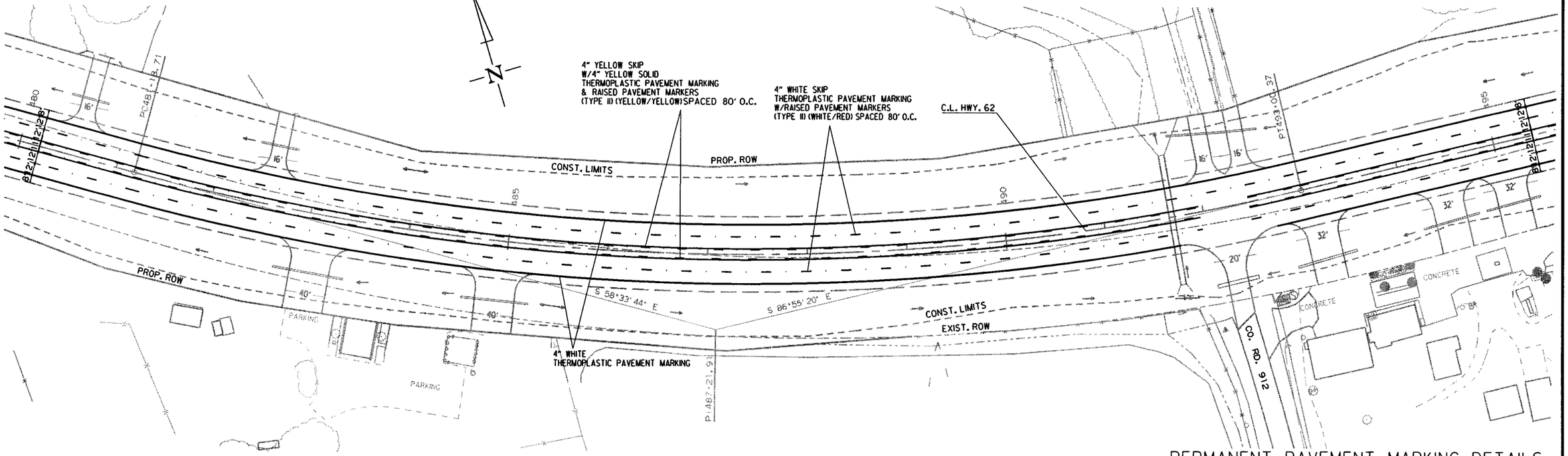
PERMANENT PAVEMENT MARKING DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	81	282

(2) PERMANENT PAVEMENT MARKING DETAILS

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8-19-16





PERMANENT PAVEMENT MARKING DETAILS

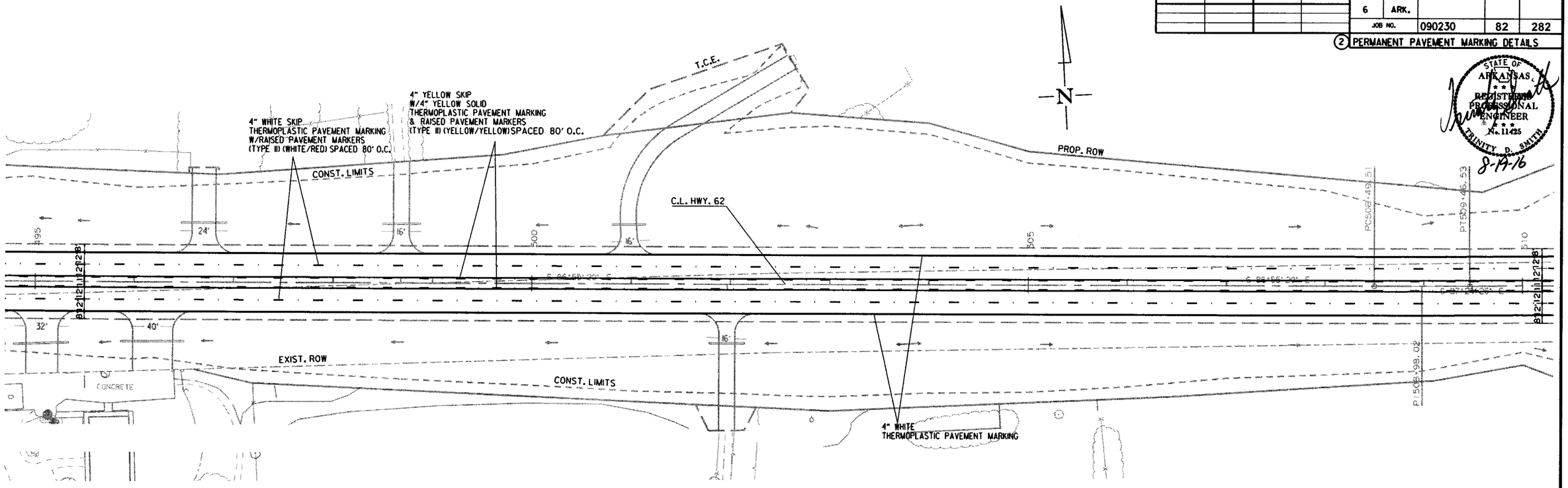
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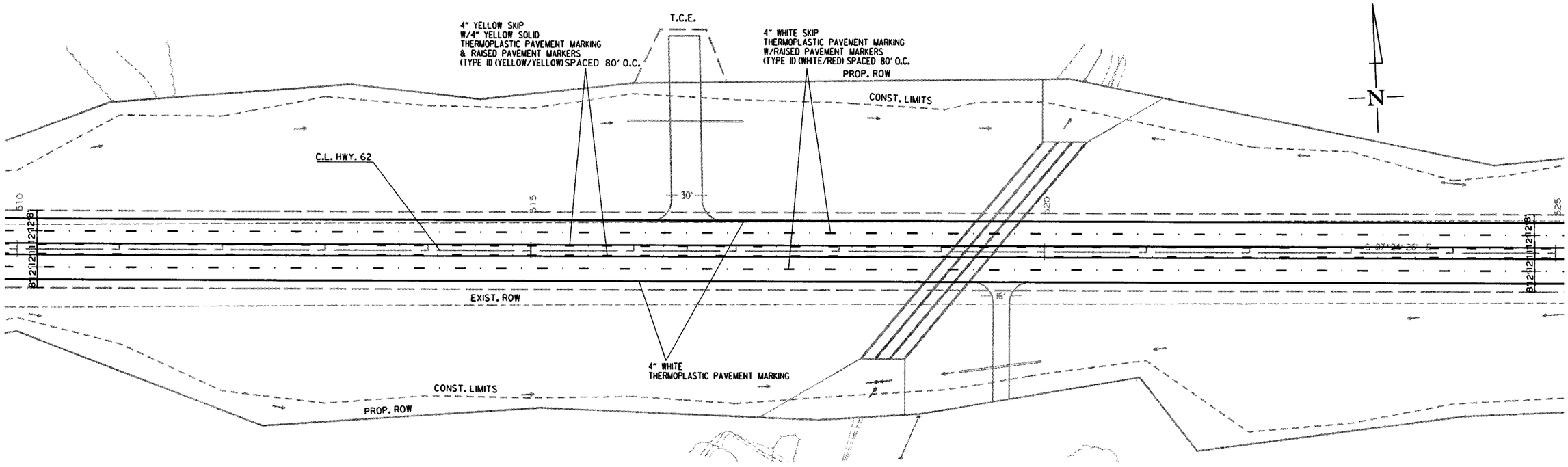
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	82	282

(2) PERMANENT PAVEMENT MARKING DETAILS

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8-19-16





PERMANENT PAVEMENT MARKING DETAILS

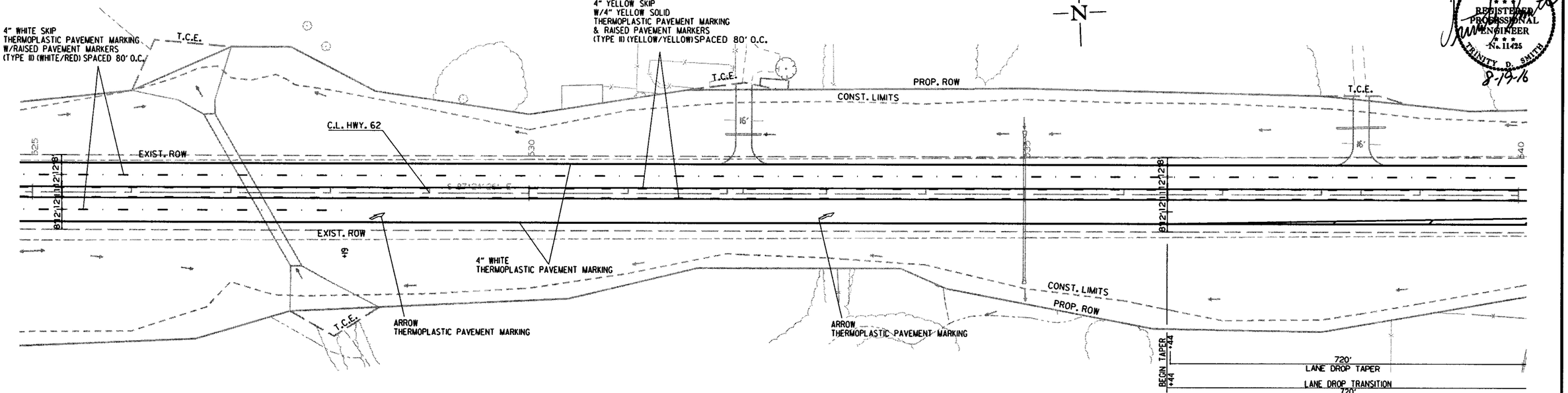
12/17/2013

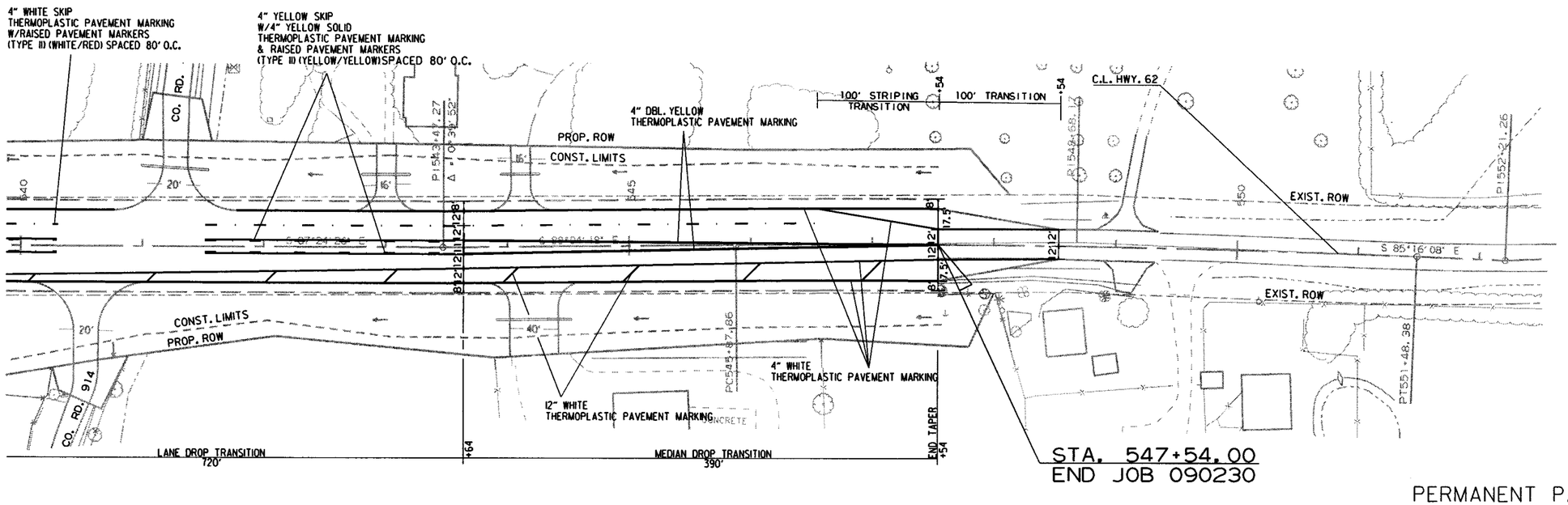
R090230.DGN

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.		090230	83	282

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16





PERMANENT PAVEMENT MARKING DETAILS

12/17/2013

R090230.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.		090230	84	282

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 1	STAGE 2	STAGE 3	END OF JOB	REMOVAL OF PERMANENT PAVEMENT MARKINGS	CONSTRUCTION PAVEMENT MARKINGS	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS		THERMOPLASTIC PAVEMENT MARKING			
								TYPE II (WHITE/RED)	TYPE II (YEL/YEL)	4" WHITE	4" YELLOW	12" WHITE	ARROWS
	LIN. FT. - EACH				LIN. FT.			EACH		LIN. FT.			EACH
REMOVAL OF PERMANENT PAVEMENT MARKINGS	9750	7343	978		18071								
CONSTRUCTION PAVEMENT MARKINGS	80410	73920	79556			233886							
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS		2200	2200				4400						
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED)				469				469					
RAISED PAVEMENT MARKERS TYPE II (YEL/YEL)				504					504				
THERMOPLASTIC PAVEMENT MARKING WHITE (4")				51206						51206			
THERMOPLASTIC PAVEMENT MARKING YELLOW (4")				51433							51433		
THERMOPLASTIC PAVEMENT MARKING WHITE (12")				144								144	
THERMOPLASTIC PAVEMENT MARKING ARROWS				2									2
TOTALS:					18071	233886	4400	469	504	51206	51433	144	2

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

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	STAGE 3	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		VERTICAL PANELS	TRAFFIC DRUMS	BARRICADES (TYPE III)		FURNISHING & INSTALLING PRECAST CONC. BARRIER	RELOCATING PRECAST CONCRETE BARRIER	TEMPORARY IMPACT ATTENUATION BARRIER	TEMP. IMPACT ATTEN.BARR. (REPAIR)	TEMP. IMPACT ATTEN.BARR. (RELOCATION)
											RIGHT	LEFT					
			LIN. FT. - EACH				NO.	SQ. FT.	EACH		LIN. FT.				EACH		
W20-1	ROAD WORK 1500 FT.	48"x48"	2	2	2	2	2	32.0									
W20-1	ROAD WORK 1000 FT.	48"x48"	2	2	2	2	2	32.0									
W20-1	ROAD WORK 500 FT.	48"x48"	2	2	2	2	2	32.0									
W20-1	ROAD WORK AHEAD	48"x48"	5	5	5	5	5	80.0									
G20-2	END ROAD WORK	48"x24"	7	7	7	7	7	56.0									
G20-1	ROAD WORK NEXT 3.7 MILES	60"x24"	2	2	2	2	2	20.0									
R11-2	ROAD CLOSED	48"x30"	4	12		12	12	120.0									
OM-3L	OBJECT MARKER	12"x36"	36	30		36	36	108.0									
OM-3R	OBJECT MARKER	12"x36"	48	40		48	48	144.0									
R2-1	SPEED LIMIT 50	24"x30"	2	2	2	2	2	10.0									
R4-1	DO NOT PASS	24"x30"	2	2	2	2	2	10.0									
RSP-1	SHOULDER CLOSED	48"x30"	2	2	2	2	2	20.0									
W8-1	BUMP	30"x30"	8	8	8	8	8	50.0									
	VERTICAL PANELS		212	212		212			212								
	TRAFFIC DRUMS		345	319	488	488				488							
	TYPE III BARRICADE-RT. (8')		4	8		8					64						
	TYPE III BARRICADE-LT. (8')		2	6		6						48					
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER		5205	1631		6836							6836				
	RELOCATING PRECAST CONCRETE BARRIER			5205		5205								5205			
	TEMPORARY IMPACT ATTENUATION BARRIER		24			24									24		
	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)		24			24										24	
	TEMPORARY IMPACT ATTENUATION BARRIER (RELOCATION)			12		12											12
TOTALS:								714.0	212	488	64	48	6836	5205	24	24	12

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

THE QUANTITY OF VERTICAL PANELS PROVIDED IN THE CONTRACT IS FOR ONE SIDE OF THE ROADWAY FOR 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.

2/16/2016

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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.		090230	85	282

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 11425
TRINITY D. SMITH
8-22-16

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
360+30	415+60	HWY. 62 - LT. AND RT.	56	56
419+30	431+50	HWY. 62 - LT. AND RT.	13	13
441+75	483+89	HWY. 62 - LT. AND RT.	43	43
487+32	487+88	HWY. 62 - RT.	1	1
490+68	492+40	HWY. 62 - LT.	3	3
496+40	547+54	HWY. 62 - LT. AND RT.	52	52
TOTALS:			168	168

REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	CURB	WALLS	CONCRETE DITCH PAVING	ISLANDS	CONCRETE DRIVEWAYS	CONCRETE PARKING AREA	WALKS	FOUNDATIONS	SIGNS	SIGN FOUNDATIONS	BUILDINGS	CATTLE GUARD	PLANTERS	CANOPY
			LIN. FT.	LIN. FT.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	EACH	EACH	EACH	EACH	EACH	EACH
351+67	365+57	HWY. 62 - RT.			423		184									
360+45	378+27	HWY. 62 - LT.		847	1584		340						8			
386+06		HWY. 62 - RT.									1					
386+82	387+70	HWY. 62 - LT.					237				1					
387+70	393+13	HWY. 62 - RT.					57				2	1			1	
400+85		HWY. 62 - RT.												1		
408+12		HWY. 62 - LT.									1					
413+06	424+02	HWY. 62 - RT.									2		2			
421+66		HWY. 62 - LT.									1					
432+37	455+40	HWY. 62 - RT.	393				280				5	1		1		
456+83	457+68	HWY. 62 - LT.		107											2	
464+99	465+92	HWY. 62 - RT.												1	1	
468+43	468+49	HWY. 62 - LT.		27												
479+28	485+51	HWY. 62 - RT.	290						105		7		1		6	
481+88		HWY. 62 - LT.									1					
492+62	493+27	HWY. 62 - C.L.		110												
492+63	496+28	HWY. 62 - RT.	278				963	1560								
492+80	496+30	HWY. 62 - LT.				18					1					2
500+49	502+25	HWY. 62 - RT.								24	1					
530+33	533+06	HWY. 62 - LT.		37					17				2		2	
540+55	545+23	HWY. 62 - RT.									2	1				
TOTALS:			961	1128	2007	18	2061	1560	122	24	25	3	13	3	12	2

REMOVAL AND DISPOSAL OF FENCE

STATION	STATION	LOCATION	FENCE
			LIN. FT.
354+80	365+55	HWY. 62 - RT.	1049
365+46	377+81	HWY. 62 - LT.	1631
371+39	373+01	HWY. 62 - RT.	231
379+96	384+56	HWY. 62 - RT.	494
385+66	391+07	HWY. 62 - LT.	518
385+66	391+07	HWY. 62 - LT.	518
391+67	408+90	HWY. 62 - RT.	1811
396+90	407+52	HWY. 62 - LT.	1258
409+20	417+55	HWY. 62 - LT.	920
410+20	418+07	HWY. 62 - RT.	786
419+00	427+01	HWY. 62 - LT.	825
429+59	456+74	HWY. 62 - LT.	2958
447+80	463+15	HWY. 62 - RT.	1665
457+59	469+64	HWY. 62 - LT.	1406
465+43	478+74	HWY. 62 - RT.	1360
472+65	479+68	HWY. 62 - LT.	923
485+50	489+00	HWY. 62 - RT.	377
490+74	494+50	HWY. 62 - LT.	646
496+55	531+82	HWY. 62 - LT.	4326
497+19	543+88	HWY. 62 - RT.	5084
533+05	540+97	HWY. 62 - LT.	846
543+10	544+03	HWY. 62 - LT.	132
546+58	548+00	HWY. 62 - RT.	180
TOTAL:			29944

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	PRESPLITTING	* SOIL STABILIZATION
			CU. YD.		SQ. YD.	TON
ENTIRE	PROJECT	STAGE 1-MAIN LANES	253649	108788		
ENTIRE	PROJECT	STAGE 2-MAIN LANES	142157	195340		
ENTIRE	PROJECT	STAGE-3-MAINLANES	15837	2255		
ENTIRE	PROJECT	APPROACHES	1600	22295		
10+30	13+37	COUNTY RD. 916	125	5018		
100+38	102+82	DRIVE	1012	14		
408+87		CHANNEL CHANGE	281			
420+32		CHANNEL CHANGE	59			
431+36		CHANNEL CHANGE	147			
453+75		CHANNEL CHANGE	55			
457+56		CHANNEL CHANGE	536			
459+88		CHANNEL CHANGE	12			
466+88		CHANNEL CHANGE	28			
475+45		CHANNEL CHANGE	98			
491+68		CHANNEL CHANGE	35			
519+29		CHANNEL CHANGE	547			
527+24		CHANNEL CHANGE	248			
* ENTIRE	PROJECT	TO BE USED IF AND WHERE			1000	100
		DIRECTED BY THE ENGINEER				
TOTALS:			416426	333710	1000	100

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

2/16/2016

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				6	ARK.			
				JOB NO.		090230	86	282

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16

SOIL LOG

STATION	LATITUDE			LONGITUDE			LOCATION	DEPTH	LIQUID LIMIT	PLASTICITY INDEX	AASHTO CLASSIFICATION	COLOR
	DEG	MIN	SEC	DEG	MIN	SEC		FEET				
355+00	36	19	3.00	93	22	27.90	43 RT.	0-5	36	19	A-6(9)	BROWN
355+00	36	19	3.01	93	22	27.80	32 RT.	0-5	40	20	A-6(11)	BROWN
355+00	36	19	3.10	93	22	27.70	20 RT.	0-5	31	15	A-6(4)	BROWN
363+00	36	18	56.00	93	22	24.30	10 LT.	0-5	40	23	A-6(12)	BROWN
363+00	36	18	55.90	93	22	24.20	23 LT.	0-5	56	37	A-7-6(31)	BROWN
363+00	36	18	55.90	93	22	24.20	23 LT.	0-5	34	19	A-6(8)	BROWN
363+00	36	18	55.90	93	22	24.00	39 LT.	0-5	58	32	A-7-6(32)	BROWN
371+00	36	18	48.20	93	22	25.80	20 RT.	0-5	31	16	A-6(9)	BROWN
379+00	36	18	40.40	93	22	21.80	55 RT.	0-5	42	27	A-7-6(26)	BROWN
387+00	36	18	37.10	93	22	3.80	20 RT.	0-5	38	23	A-6(21)	BROWN
387+00	36	18	37.30	93	22	12.70	06 RT.	0-5	22	4	A-4(0)	BROWN
395+00	36	18	34.70	93	22	3.80	18 LT.	0-3.5Z	ND	NP	A-4(0)	BROWN
395+00	36	18	34.60	93	22	3.80	05 LT.	0-5	ND	NP	A-4(0)	BROWN
403+00	36	18	31.60	93	21	55.10	06 RT.	0-5	17	3	A-4(0)	BROWN
403+00	36	18	31.50	93	21	55.10	18 RT.	0-5	21	5	A-4(1)	BROWN
411+00	36	18	28.90	93	21	45.70	20 LT.	0-5	24	6	A-4(1)	BROWN
411+00	36	18	28.80	93	21	45.70	06 LT.	0-5	23	8	A-4(3)	BROWN
419+00	36	18	25.60	93	21	36.40	06 RT.	0-5	24	11	A-6(4)	BROWN
419+00	36	18	25.50	93	21	36.40	20 RT.	0-5	21	9	A-4(2)	BROWN
419+00	36	18	25.50	93	21	36.40	20 RT.	0-5	29	16	A-6(8)	BROWN
427+00	36	18	21.90	93	21	27.70	06 LT.	0-5	28	11	A-6(6)	BROWN
427+00	36	18	22.00	93	21	27.60	19 LT.	0-5	32	19	A-6(11)	BROWN
435+00	36	18	17.40	93	21	19.30	28 RT.	0-5	ND	NP	A-4(0)	BROWN
435+00	36	18	17.40	93	21	19.20	16 RT.	0-5	ND	NP	A-4(0)	BROWN
443+00	36	18	13.60	93	21	11.10	08 LT.	0-5	22	3	A-4(0)	BROWN
443+00	36	18	13.50	93	21	11.10	04 RT.	0-5	ND	NP	A-4(0)	BROWN
451+00	36	18	9.40	93	21	3.40	16 RT.	0-5	21	4	A-4(0)	BROWN
451+00	36	18	9.30	93	21	3.40	26 RT.	0-5	ND	NP	A-4(0)	BROWN
459+00	36	18	5.40	93	20	55.20	14 RT.	0-5	19	5	A-4(0)	BROWN
459+00	36	18	5.50	93	20	55.20	02 RT.	0-5	21	4	A-4(0)	BROWN
467+00	36	18	0.80	93	20	46.50	16 RT.	0-5	20	7	A-4(2)	BROWN
467+00	36	18	0.70	93	20	46.50	26 RT.	0-5	23	8	A-4(2)	BROWN
475+00	36	17	56.40	93	20	37.60	06 LT.	0-5	29	14	A-6(5)	BROWN
475+00	36	17	56.50	93	20	37.60	16 LT.	0-5	22	8	A-4(2)	BROWN
484+00	36	17	52.20	93	20	28.70	13 RT.	0-5	24	10	A-4(5)	BROWN
484+00	36	17	52.00	93	20	28.80	23 RT.	0-5	24	9	A-4(4)	BROWN
491+00	36	17	50.10	93	20	20.10	30 RT.	0-5	21	4	A-4(0)	BROWN
499+00	36	17	49.90	93	20	13.20	20 RT.	0-1.5Z	24	9	A-4(2)	BROWN
507+00	36	17	49.70	93	20	3.70	20 RT.	0-5	30	17	A-6(5)	BROWN
507+00	36	17	49.80	93	20	3.70	CL	0-3Z	22	6	A-4(2)	BROWN
515+00	36	17	49.20	93	19	53.50	27 RT.	0-5	26	10	A-2-4(0)	BROWN
515+00	36	17	49.30	93	19	53.50	16 RT.	0-5	ND	NP	A-4(0)	BROWN
523+00	36	17	49.30	93	19	43.60	04 RT.	0-5	38	23	A-6(10)	BROWN
523+00	36	17	49.30	93	19	43.60	06 LT.	0-5	35	18	A-6(9)	BROWN
531+00	36	17	48.70	93	19	31.60	23 RT.	0-5	25	8	A-4(2)	BROWN
531+00	36	17	48.80	93	19	31.70	11 RT.	0-5	29	15	A-6(5)	BROWN
539+00	36	17	48.80	93	19	21.90	06 LT.	0-5	32	17	A-6(5)	BROWN
539+00	36	17	48.90	93	19	21.90	19 LT.	0-5	44	28	A-7-6(18)	BROWN
539+00	36	17	48.90	93	19	21.90	19 LT.	0-5	41	25	A-7-6(10)	BROWN
547+00	36	17	48.40	93	19	12.20	06 RT.	0-5	26	11	A-6(4)	BROWN
547+00	36	17	48.30	93	19	12.10	18 RT.	0-5	25	8	A-4(2)	BROWN

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

REMOVAL AND DISPOSAL OF CULVERTS (BOX 1 OF 2)

STATION	DESCRIPTION	PIPE CULVERTS	BOX CULVERTS
		EACH	EACH
351+68	30" X 30' CMP - RT.	1	
353+56	24" X 62' CMP - LT.	1	
357+78	DBL. 24" X 26' CMP - RT.	2	
357+81	24" X 26' CMP - LT.	1	
366+10	24" X 107' RCP - RT.	1	
367+29	18" X 15" X 32' ARCH CMP - LT.	1	
369+03	18" X 44' RCP - LT.	1	
377+09	18" X 72' RCP - RT.	1	
378+59	15" X 24' CMP - RT.	1	
380+24	12" X 24' RCP - LT.	1	
380+59	24" X 52' RCP - RT.	1	
380+62	12" X 15' RCP - LT.	1	
386+60	18" X 52' CMP - RT.	1	
387+34	18" X 45' CMP - RT.	1	
387+71	18" X 65' CMP - LT.	1	
388+09	18" X 45' CMP - RT.	1	
388+54	18" X 26' CMP - LT.	1	
390+52	18" X 34' RCP - C.L.	1	
392+18	18" X 24' RCP - LT.	1	
396+59	24" X 37' RCP - C.L.	1	
396+86	12" X 24" X 27' ARCH CMP - LT.	1	
402+41	24" X 34' RCP - C.L.	1	
409+80	24" X 34' CMP - RT.	1	
413+49	18" X 73' CMP - RT.	1	
418+68	18" X 60' CMP - RT.	1	
423+12	18" X 52' CMP - LT.	1	
424+10	18" X 4' CMP - LT.	1	
424+95	18" X 52' CMP - LT.	1	
426+32	18" X 26' CMP - LT.	1	
429+27	18" X 36' CMP - LT.	1	
431+33	6' X 6' X 33' RCB - C.L.		1
433+91	18" X 34' CMP - RT.	1	
435+04	18" X 40' CMP - RT.	1	
435+78	18" X 26' CMP - LT.	1	
437+58	18" X 25' CMP - LT.	1	
440+02	18" X 40' CMP - RT.	1	
442+21	18" X 34' RCP - RT.	1	
447+45	18" X 52' CMP - LT.	1	
453+75	DBL. 3' X 2' X 33' RCB - RT.		1
455+41	24" X 25' CMP - RT.	1	
457+12	18" X 34' CMP - C.L.	1	
465+02	18" X 40' CMP - LT.	1	
470+46	18" X 40' CMP - LT.	1	
475+87	TRP. 10' X 7' X 34' RCB - RT.		1
477+97	18" X 52' CMP - LT.	1	
478+76	24" X 32' CMP - RT.	1	
481+10	18" X 32' CMP - LT.	1	
SUBTOTALS (BOX 1 OF 2):		45	3

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

BENCH MARKS

STATION	LOCATION	BENCH MARKS
		EACH
359+63	R.C. BOX CULVERT HEADWALL RT.	1
408+87	R.C. BOX CULVERT HEADWALL RT.	1
420+32	R.C. BOX CULVERT HEADWALL RT.	1
431+36	R.C. BOX CULVERT HEADWALL RT.	1
453+75	R.C. BOX CULVERT HEADWALL RT.	1
457+56	R.C. BOX CULVERT HEADWALL RT.	1
459+88	R.C. BOX CULVERT HEADWALL RT.	1
466+88	R.C. BOX CULVERT HEADWALL RT.	1
475+45	R.C. BOX CULVERT HEADWALL RT.	1
491+68	R.C. BOX CULVERT HEADWALL RT.	1
519+29	R.C. BOX CULVERT HEADWALL RT.	1
527+24	R.C. BOX CULVERT HEADWALL RT.	1
TOTAL:		12

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

REMOVAL AND DISPOSAL OF CULVERTS (BOX 2 OF 2)

STATION	DESCRIPTION	PIPE CULVERTS	BOX CULVERTS
		EACH	EACH
491+68	DBL. 5' X 3' X 36' RCB - RT.		1
492+18	15" X 31' RCP - RT.	1	
492+19	3' X 3' X 58' RCB - RT.		1
492+50	18" X 20' CMP - RT.	1	
493+09	18" X 40' CMP - RT.	1	
493+48	18" X 45' CMP - RT.	1	
494+43	18" X 40' CMP - RT.	1	
494+43	18" X 41' CMP - RT.	1	
495+12	18" X 48' CMP - RT.	1	
496+06	18" X 44' CMP - RT.	1	
496+21	18" X 44' CMP - RT.	1	
519+18	TRP. 10' X 7' X 34' RCB - RT.		1
527+45	10' X 6' X 33' RCB - RT.		1
530+81	18" X 18' CMP - LT.	1	
532+25	18" X 37' RCP - LT.	1	
538+12	18" X 34' RCP - C.L.	1	
538+47	12" X 34' CMP - LT.	1	
541+20	18" X 48' RCP - LT.	1	
542+98	18" X 31' CMP - LT.	1	
544+11	18" X 26' CMP - LT.	1	
544+22	18" X 60' CMP - RT.	1	
SUBTOTALS (BOX 1 OF 2):		45	3
SUBTOTALS (BOX 2 OF 2):		17	4
TOTALS:		62	7

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

2/16/2016

R090230.DGN

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	87	282

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-22-16

DUMPED RIPRAP AND FILTER BLANKET

STATION	LOCATION	DUMPED RIPRAP	FILTER BLANKET
		CU. YD.	SQ. YD.
359+63	OUTLET OF R.C. BOX CULVERT	13	25
360+08	OUTLET OF PIPE CULVERT	5	10
380+76	OUTLET OF PIPE CULVERT	6	11
382+60	OUTLET OF PIPE CULVERT	7	13
384+90	OUTLET OF PIPE CULVERT	17	33
390+51	OUTLET OF PIPE CULVERT	4	7
396+58	OUTLET OF PIPE CULVERT	11	22
402+41	OUTLET OF PIPE CULVERT	9	17
408+87	OUTLET OF R.C. BOX CULVERT	14	27
420+32	OUTLET OF R.C. BOX CULVERT	15	30
431+36	OUTLET OF R.C. BOX CULVERT	134	267
434+45	OUTLET OF PIPE CULVERT	2	4
442+21	OUTLET OF PIPE CULVERT	11	22
453+75	OUTLET OF R.C. BOX CULVERT	16	31
457+56	OUTLET OF R.C. BOX CULVERT	100	200
459+88	OUTLET OF R.C. BOX CULVERT	5	9
466+88	OUTLET OF R.C. BOX CULVERT	21	42
475+87	OUTLET OF R.C. BOX CULVERT	214	427
491+68	OUTLET OF R.C. BOX CULVERT	9	18
519+29	OUTLET OF R.C. BOX CULVERT	127	253
527+45	OUTLET OF R.C. BOX CULVERT	86	171
535+00	OUTLET OF PIPE CULVERT	6	11
	* TO BE USED IF AND WHERE	150	300
	DIRECTED BY THE ENGINEER		
TOTALS:		982	1950

* NOTE: QUANTITIES ESTIMATED.
SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.
NOTE: FILTER BLANKET SHALL BE GEOTEXTILE FABRIC (TYPE 5).

CONCRETE COMBINATION CURB AND GUTTER

STATION	STATION	LOCATION	TYPE B-1 (1'-6")
			LIN. FT.
385+45	389+45	HWY. 62 - RT.	400
434+42	440+28	HWY. 62 - RT.	583
469+00	472+60	HWY. 62 - LT.	360
TOTAL:			1343

4" PIPE UNDERDRAIN

STATION	STATION	LOCATIONS	4" PIPE UNDERDRAINS	UNDERDRAIN OUTLET PROTECTORS
			LIN. FT.	EACH
350+00	547+54	* ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	10000	40
TOTALS:			10000	40

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

UNDERDRAINS SHALL BE STUBBED INTO THE PROPOSED DROP INLET IF AND WHERE DIRECTED BY THE ENGINEER. PAYMENT FOR THIS TO BE INCLUDED IN THE UNIT PRICE BID FOR 4" PIPE UNDERDRAIN.

MAILBOXES

LOCATION	MAILBOXES	MAILBOX SUPPORTS (SINGLE) EACH	MAILBOX SUPPORTS (DOUBLE) EACH
ENTIRE PROJECT	53	25	14
TOTALS:	53	25	14

CULVERT CLEAN OUT

STATION	LOCATION	EACH
408+87	MAIN LANES	1
420+32	MAIN LANES	1
466+88	MAIN LANES	1
TOTAL:		3

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	TON	TACK COAT GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE	100	200
DIRECTED BY THE ENGINEER		
TOTALS:	100	200

BASIS OF ESTIMATE:
ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC....25 TON/MILE
TACK COAT FOR MAINTENANCE OF TRAFFIC.....50 GAL./MILE

PAVEMENT REPAIR OVER CULVERTS (CONCRETE)

STATION	LOCATION	WIDTH FEET	LENGTH FEET	CU.YD.
359+76	HWY. 62	10.83	93	49.7
359+86	HWY. 62	8.50	92	38.6
367+00	HWY. 62	8.50	26	10.9
380+76	HWY. 62	8.50	26	10.9
382+60	HWY. 62	9.67	34	16.2
390+51	HWY. 62	8.50	24	10.1
396+58	HWY. 62	8.50	24	10.1
402+41	HWY. 62	8.50	24	10.1
431+36	HWY. 62	13.08	24	15.5
442+21	HWY. 62	8.50	24	10.1
453+75	HWY. 62	11.00	24	13.0
475+45	HWY. 62	38.92	28	53.8
491+68	HWY. 62	12.00	24	14.2
519+29	HWY. 62	39.33	32	62.2
527+24	HWY. 62	17.17	27	22.9
535+00	HWY. 62	8.50	24	10.1
TOTAL:				358.4

AVG. DEPTH = 16"

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL: SEEDING ACRE	LIME TON	MULCH COVER ACRE	WATER M.GAL.	SECOND SEEDING APPLICATION ACRE	TEMPORARY EROSION CONTROL: TEMPORARY SEEDING ACRE	MULCH COVER ACRE	WATER M.GAL.	ROCK DITCH CHECKS (E-6) CU.YD.	DROP INLET SILT FENCE (E-7) LIN. FT.	SILT FENCE (E-11) LIN. FT.	DIVERSION DITCH (E-8) LIN. FT.	SLOPE DRAIN (E-12) PIPE FOR SLOPE DRAINS LIN. FT.	SLOPE DRAIN (E-12) DUMPED RIPRAP CU.YD.	SEDIMENT BASIN (E-14) CU.YD.	OBLITERATION OF SEDIMENT BASIN CU.YD.	*SEDIMENT REMOVAL & DISPOSAL CU. YD.
ENTIRE	PROJECT	CLEARING AND GRUBBING									1122		17053						765
ENTIRE	PROJECT	STAGE 1	23.60	47.20	23.60	2407.2	23.60	30.50	30.50	622.2	507		947				2554	2554	2643
ENTIRE	PROJECT	STAGE 2						31.09	31.09	634.2	450	66	2385				2285	2285	2430
ENTIRE	PROJECT	STAGE 3	23.16	46.32	23.16	2362.3	23.16	6.10	6.10	124.4	408	44	546				1903	1903	1931
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			11.69	23.38	11.69	1192.4	11.69	16.92	16.92	345.2	622	28	5233	250	50	4	1686	1686	1881
TOTALS:			58.45	116.90	58.45	5961.9	58.45	84.61	84.61	1726.0	3109	138	26164	250	50	4	8428	8428	9650

BASIS OF ESTIMATE:
LIME .....2 TONS / ACRE OF SEEDING
WATER.....102.0 M.G. / ACRE OF SEEDING
WATER.....20.4 M.G. / ACRE OF TEMPORARY SEEDING
WATTLE DITCH CHECKS.....9 LIN. FT. / LOCATION
SAND BAG DITCH CHECKS.....22 BAGS / LOCATION
ROCK DITCH CHECKS.....3 CU.YD./LOCATION

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

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

2/16/2016

R090230.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.		090230	88	282

(2) QUANTITIES

FENCING

STATION	STATION	LOCATION	WIRE FENCE (TYPE C)	WIRE FENCE (TYPE D)	WIRE FENCE (TYPE D-1)	WIRE FENCE (TYPE D-2)	* 4' CHAIN LINK FENCE	* 16'-0" GATES
			LIN. FT.					EACH
354+85	358+23	HWY. 62-RT.	313					1
358+23	365+55	HWY. 62-RT.		679				
365+46	367+98	HWY. 62-LT.			258			1
371+39	373+01	HWY. 62-RT.			260			
379+96	384+62	HWY. 62-RT.			516			
385+66	390+19	HWY. 62-LT.	457					
396+90	401+25	HWY. 62-LT.			445			1
401+49	407+52	HWY. 62-LT.	621					
402+16	408+77	HWY. 62-RT.			683			
409+00	418+11	HWY. 62-RT.	926					3
409+21	417+47	HWY. 62-LT.	842					
419+00	420+19	HWY. 62-LT.	132					1
420+40	420+75	HWY. 62-LT.	45					
423+90	426+85	HWY. 62-LT.					295	2
430+00	431+24	HWY. 62-LT.				160		1
431+47	435+67	HWY. 62-LT.				442		
435+67	446+85	HWY. 62-LT.			1117			
447+42	453+69	HWY. 62-LT.				648		1
447+97	457+40	HWY. 62-RT.				949		2
457+68	459+84	HWY. 62-RT.				243		
457+87	459+82	HWY. 62-LT.	217					2
459+92	466+58	HWY. 62-LT.	679					2
459+94	463+15	HWY. 62-RT.				331		1
465+45	466+82	HWY. 62-RT.			152			1
466+58	469+64	HWY. 62-LT.			308			1
466+95	474+72	HWY. 62-RT.			803			1
472+65	474+52	HWY. 62-LT.			195			1
474+72	475+69	HWY. 62-RT.				113		
475+16	477+43	HWY. 62-LT.			282			
476+32	478+74	HWY. 62-RT.				248		1
477+96	479+12	HWY. 62-LT.		119				
485+55	489+00	HWY. 62-RT.		358				
490+75	491+60	HWY. 62-LT.		96				1
491+76	492+35	HWY. 62-LT.	72					1
492+56	494+48	HWY. 62-LT.			192			
496+55	498+55	HWY. 62-LT.		204				
497+20	501+89	HWY. 62-RT.				470		1
498+80	519+98	HWY. 62-LT.				2183		2
502+15	517+92	HWY. 62-RT.				1609		1
518+65	521+53	HWY. 62-RT.	367					2
520+70	526+47	HWY. 62-LT.			592			1
521+53	527+60	HWY. 62-RT.			641			1
526+84	531+82	HWY. 62-LT.			552			
527+97	538+71	HWY. 62-RT.			1094			
533+07	541+00	HWY. 62-LT.		795				
538+71	540+27	HWY. 62-RT.					158	
540+65	543+89	HWY. 62-RT.			303			
546+58	548+00	HWY. 62-RT.			170			
TOTALS:			4671	2251	8563	7396	453	33

* DENOTES ALTERNATE BID ITEM.

CONCRETE DITCH PAVING

STATION	STATION	LOCATION	LENGTH	"W"	CONC. DITCH PAVING (TYPE B)	SOLID SODDING	WATER
			LIN. FT.	FEET	SQ. YD.	SQ. YD.	M. GAL.
359+00.00	370+50.00	HWY. 62-LT.	1150.00	6.33	808.83	511.11	6.44
363+00.00	368+00.00	HWY. 62-RT.	500.00	6.33	351.67	222.22	2.80
375+00.00	377+00.00	HWY. 62-RT.	200.00	6.33	140.67	88.89	1.12
380+00.00	382+00.00	HWY. 62-LT.	200.00	6.33	140.67	88.89	1.12
383+33.00	390+00.00	HWY. 62-LT.	667.00	6.33	469.12	296.44	3.74
385+00.00	389+75.00	HWY. 62-RT.	475.00	6.33	334.08	211.11	2.66
396+00.00	398+00.00	HWY. 62-LT.	200.00	6.33	140.67	88.89	1.12
402+00.00	402+41.00	HWY. 62-LT.	41.00	6.33	28.84	18.22	0.23
405+00.00	406+00.00	HWY. 62-LT.	100.00	6.33	70.33	44.44	0.56
408+87.00	410+00.00	HWY. 62-RT.	113.00	6.33	79.48	50.22	0.63
409+00.00	410+00.00	HWY. 62-LT.	100.00	6.33	70.33	44.44	0.56
415+00.00	417+00.00	HWY. 62-LT.	200.00	6.33	140.67	88.89	1.12
421+00.00	427+00.00	HWY. 62-LT.	600.00	6.33	422.00	266.67	3.36
422+00.00	426+00.00	HWY. 62-RT.	400.00	6.33	281.33	177.78	2.24
428+90.00	430+00.00	HWY. 62-RT.	110.00	6.33	77.37	48.89	0.62
431+50.00	435+00.00	HWY. 62-LT.	347.00	6.33	244.06	154.22	1.94
433+00.00	434+25.00	HWY. 62-RT.	125.00	6.33	87.92	55.56	0.70
441+00.00	442+21.00	HWY. 62-LT.	121.00	6.33	85.10	53.78	0.68
445+00.00	457+50.00	HWY. 62-LT.	1250.00	6.33	879.17	555.56	7.00
445+00.00	454+25.00	HWY. 62-RT.	925.00	6.33	650.58	411.11	5.18
456+00.00	457+40.00	HWY. 62-RT.	140.00	6.33	98.47	62.22	0.78
466+91.00	467+19.98	HWY. 62-LT.	28.98	6.33	20.38	12.88	0.16
473+00.00	475+00.00	HWY. 62-LT.	200.00	6.33	140.67	88.89	1.12
474+00.00	475+60.00	HWY. 62-RT.	160.00	6.33	112.53	71.11	0.90
478+50.00	481+00.00	HWY. 62-LT.	250.00	6.33	175.83	111.11	1.40
478+50.00	481+00.00	HWY. 62-RT.	250.00	6.33	175.83	111.11	1.40
490+00.00	491+60.00	HWY. 62-RT.	160.00	6.33	112.53	71.11	0.90
491+80.00	499+50.00	HWY. 62-LT.	770.00	6.33	541.57	342.22	4.31
493+00.00	494+00.00	HWY. 62-RT.	100.00	6.33	70.33	44.44	0.56
508+00.00	516+00.00	HWY. 62-LT.	800.00	6.33	562.67	355.56	4.48
508+50.00	518+00.00	HWY. 62-RT.	950.00	6.33	668.17	422.22	5.32
521+00.00	524+00.00	HWY. 62-RT.	300.00	6.33	211.00	133.33	1.68
523+00.00	524+00.00	HWY. 62-LT.	100.00	6.33	70.33	44.44	0.56
526+80.00	544+50.00	HWY. 62-LT.	1770.00	6.33	1244.90	786.67	9.91
536+00.00	540+00.00	HWY. 62-RT.	400.00	6.33	281.33	177.78	2.24
542+00.00	545+00.00	HWY. 62-RT.	300.00	6.33	211.00	133.33	1.68
546+00.00	547+00.00	HWY. 62-LT.	100.00	6.33	70.33	44.44	0.56
TOTALS:					10270.76	6490.19	81.78

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-22-16

RUMBLE STRIPS IN ASPHALT SHOULDERS

STATION	STATION	LOCATION	* RUMBLE STRIPS IN ASPHALT SHOULDERS
			LIN.FT.
350+00	547+54	HWY. 62-LT.	13737
350+00	547+54	HWY. 62-RT.	13827
TOTAL:			27564

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

ACHM PATCHING OF EXISTING ROADWAY

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

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

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
* 347+65.00	349+00.00	MAIN LANES	52.00	780.00
349+00.00	350+00.00	MAIN LANES	52.00	577.78
547+54.00	548+54.00	MAIN LANES	24.00	266.67
TOTAL:				1624.45

* NOTE: AVERAGE MILLING DEPTH 2".
NOTE: AVERAGE MILLING DEPTH 1".

2/16/2016

R090230.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
9-20-2016				6	ARK.			
				JOB NO.		090230	89	282

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-20-16

SELECTED PIPE BEDDING

LOCATION	SELECTED PIPE BEDDING
	CU.YD.
ENTIRE PROJECT TO BE USED IF	
AND WHERE DIRECTED BY THE	400
ENGINEER	
TOTAL:	400

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

TEMPORARY RETAINING WALL

STATION	STATION	LOCATION	TEMPORARY RETAINING WALL	SELECT GRANULAR BACKFILL
			SQ.FT.	CU. YD.
474+50	476+50	HWY. 62	2197	57
510+00	521+50	HWY. 62	20818	540
526+76	530+50	HWY. 62	3528	91
536+00	541+00	HWY. 62	2952	77
TOTALS:			29495	765

STRUCTURES

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT (CLASS III) 18"	24"	44"X27"	(CLASS IV) 24"	36"	FLARED END SECTIONS FOR R.C. PIPE CULVERTS 18"	24"	44"X27"	TEMPORARY CULVERTS 18"	24"	54"	60"	22" X 14"	DROP INLETS TYPE ST	SPAN	HEIGHT	LENGTH	CLASS S CONCRETE-ROADWAY	REINF. STEEL-ROADWAY (GRADE 60)	UNCL.EXC. FOR STR.-ROADWAY	SOLID SODDING	WATER	STD. DWG. NOS.
		LIN. FT.					EACH			LIN. FT.					EACH	LIN. FT.			CU.YD.	POUND	CU.YD.	SQ.YD.	M.GAL.	
359+76	CONSTRUCT R.C. ARCH PIPE CULVERT ON A 45° LT. FWD. SKEW W/ FES LT. & RT.			208					2															
359+86	CONSTRUCT R.C. PIPE CULVERT ON A 45° LT. FWD. SKEW W/ FES LT. & RT.		208					2																FES-1, FES-2, PCC-1
367+00	INSTALL TEMPORARY ARCH PIPE CULVERT													95										PCC-1, PCM-1
368+70	INSTALL TEMPORARY PIPE CULVERT LT. SIDE DRAIN									42														PCC-1, PCM-1
373+00	CONSTRUCT R.C. PIPE CULVERT W/ FES LT. & RT.		130					2																FES-1, FES-2, PCC-1
380+59	INSTALL TEMPORARY PIPE CULVERT ON LT.										82													PCC-1, PCM-1
380+76	CONSTRUCT R.C. PIPE CULVERT W/ FES LT. & RT.				172			2																FES-1, FES-2, PCC-1
382+60	CONSTRUCT R.C. PIPE CULVERT ON A 43° LT. FWD SKEW W/ FES LT. & RT.					238		2																FES-1, FES-2, PCC-1
383+32	INSTALL TEMPORARY PIPE CULVERT ON LT.										56													PCC-1, PCM-1
387+00	CONSTRUCT TYPE ST D.I. ON RT. & R.C. PIPE CULVERT W/ FES	206					1								1									FES-1, FES-2, FPC-9, FPC-9S, PCC-1
390+51	CONSTRUCT R.C. PIPE CULVERT W/ FES LT. & RT.				120			2																FES-1, FES-2, PCC-1
396+58	CONSTRUCT R.C. PIPE CULVERT W/ FES LT. & RT.		120					2																FES-1, FES-2, PCC-1
402+41	CONSTRUCT R.C. PIPE CULVERT W/ FES LT. & RT.		122					2																FES-1, FES-2, PCC-1
408+87	EXTEND R.C. BOX CULVERT 42' RT. & 51' LT. W/ 3:1 WINGS LT. & RT.															6	6	93	73.68	8077	41	20	0.25	RCB-1, RCB-2, RCB-3, R-100X-0, W-X003-1
420+32	EXTEND R.C. BOX CULVERT 78' RT. & 22' LT. W/ 3:1 WINGS LT. & RT.															8	4	100	79.83	10437	48	15	0.19	RCB-1, RCB-2, RCB-3, R-100X-0, W-X003-1
431+36	CONSTRUCT R.C. BOX CULVERT W/ 3:1 WINGS LT. & RT.															6	6	145	105.31	11262	52	20	0.25	PBC-1, RCB-1, RCB-2, SPECIAL DETAILS
434+45	CONSTRUCT TYPE ST D.I. ON RT. & R.C.P.C. ON A 54° LT. FWD. SKEW W/ FES	28					1								1									FES-1, FES-2, FPC-9, FPC-9S, PCC-1
438+00	CONSTRUCT TYPE ST D.I. ON RT. & R.C. PIPE CULVERT	352													1									FPC-9, FPC-9S, PCC-1
442+21	CONSTRUCT R.C. PIPE CULVERT W/ FES LT. & RT.		122					2																FES-1, FES-2, PCC-1
453+75	CONSTRUCT R.C. BOX CULVERT W/ 3:1 WINGS LT. & RT.															4	3	141	58.76	4252	31	12	0.15	PBC-1, RCB-1, RCB-2, SPECIAL DETAILS
457+56	EXTEND R.C. BOX CULVERT 28' RT. ON A 15° LT. FWD. SKEW & 76' LT. W/ 3:1 WINGS LT. & RT.															10	6	104	144.41	16532	68	22	0.28	RCB-1, RCB-2, RCB-3, R-100X-0, R-115X-0, W-X003-1, W-X15, W-X153-1
459+88	EXTEND R.C. BOX CULVERT 21' RT. & 71' LT. W/ 3:1 WINGS LT. & RT.															3	2	92	27.44	2474	20	9	0.11	RCB-1, RCB-2, RCB-3, R-1004-A
466+88	EXTEND R.C. BOX CULVERT 35' RT. & 54' LT. W/ 3:1 WINGS LT. & RT.															3	3	89	33.02	2816	21	13	0.16	RCB-1, RCB-2, RCB-3, R-1004-A
472+56	CONSTRUCT TYPE ST D.I. ON LT. W/ 3 GRATES & R.C.P.C ON A 15° LT. FWD. SKEW W/ FES	20					1								1									FES-1, FES-2, FPC-9, FPC-9S, PCC-1
475+45	INSTALL TRI. TEMPORARY PIPE CULVERT ON A 30° RT. FWD. SKEW										312													PCC-1, PCM-1
491+68	CONSTRUCT R.C. BOX CULVERT W/ 3:1 WINGS LT. & RT.															5	3	131	63.07	4802	34	11	0.14	PBC-1, RCB-1, RCB-2, SPECIAL DETAILS
527+24	CONSTRUCT R.C. BOX CULVERT ON A 30° RT. FWD. SKEW W/ 3:1 WINGS LT. & RT.															10	6	176	189.37	26228	104	44	0.55	PBC-1, RCB-1, RCB-2, SPECIAL DETAILS
527+24	INSTALL TEMPORARY PIPE CULVERT												192											PCC-1, PCM-1
535+00	CONSTRUCT R.C. PIPE CULVERT W/ FES LT. & RT.		142					2																FES-1, FES-2, PCC-1
SUBTOTALS:		606	844	208	292	238	3	18	2	42	138	312	192	95	4				774.89	86880	419	166	2.08	
	STRUCTURES OVER 20' - 0" SPAN																							
475+45	CONST. TRI. R.C.B.C AT 30° RT FWD SKEW W/ 3:1 WINGS LT. & RT.															10	7	525	531.60	88768	213	176	2.22	PBC-1, RCB-1, RCB-2, SPECIAL DETAILS
519+29	CONST. TRI. R.C.B.C AT 40° LT FWD SKEW W/ 3:1 WINGS LT. & RT.															10	7	828	1044.82	164567	322	176	2.22	PBC-1, RCB-1, RCB-2, SPECIAL DETAILS
SUBTOTALS:																			1576.42	253335	535	352	4.44	
TOTALS:		606	844	208	292	238	3	18	2	42	138	312	192	95	4				2351.31	340215	954	518	6.52	

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.

2/16/2016

R090230.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.		090230	90	282

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16

DRIVEWAYS & TURNOUTS

STATION	SIDE	LOCATION	WIDTH	PORTLAND CEMENT CONCRETE DRIVEWAY	ACHM SURFACE COURSE (1/2") 220 LBS. PER SQ. YD. (PG 64-22)		AGGREGATE BASE COURSE (CLASS 7)	SIDE DRAINS						STANDARD DRAWINGS
								18"	24"	30"	36"	42"	42"X29"	
			FEET	SQ. YD.	SQ. YD.	TON	TON	LIN. FT.						
351+68	RT.	COMMERCIAL DRIVE	30	163.24							52			PCC-1, PCM-1, PCP-1, PCP-2
353+56	LT.	COMMERCIAL DRIVE	38		393.91	43.33	160.85		102					PCC-1, PCM-1, PCP-1, PCP-2
357+78	RT.	COMMERCIAL DRIVE	16		90.58	9.96	36.99						60	PCC-1, PCM-1
357+81	LT.	PRIVATE DRIVE	16		210.08	23.11	85.78		40					PCC-1, PCM-1, PCP-1, PCP-2
360+13	LT.	PRIVATE DRIVE	16		145.26	15.98	59.31							
368+70	LT.	PRIVATE DRIVE	16	471.33					42					PCC-1, PCM-1, PCP-1, PCP-2
372+00	RT.	CO. RD. 916	20		105.26	11.58	42.98							
379+84	LT.	PRIVATE DRIVE	16		150.95	16.60	61.64							
382+00	LT.	PRIVATE DRIVE	16		437.17	48.09	178.51	30						PCC-1, PCM-1, PCP-1, PCP-2
383+66	RT.	PRIVATE DRIVE	24		262.05	28.83	107.00							
386+60	RT.	COMMERCIAL DRIVE	40		256.97	28.27	104.93							PCC-1, PCM-1, PCP-1, PCP-2
387+34	RT.	COMMERCIAL DRIVE	36		223.17	24.55	91.13							PCC-1, PCM-1, PCP-1, PCP-2
387+70	LT.	COMMERCIAL DRIVE	40	220.13				110						PCC-1, PCM-1, PCP-1, PCP-2
388+07	RT.	COMMERCIAL DRIVE	34		201.80	22.20	82.40							PCC-1, PCM-1, PCP-1, PCP-2
388+27	LT.	PRIVATE DRIVE	16		107.95	11.87	44.08							
390+01	RT.	COMMERCIAL DRIVE	24	143.01				42						PCC-1, PCM-1, PCP-1, PCP-2
392+08	LT.	PRIVATE DRIVE	16	102.15				42						PCC-1, PCM-1, PCP-1, PCP-2
396+82	LT.	COMMERCIAL DRIVE	16		133.96	14.74	54.70		56					PCC-1, PCM-1, PCP-1, PCP-2
400+70	RT.	COMMERCIAL DRIVE	40		207.82	22.86	84.86			120				PCC-1, PCM-1, PCP-1, PCP-2
401+41	LT.	CO. RD. 805	20		211.55	23.27	86.38							
404+10	RT.	PRIVATE DRIVE	40		250.40	27.54	102.25	64						PCC-1, PCM-1, PCP-1, PCP-2
408+41	LT.	COMMERCIAL DRIVE	24		195.17	21.47	79.69							
410+02	RT.	COMMERCIAL DRIVE	40		219.20	24.11	89.51		58					PCC-1, PCM-1, PCP-1, PCP-2
413+49	RT.	COMMERCIAL DRIVE	40		222.49	24.47	90.85	64						PCC-1, PCM-1, PCP-1, PCP-2
417+71	LT.	PRIVATE DRIVE	26		102.40	11.26	41.81							
418+24	LT.	COMMERCIAL DRIVE	30		93.94	10.33	38.36							
418+69	LT.	COMMERCIAL DRIVE	30		99.48	10.94	40.62	90						PCC-1, PCM-1, PCP-1, PCP-2
418+96	RT.	COMMERCIAL DRIVE	16		90.19	9.92	36.83	38						PCC-1, PCM-1, PCP-1, PCP-2
426+00	RT.	PRIVATE DRIVE	40		232.09	25.53	94.77	66						PCC-1, PCM-1, PCP-1, PCP-2
426+24	LT.	PRIVATE DRIVE	16		92.91	10.22	37.94	32						PCC-1, PCM-1, PCP-1, PCP-2
427+86	LT.	PRIVATE DRIVE	16		92.89	10.22	37.93	40						PCC-1, PCM-1, PCP-1, PCP-2
428+50	RT.	PRIVATE DRIVE	40		213.42	23.48	87.15							
430+50	LT.	PRIVATE DRIVE	16		230.26	25.33	94.02	70						PCC-1, PCM-1, PCP-1, PCP-2
433+92	RT.	PARROT RD.	23		184.92	20.34	75.51	52						PCC-1, PCM-1, PCP-1, PCP-2
434+85	RT.	COMMERCIAL DRIVE	40	133.77										
436+05	RT.	COMMERCIAL DRIVE	40	60.44										
437+57	RT.	COMMERCIAL DRIVE	40	60.44										
439+20	RT.	COMMERCIAL DRIVE	40		85.60	9.42	34.95							
439+95	RT.	COMMERCIAL DRIVE	40	85.60										
447+25	LT.	CO. RD. 807	20		227.48	25.02	92.89	50						PCC-1, PCM-1, PCP-1, PCP-2
455+41	RT.	PRIVATE DRIVE	16		122.51	13.48	50.02		40					PCC-1, PCM-1, PCP-1, PCP-2
461+07	LT.	PRIVATE DRIVE	22		204.34	22.48	83.44							
464+59	RT.	PRIVATE DRIVE	18		129.08	14.20	52.71	46						PCC-1, PCM-1, PCP-1, PCP-2
465+15	LT.	PRIVATE DRIVE	16		86.65	9.53	35.38	32						PCC-1, PCM-1, PCP-1, PCP-2
466+10	RT.	COMMERCIAL DRIVE	24		134.50	14.80	54.92							
466+27	LT.	PRIVATE DRIVE	16		94.05	10.35	38.40							
469+85	LT.	COMMERCIAL DRIVE	40		143.28	15.76	58.51							PCC-1, PCM-1, PCP-1, PCP-2
472+20	LT.	COMMERCIAL DRIVE	40		238.22	26.20	97.27							PCC-1, PCM-1, PCP-1, PCP-2
477+65	LT.	CO. RD. 809	20		198.37	21.82	81.00	48						PCC-1, PCM-1, PCP-1, PCP-2
478+83	RT.	CO. RD. 910	20		171.62	18.88	70.08		44					PCC-1, PCM-1, PCP-1, PCP-2
480+58	LT.	PRIVATE DRIVE	16		120.55	13.26	49.22	38						PCC-1, PCM-1, PCP-1, PCP-2
482+57	LT.	PRIVATE DRIVE	16		101.48	11.16	41.44	36						PCC-1, PCM-1, PCP-1, PCP-2
483+08	RT.	COMMERCIAL DRIVE	40		250.44	27.55	102.26	70						PCC-1, PCM-1, PCP-1, PCP-2
484+92	RT.	COMMERCIAL DRIVE	40		242.49	26.67	99.02	68						PCC-1, PCM-1, PCP-1, PCP-2
492+13	LT.	PRIVATE DRIVE	16		107.52	11.83	43.90	90						PCC-1, PCM-1, PCP-1, PCP-2
492+20	RT.	CO. RD. 915	20		191.77	21.09	78.31					80		PCC-1, PCM-1, PCP-1, PCP-2
492+49	LT.	PRIVATE DRIVE	16		107.29	11.80	43.81							
493+10	RT.	COMMERCIAL DRIVE	32	165.62				64						PCC-1, PCM-1, PCP-1, PCP-2
494+41	RT.	COMMERCIAL DRIVE	32	159.82				58						PCC-1, PCM-1, PCP-1, PCP-2
495+08	RT.	COMMERCIAL DRIVE	32	153.35				56						PCC-1, PCM-1, PCP-1, PCP-2
496+18	RT.	COMMERCIAL DRIVE	40	172.67				64						PCC-1, PCM-1, PCP-1, PCP-2
496+70	LT.	PRIVATE DRIVE	24		210.10	23.11	85.79	44						PCC-1, PCM-1, PCP-1, PCP-2
498+68	LT.	PRIVATE DRIVE	16		152.85	16.81	62.41	36						PCC-1, PCM-1, PCP-1, PCP-2
501+00	LT.	PRIVATE DRIVE	16		481.17	52.93	196.48	34						PCC-1, PCM-1, PCP-1, PCP-2
501+97	RT.	PRIVATE DRIVE	16		197.76	21.75	80.75	36						PCC-1, PCM-1, PCP-1, PCP-2
516+52	LT.	PRIVATE DRIVE	30		570.04	62.70	232.77	112						PCC-1, PCM-1, PCP-1, PCP-2
519+58	RT.	PRIVATE DRIVE	16		194.86	21.43	79.57	80						PCC-1, PCM-1, PCP-1, PCP-2
532+16	LT.	PRIVATE DRIVE	16		131.82	14.50	53.83	36						PCC-1, PCM-1, PCP-1, PCP-2
538+40	LT.	PRIVATE DRIVE	16		112.27	12.35	45.84	50						PCC-1, PCM-1, PCP-1, PCP-2
540+52	RT.	CO. RD. 914	20		231.17	25.43	94.39							
541+20	LT.	CO. RD. 811	20		223.77	24.61	91.37	56						PCC-1, PCM-1, PCP-1, PCP-2
543+00	LT.	PRIVATE DRIVE	16		87.47	9.62	35.72	40						PCC-1, PCM-1, PCP-1, PCP-2
544+11	LT.	PRIVATE DRIVE	16		83.88	9.23	34.25	32						PCC-1, PCM-1, PCP-1, PCP-2
544+22	RT.	COMMERCIAL DRIVE	40		210.71	23.18	86.04	60						PCC-1, PCM-1, PCP-1, PCP-2
* ENTIRE PROJECT TEMPORARY DRIVES							2035.00							
TOTALS:				**2091.57**	**11303.35**	**1243.35**	**6650.52**	**2076**	**382**	**120**	**52**	**80**	**60**	

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.4% MIN. AGGR.....5.6% 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.

EROSION CONTROL MATTING

STATION	STATION	LOCATION	LENGTH	CLASS 3
			LIN. FT.	SQ. YD.
357+00.00	359+00.00	HWY. 62-LT.	200.00	177.78
358+00.00	363+00.00	HWY. 62-RT.	500.00	444.44
368+00.00	372+50.00	HWY. 62-RT.	450.00	400.00
370+50.00	371+00.00	HWY. 62-LT.	50.00	44.44
379+00.00	380+00.00	HWY. 62-LT.	100.00	88.89
380+00.00	385+00.00	HWY. 62-RT.	500.00	444.44
390+00.00	391+00.00	HWY. 62-LT.	100.00	88.89
410+00.00	411+00.00	HWY. 62-RT.	100.00	88.89
402+41.00	405+00.00	HWY. 62-LT.	259.00	230.22
406+00.00	409+00.00	HWY. 62-LT.	300.00	266.67
420+42.00	422+00.00	HWY. 62-RT.	158.00	140.44
426+00.00	428+00.00	HWY. 62-RT.	200.00	177.78
427+00.00	431+25.00	HWY. 62-LT.	425.00	377.78
434+25.00	439+00.00	HWY. 62-RT.	472.00	419.56
440+50.00	442+50.00	HWY. 62-RT.	200.00	177.78
443+00.00	445+00.00	HWY. 62-LT.	200.00	177.78
443+80.00	445+00.00	HWY. 62-RT.	120.00	106.67
454+25.00	456+00.00	HWY. 62-RT.	175.00	155.56
466+95.00	468+00.01	HWY. 62-RT.	105.01	93.34
475+00.00	478+50.00	HWY. 62-LT.	350.00	311.11
476+00.00	478+50.00	HWY. 62-RT.	250.00	222.22
481+00.00	484+00.00	HWY. 62-LT.	300.00	266.67
481+00.00	483+50.00	HWY. 62-RT.	250.00	222.22
491+75.00	493+00.00	HWY. 62-RT.	125.00	111.11
494+00.00	502+00.00	HWY. 62-RT.	800.00	711.11
499+50.00	501+50.00	HWY. 62-LT.	200.00	177.78
506+00.00	508+50.00	HWY. 62-RT.	250.00	222.22
507+00.00	508+00.00	HWY. 62-LT.	100.00	88.89
516+00.00	523+00.00	HWY. 62-LT.	700.00	622.22
518+70.00	521+00.00	HWY. 62-RT.	230.00	204.44
524+00.00	526+60.00	HWY. 62-LT.	260.00	231.11
526+00.00	536+00.00	HWY. 62-RT.	1000.00	888.89
540+00.00	542+00.00	HWY. 62-RT.	200.00	177.78
545+00.00	546+50.00	HWY. 62-RT.	150.00	133.33
TOTAL:				**8692.45**

NOTE: AVERAGE WIDTH = 8'-0"

2/16/2016

R090230.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.		090230	91	282

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-22-16

BASE AND SURFACING (BOX 1 OF 2)

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT				ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")								
				TON / STATION	TON	AVG. WID.	SQ.YD.	GALLONS / SQ.YD.	GALLON	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	TOTAL PG 64-22
			FEET			FEET				FEET			TON	FEET			TON	FEET			TON	TON
MAIN LANES																						
347+65.00	349+00.00	HWY. 62 - OVERLAY	135.00			52.00	780.00	0.17	132.60									52.00	780.00	220.00	85.80	85.80
349+00.00	350+00.00	HWY. 62 - TRANSITION	100.00															52.00	577.78	220.00	63.56	63.56
350+00.00	352+10.00	HWY. 62 - PAVEMENT TRANSITION	210.00	117.25	246.23	11.21	261.57	0.05	13.08	3.79	88.43	660.00	29.18	3.63	84.70	220.00	9.32	63.50	1481.67	220.00	162.98	172.30
352+10.00	354+00.00	HWY. 62 - NOTCH AND WIDEN SECTION	190.00	234.75	446.03	VAR.	473.31	0.05	23.67	VAR.	160.02	660.00	52.81	VAR.	153.06	220.00	16.84	75.00	1583.33	220.00	174.17	191.01
354+00.00	355+00.00	HWY. 62 - NOTCH AND WIDEN SECTION	100.00	255.75	255.75	VAR.	429.67	0.05	21.48	VAR.	144.44	660.00	47.67	VAR.	140.78	220.00	15.49	75.00	833.33	220.00	91.67	107.16
355+00.00	361+00.00	HWY. 62 - FULL DEPTH SECTION	600.00	437.00	2622.00	178.41	11894.00	0.05	594.70	59.58	3972.00	660.00	1310.76	59.25	3950.00	220.00	434.50	75.00	5000.00	220.00	550.00	984.50
361+00.00	362+00.00	HWY. 62 - NOTCH AND WIDEN SECTION	100.00	318.50	318.50	VAR.	965.67	0.05	48.28	VAR.	323.11	660.00	106.63	VAR.	319.44	220.00	35.14	75.00	833.33	220.00	91.67	126.81
362+00.00	364+00.00	HWY. 62 - NOTCH AND WIDEN SECTION	200.00	214.75	429.50	VAR.	1931.33	0.05	96.57	VAR.	646.22	660.00	213.25	VAR.	638.89	220.00	70.28	75.00	1666.67	220.00	183.33	253.61
364+00.00	372+93.00	HWY. 62 - FULL DEPTH SECTION	893.00	333.25	2975.92	178.41	17702.24	0.05	885.11	59.58	5911.66	660.00	1950.85	59.25	5878.92	220.00	646.68	75.00	7441.67	220.00	818.58	1465.26
372+93.00	379+00.00	HWY. 62 - FULL DEPTH SECTION	607.00	437.00	2652.59	178.41	12032.76	0.05	601.64	59.58	4018.34	660.00	1326.05	59.25	3996.08	220.00	439.57	75.00	5058.33	220.00	556.42	995.99
379+00.00	385+45.00	HWY. 62 - FULL DEPTH SECTION	645.00	333.25	2149.46	178.41	12786.05	0.05	639.30	59.58	4269.90	660.00	1409.07	59.25	4246.25	220.00	467.09	75.00	5375.00	220.00	591.25	1058.34
385+45.00	389+45.00	HWY. 62 - FULL DEPTH SECTION	400.00	333.25	1333.00	178.41	7929.33	0.05	396.47	59.58	2648.00	660.00	873.84	59.25	2633.33	220.00	289.67	75.00	3333.33	220.00	366.67	656.34
389+45.00	391+00.00	HWY. 62 - FULL DEPTH SECTION	155.00	207.50	321.63	VAR.	1874.98	0.05	93.75	VAR.	626.89	660.00	206.87	VAR.	621.21	220.00	68.33	75.00	1291.67	220.00	142.08	210.41
391+00.00	394+00.00	HWY. 62 - FULL DEPTH SECTION	300.00	333.25	999.75	178.41	5947.00	0.05	297.35	59.58	1986.00	660.00	655.38	59.25	1975.00	220.00	217.25	75.00	2500.00	220.00	275.00	492.25
394+00.00	403+00.00	HWY. 62 - NOTCH AND WIDEN SECTION	900.00	240.00	2160.00	VAR.	10641.00	0.05	532.05	VAR.	3558.00	660.00	1174.14	VAR.	3525.00	220.00	387.75	75.00	7500.00	220.00	825.00	1212.75
403+00.00	407+00.00	HWY. 62 - FULL DEPTH SECTION	400.00	333.25	1333.00	178.41	7929.33	0.05	396.47	59.58	2648.00	660.00	873.84	59.25	2633.33	220.00	289.67	75.00	3333.33	220.00	366.67	656.34
407+00.00	415+00.00	HWY. 62 - NOTCH AND WIDEN SECTION	800.00	240.00	1920.00	VAR.	9458.67	0.05	472.93	VAR.	3162.67	660.00	1043.68	VAR.	3133.33	220.00	344.67	75.00	6666.67	220.00	733.33	1078.00
415+00.00	418+00.00	HWY. 62 - NOTCH AND WIDEN SECTION	300.00	437.00	1311.00	178.41	5947.00	0.05	297.35	59.58	1986.00	660.00	655.38	59.25	1975.00	220.00	217.25	75.00	2500.00	220.00	275.00	492.25
418+00.00	419+00.00	HWY. 62 - FULL DEPTH SECTION	100.00	370.50	370.50	VAR.	1411.67	0.05	70.58	VAR.	471.78	660.00	155.69	VAR.	468.11	220.00	51.49	75.00	833.33	220.00	91.67	143.16
419+00.00	424+00.00	HWY. 62 - FULL DEPTH SECTION	500.00	437.00	2185.00	178.41	9911.67	0.05	495.58	59.58	3310.00	660.00	1092.30	59.25	3291.67	220.00	362.08	75.00	4166.67	220.00	458.33	820.41
424+00.00	425+00.00	HWY. 62 - NOTCH AND WIDEN SECTION	100.00	365.50	365.50	VAR.	1368.67	0.05	68.43	VAR.	457.44	660.00	150.96	VAR.	453.78	220.00	49.92	75.00	833.33	220.00	91.67	141.59
425+00.00	426+00.00	HWY. 62 - FULL DEPTH SECTION	100.00	437.00	437.00	178.41	1982.33	0.05	99.12	59.58	662.00	660.00	218.46	59.25	658.33	220.00	72.42	75.00	833.33	220.00	91.67	164.09
426+00.00	434+42.00	HWY. 62 - FULL DEPTH SECTION	842.00	333.25	2805.97	178.41	16691.25	0.05	834.56	59.58	5574.04	660.00	1839.43	59.25	5543.17	220.00	609.75	75.00	7016.67	220.00	771.83	1381.58
434+42.00	434+96.69	HWY. 62 - FULL DEPTH SECTION	51.38	401.25	206.16	178.41	1018.52	0.05	50.93	59.58	340.14	660.00	112.25	59.25	338.25	220.00	37.21	75.00	428.17	220.00	47.10	84.31
435+00.00	440+28.00	HWY. 62 - FULL DEPTH SECTION	528.00	401.25	2118.60	178.41	10466.72	0.05	523.34	59.58	3495.36	660.00	1153.47	59.25	3476.00	220.00	382.36	75.00	4400.00	220.00	484.00	866.36
440+28.00	444+00.00	HWY. 62 - FULL DEPTH SECTION	372.00	333.25	1239.69	178.41	7374.28	0.05	368.71	59.58	2462.64	660.00	812.67	59.25	2449.00	220.00	269.39	75.00	3100.00	220.00	341.00	610.39
444+00.00	448+00.00	HWY. 62 - NOTCH AND WIDEN SECTION	400.00	240.00	960.00	VAR.	4729.33	0.05	236.47	VAR.	1581.33	660.00	521.84	VAR.	1566.67	220.00	172.33	75.00	3333.33	220.00	366.67	539.00
448+00.00	459+00.00	HWY. 62 - FULL DEPTH SECTION	1100.00	333.25	3665.75	178.41	21805.67	0.05	1090.28	59.58	7282.00	660.00	2403.06	59.25	7241.67	220.00	796.58	75.00	9166.67	220.00	1008.33	1804.91
459+00.00	460+68.00	HWY. 62 - NOTCH AND WIDEN SECTION	168.00	279.75	469.98	VAR.	2559.76	0.05	127.99	VAR.	855.31	660.00	282.25	VAR.	849.15	220.00	93.41	75.00	1400.00	220.00	154.00	247.41
460+68.00	462+00.00	HWY. 62 - NOTCH AND WIDEN SECTION	132.00	383.50	506.22	VAR.	2011.24	0.05	100.56	VAR.	672.03	660.00	221.77	VAR.	667.19	220.00	73.39	75.00	1100.00	220.00	121.00	194.39
462+00.00	465+00.00	HWY. 62 - FULL DEPTH SECTION	300.00	437.00	1311.00	178.41	5947.00	0.05	297.35	59.58	1986.00	660.00	655.38	59.25	1975.00	220.00	217.25	75.00	2500.00	220.00	275.00	492.25
465+00.00	484+92.00	HWY. 62 - FULL DEPTH SECTION	1992.00	333.25	6638.34	178.41	39488.08	0.05	1974.40	59.58	13187.04	660.00	4351.72	59.25	13114.00	220.00	1442.54	75.00	16600.00	220.00	1826.00	3268.54
484+92.00	499+50.00	HWY. 62 - FULL DEPTH SECTION	1458.00	437.00	6371.46	178.41	28902.42	0.05	1445.12	59.58	9651.96	660.00	3185.15	59.25	9598.50	220.00	1055.84	75.00	12150.00	220.00	1336.50	2392.34
499+50.00	533+00.00	HWY. 62 - FULL DEPTH SECTION	3350.00	333.25	11163.88	178.41	66408.17	0.05	3320.41	59.58	22177.00	660.00	7318.41	59.25	22054.17	220.00	2425.96	75.00	27916.67	220.00	3070.83	5496.79
533+00.00	535+00.00	HWY. 62 - NOTCH AND WIDEN SECTION	200.00	240.00	480.00	VAR.	2364.67	0.05	118.23	VAR.	790.67	660.00	260.92	VAR.	783.33	220.00	86.17	75.00	1666.67	220.00	183.33	269.50
535+00.00	543+00.00	HWY. 62 - FULL DEPTH SECTION	800.00	333.25	2666.00	178.41	15858.67	0.05	792.93	59.58	5296.00	660.00	1747.68	59.25	5266.67	220.00	579.33	75.00	6666.67	220.00	733.33	1312.66
543+00.00	543+81.00	HWY. 62 - NOTCH AND WIDEN SECTION	81.00	251.25	203.51	VAR.	1035.72	0.05	51.79	VAR.	346.23	660.00	114.26	VAR.	343.26	220.00	37.76	75.00	675.00	220.00	74.25	112.01
543+81.00	547+54.00	HWY. 62 - NOTCH AND WIDEN SECTION	373.00	355.00	1324.15	VAR.	4769.43	0.05	238.47	VAR.	1594.37	660.00	526.14	VAR.	1580.69	220.00	173.88	75.00	3108.33	220.00	341.92	515.80
547+54.00	548+54.00	HWY. 62 - TRANSITION	100.00															49.50	550.00	220.00	60.50	60.50
SUBTOTALS:					**66963.07**		**355089.18**		**17848.05**		**118343.02**		**39053.21**		**117622.93**		**12938.56**		**166200.95**		**18282.11**	**31220.67**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.4% MIN. AGGR.....5.6% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.4% MIN. AGGR.....4.6% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULISIFED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

2/16/2016

R090230.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.		090230	92	282

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-22-16

BASE AND SURFACING (BOX 2 OF 2)

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT				ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")								
				TON / STATION	TON	AVG. WID.	SQ.YD.	GALLONS / SQ.YD.	GALLON	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	TOTAL PG 64-22
			FEET			FEET				FEET			TON	FEET			TON	FEET			TON	TON
ADDITIONAL FOR TEMPORARY WIDENING (MAINTENANCE OF TRAFFIC)																						
362+00.00	372+93.00	HWY. 62	1093.00	VAR.	185.81	VAR.	2428.22	0.05	121.41	VAR.	2428.22	660.00	801.31	VAR.	2428.22	220.00	267.10					267.10
379+00.00	414+78.00	HWY. 62	3578.00	VAR.	608.26	VAR.	5486.00	0.05	274.30	VAR.	5486.00	660.00	1810.38	VAR.	5486.00	220.00	603.46					603.46
426+00.00	435+00.00	HWY. 62	896.69	VAR.	152.44	VAR.	1595.56	0.05	79.78	VAR.	1595.56	660.00	526.53	VAR.	1595.56	220.00	175.51					175.51
440+00.00	460+68.00	HWY. 62	2068.00	VAR.	351.56	VAR.	2435.44	0.05	121.77	VAR.	2435.44	660.00	803.70	VAR.	2435.44	220.00	267.90					267.90
465+00.00	484+92.00	HWY. 62	1992.00	VAR.	338.64	VAR.	3823.00	0.05	191.15	VAR.	3823.00	660.00	1261.59	VAR.	3823.00	220.00	420.53					420.53
499+50.00	543+81.00	HWY. 62	4431.00	VAR.	753.27	VAR.	9771.44	0.05	488.57	VAR.	9771.44	660.00	3224.58	VAR.	9771.44	220.00	1074.86					1074.86
ADDITIONAL FOR LEVELING																						
ENTIRE	PROJECT	HWY. 62				VAR.	10915.00	0.17	1855.55									VAR.	10915.00	VAR.	1133.84	1133.84
ADDITIONAL FOR SUPERELEVATION																						
350+10.00	356+40.00	SUPERELEVATION TRANSITION	630.00	104.25	656.78																	
356+40.00	359+79.00	MAXIMUM SUPERELEVATION	339.00	208.50	706.82																	
359+79.00	366+09.00	SUPERELEVATION TRANSITION	630.00	104.25	656.78																	
366+10.00	372+40.00	SUPERELEVATION TRANSITION	630.00	104.25	656.78																	
372+40.00	381+40.32	MAXIMUM SUPERELEVATION	900.32	208.50	1877.17																	
381+40.32	387+70.32	SUPERELEVATION TRANSITION	630.00	104.25	656.78																	
477+13.71	482+53.71	SUPERELEVATION TRANSITION	540.00	66.50	359.10																	
482+53.71	491+65.37	MAXIMUM SUPERELEVATION	911.66	133.00	1212.51																	
491+65.37	497+05.37	SUPERELEVATION TRANSITION	540.00	66.50	359.10																	
SUBTOTALS (BOX 1 OF 2):					**66963.07**		**355089.18**		**17848.05**		**118343.02**		**39053.21**		**117622.93**		**12938.56**		**166200.95**		**18282.11**	**31220.67**
SUBTOTALS (BOX 2 OF 2):					**9531.80**		**36454.66**		**3132.53**		**25539.66**		**8428.09**		**25539.66**		**2809.36**		**10915.00**		**1133.84**	**3943.20**
TOTALS:					**76494.87**		**391543.84**		**20980.58**		**143882.68**		**47481.30**		**143162.59**		**15747.92**		**177115.95**		**19415.95**	**35163.87**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.4% MIN. AGGR.....5.6% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.4% MIN. AGGR.....4.6% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULISIFED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

2/16/2016

R090230.DGN

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	93	282

(2) SUMMARY OF QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-22-16

SUMMARY OF QUANTITIES (BOX 1 OF 2)

ITEM NUMBER	ITEM	QUANTITY	UNIT
201	CLEARING	168	STATION
201	GRUBBING	168	STATION
202	REMOVAL AND DISPOSAL OF CURB	961	LIN. FT.
202	REMOVAL AND DISPOSAL OF FENCE	29944	LIN. FT.
202	REMOVAL AND DISPOSAL OF WALLS	1128	LIN. FT.
202	REMOVAL AND DISPOSAL OF ISLANDS	18	SQ. YD.
202	REMOVAL AND DISPOSAL OF CONCRETE DRIVEWAYS	2061	SQ. YD.
202	REMOVAL AND DISPOSAL OF CONCRETE PARKING AREA	1560	SQ. YD.
202	REMOVAL AND DISPOSAL OF WALKS	122	SQ. YD.
202	REMOVAL AND DISPOSAL OF FOUNDATIONS	24	SQ. YD.
202	REMOVAL AND DISPOSAL OF SIGN FOUNDATIONS	3	EACH
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS	62	EACH
202	REMOVAL AND DISPOSAL OF BOX CULVERTS	7	EACH
202	REMOVAL AND DISPOSAL OF CONCRETE DITCH PAVING	2007	SQ. YD.
202	REMOVAL AND DISPOSAL OF BUILDINGS	13	EACH
202	REMOVAL AND DISPOSAL OF CATTLE GUARD	3	EACH
202	REMOVAL AND DISPOSAL OF SIGNS	25	EACH
202	REMOVAL AND DISPOSAL OF PLANTERS	12	EACH
202	REMOVAL AND DISPOSAL OF CANOPY	2	EACH
210	UNCLASSIFIED EXCAVATION	416426	CU. YD.
SP & 210	COMPACTED EMBANKMENT	333710	CU. YD.
210	PRESPLITTING	1000	SQ. YD.
SP & 210	SOIL STABILIZATION	100	TON
SS & 303	AGGREGATE BASE COURSE (CLASS 7)	83145	TON
SS & 401	TACK COAT	21181	GAL.
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	45297	TON
SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")	2184	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	34368	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")	2039	TON
412	COLD MILLING ASPHALT PAVEMENT	1624	SQ. YD.
SP & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	100	TON
SP & 415	ACHM PATCHING OF EXISTING ROADWAY	100	TON
505	PORTLAND CEMENT CONCRETE DRIVEWAY	2091.57	SQ. YD.
601	MOBILIZATION	1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE	1	EACH
603	MAINTENANCE OF TRAFFIC	1.00	LUMP SUM
603	18" TEMPORARY CULVERT	42	LIN. FT.
603	24" TEMPORARY CULVERT	138	LIN. FT.
603	54" TEMPORARY CULVERT	312	LIN. FT.
603	60" TEMPORARY CULVERT	192	LIN. FT.
603	22" X 14" TEMPORARY CULVERT	95	LIN. FT.
SS & 604	SIGNS	714	SQ. FT.
SS & 604	BARRICADES	112	LIN. FT.
SS & 604	TRAFFIC DRUMS	488	EACH
604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	6836	LIN. FT.
604	RELOCATING PRECAST CONCRETE BARRIER	5205	LIN. FT.
604	CONSTRUCTION PAVEMENT MARKINGS	233886	LIN. FT.
604	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	4400	LIN. FT.
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS	18071	LIN. FT.
SS & 604	VERTICAL PANELS	212	EACH
605	CONCRETE DITCH PAVING (TYPE B)	10271	SQ. YD.
606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	606	LIN. FT.
606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	844	LIN. FT.
606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV)	292	LIN. FT.
606	36" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV)	238	LIN. FT.
606	44" X 27" REINFORCED CONCRETE ARCH PIPE CULVERTS (CLASS III)	208	LIN. FT.
SP, SS, & 606	18" SIDE DRAIN	2076	LIN. FT.
SP, SS, & 606	24" SIDE DRAIN	382	LIN. FT.
SP, SS, & 606	30" SIDE DRAIN	120	LIN. FT.
SP, SS, & 606	36" SIDE DRAIN	52	LIN. FT.
SP, SS, & 606	42" SIDE DRAIN	80	LIN. FT.
SS & 606	42" X 29" SIDE DRAIN	60	LIN. FT.
606	18" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	3	EACH
606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	18	EACH
606	44" X 27" FLARED END SECTIONS FOR REINFORCED CONCRETE ARCH PIPE CULVERTS	2	EACH
606	SELECTED PIPE BEDDING	400	CU. YD.
609	DROP INLETS (TYPE ST)	4	EACH
611	UNDERDRAIN OUTLET PROTECTORS	40	EACH
611	4" PIPE UNDERDRAINS	10000	LIN. FT.
615	PAVEMENT REPAIR OVER CULVERTS (CONCRETE)	358.4	CU. YD.

2/16/2016

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SUMMARY OF QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
9-20-2016				6	ARK.			
				JOB NO.		090230	94	282

(2) SUMMARY OF QUANTITIES AND REVISIONS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-20-16

SUMMARY OF QUANTITIES (BOX 2 OF 2)

ITEM NUMBER	ITEM		QUANTITY	UNIT
619	WIRE FENCE (TYPE C)		4671	LIN. FT.
619	WIRE FENCE (TYPE D)		2251	LIN. FT.
619	WIRE FENCE (TYPE D-1)		8563	LIN. FT.
619	WIRE FENCE (TYPE D-2)		7396	LIN. FT.
619	4' STEEL CHAIN LINK FENCE	(ALTERNATE NO. 1)	453	LIN. FT.
619	4' ALUMINUM CHAIN LINK FENCE	(ALTERNATE NO. 2)	453	LIN. FT.
619	16' STEEL GATES	(ALTERNATE NO. 1)	33	EACH
619	16' ALUMINUM GATES	(ALTERNATE NO. 2)	33	EACH
620	LIME		117	TON
620	SEEDING		58.45	ACRE
SS & 620	MULCH COVER		143.06	ACRE
620	WATER		7776.2	M.GAL.
621	TEMPORARY SEEDING		84.61	ACRE
621	SILT FENCE		26164	LIN. FT.
621	DIVERSION DITCH		250	LIN. FT.
621	DROP INLET SILT FENCE		138	LIN. FT.
621	SEDIMENT BASIN		8428	CU. YD.
621	OBLITERATION OF SEDIMENT BASIN		8428	CU. YD.
621	SEDIMENT REMOVAL AND DISPOSAL		9650	CU. YD.
621	PIPE FOR SLOPE DRAINS		50	LIN. FT.
621	ROCK DITCH CHECKS		3109	CU. YD.
623	SECOND SEEDING APPLICATION		58.45	ACRE
624	SOLID SODDING		7008	SQ. YD.
626	EROSION CONTROL MATTING (CLASS 3)		8692	SQ. YD.
634	CONCRETE COMBINATION CURB AND GUTTER (TYPE B-1) (1' 6")		1343	LIN. FT.
635	ROADWAY CONSTRUCTION CONTROL		1.00	LUMP SUM
637	MAILBOXES		53	EACH
637	MAILBOX SUPPORTS (SINGLE)		25	EACH
637	MAILBOX SUPPORTS (DOUBLE)		14	EACH
642	RUMBLE STRIPS IN ASPHALT SHOULDERS		27564	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (4")		51206	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (12")		144	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING YELLOW (4")		51433	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING (ARROWS)		2	EACH
721	RAISED PAVEMENT MARKERS (TYPE II)		973	EACH
731	TEMPORARY IMPACT ATTENUATION BARRIER		24	EACH
731	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)		24	EACH
731	TEMPORARY IMPACT ATTENUATION BARRIER (RELOCATION)		12	EACH
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY		419	CU. YD.
802	CLASS S CONCRETE-ROADWAY		774.89	CU. YD.
804	REINFORCING STEEL-ROADWAY (GRADE 60)		86880	POUND
816	FILTER BLANKET		1950	SQ. YD.
816	DUMPED RIPRAP		986	CU. YD.
SP	CULVERT CLEAN OUT		3	EACH
SP	SELECT GRANULAR BACKFILL		765	CU. YD.
SP	TEMPORARY RETAINING WALL		29495	SQ. FT.
	STRUCTURES OVER 20' SPAN			
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY		535	CU. YD.
802	CLASS S CONCRETE-ROADWAY		1576.42	CU. YD.
804	REINFORCING STEEL-ROADWAY (GRADE 60)		253335	POUND

* DENOTES ALTERNATE BID ITEMS.

REVISIONS

DATE	REVISION	SHEET NUMBER
9/20/2016	REVISED QUANTITY FOR TEMPORARY RETAINING WALL.	89 AND 94.

2/16/2016

R090230.DGN

SURVEY CONTROL COORDINATES

Project Name: s090230
Date: 4/9/2013
Coordinate System: ARKANSAS STATE PLANE - NORTH ZONE BASED ON GPS CONTROL,
PROJECTED TO GROUND.
Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
55	725183.5429	907453.1156	1143.89	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
56	724081.5133	907622.5314	1172.27	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
57	723140.8052	907491.1207	1209.89	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
58	722786.7451	907797.0782	1204.19	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
59	722456.3612	908753.8939	1249.61	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
60	721937.9696	909896.8459	1270.59	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
61	721575.7828	910791.7148	1288.94	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
62	721273.4746	911515.8364	1297.49	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
63	720800.7593	912452.1854	1324.36	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
64	720220.7134	913252.8530	1336.82	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
65	719840.7851	913941.7274	1325.06	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
66	719282.4007	914711.2028	1269.73	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
67	718523.6230	915940.0054	1270.10	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
68	717819.2173	916953.8659	1289.90	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
69	717486.0470	918205.2329	1292.91	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
70	717500.4015	919463.9455	1314.16	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
71	717414.3991	920706.3987	1240.27	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
72	717367.3750	921942.7855	1280.17	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
73	717311.4190	923061.6173	1341.73	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
74	717292.4827	923708.0219	1349.82	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
75	717307.7864	924615.1400	1301.84	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
76	717261.1672	925171.0087	1299.54	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
77	717319.1759	925829.1357	1242.49	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
78	717179.7564	926885.9308	1174.59	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
79	717369.5233	927404.5957	1187.11	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
80	717453.3335	928201.9792	1175.49	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
81	716975.0444	928994.3321	1151.53	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
82	716433.1779	929536.9998	1162.72	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
83	716226.4901	930018.5151	1141.83	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
84	731648.9066	894502.6491	1353.12	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
85	731529.5568	896010.7099	1358.78	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
86	731056.7419	896498.3374	1326.42	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
87	730365.1863	897506.1592	1264.00	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
88	730503.0999	899018.1896	1255.67	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
89	730596.5231	899864.4186	1219.58	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
90	730680.0319	900673.2656	1199.35	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
91	730770.1206	901496.3021	1194.74	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
92	730826.5841	902231.7642	1183.53	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
93	730484.1825	902806.8235	1183.92	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
94	729988.2200	902965.6897	1173.69	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
95	729093.6063	903260.1921	1171.94	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
96	728490.0131	903693.3088	1165.97	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
97	727898.6939	904557.9481	1163.77	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
98	727510.0476	905120.7085	1154.67	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
99	727024.9472	905733.1002	1142.04	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
104	726267.7043	906362.1260	1133.75	GPS	AHTD GPS 080032
105	727549.4268	905366.4189	1165.40	GPS	5/8" REBAR W/ 2" ALUMINUM CAP O
106	717539.6308	918919.1472	1337.93	GPS	AHTD GPS 080033
107	717566.0429	917532.1212	1288.60	GPS	AHTD GPS 080033A
108	716377.4115	931167.7920	1139.70	GPS	AHTD GPS 050001
109	716522.9718	932213.8913	1137.46	GPS	AHTD GPS 050001
110	731617.9317	893566.9331	1348.86	GPS	5/8" REBAR W/ 2" ALUMINUM CAP O
111	731616.9014	895308.4648	1367.02	GPS	5/8" REBAR W/ 2" ALUMINUM CAP O
950	731562.8021	895501.2951	1364.47	BM	SOUTH CENT OF HW S HWY 62
951	730434.0917	897335.4749	1264.68	BM	CHISELED \OU CENTER OF HW S HWY 62
952	730804.0120	901950.5929	1186.26	BM	PAINT CHISELED SQ CENTER HW RT STATION
953	727765.4400	904793.1195	1162.76	BM	CHISELED SQ CENTER OF HW S HWY 62
954	726844.7264	905838.2711	1145.93	BM	AHTD CAP SET IN SW COR
955	725662.3581	906823.9651	1142.94	BM	AHTD CAP SW CORN BR 11.98 LOG
956	724688.1234	907653.5453	1143.35	BM	SQ IN CENTER OF HDWL RIGHT OF CL
957	722877.3688	907714.2696	1202.18	BM	SQ IN CENTER OF HW HWY 62
958	722688.3531	908043.0196	1200.65	BM	SQ IN HW HWY 62
959	722585.6719	908301.7014	1211.78	BM	SQ IN HW HWY 62 RT OF CL
960	722321.9329	908970.7122	1252.61	BM	SQ CUT IN CENTER HW
961	722089.7010	909531.3276	1263.24	BM	SQ CUT IN CENTER HW
962	721901.6637	910084.3400	1273.13	BM	SQ CUT HDWL NORTH HWY 62
963	721656.7096	910681.6574	1286.31	BM	SQ CUT HDWL NORTH HWY 62
964	721177.1211	911720.6263	1296.48	BM	5/8" REBAR W/ 2" ALUMINUM CAP
965	720605.6746	912663.2380	1316.37	BM	SQ CUT HDWL SOUTH HWY 62
966	720017.3472	913573.3681	1332.46	BM	SQ IN HDW
967	719417.3608	914561.0936	1277.91	BM	SQ IN HDW
968	719183.5065	914863.1235	1264.25	BM	SQ IN HDW
969	719058.0103	915058.1121	1260.34	BM	SQ IN HDW SOUTH OF C/L
970	718707.4707	915663.1471	1265.52	BM	SQ CUT HDWL NORTH OF C/L
971	718214.8999	916417.3953	1254.00	BM	SQ CUT HDWL NORTH OF C/L
972	717522.8910	917842.0862	1281.26	BM	SQ CUT CENTER OF HDWL S OF C/L
973	717440.3501	918940.2903	1333.14	BM	CPS IN CP S OF C/L
974	717456.3434	920595.9047	1240.98	BM	SQ CUT IN CENTER OF HDWL
975	717391.0786	921421.4305	1249.14	BM	SQ CUT HDWL SOUTH OF C/L
976	717380.6052	922489.4797	1305.56	BM	CUT SQ IN CENT HW NORTH OF C/L
977	717269.0104	923690.8348	1352.53	BM	CPS IN PP SOUTH OF CL SOUTH OF C/L
978	717247.1335	924415.9835	1292.31	BM	SQ CUT HDWL SOUTH OF C/L
979	717251.2382	924932.6756	1289.09	BM	SQ CUT HDWL SOUTH OF C/L
980	717301.6057	925556.0888	1266.64	BM	SQ CUT HDWL SOUTH OF C/L
981	717258.2589	926161.0080	1195.28	BM	SQ CUT CENTER HW SOUTH OF C/L
982	717236.4194	926384.0562	1187.59	BM	SQ CUT CENTER HW
983	717169.4268	926814.0779	1172.98	BM	SQ IN CENTER OF HDWL S OF C/L
984	717404.3459	927864.0168	1172.97	BM	SQ IN CENTER OF HDWL S OF C/L
985	717413.0562	928199.0535	1171.84	BM	SQ IN CENTER OF HDWL S OF C/L
986	717175.5239	928602.3252	1154.23	BM	SQ IN CENTER OF HDWL S OF C/L
987	717048.8202	928802.0036	1149.68	BM	SQ IN CENTER OF HDWL
988	716862.3801	929069.2328	1144.79	BM	SQ CUT HDWL SOUTH C/L
989	716633.2570	929349.2542	1156.45	BM	SQ CUT HDWL SOUTH OF C/L
990	716294.7596	929977.8904	1139.25	BM	SQ CUT NORTH END HDWL NORTH OF C/L
991	716284.4125	930562.0947	1145.58	BM	SQ CUT HDWL NORTH OF C/L
992	716299.3152	930997.7165	1141.29	BM	SQ CUT CONCRETE BASE OF ALPENA TRANS
996	727792.7774	908151.6670	1132.72	BM	SQ CUT IN CONC FE COR
997	728367.5900	910060.7155	1128.03	BM	SQ CUT IN ROCK OUTCROP 12' N CO RD
998	729164.3931	911912.7295	1127.70	BM	SQ CUT IN ROCK OUTCROP 7 FT NORTH RD
999	729227.3734	914556.5724	1108.86	BM	NGS Z-5
1500	732017.5996	896010.7050	1356.16	CTL	8-SPK TRIG ELEV.
1501	731150.3108	895995.0719	1352.23	CTL	CPS TRIG ELEV.
1502	731810.7262	896014.2775	1358.70	CTL	8-SPK TRIG ELEV.
1503	730588.5220	895975.3490	1357.56	CTL	CPS TRIG ELEV.
1504	731540.6776	896577.9856	1340.91	CTL	CPS TRIG ELEV.
1505	731546.7530	896337.9878	1344.81	CTL	CPS TRIG ELEV.
1506	730893.8545	901655.1199	1201.69	CTL	8-KSPK TRIG ELEV.
1507	730493.4013	901230.7183	1190.93	CTL	8-SPK TRIG ELEV.
1508	730895.1200	901243.1518	1198.56	CTL	8-SPK TRIG ELEV.
1509	730940.7651	902231.1186	1197.56	CTL	8-SPK TRIG ELEV.
1510	730846.6947	902537.9587	1190.66	CTL	8-SPK TRIG ELEV.
1511	730803.1170	902291.2010	1183.33	CTL	8-SPK TRIG ELEV.
1512	727761.0221	905406.7616	1191.52	CTL	CPS TRIG ELEV.
1513	727394.4962	905105.5052	1140.51	CTL	CPS TRIG ELEV.
1514	726929.2620	905872.1033	1145.02	CTL	8-SPK TRIG ELEV.
8000	725493.3413	907118.6922	1139.44	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
8001	724694.1297	907745.9647	1153.74	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
8002	723656.7173	907567.4697	1192.03	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
8003	722600.6592	908282.8013	1212.09	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
8004	722234.6411	909304.6255	1260.85	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
8005	721798.2296	910357.1572	1276.38	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
8006	721043.3220	912057.8029	1307.78	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
8007	720436.1099	912891.6540	1325.49	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
8008	720227.2099	913232.2096	1336.74	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
8009	719568.9335	914247.3199	1299.20	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
8010	718929.7116	915342.1525	1261.50	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
8011	718164.9092	916508.0320	1256.64	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
8012	717428.3794	920156.1716	1249.25	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
8013	717429.4372	921239.2437	1252.13	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
8014	717384.0897	922535.3388	1308.63	CTL	5/8" REBAR W/ 2" ALUMINUM CAP

*Note - Rebar and Cap - Standard - 5/8" Rebar with 2" Aluminum Cap stamped
*(standard markings common to all caps), or as indicated
(other markings indicated in the point description of the individual point).
ALL DISTANCES ARE GROUND.
USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT.
A PROJECT CAF OF 0.9999567414 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 s090219gi.ctl
HORIZONTAL DATUM: NAD 83 (1997)
VERTICAL DATUM: NAVD 88 POSITIONAL ACCURACY THIRD ORDER, UNLESS SPECIFIED OTHERWISE
AT A SPECIFIC POINT.

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

BASIS OF BEARING:
ARKANSAS STATE PLANE GRID BEARINGS - 0301-NORTH ZONE
DETERMINED FROM GPS CONTROL POINTS: 050001 - 050001A, 080031 - 080031A, 080032 - 080032A
CONVERGENCE ANGLE: 0-46-50.9 RIGHT AT LT 36.17-52-45.3 LG: 093.20-30-52.5 (PN:68)
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL LAND SURVEYOR
NO. 11435
TIMOTHY D. SMITH
9-19-16

SURVEY CONTROL DETAILS

DATE REVISED	DATE PLOTTED	DATE REVISED	DATE PLOTTED	FEDERAL DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		95	282
				JOB NO.	090230			

2 SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	96	282

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-13

C.L. HWY. 62

POINT NO.	TYPE	STATION	NORTHING	EASTING
8000	POB	299+98.23	728642.2057	903408.3962
8001	PC	323+59.03	727398.6778	905415.1346
8003	PT	329+28.84	726988.3905	905801.1888
8004	PC	334+79.38	726503.6489	906062.1898
8006	PT	339+77.83	726114.2749	906369.3528
8007	PI	348+00.00	725566.6761	906982.6214
8008	PC	353+06.33	725224.8738	907356.1741
8010	PT	364+16.89	724215.9061	907691.5995
8011	PC	368+01.34	723838.2210	907619.8037
8013	PT	382+97.82	722623.9508	908279.6298
8014	PC	409+31.70	721628.8448	910718.2933
8016	PT	416+68.05	721328.9378	911390.6638
8017	PC	417+05.38	721312.6418	911424.2542
8019	PT	421+30.23	721116.6717	911801.1421
8020	PC	427+67.79	720806.9323	912358.4071
8022	PT	434+25.77	720470.9395	912924.0323
8023	PC	438+04.01	720270.2892	913240.7423
8025	PT	439+94.49	720167.0152	913400.7937
8026	PC	446+28.30	719818.9600	913930.4852
8028	PT	448+67.81	719689.5342	914132.0112
8029	PC	458+20.16	719183.3008	914938.6730
8031	PT	462+90.55	718925.1542	915331.8589
8032	PC	469+30.11	718563.2457	915859.1697
8034	PT	475+35.14	718234.2008	916366.8170
8035	PC	481+18.71	717929.8249	916864.7266
8037	PT	493+00.37	717582.8265	917981.7055
8038	PC	508+49.51	717499.6484	919528.6105
8040	PT	509+46.53	717494.8493	919625.5098
8041	PI	543+47.27	717341.0100	923022.7639
8042	PC	545+87.86	717332.9141	923263.2154
8044	PT	551+48.38	717300.3614	923822.7369
8045	PI	552+21.26	717294.3499	923895.3739
8046	PI	556+65.60	717290.7986	924339.6909
8047	PI	560+62.76	717288.3292	924736.8526
8048	POE	563+91.71	717289.5996	925065.7977

C.L. CO. RD. 916

POINT NO.	TYPE	STATION	NORTHING	EASTING
8100	POB	10+00.00	723441.7808	907617.7389
8101	PC	10+50.56	723434.3832	907567.7251
8103	PT	13+23.36	723268.7284	907368.0155
8104	PI	13+37.19	723255.6574	907363.4986
8105	POE	14+61.51	723136.6032	907327.7170

DRIVEWAY STA. 382+00

POINT NO.	TYPE	STATION	NORTHING	EASTING
8200	POB	100+00.00	722664.9147	908190.8369
8201	PC	100+73.49	722730.1959	908224.5796
8203	PT	101+28.29	722782.1622	908220.8875
8204	PC	101+92.32	722834.3203	908183.7363
8206	PT	102+76.43	722907.0245	908200.1588
8207	POE	102+82.27	722909.8621	908205.2610

C.L. STAGE 2

POINT NO.	TYPE	STATION	NORTHING	EASTING
8300	POB	361+50.00	724481.8025	907729.4962
8301	PC	361+62.71	724469.1028	907728.9532
8303	PT	362+37.36	724394.4862	907729.6534
8304	PC	362+75.06	724356.8601	907731.9704
8306	PT	364+36.58	724195.8915	907723.7117
8307	PC	364+98.11	724135.1955	907713.6658
8309	PT	365+13.98	724119.5030	907711.2469
8310	PC	367+21.90	723913.6768	907681.8520
8312	PT	368+71.47	723766.2283	907656.8510
8313	PC	369+25.11	723713.5903	907646.5056
8315	PT	370+74.99	723564.5862	907633.1443
8316	PC	371+19.95	723519.6337	907633.8276
8318	PT	372+68.95	723371.9526	907651.5190
8319	POE	372+92.54	723348.9487	907656.7417

C.L. STAGE 2

POINT NO.	TYPE	STATION	NORTHING	EASTING
8400	POB	379+00.00	722850.1184	907958.4441
8401	PC	379+01.44	722849.1865	907959.5369
8403	PT	380+94.12	722745.2611	908121.0984
8404	PC	382+96.28	722659.6840	908304.2507
8406	PT	383+48.10	722638.5985	908351.5928
8407	PC	387+43.64	722484.2366	908715.7589
8409	PT	388+34.82	722448.1487	908799.5021
8410	PC	389+26.22	722411.4780	908883.2192
8412	PT	389+53.66	722399.9878	908908.1403
8413	PC	390+04.23	722377.9403	908953.6454
8415	PT	390+78.66	722349.0209	909022.1973
8416	PC	390+80.66	722348.3426	909024.0716
8418	PT	392+10.77	722301.3017	909145.3709
8419	PI	398+89.49	722041.5926	909772.4315
8420	PI	402+89.49	721891.3666	910143.1512
8421	PC	404+56.83	721830.2566	910298.9341
8423	PT	406+44.74	721758.7780	910472.7114
8424	PC	407+29.31	721725.3292	910550.3860
8426	PT	408+49.76	721678.8547	910661.5097
8427	PC	412+80.90	721516.6966	911060.9866
8429	PT	414+19.93	721452.2651	911183.9454
8430	PC	414+22.97	721450.6035	911186.4830
8432	PT	415+60.83	721386.6138	911308.3562
8433	POE	415+91.97	721374.8557	911337.1868

C.L. STAGE 2

POINT NO.	TYPE	STATION	NORTHING	EASTING
8500	POB	426+00.00	720909.6007	912223.5049
8501	PC	426+36.29	720889.8888	912253.9757
8503	PT	427+63.82	720830.4933	912366.6380
8504	PC	428+55.49	720795.1220	912451.2081
8506	PT	429+47.49	720754.2737	912533.5787
8507	PC	430+73.43	720691.1944	912642.5824
8509	PT	432+06.02	720618.9349	912753.6792
8510	PC	434+24.88	720490.2227	912930.6804
8512	PT	434+98.23	720449.0073	912991.3496
8513	POE	435+00.55	720447.7685	912993.3050

C.L. STAGE 2

POINT NO.	TYPE	STATION	NORTHING	EASTING
8600	POB	439+00.00	720233.1428	913331.3096
8601	PC	439+80.33	720189.2947	913398.6150
8603	PT	440+19.47	720168.4957	913431.7649
8604	PC	440+98.31	720127.7364	913499.2615
8606	PT	441+52.07	720098.8769	913544.6132
8607	PC	444+66.78	719923.7410	913806.0836
8609	PT	445+33.20	719887.4210	913861.6913
8610	PC	446+34.02	719833.2701	913946.7362
8612	PT	447+06.39	719795.1754	914008.2665
8613	PI	448+99.79	719695.4543	914173.9757
8614	PC	453+44.04	719462.7689	914552.4079
8616	PT	454+07.05	719429.1749	914605.7210
8617	PC	457+68.28	719233.2476	914909.2017
8619	PT	458+30.97	719198.3867	914961.3026
8620	PC	460+10.99	719095.8364	915109.2549
8622	PT	460+59.60	719068.6557	915149.5552
8623	POE	460+68.54	719063.7508	915157.0310

C.L. STAGE 2

POINT NO.	TYPE	STATION	NORTHING	EASTING
8700	POB	465+00.00	718821.0603	915514.4522
8701	PC	465+05.52	718817.9331	915519.0087
8703	PT	465+94.36	718772.3301	915595.1769
8704	PC	466+47.94	718747.7069	915642.7686
8706	PT	467+36.36	718702.3404	915718.5920
8707	PC	470+90.46	718502.1317	916010.6669
8709	PT	471+09.53	718491.4832	916026.4821
8710	PC	472+88.11	718392.9791	916175.4402
8712	PT	473+33.91	718368.9534	916214.4261
8713	PC	475+22.70	718275.0995	916378.2248
8715	PT	476+92.08	718184.7676	916521.4570
8716	PC	479+21.38	718054.3487	916710.0546
8718	PT	480+54.81	717989.0890	916826.2159
8719	PC	480+57.09	717988.1621	916828.2988
8721	PT	481+43.14	717948.5458	916904.6220
8722	PC	483+93.02	717820.3201	917119.0946
8724	PT	484+92.25	717775.4538	917207.5138
8725	POE	484+96.19	717773.9161	917211.1476

C.L. STAGE 2

POINT NO.	TYPE	STATION	NORTHING	EASTING
8800	POB	499+00.00	717568.1054	918581.4084
8801	PC	499+49.78	717565.4325	918631.1170
8803	PT	500+50.16	717564.4369	918731.4549
8804	PC	500+72.63	717565.1981	918753.9171
8806	PT	501+27.93	717564.9366	918809.1999
8807	PC	502+93.37	717557.7694	918974.4882
8809	PT	505+07.23	717545.5157	919187.9892
8810	PC	508+46.11	717521.3646	919526.0036
8812	PT	509+54.37	717518.7579	919634.1987
8813	PC	510+72.37	717521.4895	919752.1650
8815	PT	511+28.74	717520.5768	919808.5079
8816	PC	511+35.30	717520.2124	919815.0611
8818	PT	512+65.80	717515.9369	919945.4807
8819	PC	514+88.25	717513.7137	920167.9148
8821	PT	515+28.97	717512.1498	920208.5986
8822	PC	516+78.86	717502.1368	920358.1603
8824	PT	517+56.35	717501.1493	920435.6092
8825	PC	519+03.67	717507.2393	920582.7992
8827	PT	520+96.72	717489.2847	920774.4255
8828	PC	521+47.04	717477.9007	920823.4434
8830	PT	523+15.50	717459.3515	920990.4819
8831	PC	527+16.54	717462.1622	921391.5188
8833	PT	527+82.10	717459.6230	921457.0008
8834	PC	531+55.19	717428.1259	921828.7617
8836	PT	535+02.97	717409.2976	922175.9831
8837	PC	541+72.21	717393.3563	922845.0299
8839	PT	543+61.53	717364.0289	923031.5076
8840	PC	543+62.44	717363.7696	923032.3823
8842	PT	545+44.72	717334.6446	923211.8196
8843	POE	545+96.15	717332.9141	923263.2154

C.L. STAGE 3

POINT NO.	TYPE	STATION	NORTHING	EASTING
8900	POB	352+00.00	725295.2807	907276.4717
8901	PC	352+52.86	725259.5259	907315.3990
8903	PT	353+78.59	725166.8000	907400.0786
8904	POE	354+98.44	725071.5533	907472.8309

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SURVEY CONTROL DETAILS

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				6	ARK.			
				JOB NO.		090230	97	282

2 SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-17-16

STA. 350+00.00
BEGIN JOB 090230
LOG MILE 12.05

SURVEY BASELINE

C.L. STAGE 3
P.I. = 353+15.89
Δ = 10°03'32" RT.
D = 8°0'00.0"
T = 63.03'
L = 125.73'
P.C. = 352+52.86
P.T. = 353+78.59
NO SUPER

C.L. HWY. 62
P.I. = 359+15.07
Δ = 58°18'16" RT.
D = 5°15'00.0"
T = 608.74'
L = 1110.56'
P.C. = 353+06.33
P.T. = 364+16.89
e = 0.100'/'
Ls = 630'

P.I. 348+00.00
Δ 0°41'47"
S 48°14'16" E
S 47°32'29" E
345
8007
PN:8000 PD:REBAR & CAP
350
POB 352+00.00
8900
S 47°25'57" E
63.03'
8901
8008
S 47°32'29" E
63.03'
8903
IP.I. 353+15.89
PN:55 PD:5/8" REBAR W/ 2" ALUMINUM CAP
POE 354+98.44
355
8904
S 47°32'29" E
608.74'
P.I. 359+15.07
S 10°45'47" W
608.74'
PN:8001 PD:REBAR & CAP
RIGHT OF C.L.
CENTER OF HWY.
360
PN:955 PD:AHTD CAP SW CORN BR 11.98 LOG
C.L. HWY. 62
STA. 352+00.00 HWY. 62=
STA. 352+00.00 STAGE 3 C.L.
1.86' OFFSET
P.C. 352+52.86
P.C. 353+06.33
P.T. 353+78.59
C.L. STAGE 3

C.L. STAGE 2
P.I. = 363+56.17
Δ = 12°55'19" RT.
D = 8°0'00.0"
T = 81.11'
L = 161.52'
P.C. = 362+75.06
P.T. = 364+36.58
NO SUPER

POB 361+50.00
P.C. 361+62.71
P.T. 362+37.36
P.I. 363+56.17
P.C. 364+98.11
P.T. 365+13.98
360
8300
8301
37.36'
S 2°26'54" W
8303
S 3°31'26" E
37.36'
8304
S 9°23'53" W
81.11'
8306
8307
365
S 9°23'53" W
7.94'
8309
8010
8310
S 8°07'40" W
74.80'
8312
S 11°07'09" W
74.80'
8313
S 11°07'09" W
75.21'
370
8315
S 0°52'15" E
75.21'
8316
S 0°52'15" E
74.77'
8318
S 12°47'29" E
74.77'
8319
POB 10+00.00
8100
P.C. 10+50.56
8101
S 10°45'47" W
608.74'
S 10°45'47" W
892.70'
S 8°07'40" W
74.80'
S 11°07'09" W
75.21'
S 0°52'15" E
75.21'
S 0°52'15" E
74.77'
S 12°47'29" E
74.77'
S 19°03'49" W
151.77'
S 18°55'11" W
151.77'
C.L. HWY. 62
C.L. CO. RD. 916
375
PN:56 PD:5/8" REBAR W/ 2" ALUMINUM CAP
PN:5% PD:5/8" REBAR W/ 2" ALUMINUM CAP
PN:230 PD:8" SPIKE
PN:230 PD:8" SPIKE
PN:230 PD:8" SPIKE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	98	282

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16

DRIVEWAY STA. 382+00 C.L.
P.I. = 102+48.22
Δ = 96°22'47" RT.
D = 114°35'16"
T = 55.90'
L = 84.11'
P.C. = 101+92.32
P.T. = 102+76.43

DRIVEWAY STA. 382+00 C.L.
P.I. = 101+04.00
Δ = 62°47'42.0" LT.
D = 114°35'22"
T = 30.51'
L = 54.80'
P.C. = 100+73.49
P.T. = 101+28.29

C.L. STAGE 2
P.I. = 387+89.23
Δ = 0°41'02" RT.
D = 0°45'00.0"
T = 45.59'
L = 91.18'
P.C. = 387+43.64
P.T. = 388+34.82
NO SUPER

C.L. STAGE 2
P.I. = 389+39.94
Δ = 2°11'44" RT.
D = 8°00'00.0"
T = 13.72'
L = 27.44'
P.C. = 389+26.22
P.T. = 389+53.66
NO SUPER

C.L. HWY. 62
P.I. = 376+94.04
Δ = 78°33'54" LT.
D = 5°15'00.0"
T = 892.70'
L = 1496.48'
P.C. = 368+01.34
P.T. = 382+97.82
e = 0.100'/'
Ls = 630'

C.L. STAGE 2
P.I. = 379+98.36
Δ = 15°24'52" LT.
D = 8°0'00.0"
T = 96.92'
L = 192.68'
P.C. = 379+01.44
P.T. = 380+94.12
NO SUPER

C.L. STAGE 2
P.I. = 383+22.19
Δ = 2°04'23" LT.
D = 4°0'00.0"
T = 25.91'
L = 51.82'
P.C. = 382+96.28
P.T. = 383+48.10
NO SUPER

STA. 382+00.00 HWY. 62 =
STA. 100+00.00 CO. RD. 916
Δ=90°00'00"

C.L. STAGE 2
P.I. = 391+45.73
Δ = 2°36'08" RT.
D = 2°0'00.0"
T = 65.07'
L = 130.11'
P.C. = 390+80.66
P.T. = 392+10.77
NO SUPER

C.L. STAGE 2
P.I. = 405+50.79
Δ = 1°52'45" RT.
D = 1°0'00.0"
T = 93.96'
L = 187.91'
P.C. = 404+56.83
P.T. = 406+44.74
NO SUPER

C.L. STAGE 2
P.I. = 390+41.48
Δ = 5°57'18" LT.
D = 8°0'00.0"
T = 37.25'
L = 74.43'
P.C. = 390+04.23
P.T. = 390+78.66
NO SUPER

SURVEY CONTROL DETAILS

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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.		090230	99	282

(2) SURVEY CONTROL DETAILS

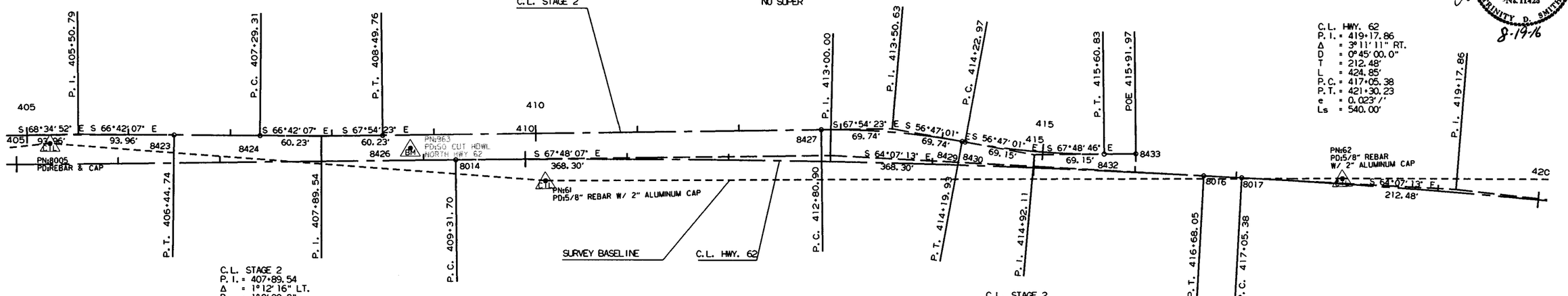
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16

C.L. STAGE 2
P.I. = 405+50.79
Δ = 1°52'45" RT.
D = 1°0'00.0"
T = 93.96'
L = 187.91'
P.C. = 404+56.83
P.T. = 406+44.74
NO SUPER

C.L. HWY. 62
P.I. = 413+00.00
Δ = 3°40'54" RT.
D = 0°30'00.0"
T = 368.30'
L = 736.35'
P.C. = 409+31.70
P.T. = 416+68.05
NO SUPER

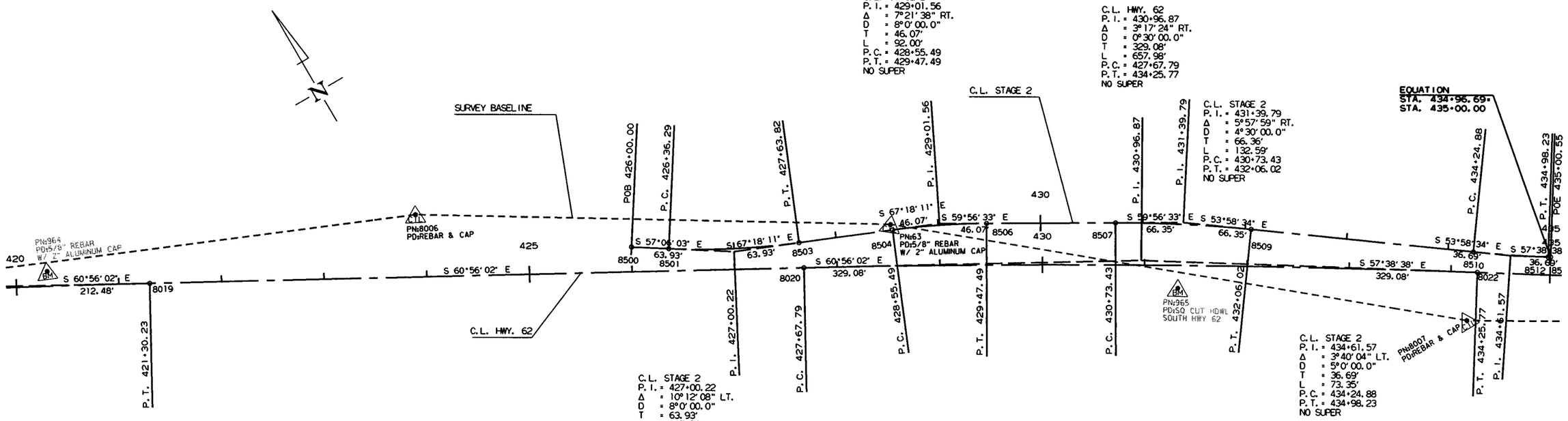
C.L. STAGE 2
P.I. = 413+50.63
Δ = 11°07'22" RT.
D = 8°0'00.0"
T = 69.73'
L = 139.03'
P.C. = 412+80.90
P.T. = 414+19.93
NO SUPER

C.L. HWY. 62
P.I. = 419+17.86
Δ = 3°11'11" RT.
D = 0°45'00.0"
T = 212.48'
L = 424.85'
P.C. = 417+05.38
P.T. = 421+30.23
e = 0.023'/'
Ls = 540.00'



C.L. STAGE 2
P.I. = 407+89.54
Δ = 1°12'16" LT.
D = 1°0'00.0"
T = 60.23'
L = 120.45'
P.C. = 407+29.31
P.T. = 408+49.76
NO SUPER

C.L. STAGE 2
P.I. = 414+92.11
Δ = 11°01'45" LT.
D = 8°0'00.0"
T = 69.14'
L = 137.86'
P.C. = 414+22.97
P.T. = 415+60.83
NO SUPER



C.L. STAGE 2
P.I. = 427+00.22
Δ = 10°12'08" LT.
D = 8°0'00.0"
T = 63.93'
L = 127.53'
P.C. = 426+36.29
P.T. = 427+63.82
NO SUPER

C.L. STAGE 2
P.I. = 429+01.56
Δ = 7°21'38" RT.
D = 8°0'00.0"
T = 46.07'
L = 92.00'
P.C. = 428+55.49
P.T. = 429+47.49
NO SUPER

C.L. HWY. 62
P.I. = 430+96.87
Δ = 3°17'24" RT.
D = 0°30'00.0"
T = 329.08'
L = 657.98'
P.C. = 427+67.79
P.T. = 434+25.77
NO SUPER

C.L. STAGE 2
P.I. = 431+39.79
Δ = 5°57'59" RT.
D = 4°30'00.0"
T = 66.36'
L = 132.59'
P.C. = 430+73.43
P.T. = 432+06.02
NO SUPER

C.L. STAGE 2
P.I. = 434+61.57
Δ = 3°40'04" LT.
D = 5°0'00.0"
T = 36.69'
L = 73.35'
P.C. = 434+24.88
P.T. = 434+98.23
NO SUPER

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SURVEY CONTROL DETAILS

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				6	ARK.			
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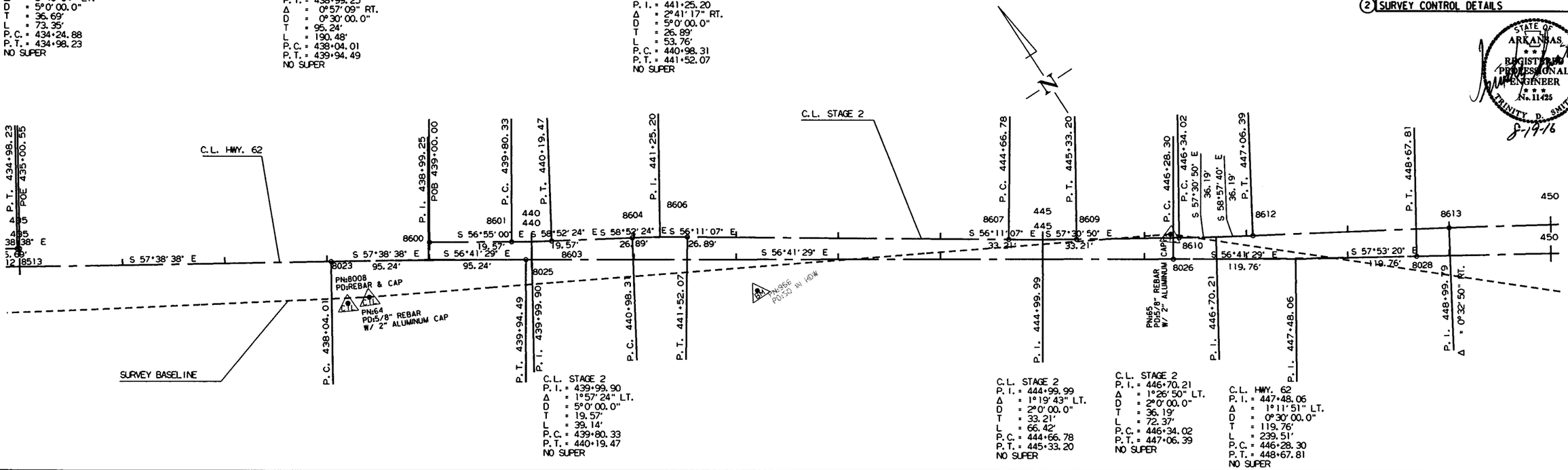
(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16

C.L. STAGE 2
P.I. = 434+61.57
Δ = 3°40'04" LT.
D = 5°0'00.0"
T = 36.69'
L = 73.35'
P.C. = 434+24.88
P.T. = 434+98.23
NO SUPER

C.L. HWY. 62
P.I. = 438+99.25
Δ = 0°57'09" RT.
D = 0°30'00.0"
T = 95.24'
L = 190.48'
P.C. = 438+04.01
P.T. = 439+94.49
NO SUPER

C.L. STAGE 2
P.I. = 441+25.20
Δ = 2°41'17" RT.
D = 5°0'00.0"
T = 26.89'
L = 53.76'
P.C. = 440+98.31
P.T. = 441+52.07
NO SUPER



C.L. STAGE 2
P.I. = 439+99.90
Δ = 1°57'24" LT.
D = 5°0'00.0"
T = 19.57'
L = 39.14'
P.C. = 439+80.33
P.T. = 440+19.47
NO SUPER

C.L. STAGE 2
P.I. = 444+99.99
Δ = 1°19'43" LT.
D = 2°0'00.0"
T = 33.21'
L = 66.42'
P.C. = 444+66.78
P.T. = 445+33.20
NO SUPER

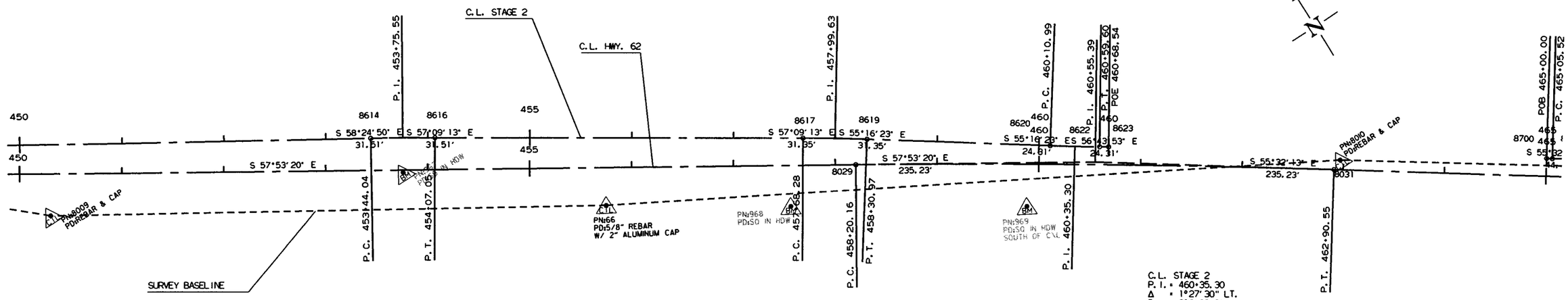
C.L. STAGE 2
P.I. = 446+70.21
Δ = 1°26'50" LT.
D = 2°0'00.0"
T = 36.19'
L = 72.37'
P.C. = 446+34.02
P.T. = 447+06.39
NO SUPER

C.L. HWY. 62
P.I. = 447+48.06
Δ = 1°11'51" LT.
D = 0°30'00.0"
T = 119.76'
L = 239.51'
P.C. = 446+28.30
P.T. = 448+67.81
NO SUPER

C.L. STAGE 2
P.I. = 453+75.55
Δ = 1°15'37" RT.
D = 2°0'00.0"
T = 31.51'
L = 63.01'
P.C. = 453+44.04
P.T. = 454+07.05
NO SUPER

C.L. STAGE 2
P.I. = 457+99.63
Δ = 1°52'50" RT.
D = 3°0'00.0"
T = 31.35'
L = 62.69'
P.C. = 457+68.28
P.T. = 458+30.97
NO SUPER

C.L. HWY. 62
P.I. = 460+55.39
Δ = 2°21'07" RT.
D = 0°30'00.0"
T = 235.23'
L = 470.39'
P.C. = 458+20.16
P.T. = 462+90.55
NO SUPER



C.L. STAGE 2
P.I. = 460+35.30
Δ = 1°27'30" LT.
D = 3°0'00.0"
T = 24.31'
L = 48.61'
P.C. = 460+10.99
P.T. = 460+59.60
NO SUPER

SURVEY CONTROL DETAILS

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				6	ARK.			
				JOB NO.		090230	101	282

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16

C.L. STAGE 2
P.I. = 466+92.21
Δ = 7°4'23" RT.
D = 8°0'00.0"
T = 44.27'
L = 88.42'
P.C. = 466+47.94
P.T. = 467+36.36
NO SUPER

C.L. STAGE 2
P.I. = 476+07.44
Δ = 4°51'10" RT.
D = 2°51'54.0"
T = 84.74'
L = 169.38'
P.C. = 475+22.70
P.T. = 476+92.08
NO SUPER

C.L. STAGE 2
P.I. = 465+50.00
Δ = 7°6'24" LT.
D = 8°0'00.0"
T = 44.48'
L = 88.84'
P.C. = 465+05.52
P.T. = 465+94.36
NO SUPER

C.L. STAGE 2
P.I. = 471+00.00
Δ = 0°57'12" LT.
D = 5°0'00.0"
T = 9.54'
L = 19.07'
P.C. = 470+90.46
P.T. = 471+09.53
NO SUPER

C.L. HWY. 62
P.I. = 472+32.69
Δ = 3°01'31" LT.
D = 0°30'00.0"
T = 302.58'
L = 605.03'
P.C. = 469+30.11
P.T. = 475+35.14
NO SUPER

C.L. STAGE 2
P.I. = 473+11.02
Δ = 3°39'51" LT.
D = 8°0'00.0"
T = 22.91'
L = 45.80'
P.C. = 472+88.11
P.T. = 473+33.91
NO SUPER

C.L. STAGE 2
P.I. = 479+88.29
Δ = 10°40'28" LT.
D = 8°0'00.0"
T = 66.91'
L = 133.43'
P.C. = 479+21.38
P.T. = 480+54.81
NO SUPER

C.L. STAGE 2
P.I. = 481+00.17
Δ = 6°53'00" RT.
D = 8°0'00.0"
T = 43.08'
L = 86.05'
P.C. = 480+57.09
P.T. = 481+43.14
NO SUPER

C.L. STAGE 2
P.I. = 479+88.29
Δ = 10°40'28" LT.
D = 8°0'00.0"
T = 66.91'
L = 133.43'
P.C. = 479+21.38
P.T. = 480+54.81
NO SUPER

C.L. STAGE 2
P.I. = 484+42.71
Δ = 7°56'18" LT.
D = 8°0'00.0"
T = 49.69'
L = 99.23'
P.C. = 483+93.02
P.T. = 484+92.25
NO SUPER

C.L. HWY. 62
P.I. = 487+21.91
Δ = 28°21'36" LT.
D = 2°24'00.0"
T = 603.20'
L = 1181.66'
P.C. = 481+18.71
P.T. = 493+00.37
e = 0.065'/'
Ls = 540.00'

SURVEY BASELINE

C.L. STAGE 2

C.L. HWY. 62

PN:970 PD:SQ CUT HDWL NORTH OF C/L

PN:67 PD:5/8" REBAR W/ 2" ALUMINUM CAP

PN:971 PD:SQ CUT HDWL NORTH OF C/L

PN:801I PD:REBAR & CAP

PN:68 PD:5/8" REBAR W/ 2" ALUMINUM CAP

PN:234 PD:8" SPIKE

PN:233 PD:8" SPIKE

PN:07 PD:NHTD GPS 080033A

PN:972 PD:SQ CUT CENTER OF HOWL S OF C/L

PN:235 PD:8" SPIKE

12/11/2013

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SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	102	282

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16

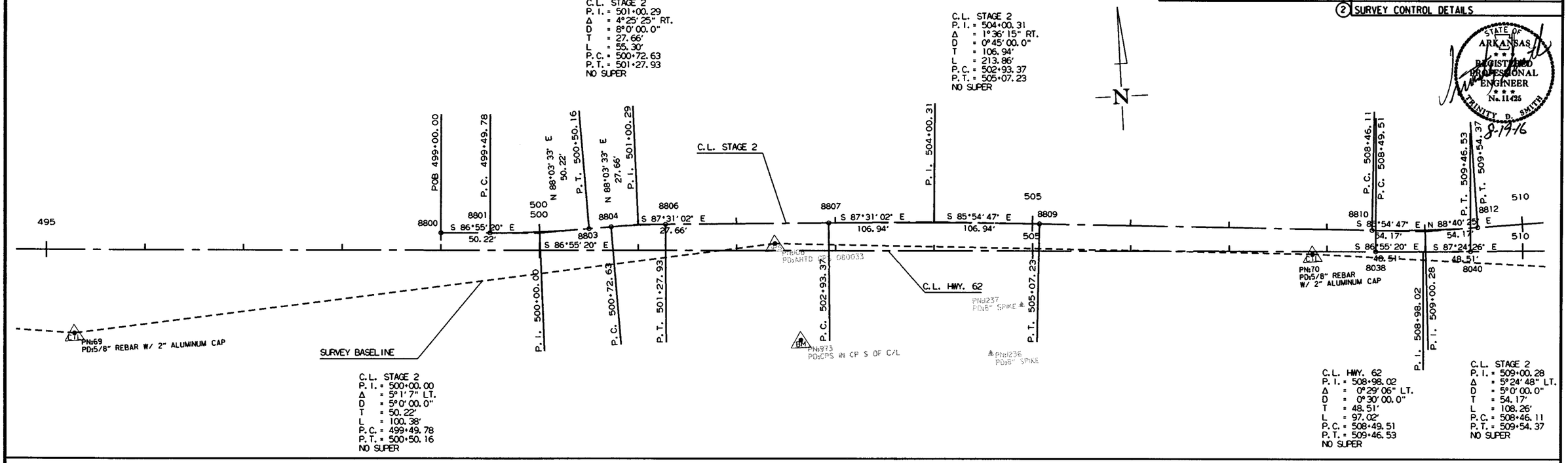
C.L. STAGE 2
P.I. = 501+00.29
Δ = 4°25'25" RT.
D = 8°0'00.0"
T = 27.66'
L = 55.30'
P.C. = 500+72.63
P.T. = 501+27.93
NO SUPER

C.L. STAGE 2
P.I. = 504+00.31
Δ = 1°36'15" RT.
D = 0°45'00.0"
T = 106.94'
L = 213.86'
P.C. = 502+93.37
P.T. = 505+07.23
NO SUPER

C.L. STAGE 2
P.I. = 500+00.00
Δ = 5°1'7" LT.
D = 5°0'00.0"
T = 50.22'
L = 100.38'
P.C. = 499+49.78
P.T. = 500+50.16
NO SUPER

C.L. HWY. 62
P.I. = 508+98.02
Δ = 0°29'06" LT.
D = 0°30'00.0"
T = 48.51'
L = 97.02'
P.C. = 508+49.51
P.T. = 509+46.53
NO SUPER

C.L. STAGE 2
P.I. = 509+00.28
Δ = 5°24'48" LT.
D = 5°0'00.0"
T = 54.17'
L = 108.26'
P.C. = 508+46.11
P.T. = 509+54.37
NO SUPER



C.L. STAGE 2
P.I. = 511+00.57
Δ = 4°30'33" RT.
D = 8°0'00.0"
T = 28.20'
L = 56.37'
P.C. = 510+72.37
P.T. = 511+28.74
NO SUPER

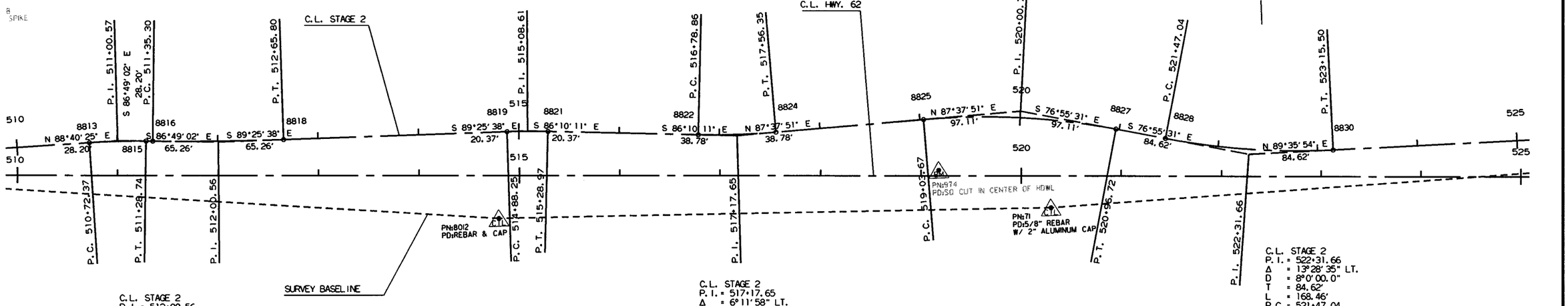
C.L. STAGE 2
P.I. = 515+08.61
Δ = 3°15'28" RT.
D = 8°0'00.0"
T = 20.36'
L = 40.72'
P.C. = 514+88.25
P.T. = 515+28.97
NO SUPER

C.L. STAGE 2
P.I. = 520+00.78
Δ = 15°26'38" RT.
D = 8°0'00.0"
T = 97.11'
L = 193.05'
P.C. = 519+03.67
P.T. = 520+96.72
NO SUPER

C.L. STAGE 2
P.I. = 512+00.56
Δ = 2°36'37" LT.
D = 2°0'00.0"
T = 65.26'
L = 130.50'
P.C. = 511+35.30
P.T. = 512+65.80
NO SUPER

C.L. STAGE 2
P.I. = 517+17.65
Δ = 6°11'58" LT.
D = 8°0'00.0"
T = 38.79'
L = 77.49'
P.C. = 516+78.86
P.T. = 517+56.35
NO SUPER

C.L. STAGE 2
P.I. = 522+31.66
Δ = 13°28'35" LT.
D = 8°0'00.0"
T = 84.62'
L = 168.46'
P.C. = 521+47.04
P.T. = 523+15.50
NO SUPER



SURVEY CONTROL DETAILS

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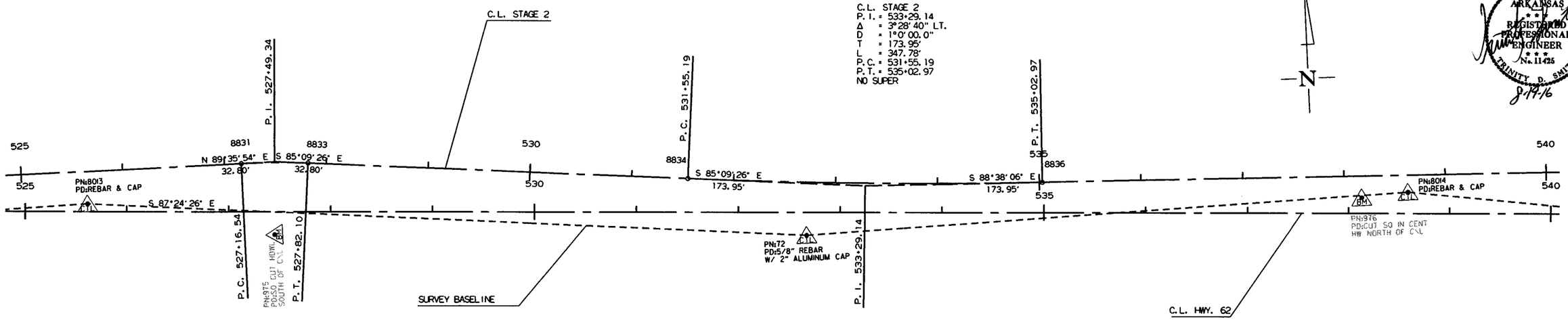
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	103	282

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8.19.16

C.L. STAGE 2
P.I. = 527+49.34
Δ = 5°14'40" RT.
D = 8°0'00.0"
T = 32.80'
L = 65.56'
P.C. = 527+16.54
P.T. = 527+82.10
NO SUPER

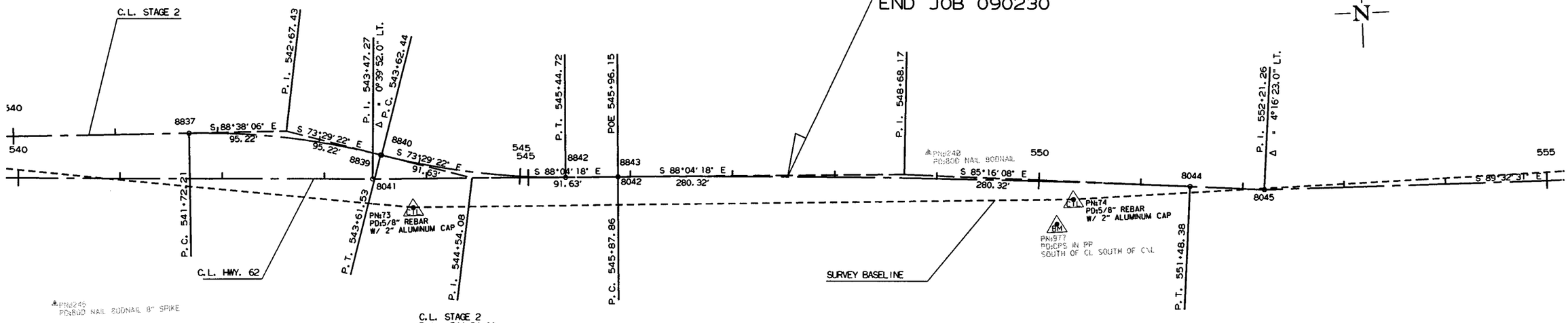
C.L. STAGE 2
P.I. = 533+29.14
Δ = 3°28'40" LT.
D = 1°0'00.0"
T = 173.95'
L = 347.78'
P.C. = 531+55.19
P.T. = 535+02.97
NO SUPER



C.L. STAGE 2
P.I. = 542+67.43
Δ = 15°08'44" RT.
D = 8°0'00.0"
T = 95.22'
L = 189.32'
P.C. = 541+72.21
P.T. = 543+61.53
NO SUPER

C.L. HWY. 62
P.I. = 548+68.17
Δ = 2°48'10" RT.
D = 0°30'00.0"
T = 280.31'
L = 560.52'
P.C. = 545+87.86
P.T. = 551+48.38
NO SUPER

STA. 547+54.00
END JOB 090230



C.L. STAGE 2
P.I. = 544+54.08
Δ = 14°34'56" LT.
D = 8°0'00.0"
T = 91.64'
L = 182.28'
P.C. = 543+62.44
P.T. = 545+44.72
NO SUPER

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SURVEY CONTROL DETAILS

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				6	ARK.			
				JOB NO.		090230	104	282

(2) PLAN AND PROFILE SHEETS

STA. 346+27 - STA. 347+67 IN PLACE
BRIDGE NO. 06397
140' X 68' CLEAR ROADWAY BRIDGE
3-46'-0" COMPOSITE W-BEAM UNIT
RETAIN

STA. 353+56 IN PLACE
24" X 62' C.M. PIPE CULVERT
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
24" X 102' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 860 CU. YDS.

STA. 357+81 IN PLACE
24" X 26' C.M. PIPE CULVERT
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
24" X 40' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 195 CU. YDS.

STATE OF ARKANSAS
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No. 11425
TRINITY D. SMITH
8-19-16

STA. 359+63 IN PLACE
3' X 2' X 158' R.C. BOX CULVERT
PLUG AND ABANDON

(2) 16' GATE

100' TRANSITION — 210' LANE SHIFT

EXIST. R/W — CONST. LIMITS — PROP. R/W

C.L. HWY. 62

S 48°14'16" E — S 47°32'29" E

68'-0" CLEAR BRIDGE WIDTH

52'-0"

38'

30' CONCRETE

PAVED

PARKING

PIN800 PDREBAR & CAP

PIN55 POINTED CAP SET IN BR TOP LOG

PIN55 Ø5/8" REBAR W/ 2" ALUMINUM CAP

P.I. 348+00.00
Δ = 0°41'47"

P.I. 359+15.07

PC353+06.33

STA. 350+00.00
BEGIN JOB 090230
LOG MILE 12.05

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

STA. 351+68 IN PLACE
30" X 30' C.M.
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND INSTALL
30" X 52' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 155 CU. YDS.

P.I. = 359+15.07
Δ = 58°18'16" RT.
D = 5°15'00.0"
T = 608.74'
L = 1110.56'
P.C. = 353+06.33
P.T. = 364+16.89
e = 0.100'/'
Ls = 630'

STA. 357+78 IN PLACE
DBL. 24" X 26' C.M. PIPE CULVERT
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND INSTALL
DBL. 42" X 29" X 30' ARCH PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 45 CU. YDS.

STA. 359+76 CONSTRUCT
44" X 27" X 208' ARCH R.C. PIPE CULVERT
ON A 45° LT. FWD. SKEW
WITH FES LT. & RT.
Q50= 74 CFS D.A. = 30 ACRES
44" X 27" R.C. PIPE (CLASS III)
(TYPE 3 BEDDING)= 208 LIN. FT.
44" X 27" FLARED END SECTION= 2 EACH

16' GATE

PAVED — 45° — 60'

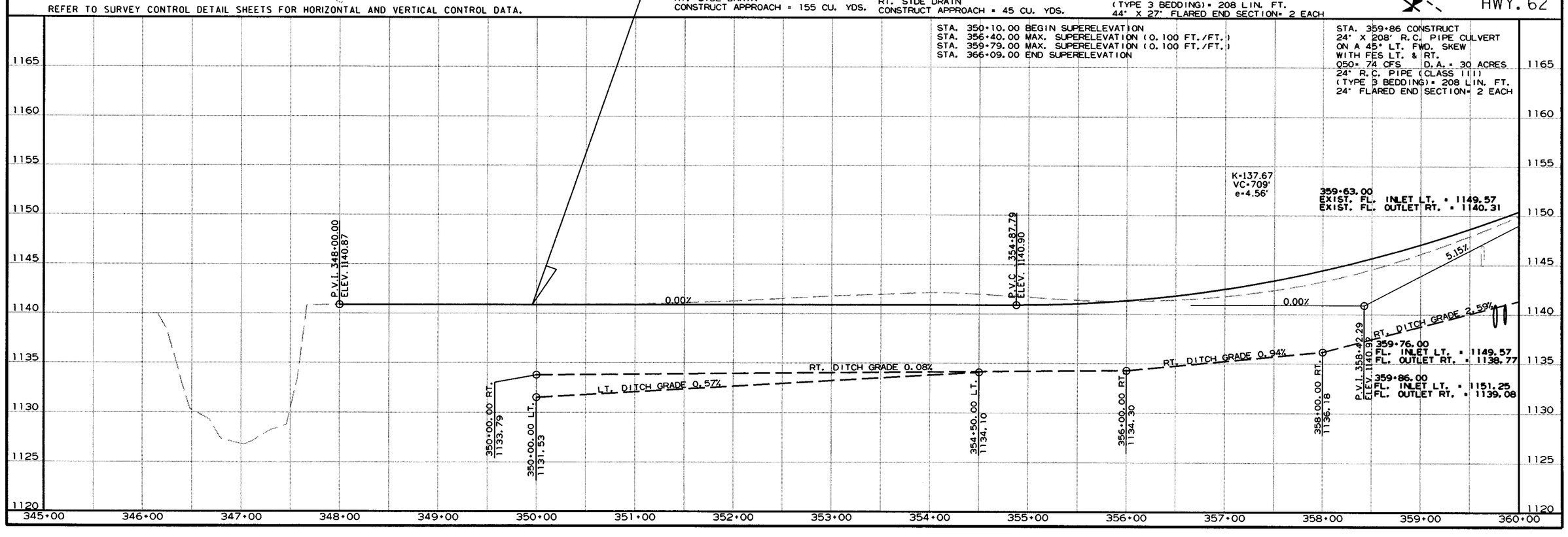
PIN800 PDREBAR & CAP

PIN55 Ø5/8" REBAR W/ 2" ALUMINUM CAP IN TOP OF CURB

HWY. 62

STA. 350+10.00 BEGIN SUPERELEVATION
STA. 356+40.00 MAX. SUPERELEVATION (0.100 FT./FT.)
STA. 359+79.00 MAX. SUPERELEVATION (0.100 FT./FT.)
STA. 366+09.00 END SUPERELEVATION

STA. 359+86 CONSTRUCT
24" X 208' R.C. PIPE CULVERT
ON A 45° LT. FWD. SKEW
WITH FES LT. & RT.
Q50= 74 CFS D.A. = 30 ACRES
24" R.C. PIPE (CLASS III)
(TYPE 3 BEDDING)= 208 LIN. FT.
24" FLARED END SECTION= 2 EACH



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				6	ARK.			
				JOB NO.		090230	105	282

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16

STA. 360+13 CONSTRUCT APPROACH LT. = 40 CU. YD.

STA. 359+00 TO STA. 370+50 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 808.83 SQ. YD.

STA. 367+00 - INSTALL
22" X 14" X 95' TEMPORARY
ARCH PIPE CULVERT

STA. 367+29 IN PLACE
18" X 32' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE

STA. 368+70 INSTALL
18" X 42' TEMPORARY PIPE CULVERT
LT. SIDE DRAIN

STA. 369+00 IN PLACE
18" X 44' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
AT STA. 368+70
18" X 42' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 165 CU. YDS.
UNCLASSIFIED EXCAVATION = 1000 CU. YDS.

P.I. = 376+94.04
Δ = 78°33'54" LT.
D = 5°15'00.0"
T = 892.70'
L = 1496.48'
P.C. = 368+01.34
P.T. = 382+97.82
e = 0.100'/'
Ls = 630'

STA. 373+00 CONSTRUCT
24" X 130' R.C. PIPE CULVERT
WITH FES LT. & RT.
Q50 = 3.08 CFS D.A. = 1.0 ACRES
24" R.C. PIPE (CLASS III)
(TYPE 3 BEDDING) = 130 LIN. FT.
24" FLARED END SECTION = 2 EACH

P.I. = 359+15.07
Δ = 58°18'16" RT.
D = 5°15'00.0"
T = 608.74'
L = 1110.56'
P.C. = 353+06.33
P.T. = 364+16.89
e = 0.100'/'
Ls = 630'

STA. 372+00.00 HWY. 62 =
STA. 10+00.00 CO. RD. 916
Δ=90°00'00"

STA. 363+00 TO STA. 368+00 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 351.67 SQ. YD.

STA. 365+59 IN PLACE
24" X 107' C.M.
PIPE CULVERT RT. SIDE DRAIN
REMOVE

STA. 368+63 IN PLACE
18" X 37' R.C. PIPE CULVERT
PLUG & ABANDON

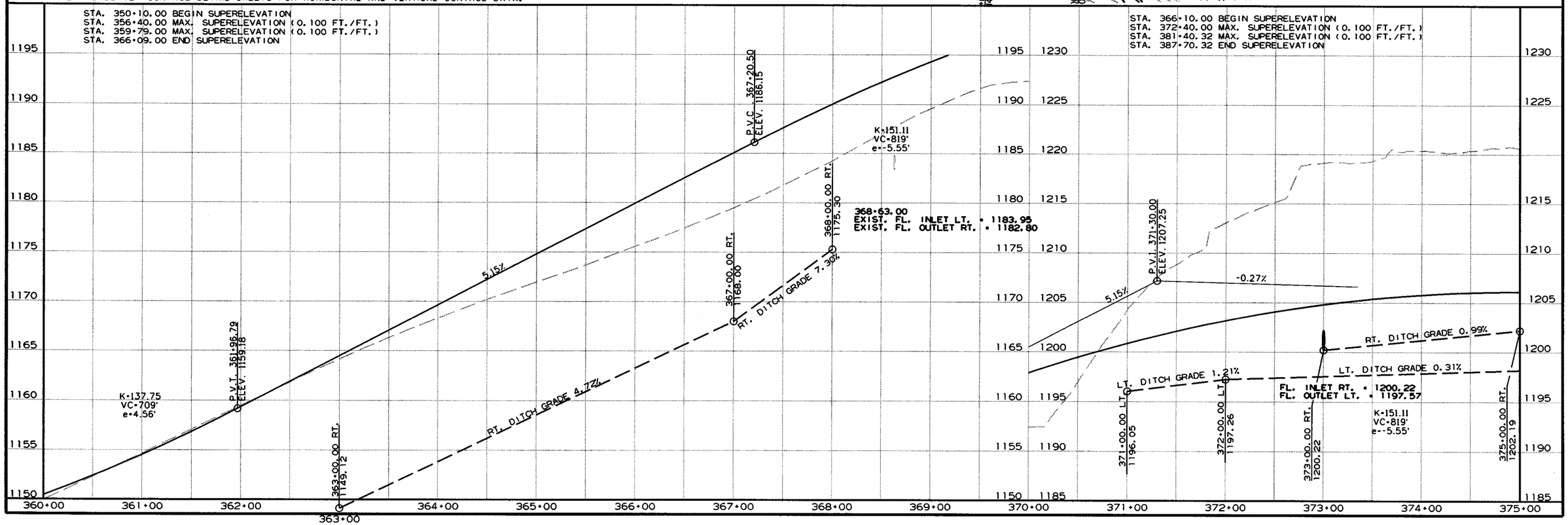
OBLITERATION OF EXISTING ROADWAY

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

HWY. 62

STA. 350+10.00 BEGIN SUPERELEVATION
STA. 356+40.00 MAX. SUPERELEVATION (0.100 FT./FT.)
STA. 359+79.00 MAX. SUPERELEVATION (0.100 FT./FT.)
STA. 366+09.00 END SUPERELEVATION

STA. 366+10.00 BEGIN SUPERELEVATION
STA. 372+40.00 MAX. SUPERELEVATION (0.100 FT./FT.)
STA. 381+40.32 MAX. SUPERELEVATION (0.100 FT./FT.)
STA. 387+70.32 END SUPERELEVATION



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				6	ARK.			
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(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-22-16

STA. 380+00 TO STA. 382+00
LT. OF C.L.
CONCRETE DITCH PAVING
(TYPE B) = 140.67 SQ. YD.

STA. 380+59 INSTALL
24" X 82' TEMPORARY PIPE CULVERT
ON LT.

P. I. = 376+94.04
Δ = 78° 33' 54" LT.
D = 5° 15' 00.0"
T = 892.70'
L = 1496.48'
P.C. = 368+01.34
P.T. = 382+97.82
e = 0.100'
Ls = 630'

STA. 379+84 CONSTRUCT
APPROACH ON LT. = 80 CU. YDS.

STA. 380+22 IN PLACE
12" X 24' R.C. PIPE CULVERT
ON LT.
REMOVE

STA. 380+61 IN PLACE
12" X 15' R.C. PIPE CULVERT
ON LT.
REMOVE

STA. 382+00 INSTALL
18" X 30' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 1010 CU. YDS.

STA. 383+25 INSTALL
DITCH BLOCK ON LT. = 12 CU. YD.

STA. 383+33 TO STA. 390+00 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 469.12 SQ. YD.

STA. 383+32 INSTALL
24" X 56' TEMPORARY PIPE CULVERT
ON LT.

STA. 387+70 IN PLACE
18" X 66' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 110' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 170 CU. YDS.

STA. 388+27 IN PLACE
12" X 18" X 26' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE
CONSTRUCT APPROACH = 90 CU. YDS.

CURB:

STA.	STA.	SIDE	TYPE	LIN. FT.
385+45	389+45	RT.	B-1	400

16' GATE

P. I. = 376+94.04

OBLITERATION OF EXISTING ROADWAY

STA. 377+33 IN PLACE
18" X 72' R.C. PIPE CULVERT
ON RT.
REMOVE

STA. 378+59 IN PLACE
15" X 24' C.M.
PIPE CULVERT RT. SIDE DRAIN
REMOVE

STA. 380+59 IN PLACE
24" X 52' R.C. PIPE CULVERT
REMOVE

STA. 380+76 CONSTRUCT
24" X 172' R.C. PIPE CULVERT
WITH FES LT. & RT.
Q50 = 36 CFS D.A. = 15 ACRES
24" R.C. PIPE (CLASS IV)
(TYPE 3 BEDDING) = 172 LIN. FT.
24" FLARED END SECTION = 2 EACH

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

STA. 385+00 TO STA. 389+75 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 334.08 SQ. YD.

STA. 386+60 IN PLACE
21" X 15" X 52' C.M.
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON RT. = 75 CU. YDS.

STA. 387+00 CONSTRUCT
DROP INLET ON RT.
W/ 3 GRATES AND 18" X 206'
R.C. PIPE CULVERT W/ FES
(CLASS III) (TYPE 3 BEDDING)
TYPE ST (3' X 4.5')
H=3'-8"

HWY. 62

STA. 375+00 TO STA. 377+00 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 140.67 SQ. YD.

STA. 366+10.00 BEGIN SUPERELEVATION
STA. 372+40.00 MAX. SUPERELEVATION (0.100 FT./FT.)
STA. 381+40.32 MAX. SUPERELEVATION (0.100 FT./FT.)
STA. 387+70.32 END SUPERELEVATION

STA. 382+60 CONSTRUCT
36" X 238' R.C. PIPE CULVERT
WITH FES LT. & RT.
ON A 43° LT. FWD. SKEW
Q50 = 44 CFS D.A. = 17 ACRES
36" R.C. PIPE (CLASS IV)
(TYPE 3 BEDDING) = 238 LIN. FT.
36" FLARED END SECTION = 2 EACH

STA. 383+32 IN PLACE
3' X 2' X 50' R.C. BOX CULVERT
PLUG & ABANDON

STA. 383+66 CONSTRUCT
APPROACH RT. = 1635 CU. YDS.

NOTE: DRIVEWAY CONNECTION OUTSIDE OF R.O.W.
SHALL BE CONSTRUCTED BY PROPERTY OWNER.

STA. 387+00
TOP ELEV.=1242.25
F.L. ELEV.=1238.58

STA. 387+34 IN PLACE
21" X 15" X 45' C.M.
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON RT. = 60 CU. YDS.

STA. 388+07 IN PLACE
18" X 26' R.C.
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON RT. = 55 CU. YDS.

K=136.20
VC=854'
e=6.70'

P.V.T. 375+39.50
ELEV. 1206.12

P.V.C. 376+34.32
ELEV. 1205.86

377+00.00 RT.
1208.28

-0.27%

RT. DITCH GRADE 3.05%

375+00.00 RT.
1202.19

LT. DITCH GRADE 0.31%

LT. DITCH GRADE 0.80%

376+00.00 LT.
1198.50

LT. DITCH GRADE 1.31%

378+00.00 LT.
1200.09

380+00.00 LT.
1203.00

LT. DITCH GRADE -4.05%

379+00.00 LT.
1201.40

FL. INLET LT. = 1200.00
FL. OUTLET RT. = 1196.74

380+59.00
EXIST. FL. INLET LT. = 1200.55
EXIST. FL. OUTLET RT. = 1197.60

P.V.I. 380+61.37
ELEV. 1204.69

380+74.00 LT.
1200.00

380+79.00 LT.
1200.00

LT. DITCH GRADE 8.25%

382+00.00 LT.
1210.00

LT. DITCH GRADE 0.09%

383+33.00 LT.
1210.12

LT. DITCH GRADE 9.77%

385+00.00 LT.
1226.43

P.V.T. 384+88.37
ELEV. 1230.33

P.V.C. 385+37.38
ELEV. 1233.27

6.00%

18" X 206' R.C. PIPE @ 4.33%

INVERT F.L.=1229.65

K=151.26
VC=631'
e=-3.29'

383+32.00
EXIST. FL. INLET LT. = 1208.76
EXIST. FL. OUTLET RT. = 1207.90

FL. INLET LT. = 1210.12
FL. OUTLET RT. = 1196.57

P.V.I. 388+52.88
ELEV. 1252.22

6.00%

1.83%

K=151.32
VC=631'
e=-3.29'

RT. DITCH GRADE -0.19%

389+75.00 RT.
1246.76

5/19/2015

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				6	ARK.			
				JOB NO.		090230	107	282

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-17-16

STA. 390+51 IN PLACE
18" X 34' R.C. PIPE CULVERT
REMOVE AND CONSTRUCT
24" X 120' R.C. PIPE CULVERT
WITH FES LT. AND RT.
Q50= 10 CFS D.A.= 4 ACRES
24" R.C. PIPE CULVERT (CLASS IV)
(TYPE 3 BEDDING)= 120 LIN. FT.
24" FES = 2 EACH

STA. 392+08 IN PLACE
18" X 24' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 42' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 105 CU. YDS.

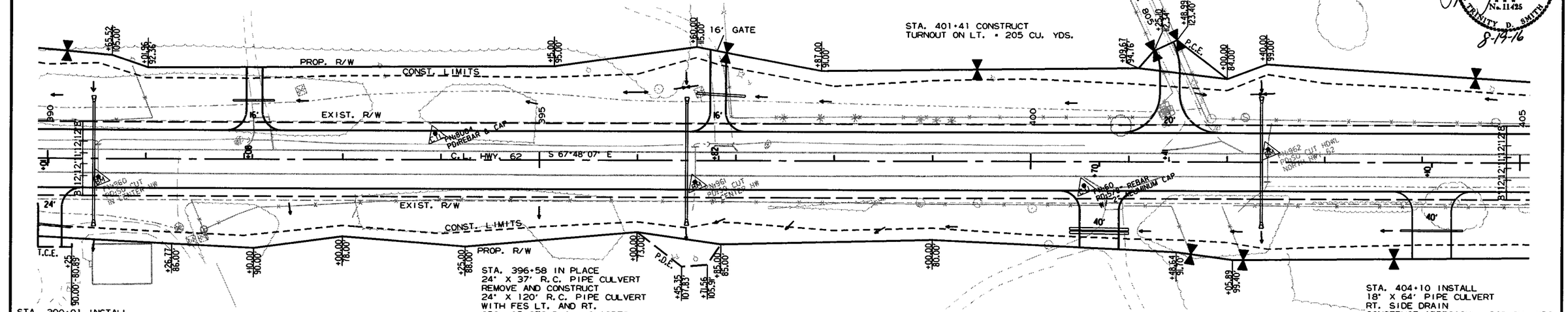
STA. 396+00 TO STA. 398+00 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE B)=140.67 SQ. YD.

STA. 396+82 IN PLACE
12" X 24" X 27' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
24" X 56' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 275 CU. YDS.

STA. 402+00 TO STA. 402+41 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE B)=28.84 SQ. YD.

STA. 402+41 IN PLACE
24" X 34' R.C. PIPE CULVERT
REMOVE AND CONSTRUCT
24" X 122' R.C. PIPE CULVERT
WITH FES LT. AND RT.
Q50= 26 CFS D.A.= 10 ACRES
24" R.C. PIPE CULVERT (CLASS III)
(TYPE 3 BEDDING) = 122 LIN. FT.
24" FES = 2 EACH

STA. 401+41 CONSTRUCT
TURNOUT ON LT. = 205 CU. YDS.



STA. 390+01 INSTALL
18" X 42' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 100 CU. YDS.

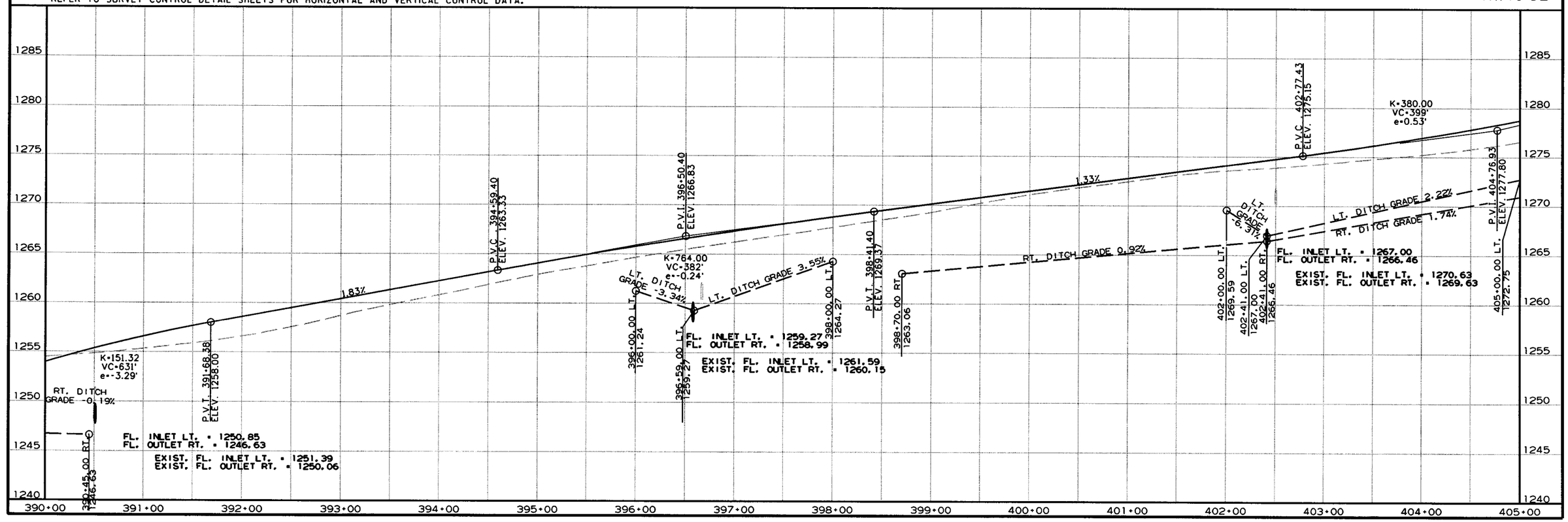
STA. 396+58 IN PLACE
24" X 37' R.C. PIPE CULVERT
REMOVE AND CONSTRUCT
24" X 120' R.C. PIPE CULVERT
WITH FES LT. AND RT.
Q50= 15 CFS D.A.= 6 ACRES
24" R.C. PIPE CULVERT (CLASS III)
(TYPE 3 BEDDING) = 120 LIN. FT.
24" FES = 2 EACH

STA. 400+70 INSTALL
DBL. 30" X 60' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 160 CU. YDS.

STA. 404+10 INSTALL
18" X 64' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 240 CU. YDS.

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

HWY. 62



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				6	ARK.			
				JOB NO.		090230	108	282

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-19-16

STA. 405+00 TO STA. 406+00 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 70.33 SQ. YD.

STA. 409+00 TO STA. 410+00 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 70.33 SQ. YD.

STA. 415+00 TO STA. 417+00 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 140.67 SQ. YD.

STA. 408+41 APPROACH
ON LT. = 130 CU. YDS.

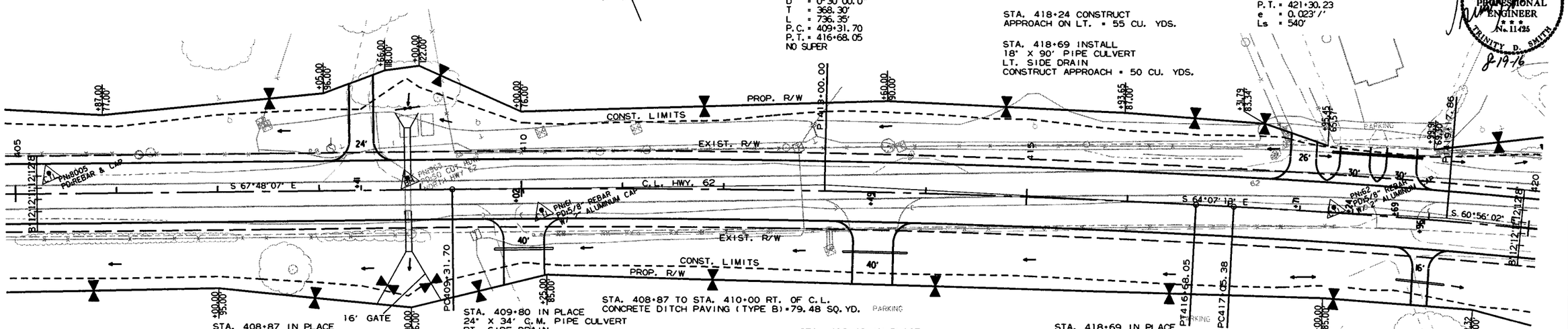
P. I. = 413+00.00
Δ = 3°40'54" RT.
D = 0°30'00.0"
T = 368.30'
L = 736.35'
P.C. = 409+31.70
P.T. = 416+68.05
NO SUPER

STA. 417+71 CONSTRUCT
APPROACH ON LT. = 75 CU. YDS.

STA. 418+24 CONSTRUCT
APPROACH ON LT. = 55 CU. YDS.

STA. 418+69 INSTALL
18" X 90' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 50 CU. YDS.

P. I. = 419+17.86
Δ = 3°11'11" RT.
D = 0°45'00.0"
T = 212.48'
L = 424.85'
P.C. = 417+05.38
P.T. = 421+30.23
e = 0.023'/'
Ls = 540'



STA. 408+87 IN PLACE
6' X 6' X 33' R.C. BOX CULVERT
REMOVE HEADWALLS LT. & RT.
RETAIN AND EXTEND 42' RT. & 51' LT.
WITH 3:1 WINGS RT.
TO AN OVERALL LENGTH OF 121'
Q50= 33 CFS D.A. = 19 ACRES

STA. 409+80 IN PLACE
24" X 34' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
STA. 410+02
24" X 58' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 120 CU. YDS.

STA. 408+87 TO STA. 410+00 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 79.48 SQ. YD.

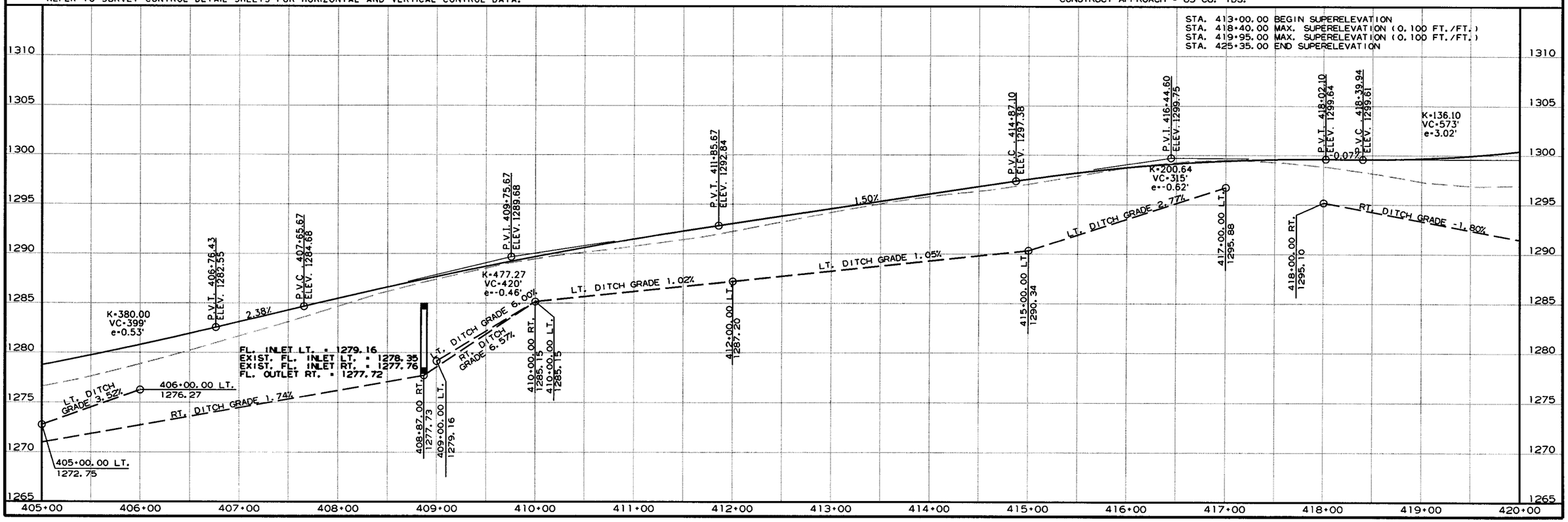
STA. 413+49 IN PLACE
21" X 15" X 73' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 64' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 170 CU. YDS.

STA. 418+69 IN PLACE
21" X 15" X 73' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
STA. 418+96
18" X 38' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 85 CU. YDS.

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

HWY. 62

STA. 413+00.00 BEGIN SUPERELEVATION
STA. 418+40.00 MAX. SUPERELEVATION (0.100 FT./FT.)
STA. 419+95.00 MAX. SUPERELEVATION (0.100 FT./FT.)
STA. 425+35.00 END SUPERELEVATION



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(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16

STA. 420+32 IN PLACE
8' X 4' X 35' R.C. BOX CULVERT
REMOVE HEADWALLS LT. & RT.
RETAIN AND EXTEND 78' RT. & 22' LT.
WITH 3:1 WINGS
TO AN OVERALL LENGTH OF 130'
Q50= 51 CFS D.A. = 22 ACRES

CHANNEL CHANGE = 59 CU. YD.

P.I. = 419+17.86
Δ = 3°11'11" RT.
D = 0°45'00.0"
T = 212.48'
L = 424.85'
P.C. = 417+05.38
P.T. = 421+30.23
e = 0.023'/'
Ls = 540'

STA. 421+00 TO STA. 427+00 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE B)=422.00 SQ. YD.

STA. 423+10 IN PLACE
18' X 52' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE

STA. 424+11 IN PLACE
21' X 15' X 4' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE

STA. 425+00 IN PLACE
21' X 15' X 52' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE

STA. 426+33 IN PLACE
21' X 15' X 26' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE
STA. 426+24 INSTALL
18' X 32' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 50 CU. YDS.

STA. 426+00 INSTALL
18' X 66' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 220 CU. YDS.

STA. 422+00 TO STA. 426+00 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE B)=281.33 SQ. YD.

STA. 427+86 INSTALL
18' X 40' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 95 CU. YDS.

STA. 428+90 TO STA. 430+00 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE B)=77.37 SQ. YD.

STA. 428+50 CONSTRUCT
APPROACH ON RT. = 170 CU. YDS.

STA. 429+29 IN PLACE
21' X 15' X 35' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE

STA. 430+50 INSTALL
18' X 70' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 570 CU. YDS.

STA. 429+66 INSTALL
18' X 56' TEMPORARY PIPE CULVERT
LT. SIDE DRAIN

STA. 431+50 TO STA. 435+00 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE B)=246.17 SQ. YD.

P.I. = 430+96.87
Δ = 3°17'24" RT.
D = 0°30'00.0"
T = 329.08'
L = 657.98'
P.C. = 427+67.79
P.T. = 434+25.77
NO SUPER

EQUATION
STA. 434+96.69=
STA. 435+00.00

STA. 433+92 IN PLACE
21' X 15' X 73' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18' X 52' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 115 CU. YDS.

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

HWY. 62

STA. 413+00.00 BEGIN SUPERELEVATION
STA. 418+40.00 MAX. SUPERELEVATION (0.100 FT./FT.)
STA. 419+95.00 MAX. SUPERELEVATION (0.100 FT./FT.)
STA. 425+35.00 END SUPERELEVATION

STA. 431+36 IN PLACE
6' X 6' X 33' R.C. BOX CULVERT
REMOVE AND CONSTRUCT
6' X 6' X 145' R.C. BOX CULVERT
WITH 3:1 WINGS LT. & RT.
Q50= 21 CFS D.A. = 8 ACRES

STA. 433+00 TO STA. 434+25 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE B)=87.92 SQ. YD.

STA. 434+45 CONSTRUCT
DROP INLET ON RT.
W/3 GRATES AND 18" X 28"
R.C. PIPE CULVERT ON 54° LT. FWD. SKEW
(CLASS III) (TYPE 3 BEDDING) WITH FES
TYPE ST (3' X 4.5')
H=4'-10"

STA. 434+45
TOP ELEV.=1327.86
F.L. ELEV.=1323.00

EQUATION
STA. 434+96.69=
STA. 435+00.00

P.I. 419+17.86
P.I. 421+26.44
P.I. 424+12.94
P.I. 424+25.36
P.I. 427+48.86
P.I. 430+72.36
P.I. 430+97.22
P.I. 432+76.22
P.I. 434+55.22
P.C. 417+05.38
P.T. 421+30.23
P.C. 424+11.28
P.T. 424+25.36
P.C. 427+67.79
P.T. 434+25.77
K-136.10
VC-573'
e-3.02'
K-151.17
VC-647'
e--3.47'
K-136.12
VC-358'
e-1.18'
-0.07%
RT. DITCH GRADE 2.90%
RT. DITCH GRADE 5.32%
RT. DITCH GRADE -5.57%
LT. DITCH GRADE -2.53%
LT. DITCH GRADE 3.37%
RT. DITCH GRADE 4.91%
2.49%
4.14%
-0.14%
18" X 28' R.C. PIPE @ 4.7%
18" X 52' R.C. PIPE @ 2.6%
FL. INLET RT. = 1291.09
EXIST. FL. INLET RT. = 1290.33
EXIST. FL. OUTLET LT. = 1289.80
FL. OUTLET LT. = 1289.80
FL. INLET LT. = 1313.78
FL. OUTLET RT. = 1304.87
EXIST. FL. INLET LT. = 1308.95
EXIST. FL. OUTLET RT. = 1308.37
INVERT F.L.=1321.68

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(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16

STA. 435+78 IN PLACE
21" X 15" X 26' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE

STA. 437+59 IN PLACE
21" X 15" X 25' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE

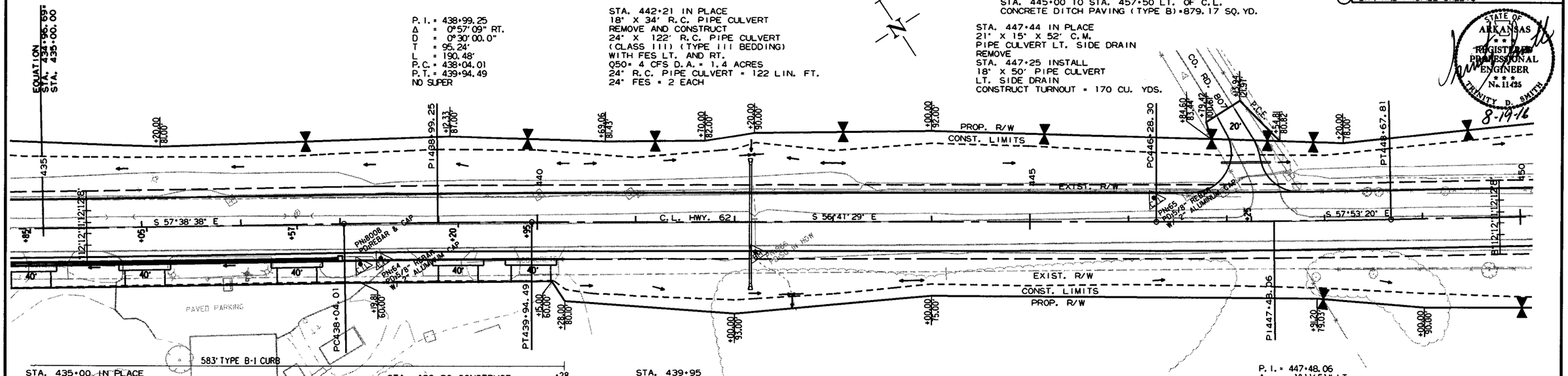
STA. 441+00 TO STA. 442+21 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 85.10 SQ. YD.

P. I. = 438+99.25
Δ = 0°57'09" RT.
D = 0°30'00.0"
T = 95.24'
L = 190.48'
P.C. = 438+04.01
P.T. = 439+94.49
NO SUPER

STA. 442+21 IN PLACE
18" X 34' R.C. PIPE CULVERT
REMOVE AND CONSTRUCT
24" X 122' R.C. PIPE CULVERT
(CLASS III) (TYPE III BEDDING)
WITH FES LT. AND RT.
Q50 = 4 CFS D.A. = 1.4 ACRES
24" R.C. PIPE CULVERT = 122 LIN. FT.
24" FES = 2 EACH

STA. 445+00 TO STA. 457+50 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 879.17 SQ. YD.

STA. 447+44 IN PLACE
21" X 15" X 52' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE
STA. 447+25 INSTALL
18" X 50' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT TURNOUT = 170 CU. YDS.



STA. 435+00 IN PLACE
18" X 40' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE

STA. 434+85 CONSTRUCT
APPROACH RT. = 5 CU. YDS.

STA. 436+05 CONSTRUCT
APPROACH ON RT. = 10 CU. YDS.

STA. 437+57 CONSTRUCT
APPROACH ON RT. = 5 CU. YDS.

STA. 439+20 CONSTRUCT
APPROACH ON RT. = 5 CU. YDS.

CURB: STA.	STA.	SIDE	TYPE	LIN. FT.
434+42	440+28	RT.	B-1	583

STA. 439+95
CONSTRUCT APPROACH RT. = 5 CU. YDS.

STA. 440+00 IN PLACE
18" X 40' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE

STA. 445+00 TO STA. 454+25 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 650.58 SQ. YD.

P. I. = 447+48.06
Δ = 1°11'51" LT.
D = 0°30'00.0"
T = 119.76'
L = 239.51'
P.C. = 446+28.30
P.T. = 448+67.81
NO SUPER

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

HWY. 62

STA. 438+00 CONSTRUCT
DROP INLET ON RT.
W/3 GRATES AND 18" X 352'
R.C. PIPE CULVERT
(CLASS III) (TYPE 3 BEDDING)
CONNECT TO DROP INLET
AT STA. 434+45 RT.
TYPE ST (3' X 4.5')
H=3'-8"

STA. 438+00
TOP ELEV.=1335.91
F.L. ELEV.=1332.27

P.V.C. 436+55.64
ELEV. 1333.88

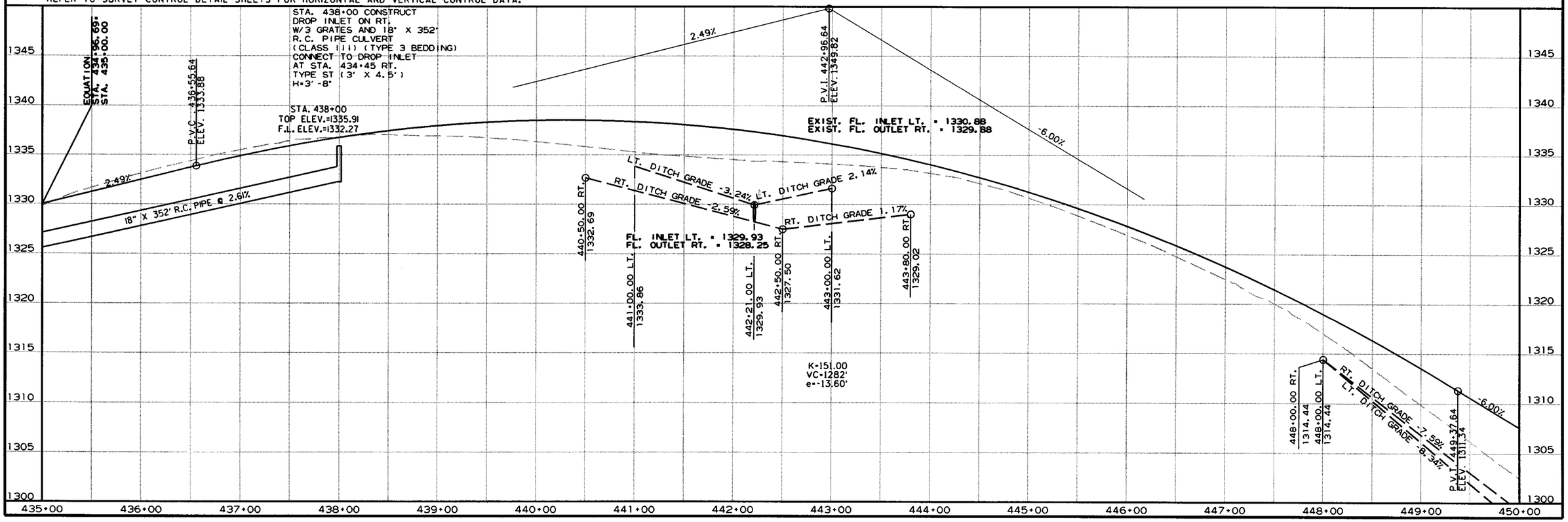
P.V.I. 442+96.64
ELEV. 1349.82

EXIST. FL. INLET LT. = 1330.88
EXIST. FL. OUTLET RT. = 1329.88

FL. INLET LT. = 1329.93
FL. OUTLET RT. = 1328.25

K=151.00
VC=1282'
e=-13.60'

P.V.T. 449+37.64
ELEV. 1311.34



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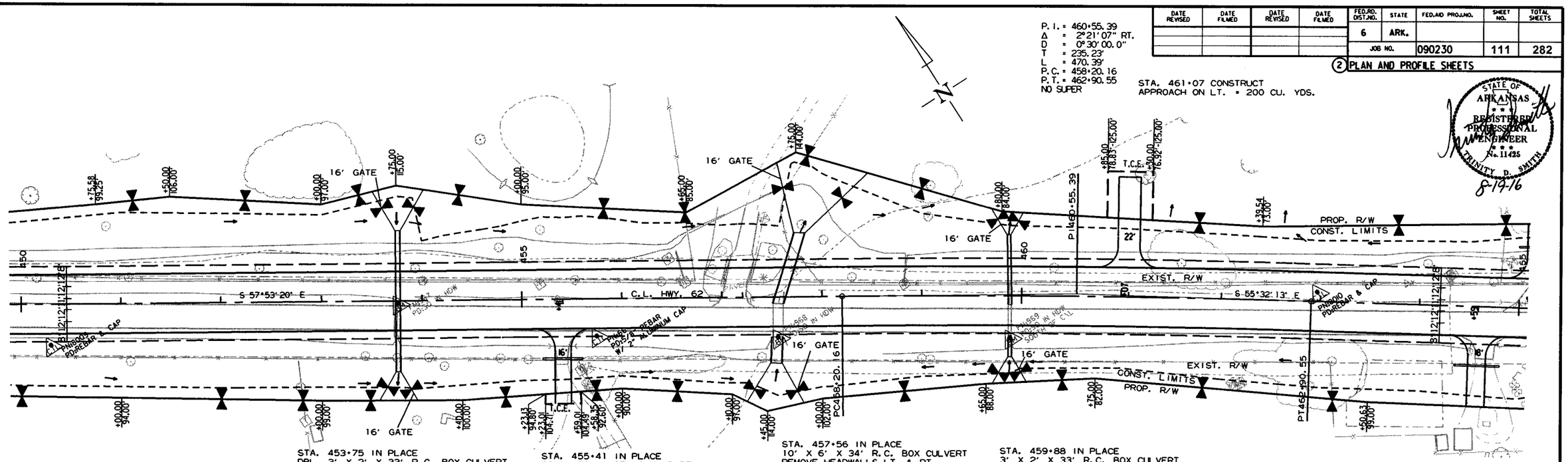
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(2) PLAN AND PROFILE SHEETS

P. I. = 460+55.39
Δ = 2°21'07" RT.
D = 0°30'00.0"
T = 235.23'
L = 470.39'
P.C. = 458+20.16
P.T. = 462+90.55
NO SUPER

STA. 461+07 CONSTRUCT APPROACH ON LT. = 200 CU. YDS.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16



STA. 453+75 IN PLACE
DBL. 3' X 2' X 33' R.C. BOX CULVERT
REMOVE AND CONSTRUCT
4' X 3' X 141' R.C. BOX CULVERT
WITH 3:1 WINGS LT. & RT.
Q50= 10 CFS D.A. = 4 ACRES

STA. 455+41 IN PLACE
28" X 20" X 25' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
24" X 40' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 140 CU. YDS.

STA. 457+56 IN PLACE
10' X 6' X 34' R.C. BOX CULVERT
REMOVE HEADWALLS LT. & RT.
RETAIN AND EXTEND 28' RT. &
ON A 15° LT. FWD. SKEW 76' LT.
WITH 3:1 WINGS RT.
TO AN OVERALL LENGTH OF 133'
Q50= 492 CFS D.A. = 200 ACRES

STA. 459+88 IN PLACE
3' X 2' X 33' R.C. BOX CULVERT
REMOVE HEADWALLS LT. & RT.
RETAIN AND EXTEND 21' RT. & 71' LT.
WITH 3:1 WINGS LT. & RT.
TO AN OVERALL LENGTH OF 122'
Q50= 8 CFS D.A. = 3 ACRES

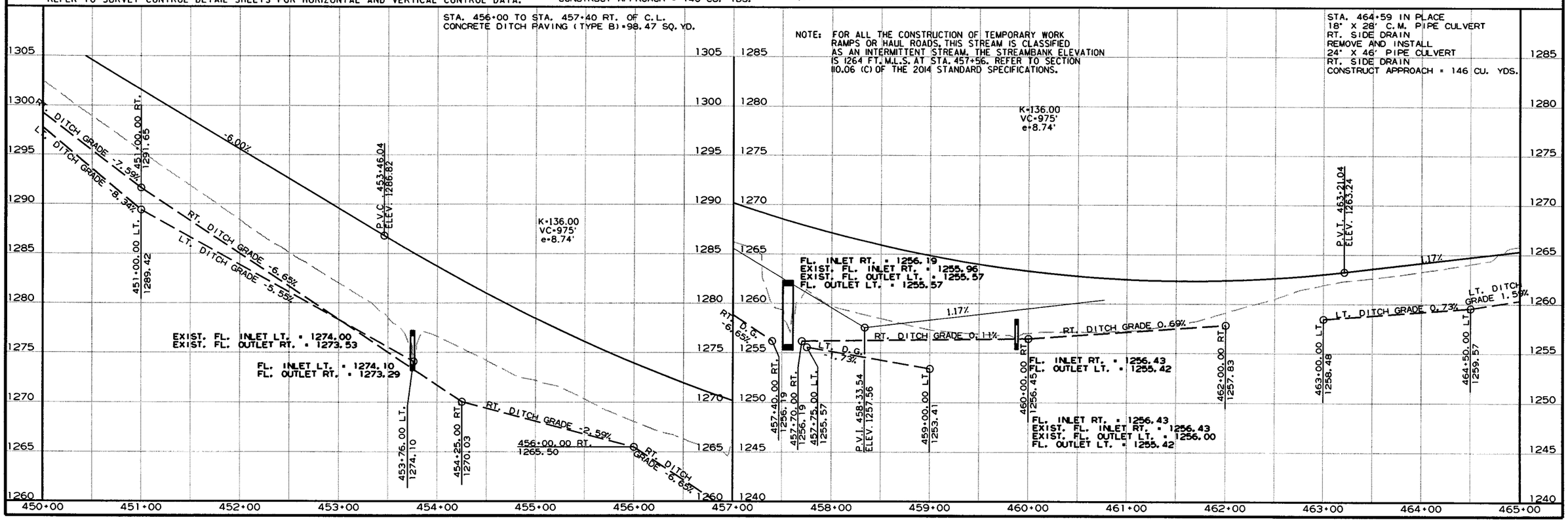
REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

HWY. 62

STA. 456+00 TO STA. 457+40 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 98.47 SQ. YD.

NOTE: FOR ALL THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS, THIS STREAM IS CLASSIFIED AS AN INTERMITTENT STREAM. THE STREAMBANK ELEVATION IS 1264 FT. M.L.S. AT STA. 457+56. REFER TO SECTION 110.06 (C) OF THE 2014 STANDARD SPECIFICATIONS.

STA. 464+59 IN PLACE
18" X 28' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
24" X 46' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 146 CU. YDS.



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(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16

STA. 465+15 IN PLACE
18" X 40' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 32' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 45 CU. YDS.

STA. 466+27 CONSTRUCT
APPROACH ON LT. = 60 CU. YDS.

STA. 469+85 CONSTRUCT
APPROACH ON LT. = 25 CU. YDS.

STA. 470+49 IN PLACE
21" X 15" X 40' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE

STA. 470+49 IN PLACE
21" X 15" X 40' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE

STA. 472+20 CONSTRUCT
APPROACH ON LT. = 90 CU. YDS.

STA. 472+56 CONSTRUCT
DROP INLET ON LT.
W/3 GRATES AND 18" X 20'
R.C. PIPE CULVERT ON 15° LT. FWD. SKEW
(CLASS III) (TYPE 3 BEDDING)
WITH FES
TYPE ST (3' X 4.5')
H=3'-8"

CURB:

STA.	STA.	SIDE	TYPE	LIN. FT.
469+00	472+60	RT.	B-1	360

360' TYPE B-1 CURB

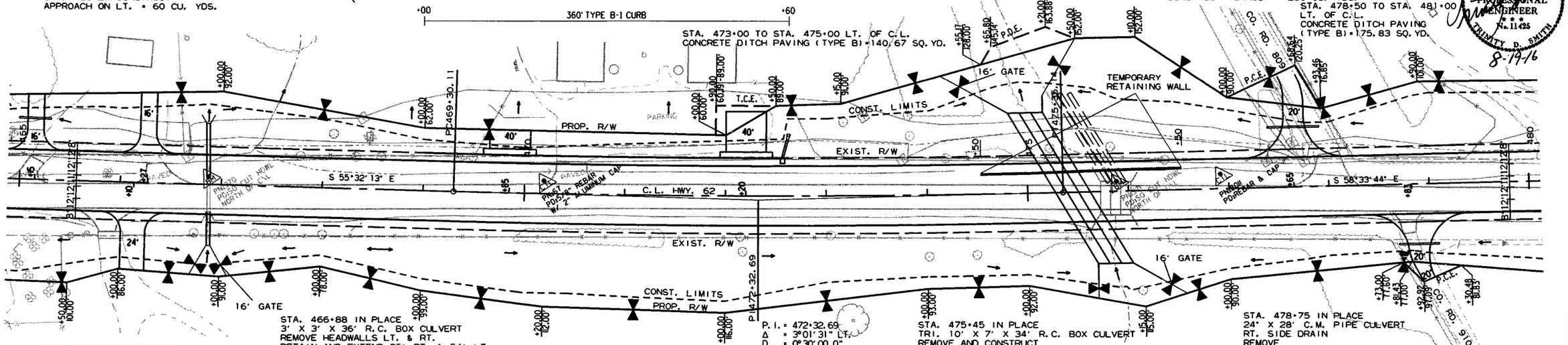
STA. 473+00 TO STA. 475+00 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 140.67 SQ. YD.

STA. 475+45 INSTALL
TRI. 48" X 104'
TEMPORARY PIPE CULVERT
ON A 30° RT. FWD. SKEW

STA. 477+65 INSTALL
18" X 48' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT TURNOUT = 280 CU. YDS.

STA. 478+00 IN PLACE
21" X 15" X 52' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE

STA. 478+50 TO STA. 481+00 RT. OF C.L.
CONCRETE DITCH PAVING
(TYPE B) = 175.83 SQ. YD.



STA. 466+10 CONSTRUCT
APPROACH ON RT. = 65 CU. YDS.

STA. 466+88 IN PLACE
3' X 3' X 36' R.C. BOX CULVERT
REMOVE HEADWALLS LT. & RT.
RETAIN AND EXTEND 35' RT. & 54' LT.
WITH 3:1 WINGS RT.
TO AN OVERALL LENGTH OF 121'
Q50= 72 CFS D.A. = 31 ACRES

STA. 474+00 TO STA. 475+60 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 112.53 SQ. YD.

P.I. = 472+32.69
Δ = 3°01' 31" LT.
D = 0°30' 00.0"
T = 302.58'
L = 605.03'
P.C. = 469+30.11
P.T. = 475+35.14
NO SUPER

STA. 475+45 IN PLACE
TRI. 10' X 7' X 34' R.C. BOX CULVERT
REMOVE AND CONSTRUCT
TRI. 10' X 7' X 175' R.C. BOX CULVERT
30° RT. FWD. SKEW
WITH 3:1 WINGS LT. & RT.
Q50= 630 CFS D.A. = 320 ACRES
SPAN=37'-6"

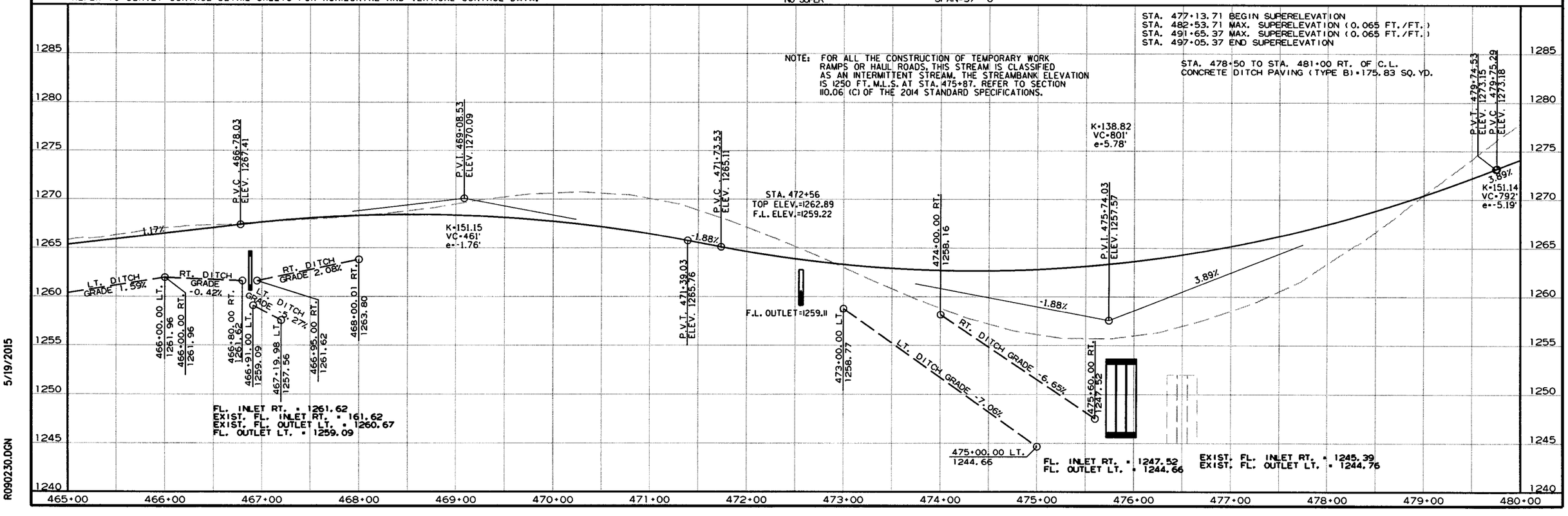
STA. 478+75 IN PLACE
24" X 28' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE
STA. 478+83 INSTALL
24" X 44' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT TURNOUT = 90 CU. YDS.

HWY. 62

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

STA. 477+13.71 BEGIN SUPERELEVATION
STA. 482+53.71 MAX. SUPERELEVATION (0.065 FT./FT.)
STA. 491+65.37 MAX. SUPERELEVATION (0.065 FT./FT.)
STA. 497+05.37 END SUPERELEVATION

NOTE: FOR ALL THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS, THIS STREAM IS CLASSIFIED AS AN INTERMITTENT STREAM. THE STREAMBANK ELEVATION IS 1250 FT. M.L.S. AT STA. 475+87. REFER TO SECTION 110.06 (C) OF THE 2014 STANDARD SPECIFICATIONS.



FL. INLET RT. = 1261.62
EXIST. FL. INLET RT. = 161.62
EXIST. FL. OUTLET LT. = 1260.67
FL. OUTLET LT. = 1259.09

FL. INLET RT. = 1247.52
FL. OUTLET LT. = 1244.66

EXIST. FL. INLET RT. = 1245.39
EXIST. FL. OUTLET LT. = 1244.75

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				6	ARK.			
				JOB NO.		090230	113	282

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16

STA. 481+10 IN PLACE
21' X 15' X 33' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE
STA. 480+58 INSTALL
18" X 38' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 115 CU. YDS.

STA. 482+57 INSTALL
18" X 36' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 80 CU. YDS.

STA. 491+53 IN PLACE
24" X 12' C.M.
PIPE CULVERT LT. SIDE DRAIN
RETAIN

STA. 491+80 TO STA. 499+50 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 541.57 SQ. YD.

STA. 491+68 IN PLACE
5' X 3' X 36' R.C. BOX CULVERT
REMOVE AND CONSTRUCT
5' X 3' X 131' R.C. BOX CULVERT
WITH 3:1 WINGS LT. & RT.
Q50 = 95 CFS D.A. = 37 ACRES

STA. 492+13 IN PLACE
15' X 31' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 90' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 105 CU. YDS.

STA. 492+49 IN PLACE
21' X 15' X 20' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON LT. = 135 CU. YDS.

STA. 494+42 IN PLACE
18" X 40' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE

STA. 493+47 IN PLACE
18" X 45' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE

16' GATE

PROP. R/W
CONST. LIMITS
EXIST. R/W
C.L. HWY. 62
S 58°33'44" E
S 86°55'20" E
PARKING
CONCRETE
CO. RD. 912

P.I. = 487+21.91
Δ = 28°21'36" LT.
D = 2°24'00.0"
T = 603.20'
L = 1181.66'
P.C. = 481+18.71
P.T. = 493+00.37
e = 0.065'/'
Ls = 540'

STA. 483+08 INSTALL
18" X 70' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 265 CU. YDS.

STA. 484+92 INSTALL
18" X 68' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 225 CU. YDS.

STA. 490+00 TO STA. 491+60 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 112.53 SQ. YD.

STA. 491+97 IN PLACE
24" X 12' C.M.
PIPE CULVERT RT. SIDE DRAIN
RETAIN

STA. 492+53 IN PLACE
18" X 52' C.M.
PIPE CULVERT RT. SIDE DRAIN
RETAIN

STA. 492+20 IN PLACE
3' X 3' X 56' CONCRETE BOX
RT. SIDE DRAIN
REMOVE AND INSTALL
42" X 80' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT TURNOUT = 580 CU. YDS.

STA. 493+10 IN PLACE
18" X 40' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 62' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 270 CU. YDS.

STA. 493+00 TO STA. 494+00 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 70.33 SQ. YD.

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

HWY. 62

STA. 477+13.71 BEGIN SUPERELEVATION
STA. 482+53.71 MAX. SUPERELEVATION (0.065 FT./FT.)
STA. 491+65.37 MAX. SUPERELEVATION (0.065 FT./FT.)
STA. 497+05.37 END SUPERELEVATION

STA. 494+41 IN PLACE
18" X 41' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 58' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 195 CU. YDS.

NOTE: FOR ALL THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS, THIS STREAM IS CLASSIFIED AS AN INTERMITTENT STREAM. THE STREAMBANK ELEVATION IS 1275 FT. M.L.S. AT STA. 491+68. REFER TO SECTION 110.06 (C) OF THE 2014 STANDARD SPECIFICATIONS.

P.V.I. 483+71.29
ELEV. 1288.58

P.V.T. 487+67.29
ELEV. 1283.23

P.V.C. 488+11.57
ELEV. 1282.64

-1.35%

K=151.14
VC=792'
e=-5.19'

484+00.00 LT.
1278.96

LT. DITCH GRADE -1.11%

489+00.00 LT.
1273.40

LT. DITCH GRADE -0.95%

FL. INLET RT. = 1276.35
FL. OUTLET LT. = 1272.90

EXIST. FL. INLET RT. = 1276.29
EXIST. FL. OUTLET LT. = 1274.58

491+60.00 LT.
1270.92

491+80.00 LT.
1270.92

P.V.I. 492+11.07
ELEV. 1277.24

LT. DITCH GRADE 5.53%

493+00.00 LT.
1277.56

490+00.00 RT.
1281.47

RT. DITCH GRADE -1.35%

491+60.00 RT.
1276.52

491+75.00 RT.
1276.52

K=136.18
VC=799'
e=5.86'

RT. DITCH GRADE -3.09%

RT. DITCH GRADE 2.78%

493+00.00 RT.
1280.00

RT. DITCH GRADE 4.21%

493+00.00 RT.
1284.21

LT. DITCH GRADE 3.51%

495+00.00 LT.
1284.58

1305 1300 1295 1290 1285 1280 1275 1270 1265 1260

480+00 481+00 482+00 483+00 484+00 485+00 486+00 487+00 488+00 489+00 490+00 491+00 492+00 493+00 494+00 495+00

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				6	ARK.			
				JOB NO.		090230	114	282

(2) PLAN AND PROFILE SHEETS

STA. 496+05 IN PLACE
18" X 44' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE

STA. 496+70 INSTALL
18" X 44' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 215 CU. YDS.

STA. 498+68 IN PLACE
18" X 44' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 36' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 300 CU. YDS.

STA. 501+00 INSTALL
18" X 34' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 5270 CU. YDS.

STA. 508+00 TO STA. 516+00 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 562.67 SQ. YD.

P. I. = 508+98.02
Δ = 0°29' 06" LT.
D = 0°30' 00.0"
T = 48.51'
L = 97.02'
P. C. = 508+49.51
P. T. = 509+46.53
NO SUPER

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16

STA. 495+08 IN PLACE
18" X 48" C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 56' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 160 CU. YDS.

STA. 496+18 IN PLACE
18" X 44' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 64' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 150 CU. YDS.

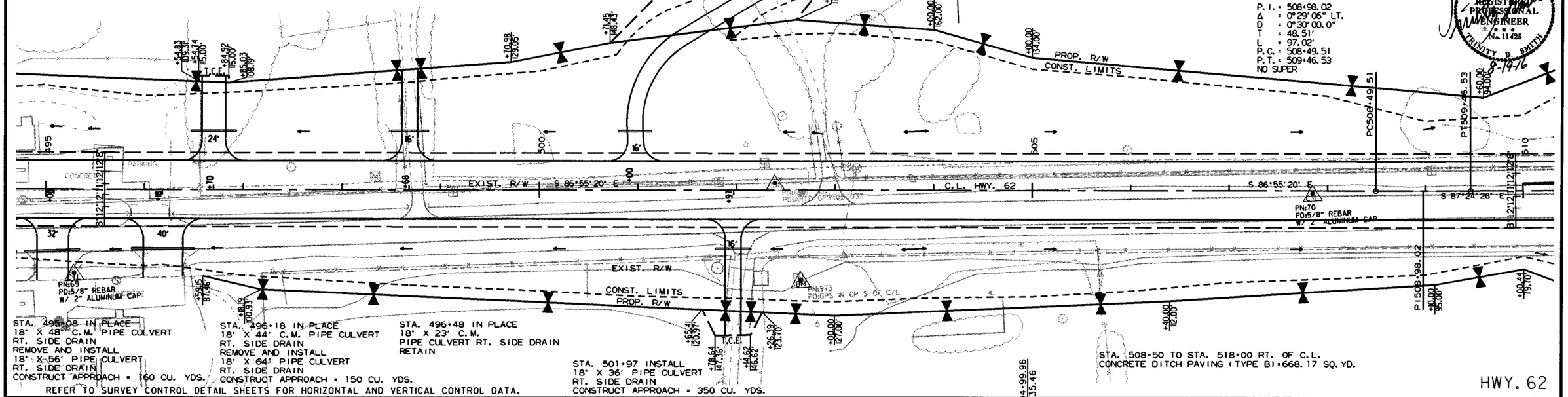
STA. 496+48 IN PLACE
18" X 23' C.M.
PIPE CULVERT RT. SIDE DRAIN
RETAIN

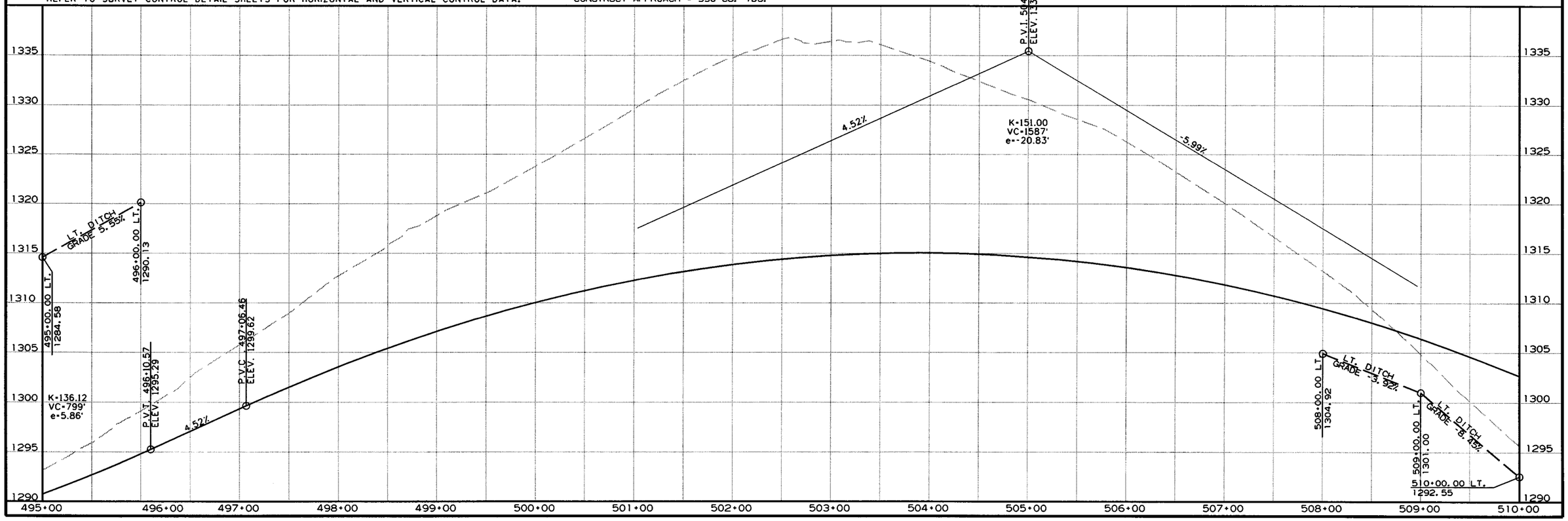
STA. 501+97 INSTALL
18" X 36' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 350 CU. YDS.

STA. 508+50 TO STA. 518+00 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 668.17 SQ. YD.

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

HWY. 62





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				6	ARK.			
				JOB NO.		090230	115	282

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16

STA. 516+52 INSTALL
18' X 112' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 2955 CU. YDS.

STA. 519+17 IN PLACE
TRI. 10' X 7' X 34' R.C. BOX CULVERT
REMOVE

STA. 519+29 CONSTRUCT
TRI. 10' X 7' X 276' R.C. BOX CULVERT
ON A 40° LT. FWD. SKEW
WITH 3:1 WINGS LT. & RT.
Q50= 2040 CFS D.A. = 1408 ACRES
SPAN=42'-5"

STA. 523+00 TO STA. 524+00 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 70.33 SQ. YD.

TEMPORARY RETAINING WALL

T.C.E. +25.00 215.00 — +70.00 215.00

+00.00 163.00 T.C.E. — T.C.E. +30.00 164.06

+23.87 160.00

+50.00 147.00

+30.00 143.00

+25.00 160.00

PROP. R/W

CONST. LIMITS

16' GATE

+40.00 185.00

30'

EXIST. R/W

C.L. HWY. 62

S 87°24'26" E

PK NAIL SET IN CONC. CURB

PN 802
PD REBAR & CAP

PN 71
PD 5/8" REBAR W/ 2" ALUMINUM CAP

EXIST. R/W

16'

+00.44 79.70

CONST. LIMITS

PROP. R/W

+40.00 170.00

+10.00 152.00

+80.00 163.00

16' GATE

+90.00 157.00

16' GATE

+94.00 72.00

+50.00 152.00

+10.00 158.00

STA. 519+58 INSTALL
18' X 80' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 970 CU. YDS.

HWY. 62

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

STA. 521+00 TO STA. 524+00 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 211.00 SQ. YD.

510+00.00 RT.
1298.15

RT. DITCH GRADE -11.85%

LT. DITCH GRADE -13.88%

511+00.00 RT.
1286.31

K=151.00
VC=1587'
e=-20.83'

510+00.00 LT.
1292.55

511+00.00 LT.
1278.87

RT. DITCH GRADE -22.36%

LT. DITCH GRADE -7.97%

512+40.00 RT.
1255.00

RT. DITCH GRADE -4.05%

P.V.T. 512+93.46
ELEV. 1287.97

-5.99%

P.V.C. 515+18.30
ELEV. 1274.51

K=136.04
VC=1623'
e=24.19'

-5.99%

LT. DITCH GRADE -7.97%

RT. DITCH GRADE -4.05%

516+00.00 LT.
1238.82

518+00.00 RT.
1232.34

LT. DITCH GRADE -2.44%

518+70.00 RT.
1232.34

EXIST. FL. INLET RT. = 1231.84
EXIST. FL. OUTLET LT. = 1231.55

RT. DITCH GRADE 1.43%

519+90.00 LT.
1229.30

FL. INLET RT. = 1231.90

520+50.00 LT.
1229.30

521+00.00 RT.
1235.63

RT. DITCH GRADE 3.45%

FL. OUTLET LT. = 1229.20

523+00.00 RT.
1242.53

RT. DITCH GRADE 3.20%

523+00.00 LT.
1234.62

P.V.I. 523+29.80
ELEV. 1225.94

LT. DITCH GRADE 8.42%

524+00.00 RT.
1245.73

524+00.00 LT.
1243.05

LT. DITCH GRADE -2.90%

5.94%

NOTE: FOR ALL THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS, THIS STREAM IS CLASSIFIED AS AN INTERMITTENT STREAM. THE STREAMBANK ELEVATION IS 1238 FT. M.L.S. AT STA. 519+07. REFER TO SECTION 110.06 (C) OF THE 2014 STANDARD SPECIFICATIONS.

1295 1290 1285 1280 1275 1270 1265 1260 1255 1250 1245 1240 1235 1230

510+00 511+00 512+00 513+00 514+00 515+00 516+00 517+00 518+00 519+00 520+00 521+00 522+00 523+00 524+00 525+00

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(2) PLAN AND PROFILE SHEETS

STA. 527+24 IN PLACE
10' X 6' X 33' R.C. BOX CULVERT
REMOVE AND CONSTRUCT
10' X 6' X 176' R.C. BOX CULVERT
30° RT. FWD. SKEW
WITH 3:1 WINGS LT. & RT.
Q50= 812 CFS D.A.= 362 ACRES

STA. 527+24 INSTALL
DBL. 60' X 96'
TEMPORARY PIPE CULVERT

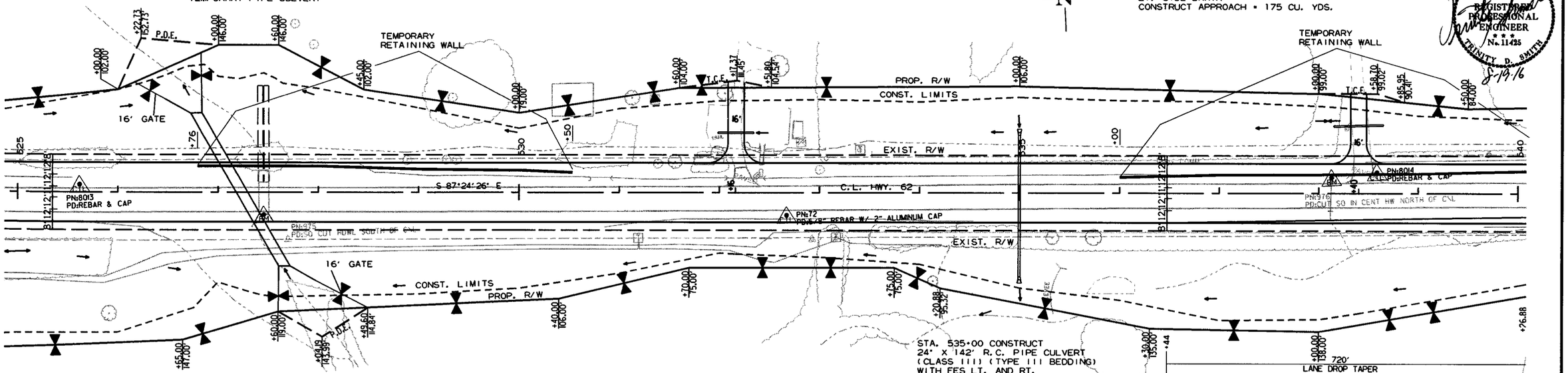
STA. 526+80 TO STA. 544+50 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE B)=1244.90 SQ.YD.

STA. 530+80 IN PLACE
18' X 20' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE

STA. 532+16 IN PLACE
18' X 37' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
18' X 36' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 130 CU. YDS.

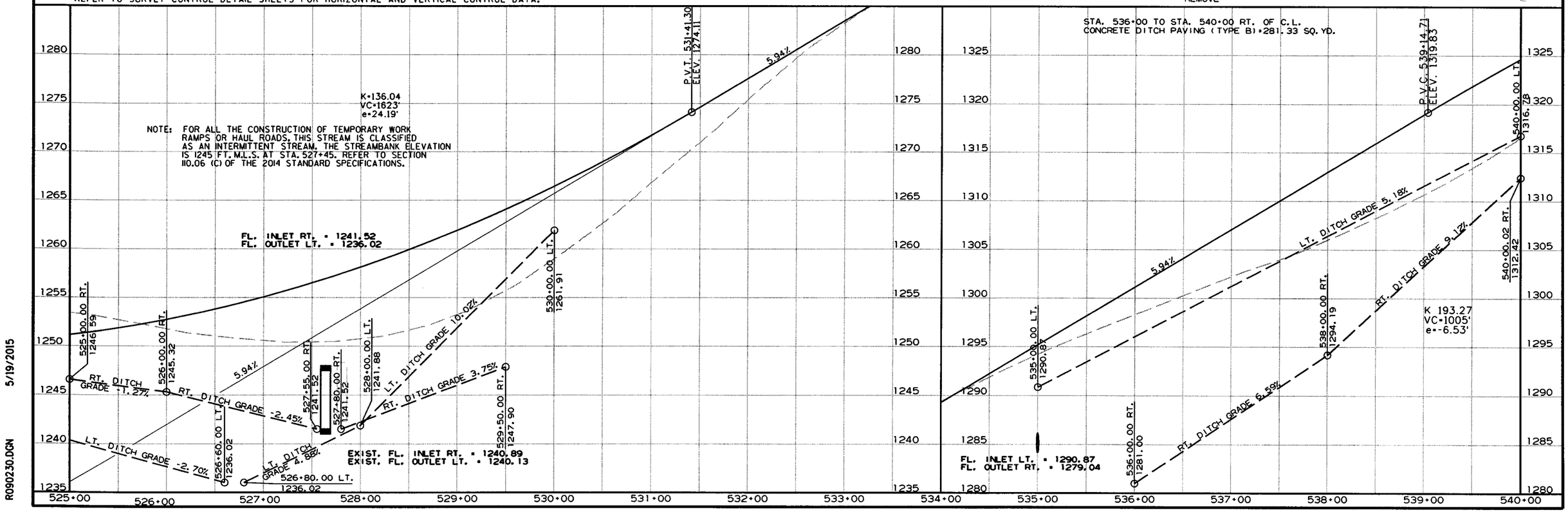
STA. 538+40 IN PLACE
12" X 34' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
18' X 50' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 175 CU. YDS.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-19-16



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

HWY. 62



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				6	ARK.			
				JOB NO.		090230	117	282

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-76

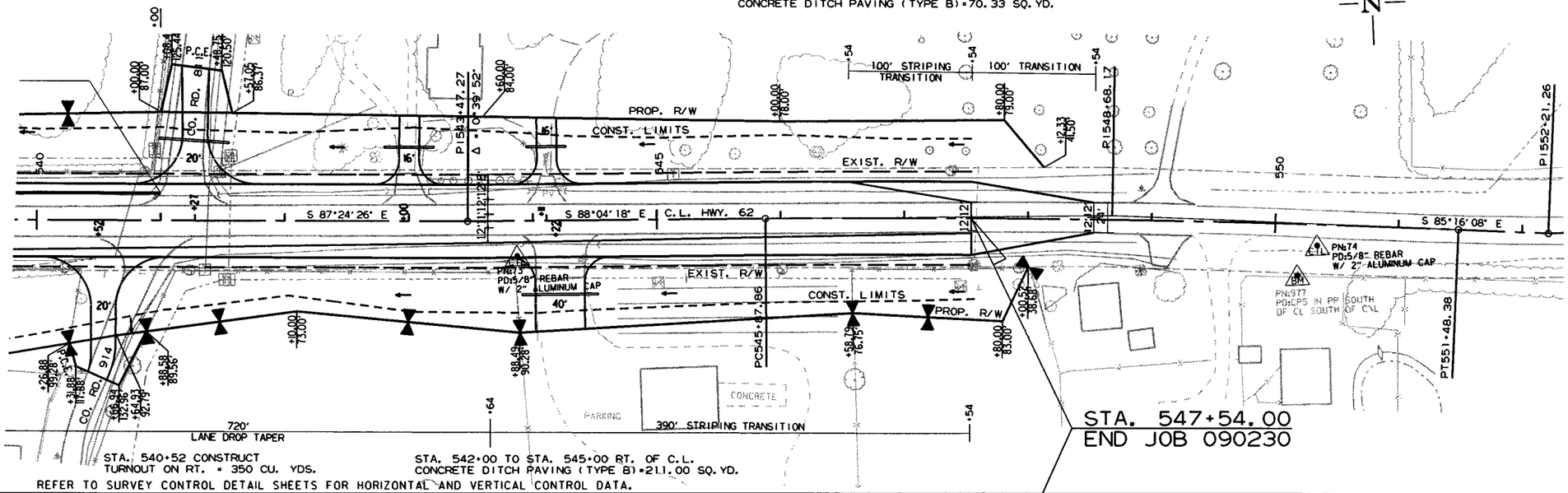
STA. 541+20 IN PLACE
18" X 49' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 56' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT TURNOUT = 205 CU. YDS.

STA. 543+00 IN PLACE
18" X 31' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 40' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 95 CU. YDS.

STA. 544+11 IN PLACE
18" X 26' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 32' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 55 CU. YDS.

P.I. = 548+68.17
Δ = 2°48'10" RT.
D = 0°30'00.0"
T = 280.31'
L = 560.52'
P.C. = 545+87.86
P.T. = 551+48.38
NO SUPER

STA. 546+00 TO STA. 547+00 LT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 70.33 SQ. YD.

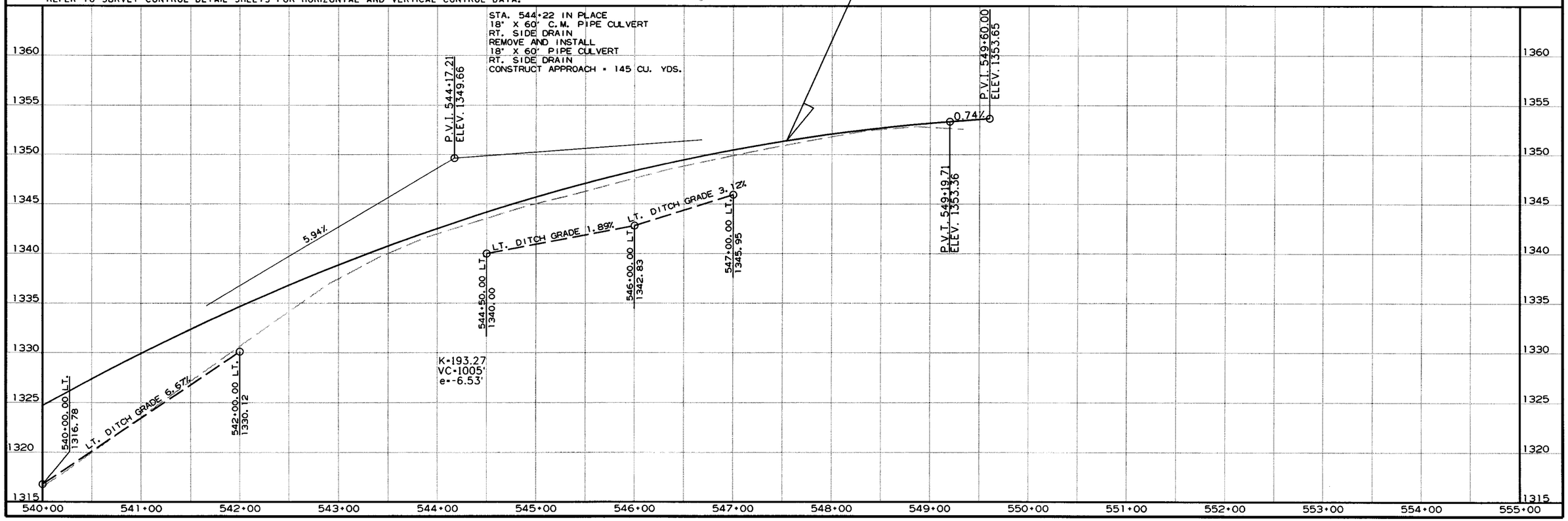


STA. 540+52 CONSTRUCT
TURNOUT ON RT. = 350 CU. YDS.

STA. 542+00 TO STA. 545+00 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 211.00 SQ. YD.

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

HWY. 62



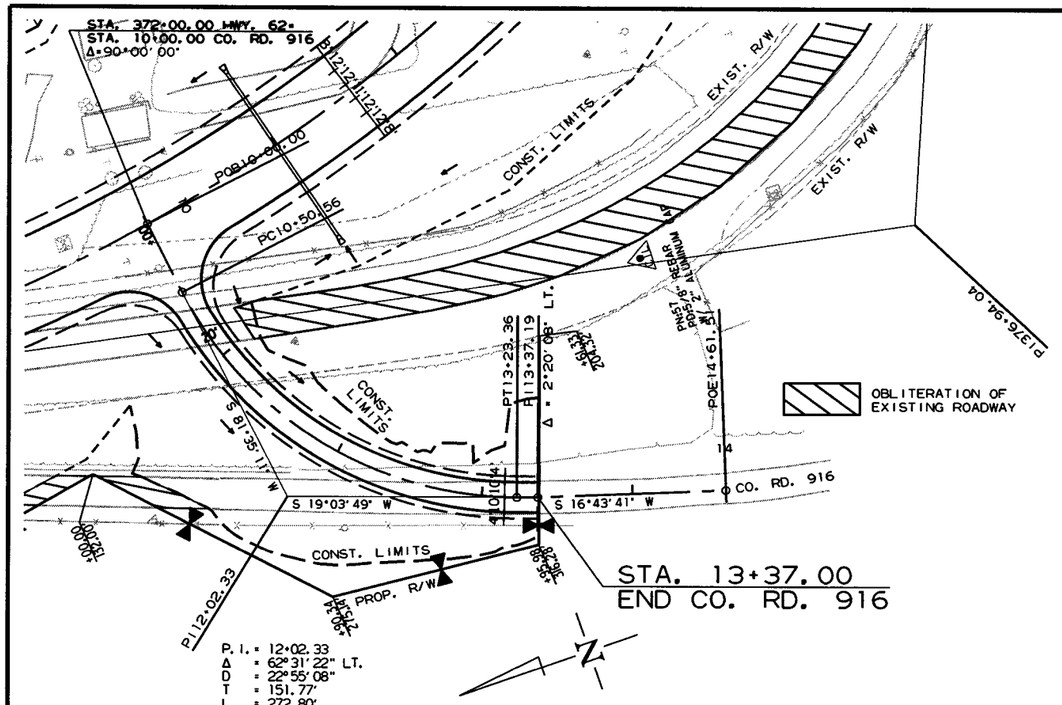
5/19/2015

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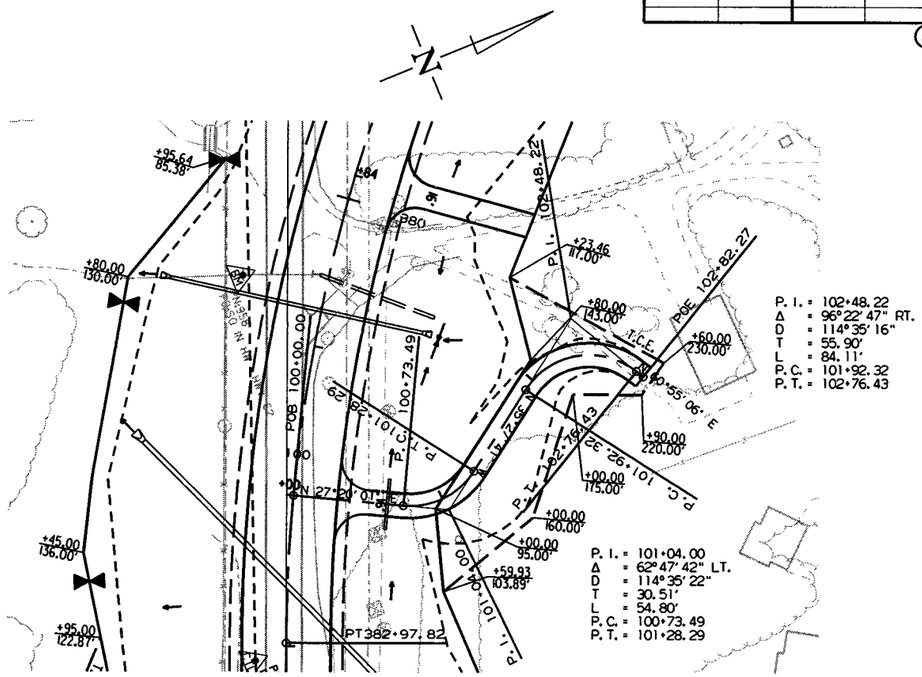
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	118	282

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-19-16

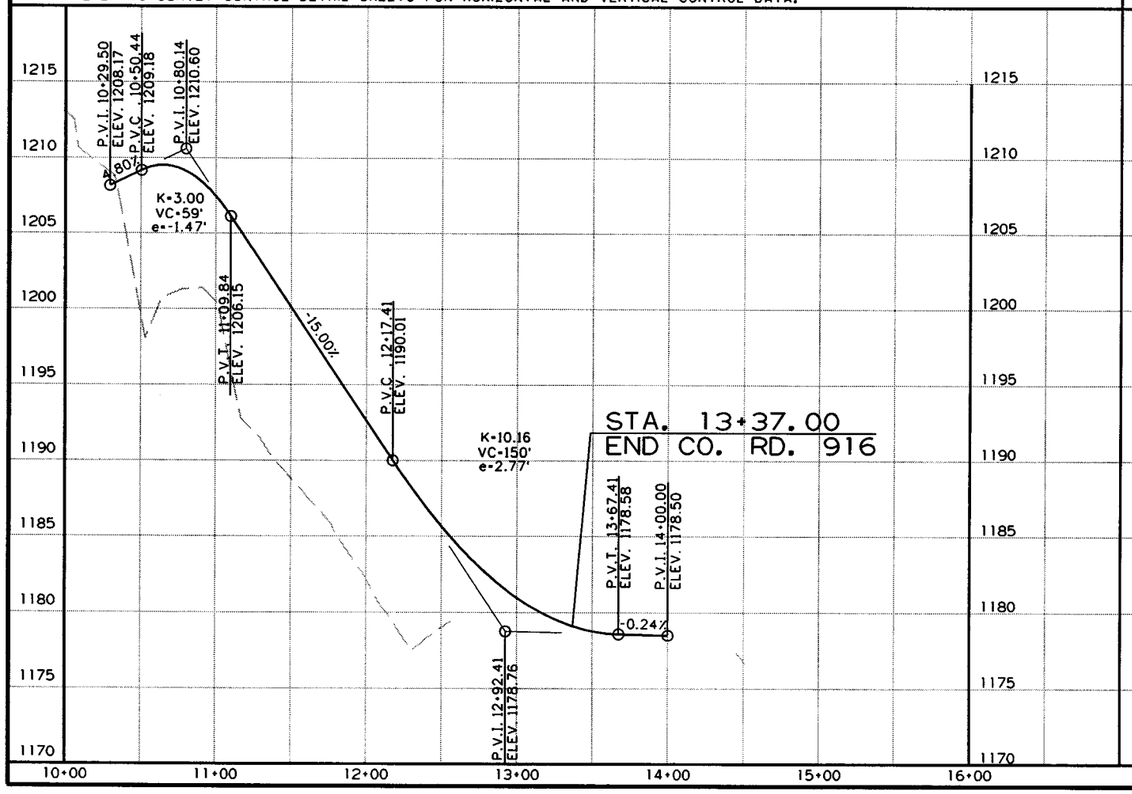


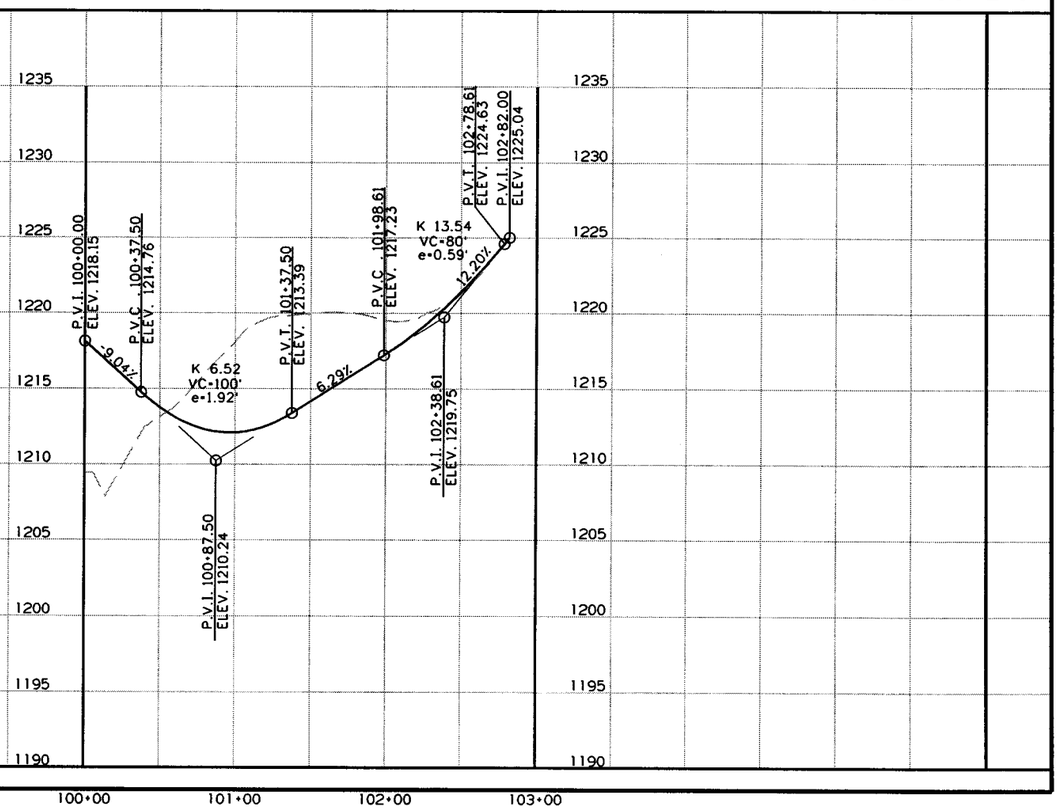
COUNTY RD. 916



DRIVEWAY AT STA. 382+00 LT.

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

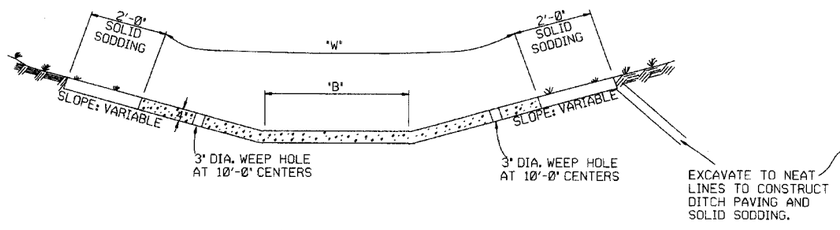




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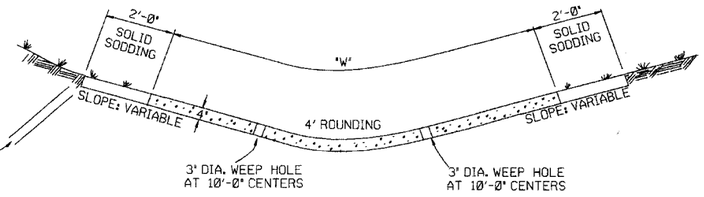
R090230.DGN

REFER TO TABULATION OF QUANTITIES FOR 'W' & 'B' DIMENSIONS



TYPE A

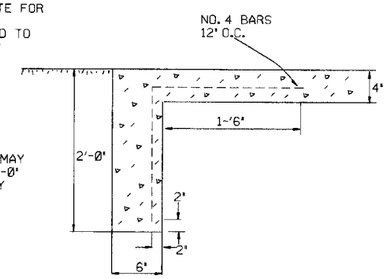
REFER TO TABULATION OF QUANTITIES FOR 'W' DIMENSIONS



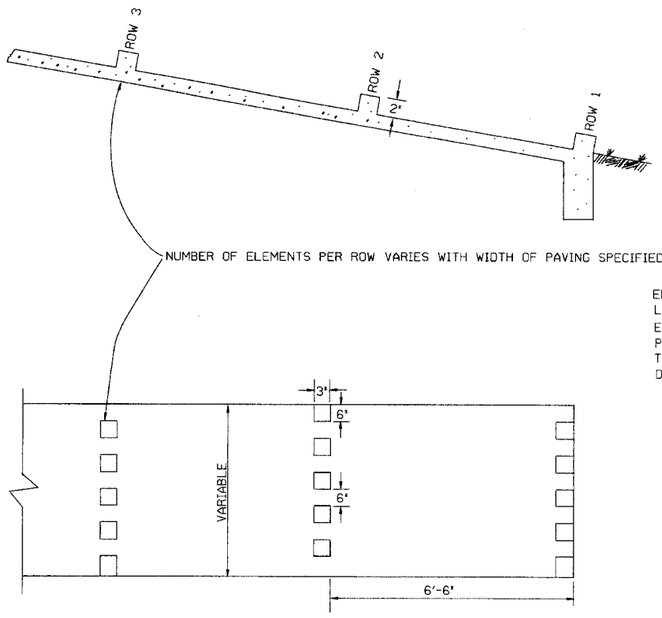
TYPE B

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

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



TOE WALL DETAIL FOR CONCRETE DITCH PAVING



ENERGY DISSIPATORS
(NO SCALE)

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 UNCLUDED IN THE PRICE BID FOR CONCRETE DITCH PAVING.

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.

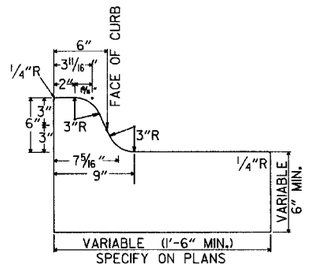
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

DATE	REVISION	DATE FILM'D
11-17-10	ADDED GENERAL NOTE	
6-2-94	ADDED GENERAL NOTE ABOUT SOLID SODDING	
11-30-8	ELIMINATED MIN. ROWS OF ELEMENTS	111-30-88
7-15-88	REVISED DISSIPATOR NOTE	653-7-15-88
4-3-87	REVISED ENERGY DISSIPATOR	671-4-3-87
1-9-87	MODIFIED NOTE ON ENERGY DISS.	532-1-9-87
11-3-86	ADDED NOTE TO ENERGY DISS.	599-12-1-86
11-1-84	ENERGY DISSIPATOR DETAILS ADDED	508-11-1-84
11-1-84	EXCAVATION DETAILS ADDED TYPED A & B	
10-2-72	REVISED AND REDRAWN	508-10-2-72

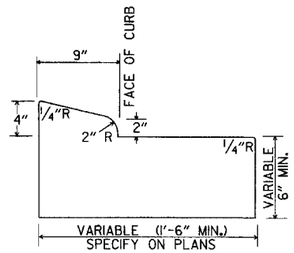
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

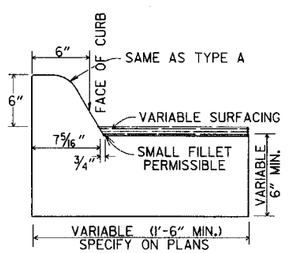
STANDARD DRAWING CDP-1



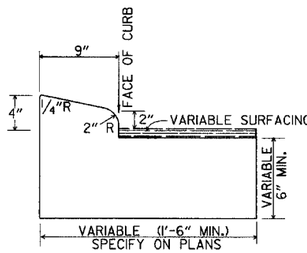
TYPE A



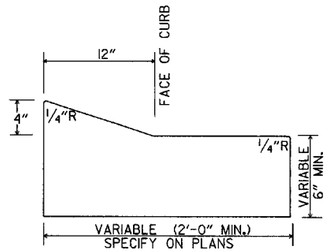
TYPE B-1



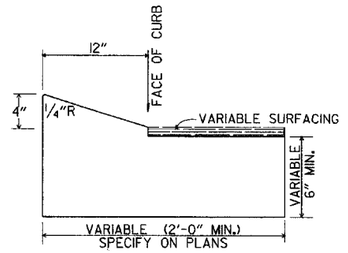
TYPE C



TYPE B-2

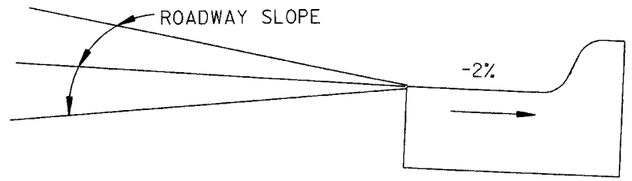


TYPE E-1



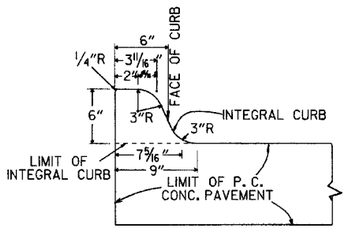
TYPE E-2

CONCRETE COMBINATION CURB AND GUTTER

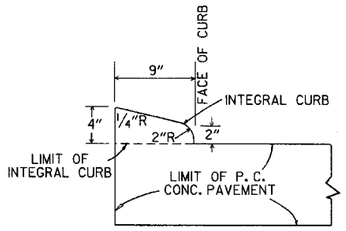


DETAIL OF GUTTER SLOPE

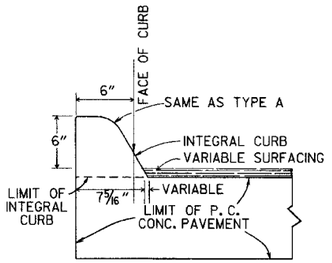
GUTTER SHALL BE CONSTRUCTED ON 2% SLOPE AWAY FROM ROADWAY, REGARDLESS OF ROADWAY SLOPE.



TYPE A

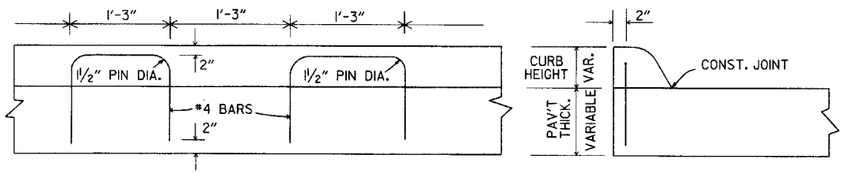


TYPE B



TYPE C

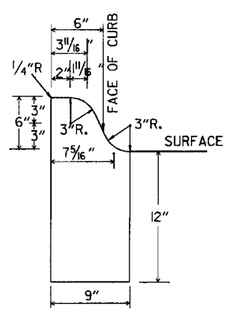
INTEGRAL CURB



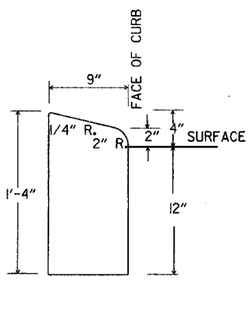
LONGITUDINAL SECTION

ELEVATION

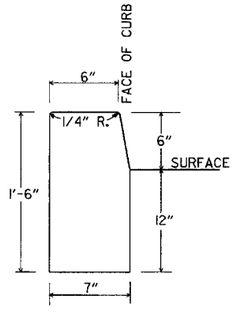
ALTERNATE CONSTRUCTION METHOD FOR INTEGRAL CURB



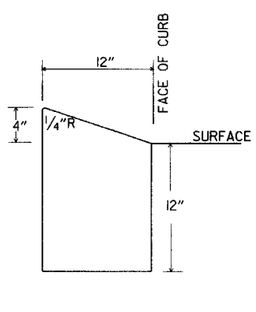
TYPE A



TYPE B

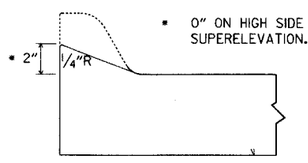


TYPE D



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.

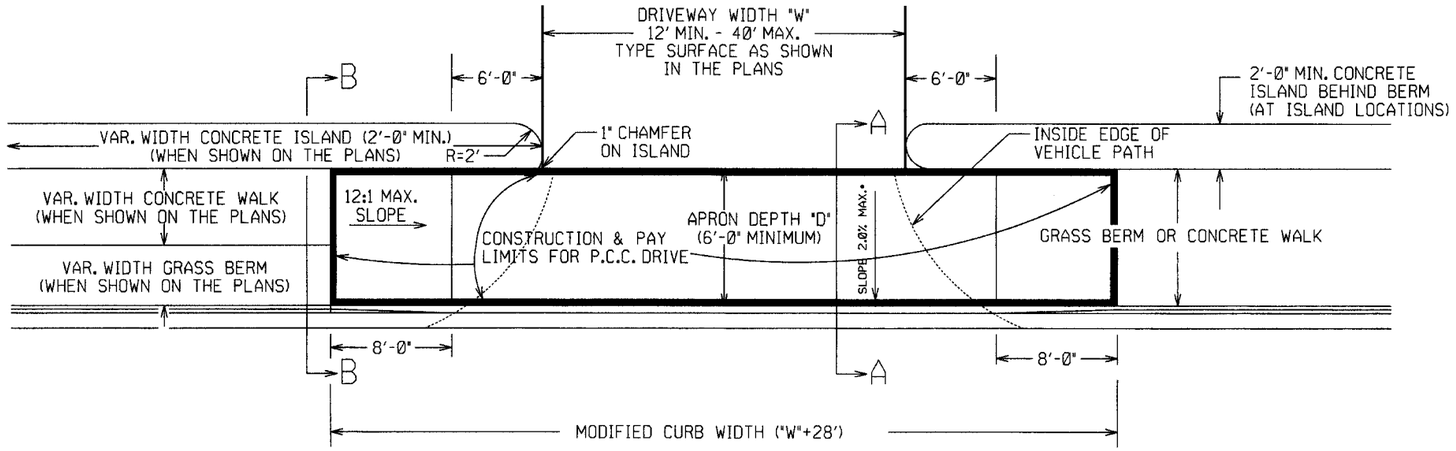
DETAILS OF MODIFIED CURB

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
5-24-90	ADDED DETAILS OF MODIFIED CURB	5-24-90
11-30-89	VARIBLE DEPTH TYPE A & B 1	11-30-89
7-15-88	REVISED MODIFIED CURB	630-7-15-88
11-1-73	REVISED MODIFIED CURB	590-11-1-73
10-2-72	REVISED AND REDRAWN	512-10-2-72

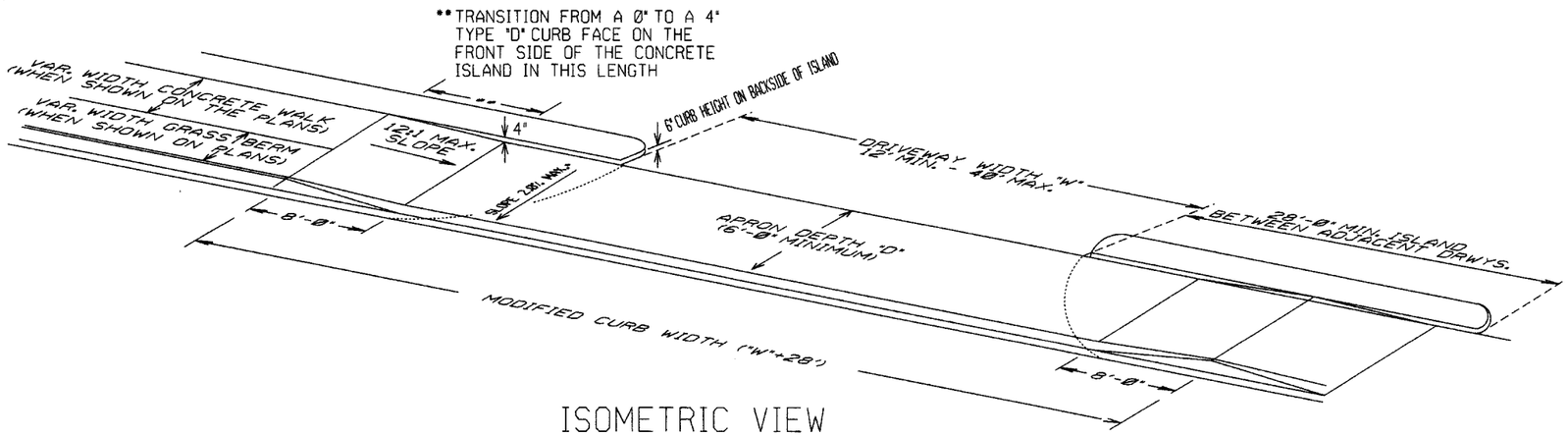
ARKANSAS STATE HIGHWAY COMMISSION

CURBING DETAILS

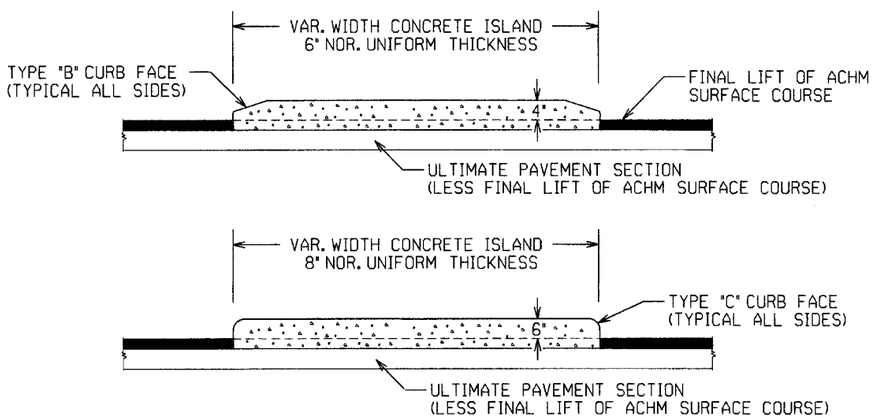
STANDARD DRAWING CG-1



PLAN VIEW

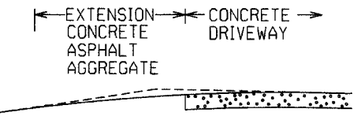


ISOMETRIC VIEW



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

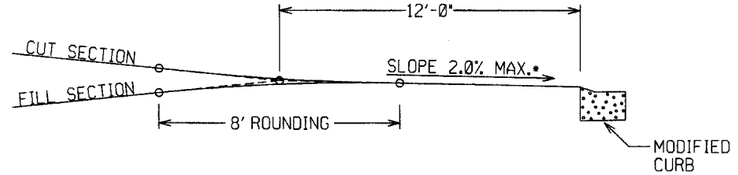
2: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
4" ACHM BINDER COURSE.(1") OR
4" ACHM BASE COURSE (1-1/2")

3: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
7" AGGREGATE BASE COURSE

4: AGGREGATE - 6" AGGREGATE BASE COURSE

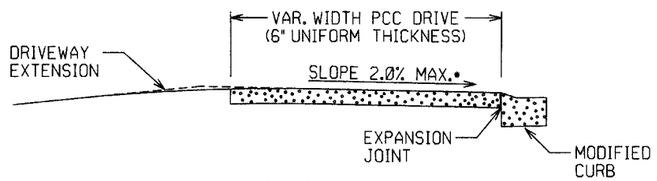
THE TYPE OF EXTENSION SHALL BE AS SHOWN IN THE PLANS. THE CONTRACTOR MAY, WITH THE APPROVAL OF THE ENGINEER, SUBSTITUTE A LOWER NUMBERED TYPE OF EXTENSION IN LIEU OF THE TYPE SPECIFIED IN THE PLANS, BUT AT NO ADDITIONAL COST TO THE DEPARTMENT.

DRIVEWAY EXTENSION DETAILS

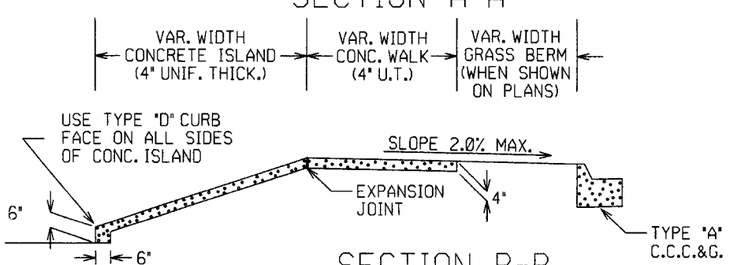


DRIVEWAY VERTICAL ALIGNMENT DETAILS

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



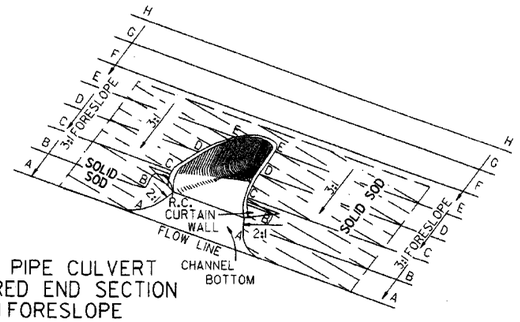
SECTION A-A



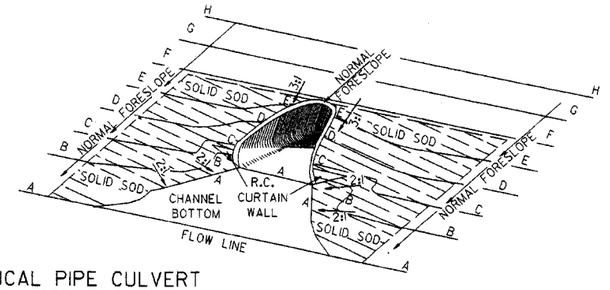
SECTION B-B
CURBED ISLAND BEHIND WALK

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

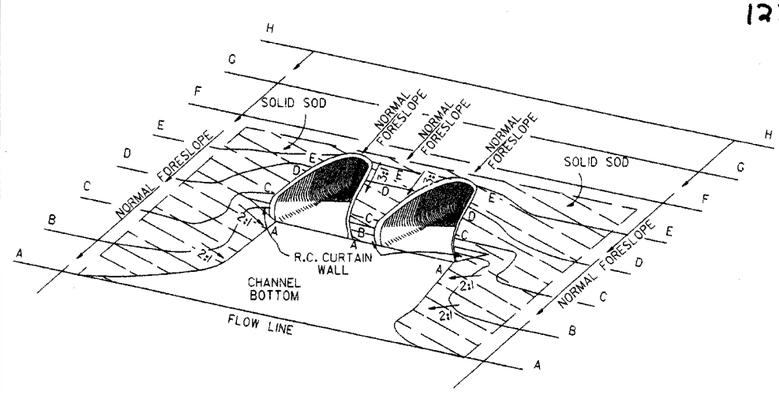
ARKANSAS STATE HIGHWAY COMMISSION
DETAILS OF DRIVEWAYS & ISLANDS
STANDARD DRAWING DR-1



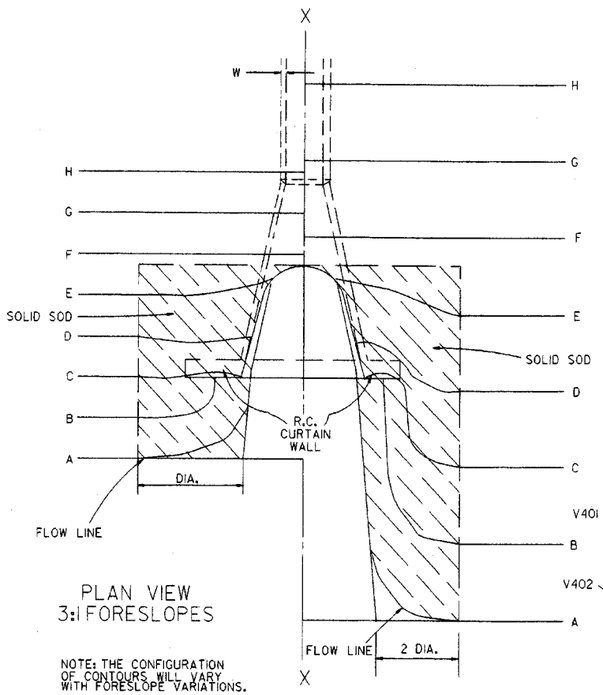
TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& 3:1 FORESLOPE



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

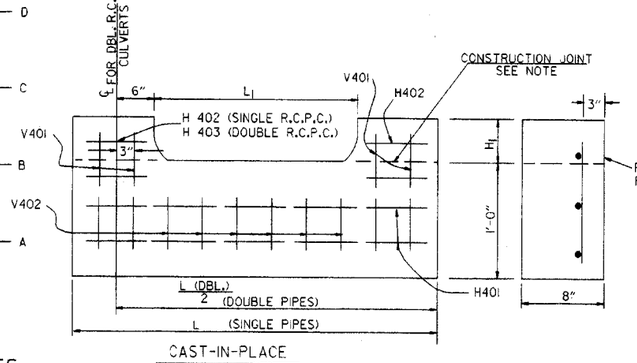
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW
FLATTENED FORESLOPES

R.C. CURTAIN WALL DIMENSIONS & QUANTITIES

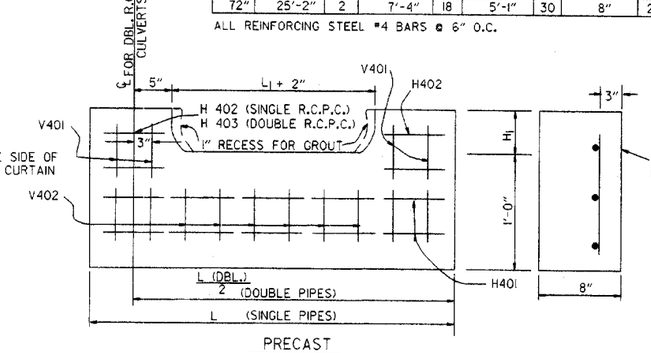
PIPE DIA.	H_1	L_1	L	L (DBL.)/2	SINGLE R.C.P.C. CONC. CU. YDS.	SINGLE R.C.P.C. REINF. STEEL LBS.	DOUBLE R.C.P.C. CONC. CU. YDS.	DOUBLE R.C.P.C. REINF. STEEL LBS.
18"	1 1/2"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0 1/2"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3 1/2"	5'-7"	11'-0"	9'-0"	0.45	39.0	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.



CAST-IN-PLACE

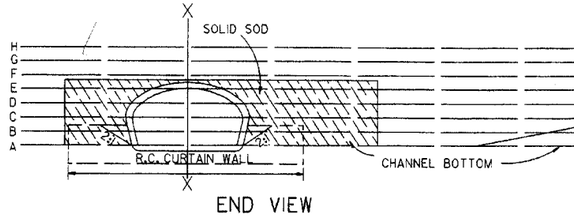
NOTE: THE PORTION OF THE R.C. CURTAIN WALL BENEATH THE FLARED END SECTION (LOWER 1'-0") SHALL BE PLACED MONOLITHICALLY. THE FLARED END SECTION SHALL THEN BE SET IN PLACE & THE REMAINING PORTIONS OF THE R.C. CURTAIN WALL PLACED.



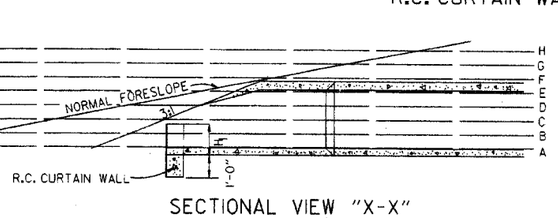
PRECAST

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

R.C. CURTAIN WALL DETAILS



END VIEW



SECTIONAL VIEW "X-X"

REINFORCING STEEL SCHEDULE

PIPE DIA.	SINGLE R.C. PIPE CULVERT H401 L	NO.	H402 L	NO.	V401 L	NO.	V402 L	NO.	DOUBLE R.C. PIPE CULVERT H401 L	NO.	H402 L	NO.	H403 L	NO.	V401 L	NO.	V402 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. 3:1	4:1	6:1	DOUBLE R.C.P.C. 3:1	4:1	6:1
	SQ. YDS.			SQ. YDS.		
18"	5	7	12	6	8	13
24"	8	12	19	9	13	20
30"	13	18	29	14	19	30
36"	17	26	41	18	28	43
42"	23	35	55	25	37	57
48"	29	46	68	31	48	70
54"	35	57	85	37	59	87
60"	45	62	104	48	65	107
72"	64	92	156	67	95	159

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

GENERAL NOTES

1. A CAST-IN-PLACE OR PRECAST CURTAIN WALL MAY BE USED. PAYMENT FOR THE CURTAIN WALL SHALL BE CONSIDERED TO BE INCLUDED IN THE UNIT PRICE BID EACH FOR FLARED END SECTIONS OF THE SEVERAL SIZES, WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS INCLUDING REINFORCING STEEL AND CONCRETE; FOR FORMS, MIXING AND PLACING; FOR EXCAVATION AND BACKFILL, AND FOR ALL LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4".
3. CONCRETE FOR CURTAIN WALL SHALL MEET THE REQUIREMENTS FOR CLASS A OR S CONCRETE AS PROVIDED IN SECTION 802 OF THE STANDARD SPECIFICATIONS OR FOR PAVING CONCRETE AS PROVIDED IN SECTION 501 OF THE STANDARD SPECIFICATIONS.
4. WELDED WIRE MESH 3 x 3 W10 x W10 MAY BE USED IN LIEU OF REINFORCING BARS.

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

ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

STANDARD DRAWING FES-1

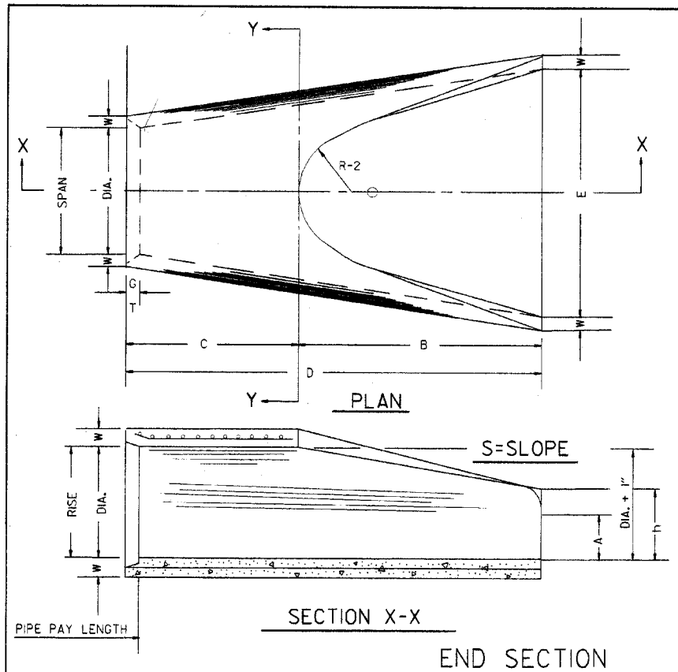
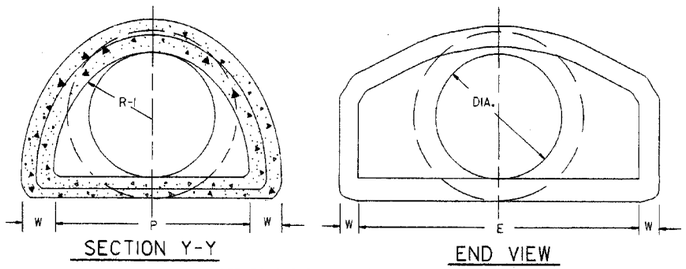


TABLE OF DIMENSIONS

DIA.	WALL	A	B	C	D	E	S	DIA. ± 1"	P	R-1	R-2	G-T	WT.	h
18"	2½"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3:1	19"	29"	15½"	12"	2"	1000	1'-0½"
24"	3"	9½"	3'-7½"	2'-6"	6'-1½"	4'-0"	3:1	25"	33⅜"	16⅜"	14"	2½"	1600	1'-1½"
30"	3½"	1'-0"	4'-6"	1'-7¾"	6'-1¾"	5'-0"	3:1	31"	37"	18½"	15"	3¼"	1940	1'-4⅝"
36"	4"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	6'-0"	3:1	37"	47⅛"	24⅝"	20"	3½"	4100	1'-8"
42"	4½"	1'-5"	5'-3"	2'-11"	8'-2"	6'-6"	3:1	43"	53⅞"	27½"	22"	3½"	5380	2'-2½"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3:1	49"	56½"	28½"	22"	3½"	6550	2'-6"
54"	5½"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3:1	55"	65½"	33⅛"	24"	4"	8750	2'-10½"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3:1	61"	72½"	36⅛"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3:1	73"	77⅞"	38⅝"	24"	5"	13250	4'-6"

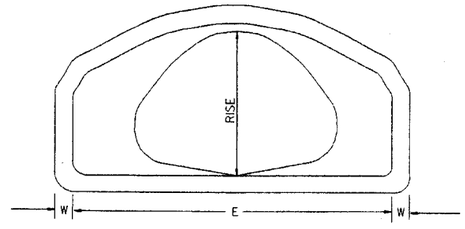


NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

ARCH PIPE

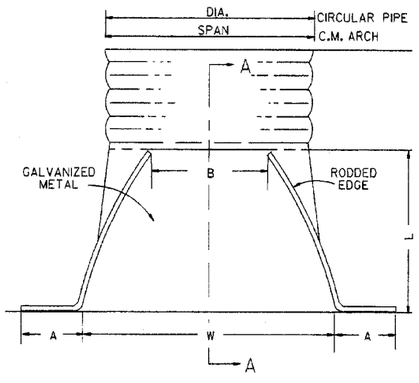
EQUIV. DIA.	• SPAN AASHTO M 206	• SPAN AHD NOMINAL	• RISE AASHTO M 206	• RISE AHD NOMINAL	W	A	B	C	D	E	P	R2	G-T	S
	INCHES													
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1½"	2½:1
18	22	22	13½	14	2½"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32⅛"	13"	2½"	2½:1
21	26	26	15½	16	2¾"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34⅛"	14"	2½"	2½:1
24	28½	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36⅛"	15"	2½"	2½:1
30	36¼	36	22½	23	3½"	10"	3'-1"	3'-0½"	6'-1½"	6'-0"	47⅛"	20"	3"	2½:1
36	43¾	44	26⅝	27	4"	10½"	4'-0"	2'-1½"	6'-1½"	6'-6"	54⅞"	22"	3½"	2½:1
42	51⅛	51	31⅜	31	4½"	11½"	4'-7"	1-10¼"	6'-5¼"	7'-2"	59½"	23"	3¾"	2½:1
48	58½	59	36	36	5"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	7'-10"	70⅝"	24"	4¼"	2½:1
54	65	65	40	40	5½"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72⅛"	24"	4¾"	2¼:1
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77⅞"	24"	5"	2¼:1

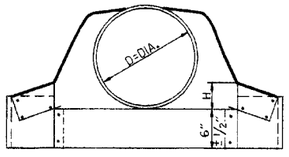
• THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.



END VIEW
CONCRETE ARCH PIPE

END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS

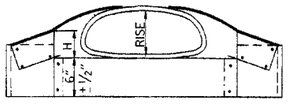




CIRCULAR PIPE

CIRCULAR PIPE

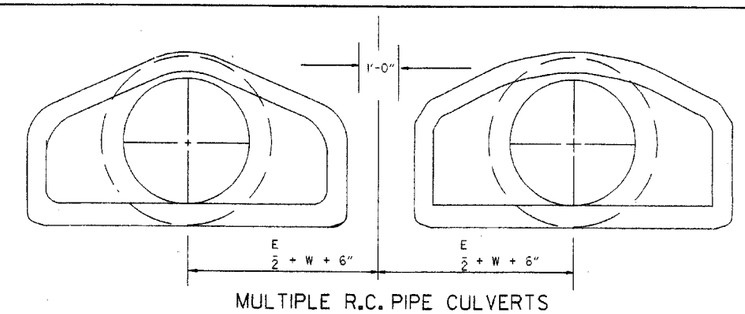
D. DIA.	GAUGE	A 1" ±	B. MAX.	H 1" ±	L 1½" ±	W 2" ±	S
		INCHES					
12	16	6	6	6	21	24	2½:1
15	16	7	8	6	26	30	2½:1
18	16	8	10	6	31	36	2½:1
21	16	9	12	6	36	42	2½:1
24	16	10	13	6	41	48	2½:1
30	14	12	16	8	51	60	2½:1
36	14	12	19	9	60	72	2½:1
42	12	16	22	11	69	84	2½:1
48	12	18	27	12	78	90	2½:1
54	12	18	30	12	84	102	2:1
60	12	18	33	12	87	114	1¾:1
66	12	18	36	12	87	120	1½:1
72	12	18	39	12	87	126	1 1/3:1



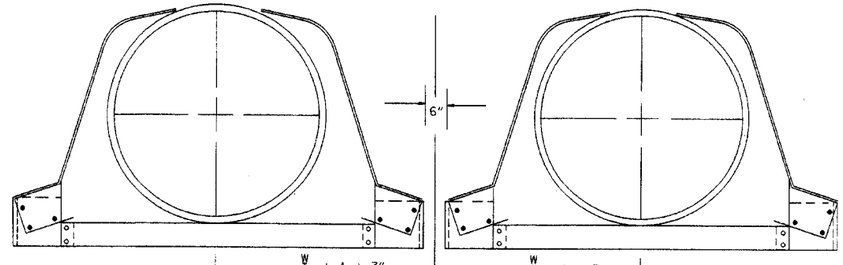
C.M. ARCH PIPE

C.M. ARCH PIPE

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



MULTIPLE R.C. PIPE CULVERTS



MULTIPLE C.M. PIPE CULVERTS

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

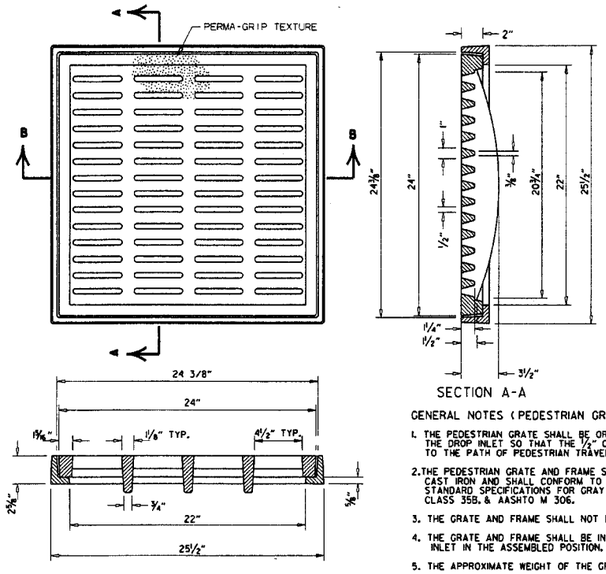
DATE	REVISION	FILMED
10-18-96	REVISED ASTM REF. TO AASHTO	10-18-96
5-15-80	REVISED DISTANCE BETWEEN MULTIPLE R.C.P. F.E.S.	664-5-15-80
7-14-78	C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES	752-7-14-78
8-22-75	ADDED MULTIPLE PIPE CULVERTS	517-8-22-75
12-5-74	REMOVED NOTE RE REINF. FOR R.C. F.E.S.	500-12-5-74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

ARKANSAS STATE HIGHWAY COMMISION

FLARED END SECTION

STANDARD DRAWING FES-2

stdfes2.dgn



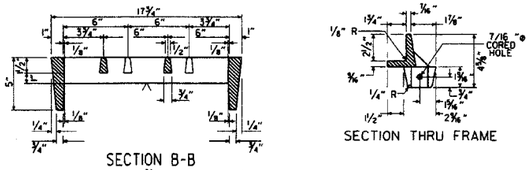
SECTION A-A

SECTION B-B

GENERAL NOTES (PEDESTRIAN GRATE & FRAME)

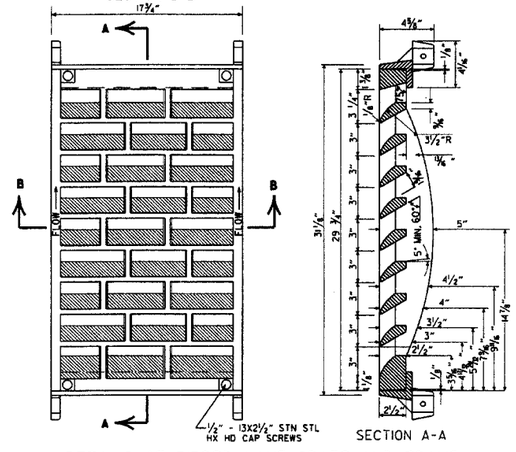
1. THE PEDESTRIAN GRATE SHALL BE ORIENTED IN THE TOP OF THE DROP INLET SO THAT THE ½" OPENINGS ARE PERPENDICULAR TO THE PATH OF PEDESTRIAN TRAVEL.
2. THE PEDESTRIAN GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS 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 211 LBS.
6. THE MINIMUM WATERWAY OPENING SHALL BE 122 SQ. IN.

DETAILS OF PEDESTRIAN GRATE AND FRAME



SECTION B-B

SECTION THRU FRAME

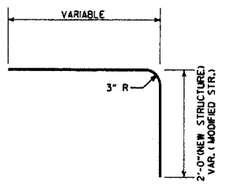


SECTION A-A

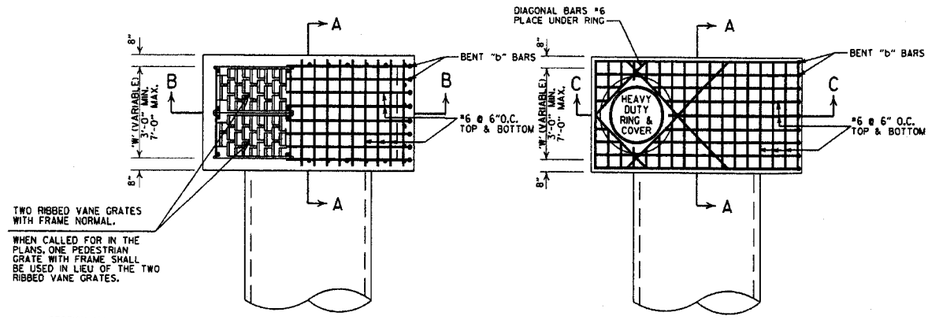
DETAILS OF RIBBED VANE GRATE AND FRAME

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.



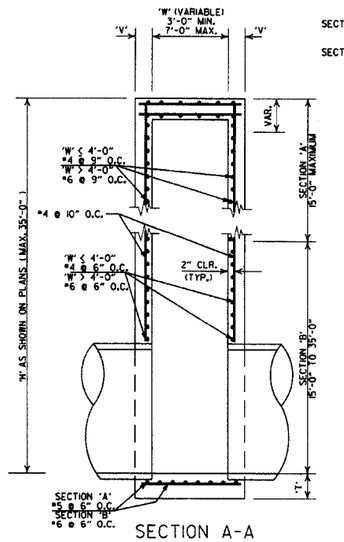
DETAIL OF BENT "b" BAR



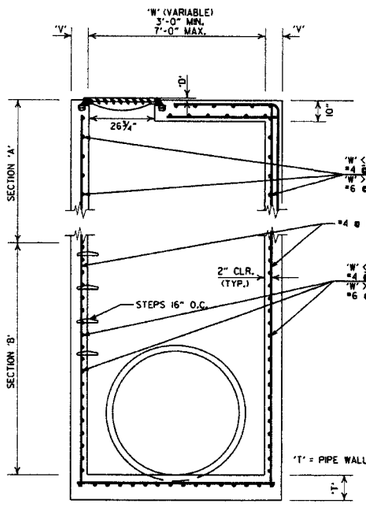
SECTION 'A'
'V' = 8"

SECTION 'B' (W)<4'-0"
'V' = 8"

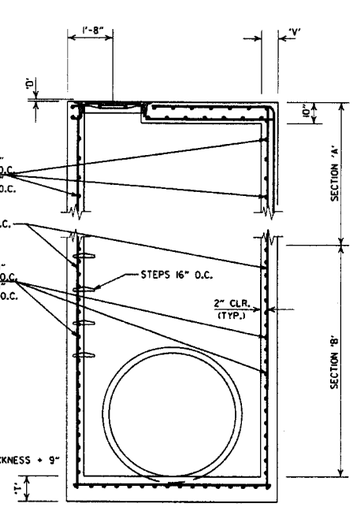
SECTION 'B' (W)>4'-0"
'V' = 10"



SECTION A-A

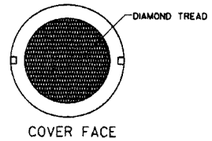


SECTION B-B

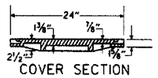


SECTION C-C

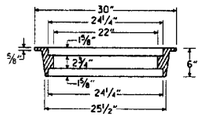
DETAILS OF DROP INLET (TYPE ST)



COVER FACE



COVER SECTION



RING SECTION

HEAVY DUTY RING & COVER

APPROXIMATE TOTAL WEIGHT = 333 LBS.

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 ¾" CHAMFER.

GENERAL NOTES (HEAVY DUTY RING & COVER):

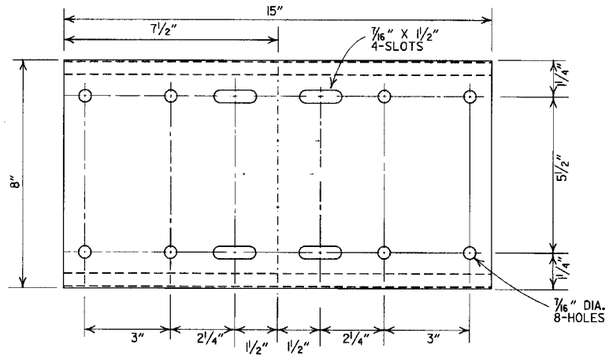
1. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
2. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
3. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE 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

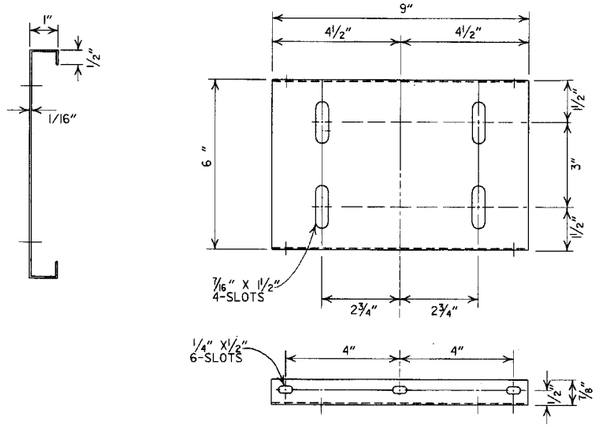
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLET & JUNCTION BOX (TYPE ST)

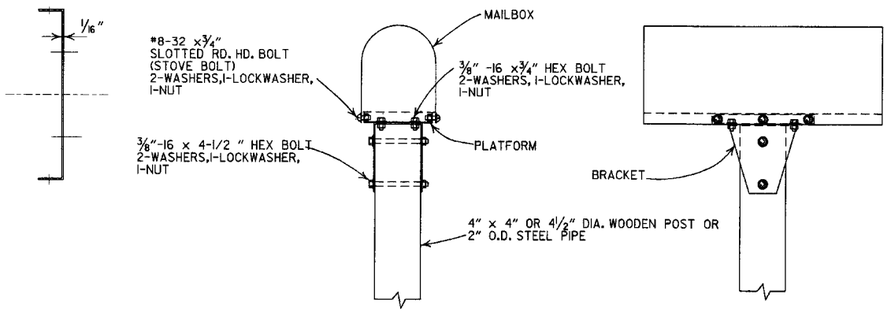
STANDARD DRAWING FPC-9S



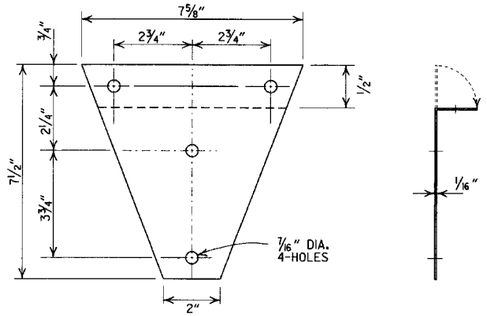
SHELF



PLATFORM



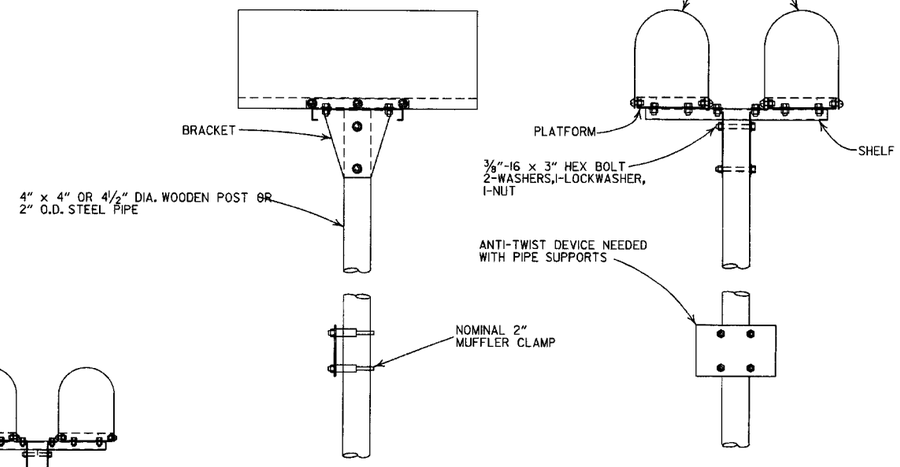
SINGLE INSTALLATION



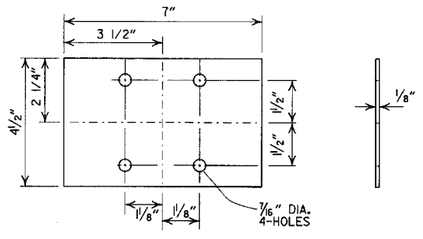
BRACKET

GENERAL NOTES

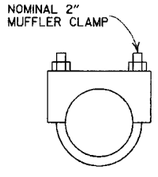
1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
2. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
3. MAILBOX SHELF, BRACKET & PLATFORM SHALL BE GALVANIZED OR PAINTED STEEL, HOWEVER TREATED 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.



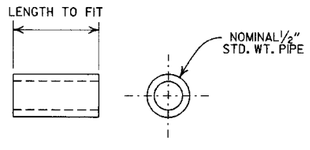
DOUBLE INSTALLATION



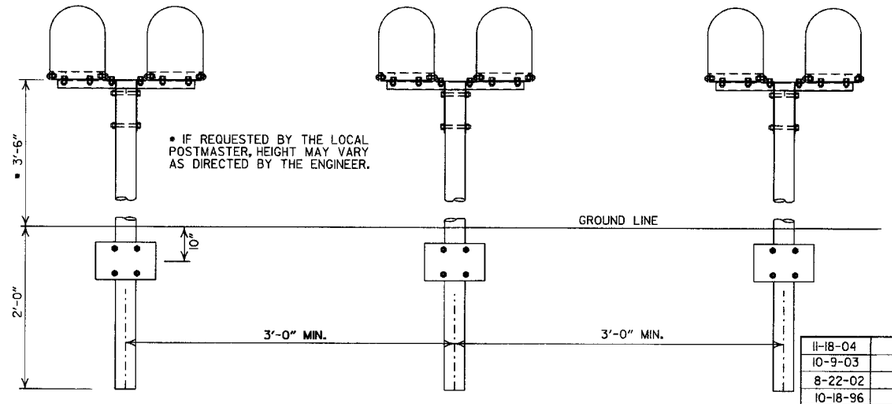
ANTI-TWIST PLATE



CLAMP



SPACER



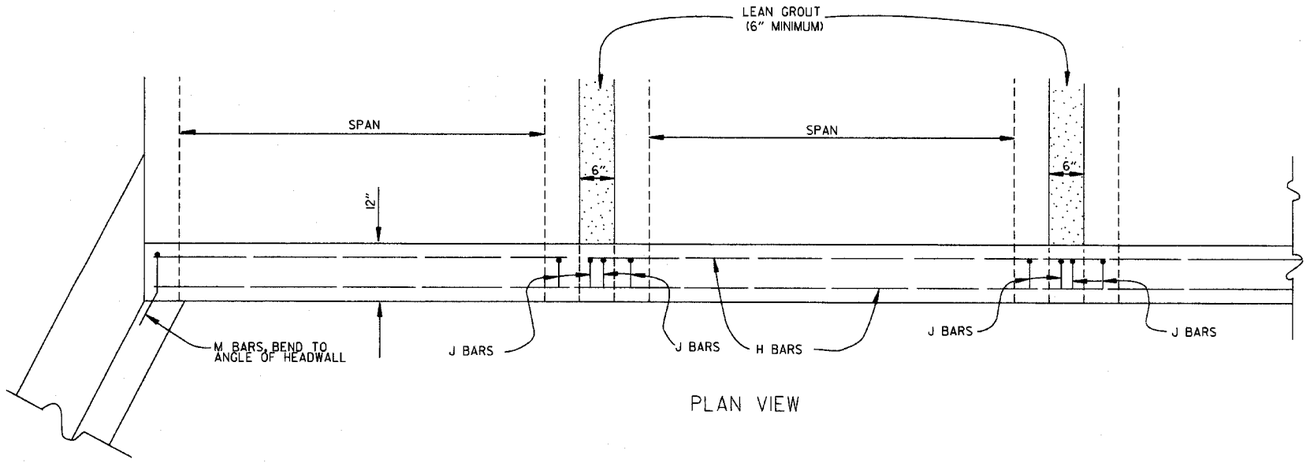
SPACING FOR MULTIPLE POST INSTALLATION

DATE	FILMED	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	10-7-15-88	ISSUED

ARKANSAS STATE HIGHWAY COMMISSION

MAILBOX DETAILS

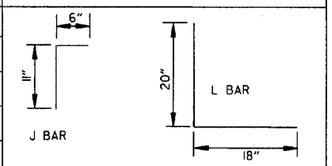
STANDARD DRAWING MB-1



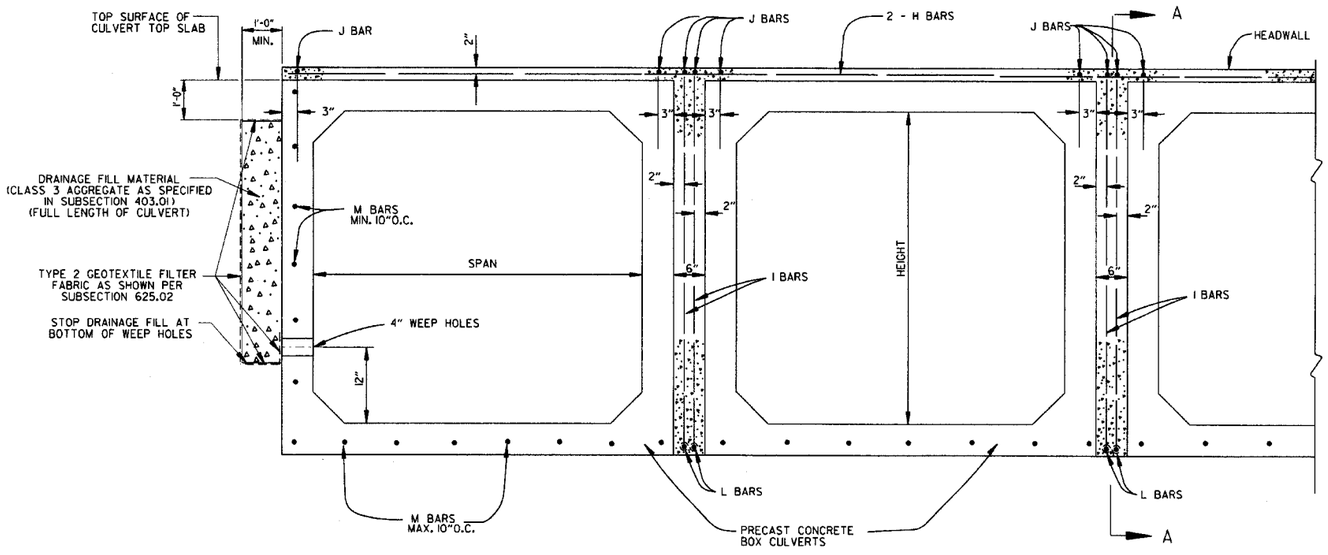
PLAN VIEW

BAR LIST

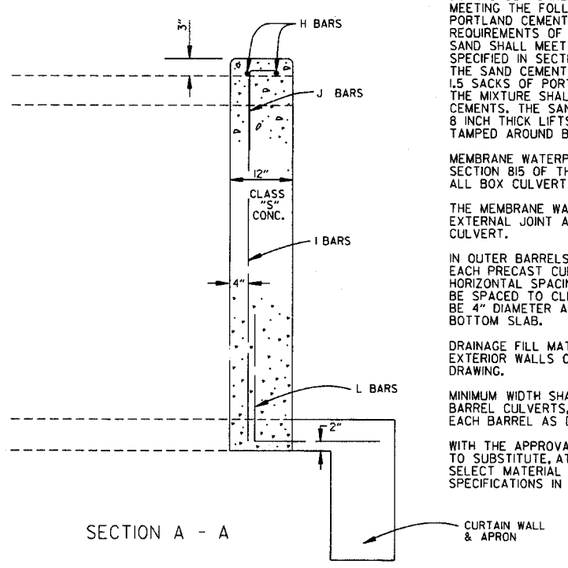
BAR	NO.	SIZE	LENGTH	BAR BENDING DIAGRAM
H	2	#4	•	
I	•	#4	•	
J	•	#4	1'-5"	
L	•	#4	3'-2"	
M	•	#4	1'-8"	



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



END VIEW



SECTION A - A

GENERAL NOTES

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

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

ALL EXPOSED CORNERS TO HAVE ¾" CHAMFERS.

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

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

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

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

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

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

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

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

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

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

ARKANSAS STATE HIGHWAY COMMISSION

PRECAST CONCRETE BOX CULVERTS

STANDARD DRAWING PBC-1

REINFORCED CONCRETE ARCH PIPE DIMENSIONS

EQUIV. DIA.	SPAN		RISE	
	AASHTO M 206	AHTD NOMINAL	AASHTO M 206	AHTD NOMINAL
INCHES	INCHES			
15	18	18	11	11
18	22	22	13½	14
21	26	26	15½	16
24	28½	29	18	18
30	36¼	36	22½	23
36	43⅜	44	26⅝	27
42	51⅛	51	31 5/16	31
48	58½	59	36	36
54	65	65	40	40
60	73	73	45	45
72	88	88	54	54
84	102	102	62	62
90	115	115	72	72
96	122	122	77½	77
108	138	138	87⅛	87
120	154	154	96⅞	97
132	168¾	169	106½	107

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

REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE DIMENSIONS

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

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

CONSTRUCTION SEQUENCE

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

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

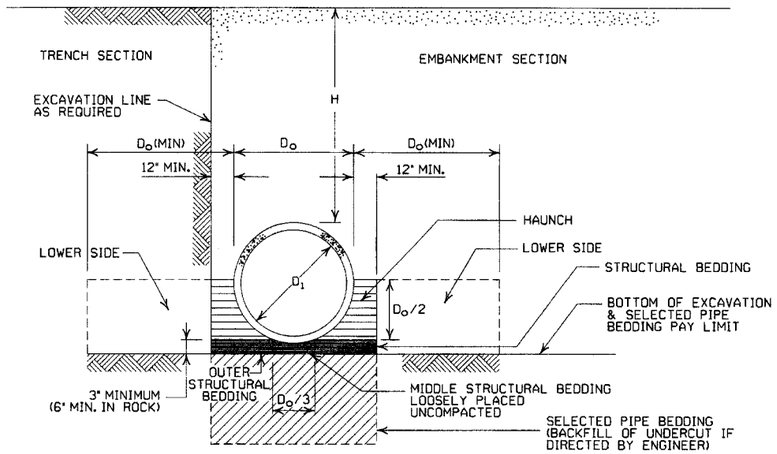
- LEGEND -

D_1 = NORMAL INSIDE DIAMETER OF PIPE
D_o = OUTSIDE DIAMETER OF PIPE
H = FILL COVER HEIGHT OVER PIPE (FEET)
MIN. = MINIMUM
▨ = UNDISTURBED SOIL

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

* SM-3 WILL NOT BE ALLOWED.

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



EMBANKMENT AND TRENCH INSTALLATIONS

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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

DATE	REVISION	DATE FILMED
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 MINUMUM 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
2⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM						
12	1	84	91			
15	1	67	73			
18	1	56	61			
24	1	42	46	59		
30	2	34	36	47		
36	2		30	39	41	
42	2		43	67	70	73
48	2		37	58	61	64
② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, BOLTED, OR HELICAL LOCK-SEAM						
36	1	48	60	88	111	118
42	1	41	51	72	90	102
48	1	36	45	64	77	85
54	2	32	40	59	71	79
60	2	29	36	53	64	71
66	2	26	33	47	58	64
72	2	24	30	44	53	59
78	2		28	41	49	54
84	2		26	38	45	51
90	2		24	35	43	45
96	2		22	33	40	44
102	2			31	38	42
108	2			30	35	39
114	2			28	34	37
120	2			27	32	35

CORRUGATED ALUMINUM PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINUMUM 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 ⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM				
12	1	45	45			
18	2	30	30	52		
24	2	22	22	39	41	
30	2		18	31	32	34
36	2.5		15	26	27	28
42	2			43	43	44
48	2			40	41	43
54	2			35	37	38
60	2				33	34
66	2					31
72	2					29

CORRUGATED METAL PIPE ARCHES

EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINUMUM CORNER RADIUS (INCHES)	STEEL					ALUMINUM			
			MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)		MAX. HEIGHT OF FILL, "H" (FT.)		MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)		MAX. HEIGHT OF FILL, "H" (FT.)
				INSTALLATION		INSTALLATION			INSTALLATION		INSTALLATION
				TYPE 1		TYPE 1			TYPE 1		TYPE 1
			2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM					2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM			
15	17x13	3	0.064	2		15		0.060	2		15
18	21x15	3	0.064	2		15		0.060	2		15
21	24x18	3	0.064	2.25		15		0.060	2.25		15
24	28x20	3	0.064	2.5		15		0.075	2.5		15
30	35x24	3	0.079	3		12		0.075	3		12
36	42x29	3½	0.079	3		12		0.105	3		12
42	49x33	4	0.079	3		12		0.105	3		12
48	57x38	5	0.109	3		13		0.135	3		13
54	64x43	6	0.109	3		14		0.135	3		14
60	71x47	7	0.138	3		15		0.164	3		15
66	77x52	8	0.168	3		15					
72	83x57	9	0.168	3		15					
			② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM								
				INSTALLATION		INSTALLATION					
				TYPE 2	TYPE 1	TYPE 2	TYPE 1				
36	40x31	5	0.079	3	2	12	15				
42	46x36	6	0.079	3	2	13	15				
48	53x41	7	0.079	3	2	13	15				
54	60x46	8	0.079	3	2	13	15				
60	66x51	9	0.079	3	2	13	15				
66	73x55	12	0.079	3	2	15	15				
72	81x59	14	0.079	3	2	15	15				
78	87x63	14	0.079	3	2	15	15				
84	95x67	16	0.109	3	2	15	15				
90	103x71	16	0.109	3	2	15	15				
96	112x75	18	0.109	3	2	15	15				
102	117x79	18	0.109	3	2	15	15				
108	128x83	18	0.138	3	2	15	15				

CONSTRUCTION SEQUENCE

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

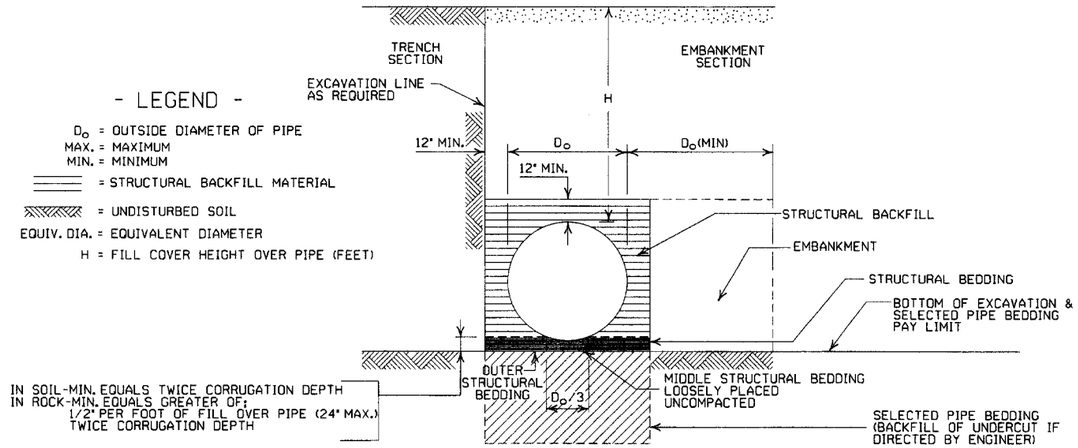
NOTE: STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF METAL PIPE.

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

③ SM-3 WILL NOT BE ALLOWED.

EQUIVALENT METAL THICKNESSES AND GAUGES

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



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. INSTALALTION TYPE 1 SHALL BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 2⅔" X ½" 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."

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

② WHERE THE STANDARD 2 2/3"x ½" 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.

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 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.

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 TRENCH WIDTH BASED ON FILL HEIGHT "H"

PIPE DIAMETER	TRENCH WIDTH (FEET) "H" < 10'-0"	TRENCH WIDTH (FEET) "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"

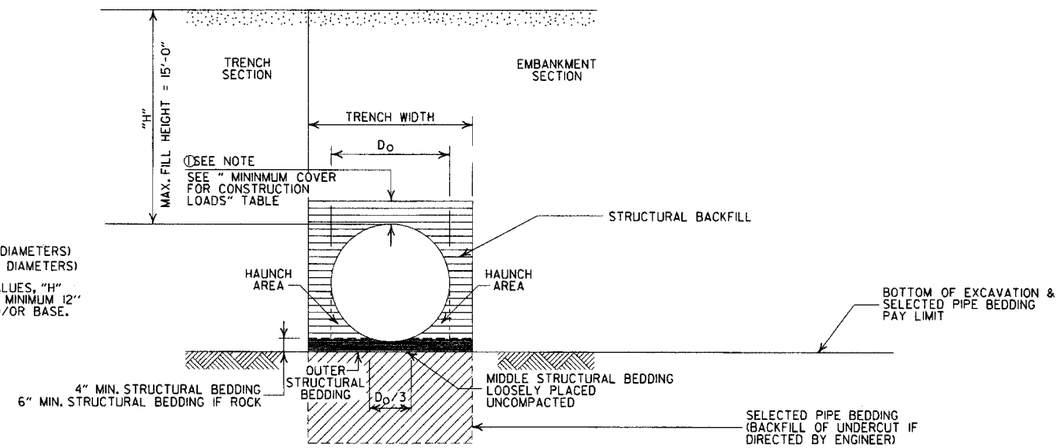
①NOTE:
18" MIN. (18" - 30" DIAMETERS)
24" MIN. (36" - 48" DIAMETERS)

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

MINIMUM COVER FOR CONSTRUCTION LOADS

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

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



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

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

CONSTRUCTION SEQUENCE

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

GENERAL NOTES

1. PIPE SHALL CONFORM TO AASHTO M294, TYPE S. INSTALLATION SHALL CONFROM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICIATIONS 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.

- LEGEND -

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

= STRUCTURAL BACKFILL MATERIAL

= UNDISTURBED SOIL

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 1INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

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

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

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

MULTIPLE INSTALLATION OF PVC PIPES

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

MAXIMUM FILL HEIGHT BASED ON STRUCTURAL BACKFILL

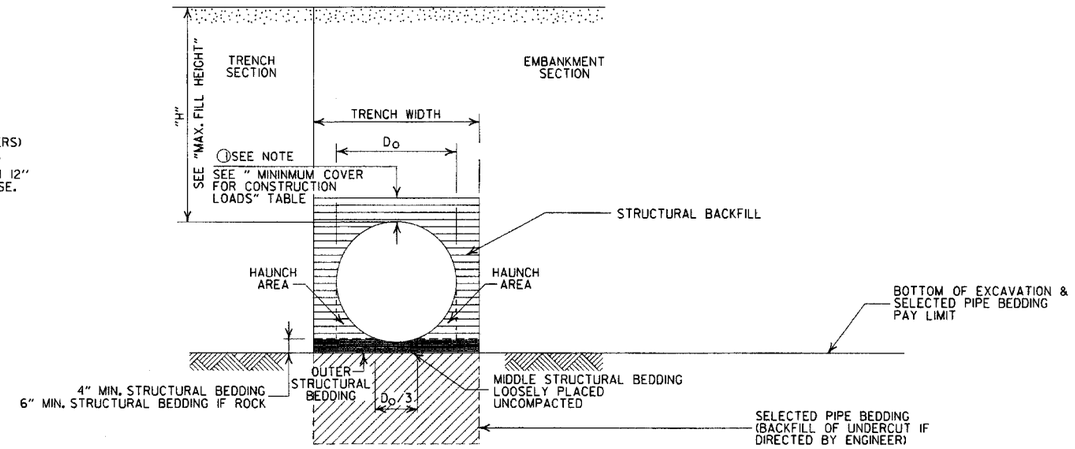
PIPE DIAMETER	"H"
18"	45'-0"
24"	45'-0"
30"	40'-0"
36"	40'-0"

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

MINIMUM COVER FOR CONSTRUCTION LOADS

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

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



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

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

CONSTRUCTION SEQUENCE

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

GENERAL NOTES

1. PIPE SHALL CONFORM TO ASTM F949, CELL CLASS 12454. INSTALLATION SHALL CONFROM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICIATIONS 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.

- LEGEND -

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

= STRUCTURAL BACKFILL MATERIAL

= UNDISTURBED SOIL

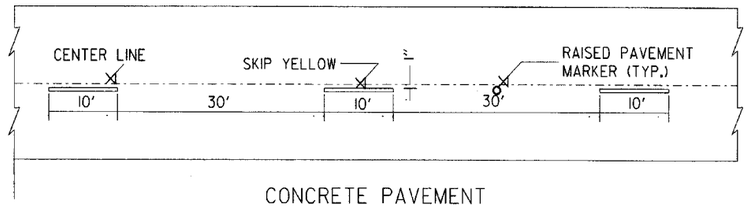
DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REV GENERAL NOTES & MINIMUM COVER NOTE; DELETED SM3 MATERIAL	
11-17-10	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

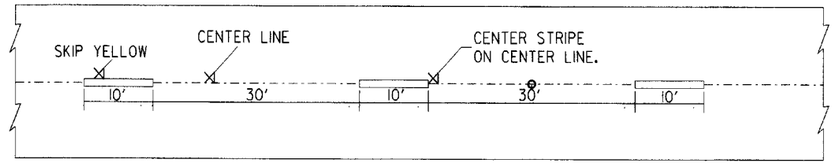
PLASTIC PIPE CULVERT (PVC F949)

STANDARD DRAWING PCP-2

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

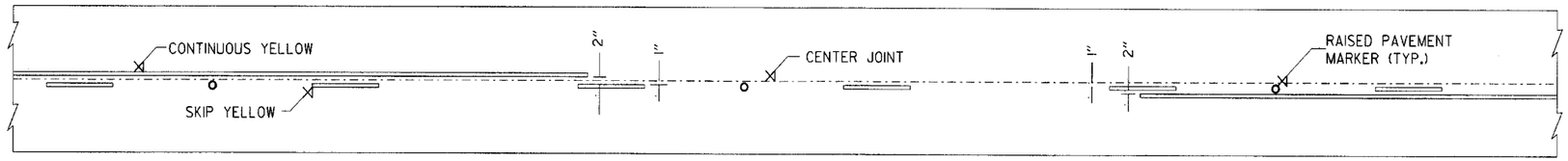


CONCRETE PAVEMENT

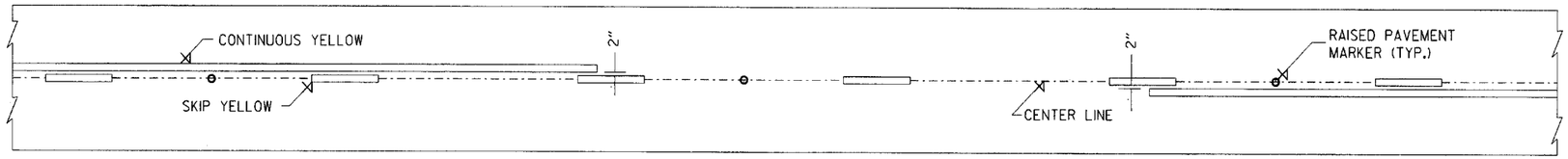


ASPHALT PAVEMENT

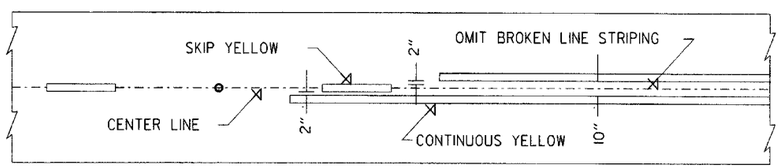
BROKEN LINE STRIPING



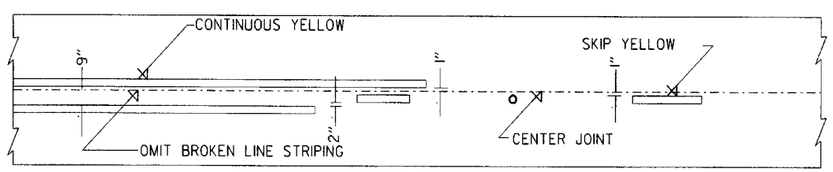
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

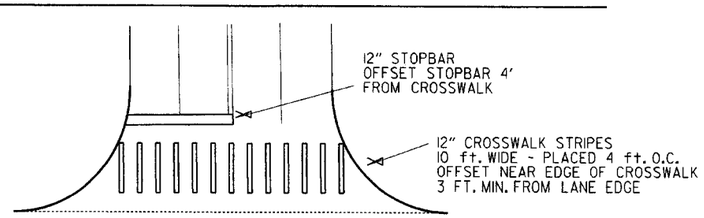


ASPHALT PAVEMENT



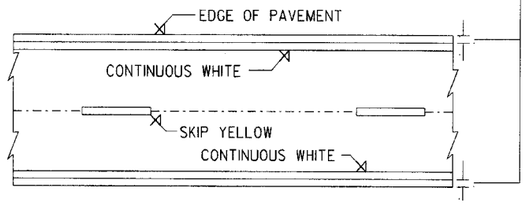
CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

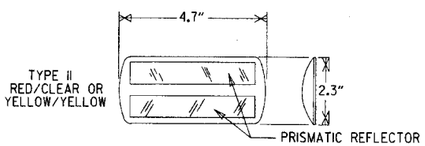


CROSSWALK AND STOPBAR DETAILS

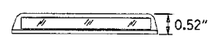
2" FOR ASPHALT OR CONCRETE PAVEMENT
6" FOR BITUMINOUS SURFACE TREATMENT



PAVEMENT EDGE LINE MARKING



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



DETAIL OF STANDARD RAISED PAVEMENT MARKERS

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

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

ARKANSAS STATE HIGHWAY COMMISSION

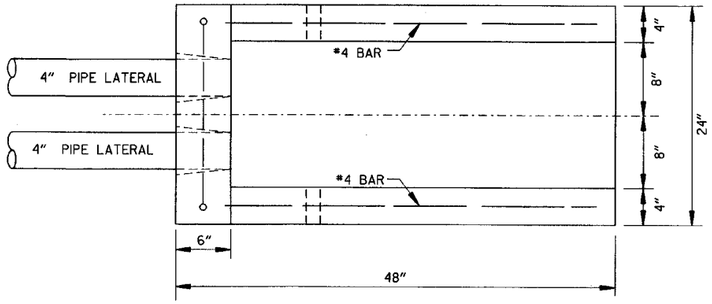
PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

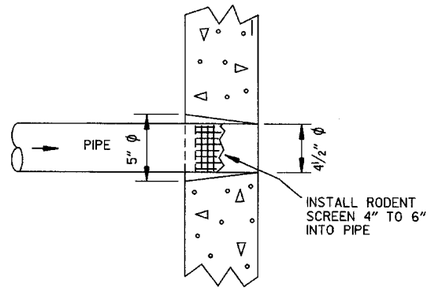
NOTE:
1. GRANULAR BACKFILL TO BE SUBSIDIARY TO PIPE UNDERDRAIN.

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

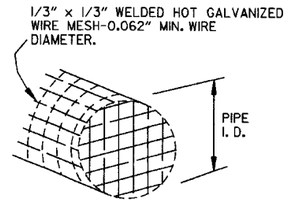
3. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC. LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.



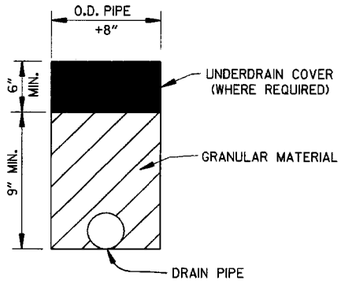
PLAN VIEW

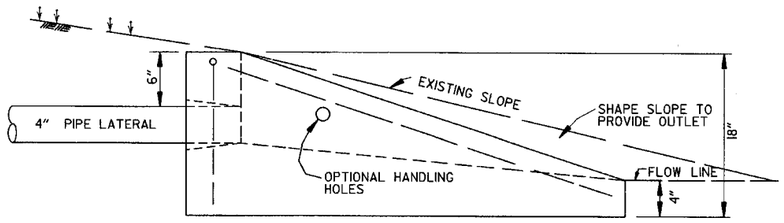


DETAIL OF HOLE FOR 4" PIPE

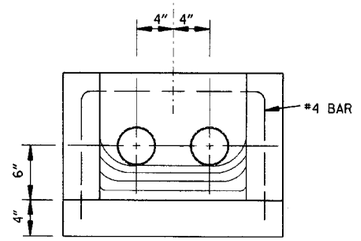


DETAIL OF RODENT SCREEN

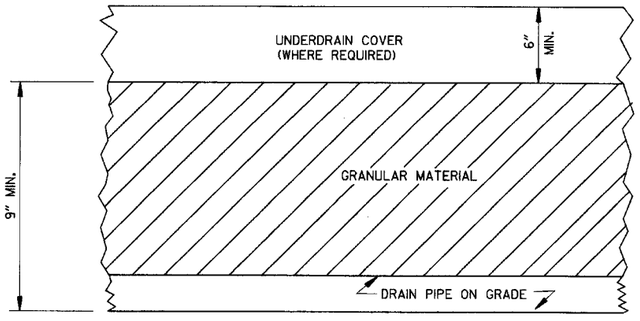




SIDE VIEW

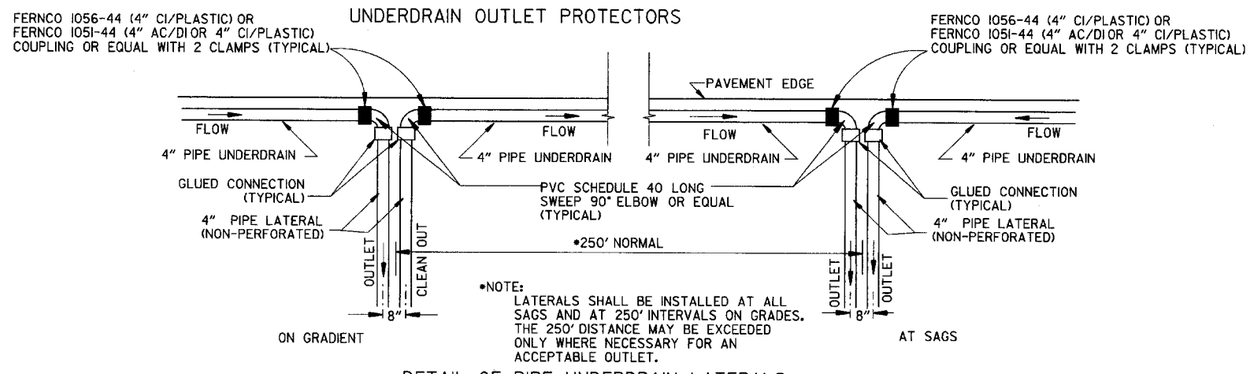


FRONT VIEW



DETAILS OF PIPE UNDERDRAIN

UNDERDRAIN OUTLET PROTECTORS



DETAIL OF PIPE UNDERDRAIN LATERALS WHEN PLACED ALONG PAVEMENT EDGE

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

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

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF PIPE UNDERDRAIN

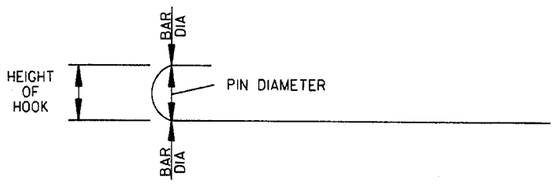
STANDARD DRAWING PU-1

7-20-95 INSTD.PUI

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

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

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



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

OVERALL HEIGHT OF HOOKED BAR DIAGRAM

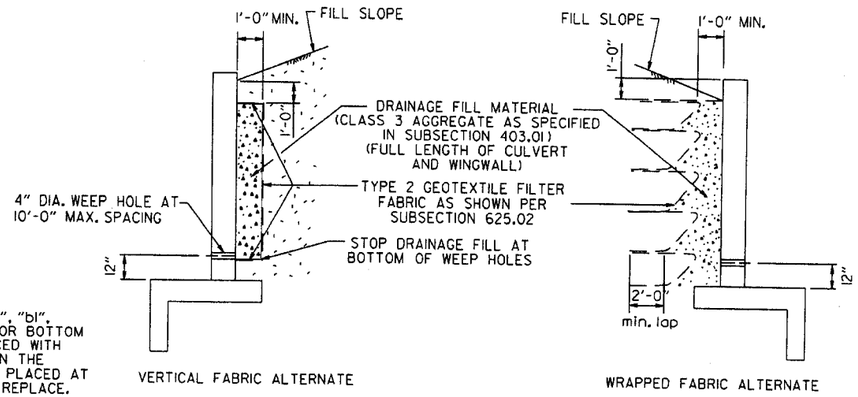
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

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

REPLACEMENT BAR LENGTHS TABLE

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

L = "OW" - 3 INCHES



WINGWALL & CULVERT DRAINAGE DETAIL

REINFORCED CONCRETE BOX CULVERT GENERAL NOTES

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

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

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

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

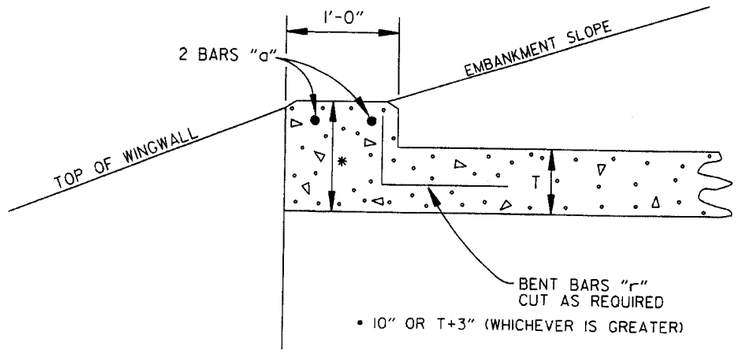
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

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

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

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

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



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

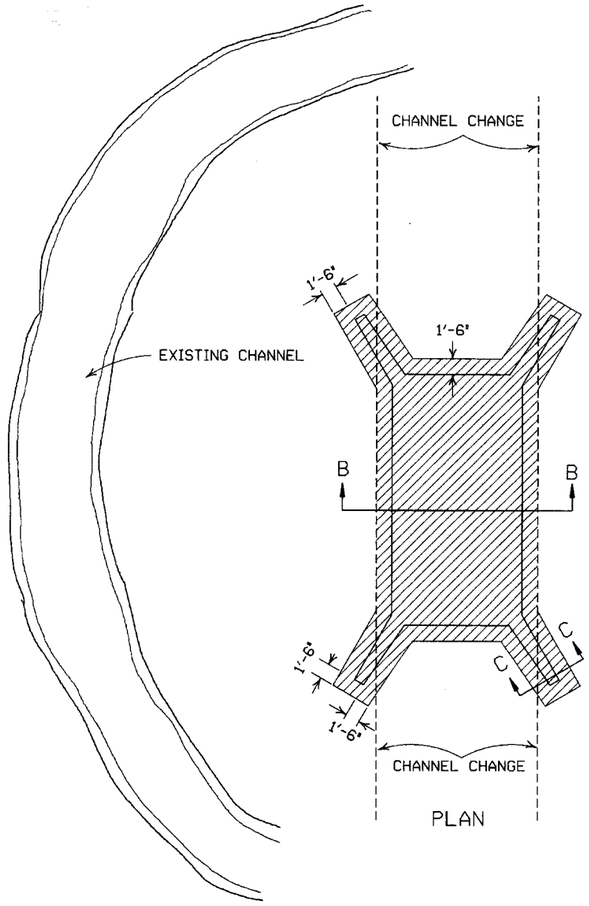
R.C. BOX CULVERT HEADWALL MODIFICATIONS

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

ARKANSAS STATE HIGHWAY COMMISSION

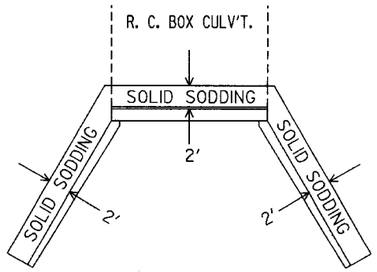
REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1



PLAN

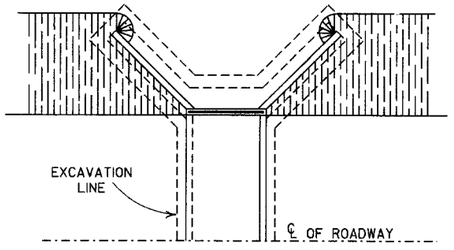
SOLID SODDING



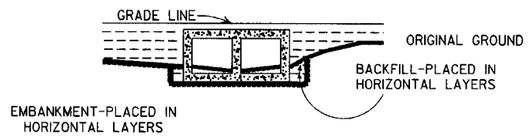
PLAN

PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

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

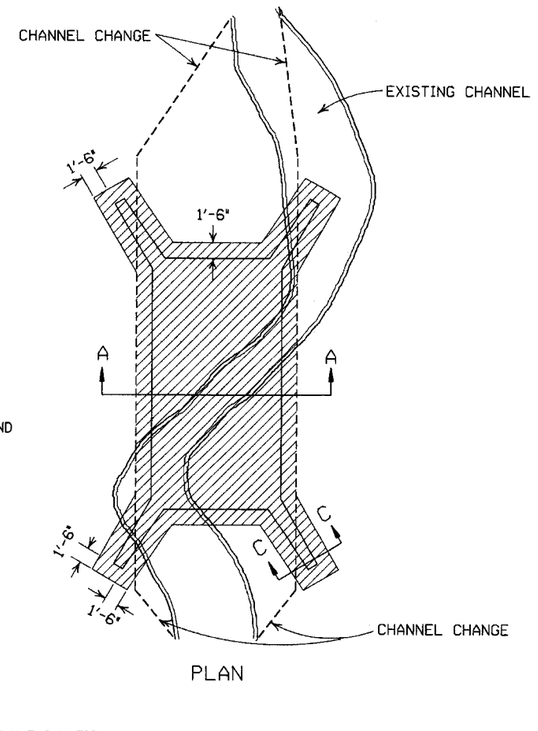


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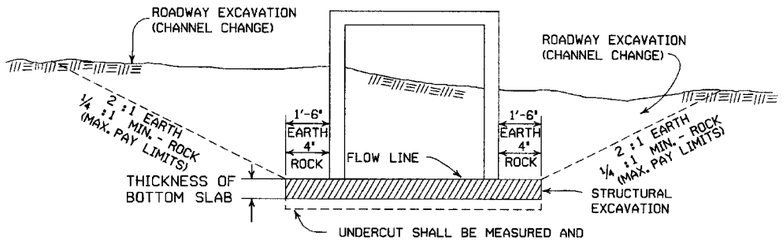


LONGITUDINAL SECTION

BACKFILL DETAILS FOR BOX CULVERT

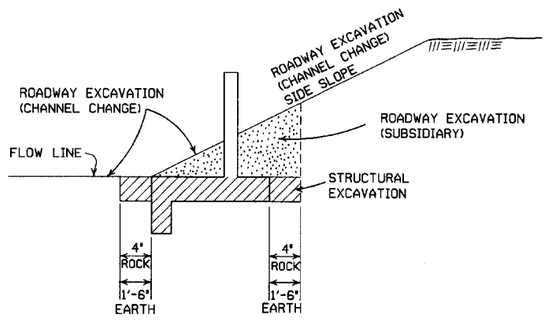


PLAN

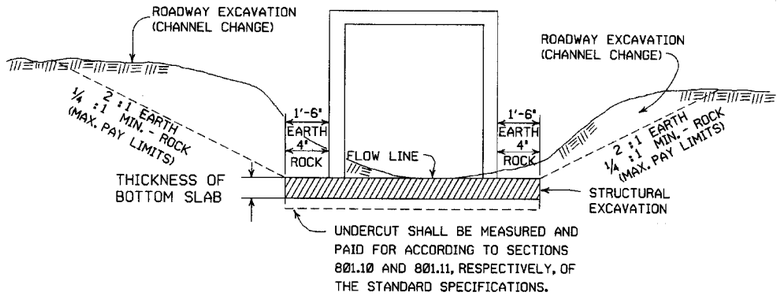


SECTION B-B

DETAILS FOR NEW CHANNELS



SECTION C-C



SECTION A-A

DETAILS THROUGH EXISTING CHANNELS

GENERAL NOTES:

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

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

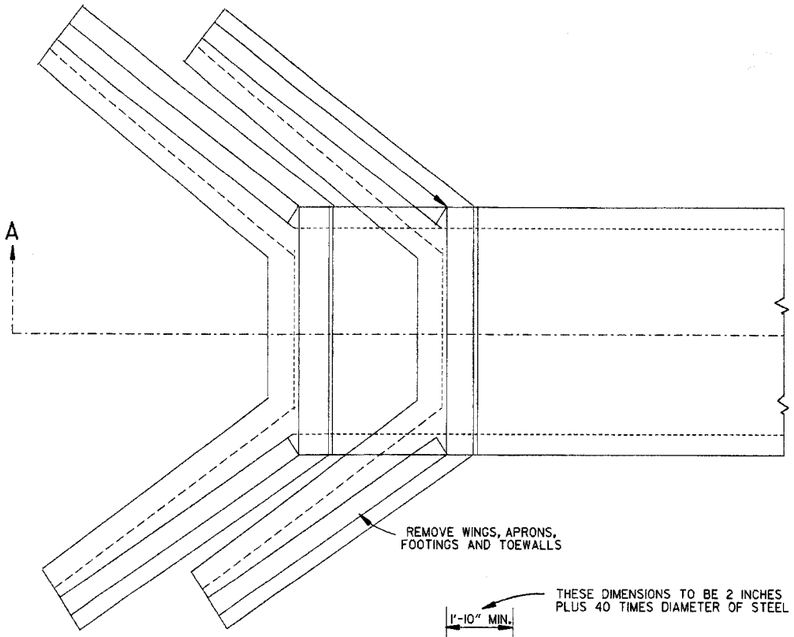
ROADWAY EXCAVATION SHOWN IN SECTION C-C ABOVE AS SUBSIDIARY WILL NOT BE MEASURED OR PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION.

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

ARKANSAS STATE HIGHWAY COMMISSION

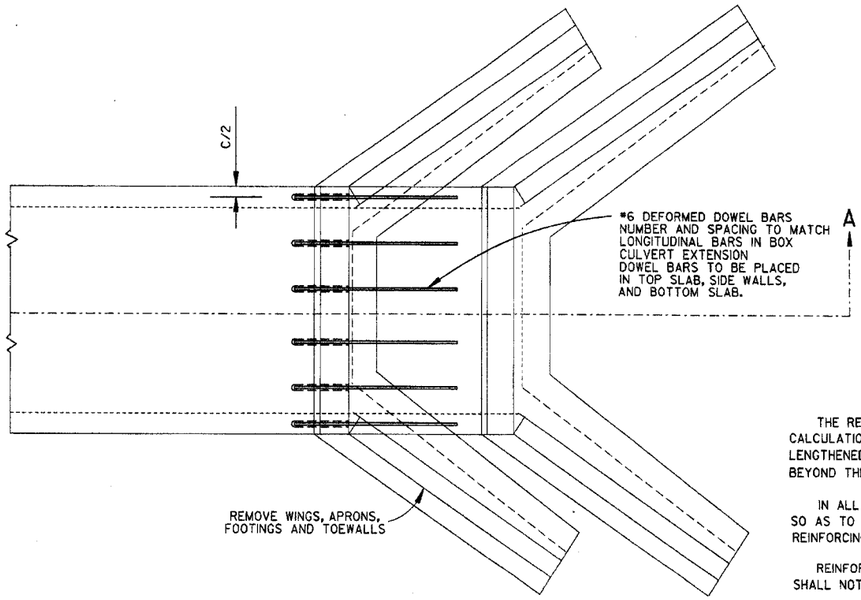
EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS

STANDARD DRAWING RCB-2



TOP VIEW
R.C. BOX CULVERT

SECTION A-A
METHOD 1



TOP VIEW
R.C. BOX CULVERT

SECTION A-A
METHOD 2

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.

DATE	REVISION	DATE FILM
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	

ARKANSAS STATE HIGHWAY COMMISSION

METHOD OF EXTENDING
EXISTING R.C. BOX CULVERTS

STANDARD DRAWING RCB-3

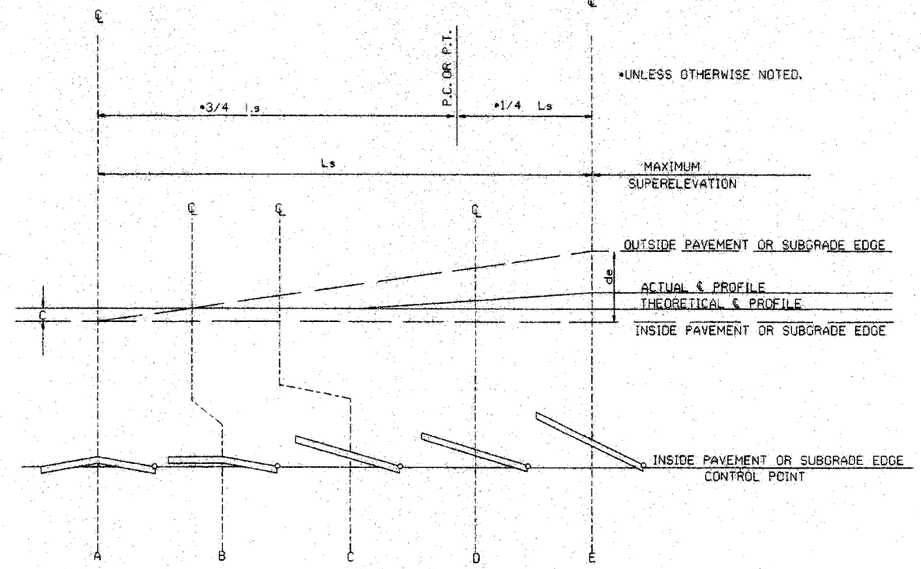
FILE STDrcb3.dgn

SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

DEGREE OF CURVE	30 MPH e	30 MPH Ls (FT) MINIMUM	30 MPH Ls (FT) DESIRABLE	40 MPH e	40 MPH Ls (FT) MINIMUM	40 MPH Ls (FT) DESIRABLE	50 MPH e	50 MPH Ls (FT) MINIMUM	50 MPH Ls (FT) DESIRABLE	55 MPH e	55 MPH Ls (FT) MINIMUM	55 MPH Ls (FT) DESIRABLE	60 MPH e	60 MPH Ls (FT) MINIMUM	60 MPH Ls (FT) DESIRABLE	70 MPH e	70 MPH Ls (FT) MINIMUM	70 MPH Ls (FT) 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.			R.C.			0.022			0.023			0.028		
1° 00'	N.C.			N.C.			0.021			0.026			0.030			0.037	275	300
1° 15'	N.C.			R.C.			0.026			0.032			0.037			0.046		
1° 30'	N.C.			0.021			0.031	200		0.037	225		0.043	250		0.054		
1° 45'	N.C.			0.025	175		0.036			0.043		300	0.049		300	0.062		
2° 00'	R.C.			0.028			0.040			0.048			0.055			0.070		
2° 15'	0.021			0.031			0.045		250	0.053			0.061			0.078	300	350
2° 30'	0.023			0.034			0.049			0.058			0.067			0.085	315	
2° 45'	0.025			0.037			0.053			0.063			0.072			0.091	335	
3° 00'	0.027	150		0.040		200	0.057			0.067	230		0.077	260		0.098	350	400
3° 15'	0.029			0.043			0.061			0.072	245		0.082	275		0.098	360	
3° 30'	0.031			0.046			0.065	205		0.076	255		0.086	285		0.100	360	
3° 45'	0.033			0.049			0.069	215		0.080	265		0.090	295				
4° 00'	0.035			0.051			0.072	225		0.083	270		0.093	305	350			
4° 30'	0.037			0.056			0.078	240		0.087	290		0.096	315				
5° 00'	0.040			0.061			0.083	250		0.091	295	350	0.098	320				
5° 30'	0.043			0.066	185		0.088	260		0.094	300							
6° 00'	0.046			0.070	190		0.092	270		0.096	305							
6° 30'	0.050			0.074	200		0.095	280	300	0.100	315							
7° 00'	0.053			0.078	210		0.098	285										
7° 30'	0.056			0.081	215		0.099	290										
8° 00'	0.058			0.084	220	250	0.100	290										
8° 30'	0.061			0.087	225													
9° 00'	0.063			0.089	230													
10° 00'	0.068	160		0.094	235													
11° 00'	0.072	170		0.097	250													
12° 00'	0.076	175		0.099	260													
13° 00'	0.080	180		0.100	250													
14° 00'	0.083	190																
15° 00'	0.086	195																
16° 00'	0.089	200																
17° 00'	0.091	200																
18° 00'	0.093	205																
19° 00'	0.095	210																
20° 00'	0.097	215	250															
21° 00'	0.098	215																
22° 00'	0.099	215																
23° 00'	0.099	215																
24° 00'	0.100	220																
	D MAX = 24° 45'			D MAX = 13° 15'			D MAX = 8° 15'			D MAX = 6° 30'			D MAX = 5° 15'			D MAX = 3° 30'		

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.)



•UNLESS OTHERWISE NOTED.

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

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

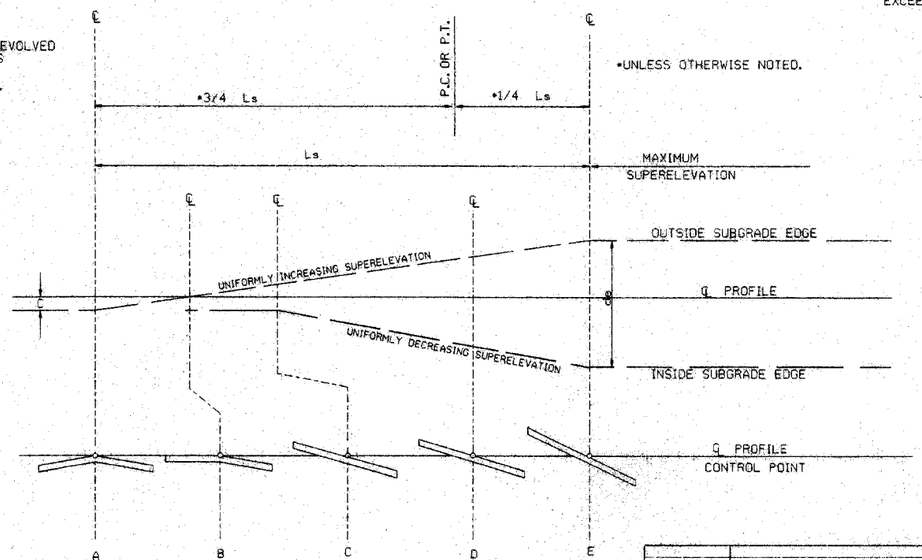
GENERAL NOTES

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.



•UNLESS OTHERWISE NOTED.

STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE

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

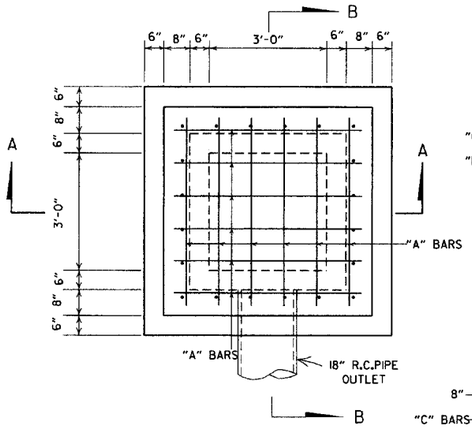
DATE	REVISION	DATE FILMED
10-18-96	ADDED FORMULA	10-18-96
01-09-87	ISSUED	534-1-9-87

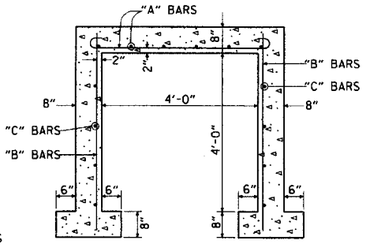
ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

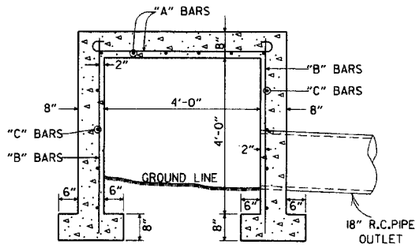
STANDARD DRAWING SE-2

FILE STDSE2.DGN





SEC A-A



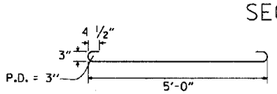
SEC B-B

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

STEEL SCHEDULE

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

ALL STEEL TO BE #4 BARS



"A" BARS

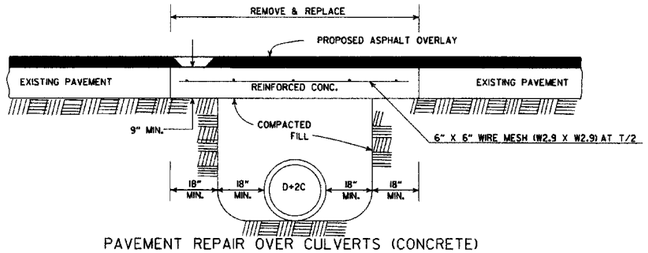
QUANTITIES

CONCRETE 3.31 CU. YDS.
REINFORCING STEEL 168 LB.

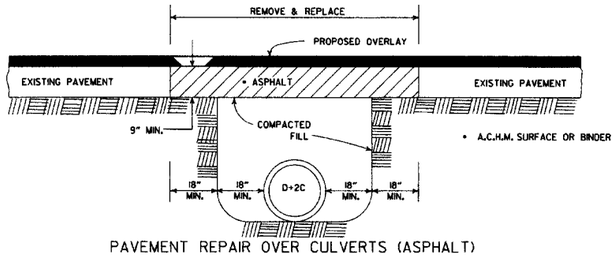
GENERAL NOTE:

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

REINFORCED CONCRETE SPRING BOX



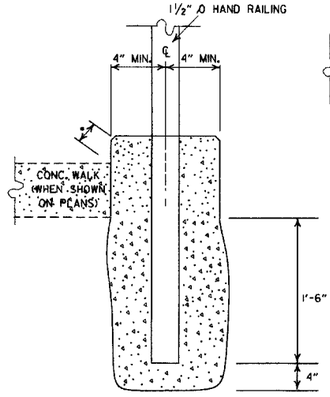
PAVEMENT REPAIR OVER CULVERTS (CONCRETE)



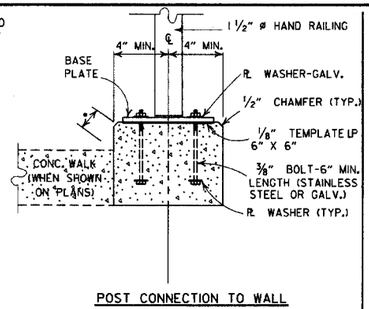
PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS

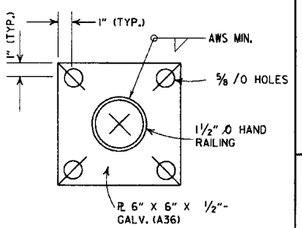
• A 2" MIN. HIGH CURB IS REQUIRED WHEN CONCRETE WALK IS ADJACENT TO THE HAND RAILING. PAYMENT FOR CURB SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR CONCRETE WALKS.



DETAIL OF HAND RAILING SET IN CONCRETE

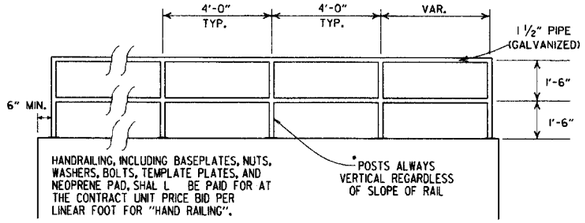


POST CONNECTION TO WALL

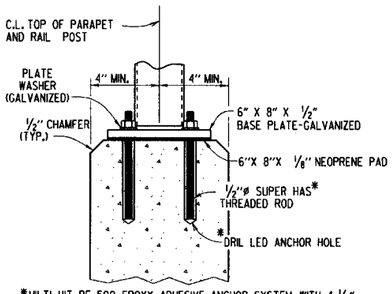


BASE PLATE

POST CONNECTION DETAILS



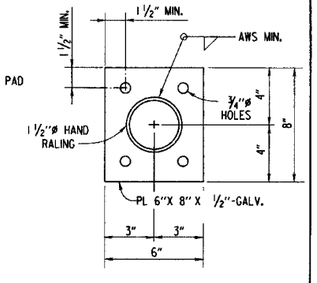
HAND RAILING SHALL CONFORM TO SECTION 633.



*HILTI HIT RE 500 EPOXY ADHESIVE ANCHOR SYSTEM WITH 4 1/2" EMBEDMENT OR APPROVED EQUAL.

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

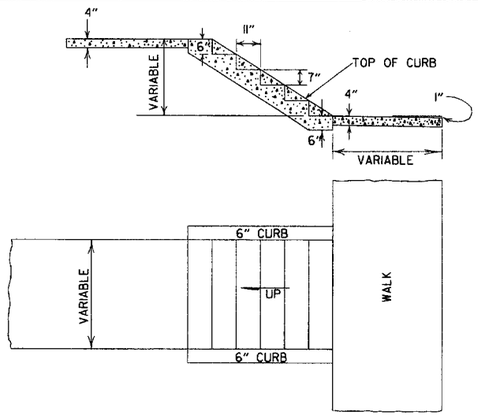
POST CONNECTION TO WALL



BASE PLATE

DETAILS OF ALTERNATE POST ANCHOR SYSTEM
(EPOXY ADHESIVE ANCHORS)

HAND RAILING DETAILS



GENERAL NOTES

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

DETAILS OF CONCRETE STEPS & WALKS

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

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF SPECIAL ITEMS

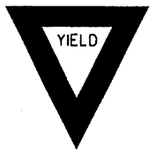
STANDARD DRAWING SI-1

R1-1



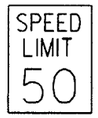
STANDARD 30"X30"
EXPRESSWAY 36"X36"
SPECIAL 48"X48"

R1-2



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

R2-1



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

W3-5



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

W3-5a



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

R4-1



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

R4-2



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

R5-1



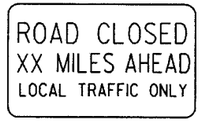
STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

R11-2



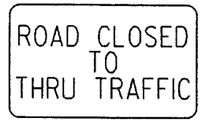
48"X30"

R11-3A



60"X30"

R11-4



60"X30"

RSP-1



48"X30"

W1-1



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

W1-2



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

W1-3



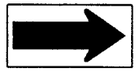
STD. 48"X48"

W1-4



STD. 48"X48"

W1-6



STD. 48"X24"
SPECIAL 60"X30"

W1-8



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

W3-1



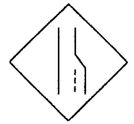
STD. 36"X36"
SPECIAL 48"X48"

W3-2



STD. 36"X36"
SPECIAL 48"X48"

W4-2



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

W5-1



STD. 36"X36"
SPECIAL 48"X48"

W6-3



EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7



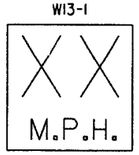
EXPWY. 36"X36"
FWY. 48"X48"

W9-2



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

W13-1



STD. 24"X24"

W20-1



STD. 48"X48"

W20-2



STD. 48"X48"

W20-3



STD. 48"X48"

W20-4



STD. 48"X48"

W20-5



STD. 48"X48"

W20-7a



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

W21-2



STD. 30"X30"
SPECIAL 36"X36"

W21-5



STD. 30"X30"
SPECIAL 36"X36"

W24-1



STD. 36"X36"

W1-4b



STD. 48"X48"

R56-1



STD. 18"X18"

W8-11



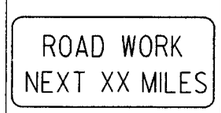
STD. 36"X36"
FWY. 48"X48"

W8-9



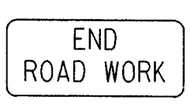
STD. 36"X36"
FWY. 48"X48"

G20-1



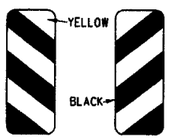
60"X24"

G20-2



48"X24"

OM-3L OM-3R



12"X36"

M4-9



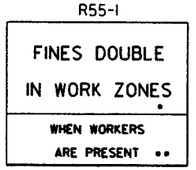
STD. 30"X24"
SPECIAL 48"X36"
SPECIAL 60"X48"

M4-10



48"X18"

R55-1



36"X60"

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

ADVANCE DISTANCES
(XXXX)

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

GENERAL NOTES:

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

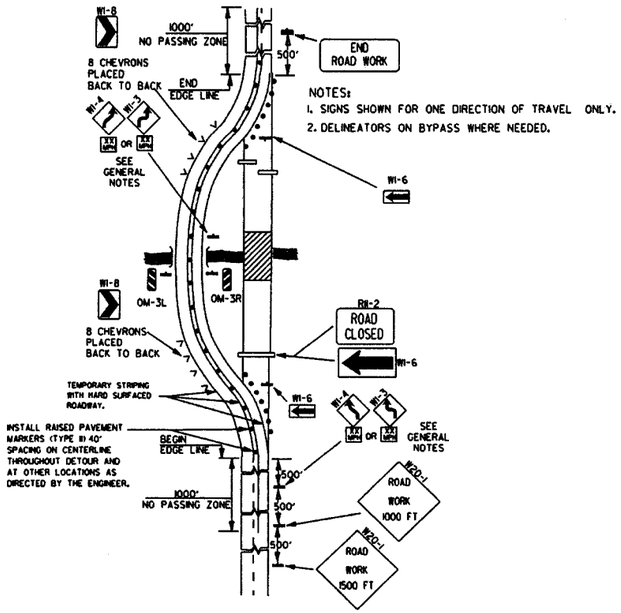
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY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

DATE	REVISION	FILMED
9-2-15	REVISED REDUCED SPEED LIMIT AHEAD SIGNS REVISED ROAD WORK NEXT XX MILES	
12-15-11	REVISED W24-1	
11-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
11-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
11-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
8-18-98	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	
8-15-94	DRAWN AND PLACED IN USE	

ARKANSAS STATE HIGHWAY COMMISSION

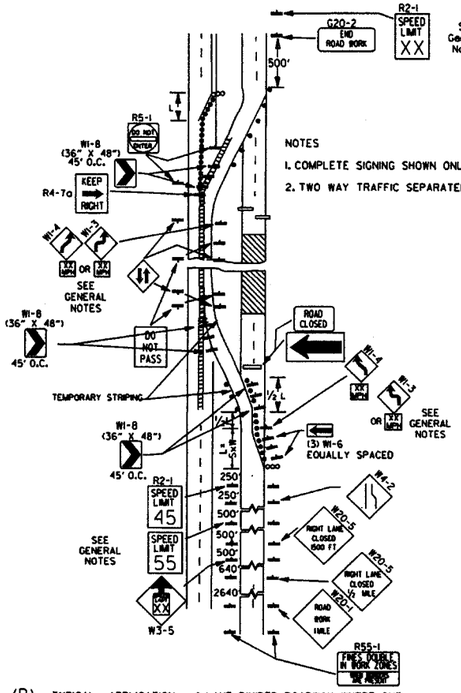
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



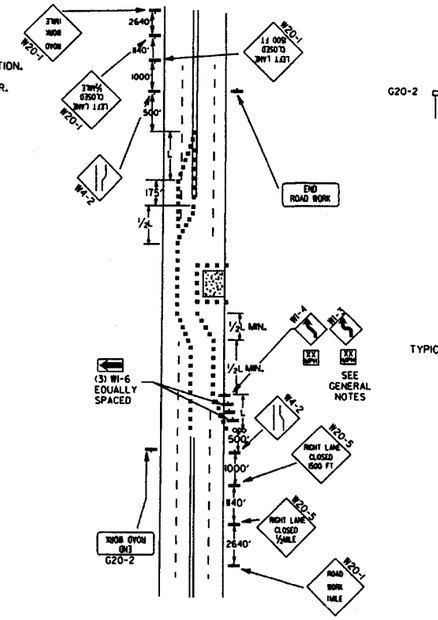
NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

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

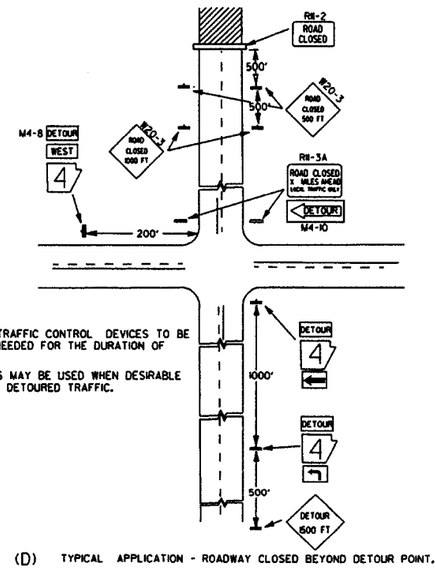


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

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

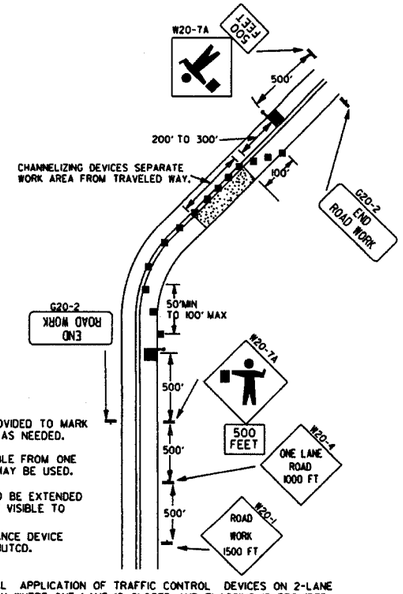


(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



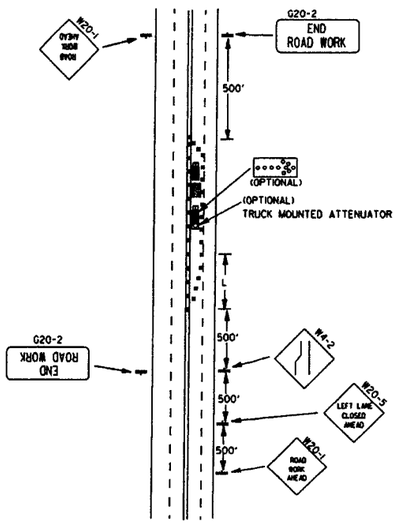
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

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

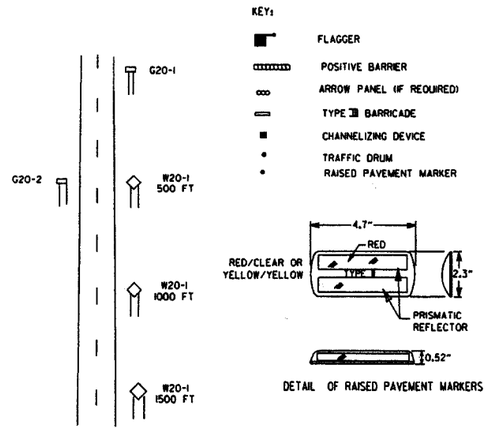


NOTES:
1. FLOOD LIGHTS SHOULD BE PROVIDED TO MARK FLAGGER STATIONS AT NIGHT AS NEEDED.
2. IF ENTIRE WORK AREA IS VISIBLE FROM ONE STATION, A SINGLE FLAGGER MAY BE USED.
3. CHANNELIZING DEVICES ARE TO BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
4. AUTOMATED FLAGGER ASSISTANCE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

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



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



DETAIL OF RAISED PAVEMENT MARKERS

TYPICAL ADVANCE WARNING SIGN PLACEMENT

TAPER FORMULAE:

L=SXW FOR SPEEDS OF 45MPH OR MORE.

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

WHERE:
L= MINIMUM LENGTH OF TAPER.
S= NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.
W= WIDTH OF OFFSET.

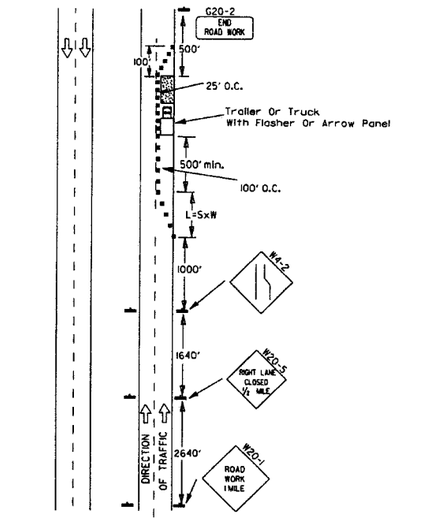
GENERAL NOTES:
1. ADVISORY SPEED POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS TO BE DETERMINED AT SITE. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-1 55MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE.
8. DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE AHTD QUALIFIED PRODUCTS LIST.

DATE	REVISION	FILMED
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	
3-8-10	ADDED (AFAD)	
11-20-08	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	

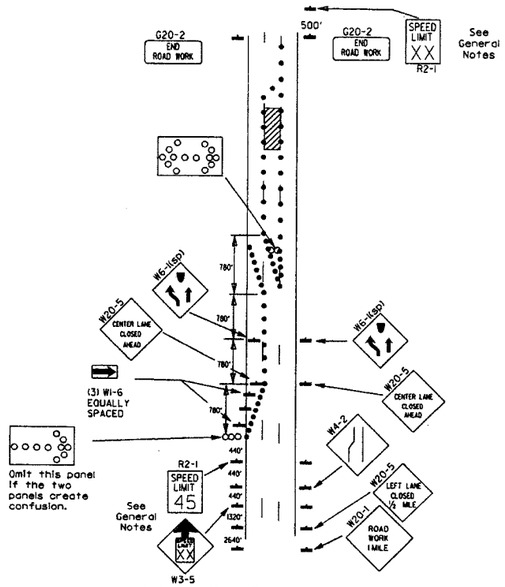
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

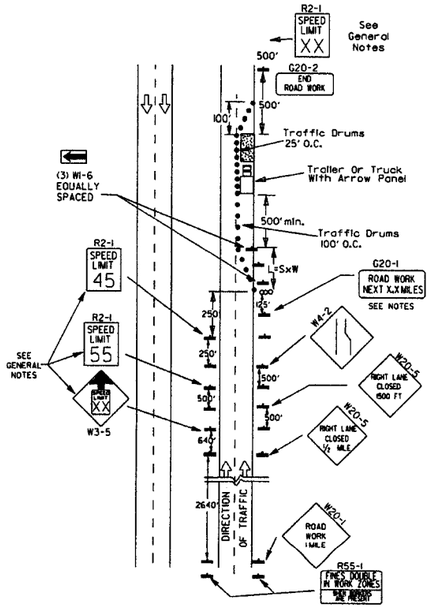
STANDARD DRAWING TC-2



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



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



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

KEY:

ooo Arrow Panel (if Required)

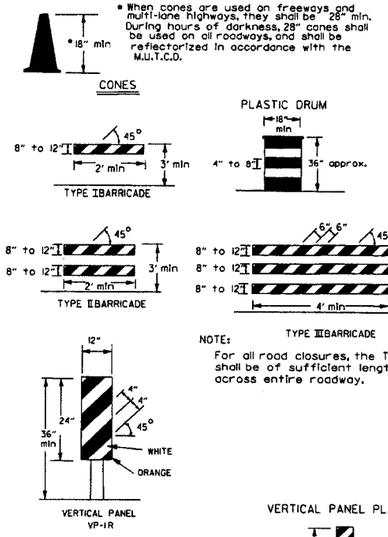
■ Channelizing Device

● Traffic drum

GENERAL NOTES:

1. A speed limit reduction may be implemented ONLY when designated in the plan or when recommended by the Roadway Design Division.
2. When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the W3-5 shall be installed at that location. Additional R2-1 45mph speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
3. When the existing speed limit is 65mph and the plans require a speed limit of 55mph, the R2-1(45) shall be omitted. Additional R2-1 55mph speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
4. The maximum spacing between channelizing devices in a taper should be approximately equal in feet to the speed limit. Beyond the taper, maximum spacing shall be two times the speed limit or as directed by the Engineer.
5. Warning lights and/or flags may be mounted to signs or channelizing devices at night as needed.
6. Pavement markings no longer applicable which might create confusion in the minds of vehicle operators shall be removed or obliterated as soon as practicable.
7. The G20-1 sign will be required on jobs of over two miles in length. When the lane closure is not at the beginning of the project, the G20-1 sign shall be erected 125' in advance of the job limit. Additional W20-1 (1 MILE) signs are not required in advance of lane closures that begin inside the project limits.
8. Flaggers shall use STOP/SLOW paddles for controlling traffic through work zones. Flags may be used only for emergency situations.
9. All plastic drums and cones shall meet the requirements of NCHRP-350 or Manual For Assessing Safety Hardware (MASH).
10. Trailer mounted devices such as arrow panels and portable changeable message signs shall be delineated by affixing conspicuity material in a continuous line on the face of the trailer. When placed on or adjacent to the shoulder and not behind a positive barrier, these devices shall be delineated by placing five (5) traffic drums, equally spaced along the traffic side of the device.

Channelizing devices



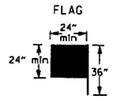
NOTE:
For all road closures, the Type III barricades shall be of sufficient length to extend across entire roadway.

TRAFFIC CONTROL DEVICES FOR VERTICAL PAVEMENT DIFFERENTIALS

VERTICAL DIFFERENTIAL	LOCATIONS	TRAFFIC CONTROL
1" to 3"	Centerline, lane lines	W8-11
1" to 3"	Edge of shoulder	W8-9
Greater than 3"	Lane lines	Standard lane closure required
Greater than 3"	Edge of traveled lane	*RSP-1 and vertical panels, drums or concrete barrier
Greater than 3"	Edge of shoulder	*Vertical panels, drums or concrete barrier

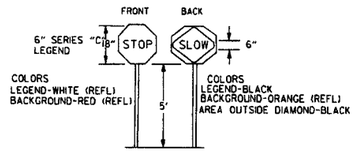
* When shown on the plans concrete barrier will be used.
When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.

FLAG

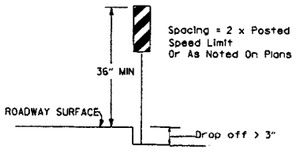


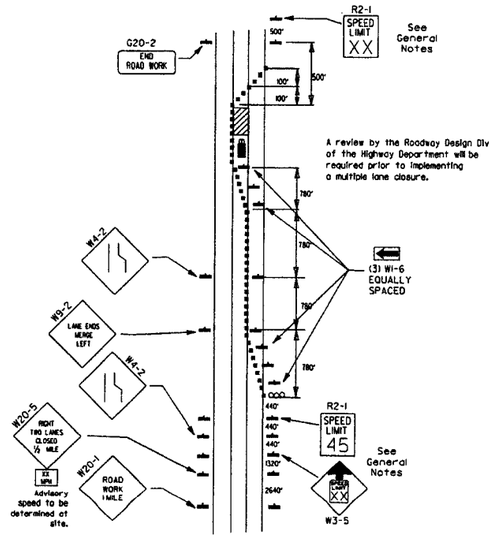
Flag shall be of good grade red material

STOP SLOW PADDLE



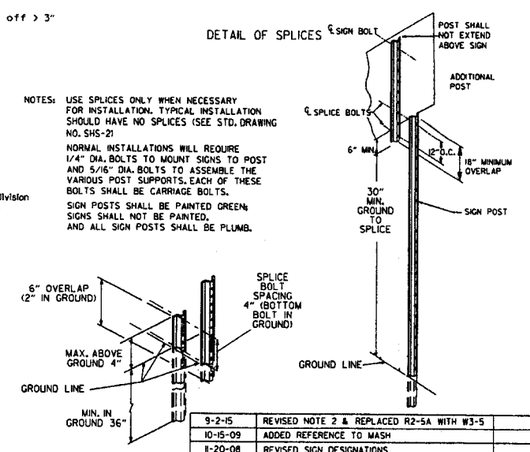
VERTICAL PANEL PLACEMENT





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

DETAIL OF SPLICES



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

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

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

DATE	REVISION	FILMED
9-2-15	REVISED NOTE 2 & REPLACED R2-5A WITH W3-5	
10-15-09	ADDED REFERENCE TO MASH	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED NOTE	
10-1-98	ADDED NOTE	
4-03-97	ADDED (SP) TO W6-1 & REVISED TRAFFIC CONTROL DEVICES NOTE	
10-18-96	ADDED R55-1	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL, TEXT	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-94	DRAWN AND PLACED IN USE	

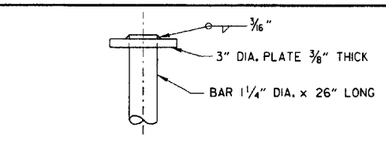
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

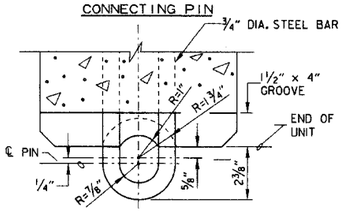
STANDARD DRAWING TC-3

REINFORCING BAR TABLE PER BARRIER UNIT

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

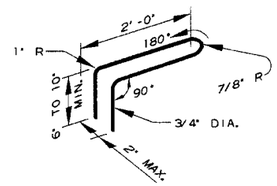


CONNECTING PIN

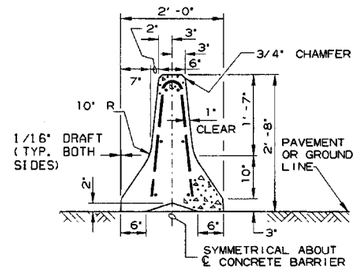


SECTION E-E

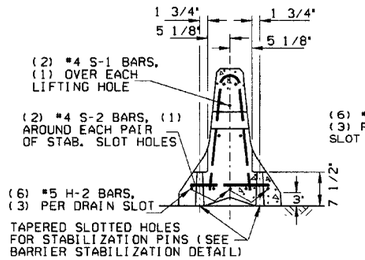
CONNECTION DETAILS



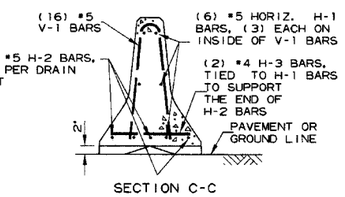
CONNECTION LOOP



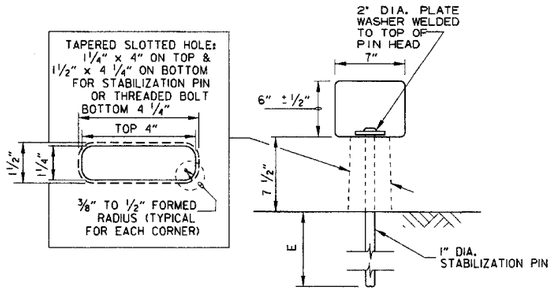
SECTION A-A



SECTION B-B



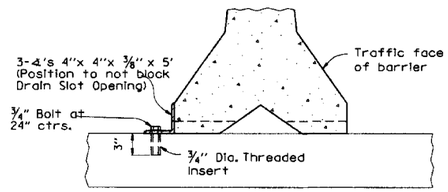
SECTION C-C



BARRIER STABILIZATION DETAIL

ROADWAY SECTION

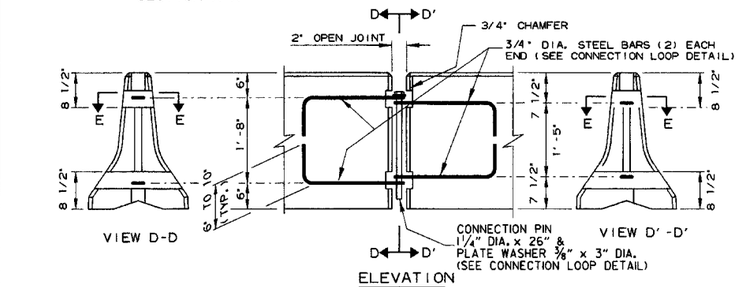
(E) 4" - Concrete Pavement
8" - Asphalt Pavement
12" - Shoulder Areas



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

BARRIER STABILIZATION DETAIL

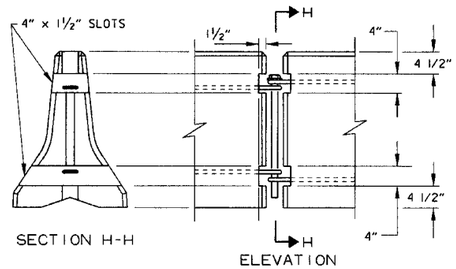
BRIDGE DECKS



VIEW D-D

VIEW D'-D'

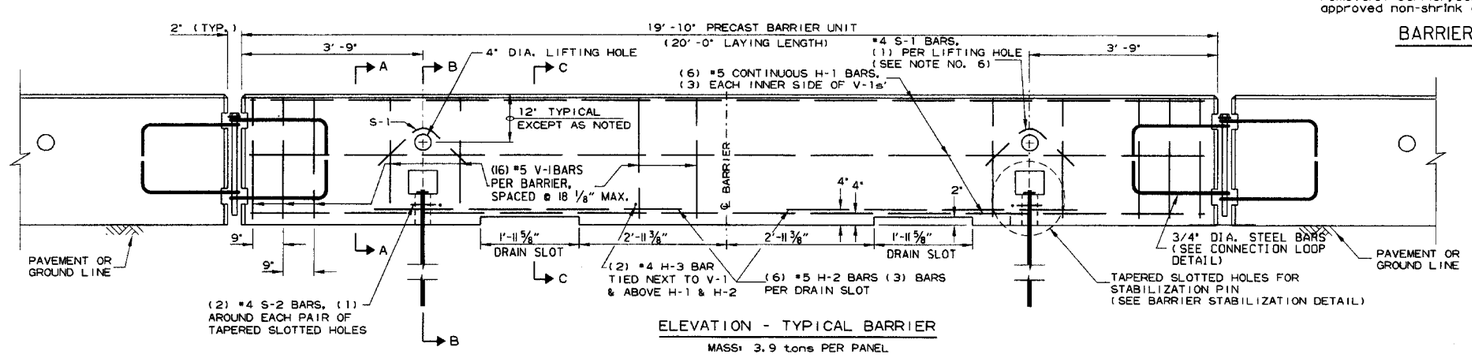
ELEVATION



SECTION H-H

ELEVATION

BARRIER REMOVAL SLOT DETAILS



ELEVATION - TYPICAL BARRIER

MASS: 3.9 tons PER PANEL

General Notes

1. The contractor shall furnish the Precast Concrete Barrier Units and shall be responsible for the manufacture, shipment, storage, placement and removal. At the completion of the project, the precast units will remain the property of the contractor.
2. Materials shall meet the following minimum requirements:
   Concrete: 2500 psi compressive strength at 28 days.
   Reinforcing Steel: AASHTO M 31 or M 53, Grade 60
   Structural Steel: AASHTO-M270 Grade 36 shall be used for the Connection Pin, Connection Loops, and Stabilization Pins. A One Piece Pin with a 3" rounded top may be used in place of the detailed Connection Pin.
   Delineators: Delineators shall be mounted at 10' spacing on top of precast barrier.

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

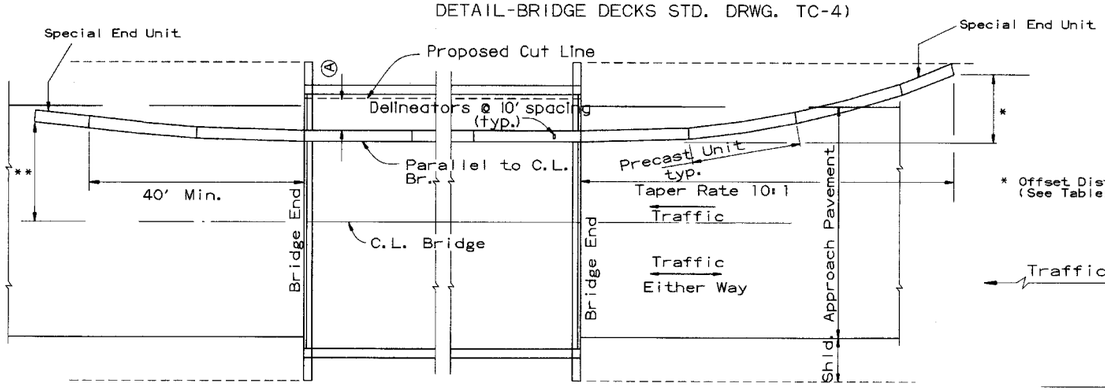
DATE	REVISION	FILMED
2-27-14	REVISED BARRIER STABILIZATION DETAIL	
10-15-09	ADDED REFERENCE TO MASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-16-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02	ISSUED NEW DRAWING	

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

STANDARD DRAWING TC-4

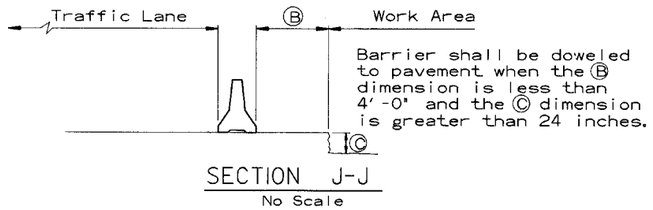
Ⓐ 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)



BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

* Offset Distance (See Table)

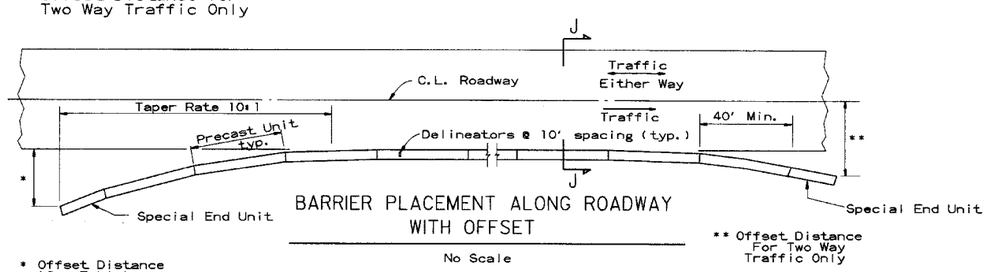


Barrier shall be doweled to pavement when the Ⓑ dimension is less than 4'-0" and the Ⓒ dimension is greater than 24 inches.

SECTION J-J

No Scale

** Offset Distance for Two Way Traffic Only



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

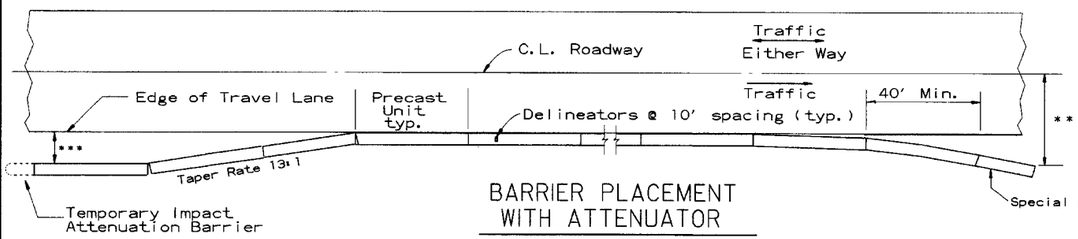
* Offset Distance (See Table)

** Offset Distance For Two Way Traffic Only

Offset Distance Table

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

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

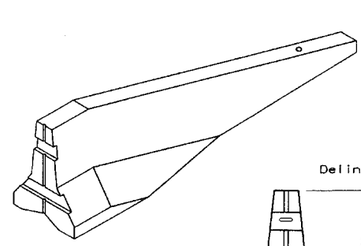


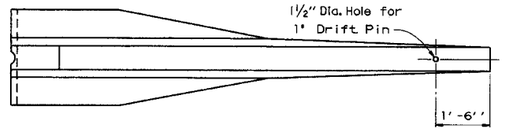
BARRIER PLACEMENT WITH ATTENUATOR

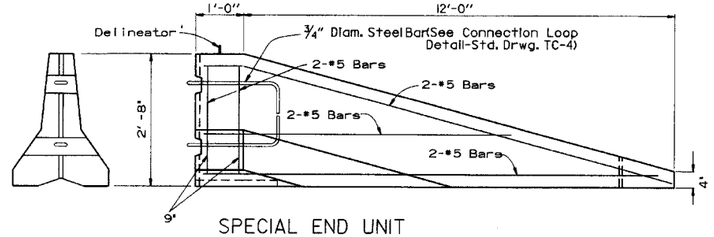
No Scale

** Offset Distance For Two Way Traffic Only

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







SPECIAL END UNIT

No Scale

General Notes

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

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

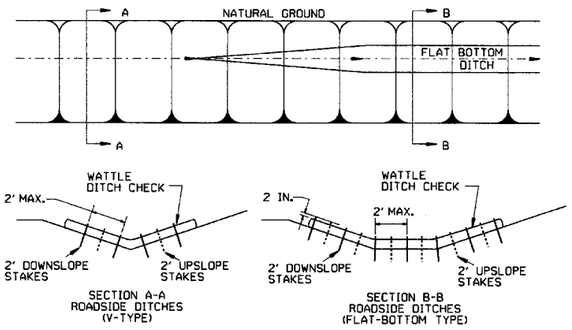
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

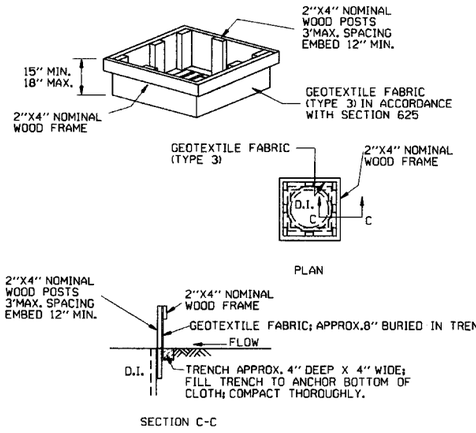
STANDARD DRAWING TC-5

GENERAL NOTES

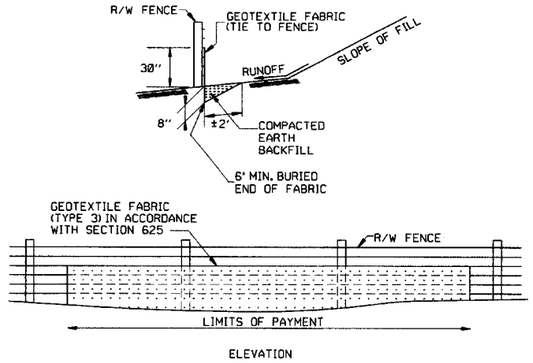
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



DROP INLET SILT FENCE (E-7)



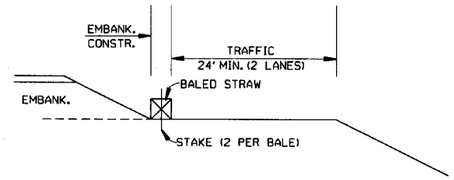
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

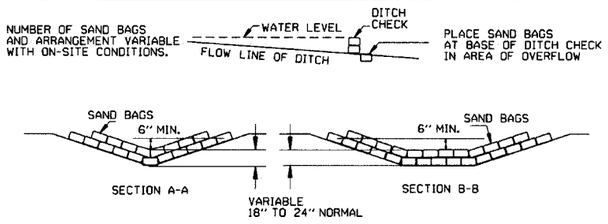
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

GENERAL NOTES

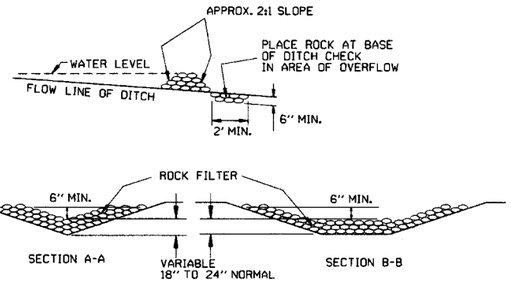
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.
2. NO GAPS SHALL BE LEFT BETWEEN BALES.
3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.



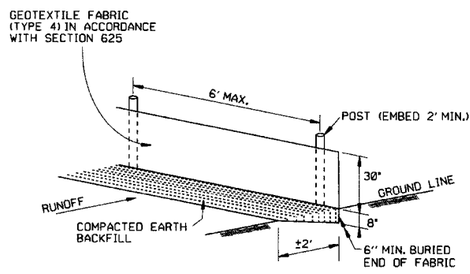
BALED STRAW FILTER BARRIER (E-2)



SAND BAG DITCH CHECK (E-5)



ROCK DITCH CHECK (E-6)



SILT FENCE (E-11)

GENERAL NOTES

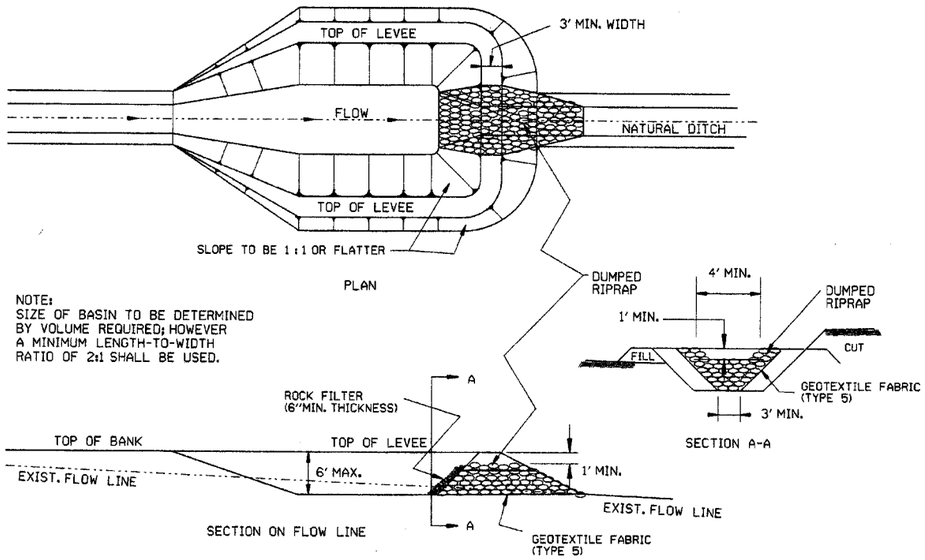
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

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

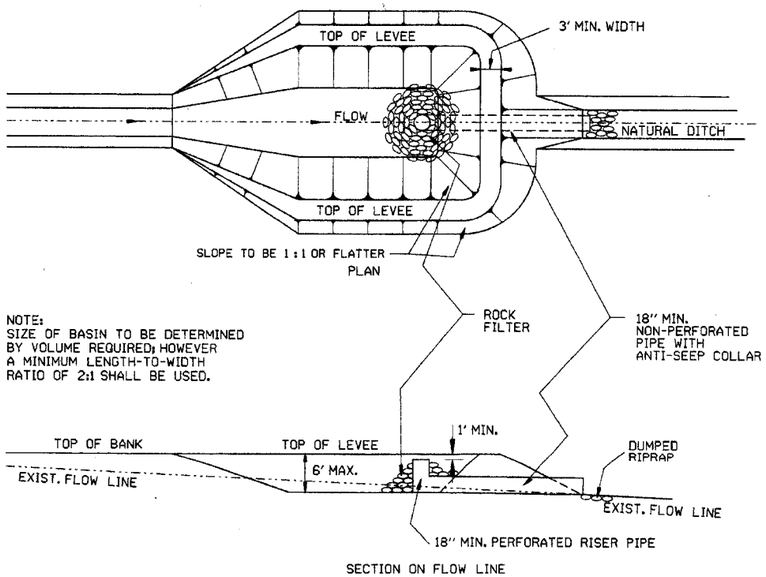
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

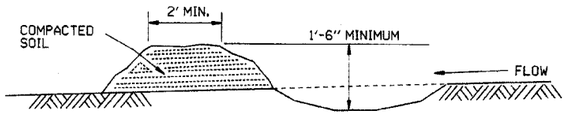
STANDARD DRAWING TEC-1



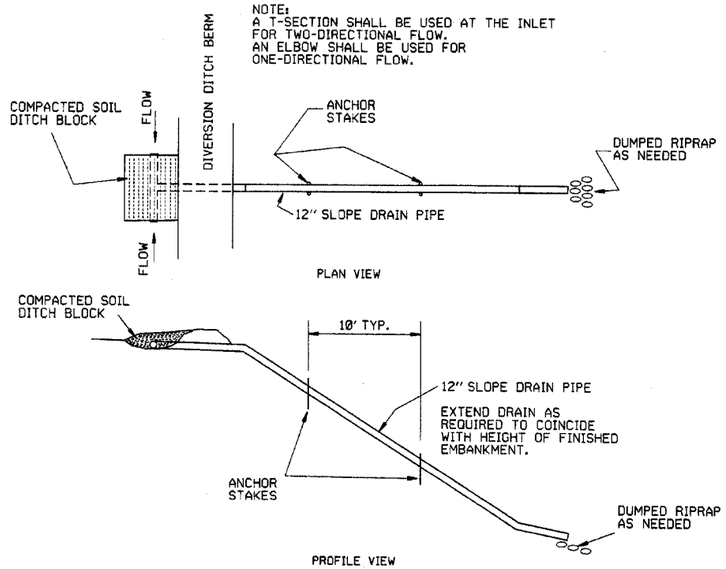
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



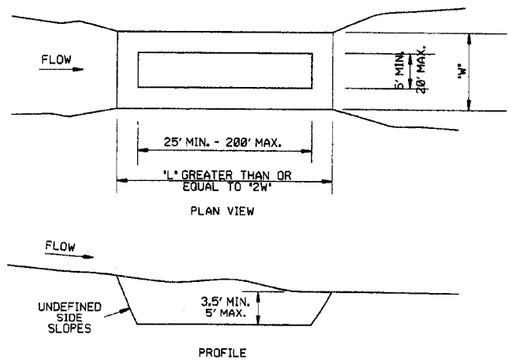
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



SEDIMENT BASIN (E-14)

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

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

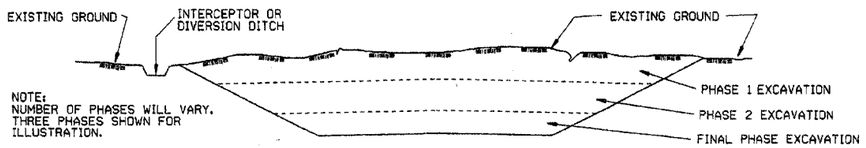
STANDARD DRAWING TEC-2

CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE

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

EXCAVATION



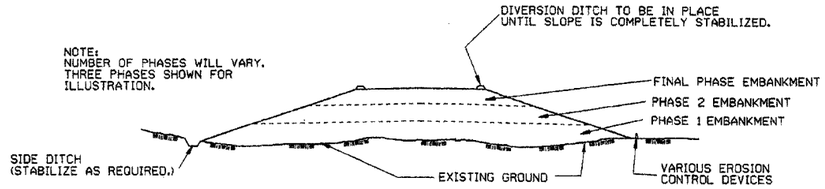
GENERAL NOTE

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

CONSTRUCTION SEQUENCE

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

EMBANKMENT



GENERAL NOTE

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

CONSTRUCTION SEQUENCE

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

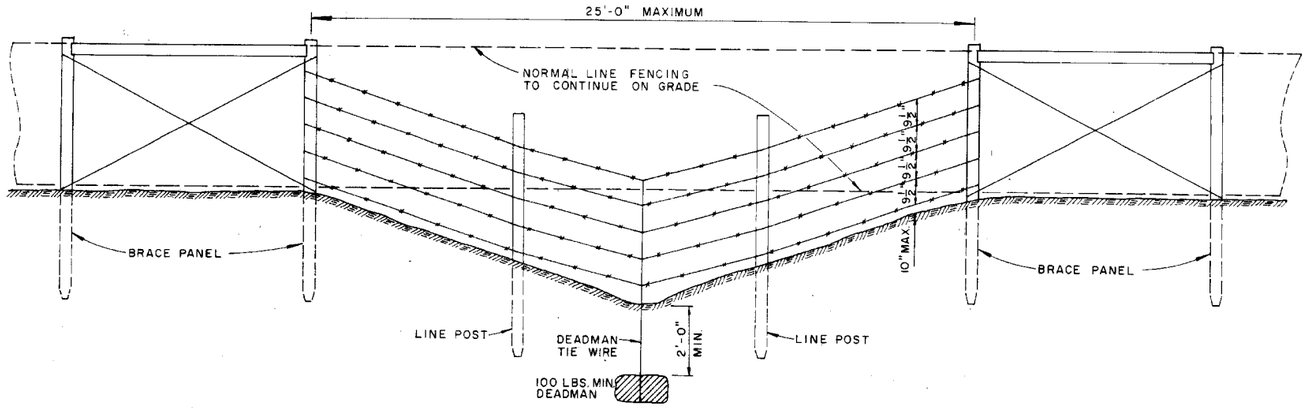
DATE	REVISION	FILMED
11-03-94	CORRECTED SPELLING	
6-2-94	Drawn & Issued	6-2-94

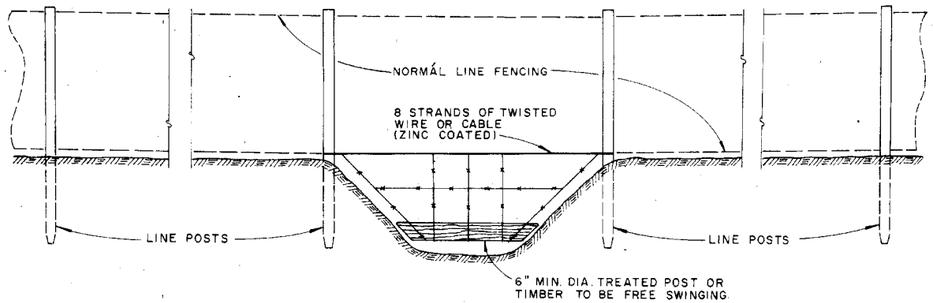
ARKANSAS STATE HIGHWAY COMMISSION

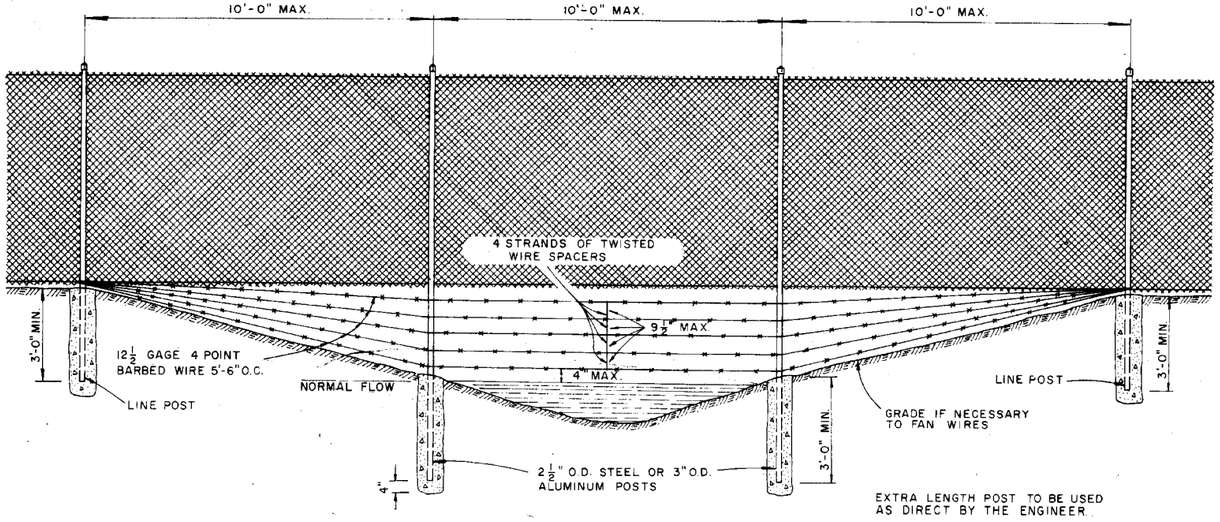
TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3

stdtec3.dgn







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.

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

ARKANSAS STATE HIGHWAY COMMISSION

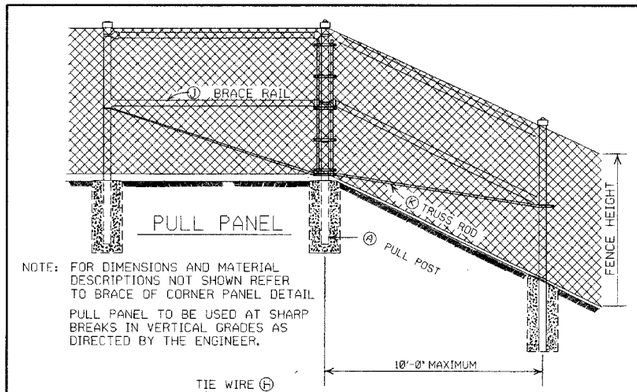
WIRE FENCE WATER GAPS

STANDARD DRAWING

WF-2

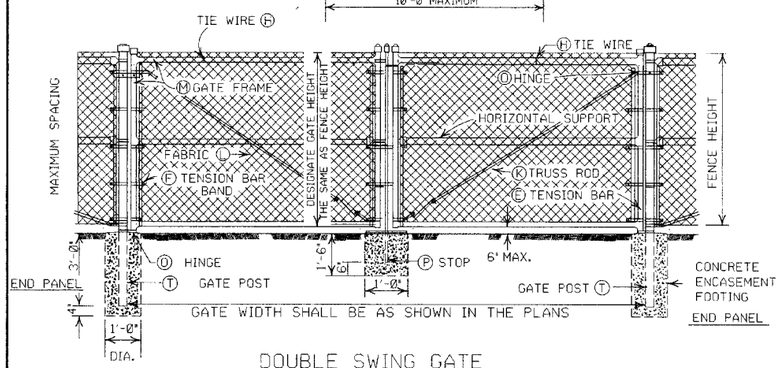
73

1M—11-71—47001—PP&BC



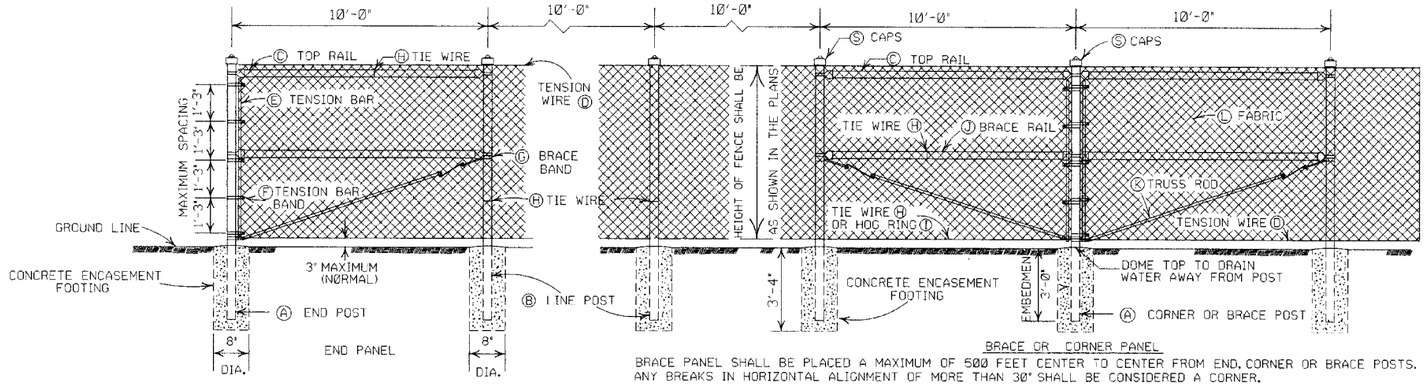
NOTE: FOR DIMENSIONS AND MATERIAL DESCRIPTIONS NOT SHOWN REFER TO BRACE OF CORNER PANEL DETAIL

PULL PANEL TO BE USED AT SHARP BREAKS IN VERTICAL GRADES AS DIRECTED BY THE ENGINEER.



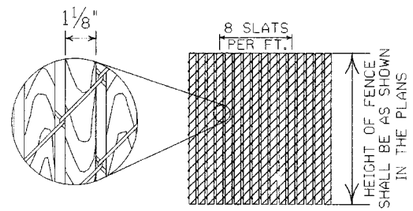
DOUBLE SWING GATE

POST SPACING DETAIL



BRACE OR CORNER PANEL

BRACE PANEL SHALL BE PLACED A MAXIMUM OF 500 FEET CENTER TO CENTER FROM END, CORNER OR BRACE POSTS. ANY BREAKS IN HORIZONTAL ALIGNMENT OF MORE THAN 30° SHALL BE CONSIDERED A CORNER.



1⅛" X ¼" REDWOOD SLATS(LENGTH TO MATCH HEIGHT OF FENCE)

DETAIL OF REDWOOD SLAT INSTALLATION

(WHERE APPLICABLE)

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.

(O) 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.

CONCRETE REQUIRED FOR THE EMBEDMENT OF ALL POSTS SHALL NOT BE PAID FOR DIRECTLY BUT SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR CHAIN LINK FENCE.

POSTS SHALL BE SPACED EQUIDISTANT ON A MAXIMUM OF 10' CENTERS.

EXCAVATION FOR POSTS: IN OTHER THAN ROCK SHALL BE OF THE DIMENSIONS INDICATED. IF ROCK IS ENCOUNTERED BEFORE REACHING THE REQUIRED DEPTH, THE EXCAVATION SHALL BE CONTINUED TO THE DEPTH INDICATED OR 1'-6" INTO THE ROCK, WHICHEVER IS LESS, AND SHALL BE A MINIMUM OF 8 INCHES IN DIAMETER.

HEIGHT OF FENCE FABRIC	(A) END, PULL, CORNER OR BRACE POST	(B) LINE POSTS SIZE	(B) LINE POSTS TIE SPACING	(C) TOP RAIL SIZE	(C) TOP RAIL TIE SPACING	(C) TOP RAIL MIN. LENGTH	(D) TENSION WIRE SIZE	(D) TENSION WIRE TIE SPACING	(E) TENSION BAR SIZE	(E) TENSION BAR LENGTH	(F) TENSION BAR BAND SIZE	(F) TENSION BAR BAND BOLT SIZE	(F) TENSION BAR BAND SPACING	(G) BRACE BAND SIZE	(G) BRACE BAND BOLT SIZE
6' AND LESS	2½" O.D.	2" O.D.	1 TIE EVERY 1'-2" OF FABRIC HEIGHT	1⅝" O.D.	1 TIE EVERY 2'-0"	10'-0"	7 GAUGE COIL SPRING WIRE	1 TIE EVERY 1'-0"	MIN. OF 3/16" X ¾"	MIN. OF 2" LESS THAN FABRIC HEIGHT	MIN. OF ¾" X 0.074	5/16" X 1¼"	1 BAND AT TOP AND BOTTOM 15" MAX. INTERVAL BETWEEN BANDS	MIN. OF ¾" X 0.105	5/16" X 1¼"
OVER 6' TO 12' INCL.	3" O.D.	2½" O.D.													

HEIGHT OF FENCE FABRIC	(H) TIE WIRE	(I) HOG RING	(J) BRACE RAIL SIZE	(J) BRACE RAIL TIE SPACING	(K) TRUSS ROD	(L) FABRIC SIZE	(L) FABRIC MESH	(L) FABRIC SELVAGE	(M) GATE FRAME SIZE	(M) GATE FRAME TIE SPACING	(N) HORIZONTAL SUPPORT SIZE	(N) HORIZONTAL SUPPORT TIE SPACING	(O) HINGE TYPE	(T) GATE POST GATE WIDTH 12' AND LESS	(T) GATE POST GATE WIDTH OVER 12' TO 24' INCL.
6' AND LESS	MIN. OF 12 GA. STEEL OR 9 GA. ALUM.	SAME GAUGE AS FABRIC	1⅝" O.D.	1 TIE EVERY 2'-0"	MIN. OF 3/16" ROUND WITH TIGHTNERS AND FITTINGS	9 GA.	2"	KNUCK-ING AND/OR TWIST-ING	2" O.D.	1 TIE EVERY 1'-0"	2" O.D.	1 TIE EVERY 1'-0"	OFFSET	3" O.D.	4" O.D.
OVER 6' TO 12' INCL.														4" O.D.	

NOTE: POST SIZES SHOWN ARE FOR STEEL. WHERE ALUMINUM IS PROVIDED, LINE POSTS SHALL HAVE AN OUT SIDE DIAMETER OF 2½" 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 3½" FOR FENCE HEIGHTS OF 6' TO 12'. GATE POSTS WHERE GATE WIDTH IS 12' AND LESS SHALL HAVE AN OUTSIDE DIAMETER OF 3½" 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.

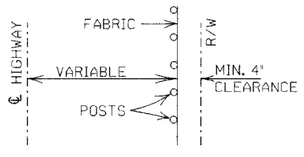
OTHER DETAILS APPLY TO BOTH STEEL AND ALUMINUM FENCE.

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 O.D. INCHES	WALL THICKNESS	LBS. PER LINEAR FT. STEEL	LBS. PER LINEAR FT. ALUMINUM	GRADE 2 O.D. INCHES	WALL THICKNESS	LBS. PER LINEAR FT.
1⅝	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
2½	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
3½	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



INSTALLATION MAY BE MODIFIED AS SHOWN IN THE PLANS

TYPICAL INSTALLATION DIAGRAM

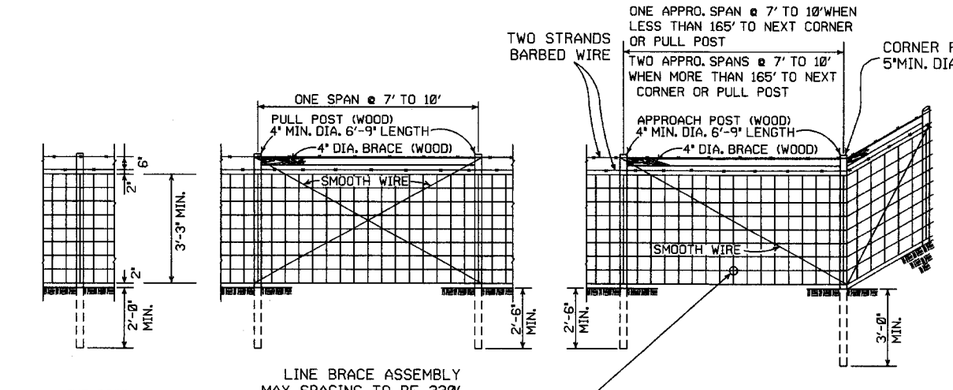
DATE	REVISION	FILMED
11-17-10	REVISED TRUSS ROD	
12-10-09	REVISED POSTS & RAILS TABLE	
5-21-09	ADDED TABLE & GEN. NOTE (C)	
8-22-02	REVISED NOTES, REMOVED TABLE, & REMOVED FENCE ALTERNATE	
4-3-97	REVISED BRACE RAIL NOTE	
10-18-96	REVISED AASHTO & ASTM REF.	
11-3-94	REVISED NOTE (L)	
10-1-92	DELETED ALTERNATE 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	548-10-30-87
4-20-79	REVISED TOP RAIL & TENSION WIRE	695-4-20-79
10-2-72	REVISED AND REDRAWN	530-10-2-72

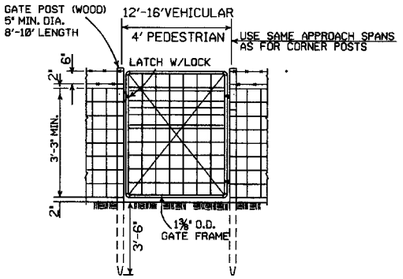
ARKANSAS STATE HIGHWAY COMMISSION

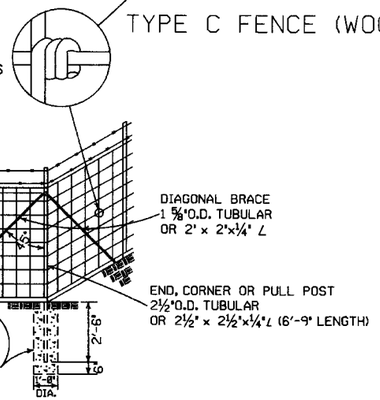
CHAIN LINK FENCE

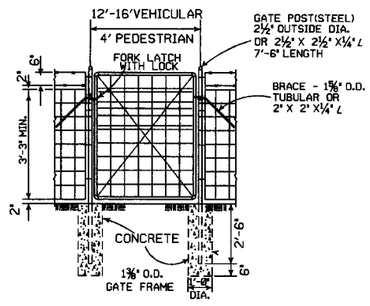
STANDARD DRAWING WF-3

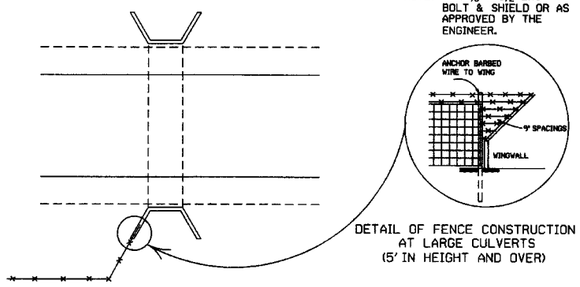
TYPE C FENCE (WOOD POSTS)











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

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

GENERAL NOTES:

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

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

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

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

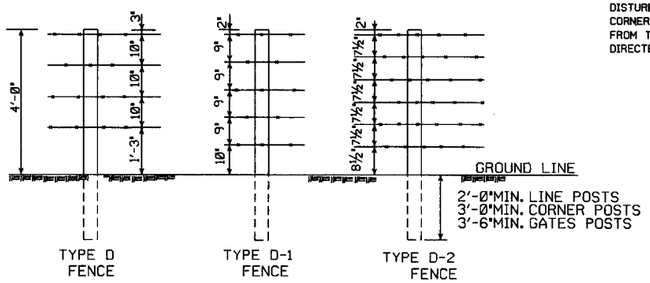
SPLICE FOR BARBED WIRE BETWEEN PULL POST ASSEMBLY SHALL BE BY THE "EYE METHOD" AS DESCRIBED AS FOLLOWS: THE ENDS OF THE BARBED WIRE SHALL BE BENT TO FORM A LOOP. THE LOOPS SHALL BE CONNECTED. AFTER THE LOOPS ARE CONNECTED THE ENDS OF THE WIRE SHALL BE WRAPPED AROUND THE PROJECTING WIRES A MINIMUM OF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

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

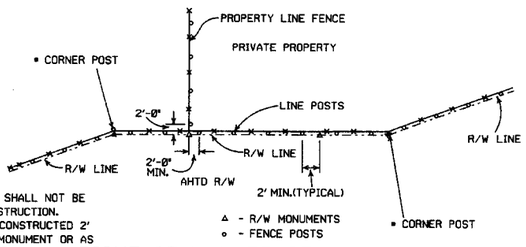
STAPLE AT LEAST TOP, BOTTOM AND ALTERNATE WIRES OF WOVEN FABRIC FOR WOOD LINE POSTS.

TYPE C FENCE (STEEL POSTS)

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

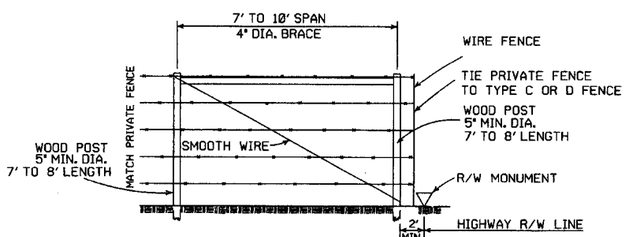


NOTE: SPACING AND SIZE (EXCEPT LENGTH) OF POSTS, APPROACH SPANS, PULL POST ASSEMBLIES, AND CORNER BRACING FOR TYPE D FENCE SHALL CONFORM TO TYPE C FENCE. USE GALVANIZED STAPLES ON WOOD POSTS AND APPROVED FASTENERS ON STEEL POSTS.

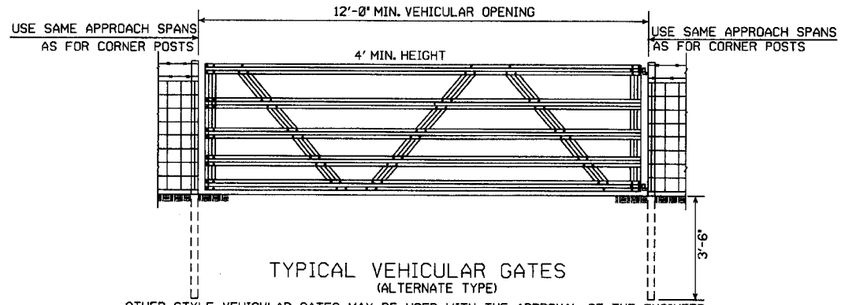


• NOTE: RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY FENCE CONSTRUCTION. CORNER POSTS SHALL BE CONSTRUCTED 2' FROM THE RIGHT-OF-WAY MONUMENT OR AS DIRECTED BY THE ENGINEER.

RIGHT-OF-WAY FENCE LOCATION



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



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

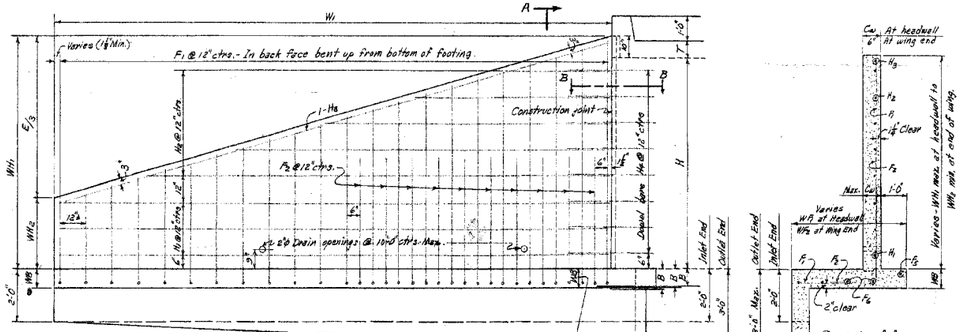
DATE	REVISION	FILMED
8-22-02	REVISED GENERAL NOTES	
10-18-96	REVISED AASHTO	
11-22-95	REVISED R-O-W LOCATION DETAIL	
6-2-94	REVISED BARB WIRE AND ADDED CORNER POST NOTES	6-2-94
8-5-93	REVISED R/W INSTALLATION FENCE	8-5-93
10-1-92	ADDED STAPLE NOTE	10-1-92
8-15-91	ADDED TYPE D-2 FENCE	8-15-91
11-30-89	DELETED CLASS CONCRETE	11-30-89
7-15-88	ADDED SPLICE NOTE	700-7-15-88
10-30-87	GENERAL REVISIONS	649-10-30-87
11-1-84	MAX. POST SPACING MIN. WIRE GAUGE	507-11-1-84
1-4-83	MIN. DIA. LINE POST	648-1-4-83
3-2-81	TOLERANCE FOR POST LENGTH	722-3-2-81
12-1-72	ADDED D-1 & FENCE INSTALLATION	564-12-1-72
10-2-72	REVISED AND REDRAWN	540-10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE
TYPE C AND D

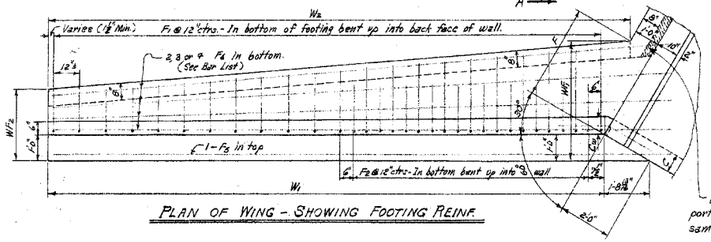
STANDARD DRAWING WF-4

FED. ROAD PROJECT	STATE	FED. AID PROJECT	TOTAL SHEETS	SHEET NO.	TOTAL SHEETS
	ARK.			149	
JOB NO.					



REAR ELEVATION OF WING - SHOWING BACK FACE REINF.

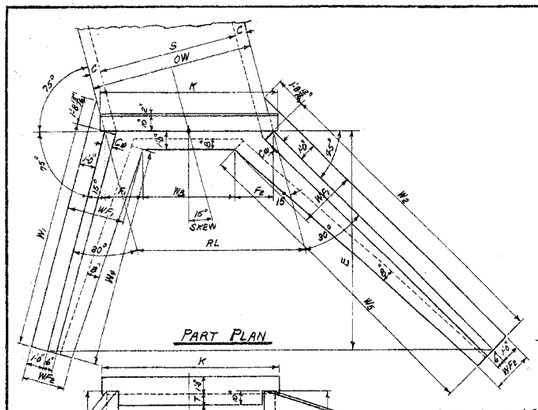
WB may be more, equal to, or less than the bottom slab thickness B.



Revised 3-5-93

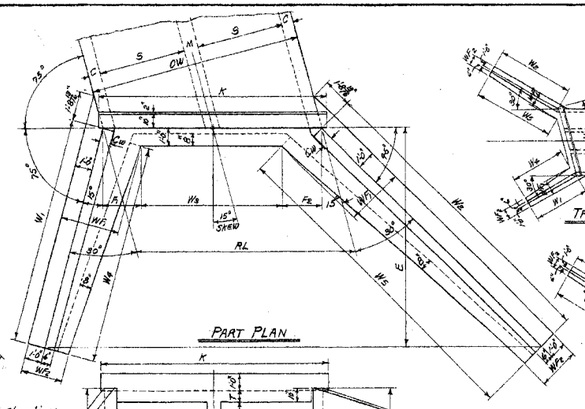
172

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			150	
JOB No.					



SINGLE BARREL CULVERT - 15° SKEW RIGHT FORWARD

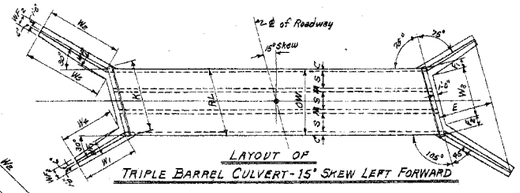
Details of Culvert with 15° Skew Left Forward is reversed, see Layout below.



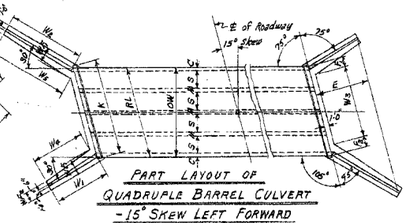
DOUBLE BARREL CULVERT - 15° SKEW RIGHT FORWARD

Details of Culvert with 15° Skew Left Forward is reversed, see Layout below.

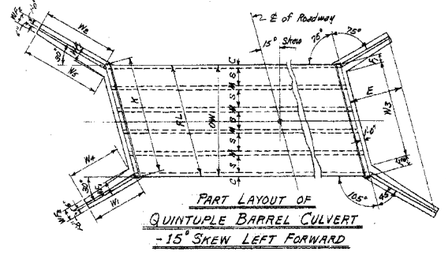
Note:- Plans and Elevations are not to scale.



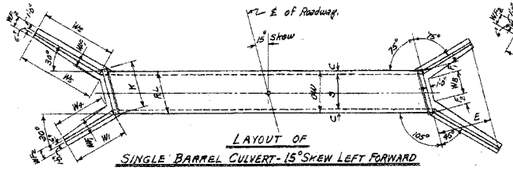
LAYOUT OF TRIPLE BARREL CULVERT - 15° SKEW LEFT FORWARD



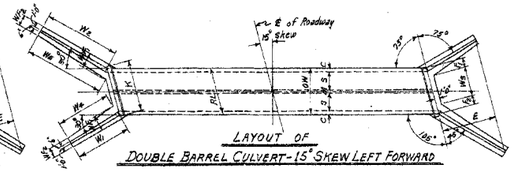
PART LAYOUT OF QUADRUPLE BARREL CULVERT - 15° SKEW LEFT FORWARD



PART LAYOUT OF QUINTUPLE BARREL CULVERT - 15° SKEW LEFT FORWARD

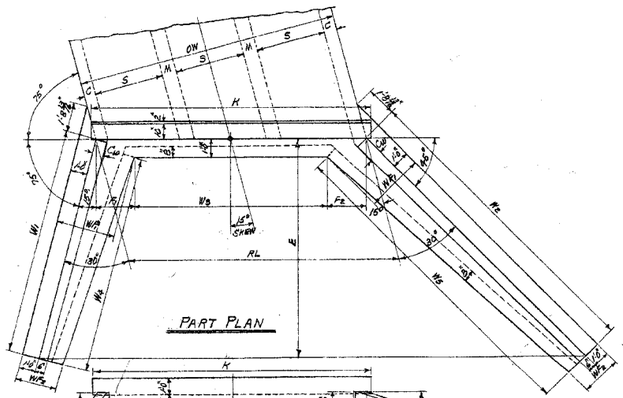


LAYOUT OF SINGLE BARREL CULVERT - 15° SKEW LEFT FORWARD



LAYOUT OF DOUBLE BARREL CULVERT - 15° SKEW LEFT FORWARD

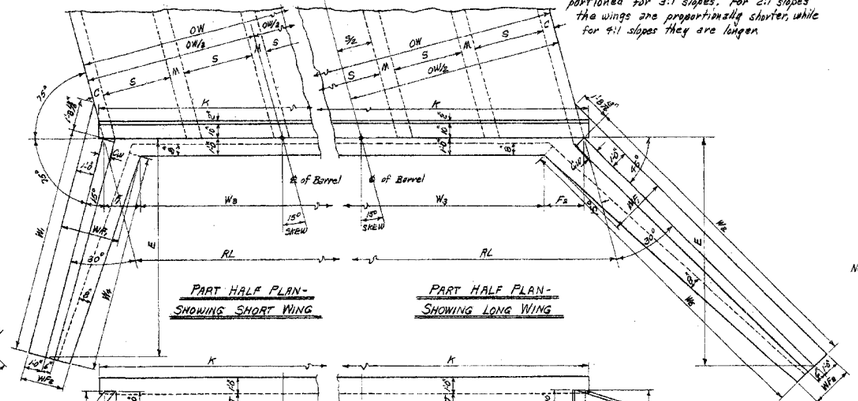
Note:- The length of the wings for the Plans, Elevations, and Layouts, as drawn, are proportioned for 3:1 slopes. For 2:1 slopes the wings are proportionally shorter, while for 4:1 slopes they are longer.

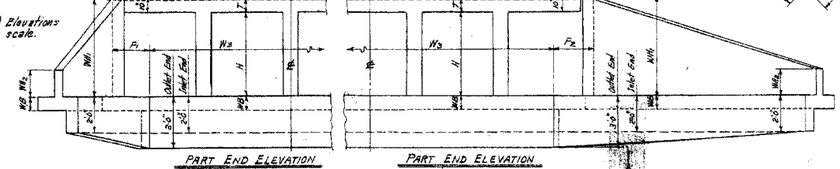


TRIPLE BARREL CULVERT - 15° SKEW RIGHT FORWARD

Details of Culvert with 15° Skew Left Forward is reversed. see Layout at top center of sheet.

Note:- Plans and Elevations are not to scale.





QUADRUPLE BARREL CULVERT - 15° SKEW RT. FWD.

Details of Culvert with 15° Skew Left Forward is reversed, see Layout at above center.

QUINTUPLE BARREL CULVERT - 15° SKEW RT. FWD.

Details of Culvert with 15° Skew Left Forward is reversed, see Layout above.

ROADWAY LENGTH RL — HEADWALL LENGTH K — APRON DIMENSION W_3

$RL = OW \times 1.035276$ — $K = RL + (6\frac{1}{2}^{"})$ — $W_3 = RL - (F_1 + F_2)$

USE WITH DRAWING No.	CLEAR OPENING	CLEAR HEIGHT	SUM OF FOOTING DIMENSIONS	SINGLE BARREL CULVERT				DOUBLE BARREL CULVERT				TRIPLE BARREL CULVERT				QUADRUPLE BARREL CULVERT				QUINTUPLE BARREL CULVERT			
	S	H	$F_1 \& F_2$	OW	RL	K	W_3	OW	RL	K	W_3	OW	RL	K	W_3	OW	RL	K	W_3	OW	RL	K	W_3
W-X152-1, W-X153-1 or W-X154-1 (FOR H=8'0" OR LESS)	4'	2'	2'-0"	5'-0"	5'-2⅜	5'-8⅝	3'-2⅝	9'-6"	10'-0"	10'-6⅜	8'-0"	14'-4"	14'-10"	15'-4⅜	12'-10"	19'-0"	19'-8"	20'-2⅝	17'-8"	23'-8"	24'-6"	25'-0⅜	22'-6"
		3'	2'-9⅜	5'-0"	"	"	2'-9⅜	9'-8"	"	"	7'-7⅝	14'-4"	"	"	12'-0⅜	19'-0"	"	"	16'-10⅛	23'-8"	"	"	21'-8⅝
		4'	3'-7⅝	5'-0"	"	"	2'-2⅝	9'-8"	"	"	6'-9⅛	14'-4"	"	"	11'-2⅝	19'-0"	"	"	16'-4⅜	23'-8"	"	"	20'-10⅝
		5'	4'-5⅜	5'-0"	"	"	0'-8⅝	9'-8"	"	"	5'-6⅝	14'-4"	"	"	10'-4⅜	19'-0"	"	"	15'-2⅝	23'-8"	"	"	20'-0⅜
		6'	5'-3⅛	5'-2"	5'-4⅝	5'-10⅝	0'-1"	9'-11"	10'-3½	10'-9⅝	5'-0"	14'-8"	15'-2⅛	15'-8⅝	9'-11"	19'-5"	20'-1⅛	20'-7⅝	19'-10"	24'-2"	25'-0⅛	25'-6⅝	19'-9"
	5'	3'	2'-9⅜	6'-0"	6'-2⅝	6'-9"	3'-4⅝	11'-8"	12'-1"	12'-7⅝	9'-3⅛	17'-9"	17'-10⅜	18'-5⅝	15'-1⅝	23'-9"	23'-8⅜	24'-4⅝	21'-0"	28'-6"	29'-8⅜	30'-8⅛	26'-10⅛
		4'	3'-7⅝	6'-0"	"	"	2'-7"	11'-8"	"	"	8'-5⅜	17'-4"	"	"	14'-3⅛	23'-0"	"	"	20'-2⅜	28'-6"	"	"	26'-0⅛
		5'	4'-5⅜	6'-0"	"	"	1'-9⅛	11'-8"	"	"	7'-7⅛	17'-4"	"	"	13'-6"	23'-0"	"	"	19'-4⅝	28'-6"	"	"	25'-2⅛
		6'	5'-3⅛	6'-2"	6'-4⅝	6'-10⅝	1'-1⅛	11'-11"	12'-5"	12'-10⅝	7'-0⅛	17'-8"	18'-3½	18'-10⅛	13'-6"	23'-5"	24'-2⅛	24'-9⅛	18'-10⅛	29'-2"	30'-2⅝	30'-9⅝	24'-11⅛
		7'	6'-2⅝	6'-9"	6'-10⅝	7'-0⅝	Ⓐ 0"	12'-1"	12'-6⅝	13'-0⅝	6'-0⅛	17'-11"	18'-6⅝	19'-1"	18'-0⅛	23'-9"	24'-7"	25'-1⅝	18'-1⅛	29'-7"	30'-7⅛	31'-2⅝	24'-1⅝
	6'	3'	2'-9⅜	7'-0"	7'-3"	7'-9⅜	4'-1⅝	13'-8"	14'-1⅜	14'-8⅜	11'-4"	20'-9"	21'-0⅜	21'-5"	18'-2⅜	27'-0"	27'-11⅜	28'-5⅛	25'-1⅜	33'-8"	34'-10⅝	35'-4⅝	32'-0⅝
		4'	3'-7⅝	7'-0"	"	"	3'-7⅝	13'-8"	"	"	10'-6⅝	20'-4"	"	"	17'-1⅝	27'-0"	"	"	23'-6"	33'-8"	"	"	31'-2⅝
		5'	4'-5⅜	7'-0"	"	"	2'-9⅝	13'-8"	"	"	9'-10⅝	20'-4"	"	"	16'-7⅝	27'-0"	"	"	23'-6"	33'-8"	"	"	30'-2⅝
		6'	5'-3⅛	7'-2"	7'-4⅝	7'-10⅝	2'-1⅛	13'-11"	14'-5"	14'-10⅝	9'-1⅛	20'-8"	21'-0⅝	21'-10⅛	16'-11⅛	27'-5"	28'-2⅝	28'-11"	23'-11⅛	34'-2"	35'-1⅛	35'-11"	30'-11⅛
		7'	6'-2⅝	7'-4"	7'-6"	8'-0⅝	1'-0⅝	14'-1"	14'-7"	15'-1⅛	8'-1⅝	20'-11"	21'-2⅞	22'-2⅝	15'-8"	27'-9"	28'-5⅝	29'-3⅝	22'-8"	34'-7"	35'-5⅝	36'-4"	29'-3⅝
		8'	7'-0⅝	7'-5"	7'-7½"	8'-1⅝	Ⓐ 0"	14'-2"	14'-8"	15'-2⅝	6'-11⅝	21'-2"	21'-5⅝	22'-3⅝	14'-0"	28'-0"	28'-9⅝	29'-10⅝	21'-4"	34'-8"	35'-6⅝	36'-5"	28'-8"
	7'	4'	3'-7⅝	8'-0"	8'-3⅜	8'-9⅝	4'-7⅛	15'-8"	16'-2⅝	16'-9"	12'-7"	23'-4"	24'-1⅜	24'-10⅝	20'-4⅜	31'-0"	32'-1⅛	32'-7⅝	28'-5⅛	38'-8"	40'-0⅝	40'-6⅝	36'-9⅝
		5'	4'-5⅜	8'-0"	"	"	3'-10⅝	15'-8"	"	"	11'-9⅝	23'-4"	"	"	19'-3⅝	31'-0"	"	"	27'-2⅜	38'-8"	"	"	35'-2"
		6'	5'-3⅛	8'-2"	8'-5⅝	9'-1"	3'-2⅝	15'-11"	16'-5⅝	17'-0⅝	11'-2⅝	23'-8"	24'-4"	25'-0⅛	19'-2⅝	31'-5"	32'-6⅝	33'-0⅝	27'-3"	39'-2"	40'-6⅝	41'-1"	35'-3⅝
		7'	6'-2⅝	8'-3"	8'-6⅝	9'-11"	2'-0⅝	16'-1"	16'-7"	17'-2⅝	10'-2"	23'-11"	24'-7⅝	25'-3⅝	18'-0⅝	31'-8"	32'-10⅛	33'-5"	26'-1⅝	39'-5"	40'-11⅝	41'-6⅝	33'-6"
		8'	7'-0⅝	8'-4"	8'-7½"	9'-2"	0'-11"	16'-2"	16'-8⅝	17'-3⅝	9'-0⅝	24'-1"	24'-8⅝	25'-5⅛	17'-1⅛	31'-10"	32'-11⅛	33'-6"	25'-0"	39'-8"	41'-0⅝	41'-7⅝	33'-6⅛
	8'	4'	3'-7⅝	9'-0"	9'-3⅜	9'-10⅝	5'-8⅝	17'-8"	18'-2⅝	18'-10"	14'-1"	26'-4"	27'-1⅜	27'-10⅝	23'-7⅛	35'-0"	36'-2⅛	36'-9⅝	32'-7⅛	43'-8"	45'-2⅝	45'-9"	41'-7"
		5'	4'-5⅜	9'-2"	9'-5⅝	10'-0⅝	5'-0⅝	17'-11"	18'-6⅝	19'-1"	14'-1⅛	26'-8"	27'-5⅛	28'-1⅝	23'-8"	35'-5"	36'-8"	37'-2⅝	32'-8⅝	44'-2"	45'-8⅝	46'-3⅝	41'-7⅝
		6'	5'-3⅛	9'-2"	"	"	4'-3⅝	17'-11"	"	"	13'-3⅝	26'-8"	"	"	22'-6"	35'-5"	"	"	31'-3⅝	44'-2"	"	"	40'-5⅝
		7'	6'-2⅝	9'-3"	9'-6⅝	10'-1⅛	3'-2"	18'-1"	18'-8⅝	19'-3⅝	12'-2⅝	26'-11"	27'-8⅜	28'-5⅛	21'-9⅛	35'-8"	37'-0⅛	37'-6⅝	30'-6⅝	44'-8"	46'-2⅝	46'-9⅝	39'-6"
		8'	7'-0⅝	9'-4"	9'-8"	10'-2⅝	2'-1⅛	18'-2"	18'-9⅝	19'-4⅝	11'-1⅛	27'-0"	27'-9⅝	28'-5⅝	20'-2⅝	35'-10"	37'-1⅜	37'-7⅝	29'-4⅝	44'-8"	46'-2⅝	46'-9⅝	38'-6⅝
	9'	5'	4'-5⅜	10'-2"	10'-6⅝	11'-0⅝	6'-1"	19'-1"	20'-7⅛	21'-2"	16'-2"	29'-8"	30'-8⅝	31'-5"	26'-3⅝	39'-5"	40'-9⅜	41'-4⅝	36'-4⅛	49'-2"	50'-10⅛	51'-5⅝	46'-5⅛
		6'	5'-3⅛	10'-3"	10'-7⅝	11'-1⅝	5'-0⅝	20'-1"	20'-8⅜	21'-3"	15'-4⅝	29'-11"	30'-11⅝	31'-6"	25'-10⅛	39'-7"	41'-0⅛	41'-5⅝	35'-10⅝	49'-7"	51'-4"	51'-10⅝	46'-0⅛
		7'	6'-2⅝	10'-3"	"	"	4'-1⅝	20'-1"	"	"	14'-3⅝	29'-11"	"	"	24'-5⅝	39'-7"	"	"	34'-1⅝	49'-7"	"	"	44'-10"
		8'	7'-0⅝	10'-5"	10'-9⅝	11'-3⅝	3'-1⅝	20'-2"	20'-9⅝	21'-5"	13'-2⅝	30'-0"	31'-0⅝	31'-7"	23'-4⅝	39'-10"	41'-2⅜	41'-7⅝	33'-6⅝	49'-8"	51'-5"	51'-11⅝	43'-8⅝
	10'	5'	4'-5⅜	11'-2"	11'-6⅝	12'-1⅝	7'-1⅝	21'-1"	22'-8⅛	23'-3⅝	18'-3"	32'-8"	33'-9⅜	34'-6⅜	29'-4⅝	43'-5"	44'-11⅛	45'-6"	40'-6"	54'-2"	56'-1"	56'-7⅛	51'-7⅝
		6'	5'-3⅛	11'-3"	11'-7⅝	12'-2⅝	6'-0⅝	22'-1"	22'-10⅜	23'-6⅛	17'-7⅝	32'-11"	34'-1"	34'-10⅛	28'-8⅝	43'-8"	45'-2⅝	45'-10"	40'-0⅛	54'-7"	56'-5"	57'-0⅝	51'-1"
		7'	6'-2⅝	11'-3"	"	"	5'-1⅜	22'-1"	"	"	16'-4⅝	33'-1"	"	"	27'-10"	43'-9"	"	"	38'-3⅛	54'-7"	"	"	50'-6⅛
		8'	7'-0⅝	11'-9"	11'-11⅝	12'-10⅝	4'-0⅛	22'-2"	22'-10⅜	23'-5⅝	15'-2⅝	33'-0"	34'-2"	34'-10⅝	26'-5⅝	43'-10"	45'-4⅛	45'-11"	37'-8⅝	54'-8"	56'-7⅝	57'-1⅛	49'-10⅝
	11'	6'	5'-3⅛	12'-4"	12'-8⅝	13'-2⅝	7'-6"	24'-2"	25'-2⅝	25'-9⅛	19'-3"	36'-0"	37'-3⅛	37'-9⅝	32'-0"	47'-10"	49'-6⅝	50'-1⅝	44'-1⅛	—	—	—	—
		7'	6'-2⅝	12'-5"	"	"	6'-3⅝	24'-2"	"	"	18'-6⅝	36'-0"	"	"	30'-9⅝	47'-10"	"	"	43'-0⅛	—	—	—	—
		8'	7'-0⅝	12'-6"	"	"	5'-0⅝	24'-3"	"	"	17'-8⅝	36'-0"	"	"	29'-6⅝	47'-10"	"	"	41'-3⅝	—	—	—	—
	12'	5'	4'-5⅜	13'-1"	13'-5⅝	14'-0⅝	8'-6⅝	27'-1"	27'-7⅞	28'-3⅝	21'-10"	39'-0"	40'-3⅜	40'-10⅝	34'-6⅝	51'-10"	53'-5⅝	54'-0⅝	47'-10⅝	—	—	—	—
		6'	5'-3⅛	13'-2"	13'-6⅝	14'-1⅝	7'-11⅝	27'-2"	27'-9⅜	28'-4⅝	20'-7⅝	39'-0"	"	"	32'-8⅝	51'-10"	"	"	45'-11⅝	—	—	—	—
		7'	6'-2⅝	13'-4"	"	"	6'-11⅝	27'-2"	"	"	19'-9⅝	39'-0"	"	"	32'-0"	51'-10"	"	"	45'-1⅛	—	—	—	—
		8'	7'-0⅝	13'-5"	"	"	6'-1"	27'-3"	"	"	18'-11⅝	39'-0"	"	"	31'-2⅝	51'-10"	"	"	44'-3⅛	—	—	—	—
W-X152-2, W-X153-2 or W-X154-2 (FOR H=9'0 & OVER)	7'	3'	2'-9⅜	8'-1⅛	8'-6"	8'-10⅝	3'-6"	Ⓐ 0"	16'-5"	17'-0"	17'-6⅛	8'-0⅝	24'-9"	25'-6⅝	25'-10⅝	16'-3"	32'-8"	33'-6⅝	33'-11"	24'-5⅝	40'-8"	41'-7"	42'-1⅛	32'-7⅝
		9'	8'-11⅛	9'-6"	9'-10"	10'-4⅝	5'-10⅝	18'-5"	19'-0⅛	19'-7⅝	10'-1⅝	27'-6"	28'-5⅜	28'-10"	19'-9⅛	36'-5"	37'-6⅝	38'-0⅝	28'-7"	45'-2"	46'-5⅛	47'-0⅛	37'-3⅛
		10'	10'-2"	9'-8"	10'-2⅝	10'-8⅝	Ⓐ 0"	18'-8"	19'-3⅝	19'-10⅛	9'-2"	27'-8"	28'-7⅝	29'-2⅝	18'-5⅛	36'-8"	37'-11⅝	38'-6"	27'-9⅛	45'-8"	47'-2⅝	47'-9⅝	37'-1⅞
	9'	9'	8'-11⅛	10'-6"	10'-10⅝	11'-5"	1'-11⅛	20'-5"	21'-1⅛	21'-8⅛	12'-2⅜	30'-6"	31'-6⅜	32'-1⅛	22'-5⅛	40'-10"	42'-3⅛	42'-8⅝	32'-8⅝	50'-8"	52'-5⅛	53'-0⅛	42'-3⅛
		10'	10'-2"	10'-8"	11'-0⅝	11'-7"	0'-10⅝	20'-8"	21'-4⅜	21'-11⅛	11'-2⅝	30'-8"	31'-9"	32'-3⅛	21'-7"	40'-8"	42'-1⅝	42'-7⅛	31'-11⅛	50'-8"	52'-5⅛	53'-0"	42'-3⅛
		11'	11'-0⅝	10'-10"	11'-2⅝	11'-9"	Ⓐ 0"	20'-10"	21'-6⅜	22'-1⅛	10'-2⅜	30'-10"	31'-11"	32'-5⅝	20'-6⅛	40'-10"	42'-3⅛	42'-8⅝	30'-10⅝	50'-10"	52'-7½	53'-2"	41'-2⅝
	10'	9'	8'-11⅛	11'-6"	11'-10⅝	12'-5⅝	2'-11⅝	22'-5"	23'-2⅜	23'-9⅛	14'-3⅛	33'-4"	34'-5⅛	35'-0⅝	25'-0⅝	44'-5"	45'-9⅜	46'-4⅝	36'-10⅝	55'-8"	57'-7⅜	58'-2⅝	48'-2"
		10'	10'-2"	11'-8"	12'-1"	12'-7⅝	1'-11"	22'-8"	23'-5⅝	24'-0⅝	13'-5⅝	33'-8"	34'-10⅝	35'-5⅝	24'-8⅝	44'-10"	46'-3⅝	46'-9"	36'-7"	55'-11"	57'-9⅝	58'-5⅛	47'-5⅝
		11'	11'-4⅝	11'-10"	12'-2"	12'-9⅛	0'-10⅝	22'-10"	23'-7⅛	24'-2"	12'-8"	33'-10"	35'-0⅛	35'-6⅝	23'-7⅝	44'-10"	46'-5"	46'-11⅝	35'-6⅛	55'-10"	57'-10⅝	58'-5⅛	46'-5"
		12'	11'-7⅝	12'-0"	12'-5"	12'-11⅝	Ⓐ 0"	23'-0"	23'-9⅝	24'-4⅝	11'-10⅝	34'-0"	35'-2⅜	35'-9⅝	22'-7"	45'-0"	46'-7"	47'-1⅛	35'-1⅝	56'-0"	57'-11⅝	58'-6"	45'-4⅝
	11'	9'	8'-11⅛	12'-6"	12'-10⅝	13'-5⅝	4'-0"	24'-5"	25'-2⅜	25'-9⅛	16'-4"	34'-4"	35'-7⅛	36'-1⅝	26'-8"	45'-5"	46'-10⅝	47'-5⅛	36'-11⅝	56'-2"	58'-1⅛	58'-8⅛	46'-7⅝
		10'	10'-2"	12'-8"	13'-1"	13'-7⅝	2'-11⅝	24'-8"	25'-5⅝	26'-0⅝	15'-5⅝	34'-8"	35'-11⅝	36'-6"	26'-0⅝	45'-8"	47'-1⅝	47'-8⅛	37'-2⅝	56'-5"	58'-4⅛	58'-11⅛	47'-0⅝
		11'	11'-4⅝	12'-10"	13'-3⅝	13'-10"	1'-10⅝	24'-10"	25'-8⅛	26'-3⅝	14'-6⅜	34'-10"	36'-0⅝	36'-7⅝	25'-3⅝	45'-10"	47'-3⅝	47'-10⅛	37'-4⅝	56'-7"	58'-6⅛	59'-1⅛	47'-2⅝
		12'	11'-7⅝	13'-0"	13'-5"	13'-11⅝	0'-10⅝	25'-0"	25'-9⅝	26'-4⅝	13'-5⅝	35'-0"	36'-2⅜	36'-9⅝	24'-5⅝	46'-0"	47'-5⅝	48'-0⅛	37'-6⅝	56'-8"	58'-7⅛	59'-2⅛	47'-1⅝
	12'	9'	8'-11⅛	13'-6"	13'-10⅝	14'-5⅝	5'-0⅝	26'-5"	27'-2⅜	27'-9⅛	18'-5"	38'-8"	40'-0⅜	40'-7⅝	31'-3⅝	52'-3"	54'-1⅛	54'-7⅝	45'-1⅛	—	—	—	—
		10'	10'-2"	13'-8"	14'-1⅜	14'-8⅝	3'-11⅝	26'-8"	27'-5⅜	28'-0⅝	17'-5⅝	39'-0"	40'-3⅝	40'-10⅝	30'-10⅝	52'-8"	54'-6⅛	55'-0⅝	44'-8⅝	—	—	—	—
		11'	11'-4⅝	13'-10"	14'-3⅝	14'-10⅝	2'-11⅛	26'-10"	27'-8⅜	28'-3⅝	16'-6⅜	39'-10"	41'-2⅜	41'-9⅝	29'-10⅝	52'-10"	54'-8⅛	55'-2⅝	43'-8⅝	—	—	—	—
		12'	11'-7⅝	14'-0"	14'-5⅝	15'-0⅝	1'-10⅝	27'-0"	27'-9⅝	28'-4"	15'-6"	40'-0"	41'-4⅝	41'-10⅝	28'-9⅝	53'-0"	54'-10⅝	55'-4⅝	42'-8⅝	—	—	—	—

Ⓐ Special case for these boxes, See Detail "A" and Table "A" for revised values of F_1, F_2, W_4 and W_5, when apron width is more than 1'-6" and $W_3 = 0$". For Detail "A" and Table "A" for each slope, see Drawing Nos. W-X152-1, W-X152-2, or W-X153-1, W-X153-2, or W-X154-1, W-X154-2.

Note:- This drawing to be used in conjunction with Standard Wing Drawings for 15° Skews for each slope as listed below.

2:1 Slopes	3:1 Slopes	4:1 Slopes
W-X152-1 or W-X152-2	W-X153-1 or W-X153-2	W-X154-1 or W-X154-2.

This drawing to be used in conjunction with Std. Barrel Sections, Drawing Nos.

SINGLES	DOUBLES	TRIPLES	QUADRUPLES	QUINTUPLES
R-115X-0	R-215X-0	R-315X-0	R-415X-0	R-515X-0
R-115X-1	R-215X-1	R-315X-1	R-415X-1	R-515X-1
	R-215X-2	R-315X-2		

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS 15° SKEW

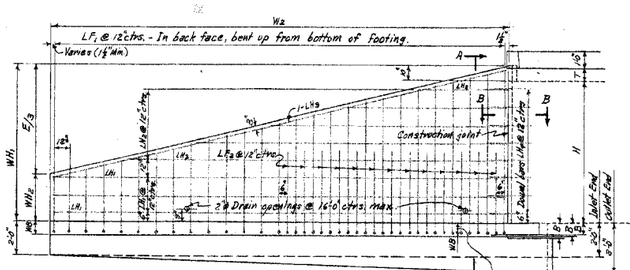
4, 5, 6, 7, 8, 9, 10, 11 & 12 SPANS — 2:1, 3:1 & 4:1 SLOPES

SINGLES, DOUBLES, TRIPLES, QUADRUPLES & QUINTUPLES. — ALL DEPTHS OF COVER H=2, 3, 4, 5, 6, 7, 8, 9, 10, 11 & 12.

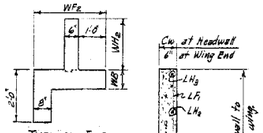
STANDARD DRAWING NO. W-X15

Designed by:- W.C.H. 5-22-63. Checked by:-
Traced by:- W.C.H. 6-13-63 Checked by:- J.E.M. 6-20-63
Quantities by:- Checked by:-

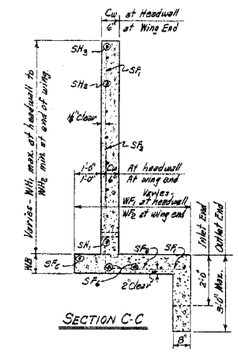
FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			151	
JOB No.					



REAR ELEVATION OF LONG WING - 15° SKEW RIGHT FORWARD
SHOWING BACK FACE REINFORCING

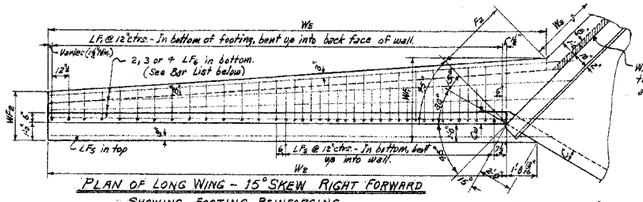


TYPICAL END VIEW OF WING



SECTION A-A

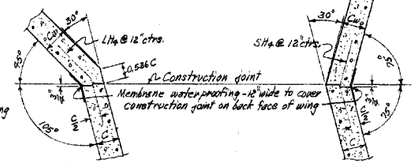
SECTION C-C



PLAN OF LONG WING - 15° SKEW RIGHT FORWARD
SHOWING FOOTING REINFORCING.

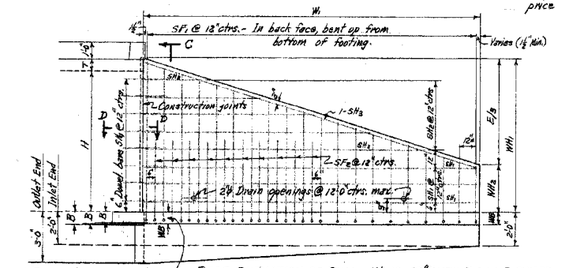
When B is more than WB, the shaded portion of the apron shall be made the same thickness as the bottom slab B.

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

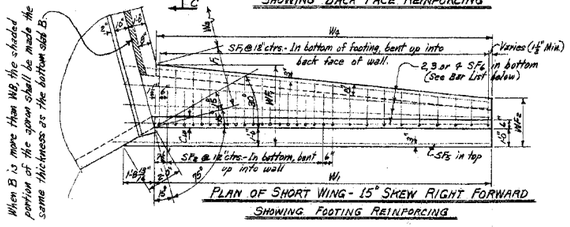


SECTION B-B SECTION D-D

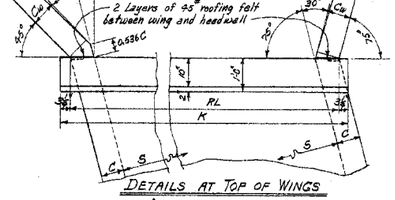
SECTIONS THRU CONSTRUCTION JOINTS



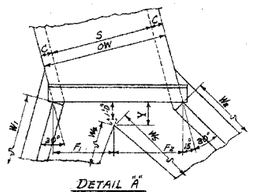
REAR ELEVATION OF SHORT WING - 15° SKEW RIGHT FORWARD
SHOWING BACK FACE REINFORCING



PLAN OF SHORT WING - 15° SKEW RIGHT FORWARD
SHOWING FOOTING REINFORCING



DETAILS AT TOP OF WINGS
15° SKEW RIGHT FORWARD



DETAIL "A"

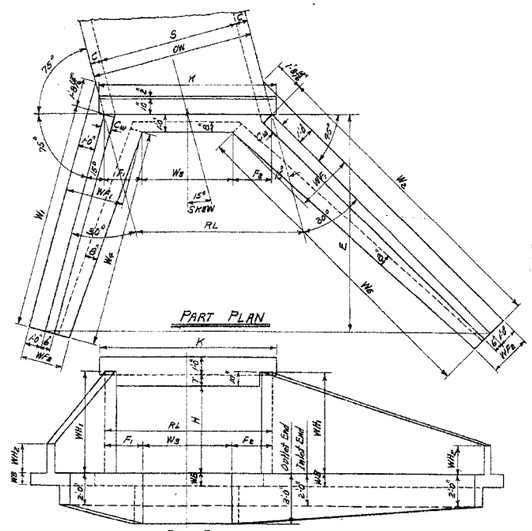
TABLE "A" - DIMENSIONS FOR DETAIL "A"

S	H	F1	F2	W4	W5	W3	Y
5'	7'	3'-0	3'-5⅜	16'-10⅛	23'-0⅜	0"	1'-0⅜
6'	8'	3'-6"	4'-1⅜	19'-0⅜	28'-3⅜	0"	1'-1"

REGULAR WING DIMENSIONS - 3:1 SLOPES

CLEAR HEIGHT OF BOX	THICKNESS OF WING FOOTING	THICKNESS OF WING AT TOP C	WINGWALL HEIGHTS AT HEADWALL	WINGWALL HEIGHTS AT END OF WING	WIDTHS OF WING FOOTINGS AT HEADWALL	WIDTHS OF WING FOOTINGS AT END OF WING	FOOTING DIMENSIONS PARALLEL WITH HEADWALL SHORT WING	FOOTING DIMENSIONS PARALLEL WITH HEADWALL LONG WING	PERPENDICULAR DISTANCE TO END OF WING	LENGTHS OF WINGWALLS SHORT WING	LENGTHS OF WINGWALLS LONG WING	INSIDE FOOTING DIMENSIONS SHORT WING	INSIDE FOOTING DIMENSIONS LONG WING	* QUANTITY PER WING CLASS S CONCRETE INLET END SHORT WING	INLET END LONG WING	OUTLET END SHORT WING	OUTLET END LONG WING
'H	WB	Cw	WH1	WH2	WF1	WF2	F1	F2	E	W1	W2	W4	W5	CU.YD.	CU.YD.	CU.YD.	CU.YD.
2'	7"	6"	2'-10"	0'-8"	2'-8"	2'-0"	1'-1⅜	0'-10⅜	6'-6"	6'-8⅜"	9'-2⅛"	6'-10½"	9'-1⅛"	0.789	1.094	0.876	1.212
3'	7"	6"	3'-10"	1'-0"	3'-8"	2'-1⅜	1'-5⅜	1'-4⅜	8'-6"	8'-9⅜"	12'-0⅜"	8'-2⅜"	12'-3⅜"	1.184	1.650	1.300	1.808
4'	7"	6"	4'-10"	1'-4"	4'-0"	2'-3"	1'-9⅜"	1'-10"	10'-6"	10'-10⅜"	14'-10⅜"	10'-2⅜"	15'-5⅜"	1.656	2.305	1.797	2.802
5'	7'	6"	5'-10"	1'-8"	5'-4"	2'-6½"	2'-1⅜"	2'-3⅜"	12'-6"	12'-11⅜"	17'-0⅜"	12'-6½"	18'-7⅜"	2.194	3.059	2.363	3.295
		7"	5'-10"	1'-8"	5'-4"	2'-6½"	2'-1⅜"	2'-3⅜"	12'-6"	12'-11⅜"	17'-0⅜"	12'-6½"	18'-7⅜"	2.287	3.188	2.455	3.424
6'	8"	7"	6'-10"	2'-0"	6'-4"	2'-9½"	2'-5⅜"	2'-7⅜"	14'-6"	14'-10⅜"	19'-0⅜"	14'-6½"	21'-1⅜"	3.052	4.252	3.296	4.317
		7½"	6'-10"	2'-0"	6'-4"	2'-9½"	2'-5⅜"	2'-7⅜"	14'-6"	15'-0⅜"	20'-0⅜"	14'-6½"	21'-1⅜"	3.114	4.329	3.369	4.405
		8"	6'-10"	2'-0"	6'-4"	2'-9½"	2'-5⅜"	2'-7⅜"	14'-6"	15'-0⅜"	20'-0⅜"	14'-6½"	21'-1⅜"	3.177	4.417	3.371	4.493
*7'	8½"	7½"	7'-10"	2'-8"	7'-2"	2'-7½"	3'-0⅞"	3'-5⅜"	16'-6"	17'-1"	23'-4"	16'-10½"	25'-1"	3.998	5.560	4.220	5.677
		8"	7'-10"	2'-8"	7'-2"	2'-7½"	3'-0⅞"	3'-5⅜"	16'-6"	17'-1"	23'-4"	16'-10½"	25'-1"	4.079	5.675	4.301	5.791
*8'	9"	8"	8'-10"	2'-8"	8'-2"	2'-9"	3'-4⅜"	4'-2⅜"	18'-6"	19'-1⅜"	26'-2"	19'-1½"	28'-5"	5.111	7.111	5.360	7.970

* Quantity per wing does not include headwall or that portion of apron or footwall for the length Wa.
* See Table 'A' for special values of F1 & F2 and Wa & W5 for Single 5'x7' and 6'x8' Box Culverts.



PART PLAN

END ELEVATION

SINGLE BARREL CULVERT - 15° SKEW RIGHT FORWARD
Details of Culvert with 15° Skew Left Forward is reversed, see Drwg. No. W-X15

TYPICAL WING DETAILS

Note:- For remainder of General Plans and Elevations of Single, Double, Triple, Quadruple and Quintuple Span Culverts, see Std. Drawing No. W-X15.
For values of RL, K, and Wb for each box, see the above Std. also.

MEMBRANE:- A membrane waterproofing 12" wide, consisting of three mopplings 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.

QUANTITIES

CLEAR SPAN	CLEAR HEIGHT	THICKNESS OF WINGWALL AND FOOTING	THICKNESS OF WING FOOTING	REINFORCING STEEL - FOR 4 WINGS	CLASS S CONCRETE - 4 WINGS HEADWALLS, WINGWALLS, FOOTINGS, FOOTWALLS AND APRONS				
					SINGLE BARREL CULVERT	DOUBLE BARREL CULVERT	TRIPLE BARREL CULVERT	QUADRUPLE BARREL CULVERT	QUINTUPLE BARREL CULVERT
S	H	Cw	WB	LB.	CU. YD.	CU. YD.	CU. YD.	CU. YD.	CU. YD.
4'	2'	6"	7"	117	4.79	5.78	6.77	7.77	8.76
	3'	6"	7"	176	6.65	7.64	8.63	9.63	10.62
	4'	6"	7"	267	8.85	9.84	10.84	11.83	12.82
	5'	6"	7"	379	11.90	12.38	13.38	14.37	15.36
	6'	7"	8"	624	15.95	16.96	17.98	18.51	19.53
5'	3'	6"	7"	176	6.87	8.01	9.28	10.48	11.69
	4'	6"	7"	267	9.28	10.38	11.92	12.49	13.90
	5'	6"	7"	379	11.61	12.81	14.02	15.23	16.44
	6'	7"	8"	624	15.67	14.30	18.14	19.38	20.61
	7'	7½"	8½"	1210	20.11	21.36	22.62	23.88	25.14
6'	3'	6"	7"	176	7.09	8.52	9.92	11.34	12.78
	4'	6"	7"	267	9.29	10.73	12.18	13.56	14.98
	5'	6"	7"	379	11.83	13.26	14.67	16.10	17.53
	6'	7"	8"	624	15.89	17.35	18.79	20.25	21.70
	7'	7½"	8½"	1210	20.33	21.81	23.28	24.76	26.26
	8'	8"	9'	1533	25.54	27.05	28.53	30.02	31.50
7'	4'	6"	7"	267	9.52	11.18	12.81	14.47	16.09
	5'	6"	7"	379	12.05	13.72	15.35	17.01	18.63
	6'	7"	8"	626	16.12	17.80	19.45	21.13	22.78
	7'	7½"	8½"	1210	20.56	22.26	23.94	25.62	27.33
	8'	8"	9'	1533	25.80	27.50	29.20	30.90	32.60
8'	4'	6"	7"	267	9.75	11.65	13.51	15.41	17.23
	5'	7"	7"	379	12.76	14.68	16.55	18.47	20.31
	6'	7"	8"	626	16.39	18.26	20.14	22.04	23.90
	7'	7½"	8½"	1210	20.78	22.72	24.62	26.55	28.42
	8'	8"	9'	1533	26.03	27.96	29.86	31.80	33.71
9'	5'	7"	7"	379	12.99	15.15	17.25	19.40	21.45
	6'	7½"	8'	626	16.69	18.07	21.19	23.36	25.42
	7'	7½"	8½"	1210	21.01	23.19	25.31	22.48	29.54
	8'	8"	9'	1683	26.25	28.42	30.55	32.72	34.76
10'	5'	7"	7"	379	13.23	15.62	17.95	20.24	22.53
	6'	7½"	8'	626	17.19	19.54	21.89	24.20	26.56
	7'	7½"	8½"	1210	21.44	23.66	26.01	28.32	30.68
	8'	8"	9'	1533	26.49	28.89	31.25	33.56	35.92
11'	6'	8"	8'	626	17.67	20.34	22.92	25.48	——
	7'	8"	8½"	1210	21.88	24.55	27.19	29.69	——
	8'	9"	9'	1535	26.70	29.37	31.96	34.52	——
12'	6'	8"	8"	626	17.91	20.84	23.64	26.46	——
	7'	8"	8½"	1210	22.11	25.04	27.85	30.67	——
	8'	8"	9'	1538	26.93	29.86	32.67	35.49	——

* For reinforcing steel in Headwalls and Aprons, see Drawings listed below.

GENERAL NOTES:-
CONCRETE:- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have ¾" 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#/□"
Reinforcing Steel 20,000#/□"

NOTE:-
This drawing to be used in conjunction with Std. Barrel Sections, Drawing Nos.

SINGLES	DOUBLES	TRIPLES	QUADRUPLES	QUINTUPLES
R-115X-0	R-215X-0	R-315X-0	R-415X-0	R-515X-0
R-115X-1	R-215X-1	R-315X-1	R-415X-1	R-515X-1
	R-215X-2	R-315X-2		

BAR LIST FOR ONE SHORT AND ONE LONG WING - 2 EACH REQUIRED

CLEAR HEIGHT	WING LOCATION	SF1 & LF1 BENT: In bottom of footing, bent up into back face of wing. One bar of each length.						SF2 & LF2 BENT: In bottom of footing, bent up into back face of wing. Alt. with F1 bars.						SF3 & LF3 STRAIGHT: Longitudinal in top of wing footing heel			SF4 & LF4 STRAIGHT: Longitudinal in bottom of wing footing toe.			SH1 & LH1: Horizontal in back face of wing.			SH2 & LH2 STRAIGHT: Horizontal in back face of wing. One bar of each length.						SH3 & LH3: In back face of wing at top - on slope.			SH4 & LH4 BENT: Dowels thru construction joint at headwall.				BAR BENDING DIAGRAM	QUANTITY: REINFORCING STEEL PER WING - LBS.	
					LENGTHS VARY																		LENGTHS VARY																
H	SHORT OR LONG	SIZE	SPACING	NO. REQD	MIN.	MAX.	X	Y	SIZE	SPACING	NO. REQD	LENGTH	X	Y	SIZE	NO. REQD	LENGTH	SIZE	NO. REQD	LENGTH	SIZE	SPACING	NO. REQD	SIZE	SPACING	NO. REQD	MAX.	MIN.	SIZE	SPACING	NO. REQD	LENGTH	SIZE	SPACING	NO. REQD	LENGTH	X		SHORT WING	LONG WING
2'	Short	#3	12"	7	1'-7"	3'-11"	6'-8"	1'-0"	#3	—	—	—	—	—	#3	1	9'-2"	#3	2	7'-10"	#3	12"	1	6'-5"	#3	12"	1	—	3'-6"	#3	1	6'-10"	#3	12"	2	2'-8"	1'-6"			
	Long	#3	12"	10	1'-7"	3'-11"	10'-8"	1'-0"	#3	—	—	—	—	—	#3	1	11'-8"	#3	2	10'-10"	#3	12"	1	8'-11"	#3	12"	1	—	4'-8"	#3	1	9'-3"	#3	12"	2	"	"	24.9	33.4	
3'	Short	#3	12"	9	2'-2"	5'-3"	8'-8"	1'-4"	#3	—	—	—	—	—	#3	1	11'-8"	#3	2	10'-0"	#3	12"	1	8'-6"	#3	12"	2	6'-7"	3'-6"	#3	1	9'-0"	#3	12"	3	"	"			
	Long	#3	12"	13	1'-11"	5'-2"	12'-8"	1'-3"	#3	—	—	—	—	—	#3	1	14'-6"	#3	2	14'-0"	#3	12"	1	11'-9"	#3	12"	2	8'-11"	4'-6"	#3	1	12'-0"	#3	12"	3	"	"	37.7	50.3	
4'	Short	#3	12"	11	2'-7"	6'-7"	6'-11"	1'-8"	#3	—	—	—	—	—	#3	1	13'-8"	#3	3	12'-2"	#3	12"	1	10'-7"	#3	12"	3	9'-6"	3'-6"	#3	1	11'-3"	#3	12"	4	"	"			
	Long	#3	12"	15	2'-6"	6'-6"	9'-11"	1'-7"	#3	—	—	—	—	—	#3	1	17'-1"	#3	3	17'-2"	#3	12"	1	14'-7"	#3	12"	3	12'-2"	4'-6"	#3	1	14'-11"	#3	12"	4	"	"	57.3	76.4	
5'	Short	#3	12"	13	3'-1"	7'-11"	5'-1"	2'-0"	2'-1"	6'-0"	#3	12"	4	3'-6"	1'-1"	2'-6"	#3	1	15'-5"	#3	3	14'-9"	#3	12"	2	12'-6"	#3	12"	3	9'-8"	3'-6"	#3	1	13'-6"	#3	12"	5	"	"			
	Long	#3	12"	18	3'-6"	7'-10"	7'-10"	1'-7"	1'-11"	6'-0"	#3	12"	5	3'-6"	1'-1"	2'-6"	#3	1	20'-2"	#3	3	20'-4"	#3	12"	2	17'-5"	#3	12"	3	13'-2"	4'-8"	#3	1	17'-10"	#3	12"	5	"	"	81.1	108.4	
6'	Short	#4	12"	16	3'-6"	9'-4"	4'-2"	2'-4"	2'-8"	7'-1"	#3	12"	4	4'-6"	1'-6"	3'-3"	#3	1	17'-4"	#3	3	16'-6"	#3	12"	2	16'-8"	#3	12"	4	12'-9"	3'-6"	#3	1	15'-6"	#3	12"	6	"	"			
	Long	#4	12"	21	3'-5"	9'-3"	9'-3"	1'-8"	2'-2"	7'-1"	#3	12"	5	4'-6"	1'-4"	3'-3"	#3	1	23'-0"	#3	3	23'-6"	#3	12"	3	20'-3"	#3	12"	4	17'-5"	4'-8"	#3	1	20'-9"	#3	12"	6	2'-8"	1'-6"	134.8	178.1	
7'	Short	#4	12"	18	3'-9"	10'-10"	1'-3"	2'-10"	2'-7"	8'-1"	#4	12"	7	5'-6"	1'-7"	4'-0"	#4	1	19'-7"	#4	4	18'-9"	#4	12"	2	16'-10"	#4	12"	5	15'-10"	3'-6"	#4	1	17'-8"	#4	12"	7	3'-6"	1'-9"			
	Long	#4	12"	24	3'-10"	10'-8"	11'-3"	2'-0"	2'-8"	8'-1"	#4	12"	9	5'-6"	1'-7"	4'-0"	#4	1	25'-10"	#4	4	26'-10"	#4	12"	2	23'-1"	#4	12"	5	21'-8"	4'-8"	#4	1	23'-8"	#4	12"	7	"	"	259.5	345.2	
8'	Short	#4	12"	20	4'-3"	12'-5"	7'-5"	3'-2"	3'-0"	9'-2"	#4	12"	10	6'-6"	1'-10"	4'-9"	#4	1	21'-8"	#4	4	21'-0"	#4	12"	3	18'-11"	#4	12"	5	15'-10"	3'-6"	#4	1	19'-10"	#4	12"	8	"	"			
	Long	#4	12"	27	4'-4"	12'-8"	11'5"	2'-3"	3'-2"	9'-2"	#4	12"	13	6'-6"	1'-10"	4'-9"	#4	1	28'-8"	#4	4	30'-3"	#4	12"	3	25'-11"	#4	12"	5	21'-8"	4'-8"	#4	1	26'-9"	#4	12"	8	3'-6"	1'-9"	328.0	438.3	

NOTE:- Bars for short wing shall be marked with prefix letter 'S', while those for long wing shall be marked with letter 'L'.

Note:- Dimensions are to bar centers.

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

Designed By:- W.C.H. 5-13-63 Checked By:-
Drawn By:- W.C.H. 6-20-63 Checked By:- BHS 8-7-63
Quantities By:- W.C.H. 9-23-63 Checked By:-

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION
DETAILS OF STANDARD WINGS
FOR
REINFORCED CONCRETE BOX CULVERTS
15° SKEW

4', 5', 6', 7', 8', 9', 10', 11' & 12' SPANS 3:1 SLOPES
SINGLES, DOUBLES, TRIPLES, QUADRUPLES & QUINTUPLES ALL DEPTHS OF COVER FOR H = 8'-0" OR LESS

STANDARD DRAWING NO. W-X153-1

RESHOT 3-4-93

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			152	
JOB No.					

BAR LIST FOR BARREL SECTION 60'-0" IN LENGTH

DEPTH OF COVER	CLEAR SPAN	CLEAR HEIGHT	'a' bars STRAIGHT In Top and Bottom Slabs of Barrel. & Add'l In Apron and Headwall- Each. SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH	'b' bars BENT - See Diagram below In Top and Bottom Slabs of Barrel. Alternate with 'a' bars. SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH	X	'g' bars STRAIGHT Longitudinal in Top Slab of Barrel SIZE	SPACING	NO. REQ'D	LENGTH	'd' bars STRAIGHT Longitudinal in Sidewalls SIZE	SPACING	NO. REQ'D	LENGTH	'e' bars. STRAIGHT Longitudinal in Bottom Slab of Barrel SIZE	SPACING	NO. REQ'D	LENGTH	'f' bars STRAIGHT Verticals in Sidewalls SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH
D	S	H																											
0'-0" TO 5'-0" MAXIMUM.	1 @ 4'	2'	#5	13"	120	120	4'-9"	#6	13"	110	110	5'-10"	6'-8"	#5	10½"	6	#4	12"	6	#4	12"	5	#4	12"	5				
		3'			120	120	4'-9"			110	110	5'-10"	6'-8"			6			6			5			5				
		4'			120	120	4'-9"			110	110	5'-10"	6'-8"			6			8			5			5				
		5'			120	120	4'-9"			110	110	5'-10"	6'-8"			6			10			6			5				
		6'			120	120	4'-11"			110	110	6'-0"	6'-10"			6			12			6			5				
	1 @ 5'	3'	#6	13"	120	120	5'-9"	#6	13"	110	110	6'-10"	6'-8"	#5	10½"	7	#4	12"	6	#4	12"	6	#4	12"	6				
		4'			120	120	5'-9"			110	110	6'-10"	6'-8"			8			6			6			6				
		5'			120	120	5'-9"			110	110	6'-10"	6'-8"			7			8			7			6				
		6'			120	120	5'-11"			110	110	7'-0"	6'-10"			7			10			7			6				
		7'			120	120	6'-0"			110	110	7'-1"	6'-11"			7			12			7			6				
		8'			120	120	6'-2"			110	110	7'-2"	7'-0"			7			14			7			6				
	1 @ 6'	3'	#6	12"	128	128	6'-9"	#6	12"	118	118	7'-10"	6'-8"	#5	10½"	8	#4	12"	6	#4	12"	7	#4	12"	7				
		4'			128	128	6'-9"			118	118	7'-10"	6'-8"			8			8			8			7				
		5'			128	128	6'-9"			118	118	7'-10"	6'-8"			8			8			8			7				
		6'			128	128	6'-11"			118	118	8'-0"	6'-10"			8			10			8			7				
		7'			128	128	7'-0"			118	118	8'-1"	6'-11"			8			12			8			7				
		8'			128	128	7'-1"			118	118	8'-2"	7'-0"			8			14			8			7	#5	12"	120	120	9'-1"
	1 @ 7'	4'	#6	11"	140	140	7'-9"	#6	11"	130	130	8'-10"	7'-8"	#5	10½"	9	#4	12"	8	#4	12"	8	#4	12"	8	#4	12"	120	120	5'-2"
		5'			140	140	7'-9"			130	130	8'-10"	7'-8"			9			10			8			8			120	120	6'-2"
		6'			140	140	7'-11"			130	130	9'-0"	7'-10"			9			12			8			8			120	120	7'-1"
		7'			140	140	8'-0"			130	130	9'-1"	7'-11"			9			14			8			8			120	120	8'-1"
		8'			140	140	8'-1"			130	130	9'-2"	8'-0"			9			16			9			8			120	120	9'-1"
		9'			140	140	8'-3"			130	130	9'-4"	8'-2"			9			18			9			8			120	120	10'-2"
	1 @ 8'	4'	#6	11"	128	128	8'-9"	#6	11"	118	118	9'-10"	8'-8"	#5	10"	11	#4	12"	8	#4	12"	9	#4	12"	9				
		5'			128	128	8'-11"			118	118	10'-0"	8'-10"			11			10			9			9				
		6'			128	128	8'-11"			118	118	10'-0"	8'-10"			11			12			9			9				
		7'	#7	12"	128	128	9'-0"	#6	12"	118	118	10'-1"	8'-11"	#5	10"	11	#4	12"	14	#4	12"	9	#4	12"	9				
		8'			128	128	9'-1"			118	118	10'-2"	9'-0"			11			16			9			9				
		9'			128	128	9'-3"			118	118	10'-4"	9'-2"			11			18			9			9				
		10'			128	128	9'-5"			118	118	10'-6"	9'-4"			11			20			9			9				
	1 @ 9'	5'	#7	11"	140	140	9'-11"	#7	11"	130	130	11'-0"	9'-10"	2 @ 30'-6" for 60'-0" Length Barrel. (1'-3" Lap)		12	#4	12"	10	#4	12"	10	#4	12"	10				
		6'			140	140	10'-0"			130	130	11'-1"	9'-11"			12			12			10			10	#4	12"	120	120	7'-5"
		7'			140	140	10'-0"			130	130	11'-1"	9'-11"			12			14			10			10			120	120	8'-5"
		8'			140	140	10'-1"	#7	11"	130	130	11'-2"	10'-0"			12	#4	12"	16	#4	12"	10	#4	12"	10			10"	144	9'-5"
		9'			140	140	10'-3"			130	130	11'-3"	10'-1"			12			18			10			10			12"	120	10'-5"
		10'			140	140	10'-5"			130	130	11'-4"	10'-3"			12			18			10			10	#5	11"	132	132	11'-5"
		11'			140	140	10'-7"			130	130	11'-5"	10'-6"			12			22			10			10		10"	144	144	12'-5"
	1 @ 10'	5'	#7	12"	128	128	10'-11"	#7	12"	118	118	12'-2"	10'-10"	2 @ 31'-6" for 60'-0" Length Barrel. (1'-3" Lap)		13	#4	12"	10	#4	12"	11	#4	12"	11				
		6'			128	128	11'-0"			118	118	12'-3"	10'-11"			13			12			11			11	#4	12"	120	120	7'-6"
		7'			128	128	11'-0"			118	118	12'-3"	10'-11"			13			14			11			11			120	120	8'-6"
		8'			128	128	11'-1"			118	118	12'-4"	11'-0"			13			16			11			11		10"	144	144	9'-6"
		9'			128	128	11'-3"	#7	12"	118	118	12'-6"	11'-2"			13	#4	12"	18	#4	12"	11	#4	12"	11		12"	120	120	10'-7"
		10'			128	128	11'-5"			118	118	12'-8"	11'-4"			13			20			11			11	#5	11"	132	132	11'-7"
		11'			128	128	11'-7"			118	118	12'-10"	11'-6"			13			22			11			11		10"	144	144	12'-7"
		12'			128	128	11'-9"			118	118	13'-0"	11'-8"			13			24			11			11	#6	12"	120	120	13'-7"
	1 @ 11'	6'	#7	11"	140	140	12'-1"	#7	11"	130	130	13'-2"	12'-0"	#5	9½"	15	#4	12"	12	#4	12"	12	#4	12"	12				
		7'			140	140	12'-1"			130	130	13'-3"	12'-0"			15			14			12			12				
		8'			140	140	12'-1"			130	130	13'-4"	12'-0"			15			14			12			12	#4	12"	120	120	8'-7"
		9'			140	140	12'-1"			130	130	13'-4"	12'-0"			15			16			12			12		10"	144	144	9'-7"
		10'			140	140	12'-3"			130	130	13'-5"	12'-2"			15			18			12			12		12"	120	120	10'-7"
		11'			140	140	12'-5"			130	130	13'-7"	12'-4"			15			20			12			12	#5	11"	132	132	11'-7"
		12'			140	140	12'-7"			130	130	13'-8"	12'-6"			15			22			12			12		10"	144	144	12'-7"
		13'			140	140	12'-9"			130	130	14'-0"	12'-8"			15			24			12			12	#6	12"	120	120	13'-7"
	1 @ 12'	6'	#8	12"	128	128	13'-1"	#7	11"	118	118	14'-4"	13'-0"	#5	9½"	16	#4	12"	12	#4	12"	13	#4	12"	13				
		7'			128	128	13'-1"			118	118	14'-4"	13'-0"			16			14			13			13	#5	12"	120	120	7'-9"
		8'			128	128	13'-1"			118	118	14'-4"	13'-0"			16			14			13			13				
		9'			128	128	13'-3"	#7	12"	118	118	14'-4"	13'-2"			16	#4	12"	16	#4	12"	13	#4	12"	13				
		10'			128	128	13'-5"			118	118	14'-8"	13'-4"			16			18			13			13				
		11'			128	128	13'-7"			118	118	14'-10"	13'-6"			16			20			13			13				
		12'			128	128	13'-9"			118	118	15'-0"	13'-8"			16			22			13			13				
																			24										

DIMENSIONS

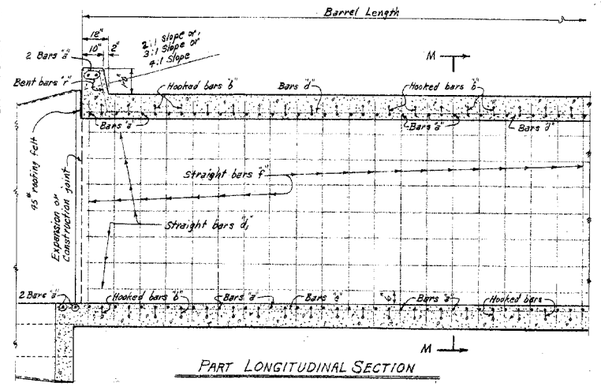
MAX. DESIGN DEPTH OF COVER	CLEAR SPAN	CLEAR HEIGHT	Sq. FT. OPENING	OVERALL WIDTH	THICKNESS OF TOP SLAB	THICKNESS OF SIDEWALLS	THICKNESS OF BOTTOM SLAB	OVERALL HEIGHT
D	S	H	A	OW	T	C	B	OH
5'-0"	1 @ 4'	2'	8	5'-0"	7"	6"	6½"	3'-1½"
		3'	12	5'-0"		6"		4'-1½"
		4'	16	5'-0"		6"		5'-1½"
		5'	20	5'-0"		6"		6'-1½"
		6'	24	5'-2"		7"		7'-1½"
	1 @ 5'	3'	15	6'-0"	7½"	6"	7"	4'-2½"
		4'	20	6'-1"		6"		5'-2½"
		5'	25	6'-0"		6"		6'-2½"
		6'	30	6'-2"		7"		7'-2½"
		7'	35	6'-3"		7½"		8'-2½"
	1 @ 6'	3'	18	7'-0"	8"	6"	7½"	4'-3½"
		4'	24	7'-0"		6"		5'-3½"
		5'	30	7'-0"		6"		6'-3½"
		6'	36	7'-2"		7"		7'-3½"
		7'	42	7'-3"		7½"		8'-3½"
		8'	48	7'-4"		8"		9'-3½"
	1 @ 7'	4'	28	8'-0"	8½"	6"	8½"	5'-5"
		5'	35	8'-0"		6"		6'-5"
		6'	42	8'-2"		7"		7'-5"
		7'	49	8'-3"		7½"		8'-5"
		8'	56	8'-4"		8"		9'-5"
		9'	63	8'-6"		9"		10'-5"
	1 @ 8'	4'	32	9'-0"	9"	6"	9½"	5'-7"
		5'	40	9'-2"		7"		6'-7"
		6'	48	9'-2"		7"		7'-7"
		7'	56	9'-3"		7½"		8'-7"
		8'	64	9'-4"		8"		9'-7"
		9'	72	9'-6"		9"		10'-7"
		10'	80	9'-8"		10"		11'-7"
	1 @ 9'	5'	45	10'-2"	10"	7"	10"	6'-8"
		6'	54	10'-3"		7½"		7'-8"
		7'	63	10'-3"		7½"		8'-8"
		8'	72	10'-4"		8"		9'-8"
		9'	81	10'-6"		9"		10'-8"
		10'	90	10'-8"		10"		11'-8"
		11'	99	10'-10"		11"		12'-8"
	1 @ 10'	5'	50	11'-2"	10½"	7"	11"	6'-9½"
		6'	60	11'-3"		7½"		7'-9½"
		7'	70	11'-3"		7½"		8'-9½"
		8'	80	11'-4"		9"		9'-9½"
		9'	90	11'-6"		9"		10'-9½"
		10'	100	11'-8"		10"		11'-9½"
		11'	110	11'-10"		11"		12'-9½"
		12'	120	12'-0"		12"		13'-9½"
	1 @ 11'	6'	66	12'-1"	11"	8"	11½"	7'-10½"
		7'	77	12'-1"		8"		8'-10½"
		8'	88	12'-1"		8"		9'-10½"
		9'	99	12'-3"		9"		10'-10½"
		10'	110	12'-5"		10"		11'-10½"
		11'	121	12'-6"		11"		12'-10½"
		12'	132	13'-0"		12"		13'-10½"
	1 @ 12'	6'	72	13'-0"	12"	8"	12½"	8'-0"
		7'	84	13'-0"		8"		9'-0"
		8'	96	13'-0"		8"		10'-0"
		9'	108	13'-0"		9"		11'-0"
		10'	120	13'-0"		10"		12'-0"
		11'	132	13'-0"		11"		13'-0"
		12'	144	14'-0"		12"		14'-0"

QUANTITIES

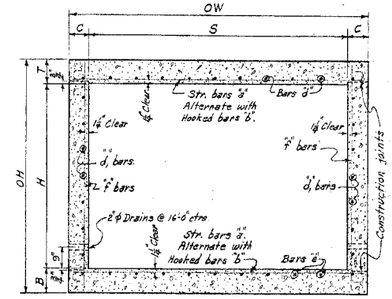
CLASS 'S' CONC. PER LIN. FT. OF BARREL	REINFORCING STEEL PER LIN. FT. BARREL	REINFORCING STEEL ADDITIONAL PER LAP	REINFORCING STEEL ADDITIONAL TWO HEADWALLS & APRONS
CU.YD.	LB.	LB.	LB.
0.282	41.49	17.95	66.35
0.319	44.16	19.62	66.35
0.356	46.83	21.29	66.35
0.394	49.50	22.96	66.35
0.474	52.96	24.63	67.75
0.380	55.55	22.19	101.27
0.417	58.23	23.86	101.27
0.454	60.90	25.53	101.27
0.535	64.49	27.20	103.27
0.609	67.63	28.87	103.27
0.496	66.29	24.76	118.94
0.983	68.96	26.43	118.94
0.520	71.64	28.10	118.94
0.602	75.31	29.77	120.94
0.671	78.98	31.44	121.97
0.746	88.47	33.11	122.97
0.568	81.32	29.01	136.88
0.605	84.00	30.68	136.88
0.688	87.76	32.35	138.88
0.757	90.98	34.02	139.88
0.832	96.65	35.69	140.88
0.996	105.59	37.36	142.88
0.676	95.26	38.32	194.07
0.754	99.12	39.99	196.80
0.797	101.79	36.66	196.80
0.867	105.05	38.33	198.16
0.942	110.81	40.00	199.52
1.057	119.92	41.67	202.85
1.184	124.67	43.34	204.97
0.844	119.72	37.56	219.41
0.910	118.06	39.23	220.97
0.957	120.71	40.90	220.97
1.033	126.54	42.57	222.33
1.148	135.80	44.24	225.06
1.276	142.68	45.91	227.78
1.416	150.90	47.58	230.51
0.957	130.69	40.13	242.69
1.024	133.99	41.80	244.00
1.071	136.66	43.47	244.00
1.147	142.55	45.14	245.36
1.263	151.92	46.81	248.09
1.391	158.89	48.98	250.81
1.532	166.71	50.15	253.54
1.685	178.67	51.82	256.26
1.153	155.16	46.12	268.62
1.202	157.83	47.79	268.62
1.252	163.06	49.46	268.62
1.368	172.60	51.13	271.34
1.792	193.79	56.14	279.52
1.264	172.20	48.69	357.62
1.333	174.87	50.36	357.62
1.383	180.15	52.03	357.62
1.500	183.85	58.70	361.18
1.630	187.07	55.37	366.74
1.772	205.16	57.04	368.30
1.926	217.95	58.71	371.86

W-X002-1, W-X002-2 or W-X004-1 or W-X004-2.

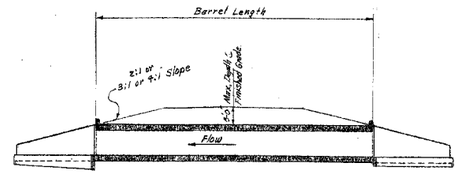
W-X003-1 or W-X003-2 and W-X004-1 or W-X004-2.



PART LONGITUDINAL SECTION



TYPICAL SECTION M-M



LONGITUDINAL SECTION

NOTE:- For details of wings and bar lists, see Drawing Nos. W-X003-1 or W-X003-2 and W-X004-1 or W-X004-2.

BAR SIZE	PIN DIAM.	K	ADD FOR 2 HOOKS	BENDING DIAGRAM Bars 'b'.
#6	3"	5"	1'-2"	K, Pin Diam., X
#7	3⅝"	5⅜"	1'-4"	

NOTE:- Dimensions are to centers of bars.

DOWEL BARS FOR TWO HEADWALLS

SPAN	SIZE	SPACING	NO. REQ'D	LENGTH	X	Bars 'r' Dowel bars in Headwalls.
4'	#4	11"±	12	2'-6"	1'-3"	r, 12", X
5'	#4	11"±	14	2'-7"	1'-3½"	
6'	#4	11"±	16	2'-8"	1'-4"	
7'	#4	11"±	18	2'-9"	1'-4½"	
8'	#4	11½"±	20	2'-11"	1'-5½"	
9'	#4	11½"±	22	3'-0"	1'-6"	
10'	#4	11½"±	24	3'-1"	1'-6½"	
11'	#4	12"±	26	3'-2"	1'-7"	
12'	#4	12"±	28	3'-3"	1'-7½"	

GENERAL NOTES:-

CONCRETE:- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have ¾" 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'-6". Lap longitudinal bars 30 diameters.

CONSTRUCTION JOINTS:- Construction joints between wingwalls, sidewalls 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 24,000 Lb. Axles @ 9'-0" ctrs.

UNIT STRESSES:-

Class S Concrete (n=10) 1200 #/s"

Reinforcing Steel 24,000 #/s"

NOTE:- This drawing to be used in conjunction with Standard Drawing Nos. W-X003-1 or W-X003-2 and W-X004-1 or W-X004-2. Also Drawing Not. W-X.002-1 or W-X.002-2.

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS

4,5,6,7,8,9,10,11&12' SPANS — 3:1 OR 4:1 SLOPES

SINGLES — UNDER 5'-0" COVER

STANDARD DRAWING NO. R-100X-0

Designed By:- W.C.H. 1-23-63. Checked By:- RBMS-5-9-63

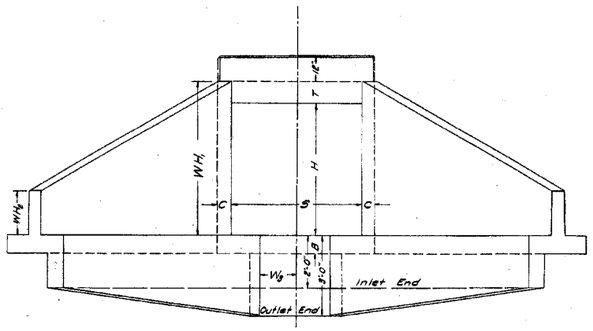
Drawn By:- W.C.H. 2-8-63. Checked By:- RBMS-5-24-63

Quantities By:- W.C.H. 2-12-63. Checked By:- RBMS-5-24-63

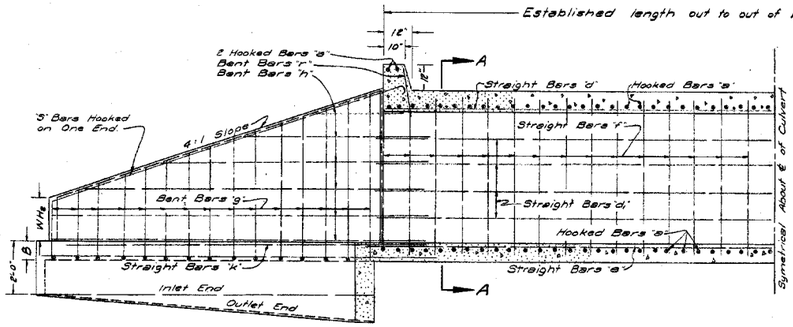
Reshot 3-4-93 345

89

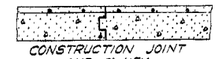
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	NO. SHEET	TOTAL SHEETS
6	ARK.			1529	
JOB NO.					

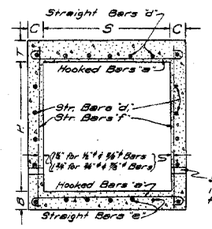


END ELEVATION



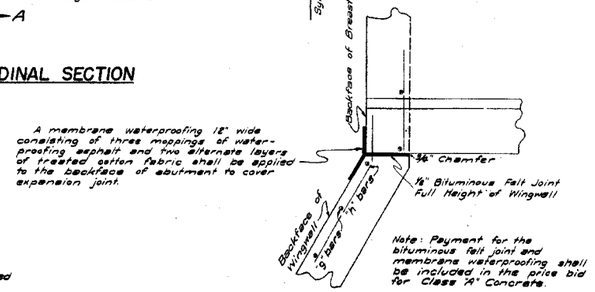
LONGITUDINAL SECTION





3" Diameter drains to be placed in both walls one foot above floor level at 20' Centers.

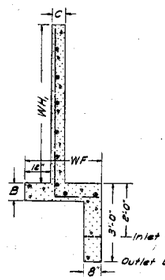
SECTION A-A



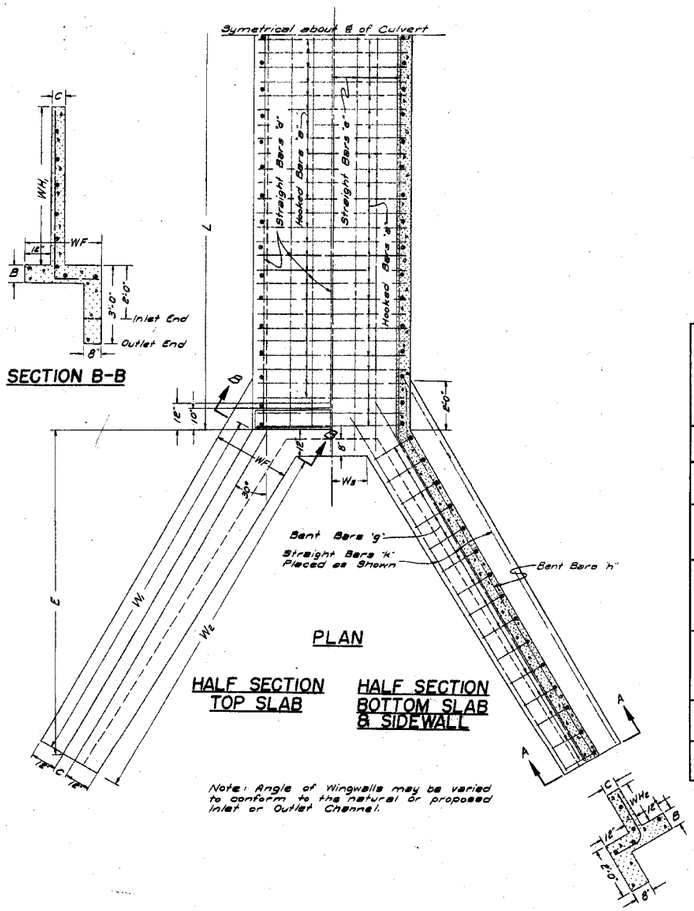
A membrane waterproofing 12" wide consisting of three mopings of waterproofing asphalt and two alternate layers of treated cotton fabric shall be applied to the backface of abutment to cover expansion joint.

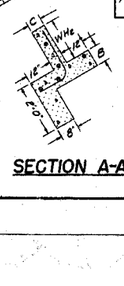
DETAIL OF EXPANSION JOINT FOR CULVERT WHEN HEIGHT "H"=8' OR MORE

Scale ¾" = 1'-0"



SECTION B-B





SECTION A-A

DIMENSIONS AND QUANTITIES

SPAN	HEIGHT	AREA OF OPENING SQ. FT.	MAXIMUM DEPTH OF COVER	THICKNESS OF SLAB	THICKNESS OF SIDE WALLS & WINGWALLS	THICKNESS OF BOTTOM SLAB	WINGWALL HEIGHTS AT HEADWALLS	WINGWALL HEIGHTS AT WINGEND	MAXIMUM WIDTH OF WING FOOTING	PERPENDICULAR DIST. FROM ℄ OF WING TO END OF WING	LENGTH OF WINGWALLS	INSIDE LENGTH OF WING FOOTINGS	FOOTING DIMENSION FROM ℄ OF BOX	CONCRETE CU.YD. HEADWALLS WINGWALLS & FOOTINGS	CONCRETE CU.YD. PER LINEAR FT. OF BARREL	STEEL LB. HEADWALLS WINGWALLS & FOOTINGS	STEEL LB. PER LINEAR FT OF BARREL	STEEL LB. ADD'L STEEL FOR LAPS
S	H	A	D	T	C	B	WH1	WH2	WF	E	W1	W2	W3					
3	2	6			6"		2'-9"	1'-0"	2'-6"	7'-0"	8'-1"	7'-8½"	0'-10½"	4.76	0.235	286	22.56	11.1
	3	9	16'	6½"	6"	6½"	3'-9"	1'-0"	2'-6"	11'-0"	12'-8½"	12'-5"	0'-10½"	7.59	0.272	440	25.27	13.4
	4	12			6"		4'-9"	1'-4"	2'-6"	13'-8"	15'-2½"	15'-0"	0'-10½"	10.06	0.309	587	27.97	15.6
4	2	8	13'	7½"	6"	7½"	2'-9"	1'-0"	2'-6"	7'-0"	8'-1"	7'-8½"	1'-4½"	5.10	0.306	298	31.05	15.6
	3	12	13'		6"		3'-9"	1'-0"	2'-6"	11'-0"	12'-8½"	12'-5"	1'-4½"	8.03	0.343	453	33.76	17.8
	4	16	13'		6"		4'-9"	1'-4"	2'-6"	15'-0"	17'-2½"	17'-0"	1'-4½"	10.64	0.380	600	36.46	20.0
	6	24	11'		7"		6'-9"	2'-0"	3'-4½"	19'-0"	21'-11½"	22'-2"	0'-5"	18.73	0.496	993	42.01	24.5
5	2	10	11'	8"	6"	8"	2'-10"	1'-0"	2'-6"	7'-4"	8'-5½"	8'-2½"	1'-10½"	6.36	0.370	365	38.31	17.8
	3	15	11'		6"		3'-10"	1'-0"	2'-6"	11'-4"	13'-1"	12'-9½"	1'-10½"	8.73	0.407	482	41.06	20.0
	4	20	11'		6"		4'-10"	1'-4"	2'-6"	14'-0"	16'-2"	15'-10½"	1'-10½"	11.83	0.444	645	43.77	22.3
	5	25	11'		6"		5'-10"	1'-8"	2'-11"	16'-8"	19'-3"	19'-2½"	1'-4½"	14.53	0.481	830	46.47	24.5
	7	35	9'		7½"		7'-10"	2'-4"	3'-1"	22'-0"	25'-4½"	25'-1½"	0'-4"	25.20	0.633	1551	58.60	28.9
6	3	18	9'	9"	6"	9"	3'-10"	1'-0"	2'-6"	11'-4"	13'-1"	12'-9½"	2'-4½"	9.26	0.500	493	50.41	22.3
	4	24	9'		6"		4'-10"	1'-4"	2'-6"	14'-0"	16'-2"	15'-10½"	2'-4½"	11.93	0.537	645	53.11	24.5
	5	30	9'		6"		5'-10"	1'-8"	2'-11"	16'-8"	19'-3"	19'-2½"	1'-10½"	15.30	0.574	845	55.82	26.7
	6	36	9'		7"		6'-10"	2'-0"	3'-5"	19'-4"	22'-4"	22'-7"	1'-4½"	20.57	0.657	1063	58.52	28.9
	8	48	7'		8"		8'-10"	2'-8"	4'-5"	24'-8"	28'-5½"	28'-4½"	0'-3½"	32.89	0.800	1942	72.49	33.4
8	7	56	7'	11"	7½"	11"	8'-0"	2'-4"	4'-0"	22'-8"	26'-2"	26'-3½"	1'-8½"	29.52	0.952	1735	84.20	40.1
	8	64	7'		8"		9'-0"	2'-8"	4'-6"	25'-4"	29'-3"	30'-6½"	1'-2½"	36.71	1.029	2088	88.05	42.3
	10	80	7'		10"		11'-0"	3'-4"	5'-6"	30'-8"	35'-5"	36'-11½"	0'-2½"	57.93	1.272	3217	101.18	46.8
10	8	80	6'	13"	8"	13"	9'-0"	2'-8"	4'-6"	25'-4"	29'-3"	30'-6½"	2'-2½"	59.32	1.305	2159	136.74	44.5
	10	100	6'		10"		11'-0"	3'-4"	5'-6"	30'-8"	35'-5"	36'-11½"	1'-2½"	81.51	1.553	3299	151.04	49.0
	12	120	6'		12"		13'-0"	4'-0"	6'-6"	36'-0"	41'-6½"	43'-0½"	0'-2½"	91.44	1.852	5333	169.90	53.4

LAP NOTE: In computing quantities of steel from the above table, add one lap for culverts up to 50'-0" in length and one lap for each additional 25'-0" in length.

SPECIFICATIONS: Arkansas Standard Road and Bridge Specifications.

*REINFORCING STEEL: To be deformed bars of Structural or Intermediate grade.

CHAMFER: All exposed corners to have ¾" Chamfer.

CONCRETE: All Concrete to be Class "A".

*Reinforcing Steel to be deformed bars of intermediate or rail grade on all Interstate Highways.

CONSTRUCTION JOINTS: Construction joints in wing walls and apron slabs shall be made only where shown on the plans. Maximum length of culvert between headwalls for which continuous pours will be permitted is 75'. For longer culverts construction joints shall be provided in slabs and walls at intervals not greater than 50'. Joints shall be normal to ℄ of barrel and shall have 2" continuous keys.

Longitudinal reinforcing shall be continuous through joints.

STEEL SCHEDULE

For Culverts 30'-0" in Length - Out to Out of Barrel

SPAN	HEIGHT	'a' bars (5'-0" to 9'-6" bars 6" for 10'-0" & 12'-0" bars) X	'd' bars STRAIGHT In Bottom of Top Slab	'd' bars STRAIGHT In Sidewalls	'e' bars STRAIGHT In Top of Bottom Slab	'f' bars STRAIGHT Vertical Bars In Sidewalls	'g' bars Vertical Bars in back face of Wingwall bent into bottom of footing	'h' bars Horizontal bars in Wingwalls	'k' bars STRAIGHT In Wing Footing	'r' bars Dowels in Headwalls	's' bars In Top of Each Wingwall
S	H	℄ in each headwall balances in top and bottom slab of barrel	31'-9" for 30'-0" Length	29'-9" for 30'-0" Length	29'-9" for 30'-0" Length	31'-9" for 30'-0" Length	X Min. / X Max. / Y Min. / Y Max. / Z Min. / Z Max.	Z			Z
		SIZE SPACING NUMBER LENGTH	SIZE SPACING NUMBER LENGTH	SIZE SPACING NUMBER LENGTH	SIZE SPACING NUMBER LENGTH	SIZE SPACING NUMBER LENGTH	SIZE SPACING NUMBER LENGTH X Min. X Max. Y Min. Y Max. Z Min. Z Max.	NUMBER LENGTH	NUMBER LENGTH	NUMBER LENGTH	NUMBER LENGTH Z
3	2	#4 12d 4'-6" 3'-9"	#4 12" 4	#4 12" 2	#4 12" 4	#4 12" 62 2'-10"	#4 12" 36 3'-5" 1'-3" 1'-3" 1'-3½" 3'-0½"	12 7'-11½"	3'-2½" 7'-10"	12 9'-7½"	10 2'-11½" d 9'-7½" 9'-1½"
	3	12d 4'-6" 3'-9"	4	4	4	62 3'-10"	52 3'-11" 1'-3" 1'-3" 1'-4½" 3'-11½"	16 10'-7½"	3'-2½" 12'-5½"	12 12'-3½"	10 2'-11½" d 12'-4½" 13'-10"
	4	12d 4'-6" 3'-9"	4	6	4	62 4'-10"	64 4'-7" 1'-3" 1'-3" 1'-3" 4'-11"	20 12'-3½"	3'-2½" 15'-6½"	12 15'-0"	10 2'-11½" d 17'-5½" 16'-10½"
4	2	10d 5'-6" 4'-9"	2	2	2	62 3'-0"	36 3'-6" 1'-3" 1'-3" 1'-4½" 3'-1½"	12 7'-11½"	3'-2½" 7'-10"	12 9'-7½"	8 2'-11½" d 9'-7½" 9'-1½"
	3	14d 5'-6" 4'-9"	4	4	4	62 4'-0"	52 4'-0" 1'-3" 1'-3" 1'-5½" 4'-0½"	16 10'-7½"	3'-2½" 12'-5½"	12 14'-3½"	10 2'-11½" d 14'-2½" 13'-10"
	4	16d 5'-6" 4'-9"	6	6	6	62 5'-0"	64 4'-8" 1'-3" 1'-10" 5'-0"	20 12'-6½"	3'-2½" 15'-6½"	12 17'-4½"	10 2'-11½" d 17'-5½" 16'-11½"
	6	24d 5'-8" 4'-7"	6	10	6	62 7'-0"	88 6'-6½" 1'-4" 2'-1" 2'-5½" 7'-0½"	28 16'-9½"	3'-2½" 21'-8½"	12 23'-6"	12 3'-0½" d 23'-9½" 23'-3½"
5	2	10d 6'-6" 5'-9"	2	2	2	62 3'-1"	36 3'-7" 1'-3" 1'-5" 1'-6" 3'-2"	12 8'-4"	3'-7½" 8'-2½"	12 10'-0½"	14 3'-1" d 10'-0" 9'-6"
	3	10d 6'-6" 5'-9"	4	4	4	62 4'-1"	52 4'-1" 1'-3" 1'-3" 1'-6½" 4'-1½"	16 11'-0½"	3'-7½" 14'-0½"	12 14'-7½"	14 3'-1" d 14'-0½" 14'-2½"
	4	10d 6'-6" 5'-9"	6	6	6	62 5'-1"	64 4'-9" 1'-3" 1'-9" 1'-9" 5'-3"	20 12'-11½"	3'-7½" 15'-11"	12 17'-8½"	14 3'-1" d 17'-10½" 17'-6½"
	5	10d 6'-6" 5'-9"	8	8	8	62 6'-1"	80 5'-7½" 1'-3" 1'-6" 2'-2" 6'-2"	24 15'-0½"	3'-7½" 18'-7½"	12 20'-9½"	14 3'-1" d 21'-0½" 20'-6½"
	7	10d 6'-9" 6'-0"	12	12	7	62 8'-1"	100 7'-6½" 1'-4½" 2'-6" 2'-9" 8'-3"	32 19'-1½"	3'-7½" 23'-1½"	12 24'-1½"	14 3'-1" d 24'-7" 24'-0"
6	3	12d 7'-6" 6'-9"	8	8	8	62 4'-3"	52 4'-2" 1'-3" 1'-3" 1'-7½" 4'-2½"	16 11'-0½"	3'-7½" 14'-7½"	12 14'-7½"	16 3'-2" d 14'-8½" 14'-2½"
	4	12d 7'-6" 6'-9"	8	8	8	62 5'-3"	64 4'-10" 1'-3" 1'-10" 5'-4"	20 12'-11½"	3'-7½" 16'-11½"	12 17'-8½"	16 3'-2" d 17'-10½" 17'-6½"
	5	12d 7'-6" 6'-9"	10	10	8	62 6'-3"	80 5'-8½" 1'-3" 1'-8" 2'-3" 6'-3"	24 15'-0½"	3'-7½" 18'-7½"	12 20'-9½"	16 3'-2" d 21'-0½" 20'-6½"
	6	12d 7'-8" 6'-11"	12	12	8	62 7'-3"	92 6'-8" 1'-4" 2'-2" 2'-7½" 7'-3½"	28 17'-1½"	3'-7½" 22'-0½"	12 23'-10½"	16 3'-2" d 24'-0½" 23'-6½"
	8	12d 7'-10" 7'-1"	14	14	8	62 9'-3"	116 8'-0½" 1'-5" 3'-2" 3'-8½" 9'-3½"	36 21'-2½"	3'-7½" 25'-6½"	12 30'-0½"	16 3'-2" d 30'-5½" 29'-11½"
8	7	8d 10'-5½" 8'-1½"	12	12	12	62 8'-7"	108 7'-10½" 1'-4½" 2'-8" 3'-1" 8'-7"	32 18'-10½"	4'-4½" 23'-3"	12 27'-8½"	20 3'-4" d 28'-1½" 27'-7½"
	8	9d 10'-6½" 9'-0½"	14	14	14	62 9'-7"	120 8'-10" 1'-5" 3'-3" 3'-5½" 9'-6½"	36 21'-1½"	4'-4½" 25'-6"	12 30'-9½"	20 3'-4" d 31'-3½" 30'-9½"
	10	9d 10'-10½" 9'-4½"	18	18	12	62 11'-7"	148 10'-10½" 1'-7" 4'-3" 4'-1" 11'-7"	44 26'-0½"	4'-4½" 30'-5"	12 36'-1½"	20 3'-4" d 37'-0½" 37'-0½"
10	8	10d 12'-6½" 11'-0½"	14	14	14	62 9'-11"	124 9'-2" 1'-5" 3'-3" 3'-7½" 9'-10½"	36 21'-1½"	4'-4½" 25'-6"	12 30'-9½"	24 3'-6" d 31'-3½" 30'-9½"
	10	10d 12'-10½" 11'-4½"	18	18	16	62 11'-11"	152 10'-11" 1'-7" 4'-3" 4'-1½" 11'-9"	44 26'-0½"	4'-4½" 30'-5"	12 36'-1½"	24 3'-6" d 37'-0½" 37'-0½"
	12	10d 13'-2½" 11'-8½"	22	22	18	62 13'-11"	180 12'-10" 1'-9" 5'-3" 4'-10½" 13'-9½"	52 30'-2½"	4'-4½" 34'-8"	12 43'-7½"	28 3'-6" d 43'-10½" 43'-4½"

NOTE: Lengths given above do not include lap.

AASHO DESIGN LIVE LOADING H-20 S-16

UNIT STRESSES

Concrete (n-15) 840 Lbs Per Sq. In.

Reinforcing Steel (Str. Gr.) 18000 Lbs. Per Sq. In.

SPECIAL MILITARY LOADING

Add'l Loading For Interstate Highways

2 - 24,000 Lb. Axles @ 4'-0" Ctrs.

Concrete (n-15) - 840 Lbs. Per Sq. In.

Reinf. Steel (Int. or Rail) - 20000 Lbs. Per Sq. In.

REVISIONS	
March, 58	Drawn
July, 1958	Construction Joints

ARKANSAS STATE HIGHWAY COMMISSION

REINFORCED CONCRETE BOX CULVERTS

3' TO 10' SPAN **4:1 SLOPES**

SINGLE **OVER 3'-6" COVER**

STD. DWG. NO. R-1004-A

11-A

RESHOT 3-8-93

179

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			1528	
JOB No.					

BAR LIST FOR BARREL SECTION 60'-0" IN LENGTH

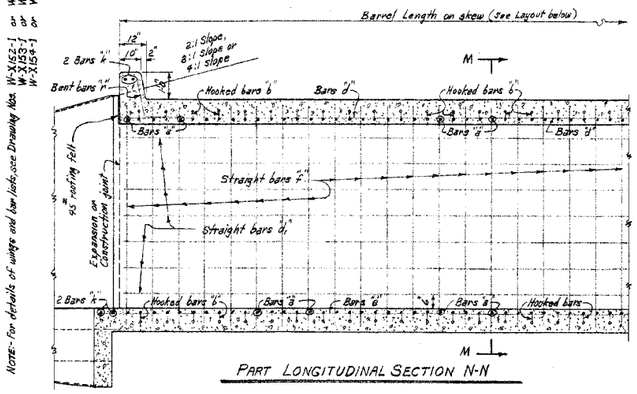
DEPTH OF COVER	CLEAR SPAN	CLEAR HEIGHT	"a" bars STRAIGHT In Top and Bottom Slabs of Barrel.				"b" bars BENT- See Diagram. In Top and Bottom Slabs of Barrel. Alternate with "a" bars					"d" bars STRAIGHT Longitudinal in Top Slab of Barrel			"d1" bars STRAIGHT Longitudinal in Sidewalls			"c" bars STRAIGHT Longitudinal in Bottom Slab of Barrel			"f" bars STRAIGHT Verticals in Sidewalls			"k" bars STRAIGHT 2 in Top of Headwalls and Aprons-Each.		
D	S	H	SIZE	SPACING	NO. REQD.	LENGTH	SIZE	SPACING	NO. REQD.	LENGTH	X	SIZE	SPACING	NO. REQD.	SIZE	SPACING	NO. REQD.	SIZE	SPACING	NO. REQD.	SIZE	SPACING	NO. REQD.	LENGTH	SIZE	NO. REQD.	LENGTH
0'-0" TO 5'-0" MAXIMUM	4 @ 4'	2'	#6	13"	112	4'-11"	#6	13"	110	6'-0"	6'-10"	10½" #5		6	#6	12"	4	#6	12"	5	#5	12"	120	2'-11"	8	5'-5"
		3'			112	4'-11"			110	6'-0"	6'-10"			6			5			5			120	3'-11"	8	5'-5"
		4'			112	4'-11"			110	6'-0"	6'-10"			6			5			5			120	4'-11"	8	5'-5"
		5'			112	4'-11"			110	6'-0"	6'-10"			10			5			5			120	5'-11"	8	5'-5"
		6'			112	5'-1"			110	6'-2"	5'-0"			12			5			5			120	6'-11"	8	5'-7"
	5 @ 5'	3'			112	5'-11"			110	7'-1"	5'-11"	10½" #5		7			6			6			120	4'-8"	8	6'-6"
		4'			112	5'-11"			110	7'-1"	5'-11"			8			6			6			120	5'-8"	8	6'-6"
		5'	#6	13"	112	5'-11"	#6	13"	110	7'-1"	5'-11"			10	#6	12"	6	#6	12"	6	#5	12"	120	6'-8"	8	6'-6"
		6'			112	6'-1"			110	7'-3"	6'-1"			12			6			6			120	7'-10"	8	6'-8"
		7'			112	6'-8"			110	7'-9"	6'-2"			14			6			6			120	8'-10"	8	6'-9"
	6 @ 6'	3'			120	7'-0"			118	8'-1"	6'-11"			6			7			7			120	4'-1"	8	7'-6"
		4'			120	7'-0"			118	8'-1"	6'-11"			8			7			7			120	5'-1"	8	7'-6"
		5'	#6	12"	120	7'-0"	#6	12"	118	8'-1"	6'-11"	10½" #5		8	#6	12"	8	#6	12"	7	#5	12"	120	6'-1"	8	7'-6"
		6'			120	7'-2"			118	8'-3"	7'-1"			10			8			7			120	7'-1"	8	7'-8"
		7'			120	7'-3"			118	8'-4"	7'-2"			12			8			7			120	8'-1"	8	7'-9"
		8'			120	7'-4"			118	8'-5"	7'-3"			14			8			7			120	9'-1"	8	7'-10"
	7 @ 7'	4'			182	8'-0"			130	9'-1"	7'-11"			8			8			8			120	5'-2"	8	8'-7"
		5'			132	8'-0"			130	9'-1"	7'-11"			10			8			8			120	6'-2"	8	8'-7"
		6'	#6	11"	132	8'-2"	#6	11"	130	9'-3"	8'-1"	10½" #5		12	#6	12"	8	#6	12"	8	#5	12"	120	7'-2"	8	8'-9"
		7'			132	8'-3"			130	9'-4"	8'-2"			14			8			8			120	8'-2"	8	8'-10"
		8'			132	8'-4"			130	9'-5"	8'-3"			16			8			8			120	9'-2"	8	8'-11"
		9'			132	8'-6"			130	9'-7"	8'-5"			18			8			8			120	10'-2"	8	9'-1"
	8 @ 8'	4'			120	9'-1"			118	10'-2"	9'-0"			8			9			9			120	5'-4"	8	9'-7"
		5'			120	9'-3"			118	10'-4"	9'-2"			10			9			9			120	6'-4"	8	9'-9"
		6'			120	9'-3"			118	10'-4"	9'-2"			12			9			9			120	7'-4"	8	9'-9"
		7'	#7	12"	120	9'-4"	#6	12"	118	10'-5"	9'-3"	10" #5		14	#6	12"	9	#6	12"	9	#5	12"	120	8'-4"	8	9'-10"
		8'			120	9'-5"			118	10'-6"	9'-4"			16			9			9			120	9'-4"	8	9'-11"
		9'			120	9'-7"			118	10'-8"	9'-6"			18			9			9			120	10'-4"	8	10'-1"
		10'			120	9'-9"			118	10'-10"	9'-8"			20			9			9			132	11'-4"	8	10'-3"
	9 @ 9'	5'			132	10'-3"			130	11'-6"	10'-2"			10			10			10			120	6'-5"	8	10'-9"
		6'			132	10'-4"			130	11'-5"	10'-1"			12			10			10			120	7'-5"	8	10'-10"
		7'			132	10'-4"			130	11'-5"	10'-3"			14			10			10			120	8'-5"	8	10'-10"
		8'	#7	11"	132	10'-5"	#6	11"	130	11'-6"	10'-4"	10" #5		16	#6	12"	10	#6	12"	10	#5	12"	144	9'-5"	#7	10'-11"
		9'			132	10'-7"			130	11'-8"	10'-6"			18			10			10			120	10'-5"	8	11'-0"
		10'			132	10'-8"			130	11'-10"	10'-8"			20			10			10			132	11'-5"	8	11'-1"
		11'			132	10'-11"			130	12'-0"	10'-10"			22			10			10			144	12'-5"	8	11'-2"
	10 @ 10'	5'			120	11'-3"			118	12'-7"	11'-5"			13			10			11			120	6'-6"	8	11'-10"
		6'			120	11'-9"			118	12'-8"	11'-6"			13			12			11			120	7'-6"	8	11'-11"
		7'			120	11'-9"			118	12'-8"	11'-6"			13			14			11			120	8'-6"	8	11'-11"
		8'	#7	12"	120	11'-5"	#7	12"	118	12'-9"	11'-5"	10" #5		13	#6	12"	16	#6	12"	11	#5	12"	144	9'-6"	#7	12'-0"
		9'			120	11'-8"			118	12'-11"	11'-7"			13			18			11			144	10'-6"	8	12'-0"
		10'			120	11'-10"			118	13'-1"	11'-9"			13			20			11			144	11'-6"	8	12'-1"
		11'			120	12'-0"			118	13'-3"	11'-11"			13			22			11			144	12'-6"	8	12'-1"
		12'			120	12'-2"			118	13'-5"	12'-1"			13			24			11			144	13'-6"	8	12'-2"
	11 @ 11'	6'			132	12'-6"			130	13'-9"	12'-5"			15			12			12			120	7'-7"	8	12'-6"
		7'			132	12'-6"			130	13'-9"	12'-5"			15			14			12			120	8'-7"	8	13'-0"
		8'			132	12'-6"			130	13'-9"	12'-5"			15			16			12			120	9'-7"	8	13'-0"
		9'	#7	11"	132	12'-8"	#7	11"	130	13'-11"	12'-7"	9½" #5		15	#6	12"	18	#6	12"	12	#5	12"	120	10'-7"	#7	12'-6"
		10'			132	12'-10"			130	14'-1"	12'-9"			15			20			12			120	11'-7"	8	12'-6"
		11'			132	13'-0"			130	14'-3"	12'-11"			15			22			12			120	12'-7"	8	12'-7"
		12'			132	13'-2"			130	14'-5"	13'-1"			15			24			12			120	13'-7"	8	12'-8"
	12 @ 12'	6'			120	13'-6"			118	14'-10"	13'-6"			16			12			13			120	7'-8"	8	14'-1"
		7'			120	13'-6"			118	14'-10"	13'-6"			16			14			13			120	8'-8"	8	14'-1"
		8'			120	13'-6"			118	14'-10"	13'-6"			16			16			13			120	9'-8"	8	14'-1"
		9'	#8	12"	120	13'-8"	#7	12"	118	15'-0"	13'-8"	9½" #5		16	#6	12"	18	#6	12"	13	#5	12"	120	11'-8"	#8	14'-8"
		10'			120	13'-10"			118	15'-2"	13'-10"			16			20			13			120	12'-8"	8	14'-5"
		11'			120	14'-0"			118	15'-4"	14'-0"			16			22			13			120	13'-8"	8	14'-7"
		12'			120	14'-2"			118	15'-6"	14'-2"			16			24			13			120	14'-8"	8	14'-9"

NOTE:- The "a" and "b" bars are to be placed parallel with the headwalls, spacing to be parallel with barrel.

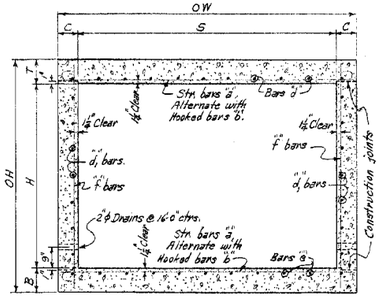
DIMENSIONS AND QUANTITIES

MAX. DESIGN DEPTH OF COVER	BARREL DIMENSIONS CLEAR SPAN	CLEAR HEIGHT	SQ. FT. OF OPENING	OVERALL WIDTH	THICKNESS OF TOP SLAB	THICKNESS OF SIDEWALL	THICKNESS OF BOTTOM SLAB	OVERALL HEIGHT	ROADWAY LENGTH	LENGTH OF HEADWALL	UNIT QUANTITIES CLASS 'S' CONC. PER LIN. FT. OF BARREL	REINFORCING STEEL PER LIN. FT. OF BARREL	REINFORCING STEEL ADDITIONAL PER LAP	REINFORCING STEEL ADDITIONAL TWO HEADWALLS & APRONS
D	S	H	A	OW	T	C	B	OH	RL	K	CU.YD.	LB.	LB.	LB.
5'-0"	4 @ 4'	2'	8	5'-0"	7"	6"	6½"	3'-1½"	5'-2⅝"	5'-3⅝"	0.282	92.27	17.95	71.92
		3'	12	5'-0"		6"		4'-1½"	"	"	0.319	94.94	13.62	71.92
		4'	16	5'-0"		6"		5'-1½"	"	"	0.356	97.62	21.29	71.92
		5'	20	5'-0"		6"		6'-1½"	"	"	0.394	50.29	22.96	71.92
		6'	24	5'-2"		7"		7'-1½"	5'-4⅝"	5'-10⅝"	0.474	53.74	24.63	73.31
	5 @ 5'	3'	15	6'-0"		6"		4'-2½"	4'-2⅝"	4'-9"	0.380	56.71	22.19	110.28
		4'	20	6'-0"		6"		5'-2½"	"	"	0.417	59.38	23.56	110.28
		5'	25	6'-0"	7½"	6"	7"	6'-2½"	"	"	0.454	62.05	25.53	110.28
		6'	30	6'-2"		7"		7'-2½"	6'-4⅝"	6'-11⅛"	0.535	65.65	27.20	112.26
		7'	35	6'-3"		7½"		8'-2½"	6'-5⅝"	7'-0⅝"	0.604	68.78	28.87	113.28
	6 @ 6'	3'	18	7'-0"		6"		4'-3½"	7'-3"	7'-9⅝"	0.446	67.79	20.74	127.97
		4'	24	7'-0"		6"		5'-3½"	"	"	0.483	70.47	26.43	127.97
		5'	30	7'-0"	8"	6"	7½"	6'-3½"	"	"	0.520	73.14	28.10	127.97
		6'	36	7'-2"		7"		7'-3½"	7'-5"	7'-11⅛"	0.602	76.81	29.77	129.96
		7'	42	7'-3"		7½"		8'-3½"	7'-6"	8'-0⅛"	0.671	79.36	31.44	130.98
		8'	48	7'-4"		8"		9'-3½"	7'-7½"	8'-1⅝"	0.746	83.97	33.11	131.98
	7 @ 7'	4'	28	8'-0"		6"		5'-5"	8'-3½"	8'-9⅝"	0.568	82.36	29.01	196.89
		5'	35	8'-0"		6"		6'-5"	"	"	0.605	85.63	30.69	196.89
		6'	42	8'-2"	8½"	7"	8½"	7'-5"	8'-5½"	9'-0"	0.688	88.90	32.35	198.89
		7'	49	8'-3"		7½"		8'-5"	8'-6⅝"	9'-1"	0.757	92.62	34.02	199.90
		8'	56	8'-4"		8"		9'-5"	8'-7⅝"	9'-2"	0.852	98.28	35.69	150.90
		9'	63	8'-6"		9"		10'-5"	8'-9⅝"	9'-4"	0.946	107.22	37.36	152.90
	8 @ 8'	4'	32	9'-0"		6"		5'-7"	9'-3⅝"	9'-10⅛"	0.676	97.69	33.32	207.70
		5'	40	9'-2"		7"		6'-7"	9'-5⅝"	10'-0⅛"	0.754	101.48	34.99	210.92
		6'	48	9'-2"		7"		7'-7"	"	"	0.797	104.15	36.66	210.92
		7'	56	9'-3"	9½"	7½"	9½"	8'-7"	9'-6⅝"	10'-1⅛"	0.867	107.92	38.33	211.79
		8'	64	9'-4"		8"		9'-7"	9'-8"	10'-2⅝"	0.962	113.17	40.00	213.15
		9'	72	9'-6"		9"		10'-7"	9'-10"	10'-4½"	1.057	122.28	41.67	215.87
		10'	80	9'-8"		10"		11'-7"	10'-0⅛"	10'-6⅝"	1.189	129.04	43.34	218.60
	9 @ 9'	5'	45	10'-2"		7"		6'-8"	10'-6⅝"	11'-0⅝"	0.894	117.30	37.56	233.23
		6'	54	10'-5"		7½"		7'-8"	10'-7⅝"	11'-1⅝"	0.910	120.62	39.23	234.60
		7'	63	10'-5"		7½"		8'-8"	"	"	0.957	123.29	40.90	234.60
		8'	72	10'-6"	10"	8"	10"	9'-8"	10'-8⅝"	11'-2⅝"	1.038	129.18	42.57	235.96
		9'	81	10'-6"		9"		10'-8"	10'-10⅝"	11'-5"	1.148	138.38	44.24	244.05
		10'	90	10'-8"		10"		11'-8"	11'-0⅝"	11'-7"	1.276	145.26	45.91	244.77
		11'	99	10'-10"		11"		12'-8"	11'-2⅝"	11'-9"	1.416	152.98	47.58	246.50
	10 @ 10'	5'	50	11'-2"		7"		6'-9"	11'-6⅝"	12'-1⅝"	0.957	133.70	40.13	257.63
		6'	60	11'-3"		7½"		7'-9"	11'-7⅝"	12'-2⅝"	1.024	137.06	41.80	258.99
		7'	70	11'-3"		7½"		8'-9"	"	"	1.071	139.73	43.47	258.99
		8'	80	11'-4"	10½"	8"	11"	9'-9"	11'-8⅝"	12'-3⅝"	1.147	145.62	45.14	260.35
		9'	90	11'-6"		9"		10'-9"	11'-10⅝"	12'-5⅝"	1.263	150.33	46.81	263.08
		10'	100	11'-8"		10"		11'-9"	12'-1"	12'-7"	1.391	162.30	48.48	265.80
		11'	110	11'-8"		11"		12'-9"	12'-3"	12'-9"	1.532	170.12	50.15	266.53
		12'	120	12'-0"		12"		13'-9"	12'-5"	12'-11"	1.685	180.08	51.82	271.25
	11 @ 11'	6'	66	12'-6"		8"		7'-10"	12'-9"	13'-3⅝"	1.158	158.87	44.12	283.61
		7'	77	12'-6"		8"		8'-10"	"	"	1.202	161.55	47.79	283.61
		8'	88	12'-6"		8"		9'-10"	"	"	1.258	166.78	49.46	288.61
		9'	99	12'-6"	11"	9"	11½"	10'-10"	12'-11"	13'-5⅝"	1.368	176.31	51.13	286.33
		10'	110	12'-8"		10"		11'-10"	13'-1"	13'-7⅝"	1.497	183.92	52.80	289.06
		11'	121	12'-10"		11"		12'-10"	13'-3"	13'-10"	1.638	191.38	54.47	293.15
		12'	132	13'-0"		12"		13'-10"	13'-5"	14'-0"	1.792	203.51	56.14	295.87
	12 @ 12'	6'	72	13'-6"		8"		8'-0"	13'-9"	14'-4"	1.284	176.97	48.69	378.98
		7'	84	13'-6"		8"		9'-0"	"	"	1.333	179.14	50.36	378.98
		8'	96	13'-6"		8"		10'-0"	"	"	1.385	184.42	52.03	378.98
		9'	108	13'-8"	12½"	9"	12½"	11'-0"	13'-11"	14'-6⅝"	1.500	194.12	53.70	382.54
		10'	120	13'-8"		10"		12'-0"	14'-1"	14'-8⅝"	1.630	201.39	55.37	386.10
		11'	132	13'-10"		11"		13'-0"	14'-3"	14'-10⅝"	1.772	209.48	57.04	389.66
		12'	144	14'-0"		12"		14'-0"	14'-5"	15'-0⅝"	1.926	221.72	58.71	393.22

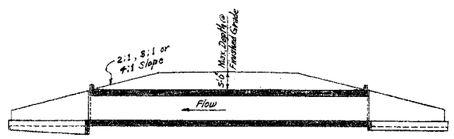
NOTE:- For details of wings and bar lists, see Drawing Nos. W-X152-2 and W-X15 or W-X153-2 " " or W-X154-2 " "



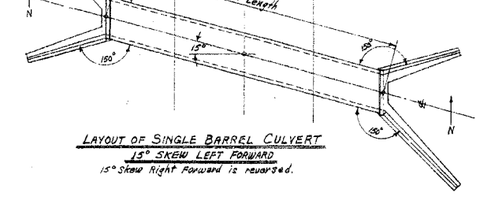
PART LONGITUDINAL SECTION N-N



TYPICAL SECTION M-M



LONGITUDINAL SECTION N-N



LAYOUT OF SINGLE BARREL CULVERT
15° SKEW LEFT FORWARD
15° Skew Right Forward is reversed.

GENERAL NOTES:-
CONCRETE:- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have ¾" 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, sidewalls 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 24,000 Lb. Axles @ 4'-0" ctrs.
UNIT STRESSES:-
Class S Concrete (n=10) 1200 #/□"
Reinforcing Steel 20,000 #/□"

NOTE:- This drawing to be used in conjunction with Standard Drawing Nos. W-X152-1 or W-X152-2 , W-X153-1 or W-X153-2 and W-X154-1 or W-X154-2. Also W-X15.

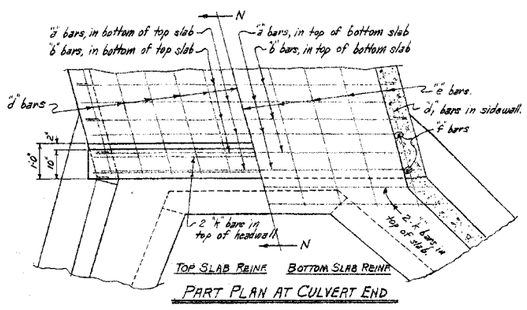
CLASS S CONCRETE

BAR SIZE	PIN DIAM.	K	ADD FOR 2 HOOKS	BENDING DIAGRAM Bars "b"
#6	3"	5"	1'-2"	K, Pin diam., X
#7	3⅝"	5⅜"	1'-4"	

NOTE:-Dimensions are to centers of bars

DOWEL BARS FOR TWO HEADWALLS

SPAN @	SIZE	SPACING	NO. REQD.	LENGTH	X	Bars "f" Dowel bars in headwalls
4'	#4	11"	12	2'-6"	1'-3"	12, X
5'	#4	11"	14	2'-7"	1'-3½"	
6'	#4	11"	16	2'-8"	1'-4"	
7'	#4	11½"	18	2'-9"	1'-4½"	
8'	#4	11½"	20	2'-11"	1'-5½"	
9'	#4	11½"	22	3'-0"	1'-6"	
10'	#4	12"	24	3'-1"	1'-6½"	
11'	#4	12"	26	3'-2"	1'-7"	
12'	#4	12"	28	3'-3"	1'-7½"	



PART PLAN AT CULVERT END

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS

15° SKEW

4',5',6',7',8',9',10',11' & 12' SPANS SINGLES

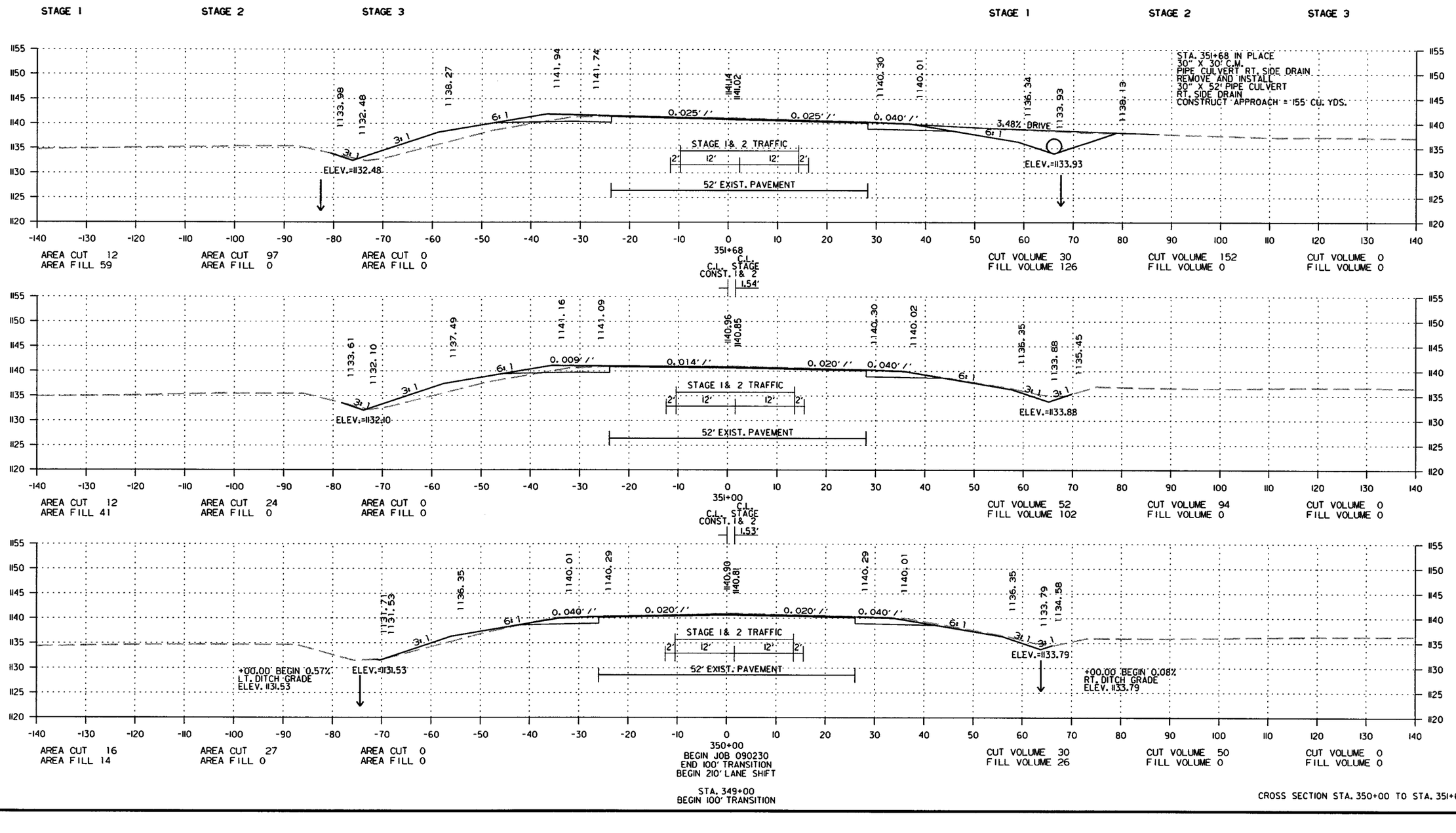
2:1, 3:1 OR 4:1 SLOPES UNDER 5'-0" COVER

STANDARD DRAWING NO. R-115X-0

Designed By:- W.C.H. 1-23-63 Checked By:- R.M.S. 5-8-63
Drawn By:- W.C.H. 8-14-63 Checked By:- R.P.S. 10-7-63
Quantities By:- W.C.H. 8-21-63 Checked By:- R.G. 12-10-63

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	153	282

(2) CROSS SECTIONS



CROSS SECTION STA. 350+00 TO STA. 351+68

2/4/2016

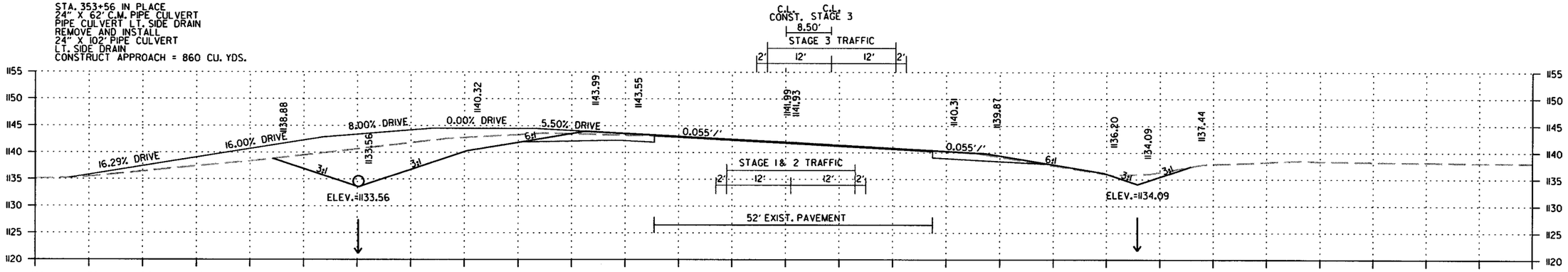
R090230.DGN

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.		090230	154	282

(2) CROSS SECTIONS

STAGE 1 STAGE 2 STAGE 3

STA. 353+56 IN PLACE
24" X 62' C.M. PIPE CULVERT
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
24" X 102' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 860 CU. YDS.



AREA CUT 207
AREA FILL 0

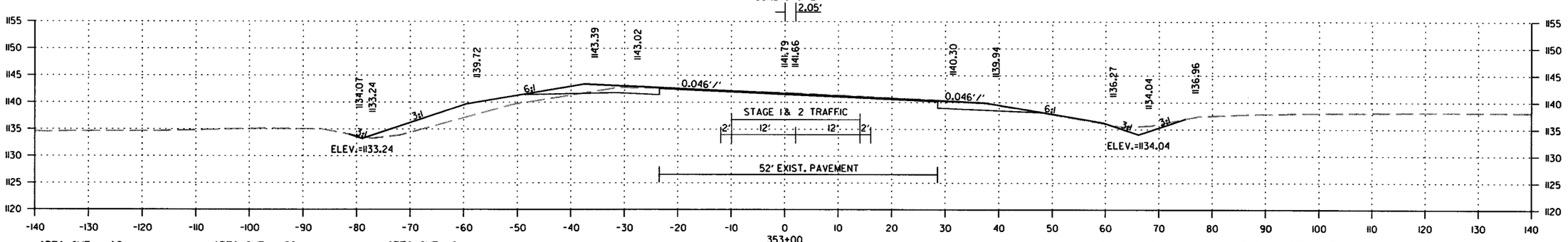
AREA CUT 32
AREA FILL 5

AREA CUT 0
AREA FILL 0

CUT VOLUME 228
FILL VOLUME 62

CUT VOLUME 62
FILL VOLUME 7

CUT VOLUME 0
FILL VOLUME 0



AREA CUT 13
AREA FILL 60

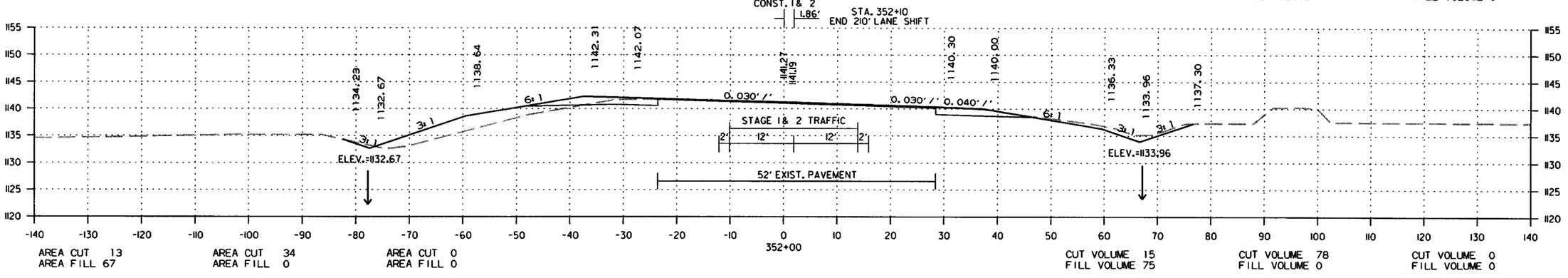
AREA CUT 28
AREA FILL 2

AREA CUT 0
AREA FILL 0

CUT VOLUME 48
FILL VOLUME 235

CUT VOLUME 115
FILL VOLUME 4

CUT VOLUME 0
FILL VOLUME 0



AREA CUT 13
AREA FILL 67

AREA CUT 34
AREA FILL 0

AREA CUT 0
AREA FILL 0

CUT VOLUME 15
FILL VOLUME 75

CUT VOLUME 78
FILL VOLUME 0

CUT VOLUME 0
FILL VOLUME 0

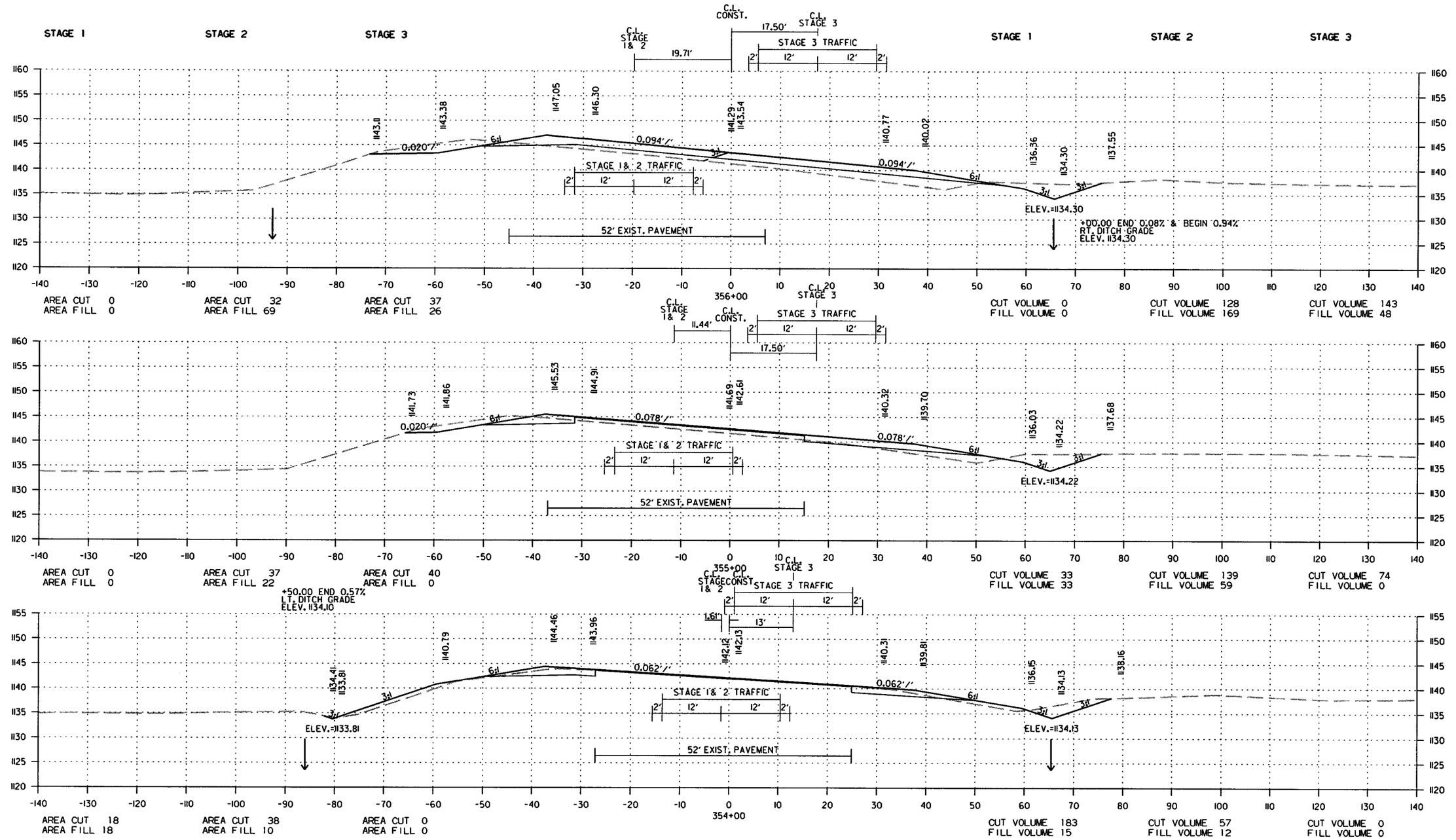
CROSS SECTION STA. 352+00 TO STA. 353+56

2/4/2016

R090230.DGN

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.		090230	155	282

(2) CROSS SECTIONS



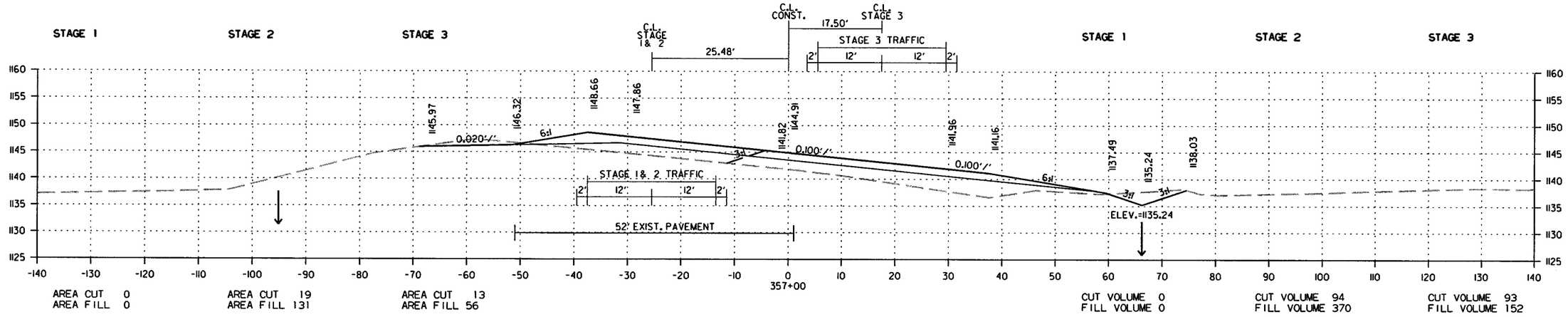
CROSS SECTION STA. 354+00 TO STA. 356+00

2/4/2016

R090230.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.		090230	156	282

(2) CROSS SECTIONS

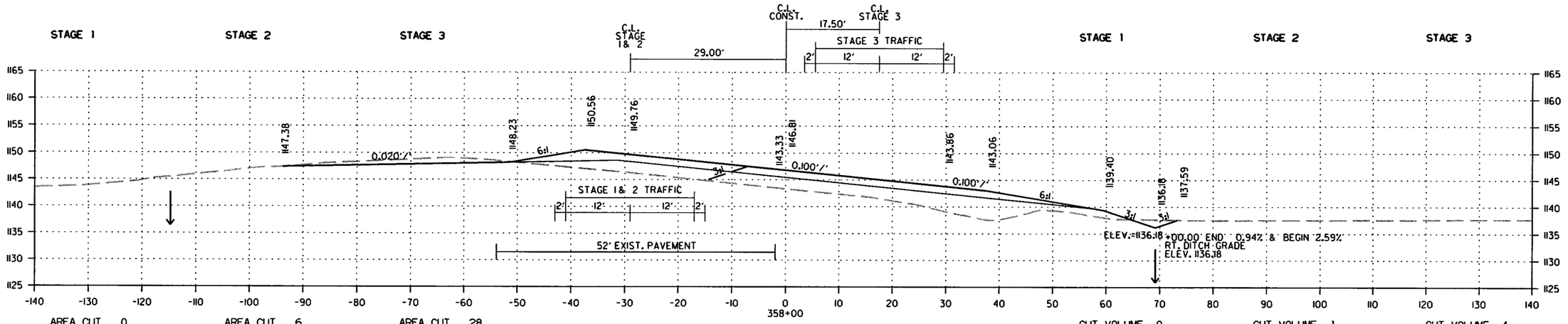


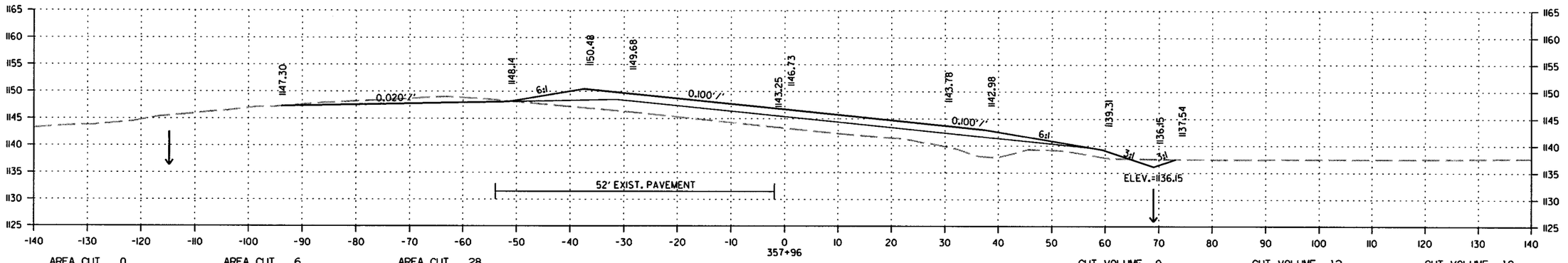
CROSS SECTION STA. 357+00

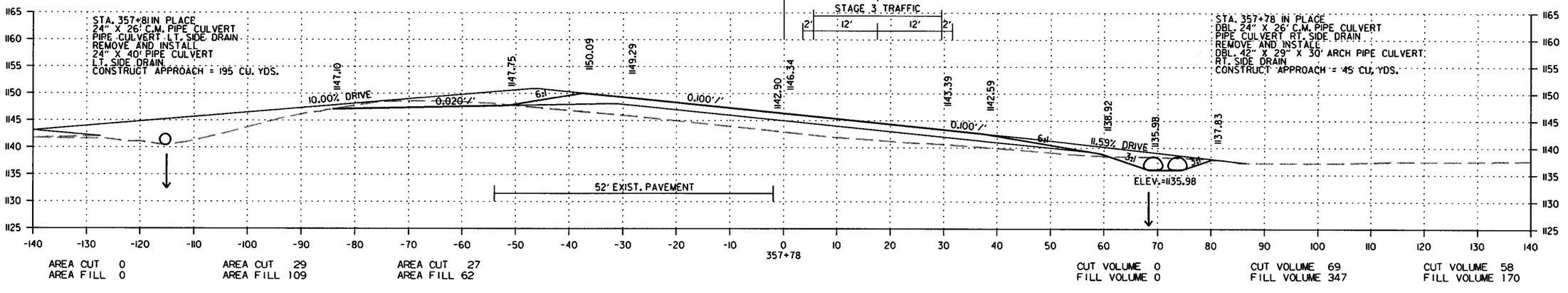
R090230.DGN 2/4/2016

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
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(2) CROSS SECTIONS







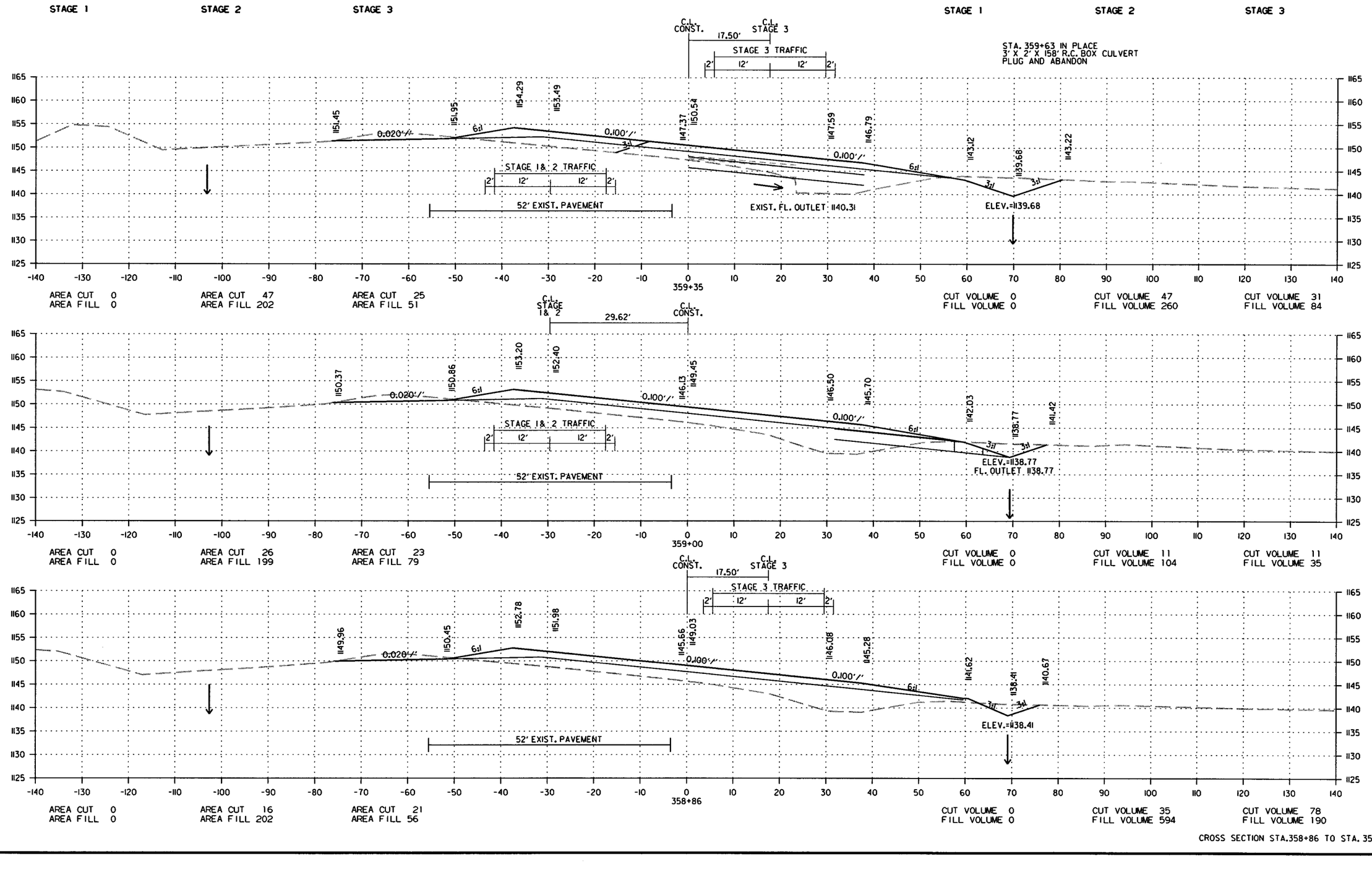
CROSS SECTION STA.357+78 TO STA. 358+00

2/4/2016

R090230.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.		090230	158	282

(2) CROSS SECTIONS



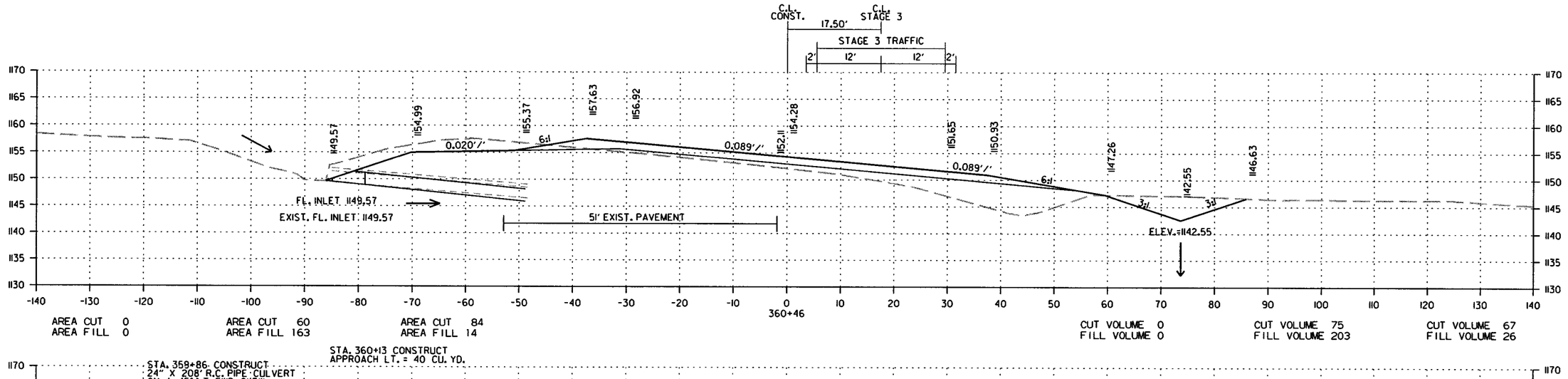
CROSS SECTION STA.358+86 TO STA. 359+35

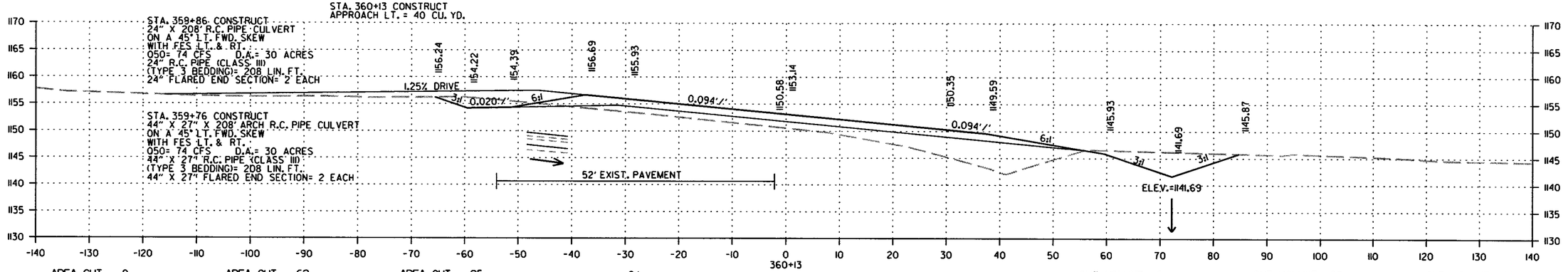
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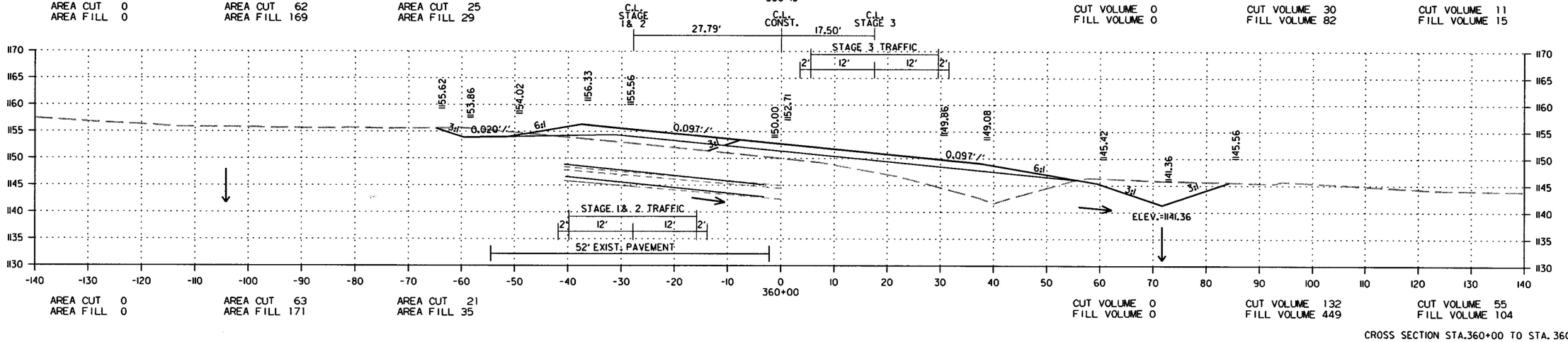
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
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(2) CROSS SECTIONS







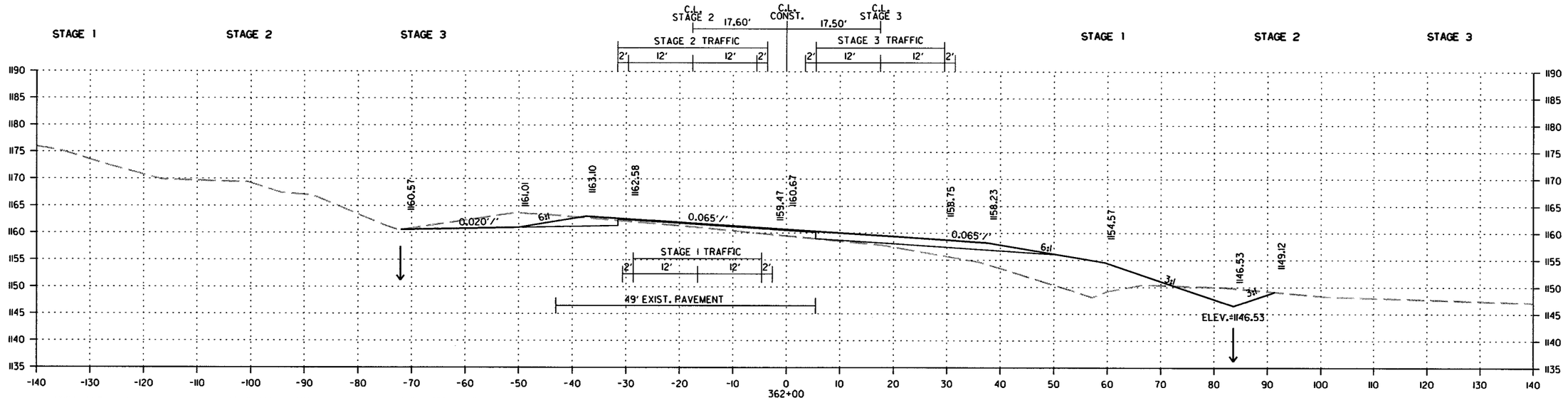
CROSS SECTION STA.360+00 TO STA. 360+46

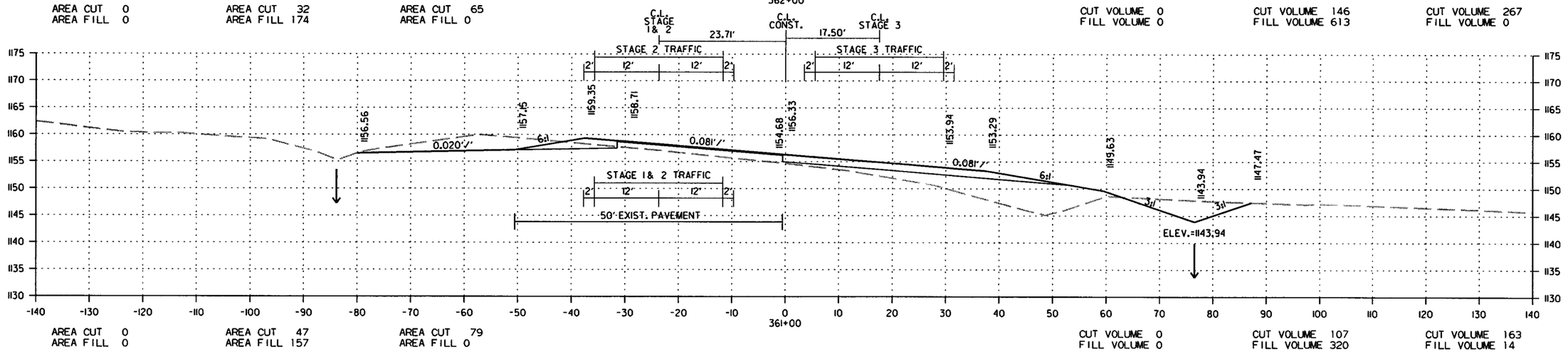
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
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(2) CROSS SECTIONS





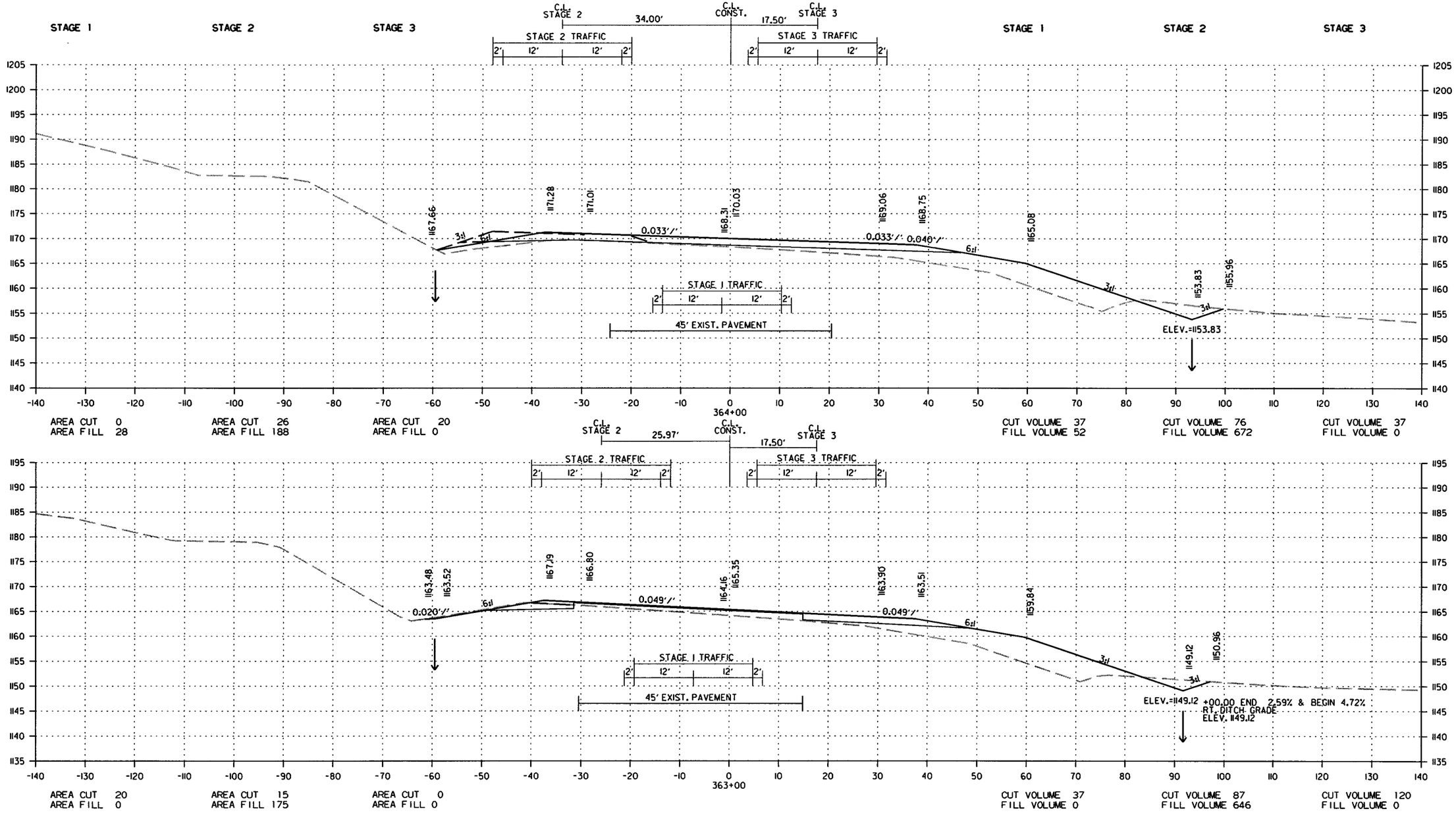
CROSS SECTION STA.361+00 TO STA. 362+00

2/4/2016

R090230.DGN

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(2) CROSS SECTIONS



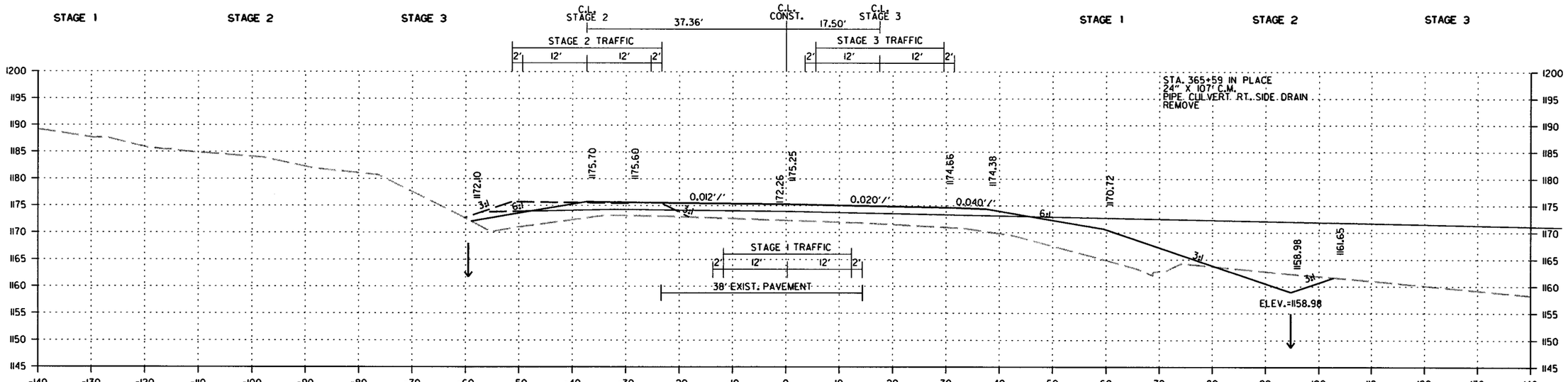
CROSS SECTION STA.363+00 TO STA. 364+00

2/4/2016

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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.			
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(2) CROSS SECTIONS



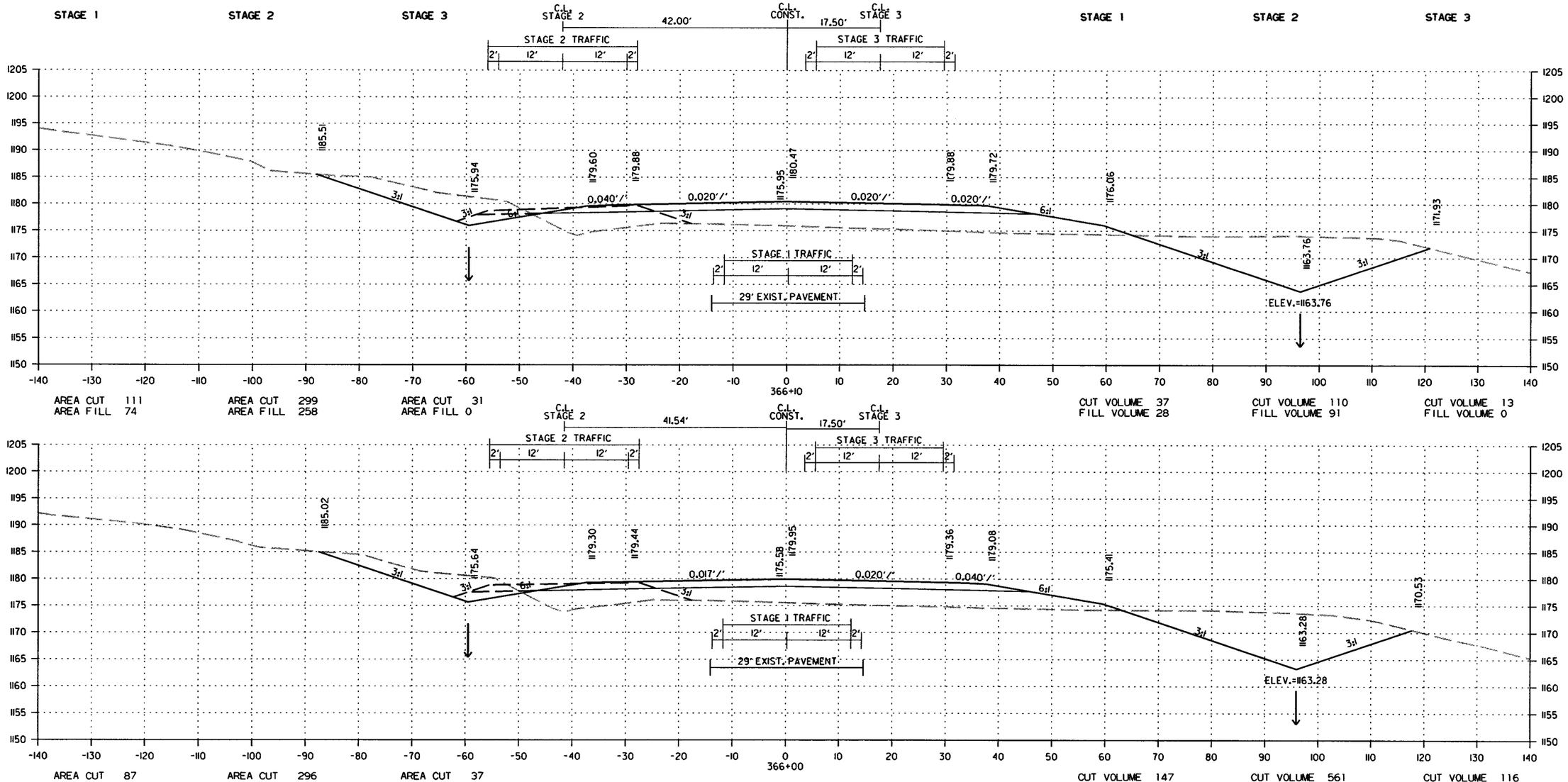
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2/4/2016

R090230.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.		090230	163	282

(2) CROSS SECTIONS



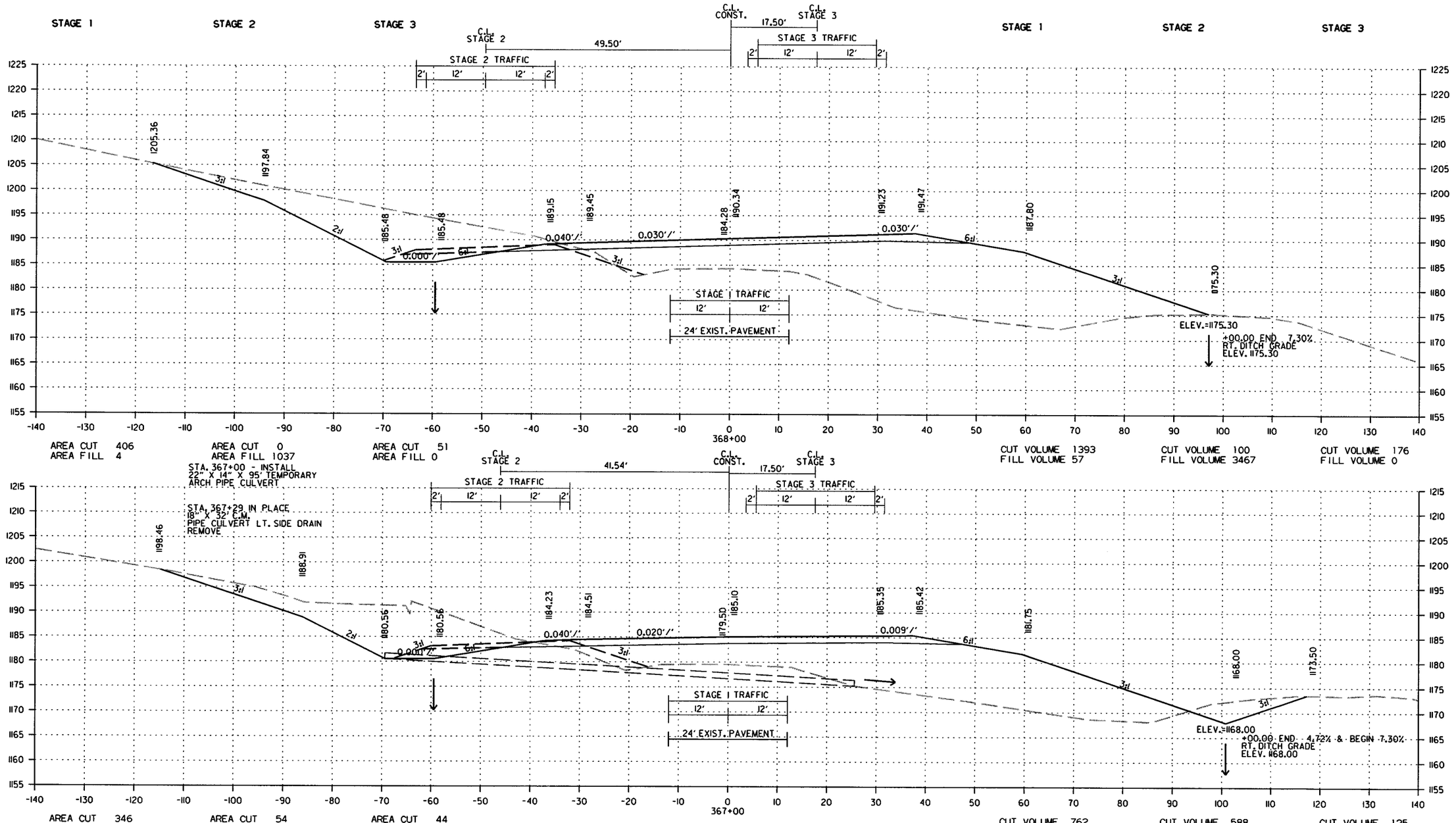
CROSS SECTION STA.366+00 TO STA. 366+10

2/4/2016

R090230.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.		090230	164	282

(2) CROSS SECTIONS



CROSS SECTION STA.367+00 TO STA. 368+00

2/4/2016

R090230.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	165	282

(2) CROSS SECTIONS

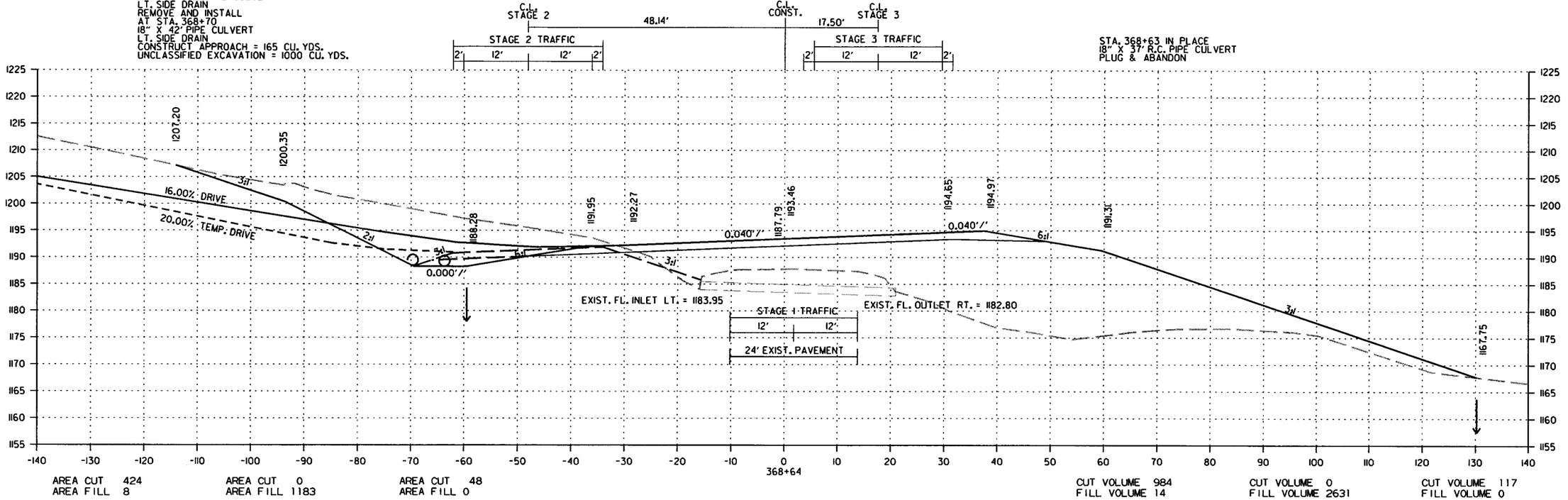
STAGE 1 STAGE 2 STAGE 3

STA. 368+70 INSTALL
18" X 42' TEMPORARY PIPE CULVERT
LT. SIDE DRAIN

STA. 369+00 IN PLACE
18" X 44' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
AT STA. 368+70
18" X 42' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 165 CU. YDS.
UNCLASSIFIED EXCAVATION = 1000 CU. YDS.

STAGE 1 STAGE 2 STAGE 3

STA. 368+63 IN PLACE
18" X 37' R.C. PIPE CULVERT
PLUG & ABANDON



AREA CUT 424
AREA FILL 8

AREA CUT 0
AREA FILL 1183

AREA CUT 48
AREA FILL 0

CUT VOLUME 984
FILL VOLUME 14

CUT VOLUME 0
FILL VOLUME 2631

CUT VOLUME 117
FILL VOLUME 0

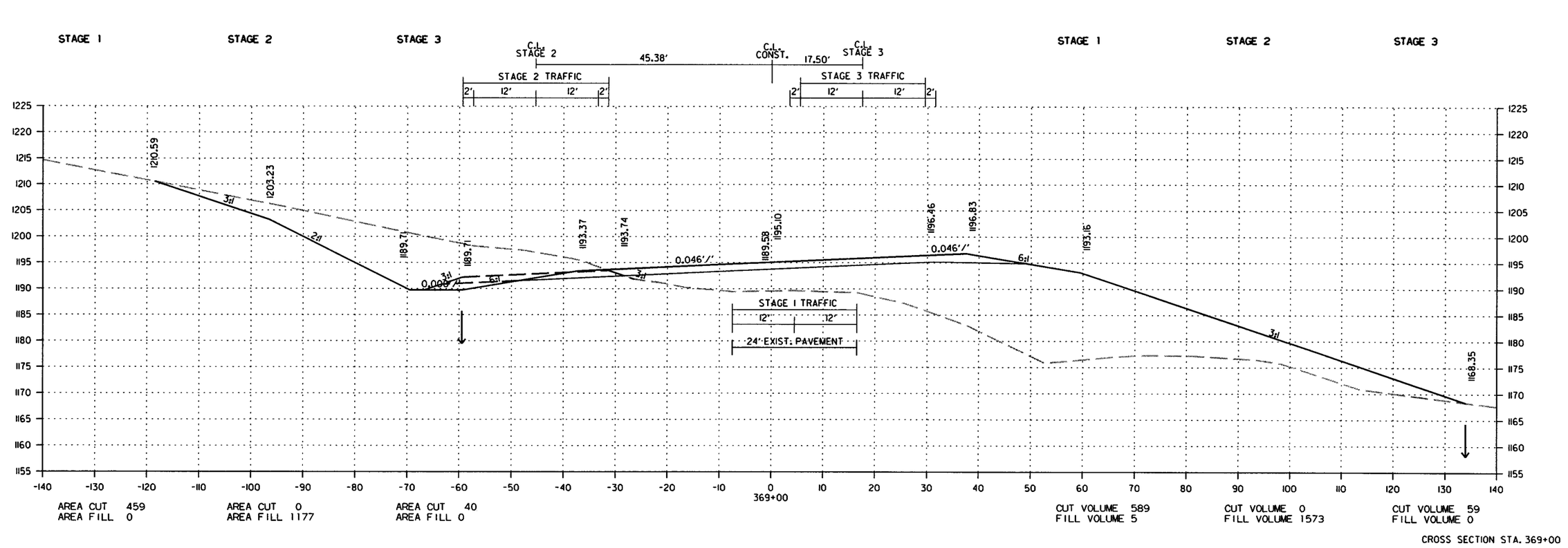
CROSS SECTION STA. 368+64

2/4/2016

R090230.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.		090230	166	282

(2) CROSS SECTIONS



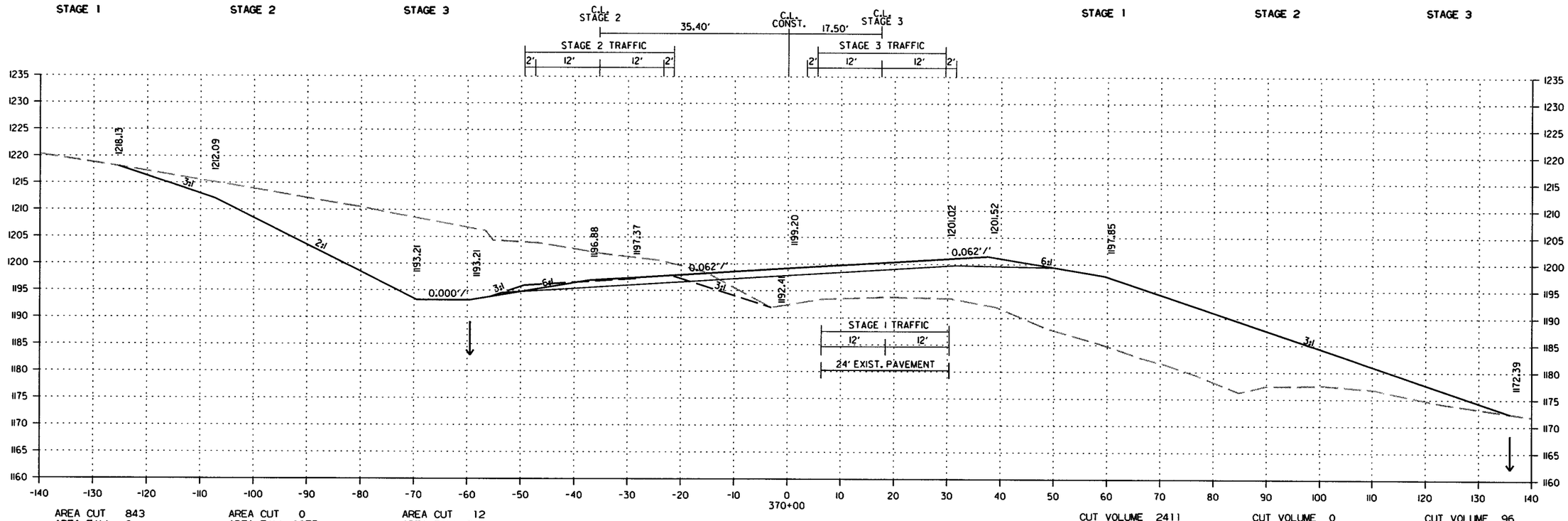
CROSS SECTION STA. 369+00

2/4/2016

R090230.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	167	282

(2) CROSS SECTIONS



AREA CUT 843
AREA FILL 0

AREA CUT 0
AREA FILL 1075

AREA CUT 12
AREA FILL 0

CUT VOLUME 2411
FILL VOLUME 0

CUT VOLUME 0
FILL VOLUME 4170

CUT VOLUME 96
FILL VOLUME 0

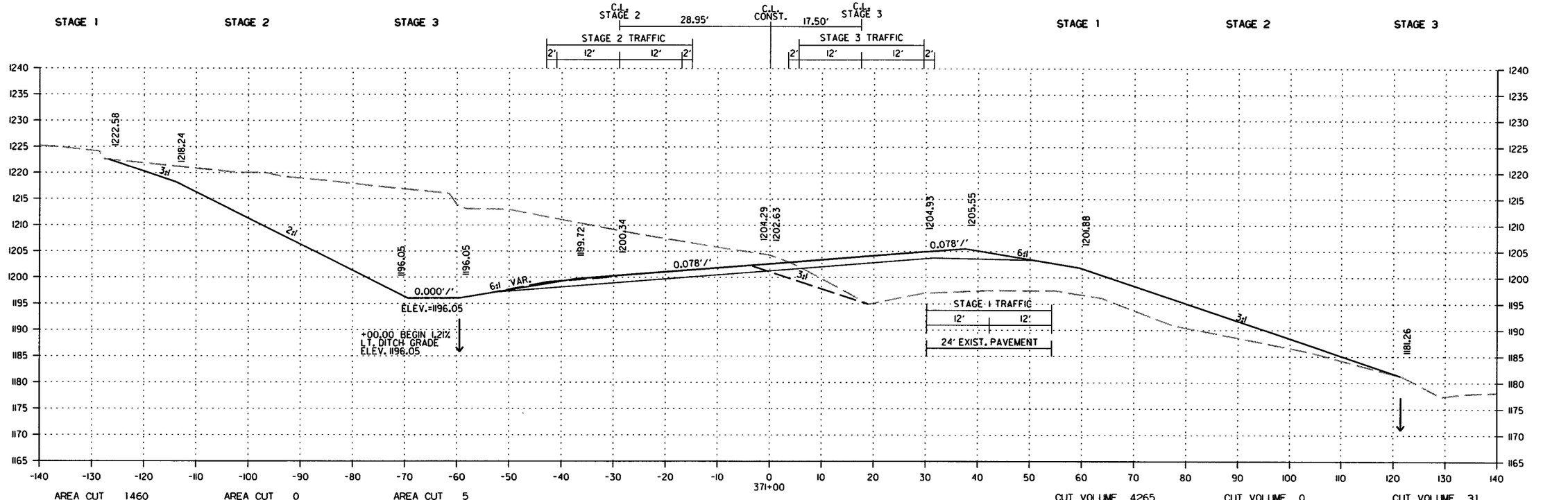
CROSS SECTION STA. 370+00

2/4/2016

R090230.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.		090230	168	282

(2) CROSS SECTIONS



CROSS SECTION STA. 371+00

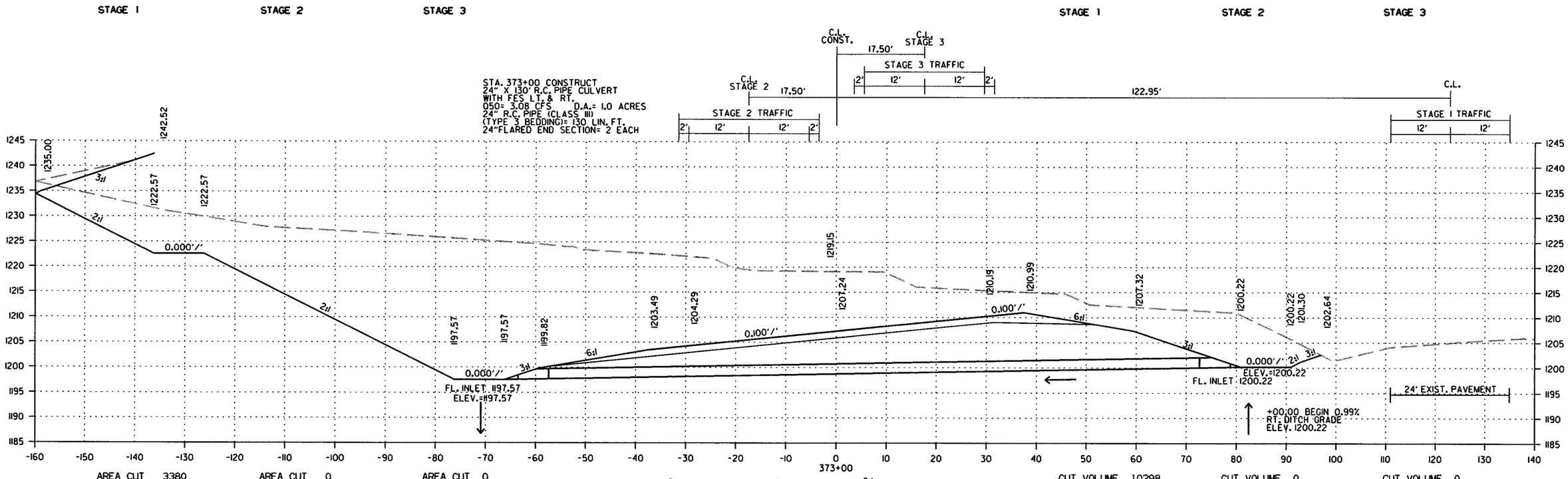
2/4/2016

R090230.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.		090230	169	282

(2) CROSS SECTIONS

1242.52



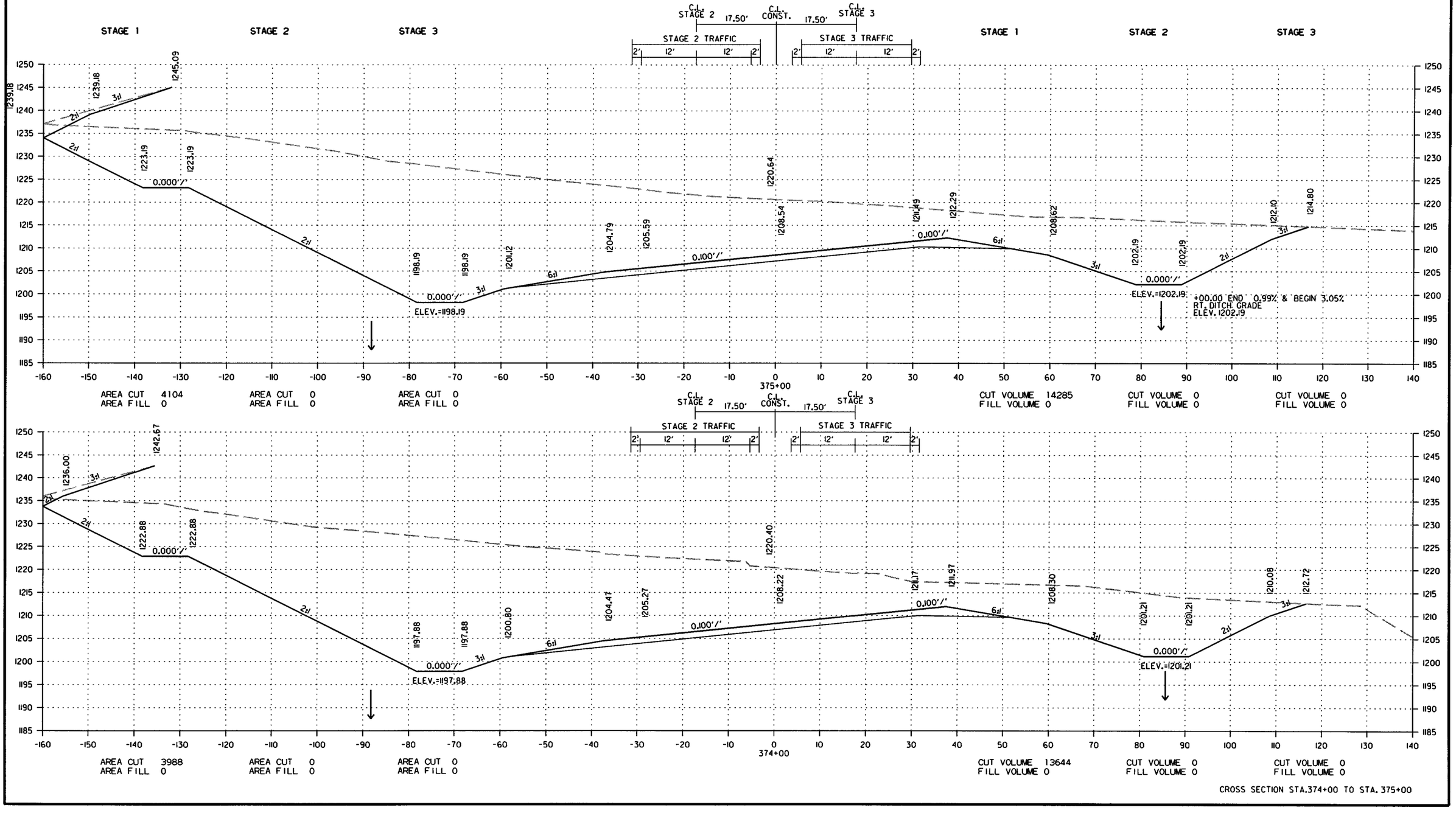
CROSS SECTION STA.372+00 TO STA. 373+00

2/4/2016

R090230.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.		090230	170	282

(2) CROSS SECTIONS



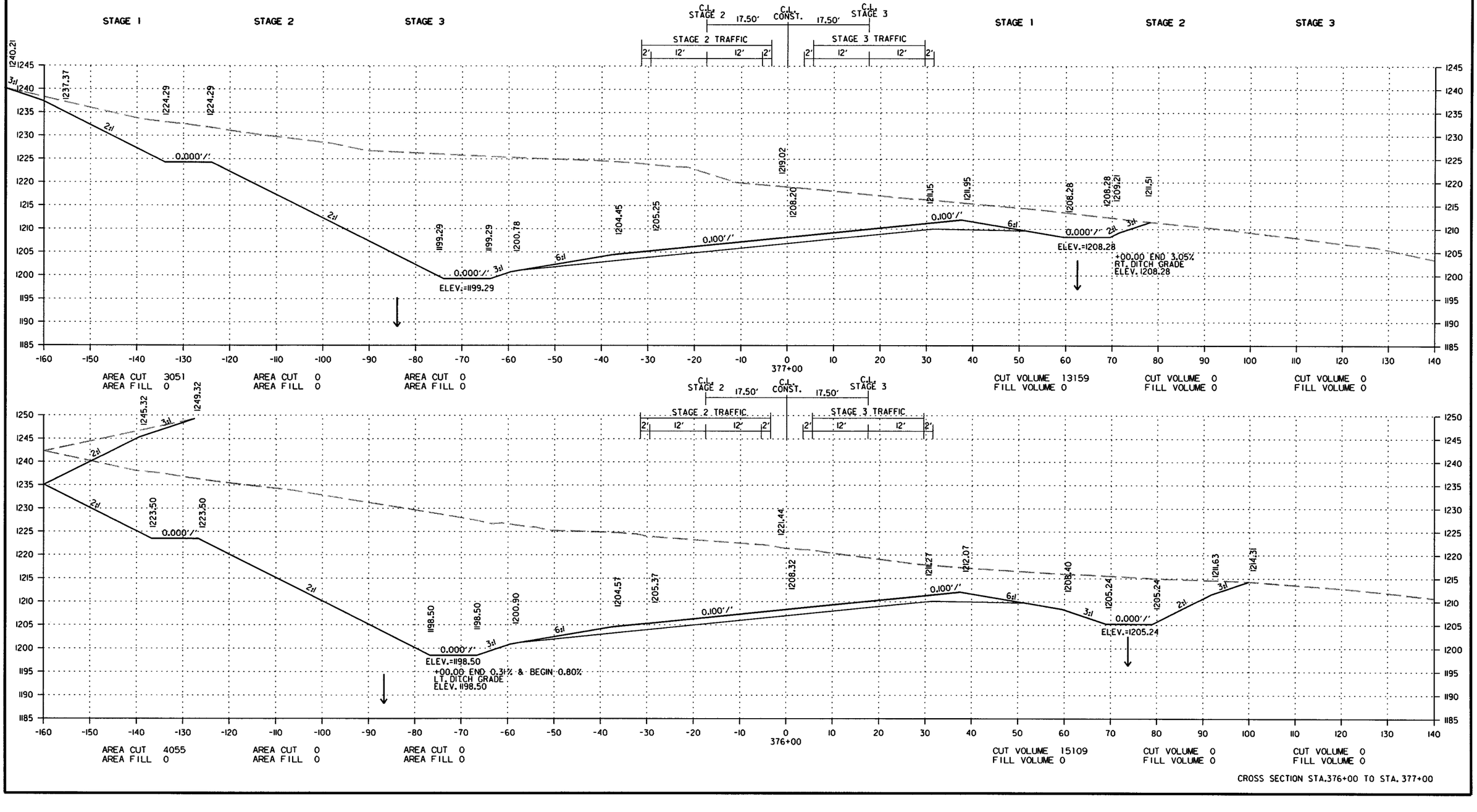
CROSS SECTION STA.374+00 TO STA. 375+00

2/4/2016

R090230.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.		090230	171	282

(2) CROSS SECTIONS



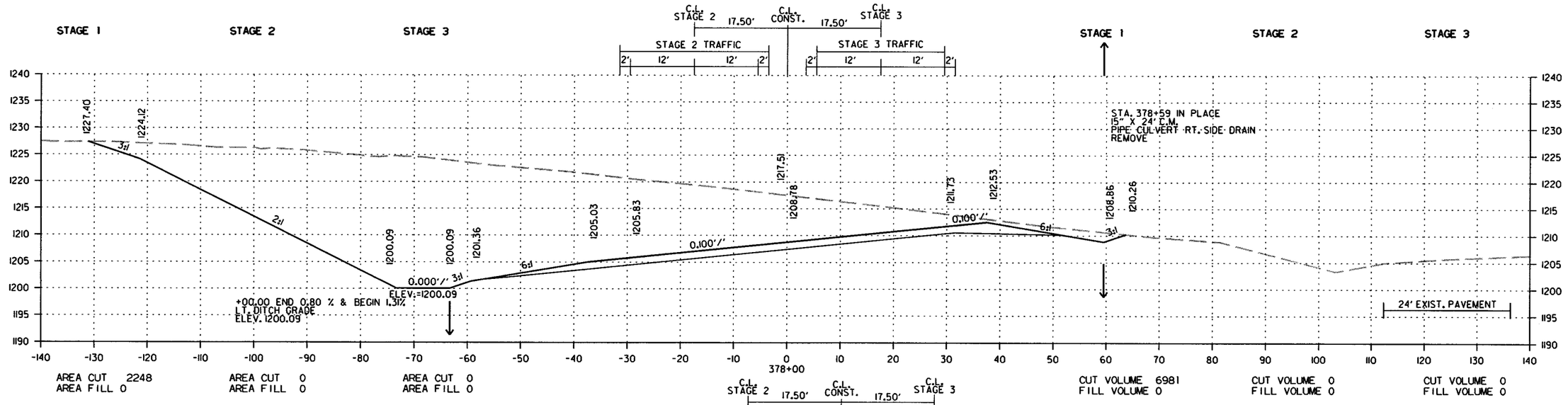
CROSS SECTION STA.376+00 TO STA. 377+00

2/4/2016

R090230.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.		090230	172	282

(2) CROSS SECTIONS



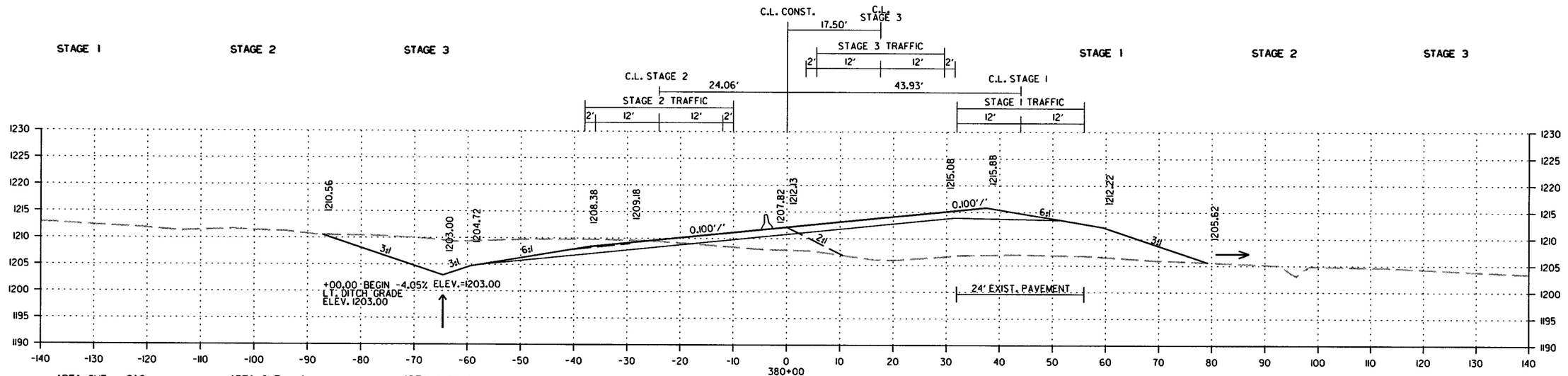
CROSS SECTION STA.377+26 TO STA. 378+00

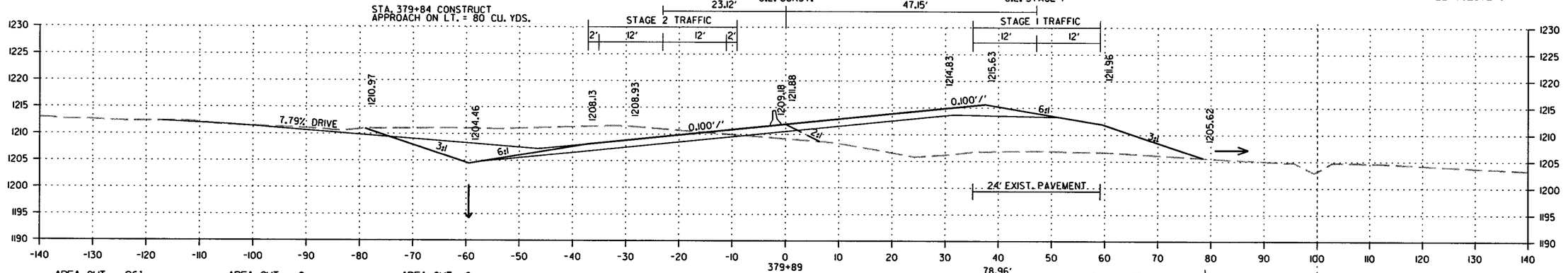
2/4/2016

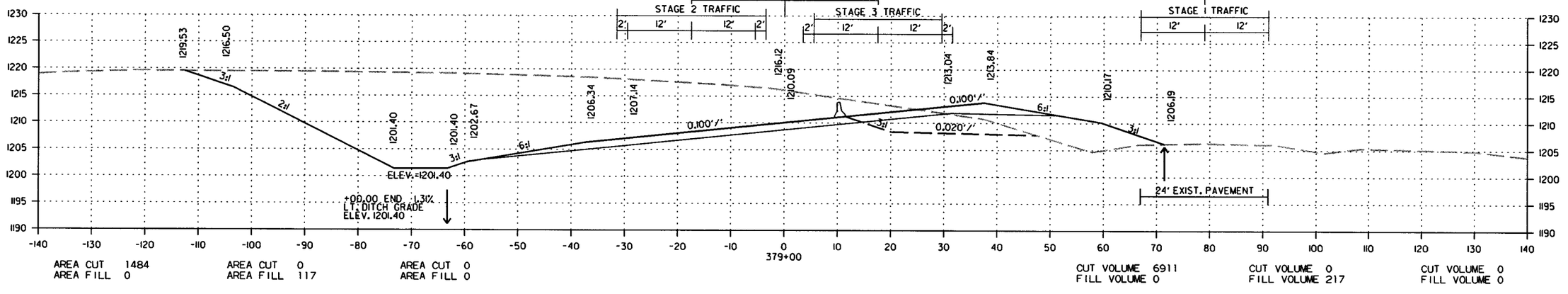
R090230.DGN

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.		090230	173	282

(2) CROSS SECTIONS







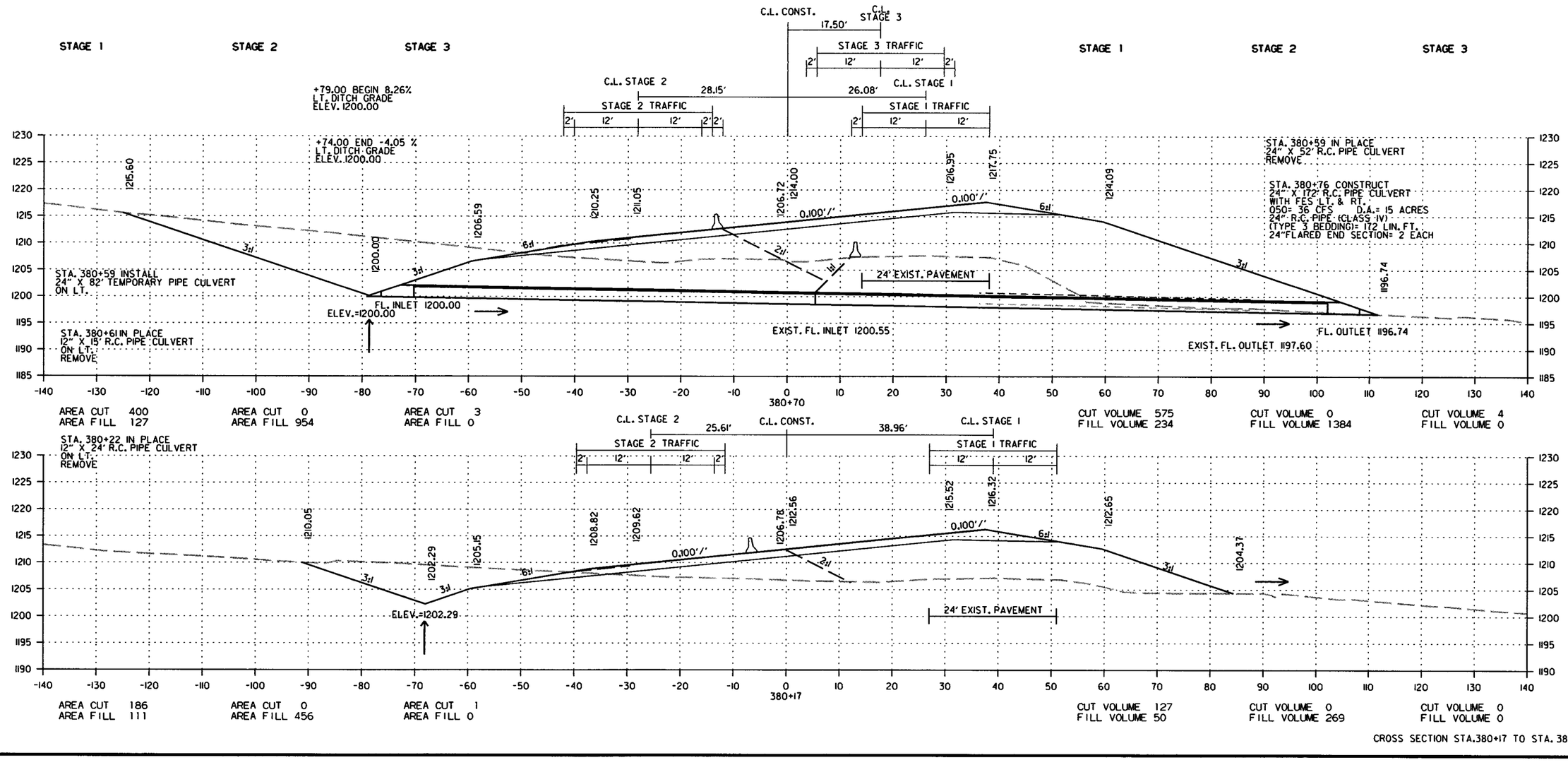
CROSS SECTION STA.379+00 TO STA. 380+00

2/4/2016

R090230.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.		090230	174	282

(2) CROSS SECTIONS



CROSS SECTION STA.380+17 TO STA. 380+70

2/4/2016

R090230.DGN

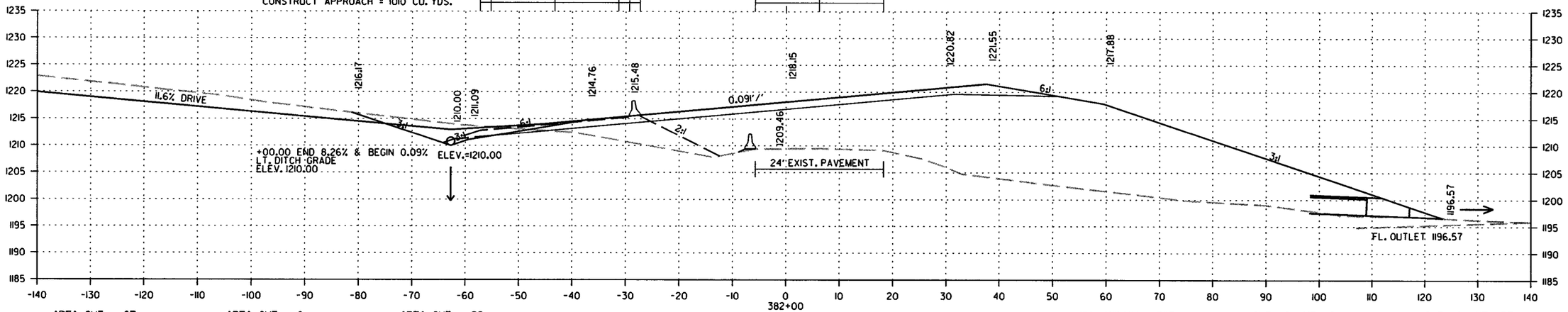
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	175	282

(2) CROSS SECTIONS

STAGE 1 STAGE 2 STAGE 3

STA. 382+00 INSTALL
18" X 30' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 1010 CU. YDS.

C.L. CONST.
C.L. STAGE 3
17.50'
STAGE 3 TRAFFIC
2' 12' 12' 2'
C.L. STAGE 2
43.31'
6.18'
C.L. STAGE 1
STAGE 2 TRAFFIC
2' 12' 12' 2' 2'
STAGE 1 TRAFFIC
12' 12'



AREA CUT 67
AREA FILL 74

AREA CUT 0
AREA FILL 1431

AREA CUT 23
AREA FILL 0

STAGE 1 STAGE 2 STAGE 3

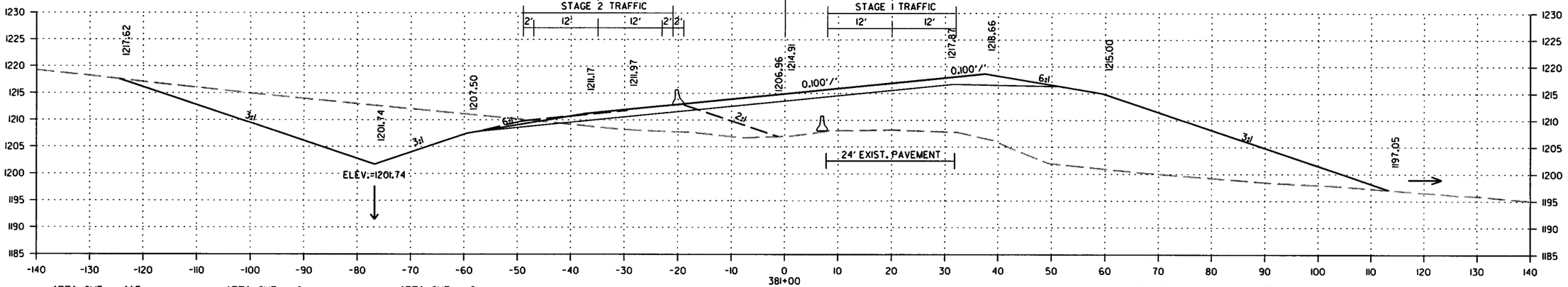
STA. 382+60 CONSTRUCT
36" X 238' R.C. PIPE CULVERT
WITH FES LT. & RT.
ON A 43° LT. FWD. SKEW
Q50= 44 CFS D.A.= 17 ACRES
36" R.C. PIPE (CLASS IV)
(TYPE 3 BEDDING)= 238 LIN. FT.
36"FLARED END SECTION= 2 EACH

CUT VOLUME 893
FILL VOLUME 322

CUT VOLUME 0
FILL VOLUME 4531

CUT VOLUME 57
FILL VOLUME 0

C.L. STAGE 2
35.01'
C.L. CONST.
19.99'
C.L. STAGE 1
STAGE 2 TRAFFIC
2' 12' 12' 2' 2'
STAGE 1 TRAFFIC
12' 12'



AREA CUT 415
AREA FILL 100

AREA CUT 0
AREA FILL 1016

AREA CUT 8
AREA FILL 0

CUT VOLUME 453
FILL VOLUME 126

CUT VOLUME 0
FILL VOLUME 1094

CUT VOLUME 6
FILL VOLUME 0

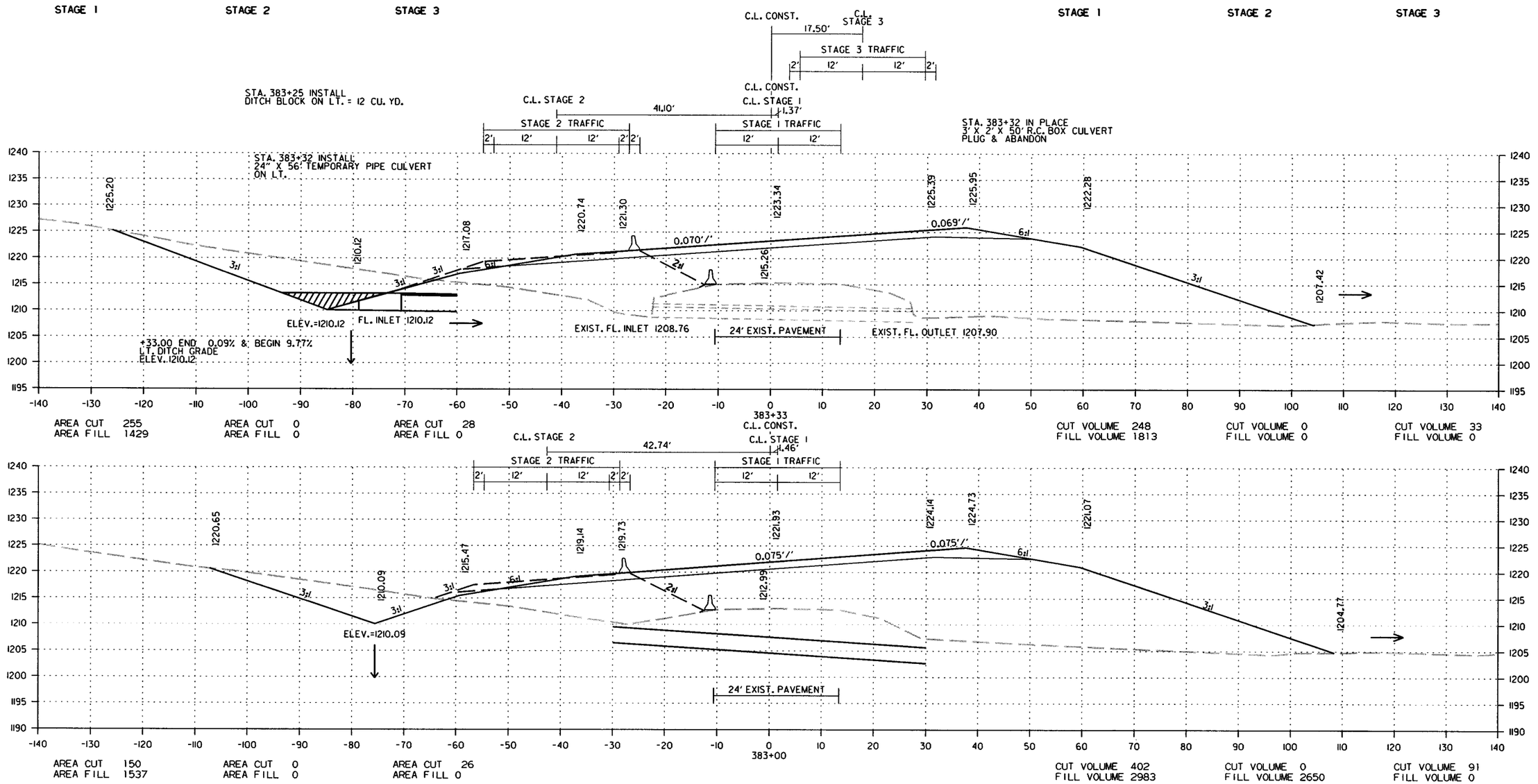
CROSS SECTION STA.381+00 TO STA. 382+00

2/4/2016

R090230.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.		090230	176	282

(2) CROSS SECTIONS



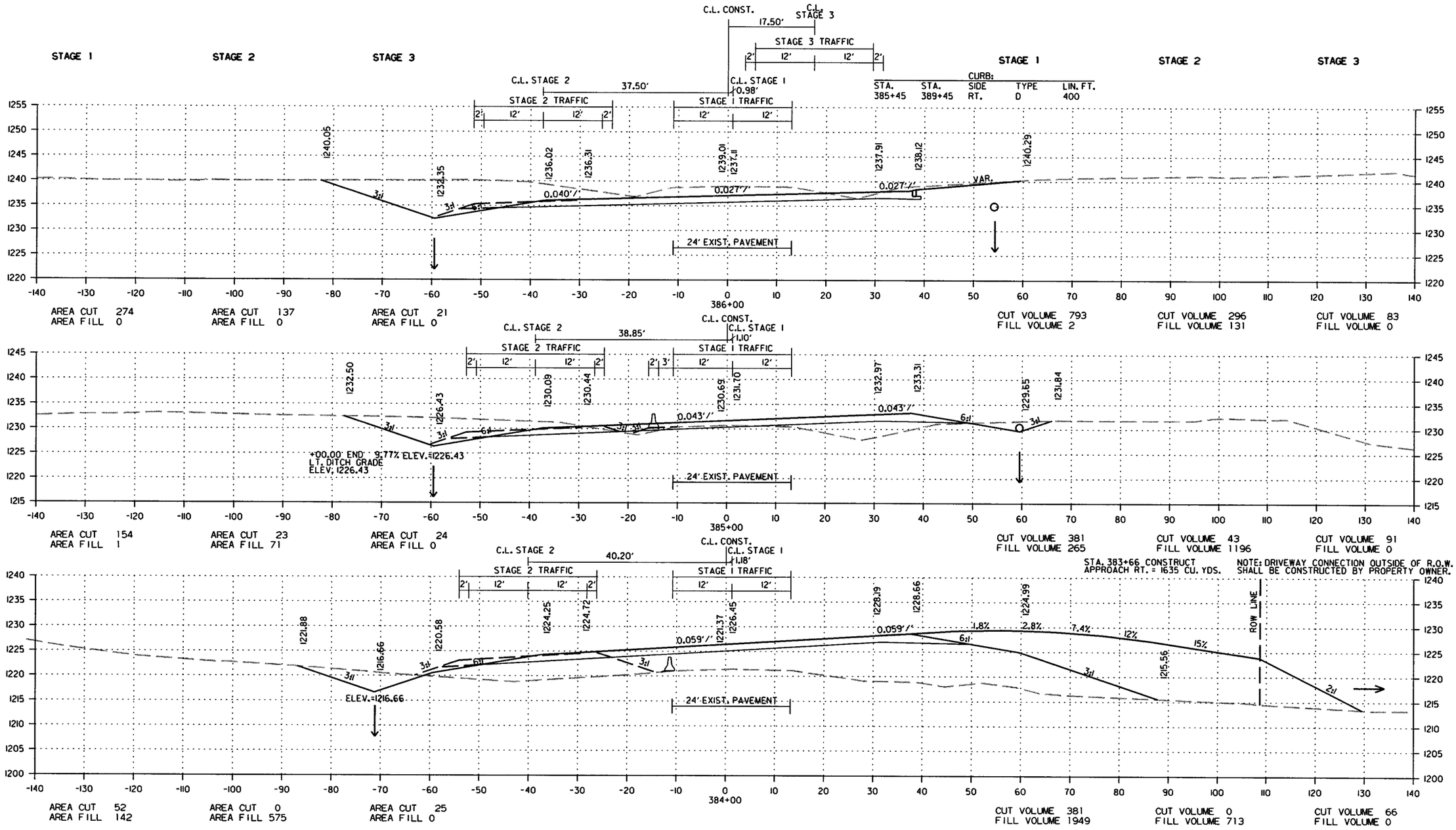
CROSS SECTION STA.383+00 TO STA. 383+33

2/4/2016

R090230.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.		090230	177	282

(2) CROSS SECTIONS



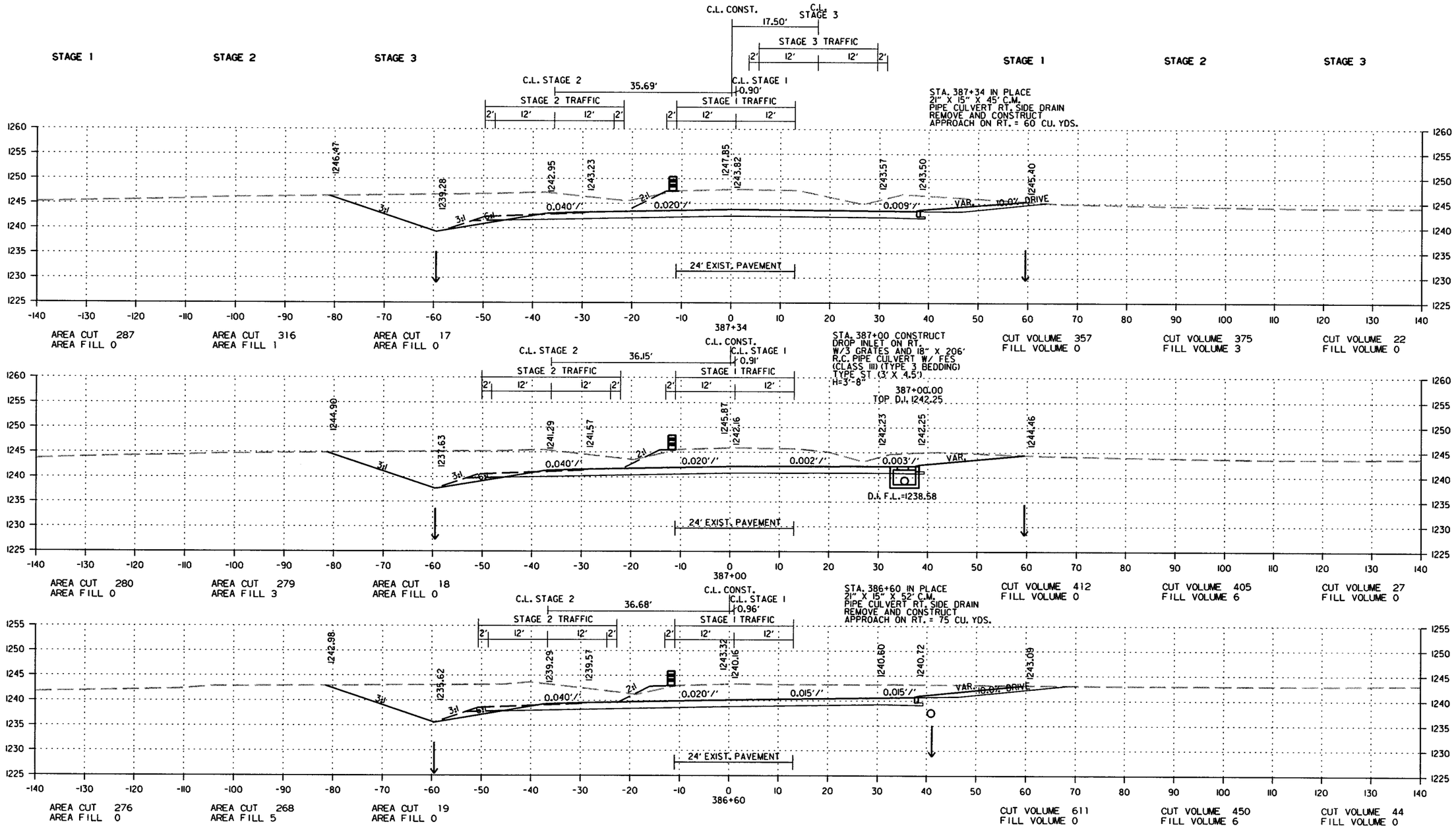
CROSS SECTION STA.384+00 TO STA. 386+00

2/4/2016

R090230.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.		090230	178	282

(2) CROSS SECTIONS



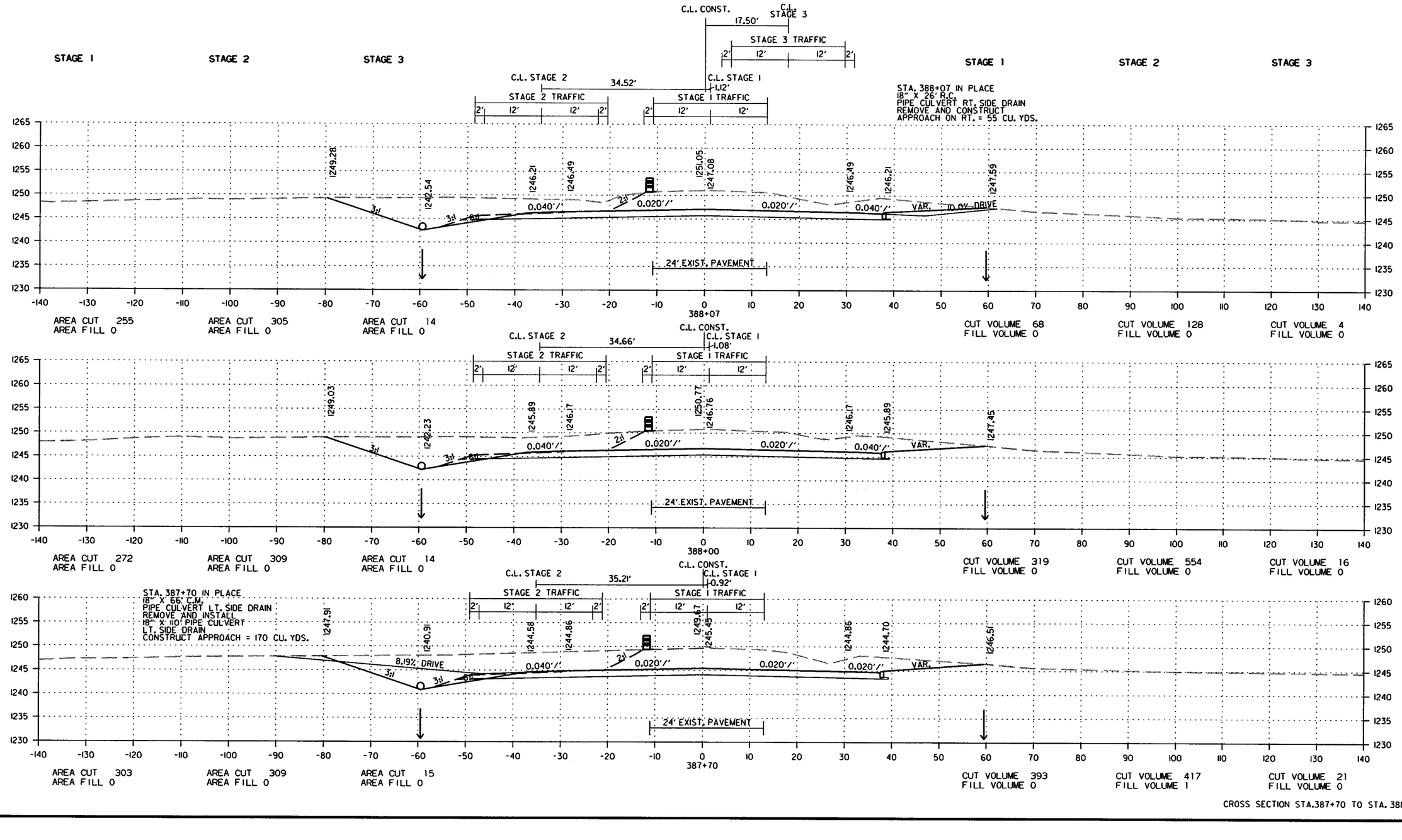
CROSS SECTION STA.386+60 TO STA. 387+34

2/4/2016

R090230.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.		090230	179	282

(2) CROSS SECTIONS



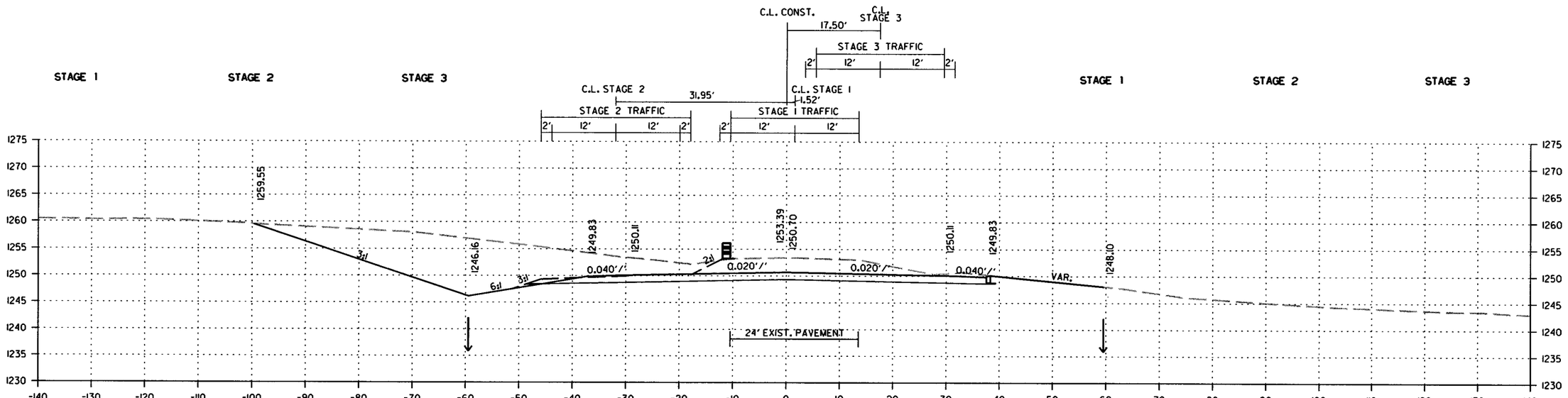
CROSS SECTION STA.387+70 TO STA. 388+07

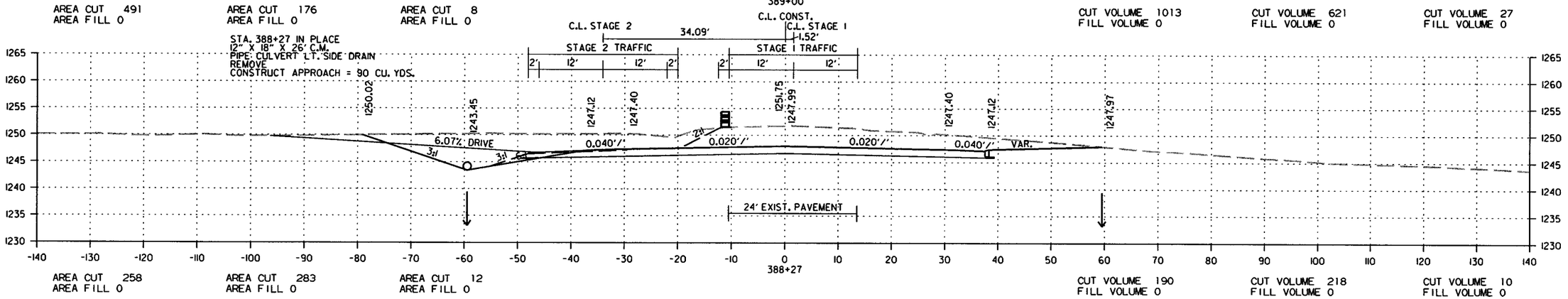
2/4/2016

R090230.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.		090230	180	282

(2) CROSS SECTIONS





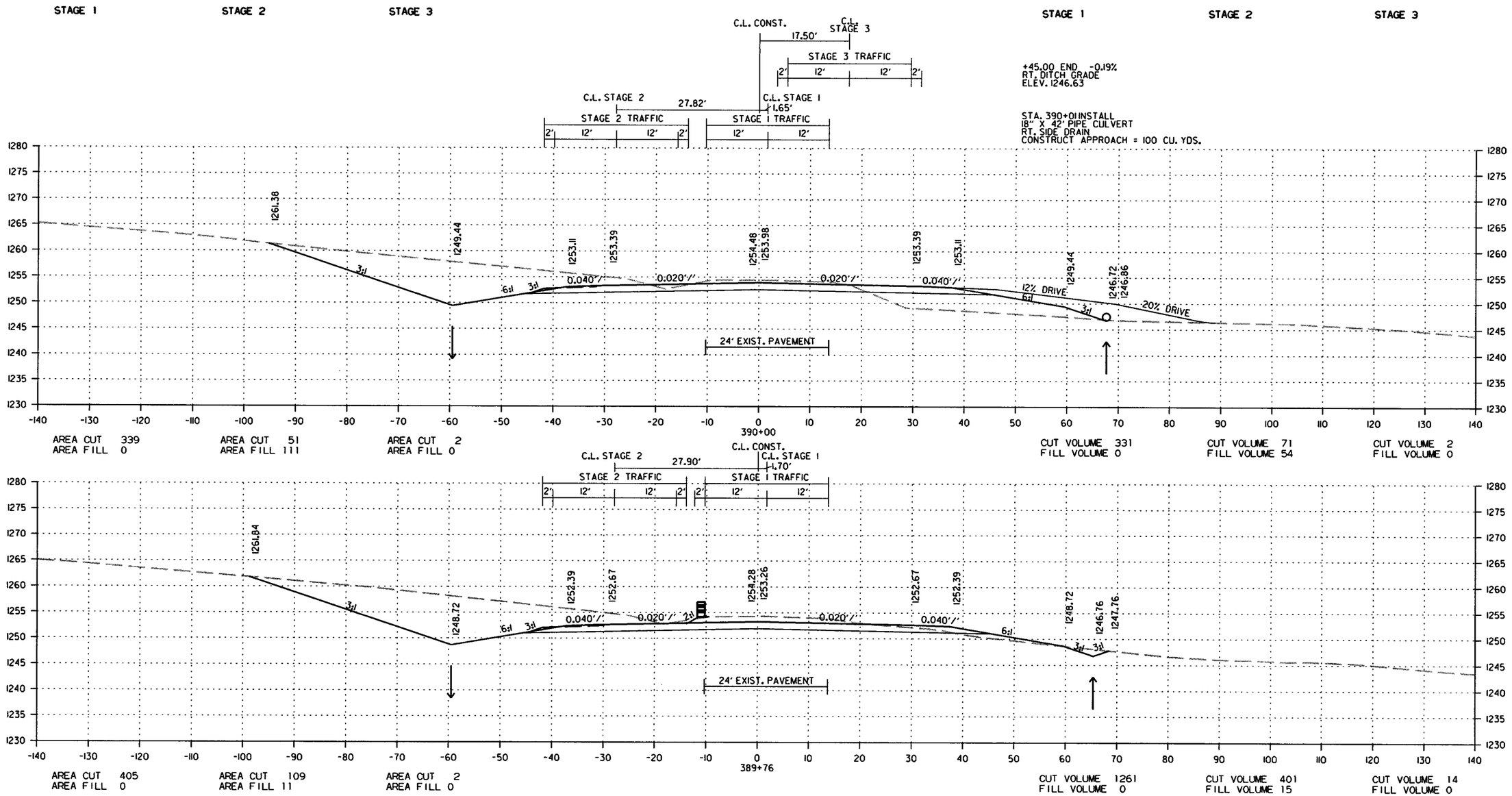
CROSS SECTION STA.388+29 TO STA. 389+00

2/4/2016

R090230.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.		090230	181	282

(2) CROSS SECTIONS



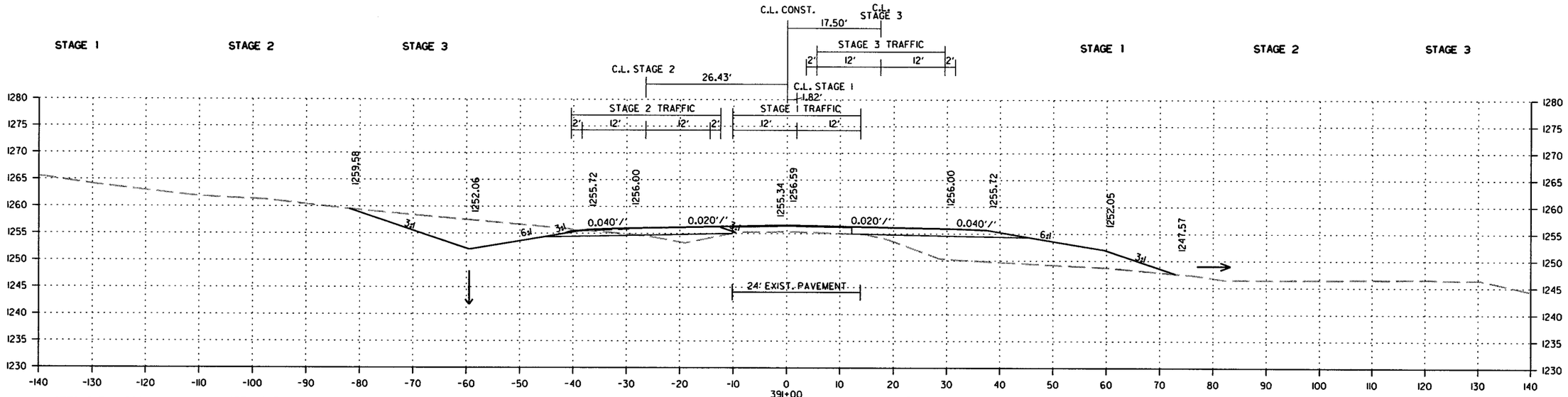
CROSS SECTION STA.389+76 TO STA. 390+00

2/4/2016

R090230.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.		090230	182	282

(2) CROSS SECTIONS



CROSS SECTION STA.390+52 TO STA. 391+00

2/4/2016

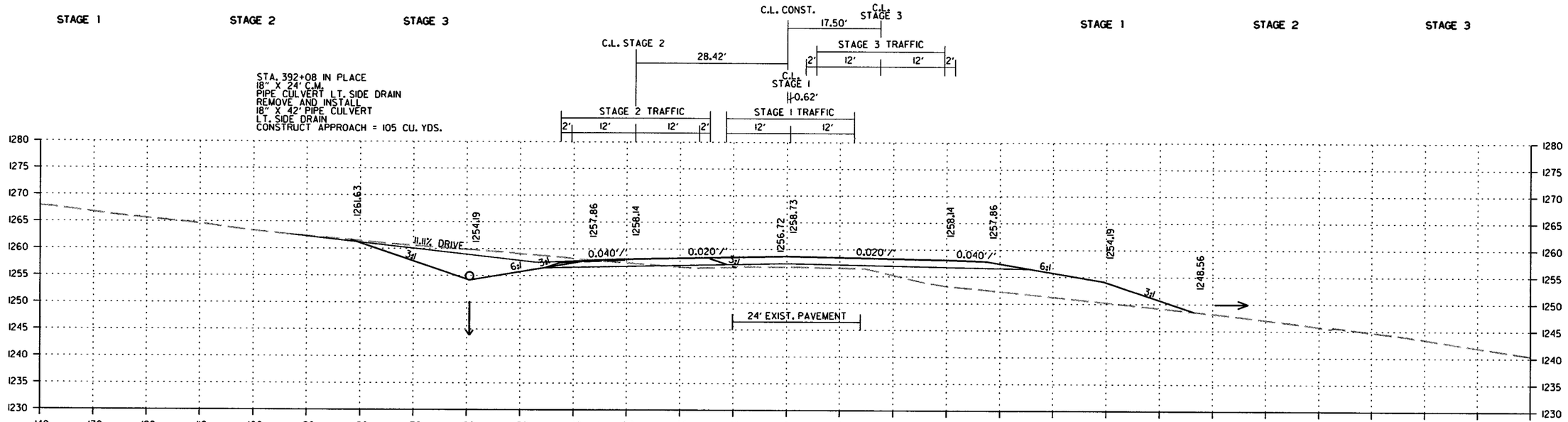
R090230.DGN

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.		090230	183	282

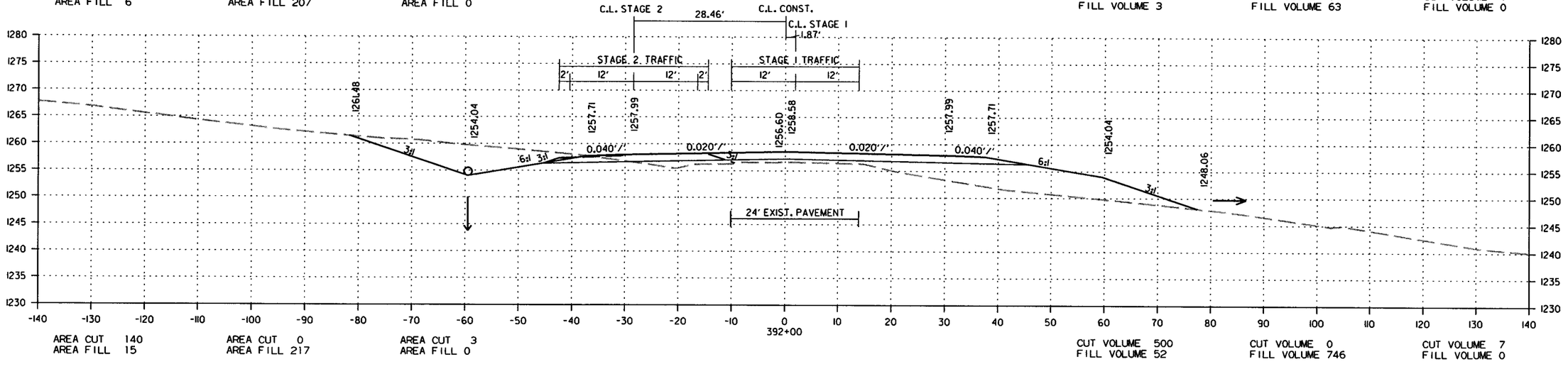
(2) CROSS SECTIONS

STAGE 1 STAGE 2 STAGE 3

STA. 392+08 IN PLACE
18" X 24' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 42' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 105 CU. YDS.



STAGE 1 STAGE 2 STAGE 3



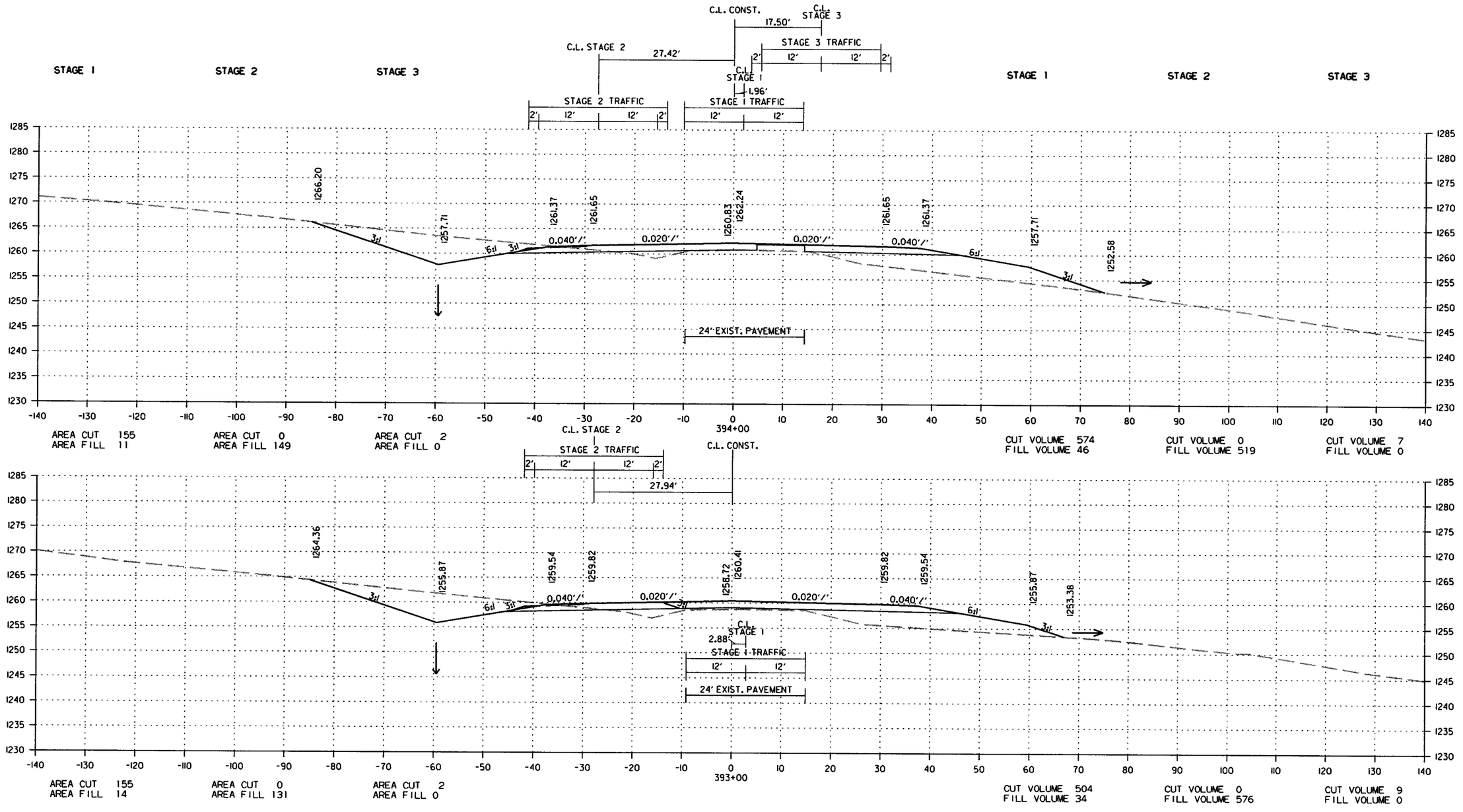
CROSS SECTION STA.392+00 TO STA. 392+08

2/4/2016

R090230.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.		090230	184	282

(2) CROSS SECTIONS



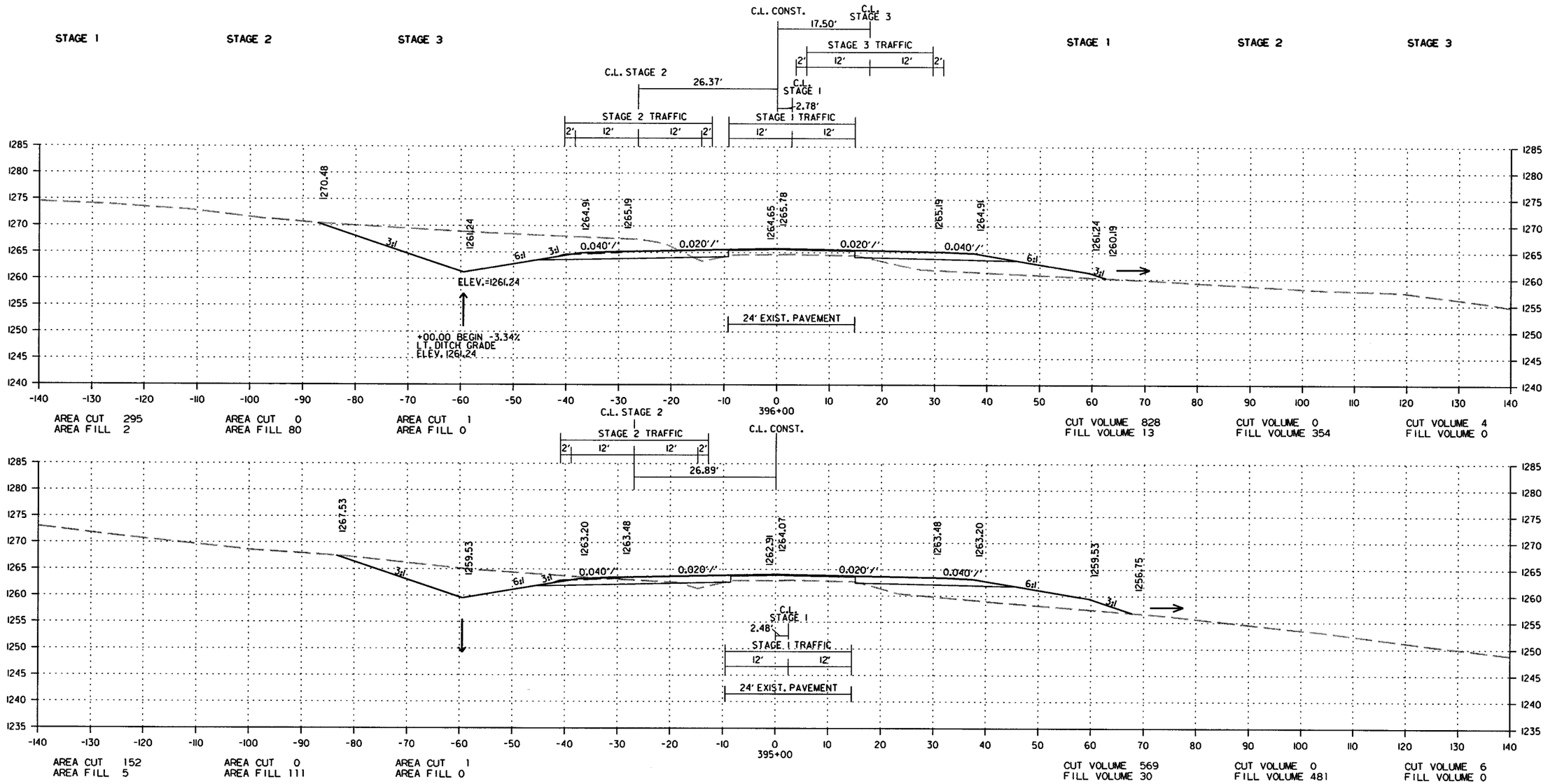
CROSS SECTION STA.393+00 TO STA. 394+00

2/4/2016

R090230.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.		090230	185	282

(2) CROSS SECTIONS



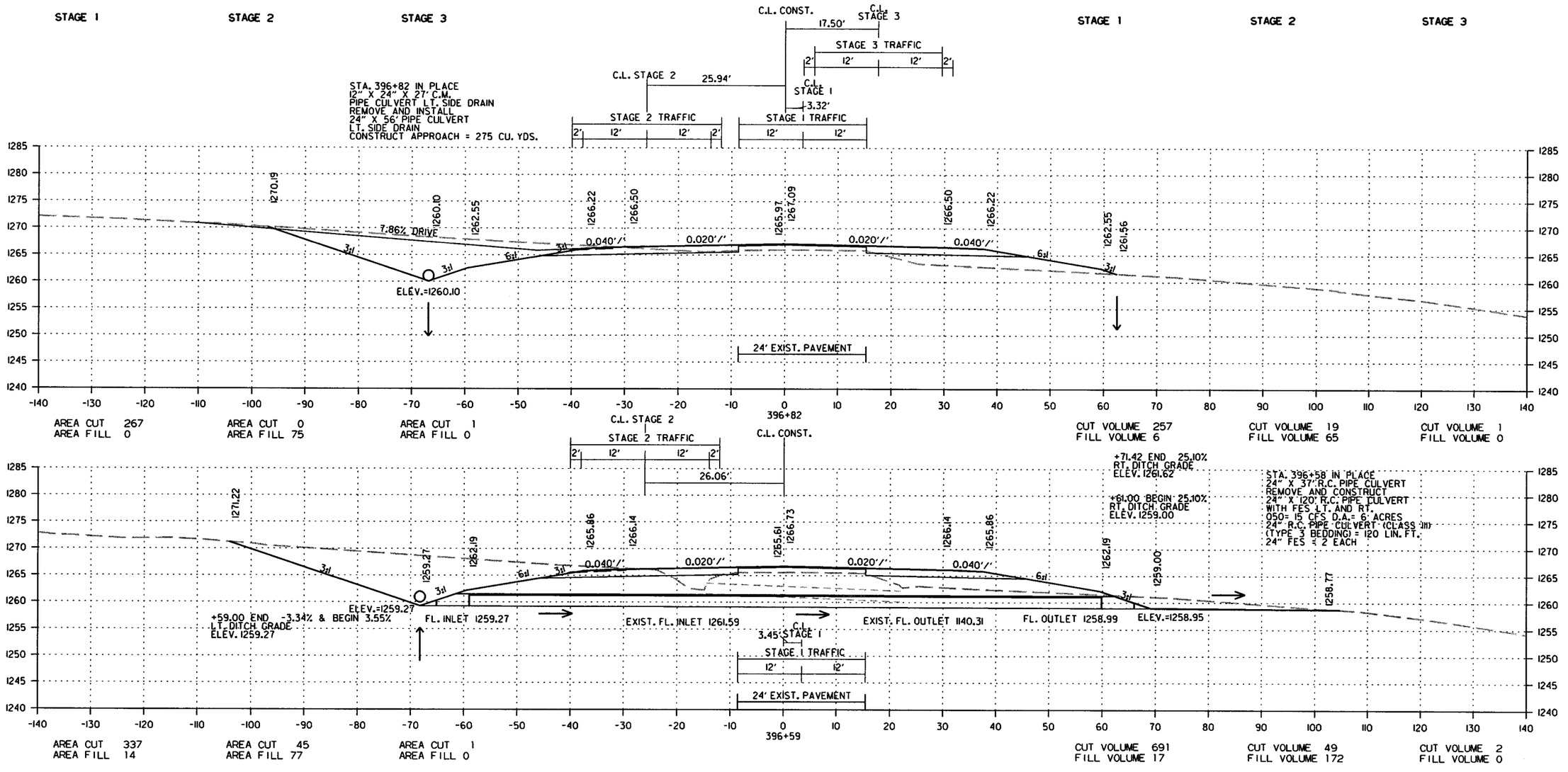
CROSS SECTION STA.395+00 TO STA. 396+00

2/4/2016

R090230.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.		090230	186	282

(2) CROSS SECTIONS



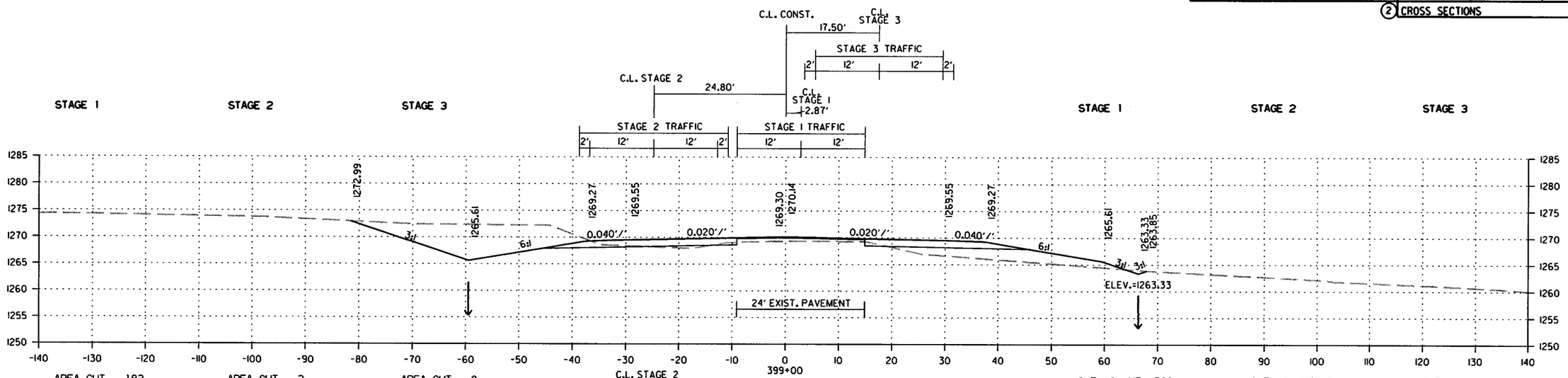
CROSS SECTION STA.396+59 TO STA. 396+82

2/4/2016

R090230.DGN

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.		090230	187	282

(2) CROSS SECTIONS



CROSS SECTION STA.397+00 TO STA. 399+00

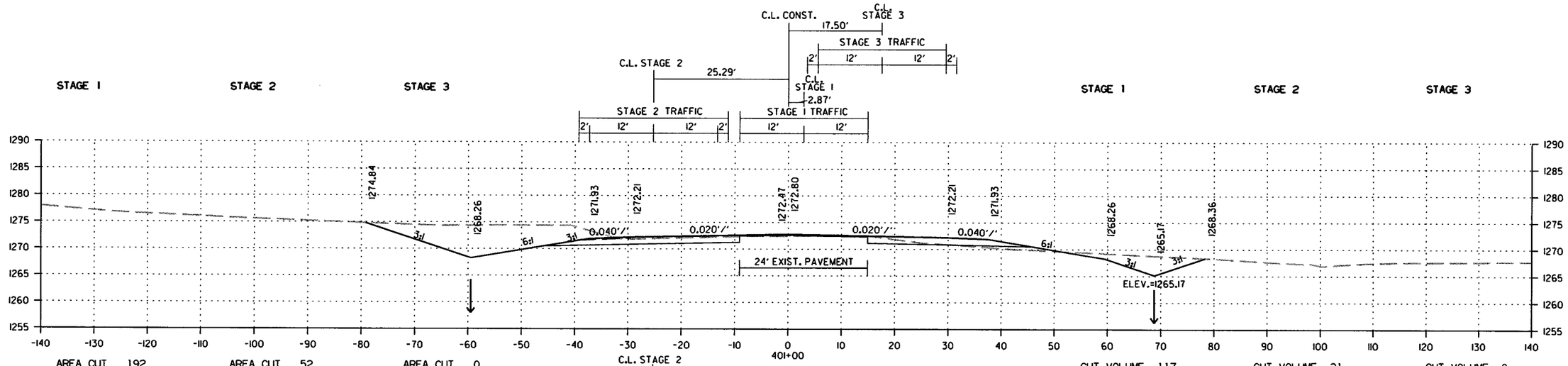
2/4/2016

R090230.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.		090230	188	282

(2) CROSS SECTIONS

1242.52



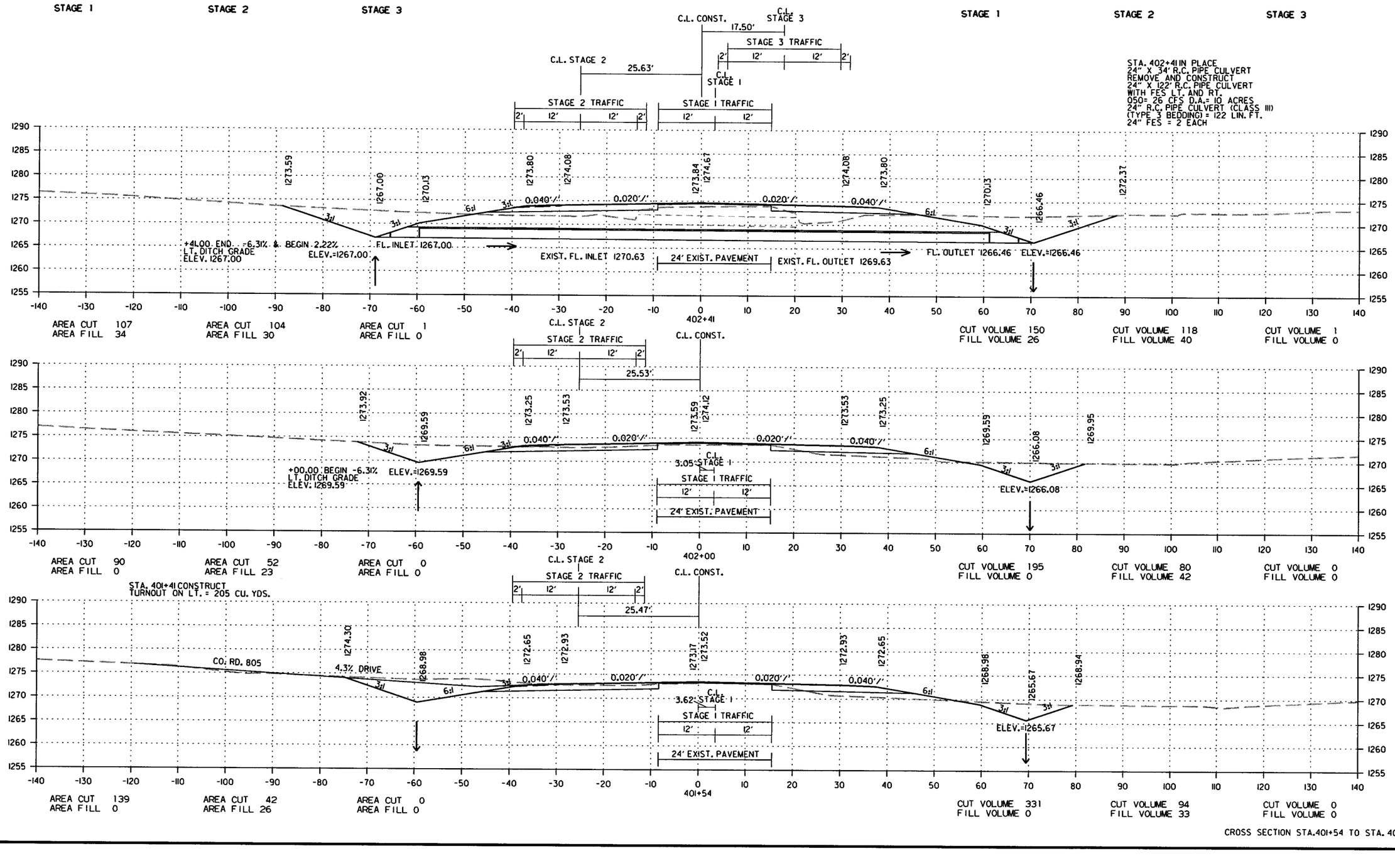
CROSS SECTION STA.400+00 TO STA. 401+00

2/4/2016

R090230.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.		090230	189	282

(2) CROSS SECTIONS



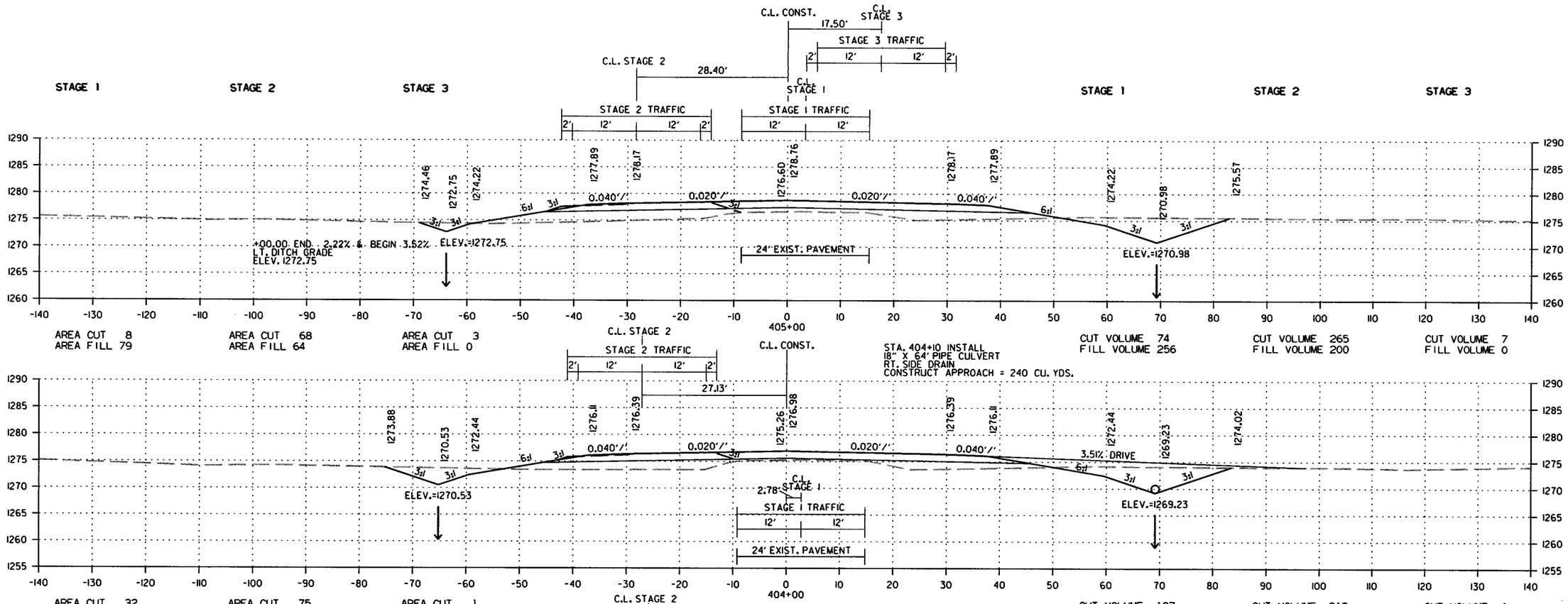
CROSS SECTION STA.401+54 TO STA. 402+41

2/4/2016

R090230.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.		090230	190	282

(2) CROSS SECTIONS



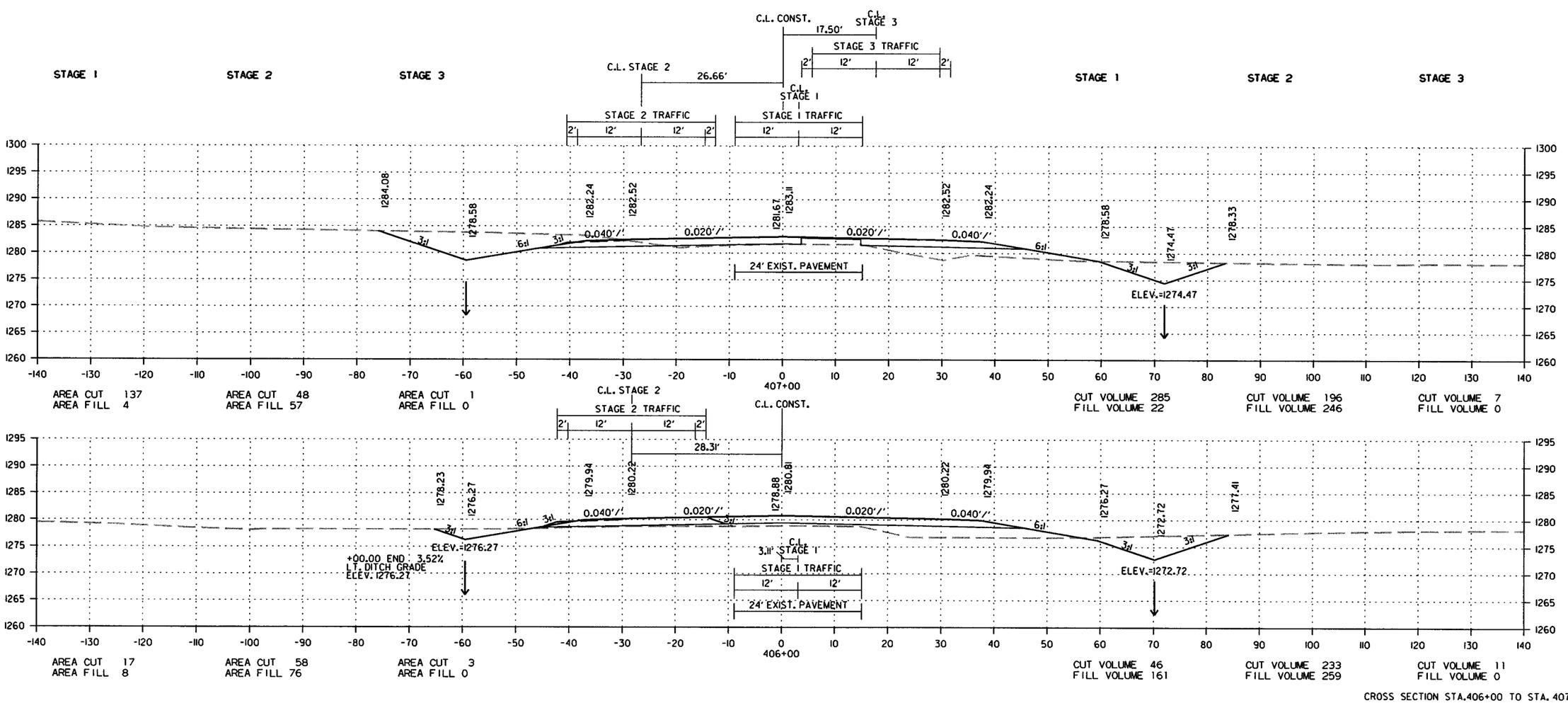
CROSS SECTION STA.403+00 TO STA. 405+00

2/4/2016

R090230.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.		090230	191	282

(2) CROSS SECTIONS



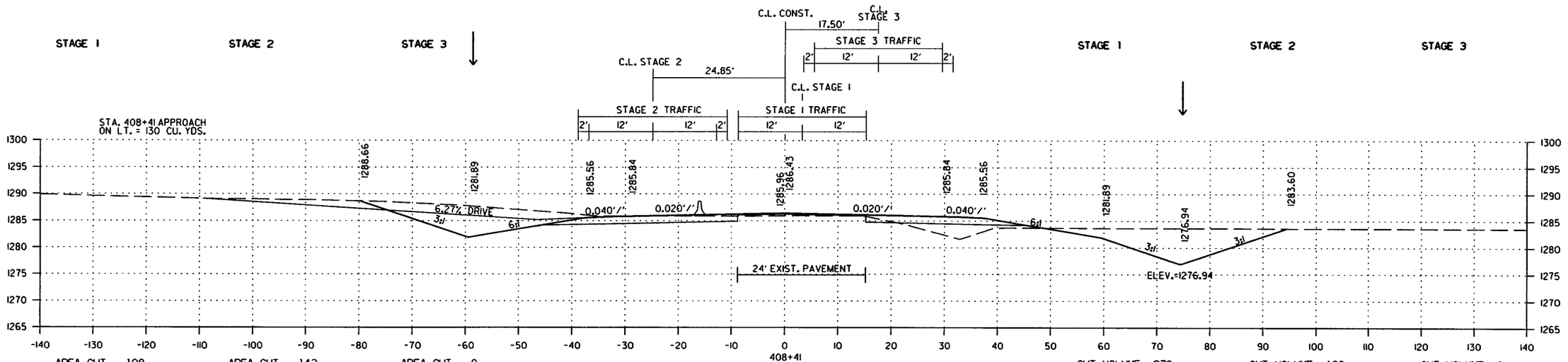
CROSS SECTION STA.406+00 TO STA. 407+00

2/4/2016

R090230.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.		090230	192	282

(2) CROSS SECTIONS



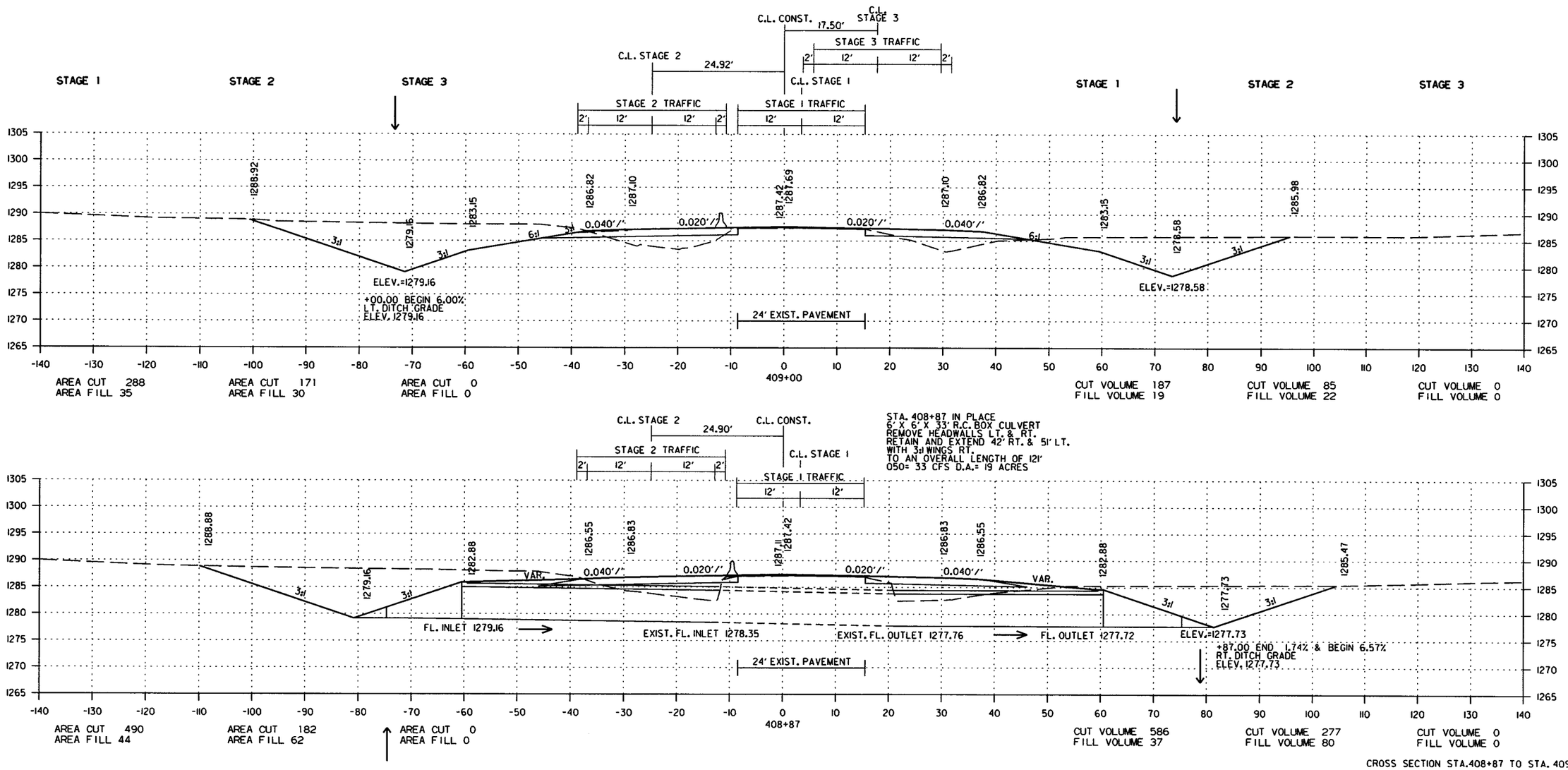
CROSS SECTION STA.408+00 TO STA. 408+41

2/4/2016

R090230.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.		090230	193	282

(2) CROSS SECTIONS



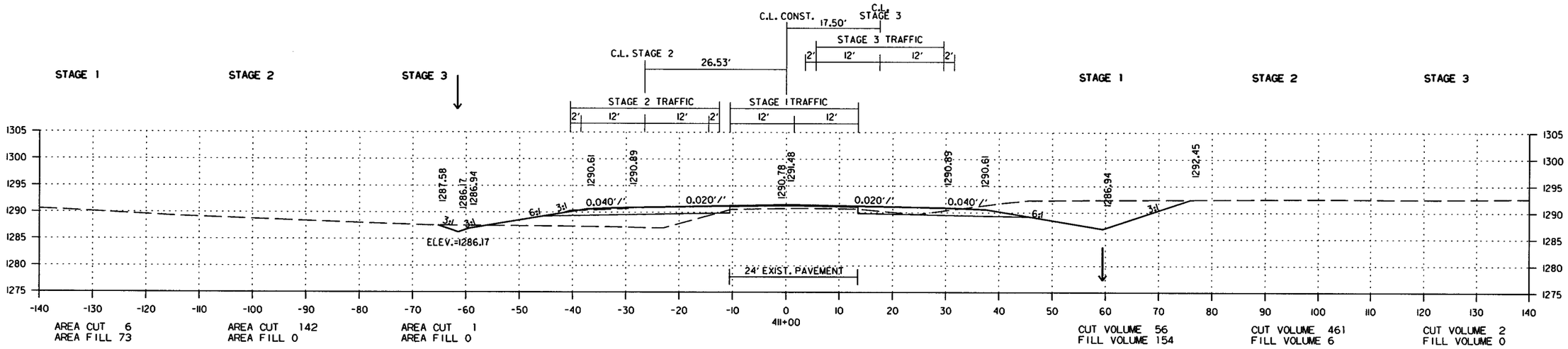
CROSS SECTION STA.408+87 TO STA. 409+00

2/4/2016

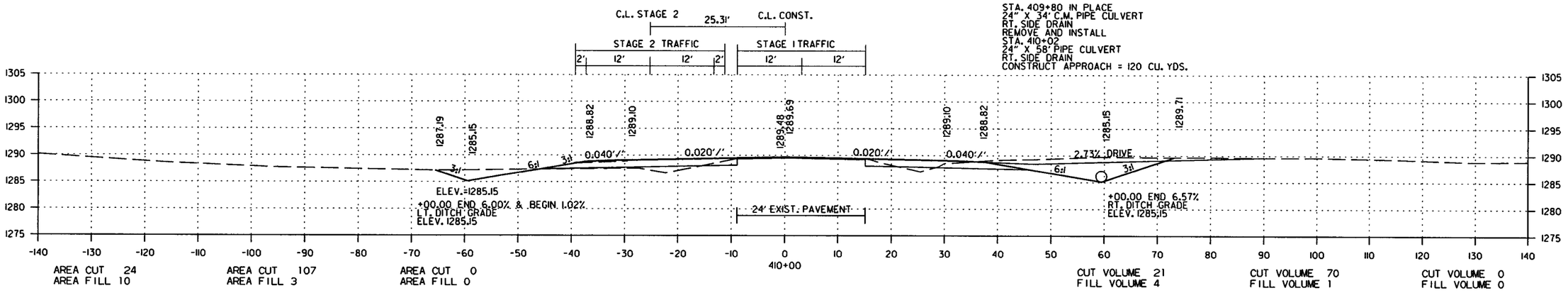
R090230.DGN

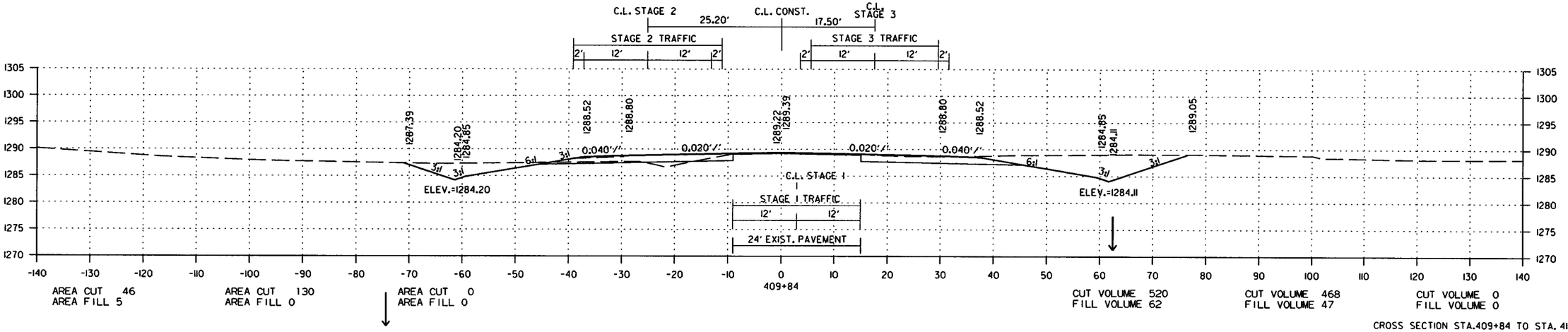
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	194	282

(2) CROSS SECTIONS



STA. 409+80 IN PLACE
24" X 34' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
STA. 410+02
24" X 58' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 120 CU. YDS.





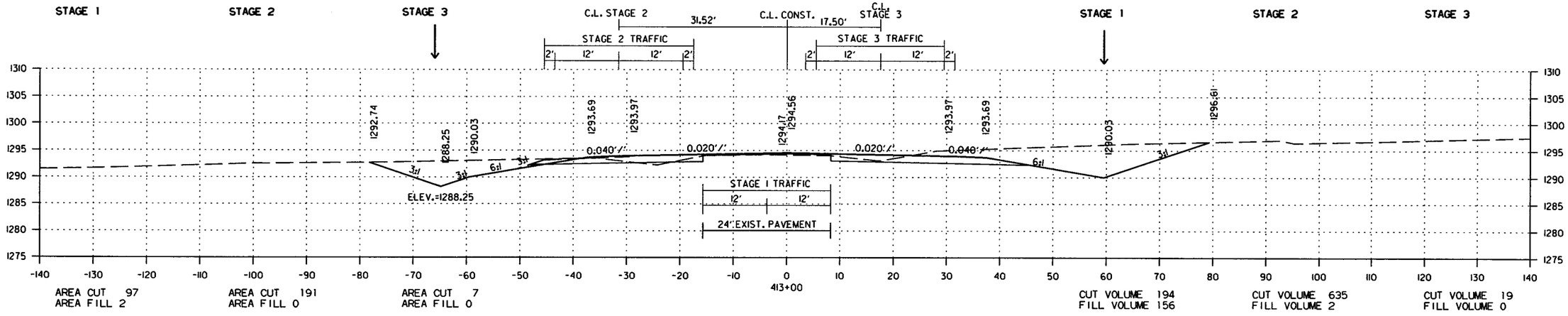
CROSS SECTION STA.409+84 TO STA. 411+00

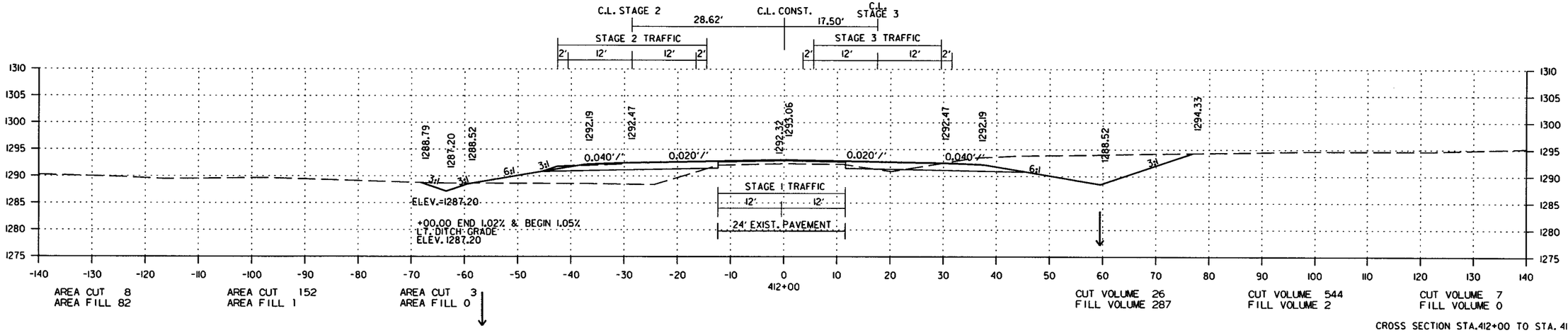
2/4/2016

R090230.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.		090230	195	282

(2) CROSS SECTIONS





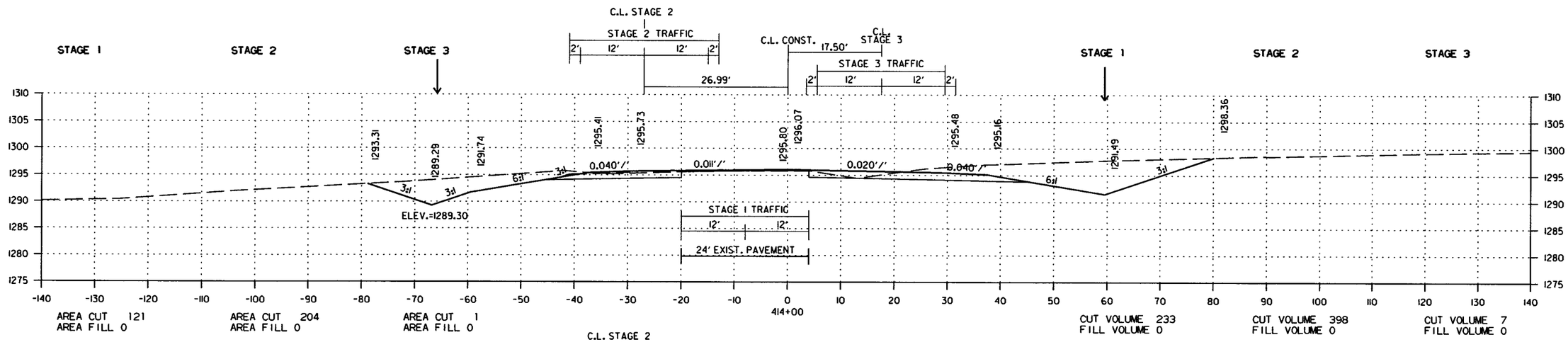
CROSS SECTION STA.412+00 TO STA. 413+00

2/4/2016

RD090230.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	196	282

(2) CROSS SECTIONS



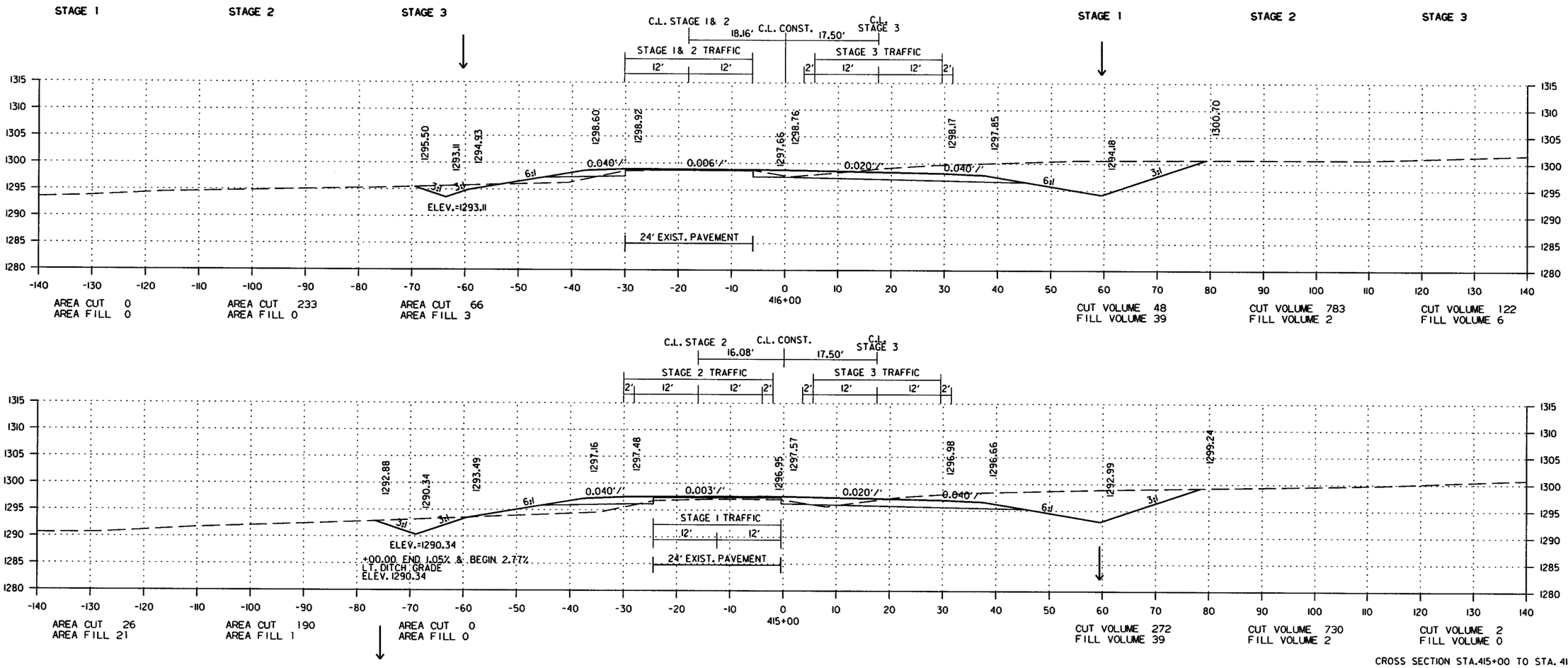
CROSS SECTION STA.413+49 TO STA. 414+00

2/4/2016

R090230.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.		090230	197	282

(2) CROSS SECTIONS



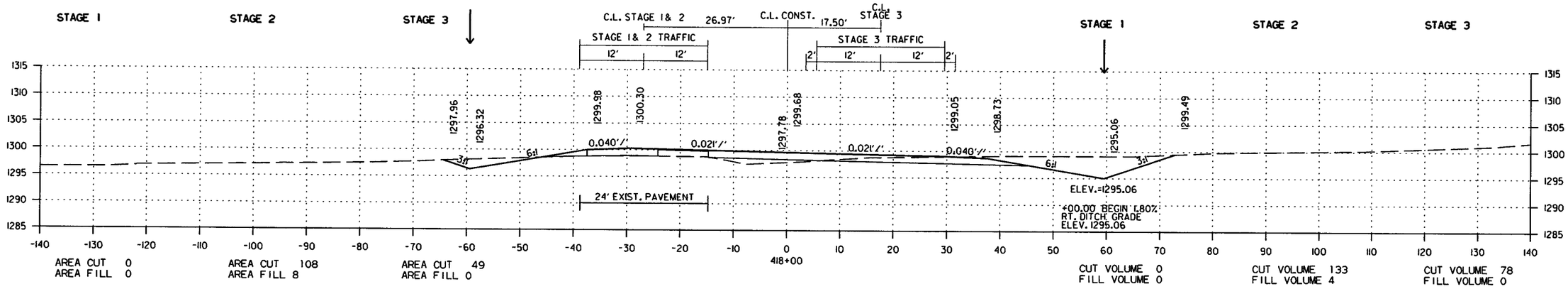
CROSS SECTION STA.415+00 TO STA. 416+00

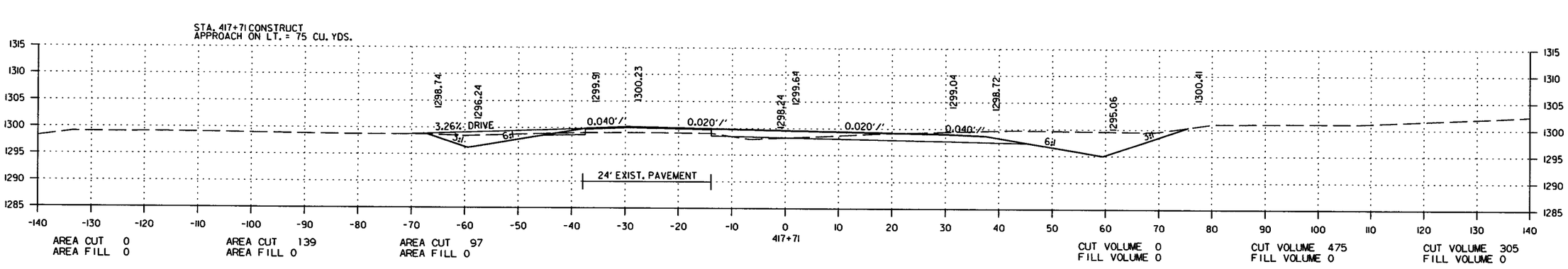
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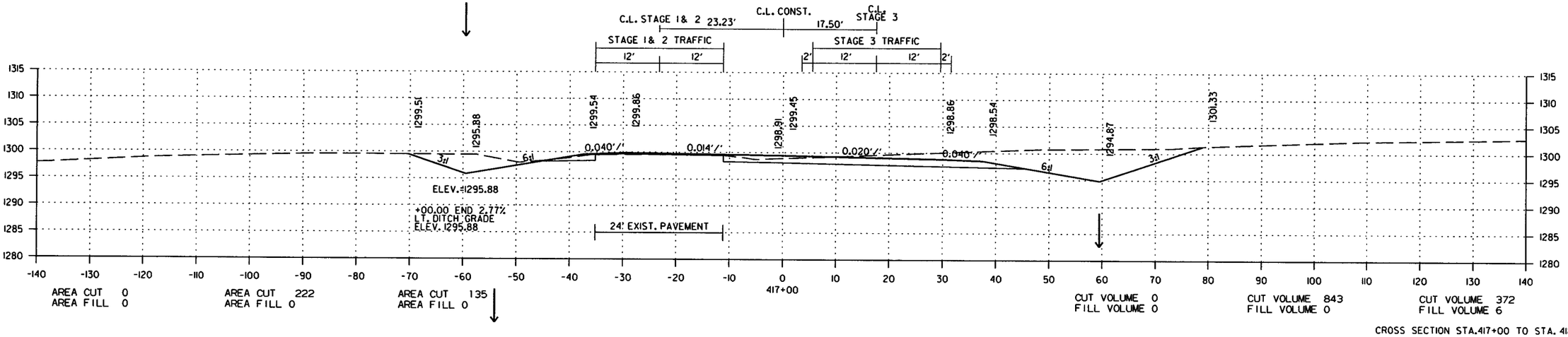
R090230.DGN

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.		090230	198	282

(2) CROSS SECTIONS







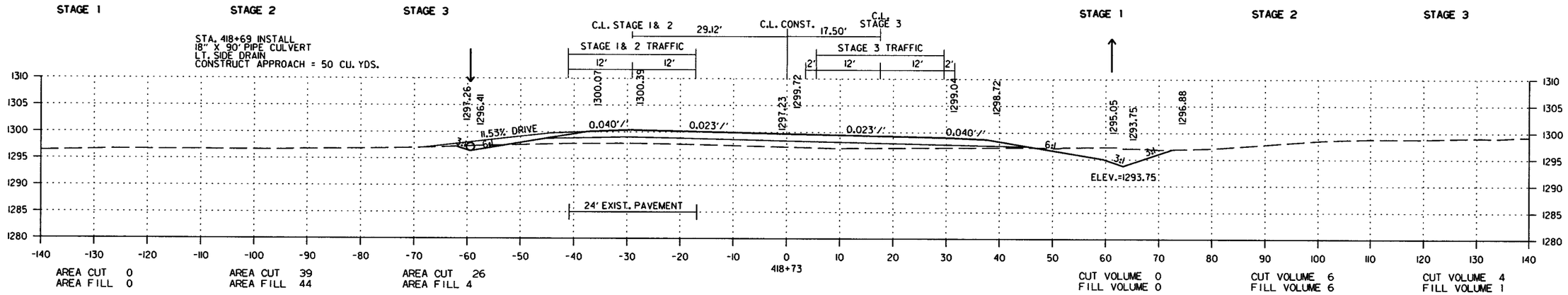
CROSS SECTION STA.417+00 TO STA. 418+00

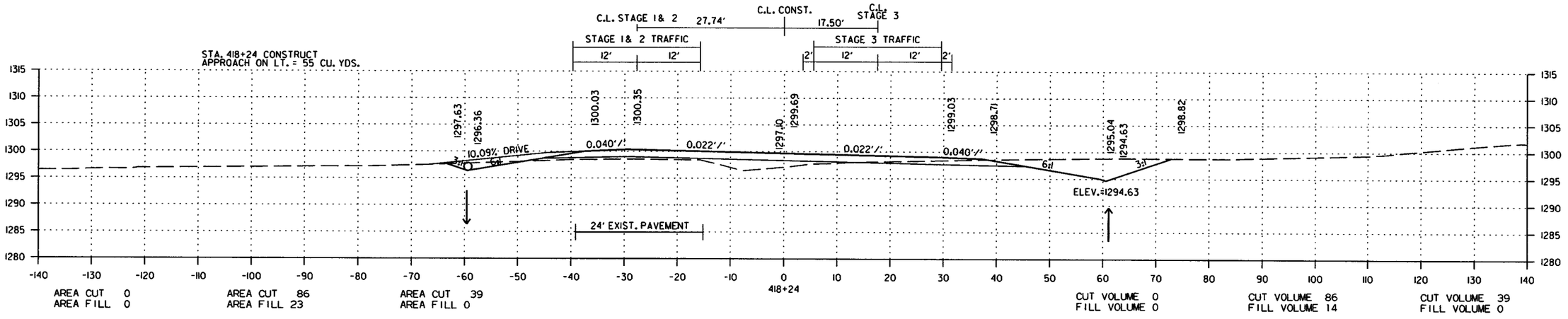
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R090230.DGN

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.		090230	199	282

(2) CROSS SECTIONS





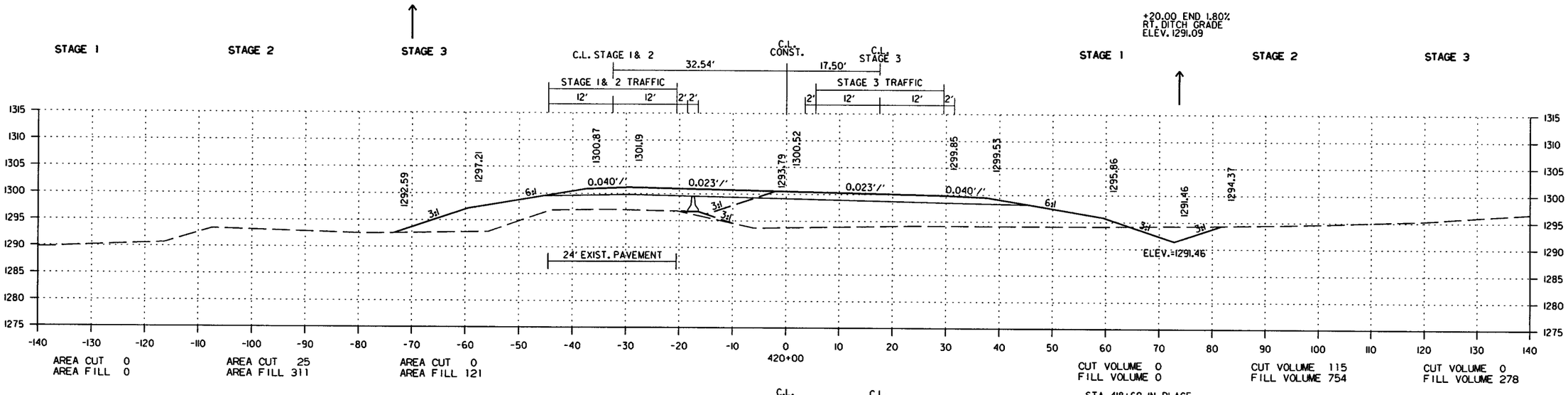
CROSS SECTION STA.418+25 TO STA. 418+73

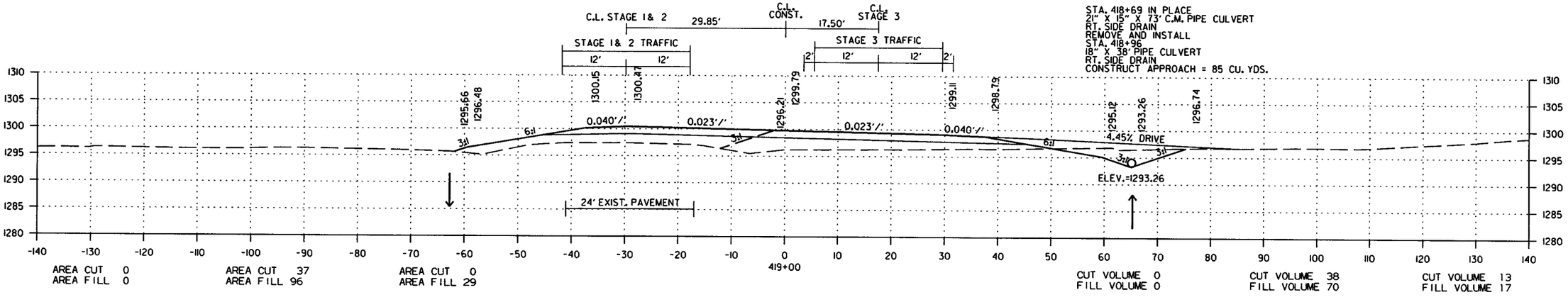
2/4/2016

R090230.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	200	282

(2) CROSS SECTIONS





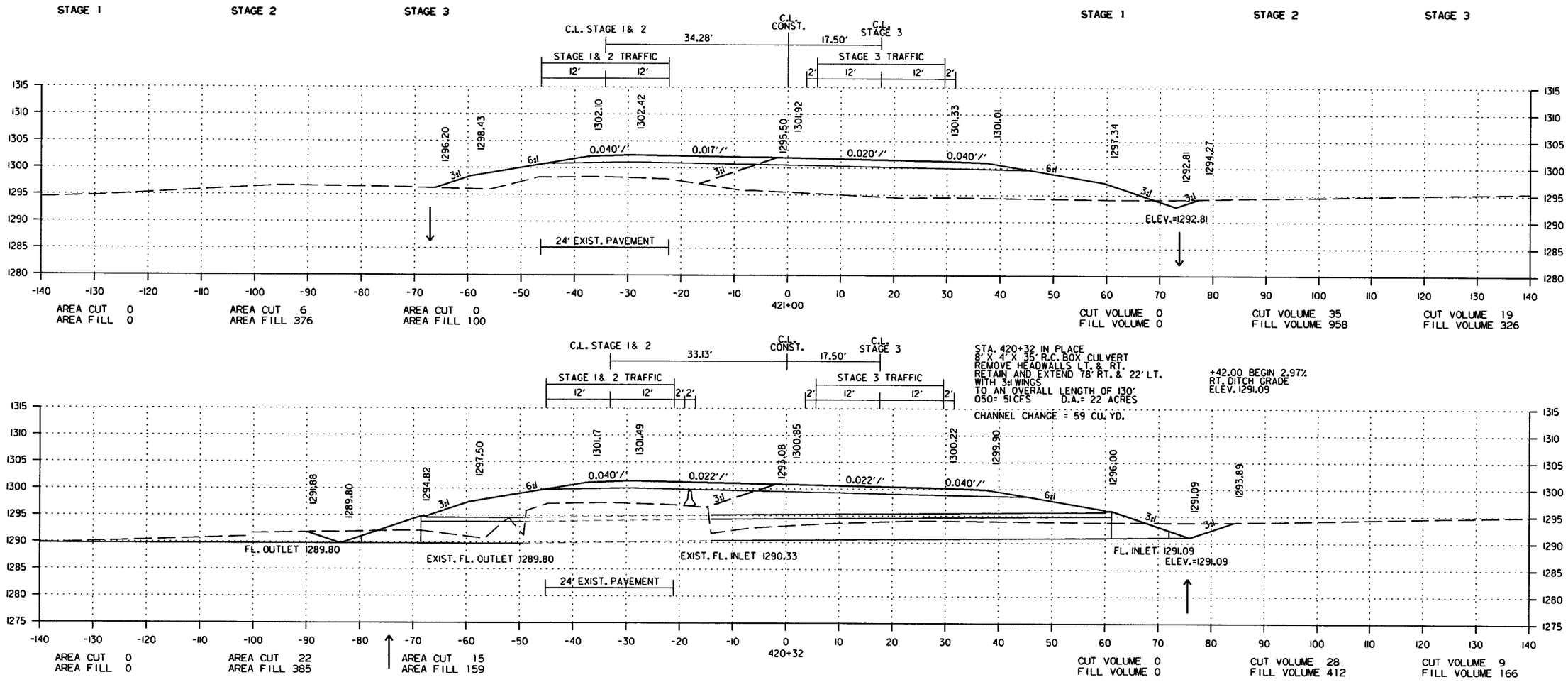
CROSS SECTION STA.419+00 TO STA. 420+00

2/4/2016

R090230.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.		090230	201	282

(2) CROSS SECTIONS



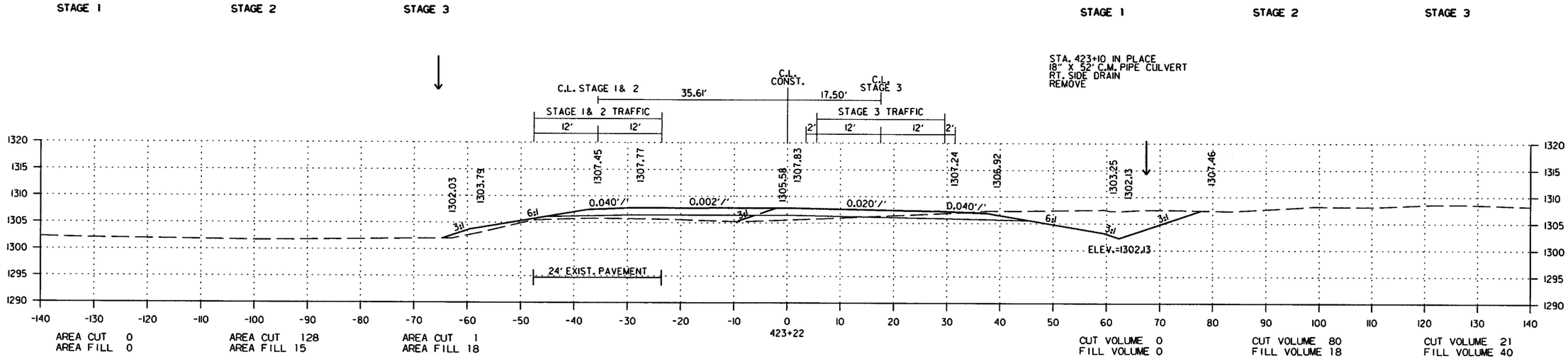
CROSS SECTION STA.420+30 TO STA. 421+00

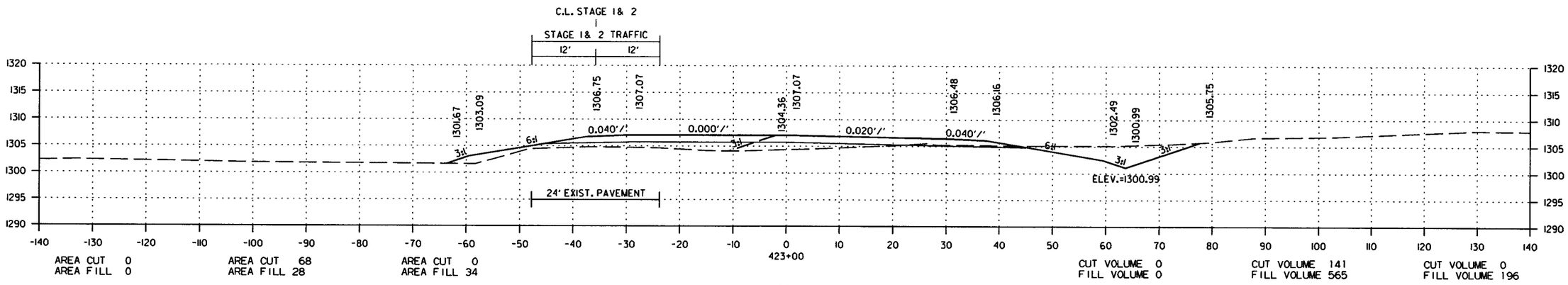
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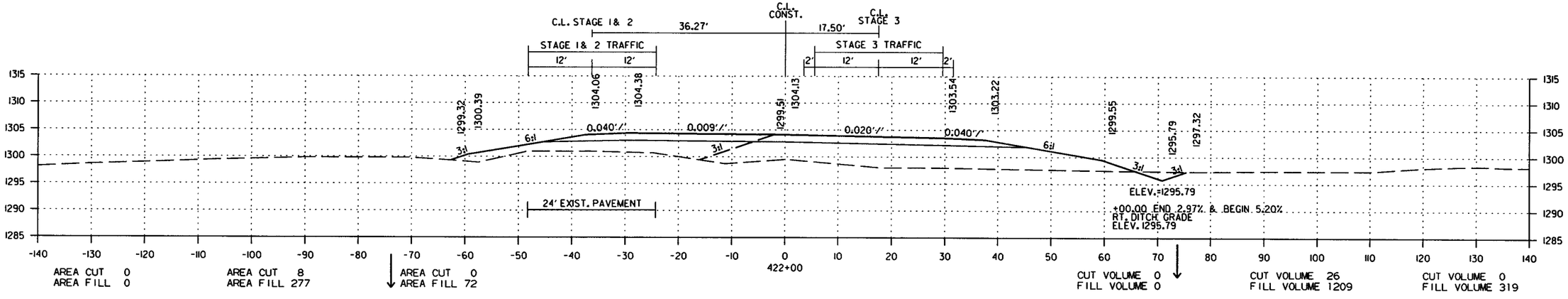
R090230.DGN

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.		090230	202	282

(2) CROSS SECTIONS







CROSS SECTION STA.422+00 TO STA. 423+22

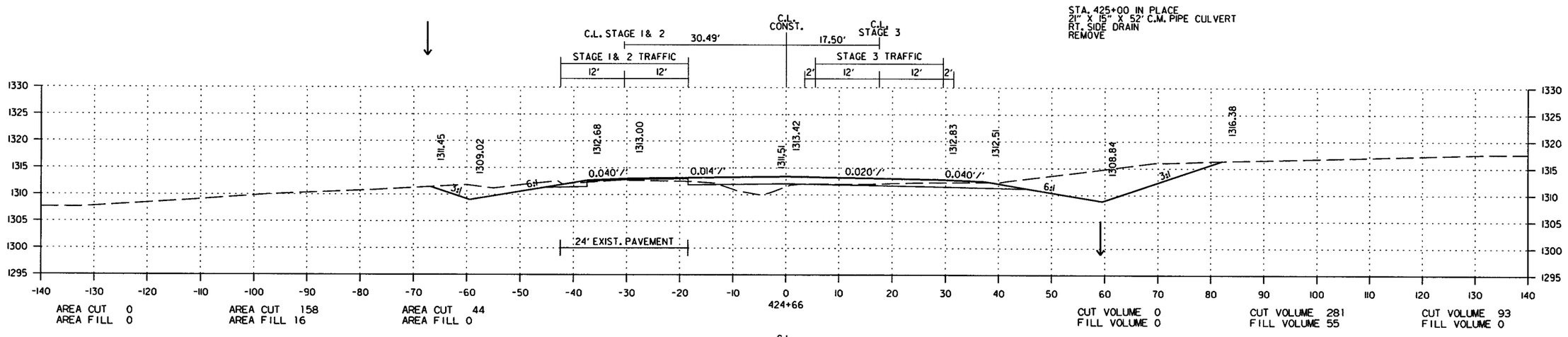
2/4/2016

R090230.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.		090230	203	282

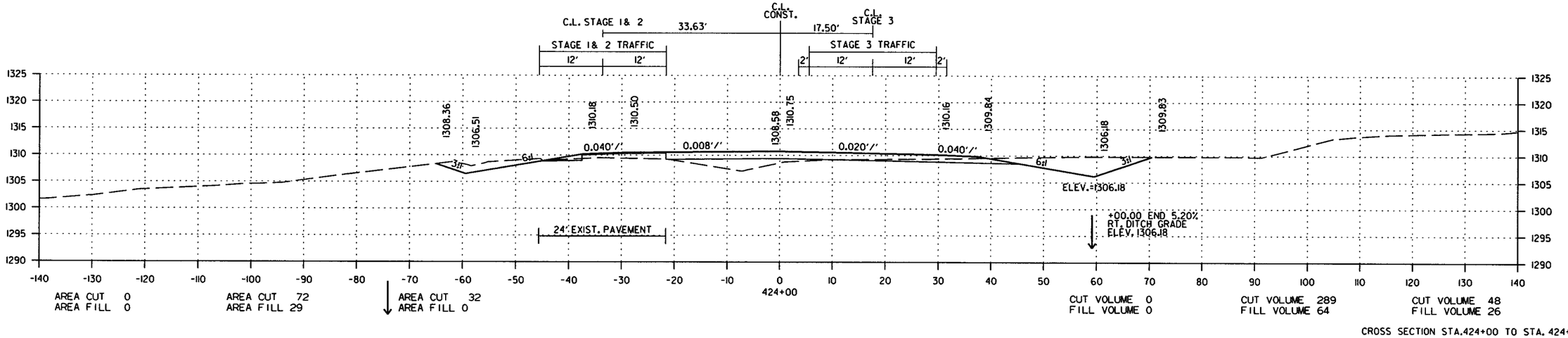
(2) CROSS SECTIONS

STAGE 1 STAGE 2 STAGE 3



STAGE 1 STAGE 2 STAGE 3

STA. 425+00 IN PLACE
21" X 15" X 52' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE



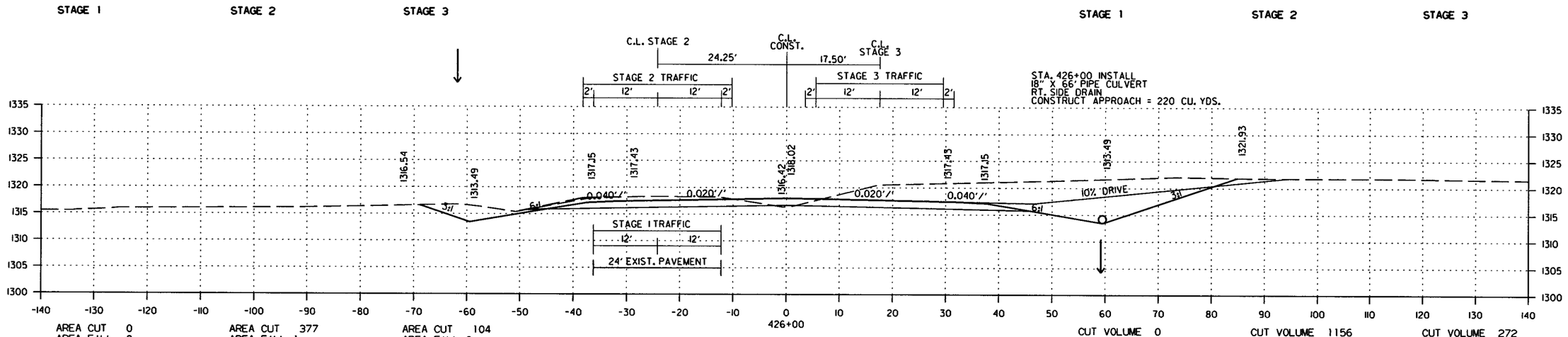
CROSS SECTION STA.424+00 TO STA. 424+66

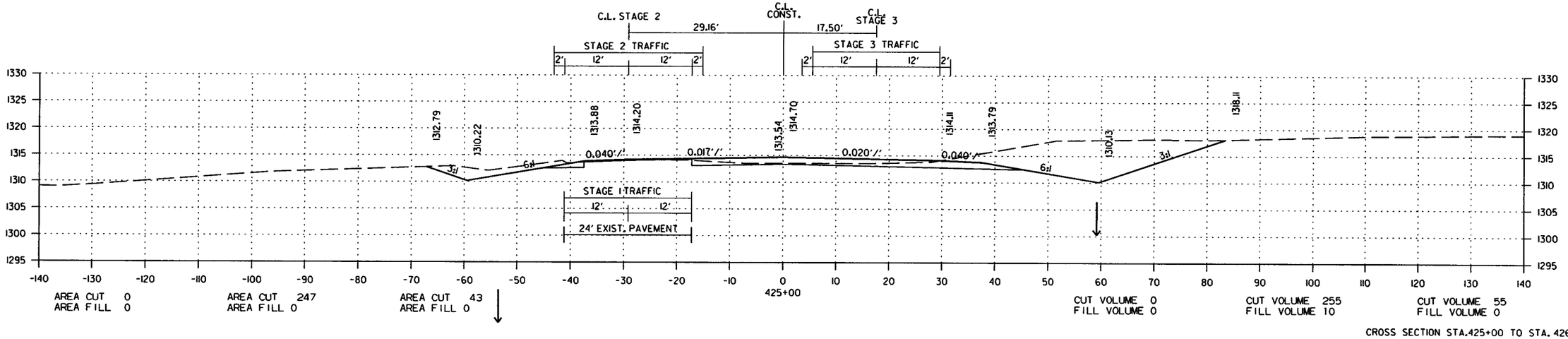
2/4/2016

R090230.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.		090230	204	282

(2) CROSS SECTIONS





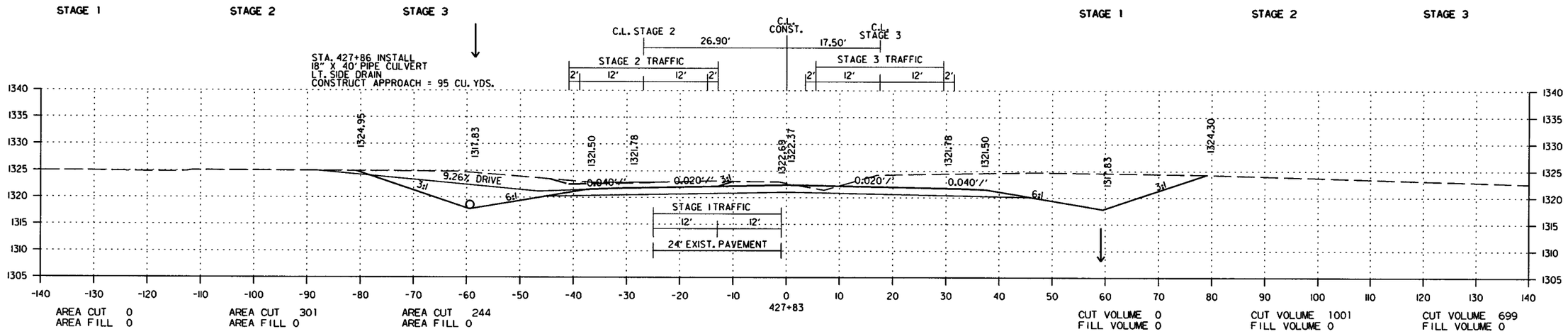
CROSS SECTION STA.425+00 TO STA. 426+00

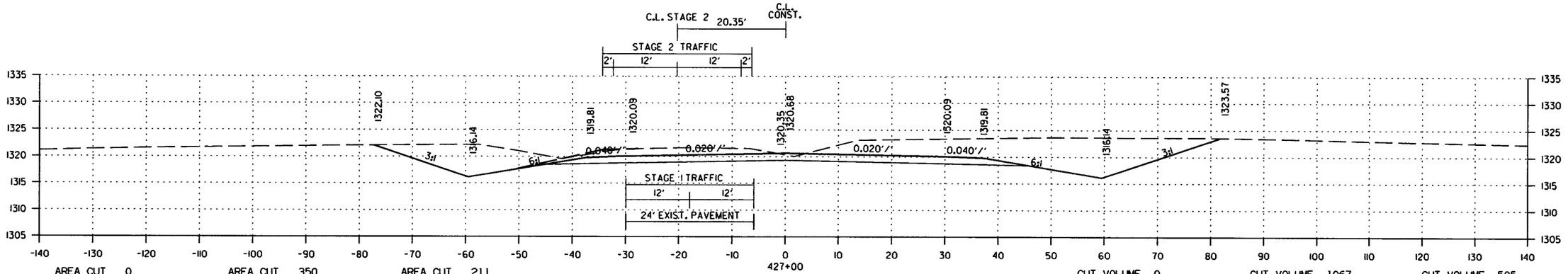
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R090230.DGN

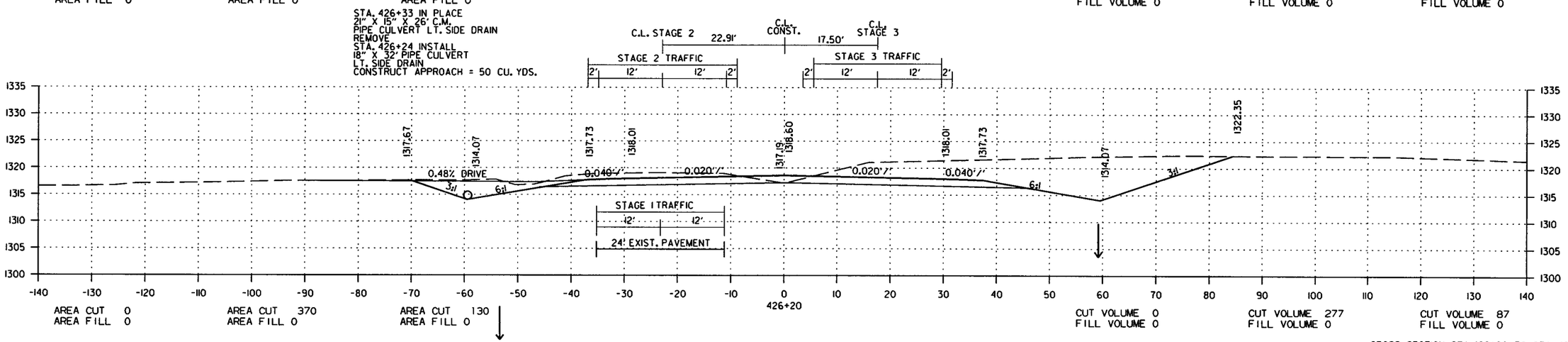
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				6	ARK.			
				JOB NO.		090230	205	282

(2) CROSS SECTIONS





STA. 426+33 IN PLACE
21" X 15" X 26' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE
STA. 426+24 INSTALL
18" X 32' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 50 CU. YDS.



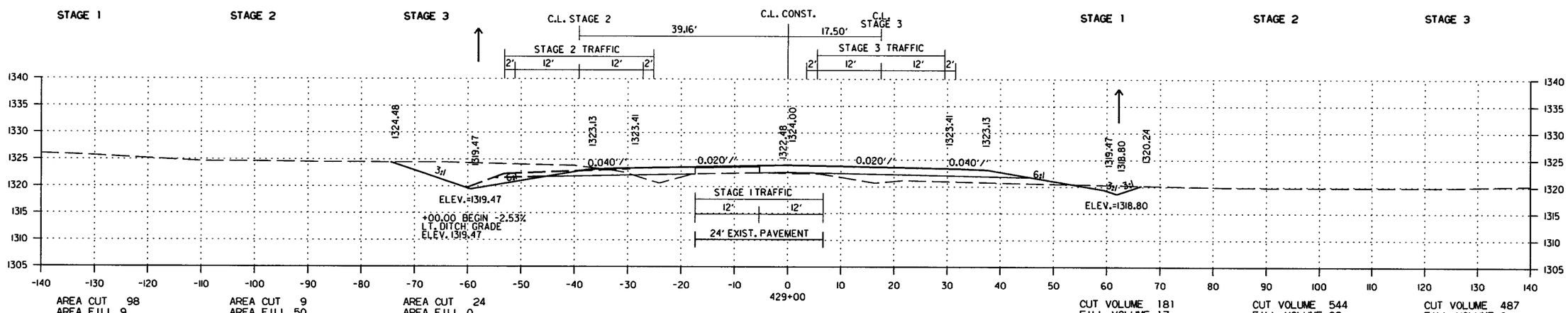
CROSS SECTION STA.426+20 TO STA. 427+83

2/4/2016

R090230.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.		090230	206	282

(2) CROSS SECTIONS



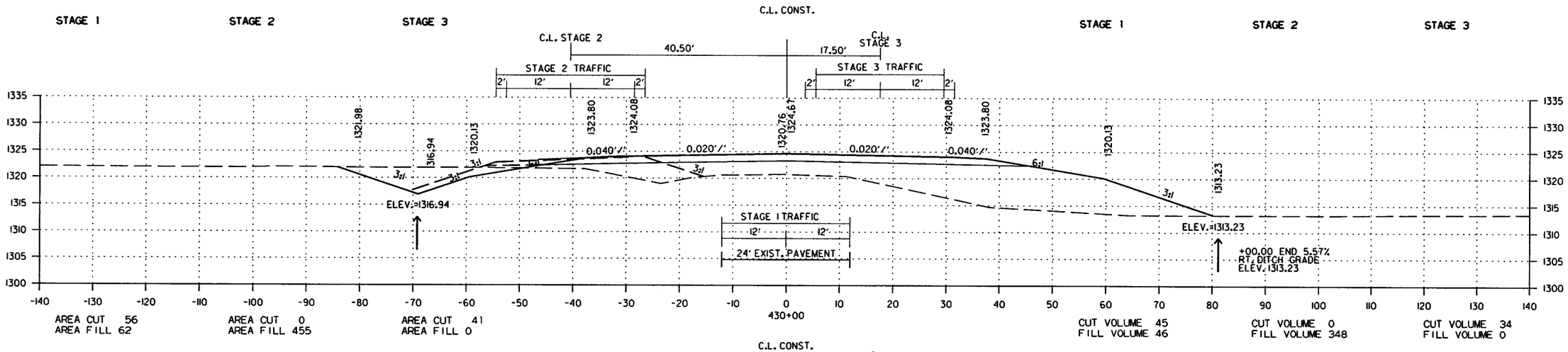
CROSS SECTION STA.428+00 TO STA. 429+00

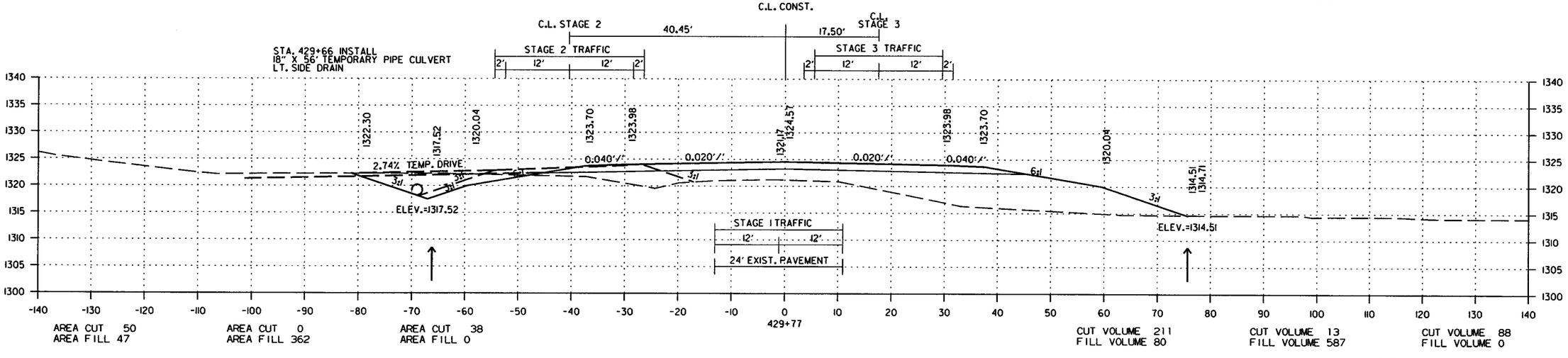
2/4/2016

R090230.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.		090230	207	282

(2) CROSS SECTIONS





CROSS SECTION STA.429+77 TO STA. 430+00

2/4/2016

R090230.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.		090230	208	282

(2) CROSS SECTIONS

STAGE 1 STAGE 2 STAGE 3

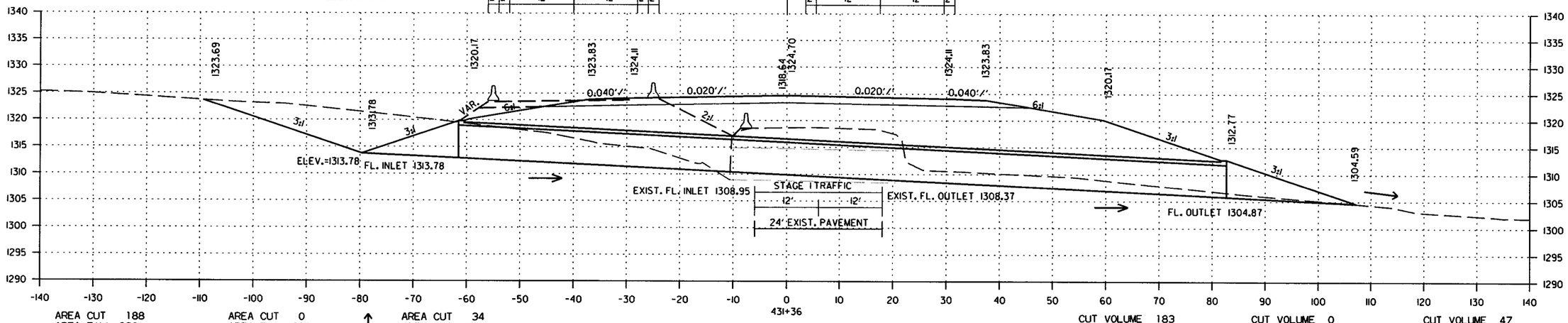
STA. 431+36 IN PLACE
6' X 6' X 33' R.C. BOX CULVERT
REMOVE AND CONSTRUCT
6' X 6' X 145' R.C. BOX CULVERT
WITH 3:1 WINGS LT. & RT.
050= 21 CFS D.A.= 8 ACRES

+50.00 BEGIN 3.37%
LT. DITCH GRADE
ELEV. 1313.78

C.L. STAGE 2 40.06' C.L. CONST. 17.50' C.L. STAGE 3

STAGE 2 TRAFFIC: 2' 2' 12' 12' 2' 2'

STAGE 3 TRAFFIC: 2' 12' 12' 2'



AREA CUT 188
AREA FILL 320

AREA CUT 0
AREA FILL 910

AREA CUT 34
AREA FILL 0

CUT VOLUME 183
FILL VOLUME 379

CUT VOLUME 0
FILL VOLUME 1125

CUT VOLUME 47
FILL VOLUME 0

STA. 429+29 IN PLACE
21" X 15" X 35' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE

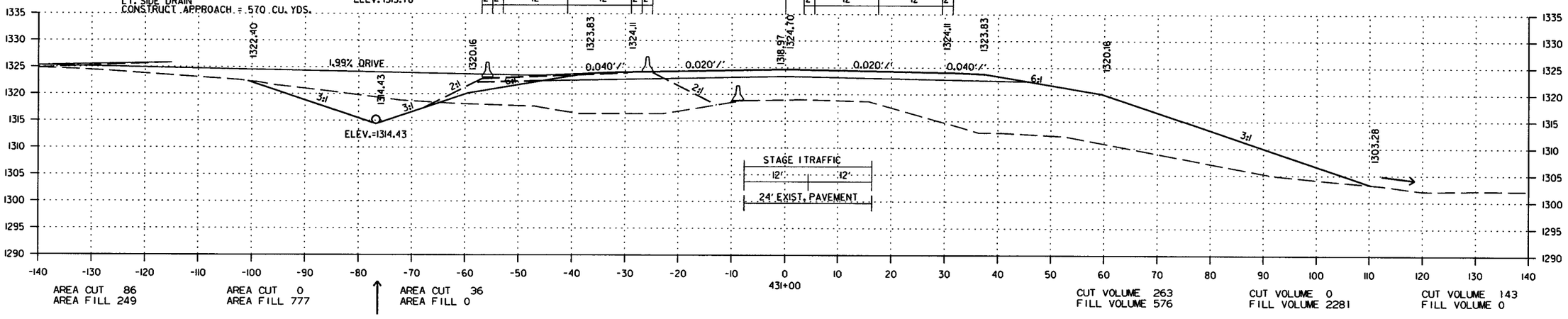
STA. 430+50 INSTALL
18" X 70' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 570 CU. YDS.

+25.00 END -2.53%
LT. DITCH GRADE
ELEV. 1313.78

C.L. STAGE 2 40.91' C.L. CONST. 17.50' C.L. STAGE 3

STAGE 2 TRAFFIC: 2' 2' 12' 12' 2' 2'

STAGE 3 TRAFFIC: 2' 12' 12' 2'



AREA CUT 86
AREA FILL 249

AREA CUT 0
AREA FILL 777

AREA CUT 36
AREA FILL 0

CUT VOLUME 263
FILL VOLUME 576

CUT VOLUME 0
FILL VOLUME 2281

CUT VOLUME 143
FILL VOLUME 0

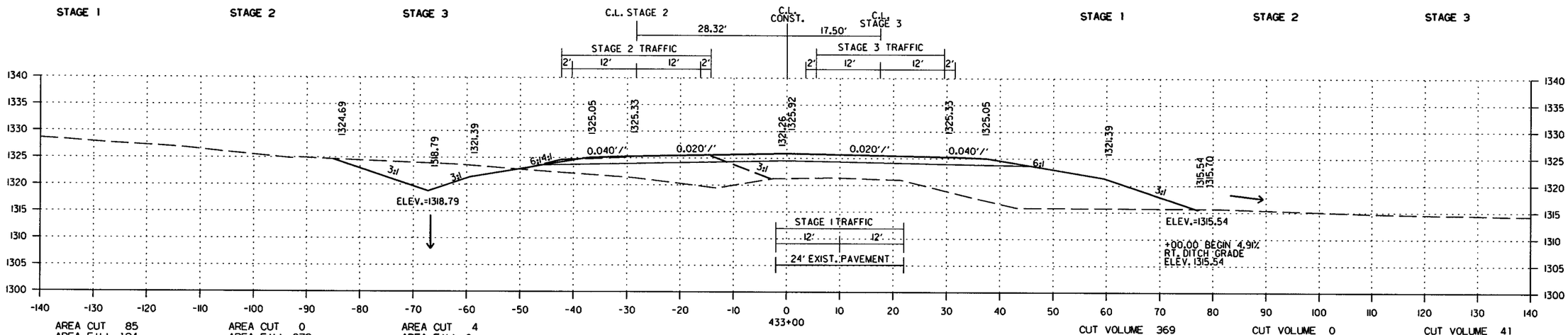
CROSS SECTION STA. 431+00 TO STA. 431+36

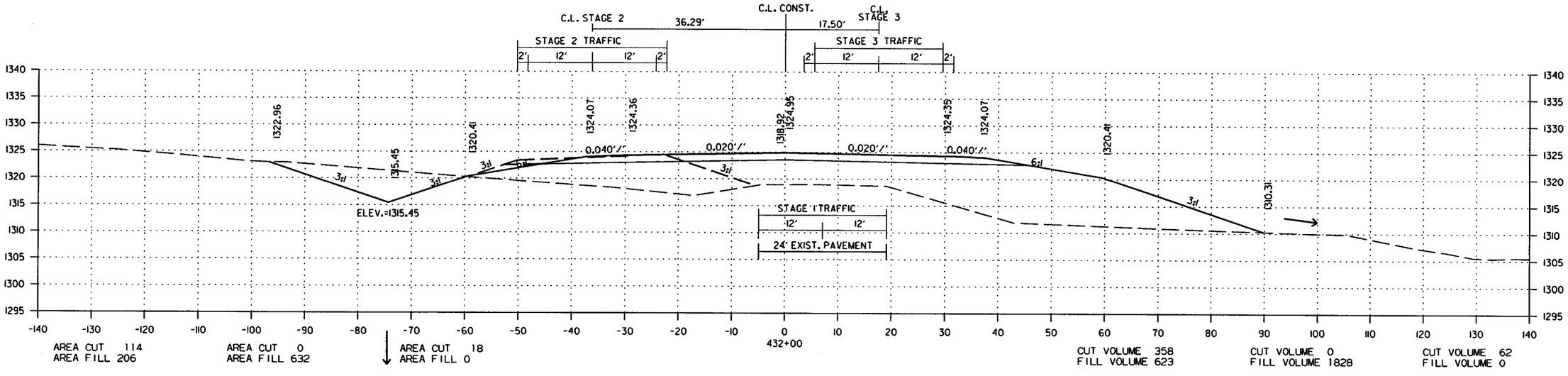
2/4/2016

R090230.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.		090230	209	282

(2) CROSS SECTIONS





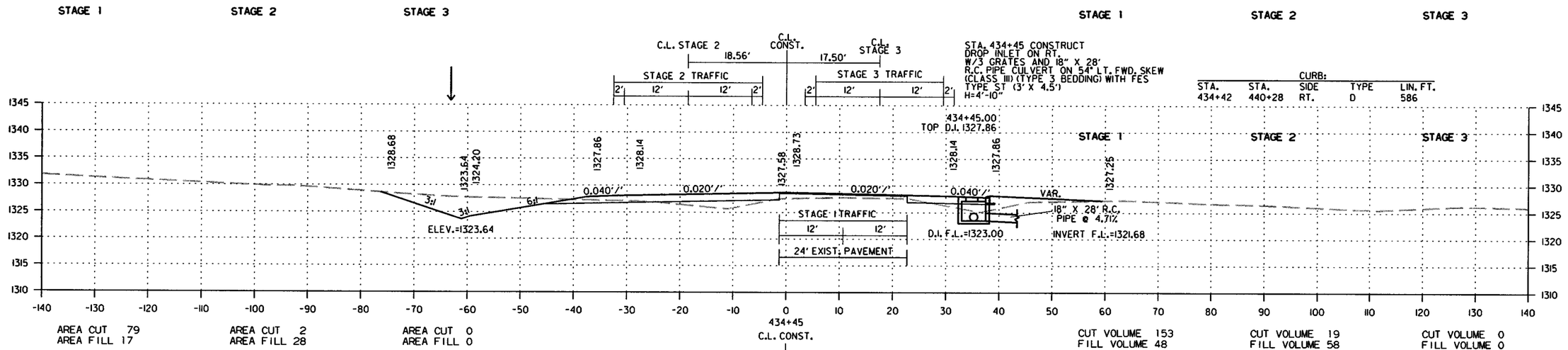
CROSS SECTION STA.432+00 TO STA. 433+00

2/4/2016

R090230.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.		090230	210	282

(2) CROSS SECTIONS



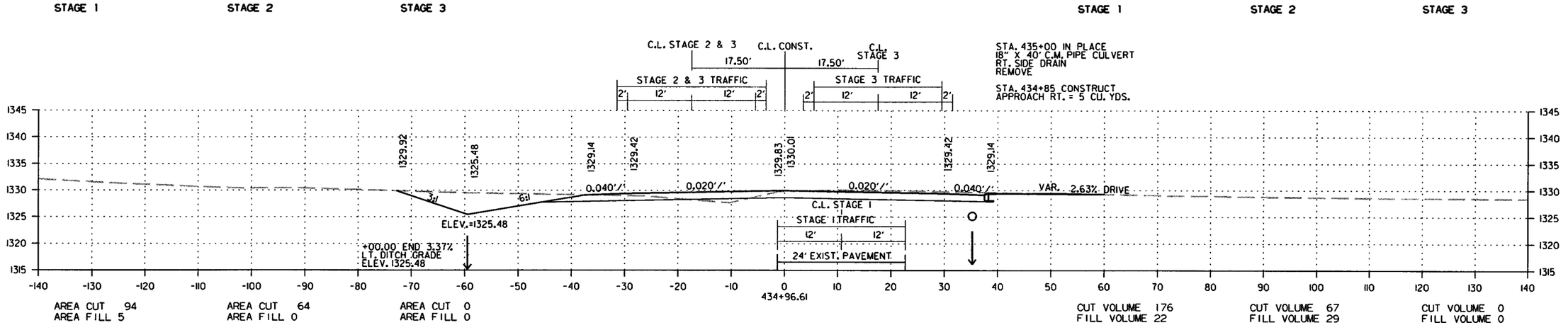
CROSS SECTION STA.433+93 TO STA. 434+45

2/4/2016

R090230.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.		090230	211	282

(2) CROSS SECTIONS



STA. 434+96.61 BACK =
STA. 435+00 AHEAD

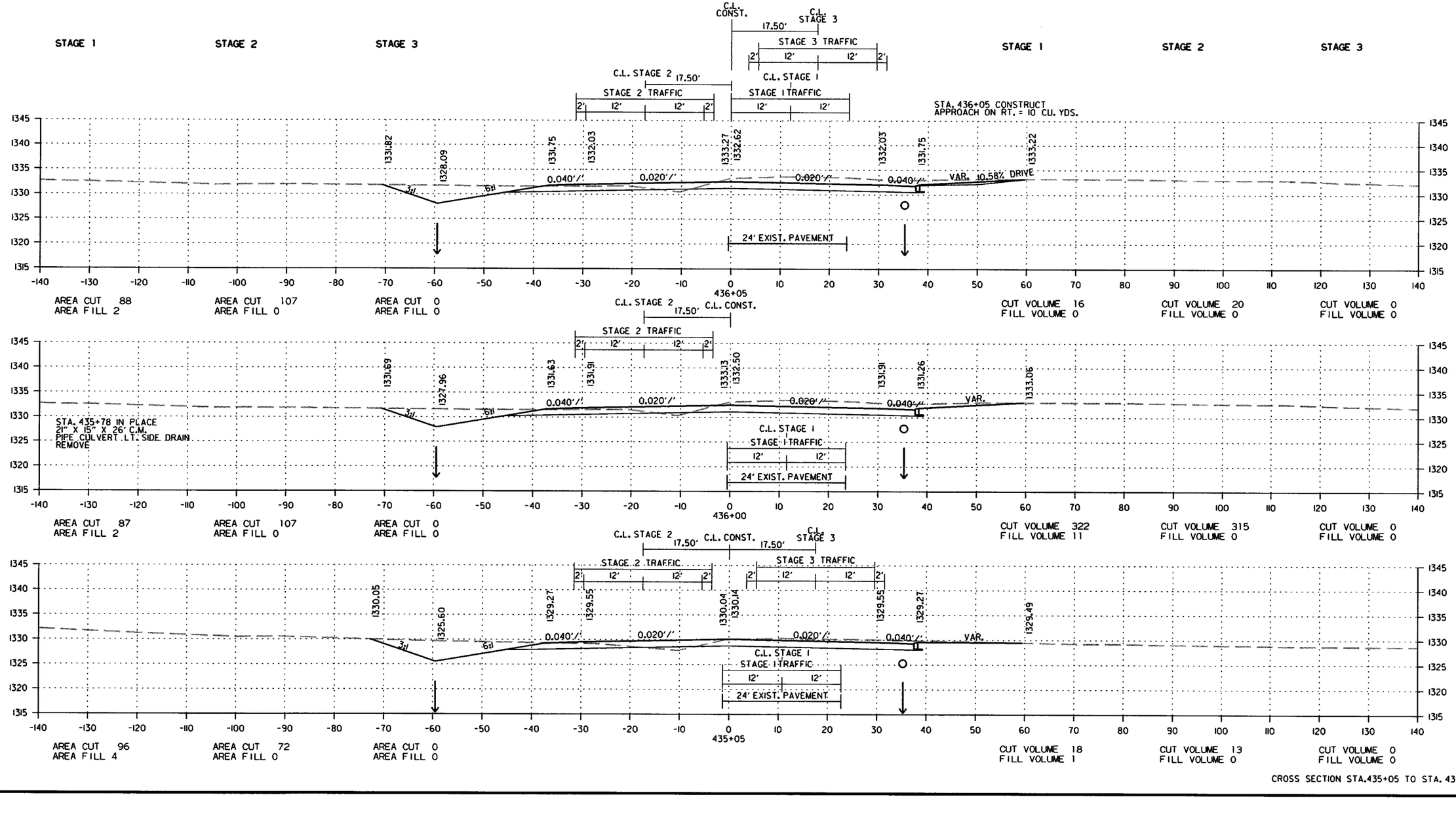
2/4/2016

R090230.DGN

CROSS SECTION STA. 435+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.		090230	212	282

(2) CROSS SECTIONS



CROSS SECTION STA.435+05 TO STA. 436+05

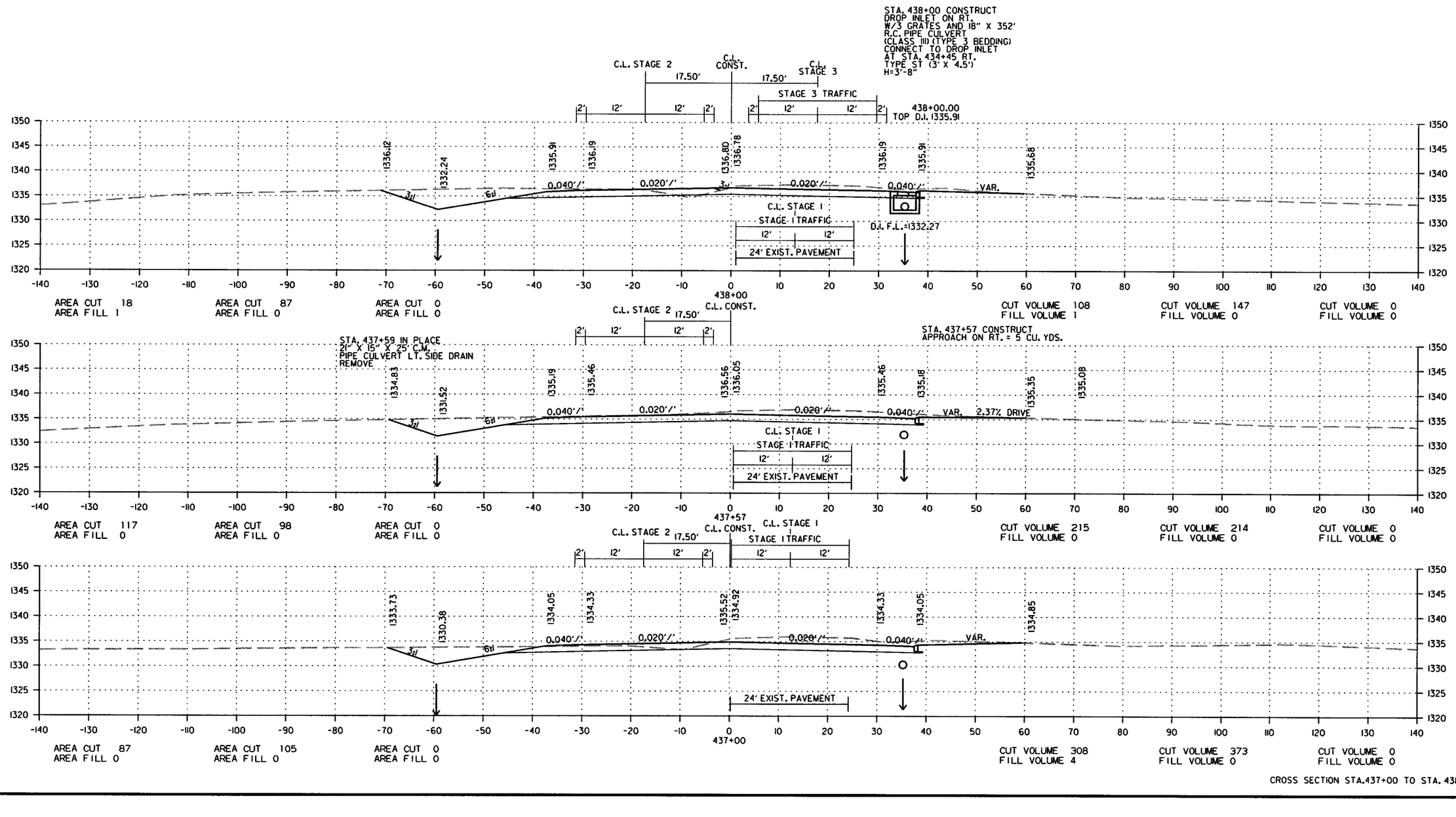
2/4/2016

R090230.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.		090230	213	282

(2) CROSS SECTIONS

STAGE 1 STAGE 2 STAGE 3 STAGE 1 STAGE 2 STAGE 3



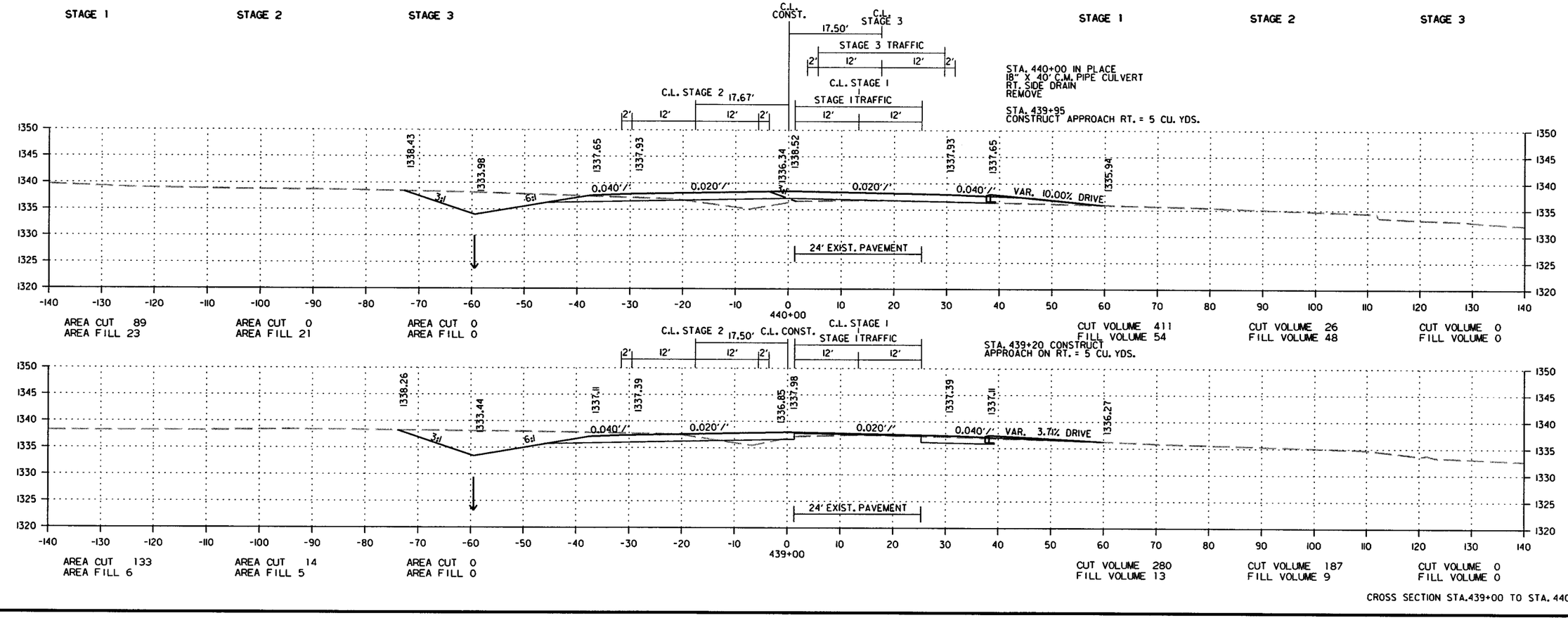
CROSS SECTION STA.437+00 TO STA. 438+00

2/4/2016

R090230.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090230	214	282

(2) CROSS SECTIONS



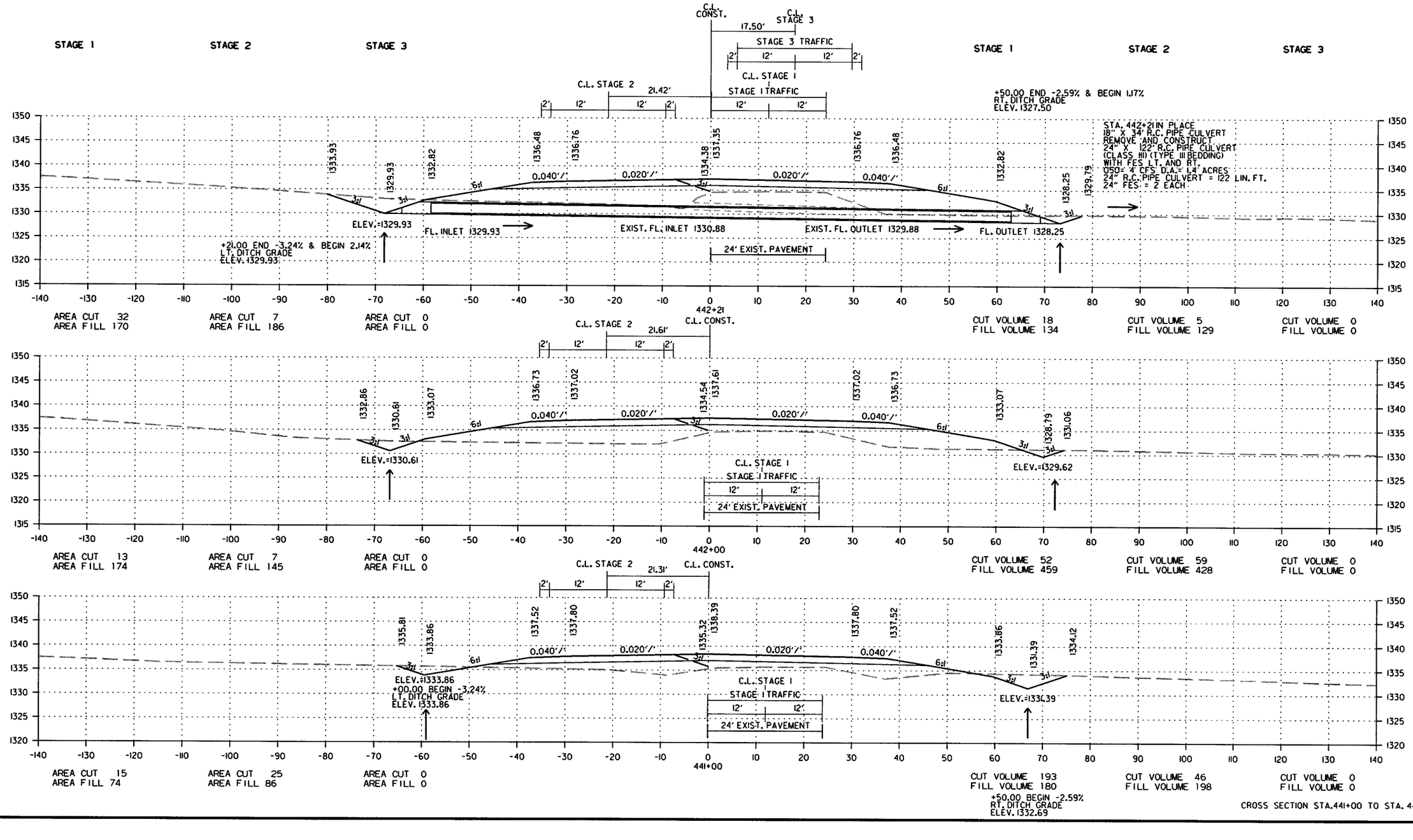
CROSS SECTION STA.439+00 TO STA. 440+03

2/4/2016

R090230.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.		090230	215	282

(2) CROSS SECTIONS

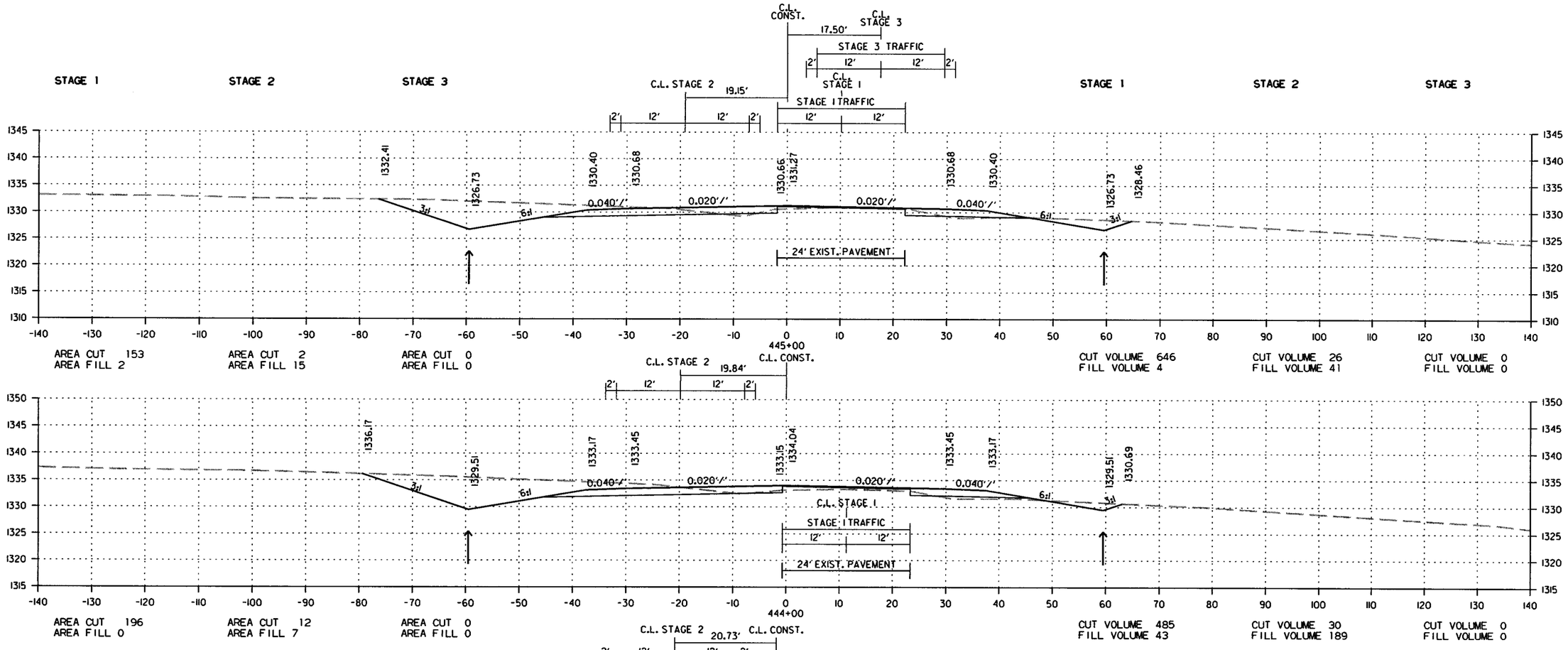


2/4/2016

R090230.DGN

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.		090230	216	282

(2) CROSS SECTIONS



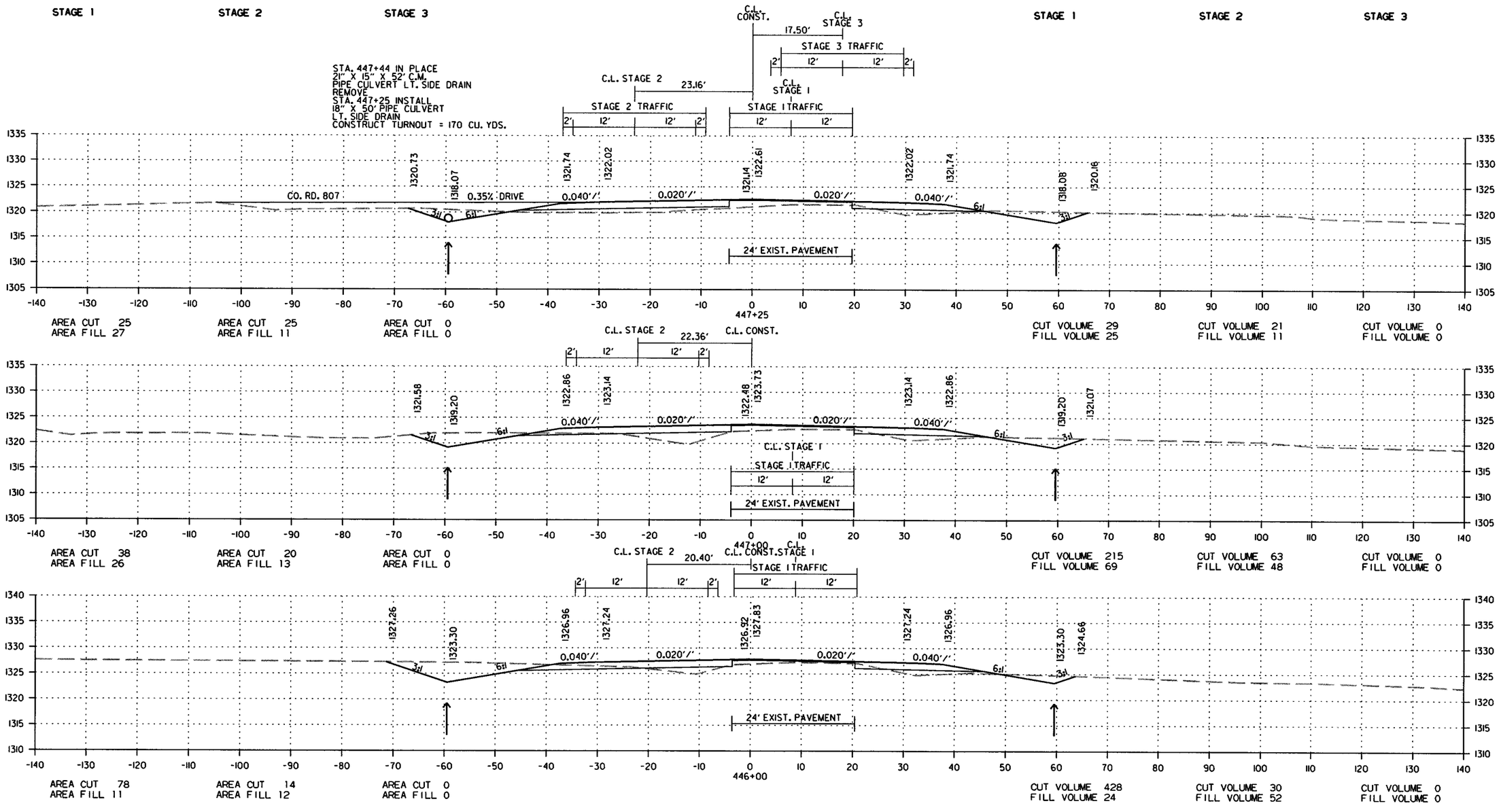
CROSS SECTION STA.443+00 TO STA. 445+00

2/4/2016

R090230.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.		090230	217	282

(2) CROSS SECTIONS



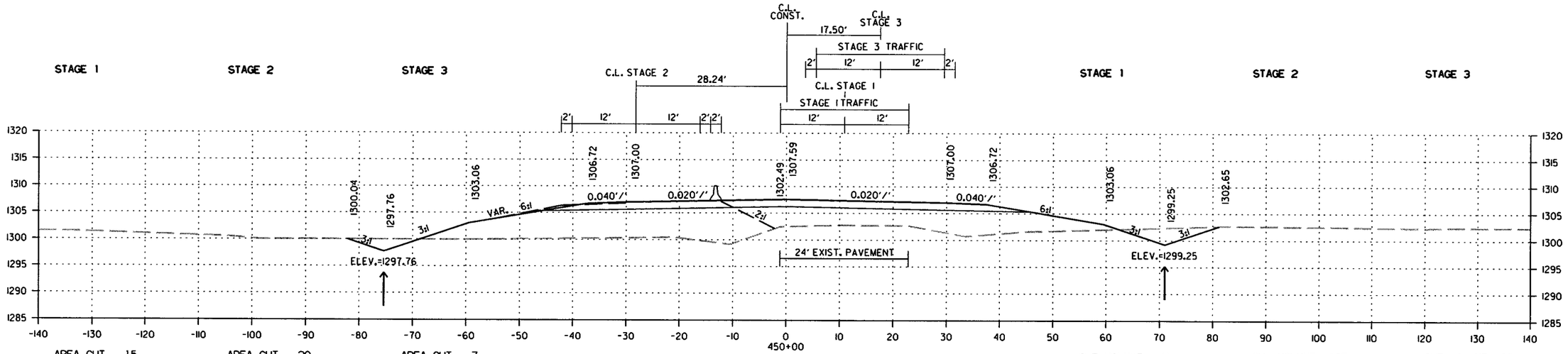
CROSS SECTION STA.446+00 TO STA. 447+25

2/4/2016

R090230.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.		090230	218	282

(2) CROSS SECTIONS



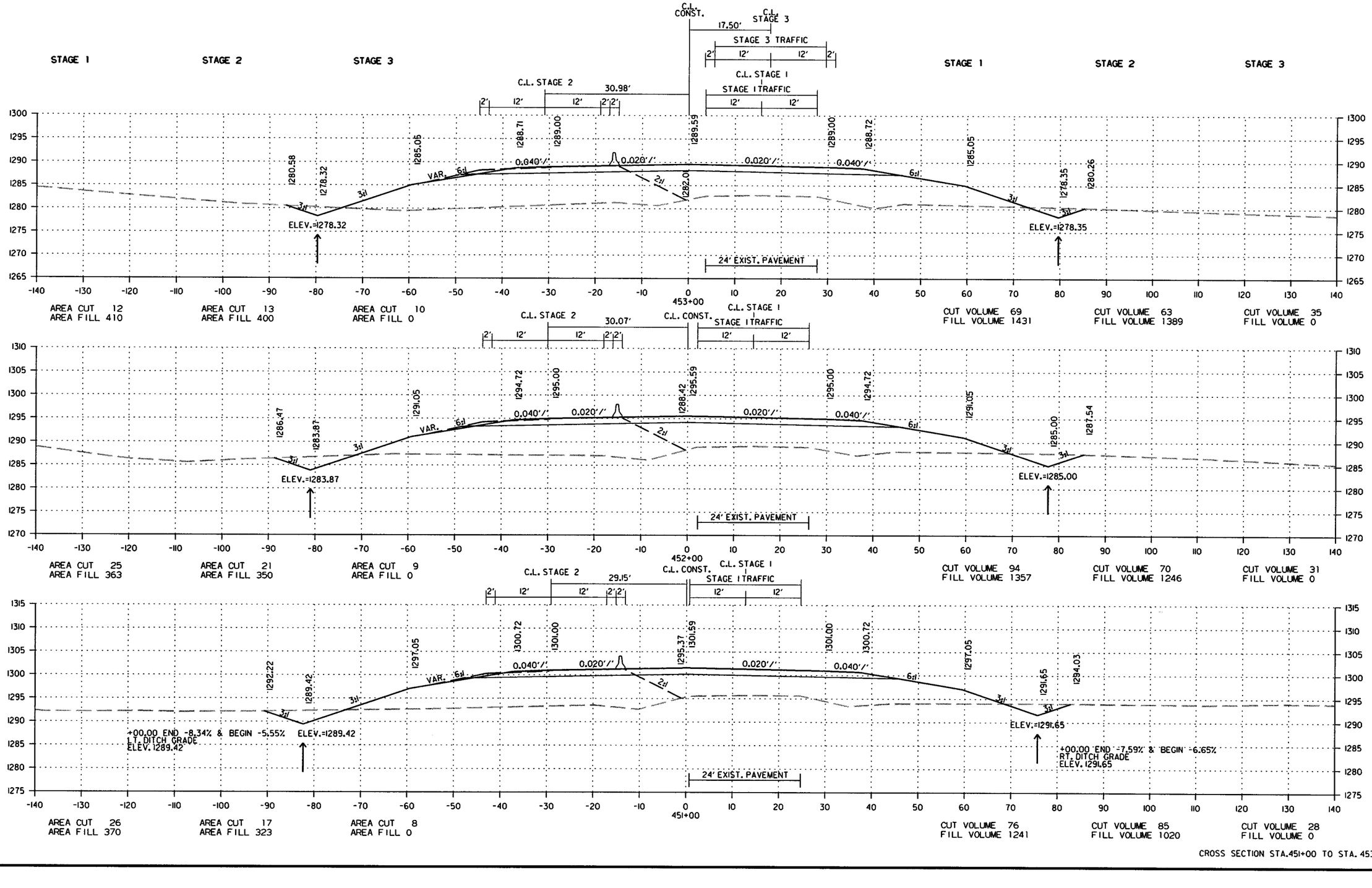
CROSS SECTION STA.448+00 TO STA. 450+00

2/4/2016

R090230.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.		090230	219	282

(2) CROSS SECTIONS



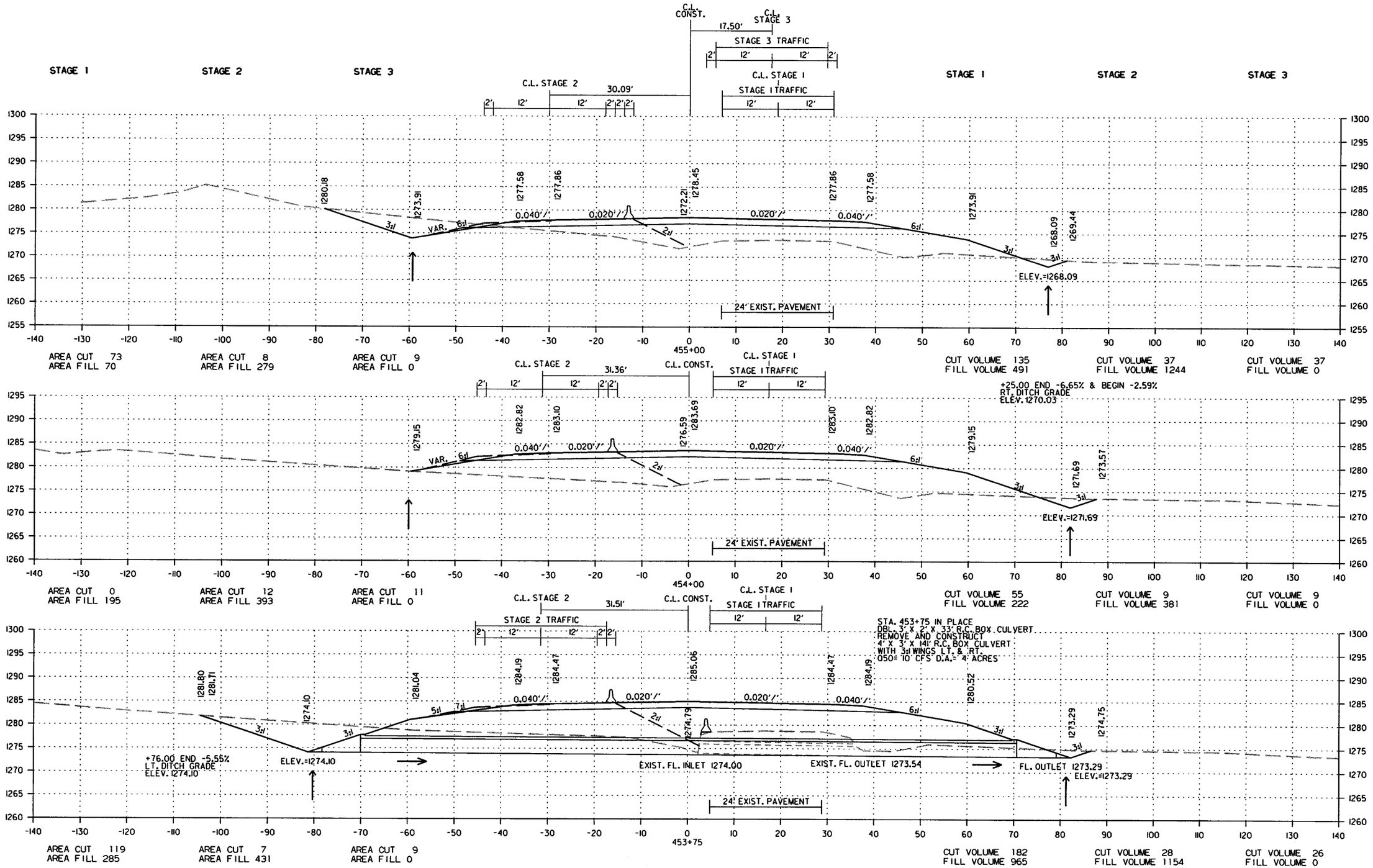
CROSS SECTION STA.451+00 TO STA. 453+00

2/4/2016

R090230.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.		090230	220	282

(2) CROSS SECTIONS



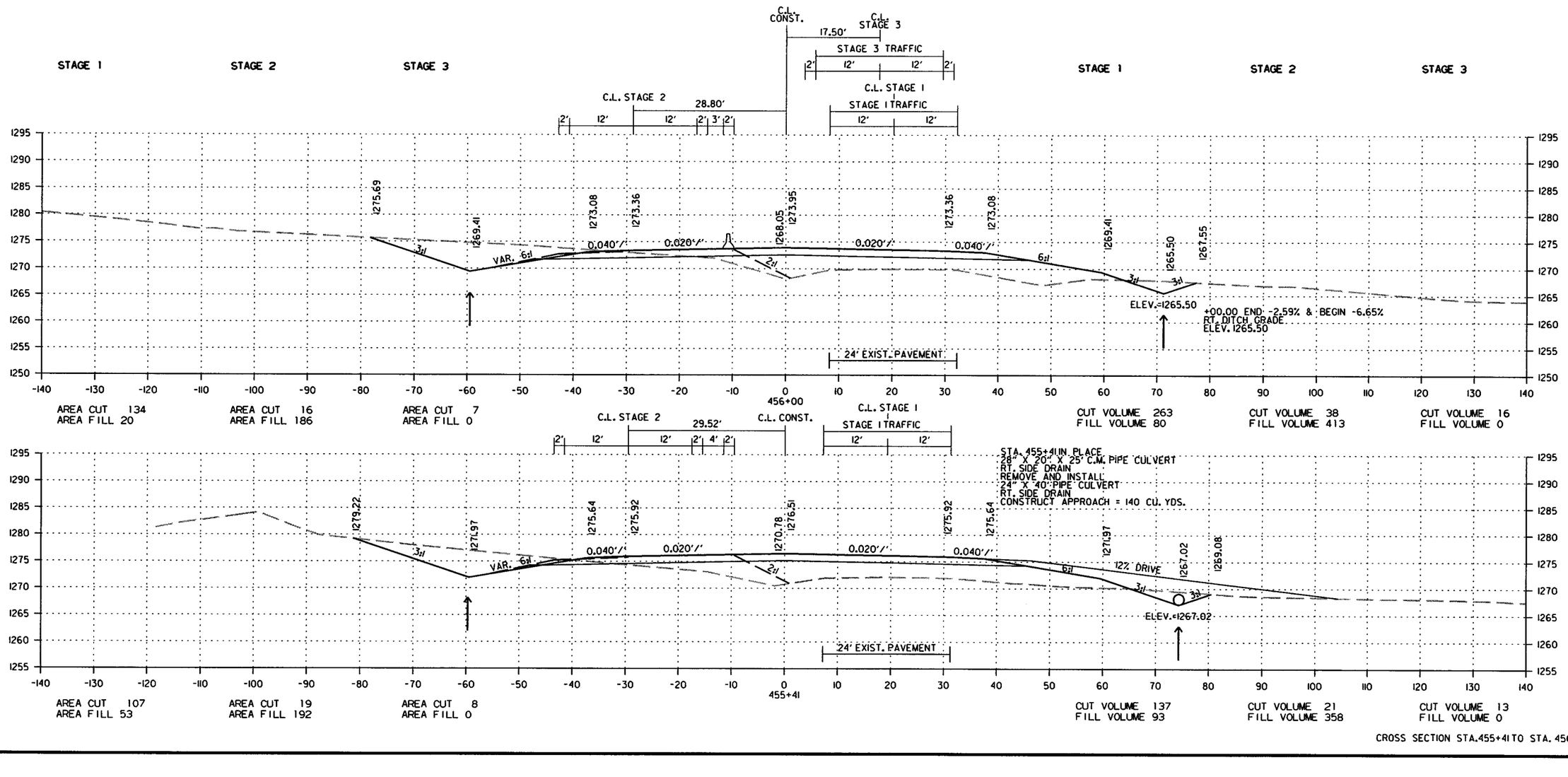
CROSS SECTION STA.453+76 TO STA. 455+00

2/4/2016

R090230.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
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(2) CROSS SECTIONS



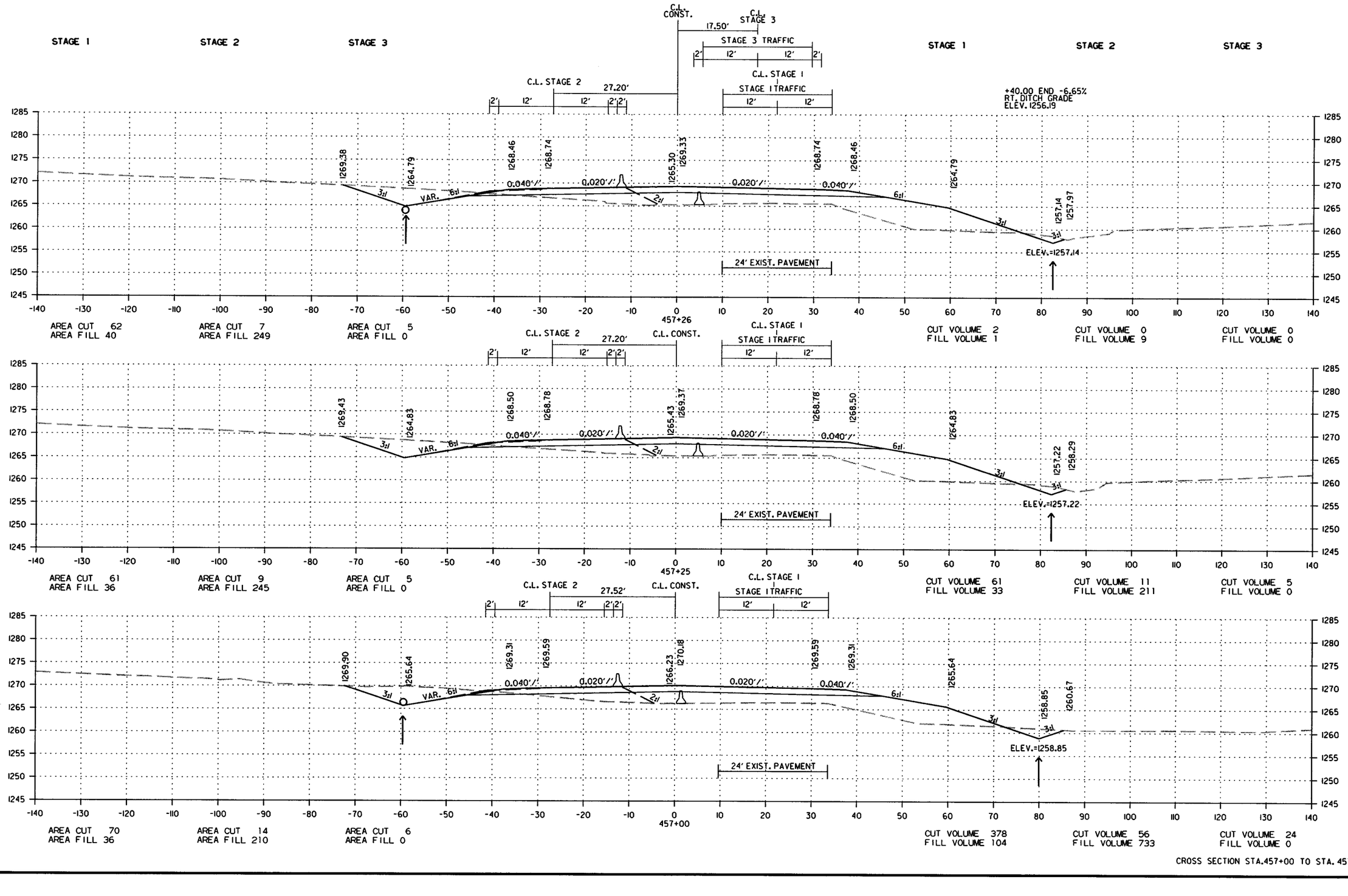
CROSS SECTION STA.455+41 TO STA. 456+00

2/4/2016

R090230.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
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(2) CROSS SECTIONS



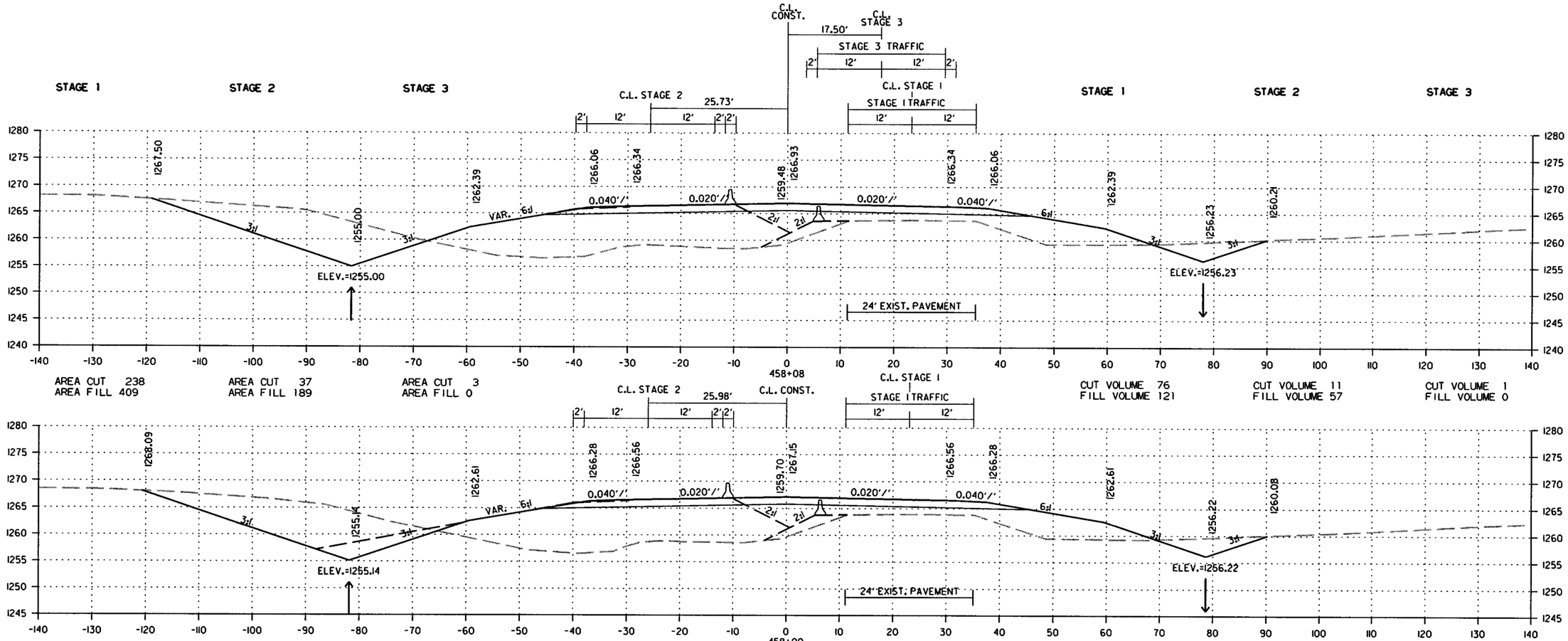
CROSS SECTION STA.457+00 TO STA. 457+26

2/4/2016

R090230.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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(2) CROSS SECTIONS



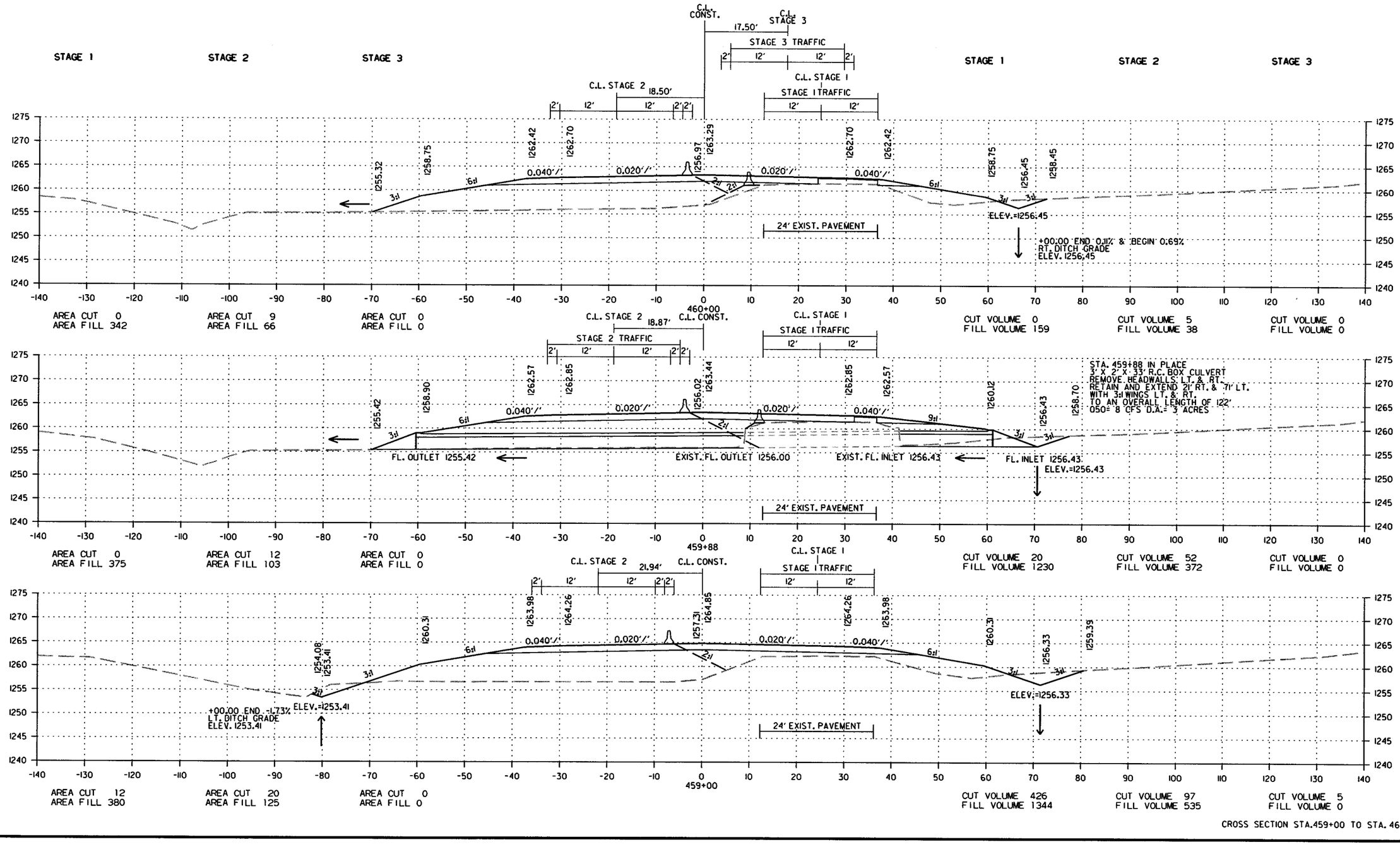
CROSS SECTION STA.457+56 TO STA. 458+08

2/4/2016

R090230.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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(2) CROSS SECTIONS



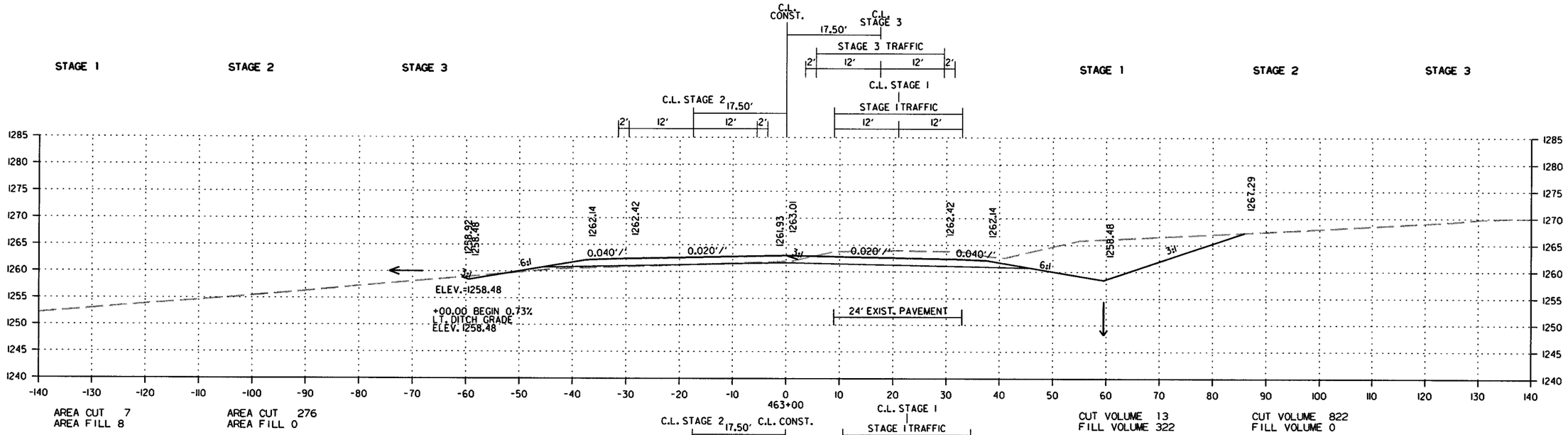
CROSS SECTION STA.459+00 TO STA. 460+00

2/4/2016

R090230.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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(2) CROSS SECTIONS



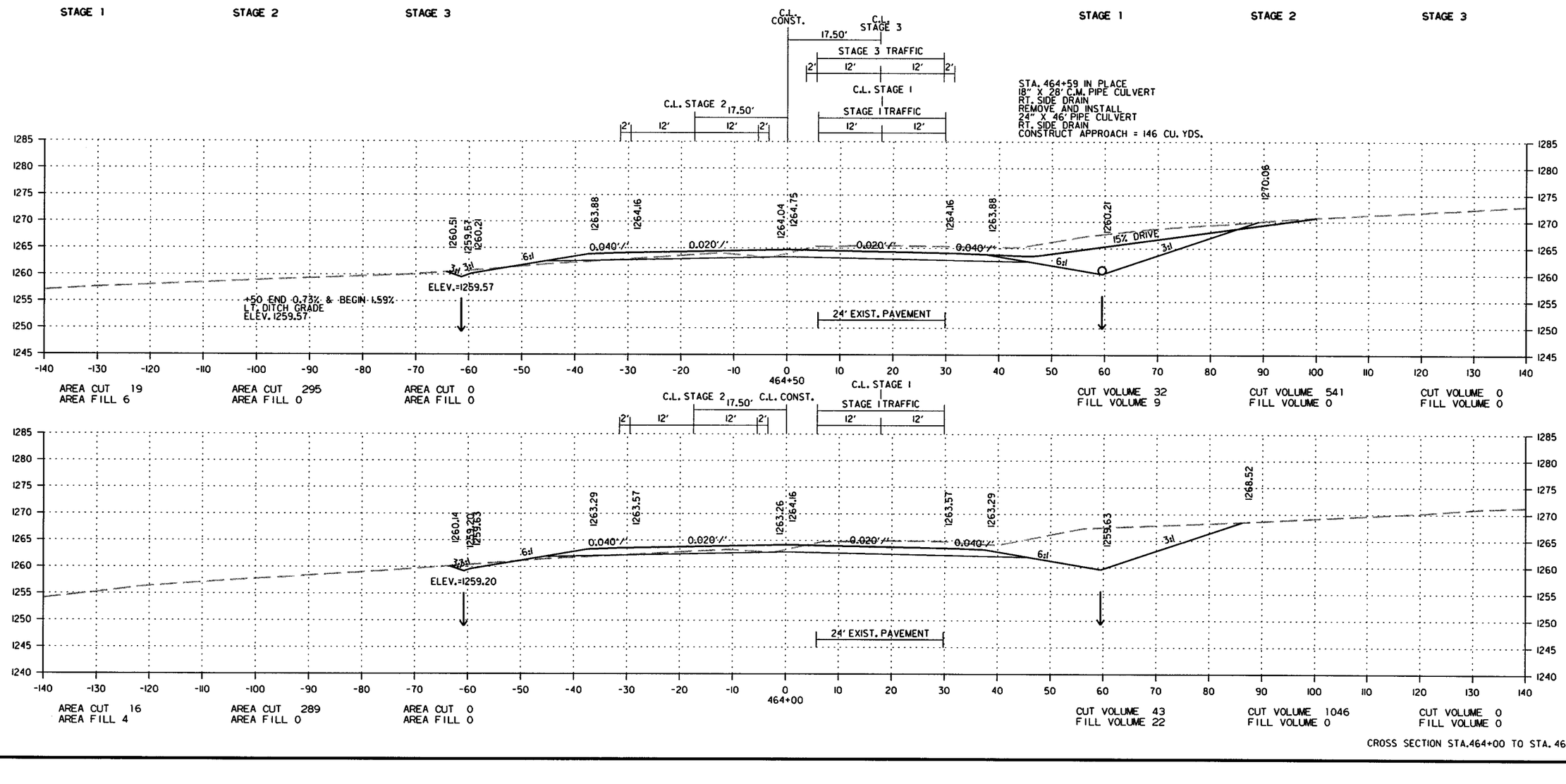
CROSS SECTION STA.461+00 TO STA. 463+00

2/4/2016

R090230.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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(2) CROSS SECTIONS



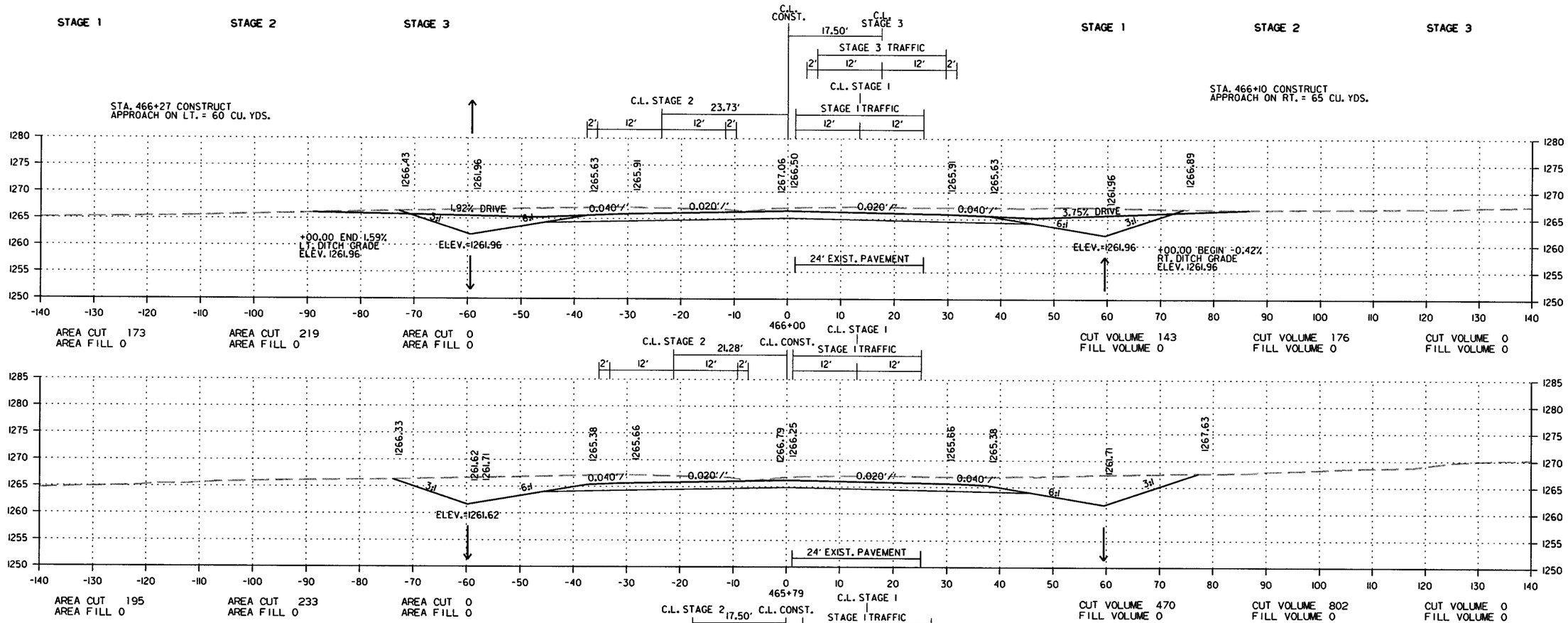
CROSS SECTION STA.464+00 TO STA. 464+50

2/4/2016

R090230.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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(2) CROSS SECTIONS



CROSS SECTION STA.465+00 TO STA. 466+00

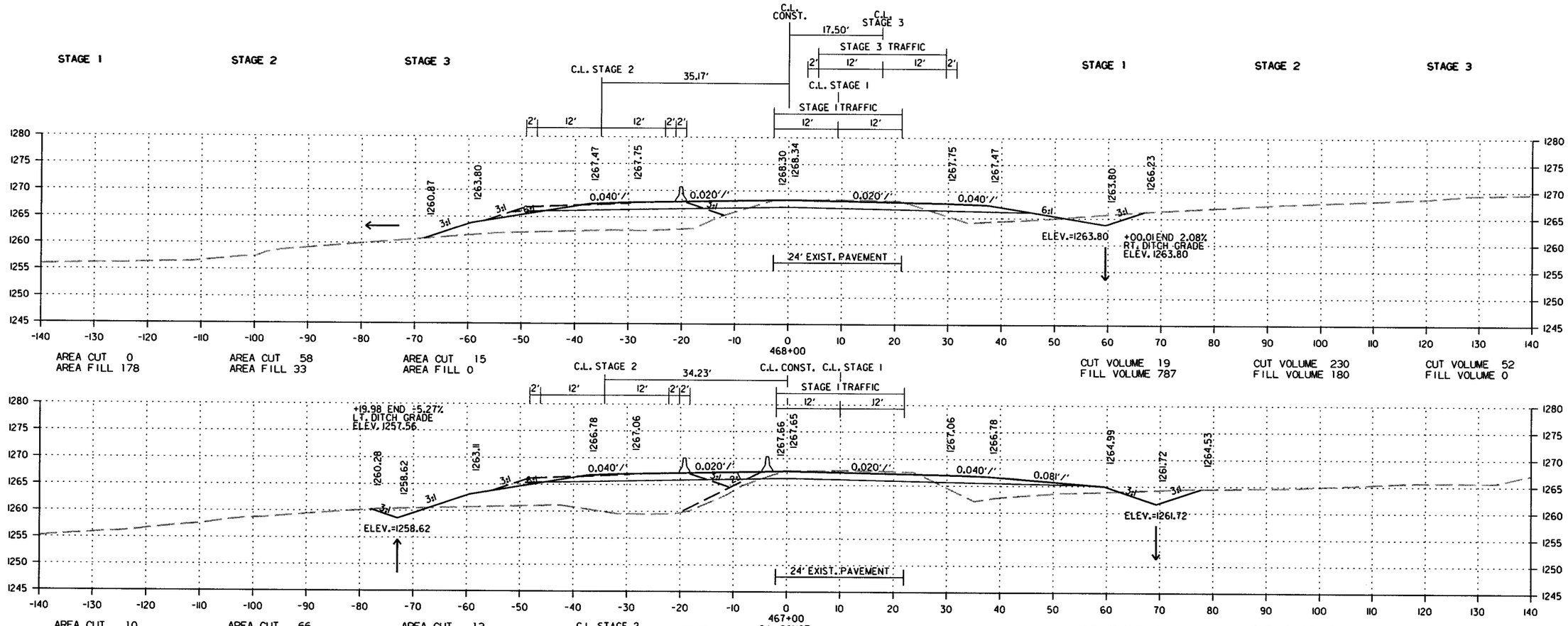
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R090230.DGN

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.		090230	228	282

(2) CROSS SECTIONS

1242.52



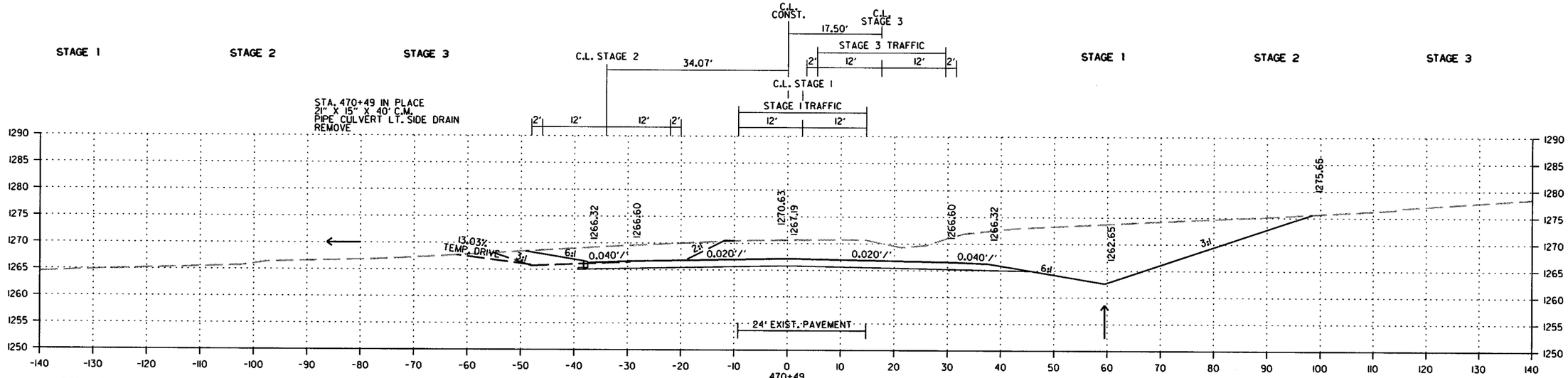
CROSS SECTION STA.466+88 TO STA. 468+00

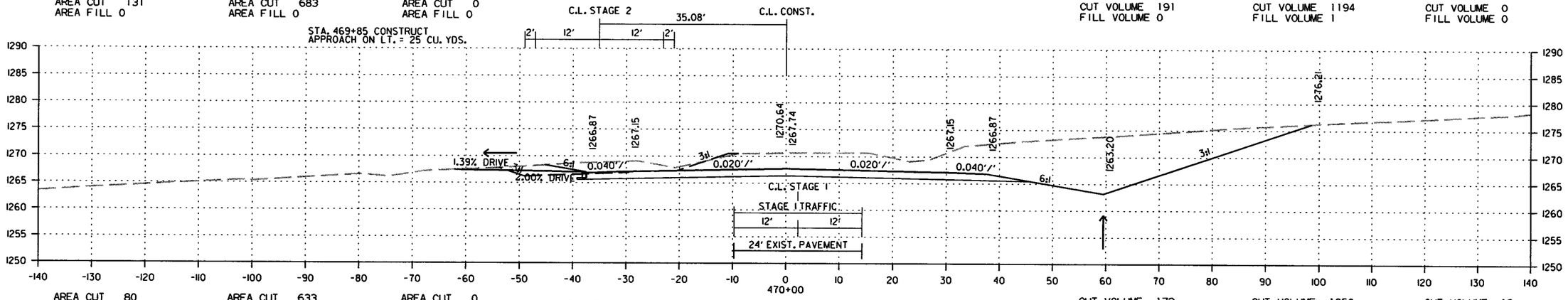
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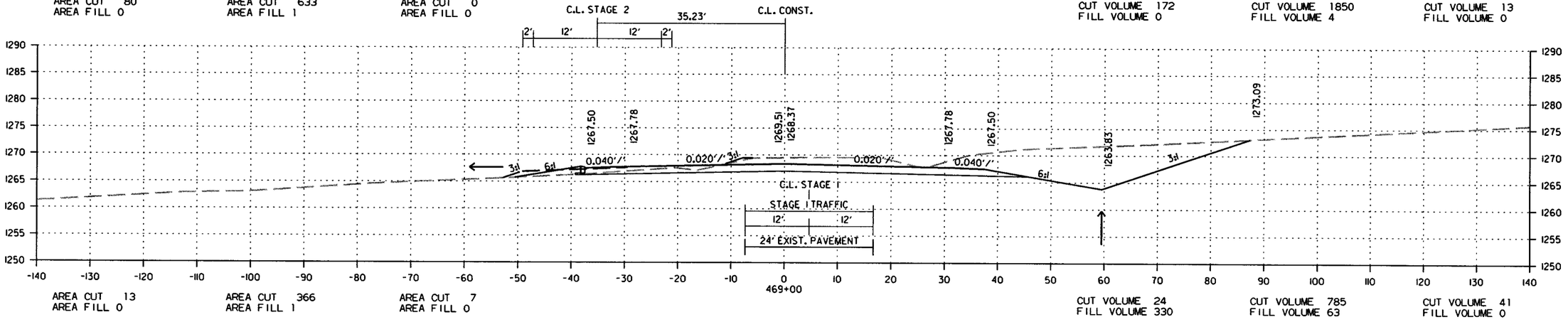
R090230.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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(2) CROSS SECTIONS







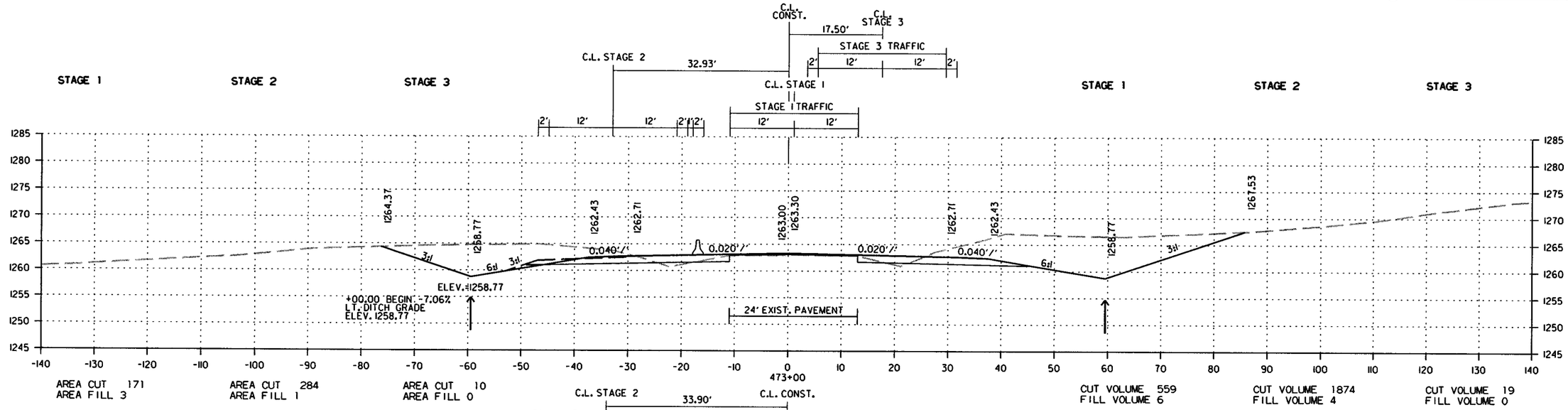
CROSS SECTION STA.469+00 TO STA. 470+49

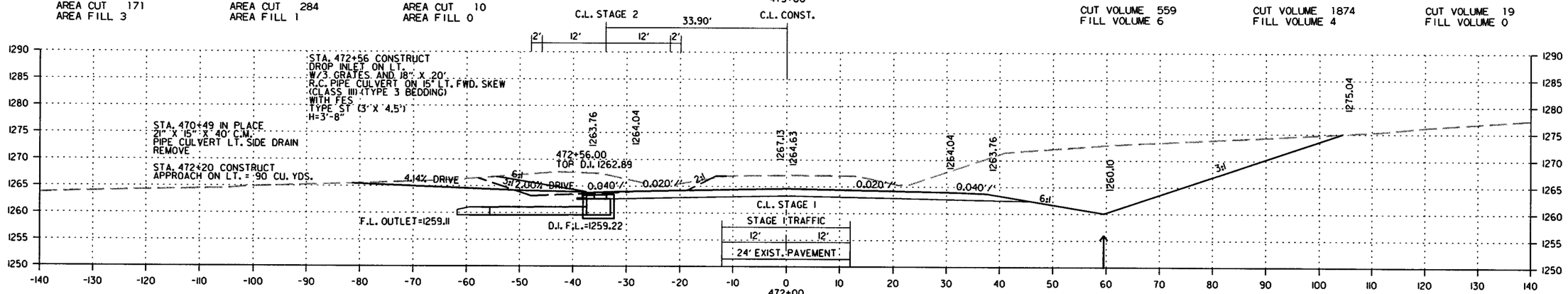
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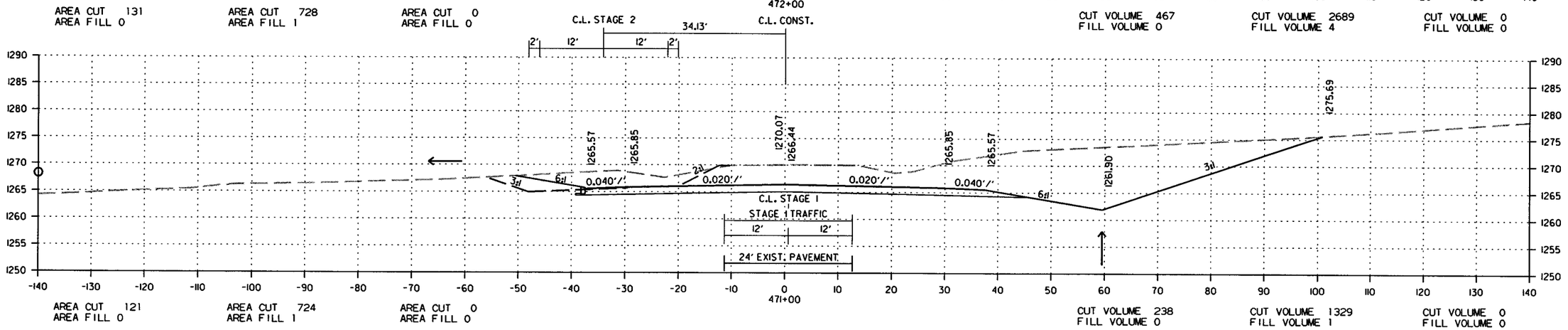
R090230.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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(2) CROSS SECTIONS







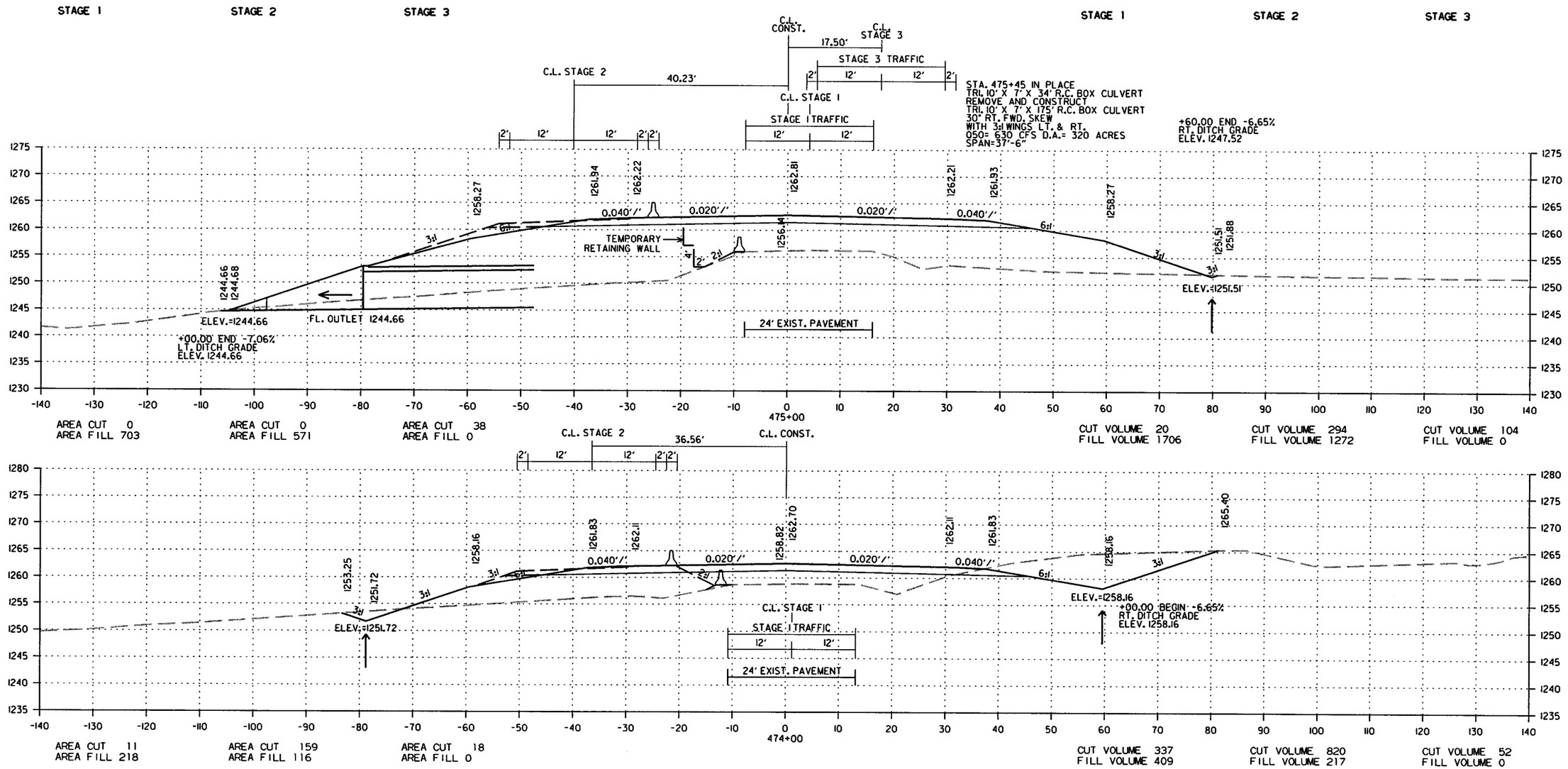
CROSS SECTION STA.471+00 TO STA. 473+00

2/4/2016

R090230.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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(2) CROSS SECTIONS



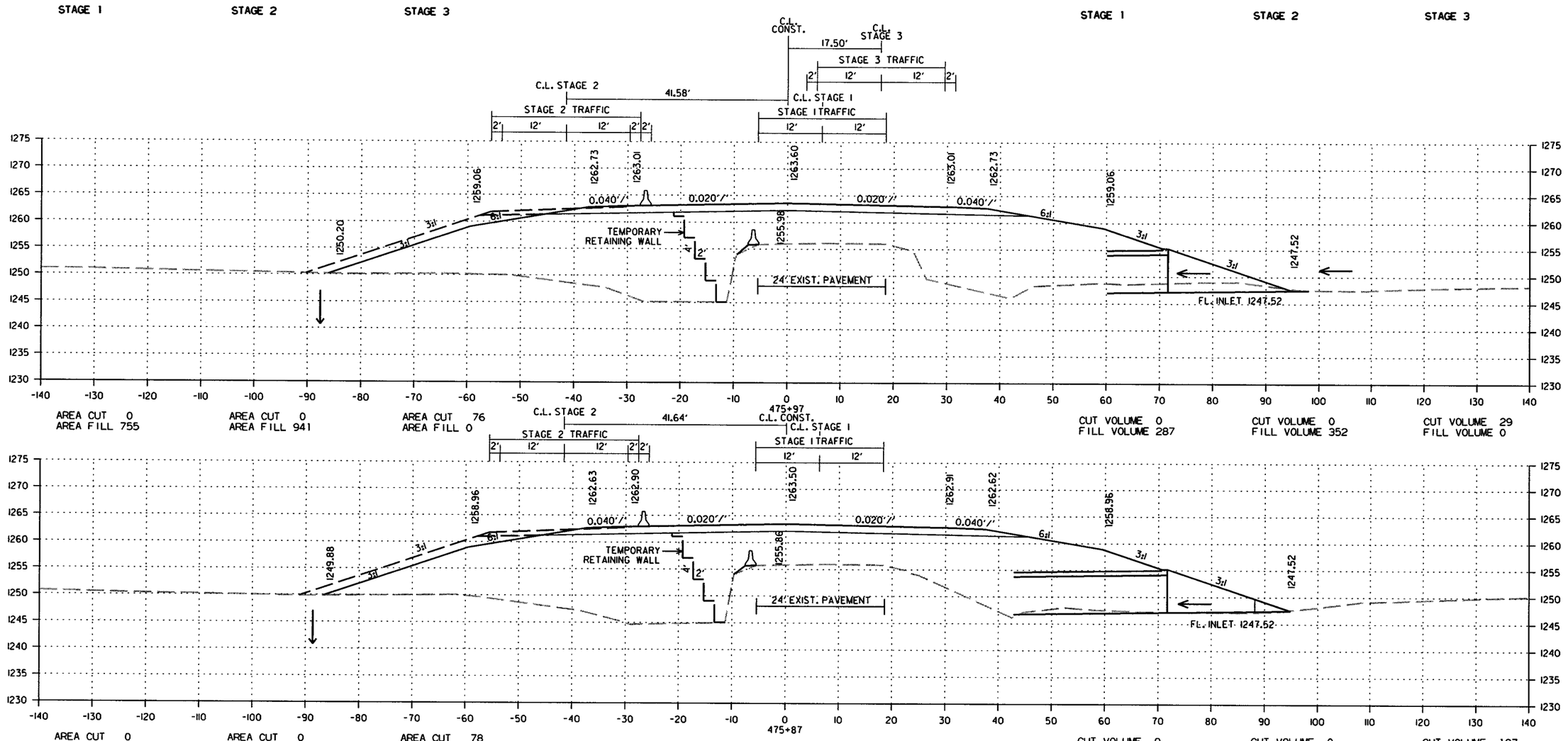
CROSS SECTION STA.474+00 TO STA. 475+00

2/4/2016

R090230.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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(2) CROSS SECTIONS



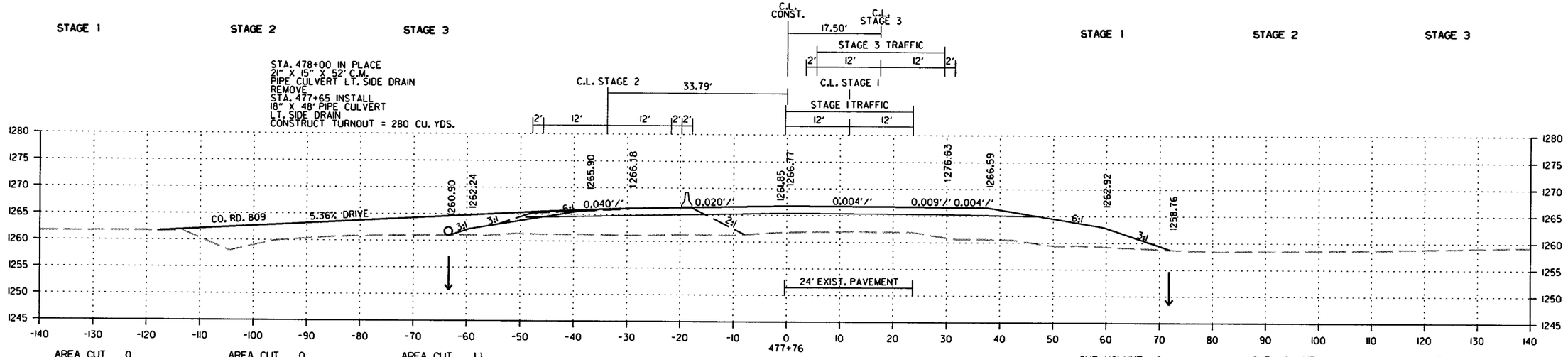
CROSS SECTION STA.475+88 TO STA. 475+97

2/4/2016

R090230.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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(2) CROSS SECTIONS



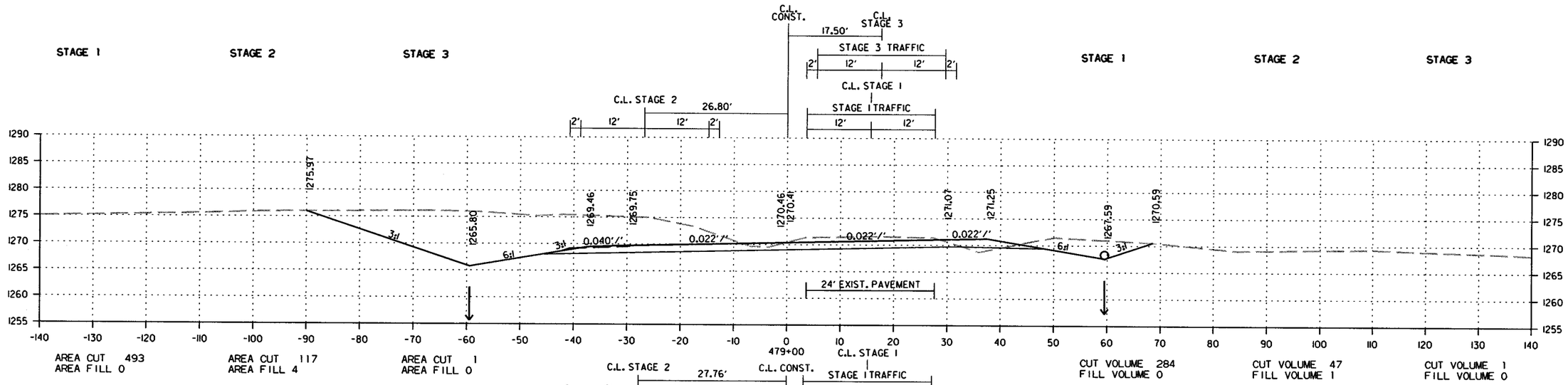
CROSS SECTION STA.476+00 TO STA. 477+76

2/4/2016

R090230.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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(2) CROSS SECTIONS



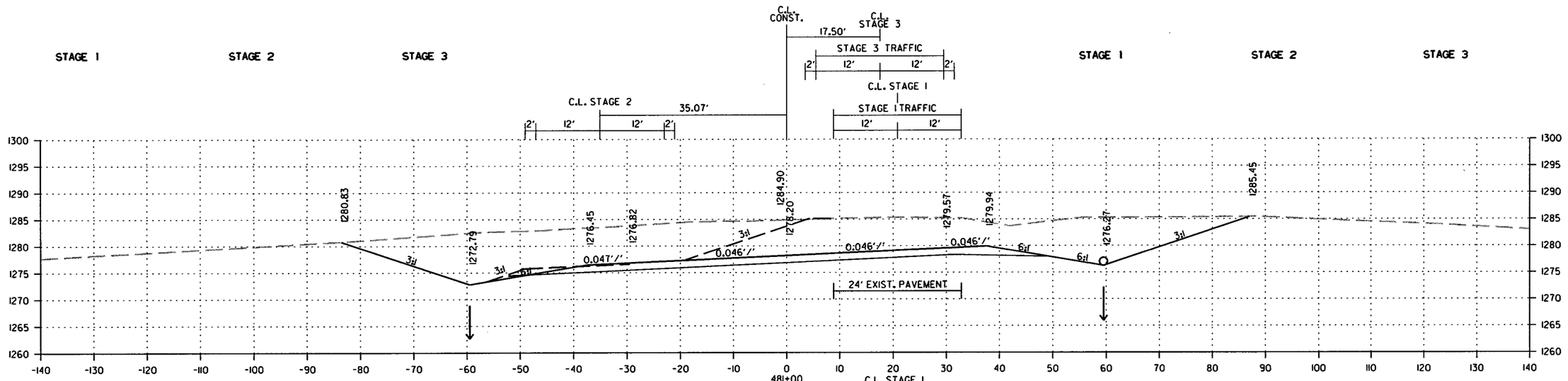
CROSS SECTION STA.478+00 TO STA. 479+00

2/4/2016

R090230.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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(2) CROSS SECTIONS



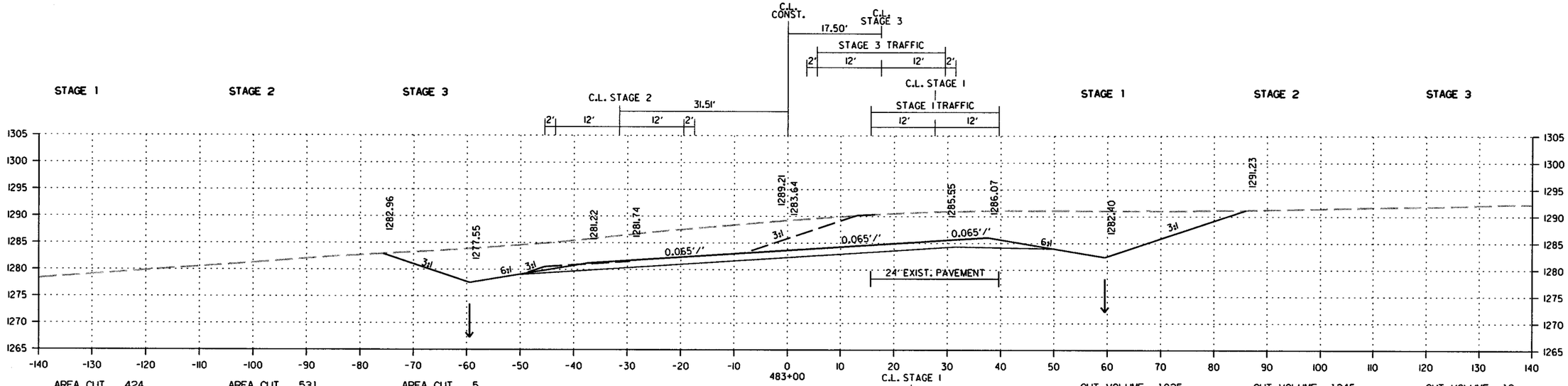
CROSS SECTION STA.480+00 TO STA. 481+00

2/4/2016

R090230.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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(2) CROSS SECTIONS



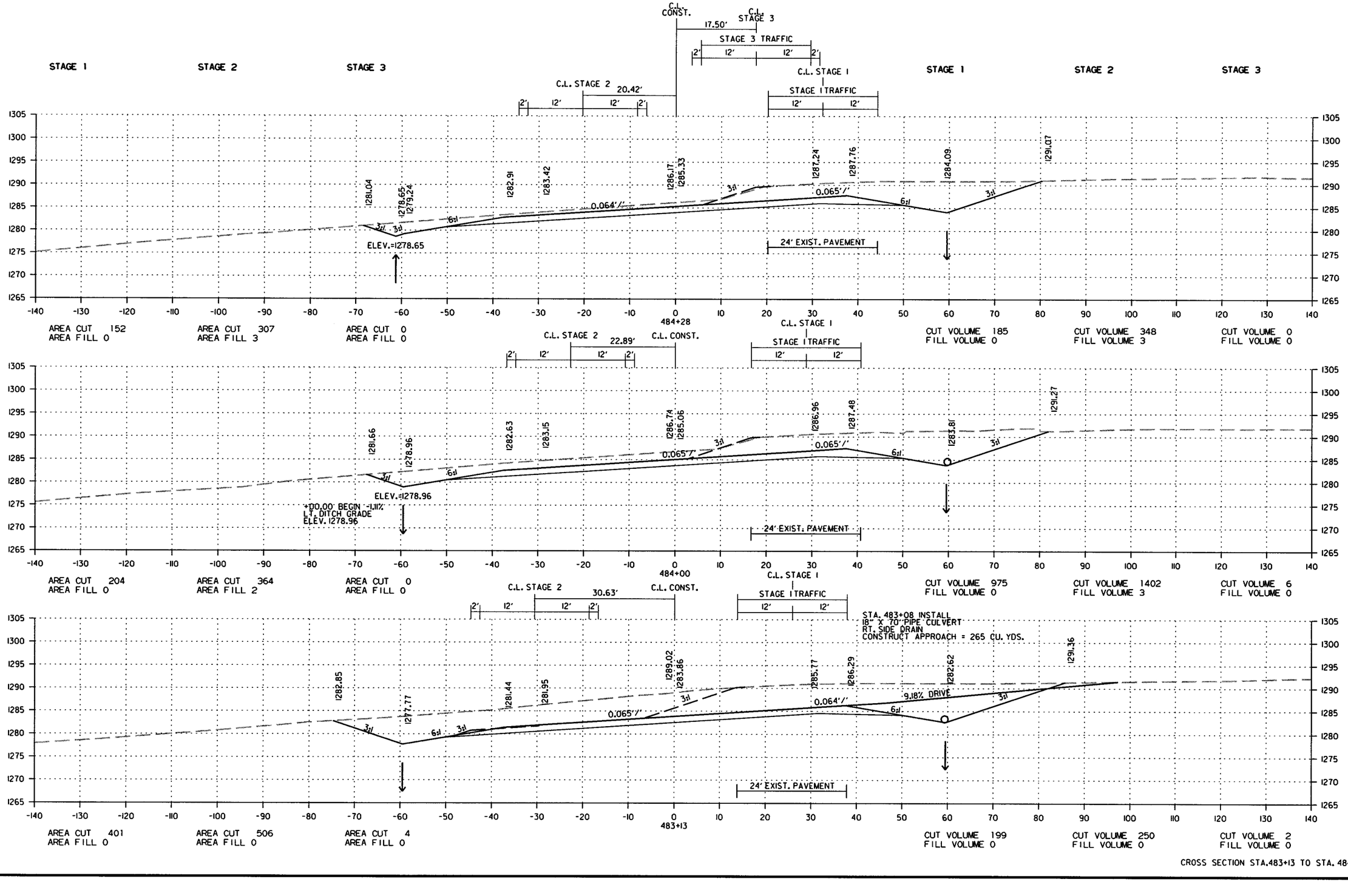
CROSS SECTION STA.482+00 TO STA. 483+00

2/4/2016

R090230.DGN

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.		090230	237	282

(2) CROSS SECTIONS



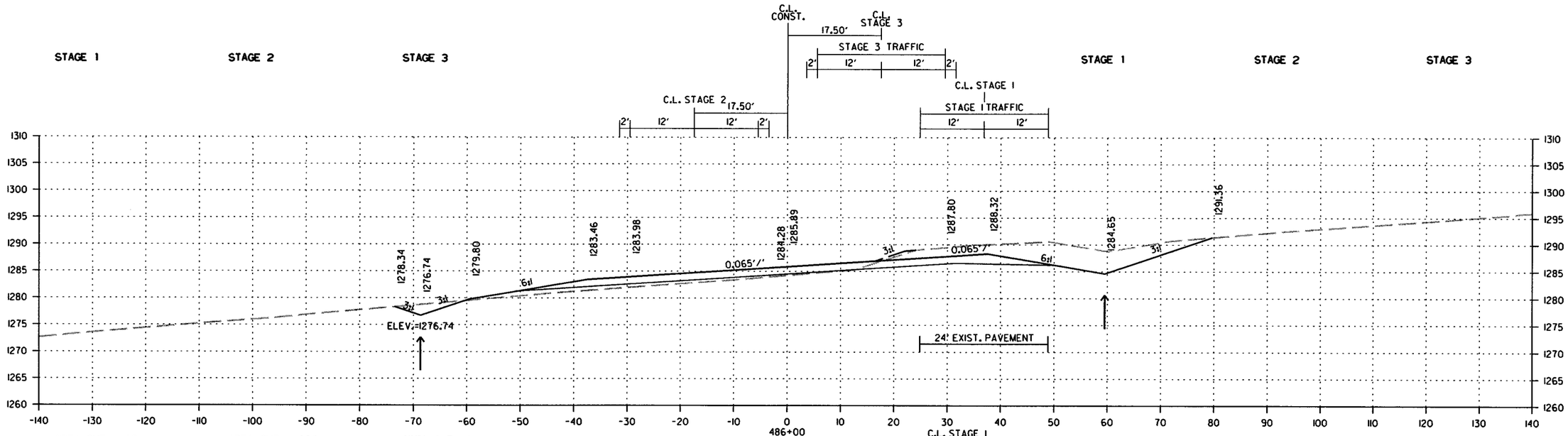
CROSS SECTION STA.483+13 TO STA. 484+28

2/4/2016

R090230.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.		090230	238	282

(2) CROSS SECTIONS



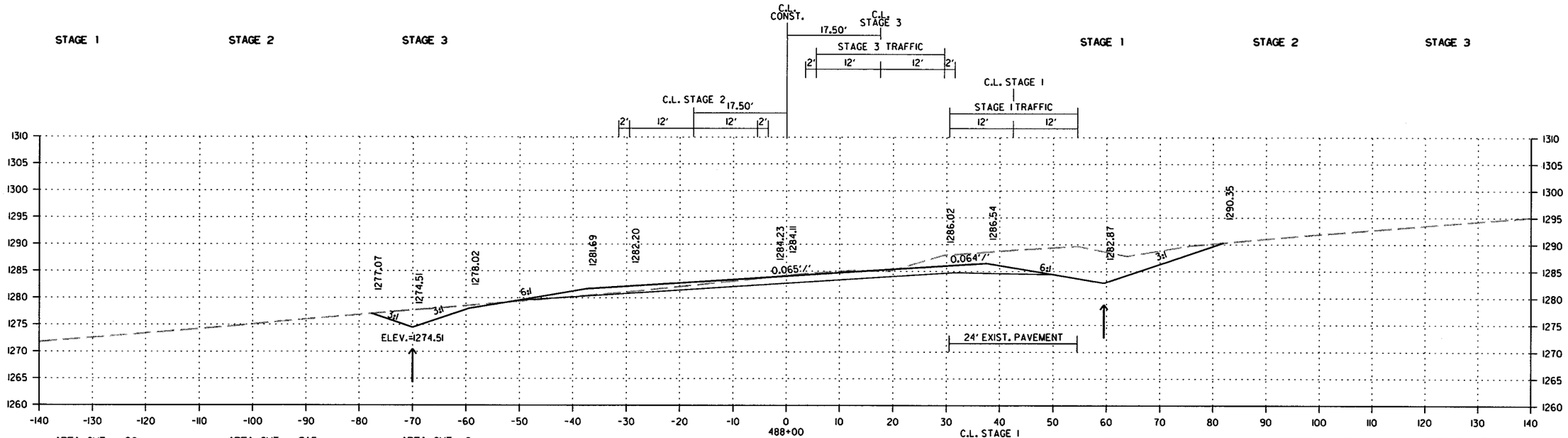
CROSS SECTION STA.485+00 TO STA. 486+00

2/4/2016

R090230.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.		090230	239	282

(2) CROSS SECTIONS



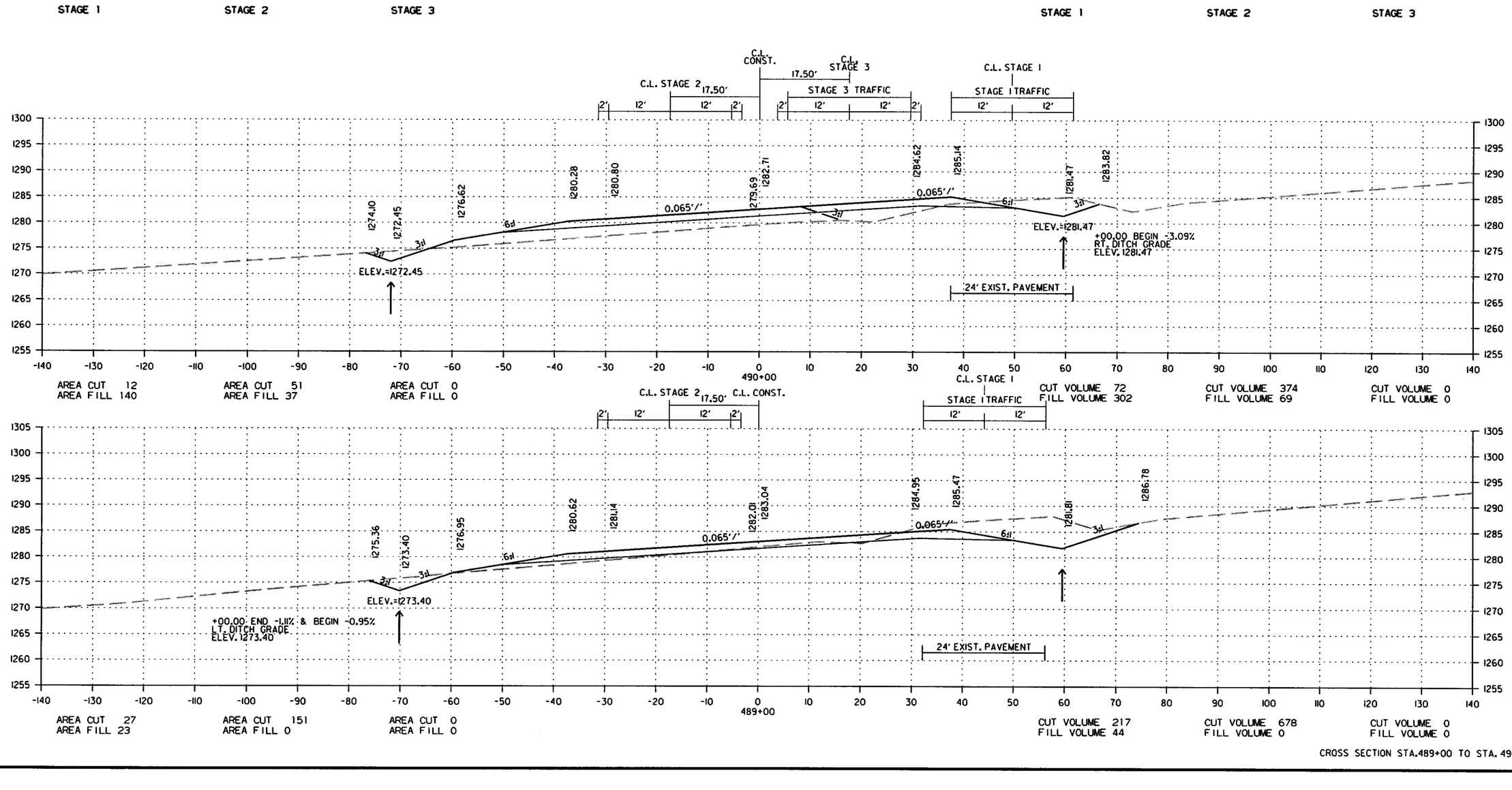
CROSS SECTION STA.487+00 TO STA. 488+00

2/4/2016

R090230.DGN

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.		090230	240	282

(2) CROSS SECTIONS



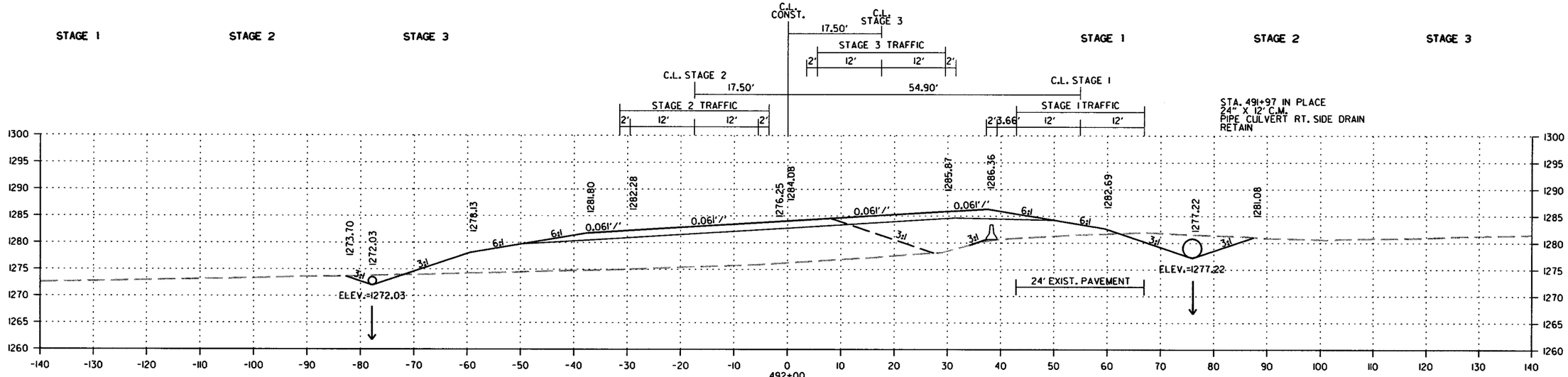
CROSS SECTION STA.489+00 TO STA. 490+00

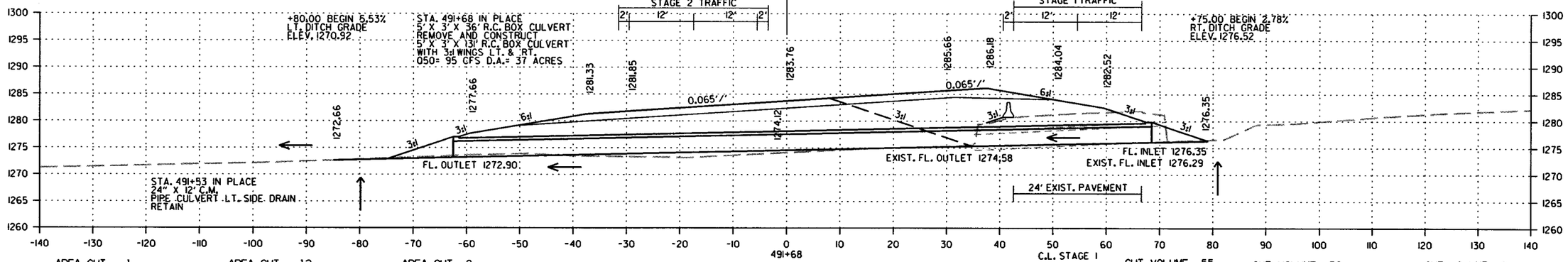
2/4/2016

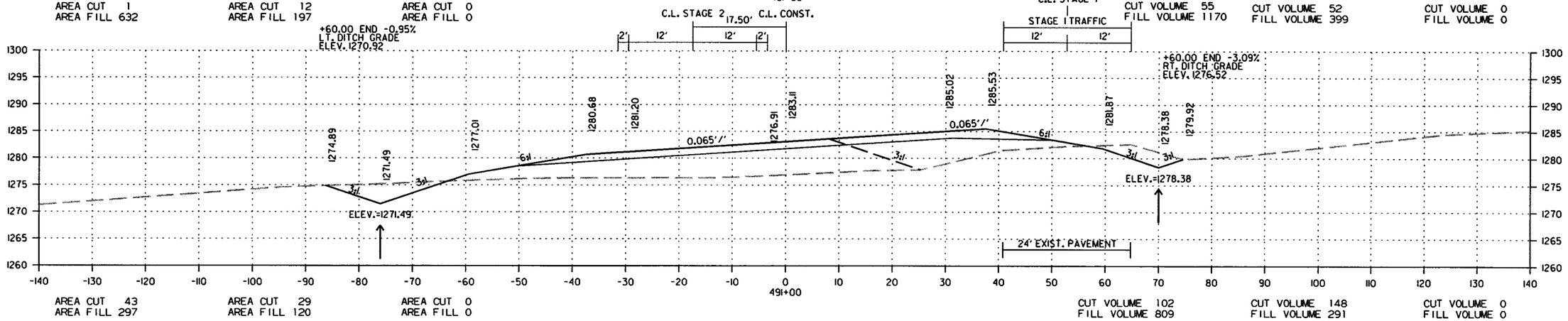
R090230.DGN

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.		090230	241	282

(2) CROSS SECTIONS







CROSS SECTION STA.491+00 TO STA. 492+00

2/4/2016

R090230.DGN

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.		090230	242	282

(2) CROSS SECTIONS

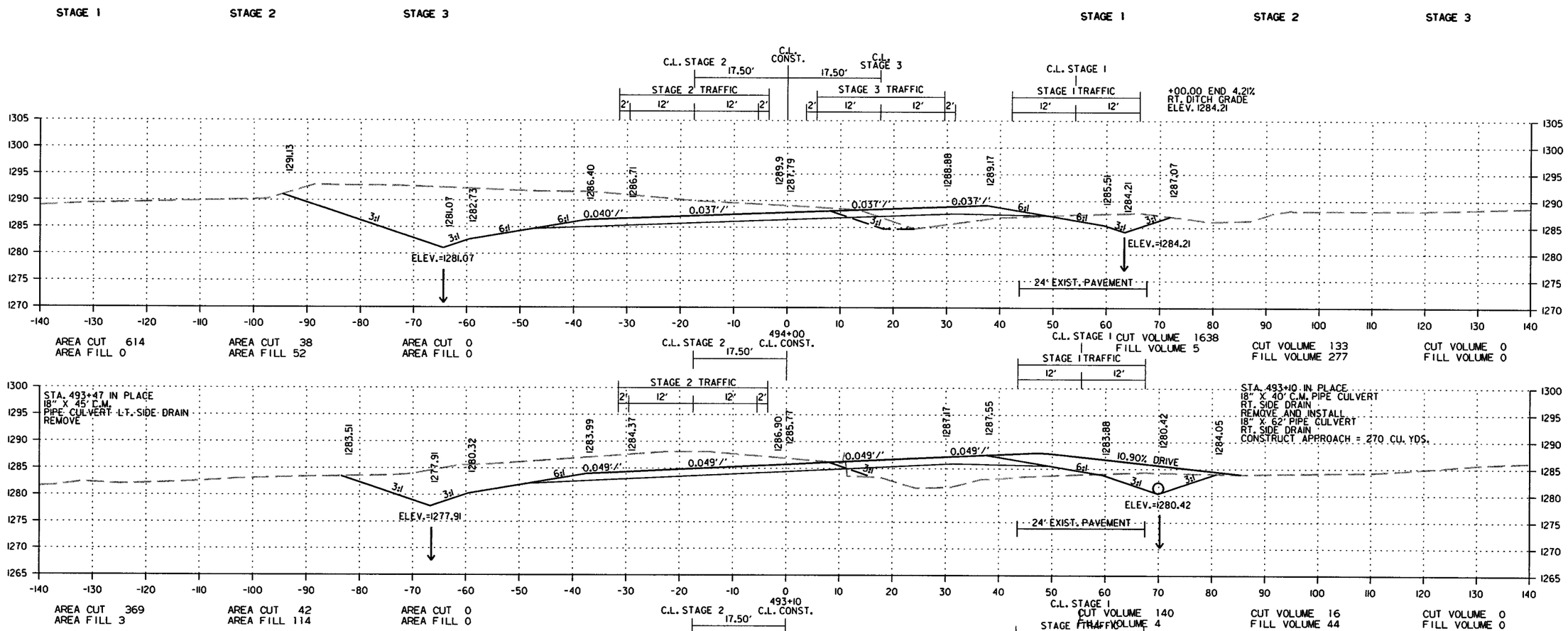
CROSS SECTION STA.492+13 TO STA. 492+49

2/4/2016

R090230.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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(2) CROSS SECTIONS



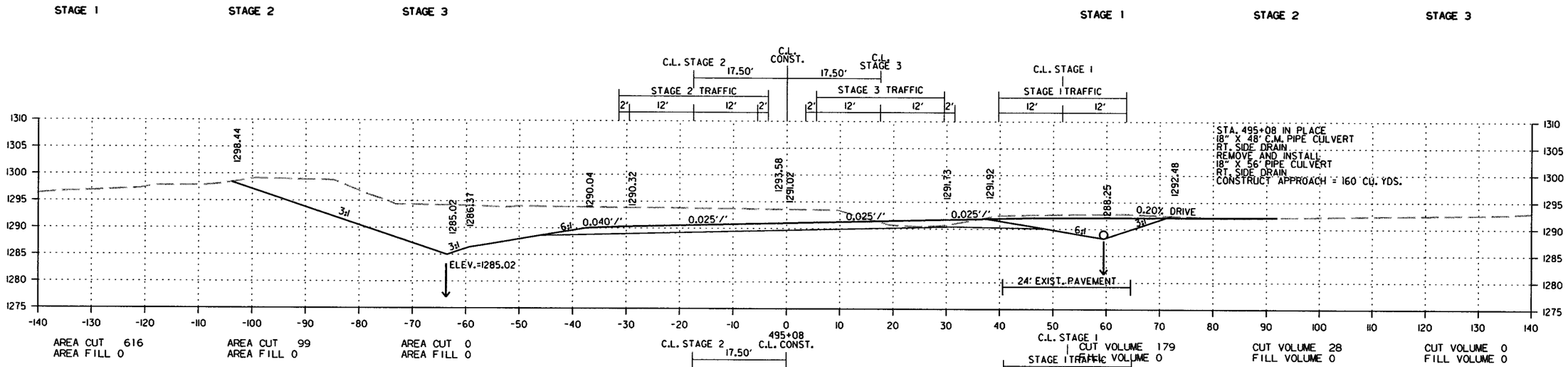
CROSS SECTION STA.493+00 TO STA. 494+00

2/4/2016

R090230.DGN

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.		090230	244	282

(2) CROSS SECTIONS



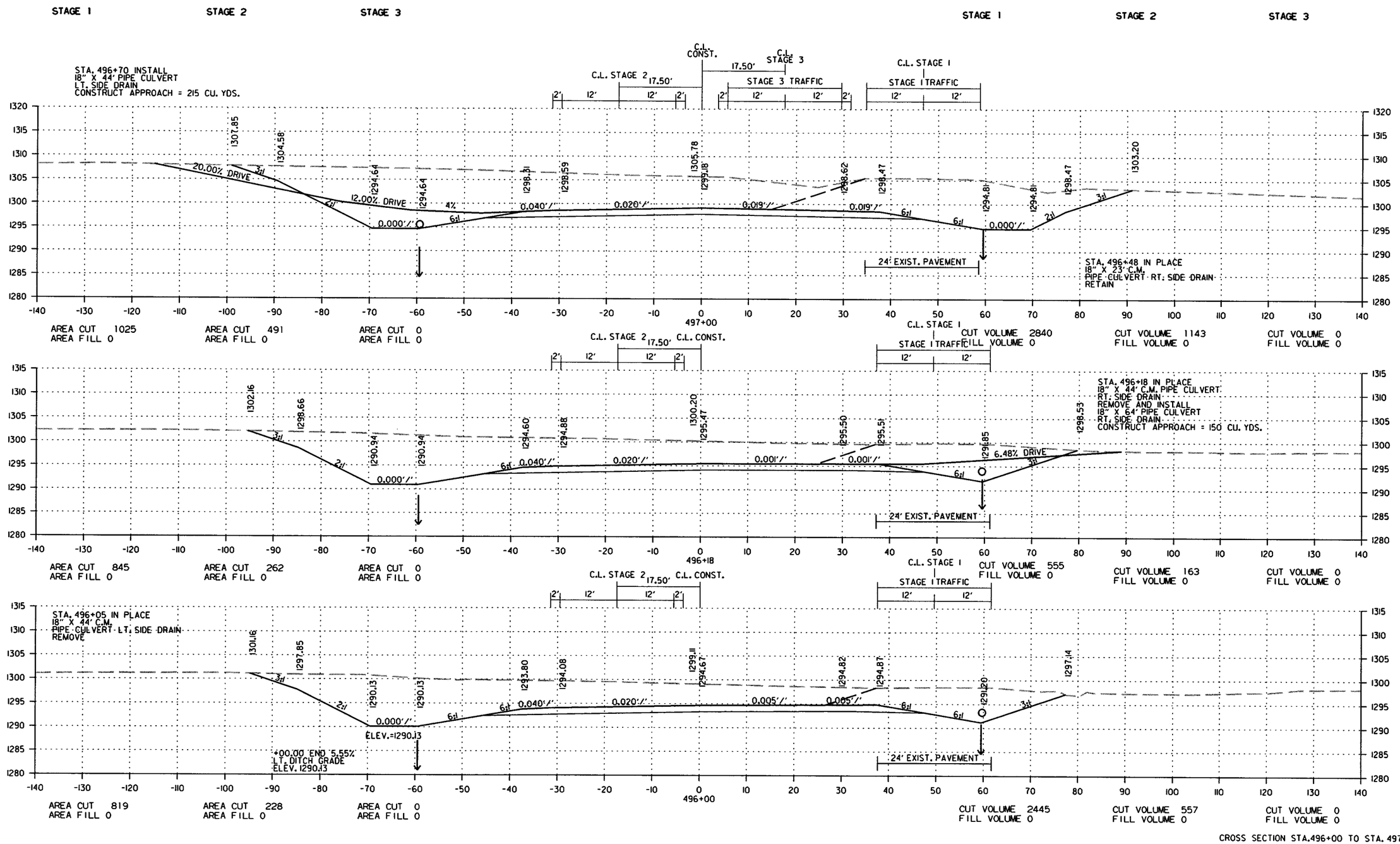
CROSS SECTION STA.494+38 TO STA. 495+08

2/4/2016

R090230.DGN

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.		090230	245	282

(2) CROSS SECTIONS



CROSS SECTION STA.496+00 TO STA. 497+00

2/4/2016

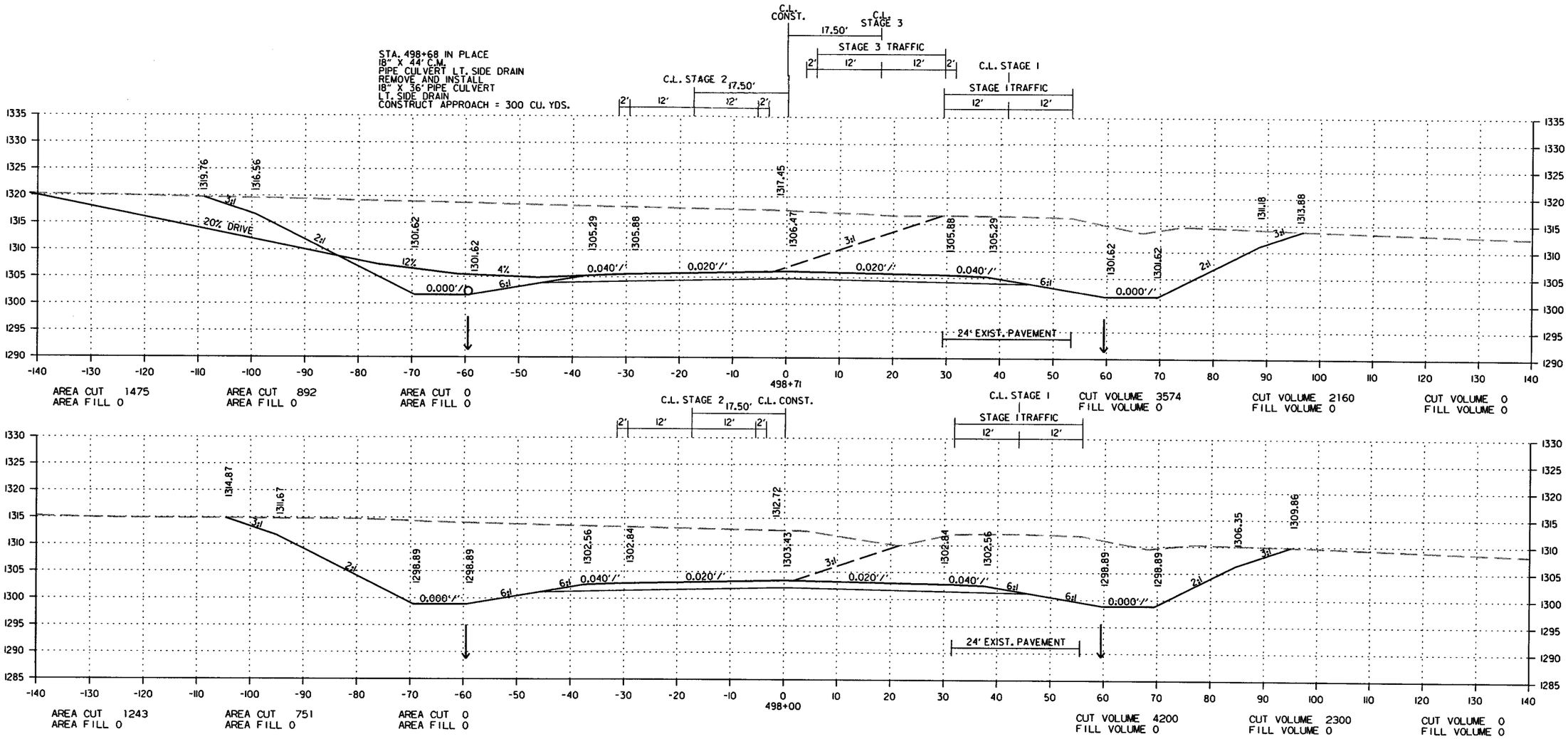
R090230.DGN

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.		090230	246	282

(2) CROSS SECTIONS

STAGE 1 STAGE 2 STAGE 3

STA. 498+68 IN PLACE
18" X 44' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 36' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 300 CU. YDS.



CROSS SECTION STA.498+00 TO STA. 498+71

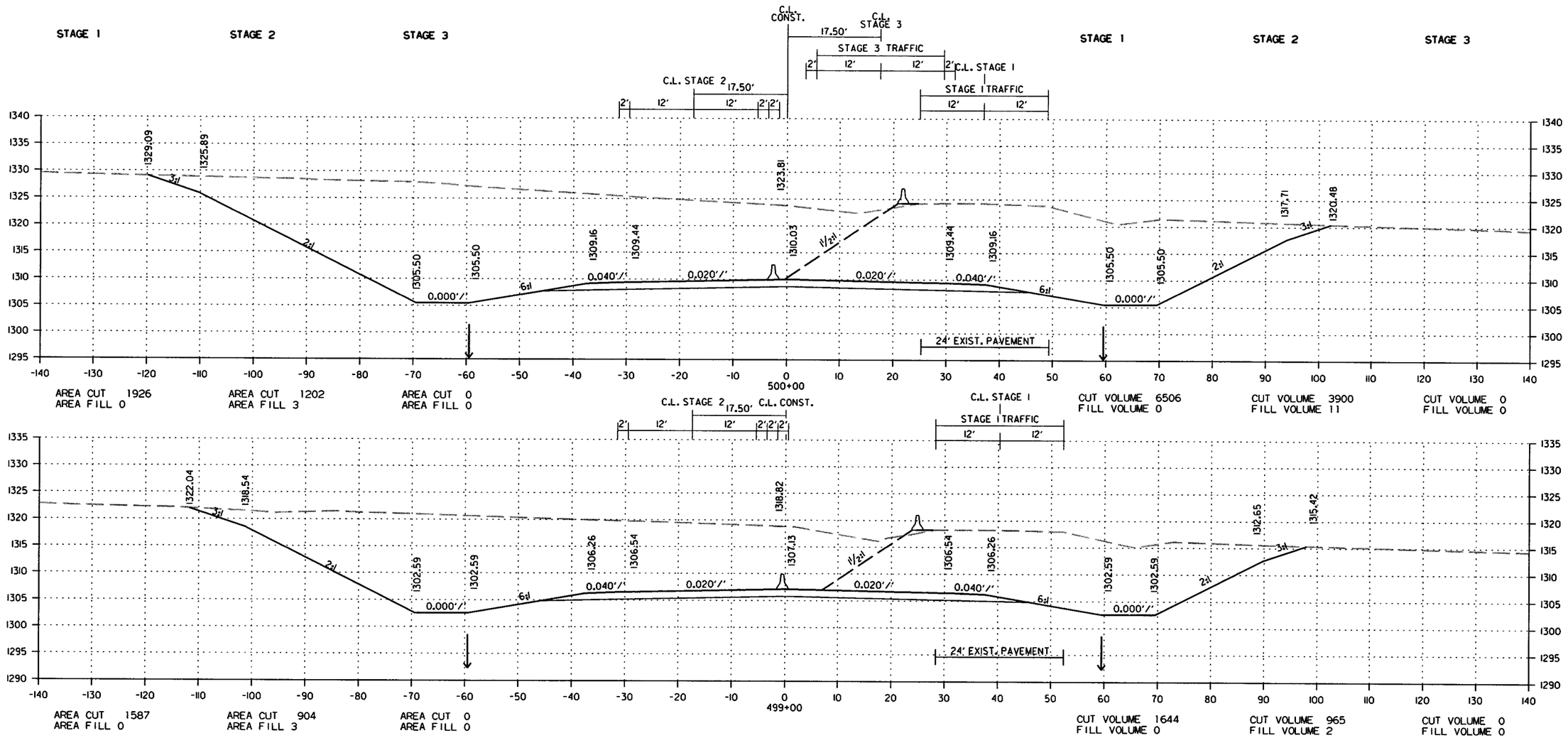
2/4/2016

R090230.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.		090230	247	282

(2) CROSS SECTIONS

1242.52



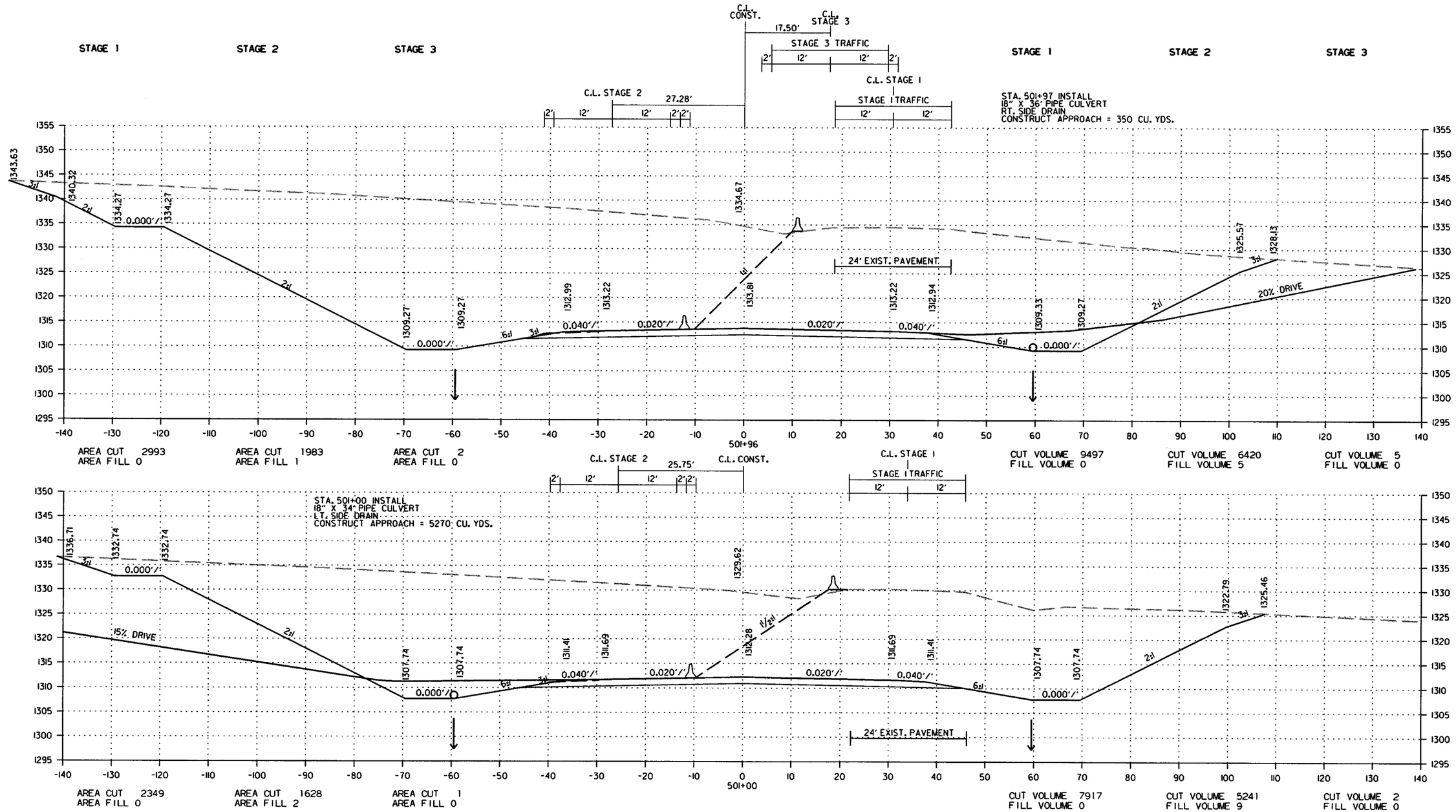
CROSS SECTION STA.499+00 TO STA. 500+00

2/4/2016

R090230.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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(2) CROSS SECTIONS



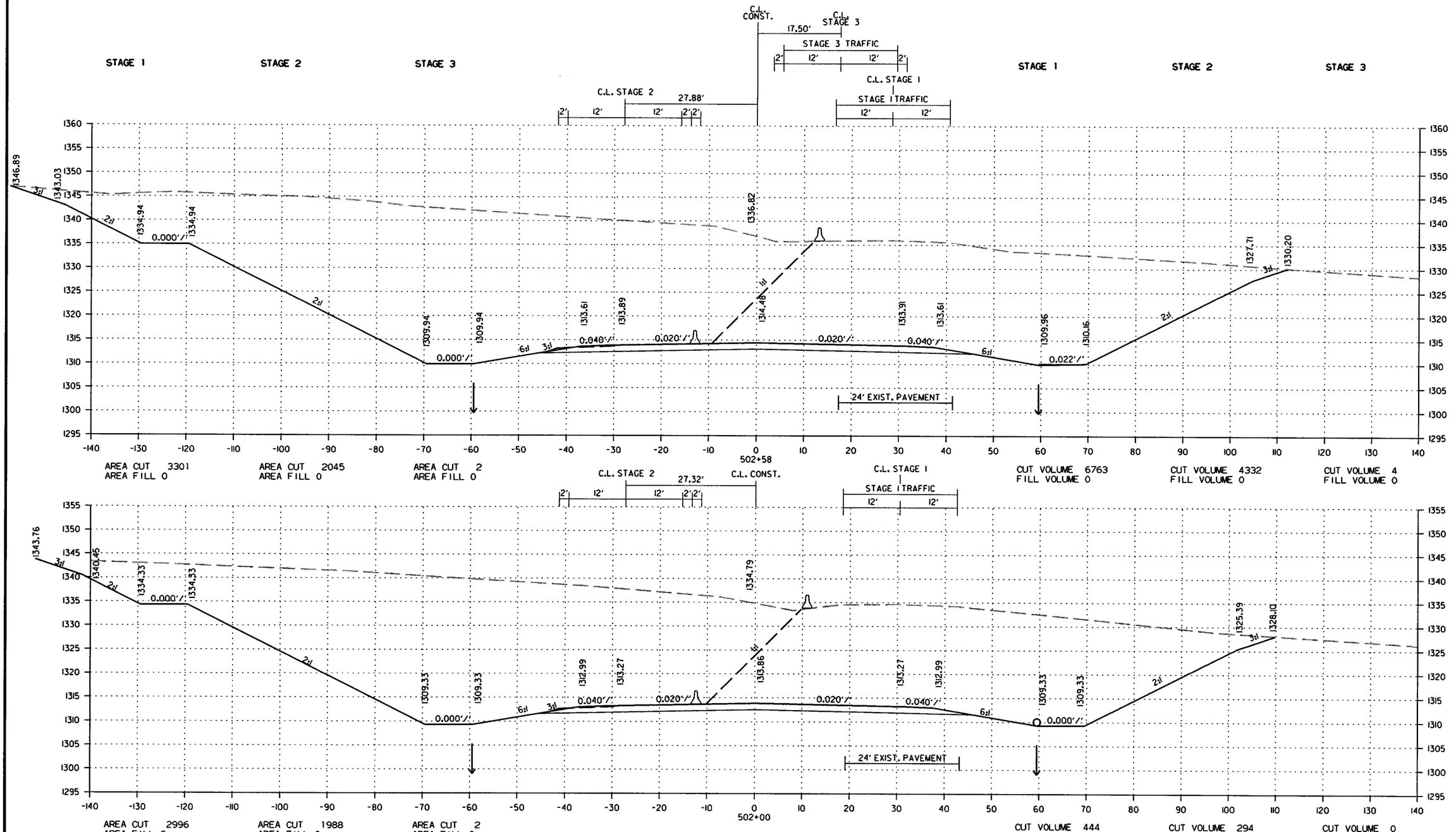
CROSS SECTION STA.501+00 TO STA. 501+96

2/4/2016

R090230.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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(2) CROSS SECTIONS



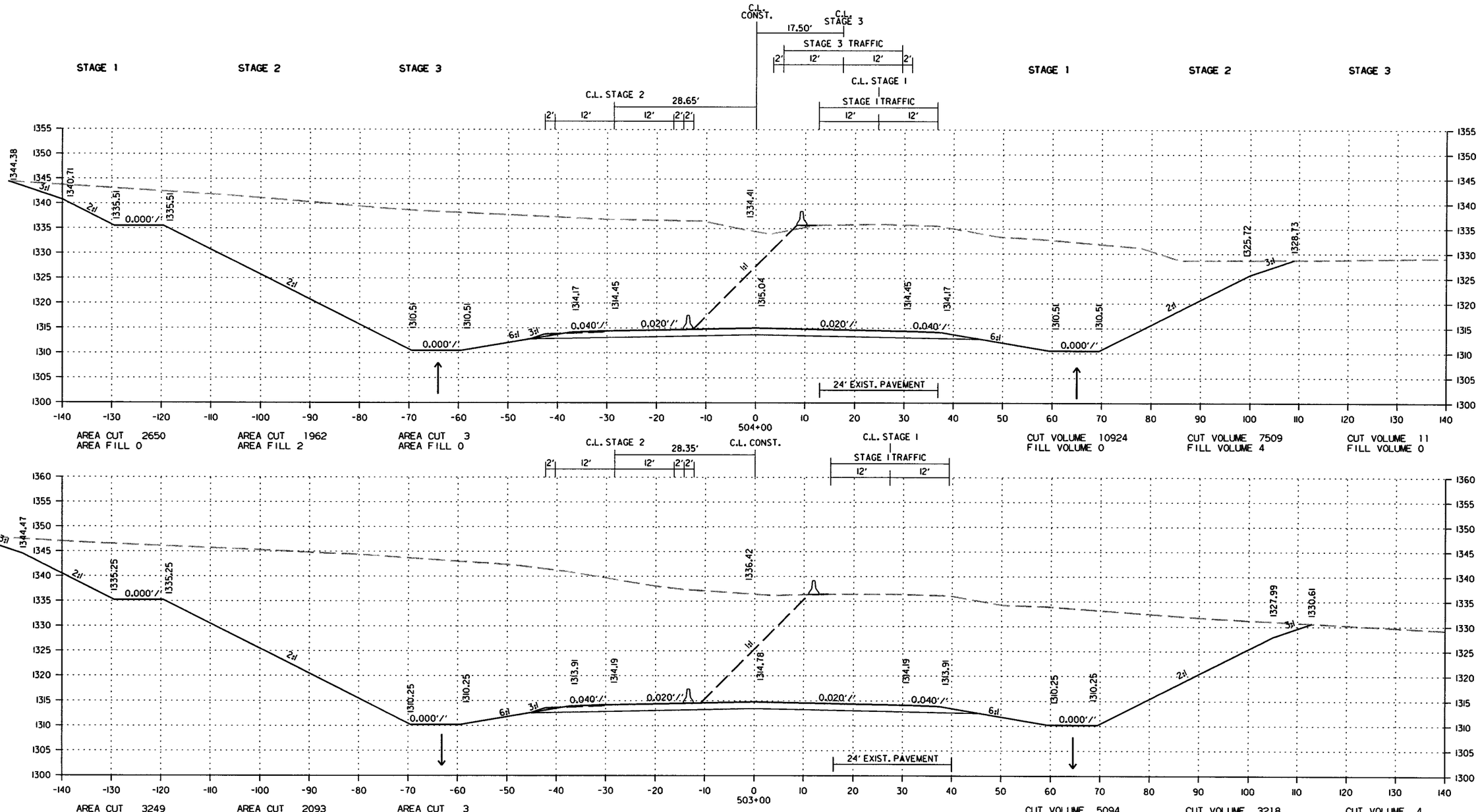
CROSS SECTION STA.502+00 TO STA. 502+58

2/4/2016

R090230.DGN

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.		090230	250	282

(2) CROSS SECTIONS



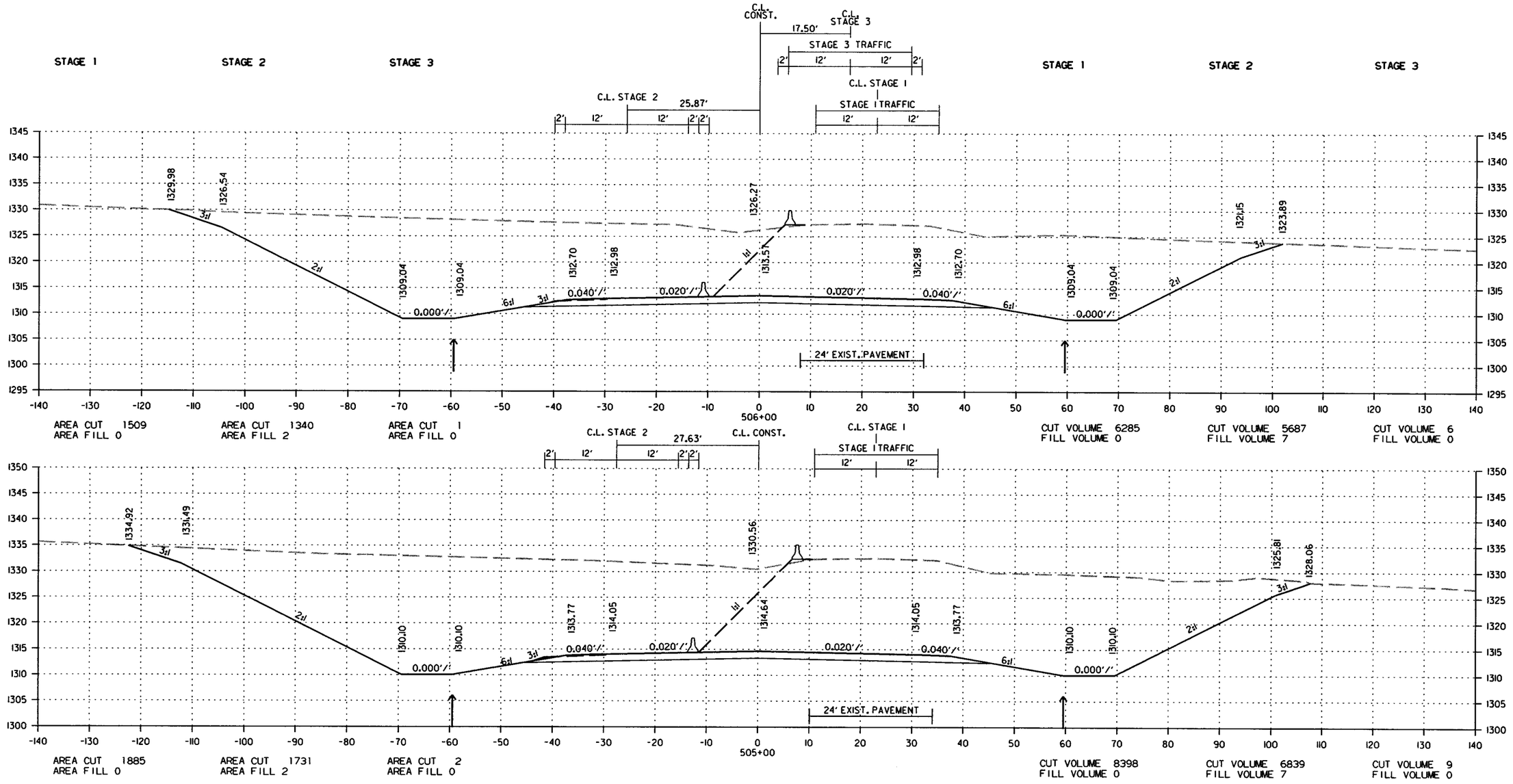
CROSS SECTION STA.503+00 TO STA. 504+00

2/4/2016

R090230.DGN

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.		090230	251	282

(2) CROSS SECTIONS



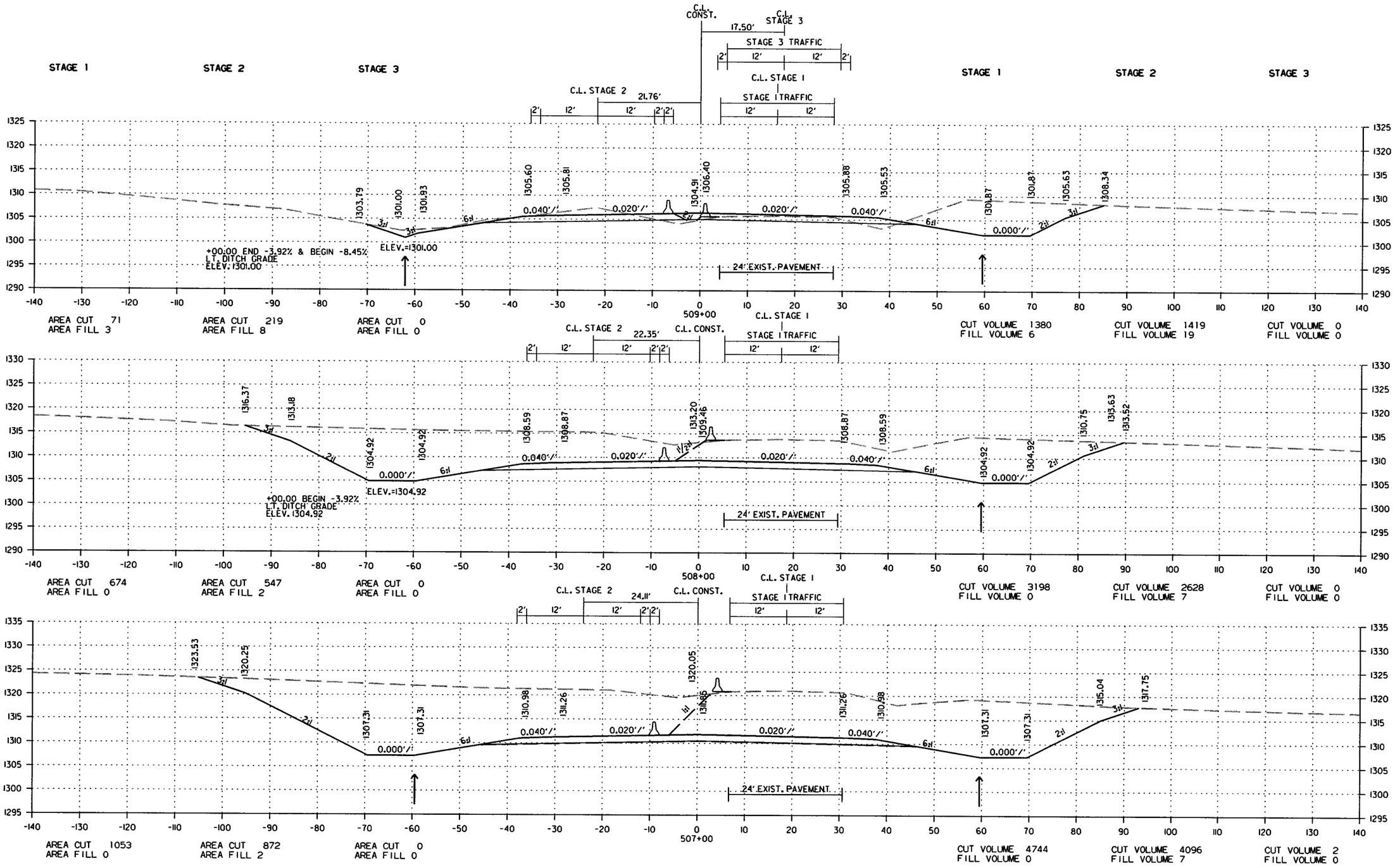
CROSS SECTION STA.505+00 TO STA.506+00

2/4/2016

R090230.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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(2) CROSS SECTIONS



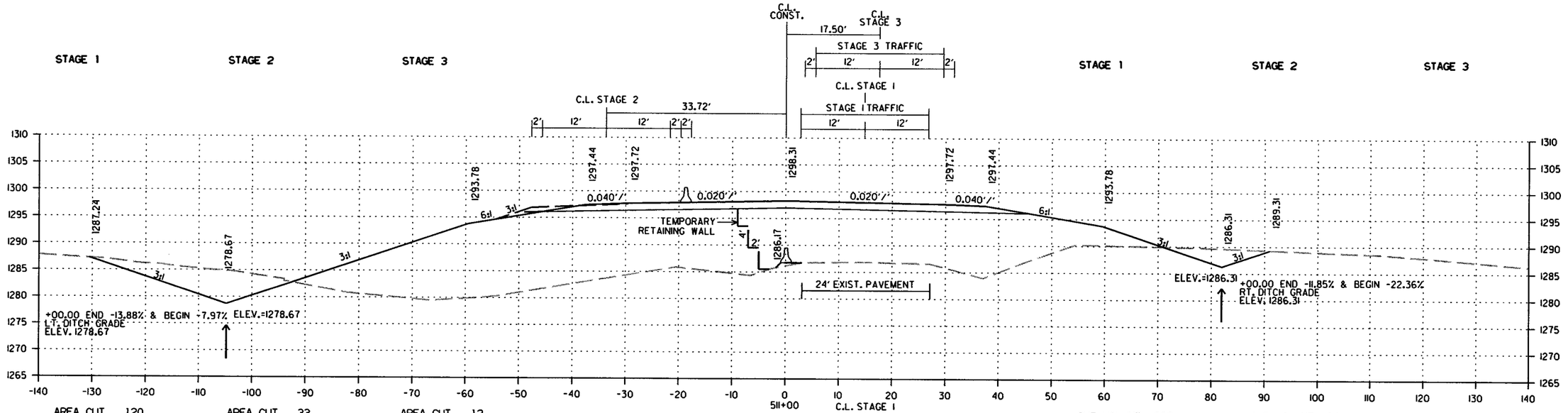
CROSS SECTION STA.507+00 TO STA. 509+00

2/4/2016

R090230.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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(2) CROSS SECTIONS



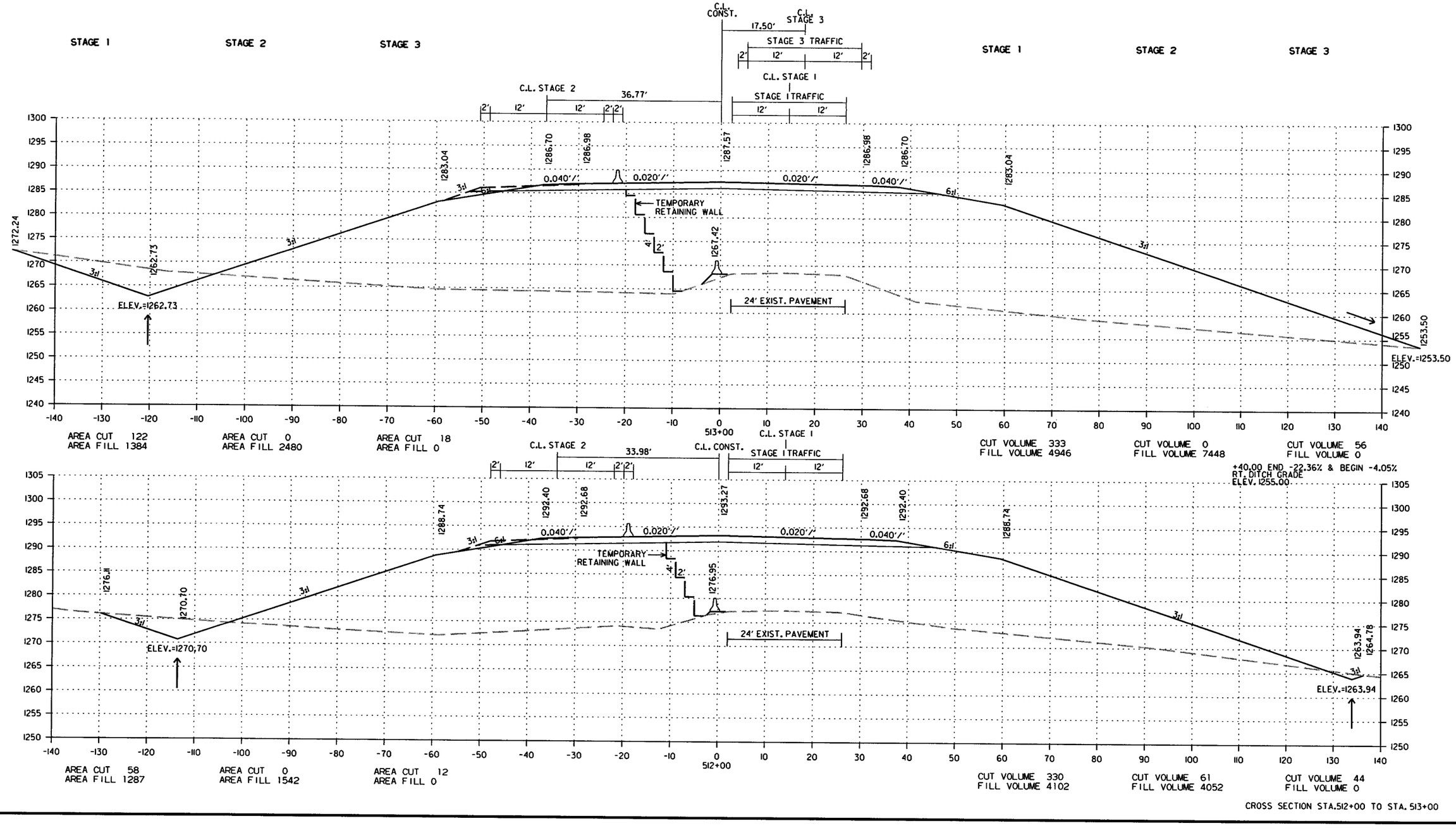
CROSS SECTION STA.510+00 TO STA. 511+00

2/4/2016

R090230.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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(2) CROSS SECTIONS



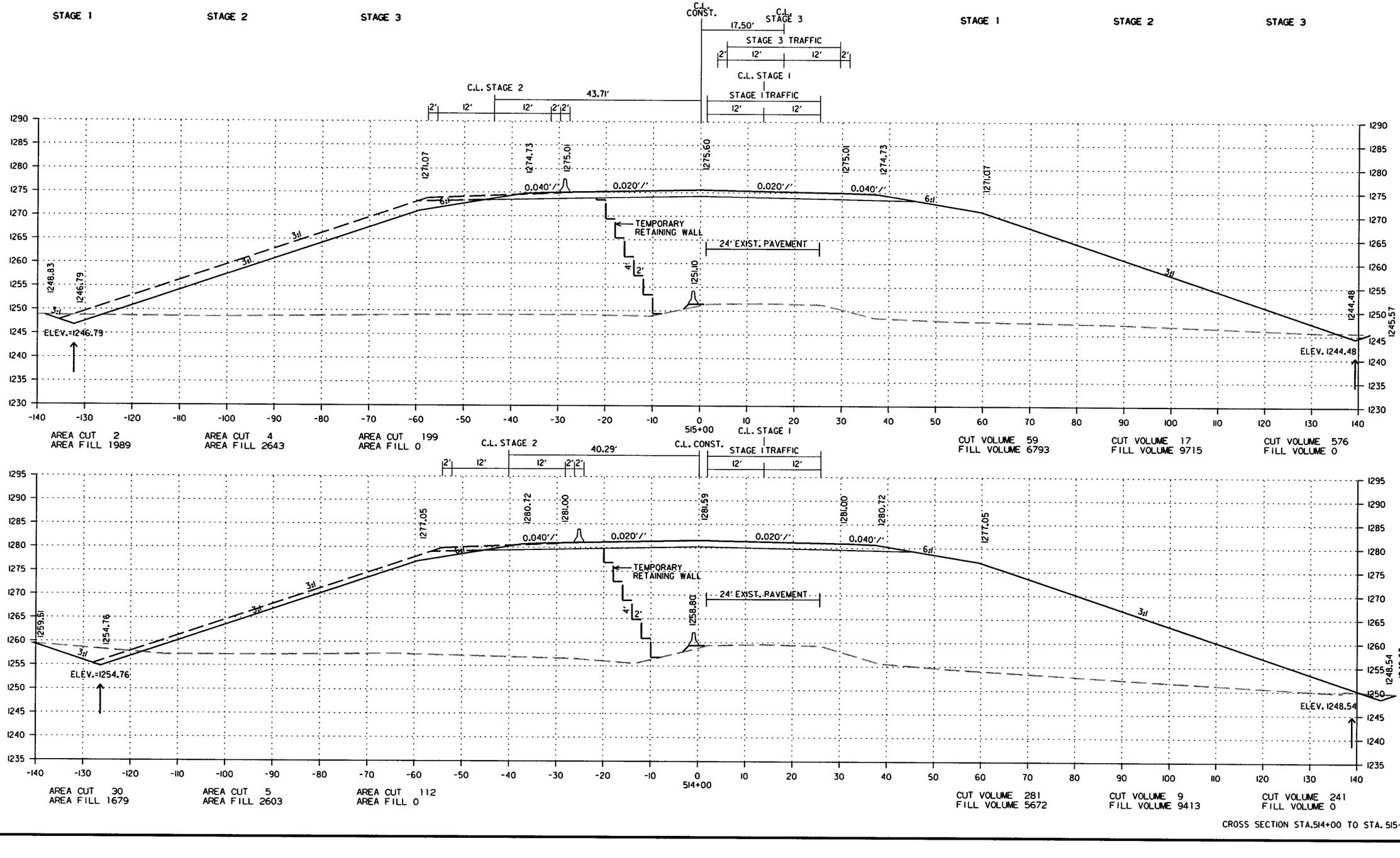
CROSS SECTION STA.512+00 TO STA. 513+00

2/4/2016

R090230.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.		090230	255	282

(2) CROSS SECTIONS



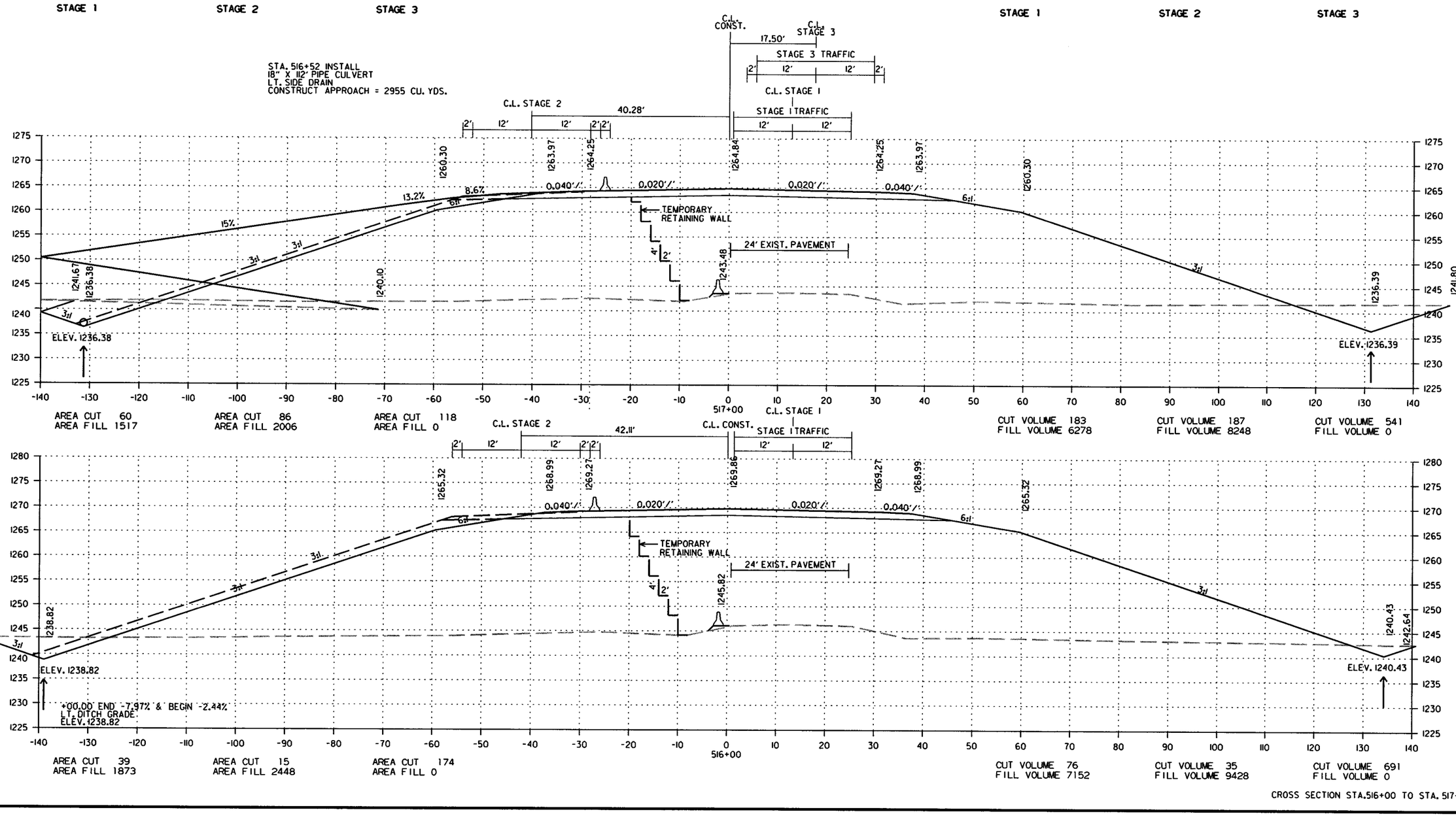
CROSS SECTION STA.514+00 TO STA. 515+00

2/4/2016

R090230.DGN

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.		090230	256	282

(2) CROSS SECTIONS



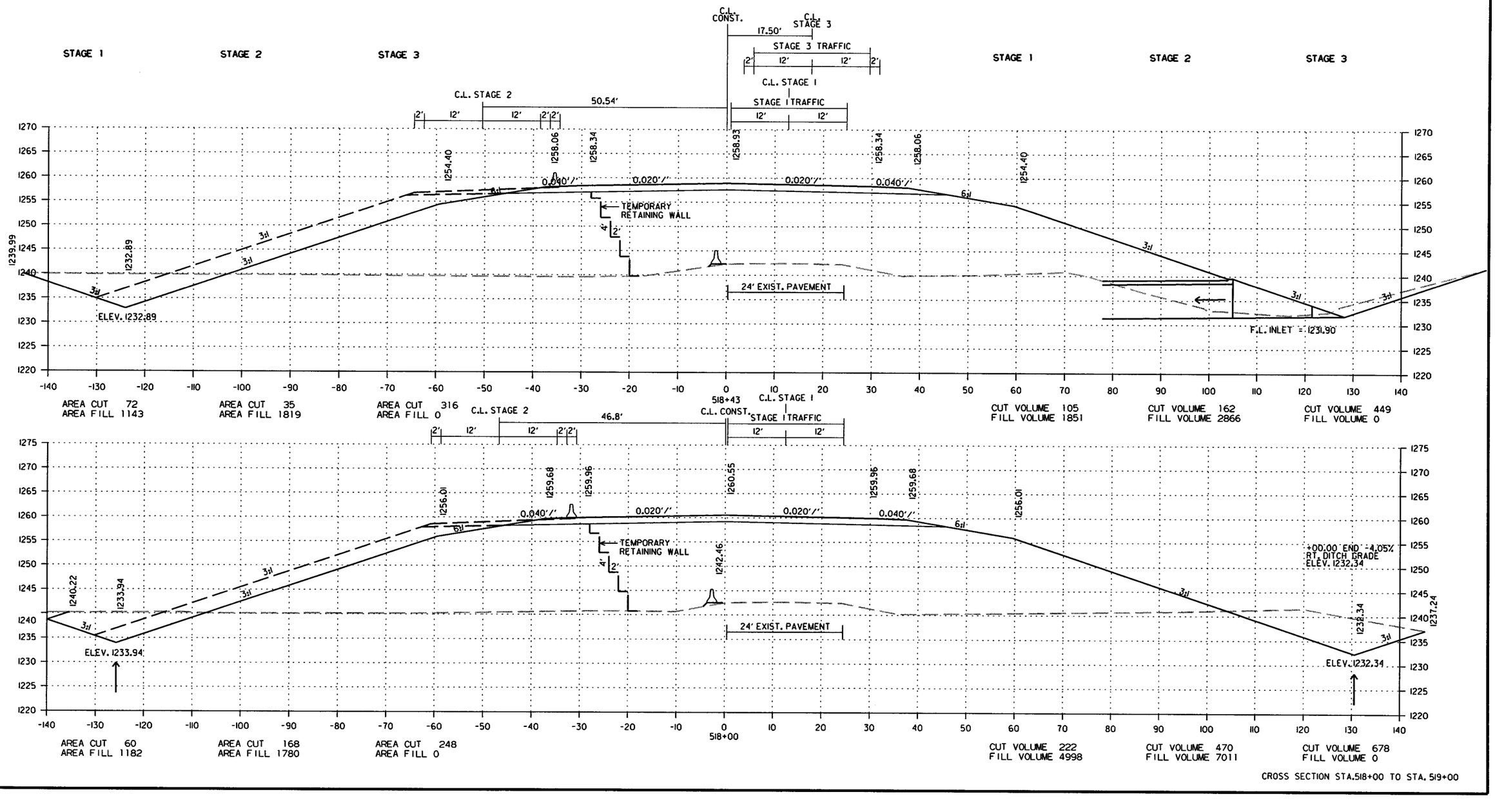
CROSS SECTION STA.516+00 TO STA. 517+00

2/4/2016

R090230.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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(2) CROSS SECTIONS



CROSS SECTION STA.518+00 TO STA. 519+00

2/4/2016

R090230.DGN

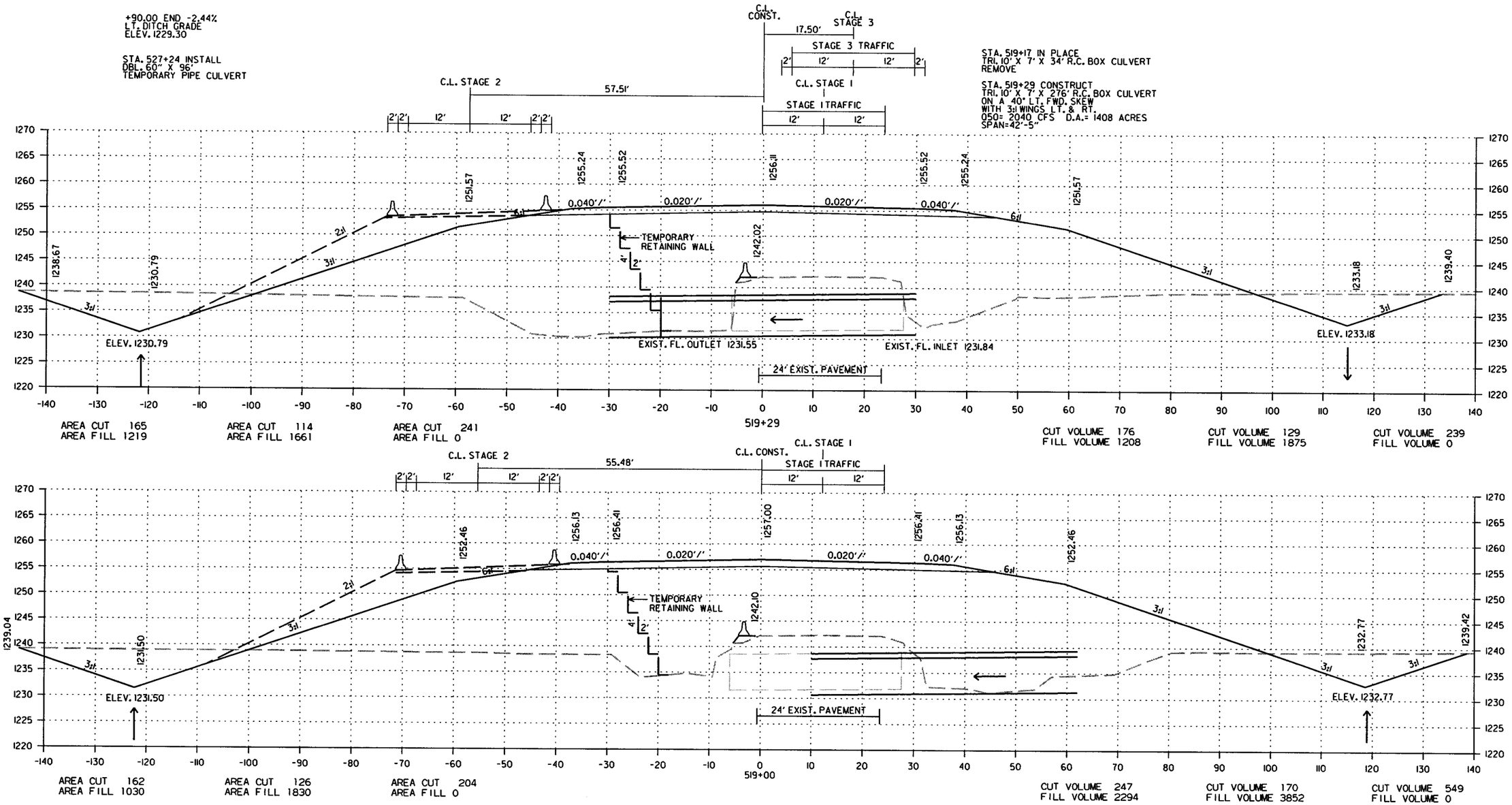
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				6	ARK.			
				JOB NO.		090230	258	282

(2) CROSS SECTIONS

STAGE 1 STAGE 2 STAGE 3

+90.00 END -2.44%
LT. DITCH GRADE
ELEV. 1229.30

STA. 527+24 INSTALL
DBL. 60" X 96'
TEMPORARY PIPE CULVERT



STAGE 1 STAGE 2 STAGE 3

STA. 519+17 IN PLACE
TRI. 10' X 7' X 34' R.C. BOX CULVERT
REMOVE

STA. 519+29 CONSTRUCT
TRI. 10' X 7' X 276' R.C. BOX CULVERT
ON A 40° LT. FWD. SKEW
WITH 3:1 WINGS LT. & RT.
Q50= 2040 CFS D.A.= 1408 ACRES
SPAN=42'-5"

+07.00 BEGIN 1.43%
RT. DITCH GRADE
ELEV. 1232.34

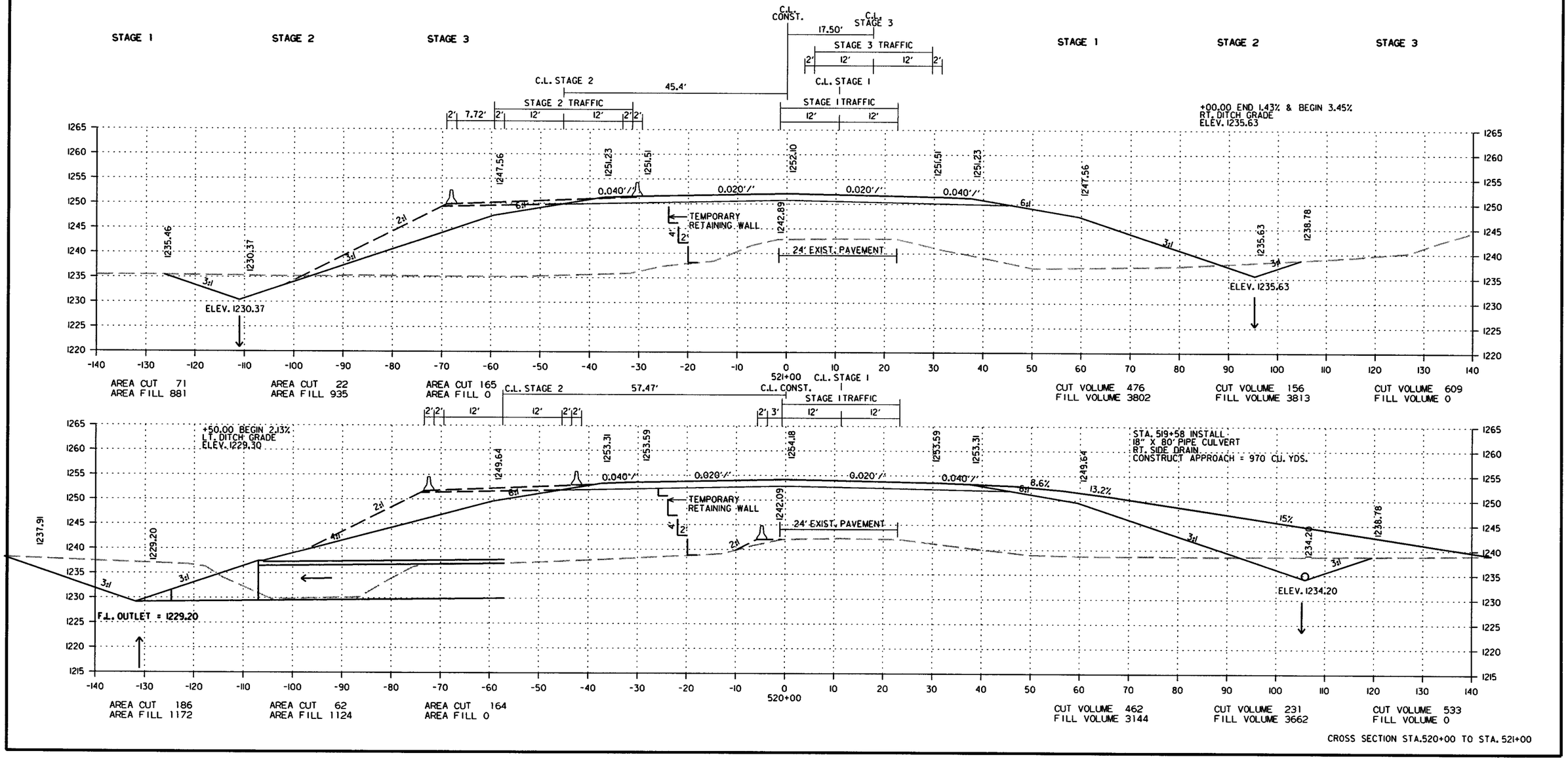
CROSS SECTION STA.519+17 TO STA. 519+82

2/4/2016

R090230.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.		090230	259	282

(2) CROSS SECTIONS



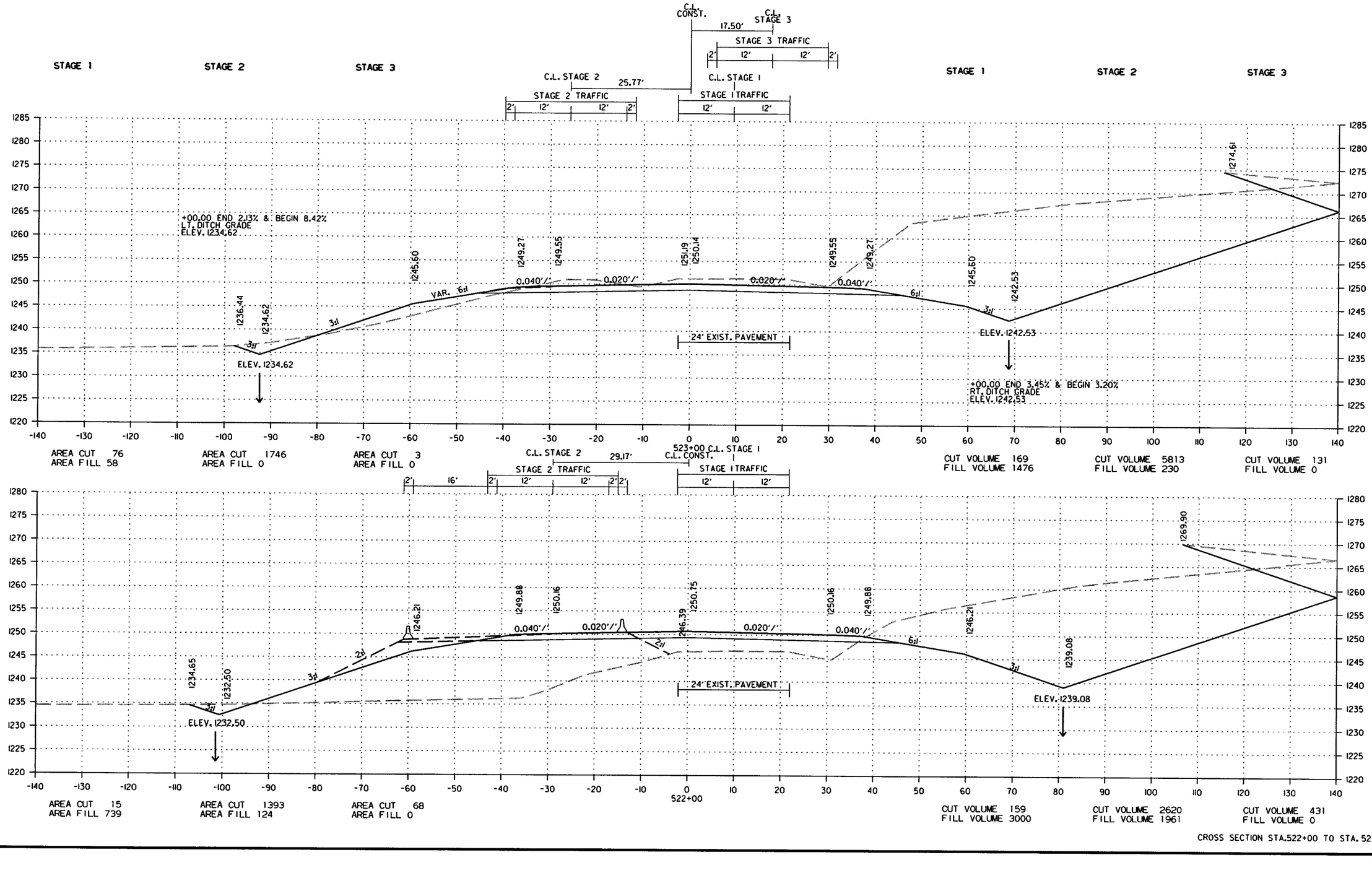
CROSS SECTION STA.520+00 TO STA. 521+00

2/4/2016

R090230.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.		090230	260	282

(2) CROSS SECTIONS



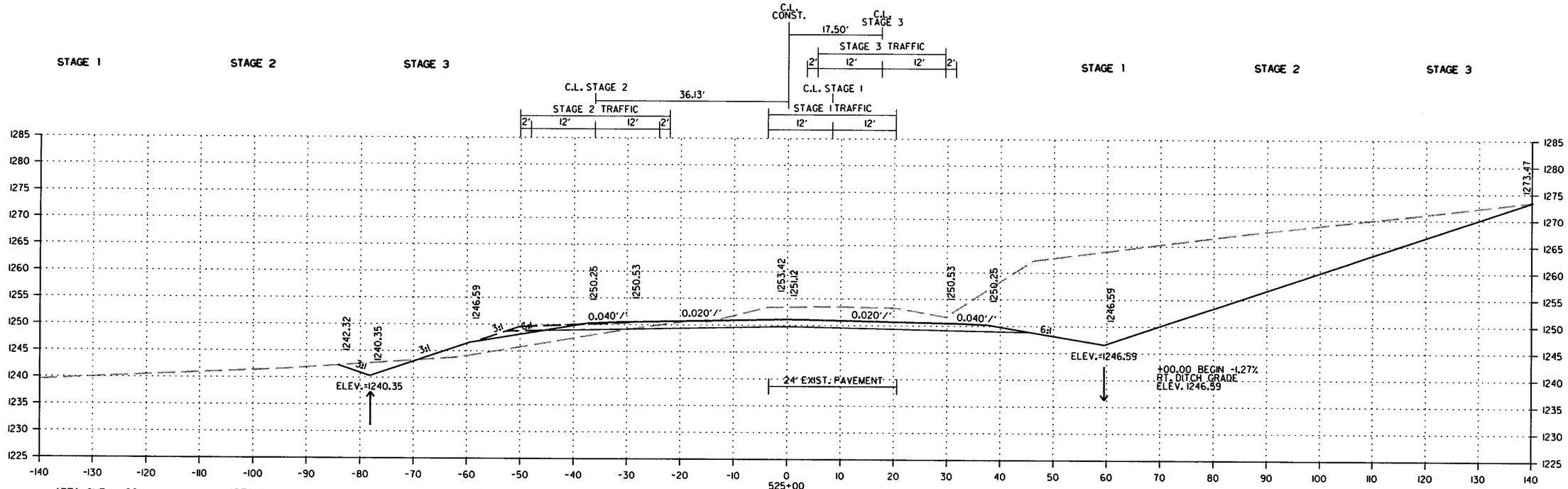
CROSS SECTION STA.522+00 TO STA. 523+00

2/4/2016

R090230.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.		090230	261	282

(2) CROSS SECTIONS



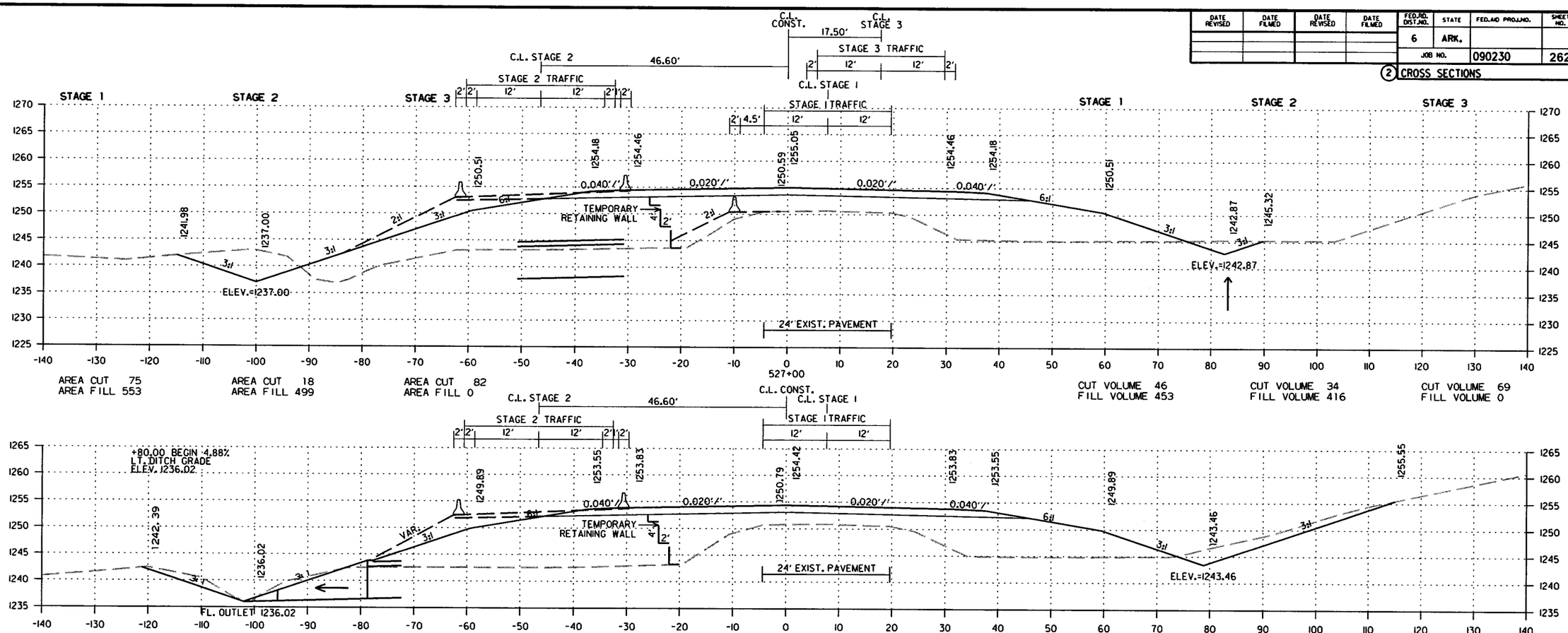
CROSS SECTION STA.524+00 TO STA. 525+00

2/4/2016

R090230.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.		090230	262	282

(2) CROSS SECTIONS



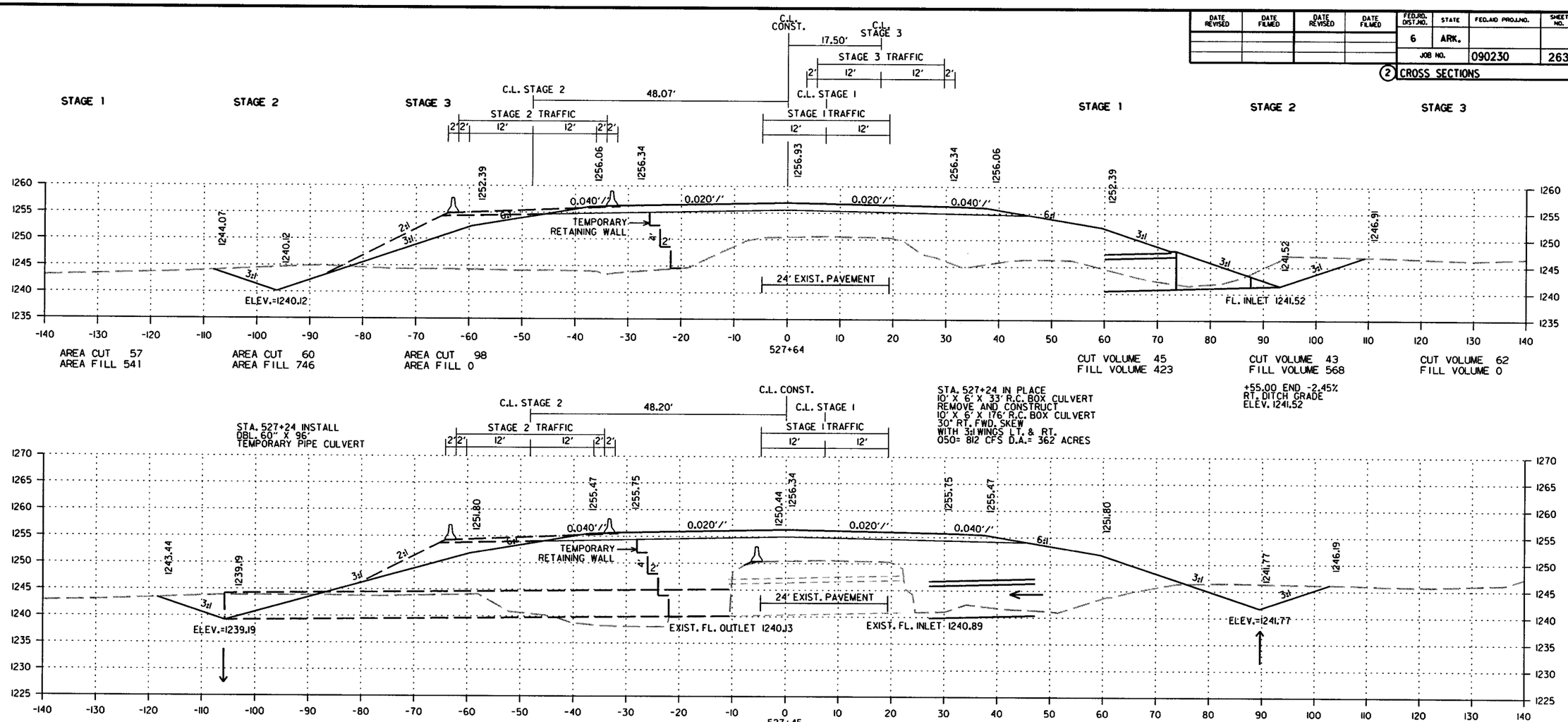
CROSS SECTION STA.526+00 TO STA. 527+00

2/4/2016

R090230.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.		090230	263	282

(2) CROSS SECTIONS



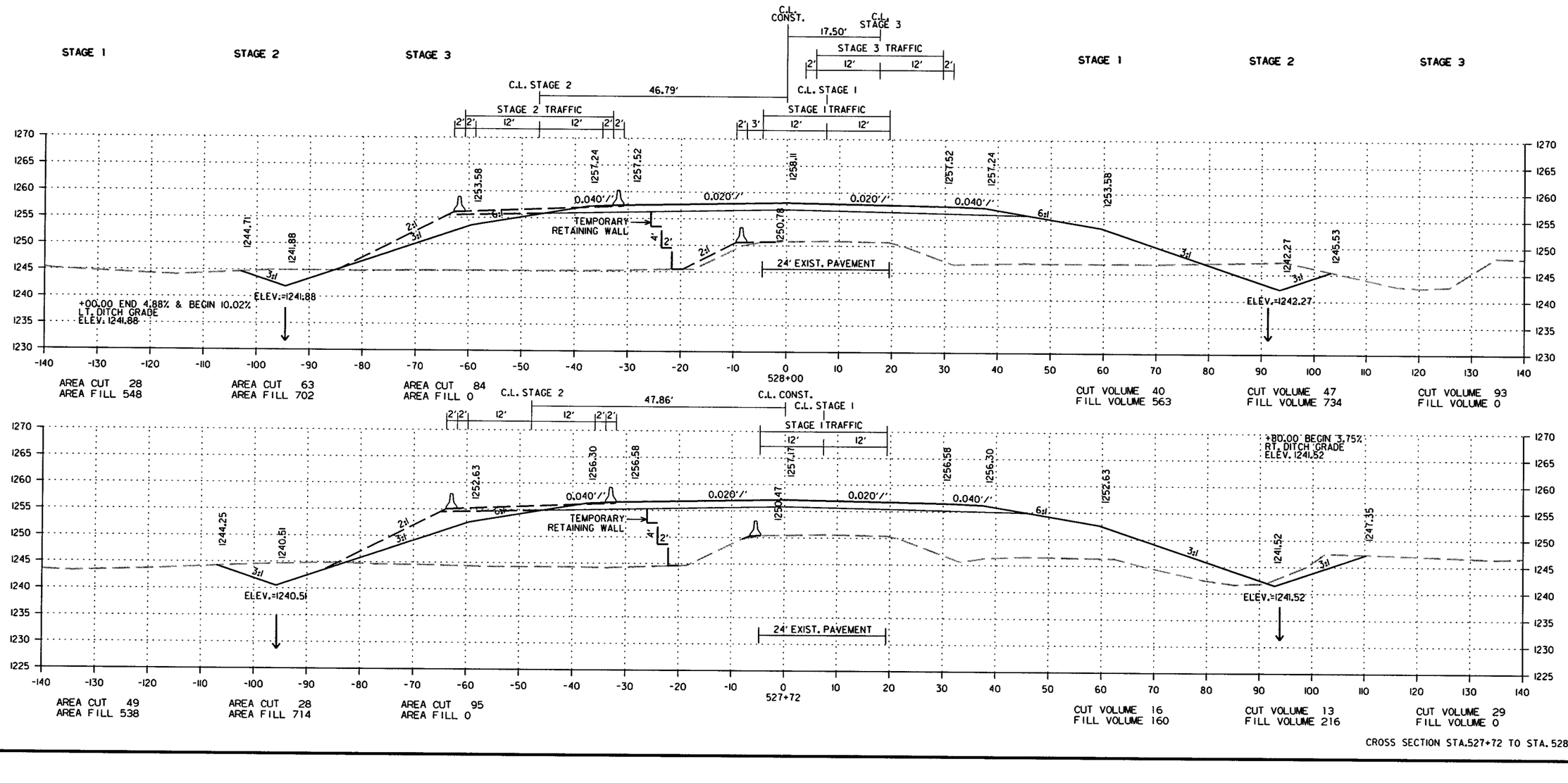
CROSS SECTION STA.527+33 TO STA. 527+45

2/4/2016

R090230.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.		090230	264	282

(2) CROSS SECTIONS



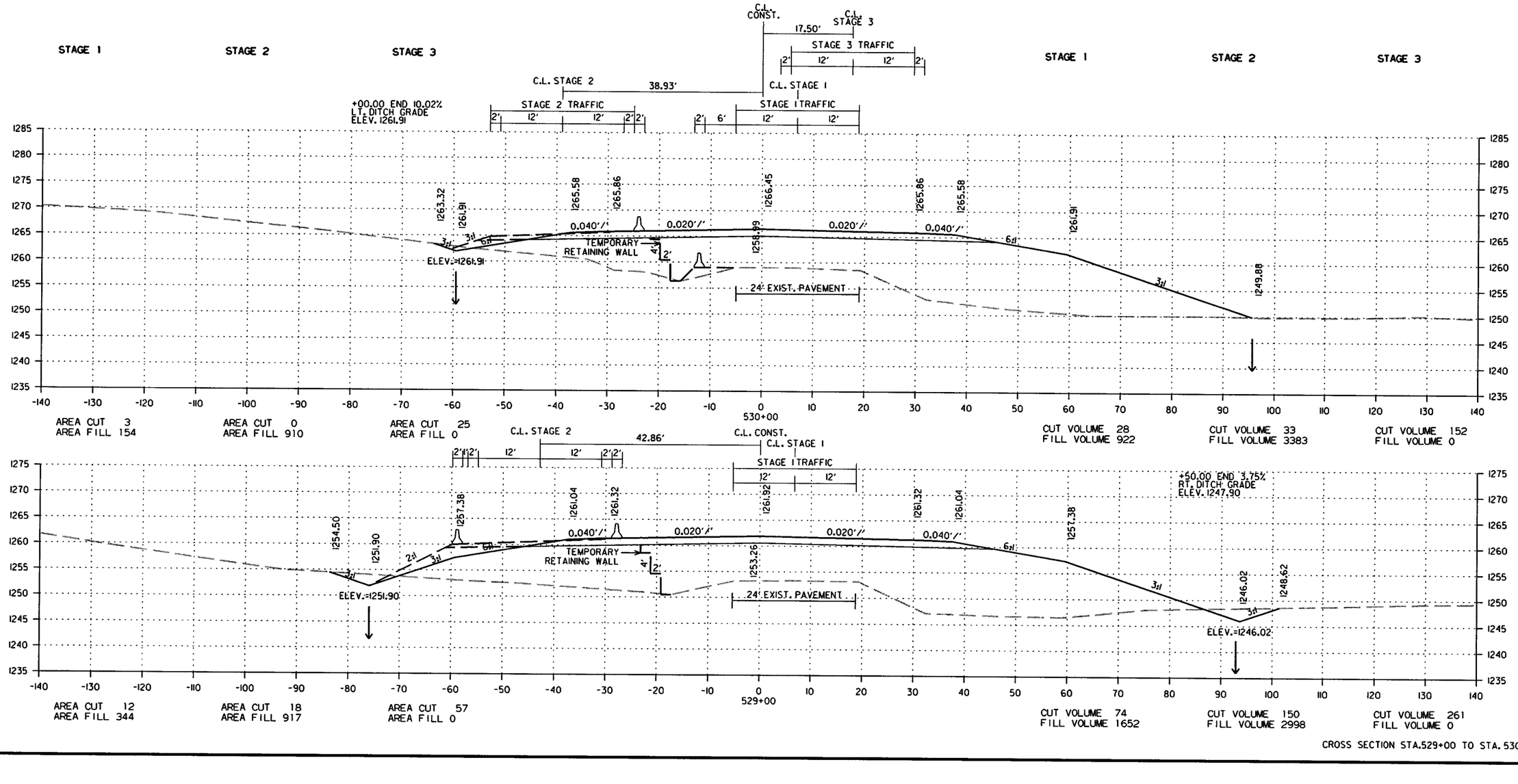
CROSS SECTION STA.527+72 TO STA.528+00

2/4/2016

R090230.DGN

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.		090230	265	282

(2) CROSS SECTIONS



CROSS SECTION STA.529+00 TO STA. 530+00

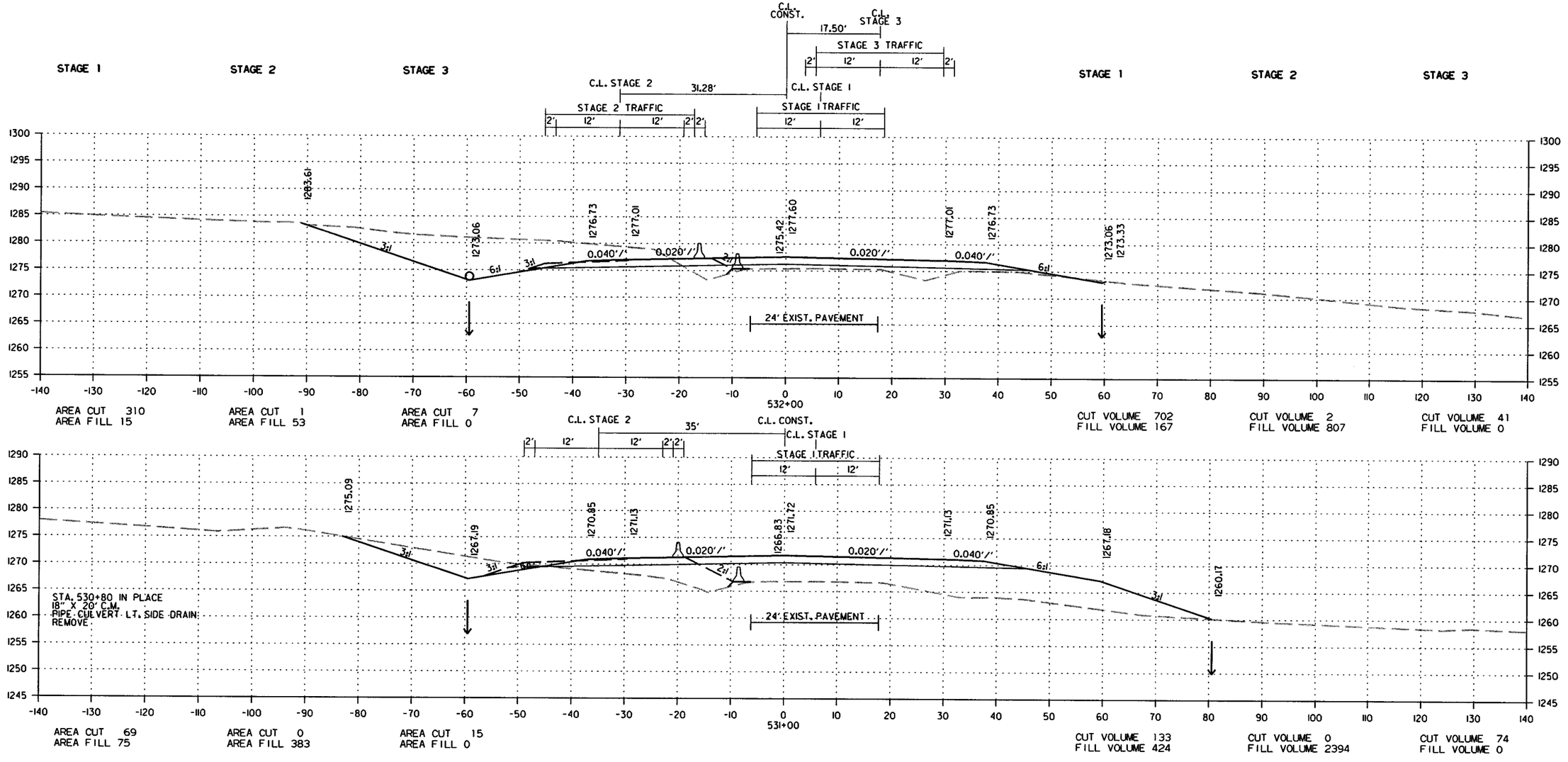
2/4/2016

R090230.DGN

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.		090230	266	282

(2) CROSS SECTIONS

1242.52



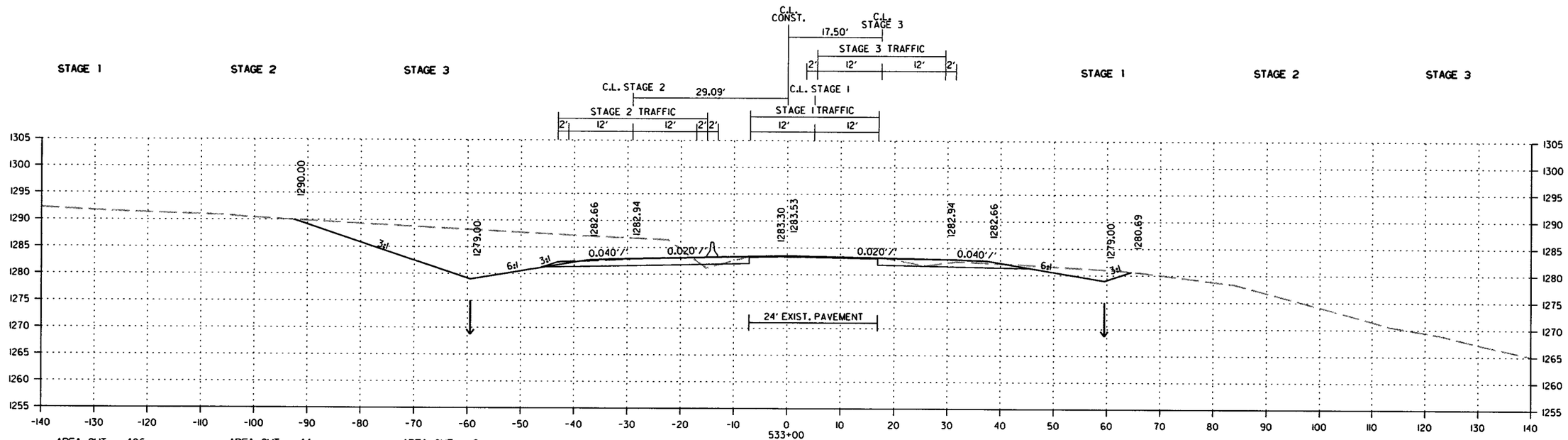
CROSS SECTION STA.531+00 TO STA. 532+00

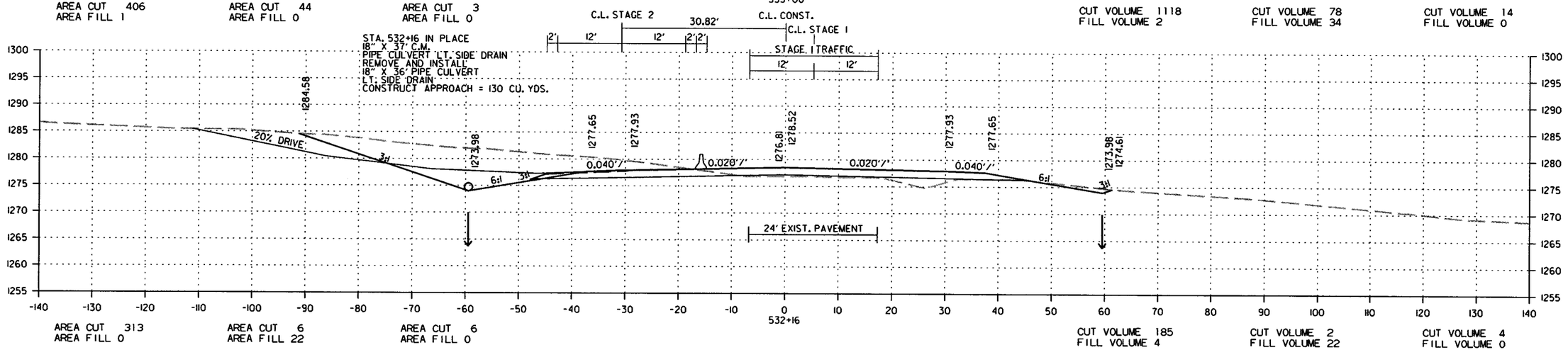
2/4/2016

R090230.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.		090230	267	282

(2) CROSS SECTIONS





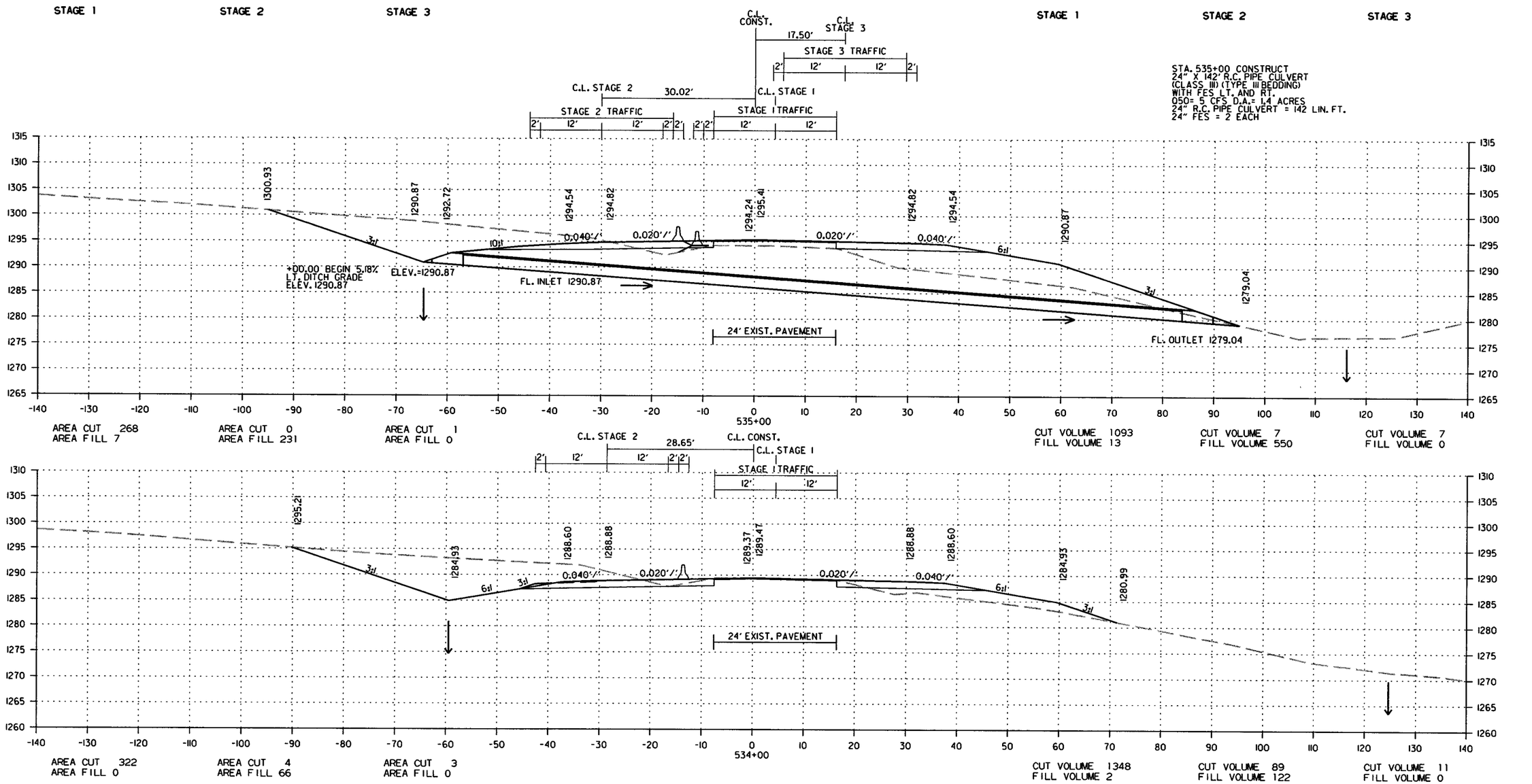
CROSS SECTION STA.532+16 TO STA. 533+00

2/4/2016

R090230.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.		090230	268	282

(2) CROSS SECTIONS



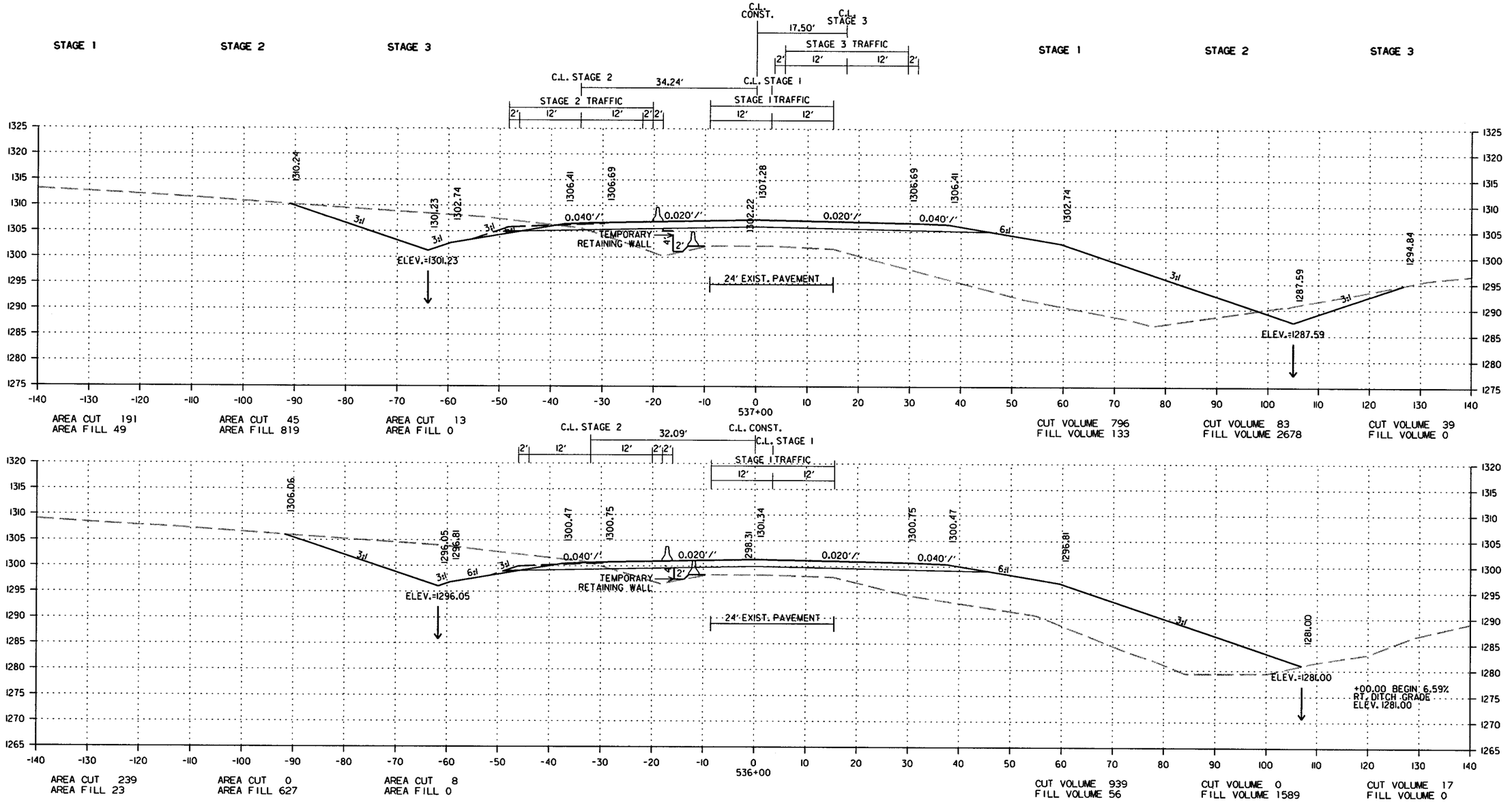
CROSS SECTION STA.534+00 TO STA. 535+00

2/4/2016

R090230.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.		090230	269	282

(2) CROSS SECTIONS



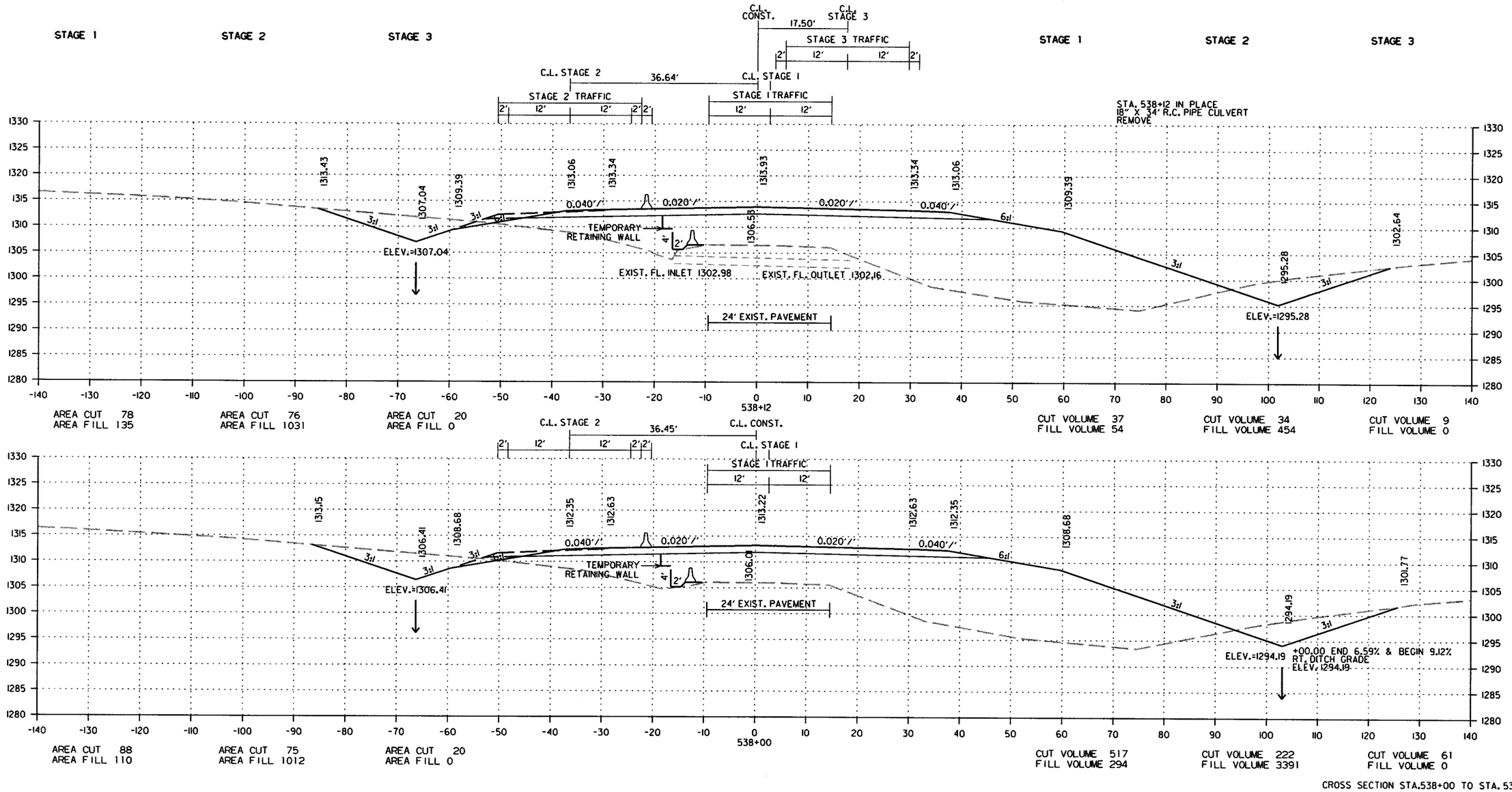
CROSS SECTION STA.536+00 TO STA. 537+00

2/4/2016

R090230.DGN

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.		090230	270	282

(2) CROSS SECTIONS



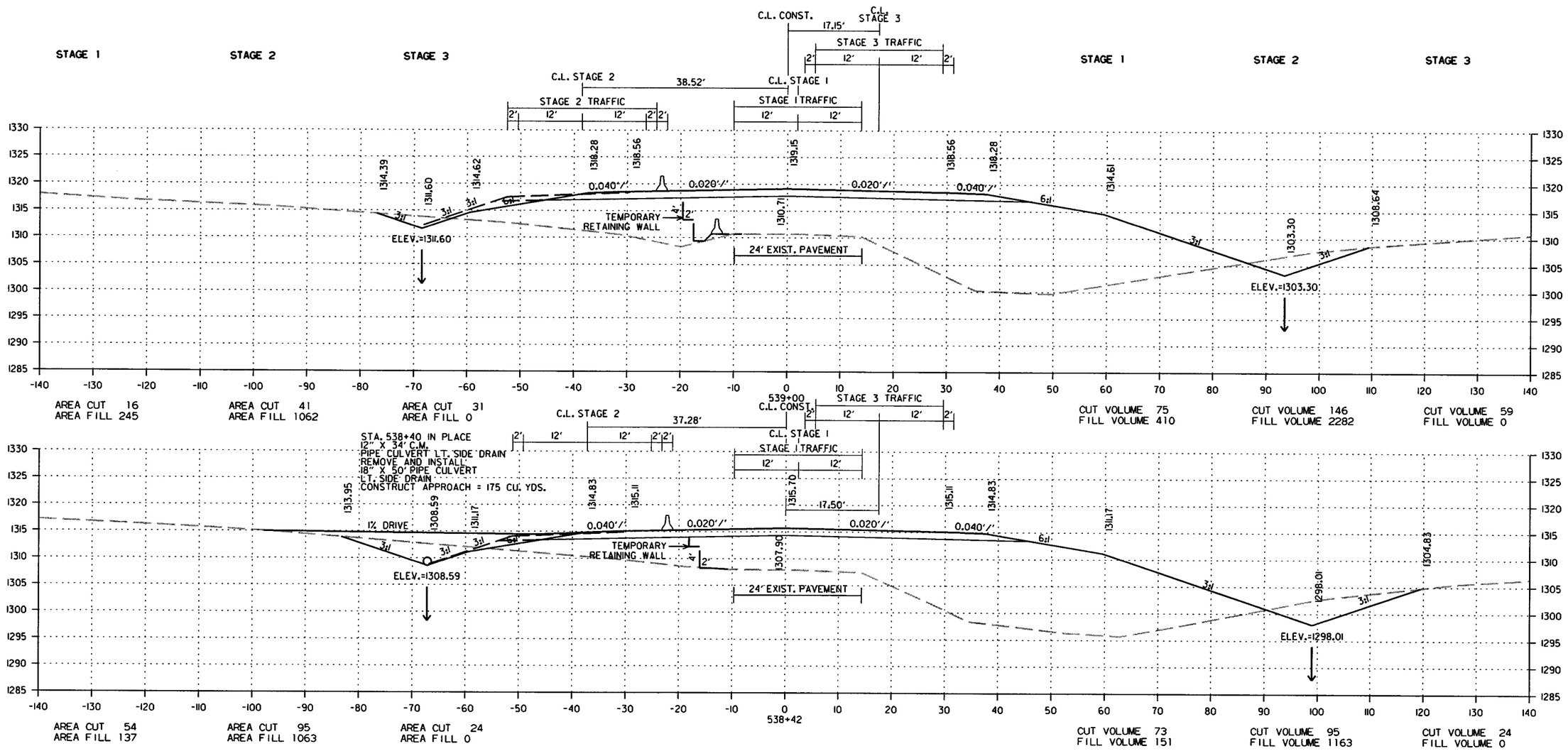
CROSS SECTION STA.538+00 TO STA. 538+12

2/4/2016

R090230.DGN

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.		090230	271	282

(2) CROSS SECTIONS



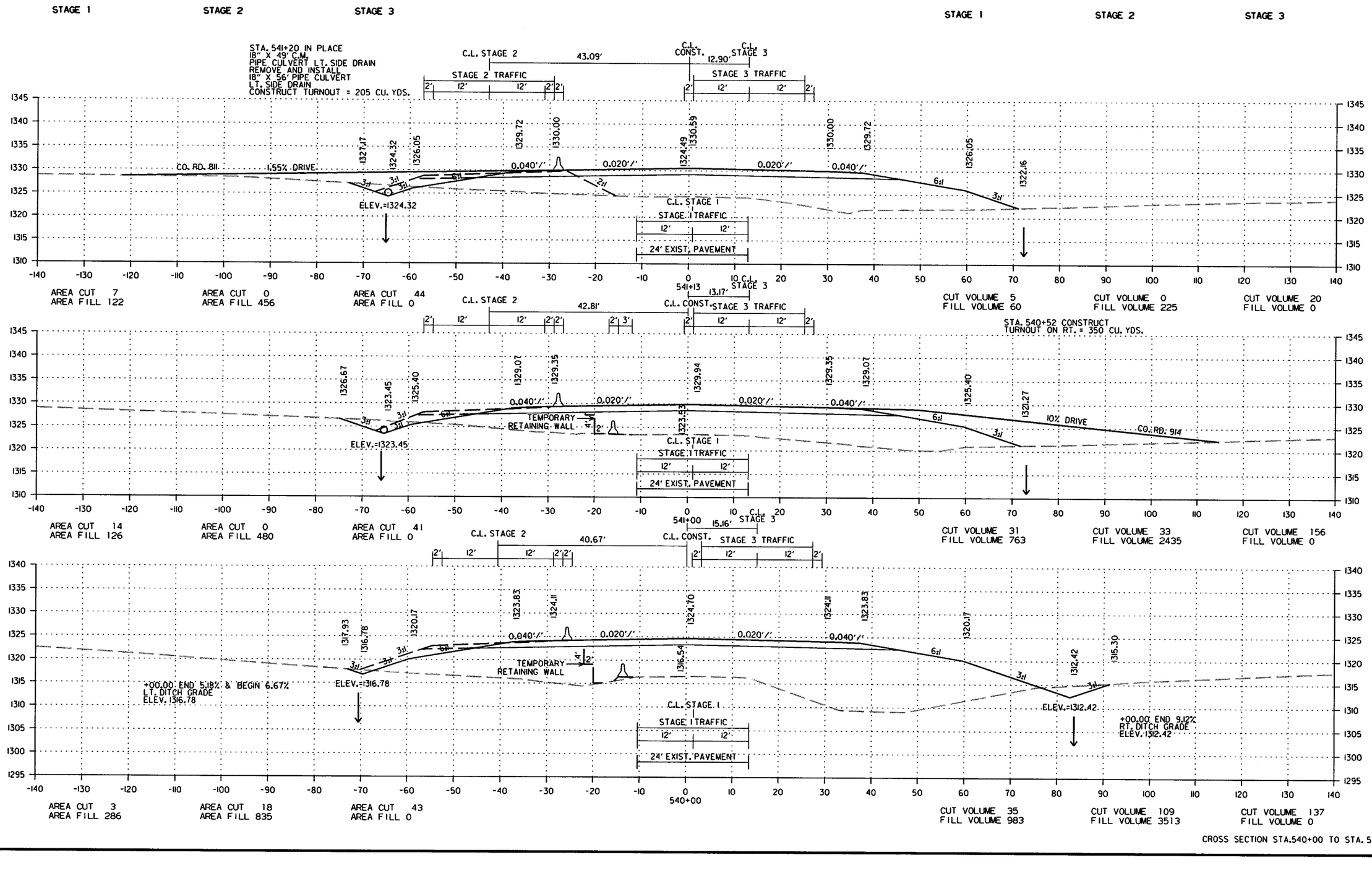
CROSS SECTION STA.538+42 TO STA. 539+00

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R090230.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.		090230	272	282

(2) CROSS SECTIONS



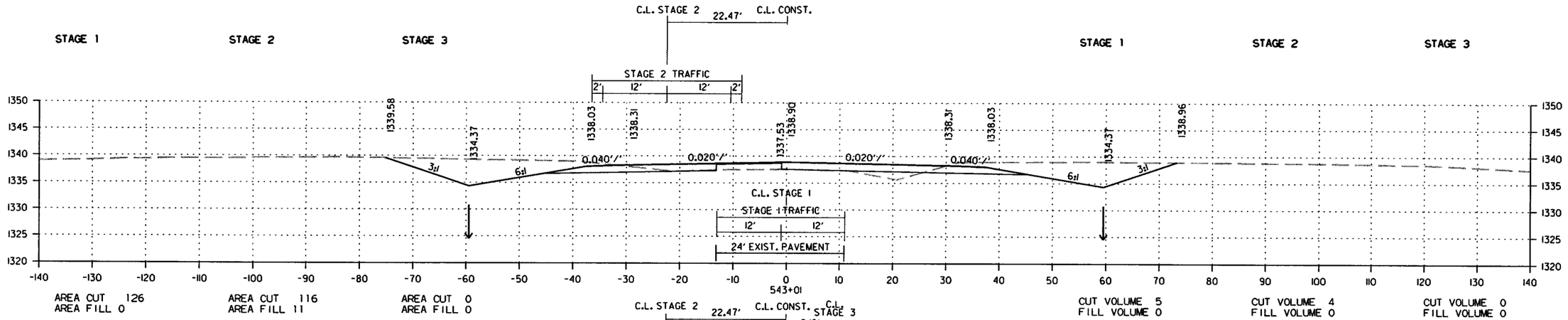
CROSS SECTION STA.540+00 TO STA. 541+13

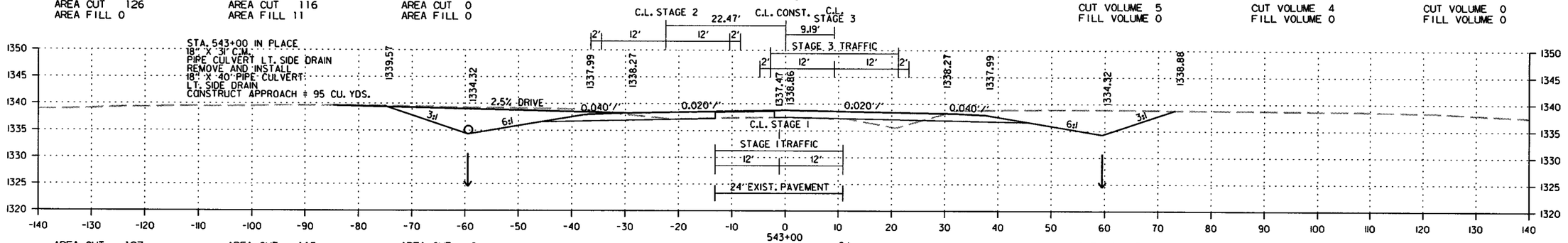
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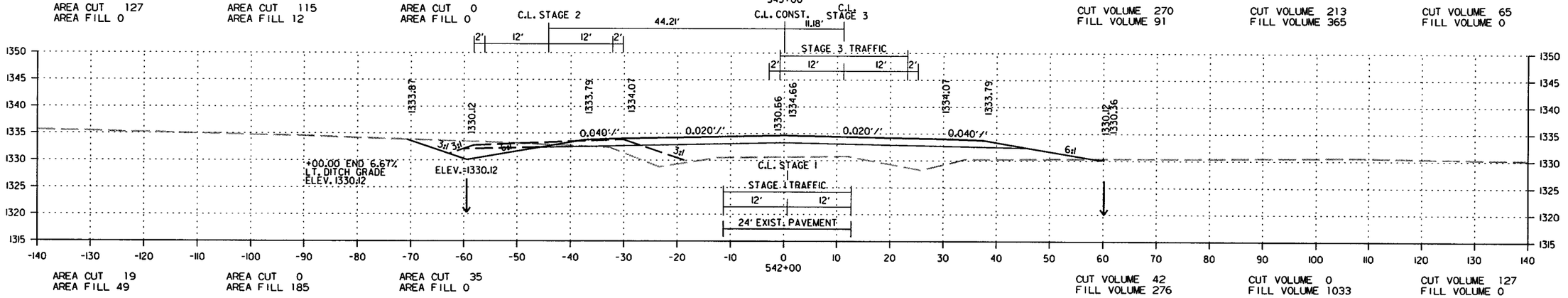
R090230.DGN

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.		090230	273	282

(2) CROSS SECTIONS







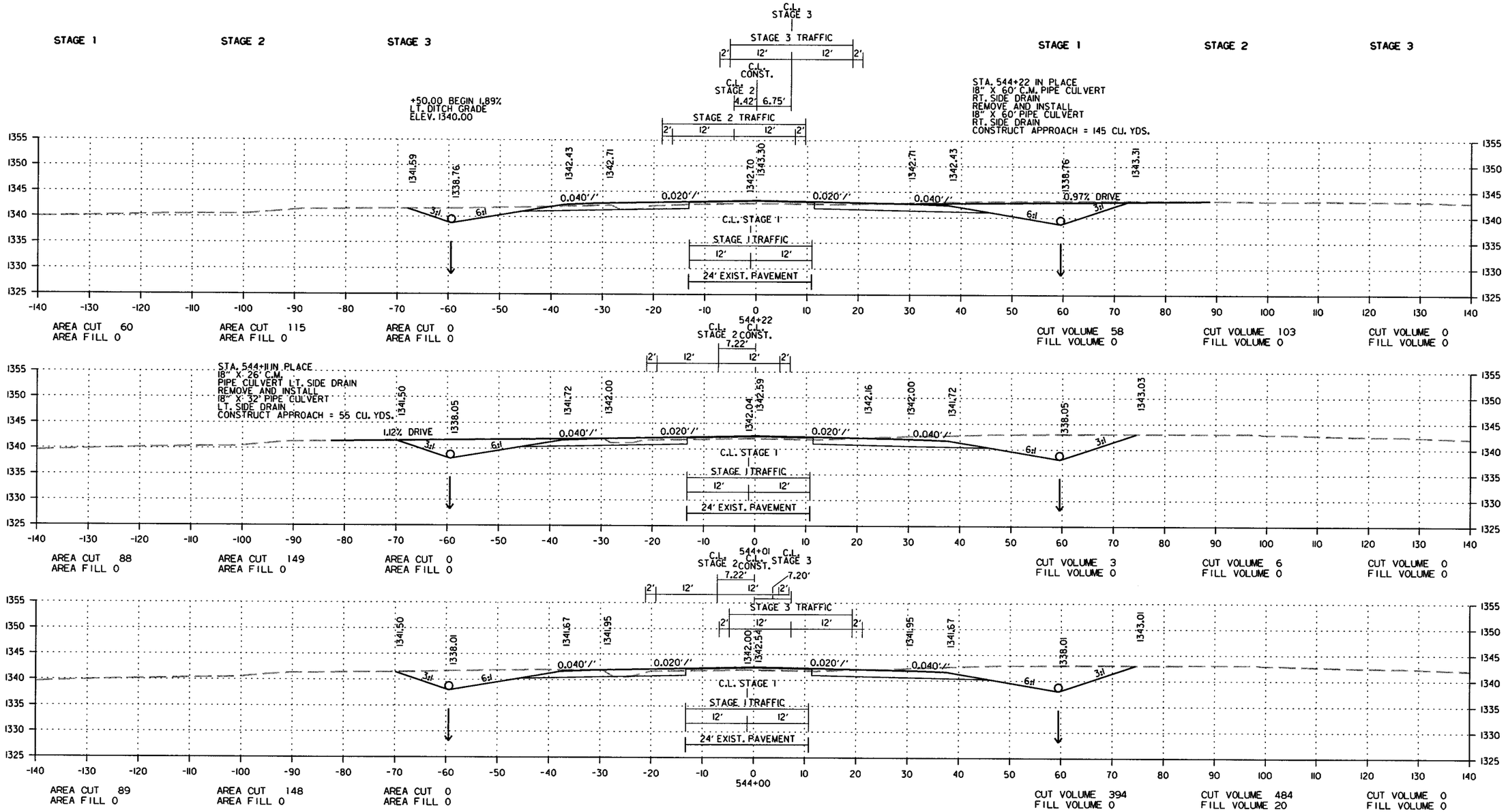
CROSS SECTION STA.542+00 TO STA. 543+01

2/4/2016

R090230.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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(2) CROSS SECTIONS



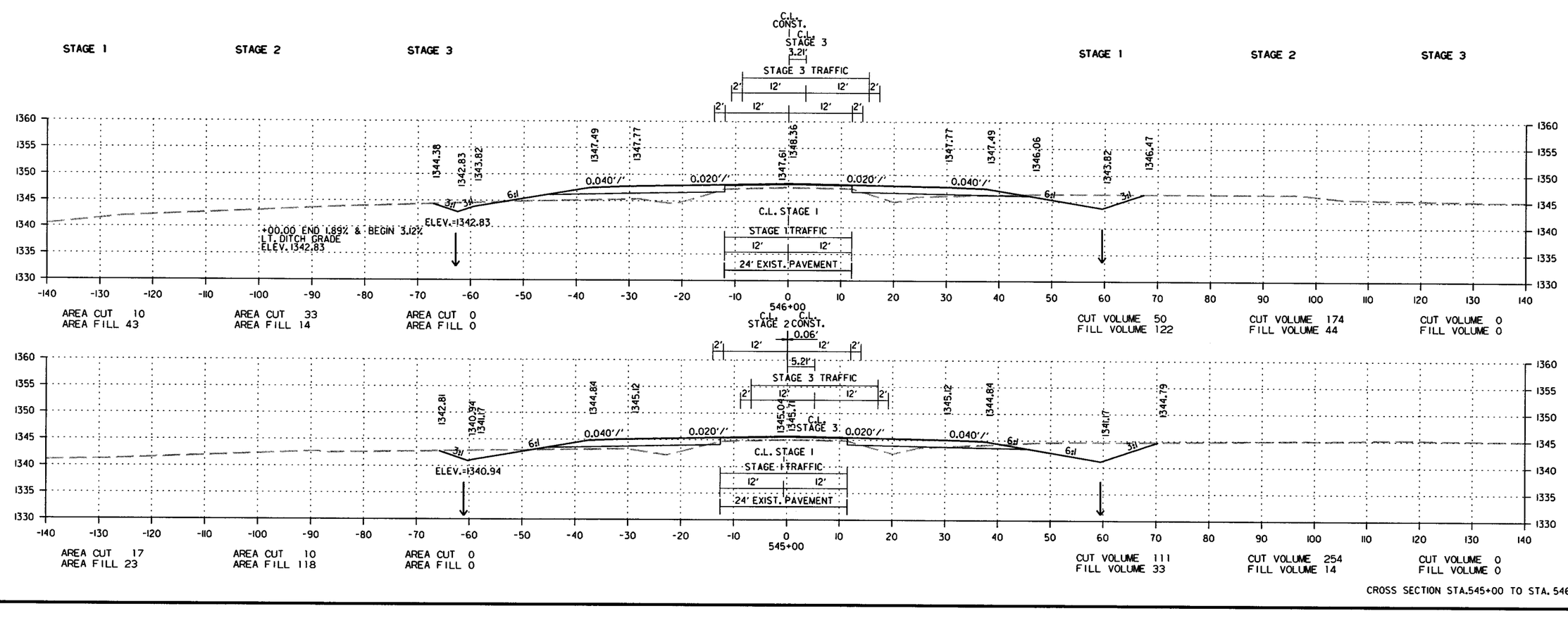
CROSS SECTION STA.544+00 TO STA. 544+22

2/4/2016

R090230.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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(2) CROSS SECTIONS



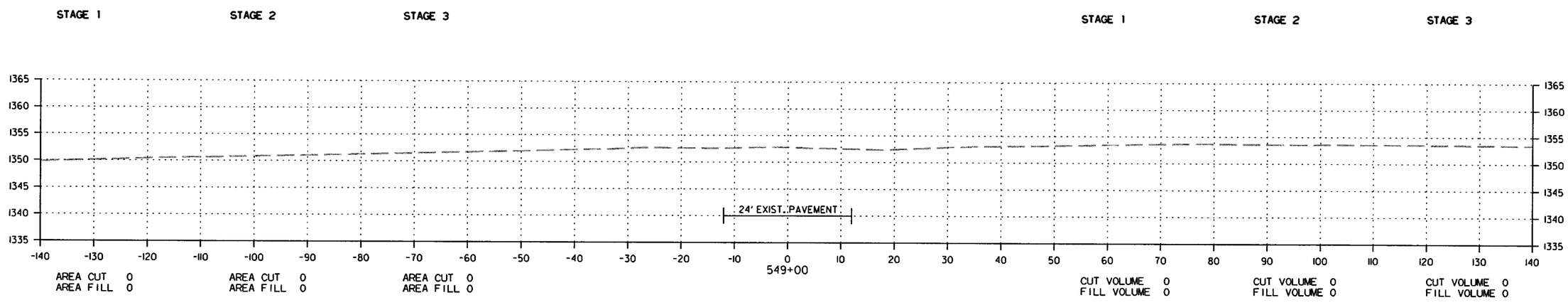
CROSS SECTION STA.545+00 TO STA. 546+00

2/4/2016

R090230.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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(2) CROSS SECTIONS



CROSS SECTION STA.547+00 TO STA. 549+00

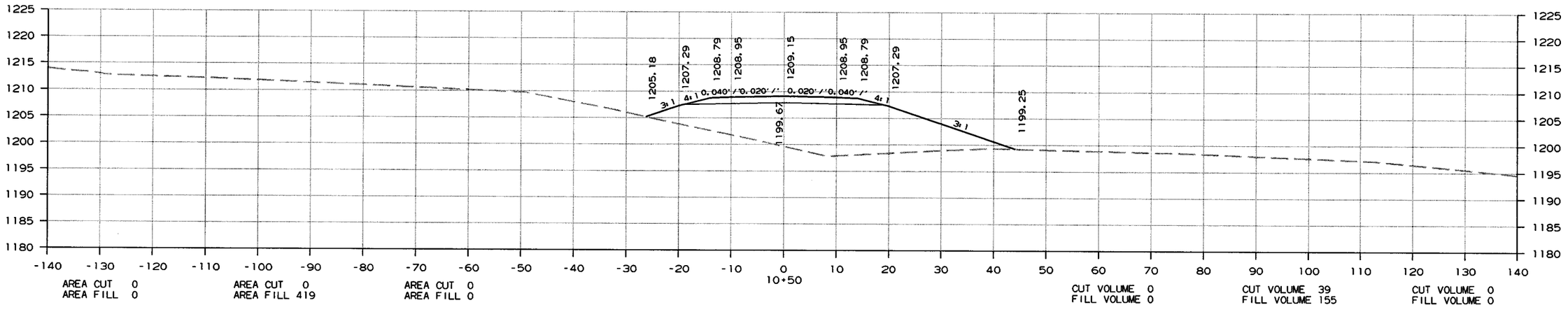
2/4/2016

R090230.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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(2) CROSS SECTIONS

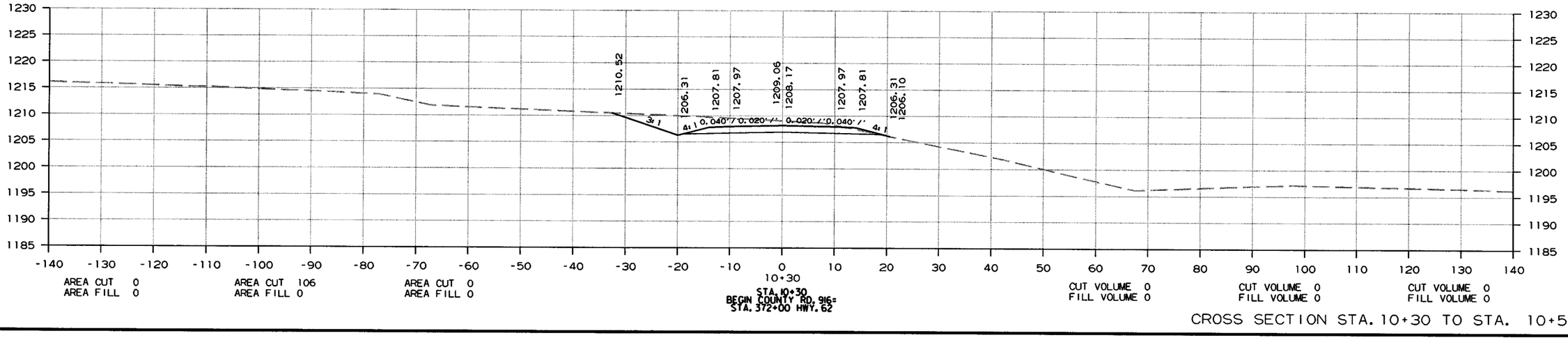
STAGE 1 STAGE 2 STAGE 3



AREA CUT 0 AREA FILL 0 | AREA CUT 0 AREA FILL 419 | AREA CUT 0 AREA FILL 0

CUT VOLUME 0 FILL VOLUME 0 | CUT VOLUME 39 FILL VOLUME 155 | CUT VOLUME 0 FILL VOLUME 0

STAGE 1 STAGE 2 STAGE 3



AREA CUT 0 AREA FILL 0 | AREA CUT 106 AREA FILL 0 | AREA CUT 0 AREA FILL 0

STA. 10+30
BEGIN COUNTY RD. 916=
STA. 372+00 HWY. 62

CUT VOLUME 0 FILL VOLUME 0 | CUT VOLUME 0 FILL VOLUME 0 | CUT VOLUME 0 FILL VOLUME 0

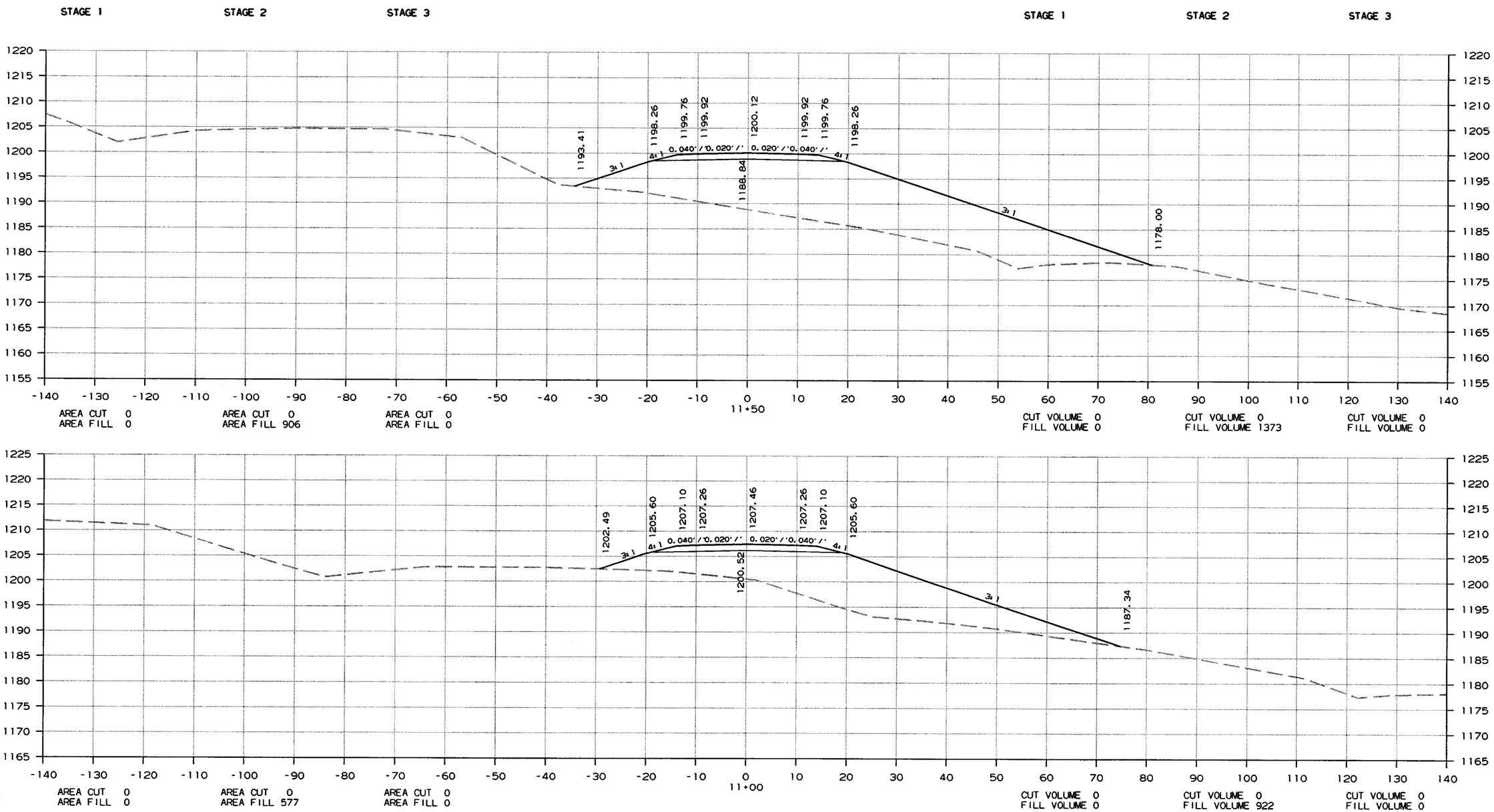
CROSS SECTION STA. 10+30 TO STA. 10+50

2/4/2016

R090230.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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(2) CROSS SECTIONS



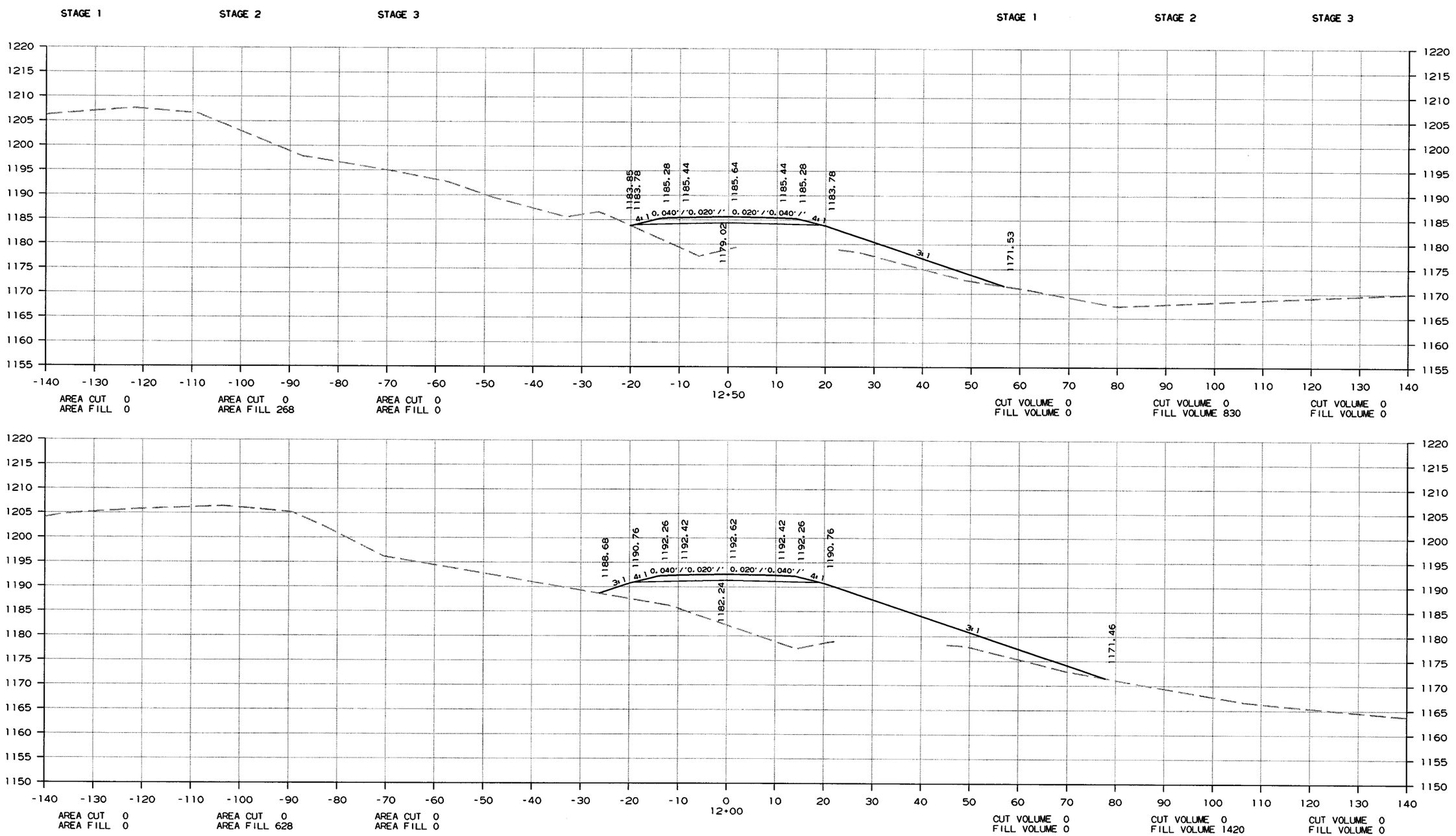
CROSS SECTION STA. 11+00 TO STA. 11+50

2/4/2016

R090230.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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(2) CROSS SECTIONS



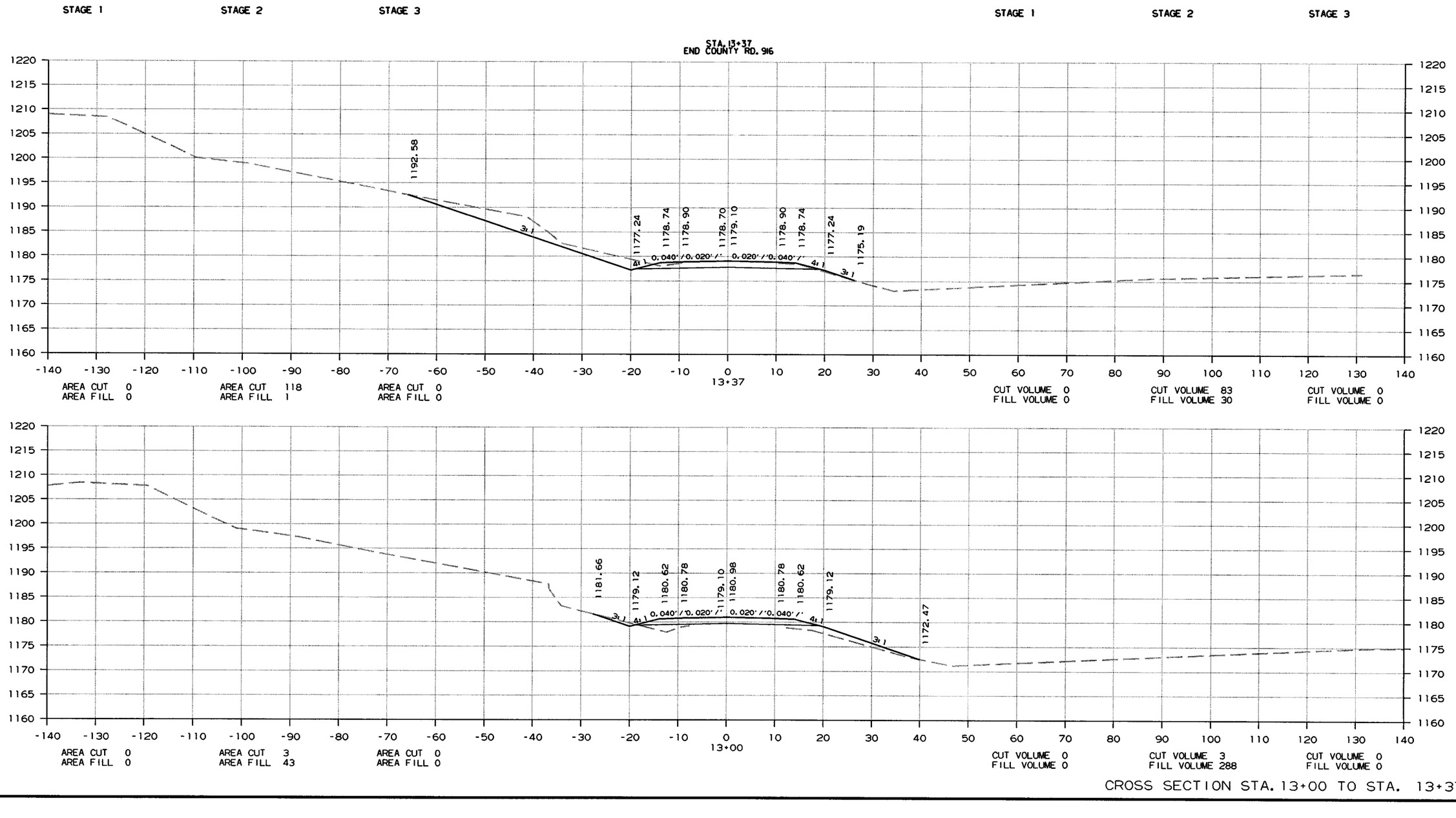
CROSS SECTION STA. 12+00 TO STA. 12+50

2/4/2016

R090230.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
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(2) CROSS SECTIONS



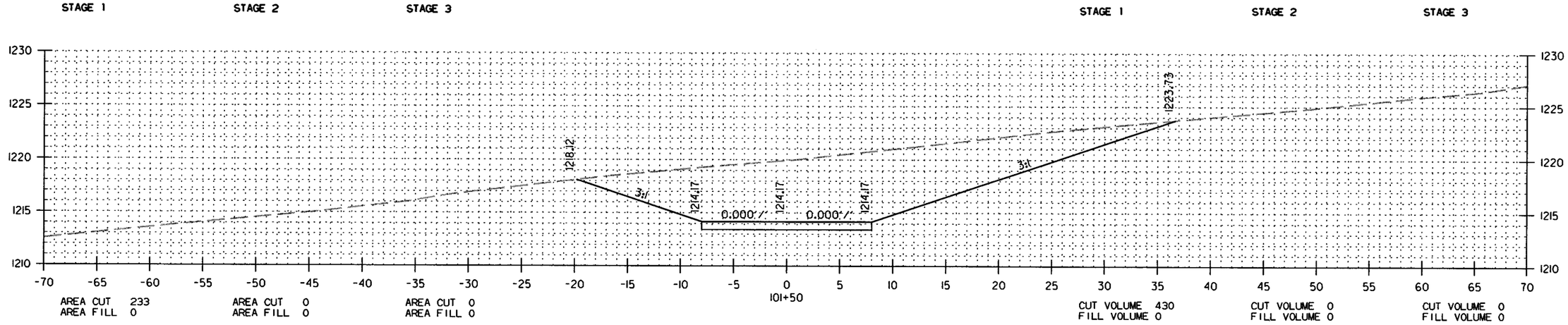
CROSS SECTION STA. 13+00 TO STA. 13+37

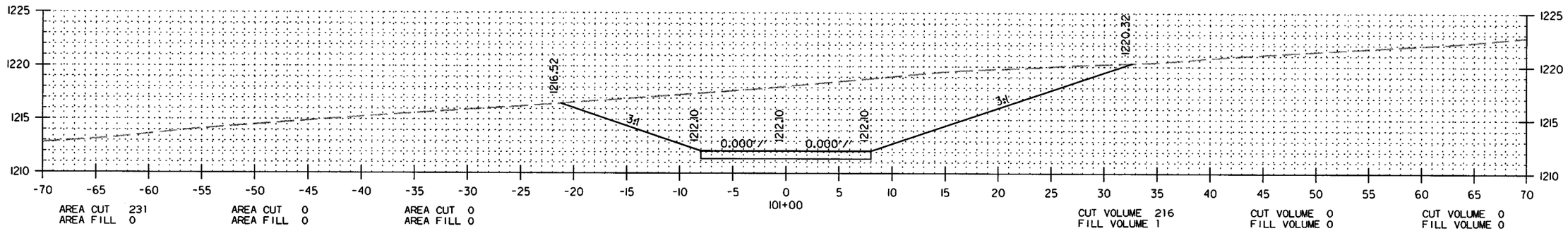
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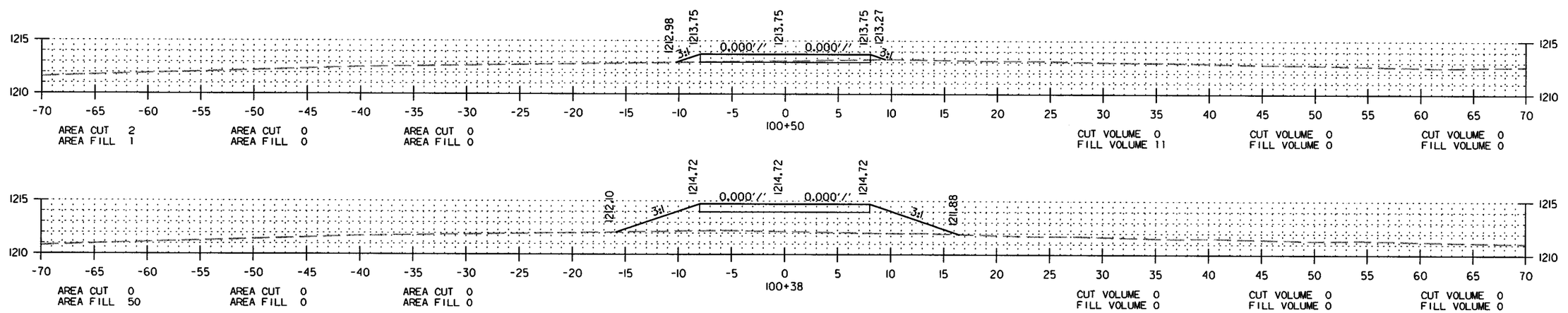
R090230.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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(2) CROSS SECTIONS







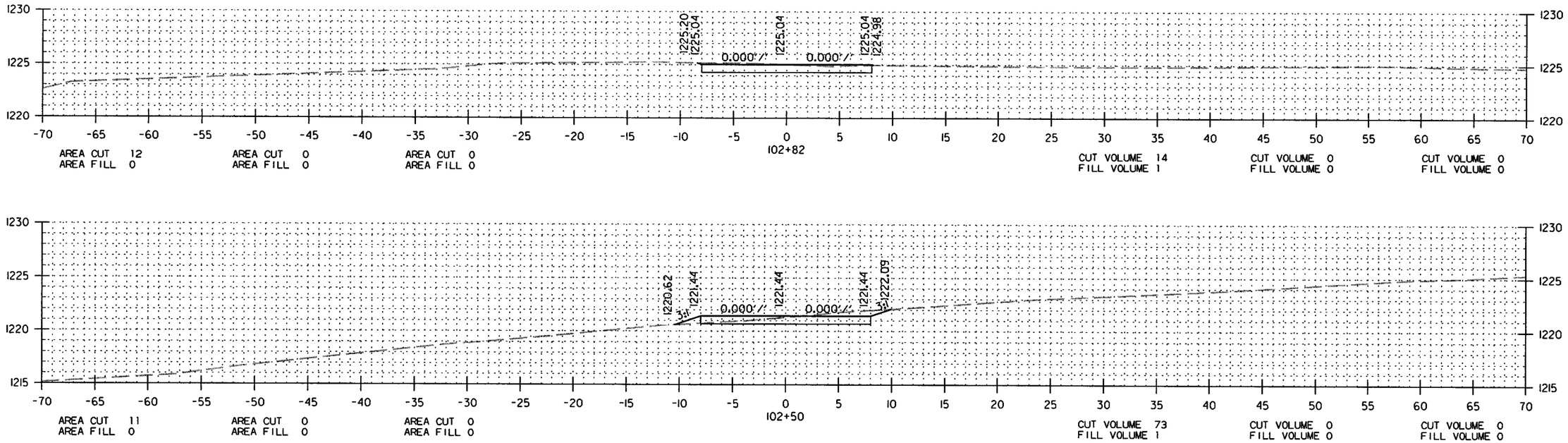
CROSS SECTION STA. 100+38 TO STA. 101+50

2/4/2016

R090230.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.		090230	282	282

(2) CROSS SECTIONS



CROSS SECTION STA. 102+00 TO STA. 102+82

2/4/2016

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