DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061309	1	260

(2) MITZI PKWY. - HWY. 290 (SAFETY IMPVTS.) (SEL. SECS.) (S)

ARKANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS FOR STATE HIGHWAY

MITZI PKWY. - HWY. 290
(SAFETY IMPVTS.) (SEL. SECS.) (S)

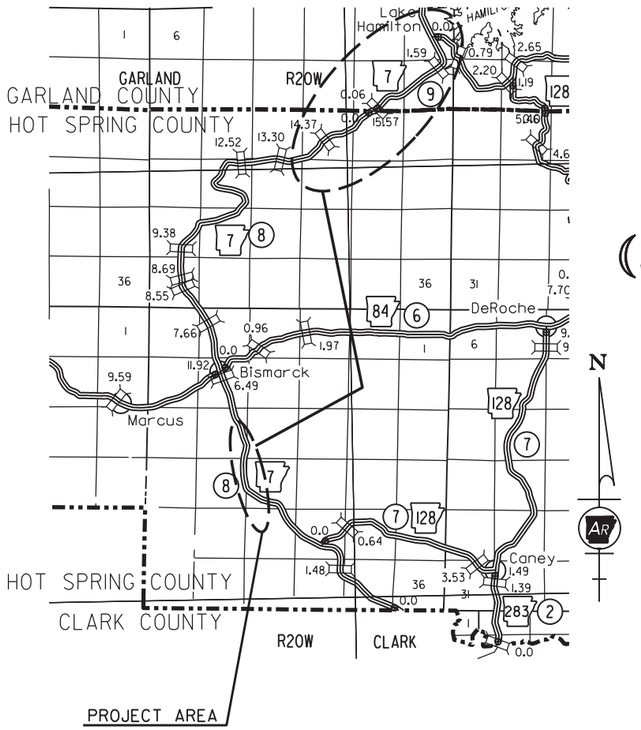
GARLAND AND HOT SPRING COUNTIES

ROUTE 7 SECTION 8 AND 9

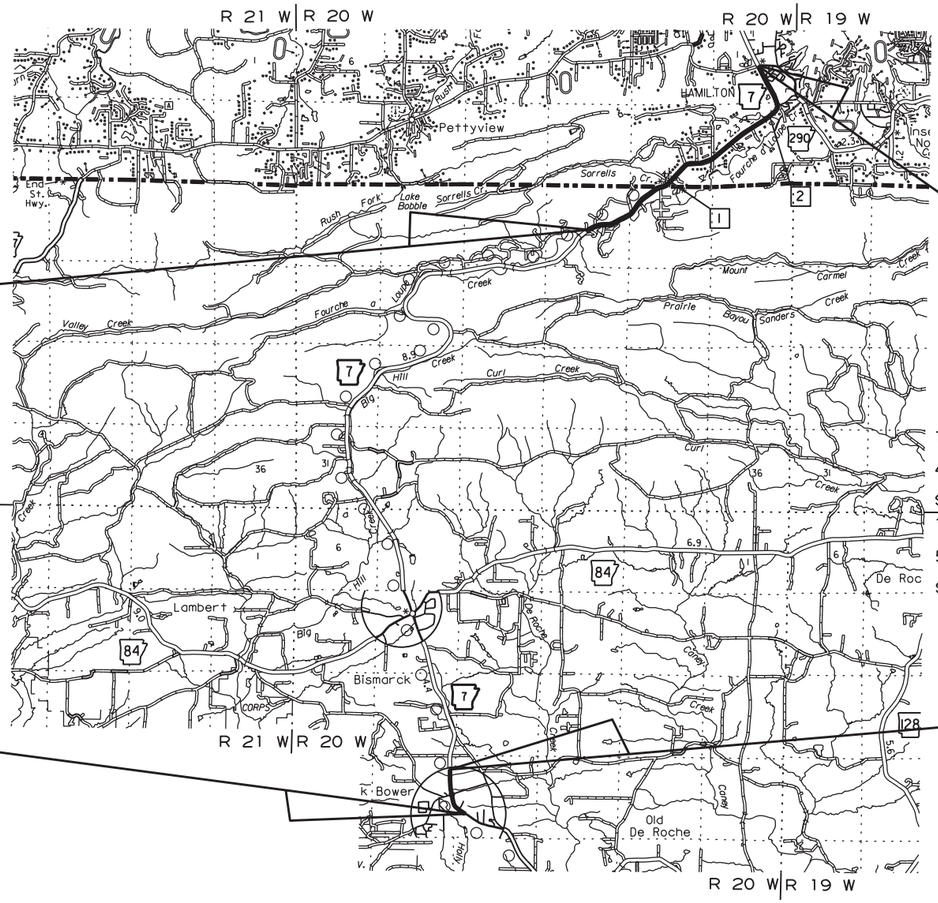
JOB 061309

FED. AID. PROJ. HSIP-3026(1)

NOT TO SCALE



VICINITY MAP


R 21 W | R 20 W
R 20 W | R 19 W
R 21 W | R 20 W
R 20 W | R 19 W
T 4 S
T 5 S
HAMILTON
Pettyview
Sorrells
Lake Bobble
Rush
Fork
Sorrells Cr.
Fourche
Laurel
Creek
Valley Creek
Hill
Creek
Curl
Creek
Big
Creek
Mount Carmel
Creek
Prairie
Bayou
Sanders
Creek
Lambert
Bismarck
K Bower
Old De Roche
De Roc
Fourche
Creek
Corp
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Creek

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				6	ARK.			
				JOB NO.		061309	2	260

(2) INDEX OF SHEETS AND STANDARD DRAWINGS

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

Trinity Smith

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INDEX OF SHEETS

SHEET NO.		TITLE
1		TITLE SHEET
2		INDEX OF SHEETS AND STANDARD DRAWINGS
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NOTE: CROSS SECTIONS NOT NORMALLY INCLUDED IN PLANS SOLD TO PROSPECTIVE BIDDERS, BUT MAY BE HAD UPON REQUEST.

ROADWAY STANDARD DRAWINGS

DRWG.NO.	TITLE	DATE
CDP-1	CONCRETE DITCH PAVING	12-08-16
CG-1	CURBING DETAILS	11-29-07
DR-1	DETAILS OF DRIVEWAYS & ISLANDS	11-07-19
FES-1	FLARED END SECTION	10-18-96
FES-2	FLARED END SECTION	10-18-96
FPC-9	DETAILS OF DROP INLETS & JUNCTION BOXES	11-16-01
FPC-9E	DETAILS OF DROP INLETS (TYPE C)	08-22-02
FPC-9M	DETAILS OF DROP INLET (TYPE MO)	08-22-02
MB-1	MAILBOX DETAILS	11-18-04
PBC-1	PRECAST CONCRETE BOX CULVERTS	01-28-15
PCC-1	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PCM-1	METAL PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PCP-1	PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)	02-27-14
PCP-2	PLASTIC PIPE CULVERT (PVC F949)	02-27-14
PCP-3	PLASTIC PIPE CULVERT (POLYPROPYLENE)	02-27-20
PM-1	PAVEMENT MARKING DETAILS	02-27-20
PU-1	DETAILS OF PIPE UNDERDRAIN	12-08-16
RCB-1	REINFORCED CONCRETE BOX CULVERT DETAILS	07-26-12
RCB-2	EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS	11-20-03
RCB-3	METHOD OF EXTENDING EXISTING R.C. BOX CULVERTS	10-12-95
SE-2	TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC	11-07-19
SE-3	TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC (4% MAXIMUM)	11-07-19
SI-1	DETAILS OF SPECIAL ITEMS	10-25-18
TC-1	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	11-07-19
TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	11-07-19
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	02-27-20
TC-4	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	11-07-19
TC-5	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	11-07-19
TEC-1	TEMPORARY EROSION CONTROL DEVICES	11-16-17
TEC-2	TEMPORARY EROSION CONTROL DEVICES	06-02-94
TEC-3	TEMPORARY EROSION CONTROL DEVICES	11-03-94
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WF-3	CHAIN LINK FENCE	11-17-10
WF-4	WIRE FENCE TYPE C AND D	08-22-02
WR-1	WHEELCHAIR RAMPS NEW CONSTRUCTION AND ALTERATIONS	11-10-05
W-X003-1	DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS	05-10-66
R-100X-0	DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS	02-08-63
R-200X-0	DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS	02-15-63

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(2) GOVERNING SPECIFICATIONS AND GENERAL NOTES

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

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GOVERNING SPECIFICATIONS

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

NUMBER	TITLE
ERRATA_____	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273__	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273__	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273__	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273__	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA-1273__	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHWA-1273__	SUPPLEMENT - TRAINING PROGRAM - JOB 061309
FHWA-1273__	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273__	SUPPLEMENT - WAGE RATE DETERMINATION
100-3_____	CONTRACTOR'S LICENSE
100-4_____	DEPARTMENT NAME CHANGE
102-2_____	ISSUANCE OF PROPOSALS
108-1_____	LIQUIDATED DAMAGES
108-2_____	WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER
110-1_____	PROTECTION OF WATER QUALITY AND WETLANDS
210-1_____	UNCLASSIFIED EXCAVATION
303-1_____	AGGREGATE BASE COURSE
306-1_____	QUALITY CONTROL AND ACCEPTANCE
400-1_____	TACK COATS
400-4_____	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
400-5_____	PERCENT AIR VOIDS FOR ACHM MIX DESIGNS
400-6_____	LIQUID ANTI-STRIP ADDITIVE
404-3_____	DESIGN OF ASPHALT MIXTURES
410-1_____	CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
410-2_____	DEVICES FOR MEASURING DENSITY FOR ROLLING PATTERNS
505-1_____	PORTLAND CEMENT CONCRETE DRIVEWAY
600-2_____	INCIDENTAL CONSTRUCTION
604-1_____	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
604-3_____	TRAFFIC CONTRCL DEVICES IN CONSTRUCTION ZONES (MASH)
605-1_____	CONCRETE DITCH PAVING
606-1_____	PIPE CULVERTS FOR SIDE DRAINS
620-1_____	MULCH COVER
621-1_____	FILTER SOCKS
633-1_____	CONCRETE WALKS, CONCRETE STEPS, AND HAND RAILING
634-1_____	CURBING
800-1_____	STRUCTURES
802-3_____	CONCRETE FOR STRUCTURES
804-2_____	REINFORCING STEEL FOR STRUCTURES
JOB 061309__	BIDDING REQUIREMENTS AND CONDITIONS
JOB 061309__	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 061309__	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 061309__	CARGO PREFERENCE ACT REQUIREMENTS
JOB 061309__	CONSTRUCTION PROJECT INFORMATION SIGN
JOB 061309__	COORDINATION OF LiDAR BRIDGE SCAN
JOB 061309__	COORDINATION OF WORK
JOB 061309__	DELAY IN RIGHT OF WAY OCCUPANCY
JOB 061309__	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB 061309__	FLEXIBLE BEGINNING OF WORK – CALENDAR DAY CONTRACT
JOB 061309__	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 061309__	MANDATORY ELECTRONIC CONTRACT
JOB 061309__	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB 061309__	NESTING SITES OF MIGRATORY BIRDS
JOB 061309__	OFF-SITE RESTRAINING CONDITIONS FOR NORTHERN LONG-EARED BATS
JOB 061309__	PARTNERING REQUIREMENTS
JOB 061309__	PERCENT WITHIN LIMITS/PAVEMENT SMOOTHNESS (IRI)
JOB 061309__	PLASTIC PIPE
JOB 061309__	PRICE ADJUSTMENT FOR ASPHALT BINDER
JOB 061309__	RESTRAINING CONDITIONS
JOB 061309__	SHORING FOR CULVERTS
JOB 061309__	SITE USE (A+C METHOD) - CALENDAR DAY CONTRACT
JOB 061309__	SOIL STABILIZATION
JOB 061309__	STORM WATER POLLUTION PREVENTION PLAN
JOB 061309__	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 061309__	UTILITY ADJUSTMENTS
JOB 061309__	VALUE ENGINEERING
JOB 061309__	WARM MIX ASPHALT
JOB 061309__	WATER POLLUTION CONTROL
JOB 061309__	WELLHEAD PROTECTION

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 ENSURE 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. THE SEQUENCE AS SHOWN ON THE MAINTENANCE OF TRAFFIC PLANS IS A GENERAL OUTLINE FOR THE CONSTRUCTION OF THIS PROJECT, AND IN NO WAY IS IT INTENDED TO COVER EVERY ITEM IN THE PROJECT. ITEMS NOT CRITICAL TO THE CONSTRUCTION SEQUENCE MAY BE CONSTRUCTED IN ANY STAGE AS APPROVED BY THE RESIDENT ENGINEER.
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.
11. THIS PROJECT IS COVERED UNDER A SECTION 404 NATIONWIDE 23 PERMIT. REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS, EDITION OF 2014, FOR PERMIT REQUIREMENTS.

11/12/2019

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(2) TYPICAL SECTIONS OF IMPROVEMENT

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

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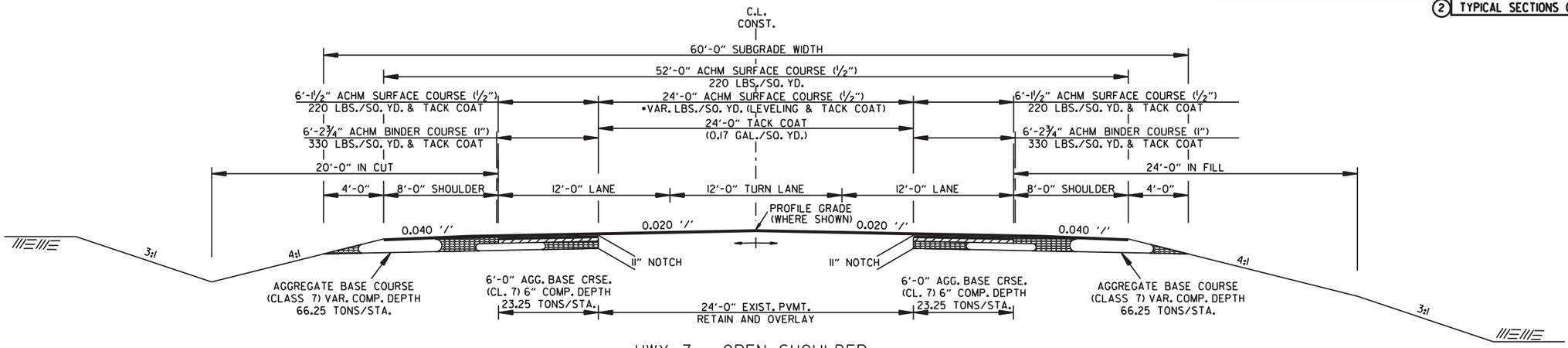


HWY. 7 - OPEN SHOULDER
NOTCH AND WIDEN SECTION
STA. 269+43.56 TO STA. 274+75.00
STA. 284+16.52 TO STA. 287+13.53
STA. 295+33.72 TO STA. 300+64.18
STA. 350+16.78 TO STA. 367+42.18
STA. 376+33.96 TO STA. 381+00.00

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

•NOTE: 100+00.00 TO 102+70.00 - TAPER
121+30.00 TO 124+00.00 - TAPER
248+00.00 TO 251+30.00 - TAPER

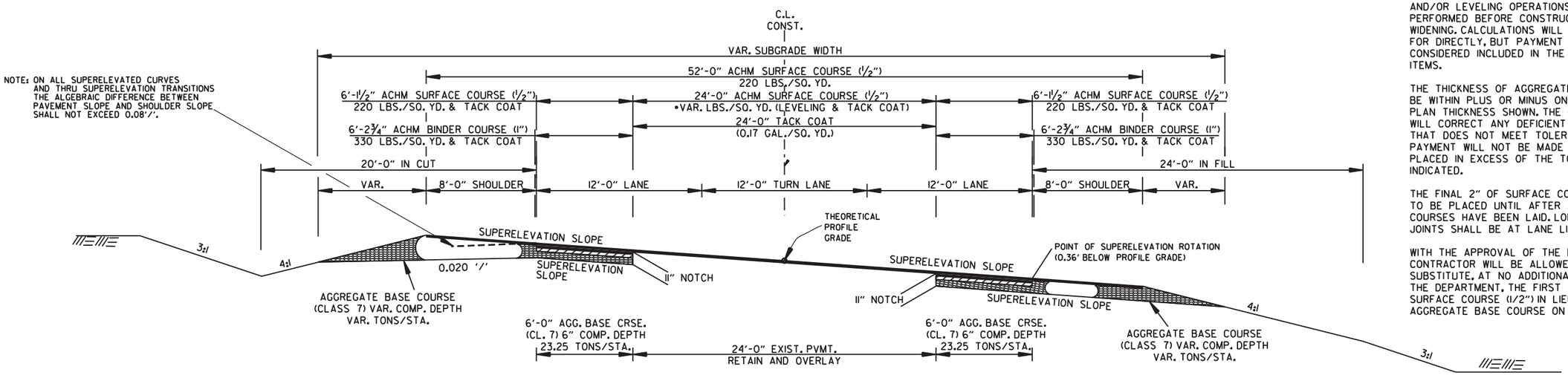
NOTES:
REFER TO CROSS SECTIONS FOR DEVIATION FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT APPROVAL OF THE ENGINEER.

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

THE FINAL 2" OF SURFACE COURSE IS NOT TO BE PLACED UNTIL 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. 7 - OPEN SHOULDER (SUPERELEVATION)
NOTCH AND WIDEN SECTION
STA. 102+70.00 TO STA. 107+92.00
STA. 118+58.00 TO STA. 121+30.00
STA. 251+30.00 TO STA. 262+25.00
STA. 265+75.00 TO STA. 269+43.56
STA. 281+75.00 TO STA. 284+16.52
STA. 287+13.53 TO STA. 295+33.72
STA. 300+64.18 TO STA. 309+90.00
STA. 318+65.00 TO STA. 350+16.78
STA. 367+42.18 TO STA. 376+33.96

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

6/29/2020

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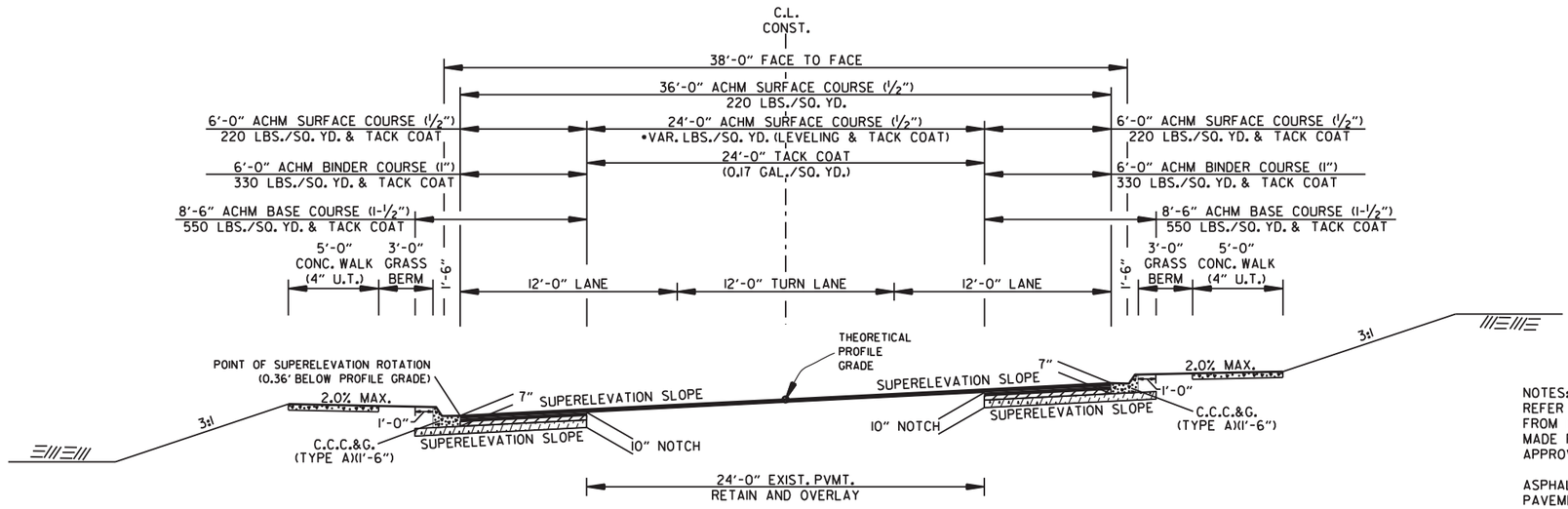
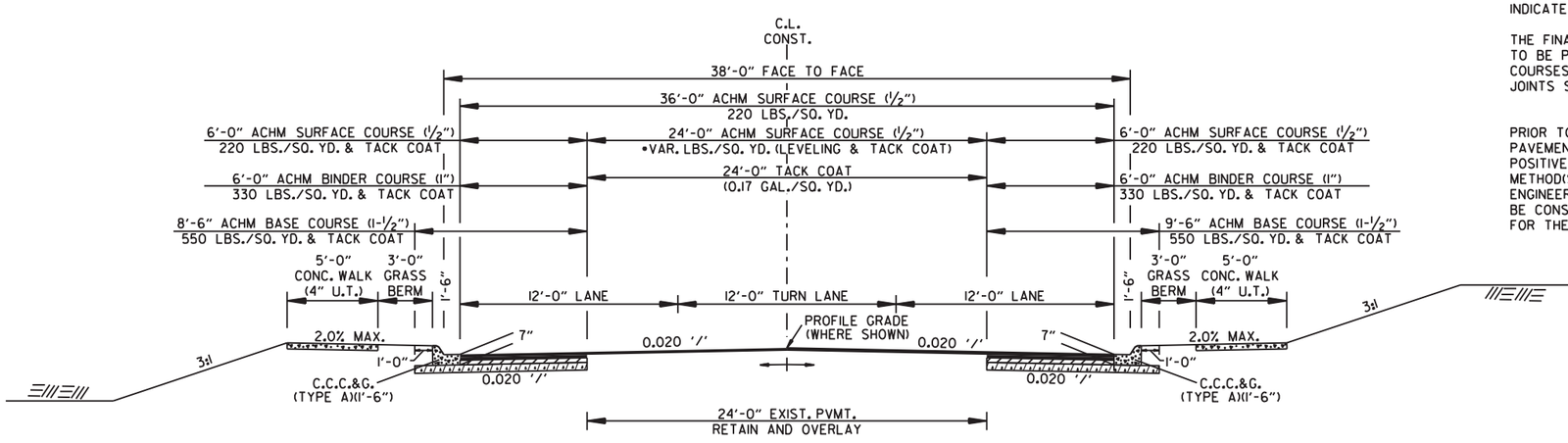


HWY. 7 - CURB AND GUTTER (SUPERELEVATION)
NOTCH AND WIDEN SECTION
STA. 107+92.00 TO STA. 112+32.36
STA. 115+71.04 TO STA. 118+58.00
STA. 386+61.00 TO STA. 389+90.00
STA. 390+90.00 TO STA. 401+50.00
STA. 403+10.00 TO STA. 412+64.92

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



HWY. 7 - CURB AND GUTTER
NOTCH AND WIDEN SECTION
STA. 112+32.36 TO STA. 115+71.04
STA. 381+00.00 TO STA. 386+61.00
STA. 412+64.92 TO STA. 430+27.70

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

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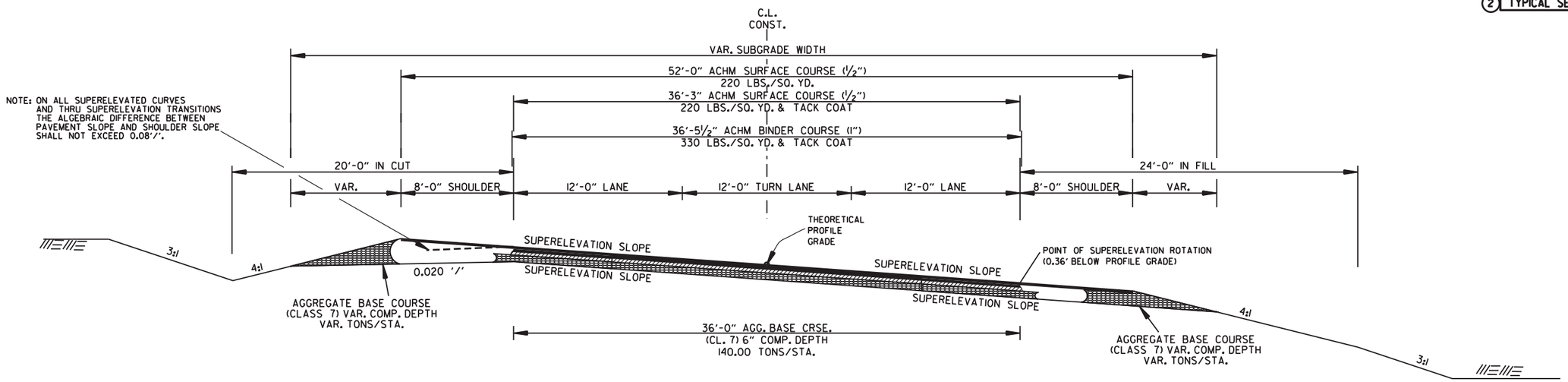
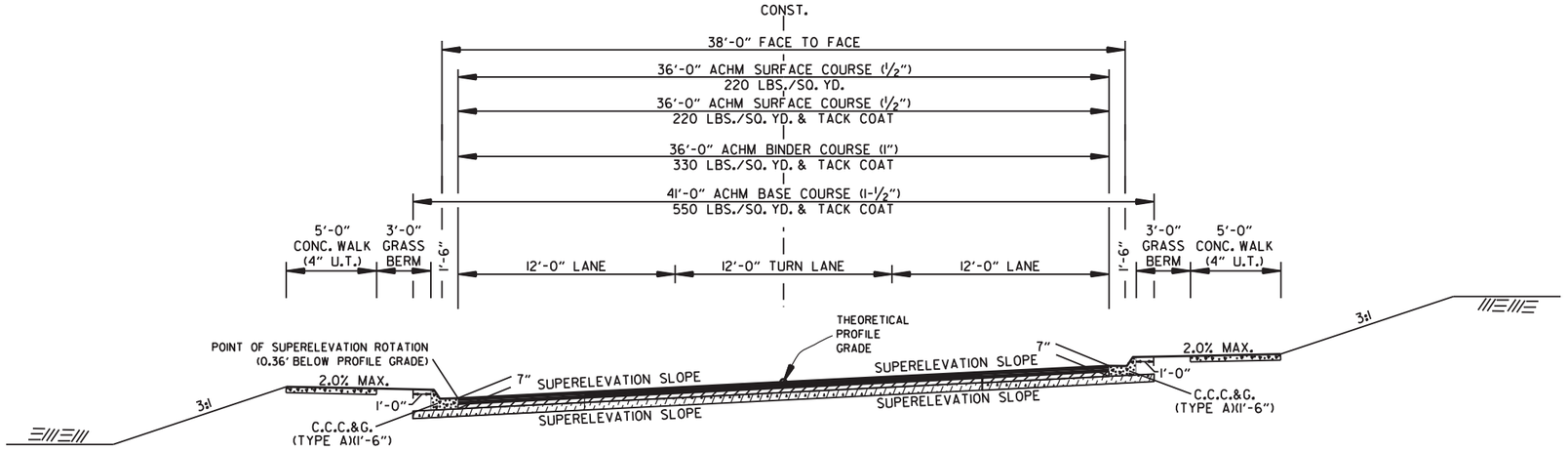


HWY. 7 - OPEN SHOULDER (SUPERELEVATION)
FULL DEPTH SECTION
STA. 262+25.00 TO STA. 265+75.00
STA. 274+75.00 TO STA. 281+75.00
STA. 309+90.00 TO STA. 318+65.00



HWY. 7 - CURB AND GUTTER (SUPERELEVATION)
FULL DEPTH SECTION
STA. 389+90.00 TO STA. 390+90.00
STA. 401+50.00 TO STA. 403+10.00

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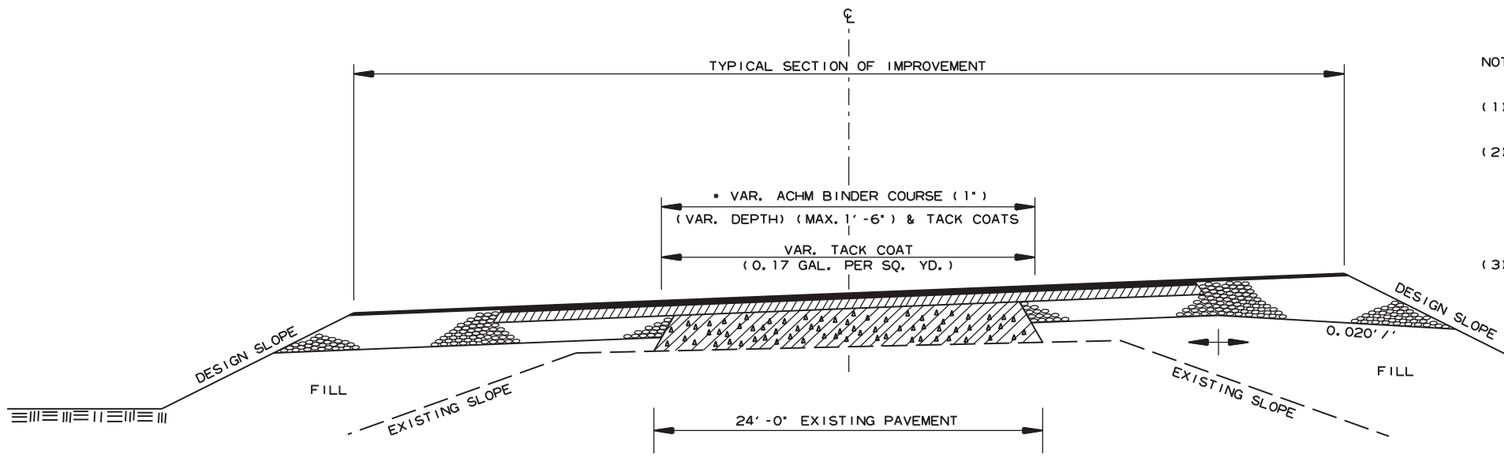
				JOB NO.		061309	7	260

(2) SPECIAL DETAILS



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

METHOD OF RAISING GRADE

NOTES:

(1) THIS DETAIL TO BE USED ONLY IF AND WHERE DIRECTED BY THE ENGINEER.

(2) QUANTITIES FOR METHOD OF GRADE RAISE USING ASPHALT WERE CALCULATED ON THIS PROJECT AT LOCATIONS WHERE THE DISTANCE BETWEEN THE EXISTING ASPHALT ROADWAY AND THE PROPOSED SUBGRADE WAS ONE FOOT OR LESS.

(3) IN LOCATIONS WHERE THE DISTANCE BETWEEN THE PROPOSED SUBGRADE AND THE EXISTING ASPHALT ROADWAY IS MORE THAN ONE FOOT, SCARIFICATION OF THE EXISTING ASPHALT ROADWAY WILL BE REQUIRED AS STATED IN SECTION 210, SUBSECTION 210.09, OF THE STANDARD SPECIFICATIONS.

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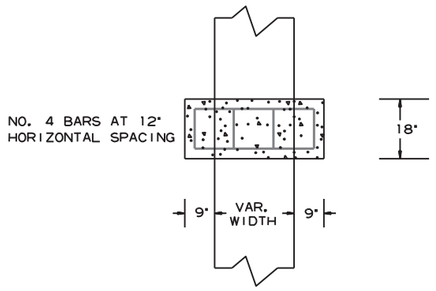
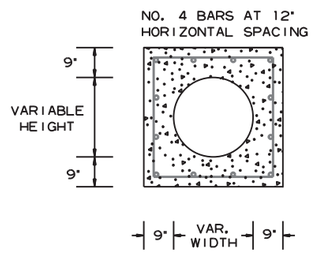
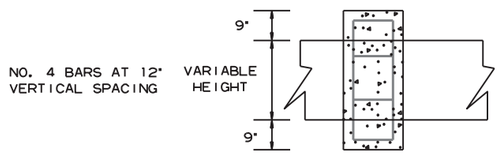


TOP VIEW

MIN 3" COVER

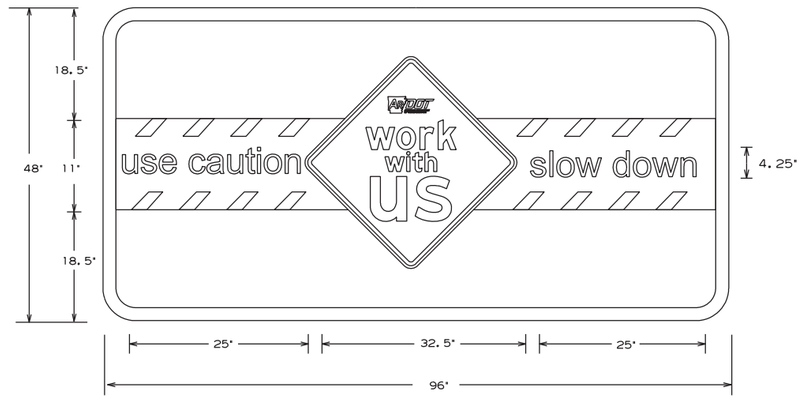


FRONT VIEW



SIDE VIEW

PIPE EXTENSION
REINFORCED CONCRETE COLLAR DETAIL



1.5" WHITE BORDER, 1.5" RADII, GREEN BACKGROUND
"use caution/slow down" 4.25" NIVEAU GROTESK, REGULAR FONT
"work with us" FRUTIGER LT 75 BLACK FONT

NOTE: DIGITAL ART WORK FILE AVAILABLE FROM ARDOT MAINTENANCE DIVISION SIGN SHOP 501-569-2665.
THIS SIGN SHALL BE PLACED 500' PRECEDING THE FIRST ADVANCE WARNING SIGN, IN THE DIRECTION OF TRAFFIC.

WORK WITH US SIGN

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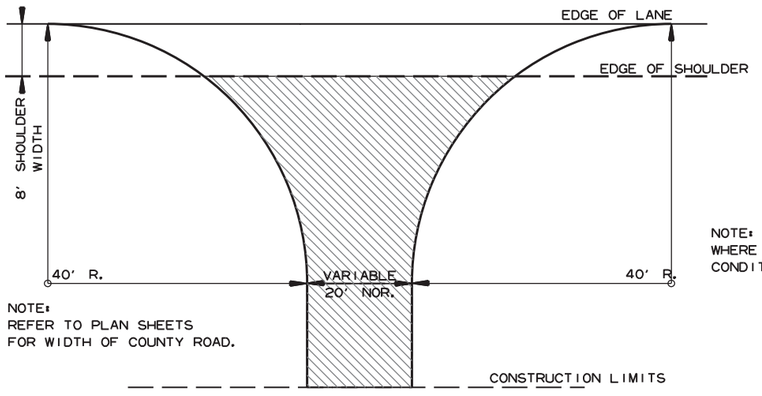
SPECIAL DETAILS

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.		061309	8	260

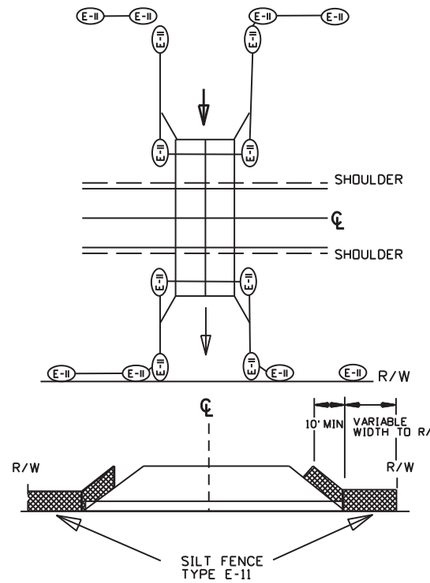
(2) SPECIAL DETAILS



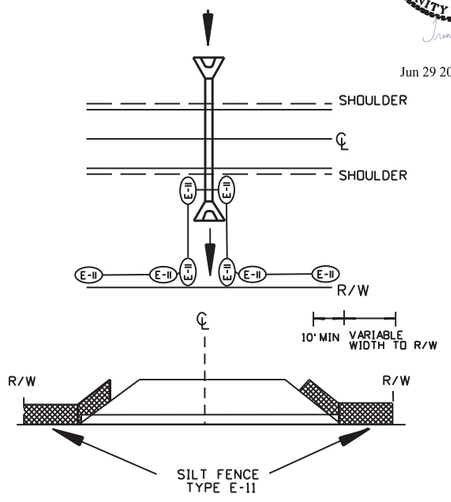
NOTE: TURNOUTS SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS AS DIRECTED BY THE ENGINEER.

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

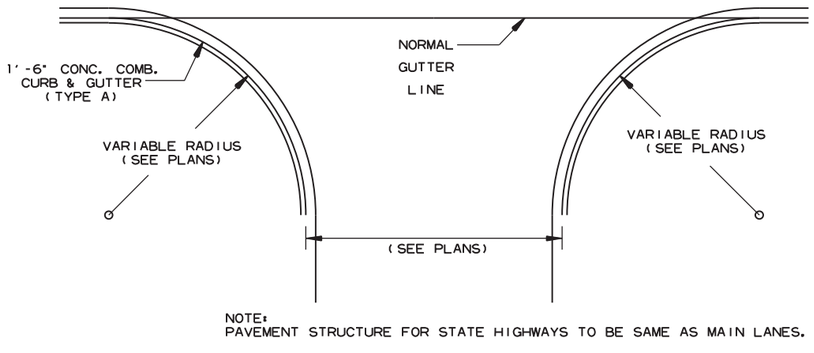
DETAIL FOR COUNTY ROAD TURNOUTS OPEN SHOULDER SECTION



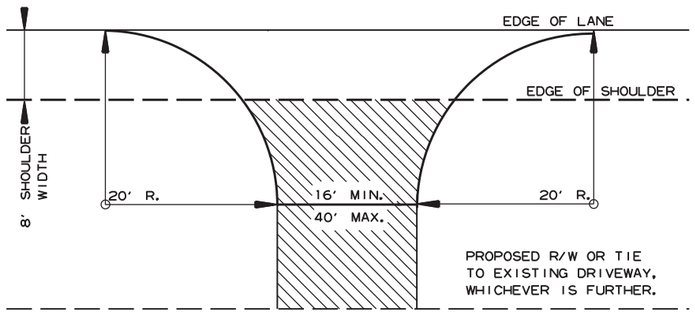
DETAIL OF SILT FENCE AT R.C. BOX



DETAIL OF SILT FENCE AT CROSS DRAINS



DETAIL OF TURNOUTS, ASPHALT STREETS, COUNTY ROADS & STATE HIGHWAYS CURB & GUTTER 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 (ARTERIALS)

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				6	ARK.			
				JOB NO.		061309	9	260

(2) SPECIAL DETAILS

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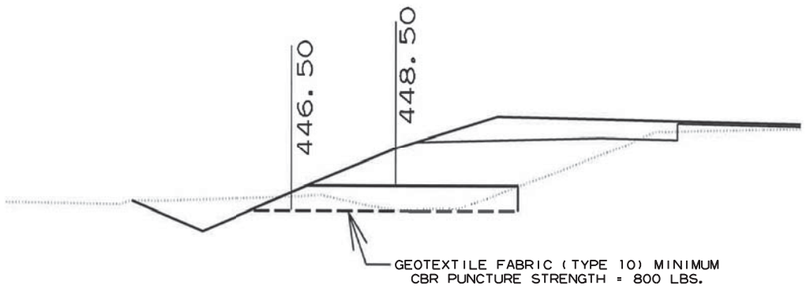
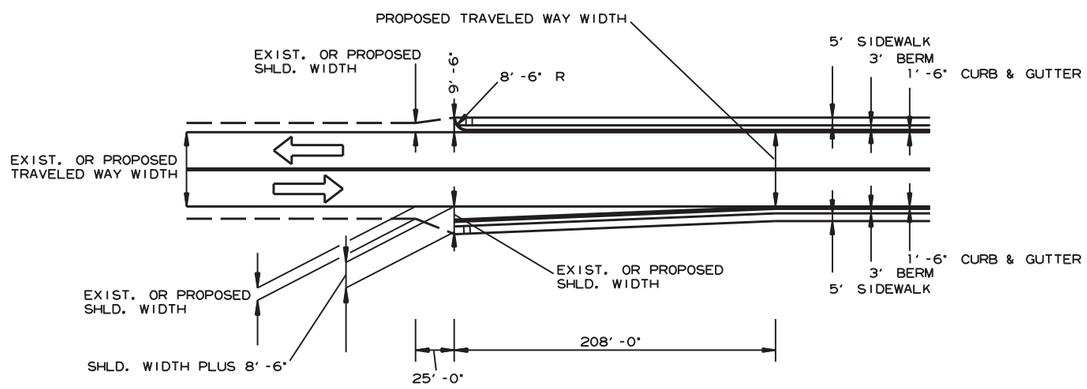
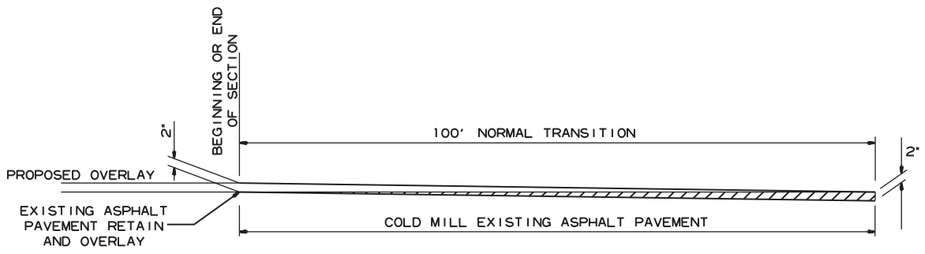
EMBANKMENTS BETWEEN STA. 367+50 TO 369+50 LT. SHOULD BE CONSTRUCTED OF STONE BACKFILL FROM ELEVATION 446.5 TO 448.5.



EMBANKMENT DETAIL



TRANSITION FROM OPEN SHOULDER TO CURB & GUTTER SECTION



DETAIL FOR TRANSITIONS



6.0" Radius, 1.3" Border, Black on Orange;
"Job XXXXXX" C 2K; "Start Date Mo Year" C 2K;
"Est Completion Mo Year" C 2K; "IDRIVE " Arial;
" ARKANSAS.COM " Arial;

CONSTRUCTION PROJECT INFORMATION SIGN

6/29/2020

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(2) SPECIAL DETAILS

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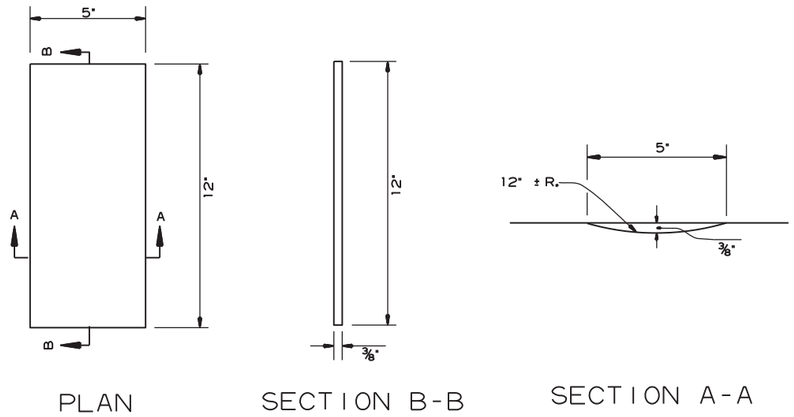
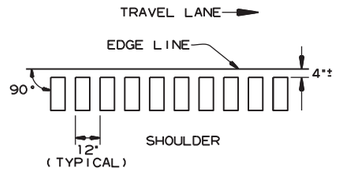
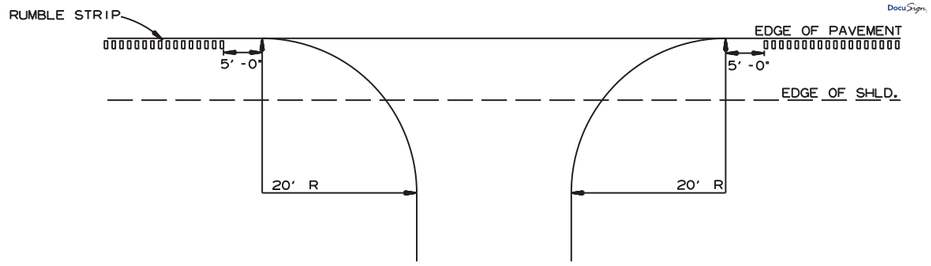


PLAN SECTION B-B SECTION A-A

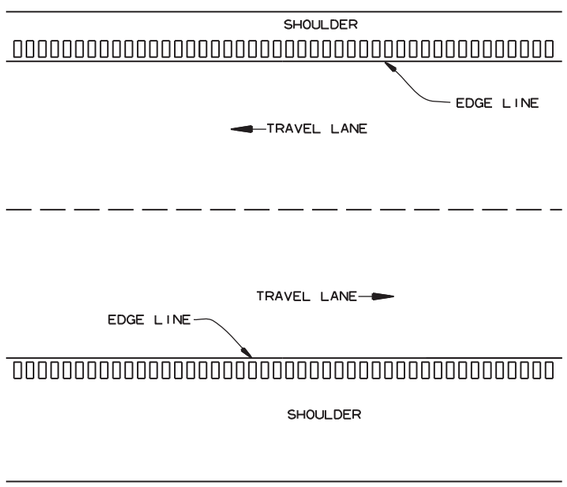
DETAILS OF RUMBLE STRIPS



LOCATION PLAN OF RUMBLE STRIPS
LEFT OR RIGHT SHOULDER



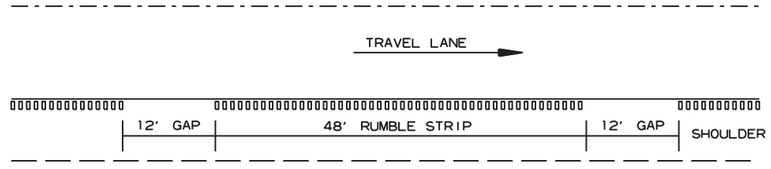
DETAIL FOR RUMBLE STRIP GAP
AT DRIVEWAY TURNOUTS



PLAN VIEW

GENERAL NOTES

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



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

DETAIL FOR GAP PATTERN RUMBLE STRIP

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(2) SPECIAL DETAILS

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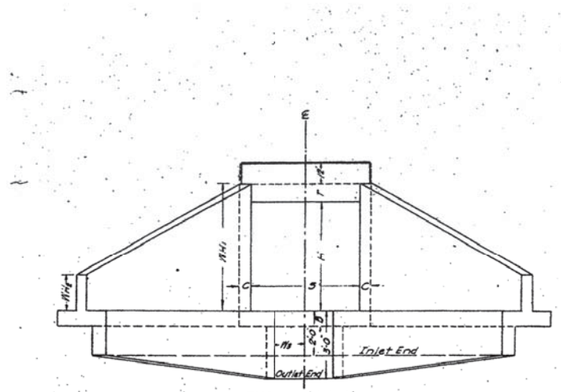
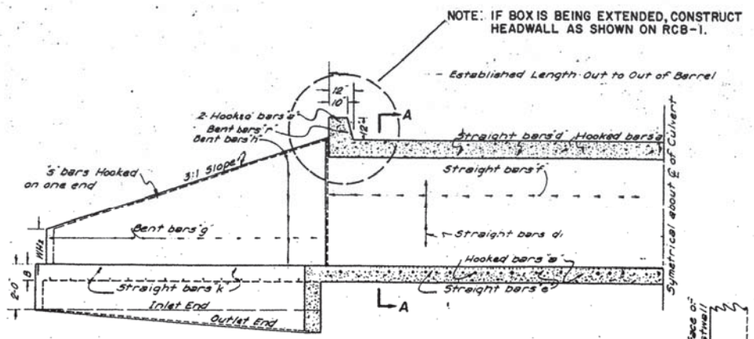
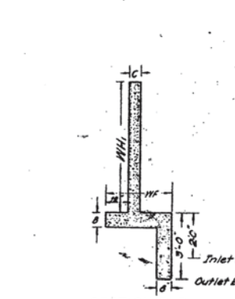


END ELEVATION



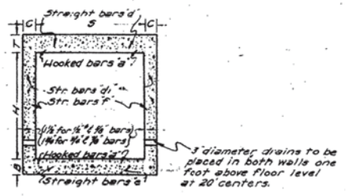
LONGITUDINAL SECTION



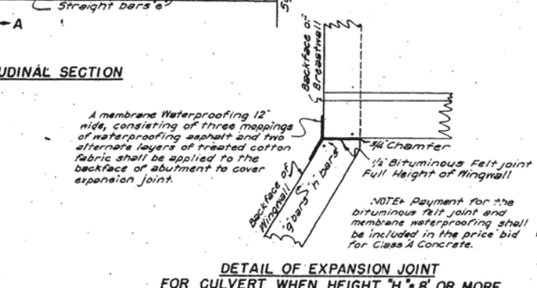
SECTION B-B

PLAN

Note: Angle of wingwalls may be varied to conform to the natural or proposed Inlet or Outlet Channel.



SECTION A-A



A membrane Waterproofing 12" wide, consisting of three mappings of waterproofing asphalt and two alternate layers of treated cotton fabric shall be applied to the backface of abutment to cover expansion joint.

NOTE- Payment for the bituminous felt joint and membrane waterproofing shall be included in the price bid for Class A Concrete.

DETAIL OF EXPANSION JOINT
FOR CULVERT WHEN HEIGHT "H" = 8' OR MORE
Scale ¾" = 1'-0"

DIMENSIONS AND QUANTITIES

SPAN	HEIGHT	AREA OF OPENING SQ. FT.	MINIMUM LENGTH OF COVER	THICKNESS OF WALLS & FOOTING SLABS	THICKNESS OF TOP SLAB	THICKNESS OF BOTTOM SLAB	WINGWALL HEIGHTS AT HEADWALLS	WINGWALL HEIGHTS AT WING ELB	MAXIMUM WIDTH OF WING FOOTING (MEASURED FROM FACE OF WINGWALL TO BACK OF WING)	LENGTH OF WINGWALLS	INSIDE LENGTH OF WING FOOTING	FOOTING DIMENSION FROM ℄ OF BOX	CONCRETE CU. Yds. HEADWALLS & FOOTINGS PER LINEAR FOOT OF CENTERLINE	CONCRETE CU. Yds. PER LINEAR FOOT OF BARREL	STEEL LB. HEADWALLS & FOOTINGS PER LINEAR FOOT OF CENTERLINE	STEEL LB. PER LINEAR FOOT OF BARREL	STEEL LB. MISC. STEEL PER LINEAR FOOT
S	H	A	D	T	C	B	W1	W2	K	W	W1	W2					
3	2	6			6"	6½"	2'-3"	1'-0"	2'-6"	5'-3"	6'-0⅝"	3'-9⅛"	0'-10⅝"	3.65	0.235	233	22.56	111
	3	9	16'	6⅓"			3'-8"	1'-0"	2'-6"	6'-3"	9'-6¼"	3'-2⅛"	0'-10⅝"	5.86	0.270	350	25.27	134
	4	12					4'-3"	1'-0"	2'-6"	10'-3"	11'-0"	1'-9⅝"	0'-10⅝"	7.71	0.309	453	27.87	156
4	2	8	13'		6"		2'-9"	1'-0"	2'-6"	5'-3"	7'-0⅛"	3'-5⅛"	1'-4⅛"	4.02	0.306	245	31.05	156
	3	12	13'	7.5"	6"	7½"	3'-9"	1'-0"	2'-6"	8'-3"	9'-6⅛"	3'-2⅛"	1'-4⅛"	6.30	0.343	362	33.76	178
	4	16	13'		6"		4'-9"	1'-6"	2'-6"	10'-3"	11'-0"	1'-9⅝"	1'-4⅛"	8.20	0.380	471	36.46	200
	6	24	11'		7"		6'-3"	2'-0"	3'-4½"	14'-3"	16'-5⅝"	6'-8⅛"	0'-5"	12.57	0.498	776	42.61	245
5	2	10	11'		6"		2'-10"	1'-0"	2'-6"	5'-6"	6'-1⅛"	3'-0⅝"	1'-0⅜"	4.59	0.370	288	38.31	178
	3	15	11'		6"		3'-10"	1'-0"	2'-6"	8'-3⅛"	9'-6¼"	3'-2⅛"	1'-0⅜"	6.82	0.407	407	41.06	220
	4	20	11'	6"	6"	8"	4'-10"	1'-6"	2'-6"	10'-6"	12'-1⅛"	3'-10"	1'-0⅜"	8.78	0.446	512	43.77	223
	5	25	11'		6½"		5'-10"	1'-9"	2'-11"	12'-6"	14'-5⅛"	4'-4⅛"	1'-4⅛"	11.20	0.451	648	46.47	245
	7	35	9'		7½"		7'-10"	2'-6"	3'-1"	16'-6"	18'-3⅛"	5'-1⅝"	0'-4"	18.17	0.653	1231	58.60	268
6	3	18	9'		6"		3'-10"	1'-0"	2'-6"	8'-6"	9'-9¼"	3'-4⅝"	2'-4⅜"	7.28	0.500	402	50.41	223
	4	24	9'		6"		4'-10"	1'-6"	2'-6"	10'-6"	12'-1⅛"	3'-10"	2'-4⅜"	9.36	0.587	525	53.11	245
	5	30	9'	9"	6"	9"	5'-10"	1'-9"	2'-11"	12'-6"	14'-5⅛"	4'-4⅛"	1'-10⅜"	11.30	0.634	643	55.82	267
	6½	36	9'		7"		6'-10"	2'-0"	3'-5"	14'-6"	16'-9"	5'-0"	1'-4⅛"	15.76	0.657	824	58.55	289
	8	48	7'		8"		8'-10"	2'-8"	4'-5"	18'-6"	21'-4⅛"	6'-8⅛"	0'-3⅝"	24.90	0.802	1489	72.69	334
8	2	16	7'	11"	7⅞"	11"	3'-0"	2'-4"	4'-0"	7'-0"	8'-1⅞"	3'-0⅜"	1'-0⅞"	22.58	0.952	1337	84.24	401
	3	24	7'		8"		4'-0"	2'-8"	4'-6"	9'-0"	10'-1⅜"	3'-4⅜"	1'-0⅞"	27.97	1.029	1592	88.05	423
	10	80	7'		10"		11'-0"	3'-4"	5'-6"	23'-0"	26'-1⅛"	8'-2⅛"	1'-0⅞"	63.33	1.234	2643	101.81	461
10	4	40	6'	13"	8"	13"	5'-0"	2'-8"	4'-6"	18'-0"	21'-1⅛"	6'-10⅛"	2'-2⅞"	30.05	1.306	1659	116.76	445
	10	100	6'		10"		11'-0"	3'-4"	5'-6"	28'-0"	32'-6⅛"	9'-7⅛"	1'-2⅞"	46.76	1.593	2524	151.04	490
	12	120	6'		12"		13'-0"	4'-0"	6'-6"	27'-0"	31'-2"	9'-4⅛"	0'-2⅝"	69.22	1.892	3847	188.90	534

LAP NOTE - In computing quantities of Steel from the above table, add one lap for culverts up to 60'-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.

STEEL SCHEDULE
For Culverts 30'-0 in Length-Out to Out of Barrel

SPAN	HEIGHT	'a' bars: S in each headwall balances in Top and Bottom slab of barrel. 3" for 8'9" & 9'6" bars; 6" for 10'6" & 12'6" bars	'd' bars STRAIGHT In Bottom of Top Slab	'd' bars STRAIGHT In Sidewalls	'd' 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 12'4" bars @ 12" Ctrs Horizontal bars in Wingwalls	'k' bars ft'd bars STRAIGHT In Wing Footing	'r' bars 12'4" bars @ 12" Ctrs Dowels in Headwalls	'S' bars ft'd bars In Top of each Wingwall
S	H	Size / Spacing / Number / Length / X	Size / Spacing / Number / Length	Size / Spacing / Number / Length	Size / Spacing / Number / Length	Size / Spacing / Number / Length	Size / Spacing / Number / Length / Y Min / Y Max	Size / Spacing / Number / Length / Z Min / Z Max	Size / Spacing / Number / Length	Size / Spacing / Number / Length	Size / Spacing / Number / Length / Z
3	2	124 4'-6 3'-3				12" 12" 4 4'	62 2'-10	28 3'-5 1'-3 1'-3	16" 12" 28 3'-5 1'-3 1'-3½	12" 12" 28 3'-5 1'-3 1'-3½	
	3	124 4'-6 3'-3					62 3'-10	40 3'-11 1'-3 1'-4⅜			
	4	124 4'-6 3'-3					62 4'-10	48 4'-7 1'-3 1'-3			
4	2	140 3'-6 4'-3					62 3'-0	28 3'-6 1'-3 1'-3			
	3	140 3'-6 4'-3					62 4'-0	40 4'-0 1'-3 1'-3			
	4	140 3'-6 4'-3					62 5'-0	48 4'-8 1'-3 1'-3			
	6	140 3'-6 4'-11					62 7'-0	68 6'-5⅝ 1'-4 2'-1			
5	2	106 6'-6 5'-3					62 3'-1	28 3'-7 1'-3 1'-3			
	3	106 6'-6 5'-3					62 4'-1	40 4'-1 1'-3 1'-3			
	4	106 6'-6 5'-3					62 5'-1	52 4'-3 1'-3 1'-3			
	5	106 6'-6 5'-3					62 6'-1	64 5'-7½ 1'-3 1'-3			
	7	106 6'-5 6'-0					62 8'-1	88 7'-6½ 1'-4⅛ 2'-3			
6	3	124 7'-6 6'-3					62 4'-3	40 4'-2 1'-3 1'-3			
	4	124 7'-6 6'-3					62 5'-3	52 4'-10 1'-3 1'-3			
	5	124 7'-6 6'-3					62 6'-3	64 5'-6½ 1'-3 1'-6			
	6	124 7'-6 6'-11					62 7'-3	76 6'-6 1'-4 2'-2			
	8	124 7'-10 7'-7					62 9'-3	100 8'-6½ 1'-5 3'-2			
8	2	64 10'-5⅜ 6'-11⅛					62 3'-7	40 3'-10½ 1'-4⅞ 2'-9			
	4	64 10'-6⅜ 7'-0⅜					62 5'-7	64 5'-10½ 1'-5 3'-3			
	6	64 10'-10⅜ 7'-4⅞					62 7'-7	88 7'-10½ 1'-5 3'-3			
	10	64 10'-10⅜ 8'-4⅞					62 11'-7	136 10'-9 1'-7 4'-3			
10	4	108 12'-6 9'-11⅛					62 6'-11	64 5'-9 1'-5 3'-3			
	10	108 12'-10⅜ 10'-3⅜					62 11'-11	136 10'-11 1'-7 4'-3			
	12	108 13'-1⅜ 10'-8⅜					62 13'-11	172 12'-10 1'-8 5'-3			

NOTE- Lengths given above do not include lap

REVISIONS	
Jan. 1957	Redrawn
Nov. 1957	Military Loading

A.A.S.H.O. DESIGN LIVE LOADING H-20 S-16
UNIT STRESSES

Concrete (n-15) - 840 Lbs. Per Sq. In.
Reinf. Steel (Str. or) - 18,000 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.

ARKANSAS STATE HIGHWAY COMMISSION

REINFORCED CONCRETE BOX CULVERTS

3' TO 10' SPAN
SINGLE

3:1 SLOPES
OVER 3'-6" COVER

6/26/2020

R061309.DGN

SPECIAL DETAILS

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

Trinity Smith

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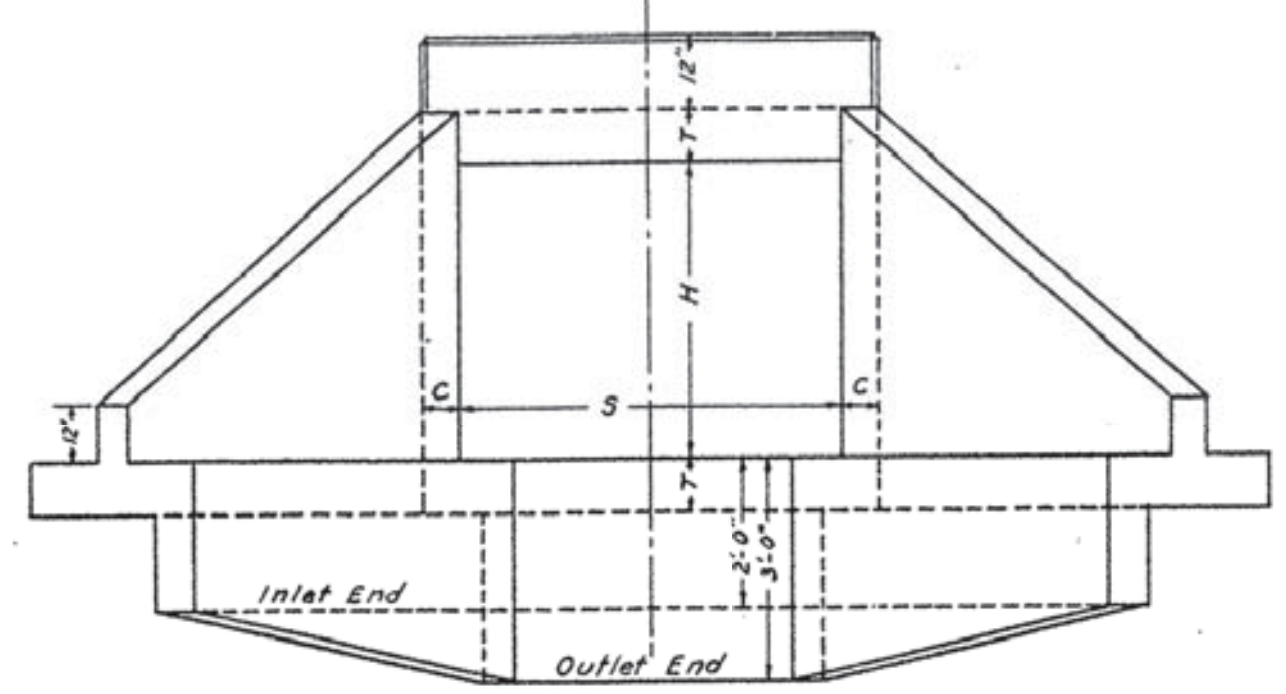

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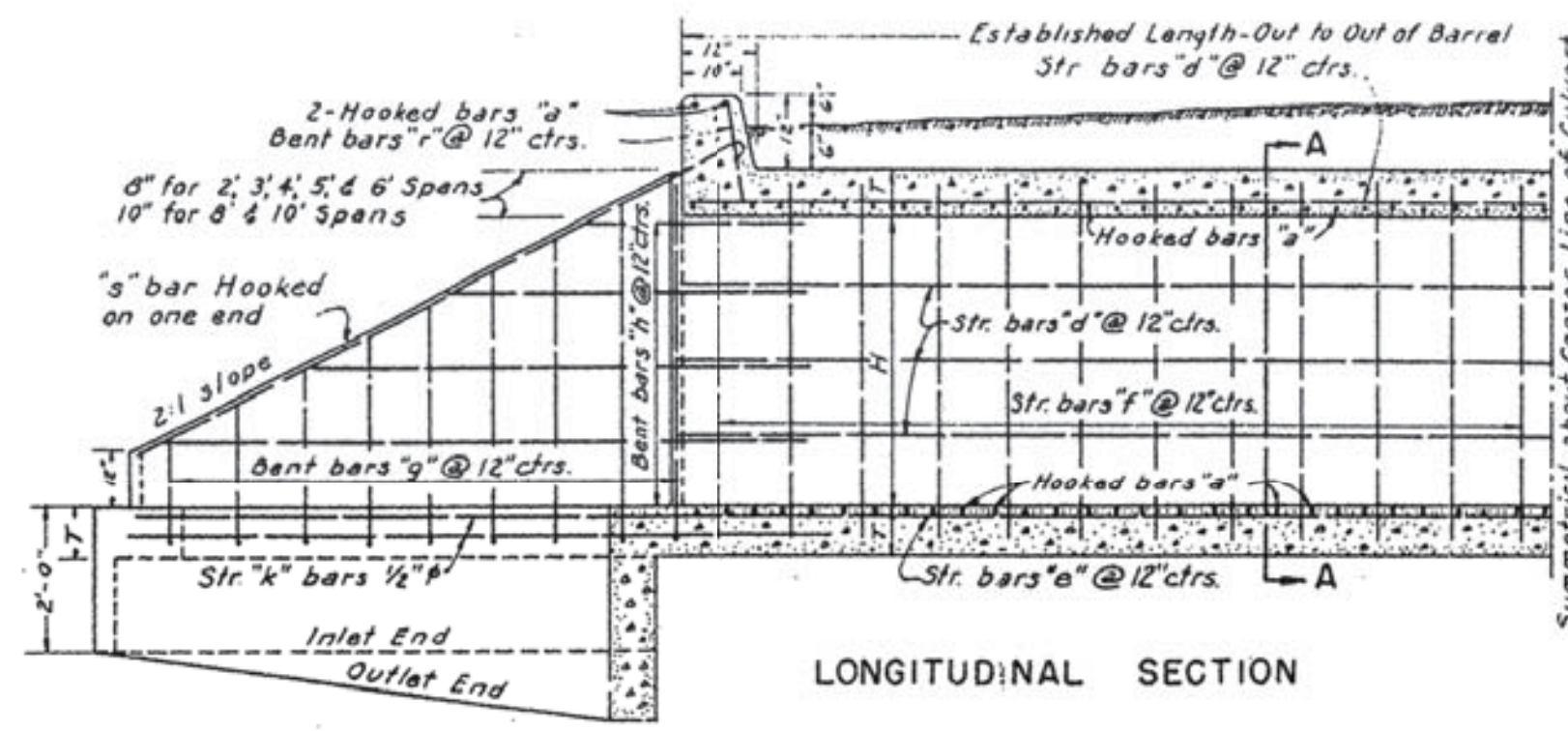
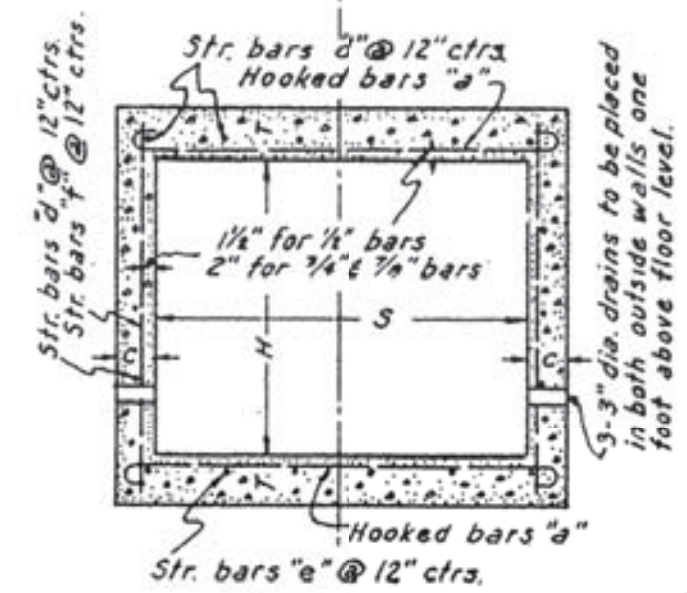


LONGITUDINAL SECTION



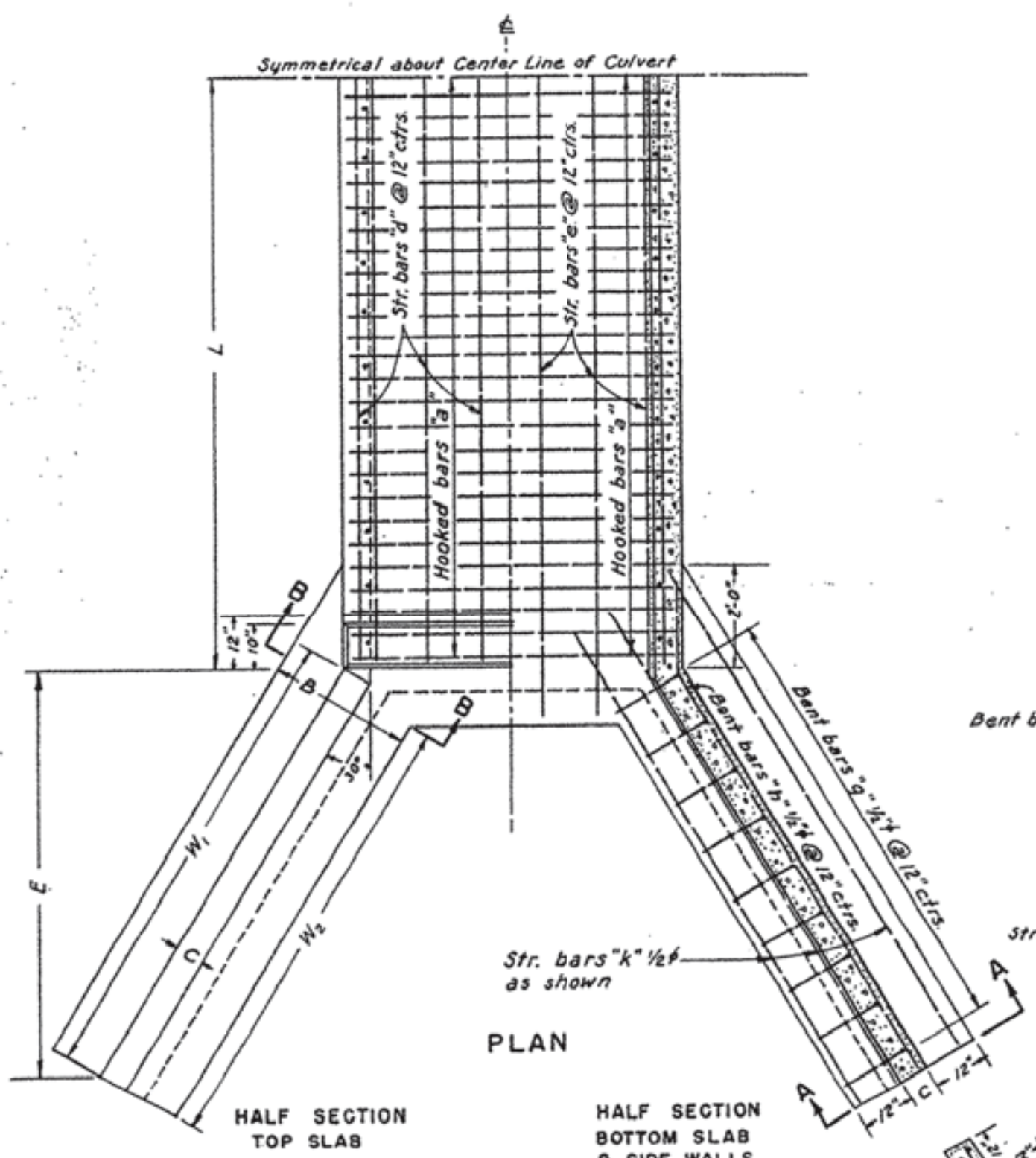
SECTION A-A

DIMENSIONS & QUANTITIES

SPAN	HEIGHT	AREA OF OPENING SQ. FT.	MAXIMUM DEPTH OF COVER	THICKNESS OF TOP & BOTTOM SLAB	THICKNESS OF SIDE & WING WALLS	WIDTH OF FOOTING	LENGTH OF FOOTING	LENGTH OF WING WALLS	LENGTH OF WINGS FROM BACK OF HEADWALL	CONCRETE CU. YD. HEADWALLS WINGWALLS & FOOTING	CONCRETE CU. YD. PER LINEAR FT. OF BARREL	STEEL LB. HEADWALLS WINGWALLS & FOOTING	STEEL LB. PER LINEAR FT. OF BARREL	STEEL LB. ADD STEEL FOR LAPS
S	H	A	D	T	C	B	W_2	W_1	E					
2	2	4	20'-0"	6½"	6"	2'-6"	3'-6½"	3'-10"	3'-4"	2.38	.194	155	17.91	8.9
3	2	6	20'-0"	7"	6"	2'-6"	3'-6½"	3'-10"	3'-4"	2.65	.247	164	22.77	11.1
	3	9			6"		5'-10½"	6'-2"	5'-4"	4.10	.284	243	25.43	13.4
4	2	8	16'-0"	7½"	6"	2'-6"	3'-6½"	3'-10"	3'-4"	2.90	.306	173	28.28	13.4
	3	12			6"		5'-10½"	6'-2"	5'-4"	4.36	.343	251	30.94	15.6
	4	16			6"		8'-2"	8'-5½"	7'-4"	5.94	.380	332	33.60	17.8
5	2	10	10'-0"	8"	6"	2'-6"	3'-6½"	3'-10"	3'-4"	3.15	.370	189	34.56	15.6
	3	15			6"		5'-10½"	6'-2"	5'-4"	4.60	.407	267	37.22	17.8
	4	20			6"		8'-2"	8'-5½"	7'-4"	6.29	.444	370	39.89	20.0
	5	25			7"	2'-9"	10'-8"	10'-9½"	9'-4"	8.78	.521	478	42.55	22.3
6	3	18	7'-0"	8½"	6"	2'-6"	5'-10½"	6'-2"	5'-4"	4.94	.478	278	41.88	20.0
	4	24			6"		8'-2"	8'-5½"	7'-4"	6.61	.515	383	44.54	22.3
	5	30			7"	2'-9"	10'-8"	10'-9½"	9'-4"	9.14	.592	492	47.20	24.5
	6	36			7"	3'-0"	13'-1"	13'-1"	11'-4"	11.58	.635	611	49.86	26.7
8	3	24	5'-0"	10½"	7"	2'-7"	6'-3½"	6'-6½"	5'-8"	6.28	.724	334	60.81	24.5
	4	32			7"	2'-7"	8'-7¼"	8'-10¼"	7'-8"	8.25	.767	429	63.47	26.7
	5	40			7"	2'-9"	11'-0¼"	11'-2"	9'-8"	10.52	.810	536	66.13	28.9
	6	48			7"	3'-0"	13'-5½"	13'-5½"	11'-8"	13.08	.853	673	68.80	31.2
	7	56			7"	3'-4"	16'-0"	15'-9½"	13'-8"	16.03	.897	976	71.46	33.4
	8	64			8"	3'-10"	18'-8"	18'-1"	15'-8"	20.69	1.000	1168	74.81	35.6
10	4	40	4'-0"	11¾"	7"	2'-7"	8'-7¼"	8'-10¼"	7'-8"	8.97	.983	505	90.62	31.2
	5	50			7"	2'-9"	11'-0¼"	11'-2"	9'-8"	11.33	1.026	611	93.28	33.4
	6	60			7"	3'-0"	13'-5½"	13'-5½"	11'-8"	13.99	1.067	749	95.94	35.6
	7	70			7"	3'-4"	16'-0"	15'-9½"	13'-8"	17.27	1.112	1060	98.60	37.9
	8	80			8"	3'-10"	18'-8"	18'-1"	15'-8"	21.88	1.217	1253	101.26	40.1
	9	90			9"	4'-3"	21'-2"	20'-4¼"	17'-8"	27.55	1.334	1740	111.86	42.3
	10	100			10"	4'-9"	23'-9½"	22'-8½"	19'-8"	34.78	1.463	2181	115.27	44.5

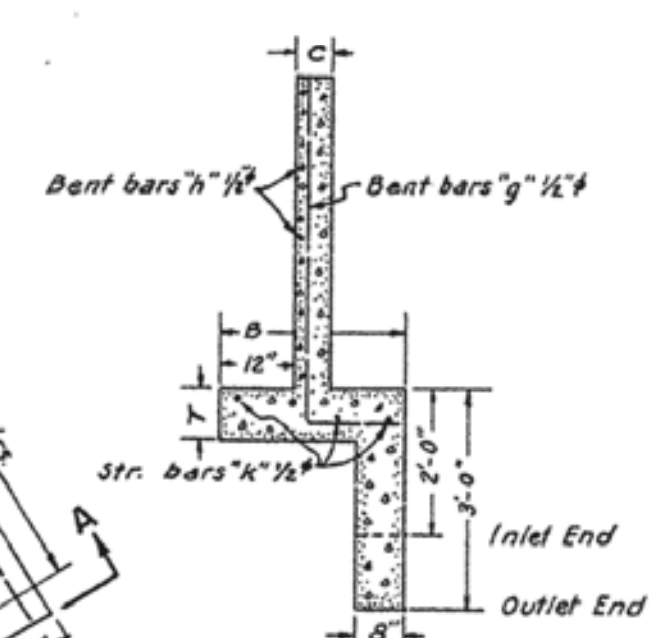
LAP NOTE:

In computing quantities of steel from the above table add one lap for culverts up to 50' in length and one lap for each additional 25' in length.

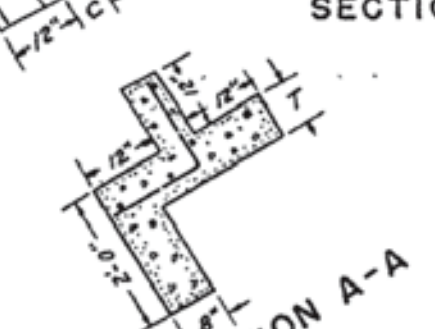


PLAN

NOTE:- Angle of Wingwalls may be varied to conform to the natural or proposed inlet or outlet channel.



SECTION B-B



SECTION A-A

STEEL SCHEDULE

For Culvert 32' in Length Out to Out of Barrel

"a" bars: 3" for 2, 3, 4, 5, 6 & 8' Span; 6" for 10' Span; 2 in each headwall, Balance in top and bottom slab of barrel.
"d" bars, "e" bars: ½"φ bars spaced at 12" Centers STRAIGHT; "d" bars: Top slab and Sidewalls; "e" bars: Top of Bottom Slab.
"f" bars: STRAIGHT Vertical bars in Sidewalls.
"g" bars: Vertical bars in Wingwalls.
"h" bars: ½"φ bars @ 12" Ctrs. (30°, 20"); Horizontal bars in Wingwalls.
"k" bars: ½"φ Bars STRAIGHT Top of Wing Footings.
"r" bars: ½"φ BENT Dowel Bar In Headwall.
"s" bars: ½"φ one in Top of Each Wingwall.

LENGTH OF SPAN S	HEIGHT H	"a" SIZE	"a" SPACING	"a" NUMBER	"a" LENGTH	"a" X	"d" NUMBER	"d" LENGTH	"e" NUMBER	"e" LENGTH	"f" SIZE	"f" SPACING	"f" NUMBER	"f" LENGTH	"g" SIZE	"g" SPACING	"g" NUMBER	"g" AV. LENGTH	"g" X Min.	"g" X Max.	"g" Y Min.	"g" Y Max.	"h" NUMBER	"h" AV. LENGTH	"h" Z Min.	"h" Z Max.	"k" NUMBER	"k" LENGTH	"r" NUMBER	"r" LENGTH	"s" NUMBER	"s" LENGTH
2	2	½"φ	6½"	122	3'-7"	2'-9"	5		3		½"φ	12"	64	2'-10"	½"φ	12"	16	3'-4"	1'-4"	2'-9"	1'-3"	1'-3"	12	4'-7"	1'-4"	3'-8"	12	5'-4"	6	3'-2"	4	5'-3"
3	2	½"φ	6"	132	4'-7"	3'-9"	6		4		½"φ	12"	64	2'-11"	½"φ	12"	16	3'-4½"	1'-4½"	2'-9½"	1'-3"	1'-3"	12	4'-7"	1'-4"	3'-8"	12	5'-4"	8	3'-2"	4	5'-3"
	3			132	4'-7"	3'-9"	8		4				64	3'-11"			24	3'-10½"	1'-6½"	3'-9½"	1'-3"	1'-3"	16	5'-11"	1'-4"	6'-0"	12	7'-8"	8	3'-2"	4	7'-9"
4	2	½"φ	5½"	144	5'-7"	4'-9"	7		5		½"φ	12"	64	3'-0"	½"φ	12"	16	3'-5"	1'-5"	2'-10"	1'-3"	1'-3"	12	4'-7"	1'-4"	3'-8"	12	5'-4"	10	3'-2"	4	5'-3"
	3			144	5'-7"	4'-9"	9		5				64	4'-0"			24	3'-11"	1'-7"	3'-10"	1'-3"	1'-3"	16	5'-11"	1'-4"	6'-0"	12	7'-8"	10	3'-2"	4	7'-9"
	4			144	5'-7"	4'-9"	11	31'-9" for 32'-0" Length	5	33'-9" for 32'-0" Length			64	5'-0"			36	4'-5"	1'-5"	4'-10"	1'-3"	1'-3"	20	7'-2"	1'-4"	8'-4"	12	10'-0"	10	3'-2"	4	10'-3"
5	2	½"φ	5"	158	6'-7"	5'-9"	8		6		½"φ	12"	64	3'-1"	½"φ	12"	16	3'-6"	1'-7"	2'-11"	1'-3"	1'-3"	12	4'-7"	1'-4"	3'-8"	12	5'-4"	14	3'-6"	4	5'-3"
	3			158	6'-7"	5'-9"	10		6				64	4'-1"			24	3'-11"	1'-5"	3'-11"	1'-3"	1'-3"	16	5'-11"	1'-4"	6'-0"	12	7'-8"	14	3'-6"	4	7'-9"
	4			158	6'-7"	5'-9"	12		6				64	5'-1"			36	4'-6"	1'-6"	4'-11"	1'-3"	1'-3"	20	7'-2"	1'-4"	8'-4"	12	10'-0"	14	3'-6"	4	10'-3"
	5			158	6'-7"	5'-9"	14		6				64	6'-1"			44	5'-2"	1'-7"	5'-11"	1'-4"	1'-6"	24	8'-5"	1'-4"	10'-8"	12	12'-4"	14	3'-6"	4	12'-9"
6	3	½"φ	5"	158	7'-7"	6'-9"	11		7		½"φ	12"	64	4'-2"	½"φ	12"	24	4'-1"	1'-5"	4'-3"	1'-3"	1'-3"	16	5'-11"	1'-4"	6'-0"	12	7'-8"	16	3'-6"	4	7'-9"
	4			158	7'-7"	6'-9"	13		7				64	5'-2"			36	4'-8"	1'-6"	5'-3"	1'-3"	1'-3"	20	7'-2"	1'-4"	8'-4"	12	10'-0"	16	3'-6"	4	10'-3"
	5			158	7'-7"	6'-9"	15		7				64	6'-2"			44	5'-4"	1'-7"	6'-3"	1'-4"	1'-6"	24	8'-5"	1'-4"	10'-8"	12	12'-4"	16	3'-6"	4	12'-9"
	6			158	7'-7"	6'-9"	17		7				64	7'-2"			52	5'-11"	1'-5"	7'-3"	1'-4"	1'-9"	28	9'-8"	1'-4"	13'-0"	12	14'-7"	16	3'-6"	4	15'-3"
8	3	⅝"φ	6"	132	9'-8"	8'-10"	13		9		½"φ	12"	64	4'-5"	½"φ	12"	28	4'-4"	1'-8"	4'-4"	1'-4"	1'-4"	16	6'-4"	1'-8"	6'-5"	12	8'-0"	20	3'-6"	4	8'-3"
	4			132	9'-8"	8'-10"	15		9				64	5'-5"			36	4'-11"	1'-9"	5'-4"	1'-4"	1'-4"	20	7'-6"	1'-8"	8'-9"	12	10'-4"	20	3'-6"	4	10'-9"
	5			132	9'-8"	8'-10"	17		9				64	6'-5"			44	5'-5"	1'-8"	6'-4"	1'-4"	1'-6"	24	8'-9"	1'-8"	11'-0"	12	12'-8"	20	3'-6"	4	13'-3"
	6			132	9'-8"	8'-10"	19		9				64	7'-5"			56	6'-0"	1'-7"	7'-4"	1'-4"	1'-9"	28	10'-0"	1'-8"	13'-4"	12	15'-0"	20	3'-6"	4	15'-9"
	7			132	9'-8"	8'-10"	21		9				64	8'-5"	⅝"φ	12"	64	6'-9"	1'-9"	8'-4"	1'-4"	2'-1"	32	11'-2"	1'-8"	15'-8"	12	17'-4"	20	3'-6"	4	18'-3"
	8			132	9'-10"	9'-0"	23		9				64	9'-5"			72	7'-5"	1'-7"	9'-4"	1'-5"	2'-6"	36	12'-5"	1'-8"	17'-11"	12	19'-8"	20	3'-6"	4	20'-9"
10	4	⅞"φ	9½"	86	12'-4"	10'-10"	17		11		½"φ	12"	64	5'-7"	½"φ	12"	36	5'-0"	1'-10"	5'-6"	1'-4"	1'-4"	20	7'-7"	1'-8"	8'-8"	12	10'-4"	24	3'-6"	4	10'-9"
	5			86	12'-4"	10'-10"	19		11				64	6'-7"			44	5'-6"	1'-8"	6'-6"	1'-4"	1'-6"	24	8'-9"	1'-8"	11'-0"	12	12'-8"	24	3'-6"	4	13'-3"
	6			86	12'-4"	10'-10"	21		11				64	7'-7"			56	6'-1"	1'-8"	7'-6"	1'-4"	1'-9"	28	10'-0"	1'-8"	13'-4"	12	15'-0"	24	3'-6"	4	15'-9"
	7			86	12'-4"	10'-10"	23		11				64	8'-7"	⅝"φ	12"	64	6'-11"	1'-10"	8'-6"	1'-4"	2'-1"	32	11'-2"	1'-8"	15'-8"	12	17'-4"	24	3'-6"	4	18'-3"
	8			86	12'-6"	11'-0"	25		11				64	9'-7"			72	7'-7"	1'-8"	9'-6"	1'-5"	2'-6"	36	12'-5"	1'-8"	17'-11"	12	19'-8"	24	3'-6"	4	20'-9"
	9			86	12'-8"	11'-2"	27		11		⅝"φ		64	10'-7"		9"	108	8'-7"	1'-8"	10'-6"	1'-6"	3'-0"	40	13'-7"	1'-8"	20'-2"	12	22'-0"	24	3'-6"	4	23'-3"
	10			86	12'-10"	11'-4"	29		11				64	11'-7"		8"	136	9'-3"	1'-10"	11'-6"	1'-7"	3'-6"	44	14'-9"	1'-8"	22'-6"	12	24'-4"	24	3'-6"	4	25'-9"

NOTE: Lengths given above do not include lap.

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 "S"

ARKANSAS STATE HIGHWAY COMMISSION

REINFORCED CONCRETE BOX CULVERTS

SINGLE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061309	13	260

(2) SPECIAL DETAILS

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

Trinity Smith

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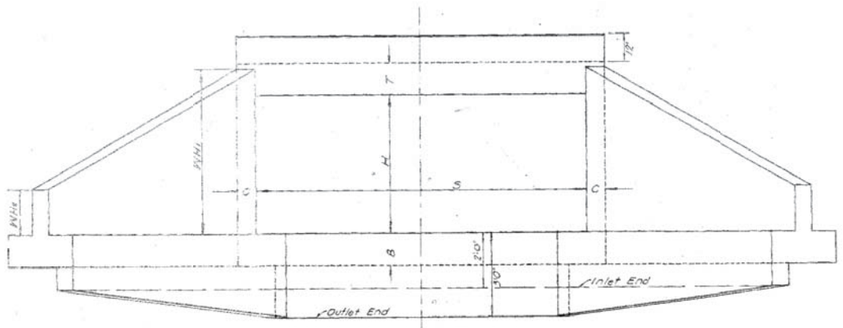
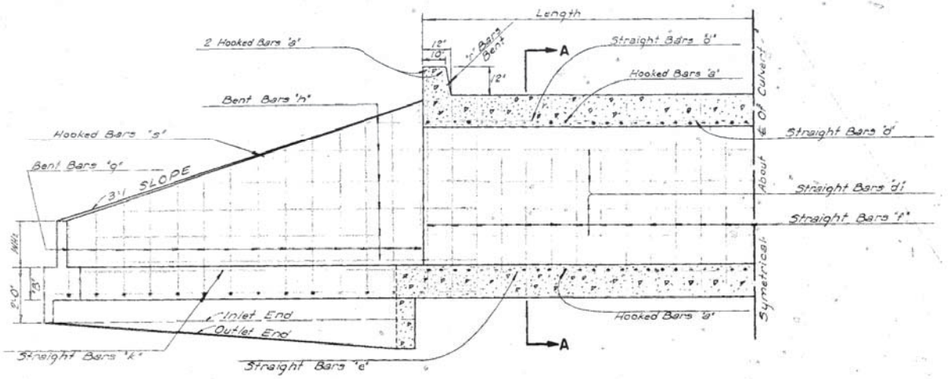
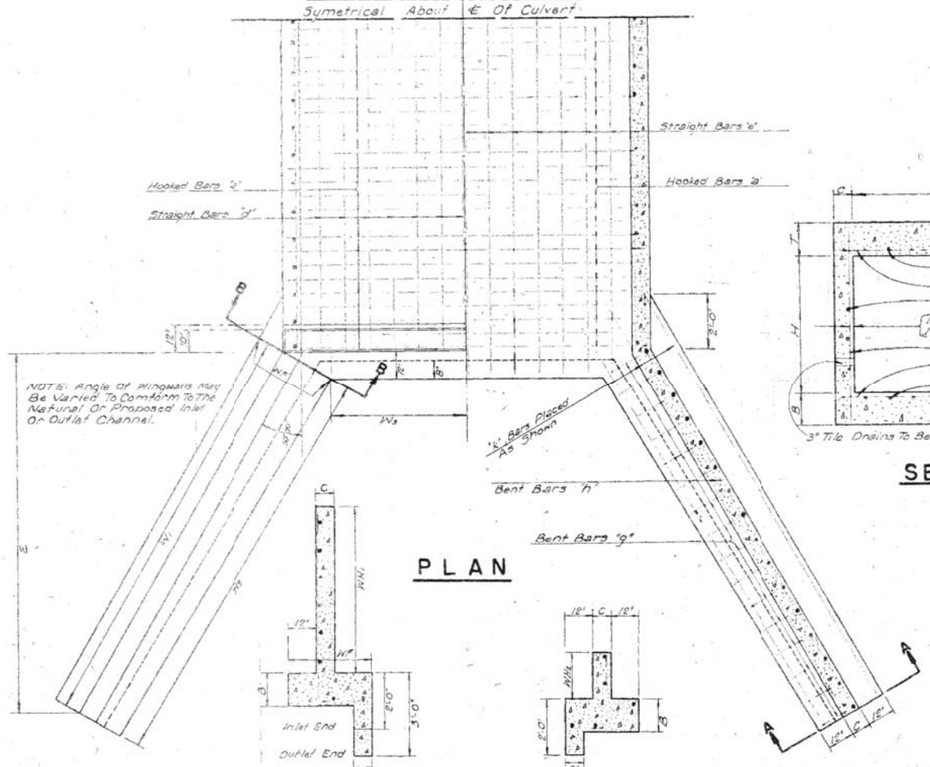


END ELEVATION

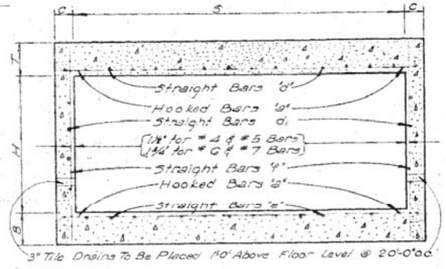
Symetrical About ℄ Of Culvert



LONGITUDINAL SECTION



PLAN



SECTION A-A

SECTION B-B

SECTION A-A

DIMENSIONS & QUANTITIES

SPAN	HEIGHT	AREA OF OPENING	MINIMUM DEPTH OF COVER	THICKNESS OF TOP SLAB	THICKNESS OF BOTTOM SLAB	THICKNESS OF WALLS & WINGWALLS	WING WEIGHTS AT HEADWALL	WING WEIGHTS AT WING END	MINIMUM WIDTH OF FOOTING PERPENDICULAR TO DIRECTION OF BARREL	LENGTH OF WINGWALLS	WINGWALLS INSIDE LENGTH FROM WING JUNCTION TO END OF BOX	CONCRETE CU.YDS. HEADWALLS & WINGS PER END	CONCRETE CU.YDS. LINEAR FOOT OF BARREL	STEEL POUNDS HEADWALLS & WINGS PER END	STEEL POUNDS LINEAR FOOT OF BARREL	STEEL POUNDS ADDITIONAL FOR LAPS
S	H	A	D	T	C	B	W_1	W_2	WF	E	W_1	W_2	W_3				
12	3	36	3'-6	14"	8"	14"	4'	1'-0	9'-8	9'-0"	10'-4	6'-5 3/4"	5'-3 1/4"	10.70	1.300	521	116.19	40.1
12	5	60	3'-6	14"	8"	14"	6'	1'-8	9'-8	9'-0"	10'-4	6'-5 3/4"	5'-3 1/4"	17.60	1.309	786	121.60	44.5

LAP NOTE: In Computing Quantities Of Steel From The Above Table, Add One Lap For Culverts Up To 60'-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'.

STEEL SCHEDULE

For Culverts 30'-0" In Length - Out To Out Of Barrel

SPAN	HEIGHT	'a' Bars					'b' Bars		'd' Bars		'e' Bars		'f' Bars		'g' Bars						'h' Bars				'k' Bars		'n' Bars		's' Bars	
							# 4 Straight		# 4 Straight		In Bottom Slab Of Barrel		Straight Vertical Bars In Sidewalls		Vertical Bars In Backface Of (Wingwall)-Bent Info Bottom Of Ftg.						#4 @ 12" Ctrs.				#4 Straight		#4 @ 18" Ctrs.		#4	
		Size	Number	Length	Weight	×	Number	Length	Number	Length	Number	Length	Number	Length	Size	Number	Length	Weight	Min.	Max.	Size	Number	Length	Weight	Size	Number	Size	Number	Size	Number	Z
12	3	#6	10	38'-0"	1,141 lbs.	10½	10	29'-9"	12	4	10	29'-9"	10	3'-9"	#4	12	4'-4"	1,040	1'-5"	1'-11"	#4	10	5'-3"	351 lbs.	#4	12	#4	10	#4	4	6'-3"
12	5	#6	10	38'-0"	1,141 lbs.	10½	10	29'-9"	12	8	10	29'-9"	10	3'-9"	#4	12	6'-4"	1,520	1'-5"	1'-9"	#4	12	6'-4"	507 lbs.	#4	12	#4	10	#4	4	6'-3"

NOTE: Lengths Given Do Not Include Laps.

DETAILS OF
12'x 3' & 12'x 5'
R.C. BOX CULVERTS
(SPECIAL)

6/26/2020

R061309.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.		061309	14	260

(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.
22'-4"	10'-0"	0'-11"	0'-10"	5	3:1	20'-9"	2'-0"	10'-10"	3'-4"	25	35	3'-4"	5'-4 1/8"	5'-7 3/4"	2'-3 5/8"	2'-8 3/4"	24'-6"	27'-0"	27'-8 7/8"	30'-2 7/8"	21.62	1786

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
WING A	4	12	25	L: Min 4'-8", Max 14'-0" X: Min 0'-11", Max 2'-11" Y: Min 3'-10", Max 11'-2"	5	12	4	L: 7'-6" X: 2'-8" Y: 4'-11"	4	12	7	L: 5'-8" X: 2'-1" Y: 3'-8"	4	18	10	Min 3'-8" Max 23'-3"	4	18	4	24'-2"
WING B	4	12	27	L: Min 4'-10", Max 14'-3" X: Min 0'-11", Max 3'-2" Y: Min 4'-0", Max 11'-2"	5	12	8	L: 8'-5" X: 2'-7" Y: 5'-11"	4	12	8	L: 5'-7" X: 2'-0" Y: 3'-8"	4	18	10	Min 4'-0" Max 25'-8"	4	18	4	26'-8"

WING	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	17	L: Min 6'-3", Max 13'-7" X: Min 2'-6", Max 2'-6" Y: Min 3'-10", Max 11'-2"	4	8	28'-7"	4	18	17	Min 2'-10" Max 4'-10"	4	18	2	Min 20'-4" Max 20'-4"	4	2	25'-2"	4	2	26'-8"	6	12	10	L: 3'-4" X: 1'-8"	838
WING B	4	18	18	L: Min 6'-6", Max 13'-7" X: Min 2'-6", Max 2'-6" Y: Min 4'-1", Max 11'-2"	4	8	31'-1"	4	18	19	Min 2'-10" Max 5'-1"	4	18	2	Min 20'-0" Max 20'-0"	4	2	27'-6"	4	2	30'-0"	6	12	10	L: 3'-4" X: 1'-8"	948

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
LICENSED PROFESSIONAL ENGINEER
★ ★ ★
No. 9235
CHARLES R. ELLIS
5-13-19

TABULAR DATA BY: KAP DATE: 04/23/2019
CHECKED BY: JGQ DATE: 04/25/2019

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.

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

INLET 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
5	3:1	10	10	10	3'-0"	10	3	11.5	10	8	22'-4"	11'-9 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	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
4	5	Max 22'-0" Min 17'-8"	1	5	5	Max 22'-0" Min 17'-8"	1	5	4.5	Max 22'-0" Min 17'-8"	2	4	6	Max 22'-0" Min 17'-8"	1
		22'-0"	5			22'-0"	5			22'-0"	6			22'-0"	4

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
7	8	9	11'-6"	4	12	6	11'-6"	4	11	47	Max 3'-9" Min 1'-10"	4	9	59	Max 3'-9" Min 1'-10"

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	CLASS "S" CONCRETE (Includes HDWL) CU. YDS.	(1) REINFORCING STEEL (GR 60) (Includes HDWL) LBS.
4	11	11 11	LONG 3'-9" SHORT 1'-11"	4	12	20	2'-10"	7.43	1213

"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	22'-1"	6	4	22'-1"	6	4	1'-9"	0'-9"	24

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	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 REINF. STEEL "g" (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	INTERIOR WALL DISTRIBUTION REINF. STEEL "d2" (LENGTH = SL) SIZE	SPACING	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	Y	LENGTH	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	TOP SLAB REINFORCING STEEL (LENGTH = OW - 4" + BENDS) "a" SIZE	"a" L	Bent "b" SIZE	Bent "b" L	"c" SIZE	"c" L	SPACING	NO. REQ'D	BOTTOM SLAB REINFORCING STEEL (LENGTH = OW - 4" + BENDS) "d" SIZE	"d" L	Bent "b1" SIZE	Bent "b1" L	"f" SIZE	"f" L	SPACING	NO. REQ'D
B	15	10	10	13.0	15	12.0	8	22'-8"	12'-4"	137	4	22'-4"	8	22'-9"	8	22'-4"	12	137	4	22'-4"	6	22'-10"	6	22'-4"	10	164

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 REINF. STEEL "g" (LENGTH = SL) SIZE	SPACING	NO. REQ'D	BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" (LENGTH = SL) SIZE	SPACING	NO. REQ'D	SIDE WALL DISTRIBUTION STEEL "d1" (LENGTH = SL) SIZE	SPACING	NO. REQ'D	INTERIOR WALL DISTRIBUTION STEEL "d2" (LENGTH = SL) SIZE	SPACING	NO. REQ'D	CLASS "S" CONCRETE CU. YDS.	REINFORCING STEEL (GR. 60) LBS.
8	8.5	386	12'-0"	4	12	274	12'-0"	4	8.5	63	5	11	47	4	9	28	4	12	20	403.67	64313

SHEET 1 OF 2
DETAILS OF R.C. BOX CULVERT
DOUBLE BARREL BOX CULVERT
Sta. 312+55
SPECIAL DETAILS

Ver. 1.114 b_061309_c1.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.		061309	15	260

SPECIAL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
5-13-19
CHARLES R. ELLIS

TABULAR DATA BY: KAP DATE: 04/23/2019
CHECKED BY: JSQ DATE: 04/25/2019

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
22'-4"	10'-0"	0'-11"	0'-10"	5	3:1	20'-9"	2'-0"	10'-10"	3'-4"	25	35	3'-4"	5'-4 1/8"	5'-7 3/4"	2'-3 5/8"	2'-8 3/4"	24'-6"	27'-0"	27'-8 7/8"	30'-2 7/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
OUTLET	OUTLET
CU.YD	LBS.
22.66	1786

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	F2	F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS	F3	F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F4
WING A	4	12	25	L	Min 4'-8" / Max 14'-0"	5	12	4	L 7'-6"		4	12	7	L 5'-8"		4	18	10	Min 3'-8" / Max 23'-3"	
				X	Min 0'-11" / Max 2'-11"				X 2'-8"					X 2'-1"						
				Y	Min 3'-10" / Max 11'-2"				Y 4'-11"					Y 3'-8"						
WING B	4	12	27	L	Min 4'-10" / Max 14'-3"	5	12	8	L 8'-5"		4	12	8	L 5'-7"		4	18	10	Min 4'-0" / Max 25'-8"	
				X	Min 0'-11" / Max 3'-2"				X 2'-7"					X 2'-0"						
				Y	Min 4'-0" / Max 11'-2"				Y 5'-11"					Y 3'-8"						

WING	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	F8	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS
WING A	4	18	4	24'-2"	4	18	17	L Min 6'-3" / Max 13'-7"		4	8	28'-7"	4	18	17	Min 2'-10" / Max 4'-10"		4	18	2	Min 20'-4" / Max 20'-4"
								X Min 2'-6" / Max 2'-6"													
								Y Min 3'-10" / Max 11'-2"													
WING B	4	18	4	26'-8"	4	18	18	L Min 6'-6" / Max 13'-7"		4	8	31'-1"	4	18	19	Min 2'-10" / Max 5'-1"		4	18	2	Min 20'-0" / Max 20'-0"
								X Min 2'-6" / Max 2'-6"													
								Y Min 4'-1" / Max 11'-2"													

WING	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	2	25'-2"	4	2	26'-8"	6	12	10	L 3'-4" / X 1'-8"	838
WING B	4	2	27'-6"	4	2	30'-0"	6	12	10	L 3'-4" / X 1'-8"	948

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	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
SK	SL	D	S	H	LL	T	HD	B	C	W	OW	OH								
5	3:1	10	10	10	3'-0"	10	3	11.5	10	8	22'-4"	11'-9 1/2"	4	5	Max 22'-0" / Min 17'-8" / 22'-0"	1 / 5	5	5	Max 22'-0" / Min 17'-8" / 22'-0"	1 / 5

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
5	4.5	Max 22'-0" / Min 17'-8" / 22'-0"	2 / 6	4	6	Max 22'-0" / Min 17'-8" / 22'-0"	1 / 4	7	8	9	11'-6"	4	12	6	11'-6"

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
4	11	47	Max 3'-9" / Min 1'-10"	4	9	59	Max 3'-9" / Min 1'-10"	4	11	11	LONG 3'-9" / SHORT 1'-11"	4	12	20	2'-10"

CLASS "S" CONCRETE (Includes HDWL) CU. YDS.	① REINFORCING STEEL (GR 60) (Includes HDWL) LBS.
7.43	1213

"k1" HDWL BARS SIZE	"k1" HDWL BARS LENGTH	"k1" HDWL BARS NO. REQ'D
4	22'-1"	6

"k2" HDWL BARS SIZE	"k2" HDWL BARS LENGTH	"k2" HDWL BARS NO. REQ'D
4	22'-1"	6

"h" HDWL BARS SIZE	"h" HDWL BARS LENGTH	"h" HDWL BARS Y	"h" HDWL BARS NO. REQ'D
4	1'-9"	0'-9"	24

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	Bent "b" L	"c" SIZE	"c" L	TOP SLAB REINF. SPACING	TOP SLAB REINF. 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	BOTTOM SLAB REINF. SPACING	BOTTOM SLAB REINF. 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 REINF. STEEL "g" LENGTH = SL SIZE	"g" SPACING	"g" 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	INTERIOR WALL DISTRIBUTION REINF. STEEL "d2" LENGTH = SL SIZE	"d2" SPACING	"d2" NO. REQ'D

HDWL DEPTH HD	ADDITIONAL REINF. FOR HDWL LBS.	"h" HDWL BARS SIZE	"h" HDWL BARS Y	"h" HDWL BARS LENGTH	"h" HDWL BARS 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
DOUBLE BARREL BOX CULVERT
Sta. 312+55

SPECIAL DETAILS

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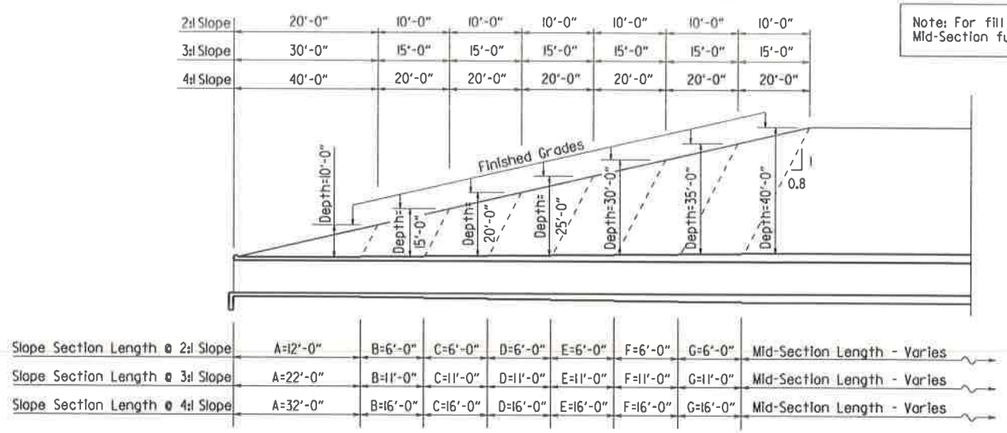
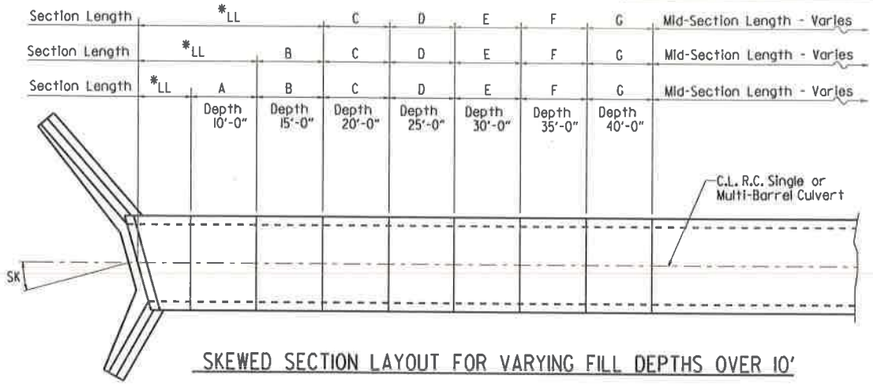


LONGITUDINAL SECTION LENGTH SCHEDULE FOR VARYING FILL DEPTHS OVER 10'

Lengths for Non-Skewed Boxes

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

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

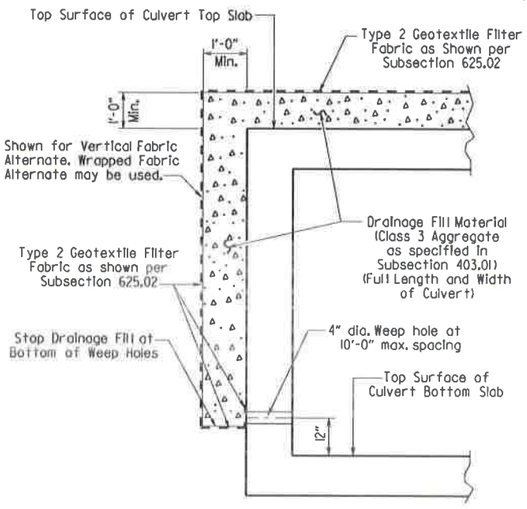


SKEWED SECTION LAYOUT FOR VARYING FILL DEPTHS OVER 10'

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.		061309	16	260

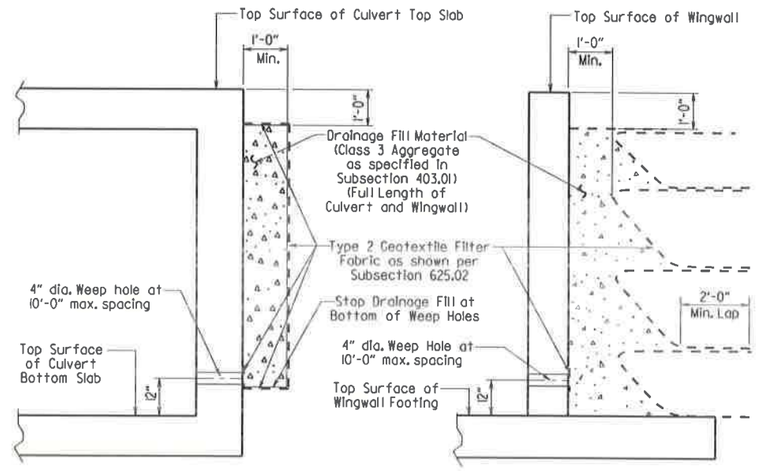
① SPECIAL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
5-13-19
CHARLES R. ELLIS



CULVERT DRAINAGE DETAIL FOR ROCK FILL

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

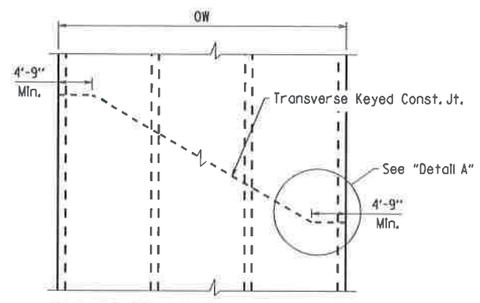


For Details of Excavation and Pay Limits, see Standard Drawing RCB-2.

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

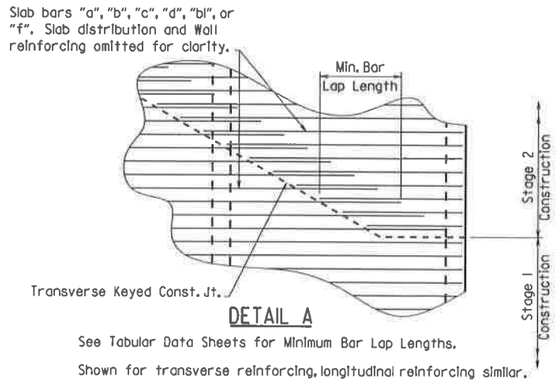
WRAPPED FABRIC ALTERNATE
(Shown for Wingwall, Similar for Culvert)

WINGWALL & CULVERT DRAINAGE DETAIL



SKEWED TRANSVERSE JOINT DETAIL

This detail shall be used to construct a skewed transverse joint only for Multi-Barrel Culverts and only when required by the Maintenance of Traffic Plans. Otherwise, transverse joints should be made normal to the centerline of the barrel.



DETAIL A

See Tabular Data Sheets for Minimum Bar Lap Lengths.

Shown for transverse reinforcing, longitudinal reinforcing similar.

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 keyed and shall be normal to the centerline of barrel except as noted. Reinforcing shall be continuous through joints unless noted otherwise. Reinforcing through stage construction joints shall provide the minimum bar lap length shown on the Tabular Data Sheets. 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 5 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

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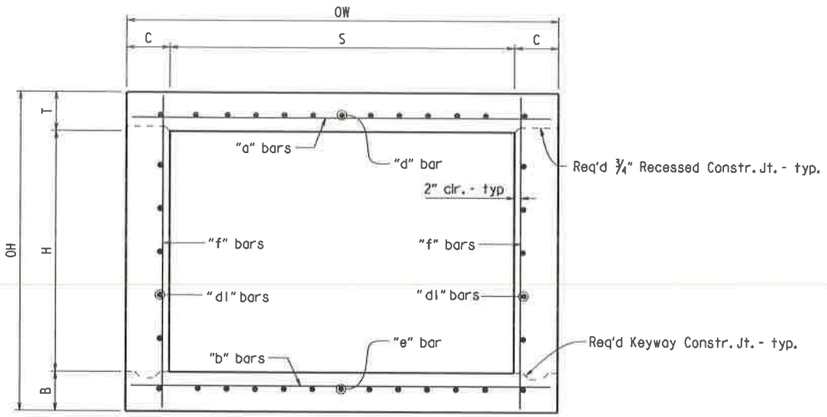
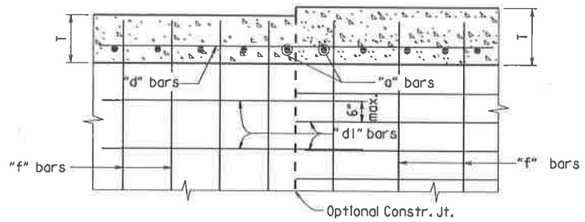
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061309	17	260

SPECIAL DETAILS

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



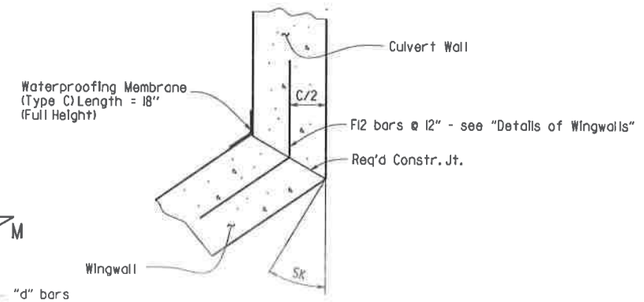
TYPICAL SECTION M-M



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

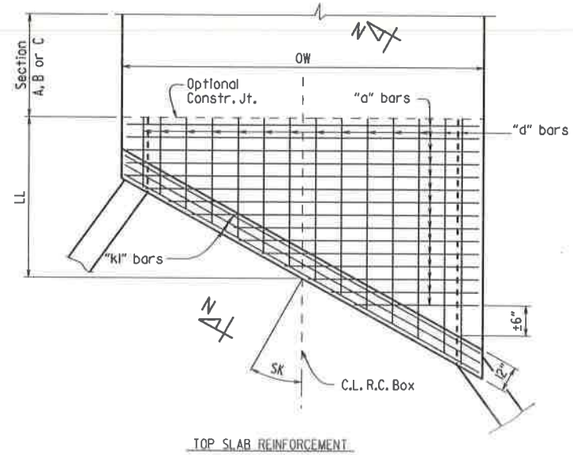
LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

TOP SLAB SHOWN, BOTTOM SLAB SIMILAR



WINGWALL ATTACHMENT

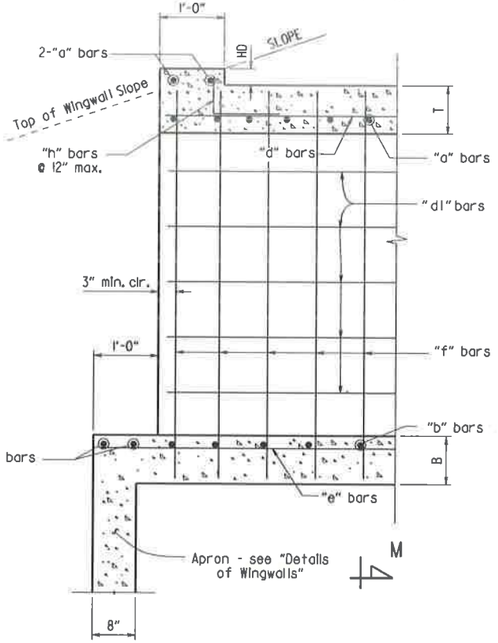
See "Details of Wingwalls" for additional information and wingwall details.



TOP SLAB REINFORCEMENT

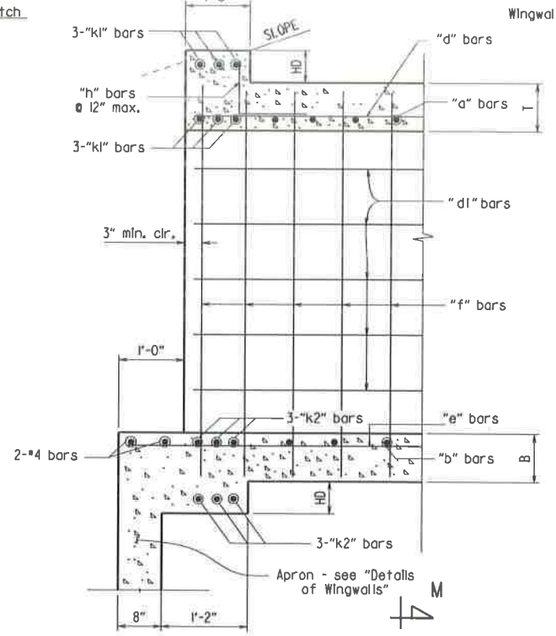


"h" bars sketch



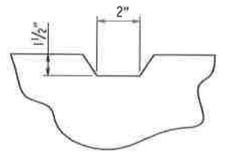
PART LONGITUDINAL SECTION

(Non-Skewed Ends)



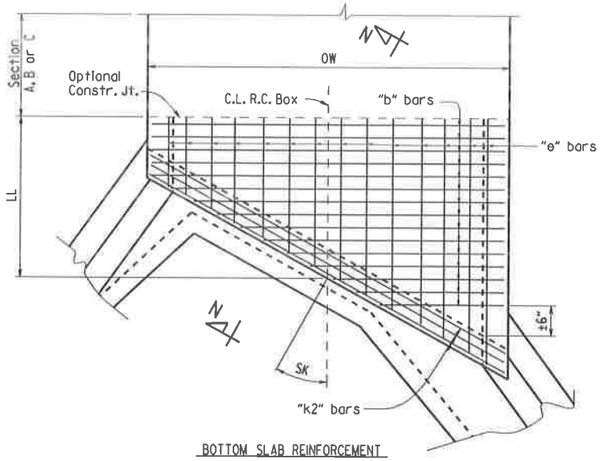
PART LONGITUDINAL SECTION N-N

(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

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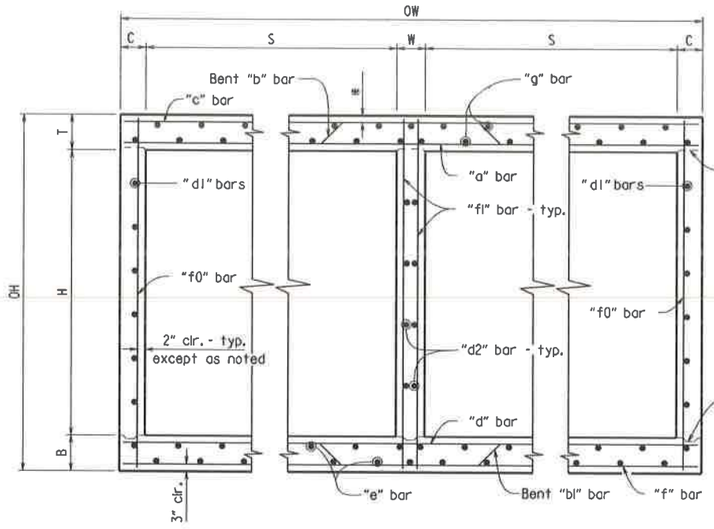
DATE REVISED	DATE FILMED	REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061309	18	260

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.

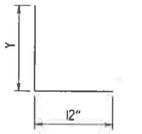
Note: When top slab of culvert serves as finished roadway surface, see General Notes on Sheet 1 of 4.



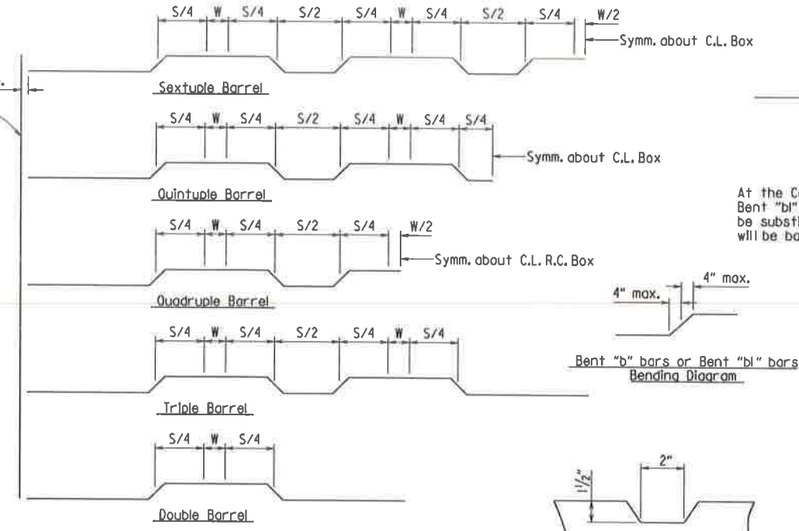
TYPICAL SECTION M-M

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

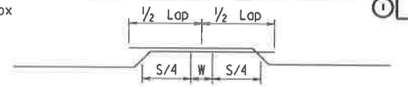
Bottom Slab
Straight "d" bars shall alternate with Bent "bl" bars in top.
Straight "f" bars shall alternate with Bent "bl" bars in bottom.



"h" bars sketch



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



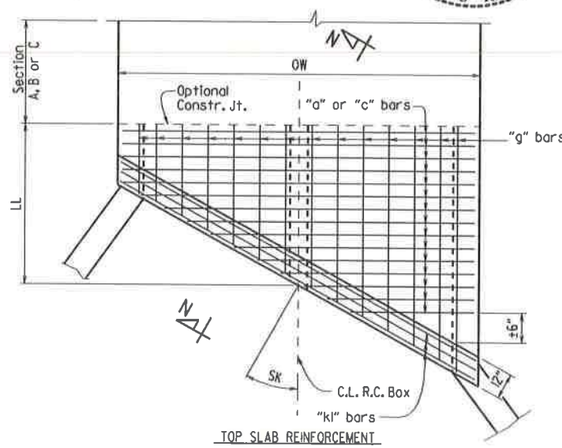
Lap Detail
For Bent "b" bars and Bent "bl" bars

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.

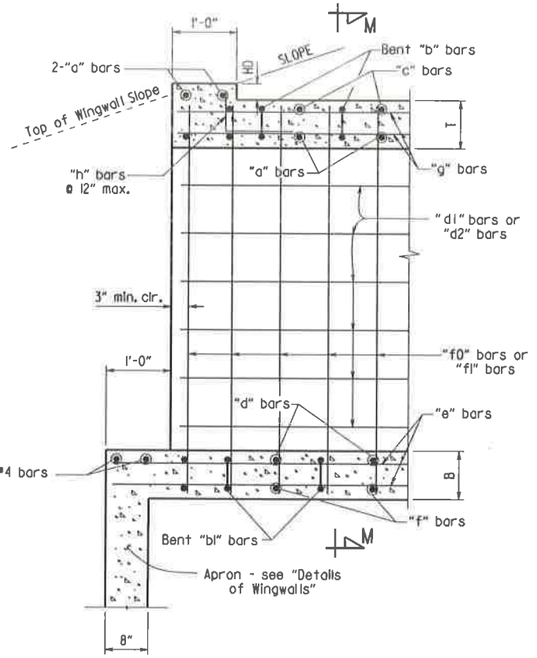
Bent "b" bars or Bent "bl" bars Bending Diagram

TYPICAL KEYWAY DETAIL

(All Construction Joints)

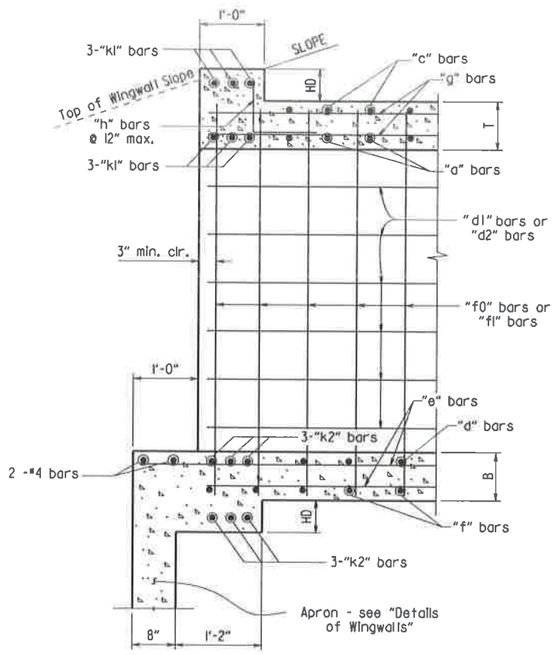


TOP SLAB REINFORCEMENT
Straight "c" bars in top.
Straight "a" bars in bottom.



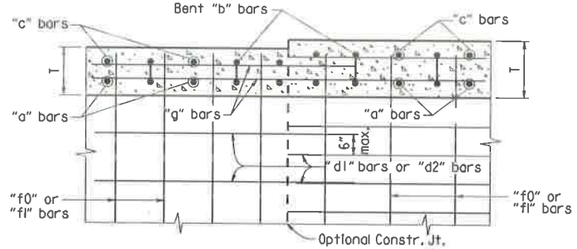
PART LONGITUDINAL SECTION

(Non-Skewed Ends)



PART LONGITUDINAL SECTION N-N

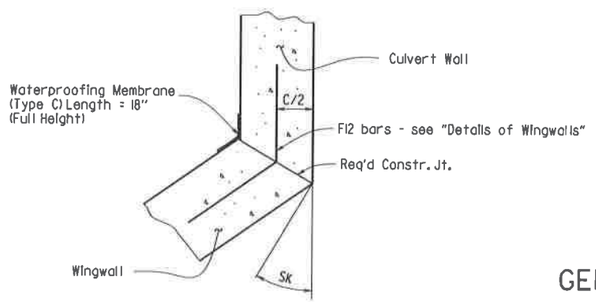
(Skewed Ends)



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

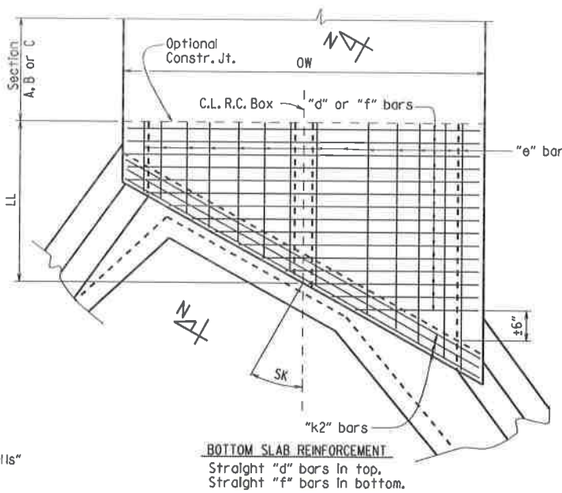
LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

TOP SLAB SHOWN, BOTTOM SLAB SIMILAR



WINGWALL ATTACHMENT

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



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

SKEWED END SECTION DETAILS

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

DETAILS OF MULTI-BARREL
R.C. BOX CULVERT

SPECIAL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
5-13-19
CHARLES R. ELLIS

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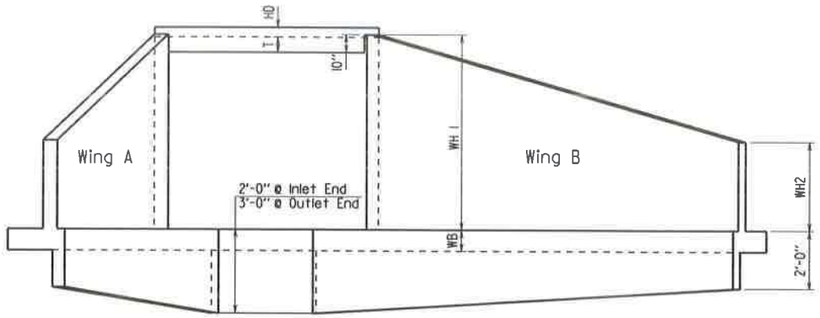
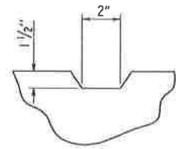
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061309	19	260

SPECIAL DETAILS



END ELEVATION

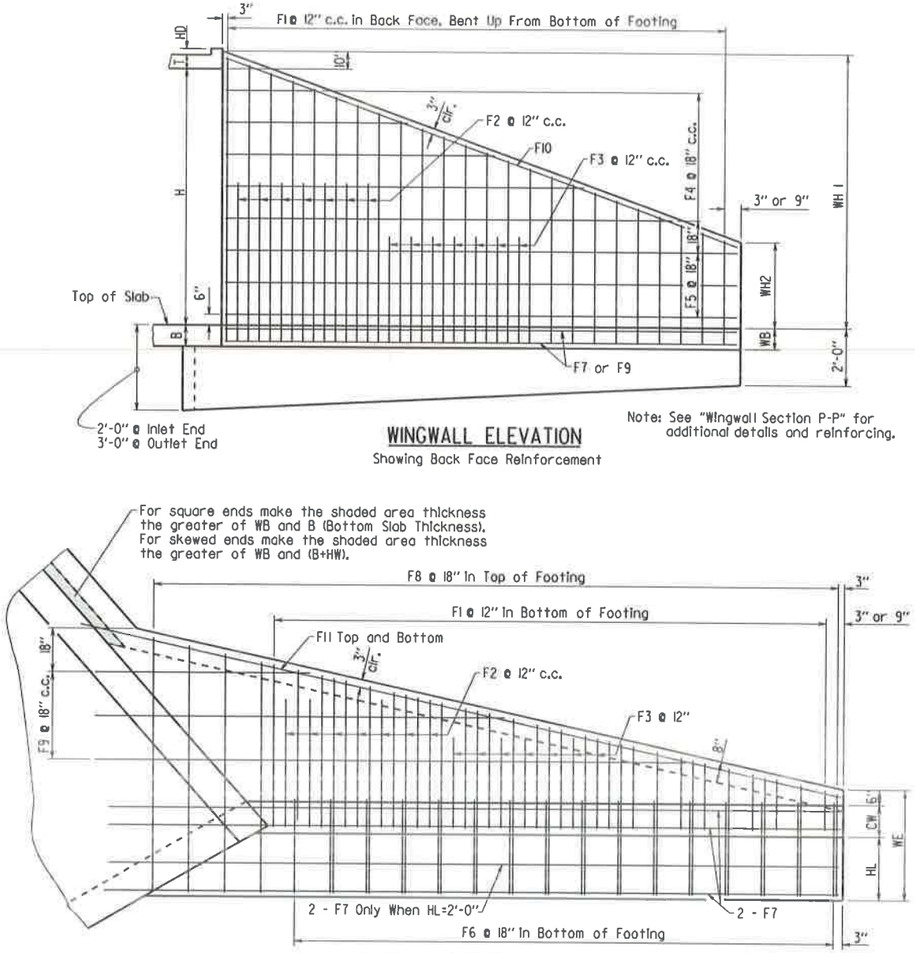
Flared Wingwalls Shown



TYPICAL KEYWAY DETAIL

All Construction Joints

PART PLAN - FLARED WINGWALLS



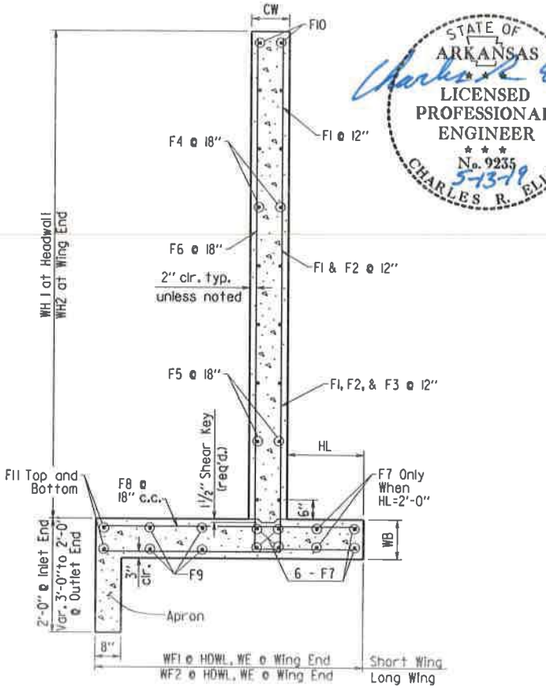
PLAN - FLARED WINGWALLS

Showing Footing Reinforcement

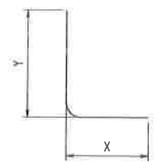
WINGWALL ELEVATION

Showing Back Face Reinforcement

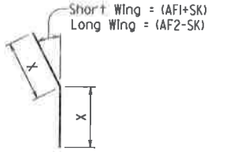
Note: See "Wingwall Section P-P" for additional details and reinforcing.



WINGWALL SECTION P-P

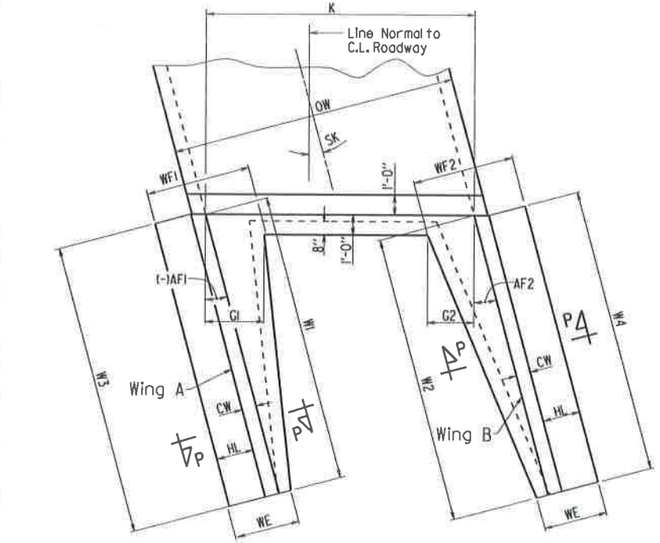


F1, F2, F3, & F6 BARS

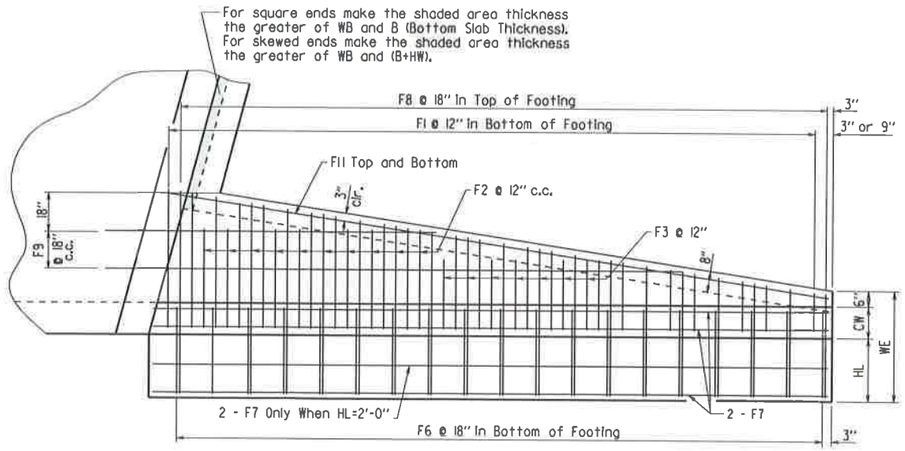


*F12 BAR

*F12 is a straight bar for parallel wingwalls

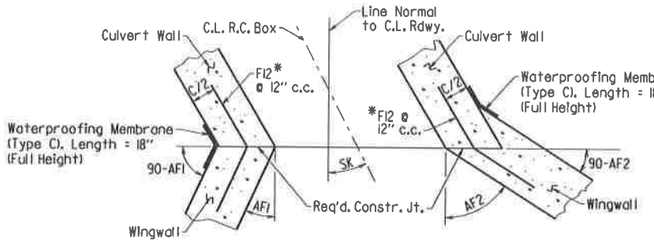


PART PLAN - PARALLEL WINGWALLS



PLAN - PARALLEL WINGWALLS

Showing Footing Reinforcement



CONSTRUCTION JOINTS

Flared Wingwalls Shown

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
5-13-19
CHARLES R. ELLIS

SHEET 4 OF 4
GENERAL DETAILS OF R.C. BOX CULVERT
DETAILS OF WINGWALLS
SPECIAL 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.		061309	20	260

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Jun 29 2020 4:38 PM
DocuSign

STA. 100+00.00
BEGIN JOB 061309
BEGIN SITE 1
LOG MILE 4.07

STA. 124+00.00
END SITE 1

REVISIONS

DATE OF REVISION	REVISION

LEGEND

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

6/29/2020

R061309.DGN

CLEARING AND GRUBBING - SITE 1
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	21	260

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
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BEGIN SITE 2

REVISIONS

DATE OF REVISION	REVISION

LEGEND

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

CLEARING AND GRUBBING - SITE 2
TEMPORARY EROSION CONTROL DETAILS

6/29/2020

R061309.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.		061309	22	260

(2) TEMPORARY EROSION CONTROL DETAILS

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Jun 29 2020 4:39 PM

REVISIONS

DATE OF REVISION	REVISION

LEGEND

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

CLEARING AND GRUBBING - SITE 2
TEMPORARY EROSION CONTROL DETAILS

6/29/2020

R061309.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.		061309	23	260

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Jun 29 2020 4:39 PM

REVISIONS

DATE OF REVISION	REVISION

LEGEND

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

CLEARING AND GRUBBING - SITE 2
TEMPORARY EROSION CONTROL DETAILS

6/29/2020

R061309.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.		061309	24	260

(2) TEMPORARY EROSION CONTROL DETAILS

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

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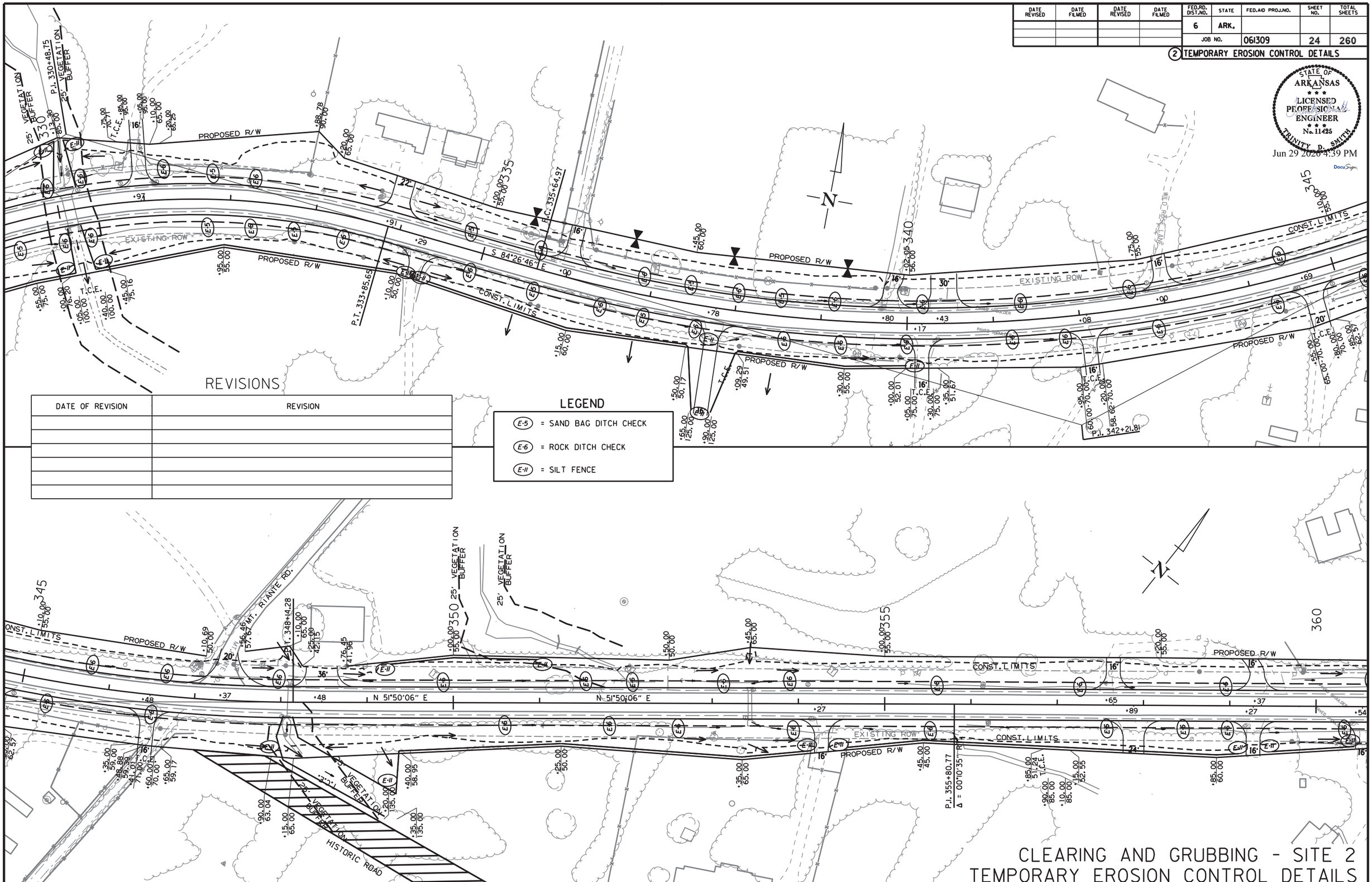

REVISIONS

DATE OF REVISION	REVISION

LEGEND

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

CLEARING AND GRUBBING - SITE 2
TEMPORARY EROSION CONTROL DETAILS

6/29/2020

R061309.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.		061309	25	260

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Jun 29 2020 4:39 PM
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REVISIONS

DATE OF REVISION	REVISION

LEGEND

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

6/29/2020

R061309.DGN

CLEARING AND GRUBBING - SITE 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.		061309	26	260

2 TEMPORARY EROSION CONTROL DETAILS

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

Trinity Smith

Jun 29 2020 4:40 PM
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LEGEND

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

REVISIONS

DATE OF REVISION	REVISION

LEGENDARY

6/29/2020

R061309.DGN

CLEARING AND GRUBBING - SITE 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.		061309	27	260

(2) TEMPORARY EROSION CONTROL DETAILS

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

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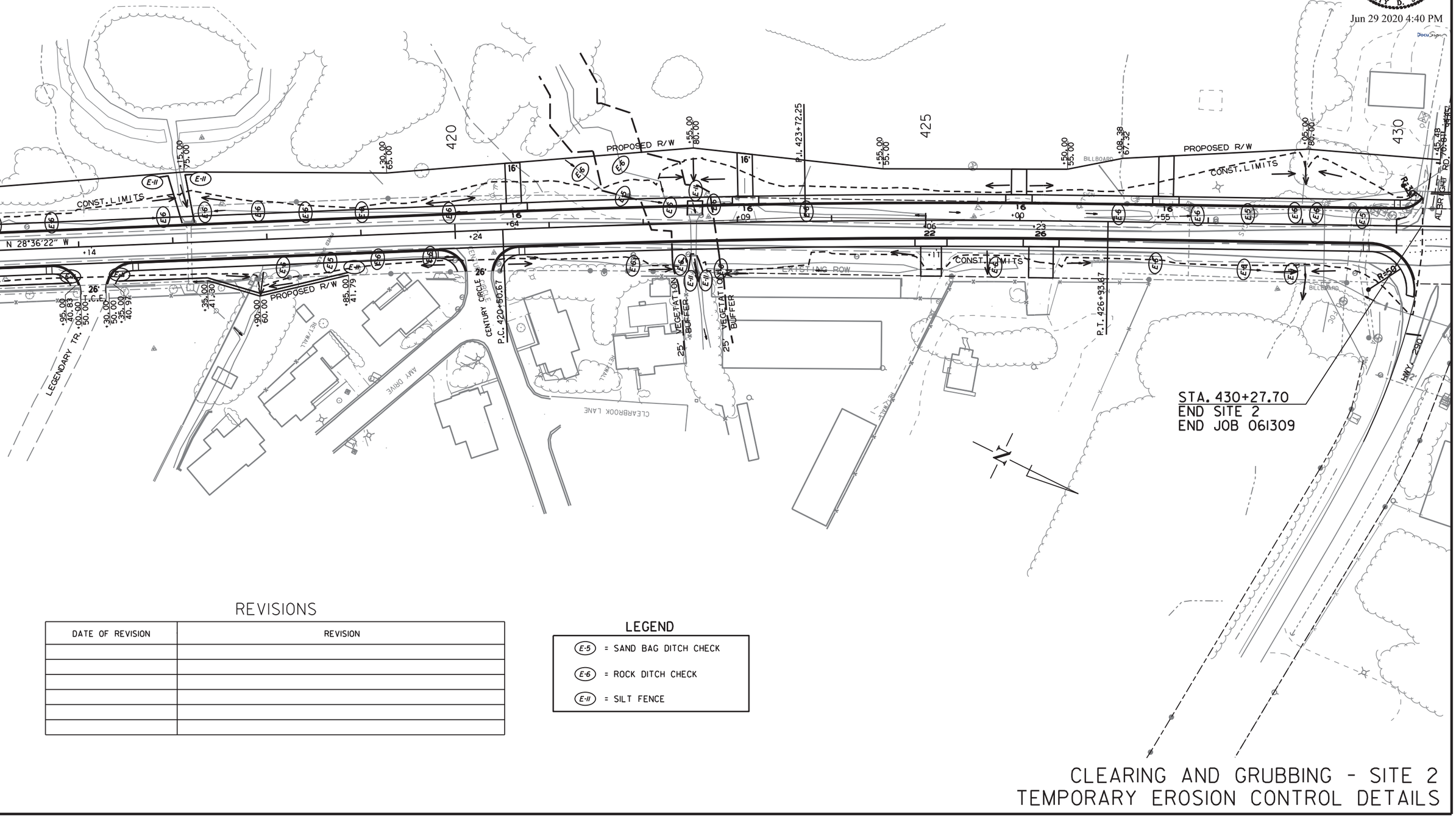

REVISIONS

DATE OF REVISION	REVISION

LEGEND

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

CLEARING AND GRUBBING - SITE 2
TEMPORARY EROSION CONTROL DETAILS

6/29/2020

R061309.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.		061309	28	260

(2) TEMPORARY EROSION CONTROL DETAILS

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

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STA. 100+00.00
BEGIN JOB 061309
BEGIN SITE 1
LOG MILE 4.07

STA. 124+00.00
END SITE 1

REVISIONS

DATE OF REVISION	REVISION

LEGEND

(E-6) = ROCK DITCH CHECKS

(E-11) = SILT FENCE

6/29/2020

R061309.DGN

STAGE 1 - SITE 1
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	29	260

(2) TEMPORARY EROSION CONTROL DETAILS

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

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STA. 248+00.00
BEGIN SITE 2

POB 245+00.00

REVISIONS

DATE OF REVISION	REVISION

LEGEND

E-6 = ROCK DITCH CHECKS

E-11 = SILT FENCE

STAGE IA - SITE 2
TEMPORARY EROSION CONTROL DETAILS

6/29/2020

R061309.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.		061309	30	260

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Jun 29 2020 4:41 PM

REVISIONS

DATE OF REVISION	REVISION

LEGEND

E-6 = ROCK DITCH CHECKS

E-11 = SILT FENCE

6/29/2020

R061309.DGN

STAGE IA - SITE 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.		061309	31	260

2 TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
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REVISIONS

DATE OF REVISION	REVISION

LEGEND

E-6 = ROCK DITCH CHECKS

E-11 = SILT FENCE

6/29/2020

R061309.DGN

STAGE IA - SITE 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.		061309	32	260

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Jun 29 2020 4:42 PM
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REVISIONS

DATE OF REVISION	REVISION

LEGEND

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

STAGE IA - SITE 2
TEMPORARY EROSION CONTROL DETAILS

6/29/2020

R061309.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.		061309	33	260

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
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REVISIONS

DATE OF REVISION	REVISION

LEGEND

E-6 = ROCK DITCH CHECKS

E-11 = SILT FENCE

6/29/2020

R061309.DGN

STAGE IA - SITE 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.		061309	34	260

2 TEMPORARY EROSION CONTROL DETAILS

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

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LEGEND

E-6 = ROCK DITCH CHECKS

E-11 = SILT FENCE

REVISIONS

DATE OF REVISION	REVISION

6/29/2020

R061309.DGN

STAGE IA - SITE 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.		061309	35	260

(2) TEMPORARY EROSION CONTROL DETAILS

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

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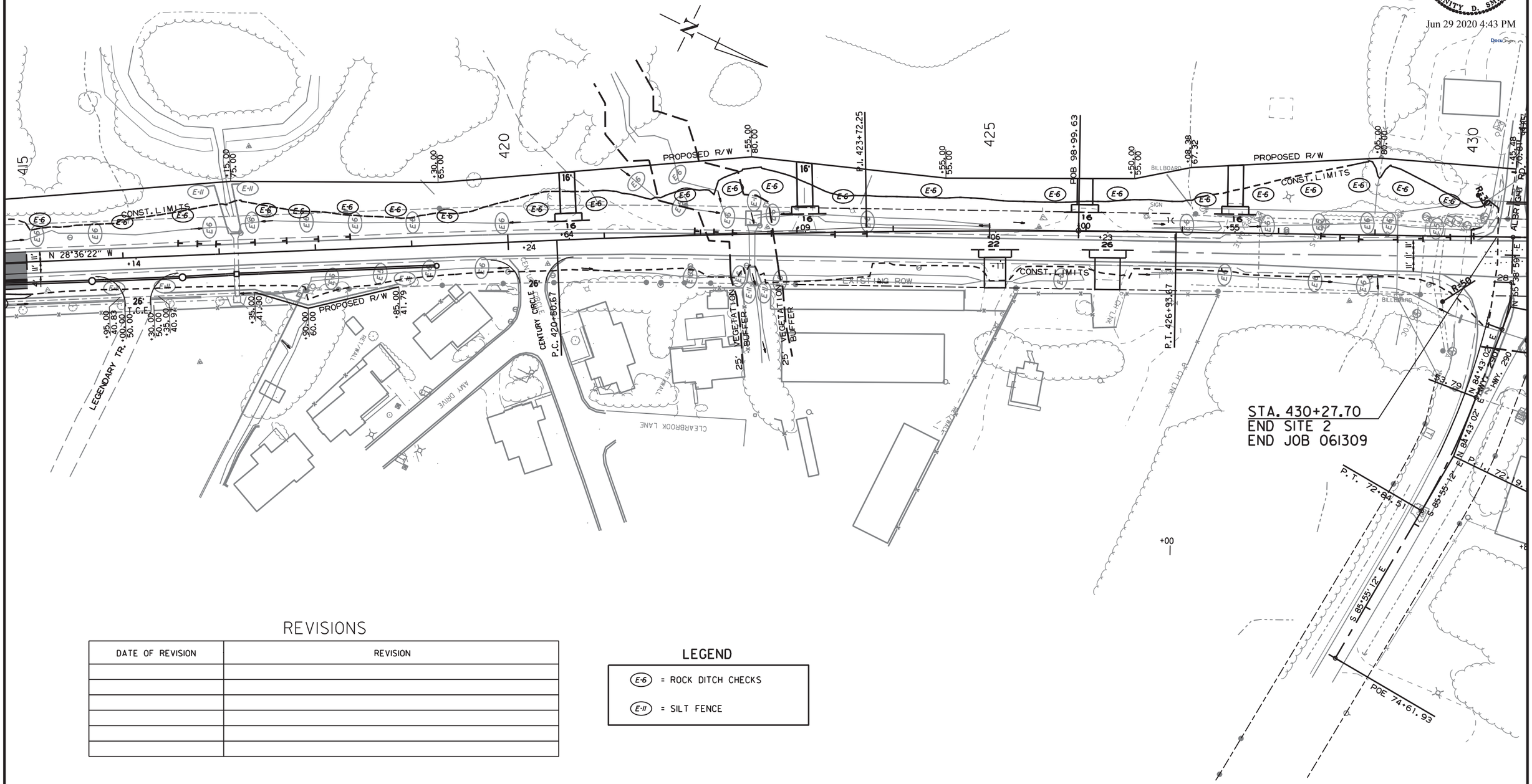

REVISIONS

DATE OF REVISION	REVISION

LEGEND

E-6 = ROCK DITCH CHECKS

E-11 = SILT FENCE

6/29/2020

R061309.DGN

STAGE IA - SITE 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.		061309	36	260

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
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LEGEND

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

REVISIONS

DATE OF REVISION	REVISION

6/29/2020

R061309.DGN

STAGE IB - SITE 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.		061309	37	260

(2) TEMPORARY EROSION CONTROL DETAILS

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

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STA. 100+00.00
BEGIN JOB 061309
BEGIN SITE 1
LOG MILE 4.07

STA. 124+00.00
END SITE 1

REVISIONS

DATE OF REVISION	REVISION

LEGEND

(E-6) = ROCK DITCH CHECKS

(E-11) = SILT FENCE

6/29/2020

R061309.DGN

STAGE 2 - SITE 1
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061309	38	260

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Jun 29 2020 4:44 PM

STA. 248+00.00
BEGIN SITE 2

POB 245+00.00

REVISIONS

DATE OF REVISION	REVISION

LEGEND

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

STAGE 2A - SITE 2
TEMPORARY EROSION CONTROL DETAILS

6/29/2020

R061309.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.		061309	39	260

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Jun 29 2020 4:44 PM
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REVISIONS

DATE OF REVISION	REVISION

LEGEND

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

STAGE 2A - SITE 2
TEMPORARY EROSION CONTROL DETAILS

6/29/2020

R061309.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.		061309	40	260

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Jun 29 2020 4:45 PM

LEGEND

E-6 = ROCK DITCH CHECKS

E-11 = SILT FENCE

REVISIONS

DATE OF REVISION	REVISION

STAGE 2A - SITE 2
TEMPORARY EROSION CONTROL DETAILS

6/29/2020

R061309.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.		061309	41	260

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Jun 29 2020 4:45 PM
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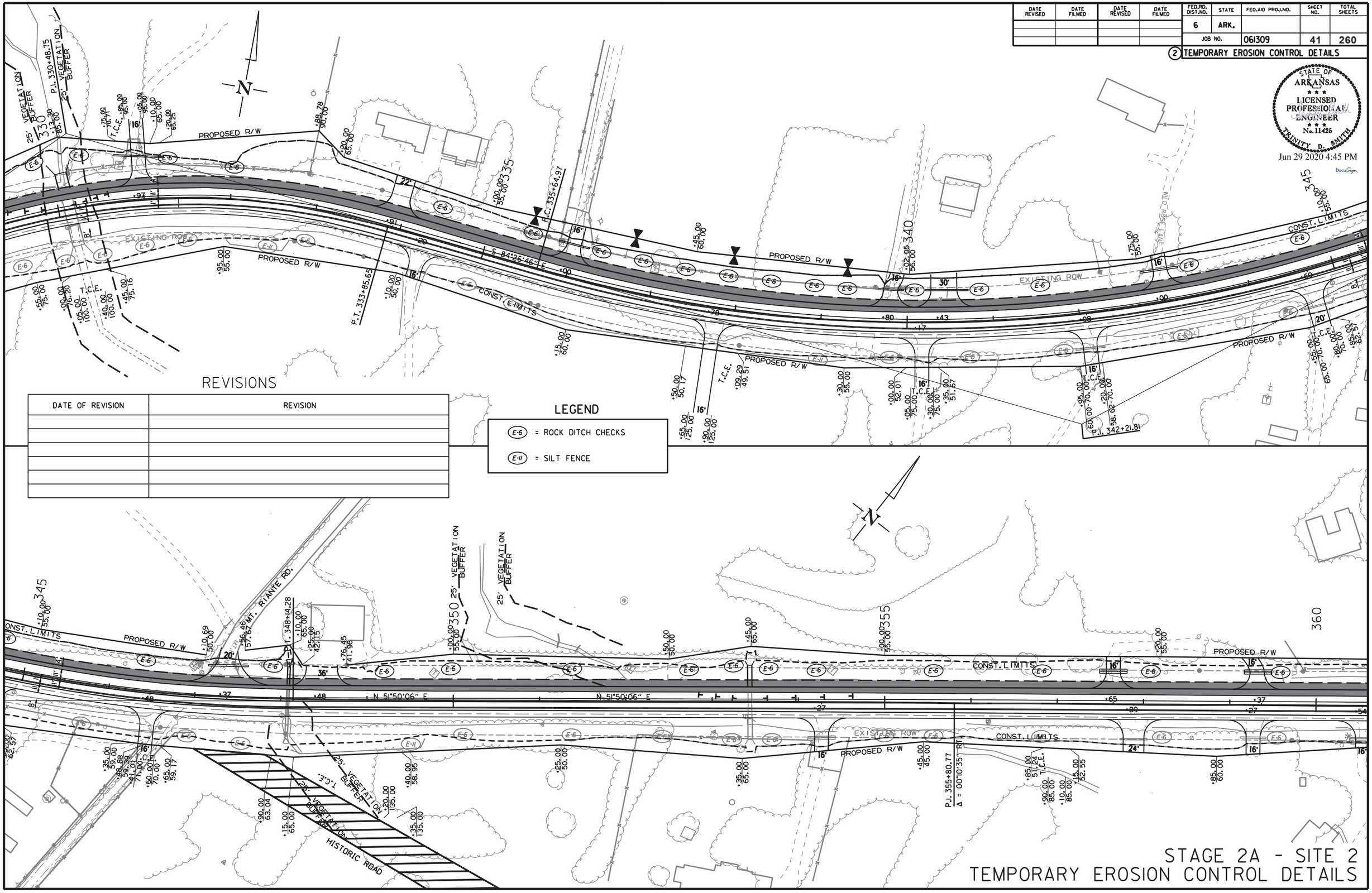
REVISIONS

DATE OF REVISION	REVISION

LEGEND

E-6 = ROCK DITCH CHECKS

E-11 = SILT FENCE



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R061309.DGN

STAGE 2A - SITE 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.		061309	42	260

(2) TEMPORARY EROSION CONTROL DETAILS

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

Jun 29 2020 4:45 PM

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REVISIONS

DATE OF REVISION	REVISION

LEGEND

E-6 = ROCK DITCH CHECKS

E-11 = SILT FENCE

6/29/2020

R061309.DGN

STAGE 2A - SITE 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.		061309	43	260

2 TEMPORARY EROSION CONTROL DETAILS

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

Trinity Smith

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LEGEND

E-6 = ROCK DITCH CHECKS

E-11 = SILT FENCE

REVISIONS

DATE OF REVISION	REVISION

STAGE 2A - SITE 2
TEMPORARY EROSION CONTROL DETAILS

6/29/2020

R061309.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.		061309	44	260

(2) TEMPORARY EROSION CONTROL DETAILS

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

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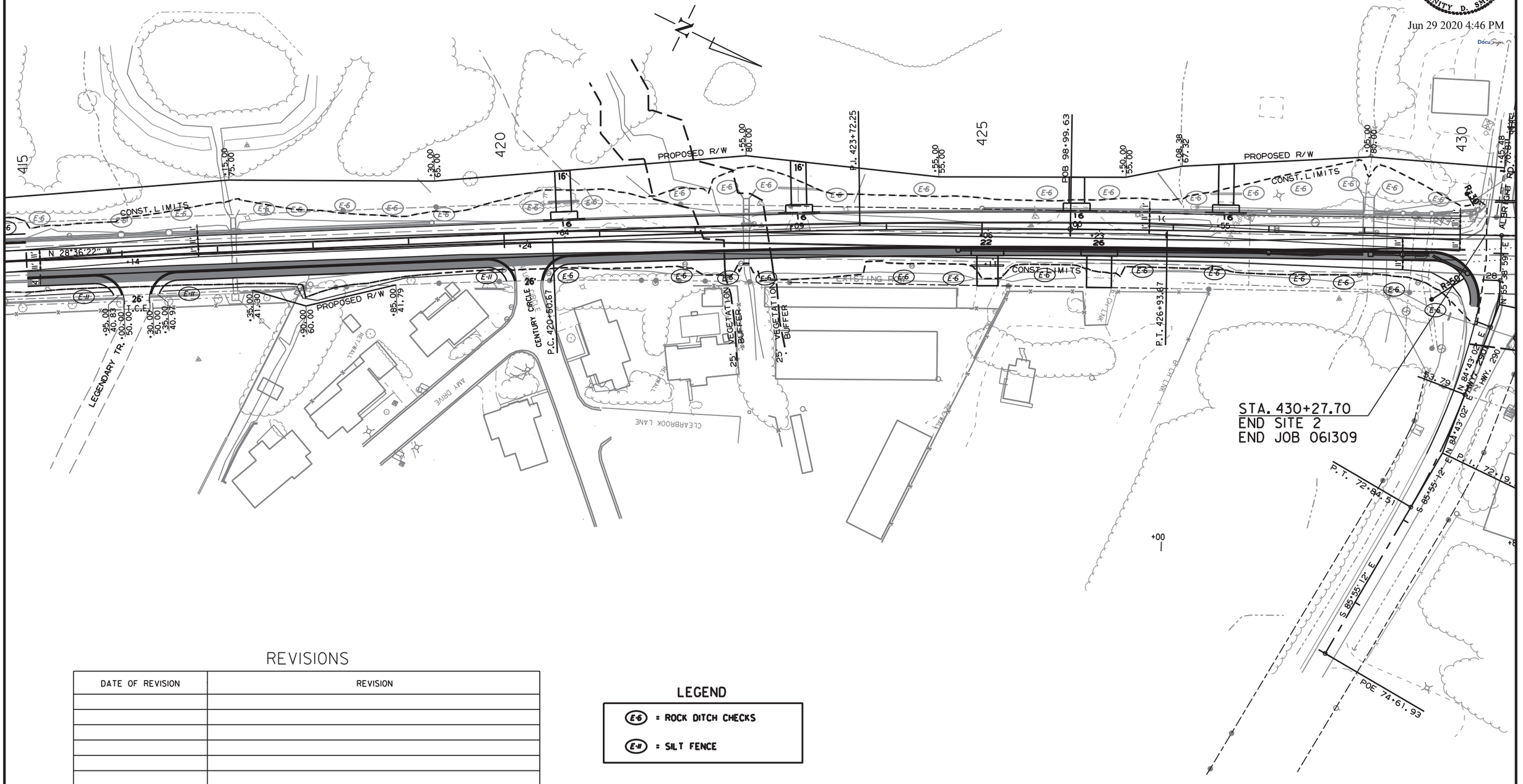


REVISIONS

DATE OF REVISION	REVISION

LEGEND

E-6 = ROCK DITCH CHECKS

E-11 = SILT FENCE

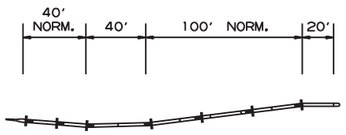
STAGE 2B - SITE 2
TEMPORARY EROSION CONTROL DETAILS

6/29/2020

R061309.DGN

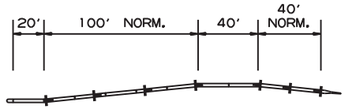
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061309	45	260

(2) MAINTENANCE OF TRAFFIC DETAILS



* TEMPORARY IMPACT ATTENUATION BARRIER

DETAIL OF OM-3 AT PCCB INSTALLATION
OM-3 RT ON ENTRANCE = 4 EACH
OM-3 LT ON EXIT = 3 EACH



DETAIL OF OM-3 AT PCCB INSTALLATION
OM-3 RT ON ENTRANCE = 4 EACH
OM-3 LT ON EXIT = 3 EACH

STAGE 1 - FURNISH AND INSTALL PRECAST CONCRETE BARRIER

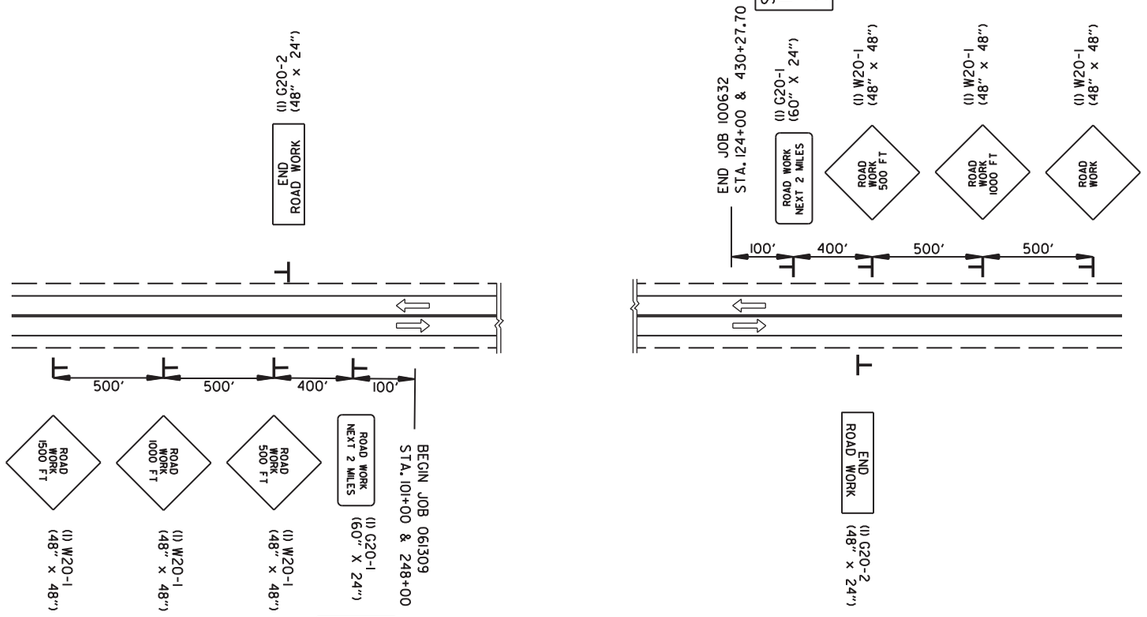
STA. 416+58 TO STA. 418+57 LT. = 200 LIN. FT.
STA. 421+94 TO STA. 422+94 LT. = 100 LIN. FT.
STA. 423+35 TO STA. 423+95 LT. = 60 LIN. FT.
STA. 428+44 TO STA. 430+04 LT. = 160 LIN. FT.

STAGE 2 - RELOCATING PRECAST CONCRETE BARRIER

STA. 116+45 TO STA. 118+45 LT. = 200 LIN. FT.
STA. 258+52 TO STA. 260+50 LT. = 200 LIN. FT.
STA. 263+41 TO STA. 265+22 LT. = 180 LIN. FT.
STA. 273+08 TO STA. 275+08 LT. = 200 LIN. FT.
STA. 276+40 TO STA. 278+20 LT. = 180 LIN. FT.
STA. 280+76 TO STA. 282+16 LT. = 140 LIN. FT.
STA. 285+26 TO STA. 287+26 LT. = 200 LIN. FT.
STA. 290+79 TO STA. 292+56 LT. = 180 LIN. FT.
STA. 299+73 TO STA. 301+73 LT. = 200 LIN. FT.
STA. 302+46 TO STA. 304+44 LT. = 200 LIN. FT.
STA. 329+42 TO STA. 330+80 LT. = 140 LIN. FT.
STA. 352+84 TO STA. 354+84 LT. = 200 LIN. FT.
STA. 391+95 TO STA. 393+35 LT. = 140 LIN. FT.
STA. 409+73 TO STA. 411+53 LT. = 180 LIN. FT.

STAGE 1 - FURNISH AND INSTALL PRECAST CONCRETE BARRIER

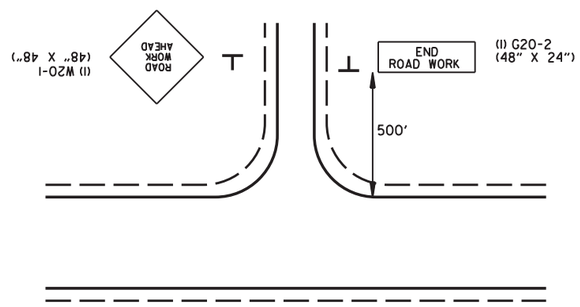
STA. 115+65 TO STA. 117+65 RT. = 200 LIN. FT.
STA. 257+69 TO STA. 259+71 RT. = 200 LIN. FT.
STA. 262+43 TO STA. 264+40 RT. = 200 LIN. FT.
STA. 272+28 TO STA. 274+28 RT. = 200 LIN. FT.
STA. 275+39 TO STA. 277+39 RT. = 200 LIN. FT.
STA. 279+98 TO STA. 281+95 RT. = 200 LIN. FT.
STA. 285+26 TO STA. 286+46 RT. = 120 LIN. FT.
STA. 289+63 TO STA. 291+66 RT. = 200 LIN. FT.
STA. 298+92 TO STA. 300+92 RT. = 200 LIN. FT.
STA. 301+86 TO STA. 303+67 RT. = 180 LIN. FT.
STA. 328+72 TO STA. 330+74 RT. = 200 LIN. FT.
STA. 352+04 TO STA. 354+04 RT. = 200 LIN. FT.
STA. 392+05 TO STA. 393+24 RT. = 120 LIN. FT.



ADVANCE WARNING (ALL STAGES)

RIGHT SHOULDER CLOSED	(4) W21-5a (36" x 36")	ALL STAGES IF AND WHERE DIRECTED BY THE ENGINEER
DO NOT PASS	(16) R4-1 (24" X 30")	ALL STAGES SPACES AT ¼ MILE INTERVALS
BUMP	(4) W8-1 (30" X 30")	IF AND WHERE DIRECTED BY THE ENGINEER
	(4) W8-17 (30" X 30")	IF AND WHERE DIRECTED BY THE ENGINEER
LOW SHOULDER	(4) W8-9 (30" X 30")	IF AND WHERE DIRECTED BY THE ENGINEER

STA. 114+04 LT. - ARLIE MOORE RD.
STA. 114+11 RT. - ARLIE MOORE RD.
STA. 306+24 RT. - LAWRENCE LANE
STA. 313+59 LT. - PREAKNESS DRIVE
STA. 347+37 LT. - MT. RIANTE RD.
STA. 403+30 RT. - MASSEY RD.
STA. 408+35 RT. - LEGENDARY TRAIL
STA. 420+24 RT. - CENTURY CIRCLE
STA. 430+40 LT. & RT.



ADVANCE WARNING - SIDE ROADS
(ALL ROADS)

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

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6/29/2020

R061309.DGN

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.		061309	46	260

(2) MAINTENANCE OF TRAFFIC DETAILS

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

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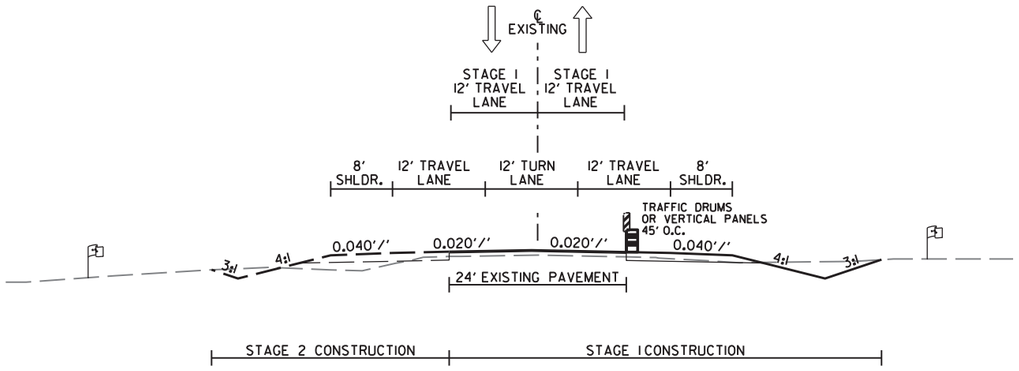
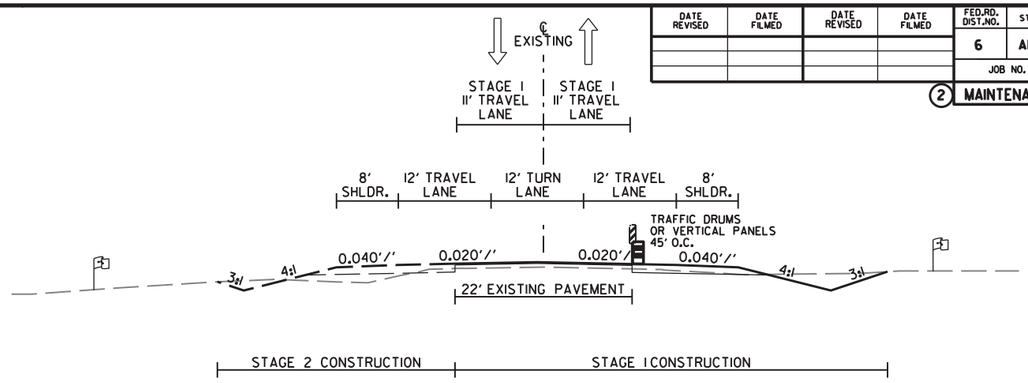
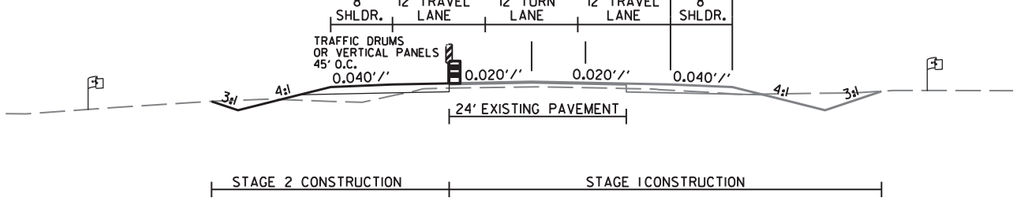


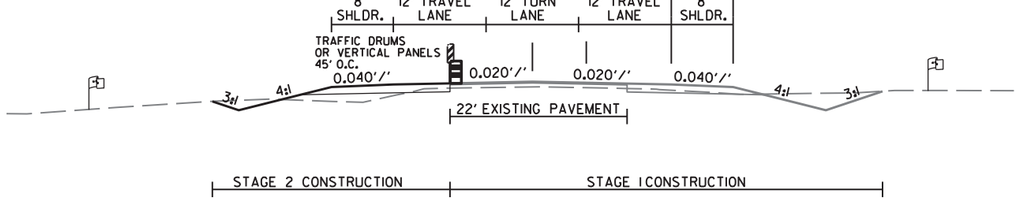
STAGE 1
STA. 101+00.00 TO STA. 123+00.00



STAGE 1
STA. 248+00.00 TO STA. 415+00.00

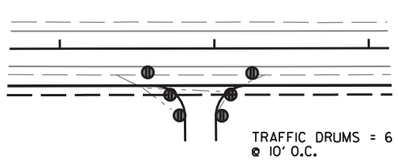


STAGE 2
STA. 101+00.00 TO STA. 123+00.00

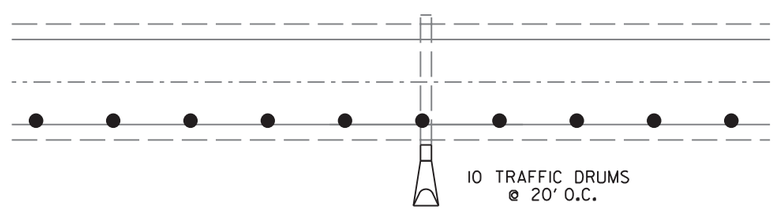


•TRANSITION FROM 0'-0" AT STA. 248+00.00
TO 7'-0" AT STA. 251+30.00

STAGE 2
STA. 248+00.00 TO STA. 415+00.00



DRIVEWAY/TRAFFIC DRUM DETAIL



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

STA. 106+49	STA. 368+69
STA. 269+72	STA. 382+30
STA. 294+99	STA. 404+65
STA. 348+08	

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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.		061309	47	260

(2) MAINTENANCE OF TRAFFIC DETAILS

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

Trinity Smith

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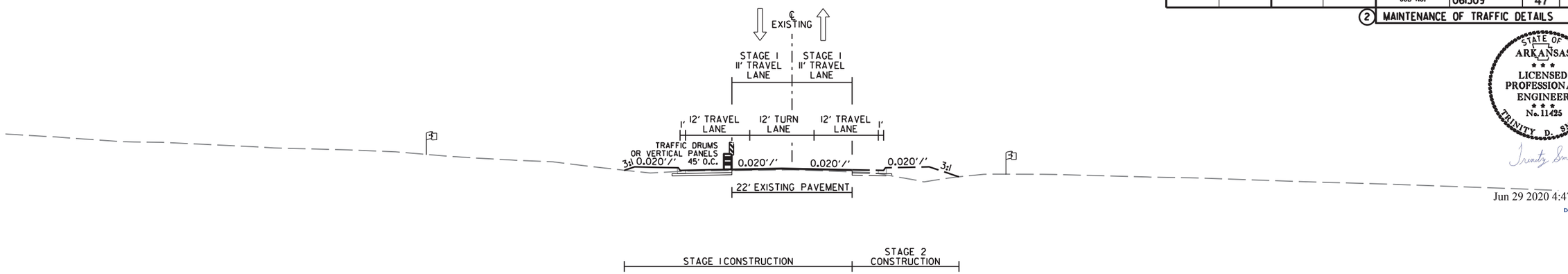
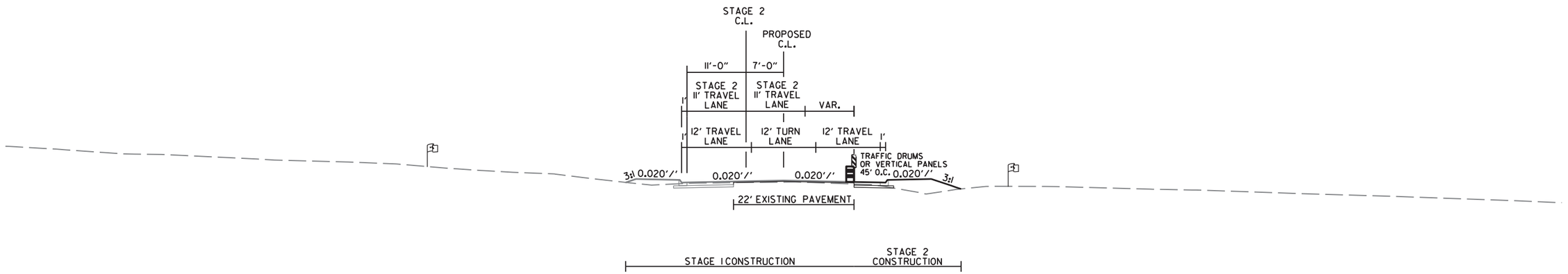


STAGE 1

STA. 415+00.00 TO STA. 430+27.70



STAGE 2

STA. 415+00.00 TO STA. 430+27.70

STAGE I CONSTRUCTION SEQUENCE

INSTALL ADVANCE WARNING SIGNS AND REMOVE NECESSARY PERMANENT PAVEMENT MARKINGS. INSTALL TRAFFIC CONTROL DEVICES AND STRIPING AS SHOWN IN THE STAGE I MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCT RIGHT SECTION OF R.C. BOX AT STA. 312+55.

EXTEND AND CONSTRUCT R.C. BOX CULVERTS AND R.C. PIPE CULVERTS AS SHOWN ON THE MAINTENANCE OF TRAFFIC DETAILS. CONSTRUCT THE FOLLOWING SEGMENTS OF PROPOSED ROADWAY THROUGH THE FIRST LAYER OF SURFACE COURSE WHILE UTILIZING LEVELING AND METHOD OF RAISING GRADE TO MAINTAIN TRAFFIC.

STA. 100+00 TO STA. 124+00 ON RIGHT
STA. 248+00 TO STA. 415+00 ON RIGHT
STA. 415+00 TO STA. 430+28 ON LEFT

STAGE 2 CONSTRUCTION SEQUENCE

INSTALL TRAFFIC CONTROL DEVICES AND STRIPING AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS. RESTRIPE ADJACENT INTERSECTION FROM STA. 430+67 TO STA. 439+07 TO LINE UP WITH STAGE 2 STRIPING. SHIFT TRAFFIC ONTO THIS ROADWAY PREVIOUSLY CONSTRUCTED IN STAGE I.

REMOVE EXISTING BRIDGE STRUCTURE AND FINISH CONSTRUCTION OF PROPOSED R.C. BOX AT STA. 312+55.

EXTEND AND CONSTRUCT R.C. BOX CULVERTS AND R.C. PIPE CULVERTS AS SHOWN ON THE MAINTENANCE OF TRAFFIC DETAILS. CONSTRUCT THE FOLLOWING SEGMENTS OF PROPOSED ROADWAY THROUGH THE FIRST LAYER OF SURFACE COURSE WHILE UTILIZING LEVELING AND METHOD OF RAISING GRADE TO MAINTAIN TRAFFIC.

STA. 100+00 TO STA. 124+00 ON LEFT
STA. 248+00 TO STA. 415+00 ON LEFT
STA. 415+00 TO STA. 430+28 ON RIGHT

FINISH ANY NECESSARY SLOPES. INSTALL CONCRETE DITCH PAVING.

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

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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.		061309	48	260

(2) MAINTENANCE OF TRAFFIC DETAILS

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

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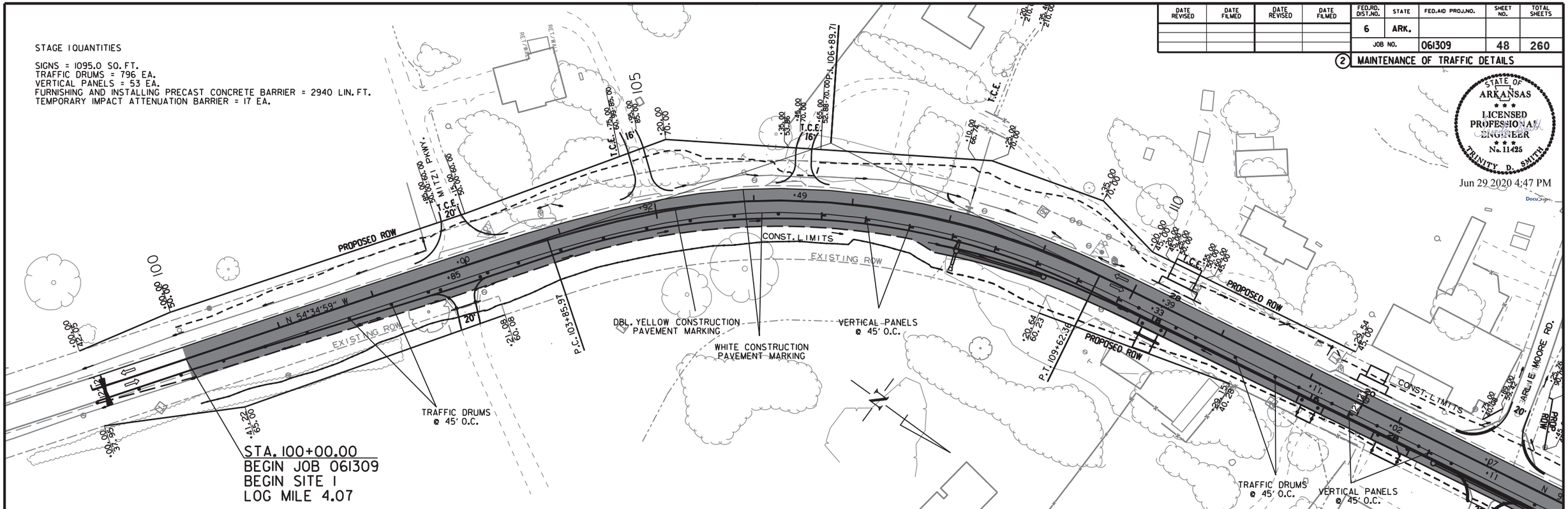
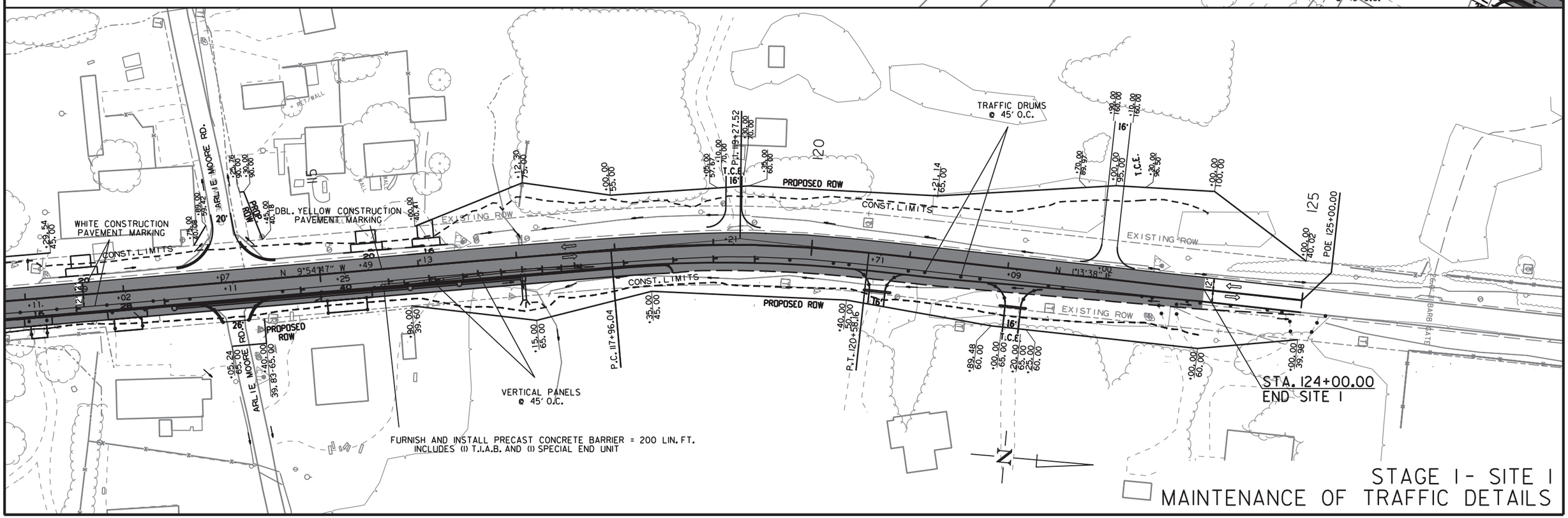
STAGE I QUANTITIES

SIGNS = 1095.0 SQ. FT.
TRAFFIC DRUMS = 796 EA.
VERTICAL PANELS = 53 EA.
FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER = 2940 LIN. FT.
TEMPORARY IMPACT ATTENUATION BARRIER = 17 EA.





STAGE I - SITE I
MAINTENANCE OF TRAFFIC DETAILS

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R061309.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.		061309	49	260

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
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STA. 248+00.00
BEGIN SITE 2

POB 245+00.00

EXISTING ROW

PROPOSED R/W

CONST. LIMITS

N 55°19'49" E

P.C. 249+95.59

P.I. 251+87.96

DBL. YELLOW CONSTRUCTION PAVEMENT MARKING

WHITE CONSTRUCTION PAVEMENT MARKING

P.T. 253+78.04

N 70°37'31" E

VERTICAL PANELS @ 45' O.C.

TRAFFIC DRUMS @ 45' O.C.

P.C. 256+79.39

P.I. 258+60.92

25' VEGETATION BUFFER

FURNISH AND INSTALL PRECAST CONCRETE BARRIER = 200 LIN. FT.
INCLUDES (1) T.I.A.B. AND (1) SPECIAL END UNIT

P.T. 260+38.18

S 87°51'26" E

P.C. 262+69.18

P.I. 264+83.73

P.T. 266+96.06

N 65°06'03" E

WHITE CONSTRUCTION PAVEMENT MARKING

DBL. YELLOW CONSTRUCTION PAVEMENT MARKING

FURNISH AND INSTALL PRECAST CONCRETE BARRIER = 200 LIN. FT.
INCLUDES (1) T.I.A.B. AND (1) SPECIAL END UNIT

STAGE IA - SITE 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.		061309	50	260

(2) MAINTENANCE OF TRAFFIC DETAILS

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

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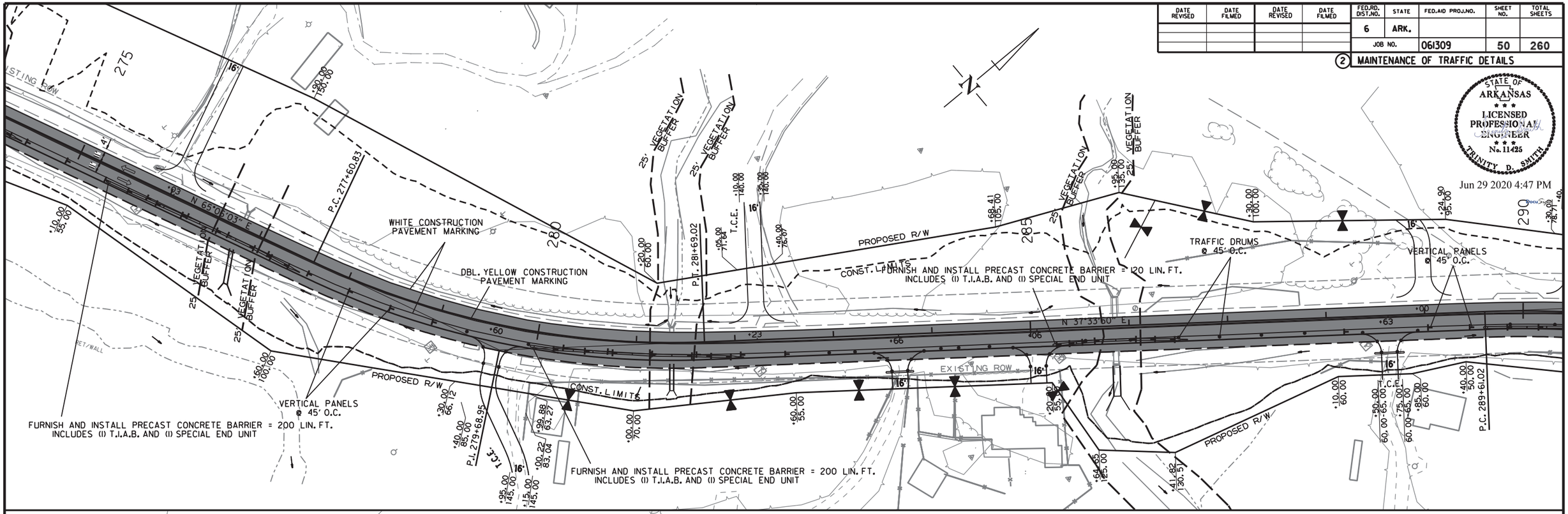

STAGE IA - SITE 2
MAINTENANCE OF TRAFFIC DETAILS

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R061309.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.		061309	51	260

(2) MAINTENANCE OF TRAFFIC DETAILS

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

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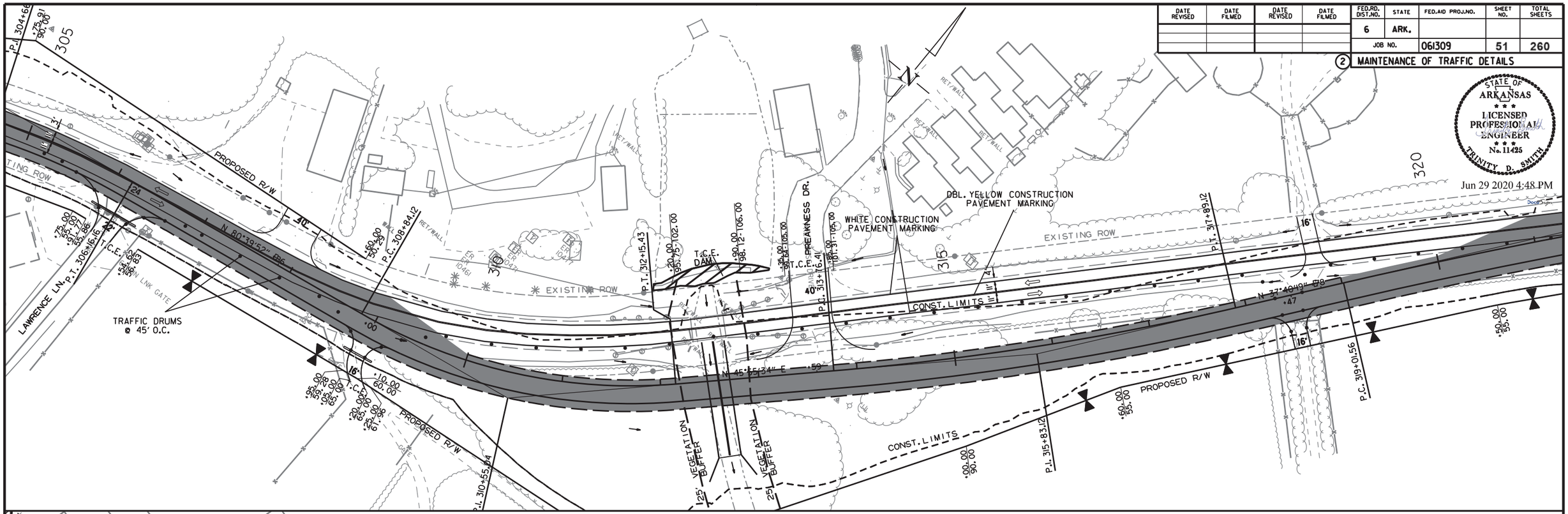

STAGE IA - SITE 2
MAINTENANCE OF TRAFFIC DETAILS

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R061309.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.		061309	52	260

(2) MAINTENANCE OF TRAFFIC DETAILS

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

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STAGE IA - SITE 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.		061309	53	260

(2) MAINTENANCE OF TRAFFIC DETAILS

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

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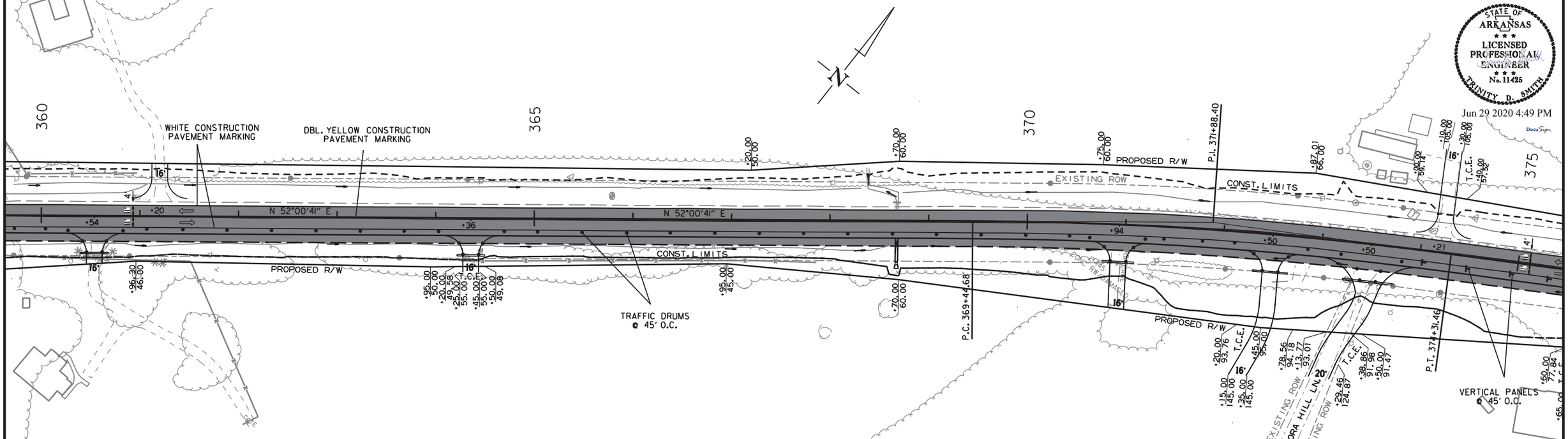

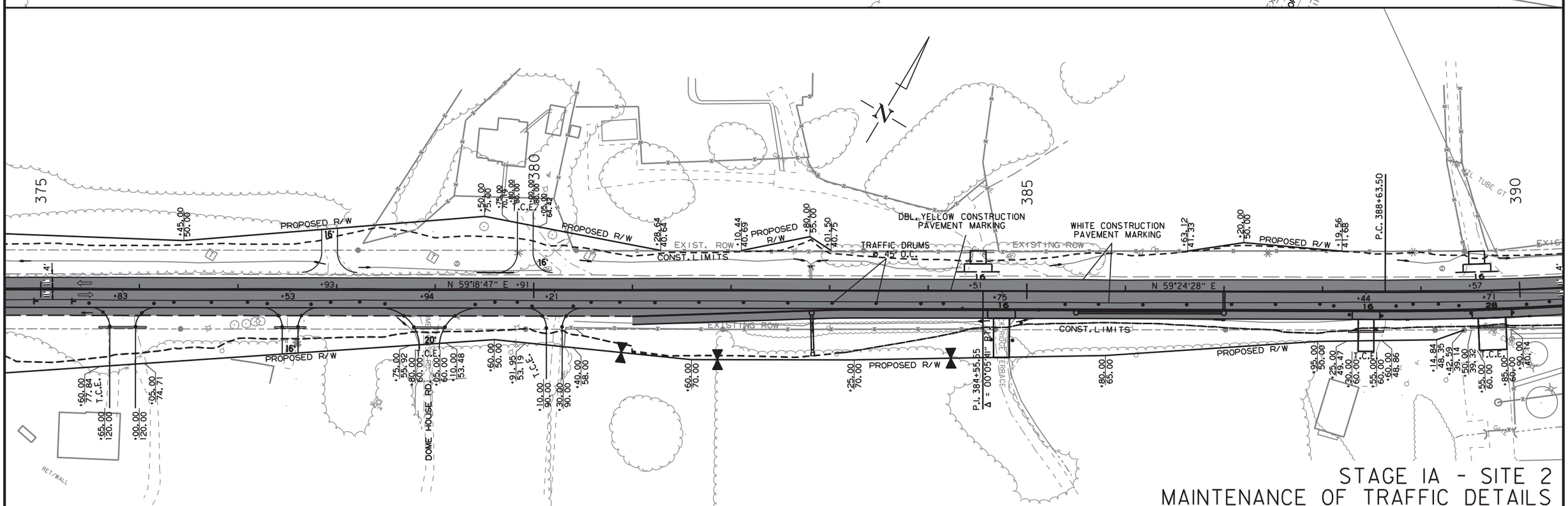

STAGE IA - SITE 2
MAINTENANCE OF TRAFFIC DETAILS

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R061309.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.		061309	54	260

(2) MAINTENANCE OF TRAFFIC DETAILS

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

Trinity Smith

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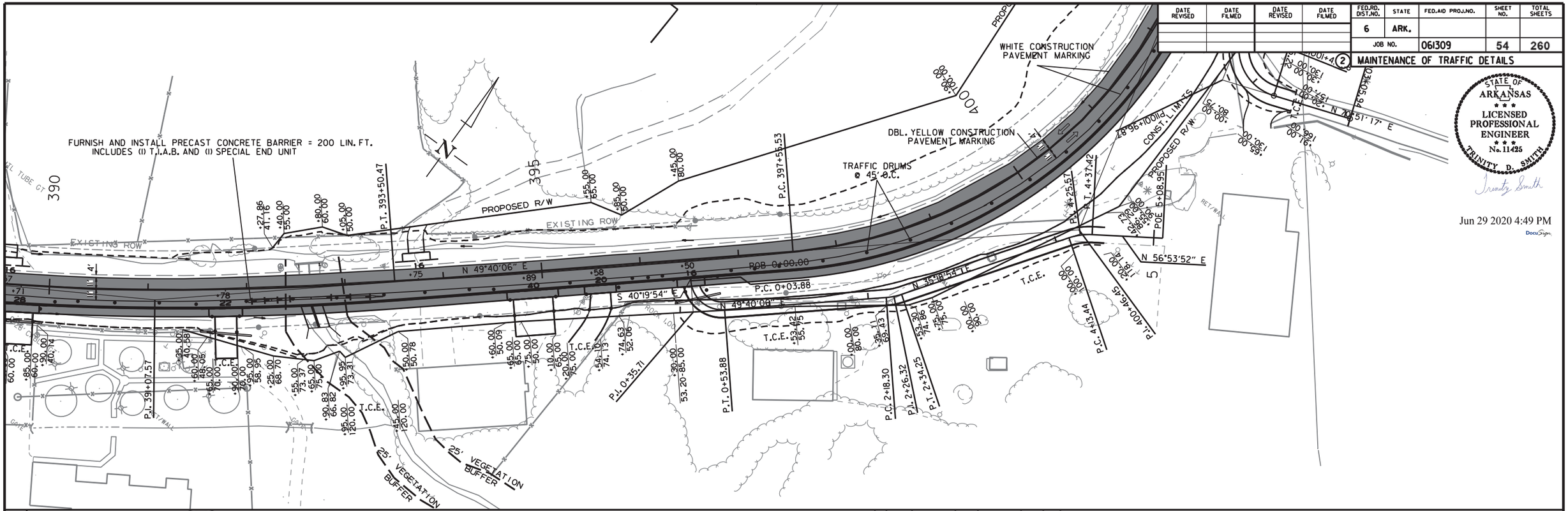

STAGE IA - SITE 2
MAINTENANCE OF TRAFFIC DETAILS

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R061309.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.		061309	55	260

(2) MAINTENANCE OF TRAFFIC DETAILS

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

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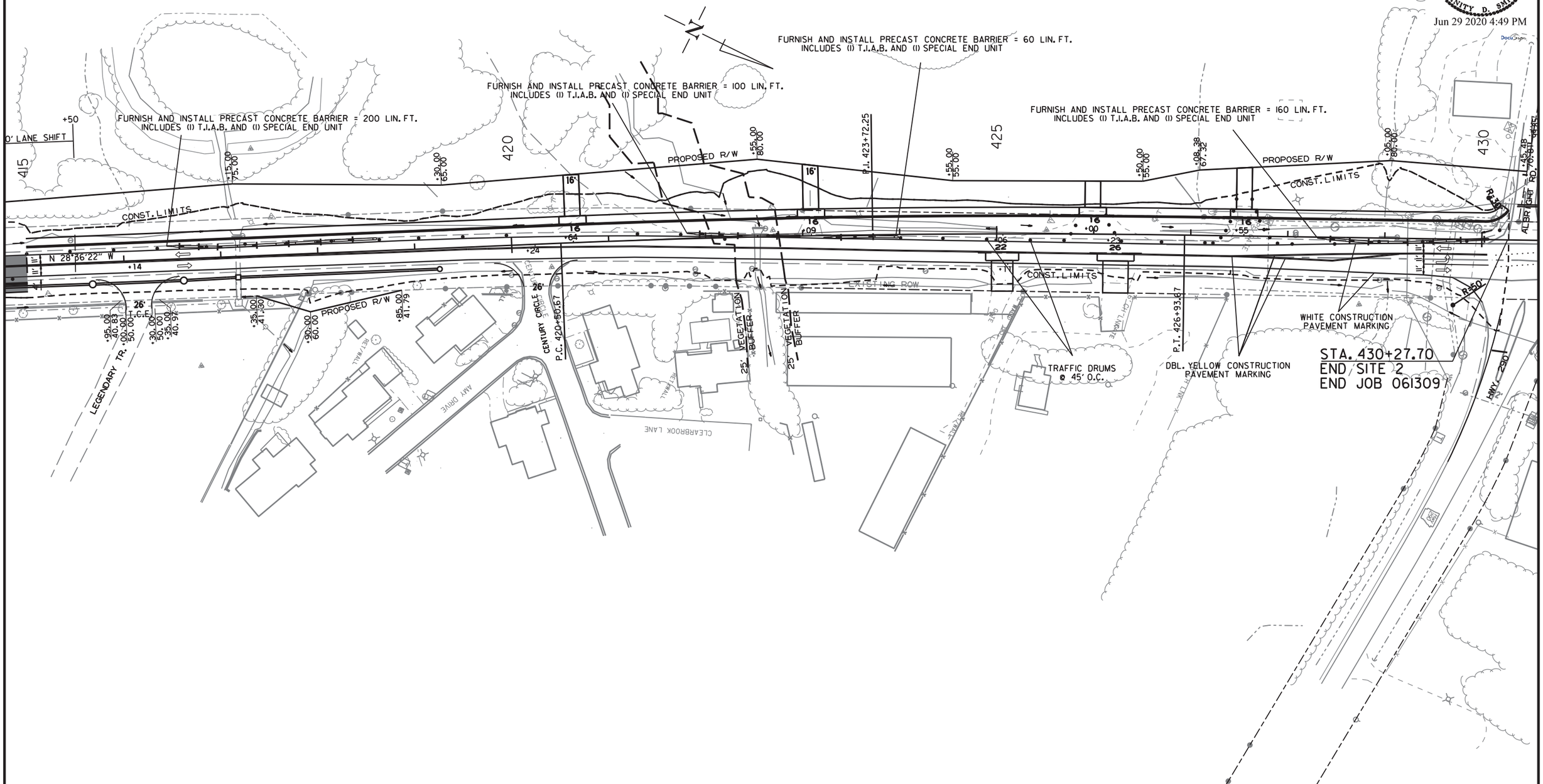

STAGE IA - SITE 2
MAINTENANCE OF TRAFFIC DETAILS

6/29/2020

R061309.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.		061309	56	260

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
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PROPOSED R/W
CONST. LIMITS
EXISTING ROW
WHITE CONSTRUCTION PAVEMENT MARKING
DBL. YELLOW CONSTRUCTION PAVEMENT MARKING
TRAFFIC DRUMS @ 45' O.C.
100' LANE SHIFT
LEGENDARY TR.
MASSEY RD.
CENTURY CIRCLE
CLEARBROOK LANE
AMY DRIVE
25' VEGETATION BUFFER
FURNISH AND INSTALL PRECAST CONCRETE BARRIER = 200 LIN. FT. INCLUDES (1) T.I.A.B. AND (1) SPECIAL END UNIT
FURNISH AND INSTALL PRECAST CONCRETE BARRIER = 100 LIN. FT. INCLUDES (1) T.I.A.B. AND (1) SPECIAL END UNIT
FURNISH AND INSTALL PRECAST CONCRETE BARRIER = 60 LIN. FT. INCLUDES (1) T.I.A.B. AND (1) SPECIAL END UNIT
FURNISH AND INSTALL PRECAST CONCRETE BARRIER = 160 LIN. FT. INCLUDES (1) T.I.A.B. AND (1) SPECIAL END UNIT
STA. 430+27.70
END SITE 2
END JOB 061309

STAGE IB - SITE 2
MAINTENANCE OF TRAFFIC DETAILS

6/29/2020
R061309.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.		061309	57	260

(2) MAINTENANCE OF TRAFFIC DETAILS

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

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STAGE 2 QUANTITIES

SIGNS = 1032.0 SQ. FT.
TRAFFIC DRUMS = 702 EA.
VERTICAL PANELS = 93 EA.
RELOCATING PRECAST CONCRETE BARRIER = 2540 LIN. FT.
TEMPORARY IMPACT ATTENUATION BARRIER (RELOCATION) = 14 EA.

TRAFFIC DRUMS @ 45' O.C.

PROPOSED ROW

VERTICAL PANELS @ 45' O.C.

CONST. LIMITS

WHITE CONSTRUCTION PAVEMENT MARKING

DBL. YELLOW CONSTRUCTION PAVEMENT MARKING

STA. 100+00.00
BEGIN JOB 061309
BEGIN SITE 1
LOG MILE 4.07

100' LANE SHIFT

FURNISH AND INSTALL PRECAST CONCRETE BARRIER = 200 LIN. FT.
INCLUDES (1) T.I.A.B. AND (1) SPECIAL END UNIT

ARLIE MOORE RD.

STA. 124+00.00
END SITE 1

STAGE 2 - SITE 1
MAINTENANCE OF TRAFFIC DETAILS

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R061309.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.		061309	58	260

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
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STA. 248+00.00
BEGIN SITE 2

POB 245+00.00

N 55°19'49" E

TRAFFIC DRUMS @ 45' O.C.

PROPOSED R/W

CONST. LIMITS

P.I. 251+87.96

P.C. 249+95.59

WHITE CONSTRUCTION PAVEMENT MARKING

P.T. 253+78.04

DBL. YELLOW CONSTRUCTION PAVEMENT MARKING

N 70°37'31" E

VERTICAL PANELS @ 45' O.C.

P.I. 258+60.92

25' VEGETATION BUFFER

P.C. 256+79.39

100' LANE SHIFT

P.T. 260+38.18

S 87°51'26" E

P.C. 262+69.18

P.T. 266+96.06

N 65°06'03" E

P.I. 264+83.73

WHITE CONSTRUCTION PAVEMENT MARKING

DBL. YELLOW CONSTRUCTION PAVEMENT MARKING

STAGE 2A - SITE 2
MAINTENANCE OF TRAFFIC DETAILS

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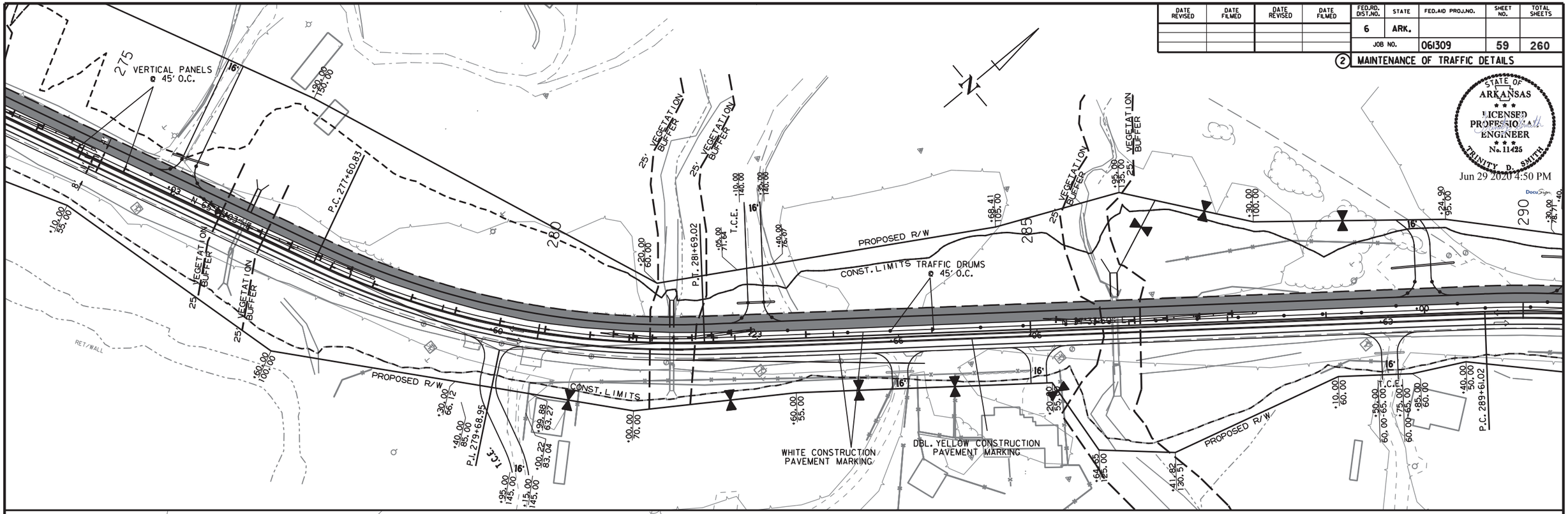
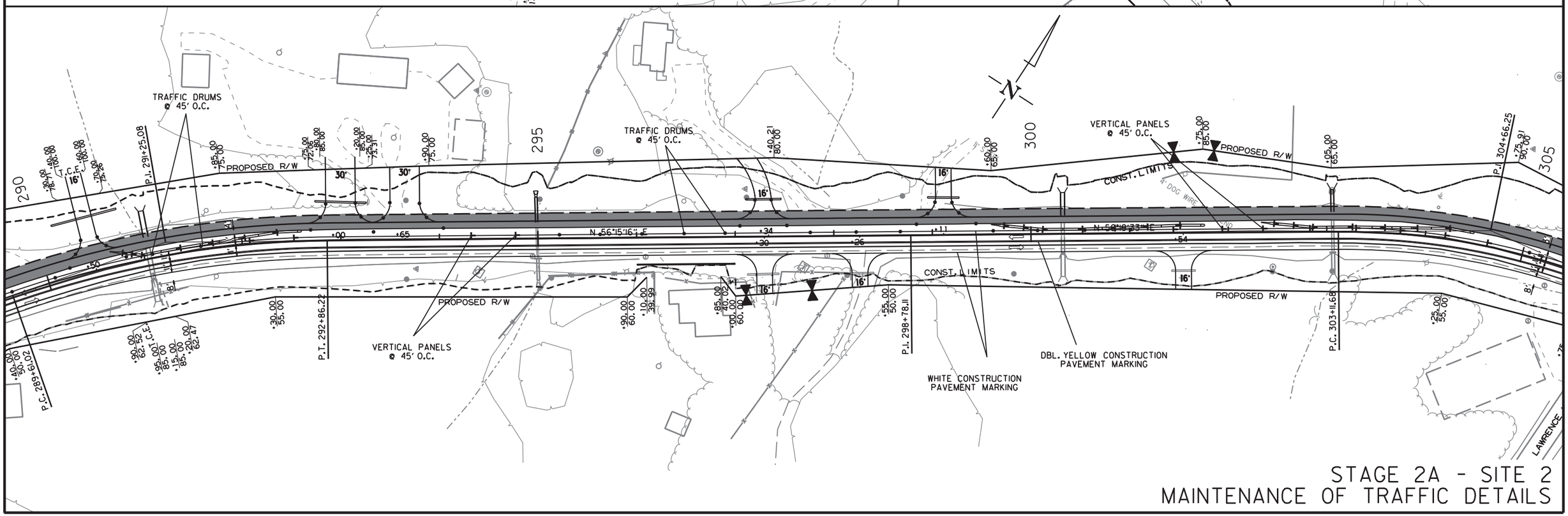
R061309.DGN

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.		061309	59	260

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Jun 29 2020 4:50 PM





STAGE 2A - SITE 2
MAINTENANCE OF TRAFFIC DETAILS

6/29/2020

R061309.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.		061309	60	260

2 MAINTENANCE OF TRAFFIC DETAILS

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

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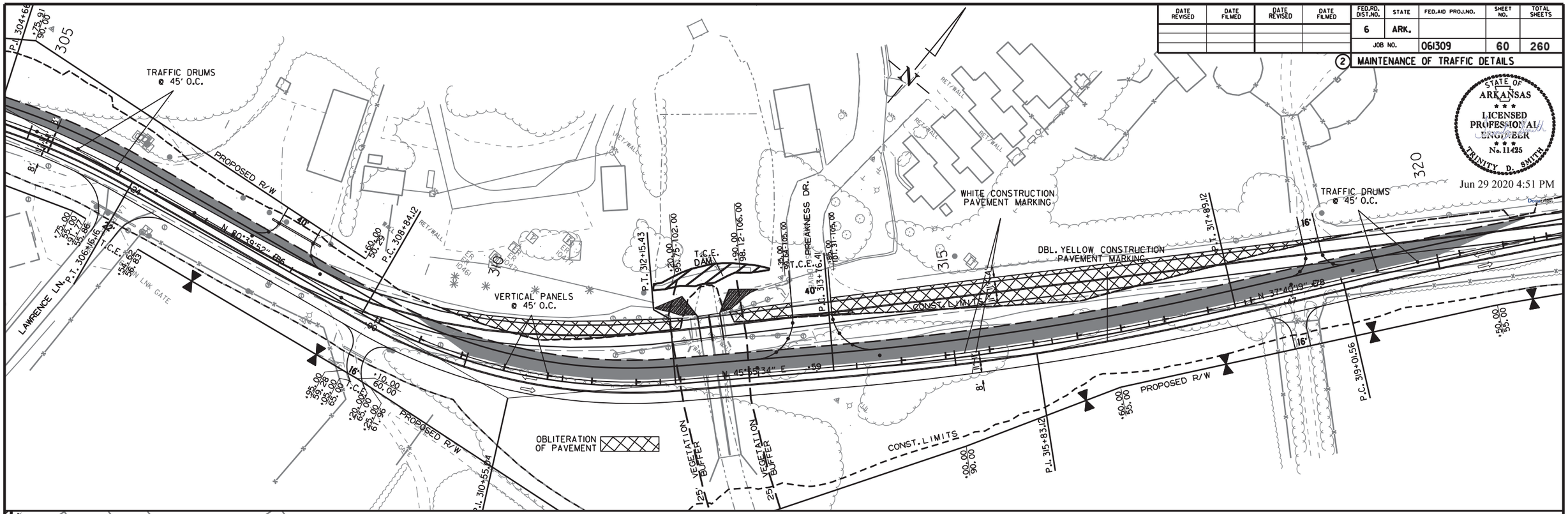
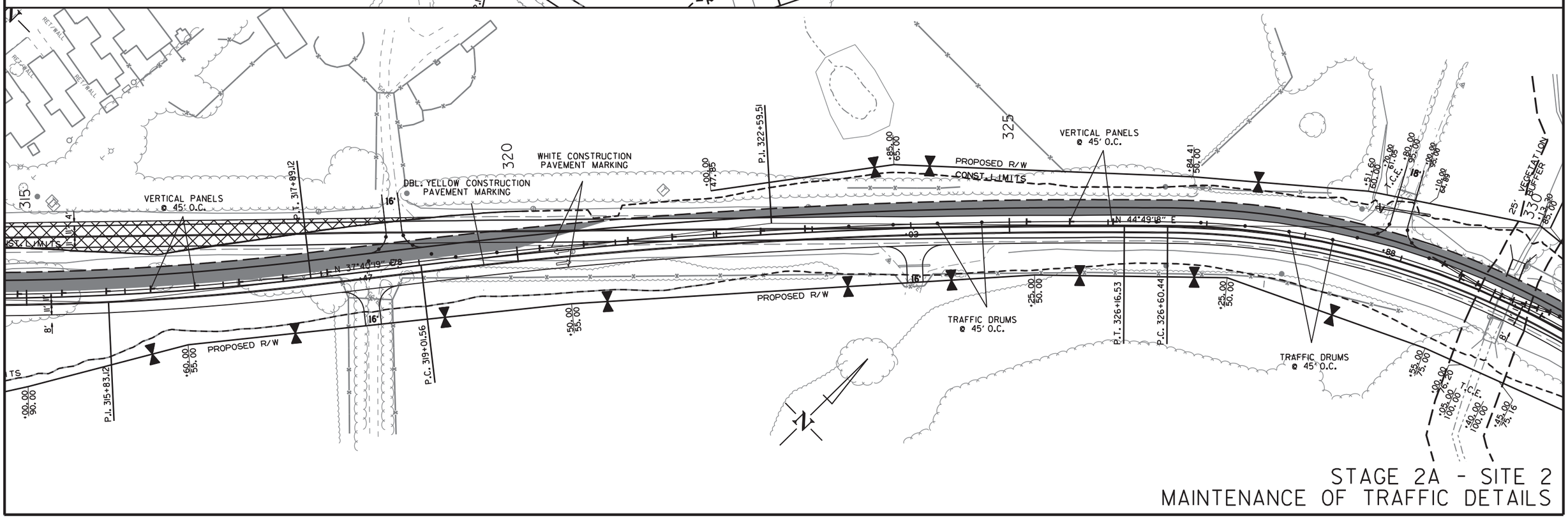




STAGE 2A - SITE 2
MAINTENANCE OF TRAFFIC DETAILS

6/29/2020

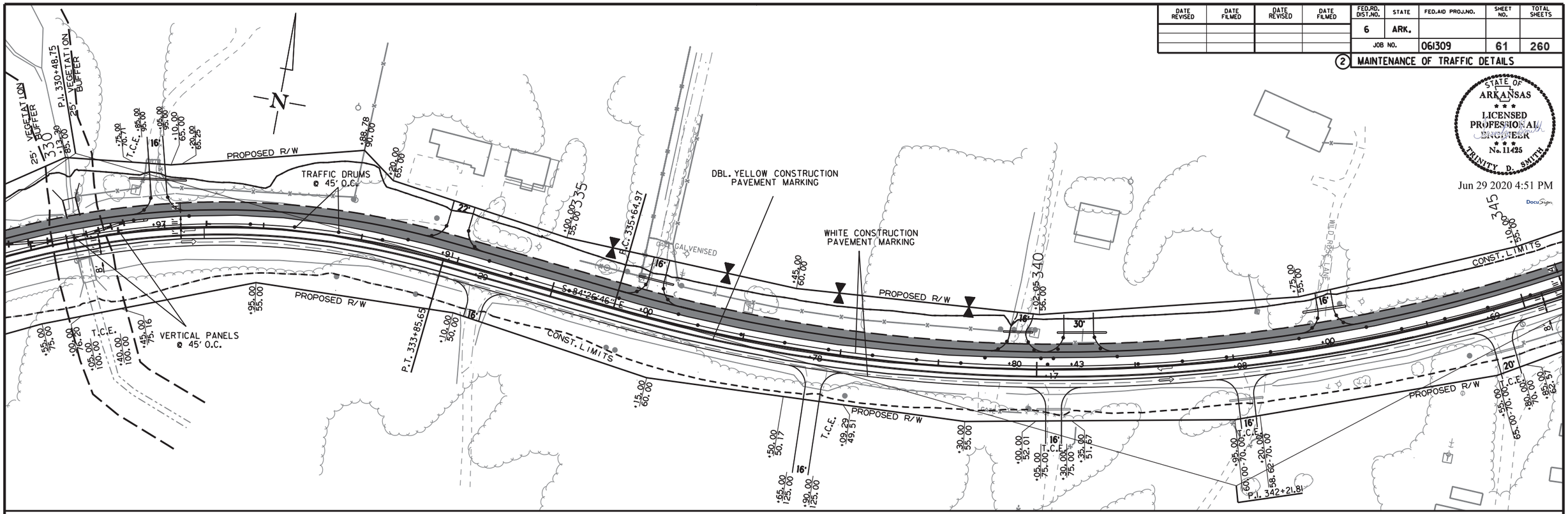
R061309.DGN

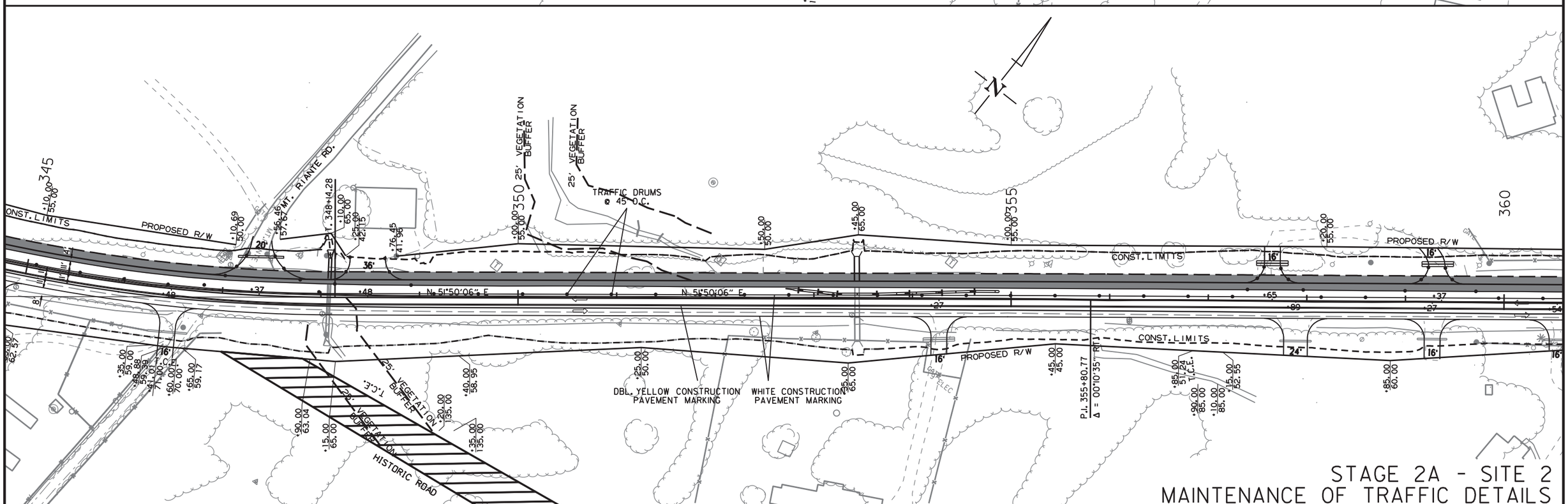
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061309	61	260

(2) MAINTENANCE OF TRAFFIC DETAILS

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

Jun 29 2020 4:51 PM





STAGE 2A - SITE 2
MAINTENANCE OF TRAFFIC DETAILS

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R061309.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.		061309	62	260

(2) MAINTENANCE OF TRAFFIC DETAILS

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

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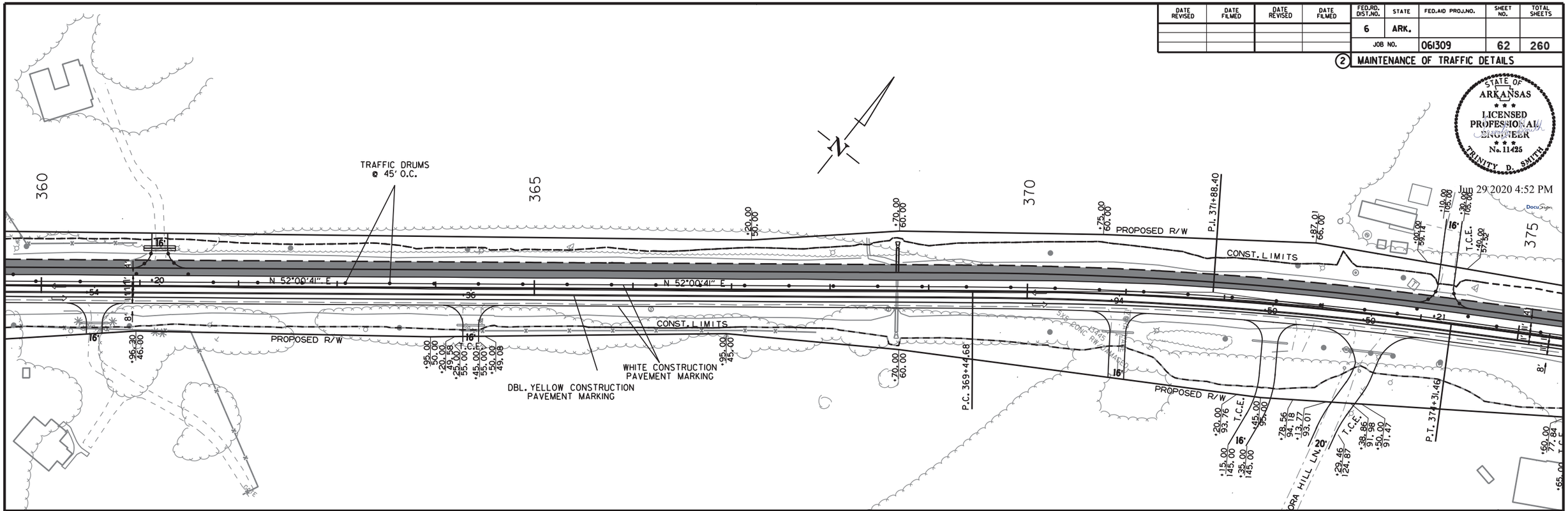
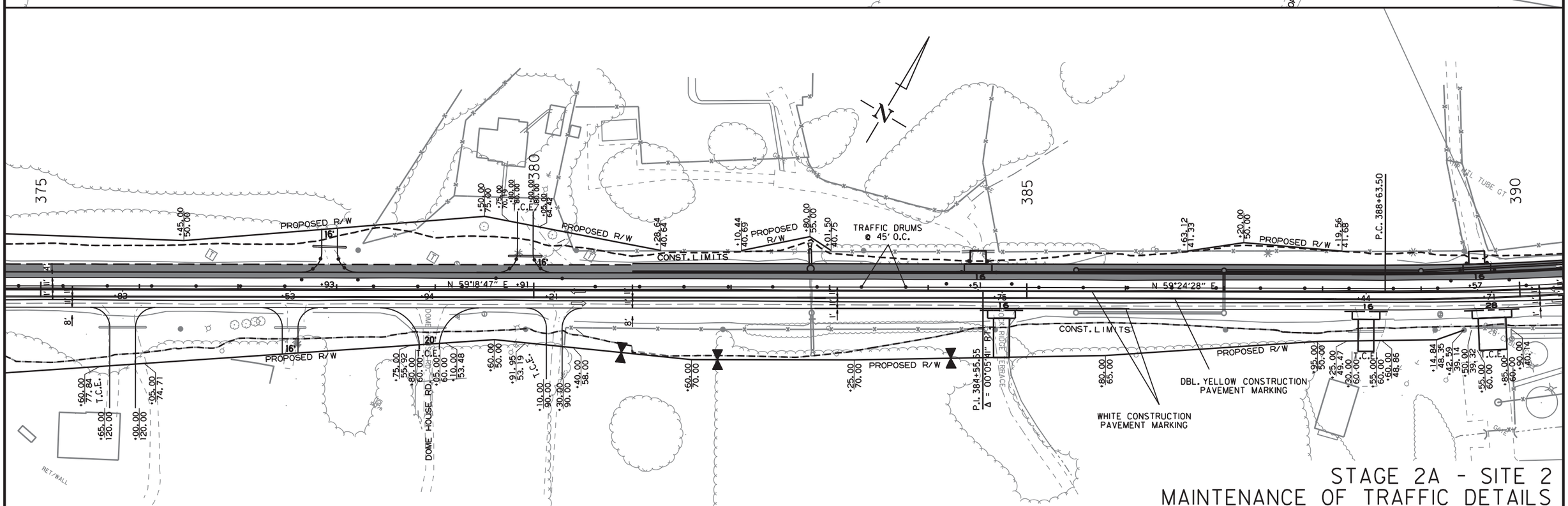




STAGE 2A - SITE 2
MAINTENANCE OF TRAFFIC DETAILS

6/29/2020

R061309.DGN

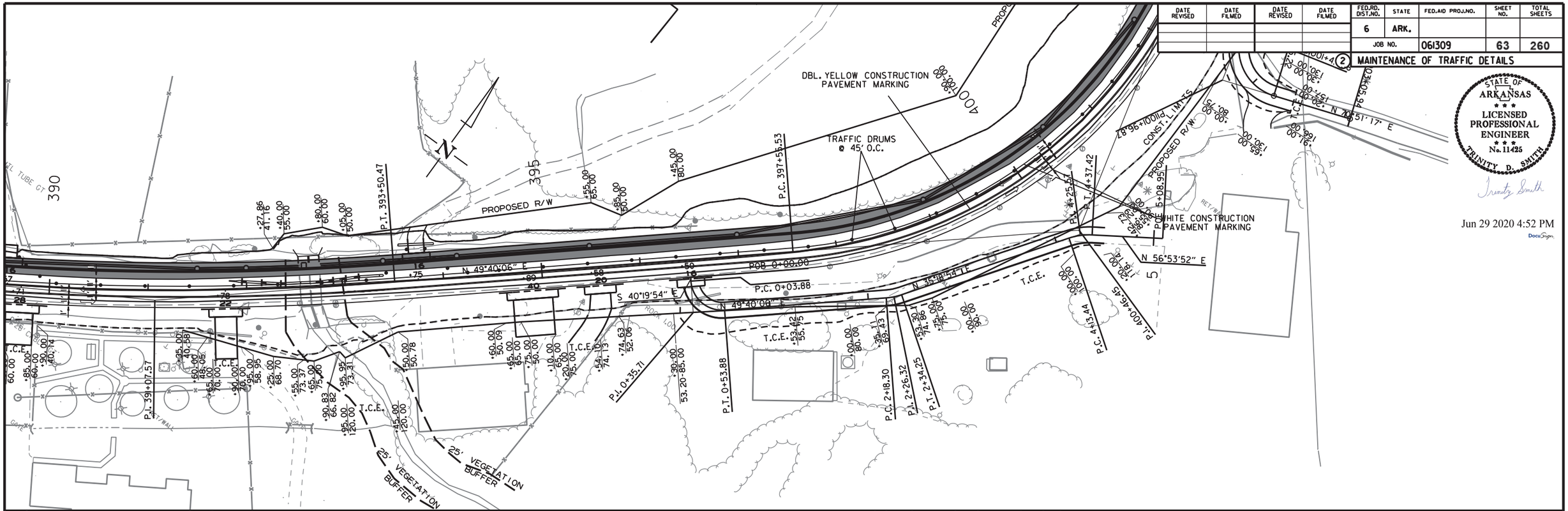
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061309	63	260

(2) MAINTENANCE OF TRAFFIC DETAILS

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

Trinity Smith

Jun 29 2020 4:52 PM



STAGE 2A - SITE 2
MAINTENANCE OF TRAFFIC DETAILS

6/29/2020

R061309.DGN

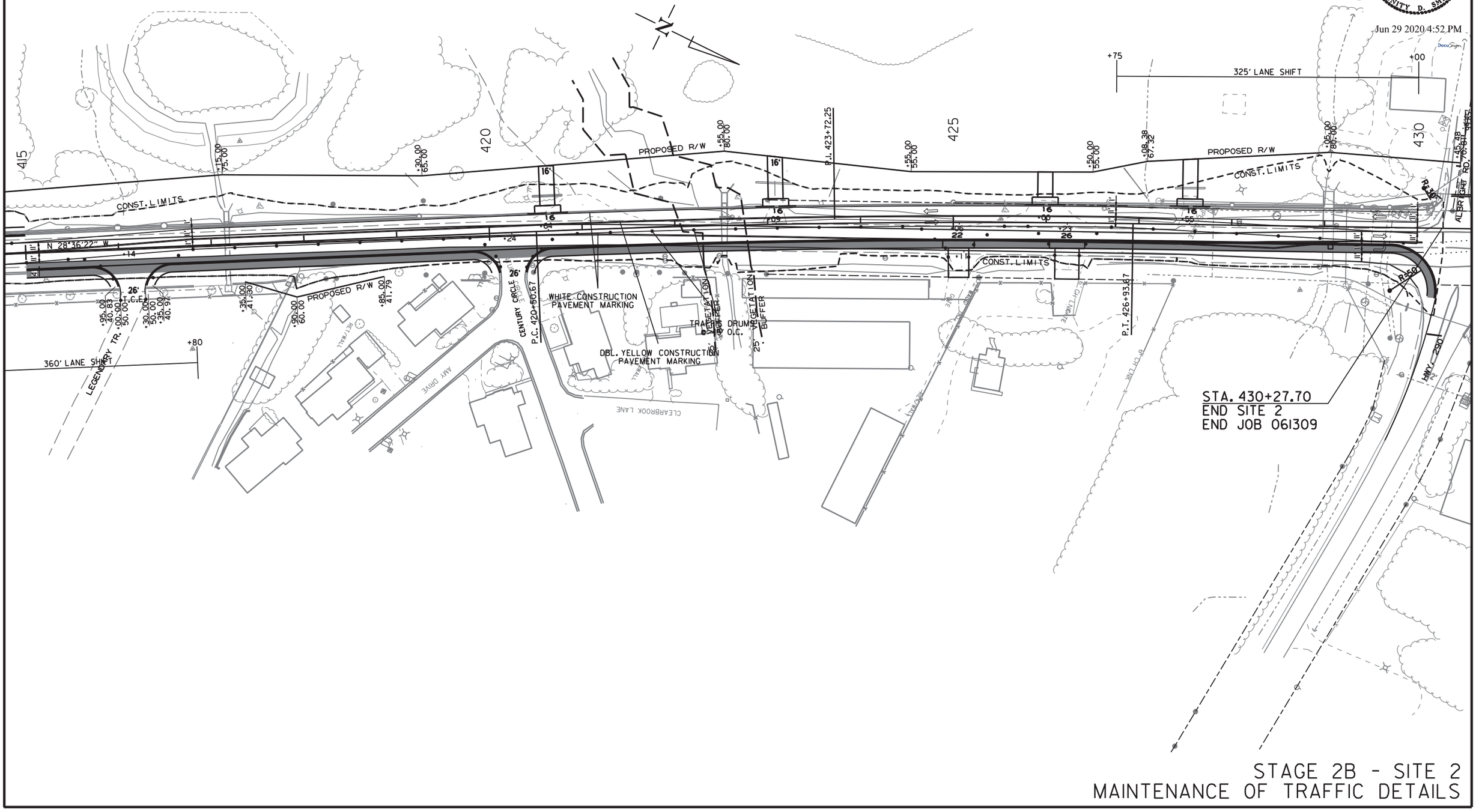
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	64	260

(2) MAINTENANCE OF TRAFFIC DETAILS

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

Jun 29 2020 4:52 PM



STAGE 2B - SITE 2
MAINTENANCE OF TRAFFIC DETAILS

6/29/2020

R061309.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.		061309	65	260

(2) PERMANENT PAVEMENT MARKING DETAILS

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

Trinity Smith

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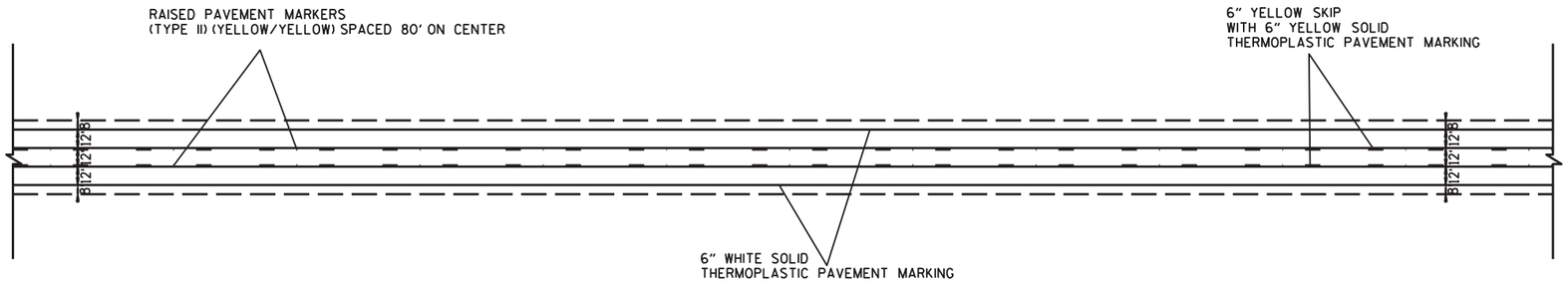

TYPICAL 3-LANE PERMANENT PAVEMENT MARKING LAYOUT

SITE 1

THERMOPLASTIC PAVEMENT MARKING WHITE (6") = 5200 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING YELLOW (6") = 6400 LIN. FT.

RAISED PAVEMENT MARKERS TYPE II (YEL./YEL.) (80' O.C.) = 65 EACH

SITE 2

THERMOPLASTIC PAVEMENT MARKING WHITE (6") = 38596 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING YELLOW (6") = 46970 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING (WORDS) = 2 EACH
THERMOPLASTIC PAVEMENT MARKING (ARROWS) = 3 EACH

RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 6 EACH
RAISED PAVEMENT MARKERS TYPE II (YEL./YEL.) (80' O.C.) = 468 EACH

6/26/2020

R061309.DGN

PERMANENT PAVEMENT MARKING DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061309	66	260

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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TRINITY D. SMITH

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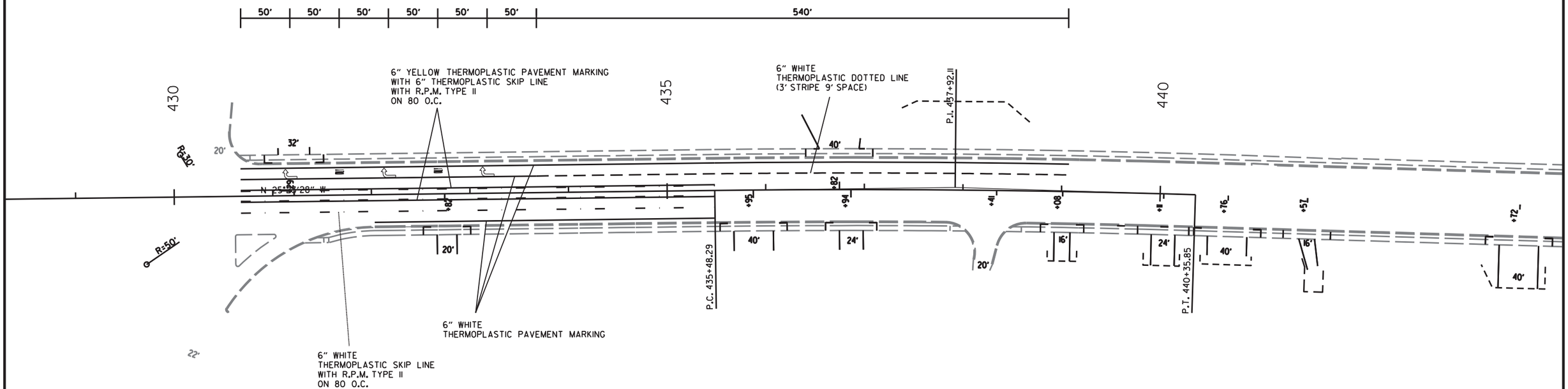

6/26/2020

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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.		061309	67	260

(2) QUANTITIES

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

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CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 1	STAGE 2	END OF JOB	REMOVAL OF PERMANENT PAVEMENT MARKINGS	CONSTRUCTION PAVEMENT MARKINGS	CONSTRUCTION PAVEMENT MARKINGS		RAISED PAVEMENT MARKERS		THERMOPLASTIC PAVEMENT MARKING			
						WORDS	ARROWS	TYPE II (WHITE/RED)	TYPE II (YELLOW/YELLOW)	6" WHITE	6" YELLOW	WORDS	ARROWS
	LIN. FT. - EACH			LIN. FT.		EACH		EACH		LIN. FT.		EACH	
SITE 1													
CONSTRUCTION PAVEMENT MARKINGS	10408	10372			20780								
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW)			65						65				
THERMOPLASTIC PAVEMENT MARKING WHITE (6")			5200							5200			
THERMOPLASTIC PAVEMENT MARKING YELLOW (6")			6400								6400		
SITE 2													
REMOVAL OF PERMANENT PAVEMENT MARKINGS		5726		5726									
CONSTRUCTION PAVEMENT MARKINGS	73096	73349	88506		234951								
CONSTRUCTION PAVEMENT MARKINGS (WORDS)		2				2							
CONSTRUCTION PAVEMENT MARKINGS (ARROWS)		3					3						
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED)			6					6					
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW)			468						468				
THERMOPLASTIC PAVEMENT MARKING WHITE (6")			38596							38596			
THERMOPLASTIC PAVEMENT MARKING YELLOW (6")			46970								46970		
THERMOPLASTIC PAVEMENT MARKING (WORDS)			2									2	
THERMOPLASTIC PAVEMENT MARKING (ARROWS)			3										3
TOTALS:				**5726**	**255731**	**2**	**3**	**6**	**533**	**43796**	**53370**	**2**	**3**

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	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		CONSTRUCTION PROJECT INFORMATION SIGN UPDATE	VERTICAL PANELS	TRAFFIC DRUMS	FURNISHING & INSTALLING PRECAST CONC. BARRIER	RELOCATING PRECAST CONCRETE BARRIER	TEMPORARY IMPACT ATTENUATION BARRIER	TEMP. IMPACT ATTEN.BARR. (REPAIR)	TEMP. IMPACT ATTEN. BARR. (RELOCATION)
			LIN. FT. - EACH			NO.	SQ. FT.		EACH		LIN. FT.			EACH	
W20-1	ROAD WORK 1500 FT.	48"x48"	4	4	4	4	64.0								
W20-1	ROAD WORK 1000 FT.	48"x48"	4	4	4	4	64.0								
W20-1	ROAD WORK 500 FT.	48"x48"	4	4	4	4	64.0								
W20-1	ROAD WORK AHEAD	48"x48"	10	10	10	10	160.0								
G20-2	END ROAD WORK	48"x24"	14	14	14	14	112.0								
G20-1	ROAD WORK NEXT xx MILES	60"x24"	4	4	4	4	40.0								
OM-3L	OBJECT MARKER	12"x36"	48	39	48	48	144.0								
OM-3R	OBJECT MARKER	12"x36"	64	52	64	64	192.0								
R4-1	DO NOT PASS	24"x30"	16	16	16	16	80.0								
W21-5a	RIGHT SHOULDER CLOSED	36"x36"	4	4	4	4	36.0								
W8-1	BUMP	30"x30"	4	4	4	4	25.0								
W8-9	LOW SHOULDER	30"x30"	4	4	4	4	25.0								
W8-17	SHOULDER DROP OFF	30"x30"	4	4	4	4	25.0								
SPECIAL	WORK WITH US SIGN (USE CAUTION, SLOW DOWN)	96"x48"	2	2	2	2	64.0								
SPECIAL	CONSTRUCTION PROJECT INFORMATION SIGN	96"x48"	2	2	2	2	64.0								
	CONSTRUCTION PROJECT INFORMATION SIGN UPDATE				10			10							
	VERTICAL PANELS		53	93	93				93						
	TRAFFIC DRUMS		796	702	796					796					
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER		2940		2940						2940				
	RELOCATING PRECAST CONCRETE BARRIER			2540	2540							2540			
	TEMPORARY IMPACT ATTENUATION BARRIER		17		17								17		
	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)		17		17									17	
	TEMPORARY IMPACT ATTENUATION BARRIER (RELOCATION)			14	14										14
TOTALS:							**1159.0**	**10**	**93**	**796**	**2940**	**2540**	**17**	**17**	**14**

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

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

6/29/2020

R061309.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.		061309	68	260

(2) QUANTITIES

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
SITE 1				
99+00	113+00	HWY. 7 - SITE 1	14	14
116+00	125+00	HWY. 7 - SITE 1	9	9
SITE 2				
247+00	307+00	HWY. 7 - SITE 2	60	60
309+00	389+00	HWY. 7 - SITE 2	80	80
391+00	408+00	HWY. 7 - SITE 2	17	17
411+00	423+00	HWY. 7 - SITE 2	12	12
428+00	430+00	HWY. 7 - SITE 2	2	2
TOTALS:			**194**	**194**

REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	WELL	POSTS	WALLS	RETAINING WALLS	CONCRETE ISLANDS	COLUMNS	CONCRETE DRIVEWAYS	SIGN FOUNDATIONS	GUARDRAIL	SEPTIC TANK	BUILDINGS	SIGNS	PLANTERS
			EACH	EACH		LIN. FT.	SQ. YD.	EACH	SQ. YD.	EACH	LIN. FT.	EACH	EACH	EACH	EACH
SITE 1															
102+55		RT. OF HWY. 7								2				1	
108+00		LT. OF HWY. 7													1
109+62		RT. OF HWY. 7								2				1	
109+65	110+00	LT. OF HWY. 7		3											
112+59		LT. OF HWY. 7							7						
118+85		LT. OF HWY. 7								1				1	
SITE 2															
254+30		LT. OF HWY. 7								4				1	
256+00	256+25	RT. OF HWY. 7		2											
257+00		LT. OF HWY. 7								2				1	
259+30	259+55	LT. OF HWY. 7						2							
277+01	277+28	LT. OF HWY. 7											1		
278+65		LT. OF HWY. 7										1			
284+34	285+11	RT. OF HWY. 7			77										
284+94		RT. OF HWY. 7						1							
285+17		RT. OF HWY. 7						1							
289+16		RT. OF HWY. 7								3				1	
293+07		LT. OF HWY. 7								1				1	
293+30		LT. OF HWY. 7								1				1	
294+20		RT. OF HWY. 7								2				1	
307+86		LT. OF HWY. 7							106						
308+75		RT. OF HWY. 7								2				1	
311+49	312+37	RT. OF HWY. 7									88				
311+54	312+37	LT. OF HWY. 7									83				
312+69	313+21	LT. OF HWY. 7									54				
312+69	313+49	RT. OF HWY. 7									80				
328+75		LT. OF HWY. 7								2				1	
333+91		LT. OF HWY. 7							120						
340+45		RT. OF HWY. 7		1											
340+26	340+65	LT. OF HWY. 7													
342+35		LT. OF HWY. 7								7				1	
346+35	346+60	RT. OF HWY. 7		2											
348+00		LT. OF HWY. 7								2				1	
359+05		RT. OF HWY. 7	1										1		
360+45		RT. OF HWY. 7						2							
364+27		RT. OF HWY. 7		1											
364+44		RT. OF HWY. 7		1											
364+99		RT. OF HWY. 7		1											
367+67		RT. OF HWY. 7		1											
370+77		RT. OF HWY. 7		1											
371+00		RT. OF HWY. 7		1											
377+85		RT. OF HWY. 7		1											
378+85	379+00	RT. OF HWY. 7		2											
380+30		RT. OF HWY. 7		1											
384+60		RT. OF HWY. 7		2											
389+50	389+90	RT. OF HWY. 7		2											
389+71		RT. OF HWY. 7							51						
395+85		RT. OF HWY. 7								4				1	
395+87	399+30	RT. OF HWY. 7			362										
396+50	402+80	RT. OF HWY. 7									630				
402+05		RT. OF HWY. 7								3				1	
403+82		RT. OF HWY. 7						1							
403+92	404+40	RT. OF HWY. 7				70									
408+28	408+42	RT. OF HWY. 7					21								
408+32		RT. OF HWY. 7													1
408+35		RT. OF HWY. 7							43						
408+55		LT. OF HWY. 7								2				2	
409+00		LT. OF HWY. 7				7									
409+25	409+50	LT. OF HWY. 7				50									
416+14		RT. OF HWY. 7							165						
419+30		LT. OF HWY. 7								3				1	
425+06		RT. OF HWY. 7							82						
427+20		LT. OF HWY. 7		1											
427+30		LT. OF HWY. 7		1											
TOTALS:			**1**	**24**	**439**	**127**	**21**	**7**	**574**	**43**	**935**	**1**	**2**	**18**	**2**

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

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

Trinity Smith

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6/26/2020

R061309.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.		061309	69	260

(2) QUANTITIES

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

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REMOVAL AND DISPOSAL OF FENCE

STATION	STATION	LOCATION	FENCE	GATES
			LIN. FT.	EACH
249+41	251+39	LT. OF HWY. 7 - SITE 2	223	
257+11	258+84	RT. OF HWY. 7 - SITE 2	236	
279+99	285+64	RT. OF HWY. 7 - SITE 2	418	
283+74	285+30	RT. OF HWY. 7 - SITE 2	199	
286+39	288+73	LT. OF HWY. 7 - SITE 2	234	
287+93	288+61	RT. OF HWY. 7 - SITE 2	80	
290+05	291+39	RT. OF HWY. 7 - SITE 2	129	
294+95	296+18	RT. OF HWY. 7 - SITE 2	175	
295+10	295+22	LT. OF HWY. 7 - SITE 2	28	
296+90	297+14	RT. OF HWY. 7 - SITE 2	35	
297+40	298+02	RT. OF HWY. 7 - SITE 2	108	
301+34	302+65	LT. OF HWY. 7 - SITE 2	151	
306+47	308+87	RT. OF HWY. 7 - SITE 2	266	1
315+84	329+19	RT. OF HWY. 7 - SITE 2	1353	1
323+37	324+51	LT. OF HWY. 7 - SITE 2	115	
326+80	328+18	LT. OF HWY. 7 - SITE 2	145	
330+18	332+88	LT. OF HWY. 7 - SITE 2	378	1
335+19	335+82	LT. OF HWY. 7 - SITE 2	86	
336+13	339+64	LT. OF HWY. 7 - SITE 2	357	
344+89	346+29	RT. OF HWY. 7 - SITE 2	160	
346+68	347+02	RT. OF HWY. 7 - SITE 2	43	
352+10	354+60	RT. OF HWY. 7 - SITE 2	250	
359+69	361+52	RT. OF HWY. 7 - SITE 2	184	
359+77	360+97	LT. OF HWY. 7 - SITE 2	127	
364+22	367+86	RT. OF HWY. 7 - SITE 2	360	1
378+26	378+90	LT. OF HWY. 7 - SITE 2	91	
380+31	384+66	RT. OF HWY. 7 - SITE 2	457	
380+33	381+29	LT. OF HWY. 7 - SITE 2	113	
382+10	383+02	LT. OF HWY. 7 - SITE 2	89	
386+63	388+20	LT. OF HWY. 7 - SITE 2	135	
392+36	393+63	LT. OF HWY. 7 - SITE 2	127	
393+87	396+60	LT. OF HWY. 7 - SITE 2	275	
407+24	409+31	LT. OF HWY. 7 - SITE 2	207	1
409+29	409+45	LT. OF HWY. 7 - SITE 2		1
409+37	410+98	LT. OF HWY. 7 - SITE 2	190	1
TOTALS:			**7524**	**7**

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.
SITE 1							
116+12.00	117+05.00	RT. HWY. 7 - SITE 1	93.00	6.00	62.00	41.33	0.52
119+25.00	123+00.00	RT. HWY. 7 - SITE 1	375.00	7.00	291.67	166.67	2.10
108+00.00	110+00.00	LT. HWY. 7 - SITE 1	200.00	6.00	133.33	88.89	1.12
116+20.00	118+00.00	LT. HWY. 7 - SITE 1	180.00	6.00	120.00	80.00	1.01
119+25.00	123+00.00	LT. HWY. 7 - SITE 1	375.00	7.00	291.67	166.67	2.10
SITE 2							
257+00.00	265+00.00	RT. HWY. 7 - SITE 2	800.00	7.00	622.22	355.56	4.48
269+00.00	269+72.00	RT. HWY. 7 - SITE 2	72.00	6.00	48.00	32.00	0.40
285+97.39	288+00.00	RT. HWY. 7 - SITE 2	202.61	6.00	135.07	90.05	1.13
290+00.00	290+99.31	RT. HWY. 7 - SITE 2	99.31	7.00	77.24	44.14	0.56
294+99.17	295+50.00	RT. HWY. 7 - SITE 2	50.83	6.00	33.89	22.59	0.28
300+37.36	301+00.00	RT. HWY. 7 - SITE 2	62.64	7.00	48.72	27.84	0.35
310+00.00	315+00.00	RT. HWY. 7 - SITE 2	500.00	5.00	277.78	222.22	2.80
324+75.00	332+00.00	RT. HWY. 7 - SITE 2	725.00	6.00	483.33	322.22	4.06
347+00.00	348+07.97	RT. HWY. 7 - SITE 2	107.97	6.00	71.98	47.99	0.60
368+67.86	370+00.00	RT. HWY. 7 - SITE 2	132.14	7.00	102.78	58.73	0.74
386+92.00	390+50.00	RT. HWY. 7 - SITE 2	358.00	7.00	278.44	159.11	2.00
391+50.00	393+50.00	RT. HWY. 7 - SITE 2	200.00	6.00	133.33	88.89	1.12
395+50.00	399+25.00	RT. HWY. 7 - SITE 2	375.00	6.00	250.00	166.67	2.10
404+69.54	406+50.00	RT. HWY. 7 - SITE 2	180.46	6.00	120.31	80.20	1.01
410+00.00	413+25.00	RT. HWY. 7 - SITE 2	325.00	6.00	216.67	144.44	1.82
261+50.00	265+00.00	LT. HWY. 7 - SITE 2	350.00	7.00	272.22	155.56	1.96
276+00.00	278+00.00	LT. HWY. 7 - SITE 2	200.00	5.00	111.11	88.89	1.12
280+00.00	282+00.00	LT. HWY. 7 - SITE 2	200.00	6.00	133.33	88.89	1.12
284+00.00	291+00.07	LT. HWY. 7 - SITE 2	700.07	6.00	466.71	311.14	3.92
324+75.00	332+00.00	LT. HWY. 7 - SITE 2	725.00	6.00	483.33	322.22	4.06
384+50.00	385+00.00	LT. HWY. 7 - SITE 2	50.00	5.00	27.78	22.22	0.28
386+92.00	390+50.00	LT. HWY. 7 - SITE 2	358.00	6.00	238.67	159.11	2.00
395+50.00	399+25.00	LT. HWY. 7 - SITE 2	375.00	6.00	250.00	166.67	2.10
404+69.54	406+50.00	LT. HWY. 7 - SITE 2	180.46	7.00	140.36	80.20	1.01
410+00.00	413+25.00	LT. HWY. 7 - SITE 2	325.00	7.00	252.78	144.44	1.82
416+50.00	418+00.00	LT. HWY. 7 - SITE 2	150.00	6.00	100.00	66.67	0.84
422+00.00	422+45.29	LT. HWY. 7 - SITE 2	45.29	6.00	30.19	20.13	0.25
428+00.00	430+00.00	LT. HWY. 7 - SITE 2	200.00	6.50	144.44	88.89	1.12
TOTALS:					**6449.35**	**4121.24**	**51.90**

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

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	GEOTEXTILE FABRIC (TYPE 10)	STONE BACKFILL	* SOIL STABILIZATION
			CU. YD.		SQ. YD.	TON	
99+00	125+00	SITE 1 - STAGE 1 MAIN LANES	2087	1707			
99+00	125+00	SITE 1 - STAGE 2 MAIN LANES	4672	2358			
247+00	430+28	SITE 2 - STAGE 2 MAIN LANES	18571	52600			
247+00	430+28	SITE 2 - STAGE 2 MAIN LANES	70745	17874			
100+00	100+00	STA. 396+50 DRIVEWAY	16	499			
100+00	100+00	MASSEY RD.	4	1011			
ENTIRE	PROJECT	APPROACHES	1345	8040			
108+16		SITE 1 - CHANNEL CHANGE	10				
117+05		SITE 1 - CHANNEL CHANGE	10				
269+72		SITE 2 - CHANNEL CHANGE	16				
291+05		SITE 2 - CHANNEL CHANGE	5				
392+65		SITE 2 - CHANNEL CHANGE	25				
367+50	369+50	SITE 2 - LT. OF HWY. 7			562.22	523	
* ENTIRE	PROJECT	TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER					500
TOTALS:			**97506**	**84089**	**562.22**	**523**	**500**

* QUANTITIES ESTIMATED.

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
100+00.00	101+00.00	MAIN LANES	24.00	266.67
124+00.00	125+00.00	MAIN LANES	24.00	266.67
247+00.00	248+00.00	MAIN LANES	24.00	266.67
TOTAL:				**800.01**

NOTE: AVERAGE MILLING DEPTH 1".

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	TON	TACK COAT
		GALLON
* ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	100	200
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
* QUANTITIES ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.
TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

REMOVAL AND DISPOSAL OF CULVERTS

STATION	DESCRIPTION	PIPE CULVERTS
		EACH
SITE 1		
106+49	18" X 42' LT. SIDE DRAIN	1
110+33	15" X 40' RT. SIDE DRAIN	1
119+21	18" X 20' LT. SIDE DRAIN	1
120+71	12" X 26' RT. SIDE DRAIN	1
SITE 2		
248+36	24" X 36' LT. CP SIDE DRAIN	1
249+29	18" X 32' LT. SIDE DRAIN	1
251+55	15" X 22' LT. SIDE DRAIN	1
251+78	18" X 24' RT. CM SIDE DRAIN	1
252+95	18" X 24' RT. CM SIDE DRAIN	1
255+20	18" X 25' RT. SIDE DRAIN	1
255+35	18" X 24' LT. SIDE DRAIN	1
256+12	15" X 21' RT. SIDE DRAIN	1
256+99	18" X 22' RT. SIDE DRAIN	1
263+26	18" X 25' LT. SIDE DRAIN	1
276+03	24" X 32' LT. CP SIDE DRAIN	1
279+38	12" X 24' RT. SIDE DRAIN	1
279+88	12" X 26' RT. CM SIDE DRAIN	1
282+23	12" X 44' LT. CM SIDE DRAIN	1
288+63	18" X 30' RT. CM SIDE DRAIN	1
313+59	24" X 62' RT. RCP SIDE DRAIN	1
328+88	24" X 88' LT. CM SIDE DRAIN	1
330+97	18" X 32' LT. SIDE DRAIN	1
337+78	18" X 25' RT. SIDE DRAIN	1
339+80	18" X 38' LT. SIDE DRAIN	1
340+17	18" X 28' RT. CM SIDE DRAIN	1
340+43	18" X 36' LT. CM SIDE DRAIN	1
342+08	18" 28' RT. CP SIDE DRAIN	1
343+01	24" X 28' LT. CP SIDE DRAIN	1
344+69	18" X 45' RT. CM SIDE DRAIN	1
346+48	18" X 36' RT. SIDE DRAIN	1
347+37	24" X 56' LT. SIDE DRAIN	1
348+08	24" X 36' R.C. PIPE CULVERT	1
348+48	18" X 51' LT. SIDE DRAIN	1
354+27	24" X 25' RT. SIDE DRAIN	1
357+65	18" X 18' RCP RT. SIDE DRAIN	1
359+27	18" X 24' RT. SIDE DRAIN	1
359+37	18" X 38' LT. CM SIDE DRAIN	1
360+54	18" X 46' RT. SIDE DRAIN	1
361+20	24" X 24' LT. SIDE DRAIN	1
364+36	24" X 46' RT. SIDE DRAIN	1
370+94	18" X 25' RT. CM SIDE DRAIN	1
372+50	18" X 24' RT. CM SIDE DRAIN	1
374+21	18" X 40' LT. CP SIDE DRAIN	1
375+83	18" X 36' RT. CM SIDE DRAIN	1
388+44	18" X 40' LT. CM SIDE DRAIN	1
389+57	12" X 21' LT. RCP SIDE DRAIN	1
389+71	18" X 40' RT. CM SIDE DRAIN	1
393+75	24" X 30' LT. CM SIDE DRAIN	1
425+06	18" X 32' LT. CP SIDE DRAIN	1
TOTAL:		**49**

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

6/26/2020

R061309.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.		061309	70	260

(2) QUANTITIES

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

Trinity Smith

Jun 29 2020 4:54 PM
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STRUCTURES

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT (CLASS III) 24"	30"	36"	PIPE CULVERT STORM DRAIN ALTERNATES 1 & 2 18"	FLARED END SECTIONS FOR R.C. PIPE CULVERTS 24"	30"	36"	DROP INLETS TYPE C	TYPE MO	EXT. 4'	EXT. 8'	YARD DRAINS	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			EACH					LIN. FT.			CU.YD.	POUND	CU.YD.	SQ.YD.	M.GAL.	
SITE 1																						
108+16	EXTEND 24" R.C. PIPE CULVERT LT. & RT.	44				1														16	0.20	PCC-1, FES-1, FES-2
108+16	CONSTRUCT DROP INLET W/ R.C. PIPE INLET ON RT.	12				1				1												FPC-9E, FPC-9M, PCC-1
109+10	CONSTRUCT DROP INLET ON RT.				89					1												FPC-9E, FPC-9M, PCC-1
113+25	CONSTRUCT DROP INLET ON LT.				252					1												FPC-9E, FPC-9M, PCC-1
113+50	CONSTRUCT DROP INLET ON RT.				237					1												FPC-9E, FPC-9M, PCC-1
115+80	CONSTRUCT DROP INLET ON LT.				121					1												FPC-9E, FPC-9M, PCC-1
115+90	CONSTRUCT DROP INLET ON RT.				47					1												FPC-9E, FPC-9M, PCC-1
116+40	CONSTRUCT DROP INLET ON RT.				62					1												FPC-9E, FPC-9M, PCC-1
117+05	EXTEND 3' X 2' R.C. BOX CULVERT													3	2	30	9.54	816	7	4	0.05	RCB-1, RCB-2, RCB-3, SPECIAL DETAIL PG. 12
117+05	CONSTRUCT DROP INLET ON RT. W/ 3' X 2' R.C. BOX OUTLET									1				3	2	21	6.76	590	5	4	0.05	FPC-9E, RCB-1, RCB-2, RCB-3, SPECIAL DETAIL PG. 12
SITE 2																						
259+11	EXTEND 5' X 2' R.C. BOX CULVERT LT. & RT.													5	2	48	23.68	2162	17	8	0.10	RCB-1, RCB-2, RCB-3, SPECIAL DETAIL PG. 12
263+81	EXTEND DBL. 6' X 3' R.C. BOX CULVERT LT. & RT.													6	3	51	52.78	8084	30	15	0.19	R-200X-0, W-X003-1, RCB-1, RCB-2, RCB-3
269+72	EXTEND 24" R.C. PIPE CULVERT LT. & RT.	50				2														16	0.20	PCC-1, FES-1, FES-2
273+58	CONSTRUCT 30" PIPE CULVERT		88				2															PCC-1, FES-1, FES-2, SI-1
273+68	EXTEND 5' X 2' R.C. BOX CULVERT LT. & RT.													5	2	46	22.94	2086	17	8	0.10	RCB-1, RCB-2, RCB-3, SPECIAL DETAIL PG. 12
276+78	EXTEND 3' X 3' R.C. BOX CULVERT LT. & RT.													3	3	63	23.99	1969	16	11	0.14	RCB-1, RCB-2, RCB-3, SPECIAL DETAIL PG. 12
281+36	EXTEND 3' X 2' R.C. BOX CULVERT LT. & RT.													3	2	55	17.44	1496	13	7	0.09	RCB-1, RCB-2, RCB-3, SPECIAL DETAIL PG. 12
285+86	EXTEND 6' X 6' R.C. BOX CULVERT LT. & RT.													6	6	56	50.90	4981	29	18	0.23	R-100X-0, W-X003-1, RCB-1, RCB-2, RCB-3
291+05	EXTEND 4' X 2' R.C. BOX CULVERT LT. & RT.													4	2	52	20.20	2368	15	8	0.10	R-100X-0, W-X003-1, RCB-1, RCB-2, RCB-3
294+99	EXTEND 24" R.C. PIPE CULVERT LT. & RT.	52				2														16	0.20	PCC-1, FES-1, FES-2
300+32	EXTEND 3' X 2' R.C. BOX CULVERT LT. & RT.													3	2	47	15.56	1316	12	7	0.09	RCB-1, RCB-2, RCB-3, SPECIAL DETAIL PG. 12
303+06	EXTEND 4' X 2' R.C. BOX CULVERT LT. & RT.													4	2	48	19.07	2202	14	8	0.10	R-100X-0, W-X003-1, RCB-1, RCB-2, RCB-3
330+13	EXTEND 12' X 5' R.C. BOX CULVERT LT. & RT.													12	5	43			54	19	0.24	RCB-1, RCB-2, RCB-3, SPECIAL DETAIL PG. 13
348+08	CONSTRUCT 36" R.C. PIPE CULVERT			82				2												16	0.20	PCC-1, FES-1, FES-2, SI-1
353+44	EXTEND 4' X 2' R.C. BOX CULVERT LT. & RT.													4	2	48	19.07	2202	14	8	0.10	R-100X-0, W-X003-1, RCB-1, RCB-2, RCB-3
368+69	EXTEND 24" R.C. PIPE CULVERT LT. & RT.	52				2														16	0.20	PCC-1, FES-1, FES-2
382+81	CONSTRUCT DROP INLET ON LT.	18				1				1		1								8	0.10	FPC-9E, FPC-9M, PCC-1, FES-1, FES-2
382+81	EXTEND 24" R.C. PIPE CULVERT	4																				PCC-1
382+81	CONSTRUCT DROP INLET ON RT.	34				1				1		1								8	0.10	FPC-9E, FPC-9M, PCC-1, FES-1, FES-2
385+50	CONSTRUCT DROP INLET ON LT.				146					1		1										FPC-9E, FPC-9M, PCC-1
385+50	CONSTRUCT DROP INLET ON RT.				146					1		1										FPC-9E, FPC-9M, PCC-1
387+00	CONSTRUCT DROP INLET ON LT.				196					1	1											FPC-9E, FPC-9M, PCC-1
387+00	CONSTRUCT DROP INLET ON RT.				39					1	1											FPC-9E, FPC-9M, PCC-1
389+00	CONSTRUCT DROP INLET ON LT.				244					1		1										FPC-9E, FPC-9M, PCC-1
391+50	CONSTRUCT DROP INLET ON LT.				46					1	1											FPC-9E, FPC-9M, PCC-1
392+00	CONSTRUCT DROP INLET ON LT.				52					1		1										FPC-9E, FPC-9M, PCC-1
392+59	CONSTRUCT DROP INLET ON LT.								1													FPC-9E
393+40	CONSTRUCT DROP INLET ON LT.				63					1		1										FPC-9E, FPC-9M, PCC-1
394+15	CONSTRUCT DROP INLET ON LT.				71					1		1										FPC-9E, FPC-9M, PCC-1
395+50	CONSTRUCT DROP INLET ON LT.				131					1	1											FPC-9E, FPC-9M, PCC-1
397+00	CONSTRUCT DROP INLET ON LT.				146					1		1										FPC-9E, FPC-9M, PCC-1
399+00	CONSTRUCT DROP INLET ON LT.				188					1	1											FPC-9E, FPC-9M, PCC-1
400+50	CONSTRUCT DROP INLET ON LT.				138					1	1											FPC-9E, FPC-9M, PCC-1
402+00	CONSTRUCT DROP INLET ON LT.				139					1	1											FPC-9E, FPC-9M, PCC-1
404+64	CONSTRUCT DROP INLET ON LT.	12				1				1	1									8	0.10	FPC-9E, FPC-9M, PCC-1, FES-1, FES-2
404+65	EXTEND 24" R.C. PIPE CULVERT	6																				PCC-1, FES-1, FES-2
406+50	CONSTRUCT DROP INLET ON LT.				181					1	1											FPC-9E, FPC-9M, PCC-1
410+13	CONSTRUCT DROP INLET ON LT.								1		1											FPC-9E
410+13	EXTEND 3' X 3' R.C. BOX CULVERT LT.													3	3	19	8.60	655	6	5	0.06	RCB-1, RCB-2, RCB-3, SPECIAL DETAIL PG. 12
412+00	CONSTRUCT DROP INLET ON LT.				196					1		1										FPC-9E, FPC-9M, PCC-1
414+00	CONSTRUCT DROP INLET ON LT.				195					1	1											FPC-9E, FPC-9M, PCC-1
414+00	CONSTRUCT DROP INLET ON RT.				162					1	1											FPC-9E, FPC-9M, PCC-1
415+67	CONSTRUCT DROP INLET ON RT.				88					1		1										FPC-9E, FPC-9M, PCC-1
416+00	CONSTRUCT DROP INLET ON LT.				44					1		1										FPC-9E, FPC-9M, PCC-1
416+50	CONSTRUCT DROP INLET ON LT.				62					1		1										FPC-9E, FPC-9M, PCC-1
416+61	CONSTRUCT DROP INLET ON RT.				51					1		1										FPC-9E, FPC-9M, PCC-1
417+17	CONSTRUCT DROP INLET ON LT.								1			1										FPC-9E
417+17	EXTEND 4' X 3' R.C. BOX CULVERT LT.													4	3	14	8.18	736	6	6	0.08	R-100X-0, W-X003-1, RCB-1, RCB-2, RCB-3
417+17	CONSTRUCT DROP INLET ON RT.								1			1										FPC-9E
419+25	CONSTRUCT DROP INLET ON LT.				204					1		1										FPC-9E, FPC-9M, PCC-1
419+25	CONSTRUCT DROP INLET ON RT.				204					1		1										FPC-9E, FPC-9M, PCC-1
422+53	CONSTRUCT DROP INLET ON LT.								1		1											FPC-9E
422+53	EXTEND 5' X 4' R.C. BOX CULVERT LT.													5	4	26	15.88	1716	10	7	0.09	R-100X-0, W-X003-1, RCB-1, RCB-2, RCB-3
422+53	CONSTRUCT DROP INLET ON LT.								1		1											FPC-9E
424+75	CONSTRUCT DROP INLET ON RT.				321					1	1											FPC-9E, FPC-9M, PCC-1
425+00	CONSTRUCT DROP INLET ON LT.				296					1	1											FPC-9E, FPC-9M, PCC-1
428+00	CONSTRUCT DROP INLET ON LT.				97					1	1											FPC-9E, FPC-9M, PCC-1
428+00	CONSTRUCT DROP INLET ON RT.				97					1	1											FPC-9E, FPC-9M, PCC-1
429+04	EXTEND 10' X 4' R.C. BOX CULVERT LT.													10	4	37	47.14	3889	10	8	0.10	RCB-1, RCB-2, RCB-3, SPECIAL DETAIL PG. 11
429+40	CONSTRUCT DROP INLET ON LT.				29					1												FPC-9E, FPC-9M, PCC-1
429+40	CONSTRUCT DROP INLET ON RT.				29					1												FPC-9E, FPC-9M, PCC-1
429+70	CONSTRUCT DROP INLET ON LT.				26					1		1										FPC-9E, FPC-9M, PCC-1
429+70	CONSTRUCT DROP INLET ON RT.				26					1		1										FPC-9E, FPC-9M, PCC-1
430+10	CONSTRUCT DROP INLET ON RT.				45					1	1											FPC-9E, FPC-9M, PCC-1
430+19	CONSTRUCT DROP INLET ON LT.				45					1	1											FPC-9E, FPC-9M, PCC-1
*	ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.												10									FPC-9
SUBTOTALS:		**284**	**88**	**82**	**4951**	**11**	**2**	**2**	**6**	**45**	**20**	**20**	**10**				**361.73**	**37268**	**275**	**255**	**3.21**	
	STRUCTURES OVER 20' - 0" SPAN																					
SITE 2																						
312+55	CONSTRUCT DBL. 10' X 10' R.C. BOX CULVERT													10	10	143	462.81	70311	209	33	0.42	RCB-1, RCB-2, SPECIAL DETAIL PG. 12
392+66	EXTEND DBL. 10' X 4' R.C. BOX CULVERT LT. & RT.													10	4	30	84.14	6572	18	19	0.24	RCB-1, RCB-2, RCB-3, SPECIAL DETAIL PG. 11
SUBTOTALS:																	**546.95**	**76883**	**227**	**52**	**0.66**	
TOTALS:		**284**	**88**	**82**	**4951**	**11**	**2**	**2**	**6**	**45**	**20**	**20**	**10**				**908.68**	**114151**	**502**	**307**	**3.87**	

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

NOTE: FOR R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.
NOTE: FOR C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.
* QUANTITIES ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.

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R061309.DGN

QUANTITIES

DRIVEWAYS & TURNOUTS

STATION	SIDE	LOCATION	WIDTH	**MODIFIED CURB		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"	21"X15"	
			FEET	STATION	STATION	SQ. YD.	SQ. YD.	TON	TON	LIN. FT.					
SITE 1															
102+86	RT.	HWY. 7 - SITE 1	20				78.96	8.69	32.24	32					PCC-1, PCM-1, PCP-1, PCP-2
103+00	LT.	HWY. 7 - SITE 1	20				38.70	4.26	15.80	42					PCC-1, PCM-1, PCP-1, PCP-2
104+92	LT.	HWY. 7 - SITE 1	16				110.77	12.18	45.23	28					PCC-1, PCM-1, PCP-1, PCP-2
106+49	LT.	HWY. 7 - SITE 1	16				84.64	9.31	34.56	30					PCC-1, PCM-1, PCP-1, PCP-2
110+33	RT.	HWY. 7 - SITE 1	18	110+10	110+56	40.89	45.20	4.97	18.46	28					PCC-1, PCM-1, PCP-1, PCP-2
110+39	LT.	HWY. 7 - SITE 1	28	110+11	110+67	49.78	70.00	7.70	28.58						
112+11	RT.	HWY. 7 - SITE 1	16	111+89	112+33	39.11	22.51	2.48	9.19						
112+59	LT.	HWY. 7 - SITE 1	20	112+35	112+83	70.23									
113+02	RT.	HWY. 7 - SITE 1	28	112+74	113+30	49.78	38.89	4.28	15.88						
114+07	LT.	HWY. 7 - SITE 1	20				182.97	20.13	74.71						
114+11	RT.	HWY. 7 - SITE 1	26				129.59	14.25	52.92						
115+25	RT.	HWY. 7 - SITE 1	40	114+91	115+59	60.44	54.13	5.95	22.10						
115+49	LT.	HWY. 7 - SITE 1	20	115+25	115+73	42.67	28.56	3.14	11.66						
116+13	LT.	HWY. 7 - SITE 1	16	115+91	116+35	39.11	29.33	3.23	11.98						
119+21	LT.	HWY. 7 - SITE 1	16				81.97	9.02	33.47	28					PCC-1, PCM-1, PCP-1, PCP-2
120+71	RT.	HWY. 7 - SITE 1	16				49.44	5.44	20.19	28					PCC-1, PCM-1, PCP-1, PCP-2
122+09	RT.	HWY. 7 - SITE 1	16				72.73	8.00	29.70	28					PCC-1, PCM-1, PCP-1, PCP-2
123+00	LT.	HWY. 7 - SITE 1	16				248.20	27.30	101.35	30					PCC-1, PCM-1, PCP-1, PCP-2
SITE 2															
248+36	LT.	HWY. 7 - SITE 2	16				147.40	16.21	60.19		44				PCC-1, PCM-1, PCP-1, PCP-2
249+29	LT.	HWY. 7 - SITE 2	16				75.57	8.31	30.86	32					PCC-1, PCM-1, PCP-1, PCP-2
251+55	LT.	HWY. 7 - SITE 2	16				72.73	8.00	29.70	42					PCC-1, PCM-1, PCP-1, PCP-2
251+78	RT.	HWY. 7 - SITE 2	16				58.33	6.42	23.82	36					PCC-1, PCM-1, PCP-1, PCP-2
252+24	LT.	HWY. 7 - SITE 2	16				73.00	8.03	29.81		40				PCC-1, PCM-1, PCP-1, PCP-2
252+95	RT.	HWY. 7 - SITE 2	16				61.90	6.81	25.28	36					PCC-1, PCM-1, PCP-1, PCP-2
253+85	RT.	HWY. 7 - SITE 2	16				67.01	7.37	27.36	34					PCC-1, PCM-1, PCP-1, PCP-2
255+20	RT.	HWY. 7 - SITE 2	16				61.71	6.79	25.20	32					PCC-1, PCM-1, PCP-1, PCP-2
255+35	LT.	HWY. 7 - SITE 2	20				115.19	12.67	47.04		44				PCC-1, PCM-1, PCP-1, PCP-2
256+12	RT.	HWY. 7 - SITE 2	16				59.24	6.52	24.19	30					PCC-1, PCM-1, PCP-1, PCP-2
256+99	RT.	HWY. 7 - SITE 2	16				55.84	6.14	22.80	28					PCC-1, PCM-1, PCP-1, PCP-2
261+09	RT.	HWY. 7 - SITE 2	20				109.81	12.08	44.84						
263+26	LT.	HWY. 7 - SITE 2	16				216.48	23.81	88.40	46					PCC-1, PCM-1, PCP-1, PCP-2
269+95	RT.	HWY. 7 - SITE 2	20				120.93	13.30	49.38						
276+03	LT.	HWY. 7 - SITE 2	16				221.39	24.35	90.40			38			PCC-1, PCM-1, PCP-1, PCP-2
279+60	RT.	HWY. 7 - SITE 2	16				240.46	26.45	98.19						
282+23	LT.	HWY. 7 - SITE 2	16				206.06	22.67	84.14	38					PCC-1, PCM-1, PCP-1, PCP-2
283+66	RT.	HWY. 7 - SITE 2	16				54.95	6.04	22.44	28					PCC-1, PCM-1, PCP-1, PCP-2
285+06	RT.	HWY. 7 - SITE 2	16				54.95	6.04	22.44						
288+63	RT.	HWY. 7 - SITE 2	16				72.73	8.00	29.70	30					PCC-1, PCM-1, PCP-1, PCP-2
289+00	LT.	HWY. 7 - SITE 2	16				141.85	15.60	57.92	64					PCC-1, PCM-1, PCP-1, PCP-2
290+50	LT.	HWY. 7 - SITE 2	16				135.63	14.92	55.38	68					PCC-1, PCM-1, PCP-1, PCP-2
293+00	LT.	HWY. 7 - SITE 2	30				200.43	22.05	81.84	52					PCC-1, PCM-1, PCP-1, PCP-2
293+65	LT.	HWY. 7 - SITE 2	30				164.60	18.11	67.21						
297+30	RT.	HWY. 7 - SITE 2	16				60.29	6.63	24.62	32					PCC-1, PCM-1, PCP-1, PCP-2
297+34	LT.	HWY. 7 - SITE 2	16				106.51	11.72	43.49	36					PCC-1, PCM-1, PCP-1, PCP-2
298+26	RT.	HWY. 7 - SITE 2	16				49.35	5.43	20.15	28					PCC-1, PCM-1, PCP-1, PCP-2
299+11	LT.	HWY. 7 - SITE 2	16				78.06	8.59	31.87	32					PCC-1, PCM-1, PCP-1, PCP-2
301+54	RT.	HWY. 7 - SITE 2	16				58.69	6.46	23.97	28					PCC-1, PCM-1, PCP-1, PCP-2
306+24	RT.	HWY. 7 - SITE 2	22				127.15	13.99	51.92	51					PCC-1, PCM-1, PCP-1, PCP-2
307+86	LT.	HWY. 7 - SITE 2	40			56.73	75.56	8.31	30.85	56					PCC-1, PCM-1, PCP-1, PCP-2
309+00	RT.	HWY. 7 - SITE 2	16				81.62	8.98	33.33		32				PCC-1, PCM-1, PCP-1, PCP-2
313+59	LT.	HWY. 7 - SITE 2	40				385.37	42.39	157.36		82				PCC-1, PCM-1, PCP-1, PCP-2
318+47	RT.	HWY. 7 - SITE 2	16				53.87	5.93	22.00						
318+78	LT.	HWY. 7 - SITE 2	16				92.07	10.13	37.60						
324+03	RT.	HWY. 7 - SITE 2	16				54.86	6.03	22.40		32				PCC-1, PCM-1, PCP-1, PCP-2
328+88	LT.	HWY. 7 - SITE 2	18				142.32	15.66	58.11		56				PCC-1, PCM-1, PCP-1, PCP-2
330+97	LT.	HWY. 7 - SITE 2	16				126.79	13.95	51.77	58					PCC-1, PCM-1, PCP-1, PCP-2
333+91	LT.	HWY. 7 - SITE 2	22			85.09									
334+29	RT.	HWY. 7 - SITE 2	16				47.57	5.23	19.42						
336+00	LT.	HWY. 7 - SITE 2	16				64.55	7.10	26.36	28					PCC-1, PCM-1, PCP-1, PCP-2
337+78	RT.	HWY. 7 - SITE 2	16				179.81	19.78	73.42	25					PCC-1, PCM-1, PCP-1, PCP-2
339+80	LT.	HWY. 7 - SITE 2	16				64.27	7.07	26.24	30					PCC-1, PCM-1, PCP-1, PCP-2
340+17	RT.	HWY. 7 - SITE 2	16				90.92	10.00	37.13	34					PCC-1, PCM-1, PCP-1, PCP-2
340+43	LT.	HWY. 7 - SITE 2	30				111.00	12.21	45.33		50				PCC-1, PCM-1, PCP-1, PCP-2
342+08	RT.	HWY. 7 - SITE 2	16				82.05	9.03	33.50		34				PCC-1, PCM-1, PCP-1, PCP-2
343+01	LT.	HWY. 7 - SITE 2	16				57.44	6.32	23.45		34				PCC-1, PCM-1, PCP-1, PCP-2
344+69	RT.	HWY. 7 - SITE 2	20				101.69	11.19	41.52		38				PCC-1, PCM-1, PCP-1, PCP-2
346+48	RT.	HWY. 7 - SITE 2	16				81.99	9.02	33.48				40		PCC-1, PCM-1, PCP-1, PCP-2
347+37	LT.	HWY. 7 - SITE 2	20				34.51	3.80	14.09		46				PCC-1, PCM-1, PCP-1, PCP-2
348+48	LT.	HWY. 7 - SITE 2	36				67.64	7.44	27.62						
354+27	RT.	HWY. 7 - SITE 2	16				57.17	6.29	23.34		64				PCC-1, PCM-1, PCP-1, PCP-2
357+65	LT.	HWY. 7 - SITE 2	16				54.81	6.03	22.38			60			PCC-1, PCM-1, PCP-1, PCP-2
357+89	RT.	HWY. 7 - SITE 2	24				82.92	9.12	33.86	40					PCC-1, PCM-1, PCP-1, PCP-2
359+27	RT.	HWY. 7 - SITE 2	16				60.73	6.68	24.80		30				PCC-1, PCM-1, PCP-1, PCP-2
359+37	LT.	HWY. 7 - SITE 2	16				59.40	6.53	24.26			56			PCC-1, PCM-1, PCP-1, PCP-2
360+54	RT.	HWY. 7 - SITE 2	16				43.36	4.77	17.71	28					PCC-1, PCM-1, PCP-1, PCP-2
361+20	LT.	HWY. 7 - SITE 2	16				51.98	5.72	21.23			56			PCC-1, PCM-1, PCP-1, PCP-2
364+36	RT.	HWY. 7 - SITE 2	16				54.95	6.04	22.44		28				PCC-1, PCM-1, PCP-1, PCP-2
370+94	RT.	HWY. 7 - SITE 2	16				108.20	11.90	44.18		32				PCC-1, PCM-1, PCP-1, PCP-2
372+50	RT.	HWY. 7 - SITE 2	16				222.28	24.45	90.76	36					PCC-1, PCM-1, PCP-1, PCP-2
373+50	RT.	HWY. 7 - SITE 2	20				325.64	35.82	132.97	51					PCC-1, PCM-1, PCP-1, PCP-2
374+21	LT.	HWY. 7 - SITE 2	16				143.98	15.84	58.79	40					PCC-1, PCM-1, PCP-1, PCP-2
375+83	RT.	HWY. 7 - SITE 2	26				274.96	30.25	112.28	48					PCC-1, PCM-1, PCP-1, PCP-2
377+53	RT.	HWY. 7 - SITE 2	16				71.68	7.88	29.27	32					PCC-1, PCM-1, PCP-1, PCP-2
377+93	LT.	HWY. 7 - SITE 2	16				67.59	7.43	27.60	34					PCC-1, PCM-1, PCP-1, PCP-2
378+94	RT.	HWY. 7 - SITE 2	20				109.81	12.08	44.84		34				PCC-1, PCM-1, PCP-1, PCP-2
379+91	LT.	HWY. 7 - SITE 2	16				99.40	10.93	40.59		34				PCC-1, PCM-1, PCP-1, PCP-2
380+21	RT.	HWY. 7 - SITE 2	16				117.33	12.91	47.91						
384+51	LT.	HWY. 7 - SITE 2	16	384+29	384+73	39.11	23.70	2.61	9.68						
384+75	RT.	HWY. 7 - SITE 2	16	384+53	384+97	39.11	70.49	7.75	28.78						
388+44	RT.	HWY. 7 - SITE 2	16	388+22	388+66	39.11	57.78	6.36	23.59					28	PCC-1, PCM-1, PCP-1, PCP-2
389+57	LT.	HWY. 7 - SITE 2	16	389+35	389+79	39.11	23.18	2.55	9.47						
389+71	RT.	HWY. 7 - SITE 2	28	389+43	389+99	150.18								34	PCC-1, PCM-1, PCP-1, PCP-2
391+78	RT.	HWY. 7 - SITE 2	22	391+53	392+03	44.44	103.89	11.43	42.42			38			PCC-1, PCM-1, PCP-1, PCP-2
393+75	LT.	HWY. 7 - SITE 2	16	393+53	393+97	39.11	47.82	5.26	19.53			34			PCC-1, PCM-1, PCP-1, PCP-2
394+89	RT.	HWY. 7 - SITE 2	40	394+55	395+23	60.44	166.62	18.33	68.04						
395+58	RT.	HWY. 7 - SITE 2	20	395+34	395+82	42.67	117.78	12.96	48.09						
396+50	RT.	HWY. 7 - SITE 2	16	396+28	396+72	39.11				38					PCC-1, PCM-1, PCP-1, PCP-2
408+35	RT.	HWY. 7 - SITE 2	50			259.59									
409+16	LT.	HWY. 7 - SITE 2	26	408+89	409+43	48.00	161.78	17.80	66.06					32	PCC-1, PCM-1, PCP-1, PCP-2
409+74	LT.	HWY. 7 - SITE 2	20	409+50	409+98	42.67	131.11	14.42	53.54	46					PCC-1, PCM-1, PCP-1, PCP-2
416+14	RT.	HWY. 7 - SITE 2	26			135.37									
420+24	RT.	HWY. 7 - SITE 2	26				129.59	14.25	52.92						
420+64	LT.	HWY. 7 - SITE 2	16	420+42	420+86	39.11	76.27	8.39	31.14	28					PCC-1, PCM-1, PCP-1, PCP-2
423+09	LT.	HWY. 7 - SITE 2	16	422+87	423+31	39.11	80.69	8.88	32.95		38				PCC-1, PCM-1, PCP-1, PCP-2
425+06	RT.	HWY. 7 - SITE 2	22	424+81	425+31	95.77				40					PCC-1, PCM-1, PCP-1, PCP-2
425+99	LT.	HWY. 7 - SITE 2	16	425+77	426+21	39.11	48.32	5.32	19.73						
426+23	RT.	HWY. 7 - SITE 2	26	425+96	426+50	48.00	95.13	10.46	38.84						
427+55	LT.	HWY. 7 - SITE 2	16	427+33	427+77	39.11	76.11	8.37	31.08	30					PCC-1, PCM-1, PCP-1, PCP-2
1002+21	RT.	MASSEY RD. - SITE 2	28				109.30	12.02	44.63						
* ENTIRE PROJECT TEMPORARY DRIVES									1080.00						
TOTALS:						**1852.06**	**10156.48**	**1117.24**	**5227.25**	**1799**	**792**	**282**	**40**	**94**	

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....95.1% MIN. AGGR.....4.9% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

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

** FOR INFORMATION ONLY

NOTE: FOR R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.
NOTE: FOR C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

Jun 29 2020 4:54 PM

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11435
TIMOTHY D. SMITH

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		71	260

JOB NO. 061309

(2) QUANTITIES

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061309	72	260

(2) QUANTITIES

4" PIPE UNDERDRAIN

STATION	STATION	LOCATIONS	4" PIPE UNDERDRAINS	UNDERDRAIN OUTLET PROTECTORS
			LIN. FT.	EACH
* ENTIRE PROJECT TO BE USED IF AND			1500	10
WHERE DIRECTED BY THE ENGINEER				
TOTALS:			1500	10

* 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.

PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

STATION	LOCATION	WIDTH	LENGTH	TON
		FEET		
273+58	MAIN LANES	9.08	24	12
348+08	MAIN LANES	9.67	24	13
387+00	MAIN LANES	8.50	24	11
TOTAL:				36

AVG. DEPTH = 9"

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	* 5' CHAIN LINK FENCE	* 16'-0" GATES
			LIN. FT.						EACH
279+99	283+57	RT. OF HWY. 7 - SITE 2					372		
283+73	284+22	RT. OF HWY. 7 - SITE 2					48		
285+20	285+30	RT. OF HWY. 7 - SITE 2					18		1
285+98	288+74	LT. OF HWY. 7 - SITE 2		312					
296+90	297+14	RT. OF HWY. 7 - SITE 2			33				
297+40	298+02	RT. OF HWY. 7 - SITE 2			60				
301+34	302+65	LT. OF HWY. 7 - SITE 2					136		
306+47	308+87	RT. OF HWY. 7 - SITE 2						240	1
315+84	318+55	RT. OF HWY. 7 - SITE 2	197						1
318+55	323+89	RT. OF HWY. 7 - SITE 2	530						
323+37	324+51	LT. OF HWY. 7 - SITE 2	111						
324+16	329+19	RT. OF HWY. 7 - SITE 2	485						
326+80	328+18	LT. OF HWY. 7 - SITE 2	146						
335+19	335+82	LT. OF HWY. 7 - SITE 2	65						
336+13	339+64	LT. OF HWY. 7 - SITE 2	339						
344+89	346+29	RT. OF HWY. 7 - SITE 2					138		
346+68	347+02	RT. OF HWY. 7 - SITE 2	44						
364+28	364+44	RT. OF HWY. 7 - SITE 2							1
380+31	384+66	RT. OF HWY. 7 - SITE 2				436			
TOTALS:			1917	312	93	436	712	240	4

* DENOTES ALTERNATE BID ITEM.

SELECTED PIPE BEDDING

LOCATION	SELECTED PIPE BEDDING
	CU.YD.
ENTIRE PROJECT TO BE USED IF	
AND WHERE DIRECTED BY THE	300
ENGINEER	
TOTAL:	300

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

EROSION CONTROL MATTING

STATION	STATION	LOCATION	LENGTH	CLASS 3
			LIN. FT.	SQ. YD.
SITE 1				
100+00.00	111+00.00	RT. HWY. 7 - SITE 1	1100.00	977.78
117+05.00	119+25.00	RT. HWY. 7 - SITE 1	220.00	195.56
100+00.00	101+00.00	LT. HWY. 7 - SITE 1	100.00	88.89
102+85.00	108+00.00	LT. HWY. 7 - SITE 1	515.00	457.78
SITE 2				
251+00.00	257+00.00	RT. HWY. 7 - SITE 2	600.00	533.33
265+00.00	269+00.00	RT. HWY. 7 - SITE 2	400.00	355.56
269+72.00	285+97.39	RT. HWY. 7 - SITE 2	1625.39	1444.79
288+00.00	290+00.00	RT. HWY. 7 - SITE 2	200.00	177.78
290+99.31	294+99.17	RT. HWY. 7 - SITE 2	399.86	355.43
297+00.00	299+00.00	RT. HWY. 7 - SITE 2	200.00	177.78
301+00.00	303+00.00	RT. HWY. 7 - SITE 2	200.00	177.78
305+00.00	310+00.00	RT. HWY. 7 - SITE 2	500.00	444.44
317+00.00	324+75.00	RT. HWY. 7 - SITE 2	775.00	688.89
332+00.00	347+00.00	RT. HWY. 7 - SITE 2	1500.00	1333.33
348+07.97	366+00.00	RT. HWY. 7 - SITE 2	1792.03	1592.92
370+00.00	380+00.00	RT. HWY. 7 - SITE 2	1000.00	888.89
399+25.00	404+69.54	RT. HWY. 7 - SITE 2	544.54	484.04
418+00.00	421+00.00	RT. HWY. 7 - SITE 2	300.00	266.67
425+00.00	429+00.00	RT. HWY. 7 - SITE 2	400.00	355.56
249+00.00	261+50.00	LT. HWY. 7 - SITE 2	1250.00	1111.11
263+69.18	276+00.00	LT. HWY. 7 - SITE 2	1230.82	1094.06
278+00.00	280+00.00	LT. HWY. 7 - SITE 2	200.00	177.78
282+00.00	284+00.00	LT. HWY. 7 - SITE 2	200.00	177.78
291+00.07	324+75.00	LT. HWY. 7 - SITE 2	3374.93	2999.94
332+00.00	365+00.00	LT. HWY. 7 - SITE 2	3300.00	2933.33
368+67.00	373+00.00	LT. HWY. 7 - SITE 2	433.00	384.89
377+92.00	383+25.00	LT. HWY. 7 - SITE 2	533.00	473.78
385+50.00	386+92.00	LT. HWY. 7 - SITE 2	142.00	126.22
392+00.00	395+50.00	LT. HWY. 7 - SITE 2	350.00	311.11
399+25.00	404+69.54	LT. HWY. 7 - SITE 2	544.54	484.04
406+50.00	410+00.00	LT. HWY. 7 - SITE 2	350.00	311.11
413+25.00	416+50.00	LT. HWY. 7 - SITE 2	325.00	288.89
418+00.00	422+00.00	LT. HWY. 7 - SITE 2	400.00	355.56
422+45.29	428+00.00	LT. HWY. 7 - SITE 2	554.71	493.08
TOTAL:				22719.88

NOTE: AVERAGE WIDTH = 8'-0"

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL: SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	SOLID SODDING	TEMPORARY EROSION CONTROL: TEMPORARY SEEDING	MULCH COVER	WATER	WATTLE (20") DITCH CHECKS (E-1)	SAND BAG DITCH CHECKS (E-5)	ROCK DITCH CHECKS (E-6)	18" FILTER SOCKS (E-6)	DROP INLET SILT FENCE (E-7)	SILT FENCE (E-11)	DIVERSION DITCH (E-8)	PIPE FOR SLOPE DRAINS	DUMPED RIPRAP SLOPE DRAIN (E-12)	SEDIMENT BASIN (E-10)	OBLITERATION OF SEDIMENT BASIN	*SEDIMENT REMOVAL & DISPOSAL
			ACRE	TON	ACRE	M.GAL.	ACRE	SQ.YD.	ACRE	ACRE	M.GAL.	LIN. FT.	BAG	CU.YD.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	CU.YD.	CU.YD.	CU.YD.	CU. YD.
SITE 1																							
100+00	124+00	CLEARING AND GRUBBING							3.75	3.75	76.5		462	84			3112						451
100+00	124+00	STAGE 1	1.38	2.76	1.38	140.8	1.38		2.77	2.77	56.5			75			186						149
100+00	124+00	STAGE 2	0.74	1.48	0.74	82.5	0.74	556	1.49	1.49	30.4			78			666						201
SITE 2																							
248+00	430+27	CLEARING AND GRUBBING							43.62	43.62	889.8		1782	765			17374						979
248+00	430+27	STAGE 1	15.49	30.98	15.49	1580.0	15.49		30.29	30.29	617.9			426			5916						361
248+00	430+27	STAGE 2	8.34	16.68	8.34	887.6	8.34	2929	16.31	16.31	332.7			528			2633						274
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			6.49	12.98	6.49	662.0	6.49		24.56	24.56	501.0	900	561	489	1300	300	7472	800	200	200	100	100	676
TOTALS:			32.44	64.88	32.44	3352.9	32.44	3485.00	122.79	122.79	2504.8	900	2805	2445	1300	300	37359	800	200	200	100	100	3091

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

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

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6/26/2020

R061309.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.		061309	73	260

(2) QUANTITIES

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

Trinity Smith

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CONCRETE WALKS

STATION	STATION	LOCATION	LENGTH	CONCRETE WALKS	HAND RAILING
			LIN. FT.	SQ.YD.	LIN. FT.
		SITE 1			
107+92	110+11	LT. HWY. 7 - SITE 1	219	122	
110+67	112+35	LT. HWY. 7 - SITE 1	168	93	
112+83	113+91	LT. HWY. 7 - SITE 1	108	60	
114+20	115+25	LT. HWY. 7 - SITE 1	105	58	
115+73	115+91	LT. HWY. 7 - SITE 1	18	10	
116+35	118+58	LT. HWY. 7 - SITE 1	223	124	
107+92	110+10	RT. HWY. 7 - SITE 1	218	121	
110+56	111+89	RT. HWY. 7 - SITE 1	133	74	
112+33	112+74	RT. HWY. 7 - SITE 1	41	23	
113+30	113+98	RT. HWY. 7 - SITE 1	68	38	
114+24	114+91	RT. HWY. 7 - SITE 1	67	37	
115+59	118+58	RT. HWY. 7 - SITE 1	299	166	
		SITE 2			
381+00	384+29	LT. HWY. 7 - SITE 2	329	183	
384+73	389+35	LT. HWY. 7 - SITE 2	462	257	
389+79	393+53	LT. HWY. 7 - SITE 2	374	208	
393+97	408+89	LT. HWY. 7 - SITE 2	1492	829	
409+43	409+50	LT. HWY. 7 - SITE 2	7	4	
409+98	420+42	LT. HWY. 7 - SITE 2	1044	580	
420+86	422+87	LT. HWY. 7 - SITE 2	201	112	
423+31	425+77	LT. HWY. 7 - SITE 2	246	137	
426+21	427+33	LT. HWY. 7 - SITE 2	112	62	
427+77	430+28	LT. HWY. 7 - SITE 2	251	139	
381+00	384+53	RT. HWY. 7 - SITE 2	353	196	
384+97	388+22	RT. HWY. 7 - SITE 2	325	181	
388+66	389+43	RT. HWY. 7 - SITE 2	77	43	
389+99	391+53	RT. HWY. 7 - SITE 2	154	86	
392+03	394+55	RT. HWY. 7 - SITE 2	252	140	
395+23	395+34	RT. HWY. 7 - SITE 2	11	6	
395+82	396+28	RT. HWY. 7 - SITE 2	46	26	
396+72	403+20	RT. HWY. 7 - SITE 2	648	360	
403+40	408+10	RT. HWY. 7 - SITE 2	470	261	
408+59	416+00	RT. HWY. 7 - SITE 2	741	412	
416+27	420+11	RT. HWY. 7 - SITE 2	384	213	
420+37	424+81	RT. HWY. 7 - SITE 2	444	247	
422+50	422+56	RT. HWY. 7 - SITE 2	6		6
425+31	425+96	RT. HWY. 7 - SITE 2	65	36	
426+50	430+28	RT. HWY. 7 - SITE 2	378	210	
428+98	429+10	RT. HWY. 7 - SITE 2	12	7	12
TOTAL:				5861	18

CONCRETE COMBINATION CURB AND GUTTER

STATION	STATION	LOCATION	TYPE A (1' 6")	TYPE B-1 (1' 6")
			LIN. FT.	
		SITE 1		
107+92	110+11	LT. HWY. 7 - SITE 1	219	
110+67	112+35	LT. HWY. 7 - SITE 1	168	
112+83	113+91	LT. HWY. 7 - SITE 1	108	
114+20	115+25	LT. HWY. 7 - SITE 1	105	
115+73	115+91	LT. HWY. 7 - SITE 1	18	
116+35	118+58	LT. HWY. 7 - SITE 1	223	
107+92	110+10	RT. HWY. 7 - SITE 1	218	
110+56	111+89	RT. HWY. 7 - SITE 1	133	
112+33	112+74	RT. HWY. 7 - SITE 1	41	
113+30	113+98	RT. HWY. 7 - SITE 1	68	
114+24	114+91	RT. HWY. 7 - SITE 1	67	
115+59	118+58	RT. HWY. 7 - SITE 1	299	
		SITE 2		
296+00	297+00	LT. HWY. 7 - SITE 1		100
381+00	384+29	LT. HWY. 7 - SITE 2	329	
384+73	389+35	LT. HWY. 7 - SITE 2	462	
389+79	393+53	LT. HWY. 7 - SITE 2	374	
393+97	408+89	LT. HWY. 7 - SITE 2	1492	
409+43	409+50	LT. HWY. 7 - SITE 2	7	
409+98	420+42	LT. HWY. 7 - SITE 2	1044	
420+86	422+87	LT. HWY. 7 - SITE 2	201	
423+31	425+77	LT. HWY. 7 - SITE 2	246	
426+21	427+33	LT. HWY. 7 - SITE 2	112	
427+77	430+28	LT. HWY. 7 - SITE 2	251	
381+00	384+53	RT. HWY. 7 - SITE 2	353	
384+97	388+22	RT. HWY. 7 - SITE 2	325	
388+66	389+43	RT. HWY. 7 - SITE 2	77	
389+99	391+53	RT. HWY. 7 - SITE 2	154	
392+03	394+55	RT. HWY. 7 - SITE 2	252	
395+23	395+34	RT. HWY. 7 - SITE 2	11	
395+82	396+28	RT. HWY. 7 - SITE 2	46	
396+72	403+20	RT. HWY. 7 - SITE 2	648	
403+40	408+10	RT. HWY. 7 - SITE 2	470	
408+59	416+00	RT. HWY. 7 - SITE 2	741	
416+27	420+11	RT. HWY. 7 - SITE 2	384	
420+37	424+81	RT. HWY. 7 - SITE 2	444	
425+31	425+96	RT. HWY. 7 - SITE 2	65	
426+50	430+28	RT. HWY. 7 - SITE 2	378	
TOTAL:			10533	100

MAILBOXES

LOCATION	MAILBOXES	MAILBOX SUPPORTS (SINGLE)	MAILBOX SUPPORTS (DOUBLE)
	EACH		
HWY. 7 - SITE 1	10	10	
HWY. 7 - SITE 2	46	34	6
TOTALS:	**56**	**44**	**6**

WHEELCHAIR RAMPS

STATION	LOCATION	TYPE 3
		SQ.YD.
107+96.15	RT. OF HWY. 7	9.4
108+00.00	LT. OF HWY. 7	11.9
113+55.54	LT. OF HWY. 7	21.4
113+69.18	RT. OF HWY. 7	19.0
114+52.93	RT. OF HWY. 7	19.0
114+56.10	LT. OF HWY. 7	21.4
118+50.00	LT. OF HWY. 7	9.4
118+50.00	RT. OF HWY. 7	11.9
381+10.00	LT. OF HWY. 7	9.4
381+10.00	RT. OF HWY. 7	9.4
402+90.00	RT. OF HWY. 7	19.0
403+70.00	RT. OF HWY. 7	19.0
407+81.15	RT. OF HWY. 7	19.0
408+88.47	RT. OF HWY. 7	19.0
415+70.54	RT. OF HWY. 7	19.0
416+56.45	RT. OF HWY. 7	19.0
419+81.09	RT. OF HWY. 7	19.0
420+67.16	RT. OF HWY. 7	19.0
429+71.19	LT. OF HWY. 7	18.9
430+03.57	RT. OF HWY. 7	23.2
TOTALS:		336.3

RUMBLE STRIPS IN ASPHALT SHOULDERS

STATION	STATION	LOCATION	* RUMBLE STRIPS IN ASPHALT SHOULDERS
			LIN.FT.
		SITE 1	
100+00	107+92	LT. HWY. 7 - SITE 1	550
118+58	124+00	LT. HWY. 7 - SITE 1	472
100+00	107+92	RT. HWY. 7 - SITE 2	660
118+58	124+00	RT. HWY. 7 - SITE 2	410
		SITE 2	
248+00	381+00	LT. HWY. 7 -SITE 2	10982
248+00	381+00	RT. HWY. 7 - SITE 2	10614
TOTAL:			23688

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

DUMPED RIPRAP AND FILTER BLANKET

STATION	STATION	LOCATION	DUMPED RIPRAP	FILTER BLANKET
			CU. YD.	SQ. YD.
SITE 2				
312+00	312+42	LT. OF HWY. 7	23	45
312+67	313+06	LT. OF HWY. 7	20	40
TOTALS:			43	85

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

6/29/2020

R061309.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.		061309	74	260

(2) QUANTITIES

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

Trinity Smith

Jun 29 2020 4:54 PM
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SOIL LOG

STATION	LATITUDE			LONGITUDE			LOCATION	DEPTH	LIQUID LIMIT	PLASTICITY INDEX	AASHTO CLASSIFICATION	COLOR
	DEG	MIN	SEC	DEG	MIN	SEC		FEET				
101+00	34	16	52.40	93	9	40.20	06' RT	0-5	ND	NP	A-4 (0)	BROWN
101+00	34	16	52.40	93	9	40.20	15' RT	0-5	20	5	A-4 (0)	BROWN
101+00	34	16	52.50	93	9	40.10	22' RT	0-5	26	11	A-6 (4)	BROWN
109+00	34	16	58.10	93	9	46.60	06' LT	0-5	29	13	A-6 (8)	BROWN
109+00	34	16	58.00	93	9	46.70	15' LT	0-5	34	19	A-6 (9)	BROWN
109+00	34	16	58.00	93	9	46.80	22' LT	0-5	18	4	A-4 (0)	BROWN
118+00	34	17	6.80	93	9	48.50	06' RT	0-3.5	ND	NP	A-4 (0)	BR/GR
118+00	34	17	6.80	93	9	48.40	15' RT	0-5	18	3	A-4 (0)	BROWN
118+00	34	17	6.90	93	9	48.40	22' RT	0-5	ND	NP	A-4 (0)	BROWN
248+00	34	23	1.40	93	7	56.30	06' RT	0-5	26	11	A-2-6 (0)	BROWN
248+00	34	23	1.30	93	7	56.20	14' RT	0-5	26	10	A-2-4 (0)	BROWN
248+00	34	23	1.30	93	7	56.20	20' RT	0-5	ND	NP	A-1-B (0)	BROWN
256+00	34	23	5.30	93	7	47.60	14' LT	0-5	32	11	A-6 (2)	BROWN
256+00	34	23	5.20	93	7	47.60	06' LT	0-5	33	13	A-6 (1)	BROWN
256+00	34	23	5.30	93	7	47.60	20' LT	0-5	26	9	A-4 (1)	BR/GR
265+00	34	23	6.10	93	7	36.80	06' RT	0-5	30	11	A-6 (0)	BROWN
265+00	34	23	6.00	93	7	36.80	14' RT	0-5	27	9	A-2-4 (0)	BROWN
265+00	34	23	6.00	93	7	36.80	20' RT	0-5	-	-	A-1-A (0)	BROWN
272+00	34	23	9.10	93	7	29.20	06' RT	0-5	30	12	A-6 (2)	BROWN
272+00	34	23	9.20	93	7	29.40	20' LT	0-5	37	14	A-6 (7)	BROWN
281+00	34	23	13.70	93	7	19.80	06' RT	0-5	32	10	A-4 (6)	RD/BR
281+00	34	23	13.60	93	7	19.80	14' RT	0-5	30	11	A-6 (5)	RD/BR
281+00	34	23	13.60	93	7	19.80	20' RT	0-5	26	8	A-4 (1)	BROWN
288+00	34	23	19.00	93	7	15.20	06' LT	0-5	39	17	A-6 (10)	BROWN
288+00	34	23	19.10	93	7	15.30	14' LT	0-5	37	15	A-6 (8)	BROWN
288+00	34	23	19.10	93	7	15.30	20' LT	0-5	31	13	A-6 (9)	GRAY
296+00	34	23	23.90	93	7	8.50	06' RT	0-5	31	10	A-4 (2)	BROWN
296+00	34	23	23.80	93	7	8.40	14' RT	0-5	29	9	A-4 (0)	BROWN
296+00	34	23	23.80	93	7	8.40	20' RT	0-5	28	8	A-2-4 (0)	BROWN
304+00	34	23	28.70	93	6	60.00	06' LT	0-5	27	8	A-4 (0)	BROWN
304+00	34	23	28.80	93	7	0.00	14' LT	0-5	30	10	A-2-4 (0)	BROWN
304+00	34	23	28.80	93	7	0.10	20' LT	0-4	24	7	A-2-4 (0)	BROWN
310+00	34	23	30.00	93	6	53.50	24' RT	0-4	35	12	A-2-6 (0)	GRAY
320+00	34	23	37.40	93	6	44.70	20' RT	0-5	23	5	A-2-A (0)	BROWN
328+00	34	23	42.70	93	6	38.90	06' LT	0-3.5	32	12	A-6 (3)	BROWN
328+00	34	23	42.80	93	6	39.00	14' LT	0-5	32	13	A-2-6 (0)	BROWN
328+00	34	23	42.80	93	6	39.00	20' LT	0-5	28	9	A-2-4 (0)	BROWN
336+00	34	23	44.00	93	6	29.80	06' RT	0-5	33	14	A-6 (10)	BROWN
336+00	34	23	44.00	93	6	29.80	14' RT	0-5	23	7	A-4 (3)	BROWN
336+00	34	23	44.00	93	6	29.70	20' RT	0-5	28	10	A-4 (6)	BROWN
344+00	34	23	45.60	93	6	20.20	06' LT	0-3.5	23	8	A-4 (1)	BROWN
344+00	34	23	45.70	93	6	20.20	14' LT	0-5	28	12	A-6 (3)	BROWN
344+00	34	23	45.70	93	6	20.30	20' LT	0-4	36	17	A-6 (7)	BROWN
360+00	34	23	55.00	93	6	4.90	06' RT	0-5	29	11	A-6 (3)	BROWN
360+00	34	23	55.00	93	6	4.80	14' RT	0-4.5z	33	12	A-6 (3)	BROWN
360+00	34	23	54.90	93	6	4.80	20' RT	0-4z	27	7	A-2-4 (0)	BROWN
368+00	34	24	0.00	93	5	57.70	06' LT	0-5	32	11	A-6 (5)	RD/BR
368+00	34	24	0.00	93	5	57.70	14' LT	0-5	32	11	A-6 (5)	RD/BR
368+00	34	24	0.00	93	5	57.70	20' LT	0-5	29	10	A-4 (4)	RD/BR
376+00	34	24	4.40	93	5	49.70	06' LT	0-5	40	15	A-6 (10)	BROWN
376+00	34	24	4.30	93	5	49.60	14' RT	0-5	45	19	A-7-6 (15)	BROWN
376+00	34	24	4.30	93	5	49.60	20' RT	0-5	36	14	A-6 (6)	BROWN
384+00	34	24	6.60	93	5	45.20	06' LT	0-4z	22	5	A-4 (1)	BROWN
384+00	34	24	8.70	93	5	41.60	14' LT	0-4.5z	29	8	A-4 (3)	BROWN
384+00	34	24	8.70	93	5	41.60	20' LT	0-5	22	5	A-4 (2)	BROWN
392+00	34	24	12.80	93	5	33.80	06' LT	0-5	27	8	A-4 (2)	BROWN
392+00	34	24	12.90	93	5	33.80	20' LT	0-5	ND	NP	A-1-A (0)	BROWN
408+00	34	24	25.30	93	5	28.20	06' LT	0-5	29	11	A-6 (3)	BROWN
408+00	34	24	26.20	93	5	28.90	14' LT	0-5	31	12	A-6 (4)	BROWN
416+00	34	24	33.30	93	5	33.30	06' LT	0-5	32	11	A-6 (5)	BROWN
416+00	34	24	33.30	93	5	33.40	14' LT	0-5	27	9	A-4 (4)	BROWN
416+00	34	24	33.20	93	5	33.50	20' LT	0-5	29	9	A-4 (3)	BROWN
424+00	34	24	40.50	93	5	37.90	06' LT	0-5	20	3	A-4 (0)	BROWN
424+00	34	24	40.50	93	5	37.90	14' LT	0-5	22	5	A-4 (1)	BROWN
424+00	34	24	40.40	93	5	38.00	20' LT	0-5	22	5	A-4 (1)	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

BENCH MARKS

STATION	LOCATION	BENCH MARKS EACH
	SITE 1	
117+05	HWY. 7 - HEADWALL ON LT.	1
	SITE 2	
259+11	HWY. 7 - HEADWALL ON LT.	1
263+81	HWY. 7 - HEADWALL ON LT.	1
273+68	HWY. 7 - HEADWALL ON LT.	1
276+78	HWY. 7 - HEADWALL ON LT.	1
281+36	HWY. 7 - HEADWALL ON LT.	1
285+86	HWY. 7 - HEADWALL ON LT.	1
291+05	HWY. 7 - HEADWALL ON LT.	1
300+32	HWY. 7 - HEADWALL ON LT.	1
303+06	HWY. 7 - HEADWALL ON LT.	1
312+55	HWY. 7 - HEADWALL ON LT.	1
330+13	HWY. 7 - HEADWALL ON LT.	1
353+44	HWY. 7 - HEADWALL ON LT.	1
392+66	HWY. 7 - HEADWALL ON LT.	1
410+13	HWY. 7 - HEADWALL ON LT.	1
417+17	HWY. 7 - HEADWALL ON LT.	1
422+53	HWY. 7 - HEADWALL ON LT.	1
429+04	HWY. 7 - HEADWALL ON LT.	1
TOTAL:		18

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

REMOVAL OF EXISTING BRIDGE STRUCTURE

STATION	STATION	LOCATION	LUMP SUM
312+36	312+70	HWY. 7 (SITE NO. 1) (BR. NO. 01345)	1.00

6/29/2020

R061309.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.		061309	75	260

(2) QUANTITIES

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

Jun 29 2020 4:55 PM

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BASE AND SURFACING

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT							ACHM BASE COURSE (1 1/2")				ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")							
						(0.05 GAL. PER SQ. YD.)			(0.17 GAL. PER SQ. YD.)																			
				TON / STATION	TON	TOTAL WID.	SQ.YD.	GALLON	TOTAL WID.	SQ.YD.	GALLON	TOTAL GALLONS	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	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	TOTAL PG 64-22
			FEET			FEET			FEET				FEET			TON	FEET			TON	FEET			TON	FEET			TON	TON
MAIN LANES																												
SITE 1																												
99+00.00	100+00.00	MAIN LANES TRANSITION	100.00	49.75	49.75				29.75	330.56	56.20	56.20													29.75	330.56	220.00	36.36	36.36
100+00.00	102+70.00	270' TRANSITION	270.00	155.75	420.53	36.36	1090.80	54.54				54.54					6.23	186.90	330.00	30.84	6.13	183.90	220.00	20.23	46.00	1380.00	220.00	151.80	172.03
102+70.00	107+67.00	NOTCH AND WIDEN - OPEN SHOULDER	497.00	179.00	889.63	48.71	2689.87	134.49				134.49					12.46	688.07	330.00	113.53	12.25	676.47	220.00	74.41	52.00	2871.56	220.00	315.87	390.28
107+67.00	107+92.00	NOTCH AND WIDEN - CURB AND GUTTER TRANSITION	25.00	202.25	50.56	48.71	135.31	6.77				6.77					12.46	34.61	330.00	5.71	12.25	34.03	220.00	3.74	57.00	158.33	220.00	17.42	21.16
107+92.00	118+58.00	NOTCH AND WIDEN - CURB AND GUTTER	1066.00			65.00	7698.89	384.94				384.94	17.00	2013.56	550.00	553.73	12.00	1421.33	330.00	234.52	12.00	1421.33	220.00	156.35	36.00	4264.00	220.00	469.04	625.39
118+58.00	118+83.00	NOTCH AND WIDEN - CURB AND GUTTER TRANSITION	25.00	202.25	50.56	48.71	135.31	6.77				6.77					12.46	34.61	330.00	5.71	12.25	34.03	220.00	3.74	57.00	158.33	220.00	17.42	21.16
118+83.00	121+30.00	NOTCH AND WIDEN - OPEN SHOULDER	247.00	179.00	442.13	48.71	1336.82	66.84				66.84					12.46	341.96	330.00	56.42	12.25	336.19	220.00	36.98	52.00	1427.11	220.00	156.98	193.96
121+30.00	124+00.00	270' TRANSITION	270.00			36.36	1090.80	54.54				54.54					6.23	186.90	330.00	30.84	6.13	183.90	220.00	20.23	46.00	1380.00	220.00	151.80	172.03
124+00.00	125+00.00	MAIN LANES TRANSITION	100.00	49.75	49.75				29.57	328.56	55.86	55.86													29.57	328.56	220.00	36.14	36.14
SITE 2																												
247+00.00	248+00.00	MAIN LANES TRANSITION	100.00	49.75	49.75				VAR.	417.67	71.00	71.00													VAR.	417.67	220.00	45.94	45.94
248+00.00	251+30.00	330' TRANSITION	330.00	155.75	513.98	36.36	1333.20	66.66				66.66					6.23	228.43	330.00	37.69	6.13	224.77	220.00	24.72	46.00	1686.67	220.00	185.53	210.25
251+30.00	262+25.00	NOTCH AND WIDEN - OPEN SHOULDER	1095.00	179.00	1960.05	48.71	5926.38	296.32				296.32					12.46	1515.97	330.00	250.14	12.25	1490.42	220.00	163.95	52.00	6326.67	220.00	695.93	859.88
262+25.00	265+75.00	FULL DEPTH - OPEN SHOULDER	350.00	272.50	953.75	96.71	3760.94	188.05				188.05					36.46	1417.89	330.00	233.95	36.25	1409.72	220.00	155.07	52.00	2022.22	220.00	222.44	377.51
265+75.00	274+75.00	NOTCH AND WIDEN - OPEN SHOULDER	900.00	179.00	1611.00	48.71	4871.00	243.55				243.55					12.46	1246.00	330.00	205.59	12.25	1225.00	220.00	134.75	52.00	5200.00	220.00	572.00	706.75
274+75.00	281+75.00	FULL DEPTH - OPEN SHOULDER	700.00	272.50	1907.50	96.71	7521.89	376.09				376.09					36.46	2835.78	330.00	467.90	36.25	2819.44	220.00	310.14	52.00	4044.44	220.00	444.89	755.03
281+75.00	309+90.00	NOTCH AND WIDEN - OPEN SHOULDER	2815.00	179.00	5038.85	48.71	15235.41	761.77				761.77					12.46	3897.21	330.00	643.04	12.25	3831.53	220.00	421.47	52.00	16264.44	220.00	1789.09	2210.56
309+90.00	318+65.00	FULL DEPTH - OPEN SHOULDER	875.00	272.50	2384.38	96.71	9402.36	470.12				470.12					36.46	3544.72	330.00	584.88	36.25	3524.31	220.00	387.67	52.00	5055.56	220.00	556.11	943.78
318+65.00	380+75.00	NOTCH AND WIDEN - OPEN SHOULDER	6210.00	179.00	11115.90	48.71	33609.90	1680.50				1680.50					12.46	8597.40	330.00	1418.57	12.25	8452.50	220.00	929.78	52.00	35880.00	220.00	3946.80	4876.58
380+75.00	381+00.00	NOTCH AND WIDEN - CURB AND GUTTER TRANSITION	25.00	202.25	50.56	48.71	135.31	6.77				6.77					12.46	34.61	330.00	5.71	12.25	34.03	220.00	3.74	57.00	158.33	220.00	17.42	21.16
381+00.00	389+90.00	NOTCH AND WIDEN - CURB AND GUTTER	890.00			65.00	6427.78	321.39				321.39	17.00	1681.11	550.00	462.31	12.00	1186.67	330.00	195.80	12.00	1186.67	220.00	130.53	36.00	3560.00	220.00	391.60	522.13
389+90.00	390+90.00	FULL DEPTH - CURB AND GUTTER	100.00			137.00	1522.22	76.11				76.11	41.00	455.56	550.00	125.28	36.00	400.00	330.00	66.00	36.00	400.00	220.00	44.00	36.00	400.00	220.00	44.00	88.00
390+90.00	401+50.00	NOTCH AND WIDEN - CURB AND GUTTER	1060.00			65.00	7655.56	382.78				382.78	17.00	2002.22	550.00	550.61	12.00	1413.33	330.00	233.20	12.00	1413.33	220.00	155.47	36.00	4240.00	220.00	466.40	621.87
401+50.00	403+10.00	FULL DEPTH - CURB AND GUTTER	160.00			137.00	2435.56	121.78				121.78	41.00	728.89	550.00	200.44	36.00	640.00	330.00	105.60	36.00	640.00	220.00	70.40	36.00	640.00	220.00	70.40	140.80
403+10.00	421+42.35	NOTCH AND WIDEN - CURB AND GUTTER	1832.35			65.00	13233.64	661.68				661.68	17.00	3461.11	550.00	951.81	12.00	2443.13	330.00	403.12	12.00	2443.13	220.00	268.74	36.00	7329.40	220.00	806.23	1074.97
421+42.35	430+27.70	NOTCH LT. AND WIDEN - CURB AND GUTTER	885.35			99.28	9766.39	488.32				488.32	28.46	2799.67	550.00	769.91	23.42	2303.88	330.00	380.14	23.40	2301.91	220.00	253.21	36.00	3541.40	220.00	389.55	642.76
DRIVEWAY AT STA. 396+50																												
0+09.50	4+50.00	DRIVEWAY	440.50	87	383.24																				16.00	783.11	220.00	86.14	86.14
MASSEY RD.																												
1000+00.00	1000+30.00	TURNOUT	30.00	226.88	68.06																				20.00	109.70	220.00	12.07	12.07
1000+30.00	1002+46.00	DRIVEWAY	216.00	105.25	227.34																				20.00	480.00	220.00	52.80	52.80
ADDITIONAL FOR LEVELING																												
SITE 1																												
100+00.00	124+00.00	HWY. 7	2400.00						24.00	6400.00	1088.00	1088.00													24.00	6400.00	VAR.	1330.56	1330.56
SITE 2																												
248+00.00	262+25.00	HWY. 7 - LEVELING	1425.00						24.00	3800.00	646.00	646.00													24.00	3800.00	VAR.	386.10	386.10
265+75.00	274+75.00	HWY. 7 - LEVELING	900.00						24.00	2400.00	408.00	408.00													24.00	2400.00	VAR.	605.88	605.88
281+75.00	389+90.00	HWY. 7 - LEVELING	10815.00						24.00	28840.00	4902.80	4902.80													24.00	28840.00	VAR.	2859.12	2859.12
390+90.00	401+50.00	HWY. 7 - LEVELING	1060.00						24.00	2826.67	480.53	480.53													24.00	2826.67	VAR.	1096.92	1096.92
403+10.00	430+27.70	HWY. 7 - LEVELING	2717.70						24.00	7247.20	1232.02	1232.02													24.00	7247.20	VAR.	1690.92	1690.92
ADDITIONAL FOR GRADE RAISE																												
SITE 2																												
262+25.00	265+75.00	HWY. 7 - GRADE RAISE	350.00						24.00	933.33	158.67	158.67					48.00	1866.67	VAR.	443.52									
274+75.00	281+75.00	HWY. 7 - GRADE RAISE	700.00						24.00	1866.67	317.33	317.33					48.00	3733.33	VAR.	1486.98									
389+90.00	390+90.00	HWY. 7 - GRADE RAISE	100.00						24.00	266.67	45.33	45.33					48.00	533.33	VAR.	79.20									
401+50.00	403+10.00	HWY. 7 - GRADE RAISE	160.00						24.00	426.67	72.53	72.53					48.00	853.33	VAR.	186.12									
TOTALS:					**28217.27**		**137015.34**	**6850.78**		**56084.00**	**9534.27**	**16385.05**		**13142.12**		**3614.09**		**41586.06**		**7904.72**		**34266.61**		**3769.32**		**161951.93**		**20117.67**	**23886.99**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....95.1% MIN. AGGR.....4.9% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.9% MIN. AGGR.....4.1% ASPHALT BINDER
ACHM BASE COURSE (1 1/2").....96.2% MIN. AGGR.....3.8% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

6/26/2020

R061309.DGN

SUMMARY OF QUANTITIES (BOX 1 OF 2)

	ITEM NUMBER	ITEM		QUANTITY	UNIT
	201	CLEARING		194	STATION
	201	GRUBBING		194	STATION
	202	REMOVAL AND DISPOSAL OF WELL		1	EACH
	202	REMOVAL AND DISPOSAL OF FENCE		7524	LIN. FT.
	202	REMOVAL AND DISPOSAL OF GATES		7	EACH
	202	REMOVAL AND DISPOSAL OF POSTS		24	EACH
	202	REMOVAL AND DISPOSAL OF WALLS		439	LIN. FT.
	202	REMOVAL AND DISPOSAL OF RETAINING WALLS		127	LIN. FT.
	202	REMOVAL AND DISPOSAL OF CONCRETE ISLANDS		21	SQ. YD.
	202	REMOVAL AND DISPOSAL OF COLUMNS		7	EACH
	202	REMOVAL AND DISPOSAL OF CONCRETE DRIVEWAYS		574	SQ. YD.
	202	REMOVAL AND DISPOSAL OF SIGN FOUNDATIONS		43	EACH
	202	REMOVAL AND DISPOSAL OF PIPE CULVERTS		49	EACH
	202	REMOVAL AND DISPOSAL OF GUARDRAIL		935	LIN. FT.
	202	REMOVAL AND DISPOSAL OF SEPTIC TANK		1	EACH
	202	REMOVAL AND DISPOSAL OF BUILDINGS		2	EACH
	202	REMOVAL AND DISPOSAL OF SIGNS		18	EACH
	202	REMOVAL AND DISPOSAL OF PLANTERS		2	EACH
	207	STONE BACKFILL		523	TON
	SS & 210	UNCLASSIFIED EXCAVATION		97506	CU. YD.
	210	COMPACTED EMBANKMENT		84089	CU. YD.
	SP & 210	SOIL STABILIZATION		500	TON
	SS & 303	AGGREGATE BASE COURSE (CLASS 7)		33445	TON
	SS & 401	TACK COAT		16585	GAL.
	SP, SS, & 405	MINERAL AGGREGATE IN ACHM BASE COURSE (1 1/2")		3477	TON
	SP, SS, & 405	ASPHALT BINDER (PG 64-22) IN ACHM BASE COURSE (1 1/2")		137	TON
	SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")		7581	TON
	SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")		324	TON
	SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")		23779	TON
	SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")		1225	TON
	412	COLD MILLING ASPHALT PAVEMENT		800	SQ. YD.
	SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC		100	TON
	SS & 505	PORTLAND CEMENT CONCRETE DRIVEWAY		1852.06	SQ. YD.
	601	MOBILIZATION		1.00	LUMP SUM
	SP & 602	FURNISHING FIELD OFFICE		1	EACH
	SS & 603	MAINTENANCE OF TRAFFIC		1.00	LUMP SUM
	SS & 604	SIGNS		1159	SQ. FT.
	SP, SS, & 604	CONSTRUCTION PROJECT INFORMATION SIGN UPDATE		10	EACH
	SS & 604	TRAFFIC DRUMS		796	EACH
	SS & 604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER		2940	LIN. FT.
	SS & 604	RELOCATING PRECAST CONCRETE BARRIER		2540	LIN. FT.
	604	CONSTRUCTION PAVEMENT MARKINGS		255731	LIN. FT.
	604	CONSTRUCTION PAVEMENT MARKINGS (WORDS)		2	EACH
	604	CONSTRUCTION PAVEMENT MARKINGS (ARROWS)		3	EACH
	604	REMOVAL OF PERMANENT PAVEMENT MARKINGS		5726	LIN. FT.
	SS & 604	VERTICAL PANELS		93	EACH
	SS & 605	CONCRETE DITCH PAVING (TYPE B)		6449	SQ. YD.
*	606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	(ALTERNATE NO. 1)	4951	LIN. FT.
*	606	18" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE	(ALTERNATE NO. 2)	4951	LIN. FT.
	606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		284	LIN. FT.
	606	30" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		88	LIN. FT.
	606	36" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		82	LIN. FT.
	SP, SS, & 606	18" SIDE DRAIN		1799	LIN. FT.
	SP, SS, & 606	24" SIDE DRAIN		792	LIN. FT.
	SP, SS, & 606	30" SIDE DRAIN		282	LIN. FT.
	SP, SS, & 606	36" SIDE DRAIN		40	LIN. FT.
	SS & 606	21" X 15" SIDE DRAIN		94	LIN. FT.
	606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		11	EACH
	606	30" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		2	EACH
	606	36" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		2	EACH
	606	SELECTED PIPE BEDDING		300	CU. YD.
	SS & 609	DROP INLETS (TYPE C)		6	EACH
	SS & 609	DROP INLETS (TYPE MO)		45	EACH
	SS & 609	DROP INLET EXTENSIONS (4')		20	EACH
	SS & 609	DROP INLET EXTENSIONS (8')		20	EACH
	SS & 609	YARD DRAINS		10	EACH
	SS & 611	4" PIPE UNDERDRAINS		1500	LIN. FT.
	SS & 611	UNDERDRAIN OUTLET PROTECTORS		10	EACH
	615	PAVEMENT REPAIR OVER CULVERTS (ASPHALT)		36	TON
	619	WIRE FENCE (TYPE C)		1917	LIN. FT.
	619	WIRE FENCE (TYPE D)		312	LIN. FT.
	619	WIRE FENCE (TYPE D-1)		93	LIN. FT.
	619	WIRE FENCE (TYPE D-2)		436	LIN. FT.
*	619	4' STEEL CHAIN LINK FENCE	(ALTERNATE NO. 1)	712	LIN. FT.
*	619	4' ALUMINUM CHAIN LINK FENCE	(ALTERNATE NO. 2)	712	LIN. FT.
*	619	5' STEEL CHAIN LINK FENCE	(ALTERNATE NO. 1)	240	LIN. FT.
*	619	5' ALUMINUM CHAIN LINK FENCE	(ALTERNATE NO. 2)	240	LIN. FT.
*	619	16' STEEL GATES	(ALTERNATE NO. 1)	4	EACH
*	619	16' ALUMINUM GATES	(ALTERNATE NO. 2)	4	EACH
	620	LIME		65	TON
	620	SEEDING		32.44	ACRE
	SS & 620	MULCH COVER		155.23	ACRE
	620	WATER		5913.5	M. GAL.
	621	TEMPORARY SEEDING		122.79	ACRE
	621	SILT FENCE		37359	LIN. FT.
	621	SAND BAG DITCH CHECKS		2805	BAG
	621	DIVERSION DITCH		800	LIN. FT.
	621	DROP INLET SILT FENCE		300	LIN. FT.
	621	SEDIMENT BASIN		100	CU. YD.
	621	OBLITERATION OF SEDIMENT BASIN		100	CU. YD.
	621	SEDIMENT REMOVAL AND DISPOSAL		3091	CU. YD.
	621	PIPE FOR SLOPE DRAINS		200	LIN. FT.
	621	ROCK DITCH CHECKS		2445	CU. YD.
	SS & 621	FILTER SOCK (18")		1300	LIN. FT.
	621	WATTLE (20")		900	LIN. FT.
	623	SECOND SEEDING APPLICATION		32.44	ACRE
	624	SOLID SODDING		7913	SQ. YD.
	625	GEOTEXTILE FABRIC (TYPE 10)		562	SQ. YD.
	626	EROSION CONTROL MATTING (CLASS 3)		22720	SQ. YD.
	SS & 633	CONCRETE WALKS		5861	SQ. YD.
	SS & 633	HAND RAILING		18	LIN. FT.
	SS & 634	CONCRETE COMBINATION CURB AND GUTTER (TYPE A) (1' 6")		10533	LIN. FT.
	SS & 634	CONCRETE COMBINATION CURB AND GUTTER (TYPE B-1) (1' 6")		100	LIN. FT.
	635	ROADWAY CONSTRUCTION CONTROL		1.00	LUMP SUM
	637	MAILBOXES		56	EACH
	637	MAILBOX SUPPORTS (SINGLE)		44	EACH
	637	MAILBOX SUPPORTS (DOUBLE)		6	EACH
	641	WHEELCHAIR RAMPS (TYPE 3)		336	SQ. YD.

* DENOTES ALTERNATE BID ITEMS.

SUMMARY OF QUANTITIES

Jun 29 2020 4:55 PM

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11435
TIMOTHY D. SMITH

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

② SUMMARY OF QUANTITIES AND REVISIONS

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		76	260

JOB NO. 061309

SUMMARY OF QUANTITIES (BOX 2 OF 2)

ITEM NUMBER	ITEM	QUANTITY	UNIT
642	RUMBLE STRIPS IN ASPHALT SHOULDERS	23688	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (6")	43796	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING YELLOW (6")	53370	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING (WORDS)	2	EACH
719	THERMOPLASTIC PAVEMENT MARKING (ARROWS)	3	EACH
721	RAISED PAVEMENT MARKERS (TYPE II)	539	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER	17	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)	17	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER (RELOCATION)	14	EACH
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY	275	CU. YD.
SS & 802	CLASS S CONCRETE-ROADWAY	361.73	CU. YD.
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)	37268	POUND
816	FILTER BLANKET	85	SQ. YD.
816	DUMPED RIPRAP	243	CU. YD.
	STRUCTURES OVER 20' SPAN		
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)	1.00	LUMP SUM
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY	227	CU. YD.
SS & 802	CLASS S CONCRETE-ROADWAY	546.95	CU. YD.
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)	76883	POUND

REVISIONS

DATE	REVISION	SHEET NUMBER
07/30/2020	REVISED SITE 2 CROSS SECTIONS TO DISPLAY CROSS SLOPES AND ELEVATIONS.	77, 124-260

SUMMARY OF QUANTITIES AND REVISIONS

Jul 30 2020 4:22 PM

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11435
TIMOTHY D. SMITH

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.		77	260
				JOB NO.		061309		

(2) SUMMARY OF QUANTITIES AND REVISIONS

SURVEY CONTROL COORDINATES
Project Name: 061440
Date: 8/4/2015
Coordinate System: Arkansas State Plane Coordinates
Based on AHTD GPS PTS : *300008 - 300008A, 260030, 300007 (north section) 300010 - 300010A, 300011 - 300011A(south section)*
Based on NGS PTS : V 139 RESET & S 139 (north section) A 151 & Y 140 (south section)
Projected to Ground Coordinates
Units: U.S. Survey Foot

COORDINATES LISTED BELOW ARE GROUND (Localized) COORDINATES !!!!

Point No.	Northing	SY	Easting	SX	Elevation	SZ	Feature Code	Point Description
1	1941573.3991	0.0300	975018.8303	0.0300	525.92	0.003	CTL	PD:AHTD STD. MON. STAMPED PN:1
2	1941088.5301	0.0300	974360.6807	0.0300	529.82	0.003	CTL	PD:AHTD STD. MON. STAMPED PN:2
3	1940507.2258	0.0300	973970.2033	0.0300	528.87	0.005	CTL	PD:AHTD STD. MON. STAMPED PN:3
4	1940205.3744	0.0300	973687.0840	0.0300	514.95	0.005	CTL	PD:AHTD STD. MON. STAMPED PN:4
5	1939866.3051	0.0300	972974.2799	0.0300	513.67	0.005	CTL	PD:AHTD STD. MON. STAMPED PN:5
6	1939601.0030	0.0300	972338.2863	0.0300	520.21	0.005	CTL	PD:AHTD STD. MON. STAMPED PN:6
7	1939591.3678	0.0300	971837.7929	0.0300	536.35	0.004	CTL	PD:AHTD STD. MON. STAMPED PN:7
8	1939396.3685	0.0145	971050.4269	0.0143	542.92	0.003	CTL	PD:AHTD STD. MON. STAMPED PN:8
9	1938970.1209	0.0300	970504.0479	0.0300	542.35	0.004	CTL	PD:AHTD STD. MON. STAMPED PN:9
10	1938742.1073	0.0300	970192.9923	0.0300	552.02	0.004	CTL	PD:AHTD STD. MON. STAMPED PN:10
11	1938300.4673	0.0300	969934.0350	0.0300	572.85	0.005	CTL	PD:AHTD STD. MON. STAMPED PN:11
12	1937790.1767	0.0149	969440.6636	0.0146	583.22	0.006	CTL	PD:AHTD STD. MON. STAMPED PN:12
13	1937353.0386	0.0300	968829.1750	0.0300	596.74	0.006	CTL	PD:AHTD STD. MON. STAMPED PN:13
14	1937202.1065	0.0300	968142.8725	0.0300	596.38	0.007	CTL	PD:AHTD STD. MON. STAMPED PN:14
15	1937051.3084	0.0300	967408.9023	0.0300	607.07	0.008	CTL	PD:AHTD STD. MON. STAMPED PN:15
16	1936884.1048	0.0300	966779.3498	0.0300	614.81	0.009	CTL	PD:AHTD STD. MON. STAMPED PN:16
17	1937002.7172	0	966216.8665	0	606.94	0.009	CTL	PD:AHTD STD. MON. STAMPED PN:17
18	1937097.6291	0	965522.0798	0	609.74	0.010	CTL	PD:AHTD STD. MON. STAMPED PN:18
19	1937241.6154	0	964767.8171	0	649.20	0.011	CTL	PD:AHTD STD. MON. STAMPED PN:19
20	1937112.5548	0	964091.0811	0	647.67	0.011	CTL	PD:AHTD STD. MON. STAMPED PN:20
21	1937008.9183	0.0190	963412.9126	0.0110	658.63	0.011	CTL	PD:AHTD STD. MON. STAMPED PN:21
22	1936937.3811	0.0113	962861.5061	0.0078	668.34	0.012	CTL	PD:AHTD STD. MON. STAMPED PN:22
23	1907975.6987	0.0140	961029.3875	0.0208	497.17	0.006	CTL	PD:AHTD STD. MON. STAMPED PN:23
24	1906286.4918	0.0090	961219.5435	0.0140	491.19	0.004	CTL	PD:AHTD STD. MON. STAMPED PN:24
25	1905609.3696	0.0203	960972.9062	0.0188	514.42	0.006	CTL	PD:AHTD STD. MON. STAMPED PN:25
26	1905071.1477	0.0128	960956.9173	0.0214	542.93	0.007	CTL	PD:AHTD STD. MON. STAMPED PN:26
27	1904683.0711	0.0133	960992.5804	0.0234	525.95	0.007	CTL	PD:AHTD STD. MON. STAMPED PN:27
28	1903992.2589	0.0229	960940.8218	0.0220	529.69	0.008	CTL	PD:AHTD STD. MON. STAMPED PN:28
29	1903283.8112	0.0127	960979.3007	0.0144	508.06	0.009	CTL	PD:AHTD STD. MON. STAMPED PN:29
30	1902600.8285	0.0150	961096.8079	0.0198	508.38	0.009	CTL	PD:AHTD STD. MON. STAMPED PN:30
31	1902087.0079	0.0176	961447.2921	0.0191	508.72	0.009	CTL	PD:AHTD STD. MON. STAMPED PN:31
32	1901711.9671	0.0225	962045.3674	0.0213	498.95	0.009	CTL	PD:AHTD STD. MON. STAMPED PN:32
33	1901320.0662	0.0242	962590.6464	0.0175	503.62	0.010	CTL	PD:AHTD STD. MON. STAMPED PN:33
34	1901023.3812	0.0235	963075.1273	0.0167	508.09	0.010	CTL	PD:AHTD STD. MON. STAMPED PN:34
35	1900907.7882	0.0203	963719.0560	0.0186	505.28	0.010	CTL	PD:AHTD STD. MON. STAMPED PN:35
36	1900661.1727	0.0198	964486.8300	0.0183	508.62	0.010	CTL	PD:AHTD STD. MON. STAMPED PN:36
37	1900292.8766	0.0193	964777.4124	0.0197	493.74	0.010	CTL	PD:AHTD STD. MON. STAMPED PN:37
38	1899670.8485	0.0200	965008.4643	0.0182	466.47	0.010	CTL	PD:AHTD STD. MON. STAMPED PN:38
39	1898981.4750	0.0198	965329.2922	0.0239	458.28	0.010	CTL	PD:AHTD STD. MON. STAMPED PN:39
40	1898389.8257	0.0233	965794.6394	0.0279	437.83	0.010	CTL	PD:AHTD STD. MON. STAMPED PN:40
41	1898001.6713	0.0213	966148.6402	0.0247	450.08	0.009	CTL	PD:AHTD STD. MON. STAMPED PN:41
42	1903094.8915	0.0182	961133.0838	0.0167	505.50	0.009	CTL	PD:AHTD STD. MON. STAMPED PN:42
43	1903436.8108	0.0687	962331.4456	0.0235	481.41	0.010	CTL	PD:AHTD STD. MON. STAMPED PN:43
100	1940987.7002	0.0001	974221.5618	0.0001	539.72	0.000	GPS	PD:AHTD 6PS #300007
101	1936899.7581	0.0001	962498.7214	0.0001	661.14	0.012	GPS	PD:AHTD 6PS #300008
102	1936739.6315	0.0001	960331.7645	0.0001	732.64	0.013	GPS	PD:AHTD 6PS #300008A
105	1909007.4175	0.0001	960688.7573	0.0001	516.40	0.006	GPS	PD:AHTD 6PS #300010
106	1906819.8737	0.0001	961383.4400	0.0001	488.26	0.003	GPS	PD:AHTD 6PS #300010A
107	1897269.3878	0.0001	966808.9171	0.0001	464.48	0.010	GPS	PD:AHTD 6PS #300011
108	1896313.4486	0.0001	968476.1759	0.0001	480.78	0.009	GPS	PD:AHTD 6PS #300011A
111	1941969.4834	0.0001	975718.6861	0.0001	527.45	0.000	GPS	PD:AHTD 6PS #260030
900	1939098.7687	0.0250	970632.5035	0.0250	542.32	0.000	BM	PD:V139 RESET 1969
901	1939600.8814	0.3000	971798.4695	0.3000	532.72	0.004	TBM	PD:CHISELED SQ. IN TOP OF
902	1939965.5102	0.3000	973189.7498	0.3000	510.67	0.004	TBM	PD:CHISELED SQ. IN TOP CENTER
903	1940711.8881	0.3000	974139.4369	0.3000	521.28	0.003	TBM	PD:CHISELED SQ. IN TOP OF NE
904	1941352.5682	0.3000	974758.4111	0.3000	524.49	0.003	TBM	PD:CHISELED SQ. IN TOP CENTER
905	1938099.9674	0.3000	969720.8348	0.3000	574.19	0.005	TBM	PD:CHISELED SQ. IN TOP SW
906	1937320.7682	0.3000	968723.6164	0.3000	591.61	0.007	TBM	PD:CHISELED SQ. IN TOP CENTER
907	1937043.0999	0.3000	967317.2990	0.3000	601.45	0.008	TBM	PD:CHISELED SQ. IN TOP SW
908	1936867.6810	0.3000	966604.8591	0.3000	613.20	0.009	TBM	PD:CHISELED SQ. IN TOP CENTER
909	1937083.6742	0.3000	965823.4191	0.3000	607.55	0.009	TBM	PD:CHISELED SQ. IN NE COR
910	1937041.5255	0.3000	963456.2277	0.3000	650.84	0.011	TBM	PD:CHISELED SQ. IN TOP CENTER
911	1936833.2277	0.3000	961735.1507	0.3000	657.88	0.012	TBM	PD:CHISELED SQ. IN NE COR OF
912	1936787.9664	0.0600	961631.8937	0.0600	663.35	0.012	TBM	
913	1907803.3195	0.3000	961083.9847	0.3000	490.70	0.005	TBM	PD:CHIS SQ. N.END HW
914	1906189.3049	0.3000	961183.7770	0.3000	487.94	0.004	TBM	PD:CHIS SQ. HW
915	1904467.0103	0.3000	960946.8354	0.3000	513.22	0.007	TBM	PD:CHIS SQ. CONC HW
916	1903339.4890	0.3000	960970.3391	0.3000	505.77	0.008	TBM	PD:CHIS SQ. CONC HW
917	1902475.4511	0.3000	961171.3661	0.3000	504.04	0.009	TBM	PD:CHIS SQ. CONC HW
918	1901560.7323	0.3000	962253.6144	0.3000	493.44	0.009	TBM	PD:CHIS SQ. CONC HW
919	1901027.1726	0.3000	963245.0842	0.3000	504.31	0.010	TBM	PD:CHIS SQ. CONC HW
920	1900865.9887	0.3000	963875.2442	0.3000	500.60	0.010	TBM	PD:CHIS SQ. CONC HW
921	1900059.4816	0.3000	964892.0172	0.3000	480.80	0.010	TBM	PD:CHIS SQ. TOP N.END
922	1899340.3774	0.3000	965196.5933	0.3000	456.21	0.010	TBM	PD:CHIS SQ. CONC HW
923	1898440.8823	0.3000	965817.3235	0.3000	437.76	0.009	TBM	PD:CHIS SQ. CONC HW
924	1897754.6433	0.3000	966428.8699	0.3000	443.98	0.009	TBM	PD:CHIS SQ. CONC HW
925	1896714.8536	30.0000	967864.6168	30.0000	462.86	0.009	TBM	PD:CHIS SQ. TOP CENTER PD:18"RCP S.END PD:S.SIDE HWY.7
926	1895990.9199	30.0000	969325.4532	30.0000	471.80	0.008	TBM	PD:CHIS SQ. E.END OF PD:CONC HW S.SIDE OF HWY.7
927	1895672.7928	30.0000	970664.9314	30.0000	433.35	0.006	TBM	PD:CHISELED SQ. IN TOP CENTER PD:18"RCP N.SIDE OF HWY.7
998	1893466.6011	30.0000	970867.2027	30.0000	382.74	0.000	BM	PD:NGS 3RD ORDER BM A 151 RESET
999	1906706.9987	0.0001	961361.7085	0.0001	492.62	0.000	BM	PD:NGS Y 140

*Standard Primary Control Monument - Rebar and Cap - Standard - 5/8"x 24" Rebar with 2"Aluminun Cap stamped: *"(include all common information here)"* plus other markings indicated in the point description of the individual point. AHTD monuments will be stamped "Arkansas Hwy & Trans Dept" with "PN: ###" & "Job ######". Monuments that are set by Consultants will be stamped "Arkansas Hwy & Trans Dept" with "PN:###", "Job######", & "PS####". The consultant Professional Surveyor in charge will stamp his/her PS license number on the cap.

**Standard GPS Control Point Monument - 5/8" x 48" Rebar with 2.5"Aluminum Cap stamped: *"(include all common information here)"* plus other markings indicated in the point description of the individual point. These monuments will be stamped "Ark. State Hwy Trans. Dept.", "GPS Survey", & "Point No. ######".

SX, SY, SZ – Represents the standard error estimate of the coordinate values of each point at the 67% confidence level (one sigma) based on the least squares analysis of the control network. See the AASHTO SDMS Technical Data Guide data tag definition for SX:, SY:, and SZ: for additional information. These values shall be used when control points are added and the entire network is reprocessed using least square analysis. A value of 0.001 is defined as fixed (no adjustment) in the least square analysis process. A value of 30 is defined as location by handheld GPS device or scaled from USGS Quadmap.

Reference Control points (1500 series) shall be used to re-establish horizontal datum if the primary control has been destroyed. These reference control points shall not be used for vertical control unless the elevation has been established from the project datum with 3-wire level techiniques.

All additional project control shall be occupied, measured, and adjusted with direct survey ties to at least two of the control points listed in the table above. New survey control shall not be independent of the survey control listed above. This includes horizontal coordinates and elevations.

Positional Accuracy:
- Horizontal - GPS (1.0 cm± 1PPM) — *PN: 100-111*
- Horizontal - Primary (2.0cm± 20PPM): — *PN:1-43*
- Horizontal - Secondary (3 cm ± 50PPM): — *PN:N/A*
- Vertical - NGS 1st Order (±4mm x √dist in km) — *PN:N/A*
- Vertical - NGS 2nd Order (±6mm x √dist in km) — *PN:N/A*
- Vertical - NGS 3rd Order (±8mm x √dist in km) — *PN:1-998*

Horizontal Datum: NAD 1983 (1997) State Plane Zone: 0302 - South Zone
The adjustment year is based on metadata in the SDMS Control file
A project CAF of: 0.999977047 has been used to compute the above coordinates.
The project CAF shall have a minimum precision of 9 digits right of the decimal.
This CAF is intended for use within the project limits only.
Grid Distance = Ground Distance X CAF
If Coordinates are listed as Ground:
To compute Grid Coordinates, multiply the Ground Coordinates by CAF about the origin of X=0 & Y=0
If Coordinates are listed as Grid:
To compute Ground Coordinates, divide the Grid Coordinates by CAF about the origin of X=0 & Y=0

Vertical Datum: NAVD 1988 based NGS BM: V 139 RESET & S 139 (north section) A 151 & Y 140 (south section)
A project Elevation Factor of: 0.9999744733 has been computed and incorporated in the above CAF.
This is based on the average elevation of the project: 533.67 Feet
3-Wire Leveling techniques have been used to establish elevations on
Points: 1-43, 100-111, 910-927 From NGS BM: V 139 RESET & S 139 (north section) A 151 & Y 140 (south section)

Basis of Bearing: Grid Bearings based on AHTD GPS points: *300008 - 300008A, 260030, 300007 (north section) 300010 - 300010A, 300011 - 300011A(south sect*
Convergence Angle is: 0°38'14.39" Left at PN: 13
LT: 34-22-43.06N LG: 093-08-19.39 W
Grid Azimuth = Astronomical Azimuth - Convergence Angle
Convergence Angle is: 0°39'01.01" Left at PN: 31
LT: 34-16-53.42N LG: 093-09-42.68 W
Grid Azimuth = Astronomical Azimuth - Convergence Angle

SURVEY CONTROL COORDINATES
Project Name: 061309
Date: 1/28/2014
Coordinate System: Arkansas State Plane Coordinates
Based on AHTD GPS PTS : *260039-260039a,260030,300007*
Projected to Ground Coordinates
Units: U.S. Survey Foot

COORDINATES LISTED BELOW ARE GROUND (Localized) COORDINATES !!!!

Point No.	Northing	SY	Easting	SX	Elevation	SZ	Feature Code	Point Description
1	1941966.8125	0.0110	975998.6942	0.0099	524.53	0.000	CTL	5/8" x 24" Rebar with 2" Aluminum cap Stamped PN:1
2	1942675.8116	0.0114	976746.1061	0.0105	525.26	0.000	CTL	5/8" x 24" Rebar with 2" Aluminum cap Stamped PN:2
3	1943346.2342	0.0133	977372.0871	0.0114	504.42	0.000	CTL	5/8" x 24" Rebar with 2" Aluminum cap Stamped PN:3
4	1943450.9270	0.0216	978020.1987	0.0179	503.32	0.000	CTL	5/8" x 24" Rebar with 2" Aluminum cap Stamped PN:4
5	1943440.4355	0.0161	978709.1981	0.0135	484.72	0.000	CTL	5/8" x 24" Rebar with 2" Aluminum cap Stamped PN:5
6	1943887.6098	0.0152	979359.0259	0.0126	473.83	0.000	CTL	5/8" x 24" Rebar with 2" Aluminum cap Stamped PN:6
7	1944528.7113	0.0222	980245.8466	0.0184	458.27	0.000	CTL	5/8" x 24" Rebar with 2" Aluminum cap Stamped PN:7
8	1945052.5444	0.0222	980853.9852	0.0182	450.68	0.000	CTL	5/8" x 24" Rebar with 2" Aluminum cap Stamped PN:8
9	1945299.4702	0.0159	981278.4456	0.0120	468.47	0.000	CTL	5/8" x 24" Rebar with 2" Aluminum cap Stamped PN:9
10	1945835.4069	0.0108	982167.9266	0.0093	456.95	0.000	CTL	5/8" x 24" Rebar with 2" Aluminum cap Stamped PN:10
11	1946250.1193	0.0104	982831.5661	0.0090	425.75	0.000	CTL	5/8" x 24" Rebar with 2" Aluminum cap Stamped PN:11
12	1946830.4225	0.0135	983412.0430	0.0117	449.62	0.000	CTL	5/8" x 24" Rebar with 2" Aluminum cap Stamped PN:12
13	1947574.8103	0.0163	983301.4961	0.0134	464.43	0.000	CTL	5/8" x 24" Rebar with 2" Aluminum cap Stamped PN:13
14	1948066.9098	0.0139	983047.6877	0.0114	449.29	0.000	CTL	5/8" x 24" Rebar with 2" Aluminum cap Stamped PN:14
100	1954154.8870	0.0001	981612.1311	0.0001	456.60	0.002	GPS	5/8" x 48" Rebar with 2.5" Aluminum cap Stamped PN:260029
101	1952168.9394	0.0001	981237.4622	0.0001	421.36	0.001	GPS	5/8" x 48" Rebar with 2.5" Aluminum cap Stamped PN:260029A
102	1941969.4834	0.0001	975718.6861	0.0001	527.45	0.006	GPS	5/8" x 48" Rebar with 2.5" Aluminum cap Stamped PN:260030
103	1940987.7002	0.0001	974221.5618	0.0001	539.72	0.000	GPS	5/8" x 48" Rebar with 2.5" Aluminum cap Stamped PN:300007
905	1948898.7179	0.3000	982611.0637	0.3000	448.11	0.003	TBM	CHISELED SQ. IN TOP OF CONC. BOX CU, E. SIDE OF HWY 7, 5.7' N OF CROSSING SIGN
913	1947207.3569	30.0000	983413.2007	30.0000	454.06	0.004	TBM	CHISELED SQ. IN SE COR. OF CONC. HM, E. SIDE OF HWY 7
914	1945622.7691	30.0000	981833.5813	30.0000	460.50	0.004	TBM	5/8"REBAR E.SIDE OF HWY 7, 30' FROM FOG LINE, 54' 233 AZ TO PP
915	1944073.8731	30.0000	979650.7804	30.0000	469.11	0.005	TBM	CHISELED SQ. IN HW, CONC. BOX CU, E SIDE OF HWY. 7, 3.9' FROM EP
916	1943379.8667	30.0000	977522.2875	30.0000	500.62	0.005	TBM	CHISELED SQ. IN HW, CONC. BOX CU, E SIDE OF HWY. 7, 4.3' FROM EP, 35' 185AZ TO 14'SWEET GUM
917	1942188.7467	30.0000	976269.2969	30.0000	512.79	0.006	TBM	CHISELED SQ. IN NE BRIDGE CORNER TOP OF CONC BRIDGEWALL, 3.4' FROM FOG LINE
918	1941958.6383	30.0000	975675.4140	30.0000	529.17	0.006	TBM	CHISELED SQ. IN CONC SLAB W.SIDE OF HWY.7, 6'X12' CONC SLAB W/2TB, 12' 75AZ TO PP
919	1941360.8331	30.0000	974757.6726	30.0000	524.49	0.006	TBM	CHISELED SQ. IN HW SE SIDE OF HWY.7, 5' FROM EP, 2.5' 290AZ TO CROSSING SIGN
920	1941074.3805	30.0000	974326.0810	30.0000	531.17	0.006	TBM	5/8"REBAR W.SIDE OF HWY. 7, 23' 261AZ 10"RED OAK, 12AZ TO 8" SWEET GUM, 20' FROM FOG LINE
921	1940101.0789	30.0000	973467.5302	30.0000	507.33	0.006	TBM	CHISELED SQ. IN CONC HW E.SIDE OF HWY.7, 4' 210AZ TO CROSSING SN, 46' 131AZ TO 18"SWEET GUM
922	1939344.7368	30.0000	970979.8522	30.0000	541.81	0.007	TBM	5/8"REBAR, 28.5'NW OF HWY 7, 4.3'SW OF CHAINLINK FNC, S55W-100' TO ASP DW EP, MAILBOX #6960
998	1952826.2090	30.0000	981327.0093	30.0000	419.05	0.000	BM	NGS S139 USGS BRASS DISK IN TOP OF S.END OF W. HW OF A DOUBLE 6'X8' BOX CONC, 2ND ORDER
999	1938944.0865	30.0000	970640.1415	30.0000	542.32	0.000	BM	V139 RESET 1969, USGS BRASS DISK IN TOP OF WING WALL, STAMPED V 139 RESET 1969, 3RD ORDER

*Standard Primary Control Monument - Rebar and Cap - Standard - 5/8"x 24" Rebar with 2"Aluminum Cap stamped: "(include all common information here)" plus other markings indicated in the point description of the individual point. AHTD monuments will be stamped "Arkansas Hwy & Trans Dept" with "PN: ###" & "Job ######". Monuments that are set by Consultants will be stamped "Arkansas Hwy & Trans Dept" with "PN:###", "Job######", & "PS####". The consultant Professional Surveyor in charge will stamp his/her PS license number on the cap.

**Standard GPS Control Point Monument - 5/8" x 48" Rebar with 2.5"Aluminum Cap stamped: "(include all common information here)" plus other markings indicated in the point description of the individual point. These monuments will be stamped "Ark. State Hwy Trans. Dept.", "GPS Survey", & "Point No. ######".

SX, SY, SZ – Represents the standard error estimate of the coordinate values of each point at the 67% confidence level (one sigma) based on the least squares analysis of the control network. See the AASHTO SDMS Technical Data Guide data tag definition for SX:, SY:, and SZ: for additional information. These values shall be used when control points are added and the entire network is reprocessed using least square analysis. A value of 0.001 is defined as fixed (no adjustment) in the least square analysis process. A value of 30 is defined as location by handheld GPS device or scaled from USGS Quadmap.

Reference Control points (1500 series) shall be used to re-establish horizontal datum if the primary control has been destroyed. These reference control points shall not be used for vertical control unless the elevation has been established from the project datum with 3-wire level techiniques.

All additional project control shall be occupied, measured, and adjusted with direct survey ties to at least two of the control points listed in the table above. New survey control shall not be independent of the survey control listed above. This includes horizontal coordinates and elevations.

Positional Accuracy:
- Horizontal - GPS (1.0 cm± 1PPM) — *PN: 100-103*
- Horizontal - Primary (2.0cm± 20PPM): — *PN:1-14*
- Horizontal - Secondary (3 cm ± 50PPM): — *PN:N/A*
- Vertical - NGS 1st Order (±4mm x √dist in km) — *PN:N/A*
- Vertical - NGS 2nd Order (±6mm x √dist in km) — *PN:998*
- Vertical - NGS 3rd Order (±8mm x √dist in km) — *PN:905,913-922,999*

Horizontal Datum: NAD 1983 (1997) State Plane Zone: 0302 - South Zone
The adjustment year is based on metadata in the SDMS Control file
A project CAF of: 0.999924438 has been used to compute the above coordinates.
The project CAF shall have a minimum precision of 9 digits right of the decimal.
This CAF is intended for use within the project limits only.
Grid Distance = Ground Distance X CAF
If Coordinates are listed as Ground:
To compute Grid Coordinates, multiply the Ground Coordinates by CAF about the origin of X=0 & Y=0
If Coordinates are listed as Grid
To compute Ground Coordinates, divide the Grid Coordinates by CAF about the origin of X=0 & Y=0

Vertical Datum: NAVD 1988 based NGS BM: S 139, V 139 RESET 1969
A project Elevation Factor of: 0.9999768166 has been computed and incorporated in the above CAF.
This is based on the average elevation of the project: 484.68 Feet
3-Wire Leveling techniques have been used to establish elevations on
Points: 1-14, 100-103, 905, 913-9 From NGS BM: S 139, V 139 RESET 1969

Basis of Bearing: Grid Bearings based on AHTD GPS points: 260039-260039a,260030,300007
Convergence Angle is: 00 36 58.7 LEFT at PN: 7
LT: 34-23-55.3 N LG: 093-06-04.1 W
Grid Azimuth = Astronomical Azimuth - Convergence Angle

Note: Information in Italics is for clarification only. It is not to be part of the actual Control Table or Control Detail Sheets.

HIGHWAY 7 SITE 1

POINT NO.	TYPE	STATION	NORTHING	EASTING
8000	POB	99+00.00	1901856.0259	961812.9839
8001	PC	103+85.97	1902137.6625	961416.9321
8003	PT	109+62.36	1902612.8845	961117.1116
8010	PC	117+96.04	1903434.1114	960973.5896
8012	PT	120+58.16	1903695.0743	960953.7708
8013	POE	125+00.00	1904136.8081	960963.2337

HIGHWAY 7 SITE 2

POINT NO.	TYPE	STATION	NORTHING	EASTING
8014	POB	245+00.00	1939017.3155	970541.5019
8015	PC	249+95.59	1939299.2281	970949.0937
8017	PT	253+78.04	1939472.4756	971288.7837
8018	PC	256+79.39	1939572.4455	971573.0627
8024	PT	260+38.18	1939625.8812	971925.7223
8025	PC	262+63.18	1939617.4684	972150.5716
8027	PT	266+96.06	1939702.0787	972571.0191
8028	PC	277+60.83	1940150.3682	973536.8184
8030	PT	281+69.02	1940402.9608	973852.4710
8031	PC	289+61.02	1941030.7622	974335.3115
8033	PT	292+86.22	1941251.9340	974571.7356
8034	PI	298+78.11	1941580.7347	975063.9008
8035	PC	303+11.68	1941821.1335	975424.7163
8037	PT	306+16.16	1941931.9123	975705.8752
8038	PC	308+84.12	1941975.3799	975970.2880
8040	PT	312+15.43	1942121.9956	976261.7415
8041	PC	313+76.41	1942233.9696	976377.3953
8043	PT	317+89.12	1942541.3877	976652.2498
8044	PC	319+01.56	1942630.3801	976720.9615
8046	PT	326+16.53	1943167.5981	977192.0355
8047	PC	326+60.44	1943198.7449	977222.9889
8049	PT	333+85.65	1943436.5922	977883.1893
8050	PC	335+64.97	1943419.2356	978061.6881
8052	PT	348+14.28	1943761.5445	979231.8648
8053	PI	355+80.77	1944235.1806	979834.5044
8054	PC	369+44.68	1945074.6722	980909.4500
8056	PT	374+31.46	1945349.0653	981311.1269
8057	PI	384+55.55	1945871.7039	982191.8070
8058	PC	388+63.50	1946079.3106	982542.9587
8060	PT	393+50.47	1946361.5074	982939.1399
8061	PC	397+55.53	1946623.6606	983247.9139
8063	PT	402+76.05	1947094.1152	983398.8383
8064	PC	405+78.68	1947387.6322	983325.1377
8066	PT	410+62.42	1947836.9814	983149.4854
8067	PC	420+50.67	1948704.5830	982676.3321
8069	PT	426+93.67	1949277.4347	982384.4663
8070	PC	435+48.29	1950049.5029	982018.0070
8072	PT	440+35.85	1950494.2826	981818.3737

STA. 396+50 DRIVEWAY

POINT NO.	TYPE	STATION	NORTHING	EASTING
8082	POB	0+00.00	1946541.6423	983179.1213
8083	PC	0+03.88	1946538.6884	983181.6292
8085	PT	0+53.88	1946535.0247	983226.4957
8086	PC	2+18.31	1946641.4462	983351.8430
8088	PT	2+34.25	1946653.1752	983362.5875
8089	PC	4+13.43	1946799.3818	983466.1652
8091	PT	4+37.41	1946815.9102	983483.3446
8092	POE	5+08.95	1946854.9769	983543.2679

MASSEY RD.

POINT NO.	TYPE	STATION	NORTHING	EASTING
8093	POB	1000+00.00	1947150.81	983403.16
8094	PC	1000+29.98	1947158.16	983432.23
8096	PT	1000+77.11	1947136.44	983468.67
8097	PC	1001+42.36	1947073.18	983484.68
8099	PT	1002+25.22	1947038.21	983549.55
8100	POE	1003+05.94	1947064.69	983625.81

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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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.		061309	79	260

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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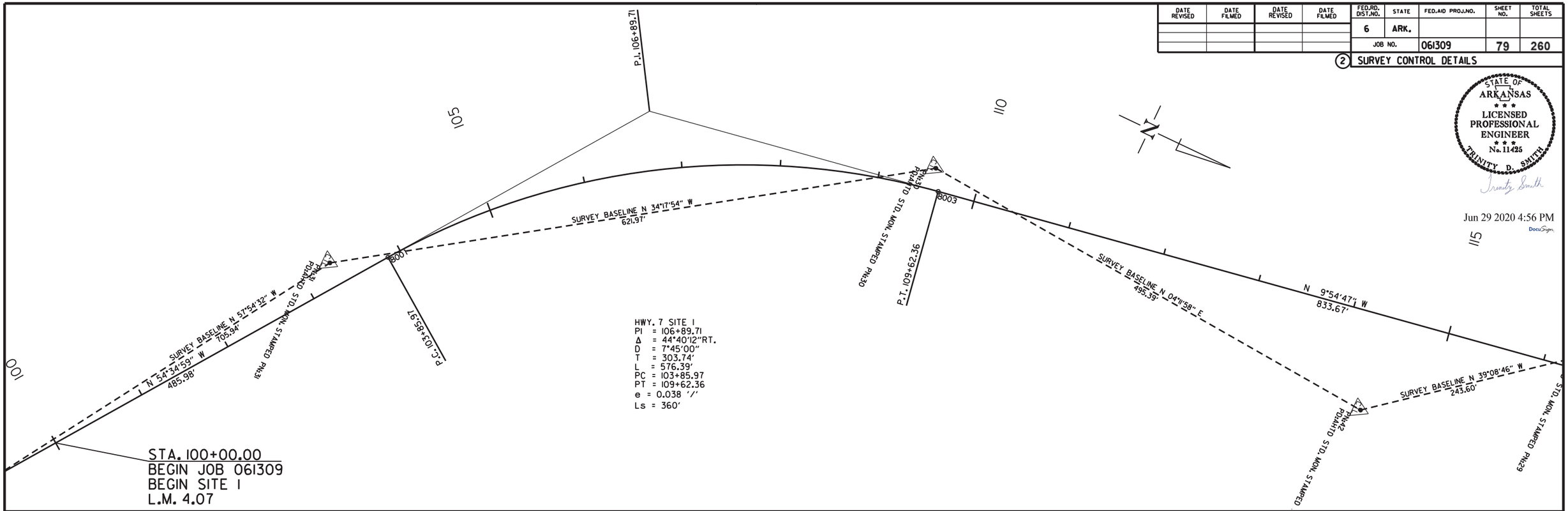

SITE 1
SURVEY CONTROL DETAILS

6/29/2020
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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.		061309	80	260

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
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STA. 248+00.00
BEGIN SITE 2
L.M. 14.38

HWY. 7 SITE 2

POB 245+00.00

8014

N 55°19'49" E
495.59'

SURVEY BASELINE N 52°02'28" E
692.98'

8015

PN:8
PD:AHTD STD. MON. STAMPED PN:8

P.C. 249+95.59

P.I. 251+87.96

P.T. 253+78.04

8017

N 70°37'31" E
301.34'

SURVEY BASELINE N 76°05'24" E
811.15'

8018

P.C. 256+79.39

P.I. 258+60.92

PN:7
PD:AHTD STD. MON. STAMPED PN:7

8024

P.T. 260+38.18

PN:9
PD:AHTD STD. MON. STAMPED PN:9

HWY. 7 SITE 2
PI = 251+87.96
Δ = 15°17'42"RT.
D = 3°59'57"
T = 192.37'
L = 382.45'
PC = 249+95.59
PT = 253+78.04
e = 0.062 '/'
Ls = 270'

HWY. 7 SITE 2
PI = 258+60.92
Δ = 21°31'03"RT.
D = 5°59'50"
T = 181.53'
L = 358.79'
PC = 256+79.39
PT = 260+38.18
e = 0.082 '/'
Ls = 330'

HWY. 7 SITE 2
PI = 264+83.73
Δ = 27°02'31"LT.
D = 6°14'49"
T = 220.55'
L = 432.88'
PC = 262+63.18
PT = 266+96.06
e = 0.086 '/'
Ls = 330'

8024

PN:7
PD:AHTD STD. MON. STAMPED PN:7

P.T. 260+38.18

S 87°51'26" E
225.01'

SURVEY BASELINE N 88°53'50" E
500.59'

8025

P.C. 262+63.18

PN:6
PD:AHTD STD. MON. STAMPED PN:6

P.I. 264+83.73

8027

P.T. 266+96.06

HWY. 7 SITE 2

SURVEY BASELINE N 67°21'24" E
689.11'

N 65°06'03" E
1064.77'

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

SURVEY BASELINE N 6
789.34'

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SITE 2
SURVEY CONTROL DETAILS

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				6	ARK.			
				JOB NO.		061309	81	260

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
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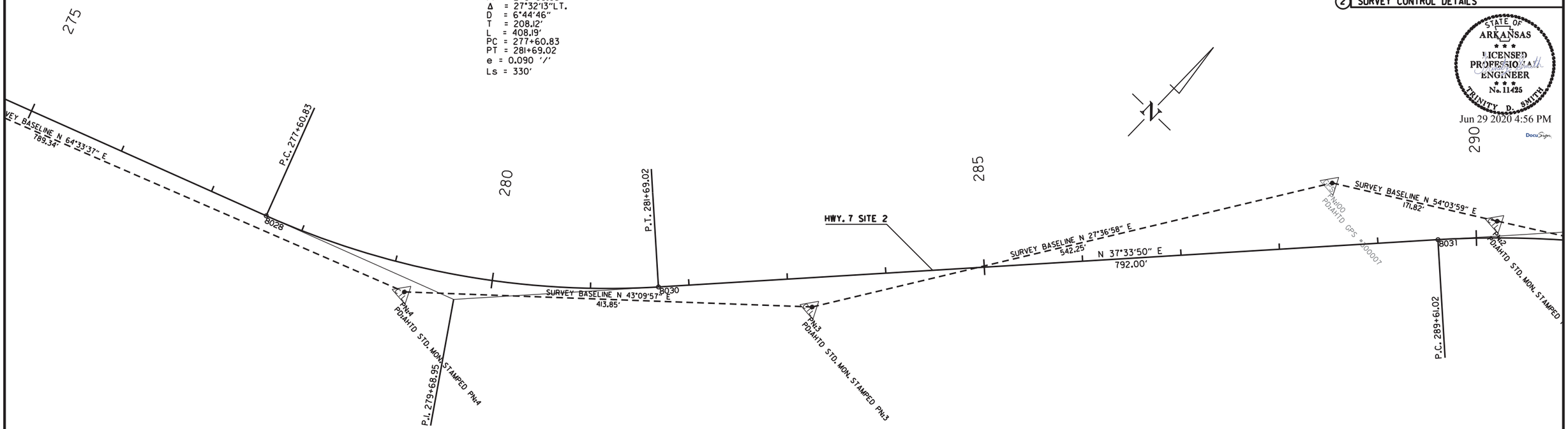
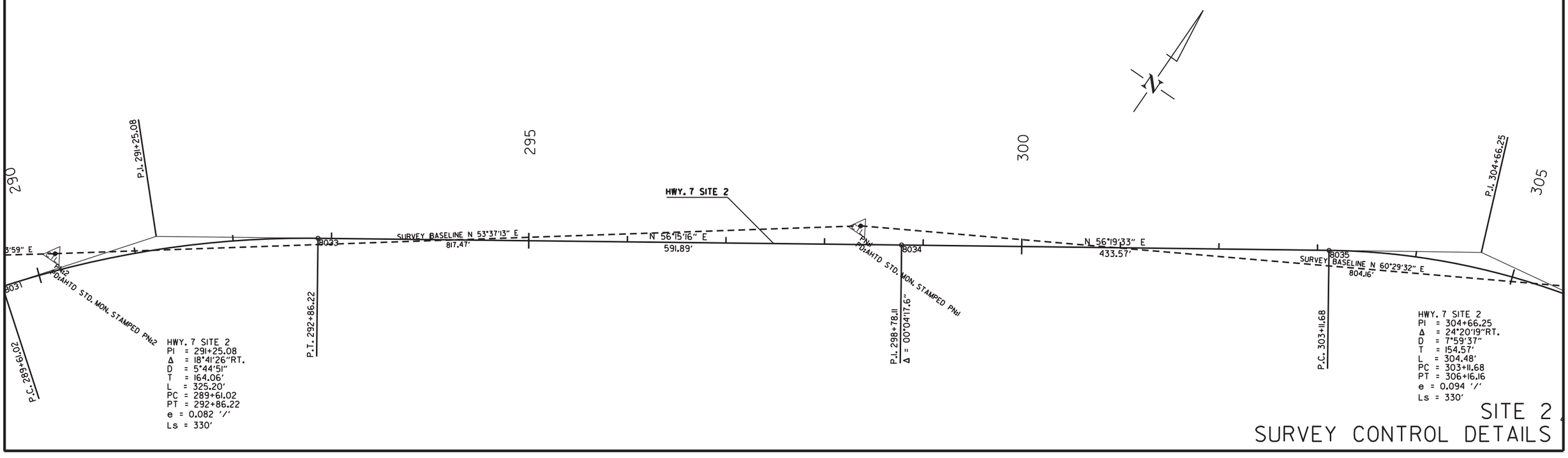
HWY. 7 SITE 2
PI = 279+68.95
Δ = 27°32'13"LT.
D = 6°44'46"
T = 208.12'
L = 408.19'
PC = 277+60.83
PT = 281+69.02
e = 0.090 '/'
Ls = 330'





HWY. 7 SITE 2
PI = 291+25.08
Δ = 18°41'26"RT.
D = 5°44'51"
T = 164.06'
L = 325.20'
PC = 289+61.02
PT = 292+86.22
e = 0.082 '/'
Ls = 330'

HWY. 7 SITE 2
PI = 304+66.25
Δ = 24°20'19"RT.
D = 7°59'37"
T = 154.57'
L = 304.48'
PC = 303+11.68
PT = 306+16.16
e = 0.094 '/'
Ls = 330'

SITE 2
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.		061309	82	260

(2) SURVEY CONTROL DETAILS

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

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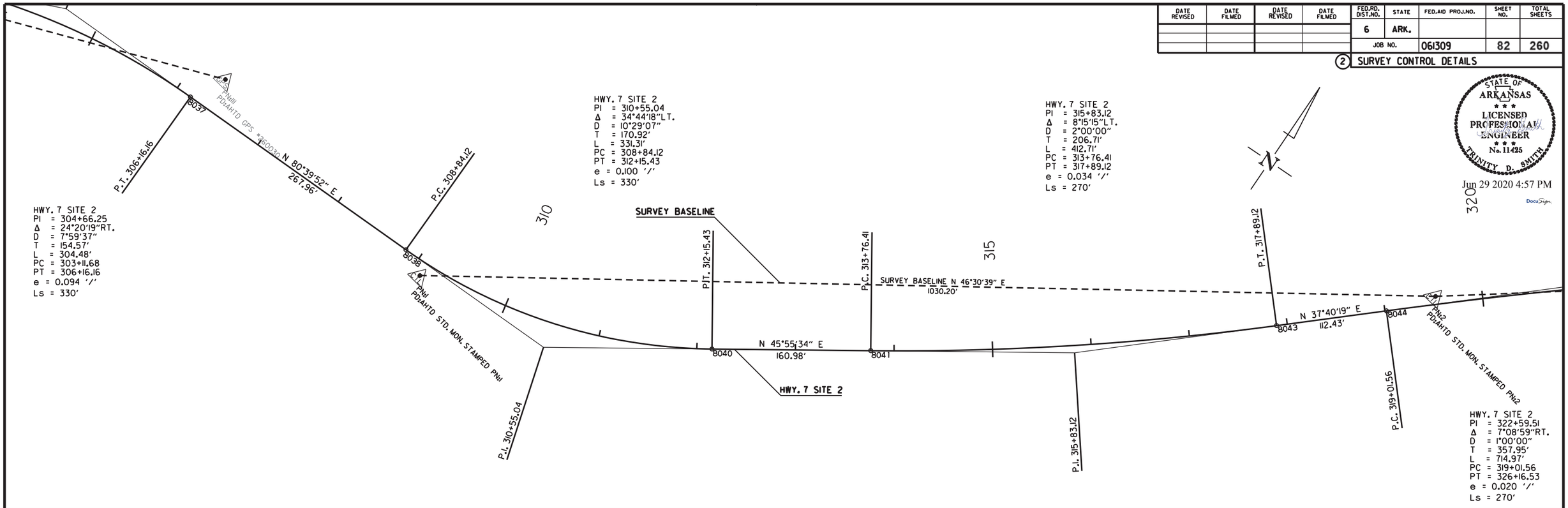

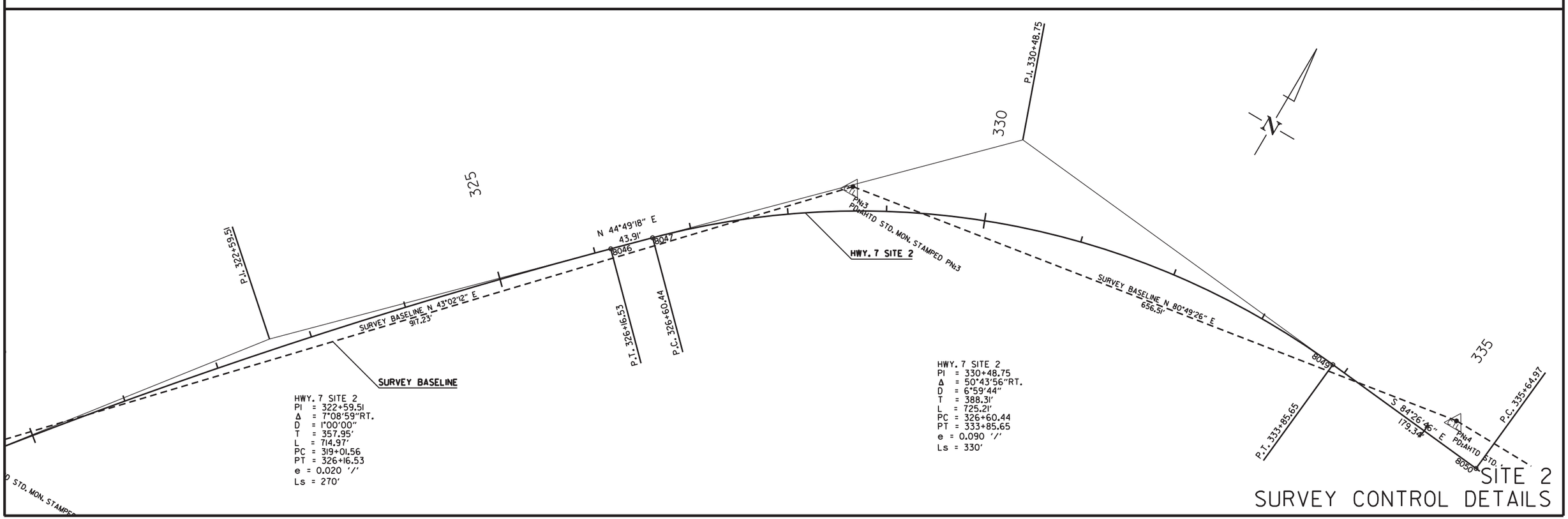

SITE 2
SURVEY CONTROL DETAILS

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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.		061309	83	260

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
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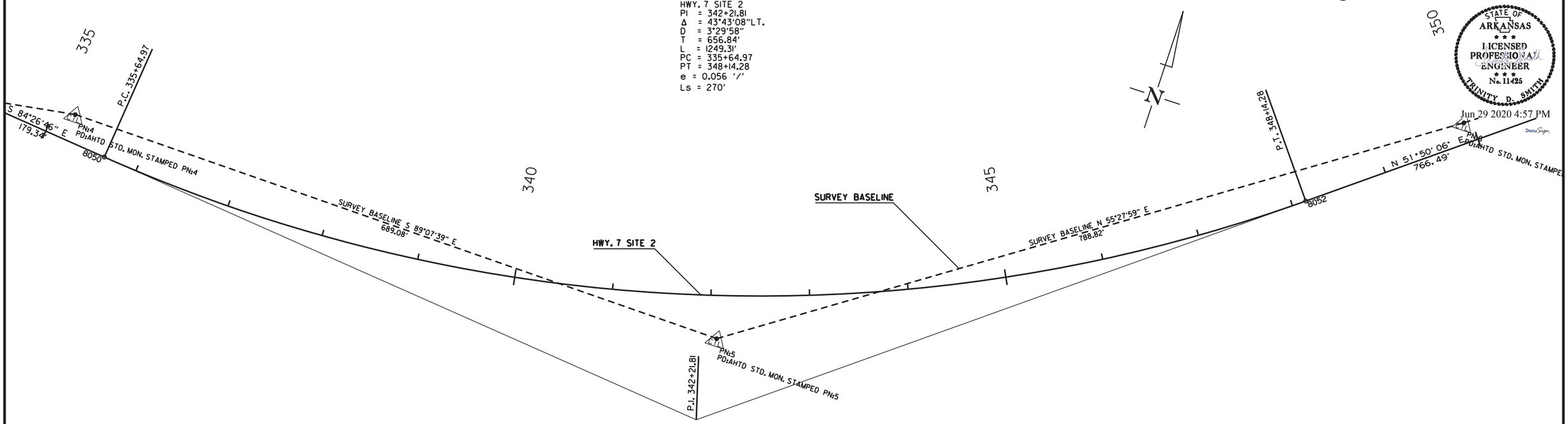
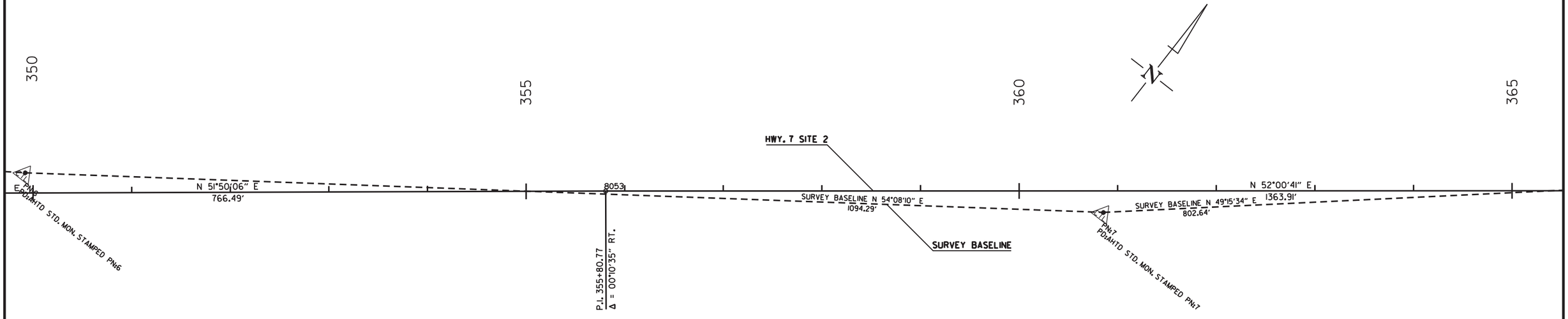
HWY. 7 SITE 2
PI = 342+21.81
Δ = 43°43'08" LT.
D = 3°29'58"
T = 656.84'
L = 1249.31'
PC = 335+64.97
PT = 348+14.28
e = 0.056 '/'
Ls = 270'





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SITE 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.		061309	84	260

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
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No. 11425
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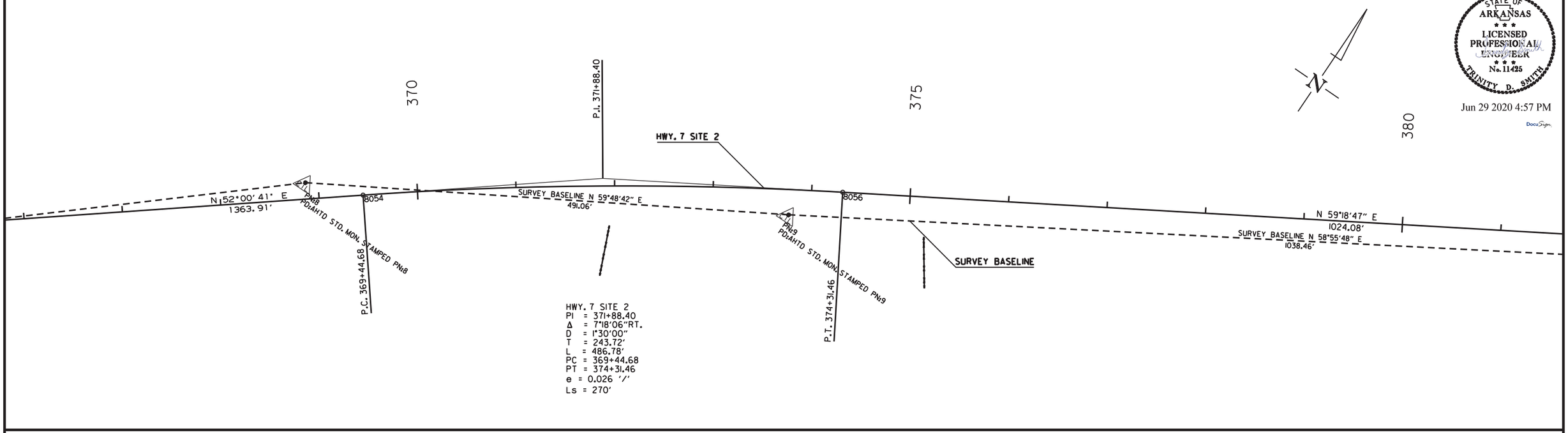

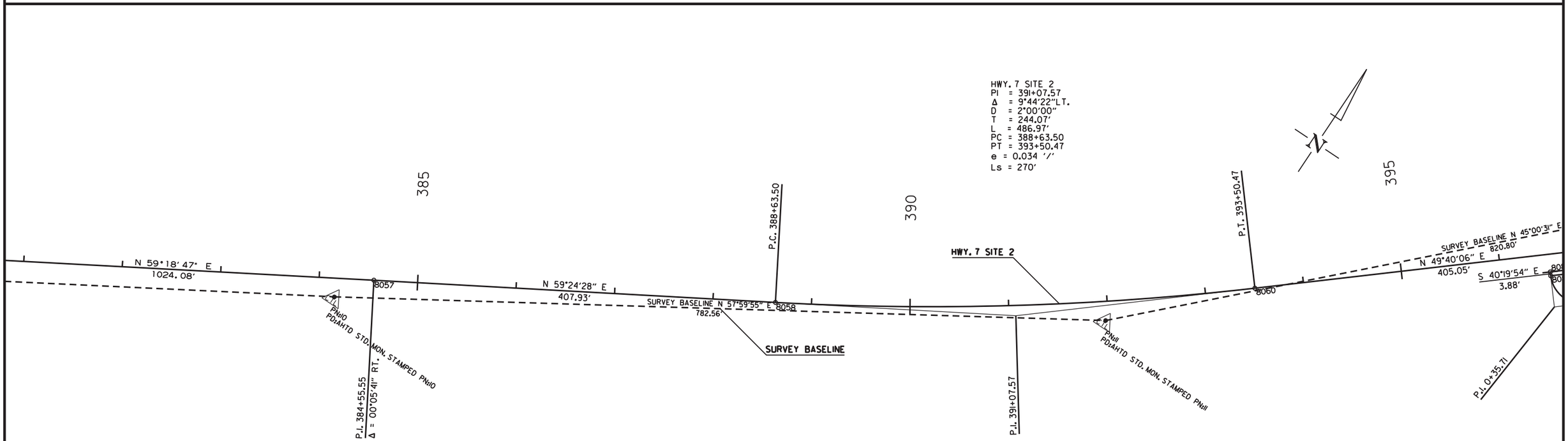

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SITE 2
SURVEY CONTROL DETAILS

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.		061309	85	260

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
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395

N 49°40'06" E 405.05'

SURVEY BASELINE N 45°20'32" E 820.80'

S 40°19'54" E 3.88'

P.I. 0+35.71

8082

8083

8085

P.T. 0+53.88

P.C. 397+55.53

POB 0+00.00

P.C. 0+03.88

8081

N 49°40'06" E 164.43'

8086

STA. 396+50 DRIVEWAY
PI = 0+35.71
Δ = 90°00'00"LT.
D = 180°00'00"
T = 31.83'
L = 50.00'
PC = 0+03.88
PT = 0+53.88
NO SUPERELEVATION

HWY. 7 SITE 2
PI = 400+46.45
Δ = 63°45'49"LT.
D = 12°15'00"
T = 290.92'
L = 520.52'
PC = 397+55.53
PT = 402+76.05
e = 0.100 '/'
Ls = 330'

400

P.C. 2+18.30

P.I. 2+26.32

P.T. 2+34.25

8088

N 35°18'54" E 179.18'

STA. 396+50 DRIVEWAY
PI = 2+26.32
Δ = 14°21'12"LT.
D = 90°00'00"
T = 8.02'
L = 15.95'
PC = 2+18.30
PT = 2+34.25
NO SUPERELEVATION

P.I. 400+46.45

P.T. 402+76.05

405

P.C. 405+78.68

HWY. 7 SITE 2
PI = 408+21.85
Δ = 14°30'39"LT.
D = 2°59'59"
T = 243.17'
L = 483.74'
PC = 405+78.68
PT = 410+62.42
e = 0.050 '/'
Ls = 270'

410

P.T. 410+62.42

8066

HWY. 7 SITE 2

SURVEY BASELINE N 27°16'59" W 553.70'

SURVEY BASELINE N 08°26'50" W 752.55'

N 14°05'43" W 302.63'

8064

8063

PTI000+77.11

POB 1000+00.00

8093

N 75°48'05" E 29.98'

8094

PCI000+29.98

S 14°11'55" E 65.25'

8097

8096

PII000+59.98

PII001+96.87

P.I. 4+25.57

P.T. 4+37.42

PNH2

S 10°10'00" W 71.53'

8090

8091

N 56°53'52" E

8092

POE 5+08.95

P.C. 4+13.44

STA. 396+50 DRIVEWAY
PI = 4+25.57
Δ = 21°34'58"RT.
D = 90°00'00"
T = 12.13'
L = 23.98'
PC = 4+13.44
PT = 4+37.42
NO SUPERELEVATION

MASSEY RD.
P.I. 1001+96.87
Δ = 94°56'48"LT.
D = 190°59'09"
T = 30.00'
L = 47.12'
P.C. 1001+42.36
P.T. 1002+25.22
NO SUPERELEVATION

MASSEY RD.
P.I. 1000+59.98
Δ = 90°00'00"RT.
D = 190°59'09"
T = 30.00'
L = 47.12'
P.C. 1000+29.98
P.T. 1000+77.11
NO SUPERELEVATION

PNH3

PTI002+25.22

8099

N 70°51'17" E 80.73'

PCI001+42.36

POE 1003+05.94

8100

P.I. 408+21.85

SURVEY BASELINE

SITE 2
SURVEY CONTROL DETAILS

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				6	ARK.			
				JOB NO.		061309	86	260

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
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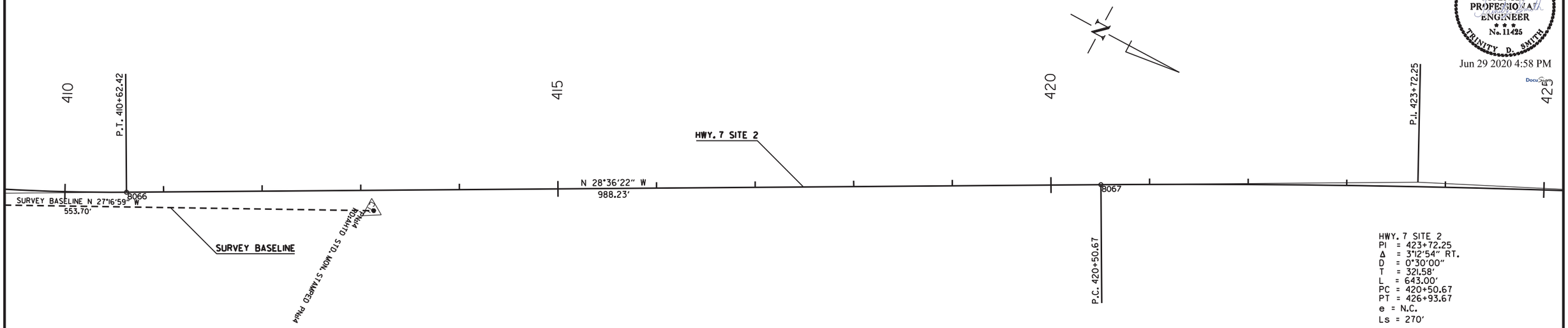

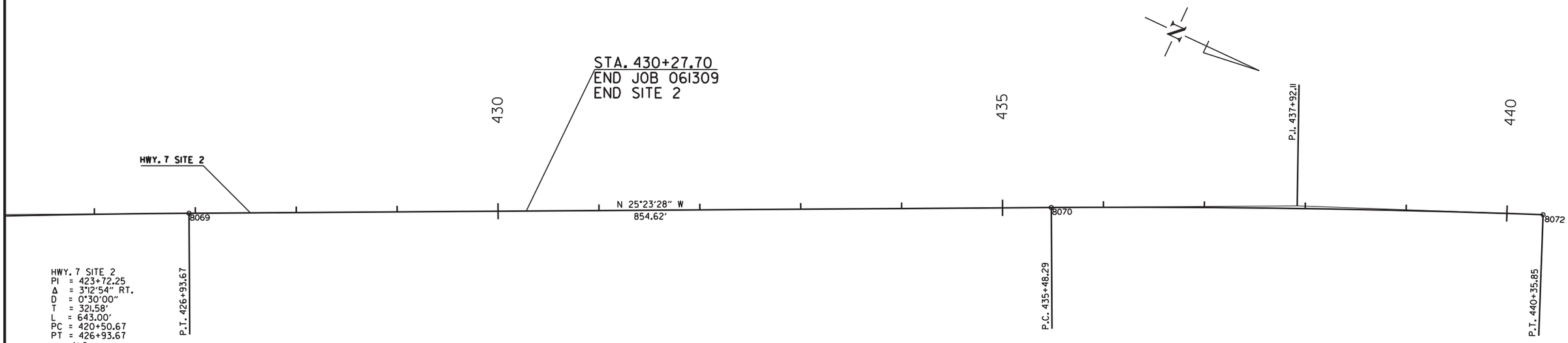

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SITE 2
SURVEY CONTROL DETAILS

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				6	ARK.			
				JOB NO.		061309	87	260

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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STA. 103+00 INSTALL
18" X 42' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT TURNOUT = 25 CU. YDS.

STA. 104+92 INSTALL
18" X 28' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 25 CU. YDS. COMP. EMB.
= 45 CU. YDS. UNCLASS. EXC.

STA. 106+49 IN PLACE
18" x 42' RC PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 30' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 80 CU. YDS.

STA. 110+39 CONSTRUCT
APPROACH ON LT.= 15 CU. YDS.

STA. 112+59 CONSTRUCT
APPROACH ON LT.= 5 CU. YDS.

STA. 114+07 CONSTRUCT
TURNOUT ON LT.= 45 CU. YDS.

STA. 107+96.15 CONSTRUCT
TYPE 3 WHELLCHAIR RAMP ON LT.
= 9.4 SQ. YDS.

STA. 114+56.10 CONSTRUCT
TYPE 3 WHELLCHAIR RAMP ON LT.
= 21.4 SQ. YDS.

STA. 113+25 - CONSTRUCT
D.I. ON LT. W/
18" X 252' PIPE OUTLET
CONNECT TO D.I. @ STA. 115+80 LT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 4.39'

STA. 113+55.54 CONSTRUCT
TYPE 3 WHELLCHAIR RAMP ON LT.
= 21.4 SQ. YDS.

STA. 100+00.00
BEGIN JOB 061309
BEGIN SITE 1
LOG MILE 4.07

270' LANE TRANSITION

100' TRANSITION

PROPOSED ROW

EXISTING ROW

CONST. LIMITS

N 54°34'59" W

PI = 106+89.71
Δ = 44°40'12"RT.
D = 7°45'00.0"
T = 303.74'
L = 576.38'
PC = 103+85.97
PT = 109+62.36
e = 0.038 '/'
Ls = 360'

STA. 108+00.00 CONSTRUCT
TYPE 3 WHELLCHAIR RAMP ON RT.
= 11.9 SQ. YDS.

STA. 108+16 - CONSTRUCT
D.I. ON RT. W/
24" X 12' PIPE INLET
TY C = 4' X 4'
TY MO = 4' I.D.
H = 5.39'
24" FES = 1EA.

STA. 109+10 - CONSTRUCT
D.I. ON RT. W/
18" X 89' PIPE OUTLET
CONNECT TO D.I. @ STA. 108+16 RT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 5.04'

STA. 108+15.67 - IN PLACE
24" x 36' R.C. PIPE CULVERT
WITH HDWLS. RT.
REMOVE HDWLS. RT. AND EXTEND R.C. PIPE
26' LT. & 10' RT. (CLASS III) (TYPE 3 BEDDING)
WITH FES LT. & RT.
CONNECT TO D.I. @ STA. 108+16 RT.
Q50=23 CFS D.A.=9.8 AC.
24" R.C. PIPE = 44 LIN. FT.
24" FES = 1EA.
CHANNEL CHANGE = 10 CU. YDS.

STA. 113+69.18 CONSTRUCT
TYPE 3 WHELLCHAIR RAMP ON RT.
= 19.0 SQ. YDS.

STA. 113+50 - CONSTRUCT
D.I. ON RT. W/
18" X 237' PIPE OUTLET
CONNECT TO D.I. @ STA. 115+90 RT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 4.31'

STA. 114+52.93 CONSTRUCT
TYPE 3 WHELLCHAIR RAMP ON RT.
= 19.0 SQ. YDS.

STA. 114+11 CONSTRUCT
TURNOUT ON RT.= 20 CU. YDS.

STA. 115+25 CONSTRUCT
APPROACH ON RT.= 10 CU. YDS.

STA. 102+85 INSTALL
18" x 32' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 25 CU. YDS. COMP. EMB.
= 5 CU. YDS. UNCLASS. EXC.

STA. 110+33 IN PLACE
15" x 40' RC PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 28' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 15 CU. YDS.

STA. 112+11 CONSTRUCT
APPROACH ON RT. = 5 CU. YDS.

STA. 113+02 CONSTRUCT
APPROACH ON RT. = 5 CU. YDS.

ARL IE MOORE RD.

SITE 1

lc38019 6/29/2020
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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.		061309	88	260

(2) PLAN AND PROFILE SHEETS

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

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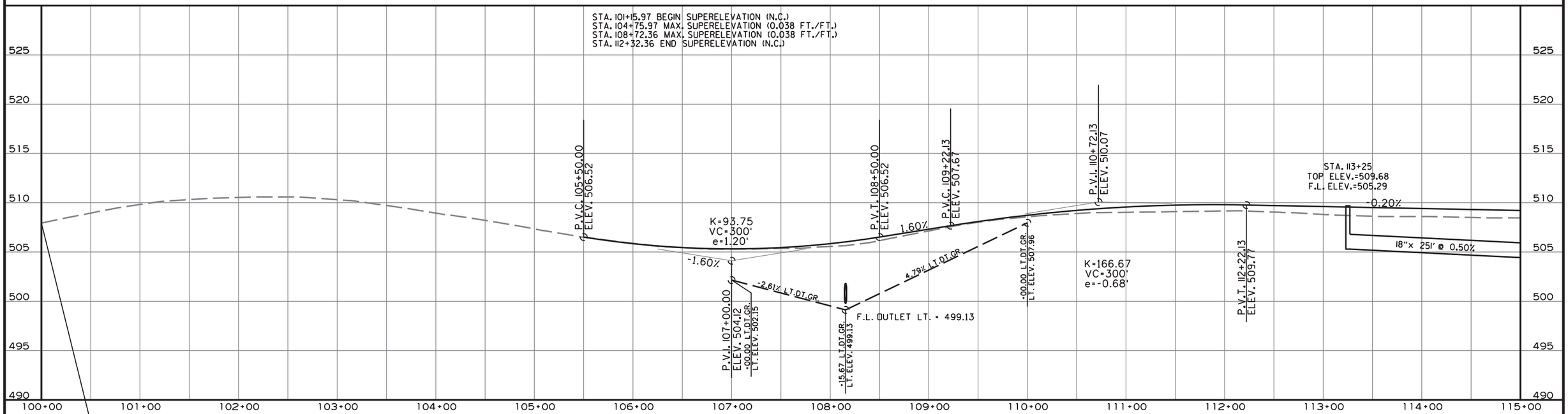
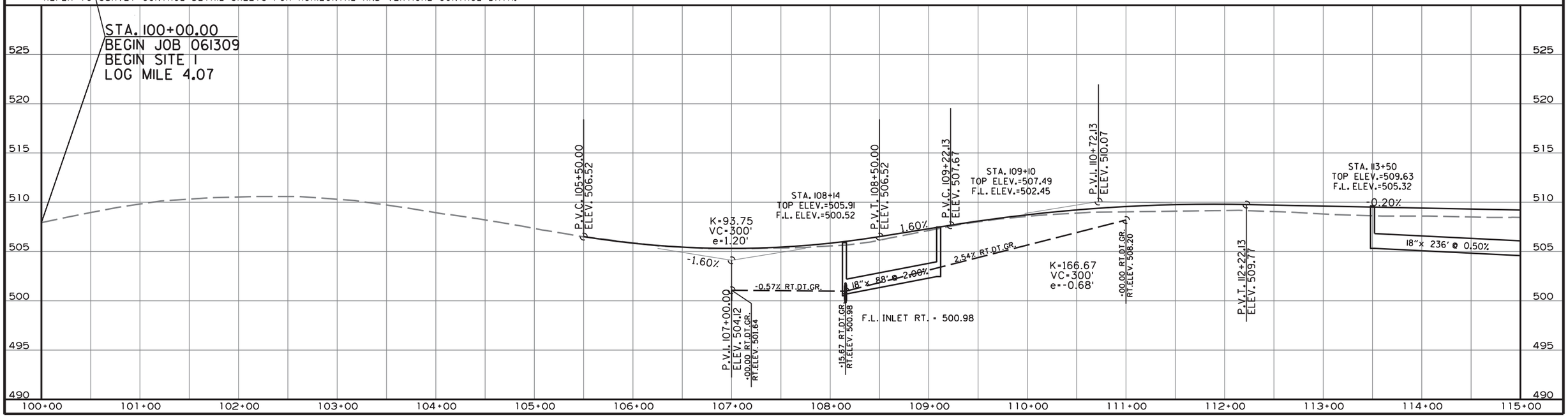
LT. SIDE



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

RT. SIDE



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lc38019
R061309.DGN

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				6	ARK.			
				JOB NO.		061309	89	260

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
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TRINITY D. SMITH

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STA. 115+49 CONSTRUCT
APPROACH ON LT. = 5 CU. YDS. UNCLASS. EXC.

STA. 116+13 CONSTRUCT
APPROACH ON LT. = 5 CU. YDS.

STA. 119+21 IN PLACE
18" x 20' RC PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 28' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 25 CU. YDS. COMP. EMB.
= 10 CU. YDS. UNCLASS. EXC.

STA. 123+00 INSTALL
18" x 30' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 30 CU. YDS. COMP. EMB.
= 430 CU. YDS. UNCLASS. EXC.

STA. 115+80 - CONSTRUCT
D.I. ON LT. W/
18" X 121' PIPE OUTLET
CONNECT TO BOX @ STA. 117+05
TY C = 4' X 4'
TY MO = 4' I.D.
H = 5.34'

STA. 118+50.00 CONSTRUCT
TYPE 3 WHELLCHAIR RAMP ON LT.
= 9.4 SQ. YDS.

270' LANE TRANSITION

100' TRANSITION

STA. 124+00.00
END SITE I

PROPOSED ROW

EXISTING ROW

CONST. LIMITS

RET/WALL

TANK STORAGE

GAS TANK

P.I. 119+27.52
P.C. 117+96.04
P.I. 120+58.16

STA. 118+50.00 CONSTRUCT
TYPE 3 WHELLCHAIR RAMP ON RT.
= 11.9 SQ. YDS.

PI = 119+27.52
Δ = 11°08'25"RT.
D = 4°15'00.0"
T = 131.48'
L = 262.13'
PC = 117+96.04
PT = 120+58.16
e = 0.034 '/'
Ls = 300'

STA. 117+05 - IN PLACE
3' x 2' x 42' R.C. BOX CULV'T.
RETAIN AND EXTEND 27' LT. & 3' RT.
WITH 3:1 WINGS LT. &
CONNECT TO D.I. @ STA. 117+05 RT.
FOR A COMPLETED LENGTH OF 73'
050 = 40 C.F.S.; D.A. = 17 AC.
CHANNEL CHANGE = 5 CU. YDS.

STA. 115+90 - CONSTRUCT
D.I. ON RT. W/
18" X 47' PIPE OUTLET
CONNECT TO D.I. @ STA. 116+40 RT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 5.18'

STA. 116+40 - CONSTRUCT
D.I. ON RT. W/
18" X 62' PIPE OUTLET
CONNECT TO D.I. @ STA. 117+05 RT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 5.83'

STA. 117+05 - CONSTRUCT
D.I. ON RT. W/
3' X 2' X 21' R.C. BOX CULV'T OUTLET
TY C = 4' X 4'
H = 7.54'
CHANNEL CHANGE = 5 CU. YDS.

STA. 120+71 IN PLACE
12" x 26' CP PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 28' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 20 CU. YDS.

STA. 122+09 INSTALL
18" x 28' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 25 CU. YDS. COMP. EMB.
= 10 CU. YDS. UNCLASS. EXC.

SITE 1

lc.38019 6/29/2020
R061309.DGN

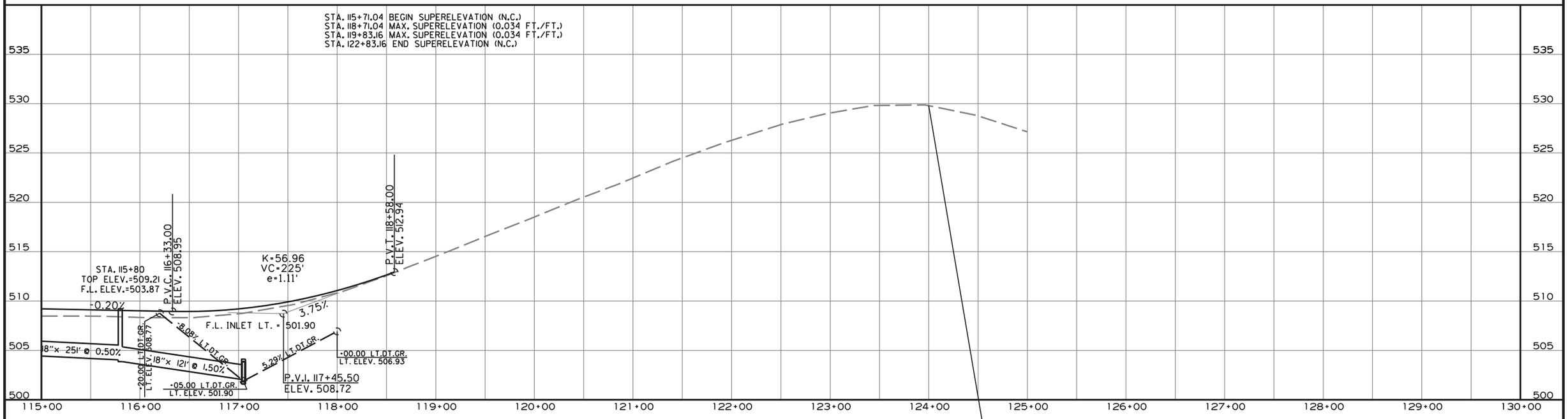
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Jun 29 2020 4:59 PM
DocuSign

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	90	260

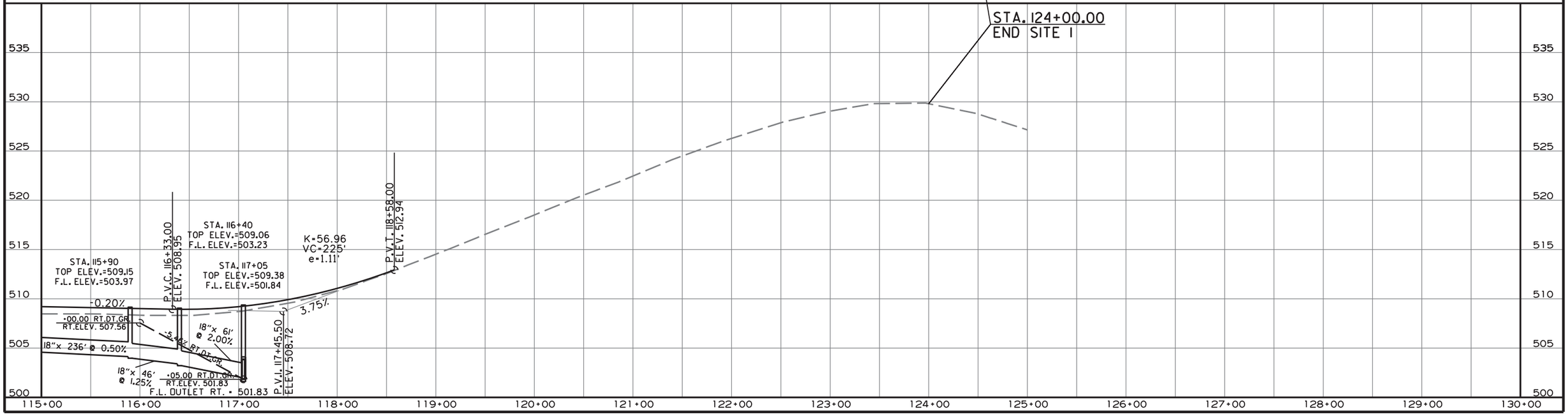
(2) PLAN AND PROFILE SHEETS

LT. SIDE



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

RT. SIDE



6/29/2020
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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.		061309	91	260

(2) PLAN AND PROFILE SHEETS

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

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STA. 248+36 IN PLACE
24" x 36' CP PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
24" x 44' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 160 CU. YDS.

STA. 249+29 IN PLACE
18" x 32' RC PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 32' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 55 CU. YDS.

STA. 251+55 IN PLACE
15" x 22' RC PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 42' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 80 CU. YDS.

STA. 252+24 INSTALL
24" x 40' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 70 CU. YDS.

STA. 255+35 IN PLACE
18" x 24' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
24" x 44' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 50 CU. YDS.

STA. 259+11 - IN PLACE
5' x 2' x 40' R.C. BOX CULV'T.
RETAIN AND EXTEND 24' LT. & 24' RT.
WITH 3:1 WINGS LT. & RT.
TO A COMPLETED LENGTH OF 88'
050 = 39 C.F.S.; D.A. = 11 AC.

100' TRANSITION
330' LANE TRANSITION
PROPOSED R/W
EXISTING ROW
CONST. LIMITS
N 55°19'49" E
N 70°37'31" E
PDB 245+00.00
P.C. 249+95.59
P.I. 251+87.96
Δ = 15°17'42"RT.
D = 3°59'57"
T = 192.37'
L = 382.45'
P.C. 249+95.59
P.T. 253+78.04
e = 0.062 '/'
Ls = 270'
P.T. 253+78.04
P.C. 256+79.39
P.I. 258+60.92
Δ = 21°31'03"RT.
D = 5°59'50"
T = 181.53'
L = 358.79'
P.C. 256+79.39
P.T. 260+38.18
e = 0.082 '/'
Ls = 330'
25' VEGETATION BUFFER
T.C.E.
P.I. 258+60.92
P.T. 260+38.18

STA. 251+78 IN PLACE
18" x 24' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 36' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 55 CU. YDS.

STA. 252+95 IN PLACE
18" x 24' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 36' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 55 CU. YDS.

STA. 253+85 INSTALL
18" x 34' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 45 CU. YDS.

STA. 255+20 IN PLACE
18" x 25' RC PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 32' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 35 CU. YDS.

STA. 256+12 IN PLACE
15" x 21' RC PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18"x 30' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 30 CU. YDS.

STA. 256+99 IN PLACE
18" x 22' RC PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 28' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 20 CU. YDS.

SITE 2

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

STA. 247+93.09 BEGIN SUPERELEVATION (N.C.)
STA. 250+63.09 MAX. SUPERELEVATION (0.062 FT./FT.)
STA. 252+58.71 MAX. SUPERELEVATION (0.062 FT./FT.)
STA. 254+41.61 END SUPERELEVATION (R.C.)

STA. 256+09.21 BEGIN SUPERELEVATION (R.C.)
STA. 258+20.62 MAX. SUPERELEVATION (0.073 FT./FT.)
STA. 258+58.78 MAX SUPERELEVATION (0.073 FT./FT.)
STA. 261+50.68 END SUPERELEVATION (N.C.)

STA. 248+00.00
BEGIN SITE 2
LOG MILE 14.38

-00.00 LT.DT.GR. LT. ELEV. 538.41
1.19% LT.DT.GR.
-00.00 LT.DT.GR. LT. ELEV. 539.60
-00.00 RT.DT.GR. RT.ELEV. 537.22
-0.49% RT.DT.GR.
-00.00 RT.DT.GR. RT.ELEV. 536.25
-0.48% LT.DT.GR.
-0.02% RT.DT.GR.
-00.00 RT.DT.GR. RT.ELEV. 536.21
-00.00 RT.DT.GR. RT.ELEV. 535.20
-2.83% LT.DT.GR.
-3.82% RT.DT.GR.
-00.00 LT.DT.GR. LT. ELEV. 535.75
-05.29 LT.DT.GR. LT. ELEV. 532.77
-17.03 LT.DT.GR. LT. ELEV. 532.77
-2.05% LT.DT.GR.
3.52% RT.DT.GR.
-00.00 LT.DT.GR. LT. ELEV. 534.47
-04.97 RT.DT.GR. RT.ELEV. 527.36
-18.04 RT.DT.GR. RT.ELEV. 527.36

F.L. INLET LT. = 532.77
F.L. OUTLET RT. = 527.36

560 555 550 545 540 535 530 525 520 515
245+00 246+00 247+00 248+00 249+00 250+00 251+00 252+00 253+00 254+00 255+00 256+00 257+00 258+00 259+00 260+00

lc38019 6/29/2020
R061309.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.		061309	92	260

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Jun 29 2020 4:59 PM
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STA. 263+26 IN PLACE
18" x 25' RC PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 46' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 145 CU. YDS. COMP. EMB.
= 120 CU. YDS. UNCLASS. EXC.

P.I. 264+83.73
Δ = 27°02'31"LT.
D = 6°14'49"
T = 220.55'
L = 432.88'
P.C. 262+63.18
P.T. 266+96.06
e = 0.086 '/'
Ls = 330'

STA. 269+72 - IN PLACE
24" x 42' R.C. PIPE CULVERT
WITH HDWLS. RT.
REMOVE HDWLS. RT. AND
EXTEND R.C. PIPE 20' LT. & 22' RT.
FOR A COMPLETED LENGTH OF 84'
(CLASS III) (TYPE 3 BEDDING)
WITH FES LT. & RT.
Q50=9.2 CFS D.A.=2.6 ACRES
24" R.C. PIPE= 50 LIN. FT.
24" FES= 2 EA.
CHANNEL CHANGE = 16 CU. YDS.

STA. 273+58 - CONSTRUCT
30" x 88' R.C. PIPE CULVERT
(CLASS III) (TYPE 3 BEDDING)
WITH FES LT. & RT.
Q50=94 C.F.S. D.A.=32 ACRES
30" R.C. PIPE= 88 LIN. FT.
30" FES= 2 EA.

STA. 273+68 - IN PLACE
5' x 2' x 40' R.C. BOX CULV'T.
RETAIN AND EXTEND 24' LT. & 22' RT.
WITH 3:1 WINGS LT. & RT.
TO A COMPLETED LENGTH OF 86'
Q50 = 94 C.F.S.; D.A. = 32 AC.

STA. 261+09 CONSTRUCT
APPROACH ON RT. = 35 CU. YDS.

STA. 263+83 - IN PLACE
DBL. 6' x 3' x 36' R.C. BOX CULV'T.
RETAIN AND EXTEND 27' LT. & 24' RT.
WITH 3:1 WINGS LT. & RT.
TO A COMPLETED LENGTH OF 87'
Q50 = 217 C.F.S.; D.A. = 74 AC.

STA. 269+95 CONSTRUCT
APPROACH ON RT. = 90 CU. YDS.

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

SITE 2

STA. 261+50.68 BEGIN SUPERELEVATION (N.C.)
STA. 264+79.62 MAX. SUPERELEVATION (0.086 FT./FT.)
STA. 266+14.62 MAX. SUPERELEVATION (0.086 FT./FT.)
STA. 269+43.56 END SUPERELEVATION (N.C.)

P.V.I. 260+00.00
ELEV. 536.18
P.V.C. 260+25.00
ELEV. 535.96
-3.52% RT.DT.GR.
-50.00 RT.DT.GR.
RT.ELEV. 532.01
K=67.75
VC=250'
e=-1.15'
P.V.I. 261+50.00
ELEV. 534.84
-4.58% RT.DT.GR.
P.V.C. 262+75.00
ELEV. 529.11
-00.00 LT.DT.GR.
LT. ELEV. 524.29
-00.00 RT.DT.GR.
RT.ELEV. 520.09
-9.24% LT.DT.GR.
-2.44% RT.DT.GR.
-69.18 LT.DT.GR.
LT. ELEV. 518.59
-69.26 RT.DT.GR.
RT.ELEV. 518.40
-91.17 RT.DT.GR.
RT.ELEV. 518.40
-94.24 LT.DT.GR.
LT. ELEV. 518.59
-2.21% LT.DT.GR.
P.V.C. 263+25.00
ELEV. 526.83
K=88.38
VC=350'
e=1.73'
P.V.I. 265+00.00
ELEV. 518.81
-00.00 LT.DT.GR.
LT. ELEV. 516.25
-0.95% RT.DT.GR.
-1.79% LT.DT.GR.
-00.00 LT.DT.GR.
LT. ELEV. 514.46
P.V.T. 266+75.00
ELEV. 517.73
P.V.I. 267+00.00
ELEV. 517.57
-00.00 RT.DT.GR.
RT.ELEV. 515.48
F.L. INLET LT. = 518.59
F.L. OUTLET RT. = 518.40
-00.00 RT.DT.GR.
RT.ELEV. 513.56
-00.00 LT.DT.GR.
LT. ELEV. 512.92
-1.36% LT.DT.GR.
-4.98% RT.DT.GR.
-72.00 RT.DT.GR.
RT.ELEV. 509.97
-72.00 LT.DT.GR.
LT. ELEV. 511.94
-0.57% LT.DT.GR.
-0.77% RT.DT.GR.
F.L. INLET LT. = 511.94
F.L. OUTLET RT. = 509.97
P.V.C. 272+25.00
ELEV. 513.95
-00.00 LT.DT.GR.
LT. ELEV. 510.65
-00.00 LT.DT.GR.
LT. ELEV. 509.35
-2.55% LT.DT.GR.
-61.53 LT.DT.GR.
LT. ELEV. 507.78
-73.83 RT.DT.GR.
RT.ELEV. 506.97
-61.54 RT.DT.GR.
RT.ELEV. 506.97
F.L. INLET LT. = 507.78
F.L. OUTLET RT. = 506.97
K=180.18
VC=800'
e=4.44'
-1.44%
-0.90% RT.DT.GR.

545 540 535 530 525 520 515 510 505 500

260+00 261+00 262+00 263+00 264+00 265+00 266+00 267+00 268+00 269+00 270+00 271+00 272+00 273+00 274+00 275+00

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061309	93	260

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Jun 29 2020 4:59 PM

STA. 276+03 IN PLACE
24" x 32' CP PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
30" x 38' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 350 CU. YDS.

STA. 276+78 - IN PLACE
3' x 3' x 42' R.C. BOX CULV'T.
RETAIN AND EXTEND 26' LT. &
37' RT. ON 15° RT. FWD. SKEW
WITH 3:1 WINGS LT. & RT.
TO A COMPLETED LENGTH OF 105'
050 = 20 C.F.S.; D.A. = 5.6 AC.

STA. 279+38 - IN PLACE
12" X 24' RC PIPE CULVERT
RT. SIDE DRAIN
REMOVE

STA. 281+36 - IN PLACE
3' x 2' x 36' R.C. BOX CULV'T.
RETAIN AND EXTEND 27' LT. & 28' RT.
WITH 3:1 WINGS LT. & RT.
TO A COMPLETED LENGTH OF 91'
050 = 38 C.F.S.; D.A. = 10.8 AC.

PI = 279+68.95
Δ = 27°32'13" LT.
D = 6°44'46"
T = 208.12'
L = 408.19'
PC = 277+60.83
PT = 281+69.02
e = 0.090 '/'
Ls = 330'

STA. 279+60 CONSTRUCT
APPROACH ON RT. = 725 CU. YDS.

STA. 279+88 IN PLACE
12" x 26' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE

STA. 282+23 IN PLACE
12" x 44' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 38' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 55 CU. YDS. COMP. EMB.
= 120 CU. YDS. UNCLASS. EXC.

STA. 283+66 INSTALL
18" x 28' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 20 CU. YDS.

STA. 285+86 - IN PLACE
6' x 6' x 70' R.C. BOX CULV'T.
RETAIN AND EXTEND 25' LT. & 31' RT.
WITH 3:1 WINGS LT. & RT.
TO A COMPLETED LENGTH OF 126'
050 = 155 C.F.S.; D.A. = 53 AC.

STA. 285+06 CONSTRUCT
APPROACH ON RT. = 30 CU. YDS.

STA. 289+00 INSTALL
18" x 64' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 375 CU. YDS.

STA. 288+63 IN PLACE
18" x 30' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 30' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 30 CU. YDS. COMP. EMB.
= 10 CU. YDS. UNCLASS. EXC.

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

SITE 2

STA. 275+13.33 BEGIN SUPERELEVATION (N.C.)
STA. 278+43.33 MAX. SUPERELEVATION (0.090 FT./FT.)
STA. 280+86.52 MAX. SUPERELEVATION (0.090 FT./FT.)
STA. 284+16.52 END SUPERELEVATION (N.C.)

STA. 287+13.53 BEGIN SUPERELEVATION
STA. 290+43.53 MAX. SUPERELEVATION (0.082 FT./FT.)
STA. 292+03.72 MAX. SUPERELEVATION (0.082 FT./FT.)
STA. 295+33.72 END SUPERELEVATION

K=180.18
VC=800'
e=4.43'

P.V.I. 276+26.00
ELEV. 508.43

P.V.T. 280+25.00
ELEV. 520.21

P.V.C. 282+50.00
ELEV. 526.96

P.V.I. 284+00.00
ELEV. 531.45

P.V.I. 285+75.00
ELEV. 532.75

K=132.74
VC=300'
e=-0.85'

P.V.T. 285+50.00
ELEV. 532.56

F.L. INLET LT. = 505.46
F.L. OUTLET RT. = 501.83

F.L. INLET LT. = 519.10
F.L. OUTLET RT. = 517.77

F.L. INLET LT. = 517.71
F.L. OUTLET RT. = 511.83

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				6	ARK.			
				JOB NO.		061309	94	260

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Jun 29 2020 5:00 PM

STA. 290+50 INSTALL
18" x 68' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 490 CU. YDS.

STA. 293+00 INSTALL
18" x 52' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 155 CU. YDS. COMP. EMB.
= 5 CU. YDS. UNCLASS. EXC.

STA. 293+65 LT.
CONSTRUCT APPROACH = 95 CU. YDS. COMP. EMB.
= 5 CU. YDS. UNCLASS. EXC.

STA. 291+05 - IN PLACE
4' x 2' x 44' R.C. BOX CULV'T.
RETAIN AND EXTEND 28' LT. & 24' RT.
WITH 3:1 WINGS LT. & RT.
TO A COMPLETED LENGTH OF 96'
050 = 25 C.F.S.; D.A. = 7 AC.
CHANNEL CHANGE = 5 CU. YDS.

STA. 294+99 - IN PLACE
24"x 36' R.C. PIPE CULV'T.
WITH HDWLS. LT. & RT.
REMOVE HDWLS LT. & RT. AND EXTEND R.C. PIPE
24' LT. AND 20' RT.
FOR A COMPLETED LENGTH OF 80'
(CLASS III) (TYPE 3) BEDDING WITH
FES LT. & RT.
050=21 CFS D.A.=5.8
24" R.C. PIPE= 52 LIN. FT.
24" FES= 2 EA.

STA. 297+34 INSTALL
18" x 36' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 55 CU. YDS. COMP. EMB.
= 20 CU. YDS. UNCLASS. EXC.

STA. 299+11 INSTALL
18" x 32' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 40 CU. YDS.

STA. 300+32 - IN PLACE
3' x 2' x 39' R.C. BOX CULV'T.
RETAIN AND EXTEND 24' LT. & 23' RT.
WITH 3:1 WINGS LT. & RT.
TO A COMPLETED LENGTH OF 86'
050 = 23 C.F.S.; D.A. = 6.4 AC.

STA. 303+06 - IN PLACE
4' x 2' x 42' R.C. BOX CULV'T.
RETAIN AND EXTEND 23' LT. & 25' RT.
WITH 3:1 WINGS LT. & RT.
TO A COMPLETED LENGTH OF 90'
050 = 19 C.F.S.; D.A. = 5.4 AC.

PROPOSED R/W
EXISTING ROW
CONST. LIMITS
4 DOG WIRE FOOTING
N 56°15'16" E
N 56°19'33" E
P.I. 291+25.08
P.C. 289+61.02
P.T. 292+86.22
P.I. 298+78.11
Δ = 0°04' 17.6" RT.
P.I. 304+66.25
P.C. 303+11.68

PI = 291+25.08
Δ = 18°41'26"RT.
D = 5°44'51"
T = 164.06'
L = 325.20'
PC = 289+61.02
PT = 292+86.22
e = 0.082 '/'
Ls = 330'

PI = 304+66.25
Δ = 24°20'19.0"RT.
D = 7°59'37"
T = 154.57'
L = 304.48'
PC = 303+11.68
PT = 306+16.16
e = 0.094 '/'
Ls = 330'

STA. 297+30 INSTALL
18" x 32' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 35 CU. YDS.

STA. 298+26 INSTALL
18" x 28' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 15 CU. YDS.

STA. 301+54 INSTALL
18" x 28' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 35 CU. YDS.

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

SITE 2

STA. 287+13.52 BEGIN SUPERELEVATION
STA. 290+43.52 MAX. SUPERELEVATION (0.082 FT./FT.)
STA. 292+03.72 MAX. SUPERELEVATION (0.082 FT./FT.)
STA. 295+33.72 END SUPERELEVATION

STA. 300+64.18 BEGIN SUPERELEVATION (N.C.)
STA. 303+50.40 MAX. SUPERELEVATION (0.082 FT./FT.)
STA. 304+63.92 MAX. SUPERELEVATION (0.082 FT./FT.)
STA. 307+50.14 END SUPERELEVATION (N.C.)

F.L. INLET LT. = 520.31
F.L. OUTLET RT. = 517.52

F.L. INLET LT. = 523.30
F.L. OUTLET RT. = 520.73

F.L. INLET LT. = 520.59
F.L. OUTLET RT. = 518.43

F.L. INLET LT. = 523.15
F.L. OUTLET RT. = 517.81

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R061309.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.		061309	95	260

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Jun 29 2020 5:00 PM
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STA. 306+24 INSTALL
18" x 51' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT TURNOUT = 30 CU. YDS.

STA. 307+86 INSTALL
18" x 56' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 70 CU. YDS.

STA. 309+00 INSTALL
24" x 32' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 45 CU. YDS.

PI = 310+55.04
Δ = 34°44'18"LT.
D = 10°29'07"
T = 170.92'
L = 331.31'
PC = 308+84.12
PT = 312+15.43
e = 0.100 '/'
Ls = 330'

STA. 313+59 IN PLACE
24" X 62' RC PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
24" x 82' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT TURNOUT = 595 CU. YDS.

DENOTES RESTRAINING CONDITION

PI = 315+83.12
Δ = 8°15'15"LT.
D = 2°00'00"
T = 206.71'
L = 412.71'
PC = 313+76.41
PT = 317+89.12
e = 0.034 '/'
Ls = 270'

STA. 318+78 CONSTRUCT
APPROACH ON RT. = 45 CU. YDS.

PI = 322+59.51
Δ = 7°08'59"RT.
D = 1°00'00.0"
T = 357.95'
L = 714.97'
PC = 319+01.56
PT = 326+16.53
e = 0.020 '/'
Ls = 270'

STA. 318+47 CONSTRUCT
APPROACH ON RT. = 25 CU. YDS.

STA. 312+55 - CONSTRUCT
DBL. 10' x 10' x 143' R.C. BOX CULV'T.
WITH 3:1 WINGS LT. & RT.
Q50 = 1450 C.F.S. ; D.A. = 1.4 SQ.MI.
SPAN = 22' - 4"

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

SITE 2

STA. 307+50.14 BEGIN SUPERELEVATION (N.C.)
STA. 309+96.28 MAX. SUPERELEVATION (0.075 FT./FT.)
STA. 310+49.77 MAX. SUPERELEVATION (0.075 FT./FT.)
STA. 312+29.91 END SUPERELEVATION (R.C.)

STA. 314+57.67 BEGIN SUPERELEVATION (R.C)
STA. 315+58.49 MAX. SUPERELEVATION (0.033 FT./FT.)
STA. 315+82.77 MAX. SUPERELEVATION (0.033 FT./FT.)
STA. 318+45.35 END SUPERELEVATION (N.C.)

STA. 318+45.35 BEGIN SUPERELEVATION (N.C.)
STA. 321+15.35 MAX. SUPERELEVATION (R.C.)
STA. 323+68.49 END SUPERELEVATION (R.C.)

STA. 312+36 TO STA. 312+70 IN PLACE
24'-0" x 32'-0" CLEAR ROADWAY BRIDGE NO. 01345
SINGLE SPAN CONCRETE ARCH
REMOVE AS EXISTING BRIDGE STRUCTURE (SITE NO. 1) = 1.00 LUMP SUM

P.V.C. 307+60.00 ELEV. 527.63
P.V.I. 308+35.00 ELEV. 527.49
P.V.C. 309+67.99 ELEV. 524.09
P.V.T. 309+10.00 ELEV. 525.57
P.V.I. 312+22.99 ELEV. 517.56
P.V.T. 314+77.99 ELEV. 521.84
P.V.C. 317+25.00 ELEV. 525.99
P.V.I. 318+75.00 ELEV. 528.51

-0.18% LT.DT.GR.
-0.19%
K=63.29
VC=150'
e=-0.44'
-2.56%
K=120.28
VC=510'
e=2.70'
1.68%
K=83.80
VC=300'
e=-1.34'
-12.05% RT.DT.GR.
5.84% RT.DT.GR.

-00.00 LT.DT.GR. LT. ELEV. 524.95
-00.00 RT.DT.GR. RT.ELEV. 528.23
+41.57 RT.DT.GR. RT.ELEV. 494.11
+90.11 RT.DT.GR. RT.ELEV. 494.11
-00.00 RT.DT.GR. RT.ELEV. 506.36

F.L. INLET LT. = 497.21
F.L. OUTLET RT. = 494.11

535 530 525 520 515 510 505 500 495 490

305+00 306+00 307+00 308+00 309+00 310+00 311+00 312+00 313+00 314+00 315+00 316+00 317+00 318+00 319+00 320+00

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(2) PLAN AND PROFILE SHEETS

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

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STA. 328+88 IN PLACE
24" x 43' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
24" x 56' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 335 CU. YDS.

STA. 330+97 IN PLACE
18" x 32' RC PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 58' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 350 CU. YDS.

STA. 333+91 CONSTRUCT
APPROACH ON LT. = 55 CU. YDS.

PI = 322+59.51
Δ = 7°08'59"RT.
D = 1°00'00"
T = 357.95'
L = 714.97'
PC = 319+01.56
PT = 326+16.53
e = 0.020 '/'
Ls = 270'

STA. 324+03 INSTALL
24" x 32' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 35 CU. YDS.

PI = 330+48.75
Δ = 50°43'56"RT.
D = 6°59'44"
T = 388.31'
L = 725.21'
PC = 326+60.44
PT = 333+85.65
e = 0.090 '/'
Ls = 330'

STA. 330+13 - IN PLACE
12' x 5' x 45' R.C. BOX CULV'T.
RETAIN AND EXTEND 19' LT. & 24' RT.
WITH 3:1 WINGS LT. & RT.
TO A COMPLETED LENGTH OF 87'
050 = 534 C.F.S.; D.A. = 228 AC.

STA. 334+29 CONSTRUCT
APPROACH ON RT. = 15 CU. YDS.

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

SITE 2

STA. 318+45.35 BEGIN SUPERELEVATION (N.C.)
STA. 321+15.35 MAX. SUPERELEVATION (R.C.)
STA. 323+68.49 END SUPERELEVATION (R.C.)

STA. 327+11.82 BEGIN SUPERELEVATION (R.C.)
STA. 329+68.49 MAX. SUPERELEVATION (0.090 FT./FT.)
STA. 331+45.31 MAX. SUPERELEVATION (0.090 FT./FT.)
STA. 334+75.31 END SUPERELEVATION (N.C.)

STA. 334+75.31 BEGIN SUPERELEVATION (N.C.)
STA. 337+45.31 MAX. SUPERELEVATION (0.056 FT./FT.)
STA. 347+46.78 MAX. SUPERELEVATION (0.056 FT./FT.)
STA. 350+16.78 END SUPERELEVATION (N.C.)

P.V.T. 320+25.00
ELEV. 525.66
-1.90%
P.V.C. 323+25.00
ELEV. 519.96
-2.38% LT.DT.GR.
P.V.I. 324+75.00
ELEV. 517.11
K=176.47
VC=300'
e=-0.64'
P.V.T. 326+25.00
ELEV. 511.71
-3.60%
P.V.C. 327+25.00
ELEV. 508.11
K=87.57
VC=500'
e=3.57'
P.V.T. 332+25.00
ELEV. 504.38
2.11%
4.69% LT.DT.GR.
3.89% RT.DT.GR.
-4.44% LT.DT.GR.
-4.58% RT.DT.GR.
P.V.I. 329+75.00
ELEV. 499.11

F.L. INLET LT. = 495.61
F.L. OUTLET RT. = 491.58

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(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
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STA. 336+00 INSTALL
18" x 28' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 20 CU. YDS.

STA. 339+80 IN PLACE
18" x 38' RC PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 30' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 25 CU. YDS.

STA. 340+43 IN PLACE
18" x 36' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
24" x 50' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 80 CU. YDS.

STA. 343+01 IN PLACE
24" x 28' CP PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
24" x 34' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 60 CU. YDS.

STA. 347+37 IN PLACE
24" x 56' RC PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
24" x 46' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 55 CU. YDS.

STA. 348+48 IN PLACE
18" x 51' RC PIPE CULVERT
LT. SIDE DRAIN
REMOVE
CONSTRUCT APPROACH = 15 CU. YDS.

PI = 342+21.81
Δ = 43°43'08"LT.
D = 3°29'58"
T = 656.84'
L = 1249.31'
PC = 335+64.97
PT = 348+14.28
e = 0.056 '/'
Ls = 270'

STA. 348+08 - IN PLACE
24"x 36' R.C. PIPE CULVERT
WITH HDWLS. LT. & RT.
REMOVE AND CONSTRUCT 36" R.C. PIPE
FOR A COMPLETED LENGTH OF 82'
(CLASS III) (TYPE 3 BEDDING) WITH
FES LT. & RT.
Q50=68 CFS D.A.=24 ACRES
36" R.C. PIPE= 82 LIN. FT.
36" FES= 2 EA.

S 84°26'46" E
N 51°50'06" E
P.C. 335+64.97
P.I. 342+21.81
P.T. 348+14.28
PROPOSED R/W
CONST. LIMITS
EXISTING ROW
MT. RIANTE RD.
HISTORIC ROAD
T.C.E.
25' VEGETATION BUFFER
DENOTES RESTRAINING CONDITION

STA. 337+78 IN PLACE
18" x 25' RC PIPE CULVERT
RT. SIDE DRAIN
REMOVE
CONSTRUCT APPROACH = 425 CU. YDS.

STA. 340+17 IN PLACE
18" x 28' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 34' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 75 CU. YDS.

STA. 342+08 IN PLACE
18" x 28' CP PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
24" x 34' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 75 CU. YDS.

STA. 344+69 IN PLACE
18" x 45' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
24" x 38' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 80 CU. YDS.

STA. 346+48 IN PLACE
18" x 36' RC PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
36" x 40' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 100 CU. YDS.

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

SITE 2

STA. 334+75.31 BEGIN SUPERELEVATION (N.C.)
STA. 337+45.31 MAX. SUPERELEVATION (0.056 FT./FT.)
STA. 347+46.78 MAX. SUPERELEVATION (0.056 FT./FT.)
STA. 350+16.78 END SUPERELEVATION (N.C.)

UNNAMED TRIBUTARY OF FOURCHE A LOUPE CREEK AT STA. 348+30 TO STA. 352+75 IS CLASSIFIED AS EPHEMERAL. THE TOP OF CHANNEL ELEVATION IS 472.0 FT. MSL. REFER TO SECTION 110.05(c) TEMPORARY FILL OF THE 2014 STANDARD SPECIFICATIONS.

-00.00 RT.DT.GR. RT.ELEV. 490.52
-2.63% RT.DT.GR.
-00.00 RT.DT.GR. RT.ELEV. 485.25
-1.52% RT.DT.GR.
F.L. INLET LT. = 473.98
F.L. OUTLET RT. = 471.89
-00.00 LT.DT.GR. LT.ELEV. 475.29
-00.00 RT.DT.GR. RT.ELEV. 476.12
+1.21% LT.DT.GR.
-3.92% RT.DT.GR.
-07.97 RT.DT.GR. RT.ELEV. 471.89
-07.97 LT.DT.GR. LT.ELEV. 473.98

510 505 500 495 490 485 480 475 470 465

335+00 336+00 337+00 338+00 339+00 340+00 341+00 342+00 343+00 344+00 345+00 346+00 347+00 348+00 349+00 350+00

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				6	ARK.			
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(2) PLAN AND PROFILE SHEETS

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

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STA. 353+44 - IN PLACE
4' x 2' x 34' R.C. BOX CULV'T.
RETAIN AND EXTEND 24' LT. & 24' RT.
WITH 3:1 WINGS LT. & RT.
TO A COMPLETED LENGTH OF 82'
050 = 173 C.F.S.; D.A. = 44 AC.

STA. 357+65 IN PLACE
18" x 18' RC PIPE CULVERT
REMOVE AND INSTALL
DBL. 30" x 30' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 40 CU. YDS.

STA. 359+37 IN PLACE
18" x 38' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
DBL. 30" x 30' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 30 CU. YDS.

STA. 361+20 IN PLACE
24" x 24' RC PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
DBL. 30" x 32' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 35 CU. YDS.

25' VEGETATION BUFFER

25' VEGETATION BUFFER

CONST. LIMITS

PROPOSED R/W

EXISTING ROW

N 51°50'06" E

N 52°00'41" E

P.I. 355+80.77
Δ = 00°10'35" RT

STA. 354+27 IN PLACE
24" x 25' RC PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
DBL. 24" x 32' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 45 CU. YDS.

STA. 357+89 INSTALL
18" x 40' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 40 CU. YDS.

STA. 359+27 IN PLACE
18" x 24' RC PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
24" x 30' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 25 CU. YDS.

STA. 360+54 IN PLACE
18" x 46' RC PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 28' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 20 CU. YDS.

STA. 364+36 IN PLACE
24" x 46' RC PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
24" x 28' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 25 CU. YDS.

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

SITE 2

-00.00 RT.DT.GR.
RT.ELEV. 468.99

-2.40% RT.DT.GR.

+44
-48.86 LT.DT.GR.
LT.ELEV. 466.54

-0.43%

-38.60 RT.DT.GR.
RT.ELEV. 465.66

-49.77 RT.DT.GR.
RT.ELEV. 465.66

-00.00 LT.DT.GR.
LT. ELEV. 466.32

-0.57% RT.DT.GR.

-00.00 RT.DT.GR.
RT.ELEV. 464.80

F.L. INLET LT. = 466.54
F.L. OUTLET RT. = 465.66

UNNAMED TRIBUTARY OF FOURCHE A LOUPE CREEK AT STA. 352+55 TO STA. 354+75 IS CLASSIFIED AS EPHEMERAL. THE TOP OF CHANNEL ELEVATION IS 476.0 FT. MSL. REFER TO SECTION 110.05(c) TEMPORARY FILL OF THE 2014 STANDARD SPECIFICATIONS.

485 480 475 470 465 460 455 450 445 440

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

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(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Jun 29 2020 5:01 PM

STA. 368+69 - IN PLACE
24"x 38' R.C. PIPE CULVERT
WITH HDWLS. LT. & RT.
REMOVE HDWLS. LT. & RT. AND EXTEND R.C. PIPE
22' LT. AND 22' RT.
FOR A COMPLETED LENGTH OF 82'
(CLASS III) (TYPE 3 BEDDING) WITH
FES LT. & RT.
050=21 CFS D.A.=9 ACRES
24" R.C. PIPE= 52 LIN. FT.
24" FES= 2 EA.

STA. 374+21 IN PLACE
18" x 40' CP PIPE CULVERT
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND CONSTRUCT
APPROACH ON LT. = 170 CU. YDS.

STA. 377+93 INSTALL
18" x 34' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 55 CU. YDS.

STA. 379+91 INSTALL
24" x 34' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 35 CU. YDS. COMP. EMB.
= 45 CU. YDS. UNCLASS. EXC.

365 370 375 380

PROPOSED R/W
EXISTING ROW
CONST. LIMITS
P.I. 371+88.40
N 52°00'41" E
N 59°18'47" E
P.C. 369+44.68
P.T. 374+31.46
T.C.E.
IZORA HILL LN.
DOME HOUSE RD.

PI = 371+88.40
Δ = 7°18'06"RT.
D = 1°30'00"
T = 243.72'
L = 486.78'
PC = 369+44.68
PT = 374+31.46
e = 0.026 '/'
Ls = 270'

STA. 370+94 IN PLACE
18" x 25' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
24" x 32' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 40 CU. YDS. COMP. EMB.
= 10 CU. YDS. UNCLASS. EXC.

STA. 373+50 INSTALL
18" x 51' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT TURNOUT = 60 CU. YDS. COMP. EMB.
= 120 CU. YDS. UNCLASS. EXC.

STA. 375+83 IN PLACE
18" x 36' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 48' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 100 CU. YDS. COMP. EMB.
= 30 CU. YDS. UNCLASS. EXC.

STA. 377+53 INSTALL
18" x 32' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 40 CU. YDS.

STA. 378+94 INSTALL
24" x 34' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT TURNOUT = 35 CU. YDS.

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

SITE 2

STA. 367+42.18 BEGIN SUPERELEVATION (N.C.)
STA. 370+12.18 MAX. SUPERELEVATION (0.026 FT./FT.)
STA. 373+63.96 MAX. SUPERELEVATION (0.026 FT./FT.)
STA. 376+33.96 END SUPERELEVATION (N.C.)

STA. 372+50 IN PLACE
18" x 24' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 36' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 75 CU. YDS. COMP. EMB.
= 210 CU. YDS. UNCLASS. EXC.

0.75% RT.DT.GR.
1.00% LT.DT.GR.
3.13% RT.DT.GR.
0.28% LT.DT.GR.
2.00% LT.DT.GR.
+69
-00.00 RT.DT.GR. RT.ELEV. 447.77
-00.00 LT.DT.GR. LT.ELEV. 446.78
-67.86 LT.DT.GR. LT.ELEV. 446.10
-67.86 RT.DT.GR. RT.ELEV. 447.45
-00.00 LT.DT.GR. LT.ELEV. 447.39
-00.00 RT.DT.GR. RT.ELEV. 451.40
-00.00 LT.DT.GR. LT.ELEV. 463.44
-00.00 LT.DT.GR. LT.ELEV. 464.00

F.L. INLET RT. = 447.26
F.L. OUTLET LT. = 446.10

480 475 470 465 460 455 450 445 440 435

365+00 366+00 367+00 368+00 369+00 370+00 371+00 372+00 373+00 374+00 375+00 376+00 377+00 378+00 379+00 380+00

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(2) PLAN AND PROFILE SHEETS

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

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STA. 384+51 LT.
CONSTRUCT APPROACH = 5 CU. YDS.

STA. 389+57 IN PLACE
12" x 21' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 5 CU. YDS.

STA. 393+75 IN PLACE
24" x 30' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
30" x 34' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 45 CU. YDS.

STA. 381+10.00 CONSTRUCT
TYPE 3 WHELLCHAIR RAMP ON LT.
= 9.4 SQ. YDS.

STA. 382+81 - CONSTRUCT
D.I. ON LT. W/8' EXTENSION
& 24" X 18' STUB INLET W/FES LT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 9' 11"
24" R.C. PIPE = 18 LIN. FT.
24" FES = 1 EACH

STA. 385+50 - CONSTRUCT
D.I. ON LT. W/8' EXTENSION
& 18" X 146' PIPE OUTLET
CONNECT TO D.I. @ STA. 387+00 LT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 4' 0"

STA. 387+00 - CONSTRUCT
D.I. ON LT. W/4' EXTENSION
& 18" X 196' PIPE OUTLET
CONNECT TO D.I. @ STA. 389+00 LT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 4' 7"

STA. 389+00 - CONSTRUCT
D.I. ON LT. W/8' EXTENSION
& 18" X 244' PIPE OUTLET
CONNECT TO D.I. @ STA. 391+50 LT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 4' 4"

PI = 391+07.57
Δ = 9°44'22" LT.
D = 2°00'00"
T = 244.00'
L = 486.97'
PC = 388+63.50
PT = 393+50.47
e = 0.034 '/'
Ls = 270'

STA. 391+50 - CONSTRUCT
D.I. ON LT. W/4' EXTENSION
& 18" X 46' PIPE OUTLET
CONNECT TO D.I. @ STA. 392+00 LT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 3' 9"

STA. 392+00 - CONSTRUCT
D.I. ON LT. W/8' EXTENSION
& 18" X 52' PIPE OUTLET
CONNECT TO R.C. BOX CULVERT
@ STA. 392+66 LT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 5' 0"

STA. 392+59 - CONSTRUCT
D.I. ON LT.
TY C = 4' X 5'
H = 7' 8"

STA. 393+40 - CONSTRUCT
D.I. ON LT. W/8' EXTENSION
& 18" X 63' PIPE OUTLET
CONNECT TO R.C. BOX CULVERT
@ STA. 393+00 LT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 6' 3"

STA. 394+15 - CONSTRUCT
D.I. ON LT. W/8' EXTENSION
& 18" X 71' PIPE OUTLET
CONNECT TO D.I. @ STA. 393+40 LT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 4' 6"

STA. 381+10.00 CONSTRUCT
TYPE 3 WHELLCHAIR RAMP ON RT.
= 9.4 SQ. YDS.

STA. 382+81 - CONSTRUCT
D.I. ON RT. W/8' EXTENSTION
& 24" X 34' STUB OUTLET W/FES RT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 11' 3"
24" R.C. PIPE = 34 LIN. FT.
24" FES = 1 EACH

STA. 385+50 - CONSTRUCT
D.I. ON RT. W/8' EXTENSION
& 18" X 146' PIPE OUTLET
CONNECT TO D.I. @ STA. 387+00 RT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 4' 1"

STA. 387+00 - CONSTRUCT
D.I. ON RT. W/4' EXTENSION
& 18" X 39' PIPE OUTLET
CONNECT TO D.I. @ STA. 387+00 LT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 4' 0"

STA. 382+81 IN PLACE
24" X 56' R.C. PIPE CULVERT
WITH HEADWALLS LT. & RT.
RETAIN AND EXTEND R.C. PIPE 2' LT. & 2' RT.
CONNECT TO D.I. @ STA. 382+81 LT.
CONNECT TO D.I. @ STA. 382+81 RT.
FOR A COMPLETED LENGTH OF 39'
(CLASS III) (TYPE 3 BEDDING)
Q50 = 5 C.F.S. D.A. = 1.9 ACRES
24" R.C. PIPE = 4 LIN. FT.

STA. 392+66 - IN PLACE BR. NO. M0184
DBL. 10' x 4' x 44' R.C. BOX CULV'T.
RETAIN AND EXTEND 7' LT. &
23' RT. ON 15° RT. FORWARD SKEW
WITH 2:1 WINGS LT. & 3:1 WINGS RT.
TO A COMPLETED LENGTH OF 75'
Q50 = 372 C.F.S.; D.A. = 186 AC.
SPAN = 21' - 9"
CHANNEL CHANGE = 25 CU. YDS.

STA. 392+83.50 IN PLACE
SIGN 85.69' RT.
RETAIN

STA. 380+21 CONSTRUCT
APPROACH ON RT.= 90 CU. YDS.

STA. 384+75
CONSTRUCT APPROACH ON RT.= 25 CU. YDS.

STA. 388+44 IN PLACE
18" x 40' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
21" x 15" x 28' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 50 CU. YDS.

STA. 389+71 IN PLACE
18" x 40' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
21" x 15" x 34' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 30 CU. YDS.

STA. 391+78 INSTALL
30" x 38' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 75 CU. YDS.

STA. 394+89 CONSTRUCT
APPROACH ON RT.= 90 CU. YDS.

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SITE 2

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	101	260

(2) PLAN AND PROFILE SHEETS

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

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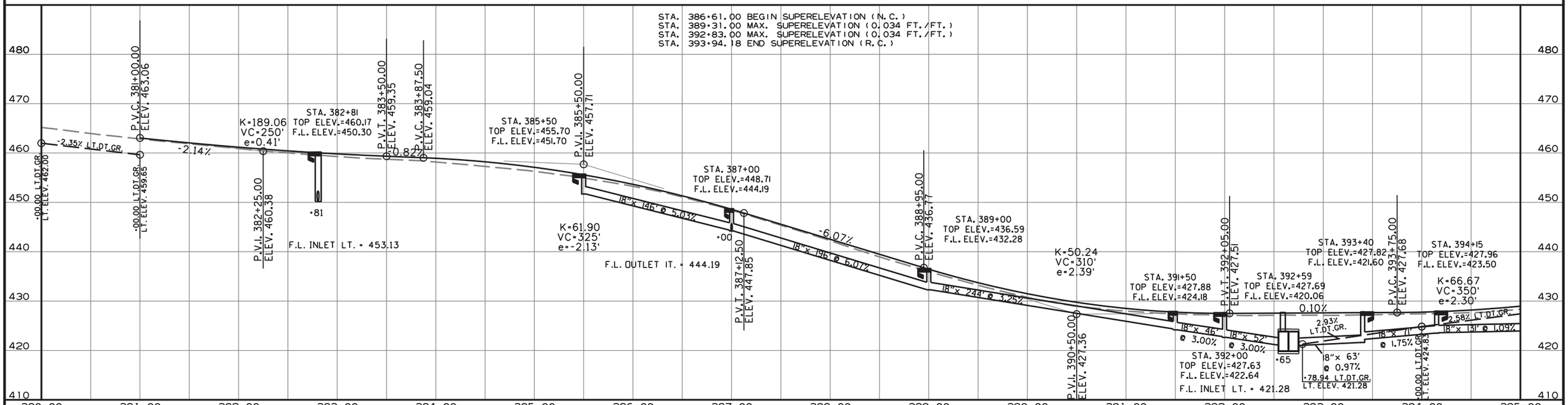
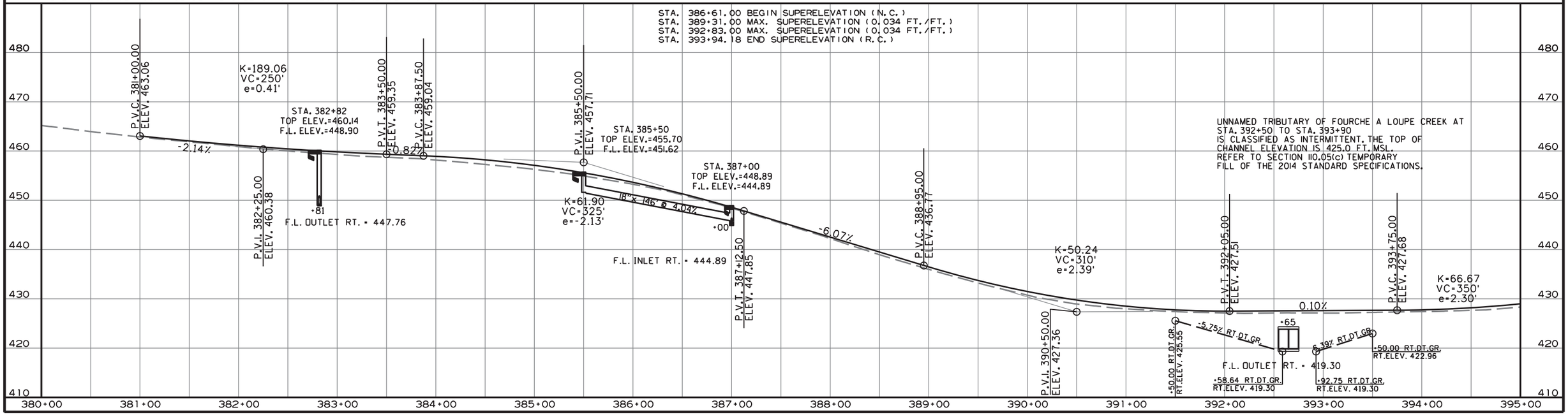
LT. SIDE



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

RT. SIDE



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

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STA. 395+50 - CONSTRUCT
D.I. ON LT. W/4' EXTENSTION
& 18" X 131' PIPE OUTLET
CONNECT TO D.I. @ STA. 394+15 LT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 5' 4"

STA. 397+00 - CONSTRUCT
D.I. ON LT. W/8' EXTENSION
& 18" X 146' PIPE OUTLET
CONNECT TO D.I. @ STA. 395+50 LT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 6' 5"

STA. 399+00 - CONSTRUCT
D.I. ON LT. W/4' EXTENSION
& 18" X 188' PIPE OUTLET
CONNECT TO D.I. @ STA. 397+00 LT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 4' 9"

STA. 400+50 - CONSTRUCT
D.I. ON LT. W/4' EXTENSTION
& 18" X 138' PIPE OUTLET
CONNECT TO D.I. @ STA. 399+00 LT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 4' 0"

STA. 402+00 - CONSTRUCT
D.I. ON LT. W/4' EXTENSTION
& 18" X 139' PIPE OUTLET
CONNECT TO D.I. @ STA. 400+50 LT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 4' 1"

STA. 404+64 - CONSTRUCT
D.I. ON LT. W/4' EXTENSION
& 24" X 12' STUB INLET W/FES LT.
TY C = 5' X 4'
TY MO = 5' I.D.
H = 5' 0"
24" R.C. PIPE = 12 LIN. FT.
24" FES = 1 EACH

STA. 406+50 - CONSTRUCT
D.I. ON LT. W/4' EXTENSION
& 18" X 181' PIPE OUTLET
CONNECT TO D.I. @ STA. 404+64 LT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 4' 0"

STA. 404+65 IN PLACE
24" X 62' R.C. PIPE CULVERT
RETAIN AND EXTEND 2' LT.
CONNECT TO D.I. @ STA. 404+64 LT.
FOR A COMPLETED LENGTH OF 62'
(CLASS III) (TYPE 3 BEDDING)
050 = 17 C.F.S. D.A. = 4.7 ACRES
24" R.C. PIPE = 6 LIN. FT.

PI = 400+46.45
Δ = 63°45'49"LT.
D = 12°15'00.0"
T = 290.92'
L = 520.52'
PC = 397+55.53
PT = 402+76.05
e = 0.100 '/'
Ls = 330'

PI = 408+21.85
Δ = 14°30'39"LT.
D = 2°59'59"
T = 243.17'
L = 483.74'
PC = 405+78.68
PT = 410+62.42
e = 0.050 '/'
Ls = 270'

STA. 409+16 INSTALL
21" x 15" x 32' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 15 CU. YDS. COMP. EMB.
= 5 CU. YDS. UNCLASS. EXC.

STA. 409+74 INSTALL
18" x 46' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 105 CU. YDS.

STA. 395+58 CONSTRUCT
APPROACH ON RT.= 80 CU. YDS.

STA. 396+50 INSTALL
18" X 48' PIPE CULVERT
RT. SIDE DRAIN

STA. 403+30 INSTALL
18" X 50' PIPE CULVERT
RT. SIDE DRAIN

STA. 407+81.15 CONSTRUCT
TYPE 3 WHELLCHAIR RAMP ON RT.
= 19.0 SQ. YDS.

STA. 408+88.47 CONSTRUCT
TYPE 3 WHELLCHAIR RAMP ON RT.
= 19.0 SQ. YDS.

STA. 408+35 CONSTRUCT
TURNOUT ON RT. = 30 CU. YDS.

PROPOSED R/W
EXISTING ROW
CONST. LIMITS
MASSEY RD.
LEGENDARY TR.
P.I. 0+35.71
P.C. 397+55.53
P.C. 0+03.85
P.O.B. 0+00.00
P.T. 0+53.88
P.C. 2+18.30
P.I. 2+26.32
P.I. 2+34.25
P.I. 400+46.45
P.C. 4+43.44
P.I. 402+76.05
P.C. 405+78.68
P.I. 408+21.85
P.O.B. 1000+00.00
P.O.E. 5+08.99
P.O.E. 1003+05.94
P.C. 1000+29.98
P.T. 4+37.42
P.I. 4+25.57
P.C. 1000+42.36
P.T. 1002+72.11
P.I. 1000+59.98
P.C. 1000+96.83
P.I. 1000+96.83
P.I. 408+23.41
P.I. 408+27.81
N 49°40'06" E
S 40°19'54" E
N 35°18'54" E
N 14°05'43" W
N 28°36'22" W
N 56°53'52" E
T.C.E.

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SITE 2

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
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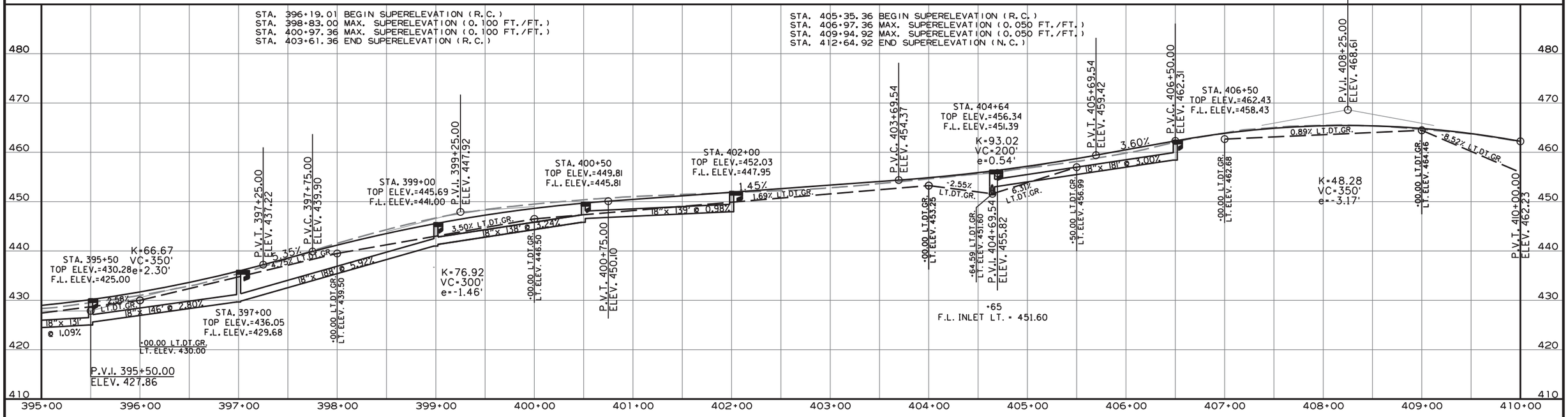
				JOB NO.		061309	103	260

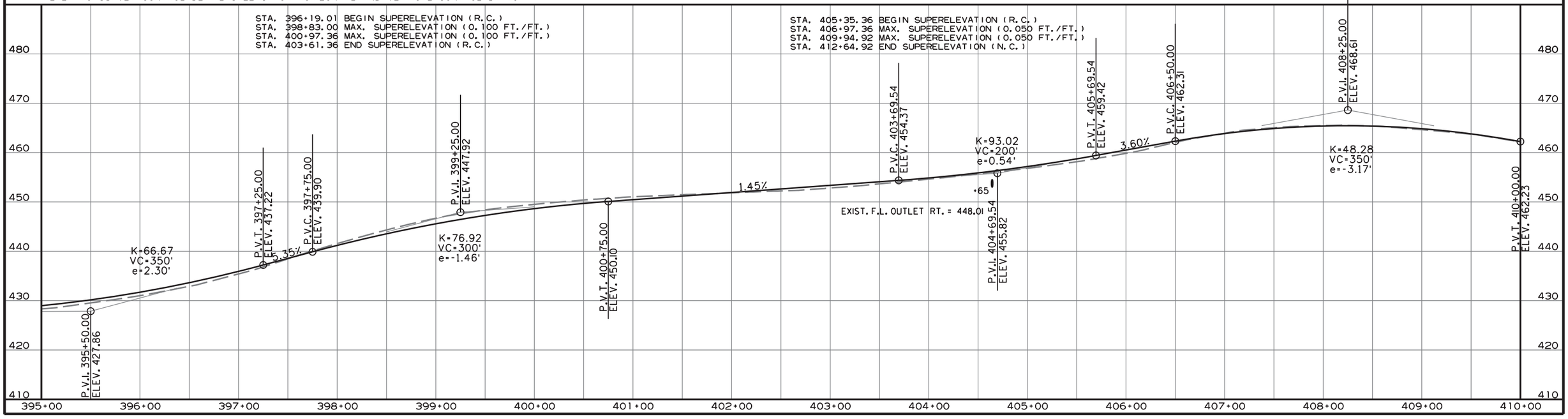
(2) PLAN AND PROFILE SHEETS

LT. SIDE



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

RT. SIDE



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(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
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STA. 420+64 INSTALL
18" x 28' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 15 CU. YDS. COMP. EMB.
= 15 CU. YDS. UNCLASS. EXC.

STA. 423+09 INSTALL
24" x 38' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 75 CU. YDS.

STA. 417+17 IN PLACE
4' X 3' X 66' R.C. BOX CULVERT
RETAIN AND EXTEND 14' LT.
FOR A COMPLETED LENGTH OF 80'
(CLASS III) (TYPE 3 BEDDING)
050 = 13.2 C.F.S. D.A. = 5.37 ACRES

STA. 422+53 - IN PLACE
5' x 4' x 44' R.C. BOX CULV'T.
RETAIN AND EXTEND 26' LT.
WITH 3:1 WINGS LT.
TO A COMPLETED LENGTH OF 70'
050 = 178 C.F.S.; D.A. = 76 AC.

STA. 425+00 - CONSTRUCT
D.I. ON LT. W/4' EXTENSTION
& 18" X 296' PIPE OUTLET
CONNECT TO D.I. @ STA. 428+00 LT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 4' 0"

STA. 410+13 IN PLACE
3" X 3' X 62' R.C. BOX CULVERT
RETAIN AND EXTEND 19' LT.
WITH 3:1 WINGS LT.
FOR A COMPLETED LENGTH OF 81'
(CLASS III) (TYPE 3 BEDDING)
050 = 16 C.F.S. D.A. = 4.4 ACRES

STA. 414+00 - CONSTRUCT
D.I. ON LT. W/4' EXTENSION
& 18" X 195' PIPE OUTLET
CONNECT TO D.I. @ STA. 416+00 LT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 4' 2"

STA. 416+50 - CONSTRUCT
D.I. ON LT. W/8' EXTENSTION
& 18" X 62' PIPE OUTLET
CONNECT TO R.C. BOX CULVERT
@ STA. 417+17 LT.
TY C = 6' X 5'
TY MO = 6' I.D.
H = 4' 2"

STA. 419+25 - CONSTRUCT
D.I. ON LT. W/8' EXTENSION
& 18" X 204' PIPE OUTLET
CONNECT TO R.C. BOX CULVERT
@ STA. 417+17 LT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 4' 6"

STA. 422+53 - CONSTRUCT
D.I. ON LT. W/4' EXTENSTION
TY C = 4' X 4'
H = 7' 1"

STA. 410+13 - CONSTRUCT
D.I. ON LT. W/4' EXTENSTION
TY C = 3' X 4'
H = 7' 2"

STA. 412+00 - CONSTRUCT
D.I. ON LT. W/8' EXTENSION
& 18" X 196' PIPE OUTLET
CONNECT TO D.I. @ STA. 414+00 LT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 4' 1"

STA. 416+00 - CONSTRUCT
D.I. ON LT. W/8' EXTENSION
& 18" X 44' PIPE OUTLET
CONNECT TO D.I. @ STA. 416+50 LT.
TY C = 4' X 4'
H = 3' 11"

STA. 417+17 - CONSTRUCT
D.I. ON LT. W/8' EXTENSION
TY C = 4' X 4'
H = 6' 1"

STA. 415+70.54 CONSTRUCT
TYPE 3 WHELLCHAIR RAMP ON RT.
= 19.0 SQ. YDS.

STA. 416+56.45 CONSTRUCT
TYPE 3 WHELLCHAIR RAMP ON RT.
= 19.0 SQ. YDS.

STA. 419+81.09 CONSTRUCT
TYPE 3 WHELLCHAIR RAMP ON RT.
= 19.0 SQ. YDS.

STA. 420+67.16 CONSTRUCT
TYPE 3 WHELLCHAIR RAMP ON RT.
= 19.0 SQ. YDS.

STA. 414+00 - CONSTRUCT
D.I. ON LT. W/4' EXTENSION
& 18" X 162' PIPE OUTLET
CONNECT TO D.I. @ STA. 415+67 LT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 4' 1"

STA. 415+67 - CONSTRUCT
D.I. ON RT. W/8' EXTENSION
& 18" X 88' PIPE OUTLET
CONNECT TO D.I. @ STA. 416+61 RT.
TY C = 6' X 5'
TY MO = 6' I.D.
H = 4' 0"

STA. 416+61 - CONSTRUCT
D.I. ON RT. W/8' EXTENSTION
& 18" X 51' PIPE OUTLET
CONNECT TO R.C. BOX CULVERT
@ STA. 416+75 RT.
TY C = 6' X 5'
TY MO = 6' I.D.
H = 4' 1"

STA. 417+17 - CONSTRUCT
D.I. ON RT. W/8' EXTENSTION
TY C = 4' X 4'
H = 6' 5"

STA. 419+25 - CONSTRUCT
D.I. ON RT. W/8' EXTENSION
& 18" X 204' PIPE OUTLET
CONNECT TO R.C. BOX CULVERT
@ STA. 417+17 RT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 4' 5"

STA. 420+24 CONSTRUCT
TURNOUT ON RT. = 5 CU. YDS.

STA. 422+53 - CONSTRUCT
D.I. ON RT. W/4' EXTENSTION
TY C = 4' X 4'
H = 7' 5"

STA. 424+75 - CONSTRUCT
D.I. ON RT. W/4' EXTENSTION
& 18" X 321' PIPE OUTLET
CONNECT TO D.I. @ STA. 428+00 RT.
TY MO = 4' I.D.
H = 6' 8"

STA. 416+14 CONSTRUCT
TURNOUT ON RT. = 15 CU. YDS.

PI = 423+72.25
Δ = 3°12'54.0" RT.
D = 0°30'00.0"
T = 321.58'
L = 643.00'
PC = 420+50.67
PT = 426+93.67
e = N.C.
Ls = 270'

PROPOSED R/W
EXISTING ROW
CONST. LIMITS
N 28°36'22" W
LEGENDARY TR.
CENTURY CIRCLE
AMY DRIVE
CLEARBROOK LANE
VEGETATION BUFFER
P.I. 423+72.25
P.C. 420+50.67
P.T. 410+62.42

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SITE 2

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(2) PLAN AND PROFILE SHEETS

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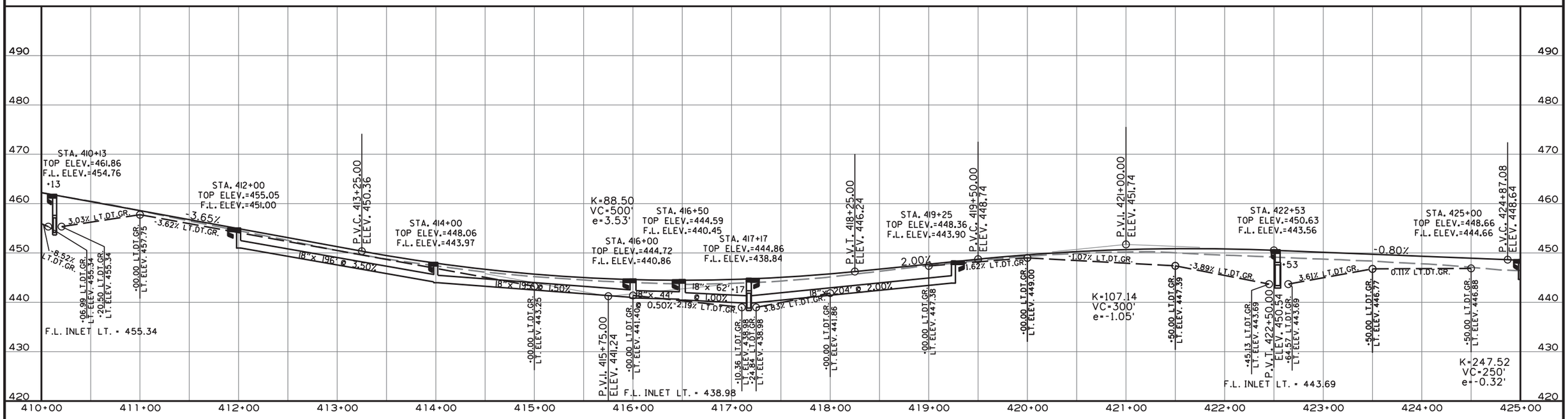
LT. SIDE



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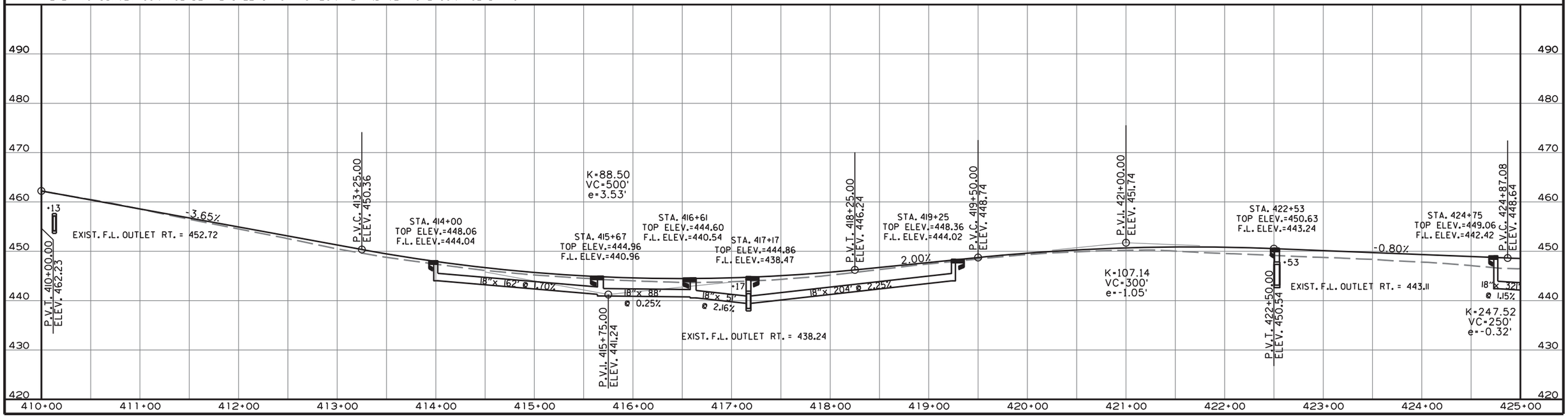
RT. SIDE



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STA. 425+99
CONSTRUCT APPROACH = 5 CU. YDS.

STA. 427+55 INSTALL
18" X 30' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 30 CU. YDS.

STA. 429+17.19 CONSTRUCT
TYPE 3 WHELLCHAIR RAMP ON LT.
= 18.9 SQ. YDS.

STA. 429+04 - IN PLACE
10' x 4' x 45' R.C. BOX CULV'T.
RETAIN AND EXTEND 37' LT.
WITH 3:1 WINGS LT.
TO A COMPLETED LENGTH OF 82'
050 = 85 C.F.S.; D.A. = 199 AC.

STA. 425+00 - CONSTRUCT
D.I. ON LT. W/4' EXTENSTION
& 18" X 296' PIPE OUTLET
CONNECT TO D.I. @ STA. 428+00 LT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 4' 0"

STA. 428+00 - CONSTRUCT
D.I. ON LT. W/4' EXTENSION
& 18" X 97' PIPE OUTLET
CONNECT TO R.C. BOX CULVERT
@ STA. 429+04 LT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 4' 0"

STA. 429+40 - CONSTRUCT
D.I. ON LT. W/
18" X 29' PIPE OUTLET
CONNECT TO R.C. BOX CULVERT
@ STA. 429+04 LT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 6' 5"

STA. 429+70 - CONSTRUCT
D.I. ON LT. W/8' EXTENSTION
& 18" X 26' PIPE OUTLET
CONNECT TO D.I. @ STA. 429+40 LT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 5' 0"

STA. 430+19 - CONSTRUCT
D.I. ON LT. W/4' EXTENSTION
& 18" X 45' PIPE OUTLET
CONNECT TO D.I. @ STA. 429+70 LT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 4' 2"

425 430 435 440

PROPOSED R/W
CONST. LIMITS
ALBRIGHT RD
R=290'
30' RADIUS
N 25°23'28" W
P.T. 426+93.67
P.C. 435+78.49
P.I. 437+92.11
T.C.E.
HWY. 290
181' RADIUS

STA. 425+06 IN PLACE
18" x 32' CP PIPE CULVERT
REMOVE AND INSTALL
18" x 40' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 55 CU. YDS.

STA. 426+23
CONSTRUCT APPROACH = 20 CU. YDS.

STA. 428+00 - CONSTRUCT
D.I. ON RT. W/4' EXTENSTION
& 18" X 97' PIPE OUTLET
CONNECT TO R.C. BOX CULVERT
@ STA. 429+04 RT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 5' 11"

STA. 429+40 - CONSTRUCT
D.I. ON RT. W/
18" X 29' PIPE OUTLET
CONNECT TO R.C. BOX CULVERT
@ STA. 429+04 RT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 6' 1"

STA. 430+03.57 CONSTRUCT
TYPE 3 WHELLCHAIR RAMP ON RT.
= 23.2 SQ. YDS.

STA. 429+70 - CONSTRUCT
D.I. ON RT. W/8' EXTENSTION
& 18" X 26' PIPE OUTLET
CONNECT TO D.I. @ STA. 429+40 RT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 5' 1"

STA. 430+10 - CONSTRUCT
D.I. ON RT. W/4' EXTENSTION
& 18" X 45' PIPE OUTLET
CONNECT TO D.I. @ STA. 429+70 RT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 4' 2"

STA. 430+27.70
END JOB 061309
END SITE 2

SEWER CLEANOUT

SITE 2

6/29/2020

R061309.DGN

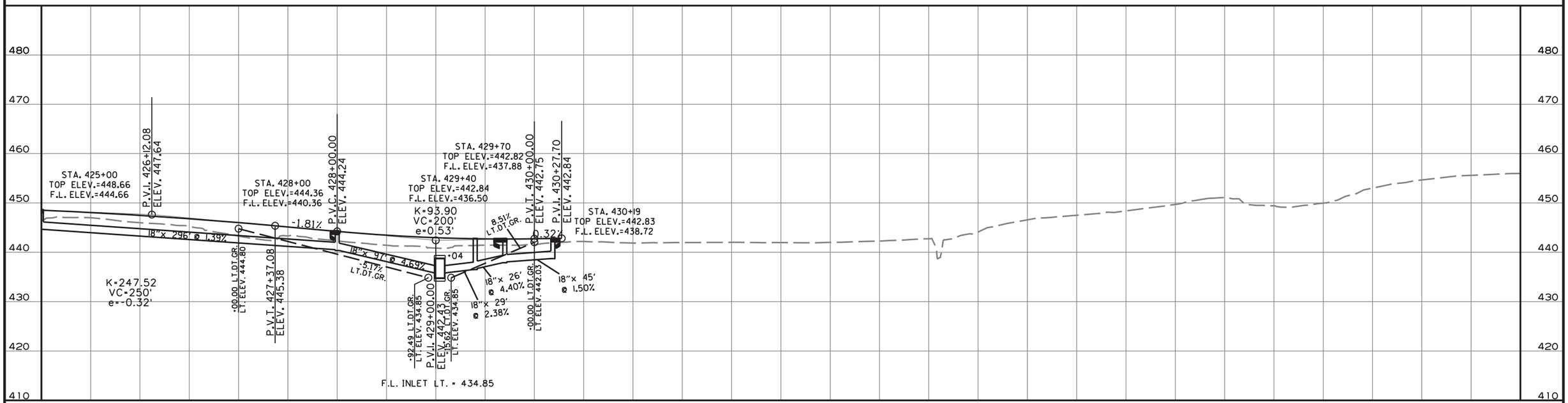
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Jun 29 2020 5:03 PM
DocuSign

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	107	260

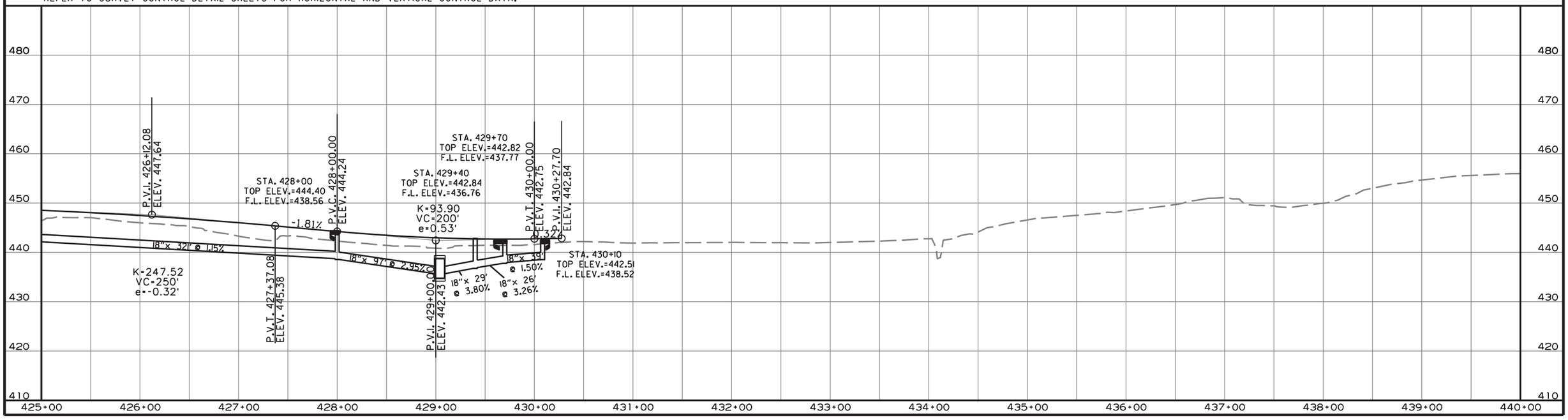
(2) PLAN AND PROFILE SHEETS

LT. SIDE



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

RT. SIDE



6/29/2020
tc.38019
R061309.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

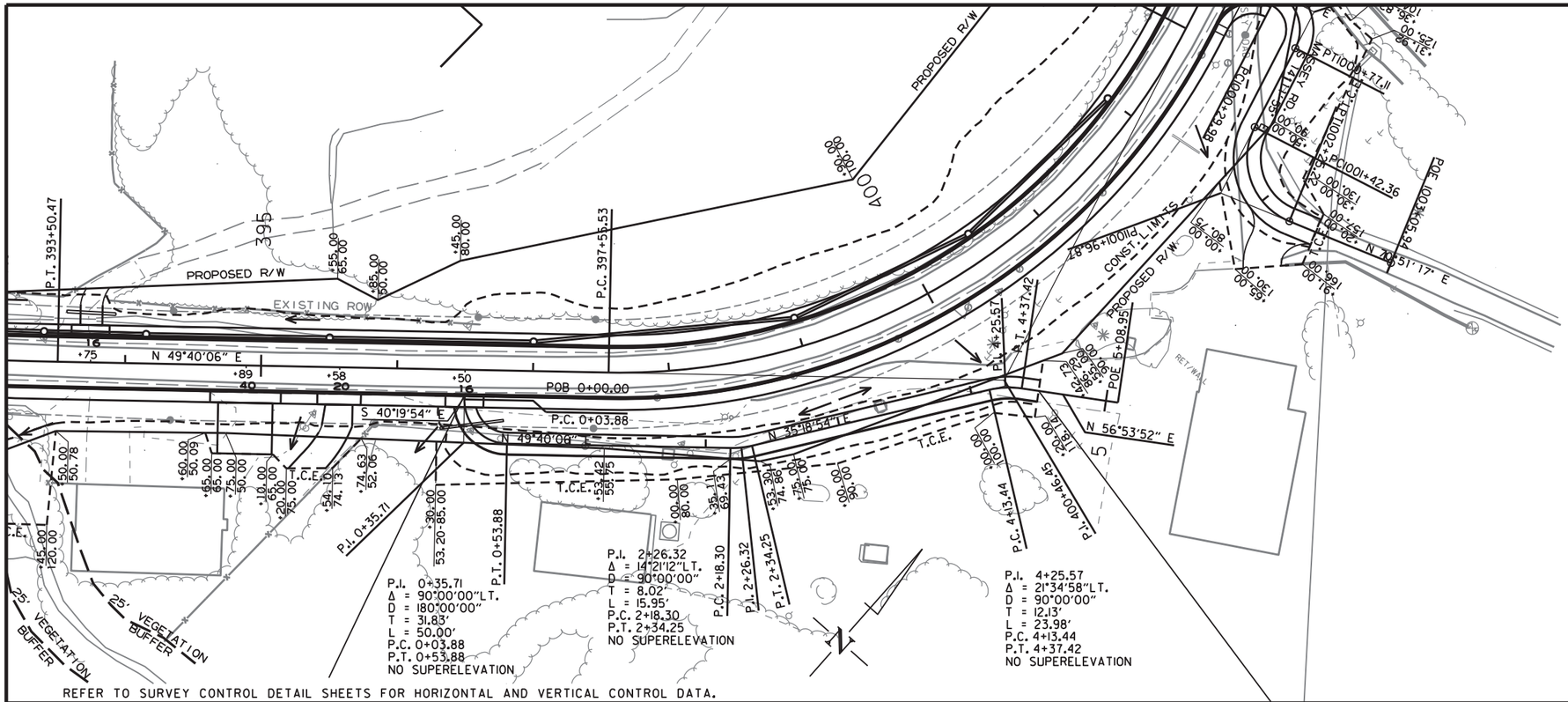
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	108	260

(2) PLAN AND PROFILE SHEETS

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

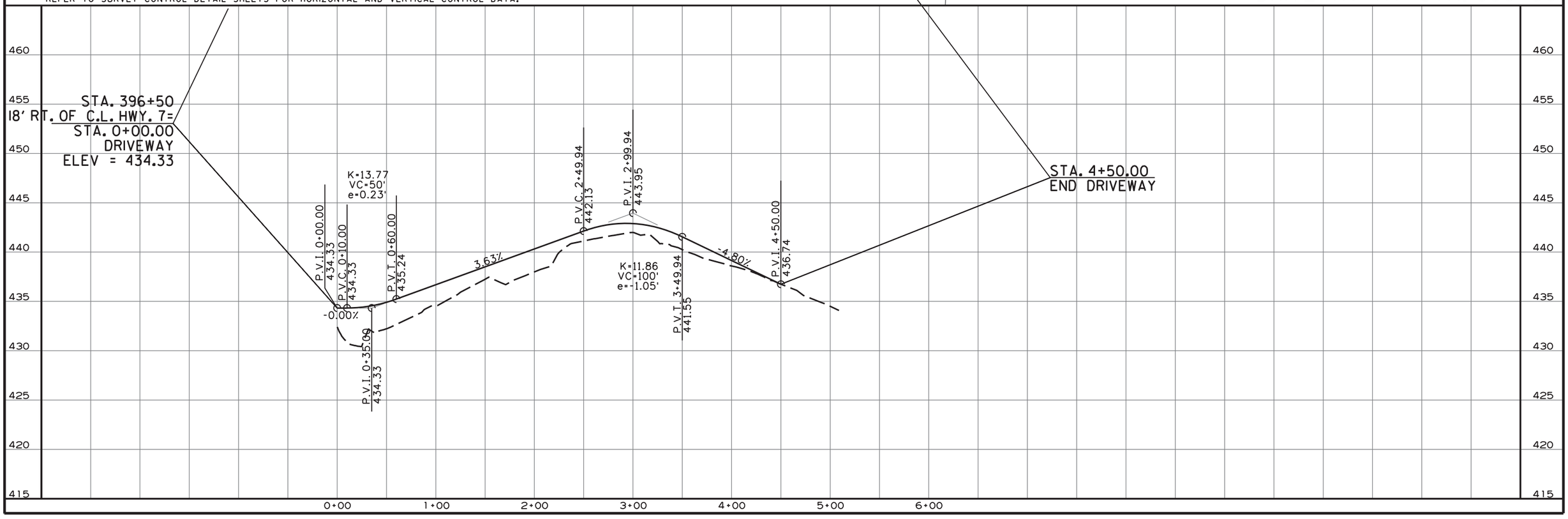
Jun 29 2020 5:03 PM

DocuSign



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

DRIVEWAY AT STA. 396+50



tc38019 6/29/2020
R061309.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.		061309	109	260

(2) PLAN AND PROFILE SHEETS

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

Jun 29 2020 5:04 PM

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P.I. 1000+59.98
Δ = 90°00'00"RT.
D = 190°59'09"
T = 30.00'
L = 47.12'
P.C. 1000+29.98
P.T. 1000+77.11
NO SUPERELEVATION

P.I. 1001+96.87
Δ = 94°56'48"LT.
D = 190°59'09"
T = 30.00'
L = 47.12'
P.C. 1001+42.36
P.T. 1002+25.22
NO SUPERELEVATION

MASSEY RD.

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

STA. 403+30
18' RT. OF C.L. HWY. 7=
STA. 1000+00.00
MASSEY RD.
ELEV = 454.50

P.V.I. 1000+00.00
454.50
P.V.C. 1000+08.00
454.37
P.V.I. 1000+12.00
454.31
-1.60%
K=1.33
VC=8'
e=-0.06'
P.V.T. 1000+16.00
454.00
-7.60%
P.V.I. 1002+46.00
436.53
STA. 1002+46.00
END MASSEY RD.

465 460 455 450 445 440 435 430 425 420

1000+00 1001+00 1002+00 1003+00 1004+00

tc38019 6/29/2020
R061309.DGN

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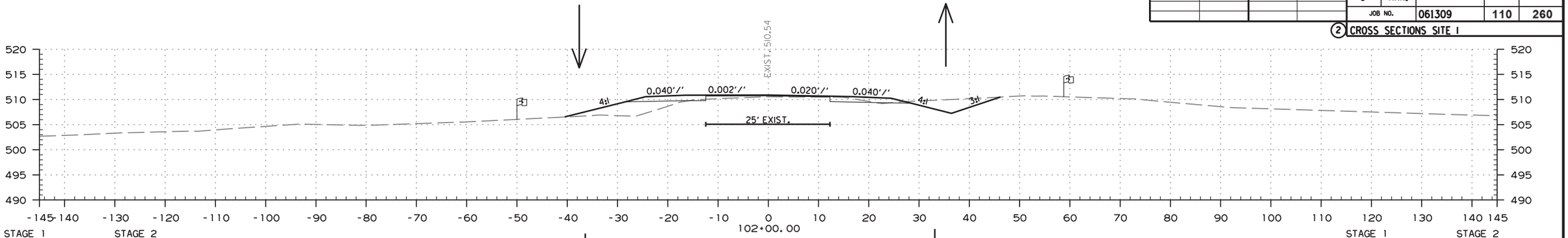
				6	ARK.			
				JOB NO.		061309	110	260

(2) CROSS SECTIONS SITE 1

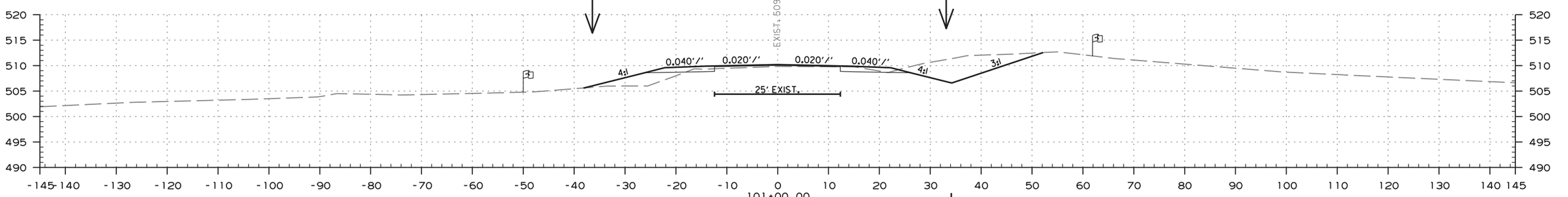


STAGE 1
AREA CUT 33
AREA FILL 1

STAGE 2
AREA CUT 1
AREA FILL 36

STAGE 1
CUT VOLUME 207
FILL VOLUME 1

STAGE 2
CUT VOLUME 6
FILL VOLUME 114

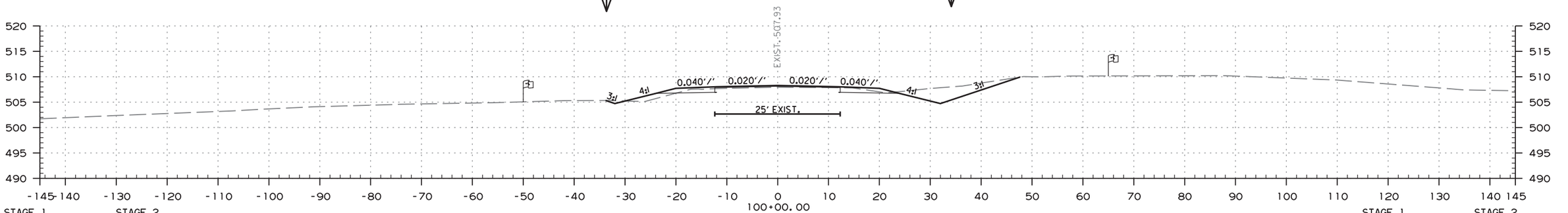


STAGE 1
AREA CUT 79
AREA FILL 0

STAGE 2
AREA CUT 3
AREA FILL 26

STAGE 1
CUT VOLUME 226
FILL VOLUME 0

STAGE 2
CUT VOLUME 15
FILL VOLUME 59

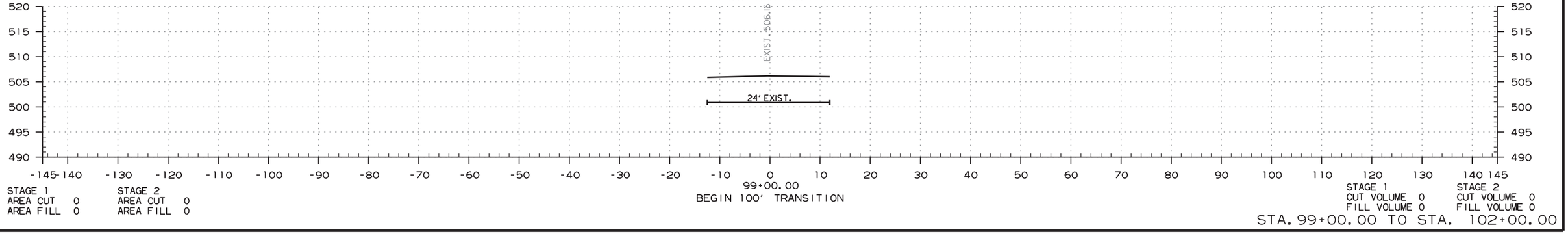


STAGE 1
AREA CUT 43
AREA FILL 0

STAGE 2
AREA CUT 5
AREA FILL 6

STAGE 1
CUT VOLUME 79
FILL VOLUME 0

STAGE 2
CUT VOLUME 10
FILL VOLUME 12



STAGE 1
AREA CUT 0
AREA FILL 0

STAGE 2
AREA CUT 0
AREA FILL 0

STAGE 1
CUT VOLUME 0
FILL VOLUME 0

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

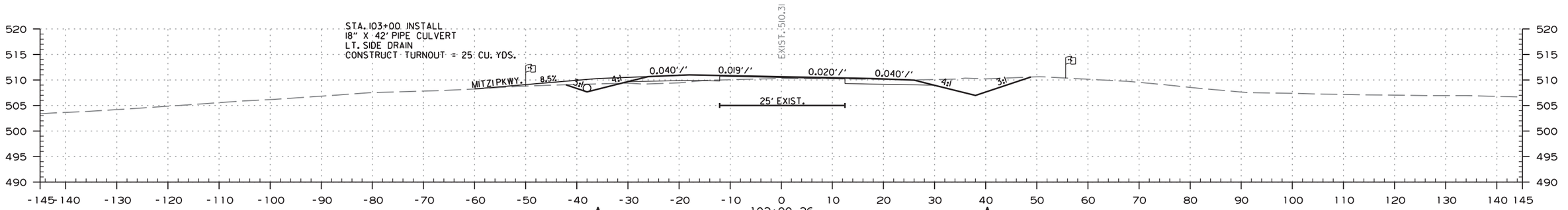
STA. 99+00.00 TO STA. 102+00.00

6/25/2020

R061309.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.		061309	111	260

(2) CROSS SECTIONS SITE 1

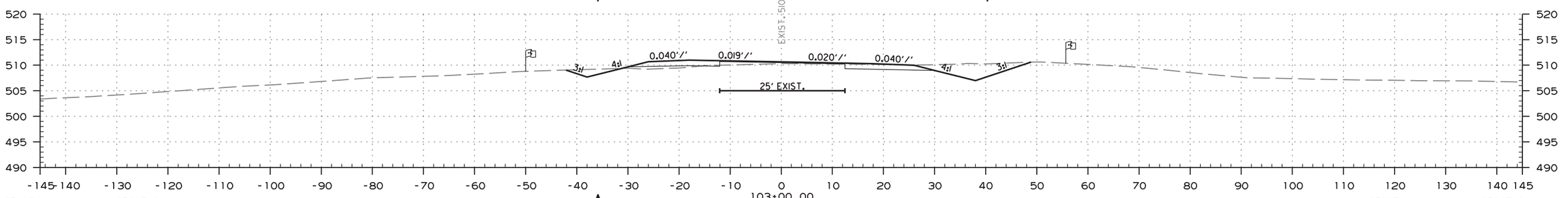


STAGE 1 AREA CUT 61 AREA FILL 12

STAGE 2 AREA CUT 9 AREA FILL 6

STAGE 1 CUT VOLUME 1 FILL VOLUME 0

STAGE 2 CUT VOLUME 1 FILL VOLUME 0

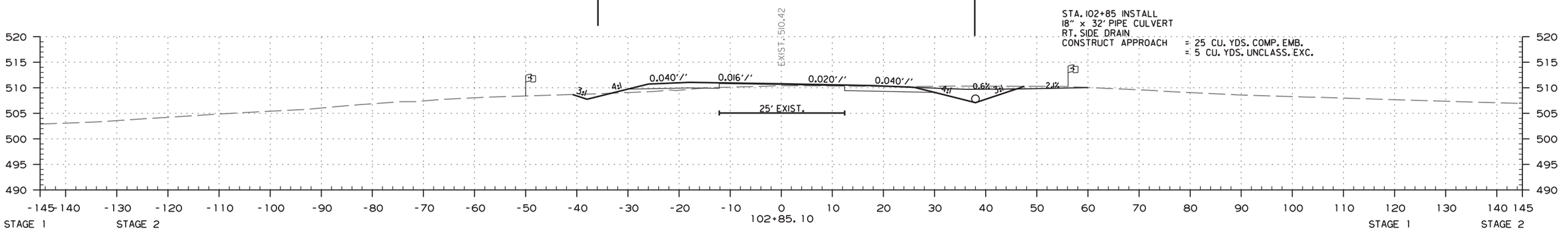


STAGE 1 AREA CUT 52 AREA FILL 0

STAGE 2 AREA CUT 9 AREA FILL 6

STAGE 1 CUT VOLUME 1 FILL VOLUME 0

STAGE 2 CUT VOLUME 4 FILL VOLUME 4



STAGE 1 AREA CUT 51 AREA FILL 0

STAGE 2 AREA CUT 4 AREA FILL 7

102+70.00 END 270' TRANSITION

STAGE 1 CUT VOLUME 131 FILL VOLUME 0

STAGE 2 CUT VOLUME 8 FILL VOLUME 69

STA. 102+85.10 TO STA. 103+00.36

6/25/2020

R061309.DGN

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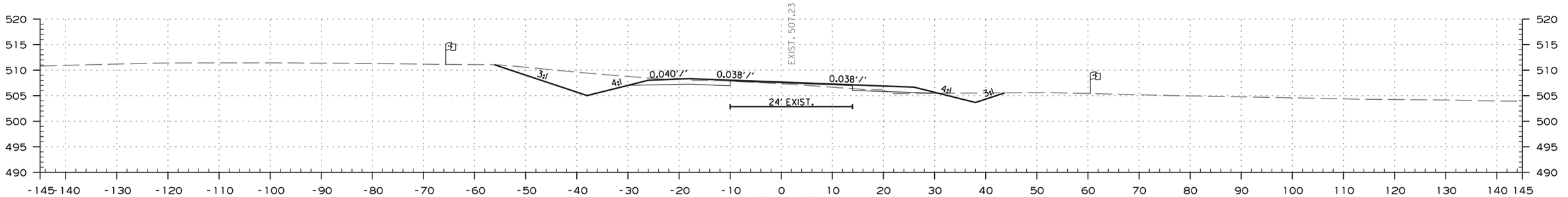
				6	ARK.			
				JOB NO.		061309	112	260

(2) CROSS SECTIONS SITE 1

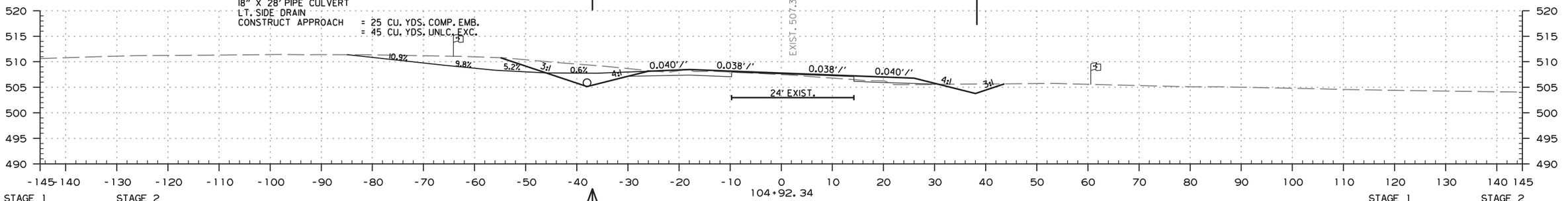


STAGE 1
AREA CUT 14
AREA FILL 2

STAGE 2
AREA CUT 87
AREA FILL 0

STAGE 1
CUT VOLUME 4
FILL VOLUME 0

STAGE 2
CUT VOLUME 24
FILL VOLUME 0

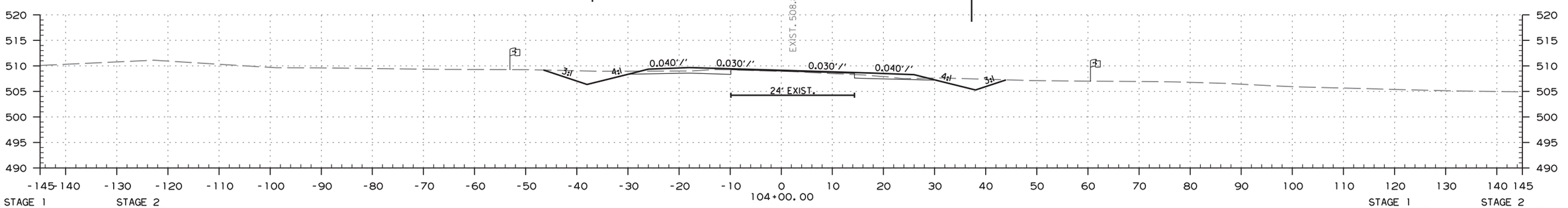


STAGE 1
AREA CUT 14
AREA FILL 2

STAGE 2
AREA CUT 79
AREA FILL 0

STAGE 1
CUT VOLUME 62
FILL VOLUME 3

STAGE 2
CUT VOLUME 196
FILL VOLUME 0



STAGE 1
AREA CUT 23
AREA FILL 0

STAGE 2
AREA CUT 36
AREA FILL 0

STAGE 1
CUT VOLUME 138
FILL VOLUME 0

STAGE 2
CUT VOLUME 36
FILL VOLUME 11

STA. 104+00.00 TO STA. 105+00.00

6/25/2020

R061309.DGN

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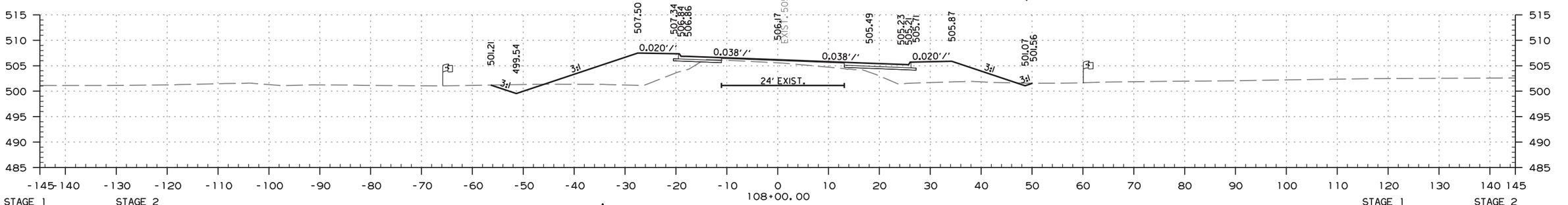
				6	ARK.			
				JOB NO.		061309	113	260

(2) CROSS SECTIONS SITE 1



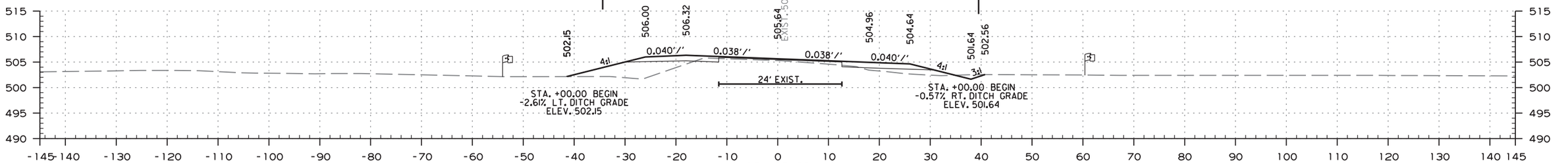
108+00.00

STAGE 1
AREA CUT 1
AREA FILL 76

STAGE 2
AREA CUT 11
AREA FILL 104

STAGE 1
CUT VOLUME 7
FILL VOLUME 165

STAGE 2
CUT VOLUME 26
FILL VOLUME 276



107+00.00

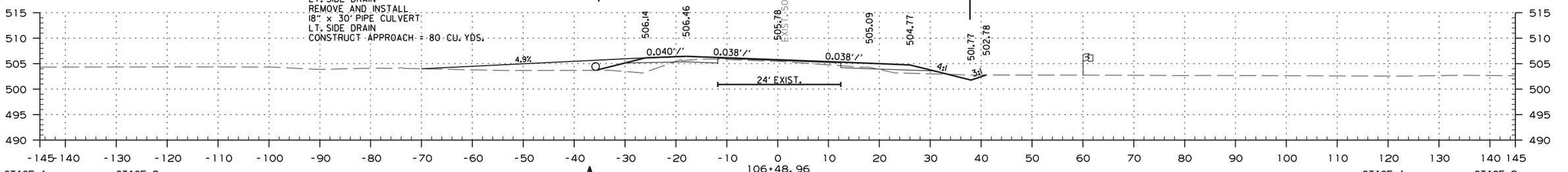
STAGE 1
AREA CUT 3
AREA FILL 13

STAGE 2
AREA CUT 3
AREA FILL 45

STAGE 1
CUT VOLUME 8
FILL VOLUME 19

STAGE 2
CUT VOLUME 6
FILL VOLUME 59

STA. 106+49 IN PLACE
18" x 42' RC PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 30' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 80 CU. YDS.



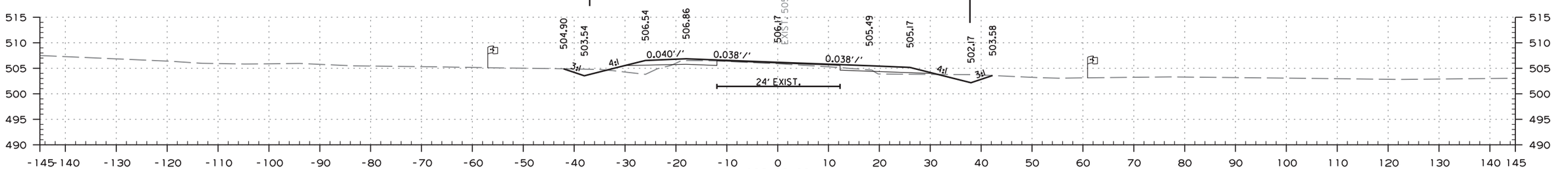
106+48.96

STAGE 1
AREA CUT 6
AREA FILL 7

STAGE 2
AREA CUT 4
AREA FILL 17

STAGE 1
CUT VOLUME 15
FILL VOLUME 10

STAGE 2
CUT VOLUME 15
FILL VOLUME 27



106+00.00

STAGE 1
AREA CUT 11
AREA FILL 4

STAGE 2
AREA CUT 12
AREA FILL 13

STAGE 1
CUT VOLUME 46
FILL VOLUME 10

STAGE 2
CUT VOLUME 184
FILL VOLUME 24

STA. 106+00.00 TO STA. 108+00.00

6/25/2020

R061309.DGN

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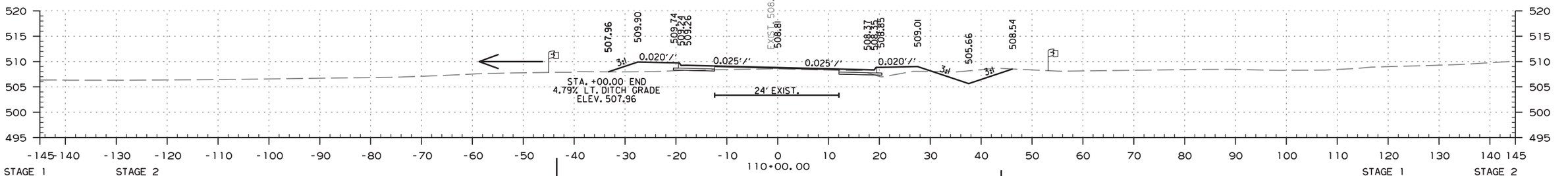
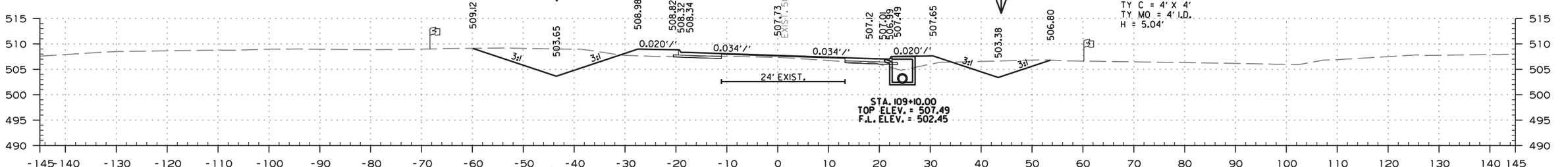
				6	ARK.			
				JOB NO.		061309	114	260

(2) CROSS SECTIONS SITE 1



STAGE 1 AREA CUT 25 AREA FILL 13

STAGE 2 AREA CUT 1 AREA FILL 19



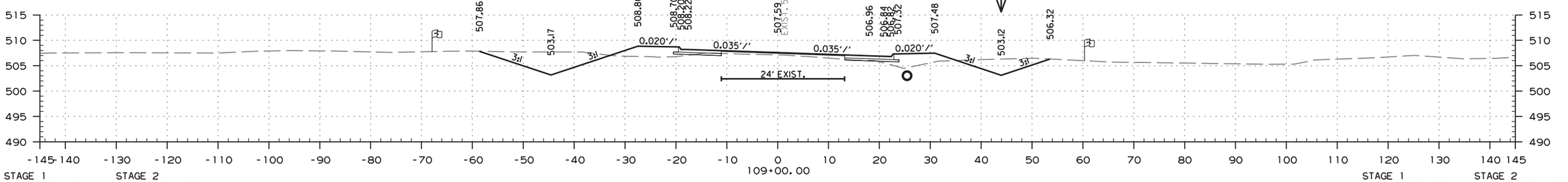
STA. 109+10 - CONSTRUCT
D.I. ON RT. W/
18" X 89' PIPE OUTLET
CONNECT TO D.I. @ STA. 108+16 RT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 5.04'

STAGE 1 AREA CUT 33 AREA FILL 21

STAGE 2 AREA CUT 83 AREA FILL 13

STAGE 1 CUT VOLUME 97 FILL VOLUME 56

STAGE 2 CUT VOLUME 140 FILL VOLUME 53

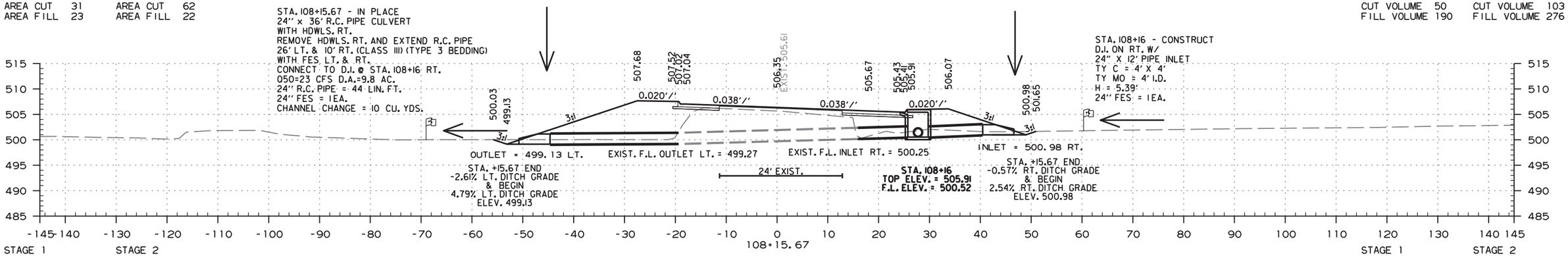


STAGE 1 AREA CUT 31 AREA FILL 23

STAGE 2 AREA CUT 62 AREA FILL 22

STAGE 1 CUT VOLUME 12 FILL VOLUME 8

STAGE 2 CUT VOLUME 27 FILL VOLUME 6



STA. 108+16 - CONSTRUCT
D.I. ON RT. W/
24" X 12' PIPE INLET
TY C = 4' X 4'
TY MO = 4' I.D.
H = 5.39'
24" FES = 1EA.

STAGE 1 AREA CUT 1 AREA FILL 98

STAGE 2 AREA CUT 4 AREA FILL 155

STAGE 1 CUT VOLUME 50 FILL VOLUME 190

STAGE 2 CUT VOLUME 103 FILL VOLUME 276

STAGE 1 CUT VOLUME 1 FILL VOLUME 51

STAGE 2 CUT VOLUME 4 FILL VOLUME 75

STA. 108+15.67 TO STA. 110+00.00

6/25/2020

R061309.DGN

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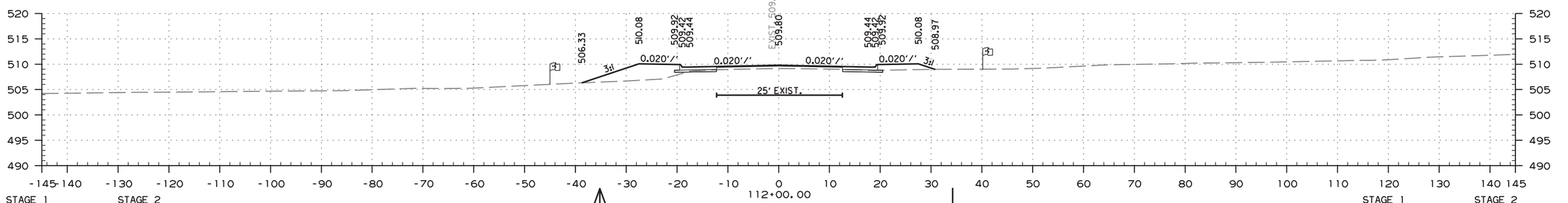
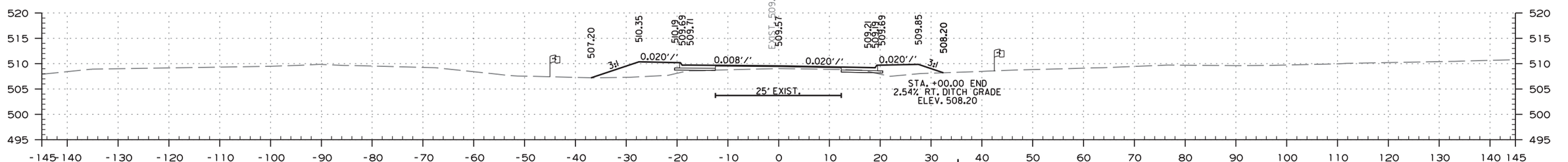
				JOB NO.		061309	115	260

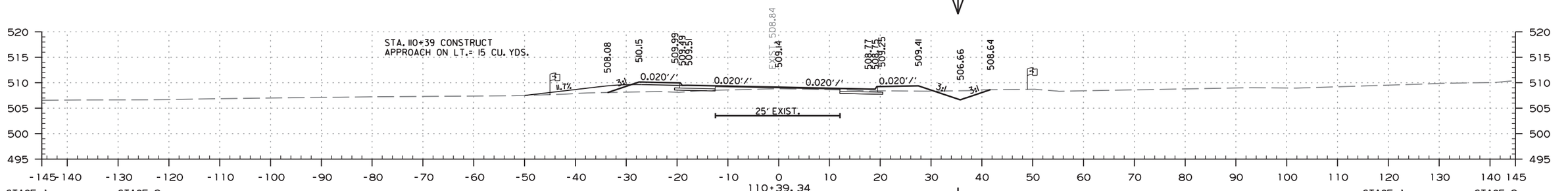
(2) CROSS SECTIONS SITE 1



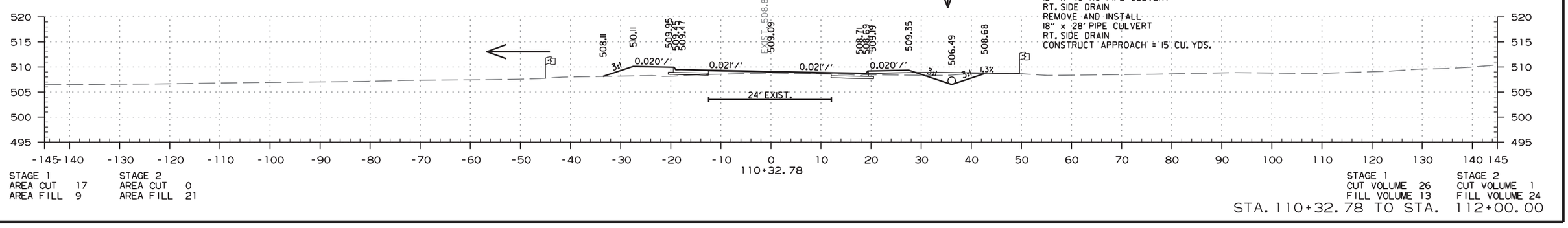
STAGE 1 AREA CUT 3 AREA FILL 11
STAGE 2 AREA CUT 1 AREA FILL 41
STAGE 1 CUT VOLUME 11 FILL VOLUME 58
STAGE 2 CUT VOLUME 3 FILL VOLUME 141



STAGE 1 AREA CUT 3 AREA FILL 20
STAGE 2 AREA CUT 0 AREA FILL 35
STAGE 1 CUT VOLUME 20 FILL VOLUME 33
STAGE 2 CUT VOLUME 0 FILL VOLUME 64



STAGE 1 AREA CUT 15 AREA FILL 9
STAGE 2 AREA CUT 0 AREA FILL 21
STAGE 1 CUT VOLUME 4 FILL VOLUME 2
STAGE 2 CUT VOLUME 0 FILL VOLUME 5



STAGE 1 AREA CUT 17 AREA FILL 9
STAGE 2 AREA CUT 0 AREA FILL 21
STAGE 1 CUT VOLUME 26 FILL VOLUME 13
STAGE 2 CUT VOLUME 1 FILL VOLUME 24

STA. 110+32.78 TO STA. 112+00.00

6/25/2020

R061309.DGN

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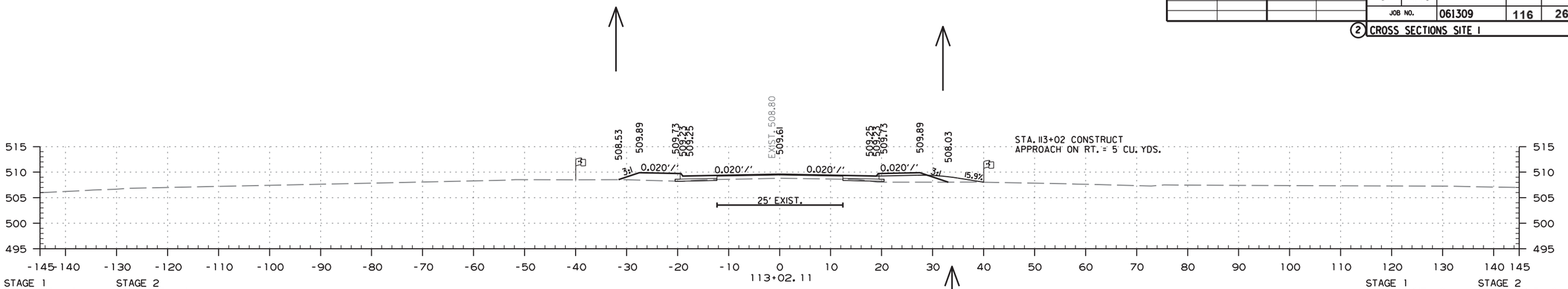
				6	ARK.			
				JOB NO.		061309	116	260

(2) CROSS SECTIONS SITE 1



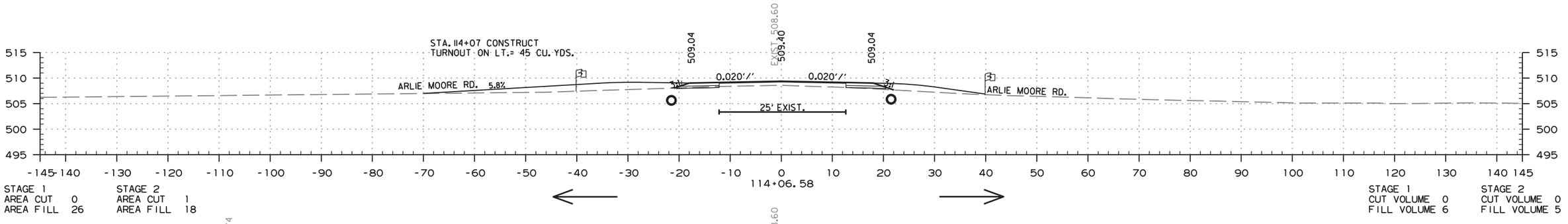
STA. 112+11.41 TO STA. 113+02.11

6/25/2020

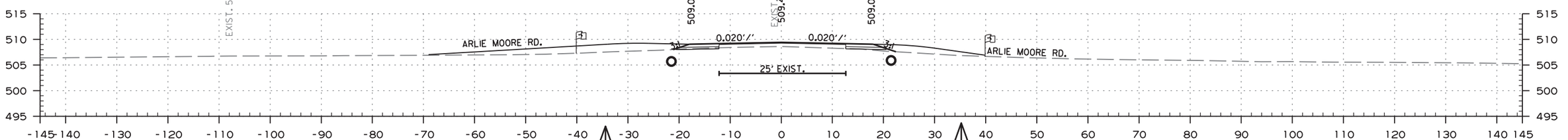
R061309.DGN

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.		061309	117	260

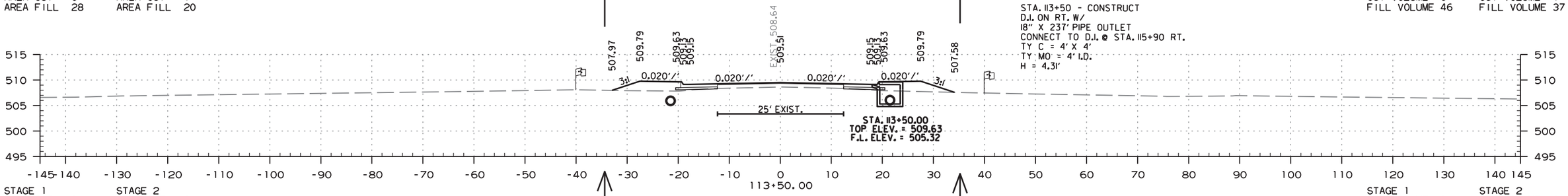
(2) CROSS SECTIONS SITE 1



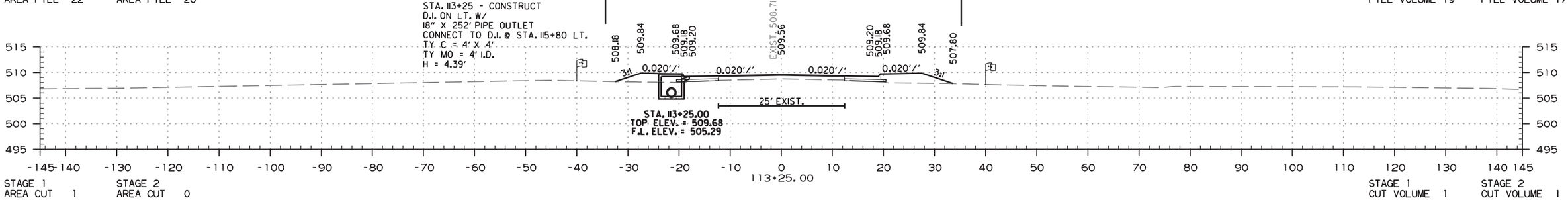
STAGE 1 AREA CUT 0 AREA FILL 26
STAGE 2 AREA CUT 1 AREA FILL 18
STAGE 1 CUT VOLUME 0 FILL VOLUME 6
STAGE 2 CUT VOLUME 0 FILL VOLUME 5



STAGE 1 AREA CUT 0 AREA FILL 28
STAGE 2 AREA CUT 1 AREA FILL 20
STAGE 1 CUT VOLUME 0 FILL VOLUME 46
STAGE 2 CUT VOLUME 1 FILL VOLUME 37



STAGE 1 AREA CUT 0 AREA FILL 22
STAGE 2 AREA CUT 0 AREA FILL 20
STAGE 1 CUT VOLUME 0 FILL VOLUME 19
STAGE 2 CUT VOLUME 0 FILL VOLUME 17



STAGE 1 AREA CUT 1 AREA FILL 20
STAGE 2 AREA CUT 0 AREA FILL 18
STAGE 1 CUT VOLUME 1 FILL VOLUME 17
STAGE 2 CUT VOLUME 1 FILL VOLUME 14

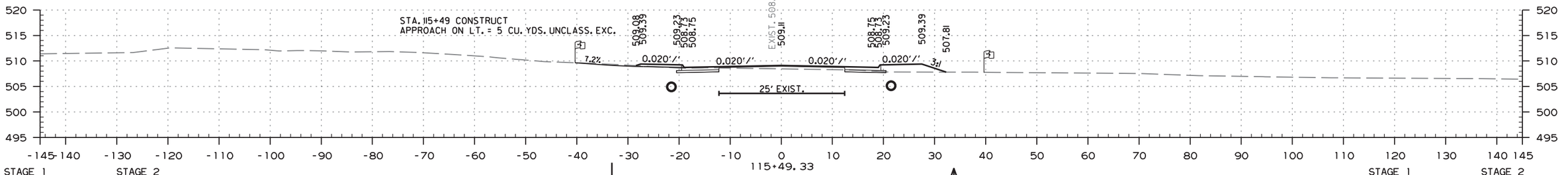
STA. 113+25.00 TO STA. 114+06.58

6/25/2020

R061309.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.		061309	118	260

(2) CROSS SECTIONS SITE 1

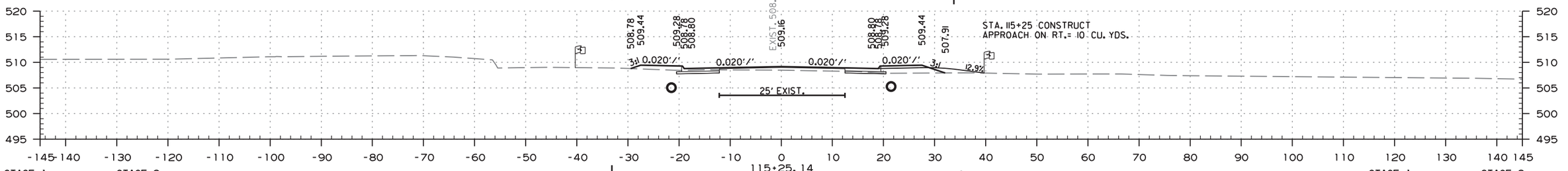


STAGE 1 AREA CUT 3 AREA FILL 15

STAGE 2 AREA CUT 7 AREA FILL 4

STAGE 1 CUT VOLUME 2 FILL VOLUME 14

STAGE 2 CUT VOLUME 5 FILL VOLUME 5

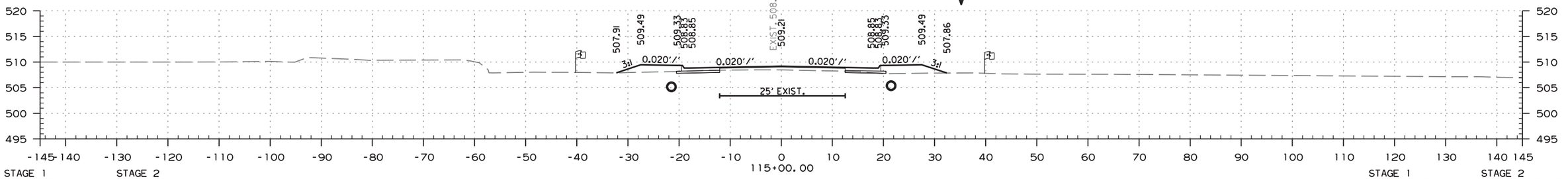


STAGE 1 AREA CUT 2 AREA FILL 15

STAGE 2 AREA CUT 7 AREA FILL 4

STAGE 1 CUT VOLUME 1 FILL VOLUME 15

STAGE 2 CUT VOLUME 4 FILL VOLUME 10

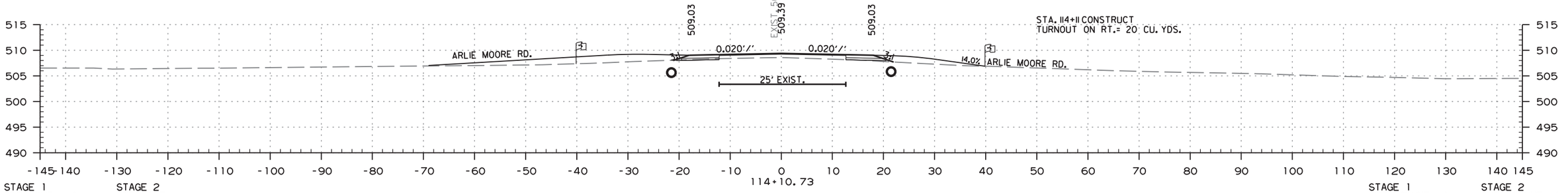


STAGE 1 AREA CUT 1 AREA FILL 17

STAGE 2 AREA CUT 4 AREA FILL 14

STAGE 1 CUT VOLUME 2 FILL VOLUME 69

STAGE 2 CUT VOLUME 8 FILL VOLUME 53



STAGE 1 AREA CUT 0 AREA FILL 25

STAGE 2 AREA CUT 1 AREA FILL 18

STAGE 1 CUT VOLUME 0 FILL VOLUME 4

STAGE 2 CUT VOLUME 0 FILL VOLUME 3

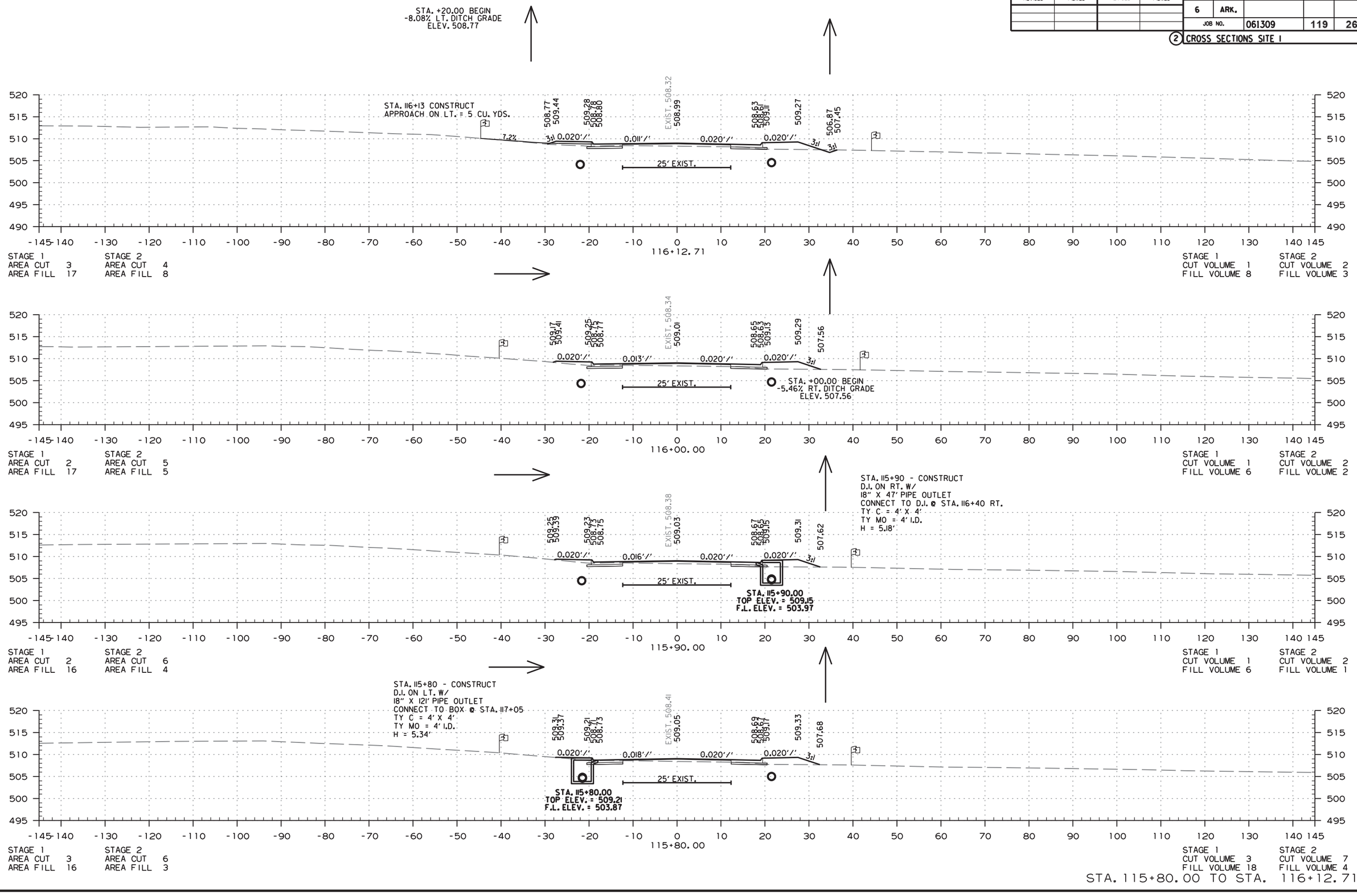
STA. 114+10.73 TO STA. 115+49.33

6/25/2020

R061309.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.		061309	119	260

(2) CROSS SECTIONS SITE 1



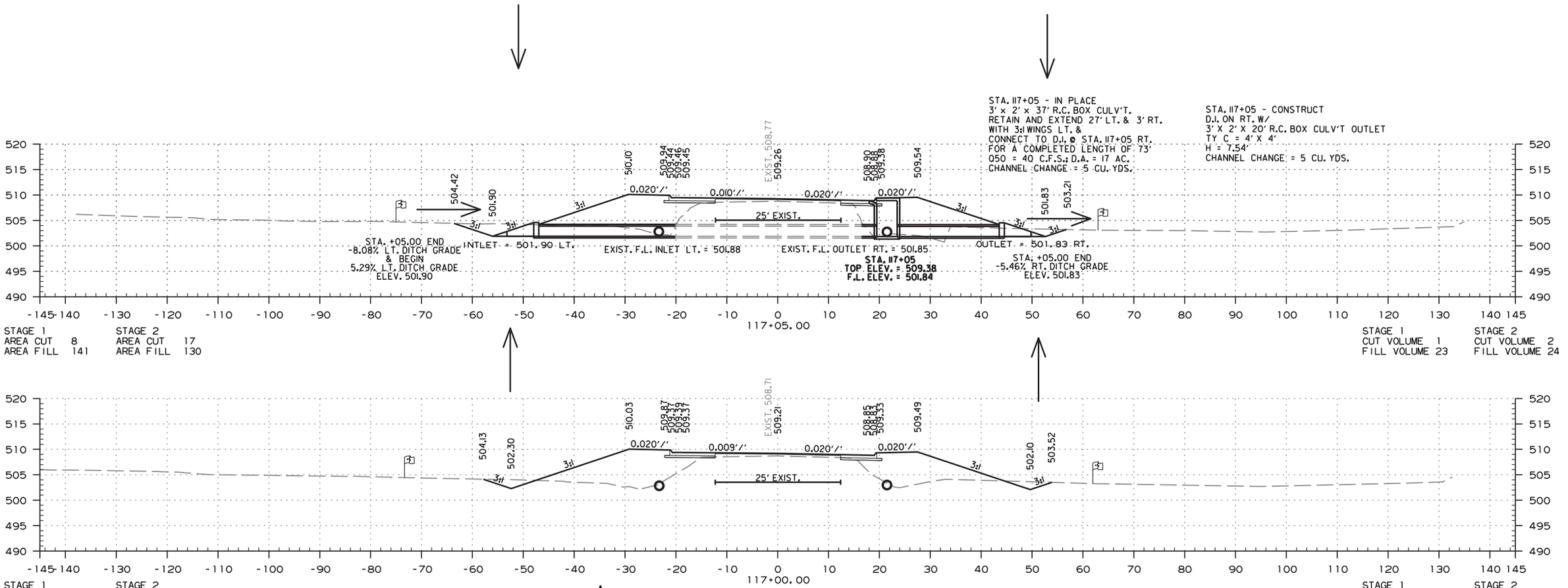
STA. 115+80.00 TO STA. 116+12.71

6/25/2020

R061309.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.		061309	120	260

(2) CROSS SECTIONS SITE 1



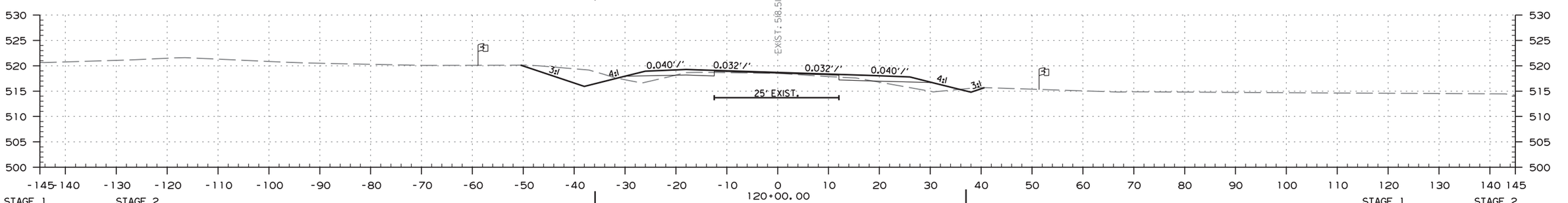
STA. 116+40.00 TO STA. 117+05.00

6/25/2020

R061309.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.		061309	121	260

(2) CROSS SECTIONS SITE 1



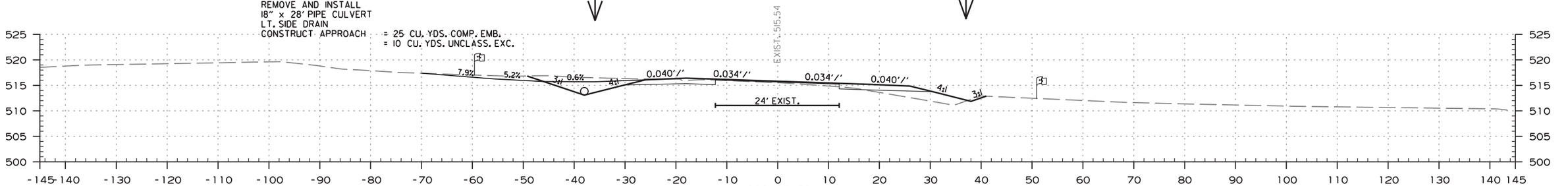
STAGE 1
AREA CUT 5
AREA FILL 15

STAGE 2
AREA CUT 36
AREA FILL 9

STA. 119+21 IN PLACE
18" x 20' RC PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 28' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 25 CU. YDS. COMP. EMB.
= 10 CU. YDS. UNCLASS. EXC.

STAGE 1
CUT VOLUME 10
FILL VOLUME 52

STAGE 2
CUT VOLUME 128
FILL VOLUME 12

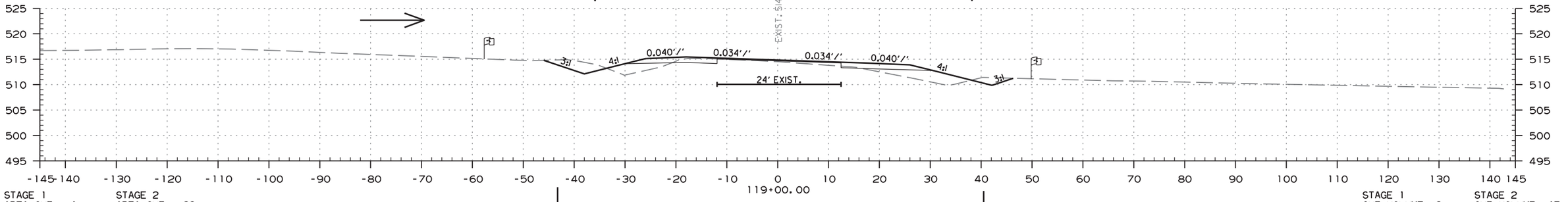


STAGE 1
AREA CUT 2
AREA FILL 22

STAGE 2
AREA CUT 56
AREA FILL 0

STAGE 1
CUT VOLUME 1
FILL VOLUME 24

STAGE 2
CUT VOLUME 37
FILL VOLUME 7

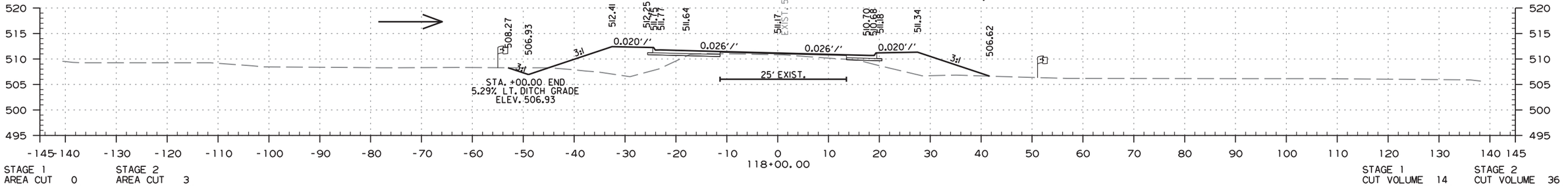


STAGE 1
AREA CUT 1
AREA FILL 28

STAGE 2
AREA CUT 22
AREA FILL 16

STAGE 1
CUT VOLUME 2
FILL VOLUME 163

STAGE 2
CUT VOLUME 47
FILL VOLUME 188



STAGE 1
AREA CUT 0
AREA FILL 60

STAGE 2
AREA CUT 3
AREA FILL 86

STAGE 1
CUT VOLUME 14
FILL VOLUME 353

STAGE 2
CUT VOLUME 36
FILL VOLUME 380

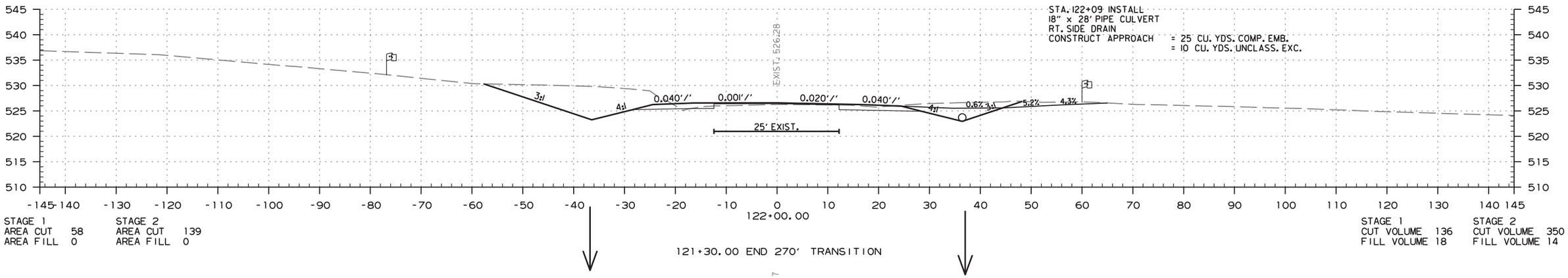
STA. 118+00.00 TO STA. 120+00.00

6/25/2020

R061309.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.		061309	122	260

(2) CROSS SECTIONS SITE 1



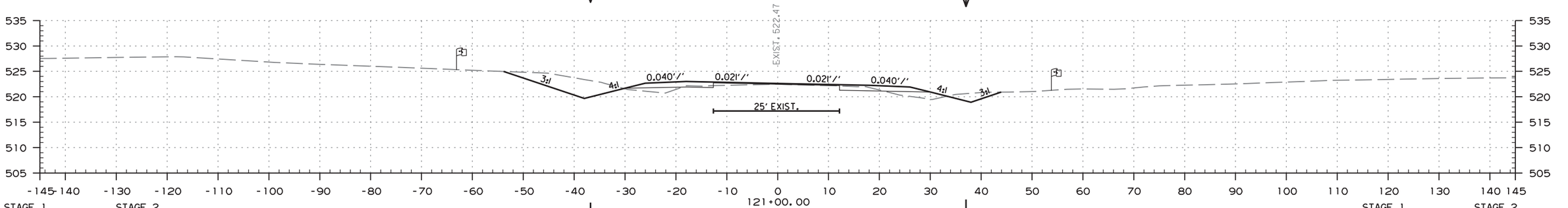
STAGE 1 AREA CUT 58 AREA FILL 0

STAGE 2 AREA CUT 139 AREA FILL 0

STAGE 1 CUT VOLUME 136 FILL VOLUME 18

STAGE 2 CUT VOLUME 350 FILL VOLUME 14

121+30.00 END 270' TRANSITION

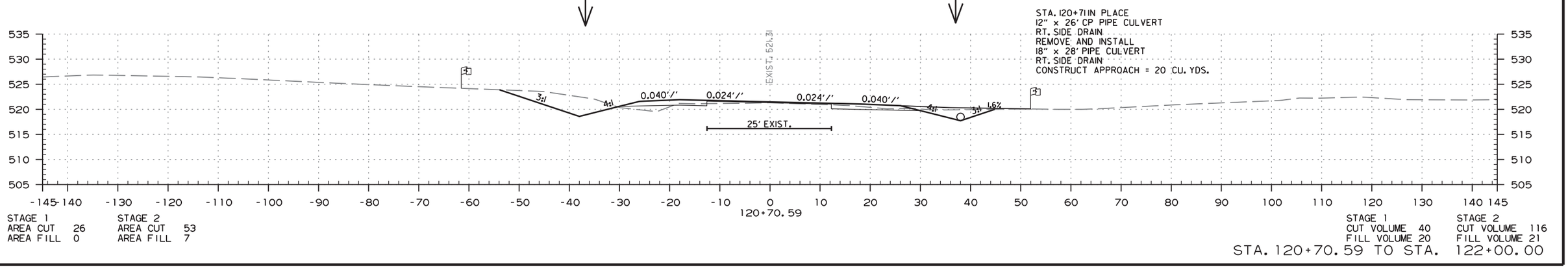


STAGE 1 AREA CUT 15 AREA FILL 10

STAGE 2 AREA CUT 50 AREA FILL 7

STAGE 1 CUT VOLUME 23 FILL VOLUME 5

STAGE 2 CUT VOLUME 56 FILL VOLUME 8



STAGE 1 AREA CUT 26 AREA FILL 0

STAGE 2 AREA CUT 53 AREA FILL 7

STAGE 1 CUT VOLUME 40 FILL VOLUME 20

STAGE 2 CUT VOLUME 116 FILL VOLUME 21

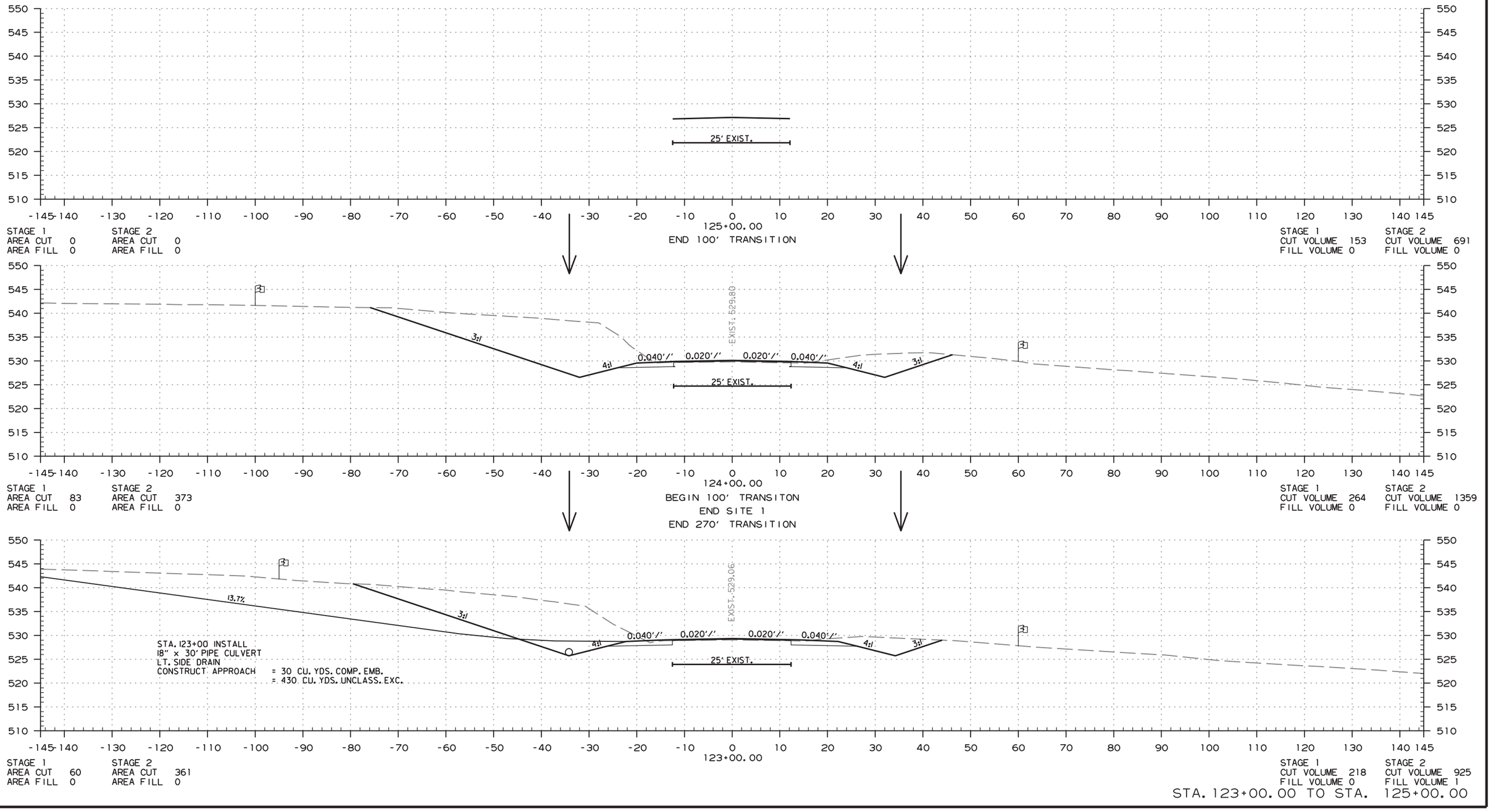
STA. 120+70.59 TO STA. 122+00.00

6/25/2020

R061309.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.		061309	123	260

(2) CROSS SECTIONS SITE 1



STA. 123+00.00 TO STA. 125+00.00

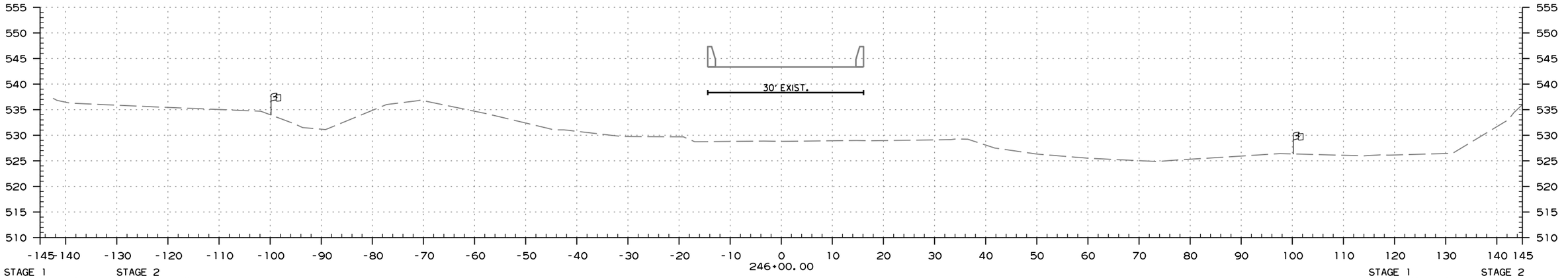
6/25/2020

R061309.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

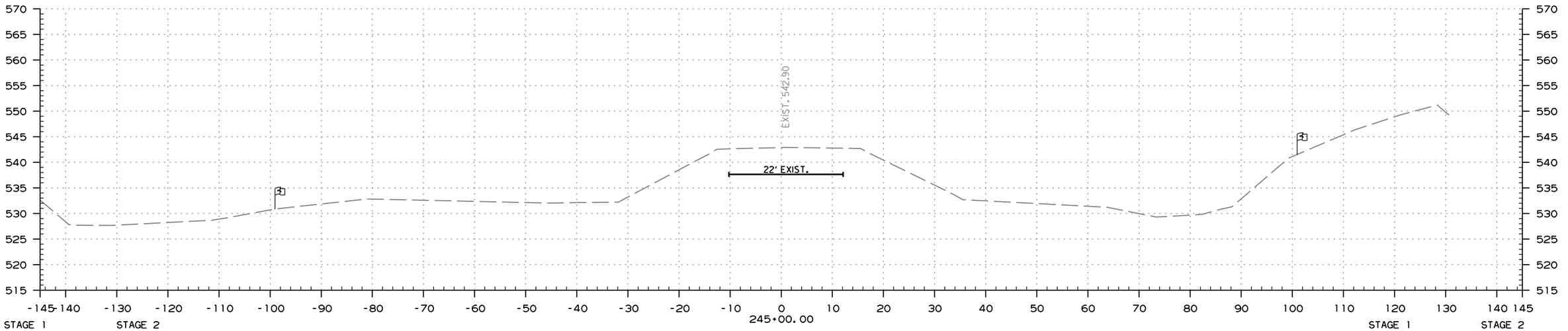
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	124	260

(2) CROSS SECTIONS SITE 2



STAGE 1	STAGE 2
AREA CUT 0	AREA CUT 0
AREA FILL 0	AREA FILL 0

STAGE 1	STAGE 2
CUT VOLUME 0	CUT VOLUME 0
FILL VOLUME 0	FILL VOLUME 0



STAGE 1	STAGE 2
AREA CUT 0	AREA CUT 0
AREA FILL 0	AREA FILL 0

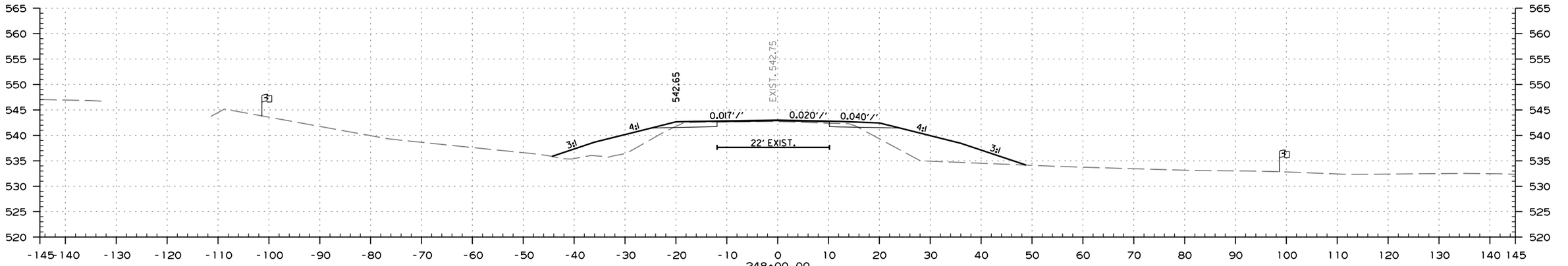
STAGE 1	STAGE 2
CUT VOLUME 0	CUT VOLUME 0
FILL VOLUME 0	FILL VOLUME 0

HWY. 7
STA. 245+00.00 TO STA. 246+00.00

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	125	260

(2) CROSS SECTIONS SITE 2



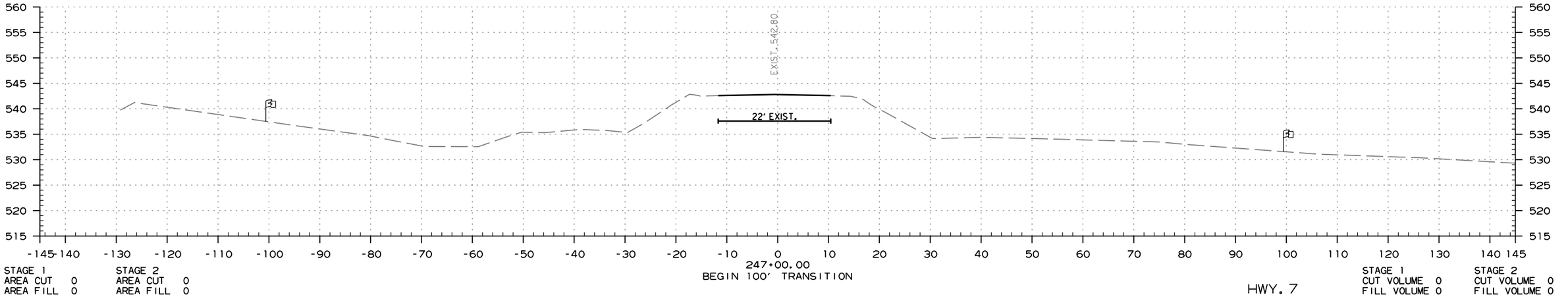
STAGE 1
AREA CUT 3
AREA FILL 98

STAGE 2
AREA CUT 7
AREA FILL 55

248+00.00
BEGIN 330' TRANSITION
BEGIN SITE 2
END 100' TRANSITION
STA. 247+93.09 BEGIN SUPERELEVATION (N.C.)

STAGE 1
CUT VOLUME 6
FILL VOLUME 181

STAGE 2
CUT VOLUME 13
FILL VOLUME 101



STAGE 1
AREA CUT 0
AREA FILL 0

STAGE 2
AREA CUT 0
AREA FILL 0

247+00.00
BEGIN 100' TRANSITION

STAGE 1
CUT VOLUME 0
FILL VOLUME 0

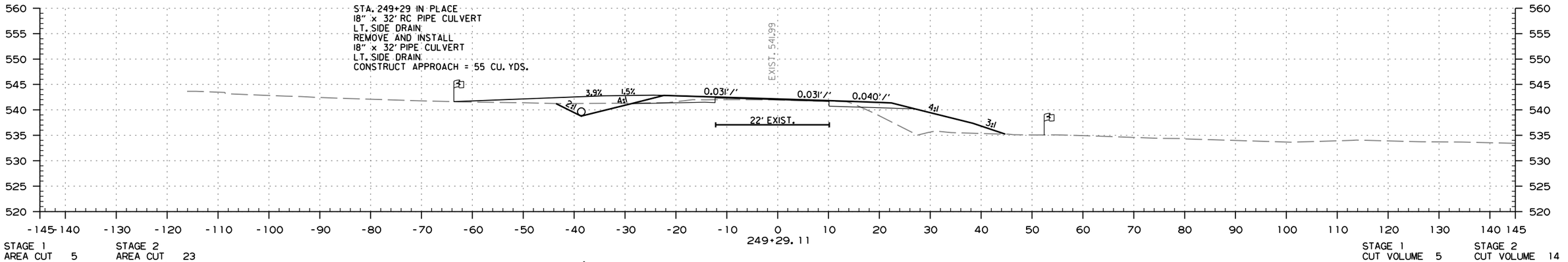
STAGE 2
CUT VOLUME 0
FILL VOLUME 0

HWY. 7
STA. 247+00.00 TO STA. 248+00.00

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	126	260

(2) CROSS SECTIONS SITE 2

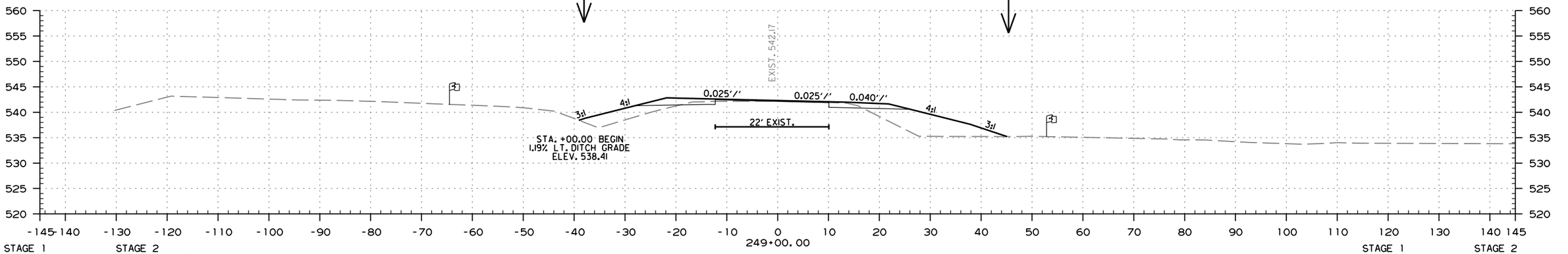


STAGE 1
AREA CUT 5
AREA FILL 69

STAGE 2
AREA CUT 23
AREA FILL 0

STAGE 1
CUT VOLUME 5
FILL VOLUME 77

STAGE 2
CUT VOLUME 14
FILL VOLUME 17

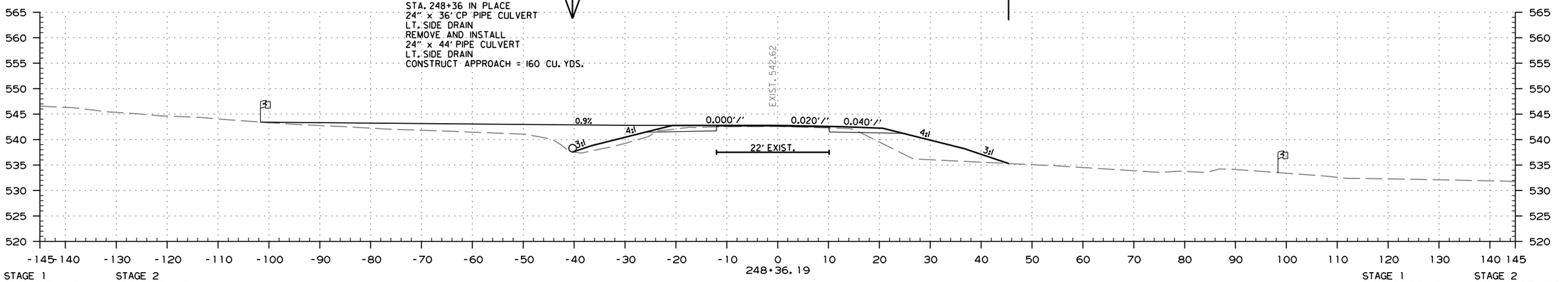


STAGE 1
AREA CUT 5
AREA FILL 74

STAGE 2
AREA CUT 3
AREA FILL 31

STAGE 1
CUT VOLUME 11
FILL VOLUME 172

STAGE 2
CUT VOLUME 12
FILL VOLUME 56



STAGE 1
AREA CUT 4
AREA FILL 72

STAGE 2
AREA CUT 7
AREA FILL 16

STAGE 1
CUT VOLUME 5
FILL VOLUME 114

STAGE 2
CUT VOLUME 10
FILL VOLUME 47

HWY. 7
STA. 248+36.19 TO STA. 249+29.11

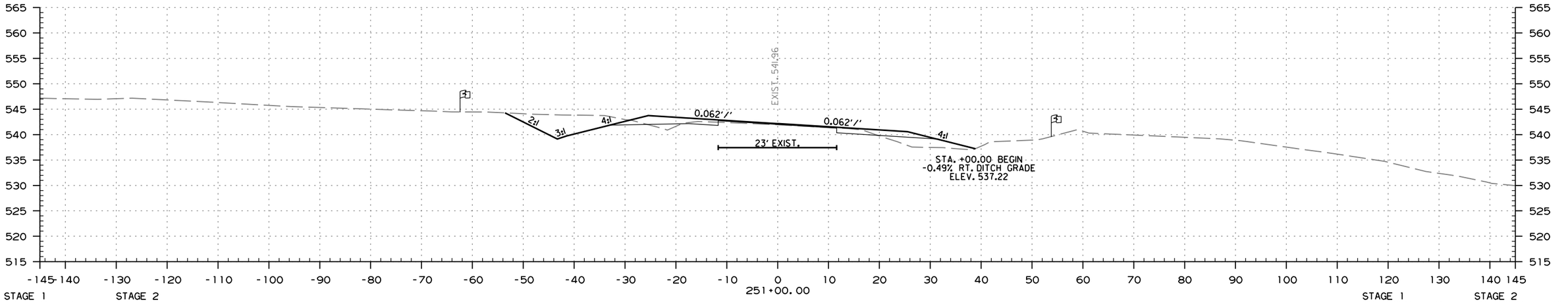
COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	127	260

(2) CROSS SECTIONS SITE 2

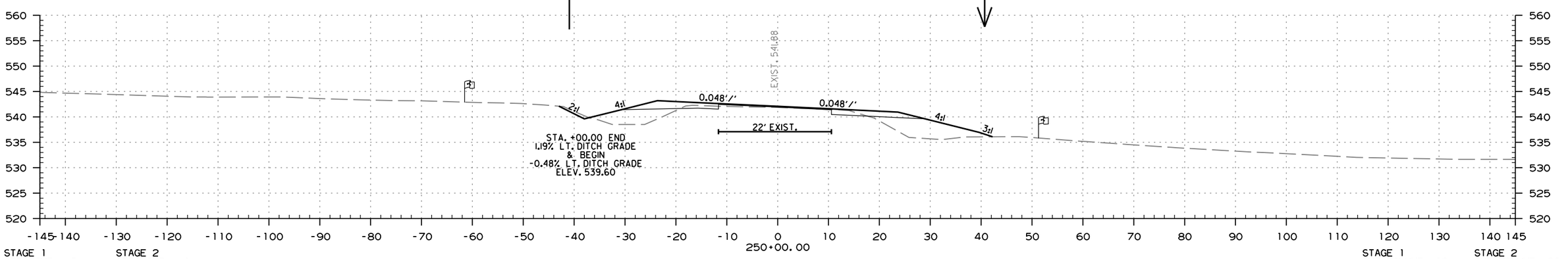
STA. 251+30 END 330' TRANSITION



STAGE 1		STAGE 2	
AREA CUT	6	AREA CUT	68
AREA FILL	22	AREA FILL	4

STAGE 1		STAGE 2	
CUT VOLUME	21	CUT VOLUME	132
FILL VOLUME	141	FILL VOLUME	71

STA. 250+63.09 MAX. SUPERELEVATION (0.062 FT./FT.)



STAGE 1		STAGE 2	
AREA CUT	5	AREA CUT	4
AREA FILL	54	AREA FILL	35

STAGE 1		STAGE 2	
CUT VOLUME	13	CUT VOLUME	36
FILL VOLUME	162	FILL VOLUME	46

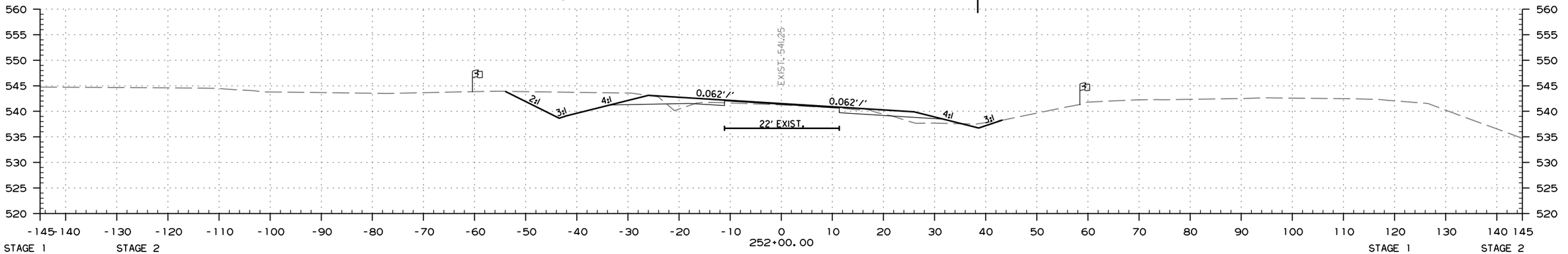
HWY. 7
STA. 250+00.00 TO STA. 251+00.00

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	128	260

(2) CROSS SECTIONS SITE 2

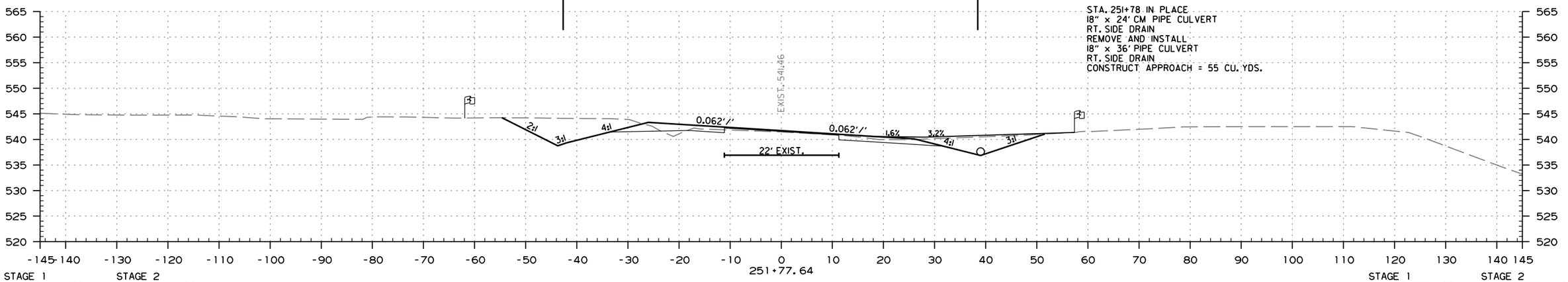


STAGE 1
AREA CUT 10
AREA FILL 9

STAGE 2
AREA CUT 87
AREA FILL 4

STAGE 1
CUT VOLUME 29
FILL VOLUME 4

STAGE 2
CUT VOLUME 73
FILL VOLUME 3



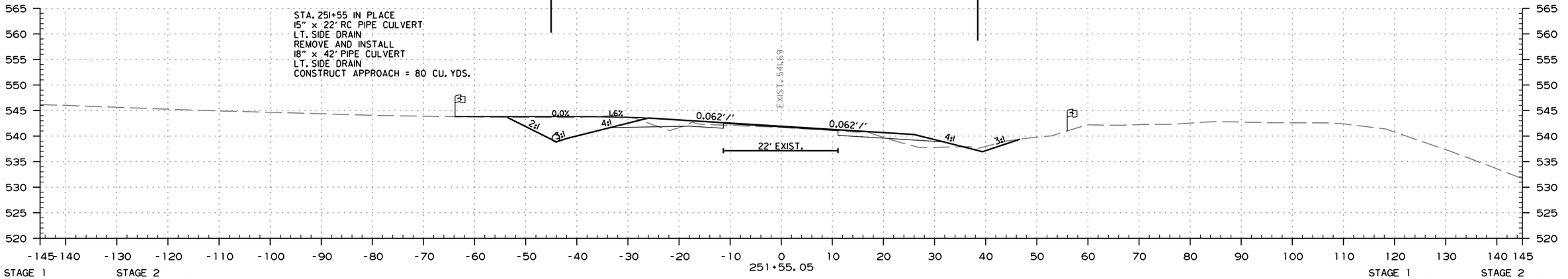
STA. 251+78 IN PLACE
18" x 24' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 36' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 55 CU. YDS.

STAGE 1
AREA CUT 60
AREA FILL 0

STAGE 2
AREA CUT 91
AREA FILL 3

STAGE 1
CUT VOLUME 30
FILL VOLUME 5

STAGE 2
CUT VOLUME 70
FILL VOLUME 2



STA. 251+55 IN PLACE
15" x 22' RC PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 42' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 80 CU. YDS.

STAGE 1
AREA CUT 12
AREA FILL 12

STAGE 2
AREA CUT 77
AREA FILL 2

STAGE 1
CUT VOLUME 19
FILL VOLUME 35

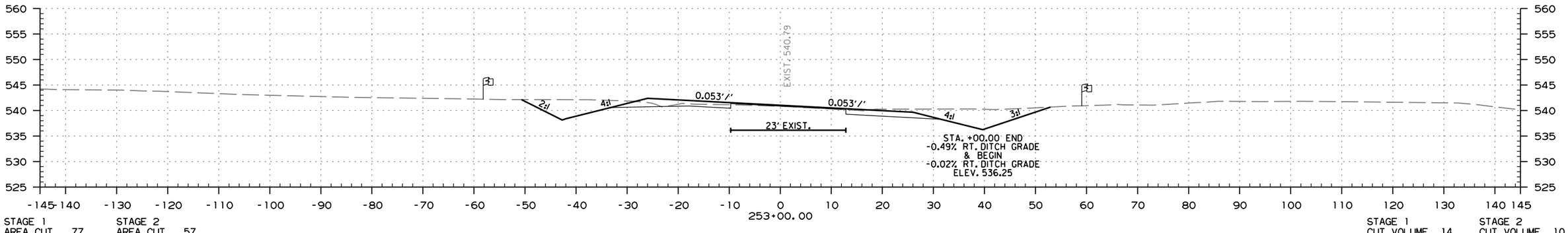
STAGE 2
CUT VOLUME 148
FILL VOLUME 6

HWY. 7
STA. 251+55.05 TO STA. 252+00.00

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	129	260

(2) CROSS SECTIONS SITE 2



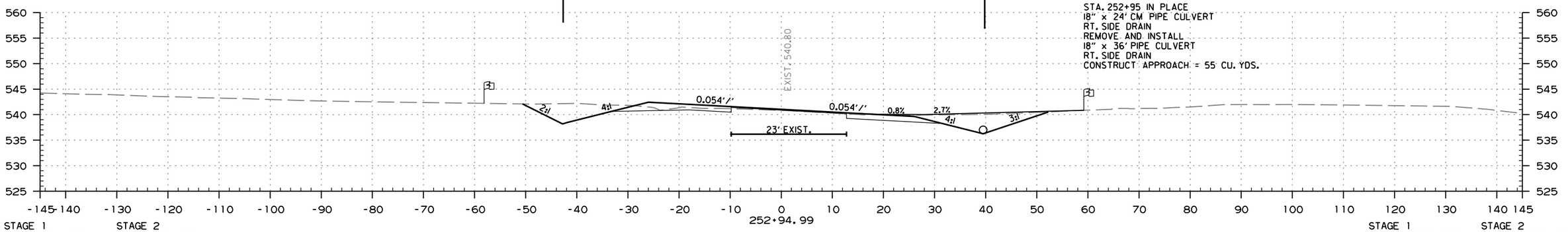
STAGE 1 AREA CUT 77 AREA FILL 0

STAGE 2 AREA CUT 57 AREA FILL 0

STAGE 1 CUT VOLUME 14 FILL VOLUME 0

STAGE 2 CUT VOLUME 10 FILL VOLUME 0

STA. 252+95 IN PLACE
18" x 24' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 36' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 55 CU. YDS.



STAGE 1 AREA CUT 69 AREA FILL 0

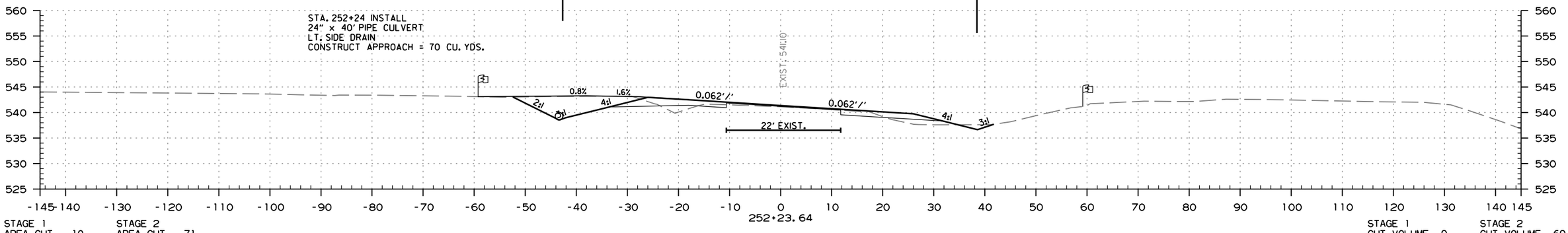
STAGE 2 AREA CUT 56 AREA FILL 0

STAGE 1 CUT VOLUME 104 FILL VOLUME 12

STAGE 2 CUT VOLUME 167 FILL VOLUME 7

STA. 252+58.71 MAX. SUPERELEVATION (0.062 FT./FT.)

STA. 252+24 INSTALL
24" x 40' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 70 CU. YDS.



STAGE 1 AREA CUT 10 AREA FILL 9

STAGE 2 AREA CUT 71 AREA FILL 6

STAGE 1 CUT VOLUME 9 FILL VOLUME 8

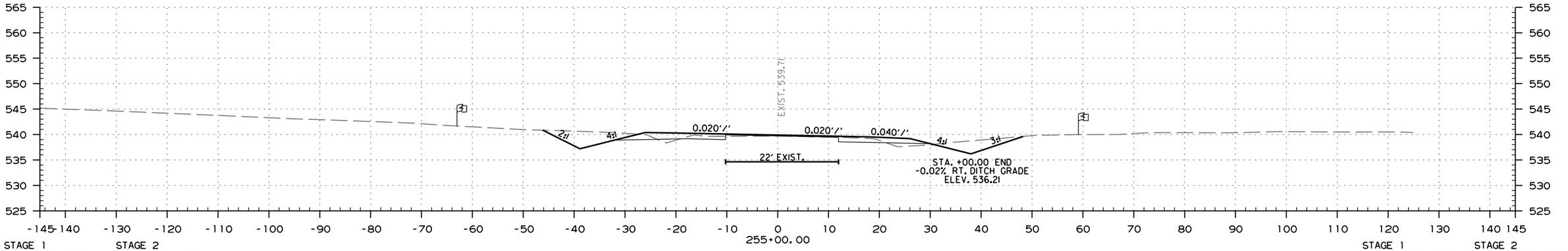
STAGE 2 CUT VOLUME 69 FILL VOLUME 4

HWY. 7
STA. 252+23.64 TO STA. 253+00.00

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	130	260

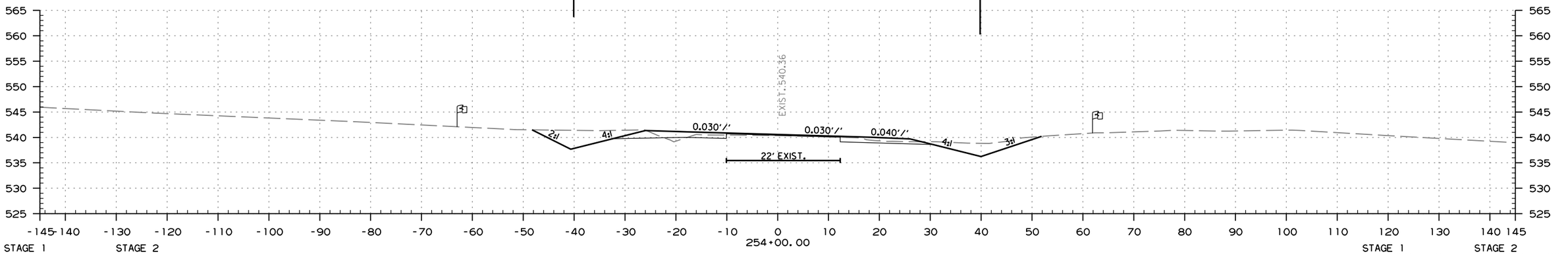
(2) CROSS SECTIONS SITE 2



STAGE 1 AREA CUT 29 AREA FILL 4
STAGE 2 AREA CUT 43 AREA FILL 2

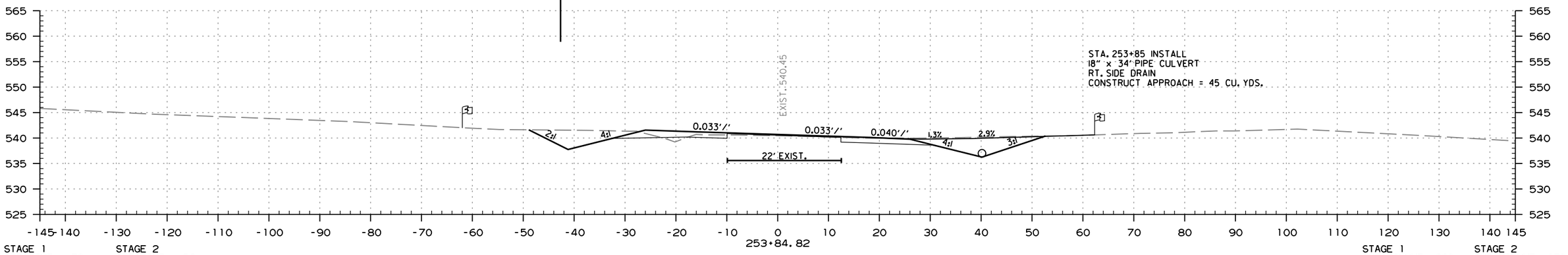
STAGE 1 CUT VOLUME 128 FILL VOLUME 8
STAGE 2 CUT VOLUME 178 FILL VOLUME 7

STA. 254+41.61 END SUPERELEVATION (R.C.)



STAGE 1 AREA CUT 40 AREA FILL 0
STAGE 2 AREA CUT 53 AREA FILL 2

STAGE 1 CUT VOLUME 31 FILL VOLUME 0
STAGE 2 CUT VOLUME 30 FILL VOLUME 1



STAGE 1 AREA CUT 70 AREA FILL 0
STAGE 2 AREA CUT 52 AREA FILL 2

STAGE 1 CUT VOLUME 230 FILL VOLUME 0
STAGE 2 CUT VOLUME 170 FILL VOLUME 4

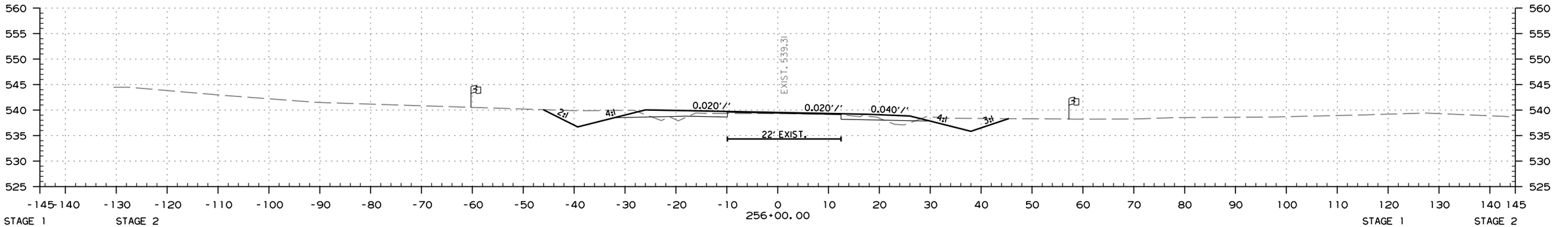
HWY. 7
STA. 253+84.82 TO STA. 255+00.00

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	131	260

(2) CROSS SECTIONS SITE 2

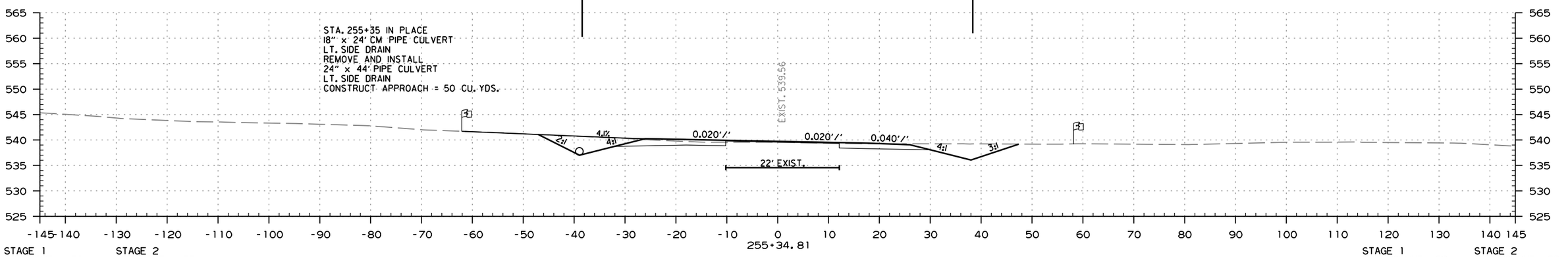


STAGE 1
AREA CUT 29
AREA FILL 3

STAGE 2
AREA CUT 40
AREA FILL 3

STAGE 1
CUT VOLUME 97
FILL VOLUME 4

STAGE 2
CUT VOLUME 114
FILL VOLUME 4

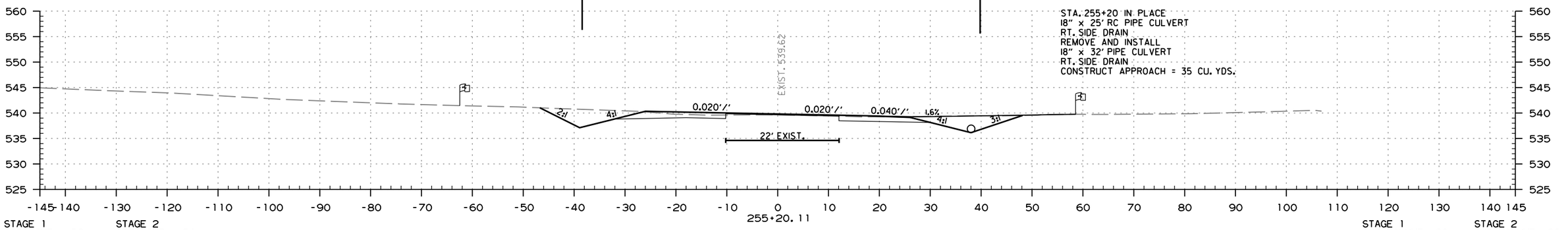


STAGE 1
AREA CUT 51
AREA FILL 0

STAGE 2
AREA CUT 55
AREA FILL 0

STAGE 1
CUT VOLUME 28
FILL VOLUME 0

STAGE 2
CUT VOLUME 29
FILL VOLUME 0



STAGE 1
AREA CUT 52
AREA FILL 0

STAGE 2
AREA CUT 54
AREA FILL 0

STAGE 1
CUT VOLUME 30
FILL VOLUME 2

STAGE 2
CUT VOLUME 36
FILL VOLUME 1

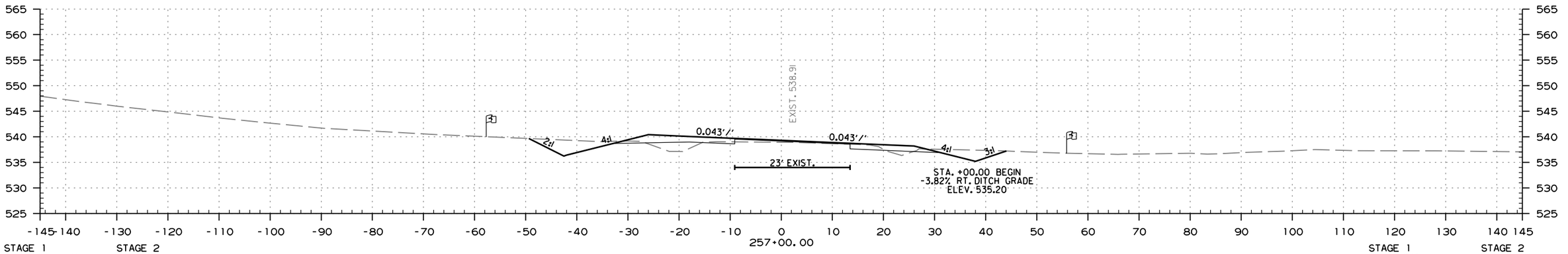
HWY. 7
STA. 255+20.11 TO STA. 256+00.00

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	132	260

(2) CROSS SECTIONS SITE 2

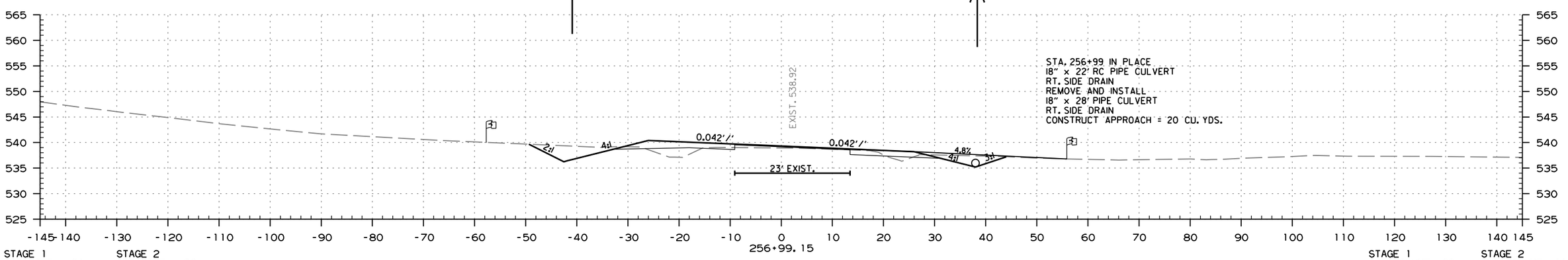


STAGE 1
AREA CUT 25
AREA FILL 2

STAGE 2
AREA CUT 31
AREA FILL 13

STAGE 1
CUT VOLUME 1
FILL VOLUME 0

STAGE 2
CUT VOLUME 1
FILL VOLUME 0

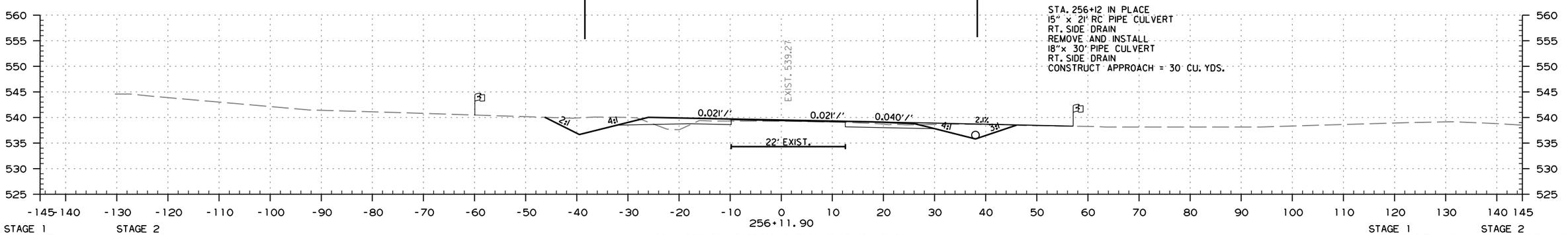


STAGE 1
AREA CUT 24
AREA FILL 2

STAGE 2
AREA CUT 32
AREA FILL 12

STAGE 1
CUT VOLUME 90
FILL VOLUME 4

STAGE 2
CUT VOLUME 118
FILL VOLUME 29



STAGE 1
AREA CUT 31
AREA FILL 0

STAGE 2
AREA CUT 41
AREA FILL 5

STA. 256+09.21 BEGIN SUPERELEVATION (R.C.)

STAGE 1
CUT VOLUME 13
FILL VOLUME 1

STAGE 2
CUT VOLUME 18
FILL VOLUME 2

HWY. 7
STA. 256+11.90 TO STA. 257+00.00

COPY OF R061309.DGN 7/30/2020

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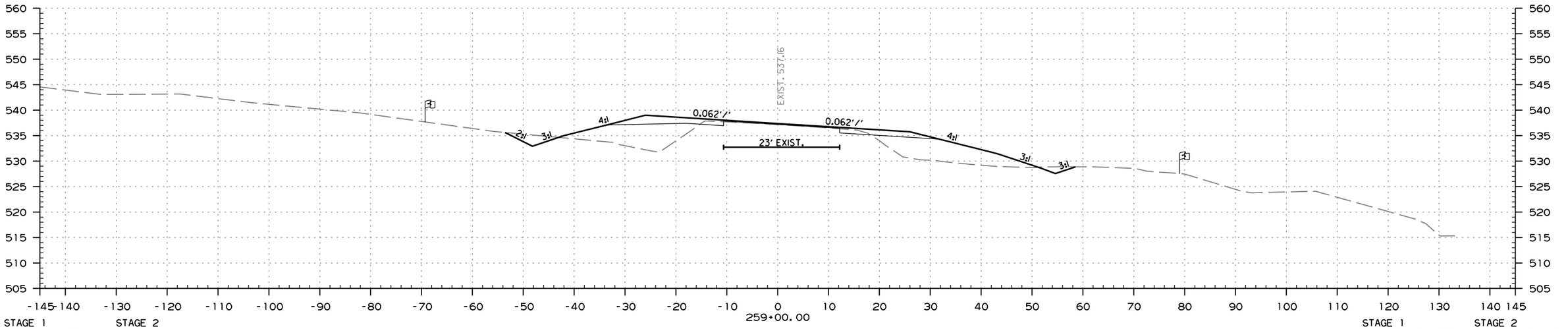
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	133	260

(2) CROSS SECTIONS SITE 2

STA. +04.97 BEGIN
-3.82% RT. DITCH GRADE
ELEV. 527.36

STA. +05.29 END
-2.83% LT. DITCH GRADE
ELEV. 532.77



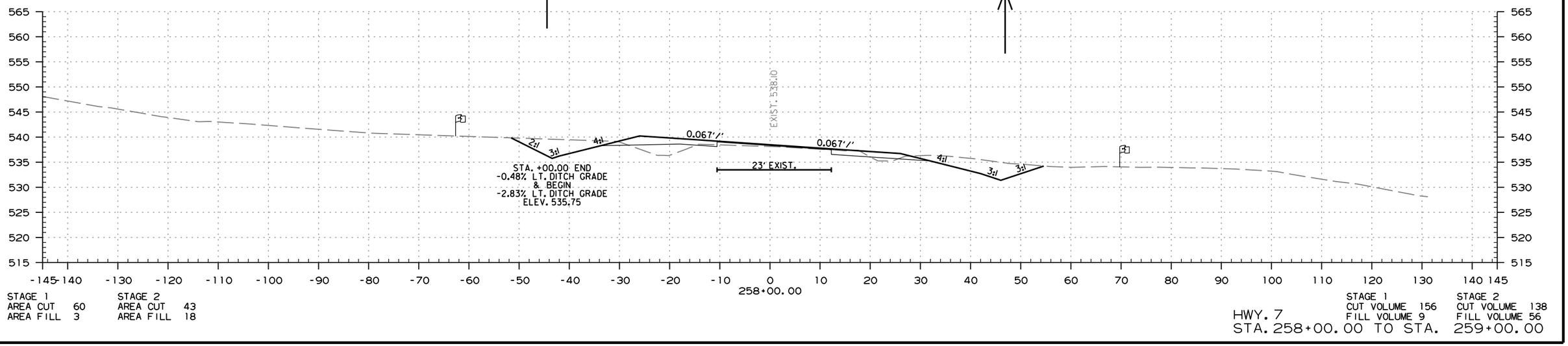
STAGE 1
AREA CUT 9
AREA FILL 92

STAGE 2
AREA CUT 15
AREA FILL 85

STAGE 1
CUT VOLUME 127
FILL VOLUME 176

STAGE 2
CUT VOLUME 107
FILL VOLUME 191

STA. 258+58.78 MAX SUPERELEVATION (0.073 FT./FT.)
STA. 258+20.62 MAX. SUPERELEVATION (0.073 FT./FT.)



STA. +00.00 END
-0.48% LT. DITCH GRADE
& BEGIN
-2.83% LT. DITCH GRADE
ELEV. 535.75

STAGE 1
AREA CUT 60
AREA FILL 3

STAGE 2
AREA CUT 43
AREA FILL 18

STAGE 1
CUT VOLUME 156
FILL VOLUME 9

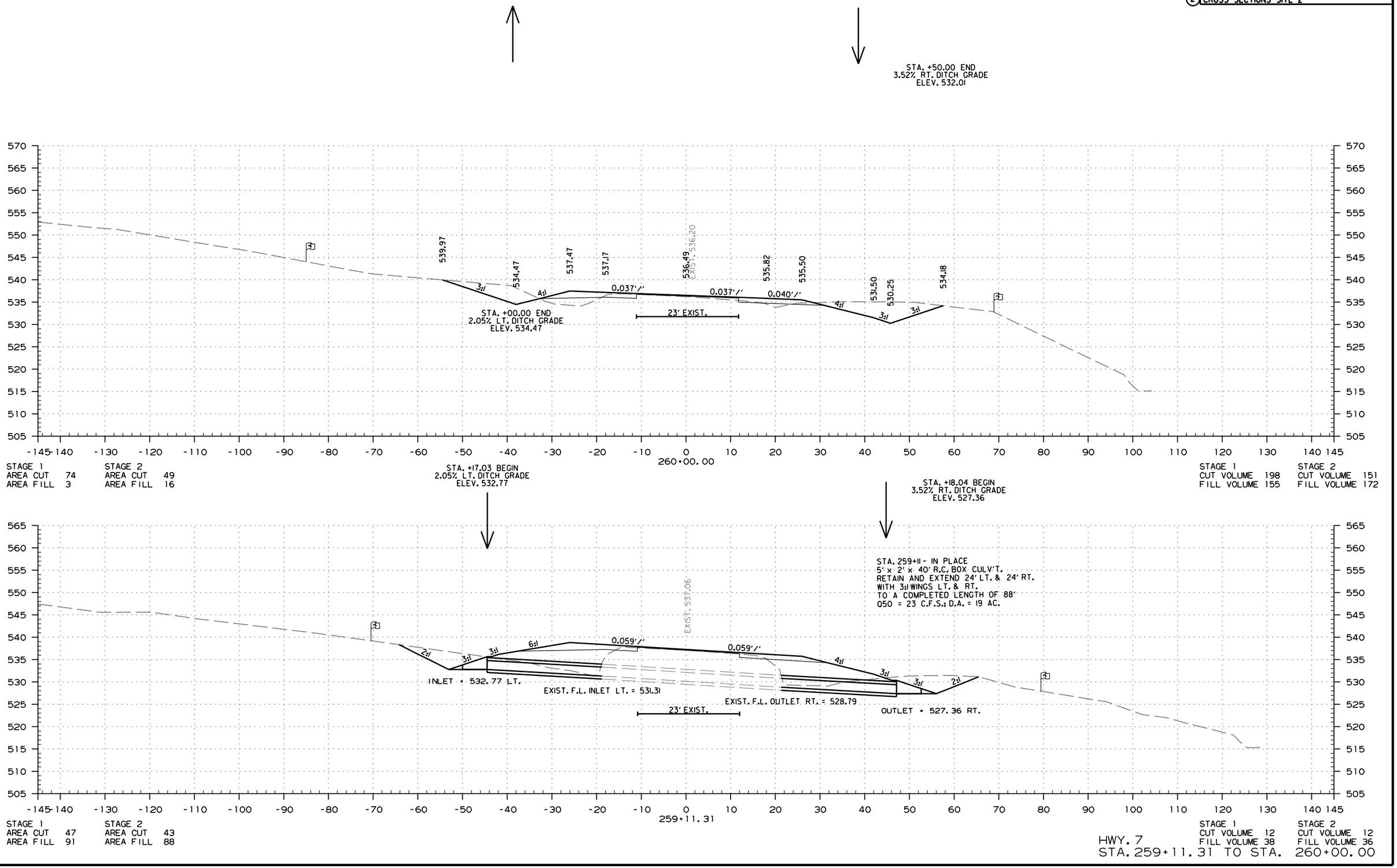
STAGE 2
CUT VOLUME 138
FILL VOLUME 56

HWY. 7
STA. 258+00.00 TO STA. 259+00.00

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	134	260

(2) CROSS SECTIONS SITE 2



HWY. 7
STA. 259+11.31 TO STA. 260+00.00

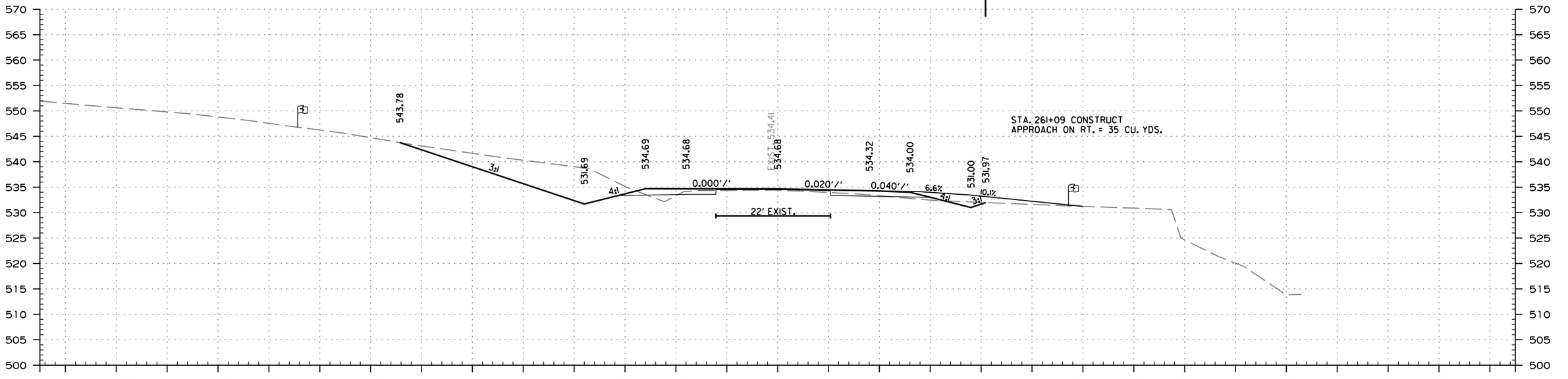
COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	135	260

(2) CROSS SECTIONS SITE 2

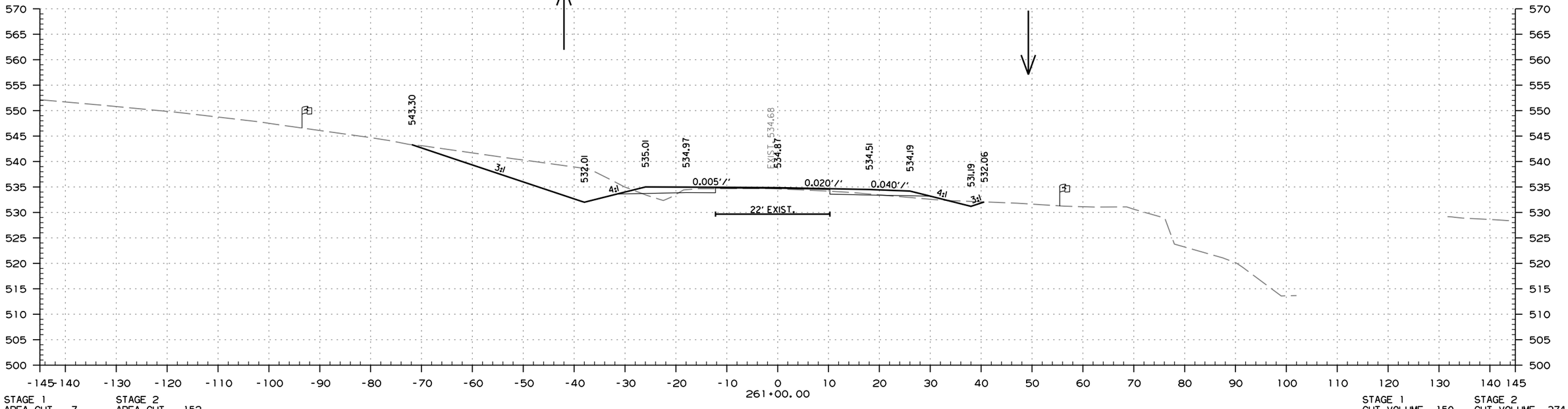
STA. 261+50.68 BEGIN SUPERELEVATION (N.C.)
STA. 261+50.68 END SUPERELEVATION (N.C.)



261+09.49

STAGE 1	STAGE 2
AREA CUT 8	AREA CUT 169
AREA FILL 3	AREA FILL 4

STAGE 1	STAGE 2
CUT VOLUME 3	CUT VOLUME 56
FILL VOLUME 1	FILL VOLUME 2



261+00.00

STAGE 1	STAGE 2
AREA CUT 7	AREA CUT 152
AREA FILL 4	AREA FILL 6

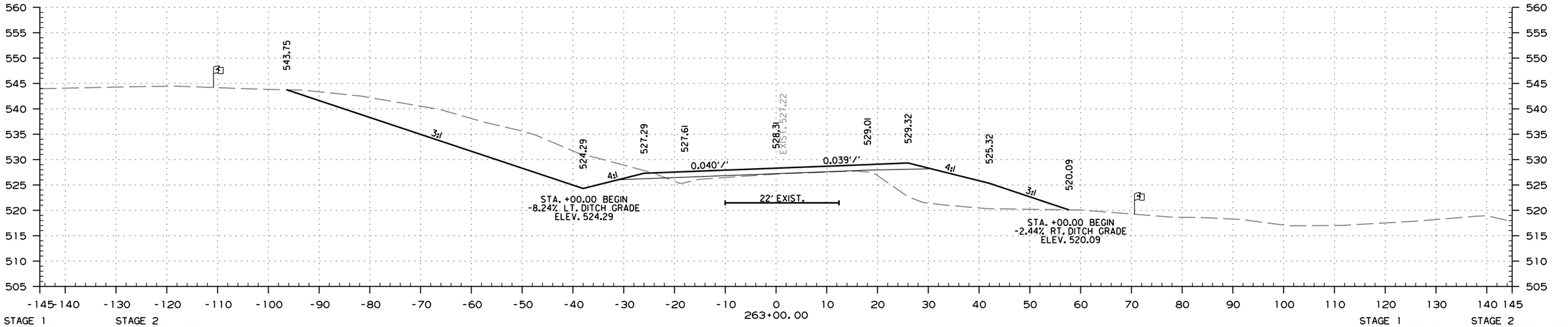
STAGE 1	STAGE 2
CUT VOLUME 150	CUT VOLUME 374
FILL VOLUME 12	FILL VOLUME 41

HWY. 7
STA. 261+00.00 TO STA. 261+09.49

COPY OF R061309.DGN 7/30/2020

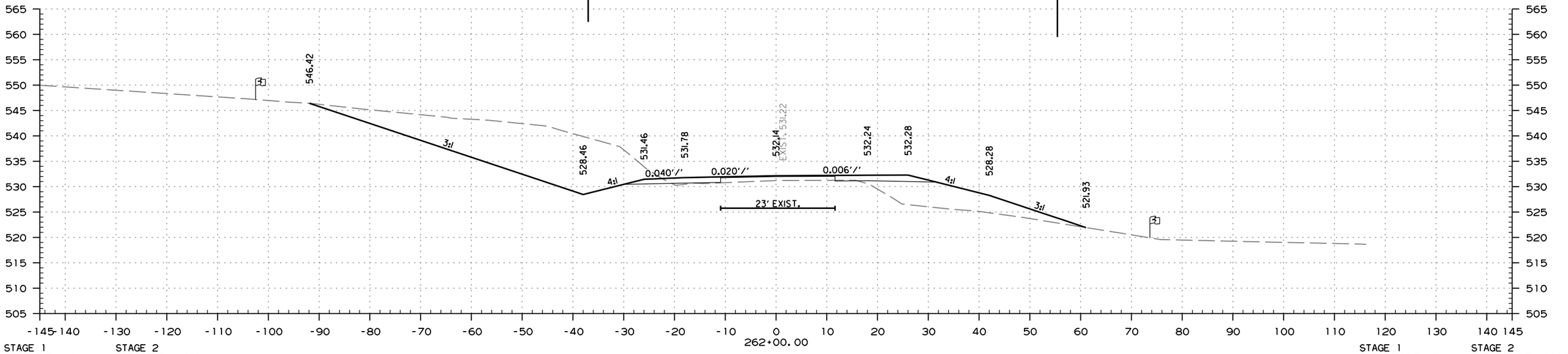
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	136	260

(2) CROSS SECTIONS SITE 2



STAGE 1 AREA CUT 0 AREA FILL 158
STAGE 2 AREA CUT 347 AREA FILL 7

STAGE 1 CUT VOLUME 1 FILL VOLUME 523
STAGE 2 CUT VOLUME 1456 FILL VOLUME 17



STAGE 1 AREA CUT 1 AREA FILL 125
STAGE 2 AREA CUT 439 AREA FILL 2

STAGE 1 CUT VOLUME 14 FILL VOLUME 125
STAGE 2 CUT VOLUME 1019 FILL VOLUME 10

HWY. 7
STA. 262+00.00 TO STA. 263+00.00

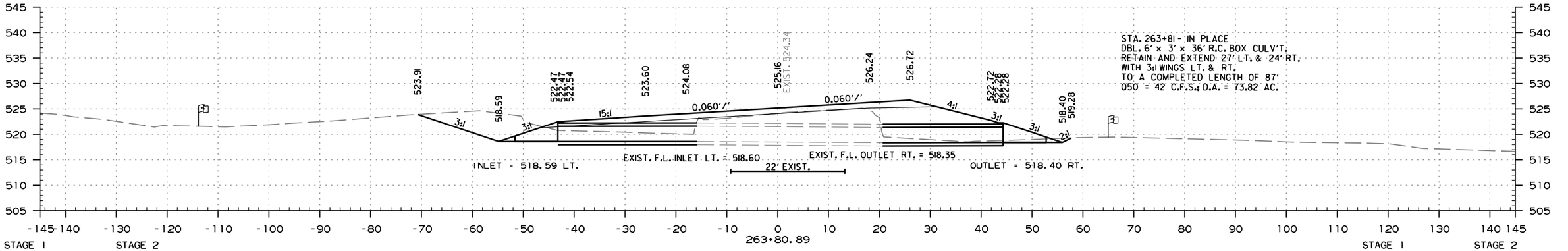
COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	137	260

(2) CROSS SECTIONS SITE 2

STA. +94.24 BEGIN
-2.21% LT. DITCH GRADE
ELEV. 518.59

STA. +91.17 BEGIN
-0.95% RT. DITCH GRADE
ELEV. 518.40



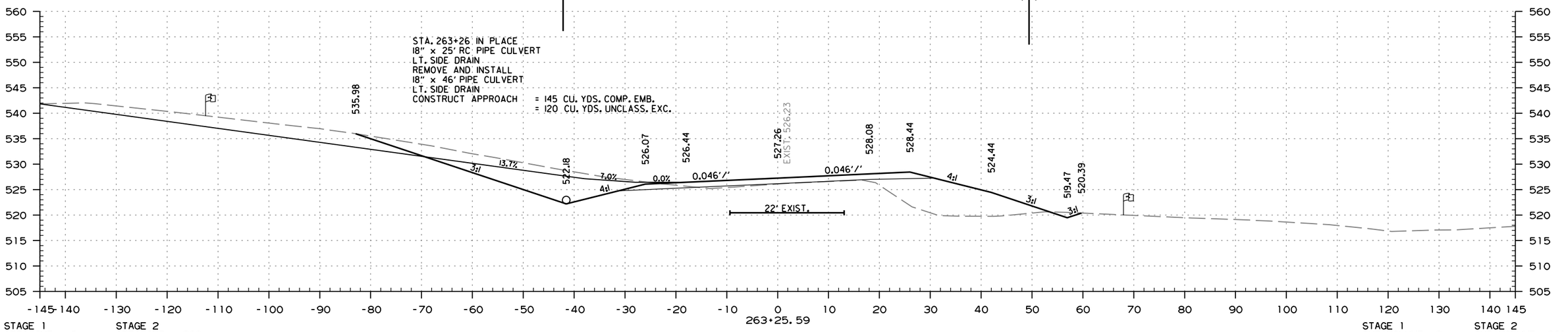
STAGE 1	STAGE 2
AREA CUT 2	AREA CUT 74
AREA FILL 153	AREA FILL 55

STAGE 1	STAGE 2
CUT VOLUME 5	CUT VOLUME 284
FILL VOLUME 306	FILL VOLUME 58

STA. +69.18 END
-8.24% LT. DITCH GRADE
ELEV. 518.59

STA. +69.26 END
-2.44% RT. DITCH GRADE
ELEV. 518.40

STA. 263+26 IN PLACE
18" x 25' RC PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 46' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 145 CU. YDS. COMP. EMB.
= 120 CU. YDS. UNCLASS. EXC.



STAGE 1	STAGE 2
AREA CUT 3	AREA CUT 203
AREA FILL 146	AREA FILL 2

STAGE 1	STAGE 2
CUT VOLUME 2	CUT VOLUME 261
FILL VOLUME 144	FILL VOLUME 4

HWY. 7
STA. 263+25.59 TO STA. 263+80.89

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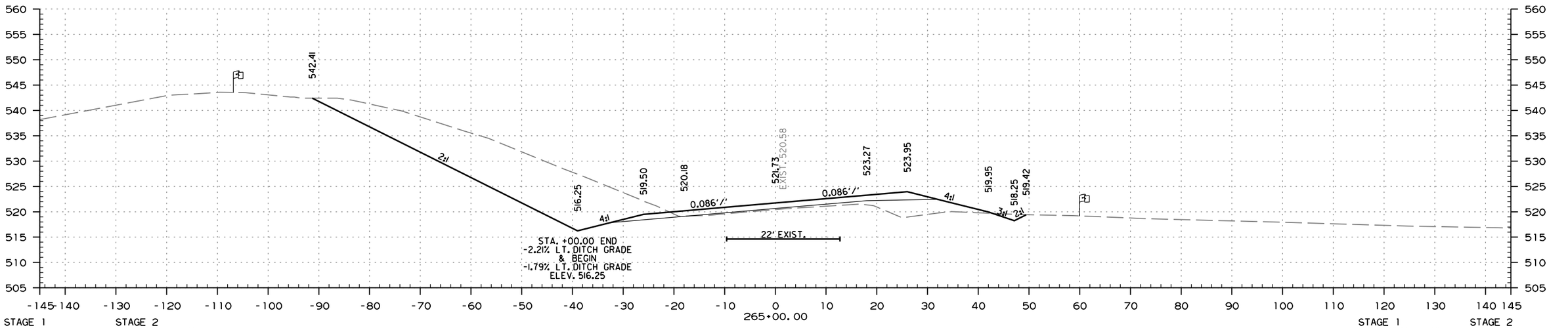
07-30-20				6	ARK.			
				JOB NO.		061309	138	260

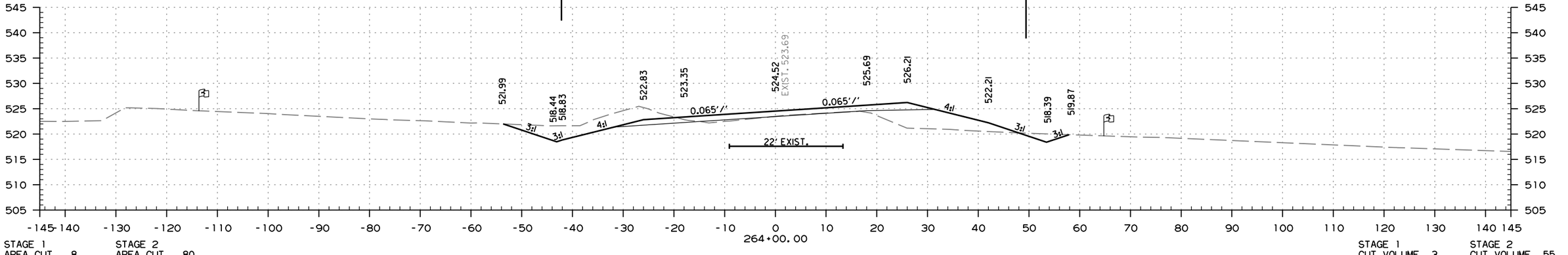
(2) CROSS SECTIONS SITE 2



STAGE 1 AREA CUT 4 AREA FILL 52
STAGE 2 AREA CUT 485 AREA FILL 1

STAGE 1 CUT VOLUME 22 FILL VOLUME 225
STAGE 2 CUT VOLUME 1046 FILL VOLUME 5

STA. 264+79.62 MAX. SUPERELEVATION (0.086 FT./FT.)



STAGE 1 AREA CUT 8 AREA FILL 70
STAGE 2 AREA CUT 80 AREA FILL 2

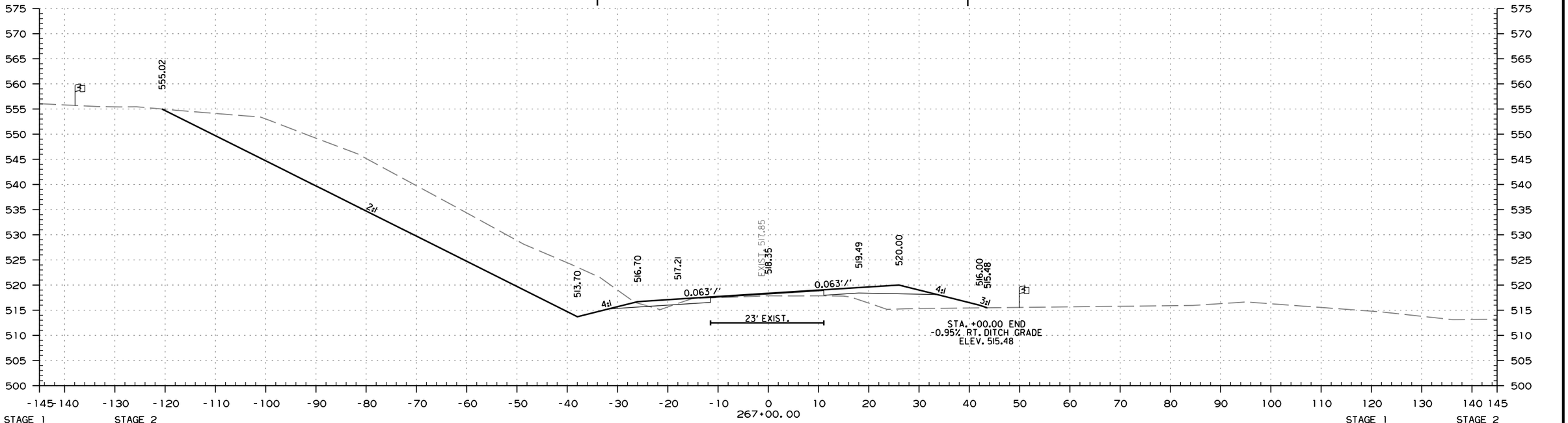
STAGE 1 CUT VOLUME 3 FILL VOLUME 79
STAGE 2 CUT VOLUME 55 FILL VOLUME 20

HWY. 7
STA. 264+00.00 TO STA. 265+00.00

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	139	260

(2) CROSS SECTIONS SITE 2



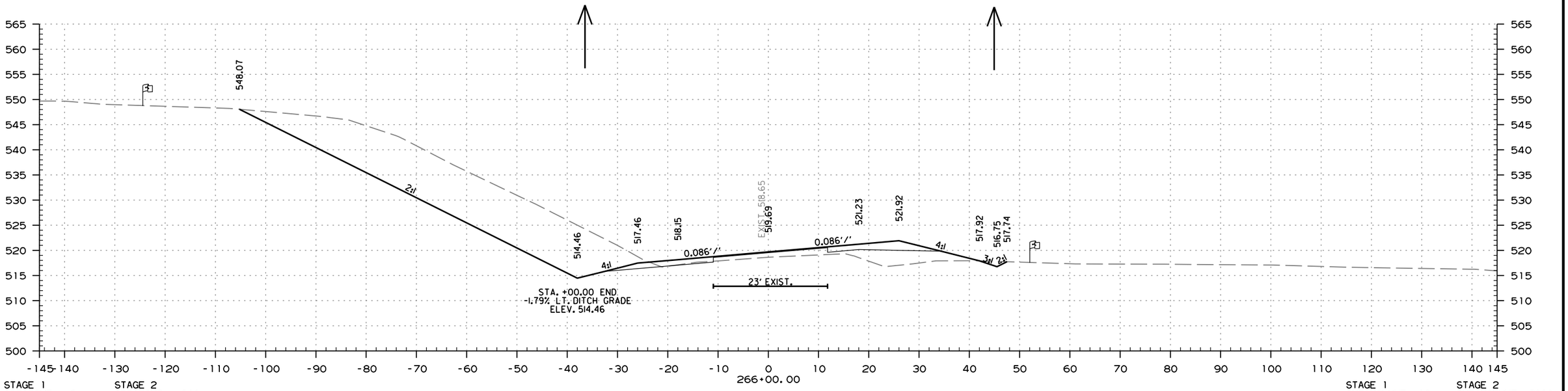
STAGE 1
AREA CUT 0
AREA FILL 59

STAGE 2
AREA CUT 755
AREA FILL 2

STAGE 1
CUT VOLUME 5
FILL VOLUME 208

STAGE 2
CUT VOLUME 2591
FILL VOLUME 4

STA. 266+14.62 MAX. SUPERELEVATION (0.086 FT./FT.)



STAGE 1
AREA CUT 3
AREA FILL 53

STAGE 2
AREA CUT 644
AREA FILL 0

STAGE 1
CUT VOLUME 13
FILL VOLUME 195

STAGE 2
CUT VOLUME 2090
FILL VOLUME 3

HWY. 7
STA. 266+00.00 TO STA. 267+00.00

COPY OF R061309.DGN 7/30/2020

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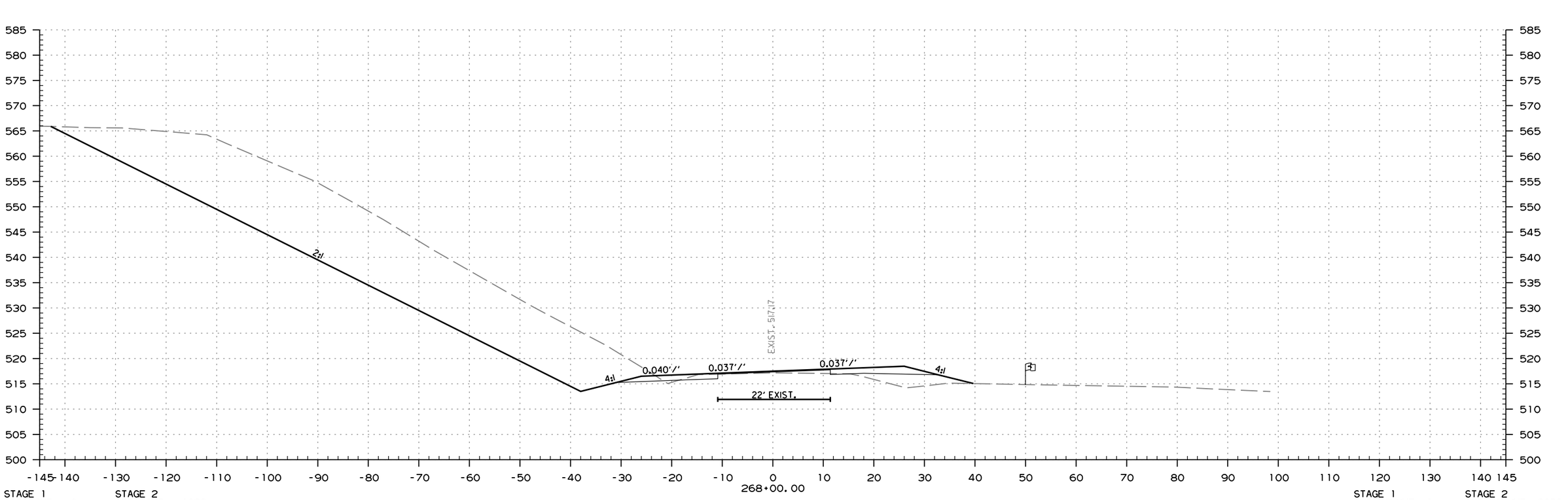
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	140	260

(2) CROSS SECTIONS SITE 2



STAGE 1
AREA CUT 0
AREA FILL 36

STAGE 2
AREA CUT 1328
AREA FILL 1

HWY. 7
STA. 268+00.00 TO STA. 268+00.00

STAGE 1
CUT VOLUME 1
FILL VOLUME 176

STAGE 2
CUT VOLUME 3858
FILL VOLUME 5

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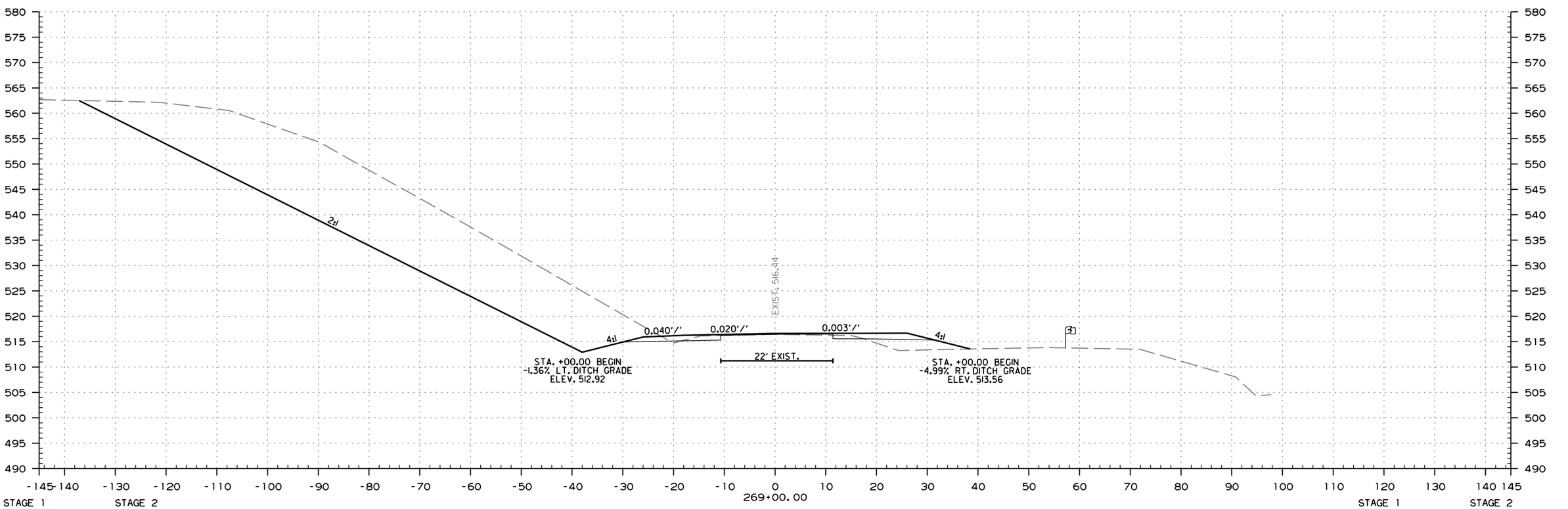
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	141	260

(2) CROSS SECTIONS SITE 2



STAGE 1
AREA CUT 3
AREA FILL 29

STAGE 2
AREA CUT 1268
AREA FILL 0

HWY. 7
STA. 269+00.00 TO STA. 269+00.00

STAGE 1
CUT VOLUME 6
FILL VOLUME 120

STAGE 2
CUT VOLUME 4807
FILL VOLUME 3

COPY OF R061309.DGN 7/30/2020

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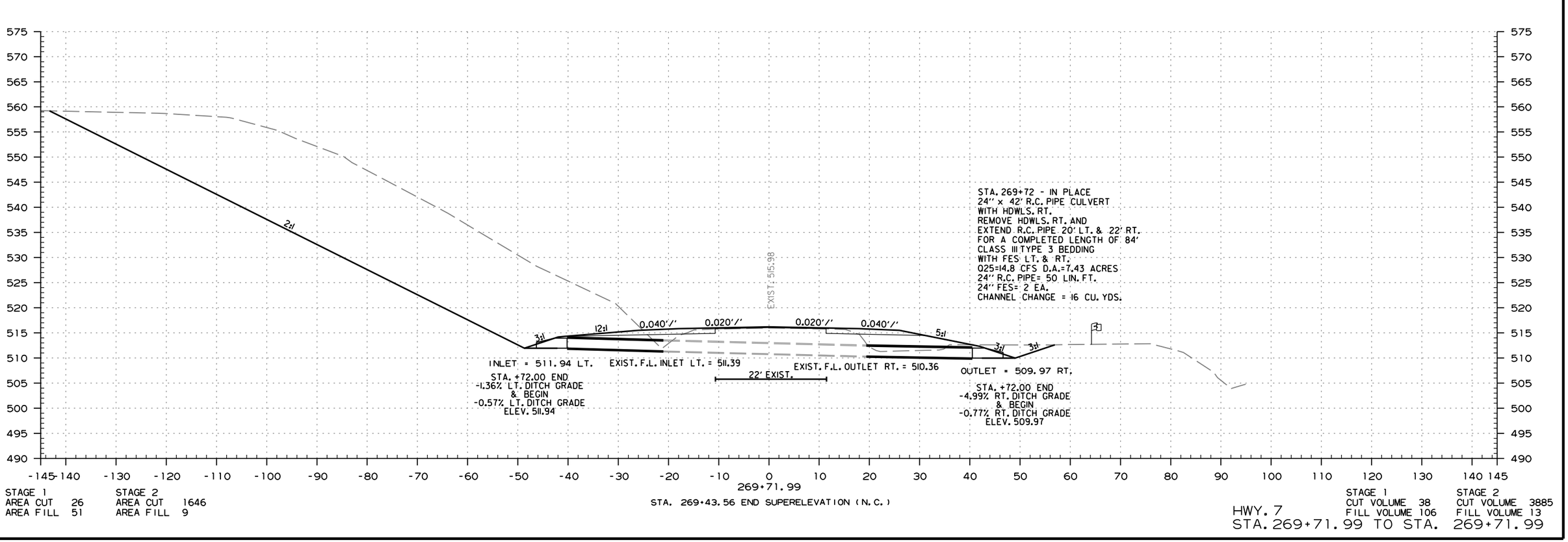
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	142	260

(2) CROSS SECTIONS SITE 2



STAGE 1		STAGE 2	
AREA CUT	26	AREA CUT	1646
AREA FILL	51	AREA FILL	9

STAGE 1		STAGE 2	
CUT VOLUME	38	CUT VOLUME	3885
FILL VOLUME	106	FILL VOLUME	13

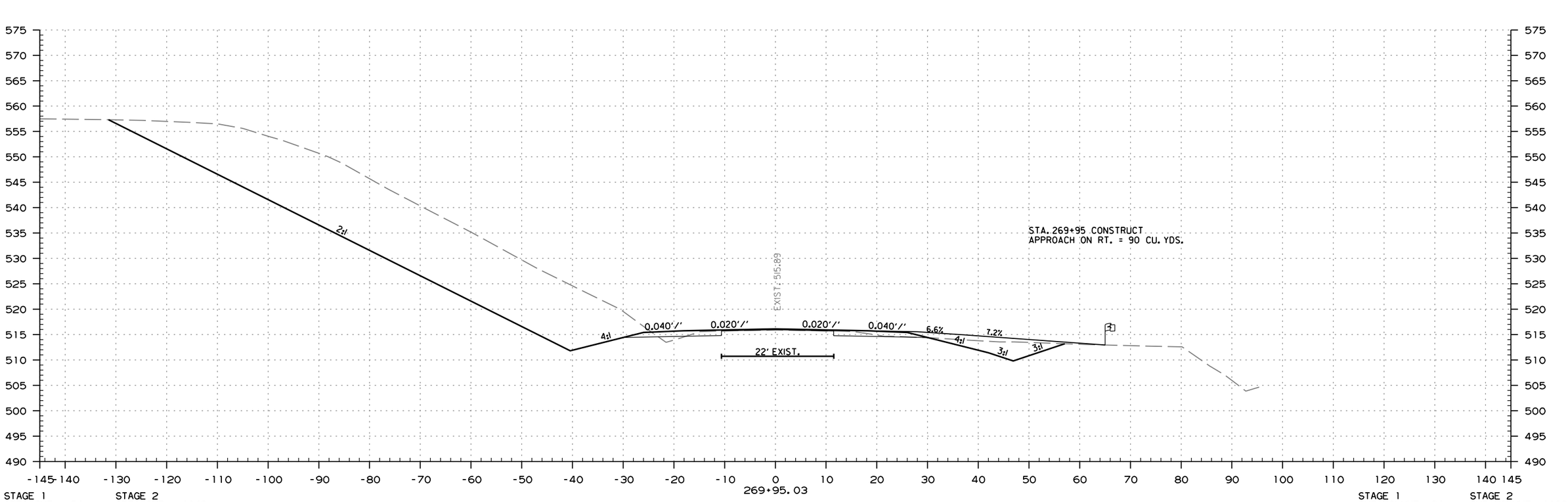
HWY. 7
STA. 269+71.99 TO STA. 269+71.99

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	143	260

(2) CROSS SECTIONS SITE 2



STAGE 1
AREA CUT 54
AREA FILL 0

STAGE 2
AREA CUT 1149
AREA FILL 3

HWY. 7
STA. 269+95.03 TO STA. 269+95.03

STAGE 1
CUT VOLUME 34
FILL VOLUME 22

STAGE 2
CUT VOLUME 1192
FILL VOLUME 5

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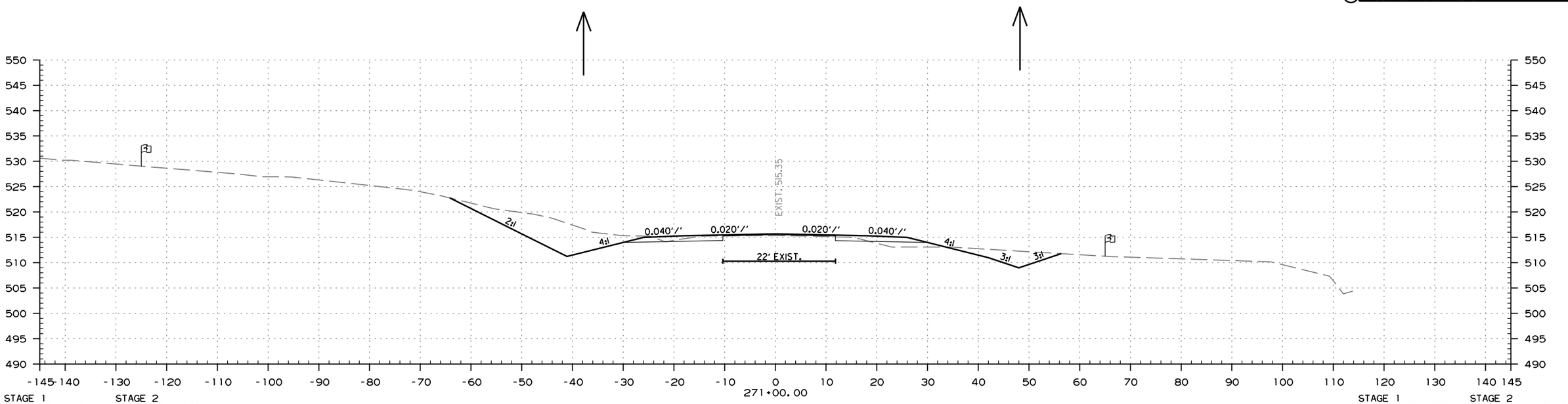
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	144	260

(2) CROSS SECTIONS SITE 2

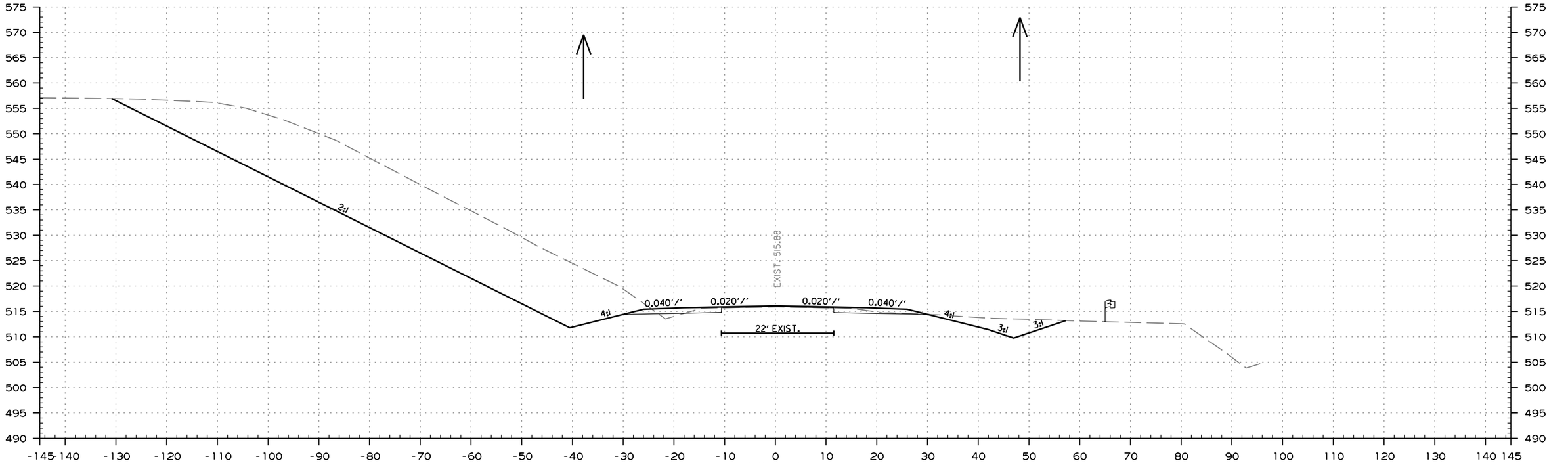


STAGE 1
AREA CUT 39
AREA FILL 11

STAGE 2
AREA CUT 133
AREA FILL 0

STAGE 1
CUT VOLUME 176
FILL VOLUME 20

STAGE 2
CUT VOLUME 2320
FILL VOLUME 5



STAGE 1
AREA CUT 56
AREA FILL 0

STAGE 2
AREA CUT 1120
AREA FILL 3

HWY. 7
STA. 270+00.00 TO STA. 271+00.00

STAGE 1
CUT VOLUME 10
FILL VOLUME 0

STAGE 2
CUT VOLUME 209
FILL VOLUME 1

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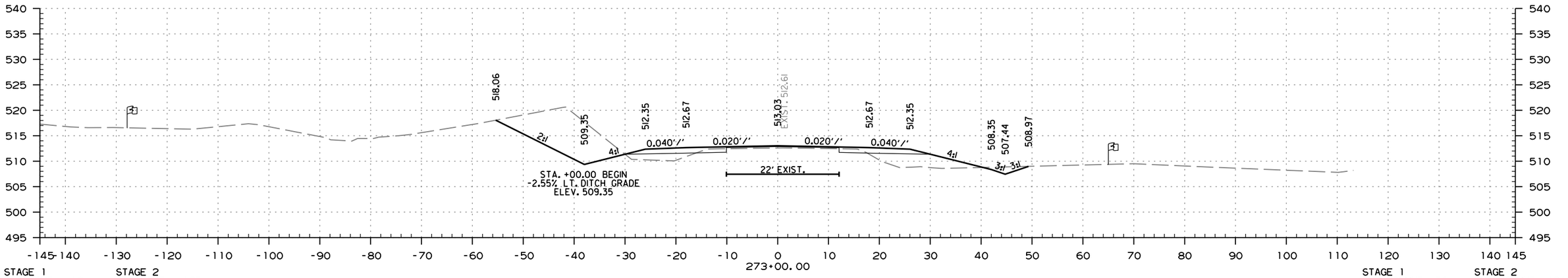
07-30-20				6	ARK.			
				JOB NO.		061309	145	260

(2) CROSS SECTIONS SITE 2

STA. +61.53 END
-2.55% LT. DITCH GRADE
ELEV. 507.78

STA. +61.54 END
-0.77% RT. DITCH GRADE
ELEV. 506.97

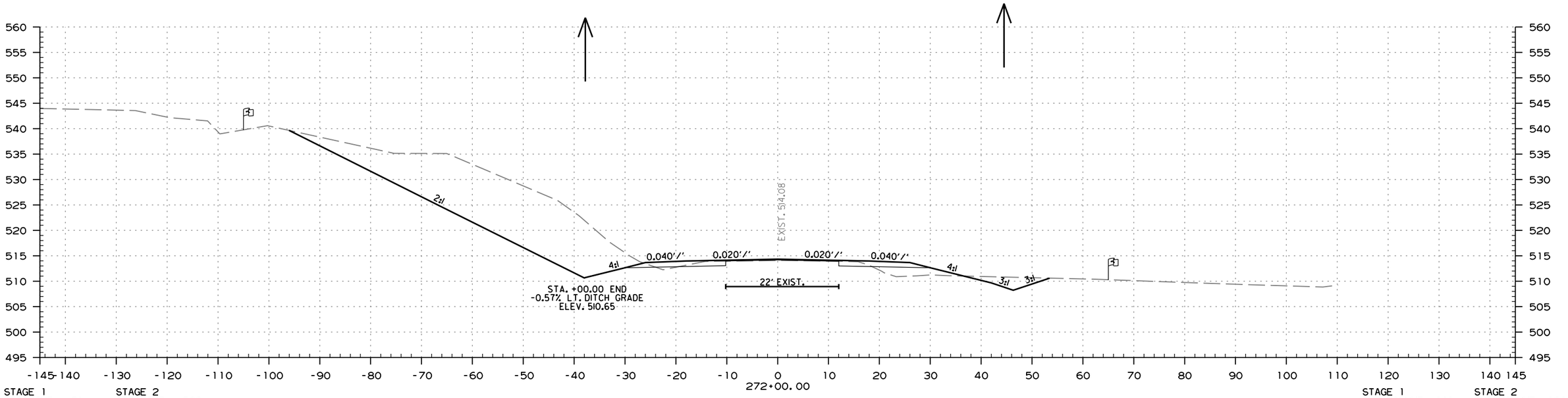


STAGE 1
AREA CUT 10
AREA FILL 40

STAGE 2
AREA CUT 135
AREA FILL 14

STAGE 1
CUT VOLUME 56
FILL VOLUME 113

STAGE 2
CUT VOLUME 1245
FILL VOLUME 29



STAGE 1
AREA CUT 21
AREA FILL 21

STAGE 2
AREA CUT 538
AREA FILL 1

STAGE 1
CUT VOLUME 111
FILL VOLUME 59

STAGE 2
CUT VOLUME 1241
FILL VOLUME 2

HWY. 7
STA. 272+00.00 TO STA. 273+00.00

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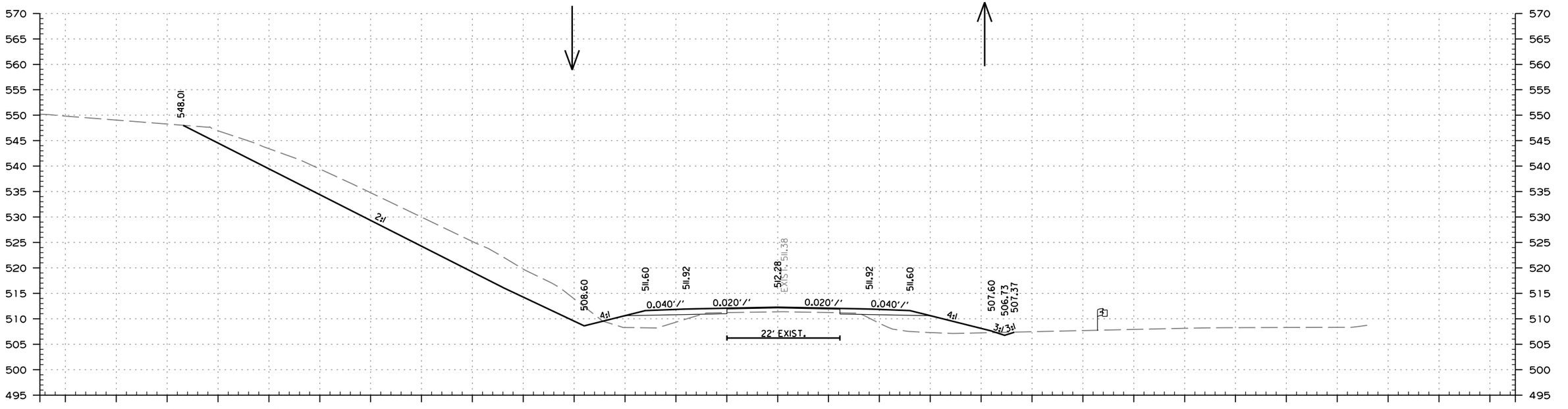
6	ARK.			
JOB NO.		061309	146	260

(2) CROSS SECTIONS SITE 2



STAGE 1
AREA CUT 2
AREA FILL 55

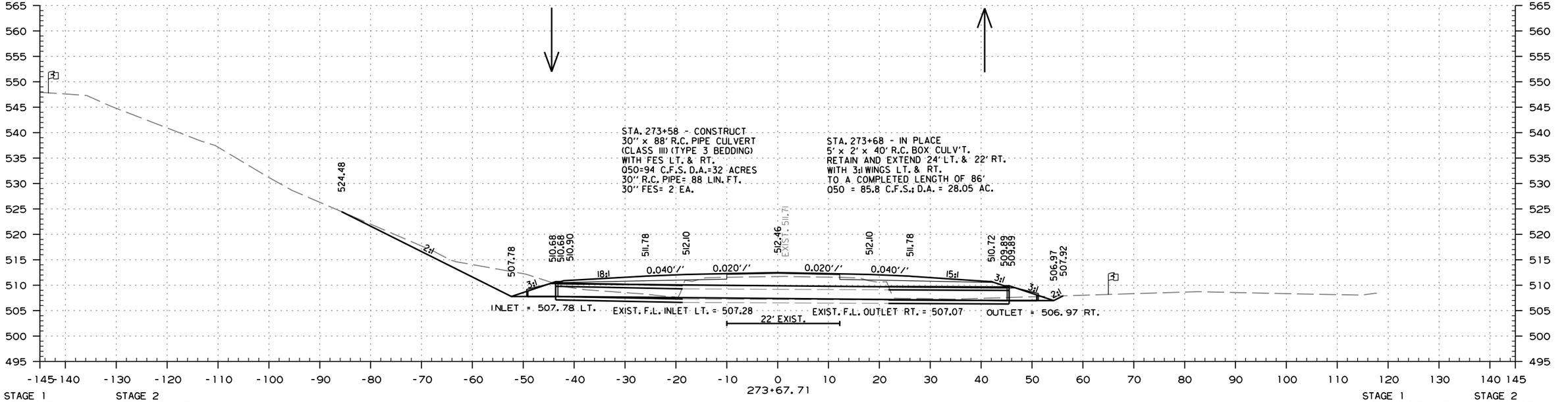
STAGE 2
AREA CUT 383
AREA FILL 32

274+00.00

STA. +73.83 BEGIN
-0.90% RT. DITCH GRADE
ELEV. 506.97

STAGE 1
CUT VOLUME 3
FILL VOLUME 84

STAGE 2
CUT VOLUME 273
FILL VOLUME 50



STA. 273+58 - CONSTRUCT
30" x 88' R.C. PIPE CULVERT
(CLASS III) (TYPE 3 BEDDING)
WITH FES LT. & RT.
Q50=94 C.F.S. D.A.=32 ACRES
30" R.C. PIPE= 88 LIN. FT.
30" FES= 2 EA.

STA. 273+68 - IN PLACE
5' x 2' x 40' R.C. BOX CULV'T.
RETAIN AND EXTEND 24' LT. & 22' RT.
WITH 3:1 WINGS LT. & RT.
TO A COMPLETED LENGTH OF 86'
Q50 = 85.8 C.F.S.; D.A. = 28.05 AC.

STAGE 1
AREA CUT 4
AREA FILL 85

STAGE 2
AREA CUT 74
AREA FILL 53

273+67.71

STAGE 1
CUT VOLUME 17
FILL VOLUME 157

STAGE 2
CUT VOLUME 261
FILL VOLUME 84

HWY. 7
STA. 273+67.71 TO STA. 274+00.00

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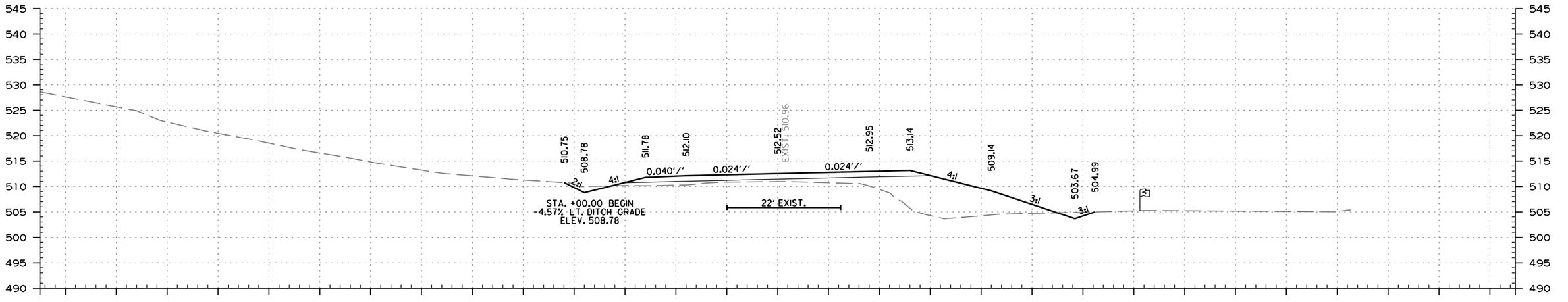
6	ARK.			
JOB NO.		061309	147	260

(2) CROSS SECTIONS SITE 2



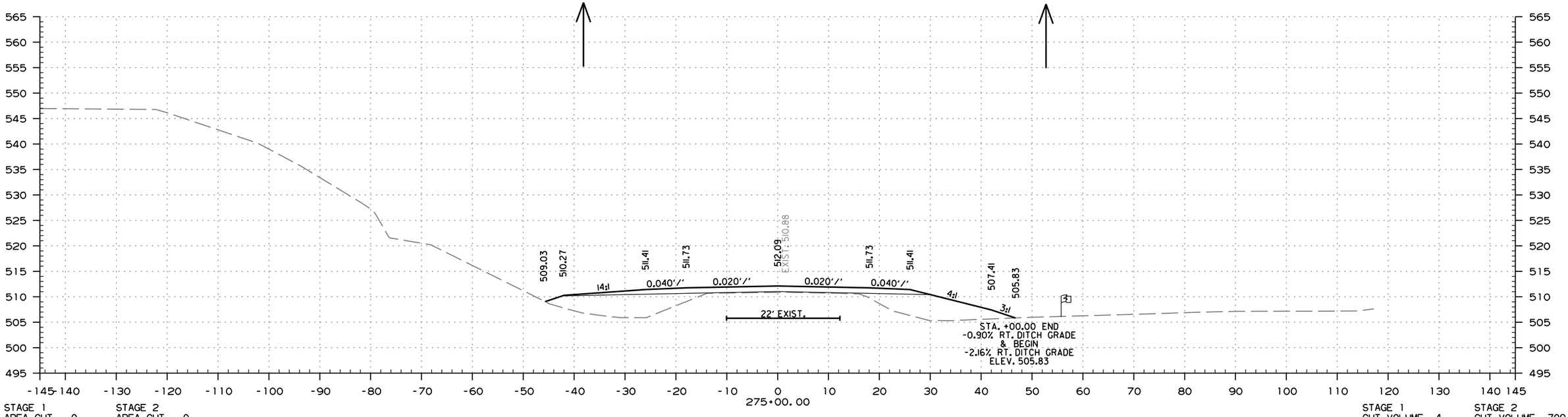
STAGE 1
AREA CUT 5
AREA FILL 175

STAGE 2
AREA CUT 6
AREA FILL 13

STA. 275+13.33 BEGIN SUPERELEVATION (N.C.)

STAGE 1
CUT VOLUME 8
FILL VOLUME 489

STAGE 2
CUT VOLUME 11
FILL VOLUME 202



STAGE 1
AREA CUT 0
AREA FILL 89

STAGE 2
AREA CUT 0
AREA FILL 96

STAGE 1
CUT VOLUME 4
FILL VOLUME 267

STAGE 2
CUT VOLUME 709
FILL VOLUME 237

HWY. 7
STA. 275+00.00 TO STA. 276+00.00

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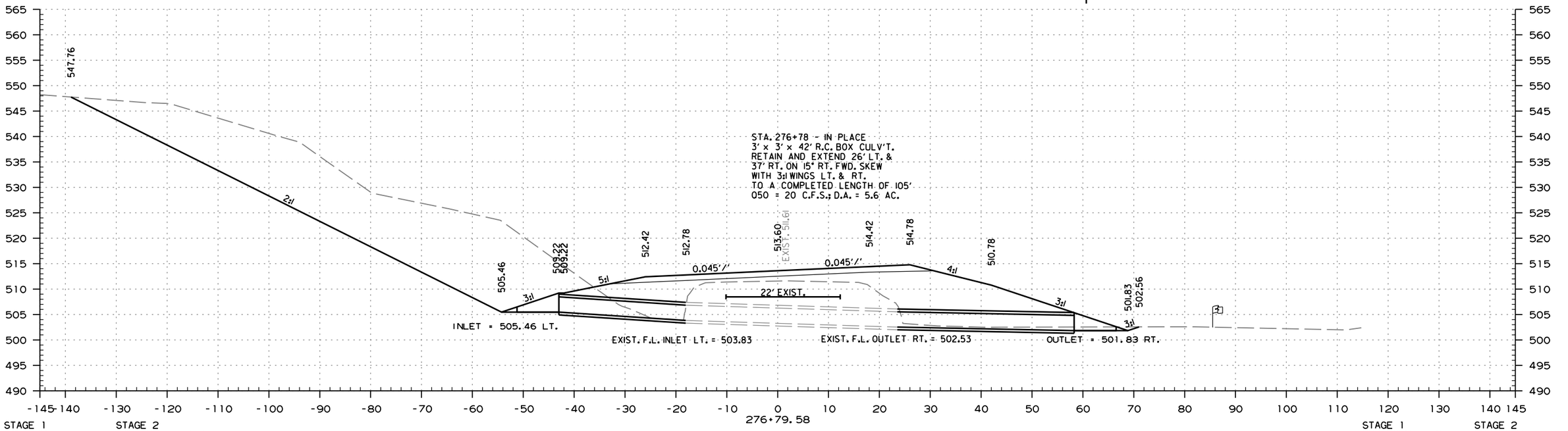
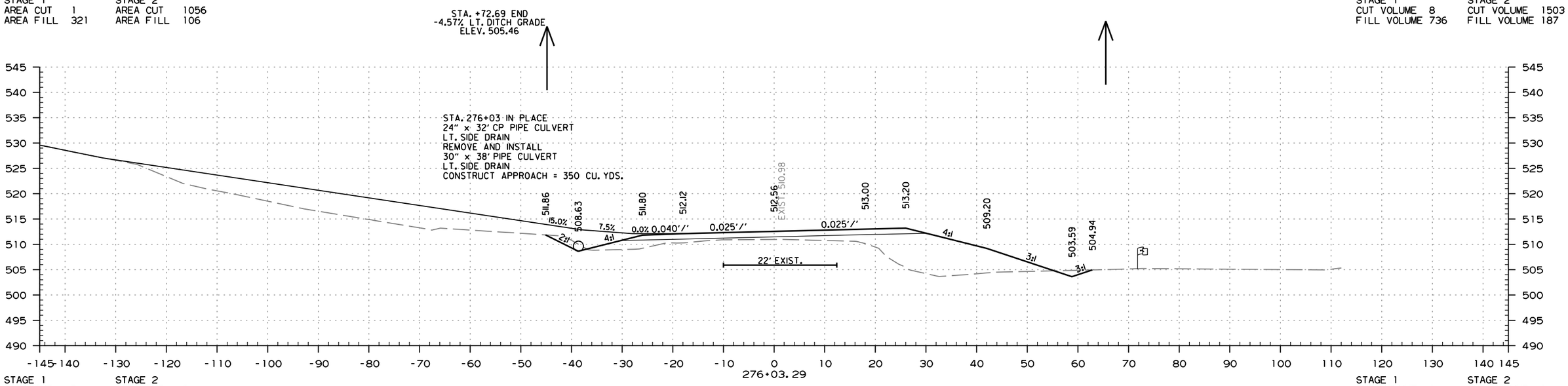
07-30-20				6	ARK.			
				JOB NO.		061309	148	260

(2) CROSS SECTIONS SITE 2



STAGE 1	STAGE 2
AREA CUT 1	AREA CUT 1056
AREA FILL 321	AREA FILL 106

STAGE 1	STAGE 2
CUT VOLUME 8	CUT VOLUME 1503
FILL VOLUME 736	FILL VOLUME 187



STAGE 1	STAGE 2
AREA CUT 5	AREA CUT 8
AREA FILL 200	AREA FILL 26

STAGE 1	STAGE 2
CUT VOLUME 1	CUT VOLUME 1
FILL VOLUME 23	FILL VOLUME 2

HWY. 7
STA. 276+03.29 TO STA. 276+79.58

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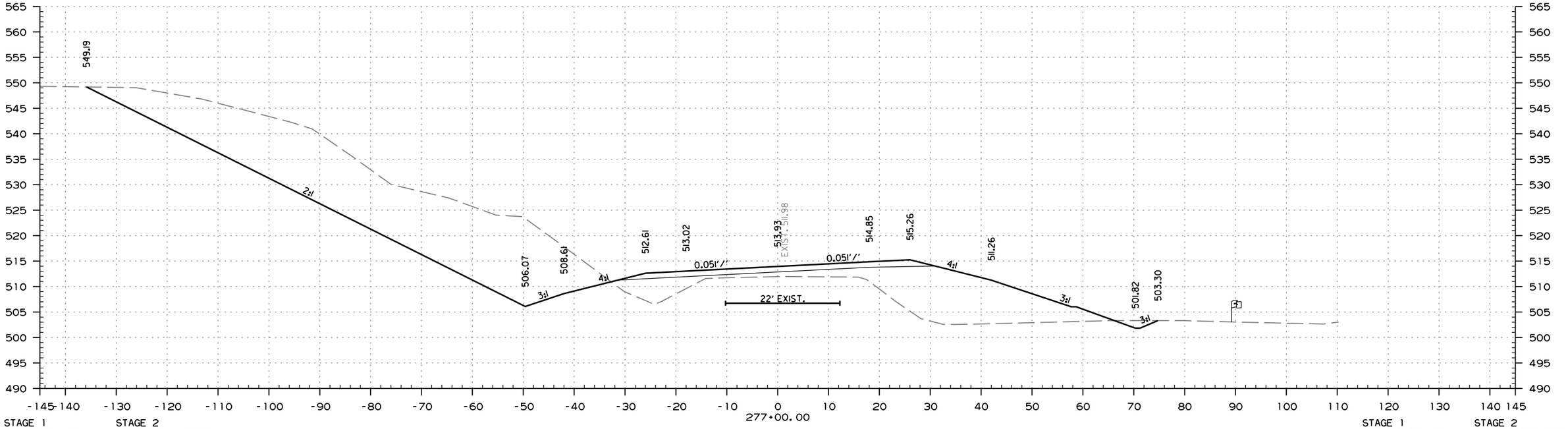
6	ARK.			
JOB NO.		061309	149	260

(2) CROSS SECTIONS SITE 2



STAGE 1
AREA CUT 7
AREA FILL 343

STAGE 2
AREA CUT 1067
AREA FILL 57

HWY. 7
STA. 277+00.00 TO STA. 277+00.00

STAGE 1
CUT VOLUME 3
FILL VOLUME 251

STAGE 2
CUT VOLUME 802
FILL VOLUME 62

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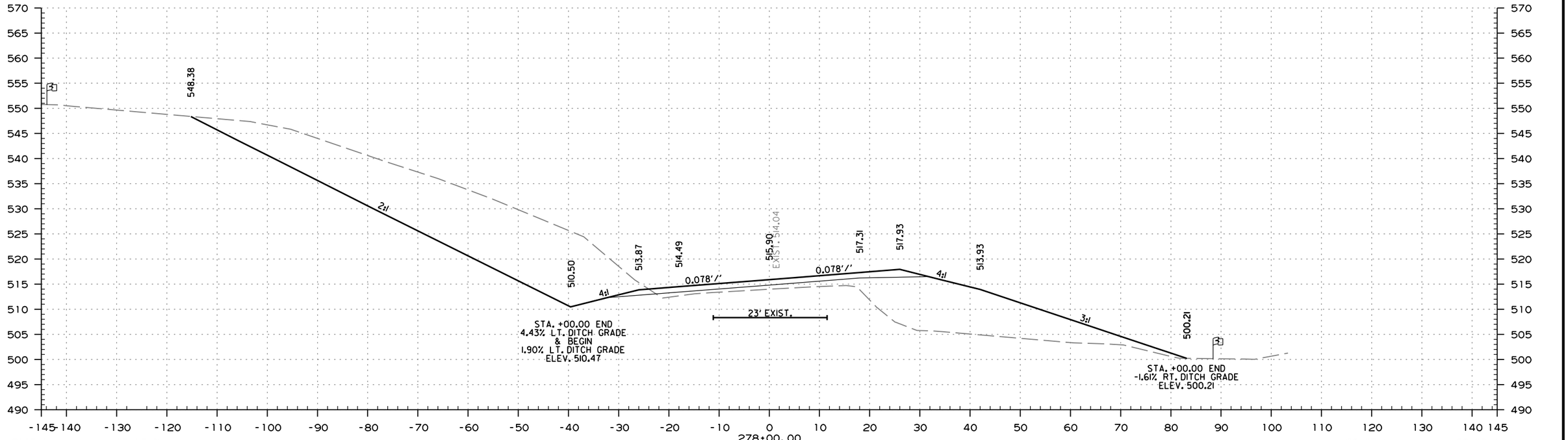
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	150	260

(2) CROSS SECTIONS SITE 2



STAGE 1
AREA CUT 0
AREA FILL 385

STAGE 2
AREA CUT 862
AREA FILL 8

HWY. 7
STA. 278+00.00 TO STA. 278+00.00

STAGE 1
CUT VOLUME 13
FILL VOLUME 1348

STAGE 2
CUT VOLUME 3570
FILL VOLUME 119

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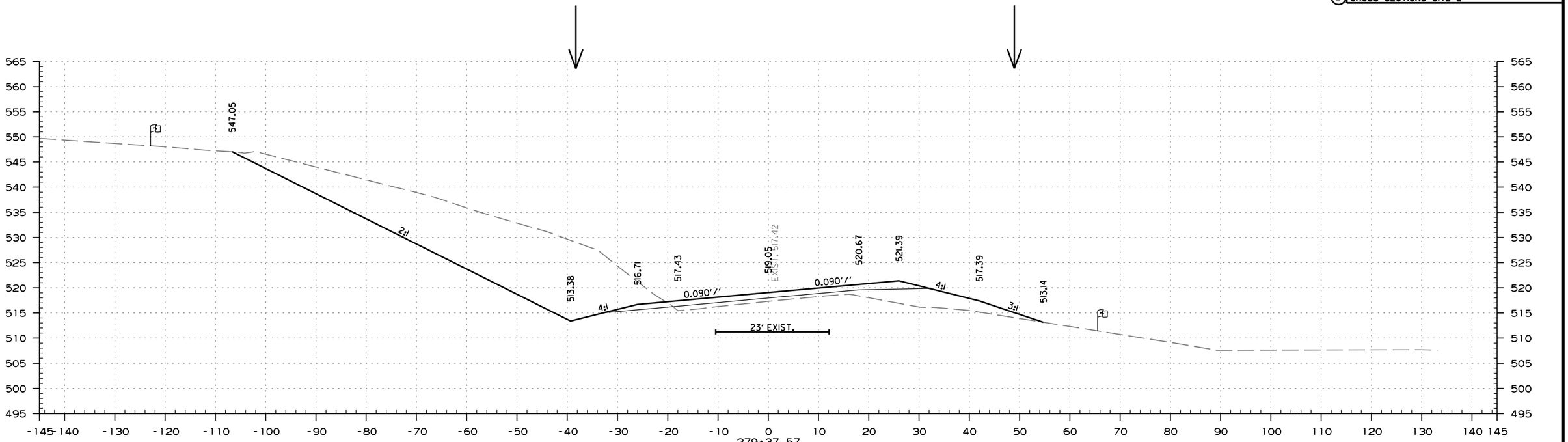
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	151	260

(2) CROSS SECTIONS SITE 2

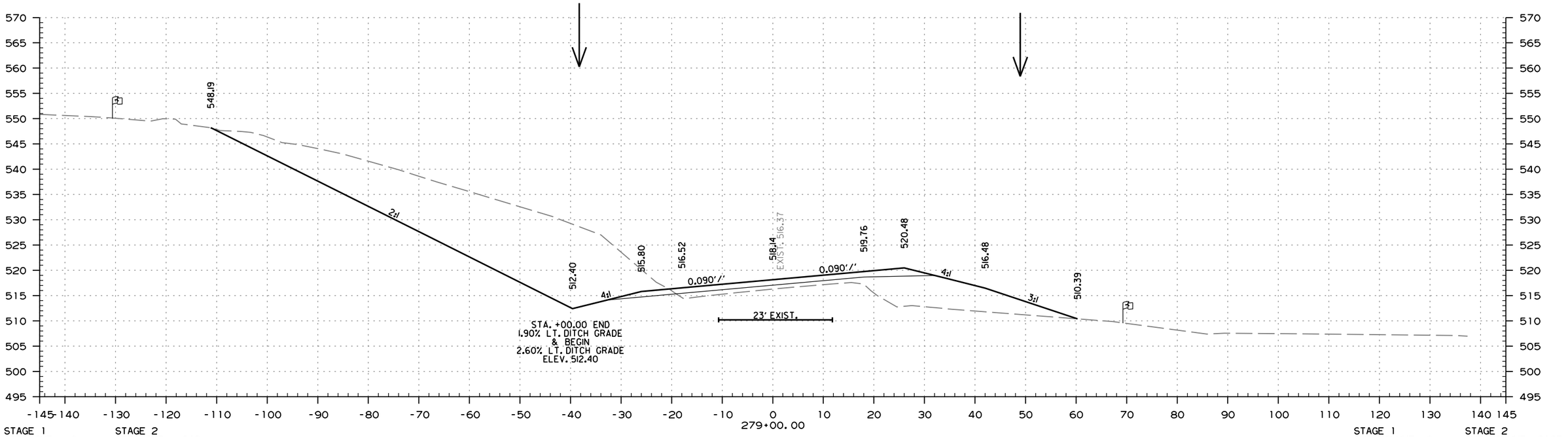


STAGE 1
AREA CUT 0
AREA FILL 84

STAGE 2
AREA CUT 781
AREA FILL 7

STAGE 1
CUT VOLUME 0
FILL VOLUME 81

STAGE 2
CUT VOLUME 1134
FILL VOLUME 10



STAGE 1
AREA CUT 0
AREA FILL 176

STAGE 2
AREA CUT 848
AREA FILL 8

STA. 278+43.33 MAX. SUPERELEVATION (0.090 FT./FT.)

STAGE 1
CUT VOLUME 0
FILL VOLUME 1079

STAGE 2
CUT VOLUME 3167
FILL VOLUME 29

HWY. 7
STA. 279+00.00 TO STA. 279+37.57

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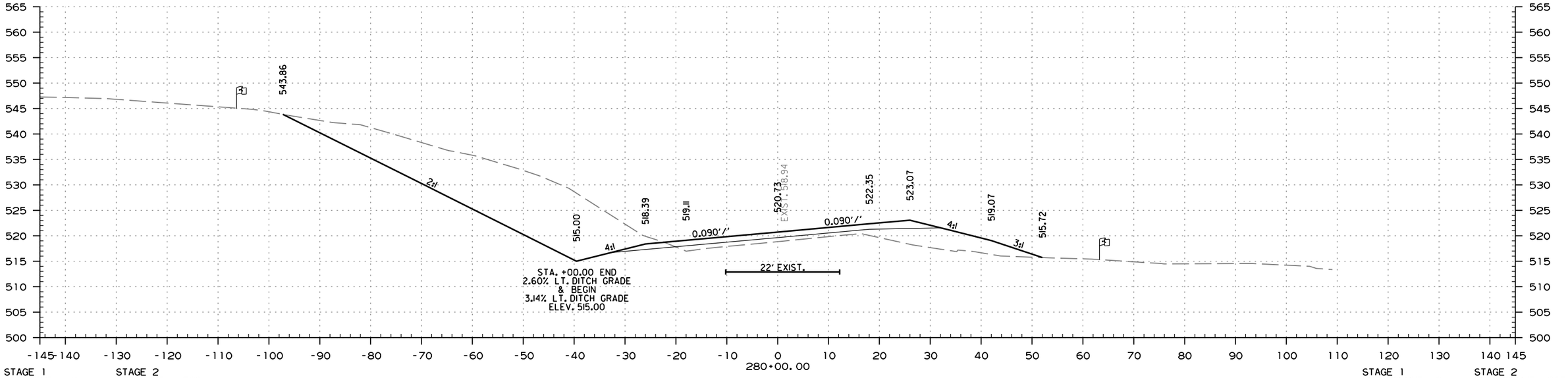
07-30-20				6	ARK.			
				JOB NO.		061309	152	260

(2) CROSS SECTIONS SITE 2

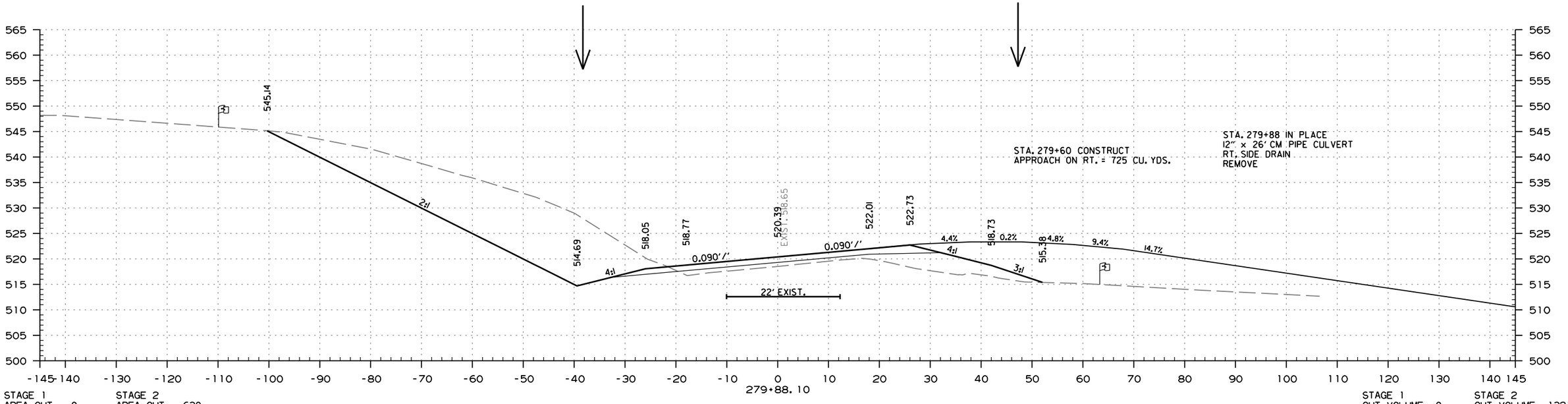


STAGE 1
AREA CUT 0
AREA FILL 92

STAGE 2
AREA CUT 580
AREA FILL 8

STAGE 1
CUT VOLUME 0
FILL VOLUME 38

STAGE 2
CUT VOLUME 267
FILL VOLUME 4



STAGE 1
AREA CUT 0
AREA FILL 81

STAGE 2
AREA CUT 630
AREA FILL 8

STAGE 1
CUT VOLUME 0
FILL VOLUME 155

STAGE 2
CUT VOLUME 1321
FILL VOLUME 14

HWY. 7
STA. 279+88.10 TO STA. 280+00.00

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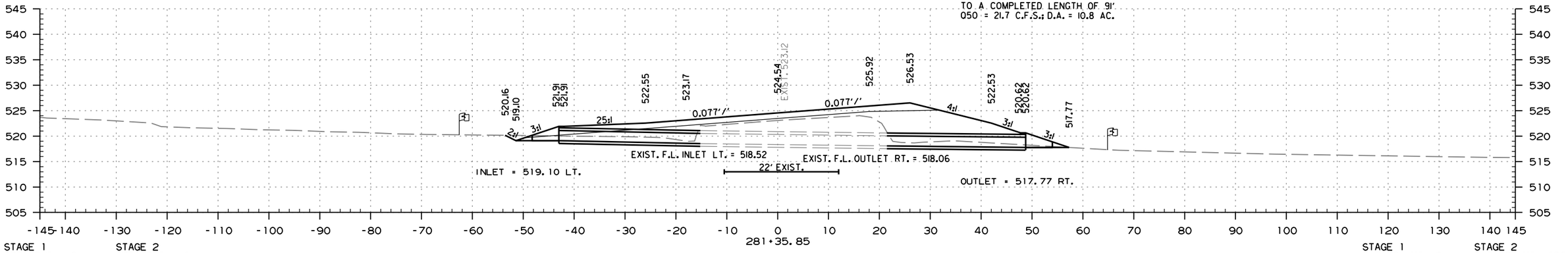
07-30-20				6	ARK.			
				JOB NO.		061309	153	260

(2) CROSS SECTIONS SITE 2

STA. +41.20 BEGIN
4.29% LT. DITCH GRADE
ELEV. 519.10

STA. 281+36 - IN PLACE
3' x 2' x 36' R.C. BOX CULV'T.
RETAIN AND EXTEND 27' LT. & 28' RT.
WITH 3:1 WINGS LT. & RT.
TO A COMPLETED LENGTH OF 91'
Q50 = 21.7 C.F.S.; D.A. = 10.8 AC.



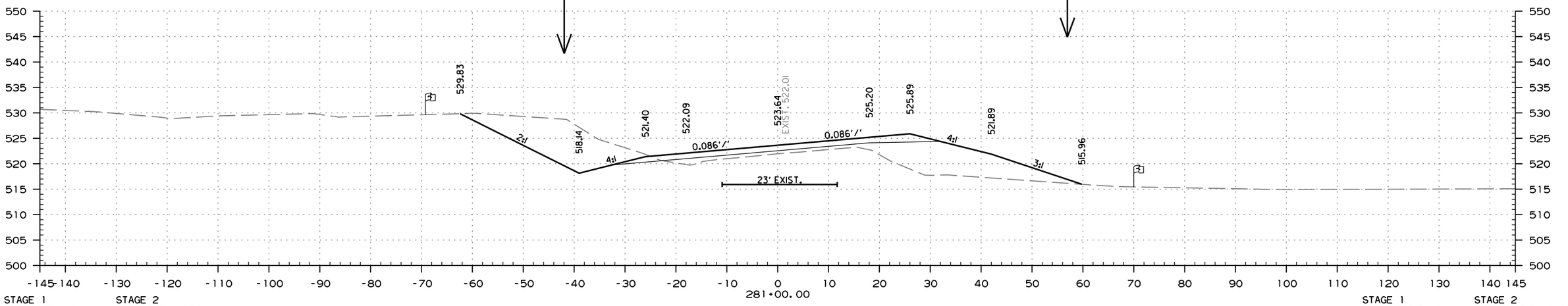
STAGE 1
AREA CUT 0
AREA FILL 155

STAGE 2
AREA CUT 4
AREA FILL 42

STAGE 1
CUT VOLUME 0
FILL VOLUME 214

STAGE 2
CUT VOLUME 126
FILL VOLUME 34

STA. +30.59 END
3.14% LT. DITCH GRADE
ELEV. 519.10



STAGE 1
AREA CUT 0
AREA FILL 168

STAGE 2
AREA CUT 186
AREA FILL 10

STA. 280+86.52 MAX. SUPERELEVATION (0.090 FT./FT.)

STAGE 1
CUT VOLUME 0
FILL VOLUME 482

STAGE 2
CUT VOLUME 1418
FILL VOLUME 33

HWY. 7
STA. 281+00.00 TO STA. 281+35.85

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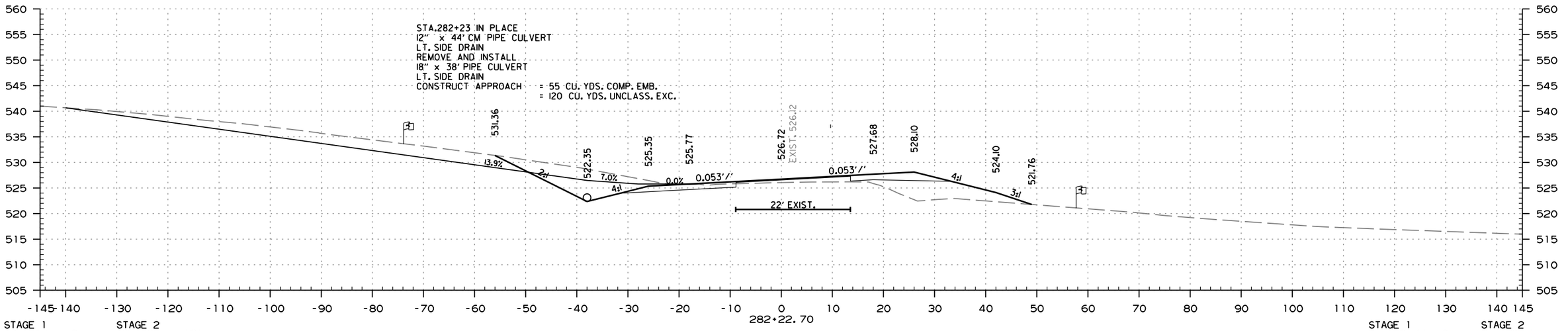
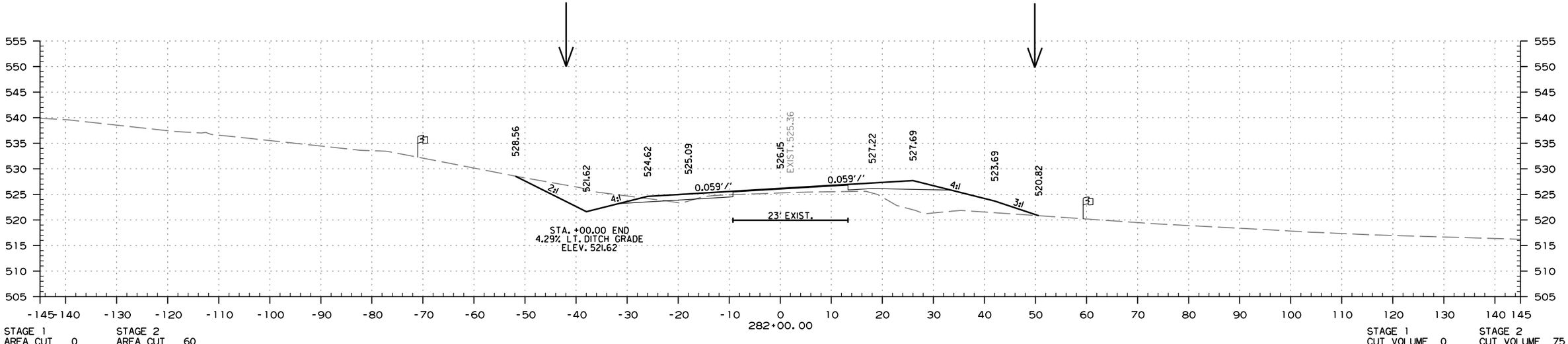
JOB NO.		061309	154	260

(2) CROSS SECTIONS SITE 2



STAGE 1	STAGE 2
AREA CUT 0	AREA CUT 124
AREA FILL 74	AREA FILL 0

STAGE 1	STAGE 2
CUT VOLUME 0	CUT VOLUME 77
FILL VOLUME 70	FILL VOLUME 1



STAGE 1	STAGE 2
AREA CUT 0	AREA CUT 60
AREA FILL 92	AREA FILL 2

STAGE 1	STAGE 2
CUT VOLUME 0	CUT VOLUME 75
FILL VOLUME 293	FILL VOLUME 53

HWY. 7
STA. 282+00.00 TO STA. 282+22.70

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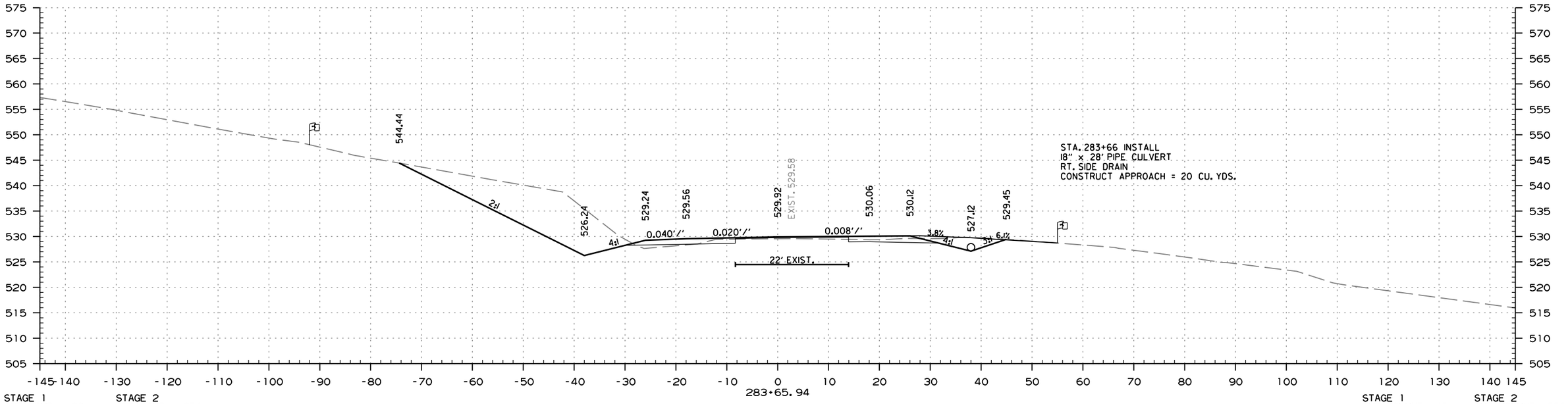
JOB NO.		061309	155	260

(2) CROSS SECTIONS SITE 2

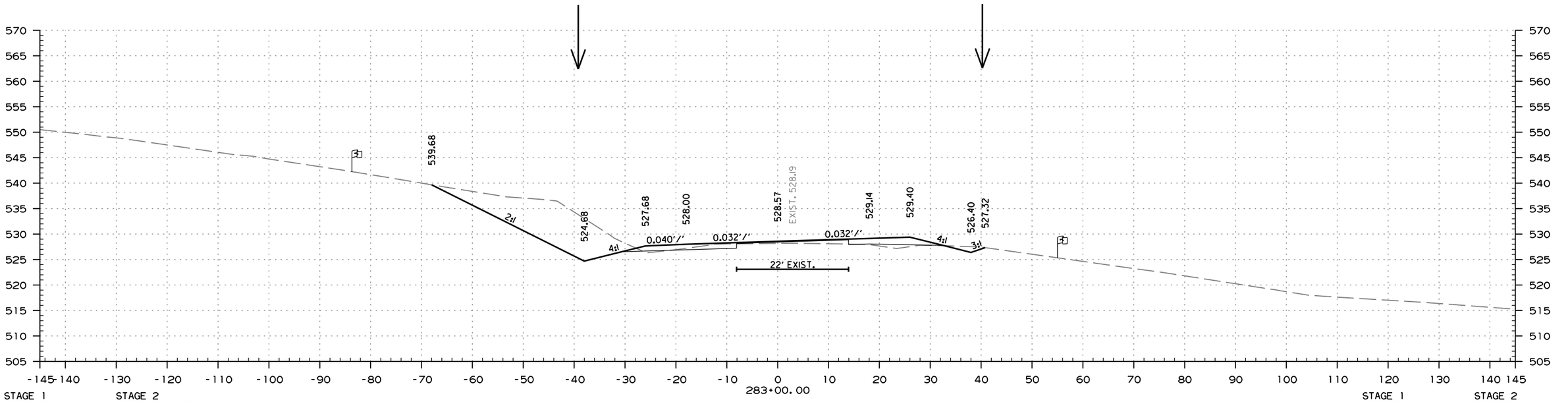


STAGE 1
AREA CUT 32
AREA FILL 0

STAGE 2
AREA CUT 254
AREA FILL 4

STAGE 1
CUT VOLUME 45
FILL VOLUME 6

STAGE 2
CUT VOLUME 558
FILL VOLUME 6



STAGE 1
AREA CUT 5
AREA FILL 5

STAGE 2
AREA CUT 203
AREA FILL 1

STAGE 1
CUT VOLUME 7
FILL VOLUME 113

STAGE 2
CUT VOLUME 467
FILL VOLUME 1

HWY. 7
STA. 283+00.00 TO STA. 283+65.94

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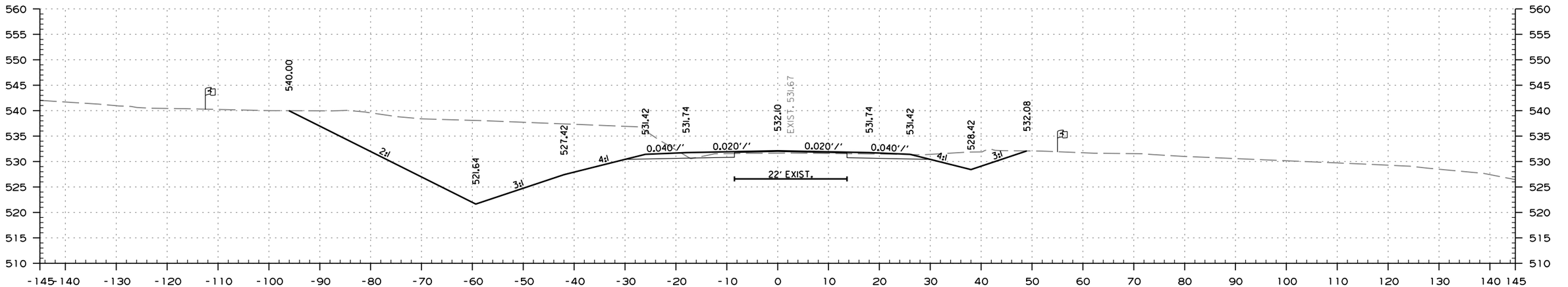
JOB NO.		061309	156	260

(2) CROSS SECTIONS SITE 2



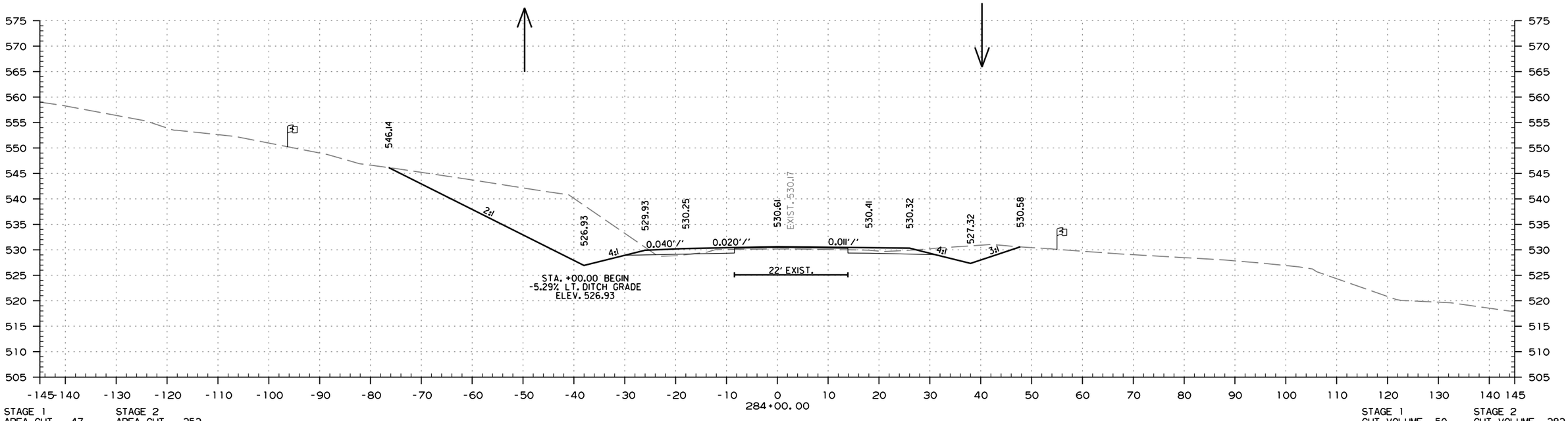
STAGE 1
AREA CUT 52
AREA FILL 0

STAGE 2
AREA CUT 687
AREA FILL 0

STAGE 1
CUT VOLUME 184
FILL VOLUME 0

STAGE 2
CUT VOLUME 1927
FILL VOLUME 3

STA. 284+16.52 END SUPERELEVATION (N.C.)



STAGE 1
AREA CUT 47
AREA FILL 0

STAGE 2
AREA CUT 353
AREA FILL 2

STAGE 1
CUT VOLUME 50
FILL VOLUME 0

STAGE 2
CUT VOLUME 383
FILL VOLUME 4

HWY. 7
STA. 284+00.00 TO STA. 285+00.00

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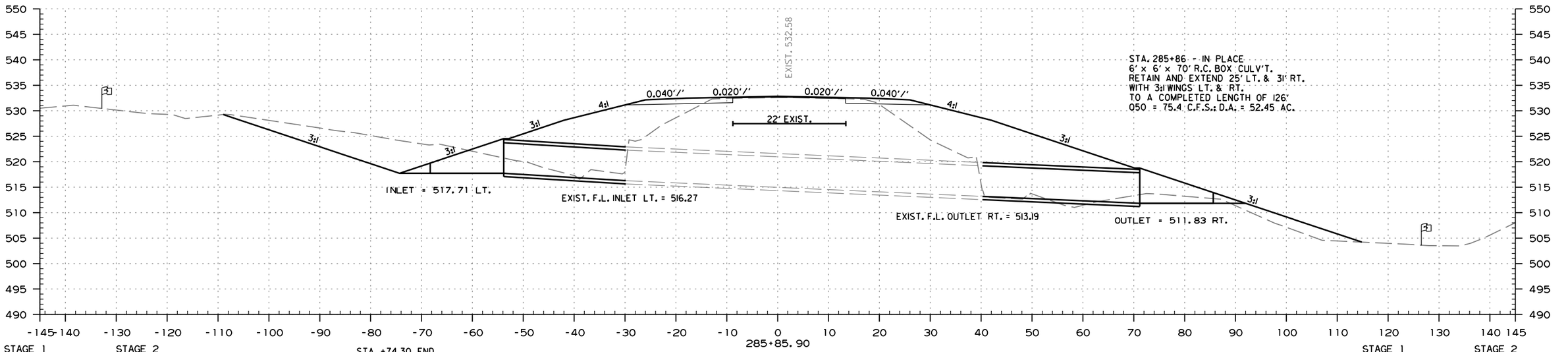
6	ARK.			
JOB NO.		061309	157	260

(2) CROSS SECTIONS SITE 2

STA. +98.22 BEGIN
6.83% LT. DITCH GRADE
ELEV. 517.71

STA. +97.39 BEGIN
12.96% RT. DITCH GRADE
ELEV. 504.20



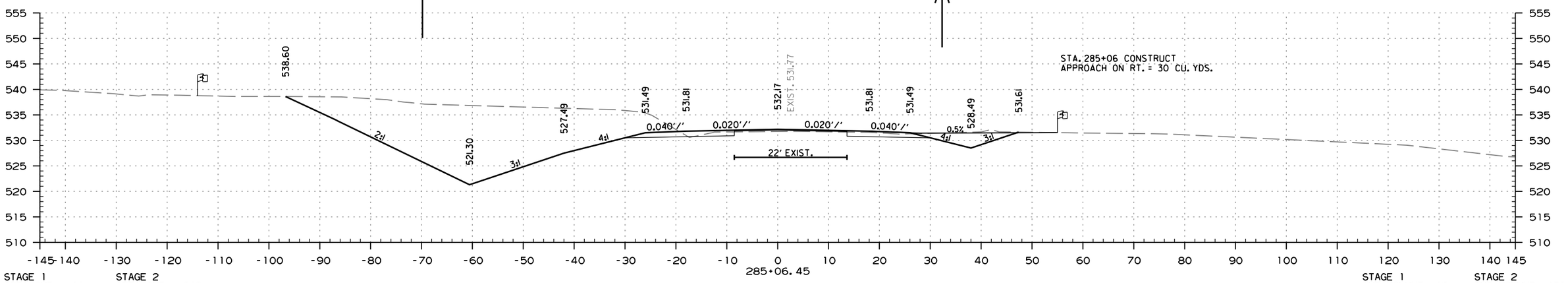
STAGE 1
AREA CUT 5
AREA FILL 549

STAGE 2
AREA CUT 166
AREA FILL 301

STAGE 1
CUT VOLUME 72
FILL VOLUME 807

STAGE 2
CUT VOLUME 1190
FILL VOLUME 443

STA. +74.30 END
-5.29% LT. DITCH GRADE
ELEV. 517.71



STAGE 1
AREA CUT 44
AREA FILL 0

STAGE 2
AREA CUT 643
AREA FILL 0

STAGE 1
CUT VOLUME 12
FILL VOLUME 0

STAGE 2
CUT VOLUME 159
FILL VOLUME 0

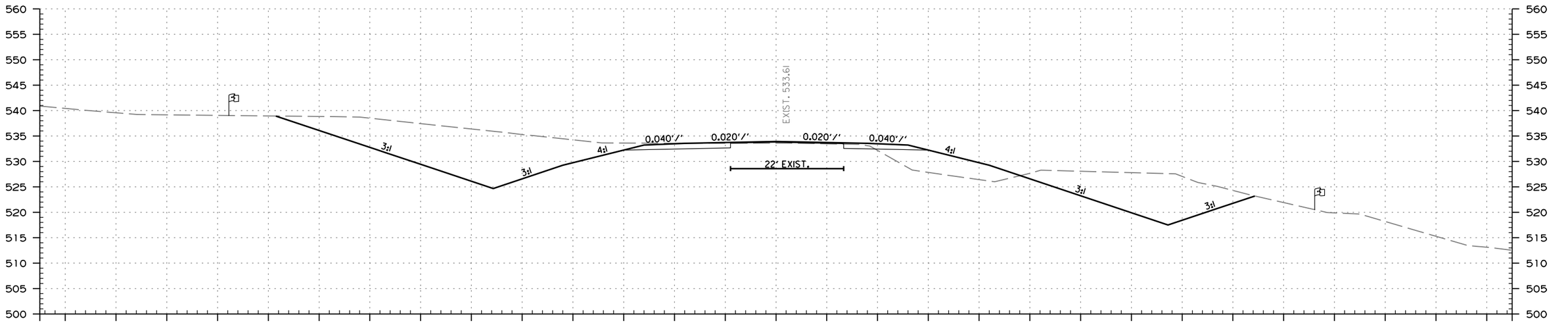
HWY. 7
STA. 285+06.45 TO STA. 285+85.90

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	158	260

(2) CROSS SECTIONS SITE 2

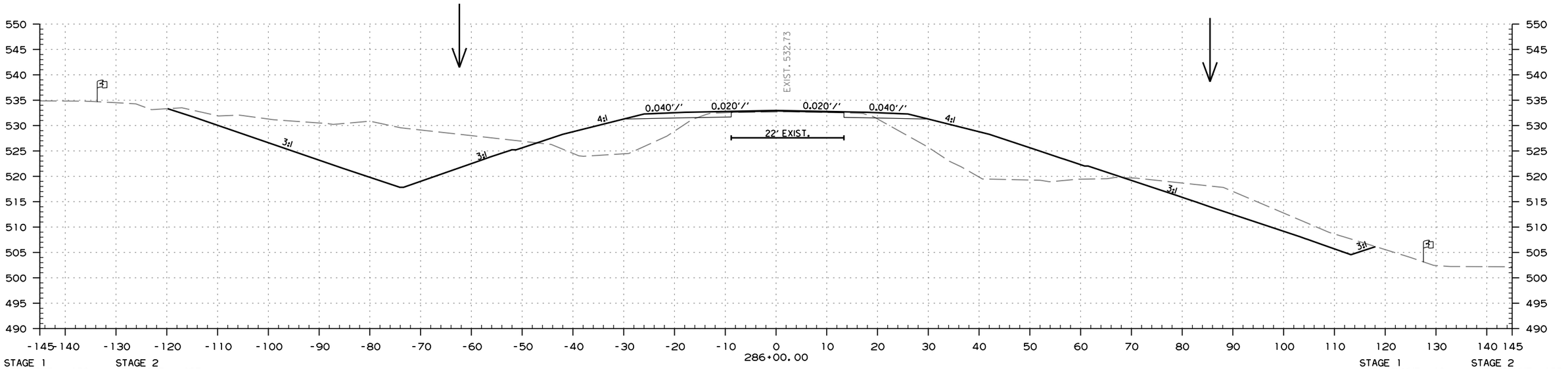


STAGE 1
AREA CUT 252
AREA FILL 83

STAGE 2
AREA CUT 436
AREA FILL 0

STAGE 1
CUT VOLUME 746
FILL VOLUME 602

STAGE 2
CUT VOLUME 1597
FILL VOLUME 236



STAGE 1
AREA CUT 150
AREA FILL 242

STAGE 2
AREA CUT 427
AREA FILL 128

STAGE 1
CUT VOLUME 40
FILL VOLUME 206

STAGE 2
CUT VOLUME 155
FILL VOLUME 112

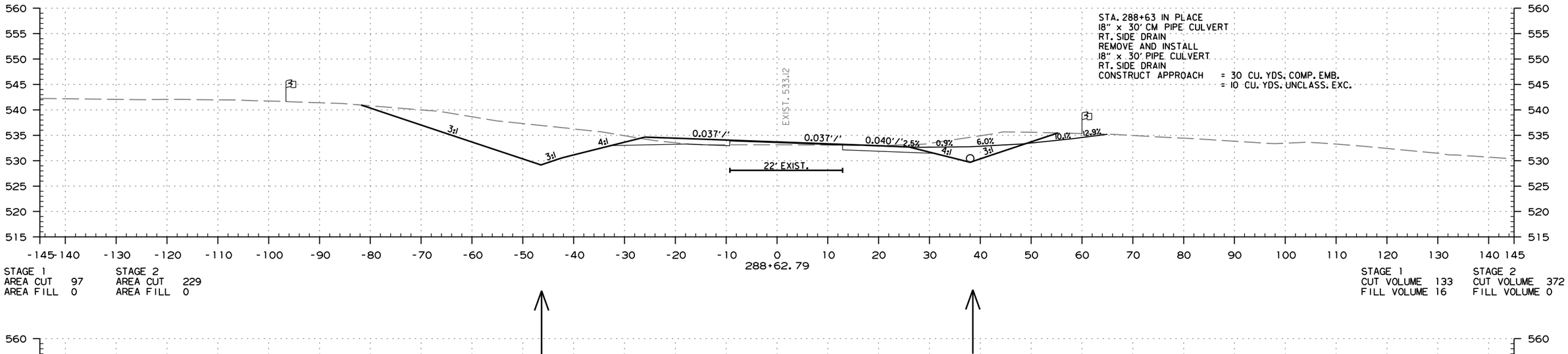
HWY. 7
STA. 286+00.00 TO STA. 287+00.00

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	159	260

(2) CROSS SECTIONS SITE 2

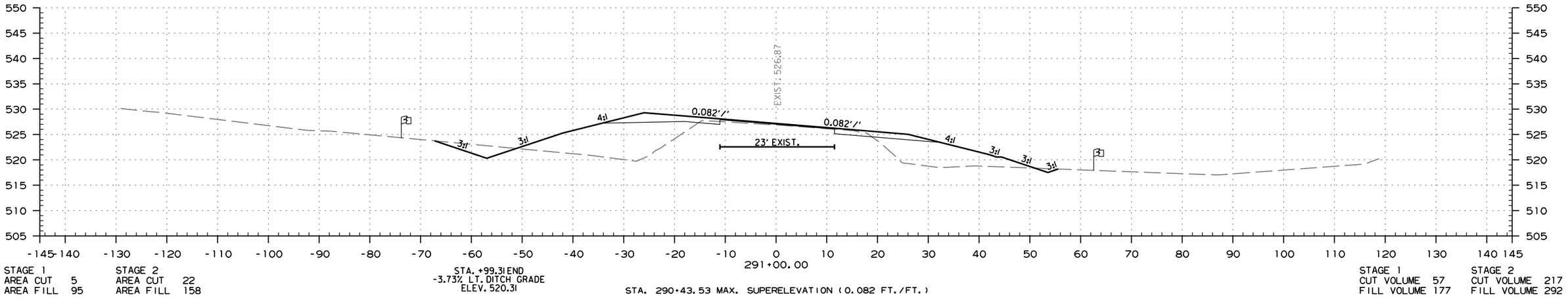


HWY. 7
STA. 288+00.00 TO STA. 288+62.79

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	160	260

(2) CROSS SECTIONS SITE 2

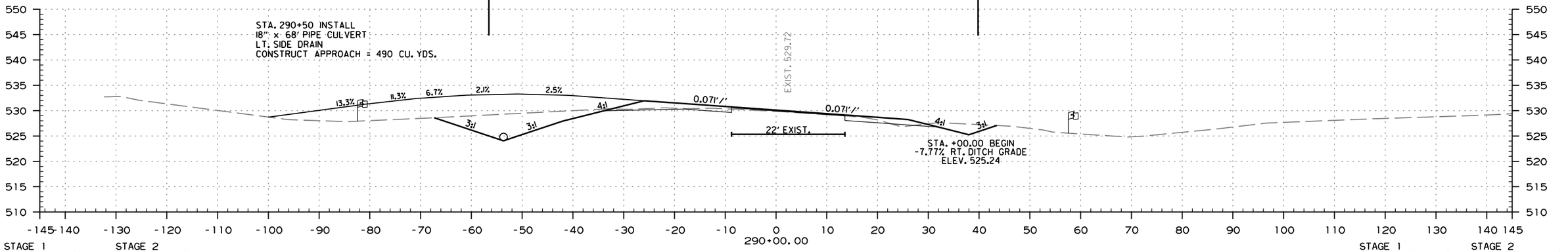


STAGE 1
AREA CUT 5
AREA FILL 95

STAGE 2
AREA CUT 22
AREA FILL 158

STAGE 1
CUT VOLUME 57
FILL VOLUME 177

STAGE 2
CUT VOLUME 217
FILL VOLUME 292

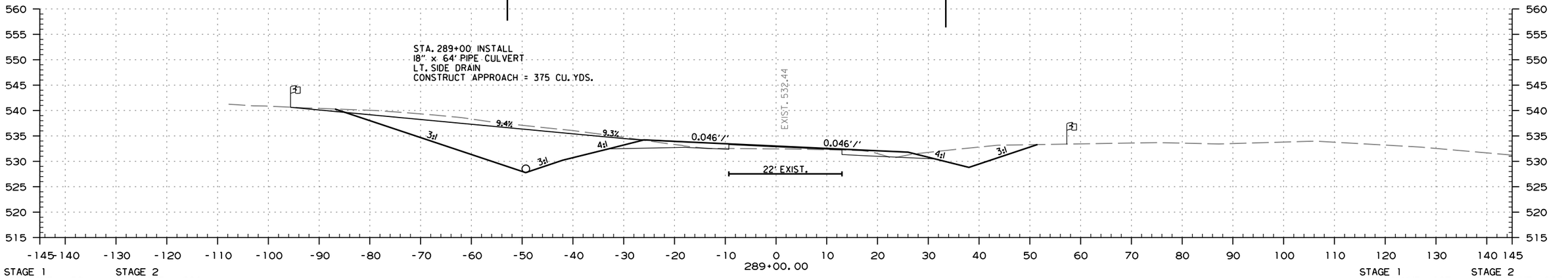


STAGE 1
AREA CUT 23
AREA FILL 1

STAGE 2
AREA CUT 95
AREA FILL 0

STAGE 1
CUT VOLUME 150
FILL VOLUME 2

STAGE 2
CUT VOLUME 740
FILL VOLUME 0



STAGE 1
AREA CUT 58
AREA FILL 0

STAGE 2
AREA CUT 304
AREA FILL 0

HWY. 7
STA. 289+00.00 TO STA. 291+00.00

STAGE 1
CUT VOLUME 107
FILL VOLUME 0

STAGE 2
CUT VOLUME 367
FILL VOLUME 0

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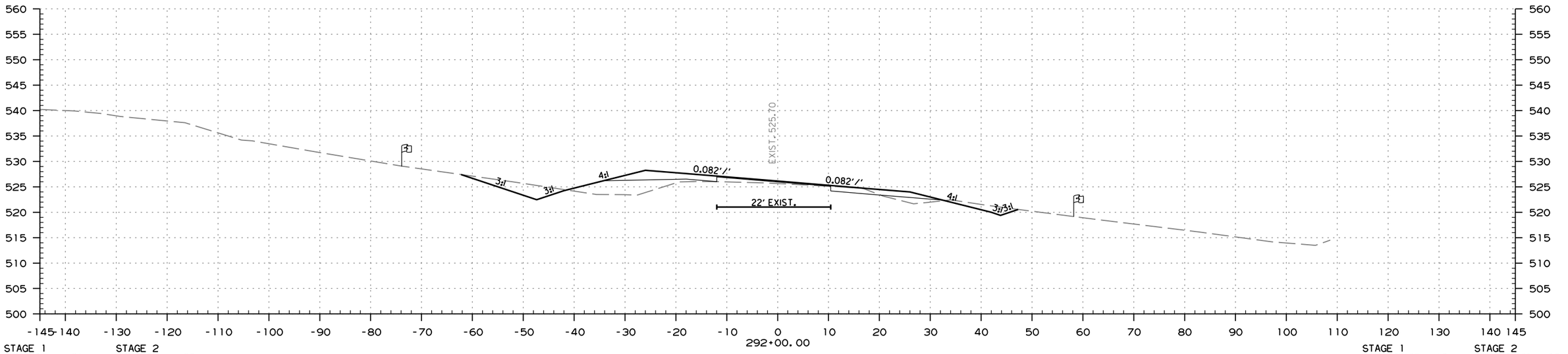
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	161	260

(2) CROSS SECTIONS SITE 2



STAGE 1
AREA CUT 21
AREA FILL 8

STAGE 2
AREA CUT 29
AREA FILL 46

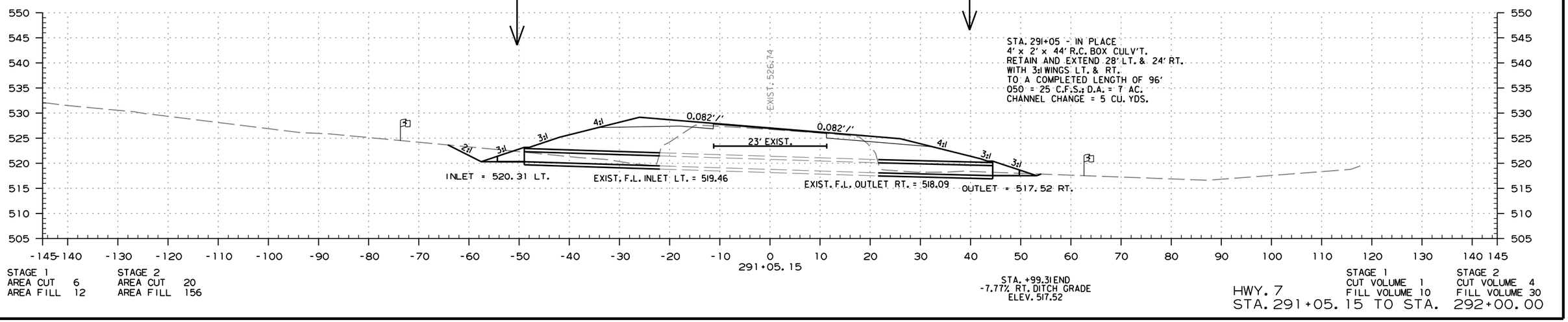
STAGE 1
CUT VOLUME 48
FILL VOLUME 34

STAGE 2
CUT VOLUME 86
FILL VOLUME 354

STA. +10.41 BEGIN
2.40% LT. DITCH GRADE
ELEV. 520.31

STA. +10.95 BEGIN
2.10% RT. DITCH GRADE
ELEV. 517.52

STA. 291+05 - IN PLACE
4' x 2' x 44' R.C. BOX CULV'T.
RETAIN AND EXTEND 28' LT. & 24' RT.
WITH 3:1 WINGS LT. & RT.
TO A COMPLETED LENGTH OF 96'
050 = 25 C.F.S.; D.A. = 7 AC.
CHANNEL CHANGE = 5 CU. YDS.



STAGE 1
AREA CUT 6
AREA FILL 12

STAGE 2
AREA CUT 20
AREA FILL 156

STA. +99.31 END
-7.77% RT. DITCH GRADE
ELEV. 517.52

STAGE 1
CUT VOLUME 1
FILL VOLUME 10

STAGE 2
CUT VOLUME 4
FILL VOLUME 30

HWY. 7
STA. 291+05.15 TO STA. 292+00.00

COPY OF R061309.DGN 7/30/2020

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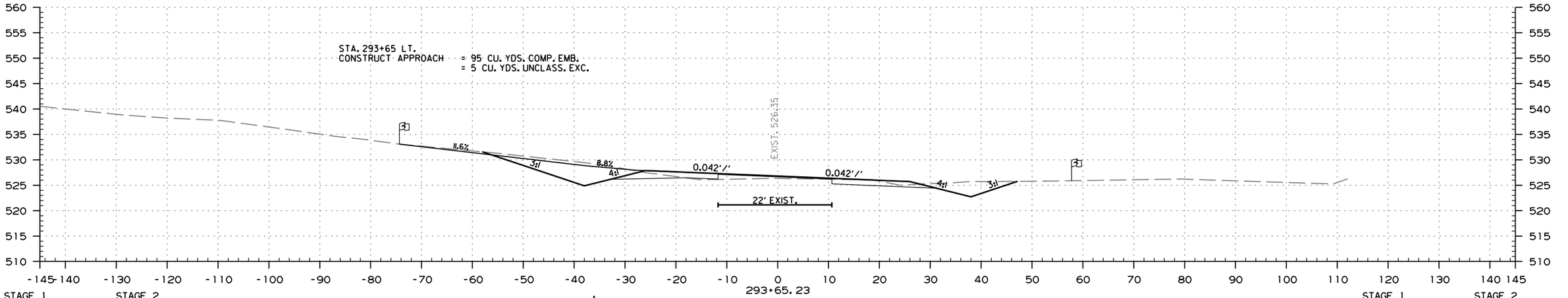
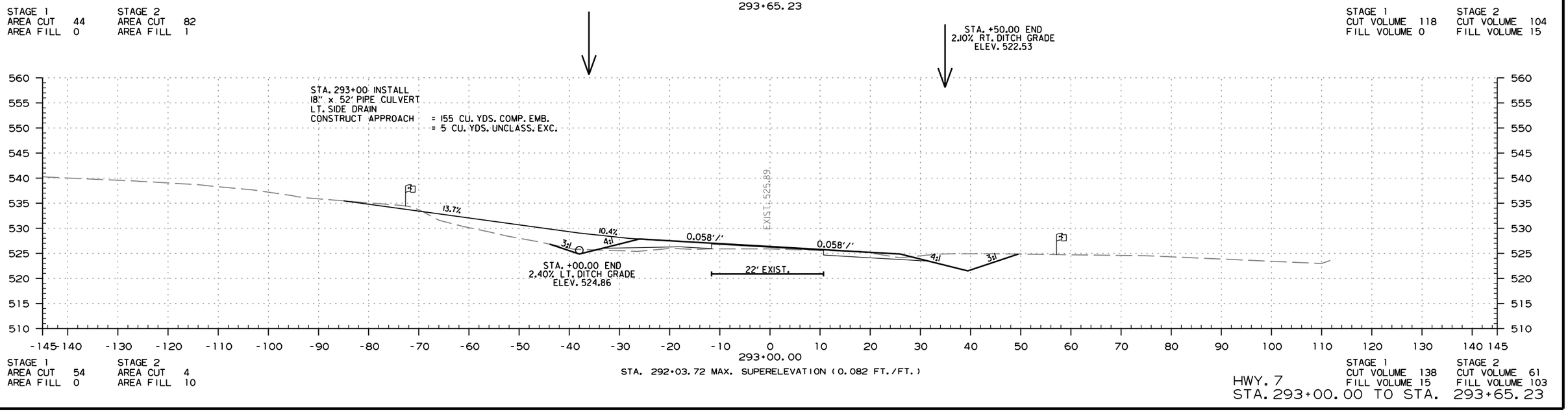
07-30-20				6	ARK.			
				JOB NO.		061309	162	260

(2) CROSS SECTIONS SITE 2



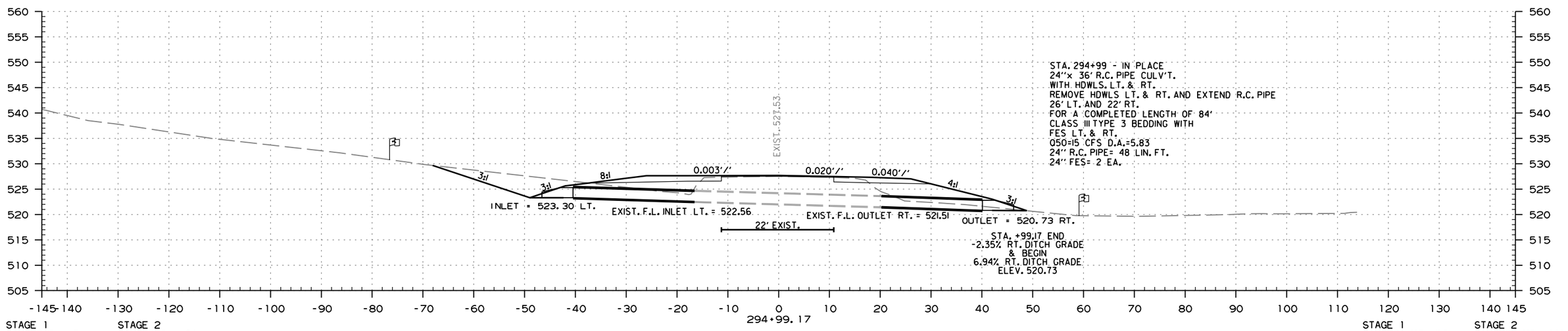


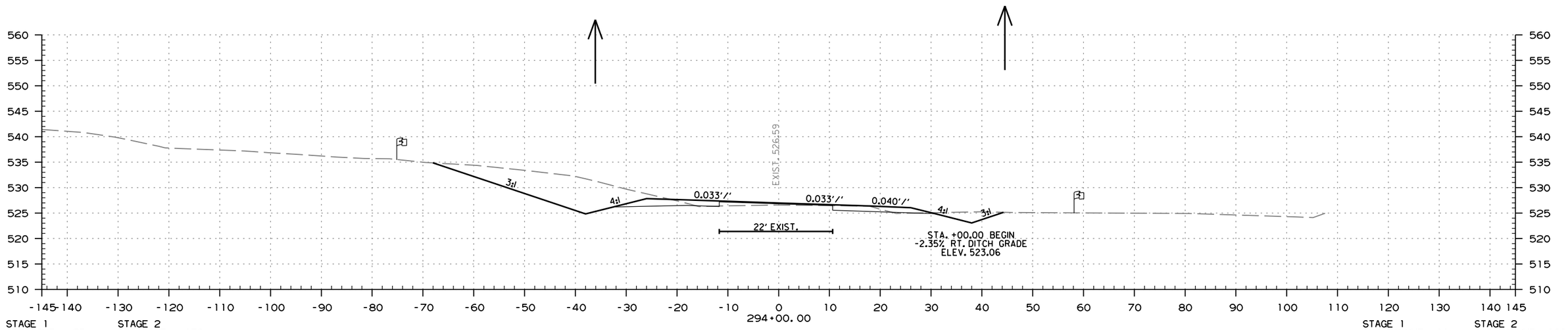
HWY. 7
STA. 293+00.00 TO STA. 293+65.23

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	163	260

(2) CROSS SECTIONS SITE 2



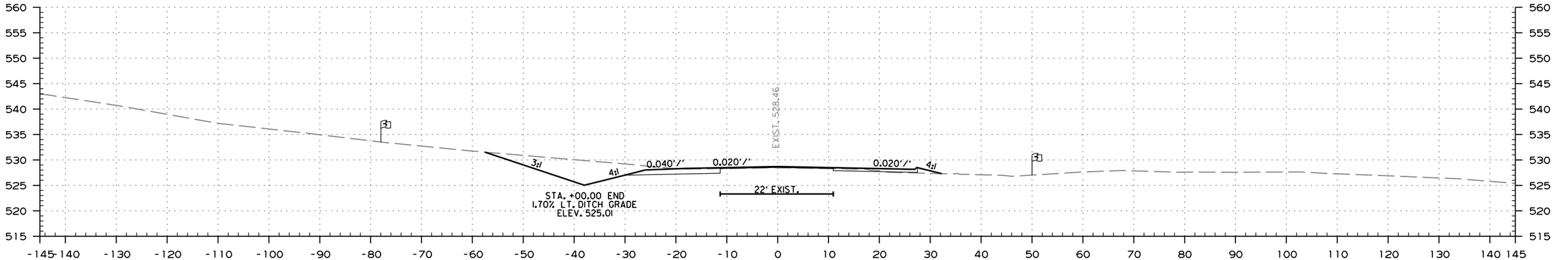


HWY. 7
STA. 294+00.00 TO STA. 294+99.17

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	164	260

(2) CROSS SECTIONS SITE 2



STAGE 1
AREA CUT 3
AREA FILL 3

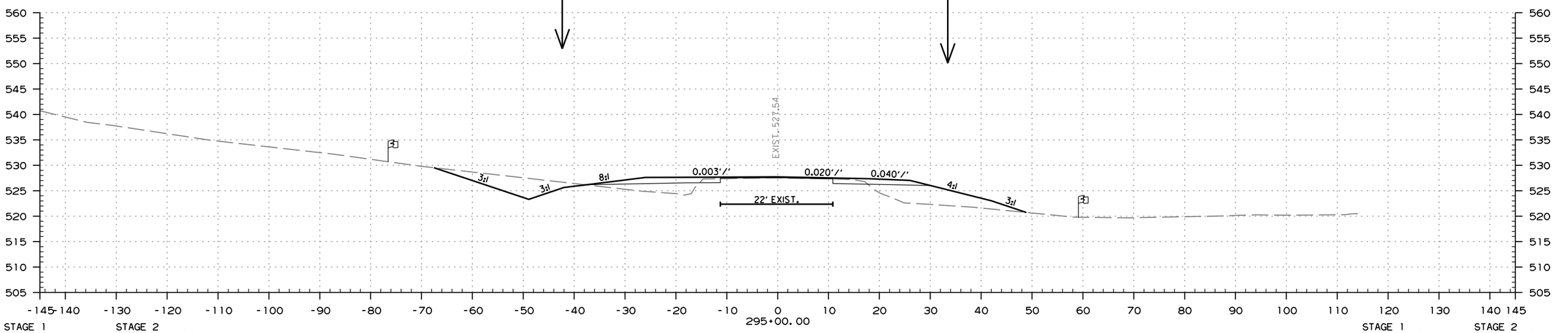
STAGE 2
AREA CUT 100
AREA FILL 0

STAGE 1
CUT VOLUME 16
FILL VOLUME 136

STAGE 2
CUT VOLUME 281
FILL VOLUME 53

STA. 295+33.72 END SUPERELEVATION

STA. +50.00 END
6.94% RT. DITCH GRADE
ELEV. 524.26



STAGE 1
AREA CUT 5
AREA FILL 70

STAGE 2
AREA CUT 52
AREA FILL 29

STAGE 1
CUT VOLUME 0
FILL VOLUME 2

STAGE 2
CUT VOLUME 2
FILL VOLUME 1

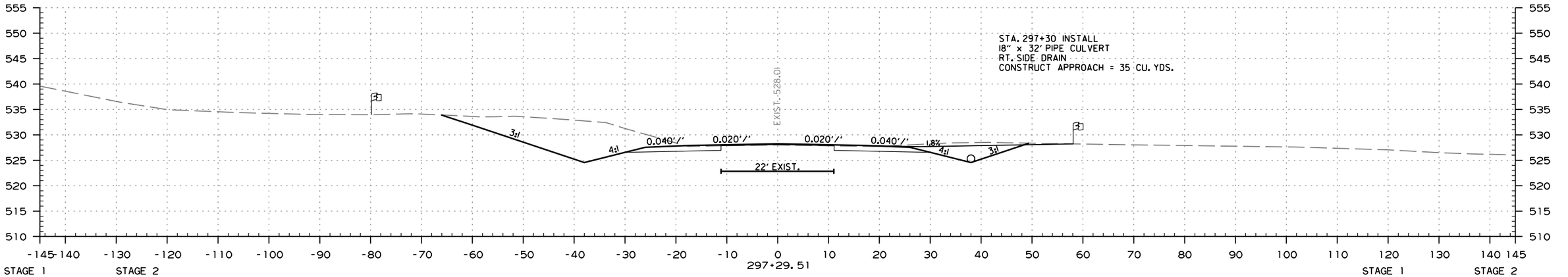
HWY. 7
STA. 295+00.00 TO STA. 296+00.00

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	165	260

(2) CROSS SECTIONS SITE 2

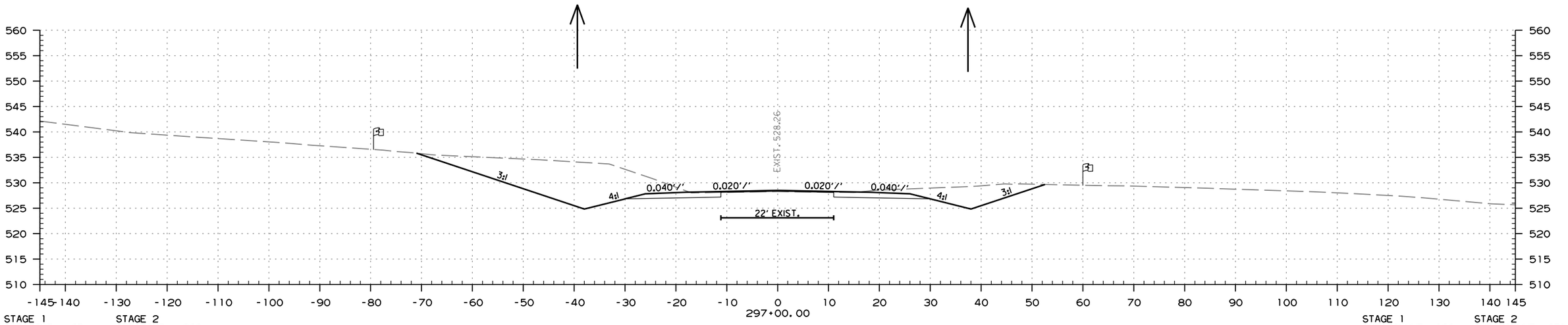


STAGE 1
AREA CUT 67
AREA FILL 0

STAGE 2
AREA CUT 212
AREA FILL 0

STAGE 1
CUT VOLUME 72
FILL VOLUME 0

STAGE 2
CUT VOLUME 259
FILL VOLUME 0



STAGE 1
AREA CUT 65
AREA FILL 0

STAGE 2
AREA CUT 262
AREA FILL 0

STAGE 1
CUT VOLUME 126
FILL VOLUME 6

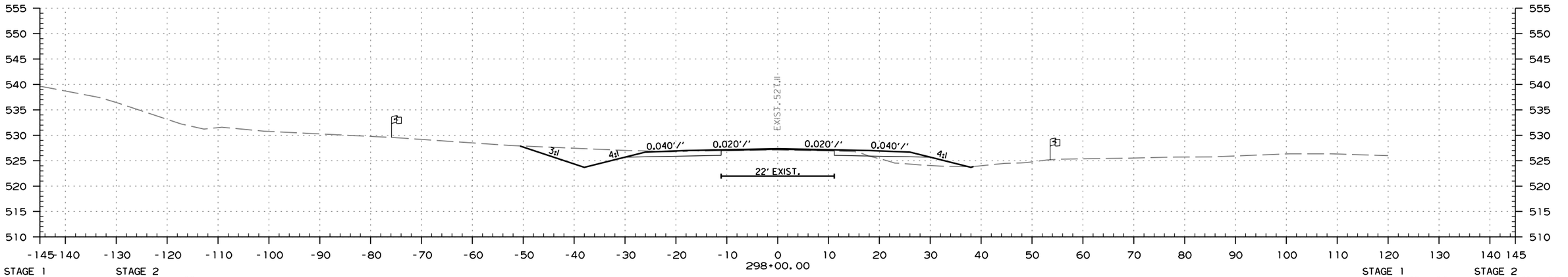
STAGE 2
CUT VOLUME 670
FILL VOLUME 0

HWY. 7
STA. 297+00.00 TO STA. 297+29.51

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	166	260

(2) CROSS SECTIONS SITE 2

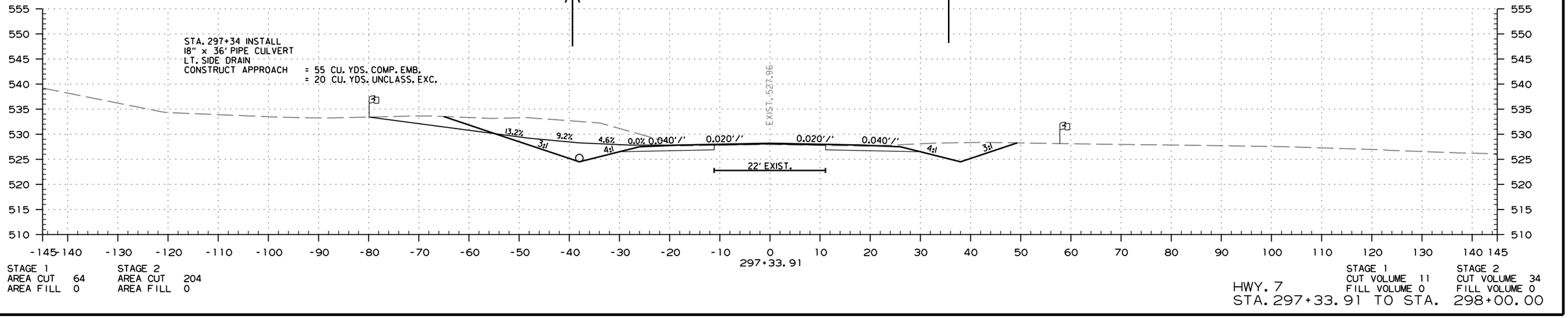


STAGE 1 AREA CUT 5 AREA FILL 20

STAGE 2 AREA CUT 63 AREA FILL 0

STAGE 1 CUT VOLUME 84 FILL VOLUME 24

STAGE 2 CUT VOLUME 327 FILL VOLUME 0



STAGE 1 AREA CUT 64 AREA FILL 0

STAGE 2 AREA CUT 204 AREA FILL 0

STAGE 1 CUT VOLUME 11 FILL VOLUME 0

STAGE 2 CUT VOLUME 34 FILL VOLUME 0

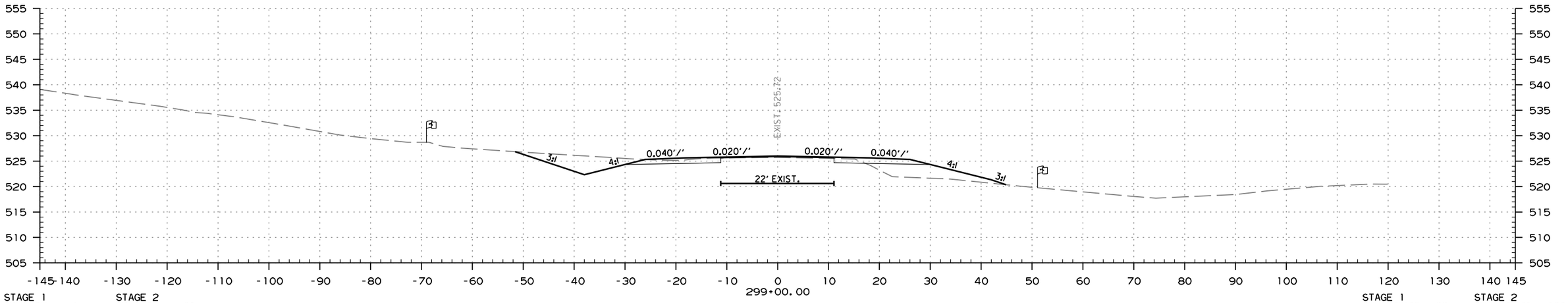
HWY. 7
STA. 297+33.91 TO STA. 298+00.00

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	167	260

(2) CROSS SECTIONS SITE 2

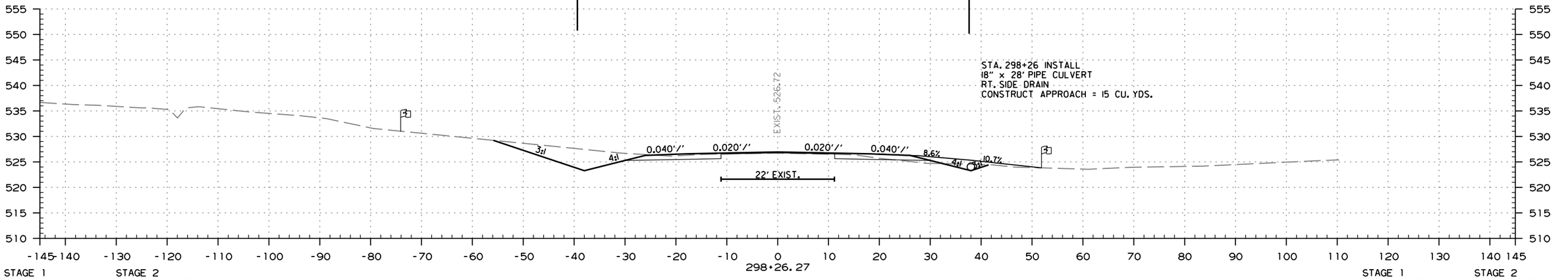


STAGE 1
AREA CUT 4
AREA FILL 46

STAGE 2
AREA CUT 60
AREA FILL 0

STAGE 1
CUT VOLUME 22
FILL VOLUME 67

STAGE 2
CUT VOLUME 188
FILL VOLUME 0



STA. 298+26 INSTALL
18" x 28' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 15 CU. YDS.

STAGE 1
AREA CUT 12
AREA FILL 3

STAGE 2
AREA CUT 77
AREA FILL 0

STAGE 1
CUT VOLUME 8
FILL VOLUME 11

STAGE 2
CUT VOLUME 68
FILL VOLUME 0

HWY. 7
STA. 298+26.27 TO STA. 299+00.00

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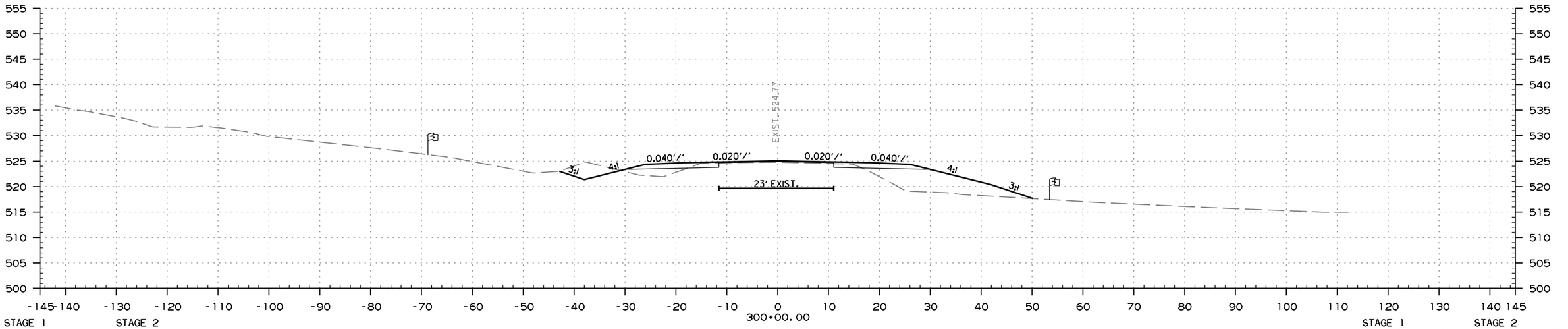
07-30-20				6	ARK.			
				JOB NO.		061309	168	260

(2) CROSS SECTIONS SITE 2

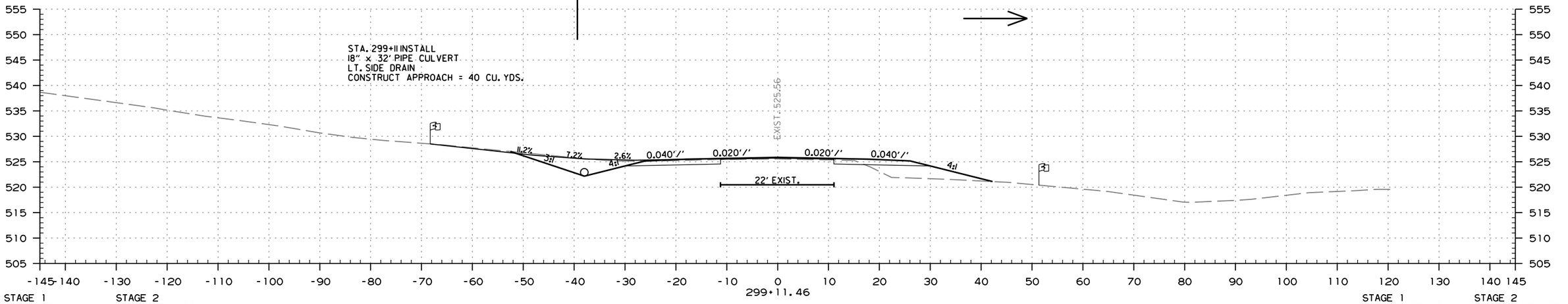


STAGE 1
AREA CUT 3
AREA FILL 89

STAGE 2
AREA CUT 25
AREA FILL 13

STAGE 1
CUT VOLUME 12
FILL VOLUME 212

STAGE 2
CUT VOLUME 137
FILL VOLUME 21



STAGE 1
AREA CUT 40
AREA FILL 4

STAGE 2
AREA CUT 59
AREA FILL 0

STAGE 1
CUT VOLUME 2
FILL VOLUME 18

STAGE 2
CUT VOLUME 25
FILL VOLUME 0

HWY. 7
STA. 299+11.46 TO STA. 300+00.00

COPY OF R061309.DGN 7/30/2020

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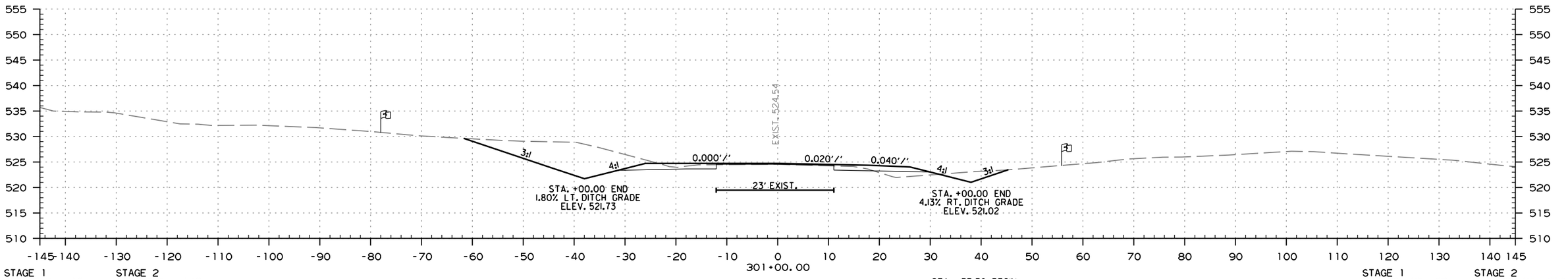
6	ARK.			
JOB NO.		061309	169	260

(2) CROSS SECTIONS SITE 2



STAGE 1
AREA CUT 19
AREA FILL 9

STAGE 2
AREA CUT 142
AREA FILL 0

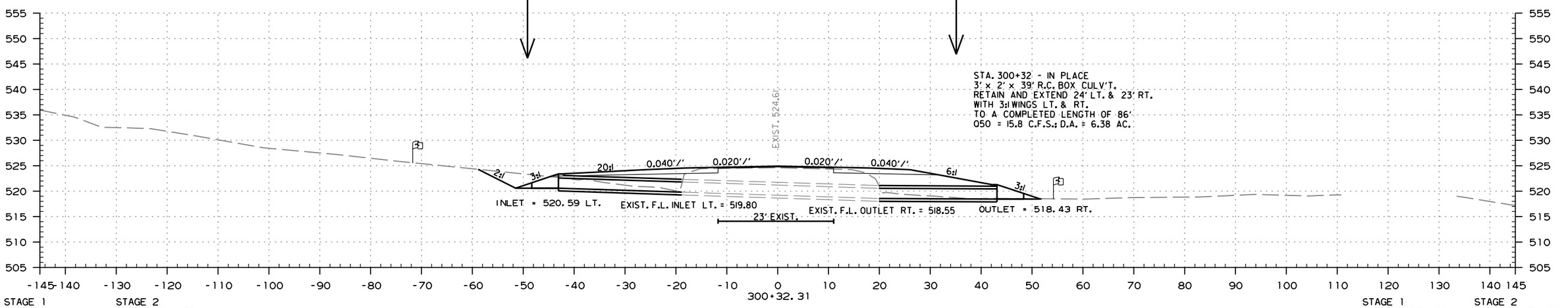
STAGE 1
CUT VOLUME 28
FILL VOLUME 136

STAGE 2
CUT VOLUME 210
FILL VOLUME 56

STA. +37.34 BEGIN
1.80% LT. DITCH GRADE
ELEV. 520.59

STA. 300+64.18 BEGIN SUPERELEVATION (N.C.)

STA. +37.36 BEGIN
4.13% RT. DITCH GRADE
ELEV. 518.43



STAGE 1
AREA CUT 4
AREA FILL 100

STAGE 2
AREA CUT 25
AREA FILL 45

STAGE 1
CUT VOLUME 35
FILL VOLUME 150

STAGE 2
CUT VOLUME 30
FILL VOLUME 35

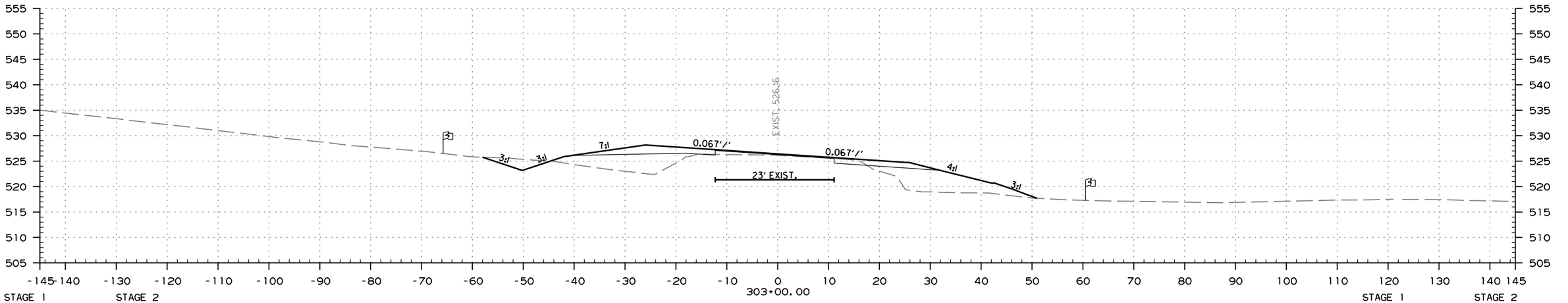
HWY. 7
STA. 300+32.31 TO STA. 301+00.00

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	170	260

(2) CROSS SECTIONS SITE 2

STA. +00.55 END
X% LT. DITCH GRADE
ELEV. 523.15

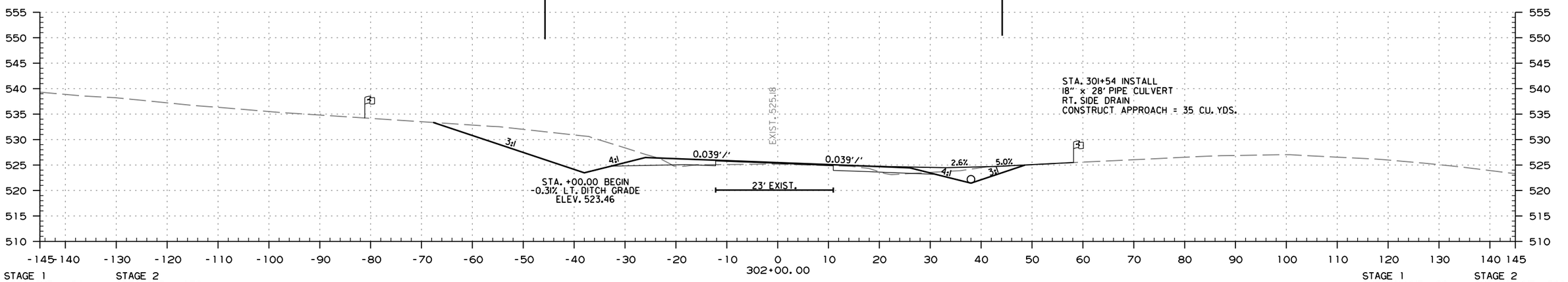


STAGE 1
AREA CUT 5
AREA FILL 0

STAGE 2
AREA CUT 15
AREA FILL 68

STAGE 1
CUT VOLUME 72
FILL VOLUME 3

STAGE 2
CUT VOLUME 347
FILL VOLUME 127



STAGE 1
AREA CUT 34
AREA FILL 1

STAGE 2
AREA CUT 172
AREA FILL 1

STAGE 1
CUT VOLUME 98
FILL VOLUME 20

STAGE 2
CUT VOLUME 583
FILL VOLUME 2

HWY. 7
STA. 302+00.00 TO STA. 303+00.00

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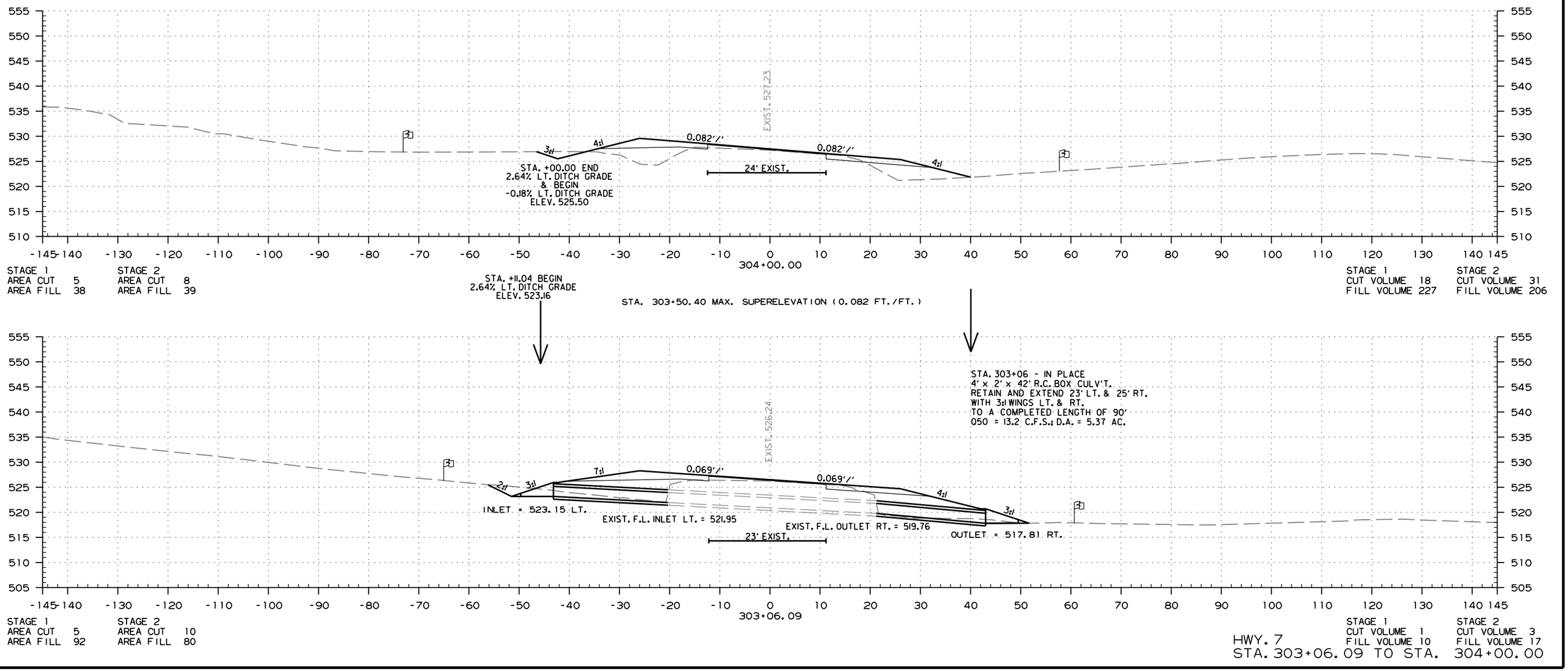
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	171	260

(2) CROSS SECTIONS SITE 2

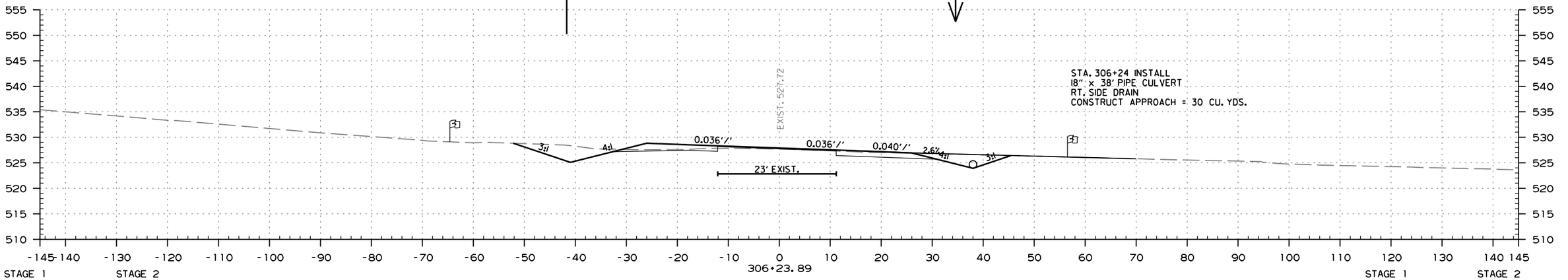


HWY. 7
STA. 303+06.09 TO STA. 304+00.00

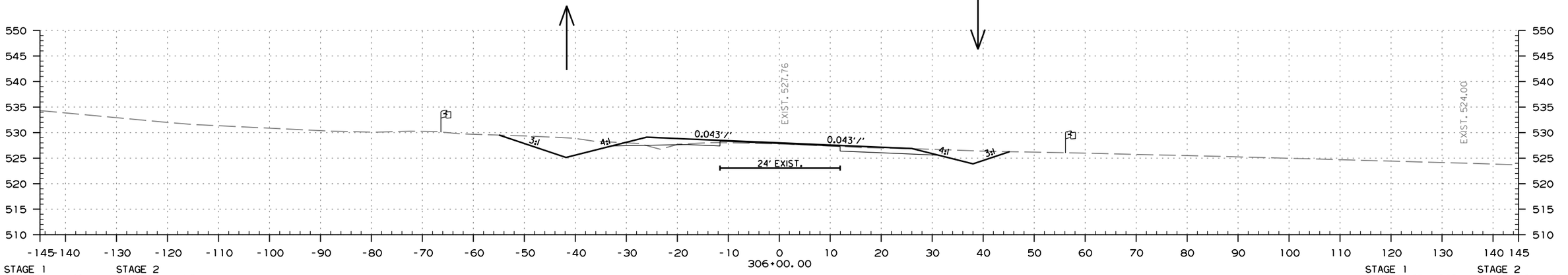
COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	172	260

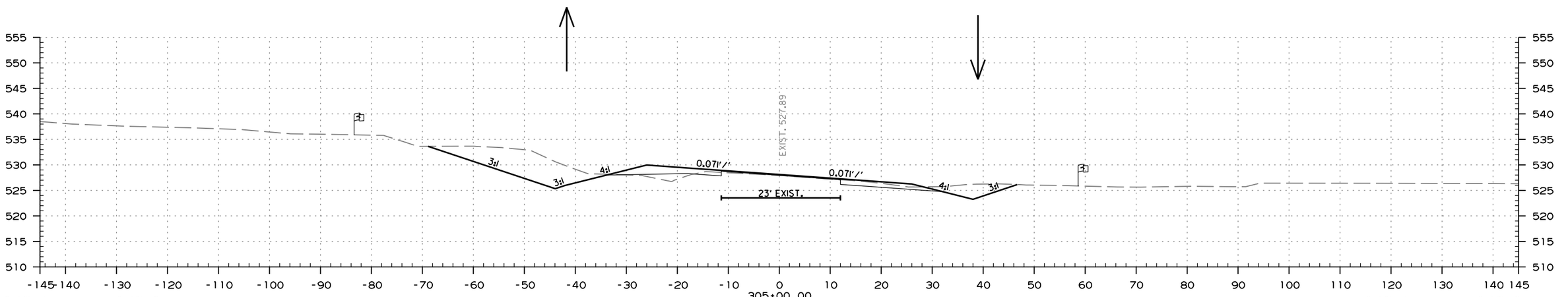
(2) CROSS SECTIONS SITE 2



STAGE 1 AREA CUT 42 AREA FILL 0
STAGE 2 AREA CUT 40 AREA FILL 0
STAGE 1 CUT VOLUME 36 FILL VOLUME 0
STAGE 2 CUT VOLUME 41 FILL VOLUME 1



STAGE 1 AREA CUT 40 AREA FILL 0
STAGE 2 AREA CUT 52 AREA FILL 2
STAGE 1 CUT VOLUME 149 FILL VOLUME 0
STAGE 2 CUT VOLUME 313 FILL VOLUME 21



STAGE 1 AREA CUT 40 AREA FILL 0
STAGE 2 AREA CUT 117 AREA FILL 9

STA. 304+63.92 MAX. SUPERELEVATION (0.082 FT./FT.)

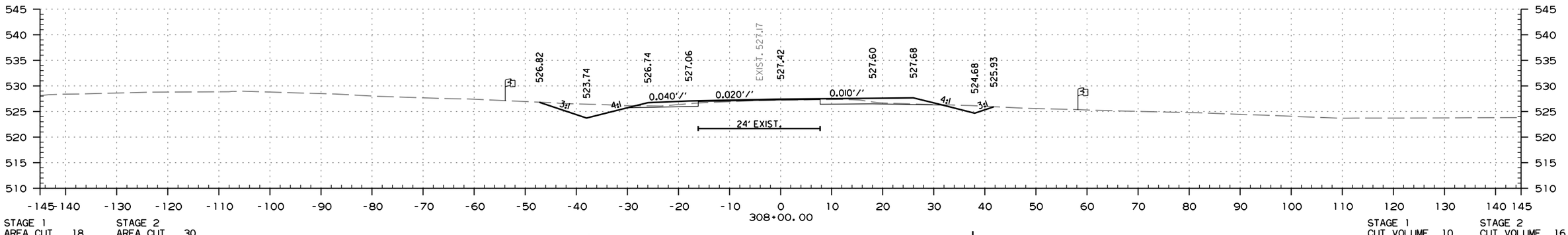
STAGE 1 CUT VOLUME 84 FILL VOLUME 71
STAGE 2 CUT VOLUME 231 FILL VOLUME 88

HWY. 7
STA. 305+00.00 TO STA. 306+23.89

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	173	260

(2) CROSS SECTIONS SITE 2

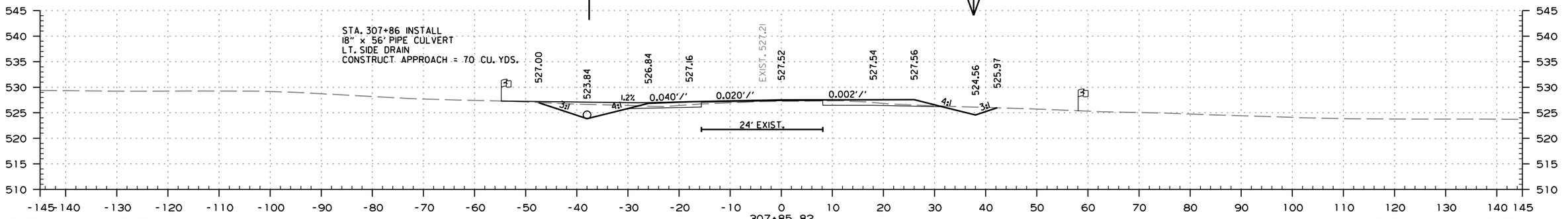


STAGE 1
AREA CUT 18
AREA FILL 0

STAGE 2
AREA CUT 30
AREA FILL 0

STAGE 1
CUT VOLUME 10
FILL VOLUME 0

STAGE 2
CUT VOLUME 16
FILL VOLUME 0

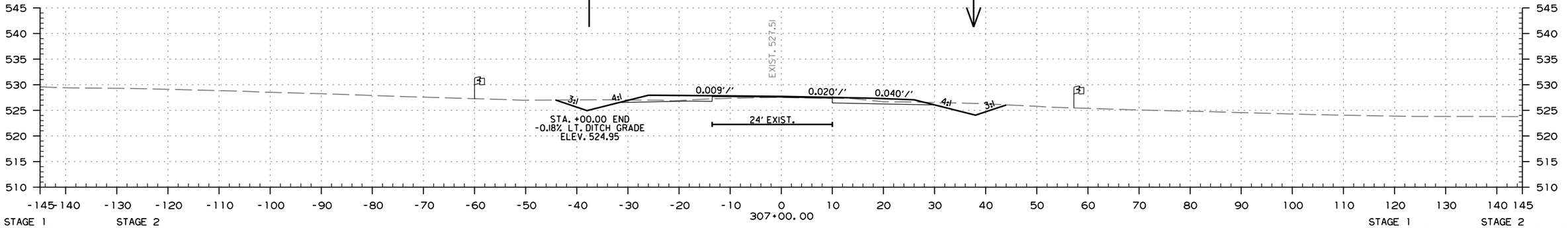


STAGE 1
AREA CUT 20
AREA FILL 0

STAGE 2
AREA CUT 33
AREA FILL 0

STAGE 1
CUT VOLUME 80
FILL VOLUME 0

STAGE 2
CUT VOLUME 85
FILL VOLUME 0



STAGE 1
AREA CUT 31
AREA FILL 0

STAGE 2
AREA CUT 21
AREA FILL 0

STAGE 1
CUT VOLUME 102
FILL VOLUME 0

STAGE 2
CUT VOLUME 85
FILL VOLUME 0

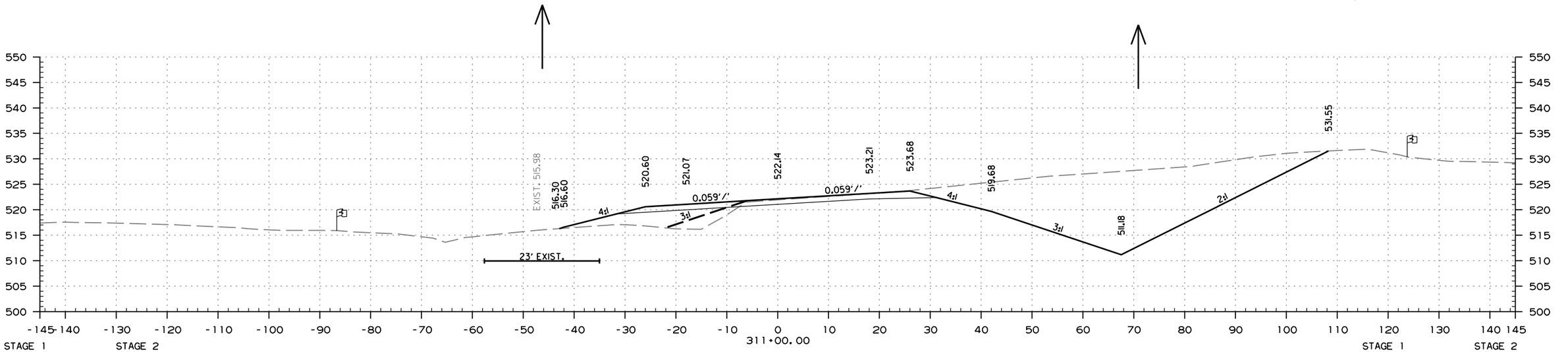
HWY. 7
STA. 307+00.00 TO STA. 308+00.00

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	174	260

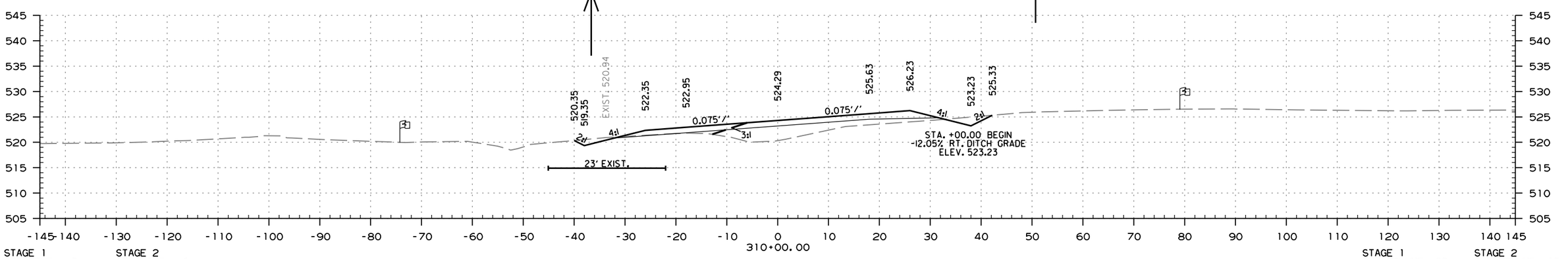
(2) CROSS SECTIONS SITE 2



STAGE 1 AREA CUT 702 AREA FILL 0
STAGE 2 AREA CUT 0 AREA FILL 57

STA. 310+49.77 MAX. SUPERELEVATION (0.075 FT./FT.)

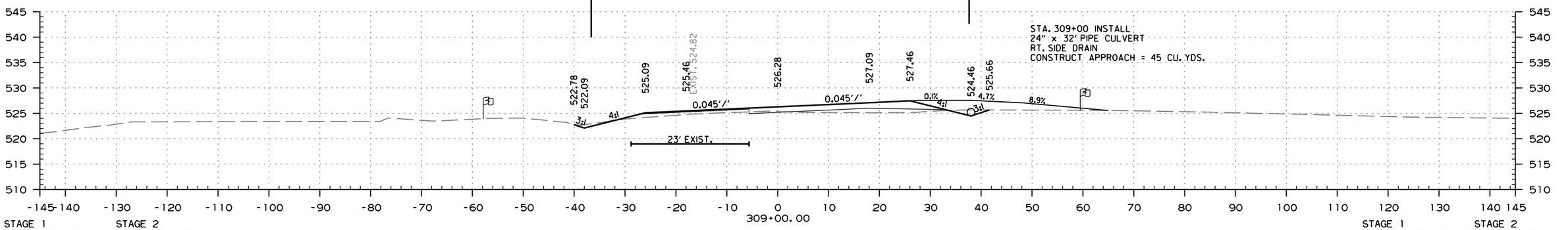
STAGE 1 CUT VOLUME 1316 FILL VOLUME 128
STAGE 2 CUT VOLUME 0 FILL VOLUME 111



STAGE 1 AREA CUT 8 AREA FILL 69
STAGE 2 AREA CUT 0 AREA FILL 2.63

STA. 309+96.28 MAX. SUPERELEVATION (0.075 FT./FT.)

STAGE 1 CUT VOLUME 28 FILL VOLUME 160
STAGE 2 CUT VOLUME 12 FILL VOLUME 5



STAGE 1 AREA CUT 7 AREA FILL 17
STAGE 2 AREA CUT 7 AREA FILL 0

STAGE 1 CUT VOLUME 45 FILL VOLUME 32
STAGE 2 CUT VOLUME 68 FILL VOLUME 0

HWY. 7
STA. 309+00.00 TO STA. 311+00.00

COPY OF R061309.DGN 7/30/2020

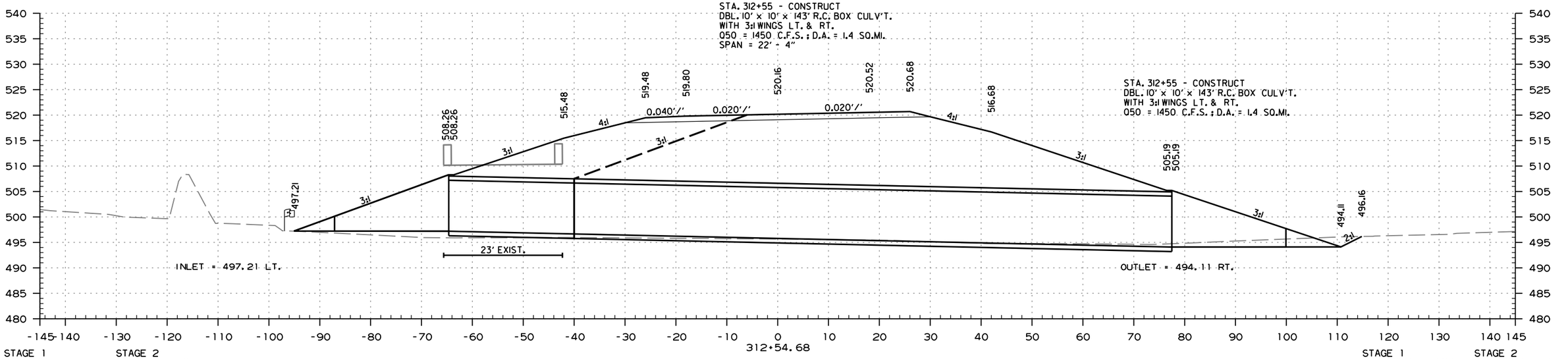
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	175	260

(2) CROSS SECTIONS SITE 2

STA. 312+36 TO STA. 312+70 IN PLACE
24'-0" x 32'-0" CLEAR ROADWAY BRIDGE NO. 01345
SINGLE SPAN CONCRETE ARCH
REMOVE AS EXISTING BRIDGE STRUCTURE (SITE NO. 1) = 1.00 LUMP SUM

STA. 312+55 - CONSTRUCT
DBL. 10' x 10' x 143' R.C. BOX CULV'T.
WITH 3:1 WINGS LT. & RT.
Q50 = 1450 C.F.S. ; D.A. = 1.4 SQ.MI.
SPAN = 22' - 4"

STA. +90.11 BEGIN
5.84% RT. DITCH GRADE
ELEV. 494.11



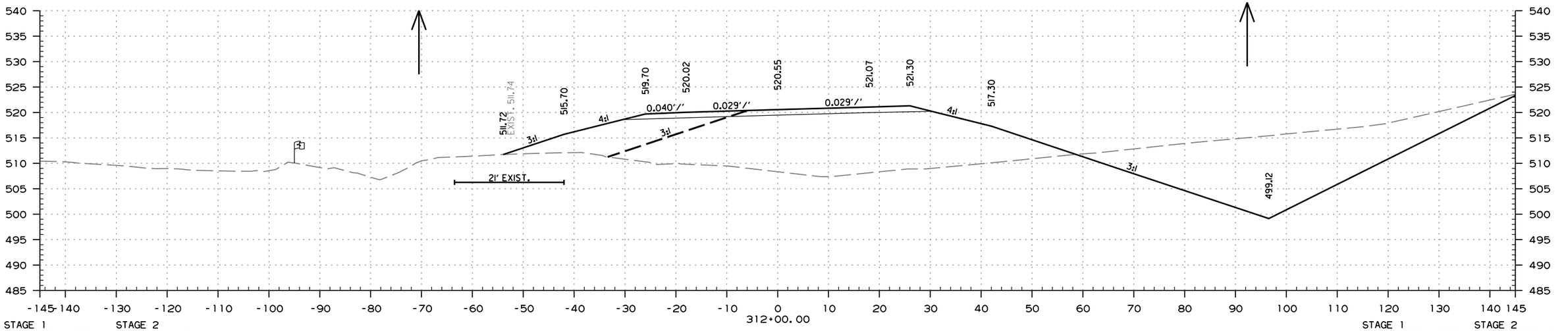
STAGE 1 AREA CUT 9 AREA FILL 2726
STAGE 2 AREA CUT 0 AREA FILL 479

STA. 312+55 - CONSTRUCT
DBL. 10' x 10' x 143' R.C. BOX CULV'T.
WITH 3:1 WINGS LT. & RT.
Q50 = 1450 C.F.S. ; D.A. = 1.4 SQ.MI.

STA. +41.57 END
-12.05% RT. DITCH GRADE
ELEV. 494.11

STAGE 1 CUT VOLUME 690 FILL VOLUME 3512
STAGE 2 CUT VOLUME 0 FILL VOLUME 636

STA. 312+29.91 END SUPERELEVATION (R.C.)



STAGE 1 AREA CUT 672 AREA FILL 744
STAGE 2 AREA CUT 0 AREA FILL 149

STAGE 1 CUT VOLUME 2546 FILL VOLUME 1377
STAGE 2 CUT VOLUME 0 FILL VOLUME 382

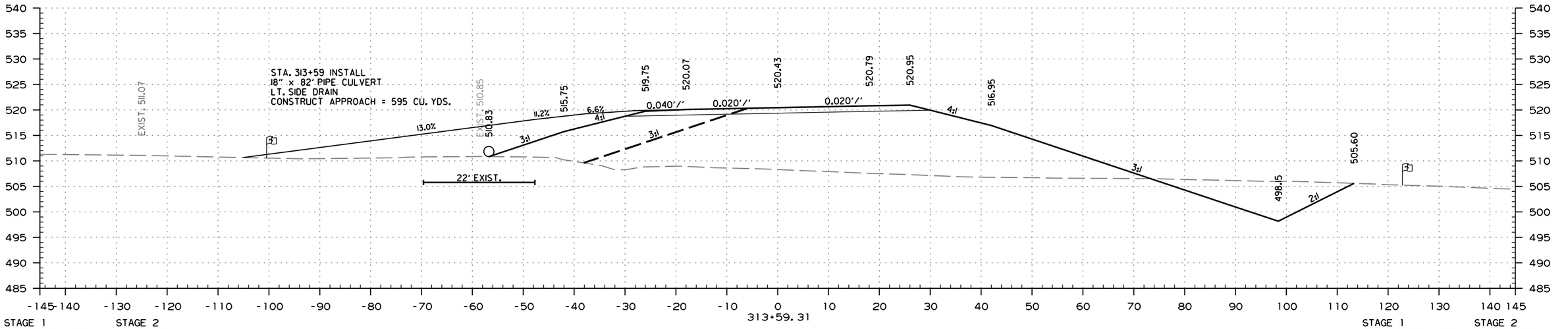
HWY. 7
STA. 312+00.00 TO STA. 312+54.68

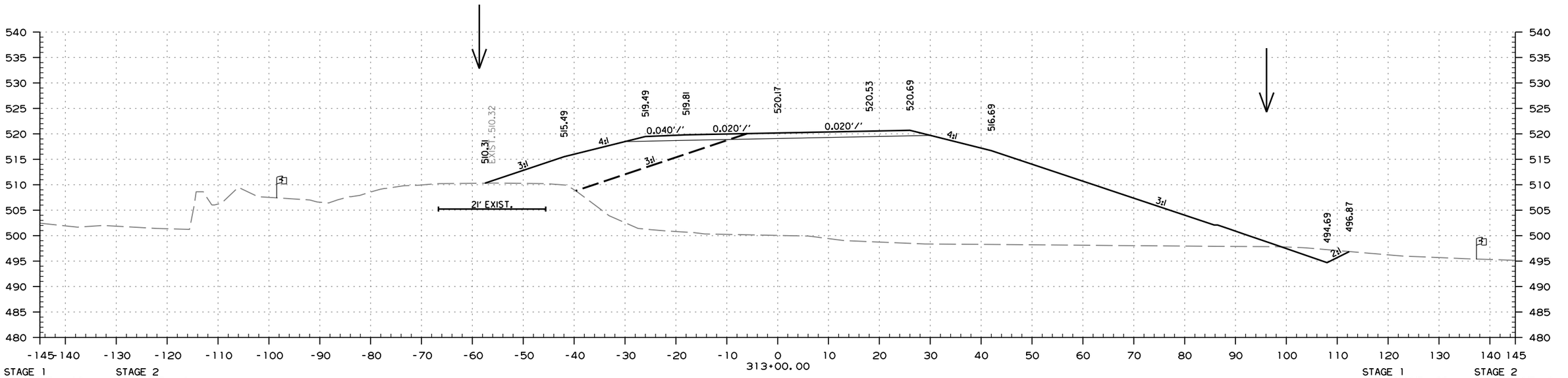
COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	176	260

(2) CROSS SECTIONS SITE 2



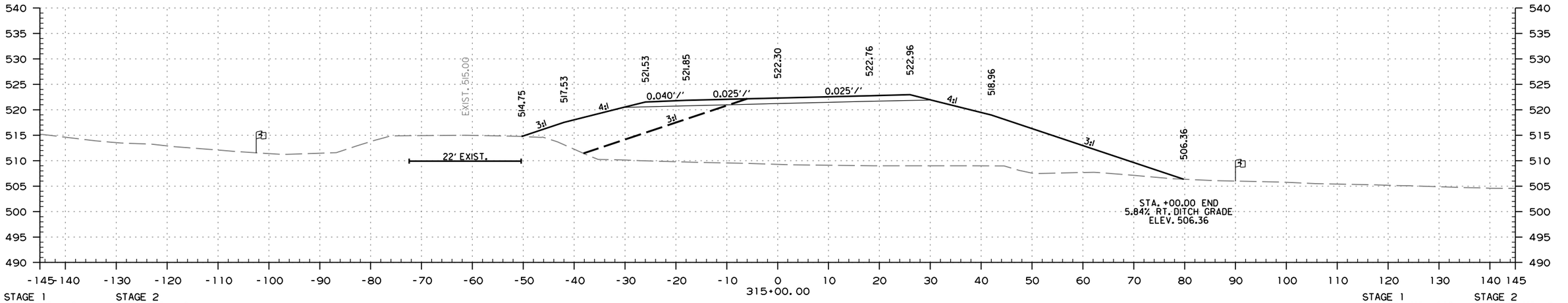


HWY. 7
STA. 313+00.00 TO STA. 313+59.31

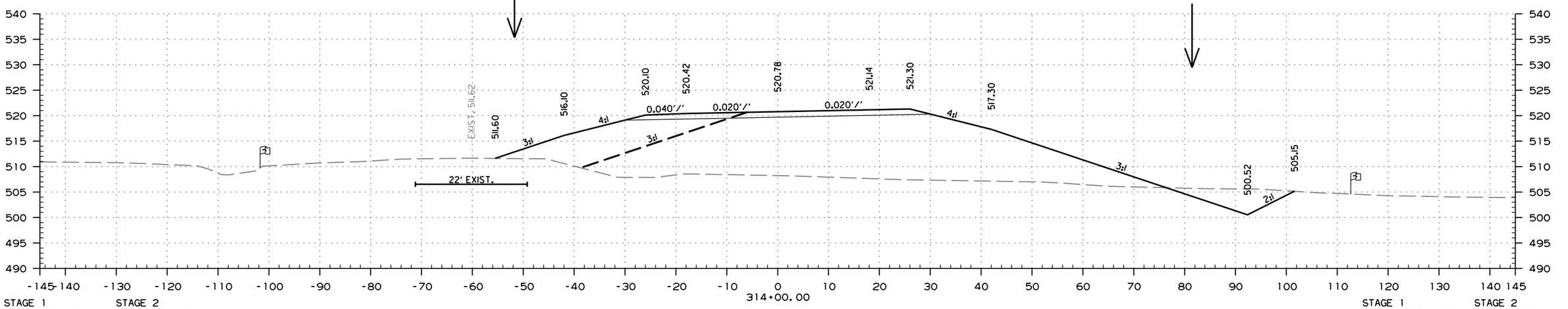
COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	177	260

(2) CROSS SECTIONS SITE 2



STA. 314+57.67 BEGIN SUPERELEVATION (R.C)



HWY. 7
STA. 314+00.00 TO STA. 315+00.00

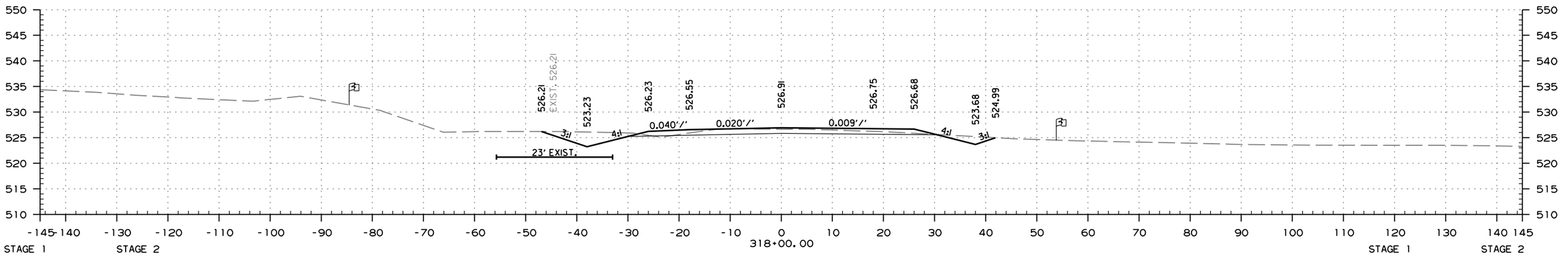
COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	178	260

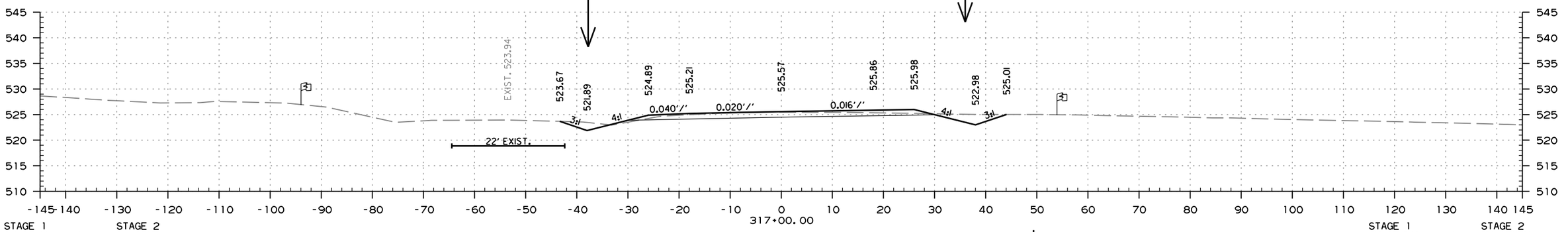
(2) CROSS SECTIONS SITE 2

STA. 318+45.35 BEGIN SUPERELEVATION (N.C.)
STA. 318+45.35 END SUPERELEVATION (N.C.)



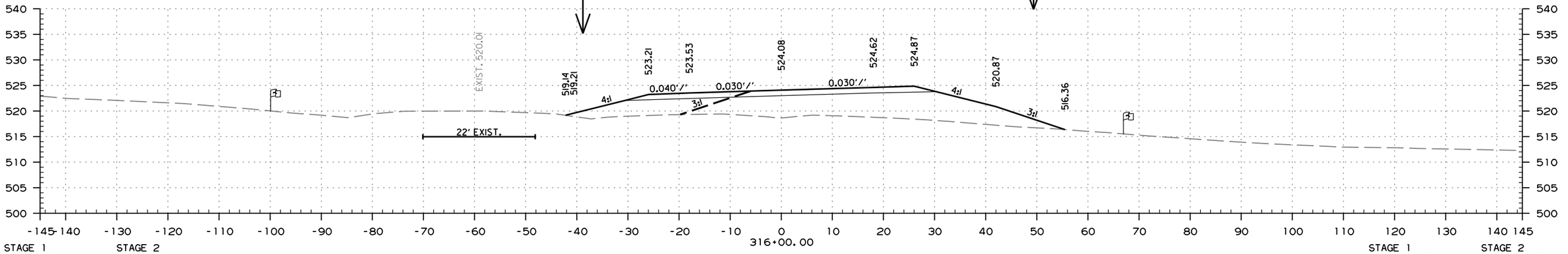
STAGE 1 AREA CUT 44 AREA FILL 0
STAGE 2 AREA CUT 29 AREA FILL 0

STAGE 1 CUT VOLUME 188 FILL VOLUME 0
STAGE 2 CUT VOLUME 68 FILL VOLUME 3



STAGE 1 AREA CUT 56 AREA FILL 0
STAGE 2 AREA CUT 8 AREA FILL 1

STAGE 1 CUT VOLUME 107 FILL VOLUME 506
STAGE 2 CUT VOLUME 14 FILL VOLUME 133



STAGE 1 AREA CUT 0 AREA FILL 273
STAGE 2 AREA CUT 0 AREA FILL 70

STA. 315+82.77 MAX. SUPERELEVATION (0.033 FT./FT.)
STA. 315+58.49 MAX. SUPERELEVATION (0.033 FT./FT.)

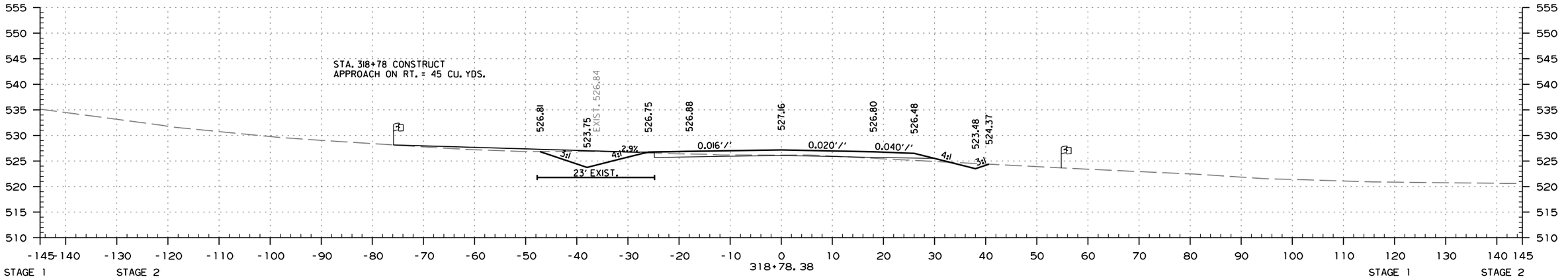
STAGE 1 CUT VOLUME 0 FILL VOLUME 2354
STAGE 2 CUT VOLUME 0 FILL VOLUME 421

HWY. 7
STA. 316+00.00 TO STA. 318+00.00

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	179	260

(2) CROSS SECTIONS SITE 2



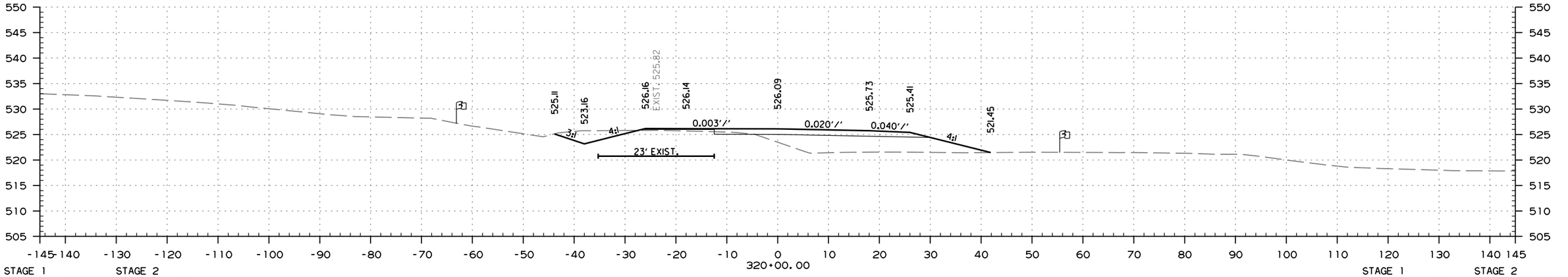
HWY. 7
STA. 318+46.72 TO STA. 318+78.38

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	180	260

(2) CROSS SECTIONS SITE 2

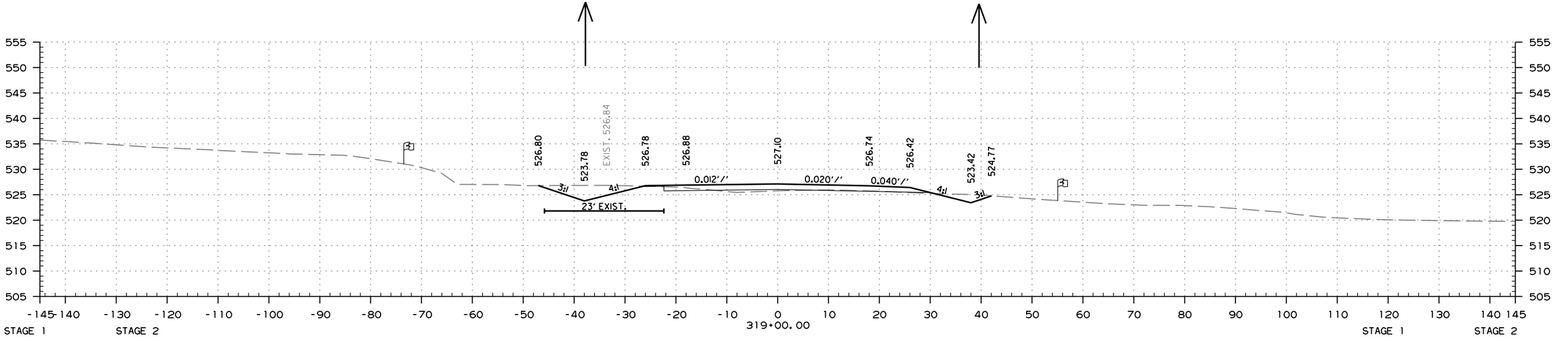


STAGE 1
AREA CUT 3
AREA FILL 112

STAGE 2
AREA CUT 21
AREA FILL 0

STAGE 1
CUT VOLUME 32
FILL VOLUME 218

STAGE 2
CUT VOLUME 111
FILL VOLUME 0



STAGE 1
AREA CUT 15
AREA FILL 5

STAGE 2
AREA CUT 38
AREA FILL 0

STAGE 1
CUT VOLUME 12
FILL VOLUME 5

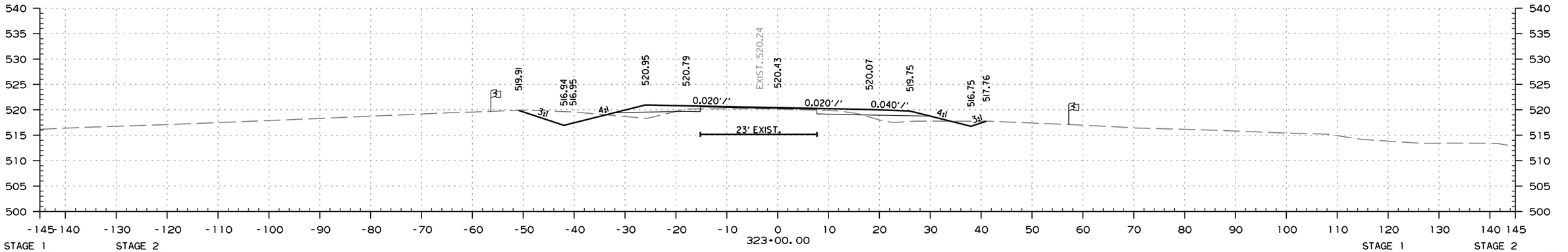
STAGE 2
CUT VOLUME 30
FILL VOLUME 0

HWY. 7
STA. 319+00.00 TO STA. 320+00.00

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	181	260

(2) CROSS SECTIONS SITE 2

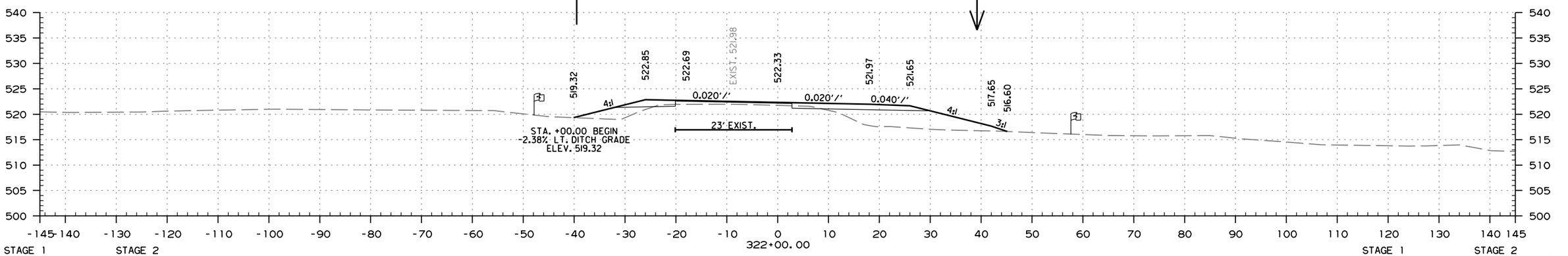


STAGE 1
AREA CUT 8
AREA FILL 15

STAGE 2
AREA CUT 26
AREA FILL 10

STAGE 1
CUT VOLUME 19
FILL VOLUME 181

STAGE 2
CUT VOLUME 50
FILL VOLUME 55



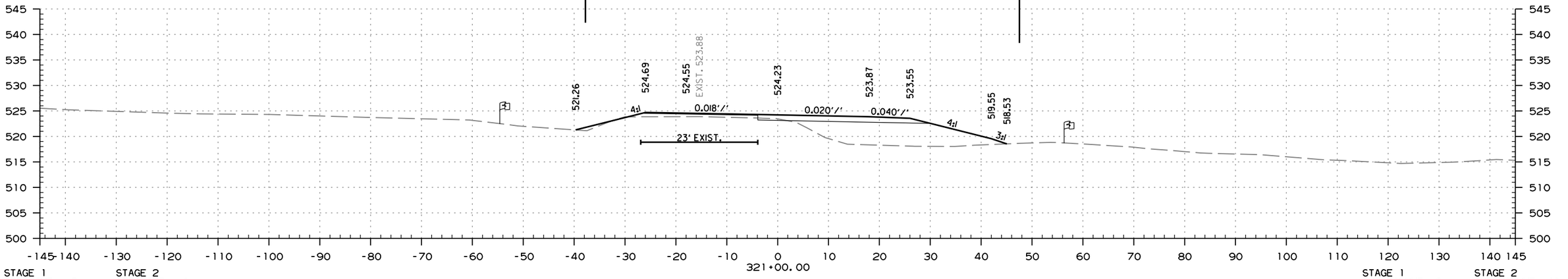
STAGE 1
AREA CUT 2
AREA FILL 83

STAGE 2
AREA CUT 1
AREA FILL 20

STA. 321+15.35 MAX. SUPERELEVATION (R.C.)

STAGE 1
CUT VOLUME 7
FILL VOLUME 406

STAGE 2
CUT VOLUME 3
FILL VOLUME 41



STAGE 1
AREA CUT 2
AREA FILL 136

STAGE 2
AREA CUT 0
AREA FILL 2

STAGE 1
CUT VOLUME 8
FILL VOLUME 460

STAGE 2
CUT VOLUME 40
FILL VOLUME 5

HWY. 7
STA. 321+00.00 TO STA. 323+00.00

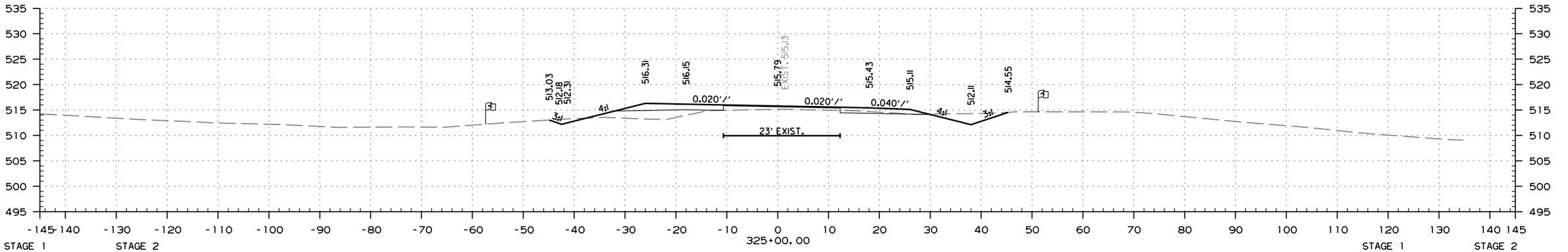
COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	182	260

(2) CROSS SECTIONS SITE 2

STA. +30.00 END
-2.38% LT. DITCH GRADE
ELEV. 511.47



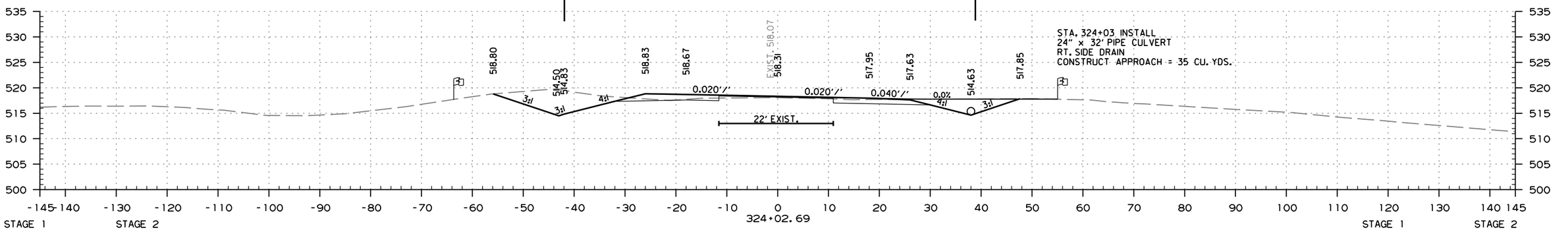
STAGE 1
AREA CUT 21
AREA FILL 0

STAGE 2
AREA CUT 4
AREA FILL 28

STAGE 1
CUT VOLUME 127
FILL VOLUME 0

STAGE 2
CUT VOLUME 139
FILL VOLUME 51

STA. 324+03 INSTALL
24" x 32' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 35 CU. YDS.

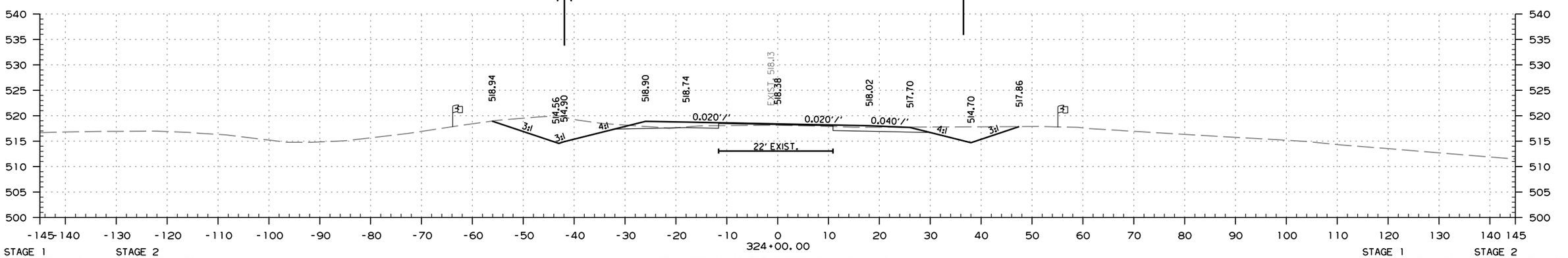


STAGE 1
AREA CUT 50
AREA FILL 0

STAGE 2
AREA CUT 73
AREA FILL 0

STAGE 1
CUT VOLUME 5
FILL VOLUME 0

STAGE 2
CUT VOLUME 7
FILL VOLUME 0



STAGE 1
AREA CUT 48
AREA FILL 0

STAGE 2
AREA CUT 76
AREA FILL 0

STA. 323+68.49 END SUPERELEVATION (R.C.)

STAGE 1
CUT VOLUME 104
FILL VOLUME 28

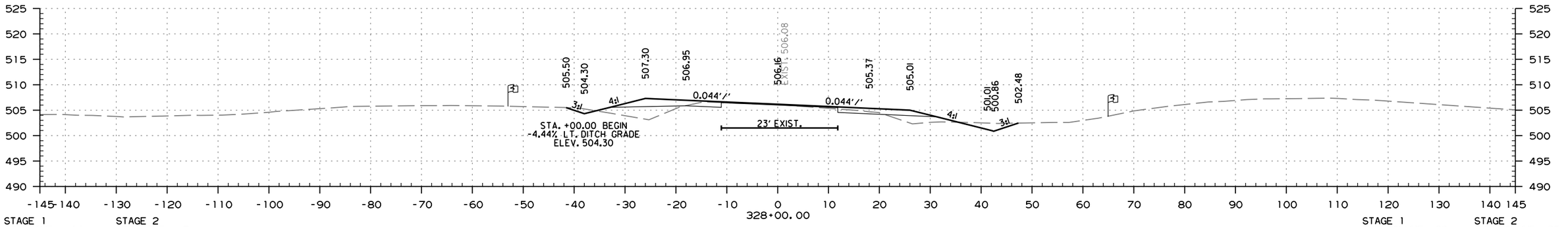
STAGE 2
CUT VOLUME 189
FILL VOLUME 18

HWY. 7
STA. 324+00.00 TO STA. 325+00.00

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	183	260

(2) CROSS SECTIONS SITE 2



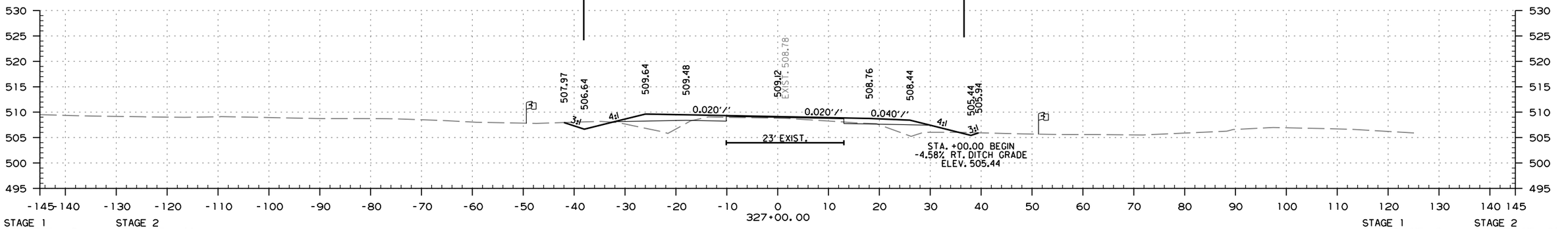
STAGE 1
AREA CUT 14
AREA FILL 13

STAGE 2
AREA CUT 9
AREA FILL 25

STAGE 1
CUT VOLUME 29
FILL VOLUME 56

STAGE 2
CUT VOLUME 36
FILL VOLUME 80

STA. 327+11.82 BEGIN SUPERELEVATION (R.C.)

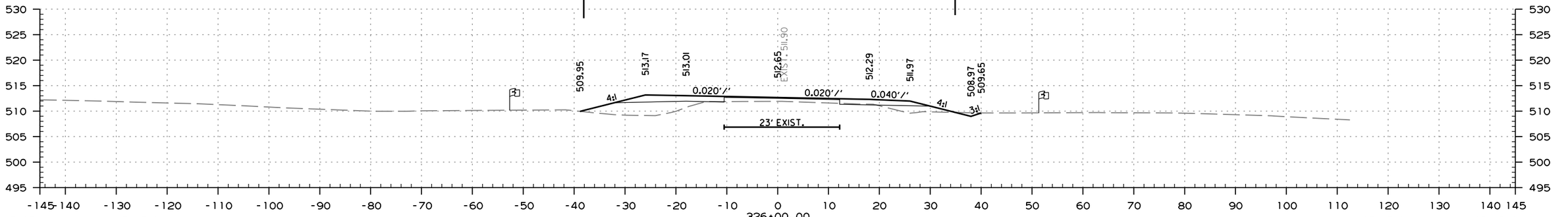


STAGE 1
AREA CUT 2
AREA FILL 18

STAGE 2
AREA CUT 11
AREA FILL 19

STAGE 1
CUT VOLUME 9
FILL VOLUME 57

STAGE 2
CUT VOLUME 21
FILL VOLUME 115



STAGE 1
AREA CUT 3
AREA FILL 13

STAGE 2
AREA CUT 0
AREA FILL 43

STAGE 1
CUT VOLUME 44
FILL VOLUME 23

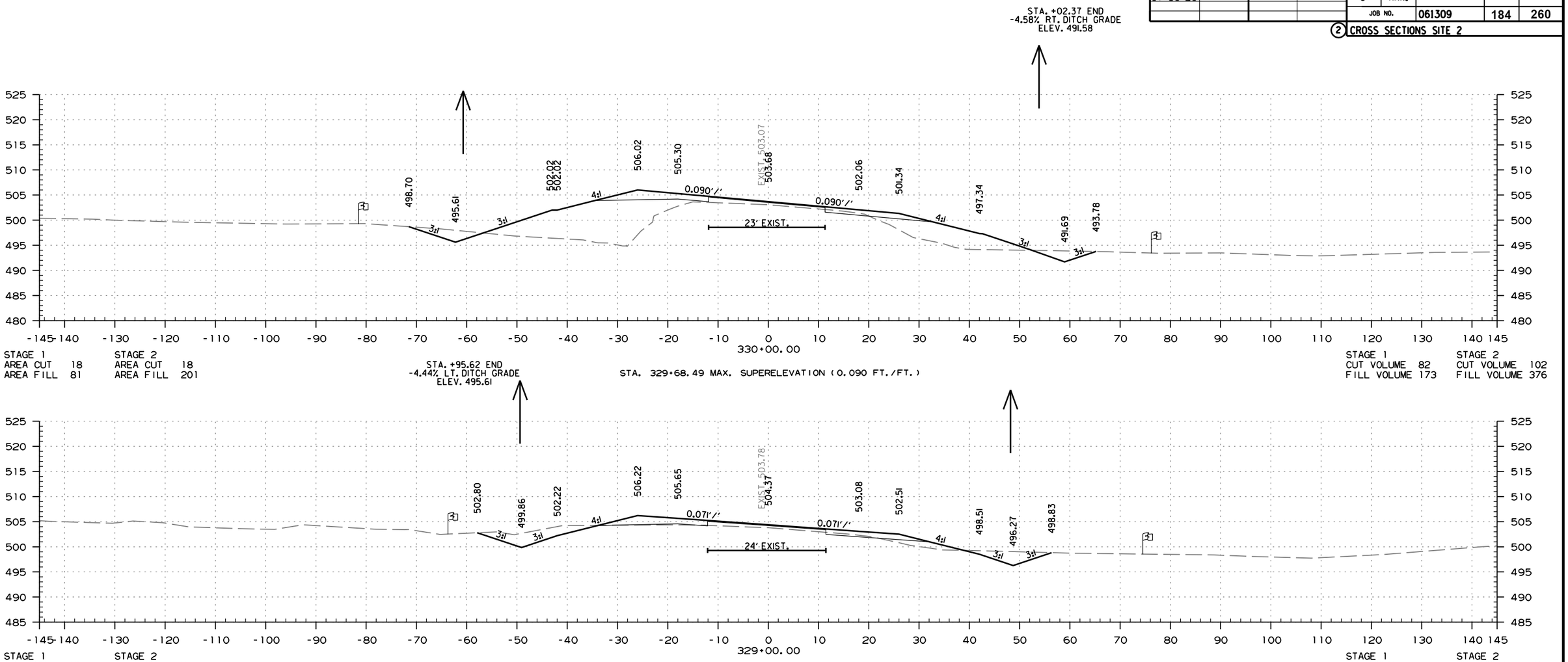
STAGE 2
CUT VOLUME 7
FILL VOLUME 132

HWY. 7
STA. 326+00.00 TO STA. 328+00.00

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	184	260

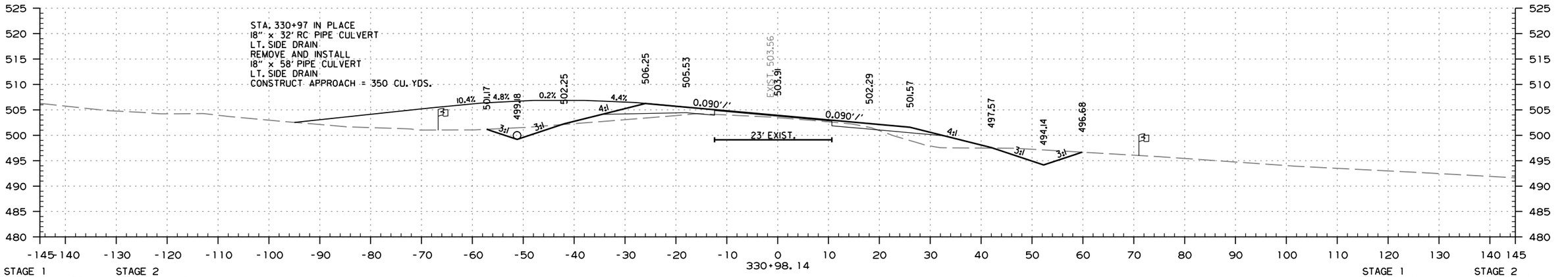
(2) CROSS SECTIONS SITE 2



COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	185	260

(2) CROSS SECTIONS SITE 2

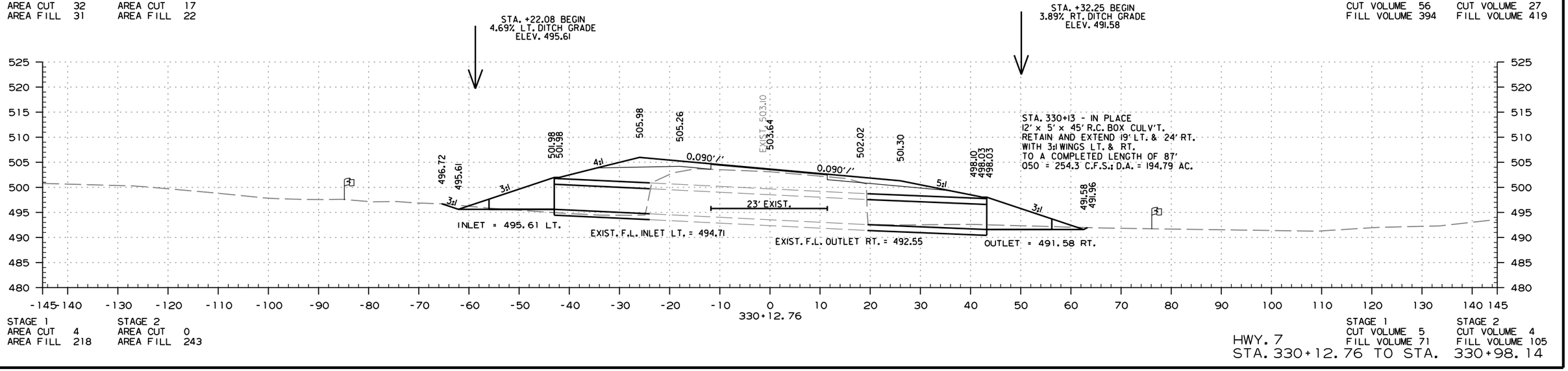


STAGE 1
AREA CUT 32
AREA FILL 31

STAGE 2
AREA CUT 17
AREA FILL 22

STAGE 1
CUT VOLUME 56
FILL VOLUME 394

STAGE 2
CUT VOLUME 27
FILL VOLUME 419



STAGE 1
AREA CUT 4
AREA FILL 218

STAGE 2
AREA CUT 0
AREA FILL 243

STAGE 1
CUT VOLUME 5
FILL VOLUME 71

STAGE 2
CUT VOLUME 4
FILL VOLUME 105

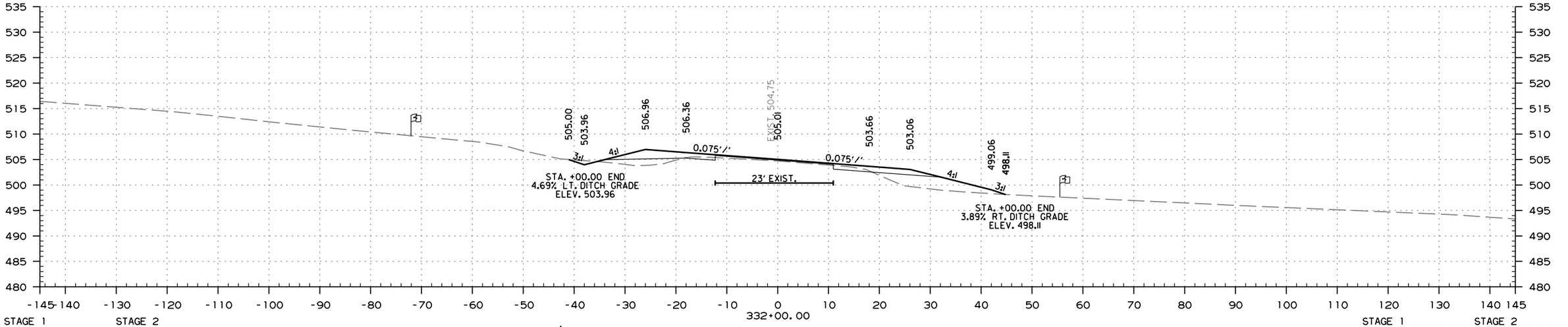
HWY. 7
STA. 330+12.76 TO STA. 330+98.14

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	186	260

(2) CROSS SECTIONS SITE 2



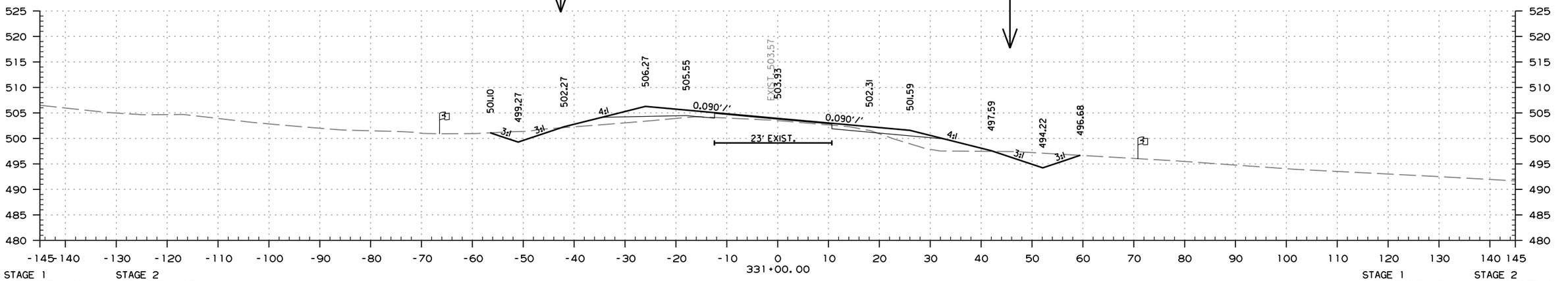
STAGE 1
AREA CUT 4
AREA FILL 42

STAGE 2
AREA CUT 5
AREA FILL 14

STAGE 1
CUT VOLUME 64
FILL VOLUME 137

STAGE 2
CUT VOLUME 36
FILL VOLUME 67

STA. 331+45.31 MAX. SUPERELEVATION (0.090 FT./FT.)



STAGE 1
AREA CUT 30
AREA FILL 32

STAGE 2
AREA CUT 15
AREA FILL 22

STAGE 1
CUT VOLUME 2
FILL VOLUME 2

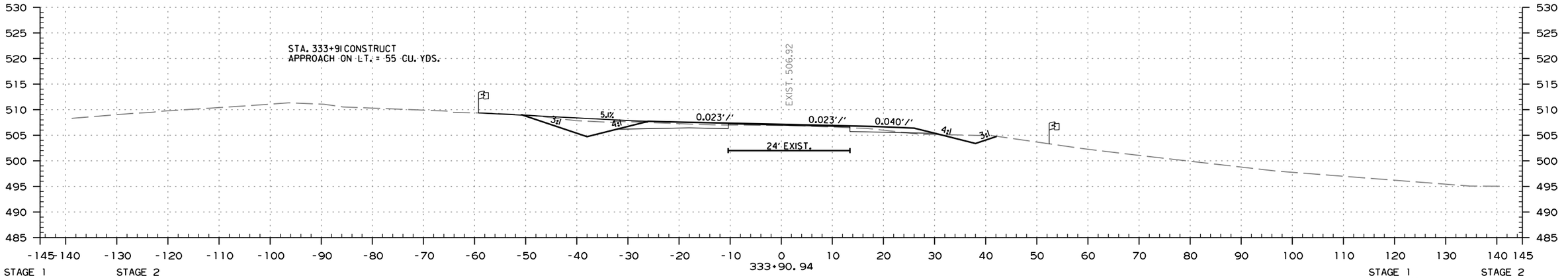
STAGE 2
CUT VOLUME 1
FILL VOLUME 1

HWY. 7
STA. 331+00.00 TO STA. 332+00.00

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	187	260

(2) CROSS SECTIONS SITE 2

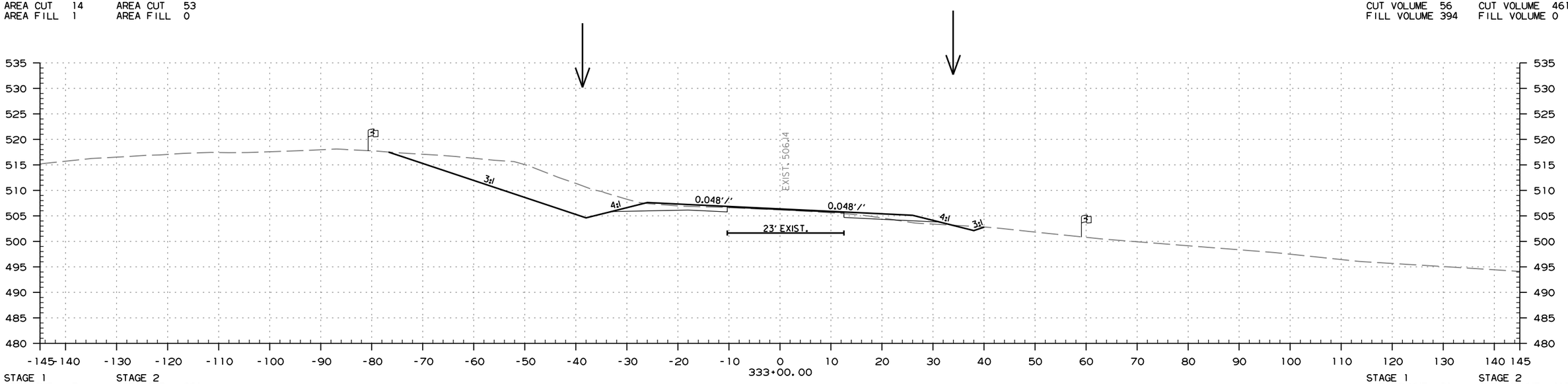


STAGE 1
AREA CUT 14
AREA FILL 1

STAGE 2
AREA CUT 53
AREA FILL 0

STAGE 1
CUT VOLUME 56
FILL VOLUME 394

STAGE 2
CUT VOLUME 461
FILL VOLUME 0



STAGE 1
AREA CUT 7
AREA FILL 4

STAGE 2
AREA CUT 221
AREA FILL 0

STAGE 1
CUT VOLUME 21
FILL VOLUME 85

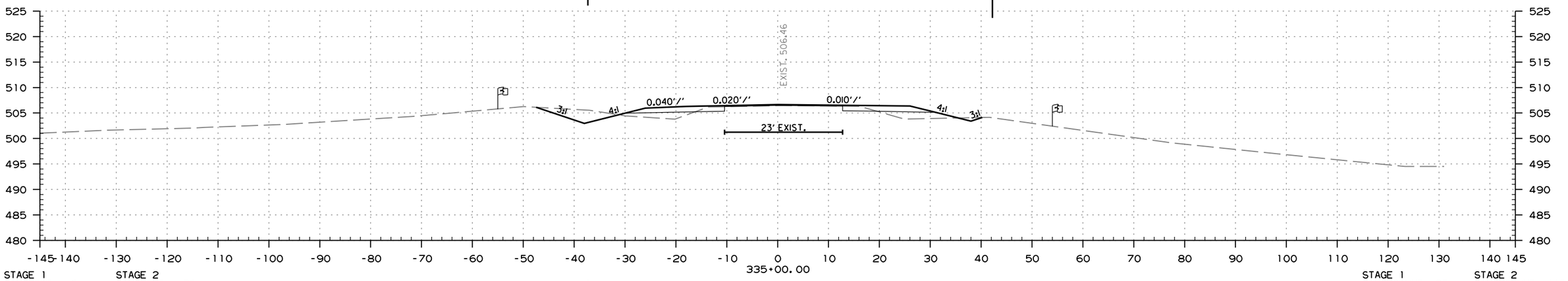
STAGE 2
CUT VOLUME 417
FILL VOLUME 27

HWY. 7
STA. 333+00.00 TO STA. 333+90.94

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	188	260

(2) CROSS SECTIONS SITE 2

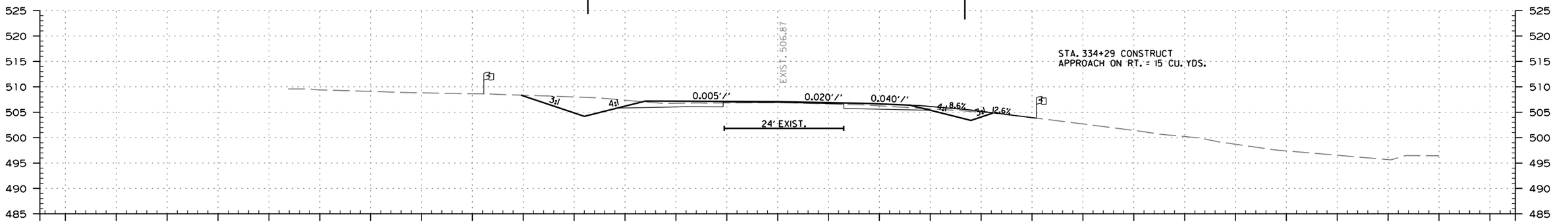


335+00.00

STA. 334+75.31 BEGIN SUPERELEVATION (N.C.)
STA. 334+75.31 END SUPERELEVATION (N.C.)

STAGE 1	STAGE 2
AREA CUT 6	AREA CUT 26
AREA FILL 15	AREA FILL 12

STAGE 1	STAGE 2
CUT VOLUME 37	CUT VOLUME 113
FILL VOLUME 19	FILL VOLUME 16

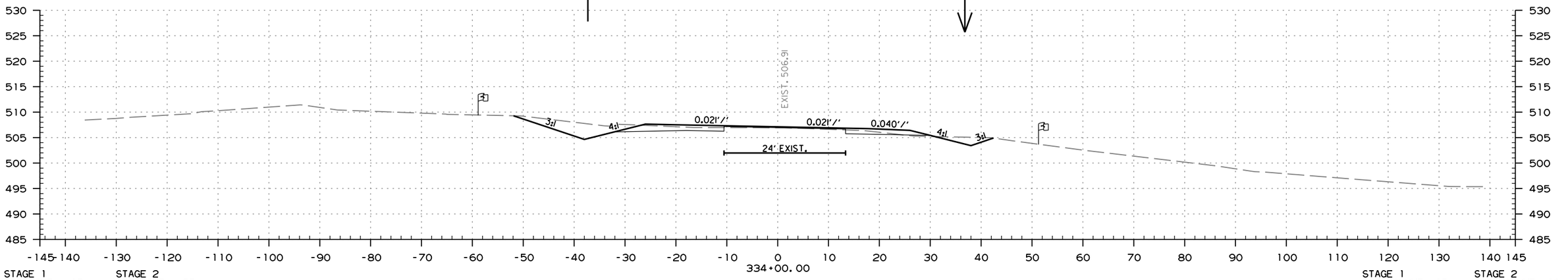


STA. 334+29 CONSTRUCT
APPROACH ON RT. = 15 CU. YDS.

334+29.14

STAGE 1	STAGE 2
AREA CUT 22	AREA CUT 61
AREA FILL 0	AREA FILL 0

STAGE 1	STAGE 2
CUT VOLUME 20	CUT VOLUME 18
FILL VOLUME 0	FILL VOLUME 0



334+00.00

STAGE 1	STAGE 2
AREA CUT 15	AREA CUT 55
AREA FILL 1	AREA FILL 0

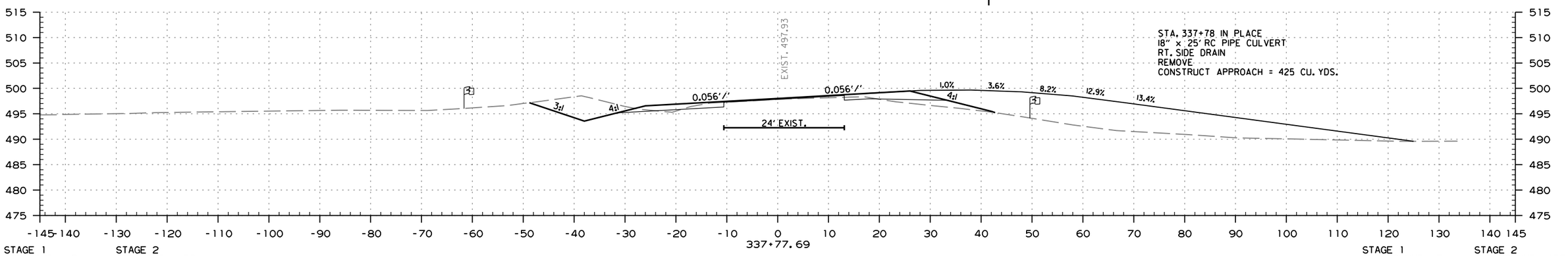
STAGE 1	STAGE 2
CUT VOLUME 15	CUT VOLUME 18
FILL VOLUME 0	FILL VOLUME 0

HWY. 7
STA. 334+00.00 TO STA. 335+00.00

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	189	260

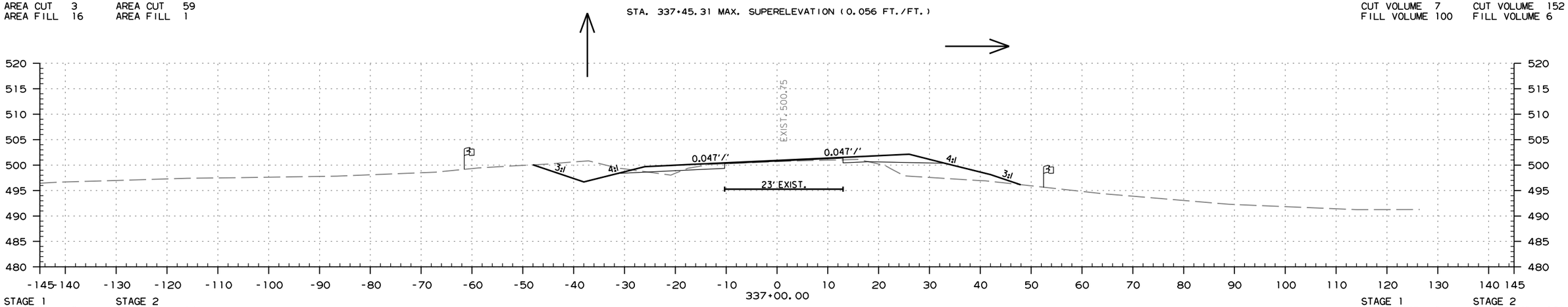
(2) CROSS SECTIONS SITE 2



STAGE 1 AREA CUT 3 AREA FILL 16
STAGE 2 AREA CUT 59 AREA FILL 1

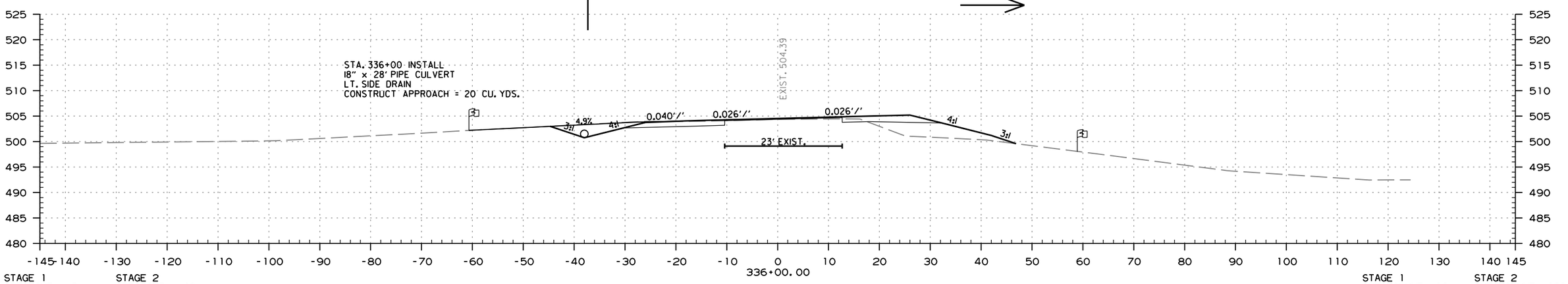
STA. 337+45.31 MAX. SUPERELEVATION (0.056 FT./FT.)

STAGE 1 CUT VOLUME 7 FILL VOLUME 100
STAGE 2 CUT VOLUME 152 FILL VOLUME 6



STAGE 1 AREA CUT 2 AREA FILL 53
STAGE 2 AREA CUT 47 AREA FILL 3

STAGE 1 CUT VOLUME 9 FILL VOLUME 194
STAGE 2 CUT VOLUME 166 FILL VOLUME 5



STAGE 1 AREA CUT 2 AREA FILL 51
STAGE 2 AREA CUT 43 AREA FILL 0

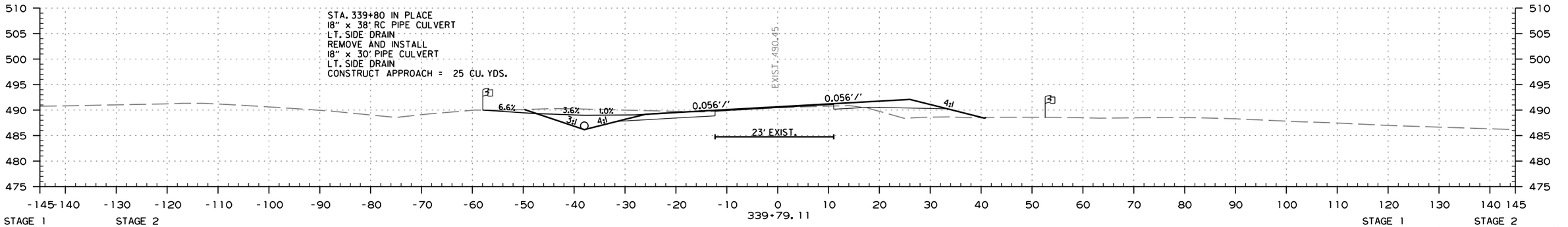
STAGE 1 CUT VOLUME 16 FILL VOLUME 122
STAGE 2 CUT VOLUME 128 FILL VOLUME 23

HWY. 7
STA. 336+00.00 TO STA. 337+77.69

COPY OF R061309.DGN 7/30/2020

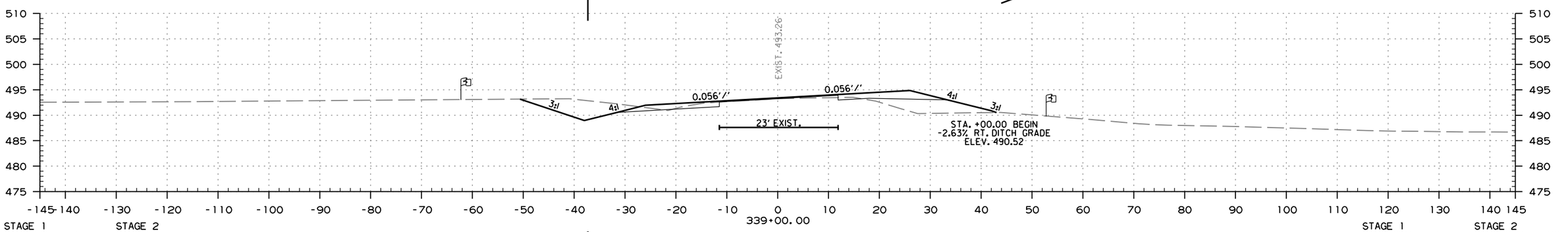
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	190	260

(2) CROSS SECTIONS SITE 2



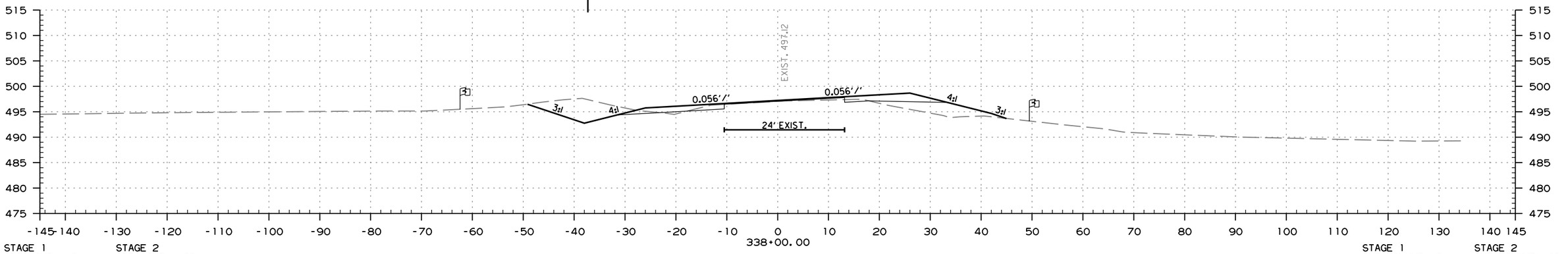
STAGE 1 AREA CUT 3 AREA FILL 29
STAGE 2 AREA CUT 73 AREA FILL 0

STAGE 1 CUT VOLUME 6 FILL VOLUME 106
STAGE 2 CUT VOLUME 184 FILL VOLUME 0



STAGE 1 AREA CUT 2 AREA FILL 44
STAGE 2 AREA CUT 52 AREA FILL 0

STAGE 1 CUT VOLUME 6 FILL VOLUME 151
STAGE 2 CUT VOLUME 207 FILL VOLUME 3



STAGE 1 AREA CUT 2 AREA FILL 44
STAGE 2 AREA CUT 60 AREA FILL 1

STAGE 1 CUT VOLUME 2 FILL VOLUME 22
STAGE 2 CUT VOLUME 49 FILL VOLUME 1

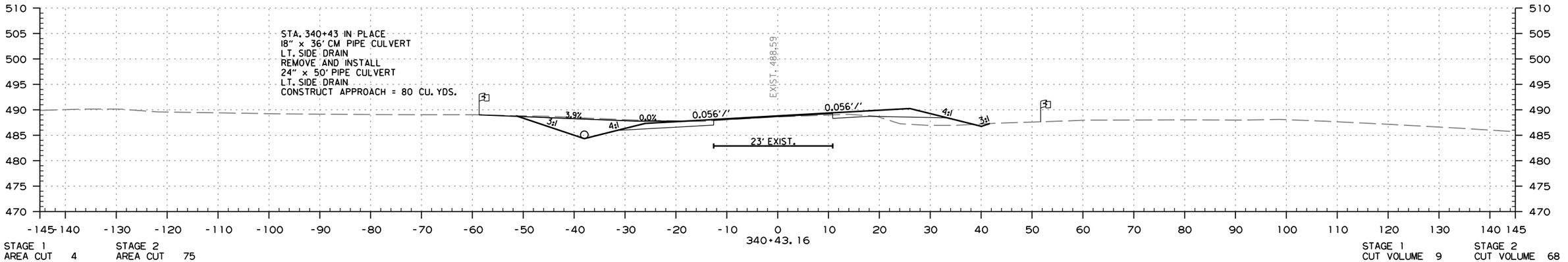
HWY. 7
STA. 338+00.00 TO STA. 339+79.11

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

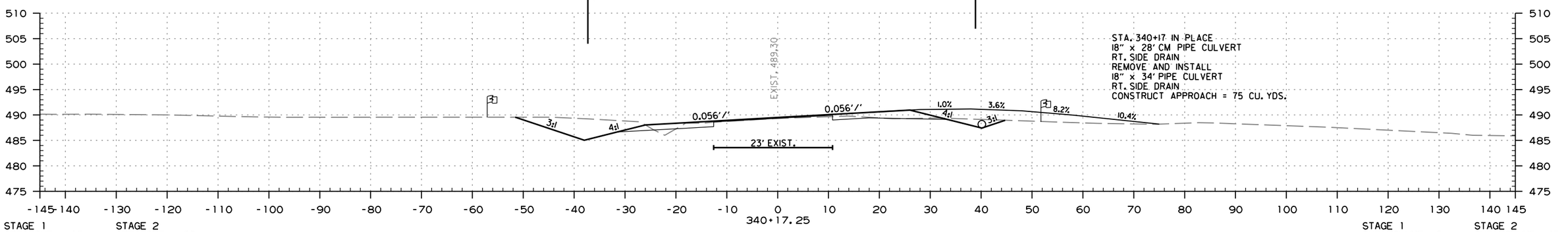
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	191	260

(2) CROSS SECTIONS SITE 2



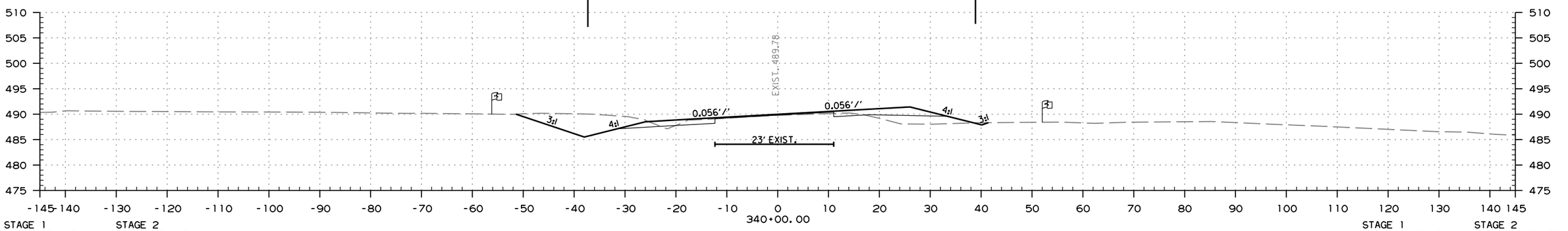
STAGE 1 AREA CUT 4 AREA FILL 21
STAGE 2 AREA CUT 75 AREA FILL 0

STAGE 1 CUT VOLUME 9 FILL VOLUME 10
STAGE 2 CUT VOLUME 68 FILL VOLUME 0



STAGE 1 AREA CUT 15 AREA FILL 1
STAGE 2 AREA CUT 68 AREA FILL 3

STAGE 1 CUT VOLUME 6 FILL VOLUME 8
STAGE 2 CUT VOLUME 45 FILL VOLUME 1



STAGE 1 AREA CUT 3 AREA FILL 25
STAGE 2 AREA CUT 74 AREA FILL 1

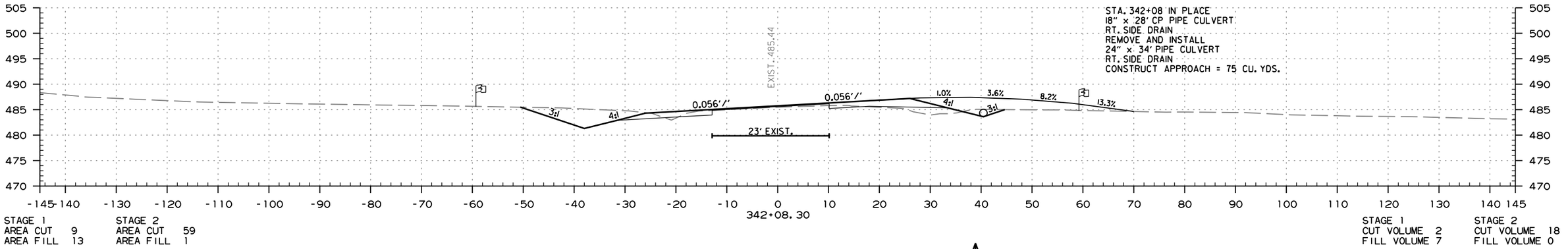
STAGE 1 CUT VOLUME 2 FILL VOLUME 21
STAGE 2 CUT VOLUME 57 FILL VOLUME 0

HWY. 7
STA. 340+00.00 TO STA. 340+43.16

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	192	260

(2) CROSS SECTIONS SITE 2

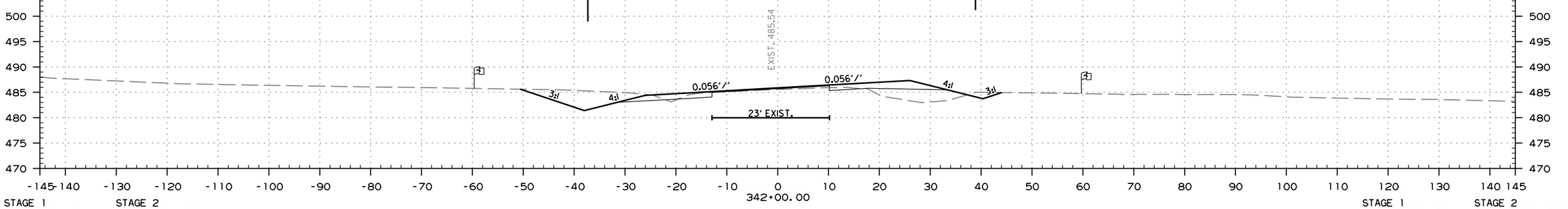


STAGE 1 AREA CUT 9 AREA FILL 13

STAGE 2 AREA CUT 59 AREA FILL 1

STAGE 1 CUT VOLUME 2 FILL VOLUME 7

STAGE 2 CUT VOLUME 18 FILL VOLUME 0

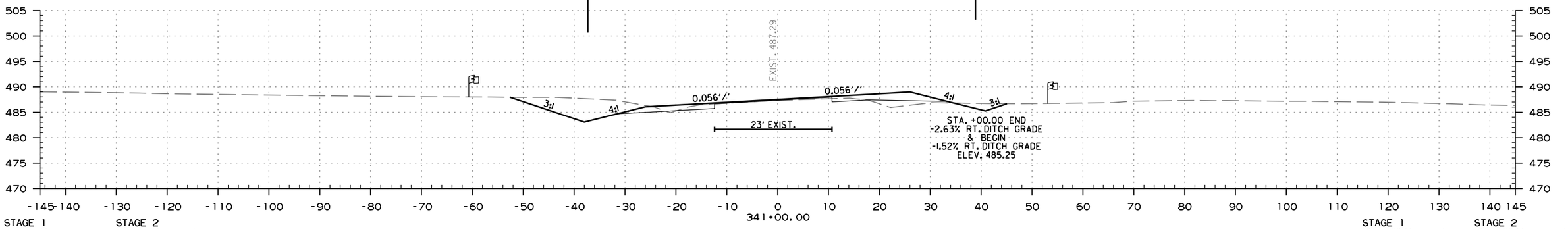


STAGE 1 AREA CUT 7 AREA FILL 35

STAGE 2 AREA CUT 61 AREA FILL 1

STAGE 1 CUT VOLUME 32 FILL VOLUME 85

STAGE 2 CUT VOLUME 256 FILL VOLUME 1



STAGE 1 AREA CUT 11 AREA FILL 11

STAGE 2 AREA CUT 78 AREA FILL 0

STAGE 1 CUT VOLUME 16 FILL VOLUME 34

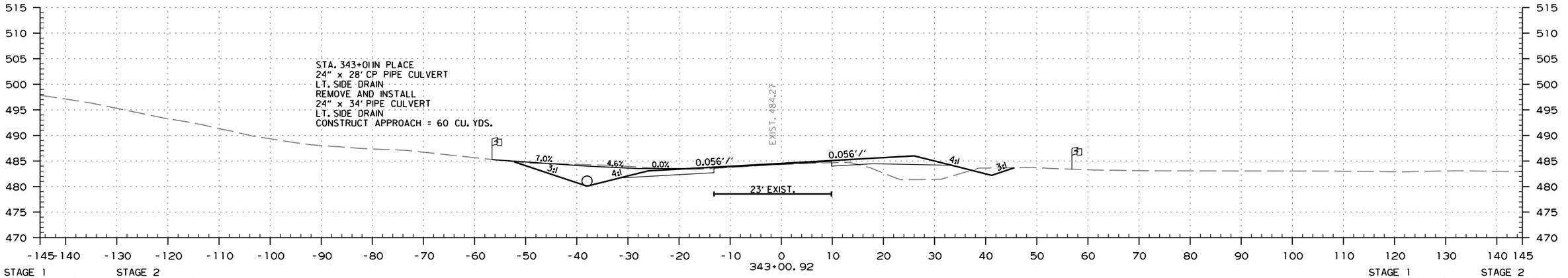
STAGE 2 CUT VOLUME 160 FILL VOLUME 0

HWY. 7
STA. 341+00.00 TO STA. 342+08.30

COPY OF R061309.DGN 7/30/2020

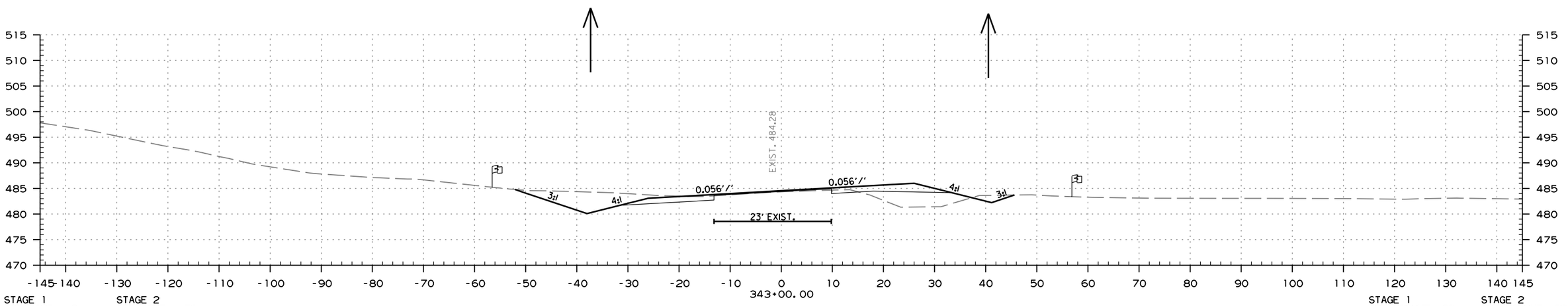
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	193	260

(2) CROSS SECTIONS SITE 2



STAGE 1	STAGE 2
AREA CUT 9	AREA CUT 76
AREA FILL 44	AREA FILL 0

STAGE 1	STAGE 2
CUT VOLUME 0	CUT VOLUME 3
FILL VOLUME 2	FILL VOLUME 0



STAGE 1	STAGE 2
AREA CUT 9	AREA CUT 76
AREA FILL 45	AREA FILL 0

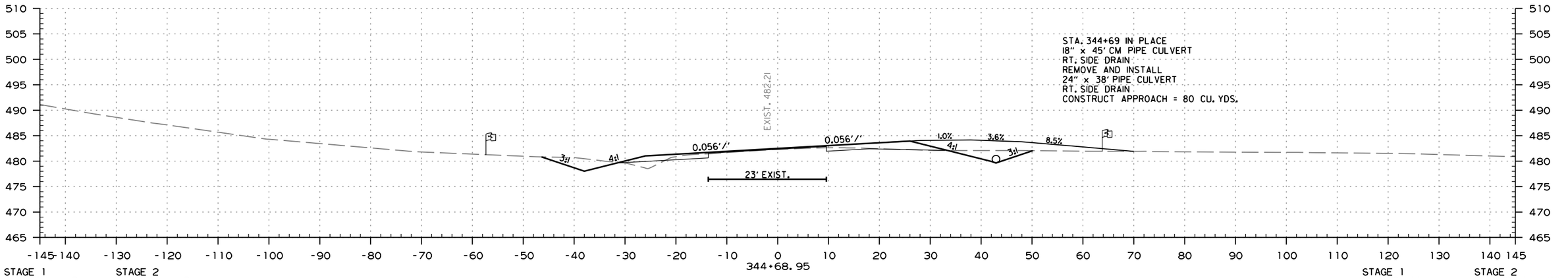
STAGE 1	STAGE 2
CUT VOLUME 30	CUT VOLUME 230
FILL VOLUME 97	FILL VOLUME 1

HWY. 7
STA. 343+00.00 TO STA. 343+00.92

COPY OF R061309.DGN 7/30/2020

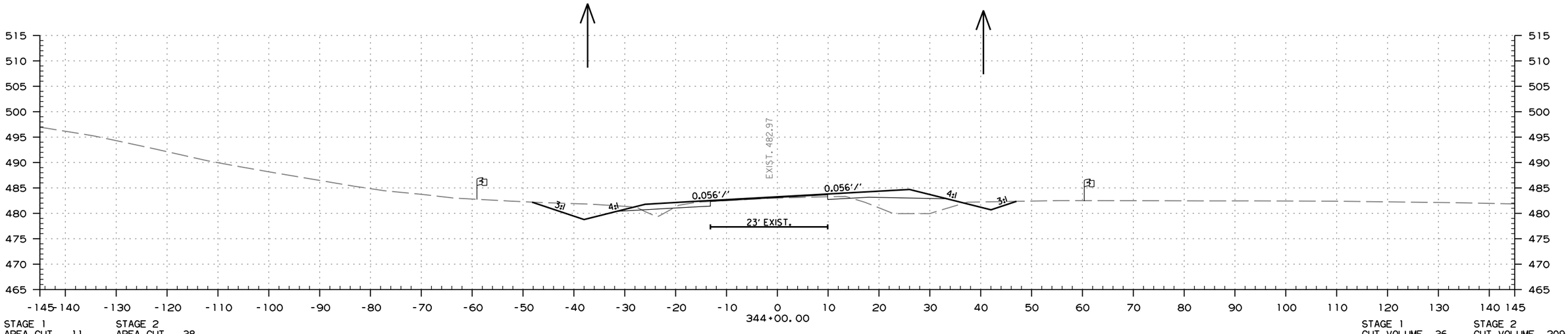
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	194	260

(2) CROSS SECTIONS SITE 2



STAGE 1		STAGE 2	
AREA CUT	24	AREA CUT	25
AREA FILL	0	AREA FILL	6

STAGE 1		STAGE 2	
CUT VOLUME	44	CUT VOLUME	80
FILL VOLUME	59	FILL VOLUME	14



STAGE 1		STAGE 2	
AREA CUT	11	AREA CUT	38
AREA FILL	46	AREA FILL	5

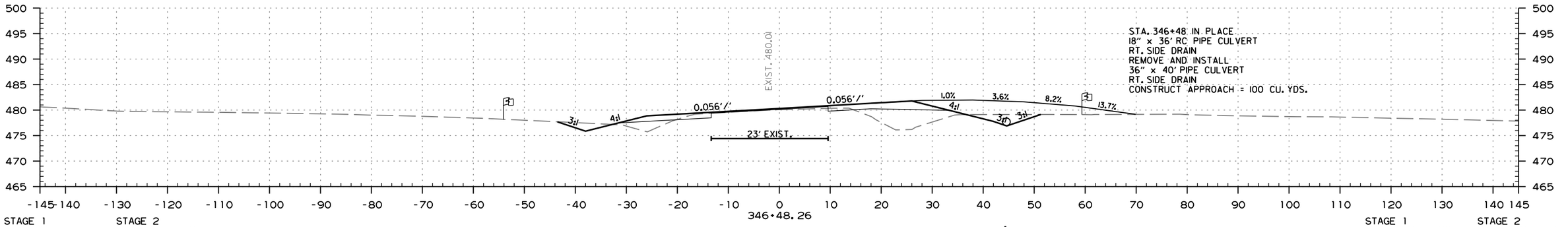
STAGE 1		STAGE 2	
CUT VOLUME	36	CUT VOLUME	209
FILL VOLUME	166	FILL VOLUME	9

HWY. 7
STA. 344+00.00 TO STA. 344+68.95

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	195	260

(2) CROSS SECTIONS SITE 2

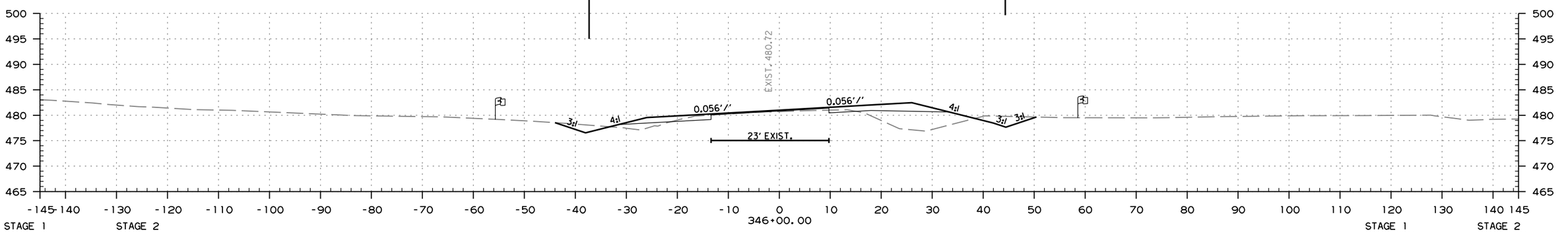


STAGE 1
AREA CUT 18
AREA FILL 49

STAGE 2
AREA CUT 13
AREA FILL 12

STAGE 1
CUT VOLUME 30
FILL VOLUME 91

STAGE 2
CUT VOLUME 24
FILL VOLUME 18

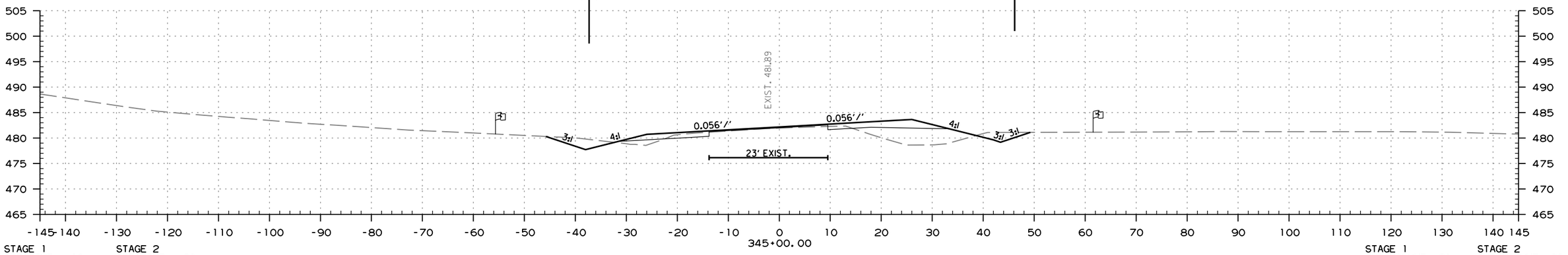


STAGE 1
AREA CUT 16
AREA FILL 52

STAGE 2
AREA CUT 13
AREA FILL 8

STAGE 1
CUT VOLUME 54
FILL VOLUME 198

STAGE 2
CUT VOLUME 62
FILL VOLUME 26



STAGE 1
AREA CUT 13
AREA FILL 53

STAGE 2
AREA CUT 20
AREA FILL 6

STAGE 1
CUT VOLUME 21
FILL VOLUME 41

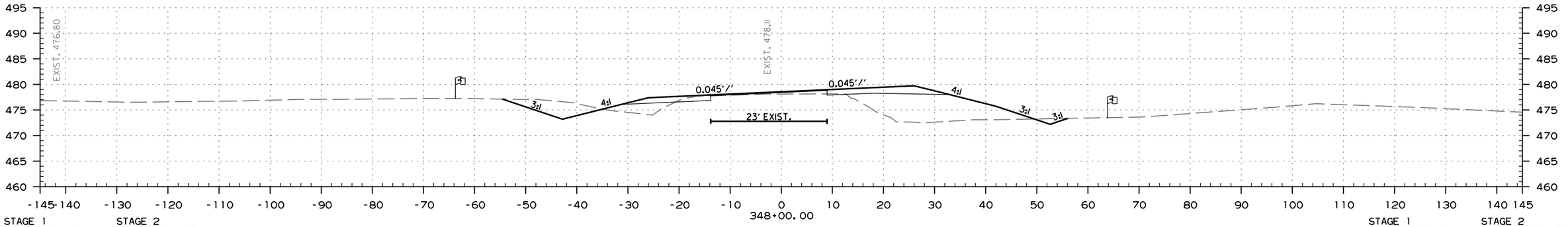
STAGE 2
CUT VOLUME 26
FILL VOLUME 7

HWY. 7
STA. 345+00.00 TO STA. 346+48.26

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	196	260

(2) CROSS SECTIONS SITE 2



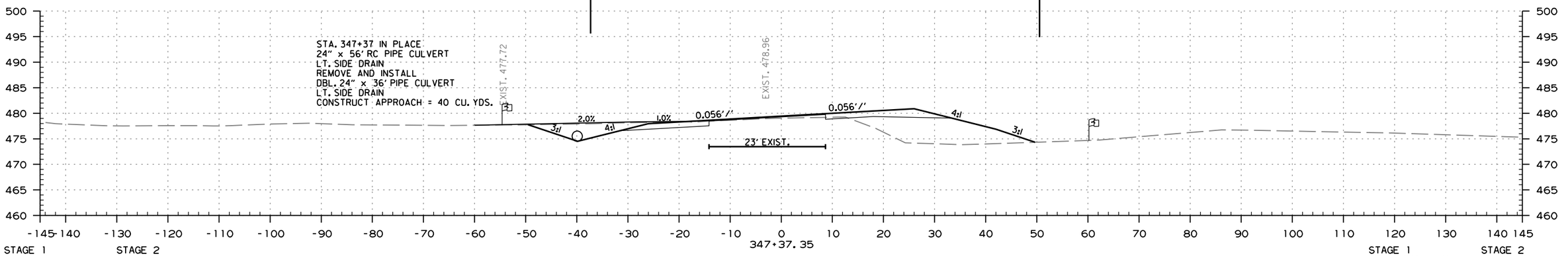
STAGE 1
AREA CUT 4
AREA FILL 130

STAGE 2
AREA CUT 19
AREA FILL 19

STA. 347+46.78 MAX. SUPERELEVATION (0.056 FT./FT.)

STAGE 1
CUT VOLUME 6
FILL VOLUME 289

STAGE 2
CUT VOLUME 81
FILL VOLUME 22

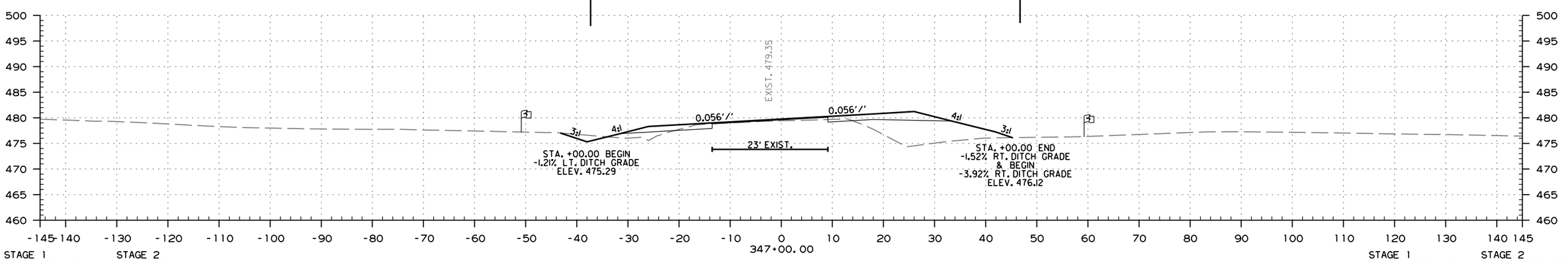


STAGE 1
AREA CUT 1
AREA FILL 119

STAGE 2
AREA CUT 51
AREA FILL 0

STAGE 1
CUT VOLUME 2
FILL VOLUME 145

STAGE 2
CUT VOLUME 42
FILL VOLUME 7



STAGE 1
AREA CUT 2
AREA FILL 91

STAGE 2
AREA CUT 11
AREA FILL 10

STAGE 1
CUT VOLUME 19
FILL VOLUME 134

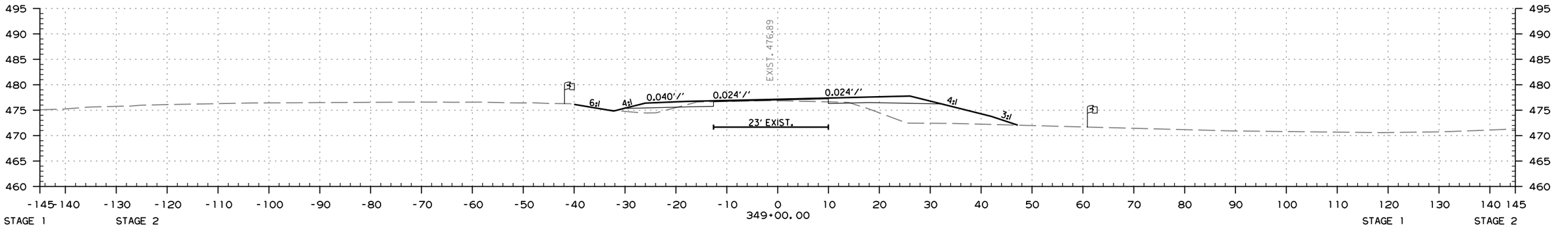
STAGE 2
CUT VOLUME 23
FILL VOLUME 22

HWY. 7
STA. 347+00.00 TO STA. 348+00.00

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	197	260

(2) CROSS SECTIONS SITE 2



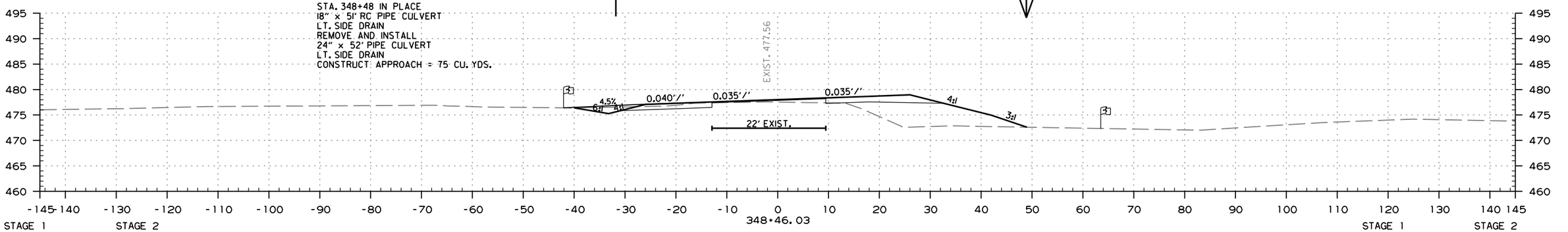
STAGE 1
AREA CUT 1
AREA FILL 78

STAGE 2
AREA CUT 5
AREA FILL 8

STAGE 1
CUT VOLUME 1
FILL VOLUME 182

STAGE 2
CUT VOLUME 25
FILL VOLUME 8

STA. 348+48 IN PLACE
18" x 51' RC PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
24" x 52' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 75 CU. YDS.



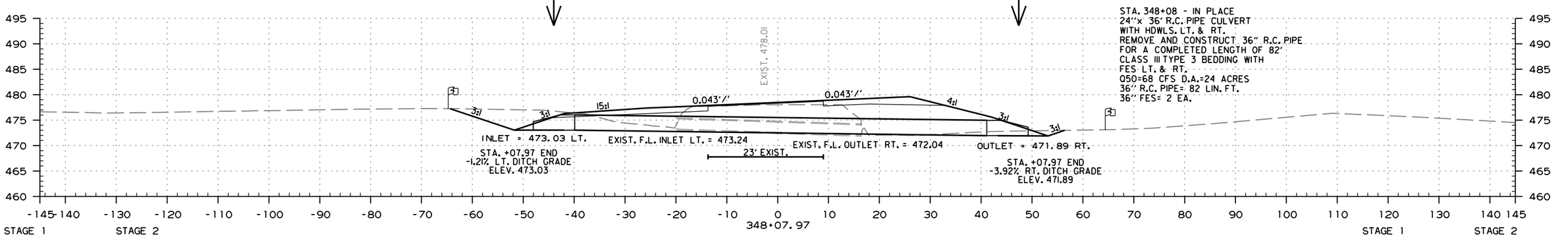
STAGE 1
AREA CUT 0
AREA FILL 104

STAGE 2
AREA CUT 20
AREA FILL 0

STAGE 1
CUT VOLUME 3
FILL VOLUME 181

STAGE 2
CUT VOLUME 38
FILL VOLUME 22

STA. 348+08 - IN PLACE
24"x 36' R.C. PIPE CULVERT
WITH HDWLS. LT. & RT.
REMOVE AND CONSTRUCT 36" R.C. PIPE
FOR A COMPLETED LENGTH OF 82'
CLASS III TYPE 3 BEDDING WITH
FES LT. & RT.
Q50=68 CFS D.A.=24 ACRES
36" R.C. PIPE= 82 LIN. FT.
36" FES= 2 EA.



STAGE 1
AREA CUT 4
AREA FILL 153

STAGE 2
AREA CUT 34
AREA FILL 31

STAGE 1
CUT VOLUME 1
FILL VOLUME 42

STAGE 2
CUT VOLUME 8
FILL VOLUME 7

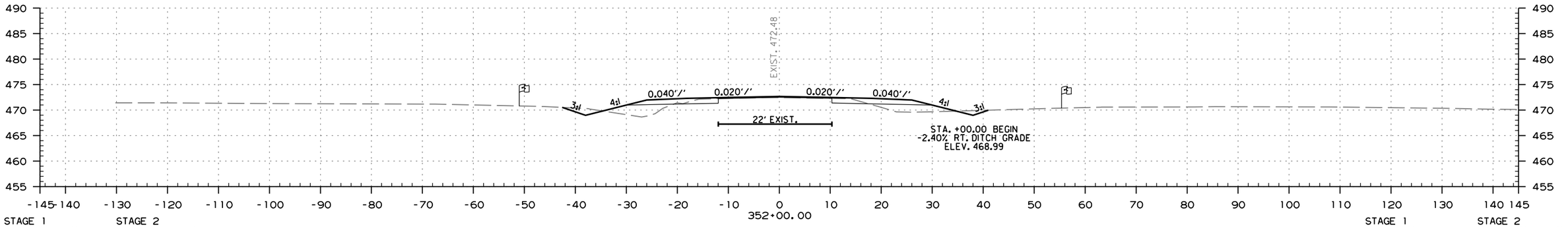
HWY. 7
STA. 348+07.97 TO STA. 349+00.00

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	198	260

(2) CROSS SECTIONS SITE 2

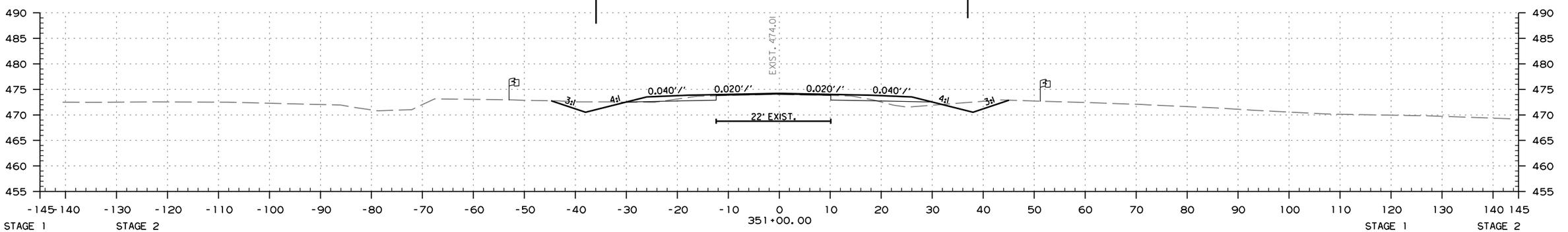


STAGE 1
AREA CUT 8
AREA FILL 17

STAGE 2
AREA CUT 10
AREA FILL 19

STAGE 1
CUT VOLUME 51
FILL VOLUME 47

STAGE 2
CUT VOLUME 58
FILL VOLUME 37



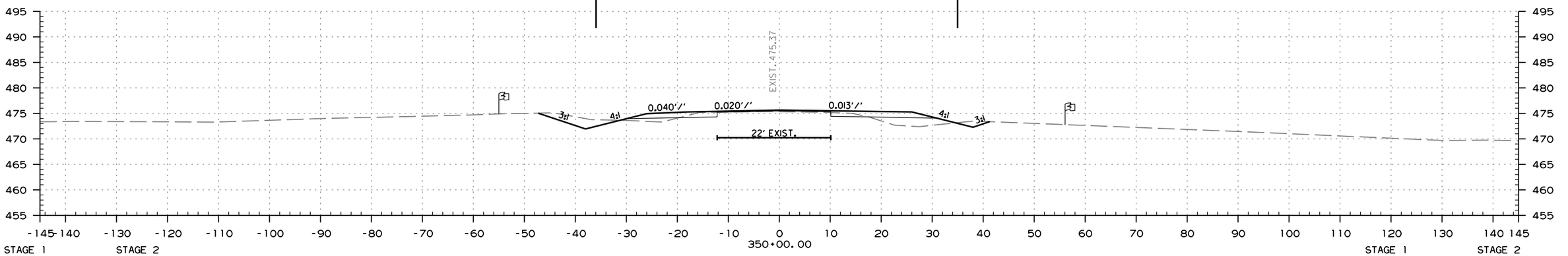
STAGE 1
AREA CUT 20
AREA FILL 8

STAGE 2
AREA CUT 21
AREA FILL 1

STAGE 1
CUT VOLUME 51
FILL VOLUME 52

STAGE 2
CUT VOLUME 81
FILL VOLUME 11

STA. 350+16.78 END SUPERELEVATION (N.C.)



STAGE 1
AREA CUT 8
AREA FILL 19

STAGE 2
AREA CUT 23
AREA FILL 5

STAGE 1
CUT VOLUME 17
FILL VOLUME 181

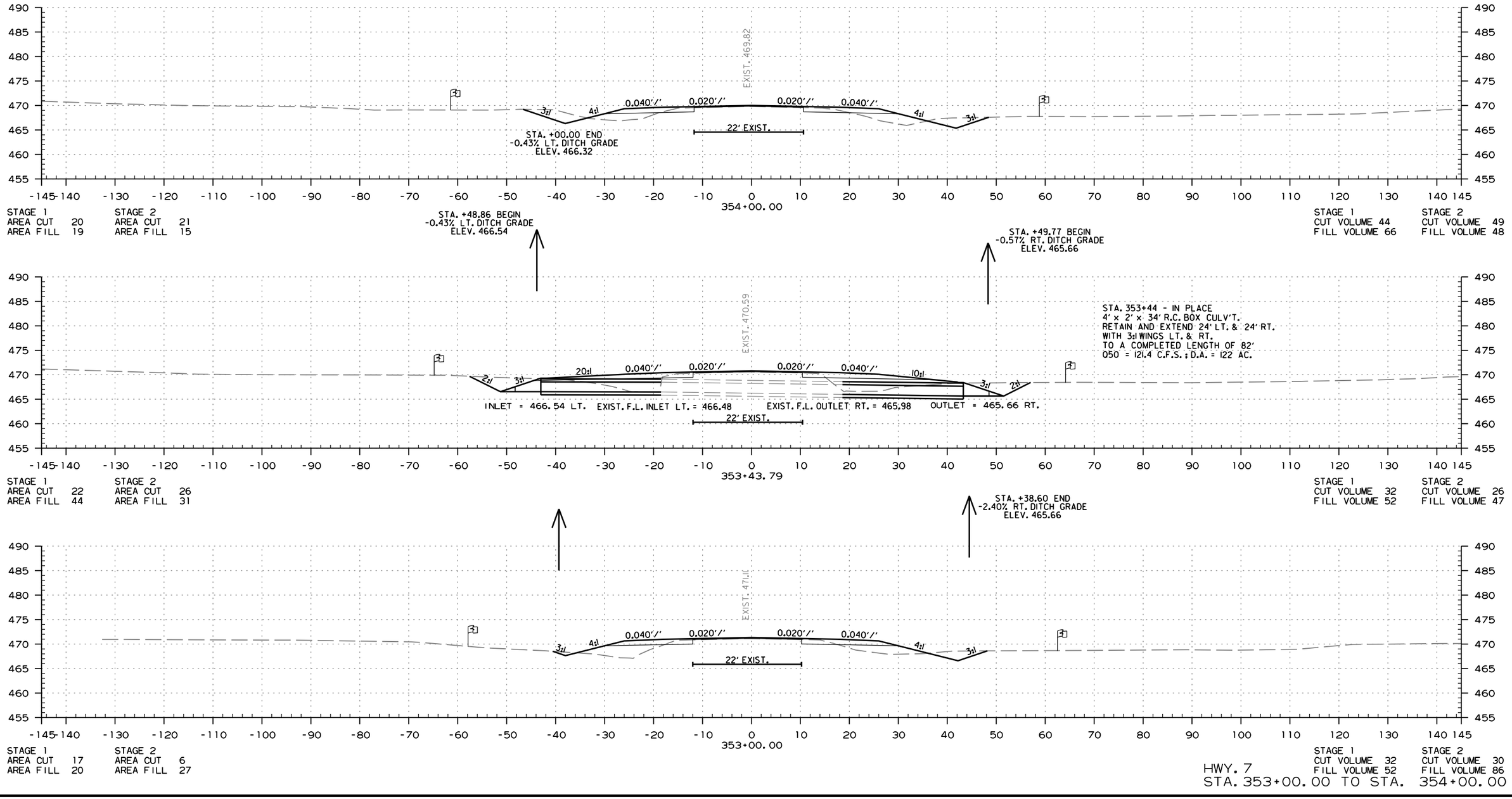
STAGE 2
CUT VOLUME 51
FILL VOLUME 25

HWY. 7
STA. 350+00.00 TO STA. 352+00.00

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	199	260

(2) CROSS SECTIONS SITE 2



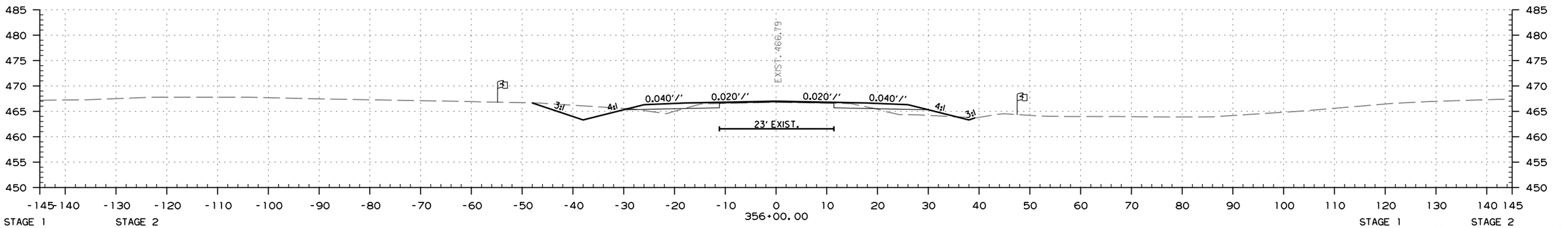
HWY. 7
STA. 353+00.00 TO STA. 354+00.00

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	200	260

(2) CROSS SECTIONS SITE 2

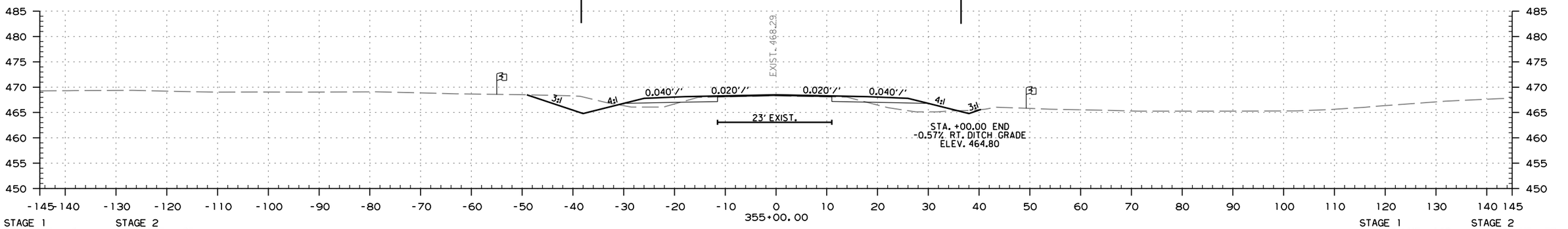


STAGE 1
AREA CUT 6
AREA FILL 12

STAGE 2
AREA CUT 31
AREA FILL 4

STAGE 1
CUT VOLUME 22
FILL VOLUME 57

STAGE 2
CUT VOLUME 122
FILL VOLUME 23

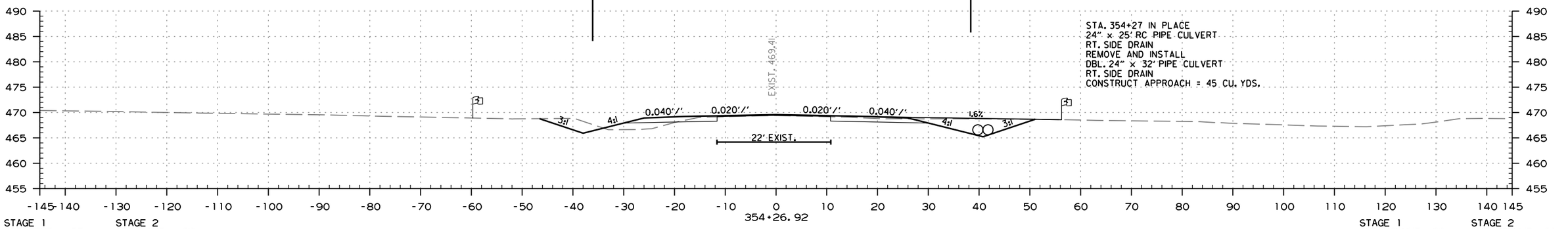


STAGE 1
AREA CUT 6
AREA FILL 27

STAGE 2
AREA CUT 35
AREA FILL 8

STAGE 1
CUT VOLUME 162
FILL VOLUME 55

STAGE 2
CUT VOLUME 77
FILL VOLUME 28



STAGE 1
AREA CUT 57
AREA FILL 0

STAGE 2
AREA CUT 22
AREA FILL 13

STAGE 1
CUT VOLUME 39
FILL VOLUME 9

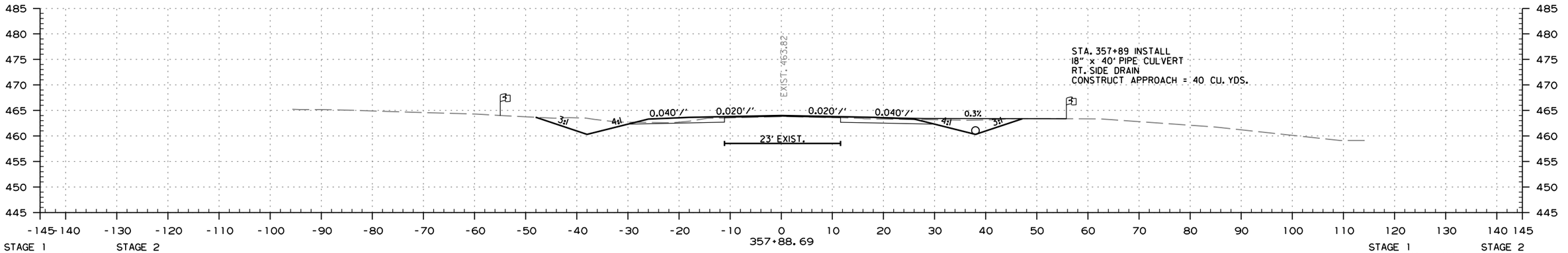
STAGE 2
CUT VOLUME 21
FILL VOLUME 14

HWY. 7
STA. 354+26.92 TO STA. 356+00.00

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	201	260

(2) CROSS SECTIONS SITE 2

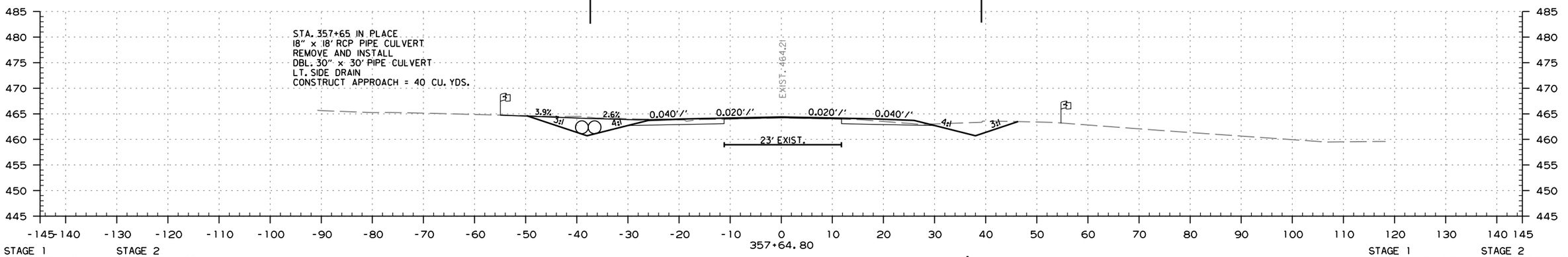


STAGE 1 AREA CUT 43 AREA FILL 0

STAGE 2 AREA CUT 37 AREA FILL 0

STAGE 1 CUT VOLUME 20 FILL VOLUME 0

STAGE 2 CUT VOLUME 43 FILL VOLUME 0

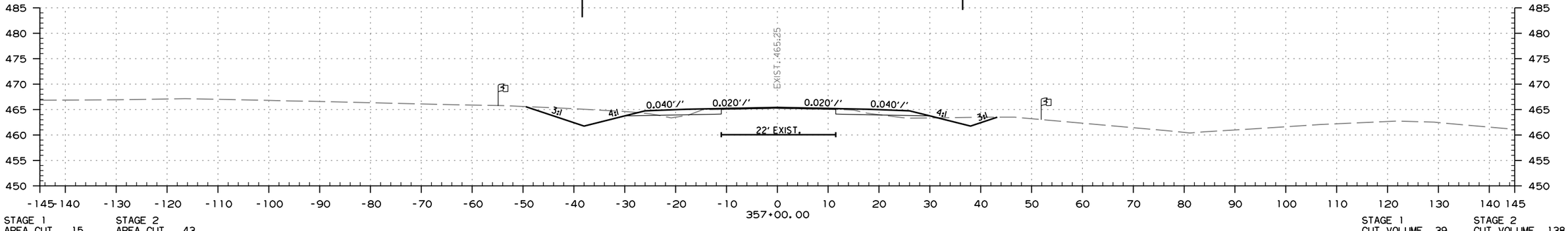


STAGE 1 AREA CUT 3 AREA FILL 0

STAGE 2 AREA CUT 60 AREA FILL 0

STAGE 1 CUT VOLUME 22 FILL VOLUME 7

STAGE 2 CUT VOLUME 124 FILL VOLUME 2



STAGE 1 AREA CUT 15 AREA FILL 4

STAGE 2 AREA CUT 43 AREA FILL 2

STAGE 1 CUT VOLUME 39 FILL VOLUME 29

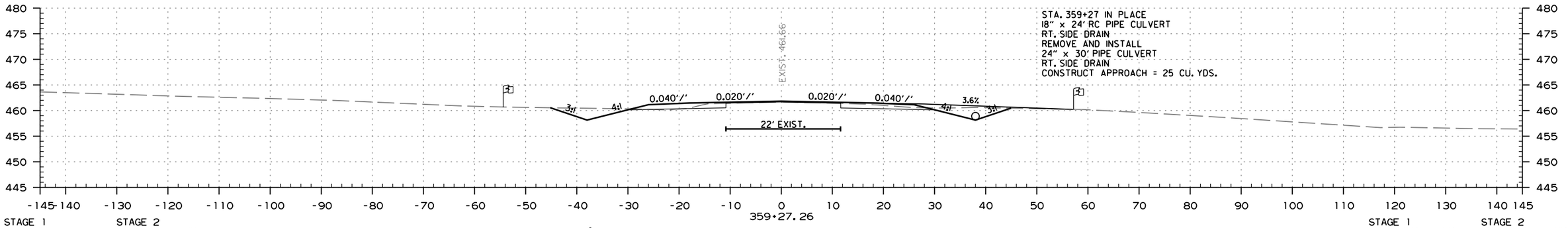
STAGE 2 CUT VOLUME 138 FILL VOLUME 12

HWY. 7
STA. 357+00.00 TO STA. 357+88.69

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	202	260

(2) CROSS SECTIONS SITE 2

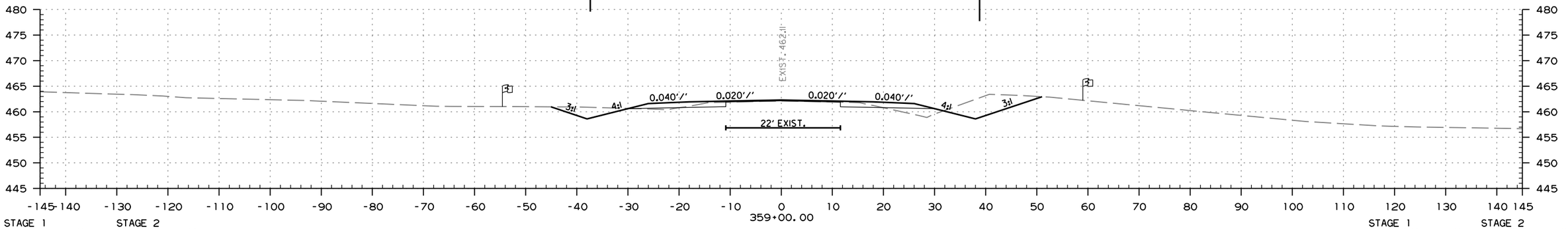


STAGE 1
AREA CUT 54
AREA FILL 1

STAGE 2
AREA CUT 23
AREA FILL 1

STAGE 1
CUT VOLUME 63
FILL VOLUME 7

STAGE 2
CUT VOLUME 23
FILL VOLUME 1

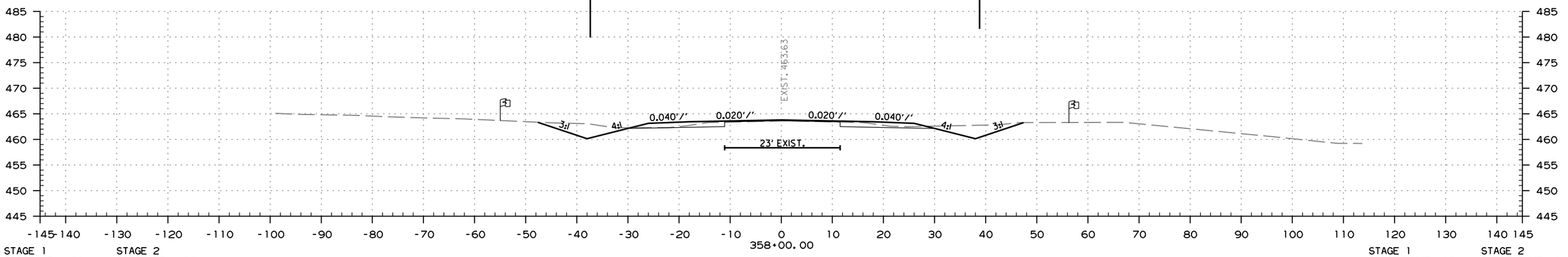


STAGE 1
AREA CUT 48
AREA FILL 10

STAGE 2
AREA CUT 23
AREA FILL 1

STAGE 1
CUT VOLUME 152
FILL VOLUME 19

STAGE 2
CUT VOLUME 100
FILL VOLUME 3



STAGE 1
AREA CUT 34
AREA FILL 0

STAGE 2
AREA CUT 32
AREA FILL 0

STAGE 1
CUT VOLUME 16
FILL VOLUME 0

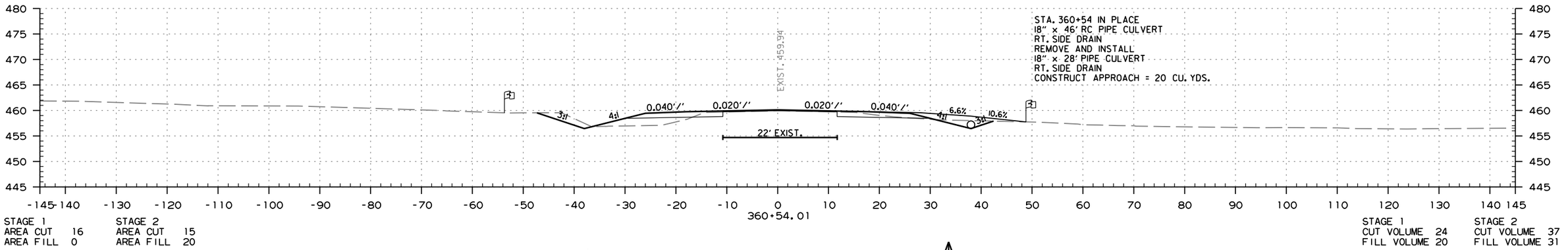
STAGE 2
CUT VOLUME 14
FILL VOLUME 0

HWY. 7
STA. 358+00.00 TO STA. 359+27.26

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	203	260

(2) CROSS SECTIONS SITE 2

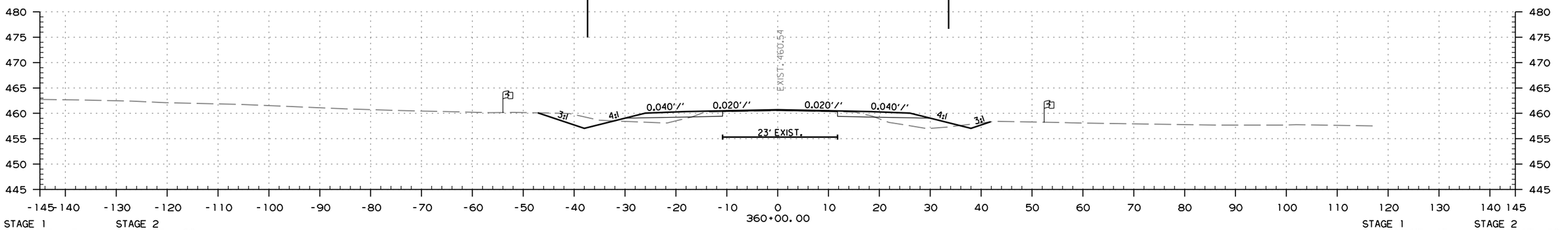


STAGE 1 AREA CUT 16 AREA FILL 0

STAGE 2 AREA CUT 15 AREA FILL 20

STAGE 1 CUT VOLUME 24 FILL VOLUME 20

STAGE 2 CUT VOLUME 37 FILL VOLUME 31

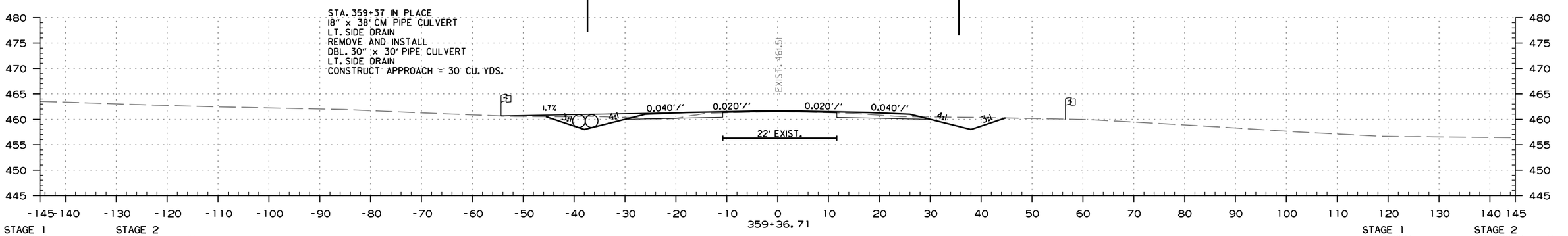


STAGE 1 AREA CUT 7 AREA FILL 20

STAGE 2 AREA CUT 22 AREA FILL 11

STAGE 1 CUT VOLUME 45 FILL VOLUME 22

STAGE 2 CUT VOLUME 59 FILL VOLUME 13



STAGE 1 AREA CUT 31 AREA FILL 0

STAGE 2 AREA CUT 28 AREA FILL 0

STAGE 1 CUT VOLUME 11 FILL VOLUME 0

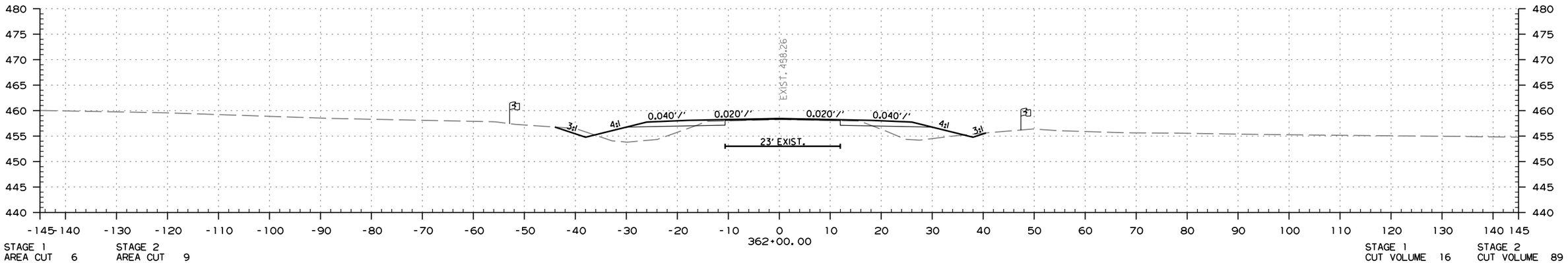
STAGE 2 CUT VOLUME 9 FILL VOLUME 0

HWY. 7
STA. 359+36.71 TO STA. 360+54.01

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	204	260

(2) CROSS SECTIONS SITE 2



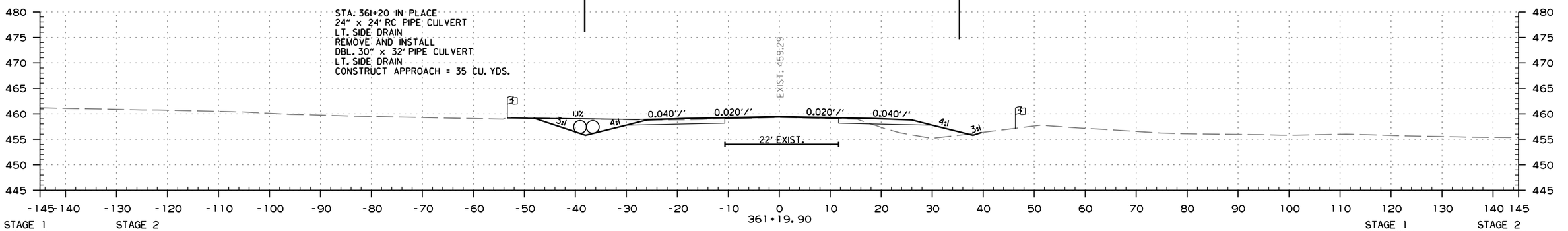
STAGE 1
AREA CUT 6
AREA FILL 28

STAGE 2
AREA CUT 9
AREA FILL 37

STAGE 1
CUT VOLUME 16
FILL VOLUME 82

STAGE 2
CUT VOLUME 89
FILL VOLUME 54

STA. 361+20 IN PLACE
24" x 24' RC PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
DBL. 30" x 32' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 35 CU. YDS.

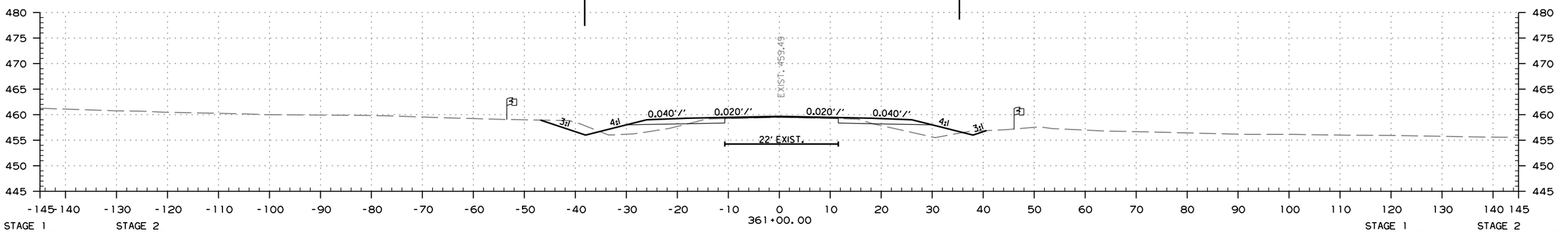


STAGE 1
AREA CUT 5
AREA FILL 27

STAGE 2
AREA CUT 51
AREA FILL 0

STAGE 1
CUT VOLUME 4
FILL VOLUME 18

STAGE 2
CUT VOLUME 25
FILL VOLUME 7



STAGE 1
AREA CUT 6
AREA FILL 21

STAGE 2
AREA CUT 18
AREA FILL 20

STAGE 1
CUT VOLUME 19
FILL VOLUME 18

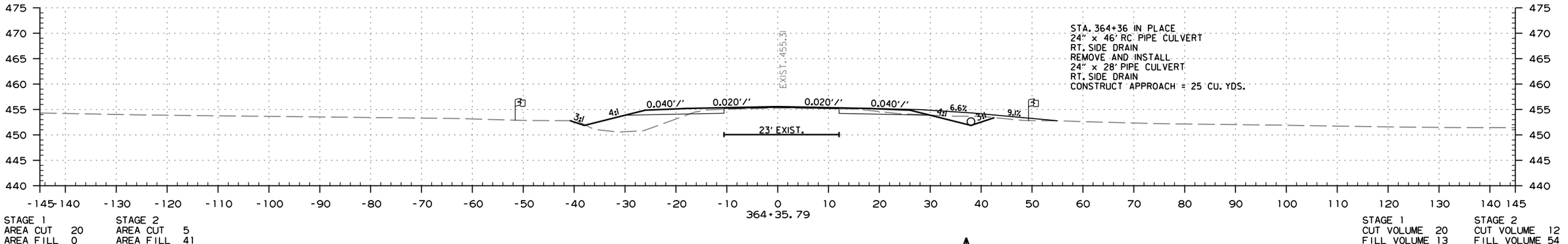
STAGE 2
CUT VOLUME 28
FILL VOLUME 34

HWY. 7
STA. 361+00.00 TO STA. 362+00.00

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	205	260

(2) CROSS SECTIONS SITE 2

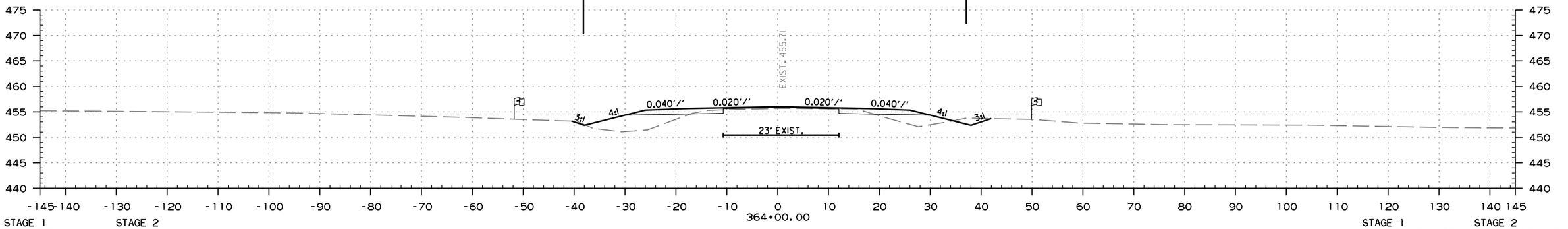


STAGE 1
AREA CUT 20
AREA FILL 0

STAGE 2
AREA CUT 5
AREA FILL 41

STAGE 1
CUT VOLUME 20
FILL VOLUME 13

STAGE 2
CUT VOLUME 12
FILL VOLUME 54

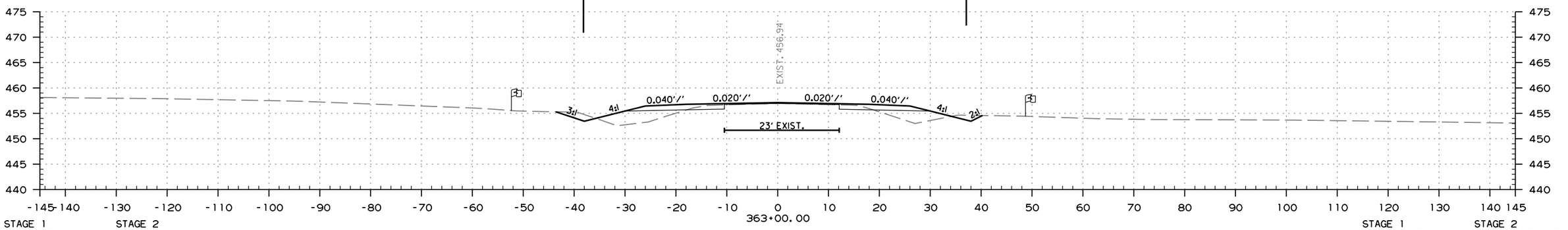


STAGE 1
AREA CUT 11
AREA FILL 19

STAGE 2
AREA CUT 14
AREA FILL 41

STAGE 1
CUT VOLUME 183
FILL VOLUME 74

STAGE 2
CUT VOLUME 46
FILL VOLUME 141



STAGE 1
AREA CUT 88
AREA FILL 20

STAGE 2
AREA CUT 11
AREA FILL 30

STAGE 1
CUT VOLUME 174
FILL VOLUME 90

STAGE 2
CUT VOLUME 37
FILL VOLUME 123

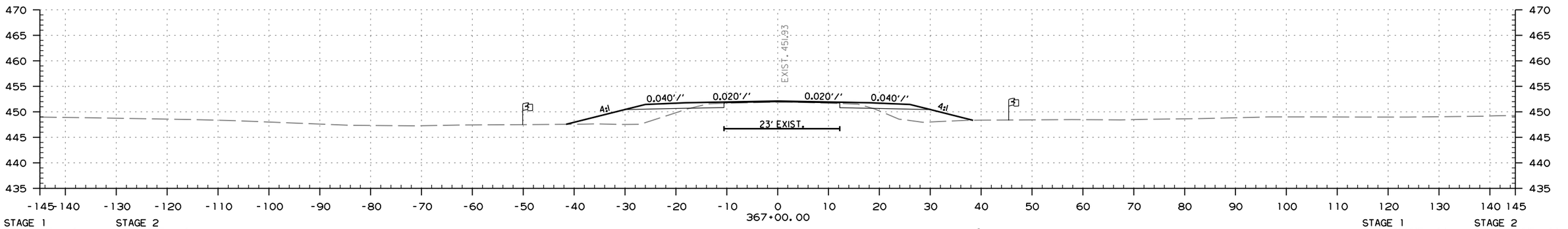
HWY. 7
STA. 363+00.00 TO STA. 364+35.79

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	206	260

(2) CROSS SECTIONS SITE 2

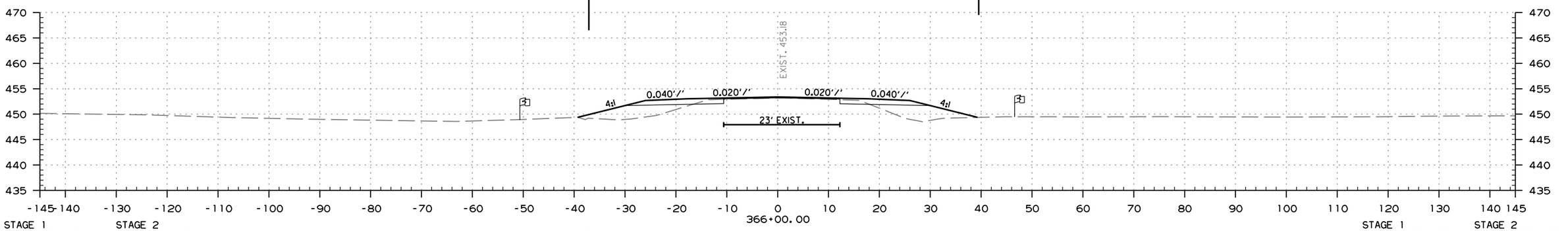


STAGE 1
AREA CUT 4
AREA FILL 29

STAGE 2
AREA CUT 4
AREA FILL 40

STAGE 1
CUT VOLUME 14
FILL VOLUME 121

STAGE 2
CUT VOLUME 14
FILL VOLUME 141

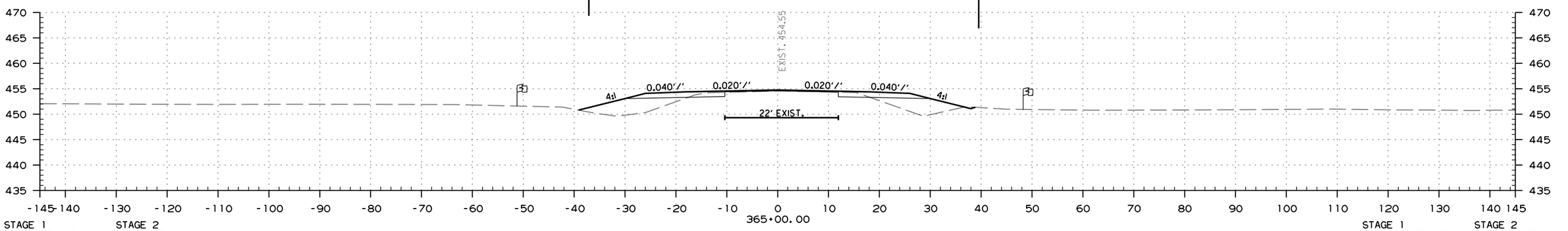


STAGE 1
AREA CUT 4
AREA FILL 36

STAGE 2
AREA CUT 4
AREA FILL 36

STAGE 1
CUT VOLUME 16
FILL VOLUME 129

STAGE 2
CUT VOLUME 15
FILL VOLUME 144



STAGE 1
AREA CUT 5
AREA FILL 34

STAGE 2
AREA CUT 4
AREA FILL 41

STAGE 1
CUT VOLUME 29
FILL VOLUME 40

STAGE 2
CUT VOLUME 11
FILL VOLUME 98

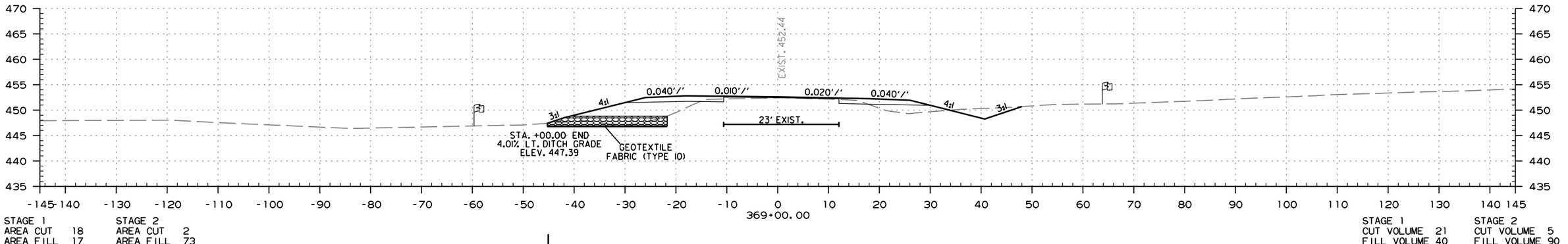
HWY. 7
STA. 365+00.00 TO STA. 367+00.00

COPY OF R061309.DGN 7/30/2020

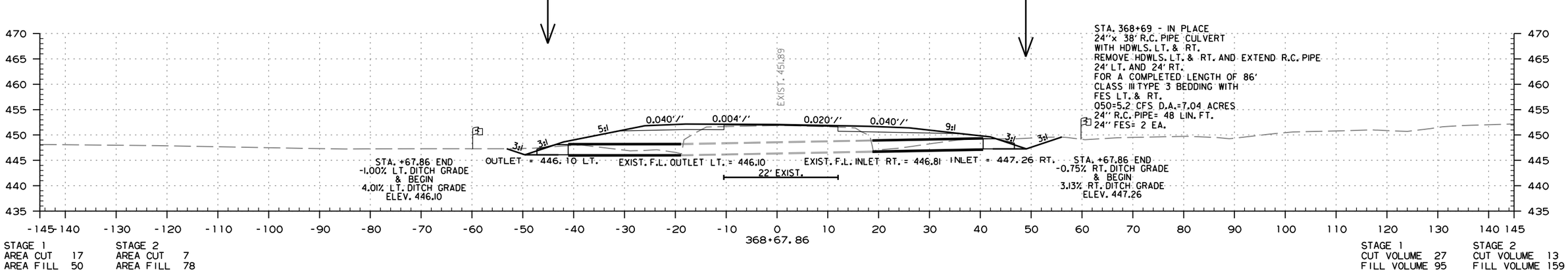
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	207	260

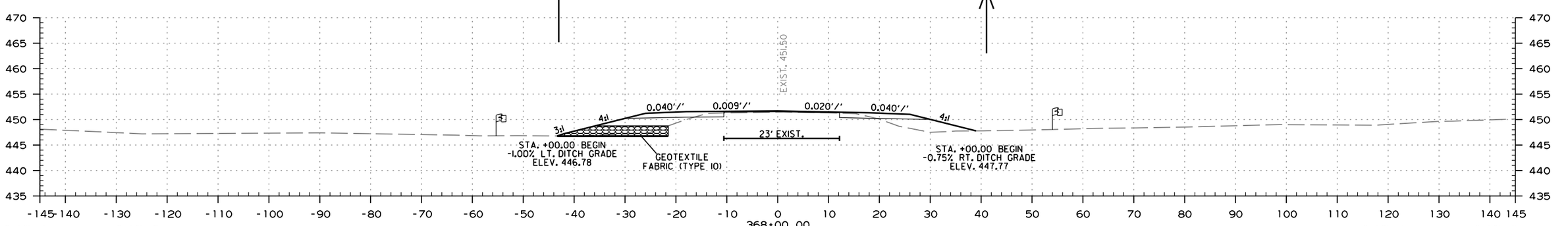
(2) CROSS SECTIONS SITE 2



STAGE 1 AREA CUT 18 AREA FILL 17
STAGE 2 AREA CUT 2 AREA FILL 73
STAGE 1 CUT VOLUME 21 FILL VOLUME 40
STAGE 2 CUT VOLUME 5 FILL VOLUME 90



STAGE 1 AREA CUT 17 AREA FILL 50
STAGE 2 AREA CUT 7 AREA FILL 78
STAGE 1 CUT VOLUME 27 FILL VOLUME 95
STAGE 2 CUT VOLUME 13 FILL VOLUME 159



STAGE 1 AREA CUT 5 AREA FILL 26
STAGE 2 AREA CUT 3 AREA FILL 48

STA. 367+42.18 BEGIN SUPERELEVATION (N.C.)

STAGE 1 CUT VOLUME 16 FILL VOLUME 103
STAGE 2 CUT VOLUME 13 FILL VOLUME 163

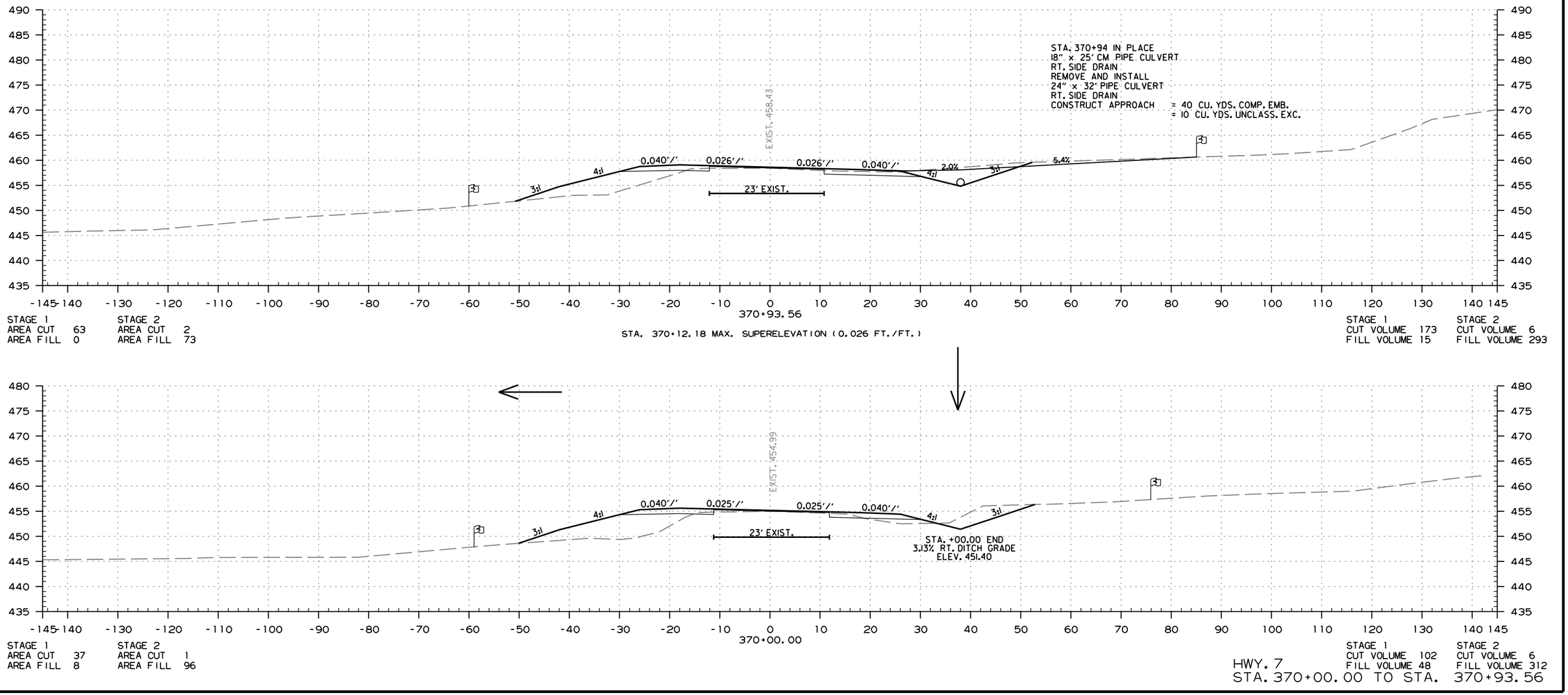
HWY. 7
STA. 368+00.00 TO STA. 369+00.00

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	208	260

(2) CROSS SECTIONS SITE 2



STAGE 1
AREA CUT 63
AREA FILL 0

STAGE 2
AREA CUT 2
AREA FILL 73

STAGE 1
CUT VOLUME 173
FILL VOLUME 15

STAGE 2
CUT VOLUME 6
FILL VOLUME 293

STAGE 1
AREA CUT 37
AREA FILL 8

STAGE 2
AREA CUT 1
AREA FILL 96

STAGE 1
CUT VOLUME 102
FILL VOLUME 48

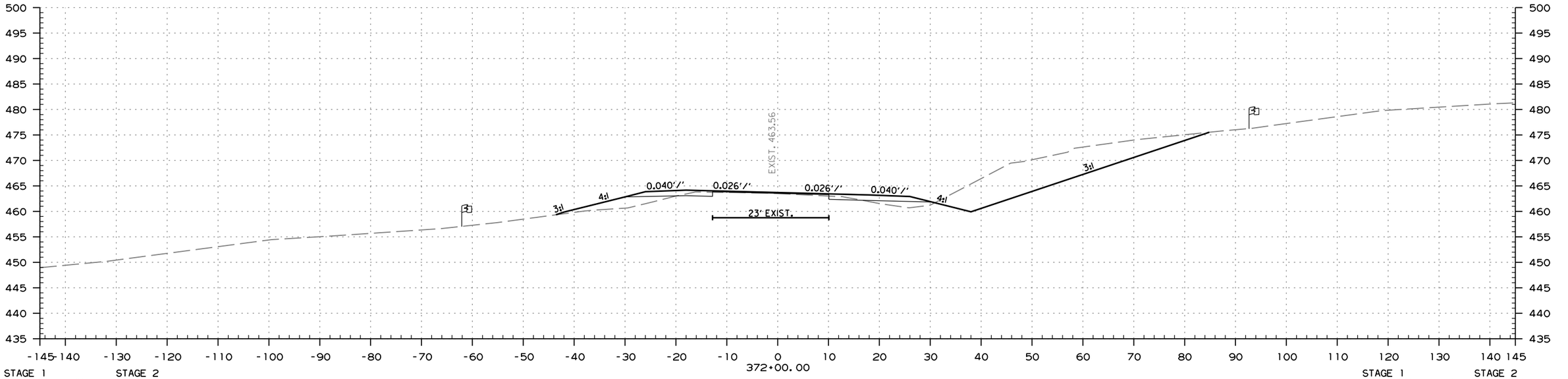
STAGE 2
CUT VOLUME 6
FILL VOLUME 312

HWY. 7
STA. 370+00.00 TO STA. 370+93.56

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	209	260

(2) CROSS SECTIONS SITE 2

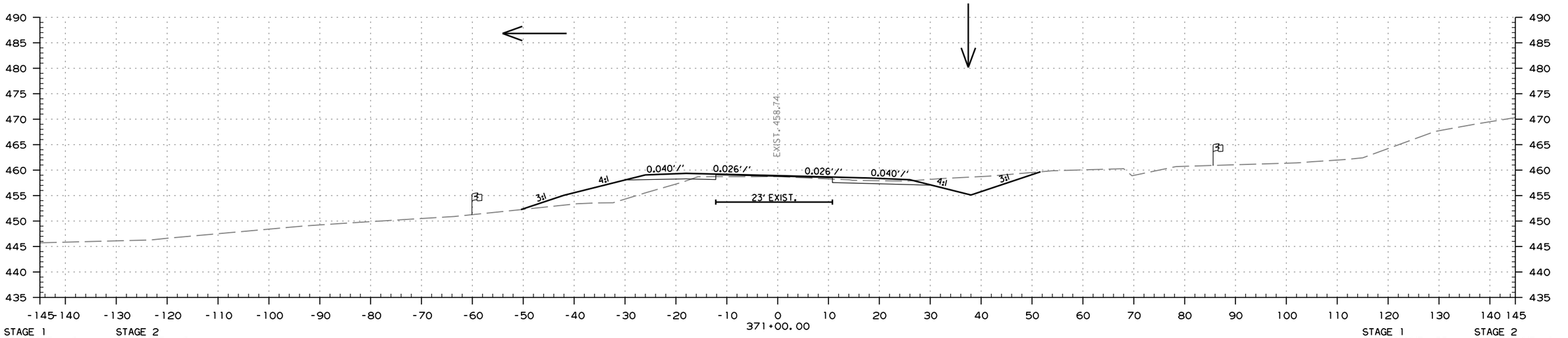


STAGE 1
AREA CUT 225
AREA FILL 11

STAGE 2
AREA CUT 4
AREA FILL 26

STAGE 1
CUT VOLUME 519
FILL VOLUME 20

STAGE 2
CUT VOLUME 11
FILL VOLUME 175



STAGE 1
AREA CUT 6
AREA FILL 14

STAGE 2
AREA CUT 2
AREA FILL 68

STAGE 1
CUT VOLUME 55
FILL VOLUME 0

STAGE 2
CUT VOLUME 0
FILL VOLUME 17

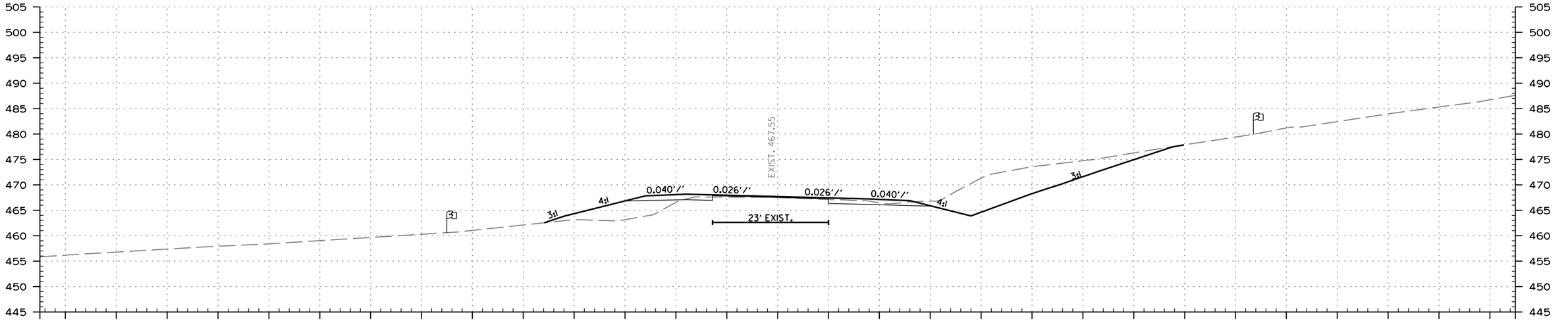
HWY. 7
STA. 371+00.00 TO STA. 372+00.00

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	210	260

(2) CROSS SECTIONS SITE 2

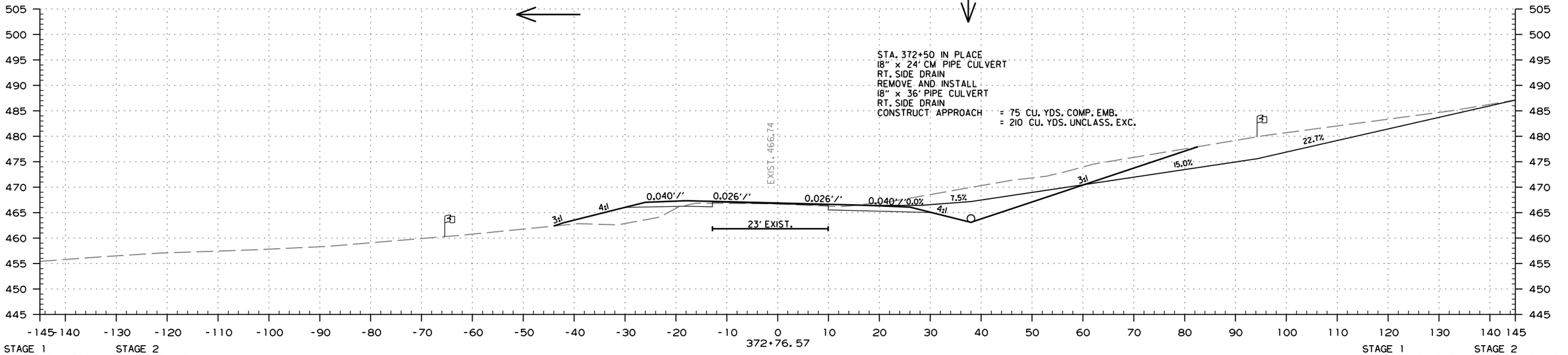


STAGE 1
AREA CUT 183
AREA FILL 0

STAGE 2
AREA CUT 3
AREA FILL 55

STAGE 1
CUT VOLUME 179
FILL VOLUME 0

STAGE 2
CUT VOLUME 3
FILL VOLUME 43



STAGE 1
AREA CUT 230
AREA FILL 0

STAGE 2
AREA CUT 3
AREA FILL 44

STAGE 1
CUT VOLUME 645
FILL VOLUME 15

STAGE 2
CUT VOLUME 10
FILL VOLUME 100

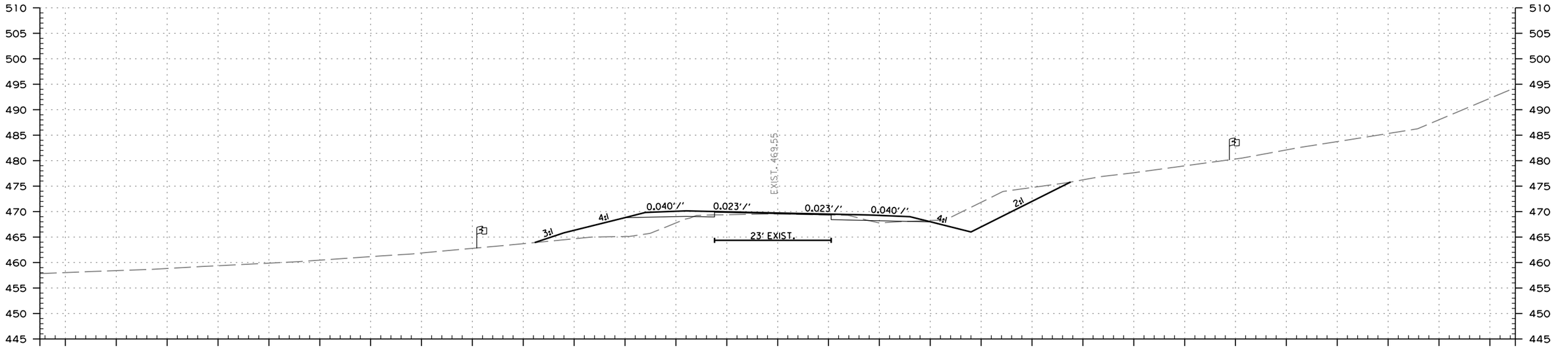
HWY. 7
STA. 372+76.57 TO STA. 373+00.00

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	211	260

(2) CROSS SECTIONS SITE 2



STAGE 1
AREA CUT 84
AREA FILL 2

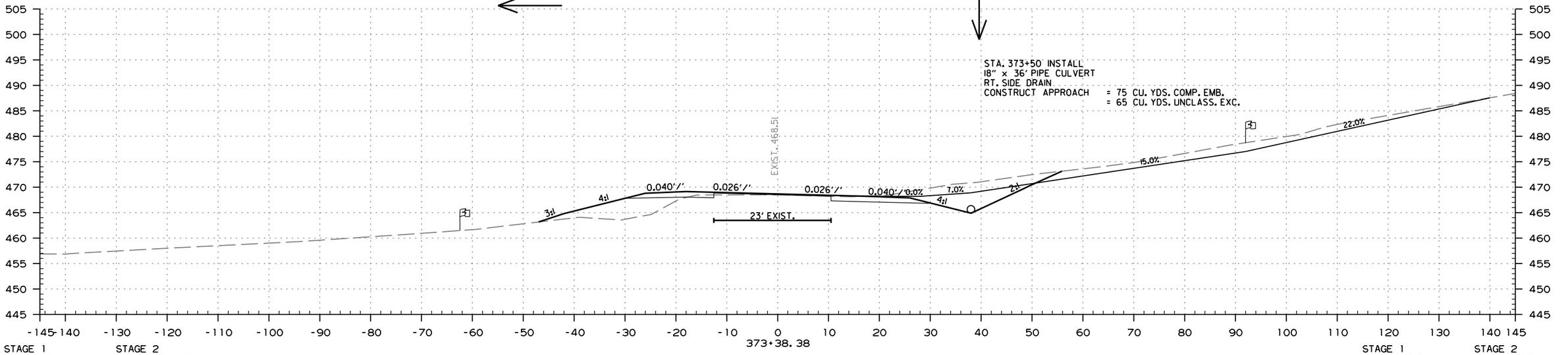
STAGE 2
AREA CUT 1
AREA FILL 66

STAGE 1
CUT VOLUME 233
FILL VOLUME 2

STAGE 2
CUT VOLUME 4
FILL VOLUME 145

STA. 373+63.96 MAX. SUPERELEVATION (0.026 FT./FT.)

STA. 373+50 INSTALL
18" x 36' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 75 CU. YDS. COMP. EMB.
= 65 CU. YDS. UNCLASS. EXC.



STAGE 1
AREA CUT 120
AREA FILL 0

STAGE 2
AREA CUT 2
AREA FILL 62

STAGE 1
CUT VOLUME 216
FILL VOLUME 0

STAGE 2
CUT VOLUME 4
FILL VOLUME 83

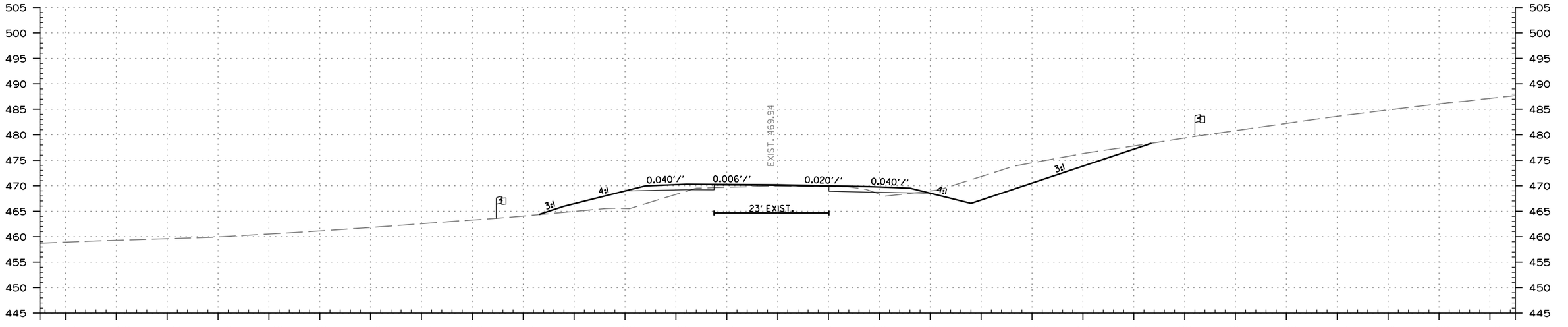
HWY. 7
STA. 373+38.38 TO STA. 374+00.00

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	212	260

(2) CROSS SECTIONS SITE 2



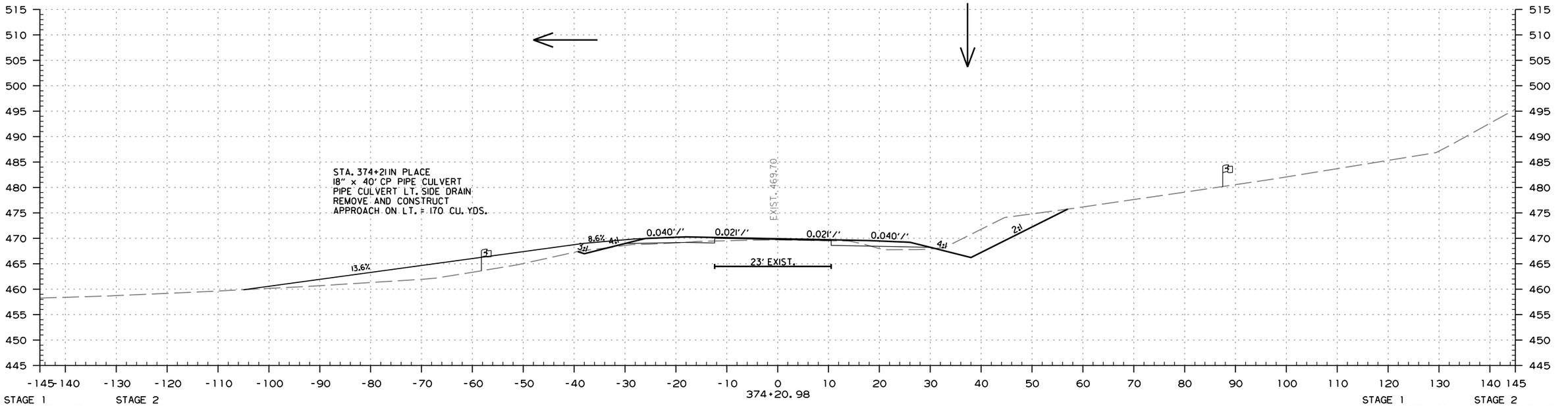
375+00.00

STAGE 1
AREA CUT 129
AREA FILL 3

STAGE 2
AREA CUT 2
AREA FILL 54

STAGE 1
CUT VOLUME 304
FILL VOLUME 13

STAGE 2
CUT VOLUME 7
FILL VOLUME 82



374+20.98

STAGE 1
AREA CUT 79
AREA FILL 6

STAGE 2
AREA CUT 3
AREA FILL 2

STAGE 1
CUT VOLUME 63
FILL VOLUME 3

STAGE 2
CUT VOLUME 2
FILL VOLUME 26

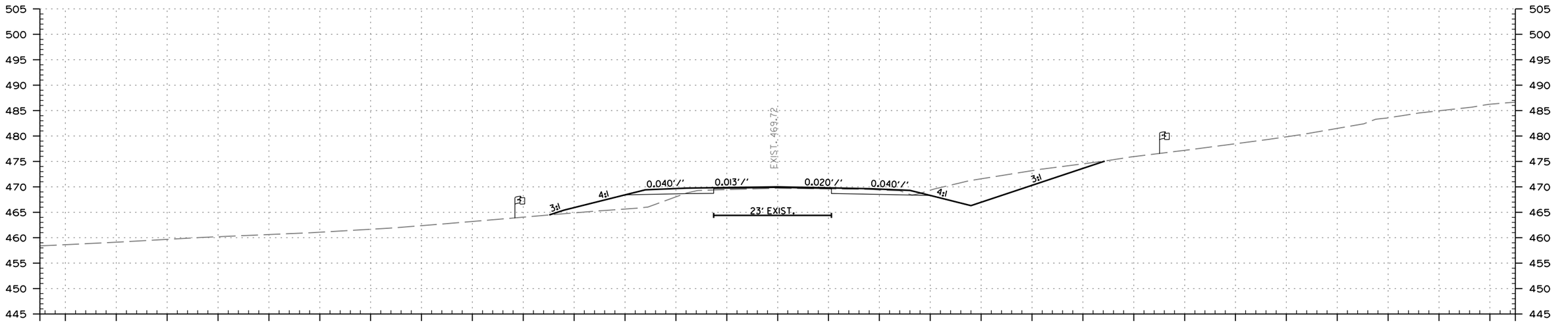
HWY. 7
STA. 374+20.98 TO STA. 375+00.00

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	213	260

(2) CROSS SECTIONS SITE 2



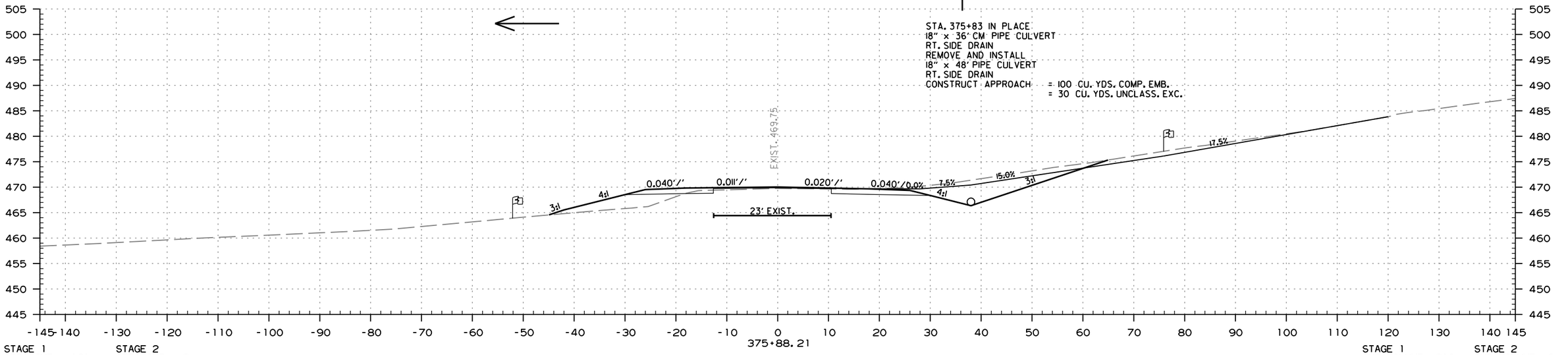
STAGE 1
AREA CUT 107
AREA FILL 0

STAGE 2
AREA CUT 3
AREA FILL 43

STAGE 1
CUT VOLUME 50
FILL VOLUME 0

STAGE 2
CUT VOLUME 1
FILL VOLUME 18

STA. 375+83 IN PLACE
18" x 36' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 48' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 100 CU. YDS. COMP. EMB.
= 30 CU. YDS. UNCLASS. EXC.



STAGE 1
AREA CUT 121
AREA FILL 0

STAGE 2
AREA CUT 2
AREA FILL 42

STAGE 1
CUT VOLUME 216
FILL VOLUME 0

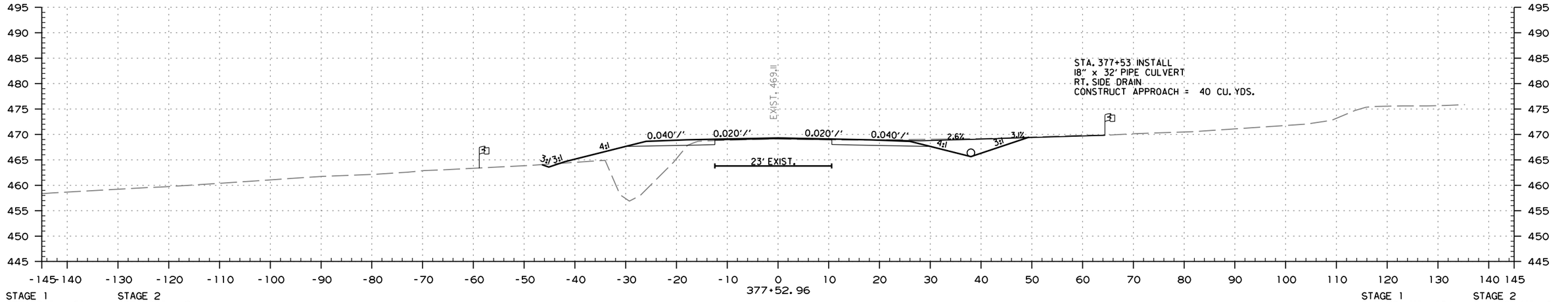
STAGE 2
CUT VOLUME 6
FILL VOLUME 156

HWY. 7
STA. 375+88.21 TO STA. 376+00.00

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	214	260

(2) CROSS SECTIONS SITE 2

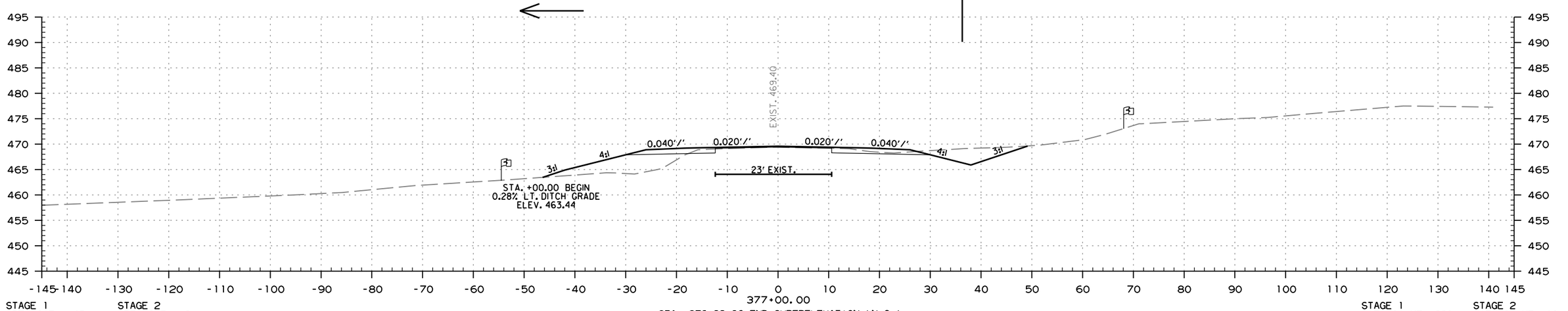


STAGE 1
AREA CUT 61
AREA FILL 0

STAGE 2
AREA CUT 3
AREA FILL 112

STAGE 1
CUT VOLUME 104
FILL VOLUME 0

STAGE 2
CUT VOLUME 6
FILL VOLUME 170



STA. 376+33.96 END SUPERELEVATION (N.C.)

STAGE 1
AREA CUT 45
AREA FILL 0

STAGE 2
AREA CUT 3
AREA FILL 61

STAGE 1
CUT VOLUME 281
FILL VOLUME 0

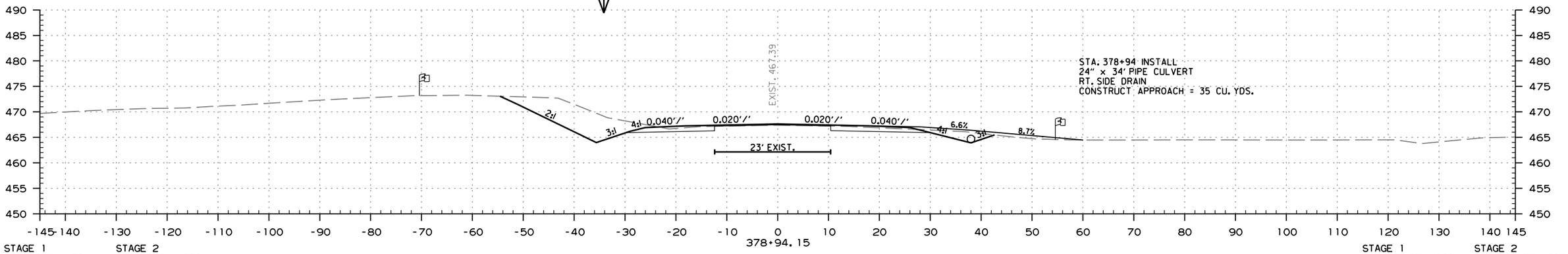
STAGE 2
CUT VOLUME 11
FILL VOLUME 193

HWY. 7
STA. 377+00.00 TO STA. 377+52.96

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	215	260

(2) CROSS SECTIONS SITE 2

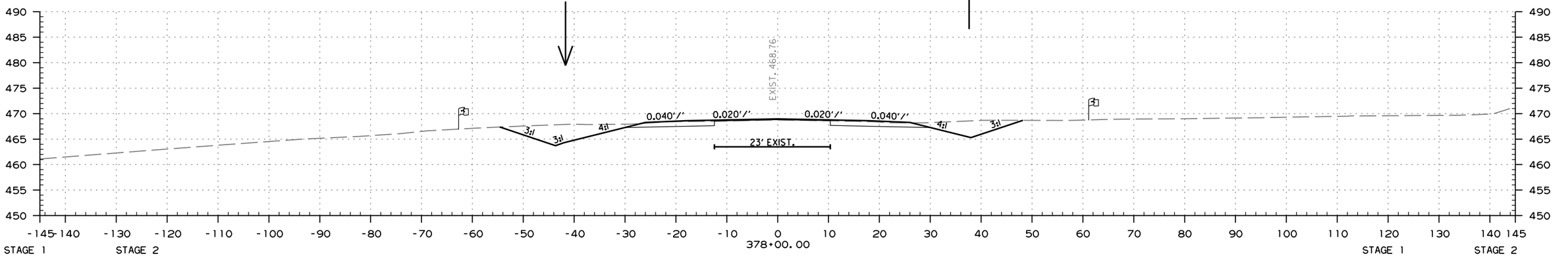


STAGE 1 AREA CUT 30 AREA FILL 0

STAGE 2 AREA CUT 111 AREA FILL 0

STAGE 1 CUT VOLUME 141 FILL VOLUME 0

STAGE 2 CUT VOLUME 314 FILL VOLUME 0

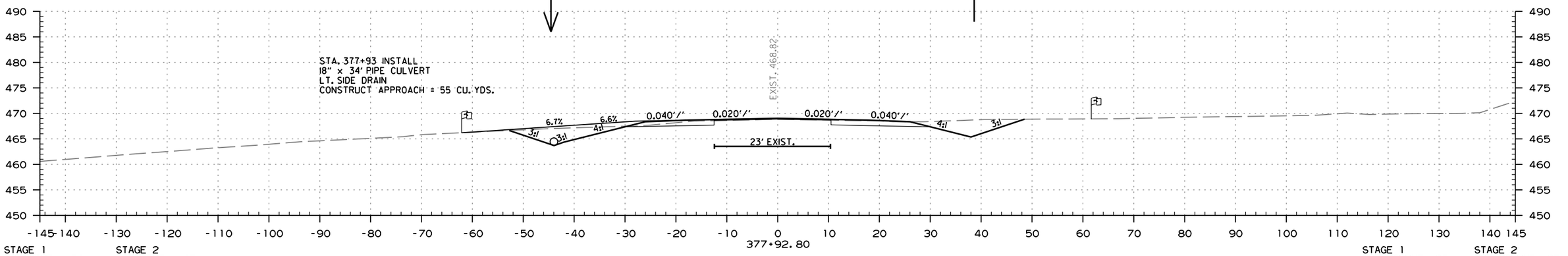


STAGE 1 AREA CUT 51 AREA FILL 0

STAGE 2 AREA CUT 69 AREA FILL 0

STAGE 1 CUT VOLUME 14 FILL VOLUME 0

STAGE 2 CUT VOLUME 15 FILL VOLUME 0



STAGE 1 AREA CUT 54 AREA FILL 0

STAGE 2 AREA CUT 47 AREA FILL 0

STAGE 1 CUT VOLUME 85 FILL VOLUME 0

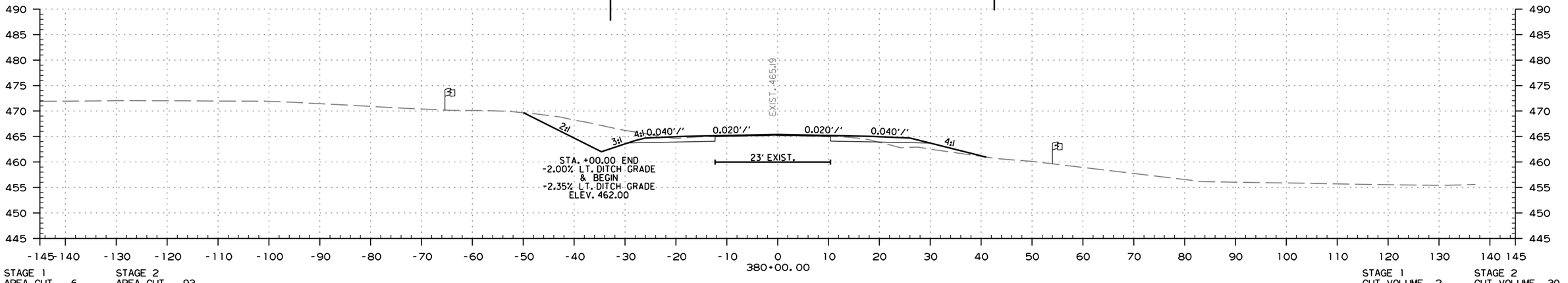
STAGE 2 CUT VOLUME 37 FILL VOLUME 82

HWY. 7
STA. 377+92.80 TO STA. 378+94.15

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	216	260

(2) CROSS SECTIONS SITE 2

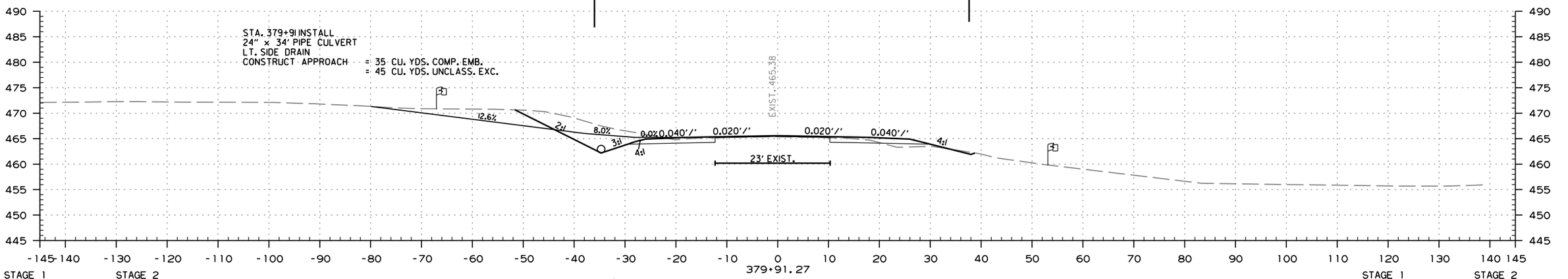


STAGE 1
AREA CUT 6
AREA FILL 14

STAGE 2
AREA CUT 93
AREA FILL 0

STAGE 1
CUT VOLUME 2
FILL VOLUME 3

STAGE 2
CUT VOLUME 30
FILL VOLUME 0

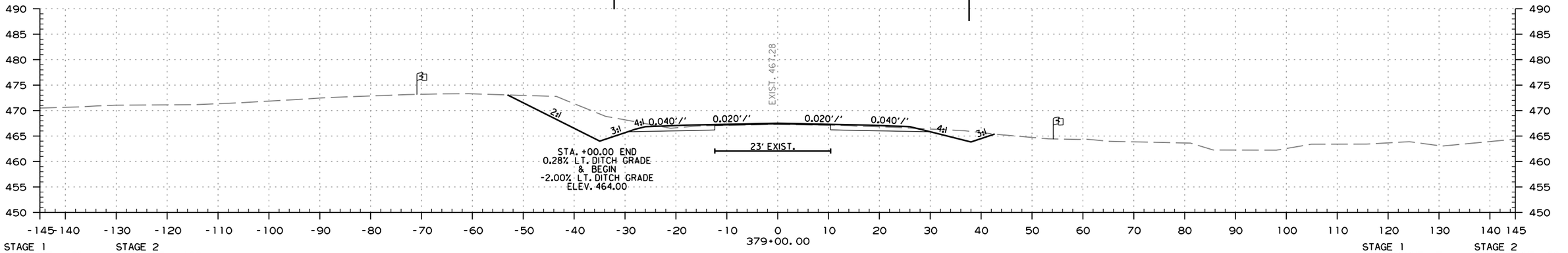


STAGE 1
AREA CUT 8
AREA FILL 6

STAGE 2
AREA CUT 95
AREA FILL 0

STAGE 1
CUT VOLUME 65
FILL VOLUME 10

STAGE 2
CUT VOLUME 333
FILL VOLUME 0



STAGE 1
AREA CUT 30
AREA FILL 0

STAGE 2
AREA CUT 102
AREA FILL 0

STAGE 1
CUT VOLUME 7
FILL VOLUME 0

STAGE 2
CUT VOLUME 23
FILL VOLUME 0

HWY. 7
STA. 379+00.00 TO STA. 380+00.00

COPY OF R061309.DGN 7/30/2020

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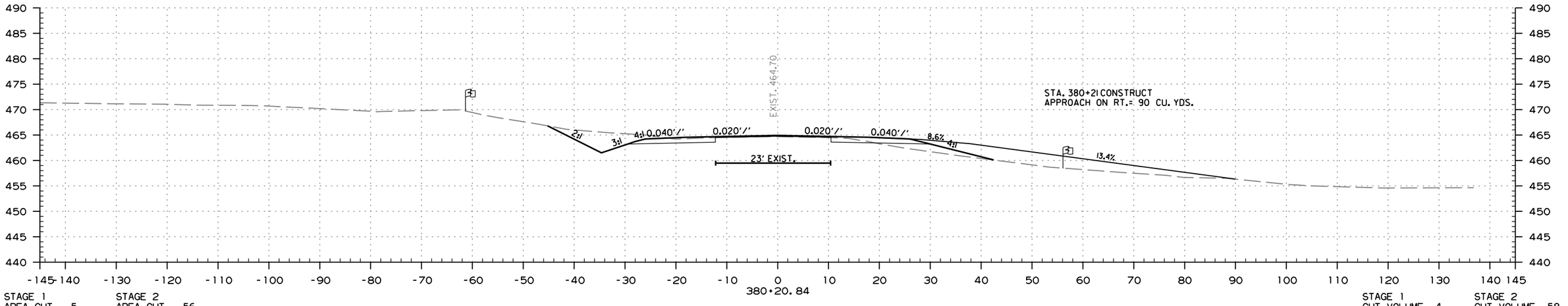
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	217	260

(2) CROSS SECTIONS SITE 2



STAGE 1
AREA CUT 5
AREA FILL 19

STAGE 2
AREA CUT 56
AREA FILL 0

HWY. 7
STA. 380+20.84 TO STA. 381+00.00

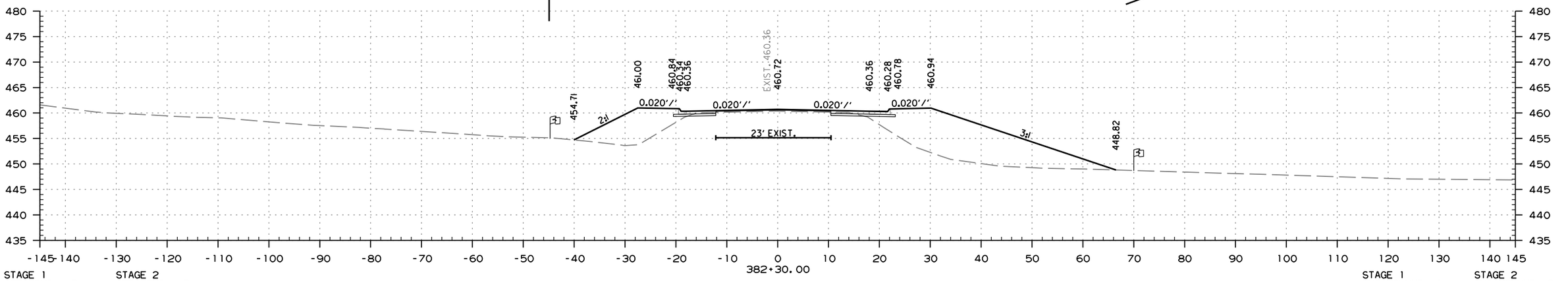
STAGE 1
CUT VOLUME 4
FILL VOLUME 13

STAGE 2
CUT VOLUME 58
FILL VOLUME 0

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	218	260

(2) CROSS SECTIONS SITE 2

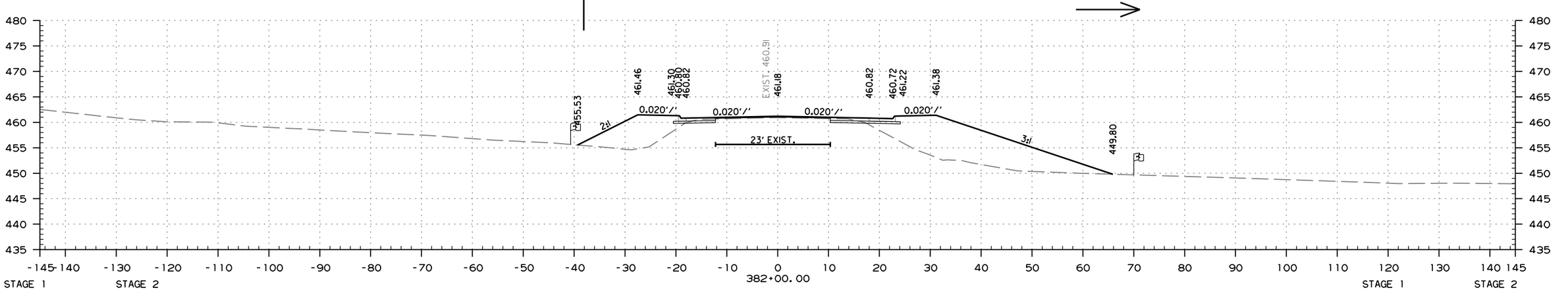


STAGE 1
AREA CUT 3
AREA FILL 250

STAGE 2
AREA CUT 2
AREA FILL 86

STAGE 1
CUT VOLUME 4
FILL VOLUME 263

STAGE 2
CUT VOLUME 3
FILL VOLUME 92

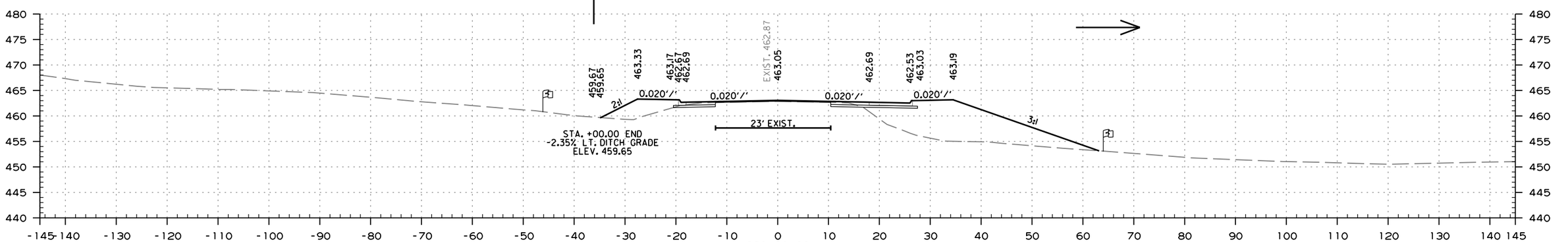


STAGE 1
AREA CUT 3
AREA FILL 250

STAGE 2
AREA CUT 3
AREA FILL 80

STAGE 1
CUT VOLUME 15
FILL VOLUME 788

STAGE 2
CUT VOLUME 15
FILL VOLUME 212



STAGE 1
AREA CUT 4
AREA FILL 202

STAGE 2
AREA CUT 5
AREA FILL 34

STAGE 1
CUT VOLUME 13
FILL VOLUME 323

STAGE 2
CUT VOLUME 90
FILL VOLUME 50

HWY. 7
STA. 381+00.00 TO STA. 382+30.00

MM41715 7/30/2020
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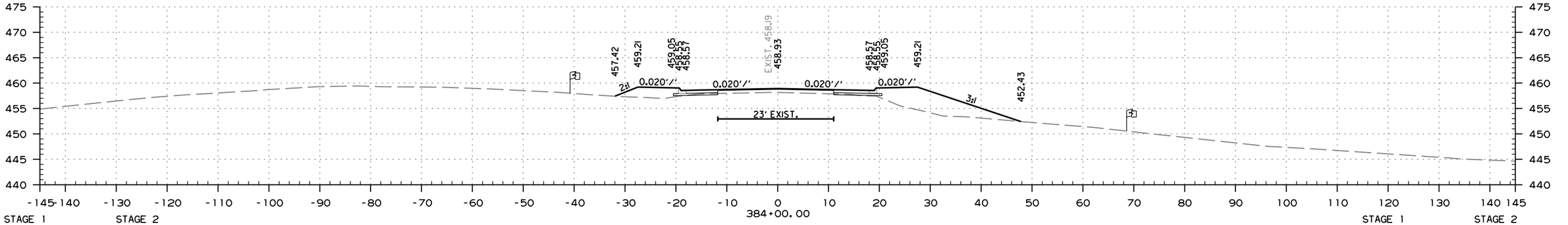
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	219	260

(2) CROSS SECTIONS SITE 2

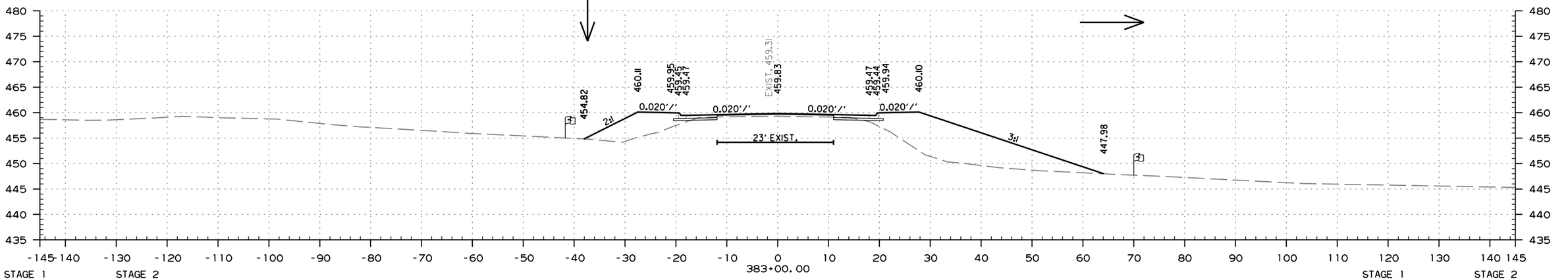


STAGE 1
AREA CUT 1
AREA FILL 77

STAGE 2
AREA CUT 1
AREA FILL 20

STAGE 1
CUT VOLUME 5
FILL VOLUME 537

STAGE 2
CUT VOLUME 7
FILL VOLUME 151



STAGE 1
AREA CUT 2
AREA FILL 213

STAGE 2
AREA CUT 2
AREA FILL 61

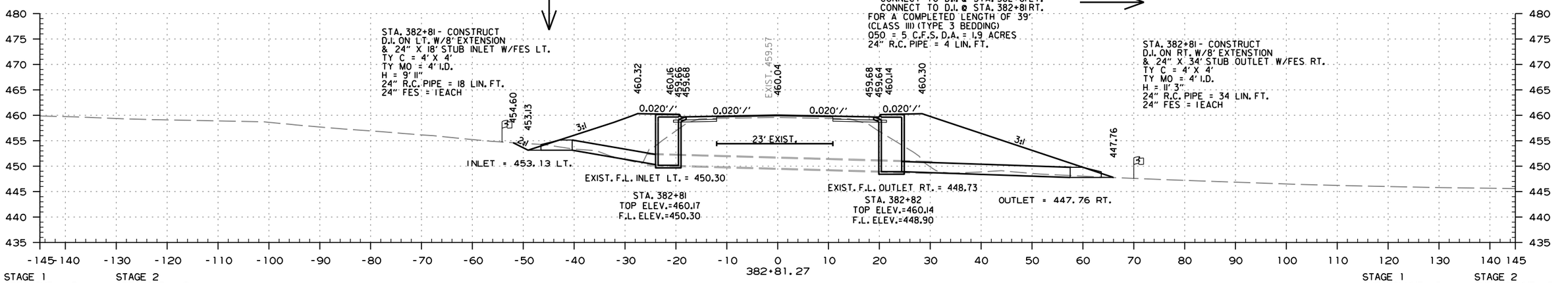
STAGE 1
CUT VOLUME 2
FILL VOLUME 163

STAGE 2
CUT VOLUME 2
FILL VOLUME 67

STA. 382+81 - CONSTRUCT
D.I. ON LT. W/8' EXTENSION
& 24" X 18' STUB INLET W/FES LT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 9' 11"
24" R.C. PIPE = 18 LIN. FT.
24" FES = 1EACH

STA. 382+81 IN PLACE
24" X 56' R.C. PIPE CULVERT
WITH HEADWALLS LT. & RT.
RETAIN AND EXTEND R.C. PIPE 2' LT. & 2' RT.
CONNECT TO D.I. @ STA. 382+81 LT.
CONNECT TO D.I. @ STA. 382+81 RT.
FOR A COMPLETED LENGTH OF 39'
(CLASS III) (TYPE 3 BEDDING)
Q50 = 5 C.F.S. D.A. = 1.9 ACRES
24" R.C. PIPE = 4 LIN. FT.

STA. 382+81 - CONSTRUCT
D.I. ON RT. W/8' EXTENSTION
& 24" X 34' STUB OUTLET W/FES RT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 11' 3"
24" R.C. PIPE = 34 LIN. FT.
24" FES = 1EACH



INLET = 453.13 LT.

EXIST. F.L. INLET LT. = 450.30

STA. 382+81
TOP ELEV.=460.17
F.L. ELEV.=450.30

EXIST. F.L. OUTLET RT. = 448.73

STA. 382+82
TOP ELEV.=460.14
F.L. ELEV.=448.90

OUTLET = 447.76 RT.

STAGE 1
AREA CUT 2
AREA FILL 256

STAGE 2
AREA CUT 2
AREA FILL 131

STAGE 1
CUT VOLUME 5
FILL VOLUME 480

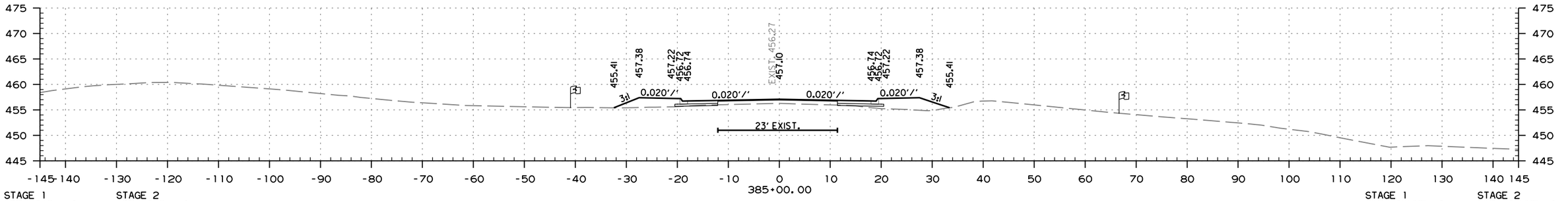
STAGE 2
CUT VOLUME 5
FILL VOLUME 206

HWY. 7
STA. 382+81.27 TO STA. 384+00.00

MM41715 7/30/2020
COPY OF R061309.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	220	260

(2) CROSS SECTIONS SITE 2



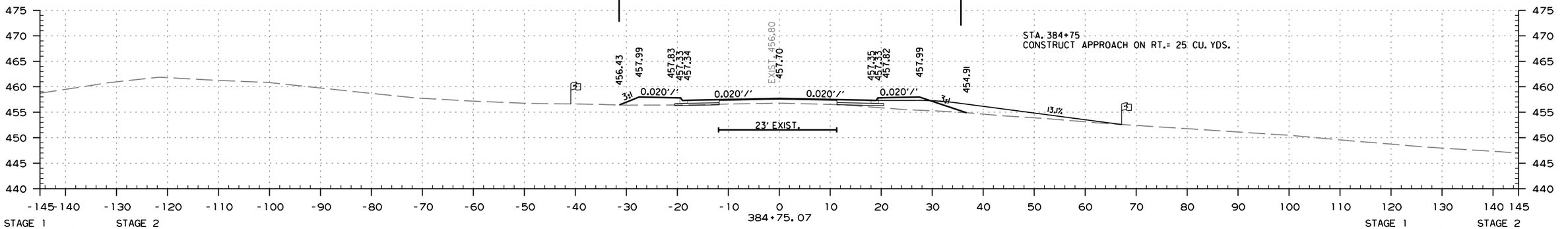
385+00.00

STAGE 1 AREA CUT 0 AREA FILL 26

STAGE 2 AREA CUT 1 AREA FILL 18

STAGE 1 CUT VOLUME 0 FILL VOLUME 26

STAGE 2 CUT VOLUME 1 FILL VOLUME 15



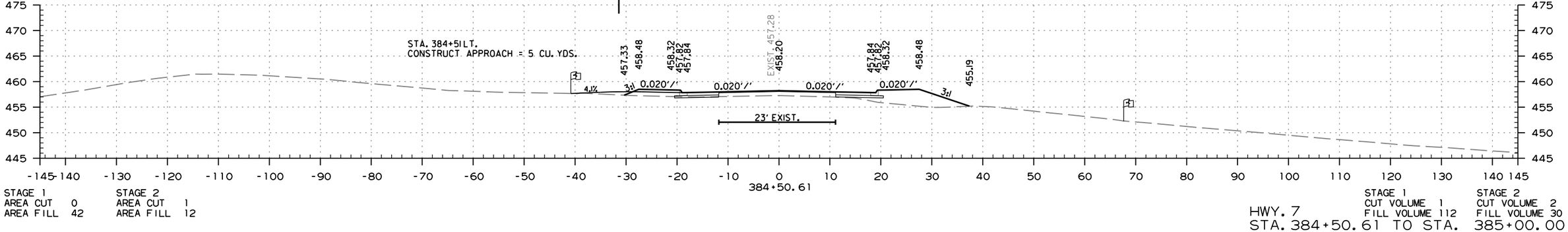
384+75.07

STAGE 1 AREA CUT 0 AREA FILL 31

STAGE 2 AREA CUT 1 AREA FILL 15

STAGE 1 CUT VOLUME 0 FILL VOLUME 33

STAGE 2 CUT VOLUME 1 FILL VOLUME 12



384+50.61

STAGE 1 AREA CUT 0 AREA FILL 42

STAGE 2 AREA CUT 1 AREA FILL 12

STAGE 1 CUT VOLUME 1 FILL VOLUME 112

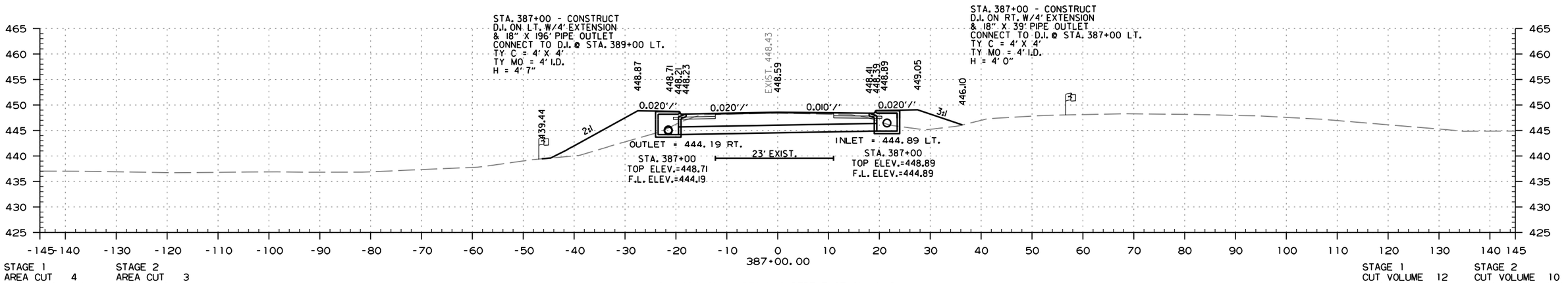
STAGE 2 CUT VOLUME 2 FILL VOLUME 30

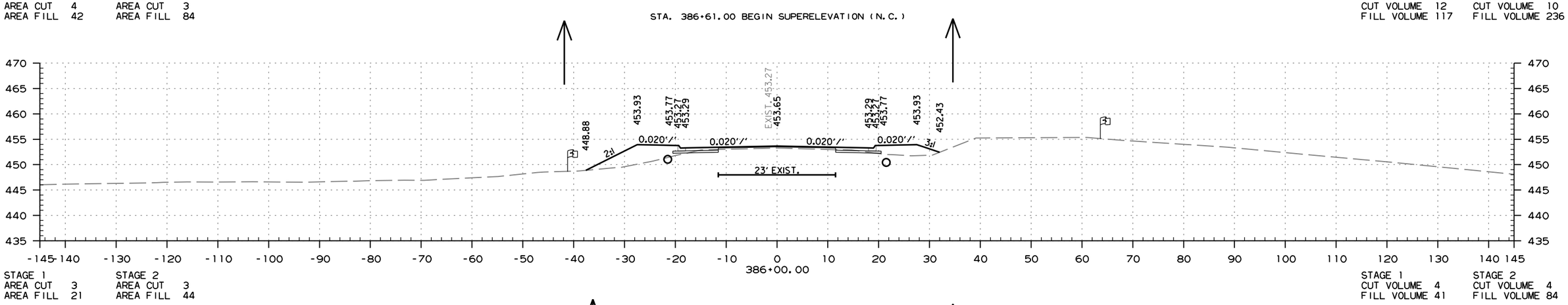
HWY. 7
STA. 384+50.61 TO STA. 385+00.00

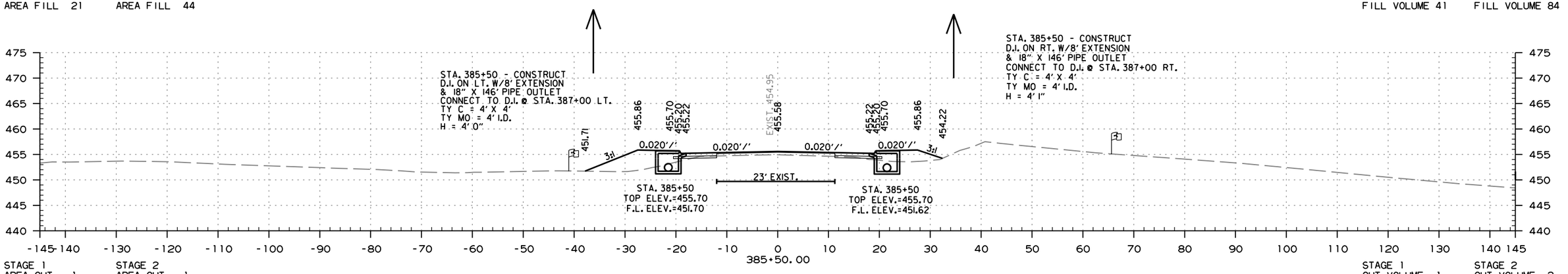
MM41715 7/30/2020
COPY OF R061309.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	221	260

(2) CROSS SECTIONS SITE 2





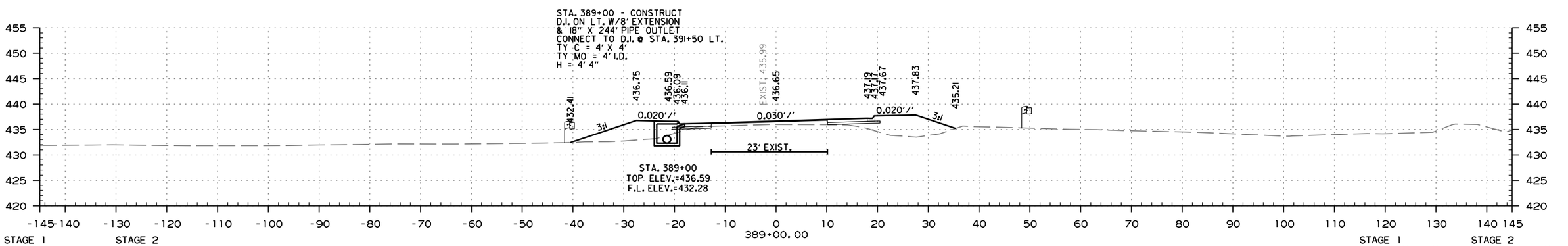


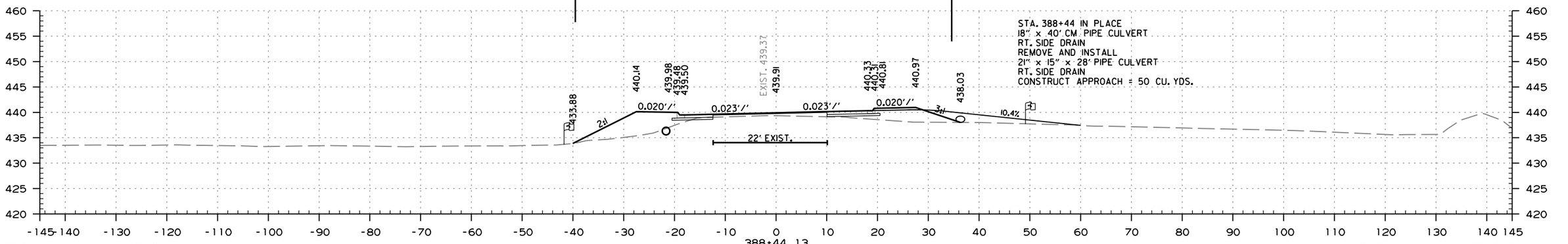
MM41715 7/30/2020
COPY OF R061309.DGN

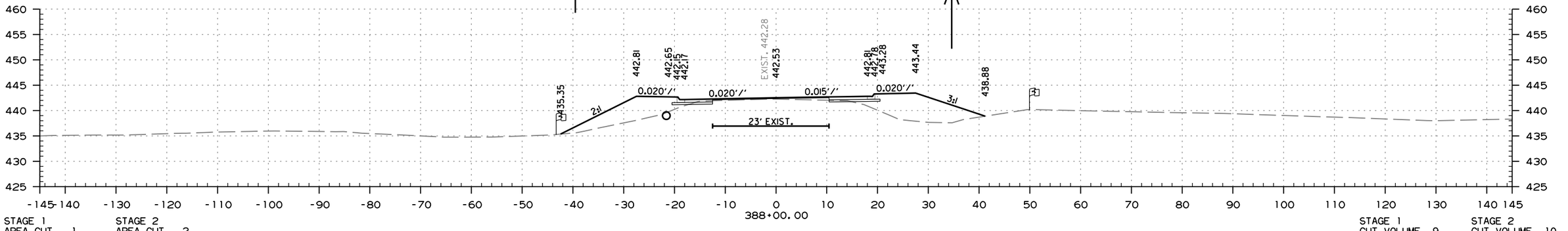
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	222	260

(2) CROSS SECTIONS SITE 2





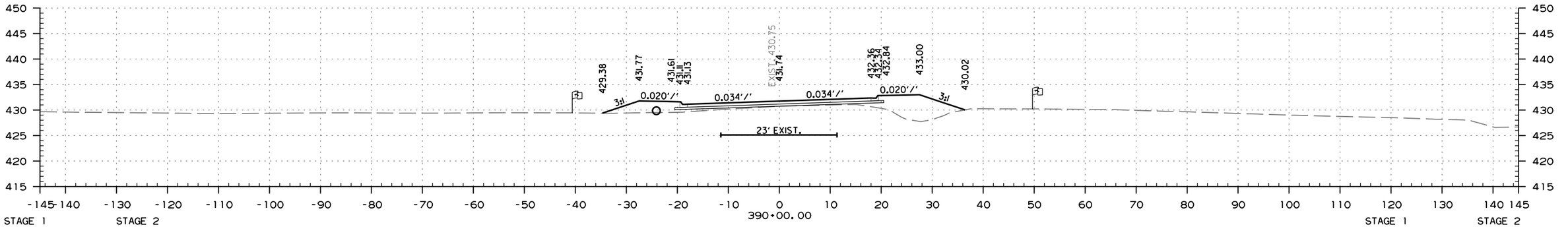


HWY. 7
STA. 388+00.00 TO STA. 389+00.00

MM41715 7/30/2020
COPY OF R061309.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	223	260

(2) CROSS SECTIONS SITE 2

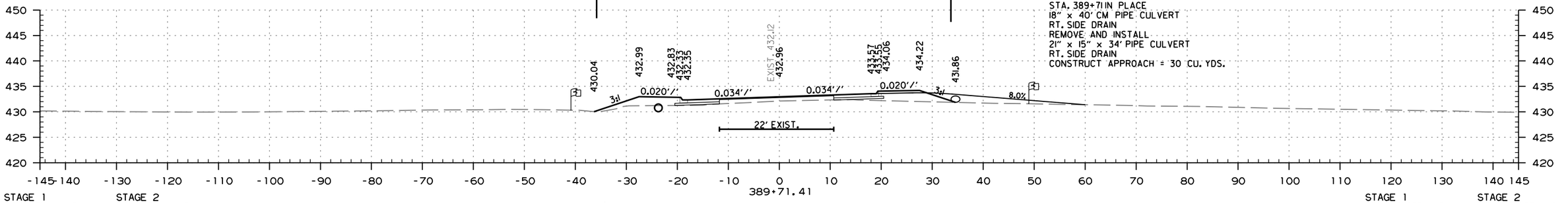


STAGE 1 AREA CUT 0 AREA FILL 58

STAGE 2 AREA CUT 0 AREA FILL 29

STAGE 1 CUT VOLUME 0 FILL VOLUME 44

STAGE 2 CUT VOLUME 0 FILL VOLUME 26



STA. 389+71 IN PLACE
18" x 40' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
21" x 15" x 34' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 30 CU. YDS.

STAGE 1 AREA CUT 0 AREA FILL 25

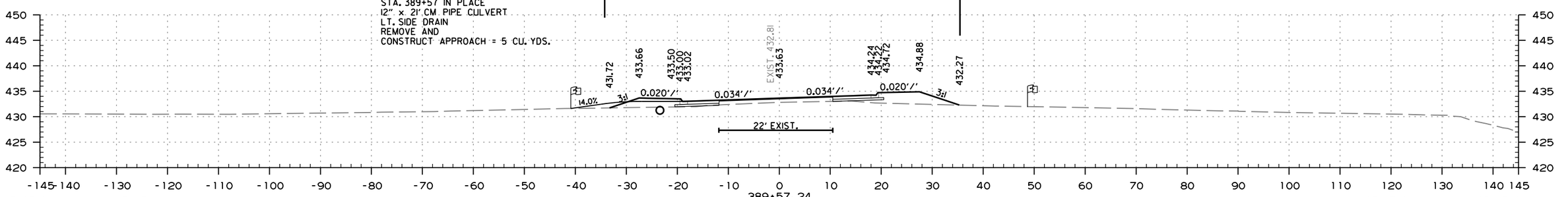
STAGE 2 AREA CUT 0 AREA FILL 21

STA. 389+31.00 MAX. SUPERELEVATION (0.034 FT./FT.)

STAGE 1 CUT VOLUME 0 FILL VOLUME 14

STAGE 2 CUT VOLUME 1 FILL VOLUME 11

STA. 389+57 IN PLACE
12" x 21' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND
CONSTRUCT APPROACH = 5 CU. YDS.



STAGE 1 AREA CUT 0 AREA FILL 29

STAGE 2 AREA CUT 4 AREA FILL 19

STAGE 1 CUT VOLUME 0 FILL VOLUME 87

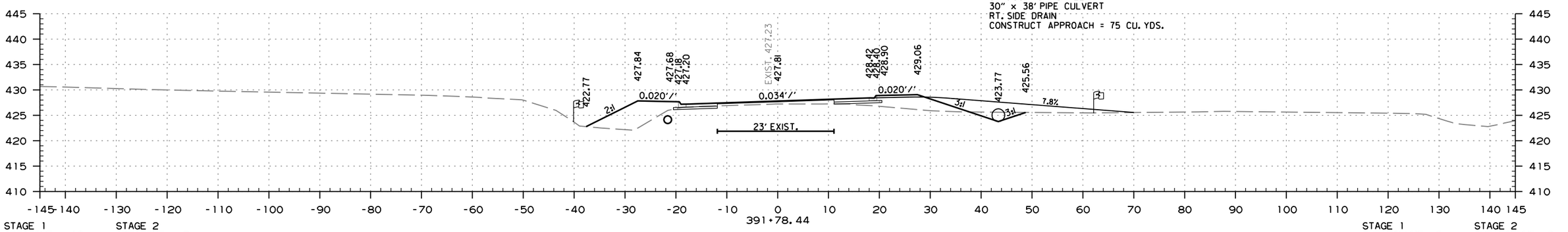
STAGE 2 CUT VOLUME 5 FILL VOLUME 75

HWY. 7
STA. 389+57.24 TO STA. 390+00.00

MM41715 7/30/2020
COPY OF R061309.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	224	260

(2) CROSS SECTIONS SITE 2

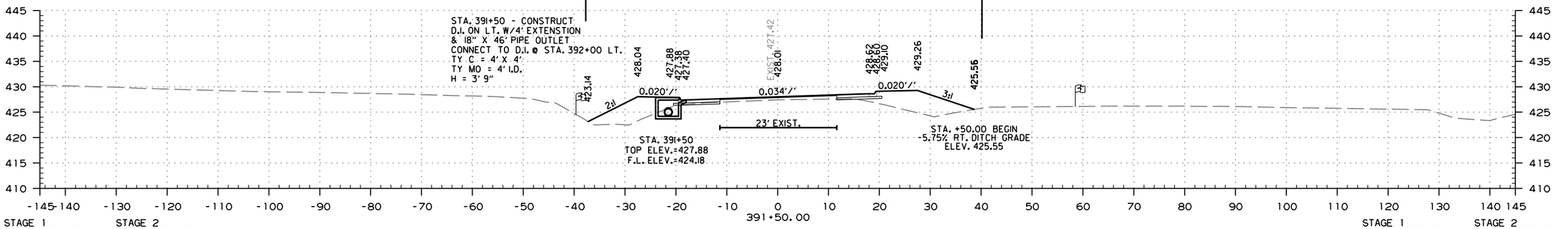


STAGE 1
AREA CUT 10
AREA FILL 37

STAGE 2
AREA CUT 3
AREA FILL 54

STAGE 1
CUT VOLUME 6
FILL VOLUME 50

STAGE 2
CUT VOLUME 3
FILL VOLUME 56

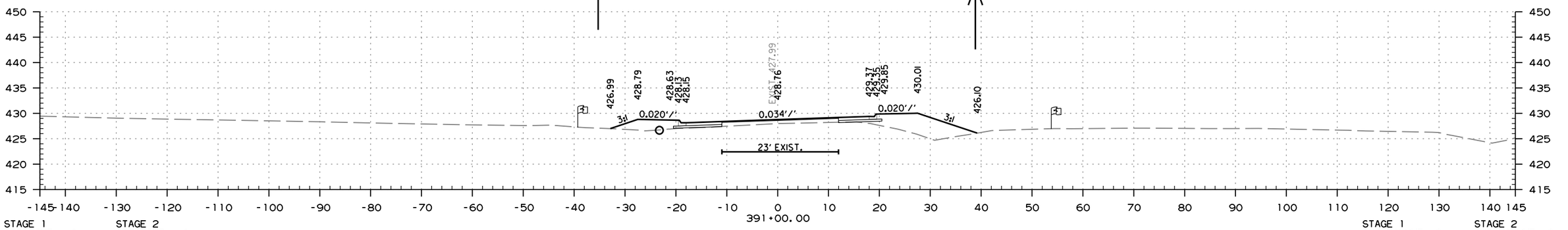


STAGE 1
AREA CUT 1
AREA FILL 58

STAGE 2
AREA CUT 2
AREA FILL 53

STAGE 1
CUT VOLUME 0
FILL VOLUME 106

STAGE 2
CUT VOLUME 2
FILL VOLUME 69



STAGE 1
AREA CUT 0
AREA FILL 57

STAGE 2
AREA CUT 0
AREA FILL 21

STAGE 1
CUT VOLUME 0
FILL VOLUME 212

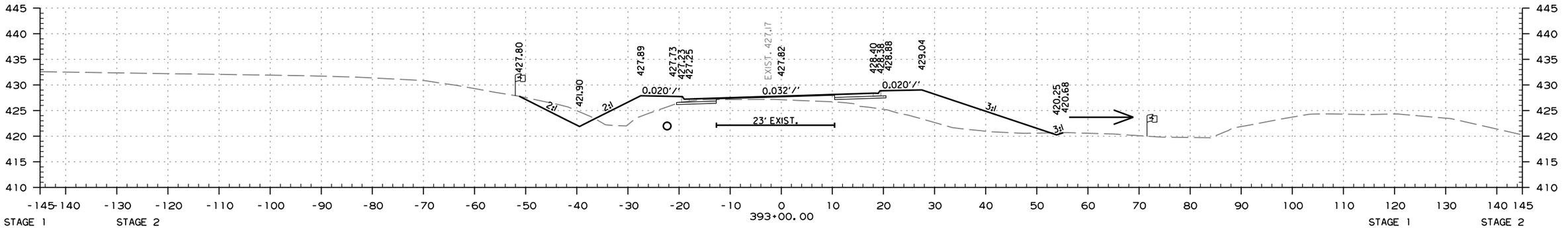
STAGE 2
CUT VOLUME 0
FILL VOLUME 93

HWY. 7
STA. 391+00.00 TO STA. 391+78.44

MM41715 7/30/2020
COPY OF R061309.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	225	260

(2) CROSS SECTIONS SITE 2



STAGE 1
AREA CUT 1
AREA FILL 137

STAGE 2
AREA CUT 28
AREA FILL 49

STA. +78.94 BEGIN
2.93% LT. DITCH GRADE
ELEV. 421.27

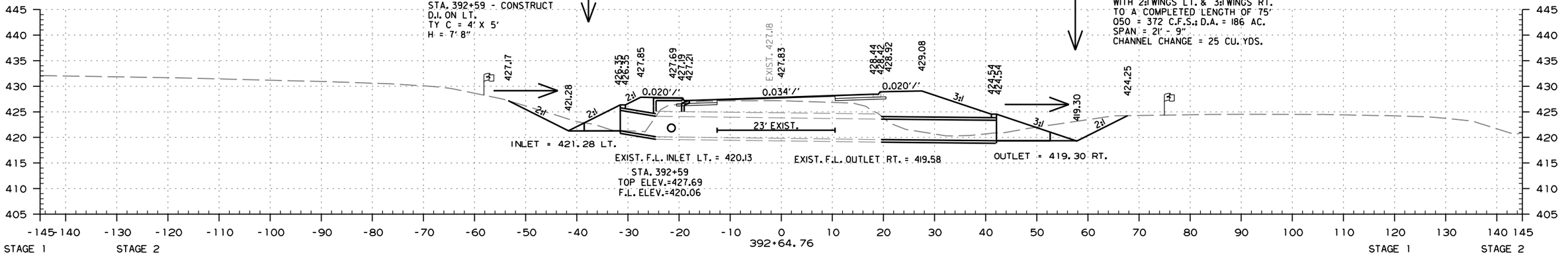
STA. 392+83.00 MAX. SUPERELEVATION (0.034 FT./FT.)

STA. +92.75 BEGIN
6.39% RT. DITCH GRADE
ELEV. 419.30

STA. 392+66 - IN PLACE BR. NO. M0184
DBL. 10' x 4' x 44' R.C. BOX CULV'T.
RETAIN AND EXTEND 7' LT. &
23' RT. ON 15° RT. FORWARD SKEW
WITH 2:1 WINGS LT. & 3:1 WINGS RT.
TO A COMPLETED LENGTH OF 75'
050 = 372 C.F.S.; D.A. = 186 AC.
SPAN = 21' - 9"
CHANNEL CHANGE = 25 CU. YDS.

STAGE 1
CUT VOLUME 24
FILL VOLUME 200

STAGE 2
CUT VOLUME 33
FILL VOLUME 75



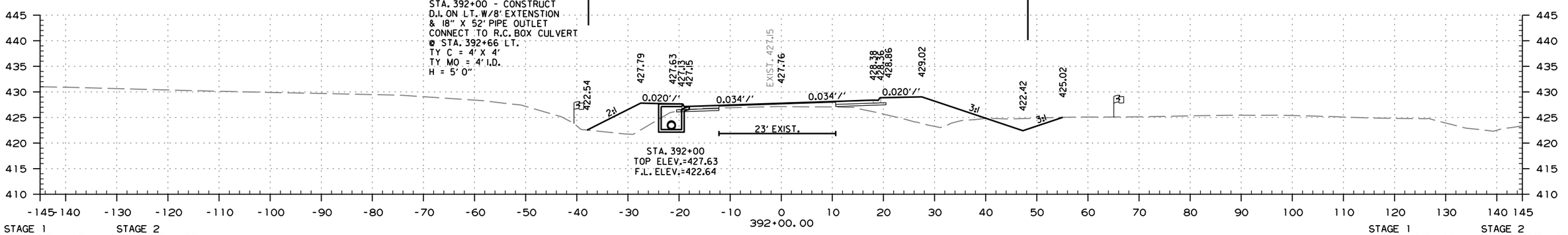
STAGE 1
AREA CUT 36
AREA FILL 169

STAGE 2
AREA CUT 22
AREA FILL 66

STAGE 1
CUT VOLUME 63
FILL VOLUME 293

STAGE 2
CUT VOLUME 53
FILL VOLUME 146

STA. +58.64 END
-5.75% RT. DITCH GRADE
ELEV. 419.30



STAGE 1
AREA CUT 17
AREA FILL 76

STAGE 2
AREA CUT 22
AREA FILL 55

STAGE 1
CUT VOLUME 11
FILL VOLUME 45

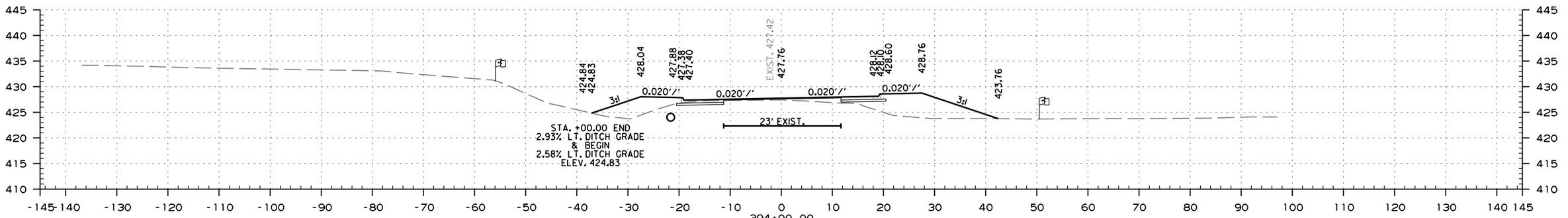
STAGE 2
CUT VOLUME 10
FILL VOLUME 53

HWY. 7
STA. 392+00.00 TO STA. 393+00.00

tc38019 7/31/2020
R061309.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	226	260

(2) CROSS SECTIONS SITE 2



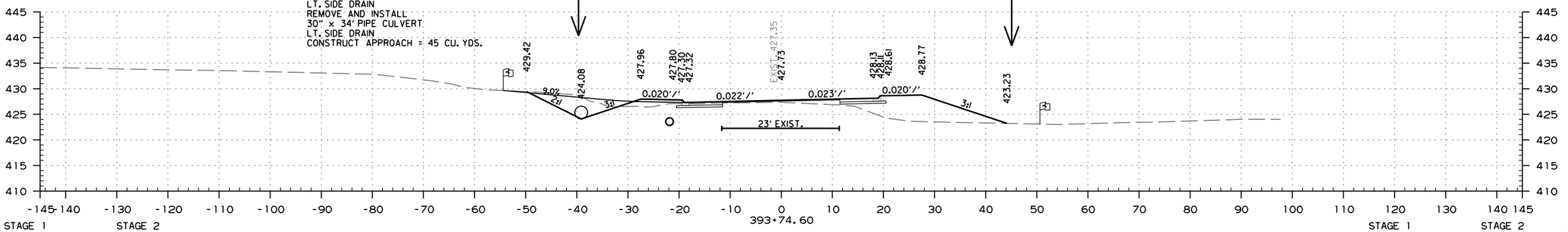
STAGE 1 AREA CUT 0 AREA FILL 78

STAGE 2 AREA CUT 6 AREA FILL 39

STA. 393+94.18 END SUPERELEVATION (R.C.)

STAGE 1 CUT VOLUME 0 FILL VOLUME 79

STAGE 2 CUT VOLUME 24 FILL VOLUME 24

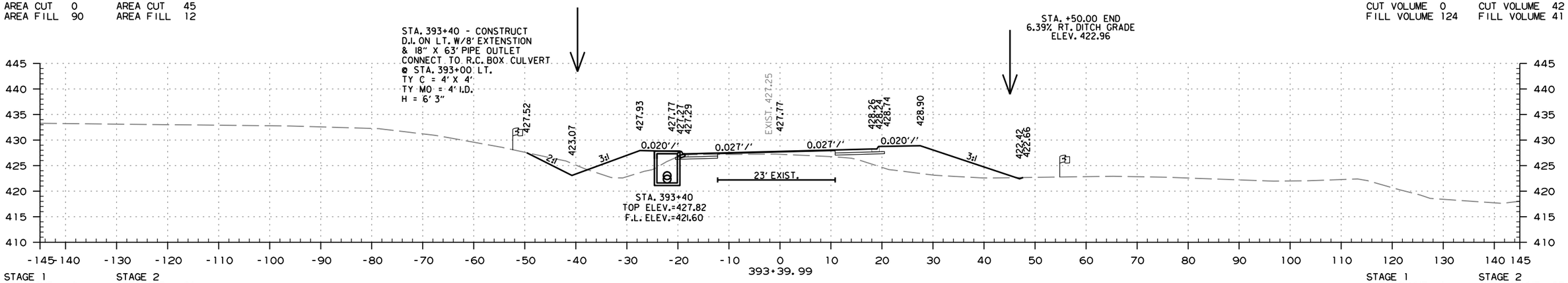


STAGE 1 AREA CUT 0 AREA FILL 90

STAGE 2 AREA CUT 45 AREA FILL 12

STAGE 1 CUT VOLUME 0 FILL VOLUME 124

STAGE 2 CUT VOLUME 42 FILL VOLUME 41



STAGE 1 AREA CUT 0 AREA FILL 103

STAGE 2 AREA CUT 21 AREA FILL 52

STAGE 1 CUT VOLUME 1 FILL VOLUME 178

STAGE 2 CUT VOLUME 37 FILL VOLUME 74

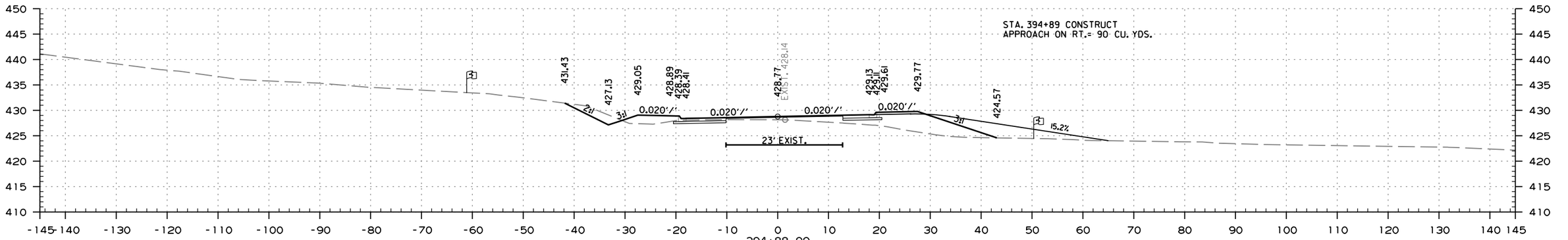
HWY. 7
STA. 393+39.99 TO STA. 394+00.00

MM41715 7/30/2020
COPY OF R061309.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	227	260

(2) CROSS SECTIONS SITE 2

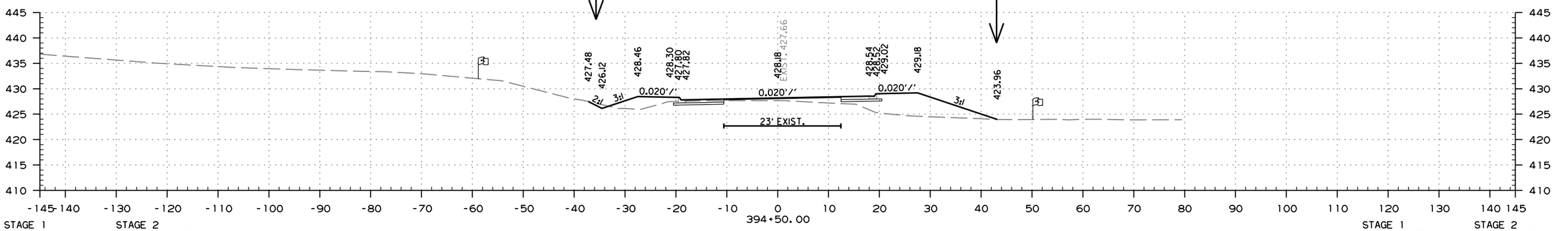


STAGE 1
AREA CUT 0
AREA FILL 67

STAGE 2
AREA CUT 20
AREA FILL 15

STAGE 1
CUT VOLUME 0
FILL VOLUME 103

STAGE 2
CUT VOLUME 21
FILL VOLUME 25

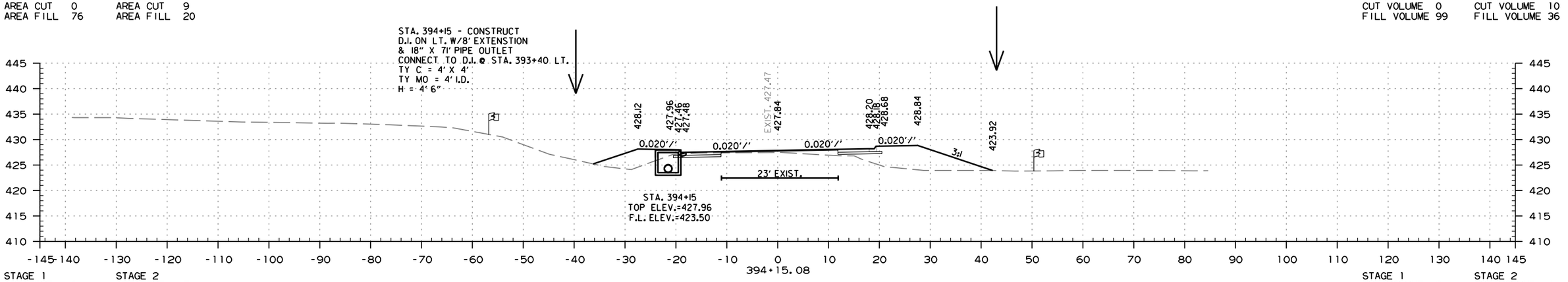


STAGE 1
AREA CUT 0
AREA FILL 76

STAGE 2
AREA CUT 9
AREA FILL 20

STAGE 1
CUT VOLUME 0
FILL VOLUME 99

STAGE 2
CUT VOLUME 10
FILL VOLUME 36



STAGE 1
AREA CUT 0
AREA FILL 77

STAGE 2
AREA CUT 7
AREA FILL 35

STAGE 1
CUT VOLUME 0
FILL VOLUME 43

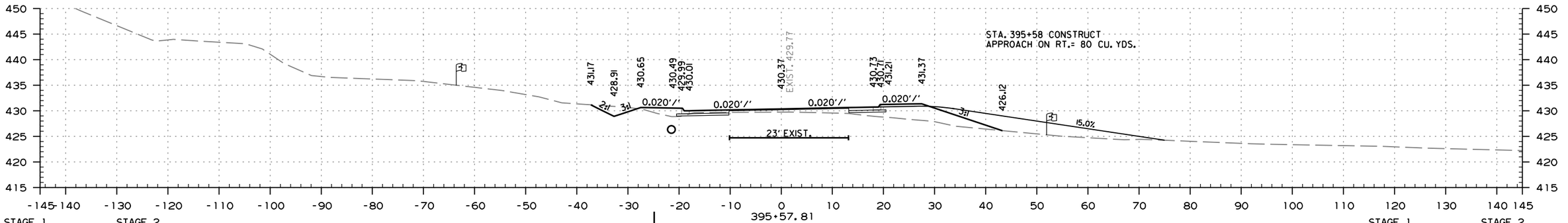
STAGE 2
CUT VOLUME 4
FILL VOLUME 21

HWY. 7
STA. 394+15.08 TO STA. 394+88.99

MM41715 7/30/2020
COPY OF R061309.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	228	260

(2) CROSS SECTIONS SITE 2

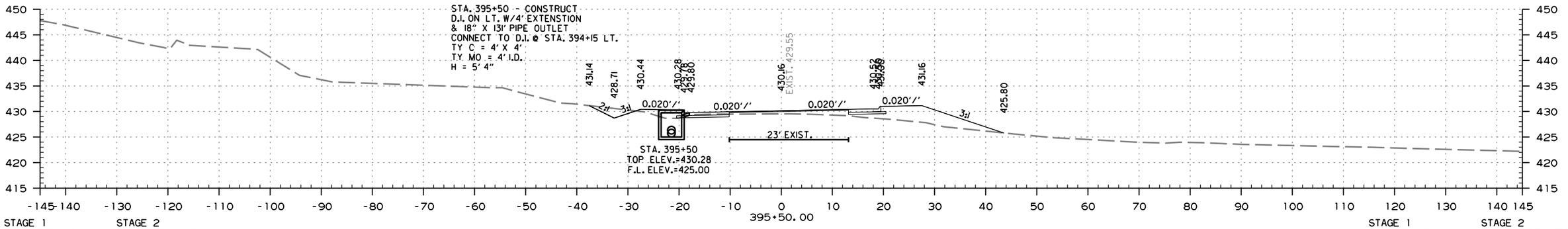


STAGE 1
AREA CUT 0
AREA FILL 53

STAGE 2
AREA CUT 14
AREA FILL 9

STAGE 1
CUT VOLUME 0
FILL VOLUME 16

STAGE 2
CUT VOLUME 4
FILL VOLUME 3

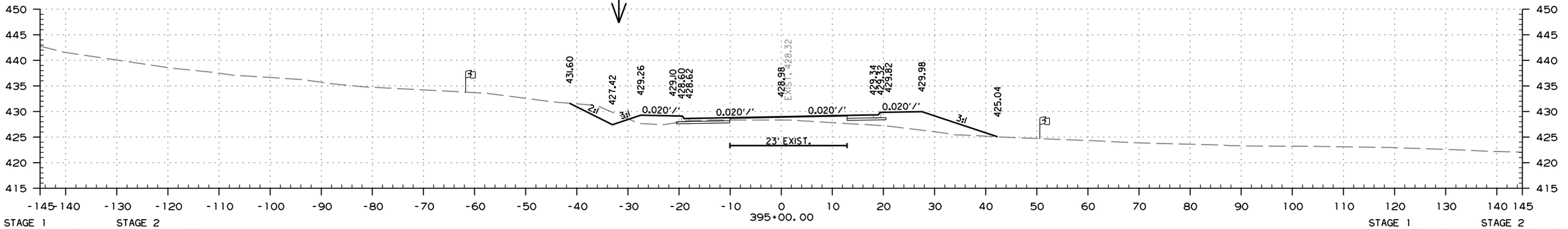


STAGE 1
AREA CUT 0
AREA FILL 55

STAGE 2
AREA CUT 13
AREA FILL 10

STAGE 1
CUT VOLUME 0
FILL VOLUME 105

STAGE 2
CUT VOLUME 33
FILL VOLUME 23



STAGE 1
AREA CUT 0
AREA FILL 59

STAGE 2
AREA CUT 23
AREA FILL 15

STAGE 1
CUT VOLUME 0
FILL VOLUME 26

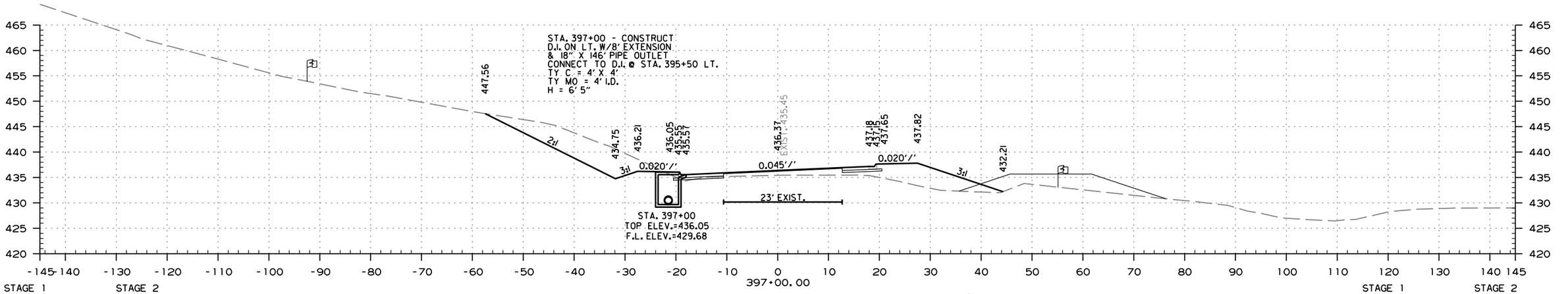
STAGE 2
CUT VOLUME 9
FILL VOLUME 6

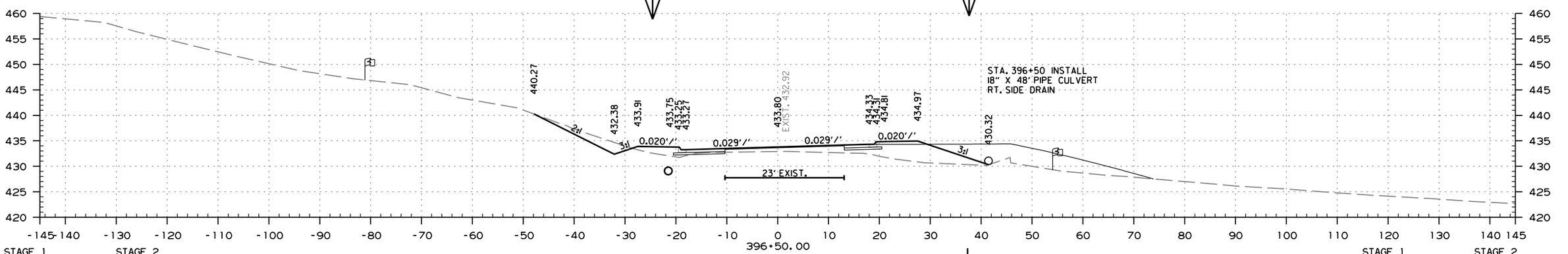
HWY. 7
STA. 395+00.00 TO STA. 395+57.81

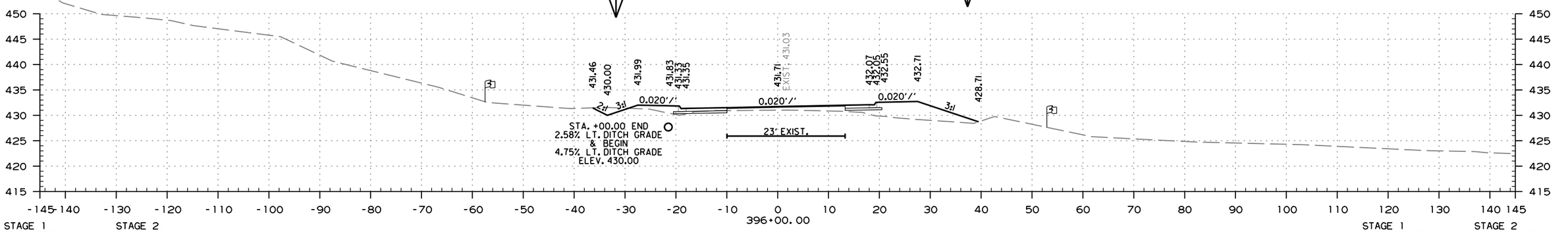
MM41715 7/30/2020
COPY OF R061309.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	229	260

(2) CROSS SECTIONS SITE 2





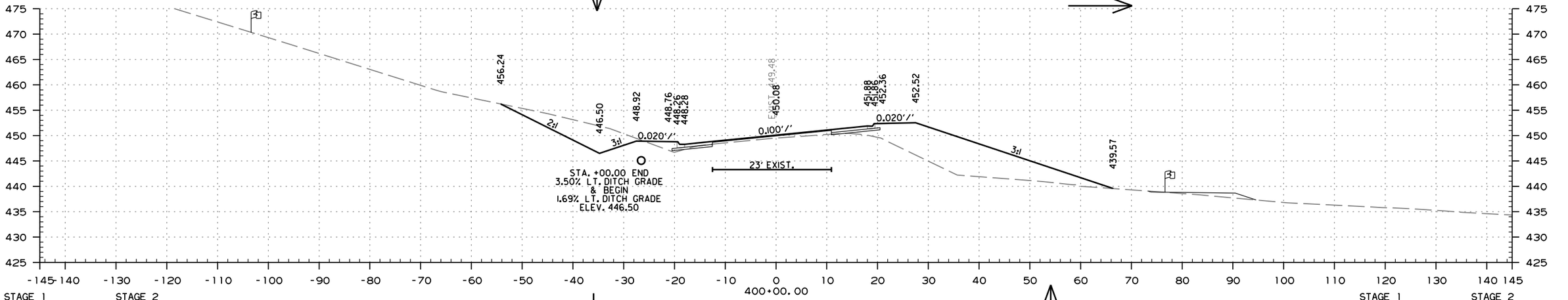


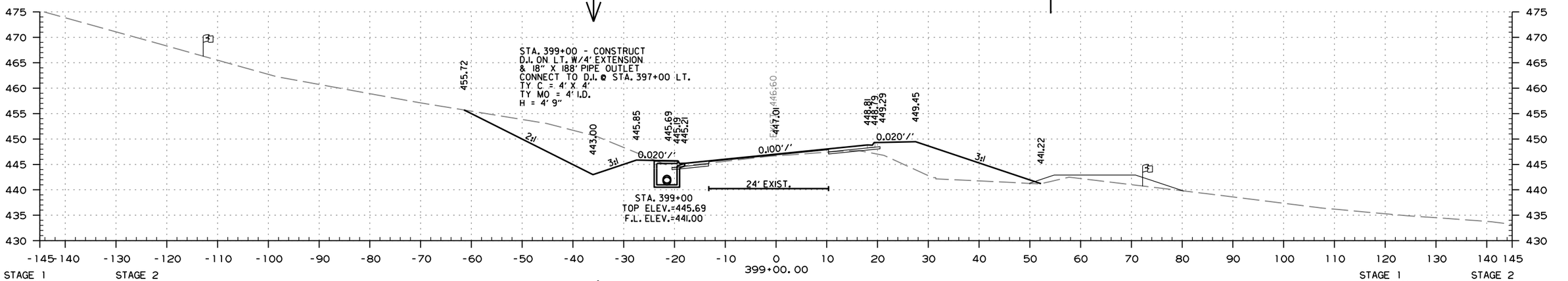
HWY. 7
STA. 396+00.00 TO STA. 397+00.00

MM41715 7/30/2020
COPY OF R061309.DGN

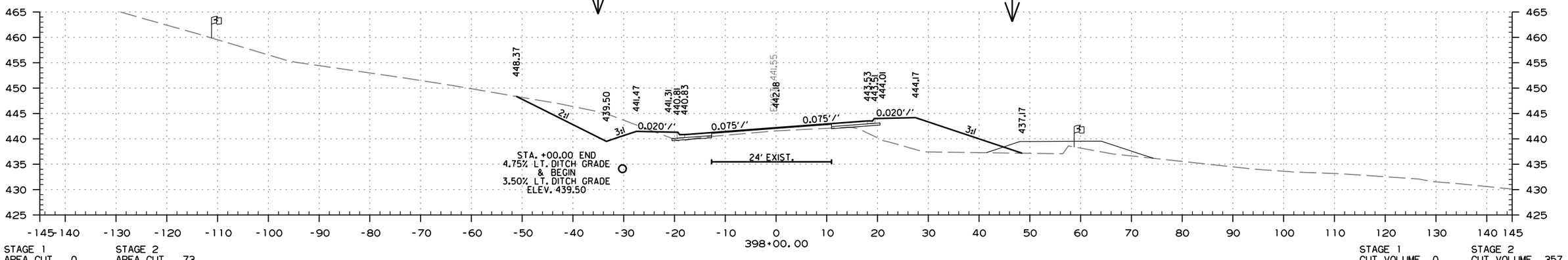
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	230	260

(2) CROSS SECTIONS SITE 2





STA. 398+83.00 MAX. SUPERELEVATION (0.100 FT./FT.)



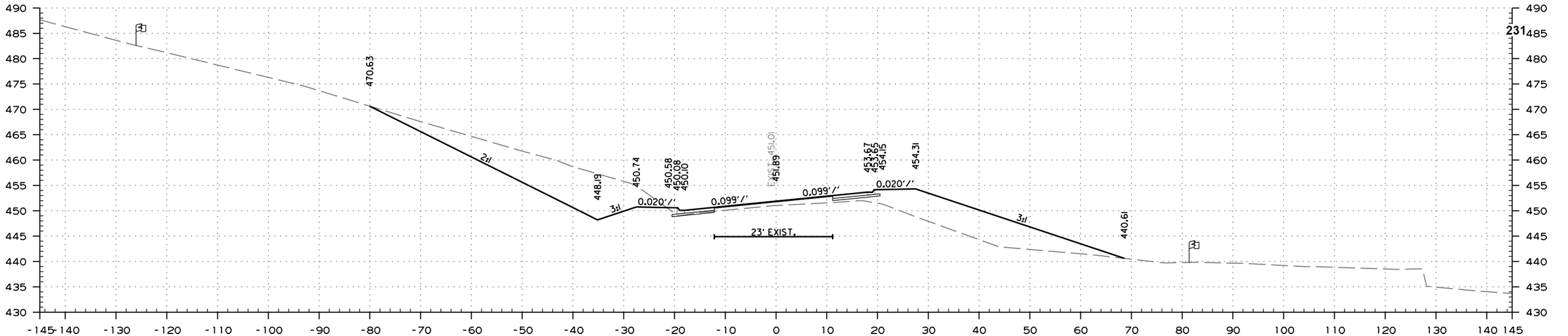
HWY. 7
STA. 398+00.00 TO STA. 400+00.00

MM41715 7/30/2020
COPY OF R061309.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	231	260

(2) CROSS SECTIONS SITE 2



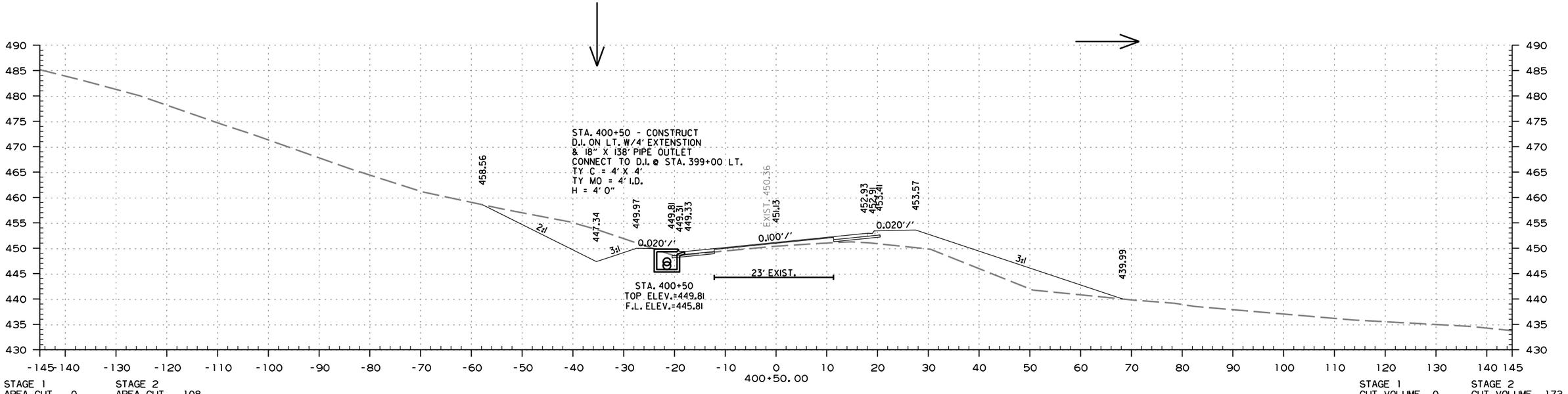
STAGE 1
AREA CUT 0
AREA FILL 202

STAGE 2
AREA CUT 270
AREA FILL 1

STA. 400+97.36 MAX. SUPERELEVATION (0.100 FT./FT.)

STAGE 1
CUT VOLUME 0
FILL VOLUME 320

STAGE 2
CUT VOLUME 350
FILL VOLUME 4



STAGE 1
AREA CUT 0
AREA FILL 143

STAGE 2
AREA CUT 108
AREA FILL 3

STAGE 1
CUT VOLUME 0
FILL VOLUME 326

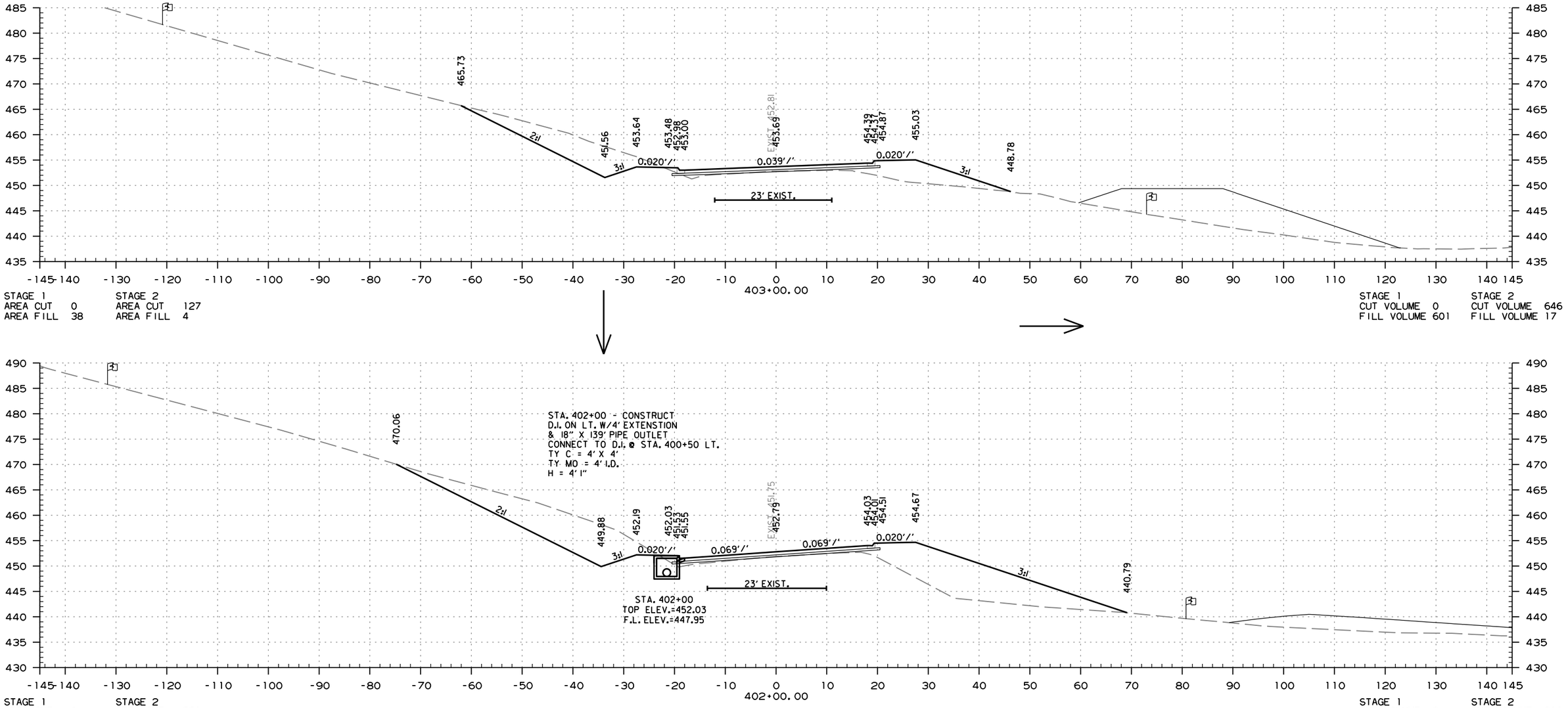
STAGE 2
CUT VOLUME 173
FILL VOLUME 10

HWY. 7
STA. 400+50.00 TO STA. 401+00.00

MM41715 7/30/2020
COPY OF R061309.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	232	260

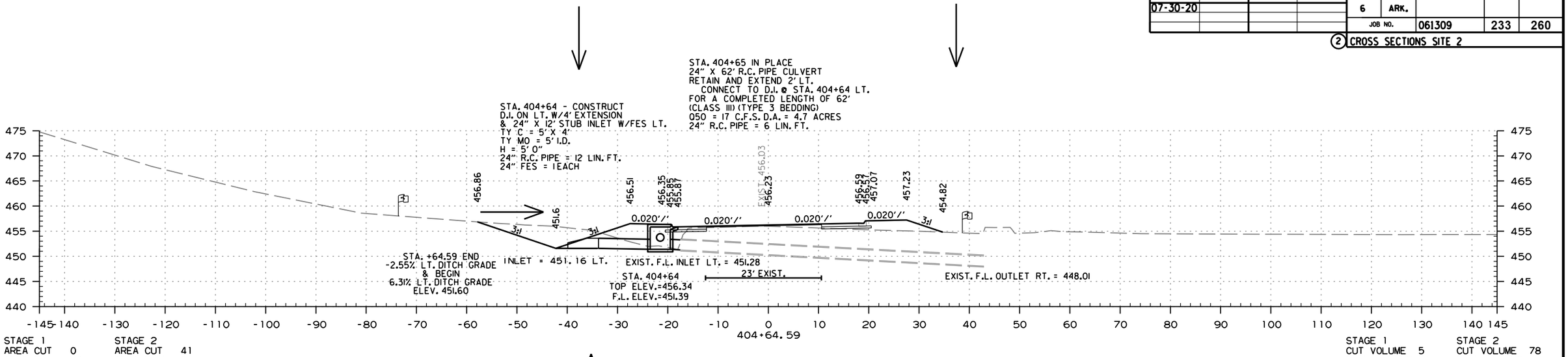
(2) CROSS SECTIONS SITE 2

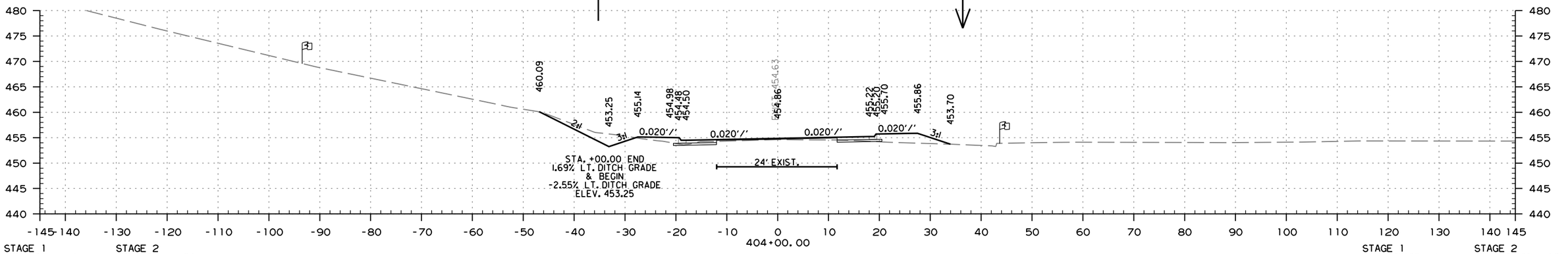


MM41715 7/30/2020
COPY OF R061309.DGN

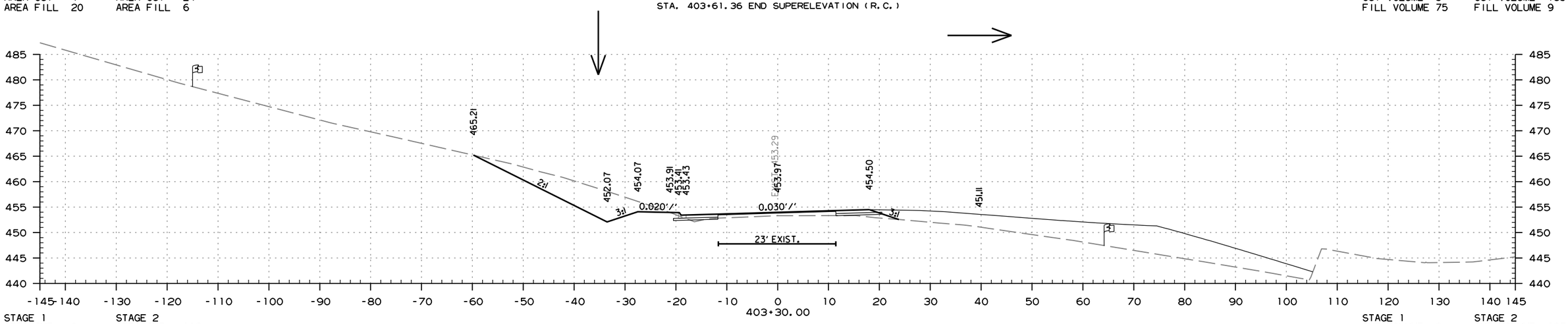
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	233	260

(2) CROSS SECTIONS SITE 2





STA. 403+61.36 END SUPERELEVATION (R.C.)



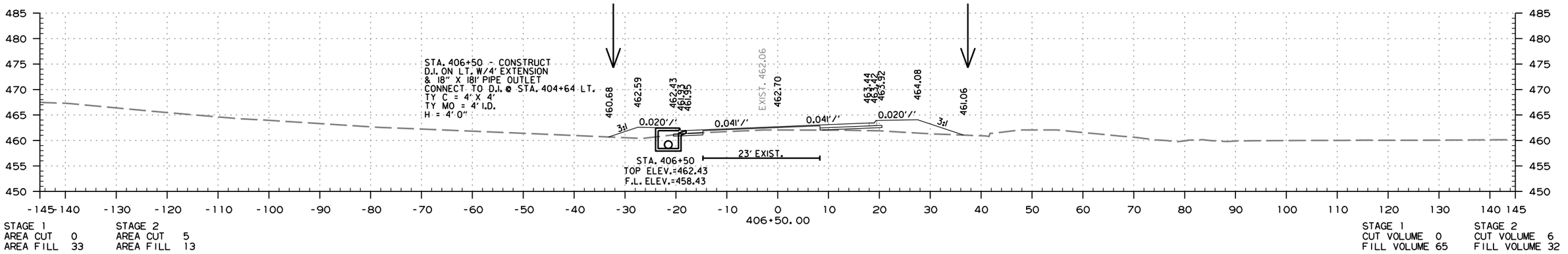
HWY. 7
STA. 403+30.00 TO STA. 404+64.59

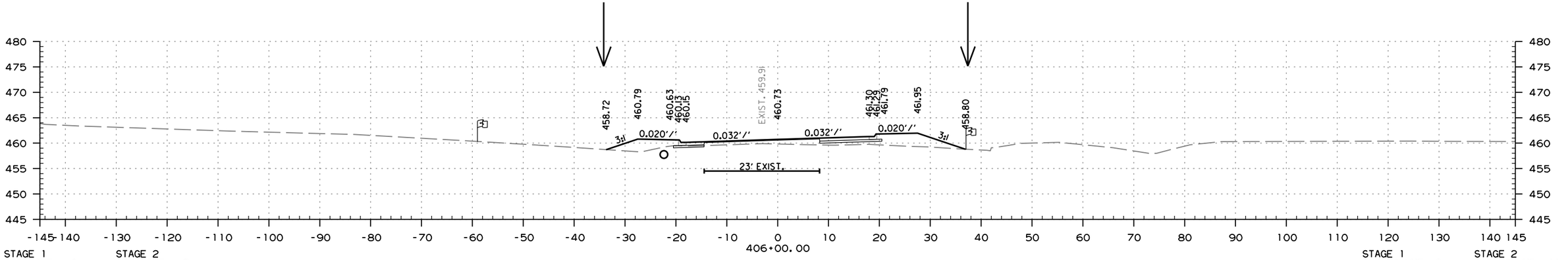
MM41715 7/30/2020
COPY OF R061309.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	234	260

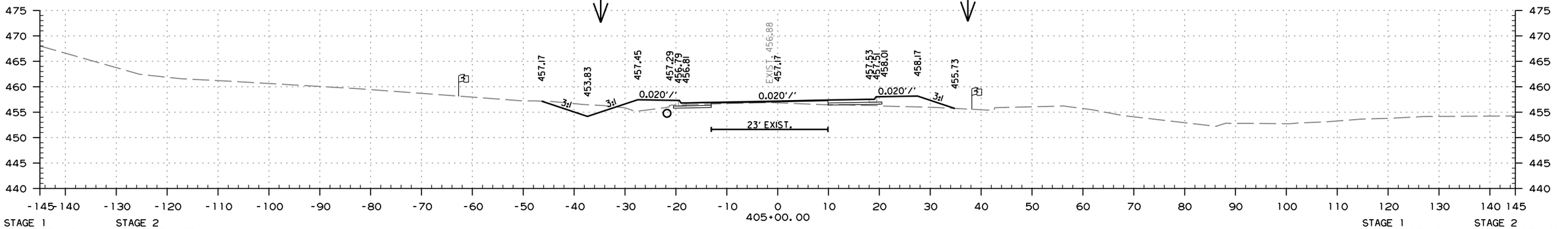
(2) CROSS SECTIONS SITE 2





STA. +50.00 END
6.31% LT. DITCH GRADE
ELEV. 454.16

STA. 405+35.36 BEGIN SUPERELEVATION (R.C.)



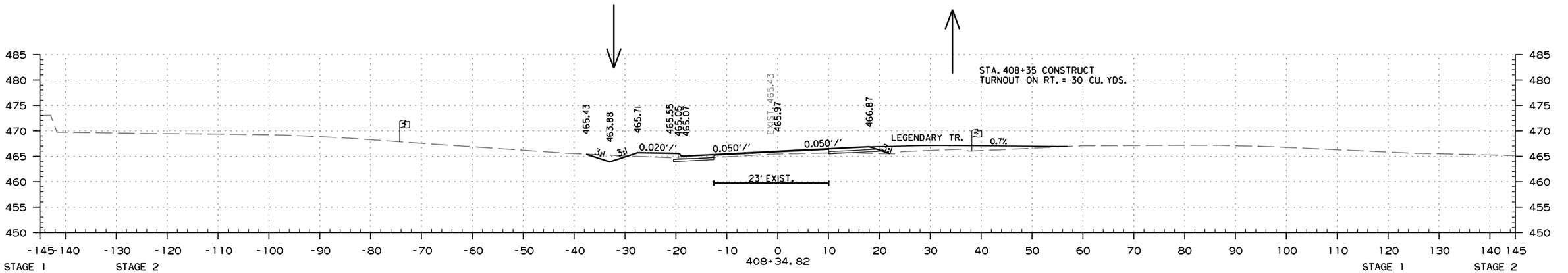
HWY. 7
STA. 405+00.00 TO STA. 406+50.00

MM41715 7/30/2020
COPY OF R061309.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	235	260

(2) CROSS SECTIONS SITE 2

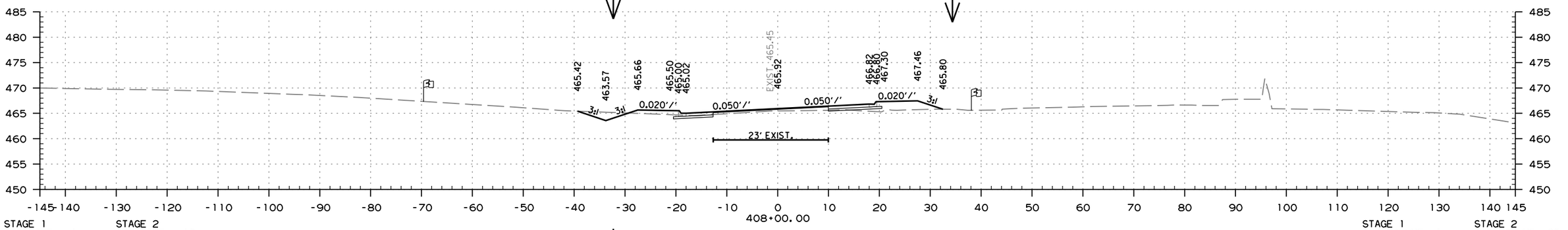


STAGE 1
AREA CUT 0
AREA FILL 17

STAGE 2
AREA CUT 9
AREA FILL 7

STAGE 1
CUT VOLUME 1
FILL VOLUME 24

STAGE 2
CUT VOLUME 14
FILL VOLUME 9

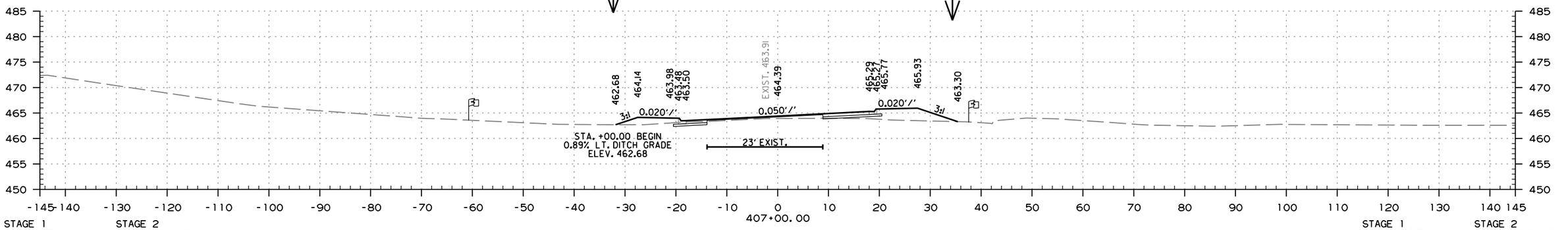


STAGE 1
AREA CUT 1
AREA FILL 20

STAGE 2
AREA CUT 13
AREA FILL 7

STAGE 1
CUT VOLUME 1
FILL VOLUME 90

STAGE 2
CUT VOLUME 32
FILL VOLUME 36



STAGE 1
AREA CUT 0
AREA FILL 29

STAGE 2
AREA CUT 5
AREA FILL 13

STA. 406+97.36 MAX. SUPERELEVATION (0.050 FT./FT.)

STAGE 1
CUT VOLUME 0
FILL VOLUME 58

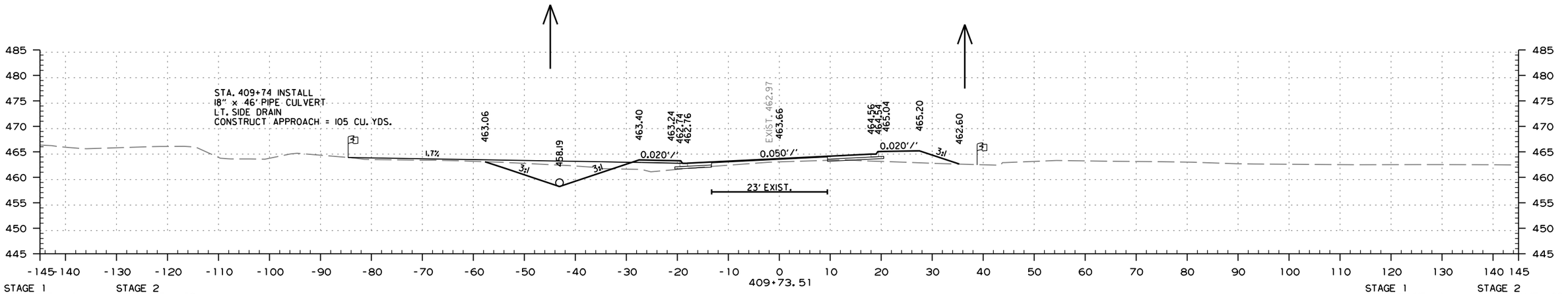
STAGE 2
CUT VOLUME 9
FILL VOLUME 23

HWY. 7
STA. 407+00.00 TO STA. 408+34.82

MM41715 7/30/2020
COPY OF R061309.DGN

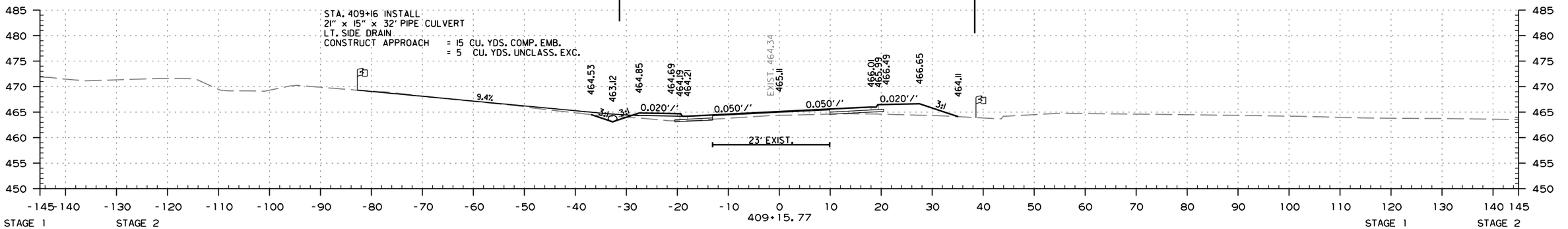
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	236	260

(2) CROSS SECTIONS SITE 2



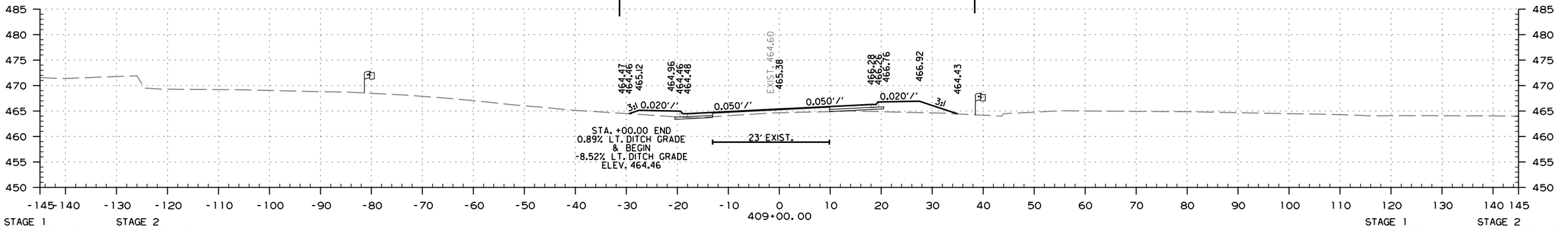
STAGE 1 AREA CUT 1 AREA FILL 27
STAGE 2 AREA CUT 53 AREA FILL 20

STAGE 1 CUT VOLUME 1 FILL VOLUME 57
STAGE 2 CUT VOLUME 62 FILL VOLUME 33



STAGE 1 AREA CUT 0 AREA FILL 26
STAGE 2 AREA CUT 5 AREA FILL 11

STAGE 1 CUT VOLUME 0 FILL VOLUME 15
STAGE 2 CUT VOLUME 2 FILL VOLUME 6



STAGE 1 AREA CUT 0 AREA FILL 26
STAGE 2 AREA CUT 2 AREA FILL 8

STAGE 1 CUT VOLUME 1 FILL VOLUME 52
STAGE 2 CUT VOLUME 13 FILL VOLUME 19

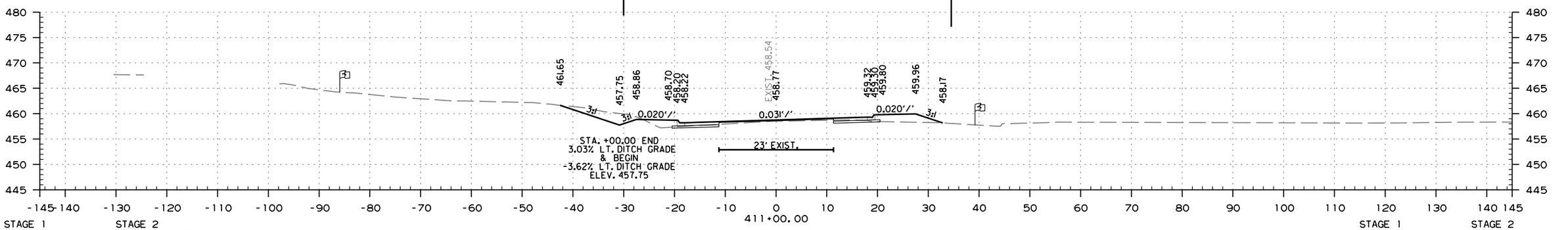
HWY. 7
STA. 409+00.00 TO STA. 409+73.51

MM41715 7/30/2020
COPY OF R061309.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	237	260

(2) CROSS SECTIONS SITE 2



STAGE 1
AREA CUT 4
AREA FILL 16

STAGE 2
AREA CUT 23
AREA FILL 7

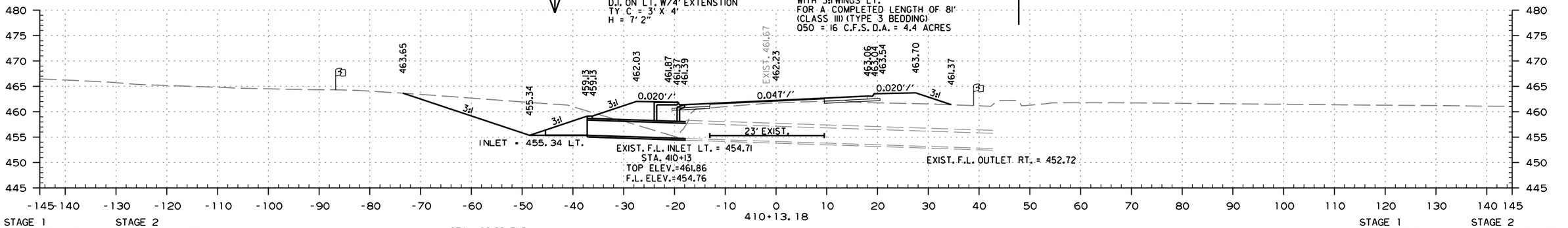
STAGE 1
CUT VOLUME 9
FILL VOLUME 64

STAGE 2
CUT VOLUME 243
FILL VOLUME 129

STA. +20.50 BEGIN
3.03% LT. DITCH GRADE
ELEV. 455.34

STA. 410+13 - CONSTRUCT
D.I. ON LT. W/4' EXTENSTION
TY C = 3' X 4'
H = 7' 2"

STA. 410+13 IN PLACE
3" X 3' X 62' R.C. BOX CULVERT
RETAIN AND EXTEND 19' LT.
WITH 3:1 WINGS LT.
FOR A COMPLETED LENGTH OF 81'
(CLASS III) (TYPE 3 BEDDING)
Q50 = 16 C.F.S. D.A. = 4.4 ACRES



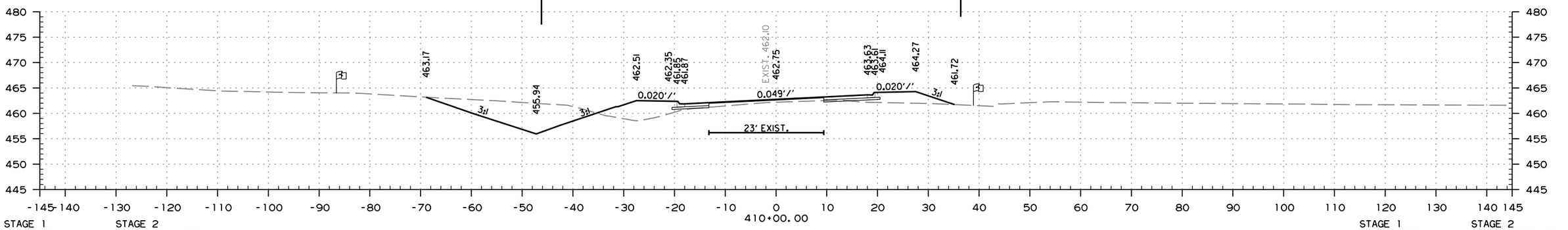
STAGE 1
AREA CUT 2
AREA FILL 24

STAGE 2
AREA CUT 128
AREA FILL 73

STAGE 1
CUT VOLUME 1
FILL VOLUME 12

STAGE 2
CUT VOLUME 58
FILL VOLUME 28

STA. +06.99 END
-8.52% LT. DITCH GRADE
ELEV. 455.34



STAGE 1
AREA CUT 1
AREA FILL 27

STAGE 2
AREA CUT 110
AREA FILL 41

STA. 409+94.92 MAX. SUPERELEVATION (0.050 FT./FT.)

STAGE 1
CUT VOLUME 1
FILL VOLUME 27

STAGE 2
CUT VOLUME 80
FILL VOLUME 30

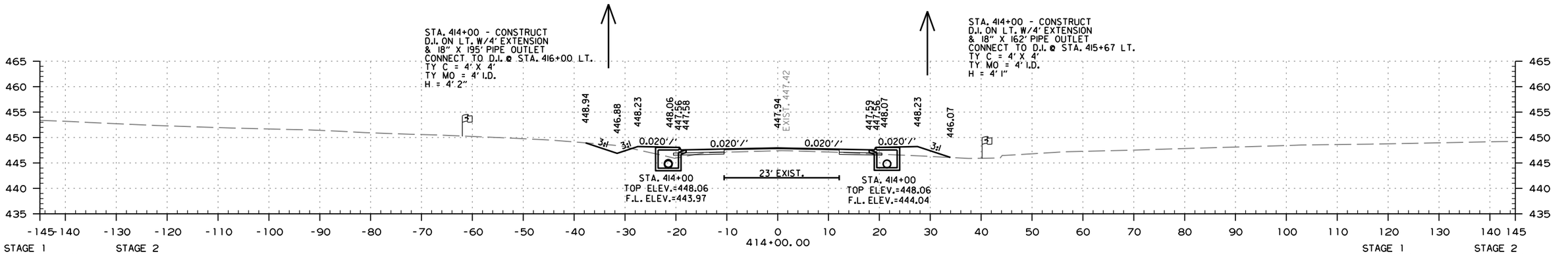
HWY. 7
STA. 410+00.00 TO STA. 411+00.00

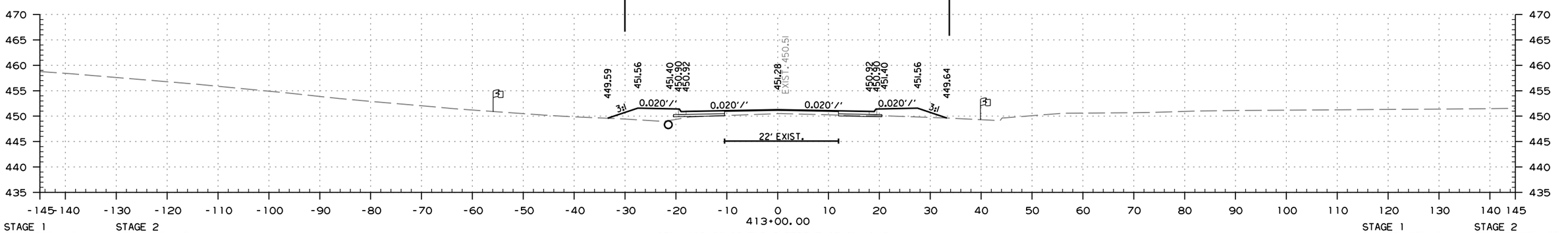
MM41715 7/30/2020
COPY OF R061309.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

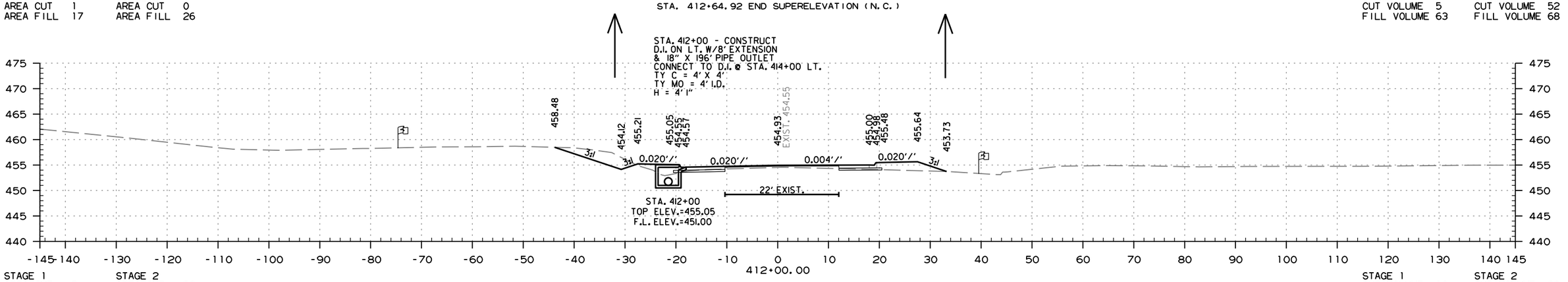
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	238	260

(2) CROSS SECTIONS SITE 2





STA. 412+64.92 END SUPERELEVATION (N.C.)

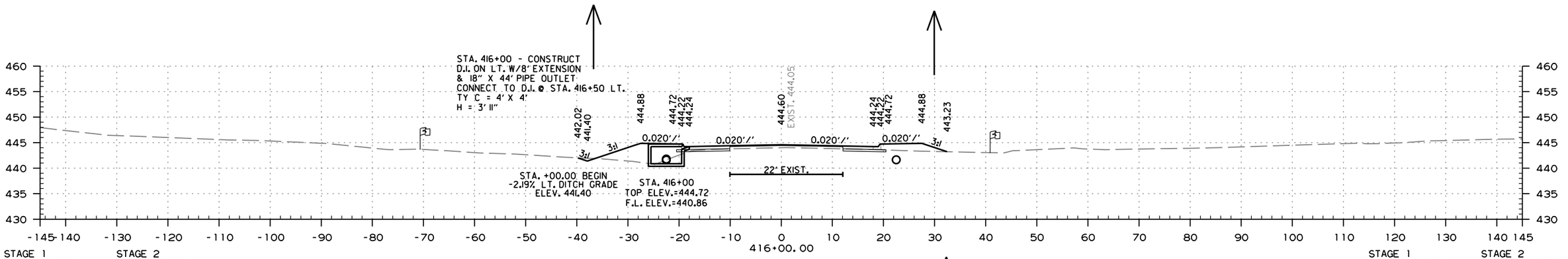


HWY. 7
STA. 412+00.00 TO STA. 414+00.00

MM41715 7/30/2020
COPY OF R061309.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	239	260

(2) CROSS SECTIONS SITE 2

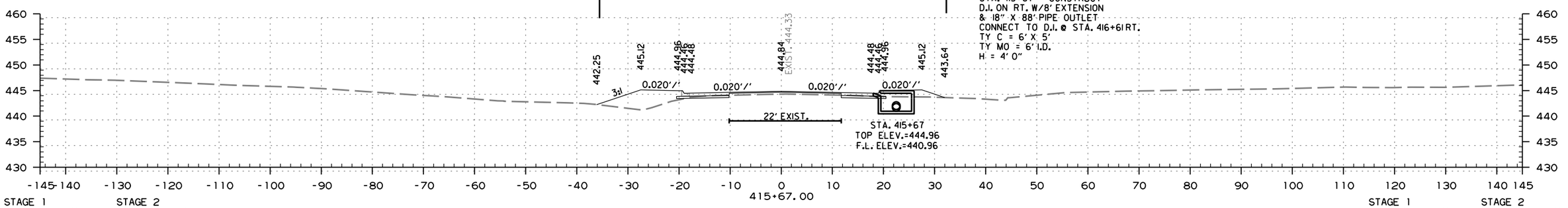


STAGE 1
AREA CUT 3
AREA FILL 43

STAGE 2
AREA CUT 3
AREA FILL 14

STAGE 1
CUT VOLUME 6
FILL VOLUME 70

STAGE 2
CUT VOLUME 7
FILL VOLUME 26

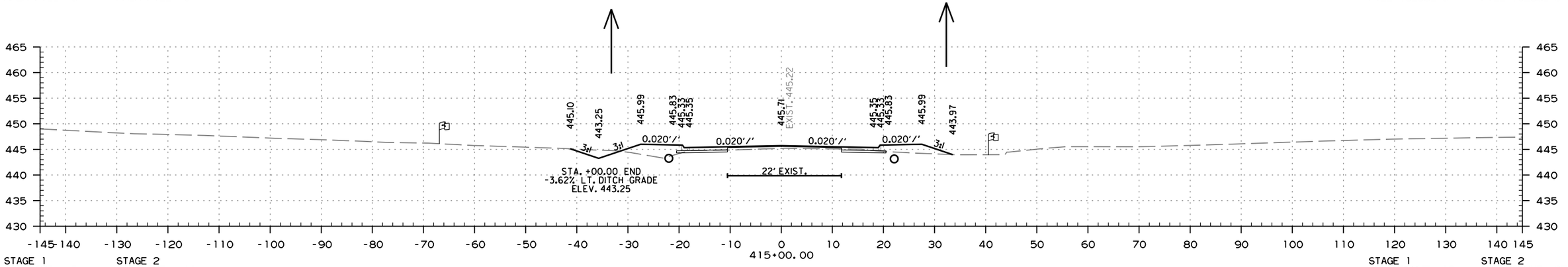


STAGE 1
AREA CUT 0
AREA FILL 0

STAGE 2
AREA CUT 0
AREA FILL 0

STAGE 1
CUT VOLUME 0
FILL VOLUME 0

STAGE 2
CUT VOLUME 0
FILL VOLUME 0



STAGE 1
AREA CUT 5
AREA FILL 17

STAGE 2
AREA CUT 11
AREA FILL 21

STAGE 1
CUT VOLUME 13
FILL VOLUME 66

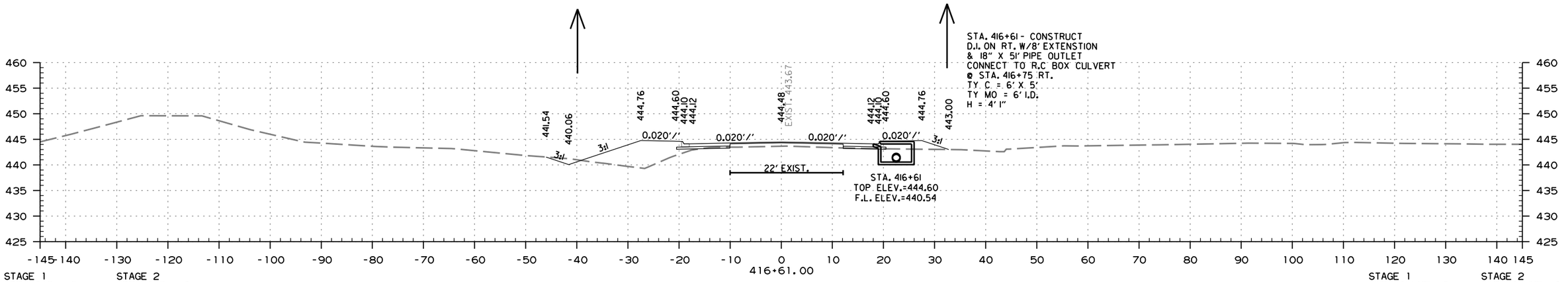
STAGE 2
CUT VOLUME 37
FILL VOLUME 62

HWY. 7
STA. 415+00.00 TO STA. 416+00.00

MM41715 7/30/2020
COPY OF R061309.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	240	260

(2) CROSS SECTIONS SITE 2

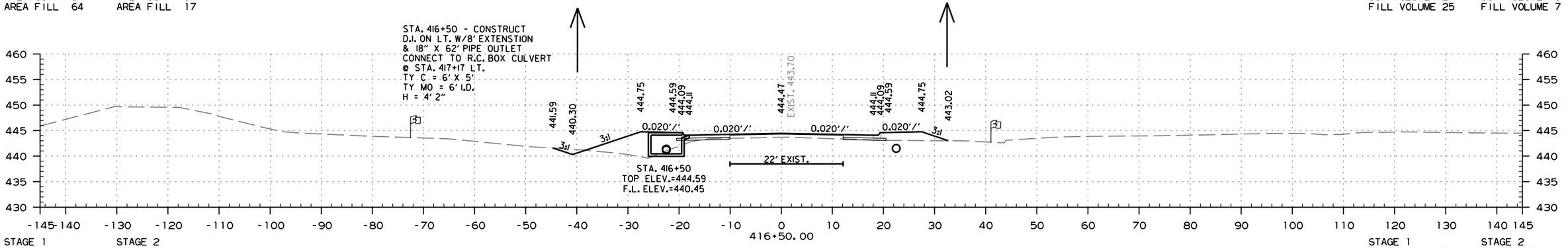


STAGE 1
AREA CUT 5
AREA FILL 64

STAGE 2
AREA CUT 0
AREA FILL 17

STAGE 1
CUT VOLUME 2
FILL VOLUME 25

STAGE 2
CUT VOLUME 0
FILL VOLUME 7

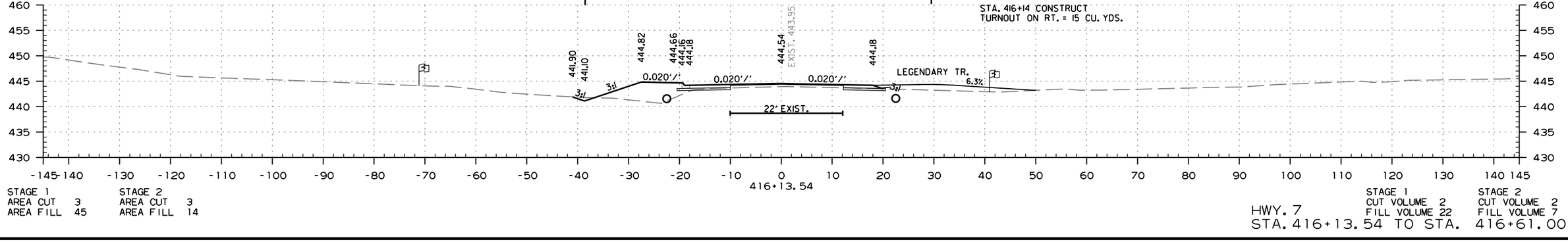


STAGE 1
AREA CUT 4
AREA FILL 58

STAGE 2
AREA CUT 1
AREA FILL 17

STAGE 1
CUT VOLUME 5
FILL VOLUME 70

STAGE 2
CUT VOLUME 3
FILL VOLUME 21



STAGE 1
AREA CUT 3
AREA FILL 45

STAGE 2
AREA CUT 3
AREA FILL 14

STAGE 1
CUT VOLUME 2
FILL VOLUME 22

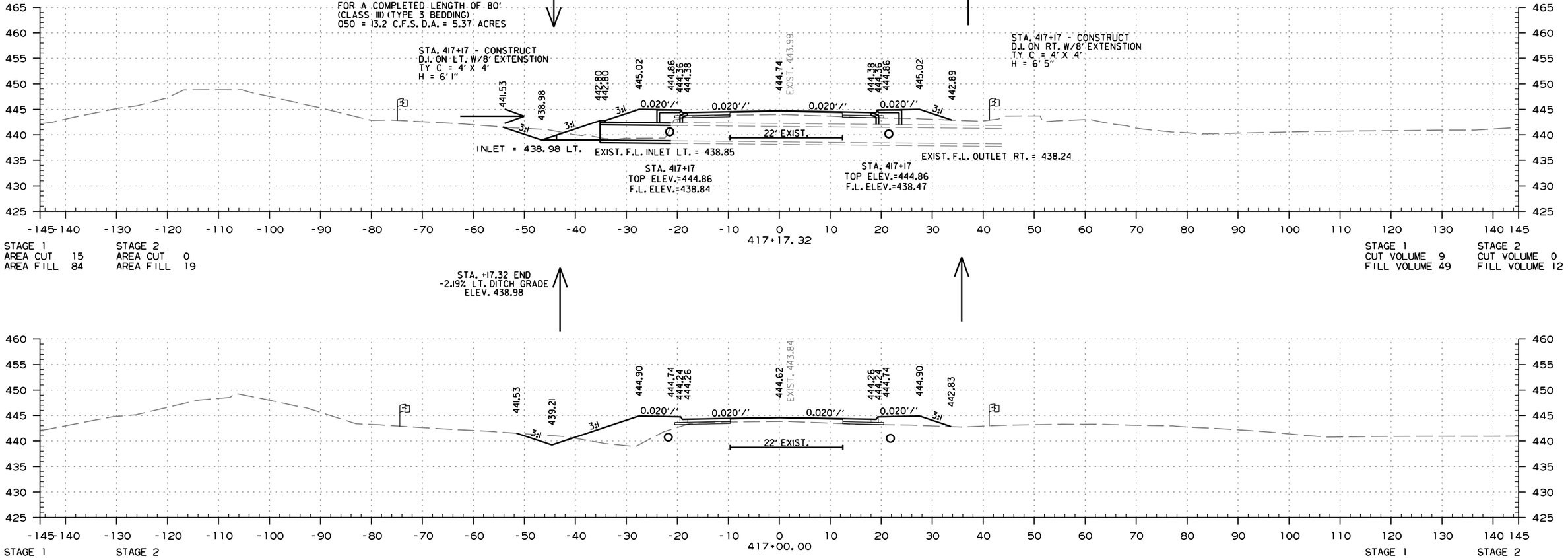
STAGE 2
CUT VOLUME 2
FILL VOLUME 7

HWY. 7
STA. 416+13.54 TO STA. 416+61.00

MM41715 7/30/2020
COPY OF R061309.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	241	260

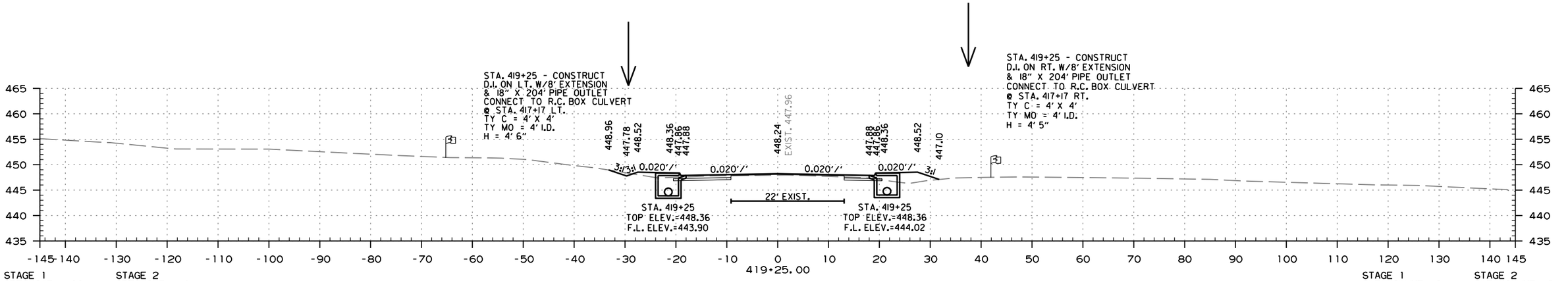
(2) CROSS SECTIONS SITE 2



MM41715 7/30/2020
COPY OF R061309.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	242	260

(2) CROSS SECTIONS SITE 2

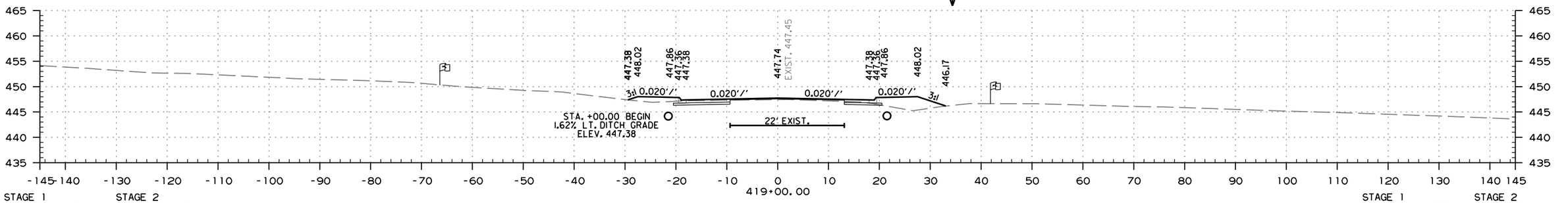


STAGE 1
AREA CUT 10
AREA FILL 7

STAGE 2
AREA CUT 4
AREA FILL 18

STAGE 1
CUT VOLUME 9
FILL VOLUME 7

STAGE 2
CUT VOLUME 3
FILL VOLUME 19

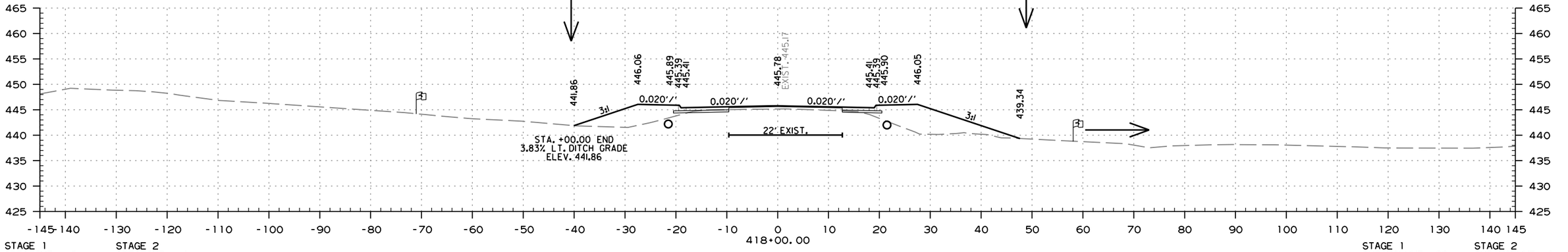


STAGE 1
AREA CUT 9
AREA FILL 8

STAGE 2
AREA CUT 3
AREA FILL 24

STAGE 1
CUT VOLUME 22
FILL VOLUME 114

STAGE 2
CUT VOLUME 7
FILL VOLUME 205



STAGE 1
AREA CUT 3
AREA FILL 53

STAGE 2
AREA CUT 1
AREA FILL 87

STAGE 1
CUT VOLUME 28
FILL VOLUME 210

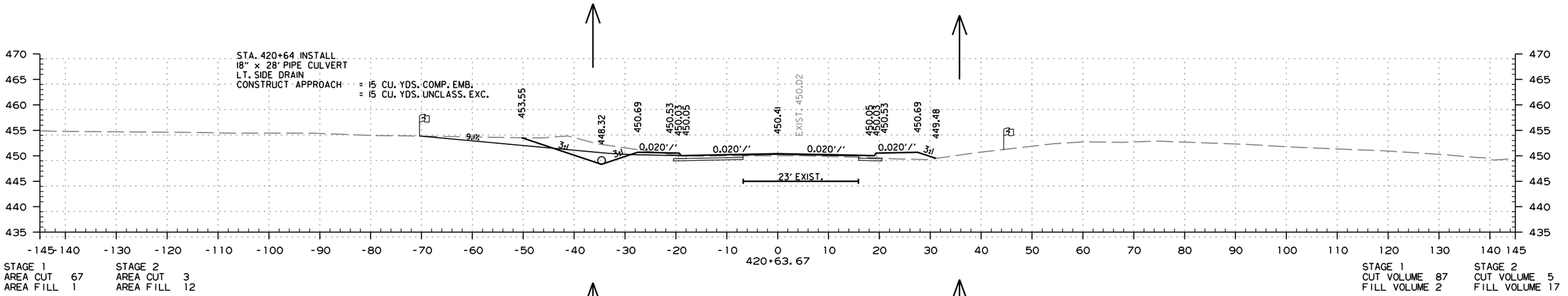
STAGE 2
CUT VOLUME 1
FILL VOLUME 162

HWY. 7
STA. 418+00.00 TO STA. 419+25.00

MM41715 7/30/2020
COPY OF R061309.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	243	260

(2) CROSS SECTIONS SITE 2

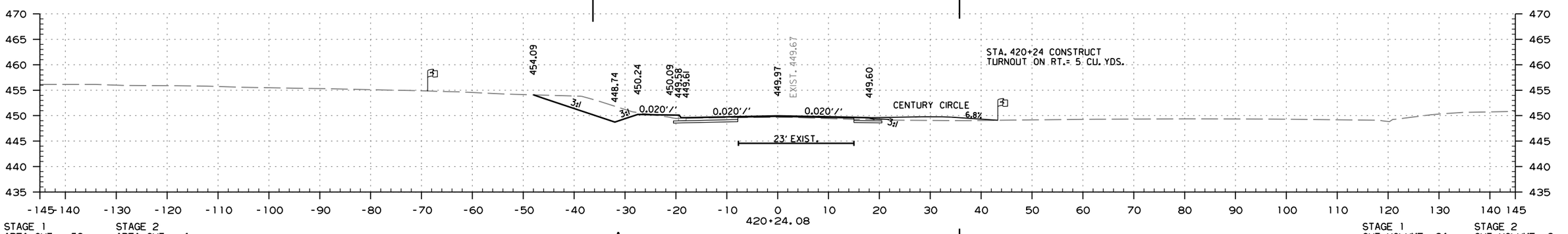


STAGE 1
AREA CUT 67
AREA FILL 1

STAGE 2
AREA CUT 3
AREA FILL 12

STAGE 1
CUT VOLUME 87
FILL VOLUME 2

STAGE 2
CUT VOLUME 5
FILL VOLUME 17

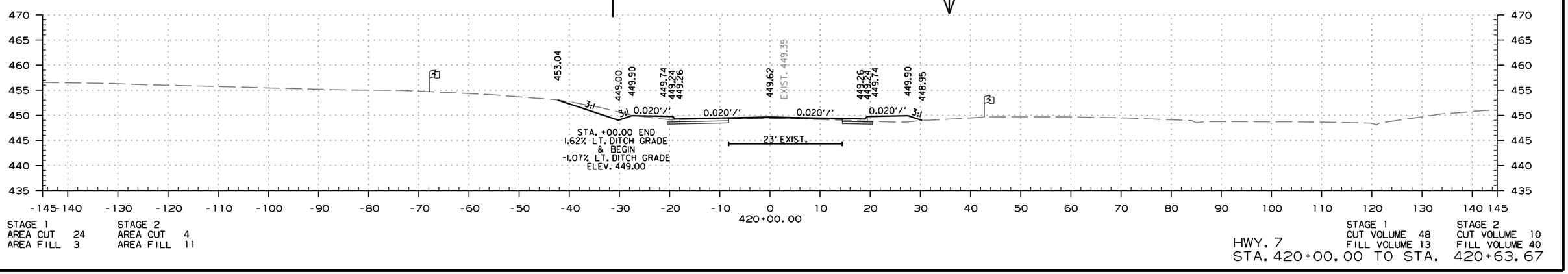


STAGE 1
AREA CUT 53
AREA FILL 2

STAGE 2
AREA CUT 4
AREA FILL 10

STAGE 1
CUT VOLUME 34
FILL VOLUME 2

STAGE 2
CUT VOLUME 3
FILL VOLUME 9



STAGE 1
AREA CUT 24
AREA FILL 3

STAGE 2
AREA CUT 4
AREA FILL 11

STAGE 1
CUT VOLUME 48
FILL VOLUME 13

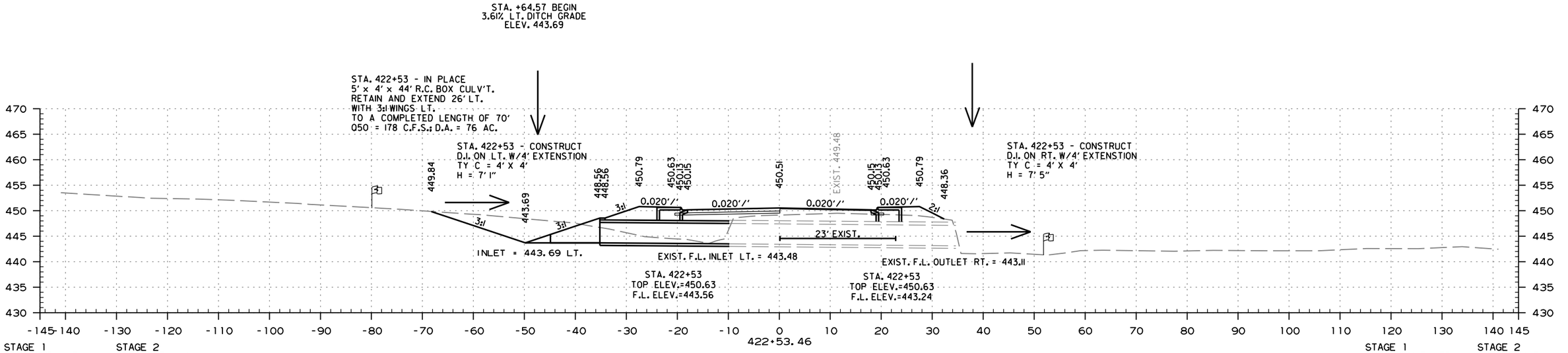
STAGE 2
CUT VOLUME 10
FILL VOLUME 40

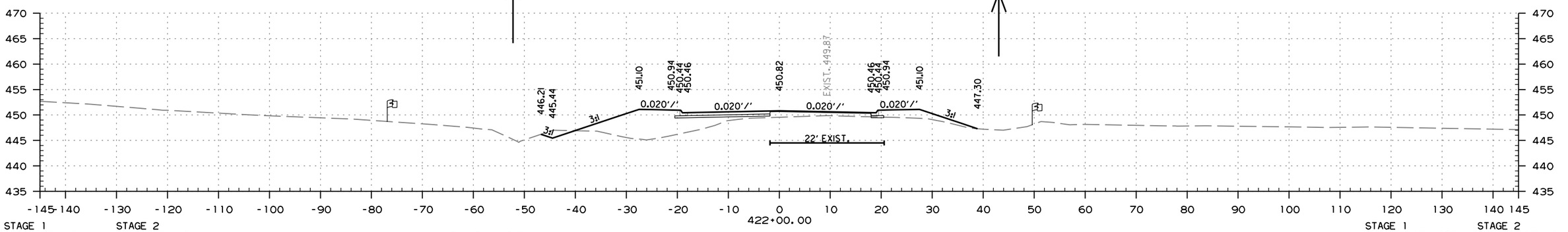
HWY. 7
STA. 420+00.00 TO STA. 420+63.67

MM41715 7/30/2020
COPY OF R061309.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	244	260

(2) CROSS SECTIONS SITE 2





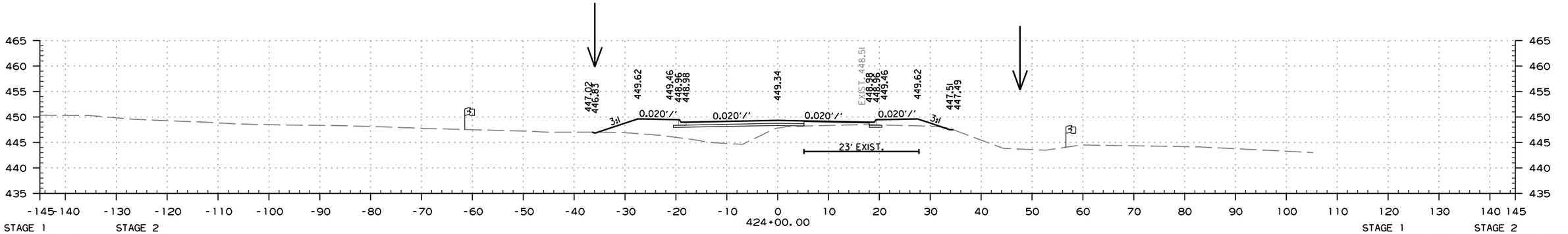
HWY. 7
STA. 421+00.00 TO STA. 422+53.46

MM41715 7/30/2020
COPY OF R061309.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	245	260

(2) CROSS SECTIONS SITE 2



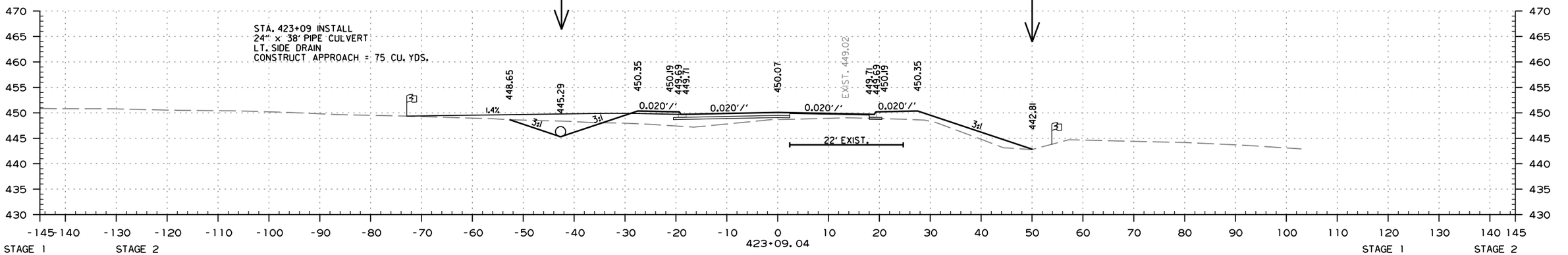
STAGE 1
AREA CUT 0
AREA FILL 87

STAGE 2
AREA CUT 1
AREA FILL 13

STA. +50.00 END
3.61% LT. DITCH GRADE
& BEGIN
0.11% LT. DITCH GRADE
ELEV. 446.77

STAGE 1
CUT VOLUME 47
FILL VOLUME 231

STAGE 2
CUT VOLUME 3
FILL VOLUME 86

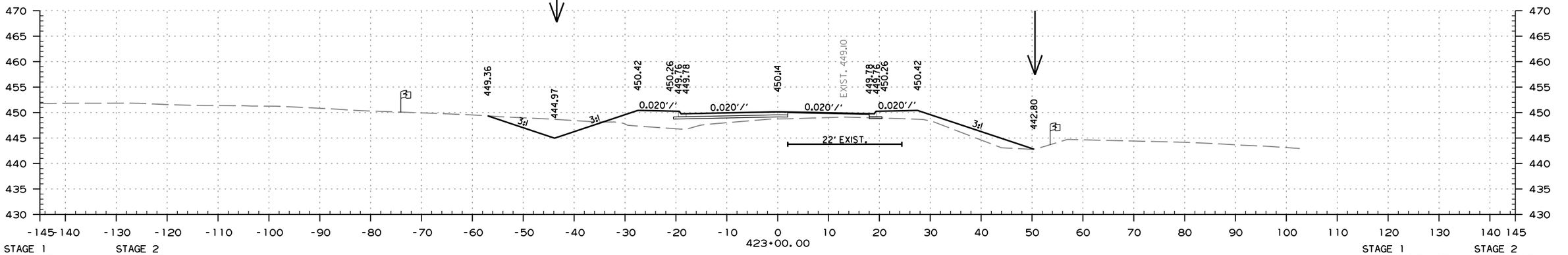


STAGE 1
AREA CUT 28
AREA FILL 50

STAGE 2
AREA CUT 0
AREA FILL 39

STAGE 1
CUT VOLUME 12
FILL VOLUME 18

STAGE 2
CUT VOLUME 0
FILL VOLUME 14



STAGE 1
AREA CUT 41
AREA FILL 56

STAGE 2
AREA CUT 0
AREA FILL 43

HWY. 7
STA. 423+00.00 TO STA. 424+00.00

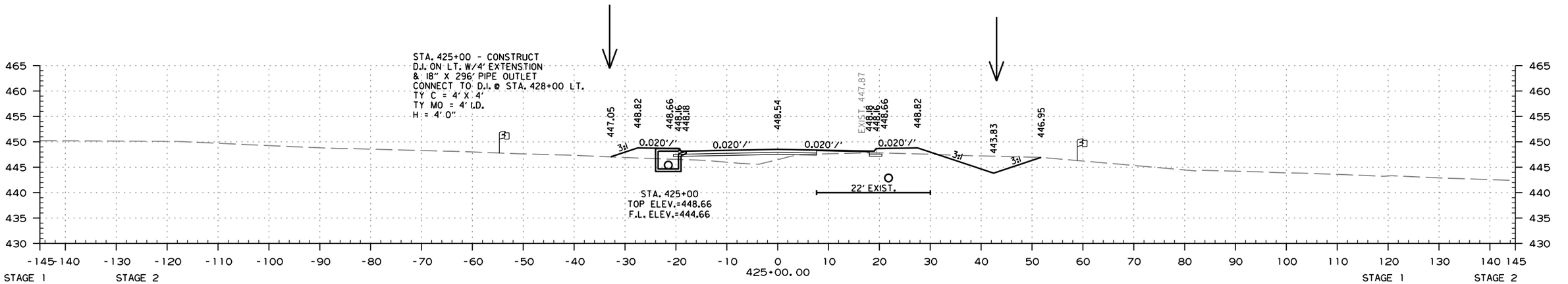
STAGE 1
CUT VOLUME 97
FILL VOLUME 163

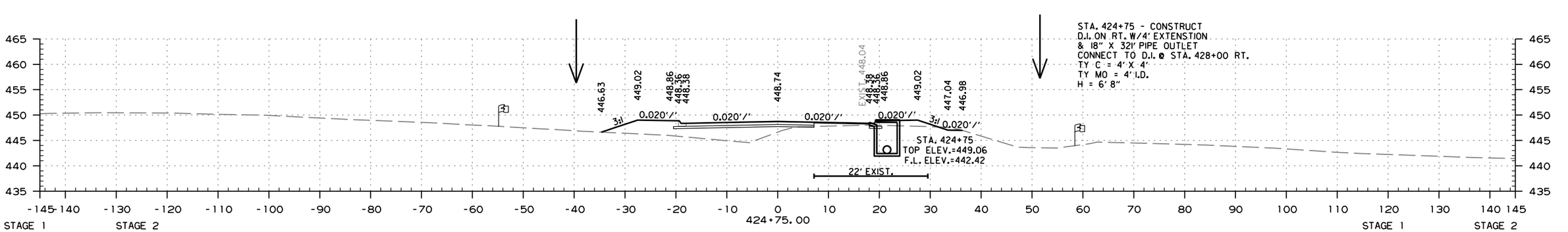
STAGE 2
CUT VOLUME 1
FILL VOLUME 51

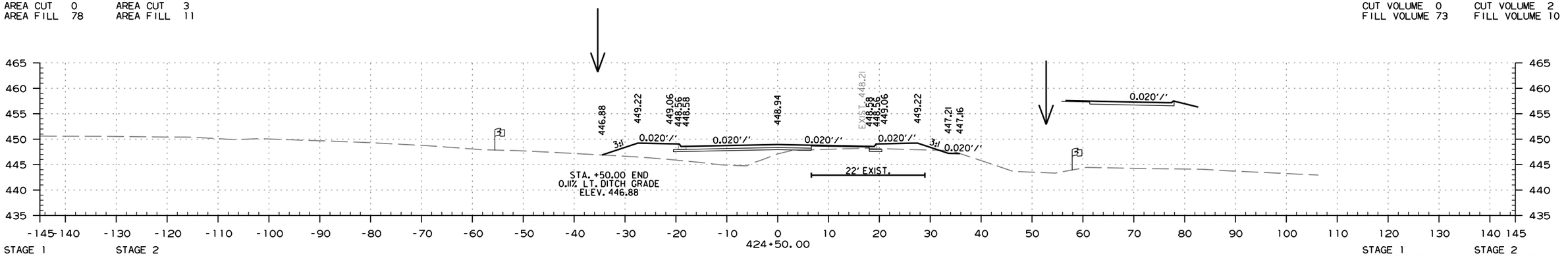
MM41715 7/30/2020
COPY OF R061309.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	246	260

(2) CROSS SECTIONS SITE 2





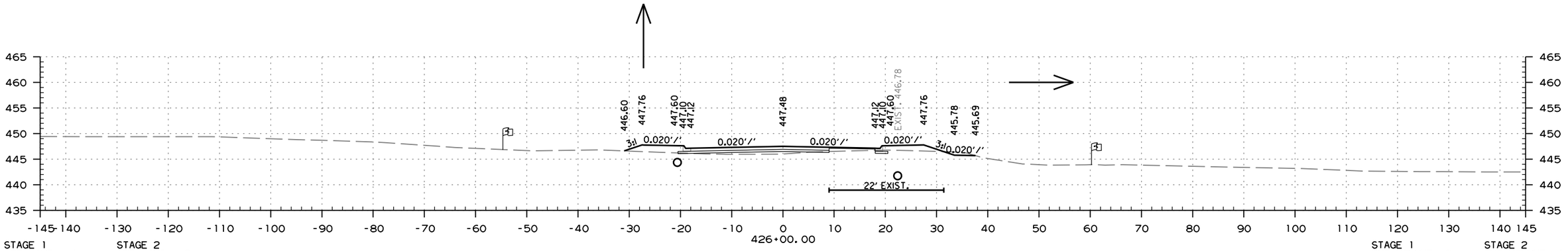


HWY. 7
STA. 424+50.00 TO STA. 425+00.00

MM41715 7/30/2020
COPY OF R061309.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	247	260

(2) CROSS SECTIONS SITE 2

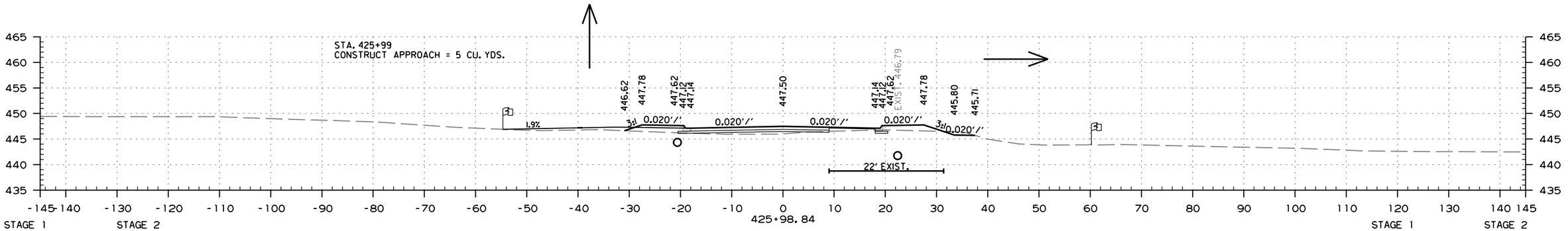


STAGE 1
AREA CUT 1
AREA FILL 20

STAGE 2
AREA CUT 3
AREA FILL 10

STAGE 1
CUT VOLUME 0
FILL VOLUME 1

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

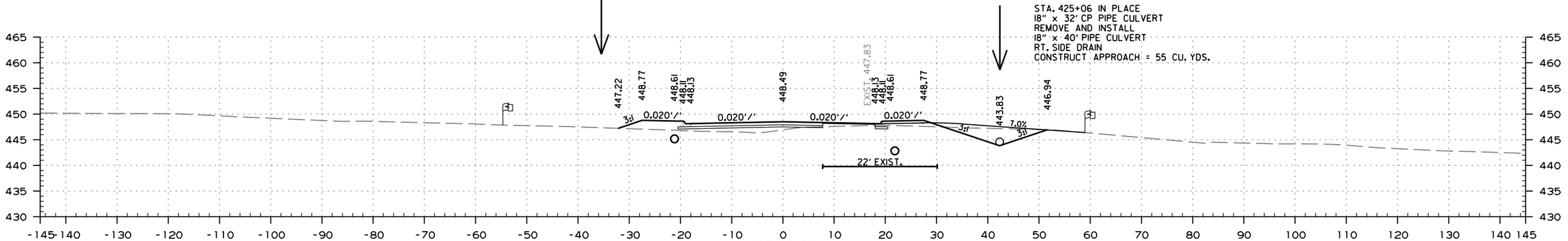


STAGE 1
AREA CUT 1
AREA FILL 20

STAGE 2
AREA CUT 4
AREA FILL 10

STAGE 1
CUT VOLUME 1
FILL VOLUME 91

STAGE 2
CUT VOLUME 68
FILL VOLUME 35



STAGE 1
AREA CUT 0
AREA FILL 33

STAGE 2
AREA CUT 35
AREA FILL 10

STAGE 1
CUT VOLUME 0
FILL VOLUME 63

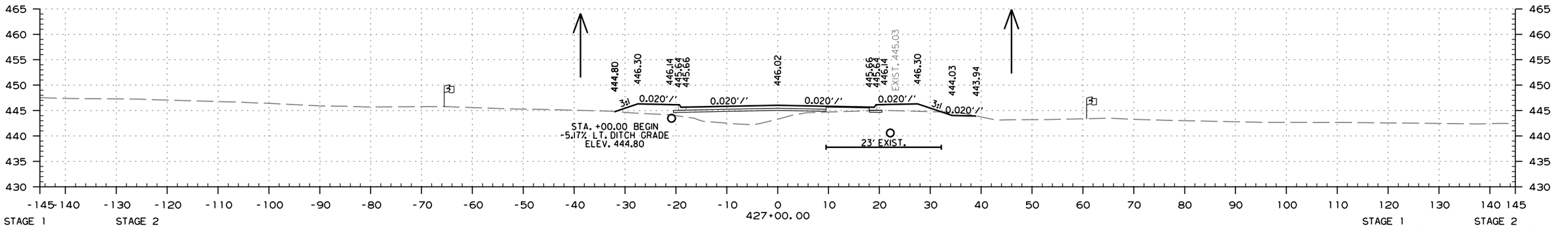
STAGE 2
CUT VOLUME 22
FILL VOLUME 12

HWY. 7
STA. 425+05.56 TO STA. 426+00.00

MM41715 7/30/2020
COPY OF R061309.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	248	260

(2) CROSS SECTIONS SITE 2

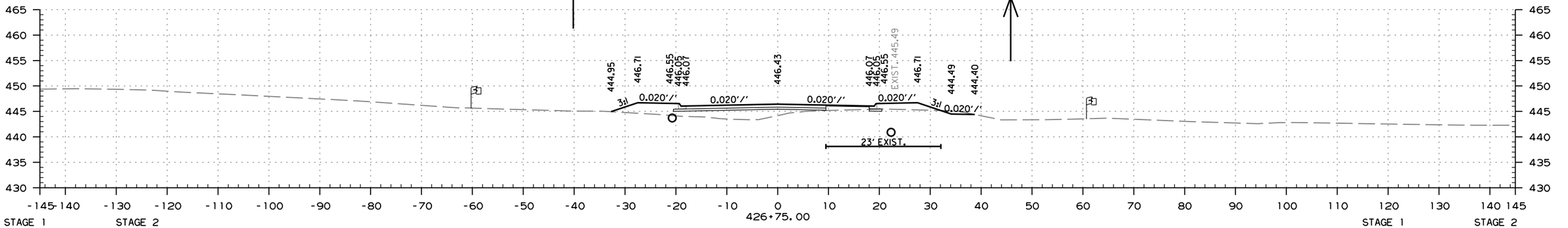


STAGE 1
AREA CUT 0
AREA FILL 65

STAGE 2
AREA CUT 3
AREA FILL 13

STAGE 1
CUT VOLUME 0
FILL VOLUME 57

STAGE 2
CUT VOLUME 3
FILL VOLUME 12

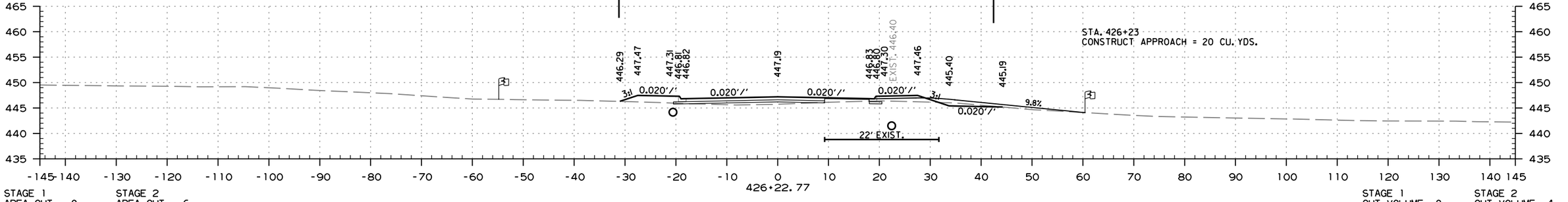


STAGE 1
AREA CUT 0
AREA FILL 58

STAGE 2
AREA CUT 3
AREA FILL 13

STAGE 1
CUT VOLUME 1
FILL VOLUME 108

STAGE 2
CUT VOLUME 9
FILL VOLUME 32



STAGE 1
AREA CUT 0
AREA FILL 20

STAGE 2
AREA CUT 6
AREA FILL 11

STAGE 1
CUT VOLUME 0
FILL VOLUME 17

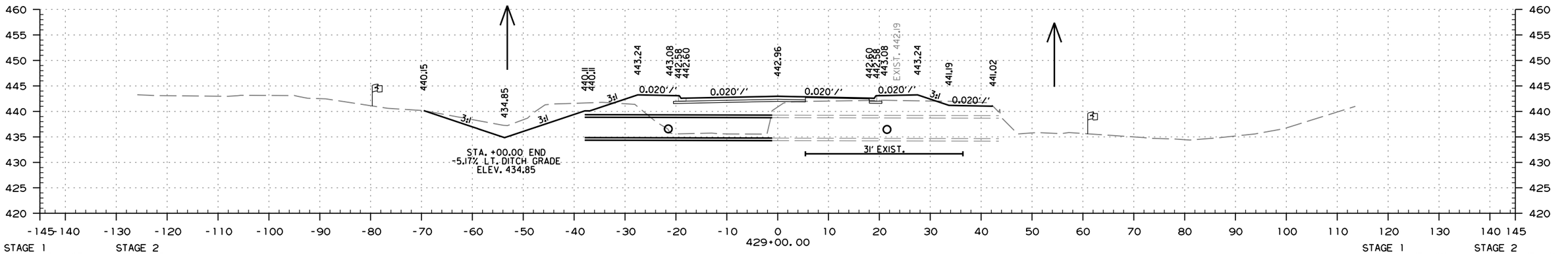
STAGE 2
CUT VOLUME 4
FILL VOLUME 9

HWY. 7
STA. 426+22.77 TO STA. 427+00.00

MM41715 7/30/2020
COPY OF R061309.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	249	260

(2) CROSS SECTIONS SITE 2



STAGE 1
AREA CUT 67
AREA FILL 160

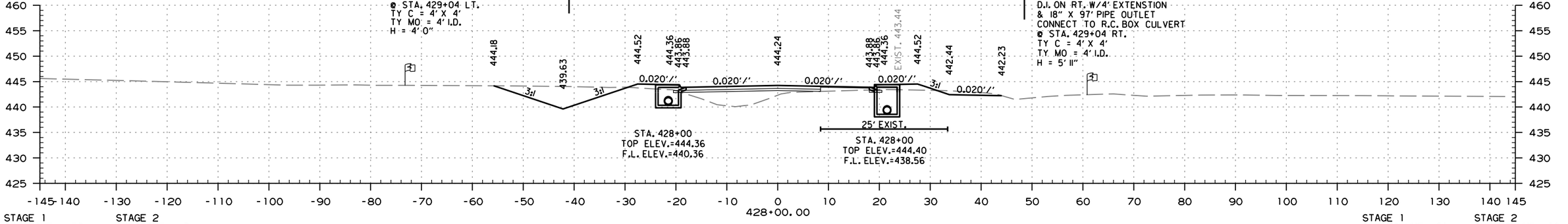
STAGE 2
AREA CUT 8
AREA FILL 10

STAGE 1
CUT VOLUME 230
FILL VOLUME 385

STAGE 2
CUT VOLUME 29
FILL VOLUME 39

STA. 428+00 - CONSTRUCT
D.I. ON LT. W/4' EXTENSION
& 18" X 97' PIPE OUTLET
CONNECT TO R.C. BOX CULVERT
@ STA. 429+04 LT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 4'0"

STA. 428+00 - CONSTRUCT
D.I. ON RT. W/4' EXTENSTION
& 18" X 97' PIPE OUTLET
CONNECT TO R.C. BOX CULVERT
@ STA. 429+04 RT.
TY C = 4' X 4'
TY MO = 4' I.D.
H = 5' 11"



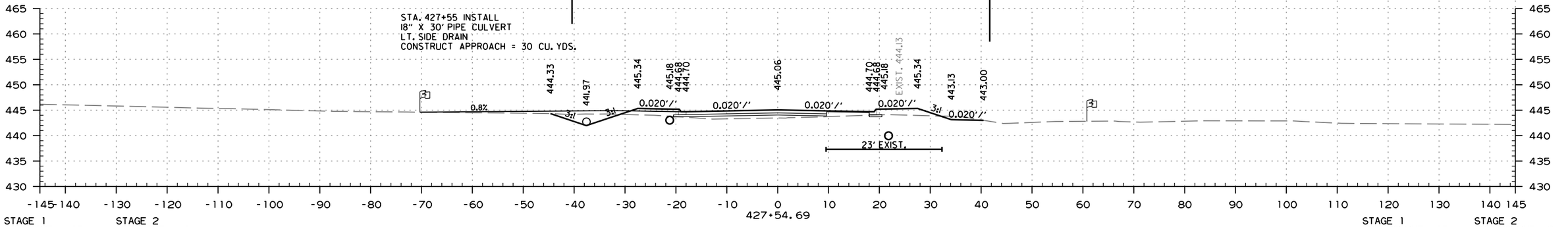
STAGE 1
AREA CUT 58
AREA FILL 48

STAGE 2
AREA CUT 8
AREA FILL 11

STAGE 1
CUT VOLUME 61
FILL VOLUME 61

STAGE 2
CUT VOLUME 10
FILL VOLUME 20

STA. 427+55 INSTALL
18" X 30' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 30 CU. YDS.



STAGE 1
AREA CUT 15
AREA FILL 25

STAGE 2
AREA CUT 4
AREA FILL 13

STAGE 1
CUT VOLUME 15
FILL VOLUME 91

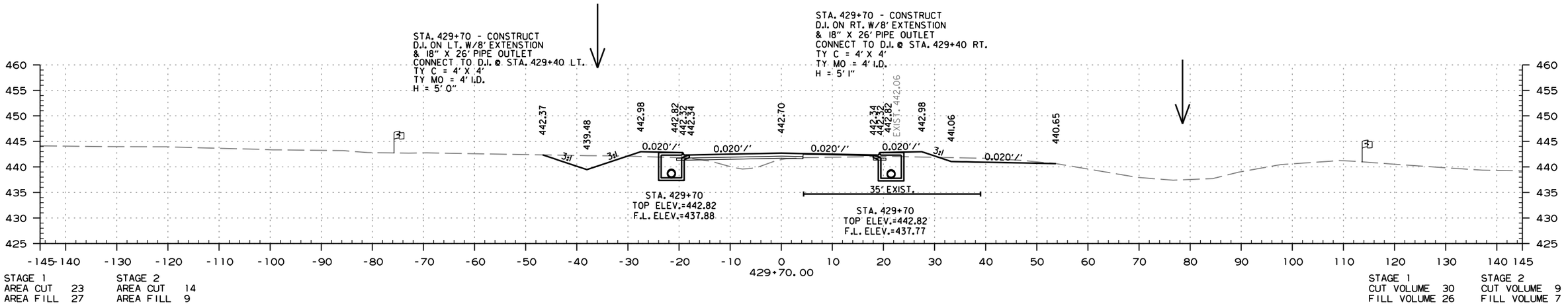
STAGE 2
CUT VOLUME 8
FILL VOLUME 26

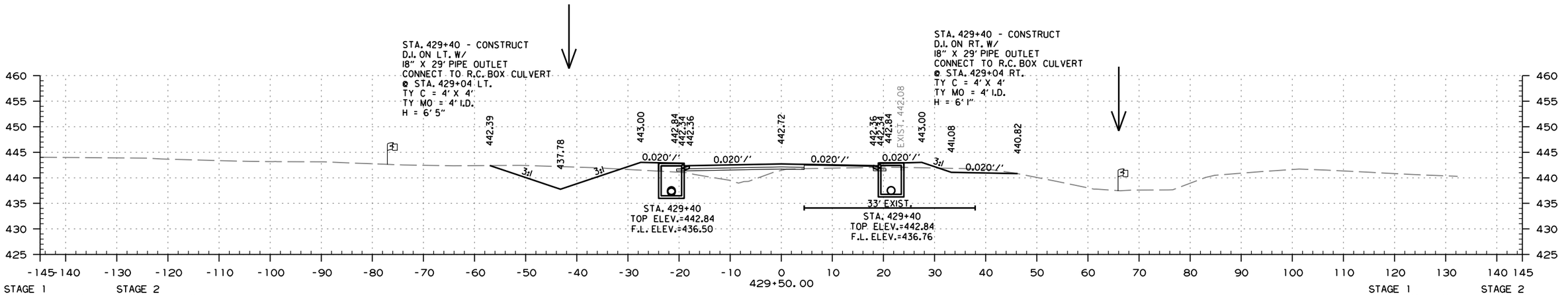
HWY. 7
STA. 427+54.69 TO STA. 429+00.00

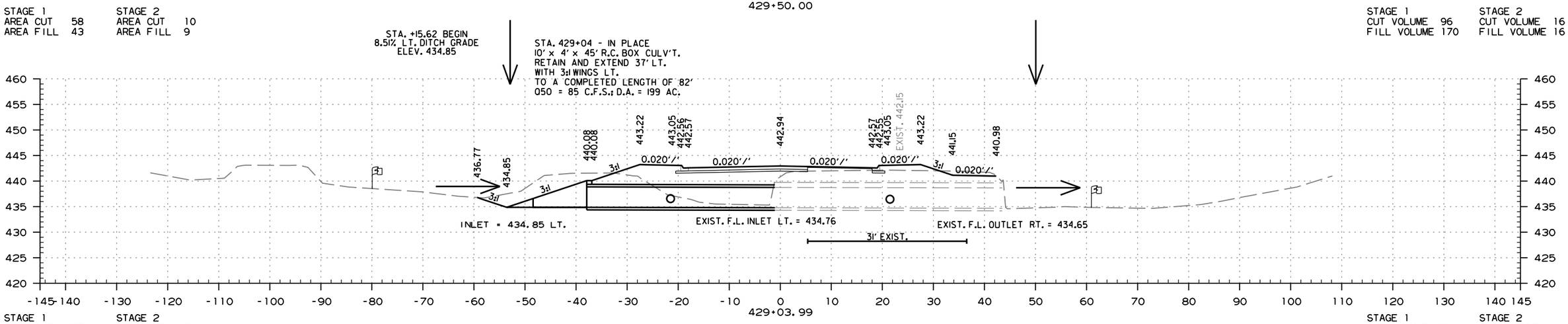
MM41715 7/30/2020
COPY OF R061309.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	250	260

(2) CROSS SECTIONS SITE 2







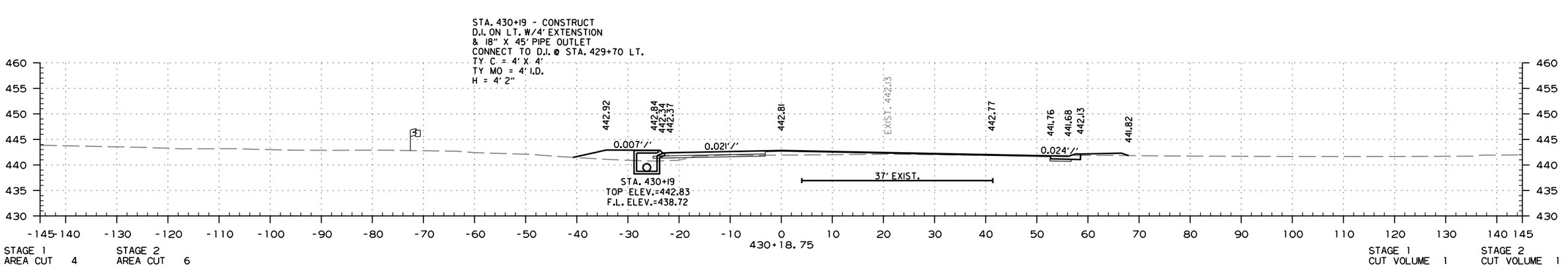
HWY. 7
STA. 429+03.99 TO STA. 429+70.00

MM41715 7/30/2020
COPY OF R061309.DGN

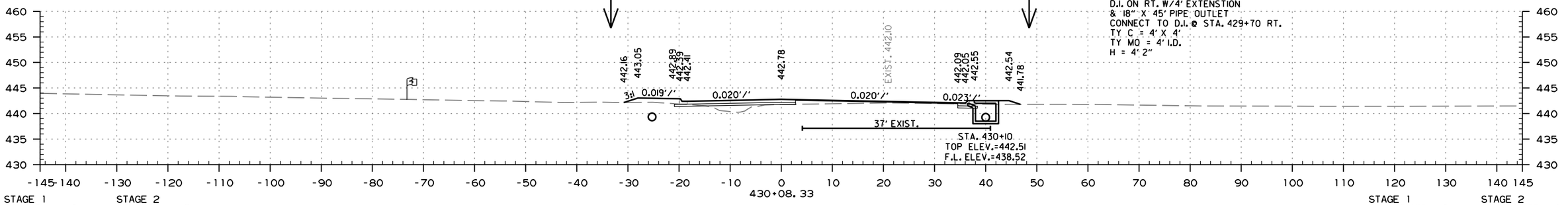
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	251	260

(2) CROSS SECTIONS SITE 2

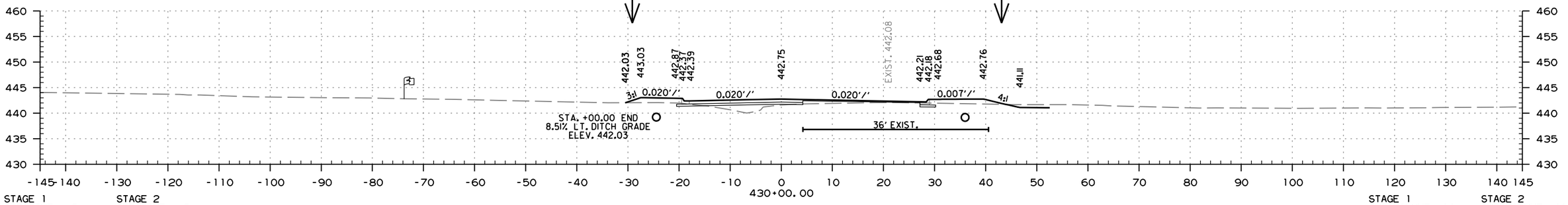
STA. 430+27.70 END JOB 061309
END SITE 2



STAGE 1 AREA CUT 4 AREA FILL 30
STAGE 2 AREA CUT 6 AREA FILL 0
STAGE 1 CUT VOLUME 1 FILL VOLUME 11
STAGE 2 CUT VOLUME 1 FILL VOLUME 1



STAGE 1 AREA CUT 0 AREA FILL 28
STAGE 2 AREA CUT 2 AREA FILL 7
STAGE 1 CUT VOLUME 0 FILL VOLUME 8
STAGE 2 CUT VOLUME 1 FILL VOLUME 3



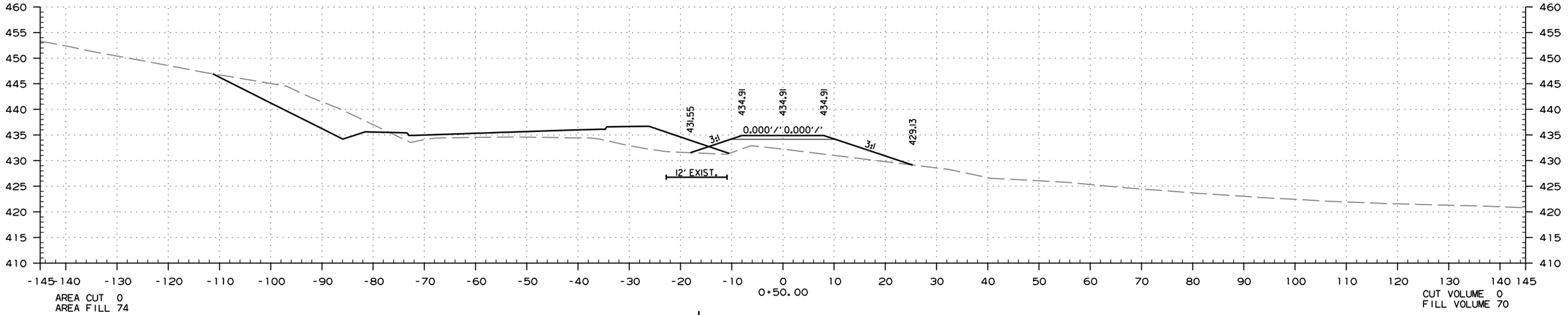
STAGE 1 AREA CUT 2 AREA FILL 21
STAGE 2 AREA CUT 5 AREA FILL 11
STAGE 1 CUT VOLUME 14 FILL VOLUME 26
STAGE 2 CUT VOLUME 11 FILL VOLUME 11

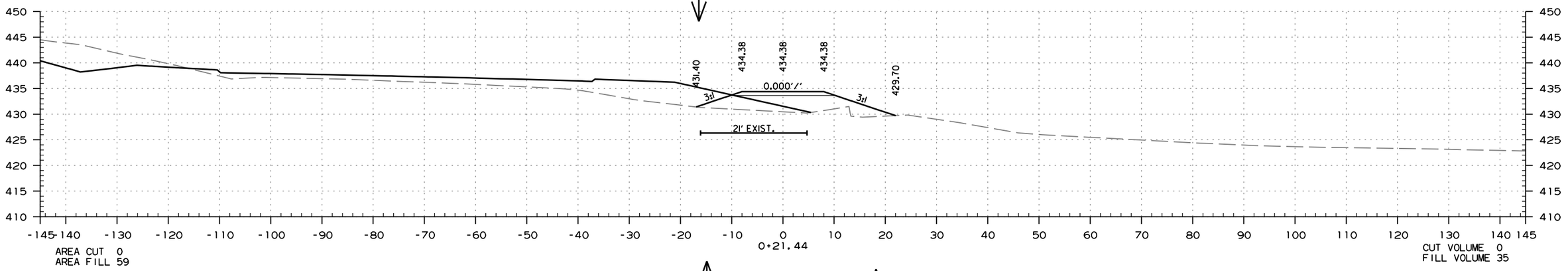
HWY. 7
STA. 430+00.00 TO STA. 430+18.75

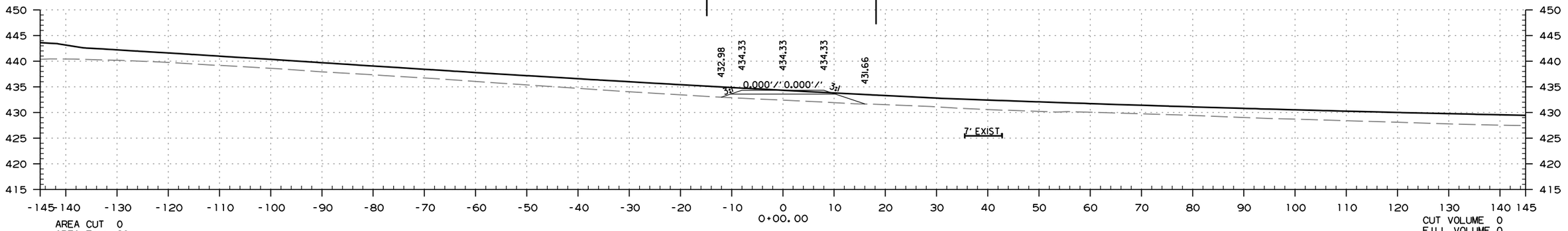
MM41715 7/30/2020
COPY OF R061309.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	252	260

(2) CROSS SECTIONS SITE 2







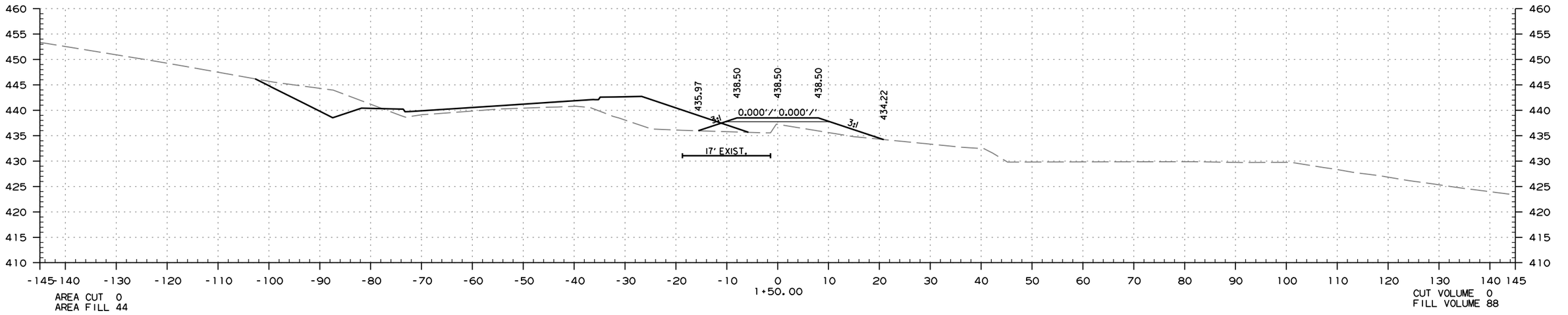
DRIVEWAY AT STA. 396+50
STA. 0+00.00 TO STA. 0+50.00

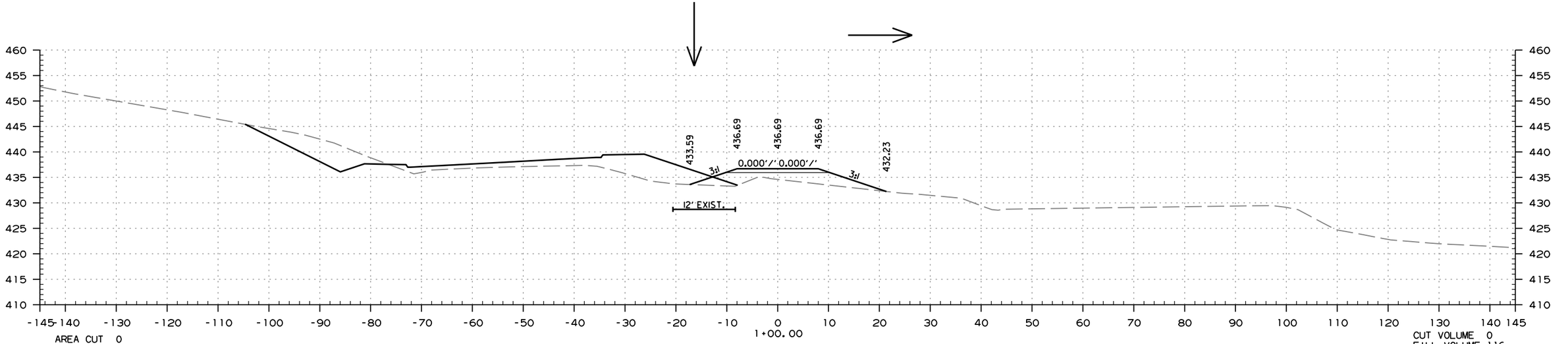
MM41715 7/30/2020
COPY OF R061309.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	253	260

(2) CROSS SECTIONS SITE 2





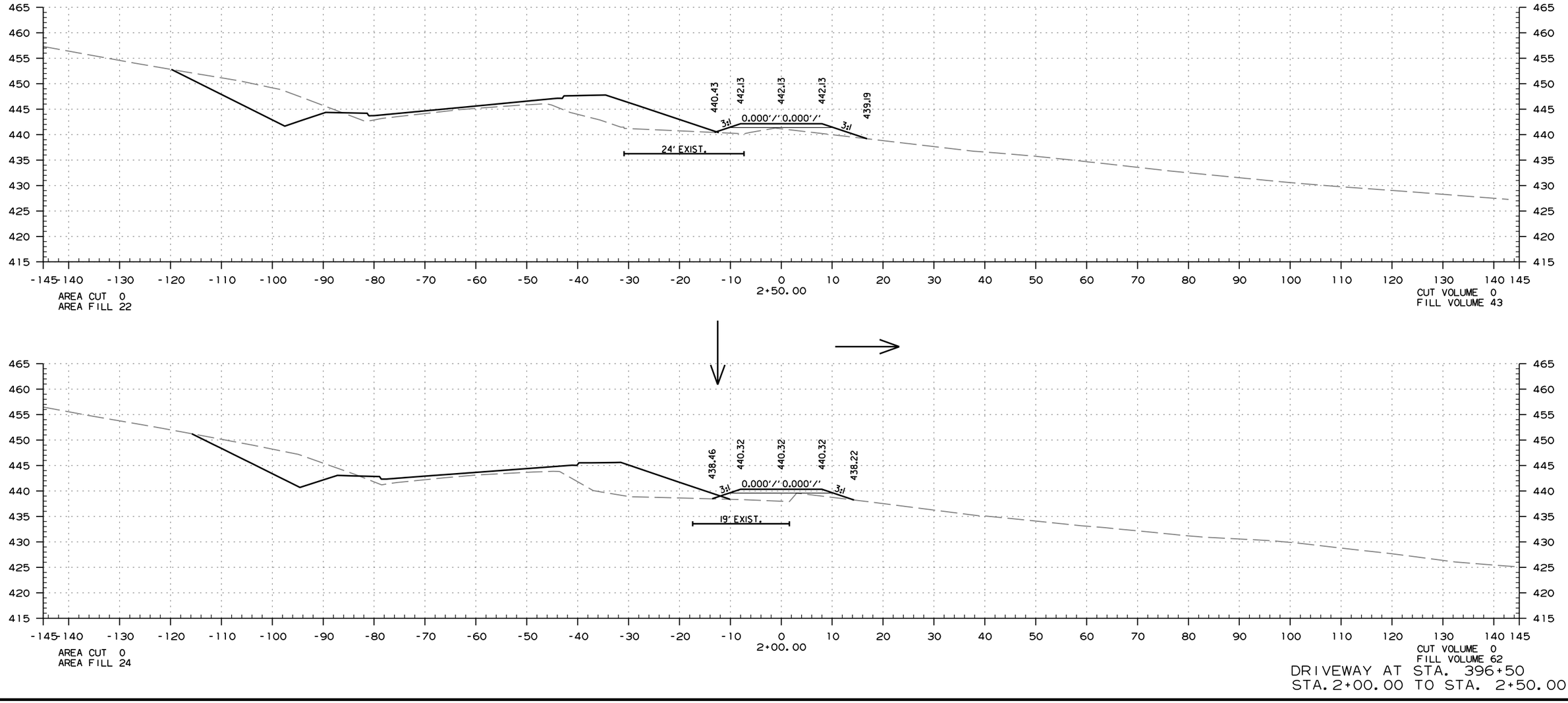
DRIVEWAY AT STA. 396+50
STA. 1+00.00 TO STA. 1+50.00

MM41715 7/30/2020
COPY OF R061309.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	254	260

(2) CROSS SECTIONS SITE 2



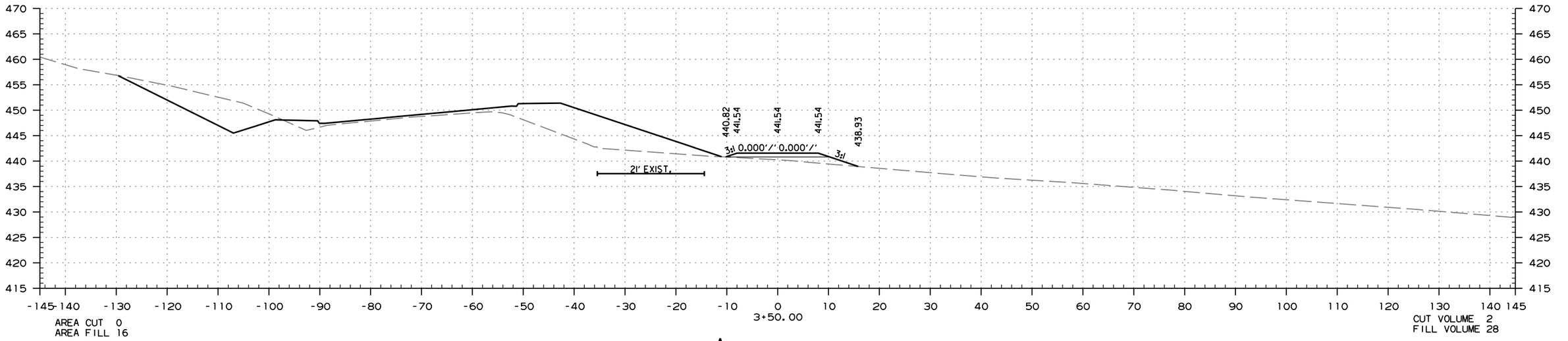
DRIVEWAY AT STA. 396+50
STA. 2+00.00 TO STA. 2+50.00

MM41715 7/30/2020
COPY OF R061309.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

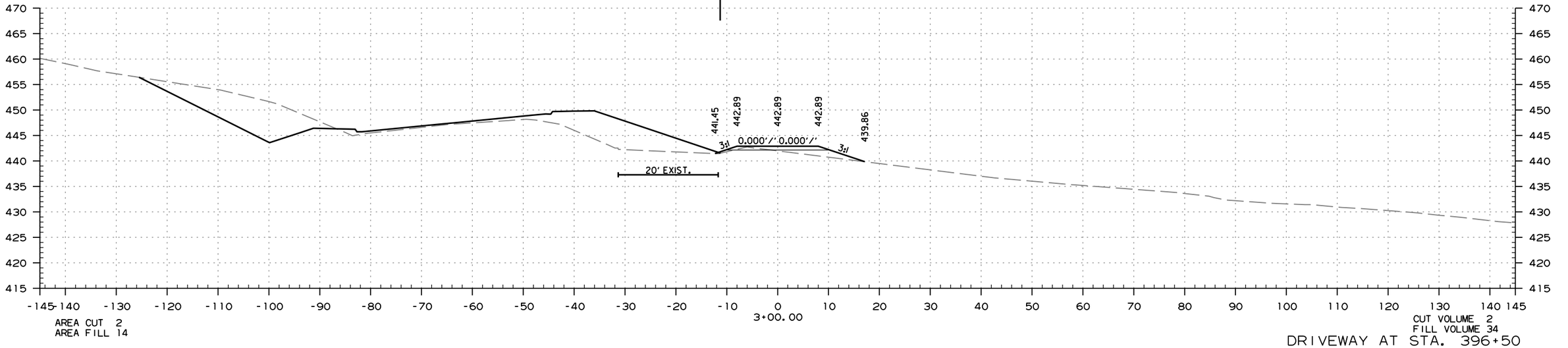
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	255	260

(2) CROSS SECTIONS SITE 2



AREA CUT 0
AREA FILL 16

CUT VOLUME 2
FILL VOLUME 28



AREA CUT 2
AREA FILL 14

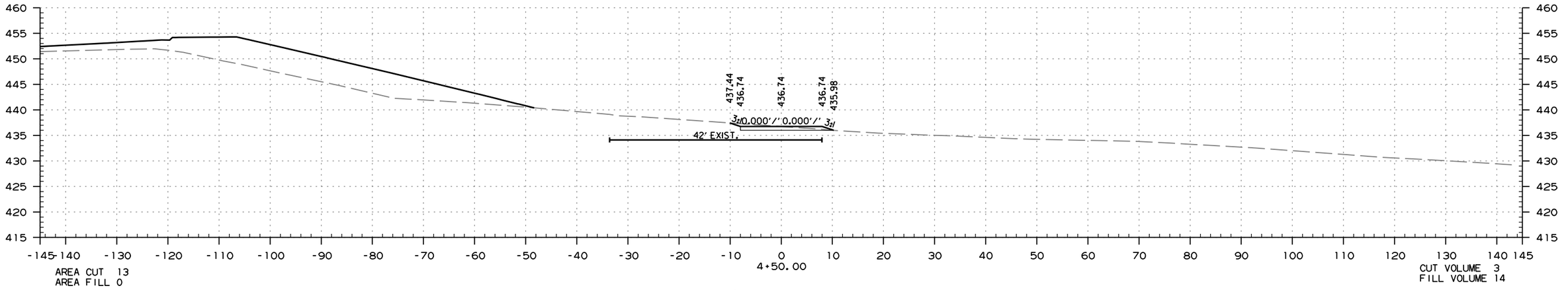
CUT VOLUME 2
FILL VOLUME 34

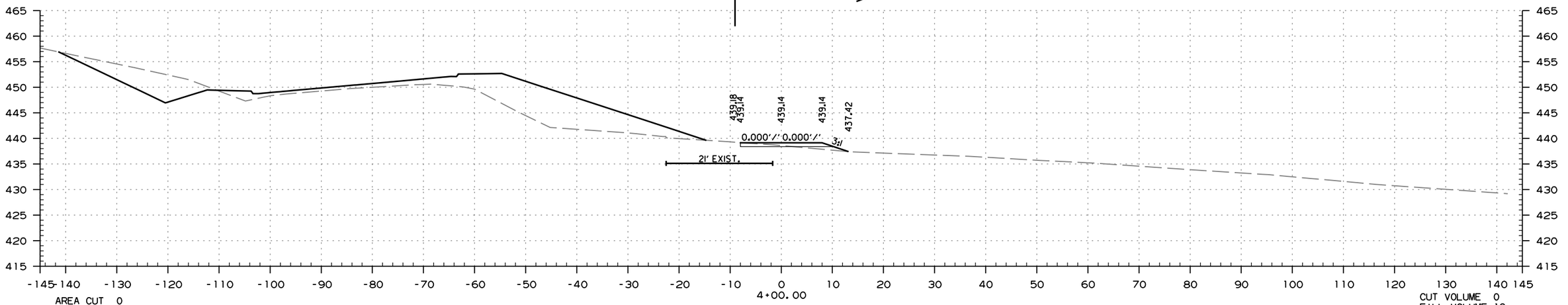
DRIVEWAY AT STA. 396+50
STA. 3+00.00 TO STA. 3+50.00

MM41715 7/30/2020
COPY OF R061309.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
07-30-20				6	ARK.			
				JOB NO.		061309	256	260

(2) CROSS SECTIONS SITE 2





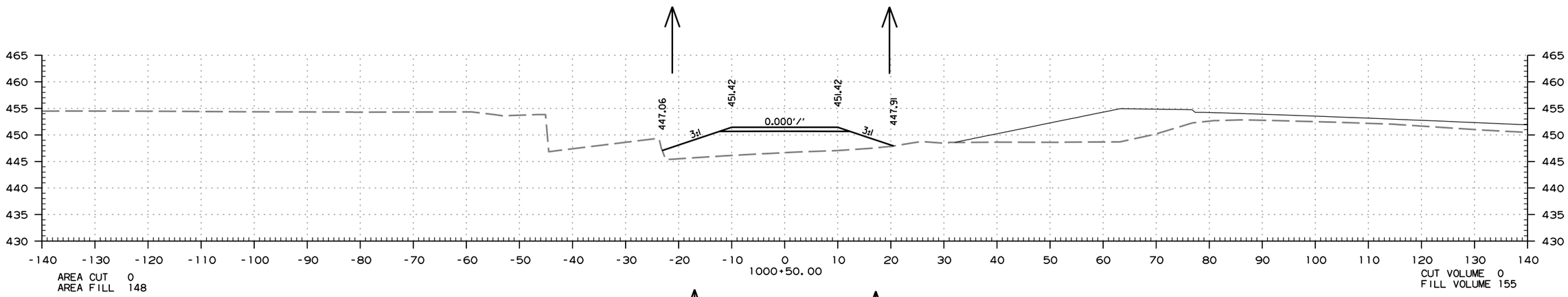
DRIVEWAY AT STA. 396+50
STA. 4+00.00 TO STA. 4+50.00

MM41715 7/30/2020
COPY OF R061309.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	257	260

(2) CROSS SECTIONS SITE 2



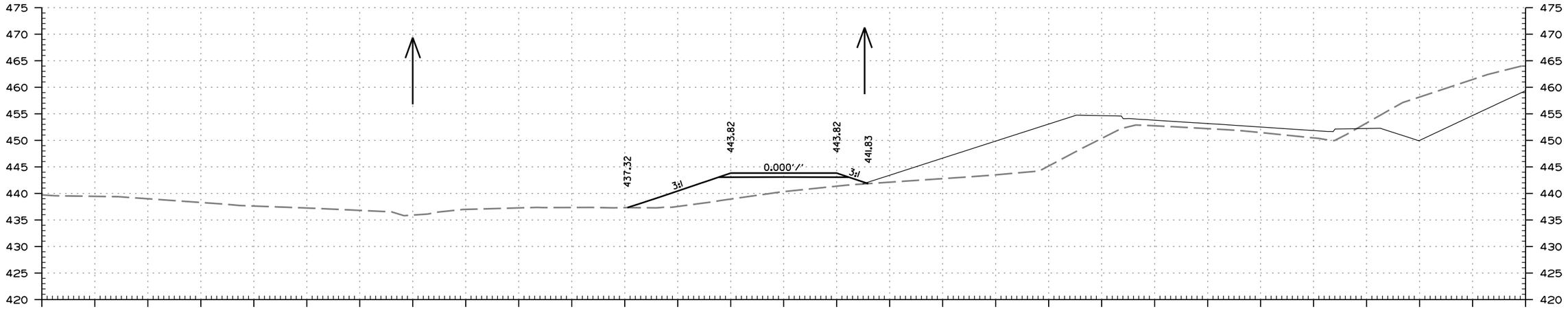
MASSEY RD.
STA. 1000+00.00 TO STA. 1000+50.00

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

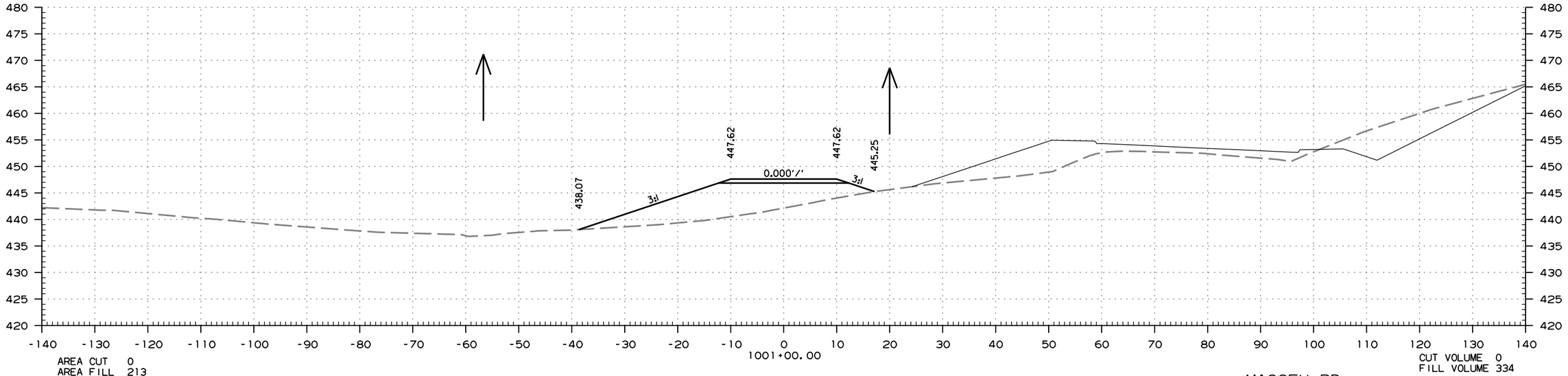
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	258	260

(2) CROSS SECTIONS SITE 2



AREA CUT 0
AREA FILL 116

CUT VOLUME 0
FILL VOLUME 304



AREA CUT 0
AREA FILL 213

CUT VOLUME 0
FILL VOLUME 334

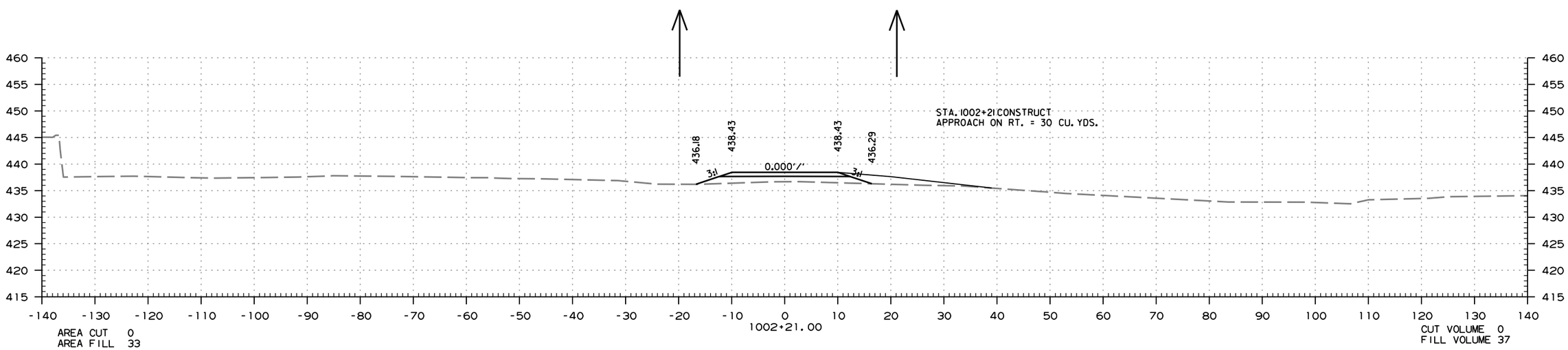
MASSEY RD.
STA. 1001+00.00 TO STA. 1001+50.00

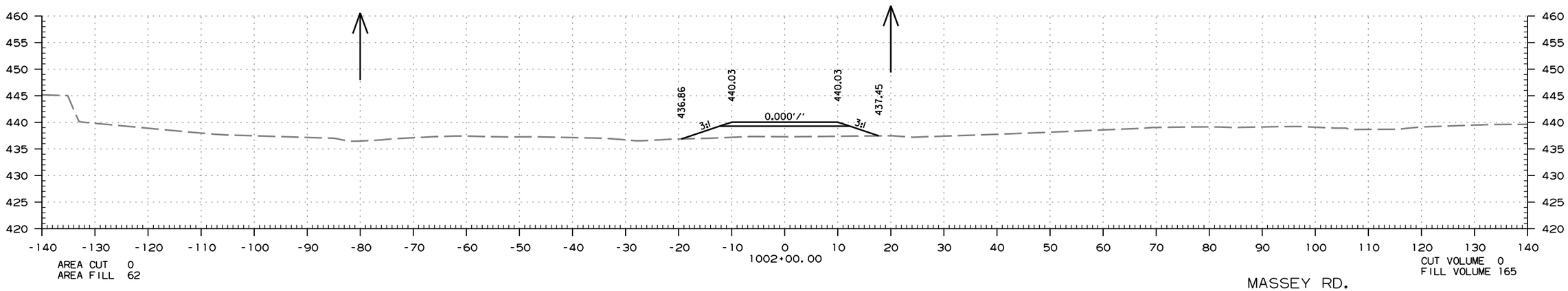
COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	259	260

(2) CROSS SECTIONS SITE 2





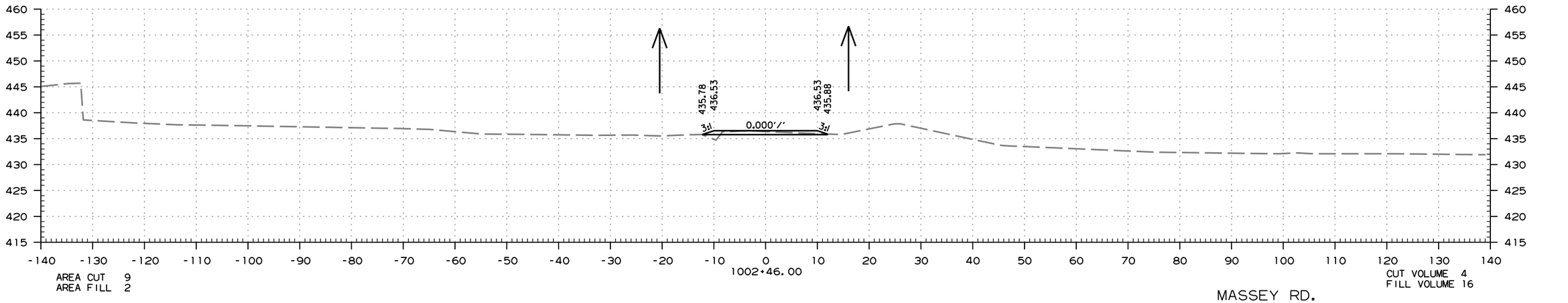
MASSEY RD.
STA. 1002+00.00 TO STA. 1002+21.00

COPY OF R061309.DGN 7/30/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
07-30-20			

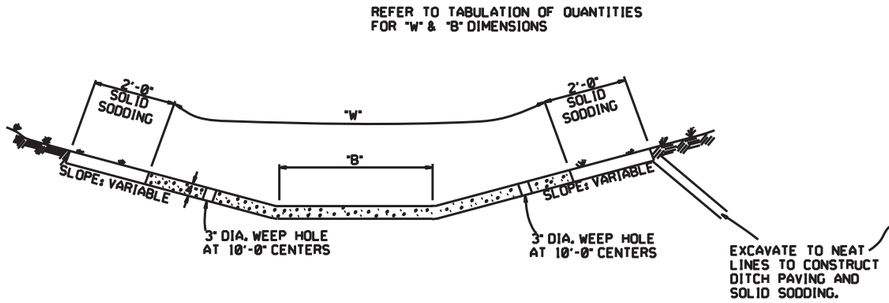
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061309	260	260

(2) CROSS SECTIONS SITE 2

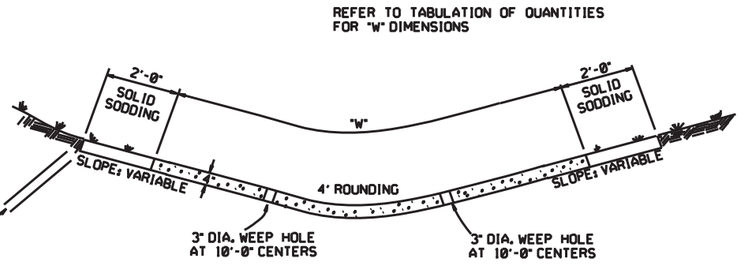


MASSEY RD.
STA. 1002+46.00 TO STA. 1002+46.00

COPY OF R061309.DGN 7/30/2020

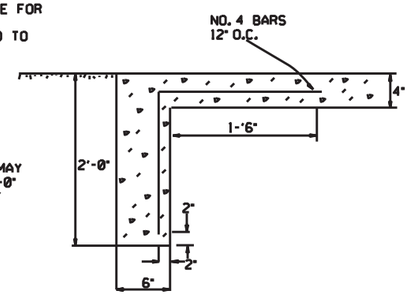


TYPE A



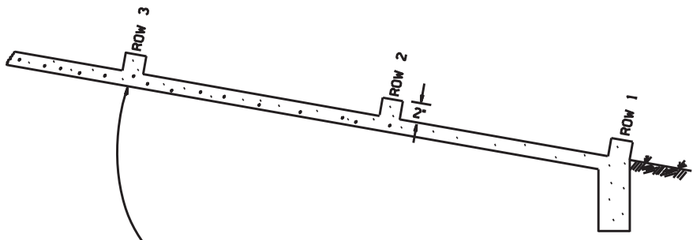
TYPE B

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



TOE WALL DETAIL FOR CONCRETE DITCH PAVING

TOE WALL DEPTH MAY BE ALTERED TO 1'-0" WHEN DIRECTED BY THE ENGINEER IN ROCK EXCAVATION



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 INCLUDED 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.

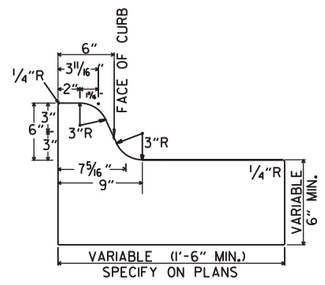
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45° INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

DATE	REVISION	DATE FILM'D
12-8-16	CORRECTED ENERGY DISSIPATOR DRAWING AND NOTE	
11-17-10	ADDED GENERAL NOTE	
6-2-94	ADDED GENERAL NOTE ABOUT SOLID SODDING	
11-30-8	ELIMINATED MIN. ROWS OF ELEMENTS	111-30-89
7-15-88	REVISED DISSIPATOR NOTE	653-7-15-88
4-3-87	REVISED ENERGY DISSIPATOR	671-4-3-87
1-9-87	MODIFIED NOTE ON ENERGY DISS.	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

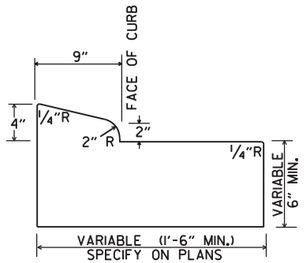
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

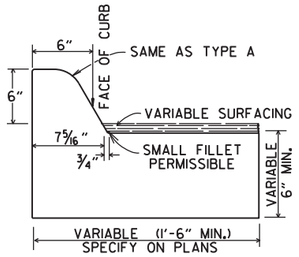
STANDARD DRAWING CDP-1



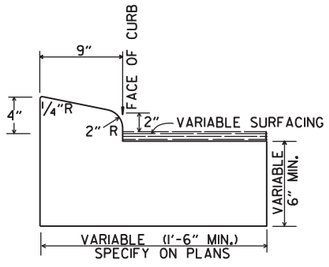
TYPE A



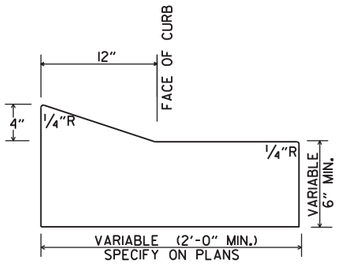
TYPE B-1



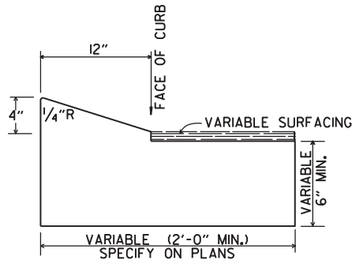
TYPE C



TYPE B-2

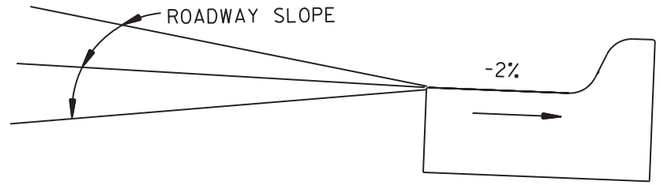


TYPE E-1



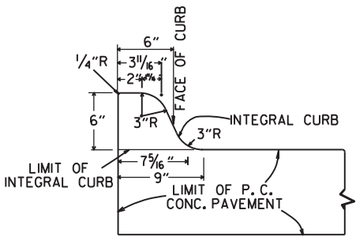
TYPE E-2

CONCRETE COMBINATION CURB AND GUTTER

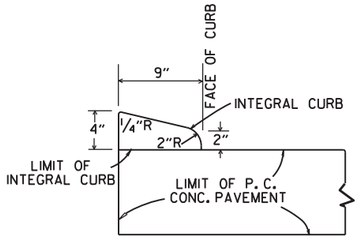


DETAIL OF GUTTER SLOPE

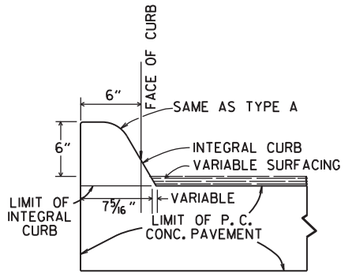
GUTTER SHALL BE CONSTRUCTED ON 2% SLOPE AWAY FROM ROADWAY, REGARDLESS OF ROADWAY SLOPE.



TYPE A

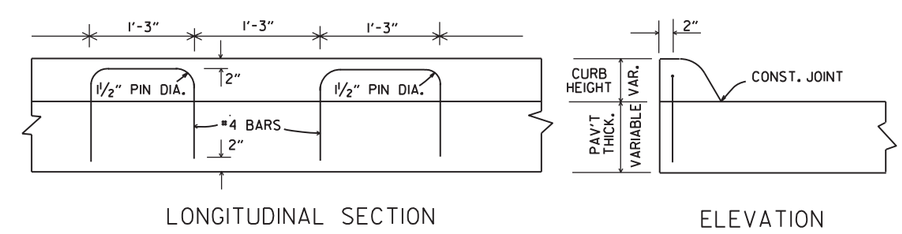


TYPE B



TYPE C

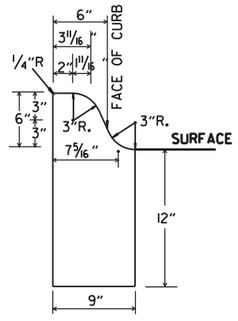
INTEGRAL CURB



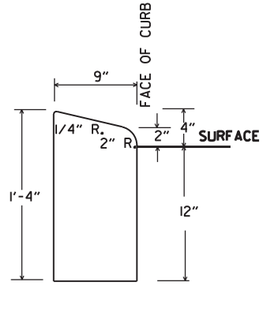
LONGITUDINAL SECTION

ELEVATION

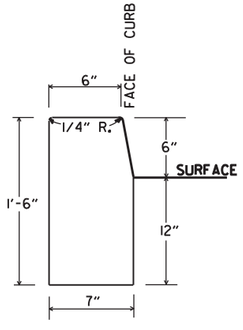
ALTERNATE CONSTRUCTION METHOD FOR INTEGRAL CURB



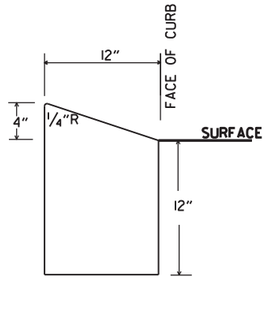
TYPE A



TYPE B

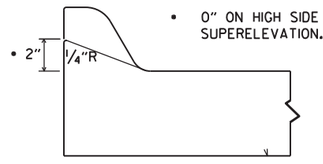


TYPE D



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.

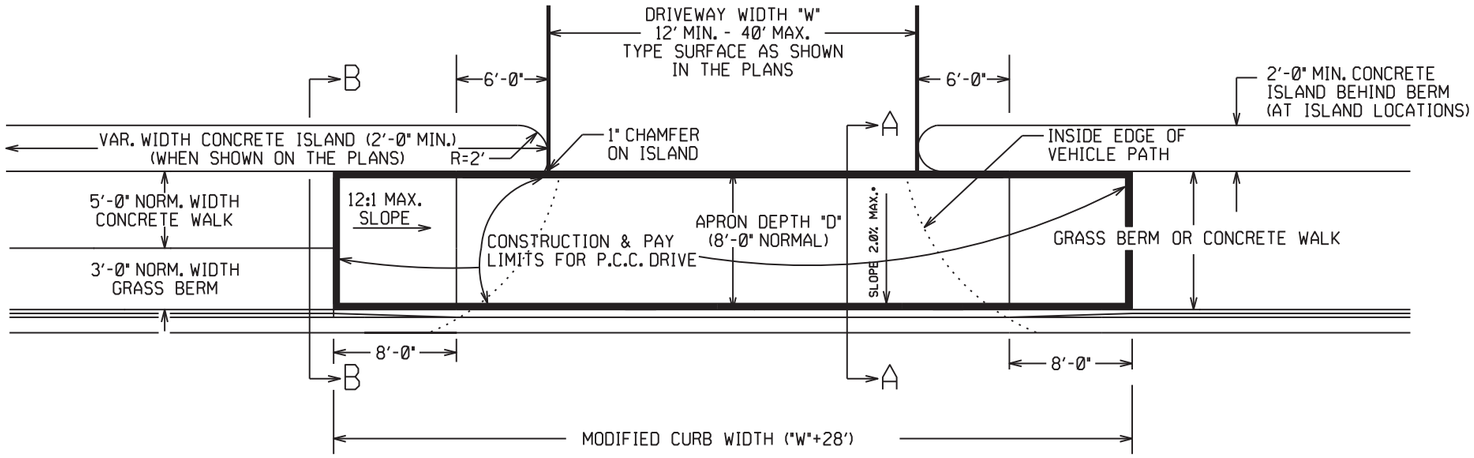
DETAILS OF MODIFIED CURB

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 I	11-30-89
7-15-88	REVISED MODIFIED CURB	630-7-15-88
11-1-73	REVISED MODIFIED CURB	500-11-1-73
10-2-72	REVISED AND REDRAWN	512-10-2-72

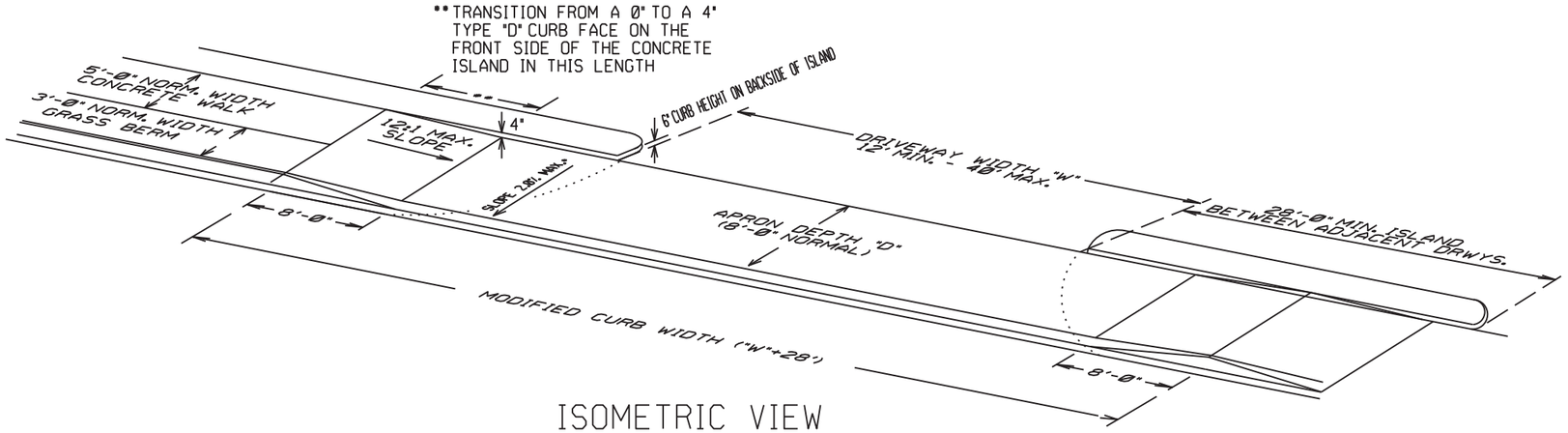
ARKANSAS STATE HIGHWAY COMMISSION

CURBING DETAILS

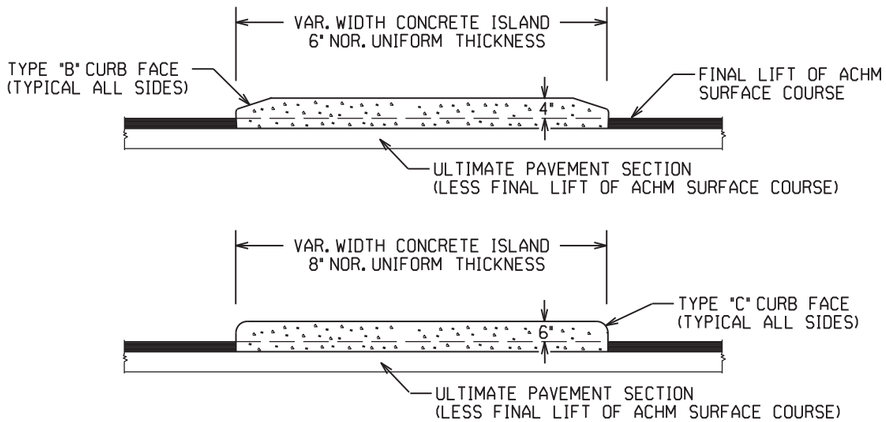
STANDARD DRAWING CG-1



PLAN VIEW

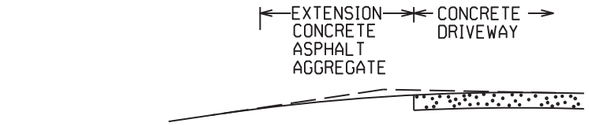


ISOMETRIC VIEW



CURBED ISLANDS FOR CHANNELIZATION

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



EXTENSION TYPICAL SECTIONS

1: CONCRETE - 6" P.C. CONCRETE DRIVEWAY

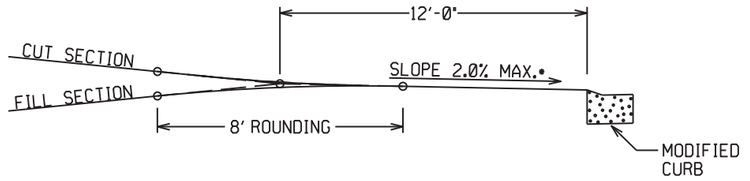
2: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
4" ACHM BINDER COURSE (1") OR
4" ACHM BASE COURSE (1-1/2")

3: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
7" AGGREGATE BASE COURSE

4: AGGREGATE - 6" AGGREGATE BASE COURSE

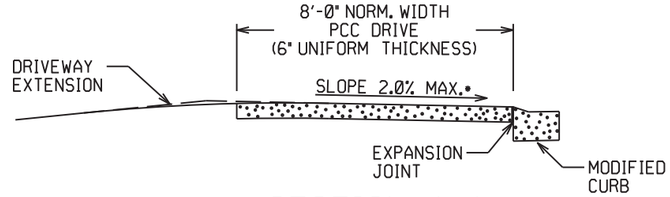
THE TYPE OF EXTENSION SHALL BE AS SHOWN IN THE PLANS. THE CONTRACTOR MAY, WITH THE APPROVAL OF THE ENGINEER, SUBSTITUTE A LOWER NUMBERED TYPE OF EXTENSION IN LIEU OF THE TYPE SPECIFIED IN THE PLANS, BUT AT NO ADDITIONAL COST TO THE DEPARTMENT.

DRIVEWAY EXTENSION DETAILS

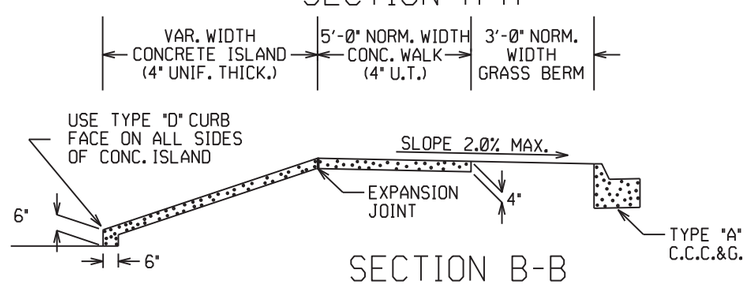


DRIVEWAY VERTICAL ALIGNMENT DETAILS

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



SECTION A-A



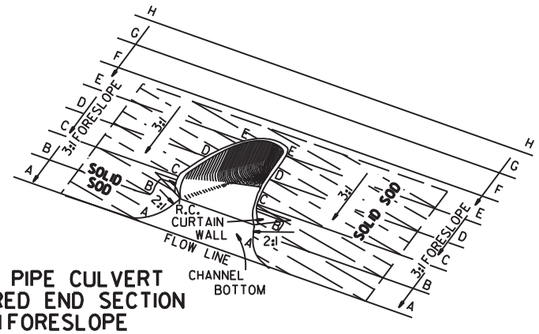
SECTION B-B
CURBED ISLAND BEHIND WALK

DATE REV	DATE FILMED	DESCRIPTION
11-07-19		REVISED WALK DETAILS
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

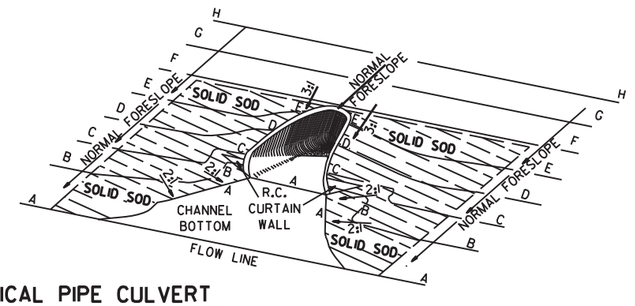
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DRIVEWAYS & ISLANDS

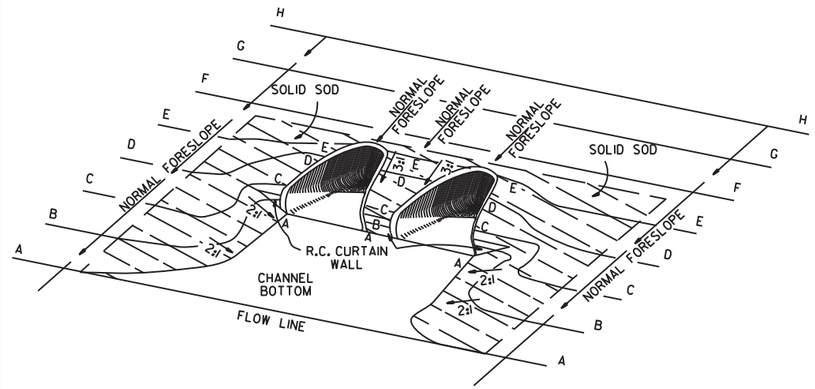
STANDARD DRAWING DR-1



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

R.C. CURTAIN WALL
DIMENSIONS & QUANTITIES

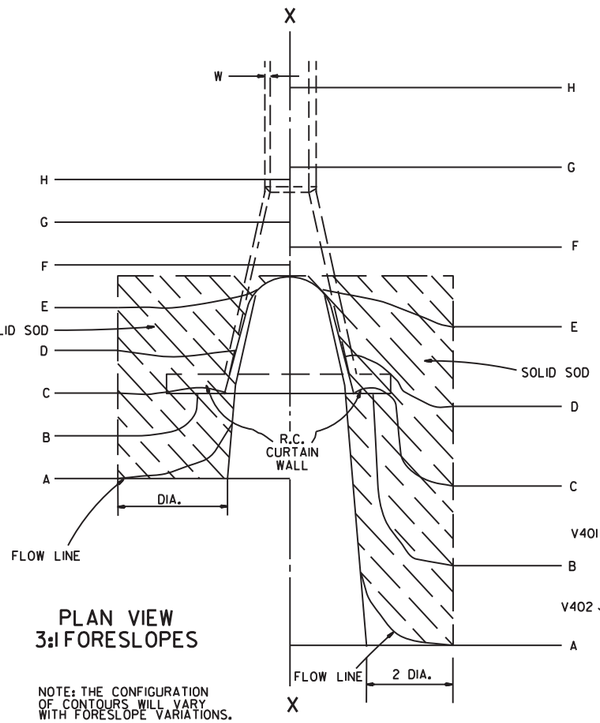
PIPE DIA.	H_1	L_1	L	L (DBL.)/2	SINGLE R.C.P.C.		DOUBLE R.C.P.C.	
					CONC.	REINF. STEEL	CONC.	REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	39.0	0.67	59.0
36"	1'-7"	6'-8"	13'-0"	10'-6"	0.58	52.6	0.83	73.9
42"	2'-1½"	7'-3"	15'-6"	12'-0"	0.82	77.1	1.10	100.7
48"	2'-5"	7'-10"	17'-0"	13'-0"	0.98	94.9	1.27	120.4
54"	2'-9½"	8'-5"	18'-6"	14'-0"	1.16	115.8	1.47	143.7
60"	3'-4"	9'-0"	20'-6"	15'-6"	1.47	149.7	1.84	180.3
72"	4'-5"	10'-2"	25'-6"	18'-6"	2.31	232.6	2.73	271.0

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

REINFORCING STEEL SCHEDULE

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

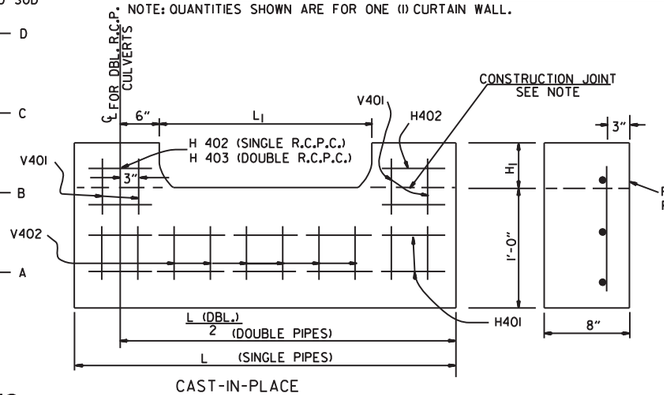
ALL REINFORCING STEEL #4 BARS @ 6" O.C.



PLAN VIEW
3:1 FORESLOPES

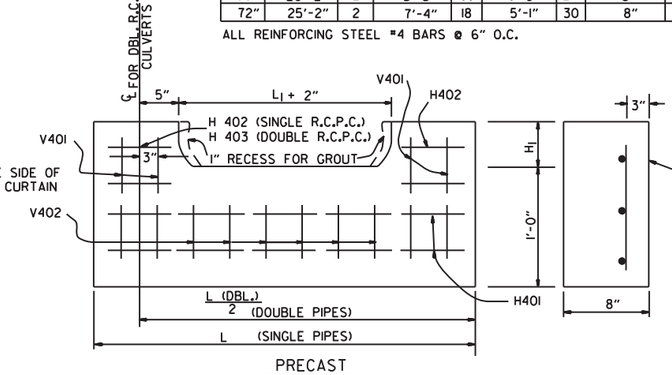
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW
FLATTENED FORESLOPES



CAST-IN-PLACE

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



PRECAST

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

R.C. CURTAIN WALL DETAILS

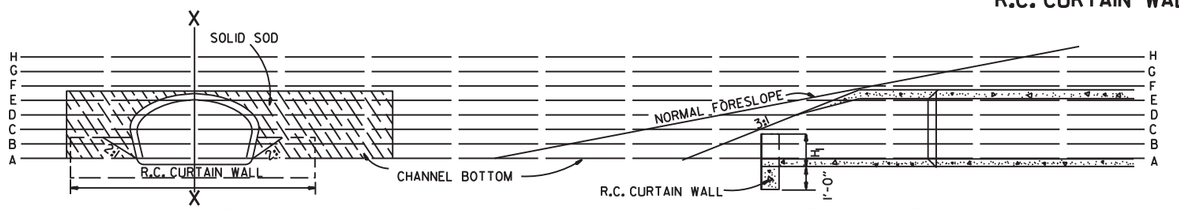
SOLID SODDING

PIPE DIA.	SINGLE R.C.P.C.			DOUBLE R.C.P.C.		
	3:1	4:1	6:1	3:1	4:1	6:1
	SQ. YDS.			SQ. YDS.		
18"	5	7	12	6	8	13
24"	8	12	19	9	13	20
30"	13	18	29	14	19	30
36"	17	26	41	18	28	43
42"	23	35	55	25	37	57
48"	29	46	68	31	48	70
54"	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 ¾".
3. CONCRETE FOR CURTAIN WALL SHALL MEET THE REQUIREMENTS FOR CLASS A OR S CONCRETE AS PROVIDED IN SECTION 802 OF THE STANDARD SPECIFICATIONS OR FOR PAVING CONCRETE AS PROVIDED IN SECTION 501 OF THE STANDARD SPECIFICATIONS.
4. WELDED WIRE MESH 3 x 3 W10 x W10 MAY BE USED IN LIEU OF REINFORCING BARS.



END VIEW

SECTIONAL VIEW "X-X"

DATE	REVISION	FILMED
10-18-96	ADDED NOTE TO SOLID SODDING	
10-12-95	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

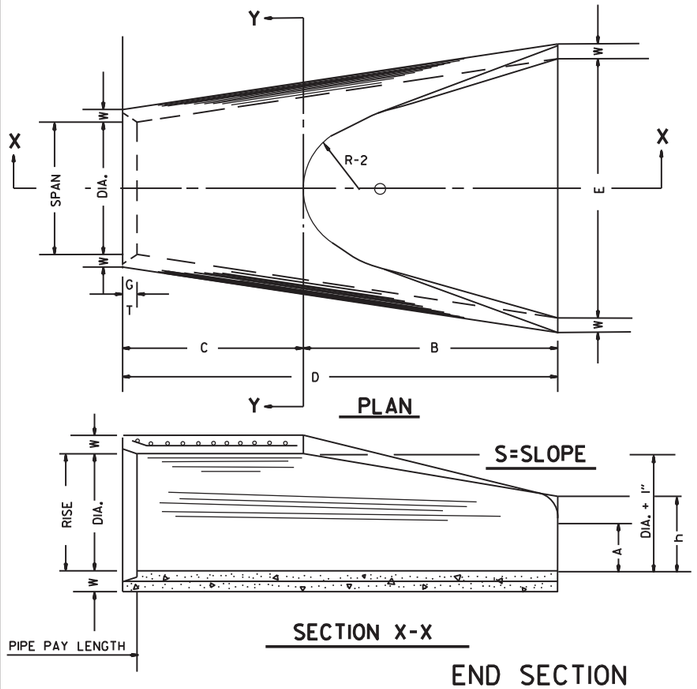
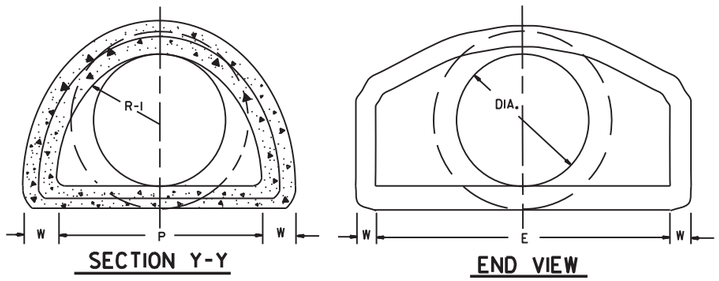


TABLE OF DIMENSIONS

DIA.	WALL	A	B	C	D	E	S	DIA. + I"	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"	16⅛"	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'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3:1	43"	53⅛"	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"	77⅛"	38⅝"	24"	5"	13250	4'-6"



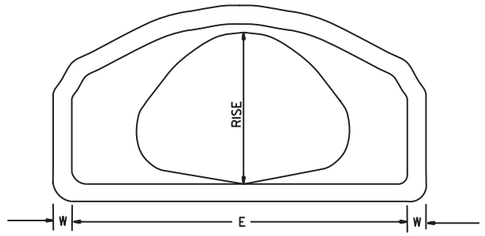
NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

END SECTION
FOR REINFORCED CONCRETE PIPE CULVERTS

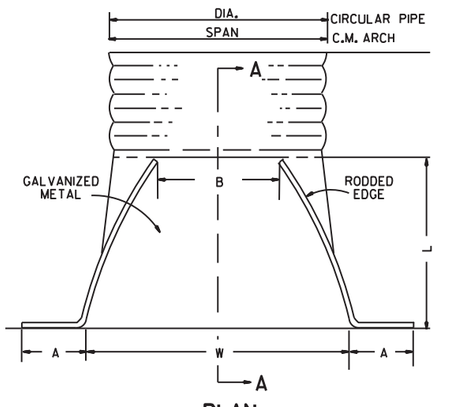
ARCH PIPE

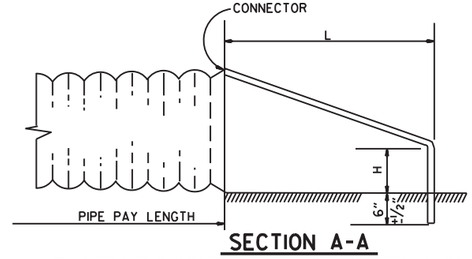
EQUIV. DIA.	• SPAN AASHTO M 206	• SPAN AHD NOMINAL	• RISE AASHTO M 206	• RISE AHD NOMINAL	W	A	B	C	D	E	P	R2	G-T	S
	INCHES													
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1½"	2½:1
18	22	22	13½	14	2½"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32⅛"	13"	2½"	2½:1
21	26	26	15½	16	2¾"	7"	2'-3"	3'-10"	6'-1"	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"	54⅜"	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"	77⅛"	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.

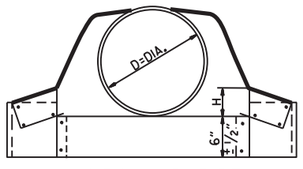


END VIEW
CONCRETE ARCH PIPE

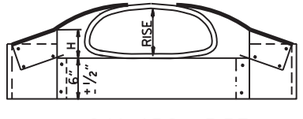




NOTE: ALTERNATE CONNECTIONS TO THE PIPE CULVERTS, IN ACCORDANCE WITH MANUFACTURER'S STANDARD PRACTICES, MAY BE MADE SUBJECT TO THE APPROVAL OF THE ENGINEER.



CIRCULAR PIPE



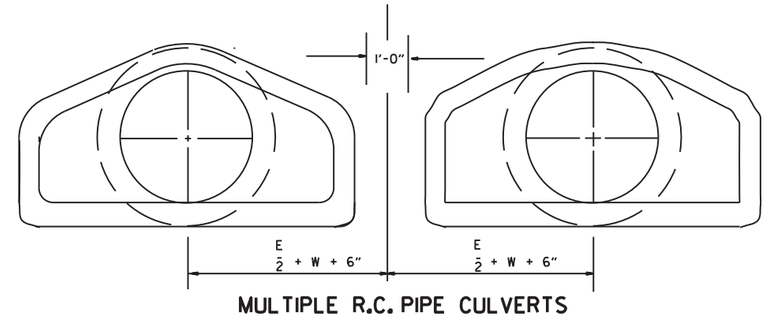
C.M. ARCH PIPE

CIRCULAR PIPE

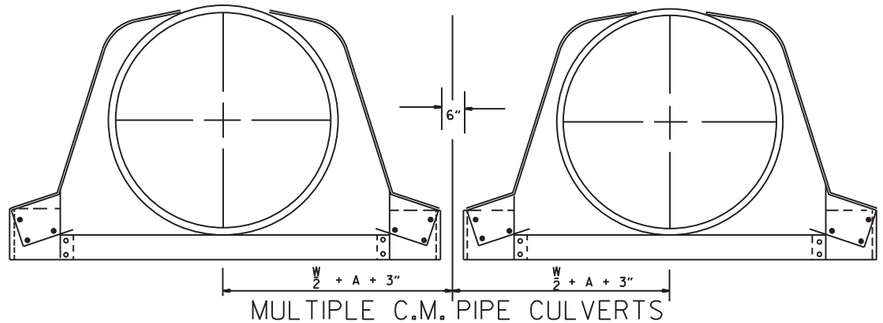
D. DIA.	GAUGE	A I" ±	B. MAX.	H I" ±	L 1½" ±	W 2" ±	S
		INCHES					
12	16	6	6	6	21	24	2½:1
15	16	7	8	6	26	30	2½:1
18	16	8	10	6	31	36	2½:1
21	16	9	12	6	36	42	2½:1
24	16	10	13	6	41	48	2½:1
30	14	12	16	8	51	60	2½:1
36	14	14	19	9	60	72	2½:1
42	12	16	22	11	69	84	2½:1
48	12	18	27	12	78	90	2½:1
54	12	18	30	12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

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



MULTIPLE R.C. PIPE CULVERTS



MULTIPLE C.M. PIPE CULVERTS

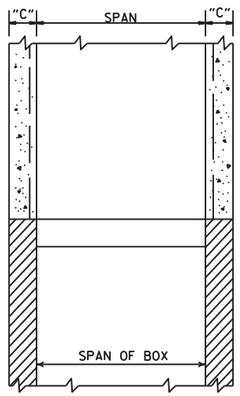
END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS

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

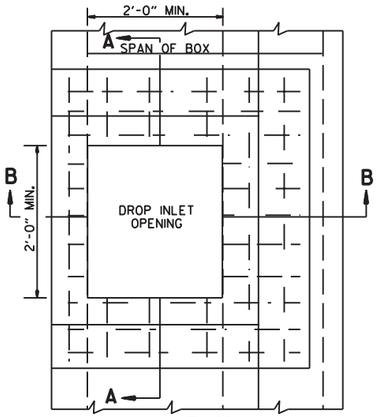
ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

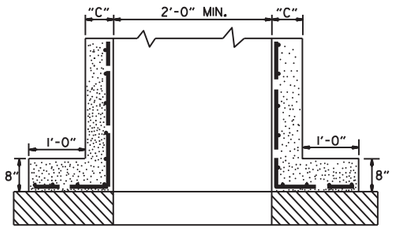
STANDARD DRAWING FES-2



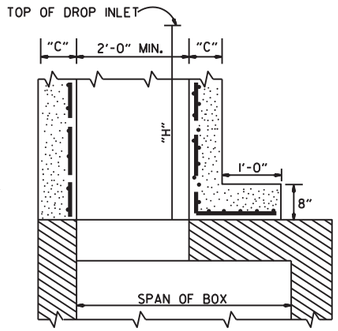
SECTION B-B



PLAN

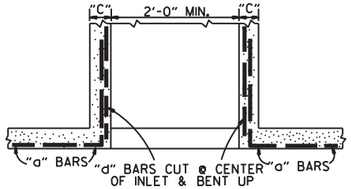


SECTION A-A

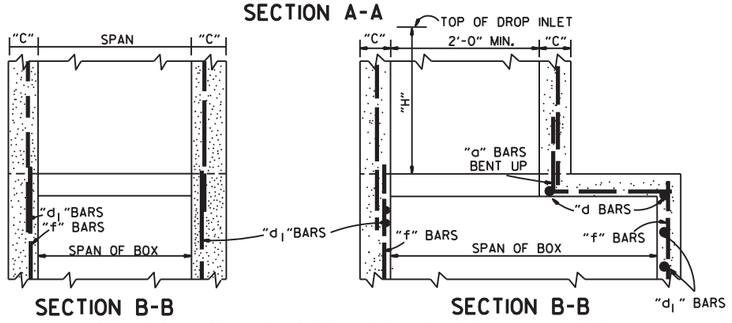


SECTION B-B

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



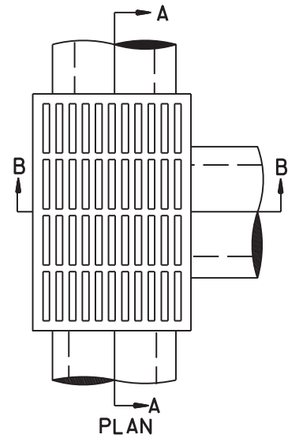
SECTION A-A



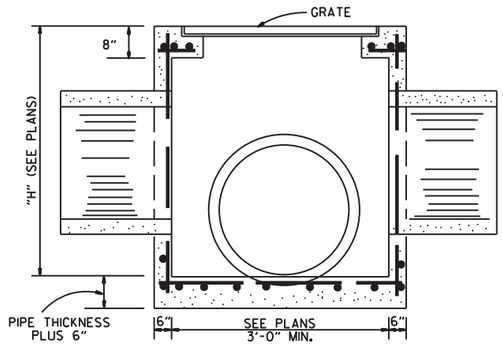
SECTION B-B SECTION B-B

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

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

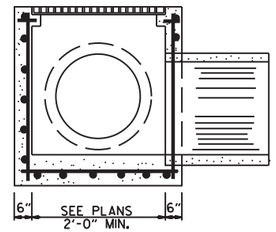


PLAN



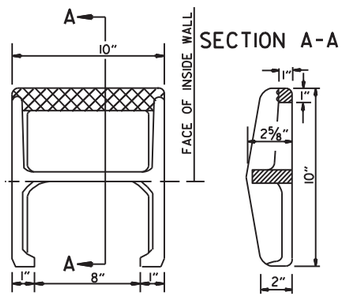
SECTION A-A

NOTE: REINF. BARS TO BE #4 BARS ON 6" CTRS. WITH 1½" MIN. COVER. THIS TYPE DROP INLET TO BE USED WHERE NOT SUBJECTED TO TRAFFIC.



SECTION B-B

DROP INLET (TYPE E)

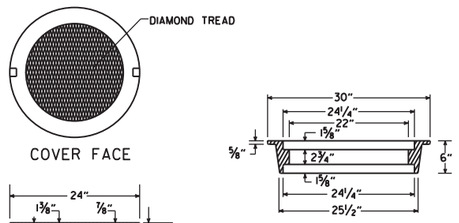


APPROX. WEIGHT = 11 LBS. (CAST IRON)

PLAN

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

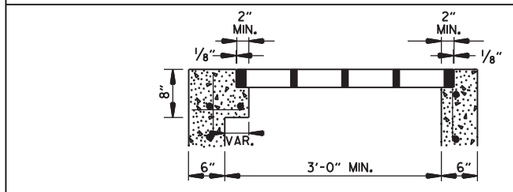
DETAIL OF STEP FOR DROP INLET



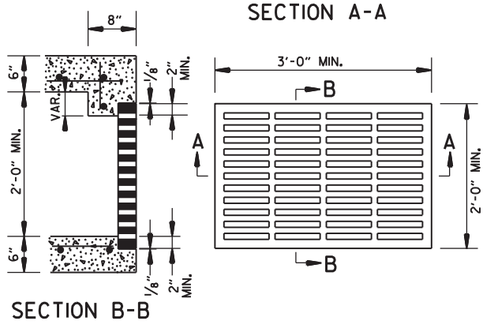
COVER SECTION RING SECTION

APPROXIMATE TOTAL WEIGHT = 333 LBS.

HEAVY DUTY RING & COVER



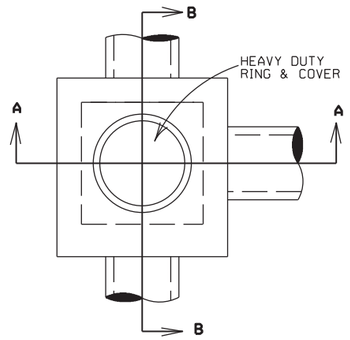
SECTION A-A



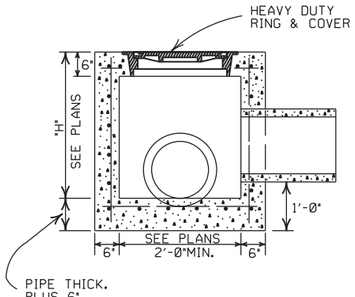
SECTION B-B

APPROXIMATE MINIMUM WATERWAY OPENING = 260 SQ. IN.

GRATE FOR TYPE E DROP INLET

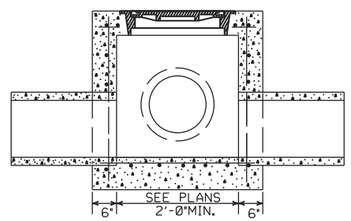


PLAN



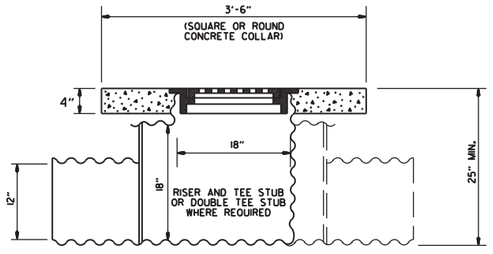
SECTION A-A

NOTE: REINF. BARS TO BE #4 BARS ON 6" CTRS. WITH 1½" MIN. COVER. THIS TYPE JUNCTION BOX TO BE USED WHERE NOT SUBJECTED TO TRAFFIC.

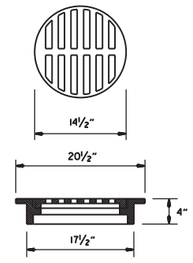


SECTION B-B

JUNCTION BOX (TYPE E)



NOTE: CONCRETE COLLAR TO BE CAST IN PLACE. 12" PIPE CULVERTS TO BE MEASURED AND PAID FOR AS " 12" SIDE DRAIN ".



USE NEENAH R-5901-C OR EQUIVALENT BICYCLE SAFE FRAME AND GRATE

DETAIL OF YARD DRAIN

GENERAL NOTES:

1. ALL EXPOSED CORNERS SHALL BE ¾" CHAMFERED.
2. STEPS SHALL BE INSTALLED ON 16" CENTERS ON ALL INLETS 4'-0" HIGH OR OVER, OR AS APPROVED BY THE ENGINEER.
3. EXPANSION JOINT MATERIAL SHALL BE ¾" PREFORMED FIBER.
4. GRATE OR 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. GRATE MAY BE USED WITHOUT FRAME.
5. GRATE AND FRAME SHALL NOT BE PAINTED.
6. GRATE SHALL BE BICYCLE SAFE.
7. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
8. 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 M105 CLASS 35B & AASHTO M306.
9. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
10. 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 REV.	REVISION	DATE FILMED
11-16-01	ADDED NOTE 10	
1-12-00	REVISED HEAVY DUTY RING & COVER	
7-02-98	CHANGED GRATE DETAIL. DELETED DI(TYPE D), REPLACED RING & COVER W/HEAVY DUTY RING & COVER, ADDED JUNCTION BOX (TYPE E)	
6-26-97	ADDED DIMENSION TO TYPE IV-A	
10-18-96	ADDED DETAIL OF YARD DRAIN	
8-15-91	DELETE TYPE IV GRATE	
7-15-88	REVISED STEP DETAIL	
5-20-83	REVISED DETAILS OF GRATES (TYPE IV & IV-A)	
2-4-83	ADDED GENERAL NOTE NO. 4	
3-2-81	ADDED TYPE IV-A GRATE	
5-22-74	DELETED INLET (TYPE F) & GRATE (TYPE III)	
10-2-72	REVISED AND REDRAWN	

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS & JUNCTION BOXES

STANDARD DRAWING FPC-9

4'-0" LENGTH DROP INLET

PIPE SIZE	MIN. WIDTH	HEIGHT 5'-0" CLASS A CONC.	HEIGHT 5'-0" REINF. STEEL	PLUS OR MINUS PER LIN. FT. OF HEIGHT CLASS A CONC.	PLUS OR MINUS PER LIN. FT. OF HEIGHT REINF. STEEL
		CU. YDS.	POUNDS	CU. YDS.	POUNDS
18"	2'-6"	1.77	156	0.28	22
24"	2'-6"	1.79	156	0.28	22
30"	3'-2"	2.39	205	0.30	26
36"	3'-8"	2.63	236	0.32	28
42"	4'-4"	2.95	250	0.34	30
48"	4'-10"	3.21	265	0.36	32

NOTE: QUANTITIES ARE APPROXIMATE AND ARE SHOWN FOR BIDDER INFORMATION ONLY.

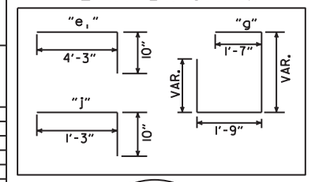
DROP INLET EXTENSION

4'-0" CLASS A CONC.	4'-0" REINF. STEEL	8'-0" CLASS A CONC.	8'-0" REINF. STEEL
CU. YDS.	POUNDS	CU. YDS.	POUNDS
0.58	38	0.87	72
DEDUCT FROM QUANTITY COMPUTED FOR EACH EXTENSION ADDED.			
0.04	3		

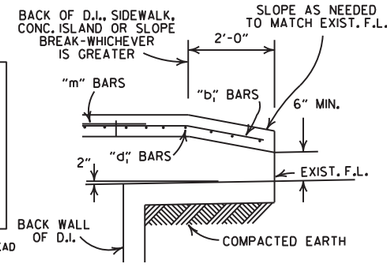
DEDUCT FROM QUANTITY COMPUTED FOR EACH PIPE ENTERING INLET

INSIDE DIA. PIPE	CLASS A CONC.	REINF. STEEL
INCHES	CU. YDS.	POUNDS
18	0.05	2
24	0.09	3
30	0.13	4
42	0.24	8

BAR DIAGRAM

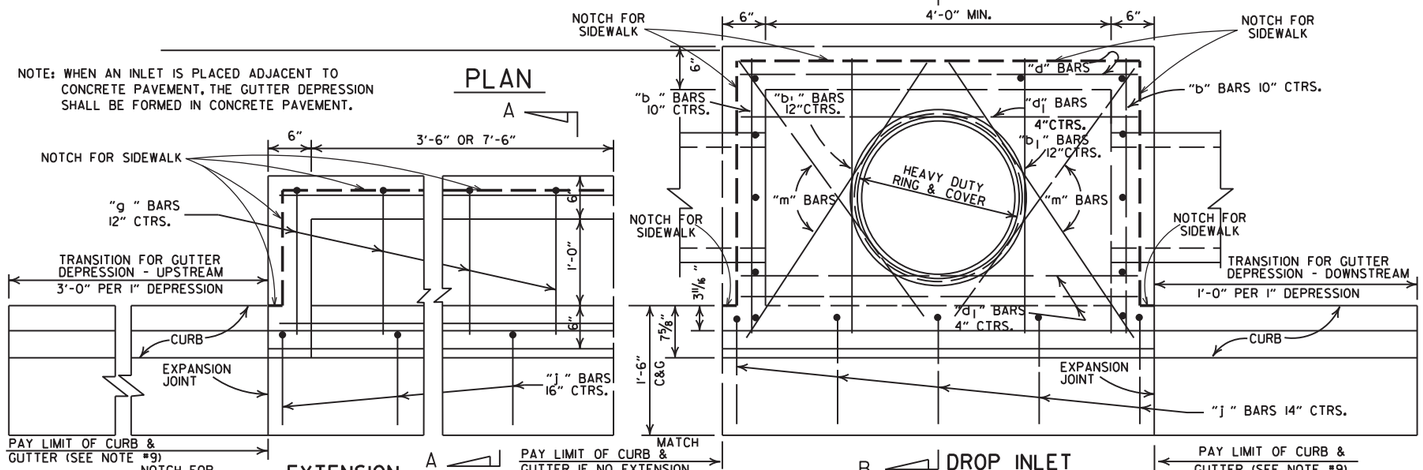


BACK OPENING

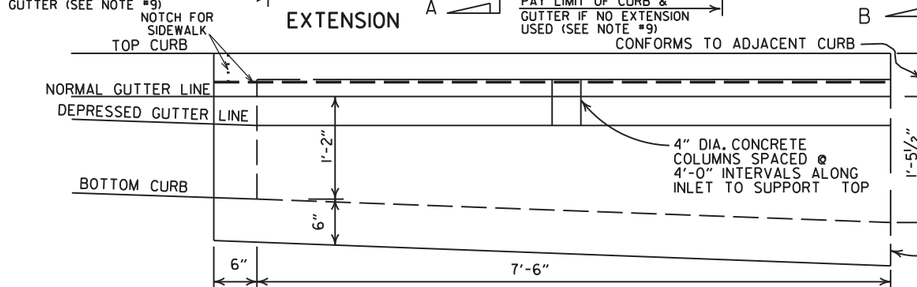


WHEN OPENING IN BACK IS CALLED FOR ON PLANS EXTEND OPENING AS SHOWN IN DETAIL. PAYMENT TO BE INCLUDED IN PRICE BID FOR DROP INLET (TYPE C).

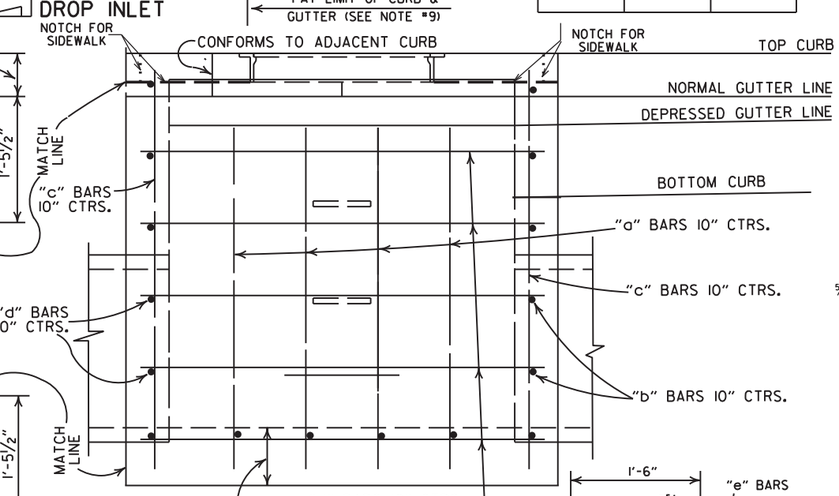
PLAN



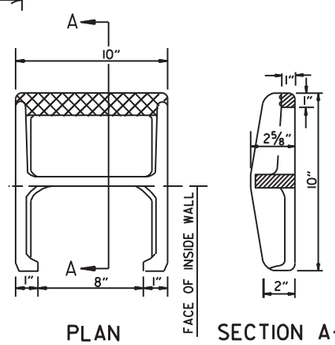
EXTENSION



DROP INLET



ELEVATION

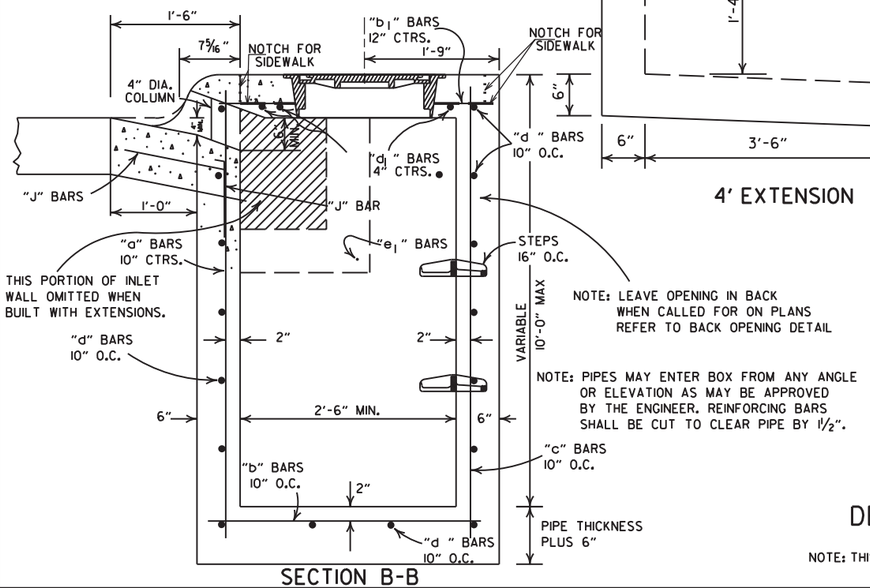


PLAN SECTION A-A

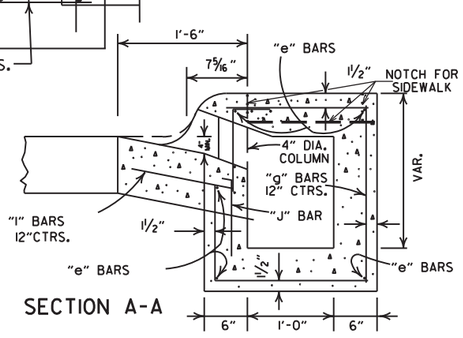
DETAIL OF STEP FOR DROP INLET

APPROX. WEIGHT = 11 LBS. (CAST IRON)

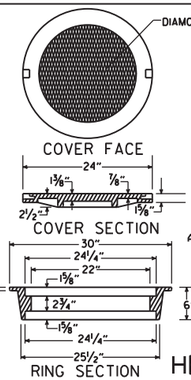
NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.



SECTION B-B



SECTION A-A



APPROXIMATE TOTAL WEIGHT = 333 LBS.

HEAVY DUTY RING & COVER

GENERAL NOTES:

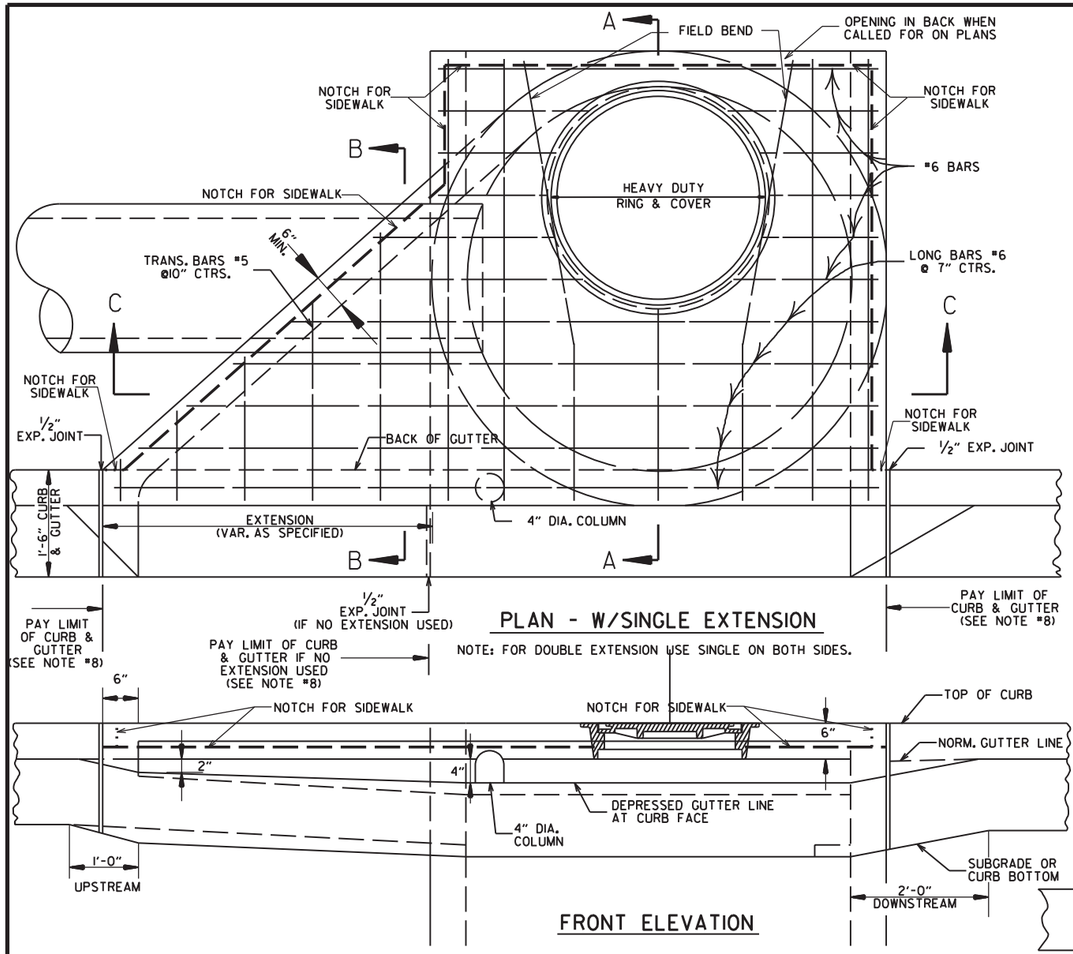
1. ALL EXPOSED CORNERS TO HAVE ¾" CHAMFER.
2. STEPS SHALL BE INSTALLED IN ALL INLETS 4'-0" HIGH AND OVER OF AS APPROVED BY THE ENGINEER.
3. ALL REINF. BARS SHALL BE #4 AND HAVE 1½" COVER.
4. DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
5. THIS DROP INLET MAY BE CONSTRUCTED ON NEW OR EXISTING R.C. BOX CULVERT AS SHOWN ON F.P.C.-9.
6. WHEN PLANS CALL FOR DROP INLET OVER 10'-0" HIGH, FLOOR AND WALLS SHALL BE CONSTRUCTED AS SHOWN FOR TYPE "RM" DROP INLET (FPC-9D).
7. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
8. DURING CONSTRUCTION OF THE ROADWAY THE CONTRACTOR SHALL MAINTAIN DRAINAGE INTO OR AROUND THE DROP INLET AS APPROVED BY THE ENGINEER.
9. PAYMENT FOR CURB AND/OR CURB AND GUTTER WITHIN THE LIMITS OF DROP INLETS AND DROP INLET EXTENSIONS SHALL BE CONSIDERED INCLUDED IN PAYMENT MADE FOR DROP INLETS AND/OR DROP INLET EXTENSIONS.
10. 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 M105 CLASS 35B & AASHTO M306.
11. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
12. 4"×2" NOTCH SHALL BE FORMED IN ALL DROP INLETS TO SUPPORT SIDEWALK CONSTRUCTION. REFER TO DETAIL OF NOTCH FOR SIDEWALKS.
13. 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.

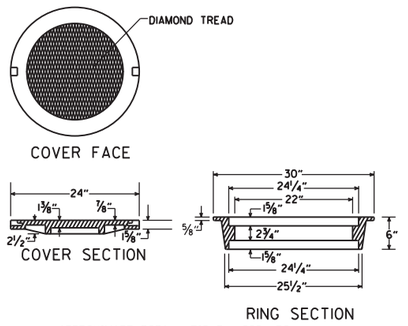
DATE REV.	REVISION	DATE FILMED
8-22-02	ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B	
11-16-01	ADDED NOTE 13; REVISED SECTION B-B	
1-12-00	CORRECTED DIMENSION ON SECTION B-B & REVISED RING & COVER	
5-13-99	ADDED DETAIL OF NOTCH FOR SIDEWALKS	
7-02-98	REPLACED RING & COVER W/HEAVY DUTY RING & COVER ADDED NOTES 9,10,&11	
10-18-96	CORRECTED SPELLING	
4-26-96	ADDED NOTE 8 & REVISED (4')(8') EXTENSION TITLES	10-18-96
4-1-93	REVISED BACK OPENING & NOTE	
8-15-91	DELETE TYPE IV GRATE	
7-15-88	REVISED STEP DETAIL	
5-20-83	REVISED DETAILS OF GRATES (TYPE IV & IV-A)	
2-4-83	ADDED GENERAL NOTE NO. 4	
3-2-81	ADDED TYPE IV-A GRATE	
5-22-74	DELETED INLET (TYPE F) & GRATE (TYPE III)	
10-2-72	REVISED AND REDRAWN	

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS (TYPE C)

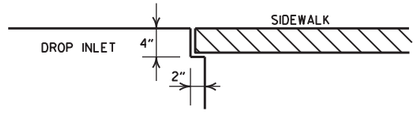
STANDARD DRAWING FPC-9E



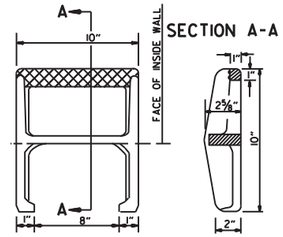


HEAVY DUTY RING & COVER

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 M105 CLASS 35B & AASHTO M306.
2. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
3. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.



DETAIL OF NOTCH FOR SIDEWALKS



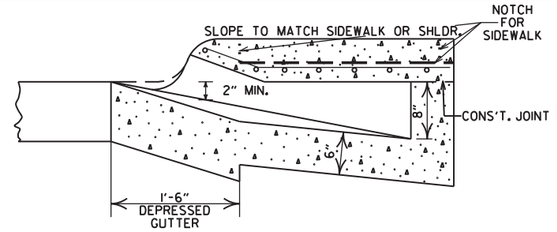
SECTION A-A

APPROX. WEIGHT = 11 LBS. (CAST IRON)

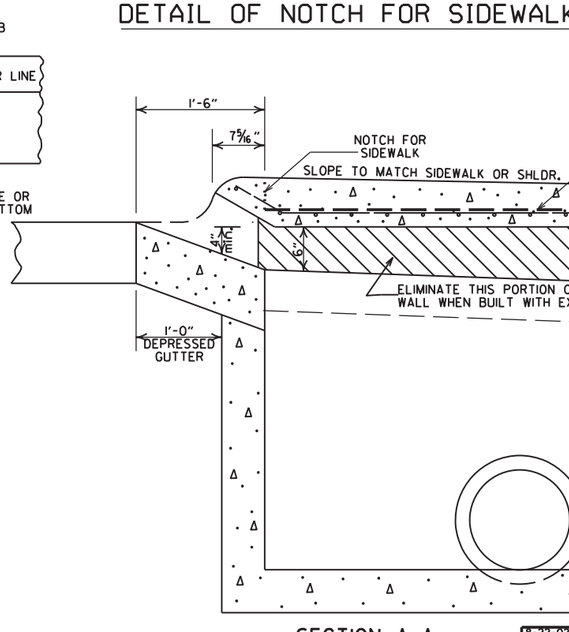
PLAN

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

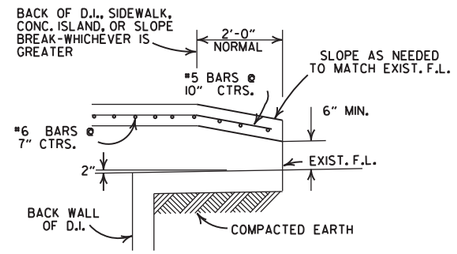
DETAIL OF STEP FOR DROP INLET



SECTION B-B



SECTION A-A



BACK OPENING

WHEN OPENING IN BACK IS CALLED FOR ON PLANS EXTEND OPENING AS SHOWN IN DETAIL. PAYMENT TO BE INCLUDED IN PRICE BID FOR DROP INLET (TYPE MO).

GENERAL NOTES:

1. ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFER.
2. STEPS SHALL BE INSTALLED IN ALL INLETS 4'-0" HIGH AND OVER OR AS DIRECTED BY THE ENGINEER.
3. ALL REINFORCING BARS SHALL BE GRADE 60 AND HAVE MIN. 1 1/2" COVER.
4. DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
5. 4" DIA. COLUMNS SPACED AT MAX. 4'-0" INTERVALS SHALL BE INSTALLED ALONG INLET AND EXTENSION TO SUPPORT TOP.
6. BASE AND INLET WALLS SHALL BE CAST MONOLITHICALLY.
7. THE THROAT SHALL BE CAST INTEGRALLY WITH THE GUTTER.
8. PAYMENT FOR CURB AND/OR CURB AND GUTTER WITHIN THE LIMITS OF DROP INLETS AND DROP INLET EXTENSIONS SHALL BE CONSIDERED INCLUDED IN PAYMENT MADE FOR DROP INLETS AND/OR DROP INLET EXTENSIONS.
9. PIPES MAY ENTER DROP INLET FROM ANY ANGLE OR ELEVATION AS MAY BE APPROVED BY THE ENGINEER.
10. APPROPRIATE SIZE TYPE C DROP INLETS MAY BE SUBSTITUTED FOR TYPE MO DROP INLETS AS APPROVED BY THE ENGINEER. PAYMENT TO BE AS DROP INLET (TYPE MO).
11. DURING CONSTRUCTION OF THE ROADWAY THE CONTRACTOR SHALL MAINTAIN DRAINAGE INTO OR AROUND THE DROP INLET AS APPROVED BY THE ENGINEER.
12. 4"x2" NOTCH SHALL BE FORMED IN ALL DROP INLETS TO SUPPORT SIDEWALK CONSTRUCTION. REFER TO DETAIL OF NOTCH FOR SIDEWALKS.
13. 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.

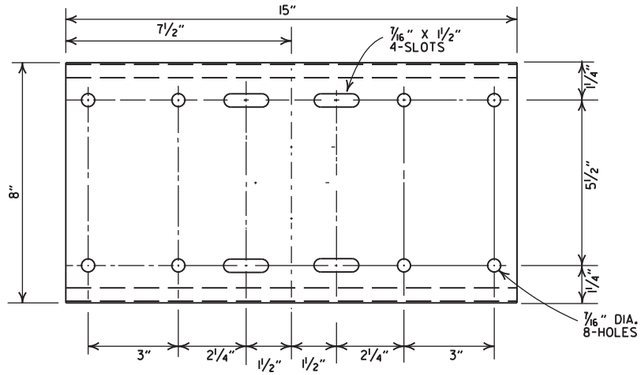
DIA. OF D.I.	DIA. OF OUTLET PIPE	MINIMUM WALL THICKNESS	
		CAST IN PLACE	PRECAST
4' I.D.	12" THRU 27"	6"	5"
5' I.D.	30" THRU 42"	8"	6"
6' I.D.	48" THRU 54"	8"	7"

DATE	REVISIONS	DATE FILMED
8-22-02	ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B	
11-16-01	ADDED NOTE 13	
1-12-00	REVISED HEAVY DUTY RING & COVER	
5-13-99	ADDED NOTCH DETAIL FOR SIDEWALKS	
7-02-98	REP. NOTE 8, REM. PLAN DET., REV. PICTURE FOR NEW RING & COVER, ADDED HEAVY DUTY RING & COVER AND DETAIL OF STEP FOR DROP INLET	
4-26-96	ADDED NOTE 1/2 ADJ. OPENING DIMENSION	
10-12-95	CORRECTED #6 BAR SPACING	
7-20-95	CORRECTED DIAMETER OF D.I. IN BOX	
4-27-95	TYPE C TO MO (OPEN BACK DETAIL)	
11-3-94	REVISED GENERAL NOTES	11-3-94
4-1-93	REV. BACK OPEN. DETAIL & NOTE	4-1-93
8-15-91	REVISED NOTES 11,12 & ADDED BK.OPEN DETAIL	8-15-91
11-30-89	ADDED NOTE NO. 12	11-30-89
5-23-89	ADDED NOTE & MINIMUM WALL THICKNESS	513-5-23-89
7-15-88	ADDED EXTEND NOTE TO SECTION A-A	629-7-15-88
1-14-87	MODIFIED WALL THICKNESS	783-1-14-87
6-12-87	ISSUED	4-6-12-87

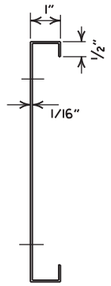
ARKANSAS STATE HIGHWAY COMMISSION

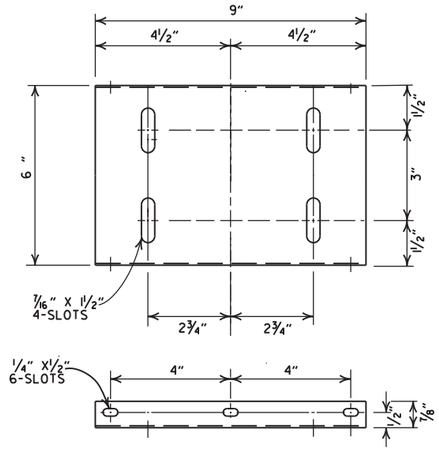
DETAILS OF DROP INLET (TYPE MO)

STANDARD DRAWING FPC-9M

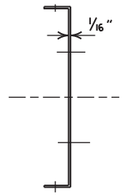


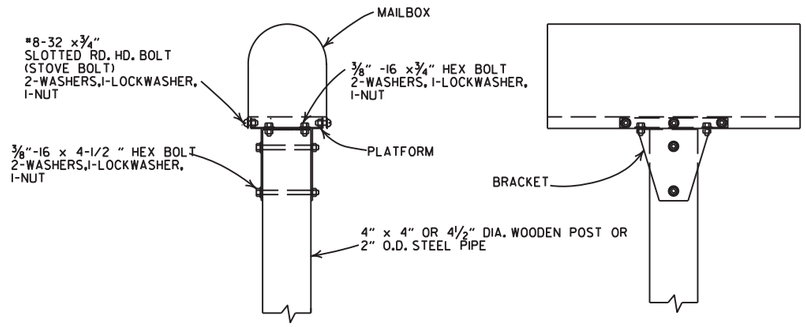
SHELF



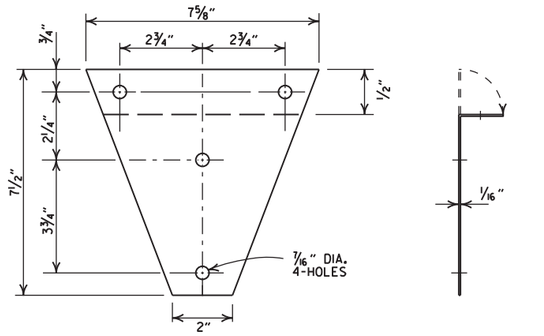


PLATFORM





SINGLE INSTALLATION



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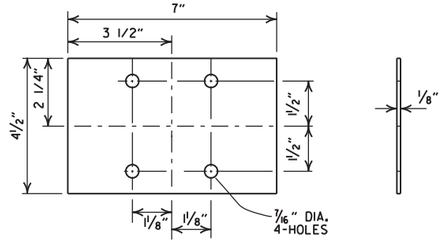
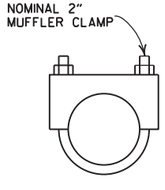
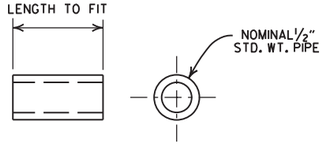


ANTI-TWIST PLATE



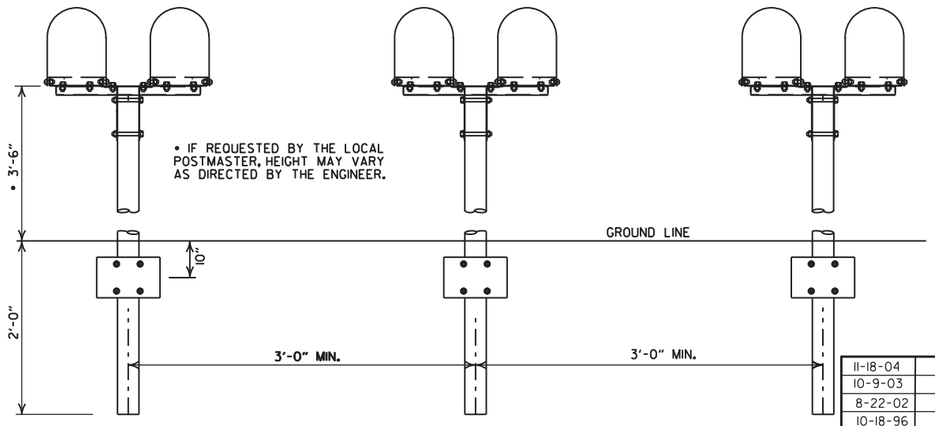
CLAMP



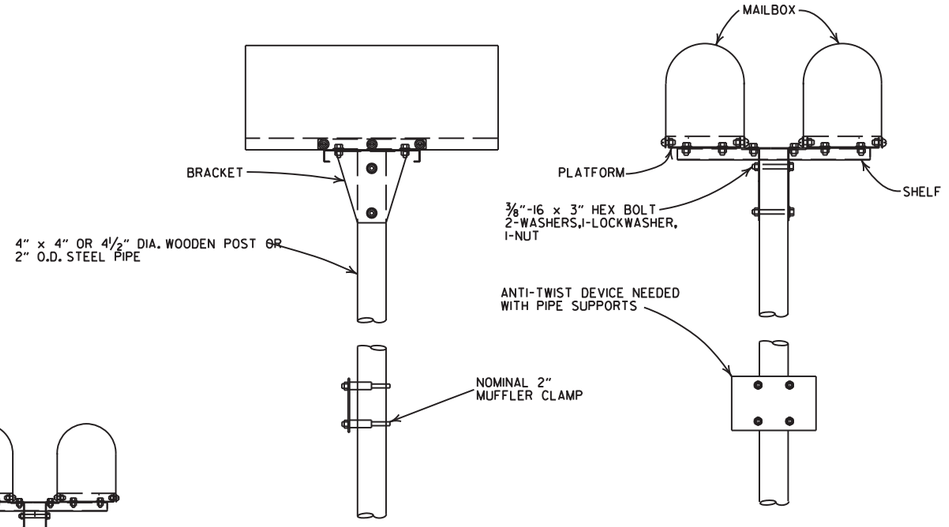
SPACER

GENERAL NOTES

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



SPACING FOR MULTIPLE POST INSTALLATION



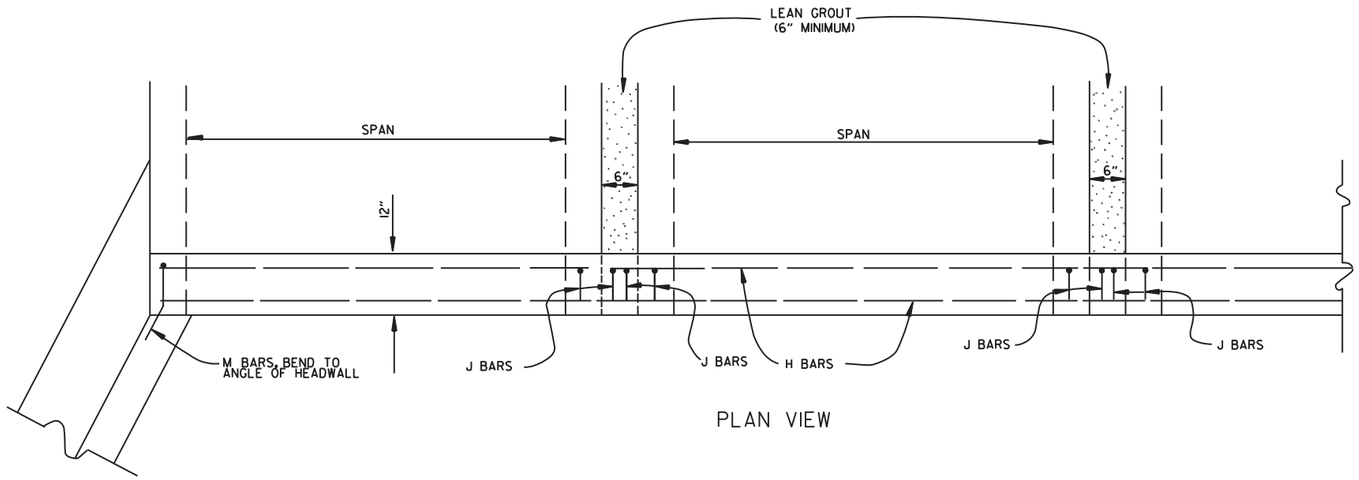
DOUBLE INSTALLATION

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

ARKANSAS STATE HIGHWAY COMMISSION

MAILBOX DETAILS

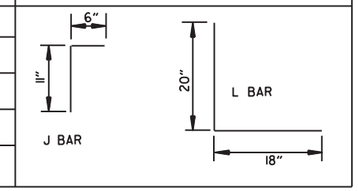
STANDARD DRAWING MB-1



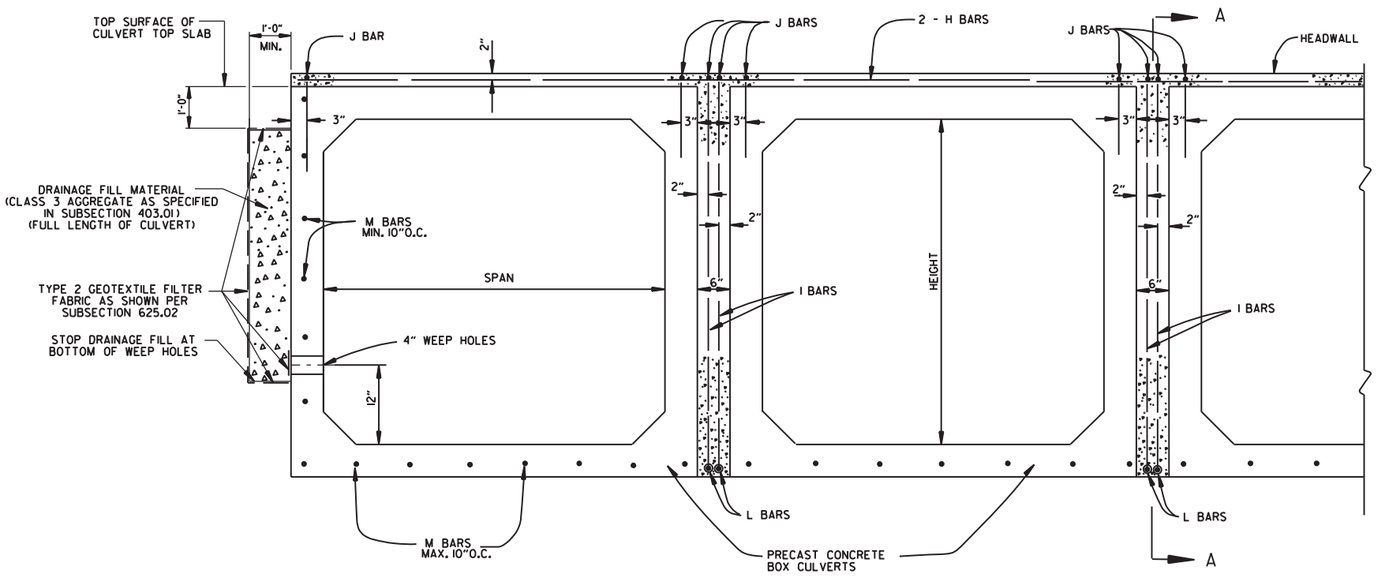
PLAN VIEW

BAR LIST

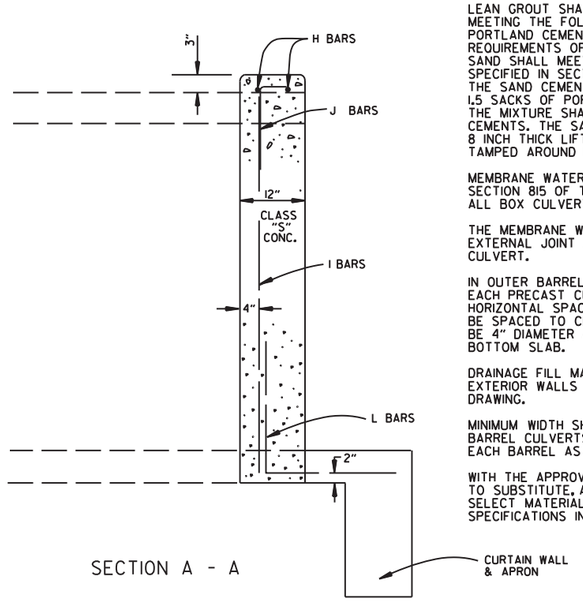
BAR	NO.	SIZE	LENGTH	BAR BENDING DIAGRAM
H	2	#4	•	
I	•	#4	•	
J	•	#4	1'-5"	
L	•	#4	3'-2"	
M	•	#4	1'-8"	



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



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	ARDOT NOMINAL	AASHTO M 206	ARDOT NOMINAL
INCHES	INCHES			
15	18	18	11	11
18	22	22	13½	14
21	26	26	15½	16
24	28½	29	18	18
30	36¼	36	22½	23
36	43⅜	44	26⅝	27
42	51⅛	51	31⅝	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.

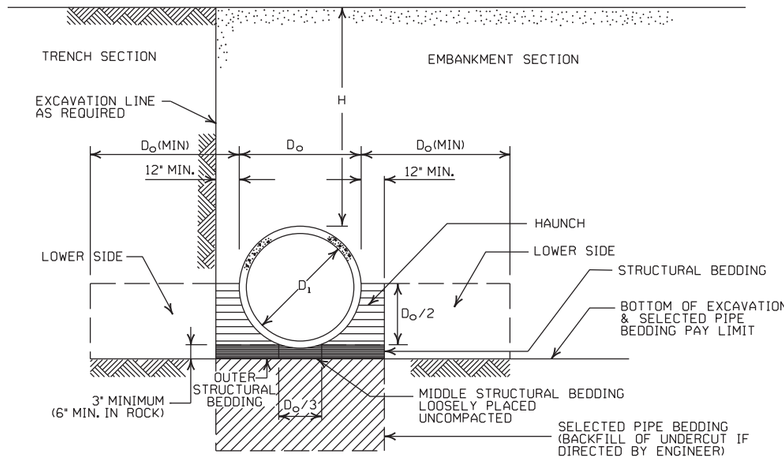
- LEGEND -

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

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

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

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

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.

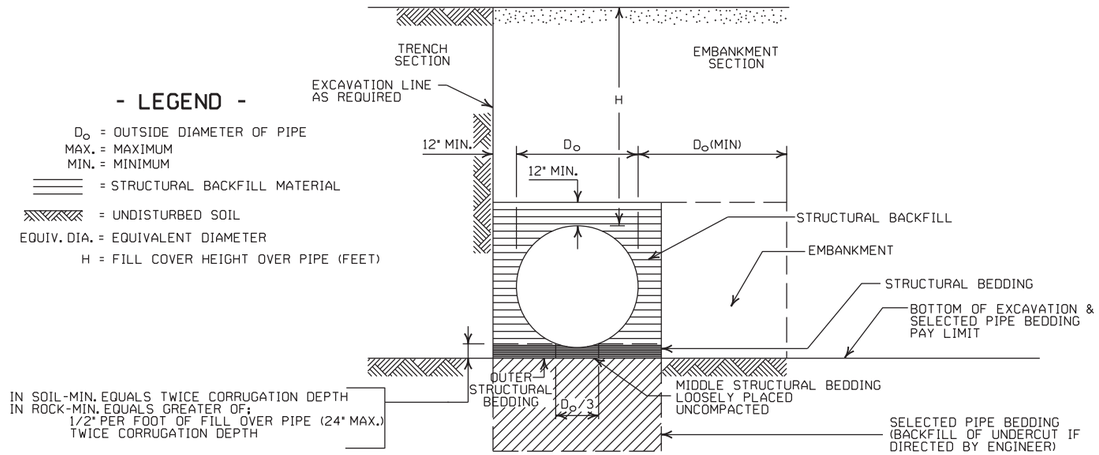
NOTE: STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF METAL PIPE.

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

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

② WHERE THE STANDARD 2 2/3"x 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"	"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"

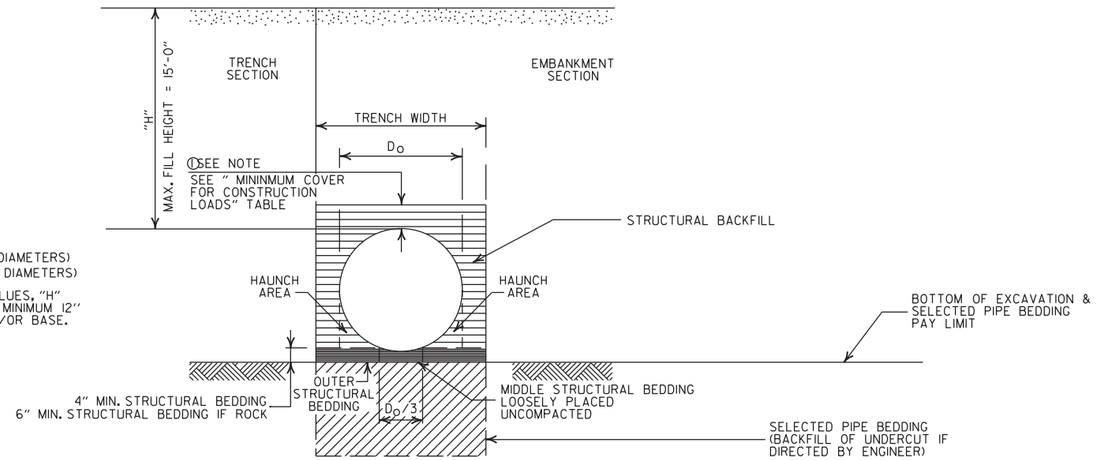
①NOTE:
18" MIN. (18" - 30" DIAMETERS)
24" MIN. (36" - 48" DIAMETERS)

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 CONFORM 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.)
D = 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

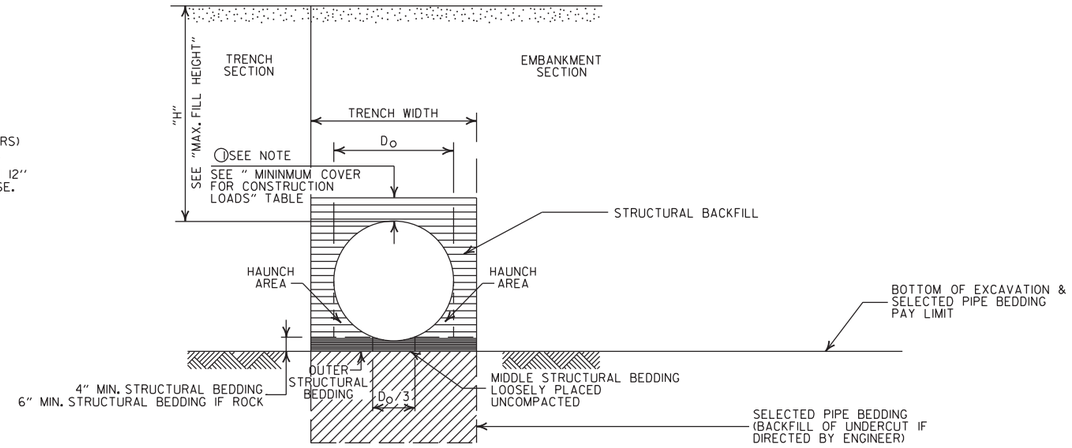
PIPE DIAMETER	"H"
18"	45'-0"
24"	45'-0"
30"	40'-0"
36"	40'-0"

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

- 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

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

*SM3 WILL NOT BE ALLOWED.

** STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 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 POLYPROPYLENE PIPE.

MULTIPLE INSTALLATION OF POLYPROPYLENE PIPES

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

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

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

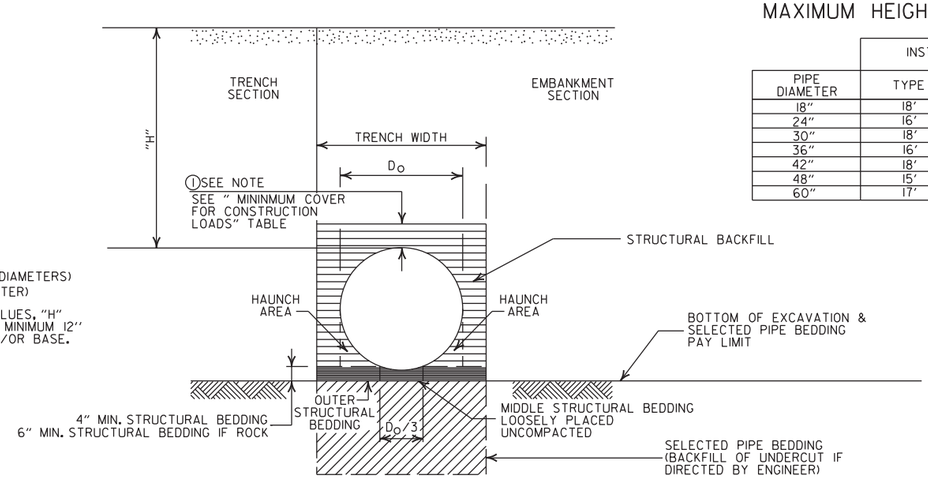
MINIMUM COVER FOR CONSTRUCTION LOADS

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

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

①NOTE:
12" MIN. (18" - 42" DIAMETERS)
24" MIN. (60" DIAMETER)

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



MAXIMUM HEIGHT OF FILL "H"

PIPE DIAMETER	INSTALLATION TYPE	
	TYPE 1	TYPE 2
18"	18'	14'
24"	16'	12'
30"	18'	14'
36"	16'	12'
42"	18'	13'
48"	15'	11'
60"	17'	12'

EMBANKMENT AND TRENCH INSTALLATIONS

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

CONSTRUCTION SEQUENCE

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

GENERAL NOTES

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

- LEGEND -

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

= STRUCTURAL BACKFILL MATERIAL

= UNDISTURBED SOIL

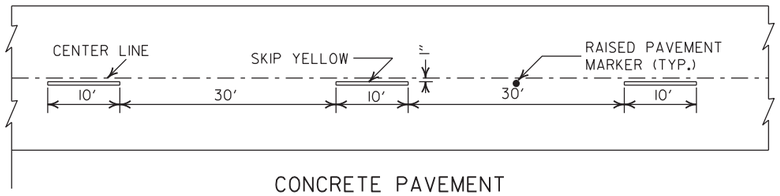
DATE	REVISION	DATE FILMED
02-27-20	REVISED	
11-07-19	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

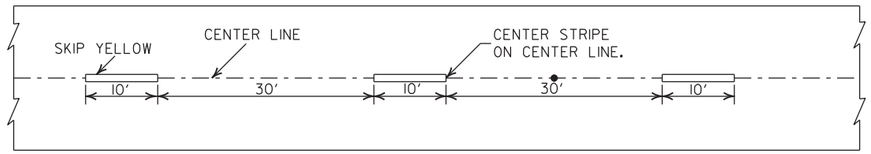
PLASTIC PIPE CULVERT (POLYPROPYLENE)

STANDARD DRAWING PCP-3

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.

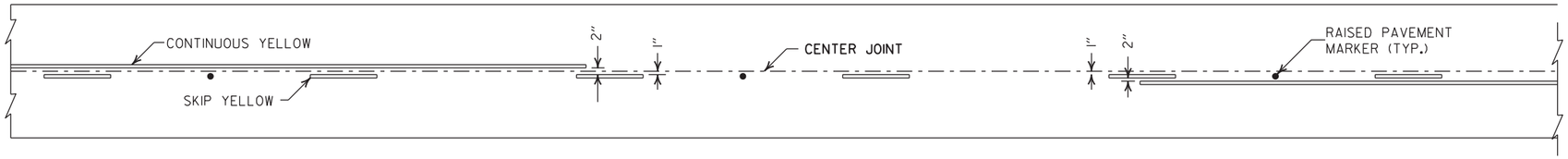


CONCRETE PAVEMENT

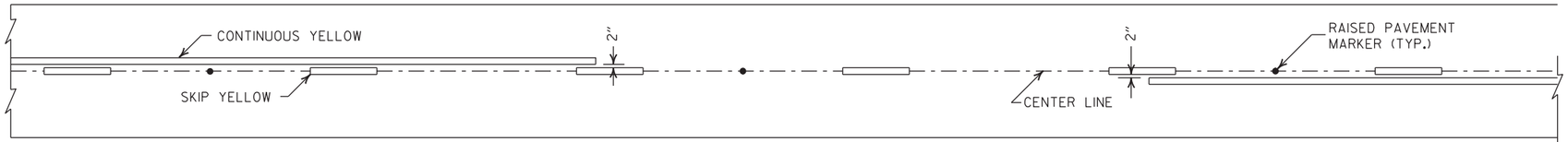


ASPHALT PAVEMENT

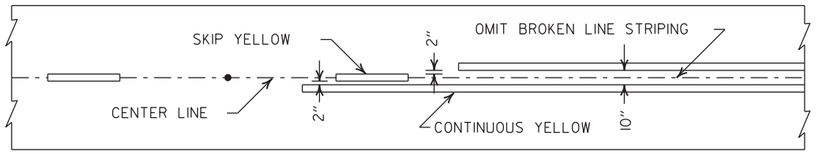
BROKEN LINE STRIPING



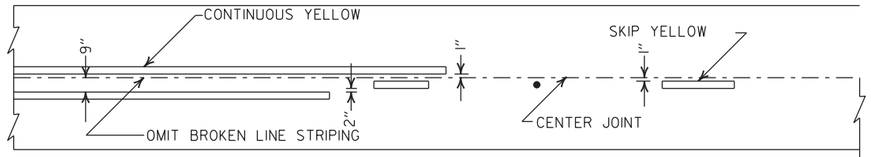
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

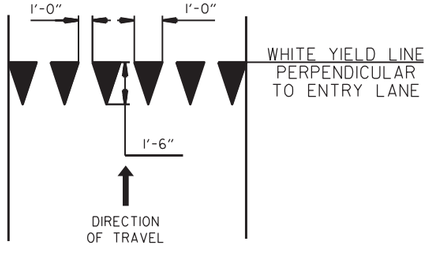


ASPHALT PAVEMENT

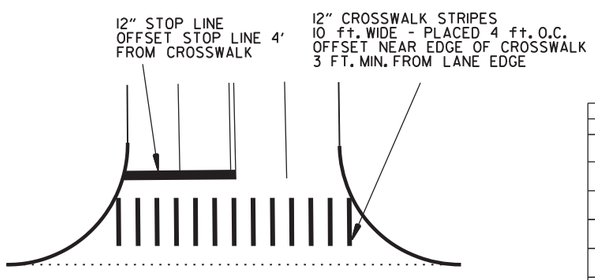


CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

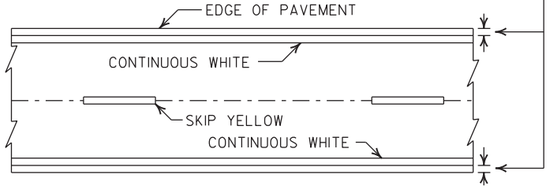


YIELD LINE DETAIL



CROSSWALK AND STOP LINE DETAILS

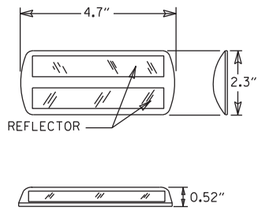
2" FOR ASPHALT OR CONCRETE PAVEMENT
6" FOR BITUMINOUS SURFACE TREATMENT



PAVEMENT EDGE LINE MARKING

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

TYPE II
RED/CLEAR OR
YELLOW/YELLOW



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

DETAIL OF STANDARD RAISED PAVEMENT MARKERS

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

ARKANSAS STATE HIGHWAY COMMISSION

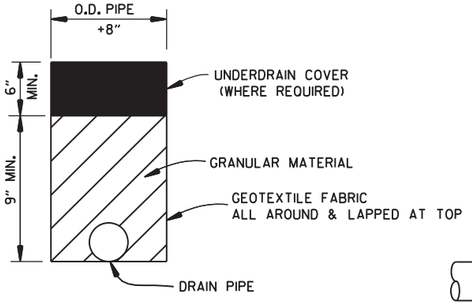
PAVEMENT MARKING DETAILS

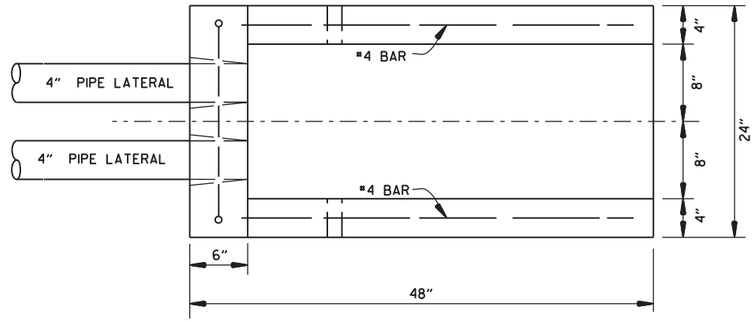
STANDARD DRAWING PM-1

NOTE:

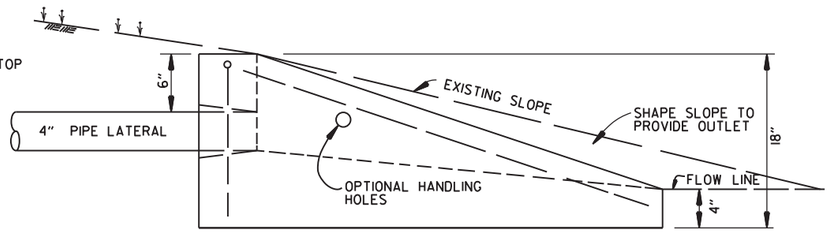
1. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.

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

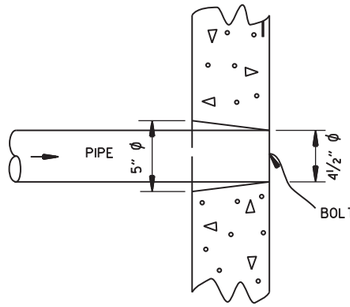




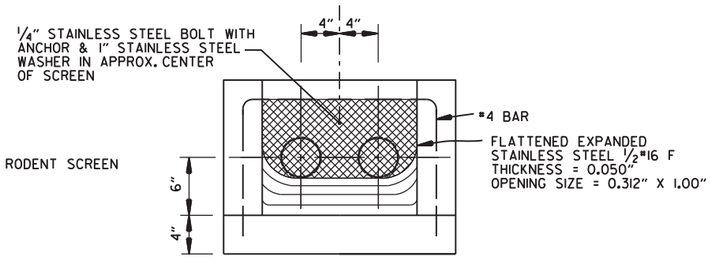
PLAN VIEW



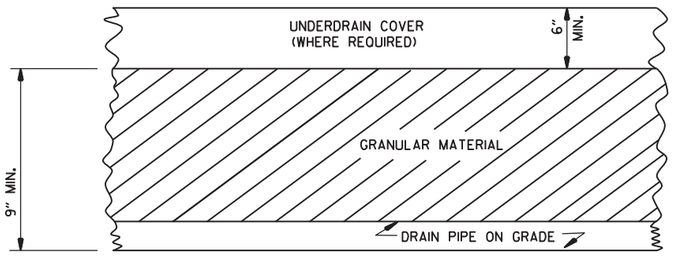
SIDE VIEW



DETAIL OF HOLE FOR 4" PIPE

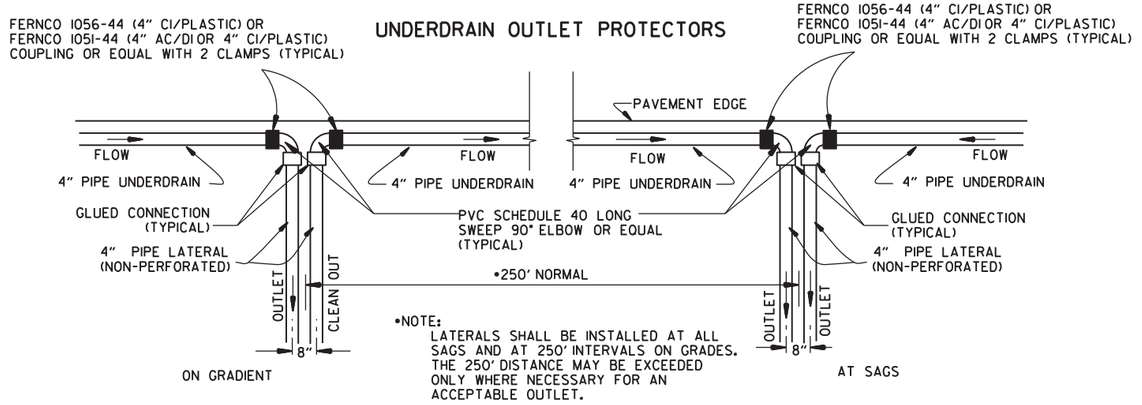


FRONT VIEW
(DETAIL OF RODENT SCREEN)



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.

NOTES FOR PIPE UNDERDRAINS

1. GEOTEXTILE FABRIC SHALL MEET THE REQUIREMENTS OF SECTION 625 FOR TYPE 1. PAYMENT FOR GEOTEXTILE FABRIC AND GRANULAR FILTER MATERIAL SHALL BE INCLUDED IN THE PRICE BID PER LIN. FT. FOR "4" PIPE UNDERDRAINS" IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

2. 4" NON-PERFORATED SCHEDULE 40 PVC PIPE LATERALS WITH OUTLET PROTECTORS SHALL BE INSTALLED AS SHOWN HEREON. LATERALS WILL BE MEASURED AND PAID FOR AS "4" PIPE UNDERDRAINS." UNDERDRAIN OUTLET PROTECTORS WILL BE MEASURED AND PAID FOR BY THE UNIT IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

3. EXISTING 4" PIPE UNDERDRAINS MAY BE CONNECTED TO PROPOSED DROP INLETS OR EXTENDED WHERE DIRECTED BY THE ENGINEER. PAYMENT FOR CONNECTING TO DROP INLETS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR "4" PIPE UNDERDRAINS."

4. THE LOCATION OF ALL LATERALS SHALL BE MARKED WITH 4" X 12" PERMANENT PAVEMENT MARKING TAPE (TYPE III WHITE) AT THE OUTSIDE EDGE OF THE SHOULDER, PLACED TRANSVERSE TO TRAFFIC. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

5. PAYMENT FOR THE RODENT SCREEN SHALL BE INCLUDED IN THE PRICE BID PER EACH FOR "UNDERDRAIN OUTLET PROTECTORS."

6. ANY EXISTING UNDERDRAINS THAT INTERFERE WITH INSTALLATION OF THE NEW UNDERDRAIN SYSTEM SHALL BE REMOVED AND DISPOSED OF AS DIRECTED BY THE ENGINEER. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS. EXISTING UNDERDRAIN OUTLET PROTECTORS SHALL BE REMOVED UNDER THE ITEM "REMOVAL AND DISPOSAL OF UNDERDRAIN OUTLET PROTECTORS."

7. AT LOCATIONS WHERE A SINGLE LATERAL IS USED THE CONTRACTOR SHALL HAVE THE FOLLOWING OPTIONS: 1. INSTALL OUTLET PROTECTOR AS SHOWN ON STANDARD DRAWING PU-1 AND GROUT THE UNUSED HOLE OR 2. INSTALL AN OUTLET PROTECTOR WITH A SINGLE HOLE.

DATE	REVISION	DATE FILMED
12-8-16	ADDED NOTES FOR PIPE UNDERDRAINS, REVISED RODENT SCREEN DETAIL AND NOTES, REMOVED NOTE 1 FOR GRANULAR MATERIAL, ADDED NOTE FOR GEOTEXTILE FABRIC	
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

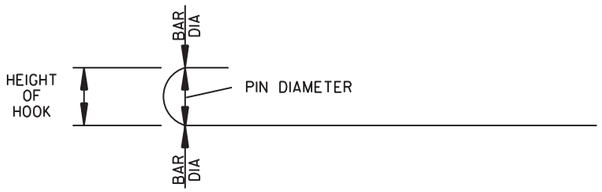
DETAILS OF PIPE UNDERDRAIN

STANDARD DRAWING PU-1

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

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

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



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

OVERALL HEIGHT OF HOOKED BAR DIAGRAM

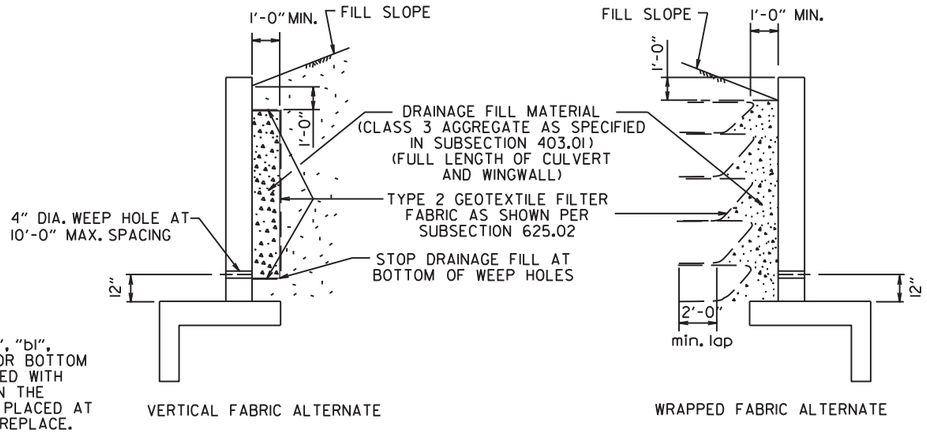
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

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

REPLACEMENT BAR LENGTHS TABLE

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

L = "OW" - 3 INCHES



WINGWALL & CULVERT DRAINAGE DETAIL

REINFORCED CONCRETE BOX CULVERT GENERAL NOTES

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

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

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

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

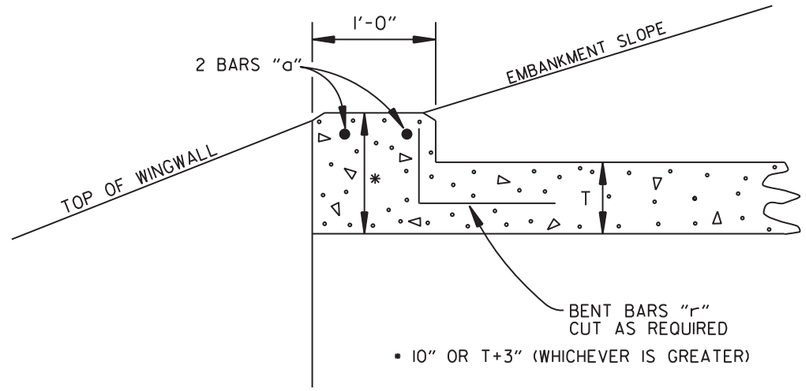
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

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

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

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

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



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

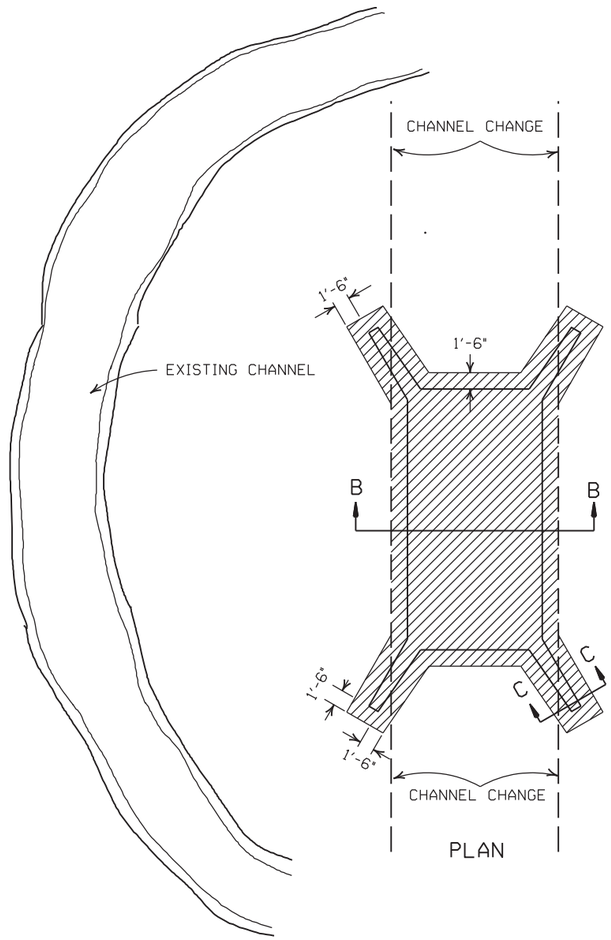
R.C. BOX CULVERT HEADWALL MODIFICATIONS

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

ARKANSAS STATE HIGHWAY COMMISSION

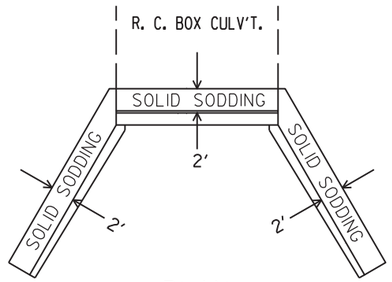
REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1



PLAN

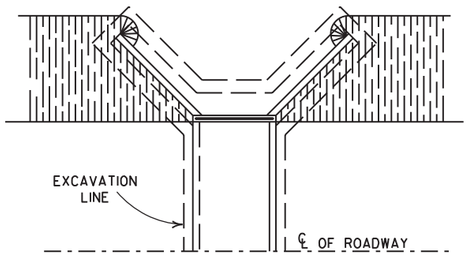
SOLID SODDING



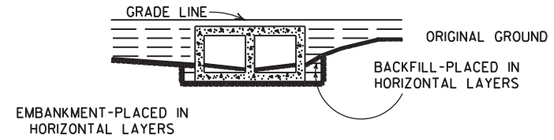
PLAN

PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

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

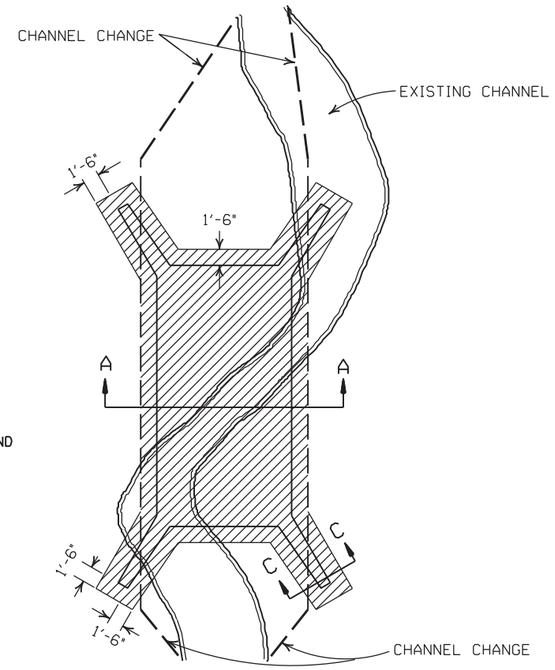


PLAN

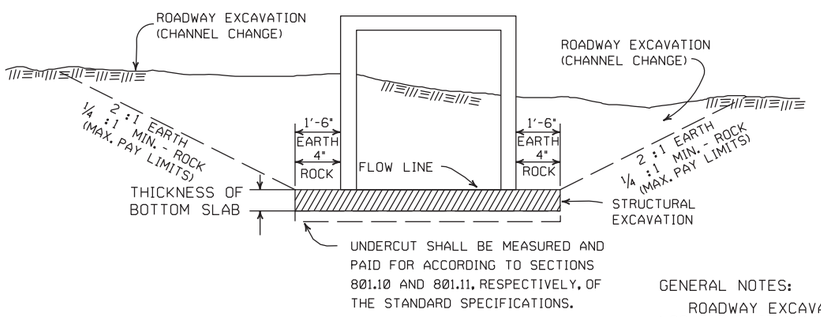


LONGITUDINAL SECTION

BACKFILL DETAILS FOR BOX CULVERT

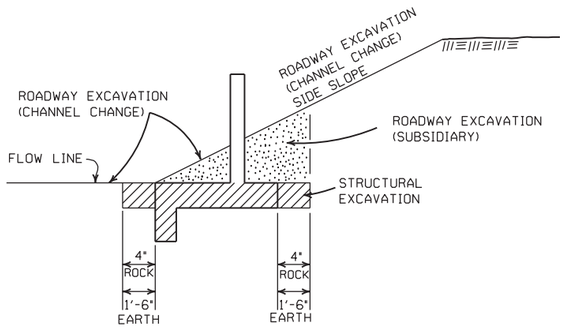


PLAN

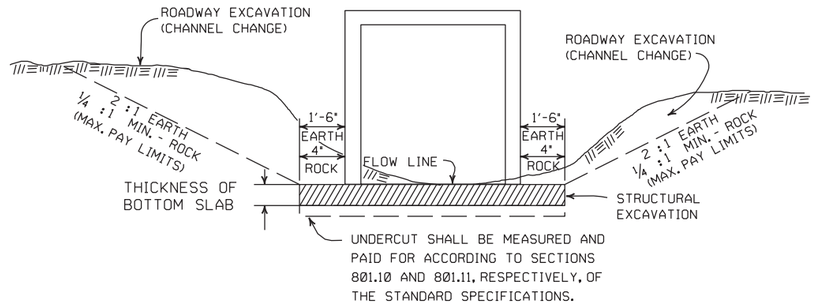


SECTION B-B

DETAILS FOR NEW CHANNELS



SECTION C-C



SECTION A-A

DETAILS THROUGH EXISTING CHANNELS

GENERAL NOTES:

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

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

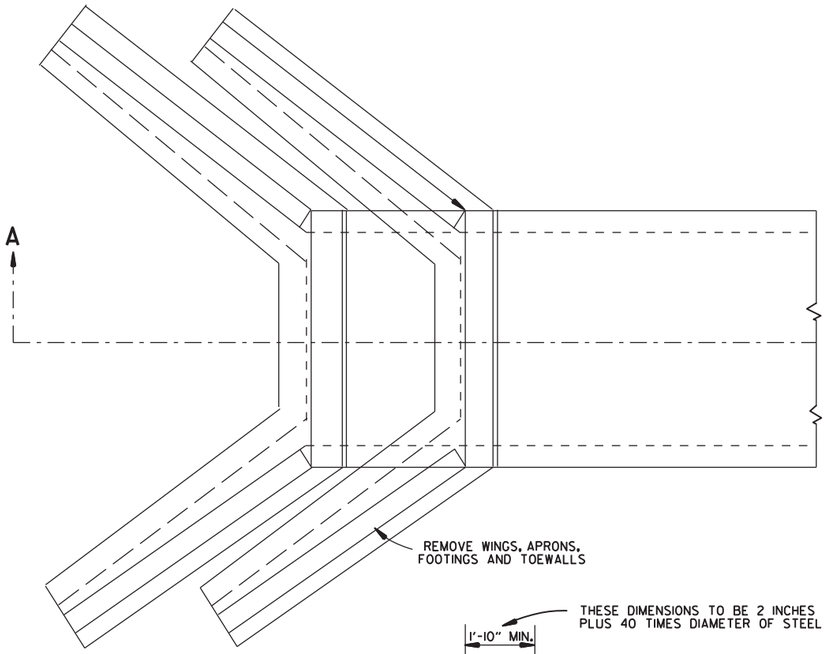
ROADWAY EXCAVATION SHOWN IN SECTION C-C ABOVE AS SUBSIDIARY WILL NOT BE MEASURED OR PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION.

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

ARKANSAS STATE HIGHWAY COMMISSION

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

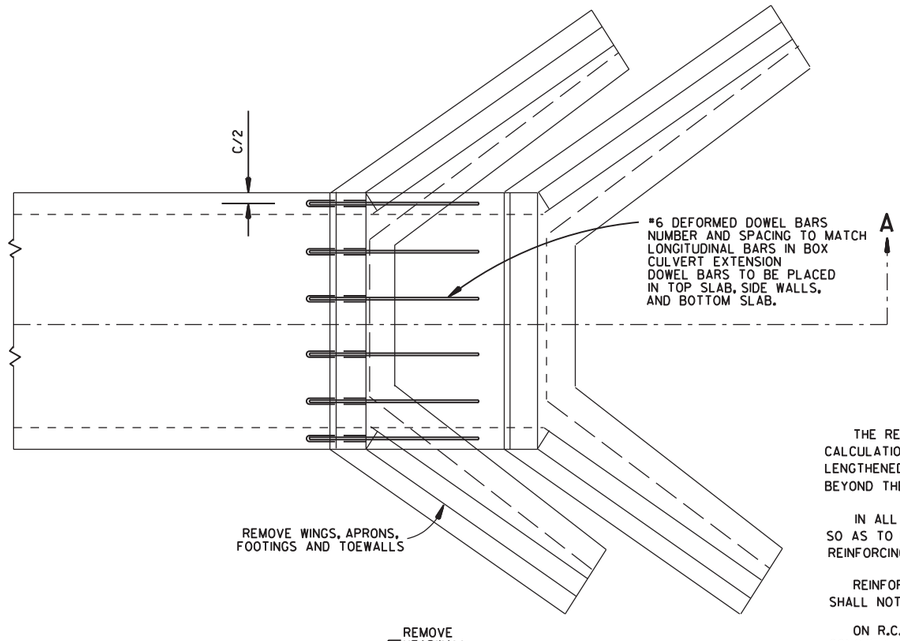
STANDARD DRAWING RCB-2



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

SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

DEGREE OF CURVE	30 MPH			35 MPH			40 MPH			45 MPH			50 MPH			55 MPH			60 MPH			65 MPH			70 MPH			75 MPH		
	e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)	
		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE
0° 15'	NC			NC			NC			NC			NC			NC			NC			NC			NC			NC		
0° 30'	NC			NC			NC			NC			NC			NC			RC	96		RC	96		RC	96		0.022	101	
0° 45'	NC			NC			NC			NC			RC	96		RC	96		0.024	106		0.026	110		0.030	120		0.032	125	
1° 00'	NC			NC			NC			RC	90		0.022	101		0.026	110		0.030	120		0.034	130		0.038	139		0.042	149	300
1° 15'	NC			NC			RC	84		0.022	95		0.028	115		0.032	125		0.038	139		0.042	149		0.046	158	300	0.052	173	
1° 30'	NC			RC	78		0.022	88		0.028	108		0.032	125		0.038	139		0.044	154		0.050	168	300	0.056	182		0.062	197	
1° 45'	RC	72		RC	78		0.026	97		0.030	113		0.036	134		0.044	154		0.050	168		0.056	182		0.064	202		0.070	216	
2° 00'	RC	72		0.024	86		0.028	101		0.034	122		0.042	149		0.048	163		0.056	182		0.064	202		0.070	216		0.080	240	
2° 15'	RC	72		0.026	90		0.032	109		0.038	131		0.046	158		0.054	178		0.062	197		0.070	216		0.078	235		0.088	259	350
2° 30'	0.022	75		0.028	94		0.034	113		0.042	140		0.050	168		0.058	187	300	0.068	211		0.076	230		0.086	254	350	0.096	278	
2° 45'	0.024	79		0.030	98		0.038	122		0.046	149	200	0.054	178		0.064	202		0.072	221		0.082	245		0.092	269		0.100	288	400
3° 00'	0.026	83		0.034	105		0.040	126		0.050	158		0.058	187		0.068	211		0.078	235		0.088	259		0.098	283		D MAX = 2° 45'		
3° 15'	0.028	86		0.036	109		0.044	134		0.052	162		0.062	197		0.072	221		0.082	245		0.092	269		0.100	288				
3° 30'	0.030	90		0.038	113		0.046	139		0.056	171		0.066	206		0.076	230		0.086	254		0.096	278		D MAX = 3° 30'					
3° 45'	0.032	93		0.040	117		0.050	147		0.058	176		0.070	216		0.080	240		0.090	264		0.098	283							
4° 00'	0.034	97		0.042	121	200	0.052	151		0.062	185		0.072	221		0.084	250		0.094	274		0.100	288							
4° 15'	0.036	100		0.044	125		0.054	155		0.064	189		0.076	230		0.086	254		0.096	278		D MAX = 4° 15'								
4° 30'	0.036	100		0.046	129		0.056	160		0.068	198		0.078	235		0.090	264		0.098	283										
4° 45'	0.038	104	200	0.048	133		0.060	168		0.070	203		0.082	245		0.092	269		0.100	288										
5° 00'	0.040	108		0.050	137		0.062	172		0.072	207		0.084	250		0.094	274		D MAX = 5° 15'										
5° 30'	0.044	115		0.054	144		0.066	181		0.078	221	250	0.088	259		0.098	283												
6° 00'	0.046	119		0.058	152		0.070	189		0.082	230		0.092	269		0.100	288												
6° 30'	0.050	126		0.062	160		0.074	198		0.086	239		0.096	278	300	D MAX = 6° 30'													
7° 00'	0.052	130		0.064	164		0.078	206		0.090	248		0.098	283															
7° 30'	0.054	133		0.068	172		0.080	210		0.092	252		0.100	288															
8° 00'	0.058	140		0.070	176		0.084	219		0.094	257	300	D MAX = 8° 25'																
8° 30'	0.060	144		0.072	179		0.086	223	250	0.096	261																		
9° 00'	0.062	148		0.076	187		0.088	227		0.098	266																		
9° 30'	0.064	151		0.078	191		0.092	235		0.100	270																		
10° 00'	0.066	155		0.080	195		0.094	240		D MAX = 10° 30'																			
11° 00'	0.070	162		0.084	203		0.096	244																					
12° 00'	0.074	169		0.088	211	250	0.098	248																					
13° 00'	0.076	173		0.090	215		0.100	252	300																				
14° 00'	0.080	180		0.094	222		D MAX = 13° 45'																						
15° 00'	0.082	184		0.096	226																								
16° 00'	0.086	191		0.098	230																								
17° 00'	0.088	194		0.100	234																								
18° 00'	0.090	198	250	D MAX = 19° 30'																									
19° 00'	0.092	202																											
20° 00'	0.094	205																											
21° 00'	0.096	209																											
22° 00'	0.096	209																											
23° 00'	0.098	212																											
24° 00'	0.098	212																											
25° 00'	0.100	216																											
D MAX = 28° 30'																													

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%

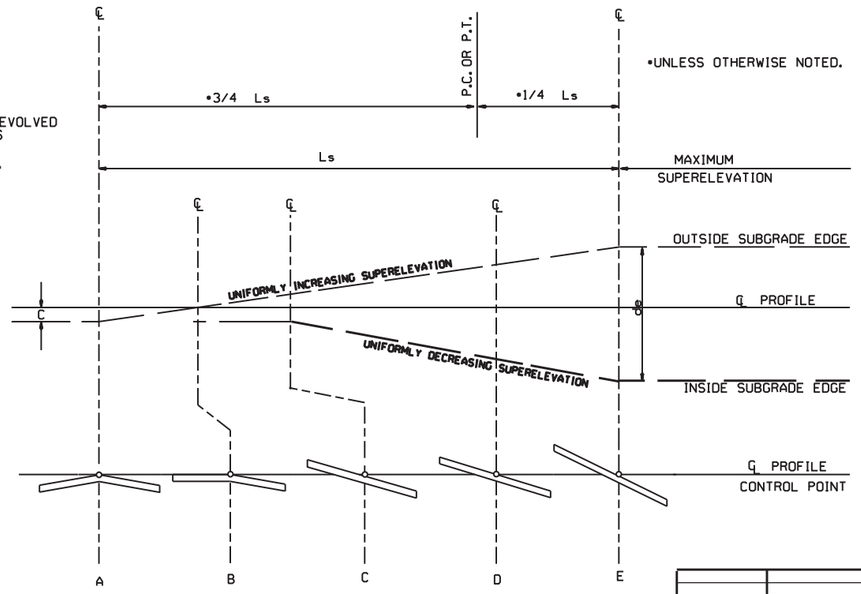
NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

RATE OF SUPERELEVATION SHALL BE COMPUTED ON STRAIGHT LINE METHOD USING APPLICABLE Ls.

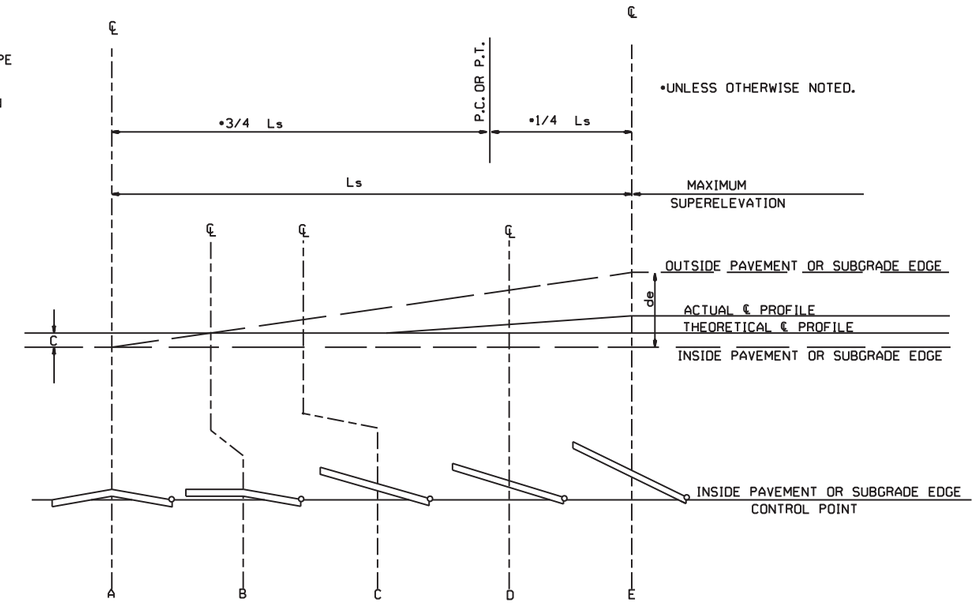
SUPERELEVATION FORMULA = $\frac{Lde}{Ls}$

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.)



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE



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

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

DATE	REVISION	DATE FILMED
11-07-19	REVISED SUPERELEVATION TABLE	
10-18-96	ADDED FORMULA	
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

SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC (4% MAXIMUM)

DEGREE OF CURVE	30 MPH e	30 MPH Ls (FT) MINIMUM	30 MPH Ls (FT) DESIRABLE
0° 15'	NC		
0° 30'			
0° 45'			
1° 00'			
1° 15'			
1° 30'			
1° 45'			
2° 00'			
2° 15'	RC	72	100
2° 30'			
2° 45'			
3° 00'			
3° 15'	0.022	75	
3° 30'			
3° 45'	0.024	79	
4° 00'			
4° 15'			
4° 30'			
4° 45'	0.026	83	
5° 00'			
5° 30'			
6° 00'	0.028	86	125
6° 30'			
7° 00'	0.030	90	
7° 30'			
8° 00'			
8° 30'	0.032	93	
9° 00'			
9° 30'			
10° 00'	0.034	97	
10° 30'			
11° 00'			
11° 30'			
12° 00'	0.036	100	
12° 30'			
13° 00'			
13° 30'			
14° 00'	0.038	104	
14° 30'			
15° 00'			
15° 30'			
16° 00'			
16° 30'	0.040	108	150

D MAX = 22° 45'

DEGREE OF CURVE	35 MPH e	35 MPH Ls (FT) MINIMUM	35 MPH Ls (FT) DESIRABLE
0° 15'	NC		
0° 30'			
0° 45'			
1° 00'			
1° 15'			
1° 30'			
1° 45'	RC	78	100
2° 00'			
2° 15'			
2° 30'	0.022	82	
2° 45'	0.024	86	
3° 00'			
3° 15'			
3° 30'	0.026	90	
3° 45'			
4° 00'			
4° 15'	0.028	94	125
4° 30'			
4° 45'			
5° 00'	0.030	98	
5° 30'			
6° 00'	0.032	101	
6° 30'			
7° 00'	0.034	105	
7° 30'			
8° 00'			
8° 30'	0.036	109	
9° 00'			150
9° 30'	0.038	113	
10° 00'			
10° 30'			
11° 00'			
11° 30'	0.040	117	

D MAX = 15° 15'

DEGREE OF CURVE	40 MPH e	40 MPH Ls (FT) MINIMUM	40 MPH Ls (FT) DESIRABLE
0° 15'	NC		
0° 30'			
0° 45'			
1° 00'			
1° 15'	RC	84	100
1° 30'			
1° 45'			
2° 00'	0.022	88	
2° 15'	0.024	92	
2° 30'	0.026	97	
2° 45'			
3° 00'	0.028	101	125
3° 15'			
3° 30'	0.030	105	
3° 45'			
4° 00'	0.032	109	
4° 15'			
4° 30'	0.034	113	
4° 45'			
5° 00'	0.036	118	150
5° 30'			
6° 00'	0.038	122	
6° 30'			
7° 00'	0.040	126	
7° 30'			
8° 00'			

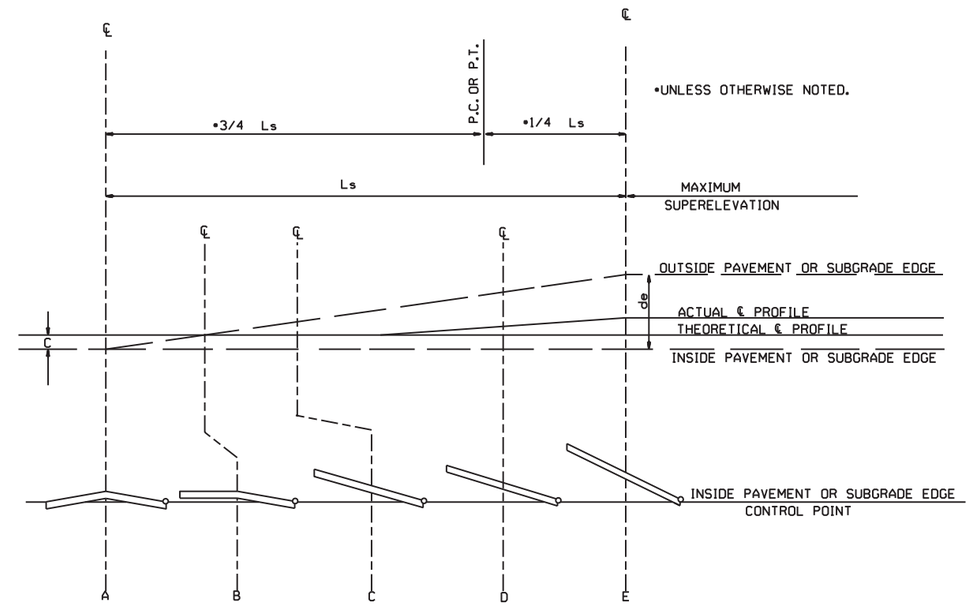
D MAX = 10° 30'

DEGREE OF CURVE	45 MPH e	45 MPH Ls (FT) MINIMUM	45 MPH Ls (FT) DESIRABLE
0° 15'	NC		
0° 30'			
0° 45'			
1° 00'	RC	90	125
1° 15'			
1° 30'	0.022	95	
1° 45'	0.024	99	
2° 00'	0.026	104	
2° 15'			
2° 30'	0.028	108	
2° 45'	0.030	113	
3° 00'			
3° 15'	0.032	117	
3° 30'			
3° 45'	0.034	122	150
4° 00'			
4° 15'	0.036	126	
4° 30'			
4° 45'	0.038	131	
5° 00'			
5° 30'	0.040	135	
6° 00'			

D MAX = 8° 00'

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.)



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

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

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

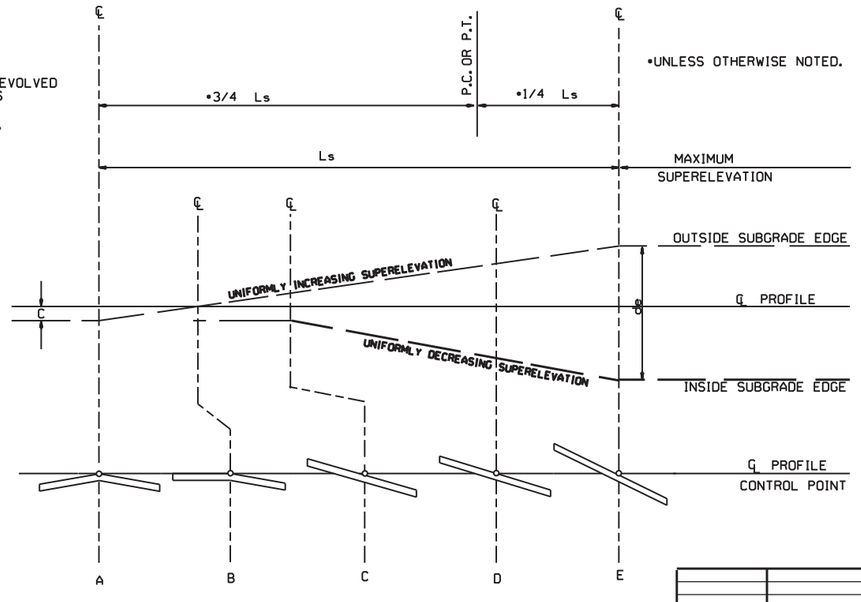
GENERAL NOTES

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

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

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

RATE OF SUPERELEVATION SHALL BE COMPUTED ON STRAIGHT LINE METHOD USING APPLICABLE Ls.



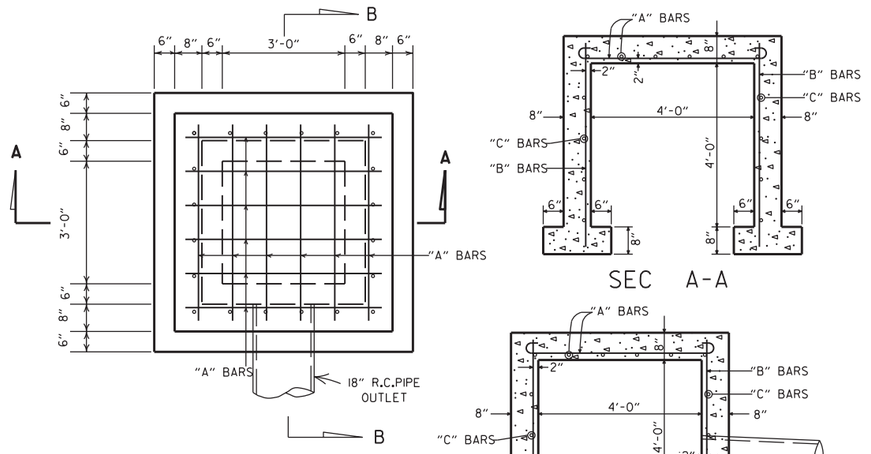
STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE

11-07-19	ISSUED	
DATE	REVISION	DATE FILMED

ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC (4% MAXIMUM)

STANDARD DRAWING SE-3

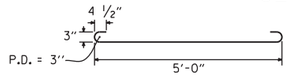


NOTE: MAX FILL HEIGHT ABOVE TOP OF BOX = 13'-0".

STEEL SCHEDULE

BARS	NUMBER	LENGTH	SPACING
"A"	12	6'-0"	10"
"B"	20	5'-0"	10 ½"
"C"	16	5'-0"	12"

ALL STEEL TO BE #4 BARS



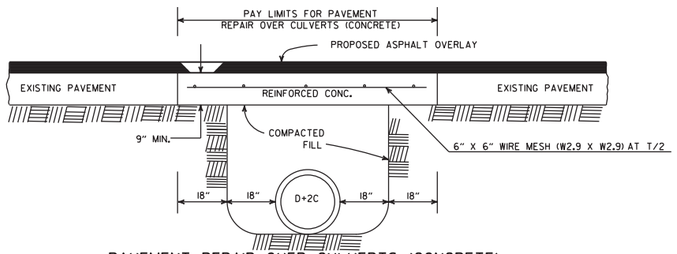
QUANTITIES

CONCRETE 3.31 CU. YDS.
REINFORCING STEEL 168 LB.

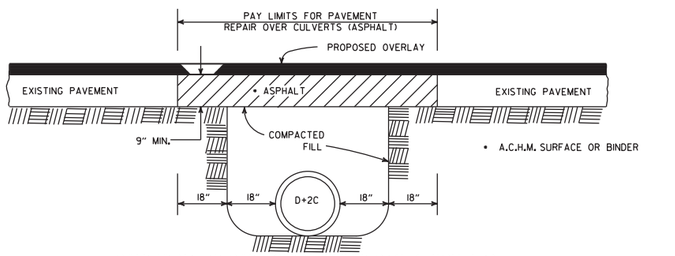
GENERAL NOTE:

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



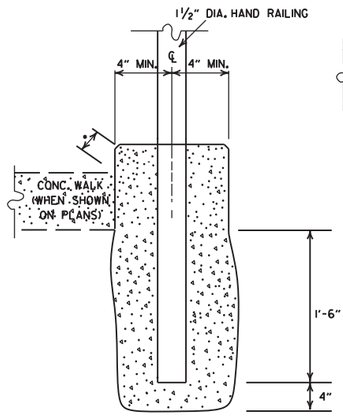
PAVEMENT REPAIR OVER CULVERTS (CONCRETE)



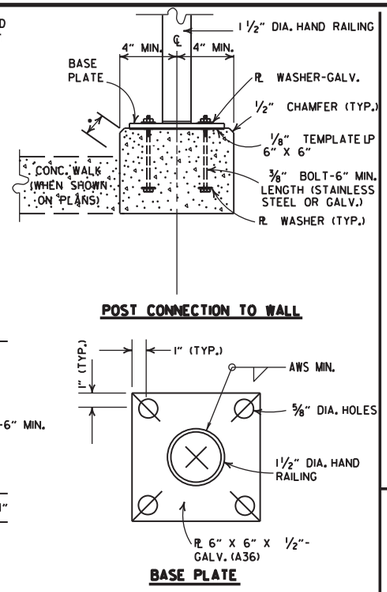
PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS

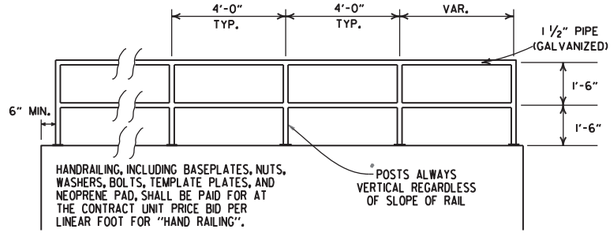
• A 2" MIN. HIGH CURB IS REQUIRED WHEN CONCRETE WALK IS ADJACENT TO THE HAND RAILING. PAYMENT FOR CURB SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR CONCRETE WALKS.



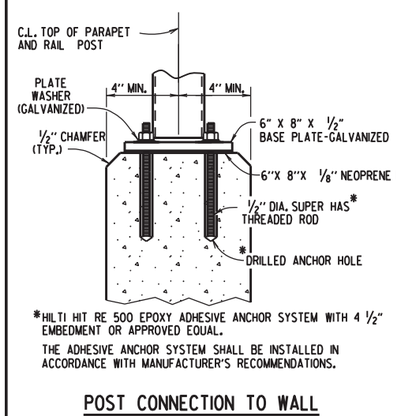
DETAIL OF HAND RAILING SET IN CONCRETE



POST CONNECTION DETAILS



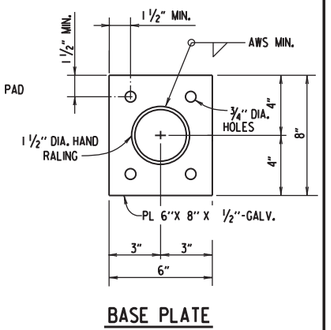
HAND RAILING SHALL CONFORM TO SECTION 633.



*HILTI HIT RE 500 EPOXY ADHESIVE ANCHOR SYSTEM WITH 4 ½" EMBEDMENT OR APPROVED EQUAL.

THE ADHESIVE ANCHOR SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

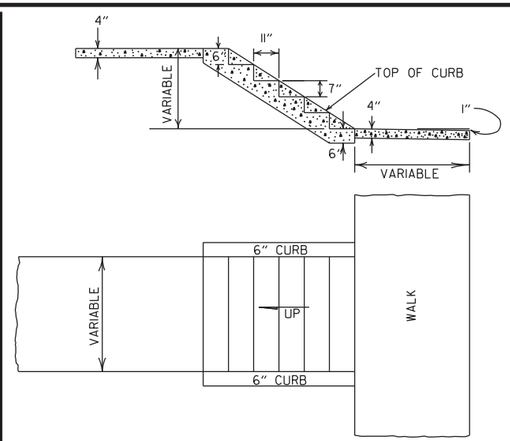
POST CONNECTION TO WALL



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
10-25-18	REVISED DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS	
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



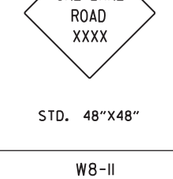
STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R4-2



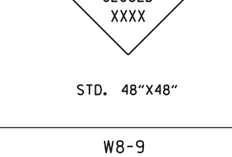
STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R5-1



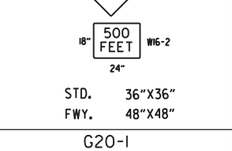
STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

RII-2



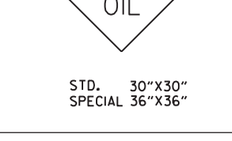
48"X30"

RII-3A



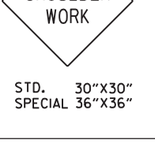
60"X30"

RII-4



60"X30"

W21-5a



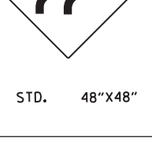
STD. 36"X36"
FWY. 48"X48"

WI-1



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

WI-2



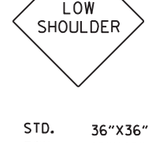
STD. 36"X36"
FWY. 48"X48"

WI-3



STD. 48"X48"

WI-4



STD. 48"X48"

WI-6



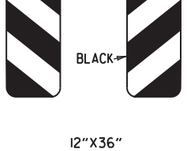
STD. 48"X24"
SPECIAL 60"X30"

WI-8



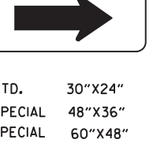
STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

W3-1



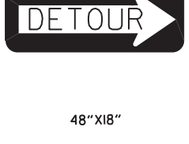
STD. 36"X36"
SPECIAL 48"X48"

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"

WI3-1



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"

WI-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.

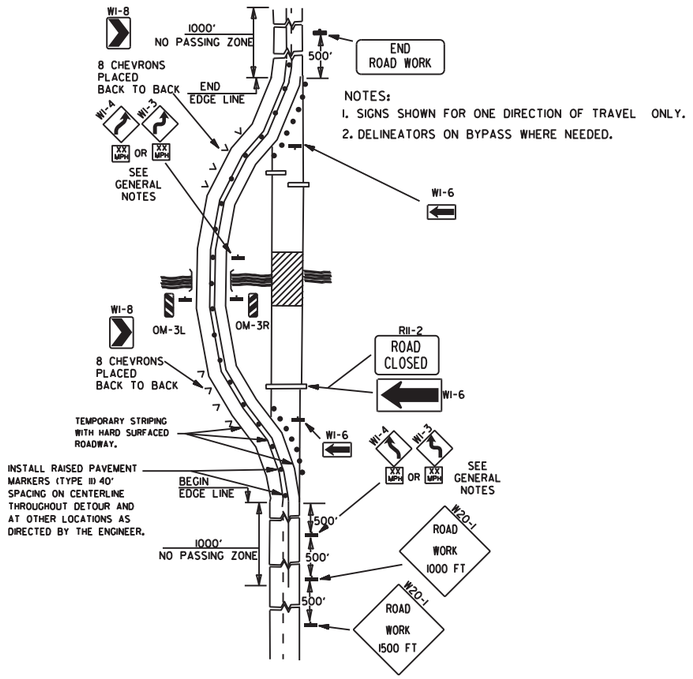
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED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

DATE	REVISION	FILMED
11-07-19	REVISED FOR MASH	
4-13-17	DELETED RSP-1 & ADDED W21-5a	
9-2-15	REVISED REDUCED SPEED LIMIT AHEAD SIGNS REVISED ROAD WORK NEXT XX MILES	
12-15-11	REVISED W24-1	
11-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
11-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
11-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
11-18-98	ADDED NOTE	
6-26-97	REVISED NOTE 5	
4-03-97	REVISED NOTE 5	
10-18-96	ADDED CONTROLLED ACCESS HWY. SIGN & TO NOTE 7	
10-12-95	ADDED R55-1	
6-8-95	REVISED TO CORRECT SIGN ILLUSTRATIONS	6-8-95
2-2-95	REVISED PER PART VI, MUTCD SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

ARKANSAS STATE HIGHWAY COMMISSION

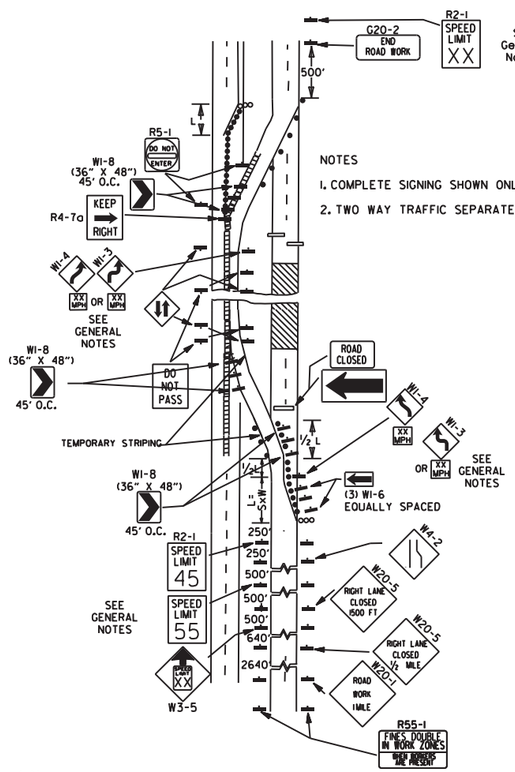
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



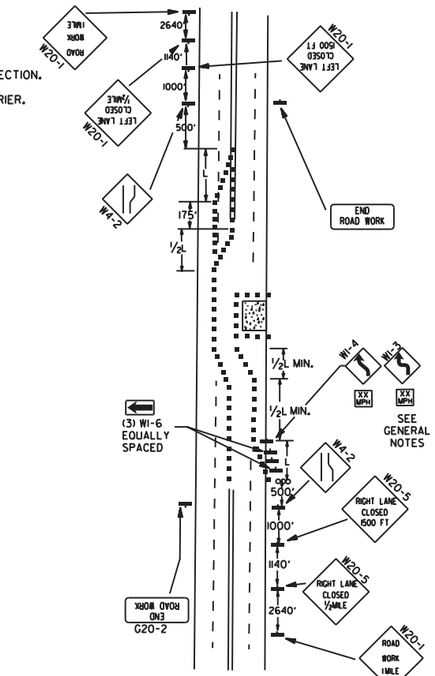
NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

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

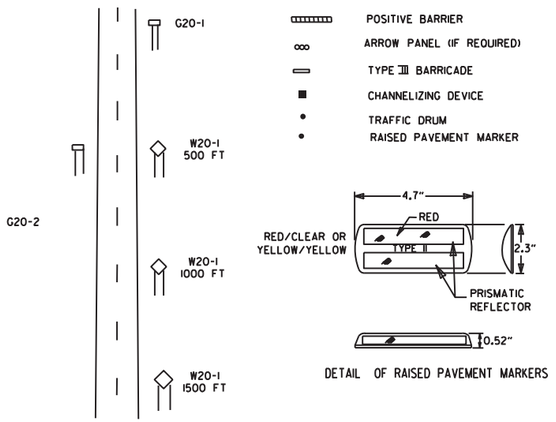


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

(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.



DETAIL OF RAISED PAVEMENT MARKERS

TYPICAL ADVANCE WARNING SIGN PLACEMENT

TAPER FORMULAE:

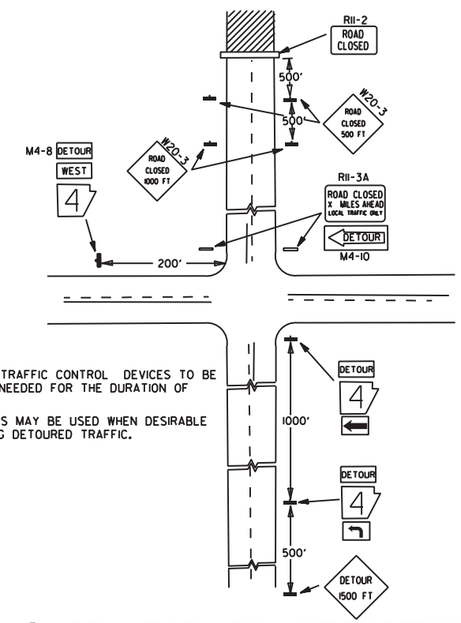
L=SXW FOR SPEEDS OF 45MPH OR MORE.

$L = \frac{WS^2}{60}$ 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.

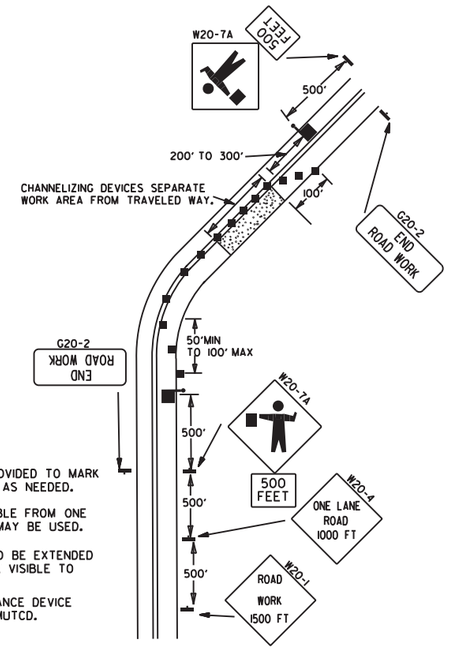
GENERAL NOTES:

1. THE MAINTENANCE DIVISION SHALL CONDUCT A BALL BANK STUDY TO DETERMINE THE ADVISORY SPEED LIMIT PRIOR TO OPENING TO TRAFFIC. THE ADVISORY SPEED WILL BE POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-145MPH 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 R2-155MPH 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 ARDOT QUALIFIED PRODUCTS LIST.
9. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).



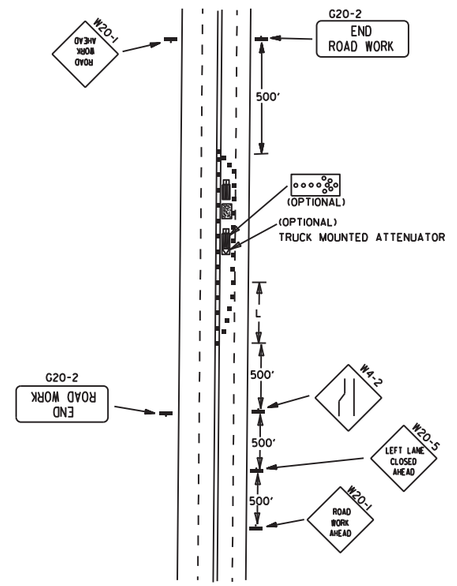
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

(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.



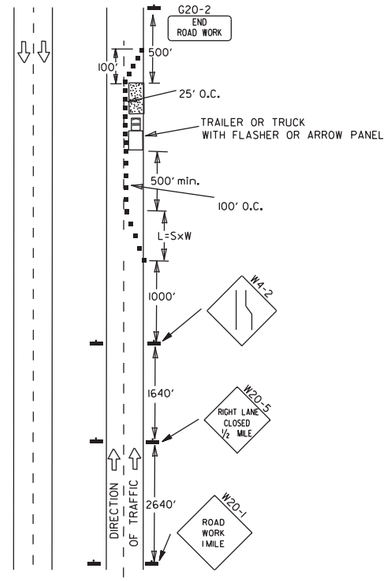
(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

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

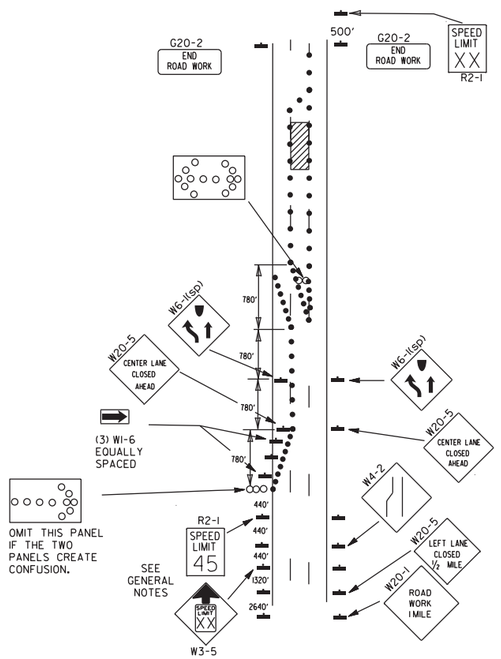
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-2



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



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

KEY:

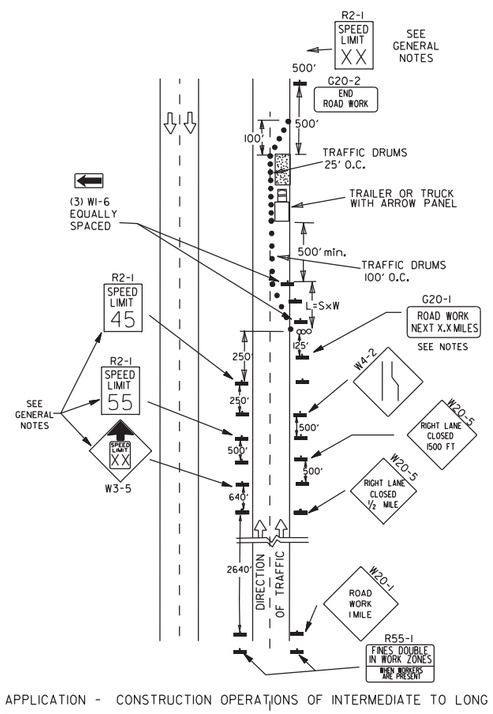
ooo ARROW PANEL (IF REQUIRED)

■ CHANNELIZING DEVICE

● TRAFFIC DRUM

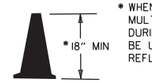
GENERAL NOTES:

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 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-1 55MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. THE G20-1 SIGN WILL BE REQUIRED ON JOBS OF OVER TWO MILES IN LENGTH. WHEN THE LANE CLOSURE IS NOT AT THE BEGINNING OF THE PROJECT, THE G20-1 SIGN SHALL BE ERECTED 125' IN ADVANCE OF THE JOB LIMIT. ADDITIONAL W20-1 (1 MILE) SIGNS ARE NOT REQUIRED IN ADVANCE OF LANE CLOSURES THAT BEGIN INSIDE THE PROJECT LIMITS.
8. FLAGGERS SHALL USE STOP/SLOW PADDLES FOR CONTROLLING TRAFFIC THROUGH WORK ZONES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. ALL PLASTIC DRUMS AND CONES SHALL MEET THE REQUIREMENTS OF 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.
11. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).



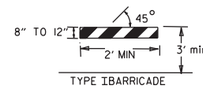
(C) TYPICAL APPLICATION - CONSTRUCTION OPERATIONS OF INTERMEDIATE TO LONG TERM DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.

CHANNELIZING DEVICES



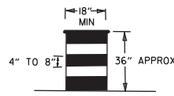
* WHEN CONES ARE USED ON FREEWAYS AND MULTI-LANE HIGHWAYS, THEY SHALL BE 28" MIN. DURING HOURS OF DARKNESS. 28" CONES SHALL BE USED ON ALL ROADWAYS, AND SHALL BE REFLECTORIZED IN ACCORDANCE WITH THE M.U.T.C.D.

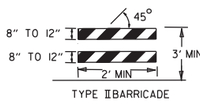
CONES



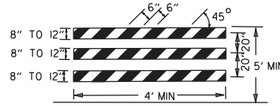
TYPE I BARRICADE

PLASTIC DRUM



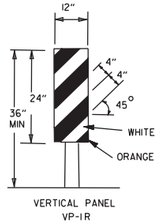


TYPE II BARRICADE



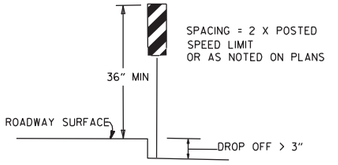
TYPE III BARRICADE

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

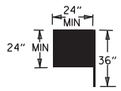


VERTICAL PANEL
VP-1R

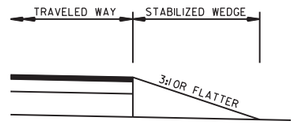
VERTICAL PANEL PLACEMENT



FLAG

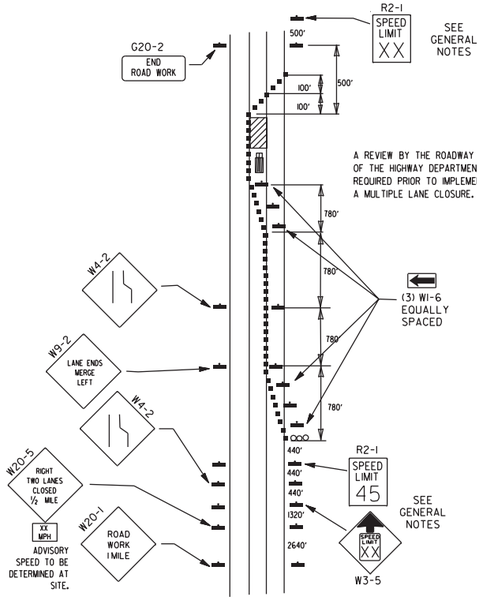


FLAG SHALL BE OF GOOD GRADE RED MATERIAL



STABILIZED WEDGE

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



A REVIEW BY THE ROADWAY DESIGN DIVISION OF THE HIGHWAY DEPARTMENT WILL BE REQUIRED PRIOR TO IMPLEMENTING A MULTIPLE LANE CLOSURE.

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

TRAFFIC CONTROL DEVICES

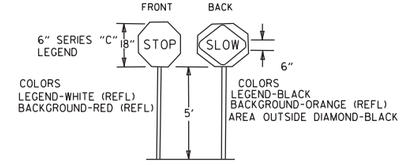
NON-INTERSTATE			
VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL	
		≤ 45 MPH	> 45 MPH
≤ 2"	CENTERLINE	W8-11 AND LANE STRIPING	W8-11 AND LANE STRIPING
> 2"	CENTERLINE	STANDARD LANE CLOSURE	STANDARD LANE CLOSURE
≤ 3"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9, EDGE LINE STRIPING, AND VERTICAL PANELS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

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

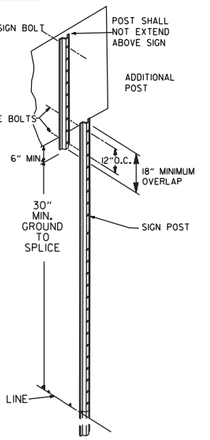
INTERSTATE AND NON-INTERSTATE		
FORESLOPE	HEIGHT	TRAFFIC CONTROL
1:1	> 2 FT	PRECAST CONCRETE BARRIER
2:1	≤ 5 FT	TRAFFIC DRUMS
2:1	> 5 FT	PRECAST CONCRETE BARRIER
Flatter than 2:1	N/A	TRAFFIC DRUMS

GENERAL NOTES:
1. WHEN THE SHOULDER AREA IS USED AS PART OF THE TRAVELED LANE AND THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, THEN VERTICAL PANELS SHALL BE USED.
2. WHEN THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, A STABILIZED WEDGE SHALL BE USED.
3. PRECAST CONCRETE BARRIER WALL CAN BE USED IN LIEU OF A STABILIZED WEDGE, W8-17 SIGN, EDGE LINE STRIPING, AND TRAFFIC DRUMS, IF AND WHERE DIRECTED BY THE ENGINEER.
4. A STABILIZED WEDGE, W8-17 SIGN, EDGE LINE STRIPING, AND TRAFFIC DRUMS CAN BE USED IN LIEU OF PRECAST CONCRETE BARRIER WALL, IF AND WHERE DIRECTED BY THE ENGINEER.
5. W21-5, W21-5a, AND/OR W21-5b SIGNS SHALL BE USED WHERE THE ROADWAY IS UNOBSTRUCTED IF AND WHERE DIRECTED BY THE ENGINEER.

STOP SLOW PADDLE



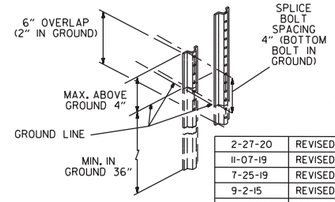
DETAIL OF SPLICES



NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-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
2-27-20	REVISED TRAFFIC CONTROL DEVICES DETAILS	
11-07-19	REVISED NOTE 9, ADDED NOTE 11	
7-25-19	REVISED TRAFFIC CONTROL DEVICES DETAILS	
9-2-15	REVISED NOTE 2 & REPLACED R2-5A WITH W3-5	
10-15-09	ADDED REFERENCE TO MASH	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED NOTE	
10-1-98	ADDED NOTE	
4-03-97	ADDED (SP) TO W6-1& REVISED TRAFFIC CONTROL DEVICES NOTE	
10-18-96	ADDED R55-1	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL, TEXT	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

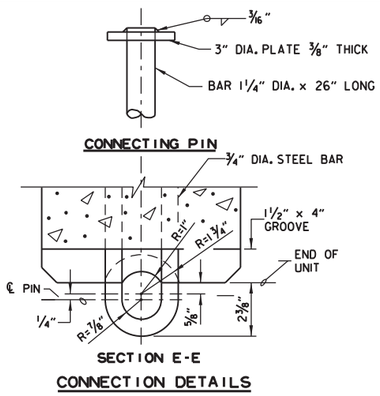
ARKANSAS STATE HIGHWAY COMMISSION

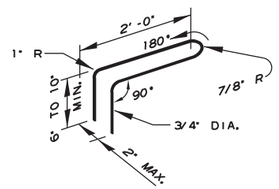
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

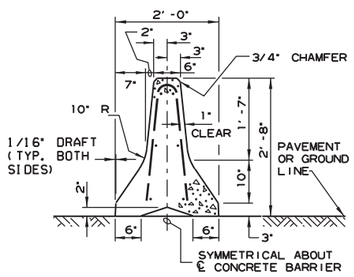
STANDARD DRAWING TC-3

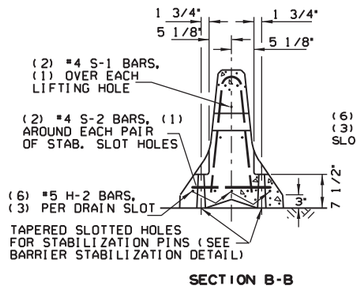
REINFORCING BAR TABLE PER BARRIER UNIT

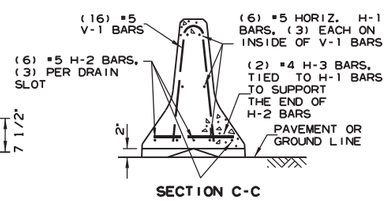
MARK	LOCATION	BAR SIZE	(NO. BARS)	SKETCH
H-1	HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS	#5	(6)	19'-3"
H-2	CENTERED ABOVE DRAIN SLOTS LONG. & TRANSVERSELY	#5	(6)	6'-6"
H-3	TIED ABOVE H-1 BARS TO SUPPORT H-2. TIED TO V-1	#4	(2)	1'-6"
S-1	OVER LIFT HOLES	#4	(2)	2'-5", LIFTING HOLE, 90°, 3 3/8" R
S-2	HORIZ. AROUND SLOTS BETWEEN V-1'S @ DRAIN SLOTS	#4	(2)	1 1/2" R, SLOTS, 7", 1'-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°, 9 1/2", 2'-1 3/8", 4 3/8"

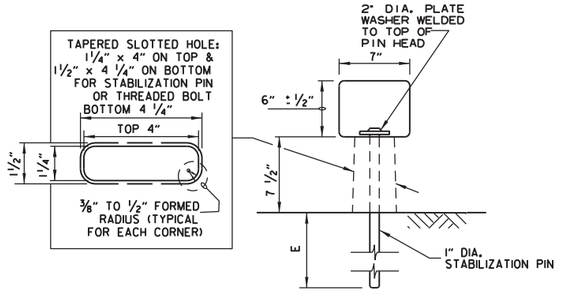


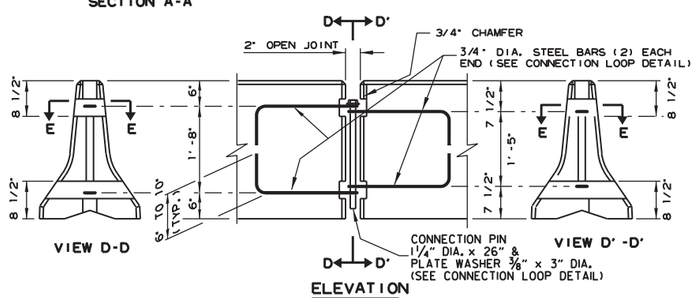


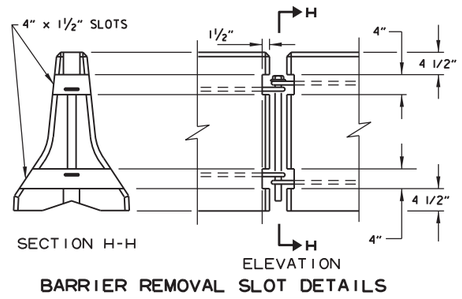


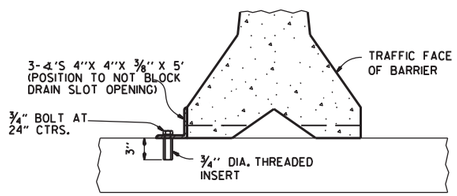




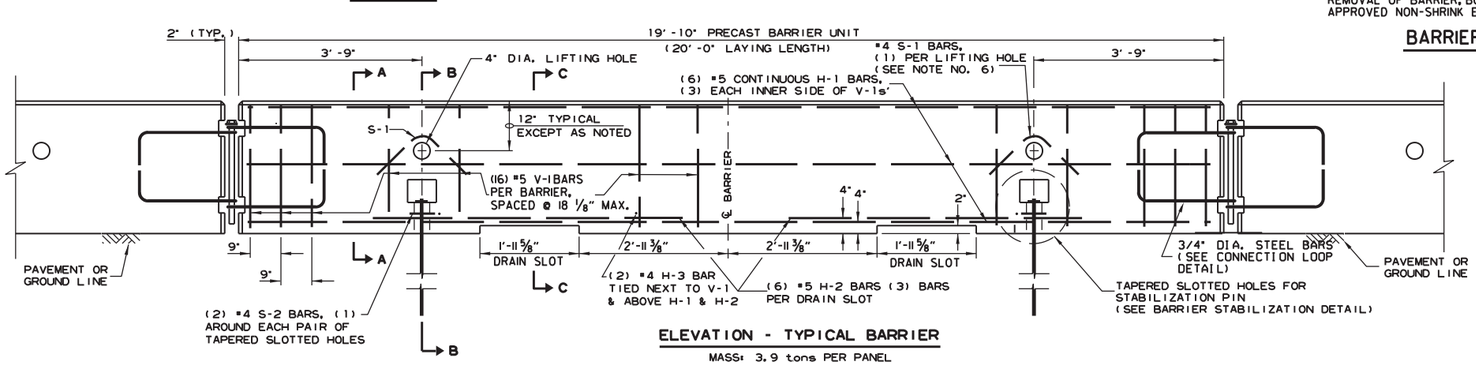








NOTE: " THREADED INSERTS SHALL BE CAST IN PLACE FOR ALL NEW BRIDGE DECKS AND DRILLED AND GROUTED FOR EXISTING BRIDGE DECKS. INSERTS SHALL HAVE A MINIMUM ULTIMATE LOAD CAPACITY OF 8000 LBS. IN TENSION. AFTER REMOVAL OF BARRIER, BOLTS, AND ANGLES, THE INSERTS SHALL BE FILLED WITH APPROVED NON-SHRINK EPOXY.



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 ARDOT 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 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 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 MANUAL FOR ASSESSING SAFETY HARDWARE (MASH). 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.

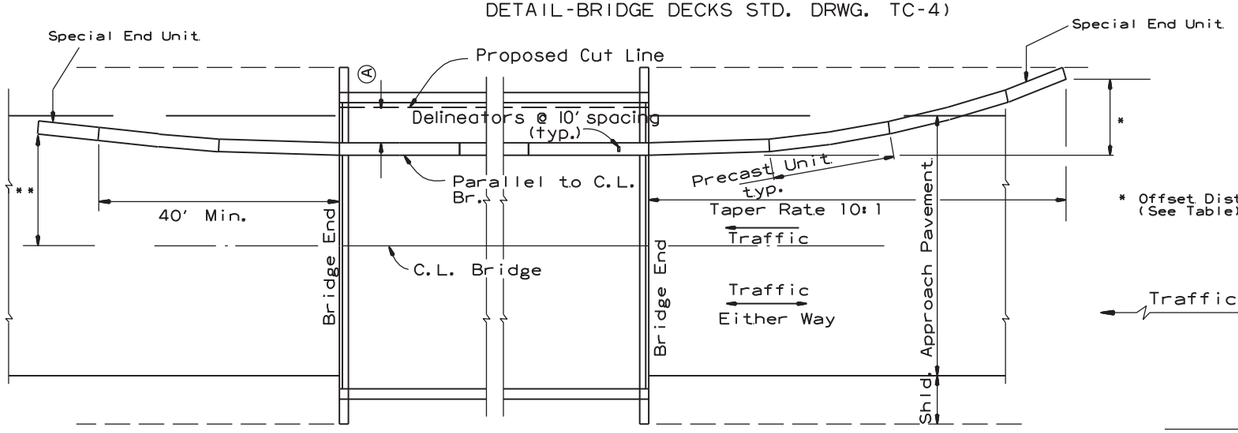
DATE	REVISION	FILMED
11-07-19	REVISED NOTE 3	
2-27-14	REVISED BARRIER STABILIZATION DETAIL	
10-15-09	ADDED REFERENCE TO MASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02	ISSUED NEW DRAWING	

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

STANDARD DRAWING TC-4

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

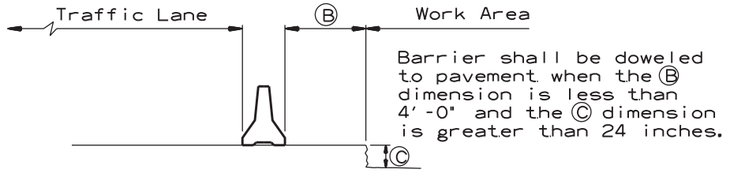


BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

** Offset Distance for Two Way Traffic Only

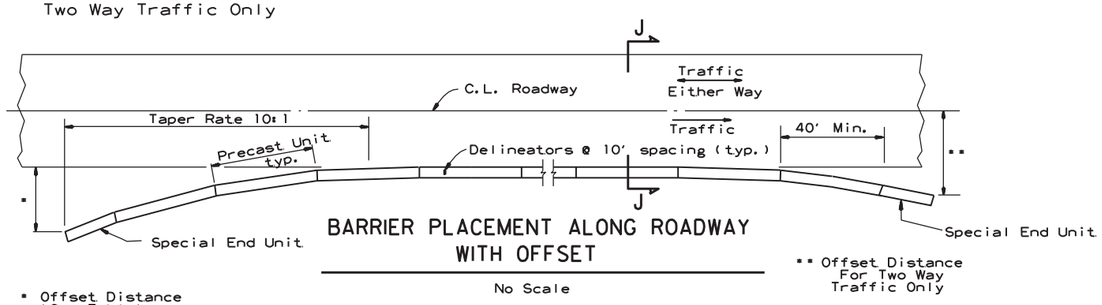
* Offset Distance (See Table)



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



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

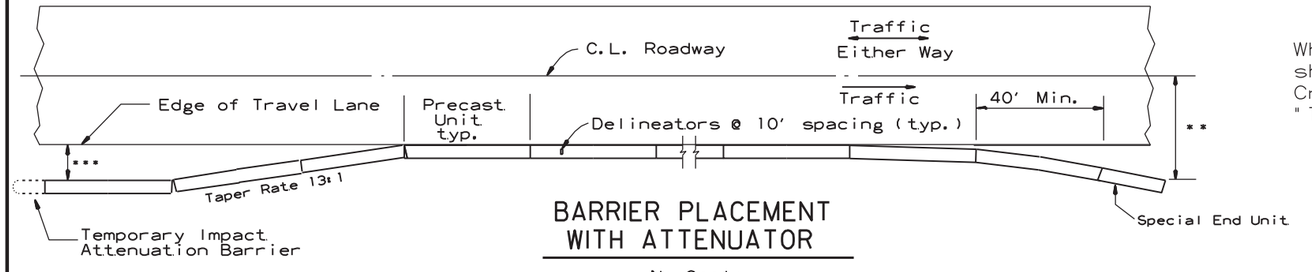
** Offset Distance For Two Way Traffic Only

* Offset Distance (See Table)

Offset Distance Table

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

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

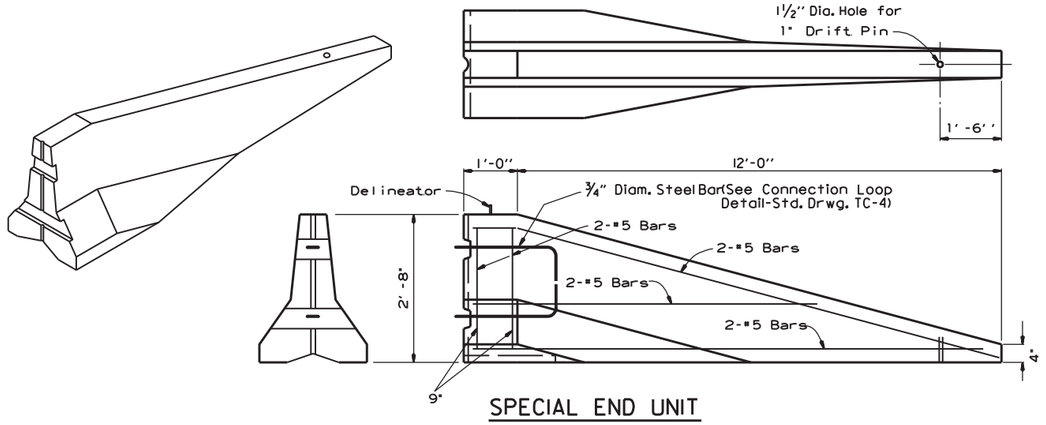


BARRIER PLACEMENT WITH ATTENUATOR

No Scale

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

** Offset Distance For Two Way Traffic Only



SPECIAL END UNIT

No Scale

General Notes

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

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

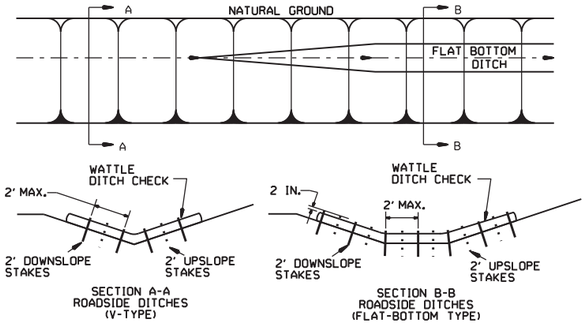
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

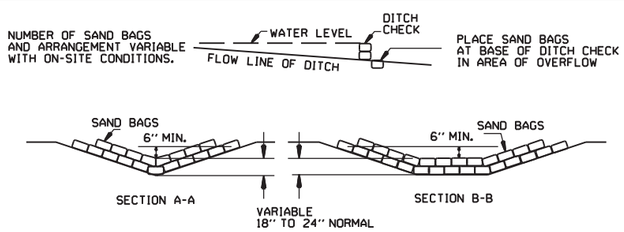
STANDARD DRAWING TC-5

GENERAL NOTES

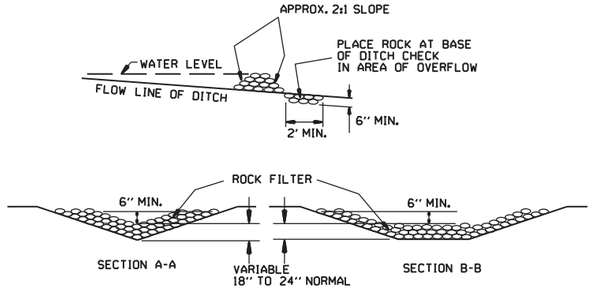
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



SAND BAG DITCH CHECK (E-5)

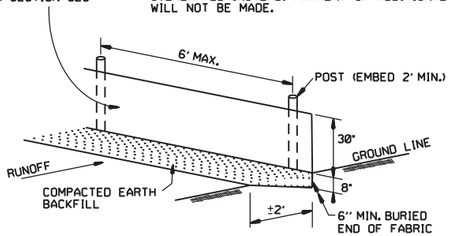


ROCK DITCH CHECK (E-6)

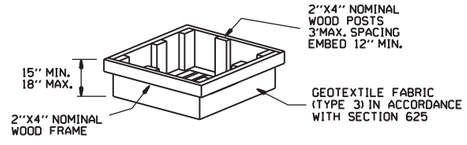
GENERAL NOTES

GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625

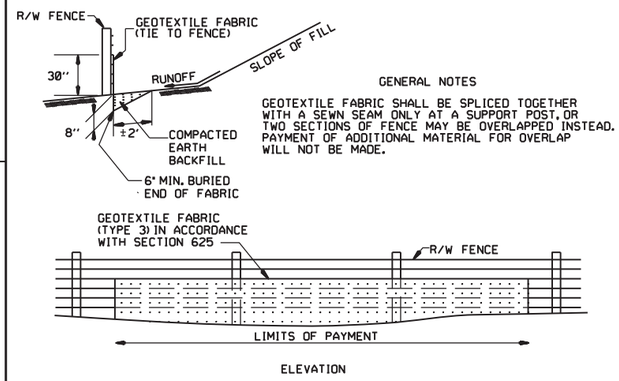
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



SILT FENCE (E-11)



DROP INLET SILT FENCE (E-7)



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.

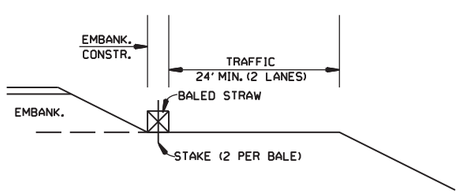
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

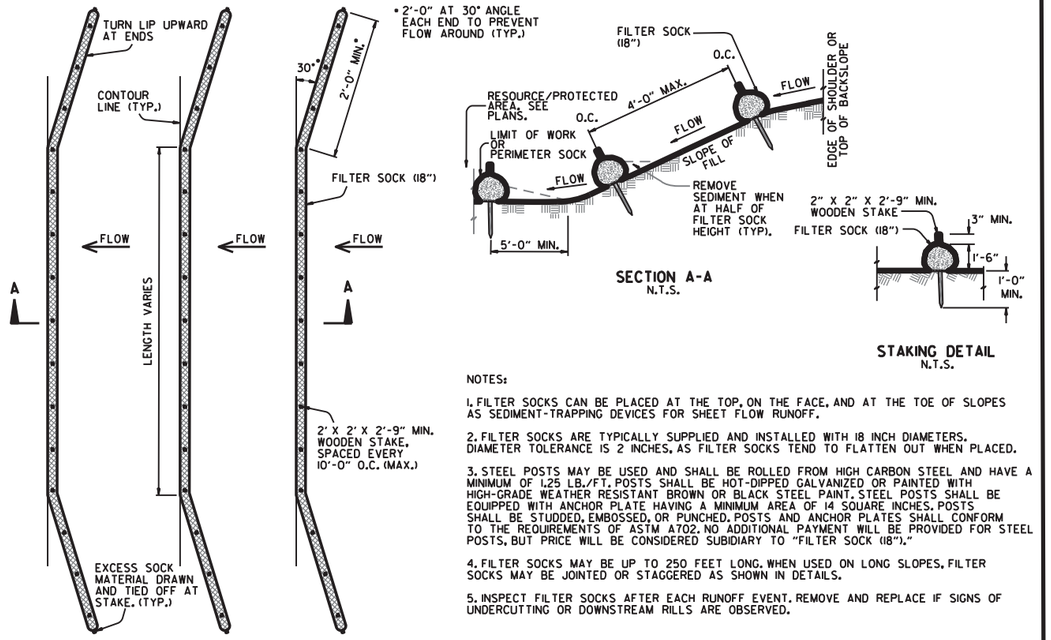
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

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)



NOTES:

1. FILTER SOCKS CAN BE PLACED AT THE TOP, ON THE FACE, AND AT THE TOE OF SLOPES AS SEDIMENT-TRAPPING DEVICES FOR SHEET FLOW RUNOFF.

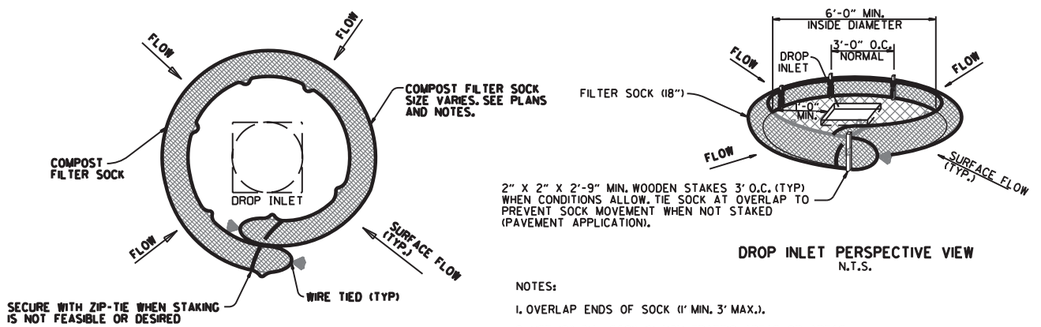
2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES, AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.

3. STEEL POSTS MAY BE USED AND SHALL BE ROLLED FROM HIGH CARBON STEEL AND HAVE A MINIMUM OF 1.25 LB./FT. POSTS SHALL BE HOT-DIPPED GALVANIZED OR PAINTED WITH HIGH-GRADE WEATHER RESISTANT BROWN OR BLACK STEEL PAINT. STEEL POSTS SHALL BE EQUIPPED WITH ANCHOR PLATE HAVING A MINIMUM AREA OF 14 SQUARE INCHES. POSTS SHALL BE STUDDED, EMBOSSED, OR PUNCHED. POSTS AND ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR STEEL POSTS, BUT PRICE WILL BE CONSIDERED SUBIDIARY TO "FILTER SOCK (18")."

4. FILTER SOCKS MAY BE UP TO 250 FEET LONG. WHEN USED ON LONG SLOPES, FILTER SOCKS MAY BE JOINTED OR STAGGERED AS SHOWN IN DETAILS.

5. INSPECT FILTER SOCKS AFTER EACH RUNOFF EVENT. REMOVE AND REPLACE IF SIGNS OF UNDERCUTTING OR DOWNSTREAM RILLS ARE OBSERVED.

FILTER SOCK ALONG SLOPE (E-3)



NOTES:

1. OVERLAP ENDS OF SOCK (1' MIN. 3' MAX.).

2. USE 18" DIA. SOCK IN NON-TRAFFIC AREAS OR AREAS WHERE SAFETY IS NOT A CONCERN.

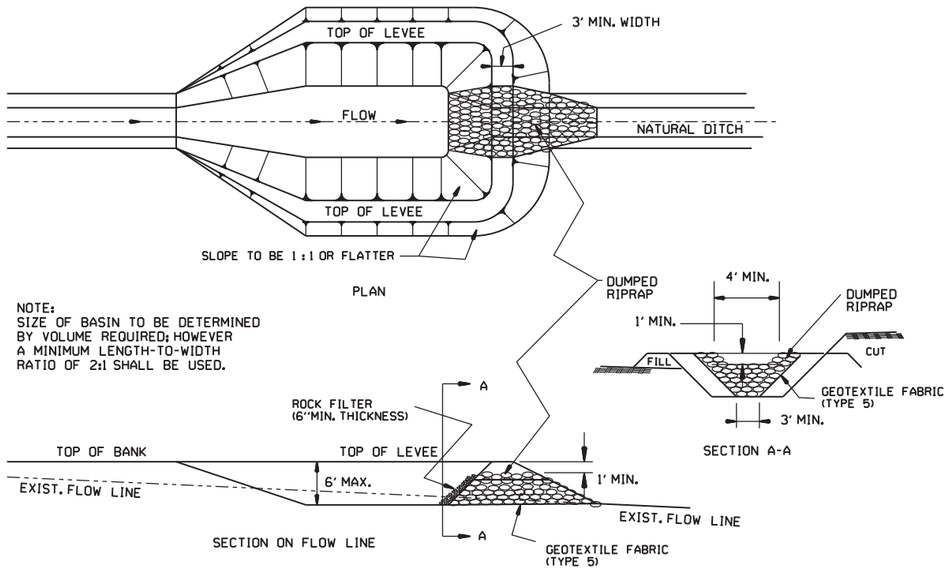
COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)

DATE	REVISION	FILMED
11-16-17	ADDED FILTER SOCK E-3 AND E-13	
12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK	
11-18-98	ADDED NOTES	
07-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)	
07-20-95	REVISED SILT FENCE E-4 AND E-11	7-20-95
07-15-94	REV. E-4 & E-11 MIN. 13" BURIED END OF FABRIC	
06-02-94	REVISED E-1,4,7 & 11; DELETED E-2 & 3	6-2-94
04-01-93	REDRAWN	
10-01-92	REDRAWN	
08-02-76	ISSUED R.D.M.	298-7-28-76

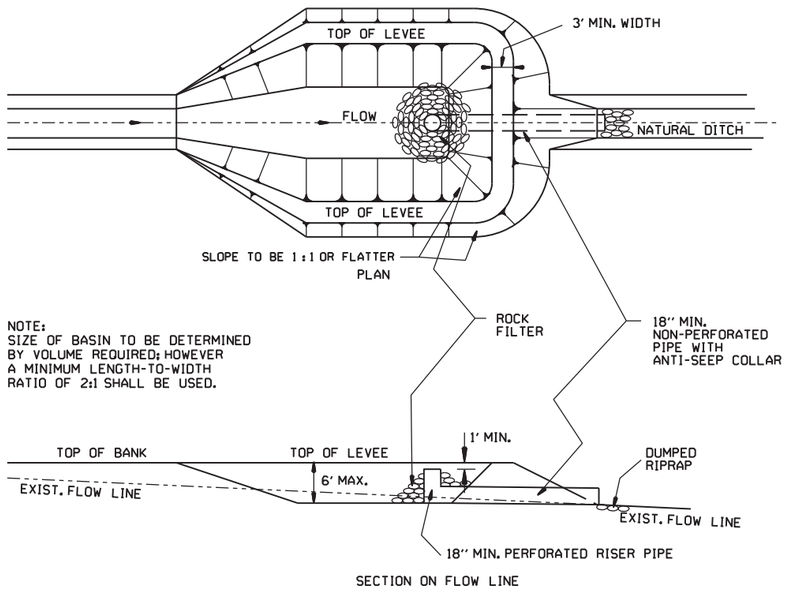
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

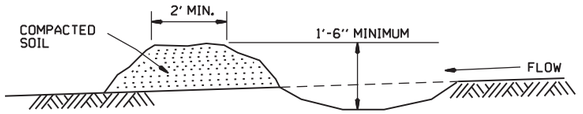
STANDARD DRAWING TEC-1



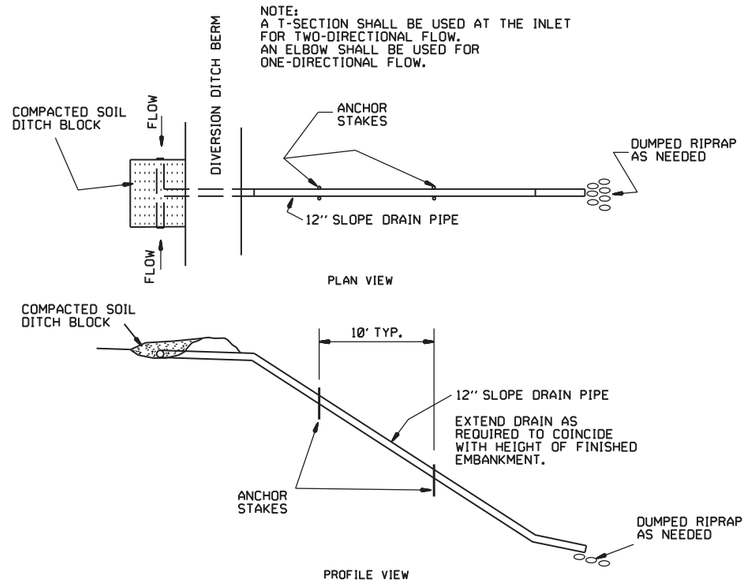
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



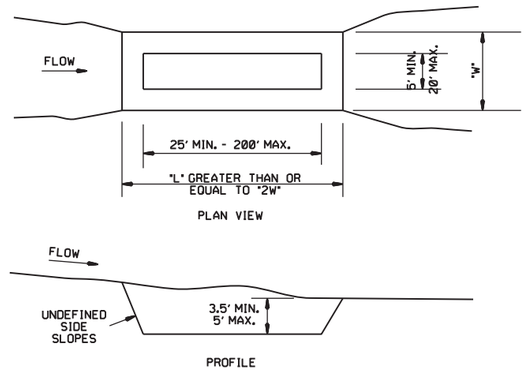
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



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

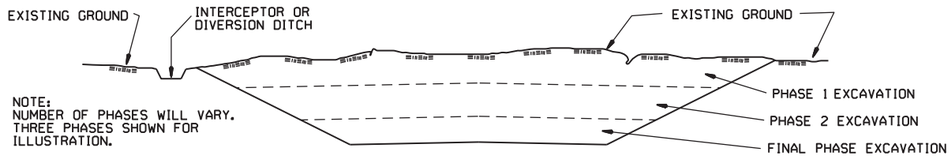
CLEARING AND GRUBBING

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

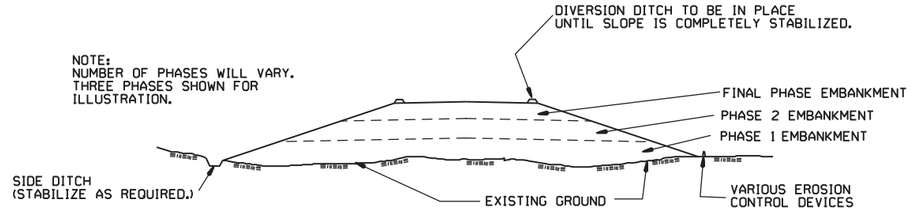
1. EXCAVATE AND STABILIZE INTERCEPTOR AND/OR DIVERSION DITCHES.

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.

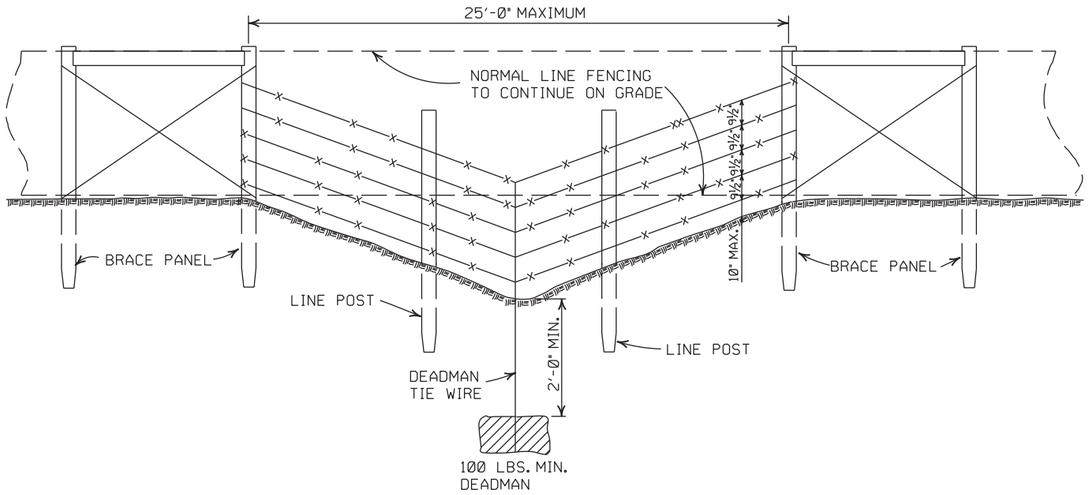
4. PLACE FINAL PHASE OF EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PLACE DIVERSION DITCHES AND SLOPE DRAINS AND MAINTAIN UNTIL ENTIRE SLOPE IS STABILIZED.

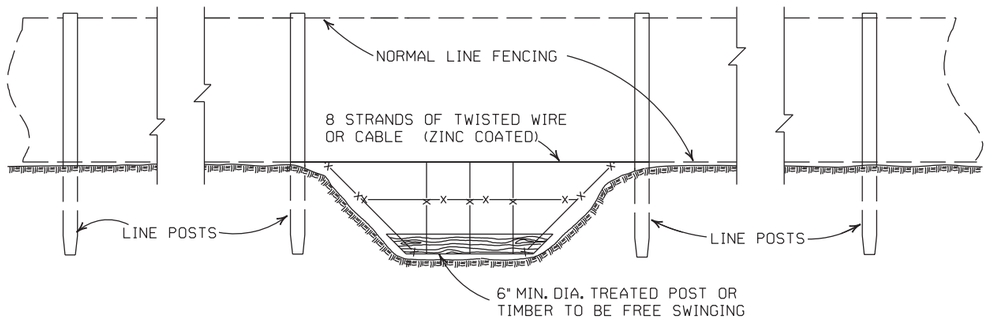
DATE	REVISION	FILMED
11-03-94	CORRECTED SPELLING	
6-2-94	Drawn & Issued	6-2-94

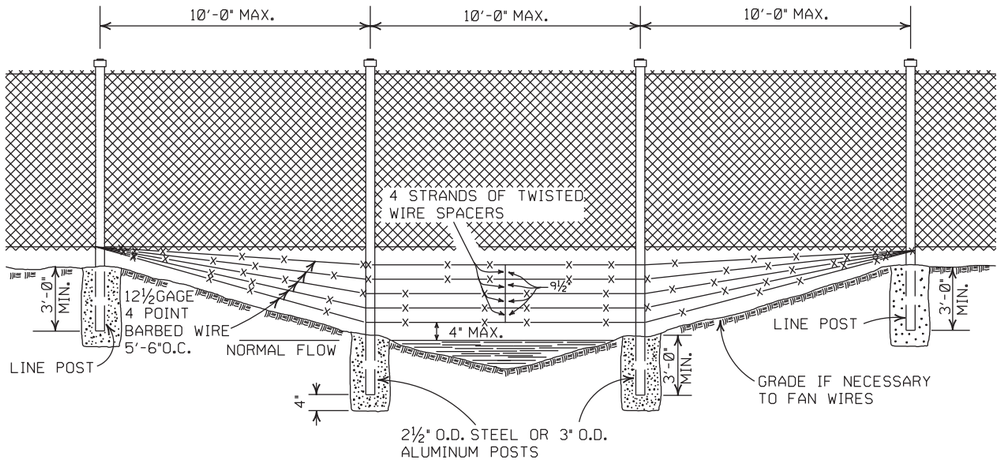
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3







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.

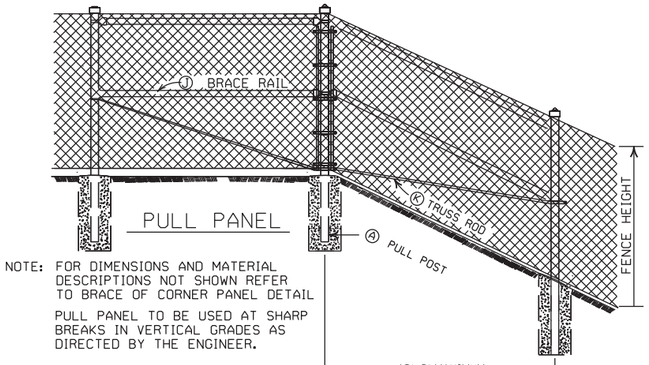
PAYMENT FOR THE TYPE INSTALLATION USED WILL NOT BE MADE DIRECTLY BUT WILL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR WIRE FENCE OR CHAIN LINK FENCE.

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

ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE WATER GAPS

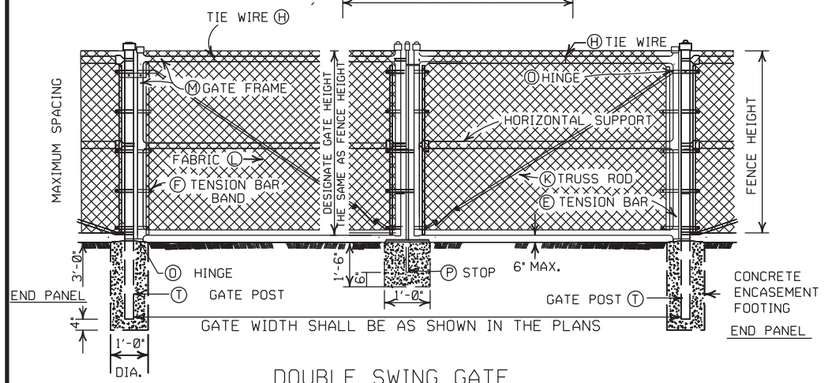
STANDARD DRAWING WF-2



PULL PANEL

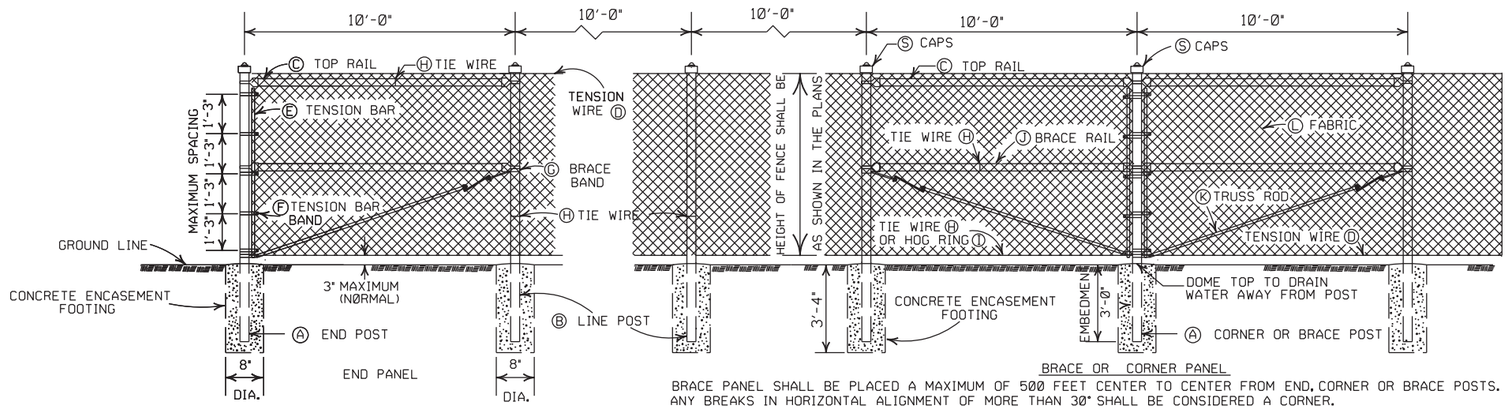
NOTE: FOR DIMENSIONS AND MATERIAL DESCRIPTIONS NOT SHOWN REFER TO BRACE OF CORNER PANEL DETAIL

PULL PANEL TO BE USED AT SHARP BREAKS IN VERTICAL GRADES AS DIRECTED BY THE ENGINEER.



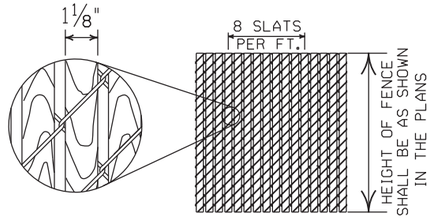
DOUBLE SWING GATE

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)

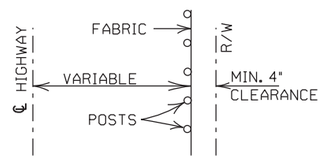
HEIGHT OF FENCE FABRIC	(A)	(B)		(C)			(D)		(E)		(F)			(G)	
	END, PULL, CORNER OR BRACE POST	LINE POSTS		TOP RAIL			TENSION WIRE		TENSION BAR		TENSION BAR BAND			BRACE BAND	
		SIZE	TIE SPACING	SIZE	TIE SPACING	MIN. LENGTH	SIZE	TIE SPACING	SIZE	LENGTH	SIZE	BOLT SIZE	SPACING	SIZE	BOLT SIZE
6' AND LESS	2½" 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 ⅜" X ¾"	MIN. OF 2" LESS THAN FABRIC HEIGHT	MIN. OF ¾" X 0.074	⅝" X 1¼"	1 BAND AT TOP AND BOTTOM 15" MAX. INTERVAL BETWEEN BANDS	MIN. OF ¾" X 0.105	⅝" X 1¼"
OVER 6' TO 12' INCL.	3 " O.D.	2½" O.D.													

HEIGHT OF FENCE FABRIC	(H)	(I)	(J)		(K)	(L)			(M)		(N)		(O)	(T)	
	TIE WIRE	HOG RING	BRACE RAIL		TRUSS ROD	FABRIC			GATE FRAME		HORIZONTAL SUPPORT		HINGE TYPE	GATE POST	
			SIZE	TIE SPACING		SIZE	MESH	SELVAGE	SIZE	TIE SPACING	SIZE	TIE SPACING	180° SWING	GATE WIDTH 12' AND LESS	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 ⅝" 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.



INSTALLATION MAY BE MODIFIED AS SHOWN IN THE PLANS

TYPICAL INSTALLATION DIAGRAM

POSTS AND RAILS

SIZE O.D.	GRADE 1 AND ALUMINUM ALLOY				GRADE 2		
	O.D. INCHES	WALL THICKNESS	LBS. PER LINEAR FT. STEEL	LBS. PER LINEAR FT. ALUMINUM	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

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.

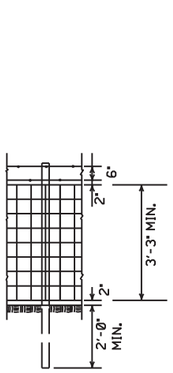
EXCAVATION FOR POSTS: IN OTHER THAN ROCK SHALL BE OF THE DIMENSIONS INDICATED. IF ROCK IS ENCOUNTERED BEFORE REACHING THE REQUIRED DEPTH, THE EXCAVATION SHALL BE CONTINUED TO THE DEPTH INDICATED OR 1'-6" INTO THE ROCK, WHICHEVER IS LESS, AND SHALL BE A MINIMUM OF 8 INCHES IN DIAMETER.

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 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

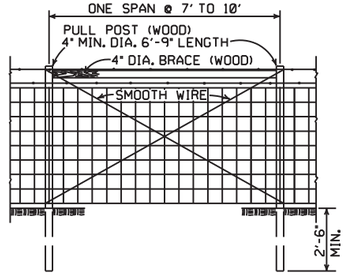
ARKANSAS STATE HIGHWAY COMMISSION

CHAIN LINK FENCE

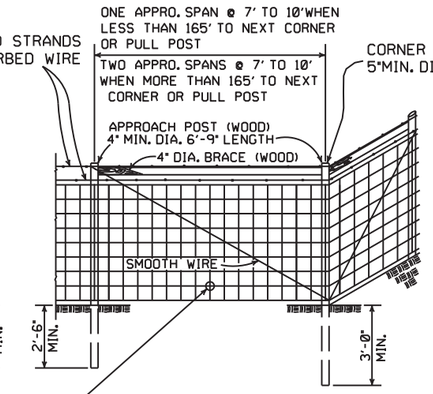
STANDARD DRAWING WF-3

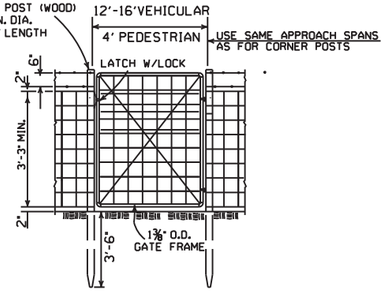


LINE POST
3" MIN. DIA. 6'-3" LENGTH
MAX. SPACING TO BE 10'-0"



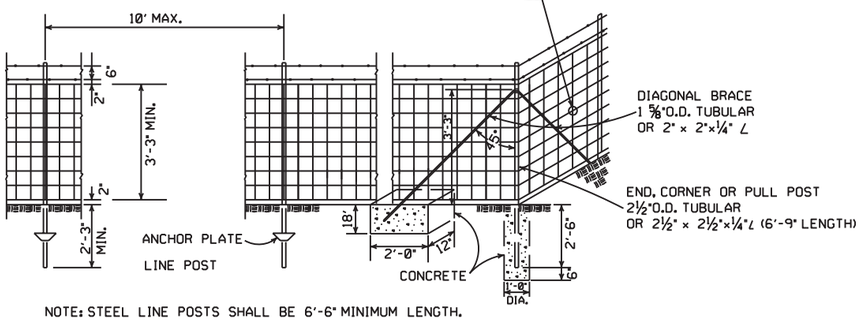
LINE BRACE ASSEMBLY
MAX. SPACING TO BE 330'

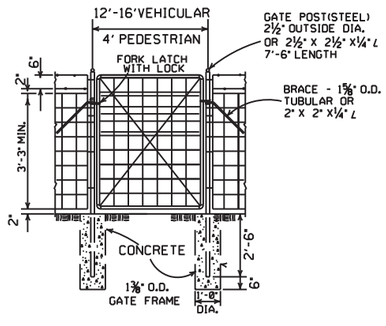


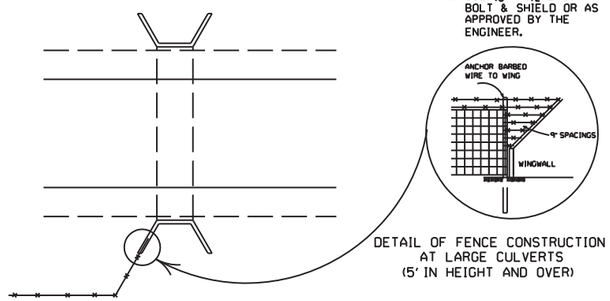


TYPE C FENCE (WOOD POSTS)

OTHER APPROVED TIES
WILL BE PERMITTED





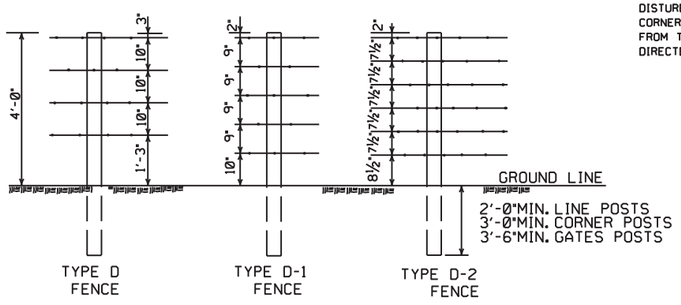


DETAIL OF FENCE CONSTRUCTION
AT LARGE CULVERTS
(5' IN HEIGHT AND OVER)

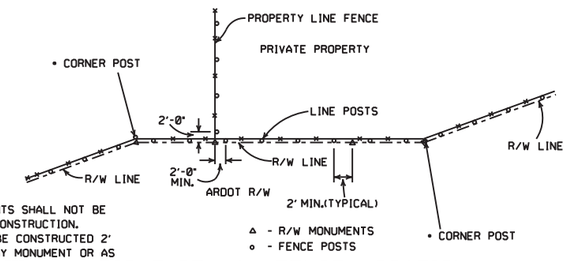
NOTE: STEEL LINE POSTS SHALL BE 6'-6" MINIMUM LENGTH.

TYPE C FENCE (STEEL POSTS)

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

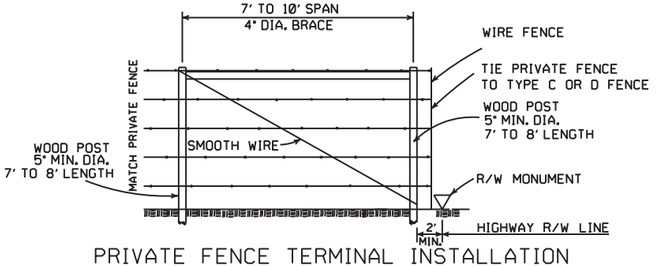


NOTE: SPACING AND SIZE (EXCEPT LENGTH) OF POSTS, APPROACH SPANS, PULL POST ASSEMBLIES, AND CORNER BRACING FOR TYPE D FENCE SHALL CONFORM TO TYPE C FENCE. USE GALVANIZED STAPLES ON WOOD POSTS AND APPROVED FASTENERS ON STEEL POSTS.



• 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.

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.

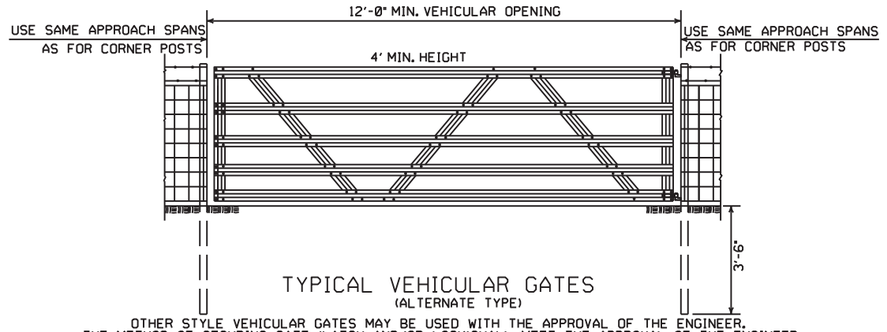
DRIVEWAY GATES, EITHER SINGLE 12' TO 16' OR DOUBLE 6' TO 8' OPENING OF THE SAME TYPE AS THE PEDESTRIAN GATE, SHALL BE INSTALLED ON THE RIGHT SIDE OF EACH THROUGH LANE ROAD AT LARGE CULVERTS OR BRIDGE CROSS FENCE, FOR USE OF MAINTENANCE EQUIPMENT. LOCATION OF GATES TO BE SHOWN ON PLANS OR AS DESIGNATED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



TYPICAL VEHICULAR GATES
(ALTERNATE TYPE)

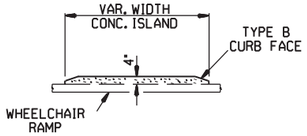
OTHER STYLE VEHICULAR GATES MAY BE USED WITH THE APPROVAL OF THE ENGINEER.
THE METHOD OF SECURING GATE (LATCH AND/OR LOCK) SHALL MEET THE APPROVAL OF THE ENGINEER.

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

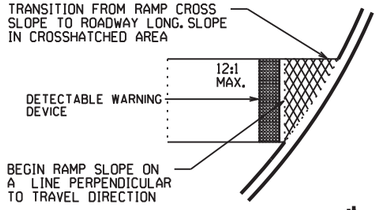
ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE
TYPE C AND D

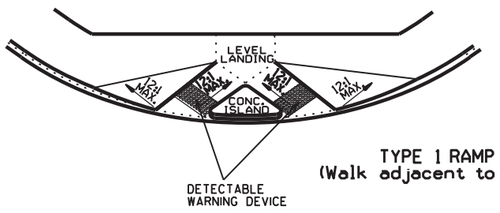
STANDARD DRAWING WF-4



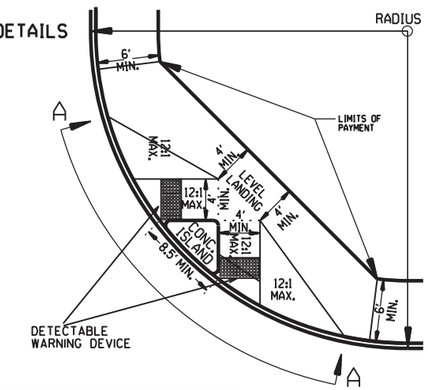
CONCRETE ISLAND DETAIL



SLOPE TRANSITION DETAILS



TYPE 1 RAMP
(Walk adjacent to curb)

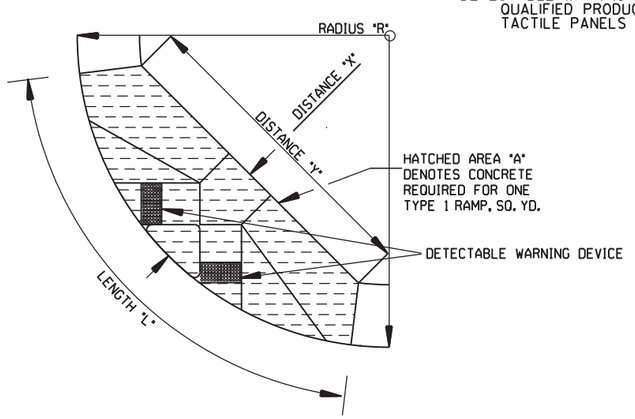




SECTION A-A

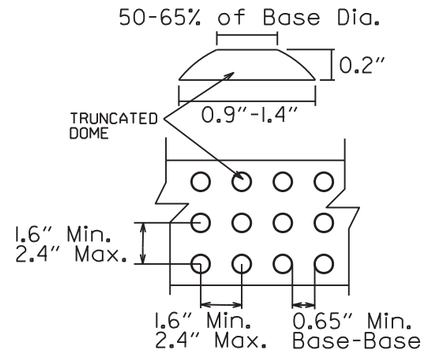
TYPE 1 RAMP DIMENSIONS AND QUANTITIES

RADIUS "R" FEET	DISTANCE "X" FEET	DISTANCE "Y" FEET	LENGTH "L" FEET	RAMP AREA "A" SQ. YD.
15	11.67	18.82	32.18	26.21
20	11.52	22.28	35.46	30.07
25	11.43	26.60	38.77	33.80
30	11.37	30.26	40.93	36.90
35	11.33	33.51	43.11	39.77
40	11.30	36.45	45.26	42.45
45	11.27	39.16	47.34	44.97
50	11.25	41.69	49.36	47.35
55	11.24	44.07	51.31	49.63
60	11.22	46.33	53.21	51.80



GENERAL NOTES FOR DETECTABLE WARNING DEVICES

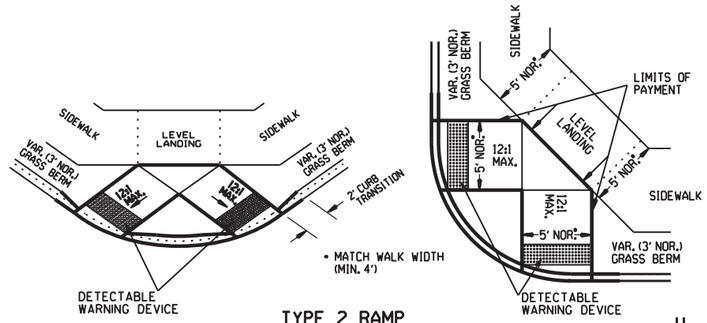
THE DETECTABLE WARNING DEVICE SHALL BE LOCATED SO THAT THE NEAREST EDGE OF THE DEVICE IS 6 TO 8 INCHES FROM THE FACE OF THE CURB.
TRUNCATED DOMES IN THE DETECTABLE WARNING SURFACE SHALL MEET THE REQUIREMENTS OF THE GEOMETRIC CONFIGURATION SHOWN.
DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF TRAVEL TO PERMIT WHEELS TO ROLL BETWEEN DOMES.
DETECTABLE WARNING DEVICE SHALL BE 24 INCHES IN THE DIRECTION OF TRAVEL AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR FLUSH SURFACE.
DETECTABLE WARNING DEVICE SHALL BE ON THE ARDOT QUALIFIED PRODUCTS LIST FOR CAST-IN-PLACE TACTILE PANELS (ADA DETECTABLE WARNING).



DETECTABLE WARNING DEVICE DETAIL

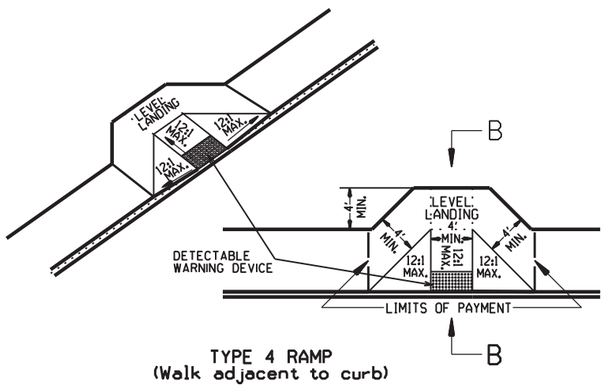
GENERAL NOTES:

IN NEW CONSTRUCTION, UNLESS OTHERWISE INDICATED ON THE PLANS, WHEELCHAIR RAMPS ARE TO BE PROVIDED AT ALL CORNERS OF CURBED STREET INTERSECTIONS AND MID-BLOCK CROSSWALK LOCATIONS.
IN ALTERATIONS WHEELCHAIR RAMPS ARE TO BE PROVIDED AT CURBED STREET INTERSECTIONS WITH PEDESTRIAN TRAFFIC AND MID-BLOCK CROSSWALK LOCATIONS.
THE LENGTH OF THE RAMP SHALL BE SUCH THAT THE SLOPE DOES NOT EXCEED 12:1. THE SURFACE TEXTURE OF THE RAMP SHALL CONFORM TO A CLASS 6 FINISH ACCORDING TO SECTION 802.19.
THE NORMAL GUTTER GRADE SHALL BE MAINTAINED THROUGH THE AREA OF THE RAMP.
ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION.
THE MINIMUM THICKNESS OF THE RAMP, WALK, & LANDING SHALL BE 4".
THE MINIMUM WIDTH OF THE RAMPS SHALL BE THE WALK WIDTH OR 36", WHICHEVER IS GREATER.
RAMPS SHALL BE MODIFIED AS NECESSARY TO INSURE THAT THEY ARE PARALLEL TO A LINE DRAWN FROM THE CENTER OF ONE RAMP TO THE CENTER OF THE RAMP ON THE OPPOSITE SIDE OF THE INTERSECTION.
THE DIMENSIONS AND QUANTITIES SHOWN ON THIS DRAWING ARE FOR A 90° INTERSECTION ONLY. DIMENSIONS AND QUANTITIES FOR SKEWED INTERSECTIONS WILL VARY, AND ARE TO BE DETERMINED BY THE ENGINEER.

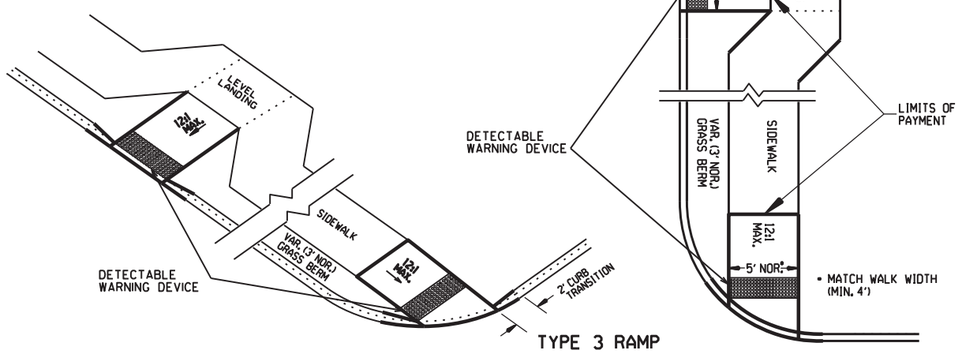


TYPE 2 RAMP

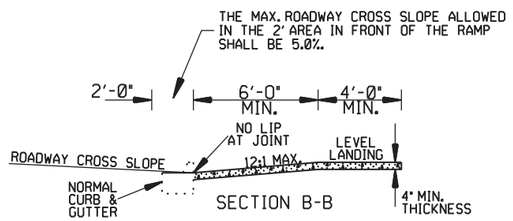
NOTE:
THE CROSS SLOPE OF THE RAMPS, LEVEL LANDINGS, AND SIDEWALKS SHALL NOT EXCEED 2.0% UNLESS REQUIRED TO MATCH STREET LONGTITUDINAL GRADE.



TYPE 4 RAMP
(Walk adjacent to curb)



TYPE 3 RAMP



SECTION B-B

RAMP SELECTION CRITERIA

FIRST CHOICE	TYPE 1	CORNER LOCATIONS WITH THE WALK ADJACENT TO THE CURB (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 2	CORNER LOCATIONS WITH THE WALK OFFSET FROM THE CURB A DISTANCE INSUFFICIENT TO ALLOW THE REQUIRED RAMP SLOPE (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 3	CORNER LOCATIONS WITH THE WALK OFFSET FROM THE CURB A DISTANCE SUFFICIENT TO ALLOW THE REQUIRED RAMP SLOPE (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 4	TANGENT LOCATIONS (BOTH NEW CONSTRUCTION AND ALTERATIONS).
SECOND CHOICE	TYPE 5	TANGENT LOCATIONS (ALTERATIONS ONLY).
THIRD CHOICE	TYPE 6	CORNER LOCATIONS (ALTERATIONS ONLY). THIS RAMP MAY BE USED ONLY IF THE TYPE 5 RAMPS CANNOT BE PLACED AT THE ENDS OF THE RADIUS.
FOURTH CHOICE		IF SITE CONSTRAINTS PREVENT THE CONSTRUCTION OF ANY OF THE TYPES LISTED, THEN AND ONLY THEN CAN THE 12:1 MAX. SLOPE ON THE RAMP BE EXCEEDED TO PROVIDE ACCESS TO THE STREET LEVEL (ALTERATIONS ONLY). THE SLOPE CAN BE STEEPENED TO A 10:1 MAX. FOR A MAX. LENGTH OF 5' OR A 8:1 MAX. FOR A MAX. LENGTH OF 2'. SLOPES STEEPER THAN 8:1 ARE NOT ALLOWED UNDER ANY CIRCUMSTANCES.

NOTE: IN ALTERATIONS, THE SELECTION OF THE TYPE OF WHEELCHAIR RAMP TO BE CONSTRUCTED SHALL BE BASED ON THE AMOUNT OF RIGHT-OF-WAY AVAILABLE, AND ON THE PRESENCE OF OTHER SITE CONSTRAINTS (UTILITIES, BUILDINGS, ETC.). THE TABLE ABOVE LISTS THE ORDER IN WHICH THE RAMPS ARE TO BE CONSIDERED.

AN ALTERATION IS DEFINED AS A PROJECT THAT CHANGES OR AFFECTS THE USE OF A PEDESTRIAN PATHWAY (OVERLAYS, SIGNALIZATION PROJECTS, ETC.) BUT DOES NOT REQUIRE THE PURCHASE OF ADDITIONAL RIGHT-OF-WAY. ALL PROJECTS THAT REQUIRE THE PURCHASE OF ADDITIONAL RIGHT-OF-WAY WILL USUALLY BE CONSIDERED NEW CONSTRUCTION FOR THE PURPOSES OF THE CHART ABOVE.

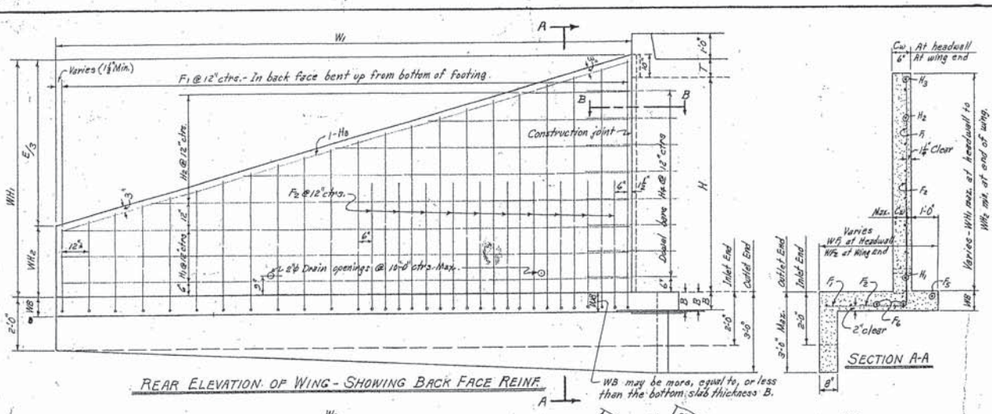
DATE	REVISION	DATE FILM
11-10-05	REVISED TO NEW SIDEWALK POLICY	
10-9-03	REVISED GEN. NOTES & ADDED NOTE	
4-10-03	REV. DETECTABLE WARNING DEVICES	
8-22-02	ADD DETECTABLE WARNING DEVICES	
3-30-00	ADD.SLOPE TRANS. & REV. ISL. DIMS.	
11-18-98	REVISED NOTES	
8-12-98	REVISED TEXTURE	
7-02-98	REDRAWN & REISSUED	
10-18-96	CORRECTED DIMENSIONS	10-18-96
5-24-90	FROM8#TO12#MAX.SLOPES	5-24-90
7-15-88	ADJUSTED MAX. SLOPE	652-7-15-88
7-14-88	INCLUD."CONC. ISLD."IN PAY ITEM	------
6-02-76	ISSUED-P.M.D.	299-7-28-76

ARKANSAS STATE HIGHWAY COMMISSION

WHEELCHAIR RAMPS NEW CONSTRUCTION AND ALTERATIONS

STANDARD DRAWING WR-1

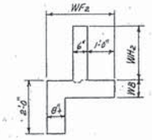
FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.				
JOB No.					



REAR ELEVATION OF WING - SHOWING BACK FACE REINF.

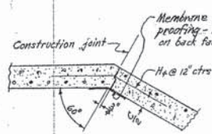
PLAN OF WING - SHOWING FOOTING REINF.

SECTION A-A

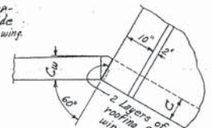


END VIEW OF WING

When B is more than WB, the shaded portion of the apron shall be the same thickness as the barrel base B.



SECTION B-B THRU CONSTRUCTION JOINT



DETAIL AT TOP OF WING

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

WING DIMENSIONS

CLEAR HEIGHT OF BOX	THICKNESS OF WING FOOTING	THICKNESS OF WING AT HEADWALL = C	WINGWALL HEIGHTS		WIDTHS OF WING FOOTINGS		PERPENDICULAR FOOTING DIMENSION	PERPENDICULAR DIST. FROM HDWL. TO END OF WING	LENGTH OF WING WALLS	INSIDE FOOTING DIMENSION	* QUANTITY PER WING CLASS S CONCRETE	
			AT HEADWALL	AT END OF WING	AT HEADWALL	AT END OF WING					INLET END	OUTLET END
H	WB	C_W	WH_1	WH_2	W_{F1}	W_{F2}	F	E	W_1	W_2	CU.YD.	CU.YD.
2'	7"	6"	2'-10"	0'-8"	2'-4"	2'-0"	0'-11⅝"	6'-6"	7'-6"	7'-1½"	0.889	0.986
3'	7"	6"	3'-10"	1'-0"	2'-8"	2'-1⅝"	1'-4⅜"	8'-6"	9'-3⅝"	9'-2⅝"	1.338	1.466
4'	7"	6"	4'-10"	1'-3"	3'-0"	2'-3"	1'-9"	10'-6"	12'-1⅝"	12'-1⅝"	1.868	2.027
5'	7"	6"	5'-10"	1'-8"	3'-4"	2'-4½"	2'-1⅞"	12'-6"	14'-5⅝"	14'-5⅝"	2.478	2.668
		7"	5'-10"	1'-8"	3'-4"	2'-4½"	2'-1⅝"	12'-6"	14'-5⅝"	14'-7½"	2.582	2.772
6'	8"	7"	6'-10"	2'-0"	3'-8"	2'-6"	2'-6½"	14'-6"	16'-9"	17'-1⅝"	3.490	3.661
		7½"	6'-10"	2'-0"	3'-8"	2'-6"	2'-6⅝"	14'-6"	16'-9"	17'-1½"	3.511	3.732
		8"	6'-10"	2'-0"	3'-8"	2'-6"	2'-6⅝"	14'-6"	16'-9"	17'-1½"	3.588	3.803
7'	8½"	7½"	7'-10"	2'-4"	4'-2"	2'-7½"	3'-1⅜"	16'-6"	19'-0½"	19'-8⅝"	4.505	4.758
		8"	7'-10"	2'-4"	4'-2"	2'-7½"	3'-1⅝"	16'-6"	19'-0⅝"	19'-8⅝"	4.597	4.851
8'	9"	8"	8'-10"	2'-8"	4'-8"	2'-9"	3'-8"	18'-6"	21'-4⅝"	22'-0⅝"	5.761	6.097

* Quantity per wing does not include headwall or that portion of apron or toewall for the length W_3.

APRON DIMENSION W_3

$W_3 = (OW - 2F)$

CLEAR SPAN	CLEAR HEIGHT	2 × FOOTING DIMENSION	SINGLE BARREL CULVERT		DOUBLE BARREL CULVERT		TRIPLE BARREL CULVERT		QUADRUPLE BARREL CULVERT		QUINTUPLE BARREL CULVERT	
S	H	2F	OW	W_3	OW	W_3	OW	W_3	OW	W_3	OW	W_3
4'	2'	1'-11⅛"	5'-0"	3'-0⅞"	9'-8"	7'-8⅝"	14'-4"	12'-4⅜"	19'-0"	17'-0⅛"	23'-8"	21'-8⅛"
	3'	2'-8⅜"	5'-0"	2'-3⅛"	9'-8"	6'-11⅛"	14'-4"	11'-7⅝"	19'-0"	16'-3⅝"	23'-8"	20'-11⅝"
	4'	3'-6"	5'-0"	1'-6"	9'-8"	6'-2"	14'-4"	10'-10"	19'-0"	15'-6"	23'-8"	20'-2"
	5'	4'-3⅜"	5'-0"	0'-8⅝"	9'-8"	5'-4⅛"	14'-4"	10'-0⅜"	19'-0"	14'-8⅝"	23'-8"	19'-9⅞"
	6'	5'-0⅞"	5'-2"	0'-1⅛"	9'-11"	4'-10⅛"	14'-8"	9'-7⅜"	19'-5"	14'-2⅛"	24'-2"	19'-1⅜"
5'	3'	2'-8⅜"	6'-0"	3'-3⅝"	11'-8"	8'-11⅛"	17'-4"	14'-7⅜"	23'-0"	20'-3⅛"	28'-8"	25'-11⅛"
	4'	3'-6"	6'-0"	2'-6"	11'-8"	8'-2"	17'-4"	13'-10"	23'-0"	19'-6"	28'-8"	25'-2"
	5'	4'-3⅜"	6'-0"	1'-8⅝"	11'-8"	7'-4⅛"	17'-4"	13'-0⅜"	23'-0"	18'-8⅝"	28'-8"	24'-9⅞"
	6'	5'-0⅞"	6'-2"	1'-1⅛"	11'-11"	6'-10⅛"	17'-8"	12'-7⅜"	23'-5"	18'-2⅛"	29'-2"	24'-1⅜"
	7'	6'-2⅛"	6'-5"	0'-0⅝"	12'-1"	5'-10⅝"	17'-11"	11'-8⅝"	23'-9"	17'-1⅝"	29'-7"	23'-0⅝"
6'	3'	2'-8⅜"	7'-0"	4'-3⅝"	13'-8"	10'-11⅛"	20'-4"	17'-7⅜"	27'-0"	24'-3⅛"	33'-8"	30'-11⅛"
	4'	3'-6"	7'-0"	3'-6"	13'-8"	10'-2"	20'-4"	16'-10"	27'-0"	23'-6"	33'-8"	30'-2"
	5'	4'-3⅜"	7'-0"	2'-8⅝"	13'-8"	9'-4⅛"	20'-4"	16'-0⅜"	27'-0"	22'-8⅝"	33'-8"	29'-4⅞"
	6'	5'-0⅞"	7'-2"	2'-1⅛"	13'-11"	8'-10⅛"	20'-8"	15'-7⅜"	27'-5"	22'-2⅛"	34'-2"	29'-1⅜"
	7'	6'-2⅛"	7'-5"	1'-0⅝"	14'-1"	7'-10⅝"	20'-11"	14'-8⅝"	27'-9"	21'-1⅝"	34'-7"	28'-0⅝"
	8'	7'-1⅝"	7'-8"	0'-0"	14'-2"	6'-10"	21'-0"	13'-8"	27'-10"	20'-0"	34'-8"	27'-0"
8'	4'	3'-6"	9'-0"	5'-6"	16'-6"	14'-2"	24'-9"	22'-10"	35'-0"	31'-6"	43'-8"	40'-2"
	5'	4'-3⅜"	9'-2"	4'-10⅝"	17'-1"	13'-7⅛"	24'-8"	22'-0⅜"	35'-5"	31'-1⅝"	44'-2"	39'-10⅝"
	6'	5'-0⅞"	9'-2"	4'-1⅛"	17'-1"	12'-10⅛"	24'-8"	21'-1⅜"	35'-5"	30'-1⅛"	44'-2"	39'-1⅜"
	7'	6'-2⅛"	9'-5"	3'-0⅝"	18'-1"	11'-10⅝"	24'-11"	20'-0⅝"	35'-9"	29'-0⅝"	44'-7"	38'-0⅝"
	8'	7'-1⅝"	9'-9"	2'-0"	18'-2"	10'-10"	25'-0"	19'-0"	35'-10"	28'-0"	44'-8"	37'-0"
9'	5'	4'-3⅜"	10'-2"	5'-10⅝"	19'-11"	15'-7⅛"	29'-8"	25'-4⅜"	39'-5"	35'-1⅝"	49'-2"	44'-10⅝"
	6'	5'-0⅞"	10'-3"	5'-1⅛"	20'-1"	15'-0⅛"	29'-11"	24'-5⅜"	39'-9"	34'-2⅛"	49'-7"	43'-11⅜"
	7'	6'-2⅛"	10'-3"	4'-0⅝"	20'-1"	13'-10⅝"	29'-11"	23'-2⅝"	39'-9"	33'-0⅝"	49'-7"	42'-10⅝"
	8'	7'-1⅝"	10'-10"	3'-0"	20'-2"	12'-10"	30'-0"	22'-2"	39'-10"	32'-0"	49'-8"	41'-10"
10'	6'	5'-0⅞"	11'-2"	6'-0⅛"	21'-11"	17'-7⅛"	32'-8"	28'-4⅜"	43'-5"	39'-1⅝"	54'-2"	49'-10⅝"
	7'	6'-2⅛"	11'-3"	5'-0⅝"	22'-1"	17'-0⅝"	32'-11"	27'-1⅝"	43'-9"	38'-0⅝"	54'-7"	48'-11⅜"
	8'	7'-1⅝"	11'-9"	4'-0"	22'-2"	15'-10"	32'-11"	26'-0⅜"	43'-10"	37'-0"	54'-8"	47'-10"
11'	6'	5'-0⅞"	12'-0"	7'-3⅛"	23'-8"	19'-1⅛"	34'-0"	30'-1⅜"	47'-1"	42'-3⅛"		
	7'	6'-2⅛"	12'-0"	6'-1⅝"	23'-8"	17'-11⅝"	34'-0"	28'-10⅝"	47'-0"	41'-0⅝"		
	8'	7'-1⅝"	12'-8"	5'-0"	23'-8"	16'-10"	34'-0"	28'-8"	47'-0"	40'-6"		
12'	6'	5'-0⅞"	13'-0"	8'-3⅛"	26'-2"	21'-1⅛"	39'-0"	33'-1⅜"	51'-10"	46'-3⅛"		
	7'	6'-2⅛"	13'-0"	7'-1⅝"	26'-2"	19'-11⅝"	39'-0"	32'-0⅝"	51'-10"	45'-1⅝"		
	8'	7'-1⅝"	13'-6"	6'-0"	26'-2"	18'-10"	39'-0"	31'-8"	51'-10"	44'-6"		

QUANTITIES

CLEAR SPAN	CLEAR HEIGHT	THICKNESS OF WING AT HEADWALL	THICKNESS OF WING FOOTING	REINFORCING STEEL - LBS. FOR 4 WINGS	CLASS S CONCRETE - 4 WINGS HEADWALLS, WINGWALLS, FOOTINGS, TOEWALLS AND APRONS				
					SINGLE BARREL CULVERT	DOUBLE BARREL CULVERT	TRIPLE BARREL CULVERT	QUADRUPLE BARREL CULVERT	QUINTUPLE BARREL CULVERT
S	H	C_W	WB	LB.	CU.YD.	CU.YD.	CU.YD.	CU.YD.	CU.YD.
4'	2'	6"	7"	108.0	4.50	5.96	6.42	7.38	8.34
	3'	6"	7"	169.0	6.26	7.21	8.17	9.13	10.09
	4'	6"	7"	259.6	8.33	9.28	10.24	11.20	12.16
	5'	6"	7"	357.8	10.72	11.68	12.64	13.60	14.56
	6'	7"	8"	583.1	14.55	15.53	16.52	17.51	18.49
5'	3'	6"	7"	164.9	6.97	7.63	8.29	9.96	11.12
	4'	6"	7"	259.6	8.56	9.70	10.87	10.03	12.20
	5'	6"	7"	357.8	10.394	12.10	13.26	14.93	15.59
	6'	7"	8"	583.1	14.77	15.96	17.15	18.34	19.54
	7'	7⅛"	8⅝"	1139.6	18.94	20.15	21.37	22.59	23.80
6'	3'	6"	7"	164.9	6.68	8.06	9.42	10.80	12.18
	4'	6"	7"	259.6	8.75	10.14	11.49	12.87	14.25
	5'	6"	7"	357.8	11.15	12.53	13.88	15.27	16.65
	6'	7"	8"	583.1	14.98	16.39	17.78	19.18	20.59
	7'	7⅛"	8⅝"	1139.6	19.15	20.58	22.00	23.43	24.86
	8'	8"	9"	1925.6	24.09	25.53	26.96	28.39	29.83
7'	4'	6"	7"	259.6	8.97	10.58	12.15	13.76	15.35
	5'	6"	7"	357.8	11.86	12.37	14.58	16.15	17.75
	6'	7"	8"	583.1	15.20	16.82	18.42	20.04	21.66
	7'	7⅛"	8⅝"	1139.6	19.28	21.02	22.68	24.28	25.92
	8'	8"	9"	1925.6	24.32	25.97	27.60	29.25	30.89
8'	4'	6"	7"	259.6	9.19	11.03	12.82	14.65	16.45
	5'	7"	7"	357.8	12.03	13.89	15.70	17.55	19.34
	6'	7"	8"	583.1	15.92	17.27	19.09	20.93	22.75
	7'	7⅛"	8⅝"	1139.6	19.99	21.96	23.90	25.76	26.99
	8'	8"	9"	1925.6	24.94	26.91	28.84	30.11	31.96
9'	5'	7"	7"	357.8	12.26	14.39	16.87	18.95	20.97
	6'	7⅛"	8"	583.1	15.94	18.04	20.09	22.19	24.23
	7'	7⅛"	8⅝"	1139.6	19.81	21.91	23.96	26.06	28.10
	8'	8"	9"	1925.6	24.76	26.86	28.91	31.00	33.05
10'	5'	7"	7"	357.8	12.49	14.80	17.05	19.24	21.52
	6'	7⅛"	8"	583.1	16.17	18.50	20.77	22.99	25.28
	7'	7⅛"	8⅝"	1139.6	20.04	22.37	24.64	26.87	29.15
	8'	8"	9"	1925.6	24.98	27.31	29.58	31.81	34.10
11'	6'	8"	8"	583.1	16.69	19.27	21.76	24.33	
	7'	8"	8⅝"	1139.6	20.64	23.22	25.71	28.18	
	8'	8"	9"	1925.6	25.19	27.77	30.27	32.74	
12'	6'	8"	8"	583.1	16.92	19.75	22.95	25.18	
	7'	8"	8⅝"	1139.6	20.87	23.69	26.90	29.18	
	8'	8"	9"	1925.6	25.42	28.25	30.96	33.69	

* For reinforcing steel in Headwalls and Aprons, See Details of Standard Barrel Sections for R.C. Box Culverts for the desired Span and Height.

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 Standard Barrel Sections, Drawing Nos. as listed below.

SINGLES	DOUBLES	TRIPLES	QUADRUPLES	QUINTUPLES
R-100X-0	R-200X-0	R-300X-0	R-400X-0	R-500X-0
R-100X-X1	R-200X-X1	R-300X-X1	R-400X-X1	R-500X-X1
R-100X-X2	R-200X-X2	R-300X-X2	R-400X-X2	
	R-200X-X3	R-300X-X3		

CLASS S CONCRETE

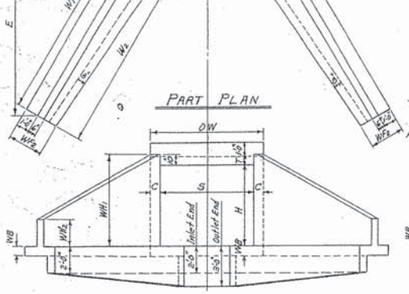
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS

4', 5', 6', 7', 8', 9', 10', 11' & 12' SPANS — 3:1 SLOPES

SINGLES, DOUBLES, TRIPLES, QUADRUPLES & QUINTUPLES. — ALL DEPTHS OF COVER FOR H= 8'-0" OR LESS

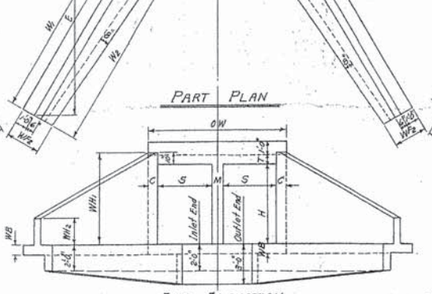
STANDARD DRAWING NO. W-X003-1



PART PLAN

END ELEVATION

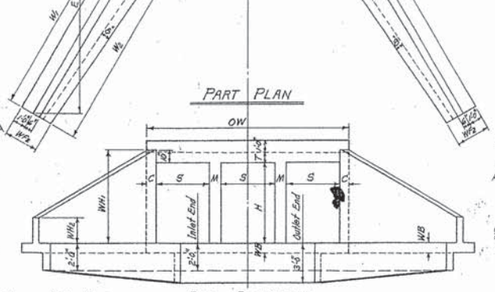
SINGLE BARREL CULVERT



PART PLAN

END ELEVATION

DOUBLE BARREL CULVERT

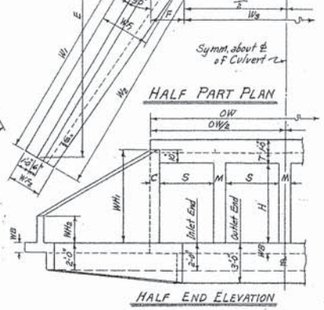


PART PLAN

END ELEVATION

TRIPLE BARREL CULVERT

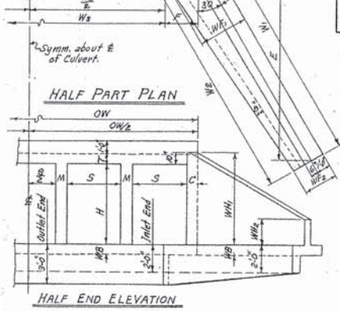
NOTE:- Plans and Elevations are not to scale.



HALF PART PLAN

HALF END ELEVATION

QUADRUPLE BARREL CULVERT



HALF PART PLAN

HALF END ELEVATION

QUINTUPLE BARREL CULVERT

MEMBRANE:- 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 back face of wing to cover the construction joints in wings.

BAR LIST FOR ONE WING - 4 REQUIRED

CLEAR HEIGHT	F_1 BENT: In bottom of footing, bent up into back face of wing. One bar of each length. SIZE	SPACING	NO. REQD	LENGTHS VARY MIN.	LENGTHS VARY MAX.	X MIN.	X MAX.	Y MIN.	Y MAX.	F_2 BENT: In bottom of footing, bent up into back face of wing. Alt. with F_1 bars. SIZE	SPACING	NO. REQD	LENGTH	X	Y	F_5 STRAIGHT: Longitudinal in top of wing footing heel. SIZE	NO. REQD	LENGTH	F_4 STRAIGHT: Longitudinal in bottom of wing footing toe. SIZE	NO. REQD	LENGTH	H_1 STRAIGHT: Horizontal in back face of wing. SIZE	SPACING	NO. REQD	LENGTH	H_2 STRAIGHT: Horizontal in back face of wing. One bar of each length. SIZE	SPACING	NO. REQD	LENGTHS VARY MAX.	LENGTHS VARY MIN.	H_3 STRAIGHT: In back face of wing at top - on slope. SIZE	NO. REQD	LENGTH	H_4 BENT: Dowels thru construction joint at headwall. SIZE	SPACING	NO. REQD	LENGTH	X	QUANTITY REINFORCING STEEL PER WING LB.	BAR BENDING DIAGRAMS
H																																										
2'	#3	18"	8	1'-6"	3'-10"	0'-8"	1'-0"	0'-11"	2'-11"	—	—	—	—	—	—	#3	1	9'-8"	#3	2	8'-6"	#3	18"	1	7'-2"	#3	12"	1	—	9'-6"	#8	1	7'-8"	#3	12"	2	2'-8"	1'-9"	27.0	
3'	#3	12"	10	2'-2"	5'-2"	0'-10"	1'-3"	1'-3"	4'-0"	—	—	—	—	—	—	#3	1	12'-0"	#3	2	11'-0"	#3	18"	1	9'-6"	#3	12"	2	7'-6"	9'-0"	#3	1	9'-9"	#3	12"	3	2'-8"	1'-9"	41.1	
4'	#3	12"	13	2'-8"	6'-6"	0'-11"	1'-7"	1'-6"	5'-0"	—	—	—	—	—	—	#3	1	14'-9"	#3	3	13'-6"	#3	18"	1	11'-10"	#3	12"	3	10'-11"	9'-0"	#3	1	10'-8"	#3	12"	4	2'-8"	1'-9"	63.7	
5'	#3	12"	15	2'-11"	7'-10"	1'-1"	1'-11"	1'-11"	6'-0"	#3	12"	4	3'-6"	1'-1"	2'-6"	#3	1	16'-8"	#3	3	16'-0"	#3	18"	2	14'-2"	#3	12"	3	10'-11"	9'-0"	#3	1	11'-7"	#3	12"	5	2'-8"	1'-9"	89.5	
6'	#4	12"	17	3'-6"	9'-3"	1'-2"	2'-3"	2'-5"	7'-1"	#3	12"	4	4'-6"	1'-4"	3'-3"	#3	1	18'-0"	#3	3	18'-6"	#3	18"	2	16'-6"	#3	12"	4	14'-4"	9'-0"	#3	1	12'-5"	#3	12"	6	2'-8"	1'-9"	145.8	
7'	#4	12"	20	3'-9"	10'-9"	1'-3"	2'-9"	2'-7"	8'-1"	#4	12"	7	5'-6"	1'-7"	4'-0"	#4	1	21'-4"	#4	4	21'-0"	#4	18"	2	18'-9"	#4	12"	5	17'-9"	9'-0"	#4	1	13'-5"	#4	12"	7	3'-6"	1'-9"	283.7	
8'	#4	12"	22	4'-6"	12'-3"	1'-5"	3'-2"	3'-0"	9'-2"	#4	12"	10	6'-6"	1'-10"	4'-9"	#4	1	23'-8"	#4	4	23'-6"	#4	18"	3	21'-4"	#4	12"	5	17'-9"	9'-0"	#4	1	21'-10"	#4	12"	8	3'-6"	1'-9"	356.4	

NOTE:- Dimensions are to bar centers.

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

Designed By:- W.C.H. 8-20-62. Checked By:- RMS:- 1-9-63
Drawn By:- W.C.H. 12-4-62. Checked By:- RMS:- 1-31-63
Quantities By:- W.C.H. 12-14-62. Checked By:- RMS:- 3-29-63
Rechecked By:-

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.				
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' 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	"d" bars STRAIGHT Longitudinal in Top Slab of Barrel SIZE	SPACING	NO. REQ'D	LENGTH	"d1" 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"	4'-8"	#5	10½"	6	#4	12"	4				#4	12"	5	#4	12"	120	120	2'-11"
		3'			120	120	4'-9"			110	110	5'-10"	4'-8"			6			6						5			120	120	3'-11"
		4'			120	120	4'-9"			110	110	5'-10"	4'-8"			6			8						5			120	120	4'-11"
		5'			120	120	4'-9"			110	110	5'-10"	4'-8"			6			10						5			120	120	6'-11"
		6'			120	120	4'-11"			110	110	6'-0"	4'-10"			6			12						5					
	1 @ 5'	3'			120	120	5'-9"			110	110	6'-10"	5'-8"			6			6						6			120	120	4'-9"
		4'			120	120	5'-9"			110	110	6'-10"	5'-8"			7			8						6			120	120	5'-0"
		5'	#6	13"	120	120	5'-9"	#6	13"	110	110	6'-10"	5'-8"	#5	10½"	7	#4	12"	10				#4	12"	6	#4	12"	120	120	7'-0"
		6'			120	120	5'-11"			110	110	7'-0"	5'-10"			7			12						6			120	120	8'-0"
		7'			120	120	6'-0"			110	110	7'-1"	5'-11"			7			14						6					
	1 @ 6'	3'			128	128	6'-9"			118	118	7'-10"	6'-8"			8			6						7			120	120	4'-1"
		4'			128	128	6'-9"			118	118	7'-10"	6'-8"			8			8						7			120	120	5'-1"
		5'			128	128	6'-9"			118	118	7'-10"	6'-8"			8			10						7			120	120	6'-1"
		6'	#6	12"	128	128	6'-11"	#6	12"	118	118	8'-0"	6'-10"	#5	10½"	8	#4	12"	12				#4	12"	7	#4	12"	120	120	7'-1"
		7'			128	128	7'-0"			118	118	8'-1"	6'-11"			8			14						7			120	120	8'-1"
		8'			128	128	7'-1"			118	118	8'-2"	7'-0"			8			16						7			120	120	9'-1"
	1 @ 7'	4'			140	140	7'-9"			130	130	8'-10"	7'-8"			9			8						8			120	120	6'-2"
		5'			140	140	7'-9"			130	130	8'-10"	7'-8"			9			10						8			120	120	7'-2"
		6'	#6	11"	140	140	7'-11"	#6	11"	130	130	9'-0"	7'-10"	#5	10½"	9	#4	12"	12				#4	12"	8	#4	12"	120	120	8'-2"
		7'			140	140	8'-0"			130	130	9'-1"	7'-11"			9			14						8			120	120	9'-2"
		8'			140	140	8'-1"			130	130	9'-2"	8'-0"			9			16						8					
		9'			140	140	8'-3"			130	130	9'-3"	8'-2"			9			18						8					
	1 @ 8'	5'			128	128	8'-9"			118	118	9'-10"	8'-8"			11			10						9			120	120	5'-9"
		6'			128	128	8'-11"			118	118	10'-0"	8'-10"			11			12						9			120	120	7'-8"
		7'			128	128	8'-11"			118	118	10'-0"	8'-10"			11			14						9			120	120	8'-8"
		8'	#7	12"	128	128	9'-0"	#6	12"	118	118	10'-1"	8'-11"	#5	10"	11	#4	12"	16				#4	12"	9					
		9'			128	128	9'-2"			118	118	10'-2"	9'-0"			11			18						9					
		10'			128	128	9'-5"			118	118	10'-4"	9'-2"			11			20						9					
	1 @ 9'	5'			140	140	9'-11"			130	130	11'-0"	9'-10"			12			10						10			120	120	6'-5"
		6'			140	140	10'-0"			130	130	11'-1"	9'-11"			12			12						10			120	120	7'-5"
		7'			140	140	10'-0"			130	130	11'-1"	9'-11"			12			14						10			120	120	8'-5"
		8'	#7	11"	140	140	10'-1"	#6	11"	130	130	11'-2"	10'-0"	#5	10"	12	#4	12"	16				#4	12"	10					
		9'			140	140	10'-3"			130	130	11'-4"	10'-2"			12			18						10					
		10'			140	140	10'-5"			130	130	11'-6"	10'-4"			12			20						10					
		11'			140	140	10'-7"			130	130	11'-8"	10'-6"			12			22						10					
	1 @ 10'	5'			128	128	10'-11"			118	118	12'-2"	10'-10"			13			10						11			120	120	6'-6"
		6'			128	128	11'-0"			118	118	12'-3"	10'-11"			13			12						11			120	120	8'-6"
		7'			128	128	11'-0"			118	118	12'-3"	10'-11"			13			14						11					
		8'	#7	12"	128	128	11'-1"	#7	12"	118	118	12'-4"	11'-0"	#5	10"	13	#4	12"	16				#4	12"	11					
		9'			128	128	11'-3"			118	118	12'-6"	11'-2"			13			18						11					
		10'			128	128	11'-5"			118	118	12'-8"	11'-4"			13			20						11					
		11'			128	128	11'-7"			118	118	12'-10"	11'-6"			13			22						11					
		12'			128	128	11'-9"			118	118	13'-0"	11'-8"			13			24						11					
	1 @ 11'	6'			140	140	12'-1"			130	130	13'-4"	12'-0"			15			12						12					
		7'			140	140	12'-1"			130	130	13'-4"	12'-0"			15			14						12					
		8'			140	140	12'-3"			130	130	13'-4"	12'-0"			15			16						12					
		9'	#7	11"	140	140	12'-3"	#7	11"	130	130	13'-6"	12'-2"	#5	9½"	15	#4	12"	18				#4	12"	12					
		10'			140	140	12'-5"			130	130	13'-8"	12'-4"			15			20						12					
		11'			140	140	12'-7"			130	130	13'-10"	12'-6"			15			22						12					
		12'			140	140	12'-9"			130	130	14'-0"	12'-8"			15			24						12					
	1 @ 12'	6'			128	128	13'-1"			118	118	14'-4"	13'-0"			16			12						13					
		7'			128	128	13'-1"			118	118	14'-4"	13'-0"			16			14						13					
		8'			128	128	13'-1"			118	118	14'-4"	13'-0"			16			16						13					
		9'	#8	12"	128	128	13'-3"	#7	12"	118	118	14'-6"	13'-2"	#5	9½"	16	#4	12"	18				#4	12"	13					
		10'			128	128	13'-5"			118	118	14'-8"	13'-4"			16			20						13					
		11'			128	128	13'-7"			118	118	14'-10"	13'-6"			16			22						13					
		12'			128	128	13'-9"			118	118	15'-0"	13'-8"			16			24						13					

BAR SIZE	PIN DIAM.	K	ADD FOR 2 HOOKS	BENDING DIAGRAM Bars "b".
#6	3"	5"	1'-2"	K, Pin Diam., X
#7	3½"	5⅜"	1'-9"	

NOTE:- Dimensions are to centers of bars.

DOWEL BARS FOR TWO HEADWALLS

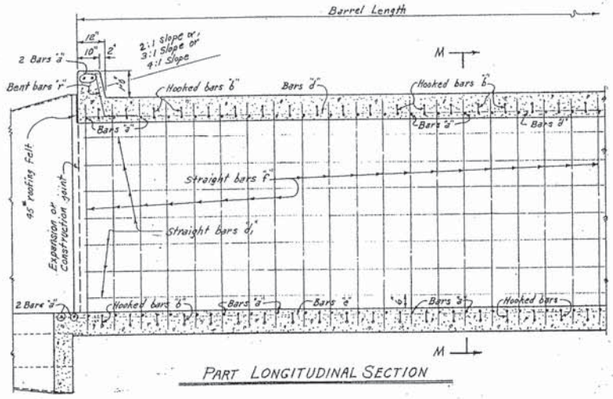
SPAN	SIZE	SPACING	NO. REQ'D	LENGTH	X
4'	#4	11"±	12	2'-6"	1'-3"
5'	#4	11"±	14	2'-7"	1'-3⅛"
6'	#4	11"±	16	2'-8"	1'-4"
7'	#4	11"±	18	2'-9"	1'-4⅛"
8'	#4	11⅛"±	20	2'-11"	1'-5⅛"
9'	#4	11⅛"±	22	3'-0"	1'-6"
10'	#4	11⅛"±	24	3'-1"	1'-6⅛"
11'	#4	12"±	26	3'-2"	1'-7"
12'	#4	12"±	28	3'-3"	1'-7⅛"

Bars "f" Dowel bars in Headwalls. X, 3, 12

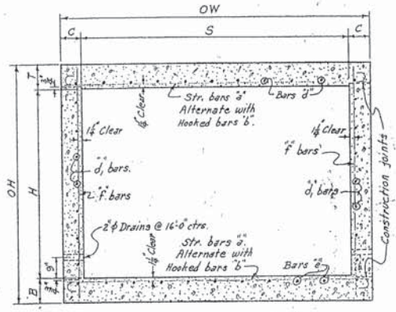
DIMENSIONS AND QUANTITIES

MARK. DESIGN DEPTH OF COVER	BARREL DIMENSIONS CLEAR SPAN	CLEAR HEIGHT	SQ. FT. OPENING	OVERALL WIDTH	THICKNESS OF TOP SLAB	THICKNESS OF SIDEWALLS	THICKNESS OF BOTTOM SLAB	OVERALL HEIGHT	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	CU.YD.	LB.	LB.	LB.
5'-0"	1 @ 4'	2'	8	5'-0"	7"	6"	6½"	3'-1⅝"	0.282	41.99	17.95	66.35
		3'	12	5'-0"		6"		4'-1⅜"	0.319	44.16	19.62	66.35
		4'	16	5'-0"		6"		5'-1⅛"	0.356	46.83	21.29	66.35
		5'	20	5'-0"		6"		6'-1⅞"	0.394	49.50	22.96	66.35
		6'	24	5'-2"		7"		7'-1⅝"	0.474	52.96	24.63	67.75
	1 @ 5'	3'	15	6'-0"	7"	6"	6½"	4'-2⅝"	0.380	55.35	22.19	101.27
		4'	20	6'-0"		6"		5'-2⅝"	0.417	58.23	23.86	101.27
		5'	25	6'-0"		6"		6'-2⅝"	0.454	60.90	25.53	101.27
		6'	30	6'-2"		7"		7'-2⅝"	0.535	64.99	27.20	103.27
		7'	35	6'-3"		7½"		8'-2⅝"	0.604	67.63	28.87	104.27
	1 @ 6'	3'	18	7'-0"	7½"	6"	7"	4'-3⅜"	0.496	66.29	29.76	118.96
		4'	24	7'-0"		6"		5'-3⅜"	0.983	68.96	26.93	118.96
		5'	30	7'-0"		6"		6'-3⅜"	0.520	71.64	28.10	118.96
		6'	36	7'-2"		7"		7'-3⅜"	0.602	75.31	29.77	120.96
		7'	42	7'-3"		7½"		8'-3⅜"	0.671	78.98	31.44	121.97
		8'	48	7'-4"		8"		9'-3⅜"	0.746	88.47	33.11	122.97
	1 @ 7'	4'	28	8'-0"	8"	6"	8½"	5'-5"	0.568	81.32	29.01	136.88
		5'	35	8'-0"		6"		6'-5"	0.605	84.00	30.68	136.88
		6'	42	8'-2"		7"		7'-5"	0.688	87.76	32.35	138.88
		7'	49	8'-3"		7½"		8'-5"	0.757	90.98	39.02	139.88
		8'	56	8'-4"		8"		9'-5"	0.832	96.65	35.69	140.88
		9'	63	8'-6"		9"		10'-5"	0.996	105.59	32.36	142.89
	1 @ 8'	4'	32	9'-0"	9½"	6"	9½"	5'-7"	0.676	95.26	33.32	198.07
		5'	40	9'-2"		7"		6'-7"	0.759	99.12	34.99	196.80
		6'	48	9'-2"		7"		7'-7"	0.797	101.79	36.66	196.80
		7'	56	9'-3"		7½"		8'-7"	0.867	105.05	38.33	198.16
		8'	64	9'-4"		8"		9'-7"	0.942	110.81	40.00	199.52
		9'	72	9'-6"		9"		10'-7"	1.057	119.32	41.67	202.25
		10'	80	9'-8"		10"		11'-7"	1.184	126.67	43.36	204.97
	1 @ 9'	5'	45	10'-2"	10"	7"	10"	6'-8"	0.849	119.72	37.56	213.61
		6'	54	10'-3"		7½"		7'-8"	0.910	118.04	39.23	220.97
		7'	63	10'-3"		7½"		8'-8"	0.957	120.71	40.90	220.97
		8'	72	10'-4"		8"		9'-8"	1.033	126.54	42.57	222.33
		9'	81	10'-6"		9"		10'-8"	1.148	135.80	44.24	225.06
		10'	90	10'-8"		10"		11'-8"	1.276	142.68	45.91	227.78
		11'	99	10'-10"		11"		12'-8"	1.416	150.90	47.58	230.51
	1 @ 10'	5'	50	11'-2"	10½"	7"	11"	6'-9½"	0.957	130.64	40.13	242.64
		6'	60	11'-3"		7½"		7'-9½"	1.024	133.99	41.80	244.00
		7'	70	11'-3"		7½"		8'-9½"	1.071	136.66	43.47	244.00
		8'	80	11'-4"		8"		9'-9½"	1.147	142.55	45.14	245.36
		9'	90	11'-6"		9"		10'-9½"	1.263	151.92	46.81	248.09
		10'	100	11'-8"		10"		11'-9½"	1.391	158.89	48.98	250.81
		11'	110	11'-10"		11"		12'-9½"	1.532	166.71	50.15	253.54
		12'	120	12'-0"		12"		13'-9½"	1.685	178.67	51.82	256.26
	1 @ 11'	6'	66	12'-3"	11"	8"	11⅝"	7'-10⅝"	1.193	156.16	46.12	268.62
		7'	77	12'-8"		8"		8'-10⅝"	1.202	157.83	47.79	268.62
		8'	88	12'-6"		8"		9'-10⅝"	1.252	163.06	49.46	268.62
		9'	99	12'-6"		9"		10'-10⅝"	1.368	172.60	51.13	271.34
		10'	110	12'-8"		10"		11'-10⅝"	1.497	179.70	52.80	274.07
		11'	121	12'-10"		11"		12'-10⅝"	1.638	187.67	54.97	276.79
		12'	132	13'-0"		12"		13'-10⅝"	1.792	199.79	56.14	279.52
	1 @ 12'	6'	72	13'-4"	11½"	8"	12⅛"	8'-0"	1.289	172.20	98.69	357.62
		7'	84	13'-6"		8"		9'-0"	1.333	179.87	50.36	357.62
		8'	96	13'-9"		8"		10'-0"	1.383	180.15	52.031	357.62
		9'	108	13'-6"		9"		11'-0"	1.500	189.85	58.70	361.18
		10'	120	13'-8"		10"		12'-0"	1.630	197.07	55.37	364.74
		11'	132	13'-10"		11"		13'-0"	1.772	205.16	57.04	368.30
		12'	144	14'-0"		12"		14'-0"	1.926	217.95	58.71	371.86

W-X002-1, W-X003-2, or W-X004-2 and W-X002-1 or W-X004-2



PART LONGITUDINAL SECTION



TYPICAL SECTION M-M

LONGITUDINAL SECTION

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 38'-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-X003-1 or W-X003-2 and W-X004-1 or W-X004-2. Also Drawing Nos. W-X002-1 or W-X002-2.

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:- BHS 5-8-63
Drawn By:- W.C.H. 2-8-63. Checked By:- BHS 5-24-63
Quantities By:- W.C.H. 2-12-63. Checked By:- BHS 5-24-63

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.				
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 Slab of Barrel. & Add'l in Apron and Headwall.- Each.					"b" bars BENT - See Diagram below. In Bottom of Top Slab bent up over Division Wall - hooked. Alternate with "a" and "c" bars.							"b2" bars BENT - See Diagram below. In Top of Bottom Slab bent down under Division Wall - hooked. Alternate with "a" and "c" bars.							"c" bars STRAIGHT In Top and Bottom Slab of Barrel. Alternate with "b" and "b2" bars.				"d" bars STRAIGHT Longitudinal in Top Slab of Barrel.			"d1" bars STRAIGHT Longitudinal in Sidewalls and Division Walls.			"e" bars STRAIGHT Longitudinal in Bottom Slab of Barrel.			"f" bars STRAIGHT Vertical in Sidewalls and Division Walls.			
			SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH	SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH	X	Y	Z	SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH	X	Y	Z	SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH
D	S	H																																							
0'-0" TO 5'-0" MAXIMUM.	2 @ 2'	2'			128	128	9'-5"			59	59	10'-6"	0'-3"	2'-2½"	3'-0"			59	59	10'-6"	0'-3"	2'-2½"	3'-0"			120	120	4'-8"	#5	12"	8	14'										
		3'			128	128	9'-5"			59	59	10'-6"	0'-3"	2'-2½"	3'-0"			59	59	10'-6"	0'-3"	2'-2½"	3'-0"			120	120	4'-8"			12	14'										
	4' @ 2'	4'	#5	12"	128	128	9'-5"	#5	12"	59	59	10'-6"	0'-3"	2'-2½"	3'-0"	#5	12"	59	59	10'-6"	0'-3"	2'-2½"	3'-0"	#5	12"	120	120	4'-8"	#4	12"	16	14'										
		5'			128	128	9'-5"			59	59	10'-6"	0'-3"	2'-2½"	3'-0"			59	59	10'-6"	0'-3"	2'-2½"	3'-0"			120	120	4'-8"			20	14'										
		6'			128	128	9'-5"			59	59	10'-6"	0'-3"	2'-2½"	3'-0"			59	59	10'-6"	0'-3"	2'-2½"	3'-0"			120	120	4'-8"			24	14'										
		3'			128	128	11'-5"			59	59	12'-7"	0'-3½"	2'-7½"	4'-1"			59	59	12'-7"	0'-3½"	2'-7½"	4'-1"			120	120	5'-8"			12	16'										
	5 @ 2'	4'			128	128	11'-5"			59	59	12'-7"	0'-3½"	2'-7½"	4'-1"			59	59	12'-7"	0'-3½"	2'-7½"	4'-1"			120	120	5'-8"			16	16'										
		5'	#6	12"	128	128	11'-8"	#5	12"	59	59	12'-10"	0'-3½"	2'-10½"	4'-2"	#5	12"	59	59	12'-10"	0'-3½"	2'-10½"	4'-2"	#6	12"	120	120	5'-9"	#4	12"	20	16'										
		6'			128	128	11'-8"			59	59	13'-0"	0'-3½"	2'-10½"	4'-2"			59	59	13'-0"	0'-3½"	2'-10½"	4'-2"			120	120	5'-9"			24	16'										
		7'			128	128	11'-10"			59	59	13'-0"	0'-3½"	2'-10½"	4'-2½"			59	59	13'-0"	0'-3½"	2'-10½"	4'-2½"			120	120	5'-10"			28	16'										
		3'			140	140	13'-5"			65	65	14'-7"	0'-4"	3'-2½"	4'-10"			65	65	14'-7"	0'-4"	3'-2½"	4'-10"			132	132	6'-8"			12	18'										
	6 @ 2'	4'			140	140	13'-5"			65	65	14'-7"	0'-4"	3'-2½"	4'-10"			65	65	14'-7"	0'-4"	3'-2½"	4'-10"			132	132	6'-8"			16	18'										
		5'	#6	11"	140	140	13'-5"	#5	11"	65	65	14'-7"	0'-4"	3'-2½"	4'-10"	#5	11"	65	65	14'-7"	0'-4"	3'-2½"	4'-10"	#6	11"	132	132	6'-8"	#4	12"	20	18'										
		6'			140	140	13'-8"			65	65	14'-10"	0'-4"	3'-2½"	4'-11½"			65	65	14'-10"	0'-4"	3'-2½"	4'-11½"			132	132	6'-8"			24	18'										
		7'			140	140	13'-10"			65	65	15'-0"	0'-4"	3'-2½"	4'-11½"			65	65	15'-0"	0'-4"	3'-2½"	4'-11½"			132	132	6'-10"			28	18'										
		8'			140	140	13'-11"			65	65	15'-1"	0'-4"	3'-2½"	5'-0"			65	65	15'-1"	0'-4"	3'-2½"	5'-0"			132	132	6'-10"			32	18'										
		3'			128	128	15'-5"			59	59	16'-3"	0'-4⅛"	3'-5"	5'-7"			59	59	16'-3"	0'-4⅛"	3'-5"	5'-7"			120	120	7'-8"			16	20'										
	7 @ 2'	4'			128	128	15'-5"			59	59	16'-3"	0'-4⅛"	3'-5"	5'-7"			59	59	16'-3"	0'-4⅛"	3'-5"	5'-7"			120	120	7'-8"			20	20'										
		5'	#6	12"	128	128	15'-8"	#6	12"	59	59	16'-9"	0'-4⅛"	3'-5"	5'-7"	#6	12"	59	59	16'-9"	0'-4⅛"	3'-5"	5'-7"	#5	11⅝"	120	120	7'-9"	#4	12"	24	20'										
		6'			128	128	15'-8"			59	59	17'-0"	0'-4⅛"	3'-5"	5'-8"			59	59	17'-0"	0'-4⅛"	3'-5"	5'-8"			120	120	7'-9"			28	20'										
		7'			128	128	15'-10"			59	59	17'-2"	0'-4⅛"	3'-5"	5'-8½"			59	59	17'-2"	0'-4⅛"	3'-5"	5'-8½"			120	120	7'-10"			32	20'										
		8'			128	128	15'-11"			59	59	17'-3"	0'-4⅛"	3'-5"	5'-9"			59	59	17'-3"	0'-4⅛"	3'-5"	5'-9"			120	120	7'-10"			36	20'										
		9'			128	128	16'-2"			59	59	17'-6"	0'-4⅛"	3'-8"	5'-10"			59	59	17'-6"	0'-4⅛"	3'-8"	5'-10"			120	120	7'-11"			40	20'										
		3'			140	140	17'-5"			65	65	18'-10"	0'-5"	3'-11"	6'-4"			65	65	18'-10"	0'-5"	3'-11"	6'-4"			132	132	8'-8"			16	22'										
	8 @ 2'	4'			140	140	17'-8"			65	65	19'-1"	0'-5"	3'-11"	6'-5"			65	65	19'-1"	0'-5"	3'-11"	6'-5"			132	132	8'-8½"			20	22'										
		5'	#6	11"	140	140	17'-8"	#6	11"	65	65	19'-3"	0'-5"	4'-0"	6'-5½"	#6	11"	65	65	19'-3"	0'-5"	4'-0"	6'-5½"	#5	11⅝"	132	132	8'-8½"	#4	12"	24	22'										
		6'			140	140	17'-11"			65	65	19'-4"	0'-5"	4'-0"	6'-6"			65	65	19'-4"	0'-5"	4'-0"	6'-6"			132	132	8'-9"			28	22'										
		7'			140	140	18'-2"			65	65	19'-7"	0'-5"	4'-0½"	6'-6½"			65	65	19'-7"	0'-5"	4'-0½"	6'-6½"			132	132	8'-9½"			32	22'										
		8'			140	140	18'-4"			65	65	19'-9"	0'-5"	4'-1"	6'-7"			65	65	19'-9"	0'-5"	4'-1"	6'-7"			132	132	8'-10"			36	22'										
		9'			140	140	18'-5"			65	65	19'-10"	0'-5"	4'-1½"	6'-8"			65	65	19'-10"	0'-5"	4'-1½"	6'-8"			132	132	8'-10½"			40	22'										
		5'			140	140	19'-8"			65	65	21'-1"	0'-5½"	4'-4"	7'-2"			65	65	21'-1"	0'-5½"	4'-4"	7'-2"			132	132	9'-3"			20	25'										
	9 @ 2'	6'			140	140	19'-10"			65	65	21'-3"	0'-5½"	4'-4½"	7'-2½"			65	65	21'-3"	0'-5½"	4'-4½"	7'-2½"			132	132	9'-4"			24	25'										
		7'	#6	11"	140	140	19'-11"	#6	11"	65	65	21'-3"	0'-5½"	4'-5"	7'-3"	#6	11"	65	65	21'-3"	0'-5½"	4'-5"	7'-3"	#5	11⅝"	132	132	9'-4½"	#4	12"	28	25'										
		8'			140	140	20'-1"			65	65	21'-5"	0'-5½"	4'-5½"	7'-3½"			65	65	21'-5"	0'-5½"	4'-5½"	7'-3½"			132	132	9'-5"			32	25'										
		9'			140	140	20'-2"			65	65	21'-7"	0'-5½"	4'-6"	7'-4"			65	65	21'-7"	0'-5½"	4'-6"	7'-4"			132	132	9'-5½"			36	25'										
		10'			140	140	20'-5"			65	65	21'-10"	0'-5½"	4'-6½"	7'-5"			65	65	21'-10"	0'-5½"	4'-6½"	7'-5"			132	132	9'-6"			40	25'										
		11'			140	140	20'-7"			65	65	22'-0"	0'-5½"	4'-7"	7'-6"			65	65	22'-0"	0'-5½"	4'-7"	7'-6"			132	132	10'-0"			44	25'										
		5'			128	128	21'-8"			59	59	23'-2"	0'-6"	4'-9"	7'-11"			59	59	23'-2"	0'-6"	4'-9"	7'-11"			120	120	10'-9"			20	27'										
	10 @ 2'	6'			128	128	21'-10"			59	59	23'-4"	0'-6"	4'-10"	7'-11½"			59	59	23'-4"	0'-6"	4'-9"	7'-11½"			120	120	10'-10"			24	27'										
		7'	#6	12"	128	128	21'-11"	#6	12"	59	59	23'-6"	0'-6"	4'-10"	7'-11½"	#6	12"	59	59	23'-6"	0'-6"	4'-9"	7'-11½"	#5	11⅝"	120	120	10'-10"	#4	12"	28	27'										
		8'			128	128	22'-2"			59	59	23'-8"	0'-6"	4'-10"	8'-0"			59	59	23'-8"	0'-6"	4'-10"	8'-0"			120	120	10'-11"			32	27'										
		9'			128	128	22'-5"			59	59	23'-10"	0'-6"	4'-10"	8'-0½"			59	59	23'-10"	0'-6"	4'-10"	8'-0½"			120	120	10'-11"			36	27'										
		10'			128	128	22'-8"			59	59	24'-0"	0'-6"	4'-10"	8'-1"			59	59	24'-0"	0'-6"	4'-10"	8'-1"			120	120	11'-0"			40	27'										
		11'			128	128	22'-11"			59	59	24'-3"	0'-6"	5'-0"	8'-1½"			59	59	24'-3"	0'-6"	5'-0"	8'-1½"			120	120	11'-0"			44	27'										
		12'			128	128	23'-1"			59	59	24'-5"	0'-6"	5'-0"	8'-2"			59	59	24'-5"	0'-6"	5'-0"	8'-2"			120	120	11'-0"			48	27'										
		6'			128	128	23'-4"			59	59	25'-5"	0'-6½"	5'-1"	8'-5"			59	59	25'-5"	0'-7½"	5'-1"	8'-5"			120	120	11'-10"			24	30'										
	2 @ 11'	7'			128	128	23'-11"			59	59	25'-5"	0'-6½"	5'-1"	8'-5"			59	59	25'-6"	0'-7½"	5'-1"	8'-5"			120	120	11'-10"			28	30'										
		8'	#7	12"	128	128	23'-11"	#6	12"	59	59	25'-5"	0'-6½"	5'-1"	8'-5"	#7	12"	59	59	25'-6"	0'-7½"	5'-1"	8'-5"	#5	11⅝"	120	120	11'-10"	#4	12"	32	30'										
		9'			128	128	24'-2"			59	59	25'-6"	0'-6½"	5'-2"	8'-6"			59	59	25'-9"	0'-7½"	5'-2"	8'-6"			120	120	11'-11"			36	30'										
		10'			128	128	24'-5"			59	59	25'-11"	0'-6½"	5'-3"	8'-6½"			59	59	26'-0"	0'-7½"	5'-3"	8'-6½"			120	120	12'-0"			40	30'										
		11'			128	128	24'-7"			59	59	26'-1"	0'-6½"	5'-3"	9'-0"			59	59	26'-3"	0'-7½"	5'-3"	9'-0"			120	120	12'-0"			44	30'										
		12'			128	128	24'-10"			59	59	26'-3"	0'-6½"	5'-5"	9'-1"			59	59	26'-6"	0'-7½"	5'-3"	9'-1"			120	120	12'-0"			48	30'										
		6'			140	140	25'-11"			65	65	27'-5"	0'-7"	5'-8"	9'-6"			65	65	27'-7"	0'-8½"	5'-5"	9'-6"			132	132	12'-10"			24	32'										
	2 @ 12'	7'			140	140	25'-11"			65	65	27'-5"	0'-7"	5'-8"	9'-6"			65	65	27'-7"	0'-8½"	5'-5"	9'-6"			132	132	12'-10"			28	32'										
		8'	#7	11"	140	140	25'-11"	#6	11"	65	65	27'-5"	0'-7"	5'-8"	9'-6"	#7	11"	65	65	27'-7"	0'-8½"	5'-5"	9'-6"	#5	11⅝"	132	132	12'-10"	#4	12"	32	32'										
		9'			140	140	26'-2"			65	65	27'-8"	0'-7"	5'-9"	9'-7"			65	65	27'-10"	0'-8½"	5'-6"	9'-7"			132	132	12'-11"			36	32'										
		10'			140	140	26'-5"			65	65	27'-10"	0'-7"	5'-10"	9'-8"			65	65	28'-1"	0'-8½"	5'-7"	9'-8"			132	132	13'-0"			40	32'										
		11'			140	140	26'-7"			65	65	28'-1"	0'-7"	5'-10"	9'-9"			65	65	28'-3"	0'-8½"	5'-7"	9'-9"			132	132	13'-0"			44	32'										
		12'			140	140	26'-9"			65	65	28'-3"	0'-7"	5'-10"	9'-10"			65	65	28'-5"	0'-8½"	5'-7"	9'-10"			132	132	13'-0"			48	32'										

Designed by:- W.C.H. 1-17-63.
Drawn by:- W.C.H. 2-15-63.
Quantities by:- W.C.H. 2-19-63.

Checked by:- RMS - 5-14-63
Checked by:- RMS - 5-24-63
Checked by:- RMS - 5-28-63

BAR SIZE	PIN DIAM.	K	ADD FOR 2 HOOKS	BENDING DIAGRAM FOR Bars "b" and "b2".
#5	2⅝"	4½"	0'-11⅝"	
#6	3"	5"	1'-2"	

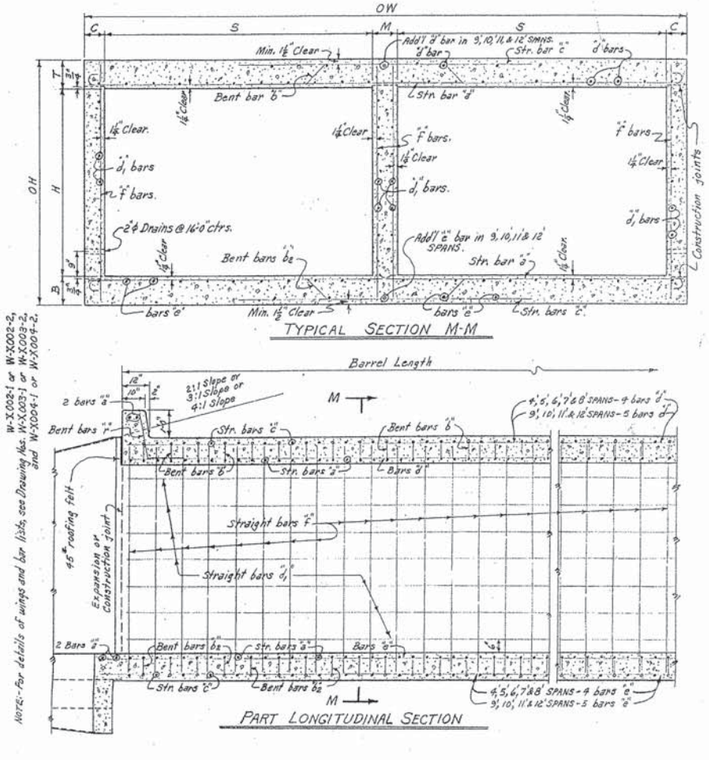
NOTE:- Dimensions are to centers of bars. (Bars "b" and "b2")

DOWEL BARS FOR TWO HEADWALLS

2 SPANS @	SIZE	SPACING	NO. REQ'D	LENGTH	X	Bars "x" Dowel bars in Headwalls.
4'	#4	12"c	20	2'-5"	1'-2⅝"	
5'	#4	12"c	24	2'-6"	1'-3"	
6'	#4	12"c	28	2'-7"	1'-3⅝"	
7'	#4	12"c	32	2'-8"	1'-4"	
8'	#4	12"c	36	2'-9"	1'-4⅝"	
9'	#4	12"c	40	2'-10"	1'-5"	
10'	#4	12"c	46	2'-11"	1'-5⅝"	
11'	#4	12"c	50	3'-0"	1'-6"	
12'	#4	12"c	54	3'-1"	1'-6⅝"	

DIMENSIONS — QUANTITIES

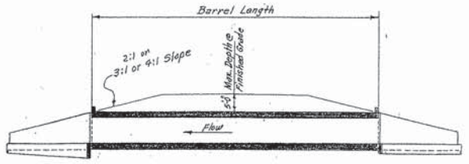
MAX. DESIGN DEPTH OF COVER	BARREL DIMENSIONS: CLEAR SPANS	CLEAR HEIGHT	SQ. FT. OPENING	OVERALL WIDTH	THICKNESS OF TOP SLAB	THICKNESS OF SIDEWALLS & DIVISION WALL	THICKNESS OF BOTTOM SLAB	OVERALL HEIGHT	UNIT QUANTITIES: CLASS S CONC. PER LIN. FT. OF BARREL	REINFORCING STEEL PER LIN. FT. OF BARREL	REINFORCING STEEL ADDITIONAL PER LAP	REINFORCING STEEL ADDITIONAL TWO HEADWALLS & APRONS
D	S	H	A	OW	T	C	M	B	OH	CU.YD.	LB.	LB.	LB.
5'-0"	2 @ 5'	2'	16	9'-8"	6½"	6"	8"	6"	3'-0½"	0.496	88.15	42.71	189.56
		3'	24	9'-8"					4'-0½"	0.558	93.49	44.05	189.56
		4'	32	9'-8"					5'-0½"	0.620	98.84	49.39	189.56
		5'	40	9'-8"					6'-0½"	0.682	104.18	52.73	189.56
		6'	48	9'-11"		7"	9"		7'-0½"	0.809	110.74	56.07	181.65
	2 @ 6'	3'	30	11'-8"	7"	6"	8"	6½"	4'-1⅞"	0.671	123.34	51.19	198.64
		4'	40	11'-8"		6"	8"		5'-1⅞"	0.733	128.48	54.53	198.64
		5'	50	11'-8"		6"	8"		6'-1⅞"	0.795	134.03	57.87	198.64
		6'	60	11'-11"		7"	9"		7'-1⅞"	0.922	140.89	61.21	201.69
		7'	70	12'-1"		7½"	10"		8'-1⅞"	1.046	147.34	64.55	203.65
	2 @ 7'	3'	34	13'-8"	7½"	6"	8"	7½"	4'-5"	0.818	148.50	56.34	233.58
		4'	48	13'-8"		6"	8"		5'-5"	0.880	153.85	59.68	233.58
		5'	60	13'-8"		6"	8"		6'-5"	0.941	159.19	63.02	233.58
		6'	72	13'-11"		7"	9"		7'-5"	1.070	166.20	66.36	236.59
		7'	84	14'-1"		7½"	10"		8'-5"	1.192	172.74	69.70	238.53
		8'	96	14'-2"		8"	10"		9'-5"	1.298	183.36	73.04	239.53
	2 @ 8'	4'	56	15'-8"	8"	6"	8"	8"	5'-6"	1.021	178.15	64.83	268.97
		5'	70	15'-8"		6"	8"		6'-6"	1.082	183.49	68.17	268.97
		6'	84	15'-11"		7"	9"		7'-6"	1.212	190.53	71.51	271.97
		7'	98	16'-1"		7½"	10"		8'-6"	1.339	197.19	74.85	273.98
		8'	112	16'-2"		8"	10"		9'-6"	1.440	207.89	78.19	274.98
		9'	126	16'-5"		9"	11"		10'-6"	1.616	225.25	81.53	277.98
	2 @ 9'	4'	64	17'-8"	9"	6"	8"	9"	5'-6"	1.174	210.37	71.71	304.80
		5'	80	17'-11"		7"	9"		6'-6"	1.295	217.63	75.05	307.81
		6'	96	17'-11"		7"	9"		7'-6"	1.366	222.97	78.39	307.81
		7'	112	18'-1"	8½"	7½"	10"	8½"	8'-6"	1.989	223.48	81.73	309.81
		8'	128	18'-2"		8"	10"		9'-6"	1.595	249.87	85.07	310.81
		9'	144	18'-5"		9"	11"		10'-6"	1.772	258.08	88.91	313.82
		10'	160	18'-8"		10"	12"		11'-6"	1.967	271.07	91.75	316.82
	2 @ 10'	5'	90	19'-11"	9"	7"	9"	9½"	6'-6½"	1.977	239.37	82.77	345.92
		6'	108	20'-1"		7½"	10"		7'-6½"	1.594	246.08	86.11	347.93
		7'	126	20'-1"		7½"	10"		8'-6½"	1.671	251.93	89.45	347.93
		8'	144	20'-2"		8"	10"		9'-6½"	1.778	262.26	92.79	348.93
		9'	162	20'-5"		9"	11"		10'-6½"	1.956	279.35	96.13	351.93
		10'	180	20'-8"		10"	12"		11'-6½"	2.152	292.97	99.47	356.93
		11'	198	20'-10"		11"	12"		12'-6½"	2.328	306.86	102.81	356.94
	2 @ 11'	5'	100	21'-11"	9½"	7"	9"	10"	6'-7½"	1.674	279.64	87.32	470.99
		6'	120	22'-1"		7½"	10"		7'-7½"	1.792	286.50	91.26	492.71
		7'	140	22'-1"		7½"	10"		8'-7½"	1.869	291.85	94.60	492.71
		8'	160	22'-2"		8"	10"		9'-7½"	1.976	302.77	97.94	494.08
		9'	180	22'-5"		9"	11"		10'-7½"	2.155	320.74	101.28	498.16
		10'	200	22'-8"		10"	12"		11'-7½"	2.352	393.99	104.62	492.25
		11'	220	22'-10"		11"	12"		12'-7½"	2.529	398.01	107.96	494.98
		12'	240	23'-0"		12"	12"		13'-7½"	2.718	370.23	111.30	497.70
	2 @ 12'	6'	132	24'-2"	10"	8"	10"	10½"	7'-9"	2.048	309.36	96.41	530.03
		7'	154	24'-2"		8"	10"		8'-9"	2.128	314.70	99.75	530.03
		8'	176	24'-2"		8"	10"		9'-9"	2.208	325.12	103.09	530.03
		9'	198	24'-5"		9"	11"		10'-9"	2.388	343.25	106.43	534.12
		10'	220	24'-8"		10"	12"		11'-9"	2.586	356.57	109.77	538.21
		11'	242	24'-10"		11"	12"		12'-9"	2.764	370.67	113.11	542.93
		12'	264	25'-0"		12"	12"		13'-9"	2.954	393.05	116.95	542.66
	2 @ 13'	6'	144	26'-2"	10½"	8"	10"	11"	7'-10½"	2.293	353.31	101.55	576.93
		7'	168	26'-2"		8"	10"		8'-10½"	2.379	358.65	104.89	576.93
		8'	192	26'-2"		8"	10"		9'-10½"	2.459	369.12	108.23	576.93
		9'	216	26'-5"		9"	11"		10'-10½"	2.690	387.52	111.57	580.52
		10'	240	26'-8"		10"	12"		11'-10½"	2.840	401.07	114.91	584.60
		11'	264	26'-10"		11"	12"		12'-10½"	3.018	415.31	118.25	587.33
		12'	288	27'-0"		12"	12"		13'-10½"	3.208	937.88	121.59	590.05



TYPICAL SECTION M-M

PART 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.



LONGITUDINAL SECTION

NOTE:- This drawing to be used in conjunction with Standard Wing Drawing Nos. W-X003-1 or W-X003-2 and W-X004-1 or W-X004-2. Also Drawing Nos. W-X002-1 or W-X002-2.

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, division walls and slabs shall be only where shown on plans.

SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.

DESIGN LIVE LOAD

H20-S16 LOADING A.A.S.H.O. 1961
AND
SPECIAL MILITARY LOADING
Two 24,000 lb. Axles @ 4'-0" ctrs.

UNIT STRESSES:-
Class S Concrete (n=10) 1200 #/□"
Reinforcing Steel 20,000 #/□"

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
DOUBLES — UNDER 5'-0" COVER

STANDARD DRAWING NO. R-200X-0.