DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	1	368
		HWY. 278 - HWY. 293 (S)				

"A FULLY CONTROLLED ACCESS FACILITY"
ARKANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS FOR STATE HIGHWAY

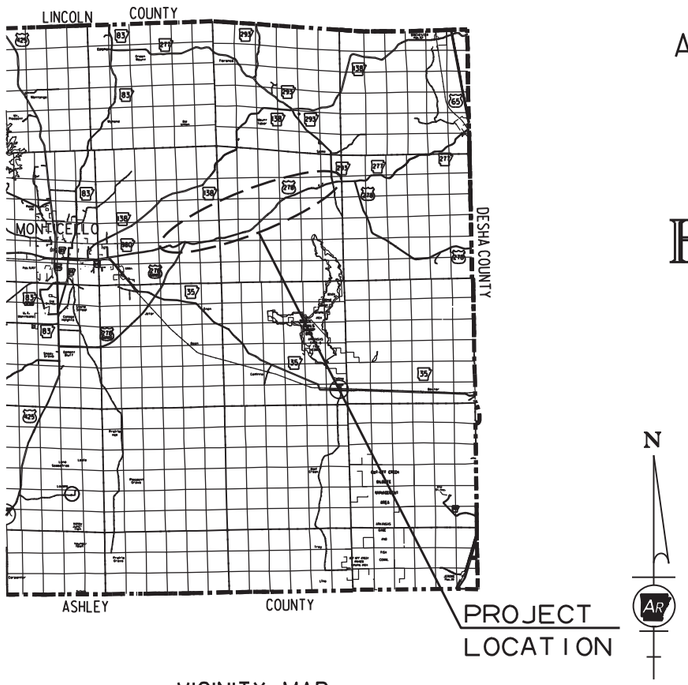
HWY. 278 - HWY. 293 (S)

DREW COUNTY

ROUTE 569 SECTION 7

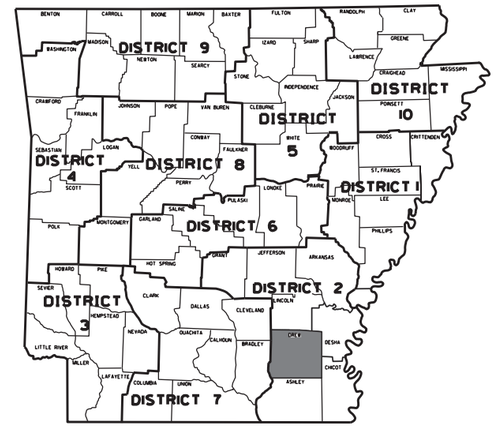
JOB 020678

FED. AID PROJ. NCIIP-222I(2)



VICINITY MAP

NOT TO SCALE



ARK. HWY. DIST. NO. 2

DESIGN TRAFFIC DATA

DESIGN YEAR	2042
2022 ADT	1700
2042 ADT	4700
2042 DHV	517
DIRECTIONAL DISTRIBUTION	0.60
TRUCKS	25%
DESIGN SPEED	70 MPH

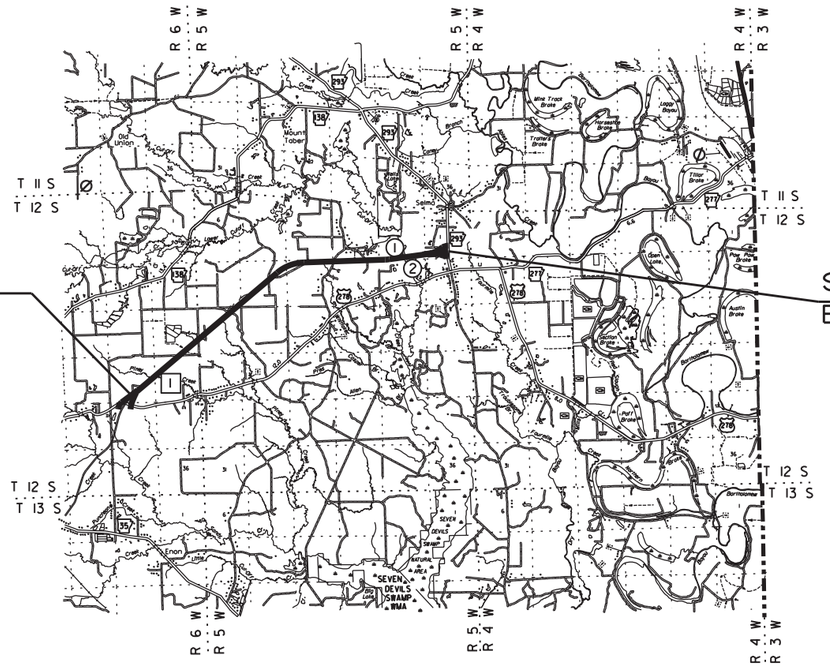
BRIDGE DATA

① HIGHWAY 569 OVER CUTOFF CREEK
602'-2" BRIDGE LENGTH
STA. 5108+24.92 BR. END
42'-0" CLEAR ROADWAY
PRESTRESSED CONCRETE GIRDER UNIT TYPE IV
(6 SPANS @ 100')
BR. NO. B7577
STA. 5114+27.08 BR. END

② HIGHWAY 569 OVER CUTOFF CREEK RELIEF
257'-2" BRIDGE LENGTH
STA. 5118+51.92 BR. END
42'-0" CLEAR ROADWAY
255'-0" PRESTRESSED CONCRETE GIRDER UNIT TYPE IV
(3 SPANS @ 85')
BR. NO. B7578
STA. 5121+09.08 BR. END

STRUCTURES OVER 20'-0" SPAN

[1] STA. 4768+40 CONSTRUCT
TRI. 9' X 5' X 124' R.C. BOX CULVERT
ON A 20°RT. FWD. SKEW
WITH 31 WINGS LT. & RT.
Q50 = 860 CFS D.A. = 1147 ACRES
SPAN = 30'-9"



	BEGINNING OF PROJECT	MID POINT OF PROJECT	END OF PROJECT
LATITUDE	N 33°38'18"	N 33°40'41"	N 33°41'04"
LONGITUDE	W 91°41'32"	W 91°38'20"	W 91°34'06"

GROSS LENGTH OF PROJECT	43571.10	FEET	OR	8.252	MILES	
NET " " ROADWAY	42681.02	"	"	8.083	"	
NET " " BRIDGES	890.08	"	"	0.169	"	
NET " " PROJECT	43571.10	"	"	8.252	"	

P.E. 001873
NON-PART.

APPROVED

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 10045
KELVIN REX VINES

Vines, Rex
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DEPUTY DIRECTOR
AND CHIEF ENGINEER

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	2	368
		INDEX OF SHEETS				

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

Smith, Trinity D.
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07-27-2022		6	ARK.	020678	3	368
		STANDARD DRAWINGS				

STATE OF ARKANSAS
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BRIDGE STANDARD DRAWINGS

DRWG.NO.	TITLE	DATE
55000	STANDARD DETAILS FOR EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS	02-27-14
55001	STANDARD DETAILS FOR DUMPED RIPRAP AND FILTER BLANKET AND COMPUTING EXCAVATION FOR STRUCTURES	02-27-14
55005	STANDARD DETAILS FOR PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS	03-24-16
55010	STANDARD DETAILS FOR TYPE D BRIDGE NAME PLATE	05-11-21
55021	STANDARD DETAILS FOR CONCRETE FILLED STEEL SHELL PILES AND PILE ENCASEMENTS	03-24-16
55030F	STANDARD DETAILS FOR TYPE F APPROACH GUTTERS	04-08-21
55071	STANDARD DETAILS FOR BRIDGE TRAFFIC RAIL TYPE SSTR42	07-06-22

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	05-19-22
DR-2	DETAILS OF DRIVEWAYS & STREET TURNOUTS	05-19-22
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
GR-5	GUARDRAIL DETAILS (TYPE C) STREET/ROAD BARRICADE OR TEMPORARY INSTALLATION	11-07-19
GR-6	GUARDRAIL DETAILS	05-19-22
GR-7	GUARDRAIL DETAILS	11-07-19
GR-8	GUARDRAIL DETAILS	11-07-19
GR-9	GUARDRAIL DETAILS	11-07-19
GR-10	GUARDRAIL DETAILS	11-07-19
GR-11	GUARDRAIL DETAILS	11-07-19
GR-12	GUARDRAIL DETAILS	05-14-20
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 PCLYETHYLENE)	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, & SOLD SODDING FOR BOX CULVERTS	11-20-03
SE-1	TABLES AND METHOD OF SUPERELEVATION FOR ONE-WAY TRAFFIC	11-07-19
SE-2	TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC	11-07-19
TC-1	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	11-07-19
TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	05-20-21
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	08-12-21
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
TEC-4	TEMPORARY EROSION CONTROL DEVICES	07-26-12
WF-1	WIRE FENCE TYPE A AND B	08-22-02
WF-2	WIRE FENCE WATER GAPS	04-20-79
WF-4	WIRE FENCE TYPE C AND D	08-22-02

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07-27-2022		6	ARK.	020678	4	368
		GOVERNING SPECIFICATIONS				

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GOVERNING SPECIFICATIONS (1 OF 2)

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 020678
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
105-4_____	MAINTENANCE DURING CONSTRUCTION
107-2_____	RESTRAINING CONDITIONS
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
307-1_____	CEMENT
308-1_____	CEMENT
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
400-7_____	TRACKLESS TACK
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
410-4_____	EVALUATION OF ACHM SUBLOT REPLACEMENT MATERIAL
501-2_____	CEMENT
600-2_____	INCIDENTAL CONSTRUCTION
603-1_____	LANE CLOSURE NOTIFICATION
604-1_____	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
604-3_____	TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES (MASH)
605-1_____	CONCRETE DITCH PAVING
606-1_____	PIPE CULVERTS FOR SIDE DRAINS
617-1_____	GUARDRAIL TERMINAL (TYPE 2)
620-1_____	MULCH COVER
632-1_____	CONCRETE ISLAND
729-1_____	CHANNEL POST SIGN SUPPORT
800-1_____	STRUCTURES
802-3_____	CONCRETE FOR STRUCTURES
802-4_____	CEMENT
804-2_____	REINFORCING STEEL FOR STRUCTURES
807-2_____	STEEL STRUCTURES
808-1_____	INSTALLATION OF ELASTOMERIC BEARINGS
808-2_____	ELASTOMERIC BEARINGS

GOVERNING SPECIFICATIONS (2 OF 2)

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

NUMBER	TITLE
JOB 020678__	BIDDING REQUIREMENTS AND CONDITIONS
JOB 020678__	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 020678__	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 020678__	CARGO PREFERENCE ACT REQUIREMENTS
JOB 020678__	CLASS C FLY ASH IN PORTLAND CEMENT CONCRETE PAVEMENT AND CLASS S(AE) CONCRETE
JOB 020678__	COLD MILLING - COUNTY PROPERTY
JOB 020678__	COMPACTED EMBANKMENT
JOB 020678__	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 020678__	CONSTRUCTION PROJECT INFORMATION SIGN
JOB 020678__	DELAY IN RIGHT OF WAY OCCUPANCY
JOB 020678__	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB 020678__	FLEXIBLE BEGINNING OF WORK - WORKING DAY CONTRACT
JOB 020678__	ESTABLISHING CONTRACT TIME – WORKING DAY CONTRACT
JOB 020678__	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 020678__	LIQUIDATED DAMAGES PROCEDURE FOR BID LETTINGS
JOB 020678__	LONGITUDINAL JOINT DENSITIES FOR ACHM SURFACE COURSES
JOB 020678__	MANDATORY ELECTRONIC CONTRACT
JOB 020678__	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB 020678__	PARTNERING REQUIREMENTS
JOB 020678__	PERCENT WITHIN LIMITS/PAVEMENT SMOOTHNESS (IRI)
JOB 020678__	PLASTIC PIPE
JOB 020678__	PRE-BID ON SITE INVESTIGATION OF SOIL CONDITIONS
JOB 020678__	PRICE ADJUSTMENT FOR ASPHALT BINDER
JOB 020678__	PRICE ADJUSTMENT FOR FUEL
JOB 020678__	PROHIBITION OF CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT
JOB 020678__	RESTRICTIONS ON THE USE OF RECYCLED ASPHALT PAVEMENT MATERIAL
JOB 020678__	RUMBLE STRIPS
JOB 020678__	SAND DRAINAGE BLANKET
JOB 020678__	SECTION 404 INDIVIDUAL PERMIT REQUIREMENTS
JOB 020678__	SETTLEMENT MONITORING
JOB 020678__	SHORING FOR CULVERTS
JOB 020678__	SOIL STABILIZATION
JOB 020678__	STORM WATER POLLUTION PREVENTION PLAN
JOB 020678__	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 020678__	TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES LEFT IN PLACE
JOB 020678__	UTILITY ADJUSTMENTS
JOB 020678__	VALUE ENGINEERING
JOB 020678__	WARM MIX ASPHALT

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GOVERNING SPECS.

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	5	368
		GENERAL NOTES				

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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.

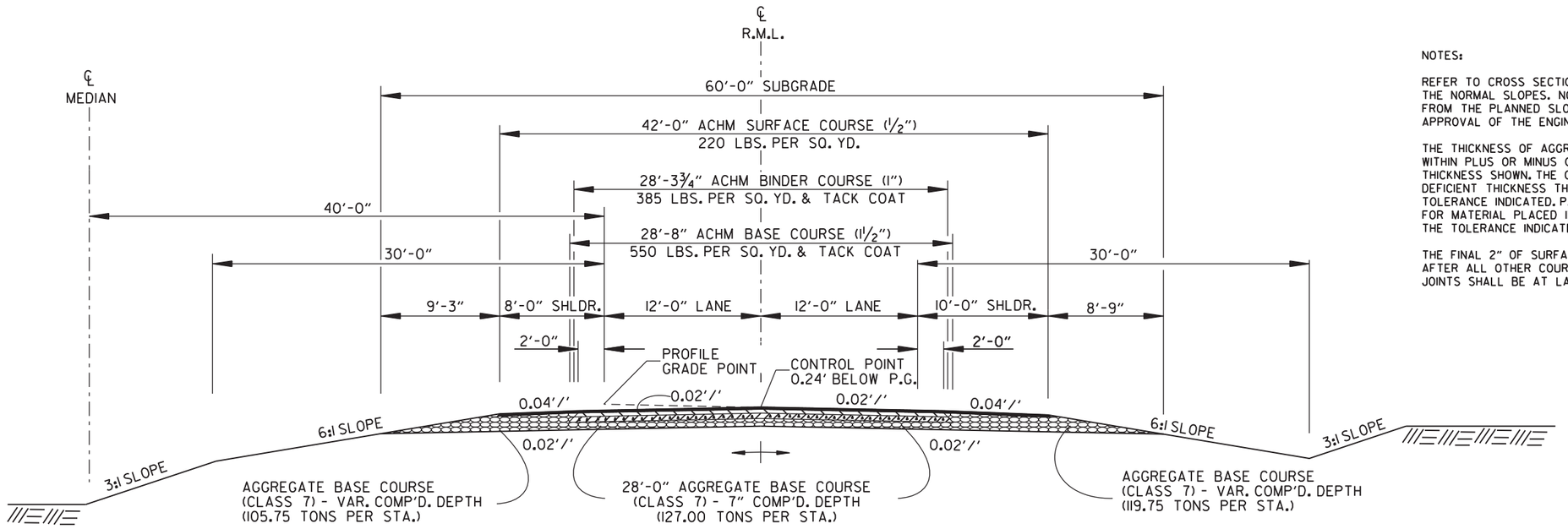
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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	6	368
		TYPICAL SECTIONS OF IMPROVEMENT				

STATE OF ARKANSAS
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RIGHT MAIN LANES - 2-LANE - NORMAL CROWN SECTION

NOTES:

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

THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH (25mm) OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

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

STA. 4782+02.61 TO STA. 4916+13.85
STA. 5005+38.85 TO STA. 5104+75.00
STA. 5124+52.00 TO STA. 5154+76.05

STA. 5154+76.05 TO 5158+96.05 420' TURN LANE TAPERS FROM 12' TO 18' LT. & RT.

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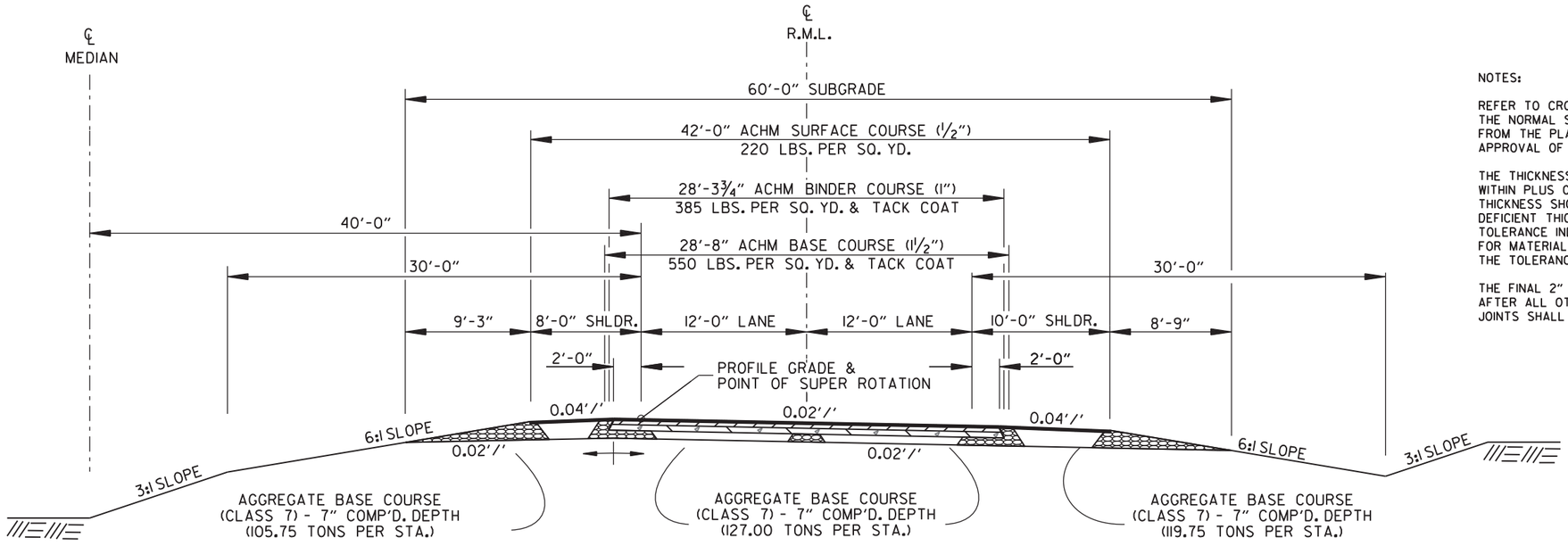
TYPICAL SECTIONS OF IMPROVEMENT

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
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		TYPICAL SECTIONS OF IMPROVEMENT				

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NOTES:

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

THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH (25mm) OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

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

MAX. 6' CUT DEPTH.

• AS DIRECTED BY THE ENGINEER IF CUT DEPTH EXCEEDS 6' THEN A 4:1 MAY BE UTILIZED.

RIGHT MAIN LANES - 2-LANE - SUPERELEVATION SECTION

STA. 4729+84.02 TO STA. 4782+02.61
STA. 4916+13.85 TO STA. 5005+38.85
STA. 5104+75.00 TO STA. 5107+86.92
STA. 5114+65.08 TO STA. 5118+13.92
STA. 5121+47.08 TO STA. 5124+52.00

STA. 4728+04.02 TO 4729+24.02 - RIGHT TURN LANE TAPERS FROM 22' TO 12'

STA. 4728+04.02 TO STA. 4729+84.02 - LEFT THRU LANE TAPERS FROM 12' TO 0'

mh39735 5/9/2022
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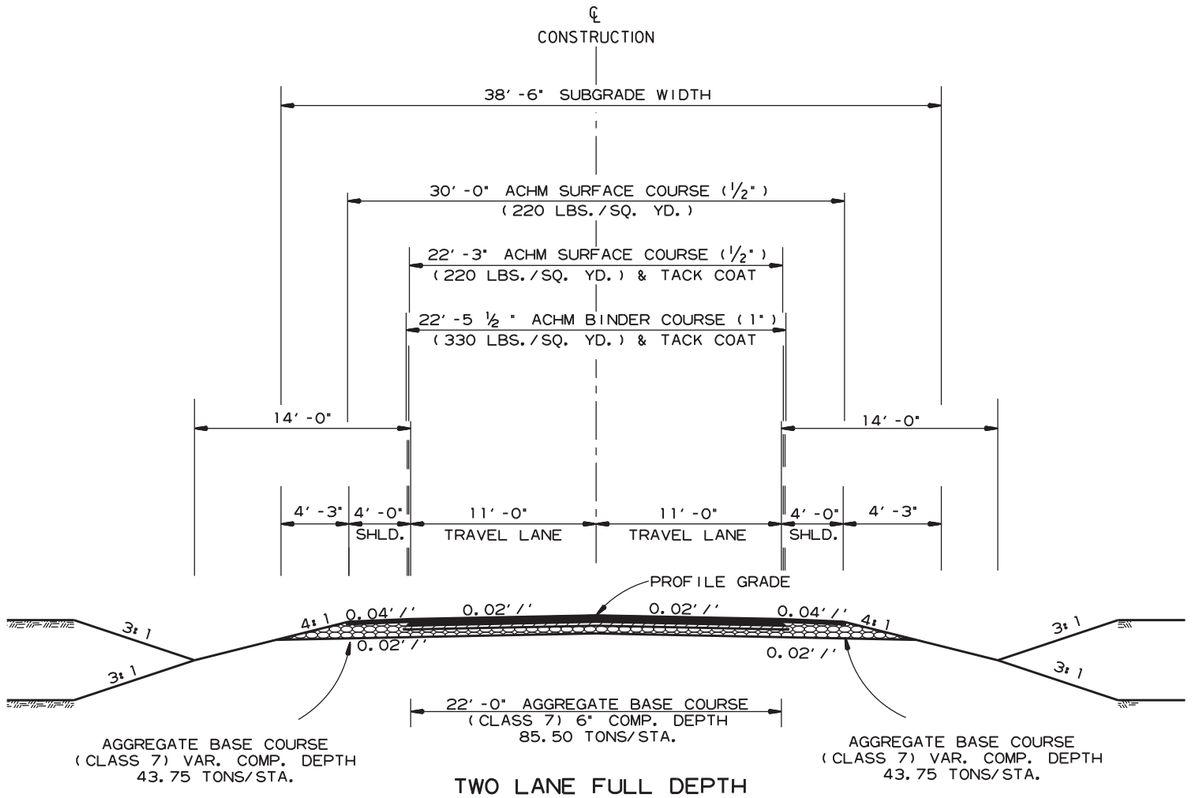
TYPICAL SECTIONS OF IMPROVEMENT

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	8	368
		TYPICAL SECTIONS OF IMPROVEMENT				

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

Aug 2 2022 8:47 AM

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TWO LANE FULL DEPTH OPEN SHOULDER

HWY. 293

STA. 318+88.64 TO STA. 324+05.55

NOTES:

1. REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.
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3. 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.
4. THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAID. LONGITUDINAL JOINTS SHALL BE AT LANE LINES.

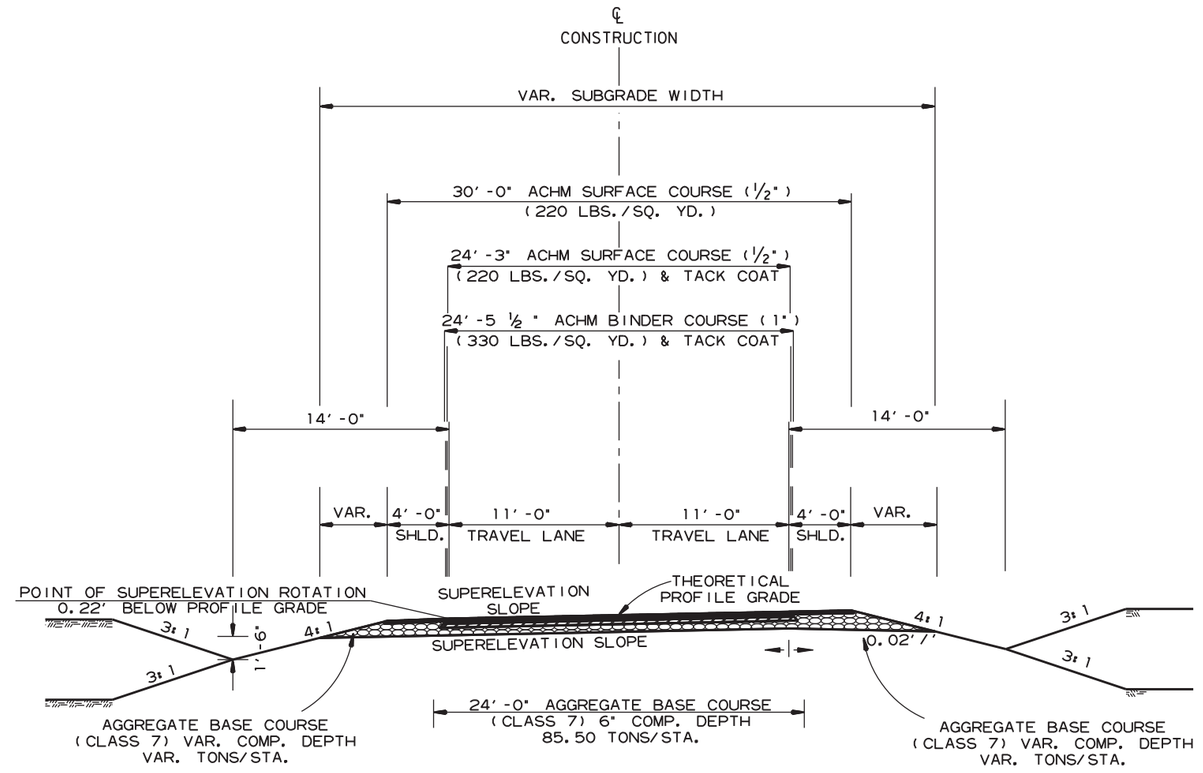
mh39735 5/9/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	9	368
		TYPICAL SECTIONS OF IMPROVEMENT				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
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TWO LANE FULL DEPTH OPEN SHOULDER

HWY. 293

STA. 302+70.00 TO STA. 310+84.59
STA. 324+05.55 TO STA. 327+10.59

NOTES:

1. REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.
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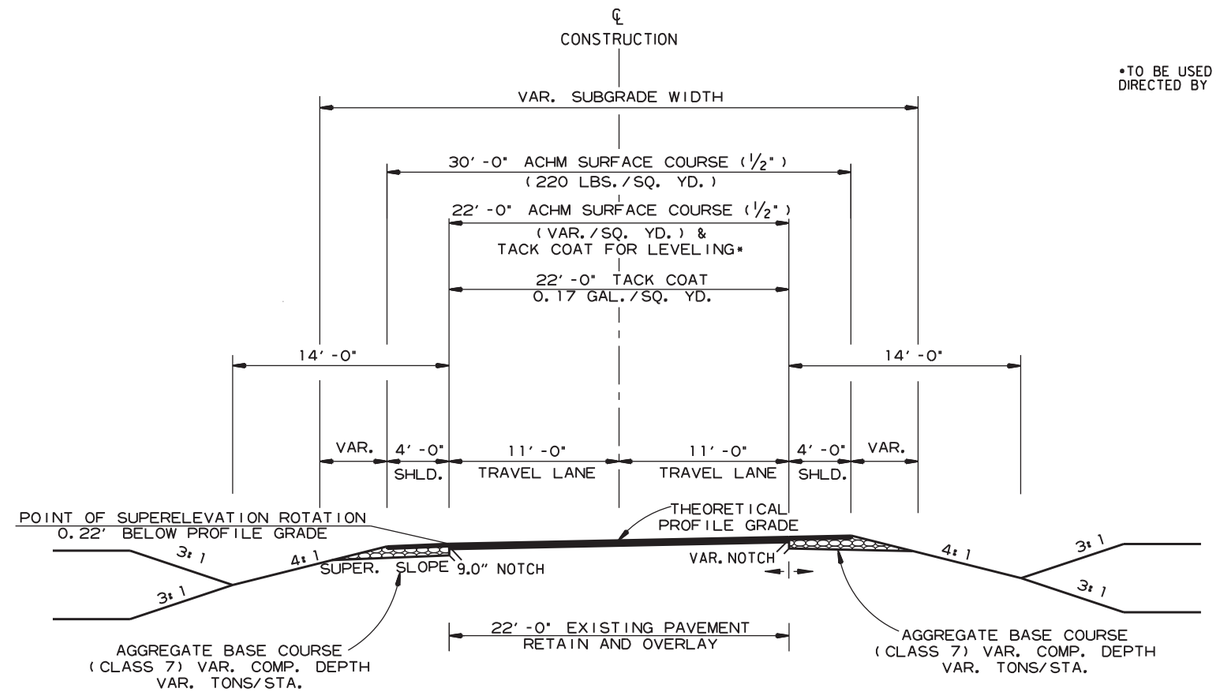
mh39735 5/9/2022
R020678.DGN

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07-27-2022		6	ARK.	020678	10	368
		TYPICAL SECTIONS OF IMPROVEMENT				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
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TWO LANE NOTCH & WIDEN
OPEN SHOULDER

HWY. 293

STA. 301+00.00 TO STA. 302+70.00
STA. 327+10.59 TO STA. 330+14.77

*TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

NOTES:

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3. 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.
4. 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.
5. THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAID. LONGITUDINAL JOINTS SHALL BE AT LANE LINES.

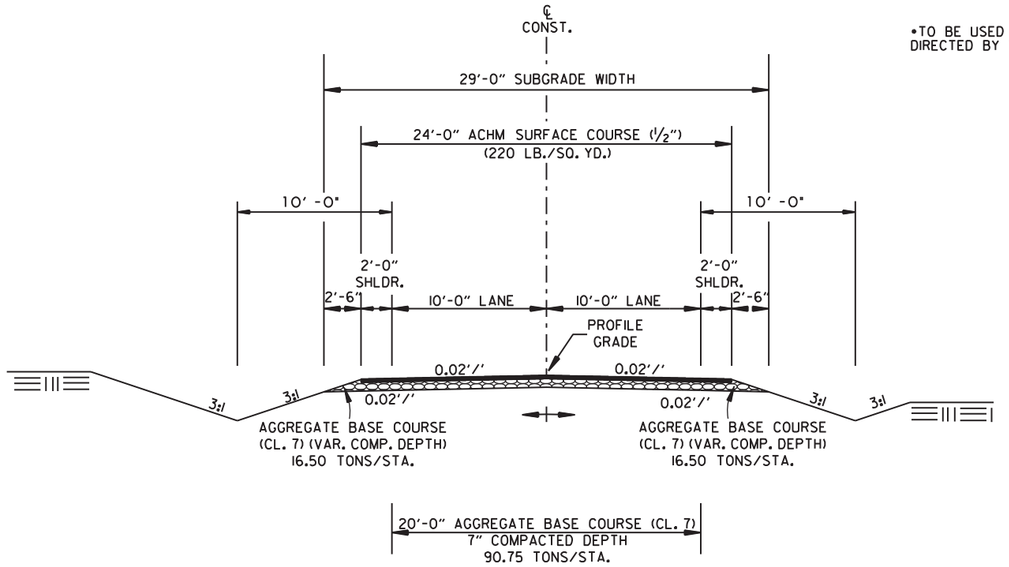
mh39735 5/9/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	11	368
		TYPICAL SECTIONS OF IMPROVEMENT				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
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•TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

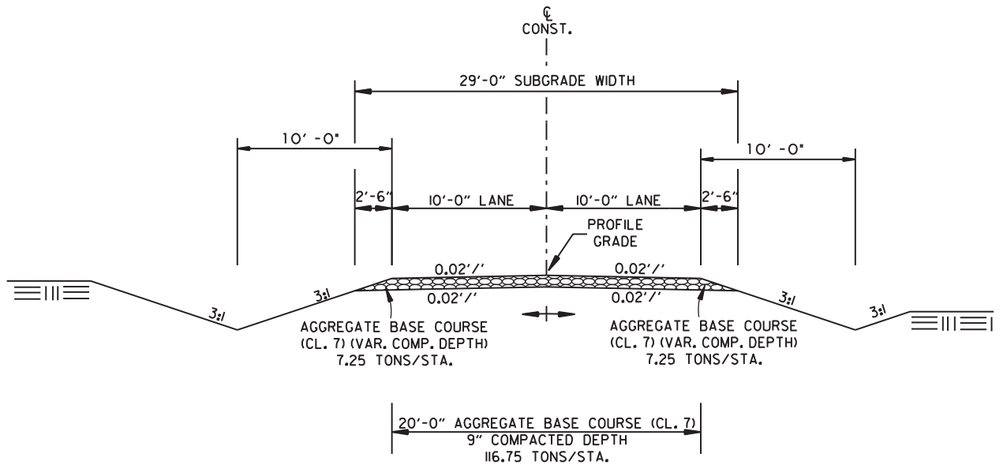
COUNTY ROAD 75
STA. 100+00.00 TO STA. 107+23.61
STA. 107+65.61 TO STA. 114+57.19

LD LONG ROAD
STA. 900+00.00 TO STA. 906+10.59
STA. 906+52.59 TO STA. 909+81.67

NOTES:

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

•TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER



LD LONG FRONTAGE ROAD
STA. 800+08.44 TO STA. 838+45.45

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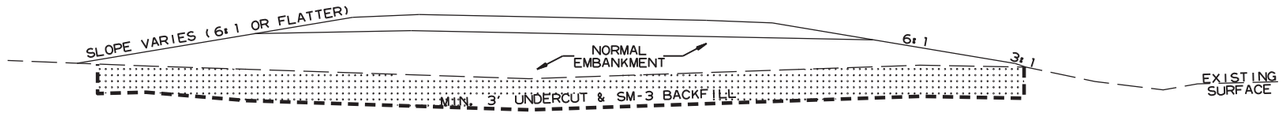
TYPICAL SECTIONS OF IMPROVEMENT

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	12	368
		SPECIAL DETAILS				

STATE OF ARKANSAS
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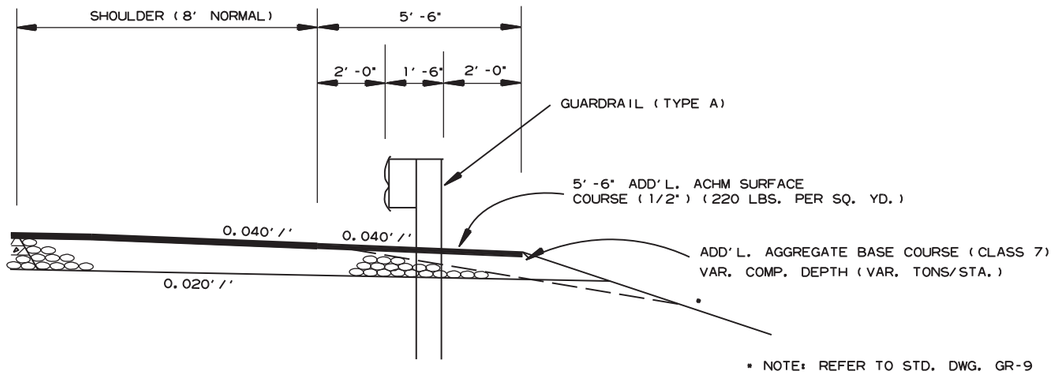
Aug 2 2022 8:48 AM

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

DETAIL OF UNDERCUT WITH SELECT GRANULAR MATERIAL BACKFILL



WIDENING FOR GUARDRAIL



6.0" Radius, 1.3" Border, Black on Orange;
"Job 020678" C 2K; "Start Date Mo Year" C 2K;
"Est Completion Mo Year" C 2K; "IDRIVE" Arial;
" ARKANSAS.COM " Arial;

CONSTRUCTION PROJECT INFORMATION SIGN

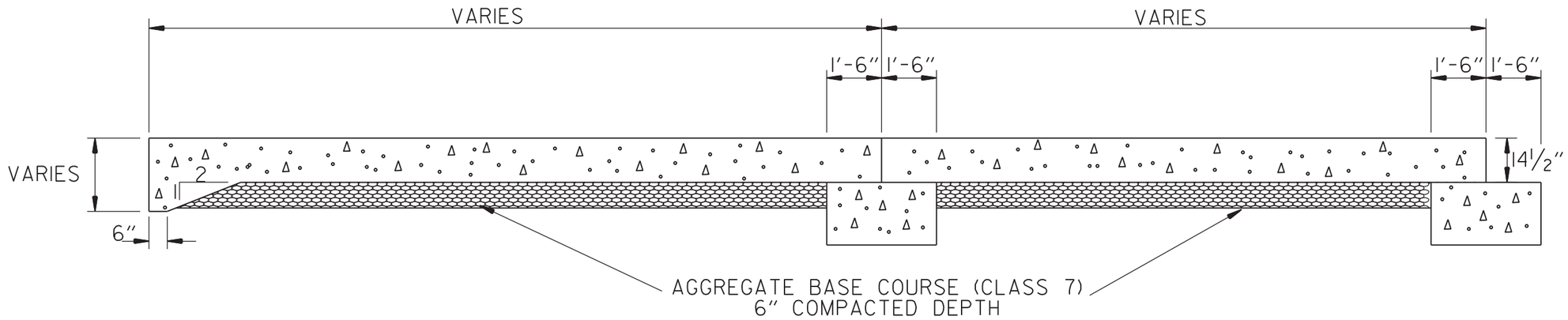
mh39735 6/29/2022
R020678.DGN

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		SPECIAL DETAILS				

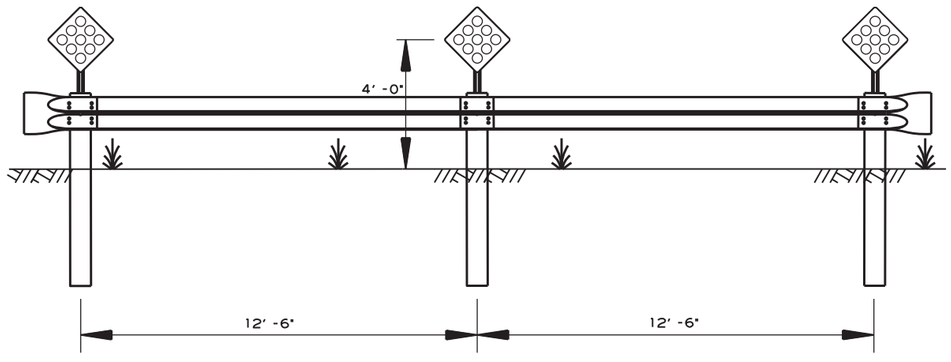
STATE OF ARKANSAS
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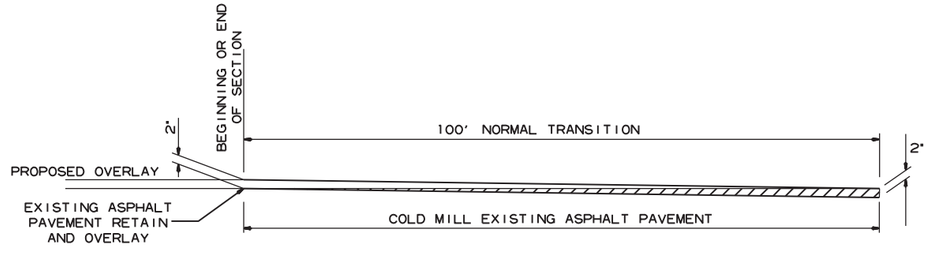
SPECIAL DETAIL OF APPROACH SLAB



ROAD CLOSED DETAIL

TO BE USED WHERE EXISTING
ROADS WILL BE PERMANENTLY CLOSED.
SEE PLAN SHEETS FOR LOCATIONS
SEE STD. DWG. GR-5 FOR
MORE DETAILS.

CONSTRUCT
25 LIN. FT. TYPE "C" GUARDRAIL
WITH 3 RED DIAMOND REFLECTORS
MOUNTED ON U-CHANNEL POSTS
DIRECTLY BEHIND THE GUARDRAIL
AT A HEIGHT OF 4'-0".

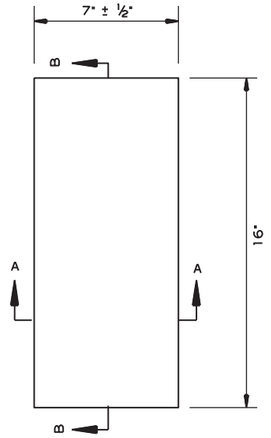


DETAIL FOR TRANSITIONS

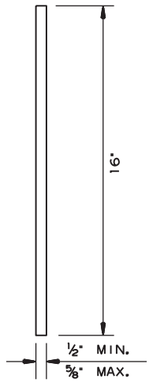
mh39735 6/29/2022
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SPECIAL DETAILS

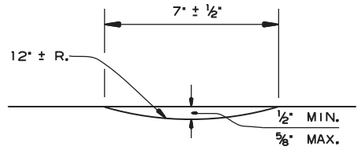
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	14	368
		SPECIAL DETAILS				



PLAN

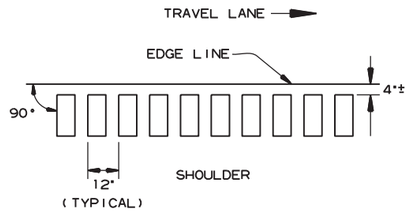


SECTION B-B

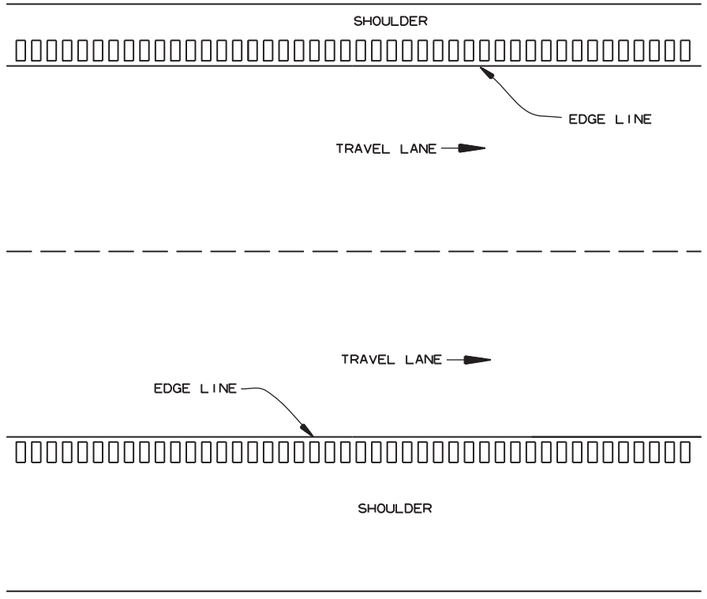


SECTION A-A

DETAILS OF RUMBLE STRIPS



LOCATION PLAN OF RUMBLE STRIPS
LEFT OR RIGHT SHOULDER



PLAN VIEW

NOTES:

1. ALIGNMENT OF RUMBLE STRIPS SHALL GENERALLY BE STRAIGHT AND OFFSET APPROXIMATELY 4" FROM THE OUTER EDGE OF THE EDGE LINE. THIS OFFSET MAY BE ADJUSTED TO ACCOMMODATE VARIATIONS IN THE EDGE LINE.
2. THE ½" DEPTH SHALL GENERALLY APPLY FOR THE ENTIRE 16" LENGTH. SOME VARIATION TO SUIT SHOULDER SLOPE BREAKS MAY BE NECESSARY.
3. RUMBLE STRIPS SHALL NOT BE INSTALLED ON BRIDGE DECKS, APPROACH SLABS, OR ACROSS TRANSVERSE JOINTS OF CONCRETE SHOULDERS.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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TRINITY D. SMITH

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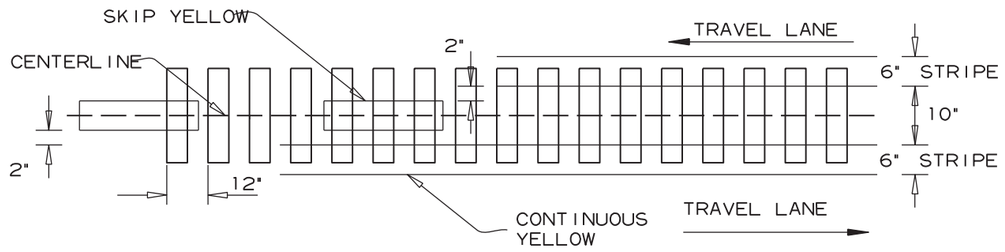
mh39735 6/29/2022
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SPECIAL DETAILS

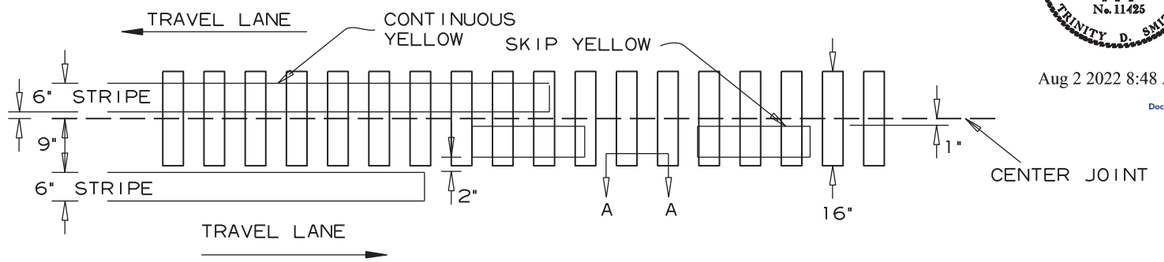
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		SPECIAL DETAILS				

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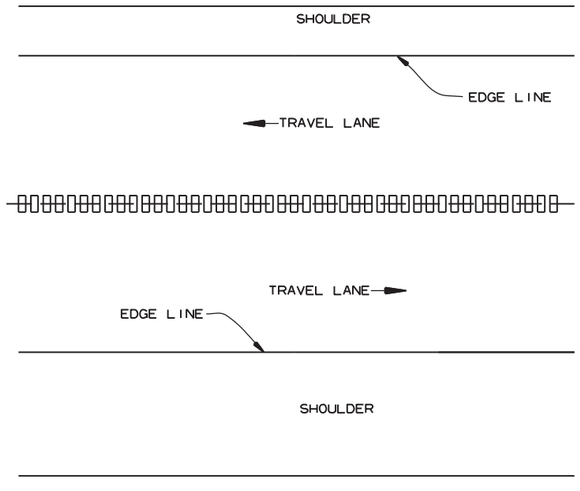


ASPHALT PAVEMENT

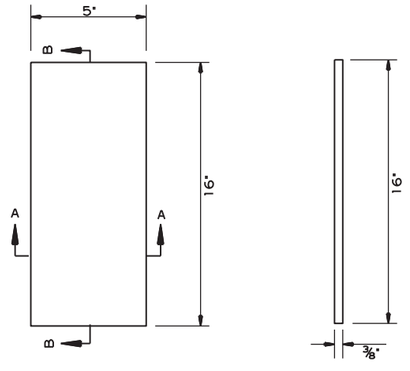


CONCRETE PAVEMENT

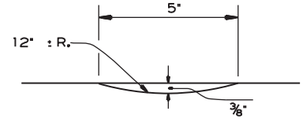
LOCATION PLAN OF CENTERLINE RUMBLE STRIPES



PLAN VIEW



PLAN SECTION B-B



SECTION A-A

DETAILS OF CENTERLINE RUMBLE STRIPES

GENERAL NOTES

1. RUMBLE STRIPES SHALL NOT BE INSTALLED ON BRIDGE DECKS, APPROACH SLABS, INTERSECTING STREETS OR ROADWAYS, OR ACROSS TRANSVERSE JOINTS OF CONCRETE SHOULDERS.
2. RUMBLE STRIPES SHALL BE MEASURED BY THE LINEAR FOOT LONGITUDINALLY ALONG THE CENTERLINE.
3. THE 3/8" DEPTH SHALL GENERALLY APPLY FOR THE ENTIRE 16" LENGTH. SOME VARIATION TO SUIT SLOPE BREAKS MAY BE NECESSARY.

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R020678.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
07-27-2022				6	ARK.		16	368
				JOB NO.		020678		

① SPECIAL DETAILS

INLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	LENGTH OF FOOTING HEEL WING A	LENGTH OF FOOTING HEEL WING B
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4
29'-4"	5'-0"	0'-9"	0'-8"	20	3:1	30'-1 7/8"	1'-0"	5'-10"	1'-8"	10	50	2'-2"	2'-9 1/2"	3'-3 1/4"	0'-11 5/8"	1'-3 5/8"	12'-6"	19'-0"	14'-4 5/8"	20'-10 5/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
INLET	INLET
CU.YD	LBS.
7.89	725

WING	F1 BAR SIZE	F1 MAX SPACING	F1 NO. REQ'D	F1 LENGTHS VARY	F1 LENGTHS	F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS	F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS	F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY	F6 LENGTHS	F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS	REINF. STEEL QTY. PER WING (LBS)
WING A	4	12	13	L	Min 2'-8"	-	-	-	L -	-	-	-	L -	4	18	4	Min	4	18	2	12'-2"	4	18	9	L Min 3'-3"	4	6	15'-3"	6	18	8	Min	-	-	-	Min	4	2	12'-8"	4	2	13'-7"	6	12	5	L 3'-4"	280
					Max 7'-4"												6'-4"								Max 7'-3"							1'-8"														X 1'-8"	
				X	Min 0'-9"				X -				X -				Max				Max				X Min 1'-4"							-				Max										
					Max 1'-5"												10'-10"								Max 1'-4"							2'-3"														
				Y	Min 2'-0"				Y -				Y -												Y Min 2'-0"							-														
					Max 6'-0"																				Max 6'-0"																						
WING B	4	12	19	L	Min 2'-9"	-	-	-	L -	-	-	-	L -	4	18	6	Min	4	18	2	18'-8"	4	18	13	L Min 3'-4"	4	6	21'-9"	6	18	13	Min	4	18	2	Min	4	2	19'-0"	4	2	21'-11"	6	12	5	L 3'-4"	445
					Max 7'-9"												2'-10"								Max 7'-3"							1'-8"				28'-7"										
				X	Min 0'-9"				X -				X -				Max				Max				X Min 1'-4"							Max				Max										
					Max 1'-10"												16'-7"								Max 1'-4"							2'-8"														
				Y	Min 2'-1"				Y -				Y -												Y Min 2'-1"							-														
					Max 6'-0"																				Max 6'-0"																						

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"



TABULAR DATA BY: NAC DATE: 1/24/2022
CHECKED BY: HY DATE: 1/25/2022

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 (Grade 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	TOP SLAB REINFORCING STEEL "a" SIZE	"a" SPACING	"a" LENGTHS VARY	"a" LENGTH	"a" NO. REQ'D	TOP SLAB REINFORCING STEEL "c" SIZE	"c" SPACING	"c" LENGTHS VARY	"c" LENGTH	"c" NO. REQ'D	BOTTOM SLAB REINFORCING STEEL "d" SIZE	"d" SPACING	"d" LENGTHS VARY	"d" LENGTH	"d" NO. REQ'D	BOTTOM SLAB REINFORCING STEEL "f" SIZE	"f" SPACING	"f" LENGTHS VARY	"f" LENGTH	"f" NO. REQ'D	SIDE WALL REINFORCING STEEL "f0" SIZE	"f0" SPACING	"f0" NO. REQ'D	"f0" LENGTH	INTERIOR WALL REINFORCING STEEL "f1" SIZE	"f1" SPACING	"f1" NO. REQ'D	"f1" LENGTH	TOP SLAB DISTRIBUTION REINFORCING STEEL "g" SIZE	"g" SPACING	"g" NO. REQ'D	"g" LENGTHS VARY	BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY	SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH	INTERIOR WALL DISTRIBUTION REINFORCING STEEL "d2" SIZE	"d2" SPACING	"d2" NO. REQ'D	"d2" LENGTH
SK	SL	D	S	H	LL	T	HD	B	C	W	OW	OH																		

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
07-27-2022				6	ARK.		17	368
				JOB NO.		020678		

(1) SPECIAL DETAILS

STATE OF ARKANSAS
Jun 15 2022 11:14 AM
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

TABULAR DATA BY: NAC DATE: 1/24/2022
CHECKED BY: HY DATE: 1/25/2022

OUTLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	LENGTH OF FOOTING HEEL WING A	LENGTH OF FOOTING HEEL WING B	CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
																					OUTLET	OUTLET
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4	CU.YD	LBS.
29'-4"	5'-0"	0'-9"	0'-8"	20	3:1	30'-1 7/8"	1'-0"	5'-10"	1'-8"	10	50	2'-2"	2'-9 1/2"	3'-3 1/4"	0'-11 5/8"	1'-3 5/8"	12'-6"	19'-0"	14'-4 5/8"	20'-10 5/8"	8.96	725

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY			F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS	F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS	F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY			F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS		REINF. STEEL QTY. PER WING (LBS)
WING A	4	12	13	L	Min	2'-8"	-	-	-	-	-	-	-	-	4	18	4	Min	4	18	2	12'-2"	4	18	9	L	Min	3'-3"	4	6	15'-3"	6	18	8	Min	-	-	-	-	4	2	12'-8"	4	2	13'-7"	6	12	5	L	3'-4"	280
					Max	7'-4"												6'-4"									Max	7'-3"							1'-8"													
				X	Min	0'-9"												Max								X	Min	1'-4"							Max												X	1'-8"	
					Max	1'-5"												10'-10"									Max	1'-4"							2'-3"													
				Y	Min	2'-0"																				Y	Min	2'-0"							-													
					Max	6'-0"																					Max	6'-0"																					
WING B	4	12	19	L	Min	2'-9"	-	-	-	-	-	-	-	-	4	18	6	Min	4	18	2	18'-8"	4	18	13	L	Min	3'-4"	4	6	21'-9"	6	18	13	Min	4	18	2	28'-7"	4	2	19'-0"	4	2	21'-11"	6	12	5	L	3'-4"	445
					Max	7'-9"												2'-10"									Max	7'-3"							1'-8"													
				X	Min	0'-9"												Max								X	Min	1'-4"							Max												X	1'-8"	
					Max	1'-10"												16'-7"									Max	1'-4"							2'-8"													
				Y	Min	2'-1"																				Y	Min	2'-1"							-													
					Max	6'-0"																					Max	6'-0"																					

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

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

(1) Any Bar Lap Required for the Skewed End Section shall be considered subsidiary to the item "Reinforcing Steel - Roadway (Grade 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 | BOTTOM SLAB REINFORCING STEEL "d" SIZE | "d" SPACING | "d" LENGTHS VARY | "d" NO. REQ'D | BOTTOM SLAB REINFORCING STEEL "f" SIZE | "f" SPACING | "f" LENGTHS VARY | "f" NO. REQ'D | SIDE WALL REINFORCING STEEL "f0" SIZE | "f0" SPACING | "f0" NO. REQ'D | "f0" LENGTH | INTERIOR WALL REINFORCING STEEL "f1" SIZE | "f1" SPACING | "f1" NO. REQ'D | "f1" LENGTH | TOP SLAB DISTRIBUTION REINFORCING STEEL "g" SIZE | "g" SPACING | "g" NO. REQ'D | "g" LENGTHS VARY | BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE | "e" SPACING | "e" NO. REQ'D | "e" LENGTHS VARY | SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE | "d1" SPACING | "d1" NO. REQ'D | "d1" LENGTH | INTERIOR WALL DISTRIBUTION REINFORCING STEEL "d2" SIZE | "d2" SPACING | "d2" NO. REQ'D | "d2" LENGTH | CLASS "S" CONCRETE (Includes HDWL) CU. YDS. | (1) REINFORCING STEEL (GR 60) (Includes HDWL) LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
07-27-2022				6	ARK.		18	368
				JOB NO.		020678		

① SPECIAL DETAILS

STATE OF ARKANSAS
Jun 15 2022 11:14 AM
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

TABULAR DATA BY: NAC DATE: 1/24/2022
CHECKED BY: HY DATE: 1/25/2022

INLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	LENGTH OF FOOTING HEEL WING A	LENGTH OF FOOTING HEEL WING B
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4
17'-8"	4'-0"	0'-9"	0'-8"	0	3:1	16'-8"	1'-0"	4'-10"	1'-4"	30	30	2'-2"	2'-5 3/4"	2'-5 3/4"	0'-4 3/8"	0'-4 3/8"	12'-0"	12'-0"	13'-10 5/8"	13'-10 5/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
INLET	INLET
CU.YD	LBS.
5.06	478

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY		F1 LENGTHS	F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS	F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS	F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F5 LENGTHS VARY		F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY		F6 LENGTHS	F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY		F8 LENGTHS	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS		REINF. STEEL QTY. PER WING (LBS)
WING A	4	12	12	L	Min	2'-6"	-	-	-	L	-	-	-	-	L	-	4	18	4	Min		4	18	2	11'-8"	4	18	8	L	Min	3'-2"	4	6	14'-9"	6	18	8	Min		1'-8"	-	-	-	Min	-	4	2	12'-0"	4	2	13'-4"	6	12	4	L	3'-4"	239
					Max	6'-0"													3'-10"											Max	6'-3"								Max						Max											
				X	Min	0'-9"				X	-				X	-													X	Min	1'-4"							X	Min	1'-4"															
					Max	1'-1"													Max												Max	1'-4"								Max															
				Y	Min	1'-10"				Y	-				Y	-			9'-0"											Y	Min	1'-11"							Y	Min	2'-0"															
					Max	5'-0"																									Max	5'-0"								Max	-															
WING B	4	12	12	L	Min	2'-6"	-	-	-	L	-	-	-	-	L	-	4	18	4	Min		4	18	2	11'-8"	4	18	8	L	Min	3'-2"	4	6	14'-9"	6	18	8	Min		1'-8"	-	-	-	Min	-	4	2	12'-0"	4	2	13'-4"	6	12	4	L	3'-4"	239
					Max	6'-0"													3'-10"											Max	6'-3"								Max						Max											
				X	Min	0'-9"				X	-				X	-													X	Min	1'-4"							X	Min	1'-4"															
					Max	1'-1"													Max												Max	1'-4"								Max															
				Y	Min	1'-10"				Y	-				Y	-			9'-0"											Y	Min	1'-11"							Y	Min	2'-0"															
					Max	5'-0"																									Max	5'-0"								Max	-															

MID-SECTION BAR LAP TABLE

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

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

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

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 (Grade 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	TOP SLAB REINFORCING STEEL "a" SIZE	"a" SPACING	"a" LENGTHS VARY	"a" NO. REQ'D	TOP SLAB REINFORCING STEEL "c" SIZE	"c" SPACING	"c" LENGTHS VARY	"c" NO. REQ'D	BOTTOM SLAB REINFORCING STEEL "d" SIZE	"d" SPACING	"d" LENGTHS VARY	"d" NO. REQ'D	BOTTOM SLAB REINFORCING STEEL "f" SIZE	"f" SPACING	"f" LENGTHS VARY	"f" NO. REQ'D	SIDE WALL REINFORCING STEEL "f0" SIZE	"f0" SPACING	"f0" NO. REQ'D	"f0" LENGTH	INTERIOR WALL REINFORCING STEEL "f1" SIZE	"f1" SPACING	"f1" NO. REQ'D	"f1" LENGTH	TOP SLAB DISTRIBUTION REINFORCING STEEL "g" SIZE	"g" SPACING	"g" NO. REQ'D	"g" LENGTHS VARY	BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY	SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH	INTERIOR WALL DISTRIBUTION REINFORCING STEEL "d2" SIZE	"d2" SPACING	"d2" NO. REQ'D	"d2" LENGTH
SK	SL	D	S	H	LL	T	HD	B	C	W	OW	OH																																															
															Max				Max					Max					Max																													
															Min				Min					Min					Min																													

"k1" HDWL BARS SIZE	"k1" HDWL BARS LENGTH	"k1" HDWL BARS NO. REQ'D	"k2" HDWL BARS SIZE	"k2" HDWL BARS LENGTH	"k2" HDWL BARS NO. REQ'D	"h" HDWL BARS SIZE	"h" HDWL BARS LENGTH	"h" HDWL BARS Y	"h" HDWL BARS NO. REQ'D

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

INLET SLOPE SECTION(S)

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

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
3"	23	4	0'-7"	1'-7"	19

CLASS "S" CONCRETE CU. YDS.	REINFORCING STEEL (GR. 60) LBS.
TOTAL	
0.16	43

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

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

MID-SECTION

R.C. BOX SECTION D	DESIGN FILL DEPTH (FT.) S	CLEAR SPAN (FT.) H	CLEAR HEIGHT (FT.) T	TOP SLAB THK. B	BOTTOM SLAB THK. C	SIDE WALL THK. W	INTERIOR WALL THK. OW	OVER ALL WIDTH OH	OVER ALL HEIGHT SL	SECTION LENGTH (FT.)	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 STEEL "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D	INTERIOR WALL DISTRIBUTION STEEL "d2" LENGTH = SL SIZE	SPACING	NO. REQ'D
A	5	8	4	9.0	9	6.0	8	17'-8"	5'-6"	90	4	17'-4"	8	17'-6"	7	17'-4"	17	63	4	17'-4"	4	17'-6"	4	17'-4"	9	120	4	8.5	254	5'-2"	4	12	180	5'-2"	4	12	35	4	12	35	4	12	8	4	12	8

CLASS "S" CONCRETE CU. YDS.	REINFORCING STEEL (GR. 60) LBS.
110.56	17006

SHEET 1 OF 2
DETAILS OF R.C. BOX CULVERT
DOUBLE BARREL BOX CULVERT
Sta. 4836+00

SPECIAL DETAILS

Ver. i_li7 b020678_c2.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
07-27-2022				6	ARK.		19	368
				JOB NO.		020678		

(1) SPECIAL DETAILS

STATE OF ARKANSAS
Jul 5 2022 11:14 AM
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

TABULAR DATA BY: NAC DATE: 1/24/2022
CHECKED BY: HY DATE: 1/25/2022

OUTLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	LENGTH OF FOOTING HEEL WING A	LENGTH OF FOOTING HEEL WING B	CLASS "S" CONCRETE (Includes apron) OUTLET	REINFORCING STEEL (Includes apron and laps if required) OUTLET
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4	CU.YD	LBS.
17'-8"	4'-0"	0'-9"	0'-8"	0	3:1	16'-8"	1'-0"	4'-10"	1'-4"	30	30	2'-2"	2'-5 3/4"	2'-5 3/4"	0'-4 3/8"	0'-4 3/8"	12'-0"	12'-0"	13'-10 5/8"	13'-10 5/8"	5.74	478

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY	F1 LENGTHS	F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS	F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS	F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY	F6 LENGTHS	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS	REINF. STEEL QTY. PER WING (LBS)
WING A	4	12	12	L Min 2'-6" / Max 6'-0"		-	-	-	L -	-	-	-	L -	4	18	4	Min 3'-10" / Max 9'-0"	4	18	2	11'-8"	4	18	8	L Min 3'-2" / Max 6'-3"		4	6	14'-9"	6	18	8	Min 1'-8" / Max 2'-0"	-	-	-	Min - / Max -	4	2	12'-0"	4	2	13'-4"	6	12	4	L 3'-4" / X 1'-8"	239
				X Min 0'-9" / Max 1'-1"					X -				X -									4	18	8	X Min 1'-4" / Max 1'-4"																						
				Y Min 1'-10" / Max 5'-0"					Y -				Y -									4	18	8	Y Min 1'-11" / Max 5'-0"																						
WING B	4	12	12	L Min 2'-6" / Max 6'-0"		-	-	-	L -	-	-	-	L -	4	18	4	Min 3'-10" / Max 9'-0"	4	18	2	11'-8"	4	18	8	L Min 3'-2" / Max 6'-3"		4	6	14'-9"	6	18	8	Min 1'-8" / Max 2'-0"	-	-	-	Min - / Max -	4	2	12'-0"	4	2	13'-4"	6	12	4	L 3'-4" / X 1'-8"	239
				X Min 0'-9" / Max 1'-1"					X -				X -									4	18	8	X Min 1'-4" / Max 1'-4"																						
				Y Min 1'-10" / Max 5'-0"					Y -				Y -									4	18	8	Y Min 1'-11" / Max 5'-0"																						

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

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

(1) Any Bar Lap Required for the Skewed End Section shall be considered subsidiary to the item "Reinforcing Steel - Roadway (Grade 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 REINF. "a" SIZE	"a" SPACING	"a" LENGTHS VARY	"a" NO. REQ'D	TOP SLAB REINF. "c" SIZE	"c" SPACING	"c" LENGTHS VARY	"c" NO. REQ'D	BOTTOM SLAB REINF. "d" SIZE	"d" SPACING	"d" LENGTHS VARY	"d" NO. REQ'D	BOTTOM SLAB REINF. "f" SIZE	"f" SPACING	"f" LENGTHS VARY	"f" NO. REQ'D	SIDE WALL REINF. "f0" SIZE	"f0" SPACING	"f0" NO. REQ'D	"f0" LENGTH	INTERIOR WALL REINF. "f1" SIZE	"f1" SPACING	"f1" NO. REQ'D	"f1" LENGTH	TOP SLAB DIST. REINF. "g" SIZE	"g" SPACING	"g" NO. REQ'D	"g" LENGTHS VARY	BOTTOM SLAB DIST. REINF. "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY	SIDE WALL DIST. REINF. "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH	INTERIOR WALL DIST. REINF. "d2" SIZE	"d2" SPACING	"d2" NO. REQ'D	"d2" LENGTH
SK	SL	D	S	H	LL	T	HD	B	C	W	OW	OH			Max / Min				Max / Min				Max / Min				Max / Min												Max / Min			Max / Min			LONG / SHORT						

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

"k1" HDWL BARS SIZE	LENGTH	NO. REQ'D	"k2" HDWL BARS SIZE	LENGTH	NO. REQ'D	"h" HDWL BARS SIZE	LENGTH	Y	NO. REQ'D

OUTLET SLOPE SECTION(S)

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

HDWL DEPTH HD	ADDITIONAL REINF. FOR HDWL LBS.	"h" HDWL BARS SIZE	Y	LENGTH	NO. REQ'D
3"	23	4	0'-7"	1'-7"	19

CLASS "S" CONCRETE CU. YDS.	REINFORCING STEEL (GR. 60) LBS.
TOTAL	
0.16	43

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. 4836+00

SPECIAL DETAILS

Ver. Lin7 b020678_c2.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
07-27-2022				6	ARK.		20	368
				JOB NO.		020678		

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.
17'-8"	4'-0"	0'-9"	0'-8"	10	3:1	16'-11 1/8"	1'-0"	4'-10"	1'-4"	20	40	2'-2"	2'-5 3/4"	2'-6 3/4"	0'-6"	0'-4"	11'-0"	13'-6"	12'-10 5/8"	15'-4 5/8"	5.18	488

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY	F1 LENGTHS	F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS	F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS	F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY	F6 LENGTHS	F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS	REINF. STEEL QTY. PER WING (LBS)
WING A	4	12	11	L	Min 2'-6"	-	-	-	-	-	-	-	-	4	18	4	Min	4	18	2	10'-8"	4	18	8	L Min 2'-11"	4	4	6	13'-9"	6	18	7	Min	-	-	-	Min	4	2	11'-1"	4	2	12'-2"	6	12	4	L 3'-4"	223
					Max 6'-0"												3'-6"								X Min 6'-3"								1'-8"				-									X 1'-8"	
				X	Min 0'-9"																				Max 1'-4"											Max										
					Max 1'-1"												Max								Min 1'-8"								Max													
				Y	Min 1'-10"												8'-3"								X Max 1'-4"								1'-11"				-										
					Max 5'-0"																				Min 1'-8"																					
																									Max 5'-0"																					
WING B	4	12	14	L	Min 2'-4"	-	-	-	-	-	-	-	-	4	18	4	Min	4	18	2	13'-2"	4	18	9	L Min 3'-2"	4	4	6	16'-3"	6	18	9	Min	-	-	-	Min	4	2	13'-6"	4	2	15'-2"	6	12	4	L 3'-4"	265
					Max 6'-1"												4'-4"								X Max 6'-3"								1'-8"				-									X 1'-8"	
				X	Min 0'-9"																				Max 1'-4"											Max										
					Max 1'-2"												Max								Min 1'-1"								Max													
				Y	Min 1'-8"												10'-1"								X Max 5'-0"								2'-1"				-										
					Max 5'-0"																																										

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"



TABULAR DATA BY: CMW DATE: 7/26/2022
CHECKED BY: NAC DATE: 7/27/2022

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 (Grade 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
10	3:1	10	8	4	3'-7"	8	3	9.5	6	8	17'-8"	5'-5 1/2"

TOP SLAB REINFORCING STEEL "a" SIZE	"a" SPACING	"a" LENGTHS VARY	"a" LENGTHS	"a" NO. REQ'D	"c" SIZE	"c" SPACING	"c" LENGTHS VARY	"c" LENGTHS	"c" NO. REQ'D
4	5.5	Max	17'-4"	4	6	7	Max	17'-4"	3
		Min	8'-9"				Min	8'-9"	
			17'-4"	5				17'-4"	4

BOTTOM SLAB REINFORCING STEEL "d" SIZE	"d" SPACING	"d" LENGTHS VARY	"d" LENGTHS	"d" NO. REQ'D	"f" SIZE	"f" SPACING	"f" LENGTHS VARY	"f" LENGTHS	"f" NO. REQ'D
4	4	Max	17'-4"	5	4	7	Max	17'-4"	3
		Min	8'-9"				Min	8'-9"	
			17'-4"	6				17'-4"	4

SIDE WALL REINFORCING STEEL "f0" SIZE	"f0" SPACING	"f0" NO. REQ'D	"f0" LENGTH
4	9	10	5'-2"

INTERIOR WALL REINFORCING STEEL "f1" SIZE	"f1" SPACING	"f1" NO. REQ'D	"f1" LENGTH
4	12	3	5'-2"

TOP SLAB DISTRIBUTION REINFORCING STEEL "g" SIZE	"g" SPACING	"g" NO. REQ'D	"g" LENGTHS VARY	"g" LENGTHS
4	12	35	Max	4'-11"
			Min	1'-10"

BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY	"e" LENGTHS
4	11	39	Max	4'-11"
			Min	1'-10"

SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH
4	12	4	LONG 4'-11"
		4	SHORT 1'-11"

INTERIOR WALL DISTRIBUTION REINFORCING STEEL "d2" SIZE	"d2" SPACING	"d2" NO. REQ'D	"d2" LENGTH
4	12	8	3'-5"

CLASS "S" CONCRETE (Includes HDWL) CU. YDS.	① REINFORCING STEEL (GR 60) (Includes HDWL) LBS.
4.63	865

"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	17'-3"	6	4	17'-3"	6	4	1'-7"	0'-7"	19

INLET SLOPE SECTION(S)

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

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

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

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

MID-SECTION

R.C. BOX SECTION D	DESIGN FILL DEPTH (FT.) S	CLEAR SPAN (FT.) H	CLEAR HEIGHT (FT.) T	TOP SLAB THK. B	BOTTOM SLAB THK. C	SIDE WALL THK. W	INTERIOR WALL THK. OW	OVER ALL WIDTH OH	OVER ALL HEIGHT SL	SECTION LENGTH (FT.)	TOP SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS "a" SIZE	"a" L	Bent "b" SIZE	Bent "b" L	"c" SIZE	"c" L	"a" SPACING	"a" 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	"d" SPACING	"d" 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 STEEL "d1" LENGTH = SL SIZE	"d1" SPACING	"d1" NO. REQ'D	INTERIOR WALL DISTRIBUTION STEEL "d2" LENGTH = SL SIZE	"d2" SPACING	"d2" NO. REQ'D
A	10	8	4	9.0	10	6.0	8	17'-8"	5'-7"	214.833	4	17'-4"	6	17'-6"	5	17'-4"	15	171	4	17'-4"	5	17'-7"	4	17'-4"	9	286	4	7.5	686	5'-3"	4	12	428	5'-3"	4	12	35	4	11	39	4	12	8	4	12	8

CLASS "S" CONCRETE CU. YDS.	REINFORCING STEEL (GR. 60) LBS.
275.61	38861

SHEET 1 OF 2
DETAILS OF R.C. BOX CULVERT
DOUBLE BARREL BOX CULVERT
Sta. 4884+13

SPECIAL DETAILS

Ver. 1.17 b020678_cl0.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
07-27-2022				6	ARK.		21	368
				JOB NO.		020678		

① SPECIAL DETAILS

STATE OF ARKANSAS
Ellis, Rick
Jul 27 2022 11:24 AM
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

TABULAR DATA BY: CMW DATE: 7/26/2022
CHECKED BY: NAC DATE: 7/27/2022

OUTLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	LENGTH OF FOOTING HEEL WING A	LENGTH OF FOOTING HEEL WING B	CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4	OUTLET	OUTLET
17'-8"	4'-0"	0'-9"	0'-8"	10	3:1	16'-11 1/8"	1'-0"	4'-10"	1'-4"	20	40	2'-2"	2'-5 3/4"	2'-6 3/4"	0'-6"	0'-4"	11'-0"	13'-6"	12'-10 5/8"	15'-4 5/8"	CU.YD	LBS.
																					5.86	488

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY	F1 LENGTHS	F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS	F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS	F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY	F6 LENGTHS	F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS	REINF. STEEL QTY. PER WING (LBS)
WING A	4	12	'1	L Min 2'-6" / Max 6'-0"	-	-	-	-	L -	-	-	-	L -	4	18	4	Min 3'-6" / Max 8'-3"	4	18	2	10'-8"	4	18	8	L Min 2'-11" / Max 6'-3"	4	6	13'-9"	6	18	7	Min 1'-8" / Max 1'-11"	-	-	-	Min - / Max -	4	2	11'-1"	4	2	12'-2"	6	12	4	L 3'-4"	223
				X Min 0'-9" / Max 1'-1"					X -				X -												X Min 1'-4" / Max 1'-4"																					X 1'-8"	
				Y Min 1'-10" / Max 5'-0"					Y -				Y -												Y Min 1'-9" / Max 5'-0"																						
WING B	4	12	'4	L Min 2'-4" / Max 6'-1"	-	-	-	-	L -	-	-	-	L -	4	18	4	Min 4'-4" / Max 10'-1"	4	18	2	13'-2"	4	18	9	L Min 3'-2" / Max 6'-3"	4	6	16'-3"	6	18	9	Min 1'-8" / Max 2'-1"	-	-	-	Min - / Max -	4	2	13'-6"	4	2	15'-2"	6	12	4	L 3'-4"	265
				X Min 0'-9" / Max 1'-2"					X -				X -												X Min 1'-4" / Max 1'-4"																					X 1'-8"	
				Y Min 1'-8" / Max 5'-0"					Y -				Y -												Y Min 1'-1" / Max 5'-0"																						

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

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

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

OUTLET SKEWED END SECTION

| SKEW (DEGREE) SK | SLOPE SL | DESIGN FILL DEPTH (FT.) D | CLEAR SPAN (FT.) S | CLEAR HEIGHT (FT.) H | SECTION LENGTH LL | TOP SLAB THK. T | HDWL DEPTH HD | BOTTOM SLAB THK. B | SIDE WALL THK. C | INTERIOR WALL THK. W | OVER ALL WIDTH OW | OVER ALL HEIGHT OH | 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 | SIDE WALL REINFORCING STEEL "f0" SIZE | "f0" SPACING | "f0" NO. REQ'D | "f0" LENGTH | INTERIOR WALL REINFORCING STEEL "f1" SIZE | "f1" SPACING | "f1" NO. REQ'D | "f1" LENGTH | TOP SLAB DISTRIBUTION REINFORCING STEEL "g" SIZE | "g" SPACING | "g" NO. REQ'D | "g" LENGTHS VARY | BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE | "e" SPACING | "e" NO. REQ'D | "e" LENGTHS VARY | SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE | "d1" SPACING | "d1" NO. REQ'D | "d1" LENGTH | INTERIOR WALL DISTRIBUTION REINFORCING STEEL "d2" SIZE | "d2" SPACING | "d2" NO. REQ'D | "d2" LENGTH | CLASS "S" CONCRETE (Includes HDWL) CU. YDS. | ① REINFORCING STEEL (GR 60) (Includes HDWL) LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
07-27-2022				6	ARK.		22	368
				JOB NO.		020678		

SPECIAL DETAILS

INLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	LENGTH OF FOOTING HEEL WING A	LENGTH OF FOOTING HEEL WING B
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4
17'-8"	4'-0"	0'-9"	0'-8"	10	3:1	16'-11 1/8"	1'-0"	4'-10"	1'-4"	20	40	2'-2"	2'-5 3/4"	2'-6 3/4"	0'-6"	0'-4"	11'-0"	13'-6"	12'-10 5/8"	15'-4 5/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
INLET	INLET
CU.YD	LBS.
5.18	488

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY	F1 LENGTHS	F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS	F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS	F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY	F6 LENGTHS	F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS	REINF. STEEL QTY. PER WING (LBS)
WING A	4	12	11	L Min	2'-6"	-	-	-	-	-	-	-	-	4	18	4	Min	4	18	2	10'-8"	4	18	8	L Min	2'-11"	4	6	13'-9"	6	18	7	Min	-	-	-	-	4	2	11'-1"	4	2	12'-2"	6	12	4	L 3'-4"	223
				L Max	6'-0"												3'-6"								X Min	6'-3"							1'-8"													
				X Min	0'-9"																				X Max	1'-4"																			X 1'-8"	
				X Max	1'-1"												Max								X Min	1'-4"							-													
				Y Min	1'-10"																				Y Min	1'-8"																				
				Y Max	5'-0"																				Y Max	5'-0"																				
WING B	4	12	14	L Min	2'-4"	-	-	-	-	-	-	-	-	4	18	4	Min	4	18	2	13'-2"	4	18	9	L Min	3'-2"	4	6	16'-3"	6	18	9	Min	-	-	-	-	4	2	13'-6"	4	2	15'-2"	6	12	4	L 3'-4"	265
				L Max	6'-1"												4'-4"								X Min	6'-3"							1'-8"													
				X Min	0'-9"																				X Max	1'-4"																			X 1'-8"	
				X Max	1'-2"												Max								Y Min	1'-1"							-													
				Y Min	1'-8"																				Y Max	5'-0"																				
				Y Max	5'-0"												10'-1"																														

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
Jul 27 2022 11:24 AM
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

TABULAR DATA BY: CMW DATE: 7/26/2022
CHECKED BY: NAC DATE: 7/27/2022

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 (Grade 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	TOP SLAB REINF. "a" SIZE	"a" SPACING	"a" LENGTHS VARY	"a" NO. REQ'D	TOP SLAB REINF. "c" SIZE	"c" SPACING	"c" LENGTHS VARY	"c" NO. REQ'D	BOTTOM SLAB REINF. "d" SIZE	"d" SPACING	"d" LENGTHS VARY	"d" NO. REQ'D	BOTTOM SLAB REINF. "f" SIZE	"f" SPACING	"f" LENGTHS VARY	"f" NO. REQ'D	SIDE WALL REINF. "f0" SIZE	"f0" SPACING	"f0" NO. REQ'D	"f0" LENGTH	INTERIOR WALL REINF. "f1" SIZE	"f1" SPACING	"f1" NO. REQ'D	"f1" LENGTH	TOP SLAB DIST. REINF. "g" SIZE	"g" SPACING	"g" NO. REQ'D	"g" LENGTHS VARY	BOTTOM SLAB DIST. REINF. "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY	SIDE WALL DIST. REINF. "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH	INTERIOR WALL DIST. REINF. "d2" SIZE	"d2" SPACING	"d2" NO. REQ'D	"d2" LENGTH
SK	SL	D	S	H	LL	T	HD	B	C	W	OW	OH	SIZE	SPACING	LENGTHS VARY	NO. REQ'D	SIZE	SPACING	LENGTHS VARY	NO. REQ'D	SIZE	SPACING	LENGTHS VARY	NO. REQ'D	SIZE	SPACING	LENGTHS VARY	NO. REQ'D	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTHS VARY	SIZE	SPACING	NO. REQ'D	LENGTHS VARY	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH
10	3:1	10	8	4	3'-7"	8	3	9.5	6	8	17'-8"	5'-5 1/2"	4	5.5	Max 17'-4" / Min 8'-9"	4	6	7	Max 17'-4" / Min 8'-9"	3	4	4	Max 17'-4" / Min 8'-9"	5	4	7	Max 17'-4" / Min 8'-9"	3	4	9	10	5'-2"	4	12	3	5'-2"	4	12	35	Max 4'-11" / Min 1'-10"	4	11	39	Max 4'-11" / Min 1'-10"	4	12	4	LONG 4'-11" / SHORT 1'-11"	4	12	8	3'-5"
															17'-4"	5			17'-4"	4			17'-4"	6			17'-4"	4																							

CLASS "S" CONCRETE (Includes HDWL) CU. YDS.	(1) REINFORCING STEEL (GR 60) (Includes HDWL) LBS.
4.63	865

"k1" HDWL BARS SIZE	LENGTH	NO. REQ'D	"k2" HDWL BARS SIZE	LENGTH	NO. REQ'D	"h" HDWL BARS SIZE	LENGTH	Y	NO. REQ'D
4	17'-3"	6	4	17'-3"	6	4	1'-7"	0'-7"	19

INLET SLOPE SECTION(S)

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

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

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

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

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

MID-SECTION

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	TOP SLAB THK.	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVER ALL WIDTH	OVER ALL HEIGHT	SECTION LENGTH (FT.)	TOP SLAB REINF. LENGTH = OW - 4" + BENDS "a" SIZE	"a" L	Bent "b" SIZE	Bent "b" L	"c" SIZE	"c" L	"c" SPACING	"c" NO. REQ'D	BOTTOM SLAB REINF. LENGTH = OW - 4" + BENDS "d" SIZE	"d" L	Bent "b1" SIZE	Bent "b1" L	"f" SIZE	"f" L	"f" SPACING	"f" NO. REQ'D	SIDE WALL REINF. "f0" LENGTH = OH - 4" SIZE	"f0" SPACING	"f0" NO. REQ'D	"f0" LENGTH	INTERIOR WALL REINF. "f1" LENGTH = OH - 4" SIZE	"f1" SPACING	"f1" NO. REQ'D	"f1" LENGTH	TOP SLAB DIST. REINF. "g" LENGTH = SL SIZE	"g" SPACING	"g" NO. REQ'D	BOTTOM SLAB DIST. REINF. "e" LENGTH = SL SIZE	"e" SPACING	"e" NO. REQ'D	SIDE WALL DIST. STEEL "d1" LENGTH = SL SIZE	"d1" SPACING	"d1" NO. REQ'D	INTERIOR WALL DIST. STEEL "d2" LENGTH = SL SIZE	"d2" SPACING	"d2" NO. REQ'D
D	S	H	T	B	C	W	OW	OH	SL																																									
A	10	8	4	9.0	10	6.0	8	17'-8"	5'-7"	44.8333	4	17'-4"	6	17'-6"	5	17'-4"	15	35	4	17'-4"	5	17'-7"	4	17'-4"	9	59	4	7.5	142	5'-3"	4	12	88	5'-3"	4	12	35	4	11	39	4	12	8	4	12	8

CLASS "S" CONCRETE CU. YDS.	REINFORCING STEEL (GR. 60) LBS.
57.52	8105

SHEET 1 OF 2
DETAILS OF R.C. BOX CULVERT
DOUBLE BARREL BOX CULVERT
Sta. 836+84

SPECIAL DETAILS

Ver. Jul7 b020678_c9.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
07-27-2022				6	ARK.		23	368
				JOB NO.		020678		

① SPECIAL DETAILS

STATE OF ARKANSAS
Jul 27 2022 11:21 AM
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

TABULAR DATA BY: CMW DATE: 7/26/2022
CHECKED BY: NAC DATE: 7/27/2022

OUTLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	LENGTH OF FOOTING HEEL WING A	LENGTH OF FOOTING HEEL WING B	CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4	OUTLET	OUTLET
17'-8"	4'-0"	0'-9"	0'-8"	10	3:1	16'-11 1/8"	1'-0"	4'-10"	1'-4"	20	40	2'-2"	2'-5 3/4"	2'-6 3/4"	0'-6"	0'-4"	11'-0"	13'-6"	12'-10 5/8"	15'-4 5/8"	CU.YD	LBS.
																					5.86	488

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY	F1 LENGTHS	F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS	F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS	F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY	F6 LENGTHS	F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS	REINF. STEEL QTY. PER WING (LBS)
WING A	4	12	'1	L Min 2'-6" / Max 6'-0"		-	-	-		-	-	-		4	18	4	Min 3'-6" / Max 8'-3"	4	18	2	10'-8"	4	18	8	L Min 2'-11" / Max 6'-3"		4	6	13'-9"	6	18	7	Min 1'-8" / Max 1'-11"	-	-	-	Min - / Max -	4	2	11'-1"	4	2	12'-2"	6	12	4	L 3'-4"	223
				X Min 0'-9" / Max 1'-1"																					X Min 1'-4" / Max 1'-4"																						X 1'-8"	
				Y Min 1'-10" / Max 5'-0"																					Y Min 1'-9" / Max 5'-0"																							
WING B	4	12	'4	L Min 2'-4" / Max 6'-1"		-	-	-		-	-	-		4	18	4	Min 4'-4" / Max 10'-1"	4	18	2	13'-2"	4	18	9	L Min 3'-2" / Max 6'-3"		4	6	16'-3"	6	18	9	Min 1'-8" / Max 2'-1"	-	-	-	Min - / Max -	4	2	13'-6"	4	2	15'-2"	6	12	4	L 3'-4"	265
				X Min 0'-9" / Max 1'-2"																					X Min 1'-4" / Max 1'-4"																						X 1'-8"	
				Y Min 1'-8" / Max 5'-0"																					Y Min 1'-1" / Max 5'-0"																							

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

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

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

OUTLET SKEWED END SECTION

| SKEW (DEGREE) SK | SLOPE SL | DESIGN FILL DEPTH (FT.) D | CLEAR SPAN (FT.) S | CLEAR HEIGHT (FT.) H | SECTION LENGTH LL | TOP SLAB THK. T | HDWL DEPTH HD | BOTTOM SLAB THK. B | SIDE WALL THK. C | INTERIOR WALL THK. W | OVER ALL WIDTH OW | OVER ALL HEIGHT OH | 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 | SIDE WALL REINFORCING STEEL "f0" SIZE | "f0" SPACING | "f0" NO. REQ'D | "f0" LENGTH | INTERIOR WALL REINFORCING STEEL "f1" SIZE | "f1" SPACING | "f1" NO. REQ'D | "f1" LENGTH | TOP SLAB DISTRIBUTION REINFORCING STEEL "g" SIZE | "g" SPACING | "g" NO. REQ'D | "g" LENGTHS VARY | BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE | "e" SPACING | "e" NO. REQ'D | "e" LENGTHS VARY | SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE | "d1" SPACING | "d1" NO. REQ'D | "d1" LENGTH | INTERIOR WALL DISTRIBUTION REINFORCING STEEL "d2" SIZE | "d2" SPACING | "d2" NO. REQ'D | "d2" LENGTH | CLASS "S" CONCRETE (Includes HDWL) CU. YDS. | ① REINFORCING STEEL (GR 60) (Includes HDWL) LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
07-27-2022				6	ARK.		24	368
				JOB NO.		020678		

(1) SPECIAL DETAILS

STATE OF ARKANSAS
Jun 15 2022 11:13 AM
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

TABULAR DATA BY: NAC DATE: 1/24/2022
CHECKED BY: HY DATE: 1/25/2022

INLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT		WINGWALL ANGLE (DEGREE)		FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL		FOOTING DIMENSION PARALLEL WITH HDWL		LENGTH OF WINGWALLS		LENGTH OF FOOTING HEEL	
								AT HDWL	AT WING END	WING A	WING B		WING A	WING B	WING A	WING B	WING A	WING B	WING A	WING B
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4
17'-8"	4'-0"	0'-9"	0'-8"	0	3:1	16'-8"	1'-0"	4'-10"	1'-4"	30	30	2'-2"	2'-5 3/4"	2'-5 3/4"	0'-4 3/8"	0'-4 3/8"	12'-0"	12'-0"	13'-10 5/8"	13'-10 5/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
INLET	INLET
CU.YD	LBS.
5.06	478

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

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
07-27-2022				6	ARK.		25	368
				JOB NO.		020678		

(1) SPECIAL DETAILS

STATE OF ARKANSAS
Jul 5 2022 11:15 AM
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

TABULAR DATA BY: NAC DATE: 1/24/2022
CHECKED BY: HY DATE: 1/25/2022

OUTLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	LENGTH OF FOOTING HEEL WING A	LENGTH OF FOOTING HEEL WING B	CLASS "S" CONCRETE (Includes apron) OUTLET	REINFORCING STEEL (Includes apron and laps if required) OUTLET
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4	CU.YD	LBS.
17'-8"	4'-0"	0'-9"	0'-8"	0	3:1	16'-8"	1'-0"	4'-10"	1'-4"	30	30	2'-2"	2'-5 3/4"	2'-5 3/4"	0'-4 3/8"	0'-4 3/8"	12'-0"	12'-0"	13'-10 5/8"	13'-10 5/8"	5.74	478

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY	F1 LENGTHS	F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS	F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS	F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY	F6 LENGTHS	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS	REINF. STEEL QTY. PER WING (LBS)
WING A	4	12	12	L Min 2'-6" / Max 6'-0"	L -	-	-	-	L -	-	-	-	L -	4	18	4	Min 3'-10" / Max 9'-0"	4	18	2	11'-8"	4	18	8	L Min 3'-2" / Max 6'-3"	L Min 1'-4" / Max 1'-4"	4	6	14'-9"	6	18	8	Min 1'-8" / Max 2'-0"	-	-	-	Min - / Max -	4	2	12'-0"	4	2	13'-4"	6	12	4	L 3'-4" / X 1'-8"	239
				X Min 0'-9" / Max 1'-1"	X -				X -				X -												X Min 1'-4" / Max 1'-4"																						
				Y Min 1'-10" / Max 5'-0"	Y -				Y -				Y -												Y Min 1'-11" / Max 5'-0"																						
WING B	4	12	12	L Min 2'-6" / Max 6'-0"	L -	-	-	-	L -	-	-	-	L -	4	18	4	Min 3'-10" / Max 9'-0"	4	18	2	11'-8"	4	18	8	L Min 3'-2" / Max 6'-3"	L Min 1'-4" / Max 1'-4"	4	6	14'-9"	6	18	8	Min 1'-8" / Max 2'-0"	-	-	-	Min - / Max -	4	2	12'-0"	4	2	13'-4"	6	12	4	L 3'-4" / X 1'-8"	239
				X Min 0'-9" / Max 1'-1"	X -				X -				X -												X Min 1'-4" / Max 1'-4"																						
				Y Min 1'-10" / Max 5'-0"	Y -				Y -				Y -												Y Min 1'-11" / Max 5'-0"																						

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

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

(1) Any Bar Lap Required for the Skewed End Section shall be considered subsidiary to the item "Reinforcing Steel - Roadway (Grade 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 REINF. 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 REINF. STEEL "d" SIZE | "d" SPACING | "d" LENGTHS VARY | "d" NO. REQ'D | "f" SIZE | "f" SPACING | "f" LENGTHS VARY | "f" NO. REQ'D | SIDE WALL REINF. STEEL "f0" SIZE | "f0" SPACING | "f0" NO. REQ'D | "f0" LENGTH | INTERIOR WALL REINF. STEEL "f1" SIZE | "f1" SPACING | "f1" NO. REQ'D | "f1" LENGTH | TOP SLAB DISTRIBUTION REINF. STEEL "g" SIZE | "g" SPACING | "g" NO. REQ'D | "g" LENGTHS VARY | BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" SIZE | "e" SPACING | "e" NO. REQ'D | "e" LENGTHS VARY | SIDE WALL DISTRIBUTION REINF. STEEL "d1" SIZE | "d1" SPACING | "d1" NO. REQ'D | "d1" LENGTH | INTERIOR WALL DISTRIBUTION REINF. 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. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
07-27-2022				6	ARK.		26	368
				JOB NO.		020678		

(1) SPECIAL DETAILS

STATE OF ARKANSAS
Jun 15 2022 11:13 AM
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

TABULAR DATA BY: NAC DATE: 1/24/2022
CHECKED BY: HY DATE: 1/25/2022

INLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	LENGTH OF FOOTING HEEL WING A	LENGTH OF FOOTING HEEL WING B
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4
17'-8"	4'-0"	0'-9"	0'-8"	45	3:1	23'-6 7/8"	1'-0"	4'-10"	1'-4"	0	60	2'-2"	2'-3 3/4"	2'-7 7/8"	0'-7 3/4"	0'-3"	10'-6"	21'-0"	11'-5 1/2"	25'-3 1/2"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
INLET	INLET
CU.YD	LBS.
6.80	617

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY	F1 LENGTHS	F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS	F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS	F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F5 LENGTHS VARY	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY	F6 LENGTHS	F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F8 LENGTHS	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS	REINF. STEEL QTY. PER WING (LBS)
WING A	4	12	11	L Min	2'-4"	-	-	-	-	-	-	-	-	4	18	4	Min	3'-4"	4	18	2	10'-2"	4	18	7	L Min	3'-3"	4	6	12'-4"	6	18	7	Min	1'-8"	-	-	-	Min	-	4	2	10'-7"	4	2	11'-4"	6	12	4	L	3'-4"	215
				L Max	5'-10"												Max	7'-10"								L Max	6'-3"												Max	-										
				X Min	0'-9"																					X Min	1'-4"																				X	1'-8"	
				X Max	0'-11"																					X Max	1'-4"																						
				Y Min	1'-8"																					Y Min	2'-0"																						
				Y Max	5'-0"																					Y Max	5'-0"																						
WING B	4	12	21	L Min	2'-4"	-	-	-	-	-	-	-	-	4	18	4	Min	6'-10"	4	18	2	20'-8"	4	18	14	L Min	3'-1"	4	6	26'-2"	6	18	14	Min	1'-8"	-	-	-	Min	-	4	2	20'-10"	4	2	23'-7"	6	12	4	L	3'-4"	402
				L Max	6'-2"												Max	15'-10"								L Max	6'-3"												Max	-										
				X Min	0'-9"																					X Min	1'-4"																				X	1'-8"	
				X Max	1'-3"																					X Max	1'-4"																						
				Y Min	1'-8"																					Y Min	1'-10"																						
				Y Max	5'-0"																					Y Max	5'-0"																						

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"

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 (Grade 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	TOP SLAB REINFORCING STEEL "a" SIZE	"a" SPACING	"a" LENGTHS VARY	"a" NO. REQ'D	TOP SLAB REINFORCING STEEL "c" SIZE	"c" SPACING	"c" LENGTHS VARY	"c" NO. REQ'D	BOTTOM SLAB REINFORCING STEEL "d" SIZE	"d" SPACING	"d" LENGTHS VARY	"d" NO. REQ'D	BOTTOM SLAB REINFORCING STEEL "f" SIZE	"f" SPACING	"f" LENGTHS VARY	"f" NO. REQ'D	SIDE WALL REINFORCING STEEL "f0" SIZE	"f0" SPACING	"f0" NO. REQ'D	"f0" LENGTH	INTERIOR WALL REINFORCING STEEL "f1" SIZE	"f1" SPACING	"f1" NO. REQ'D	"f1" LENGTH	TOP SLAB DISTRIBUTION REINFORCING STEEL "g" SIZE	"g" SPACING	"g" NO. REQ'D	"g" LENGTHS VARY	BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY	SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH	INTERIOR WALL DISTRIBUTION REINFORCING STEEL "d2" SIZE	"d2" SPACING	"d2" NO. REQ'D	"d2" LENGTH
SK	SL	D	S	H	LL	T	HD	B	C	W	OW	OH	SIZE	SPACING	LENGTHS VARY	NO. REQ'D	SIZE	SPACING	LENGTHS VARY	NO. REQ'D	SIZE	SPACING	LENGTHS VARY	NO. REQ'D	SIZE	SPACING	LENGTHS VARY	NO. REQ'D	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTHS VARY	SIZE	SPACING	NO. REQ'D	LENGTHS VARY	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH
45	3:1	10	8	4	10'-10"	8	3	9.5	6	8	17'-8"	5'-5 1/2"	4	5.5	Max 17'-4" Min 2'-1"	34	6	7	Max 17'-4" Min 2'-1"	27	4	4	Max 17'-4" Min 2'-1"	46	4	7	Max 17'-4" Min 2'-1"	27	4	9	30	5'-2"	4	12	22	5'-2"	4	12	35	Max 19'-6" Min 1'-10"	4	11	39	Max 19'-6" Min 1'-10"	4	12	4	LONG 19'-2" SHORT 2'-2"	4	12	8	10'-8"
															17'-4"	5			17'-4"	4			17'-4"	6			17'-4"	4																												

"k1" HDWL BARS			"k2" HDWL BARS			"h" HDWL BARS			
SIZE	LENGTH	NO. REQ'D	SIZE	LENGTH	NO. REQ'D	SIZE	LENGTH	Y	NO. REQ'D
5	24'-2"	6	5	24'-2"	6	4	1'-7"	0'-7"	26

CLASS "S" CONCRETE (Includes HDWL)	(1) REINFORCING STEEL (GR 60) (Includes HDWL)
CU. YDS.	LBS.
13.51	2516

INLET SLOPE SECTION(S)

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

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

HDWL DEPTH	ADDITIONAL REINF. FOR HDWL	"h" HDWL BARS			
HD	LBS.	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.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	TOP SLAB THK.	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVER ALL WIDTH	OVER ALL HEIGHT	SECTION LENGTH (FT.)	TOP SLAB REINFORCING STEEL 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 STEEL "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D	INTERIOR WALL DISTRIBUTION STEEL "d2" LENGTH = SL SIZE	SPACING	NO. REQ'D
D	S	H	T	B	C	W	OW	OH	SL																																												
A	10	8	4	9.0	10	6.0	8	17'-8"	5'-7"	113.333	4	17'-4"	6	17'-6"	5	17'-4"	15	90	4	17'-4"	5	17'-7"	4	17'-4"	9	151	4	7.5	362	5'-3"	4	12	226	5'-3"	4	12	35	4	11	39	4	12	8	4	12	8

CLASS "S" CONCRETE	REINFORCING STEEL (GR. 60)
CU. YDS.	LBS.
145.40	20434

SHEET 1 OF 2
DETAILS OF R.C. BOX CULVERT
DOUBLE BARREL BOX CULVERT
Sta. 4982+67

SPECIAL DETAILS

Ver. 1.17 b020678_c5.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
07-27-2022				6	ARK.		27	368
				JOB NO.		020678		

(1) SPECIAL DETAILS

STATE OF ARKANSAS
Jul 5 2022 11:15 AM
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

TABULAR DATA BY: NAC DATE: 1/24/2022
CHECKED BY: HY DATE: 1/25/2022

OUTLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	LENGTH OF FOOTING HEEL WING A	LENGTH OF FOOTING HEEL WING B	CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4	OUTLET	OUTLET
17'-8"	4'-0"	0'-9"	0'-8"	45	3:1	23'-6 7/8"	1'-0"	4'-10"	1'-4"	0	60	2'-2"	2'-3 3/4"	2'-7 7/8"	0'-7 3/4"	0'-3"	10'-6"	21'-0"	11'-5 1/2"	25'-3 1/2"	CU.YD	LBS.
																					7.74	617

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY	F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS	F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS	F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS	REINF. STEEL QTY. PER WING (LBS)
WING A	4	12	11	L Min 2'-4" / Max 5'-10"; X Min 0'-9" / Max 0'-11"; Y Min 1'-8" / Max 5'-0"	-	-	-	L - / X - / Y -	-	-	-	L - / X - / Y -	4	18	4	Min 3'-4" / Max 7'-10"	4	18	2	10'-2"	4	18	7	L Min 3'-3" / Max 6'-3"; X Min 1'-4" / Max 1'-4"; Y Min 2'-0" / Max 5'-0"	4	6	12'-4"	6	18	7	Min 1'-8" / Max 1'-10"	-	-	-	Min - / Max -	4	2	10'-7"	4	2	11'-4"	6	12	4	L 3'-4" / X 1'-8"	215
WING B	4	12	21	L Min 2'-4" / Max 6'-2"; X Min 0'-9" / Max 1'-3"; Y Min 1'-8" / Max 5'-0"	-	-	-	L - / X - / Y -	-	-	-	L - / X - / Y -	4	18	4	Min 6'-10" / Max 15'-10"	4	18	2	20'-8"	4	18	14	L Min 3'-1" / Max 6'-3"; X Min 1'-4" / Max 1'-4"; Y Min 1'-10" / Max 5'-0"	4	6	26'-2"	6	18	14	Min 1'-8" / Max 2'-2"	-	-	-	Min - / Max -	4	2	20'-10"	4	2	23'-7"	6	12	4	L 3'-4" / X 1'-8"	402

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 (Grade 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 REINF. 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 REINF. STEEL "d" SIZE	"d" SPACING	"d" LENGTHS VARY	"d" NO. REQ'D	"f" SIZE	"f" SPACING	"f" LENGTHS VARY	"f" NO. REQ'D	SIDE WALL REINF. STEEL "f0" SIZE	"f0" SPACING	"f0" NO. REQ'D	"f0" LENGTH	INTERIOR WALL REINF. STEEL "f1" SIZE	"f1" SPACING	"f1" NO. REQ'D	"f1" LENGTH	TOP SLAB DISTRIB. REINF. STEEL "g" SIZE	"g" SPACING	"g" NO. REQ'D	"g" LENGTHS VARY	BOTTOM SLAB DISTRIB. REINF. STEEL "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY	SIDE WALL DISTRIB. REINF. STEEL "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH	INTERIOR WALL DISTRIB. REINF. STEEL "d2" SIZE	"d2" SPACING	"d2" NO. REQ'D	"d2" LENGTH
SK	SL	D	S	H	LL	T	HD	B	C	W	OW	OH																																																		
45	3:1	10	8	4	10'-10"	8	3	9.5	6	8	17'-8"	5'-5 1/2"	4	5.5	Max 17'-4" / Min 2'-1" / 17'-4"	34 / 5	6	7	Max 17'-4" / Min 2'-1" / 17'-4"	27 / 4	4	4	Max 17'-4" / Min 2'-1" / 17'-4"	46 / 6	4	7	Max 17'-4" / Min 2'-1" / 17'-4"	27 / 4	4	9	30	5'-2"	4	12	22	5'-2"	4	12	35	Max 19'-6" / Min 1'-10"	4	11	39	Max 19'-6" / Min 1'-10"	4	12	4	LONG 19'-2" / SHORT 2'-2"	4	12	8	10'-8"

CLASS "S" CONCRETE (Includes HDWL) CU. YDS.	(1) REINFORCING STEEL (GR 60) (Includes HDWL) LBS.
13.51	2516

"k1" HDWL BARS SIZE	"k1" HDWL BARS LENGTH	"k1" HDWL BARS NO. REQ'D	"k2" HDWL BARS SIZE	"k2" HDWL BARS LENGTH	"k2" HDWL BARS NO. REQ'D	"h" HDWL BARS SIZE	"h" HDWL BARS LENGTH	"h" HDWL BARS Y	"h" HDWL BARS NO. REQ'D
5	24'-2"	6	5	24'-2"	6	4	1'-7"	0'-7"	26

OUTLET SLOPE SECTION(S)

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

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. 4982+67

SPECIAL DETAILS

Ver. Lin7 b020678_c5.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
07-27-2022				6	ARK.		28	368
				JOB NO.		020678		

① SPECIAL DETAILS

STATE OF ARKANSAS
Jun 15 2022 11:13 AM
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

TABULAR DATA BY: NAC DATE: 1/24/2022
CHECKED BY: HY DATE: 1/25/2022

INLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	LENGTH OF FOOTING HEEL WING A	LENGTH OF FOOTING HEEL WING B
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4
17'-8"	4'-0"	0'-9"	0'-8"	0	3:1	16'-8"	1'-0"	4'-10"	1'-4"	30	30	2'-2"	2'-5 3/4"	2'-5 3/4"	0'-4 3/8"	0'-4 3/8"	12'-0"	12'-0"	13'-10 5/8"	13'-10 5/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
INLET	INLET
CU.YD	LBS.
5.06	478

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY	F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS	F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS	F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY	F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS	REINF. STEEL QTY. PER WING (LBS)
WING A	4	12	12	L Min 2'-6" / Max 6'-0"; X Min 0'-9" / Max 1'-1"; Y Min 1'-10" / Max 5'-0"	-	-	-	L - / X - / Y -	-	-	-	L - / X - / Y -	4	18	4	Min 3'-10" / Max 9'-0"	4	18	2	11'-8"	4	18	8	L Min 3'-2" / Max 6'-3"; X Min 1'-4" / Max 1'-4"; Y Min 1'-11" / Max 5'-0"	4	6	14'-9"	6	18	8	Min 1'-8" / Max 2'-0"	-	-	-	Min - / Max -	4	2	12'-0"	4	2	13'-4"	6	12	4	L 3'-4" / X 1'-8"	239
WING B	4	12	12	L Min 2'-6" / Max 6'-0"; X Min 0'-9" / Max 1'-1"; Y Min 1'-10" / Max 5'-0"	-	-	-	L - / X - / Y -	-	-	-	L - / X - / Y -	4	18	4	Min 3'-10" / Max 9'-0"	4	18	2	11'-8"	4	18	8	L Min 3'-2" / Max 6'-3"; X Min 1'-4" / Max 1'-4"; Y Min 1'-11" / Max 5'-0"	4	6	14'-9"	6	18	8	Min 1'-8" / Max 2'-0"	-	-	-	Min - / Max -	4	2	12'-0"	4	2	13'-4"	6	12	4	L 3'-4" / X 1'-8"	239

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"

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 (Grade 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	TOP SLAB REINFORCING STEEL "a" SIZE	"a" SPACING	"a" LENGTHS VARY	"a" NO. REQ'D	TOP SLAB REINFORCING STEEL "c" SIZE	"c" SPACING	"c" LENGTHS VARY	"c" NO. REQ'D	BOTTOM SLAB REINFORCING STEEL "d" SIZE	"d" SPACING	"d" LENGTHS VARY	"d" NO. REQ'D	BOTTOM SLAB REINFORCING STEEL "f" SIZE	"f" SPACING	"f" LENGTHS VARY	"f" NO. REQ'D	SIDE WALL REINFORCING STEEL "f0" SIZE	"f0" SPACING	"f0" NO. REQ'D	"f0" LENGTH	INTERIOR WALL REINFORCING STEEL "f1" SIZE	"f1" SPACING	"f1" NO. REQ'D	"f1" LENGTH	TOP SLAB DISTRIBUTION REINFORCING STEEL "g" SIZE	"g" SPACING	"g" NO. REQ'D	"g" LENGTHS VARY	BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY	SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH	INTERIOR WALL DISTRIBUTION REINFORCING STEEL "d2" SIZE	"d2" SPACING	"d2" NO. REQ'D	"d2" LENGTH
SK	SL	D	S	H	LL	T	HD	B	C	W	OW	OH																																													
															Max / Min				Max / Min				Max / Min				Max / Min																		

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
07-27-2022				6	ARK.		29	368
				JOB NO.		020678		

(1) SPECIAL DETAILS

STATE OF ARKANSAS
Jul 5 2022 11:15 AM
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

TABULAR DATA BY: NAC DATE: 1/24/2022
CHECKED BY: HY DATE: 1/25/2022

OUTLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	LENGTH OF FOOTING HEEL WING A	LENGTH OF FOOTING HEEL WING B	CLASS "S" CONCRETE (Includes apron) OUTLET	REINFORCING STEEL (Includes apron and laps if required) OUTLET
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4	CU.YD	LBS.
17'-8"	4'-0"	0'-9"	0'-8"	0	3:1	16'-8"	1'-0"	4'-10"	1'-4"	30	30	2'-2"	2'-5 3/4"	2'-5 3/4"	0'-4 3/8"	0'-4 3/8"	12'-0"	12'-0"	13'-10 5/8"	13'-10 5/8"	5.74	478

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY	F1 LENGTHS	F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS	F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS	F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY	F6 LENGTHS	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS	REINF. STEEL QTY. PER WING (LBS)
WING A	4	12	12	L Min 2'-6" / Max 6'-0"	L -	-	-	-	L -	-	-	-	L -	4	18	4	Min 3'-10" / Max 9'-0"	4	18	2	11'-8"	4	18	8	L Min 3'-2" / Max 6'-3"	L Min 1'-4" / Max 1'-4"	4	6	14'-9"	6	18	8	Min 1'-8" / Max 2'-0"	-	-	-	Min - / Max -	4	2	12'-0"	4	2	13'-4"	6	12	4	L 3'-4" / X 1'-8"	239
				X Min 0'-9" / Max 1'-1"	X -				X -				X -												X Min 1'-4" / Max 1'-4"																							
				Y Min 1'-10" / Max 5'-0"	Y -				Y -				Y -												Y Min 1'-11" / Max 5'-0"																							
WING B	4	12	12	L Min 2'-6" / Max 6'-0"	L -	-	-	-	L -	-	-	-	L -	4	18	4	Min 3'-10" / Max 9'-0"	4	18	2	11'-8"	4	18	8	L Min 3'-2" / Max 6'-3"	L Min 1'-4" / Max 1'-4"	4	6	14'-9"	6	18	8	Min 1'-8" / Max 2'-0"	-	-	-	Min - / Max -	4	2	12'-0"	4	2	13'-4"	6	12	4	L 3'-4" / X 1'-8"	239
				X Min 0'-9" / Max 1'-1"	X -				X -				X -												X Min 1'-4" / Max 1'-4"																							
				Y Min 1'-10" / Max 5'-0"	Y -				Y -				Y -												Y Min 1'-11" / Max 5'-0"																							

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

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

(1) Any Bar Lap Required for the Skewed End Section shall be considered subsidiary to the item "Reinforcing Steel - Roadway (Grade 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 REINF. 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 REINF. STEEL "d" SIZE	"d" SPACING	"d" LENGTHS VARY	"d" NO. REQ'D	"f" SIZE	"f" SPACING	"f" LENGTHS VARY	"f" NO. REQ'D	SIDE WALL REINF. STEEL "f0" SIZE	"f0" SPACING	"f0" NO. REQ'D	"f0" LENGTH	INTERIOR WALL REINF. STEEL "f1" SIZE	"f1" SPACING	"f1" NO. REQ'D	"f1" LENGTH	TOP SLAB DISTRIBUTION REINF. STEEL "g" SIZE	"g" SPACING	"g" NO. REQ'D	"g" LENGTHS VARY	BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY	SIDE WALL DISTRIBUTION REINF. STEEL "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH	INTERIOR WALL DISTRIBUTION REINF. STEEL "d2" SIZE	"d2" SPACING	"d2" NO. REQ'D	"d2" LENGTH
SK	SL	D	S	H	LL	T	HD	B	C	W	OW	OH			Max / Min				Max / Min				Max / Min																Max / Min				Max / Min			LONG / SHORT			

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

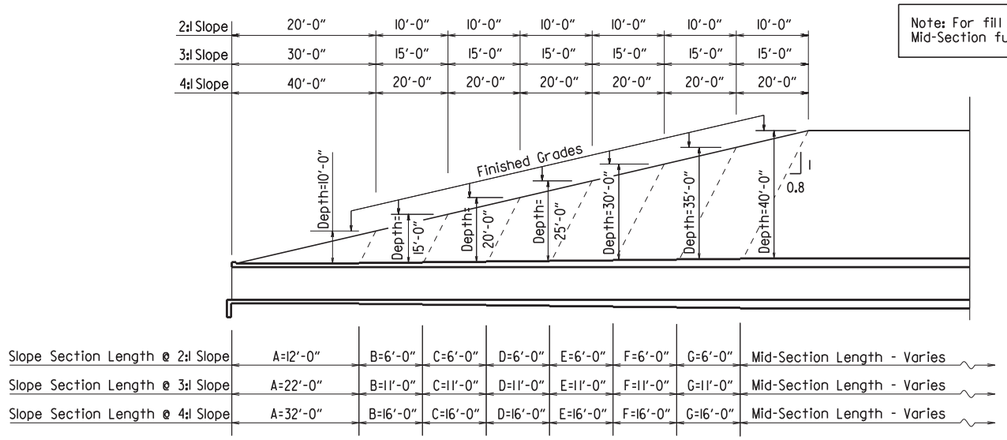
"k1" HDWL BARS SIZE	"k1" HDWL BARS LENGTH	"k1" HDWL BARS NO. REQ'D	"k2" HDWL BARS SIZE	"k2" HDWL BARS LENGTH	"k2" HDWL BARS NO. REQ'D	"h" HDWL BARS SIZE	"h" HDWL BARS LENGTH	"h" HDWL BARS Y	"h" HDWL BARS NO. REQ'D

OUTLET SLOPE SECTION(S)

R.C. BOX SECTION	D	S	H	T	B	C	W	OW	OH	SL	TOP SLAB REINF. STEEL LENGTH = OW - 4" + BENDS "a" SIZE	"a" L	Bent "b" SIZE	Bent "b" L	"c" SIZE	"c" L	"c" SPACING	"c" NO. REQ'D	BOTTOM SLAB REINF. STEEL LENGTH = OW - 4" + BENDS "d" SIZE	"d" L	Bent "b1" SIZE	Bent "b1" L	"f" SIZE	"f" L	"f" SPACING	"f" NO. REQ'D	SIDE WALL REINF. STEEL "f0" LENGTH = OH - 4" SIZE	"f0" SPACING	"f0" NO. REQ'D	"f0" LENGTH	INTERIOR WALL REINF. 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

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
07-27-2022				6	ARK.		30	368
				JOB NO.		020678		

1 SPECIAL DETAILS

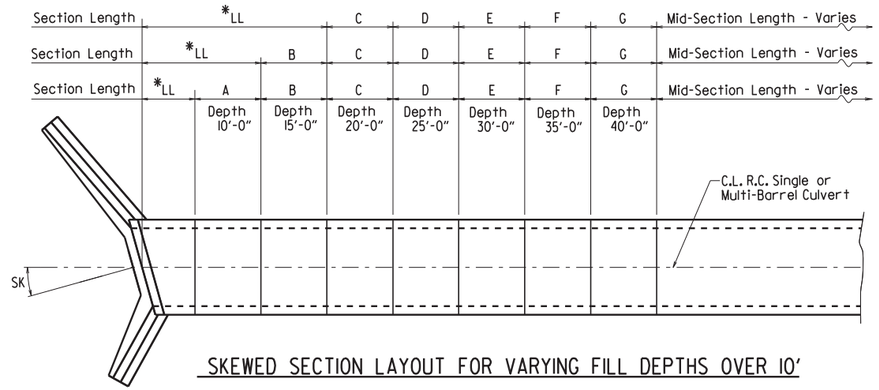


Note: For fill depths 10' and under, use Mid-Section full length of box culvert.

LONGITUDINAL SECTION LENGTH SCHEDULE FOR VARYING FILL DEPTHS OVER 10'

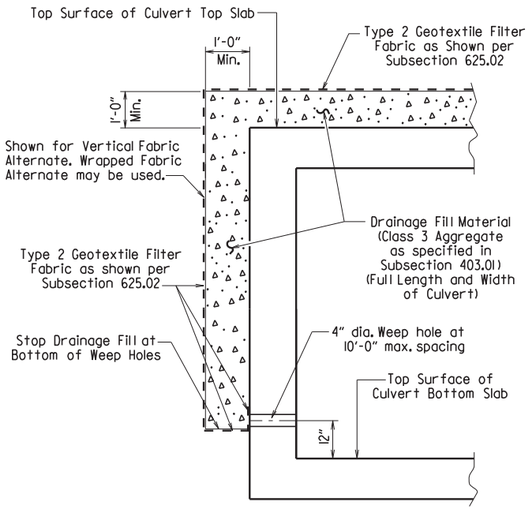
Lengths for Non-Skewed Boxes

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



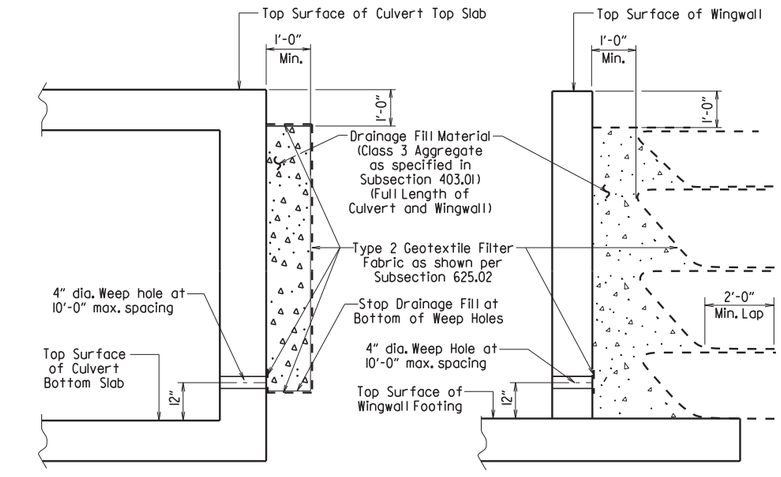
SKEWED SECTION LAYOUT FOR VARYING FILL DEPTHS OVER 10'

STATE OF ARKANSAS
Jan 15 2022 11:15 AM
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS



CULVERT DRAINAGE DETAIL FOR ROCK FILL

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

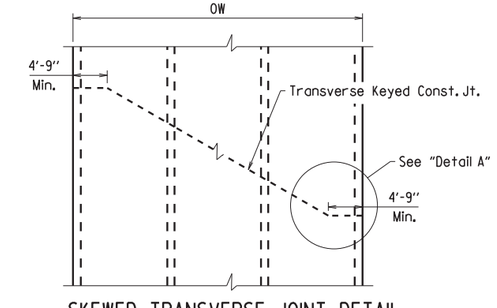


For Details of Excavation and Pay Limits, see Standard Drawing RCB-2.

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

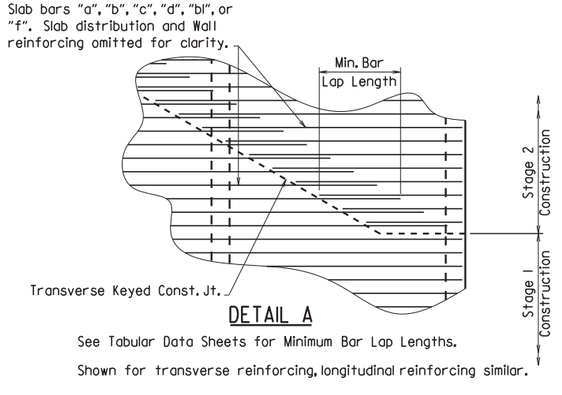
WRAPPED FABRIC ALTERNATE
(Shown for Wingwall, Similar for Culvert)

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

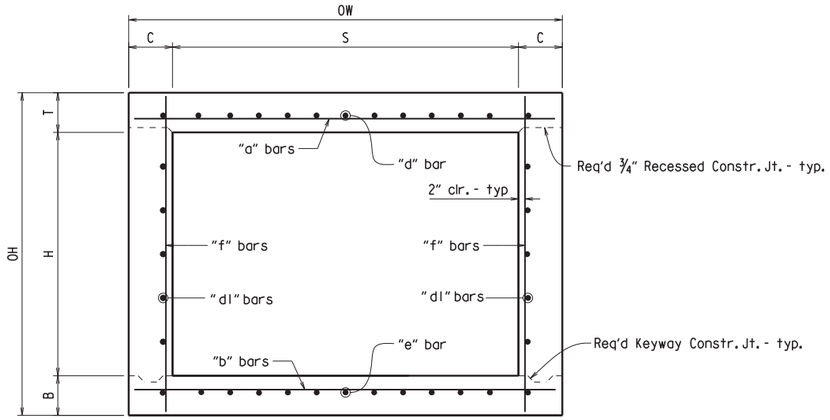
GENERAL NOTES & LONGITUDINAL SECTION LENGTH SCHEDULE

SPECIAL DETAILS

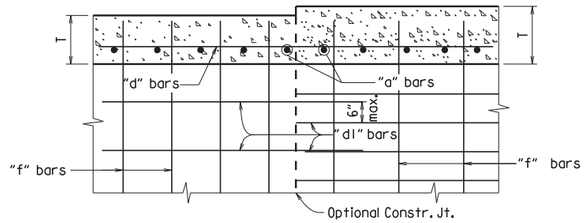
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07-27-2022				6	ARK.		31	368
				JOB NO.		020678		
				(1)		SPECIAL DETAILS		

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



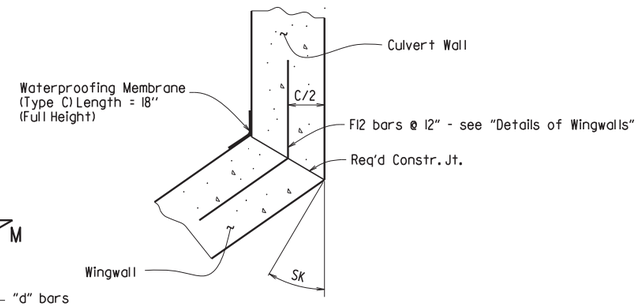
TYPICAL SECTION M-M



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

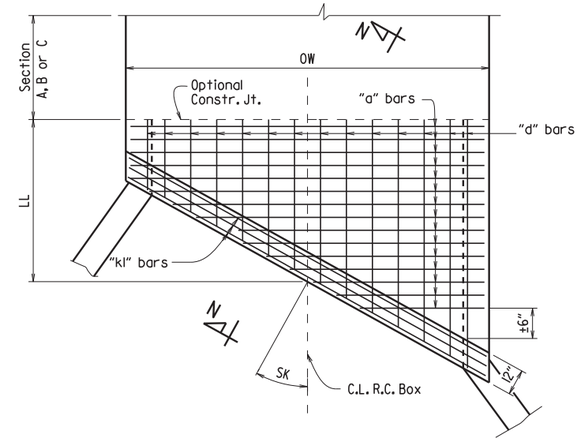
LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

TOP SLAB SHOWN, BOTTOM SLAB SIMILAR

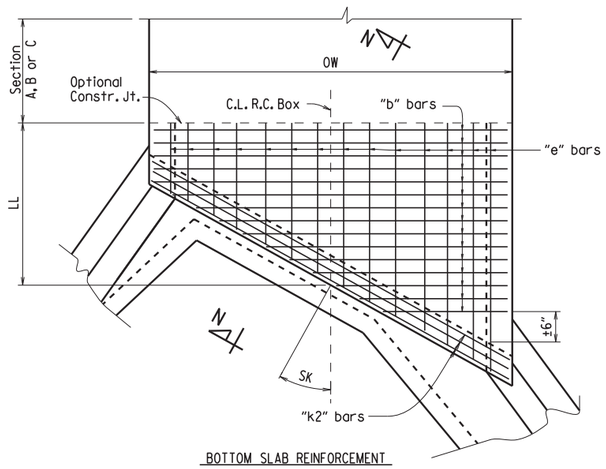


WINGWALL ATTACHMENT

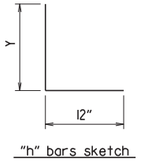
See "Details of Wingwalls" for additional information and wingwall details.

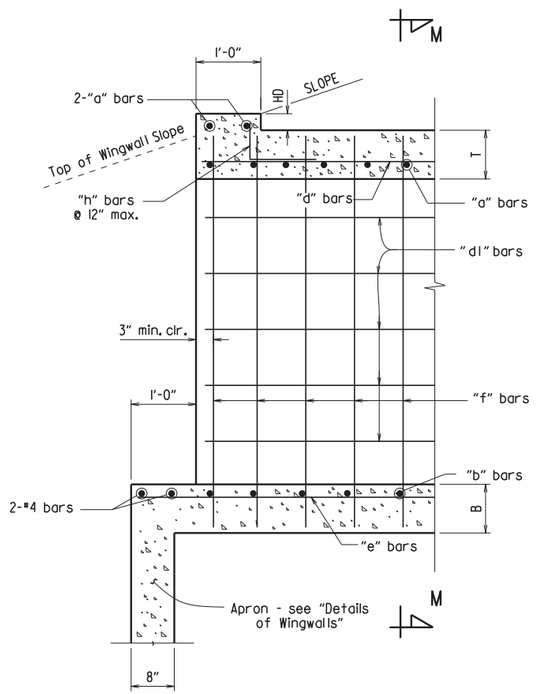


TOP SLAB REINFORCEMENT



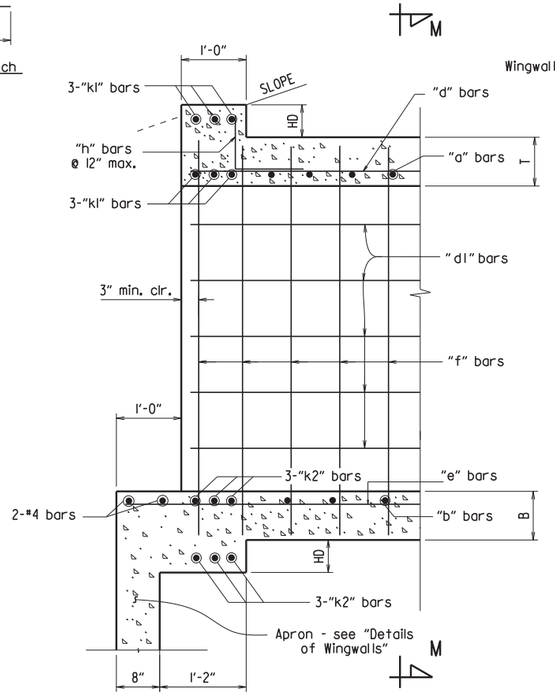
BOTTOM SLAB REINFORCEMENT





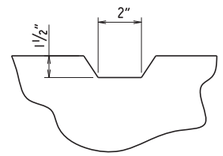
PART LONGITUDINAL SECTION

(Non-Skewed Ends)



PART LONGITUDINAL SECTION N-N

(Skewed Ends)



TYPICAL KEYWAY DETAIL

(All Construction Joints)

SKEWED END SECTION DETAILS

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

DETAILS OF SINGLE BARREL
R.C. BOX CULVERT

SPECIAL DETAILS

STATE OF ARKANSAS
CHARLES R. ELLIS
No. 9235
LICENSED PROFESSIONAL ENGINEER
Thu, 15 2022 11:15 AM

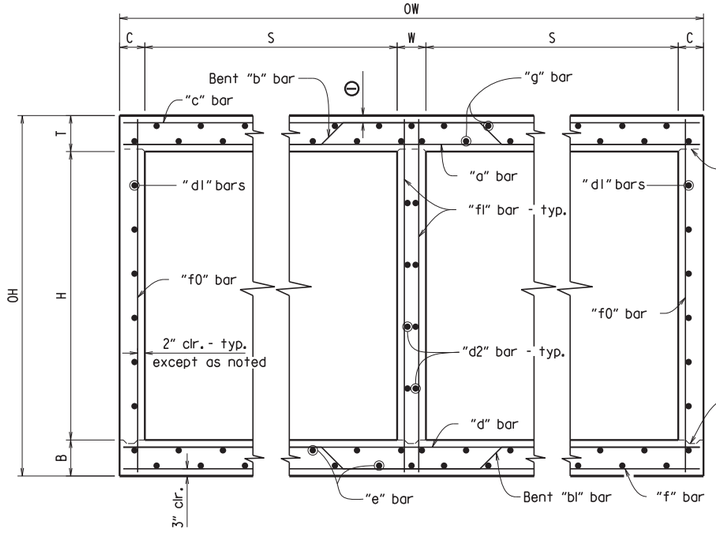
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07-27-2022				6	ARK.		32	368
				JOB NO.		020678		

① SPECIAL DETAILS

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

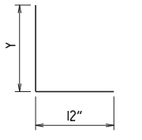
Note: When top slab of culvert serves as finished roadway surface, see General Notes on Sheet 1 of 4.



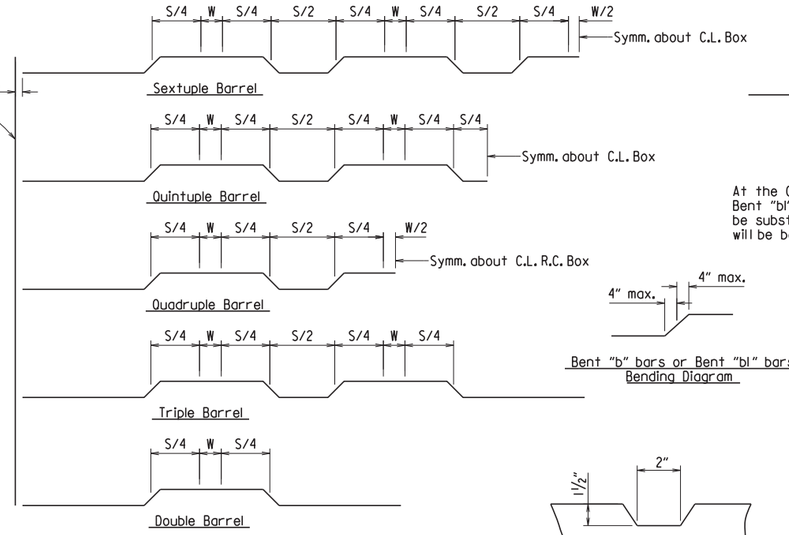
TYPICAL SECTION M-M

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

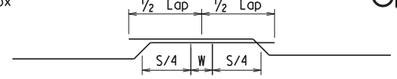
Bottom Slab
Straight "d" bars shall alternate with Bent "bl" bars in top.
Straight "f" bars shall alternate with Bent "bl" bars in bottom.



"h" bars sketch



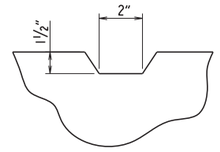
Bent "b" bars or Bent "bl" bars sketch



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

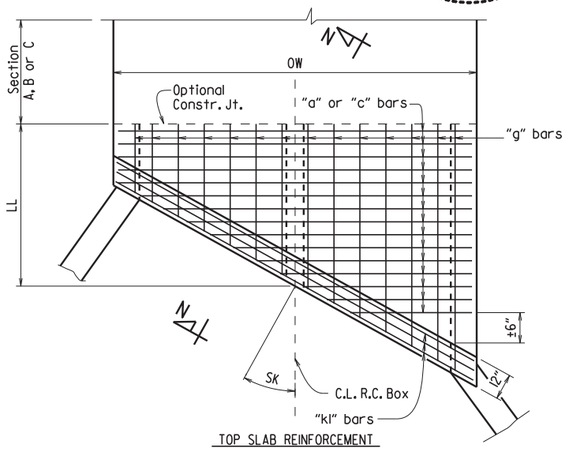
At the Contractor's option in lieu of providing Bent "b" or Bent "bl" bars, one bar top and bottom of equivalent size may be substituted for each bent bar. Payment for the reinforcing will be based on the weight of the "b" or "bl" bar.

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

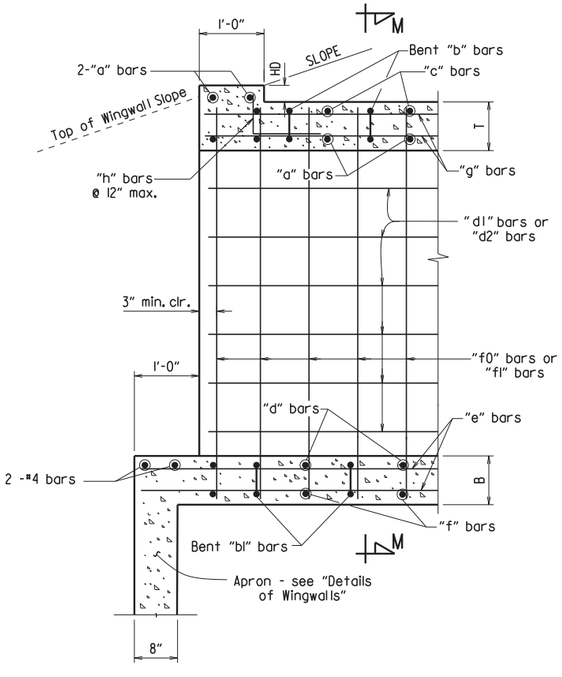


TYPICAL KEYWAY DETAIL

(All Construction Joints)

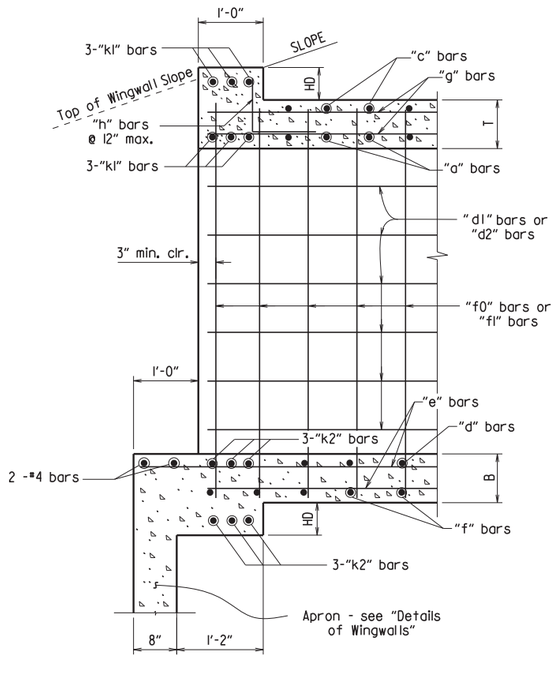


TOP SLAB REINFORCEMENT
Straight "c" bars in top.
Straight "a" bars in bottom.



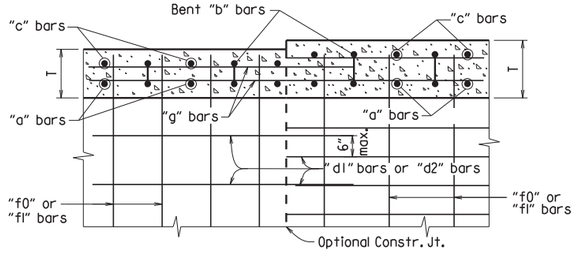
PART LONGITUDINAL SECTION

(Non-Skewed Ends)



PART LONGITUDINAL SECTION N-N

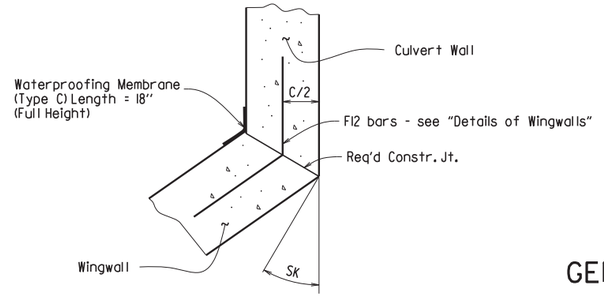
(Skewed Ends)



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

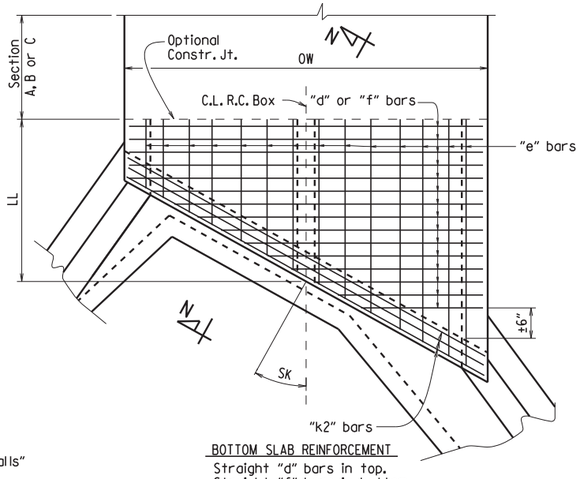
LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

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

STATE OF ARKANSAS
Jun 15 2022 11:13 AM
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

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

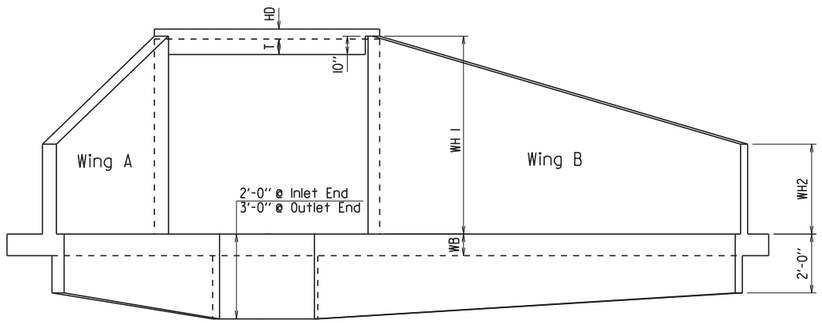
DETAILS OF MULTI-BARREL R.C. BOX CULVERT

SPECIAL DETAILS

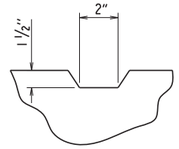
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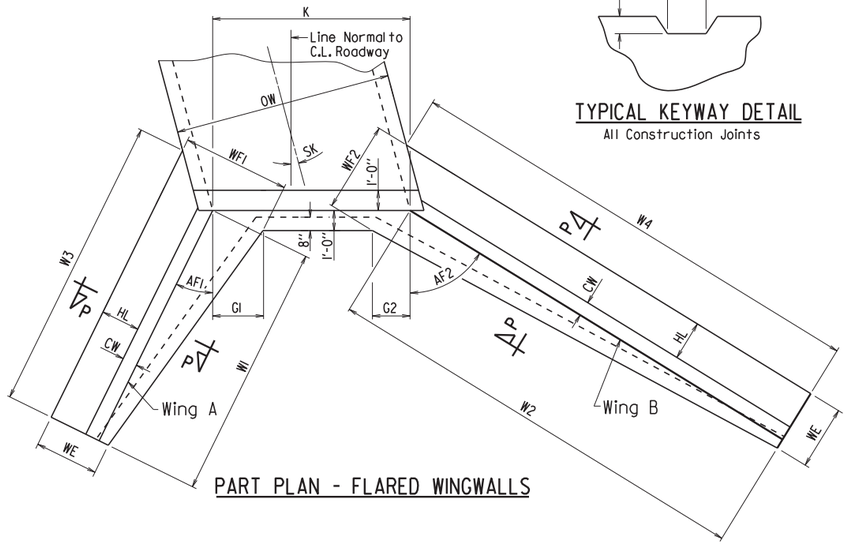
① SPECIAL DETAILS



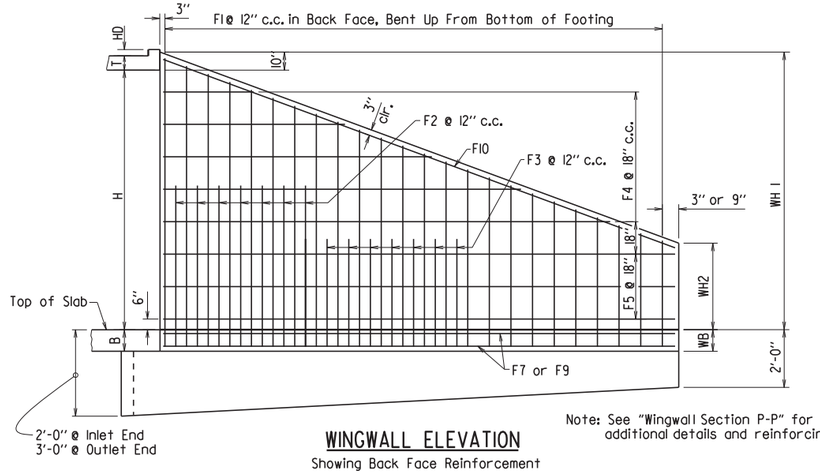
END ELEVATION
Flared Wingwalls Shown



TYPICAL KEYWAY DETAIL
All Construction Joints

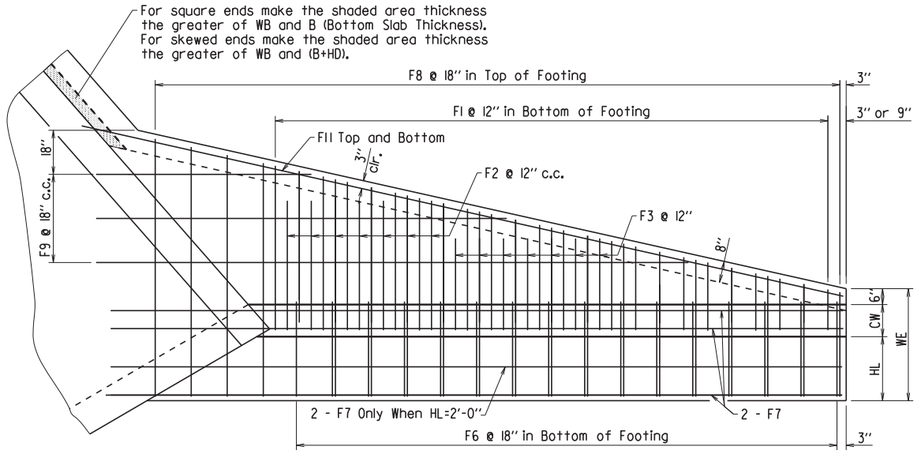


PART PLAN - FLARED WINGWALLS

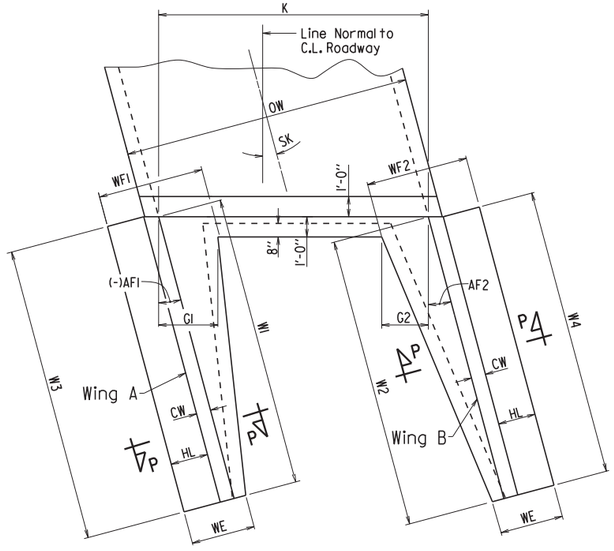


WINGWALL ELEVATION
Showing Back Face Reinforcement

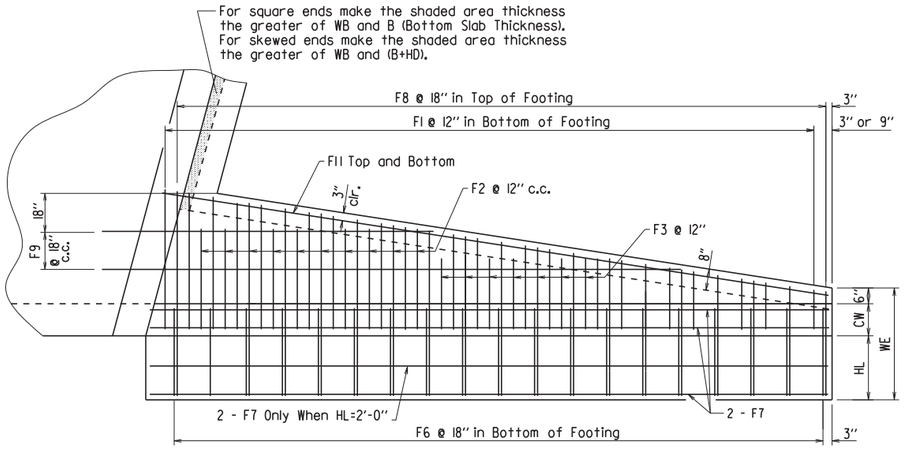
Note: See "Wingwall Section P-P" for additional details and reinforcing.



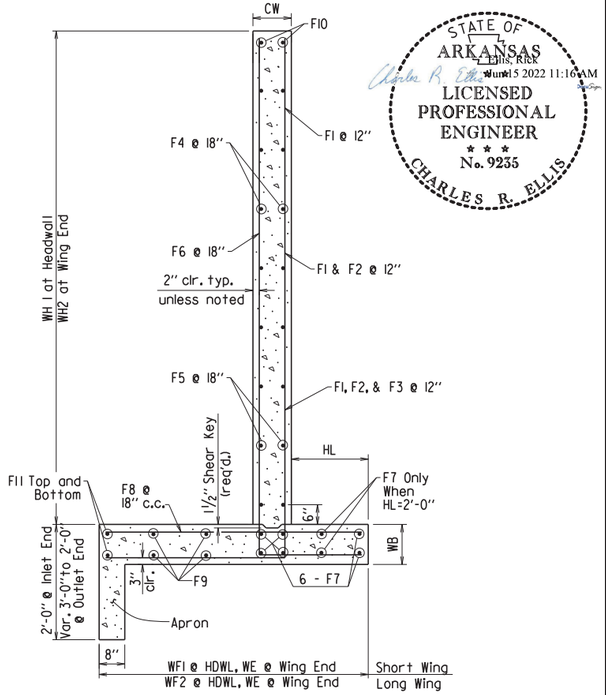
PLAN - FLARED WINGWALLS
Showing Footing Reinforcement



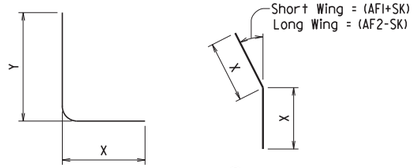
PART PLAN - PARALLEL WINGWALLS



PLAN - PARALLEL WINGWALLS
Showing Footing Reinforcement



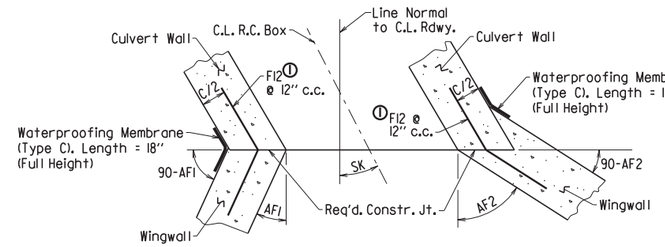
WINGWALL SECTION P-P



F1, F2, F3, & F6 BARS

①F12 BAR

①F12 is a straight bar for parallel wingwalls



CONSTRUCTION JOINTS
Flared Wingwalls Shown

STATE OF ARKANSAS
Ellis, Rick
Jun 15 2022 11:16 AM
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

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

V LII7 b020678_culvert.dgn

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	34	368

TEMPORARY EROSION CONTROL DETAILS

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

Aug 2 2022 8:49 AM
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LEGEND

E-II — E-II SILT FENCE

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

STA. 4726+71 TO STA. 4743+25
SILT FENCE = 2398 LIN. FT.

STA. 4743+25 TO STA. 4755+00
SILT FENCE = 1196 LIN. FT.

STA. 4727+25 TO STA. 4741+85
SILT FENCE = 1437 LIN. FT.

STA. 4741+85 TO STA. 4755+00
SILT FENCE = 1354 LIN. FT.

STA. 4755+00 TO STA. 4775+00
SILT FENCE = 3117 LIN. FT.

STA. 4755+00 TO STA. 4775+00
SILT FENCE = 2988 LIN. FT.

SILT FENCE = 345 LIN. FT.

SILT FENCE = 350 LIN. FT.

25' BUFFER

GATE

PINEY CREEK

REVISIONS

DATE OF REVISION	REVISION

CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

mh39735 6/23/2022
RO20678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	35	368
		TEMPORARY EROSION CONTROL DETAILS				

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

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STA. 4775+00 TO STA. 4800+00
SILT FENCE = 2509 LIN. FT.

UNAMED TRIBUTARY

E-II

+10.00
135.00

4775 4780 4785 4790 4795 4800 4805

25' BUFFER

SILT FENCE = 335 LIN. FT.

SILT FENCE = 310 LIN. FT.

P.T. 4779+40.11

+75.00
125.00

25' BUFFER

+10.00
155.00

UNAMED TRIBUTARY

+22.00
125.00

STA. 4755+00 TO STA. 4805+00
SILT FENCE = 3032 LIN. FT.

CULTIVATED FIELD

WOODS

PINE TREE FARM

LEGEND

E-II — E-II SILT FENCE

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

REVISIONS

DATE OF REVISION	REVISION

4805 4810 4815 4820 4825 4830 4835

25' BUFFER

SILT FENCE = 340 LIN. FT.

SILT FENCE = 330 LIN. FT.

25' BUFFER

25' BUFFER

SILT FENCE = 395 LIN. FT.

+22.00
125.00

+17.01
160.00

UNAMED TRIBUTARY

STA. 4805+00 TO STA. 4835+00
SILT FENCE = 3015 LIN. FT.

UNNAMED TRIBUTARY

LEGEND

E-II — E-II SILT FENCE

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

mh39735 6/23/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	36	368
08-03-2022						
		TEMPORARY EROSION CONTROL DETAILS				

LEGEND

E-II — E-II CULTIVATED FIELD SILT FENCE

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

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

Smith, Trinity D.
Aug 4 2022 4:12 PM

STA. 4850+00 TO STA. 4861+41
SILT FENCE = 1141 LIN. FT.

UNNAMED TRIBUTARY

25' BUFFER
SILT FENCE = 675 LIN. FT.

CULTIVATED FIELD

POB 800+00.00

P.C. 485+73.92

SILT FENCE = 405 LIN. FT.

P.T. 486+73.92

P.T. 817+13.75

N 52°30'00" E

P.C. 804+13.75

P.I. 4857+74.06

P.I. 810+63.92

STA. 4835+00 TO STA. 4865+00
SILT FENCE = 3025 LIN. FT.

REVISIONS

DATE OF REVISION	REVISION

STA. 4880+00 TO STA. 4885+00
SILT FENCE = 500 LIN. FT.

POB 900+00.00

P.C. 901+28.75

P.T. 902+55.73

P.C. 904+24.89

SILT FENCE = 440 LIN. FT.

P.I. 905+34.89

P.I. 902+98+506

P.T. 817+13.75

SILT FENCE = 345 LIN. FT.

SILT FENCE = 480 LIN. FT.

P.I. 901+94.44

N 49°15'00" E

N 85°00'00" E

N 48°29'00" E

S 41°11'00" E

POE 838+57.40

P.C. 906+86.21

P.I. 906+55.80

N 47°02'30" E

25' BUFFER

POE 909+81.67

S 89°31'03" E

P.C. 837+47.43

P.I. 837+69.02

P.I. 837+90.35

P.I. 907+16.42

BEGIN C/A 2+25.22

END C/A 1+04.76

STA. 4865+00 TO STA. 4895+00
SILT FENCE = 3013 LIN. FT.

LEGEND

E-II — E-II SILT FENCE

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

mh39735 6/23/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	37	368

TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Aug 2 2022 8:49 AM
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CULTIVATED FIELD
POND

LEGEND

E-II — E-II SILT FENCE

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

STA. 4918+26 TO STA. 4925+00
SILT FENCE = 674 LIN. FT.

4895 4900 4905 4910 4915 4920 4925

SILT FENCE = 380 LIN. FT.

+50.00 150.00
+50.00 145.00
+15.00 135.00
P.C. 4918+26.35
SILT FENCE = 290 LIN. FT.

E-II

STA. 4895+00 TO STA. 4925+00
SILT FENCE = 3008 LIN. FT.

REVISIONS

DATE OF REVISION	REVISION

STA. 4925+00 TO STA. 4955+00
SILT FENCE = 3034 LIN. FT.

+50.00 145.00
4925 4930 4935 4940 4945 4950 4955
+85.00 130.00
+30.00 120.00
+41.62 123.82
+43.65 125.93
+20.00 135.00

STA. 4925+00 TO STA. 4955+00
SILT FENCE = 2963 LIN. FT.

+72.00 125.00
+90.00 125.00
+40.00 155.00
+25.00 155.00

LEGEND

E-II — E-II SILT FENCE

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

mh39735 6/23/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	38	368
08-03-2022						
		TEMPORARY EROSION CONTROL DETAILS				

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

Aug 4 2022 4:10 PM

DocuSigned by:

LEGEND

E-9	SEDIMENT BASIN
E-11 — E-11	SILT FENCE
E-14	SEDIMENT BASIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

P.I. 4962+75.11

STA. 4955+00 TO STA. 4985+00
SILT FENCE = 3048 LIN. FT.

N

UNAMED TRIBUTARY

+20.00 135.00 — +00.00 140.00 — +82.00 150.00 — +85.00 175.00

4955 — 4960 — 4965 — 4970 — 4975 — 4980 — 4985

E-11 — E-11 — E-11 — E-11

25' BUFFER

E-9 — 30133 CU. FT.

SILT FENCE = 450 LIN. FT.

E-14 — 16194 CU. FT.

+25.00 155.00 — +99.00 145.00

REVISIONS

DATE OF REVISION	REVISION

STA. 4955+00 TO STA. 4985+00
SILT FENCE = 3005 LIN. FT.

+74.00 165.00

UNAME

N

STA. 4985+00 TO STA. 5015+00
SILT FENCE = 3013 LIN. FT.

UNAMED TRIBUTARY

+10.00 155.00 — +94.00 155.00 — +05.00 140.00 — +80.00 170.00 — +60.00 190.00

4985 — 4990 — 4995 — 5000 — 5005 — 5010 — 5015

E-11 — E-11 — E-11 — E-11 — E-11

SILT FENCE = 345 LIN. FT.

25' BUFFER

SILT FENCE = 435 LIN. FT.

E-14 — 8372 CU. FT.

E-14 — 15516 CU. FT.

SILT FENCE = 330 LIN. FT.

SILT FENCE = 425 LIN. FT.

25' BUFFER

25' BUFFER

+63.00 155.00 — +19.00 145.00 — P.I. 5002 76.35 — +88.00 145.00 — +36.00 180.00

UNAMED TRIBUTARY

STA. 4985+00 TO STA. 5015+00
SILT FENCE = 3003 LIN. FT.

LEGEND

E-11 — E-11	SILT FENCE
E-14	SEDIMENT BASIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

mh39735 6/23/2022
RO20678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	39	368
08-03-2022		TEMPORARY EROSION CONTROL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Aug 4 2022 4:10 PM

LEGEND

E-11 — E-11 SILT FENCE

E-14 SEDIMENT BASIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

STA. 5015+00 TO STA. 5030+15
SILT FENCE = 1534 LIN. FT.

STA. 5034+35 TO STA. 5045+00
SILT FENCE = 1060 LIN. FT.

STA. 5033+10 TO STA. 5045+00
SILT FENCE = 1200 LIN. FT.

STA. 5015+00 TO STA. 5029+50
SILT FENCE = 1454 LIN. FT.

SILT FENCE = 390 LIN. FT.

25' BUFFER

10834 CU. FT.

18576 CU. FT.

UNAMED TRIBUTARY

POND

GATE

END C/A STA. +30.00

BEGIN C/A

END C/A +50.00
198.33
BEGIN C/A +50.00
223.33

END C/A
+50.00
405.00

+83.27 BEGIN C/A
201.43
+70.79 END C/A
223.10

P.C. 107+90.88

P.T. 110+24.25

P.T. 104+02.41

P.C. 5068+87.58

REVISIONS

DATE OF REVISION	REVISION

LEGEND

E-11 — E-11 SILT FENCE

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

STA. 5045+00 TO STA. 5075+00
SILT FENCE = 3000 LIN. FT.

STA. 5045+00 TO STA. 5075+00
SILT FENCE = 3007 LIN. FT.

CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

mh39735 6/23/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	40	368
08-03-2022		TEMPORARY EROSION CONTROL DETAILS				

LEGEND

E-II — E-II SILT FENCE

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Aug 4 2022 4:10 PM

STA. 5075+00 TO STA. 5105+00
SILT FENCE = 2987 LIN. FT.

STA. 5075+00 TO STA. 5105+00
SILT FENCE = 3071 LIN. FT.

REVISIONS

DATE OF REVISION	REVISION

STA. 5105+00 TO STA. 5107+80
SILT FENCE = 275 LIN. FT.

STA. 5113+88 TO STA. 5117+10
SILT FENCE = 329 LIN. FT.

SILT FENCE = 334 LIN. FT.

SILT FENCE = 352 LIN. FT.

SILT FENCE = 340 LIN. FT.

SILT FENCE = 403 LIN. FT.

E-14 8797 CU. FT.

E-14 12744 CU. FT.

E-9 35271 CU. FT.

E-9 20700 CU. FT.

16' GATE

25' BUFFER

CUTOFF CREEK

CUTOFF CREEK RELIEF

STA. 5105+00 TO STA. 5108+11
SILT FENCE = 315 LIN. FT.

STA. 5114+31 TO STA. 5118+69
SILT FENCE = 436 LIN. FT.

STA. 5124+10 TO STA. 5135+00
SILT FENCE = 1093 LIN. FT.

LEGEND

E-9 SEDIMENT BASIN

E-II — E-II SILT FENCE

E-14 SEDIMENT BASIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

mh39735 6/23/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	41	368
		TEMPORARY EROSION CONTROL DETAILS				

LEGEND

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

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Aug 2 2022 8:51 AM

STA. 5136+20 TO STA. 5147+00
SILT FENCE = 1080 LIN. FT.

STA. 5147+00 TO STA. 5163+26
SILT FENCE = 1631 LIN. FT.

STA. 5135+00 TO STA. 5141+81
SILT FENCE = 685 LIN. FT.

STA. 5141+81 TO STA. 5162+73
SILT FENCE = 2094 LIN. FT.

+00.00 190.00
+40.00 151.00
+90.00 185.00
+35.00 695.00
+81.00 125.00
+95.00 310.00
+11.00 590.00
+87.81 END C/A 815.72
+95.86 BEGIN C/A 839.38

5135 5140 5145 5150 5155 5160 5165

320 315 310 305

N 17°04'11" E
N 8°11'00" W
N 29°31'05" W

P.I. 315+45.37
P.T. 316+63.64
P.C. 314+23.13
P.I. 308+66.27
P.C. 306+66.22
P.I. 304+65.40
P.I. 304+82.56

E-5 E-6 E-11 GATE POND CONCRETE

REVISIONS

DATE OF REVISION	REVISION

mh39735 6/23/2022
R020678.DGN

CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	42	368
		TEMPORARY EROSION CONTROL DETAILS				

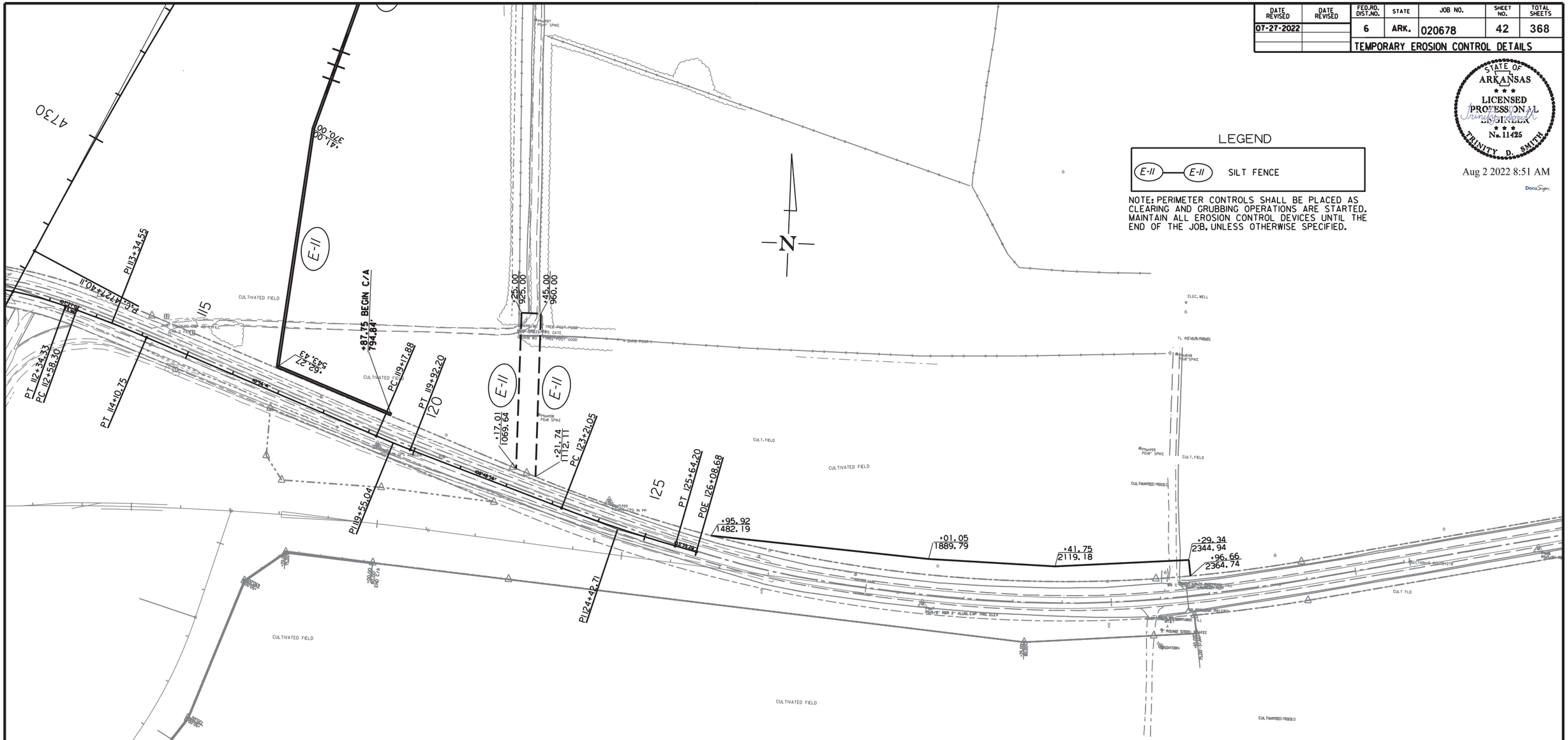
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

Aug 2 2022 8:51 AM
DocuSign

LEGEND

E-II — E-II SILT FENCE

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

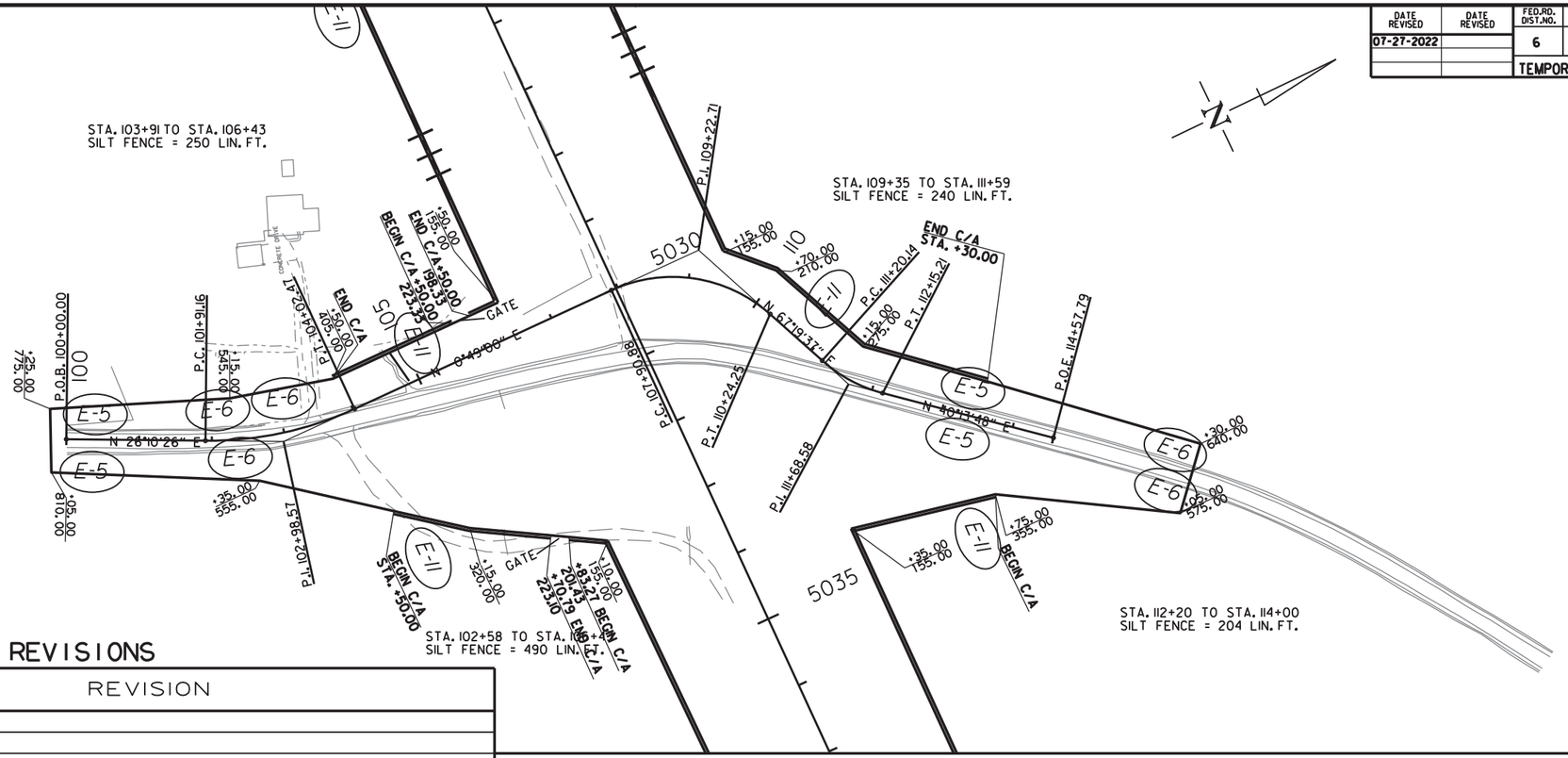

N
E-II
E-II
E-II
E-II
E-II
CULTIVATED FIELD
CULT. FIELD
ELEC. WELL
TEL. RESTRICTION MARKERS
CULTIVATED FIELD
CULTIVATED FIELD
CULTIVATED FIELD
CULTIVATED FIELD
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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	43	368
		TEMPORARY EROSION CONTROL DETAILS				

LEGEND

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

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.



REVISIONS

DATE OF REVISION	REVISION

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

Aug 2 2022 8:51 AM

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mh39735 6/23/2022
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CLEARING AND GRUBBING CO. RD. 75
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	44	368
		TEMPORARY EROSION CONTROL DETAILS				

LEGEND

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

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

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

Aug 2 2022 8:52 AM

DocuSign

POB 300+00.00
+35.64 1201.00 +21.14 1198.98
P.C. 301+97.83
E-11
E-5
E-6
N 0°16'40" E
P.I. 303+43.52
N 29°37'09" W
END C/A +25.00 925.00
P.T. 301+82.55
BEGIN C/A +95.86 839.38
END E/H +87.81 815.72
GATE
+11.00 590.00
P.I. 301+65.40
310
305
5155
5160
5165
5170
P.C. 308+66.27
P.T. 308+66.27
P.C. 5167+30.08
315
P.I. 315+45.37
P.C. 314+23.13
P.T. 316+63.64
N 8°11'00" W
320
+35.00 695.00
325
N 17°04'11" E
P.C. 326+30.55
P.I. 327+89.77
END C/A +33.02 1451.80
+37.60 1454.14
330
N 0°21'06" E
POE 331+94.11
P.I. 327+10.73

REVISIONS

DATE OF REVISION	REVISION

CLEARING AND GRUBBING HWY. 293
TEMPORARY EROSION CONTROL DETAILS

mh39735 6/23/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	45	368
		TEMPORARY EROSION CONTROL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Aug 2 2022 8:52 AM

LEGEND

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

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

PI 107+07.46
108+19.19
PC 108+88.31
PI 110+64.29
PT 112+34.33
PC 112+58.30
P.C. 4727+40.46
PI 113+34.55
PT 114+10.75
STA. 4726+46.95
BEGIN JOB 020678
110
115
4725
4730
4735
4740
4745
4750
4755
4760
4765
4770
4775
CULTIVATED FIELD
TREE FARM
PINEY CREEK
E-5
E-6
E-11
300.00 +65.00
130.00 +25.00
130.00 +90.00
50.00 +70.00
370.00 +41.00
160.00 +85.00
125.00 +70.00
130.00 +35.00
125.00 +90.00
180.00 +78.39
145.00 +30.00
175.00 +90.00

STA. 4751+19 TO STA. 4753+48
SILT FENCE = 227 LIN. FT.

STA. 4769+83 TO STA. 4779+88
SILT FENCE = 1005 LIN. FT.

25' BUFFER
GATE
25' BUFFER

REVISIONS

DATE OF REVISION	REVISION

LEGEND

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

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

P.I. 4753+85.67

STAGE 1
TEMPORARY EROSION CONTROL DETAILS

mh39735 6/23/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	46	368
		TEMPORARY EROSION CONTROL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY P. SMITH
Aug 2 2022 8:52 AM
DocuSign

LEGEND

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

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

STA. 4769+83 TO STA. 4779+88
SILT FENCE = 1005 LIN. FT.

STA. 4802+11 TO STA. 4817+69
SILT FENCE = 1558 LIN. FT.

STA. 4755+00 TO STA. 4805+00
SILT FENCE = 3032 LIN. FT.

SILT FENCE = 310 LIN. FT.

SILT FENCE = 330 LIN. FT.

UNAMED TRIBUTARY

25' BUFFER

P.T. 4779+40.11

+10.00 135.00
+75.00 125.00
+30.00 135.00
+10.00 135.00
+22.00 125.00
+17.01 160.00

4775 4780 4785 4790 4795 4800 4805 4810 4815 4820 4825 4830 4835

CULTIVATED FIELD

REVISIONS

DATE OF REVISION	REVISION

mh39735 6/23/2022
RO20678.DGN

STAGE 1
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	47	368
08-03-2022						

TEMPORARY EROSION CONTROL DETAILS

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

Aug 4 2022 4:10 PM
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LEGEND

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

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

REVISIONS

DATE OF REVISION	REVISION

LEGEND

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

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

STAGE 1
TEMPORARY EROSION CONTROL DETAILS

mh39735 6/23/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	48	368

TEMPORARY EROSION CONTROL DETAILS

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

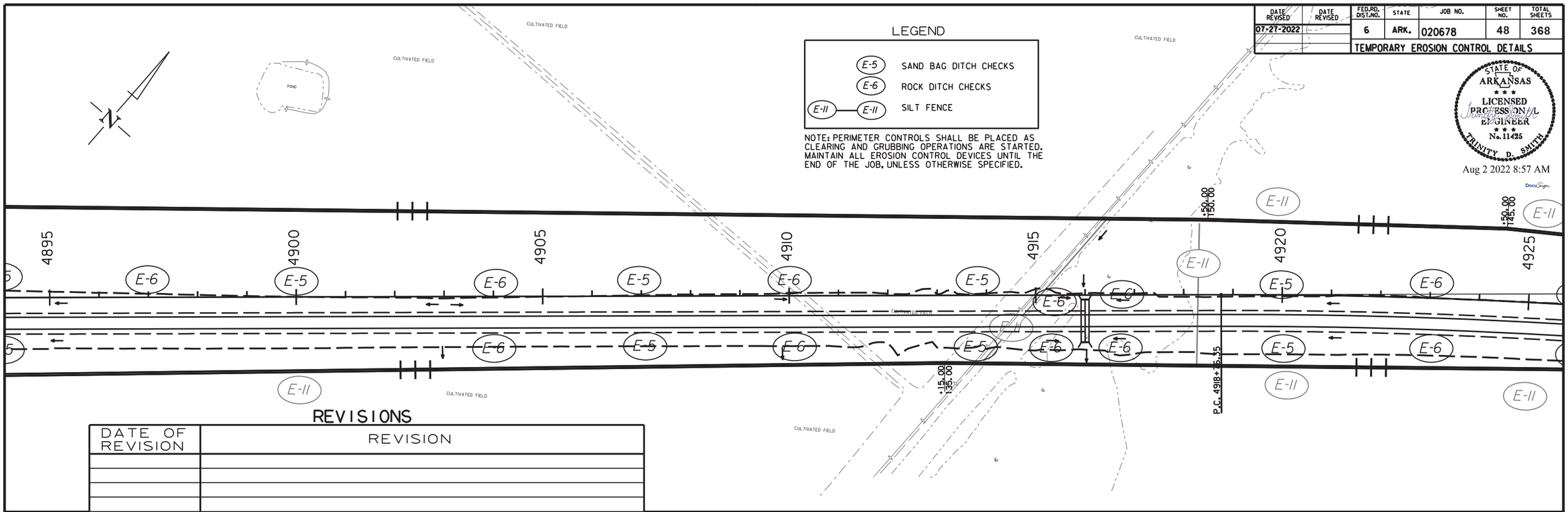
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LEGEND

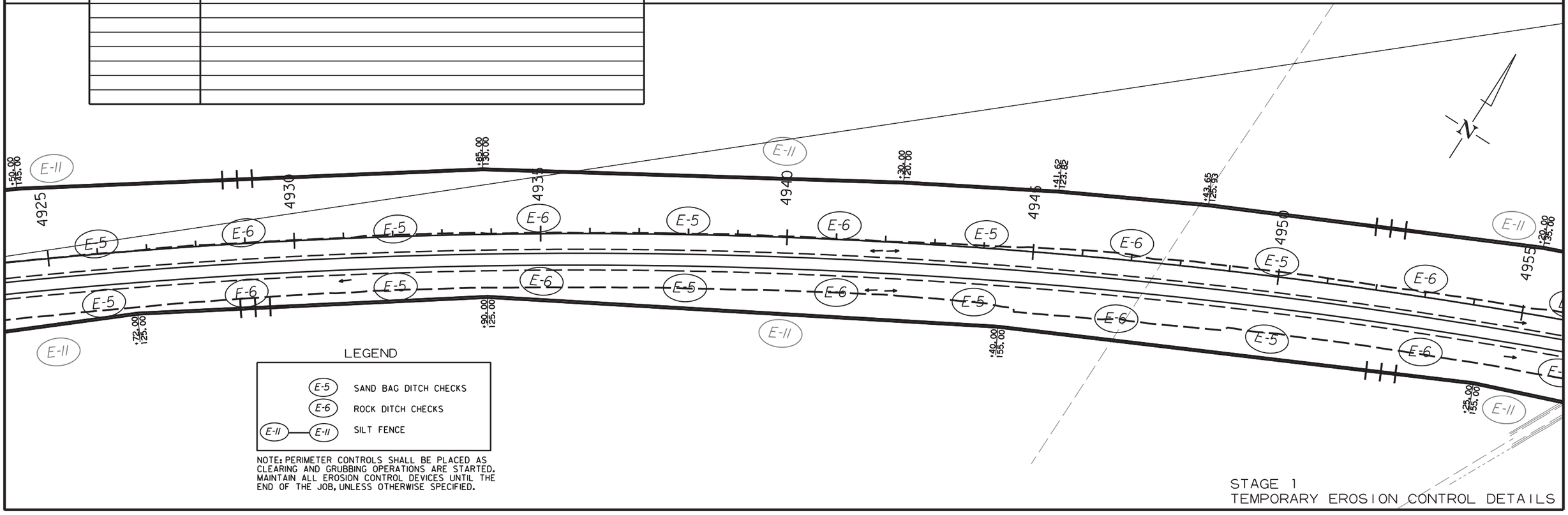
- E-5 SAND BAG DITCH CHECKS
- E-6 ROCK DITCH CHECKS
- E-11 — E-11 SILT FENCE

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.



REVISIONS

DATE OF REVISION	REVISION



LEGEND

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

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

STAGE 1
TEMPORARY EROSION CONTROL DETAILS

mh39735 6/23/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	49	368
08-03-2022		TEMPORARY EROSION CONTROL DETAILS				

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

Aug 4 2022 4:10 PM

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LEGEND

E-5	SAND BAG DITCH CHECK
E-6	ROCK DITCH CHECKS
E-9	SEDIMENT BASIN
E-11	SILT FENCE
E-14	SEDIMENT BASIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

P.I. 4962+75.11

LYTLE RD.

UNAMED TRIBUTARY

4955 4960 4965 4970 4975 4980 4985

25' BUFFER

3013 CU. FT.

16194 CU. FT.

REVISIONS

DATE OF REVISION	REVISION

STA. 4985+80 TO STA. 4992+65
SILT FENCE = 682 LIN. FT.

4985 4990 4995 5000 5005 5010 5015

LYTLE RD.

P.T. 5002+76.35

8372 CU. FT.

15516 CU. FT.

25' BUFFER

UNAMED TRIBUTARY

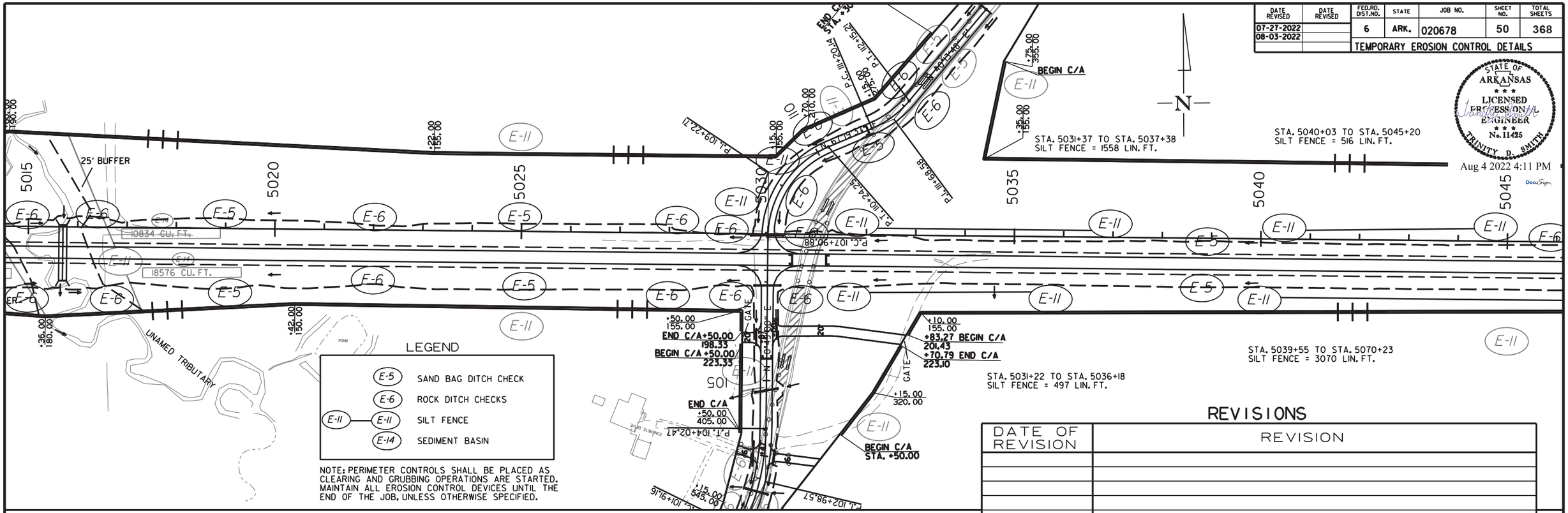
STA. 4986+35 TO STA. 4993+15
SILT FENCE = 677 LIN. FT.

STAGE 1
TEMPORARY EROSION CONTROL DETAILS

mh39735 6/23/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	50	368
08-03-2022		TEMPORARY EROSION CONTROL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Aug 4 2022 4:11 PM



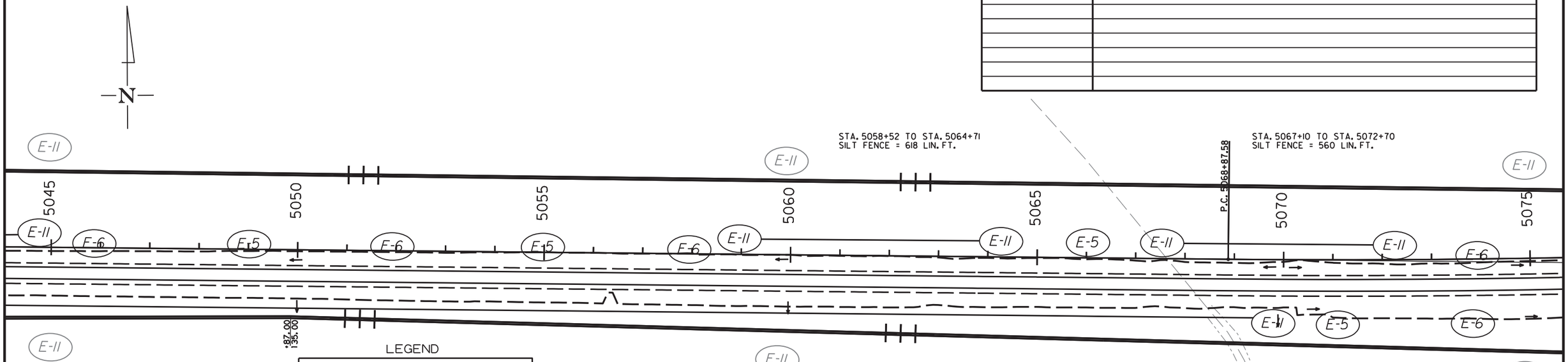
LEGEND

E-5	SAND BAG DITCH CHECK
E-6	ROCK DITCH CHECKS
E-11	SILT FENCE
E-14	SEDIMENT BASIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

REVISIONS

DATE OF REVISION	REVISION



LEGEND

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

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

STAGE 1
TEMPORARY EROSION CONTROL DETAILS

mh39735 6/23/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	51	368
08-03-2022						

TEMPORARY EROSION CONTROL DETAILS

LEGEND

- TRIANGULAR SILK DIKE
- E-5 SAND BAG DITCH CHECKS
- E-6 ROCK DITCH CHECKS
- E-8 DIVERSION DITCHES
- E-11 SILT FENCE
- E-12 SLOPE DRAIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Aug 4 2022 4:11 PM

N

+30.00 125.00 | +35.00 170.00 | +10.00 165.00 | P.I. 510+87.58

5075 5080 5085 5090 5095 5100 5105

+35.00 205.00 | +69.76 215.00 | +45.00 140.00 | P.I. 5086+91.29 | +45.00 150.00 | +65.00 185.00 | +30.00 185.00

REVISIONS

DATE OF REVISION	REVISION

LEGEND

- TRIANGULAR SILK DIKE
- E-5 SAND BAG DITCH CHECKS
- E-6 ROCK DITCH CHECKS
- E-8 DIVERSION DITCHES
- E-9 SEDIMENT BASIN
- E-11 SILT FENCE
- E-12 SLOPE DRAIN
- E-14 SEDIMENT BASIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

CUTOFF CREEK

25' BUFFER

16' GATE

E-8 2797 CU. FT.

E-12 12744 CU. FT.

E-9 20700 CU. FT.

E-6 3521 CU. FT.

P.I. 510+87.58 | +30.00 185.00 | +55.00 170.00 | +00.00 170.00 | +18.00 145.00

5105 5110 5115 5120 5125 5130 5135

CUTOFF CREEK RELIEF

STA. 5132+06 TO STA. 5141+81
SILT FENCE = 975 LIN. FT.

STAGE 1
TEMPORARY EROSION CONTROL DETAILS

mh39735 6/23/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	52	368

TEMPORARY EROSION CONTROL DETAILS

LEGEND

- TRIANGULAR SILK DIKE
- E-5 SAND BAG DITCH CHECKS
- E-6 ROCK DITCH CHECKS
- E-8 DIVERSION DITCHES
- E-11 SILT FENCE
- E-12 SLOPE DRAIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Aug 2 2022 8:58 AM

STA. 5132+06 TO STA. 5141+81
SILT FENCE = 975 LIN. FT.

STA. 5148+44 TO STA. 5150+60
SILT FENCE = 215 LIN. FT.

STA. 5162+18.05
END JOB 020678

REVISIONS

DATE OF REVISION	REVISION

mh39735 6/23/2022
R020678.DGN

STAGE 1
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	53	368
		TEMPORARY EROSION CONTROL DETAILS				

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

Aug 2 2022 8:58 AM

DocuSign

LEGEND

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

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

REVISIONS

DATE OF REVISION	REVISION

STAGE 1
TEMPORARY EROSION CONTROL DETAILS

mh39735 6/23/2022
R020678.DGN

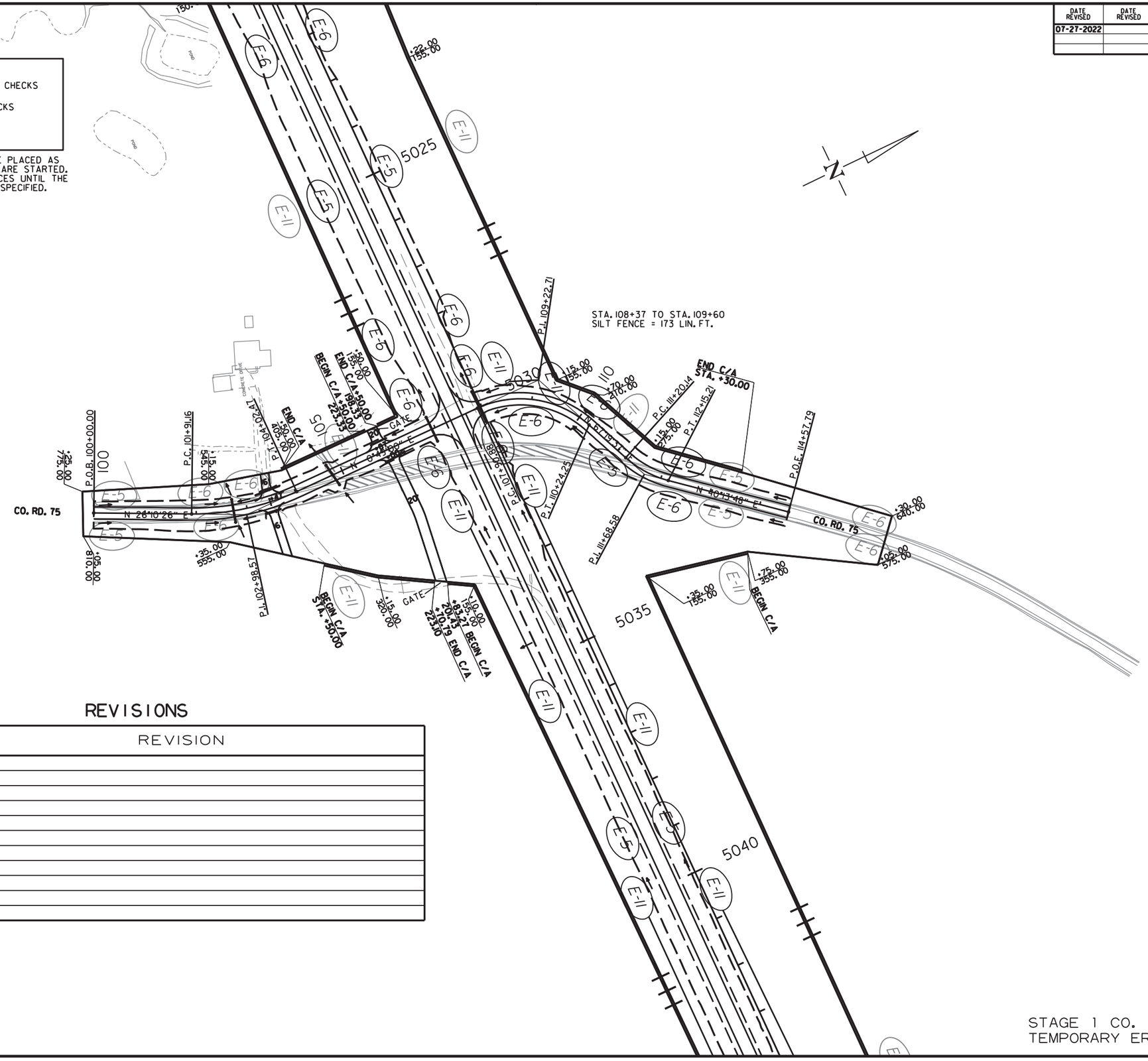
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	54	368
		TEMPORARY EROSION CONTROL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Aug 2 2022 8:58 AM
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LEGEND

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

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.



REVISIONS

DATE OF REVISION	REVISION

STAGE 1 CO. RD. 75
TEMPORARY EROSION CONTROL DETAILS

mh39735 6/23/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	55	368
		TEMPORARY EROSION CONTROL DETAILS				

LEGEND

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

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

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

Aug 2 2022 8:59 AM

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STA. 301+00.00 BEGIN
HWY. 293 INTERIM

STA. 330+14.77
END HWY. 293 INTERIM

REVISIONS

DATE OF REVISION	REVISION

STAGE 1 HWY. 293
TEMPORARY EROSION CONTROL DETAILS

mh39735 6/23/2022
R020678.DGN

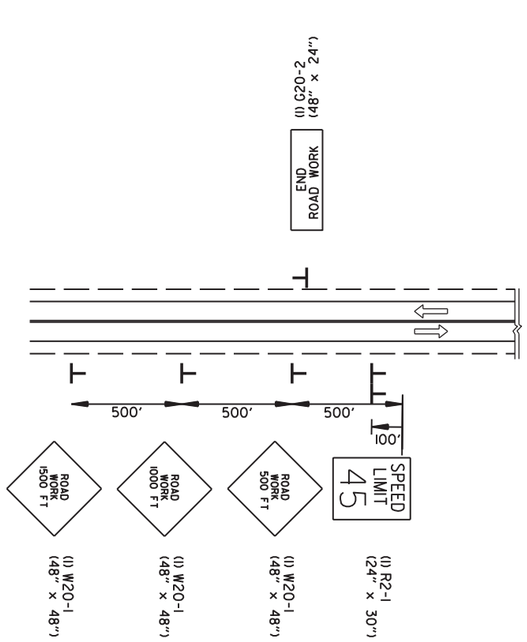
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	56	368
		MAINTENANCE OF TRAFFIC DETAILS				

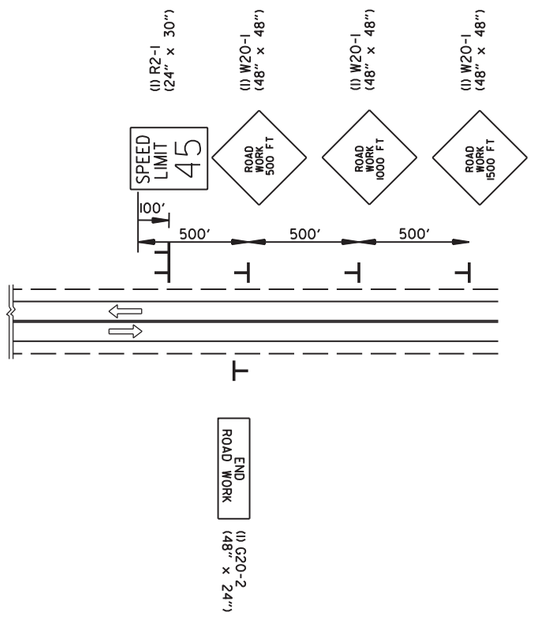
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

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ADVANCE WARNING (ALL STAGES)



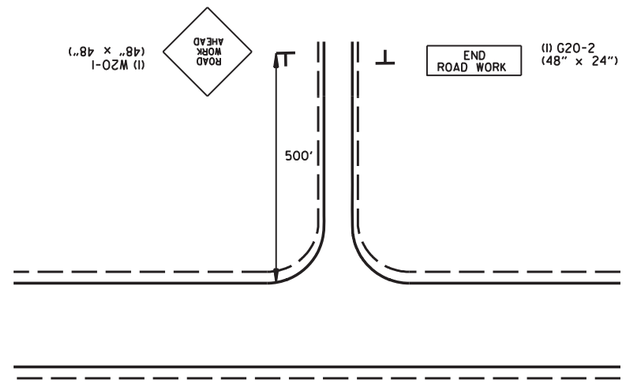


SHOULDER CLOSED	(2) W21-5a (36" X 36")	ALL STAGES TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER
DO NOT PASS	(2) R4-1 (24" X 30")	ALL STAGES TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER
BUMP	(2) W8-1 (30" X 30")	ALL STAGES TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

SEQUENCE OF CONSTRUCTION

INSTALL ADVANCE WARNING SIGNS AND DEVICES AS SHOWN IN THE MAINTENANCE OF TRAFFIC DETAILS IN ALL LOCATIONS THROUGHTOUT THE PROJECT AREA.
CONSTRUCT APPROACHS AND BRIDGE.
PLACE FINAL LIFT OF ACHIM SURFACE COURSE.
INSTALL FINAL STRIPING PER PERMANANT PAVEMENT MARKING DETAILS.

USE VERTICAL PANELS SPACED 45' ON CENTER TO DELINEATE THE WORK ZONE. USE TRAFFIC DRUMS TO DELINEATE DRIVEWAYS.



ADVANCE WARNING SIGNS

CO. RD. 75

mh39735 11/9/2021
R020678.DGN

ADVANCE WARNING SIGNS
MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	57	368
		MAINTENANCE OF TRAFFIC DETAILS				

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

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(14) TRAFFIC DRUMS SPACED 45' ON CENTER

CULTIVATED FIELD

P I 110+64.29

P I 107+07.48

P I 113+34.55

P.C. 1127+40.4

10°27'05"
3.96

81°42'09"

76°34'44"

110°56'41"

+87.75 BEGIN C/A
794.84'

+62.27
543.43

P I 119+55.04

P C 119+17.2

P T 108+19.19

P C 108+88.31

P T 112+34.33

P C 112+58.30

P T 114+10.75

P T 104+68.69

P C 105+95.63

6°58'

ROAD CLOSED

(1) R11-2
(48" X 30")

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

2 LOCATIONS

ROAD WORK 500 FT.
ROAD WORK 1000 FT.
ROAD WORK 1500 FT.

(1) W20-1 (48" x 48")
(1) W20-1 (48" x 48")
(1) W20-1 (48" x 48")

(18) C20-2 (48" x 24")

ROAD WORK

ONE STORY METAL SHOP
UNDER GROUND ELTIC
TANK ABOVE GROUND
HOUSE
SILO
CONC
TRAIL

ABOVE GROUND
6 BARB
5X48X2X4 DUBUQUE METAL GATE

110
115
4725
4730
4720

DETAIL AT HWY. 278 JUNCTION
MAINTENANCE OF TRAFFIC DETAILS

mh39735 11/9/2021
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	58	368
		MAINTENANCE OF TRAFFIC DETAILS				

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

Aug 2 2022 8:59 AM
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N

+87.75 BEGIN C/A
794.84'

+62.27
543.43

CULTIVATED FIELD

PC 119+17.88

PT 119+92.20
120

110°56'41"

+25.00
925.00

+45.00
960.00

4 BARB POOR

TREE POST POOR

PIPE GATE

TREE POST GOOD

(6) TRAFFIC DRUMS PER DRIVEWAY
LOCATION = 6 TRAFFIC DRUMS

+17.01
1069.64

PN:1498
PD:8 SPIKE

20'

+21.74
1112.11

PC 123+21.05

CULT. FIELD

CULTIVATED FIELD

125

PT 125+64.20

POE 126+08.68

+95.92
1482.19

108°48'56"

1+30

PN:5399
PD:906 GPS IN PP

103°39'20"

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

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

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

+01.05
1889.79

PN:7
PD:5/8" RBR 2" ALUM. CAP TRIG ELE

END ROAD WORK

(1) G20-2 (48" × 24")

PI 119+55.04

PI 124+42.71

CULTIVATED FIELD

mh39735 11/9/2021
R020678.DGN

DETAIL OF HWY 278 DRIVEWAY MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	59	368
08-03-2022						

MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Aug 4 2022 4:11 PM

FIELD

ROAD CLOSED

(1) R11-2 (48" X 30")

16' BARR. TYP. III RT.

POB 800+00.00

N 52°30'00" E

(3) TRAFFIC DRUMS SPACED 45' ON CENTER

STA. 800+08.44 BEGIN
LD LONG FRONTAGE RD

+70.00 100.00

P.C. 804 +00.00 205.00

805

+55.00 110.00

P.C. 485+

4850

4855

4860

+95.00 115.00

810

P.I. 4857+12.06

92

+90.73 205.00

+95.00 120.00

815

P.T. 486

4865

P.T. 817+13.75

4870

4875

CULTIVATED FIELD

N 49°15'00" E

+00.00 125.00

815

820

825

830

STAGE I FRONTAGE RD & LD LONG RD
MAINTENANCE OF TRAFFIC DETAILS

mh39735 11/9/2021
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	60	368
08-03-2022		MAINTENANCE OF TRAFFIC DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Aug 4 2022 4:11 PM

(16) TRAFFIC DRUMS SPACED 45' ON CENTER

ROAD CLOSED — (1) R11-2 (48" X 30") — 8' BARR. TYP. III RT. 8' BARR. TYP. III LT. — 3 LOCATIONS

STA. 900+00.00 BEGIN
LD LONG RD

BEGIN C/A +54.59
172.47
+80.00
174.58
POB 900+00.00
END C/A +04.76
168.31
+80.00
166.25
+05.00
160.00
+15.00
235.00
+65.00
180.00
16'
1+00
CULTIVATED FIELD
CULTIVATED FIELD
4880
GATE
N 85°00'29" E
25' BUFFER
P.C. 901+28.75
P.T. 902+55.73
+25.00
195.00
P.C. 904+48.89
905
P.I. 905+34.89
4885
N 48°43'00" E
P.I. 901+94.44
N 49°15'00" E
GATE
P.I. 905+86.26
4890
POE 838+57.40
P.C. 906+86.21
CULTIVATED FIELD
N 37°02'52" E
25' BUFFER
P.T. 908+55.80
+00.00
160.00
+50.00
115.00
+00.00
215.00
POE 909+81.67
STA. 909+81.67 END
LD LONG RD
S 89°31'03" E
+05.00
325.00
+45.00
385.00
830
+00.00
215.00
835
+00.00
135.00
+00.00
240.00
P.C. 837+47.53
P.I. 837+69.02
P.I. 837+90.35
P.I. 907+76.42
+70.00
225.83
END C/A +75.30
119.27
BEGIN C/A +25.22
116.42
STA. 838+47.40 END
LD LONG FRONTAGE RD.

STAGE I FRONTAGE RD & LD LONG RD
MAINTENANCE OF TRAFFIC DETAILS

mh39735 11/9/2021
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	61	368

MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Aug 2 2022 9:00 AM
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(29) TRAFFIC DRUMS SPACED 45' ON CENTER

STA. 100+00.00 BEGIN
HWY. CO. RD. 75

ROAD CLOSED
(1) RII-2 (48" X 30")
8' BARR. TYP. IIRT.
8' BARR. TYP. IILT.
2 LOCATIONS

BEGIN C/A +50.00
198.33
223.33
END C/A +50.00
+50.00 155.00
END C/A +50.00 405.00
P.T. 104+02.47
P.C. 101+91.16
+15.00 545.00
+25.00 775.00
P.O.B. 100+00.00
100
101
GATE
20'
N 0°49'00" E
88.06
+80
+87
+47
N 26°10'26" E
CO. RD. 75
(6) TRAFFIC DRUMS PER DRIVEWAY
2 LOCATION = 12 TRAFFIC DRUMS
(1) RII-2 (48" X 30")
16' BARR. TYP. IILT.
ROAD CLOSED
+35.00 555.00
+05.00 810.00
P.I. 102+98.57
BEGIN C/A STA. +30.00
+15 32
GATE
+10 15
+20 8
5030
110
+15.00 155.00
+70.00 270.00
P.C. 111+20.14
+15.00 275.00
P.T. 112+15.21
N 67°19'36" E
P.C. 101+90.88
P.T. 110+24.25
P.I. 111+68.58
N 40°13'48" E
+75.00 355.00
+35.00 155.00
BEGIN C/A

(10) TRAFFIC DRUMS SPACED 45' ON CENTER

END C/A
STA. +30.00

P.I. 109
5030
110
+15.00 155.00
+70.00 270.00
P.C. 111+20.14
+15.00 275.00
P.T. 112+15.21
P.O.E. 114+57.79
STA. 114+57.79 END
HWY. CO. RD. 75
N 67°19'36" E
N 40°13'48" E
CO. RD. 75
+30.00 640.00
+05.00 575.00
88.06
P.C. 101+90.88
P.T. 110+24.25
P.I. 111+68.58
ROAD CLOSED
(1) RII-2 (48" X 30")
16' BARR. TYP. IIRT.
+75.00 355.00
+35.00 155.00
BEGIN C/A
20'

STAGE I CO. RD. 75
MAINTENANCE OF TRAFFIC DETAILS

mn39735 11/9/2021
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	62	368
		MAINTENANCE OF TRAFFIC DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Aug 2 2022 9:00 AM
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(6) TRAFFIC DRUMS PER DRIVEWAY LOCATION = 6 TRAFFIC DRUMS

POB 300+00.00
+35.64
1201.00
+21.14
1198.98
P.C. 301+97.83
END C/A
+26.00
926.00
+82.56
BEGIN C/A
+95.86
835.38
+87.18
END C/A
852.72
GATE
P.T. 304+82.55
P.I. 305+65.00
+11.00
590.00
310
305
N 6°11'00" W
P.C. 308+62.12
P.T. 308+66.27
P.I. 303+43.52
STA. 301+00.00 BEGIN
HWY. 293 INTERIM
(1) RII-2
(48" X 30")
ROAD CLOSED
16' BARR.
TYP. III LT.
(10) TRAFFIC DRUMS SPACED 45' ON CENTER
5160
315
P.I. 315+45.37
P.C. 314+23.13
P.T. 316+63.64
N 6°11'00" W
HWY. 293
320
+35.00
695.00
5165
P.C. 5167+30.08
5170
5175
325
P.C. 326+30.55
P.T. 327+89.77
END C/A
+33.02
1451.86
+37.60
1454.14
N 6°21'00" W
330
P.I. 327+10.73
STA. 330+14.77
END HWY. 293 INTERIM
ROAD CLOSED
(1) RII-2
(48" X 30")
16' BARR.
TYP. III RT.
(10) TRAFFIC DRUMS SPACED 45' ON CENTER

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STAGE I HWY. 293
MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	63	368
		MAINTENANCE OF TRAFFIC DETAILS				

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

Aug 2 2022 9:00 AM

STA. 100+00.00 BEGIN
HWY. CO. RD. 75

(12) TRAFFIC DRUMS SPACED 45' ON CENTER

(6) TRAFFIC DRUMS PER DRIVEWAY
2 LOCATION = 12 TRAFFIC DRUMS

CONCRETE DRIVE

BEGIN C/A +50.00
198.33
223.33

+50.00
155.00
END C/A +50.00

P.T. 104+02.47

END C/A
+50.00
405.00

P.C. 101+91.16

+15.00
545.00

P.O.B. 100+00.00

+25.00
775.00

100

101

GATE

20

16

1+47

6

N 0°48'00" E

+00

N 26°10'26" E

CO. RD. 75

REFLECTORIZED PAINT
6" WHITE EDGE LINES

REFLECTORIZED PAINT
6" DBL. YELLOW CENTERLINE

+35.00
555.00

+05.00
810.00

P.I. 102+98.57

20'

ROAD CLOSED

(1) R11-2
(48" X 30")

(1) W1-6
(48" X 24")

16' BARR.
TYP. III RT.

88°06'+101.05 P.C.

P.T. 110+24.25

P.I. 111+68.58

N 67°19'36" E

N 40°13'48" E

5030

110

+15.00
155.00

+70.00
270.00

P.C. 111+20.14

+15.00
275.00

P.T. 112+15.21

ROAD CLOSED

(1) R11-2
(48" X 30")

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

2 LOCATIONS

+75.00
355.00

+35.00
155.00

BEGIN C/A

8 TRAFFIC DRUMS
40' O.C.
BOTH SIDES OF PROP. RD.
TRAFFIC DRUMS

END C/A
STA. +30.00

REFLECTORIZED PAINT
6" WHITE EDGE LINES

P.O.E. 114+57.79

STA. 114+57.79 END
HWY. CO. RD. 75

REFLECTORIZED PAINT
6" DBL. YELLOW CENTERLINE

+30.00
640.00

+05.00
575.00

20'

(1) R11-2
(48" X 30")

(1) W1-6
(48" X 24")

16' BARR.
TYP. III LT.

ROAD CLOSED

STAGE 2 CO. RD. 75
MAINTENANCE OF TRAFFIC DETAILS

mn39735 11/9/2021
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	64	368
		MAINTENANCE OF TRAFFIC DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Aug 2 2022 9:00 AM

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

(I) RII-2 (48" X 30")
(I) WI-6 (48" X 24")
16' BARR. TYP. III LT.

ROAD CLOSED
(I) RII-2 (48" X 30")
(I) WI-6 (48" X 24")
16' BARR. TYP. III RT.

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

(12) TRAFFIC DRUMS SPACED 45' ON CENTER

LOCATION:
SIGNS AND BARRICADES TO BE LEFT IN PLACE AT END OF JOB

(7) TRAFFIC DRUMS SPACED 45' ON CENTER

5 TRAFFIC DRUMS 40' O.C. RT SIDES OF PROP. RD. TRAFFIC DRUMS TO BE LEFT IN PLACE AT END OF JOB

STA. 301+00.00 BEGIN
HWY. 293 INTERIM

STA. 330+14.77
END HWY. 293 INTERIM

REFLECTORIZED PAINT 6" WHITE EDGE LINES

REFLECTORIZED PAINT 6" DBL. YELLOW CENTERLINE

FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER = 40 LIN. FT.
TO BE LEFT IN PLACE

POB 300+00.00
P.C. 301+97.83
P.I. 303+43.52
P.T. 304+82.55
BEGIN C/A 305+95.86
END C/A 305+95.86
P.I. 305+59.00
P.C. 306+66.12
P.T. 308+66.27
P.I. 310+30.00
P.C. 314+23.13
P.T. 316+63.64
P.I. 315+45.37
P.C. 326+30.55
P.T. 327+89.77
P.I. 327+10.73
END C/A 330+14.77
P.C. 5167+30.08

N. 0°16'40" E.
N. 8°11'00" W.
N. 23°37'09" W.
HWY. 293 N. 17°04" E.
N. 0°21'06"

5160
5165
5170
5175

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R020678.DGN

STAGE 2 HWY. 293
MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	65	368
		PERMANENT PAVEMENT MARKING DETAILS				

PERMANENT PAVEMENT MARKINGS
APPLY PERMANENT PAVEMENT MARKINGS ACCORDING TO STD. DWGS. PM-1& PM-2
CONSULT CURRENT VERSION OF MUTCD FOR ADDITIONAL DETAILS.

I-69 - STA. 4726+46.95 TO STA. 5162+18.05
6" WHITE THERMOPLASTIC PAVEMENT MARKING - 87460 LIN. FT.
6" DBL. YELLOW THERMOPLASTIC PAVEMENT MARKING - 87670 LIN. FT.
10" WHITE REFLECTORIZED PAINT PAVEMENT MARKING (ON CURB FACE) - 577 LIN. FT.
RAISED PAVEMENT MARKERS 80' O.C. (YEL/YEL) - 586 EACH
WORD "ONLY" - 2 EACH
ARROW = 2 EACH

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

Aug 2 2022 9:00 AM

STA. 4726+46.95
BEGIN JOB 020678

10" WHITE REFLECTORIZED PAINT PAVEMENT MARKING

CONCRETE ISLAND TYPE "B" CURB FACE (TYPICAL ALL SIDES)

6" WHITE THERMOPLASTIC PAVEMENT MARKING

10" WHITE REFLECTORIZED PAINT PAVEMENT MARKING

6" WHITE THERMOPLASTIC PAVEMENT MARKING

6" WHITE THERMOPLASTIC PAVEMENT MARKING

6" DBL. YELLOW THERMOPLASTIC PAVEMENT MARKING
RAISED PAVEMENT MARKINGS 80' O.C. (YEL./YEL.)

STA. 4726+46.95 I-69 CL =
STA. 111+23.52 HWY. 278 CL
Δ = 76° 19' 13"

6" WHITE THERMOPLASTIC PAVEMENT MARKING

6" DBL. YELLOW THERMOPLASTIC PAVEMENT MARKING
RAISED PAVEMENT MARKINGS 80' O.C. (YEL./YEL.)

PINEY CREEK

GATE

PINEY CREEK

MAIN LANES
PERMANENT PAVEMENT MARKING DETAILS

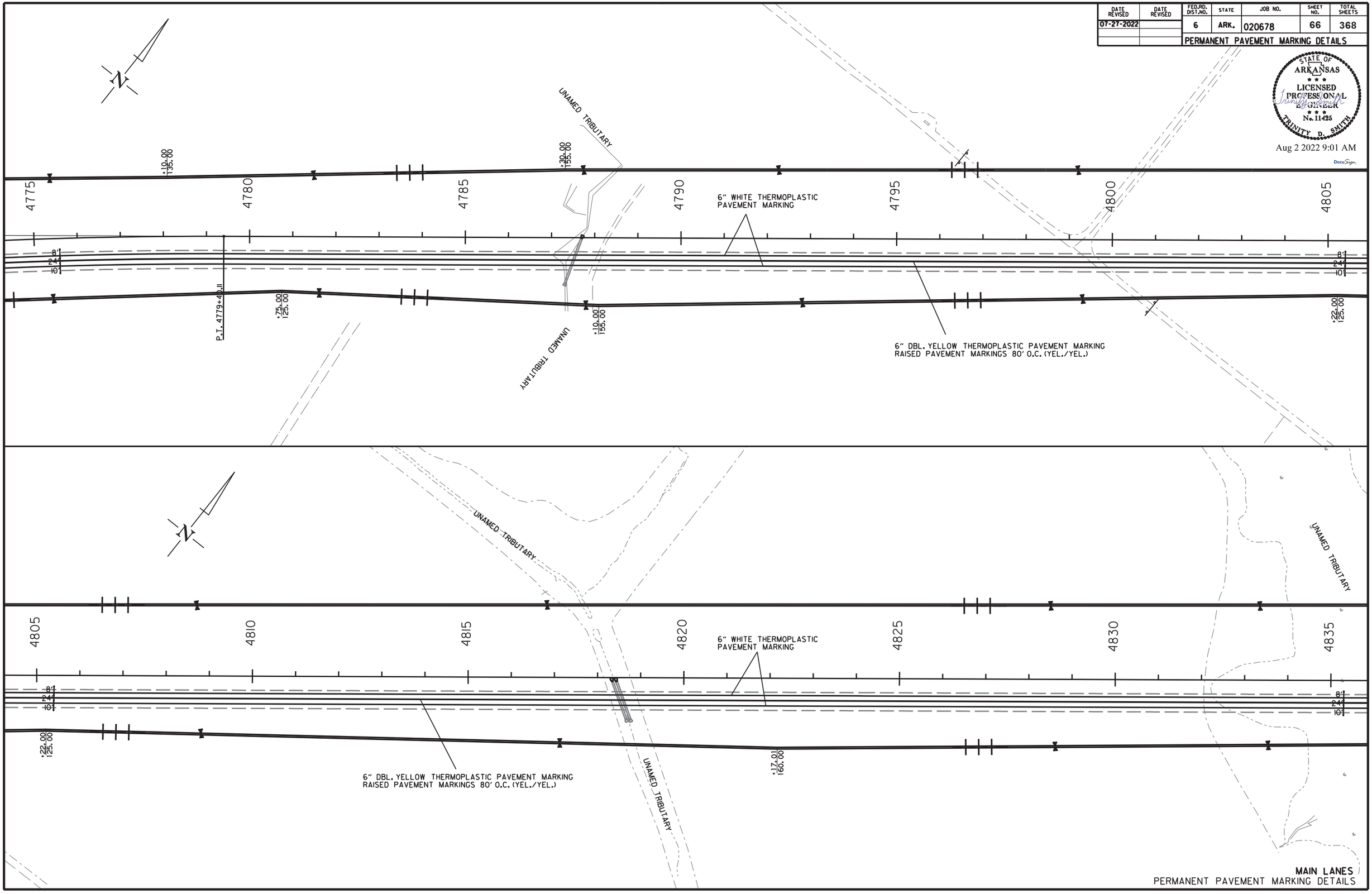
mh39735 12/7/2021
RO20678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	66	368
		PERMANENT PAVEMENT MARKING DETAILS				

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

Aug 2 2022 9:01 AM

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MAIN LANES
PERMANENT PAVEMENT MARKING DETAILS

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	67	368
08-03-2022						
		PERMANENT PAVEMENT MARKING DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Aug 4 2022 4:11 PM
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UNAMED TRIBUTARY

4835 4840 4845 4850 4855 4860 4865

P.C. 485+73.92

POB 800+00.00

P.T. 486+73.92

P.T. 817+13.75

8'
24'
10'

6" WHITE THERMOPLASTIC PAVEMENT MARKING

N 52°30'00" E

20'

•53.00 145.00

•20.52 145.00

•30.00 165.51

•70.00 100.00

•10.16 155.00

•00.00 205.00

805

•55.00 110.00

P.C. 804+13.75

•95.00 115.00

810

P.I. 4857+74.06

P.I. 810+63.92

•90.73 205.00

•95.00 120.00

815

6" DBL. YELLOW THERMOPLASTIC PAVEMENT MARKING
RAISED PAVEMENT MARKINGS 80' O.C. (YEL./YEL.)

UNAMED TRIBUTARY

LD LONG RD

BEGIN C/A 174+54.59
T12 41
END C/A 180+04.76
168.31

•80.00 174.59
•15.00 235.00
•65.00 180.00
•80.00 166.25
•95.00 160.00

POB 900+00.00

P.C. 901+28.75

P.T. 902+55.73

•25.00 195.00

P.C. 904+44.89

905

P.I. 905+34.89

4865 4870 4875 4880 4885 4890 4895

P.T. 817+13.75

N 49°15'00" E

N 85°00'29" E

N 48°49'00" E

P.I. 901+94.44

6" WHITE THERMOPLASTIC PAVEMENT MARKING

P.I. 898+506.10

P.C. 898+84.57

P.C. 906+86.21

P.I. 906+55.80

•00.00 160.00

•50.00 115.00

•00.00 215.00

P.C. 837+47.43
•00.00 240.00

P.I. 837+69.02

P.I. 837+90.35

P.I. 907+76.42

•70.00 225.88

•25.00 195.00

•05.00 305.00

P.C. 907+25.22

P.I. 907+37.30

•45.00 385.00

LD LONG RD

S 69°45'03" E

P.I. 907+74.03

P.I. 908+81.67

820 825 830 835

•00.00 125.00

•00.00 215.00

•00.00 135.00

6" DBL. YELLOW THERMOPLASTIC PAVEMENT MARKING
RAISED PAVEMENT MARKINGS 80' O.C. (YEL./YEL.)

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MAIN LANES
PERMANENT PAVEMENT MARKING DETAILS

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	68	368

PERMANENT PAVEMENT MARKING DETAILS

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

Aug 2 2022 9:01 AM

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POND

4895 4900 4905 4910 4915 4920 4925

+50.00 150.00

+50.00 145.00

8:1
2:1
10:1

6" WHITE THERMOPLASTIC PAVEMENT MARKING

6" DBL. YELLOW THERMOPLASTIC PAVEMENT MARKING
RAISED PAVEMENT MARKINGS 80' O.C. (YEL./YEL.)

+15.00 135.00

P.C. 4918+16.35

4925 4930 4935 4940 4945 4950 4955

+50.00 145.00

+85.00 130.00

+30.00 120.00

+41.62 123.82

+43.65 125.93

+20.00 135.00

+72.00 125.00

+90.00 125.00

+40.00 155.00

+25.00 155.00

6" WHITE THERMOPLASTIC PAVEMENT MARKING

6" DBL. YELLOW THERMOPLASTIC PAVEMENT MARKING
RAISED PAVEMENT MARKINGS 80' O.C. (YEL./YEL.)

MAIN LANES
PERMANENT PAVEMENT MARKING DETAILS

mh39735 12/7/2021
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	69	368
		PERMANENT PAVEMENT MARKING DETAILS				

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

Aug 2 2022 9:01 AM

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P.I. 4962+75.11

LYTLE RD.

UNAMED TRIBUTARY

6" WHITE THERMOPLASTIC PAVEMENT MARKING

6" DBL. YELLOW THERMOPLASTIC PAVEMENT MARKING
RAISED PAVEMENT MARKINGS 80' O.C. (YEL./YEL.)

UNAMED TRIBUTARY

6" WHITE THERMOPLASTIC PAVEMENT MARKING

6" DBL. YELLOW THERMOPLASTIC PAVEMENT MARKING
RAISED PAVEMENT MARKINGS 80' O.C. (YEL./YEL.)

P.I. 5002 76.35

UNAMED TRIBUTARY

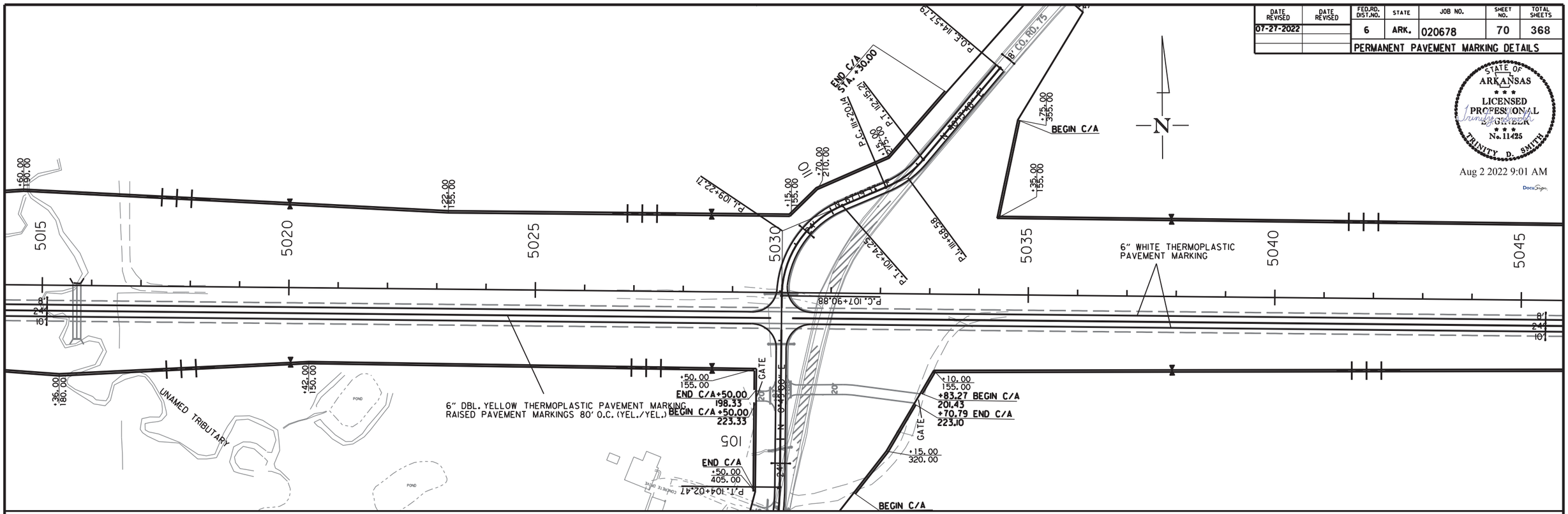
UNAMED TRIBUTARY

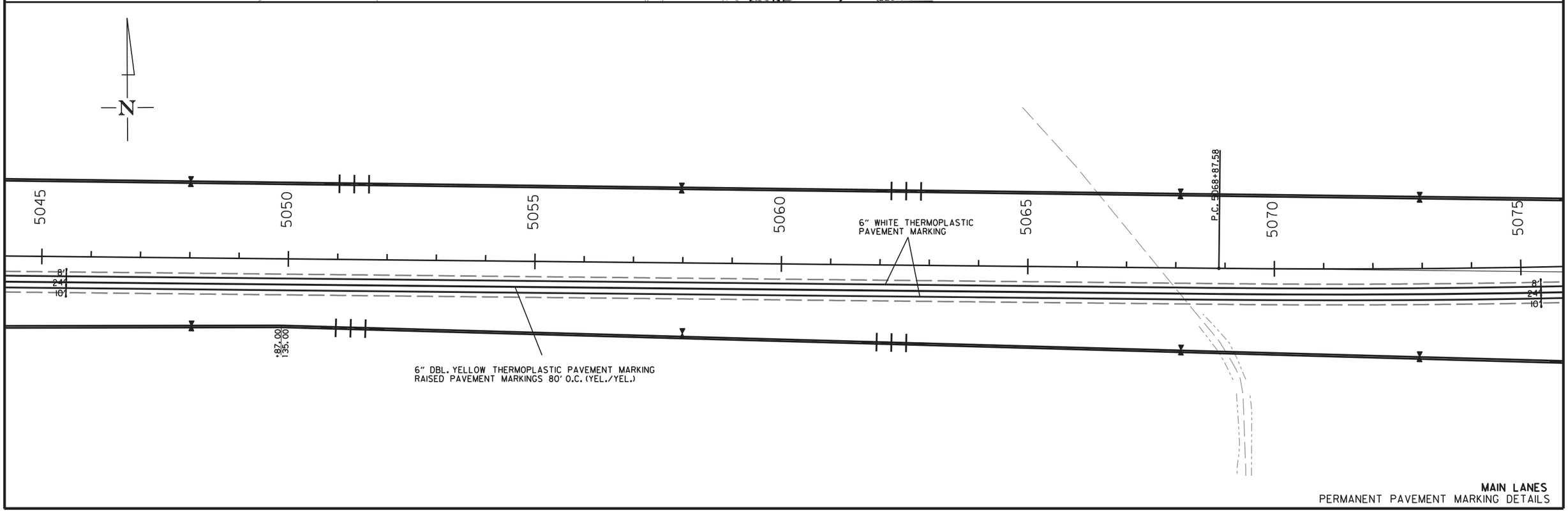
mh39735 12/7/2021
R020678.DGN

MAIN LANES
PERMANENT PAVEMENT MARKING DETAILS

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	70	368
		PERMANENT PAVEMENT MARKING DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Aug 2 2022 9:01 AM
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MAIN LANES
PERMANENT PAVEMENT MARKING DETAILS

mh39735 12/7/2021
RO20678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	71	368
		PERMANENT PAVEMENT MARKING DETAILS				

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

Aug 2 2022 9:01 AM

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N

6" WHITE THERMOPLASTIC PAVEMENT MARKING

6" DBL. YELLOW THERMOPLASTIC PAVEMENT MARKING
RAISED PAVEMENT MARKINGS 80' O.C. (YEL./YEL.)

P.I. 5086+91.29

P.T. 5104+87.58

CUTOFF CREEK

POND

16' GATE

CUTOFF CREEK RELIEF

6" DBL. YELLOW THERMOPLASTIC PAVEMENT MARKING
RAISED PAVEMENT MARKINGS 80' O.C. (YEL./YEL.)

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MAIN LANES
PERMANENT PAVEMENT MARKING DETAILS

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	72	368

PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
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6" DBL. YELLOW THERMOPLASTIC PAVEMENT MARKING
RAISED PAVEMENT MARKINGS 80' O.C. (YEL./YEL.)

6" WHITE THERMOPLASTIC
PAVEMENT MARKING

6" DBL. YELLOW THERMOPLASTIC PAVEMENT MARKING
RAISED PAVEMENT MARKINGS 80' O.C. (YEL./YEL.)

STA. 5162+18.05
END JOB 020678

150' TURN LANE

150' TURN LANE

+76.05 420' TAPER +96.05

+87.81 END C/A
815.72

+95.86 BEGIN C/A
839.38

END C/A
+25.00
925.00

GATE

P.I. 316+45.37

P.I. 316+63.64

P.C. 314+23.13

P.I. 308+66.27

P.I. 307+65.40

P.C. 306+62.12

P.I. 304+82.56

P.I. 303+43.52

P.C. 301+97.83

N 16°18'40" E

N 73°00'00" E

MAIN LANES
PERMANENT PAVEMENT MARKING DETAILS

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	73	368
		PERMANENT PAVEMENT MARKING DETAILS				

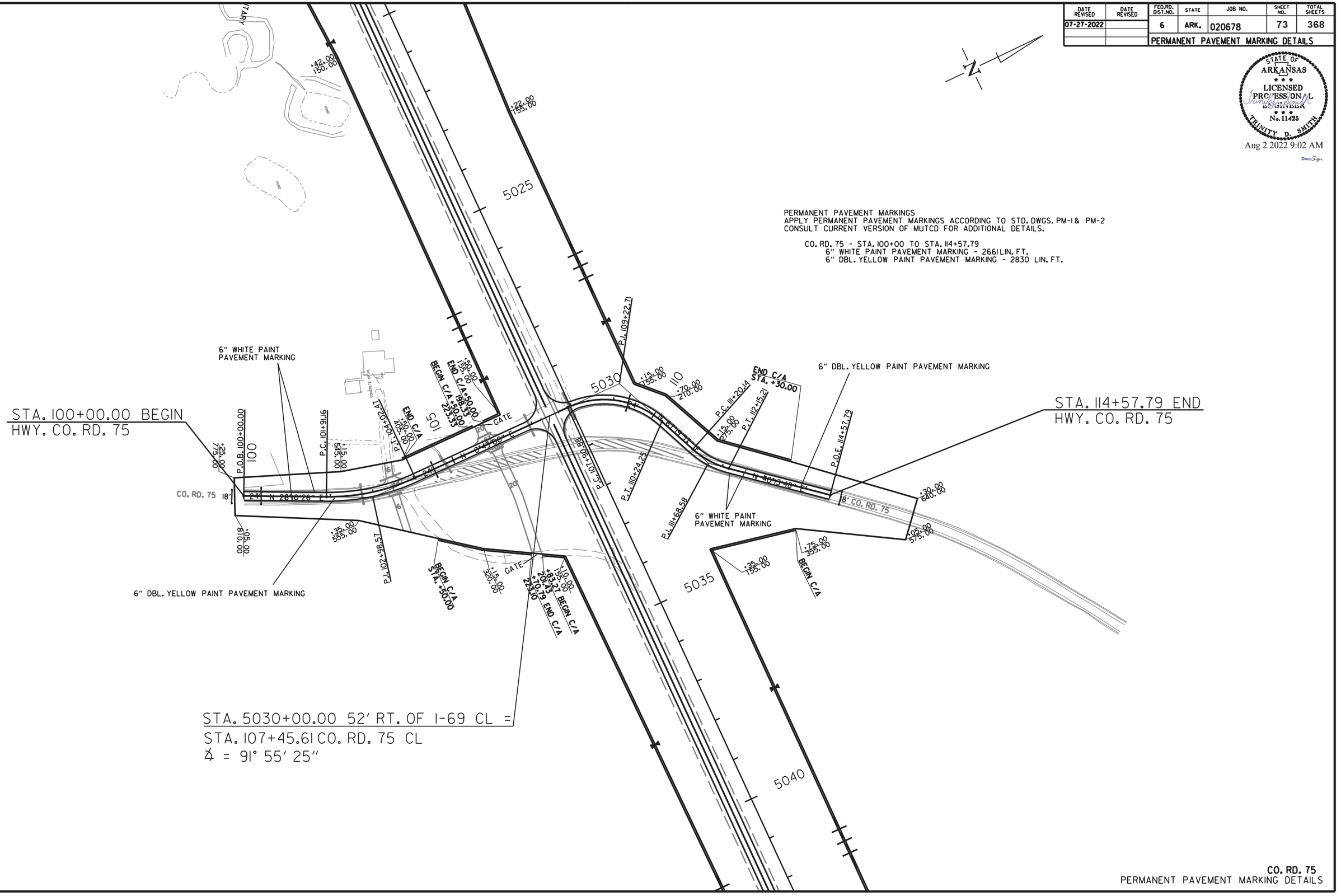
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
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PERMANENT PAVEMENT MARKINGS
APPLY PERMANENT PAVEMENT MARKINGS ACCORDING TO STD. DWGS. PM-1 & PM-2
CONSULT CURRENT VERSION OF MUTCD FOR ADDITIONAL DETAILS.

CO. RD. 75 - STA. 100+00 TO STA. 114+57.79
6" WHITE PAINT PAVEMENT MARKING - 2661 LIN. FT.
6" DBL. YELLOW PAINT PAVEMENT MARKING - 2830 LIN. FT.



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CO. RD. 75
PERMANENT PAVEMENT MARKING DETAILS

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	74	368
		PERMANENT PAVEMENT MARKING DETAILS				

PERMANENT PAVEMENT MARKINGS
APPLY PERMANENT PAVEMENT MARKINGS ACCORDING TO STD. DWGS. PM-1 & PM-2
CONSULT CURRENT VERSION OF MUTCD FOR ADDITIONAL DETAILS.

HWY. 293 - STA. 301+00.00 TO STA. 330+14.77
6" WHITE PAINT PAVEMENT MARKING - 5653 LIN. FT.
6" DBL. YELLOW PAINT PAVEMENT MARKING - 6130 LIN. FT.
RAISED PAVEMENT MARKERS 80' O.C. (YEL/YEL) - 18 EACH

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STA. 330+14.77
END HWY. 293 INTERIM

STA. 301+00.00 BEGIN
HWY. 293 INTERIM

STA. 5160+57.05 52' RT.
OF I-69 CL =
STA. 312+52.59 HWY. 293 CL
Δ = 90° 00' 00"

6" WHITE PAINT PAVEMENT MARKING
6" DBL. YELLOW PAINT PAVEMENT MARKING
GATE
YIELD LINE
"ONLY" THERMOPLASTIC PAVEMENT MARKING
10" WHITE REFLECTORIZED PAINT PAVEMENT MARKING
ARROW THERMOPLASTIC PAVEMENT MARKING
CONCRETE ISLAND TYPE "B" CURB FACE (TYPICAL ALL SIDES)

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	75	368
		QUANTITIES				

STATE OF ARKANSAS
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ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		TRAFFIC DRUMS	CONSTRUCTION PROJECT INFORMATION SIGN UPDATE	BARRICADES (TYPE III)		FURNISHING & INSTALLING PRECAST CONC. BARRIER	RELOCATING PRECAST CONCRETE BARRIER
										RIGHT	LEFT		
			LIN. FT. - EACH			NO.	SQ. FT.		EACH			LIN. FT.	
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"	1	1	1	1	16.0						
G20-2	END ROAD WORK	48"x24"	5	5	5	5	40.0						
R11-2	ROAD CLOSED	48"x30"	10	6	10	10	100.0						
R2-1	SPEED LIMIT	24"x30"	4	2	4	4	20.0						
W1-6	LARGE ARROW	48"x24"		3	3	3	24.0						
R4-1	DO NOT PASS	24"x30"	2	2	2	2	10.0						
W21-5a	RIGHT SHOULDER CLOSED	36"x36"	2	2	2	2	18.0						
W8-1	BUMP	30"x30"	2	2	2	2	12.5						
SPECIAL	CONSTRUCTION PROJECT INFORMATION SIGN	96"x48"	6	6	6	6	192.0						
	CONSTRUCTION PROJECT INFORMATION SIGN UPDATE				30	30			30				
	TRAFFIC DRUMS		103	45	103			103					
	TYPE III BARRICADE-RT. (8')		6	3	6					48			
	TYPE III BARRICADE-LT. (8')		6	3	6						48		
	TYPE III BARRICADE-RT. (16')		3	2	3					48			
	TYPE III BARRICADE-LT. (16')		2	2	2						32		
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER			40	40							40	
	RELOCATING PRECAST CONCRETE BARRIER			40	40								40
TOTALS:						**624.5**		**103**	**30**	**96**	**80**	**40**	**40**

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

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 1	END OF JOB	CONSTRUCTION PAVEMENT MARKINGS	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS	THERMOPLASTIC PAVEMENT MARKING				REFLECTORIZED PAINT PAVEMENT MARKING			
					TYPE II	6"		WORDS	ARROWS	6"		10"	YIELD LINE
					(YELLOW/YELLOW)	WHITE	YELLOW			WHITE	YELLOW	WHITE	
	LIN. FT. - EACH		LIN. FT.	LIN. FT.	EACH	LIN. FT.		EACH		LIN. FT.			
CONSTRUCTION PAVEMENT MARKINGS	5491		5491										
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS		5491		5491									
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW)		604			604								
THERMOPLASTIC PAVEMENT MARKING WHITE (6")		87460				87460							
THERMOPLASTIC PAVEMENT MARKING YELLOW (6")		87670					87670						
THERMOPLASTIC PAVEMENT MARKING (WORDS)		2						2					
THERMOPLASTIC PAVEMENT MARKING (ARROWS)		2							2				
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10")		577										577	
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (YIELD LINE)		22											22
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")		8314								8314			
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")		8960									8960		
TOTALS:			**5491**	**5491**	**604**	**87460**	**87670**	**2**	**2**	**8314**	**8960**	**577**	**22**

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

NOTE: THE 6" YELLOW STRIPING QUANTITY HAS BEEN ESTIMATED BASED ON A DOUBLE YELLOW CENTERLINE STRIPE FOR THE ENTIRE PROJECT.
THE PROJECT MUST BE MARKED FOR PASSING/NO PASSING ZONES PRIOR TO THE PLACEMENT OF ANY FINAL STRIPING.
CONTACT THE MAINTENANCE DIVISION AFTER THE FINAL LIFT OF SURFACE COURSE HAS BEEN PLACED TO SCHEDULE THE ZONING OF THE PROJECT.

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	76	368
		QUANTITIES				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
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SIGNS AND DEVICES LEFT IN PLACE

SIGN NUMBER	DESCRIPTION	SIGN SIZE	END OF JOB	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED LEFT IN PLACE		TRAFFIC DRUMS LEFT IN PLACE	BARRICADES (TYPE III) LEFT IN PLACE	
								RIGHT	LEFT
			LIN. FT. - EACH		NO.	SQ. FT.	EACH	LIN. FT.	
R11-2	ROAD CLOSED	48"x30"	1	1	1	10.0			
	TRAFFIC DRUMS		5	5			5		
	TYPE III BARRICADE-RT. (8')		1	1				8	
	TYPE III BARRICADE-LT. (8')		1	1					8
TOTALS:						10.0	5	8	8

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

EROSION CONTROL MATTING

STATION	STATION	LOCATION	LENGTH	CLASS 3
			LIN. FT.	SQ. YD.
4765+50.00	4768+00.00	MAIN LANES LT	250.00	222.22
4765+50.00	4768+50.00	MAIN LANES RT	300.00	266.67
4785+40.00	4787+70.00	MAIN LANES LT	230.00	204.44
4829+69.00	4835+83.00	MAIN LANES RT	614.00	545.78
4884+40.00	4889+00.00	MAIN LANES RT	460.00	408.89
4977+00.00	4981+70.00	MAIN LANES LT	470.00	417.78
4983+33.00	4984+88.00	MAIN LANES RT	155.00	137.78
5010+83.00	5015+53.00	MAIN LANES RT	470.00	417.78
5105+60.00	5108+25.00	MAIN LANES LT	265.00	235.56
5135+00.00	5138+00.00	MAIN LANES LT	300.00	266.67
5138+70.00	5151+00.00	MAIN LANES RT	1230.00	1093.33
5142+00.00	5151+00.00	MAIN LANES LT	900.00	800.00
836+94.00	838+00.00	LD LONG FRONTAGE RD. LT	106.00	94.22
837+25.00	838+19.00	LD LONG FRONTAGE RD. RT	94.00	83.56
901+50.00	902+90.00	LD LONG RD. RT	140.00	124.44
903+45.00	905+50.00	LD LONG RD. LT	205.00	182.22
903+45.00	905+50.00	LD LONG RD. RT	205.00	182.22
102+69.00	103+50.00	CO. RD. 75 LT	81.00	72.00
103+50.00	104+70.00	CO. RD. 75 LT	120.00	106.67
103+50.00	105+75.00	CO. RD. 75 RT	225.00	200.00
104+90.00	106+20.00	CO. RD. 75 LT	130.00	115.56
TOTAL:				6177.79

NOTE: AVERAGE WIDTH = 8'-0"

REMOVAL AND DISPOSAL OF CULVERTS

STATION	DESCRIPTION	PIPE CULVERTS
		EACH
4883+99	MAIN LANES RT	1
4884+37	MAIN LANES RT	1
4884+86	MAIN LANES RT	1
4885+72	MAIN LANES RT	1
4885+79	MAIN LANES RT	1
5033+68	MAIN LANES RT	1
103+46	CO. RD. 75 LT	1
103+46	CO. RD. 75 RT	1
104+82	CO. RD. 75 RT	1
107+82	CO. RD. 75 RT	1
303+18	HWY. 293 LT	1
315+00	HWY. 293 LT	1
320+86	HWY. 293 LT	2
TOTALS:		14

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

BENCH MARKS

STATION	LOCATION	BENCH MARKS
		EACH
4768+40	R.C. BOX CULVERT - PLACE IN RT HEADWALL	1
4884+13	R.C. BOX CULVERT - PLACE IN RT HEADWALL	1
4916+00	R.C. BOX CULVERT - PLACE IN RT HEADWALL	1
4982+67	R.C. BOX CULVERT - PLACE IN RT HEADWALL	1
5015+70	R.C. BOX CULVERT - PLACE IN RT HEADWALL	1
5108+25	BRIDGE END ON LT	1
5118+52	BRIDGE END ON LT	1
836+84	R.C BOX CULVERT - PLACE IN RT HEADWALL	1
TOTAL:		8

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

4" PIPE UNDERDRAIN

STATION	STATION	LOCATIONS	4" PIPE UNDERDRAINS	UNDERDRAIN OUTLET PROTECTORS
			LIN. FT.	EACH
* ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER			4000	16
TOTALS:			4000	16

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

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.
4768+70.00	4770+00.00	MAIN LANES LT	130.00	8.00	115.56	57.78	0.73
4769+15.00	4770+00.00	MAIN LANES RT	85.00	8.00	75.56	37.78	0.48
4785+40.00	4787+35.00	MAIN LANES RT	195.00	8.00	173.33	86.67	1.09
5015+86.00	5017+00.00	MAIN LANES LT	114.00	8.00	101.33	50.67	0.64
5016+29.00	5017+00.00	MAIN LANES RT	71.00	8.00	63.11	31.56	0.40
5082+50.00	5084+70.00	MAIN LANES RT	220.00	8.00	195.56	97.78	1.23
5097+85.00	5098+75.00	MAIN LANES RT	90.00	8.00	80.00	40.00	0.50
5098+00.00	5098+60.00	MAIN LANES LT	60.00	8.00	53.33	26.67	0.34
5098+95.00	5100+00.00	MAIN LANES LT	105.00	8.00	93.33	46.67	0.59
5098+95.00	5100+00.00	MAIN LANES RT	105.00	8.00	93.33	46.67	0.59
5107+25.00	5108+25.00	MAIN LANES RT	100.00	8.00	88.89	44.44	0.56
834+00.00	836+64.00	FRONTAGE RD. LT.	264.00	8.00	234.67	117.33	1.48
834+00.00	836+64.00	FRONTAGE RD. RT.	264.00	8.00	234.67	117.33	1.48
105+95.00	106+50.00	CO. RD. 75	55.00	8.00	48.89	24.44	0.31
TOTALS:					1651.56	825.79	10.42

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

CONCRETE ISLAND

STATION	LOCATION	CURB FACE TYPE	CONCRETE ISLAND
			SQ.YD.
4726+81	MAIN LANES LT - HWY. 278	B	33
4726+87	MAIN LANES RT - HWY. 278	B	10
5160+30	MAIN LANES RT - HWY. 293	B	94
5160+33	MAIN LANES LT - HWY. 293	B	44
5160+80	MAIN LANES RT - HWY. 293	B	44
5160+83	MAIN LANES LT - HWY. 293	B	94
TOTAL:			319

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07-27-2022		6	ARK.	020678	77	368
08-03-2022		QUANTITIES				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
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SOIL STABILIZATION

STATION	STATION	LOCATION / DESCRIPTION	SOIL STABILIZATION - PORTLAND CEMENT
			TON
4736+00.00	5162+18.05	TO BE USED IF AND WHERE	8189
		DIRECTED BY THE ENGINEER	
TOTAL:			**8189**

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

NOTE: SOIL BASED ON WEIGHT OF 107 POUNDS PER CUBIC FOOT
BASIS OF ESTIMATE = MIXED TO 12 INCHES OF DEPTH

NOTE: ALL WET LOCATIONS TO BE DRAINED PRIOR TO CONSTRUCTION
IF AND WHERE DIRECTED BY THE ENGINEER

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION			COMPACTED EMBANKMENT	*SELECT GRANULAR MATERIAL
			NORMAL	*UNDERCUT	TOTAL		
			CU. YD.			CU. YD.	
4726+46.95	5162+18.05	MAIN LANES	104978		104978	490855	
900+00.00	909+81.67	LD LONG RD.	678		678	6053	
800+08.44	838+57.40	LD LONG FRONTAGE RD.	2536		2536	11102	
100+00.00	114+57.79	CO. RD. 75	1192		1192	2305	
301+00.00	325+87.93	HWY. 293	2535		2535	6660	
4767+00.00	4771+00.00	UNDERCUT EXISTING CREEK AREA		6123	6123		6123
4786+50.00	4787+50.00	UNDERCUT EXISTING CREEK AREA		659	659		659
4831+00.00	4845+00.00	UNDERCUT EXISTING CREEK AREA		14036	14036		14036
4883+50.00	4884+50.00	UNDERCUT EXISTING CREEK AREA		719	719		719
5148+00.00	5148+00.00	UNDERCUT EXISTING POND ON LT.		669	669		669
TOTALS:			**111919**	**22206**	**134125**	**516975**	**22206**

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

NOTE: ALL WET LOCATIONS TO BE DRAINED PRIOR TO CONSTRUCTION
IF AND WHERE DIRECTED BY THE ENGINEER

FENCING

STATION	STATION	LOCATION	WIRE FENCE (TYPE A)	*16'-0" GATES
			LIN. FT.	EACH
4720+86	5030+15	MAIN LANES LT	30929	
4766+75	4768+05	MAIN LANES LT	195	
	4767+79	MAIN LANES LT		1
4768+15	4768+50	MAIN LANES RT	53	
4768+67	4769+52	MAIN LANES LT	167	
4769+13	4769+62	MAIN LANES RT	66	
	4881+32	MAIN LANES LT		1
	4886+05	MAIN LANES RT		1
5034+35	5108+82	MAIN LANES LT	7447	
5108+25	5108+82	MAIN LANES LT	212	
	5108+24	MAIN LANES LT		1
5113+79	5114+27	MAIN LANES LT	204	
5113+79	5118+90	MAIN LANES LT	511	
	5114+30	MAIN LANES RT		1
5118+52	5118+90	MAIN LANES LT	208	
	5118+49	MAIN LANES LT		1
5120+67	5121+09	MAIN LANES LT	208	
	5121+10	MAIN LANES RT		1
5120+67	5165+38	MAIN LANES LT	4975	
4727+62	5029+50	MAIN LANES RT	30234	
5033+10	5108+46	MAIN LANES RT	7536	
5108+25	5108+46	MAIN LANES RT	105	
5114+02	5114+27	MAIN LANES RT	91	
5114+02	5118+82	MAIN LANES RT	480	
5118+52	5118+82	MAIN LANES RT	91	
5120+85	5121+09	MAIN LANES RT	89	
5120+85	5161+80	MAIN LANES RT	4550	1
103+92	106+43	CO. RD. 75 LT	250	1
103+95	106+43	CO. RD. 75 RT	298	1
109+35	113+51	CO. RD. 75 LT	237	
112+20	114+00	CO. RD. 75 RT	204	
TOTALS:			**89340**	**10**

* DENOTES ALTERNATE BID ITEM.

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL					TEMPORARY EROSION CONTROL													
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	TEMPORARY SEEDING	MULCH COVER	WATER	WATTLE (20") DITCH CHECKS (E-1)	TRIANGULAR SILT DIKE	SAND BAG DITCH CHECKS (E-5)	ROCK DITCH CHECKS (E-6)	SILT FENCE (E-11)	DIVERSION DITCH (E-8)	PIPE FOR SLOPE DRAINS	DUMPED RIPRAP SLOPE DRAIN (E-12)	SEDIMENT BASIN (E-9)	SEDIMENT BASIN (E-14)	OBLITERATION OF SEDIMENT BASIN	*SEDIMENT REMOVAL & DISPOSAL
			ACRE	TON	ACRE	M.GAL.	ACRE	ACRE	ACRE	M.GAL.	LIN. FT.	LIN. FT.	BAG	CU.YD.	LIN. FT.	LIN. FT.	LIN. FT.	CU.YD.	CU. YD.	CU.YD.	CU.YD.	CU. YD.
ENTIRE	PROJECT	CLEARING AND GRUBBING						188.31	188.31	3841.5			154	24	85985				3189	3372	6561	9761
ENTIRE	PROJECT	STAGE 1						82.97	82.97	1692.6		4506	2508	450	16074	960	520	50				859
ENTIRE	PROJECT	STAGE 2	143.22	286.44	143.22	14608.4	143.22															
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			28.64	57.28	28.64	2921.3	28.64	54.26	54.26	1106.9	500	901	532	95	20412	192	104	10	638	674	1312	2124
TOTALS:			**171.86**	**343.72**	**171.86**	**17529.7**	**171.86**	**325.54**	**325.54**	**6641.0**	**500**	**5407**	**3194**	**569**	**122471**	**1152**	**624**	**60**	**3827**	**4046**	**7873**	**12744**

BASIS OF ESTIMATE:
LIME .....2 TONS / ACRE OF SEEDING
WATER.....102.0 M.G. / ACRE OF SEEDING
WATER.....20.4 M.G. / ACRE OF TEMPORARY SEEDING
WATTLE DITCH CHECKS.....9 LIN. FT. / LOCATION
SAND BAG DITCH CHECKS.....22 BAGS / LOCATION
ROCK DITCH CHECKS.....3 CU.YD./LOCATION

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

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

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R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	78	368
08-03-2022		QUANTITIES				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Aug 4 2022 4:11 PM
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DRIVEWAYS & TURNOUTS

STATION	SIDE	LOCATION	WIDTH	ACHM SURFACE COURSE (1/2") 220 LBS. PER SQ. YD. (PG 64-22)		AGGREGATE BASE COURSE (CLASS 7)	SIDE DRAINS 18"	STANDARD DRAWINGS
			FEET	SQ. YD.	TON	TON	LIN. FT.	
103+47	LT	CO. RD. 75	16	123.42	13.58	50.40	52	PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
103+47	RT	CO. RD. 75	16	178.13	19.59	72.74	32	PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
105+87	LT	CO. RD. 75	20	92.80	10.21	37.89	34	PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
106+00	RT	CO. RD. 75	20	541.69	59.59	221.19	32	PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
300+90	LT	HWY. 293	16	145.45	16.00	59.39	30	PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
303+93	RT	HWY. 293	20	150.41	16.55	61.42	48	PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
305+15	LT	HWY. 293	20	339.59	37.35	138.67	34	PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
900+00	LT	LD LONG RD	16	98.13	10.79	40.07		
122+30	LT	HWY. 278	20	30.07	3.31	303.35	32	PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
* ENTIRE PROJECT TEMPORARY DRIVES						60.00		
TOTALS:				**1699.69**	**186.97**	**1045.12**	**294**	

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.8% MIN. AGGR.....5.2% 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.

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
4726+47	5162+18	MAIN LANES	436	436
100+00	106+43	CO. RD. 75	7	7
109+35	114+58	CO. RD. 75	6	6
TOTALS:			**449**	**449**

NOTE: THE INTENT IS TO CLEAR AND GRUB ONLY THE AREA NEEDED TO CONSTRUCT THIS PROJECT OR 50 FT FROM ANY LANE EDGE, WHICHEVER IS FURTHER. IN ANY AREA OF THE PROJECT WHERE RIGHT-OF-WAY IS FOUND TO BE WITHIN 50 FT OF ANY LANE EDGE, THE INTENT IS TO CLEAR AND GRUB TO THE RIGHT-OF-WAY LINE ONLY.

REMOVAL AND DISPOSAL OF FENCE

STATION	STATION	LOCATION	FENCE
			LIN. FT.
5016+56	5018+34	MAIN LANES	296
5029+29	5029+78	MAIN LANES	150
5148+47	5151+77	MAIN LANES	710
5150+11	5163+35	MAIN LANES	1334
303+00	321+35	HWY. 293 LT	1742
TOTALS:			**4232**

STRUCTURES

STATION	LOCATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT (CLASS III) 24"	48"	(CLASS IV) 24"	42"	48"	FLARED END SECTIONS FOR R.C. PIPE CULVERTS 24"	42"	48"	SPAN	HEIGHT	LENGTH	CLASS S CONCRETE-ROADWAY	REINF. STEEL-ROADWAY (GRADE 60)	UNCL.EXC. FOR STR.-ROADWAY	SOLID SODDING	WATER	STD. DWG. NOS.
			LIN. FT.					EACH			LIN. FT.			CU.YD.	POUND	CU.YD.	SQ.YD.	M.GAL.	
4787+00	MAIN LANES	CONSTRUCT 48" x 100' R.C. PIPE CULVERT ON A 20° LT. FWD. SKEW		100						2							58	0.73	FES-1, FES-2, PCC-1
4818+37	MAIN LANES	CONSTRUCT DBL. 48" x 90' R.C. PIPE CULVERT ON A 20° RT. FWD. SKEW					180			4							62	0.78	FES-1, FES-2, PCC-1
4836+00	MAIN LANES	CONSTRUCT DBL. 8' x 4' x 90' R.C. BOX CULVERT									8	4	90	121.68	18048	61	20	0.25	RCB-1, RCB-2, SPECIAL DETAILS
4863+10	MAIN LANES	CONSTRUCT 42" x 118' R.C. PIPE CULVERT ON A 45° RT. FWD. SKEW				118			2								46	0.58	FES-1, FES-2, PCC-1
4884+13	MAIN LANES	CONSTRUCT DBL. 8' x 4' x 222' R.C. BOX CULVERT ON A 10° RT. FWD. SKEW									8	4	222	295.91	41567	129	22	0.28	RCB-1, RCB-2, SPECIAL DETAILS
4884+13	MAIN LANES	CONSTRUCT 24" x 14' PIPE INLET, CONNECT TO R.C. BOX CULVERT	14					1									8	0.10	FES-1, FES-2, PCC-1
4884+13	MAIN LANES	CONSTRUCT 24" x 16' PIPE INLET, CONNECT TO R.C. BOX CULVERT	16					1									8	0.10	FES-1, FES-2, PCC-1
4916+00	MAIN LANES	CONSTRUCT DBL. 8' x 4' x 88' R.C. BOX CULVERT									8	4	88	119.22	17675	59	21	0.26	RCB-1, RCB-2, SPECIAL DETAILS
4982+67	MAIN LANES	CONSTRUCT DBL. 8' x 4' x 160' R.C. BOX CULVERT ON A 45° RT. FWD. SKEW									8	4	135	186.93	26700	88	21	0.26	RCB-1, RCB-2, SPECIAL DETAILS
4993+70	MAIN LANES	CONSTRUCT DBL. 42" x 106' R.C. PIPE CULVERT ON A 55° LT. FWD. SKEW				212			4								50	0.63	FES-1, FES-2, PCC-1
5015+70	MAIN LANES	CONSTRUCT DBL. 8' x 4' x 114' R.C. BOX CULVERT									8	4	114	157.37	21594	74	19	0.24	RCB-1, RCB-2, SPECIAL DETAILS
5084+80	MAIN LANES	CONSTRUCT 48" x 130' R.C. PIPE CULVERT		130						2							58	0.73	FES-1, FES-2, PCC-1
5098+85	MAIN LANES	CONSTRUCT 48" x 88' R.C. PIPE CULVERT ON A 10° RT. FWD. SKEW					88			2							58	0.73	FES-1, FES-2, PCC-1
905+64	LD LONG RD	CONSTRUCT 24" x 80' R.C. PIPE CULVERT	74					2									16	0.20	FES-1, FES-2, PCC-1
906+93	LD LONG RD	CONSTRUCT 24" x 68' R.C. PIPE CULVERT	66					2									16	0.20	FES-1, FES-2, PCC-1
817+27	FRONTAGE RD	CONSTRUCT 42" x 56' R.C. PIPE CULVERT ON A 45° RT. FWD. SKEW				56			2								46	0.58	FES-1, FES-2, PCC-1
836+84	FRONTAGE RD	CONSTRUCT DBL. 8' x 4' x 52' R.C. BOX CULVERT ON A 10° RT. FWD. SKEW									8	4	52	77.82	10811	40	22	0.28	RCB-1, RCB-2, SPECIAL DETAILS
102+73	CO. RD. 75	CONSTRUCT 24" x 36' R.C. PIPE CULVERT			36			2									16	0.20	FES-1, FES-2, PCC-1
104+80	CO. RD. 75	CONSTRUCT 24" x 38' R.C. PIPE CULVERT			38			2									16	0.20	FES-1, FES-2, PCC-1
106+93	CO. RD. 75	CONSTRUCT 24" x 48' R.C. PIPE CULVERT			48			2									16	0.20	FES-1, FES-2, PCC-1
107+95	CO. RD. 75	CONSTRUCT 24" x 50' R.C. PIPE CULVERT			50			2									16	0.20	FES-1, FES-2, PCC-1
311+93	HWY. 293	CONSTRUCT 24" x 158' R.C. PIPE CULVERT	158					2									16	0.20	FES-1, FES-2, PCC-1
313+12	HWY. 293	CONSTRUCT 24" x 156' R.C. PIPE CULVERT	156					2									16	0.20	FES-1, FES-2, PCC-1
322+66	HWY. 293	CONSTRUCT DBL. 24" x 52' R.C. PIPE CULVERT ON A 20° LT. FWD. SKEW	104					4									18	0.23	FES-1, FES-2, PCC-1
SUBTOTALS:			**588**	**230**	**172**	**386**	**268**	**22**	**8**	**10**				**958.96**	**136395**	**451**	**665**	**8.36**	
STRUCTURES OVER 20' - 0" SPAN																			
4768+40	MAIN LANES	CONSTRUCT TRI. 9' x 5' x 123' R.C. BOX CULVERT ON A 20° RT. FWD. SKEW									9	5	124	293.10	46896	129	33	0.42	RCB-1, RCB-2, SPECIAL DETAILS
SUBTOTALS:														**293.10**	**46896**	**129**	**33**	**0.42**	
TOTALS:			**588**	**230**	**172**	**386**	**268**	**22**	**8**	**10**				**1252.06**	**183291**	**580**	**698**	**8.78**	

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

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

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

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	79	368
		QUANTITIES				

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

Aug 2 2022 9:03 AM

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COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
300+00.00	301+00.00	HWY. 293	22.00	244.44
330+14.77	331+14.77	HWY. 293	22.00	244.44
TOTAL:				488.88

NOTE: AVERAGE MILLING DEPTH 1".

STOCKPILE LOCATION : NORTHWEST CORNER OF THE INTERSECTION OF HWY. 278 & HWY. 293 (RT. 278, SEC. 15, LOG MILE 14.52)

ACHM PATCHING OF EXISTING ROADWAY

DESCRIPTION	TON
ENTIRE PROJECT - TO BE USED IF AND WHERE	20
DIRECTED BY THE ENGINEER	
TOTAL:	20

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

RUMBLE STRIPS IN ASPHALT SHOULDERS

STATION	STATION	LOCATION	* RUMBLE STRIPS IN ASPHALT SHOULDERS
			LIN.FT.
4729+24	4885+40	RIGHT OF MAIN LANES	15616
4886+60	5029+41	RIGHT OF MAIN LANES	14281
5030+61	5108+25	RIGHT OF MAIN LANES	7764
5114+27	5118+52	RIGHT OF MAIN LANES	425
5121+09	5158+96	RIGHT OF MAIN LANES	3787
4729+84	4885+34	LEFT OF MAIN LANES	15550
4886+59	5029+41	LEFT OF MAIN LANES	14282
5030+61	5108+25	LEFT OF MAIN LANES	7764
5114+27	5118+52	LEFT OF MAIN LANES	425
5121+09	5158+96	LEFT OF MAIN LANES	3787
TOTAL:			83681

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

CENTERLINE RUMBLE STRIPES IN ASPHALT ROADWAYS

STATION	STATION	LOCATION	* CENTERLINE RUMBLE STRIPES IN ASPHALT ROADWAYS
			LIN.FT.
4729+84.01	4885+34.00	HWY. 569	15550
4886+60.00	5029+38.51	HWY. 569	14279
5030+61.49	5107+86.92	HWY. 569	7725
5114+65.08	5118+13.92	HWY. 569	349
5121+47.08	5154+76.05	HWY. 569	3329
TOTAL:			41232

REMOVAL AND DISPOSAL OF ITEMS

STATION	LOCATION	BUILDINGS
		EACH
4750+27	MAIN LANES LT	1
4750+39	MAIN LANES RT	1
4751+28	MAIN LANES RT	1
4751+42	MAIN LANES RT	1
4751+76	MAIN LANES RT	1
5152+23	MAIN LANES LT	1
TOTAL:		6

SELECTED PIPE BEDDING

LOCATION	SELECTED PIPE BEDDING
	CU.YD.
ENTIRE PROJECT TO BE USED IF	
AND WHERE DIRECTED BY THE	160
ENGINEER	
TOTAL:	160

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

APPROACH GUTTERS AND SLABS

STATION	STATION	LOCATION	APPROACH GUTTER (TYPE F)	TYPE 1 SPECIAL APPROACH SLABS	REINFORCING STEEL-RDWY. (GR. 60)	AGGREGATE BASE CRS. (CLASS 7)
			CU.YD.	CU.YD.	POUND	TON
5107+99.92	5108+24.92	MAIN LANES LT. SIDE	4.20		210	2.74
5107+99.92	5108+24.92	MAIN LANES RT. SIDE	4.20		210	2.74
5107+86.92	5108+24.92	MAIN LANES		78.70	9882	47.29
5114+27.08	5114+52.08	MAIN LANES LT. SIDE	4.20		210	2.74
5114+27.08	5114+52.08	MAIN LANES RT. SIDE	4.20		210	2.74
5114+27.08	5114+65.08	MAIN LANES		78.70	9882	47.29
5118+26.92	5118+51.92	MAIN LANES LT. SIDE	4.20		210	2.74
5118+26.92	5118+51.92	MAIN LANES RT. SIDE	4.20		210	2.74
5118+13.92	5118+51.92	MAIN LANES		78.70	9882	47.29
5121+09.08	5121+34.08	MAIN LANES LT. SIDE	4.20		210	2.74
5121+09.08	5121+34.08	MAIN LANES RT. SIDE	4.20		210	2.74
5121+09.08	5121+47.08	MAIN LANES		78.70	9882	47.29
TOTALS:			33.60	314.80	41208	211.08

NOTE: USE T =17.5" FOR 8' SHOULDER.
NOTE: USE T =17.5" FOR 10' SHOULDER.

GUARDRAIL

STATION	STATION	LOCATION	GUARDRAIL (TYPE A)	GUARDRAIL (TYPE C)	STD. SIGN OM-3 RED DIAMOND REFLECTORIZED END OF ROAD MARKER	CHANNEL POST SIGN SUPPORT (TYPE C)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)
			LIN. FT.	LIN. FT.	SQ. FT.	EACH		EACH
	4743+60.00	RIGHT OF MAIN LANES		25	6.75	3		
	4956+15.00	RIGHT OF MAIN LANES		25	6.75	3		
	4960+36.00	LEFT OF MAIN LANES		25	6.75	3		
	5000+80.00	RIGHT OF MAIN LANES		25	6.75	3		
	5000+99.00	LEFT OF MAIN LANES		25	6.75	3		
5104+81.00	5108+25.00	RIGHT OF MAIN LANES	300				1	1
5105+81.00	5108+25.00	LEFT OF MAIN LANES	200				1	1
5114+27.00	5118+52.00	RIGHT OF MAIN LANES	325				2	
5114+27.00	5118+52.00	LEFT OF MAIN LANES	325				2	
5121+09.00	5123+53.00	RIGHT OF MAIN LANES	200				1	1
5121+09.00	5124+53.00	LEFT OF MAIN LANES	300				1	1
TOTALS:			1650	125	34	15	8	4

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	TON	TACK COAT
		GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE	50	100
DIRECTED BY THE ENGINEER		
TOTALS:	50	100

BASIS OF ESTIMATE:
ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC…25 TON/MILE
TACK COAT FOR MAINTENANCE OF TRAFFIC……....50 GAL./MILE

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QUANTITIES

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07-27-2022		6	ARK.	020678	80	368
		QUANTITIES				

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

Aug 2 2022 9:03 AM

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BASE AND SURFACING (BOX 1 OF 2)

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")									
				TON / STATION	TON	(0.05 GAL. PER SQ. YD.)			(0.17 GAL. PER SQ. YD.)			TOTAL GALLONS	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 76-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	PG 76-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	PG 76-22	TOTAL PG 64-22	TOTAL PG 76-22
			FEET			TOTAL WID. FEET	SQ.YD.	GALLON	TOTAL WID. FEET	SQ.YD.	GALLON		FEET			TON	FEET			TON	TON	FEET			TON	FEET			TON	TON	TON	TON
MAIN LANES																															
4726+49.33	4729+84.02	RIGHT MAIN LANES - 3 LANES TRANSITION	334.69	VAR.	2338.42	VAR	4116.47	205.82				205.82	VAR.	2065.59	550.00	568.04	VAR.	2050.88	385.00		394.79					VAR.	2604.84	220.00		286.53		286.53
4729+84.02	5107+86.92	RIGHT MAIN LANES	37802.90	352.50	133255.22	56.98	239334.36	11966.72				11966.72	28.67	120423.24	550.00	33116.39	28.31	118911.12	385.00		22890.39					42.00	176413.53	220.00		19405.49		19405.49
5114+65.08	5118+13.92	RIGHT MAIN LANES	348.84	352.50	1229.66	56.98	2208.55	110.43				110.43	28.67	1111.25	550.00	305.59	28.31	1097.30	385.00		211.23					42.00	1627.92	220.00		179.07		179.07
5121+47.08	5154+76.05	RIGHT MAIN LANES	3328.97	352.50	11734.62	56.98	21076.08	1053.80				1053.80	28.67	10604.62	550.00	2916.27	28.31	10471.46	385.00		2015.76					42.00	15535.19	220.00		1708.87		1708.87
5154+76.05	5158+96.05	RIGHT MAIN LANES - 3 LANES TRANSITION	420.00	VAR.	2155.25	VAR.	3216.41	160.82				160.82	VAR.	1616.14	550.00	444.44	VAR.	1600.27	385.00		308.05					VAR.	2238.79	220.00		246.27		246.27
5158+96.05	5162+18.05	RIGHT MAIN LANES - HWY. 293 INTERSECTION	322.00	145.14	467.35	64.00	2289.78	114.49				114.49	32.00	1144.89	550.00	314.84	32.00	1144.89	385.00		220.39					32.00	1144.89	220.00		125.94		125.94
LD LONG RD. AND LD LONG FRONTAGE RD.																															
900+00.00	905+29.57	LD LONG RD.	529.57	123.75	655.34																				24.00	1412.19	220.00	155.34		155.34	
905+29.57	906+10.59	LD LONG RD. TURNOUT	81.02	VAR.	150.16																				VAR.	313.86	220.00	34.52		34.52	
906+52.59	906+95.31	LD LONG RD. TURNOUT	42.72	VAR.	83.34																				VAR.	174.04	220.00	19.14		19.14	
906+95.31	909+81.67	LD LONG RD	286.36	123.75	354.37																				24.00	763.63	220.00	84.00		84.00	
800+08.44	800+41.09	LD LONG FRONTAGE RD. TURNOUT	32.65	VAR.	70.03																										
800+41.09	837+47.53	LD LONG FRONTAGE RD.	3706.44	131.25	4864.70																										
837+47.53	838+45.45	LD LONG FRONTAGE RD. TURNOUT	97.92	VAR.	219.38																										
CO. RD. 75																															
100+00.00	106+80.00	CO. RD. 75	680.00	123.75	841.50																				24.00	1813.33	220.00	199.47		199.47	
106+80.00	107+23.61	CO. RD. 75 INTERSECTION	43.61	VAR.	82.06																				VAR.	172.16	220.00	18.94		18.94	
107+65.61	108+14.79	CO. RD. 75 INTERSECTION	49.18	VAR.	93.80																				VAR.	149.79	220.00	16.48		16.48	
108+14.79	114+57.79	CO. RD. 75	643.00	123.75	795.71																				24.00	1714.67	220.00	188.61		188.61	
HWY. 293																															
300+00.00	301+00.00	TRANSITION	100.00	43.75	43.75				28.00	311.11	52.89	52.89													28.00	311.11	220.00	34.22		34.22	
301+00.00	302+70.00	NOTCH AND WIDEN	170.00	87.50	148.75				30.00	566.67	96.33	96.33													30.00	566.67	220.00	62.33		62.33	
302+70.00	310+84.59	FULL DEPTH	814.59	173.00	1409.24	44.71	4046.70	202.34				202.34					22.46	2032.85	330.00	335.42		22.25	2013.85	220.00	221.52	30.00	2715.30	220.00	298.68		520.20	
310+84.59	312+36.59	HWY. 293 INTERSECTION	152.00	VAR.	1347.10	VAR.	2437.74	121.89				121.89					VAR.	1224.55	330.00	202.05		VAR.	1213.19	220.00	133.45	VAR.	1671.90	220.00	183.91		317.36	
312+68.59	314+20.59	HWY. 293 INTERSECTION	152.00	VAR.	1306.10	VAR.	2437.70	121.89				121.89					VAR.	1224.53	330.00	202.05		VAR.	1213.17	220.00	133.45	VAR.	1671.90	220.00	183.91		317.36	
314+20.59	327+10.59	FULL DEPTH	1290.00	173.00	2231.70	44.71	6408.43	320.42				320.42					22.46	3219.27	330.00	531.18		22.25	3189.17	220.00	350.81	30.00	4300.00	220.00	473.00		823.81	
327+10.59	330+14.77	NOTCH AND WIDEN	304.18	87.50	266.16				30.00	1013.93	172.37	172.37													30.00	1013.93	220.00	111.53		111.53	
330+14.77	331+14.77	TRANSITION	100.00	43.75	43.75				28.00	311.11	52.89	52.89													28.00	311.11	220.00	34.22		34.22	
ADDITIONAL FOR SUPERELEVATION - MAIN LANES																															
4727+40.11	4730+90.11	MAIN LANES - SUPER TRANSITION	350.00	96.50	337.75																										
4730+90.11	4778+52.61	MAIN LANES - MAX SUPER	4762.50	193.00	9191.63																										
4778+52.61	4782+02.61	MAIN LANES - SUPER TRANSITION	350.00	96.50	337.75																										
4916+13.85	4919+63.85	MAIN LANES - SUPER TRANSITION	350.00	96.50	337.75																										
4919+63.85	5001+88.85	MAIN LANES - MAX SUPER	8225.00	193.00	15874.25																										
5001+88.85	5005+38.85	MAIN LANES - SUPER TRANSITION	350.00	96.50	337.75																										
5104+75.00	5108+25.00	MAIN LANES - SUPER TRANSITION	350.00	96.50	337.75																										
5108+25.00	5121+02.00	MAIN LANES - MAX SUPER	1277.00	193.00	2464.61																										
5121+02.00	5124+52.00	MAIN LANES - SUPER TRANSITION	350.00	96.50	337.75																										
SUBTOTALS (BOX 1 OF 2):					**195744.45**		**287572.22**	**14378.62**		**2202.82**	**374.48**	**14753.10**		**136965.73**		**37665.57**		**142977.12**		**1270.70**	**26040.61**		**7629.38**		**839.23**		**218640.75**		**2098.30**	**21952.17**	**2937.53**	**21952.17**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.8% MIN. AGGR.....5.2% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.8% MIN. AGGR.....4.2% ASPHALT BINDER
ACHM BASE COURSE (1 1/2").....96.5% MIN. AGGR.....3.5% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22
MAXIMUM NUMBER OF GYRATIONS = 205 FOR PG 76-22
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

mh39735 1/24/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	81	368
		QUANTITIES				



Aug 2 2022 9:03 AM

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BASE AND SURFACING (BOX 2 OF 2)

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 76-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	PG 76-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	PG 76-22	TOTAL PG 64-22	TOTAL PG 76-22
			FEET			FEET			FEET				FEET			TON	FEET			TON	TON	FEET			TON	FEET			TON	TON	TON	TON
ADDITIONAL FOR SUPERELEVATION - HWY. 293																															
301+00.00	303+31.00	HWY. 293 - SUPER TRANSITION	231.00	24.25	56.02																										
303+31.00	303+41.34	HWY. 293 - MAX SUPER	10.34	48.50	5.01																										
303+41.34	305+72.34	HWY. 293 - SUPER TRANSITION	231.00	24.25	56.02																										
305+72.34	307+64.19	HWY. 293 - SUPER TRANSITION	191.85	28.00	53.72																										
307+64.19	309+02.27	HWY. 293 - MAX SUPER	138.08	56.00	77.32																										
309+02.27	310+91.27	HWY. 293 - SUPER TRANSITION	189.00	28.00	52.92																										
314+23.13	315+43.38	HWY. 293 - SUPER TRANSITION	120.25	9.00	10.82																										
315+43.38	317+68.64	HWY. 293 - MAX SUPER	225.26	18.00	40.55																										
317+68.64	318+88.64	HWY. 293 - SUPER TRANSITION	120.00	9.00	10.80																										
324+05.55	327+05.55	HWY. 293 - SUPER TRANSITION	300.00	33.25	99.75																										
327+05.55	327+14.77	HWY. 293 - MAX SUPER	9.22	66.50	6.13																										
327+14.77	330+14.77	HWY. 293 - SUPER TRANSITION	300.00	33.25	99.75																										
ADDITIONAL FOR GUARDRAIL WIDENING																															
5104+38.17	5104+71.17	GUARDRAIL TAPER RT.	33.00	95.38	31.48																					2.75	10.08	220.00		1.11	1.11
5104+71.17	5104+81.17	GUARDRAIL WIDENING RT.	10.00	116.50	11.65																					5.50	6.11	220.00		0.67	0.67
5104+81.17	5107+81.17	GUARDRAIL TAPER RT.	300.00	110.88	332.64																					4.50	150.00	220.00		16.50	16.50
5107+81.17	5108+24.92	GUARDRAIL WIDENING RT.	43.75	105.25	46.05																					3.50	17.01	220.00		1.87	1.87
5105+38.17	5105+71.17	GUARDRAIL TAPER LT.	33.00	95.38	31.48																					2.75	10.08	220.00		1.11	1.11
5105+71.17	5105+81.17	GUARDRAIL WIDENING LT.	10.00	116.50	11.65																					5.50	6.11	220.00		0.67	0.67
5105+81.17	5107+81.17	GUARDRAIL TAPER LT.	200.00	110.88	221.76																					4.50	100.00	220.00		11.00	11.00
5107+81.17	5108+24.92	GUARDRAIL WIDENING LT.	43.75	105.25	46.05																					3.50	17.01	220.00		1.87	1.87
5114+27.08	5118+51.92	GUARDRAIL WIDENING LT.	424.84	116.50	494.94																					5.50	259.62	220.00		28.56	28.56
5114+27.08	5118+51.92	GUARDRAIL WIDENING RT.	424.84	116.50	494.94																					5.50	259.62	220.00		28.56	28.56
5121+09.05	5121+52.80	GUARDRAIL WIDENING RT	43.75	105.25	46.05																					3.50	17.01	220.00		1.87	1.87
5121+52.80	5123+52.80	GUARDRAIL TAPER RT.	200.00	110.88	221.76																					4.50	100.00	220.00		11.00	11.00
5123+52.80	5123+62.80	GUARDRAIL WIDENING RT	10.00	116.50	11.65																					5.50	6.11	220.00		0.67	0.67
5123+62.80	5123+95.80	GUARDRAIL TAPER RT.	33.00	95.38	31.48																					2.75	10.08	220.00		1.11	1.11
5121+09.05	5121+52.80	GUARDRAIL WIDENING LT	43.75	105.25	46.05																					3.50	17.01	220.00		1.87	1.87
5121+52.80	5124+52.80	GUARDRAIL TAPER LT.	300.00	110.88	332.64																					4.50	150.00	220.00		16.50	16.50
5124+52.80	5124+62.80	GUARDRAIL WIDENING LT	10.00	116.50	11.65																					5.50	6.11	220.00		0.67	0.67
5124+62.80	5124+95.80	GUARDRAIL TAPER LT.	33.00	95.38	31.48																					2.75	10.08	220.00		1.11	1.11
SUBTOTALS (BOX 1 OF 2):					**195744.45**		**287572.22**	**14378.62**		**2202.82**	**374.48**	**14753.10**		**136965.73**		**37665.57**		**142977.12**		**1270.70**	**26040.61**		**7629.38**		**839.23**		**218640.75**		**2098.30**	**21952.17**	**2937.53**	**21952.17**
SUBTOTALS (BOX 2 OF 2):					**3024.21**																					**76.00**	**1152.04**	**3960.00**		**126.72**		**126.72**
TOTALS:					**198768.66**		**287572.22**	**14378.62**		**2202.82**	**374.48**	**14753.10**		**136965.73**		**37665.57**		**142977.12**		**1270.70**	**26040.61**		**7629.38**		**839.23**	**76.00**	**219792.79**	**3960.00**	**2098.30**	**22078.89**	**2937.53**	**22078.89**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.8% MIN. AGGR.....5.2% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.8% MIN. AGGR.....4.2% ASPHALT BINDER
ACHM BASE COURSE (1 1/2").....96.5% MIN. AGGR.....3.5% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22
MAXIMUM NUMBER OF GYRATIONS = 205 FOR PG 76-22
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

mh39735 1/24/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	020678	82	368
		B7577 & B7578 - QUANTITIES - 64987				

SCHEDULE OF BRIDGE QUANTITIES - JOB NO. 020678

BRIDGE NO.	NAME PLATE TITLE	UNIT OF STRUCTURE / ITEM NO. / ITEM / UNIT	SP, SS, & 210 (2) UNCLASSIFIED EXCAVATION CU. YD.	SP, SS, & 802 CLASS S CONCRETE-BRIDGE CU. YD.	SP, SS, & 802 CLASS S(AE) CONCRETE-BRIDGE CU. YD.	SS & 802 PRESTRESSED CONCRETE GIRDERS (TYPE IV) LIN. FT.	803 CLASS 2 PROTECTIVE SURFACE TREATMENT SQ. YD.	SS & 804 REINFORCING STEEL-BRIDGE (GRADE 60) POUND	SS & 804 EPOXY COATED REINFORCING STEEL (GRADE 60) POUND	SS & 805 (1) STEEL SHELL PILING (18" DIA.) LIN. FT.	SS & 805 (1) STEEL SHELL PILING (24" DIA.) LIN. FT.	SS & 805 PILE ENCASEMENT LIN. FT.	SP, SS & 807 STRUCTURAL STEEL IN BEAM SPANS (A709, GR. 50W) POUND	SS & 808 ELASTOMERIC BEARINGS CU.IN.	SS & 809 SILICONE JOINT SEALANT LIN. FT.	812 BRIDGE NAME PLATE (TYPE D) EACH	SS & 816 FILTER BLANKET SQ. YD.	SS & 816 DUMPED RIPRAP CU. YD.	SP JOB 020678 (2) SELECT GRANULAR FILL CU. YD.
B7577	CUTOFF CREEK	BENT 1	988	67.45			17.1	10,370	540	600			1,300	4,524	45	1	177	106	1,647
		BENT 2		33.40				5,940			440	41	590	7,488					
		BENT 3		33.40				5,940			440	44	590	7,488					
		BENT 4		33.40				5,940			600	37	610	9,048	45				
		BENT 5		33.40				5,940			600	33	590	7,488					
		BENT 6		33.40				5,940			600	32	590	7,488					
		BENT 7	872	67.45			17.1	10,370	540	550			1,300	4,524	45		132	82	1,454
		300'-0" PRESTRESSED CONCRETE GIRDER UNIT			487.70	1,791.0	1,687.8		121,620				3,160						
		300'-0" PRESTRESSED CONCRETE GIRDER UNIT			487.70	1,791.0	1,687.8		121,620				3,160						
		TOTALS FOR BRIDGE NO. B7577	1,860	301.90	975.40	3,582.0	3,409.8	50,440	244,320	1,150	2,680	187	11,890	48,048	135	1	309	188	3,101
B7578	CUTOFF CREEK RELIEF	BENT 1	862	67.45			17.1	10,370	540	650			1,300	4,524	45	1	130	80	1,436
		BENT 2		33.40				5,940			560	43	610	9,048					
		BENT 3		33.40				5,940			560	85	610	9,048					
		BENT 4	851	67.45			17.1	10,370	540	600			1,300	4,524	45		126	78	1,419
		285'-0" PRESTRESSED CONCRETE GIRDER UNIT			430.60	1,521.0	1,434.6		106,460				3,160						
		TOTALS FOR BRIDGE NO. B7578	1,713	201.70	430.60	1,521.0	1,468.8	32,620	107,540	1,250	1,120	128	6,980	27,144	90	1	256	158	2,855
		TOTALS FOR JOB NO. 020678	3,573	503.60	1,406.00	5,103.0	4,878.6	83,060	351,860	2,400	3,800	315	18,870	75,192	225	2	565	346	5,956

(1) Steel sheel piles shall conform to ASTM A252, Grade 3 (Fy = 45,000 psi)

(2) For limits of Unclassified Excavation and Select Granular Backfill, see Dwg. Nos. 64988 & 65004.
For additional information, see SP JOB 020678 "Sand Drainage Blanket".

CHRIS WILLIAMS
DESIGN SECTION SUPERVISOR

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
Aug 5 2022 1:33 PM
BRIDGE ENGINEER

SCHEDULE OF BRIDGE QUANTITIES
HWY. 278 - HWY. 293 (S)
DREW COUNTY

ROUTE 569 SEC. 7
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: NAC DATE: 1/12/2022 FILENAME: b020678_q1.dgn
CHECKED BY: CMW DATE: 6/10/2022 SCALE: No Scale
DESIGNED BY: --- DATE: ---
BRIDGE NO. B7577 & B7578 DRAWING NO. 64987

PRINT DATE: 8/4/2022

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	83	368
08-03-2022		SUMMARY OF QUANTITIES				

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

Aug 4 2022 4:12 PM

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SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM	QUANTITY	UNIT
201	CLEARING	449	STATION
201	GRUBBING	449	STATION
202	REMOVAL AND DISPOSAL OF FENCE	4232	LIN. FT.
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS	14	EACH
202	REMOVAL AND DISPOSAL OF BUILDINGS	6	EACH
SP, SS, & 210	UNCLASSIFIED EXCAVATION	134125	CU. YD.
SP & 210	COMPACTED EMBANKMENT	516975	CU. YD.
SP & 210	SOIL STABILIZATION - PORTLAND CEMENT	8189	TON
SP & 302	SELECTED MATERIAL (CLASS SM-3)	22206	CU. YD.
SP, SS, & 303	AGGREGATE BASE COURSE (CLASS 7)	200025	TON
SS & 401	TACK COAT	14853	GAL.
SP, SS, & 405	MINERAL AGGREGATE IN ACHM BASE COURSE (1 1/2")	36348	TON
SP, SS, & 405	ASPHALT BINDER (PG 76-22) IN ACHM BASE COURSE (1 1/2")	1318	TON
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	26164	TON
SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")	53	TON
SP, SS, & 406	ASPHALT BINDER (PG 76-22) IN ACHM BINDER COURSE (1")	1094	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	23892	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")	163	TON
SP, SS, & 407	ASPHALT BINDER (PG 76-22) IN ACHM SURFACE COURSE (1/2")	1148	TON
SP & 412	COLD MILLING ASPHALT PAVEMENT	489	SQ. YD.
SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	50	TON
SP, SS, & 415	ACHM PATCHING OF EXISTING ROADWAY	20	TON
SP, SS, & 504	APPROACH SLABS	314.80	CU. YD.
SP, SS, & 504	APPROACH GUTTERS	33.60	CU. 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	659	SQ. FT.
SP, SS, & 604	SIGNS LEFT IN PLACE	10	SQ. FT.
SP, SS, & 604	CONSTRUCTION PROJECT INFORMATION SIGN UPDATE	30	EACH
SS & 604	BARRICADES	176	LIN. FT.
SP, SS, & 604	BARRICADES LEFT IN PLACE	16	LIN. FT.
SS & 604	TRAFFIC DRUMS	103	EACH
SP, SS, & 604	TRAFFIC DRUMS LEFT IN PLACE	5	EACH
SS & 604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	40	LIN. FT.
SS & 604	RELOCATING PRECAST CONCRETE BARRIER	40	LIN. FT.
604	CONSTRUCTION PAVEMENT MARKINGS	5491	LIN. FT.
604	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	5491	LIN. FT.
SP, SS, & 605	CONCRETE DITCH PAVING (TYPE B)	1652	SQ. YD.
SS & 606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	588	LIN. FT.
SS & 606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV)	172	LIN. FT.
SS & 606	42" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV)	386	LIN. FT.
SS & 606	48" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	230	LIN. FT.
SS & 606	48" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV)	268	LIN. FT.
SP, SS, & 606	18" SIDE DRAIN	294	LIN. FT.
SS & 606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	22	EACH
SS & 606	42" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	8	EACH
SS & 606	48" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	10	EACH
606	SELECTED PIPE BEDDING	160	CU. YD.
SS & 611	UNDERDRAIN OUTLET PROTECTORS	16	EACH
SS & 611	4" PIPE UNDERDRAINS	4000	LIN. FT.
SS & 617	GUARDRAIL (TYPE A)	1650	LIN. FT.
SS & 617	GUARDRAIL (TYPE C)	125	LIN. FT.
SS & 617	GUARDRAIL TERMINAL (TYPE 2)	4	EACH
SS & 617	THRIE BEAM GUARDRAIL TERMINAL	8	EACH
SS & 619	WIRE FENCE (TYPE A)	89340	LIN. FT.
* SS & 619	16' STEEL GATES (ALTERNATE NO. 1)	10	EACH
* SS & 619	16' ALUMINUM GATES (ALTERNATE NO. 2)	10	EACH
620	LIME	344	TON
620	SEEDING	171.86	ACRE
SS & 620	MULCH COVER	497.40	ACRE
620	WATER	24189.9	M. GAL.
621	TEMPORARY SEEDING	325.54	ACRE
621	SILT FENCE	122471	LIN. FT.
621	SAND BAG DITCH CHECKS	3194	BAG
621	DIVERSION DITCH	1152	LIN. FT.
621	SEDIMENT BASIN	7873	CU. YD.

* DENOTES ALTERNATE BID ITEMS.

mh39735 1/24/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	84	368
08-03-2022		SUMMARY OF QUANTITIES & REVISIONS				

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

Aug 4 2022 4:12 PM

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SUMMARY OF QUANTITIES (BOX 2 OF 2)

ITEM NUMBER	ITEM	QUANTITY	UNIT
621	OBLITERATION OF SEDIMENT BASIN	7873	CU. YD.
621	SEDIMENT REMOVAL AND DISPOSAL	12744	CU. YD.
621	PIPE FOR SLOPE DRAINS	624	LIN. FT.
621	ROCK DITCH CHECKS	569	CU. YD.
621	WATTLE (20")	500	LIN. FT.
621	TRIANGULAR SILT DIKE	5407	LIN. FT.
623	SECOND SEEDING APPLICATION	171.86	ACRE
624	SOLID SODDING	1524	SQ. YD.
626	EROSION CONTROL MATTING (CLASS 3)	6178	SQ. YD.
SP, SS, & 632	CONCRETE ISLAND	319	SQ. YD.
635	ROADWAY CONSTRUCTION CONTROL	1.00	LUMP SUM
642	RUMBLE STRIPS IN ASPHALT SHOULDERS	83681	LIN. FT.
SP & 642	CENTERLINE RUMBLE STRIPES IN ASPHALT ROADWAYS	41232	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")	8314	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10")	577	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")	8960	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING (YIELD LINE)	22	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (6")	87460	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING YELLOW (6")	87670	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING (WORDS)	2	EACH
719	THERMOPLASTIC PAVEMENT MARKING (ARROWS)	2	EACH
721	RAISED PAVEMENT MARKERS (TYPE II)	604	EACH
SS & 729	CHANNEL POST SIGN SUPPORT (TYPE C)	15	EACH
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY	451	CU. YD.
SP, SS, & 802	CLASS S CONCRETE-ROADWAY	958.96	CU. YD.
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)	177603	POUND
SS & 816	DUMPED RIPRAP	60	CU. YD.
	STRUCTURES OVER 20' SPAN		
SP	SELECT GRANULAR FILL	5956	CU. YD.
636	BRIDGE CONSTRUCTION CONTROL	1.00	LUMP SUM
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE	3573	CU. YD.
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY	129	CU. YD.
SP, SS, & 802	CLASS S CONCRETE-ROADWAY	293.10	CU. YD.
SP, SS, & 802	CLASS S CONCRETE-BRIDGE	503.60	CU. YD.
SP, SS, & 802	CLASS S(AE) CONCRETE-BRIDGE	1406.00	CU. YD.
SS & 802	PRESTRESSED CONCRETE BEAMS (TYPE IV)	5103.0	LIN. FT.
803	CLASS 2 PROTECTIVE SURFACE TREATMENT	4878.6	SQ. YD.
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)	46896	POUND
SS & 804	REINFORCING STEEL-BRIDGE (GRADE 60)	83060	POUND
SS & 804	EPOXY COATED REINFORCING STEEL (GRADE 60)	351860	POUND
SS & 805	STEEL SHELL PILING (18" DIAMETER)	2400	LIN. FT.
SS & 805	STEEL SHELL PILING (24" DIAMETER)	3800	LIN. FT.
SS & 805	PILE ENCASEMENT	315	LIN. FT.
SP, SS, & 807	STRUCTURAL STEEL IN BEAM SPANS (A709, GR. 50W)	18870	POUND
SS & 808	ELASTOMERIC BEARINGS	75192	CU. IN.
SS & 809	SILICONE JOINT SEALANT	225	LIN. FT.
812	BRIDGE NAME PLATE (TYPE D)	2	EACH
SS & 816	FILTER BLANKET	565	SQ. YD.
SS & 816	DUMPED RIPRAP	346	CU. YD.

REVISIONS

DATE	REVISION	SHEET NUMBER
7/27/2022	REVISED UTILITY ADJUSTMENTS SPECIAL PROVISION. REMOVED PROSECUTION AND PROGRESS WITH BID SCHEDULE SPECAL PROVISION. REVISED THE PLANS TO INCLUDE DESIGN CHANGES FOR LD LONG ROAD AND FRONTAGE ROAD. REVISED AGGREGATE BASE COURSE (CLASS 7) QUANTITIES ON COUNTY ROAD 75. ADDED DRIVEWAY ON HWY. 278 AT STA. 122+30. INCLUDED QUANTITY CORRECTIONS FOR ALL IMPACTED QUANTITIES.	ALL SHEETS
8/3/2022	REPLACED SELECTED MATERIAL (CLASS SM-3) WITH SELECT GRANULAR FILL AT ALL BRIDGE ENDS. ADDED NOTE TO CLEARING AND GRUBBING QUANTITY BOX. REVISED PLANS TO CORRELATE WITH RIGHT OF WAY. INCLUDED QUANTITY CORRECTIONS FOR ALL IMPACTED QUANTITIES.	36, 38-40, 47, 49-51, 59-60, 67, 77, 78, 82-84, 104-105, & 116-118

mh39735 1/24/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	85	368
		SURVEY CONTROL DETAILS				

SURVEY CONTROL COORDINATES

Project Name: s020678
Date: 10/24/2018
Coordinate System: ARKANSAS STATE PLANE - SOUTH ZONE BASED ON GPS CONTROL.
PROJECTED TO GROUND.
Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
1	1666170.9904	1405581.9903	195.930	CTL	ARDOT STD. MON. STAMPED PN: 16
2	1671528.6465	1410865.0887	194.137	CTL	ARDOT STD. MON. STAMPED PN: 2
3	1671505.4091	1410018.6639	191.792	CTL	ARDOT STD. MON. STAMPED PN: 3
4	1672222.1762	1410866.6272	192.970	CTL	ARDOT STD. MON. STAMPED PN: 4
5	1673847.4069	1414742.9224	187.937	CTL	ARDOT STD. MON. STAMPED PN: 5
6	1674586.2614	1414741.3188	187.550	CTL	ARDOT STD. MON. STAMPED PN: 6
7	1675220.2946	1414738.6291	188.225	CTL	ARDOT STD. MON. STAMPED PN: 7
8	1675503.5857	1415786.0198	188.222	CTL	ARDOT STD. MON. STAMPED PN: 8
9	1676050.3941	1415795.0152	187.690	CTL	ARDOT STD. MON. STAMPED PN: 9
10	1676855.9306	1415859.2894	185.803	CTL	ARDOT STD. MON. STAMPED PN: 10
11	1680835.4332	1430191.0657	173.085	CTL	ARDOT STD. MON. STAMPED PN: 11
12	1681929.8496	1430558.3685	175.576	CTL	ARDOT STD. MON. STAMPED PN: 12
13	1681353.4061	1430472.5301	173.882	CTL	ARDOT STD. MON. STAMPED PN: 13
14	1682129.4222	1443747.8504	181.019	CTL	ARDOT STD. MON. STAMPED PN: 14
15	1682894.1471	1443807.0300	181.089	CTL	ARDOT STD. MON. STAMPED PN: 15
16	1683604.1431	1443802.9090	179.886	CTL	ARDOT STD. MON. STAMPED PN: 16
17	1682468.8412	1448856.0332	185.237	CTL	ARDOT STD. MON. STAMPED PN: 17
18	1682938.7855	1448426.1831	186.754	CTL	ARDOT STD. MON. STAMPED PN: 18
19	1683426.4956	1447845.5356	182.230	CTL	ARDOT STD. MON. STAMPED PN: 19
20	1681003.6959	1453139.5463	174.848	CTL	ARDOT STD. MON. STAMPED PN: 20
21	1681597.9863	1453629.7100	174.590	CTL	ARDOT STD. MON. STAMPED PN: 21
22	1681770.6848	1454087.7598	162.635	CTL	RBR ALUM CAP 14' N OF C/L SR-277
23	1663986.9847	1404886.8744	191.605	CTL	ARDOT STD. MON. STAMPED PN: 23
24	1664720.0573	1405143.1451	193.039	CTL	ARDOT STD. MON. STAMPED PN: 24
25	1665447.5917	1405352.2850	194.085	CTL	ARDOT STD. MON. STAMPED PN: 25
26	1666923.8872	1405804.4419	194.222	CTL	ARDOT STD. MON. STAMPED PN: 26
27	1667637.5724	1406119.4753	193.555	CTL	ARDOT STD. MON. STAMPED PN: 27
28	1668192.7137	1406466.4457	192.763	CTL	ARDOT STD. MON. STAMPED PN: 28
29	1668682.0800	1406846.3516	191.733	CTL	ARDOT STD. MON. STAMPED PN: 29
30	1672095.5515	1411450.9993	191.041	CTL	ARDOT STD. MON. STAMPED PN: 30
31	1672620.1783	1412056.7428	189.012	CTL	ARDOT STD. MON. STAMPED PN: 31
32	1673134.6964	1412654.4674	189.207	CTL	ARDOT STD. MON. STAMPED PN: 32
33	1673638.6711	1413249.9514	186.886	CTL	ARDOT STD. MON. STAMPED PN: 33
34	1676403.4049	1416516.1509	185.678	CTL	ARDOT STD. MON. STAMPED PN: 34
35	1676930.9070	1417103.3126	183.477	CTL	ARDOT STD. MON. STAMPED PN: 35
36	1677428.0676	1417692.3068	183.889	CTL	ARDOT STD. MON. STAMPED PN: 36
37	1677937.4399	1418307.7984	183.863	CTL	ARDOT STD. MON. STAMPED PN: 37
38	1678446.0192	1418901.0155	186.032	CTL	ARDOT STD. MON. STAMPED PN: 38
39	1678822.1610	1419331.0370	186.398	CTL	ARDOT STD. MON. STAMPED PN: 39
40	1679189.0620	1419770.9940	188.307	CTL	ARDOT STD. MON. STAMPED PN: 40
41	1681801.5978	1428720.6314	174.924	CTL	ARDOT STD. MON. STAMPED PN: 41
42	1681772.6752	1429588.2835	174.966	CTL	ARDOT STD. MON. STAMPED PN: 42
43	1681746.6486	1430347.0457	173.490	CTL	ARDOT STD. MON. STAMPED PN: 43
44	1681756.4865	1431178.2354	176.125	CTL	ARDOT STD. MON. STAMPED PN: 44
45	1681735.8389	1431938.8723	176.969	CTL	ARDOT STD. MON. STAMPED PN: 45
46	1681716.0369	1432740.8492	178.615	CTL	ARDOT STD. MON. STAMPED PN: 46
47	1681687.2445	1433512.7077	178.794	CTL	ARDOT STD. MON. STAMPED PN: 47
48	1681663.6619	1434327.2298	182.265	CTL	ARDOT STD. MON. STAMPED PN: 48
49	1681636.0737	1435104.5549	182.688	CTL	ARDOT STD. MON. STAMPED PN: 49
50	1681661.6274	1435769.0063	178.324	CTL	ARDOT STD. MON. STAMPED PN: 50
51	1681744.4534	1436610.2424	179.508	CTL	ARDOT STD. MON. STAMPED PN: 51
52	1681752.8190	1437429.7553	169.171	CTL	ARDOT STD. MON. STAMPED PN: 52
53	1681880.0402	1438132.4945	171.354	CTL	ARDOT STD. MON. STAMPED PN: 53
54	1681977.8576	1438788.6506	147.198	CTL	ARDOT STD. MON. STAMPED PN: 54
55	1681992.0314	1439504.6986	145.525	CTL	ARDOT STD. MON. STAMPED PN: 55
56	1682014.8632	1440378.9708	146.628	CTL	ARDOT STD. MON. STAMPED PN: 56
57	1681993.8315	1441190.4419	145.169	CTL	ARDOT STD. MON. STAMPED PN: 57
58	1682177.0972	1441653.4933	161.782	CTL	ARDOT STD. MON. STAMPED PN: 58
59	1682391.4950	1442032.1637	181.534	CTL	ARDOT STD. MON. STAMPED PN: 59
60	1682903.6192	1442534.8644	181.094	CTL	ARDOT STD. MON. STAMPED PN: 60
61	1682970.9503	1443237.9402	183.606	CTL	ARDOT STD. MON. STAMPED PN: 61
62	1681008.6749	1454060.0565	153.973	CTL	ARDOT STD. MON. STAMPED PN: 62
63	1680797.6366	1454767.1666	153.300	CTL	ARDOT STD. MON. STAMPED PN: 63
64	1680672.8605	1455233.3974	151.899	CTL	ARDOT STD. MON. STAMPED PN: 64
65	1680385.5812	1456064.6730	152.283	CTL	ARDOT STD. MON. STAMPED PN: 65
66	1680248.5740	1456863.8669	152.782	CTL	ARDOT STD. MON. STAMPED PN: 66
67	1680029.9725	1457622.5952	152.042	CTL	ARDOT STD. MON. STAMPED PN: 67
68	1679901.4816	1458407.5844	150.624	CTL	ARDOT STD. MON. STAMPED PN: 68
69	1679583.5237	1459076.6045	153.176	CTL	ARDOT STD. MON. STAMPED PN: 69
70	1679332.3243	1459830.8797	149.716	CTL	ARDOT STD. MON. STAMPED PN: 70
71	1679092.2230	1460592.1143	151.512	CTL	ARDOT STD. MON. STAMPED PN: 71
72	1679077.0481	1461374.3885	152.270	CTL	ARDOT STD. MON. STAMPED PN: 72
73	1678942.6355	1462173.1920	150.918	CTL	ARDOT STD. MON. STAMPED PN: 73
74	1678691.9508	1462903.2244	151.107	CTL	ARDOT STD. MON. STAMPED PN: 74
75	1678300.9724	1463601.3449	149.295	CTL	ARDOT STD. MON. STAMPED PN: 75
76	1678013.5327	1464370.5032	147.746	CTL	ARDOT STD. MON. STAMPED PN: 76
77	1677809.9717	1465233.7393	149.658	CTL	ARDOT STD. MON. STAMPED PN: 77
78	1677543.9016	1466022.9572	147.986	CTL	ARDOT STD. MON. STAMPED PN: 78
79	1677443.6450	1466811.2914	148.650	CTL	ARDOT STD. MON. STAMPED PN: 79
80	1677442.0060	1467657.8336	149.919	CTL	ARDOT STD. MON. STAMPED PN: 80
81	1677472.2442	1468351.9287	149.754	CTL	ARDOT STD. MON. STAMPED PN: 81
82	1677506.5921	1469143.8405	149.819	CTL	ARDOT STD. MON. STAMPED PN: 82
83	1677570.1332	1469954.9302	150.315	CTL	ARDOT STD. MON. STAMPED PN: 83
84	1677620.5504	1470746.0465	150.964	CTL	ARDOT STD. MON. STAMPED PN: 84
85	1677641.2161	1471557.6331	149.857	CTL	ARDOT STD. MON. STAMPED PN: 85
86	1677664.7059	1472119.3390	149.810	CTL	ARDOT STD. MON. STAMPED PN: 86
87	1677654.7225	1472549.6446	143.012	CTL	ARDOT STD. MON. STAMPED PN: 87
88	1677645.9508	1473401.4206	150.794	CTL	ARDOT STD. MON. STAMPED PN: 88
89	1677778.1600	1474178.0236	149.204	CTL	ARDOT STD. MON. STAMPED PN: 89
90	1677789.6598	1475053.9317	149.844	CTL	ARDOT STD. MON. STAMPED PN: 90
91	1678031.9385	1475510.8599	151.043	CTL	ARDOT STD. MON. STAMPED PN: 91
92	1677892.5422	1476309.9853	148.534	CTL	ARDOT STD. MON. STAMPED PN: 92
93	1678078.2244	1477071.7229	148.208	CTL	ARDOT STD. MON. STAMPED PN: 93
94	1678076.9940	1477814.3836	151.465	CTL	ARDOT STD. MON. STAMPED PN: 94
95	1677751.0797	1478553.5219	151.030	CTL	ARDOT STD. MON. STAMPED PN: 95
96	1677749.0965	1479393.3598	150.322	CTL	ARDOT STD. MON. STAMPED PN: 96
97	1677798.7785	1480375.8165	148.482	CTL	ARDOT STD. MON. STAMPED PN: 97
98	1677942.9894	1481146.1307	145.869	CTL	ARDOT STD. MON. STAMPED PN: 98
99	1677925.6324	1481949.5442	145.123	CTL	ARDOT STD. MON. STAMPED PN: 99
100	1665604.9408	1404469.9247	194.412	GPS	ARDOT GPS *220021
101	1665899.6156	1406783.2603	193.986	GPS	ARDOT GPS *220021A
102	1674819.4986	1415455.4181	186.527	GPS	ARDOT GPS *220031
103	1673271.1872	1415600.3165	178.222	GPS	ARDOT GPS *220031A
104	1678195.9806	1423084.8143	186.499	GPS	ARDOT GPS *220030
105	1680123.3221	1423025.7137	188.664	GPS	ARDOT GPS *220030A
106	1680287.4959	1429890.8547	167.749	GPS	ARDOT GPS *220040
107	1681435.3603	1430501.0194	172.184	GPS	ARDOT GPS *220040A
108	1677676.0312	1434840.3030	174.757	GPS	ARDOT GPS *220023
109	1678384.5760	1436525.4388	172.408	GPS	ARDOT GPS *220023A
110	1686635.9387	1443777.6587	182.360	GPS	ARDOT GPS *220036
111	1684296.0573	1443771.4907	182.163	GPS	ARDOT GPS *220036A
112	1681800.0528	1456411.5554	157.628	GPS	ARDOT GPS *220037
113	1681782.2772	1454782.4790	155.831	GPS	ARDOT GPS *220037A
114	1676765.7710	1463199.7928	155.792	GPS	ARDOT GPS *220038
115	1678047.3048	1463273.0012	153.864	GPS	ARDOT GPS *220038A
116	1677559.1293	1475407.7735	150.951	GPS	ARDOT GPS *220039
117	1678948.3337	1477043.2967	152.245	GPS	ARDOT GPS *220039A
118	1679185.3894	1487659.6564	145.679	GPS	ARDOT GPS *210050
119	1680090.9276	1487082.8841	144.753	GPS	ARDOT GPS *210050A
151	1677904.4611	1482751.0854	145.372	CTL	ARDOT STD. MON. STAMPED PN: 151
152	1677890.7008	1483554.8642	145.294	CTL	ARDOT STD. MON. STAMPED PN: 152
153	1677980.9707	1484339.8071	146.426	CTL	ARDOT STD. MON. STAMPED PN: 153
154	1677929.1450	1484915.1358	143.379	CTL	ARDOT STD. MON. STAMPED PN: 154
155	1677893.0612	1485605.1032	145.472	CTL	ARDOT STD. MON. STAMPED PN: 155
156	1677922.7334	1486398.5060	146.839	CTL	ARDOT STD. MON. STAMPED PN: 156
157	1677973.8640	1486794.3698	150.137	CTL	ARDOT STD. MON. STAMPED PN: 157
158	1677723.8096	1487256.0177	149.539	CTL	ARDOT STD. MON. STAMPED PN: 158
159	1678393.0673	1486826.6762	149.638	CTL	ARDOT STD. MON. STAMPED PN: 159
160	1678141.6837	1487583.9074	145.205	CTL	ARDOT STD. MON. STAMPED PN: 160
161	1677993.9960	1488218.4995	145.165	CTL	ARDOT STD. MON. STAMPED PN: 161
162	1678665.8162	1487794.9786	145.969	CTL	ARDOT STD. MON. STAMPED PN: 162
163	1678215.9368	1488202.6413	144.987	CTL	ARDOT STD. MON. STAMPED PN: 163
164	1677514.0192	1488646.6287	145.023	CTL	ARDOT STD. MON. STAMPED PN: 164
165	1668863.7534	1406758.0635	191.607	CTL	ARDOT STD. MON. STAMPED PN: 165
166	1669235.8068	1407150.6426	188.520	CTL	ARDOT STD. MON. STAMPED PN: 166
167	1669658.9359	1407609.9312	185.072	CTL	ARDOT STD. MON. STAMPED PN: 167
168	1670099.8655	1408306.6244	184.638	CTL	ARDOT STD. MON. STAMPED PN: 168
169	1670561.2353	1408961.4555	189.863	CTL	ARDOT STD. MON. STAMPED PN: 169
170	1670989.4693	1409600.8659	189.499	CTL	ARDOT STD. MON. STAMPED PN: 170
171	1681102.1907	1422459.2248	185.641	CTL	ARDOT STD. MON. STAMPED PN: 171
172	1681356.9503	1423046.9794	182.170	CTL	ARDOT STD. MON. STAMPED PN: 172
173	1681652.9894	1423828.9157	177.982	CTL	ARDOT STD. MON. STAMPED PN: 173
174	1681871.9672	1424613.2859	175.883	CTL	ARDOT STD. MON. STAMPED PN: 174
175	1682013.1582	1425243.9049	176.013	CTL	ARDOT STD. MON. STAMPED PN: 175
176	1682142.6893	1426037.3234	177.927	CTL	ARDOT STD. MON. STAMPED PN: 176
177	1682170.3490	1426820.4256	175.636	CTL	ARDOT STD. MON. STAMPED PN: 177
178	1682177.0850	1427578.9955	176.689	CTL	ARDOT STD. MON. STAMPED PN: 178
179	1682180.6788	1427999.9100	176.920	CTL	ARDOT STD. MON. STAMPED PN: 179
180	1682098.8632	1428673.1397	172.098	CTL	ARDOT STD. MON. STAMPED PN: 180
181	1682212.8562	1444069.2537	181.481	CTL	ARDOT STD. MON. STAMPED PN: 181
182	1682562.4353	1444796.2068	175.496	CTL	ARDOT STD. MON. STAMPED PN: 182
183	1682695.7854	1445416.6899	173.962	CTL	ARDOT STD. MON. STAMPED PN: 183
184	1682768.4001	1446122.8062	173.092	CTL	ARDOT STD. MON. STAMPED PN: 184
185	1682748.4993	1446589.9661	182.082	CTL	ARDOT STD. MON. STAMPED PN: 185
186	1682661.6363	1447380.6844	186.393	CTL	ARDOT STD. MON. STAMPED PN: 186
187	1682592.9541	1448131.1542	188.142	CTL	ARDOT STD. MON. STAMPED PN: 187
188	1682274.3091	1449653.2568	181.520	CTL	ARDOT STD. MON. STAMPED PN: 188
189	1682045.1126	1450411.4911	181.125	CTL	ARDOT STD. MON. STAMPED PN: 189
190	1681832.0300	1451142.4131	177.821	CTL	ARDOT STD. MON. STAMPED PN: 190
191	1681718.2200	1451541.4380	173.122	CTL	ARDOT STD. MON. STAMPED PN: 191
192	1681564.7822	1451983.9536	152.871	CTL	ARDOT STD. MON. STAMPED PN: 192
193	1681474.8807	1452366.0625	164.435	CTL	ARDOT STD. MON. STAMPED PN: 193
194	1681316.1558	1452836.2923	177.389	CTL	ARDOT STD. MON. STAMPED PN: 194
195	1681159.7956	1453331.7004	181.624	CTL	ARDOT STD. MON. STAMPED PN: 195
900	1674154.0605	1425038.4700	182.612	TBM	5/8" REBAR W/2" ALUM CAP
901	1676779.3379	1425077.1563	187.151	TBM	5/8"REBAR W/2" ALUM CAP
903	1669233.3028	1414779.3511	186.699	TBM	5/8" REBAR W/2" ALUM CAP
904	1670710.1581	1416314.7769	178.681	TBM	5/8" REBAR W/2" ALUM CAP
905	1678097.3704	1429168.1283	173.625	TBM	5/8" REBAR W/2" ALUM CAP
906	1681986.6231	1483531.9661	151.768	TBM	5/8" REBAR W/2" ALUM CAP
907	1681327.0928	1481225.0711	152.334	TBM	5/8" REBAR W/2" ALUM CAP
908	1678947.1744	1480404.6340	147.679	TBM	5/8" REBAR W/2" ALUM CAP
959	1665549.5717	1404320.5741	196.876	BM	NGS/ARDOT BM Q 351
960	1665588.1111	1408386.5435	194.403	BM	NGS/ARDOT BM R 351
961	1666813.4120	1414175.1722	171.542	BM	NGS/ARDOT BM S 351
962	1668201.2568	1421052.5714	165.134	BM	NGS/ARDOT BM T 351
963	1670732.4614	1425059.2943	181.269	BM	NGS/ARDOT BM U 351
964	1675005.6205	1429811.1306	174.032	BM	NGS/ARDOT BM V 351
965	1676282.9236	1431306.5990	159.334	BM	NGS/ARDOT BM SLOTH
966	1678105.7260	1435793.4671	173.494	BM	NGS/ARDOT BM W 351
967	1678887.4787	1440149.7073	153.815	BM	NGS/ARDOT BM X 351
968	1679305.8813	1441111.4621	153.235	BM	NGS/ARDOT BM Y 351
969	1680257.7004	1443921.7928	182.608	BM	NGS/ARDOT BM WESLEY
970	1682087.0342	1443854.9137	184.888	BM	NGS/ARDOT BM Z 351
971	1685055.4356	1443752.8155	182.624	BM	NGS/ARDOT BM JEFFREY
972	1687383.3678	1443265.6117	184.416	BM	NGS BM SELMA RM 1
973	1684435.3447	1446963.0946	177.555	BM	NGS/ARDOT BM A 352
974	1680385.1432	1450023.0346	174.931	BM	NGS/ARDOT BM B 352
975	1681097.6128	1453374.9474	186.250	BM	NGS/ARDOT BM C 352
976	1681751.3427	1454867.7916	156.014	BM	NGS/ARDOT BM D 352
977	1681652.3127	1456631.9464	156.122	BM	NGS/ARDOT BM E 352
978	1680466.9222	1459082.3741	152.959	BM	NGS/ARDOT BM F 352
979	1684214.3672	1462740.5697	153.861	BM	NGS/ARDOT BM G 352
980	1686184.7116	1465687.6037	153.395	BM	NGS/ARDOT BM H 352
981	1686894.0259	1469482.1646	157.372	BM	NGS/ARDOT BM J 352
982	1687079.3003	1469739.7833	157.293	BM	NGS/ARDOT BM K 352
983	1687257.9982	1471090.7869	152.487	BM	NGS/ARDOT BM L 352
984	1688919.1027	1474677.3580	154.931	BM	NGS/ARDOT BM M 352
985	1692428.5441	1478471.6639	152.378	BM	NGS/ARDOT BM N 352

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

Aug 2 2022 9:04 AM
DocuSign

mh39735 6/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	86	368
		SURVEY CONTROL DETAILS				

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

Aug 2 2022 9:04 AM

DocuSign

986	1688582.6111	1480792.0166	151.217	BM	NGS/ARDOT BM P 352
987	1686530.0167	1480684.8221	151.335	BM	NGS/ARDOT BM Q 352
988	1683347.6362	1484707.5599	151.778	BM	NGS/ARDOT BM R 352
989	1679986.3149	1485571.2997	152.752	BM	NGS/ARDOT BM S 352
990	1678099.0055	1488445.3123	141.893	BM	NGS/ARDOT BM T 352
991	1679181.2487	1487662.4885	145.387	BM	NGS/ARDOT BM MILHOLEN
992	1680006.5771	1487388.2437	144.524	BM	NGS/ARDOT BM U 352
993	1680318.6482	1487158.3046	144.987	BM	NGS/ARDOT BM V 352
994	1683148.9391	1485334.0022	149.455	BM	NGS/ARDOT BM W 352
995	1684711.3476	1484539.4626	151.762	BM	NGS/ARDOT BM X 352
996	1688581.8251	1482507.1855	148.123	BM	NGS/ARDOT BM Y 352
997	1691754.9740	1480479.1735	150.082	BM	NGS/ARDOT BM Z 352
998	1693097.7990	1479807.0785	147.982	BM	NGS/ARDOT BM A 353
999	1693053.7753	1479703.4071	148.287	BM	NGS/ARDOT BM FARRON

---

*Note - Rebar and Cap - Standard - 5/8" Rebar with 2" Aluminum Cap stamped
*(standard markings common to all caps), or as indicated
(other markings indicated in the point description of the individual point).
USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT
A PROJECT CAF OF 0.9999388978 HAS BEEN USED TO COMPUTE THE ABOVE GROUND COORDINATES.
THIS CAF IS INTENDED FOR USE WITHIN THE PROJECT LIMITS.
GRID DISTANCE = GROUND DISTANCE X CAF.
GRID COORDINATES ARE STORED UNDER FILE NAME s020678gi.ctl
HORIZONTAL DATUM: NAD 83 (2011)
VERTICAL DATUM: NAVD 88 POSITIONAL ACCURACY THIRD ORDER, UNLESS SPECIFIED OTHERWISE
AT A SPECIFIC POINT.

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

BASIS OF BEARING:
ARKANSAS STATE PLANE GRID BEARINGS - 0302-SOUTH ZONE
DETERMINED FROM GPS CONTROL POINTS:
210050 - 210050A
220021 - 220021A
220022 - 220022A
220023 - 220023A
220030 - 220030A
220031 - 220031A
220036 - 220036A
220037 - 220037A
220038 - 220038A
220039 - 220039A
220040 - 220040A
CONVERGENCE ANGLE: 0-14-40 RIGHT AT PN: 183 LT: N 33-41-00 LG: W 091-33-46
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

I-69 MAIN LANES

POINT NO.	STATION	NORTHING	EASTING
8001	4708+34.30	1664559.7645	1405227.3913
8002	4714+94.74	1665145.6789	1405531.9792
8003	4727+40.11	1666266.7508	1406074.3266
8004	4779+40.11	1670283.6918	1409305.9437
8005	4851+73.92	1674755.4939	1414991.9743
8006	4863+73.92	1675521.6607	1415915.3700
8007	4918+76.35	1679144.8531	1420056.5259
8008	5002+73.35	1681978.6225	1427765.3660
8009	5068+87.58	1681884.4030	1434375.9255
8010	5104+87.58	1682115.4424	1437964.7965

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	87	368
		SURVEY CONTROL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
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HWY. 278

POINT NO.	STATION	NORTHING	EASTING
8027	94+70.72	1665602.8295	1404532.0669
8028	100+01.32	1665904.1824	140968.7869
8039	100+61.95	1665938.6142	1405018.6854
8041	104+68.69	1666103.2017	1405388.1110
8042	105+95.63	1666132.6650	1405511.5841
8044	108+19.19	1666174.7682	1405731.0640
8069	108+88.31	1666184.7431	14005799.4610
8071	112+34.33	1666157.3648	1406141.4915
8072	112+58.30	1666150.1792	1406164.3503
8074	114+10.75	1666100.0558	1406308.3047
8075	119+17.88	1665918.7749	1406781.9262
8081	119+92.20	1665893.5042	1406851.8116
8082	123+21.05	1665787.4419	1407163.0910
8084	125+64.20	1665719.4824	1407396.4681
8085	126+08.68	1665708.9821	1407439.6874

CO. RD. 75

POINT NO.	STATION	NORTHING	EASTING
8101	100+00.00	1681169.3428	1430349.8816
8103	101+91.16	1681340.8977	1430434.2003
8105	104+02.47	1681544.7020	1430483.1116
8107	107+90.88	1681933.0728	1430488.6470
8109	110+24.25	1682115.7092	1430612.1699
8111	111+20.14	1682152.6721	1430700.6493
8113	112+15.21	1682208.3314	1430776.6385
8115	114+57.79	1682393.5262	1430933.3072

HWY. 293

POINT NO.	STATION	NORTHING	EASTING
8201	300+00.00	1681656.0832	1443764.7778
8203	301+97.83	1681853.9099	1443765.7372
8205	304+82.56	1682126.2455	1443694.4405
8207	306+62.12	1682282.3371	1443605.6993
8209	308+66.27	1682474.3539	1443539.9525
8211	314+23.13	1683025.5489	1443460.6868
8213	316+63.64	1683263.3955	1443479.1682
8215	326+30.55	1684187.7153	1443762.9902
8217	327+89.77	1684344.5398	1443787.0176
8219	331+94.11	1684748.8754	1443789.4995

LD LONG RD

POINT NO.	STATION	NORTHING	EASTING
8301	900+00.00	1676805.4409	1417083.2841
8303	901+28.75	1676816.6439	1417211.5416
8305	902+55.73	1676865.6168	1417326.4255
8307	904+44.89	1676990.1696	1417468.7846
8309	905+86.26	1676981.6974	1417595.7814
8311	906+86.21	1676906.4770	1417661.5935
8313	908+55.80	1676837.8240	1417811.2028
8315	909+81.67	1676836.7641	1417937.0680

LD LONG FRONTAGE RD

POINT NO.	STATION	NORTHING	EASTING
8401	800+00.00	1674394.0533	1414744.8135
8403	804+13.75	1674646.9283	1415073.0634
8405	817+13.75	1675466.1370	1416081.4306
8407	837+47.53	1676793.7092	1417622.1540
8409	837+90.35	1676824.8870	1417651.3797
8411	838+90.35	1676878.3997	1417691.7743

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07-27-2022		6	ARK.	020678	88	368
		SURVEY CONTROL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Aug 2 2022 9:05 AM
DocuSigned by:

S 55°23'34" E 530.60'

8028 100 PI 100+

55°23'34" E 60.63'

8039

PC 100+61.95

PI 102+67.67

HWY. 278

HWY. 278
PI = 102+67.67
Δ = 21°11'10"RT.
D = 5°12'31"
T = 205.72'
L = 406.74'
PC = 100+61.95
PT = 104+68.69

PT 104+68.69

8041

N 76°34'44" E 126.94'

8042

PC 105+95.63

105

PI 107+07.48

N 17°37'00" E 758.99' SURVEY BASELINE

HWY. 278
PI = 107+07.48
Δ = 5°07'25"RT.
D = 2°17'31"
T = 111.85'
L = 223.56'
PC = 105+95.63
PT = 108+19.19

PN25 PDOARDOT STD. MON. STAMPED PN=25

8044

8043

PN26 PDOARDOT STD. MON. STAMPED PN=26

N 81°42'09" E 69.12'

8069

PN16 PDOARDOT STD. MON. STAMPED PN=16

PT 108+19.19

PC 108+88.31

HWY. 278
PI = 110+64.29
Δ = 25°44'53"RT.
D = 7°26'28"
T = 175.99'
L = 346.03'
PC = 108+88.31
PT = 112+34.33

110

PI 110+64.29

STA. 4726+46.95 I-69 CL =
STA. 111+23.52 HWY. 278 CL
Δ = 76° 19' 13"

STA. 4726+46.95
BEGIN JOB 020678

N 16°27'37" E 785.07' SURVEY BASELINE

N 23°49'03" E 780.12' SURVEY BASELINE

PN27 PDOARDOT STD. MON. STAMPED PN=27

N 32°00'21" E 654.65' SURVEY BASELINE

PN28 PDOARDOT

PI = 4753+85.67
Δ = 26°00'00"RT.
D = 0°30'00"
T = 2645.56'
L = 5200.00'
PC = 4727+40.11
PT = 4779+40.11
e = 0.020'/'
Ls = 350'

PT 4714+94.74

8002

4715

4720

4725

4730

4735

4740

4745

N 25°49'00" E 1245.37'

C.L. MEDIAN (FUTURE I-69)

8003

PC 4727+40.11

N 25°49'

1245.

PN25 PDOARDOT STD. MON. STAMPED PN=25

N 28°47'25" E 631.83' SURVEY BASELINE

PN65 PDOARDOT STD. MON. STAMPED PN=65

PN66 PDOARDOT STD. MON. STAMPED PN=66

N 47°20'48" E 624.49' SURVEY BASELINE

PN67 PDOARDOT STD. MON. STAMPED PN=67

N 57°40'15" E 824.50' SURVEY BASELINE

PN68 PDOARDOT STD. MON. STAMPED PN=68

N 54°49'58" E 80

SURVEY BASELINE

N 37°49'23" E 619.52' SURVEY BASELINE

PN28 PDOARDOT STD. MON. STAMPED PN=28

PN29 PDOARDOT STD. MON. STAMPED PN=29

PI 4753+85.67

N 25°49'00" E 1245.37'

4745

4750

4755

4760

4765

4770

4775

N 51°49'00" E 7233.81'

C.L. MEDIAN (FUTURE I-69)

PI = 4753+85.67
Δ = 26°00'00"RT.
D = 0°30'00"
T = 2645.56'
L = 5200.00'
PC = 4727+40.11
PT = 4779+40.11
e = 0.020'/'
Ls = 350'

SURVEY CONTROL DETAILS

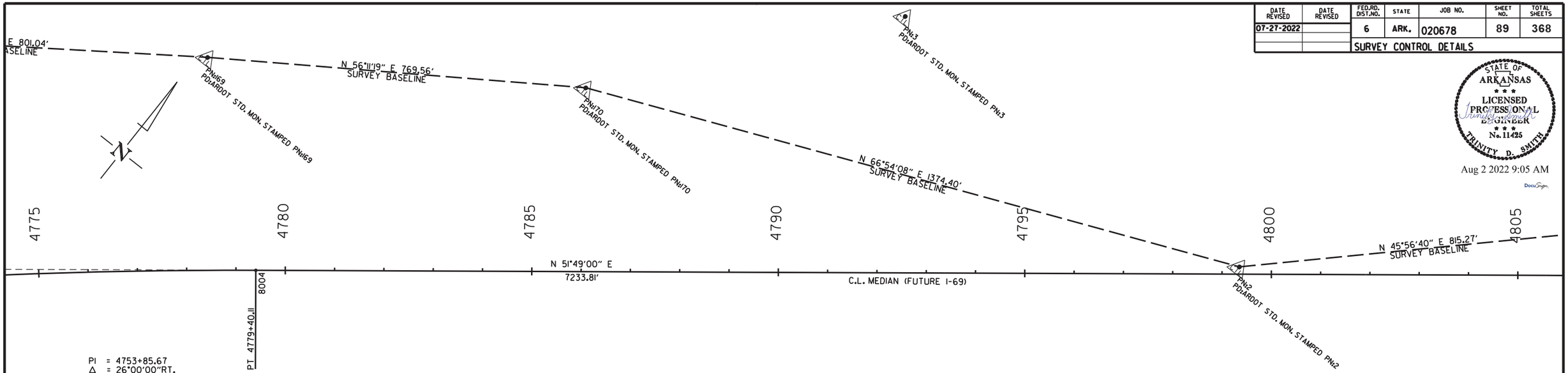
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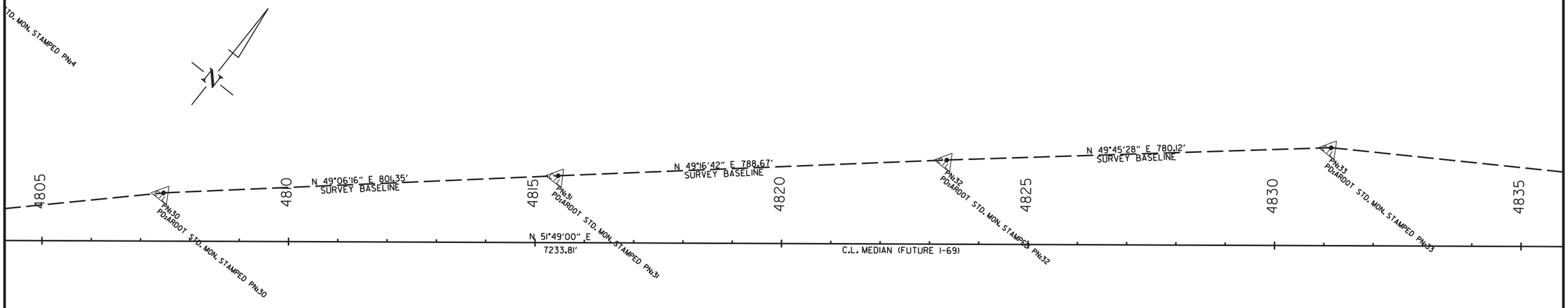
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	89	368
		SURVEY CONTROL DETAILS				

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

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07-27-2022		6	ARK.	020678	90	368

SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Aug 2 2022 9:05 AM
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N 57°34'08" E 1766.95'
SURVEY BASELINE

N 51°49'00" E
7233.81'

N 51°50'24" E 1343.51'
SURVEY BASELINE

N 01°41'35" W 634.04'
SURVEY BASELINE

PI = 4857+74.06
Δ = 3°00'00"LT.
D = 0°15'00"
T = 600.14'
L = 1200.00'
PC = 4851+73.92
PT = 4863+73.92
e = NO SUPER

POB 800+00.00

PN6
PDARDOT STD. MON. STAMPED PN6

PN7
PDARDOT STD. MON. STAMPED PN7

PC 4851+73.92

C.L. MEDIAN (FUTURE I-69)

N 48°49'00" E
5502.43'

PT 4863+73.92

PT 817+13.75

PN8
PDARDOT STD. MON. STAMPED PN8

N 52°30'00" E
413.75'

PI 4857+74.06

P.C. 804+13.75

P.I. 810+63.92

PN02
PDARDOT GPS "220031"

4835 4840 4845 4850 4855 4860 4865

8401 8403 8005 8006 8405

805 810 815

PN9
PDARDOT STD. MON. STAMPED PN9

N 63°55'02" E 802.90'
SURVEY BASELINE

PN34
PDARDOT STD. MON. STAMPED PN34

N 48°03'49" E 789.31'
SURVEY BASELINE

POB 900+00.00

PN35
PDARDOT STD. MON. STAMPED PN35

P.C. 901+28.15

P.T. 902+55.13

P.C. 904+44.89

N 49°49'58" E 770.77'
SURVEY BASELINE

PN36
PDARDOT STD. MON. STAMPED PN36

N 50°23'22" E 798.93'
SURVEY BASELINE

STA. 4886+00 52' RT. OF I-69 CL =
STA. 906+30.59 LD LONG RD CL
Δ = 90° 00' 00"

905

N 85°00'29" E
128.75'

N 48°49'00" E
189.15'

P.T. 905+34.89

P.T. 831+90.35

P.T. 901+94.44

P.I. 905+86.26

8309

411'11.00"

P.C. 906+86.21

N 37°02'52" E
67.05'

P.I. 908+55.80

P.C. 837+47.53

POE 909+81.67

S 89°31'03" E
125.87'

POE 838+57.40

P.I. 837+69.02

P.I. 907+76.42

8301 8303 8305 8307 8308 8313 8315

4865 4870 4875 4880 4885 4890 4895

P.I. 817+13.75

PN8

8405

N 49°15'00" E
2033.78'

820 825 830 835

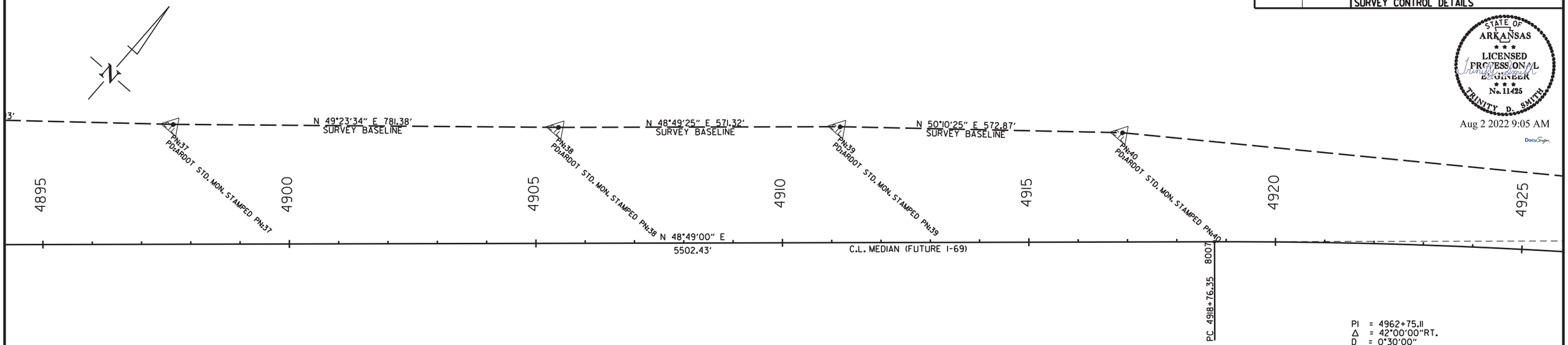
STA. 838+57.40 LD LONG FRONTAGE RD =
STA. 907+27.50 LD LONG RD CL
Δ = 90° 00'00"

SURVEY CONTROL DETAILS

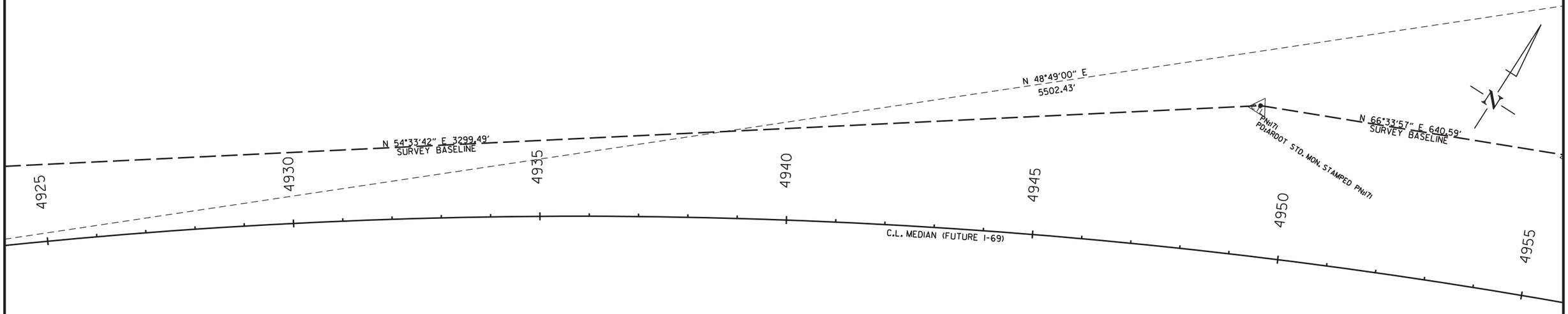
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R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	91	368
		SURVEY CONTROL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Aug 2 2022 9:05 AM
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PI = 4962+75.11
Δ = 42°00'00"RT.
D = 0°30'00"
T = 4398.76'
L = 8400.00'
PC = 4918+76.35
PT = 5002+76.35
e = 0.020'/'
Ls = 350'



PI = 4962+75.11
Δ = 42°00'00"RT.
D = 0°30'00"
T = 4398.76'
L = 8400.00'
PC = 4918+76.35
PT = 5002+76.35
e = 0.020'/'
Ls = 350'

SURVEY CONTROL DETAILS

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No. 11425
TRINITY D. SMITH

Aug 2 2022 9:05 AM
DocuSign

PI = 4962+75.11
Δ = 42°00'00"RT.
D = 0°30'00"
T = 4398.76'
L = 8400.00'
PC = 4918+76.35
PT = 5002+76.35
e = 0.020'/'
Ls = 350'

PI 4962+75.11

N 69°15'48" E 836.10'
SURVEY BASELINE

N 74°24'05" E 814.36'
SURVEY BASELINE

N 77°22'48" E 646.23'
SURVEY BASELINE

N 80°43'40" E 803.92'
SURVEY BASELINE

S 89°11'00" E
6611.23'

PN:172
PD:ARDOT STD. MON. STAMPED PN:172

PN:173
PD:ARDOT STD. MON. STAMPED PN:173

PN:174
PD:ARDOT STD. MON. STAMPED PN:174

PN:175
PD:ARDOT STD. MON. STAMPED PN:175

4955 4960 4965 4970 4975 4980 4985

C.L. MEDIAN (FUTURE I-69)

N

N 87°58'38" E 783.59'
SURVEY BASELINE

N 89°29'28" E 758.60'
SURVEY BASELINE

N 89°30'39" E 420.93'
SURVEY BASELINE

S 83°04'16" E 678.18'
SURVEY BASELINE

S 9°04'37" E 301.04'
SURVEY BASELINE

S 88°05'27" E 86
SURVEY BASELIN

PN:176
PD:ARDOT STD. MON. STAMPED PN:176

PN:177
PD:ARDOT STD. MON. STAMPED PN:177

PN:178
PD:ARDOT STD. MON. STAMPED PN:178

PN:179
PD:ARDOT STD. MON. STAMPED PN:179

PN:180
PD:ARDOT STD. MON. STAMPED PN:180

PN:41
PD:ARDOT STD. MON. STAMPED PN:41

4985 4990 4995 5000 5005 5010 5015

PT 5002+76.35

8008

S 89°11'00" E
6611.23'

C.L. MEDIAN (FUTURE I-69)

N

PI = 4962+75.11
Δ = 42°00'00"RT.
D = 0°30'00"
T = 4398.76'
L = 8400.00'
PC = 4918+76.35
PT = 5002+76.35
e = 0.020'/'
Ls = 350'

SURVEY CONTROL DETAILS

mh39735 6/14/2022
RO20678.DGN

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		SURVEY CONTROL DETAILS				

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

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STA. 5030+00.00 52' RT. OF I-69 CL =
STA. 107+45.61 CO. RD. 75 CL
Δ = 90° 00' 00"

PI = 111+68.58
Δ = 27°05'49" LT.
D = 28°30'00"
T = 48.44'
L = 95.07'
PC = 111+20.14
PT = 112+15.21
e = NO SUPER

POE 114+57.79
BHS
N 40°13'48" E
242.57'
PC 111+20.14
PT 112+15.21
BHS
PT 111
N 67°19'37" E
95.89'
PI 109+22.71
110
PT 110+24.25
PI 111+68.58
5015
5020
5025
5030
5035
5040
5045
PN:180
C.L. MEDIAN (FUTURE I-69)
BI07
PC107+90.88
PN:2
PD:ARDOT STD. MON. STAMPED PN:2
S 89°11'00" E
6611.23'
S 88°05'27" E 868.13'
SURVEY BASELINE
AMPED PN:41
PN:42
PD:ARDOT STD. MON. STAMPED PN:42
S 88°02'08" E 759.21'
SURVEY BASELINE
PN:43
PD:ARDOT STD. MON. STAMPED PN:43
N 0°49'00" E
388.41'
N 89°19'19" E 831.25'
SURVEY BASELINE
PN:44
PD:ARDOT STD. MON. STAMPED PN:44
S 88°26'42" E 760.92'
SURVEY BASELINE
PN:45
PD:ARDOT STD.
CO. RD. 75
105
BI05
PT 104+02.47

PI = 109+22.71
Δ = 66°30'37" RT.
D = 28°30'00"
T = 131.83'
L = 233.37'
PC = 107+90.88
PT = 110+24.25
e = NO SUPER

PI = 5086+91.29
Δ = 9°00'00"LT.
D = 0°15'00"
T = 1803.71'
L = 3600.00'
PC = 5068+87.58
PT = 5104+87.58
e = NO SUPER

5045
5050
5055
5060
5065
PC 5068+87.58
5070
5075
BI09
S 89°11'00" E
6611.23'
C.L. MEDIAN (FUTURE I-69)
PN:45
PD:ARDOT STD. MON. STAMPED PN:45
S 88°35'08" E 802.22'
SURVEY BASELINE
PN:46
PD:ARDOT STD. MON. STAMPED PN:46
S 87°51'49" E 772.40'
SURVEY BASELINE
PN:47
PD:ARDOT STD. MON. STAMPED PN:47
S 88°20'30" E 814.86'
SURVEY BASELINE
PN:48
PD:ARDOT STD. MON. STAMPED PN:48
S 87°58'02" E 777.81'
SURVEY BASELINE

SURVEY CONTROL DETAILS

mh39735 6/14/2022
RD020678.DGN

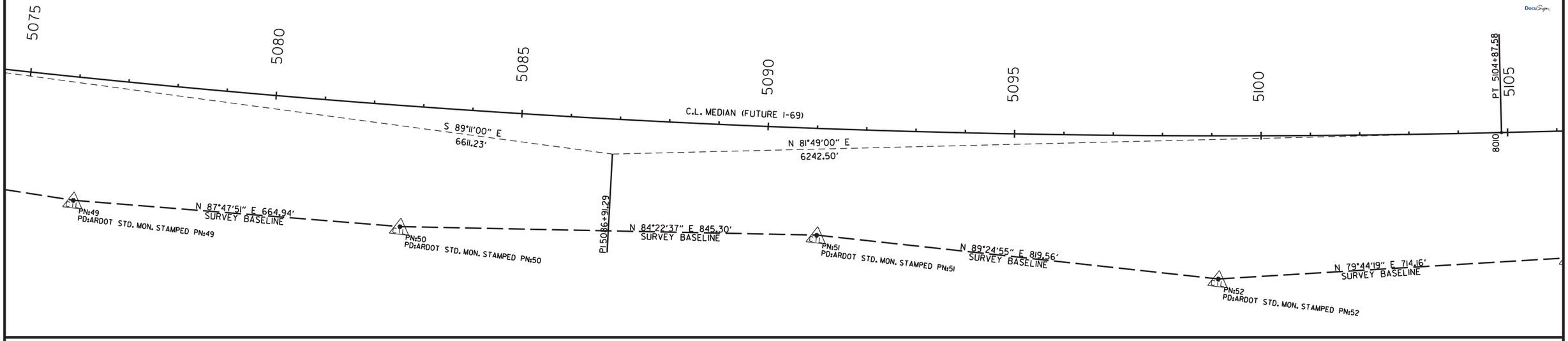
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No. 11425
TRINITY D. SMITH

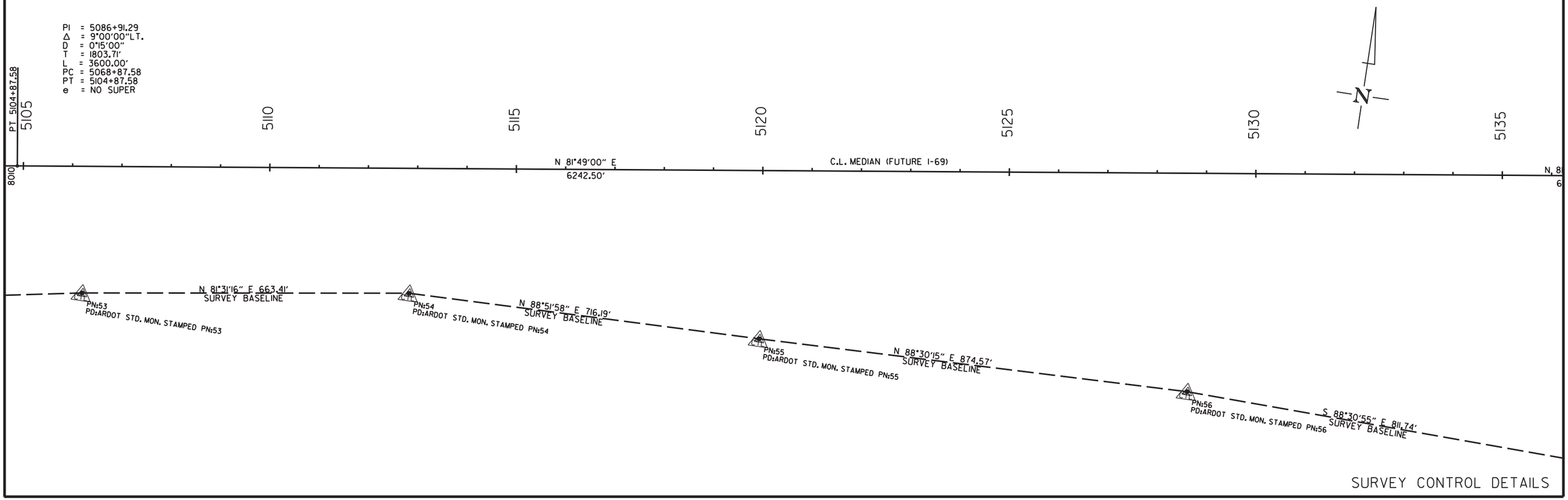
Aug 2 2022 9:06 AM

DocuSign

PI = 5086+91.29
Δ = 9°00'00"LT.
D = 0°15'00"
T = 1803.71'
L = 3600.00'
PC = 5068+87.58
PT = 5104+87.58
e = NO SUPER



PI = 5086+91.29
Δ = 9°00'00"LT.
D = 0°15'00"
T = 1803.71'
L = 3600.00'
PC = 5068+87.58
PT = 5104+87.58
e = NO SUPER



SURVEY CONTROL DETAILS

mh39735 6/14/2022
RO20678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	95	368

SURVEY CONTROL DETAILS

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

Aug 2 2022 9:06 AM

5135 5140 5145 5150 5155 5160 5165

N, 81°49'00" E
6242.50'

C.L. MEDIAN (FUTURE I-69)

N 84°31'47" E 706.29'
SURVEY BASELINE

N 44°28'05" E 717.62'
SURVEY BASELINE

N 60°28'55" E 435.15'
SURVEY BASELINE

N 68°24'27" E 498.00'
SURVEY BASELINE

FUTURE JOB 020732

S 82°18'50" E 574.25'
SURVEY BASELINE

STA. 5160+57.05 52' RT. OF I-69 CL =
STA. 312+52.59 HWY. 293 CL
Δ = 90° 00' 00"

STA. 5162+18.05
END JOB 020678

HWY. 293

315

P.I. 315+45.37

8213

P.I. 316+63.64

8211

P.C. 314+23.13

PI = 315+45.37
Δ = 25°15'11" RT.
D = 10°30'00"
T = 122.24'
L = 240.51'
PC = 314+23.13
PT = 316+63.64
e = 0.100'/'
Ls = 300'

310

N 8°11'00" W
556.87'

S 47°52'30" E
1647.01'
BASELINE

6209

P.I. 308+66.27

PI = 307+65.40
Δ = 21°26'09" RT.
D = 10°30'00"
T = 103.28'
L = 204.15'
PC = 306+62.12
PT = 308+66.27
e = 0.100'/'
Ls = 300'

P.I. 307+65.40

8207

P.C. 306+62.12

N 13°37'09" E
179.55'

8205

305

P.I. 304+82.56

N 75°26'51" E 332.06'
SURVEY BASELINE

P.I. 303+43.52

PI = 303+43.52
Δ = 29°53'49" LT.
D = 10°30'00"
T = 145.69'
L = 284.73'
PC = 301+97.83
PT = 304+82.56
e = 0.100'/'
Ls = 300'

HWY. 293

8203

P.C. 301+97.83

N 0°16'40" E
197.83'

8201

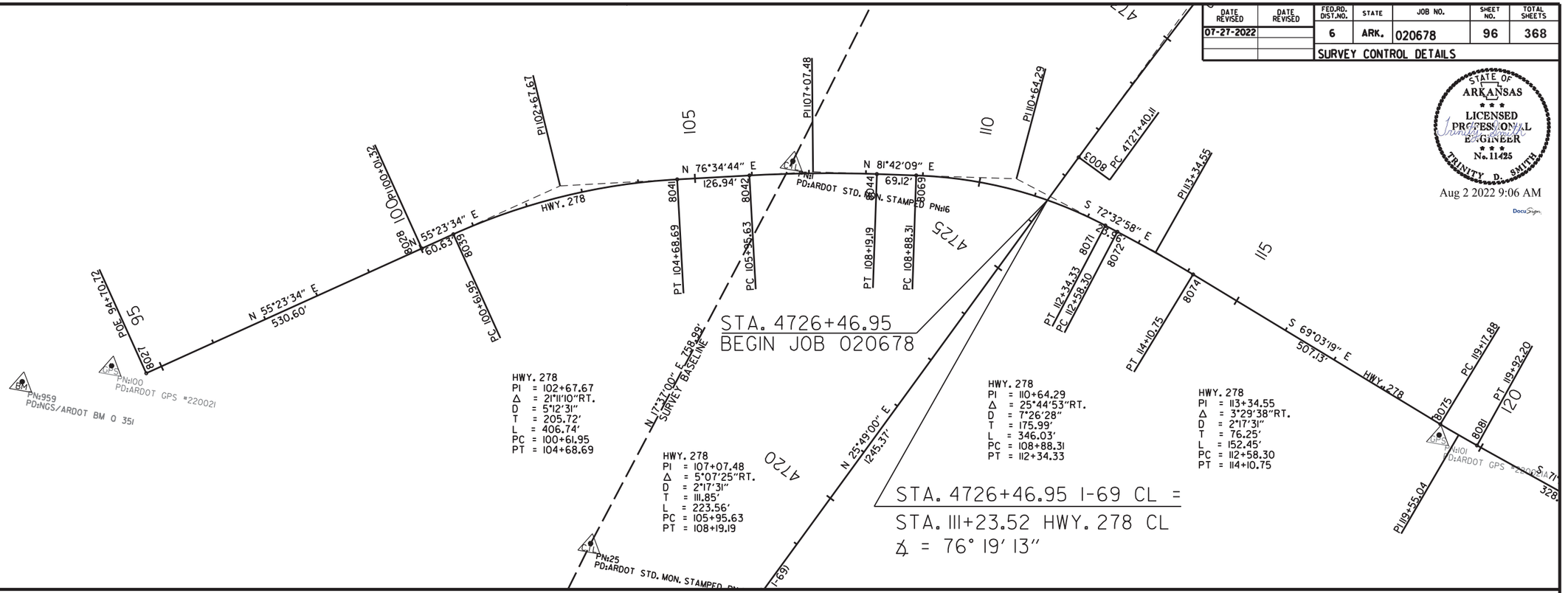
POB 300+00.00

N

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	96	368
		SURVEY CONTROL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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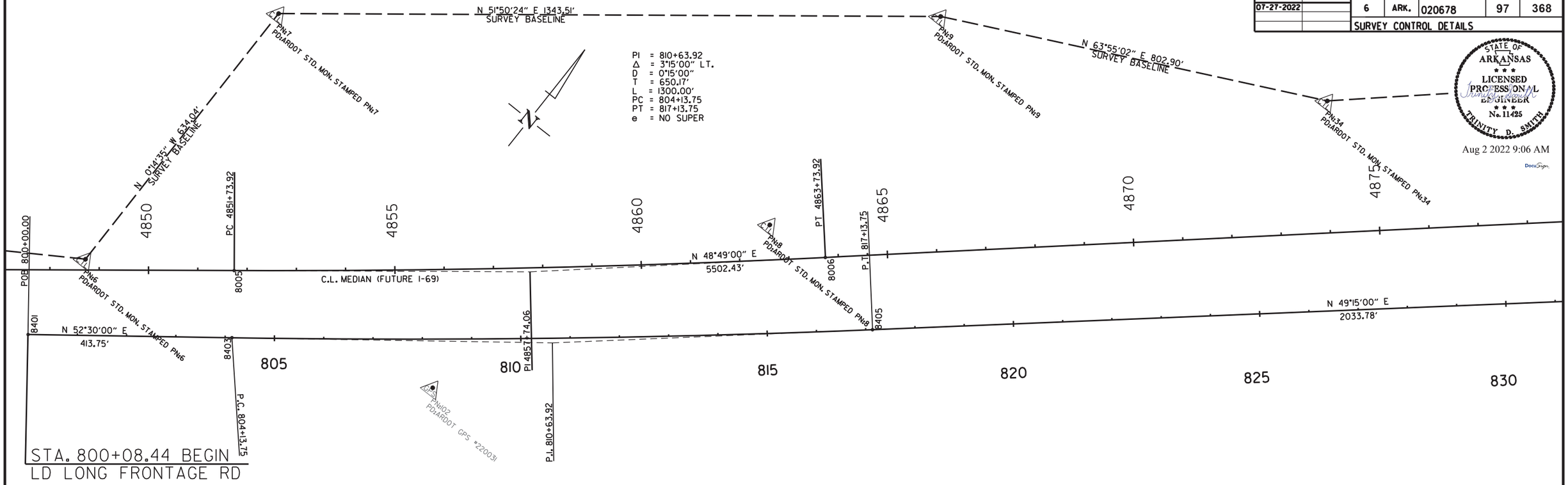
SURVEY CONTROL DETAILS

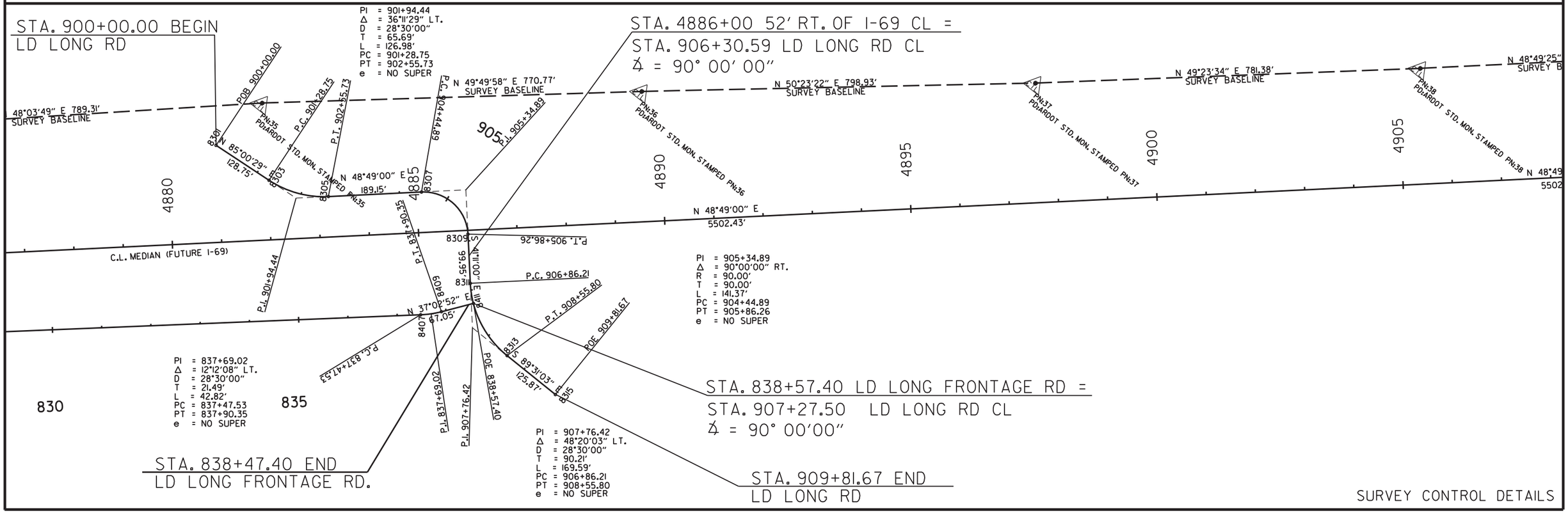
mh39735 6/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	97	368
		SURVEY CONTROL DETAILS				

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

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SURVEY CONTROL DETAILS

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	98	368
		SURVEY CONTROL DETAILS				

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

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STA. 5030+00.00 52' RT. OF I-69 CL =
STA. 107+45.61 CO. RD. 75 CL
Δ = 90° 00' 00"

PI = 102+98.57
Δ = 25°21'26"LT.
D = 12°00'00"
T = 107.41'
L = 211.31'
PC = 101+91.16
PT = 104+02.47
e = NO SUPER

PI = 111+68.58
Δ = 27°05'49" LT.
D = 28°30'00"
T = 48.44'
L = 95.07'
PC = 111+20.14
PT = 112+15.21
e = NO SUPER

PI = 109+22.71
Δ = 66°30'37" RT.
D = 28°30'00"
T = 131.83'
L = 233.37'
PC = 107+90.88
PT = 110+24.25
e = NO SUPER

STA. 100+00.00 BEGIN
HWY. CO. RD. 75

STA. 114+57.79 BEGIN
HWY. CO. RD. 75

POB 100+00.00
PC 101+91.16
PT 104+02.47
PT 110+24.25
PC 111+20.14
PT 112+15.21
POE 114+57.79
PI 109+22.71
PI 111+68.58
PI 102+20.04

N 26°10'26" E 191.16'
N 67°19'37" E 95.89'
N 40°13'48" E 242.57'
S 89°49'00" E 388.41'
N 89°19'19" E 831.25'
S 89°11'00" E 661.23'
S 88°26'42" E 760.92'
S 88°02'08" E 759.21'

PN#1 PD:4ROOT STD. MON. STAMPED PN#1
PN#2 PD:4ROOT STD. MON. STAMPED PN#2
PN#3 PD:4ROOT STD. MON. STAMPED PN#3
PN#4 PD:4ROOT STD. MON. STAMPED PN#4
PN#41 PD:4ROOT STD. MON. STAMPED PN#41
PN#42 PD:4ROOT STD. MON. STAMPED PN#42
PN#43 PD:4ROOT STD. MON. STAMPED PN#43

SURVEY BASELINE
C.L. MEDIAN (FUTURE I-69)

5025 5030 5035 5040
100 105 110
CO. RD. 75

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SURVEY CONTROL DETAILS

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07-27-2022		6	ARK.	020678	99	368
		SURVEY CONTROL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
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STA. 5160+57.05 52' RT. OF I-69 CL =
STA. 312+52.59 HWY. 293 CL
Δ = 90° 00' 00"

PI = 303+43.52
Δ = 29°53'49" LT.
D = 10°30'00"
T = 145.69'
L = 284.73'
PC = 301+97.83
PT = 304+82.56
e = 0.100'/'
Ls = 300'

STA. 301+00.00 BEGIN
HWY. 293 INTERIM

POB 300+00.00

P.C. 301+97.83

P.I. 303+43.52

P.T. 304+82.56

P.I. 301+65.40

N 8°11'00" W
556.87'

N 29°37'09" W
179.55'

N 0°16'40" E
197.83'

HWY. 293

310

305

8205

8207

8209

8203

8201

PI = 307+65.40
Δ = 21°26'09" RT.
D = 10°30'00"
T = 103.28'
L = 204.15'
PC = 306+62.12
PT = 308+66.27
e = 0.100'/'
Ls = 300'

P.C. 306+62.12

P.I. 308+66.27

N 75°26'51" E 320.07'
SURVEY BASELINE

N 64°19'04" E 806.84'
SURVEY BASELINE

PNH4 PDJARDOT STD. MON. STAMPED PNH4

PNH8 PDJARDOT STD. MON. STAMPED PNH8

PNH70 PDNGS/ARDOT 2011 Z 351

FUTURE I-69

STAMPED PNH60

5155

N 84°31'47" E 706.29'
SURVEY BASELINE

PNH61 PDJARDOT STD. MON. STAMPED PNH61

5160

315

P.I. 315+45.37

320

HWY. 293

8211

8213

N 17°04'11" E
966.91'

P.C. 314+23.13

P.T. 316+63.64

S 82°16'50" E 574.25'
SURVEY BASELINE

PNH5 PDJARDOT STD. MON. STAMPED PNH5

FUTURE JOB 020732

5165

PC 5167+30.08

8011

PI = 315+45.37
Δ = 25°15'11" RT.
D = 10°30'00"
T = 122.24'
L = 240.51'
PC = 314+23.13
PT = 316+63.64
e = 0.100'/'
Ls = 300'

S 67°26'30" W 767.01'
SURVEY BASELINE

PNH6 PDJARDOT STD. MON. STAMPED PNH6

STA. 5171+49.96
END JOB 020678

5170

PI = 327+10.73
Δ = 16°43'05" LT.
D = 10°30'00"
T = 80.18'
L = 159.22'
PC = 326+30.55
PT = 327+89.77
e = 0.100'/'
Ls = 300'

325

P.C. 326+30.55

P.I. 327+89.77

330

POE 331+94.11

8215

8217

8219

N 0°21'06" E
404.34'

GPS PNH111 PDJARDOT GPS #220036A

P.I. 327+10.73

STA. 330+14.77
END HWY. 293 INTERIM

SURVEY CONTROL DETAILS

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	100	368
		PLAN AND PROFILE SHEETS				

STATE OF ARKANSAS
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TRINITY D. SMITH
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STA. 4726+46.95 I-69 CL =
STA. 111+23.52 HWY. 278 CL
Δ = 76° 19' 13"

STA. 4726+46.95
BEGIN JOB 020678

P.T. 4714+94.74

PT 104+68.45

PC 105+95.63

PT 107+07.63

PT 108+19.19

PC 108+88.31

PI 110+64.29

PT 112+34.39

PC 112+58.30

P.C. 4727+40.11

PI 113+34.55

PT 114+10.75

CONC. ISLAND W/ TYPE B CURB FACE = 33 SQ. YDS.

CONC. ISLAND W/ TYPE B CURB FACE = 10 SQ. YDS.

HWY. 278

C.L. MEDIAN (FUTURE I-69)

N 25°49'00" E

+04.02 180' TAPER +84.02

+04.02 120' TAPER +24.02

CONSTRUCTION LIMITS

18' 12' 20' 10' 30' 24'

PROPOSED R/W. C/A. & FENCE

+55.00 300.00

+25.00 180.00

+85.00 160.00

+41.00 370.00

+70.00 260.00

PI = 4753+85.67
Δ = 26°00'00"RT.
D = 0°30'00"
T = 2645.56'
L = 5200.00'
PC = 4727+40.11
PT = 4779+40.11
e = 0.020'/'
Ls = 350'

GUARDRAIL (TYPE C)

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

MAIN LANES

STA. 4727+40.11 BEGIN SUPERELEVATION (N.C.)
STA. 4730+90.11 MAX SUPERELEVATION (0.020'/') (ROTATE TO PLANAR SECTION)
STA. 4778+52.61 MAX SUPERELEVATION (0.020'/') (ROTATE TO PLANAR SECTION)
STA. 4782+02.61 END SUPERELEVATION (N.C.)

P.V.I. 4714+68.45 190.53
CONST. IN JOB 020471
K=8571.43 VC=3000' e=-1.31'
0.35%

P.V.I. 4721+45.12 195.63
P.V.C. 4722+17.41 195.67
0.07%
P.V.I. 4723+04.91 195.73
K=202.20 VC=175' e=-0.19'
-0.80%
P.V.C. 4724+07.62 194.91
K=218.75 VC=175' e=0.17'
FUTURE
P.V.T. 4725+82.62 194.21
0.00%
P.V.C. 4726+75.12 196.42
2.14%
P.V.I. 4728+25.12 199.59
P.V.C. 4730+00.00 197.17
K=143.88 VC=200' e=0.35'
1.39%
P.V.T. 4732+00.00 195.78
0.00%
P.V.I. 4733+00.00 195.78
0.00%
P.V.C. 4741+19.99 195.78
K=9523.81 VC=2000' e=-0.53'

HWY. 278 TEMP. CONNECTOR
CONST. IN JOB 020484

P.V.I. 4723+92.41 195.63
P.V.I. 4724+95.12 194.21
P.V.I. 4726+67.42 196.26
P.V.I. 4726+68.45 195.78
-0.31% LT DI GR
+90.00 LT DI GR LT. ELEV. 193.51
K=85.71 VC=300' e=-1.31'
P.V.T. 4729+75.12 197.51
+35.00 LT DI GR LT. ELEV. 192.74
P.V.I. 4731+00.00 195.78
+98.16 LT DI GR LT. ELEV. 190.30

P.V.I.4726+16.27 I-69 CL =
STA. 111+12.23 36.00' RT. OF HWY 278 CL
ELEV. 194.21

4726+67.42 I-69 CL =
STA. 111+29.23 20.0' LT OF HWY 278 CL
ELEV. 196.42

230 220 210 200 190 180 170 160 150 140

4715+00 4716+00 4717+00 4718+00 4719+00 4720+00 4721+00 4722+00 4723+00 4724+00 4725+00 4726+00 4727+00 4728+00 4729+00 4730+00 4731+00 4732+00 4733+00 4734+00 4735+00 4736+00 4737+00 4738+00 4739+00 4740+00 4741+00 4742+00 4743+00 4744+00 4745+00

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07-27-2022		6	ARK.	020678	101	368
		PLAN AND PROFILE SHEETS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Aug 2 2022 9:07 AM
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N 26°49'00" E
N 51°49'00" E
P.I. 4753+85.67
PROPOSED R/W, C/A, & FENCE
30' MEDIAN
C.L. MEDIAN (FUTURE I-69)
40' MEDIAN
CONSTRUCTION LIMITS
25' BUFFER
GATE
FLOOD PLAIN BOUNDARY
PINEY CREEK
+30.00 130.00
+35.00 130.00
+30.00 125.00
+70.00 125.00
+28.39 180.00
+30.00 145.00
+20.00 175.00
+30.00 135.00
8'
24'
10'

PI = 4753+85.67
Δ = 26°00'00"RT.
D = 0°30'00"
T = 2645.56'
L = 5200.00'
PC = 4727+40.11
PT = 4779+40.11
e = 0.020'/'
Ls = 350'

+58.40 800' MEDIAN TAPER +58.40

STA. 4768+40 CONSTRUCT
TRI. 9' X 5' X 124' R.C. BOX CULVERT
ON A 20°RT. FWD. SKEW
WITH 34' WINGS LT. & RT.
Q50 = 860 CFS D.A. = 1147 ACRES
SPAN = 30'-9"

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

MAIN LANES

STA. 4727+40.11 BEGIN SUPERELEVATION (N.C.)
STA. 4730+90.11 MAX SUPERELEVATION (0.020'/') (ROTATE TO PLANAR SECTION)
STA. 4778+52.61 MAX SUPERELEVATION (0.020'/') (ROTATE TO PLANAR SECTION)
STA. 4782+02.61 END SUPERELEVATION (N.C.)

+70 FLOOD PLAIN BOUNDARY +25

P.V.I. 4751+19.99
195.78
K=9523.81
VC=2000'
e=-0.53'
0.00%
-0.12% LT.DT.GR.
+00.00 RT.DT.GR.
RT.ELEV. 187.46
+46.95 LT.DT.GR.
LT.ELEV. 189.00
-0.39% RT.DT.GR.
P.V.T. 4761+19.99
193.64
-0.64% LT.DT.GR.
-0.21%
P.V.C. 4765+99.00
192.62
+50.00 LT.DT.GR.
LT.ELEV. 182.60
+50.00 RT.DT.GR.
RT.ELEV. 182.57
-2.08% LT.DT.GR.
-1.79% RT.DT.GR.
F.L. INLET LT. 177.40
F.L. OUTLET RT. 177.20
Q50 DESIGN H.W. 180.90
ELEVATION 182.90
+40
+00.00 LT.DT.GR.
LT.ELEV. 177.40
+50.00 RT.DT.GR.
RT.ELEV. 177.20
+70.00 LT.DT.GR.
LT.ELEV. 177.40
4.32% LT.DT.GR.
7.14% RT.DT.GR.
+15.00 RT.DT.GR.
RT.ELEV. 177.20
K=2564.10
VC=1000'
e=0.49'
+00.00 RT.DT.GR.
RT.ELEV. 183.27
+00.00 LT.DT.GR.
LT.ELEV. 183.02
P.V.I. 4770+99.00
191.55
0.18%

NOTE:
FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS, THIS STREAM, STA. 4768+13 TO STA. 4768+67, IS CLASSIFIED AS AN INTERMITTENT STREAM. THE TOP OF CHANNEL ELEVATION IS 180 FT. MSL. REFER TO SECTION 110.06(c) OF THE 2014 STANDARD SPECIFICATIONS.

230 220 210 200 190 180 170 160 150 140

4745+00 4746+00 4747+00 4748+00 4749+00 4750+00 4751+00 4752+00 4753+00 4754+00 4755+00 4756+00 4757+00 4758+00 4759+00 4760+00 4761+00 4762+00 4763+00 4764+00 4765+00 4766+00 4767+00 4768+00 4769+00 4770+00 4771+00 4772+00 4773+00 4774+00 4775+00

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		PLAN AND PROFILE SHEETS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Aug 2 2022 9:07 AM
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STA. 4787+70 CONSTRUCT
48" X 100' R.C. PIPE CULVERT
ON A 20° LT. FWD. SKEW
(CLASS III) (TYPE 3 BEDDING)
WITH FES LT. & RT.
Q50 = 70 CFS D.A. = 71 ACRES
48" R.C. PIPE = 100 LIN. FT.
48" FES = 2 EA.

UNAMED TRIBUTARY

PROPOSED R/W, C/A, & FENCE

25' BUFFER

CONSTRUCTION LIMITS

C.L. MEDIAN (FUTURE I-69)

N 51°49'00" E

8'
24'
10'

CULTIVATED FIELD

PI = 4753+85.67
Δ = 26°00'00"RT.
D = 0°30'00"
T = 2645.56'
L = 5200.00'
PC = 4727+40.11
PT = 4779+40.11
e = 0.020'/'
Ls = 350'

P.T. 4779+40.11

FLOOD PLAIN BOUNDARY

UNAMED TRIBUTARY

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

MAIN LANES

STA. 4727+40.11 BEGIN SUPERELEVATION (N.C.)
STA. 4730+90.11 MAX SUPERELEVATION (0.020'/') (ROTATE TO PLANAR SECTION)
STA. 4778+52.61 MAX SUPERELEVATION (0.020'/') (ROTATE TO PLANAR SECTION)
STA. 4782+02.61 END SUPERELEVATION (N.C.)

K=2564.10
VC=1000'
e=0.49'

P.V.T. 4775+99.00
192.44

+00.00 LT DT GR.
LT. ELEV. 189.00

-0.30% LT DT GR.

050 DESIGN H.W.
ELEVATION 186.90'

+40.00 RT DT GR.
RT. ELEV. 189.42

+40.00 LT DT GR.
LT. ELEV. 187.36

-1.50% RT DT GR.

-1.98% LT. DT. GR.

+70

+35.00 RT DT GR.
RT. ELEV. 182.60

+70.00 LT DT GR.
LT. ELEV. 182.80

F.L. INLET LT. 182.80
F.L. OUTLET RT. 182.60

0.18%

0.68% RT DT GR.
0.68% LT. DT. GR.

P.V.C. 4802+30.00
197.11

+30.00 RT DT GR.
RT. ELEV. 192.77

+30.00 LT DT GR.
LT. ELEV. 192.77

K=2222.22
VC=1000'
e=-0.57'

NOTE:

FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS,
THIS STREAM, STA. 4787+68 TO STA. 4787+72, IS CLASSIFIED AS AN EPHEMERAL STREAM.
THE TOP OF CHANNEL ELEVATION IS 184 FT. MSL.
REFER TO SECTION 110.06(c) OF THE 2014 STANDARD SPECIFICATIONS.

230 220 210 200 190 180 170 160 150 140

4775+00 4776+00 4777+00 4778+00 4779+00 4780+00 4781+00 4782+00 4783+00 4784+00 4785+00 4786+00 4787+00 4788+00 4789+00 4790+00 4791+00 4792+00 4793+00 4794+00 4795+00 4796+00 4797+00 4798+00 4799+00 4800+00 4801+00 4802+00 4803+00 4804+00 4805+00

mh39735 5/9/2022
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		PLAN AND PROFILE SHEETS				

STATE OF ARKANSAS
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No. 11425
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Aug 2 2022 9:07 AM

CULTIVATED FIELD
BRUSH
UNAMED TRIBUTARY
PROPOSED R/W, C/A, & FENCE
25' BUFFER
C.L. MEDIAN (FUTURE I-69)
N 51°49'00" E
CONSTRUCTION LIMITS
81
241
101
22.00
25.00
17.01
160.00
STA. 4818+37 CONSTRUCT
DBL. 48" X 90' R.C. PIPE CULVERT
ON A 20° RT. FWD. SKEW
(CLASS IV) (TYPE 3 BEDDING)
WITH FES LT. & RT.
Q50 = 137 CFS D.A. = .136 ACRES
48" R.C. PIPE = 180 LIN. FT.
48" FES = 4 EA.
REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.
MAIN LANES

4805 4810 4815 4820 4825 4830 4835

230 220 210 200 190 180 170 160 150 140

P.V.I. 4807+30.00
198.00
K=2222.22
VC=1000'
e=-0.57'
0.18%
P.V.I. 4812+30.00
196.63
-0.27%
Q50 DESIGN H. W.
ELEVATION 190.40'
+37
+10.00 LT.DT.GR.
LT. ELEV. 186.30
F.L. INLET LT. 186.30
F.L. OUTLET RT. 185.90
0.21% LT.DT.GR.
P.V.C. 4826+00.00
192.87
+00.00 LT.DT.GR.
LT. ELEV. 188.17
K=5555.56
VC=2000'
e=0.91'
+69.00 RT.DT.GR.
RT. ELEV. 187.80
-0.70% LT.DT.GR.
-1.11% RT.DT.GR.

NOTE:
FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS,
THIS STREAM, STA. 4818+35 TO STA. 4818+37, IS CLASSIFIED AS AN INTERMITTENT STREAM.
THE TOP OF CHANNEL ELEVATION IS 188 FT. MSL.
REFER TO SECTION 110.06(c) OF THE 2014 STANDARD SPECIFICATIONS.

4805+00 4806+00 4807+00 4808+00 4809+00 4810+00 4811+00 4812+00 4813+00 4814+00 4815+00 4816+00 4817+00 4818+00 4819+00 4820+00 4821+00 4822+00 4823+00 4824+00 4825+00 4826+00 4827+00 4828+00 4829+00 4830+00 4831+00 4832+00 4833+00 4834+00 4835+00

mh39735 5/9/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	104	368
08-03-2022		PLAN AND PROFILE SHEETS				

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

Aug 4 2022 4:12 PM

STA. 4836+00 CONSTRUCT
DBL. 8' X 4' X 90' R.C. BOX CULVERT
WITH 3:1 WINGS LT. & RT.
Q50 = 309 CFS D.A. = 320 ACRES
SPAN = 19'-1"

PI = 4857+74.06
Δ = 3°00'00"LT.
D = 0°15'00"
T = 600.14'
L = 1200.00'
PC = 4851+73.92
PT = 4863+73.92
e = NO SUPER

STA. 4863+10 CONSTRUCT
42" X 118' R.C. PIPE CULVERT
ON A 45° RT. FWD. SKEW
(CLASS IV) (TYPE 3 BEDDING)
WITH FES LT. & RT.
Q50 = 47 CFS D.A. = 47 ACRES
42" R.C. PIPE = 118 LIN. FT.
42" FES = 2 EA.

UNNAMED TRIBUTARY
PROPOSED R/W, C/A, & FENCE
25' BUFFER
CONSTRUCTION LIMITS
C.L. MEDIAN (FUTURE I-69)
POB 800+00.00
P.C. 4851+73.92
P.T. 4863+73.92
N 51°49'00" E
N 48°49'00" E
N 52°30'08" E
PROPOSED C/A. & FENCE
80' R.
P.C. 1+808.00
P.T. 4857+74.06
0+63.92
PROPOSED R/W
MAIN LANES
REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

P.V.I. 4836+00.00 190.12
K=5555.56
VC=2000'
e=0.91'
-0.27%
-0.70% LT. DT.GR.
-1.11% RT. DT.GR.
0.46% LT.DT.GR.
0.39% RT.DT.GR.
F.L. INLET LT. 182.00
F.L. OUTLET RT. 181.00
050 DESIGN H.W. ELEVATION 185.50'
P.V.I. 4846+00.00 191.01
0.50% LT.DT.GR.
0.09%
-0.15% LT.DT.GR.
-0.16% RT.DT.GR.
P.V.C. 4863+00.00 192.52
K=2702.70
VC=1000'
e=-0.46'
F.L. INLET LT. 184.20
F.L. OUTLET RT. 183.80
050 DESIGN H.W. ELEVATION 187.70'
0.75% RT. DT.GR.

NOTE:
FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS,
THIS STREAM, STA. 4835+84 TO STA. 4836+16, IS CLASSIFIED AS AN PERENNIAL STREAM.
THE TOP OF CHANNEL ELEVATION IS 184 FT. MSL.
REFER TO SECTION 110.06(c) OF THE 2014 STANDARD SPECIFICATIONS.

4835+00 4836+00 4837+00 4838+00 4839+00 4840+00 4841+00 4842+00 4843+00 4844+00 4845+00 4846+00 4847+00 4848+00 4849+00 4850+00 4851+00 4852+00 4853+00 4854+00 4855+00 4856+00 4857+00 4858+00 4859+00 4860+00 4861+00 4862+00 4863+00 4864+00 4865+00

mh39735 5/9/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	105	368
08-03-2022		PLAN AND PROFILE SHEETS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Aug 4 2022 4:12 PM
DocuSign

STA. 4886+00 52' RT. OF I-69 CL =
STA. 906+30.59 LD LONG RD CL
Δ = 90° 00' 00"

PROPOSED R/W, C/A, & FENCE

PROPOSED C/A & FENCE

PROPOSED R/W

C.L. MEDIAN (FUTURE I-69)

CONSTRUCTION LIMITS

25' BUFFER

GATE

LD LONG RD

BEGIN C/A STA. 904+80.00
T=124.59
END C/A STA. 906+04.16
168.31

P.O.B. 900+00.00

P.C. 901+28.75

P.T. 902+55.73

P.C. 904+44.89

P.I. 905+34.89

P.T. 817+13.75

P.I. 901+94.44

P.C. 906+86.21

P.T. 908+55.80

P.O.E. 908+57.40

P.O.E. 909+81.67

P.C. 837+69.02

P.T. 837+90.53

P.I. 837+16.42

P.I. 907+90.35

BEGIN C/A STA. 905+25.22
T=175.30
END C/A STA. 906+45.32
385.00

FLOOD PLAIN BOUNDARY

MAIN LANES

STA. 4884+13 CONSTRUCT
DBL. 8' X 4' X 222' R.C. BOX CULVERT
ON A 10° RT. FWD. SKEW
WITH 3:1 WINGS LT. & RT.
AND 24" X 14' PIPE INLET W/ FES
AND 24" X 16' PIPE INLET W/ FES
(CLASS III) (TYPE 3 BEDDING)
24" R.C. PIPE = 30 LIN. FT.
24" FES = 2 EACH
050 = 321 CFS D.A. = 270 ACRES
SPAN = 19'-1"

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

P.V.I. 4868+00.00
192.96

K=2702.70
VC=1000'
e=-0.46'

0.09%

-0.28%

P.V.C. 4879+00.00
189.92

K=2439.02
VC=1000'
e=0.51'

P.V.I. 4884+00.00
188.53

P.V.T. 4889+00.00
189.18

0.13%

0.50% LT.DI.GR.
0.75% RT.DT.GR.

+00.00 RT.DI.GR.
RT.ELEV. 186.58

+00.00 LT.DI.GR.
LT. ELEV. 186.58

P.V.T. 4873+00.00
191.58

-0.68% LT.DI.GR.
-0.69% RT.DT.GR.

24"x 14' @ 0.32%

24"x 16' @ 2.18%

050 DESIGN H.W. ELEVATION 180.50'

+88.00 LT.DI.GR.
LT. ELEV. 175.80

+06.00 RT.DI.GR.
RT. ELEV. 175.50

+19.00 LT.DI.GR.
LT. ELEV. 175.80

+40.00 RT.DI.GR.
RT. ELEV. 175.50

F.L. INLET LT. 176.21
F.L. OUTLET RT. 175.50

1.35% RT.DI.GR.

0.46% LT.DI.GR.

0.16% RT.DT.GR.

+00.00 RT.DI.GR.
RT.ELEV. 181.70

+00.00 RT.DI.GR.
RT.ELEV. 182.65

NOTE:

FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS, THIS STREAM, STA. 4884+39 TO STA. 4884+07, IS CLASSIFIED AS AN EPHERMERAL STREAM. THE TOP OF CHANNEL ELEVATION IS 177 FT. MSL. REFER TO SECTION 110.06(c) OF THE 2014 STANDARD SPECIFICATIONS.

mh39735 5/9/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	106	368
		PLAN AND PROFILE SHEETS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY P. SMITH
Aug 2 2022 9:08 AM
DocuSigned by:

STA. 4916+00 CONSTRUCT
DBL. 8' X 4' X 88' R.C. BOX CULVERT
WITH 3:1 WINGS LT. & RT.
Q50 = 275 CFS D.A. = 174 ACRES
SPAN = 19'-1"

CULTIVATED FIELD
POND
METAL TRANS POLE
PROPOSED R/W, C/A, & FENCE
4895 4900 4905 4910 4915 4920 4925
C.L. MEDIAN (FUTURE I-69)
N 48°49'00" E
CONSTRUCTION LIMITS
8'
24'
10'
+50.00 150.00
+50.00 145.06
+15.00 135.00
P.C. 4918+76.35
PROPOSED R/W, C/A, & FENCE
BRUSH
FLOOD PLAIN BOUNDARY

PI = 4962+75.11
Δ = 42°00'00"RT.
D = 0°30'00"
T = 4398.76'
L = 8400.00'
PC = 4918+76.35
PT = 5002+76.35
e = 0.020'/'
Ls = 350'

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

MAIN LANES

STA. 4916+13.85 BEGIN SUPERELEVATION (N.C.)
STA. 4919+63.85 MAX SUPERELEVATION (0.020'/') (ROTATE TO PLANAR SECTION)
STA. 5001+88.85 MAX SUPERELEVATION (0.020'/') (ROTATE TO PLANAR SECTION)
STA. 5005+38.85 END SUPERELEVATION (N.C.)

230 220 210 200 190 180 170 160 150 140

0.13%
0.46% LT.DT.GR.
-0.05% LT.DT.GR.
-0.05% RT.DT.GR.
-0.01% LT. DT.GR.
-0.16% RT. DT.GR.
0.96% LT.DT.GR.
0.06% LT.DT.GR.
0.26% RT.DT.GR.

+00.00 LT.DT.GR. LT. ELEV. 184.50
+00.00 RT.DT.GR. RT.ELEV. 184.02
+00.00 LT.DT.GR. LT. ELEV. 184.03
+00.00 RT.DT.GR. RT.ELEV. 183.50
050 DESIGN H. W. ELEVATION 187.20'
+00
+85.00 LT.DT.GR. LT. ELEV. 184.00
+85.00 RT.DT.GR. RT.ELEV. 183.20
+15.00 RT.DT.GR. RT.ELEV. 183.20
+15.00 LT.DT.GR. LT. ELEV. 184.00
+40.00 LT.DT.GR. LT. ELEV. 185.20
+00.00 LT.DT.GR. LT. ELEV. 187.05

F.L. INLET LT. 184.00
F.L. OUTLET RT. 183.20

4895+00 4896+00 4897+00 4898+00 4899+00 4900+00 4901+00 4902+00 4903+00 4904+00 4905+00 4906+00 4907+00 4908+00 4909+00 4910+00 4911+00 4912+00 4913+00 4914+00 4915+00 4916+00 4917+00 4918+00 4919+00 4920+00 4921+00 4922+00 4923+00 4924+00 4925+00

mh39735 5/9/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	107	368
		PLAN AND PROFILE SHEETS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Aug 2 2022 9:08 AM

PROPOSED R/W, C/A, & FENCE
N 48°49'00" E
CONSTRUCTION LIMITS
C.L. MEDIAN (FUTURE I-69)
CONSTRUCTION LIMITS
PROPOSED R/W, C/A, & FENCE

PI = 4962+75.11
Δ = 42°00'00"RT.
D = 0°30'00"
T = 4398.76'
L = 8400.00'
PC = 4918+76.35
PT = 5002+76.35
e = 0.020'/'
Ls = 350'

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

MAIN LANES

STA. 4916+13.85 BEGIN SUPERELEVATION (N.C.)
STA. 4919+63.85 MAX SUPERELEVATION (0.020'/') (ROTATE TO PLANAR SECTION)
STA. 5001+88.85 MAX SUPERELEVATION (0.020'/') (ROTATE TO PLANAR SECTION)
STA. 5005+38.85 END SUPERELEVATION (N.C.)

P.V.C. 4937+00.00
195.45
P.V.I. 4942+00.00
196.10
P.V.T. 4947+00.00
194.25
0.13%
-0.37%
0.06% LT.DT.GR.
0.26% RT.DT.GR.
0.08% RT.DT.GR.
-0.50% LT.DT.GR.
-0.47% RT.DT.GR.
+00.00 RT.DT.GR.
RT.ELEV. 187.09
+00.00 LT.DT.GR.
LT. ELEV. 188.50
K=2000.00
VC=1000'
e=-0.63'
+00.00 RT.DT.GR.
RT.ELEV. 188.00

230 220 210 200 190 180 170 160 150 140

4925+00 4926+00 4927+00 4928+00 4929+00 4930+00 4931+00 4932+00 4933+00 4934+00 4935+00 4936+00 4937+00 4938+00 4939+00 4940+00 4941+00 4942+00 4943+00 4944+00 4945+00 4946+00 4947+00 4948+00 4949+00 4950+00 4951+00 4952+00 4953+00 4954+00 4955+00

mh39735 5/9/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	108	368
		PLAN AND PROFILE SHEETS				

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

Aug 2 2022 9:08 AM
DocuSign

P.I. 4962+75.11
LYTLE RD.
S 89°11'00" E
N
UNAMED TRIBUTARY
PROPOSED R/W, C/A, & FENCE
GUARDRAIL (TYPE C)
C.L. MEDIAN (FUTURE I-69)
CONSTRUCTION LIMITS
25' BUFFER
8'
24'
10'
PI = 4962+75.11
Δ = 42°00'00"RT.
D = 0°30'00"
T = 4398.76'
L = 8400.00'
PC = 4918+76.35
PT = 5002+76.35
e = 0.020'/'
Ls = 350'

STA. 4982+67 CONSTRUCT
DBL. 8' X 4' X 135' R.C. BOX CULVERT
ON 45° RT. FWD. SKEW
WITH 31 WINGS LT. & RT.
050 = 364 CFS D.A. = 253 ACRES
SPAN = 19'-1"

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

MAIN LANES

STA. 4916+13.85 BEGIN SUPERELEVATION (N.C.)
STA. 4919+63.85 MAX SUPERELEVATION (0.020'/') (ROTATE TO PLANAR SECTION)
STA. 5001+88.85 MAX SUPERELEVATION (0.020'/') (ROTATE TO PLANAR SECTION)
STA. 5005+38.85 END SUPERELEVATION (N.C.)

-0.37%
-0.50% LT.DT.GR.
-0.47% RT.DT.GR.
-0.18% LT.DT.GR.
-0.21% RT.DT.GR.
-0.75% RT.DT.GR.
-1.04% LT.DT.GR.
0.07%
0.60% LT. DT.GR.
-0.34% RT. DT.GR.

+00.00 LT. DT.GR. ELEV. 179.50
+00.00 RT. DT.GR. ELEV. 179.50
+00.00 LT. DT.GR. ELEV. 176.50
+00.00 RT. DT.GR. ELEV. 176.00
P.V.C. 4977+00.00
183.15
K=2272.73
VC=1000'
e=0.55'
P.V.I. 4982+00.00
181.30
050 DESIGN H.W. ELEVATION 175.90'
+70.00 LT. DT.GR. ELEV. 171.60
+25.00 LT. DT.GR. ELEV. 171.60
+67
F.L. INLET LT. 171.60
F.L. OUTLET RT. 171.40
+16.00 RT. DT.GR. ELEV. 171.40
+66.00 RT. DT.GR. ELEV. 171.40
+88.00 RT. DT.GR. ELEV. 170.88

NOTE:
FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS, THIS STREAM, STA. 4982+59 TO STA. 4982+75, IS CLASSIFIED AS AN INTERMITTENT STREAM. THE TOP OF CHANNEL ELEVATION IS 173 FT. MSL. REFER TO SECTION 110.06(c) OF THE 2014 STANDARD SPECIFICATIONS.

230 220 210 200 190 180 170 160 150 140

4955+00 4956+00 4957+00 4958+00 4959+00 4960+00 4961+00 4962+00 4963+00 4964+00 4965+00 4966+00 4967+00 4968+00 4969+00 4970+00 4971+00 4972+00 4973+00 4974+00 4975+00 4976+00 4977+00 4978+00 4979+00 4980+00 4981+00 4982+00 4983+00 4984+00 4985+00

mh39735 5/9/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	109	368
		PLAN AND PROFILE SHEETS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Aug 2 2022 9:08 AM

STA. 4993+70 CONSTRUCT
DBL. 42" X 106' R.C. PIPE CULVERT
ON A 55° LT. FWD. SKEW
(CLASS IV) (TYPE 3 BEDDING)
WITH FES LT. & RT.
Q50 = 103 CFS D.A. = 125 ACRES
42" R.C. PIPE = 212 LIN. FT.
42" FES = 4 EA.

N

GUARDRAIL (TYPE C)

LYTLE RD.

UNAMED TRIB.

PROPOSED R/W, C/A, & FENCE

25' BUFFER

S 89°11'00" E

CONSTRUCTION LIMITS

C.L. MEDIAN (FUTURE I-69)

24' MEDIAN

P.T. 5002+76.35

UNAMED TRIBUTARY

PI = 4962+75.11
Δ = 42°00'00"RT.
D = 0°30'00"
T = 4398.76'
L = 8400.00'
PC = 4918+76.35
PT = 5002+76.35
e = 0.020'/'
Ls = 350'

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

MAIN LANES

STA. 4916+13.85 BEGIN SUPERELEVATION (N.C.)
STA. 4919+63.85 MAX SUPERELEVATION (0.020'/') (ROTATE TO PLANAR SECTION)
STA. 5001+88.85 MAX SUPERELEVATION (0.020'/') (ROTATE TO PLANAR SECTION)
STA. 5005+38.85 END SUPERELEVATION (N.C.)

K=2272.73
VC=1000'
e=0.55'

P.V.T. 4987+00.00
181.67

0.07%

P.V.C. 4996+50.00
182.37

P.V.I. 5001+50.00
182.74

-0.12%

0.60% LT.DT.GR.

+00.00 LT.DT.GR.
LT. ELEV. 174.43

050 DESIGN H.W.
ELEVATION 176.80'

+34

+30.00 RT.DT.GR.
RT. ELEV. 172.50

+90.00 LT.DT.GR.
LT. ELEV. 173.30

F.L. INLET LT. 173.30
F.L. OUTLET RT. 172.50

0.57% LT.DT.GR.
0.57% RT.DT.GR.

K=5263.16
VC=1000'
e=-0.25'

-0.18% LT.DT.GR.

+00.00 LT.DT.GR.
LT. ELEV. 177.91

+00.00 RT.DT.GR.
RT. ELEV. 177.50

+00.00 LT.DT.GR.
LT. ELEV. 177.20

P.V.T. 5006+50.00
182.12

-0.23% RT.DT.GR.

-0.37% LT.DT.GR.

+83.00 RT.DT.GR.
RT. ELEV. 175.50

+00.00 LT.DT.GR.
LT. ELEV. 175.00

-0.17% RT.DT.GR.

NOTE:
FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS,
THIS STREAM, STA. 4993+66 TO STA. 4993+74, IS CLASSIFIED AS AN EMPHEMERAL STREAM.
THE TOP OF CHANNEL ELEVATION IS 175 FT. MSL.
REFER TO SECTION 110.06(c) OF THE 2014 STANDARD SPECIFICATIONS.

230 220 210 200 190 180 170 160 150 140

4985+00 4986+00 4987+00 4988+00 4989+00 4990+00 4991+00 4992+00 4993+00 4994+00 4995+00 4996+00 4997+00 4998+00 4999+00 5000+00 5001+00 5002+00 5003+00 5004+00 5005+00 5006+00 5007+00 5008+00 5009+00 5010+00 5011+00 5012+00 5013+00 5014+00 5015+00

mh39735 5/9/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	110	368
		PLAN AND PROFILE SHEETS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Aug 2 2022 9:08 AM
DocuSign

STA. 5015+70 CONSTRUCT
DBL. 8' X 4' X 114' R.C. BOX CULVERT
WITH 3:1 WINGS LT. & RT.
Q50 = 393 CFS D.A. = 500 ACRES
SPAN = 19'-1"

STA. 5030+00.00 52' RT. OF I-69 CL =
STA. 107+45.61 CO. RD. 75 CL
Δ = 90° 00' 00"

BEGIN C/A STA. +30.00
END C/A STA. +30.00
P.C. 111+20.14
P.T. 112+15.21
P.C. 111+68.58
P.T. 110+24.29
P.I. 109+22.11
P.I. 104+02.47
P.C. 107+90.88
P.O.E.
18' CO. RD. 75
N 46°43'48" E
BEGIN C/A
PROPOSED R/W, C/A, & FENCE
CONSTRUCTION LIMITS
S 89°11'00" E
C.L. MEDIAN (FUTURE I-69)
25' BUFFER
UNAMED TRIBUTARY
PROPOSED R/W, C/A, & FENCE
CONSTRUCTION LIMITS
GATE
GATE
END C/A +50.00
198.33
BEGIN C/A +50.00
223.33
END C/A
+50.00
405.00
BEGIN C/A +83.27
201.43
END C/A +70.79
223.10
BEGIN C/A STA. +50.00
OBLITERATION OF EXIST. PAVEMENT
REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

MAIN LANES

NOTE:

FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS, THIS STREAM, STA. 5015+62 TO STA. 5015+78, IS CLASSIFIED AS AN INTERMITTENT STREAM. THE TOP OF CHANNEL ELEVATION IS 170 FT. MSL. REFER TO SECTION 110.06(c) OF THE 2014 STANDARD SPECIFICATIONS.

P.V.C. 5023+50.00 180.00
K=2631.58
VC=1000'
e=0.48'
P.V.I. 5028+50.00 179.38
P.V.T. 5033+50.00 180.68
-0.12%
0.26%
F.L. INLET LT. 167.50
F.L. OUTLET RT. 167.20
-1.77% RT. +70 DT.GR.
3.95% LT. DT.GR.
3.01% RT. DT.GR.
0.08% LT.DT.GR.
0.12% RT.DT.GR.
0.08% LT.DT.GR.
0.11% RT. DT.GR.
0.17% LT.DT.GR.
0.21% RT.DT.GR.
Q50 DESIGN H. W. ELEVATION 171.70'

+53.00 RT.DT.GR. RT.ELEV. 167.20
+86.00 LT.DT.GR. LT.ELEV. 167.50
+29.00 RT.DT.GR. RT.ELEV. 167.20
+00.00 RT.DT.GR. RT.ELEV. 170.78
+00.00 LT.DT.GR. LT.ELEV. 172.00
+00.00 RT.DT.GR. RT.ELEV. 172.38
+00.00 RT.DT.GR. RT.ELEV. 172.28
+00.00 LT.DT.GR. LT.ELEV. 172.95
+60.00 LT.DT.GR. LT.ELEV. 172.81
+60.00 RT.DT.GR. RT.ELEV. 172.29
+40.00 RT.DT.GR. RT.ELEV. 172.48
+00.00 LT.DT.GR. LT.ELEV. 173.00
+00.00 RT.DT.GR. RT.ELEV. 175.93
+00.00 LT.DT.GR. LT.ELEV. 176.35
+00.00 RT.DT.GR. RT.ELEV. 176.78
+00.00 LT.DT.GR. LT.ELEV. 177.05

230 220 210 200 190 180 170 160 150 140

5015+00 5016+00 5017+00 5018+00 5019+00 5020+00 5021+00 5022+00 5023+00 5024+00 5025+00 5026+00 5027+00 5028+00 5029+00 5030+00 5031+00 5032+00 5033+00 5034+00 5035+00 5036+00 5037+00 5038+00 5039+00 5040+00 5041+00 5042+00 5043+00 5044+00 5045+00

mh39735 5/9/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	111	368
		PLAN AND PROFILE SHEETS				

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

Aug 2 2022 9:09 AM

DocuSign

PI = 5086+91.29
Δ = 9°00'00"LT.
D = 0°15'00"
T = 1803.71'
L = 3600.00'
PC = 5068+87.58
PT = 5104+87.58
e = NO SUPER

PROPOSED R/W, C/A, & FENCE

S 89°11'00" E

C.L. MEDIAN (FUTURE I-69)

CONSTRUCTION LIMITS

24'

16'

8'

CONSTRUCTION LIMITS

-87.00
135.00

PROPOSED R/W, C/A, & FENCE

P.C. 5068+87.58

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

MAIN LANES

0.26%

-0.47%

0.05% LT.DT.GR.

0.09% LT.DT.GR.

0.23% LT.DT.GR.

-0.18% RT.DT.GR.

P.V.C. 5060+30.00
187.67

P.V.I. 5067+80.00
189.62

K=2054.79
VC=1500'
e=-1.38'

+00.00 LT.DT.GR.
LT. ELEV. 178.41

+00.00 LT.DT.GR.
LT. ELEV. 178.50

+00.00 LT.DT.GR.
LT. ELEV. 179.48

+50.00 LT.DT.GR.
LT. ELEV. 181.63

+00.00 LT.DT.GR.
LT. ELEV. 182.20

+28.00 RT.DT.GR.
RT. ELEV. 180.20

230 220 210 200 190 180 170 160 150 140

5045+00 5046+00 5047+00 5048+00 5049+00 5050+00 5051+00 5052+00 5053+00 5054+00 5055+00 5056+00 5057+00 5058+00 5059+00 5060+00 5061+00 5062+00 5063+00 5064+00 5065+00 5066+00 5067+00 5068+00 5069+00 5070+00 5071+00 5072+00 5073+00 5074+00 5075+00

mh39735 5/9/2022
RO20678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	112	368
		PLAN AND PROFILE SHEETS				

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

Aug 2 2022 9:09 AM

DocuSign

PI = 5086+91.29
Δ = 9°00'00"LT.
D = 0°15'00"
T = 1803.71'
L = 3600.00'
PC = 5068+87.58
PT = 5104+87.58
e = NO SUPER

FLOOD PLAIN BOUNDARY

FLOOD PLAIN BOUNDARY

PROPOSED R/W, C/A, & FENCE

CONSTRUCTION LIMITS

S 89°11'00" E

C.L. MEDIAN (FUTURE I-69)
N 81°49'00" E

P.T. 5104+87.58

CONSTRUCTION LIMITS

PROPOSED R/W, C/A, & FENCE

FLOOD PLAIN BOUNDARY

METAL TRANS POLE

HIGH VOLTAGE MTL POLE

STA. 5084+80 CONSTRUCT
48" X 130' R.C. PIPE CULVERT
(CLASS III) (TYPE 3 BEDDING)
WITH FES LT. & RT.
Q50 = 58 CFS D.A. = 51 ACRES
48" R.C. PIPE = 130 LIN. FT.
48" FES = 2 EA.

P.I. 5086+91.29

STA. 5098+85 CONSTRUCT
48" X 88' R.C. PIPE CULVERT
ON A 10° RT. FWD. SKEW
(CLASS IV) (TYPE 3 BEDDING)
WITH FES LT. & RT.
Q50 = 67 CFS D.A. = 46 ACRES
48" R.C. PIPE = 88 LIN. FT.
48" FES = 2 EA.

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

MAIN LANES

STA. 5104+75.00 BEGIN SUPERELEVATION (N.C.)
STA. 5108+25.00 MAX SUPERELEVATION (0.020'/') (ROTATE TO PLANAR SECTION)
STA. 5121+02.00 MAX SUPERELEVATION (0.020'/') (ROTATE TO PLANAR SECTION)
STA. 5124+52.00 END SUPERELEVATION (N.C.)

+68 FLOOD PLAIN BOUNDARY

K=2054.79
VC=1500'
e=-1.38'

-0.47%

-0.18% RT DT GR.

P.V.T. 5075+30.00
186.06

+50.00 RT DT GR
RT.ELEV. 178.00

-5.59% RT DT GR.

Q50 DESIGN H.W.
ELEVATION 169.10'

+70.00 RT DT GR
RT.ELEV. 165.70

+80

F.L. INLET RT. 165.70
F.L. OUTLET LT. 164.50

P.V.C. 5086+50.00
180.75

P.V.I. 5094+00.00
177.19

K=1470.59
VC=1500'
e=-1.91'

F.L. INLET RT. 160.30
F.L. OUTLET LT. 160.10

Q50 DESIGN H.W.
ELEVATION 164.30'

-6.52% RT DT GR.

-4.17% LT. DT.GR.

+85

3.38% RT. DT GR.

3.38% LT. DT.GR.

-1.49%

+85.00 RT DT GR.
RT.ELEV. 166.17

00.00 LT DT GR.
LT.ELEV. 162.60

+60.00 LT DT GR.
LT.ELEV. 160.10

+75.00 RT DT GR.
RT.ELEV. 160.30

+95.00 LT DT GR.
LT.ELEV. 160.10

+95.00 RT DT GR.
RT.ELEV. 160.30

+00.00 RT DT GR.
RT.ELEV. 163.85

00.00 LT DT GR.
LT.ELEV. 163.65

P.V.I. 5101+50.00
165.98

P.V.C. 5103+50.00
162.99

K=335.57
VC=500'
e=0.93'

230 220 210 200 190 180 170 160 150 140

5075+00 5076+00 5077+00 5078+00 5079+00 5080+00 5081+00 5082+00 5083+00 5084+00 5085+00 5086+00 5087+00 5088+00 5089+00 5090+00 5091+00 5092+00 5093+00 5094+00 5095+00 5096+00 5097+00 5098+00 5099+00 5100+00 5101+00 5102+00 5103+00 5104+00 5105+00

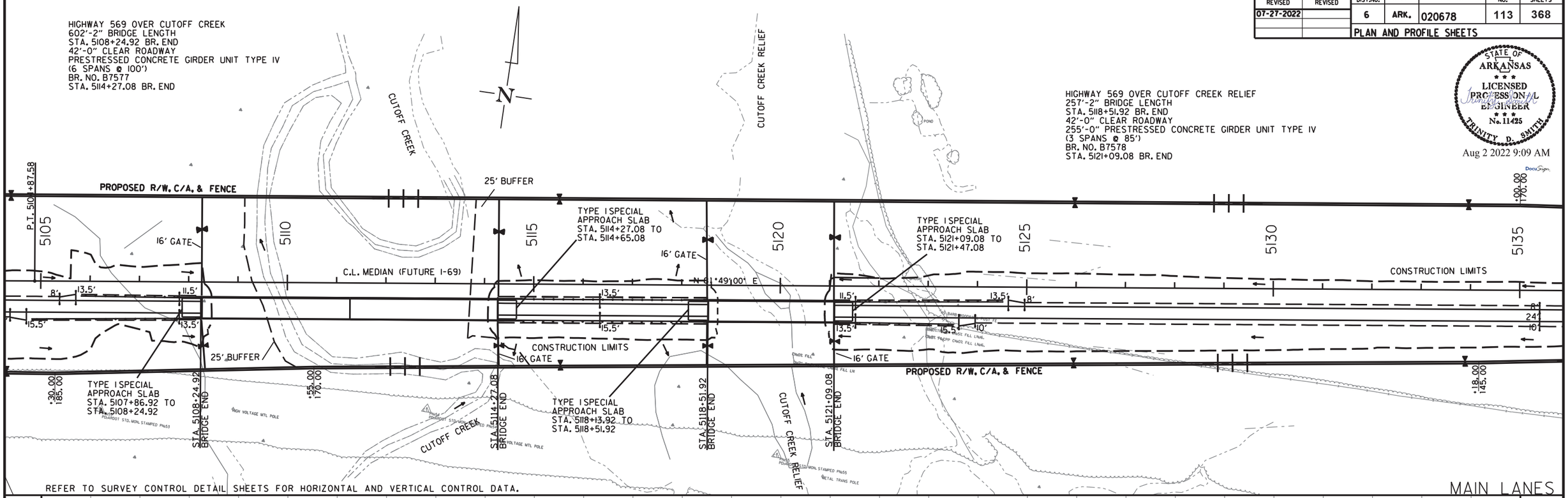
mh39735 5/9/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	113	368
		PLAN AND PROFILE SHEETS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Aug 2 2022 9:09 AM

HIGHWAY 569 OVER CUTOFF CREEK
602'-2" BRIDGE LENGTH
STA. 5108+24.92 BR. END
42'-0" CLEAR ROADWAY
PRESTRESSED CONCRETE GIRDER UNIT TYPE IV
(6 SPANS @ 100')
BR. NO. B7577
STA. 5114+27.08 BR. END

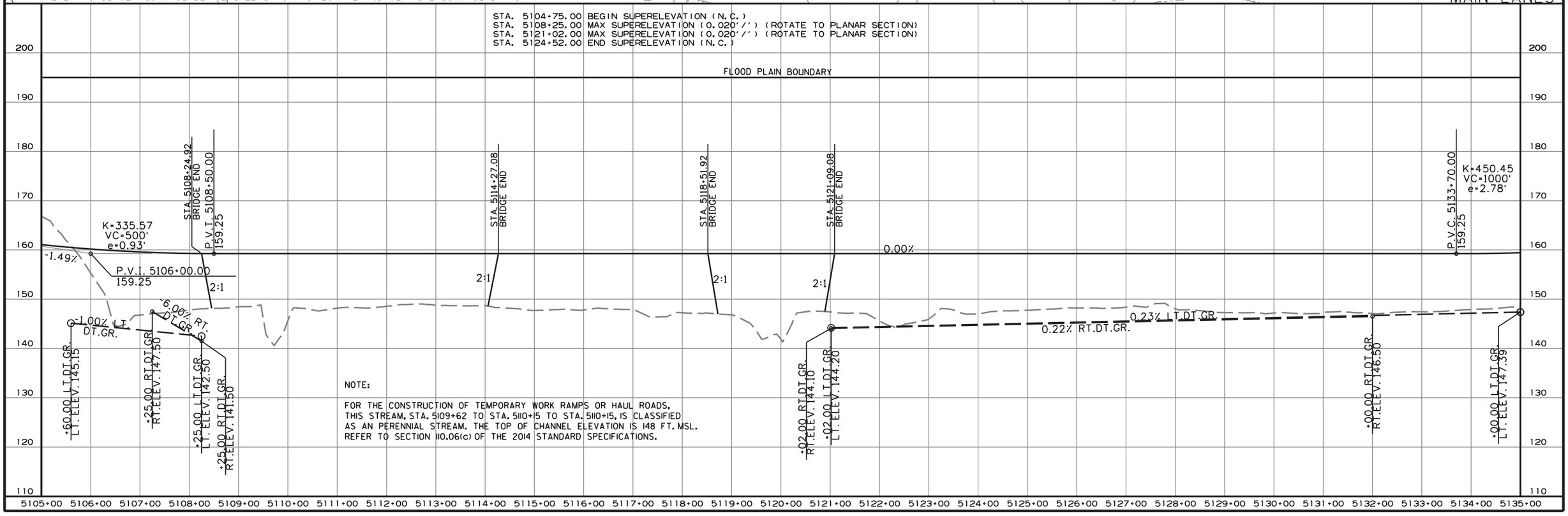
HIGHWAY 569 OVER CUTOFF CREEK RELIEF
257'-2" BRIDGE LENGTH
STA. 5118+51.92 BR. END
42'-0" CLEAR ROADWAY
255'-0" PRESTRESSED CONCRETE GIRDER UNIT TYPE IV
(3 SPANS @ 85')
BR. NO. B7578
STA. 5121+09.08 BR. END



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

MAIN LANES

STA. 5104+75.00 BEGIN SUPERELEVATION (N.C.)
STA. 5108+25.00 MAX SUPERELEVATION (0.020'/') (ROTATE TO PLANAR SECTION)
STA. 5121+02.00 MAX SUPERELEVATION (0.020'/') (ROTATE TO PLANAR SECTION)
STA. 5124+52.00 END SUPERELEVATION (N.C.)



NOTE:

FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS, THIS STREAM, STA. 5109+62 TO STA. 5110+15 TO STA. 5110+15, IS CLASSIFIED AS AN PERENNIAL STREAM. THE TOP OF CHANNEL ELEVATION IS 148 FT. MSL. REFER TO SECTION 110.06(c) OF THE 2014 STANDARD SPECIFICATIONS.

mh39735 5/9/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	114	368
		PLAN AND PROFILE SHEETS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Aug 2 2022 9:09 AM

STA. 5160+57.05 52' RT. OF I-69 CL =
STA. 312+52.59 HWY. 293 CL
Δ = 90° 00' 00"

P.I. 315+45.37
P.I. 316+63.64
P.C. 314+23.13

FLOOD PLAIN BOUNDARY
PROPOSED R/W, C/A, & FENCE
CONSTRUCTION LIMITS
N 81°49'00" E
C.L. MEDIAN (FUTURE I-69)
8'
24'
10'
36'
420' TAPER
+76.05
+96.05
OBLITERATION OF EXIST. PAVEMENT
EXIST. R/W
FUTURE JOB 020732
REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.
MAIN LANES
STA. 5162+18.05
END JOB 020678
3:1 EMBANKMENT SLOPE
FUTURE JOB 020732
-0.36%
0.03% RT.DT.GR
0.03% LT.DT.GR.
2.22%
0.00%
2.66% LT.DT.GR.
1.07% LT.DT.GR.
K=450.45
VC=1000'
e=2.78'
K=387.60
VC=1000'
e=-3.23'
+50 RT.
+00.00 LT. ELEV. 147.39
+00.00 LT. ELEV. 150.60
P.V.I. 5138+70.00 159.25
+02.00 LT. ELEV. 161.28
P.V.T. 5143+70.00 170.37
P.V.C. 5148+00.00 179.92
+50.00 RT. ELEV. 180.01
+50.00 LT. ELEV. 180.01
P.V.I. 5153+00.00 191.04
P.V.T. 5158+00.00 189.25
+18.05 RT. ELEV. 180.31
+18.05 LT. ELEV. 180.31
FLOOD PLAIN BOUNDARY +50

5135+00 5136+00 5137+00 5138+00 5139+00 5140+00 5141+00 5142+00 5143+00 5144+00 5145+00 5146+00 5147+00 5148+00 5149+00 5150+00 5151+00 5152+00 5153+00 5154+00 5155+00 5156+00 5157+00 5158+00 5159+00 5160+00 5161+00 5162+00 5163+00 5164+00 5165+00

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		PLAN AND PROFILE SHEETS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Aug 2 2022 9:09 AM
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HWY. 278
PI = 107+07.48
Δ = 5°07'25"RT.
D = 2°17'31"
T = 111.85'
L = 223.56'
PC = 105+95.63
PT = 108+19.19
FOR INFORMATION ONLY

HWY. 278
PI = 110+64.29
Δ = 25°44'53"RT.
D = 7°26'28"
T = 175.99'
L = 346.03'
PC = 108+88.31
PT = 112+34.33
FOR INFORMATION ONLY

HWY. 278
PI = 113+34.55
Δ = 3°29'38"RT.
D = 2°17'31"
T = 76.25'
L = 152.45'
PC = 112+58.30
PT = 114+10.75
FOR INFORMATION ONLY

HWY. 278
PI = 119+55.04
Δ = 2°07'45"RT.
D = 2°51'53"
T = 37.16'
L = 74.32'
PC = 119+17.88
PT = 119+92.20
FOR INFORMATION ONLY

STA. 122+30 INSTALL
18" X 32' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 35 CU. YD.

HWY. 278
PI = 124+42.71
Δ = 5°09'36"RT.
D = 2°07'19"
T = 121.66'
L = 243.15'
PC = 123+21.05
PT = 125+64.20
FOR INFORMATION ONLY

STA. 4726+46.95 I-69 CL =
STA. 111+23.52 HWY. 278 CL
Δ = 76° 19' 13"

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

HWY. 278

mh39735 5/9/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	116	368
08-03-2022		PLAN AND PROFILE SHEETS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Aug 4 2022 4:12 PM
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PI = 810+63.92
Δ = 3°15'00" LT.
D = 0°15'00"
T = 650.17'
L = 1300.00'
PC = 804+13.75
PT = 817+13.75
e = NO SUPER

PROPOSED R/W, C/A, & FENCE

P.C. 485+73.92

P.T. 4863+73.92

CONSTRUCTION LIMITS

P.C. 800+00.00

N 52°30'00" E

20'

PROPOSED C/A. & FENCE

PROPOSED R/W

80' R

P.I. 4857+42.08

P.I. 810+63.92

CULTIVATED FIELD

PROPOSED C/A. & FENCE

N 49°15'00" E.

20'

CONSTRUCTION LIMITS

PROPOSED R/W

STA. 817+27 CONSTRUCT
42" X 56' R.C. PIPE CULVERT
ON A 45° RT. FWD. SKEW
(CLASS IV) (TYPE 3 BEDDING)
WITH FES LT. & RT.
Q50 = 47 CFS D.A. = 47 ACRES
42" R.C. PIPE = 56 LIN. FT.
42" FES = 2 EA.

STA. 800+08.44 BEGIN
LD LONG FRONTAGE RD

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

LD LONG FRONTAGE RD.

P.V.I. 800+08.44
187.49
2.40%
P.V.C. 800+25.00
187.89
P.V.I. 801+50.00
190.89
K=103.31
VC=250'
e=-0.76'
P.V.T. 802+75.00
190.86
-0.02%
P.V.C. 816+00.00
190.58
P.V.I. 817+25.00
190.55
K=1666.67
VC=250'
e=-0.05'
+27
+20.00 LT. DT. GR.
LT. ELEV. 183.60
+60.00 RT. DT. GR.
RT. ELEV. 183.40
F.L. INLET LT. 183.60
F.L. OUTLET RT. 183.40
P.V.T. 818+50.00
190.34
0.71% LT. DT. GR.
0.85% RT. DT. GR.
+00.00 RT. DT. GR.
RT. ELEV. 186.30
+00.00 LT. DT. GR.
LT. ELEV. 186.30
-0.17%

230 220 210 200 190 180 170 160 150 140

800+00 801+00 802+00 803+00 804+00 805+00 806+00 807+00 808+00 809+00 810+00 811+00 812+00 813+00 814+00 815+00 816+00 817+00 818+00 819+00 820+00 821+00 822+00 823+00 824+00 825+00 826+00 827+00 828+00 829+00 830+00

mh39735 5/9/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
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08-03-2022		PLAN AND PROFILE SHEETS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Aug 4 2022 4:12 PM
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STA. 838+47.40 END
LD LONG FRONTAGE RD.

STA. 838+57.40 LD LONG FRONTAGE RD =
STA. 907+27.50 LD LONG RD CL
Δ = 90° 00'00"

LD LONG FRONTAGE RD.

STA. 836+84 CONSTRUCT
DBL. 8' X 4' X 52' R.C. BOX CULVERT
ON A 10° RT. FWD. SKEW
WITH 31 WINGS LT. & RT.
Q50 = 321 CFS D.A. = 270 ACRES
SPAN = 19'-1"

PI = 837+69.02
Δ = 12°12'08" LT.
D = 28°30'00"
T = 21.49'
L = 42.82'
PC = 837+47.53
PT = 837+90.35
e = NO SUPER

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

STA. 838+47.40 FRONTAGE RD
STA. 907+27.50 LD LONG RD
ELEV. = 186.59

Q50 DESIGN H. W. ELEVATION 180.50'

K=151.52
VC=200'
e=-0.33'

K=57.31
VC=200'
e=0.87'

-0.17%
-3.35% LT. DT.GR.
-3.39% RT. DT.GR.
-1.49%
2.38% LT. DT.GR.
2.51% RT.DT.GR.
0.32% RT. DT.GR.
2.00%

P.V.C. 834+00.00 187.67
P.V.I. 835+00.00 187.50
P.V.C. 836+25.00 185.63
P.V.I. 837+25.00 184.14
P.V.T. 838+25.00 186.14
P.V.I. 838+47.40 186.59
P.V.T. 836+00.00 186.01

+00.00 LT. ELEV. 184.05 LT. DT GR
+00.00 RT. ELEV. 184.05 RT. DT GR
F.L. INLET LT. 175.20
F.L. OUTLET RT. 175.10
+64.00 LT. ELEV. 175.20 LT. DT GR
+64.00 RT. ELEV. 175.10 RT. DT GR
+94.00 LT. ELEV. 175.20 LT. DT GR
+94.00 RT. ELEV. 175.10 RT. DT GR
+25.00 RT. ELEV. 175.00 RT. DT GR
+00.00 LT. ELEV. 177.72 LT. DT GR
+18.85 RT. ELEV. 177.36 RT. DT GR.

230 220 210 200 190 180 170 160 150 140

830+00 831+00 832+00 833+00 834+00 835+00 836+00 837+00 838+00 839+00 840+00 841+00 842+00 843+00 844+00 845+00 846+00 847+00 848+00 849+00 850+00 851+00 852+00 853+00 854+00 855+00 856+00 857+00 858+00 859+00 860+00

m39735 5/9/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	118	368
08-03-2022		PLAN AND PROFILE SHEETS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Aug 4 2022 4:12 PM

STA. 900+00.00 BEGIN
LD LONG RD

STA. 900+00
CONSTRUCT APPROACH = 10 CU. YD.

STA. 4884+13 CONSTRUCT
DBL. 8' X 4' X 222' R.C. BOX CULVERT
ON A 10° RT. FWD. SKEW
WITH 3:1 WINGS LT. & RT.
AND 24" X 14' PIPE INLET W/ FES
AND 24" X 16' PIPE INLET W/ FES
(CLASS III) (TYPE 3 BEDDING)
24" R.C. PIPE = 30 LIN. FT.
24" FES = 2 EACH
Q50 = 321 CFS D.A. = 270 ACRES
SPAN = 19'-1"

STA. 905+64 CONSTRUCT
24" X 80' R.C. PIPE CULVERT
(CLASS III) (TYPE 3 BEDDING)
WITH FES LT. & RT.
Q50 = 1.87 CFS D.A. = 2.47 ACRES
24" R.C. PIPE = 74 LIN. FT.
24" FES = 2 EA.

PI = 901+94.44
Δ = 36°11'29" LT.
D = 28°30'00"
T = 65.69'
L = 126.98'
PC = 901+28.75
PT = 902+55.73
e = NO SUPER

PI = 905+34.89
Δ = 90°00'00" RT.
R = 90.00'
T = 90.00'
L = 141.37'
PC = 904+44.89
PT = 905+86.26
e = NO SUPER

STA. 4886+00 52' RT. OF I-69 CL =
STA. 906+30.59 LD LONG RD CL
Δ = 90° 00' 00"

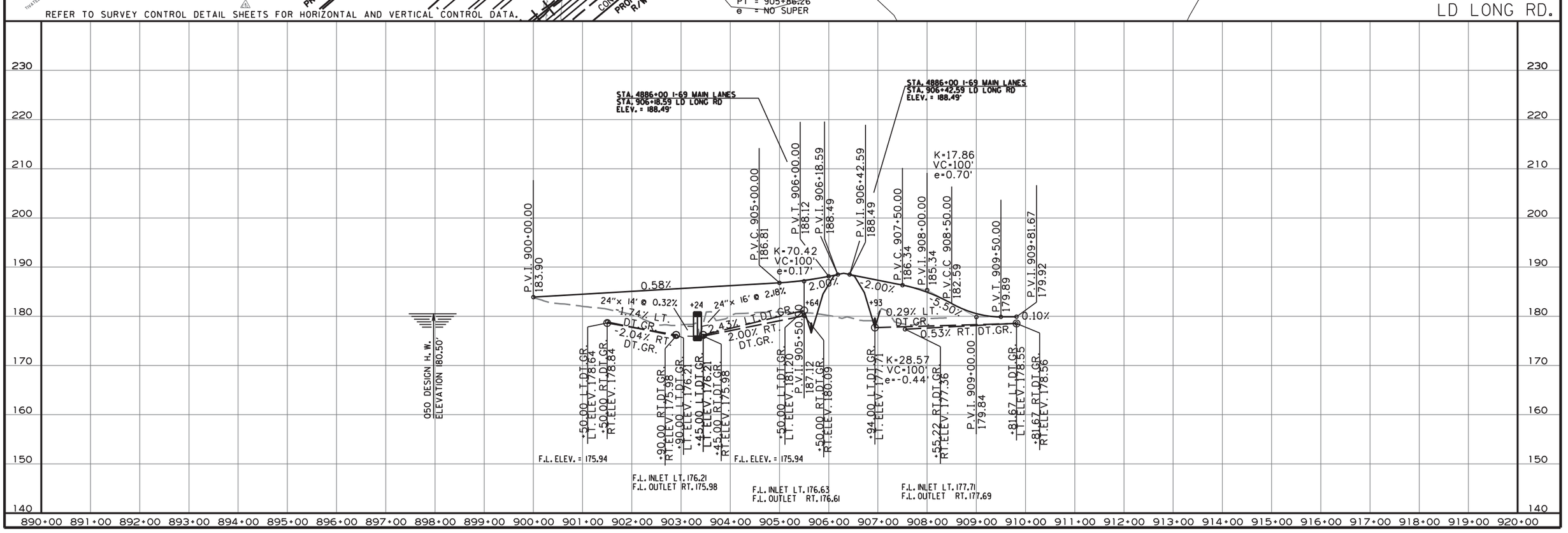
PI = 907+76.42
Δ = 48°20'03" LT.
D = 28°30'00"
T = 90.21'
L = 169.59'
PC = 906+86.21
PT = 908+55.80
e = NO SUPER

STA. 906+93 CONSTRUCT
24" X 66' R.C PIPE CULVERT
(CLASS III) (TYPE 3 BEDDING)
WITH FES LT. & RT.
Q50 = 1.30 CFS D.A. = 1.97 ACRES
24" R.C. PIPE = 66 LIN. FT.
24" FES = 2 EA.

STA. 909+81.67 END
LD LONG RD

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

LD LONG RD.



mh39735 5/9/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	119	368
		PLAN AND PROFILE SHEETS				

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

Aug 2 2022 9:10 AM

DocuSign

STA. 102+73 IN PLACE
20' X 30' C.M. PIPE CULVERT
REMOVE AND CONSTRUCT
24" X 36' R.C. PIPE CULVERT
(CLASS IV) (TYPE 3 BEDDING)
WITH FES LT. & RT.
Q25 = 9.0 CFS D.A. = 6.23 ACRES
24" R.C. PIPE = 36 LIN. FT.
24" FES = 2 EA.

STA. 103+47 INSTALL
18" X 52' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 45 CU. YD.

PI = 102+98.57
Δ = 25°21'26"LT.
D = 12°00'00"
T = 107.41'
L = 211.31'
PC = 101+91.16
PT = 104+02.47
e = NO SUPER

STA. 104+80 IN PLACE
20' X 28' C.M. PIPE CULVERT
REMOVE AND CONSTRUCT
24" X 38' R.C. PIPE CULVERT
(CLASS IV) (TYPE 3 BEDDING)
WITH FES LT. & RT.
Q25 = 1.20 CFS D.A. = 1.0 ACRES
24" R.C. PIPE = 30 LIN. FT.
24" FES = 2 EA.

PI = 111+68.58
Δ = 27°05'49" LT.
D = 28°30'00"
T = 48.44'
L = 95.07'
PC = 111+20.14
PT = 112+15.21
e = NO SUPER

OBLITERATION OF EXIST. PAVEMENT

STA. 105+87 INSTALL
18" X 34' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 55 CU. YD.

STA. 106+00 INSTALL
18" X 32' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 475 CU. YD.

STA. 100+00.00 BEGIN
HWY. CO. RD. 75

STA. 5030+00.00 52' RT. OF I-69 CL =
STA. 107+45.61 CO. RD. 75 CL
Δ = 90° 00' 00"

STA. 114+57.79 END
HWY. CO. RD. 75

PI = 109+22.71
Δ = 66°30'37" RT.
D = 28°30'00"
T = 131.83'
L = 233.37'
PC = 107+90.88
PT = 110+24.25
e = NO SUPER

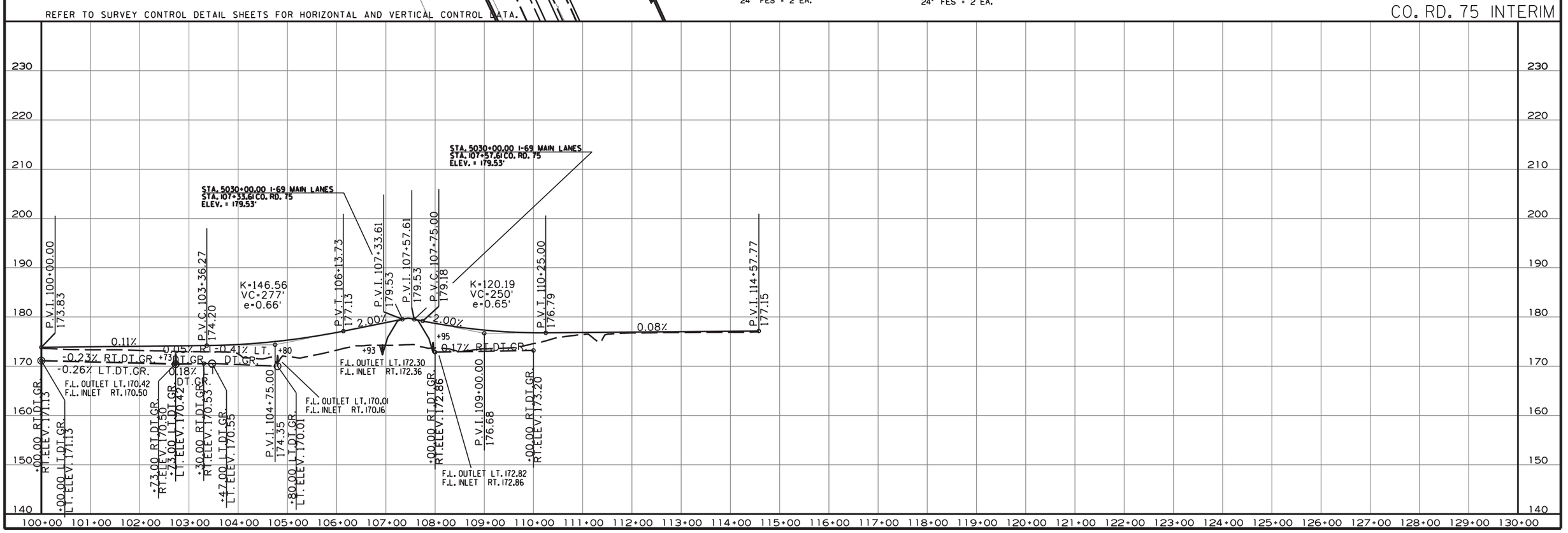
STA. 106+93 CONSTRUCT
24" X 48' R.C. PIPE CULVERT
(CLASS IV) (TYPE 3 BEDDING)
WITH FES LT. & RT.
Q50 = 1.97 CFS D.A. = 4.36 ACRES
24" R.C. PIPE = 48 LIN. FT.
24" FES = 2 EA.

STA. 107+95 CONSTRUCT
24" X 50' R.C. PIPE CULVERT
(CLASS IV) (TYPE 3 BEDDING)
WITH FES LT. & RT.
Q50 = 5.30 CFS D.A. = 4.67 ACRES
24" R.C. PIPE = 50 LIN. FT.
24" FES = 2 EA.

STA. 103+47 INSTALL
18" X 32' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 75 CU. YD.

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

CO. RD. 75 INTERIM



mh39735 5/9/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	120	368
		PLAN AND PROFILE SHEETS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
Aug 2 2022 9:10 AM

PI = 303+43.52
Δ = 29°53'49" LT.
D = 10°30'00"
T = 145.69'
L = 284.73'
PC = 301+97.83
PT = 304+82.56
e = 0.100'/'
Ls = 300'

STA. 311+93 CONSTRUCT
24" X 158' R.C. PIPE CULVERT
(CLASS III) (TYPE 3 BEDDING)
WITH FES LT. & RT.
Q50 = 6.9 CFS D.A. = 11.2 ACRES
24" R.C. PIPE = 158 LIN. FT.
24" FES = 2 EA.

STA. 300+90 IN PLACE
12" x 30' CM PIPE CULVERT
REMOVE & INSTALL
18" X 30' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 45 CU. YD.

STA. 305+15 INSTALL
18" X 34' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 30 CU. YD.

STA. 303+93 INSTALL
18" X 48' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 160 CU. YD.

CONC. ISLAND W/ TYPE B CURB FACE = 94 SQ. YDS.
CONC. ISLAND W/ TYPE B CURB FACE = 44 SQ. YDS.

CONC. ISLAND W/ TYPE B CURB FACE = 94 SQ. YDS.
CONC. ISLAND W/ TYPE B CURB FACE = 44 SQ. YDS.

PI = 307+65.40
Δ = 21°26'09" RT.
D = 10°30'00"
T = 103.28'
L = 204.15'
PC = 306+62.12
PT = 308+66.27
e = 0.100'/'
Ls = 300'

STA. 5160+57.05 52' RT. OF I-69 CL = STA. 312+52.59 HWY. 293 CL
Δ = 90° 00' 00"

STA. 313+12 CONSTRUCT
24" X 156' R.C. PIPE CULVERT
(CLASS III) (TYPE 3 BEDDING)
WITH FES LT. & RT.
Q50 = 2.1 CFS D.A. = 2.4 ACRES
24" R.C. PIPE = 156 LIN. FT.
24" FES = 2 EA.

PI = 315+45.37
Δ = 25°15'11" RT.
D = 10°30'00"
T = 122.24'
L = 240.51'
PC = 314+23.13
PT = 316+63.64
e = 0.100'/'
Ls = 300'

OBLITERATION OF EXIST. PAVEMENT

PI = 327+10.73
Δ = 16°43'05" LT.
D = 10°30'00"
T = 80.18'
L = 159.22'
PC = 326+30.55
PT = 327+89.77
e = 0.100'/'
Ls = 300'

STA. 322+23 EXIST.
DBL. 24" X 40' C.M. PIPE CULVERT
REMOVE

STA. 322+66 CONSTRUCT
DBL. 24" X 52' R.C. PIPE CULVERT
ON A 20° LT. FWD. SKEW
(CLASS III) (TYPE 3 BEDDING)
WITH FES LT. & RT.
Q25 = 26.9 CFS D.A. = 30.54 ACRES
24" R.C. PIPE = 104 LIN. FT.
24" FES = 4 EA.

+00 +00 100' TRANSITION

+14.77 +14.77 100' TRANSITION

STA. 301+00.00 BEGIN HWY. 293 INTERIM

STA. 330+14.77 END HWY. 293 INTERIM

HWY. 293 INTERIM

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

STA. 301+00.00 BEGIN SUPERELEVATION
STA. 303+31.00 MAX SUPERELEVATION (0.077'/')
STA. 303+41.34 MAX SUPERELEVATION (0.077'/')
STA. 305+72.34 END SUPERELEVATION

STA. 305+72.34 BEGIN SUPERELEVATION
STA. 307+64.19 MAX SUPERELEVATION (0.063'/')
STA. 309+02.27 MAX SUPERELEVATION (0.063'/')
STA. 310+91.27 END SUPERELEVATION

STA. 314+23.13 BEGIN SUPERELEVATION
STA. 315+43.38 MAX SUPERELEVATION (0.040'/')
STA. 317+68.64 MAX SUPERELEVATION (0.040'/')
STA. 318+88.64 END SUPERELEVATION

STA. 324+05.55 BEGIN SUPERELEVATION
STA. 327+05.55 MAX SUPERELEVATION (0.100'/')
STA. 327+14.77 MAX SUPERELEVATION (0.100'/')
STA. 330+14.77 END SUPERELEVATION

STA. 5160+57.05 I-69 MAIN LANES = STA. 312+34.59 HWY. 293 INTERIM ELEV. = 187.73'

STA. 5160+57.05 I-69 MAIN LANES = STA. 312+70.59 HWY. 293 INTERIM ELEV. = 187.73'

STA. 311+93 INLET = 180.30 RT. OUTLET = 180.27 LT.

STA. 313+12 INLET = 180.30 RT. OUTLET = 180.27 LT.

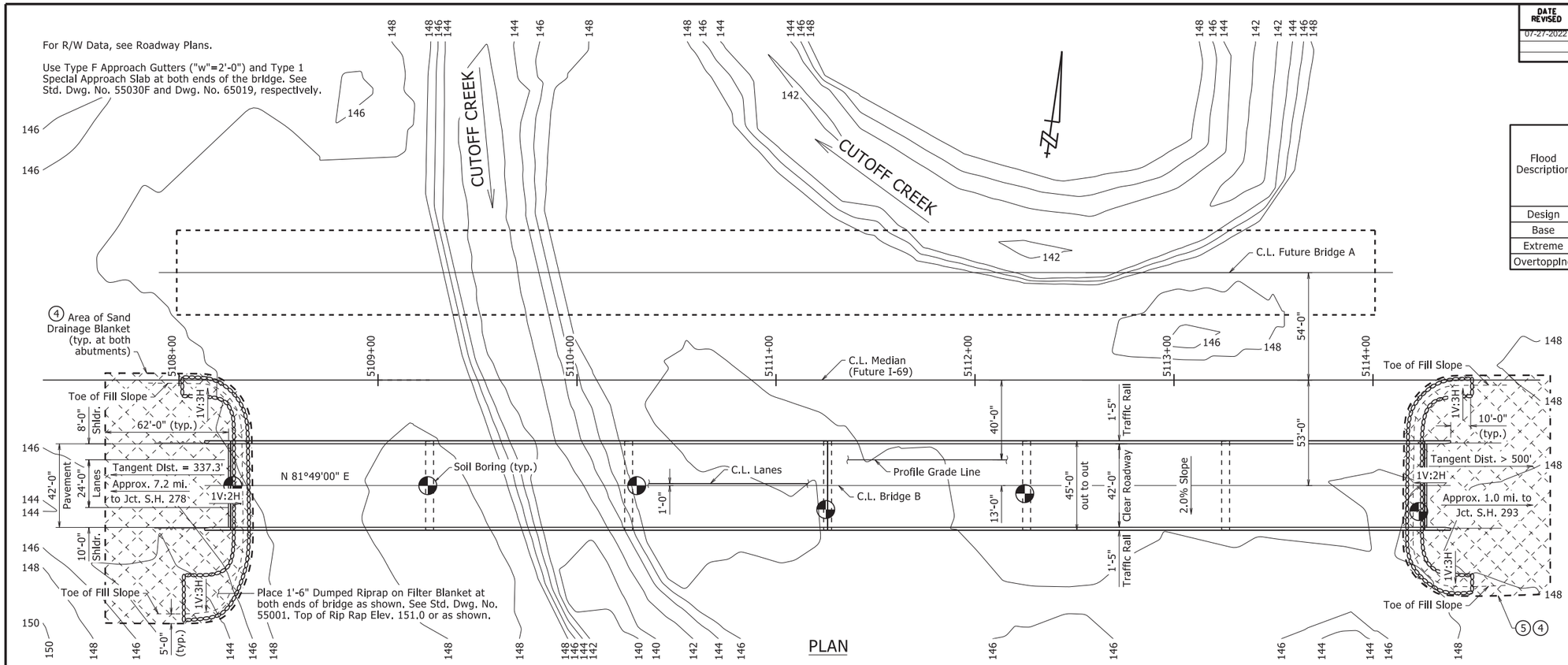
STA. 322+66 INLET = 178.58 LT. OUTLET = 178.50 RT.

mh39735 5/9/2022
RO20678.DGN

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	121	368
		B7577 -	LAYOUT	- 64988		

For R/W Data, see Roadway Plans.

Use Type F Approach Gutters ("w"=2'-0") and Type 1 Special Approach Slab at both ends of the bridge. See Std. Dwg. No. 55030F and Dwg. No. 65019, respectively.



PLAN

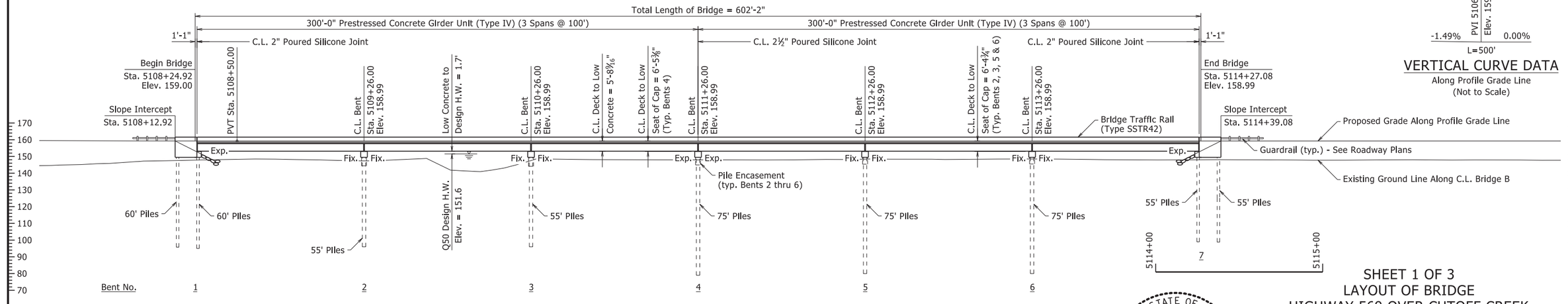
3 HYDRAULIC DATA

Flood Description	Frequency	2 Total Discharge	Discharge This Site	1 Natural Water Surface Elevation	Water Surface Elevation With Backwater
	Years	CFS	CFS	FEET	FEET
Design	50	6,145	4,120	150.9	151.6
Base	100	7,000	4,708	151.2	151.9
Extreme	500	9,070	5,773	151.6	152.4
Overtopping	>500	-	-	-	-

1. Unconstricted water surface elevation without structure or roadway approaches.
2. The Total Discharge includes flow at this site, and flow at Cutoff Creek Relief.

   Proposed Low Bridge Chord Elev. = 153.28 ft.

   Drainage Area = 91.6 square miles
   Historical H.W. Elev. N/A
3. Hydraulic Data Based on Future Condition with both bridges in place.
4. The existing ground in the vicinity of the bridge abutments requires an undercut prior to the construction of the bridge embankments. The limits of the undercut should be as shown on the plans and to a minimum depth of 3' below natural ground. The backfill material should be as specified in SP Job 020678 "SAND DRAINAGE BLANKET" to a height that is 2' above natural ground.
5. Consolidation tests indicate the time required to achieve maximum settlement at Bent 7 is more than 6 weeks. The Contractor shall complete the embankment construction and monitor the settlement of the foundation soils during the waiting period at Bent 7 prior to driving piles. The Engineer shall determine when pile driving may begin. See SP Job 020678 "SETTLEMENT MONITORING".



ELEVATION

Stations shown are along C.L. Median. Elevations shown are actual top of deck elevations at C.L. Bridge. Any vertical dimensions referenced to C.L. Deck is based on actual top of deck elevation at C.L. Bridge.

See Dwg. Nos. 64989 and 64990 for General Notes and Soil Borings.

PVI 5106+00.00
Elev. 159.25
-1.49% 0.00%
L=500'

VERTICAL CURVE DATA
Along Profile Grade Line
(Not to Scale)

STATE OF ARKANSAS
Jun 27 2022 5:16PM
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 1 OF 3
LAYOUT OF BRIDGE
HIGHWAY 569 OVER CUTOFF CREEK
HWY. 278 - HWY. 293 (S)
DREW COUNTY

ROUTE 569 SEC. 7

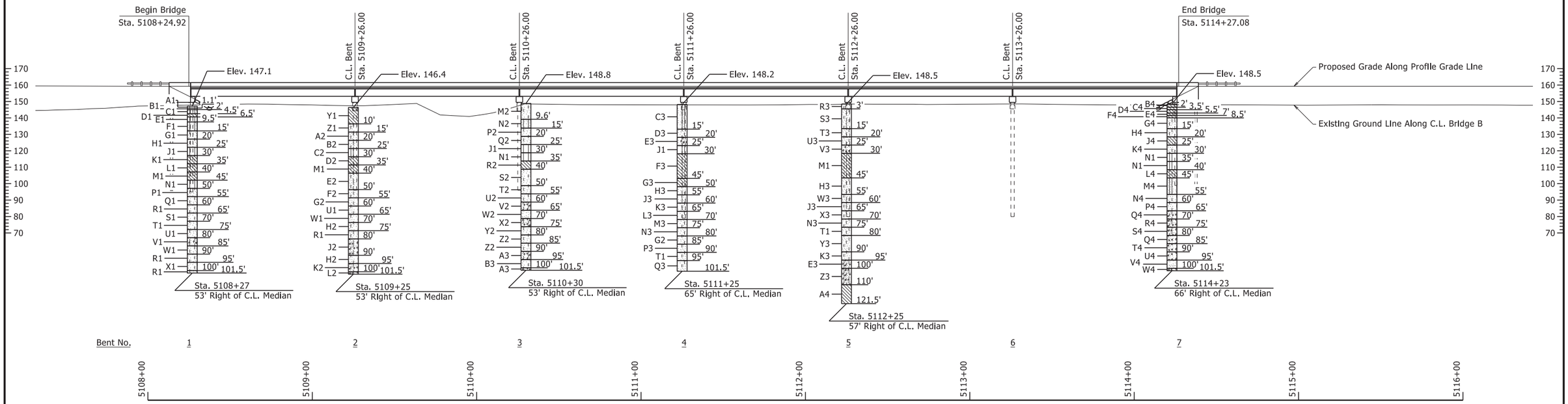
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: NAC DATE: 4/7/2021
CHECKED BY: CMW DATE: 11/2021
DESIGNED BY: CMW DATE: 4/2021
FILENAME: b020678x1_l1.dgn
SCALE: 1" = 30'

BRIDGE NO. B7577 DRAWING NO. 64988

PRINT DATE: 6/17/2022

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	122	368
		B7577 -	LAYOUT	- 64989		



ELEVATION OF SOIL BORINGS

"N" VALUES

Sta. 5108+27 - 53' Rt. of C.L. Median
2.5 - 3.5, N=7
7.0 - 8.0, N=11
10.0 - 11.0, N=18
15.5 - 16.5, N=16
20.5 - 21.5, N=0
25.5 - 26.5, N=1
30.5 - 31.5, N=13
35.5 - 36.5, N=16
40.5 - 41.5, N=25
45.5 - 46.5, N=24
50.5 - 51.5, N=39
55.5 - 56.5, N=35
60.5 - 61.5, N=52
65.5 - 66.5, N=45
70.5 - 71.5, N=42
75.5 - 76.5, N=27
80.5 - 81.5, N=34
85.5 - 86.5, N=48
90.5 - 91.5, N=89
95.5- 96.5, N=45
100.5 - 101.5, N=54

Sta. 5109+25 - 53' Rt. of C.L. Median
5.5 - 6.5, N=13
10.5 - 11.5, N=28
15.5 - 16.5, N=9
20.5 - 21.5, N=3
25.5 - 26.5, N=0
30.5 - 31.5, N=17
35.5 - 36.5, N=25
40.5 - 41.5, N=21
45.5 - 46.5, N=29
50.5 - 51.5, N=29
55.5 - 56.5, N=45
60.5 - 61.5, N=21
65.5 - 66.5, N=42
70.5 - 71.5, N=25
75.5 - 76.5, N=53
80.5 - 81.5, N=30
85.5 - 86.5, N=27
90.5 - 91.5, N=29
95.5 - 96.5, N=45
100.5 - 101.5, N=34

Sta. 5110+30 - 53' Rt. of C.L. Median
5.1 - 6.1, N=4
10.1 - 11.1, N=13
15.5 - 16.5, N=21
20.5 - 21.5, N=23
25.5 - 26.5, N=3
30.5 - 31.5, N=25
35.5 - 36.5, N=35
40.5 - 41.5, N=63
45.5 - 46.5, N=47
50.5 - 51.5, N=29
55.5 - 56.5, N=42
60.5 - 61.5, N=39
65.5 - 66.5, N=48
70.5 - 71.5, N=96
75.5 - 76.5, N=82
80.5 - 81.5, N=67
85.5 - 86.5, N=66
90.5 - 91.5, N=132
95.5 - 96.5, N=182
100.5 - 101.5, N=111

Sta. 5111+25 - 65' Rt. of C.L. Median
5.9 - 6.9, N=13
10.9 - 11.9, N=12
15.5 - 16.5, N=21
20.5 - 21.5, N=17
25.5 - 26.5, N=2
30.5 - 31.5, N=13
35.5 - 36.5, N=11
40.5 - 41.5, N=16
45.5 - 46.5, N=26
50.5 - 51.5, N=14
55.5 - 56.5, N=25
60.5 - 61.5, N=26
65.5 - 66.5, N=46
70.5 - 71.5, N=24
75.5 - 76.5, N=49
80.5 - 81.5, N=38
85.5 - 86.5, N=75
90.5 - 91.5, N=38
95.5 - 96.5, N=51
100.5 - 101.5, N=57

Sta. 5112+25 - 57' Rt. of C.L. Median
0.5 - 1.5, N=5
2.0 - 3.0, N=7
3.5 - 4.5, N=12
5.0 - 6.0, N=10
6.5 - 7.5, N=9
8.0 - 9.0, N=8
9.5 - 10.5, N=10
15.5 - 16.5, N=19
20.5 - 21.5, N=15
25.5 - 26.5, N=3
30.5 - 31.5, N=17
35.5 - 36.5, N=16
40.5 - 41.5, N=26
45.5 - 46.5, N=24
50.5 - 51.5, N=14
55.5 - 56.5, N=15
60.5 - 61.5, N=18
65.5 - 66.5, N=61
70.5 - 71.5, N=36
75.5 - 76.5, N=32
80.5 - 81.5, N=65
85.5 - 86.5, N=10
90.5 - 91.5, N=29
95.5 - 96.5, N=21
100.5 - 101.5, N=46
105.5 - 106.5, N=34
110.5 - 111.5, N=30
115.5 - 116.5, N=24
120.5 - 121.5, N=27

Sta. 5114+23 - 66' Rt. of C.L. Median
2.5 - 3.5, N=9
6.0 - 7.0, N=7
7.5 - 8.5, N=9
9.0 - 10.0, N=12
15.5 - 16.5, N=4
20.5 - 21.5, N=4
25.5 - 26.5, N=2
30.5 - 31.5, N=14
35.5 - 36.5, N=13
40.5 - 41.5, N=61
45.5 - 46.5, N=30
50.5 - 51.5, N=26
55.5 - 56.5, N=29
60.5 - 61.5, N=27
65.5 - 66.5, N=19
70.5 - 71.5, N=51
75.5 - 76.5, N=29
80.5 - 81.5, N=26
85.5 - 86.5, N=33
90.5 - 91.5, N=14
95.5 - 96.5, N=25
100.5 - 101.5, N=49

STATE OF ARKANSAS
7 Jun 27 2022 5:17PM
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 2 OF 3
LAYOUT OF BRIDGE
HIGHWAY 569 OVER CUTOFF CREEK
HWY. 278 - HWY. 293 (S)
DREW COUNTY

ROUTE 569 SEC. 7
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: NAC DATE: 4/7/2021
CHECKED BY: CMW DATE: 11/2021
DESIGNED BY: CMW DATE: 4/2021
FILENAME: b020678x1_l1.dgn
SCALE: 1" = 30'

BRIDGE NO. B7577
DRAWING NO. 64989

PRINT DATE: 6/17/2022

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	123	368
		B7577 -	LAYOUT	- 64990		

BORING LEGEND

A1-Brown Silt with Some Organic Matter (Wood)
B1-Light Brown Silt
C1-Moist, Loose, Brown Sandy Silt
D1-Brown Lean Clay with Sand
E1-Moist, Medium Dense, Brown Silt
F1-Moist, Medium Dense, Brown Sandy Silt
G1-Wet, Medium Dense, Light Brown Silty Fine Sand
H1-Wet, Very Loose, Silty Sand with Some Gravel
J1-Wet, Very Loose, Brown Silt
K1-Moist, Stiff, Greenish Gray Silty Clay
L1-Moist, Very Stiff, Greenish Gray Silty Clay with Trace Poorly Cemented Nodules
M1-Moist, Very Stiff, Greenish Gray Silty Clay
N1-Moist, Medium Dense, Greenish Gray Silt
P1-Wet, Dense, Light Brown Silty Sand
Q1-Wet, Dense, Brown Sand with Silt
R1-Wet, Very Dense, Brown Sand with Silt and Trace Gravel
S1-Wet, Dense, Light Brown Sand with Silt and Some Gravel
T1-Wet, Dense, Light Brown Sand with Silt and Trace Gravel
U1-Wet, Medium Dense, Light Brown Sand with Silt and Trace Gravel
V1-Wet, Dense, Light Brown Sand with Silt and Gravel
W1-Wet, Dense, Brown Sand with Silt and Trace Gravel
X1-Wet, Dense, Brown Sand with Silt and Some Gravel
Y1-Moist, Stiff, Brown Clay
Z1-Moist, Medium Dense, Light Brown Silty Fine Sand
A2-Wet, Loose, Light Brown Silty Fine Sand
B2-Wet, Very Loose, Light Brown Silty Fine Sand with Some Gravel
C2-Wet, Very Loose, Gray Silt
D2-Moist, Very Stiff, Greenish Gray Silty Clay with Some Poorly Cemented Nodules
E2-Wet, Medium Dense, Dark Gray Silty Sand
F2-Wet, Medium Dense, Reddish Brown Sand with Silt and Trace Gravel
G2-Wet, Dense, Light Brown Sand with Silt
H2-Wet, Medium Dense, Brown Sand with Silt and Some Gravel
J2-Wet, Medium Dense, Brown Sand with Silt and Gravel
K2-Wet, Dense, Brown Sand with Silt and Gravel
L2-Wet, Dense, Gray Sand with Silt and Gravel
M2-Dry, Very Loose, Brown Fine Sand with Silt
N2-Moist, Loose, Gray Silt with Fine Sand
P2-Moist, Medium Dense, Brown Poorly Graded Fine Sand with Silt
Q2-Wet, Medium Dense, Light Brown Poorly Graded Sand with Silt and Some Gravel
R2-Moist, Very Stiff, Greenish Gray Lean Clay
S2-Wet, Dense, Dark Brown Silty Fine Sand with Some Poorly Cemented Sand Nodules
T2-Wet, Medium Dense, Light Brown Poorly Graded Fine Sand with Silt and Trace Gravel
U2-Wet, Medium Dense, Light Brown Poorly Graded Fine Sand with Silt and Trace Gravel and Cobbles
V2-Wet, Medium Dense, Light Brown Poorly Graded Sand with Silt and Gravel
W2-Wet, Medium Dense, Light Brown Poorly Graded Sand with Some Gravel
X2-Wet, Very Dense, Light Brown Poorly Graded Sand with Silt and Gravel
Y2-Wet, Very Dense, Light Brown Poorly Graded Sand with Silt
Z2-Wet, Dense, Light Brown Poorly Graded Sand with Silt and Some Gravel
A3-Wet, Very Dense, Poorly Graded Sand with Silt and Gravel
B3-Wet, Very Dense, Brown Poorly Graded Fine Sand with Silt and Some Gravel
C3-Wet, Medium Dense Brown Sandy Silt
D3-Wet, Medium Dense, Brown Silty Fine Sand
E3-Wet, Medium Dense, Brown Fine Sand with Silt and Gravel
F3-Wet, Stiff, Greenish Gray Silty Clay
G3-Wet, Very Stiff, Greenish Gray Silty Clay
H3-Wet, Medium Dense, Dark Brown Silty Fine Sand
J3-Wet, Medium Dense, Light Brown Fine Sand with Silt
K3-Wet, Medium Dense, Light Brown Fine Sand with Silt and Some Gravel
L3-Wet, Dense, Light Brown Fine Sand with Silt and Some Gravel
M3-Wet, Medium Dense, Light Brown Fine Sand with Silt and Trace Gravel
N3-Wet, Dense, Light Brown Fine Sand with Silt and Trace Gravel
P3-Wet, Very Dense, Light Brown Sand with Silt and Some Gravel
Q3-Wet, Very Dense, Light Brown Sand with Silt and Trace Gravel
R3-Moist, Loose, Brown Silty Fine Sand
S3-Moist, Medium Dense, Brown Silty Fine Sand
T3-Wet, Medium Dense, Silty Fine Sand
U3-Wet, Medium Dense, Brown Fine Sand with Silt
V3-Wet, Very Loose, Gray Gravel with Sand
W3-Wet, Medium Dense, Light Reddish Brown Fine Sand with Silt and Trace Gravel
X3-Wet, Very Dense, Light Brown Fine Sand with Silt
Y3-Wet, Very Dense, Light Brown Fine Sand with Silt and Trace Gravel
Z3-Wet, Dense, Brown Fine Sand with Silt and Gravel
A4-Moist, Very Stiff, Gray Clay (Jackson Group)
B4-Moist, Brown Lean Clay with Some Manganese Nodules
C4-Moist, Stiff, Brown Lean Clay
D4-Moist, Brown Lean Clay with Sand Some Manganese Nodules
E4-Wet, Medium Stiff, Brown Lean Clay with Sand and Some Manganese Nodules
F4-Wet, Stiff, Brown Clay with Sand and Some Manganese Nodules
G4-Wet, Medium Dense, Brown Silty Fine Sand with Some Manganese Nodules
H4-Wet, Very Loose, Dark Brown Sandy Silt with Trace Organic Matter (Wood)
J4-Wet, Soft, Brown and Gray Lean Clay with Sand
K4-Wet, Very Loose, Brown Silty Sand with Some Gravel (No recovery)
L4-Moist, Very Hard, Greenish Gray Silty Clay with Sand (Poorly Cemented Nodules)
M4-Wet, Medium Dense, Brown Silt with Fine Sand and Trace Gravel
N4-Wet, Medium Dense, Brown Poorly Graded Fine Sand with Silt and Trace Gravel
P4-Wet, Medium Dense, Light Brown Poorly Graded Sand with Silt and Trace Gravel
Q4-Wet, Medium Dense, Light Brown Sand with Gravel
R4-Wet, Very Dense, Light Brown Poorly Graded Sand with Silt and Some Gravel
S4-Wet, Medium Dense, Light Brown Sand with Silt and Gravel
T4-Wet, Dense, Light Brown Well Graded Sand with Gravel
U4-Wet, Medium Dense, Brown Sand with Gravel
V4-Wet, Medium Dense, Brown Fine Sand with Some Gravel
W4-Wet, Dense, Gray Poorly Graded Sand with Silt and Gravel

GENERAL NOTES

BENCHMARK: Vertical Control Data are shown on the Survey Control Data Sheets.

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

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Eighth Edition (2017).

LIVE LOADING: HL-93

SEISMIC ZONE: 2 SITE CLASS: D S_{D1}: 0.177

SEISMIC OPERATIONAL CLASSIFICATION: ESSENTIAL

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (superstructure)	f'c = 4,000 psi
Class S Concrete (substructure)	f'c = 3,500 psi
Class S Concrete (prestressed concrete girders)	f'c = 8,000 psi
Reinforcing Steel (Grade 60, AASHTO M 31 or M 322, Type A)	fy = 60,000 psi
Structural Steel (ASTM A709, Gr. 50 or 50W)	Fy = 50,000 psi
Structural Steel (ASTM A709, Gr. 36)	Fy = 36,000 psi
Prestressing Strands (AASHTO M 203, Gr. 270)	f_{pu} = 270,000 psi

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

STEEL SHELL PILING: Piling in Bents 1 and 7 shall be 18" diameter concrete filled steel shell piles and shall be driven to a minimum ultimate bearing capacity of 225 tons per pile. Piling in Bents 2 thru 6 shall be 24" diameter concrete filled steel shell piles and shall be driven to a minimum ultimate bearing capacity of 400 tons per pile. All piling shall be driven with an approved air, steam, or diesel hammer. Piling in end bents shall be driven after embankment to bottom of cap is in place. Lengths of piling shown are assumed for estimating quantities only. Actual lengths are to be determined in the field. No additional payment will be made for cut-off or build-up. Test piles are not required but may be driven for the Contractor's information in accordance with Subsection 805.08(g). No piles will be paid for as test piles.

DRIVING SYSTEM: The driving system approval and the ultimate bearing capacity determination for piling shall be based on the requirements of Subsection 805.09(b), "Method B – Wave Equation Analysis (WEAP)". It is estimated that the minimum rated hammer energy required to obtain the ultimate bearing capacity will be 48,500 foot pounds per blow for Bents 1 and 7 and 84,000 foot pounds per blow for Bents 2 thru 6.

PILE ENCASEMENT: Pile encasement for Bents 2 thru 6 shall extend from bottom of cap to 3' below natural or finished ground. See Standard Drawing Number 55021 for additional information.

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

PROTECTIVE SURFACE TREATMENT: Class 2 Protective Surface Treatment shall be applied to the roadway surface and to the roadway face and top of the concrete parapet rail in accordance with Section 803.

DETAIL DRAWINGS:	DRAWING NO(S).
End Bents	64991 - 64994
Intermediate Bents	64995 - 64996
Elastomeric Bearings	65018
300'-0" Prestressed Concrete Girder Units	64997 - 65003
Poured Silicone Joints	65003
Concrete Filled Steel Shell Piling	55021
Type F Approach Gutter	55030F
Type 1 Special Approach Slab	65019
Bridge Traffic Rail	55071

STATE OF ARKANSAS
Tue 2/1/2022 5:17 PM
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 3 OF 3
LAYOUT OF BRIDGE
HIGHWAY 569 OVER CUTOFF CREEK
HWY. 278 - HWY. 293 (S)
DREW COUNTY

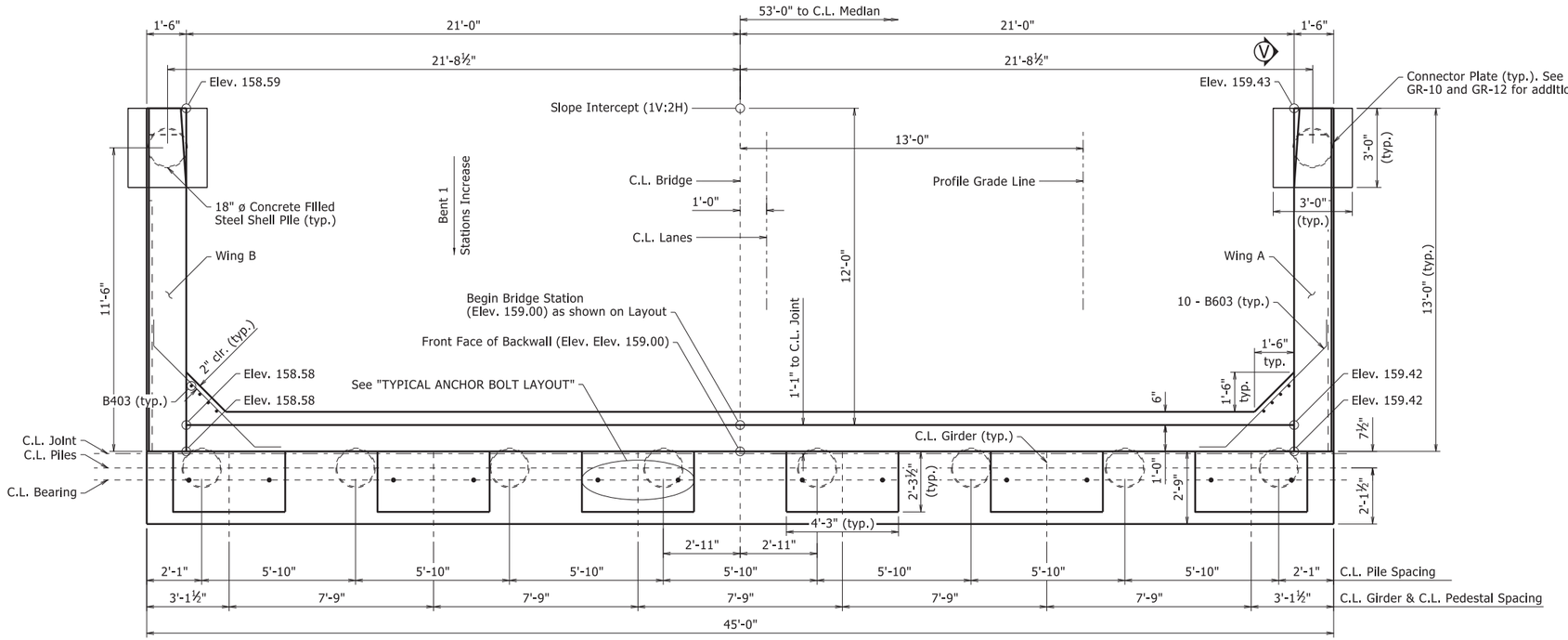
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ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: CMW DATE: 11/2021
DESIGNED BY: CMW DATE: 4/2021
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SCALE: 1" = 30'

BRIDGE NO. B7577 DRAWING NO. 64990

PRINT DATE: 6/17/2022

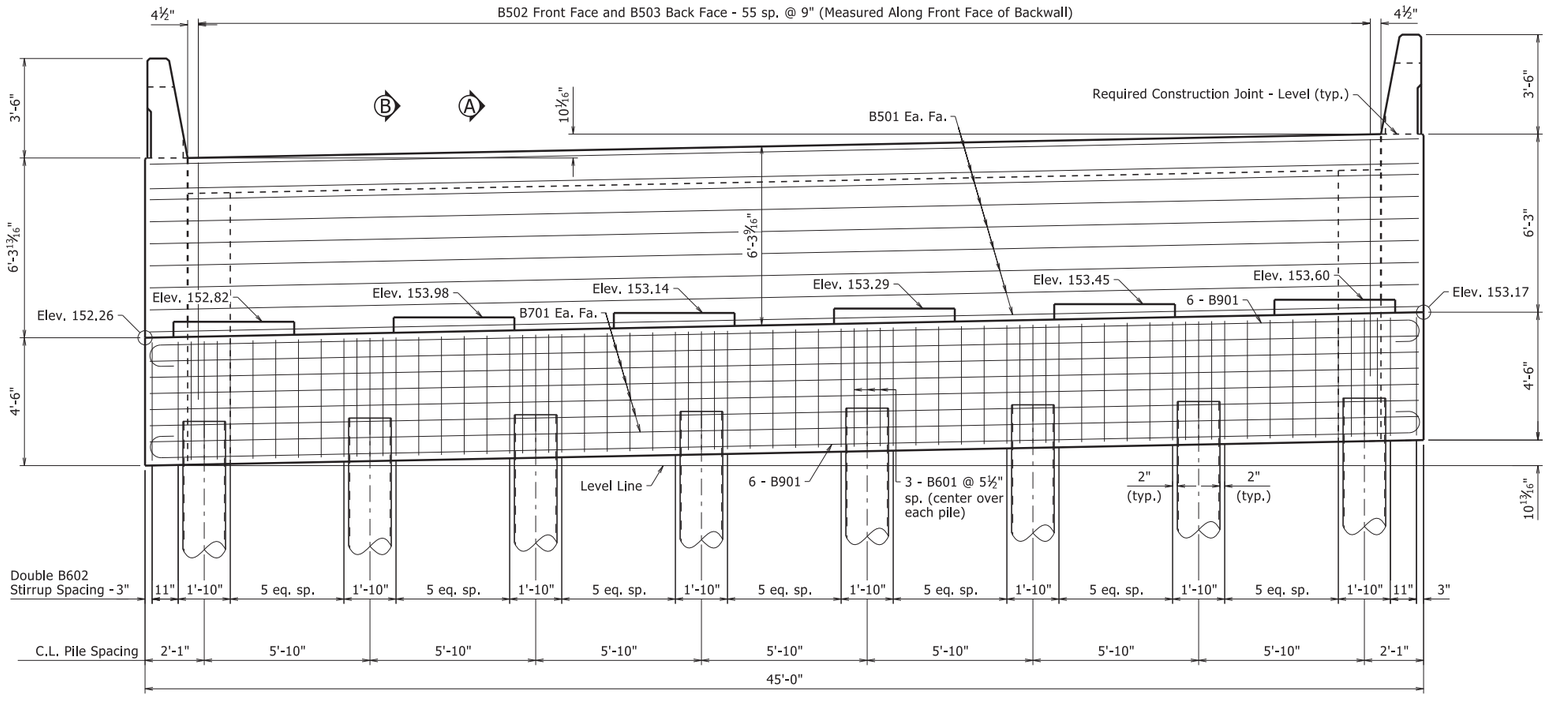
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07-27-2022		6	ARK.	020678	124	368
		B7577 - End Bents - 64991				



PLAN - BENT 1

⅜" = 1'-0"

For "VIEW V-V", See Dwg. No. 64994.



ELEVATION - BENT 1

Looking Back

⅜" = 1'-0"

GENERAL NOTES

Structural Steel in Bent 1 and Bent 7 shall be ASTM A709, Gr. 50W and shall be paid for as "Structural Steel in Beam Spans (A709, Gr. 50W)".

All pilling shall be ASTM A252, Grade 3 (Fy= 45 ksi). For details of concrete filled steel shell piles, see Std. Dwg. No. 55021.

Class 2 Protective Surface Treatment shall be applied to the top of the backwall and to the roadway face and top of the concrete rails.

For Details of Wings, see Dwg. No. 64994.

Pedestals shall be cast level at the elevations shown. For Details of Pedestals, see Dwg. No. 64992.

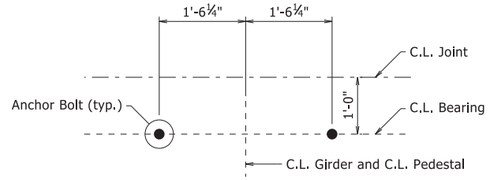
All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

For Bar List and additional Sections, see Dwg. Nos. 64993 and 64994.

All concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 3,500 psi and shall be poured in the dry. All exposed corners shall be chamfered ¾" unless noted otherwise.

Top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see Layout.



See Dwg. No. 65018 for Details of Elastomeric Bearings.

TYPICAL ANCHOR BOLT LAYOUT

No Scale

No portion of the backwall shall be poured before the girders are in place. The portion of the backwall above the optional construction joint at the paving bracket shall not be placed until the adjacent deck pour has been made. Refer to the "EXPANSION DEVICE INSTALLATION AT END BENTS" note on Dwg. No. 65003. No heavy construction equipment shall be allowed within 10' of the backwall before the deck concrete placement for the adjacent span has been completed.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
Jun 27 2022 5:17PM
BRIDGE ENGINEER

SHEET 1 OF 4
DETAILS OF END BENTS
CUTOFF CREEK

ROUTE SEC.

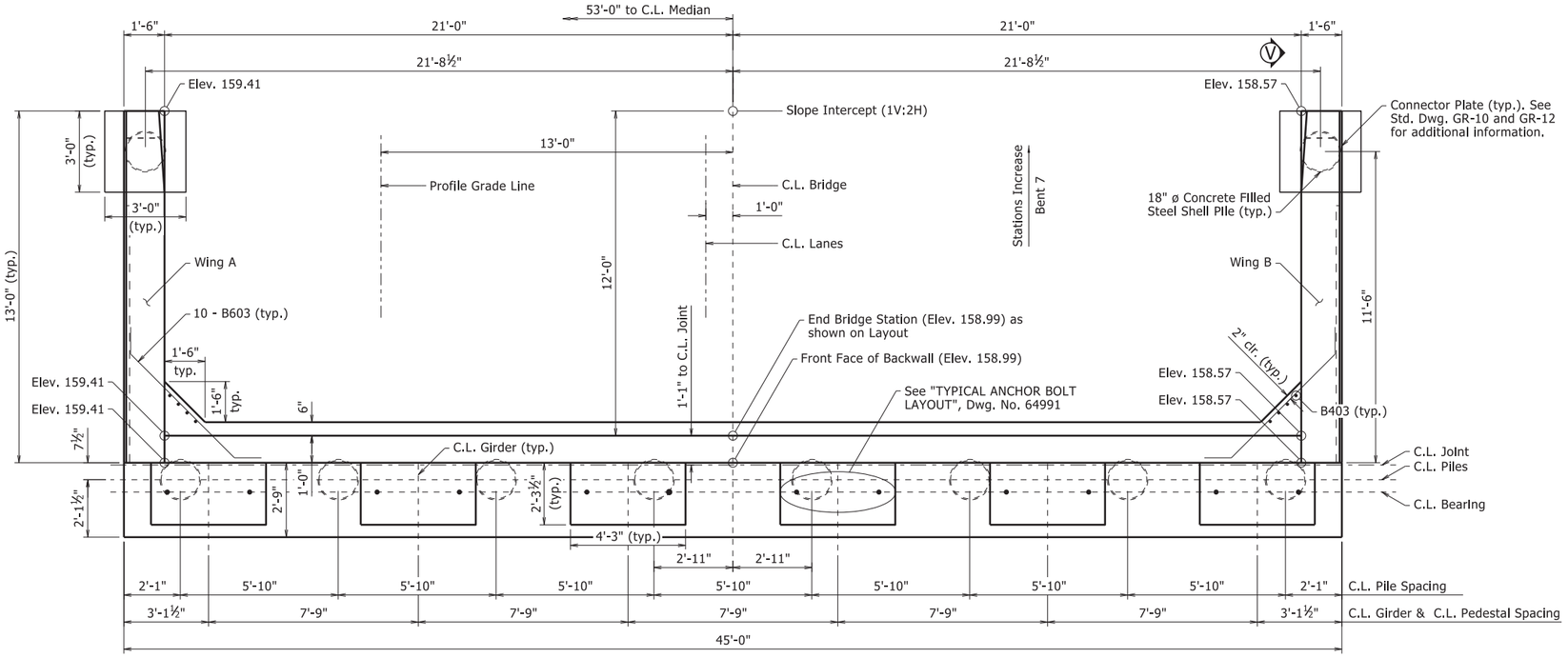
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LITTLE ROCK, ARK.

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DESIGNED BY: DBS	DATE: 3/2022		

BRIDGE NO. B7577 DRAWING NO. 64991

PRINT DATE: 6/27/2022

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
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		B7577 - End Bents - 64992				

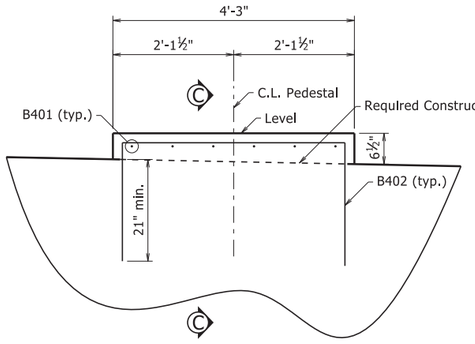


PLAN - BENT 7

⅜" = 1'-0"

For "VIEW V-V", See Dwg. No. 64994.

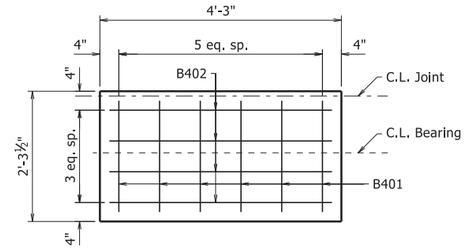
See Dwg. No. 64993 for "SECTION C-C".



TYPICAL PEDESTAL DETAIL

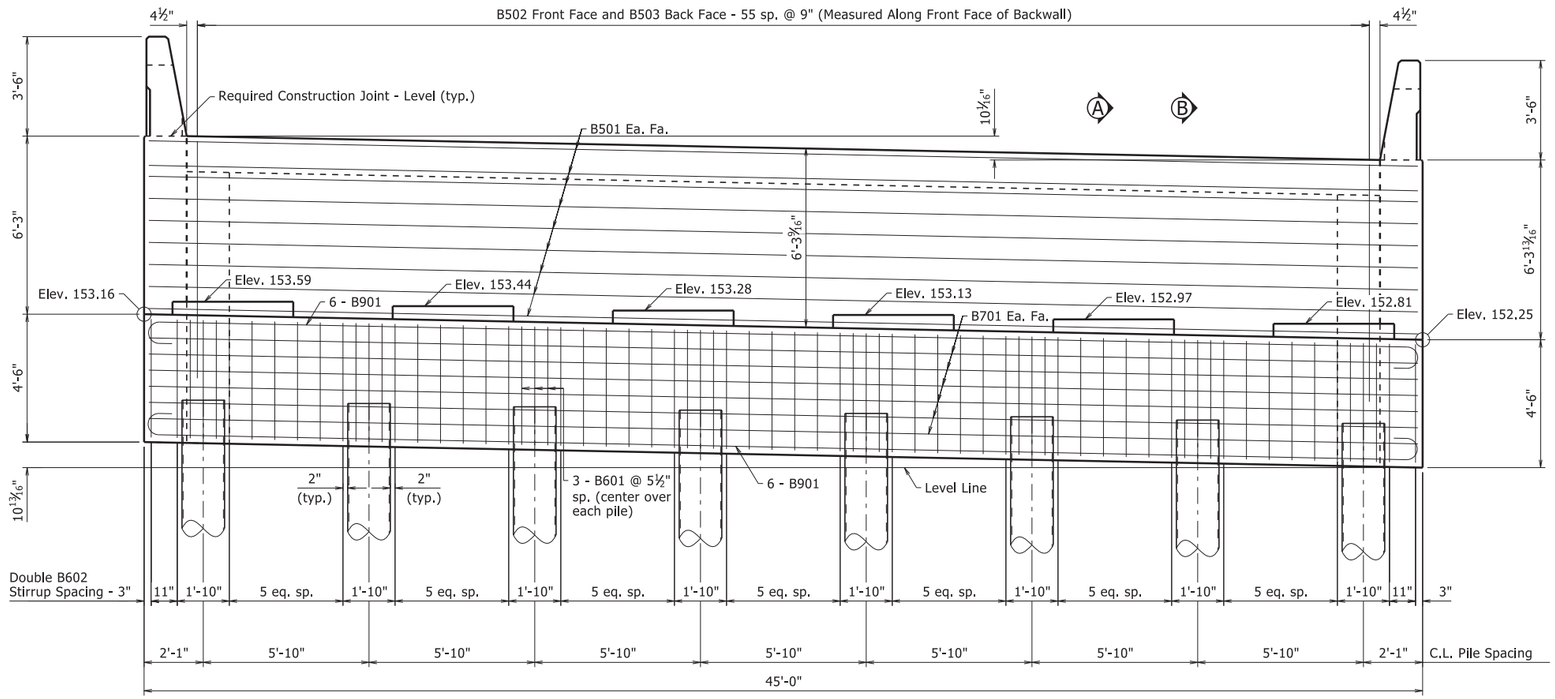
(Shown for Bent 7, Bent 1 Similar)

¾" = 1'-0"



PEDESTAL PLAN

¾" = 1'-0"



ELEVATION - BENT 7

Looking Ahead

⅜" = 1'-0"

No portion of the backwall shall be poured before the girders are in place. The portion of the backwall above the optional construction joint at the paving bracket shall not be placed until the adjacent deck pour has been made. Refer to the "EXPANSION DEVICE INSTALLATION AT END BENTS" note on Dwg. No. 65003. No heavy construction equipment shall be allowed within 10' of the backwall before the deck concrete placement for the adjacent span has been completed.

STATE OF ARKANSAS
Jun 27 2022 5:18 PM
Charles R. Ellis
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 2 OF 4
DETAILS OF END BENTS
CUTOFF CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

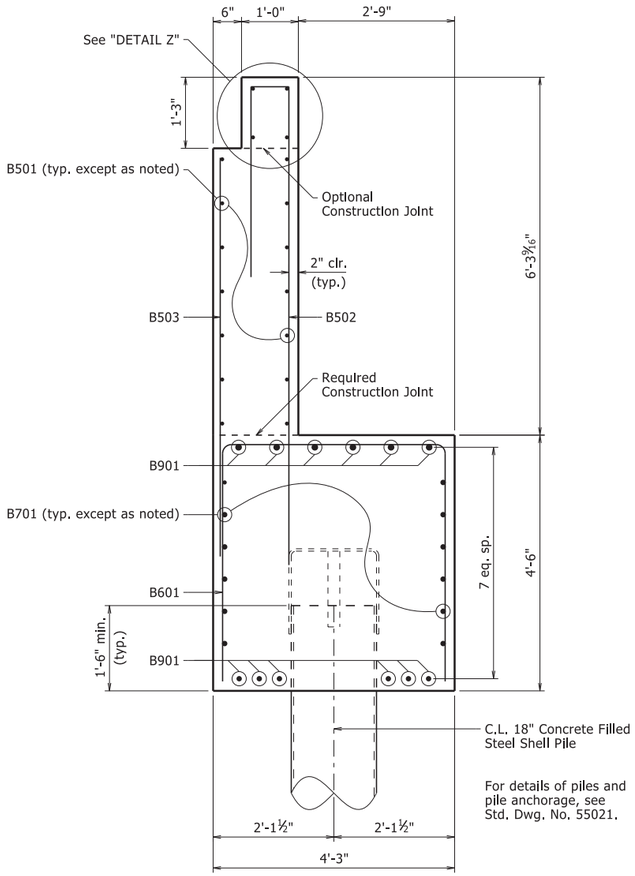
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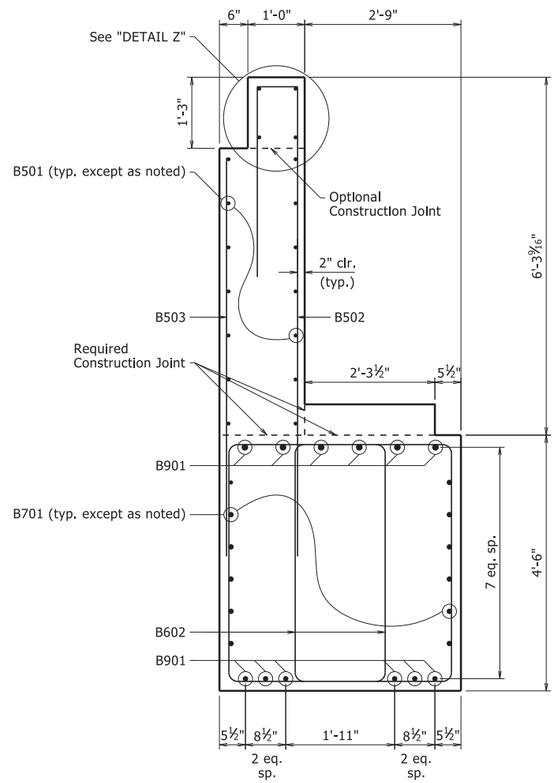
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07-27-2022		6	ARK.	020678	126	368
		B7577 - End Bents - 64993				



SECTION B-B

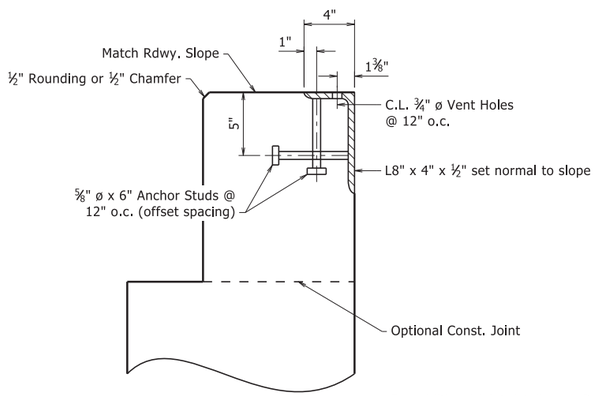
¾" = 1'-0"

For details of piles and pile anchorage, see Std. Dwg. No. 55021.



SECTION A-A

¾" = 1'-0"



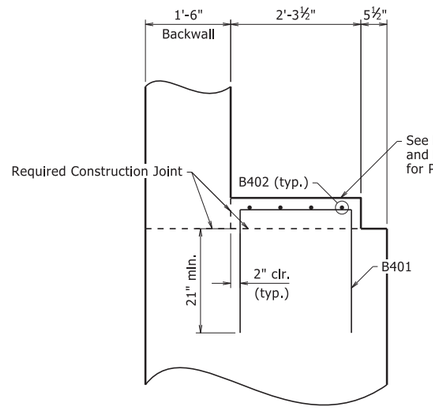
DETAIL Z

No Scale

For additional joint details, see Dwg. No. 65003.

Concrete shall be hand packed under the joint armor in the backwall.

Transverse spacing between top anchor studs and vent holes shall be 6".



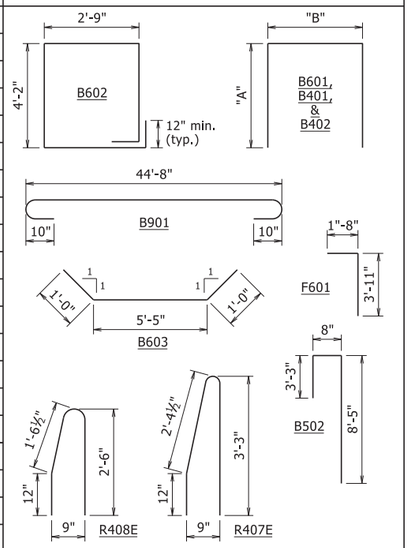
SECTION C-C

¾" = 1'-0"

BAR LIST - PER BENT

MARK	NO. REQ'D.	LENGTH	"A"	"B"	PIN DIA.
B401	36	6'-2"	2'-2"	1'-11½"	2"
B402	24	8'-1"	2'-2"	3'-11"	2"
B403	8	9'-0"	-	-	Str.
B501	18	44'-8"	-	-	Str.
B502	56	12'-0½"	-	-	2½"
B503	56	7'-0"	-	-	Str.
B601	24	11'-11"	4'-2"	3'-11"	4½"
B602	92	15'-0"	-	-	4½"
B603	20	7'-5"	-	-	4½"
B701	12	44'-8"	-	-	Str.
B901	12	47'-2"	-	-	9"
W501E	28	4'-5"	-	-	3¾"
W601	56	10'-3"	-	-	Str.
W701	48	12'-8"	-	-	Str.
F601	24	5'-5"	-	-	4½"
F602	12	2'-8"	-	-	Str.
R401E	48	7'-6"	-	-	3"
R402E	8	5'-6"	-	-	Str.
R404E	4	2'-8"	-	-	-
R405E	12	12'-8"	-	-	Str.
R406E	4	12'-6"	-	-	Str.
R407E	2	7'-4½"	-	-	2"
R408E	2	5'-9½"	-	-	2"

BENDING DIAGRAMS



Dimensions are out to out of bars.
Bars with "E" suffix are to be epoxy coated.

See Std. Dwg. No. 55071 for details of Rail bars.

STATE OF ARKANSAS
Jun 27 2022 5:18PM
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 3 OF 4
DETAILS OF END BENTS
CUTOFF CREEK

ROUTE SEC.

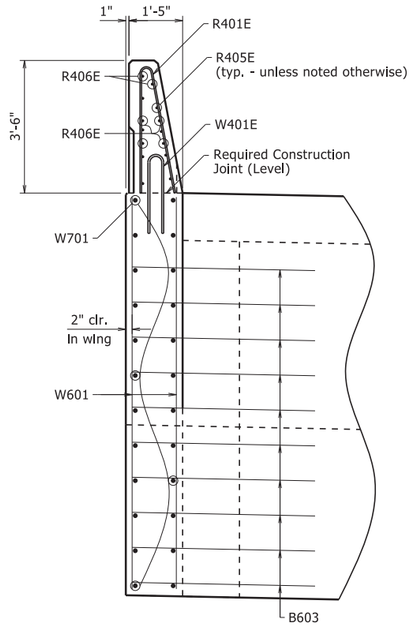
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LITTLE ROCK, ARK.

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BRIDGE NO. B7577 DRAWING NO. 64993

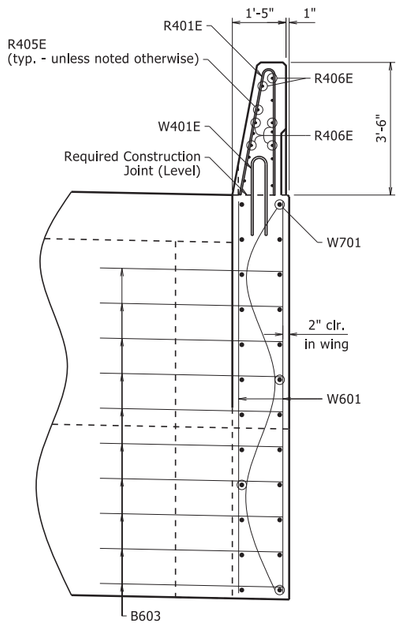
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		B7577 - End Bents - 64994				



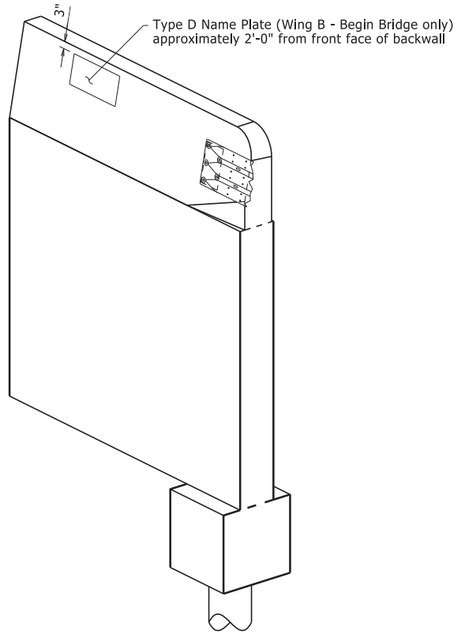
VIEW I-I

½" = 1'-0"



VIEW J-J

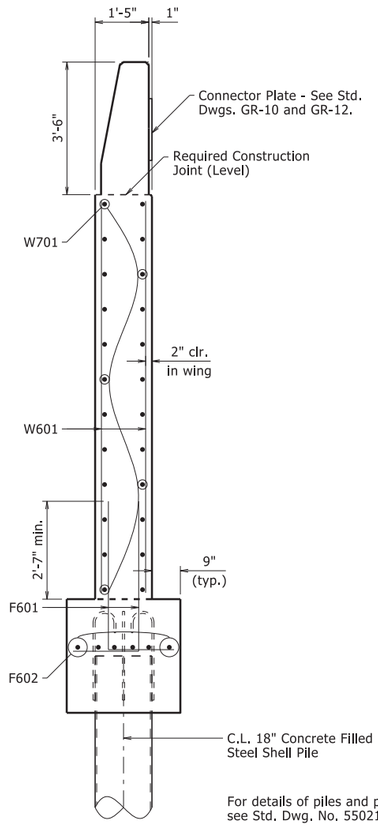
½" = 1'-0"



THREE DIMENSIONAL VIEW AT WING

No Scale

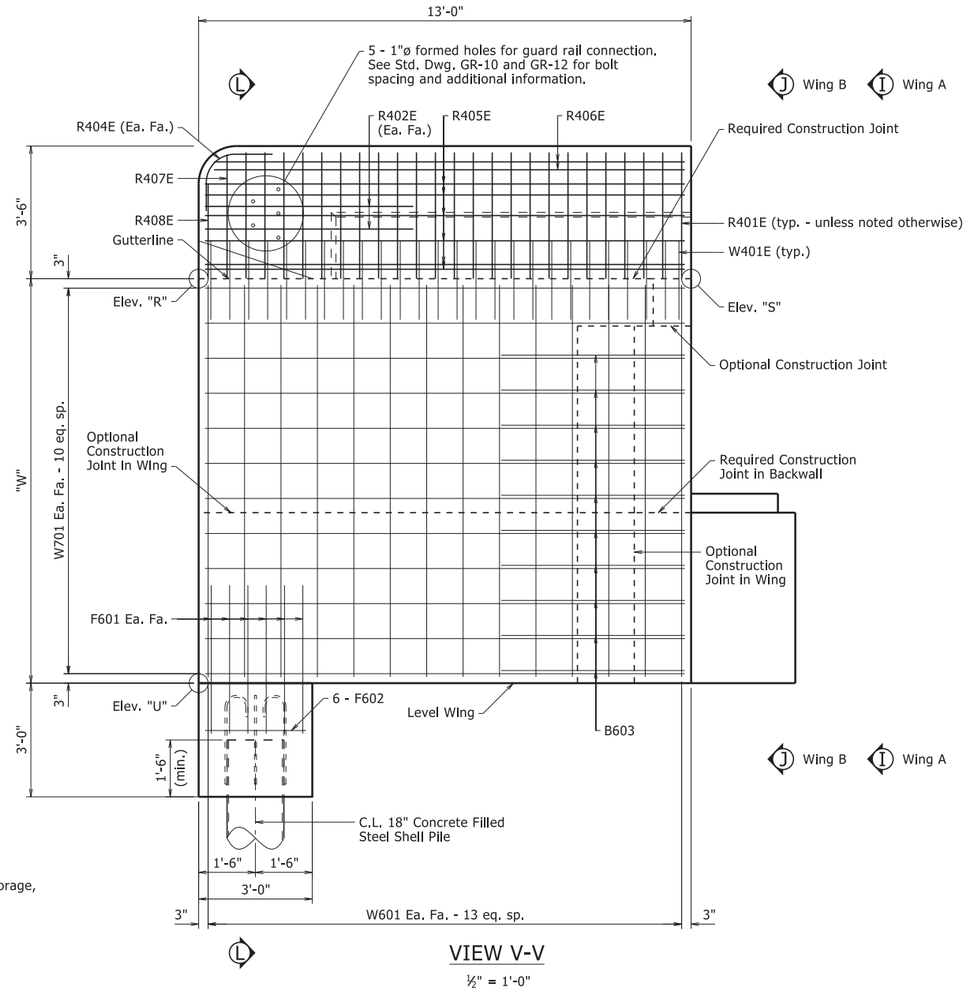
For Rail Bar details,
see Std. Dwg. No. 55071.



For details of piles and pile anchorage,
see Std. Dwg. No. 55021.

SECTION L-L

½" = 1'-0"

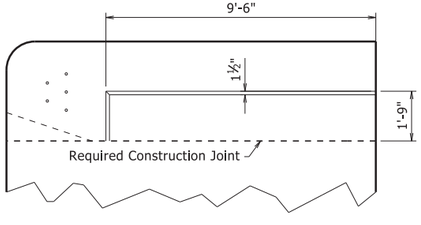


VIEW V-V

½" = 1'-0"

TABLE OF VARIABLES

BENT NO.	WING	"W"	"R"	"S"	"U"
1	A	10'-9 1/16"	159.42	159.41	148.67
	B	10'-9 13/16"	158.58	158.57	147.76
7	A	10'-9 1/16"	159.41	159.41	148.66
	B	10'-9 13/16"	158.57	158.57	147.75



LIMITS OF ENHANCEMENT

⅜" = 1'-0"

STATE OF
ARKANSAS
7 Jun 27 2022 5:18PM
LICENSED
PROFESSIONAL
ENGINEER
No. 9235
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 4 OF 4
DETAILS OF END BENTS
CUTOFF CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

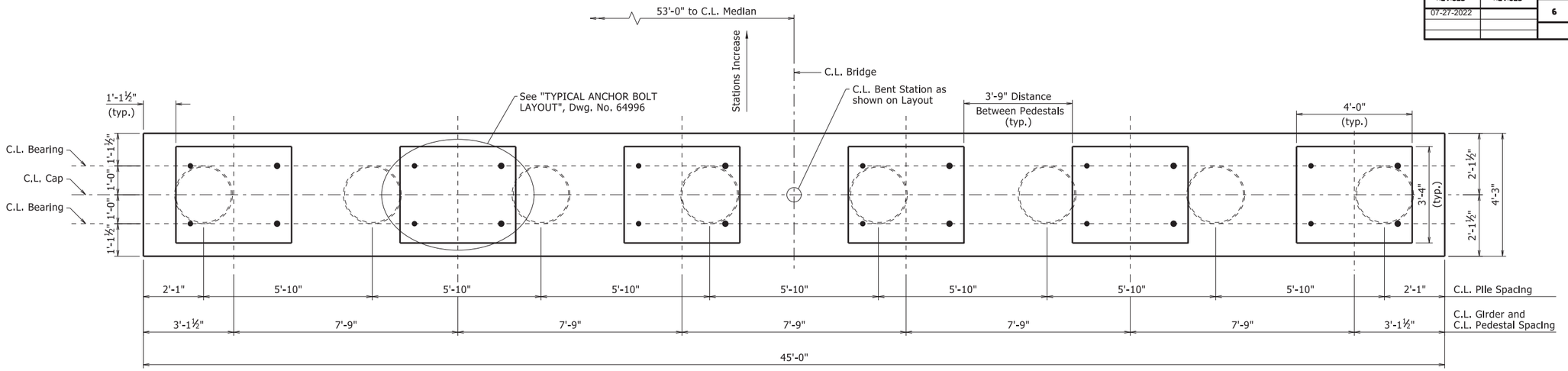
LITTLE ROCK, ARK.

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BRIDGE NO. B7577 DRAWING NO. 64994

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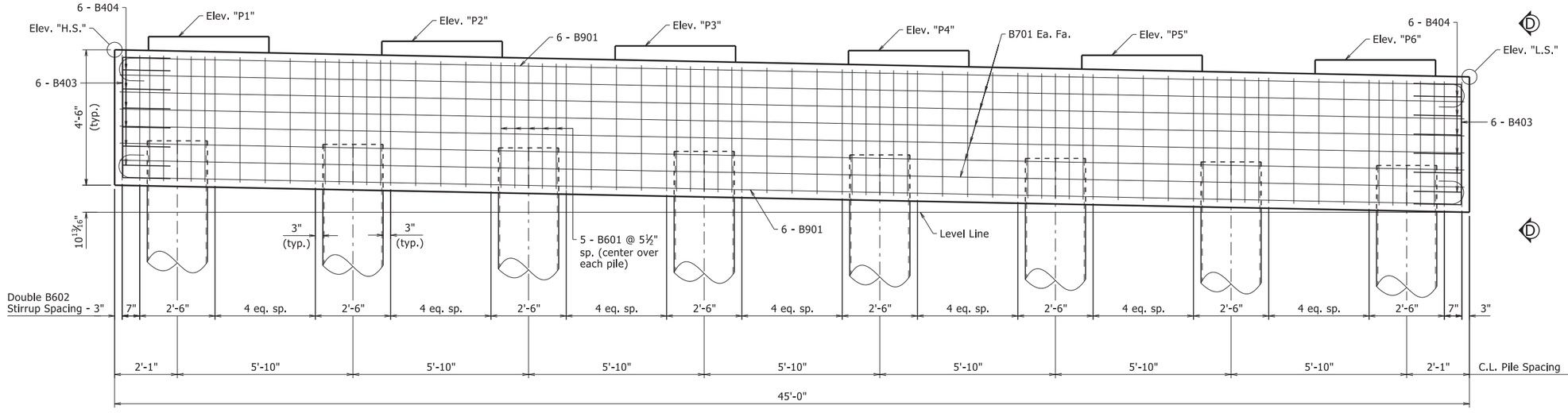
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07-27-2022		6	ARK.	020678	128	368
		B7577 - Int. Bents - 64995				



PLAN

½" = 1'-0"

See Dwg. No. 64996 for details of pedestals.



ELEVATION

Looking Ahead
½" = 1'-0"

GENERAL NOTES

All concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 3,500 psi and shall be poured in the dry. All exposed corners shall be chamfered ¾" unless noted otherwise.

Pedestals shall be cast level at the elevations shown. For Details of Pedestals, see Dwg. No. 64996.

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

Top reinforcing bars in cap and pedestals shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For Bar List and additional Sections, see Dwg. No. 64996.

All pilling shall be ASTM A252, Grade 3 (F = 45 ksi). For details of concrete filled steel shell piles, see Std. Dwg. No. 55021.

For additional information, see Layout.

TABLE OF VARIABLES

Bent No.	H.S.	P1	P2	P3	P4	P5	P6	L.S.
2, 3, 5, & 6	153.21	153.65	153.48	153.33	153.18	153.02	152.87	152.30
4	153.16	153.59	153.44	153.28	153.13	152.97	152.81	152.25

STATE OF ARKANSAS
7 Jun 27 2022 5:18PM
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
BRIDGE ENGINEER

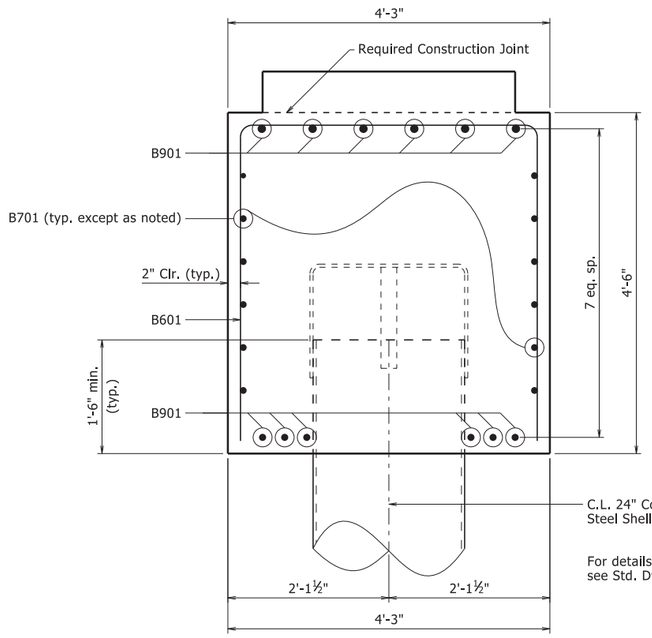
SHEET 1 OF 2
DETAILS OF INTERMEDIATE BENTS
CUTOFF CREEK

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

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PRINT DATE: 6/22/2022

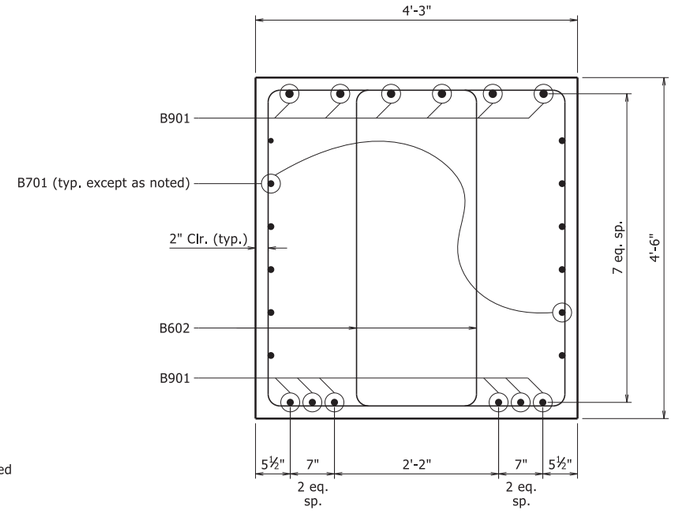
DATE REVISED	DATE REVISED	FED. RD. DST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	129	368
		B7577 - Int. Bents - 64996				



SECTION A-A

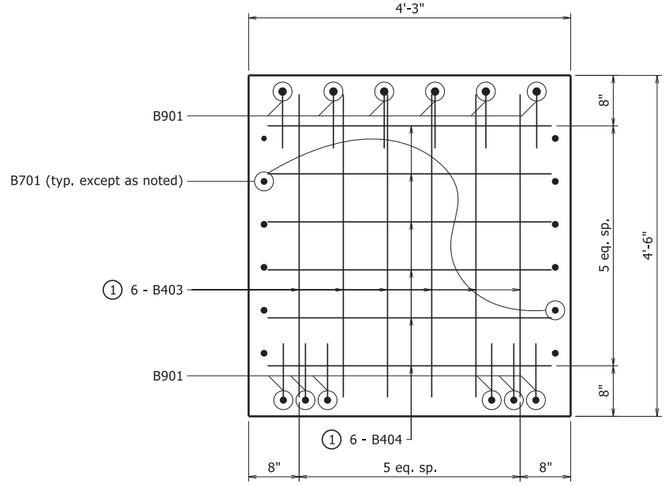
1" = 1'-0"

For details of piles and pile anchorage, see Std. Dwg. No. 55021.



SECTION B-B

1" = 1'-0"

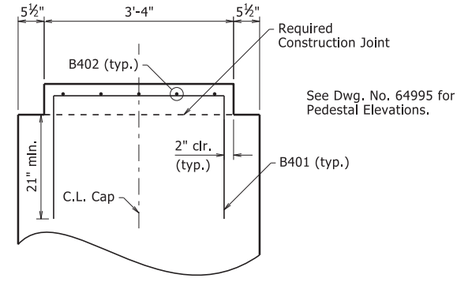


VIEW D-D

1 U-Bars Each End of Cap (3" Clr.)

B602 Stirrups not shown for clarity

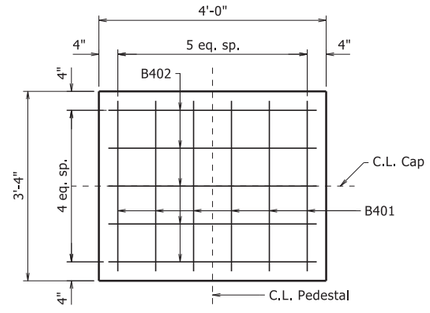
1" = 1'-0"



See Dwg. No. 64995 for Pedestal Elevations.

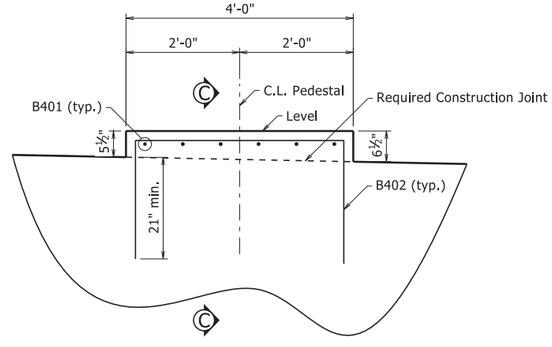
SECTION C-C

¾" = 1'-0"



PEDESTAL PLAN

¾" = 1'-0"



TYPICAL PEDESTAL DETAILS

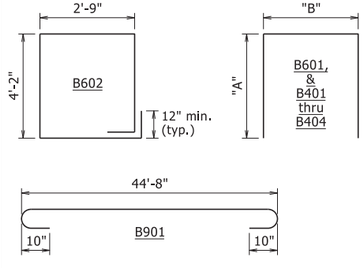
¾" = 1'-0"

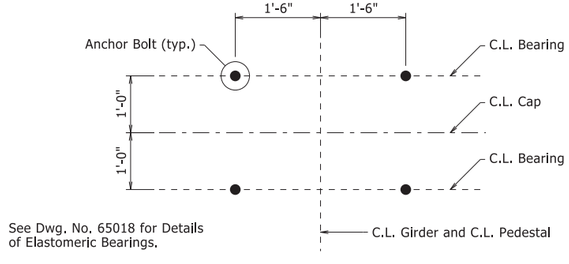
BAR LIST - PER BENT

MARK	NO. REQ'D.	LENGTH	"A"	"B"	PIN DIA.
B401	36	7'-2"	2'-2"	3'-0"	2"
B402	30	7'-10"	2'-2"	3'-8"	2"
B403	12	7'-0"	1'-7"	4'-0"	2"
B404	12	6'-9"	1'-7"	3'-9"	2"
B601	40	11'-11"	4'-2"	3'-11"	4½"
B602	78	15'-0"	-	-	4½"
B701	12	44'-8"	-	-	Str.
B901	12	47'-2"	-	-	9"

Dimensions are out to out of bars.

BENDING DIAGRAMS





See Dwg. No. 65018 for Details of Elastomeric Bearings.

TYPICAL ANCHOR BOLT LAYOUT

No Scale

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LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF INTERMEDIATE BENTS
CUTOFF CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: NAC DATE: 4/18/2022
CHECKED BY: DBS DATE: 6/2/2022
DESIGNED BY: DBS DATE: 3/2022

FILENAME: b020678x1_b2.dgn
SCALE: AS SHOWN

BRIDGE NO. B7577
DRAWING NO. 64996

PRINT DATE: 6/17/2022

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	130	368
		B7577 - 300' UNIT - 64997				

Slab Reinforcing:

Longitudinal: S401E as shown
S701E as shown over Intermediate Bents
See "HALF REINFORCING PLAN AND SLAB POURING SEQUENCE" on Dwg. No. 64998.

Transverse: S501E in top @ 6" o.c.
S502E in bottom @ 6" o.c.
S503E in top of overhang @ 6" o.c. bundled with S501E

Bar positions or clearances from the forms shall be maintained by means of stays, ties, hangers, or other approved devices per Subsection 804.06. Placement of slab bolsters or high-chairs with full length lower runners directly on removable deck forms will not be allowed.

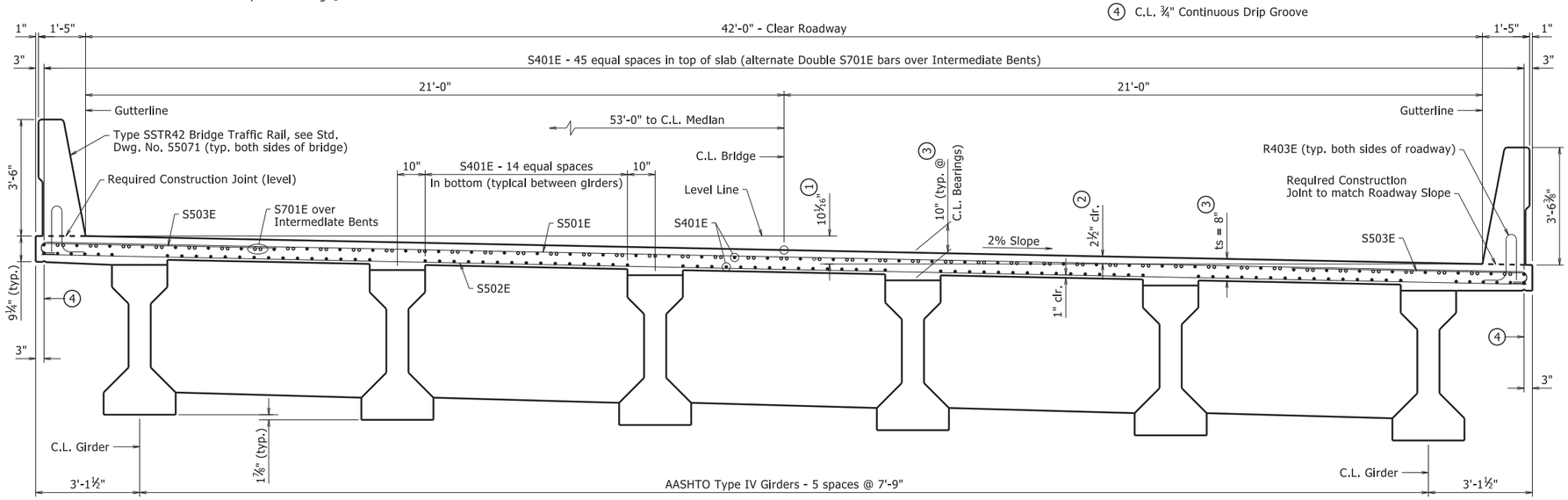
Class 2 Protective Surface Treatment shall be applied to the Roadway Surface and the Roadway Face and top of Concrete Bridge Rail.

(1) Gutterline to Gutterline.

(2) Tolerance: Minus = ¼";
Plus equal to the amount of slab thickening used to meet slab thickness tolerance. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE".

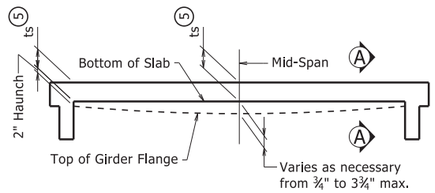
(3) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE".

(4) C.L. ¾" Continuous Drip Groove



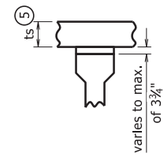
TYPICAL ROADWAY SECTION

Looking Ahead
½" = 1'-0"



GIRDER ELEVATION

No Scale



SECTION A-A

No Scale

ts = slab thickness as shown on superstructure details - See "TYPICAL ROADWAY SECTION".

(5) Tolerance when removable deck forming is used is + ½", - ¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance. See Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used.

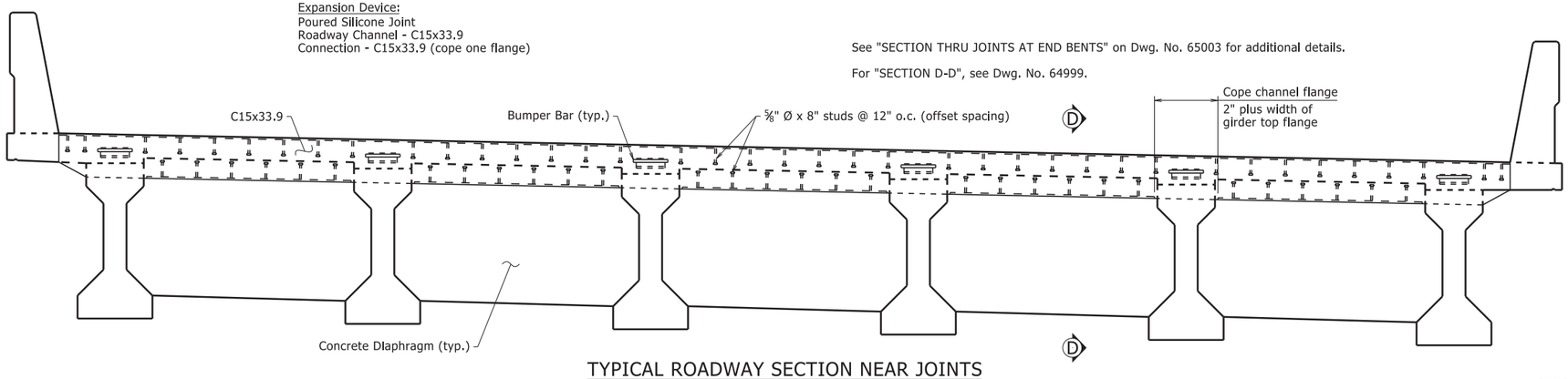
Girder Elevation sketches show the range of acceptability of the top of the Girder relative to bottom of slab after the placement of the slab. When the top of the Girder projects more than ½" into the slab, a raise in grade will be necessary. Girders shall be set in a sufficient number of spans over suitable increments so the revised grade line will produce a smooth riding surface. Variation of haunch height will be at the Contractor's expense.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

Expansion Device:
Poured Silicone Joint
Roadway Channel - C15x33.9
Connection - C15x33.9 (cope one flange)

See "SECTION THRU JOINTS AT END BENTS" on Dwg. No. 65003 for additional details.

For "SECTION D-D", see Dwg. No. 64999.



TYPICAL ROADWAY SECTION NEAR JOINTS

½" = 1'-0"

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LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
7 Jun 27 2022 5:18PM
BRIDGE ENGINEER

SHEET 1 OF 7
DETAILS OF 300'-0"
PRESTRESSED CONCRETE GIRDER UNIT
CUTOFF CREEK

ROUTE SEC.

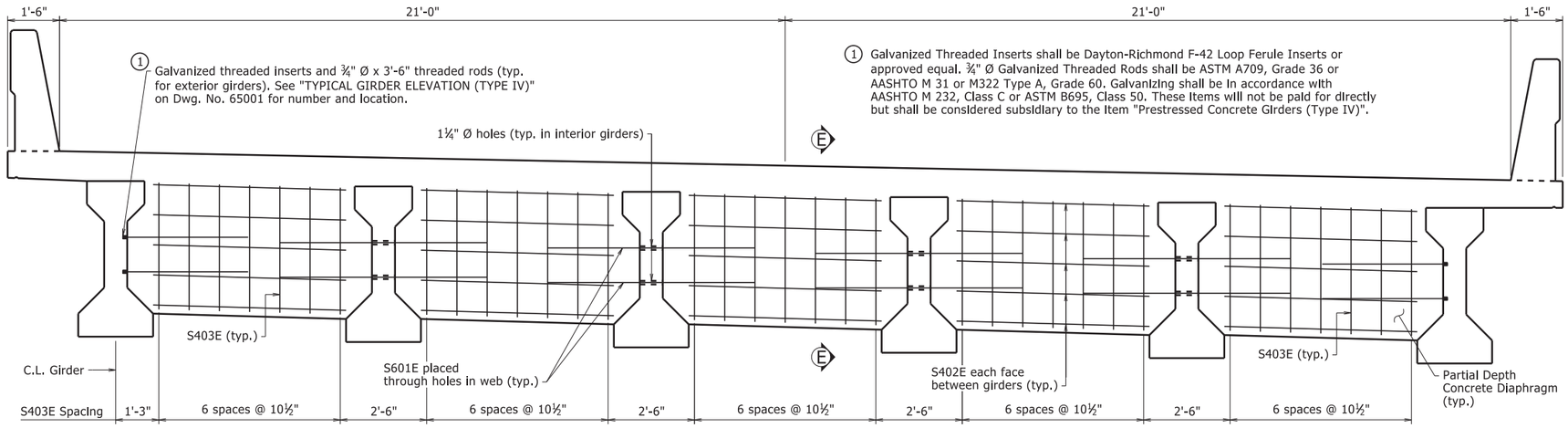
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LITTLE ROCK, ARK.

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CHECKED BY: JWP DATE: 5/2022
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FILENAME: b020678x1_s1.dgn
SCALE: As Shown

BRIDGE NO. B7577
DRAWING NO. 64997

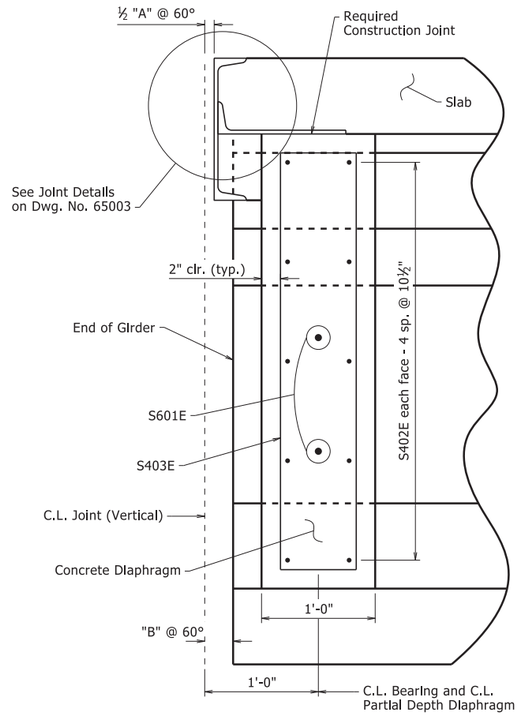
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07-27-2022		6	ARK.	020678	131	368
		B7577 - 300' UNIT - 64998				



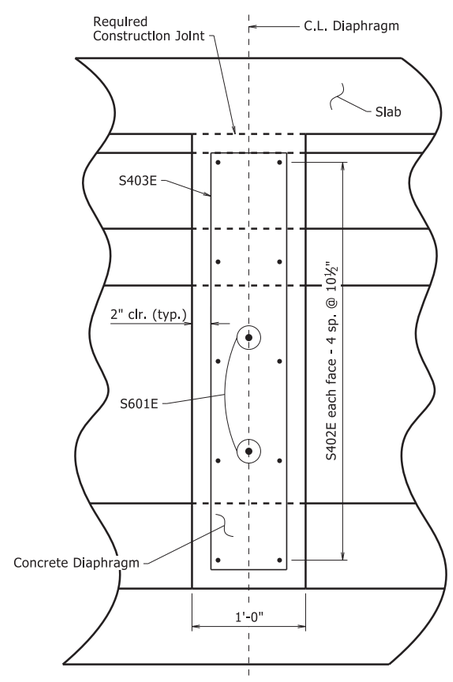
TYPICAL ROADWAY SECTION THRU DIAPHRAGMS

Looking Ahead
½" = 1'-0"



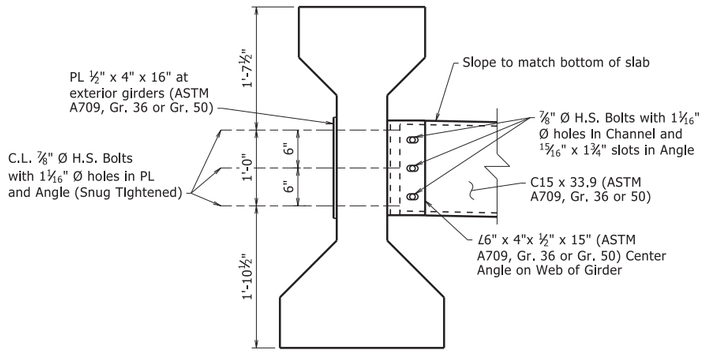
SECTION D-D

End of Unit Diaphragm shown, Normal to C.L. Joint
Dimensions and Reinforcing for End of Span Diaphragms is Typical
1½" = 1'-0"



SECTION E-E

Midspan Diaphragm, Along C.L. Bridge
1½" = 1'-0"



DETAILS OF ALTERNATE STEEL DIAPHRAGM

1" = 1'-0"

Steel diaphragms may be used in lieu of concrete diaphragms at midspan. Payment will be based on concrete diaphragms.

All components of steel diaphrams and connection shall be galvanized in accordance with Section 807.

A standard washer shall be supplied under both the nut and the head of the ⅞" dia. H.S. Bolts. An additional plate washer shall cover the angle slots.

STATE OF ARKANSAS
Charles R. Ellis
7 Jun 27 2022 5:18 PM
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 2 OF 7
DETAILS OF 300'-0"
PRESTRESSED CONCRETE GIRDER UNIT
CUTOFF CREEK

ROUTE SEC.

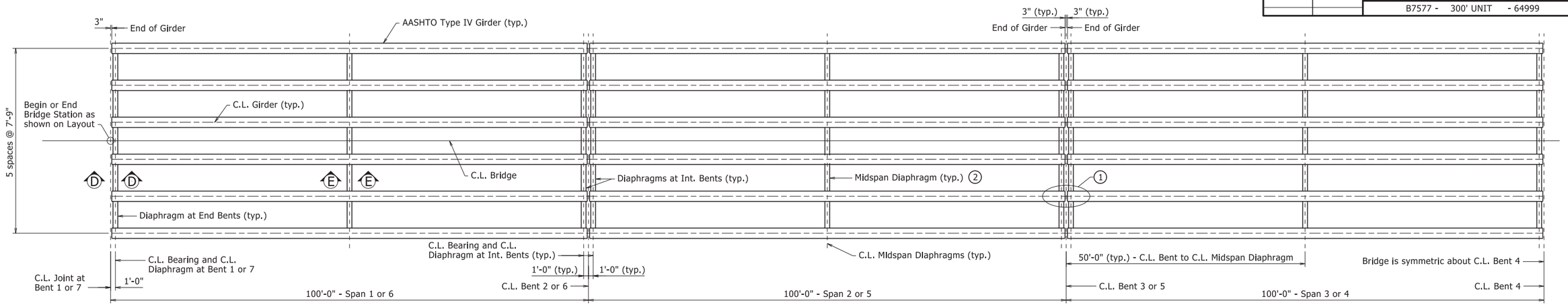
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: JWP DATE: 5/2022
DESIGNED BY: WAC DATE: 9/2021
FILENAME: b020678x1_s1.dgn
SCALE: As Shown

BRIDGE NO. B7577 DRAWING NO. 64998

PRINT DATE: 6/27/2022

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	132	368
		B7577 - 300' UNIT - 64999				



HALF FRAMING PLAN

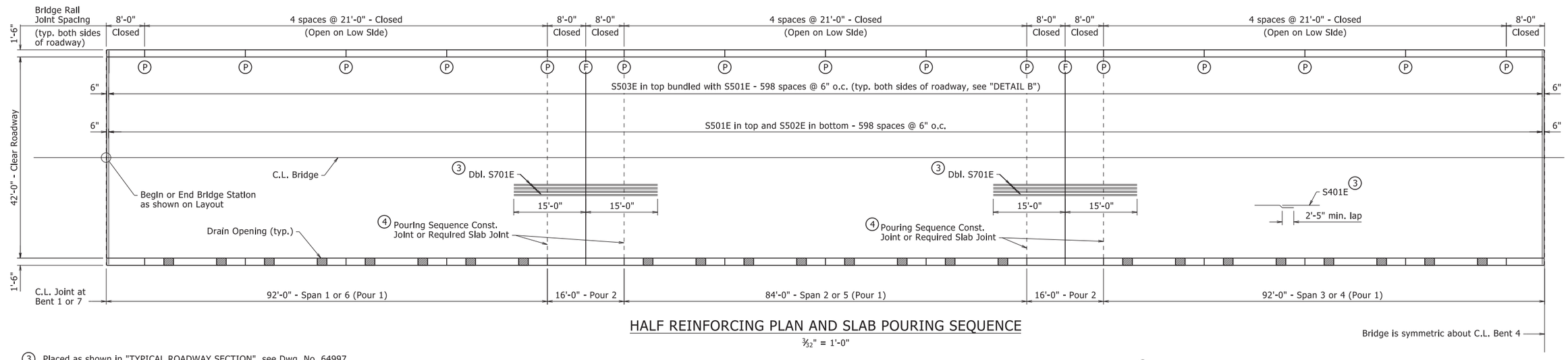
$\frac{3}{32}$" = 1'-0"

See Dwg. No. 64999 for "SECTION D-D" and "SECTION E-E".

(P) Partial-Depth rail joint at this location.

(F) Full-Depth rail joint at this location.

Bridge Rails on the high side of the bridge shall be closed. Bridge Rails on the low side of the bridge shall be open except when adjacent to Full Depth Bridge Rail Joints or the end of the Unit.



HALF REINFORCING PLAN AND SLAB POURING SEQUENCE

$\frac{3}{32}$" = 1'-0"

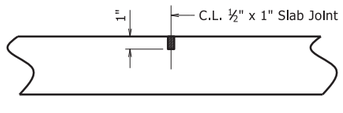
(3) Placed as shown in "TYPICAL ROADWAY SECTION", see Dwg. No. 64997.

(4) See "TRANSVERSE SLAB JOINT DETAIL".

Slab Pouring Sequence:
Pours with the same number may be placed simultaneously or separately. All Pour(s) 1 must be placed before Pour(s) 2 can be placed. A minimum of 48 hours shall elapse between the end of a pour and the start of the next pour. A minimum of 72 hours shall elapse between adjacent pours.

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

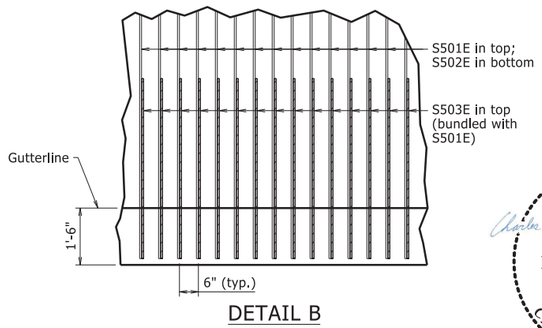
A minimum of 72 hours shall elapse between completion of the slab and the pouring of the bridge railing. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer. The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence(s). shown.



TRANSVERSE SLAB JOINT DETAIL

No Scale

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



DETAIL B

½" = 1'-0"

(1) After erection, the ends of girders at all bents shall be blocked using temporary blocking to maintain proper location on bent caps until 72 hours after the diaphragms are poured.

(2) See Dwg. No. 64999 for details of Concrete Diaphragms and "DETAILS OF ALTERNATE STEEL DIAPHRAGM".

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
Tue 2/ 2022 5:19PM
BRIDGE ENGINEER

SHEET 3 OF 7
DETAILS OF 300'-0" PRESTRESSED CONCRETE GIRDER UNIT CUTOFF CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

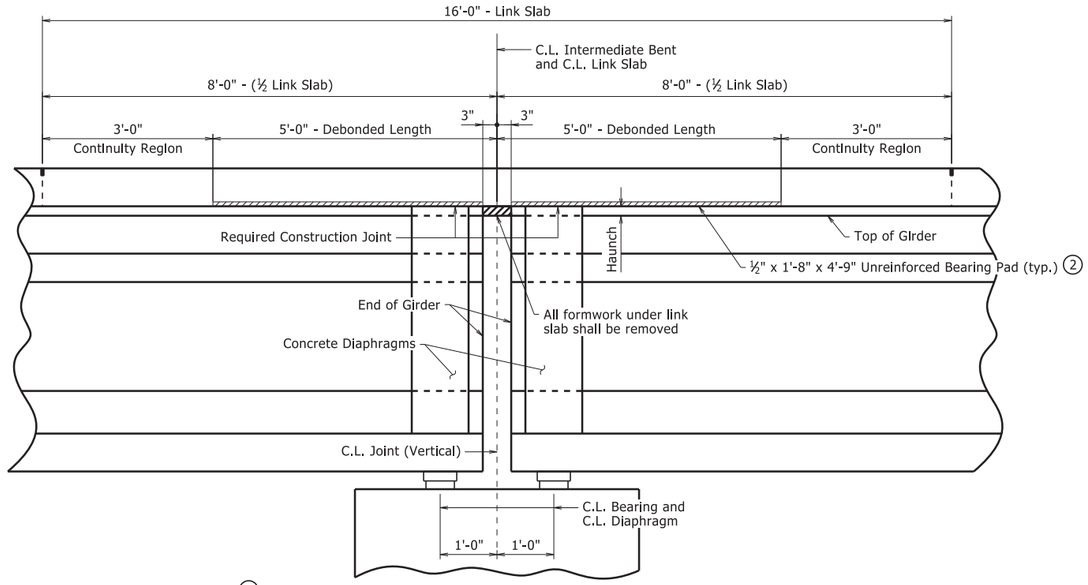
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DESIGNED BY: WAC DATE: 9/2021

FILENAME: b020678x1_s1.dgn
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BRIDGE NO. B7577 DRAWING NO. 64999

PRINT DATE: 6/27/2022

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	133	368
		B7577 - 300' UNIT - 65000				



① VIEW AT INTERMEDIATE BENTS 2, 3, 5, AND 6

Normal to C.L. Bent
¾" = 1'-0"

① See "SECTION D-D" on Dwg. No. 64999 for details of reinforcing in End of Span Diaphragms. Not shown for clarity.

② Unreinforced bearing pads shall be glued to the top of the Girder and shall meet the requirement of Section 808 with the exception that hardness shall be 50 durometer. Unreinforced bearing pads shall not be paid for directly but shall be considered subsidary to the item "Class S(AE) Concrete - Bridge".

BAR LIST - PER UNIT

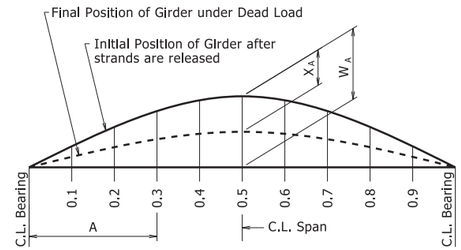
MARK	NO. REQ'D	LENGTH	P.D.	BENDING DIAGRAMS
S401E	931	44'-10½"	Str.	
S402E	450	5'-7"	Str.	
S403E	315	9'-0"	2"	
S501E	599	45'-10"	3¾"	
S502E	599	44'-8"	Str.	
S503E	1,198	7'-8"	3¾"	
S601E	72	6'-0"	Str.	
S701E	180	30'-0"	Str.	
R400E	96	6'-3"	3"	
R401E	1,200	7'-6"	3"	
R402E	120	5'-6"	Str.	
R403E	1,200	3'-6"	3¾"	
R409E	120	7'-8"	Str.	
R410E	240	20'-8"	Str.	

Dimensions are out to out of bars.

Bars with an "E" suffix are to be epoxy coated.

For bars R404E thru R408E see Std. Dwg. No. 55071.

For bending diagram of reinforcing bars in Bridge Traffic Rail and Wings, see Std. Dwg. No. 55071.



"W_A" is camber of Girder (Prestess + Dead Load of girder @ 60 days after release)

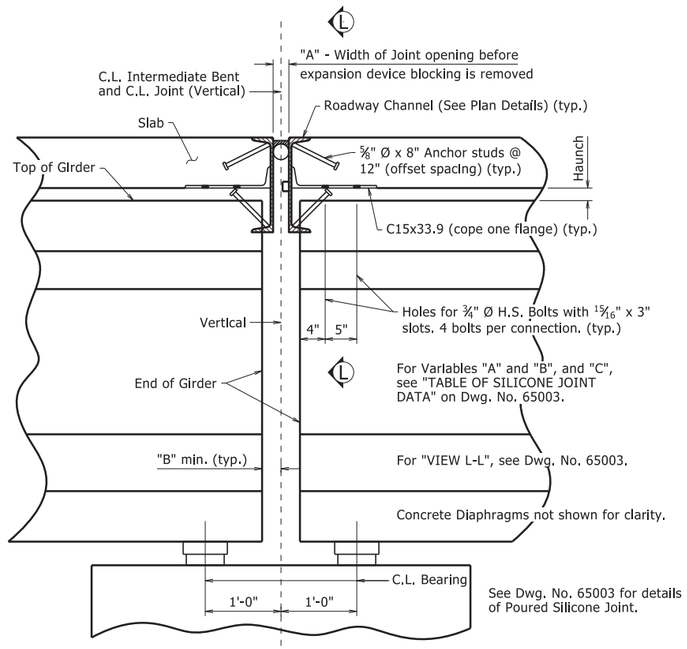
"X_A" is Dead Load Deflection of Slab + Diaphragms + Composite Dead Load

CAMBER AND DEFLECTION (INCHES)

No Scale

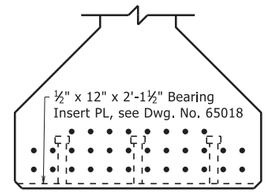
"W_A" and "X_A" are based on the required minimum concrete strength and may vary from the dimension shown. "W_A" and "X_A" shall be measured along bottom of girders unless otherwise approved by the Engineer. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on Dwg. No. 64997 for limitations of the girder final position under dead load. The Contractor is responsible for any adjustment necessary to meet slab thickness tolerance and to achieve an acceptable finished grade. No payment shall be made for any additional concrete in the haunches when camber is less than shown.

Span Pt.	Inches	
	W_A	X_A
0.0	0	0
0.1	1.094	0.453
0.2	1.855	0.890
0.3	2.348	1.233
0.4	2.624	1.453
0.5	2.712	1.528
0.6	2.624	1.453
0.7	2.348	1.233
0.8	1.855	0.890
0.9	1.094	0.453
1.0	0	0



SECTION THRU JOINT AT BENT 4

Normal to C.L. Bent
¾" = 1'-0"



Saw cut or grind all strands flush with the end of the girder. The ends of the girders and the cut-off strands shall be coated with a 1/16" min. thick coating of a QPL approved epoxy resin.

END OF GIRDER VIEW

1½" = 1'-0"

TABLE OF VARIABLES FOR BRIDGE TRAFFIC RAIL

Closed Rail Panels			Open Rail Panels					
Panel Length	A	R4XXE	Panel Length	B	C	D	E	R4XXE
8'-0"	15	R409E	21'-0"	11	4'-0"	17	9'-0"	R410E
21'-0"	41	R410E						

See Dwg. No. 55071 for variables and additional details of Type SSTR42 Bridge Traffic Rail.

STATE OF ARKANSAS
Charles R. Ellis
7 Jun 27 2022 5:19 PM
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No. 9235
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 4 OF 7
DETAILS OF 300'-0"
PRESTRESSED CONCRETE GIRDER UNIT
CUTOFF CREEK

ROUTE SEC.

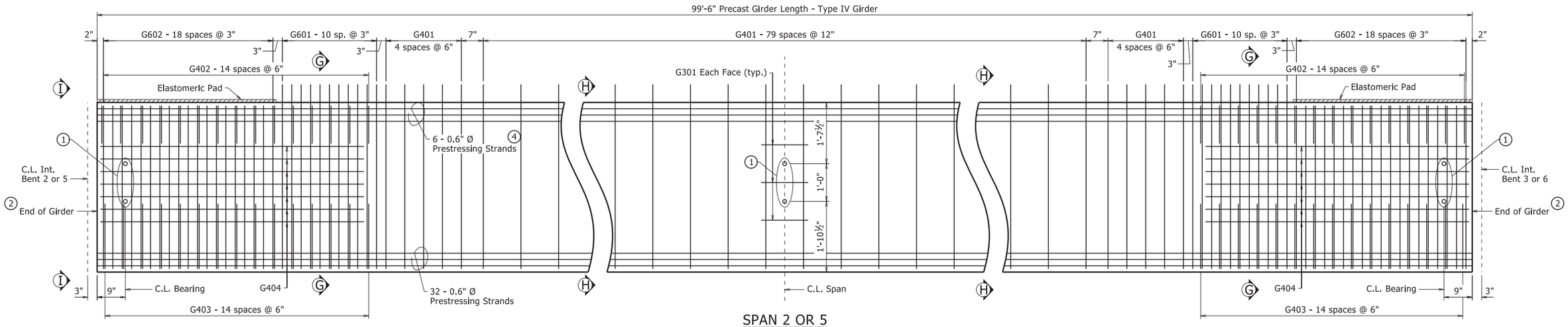
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: WAC DATE: 1/2022
CHECKED BY: JWP DATE: 5/2022
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SCALE: As Shown

BRIDGE NO. B7577 DRAWING NO. 65000

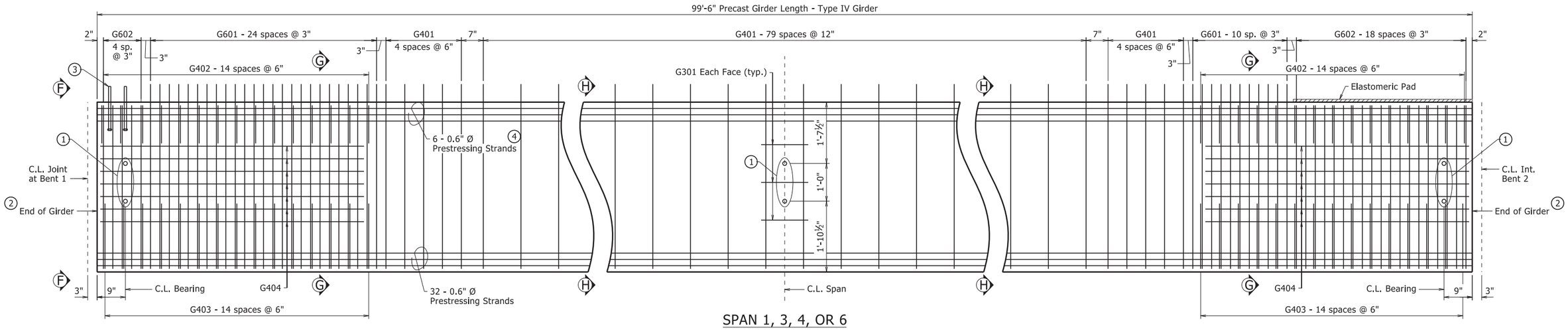
PRINT DATE: 6/27/2022

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07-27-2022		6	ARK.	020678	134	368
		B7577 - 300' UNIT - 65001				



SPAN 2 OR 5

Span 2 Shown, Span 5 Similar



SPAN 1, 3, 4, OR 6

Span 1 Shown, Span 3, 4, and 6 Similar

Dimensions are measured along C.L. Girders.

Prestressing strands will not be paid for directly, but will be considered subsidiary to the item "Prestressed Concrete Girders (Type IV)".

Prestressing strands shall be bonded along the entire length of the girder.

(1) Connection Concrete Diaphragm: ¾" Ø Threaded Inserts at interior face of exterior girders or 1¼" Ø holes at interior girders. See Dwg. No. 64999 for additional details.

(2) End of Girders to receive an epoxy coating. See "END OF GIRDER VIEW" on Dwg. No. 65000.

(3) See "SECTION THRU JOINT AT END BENTS" on Dwg. No. 65003 for additional details.

(4) G405 bars not shown for clarity.

TYPICAL GIRDER ELEVATION (TYPE IV)

Along C.L. Girder

¾" = 1'-0"

STATE OF ARKANSAS
Jun 27 2022 5:19PM
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 5 OF 7
DETAILS OF 300'-0"
PRESTRESSED CONCRETE GIRDER UNIT
CUTOFF CREEK

ROUTE SEC.

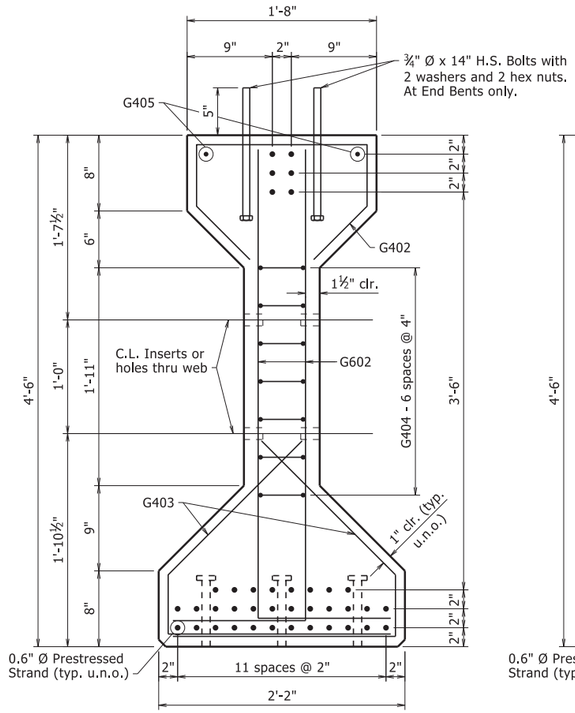
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: JWP DATE: 5/2022
DESIGNED BY: WAC DATE: 9/2021
FILENAME: b020678x1_s1.dgn
SCALE: As Shown

BRIDGE NO. B7577 DRAWING NO. 65001

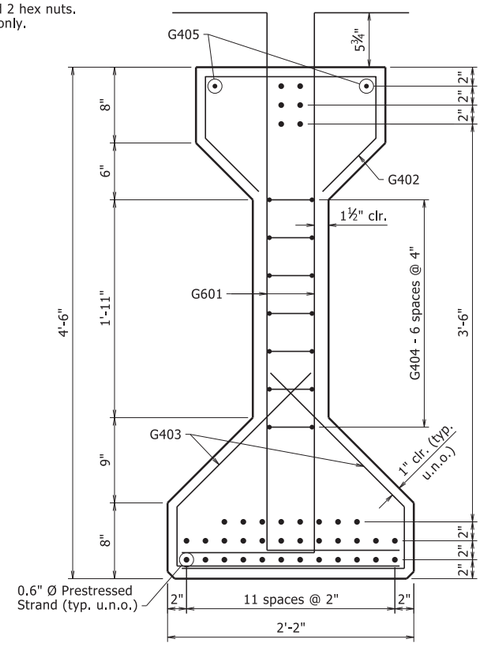
PRINT DATE: 6/27/2022

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	135	368
		B7577 - 300' UNIT - 65002				



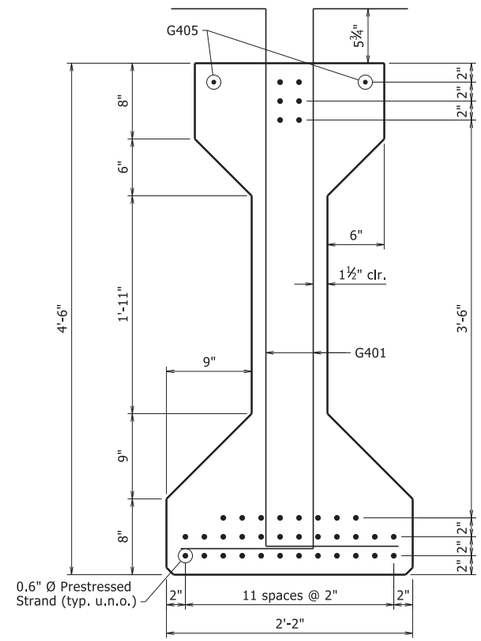
VIEW F-F

1½" = 1'-0"



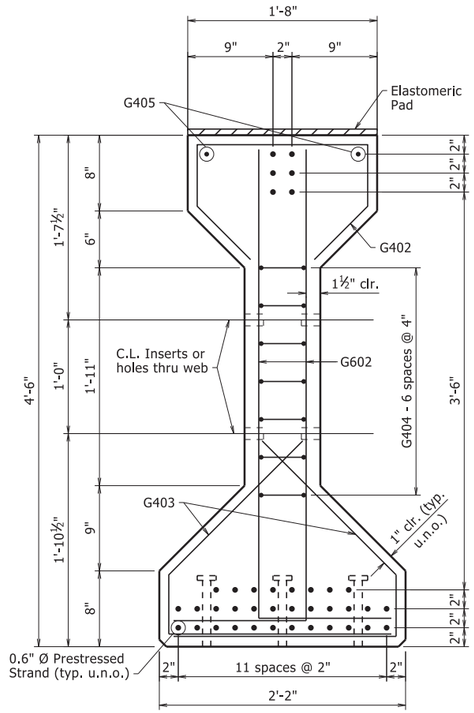
SECTION G-G

1½" = 1'-0"



SECTION H-H

1½" = 1'-0"

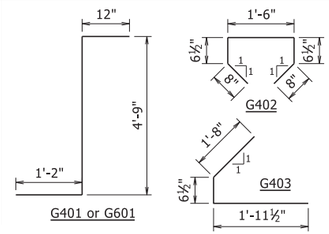


VIEW I-I

1½" = 1'-0"

BAR LIST - PER GIRDER

MARK	NO. REQ'D	LENGTH	P.D.	BENDING DIAGRAMS
G301	6	1'-3"	Str.	
G401	180	6'-9"	2"	
G402	30	3'-9"	2"	
G403	60	4'-2"	2"	
G404	14	13'-10"	2"	
G405	2	99'-2"	Str.	
G601	"X"	6'-8"	4½"	
G602	"Y"	5'-2"	4½"	



Dimensions are out to out of bars.

All bars in the Bar List will not be paid for directly, but will be considered subsidiary to the item "Prestressed Concrete Girders (Type IV)".

At the Contractor's option, the two G403 bars may be furnished as one bar.

At the Contractor's option, ⅜" ø strands pulled to 2,000 lbs. may be substituted for bars G405.

TABLE OF VARIABLES

SPAN	"X"	"Y"
1, 3, 4 or 6	72	48
2 or 5	44	76

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LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 6 OF 7
DETAILS OF 300'-0"
PRESTRESSED CONCRETE GIRDER UNIT
CUTOFF CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: WAC DATE: 1/2022
CHECKED BY: JWP DATE: 5/2022
DESIGNED BY: WAC DATE: 9/2021
FILENAME: b020678x1_s1.dgn
SCALE: As Shown

BRIDGE NO. B7577 DRAWING NO. 65002

PRINT DATE: 6/27/2022

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	136	368
		B7577 - 300' UNIT - 65003				

GENERAL NOTES:

PRESTRESSED CONCRETE GIRDERS:

Pretensioning steel shall be 0.6" ø Low Relaxation strands with a minimum ultimate strength of 270 ksi, and shall conform to AASHTO M 203.

Distances from the forms and spacing of the Prestressing Steel shall be maintained by stays, ties, hangers, spacers, or other approved supports which shall be shown on the Shop Drawings.

All girders shall be Type IV as noted on the details and shall be the standard prestressed sections adopted by the Joint Committee of AASHTO and the Prestressed Concrete Institute. All girders shall be cast in concrete floored pallets and in metal forms. All work and materials shall be as specified in Subsection 802.22.

Concrete shall be Class S and shall have a minimum 28 day compressive strength, f'c = 8,000 psi. The initial tensile force applied to each 0.6" ø strand shall be 43,950 lbs. Transfer of this tensioning load to the girder shall not be done until the compressive strength of the concrete is 6,000 psi.

Dimensions shown are to the center of the strands.

The Contractor shall submit the method and sequence for release of strands to the Engineer for approval prior to casting of the girders.

Holes and Inserts shall be cast in into the girder. Field drilling of holes shall not be permitted.

The first 16" along the tops of the girders at the beginning and end of unit shall have a smooth surface. The tops of the remaining length of the girders shall be roughened to an amplitude of ¼" and shall be scrubbed transversely with a coarse wire brush to remove all laitance to produce an adequate surface for bonding the slab.

After detensioning, saw cut, grind, or bend up strands as designated by the plans. Heat-cutting or bending methods shall not be used within 6" of the girder.

Extreme care shall be exercised in handling and moving precast prestressed concrete girders. Girders must be maintained in an upright position at all times and must be picked up from points near the girder ends. Disregard of this requirement may lead to collapse of the girder. The Contractor's proposed lifting details shall be submitted on shop drawings to the Engineer for approval. The use of holes for lifting purposes will not be permitted.

The points of support and directions of the reactions with respect to the member shall be approximately the same during transportation and storage as when the member is in its final position.

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

The Contractor may submit alternate strand patterns with design calculations for review and approval.

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

CONCRETE:

All concrete in slab, rail, and diaphragms shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi. Concrete shall be poured in the dry and all exposed corners shall be chamfered ¾" unless otherwise noted.

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

The concrete deck (roadway surface) shall be given a tine finish in accordance with Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the girder. When permitted, the use of a longitudinal strike-off will require that a vertical camber adjustment be made in the strike-off to account for the future dead load deflection due to any railings.

REINFORCING STEEL:

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

STRUCTURAL STEEL:

Structural steel shall be ASTM A709 with grade and payment as specified in the plans. Grade 50W steel shall not be painted and all exposed surfaces shall be cleaned in accordance with Subsection 807.84(e). Grade 36 and Grade 50 steel shall be painted unless otherwise noted and all exposed surfaces shall be cleaned in accordance with Subsection 807.84. Structural steel completely embedded in concrete may be ASTM A709, Gr. 36, Gr. 50 or Gr. 50W unless otherwise noted.

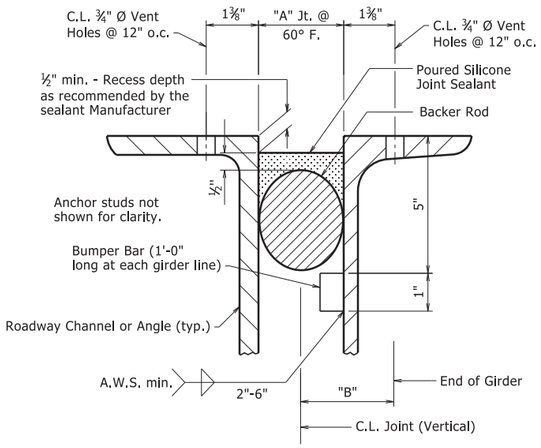
Drawings show general features of design only. Shop drawings shall be made in accordance with the specifications, submitted and approval secured before fabrication is begun.

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

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, whether permanent or temporary, a formal request with detailed drawings shall be submitted to the Engineer for approval. All welding shall conform to Subsection 807.26.

FOR ADDITIONAL INFORMATION AND NOTES, SEE LAYOUT AND PLAN DETAILS.

PRINT DATE: 6/27/2022

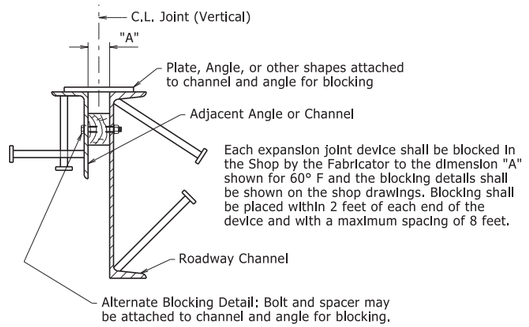


DETAIL OF POURED SILICONE JOINT

Silicone joint material and installation shall conform to Section 809. The temperature limitations recommended by the sealant Manufacturer shall be observed. The sealant shall be installed only when the average 24 hour air temperature is between 40° and 80° F.

Use an appropriately sized backer rod at the depth shown in the Manufacturer's literature based on the joint width at the time of sealing. Unless otherwise noted, do not install more backer rod than can be sealed in the same day.

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



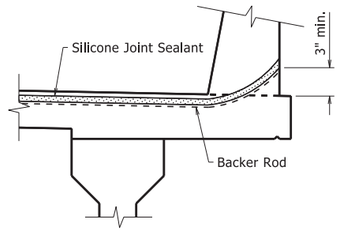
DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

EXPANSION DEVICE INSTALLATION AT END BENTS:

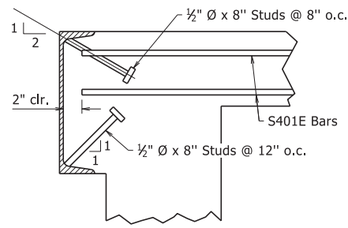
The Contractor may elect to install the expansion device using one of the following two alternatives:

1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the girders erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed, and the opening adjusted for temperature and grade.

2) The backwall shall be poured to the optional construction joint after girders are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature and grade.



JOINT SEAL PLACEMENT AT RAIL



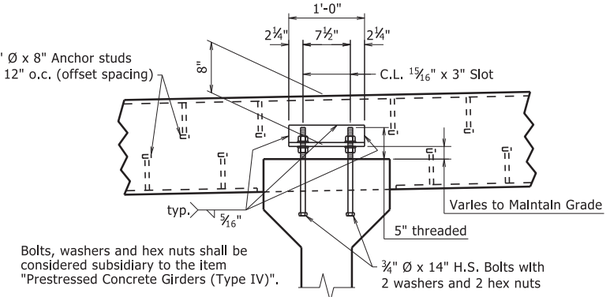
DETAILS OF ALTERNATE ANCHORS AND PLACEMENT OF LONGITUDINAL REINFORCEMENT

As an alternate to ⅝" Ø studs, ½" Ø x 8" studs spaced as shown may be used. Use weight of ⅝" stud as basis of measurement of Structural Steel in Anchors.

TABLE OF SILICONE JOINT DATA

	"A" Width Perpendicular to Joint at 24 Hour Average Temperature of:			"B" Perpendicular to Joint at 60°F	Bumper Plate Size
	40°F	60°F	80°F		
Bt. 1 & 7	2¼"	2"	1¾"	3"	1" x 1" x 12"
Bt. 4	2 15/16"	2½"	2 1/16"	3"	1¼" x 1" x 12"

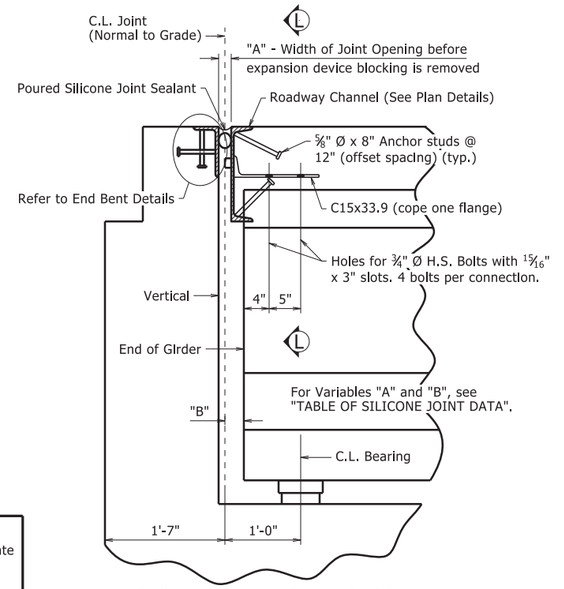
The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature. Interpolation of the table may be necessary.



Bolts, washers and hex nuts shall be considered subsidiary to the item "Prestressed Concrete Girders (Type IV)".

Bumper plates not shown for clarity.

VIEW L-L
1" = 1'-0"



Section taken is perpendicular to C.L. Joint.

Concrete shall be hand packed under joint armor.

Concrete diaphragm not shown for clarity.

SECTION THRU JOINT AT END BENTS
1" = 1'-0"

STATE OF ARKANSAS
Jun 27 2022 5:20 PM
Charles R. Ellis
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 7 OF 7
DETAILS OF 300'-0"
PRESTRESSED CONCRETE GIRDER UNIT
CUTOFF CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

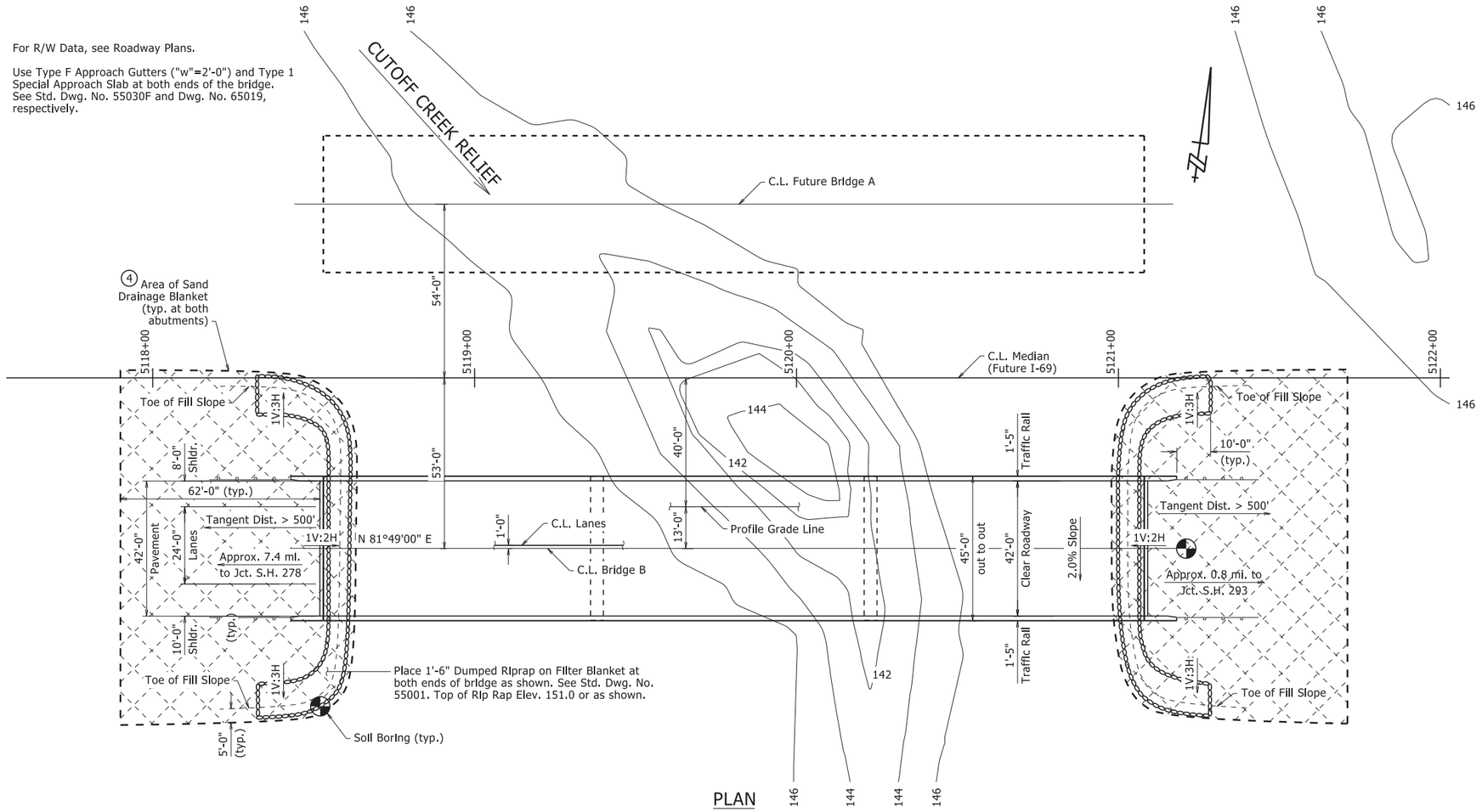
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CHECKED BY:	JWP	DATE:	5/2022	SCALE:	As Shown
DESIGNED BY:	WAC	DATE:	9/2021		

BRIDGE NO. B7577 DRAWING NO. 65003

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	137	368
		B7578 -	LAYOUT	- 65004		

For R/W Data, see Roadway Plans.

Use Type F Approach Gutters ("w"=2'-0") and Type 1 Special Approach Slab at both ends of the bridge. See Std. Dwg. No. 55030F and Dwg. No. 65019, respectively.



PLAN

3 HYDRAULIC DATA

Flood Description	Frequency	2 Total Discharge	Discharge This Site	1 Natural Water Surface Elevation	Water Surface Elevation With Backwater
	Years	CFS	CFS	FEET	FEET
Design	50	6,145	2,025	150.9	151.6
Base	100	7,000	2,292	151.2	151.9
Extreme	500	9,070	3,297	151.6	152.4
Overtopping	>500	-	-	-	-

1 Unconstricted water surface elevation without structure or roadway approaches.

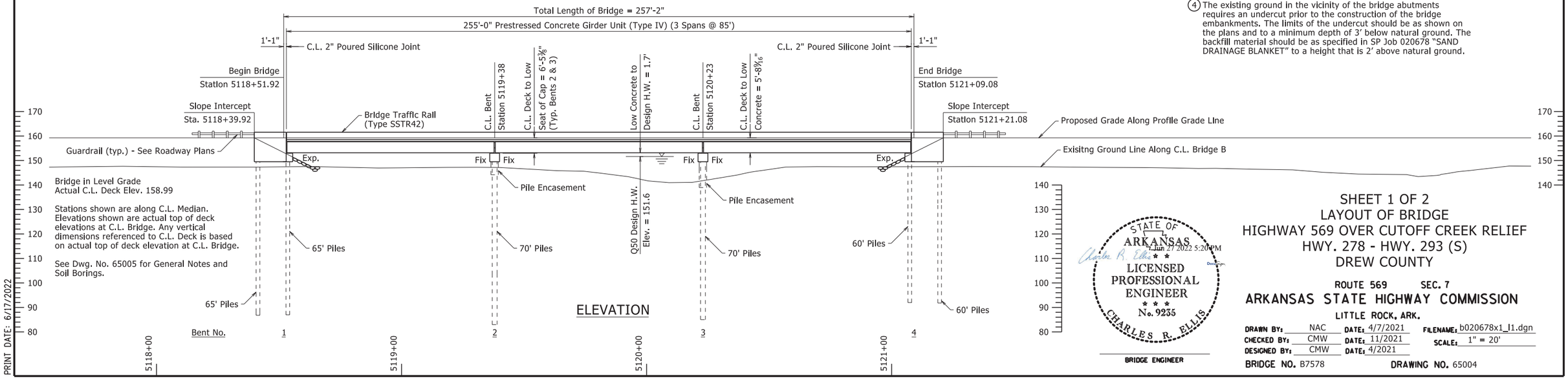
2 The Total Discharge includes flow at this site, and flow at Cutoff Creek.

Proposed Low Bridge Chord Elev. = 153.28 ft.

Drainage Area = 91.6 square miles
Historical H.W. Elev. N/A

3 Hydraulic Data Based on Future Condition with both bridges in place.

4 The existing ground in the vicinity of the bridge abutments requires an undercut prior to the construction of the bridge embankments. The limits of the undercut should be as shown on the plans and to a minimum depth of 3' below natural ground. The backfill material should be as specified in SP Job 020678 "SAND DRAINAGE BLANKET" to a height that is 2' above natural ground.



ELEVATION

PRINT DATE: 6/17/2022

STATE OF ARKANSAS
Jun 27 2022 5:20PM
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 1 OF 2
LAYOUT OF BRIDGE
HIGHWAY 569 OVER CUTOFF CREEK RELIEF
HWY. 278 - HWY. 293 (S)
DREW COUNTY

ROUTE 569 SEC. 7

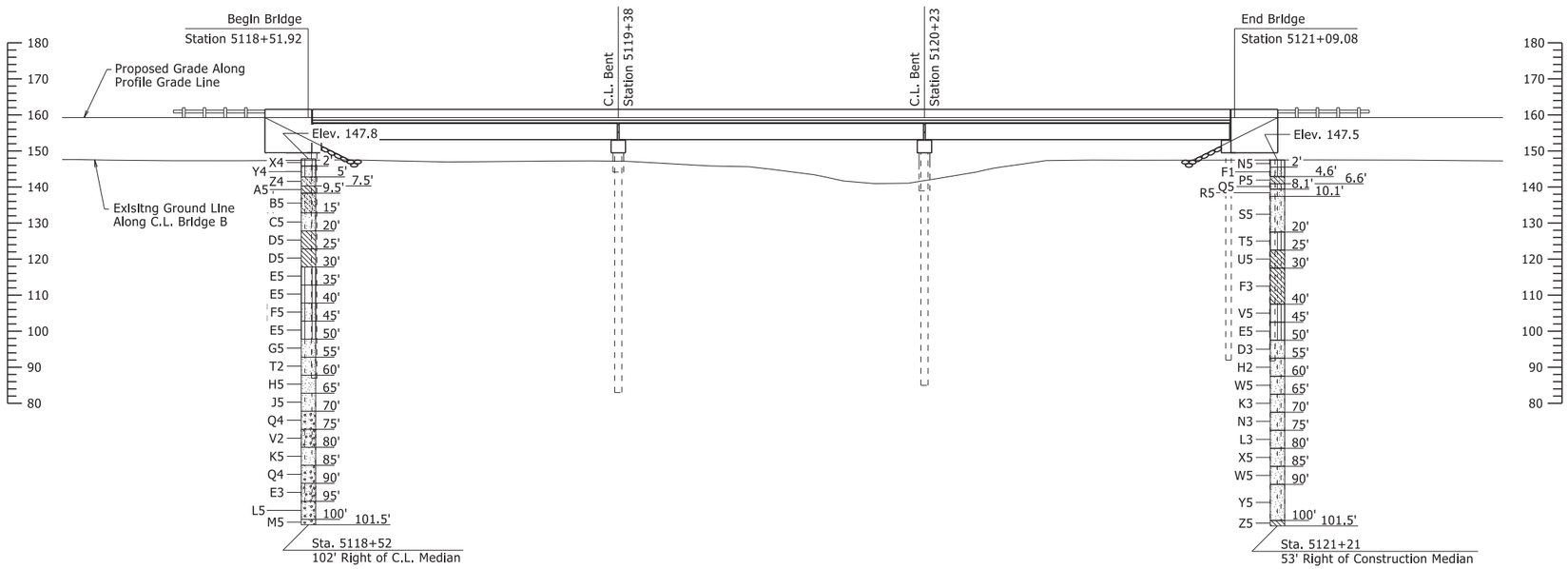
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

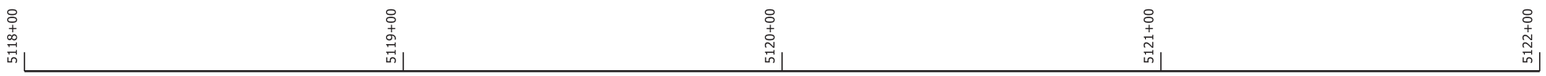
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CHECKED BY:	CMW	DATE:	11/2021	SCALE:	1" = 20'
DESIGNED BY:	CMW	DATE:	4/2021		

BRIDGE NO. B7578 DRAWING NO. 65004

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	138	368
		B7578 -	LAYOUT	- 65005		



ELEVATION OF SOIL BORINGS



"N" VALUES

Sta. 5118+52 - 102' Rt. of C.L. Median	Sta. 5121+21 - 53' Rt. of C.L. Median
2.5 - 3.5, N=6	2.5 - 3.5, N=14
8.0 - 9.0, N=7	7.1 - 8.1, N=5
10.0 - 11.0, N=4	10.6 - 11.6, N=5
15.5 - 16.5, N=6	15.5 - 16.5, N=7
20.5 - 21.5, N=3	20.5 - 21.5, N=4
25.5 - 26.5, N=4	25.5 - 26.5, N=7
30.5 - 31.5, N=12	30.5 - 31.5, N=14
35.5 - 36.5, N=15	35.5 - 36.5, N=13
40.5 - 41.5, N=31	40.5 - 41.5, N=35
45.5 - 46.5, N=15	45.5 - 46.5, N=23
50.5 - 51.5, N=14	50.5 - 51.5, N=13
55.5 - 56.5, N=27	55.5 - 56.5, N=29
60.5 - 61.5, N=18	60.5 - 61.5, N=38
65.5 - 66.5, N=28	65.5 - 66.5, N=28
70.5 - 71.5, N=18	70.5 - 71.5, N=32
75.5 - 76.5, N=28	75.5 - 76.5, N=47
80.5 - 81.5, N=25	80.5 - 81.5, N=27
85.5 - 86.5, N=25	85.5 - 86.5, N=31
90.5 - 91.5, N=26	90.5 - 91.5, N=56
95.5 - 96.5, N=26	95.5 - 96.5, N=45
100.5 - 101.5, N=35	100.5 - 101.5, N=35

BORING LEGEND

F1-Moist, Medium Dense, Brown Sandy Silt
H2-Wet, Medium Dense, Brown Sand with Silt and Some Gravel
T2-Wet, Medium Dense, Light Brown Poorly Graded Fine Sand with Silt and Trace Gravel
V2-Wet, Medium Dense, Light Brown Poorly Graded Sand with Silt and Gravel
D3-Wet, Medium Dense, Brown Silty Fine Sand
E3-Wet, Medium Dense, Brown Fine Sand with Silt and Gravel
F3-Wet, Stiff, Greenish Gray Silty Clay
K3-Wet, Medium Dense, Light Brown Fine Sand with Silt and Some Gravel
N3-Wet, Dense, Light Brown Fine Sand with Silt and Trace Gravel
Q4-Wet, Medium Dense, Light Brown Sand with Gravel
X4-Moist, Brown Silt
Y4-Moist, Loose, Brown Silt
Z4-Brown Clayey Sand
A5-Wet, Medium Stiff, Brown Lean Clay with Sand
B5-Wet, Very Loose, Brown Silty, Clayey Sand
C5-Wet, Loose, Brown Silty Fine Sand with Some Organic Matter (Wood)
D5-Wet, Soft, Greenish Gray Lean Clay
E5-Wet, Medium Dense, Greenish Gray Silt
F5-Wet, Dense, Greenish Gray Silt with Sand (Poorly Cemented Nodules)
G5-Wet, Medium Dense, Dark Brown Poorly Graded Fine Sand with Silt and Trace Gravel
H5-Wet, Medium Dense, Light Brown Fine Sand with Trace Gravel
J5-Wet, Medium Dense, Light Brown Fine Poorly Graded Sand with Silt and Trace Gravel
K5-Wet, Medium Dense, Light Brown Poorly Graded Fine Sand with Silt Trace Gravel
M5-Wet, Dense, Brown Gravel with Sand
N5-Moist, Brown Silt with Some Organic Matter (Wood)
P5-Moist, Light Brown Lean Clay with Sand
Q5-Wet, Loose, Brown Sandy Silt
R5-Silty Sand (No Recovery)
S5-Wet, Loose, Gray Silty Sand
T5-Wet, Very Loose, Greenish Gray Silt
U5-Wet, Medium Stiff, Greenish Gray Silty Clay
V5-Wet, Dense, Greenish Gray Silt
W5-Wet, Dense, Brown Fine Sand with Silt and Some Gravel
X5-Wet, Medium Dense, Brown Fine Sand with Silt and Trace Gravel
Y5-Wet, Very Dense, Brown Fine Sand with Silt and Trace Gravel
Z5-Moist, Hard, Gray Clay (Jackson Group)

GENERAL NOTES

BENCH MARK: Vertical Control Data are shown on the Survey Control Data Sheets.

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

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Eighth Edition (2017).

LIVE LOADING: HL-93

SEISMIC ZONE: 2 SITE CLASS: D S_{D1}: 0.177

SEISMIC OPERATIONAL CLASSIFICATION: ESSENTIAL

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (superstructure)	f'c = 4,000 psi
Class S Concrete (substructure)	f'c = 3,500 psi
Class S Concrete (prestressed concrete girders)	f'c = 8,000 psi
Reinforcing Steel (Grade 60, AASHTO M 31 or M 322, Type A)	fy = 60,000 psi
Structural Steel (ASTM A709, Gr. 50 or 50W)	Fy = 50,000 psi
Structural Steel (ASTM A709, Gr. 36)	Fy = 36,000 psi
Prestressing Strands (AASHTO M 203, Gr. 270)	f_{pu} = 270,000 psi

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

STEEL SHELL PILING: Piling in Bents 1 and 4 shall be 18" diameter concrete filled steel shell piles and shall be driven to a minimum ultimate bearing capacity of 225 tons per pile. Piling in Bents 2 and 3 shall be 24" diameter concrete filled steel shell piles and shall be driven to a minimum ultimate bearing capacity of 400 tons per pile. All piling shall be driven with an approved air, steam, or diesel hammer. Piling in end bents shall be driven after embankment to bottom of cap is in place. Lengths of piling shown are assumed for estimating quantities only. Actual lengths are to be determined in the field. No additional payment will be made for cut-off or build-up. Test piles are not required but may be driven for the Contractor's information in accordance with Subsection 805.08(g). No piles will be paid for as test piles.

DRIVING SYSTEM: The driving system approval and the ultimate bearing capacity determination for piling shall be based on the requirements of Subsection 805.09(b), "Method B – Wave Equation Analysis (WEAP)". It is estimated that the minimum rated hammer energy required to obtain the ultimate bearing capacity will be 48,500 foot pounds per blow for Bents 1 and 4 and 84,000 foot pounds per blow for Bents 2 and 3.

PILE ENCASEMENT: Pile encasement for Bents 2 and 3 shall extend from bottom of cap to 3' below natural or finished ground. See Standard Drawing Number 55021 for additional information.

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

PROTECTIVE SURFACE TREATMENT: Class 2 Protective Surface Treatment shall be applied to the roadway surface and to the roadway face and top of the concrete parapet rail in accordance with Section 803.

DETAIL DRAWINGS:	DRAWING NO(S).
End Bents	65006 - 65009
Intermediate Bents	65010 - 65011
Elastomeric Bearings	65018
255'-0" Prestressed Concrete Girder Unit	65012 - 65017
Poured Silicone Joints	65017
Concrete Filled Steel Shell Piling	55021
Type F Approach Gutter	55030F
Type 1 Special Approach Slab	65019
Bridge Traffic Rail	55071

STATE OF ARKANSAS
7 Jun 27 2022 5:20PM
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 2 OF 2
LAYOUT OF BRIDGE
HIGHWAY 569 OVER CUTOFF CREEK RELIEF
HWY. 278 - HWY. 293 (S)
DREW COUNTY

ROUTE 569 SEC. 7

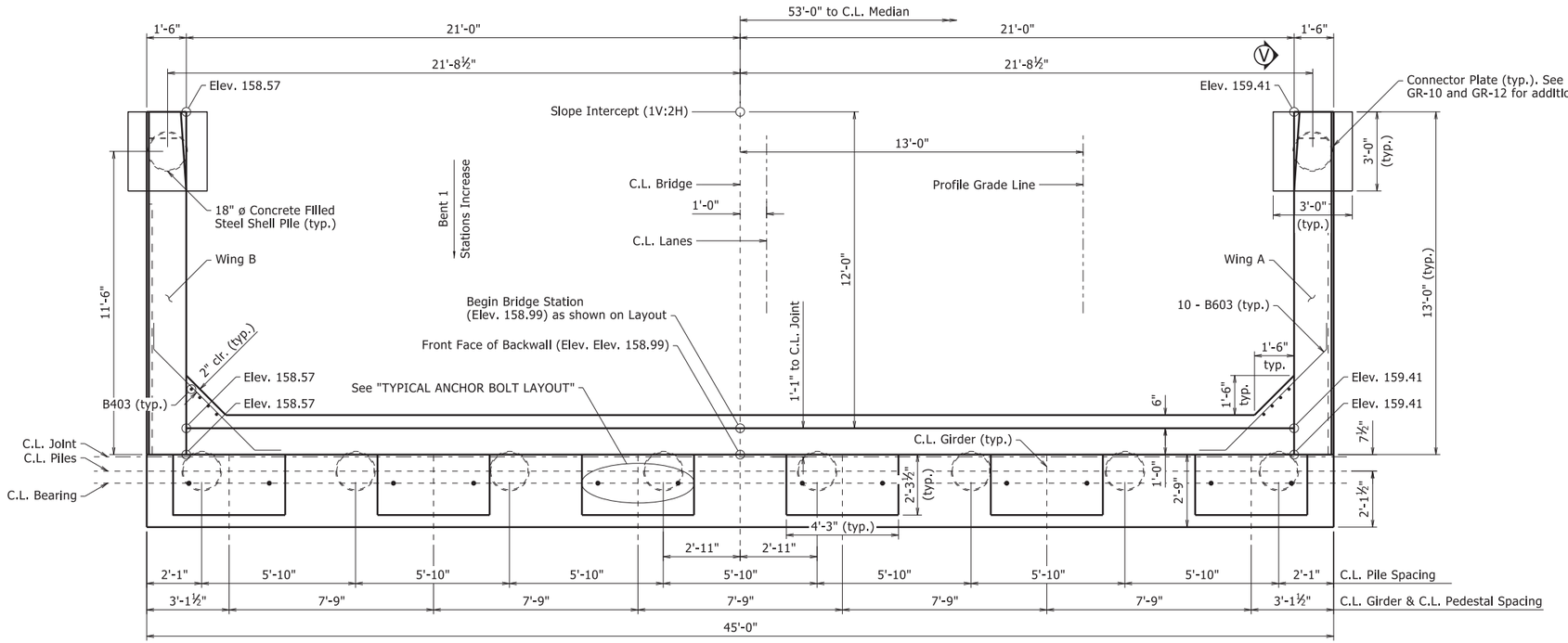
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: CMW DATE: 11/2021 SCALE: 1" = 20'
DESIGNED BY: CMW DATE: 4/2021

BRIDGE NO. B7578 DRAWING NO. 65005

PRINT DATE: 6/17/2022

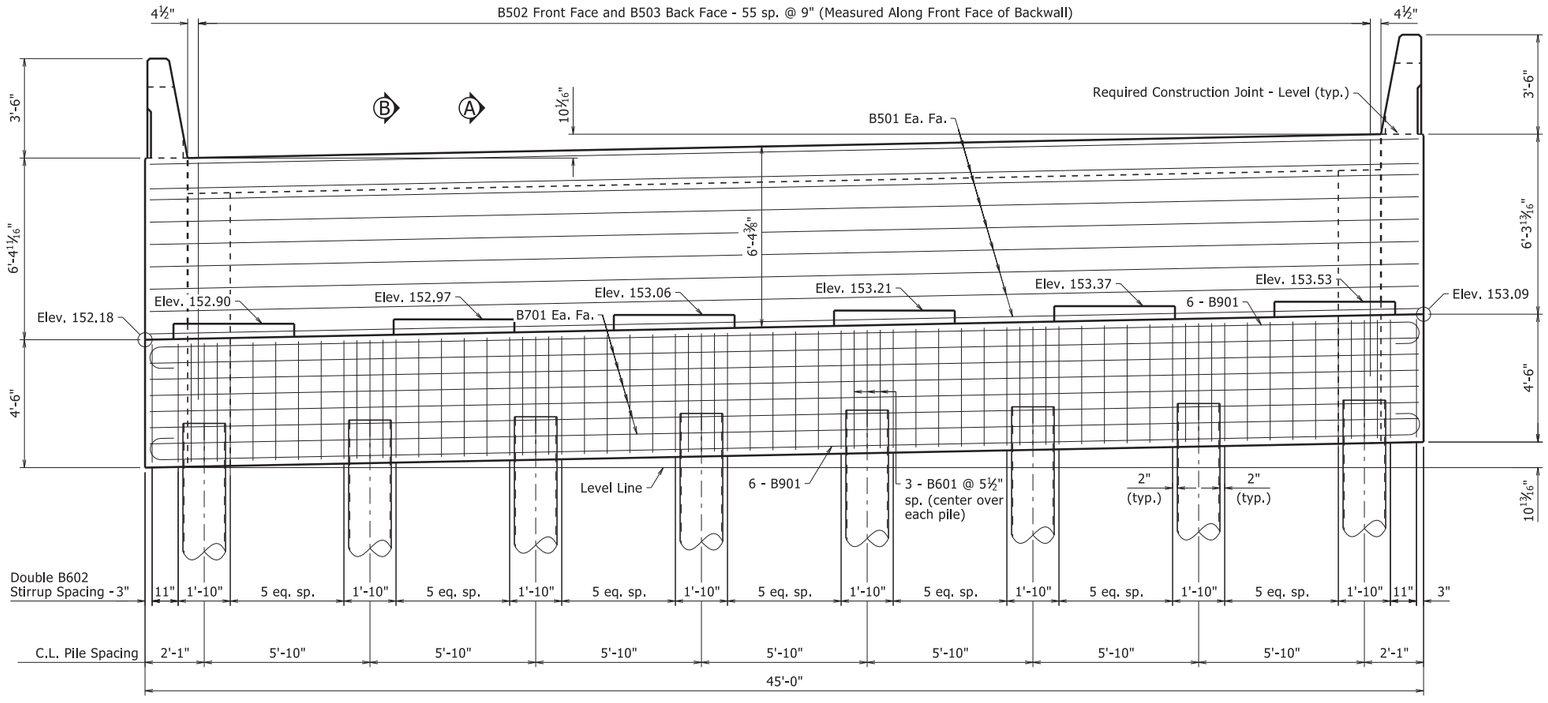
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07-27-2022		6	ARK.	020678	139	368
		B7578 - End Bents - 65006				



PLAN - BENT 1

⅜" = 1'-0"

For "VIEW V-V", See Dwg. No. 65009.



ELEVATION - BENT 1

Looking Back

⅜" = 1'-0"

GENERAL NOTES

Structural Steel in Bent 1 and Bent 4 shall be ASTM A709, Gr. 50W and shall be paid for as "Structural Steel in Beam Spans (A709, Gr. 50W)".

All pilling shall be ASTM A252, Grade 3 (Fy= 45 ksi). For details of concrete filled steel shell piles, see Std. Dwg. No. 55021.

Class 2 Protective Surface Treatment shall be applied to the top of the backwall and to the roadway face and top of the concrete rails.

For Details of Wings, see Dwg. No. 65009.

Pedestals shall be cast level at the elevations shown. For Details of Pedestals, see Dwg. No. 65007.

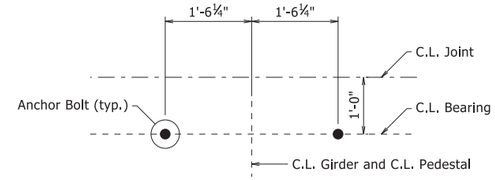
All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

For Bar List and additional Sections, see Dwg. Nos. 65008 and 65009.

All concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 3,500 psi and shall be poured in the dry. All exposed corners shall be chamfered ¾" unless noted otherwise.

Top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see Layout.



See Dwg. No. 65018 for Details of Elastomeric Bearings.

TYPICAL ANCHOR BOLT LAYOUT

No Scale

No portion of the backwall shall be poured before the girders are in place. The portion of the backwall above the optional construction joint at the paving bracket shall not be placed until the adjacent deck pour has been made. Refer to the "EXPANSION DEVICE INSTALLATION AT END BENTS" note on Dwg. No. 65017. No heavy construction equipment shall be allowed within 10' of the backwall before the deck concrete placement for the adjacent span has been completed.

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SHEET 1 OF 4
DETAILS OF END BENTS
CUTOFF CREEK RELIEF

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

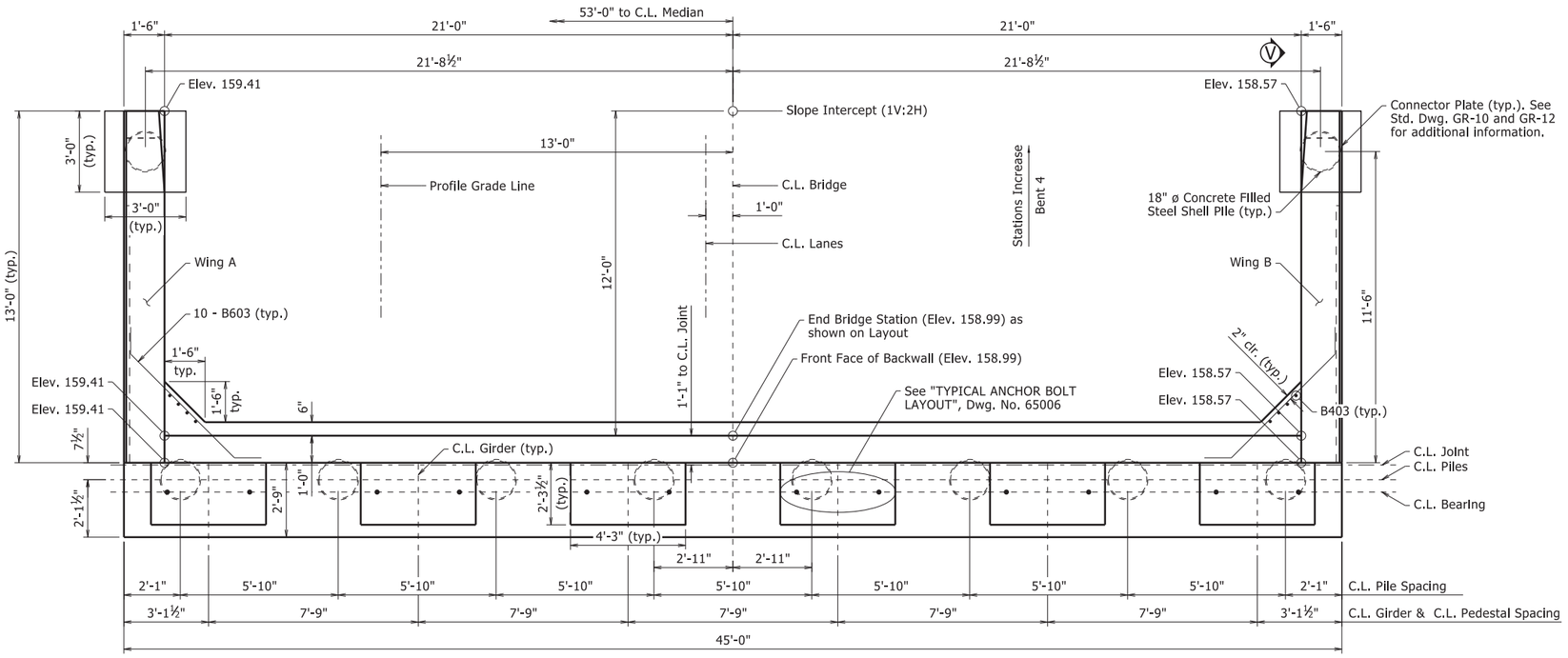
LITTLE ROCK, ARK.

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DESIGNED BY:	DBS	DATE:	3/2022		

BRIDGE NO. B7578 DRAWING NO. 65006

PRINT DATE: 6/27/2022

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	140	368
		B7578 - End Bents - 65007				

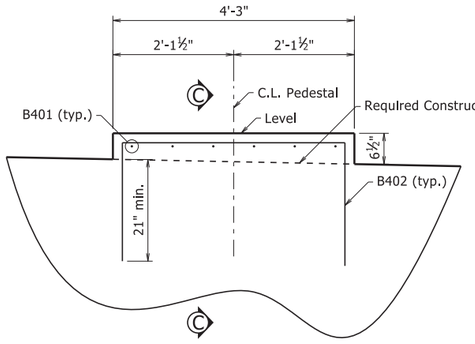


PLAN - BENT 4

⅜" = 1'-0"

For "VIEW V-V", See Dwg. No. 65009.

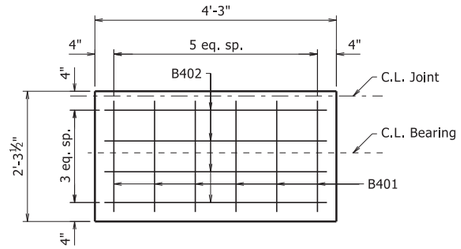
See Dwg. No. 65007 for "SECTION C-C".



TYPICAL PEDESTAL DETAILS

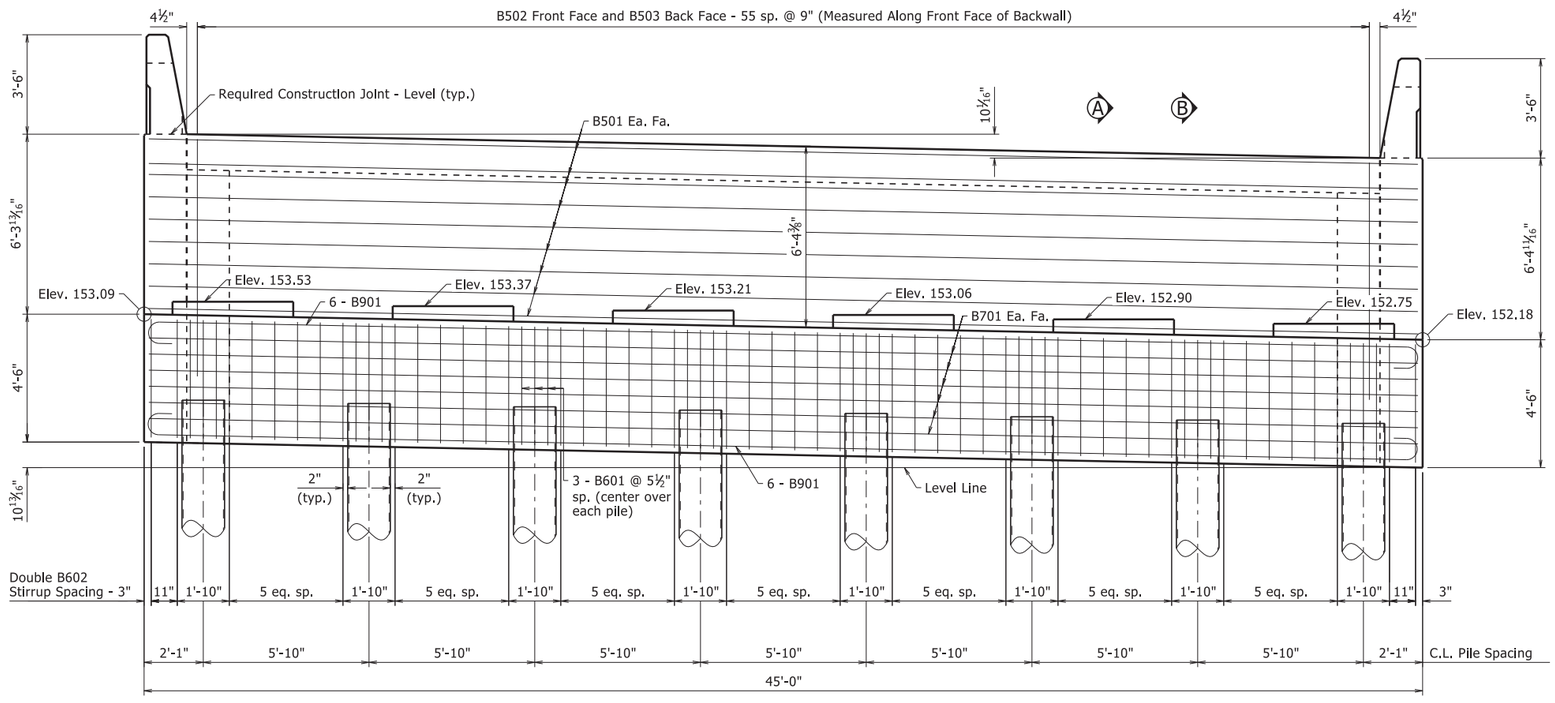
(Shown for Bent 4, Bent 1 Similar)

¾" = 1'-0"



PEDESTAL PLAN

¾" = 1'-0"



ELEVATION - BENT 4

Looking Ahead

⅜" = 1'-0"

No portion of the backwall shall be poured before the girders are in place. The portion of the backwall above the optional construction joint at the paving bracket shall not be placed until the adjacent deck pour has been made. Refer to the "EXPANSION DEVICE INSTALLATION AT END BENTS" note on Dwg. No. 65017. No heavy construction equipment shall be allowed within 10' of the backwall before the deck concrete placement for the adjacent span has been completed.

STATE OF ARKANSAS
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SHEET 2 OF 4
DETAILS OF END BENTS
CUTOFF CREEK RELIEF

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

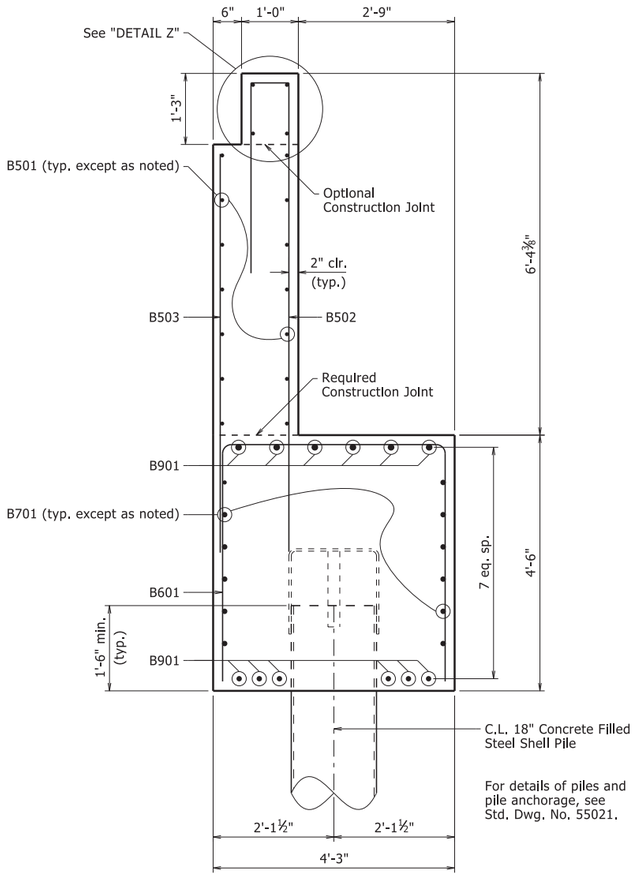
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BRIDGE NO. B7578 DRAWING NO. 65007

PRINT DATE: 6/27/2022

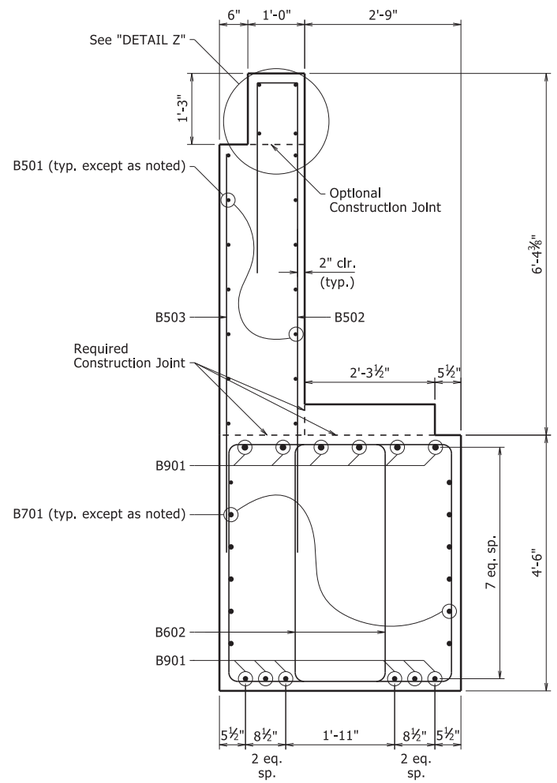
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07-27-2022		6	ARK.	020678	141	368
		B7578 - End Bents - 65008				



SECTION B-B

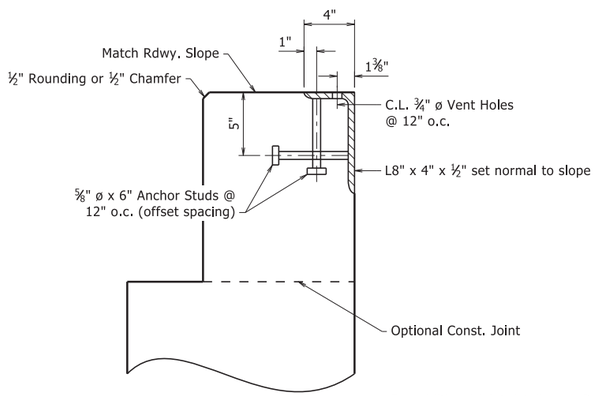
¾" = 1'-0"

For details of piles and pile anchorage, see Std. Dwg. No. 55021.



SECTION A-A

¾" = 1'-0"



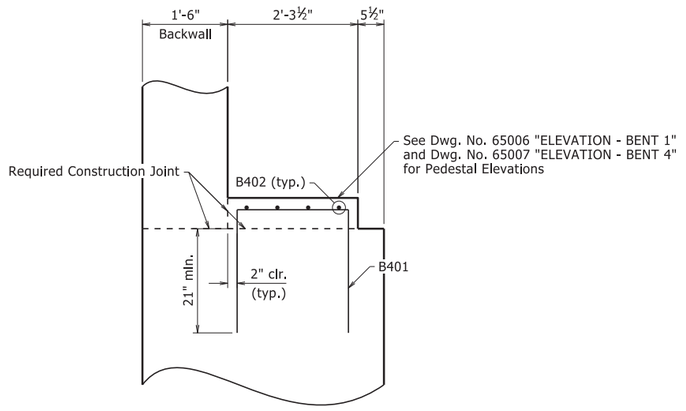
DETAIL Z

No Scale

For additional joint details, see Dwg. No. 65017.

Concrete shall be hand packed under the joint armor in the backwall.

Transverse spacing between top anchor studs and vent holes shall be 6".



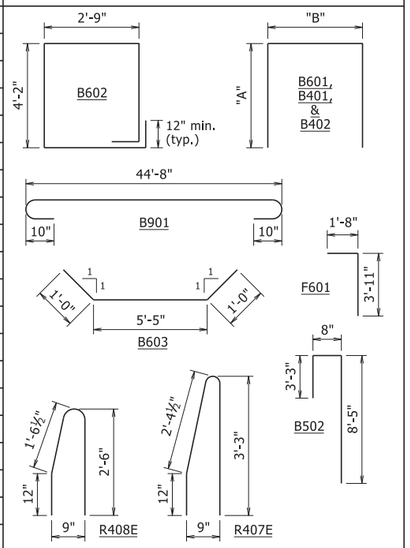
SECTION C-C

¾" = 1'-0"

BAR LIST - PER BENT

MARK	NO. REQ'D.	LENGTH	"A"	"B"	PIN DIA.
B401	36	6'-2"	2'-2"	1'-11½"	2"
B402	24	8'-1"	2'-2"	3'-11"	2"
B403	8	9'-0"	-	-	Str.
B501	18	44'-8"	-	-	Str.
B502	56	12-1½"	-	-	2½"
B503	56	7'-0"	-	-	Str.
B601	24	11'-11"	4'-2"	3'-11"	4½"
B602	94	15'-0"	-	-	4½"
B603	20	7'-5"	-	-	4½"
B701	12	44'-8"	-	-	Str.
B901	12	47'-2"	-	-	9"
W401E	52	4'-5"	-	-	3¾"
W601	56	10'-3"	-	-	Str.
W701	48	12'-8"	-	-	Str.
F601	24	5'-5"	-	-	4½"
F602	12	2'-8"	-	-	Str.
R401E	48	7'-6"	-	-	3"
R402E	8	5'-6"	-	-	Str.
R404E	4	2'-8"	-	-	-
R405E	12	12'-8"	-	-	Str.
R406E	4	12'-6"	-	-	Str.
R407E	2	7'-4½"	-	-	2"
R408E	2	5'-9½"	-	-	2"

BENDING DIAGRAMS



Dimensions are out to out of bars.
Bars with "E" suffix are to be epoxy coated.

See Std. Dwg. No. 55071 for details of Rail bars.

STATE OF ARKANSAS
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SHEET 3 OF 4
DETAILS OF END BENTS
CUTOFF CREEK RELIEF

ROUTE SEC.

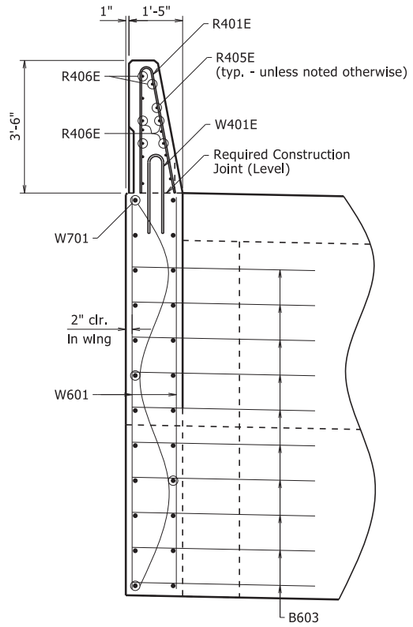
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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BRIDGE NO. B7578 DRAWING NO. 65008

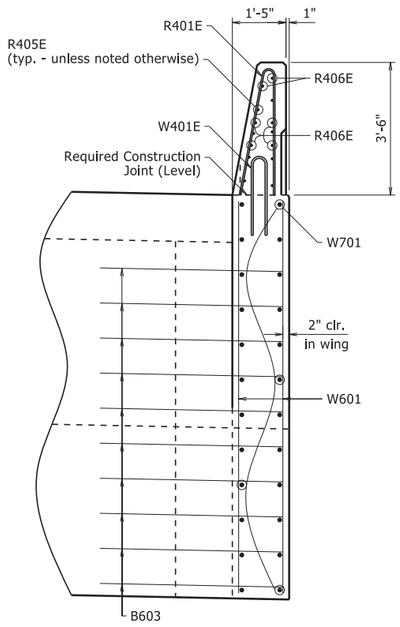
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DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
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		B7578 - End Bents - 65009				



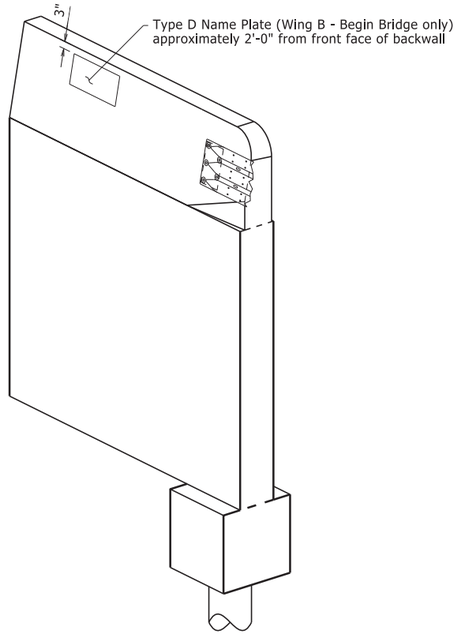
VIEW I-I

½" = 1'-0"



VIEW J-J

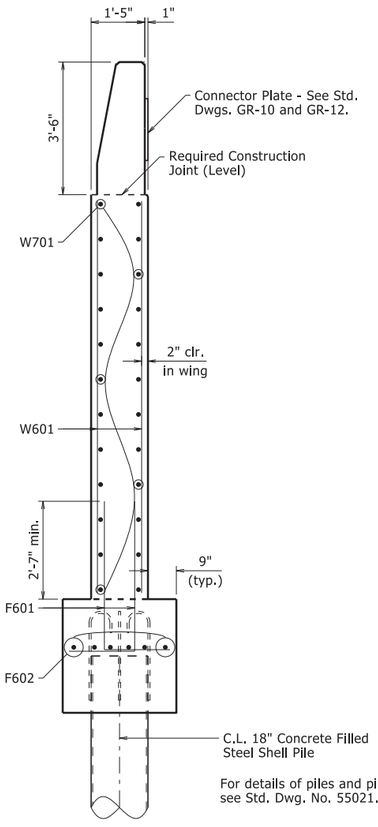
½" = 1'-0"



THREE DIMENSIONAL VIEW AT WING

No Scale

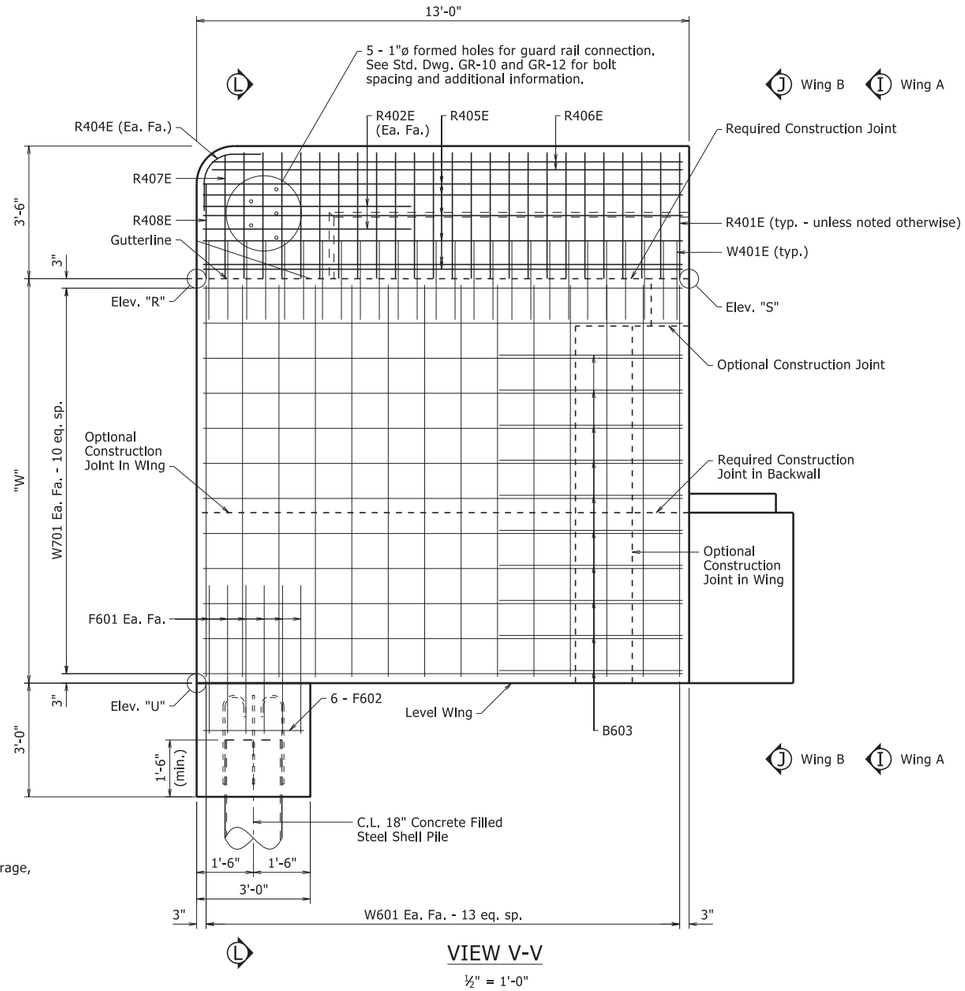
For Rail Bar details,
see Std. Dwg. No. 55071.



For details of piles and pile anchorage,
see Std. Dwg. No. 55021.

SECTION L-L

½" = 1'-0"

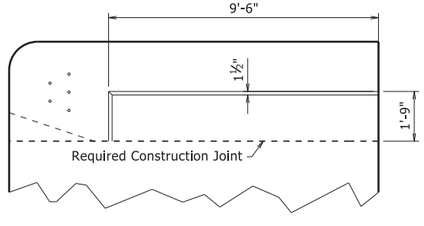


VIEW V-V

½" = 1'-0"

TABLE OF VARIABLES

BENT NO.	WING	"W"	"R"	"S"	"U"
1 & 4	A	10'-9⅞"	159.41	159.41	148.59
	B	10'-10⅝"	158.57	158.57	147.68



LIMITS OF ENHANCEMENT

⅜" = 1'-0"

STATE OF ARKANSAS
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SHEET 4 OF 4
DETAILS OF END BENTS
CUTOFF CREEK RELIEF

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

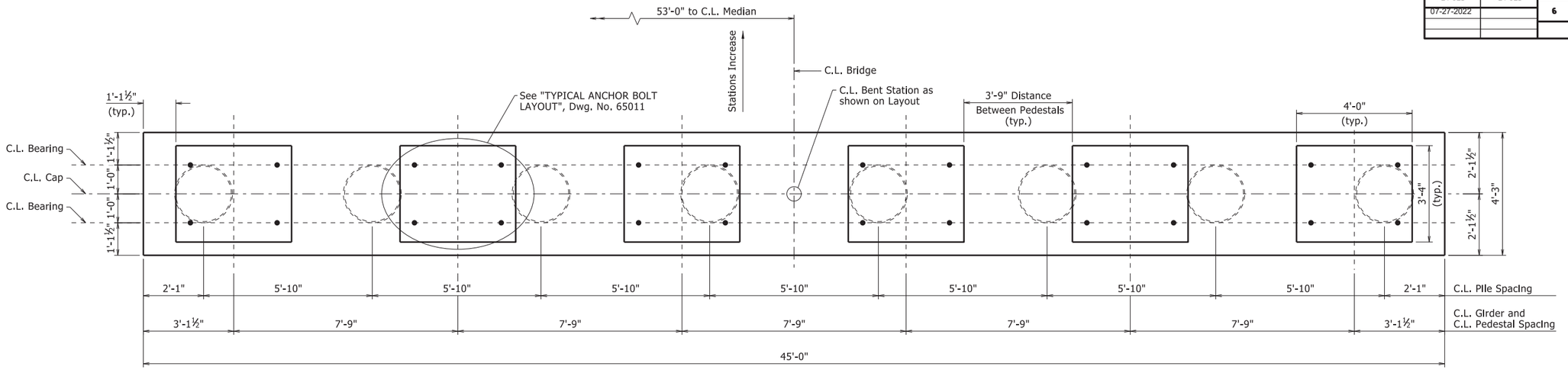
LITTLE ROCK, ARK.

DRAWN BY: NAC DATE: 4/18/2022
CHECKED BY: DBS DATE: 6/2/2022
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BRIDGE NO. B7578 DRAWING NO. 65009

PRINT DATE: 6/27/2022

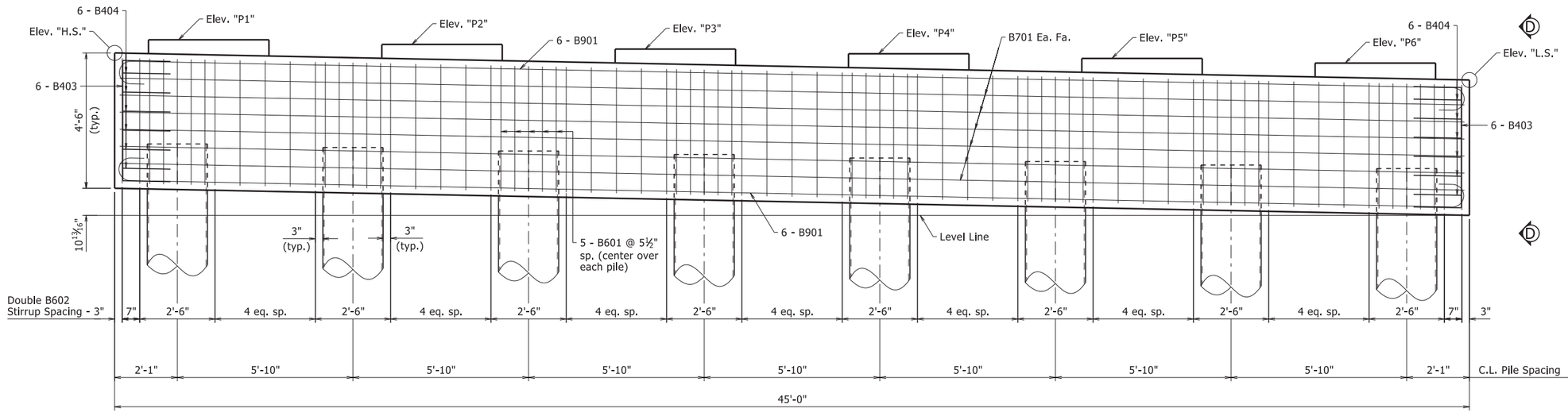
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	143	368
		B7578 - Int. Bents - 65010				



PLAN

½" = 1'-0"

See Dwg. No. 65011 for details of pedestals.



ELEVATION

Looking Ahead
½" = 1'-0"

GENERAL NOTES

All concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 3,500 psi and shall be poured in the dry. All exposed corners shall be chamfered ¾" unless noted otherwise.

Pedestals shall be cast level at the elevations shown. For Details of Pedestals, see Dwg. No. 65011.

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

Top reinforcing bars in cap and pedestals shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For Bar List and additional Sections, see Dwg. No. 65011.

All pilling shall be ASTM A252, Grade 3 (F = 45 ksi). For details of concrete filled steel shell piles, see Std. Dwg. No. 55021.

For additional information, see Layout.

TABLE OF VARIABLES

Bent No.	H.S.	P1	P2	P3	P4	P5	P6	L.S.
2 & 3	153.09	153.53	153.37	153.21	153.06	152.90	152.75	152.18

STATE OF ARKANSAS
7 Jun 27 2022 5:21PM
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
BRIDGE ENGINEER

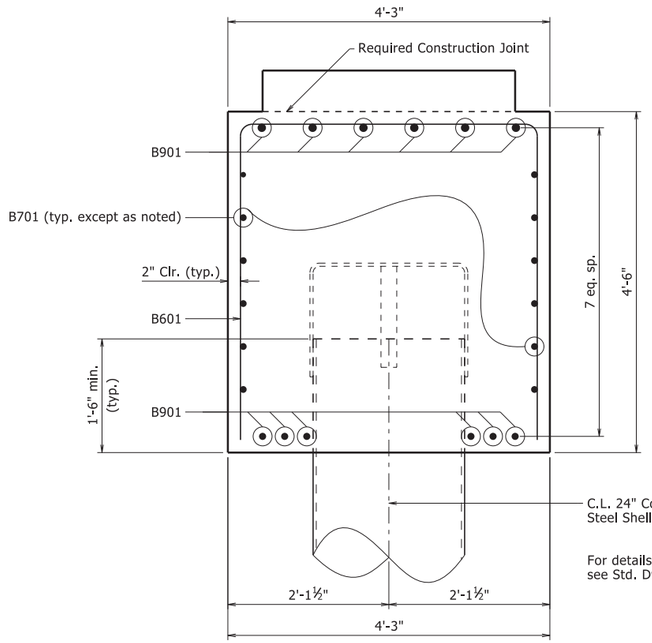
SHEET 1 OF 2
DETAILS OF INTERMEDIATE BENTS
CUTOFF CREEK RELIEF

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

DRAWN BY: NAC DATE: 4/18/2022 FILENAME: b020678x2_b2.dgn
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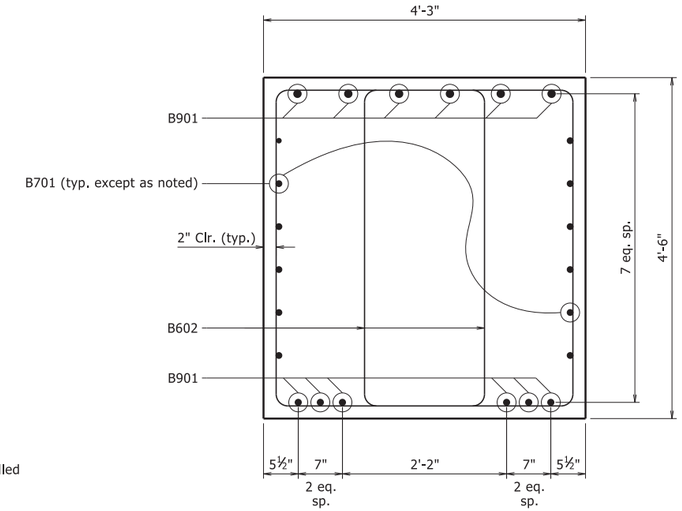
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		B7578 - Int. Bents - 65011				



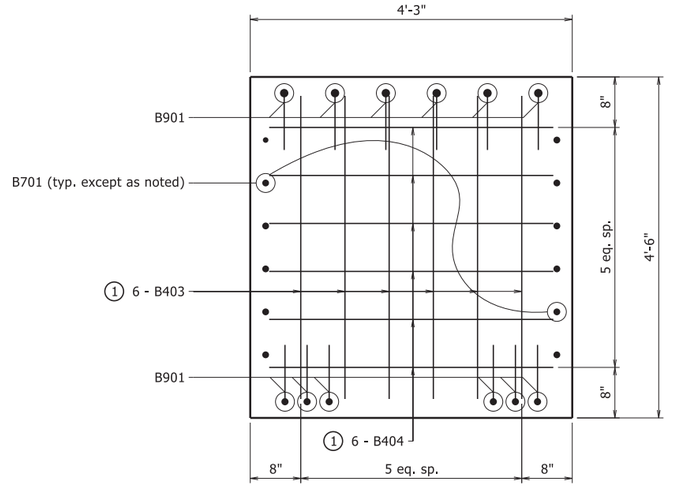
SECTION A-A

1" = 1'-0"



SECTION B-B

1" = 1'-0"

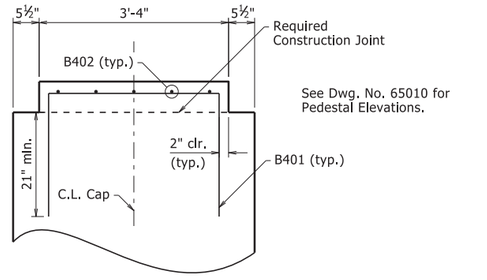


VIEW D-D

B602 stirrups not shown for clarity

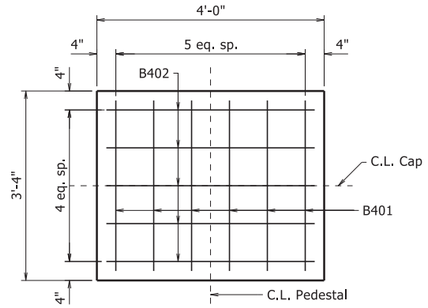
1" = 1'-0"

(1) U-Bars Each End of Cap (3" Clr.)



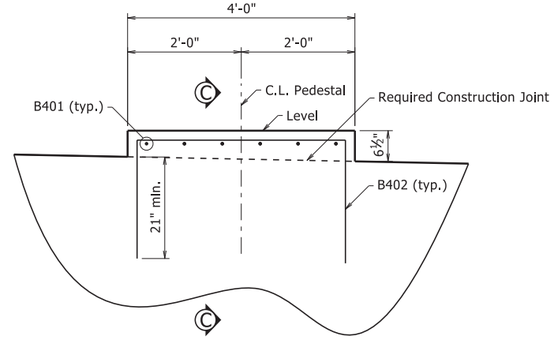
SECTION C-C

¾" = 1'-0"



PEDESTAL PLAN

¾" = 1'-0"



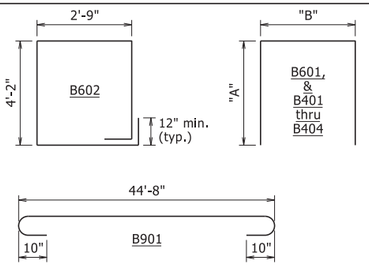
TYPICAL PEDESTAL DETAILS

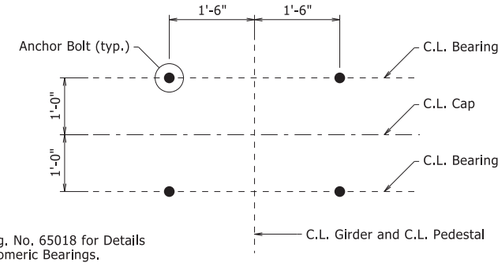
¾" = 1'-0"

BAR LIST - PER BENT

MARK	NO. REQ'D.	LENGTH	"A"	"B"	PIN DIA.	BENDING DIAGRAMS
B401	36	7'-2"	2'-2"	3'-0"	2"	
B402	30	7'-10"	2'-2"	3'-8"	2"	
B403	12	7'-0"	1'-7"	4'-0"	2"	
B404	12	6'-9"	1'-7"	3'-9"	2"	
B601	40	11'-11"	4'-2"	3'-11"	4½"	
B602	78	15'-0"	-	-	4½"	
B701	12	44'-8"	-	-	Str.	
B901	12	47'-2"	-	-	9"	

Dimensions are out to out of bars.





See Dwg. No. 65018 for Details of Elastomeric Bearings.

TYPICAL ANCHOR BOLT LAYOUT

No Scale

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LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
Thu 27 2022 5:21 PM
BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF INTERMEDIATE BENTS
CUTOFF CREEK RELIEF

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: NAC DATE: 4/18/2022 FILENAME: b020678x2_b2.dgn
CHECKED BY: DBS DATE: 6/2/2022 SCALE: AS SHOWN
DESIGNED BY: DBS DATE: 3/2022

BRIDGE NO. B7578 DRAWING NO. 65011

PRINT DATE: 6/17/2022

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	145	368
		B7578 - 255'-0" UNIT - 65012				

Slab Reinforcing:

Longitudinal: S401E top and bottom placed as shown
S701E placed as shown, see "HALF REINFORCING PLAN AND SLAB POURING SEQUENCE", Dwg. No. 65014.

Transverse: S501E @ 6" o.c. in top
S502E @ 6" o.c. in bottom
S503E @ 6" in top of overhang (lapped with No. 5 bars)

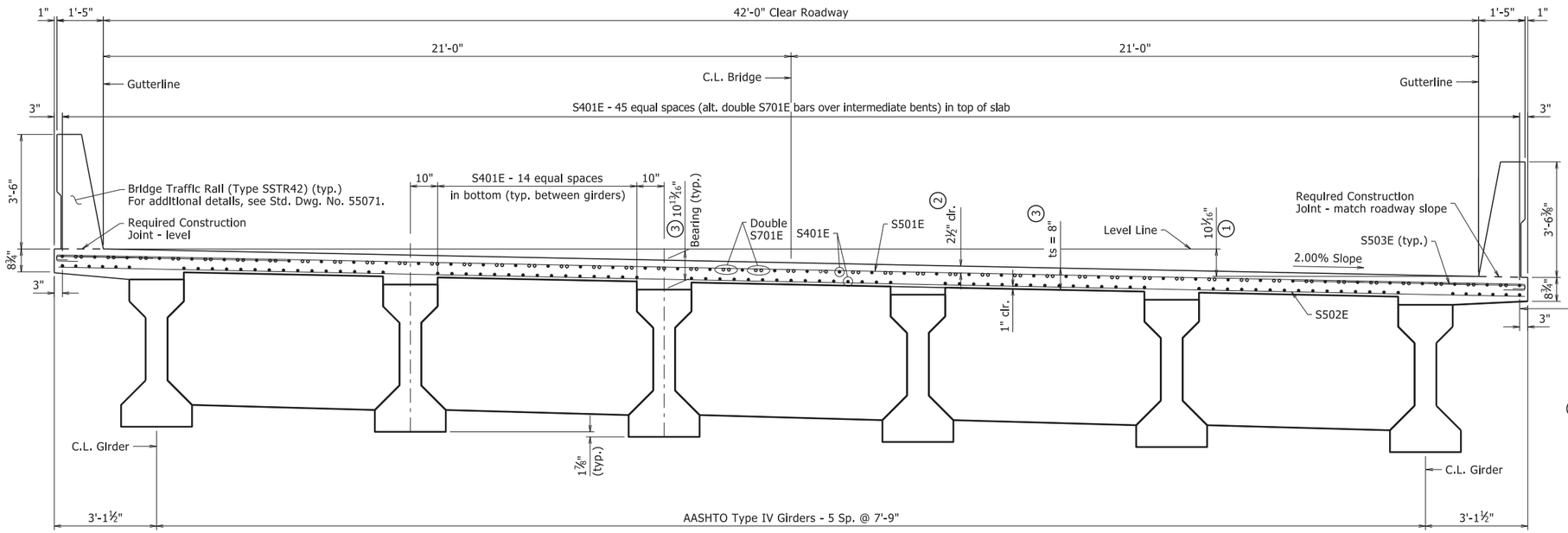
Bar positions or clearances from the forms shall be maintained by means of stays, ties, hangers, or other approved devices per Subsection 804.06. Placement of slab bolsters or high-chairs with full-length lower runners directly on removable deck forms will not be allowed.

Class 2 Protective Surface Treatment shall be applied to the Roadway Surface and the Roadway Face and Top of Concrete Bridge Rail.

(1) Gutterline to Gutterline

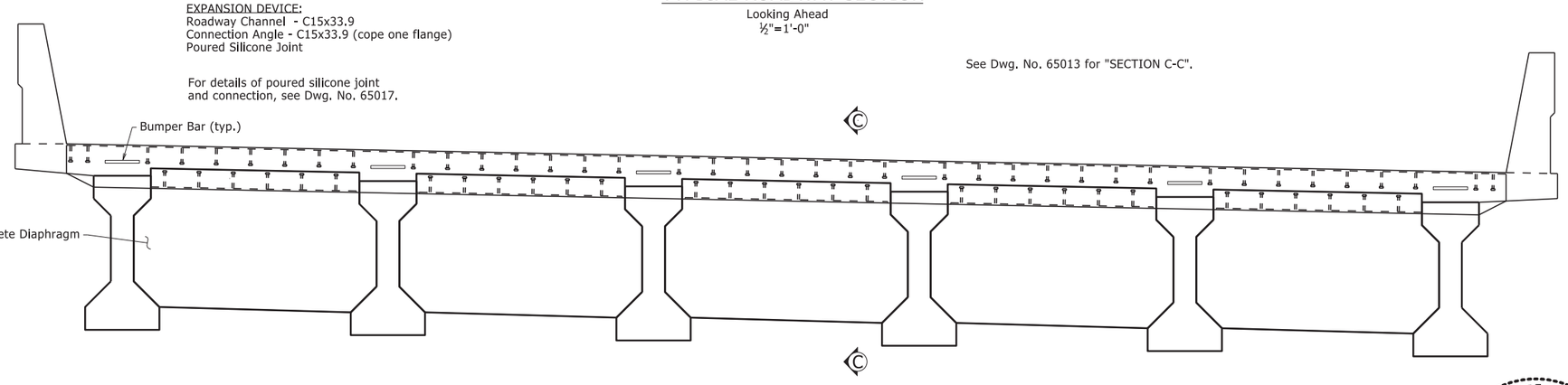
(2) Tolerance: Minus = ¼";
Plus equal to the amount of slab thickening used to meet slab thickness tolerance. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE".

(3) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE"



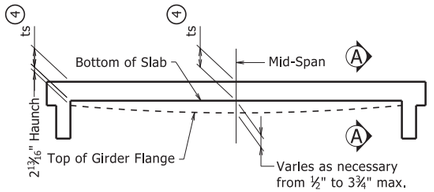
TYPICAL ROADWAY SECTION

Looking Ahead
½"=1'-0"



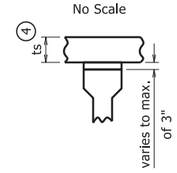
TYPICAL SECTION NEAR JOINT

Looking Ahead Bent 4, Bent 1 Similar
½" = 1'-0"



GIRDER ELEVATION

No Scale



SECTION A-A

No Scale

ts = slab thickness as shown on superstructure details - See "TYPICAL ROADWAY SECTION".

(4) Tolerance when removable deck forming is used is + ½", - ¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance. See Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used.

Girder Elevation sketches show the range of acceptability of the top of the Girder relative to bottom of slab after the placement of the slab. When the haunch is less than ½", a raise in grade will be necessary. Girders shall be set in a sufficient number of spans over suitable increments so the revised grade line will produce a smooth riding surface. Variation of haunch height will be at the Contractor's expense.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

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BRIDGE ENGINEER

SHEET 1 OF 6
DETAILS OF 255'-0"
PRESTRESSED CONCRETE GIRDER UNIT
CUTOFF CREEK RELIEF

ROUTE SEC.

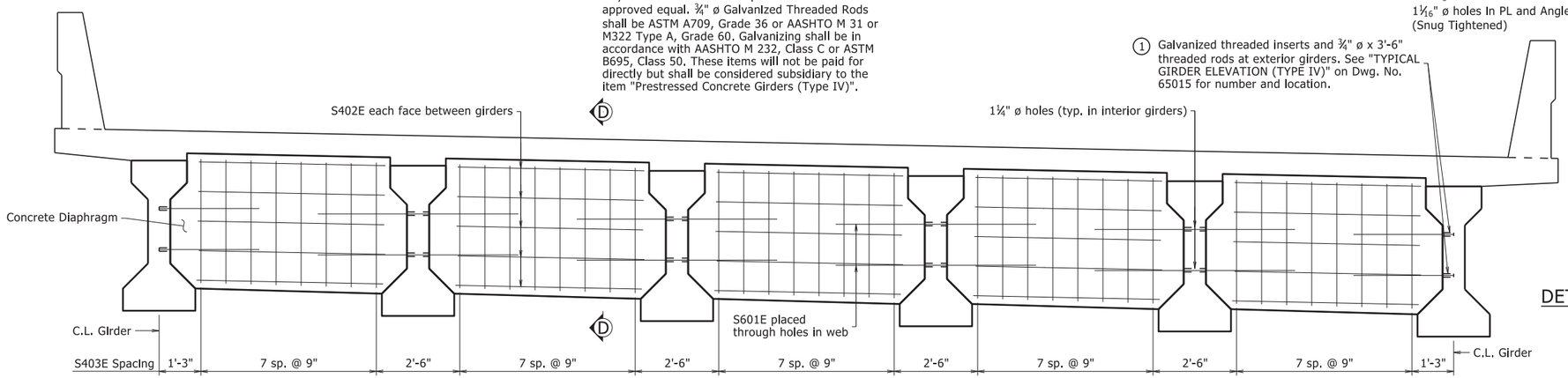
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: WAC DATE: 05/2022
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SCALE: AS SHOWN

BRIDGE NO. B7578 DRAWING NO. 65012

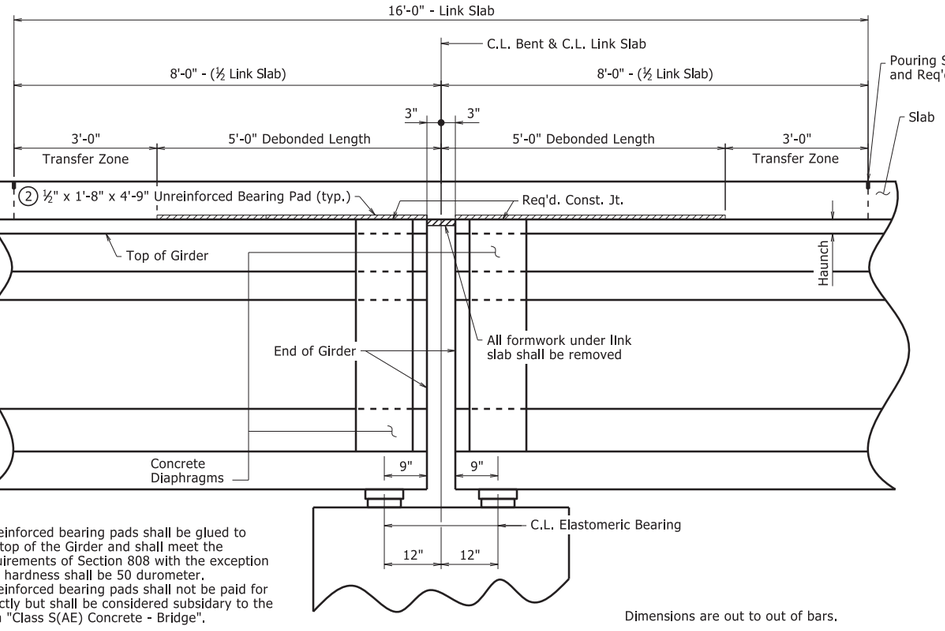
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DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	146	368
		B7578 - 255'-0" UNIT - 65013				



TYPICAL ROADWAY SECTION THRU DIAPHRAGMS

½" = 1'-0"



② Unreinforced bearing pads shall be glued to the top of the Girder and shall meet the requirements of Section 808 with the exception that hardness shall be 50 durometer. Unreinforced bearing pads shall not be paid for directly but shall be considered subsidiary to the item "Class S(AE) Concrete - Bridge".

VIEW AT INTERMEDIATE BENT

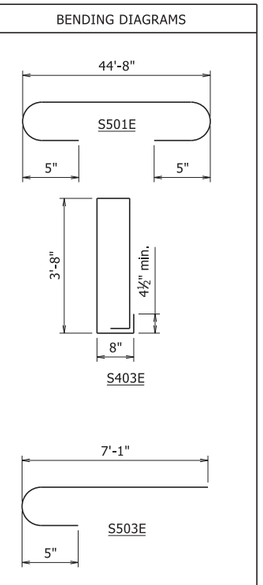
No Scale

TABLE OF VARIABLES

Closed Rail Panels			Open Rail Panels					
Panel Length	"A"	P4XXE Bar	Panel Length	"B"	"C"	"D"	"E"	P4XXE Bar
17'-3"	34	R403E	17'-3"	9	3'-4"	13	6'-7"	R403E
8'-0"	15	R404E						

BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.	BENDING DIAGRAMS
S401E	798	44'-6"	Str.	
S402E	450	5'-7"	Str.	
S403E	360	9'-0"	2"	
S501E	509	45'-10"	3¾"	
S502E	509	44'-8"	Str.	
S503E	1,018	7'-8"	3¾"	
S601E	72	6'-0"	Str.	
S701E	180	30'-0"	Str.	
R400E	96	6'-3"	3"	
R401E	1020	7'-6"	3"	
R402E	120	5'-6"	Str.	
R403E	1020	4'-3"	5¼"	
R409E	240	16'-11"	Str.	
R410E	120	7'-8"	Str.	

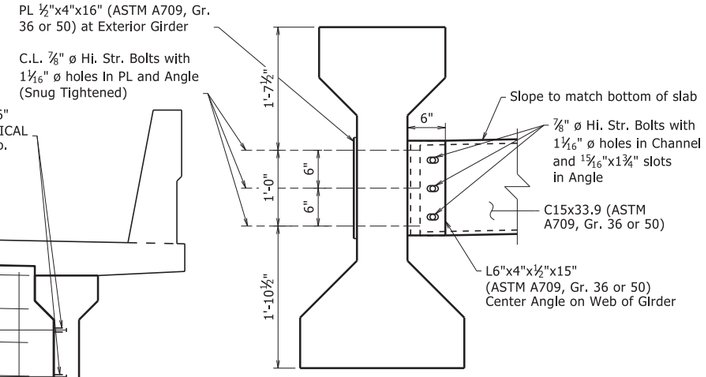


Dimensions are out to out of bars.

Bars with an "E" suffix are to be epoxy coated.

For bars R404E thru R408E see Std. Dwg. No. 55071.

For bending diagrams of parapet bars, see Dwg. No. 55071.



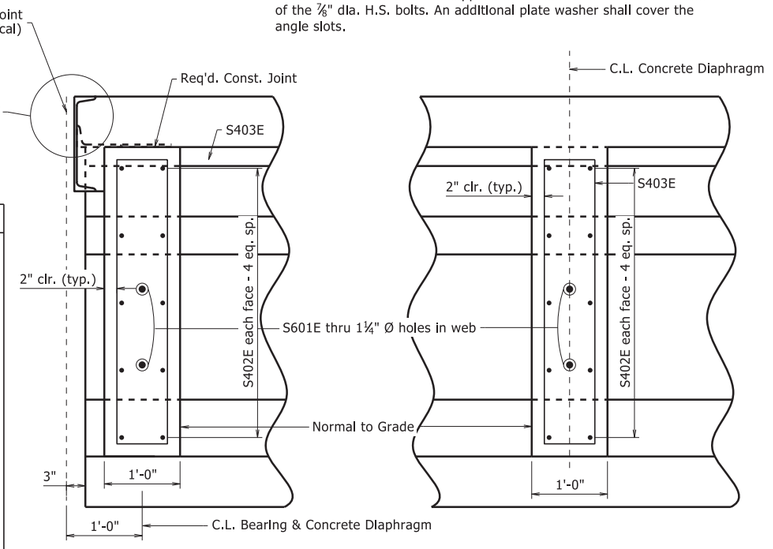
DETAILS OF ALTERNATE STEEL DIAPHRAGM

1" = 1'-0"

Steel diaphragms may be used in lieu of concrete diaphragms at midspan. Payment will be based on concrete diaphragms.

All components of steel diaphrams and connection shall be galvanized in accordance with Section 807.

A standard washer shall be supplied under both the nut and the head of the ⅞" dia. H.S. bolts. An additional plate washer shall cover the angle slots.



SECTION C-C

End of Unit Diaphragm
1" = 1'-0"

SECTION D-D

Shown at Midspan,
Diaphragms at Intermediate Bents Similar
1" = 1'-0"

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CHARLES R. ELLIS
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BRIDGE ENGINEER

SHEET 2 OF 6
DETAILS OF 255'-0" PRESTRESSED CONCRETE GIRDER UNIT CUTOFF CREEK RELIEF

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

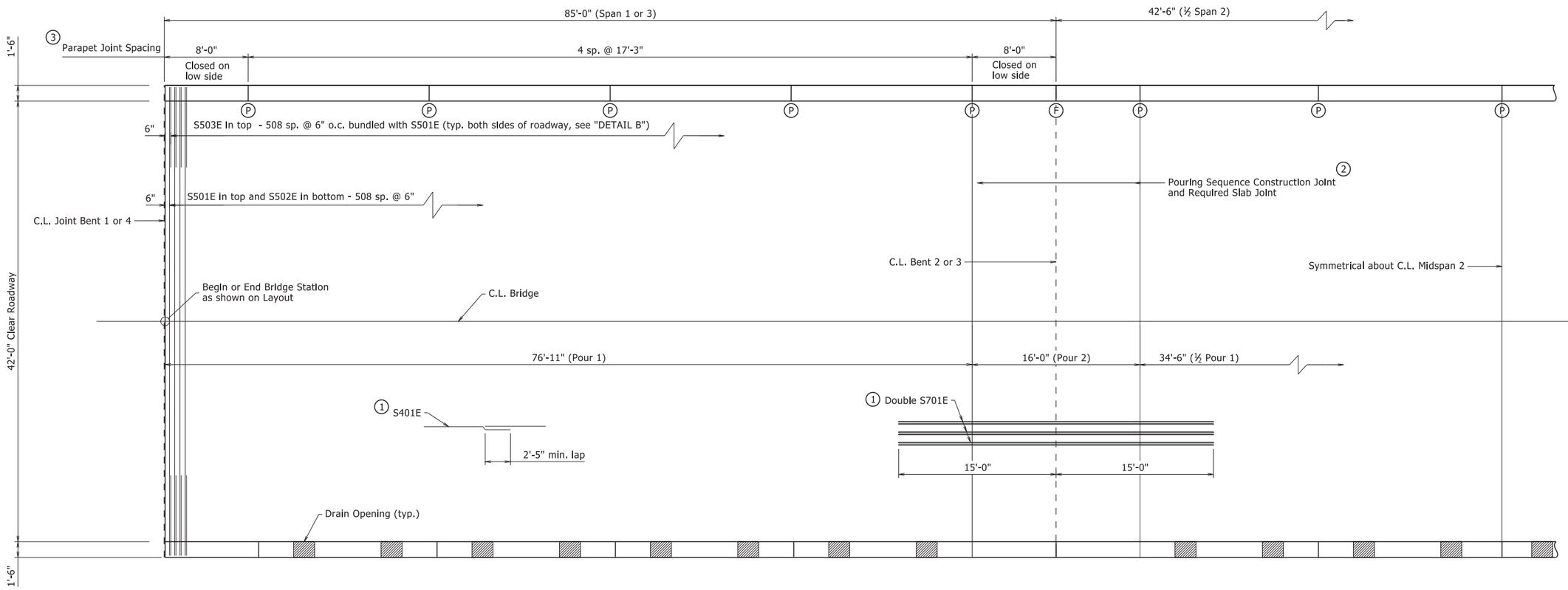
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SCALE: AS SHOWN

BRIDGE NO. B7578 DRAWING NO. 65013

PRINT DATE: 6/27/2022

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
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		B7578 - 255'-0" UNIT - 65014				

③ Closed on high side of bridge, Open on low side of Bridge. Typical unless noted otherwise.



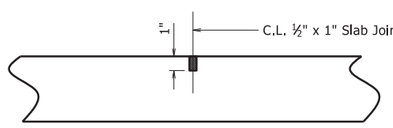
HALF REINFORCING PLAN AND SLAB POURING SEQUENCE

Slab Pouring Sequence:
Pours with the same number may be placed simultaneously or separately. All Pour(s) 1 must be placed before Pour(s) 2 can be placed.
A minimum of 48 hours shall elapse between the end of a pour and the start of the next pour.
A minimum of 72 hours shall elapse between adjacent pours.

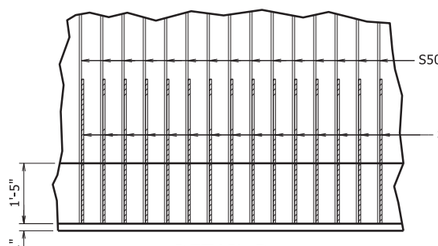
Concrete in bridge superstructure shall be placed, consolidated, and screeded off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

A minimum of 72 hours shall elapse between completion of the slab and the pouring of the bridge railing. Any railing pours made before the entire slab unit has been placed must beapproved by the Engineer. The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence(s) shown.

All concrete diaphragms shall be cast in place and poured a minimum of 48 hours before the slab is poured.



TRANSVERSE SLAB JOINT DETAIL
No Scale



DETAIL B
No Scale

① Placed as shown in "TYPICAL ROADWAY SECTION", see Dwg. No. 65012.
② See "TRANSVERSE SLAB JOINT DETAIL".
Ⓟ Partical Depth Rail Joint at this Location
Ⓕ Full Depth Rail Joint at this Location
Bridge rail spacing and joint depth shown are typical for both sides of roadway. For reinforcing details, see Dwg. No. 55071.
For bar list, see Dwg. No. 65013.

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SHEET 3 OF 6
DETAILS OF 255'-0"
PRESTRESSED CONCRETE GIRDER UNIT
CUTOFF CREEK RELIEF

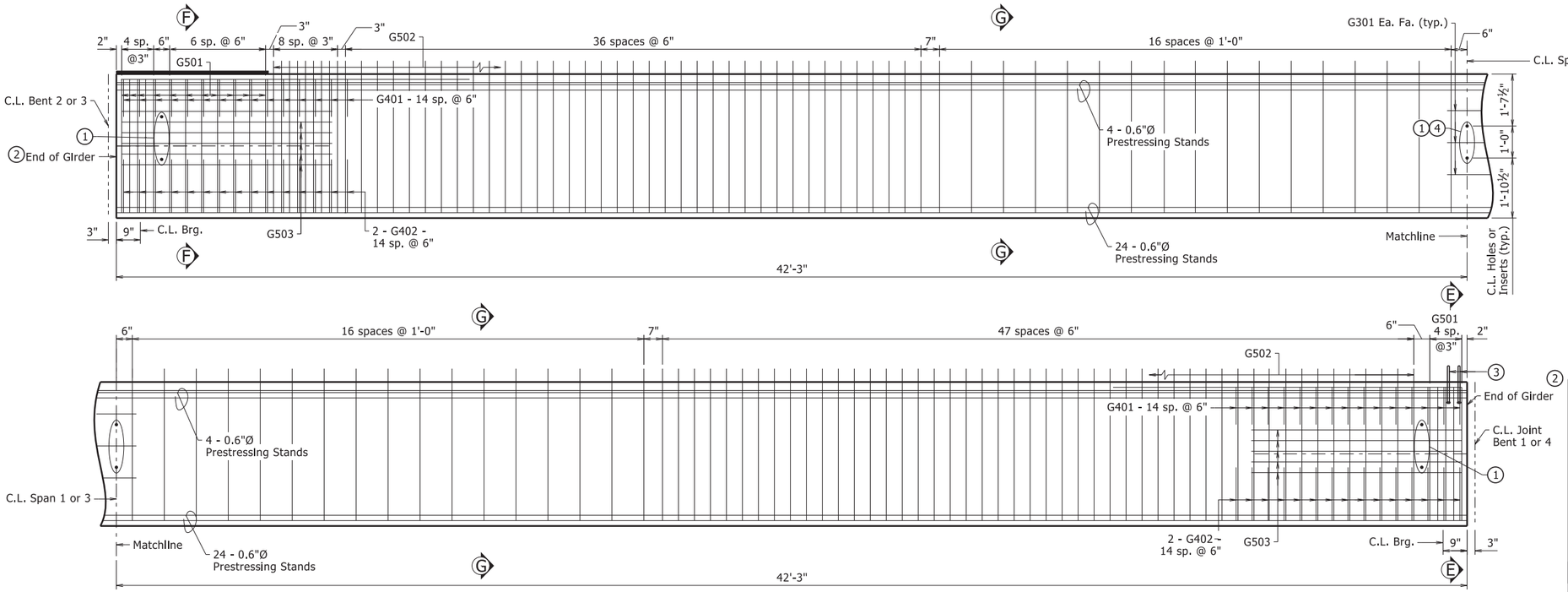
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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SCALE: 3/16" = 1'-0"

BRIDGE NO. B7578
DRAWING NO. 65014

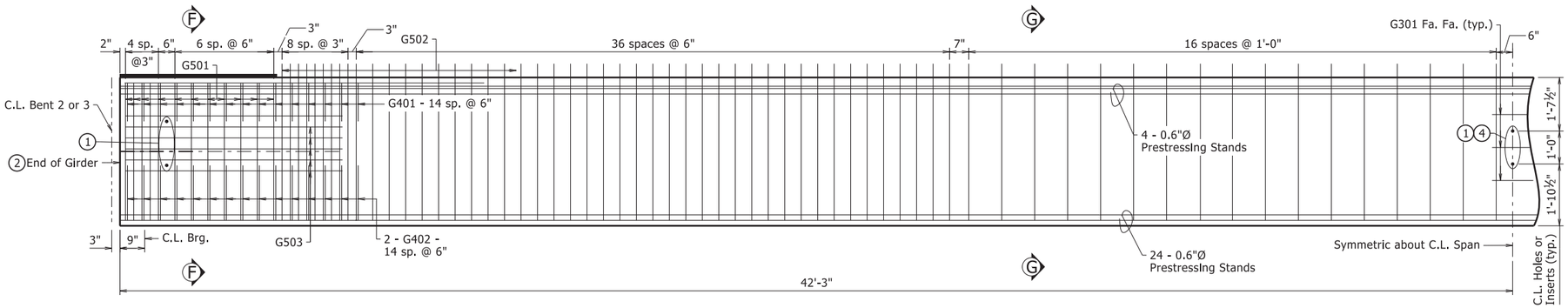
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DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	148	368
		B7578 - 255'-0" UNIT - 65015				



TYPICAL GIRDER ELEVATION END SPANS (TYPE IV)

½" = 1'-0"



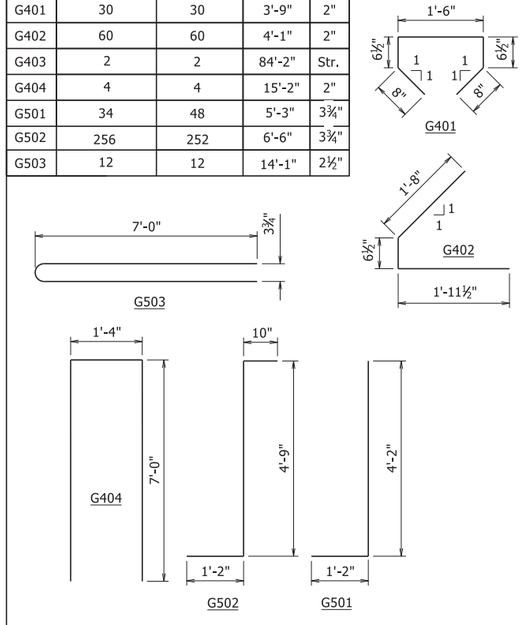
TYPICAL GIRDER ELEVATION INT. SPAN (TYPE IV)

½" = 1'-0"

1. Connection for Concrete Diaphragm: ¾" ø Threaded Inserts at interior face of exterior girders or 1¼" ø holes at interior girders. See Dwg. No. 65013 for additional details.
2. End of Girder to receive an epoxy coating. See "END OF GIRDER VIEW".
3. See "SECTION THRU JOINT AT END BENT" on Dwg. No. 65017 for additional details.
4. Shown for concrete diaphragms. See "DETAILS OF ALTERNATE STEEL DIAPHRAGM" on Dwg. No. 65013 for hole size and number when using alternate steel diaphragms.

BAR LIST - PER GIRDER

MARK	NO. REQ'D. Span 1 & 3	NO. REQ'D. Span 2	LENGTH	P.D.	BENDING DIAGRAMS
G301	6	6	1'-3"	Str.	
G401	30	30	3'-9"	2"	
G402	60	60	4'-1"	2"	
G403	2	2	84'-2"	Str.	
G404	4	4	15'-2"	2"	
G501	34	48	5'-3"	3¾"	
G502	256	252	6'-6"	3¾"	
G503	12	12	14'-1"	2½"	



All bars in the Bar List will not be paid for directly, but will be considered subsidiary to the item "Prestressed Concrete Girders (Type IV)".

At the Contractor's option, the two G402 bars may be furnished as one bar.

At the Contractor's option, ⅜" Ø strands pulled to 2,000 lbs. may be substituted for bars G403.

Dimensions are measured along girders.

Prestressing strands will not be paid for directly, but will be considered subsidiary to the item "Prestressed Concrete Girders (Type IV)".

Prestressing strands shall be bonded along the entire length of the girder.

See Dwg. No. XXXXX for "SECTION E-E", "SECTION F-F", and "SECTION G-G".

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Charles R. Ellis 7 Jun 27 2022 5:22 PM
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SHEET 4 OF 6
DETAILS OF 255'-0"
PRESTRESSED CONCRETE GIRDER UNIT
CUTOFF CREEK RELIEF

ROUTE SEC.

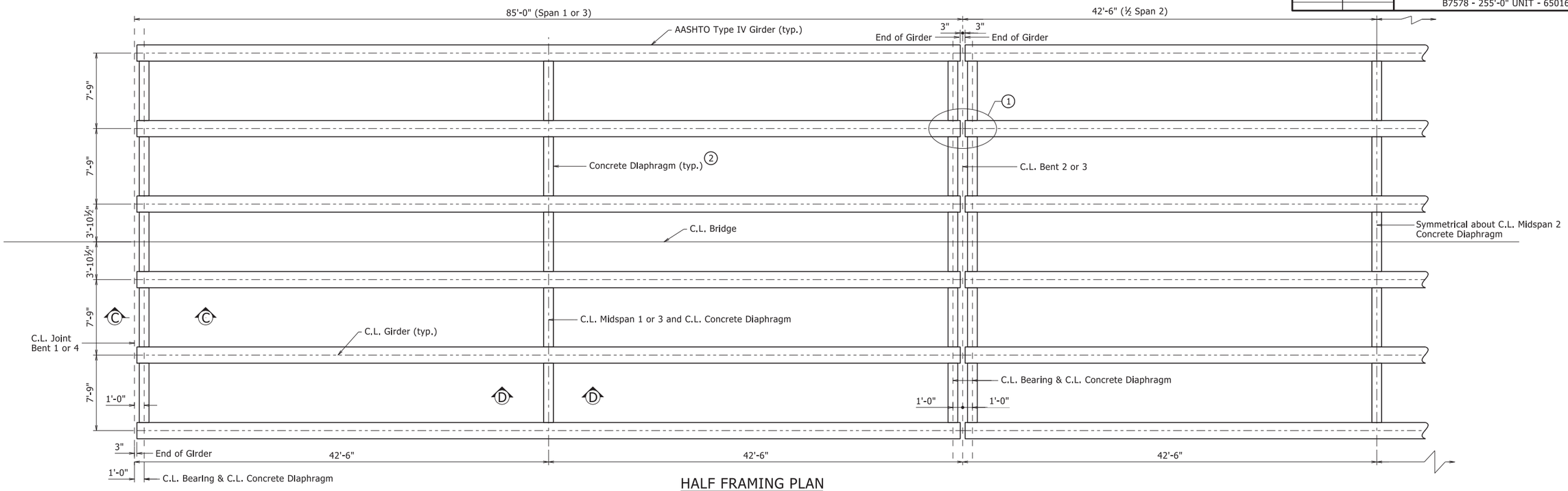
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JWP DATE: 03/2022
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BRIDGE NO. B7578 DRAWING NO. 65015

PRINT DATE: 6/27/2022

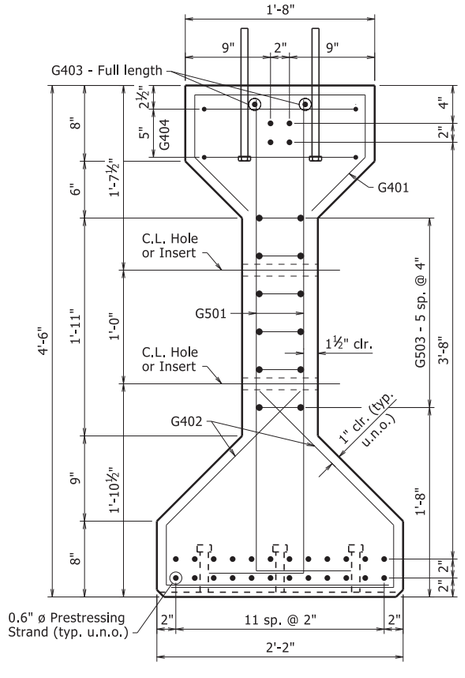
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	149	368
		B7578 - 255'-0" UNIT - 65016				



HALF FRAMING PLAN

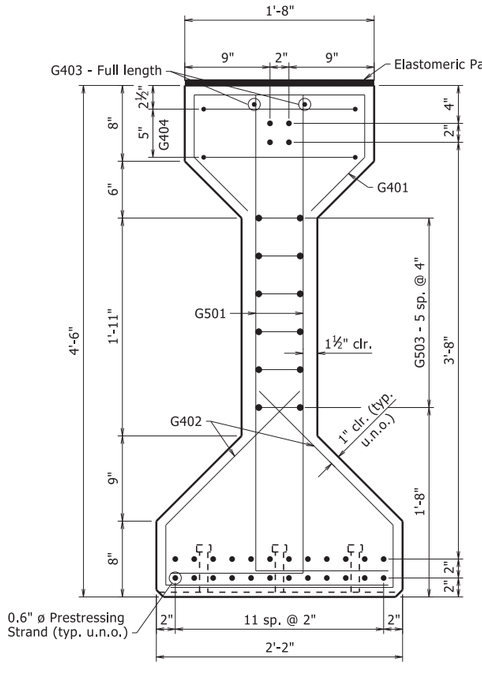
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See Dwg. No. 65013 for "SECTION C-C" and "SECTION D-D".



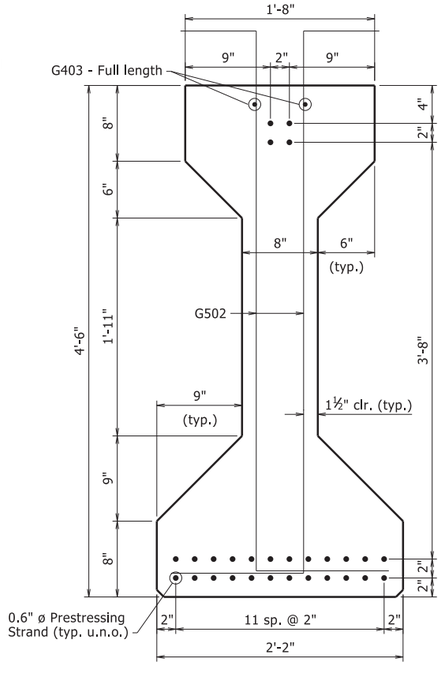
SECTION E-E

1½" = 1'-0"



SECTION F-F

1½" = 1'-0"

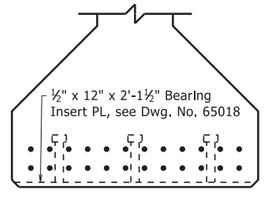


SECTION G-G

1½" = 1'-0"

1 After erection, the ends of girders at all bents shall be blocked using temporary blocking to maintain proper location on bent caps until 72 hours after the diaphragms are poured.

2 See Dwg. No. 65013 for details of Concrete Diaphragms, "SECTION C-C", "SECTION D-D", and "DETAILS OF ALTERNATE STEEL DIAPHRAGM".



Saw cut or grind all strands flush with the end of the girder. The ends of the girders and the cut-off strands shall be coated with a 1/16" min. thick coating of a QPL approved epoxy resin.

END OF GIRDER VIEW

1½" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
BRIDGE ENGINEER
Jun 27 2022 5:22PM

SHEET 5 OF 6
DETAILS OF 255'-0"
PRESTRESSED CONCRETE GIRDER UNIT
CUTOFF CREEK RELIEF

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: WAC DATE: 05/2022
DESIGNED BY: JWP DATE: 01/2022
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SCALE: 3/16" = 1'-0"

BRIDGE NO. B7578
DRAWING NO. 65016

PRINT DATE: 6/27/2022

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	150	368
		B7578 - 255'-0" UNIT - 65017				

GENERAL NOTES:

PRESTRESSED CONCRETE GIRDERS:

Pretensioning steel shall be 0.6"ø Low Relaxation strands with a minimum ultimate strength of 270 ksi, and shall conform to AASHTO M 203.

Distances from the forms and spacing of the Prestressing Steel shall be maintained by stays, ties, hangers, spacers, or other approved supports which shall be shown on the Shop Drawings.

All girders shall be Type IV as noted on the details and shall be the standard prestressed sections adopted by the Joint Committee of AASHTO and the Prestressed Concrete Institute. All girders shall be cast in concrete floored pallets and in metal forms. All work and materials shall be as specified in Subsection 802.22.

Concrete shall be Class S and shall have a minimum 28 day compressive strength, f'c = 8,000 psi. The initial tensile force applied to each 0.6"ø strand shall be 43,950 lbs. Transfer of this tensioning load to the girder shall not be done until the compressive strength of the concrete is 6,000 psi.

Dimensions shown are to the center of the strands.

The Contractor shall submit the method and sequence for release of strands to the Engineer for approval prior to casting of the girders.

Holes and Inserts shall be cast in into the girder. Field drilling of holes shall not be permitted.

The first 16" along the tops of the Girders at beginning and end of unit shall have a smooth surface. The tops of the remaining length of the girders shall be roughened to an amplitude of ¼" and shall be scrubbed transversely with a coarse wire brush to remove all laitance to produce an adequate surface for bonding the slab.

After detensioning, saw cut, grind, or bend up strands as designated by the plans. Heat-cutting or bending methods shall not be used within 6" of the girder.

Extreme care shall be exercised in handling and moving precast prestressed concrete girders. Girders must be maintained in an upright position at all times and must be picked up from points near the girder ends. Disregard of this requirement may lead to collapse of the girder. The Contractor's proposed lifting details shall be submitted on shop drawings to the Engineer for approval. The use of holes for lifting purposes will not be permitted.

The points of support and directions of the reactions with respect to the member shall be approximately the same during transportation and storage as when the member is in its final position.

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

The Contractor may submit alternate strand patterns with design calculations for review and approval.

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

CONCRETE:

All concrete in slab, rail, and diaphragms shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi. Concrete shall be poured in the dry and all exposed corners shall be chamfered ¾" unless otherwise noted.

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

The concrete deck (roadway surface) shall be given a tine finish in accordance with Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the girder. When permitted, the use of a longitudinal strike-off will require that a vertical camber adjustment be made in the strike-off to account for the future dead load deflection due to any railings.

REINFORCING STEEL:

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

STRUCTURAL STEEL:

Structural steel shall be ASTM A709 with grade and payment as specified in the plans. Grade 50W steel shall not be painted and all exposed surfaces shall be cleaned in accordance with Subsection 807.84(e). Grade 36 and Grade 50 steel shall be painted unless otherwise noted and all exposed surfaces shall be cleaned in accordance with Subsection 807.84. Structural steel completely embedded in concrete may be ASTM A709, Gr. 36, Gr. 50 or Gr. 50W unless otherwise noted.

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

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

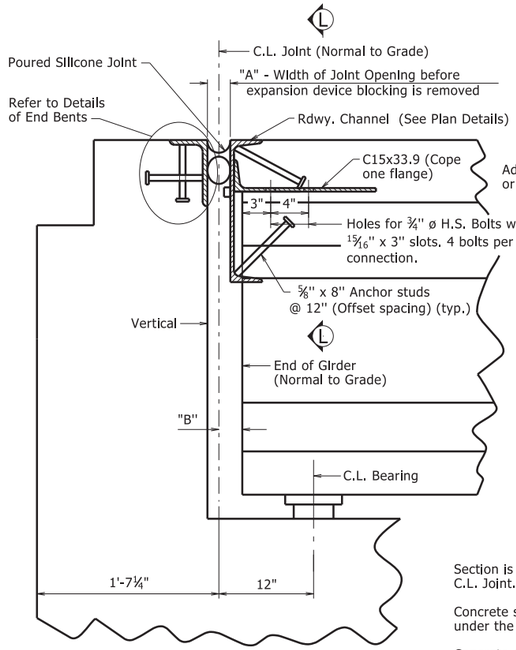
All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, whether permanent or temporary, a formal request with detailed drawings shall be submitted to the Engineer for approval. All welding shall conform to Subsection 807.26.

FOR ADDITIONAL INFORMATION AND NOTES, SEE LAYOUT AND PLAN DETAILS.

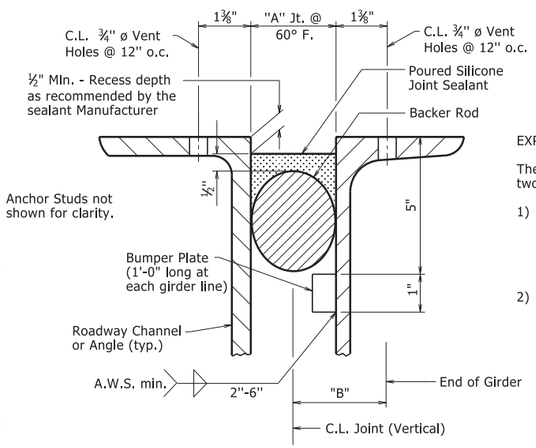
PRINT DATE: 6/27/2022

TABLE OF SILICONE JOINT DATA

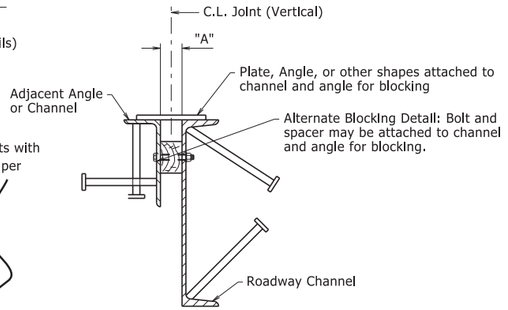
"A" Width Perpendicular to Joint at 24 Hour Average Temperature of:			"B" Perpendicular to Joint at 60°F	Bumper Plate Size
40°F	60°F	80°F		
2 3/16"	2"	1 13/16"	3"	1" x 1" x 12"



SECTION THRU JOINT AT END BENT

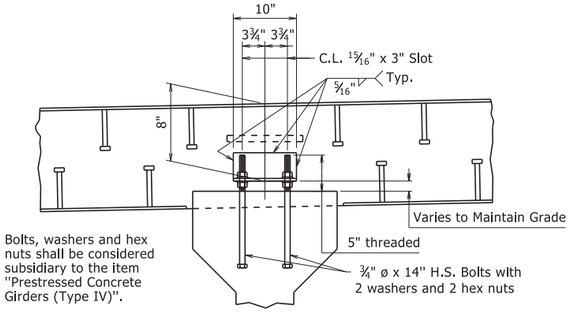


DETAIL OF POURED SILICONE JOINT



Each expansion joint device shall be blocked in the Shop by the Fabricator to the dimension "A" shown for 60° F and the blocking details shall be shown on the shop drawings. Blocking shall be placed within 2 feet of each end of the device and with a maximum spacing of 8 feet.

DETAILS FOR BLOCKING EXPANSION JOINT DEVICE



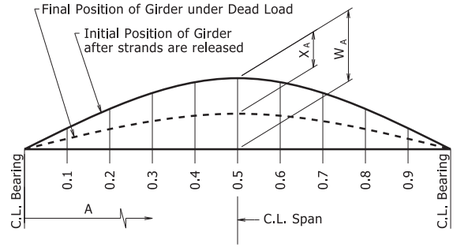
Section is taken perpendicular to C.L. Joint.

Concrete shall be hand packed under the joint armor.

Concrete diaphragm is not shown for clarity.

Bolts, washers and hex nuts shall be considered subsidiary to the item "Prestressed Concrete Girders (Type IV)".

VIEW L-L



"W_A" is camber of Girder (Prestress + Dead Load of girder @ 60 days after release)

"X_A" is Dead Load Deflection of Slab + Diaphragms + Composite Dead Load

CAMBER AND DEFLECTION (INCHES)

No Scale

"W_A" and "X_A" are based on the required minimum concrete strength and may vary from the dimension shown. "W_A" and "X_A" shall be measured along bottom of girders unless otherwise approved by the Engineer. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on Dwg. No. 65012 for limitations of the girder final position under dead load. The Contractor is responsible for any adjustment necessary to meet slab thickness tolerance and to achieve an acceptable finished grade. No payment shall be made for any additional concrete in the haunches when camber is less than shown.

Span Pt.	Inches	
	W_A	X_A
0.0	0	0
0.1	0.841	0.564
0.2	1.438	1.112
0.3	1.829	1.543
0.4	2.05	1.818
0.5	2.123	1.912
0.6	2.05	1.818
0.7	1.829	1.543
0.8	1.438	1.112
0.9	0.841	0.564
1.0	0	0

EXPANSION DEVICE INSTALLATION AT END BENTS:

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

1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the girders erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed, and the opening adjusted for temperature and grade.

2) The backwall shall be poured to the optional construction joint after girders are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature and grade.

Silicone joint material and installation shall conform to Section 809. The temperature limitations recommended by the sealant Manufacturer shall be observed. The sealant shall be installed only when the average 24 hour air temperature is between 40° and 80° F.

Use an appropriately sized backer rod at the depth shown in the Manufacturer's literature based on the joint width at the time of sealing. Unless otherwise noted, do not install more backer rod than can be sealed in the same day.

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

STATE OF ARKANSAS
7 Jun 27 2022 5:22 PM
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 6 OF 6
DETAILS OF 255'-0"
PRESTRESSED CONCRETE GIRDER UNIT
CUTOFF CREEK RELIEF

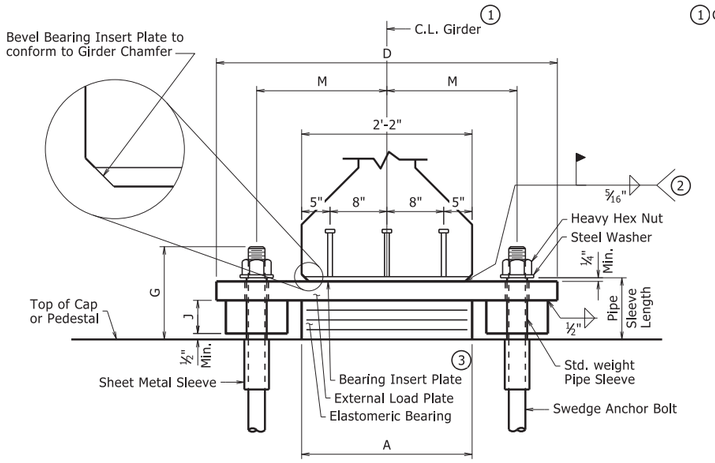
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: WAC DATE: 05/2022
DESIGNED BY: JWP DATE: 01/2022
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BRIDGE NO. B7578 DRAWING NO. 65017

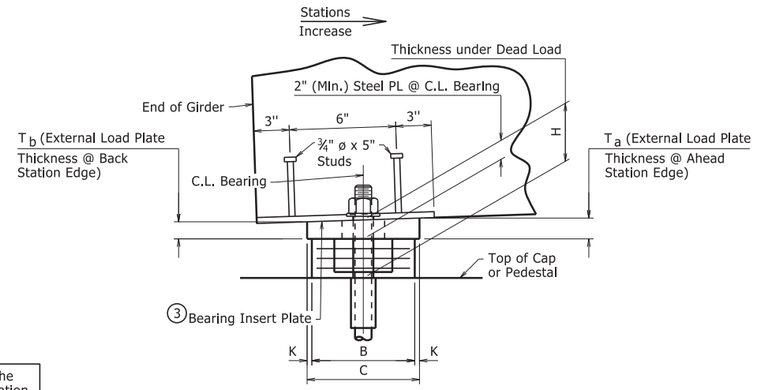
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	151	368
		B7577 & B7578 - ELASTOMERIC BRGS. - 65018				



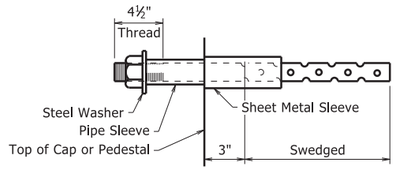
FRONT VIEW

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

Prior to erection of the girders, the Contractor shall verify the orientation of the bearings with respect to T_a and T_b.



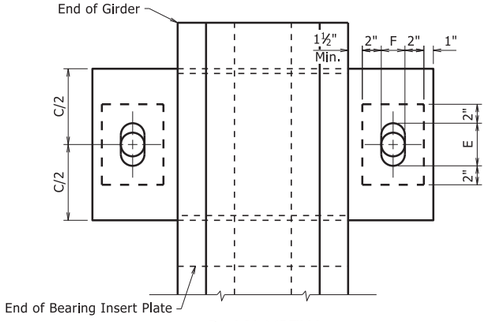
SIDE VIEW



ANCHOR BOLT DETAIL

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

If Anchor Bolts are to be drilled and grouted in place, the Galvanized Sheet Metal Sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of Structural Steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the concrete. Bolts placed in drilled holes shall be accurately set and fixed using a QPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized Sheet Metal Sleeves shall meet the requirements of ASTM 653, CS Type B or approved equivalent, be of minimum 16 gage thickness, and be galvanized according to ASTM B695, Class 50. Sheet Metal Sleeves will not be paid for directly, but will be considered subsidiary to the item "Structural Steel in Beam Spans (A709, Gr. 50W)".



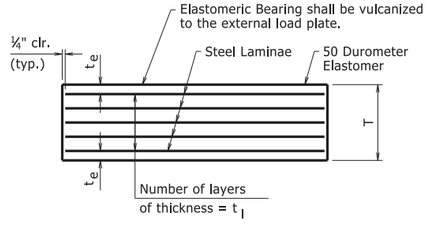
PLAN VIEW

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

Care shall be taken to ensure that the external load plate is in full and complete contact with the bearing insert plate before welding begins.

3 Bearing Insert Plate (A709, Gr. 50W) & Studs shall be considered subsidiary to the item "Prestressed Concrete Girders (Type IV)".

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



t_e = Thickness of elastomer cover on top and bottom of pad.

t_i = Thickness of elastomer between steel laminae.

N = Number of elastomer layers of thickness ti.

ELASTOMERIC BEARING

GENERAL NOTES

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

External load plates and shear blocks shall conform to ASTM A709, Grade 50W. Pipe sleeves shall be ASTM A500, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or ASTM B695, Class 50.

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

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

Pipe Sleeves, Anchor Bolts, Washers and Nuts shall be paid for at the unit price bid for "Structural Steel in Beam Spans (A709, Gr. 50W)". External load plates and shear blocks will not be measured and paid for separately, but will be considered incidental to the unit price bid for "Elastomeric Bearings".

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

TABLE OF FABRICATOR VARIABLES

4 Maximum Design Load = Service I Limit State

BRIDGE NO.	LOCATION: BENT NO(S).	LOCATION: GIRDER NO.	BRG. TYPE	SHEAR BLOCK USED	NO. of BRGS. EA. BENT	MAXIMUM DESIGN LOAD (KIPS)	ELASTOMERIC PAD: G	ELASTOMERIC PAD: H	ELASTOMERIC PAD: A	ELASTOMERIC PAD: B	ELASTOMERIC PAD: N	ELASTOMERIC PAD: ti	ELASTOMERIC PAD: te	ELASTOMERIC PAD: NO. & THICKNESS OF STEEL LAMINAE	ELASTOMERIC PAD: T	EXTERNAL LOAD PLATE: C	EXTERNAL LOAD PLATE: D	EXTERNAL LOAD PLATE: E	EXTERNAL LOAD PLATE: F	EXTERNAL LOAD PLATE: J	EXTERNAL LOAD PLATE: K	EXTERNAL LOAD PLATE: M	EXTERNAL LOAD PLATE: T_a	EXTERNAL LOAD PLATE: T_b	ANCHOR BOLT: ANCHOR BOLT (ø X L)	ANCHOR BOLT: GRADE	ANCHOR BOLT: PIPE SLEEVE SIZE (ø X L)	ANCHOR BOLT: SHEET METAL SLEEVE SIZE (ø X L)	ANCHOR BOLT: STEEL WASHER SIZE (O.D.)
B7577	1 & 7	All	Exp.	Yes	6	4 200	8 7/8"	5 5/16"	26"	8"	5	1/2"	1/4"	6 @ 12 Ga.	3 5/8"	9"	46"	5 1/8"	3 1/8"	3 1/16"	1/2"	18 1/4"	2.00"	2.00"	2" x 32"	55	2 1/2" x 5 7/8"	4" x 13"	3 3/4"
	4	All	Exp.	Yes	12	4 200	8 1/2"	5 5/16"	26"	8"	5	1/2"	1/4"	6 @ 12 Ga.	3 5/8"	9"	45"	5 1/8"	2 5/8"	3 1/16"	1/2"	18"	2.00"	2.00"	1 3/4" x 31"	55	2" x 5 3/4"	4" x 13"	3 3/8"
	2,3,5,6	All	Fix	Yes	12	4 200	8"	4 15/16"	26"	8"	4	1/2"	1/4"	5 @ 12 Ga.	3"	9"	45"	2 5/8"	2 5/8"	2 7/16"	1/2"	18"	2.00"	2.00"	1 3/4" x 31"	55	2" x 5 1/4"	4" x 13"	3 3/8"
B7578	1 & 4	All	Exp.	Yes	6	4 176	8 7/8"	5 5/16"	26"	8"	5	1/2"	1/4"	6 @ 12 Ga.	3 5/8"	9"	46"	5 1/8"	3 1/8"	3 1/16"	1/2"	18 1/4"	2.00"	2.00"	2" x 32"	55	2 1/2" x 5 7/8"	4" x 13"	3 3/4"
	2 & 3	All	Fix	Yes	12	4 176	8 5/8"	5 5/16"	26"	8"	5	1/2"	1/4"	6 @ 12 Ga.	3 5/8"	9"	45"	2 5/8"	2 5/8"	3 1/16"	1/2"	18"	2.00"	2.00"	1 3/4" x 31"	55	2" x 5 7/8"	4" x 13"	3 3/8"

STATE OF ARKANSAS
7 Jun 27 2022 5:22 PM
Charles R. Ellis
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
BRIDGE ENGINEER

PRINT DATE: 6/27/2022

DETAILS OF ELASTOMERIC BEARINGS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

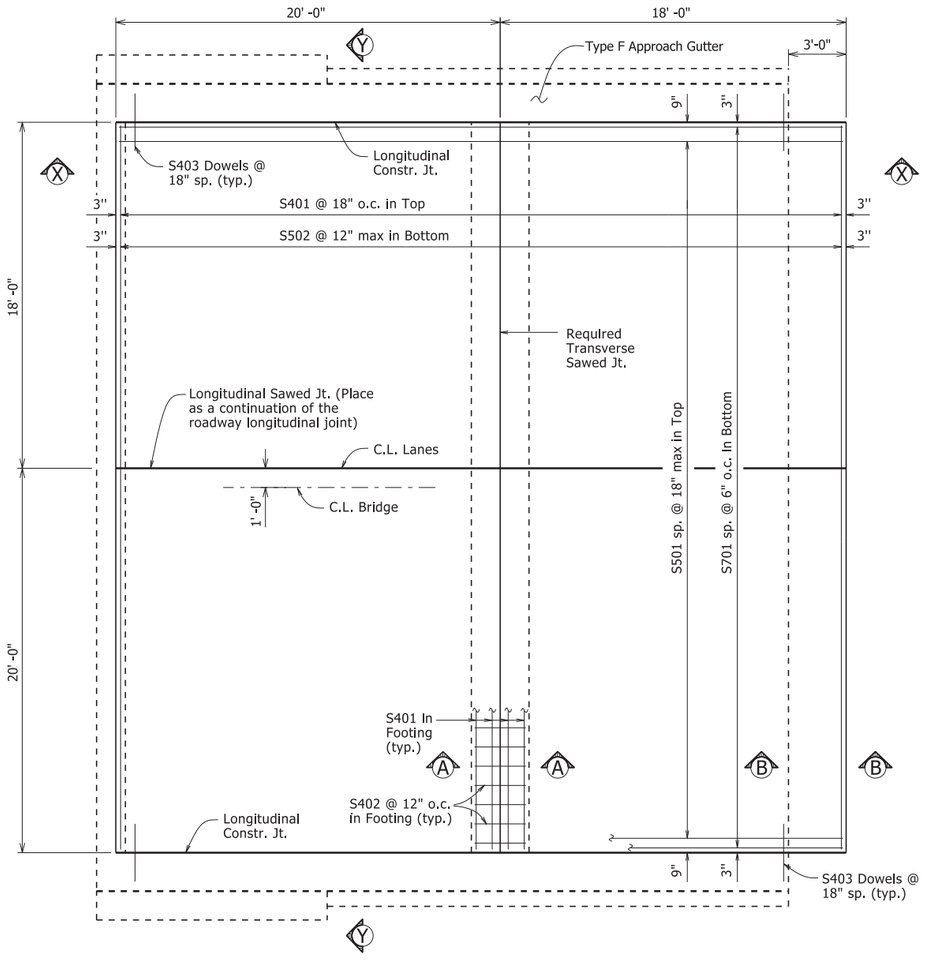
LITTLE ROCK, ARK.

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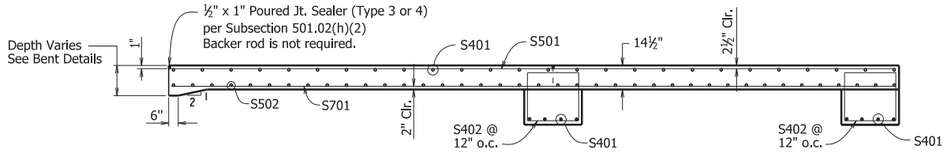
BRIDGE NO. B7577 & B7578 DRAWING NO. 65018

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
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		B7577 & B7578 - APPROACH SLAB - 65019				



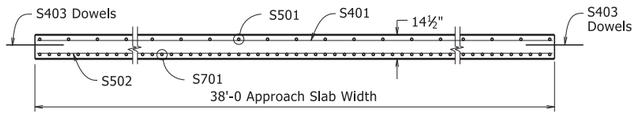
PLAN OF TYPE 1 SPECIAL APPROACH SLAB

No Scale



SECTION X-X

No Scale



SECTION Y-Y

No Scale

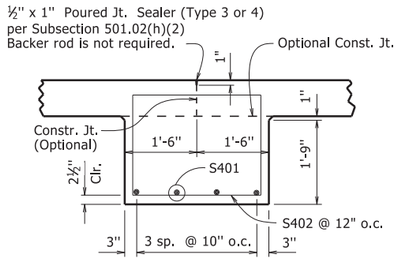
BAR LIST FOR ONE TYPE 1 SPECIAL APPROACH SLAB

Mark	No. Req'd	Length	Bending Diagram
S401	34	37'-8"	2'-7"
S402	76	10'-4"	4½" Min. (Typ.) S402 2" P.D. 2'-5"
S403	48	3'-0"	
S501	26	37'-8"	
S502	39	37'-8"	
S701	76	37'-8"	Dimensions are out to out of bar.

TABLE OF QUANTITIES FOR TYPE 1 SPECIAL APPROACH SLAB

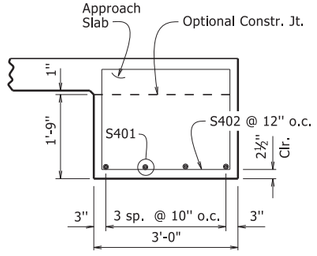
(FOR INFORMATION ONLY)

Slab Width	Reinforcing Steel (Lbs.)	Concrete (Cu. Yds.)
38'-0"	9882	78.70



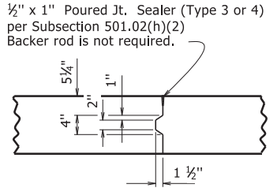
SECTION A-A

No Scale



SECTION B-B

No Scale



DETAILS OF LONGITUDINAL CONSTRUCTION JOINT

No Scale

GENERAL NOTES

All concrete shall be Class S (AE) with a minimum 28 day compressive strength f'c = 4,000 psi and shall be poured in the dry.

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

The surface finish for Approach Slab shall match that used on the bridge deck.

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

STATE OF ARKANSAS
Ellis, Rick
Charles R. Ellis
Date: 2022.07.27 5:23 PM
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
BRIDGE ENGINEER

DETAILS OF TYPE 1 SPECIAL APPROACH SLAB

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

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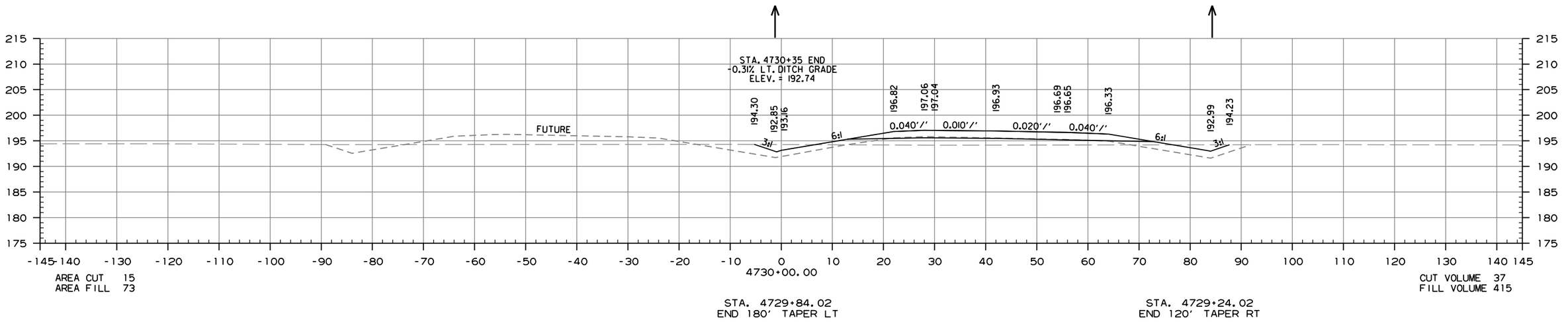
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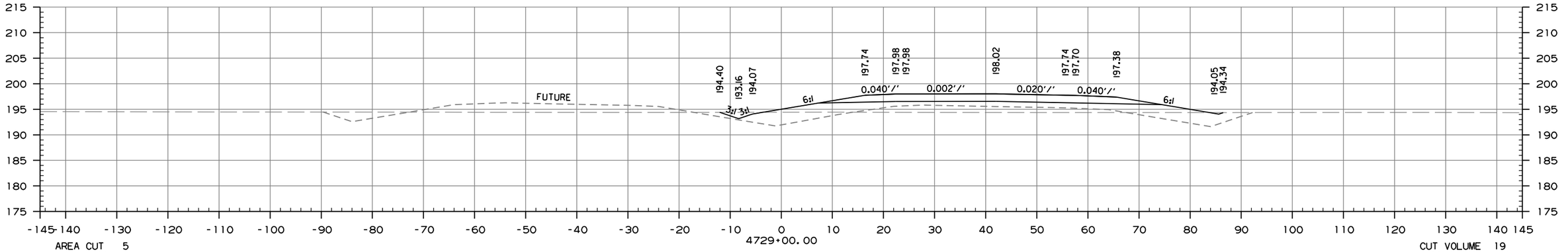
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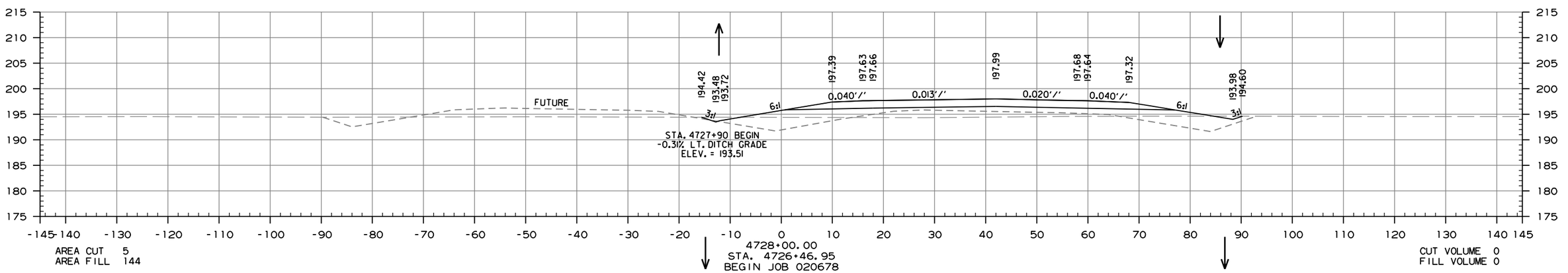
BRIDGE NO. B7577 & B7578 DRAWING NO. 65019

PRINT DATE: 6/20/2022

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
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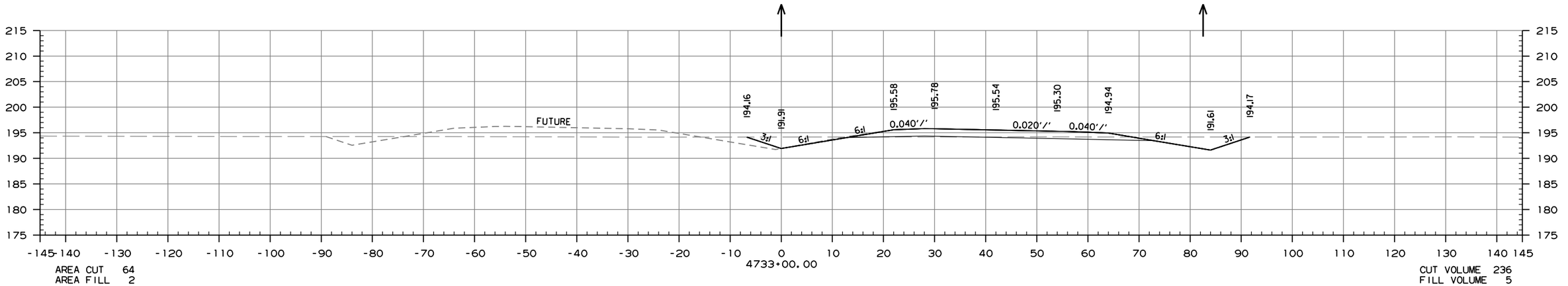




STA. 4728+00.00 TO STA. 4730+00.00

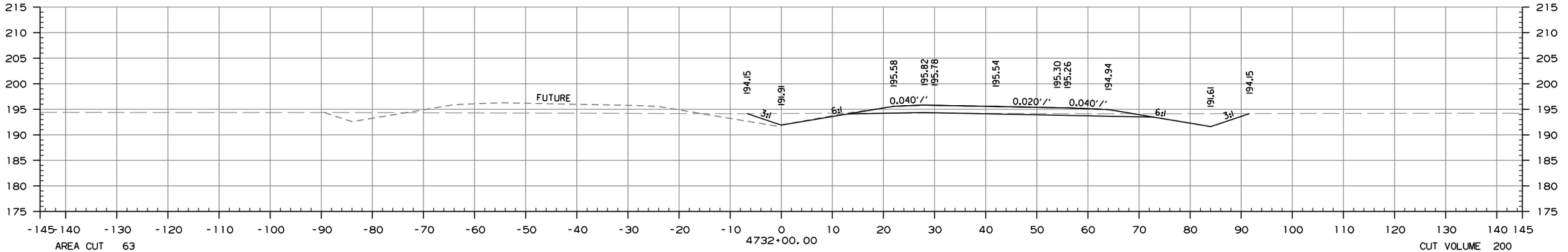
mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	154	368
		CROSS SECTIONS				



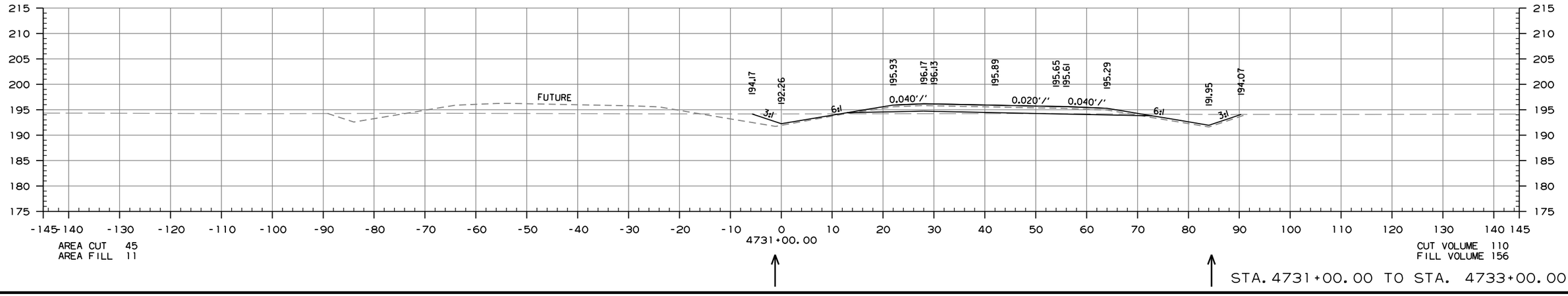
AREA CUT 64
AREA FILL 2

CUT VOLUME 236
FILL VOLUME 5



AREA CUT 63
AREA FILL 1

CUT VOLUME 200
FILL VOLUME 22



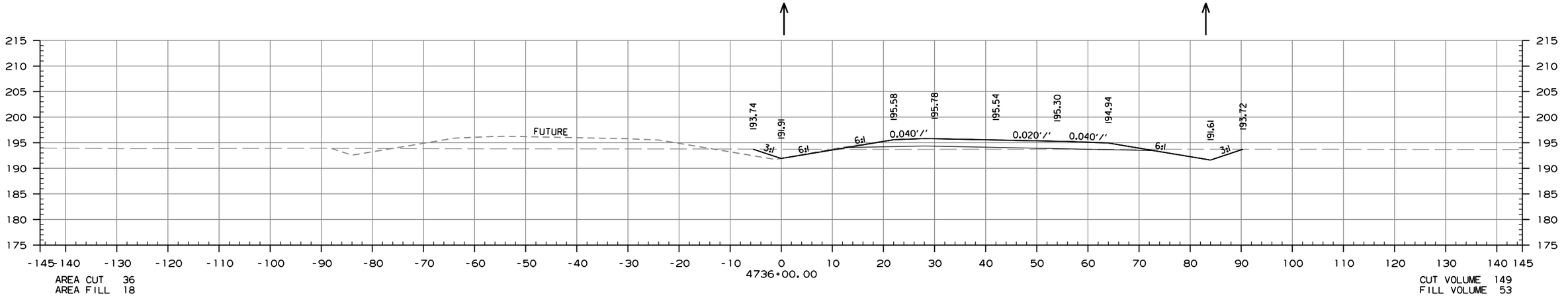
AREA CUT 45
AREA FILL 11

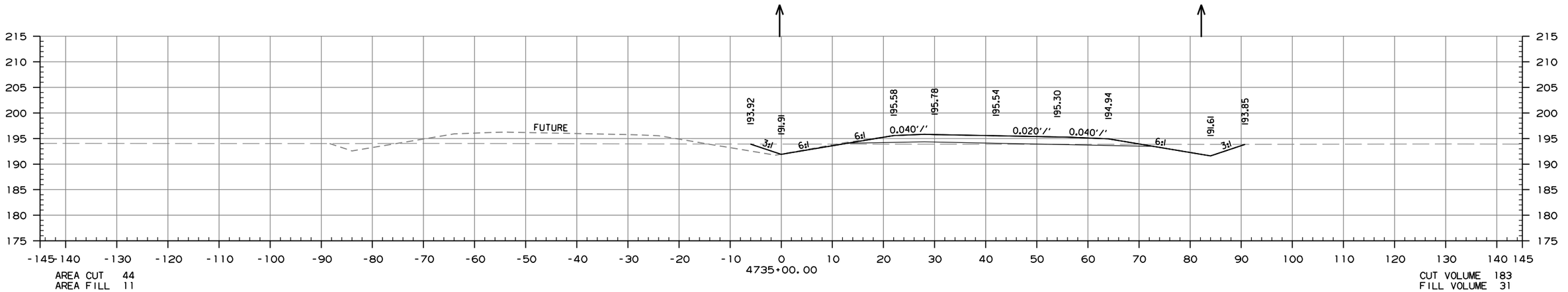
CUT VOLUME 110
FILL VOLUME 156

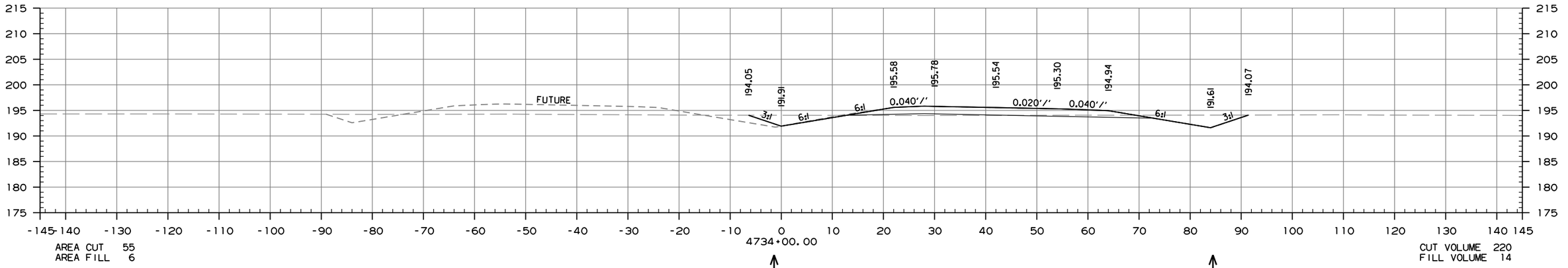
STA. 4731+00.00 TO STA. 4733+00.00

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R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	155	368
		CROSS SECTIONS				



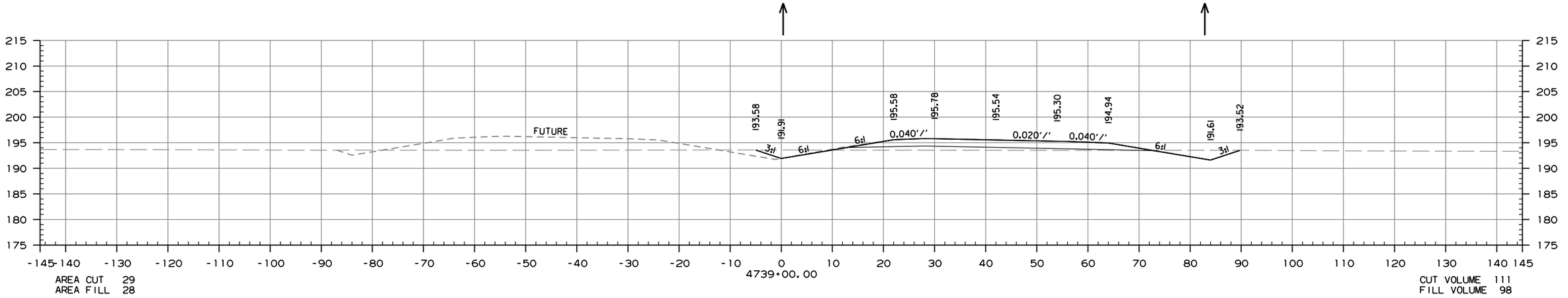


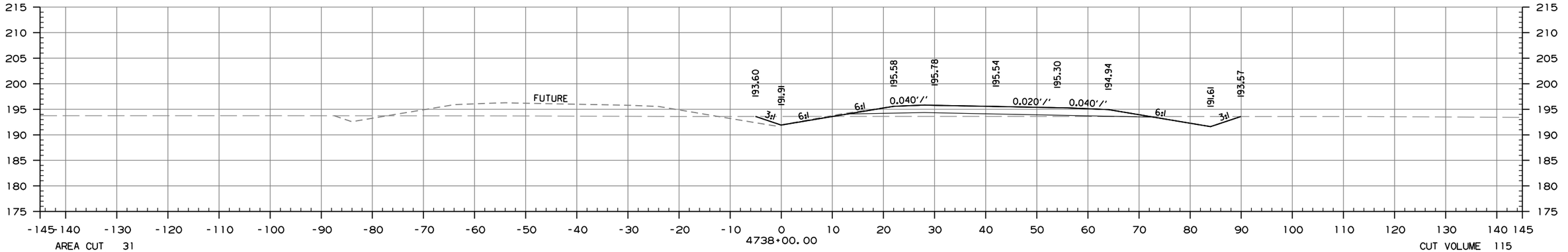


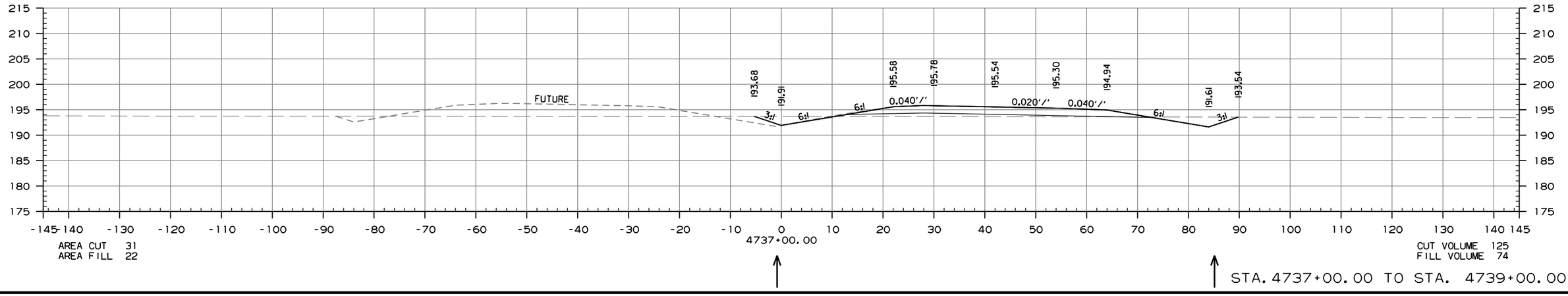
STA. 4734+00.00 TO STA. 4736+00.00

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R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	156	368
		CROSS SECTIONS				



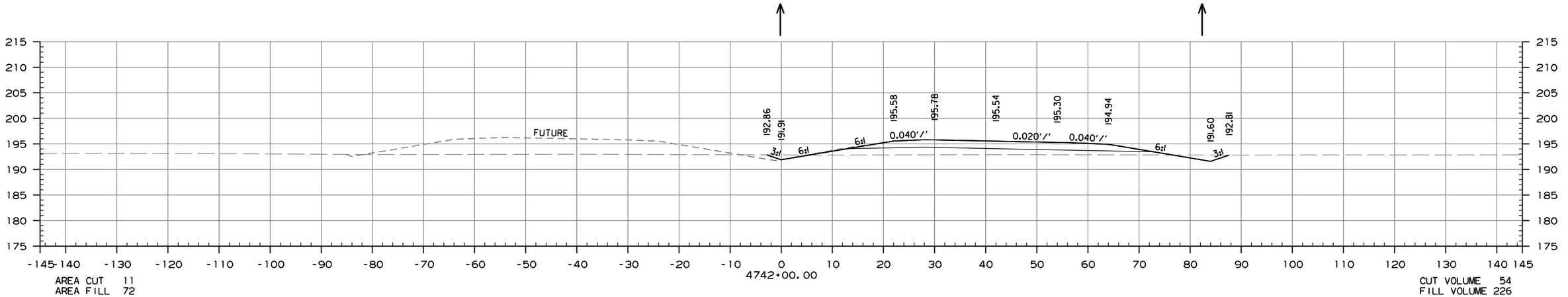


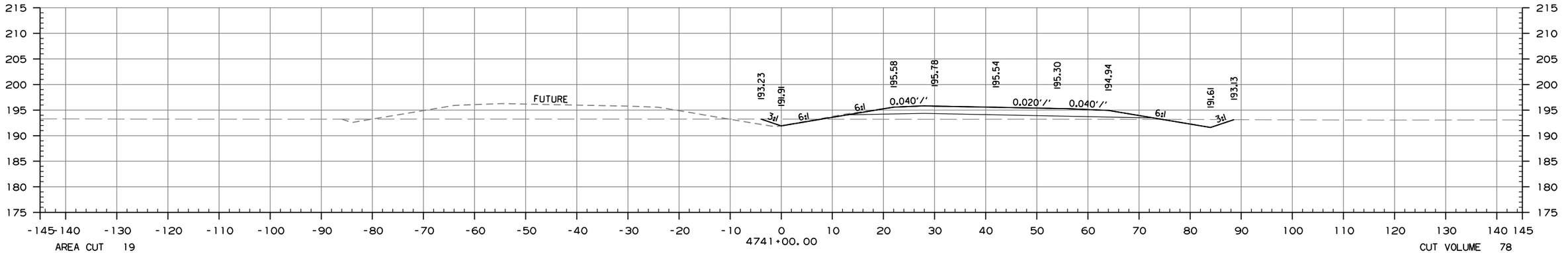


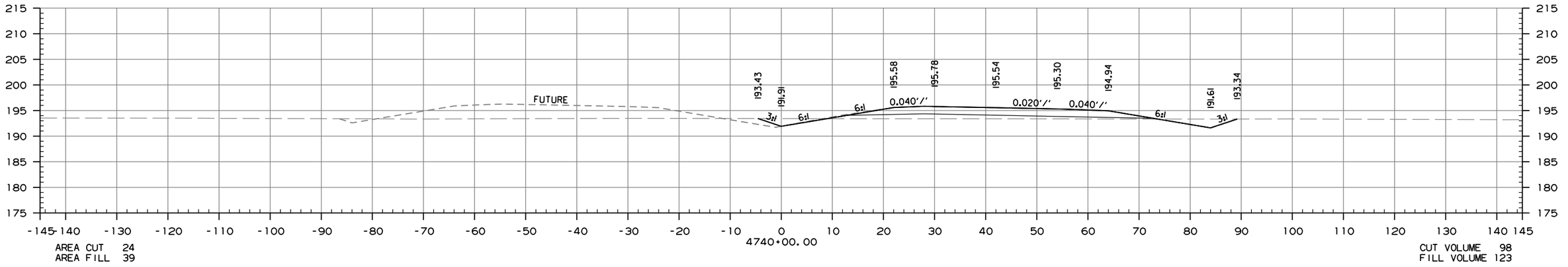
STA. 4737+00.00 TO STA. 4739+00.00

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R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	157	368
		CROSS SECTIONS				



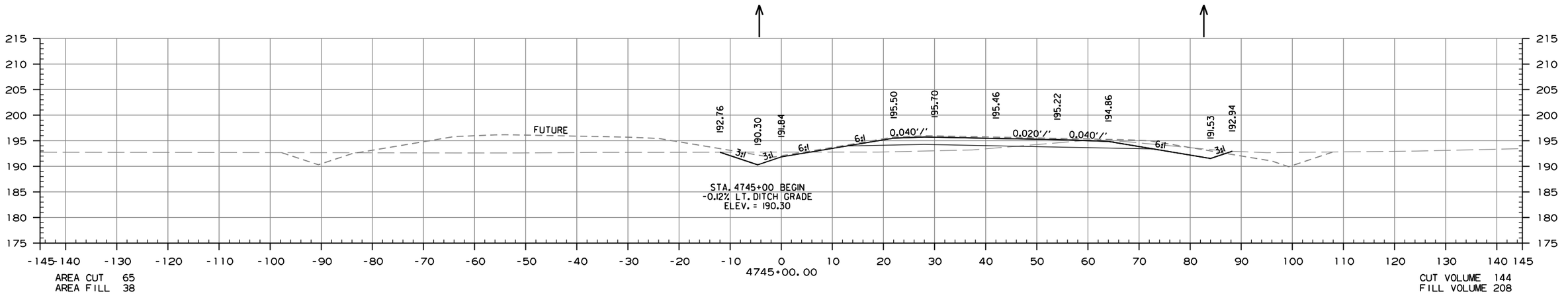


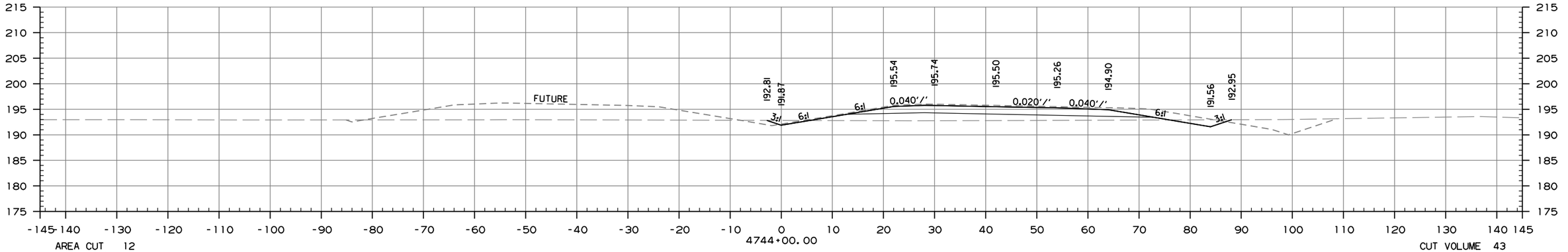


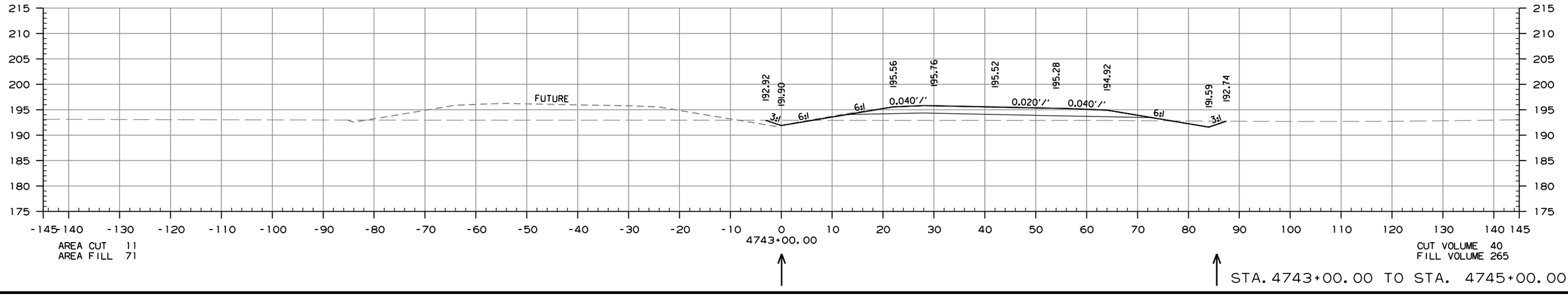
STA. 4740+00.00 TO STA. 4742+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-21-2022		6	ARK.	020678	158	368
		CROSS SECTIONS				



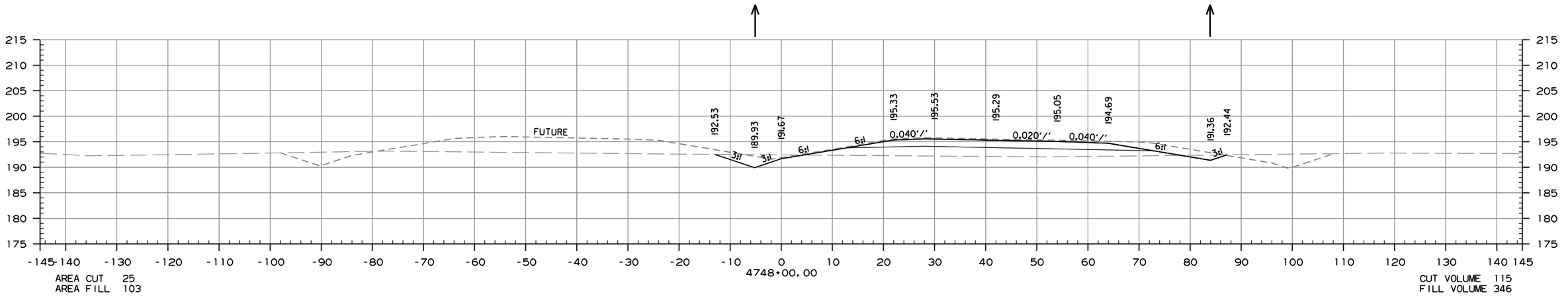




STA. 4743+00.00 TO STA. 4745+00.00

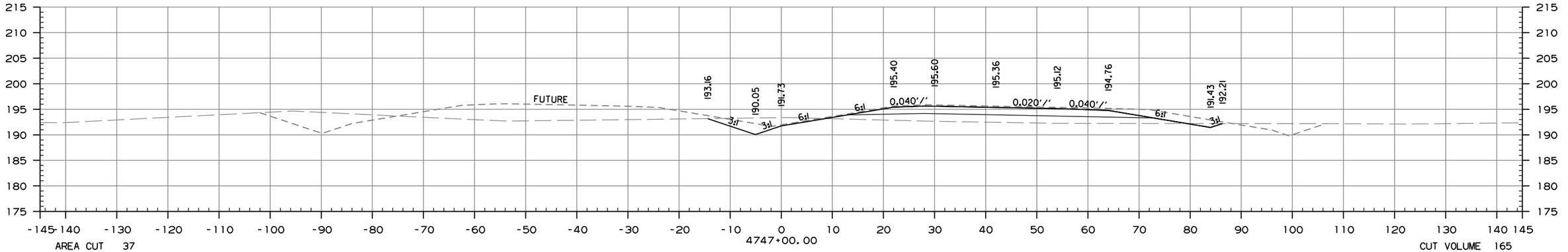
mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-21-2022		6	ARK.	020678	159	368
		CROSS SECTIONS				



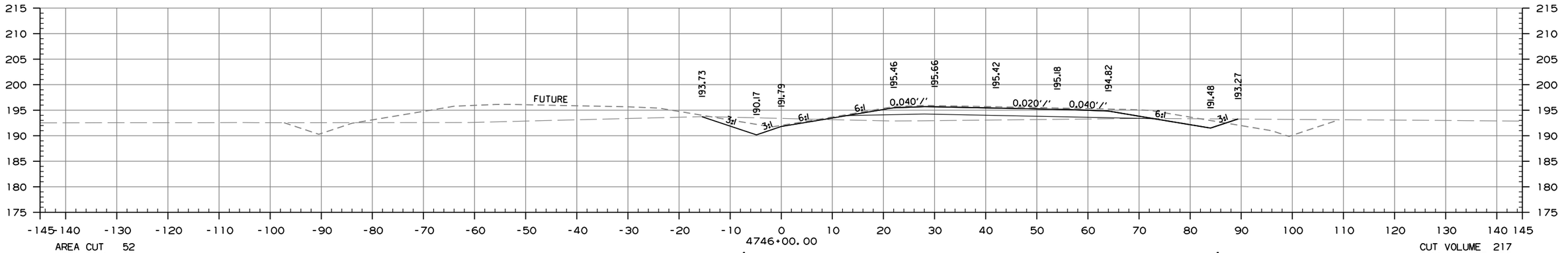
AREA CUT 25
AREA FILL 103

CUT VOLUME 115
FILL VOLUME 346



AREA CUT 37
AREA FILL 84

CUT VOLUME 165
FILL VOLUME 242



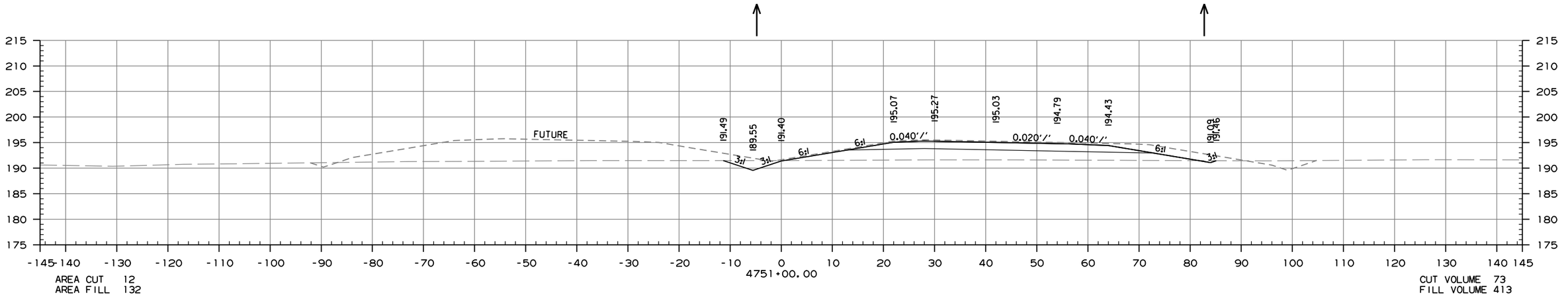
AREA CUT 52
AREA FILL 47

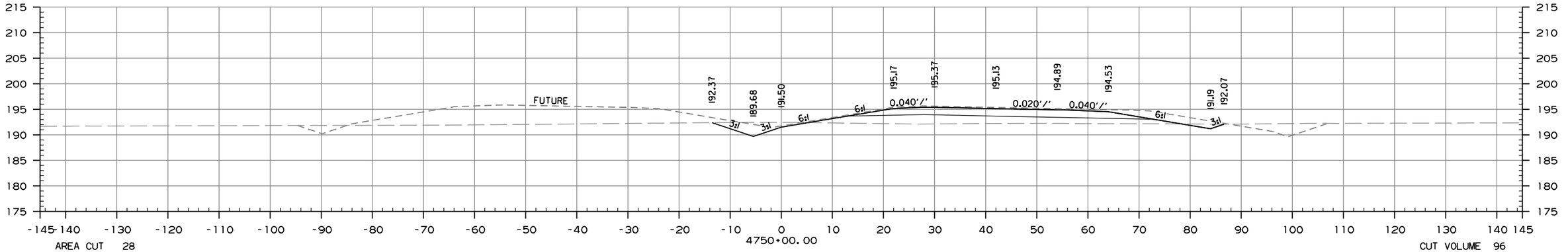
CUT VOLUME 217
FILL VOLUME 156

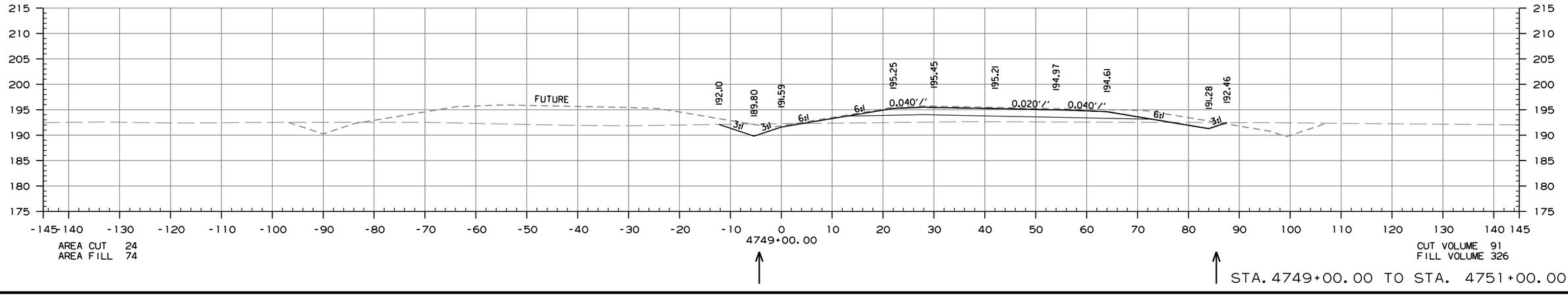
STA. 4746+00.00 TO STA. 4748+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	160	368
		CROSS SECTIONS				



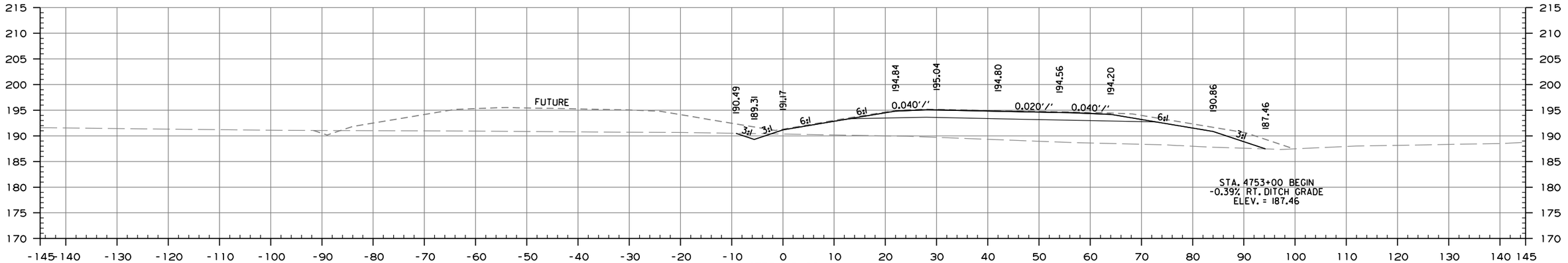


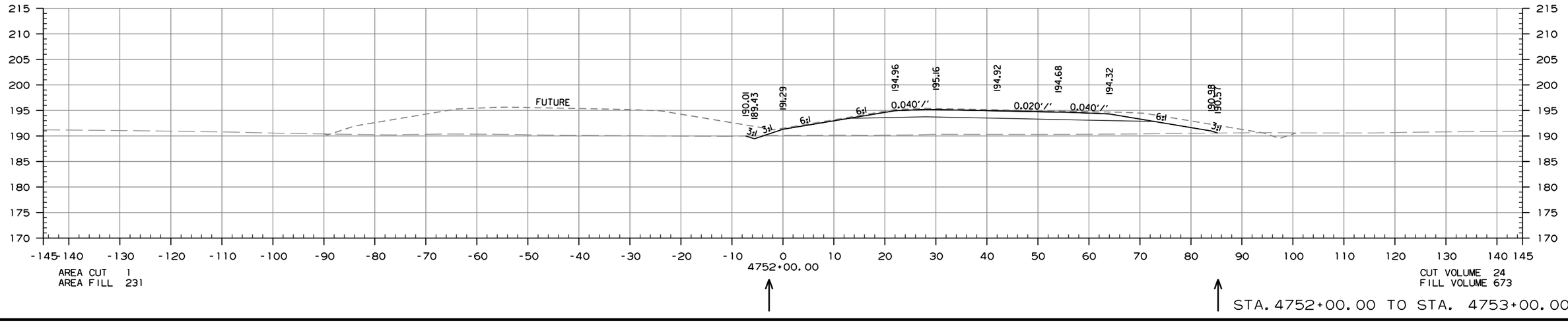


STA. 4749+00.00 TO STA. 4751+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-21-2022		6	ARK.	020678	161	368
		CROSS SECTIONS				

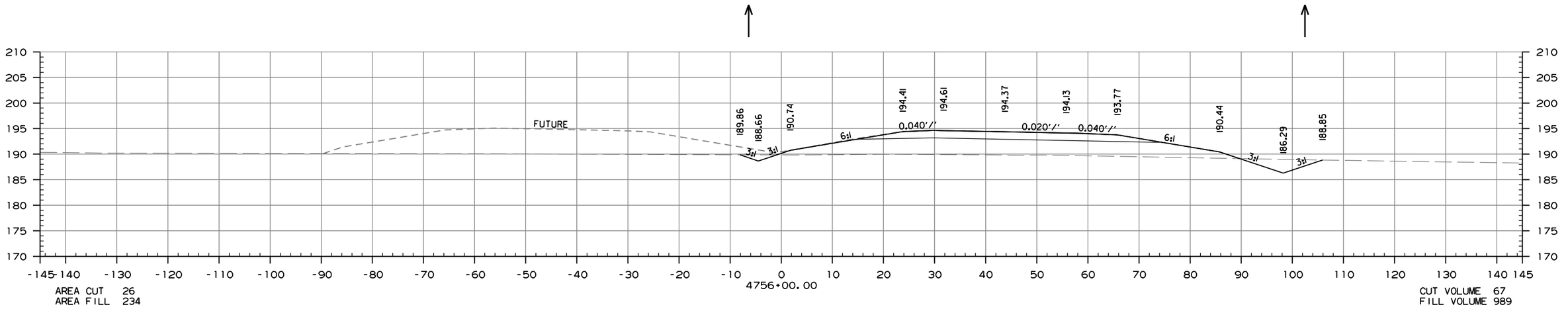


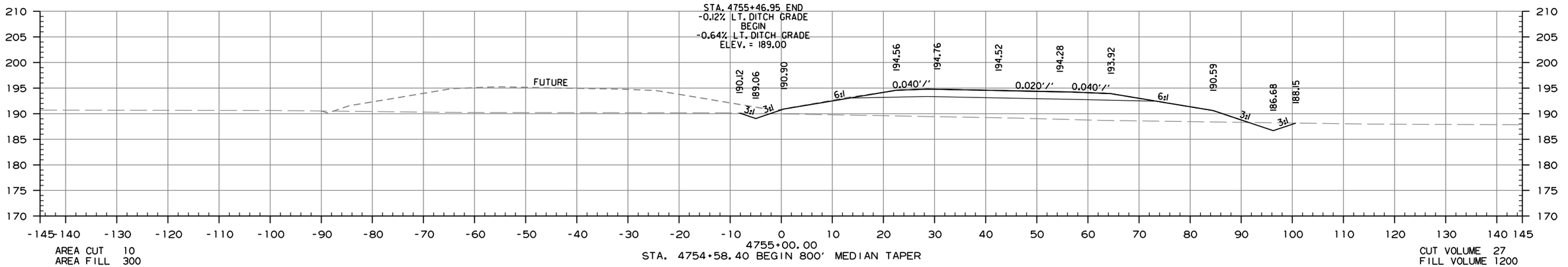


STA. 4752+00.00 TO STA. 4753+00.00

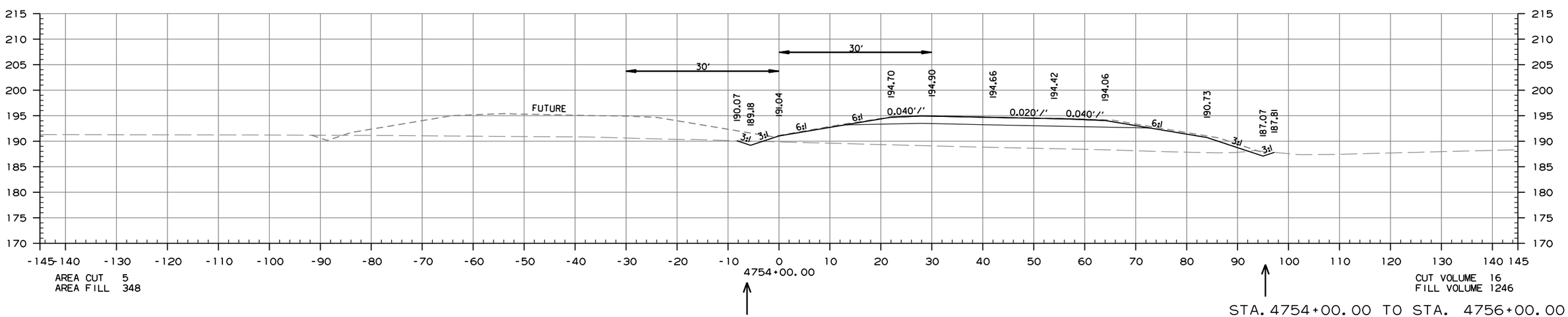
mn39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	162	368
		CROSS SECTIONS				





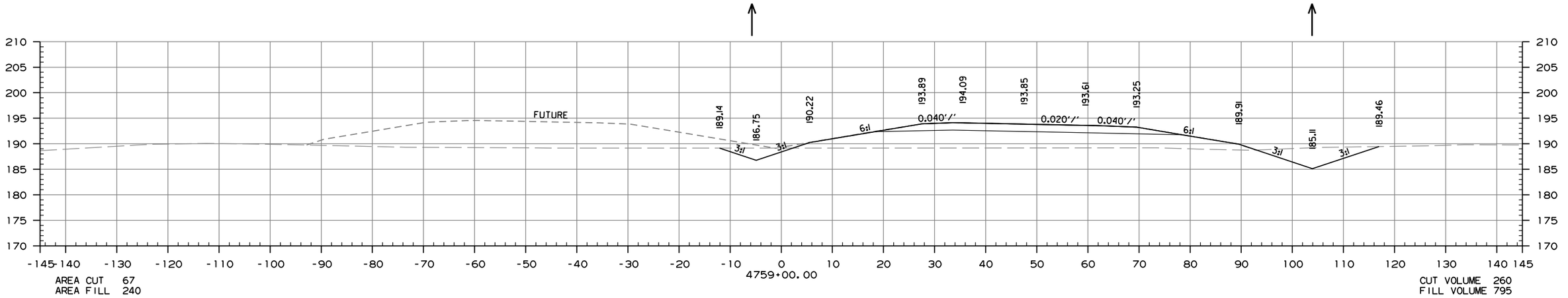
STA. 4754+58.40 BEGIN 800' MEDIAN TAPER

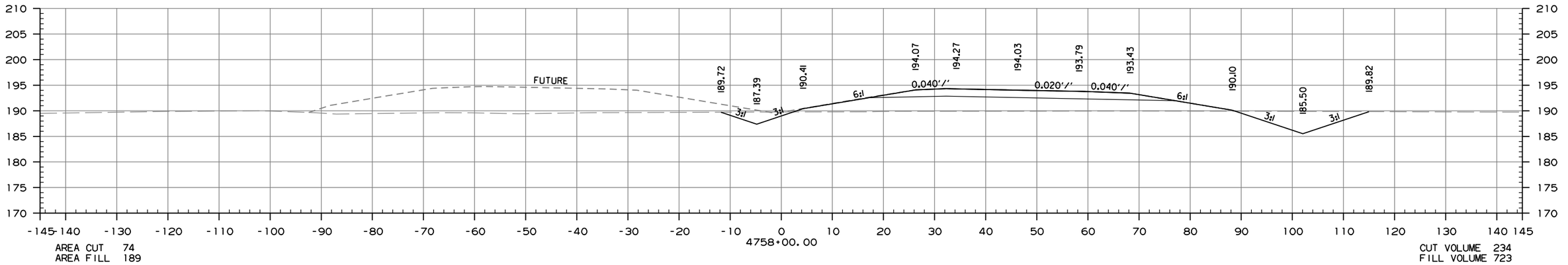


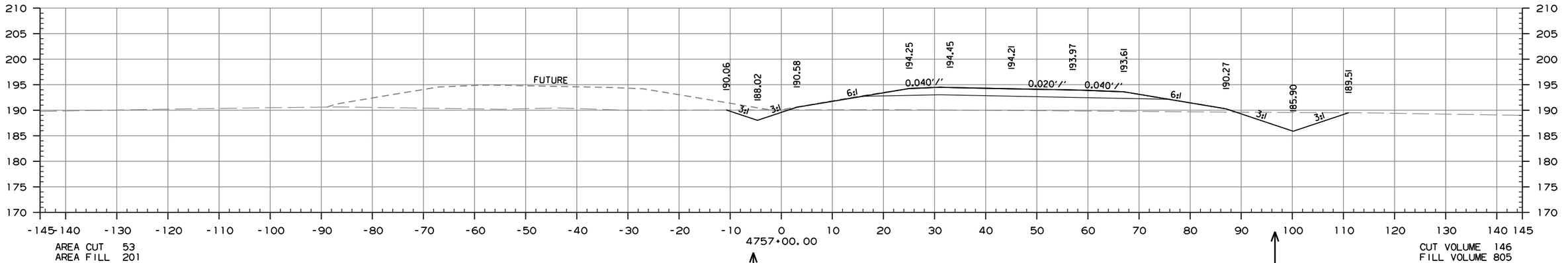
STA. 4754+00.00 TO STA. 4756+00.00

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R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	163	368
		CROSS SECTIONS				



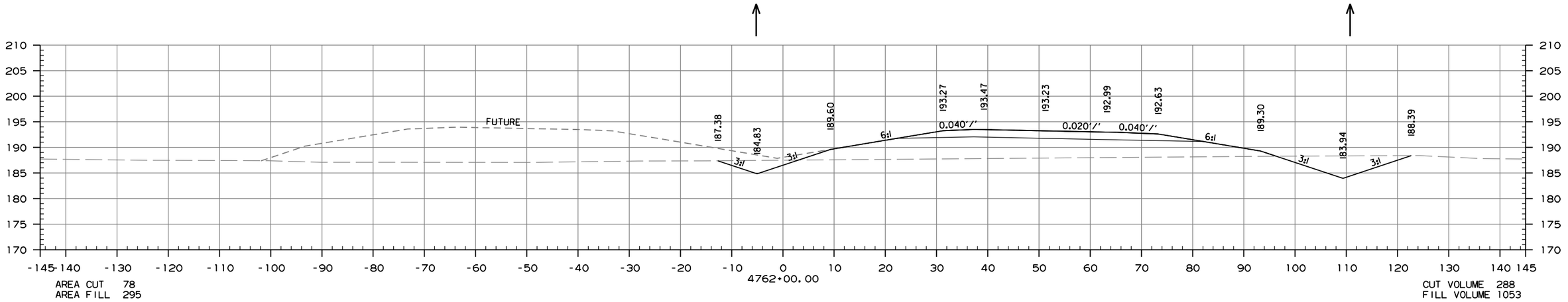


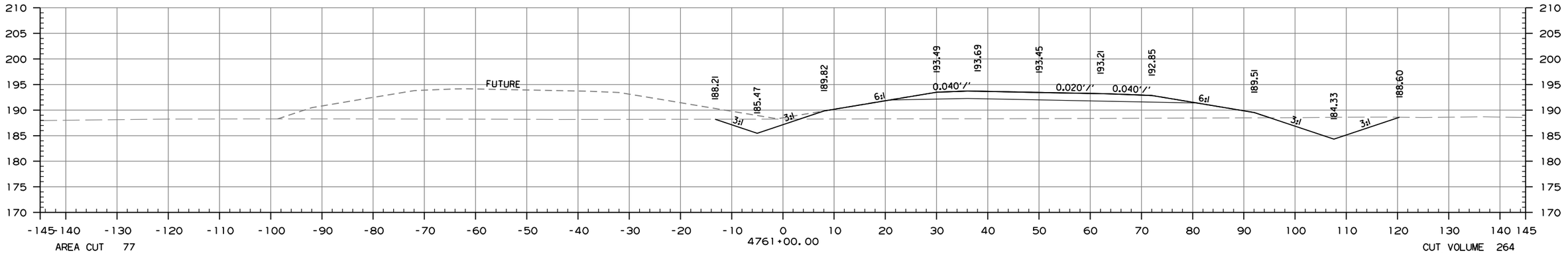


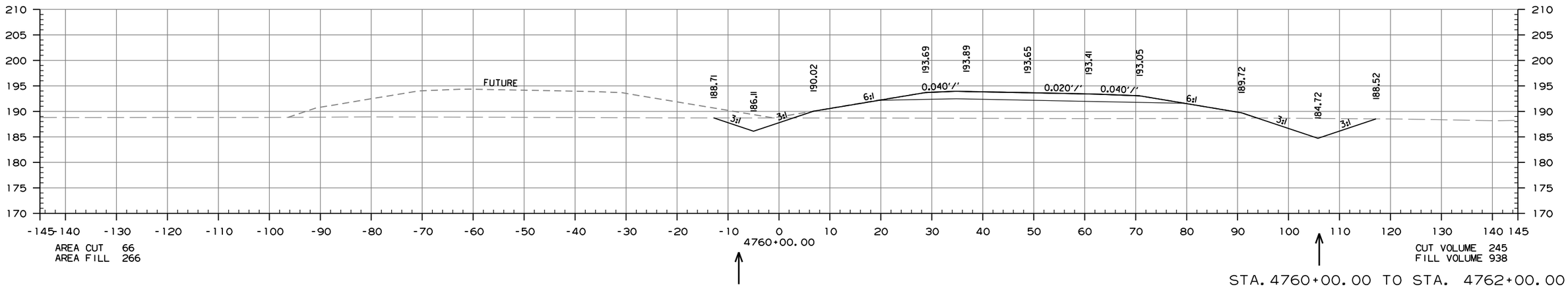
STA. 4757+00.00 TO STA. 4759+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	164	368
		CROSS SECTIONS				



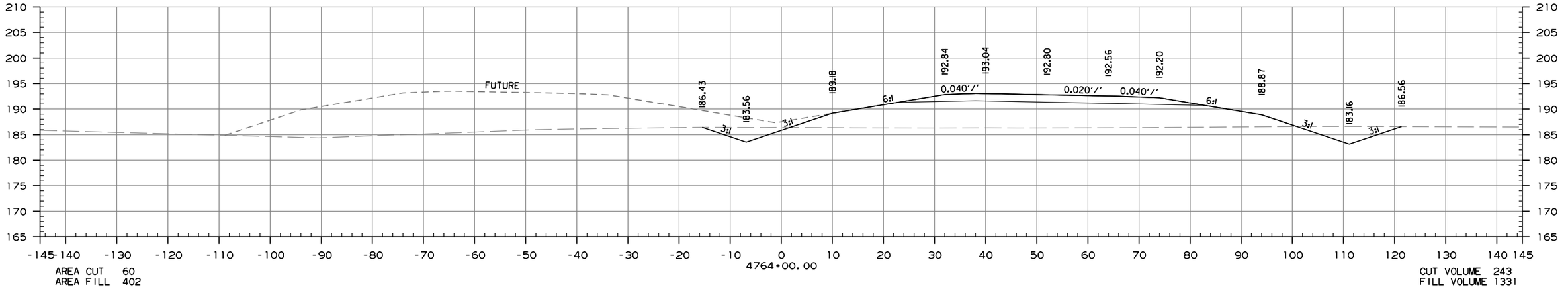


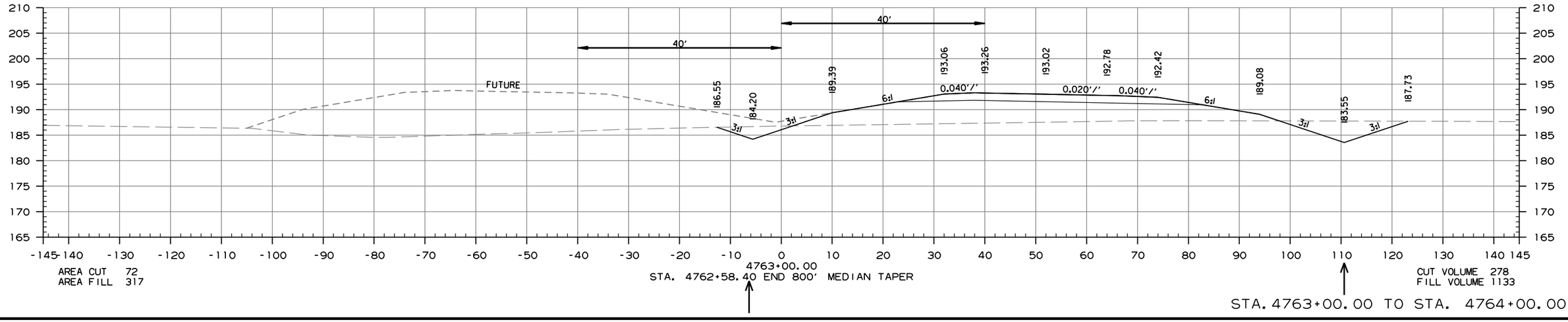


STA. 4760+00.00 TO STA. 4762+00.00

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R020678.DGN

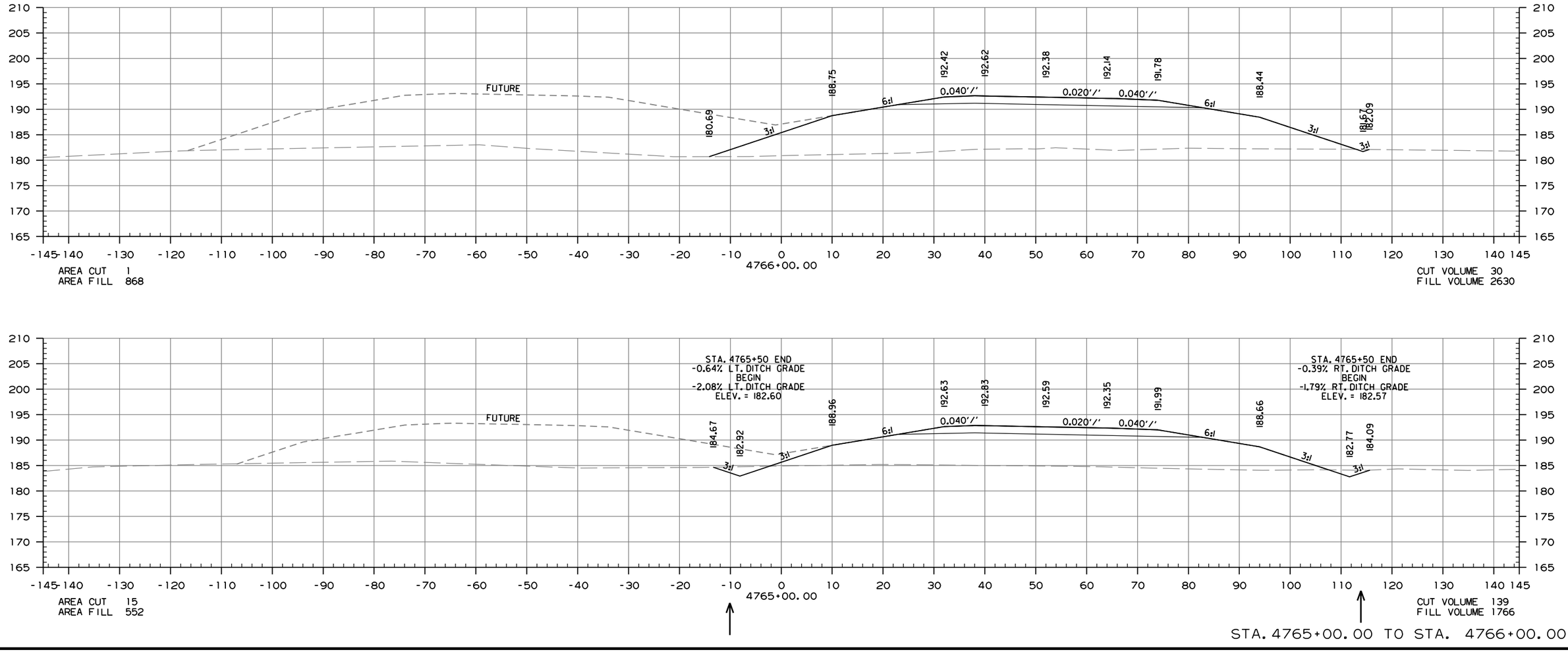
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	165	368
		CROSS SECTIONS				





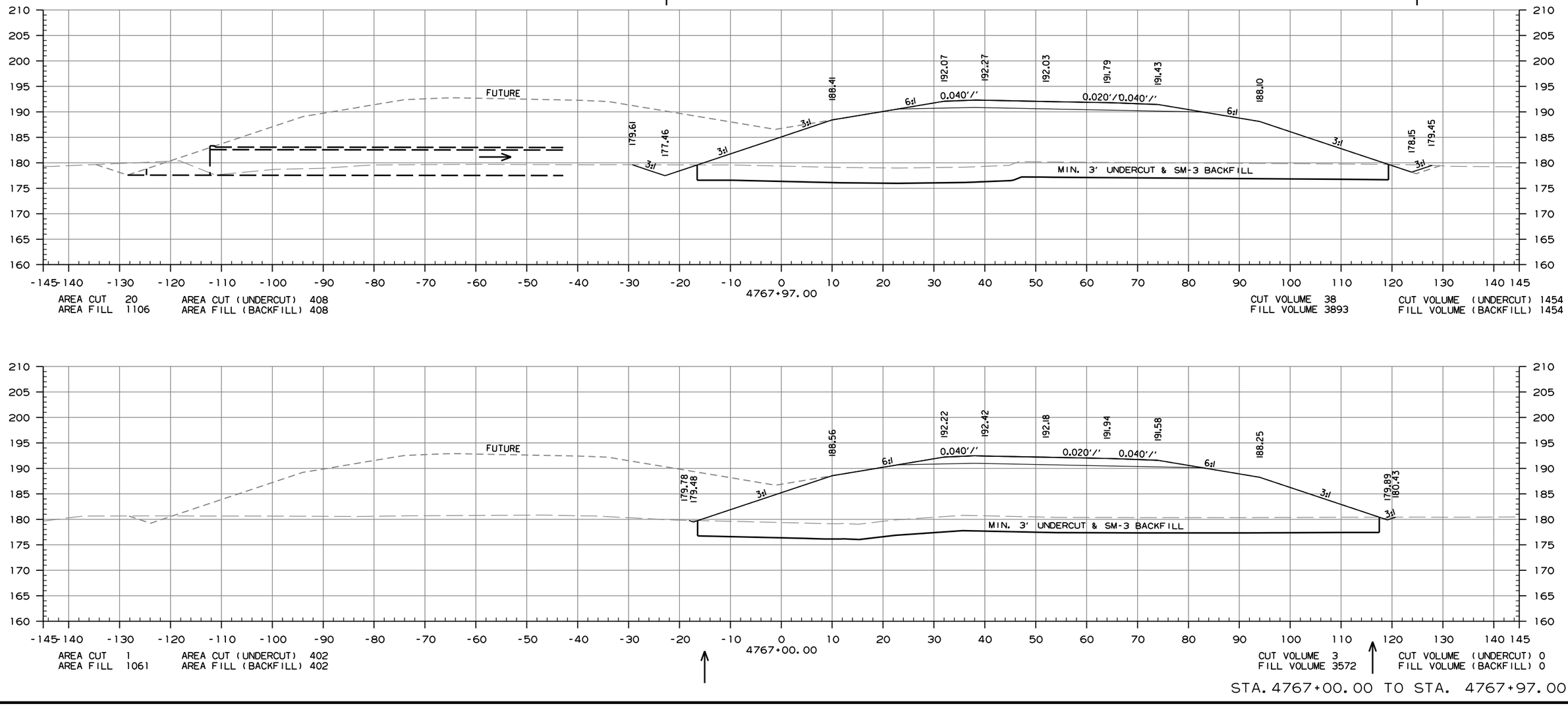
mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	166	368
		CROSS SECTIONS				



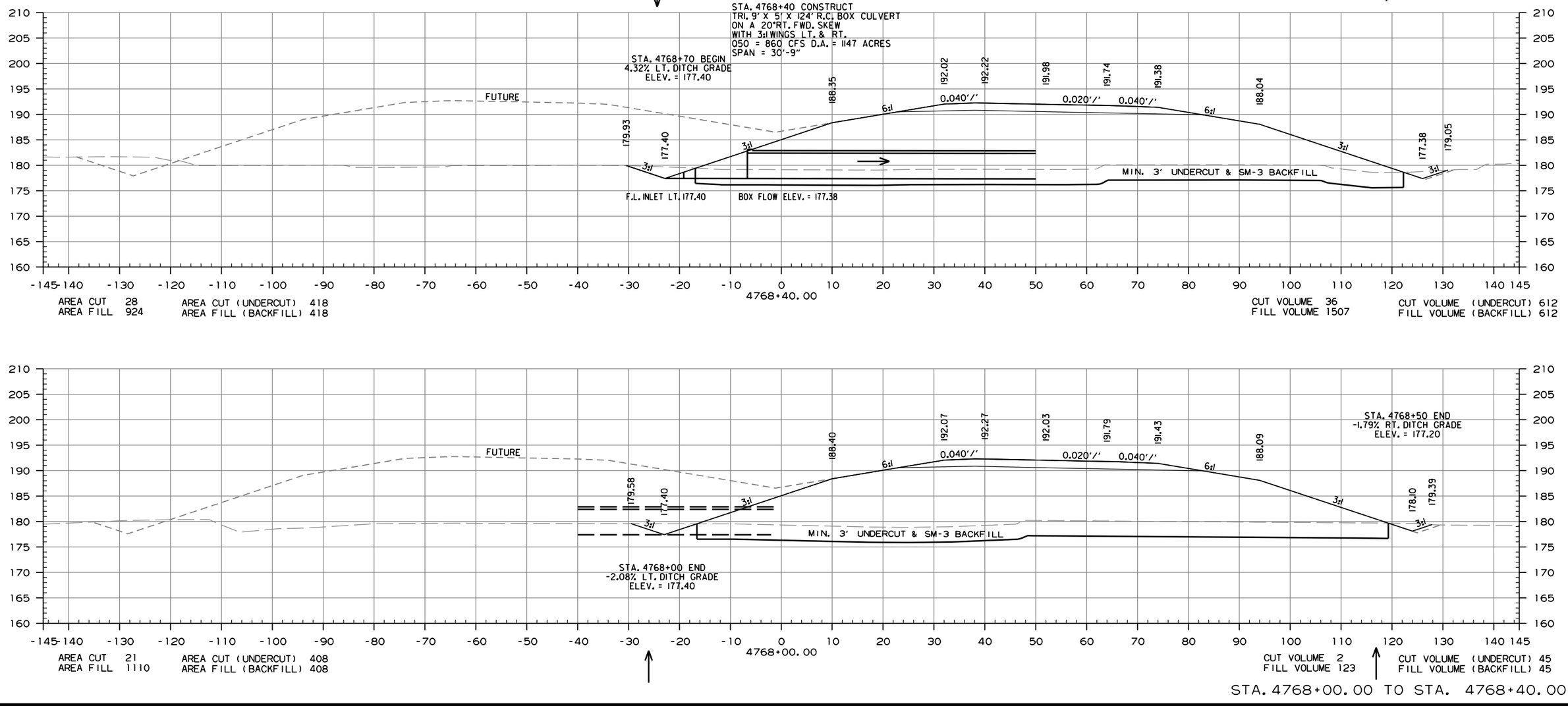
mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	167	368
		CROSS SECTIONS				



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R020678.DGN

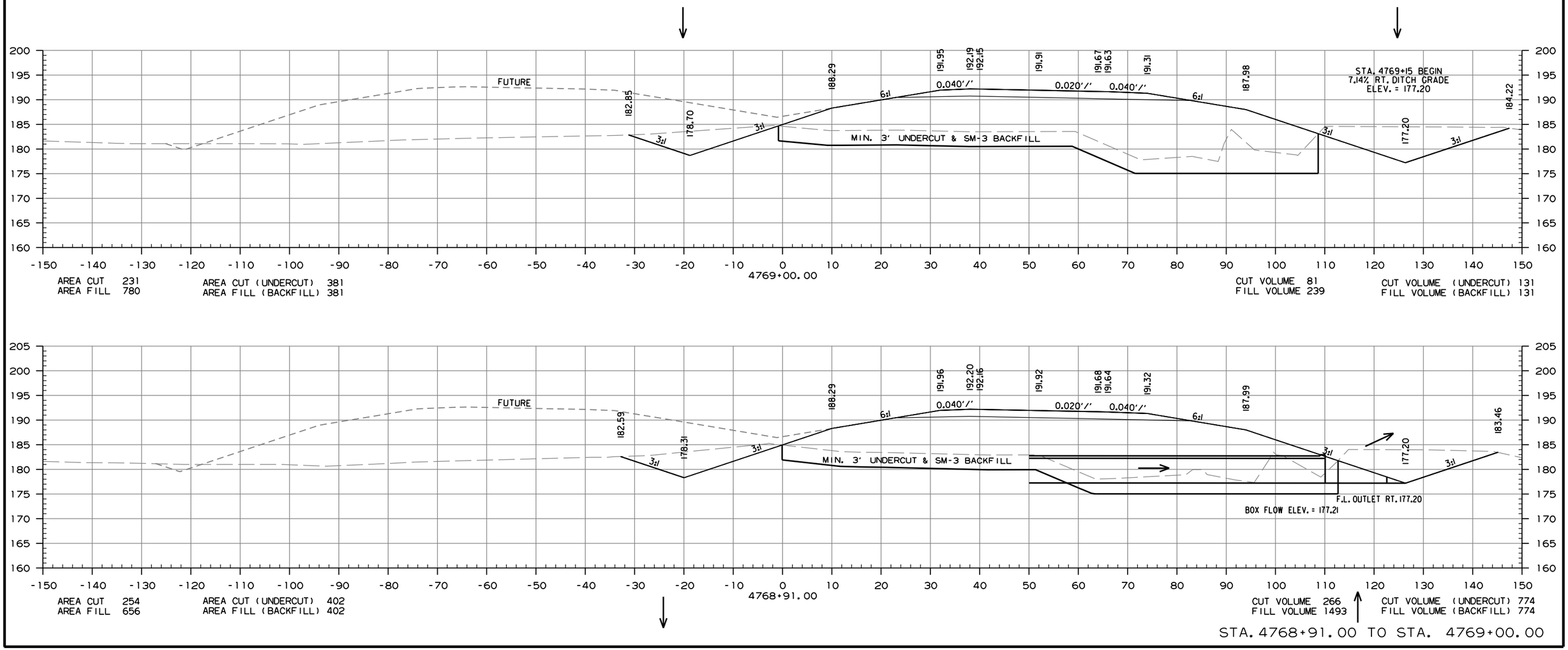
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	168	368
		CROSS SECTIONS				



STA. 4768+00.00 TO STA. 4768+40.00

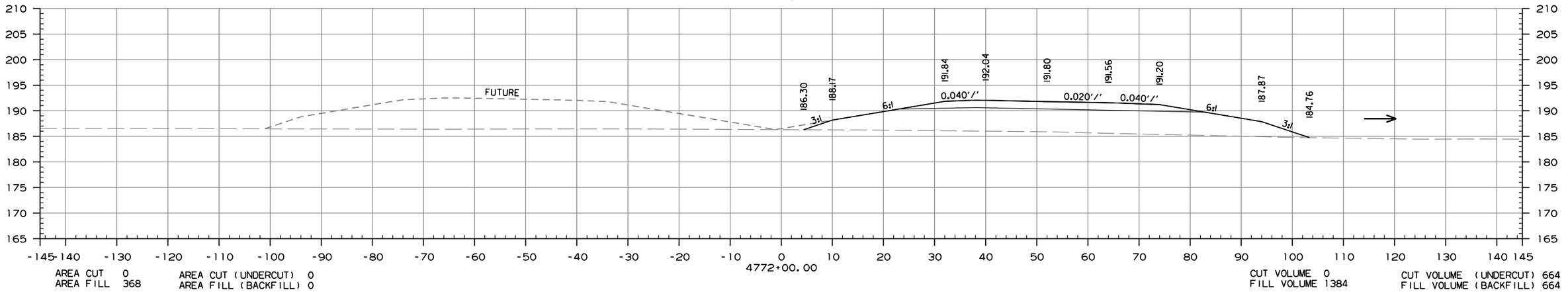
mh39735 7/14/2022
R020678.DGN

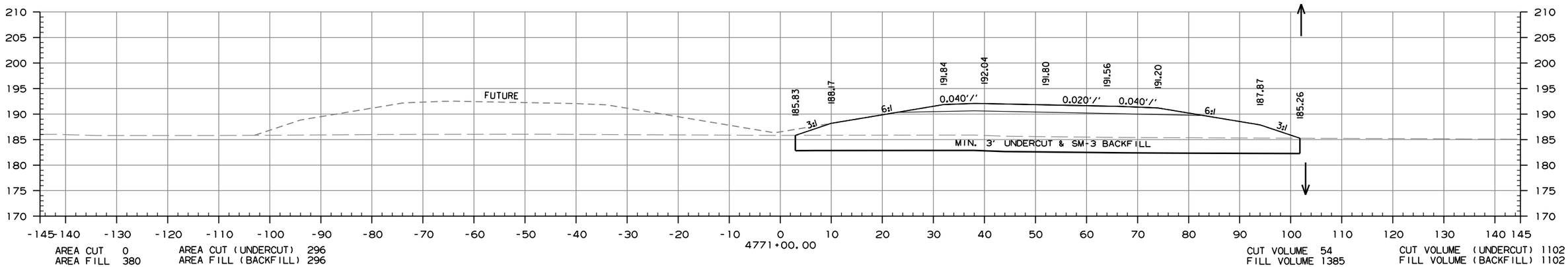
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	169	368
		CROSS SECTIONS				

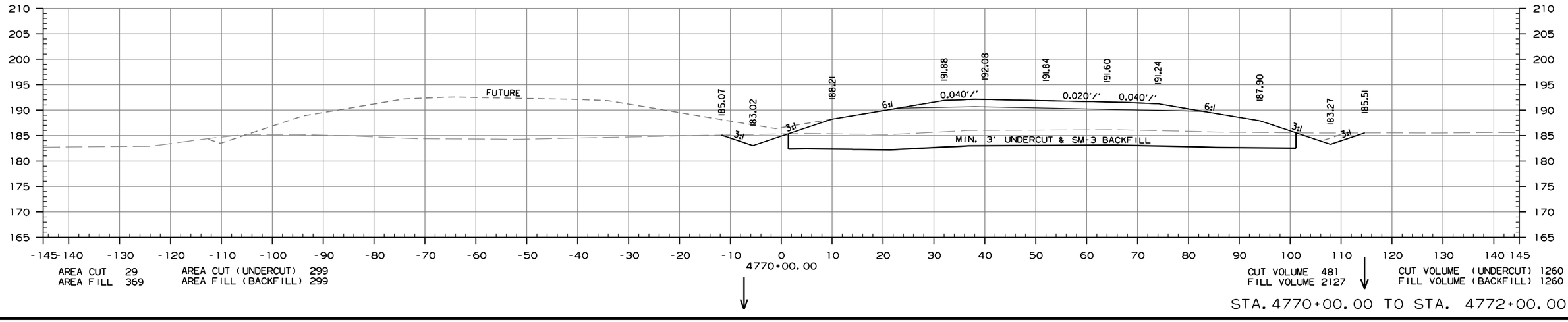


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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	170	368
		CROSS SECTIONS				



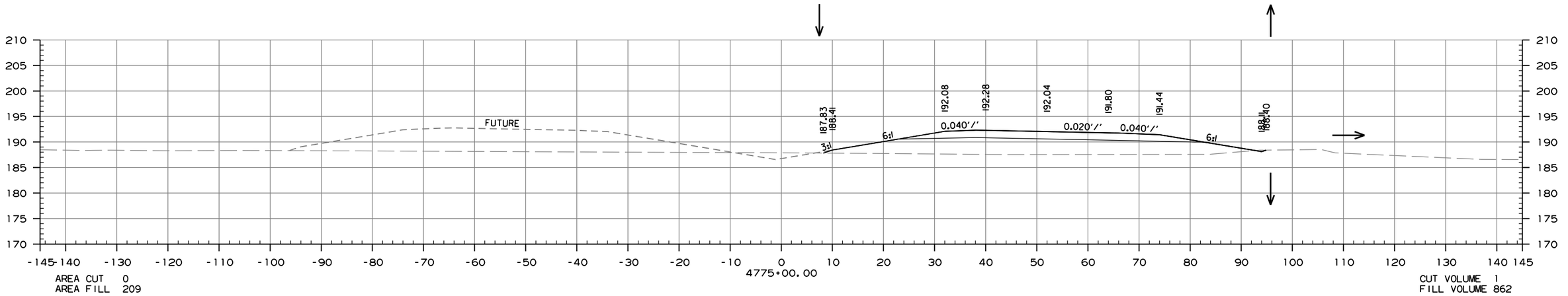


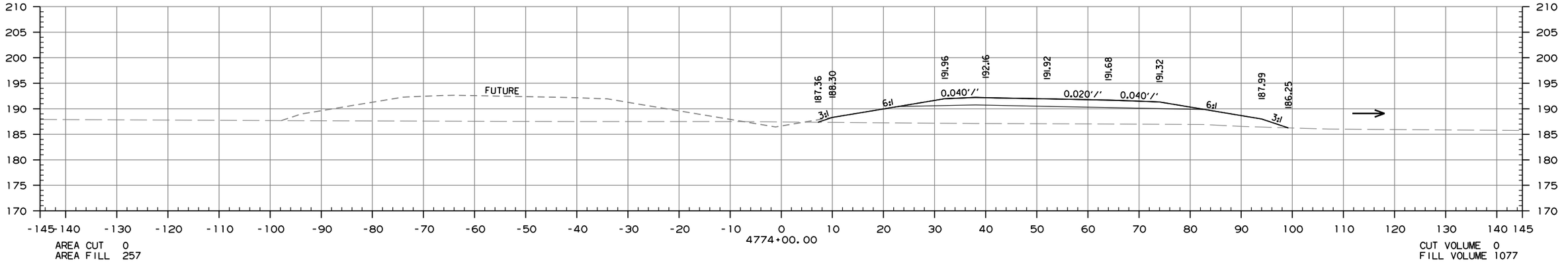


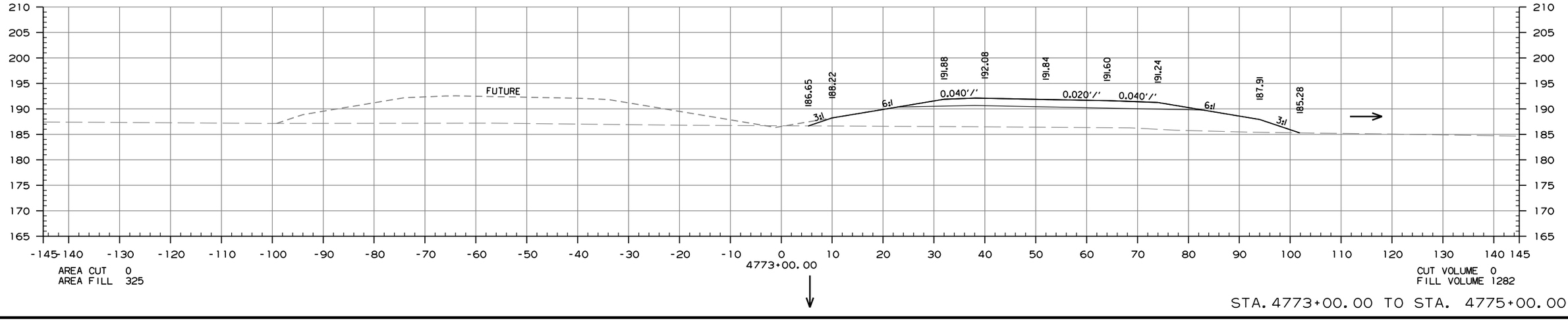
STA. 4770+00.00 TO STA. 4772+00.00

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R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	171	368
		CROSS SECTIONS				



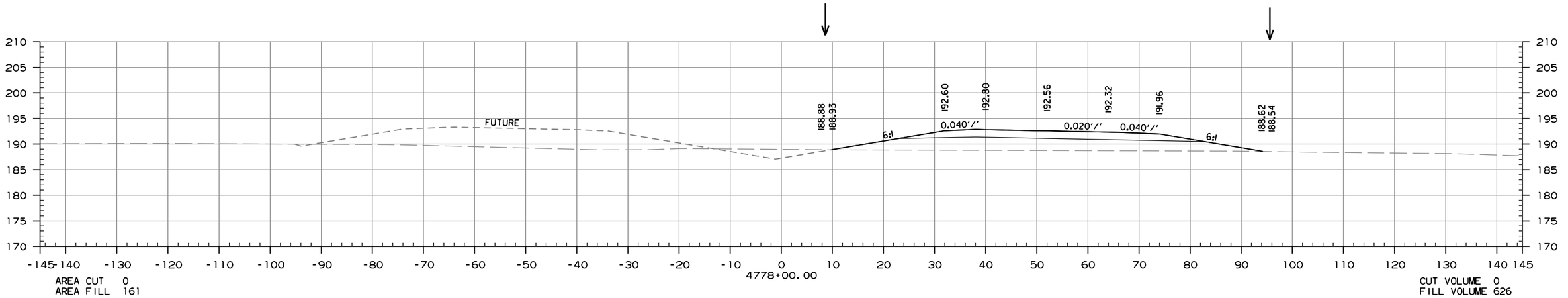


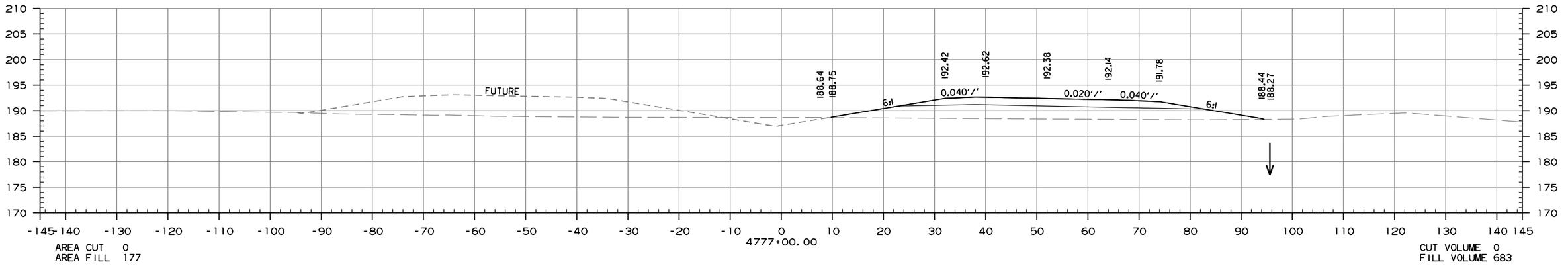


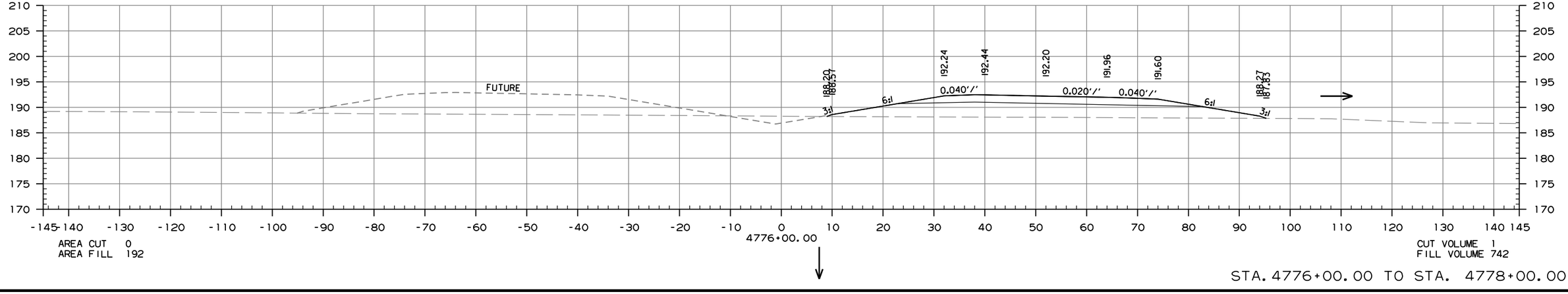
STA. 4773+00.00 TO STA. 4775+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	172	368
		CROSS SECTIONS				



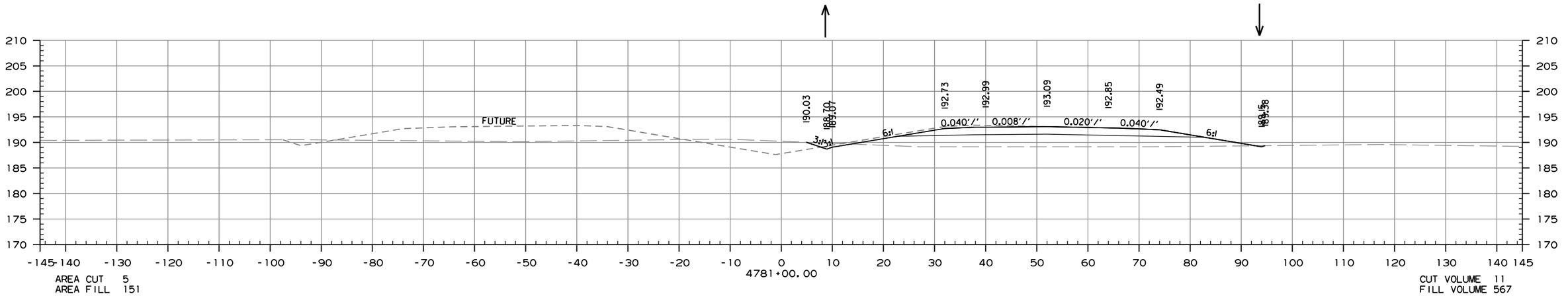


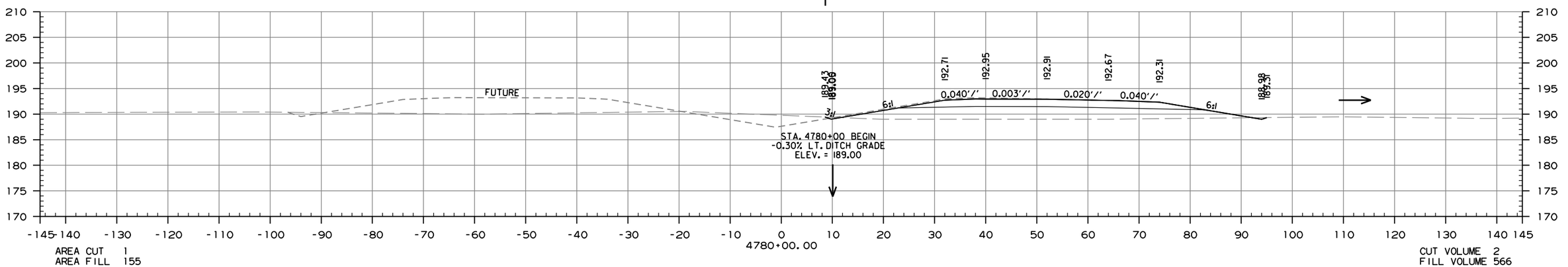


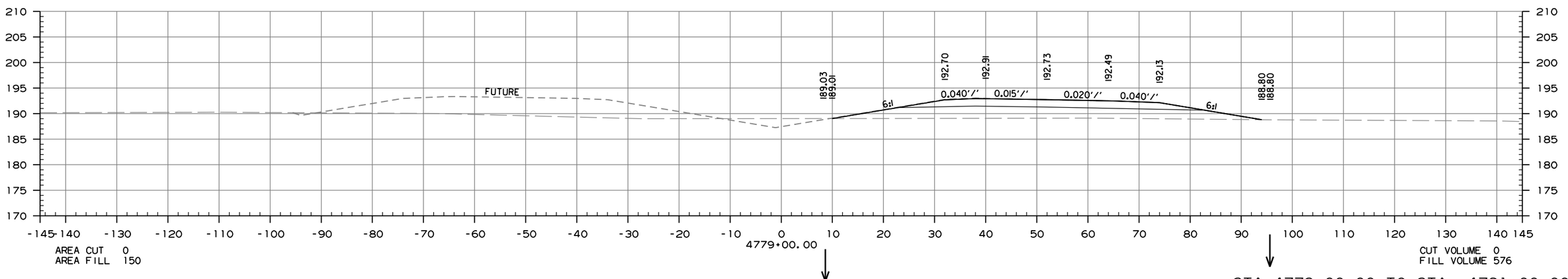
STA. 4776+00.00 TO STA. 4778+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	173	368
		CROSS SECTIONS				



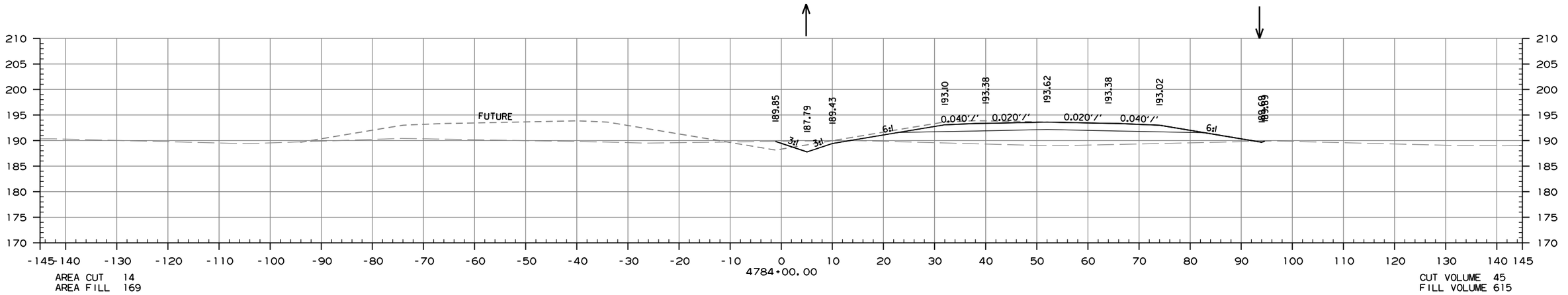




STA. 4779+00.00 TO STA. 4781+00.00

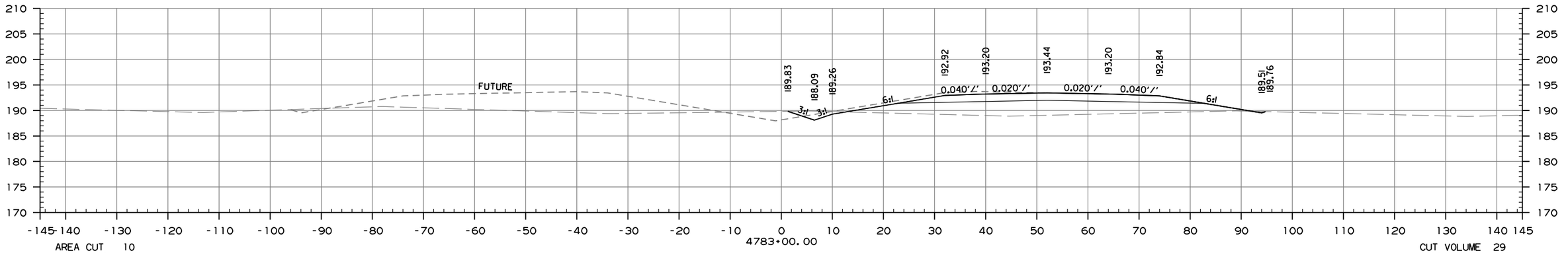
mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	174	368
		CROSS SECTIONS				



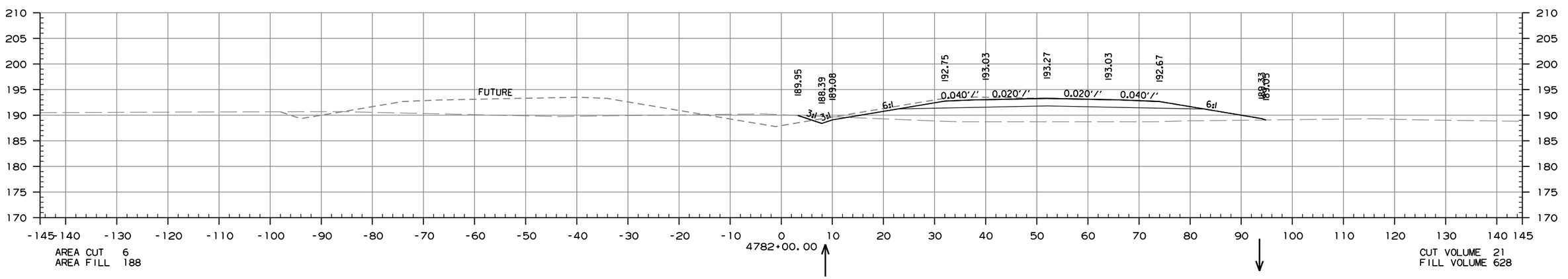
AREA CUT 14
AREA FILL 169

CUT VOLUME 45
FILL VOLUME 615



AREA CUT 10
AREA FILL 163

CUT VOLUME 29
FILL VOLUME 650



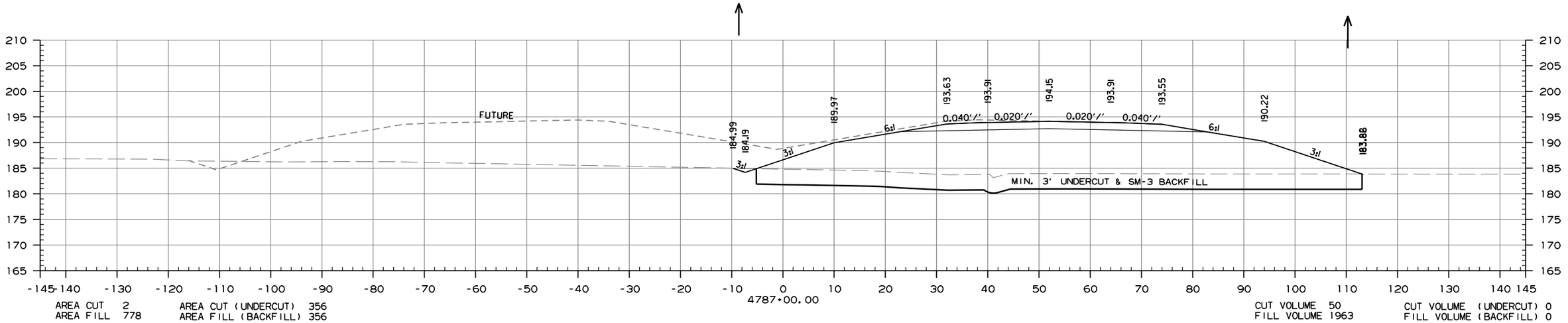
AREA CUT 6
AREA FILL 188

CUT VOLUME 21
FILL VOLUME 628

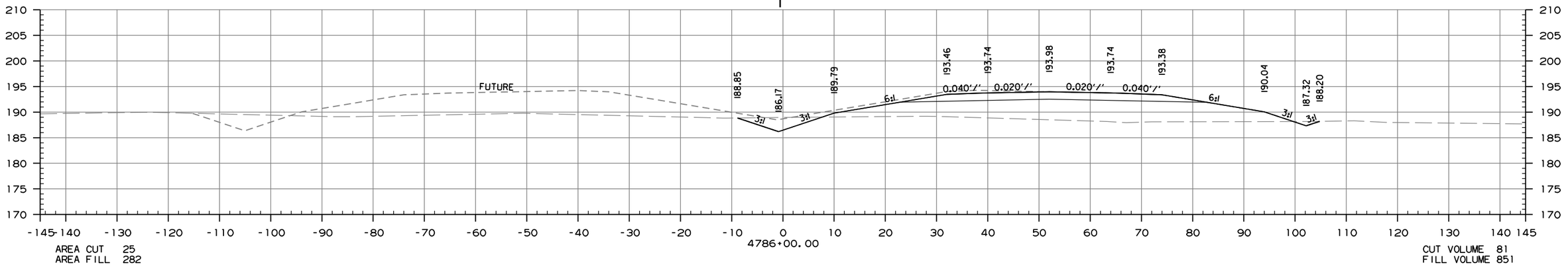
STA. 4782+00.00 TO STA. 4784+00.00

mh39735 7/14/2022
R020678.DGN

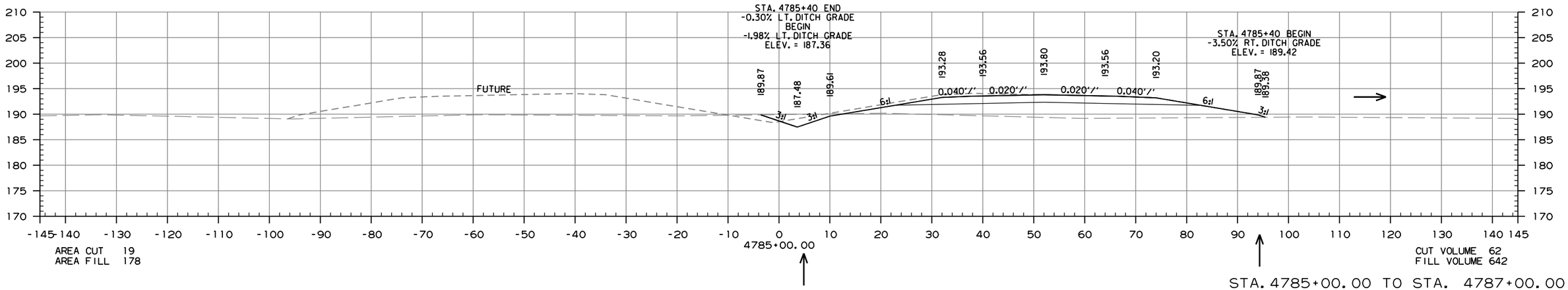
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	175	368
		CROSS SECTIONS				



AREA CUT 2
AREA FILL 778
AREA CUT (UNDERCUT) 356
AREA FILL (BACKFILL) 356
CUT VOLUME 50
FILL VOLUME 1963
CUT VOLUME (UNDERCUT) 0
FILL VOLUME (BACKFILL) 0



AREA CUT 25
AREA FILL 282
CUT VOLUME 81
FILL VOLUME 851

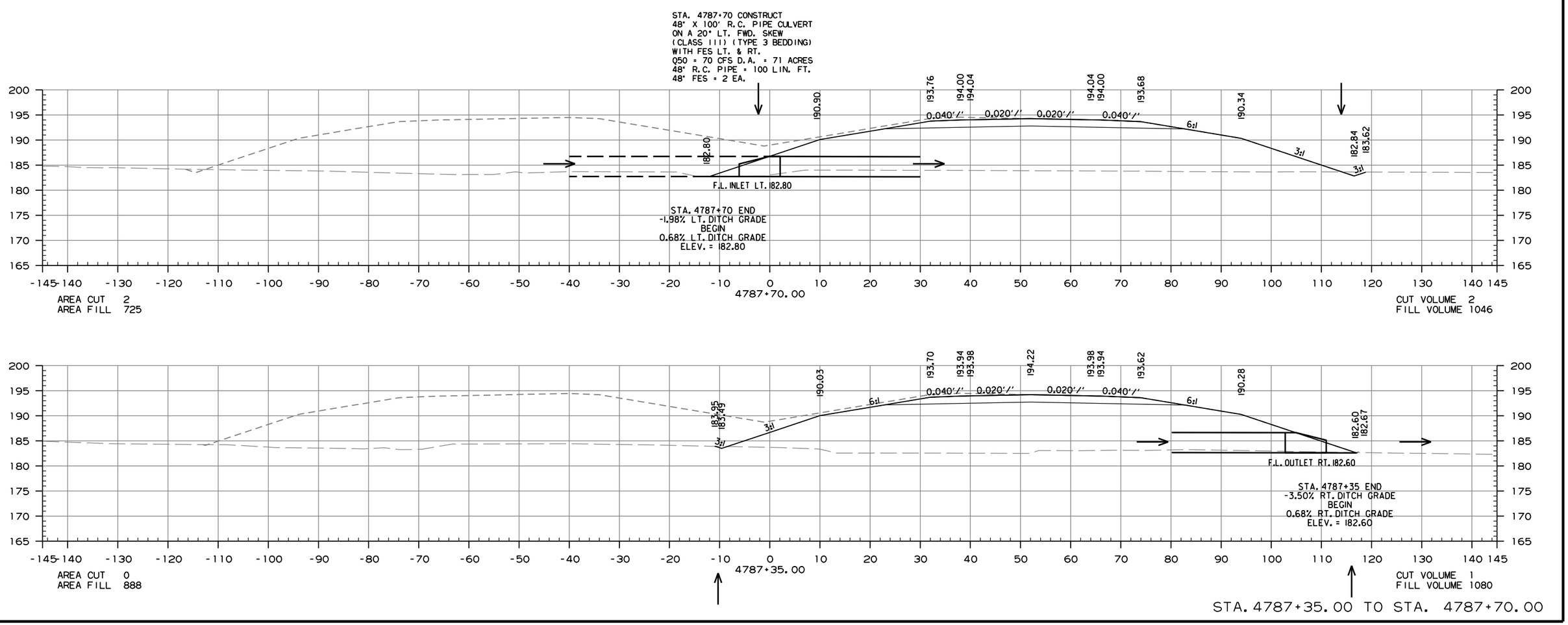


AREA CUT 19
AREA FILL 178
CUT VOLUME 62
FILL VOLUME 642

STA. 4785+00.00 TO STA. 4787+00.00

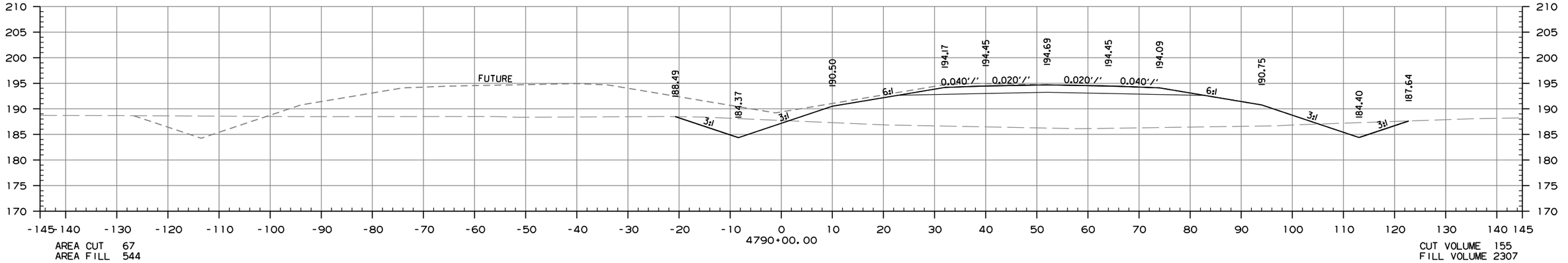
mh39735 7/14/2022
R020678.DGN

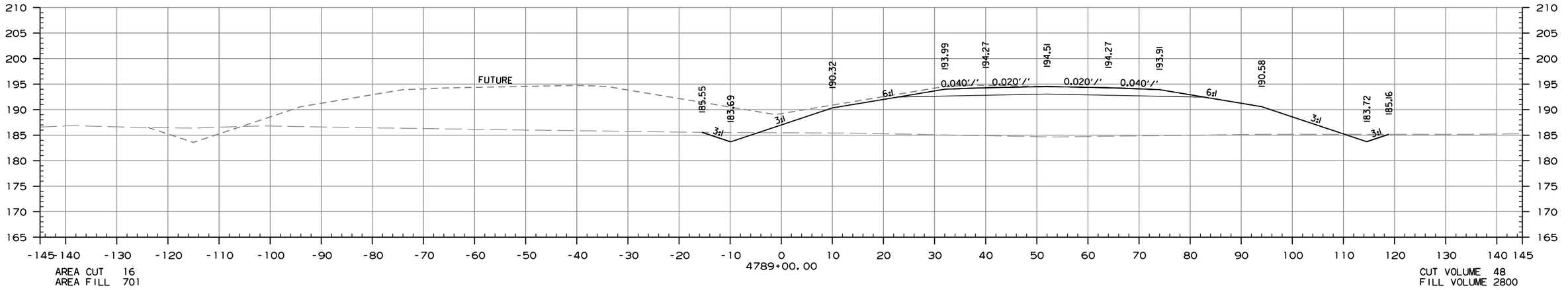
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-21-2022		6	ARK.	020678	176	368
		CROSS SECTIONS				

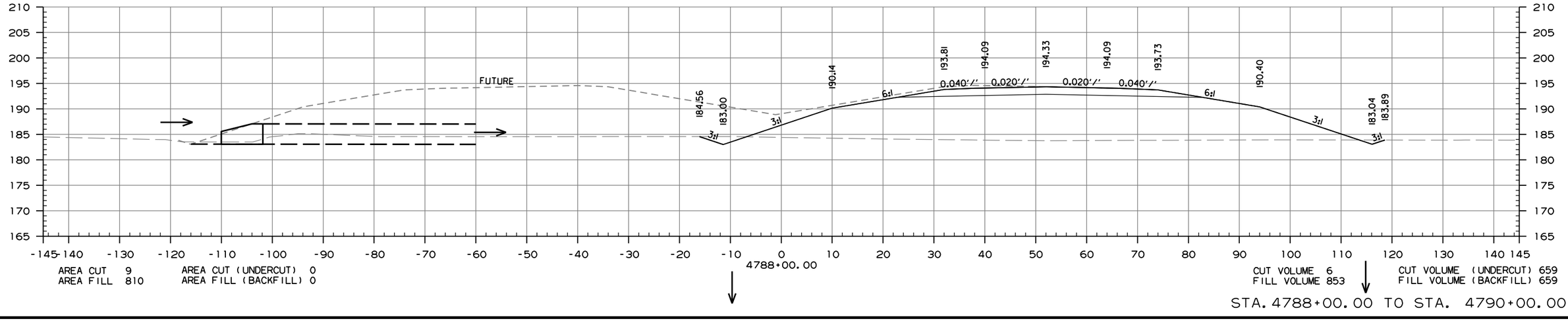


mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	177	368
		CROSS SECTIONS				



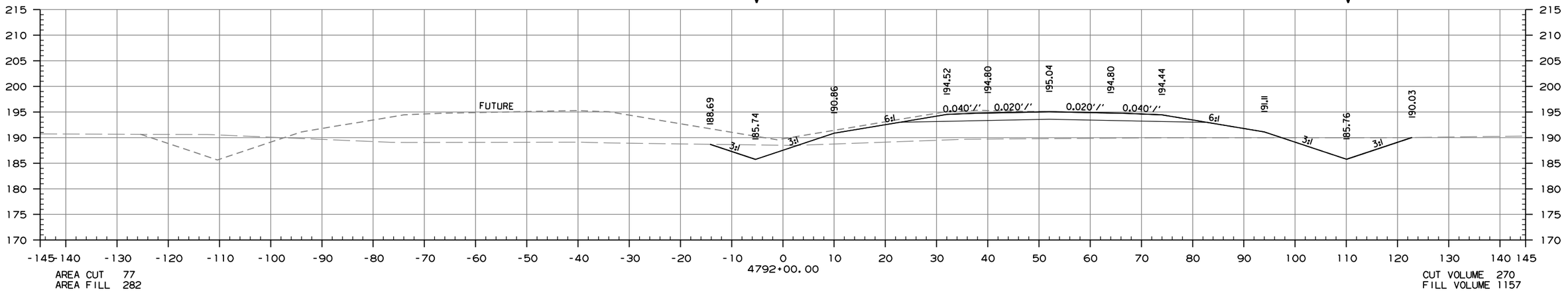


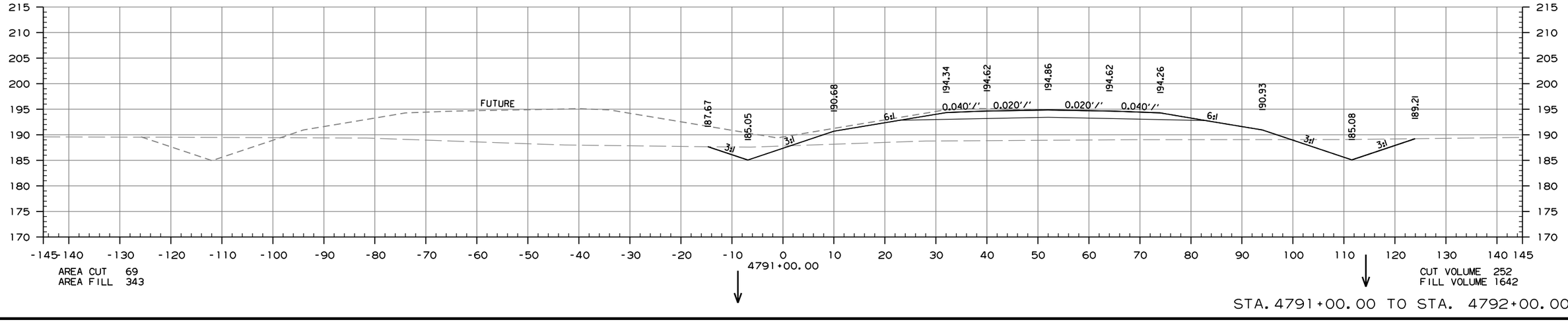


STA. 4788+00.00 TO STA. 4790+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	178	368
		CROSS SECTIONS				

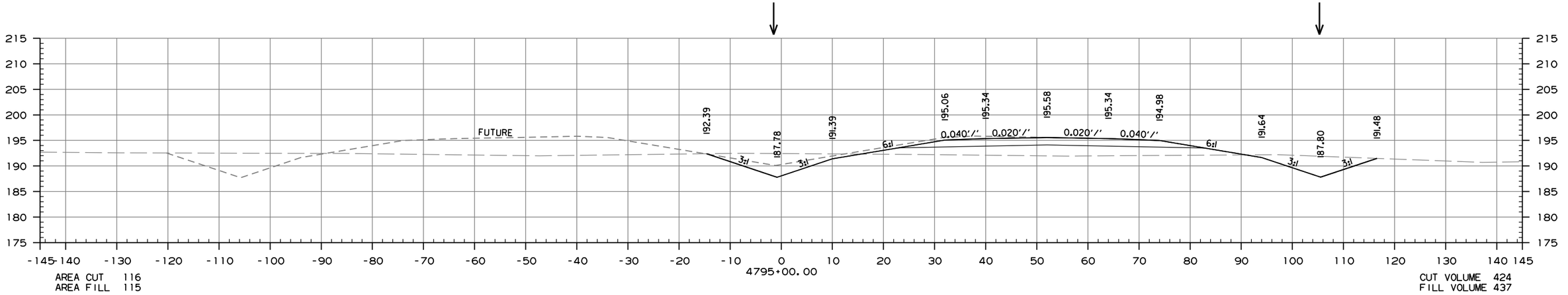


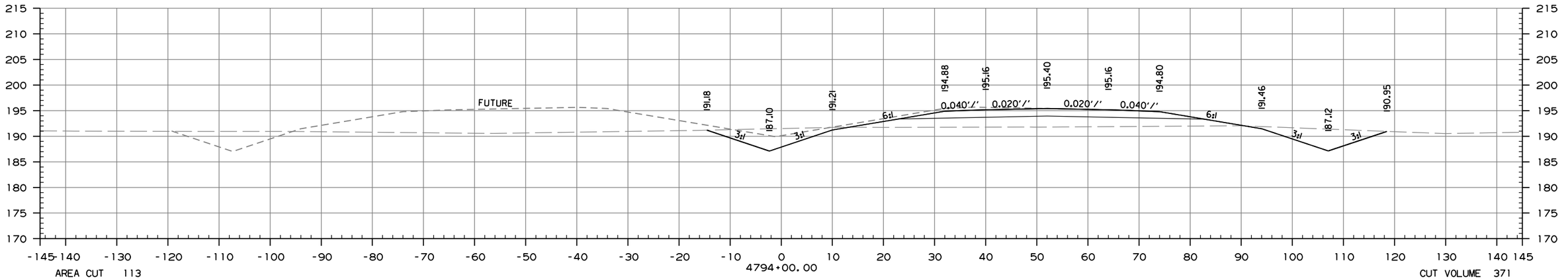


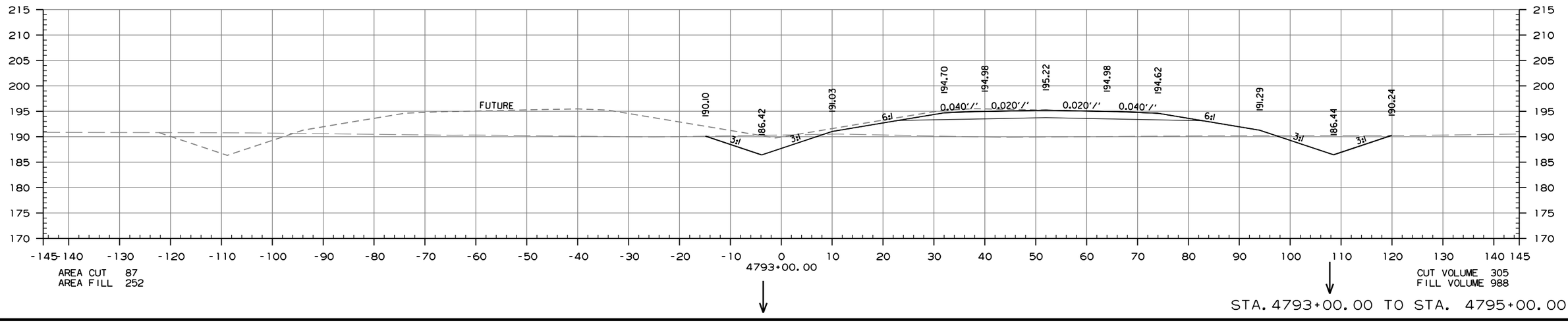
STA. 4791+00.00 TO STA. 4792+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	179	368
		CROSS SECTIONS				



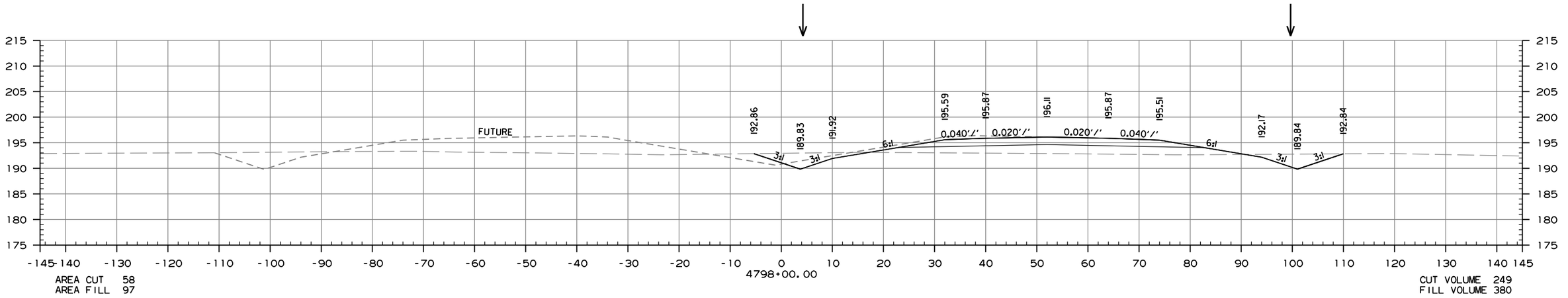


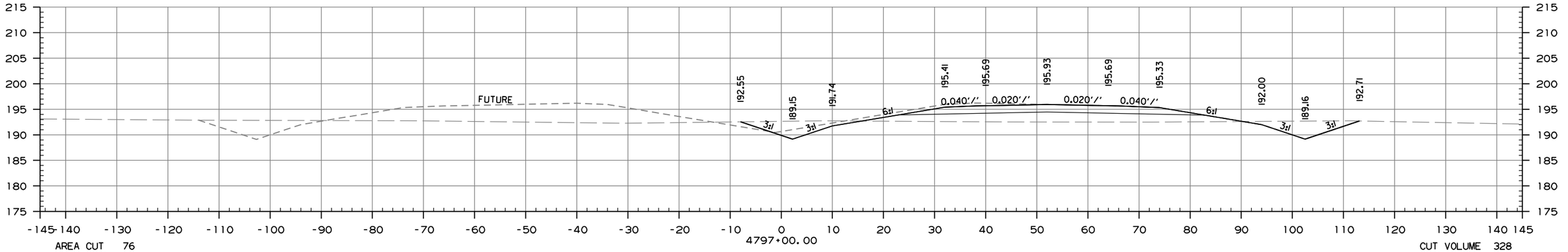


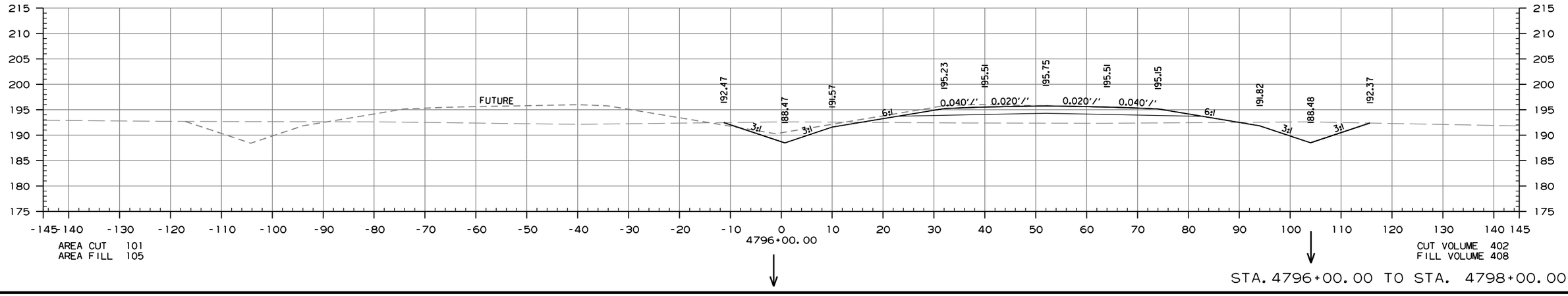
STA. 4793+00.00 TO STA. 4795+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	180	368
		CROSS SECTIONS				



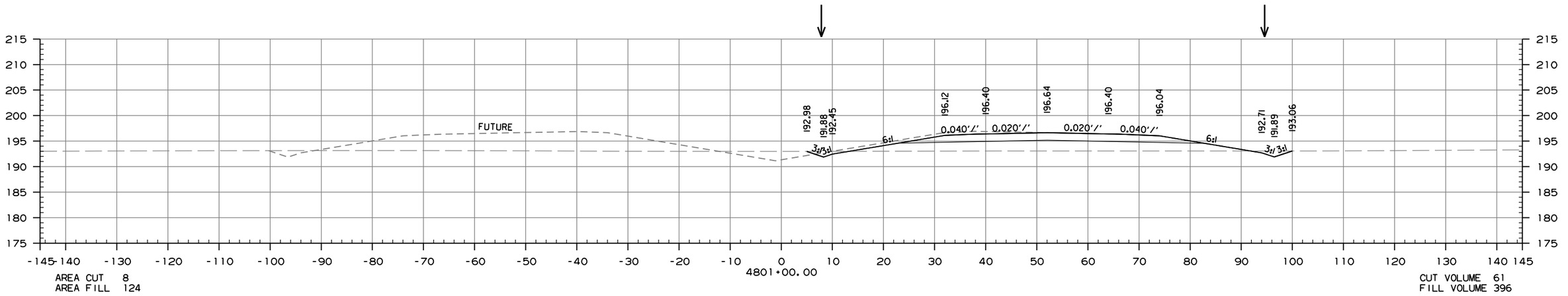


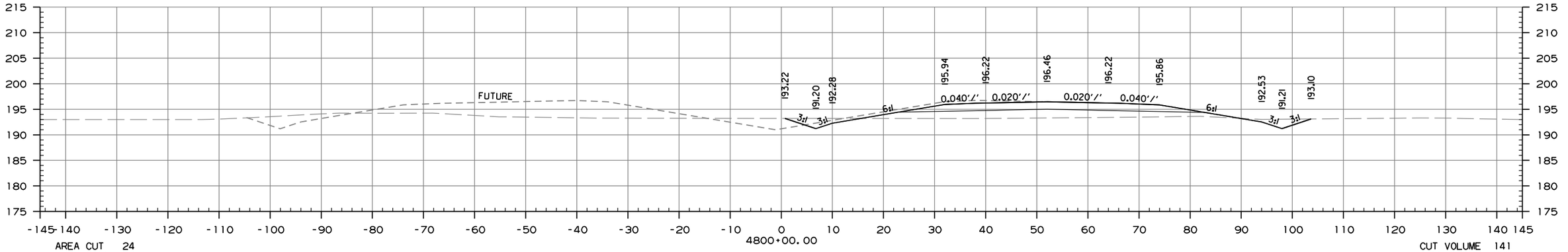


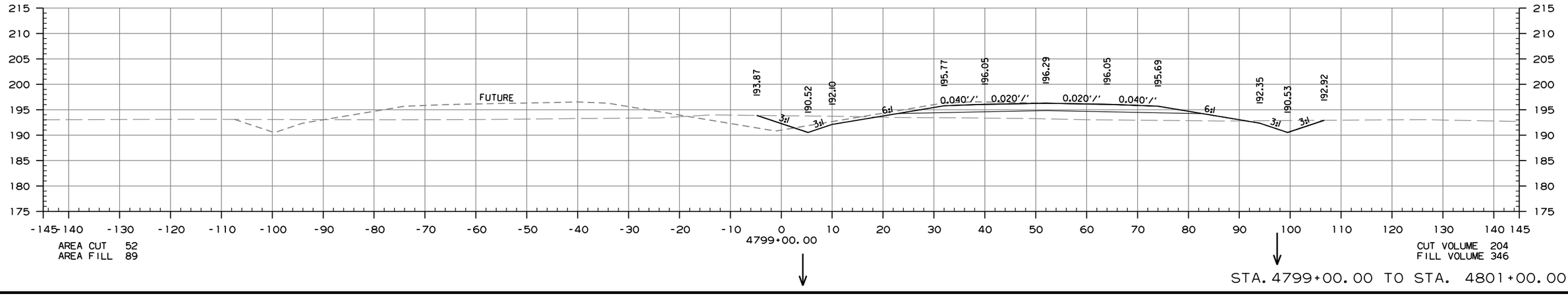
STA. 4796+00.00 TO STA. 4798+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	181	368
		CROSS SECTIONS				



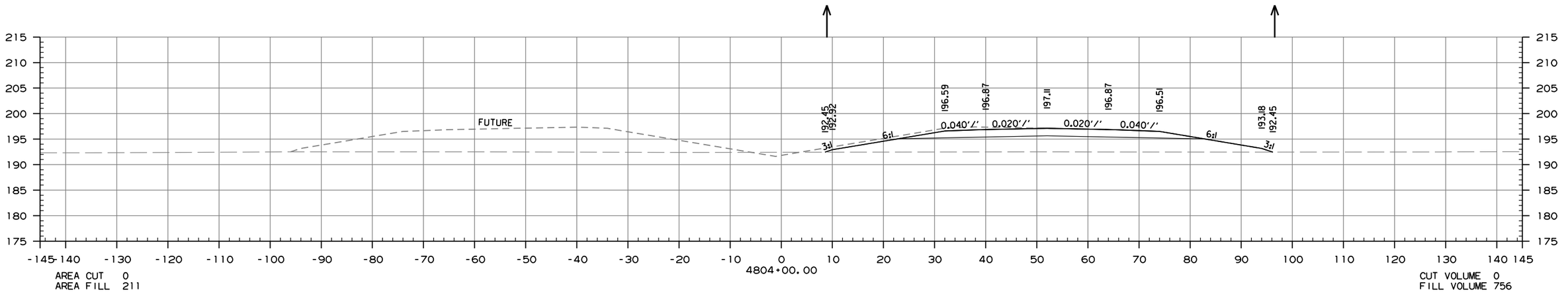


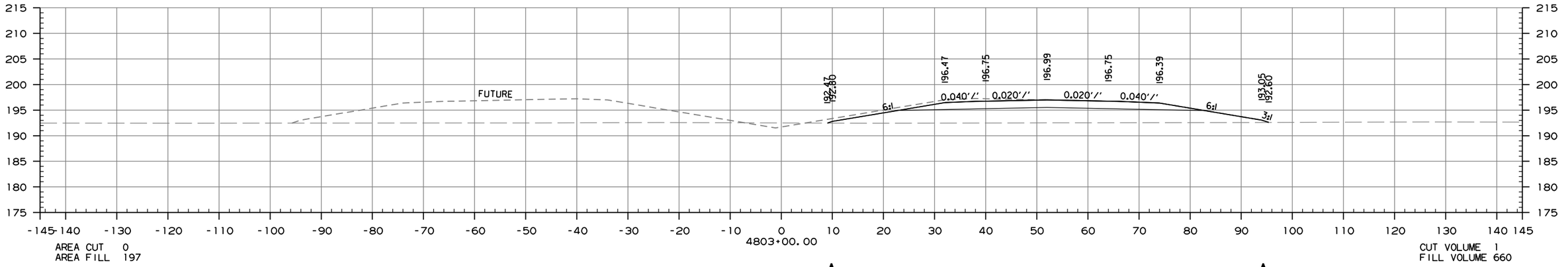


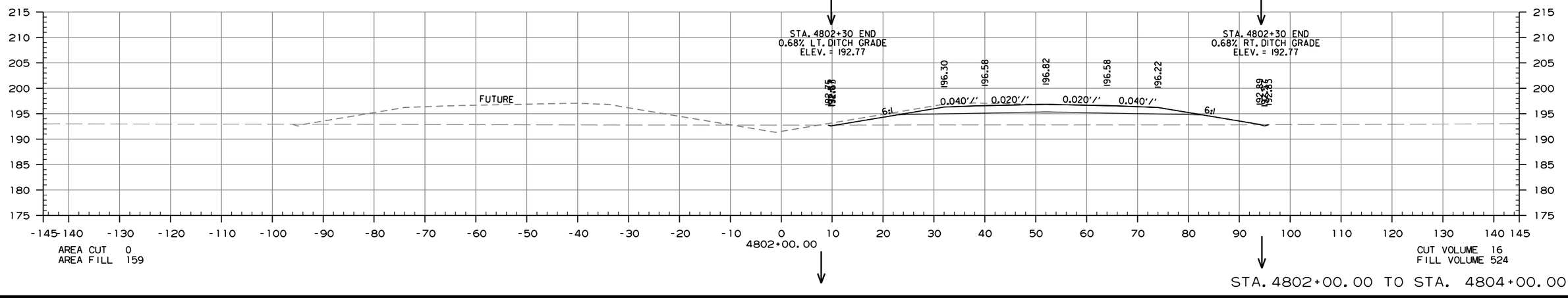
STA. 4799+00.00 TO STA. 4801+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	182	368
		CROSS SECTIONS				



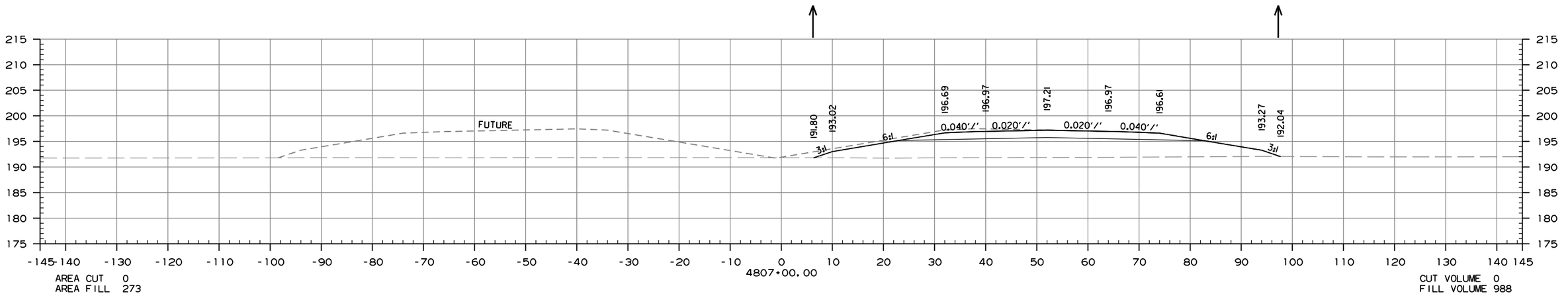


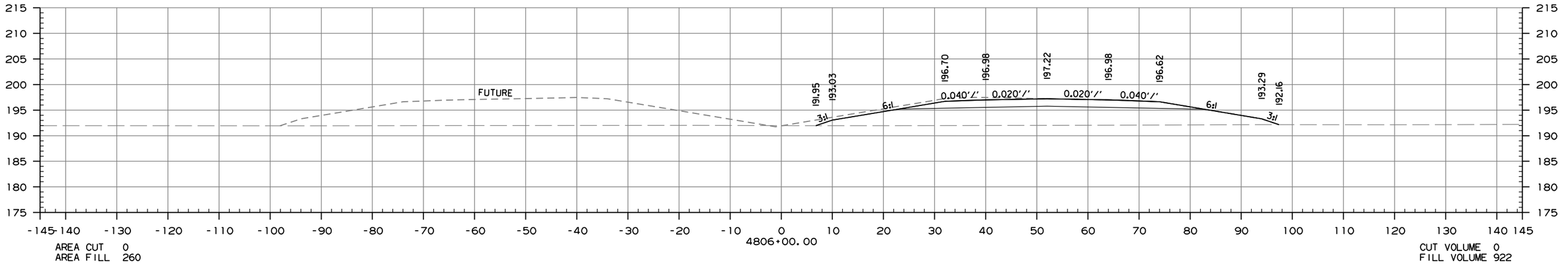


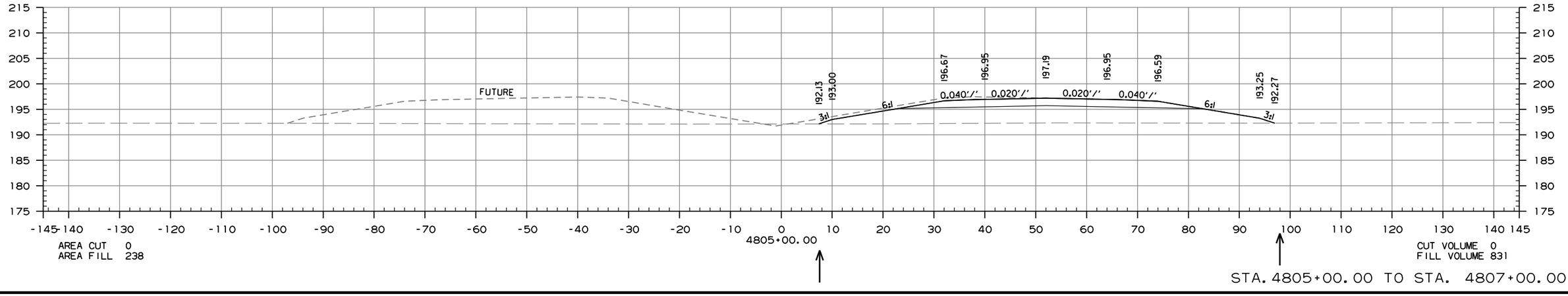
STA. 4802+00.00 TO STA. 4804+00.00

mn39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	183	368
		CROSS SECTIONS				



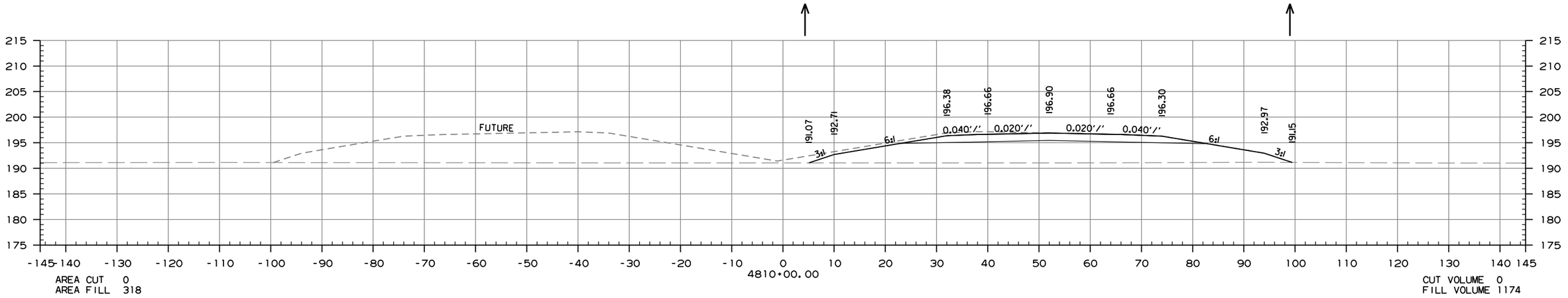


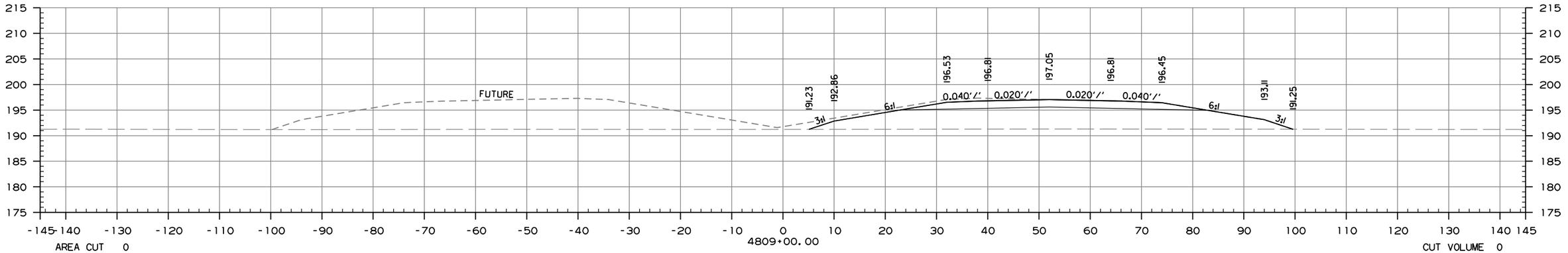


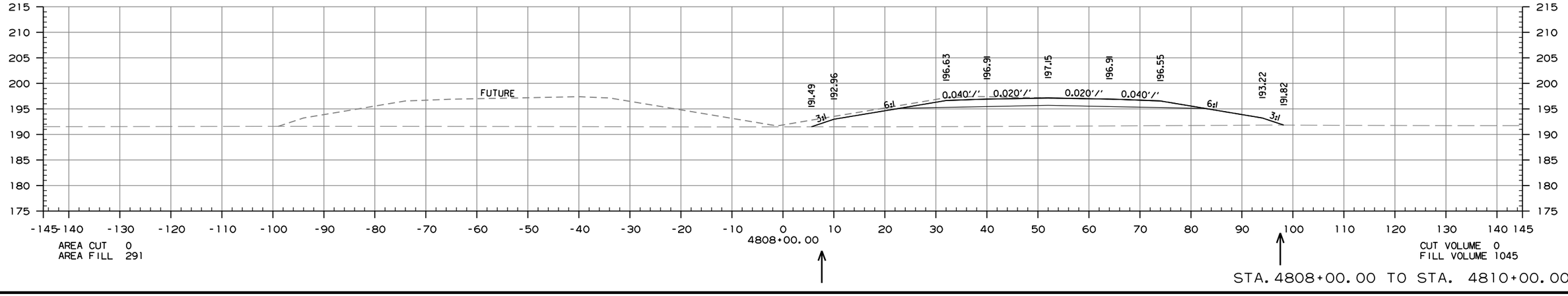
STA. 4805+00.00 TO STA. 4807+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	184	368
		CROSS SECTIONS				



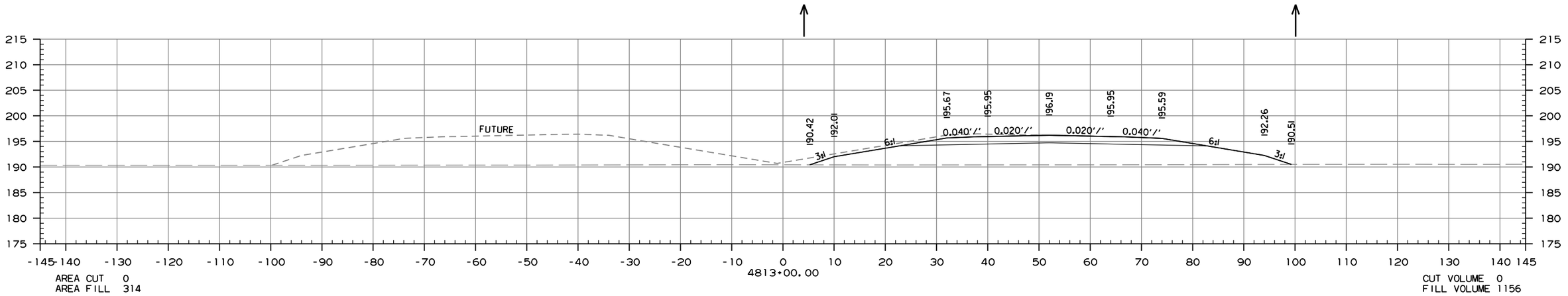


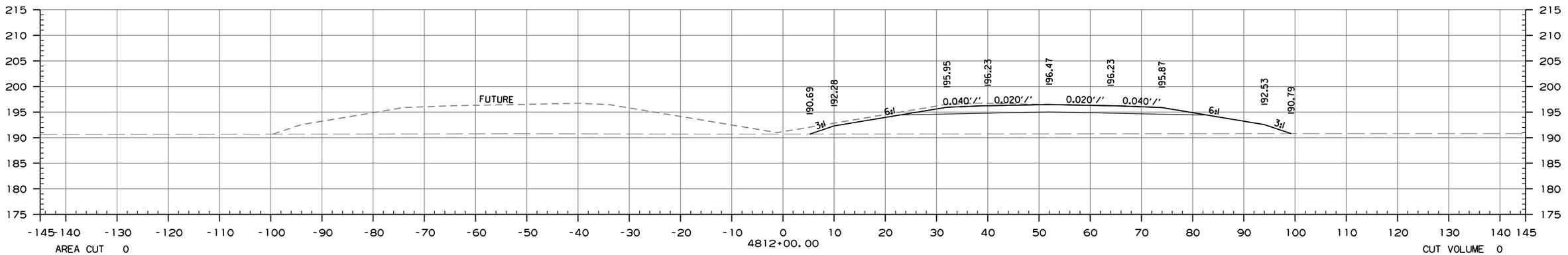


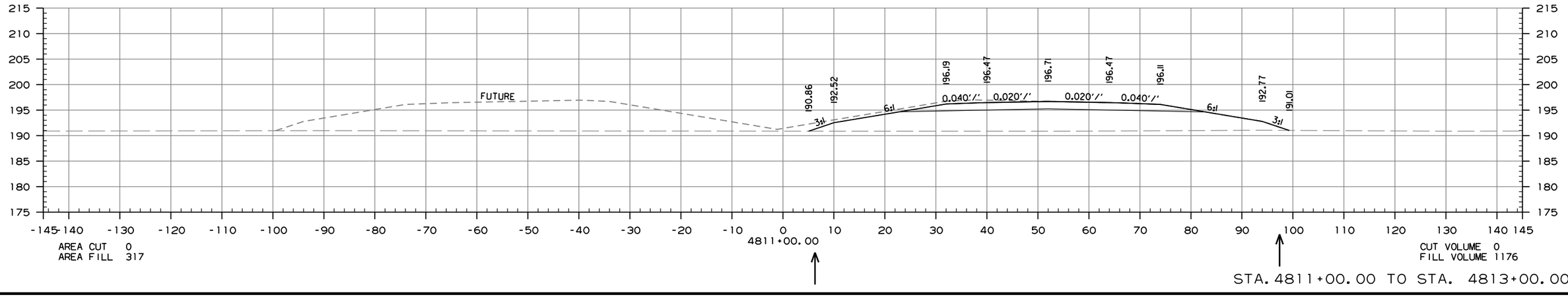
STA. 4808+00.00 TO STA. 4810+00.00

mn39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	185	368
		CROSS SECTIONS				



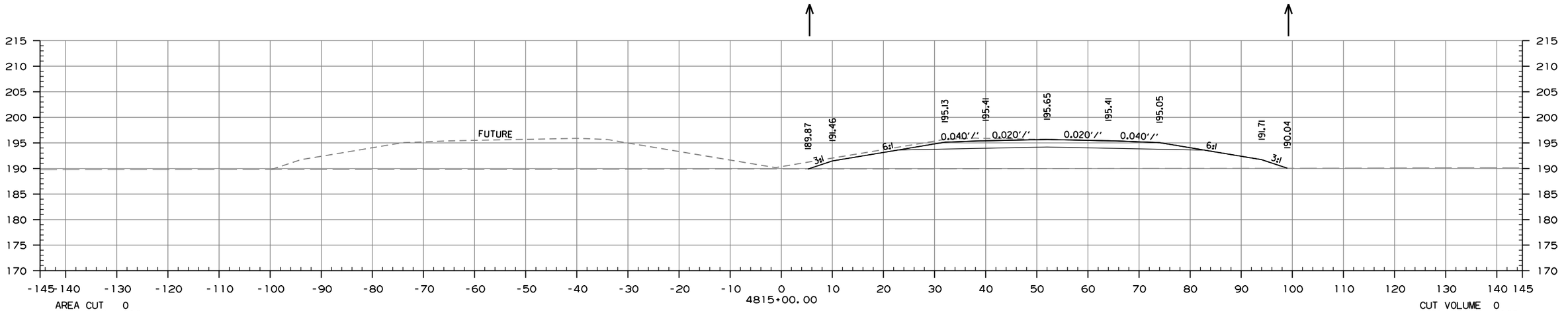


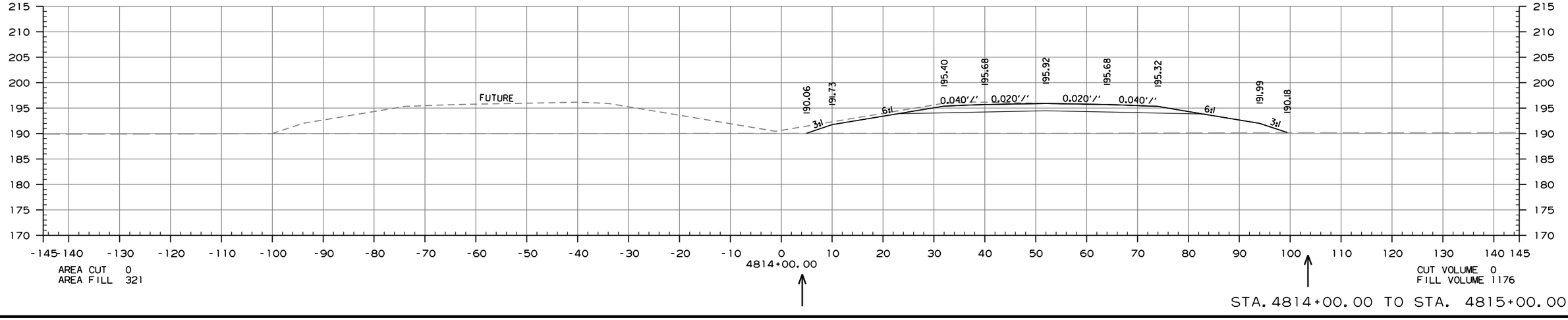


STA. 4811+00.00 TO STA. 4813+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	186	368
		CROSS SECTIONS				

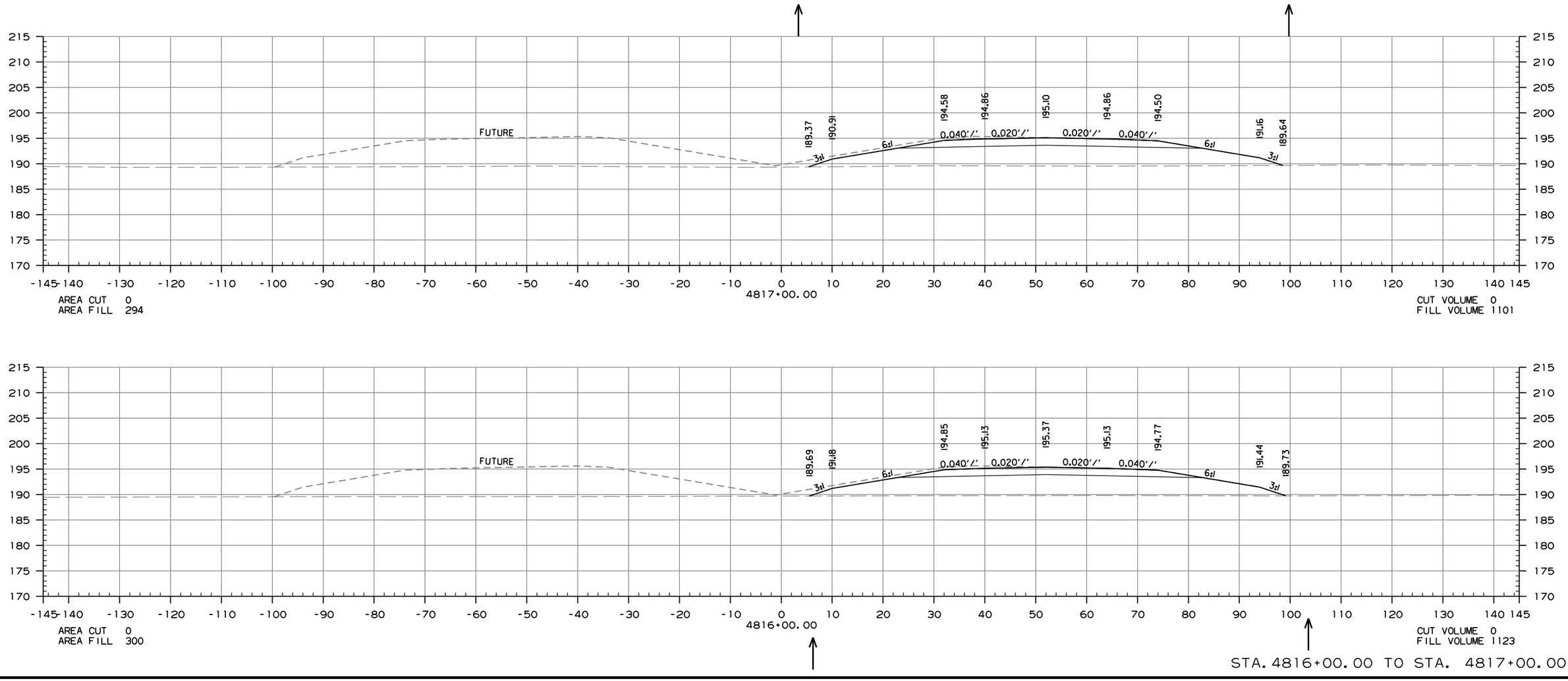




STA. 4814+00.00 TO STA. 4815+00.00

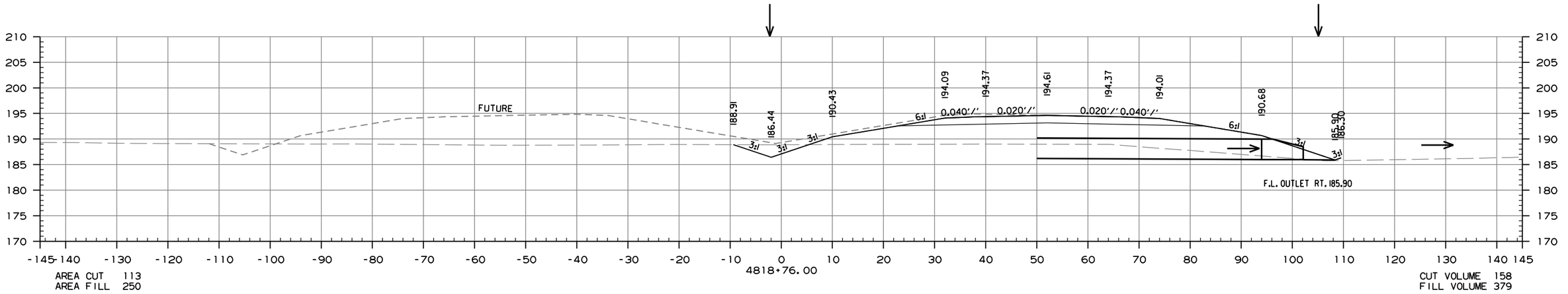
mh39735 7/14/2022
R020678.DGN

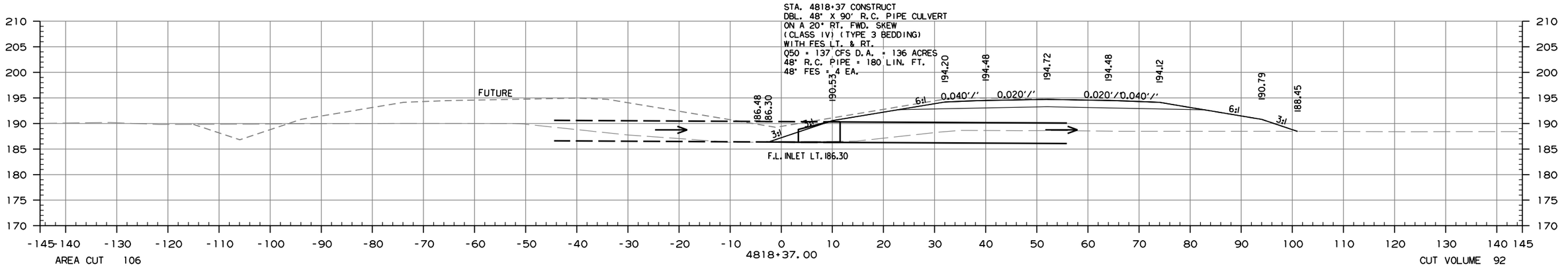
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	187	368
		CROSS SECTIONS				

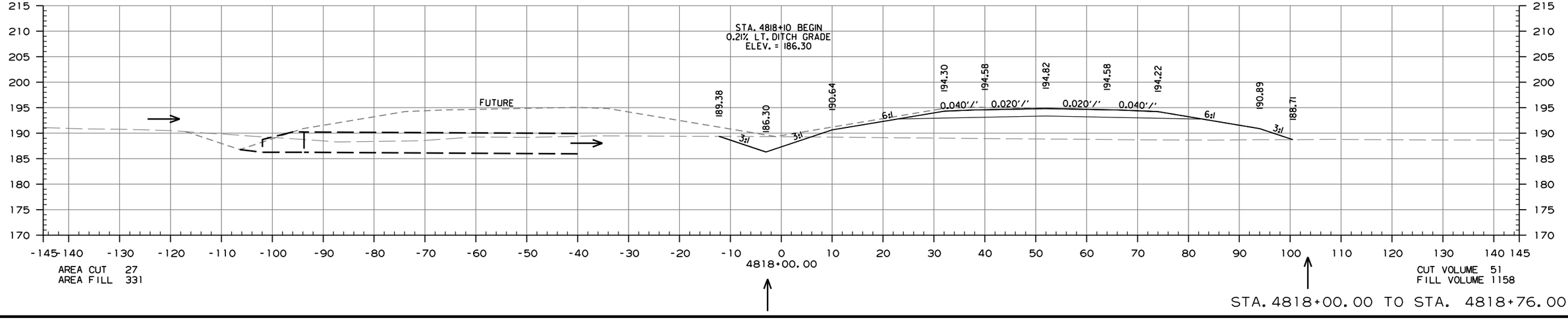


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R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	188	368
		CROSS SECTIONS				

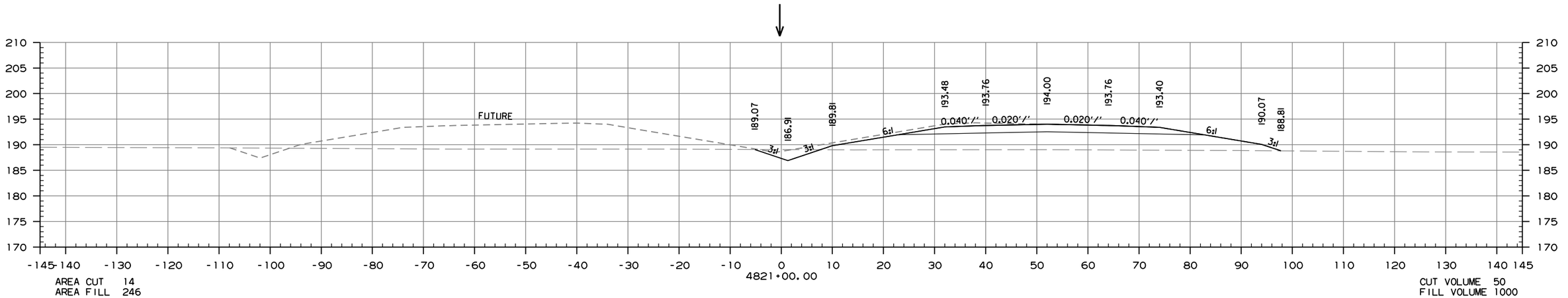


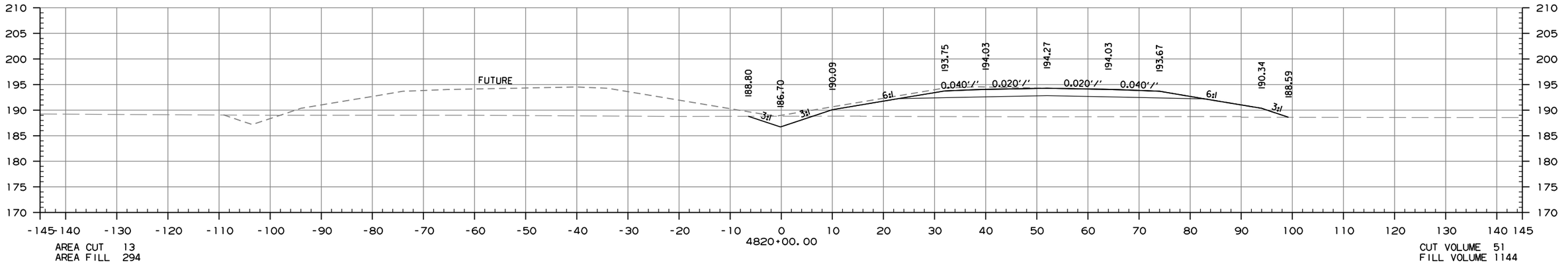


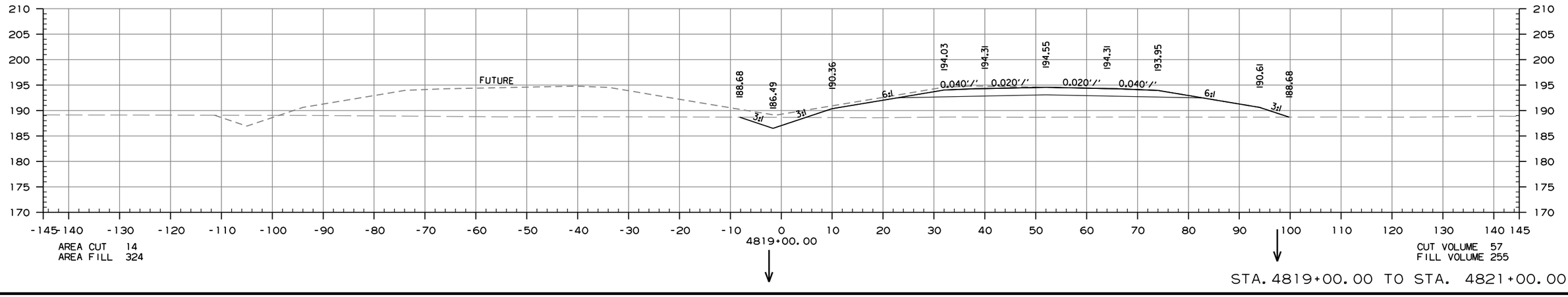


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RO20678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	189	368
		CROSS SECTIONS				



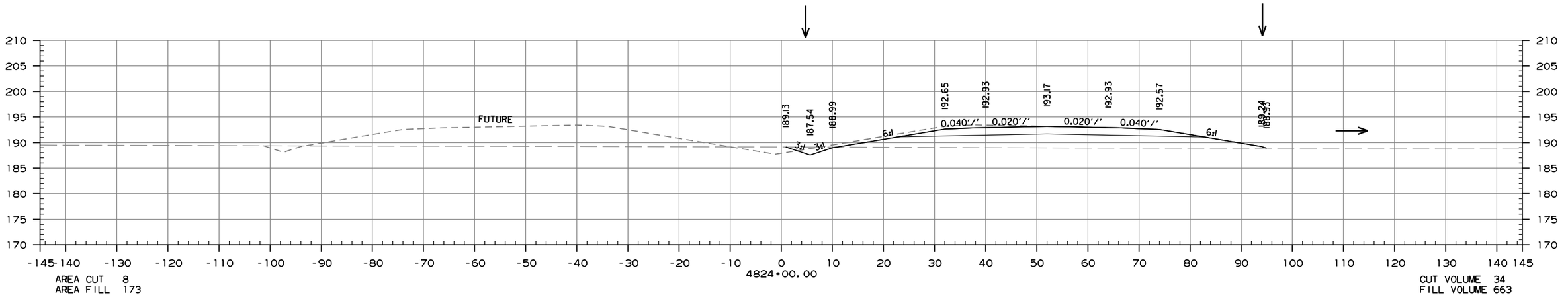


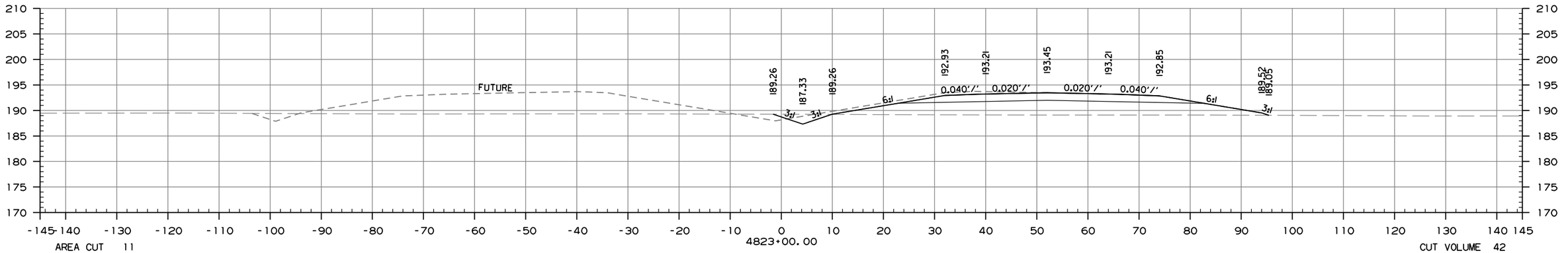


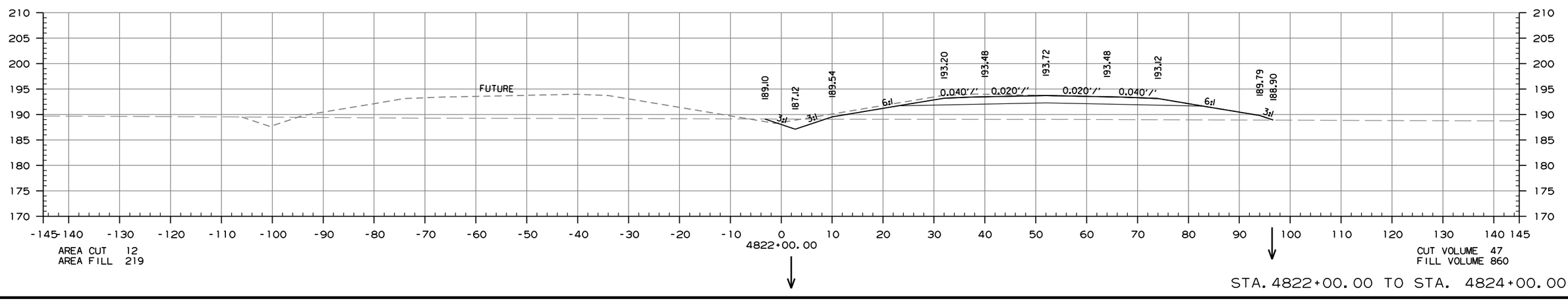
STA. 4819+00.00 TO STA. 4821+00.00

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R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	190	368
		CROSS SECTIONS				



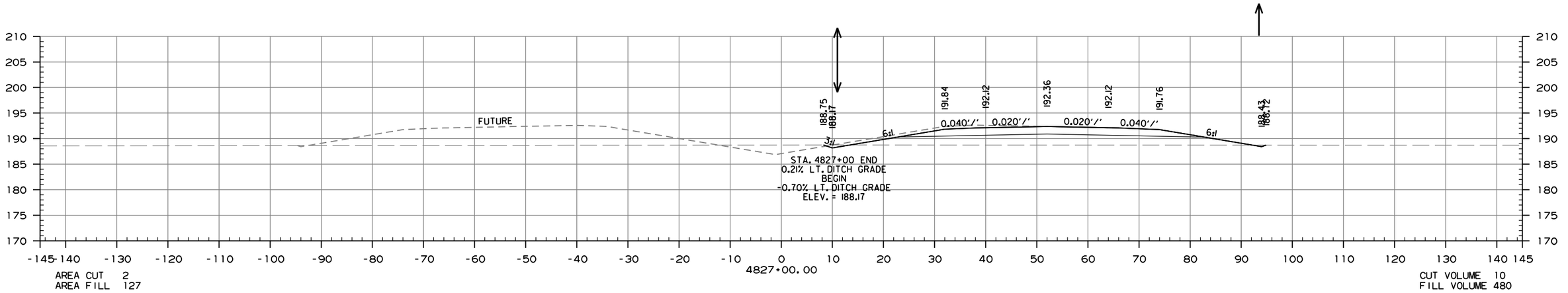


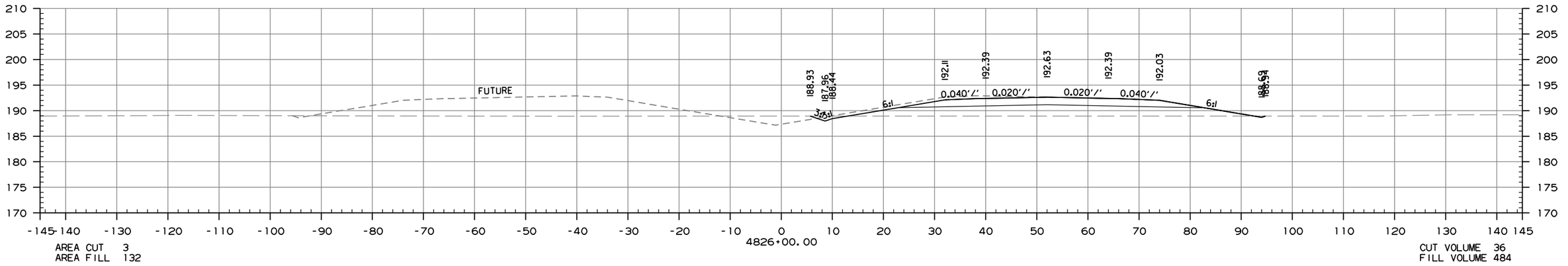


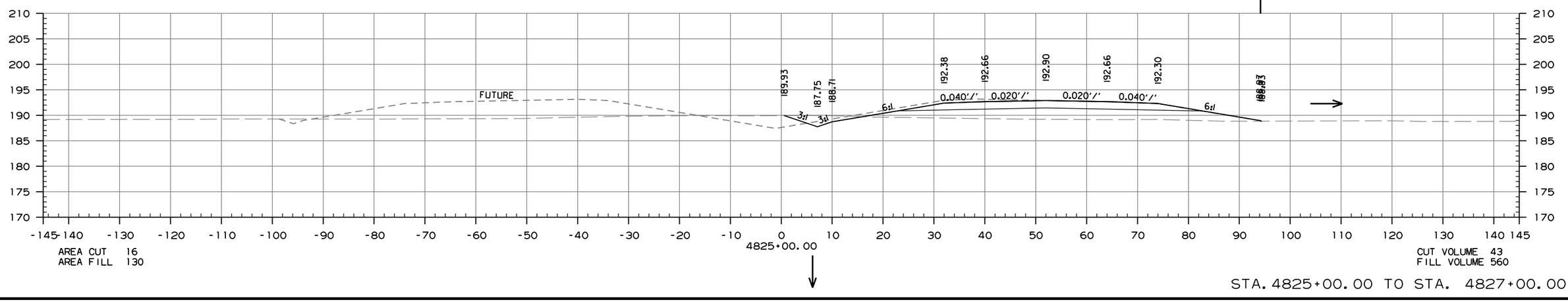
STA. 4822+00.00 TO STA. 4824+00.00

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R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	191	368
		CROSS SECTIONS				



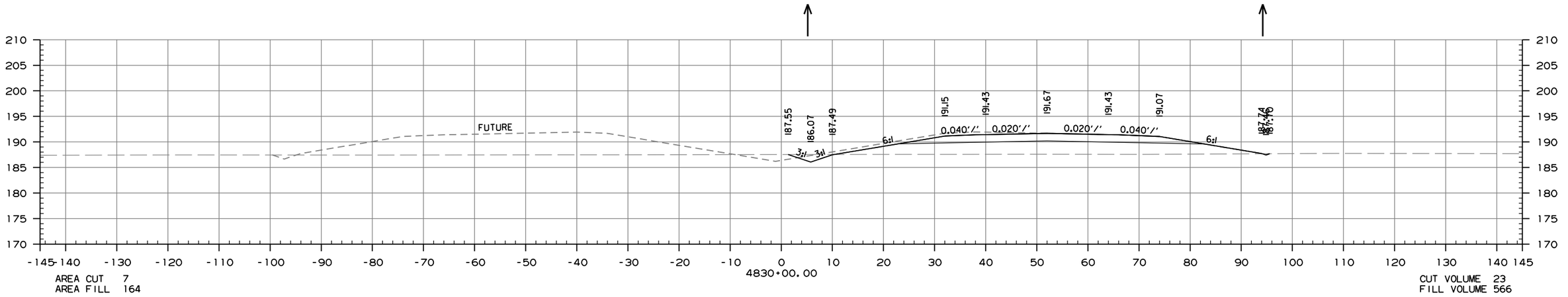


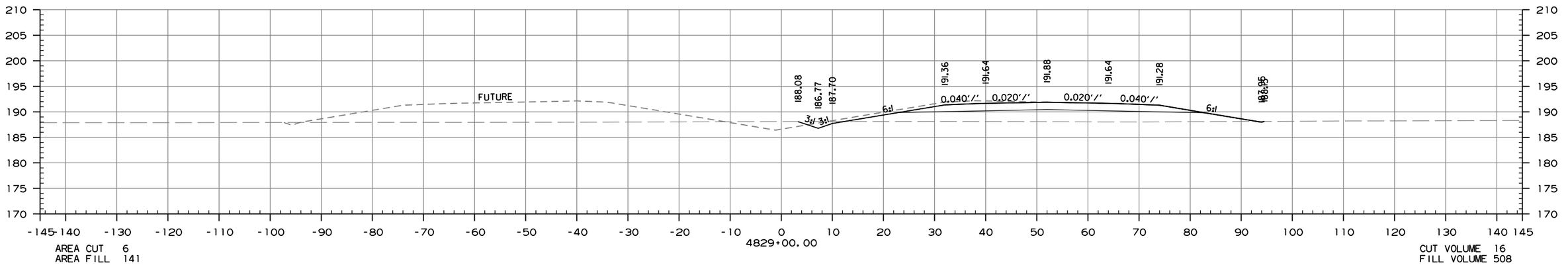


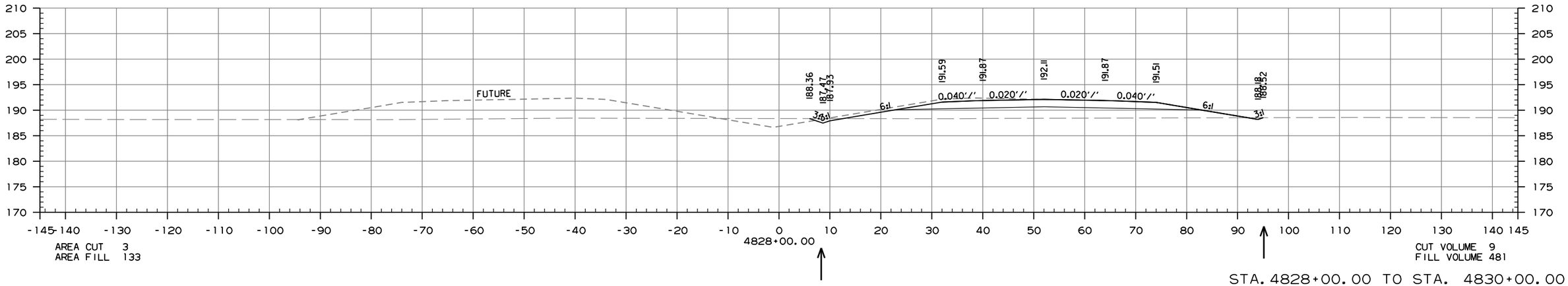
STA. 4825+00.00 TO STA. 4827+00.00

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R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	192	368
		CROSS SECTIONS				



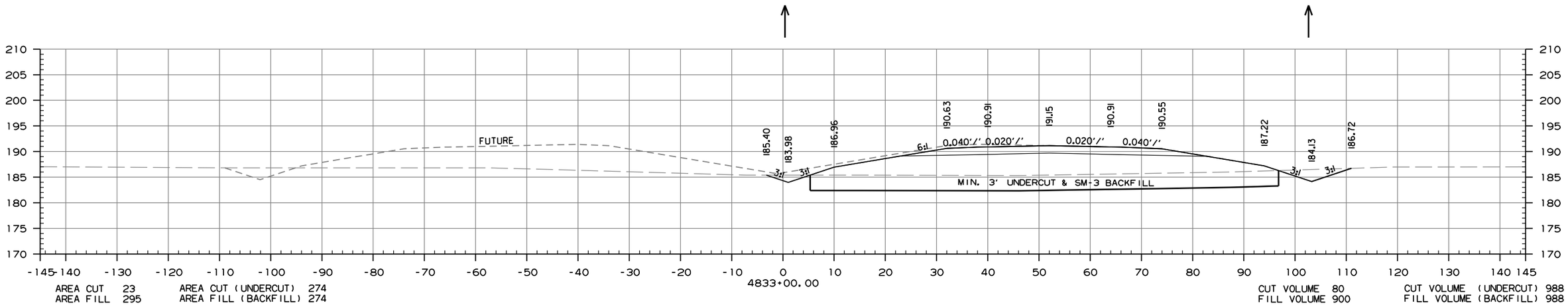




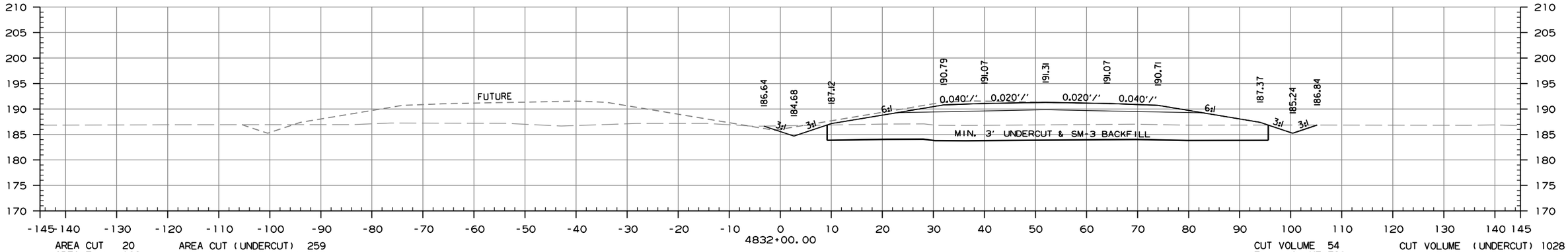
STA. 4828+00.00 TO STA. 4830+00.00

mh39735 7/14/2022
R020678.DGN

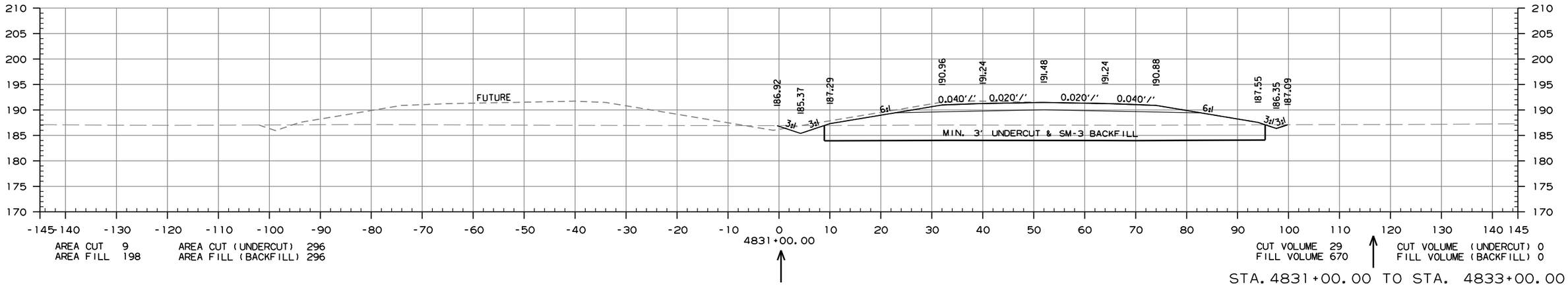
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	193	368
		CROSS SECTIONS				



AREA CUT 23
AREA FILL 295
AREA CUT (UNDERCUT) 274
AREA FILL (BACKFILL) 274
CUT VOLUME 80
FILL VOLUME 900
CUT VOLUME (UNDERCUT) 988
FILL VOLUME (BACKFILL) 988



AREA CUT 20
AREA FILL 192
AREA CUT (UNDERCUT) 259
AREA FILL (BACKFILL) 259
CUT VOLUME 54
FILL VOLUME 721
CUT VOLUME (UNDERCUT) 1028
FILL VOLUME (BACKFILL) 1028

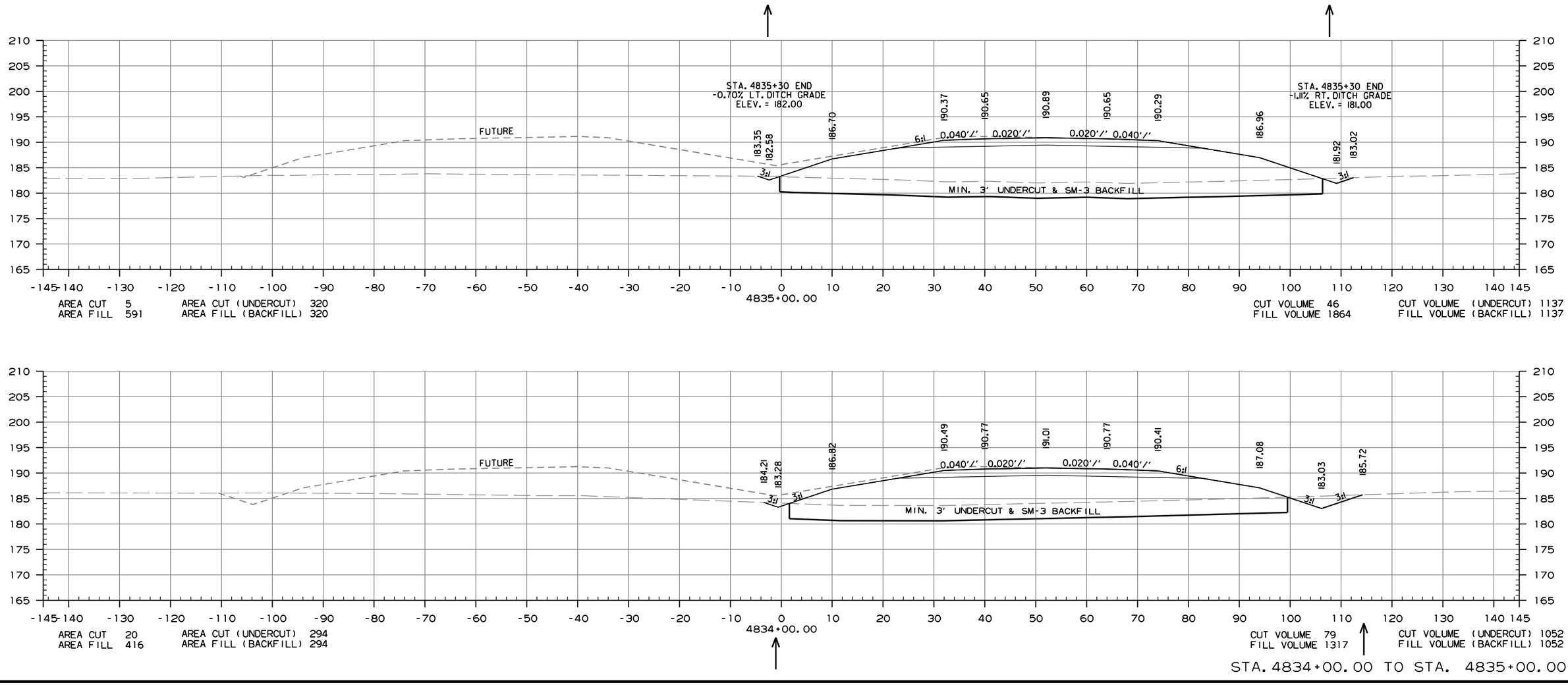


AREA CUT 9
AREA FILL 198
AREA CUT (UNDERCUT) 296
AREA FILL (BACKFILL) 296
CUT VOLUME 29
FILL VOLUME 670
CUT VOLUME (UNDERCUT) 0
FILL VOLUME (BACKFILL) 0

STA. 4831+00.00 TO STA. 4833+00.00

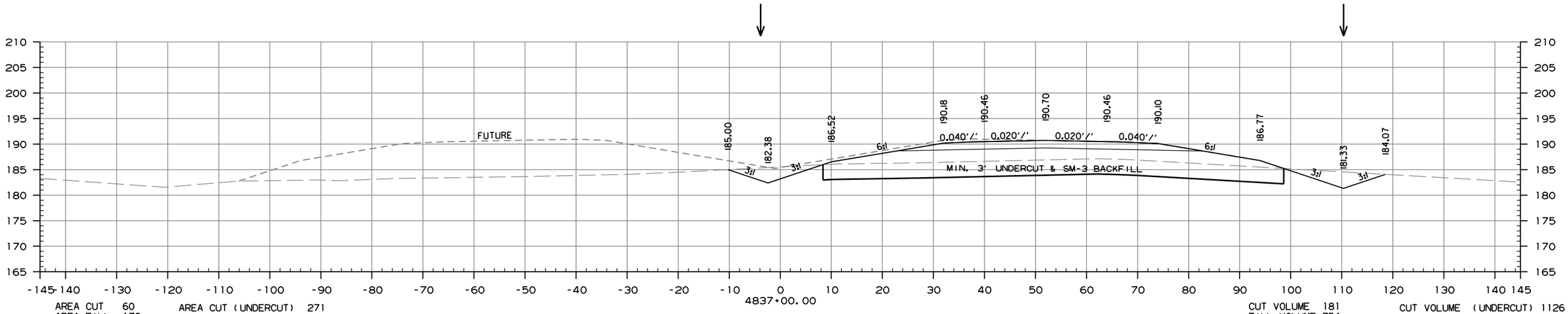
mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	194	368
		CROSS SECTIONS				



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R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	195	368
		CROSS SECTIONS				

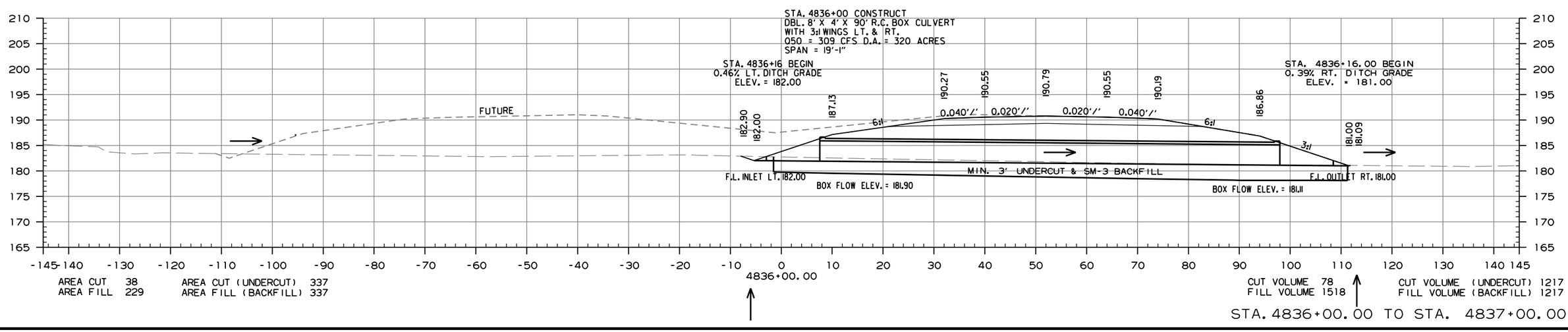


AREA CUT 60
AREA FILL 178

AREA CUT (UNDERCUT) 271
AREA FILL (BACKFILL) 271

CUT VOLUME 181
FILL VOLUME 754

CUT VOLUME (UNDERCUT) 1126
FILL VOLUME (BACKFILL) 1126



AREA CUT 38
AREA FILL 229

AREA CUT (UNDERCUT) 337
AREA FILL (BACKFILL) 337

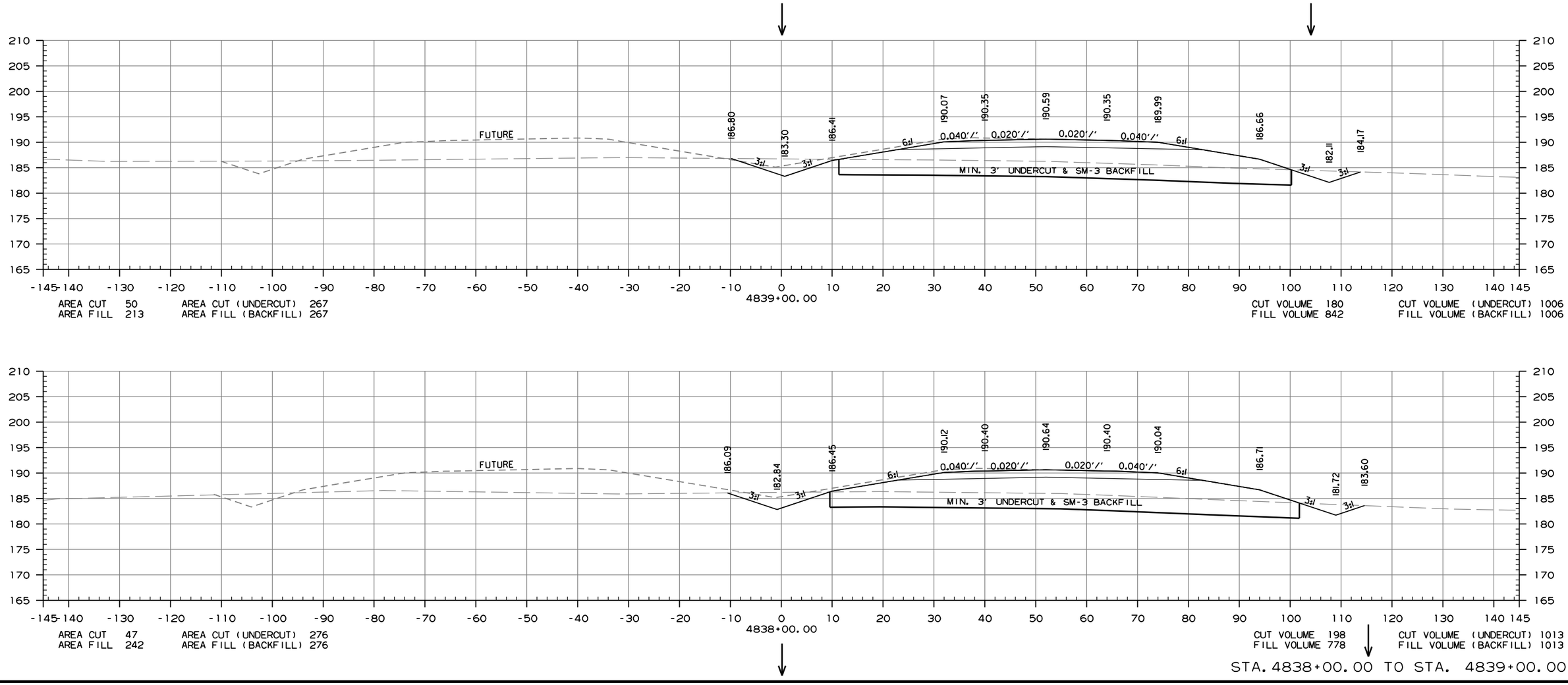
CUT VOLUME 78
FILL VOLUME 1518

CUT VOLUME (UNDERCUT) 1217
FILL VOLUME (BACKFILL) 1217

STA. 4836+00.00 TO STA. 4837+00.00

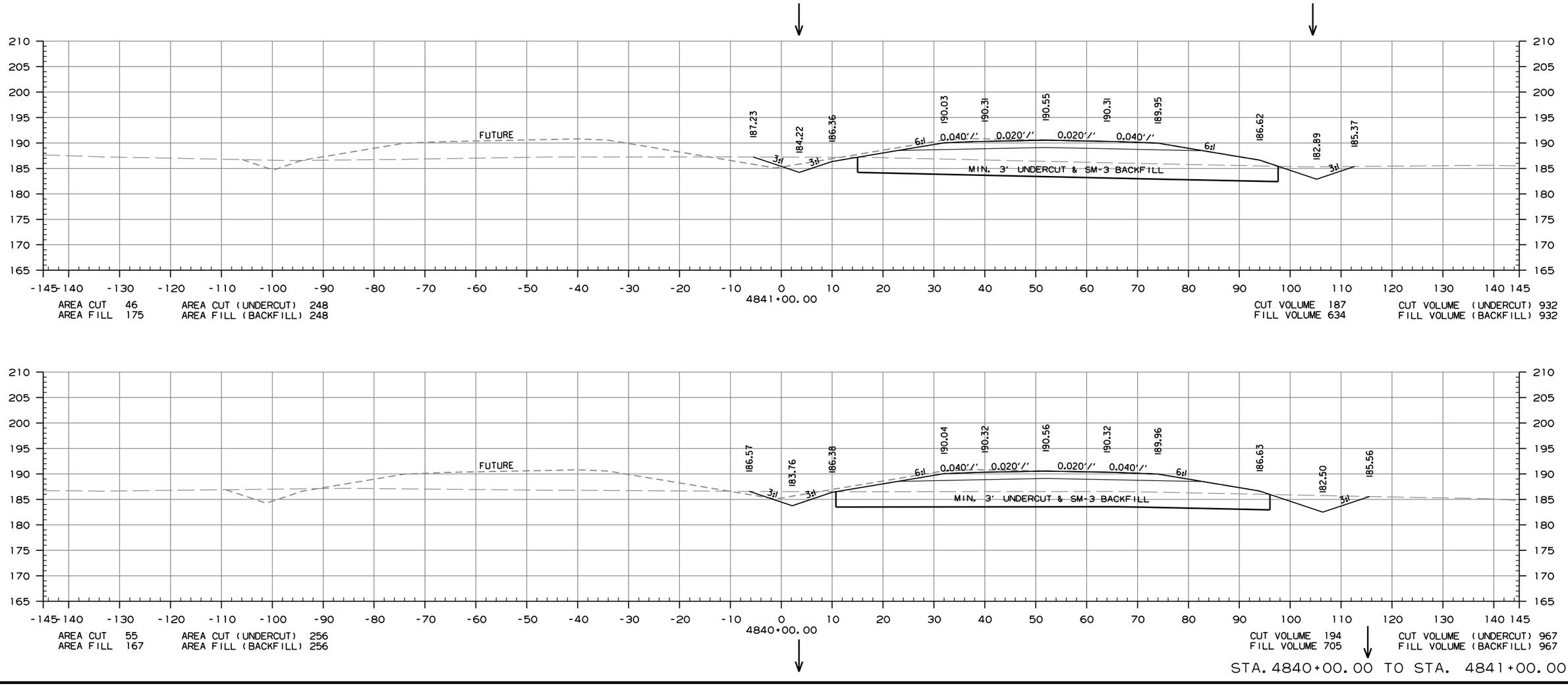
mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	196	368
		CROSS SECTIONS				



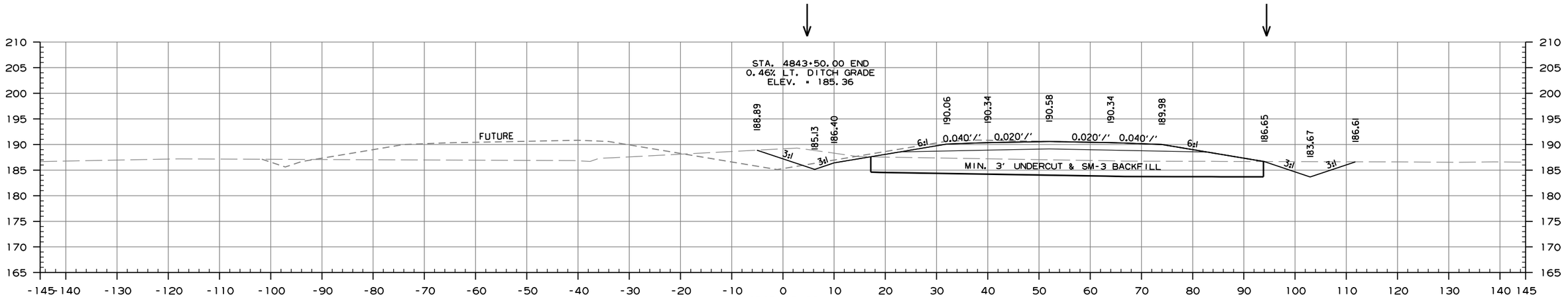
mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	197	368
		CROSS SECTIONS				



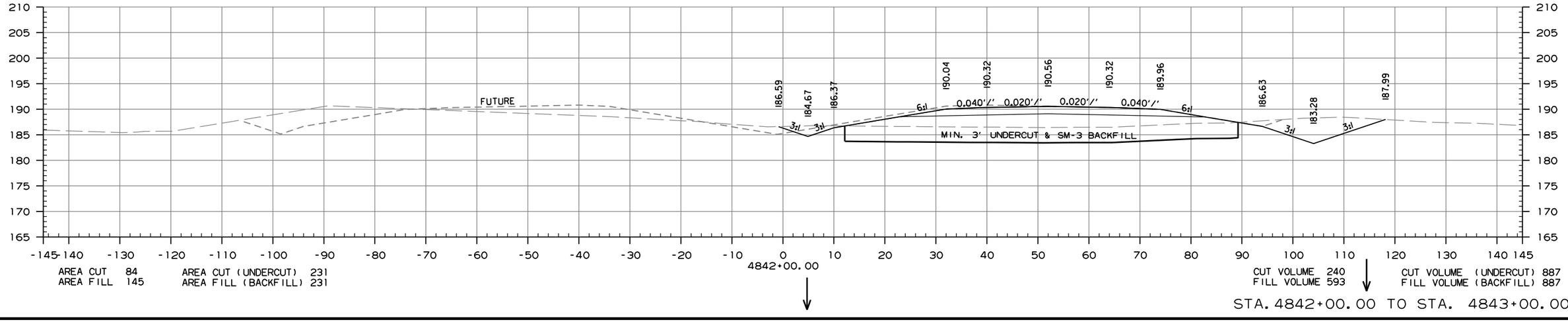
mn39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	198	368
		CROSS SECTIONS				



AREA CUT 67
AREA FILL 122
AREA CUT (UNDERCUT) 230
AREA FILL (BACKFILL) 230

CUT VOLUME 278
FILL VOLUME 495
CUT VOLUME (UNDERCUT) 854
FILL VOLUME (BACKFILL) 854



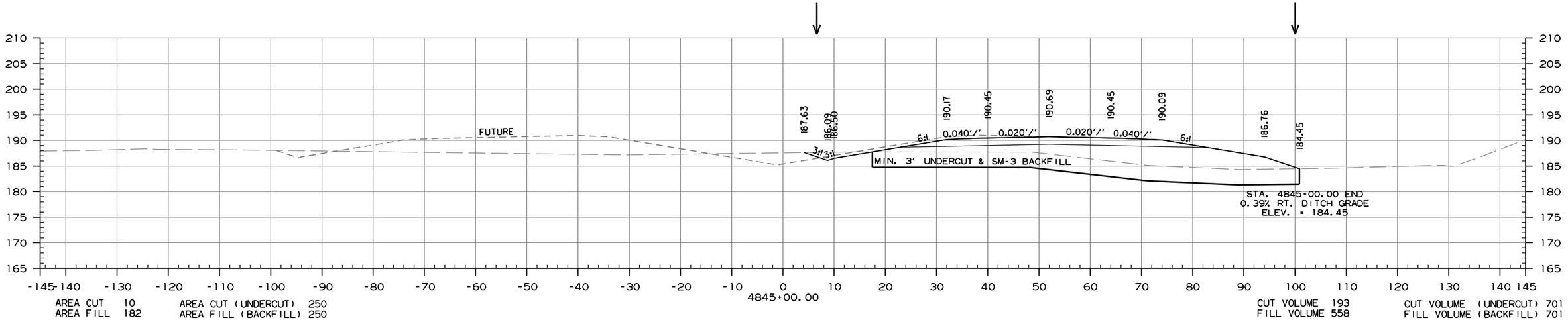
AREA CUT 84
AREA FILL 145
AREA CUT (UNDERCUT) 231
AREA FILL (BACKFILL) 231

CUT VOLUME 240
FILL VOLUME 593
CUT VOLUME (UNDERCUT) 887
FILL VOLUME (BACKFILL) 887

STA. 4842+00.00 TO STA. 4843+00.00

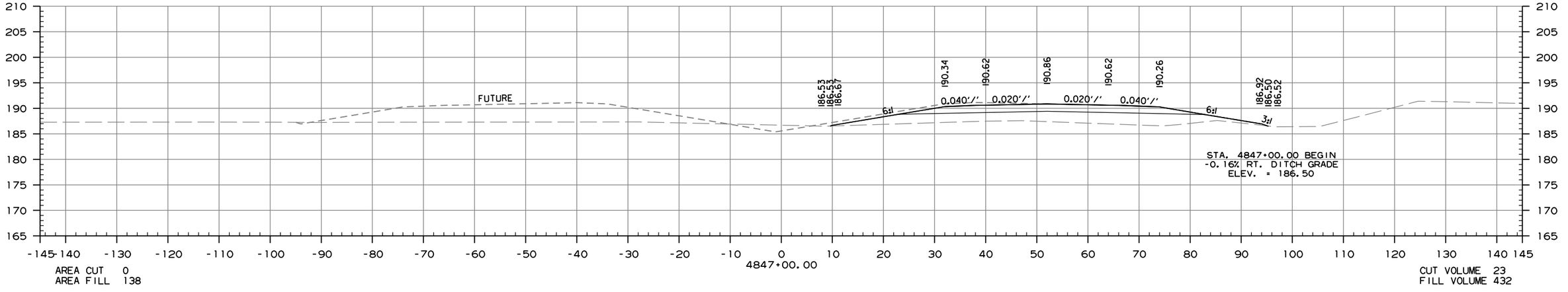
mh39735 7/14/2022
R020678.DGN

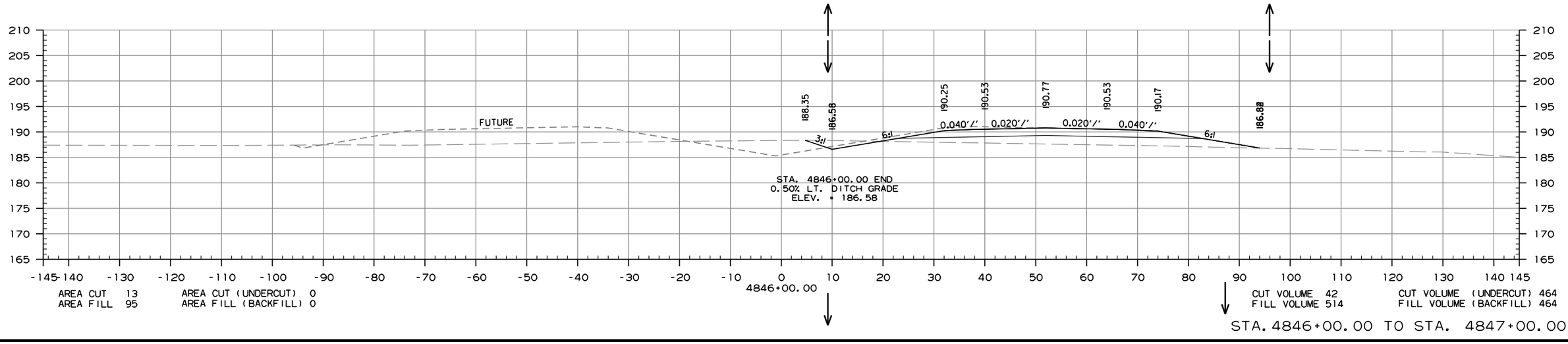
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	199	368
		CROSS SECTIONS				



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R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	200	368
		CROSS SECTIONS				

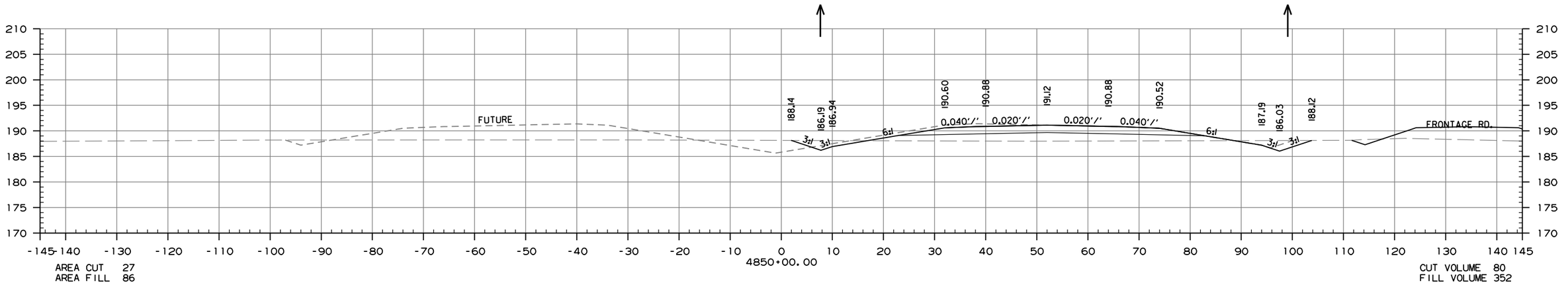


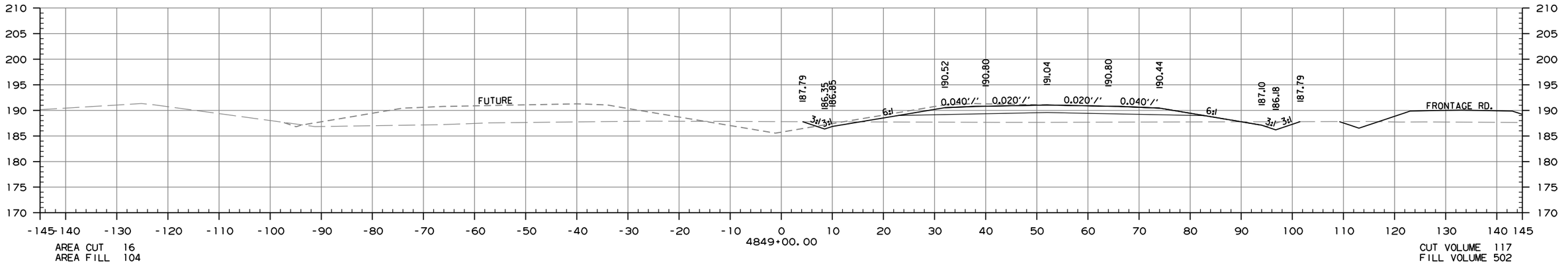


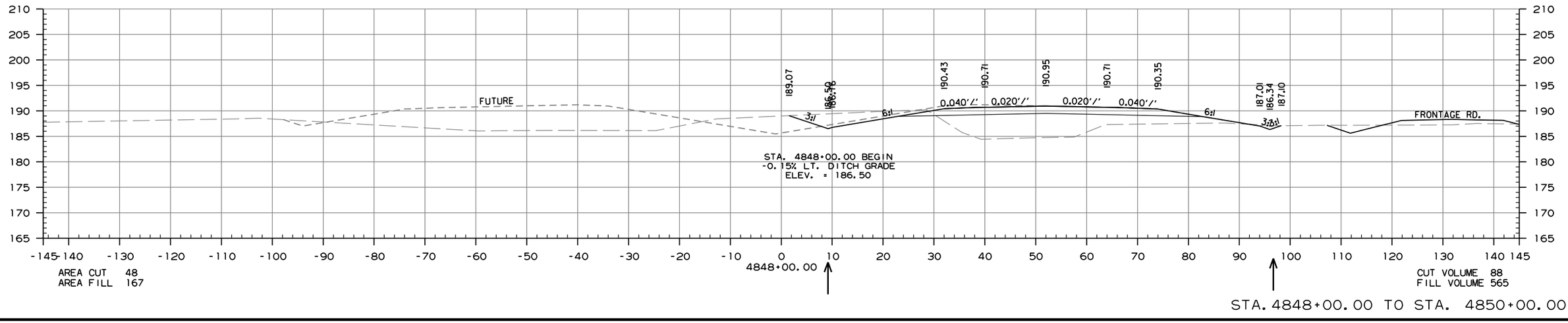
STA. 4846+00.00 TO STA. 4847+00.00

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R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	201	368
		CROSS SECTIONS				



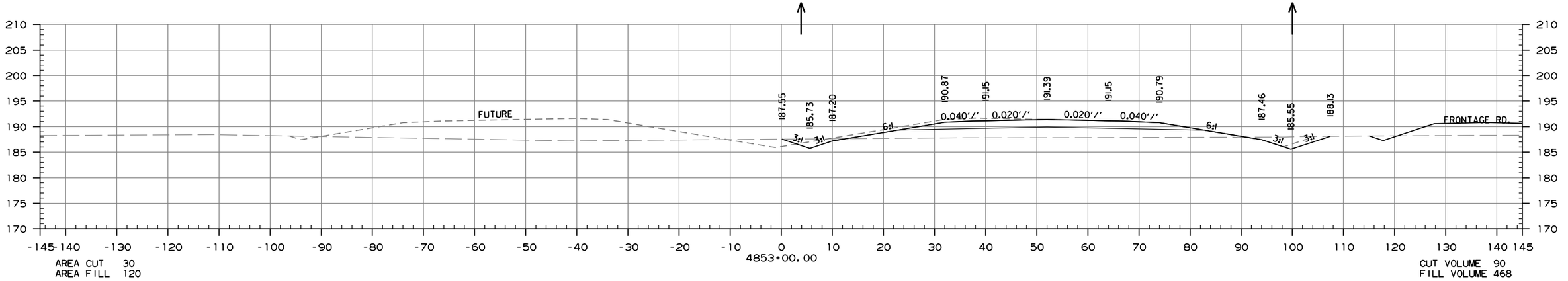


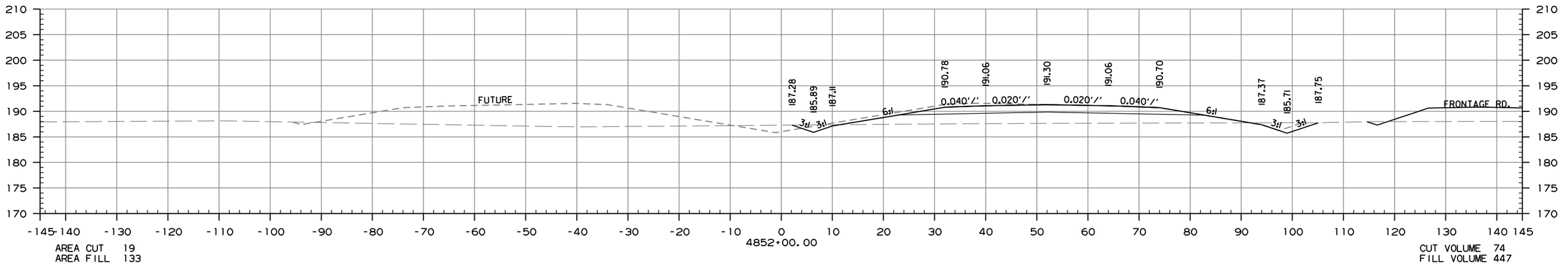


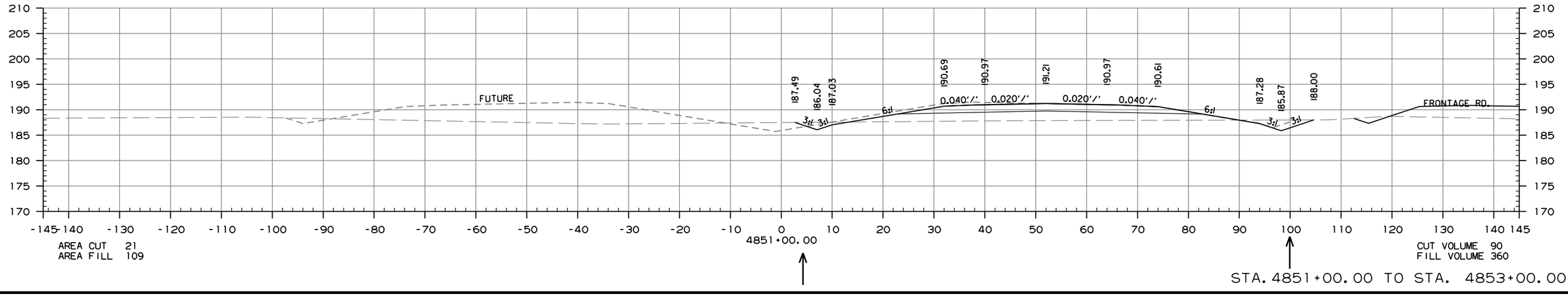
STA. 4848+00.00 TO STA. 4850+00.00

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R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	202	368
		CROSS SECTIONS				



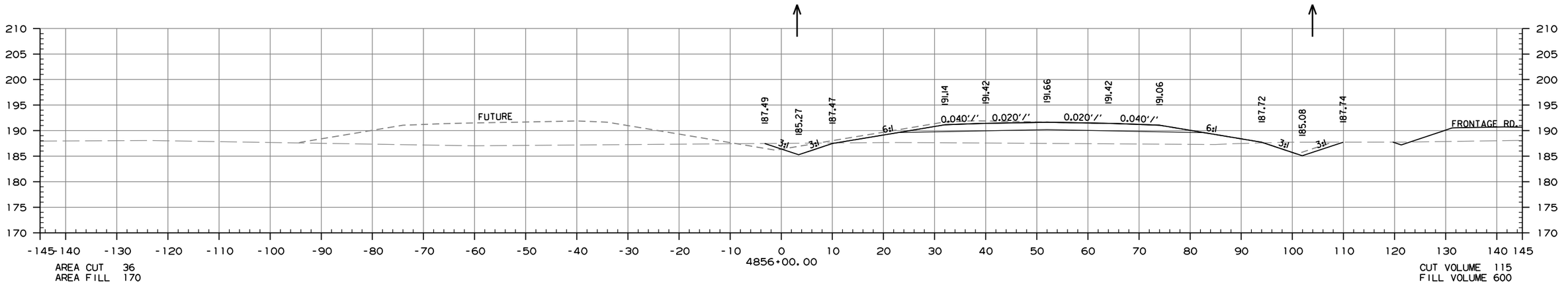


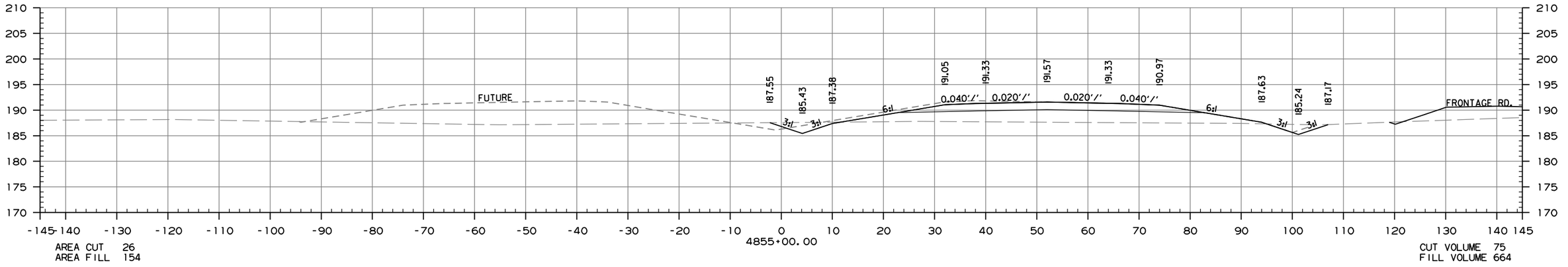


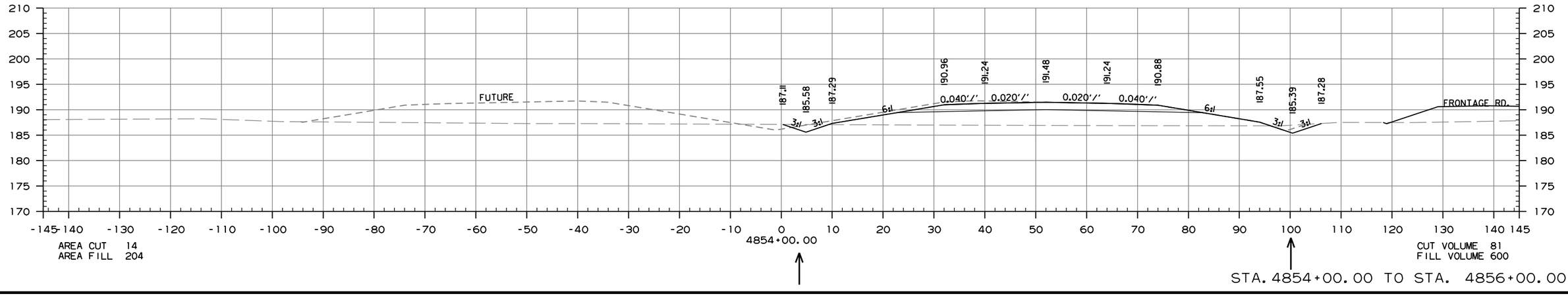
STA. 4851+00.00 TO STA. 4853+00.00

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R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	203	368
		CROSS SECTIONS				



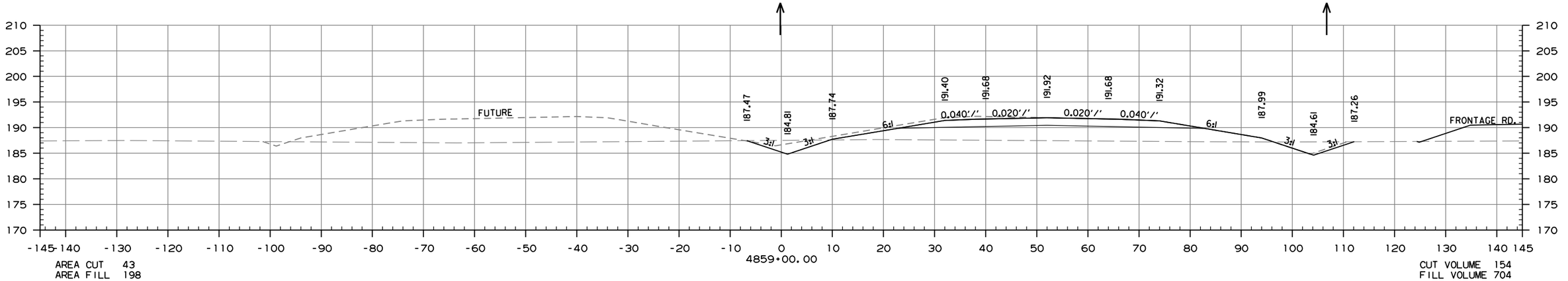


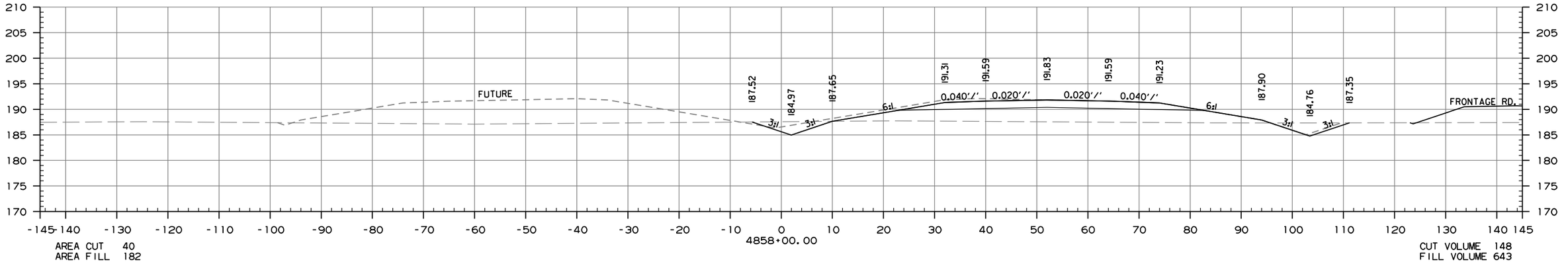


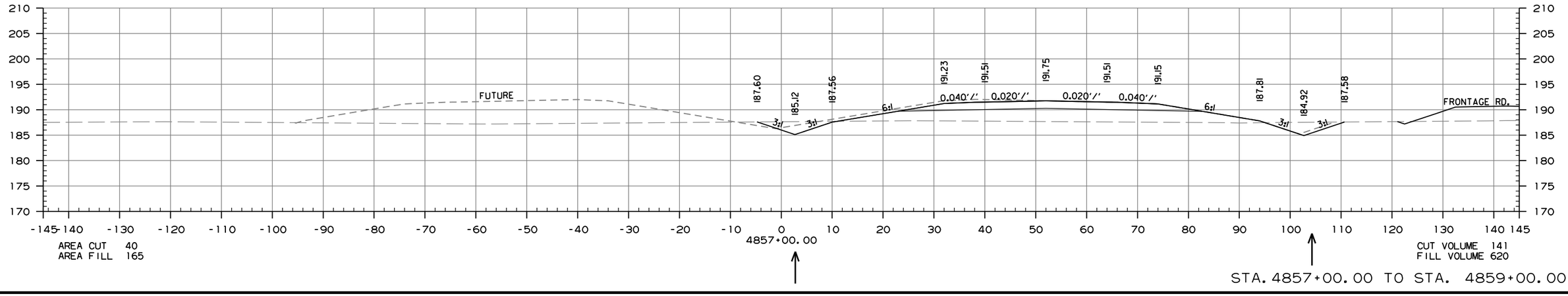
STA. 4854+00.00 TO STA. 4856+00.00

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	204	368
		CROSS SECTIONS				



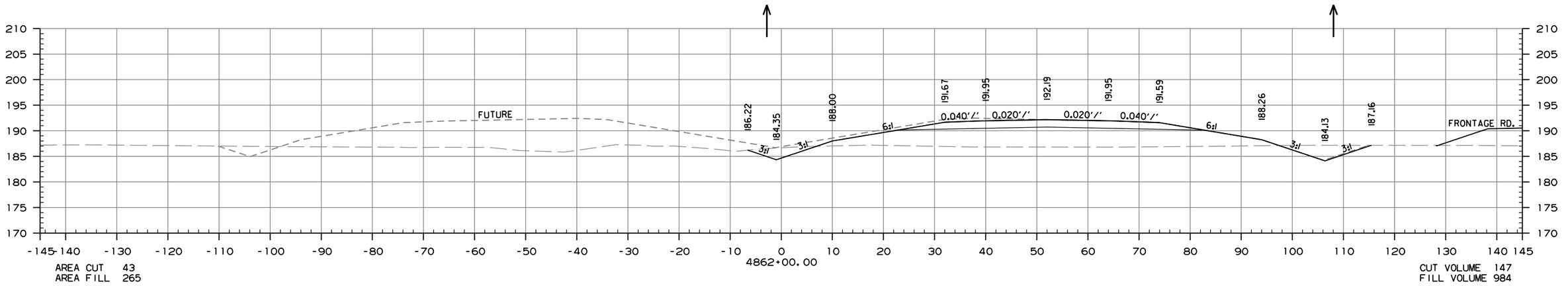


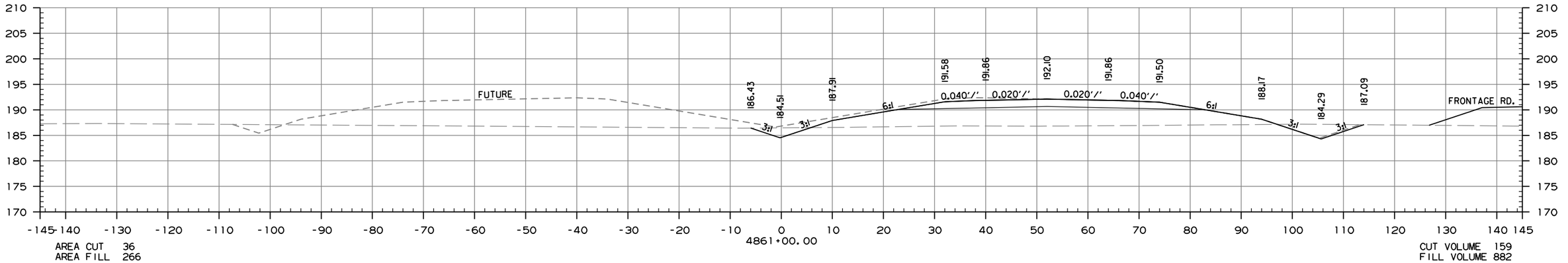


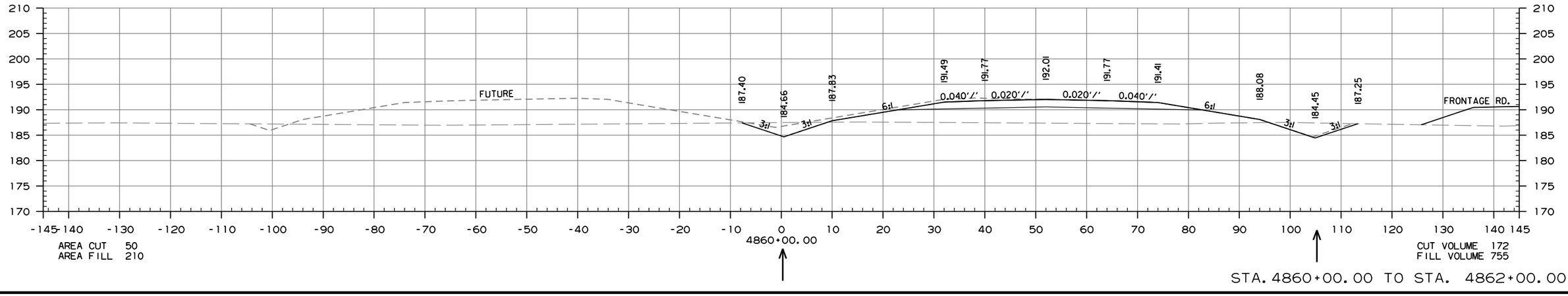
STA. 4857+00.00 TO STA. 4859+00.00

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R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	205	368
		CROSS SECTIONS				



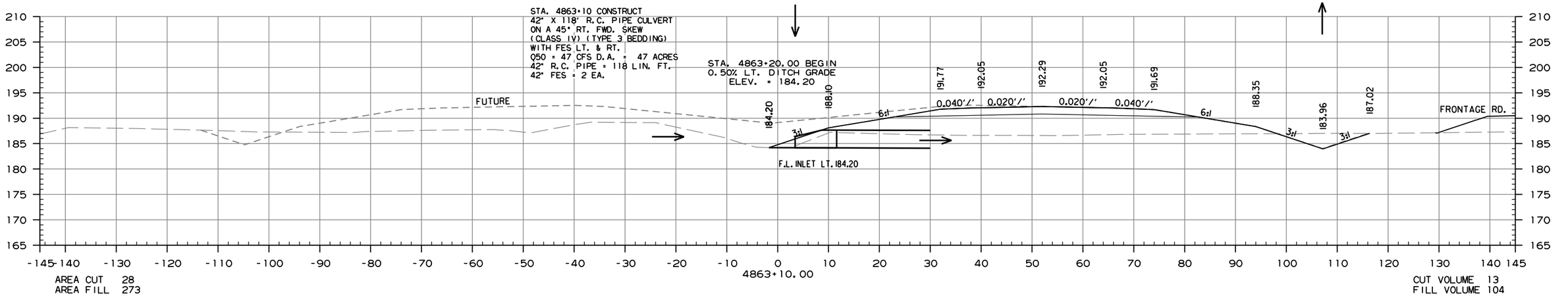


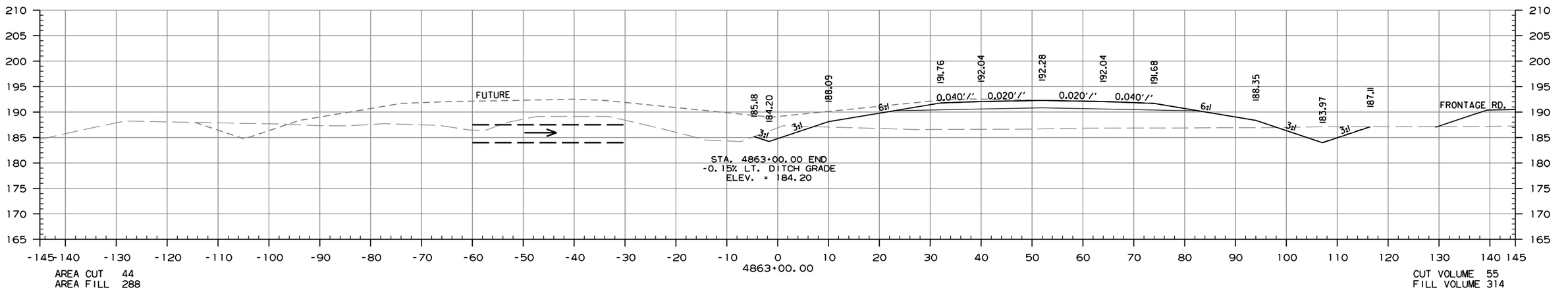


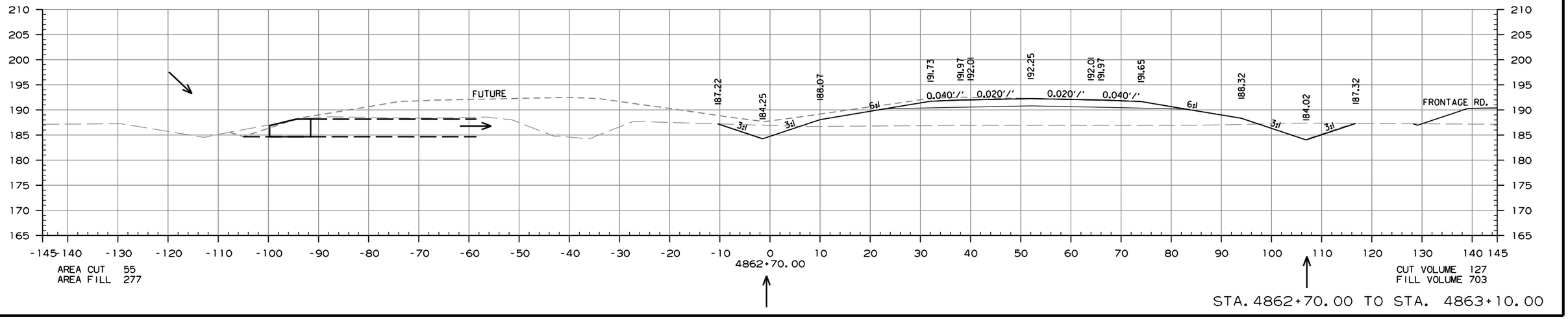
STA. 4860+00.00 TO STA. 4862+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	206	368
		CROSS SECTIONS				

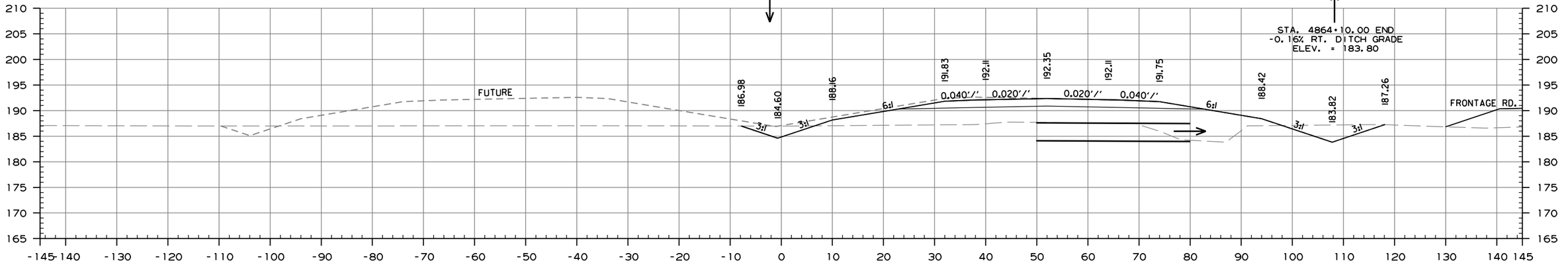


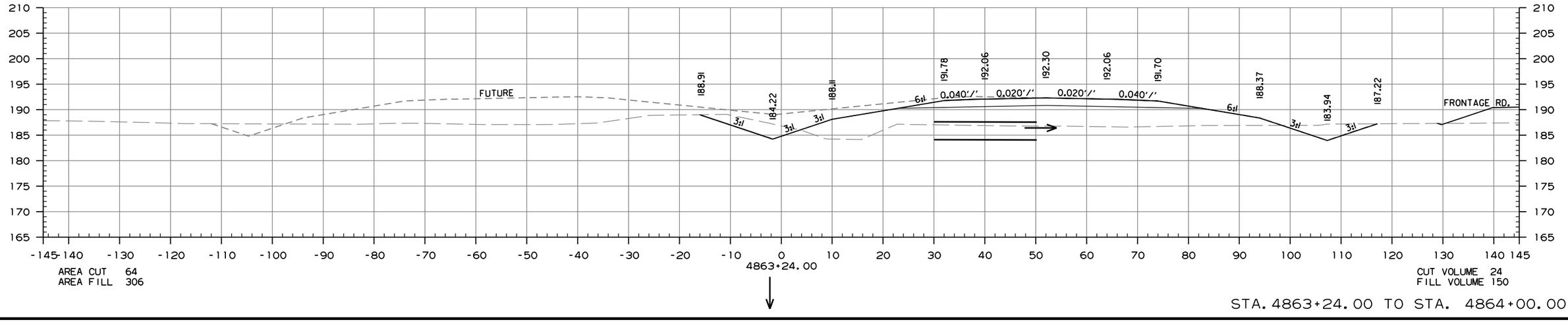




mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	207	368
		CROSS SECTIONS				

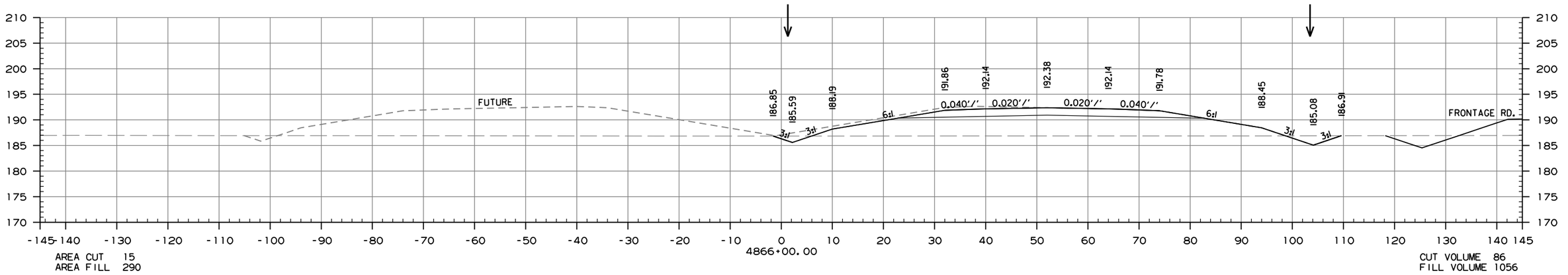


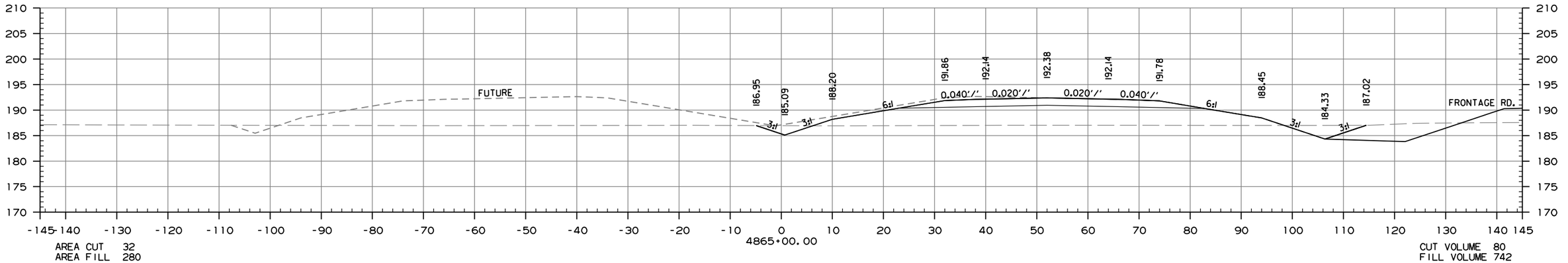


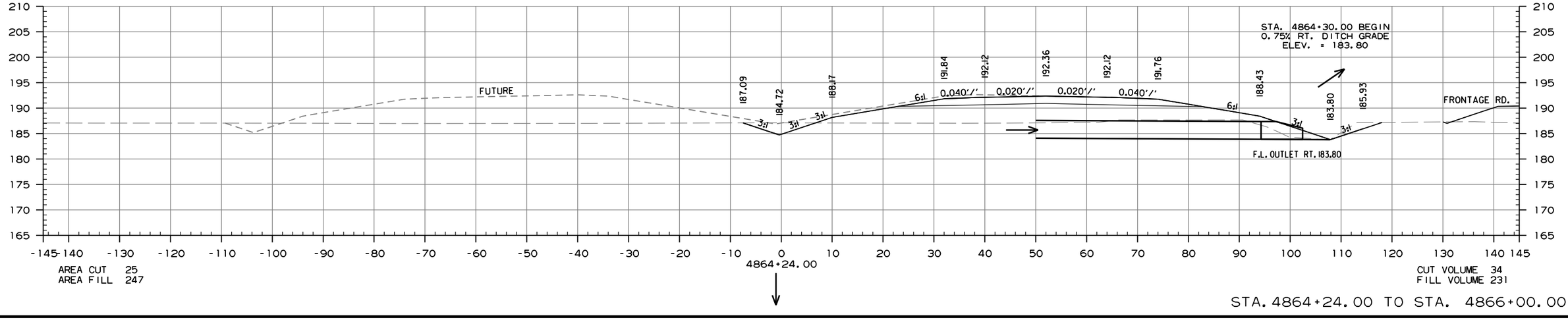
STA. 4863+24.00 TO STA. 4864+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	208	368
		CROSS SECTIONS				



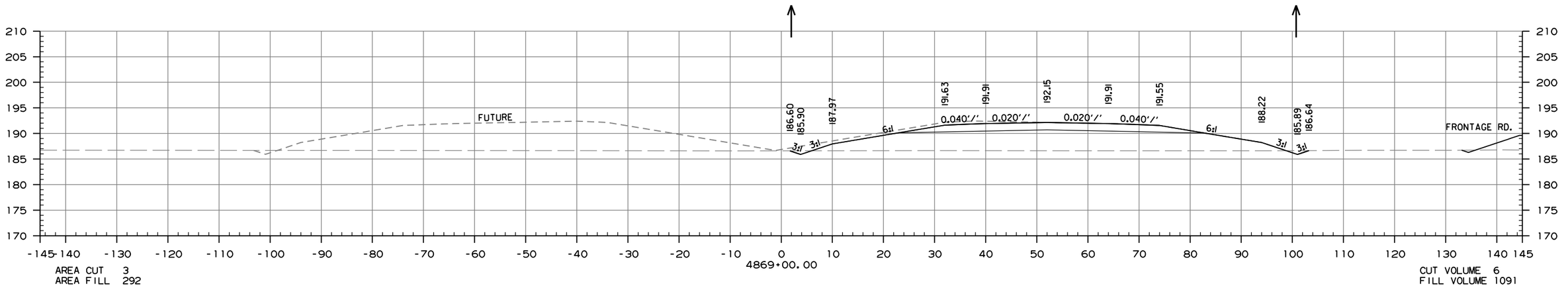


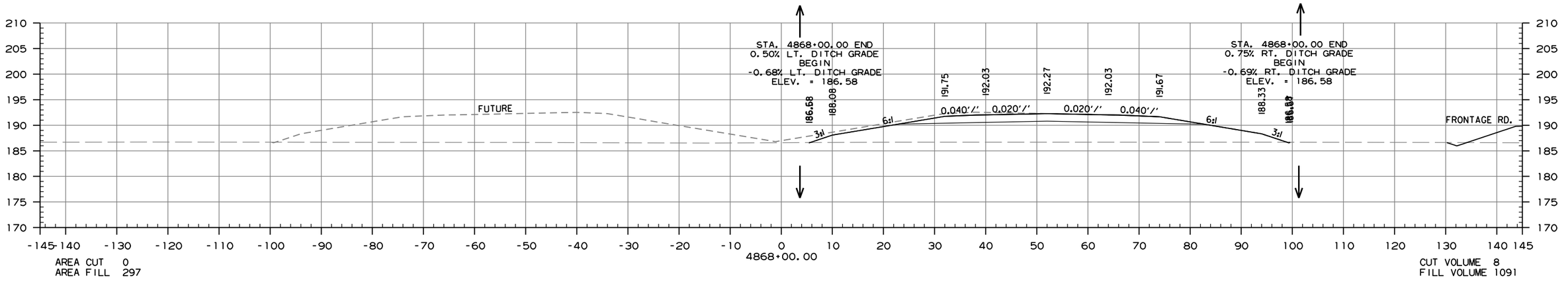


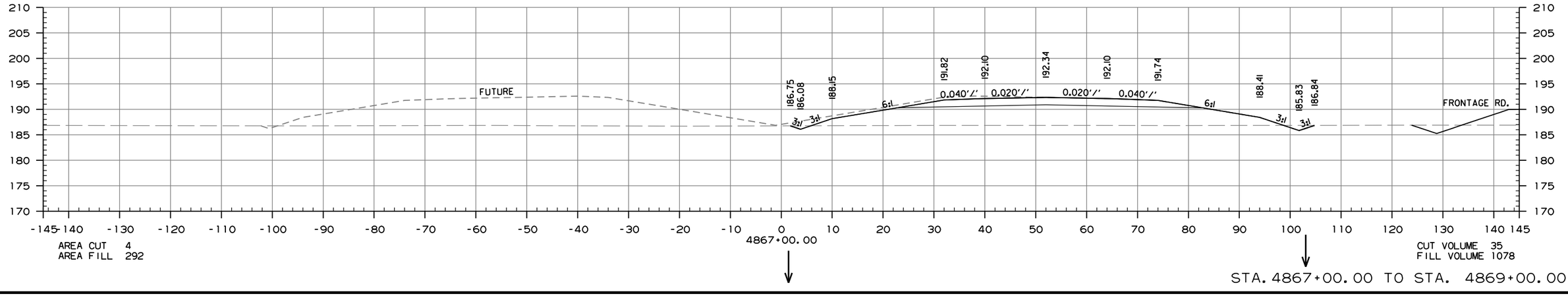
STA. 4864+24.00 TO STA. 4866+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	209	368
		CROSS SECTIONS				

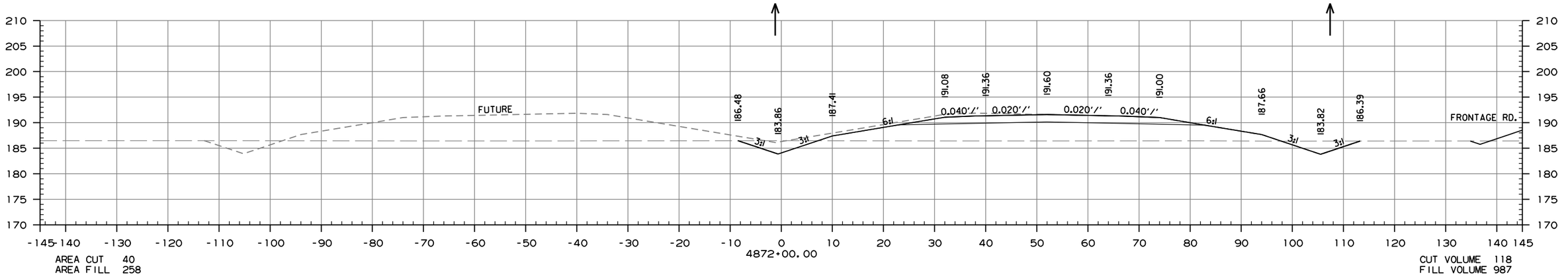


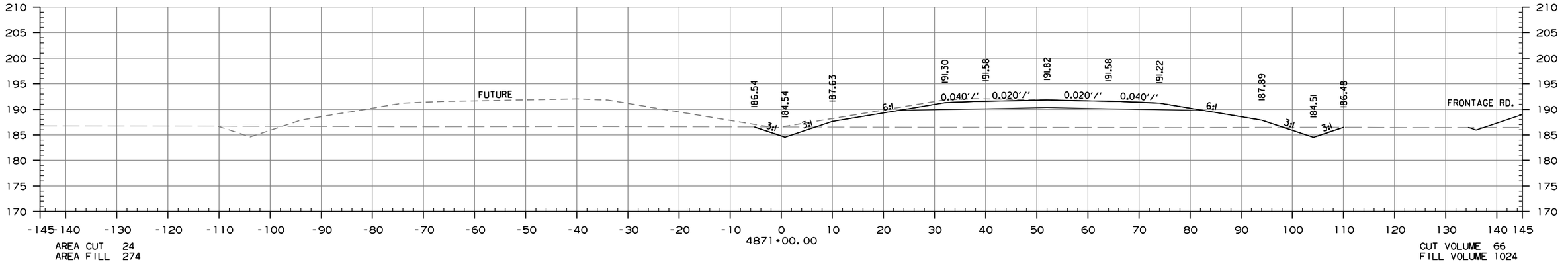


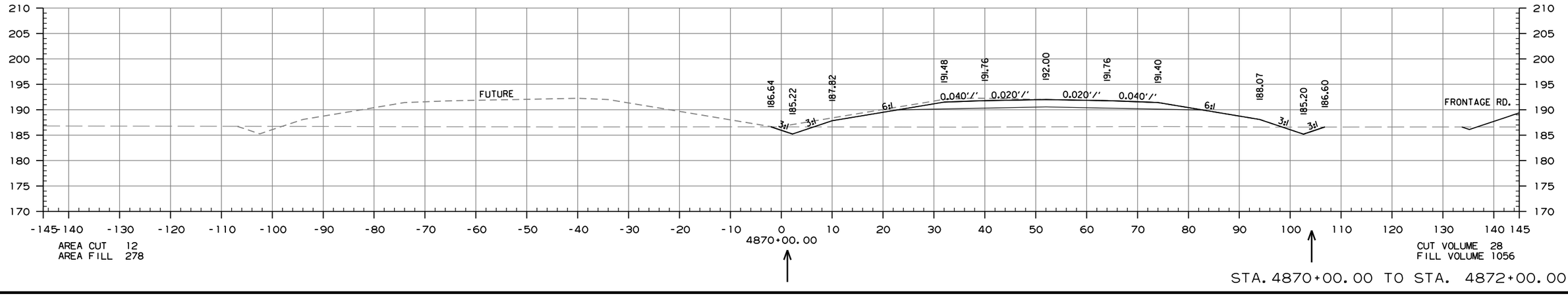


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R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	210	368
		CROSS SECTIONS				



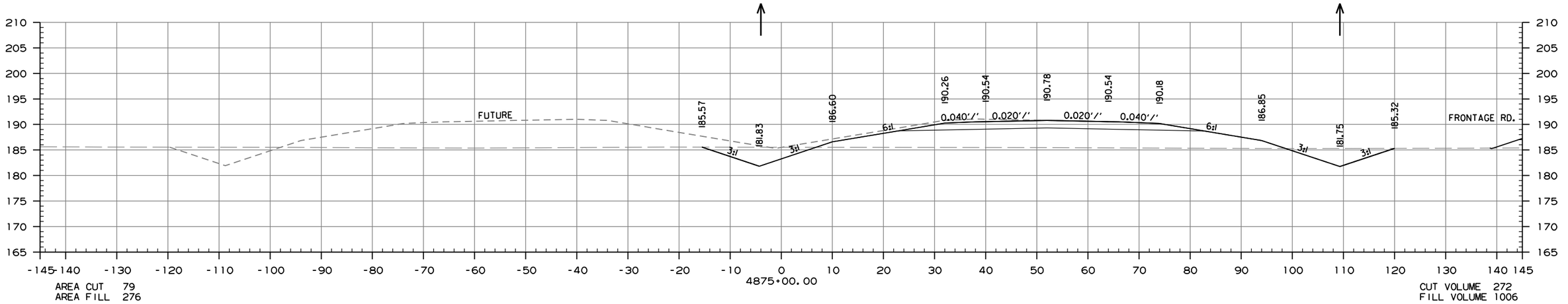


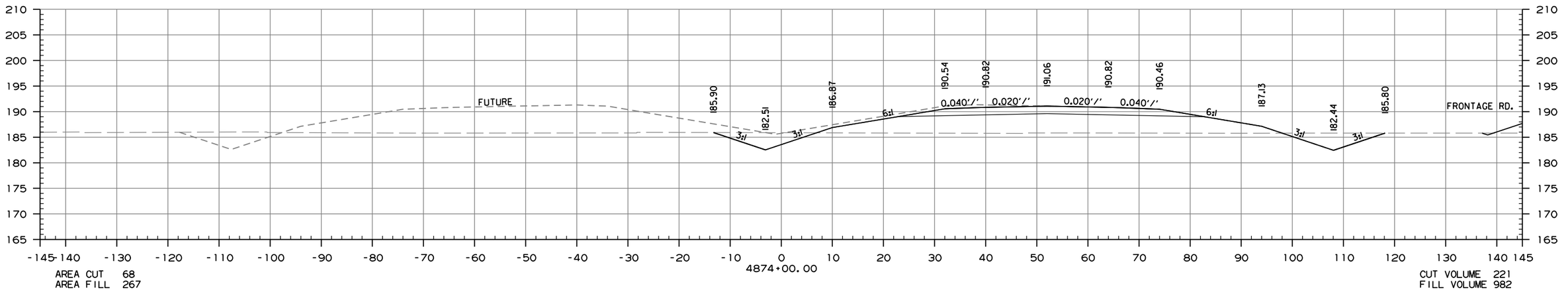


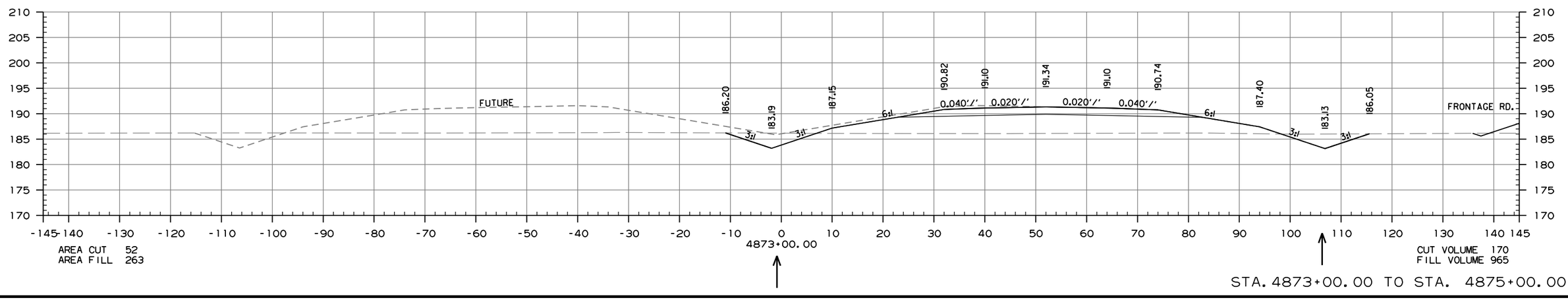
STA. 4870+00.00 TO STA. 4872+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	211	368
		CROSS SECTIONS				



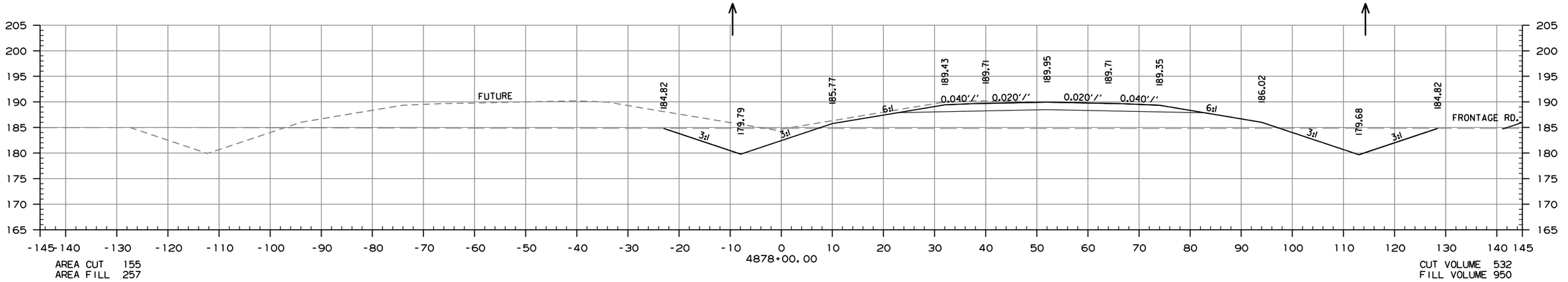




STA. 4873+00.00 TO STA. 4875+00.00

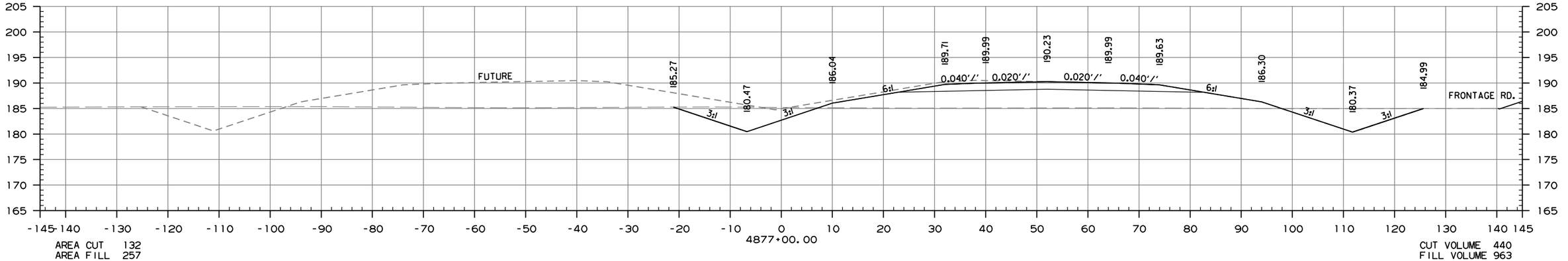
mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	212	368
		CROSS SECTIONS				



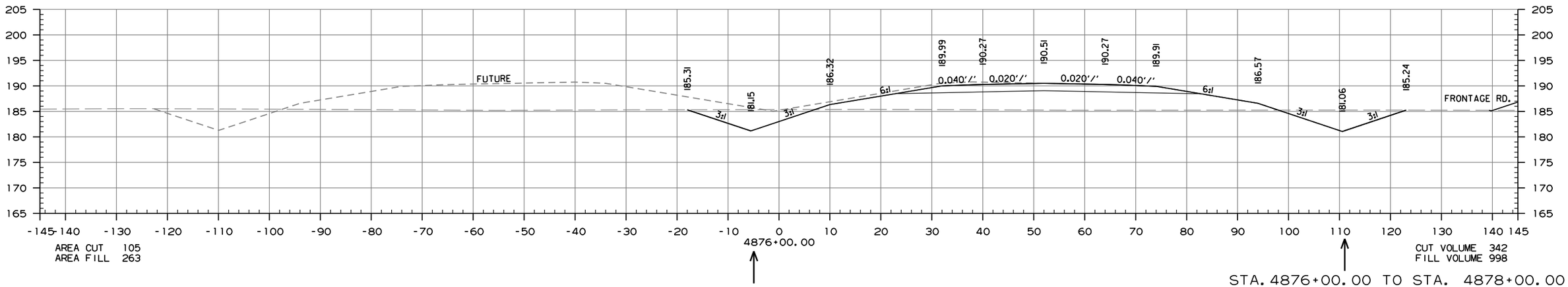
AREA CUT 155
AREA FILL 257

CUT VOLUME 532
FILL VOLUME 950



AREA CUT 132
AREA FILL 257

CUT VOLUME 440
FILL VOLUME 963



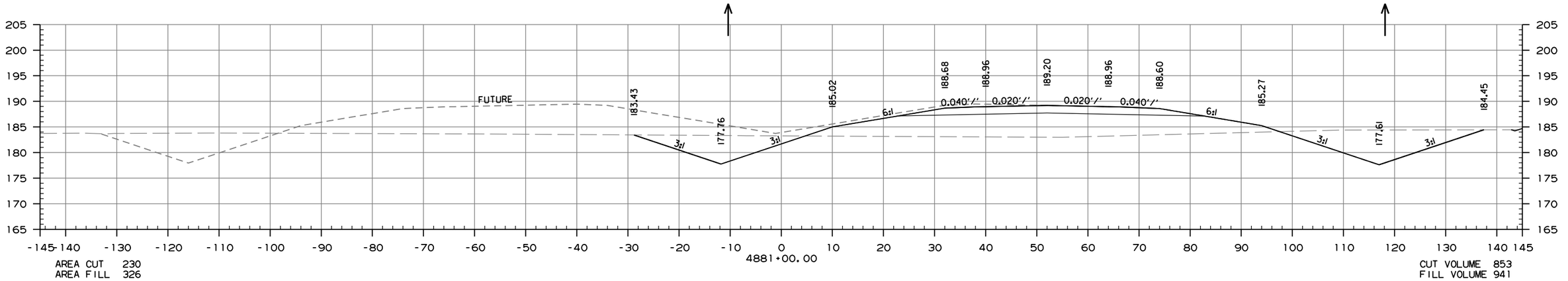
AREA CUT 105
AREA FILL 263

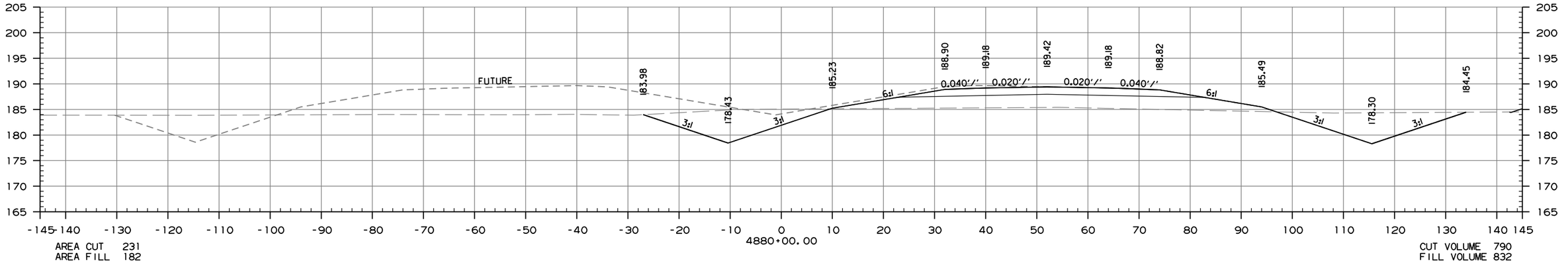
CUT VOLUME 342
FILL VOLUME 998

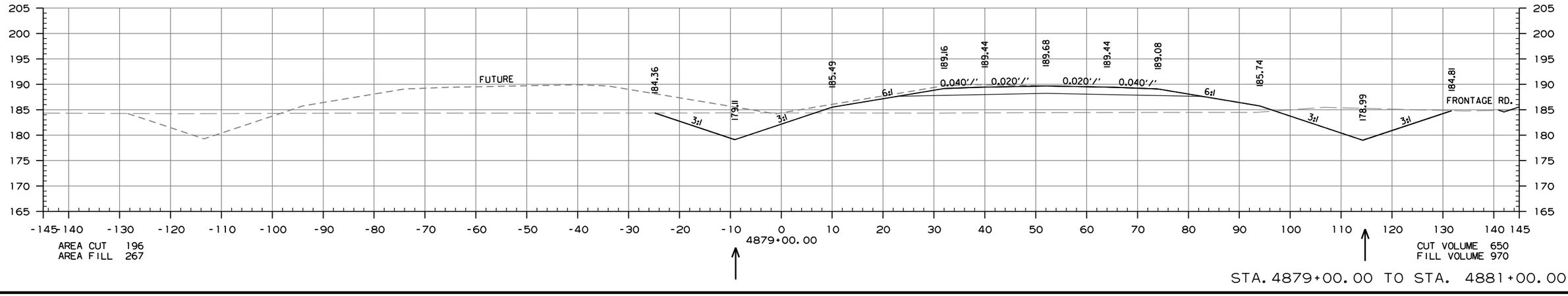
STA. 4876+00.00 TO STA. 4878+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	213	368
		CROSS SECTIONS				



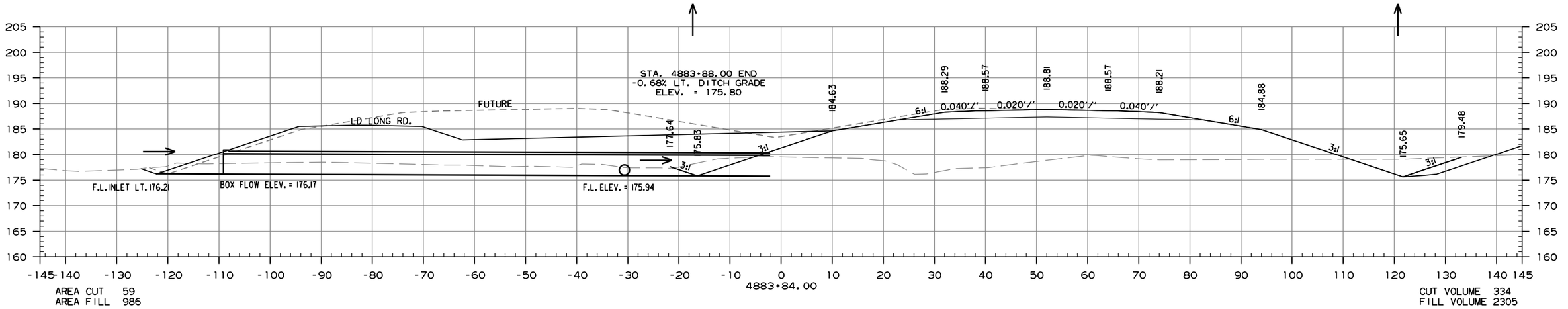


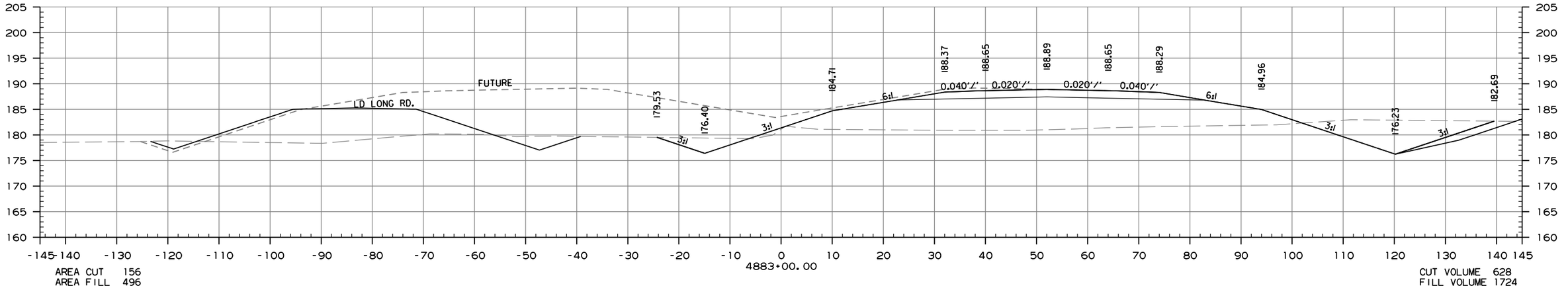


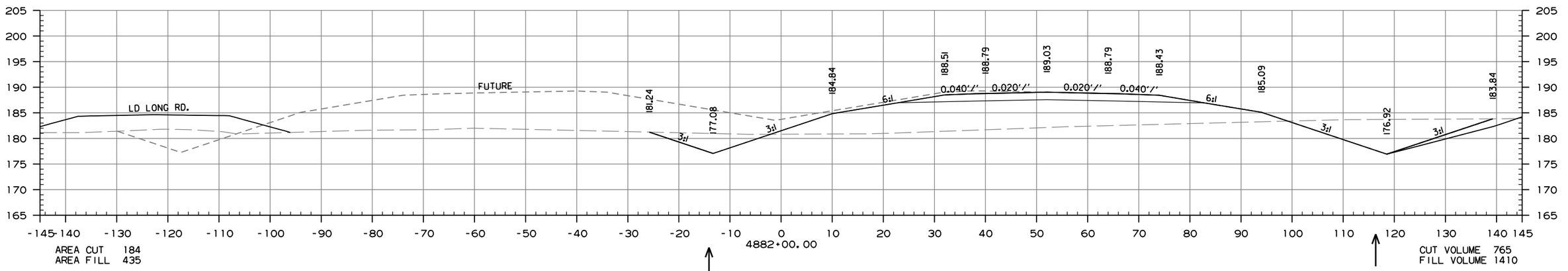
STA. 4879+00.00 TO STA. 4881+00.00

mh39735 7/14/2022
RO20678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	214	368
		CROSS SECTIONS				



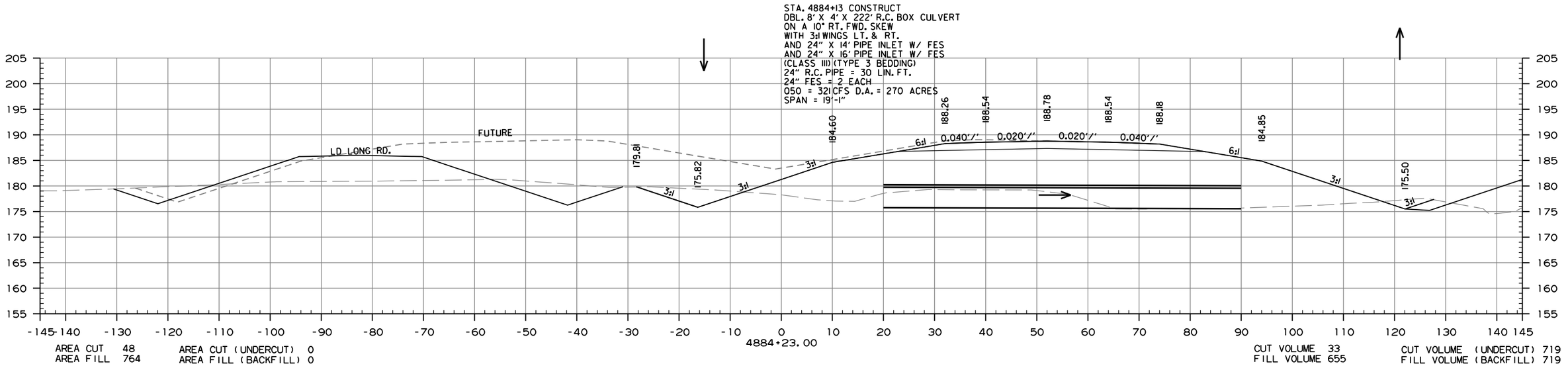




STA. 4882+00.00 TO STA. 4883+84.00

mh39735 7/14/2022
R020678.DGN

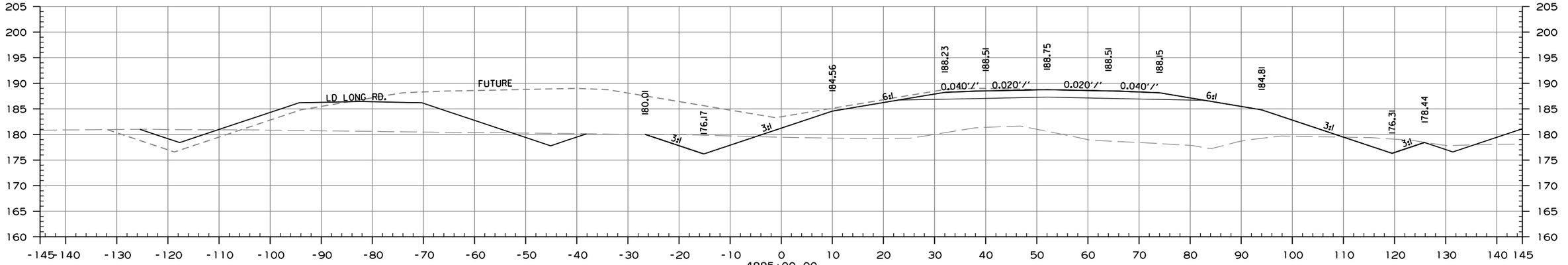
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	215	368
		CROSS SECTIONS				

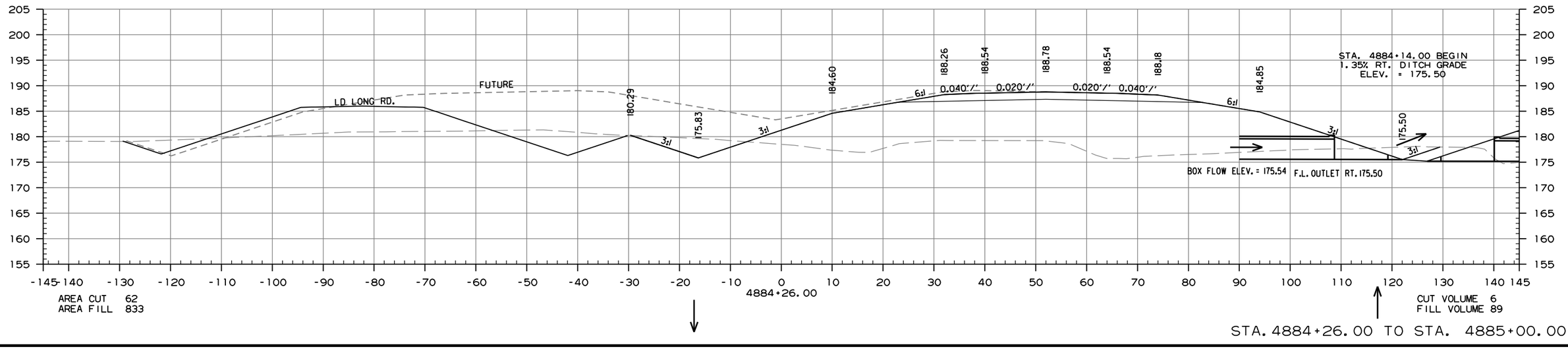


STA. 4884+00.00 TO STA. 4884+23.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	216	368
		CROSS SECTIONS				

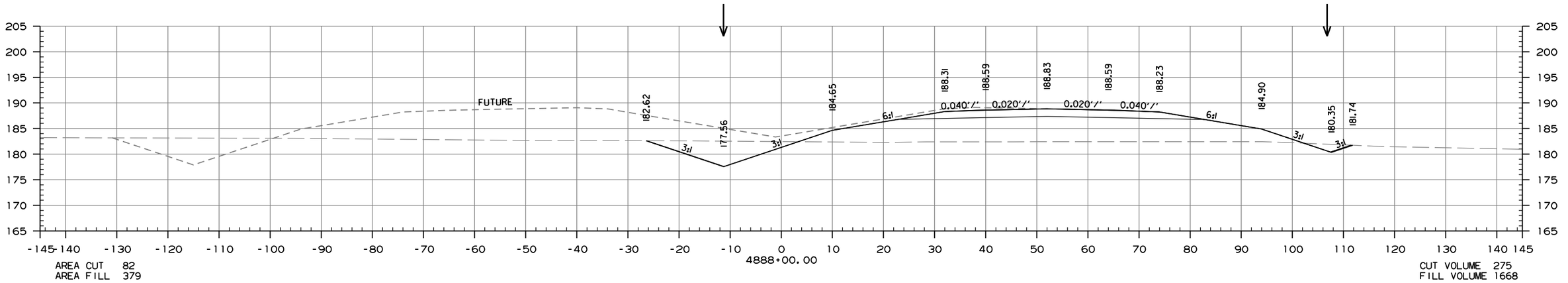


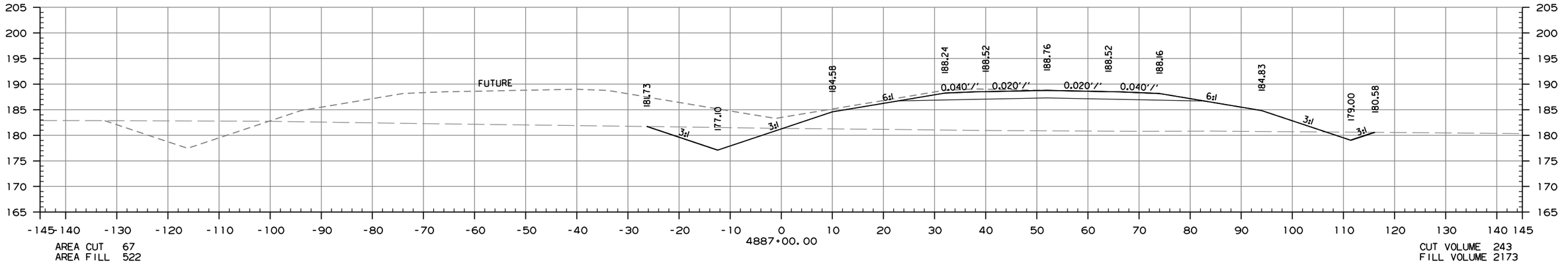


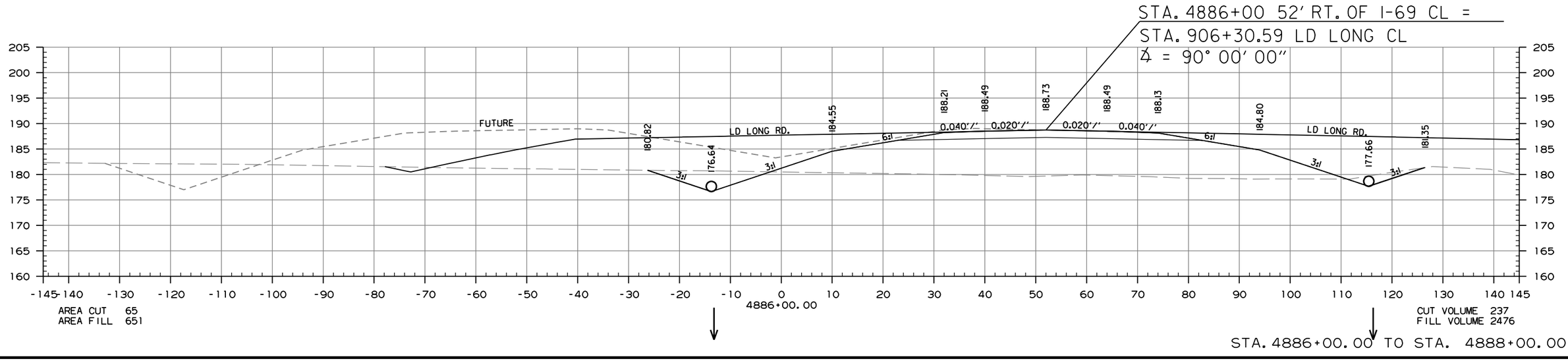
STA. 4884+26.00 TO STA. 4885+00.00

mn39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	217	368
		CROSS SECTIONS				

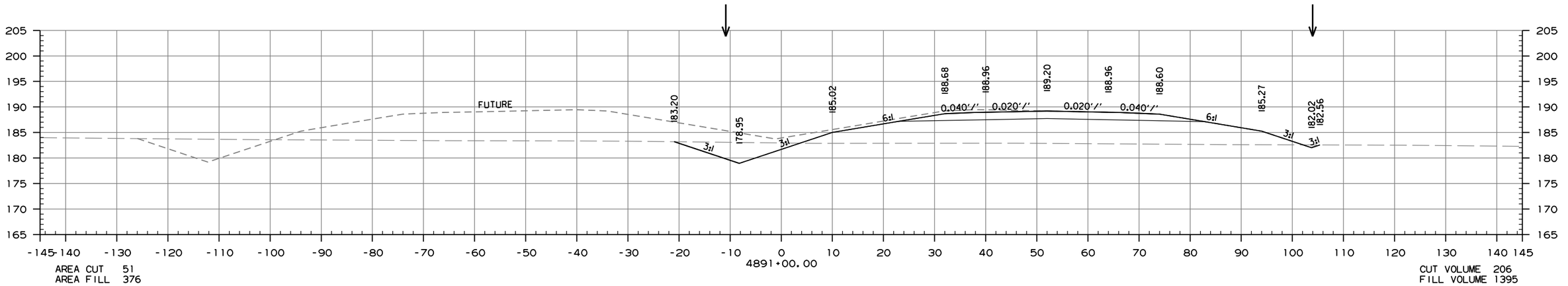


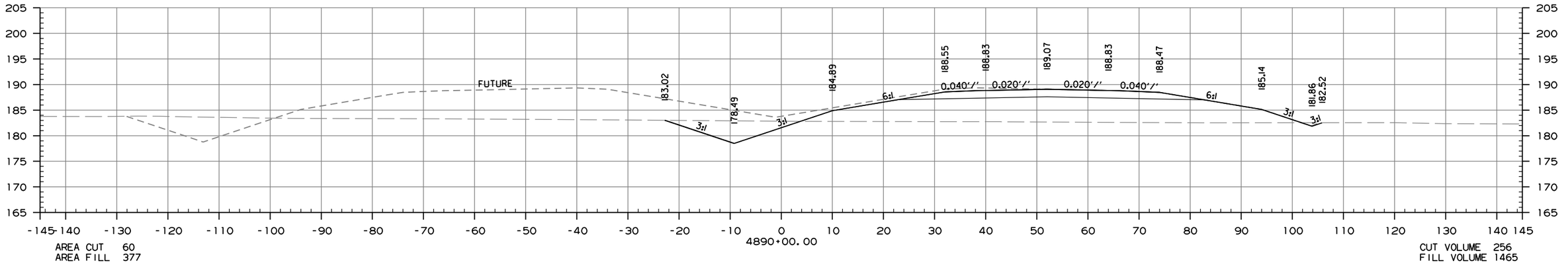


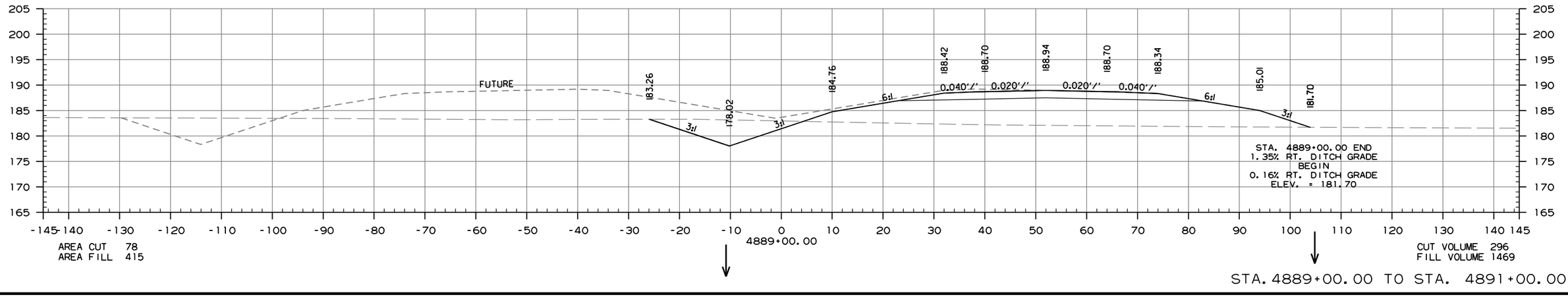


mn39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	218	368
		CROSS SECTIONS				



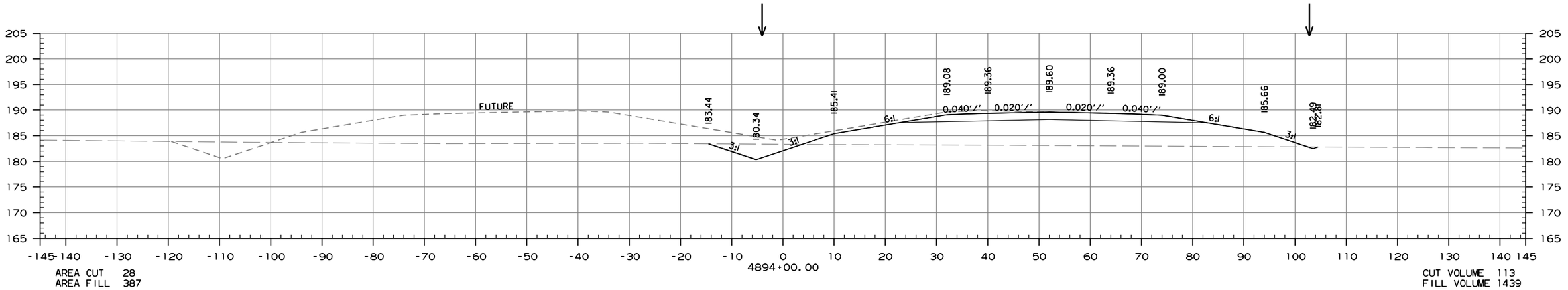


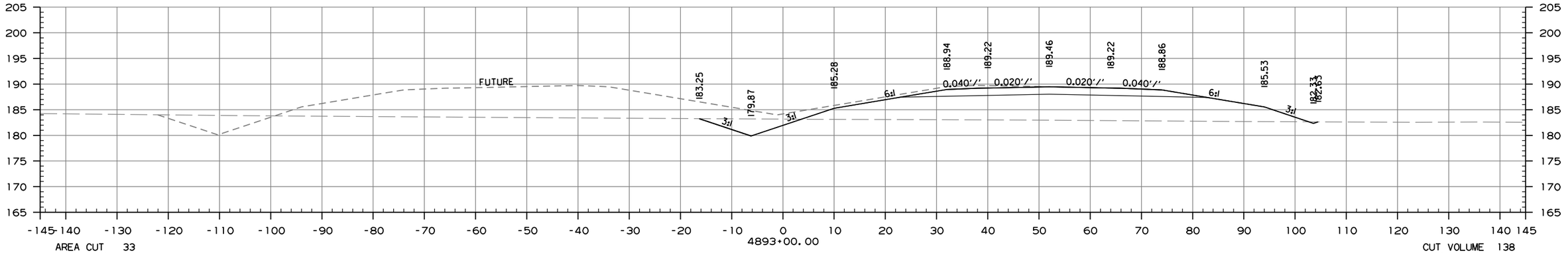


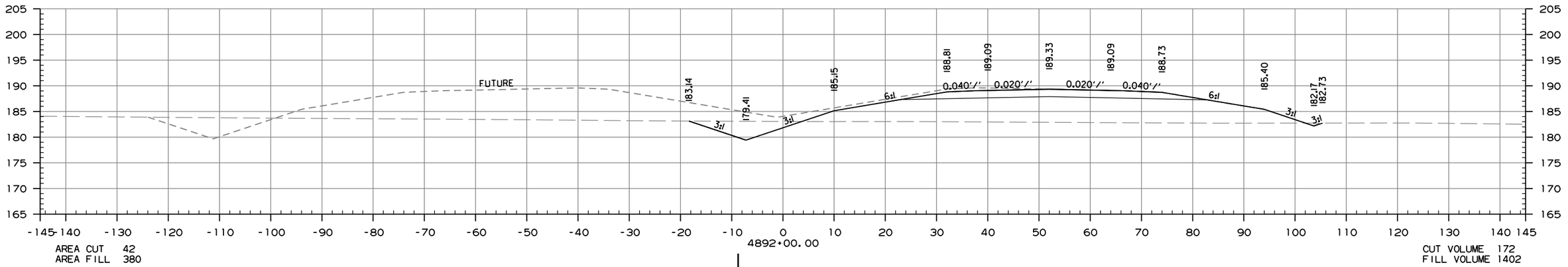
STA. 4889+00.00 TO STA. 4891+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	219	368
		CROSS SECTIONS				



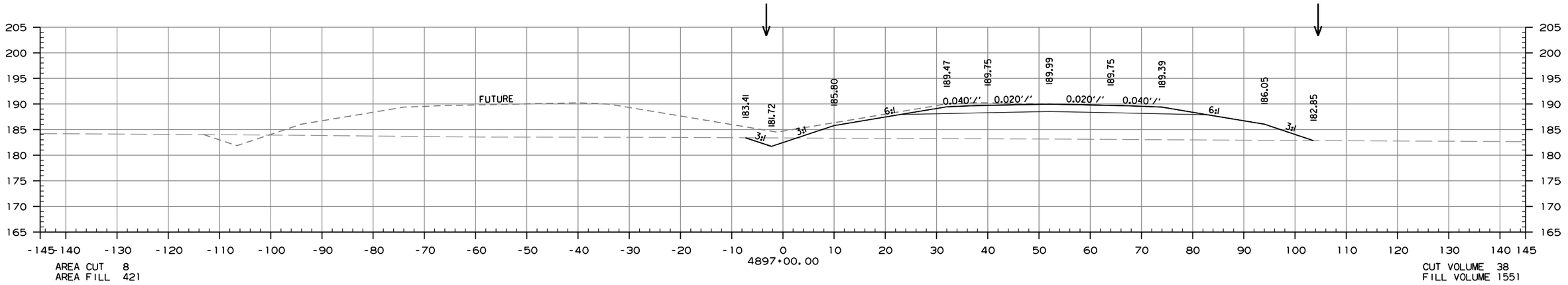


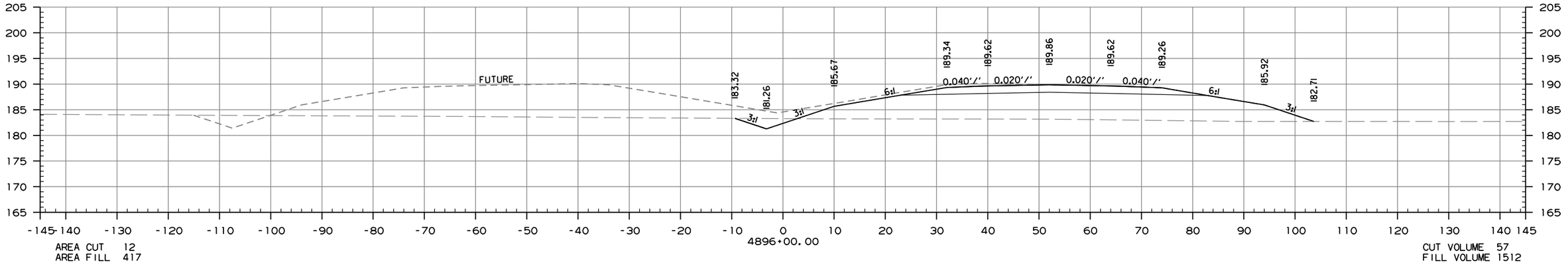


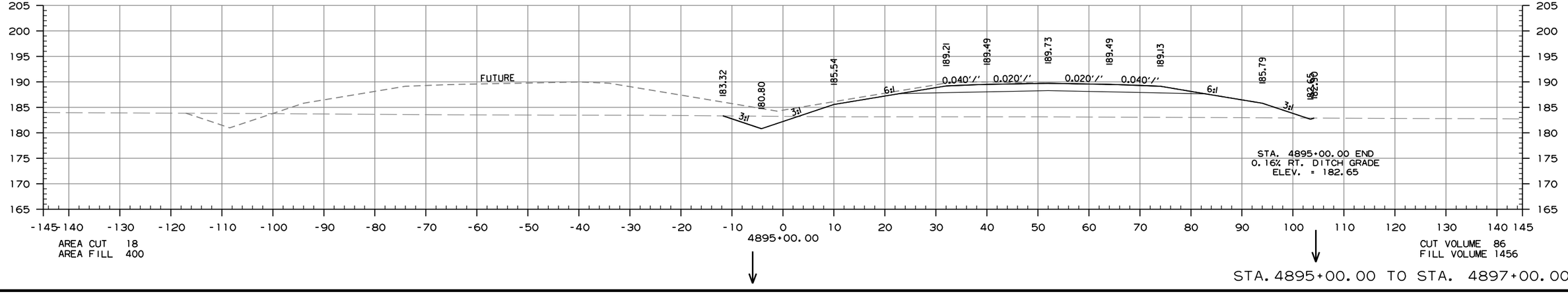
STA. 4892+00.00 TO STA. 4894+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	220	368
		CROSS SECTIONS				



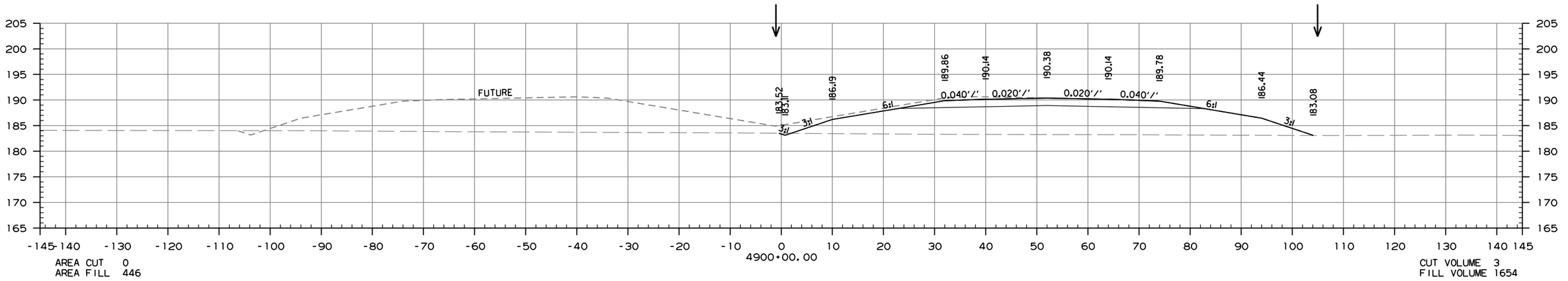


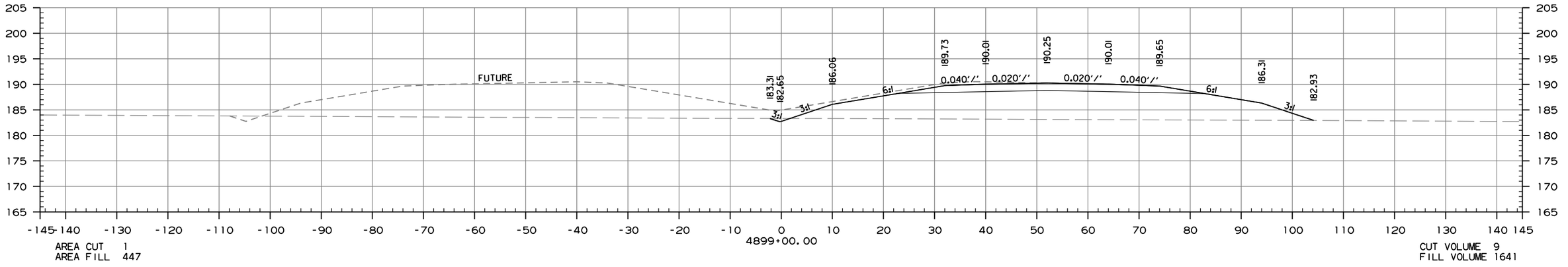


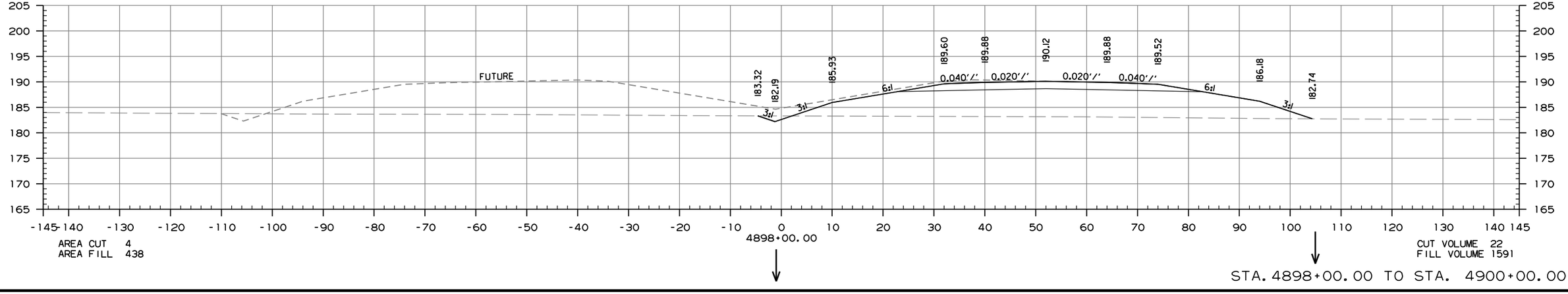
STA. 4895+00.00 TO STA. 4897+00.00

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R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	221	368
		CROSS SECTIONS				



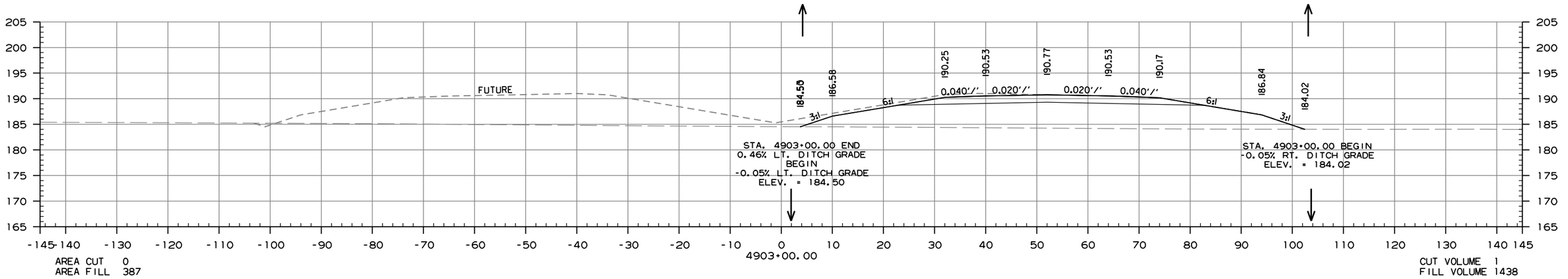


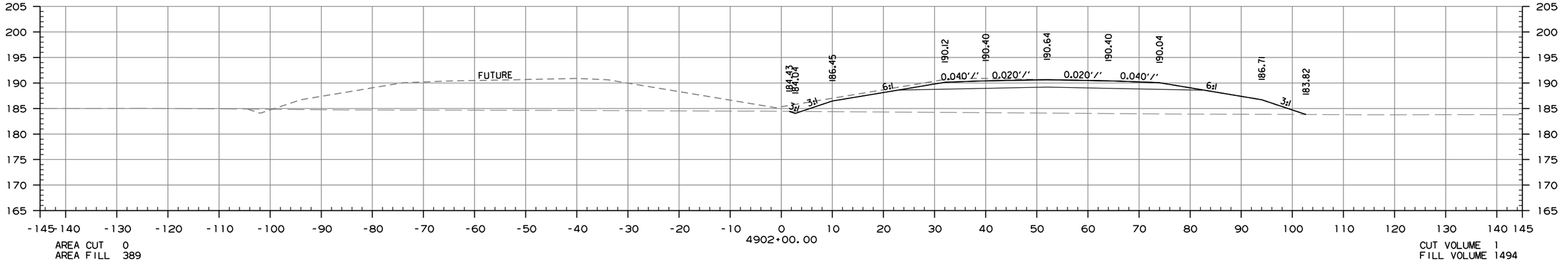


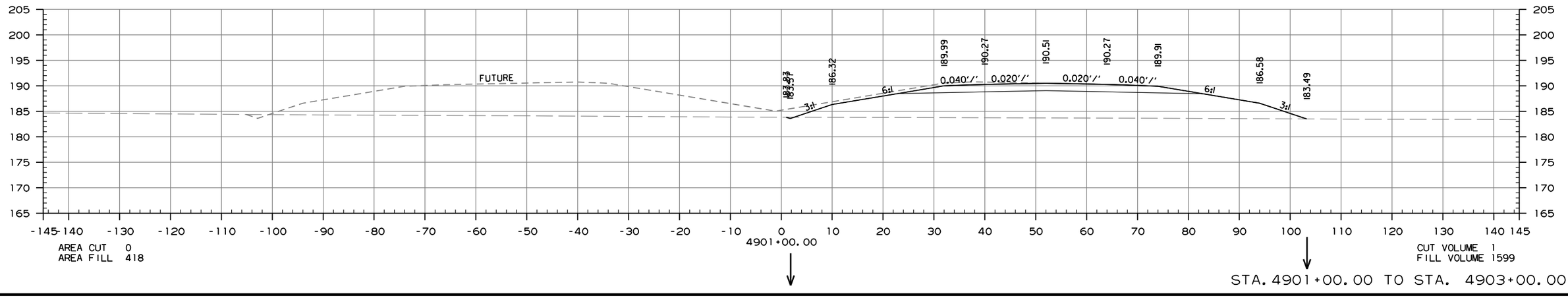
STA. 4898+00.00 TO STA. 4900+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	222	368
		CROSS SECTIONS				

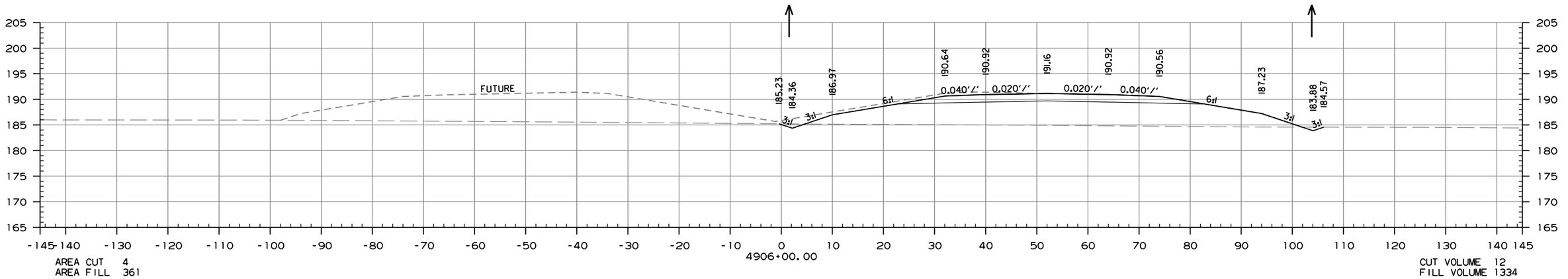


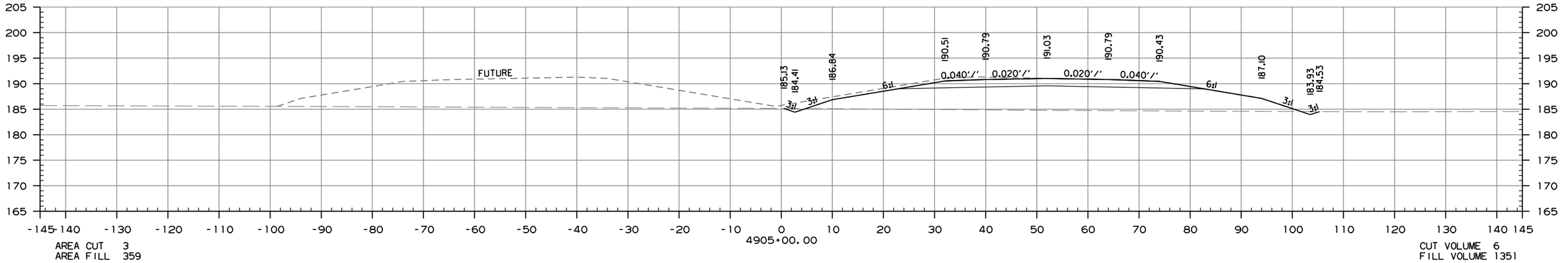


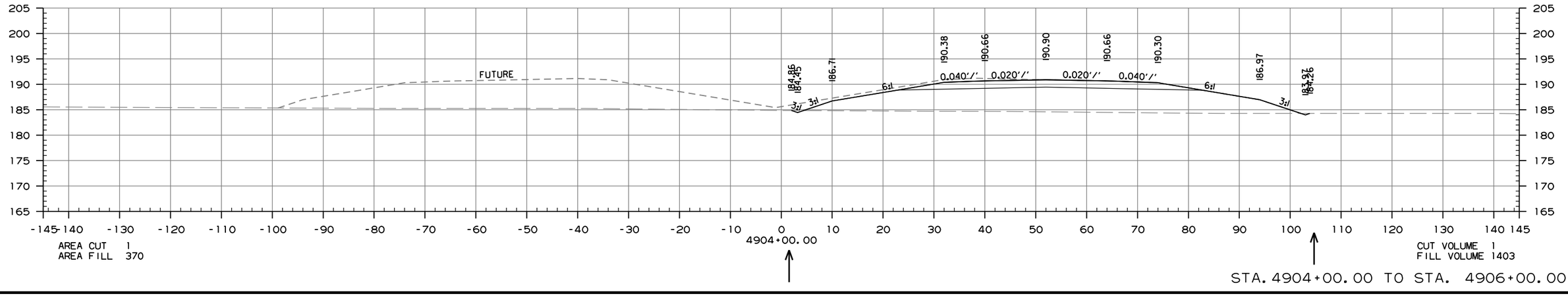


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R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	223	368
		CROSS SECTIONS				



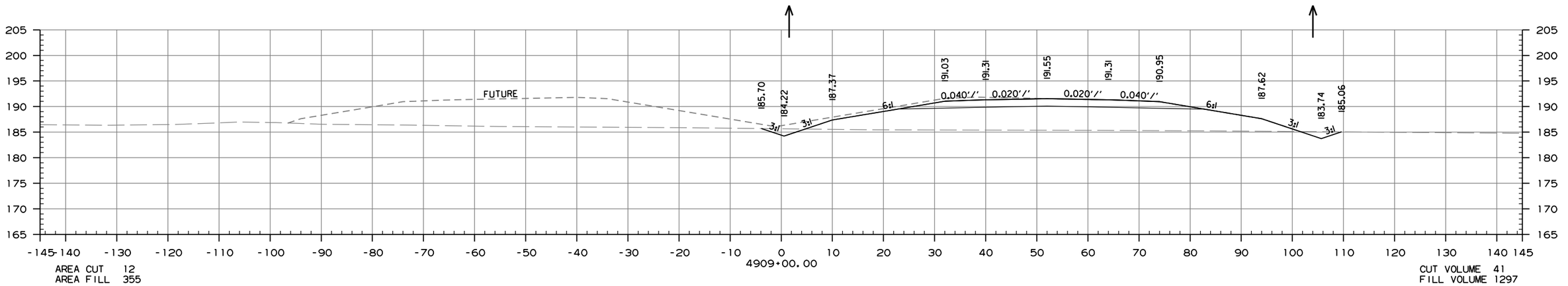


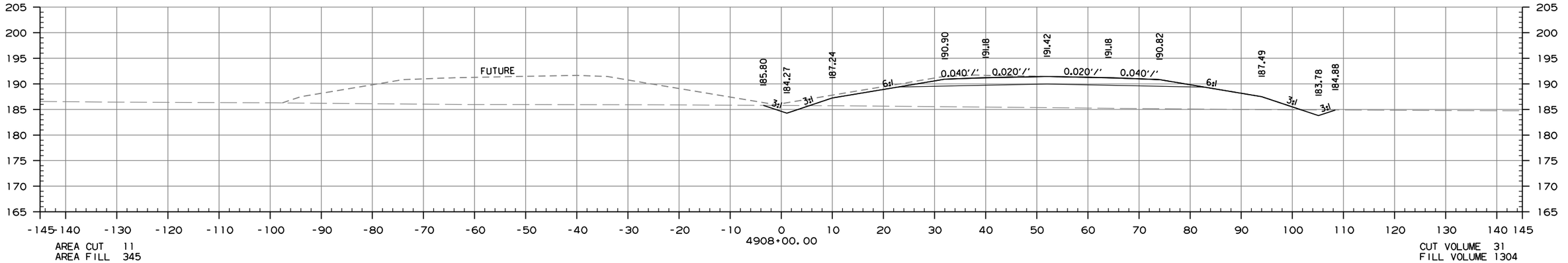


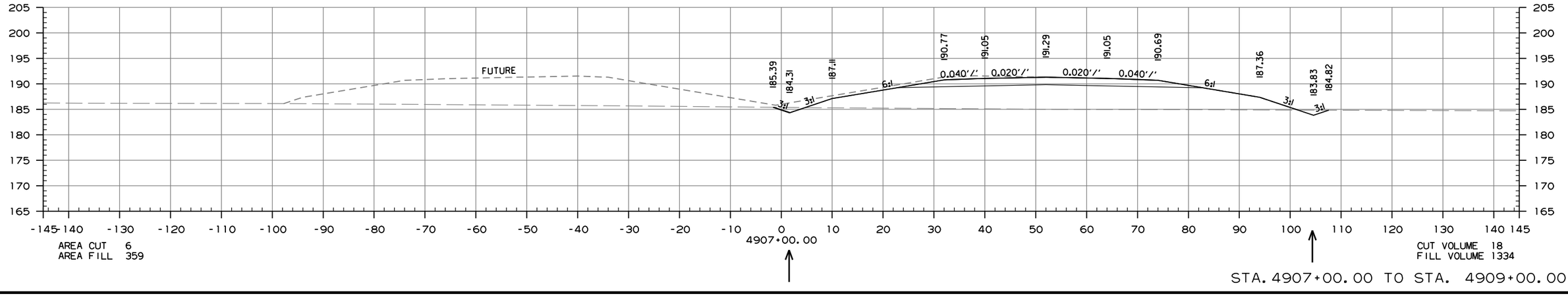
STA. 4904+00.00 TO STA. 4906+00.00

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R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	224	368
		CROSS SECTIONS				



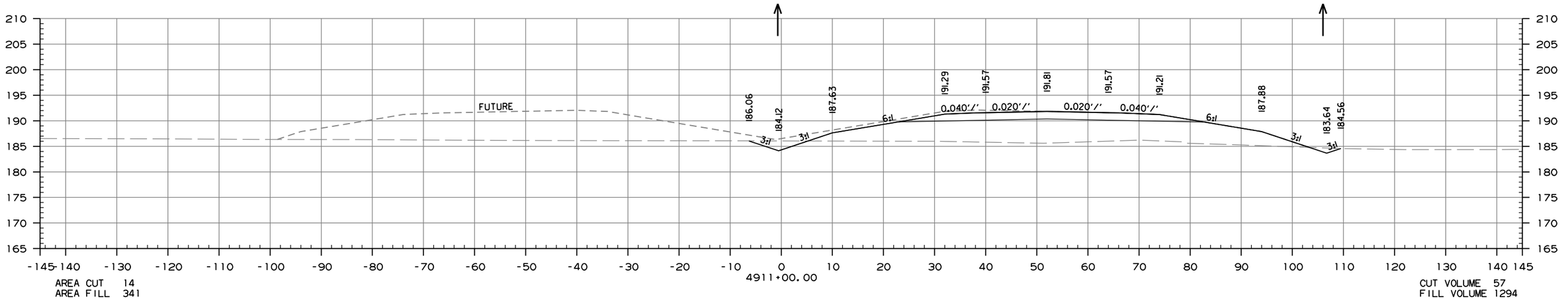




STA. 4907+00.00 TO STA. 4909+00.00

mh39735 7/14/2022
R020678.DGN

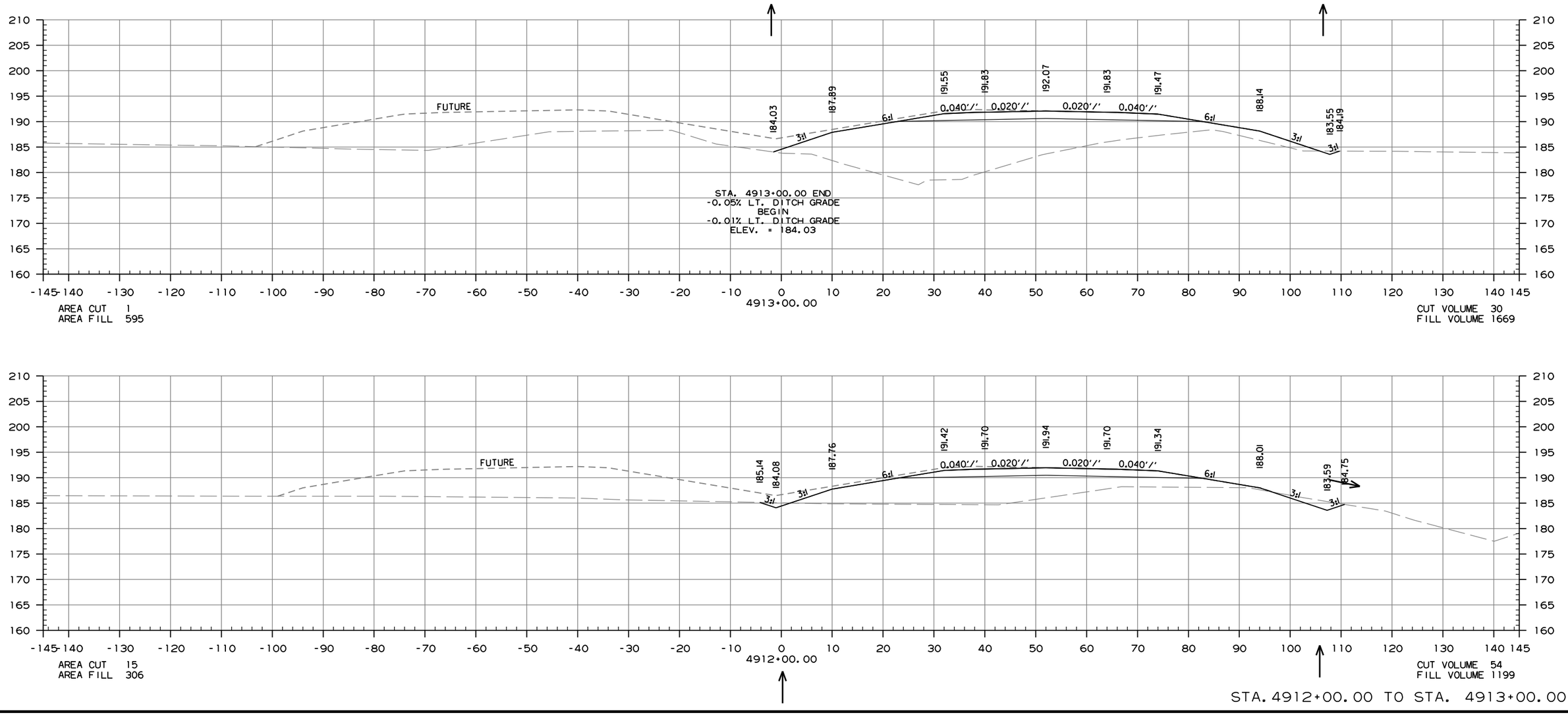
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	225	368
		CROSS SECTIONS				



STA. 4910+00.00 TO STA. 4911+00.00

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R020678.DGN

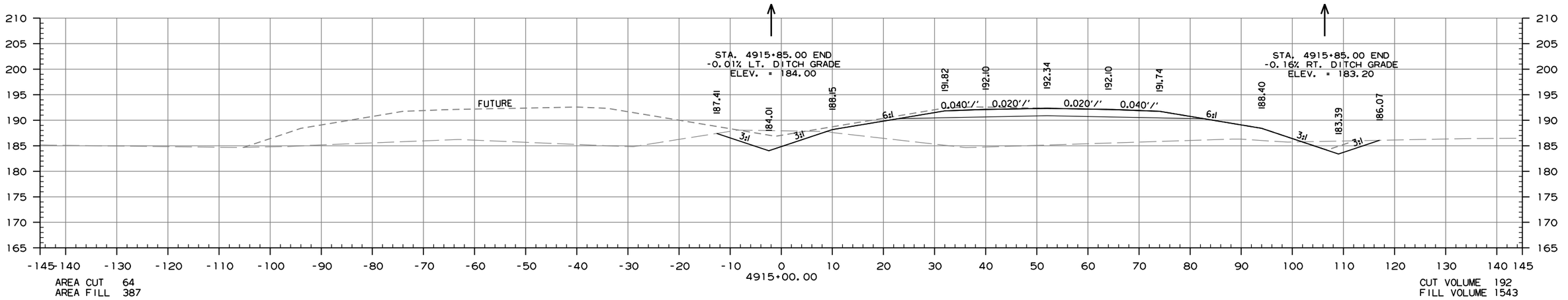
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	226	368
		CROSS SECTIONS				

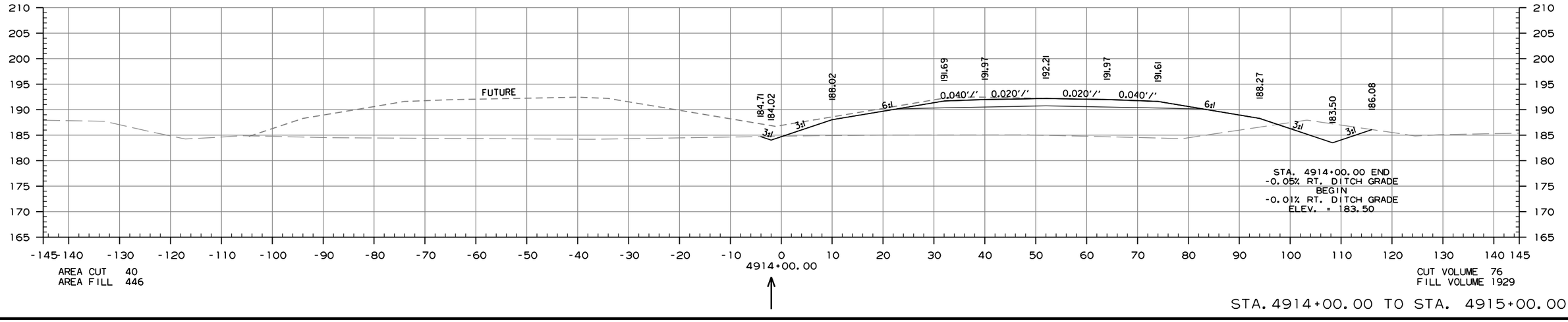


STA. 4912+00.00 TO STA. 4913+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	227	368
		CROSS SECTIONS				

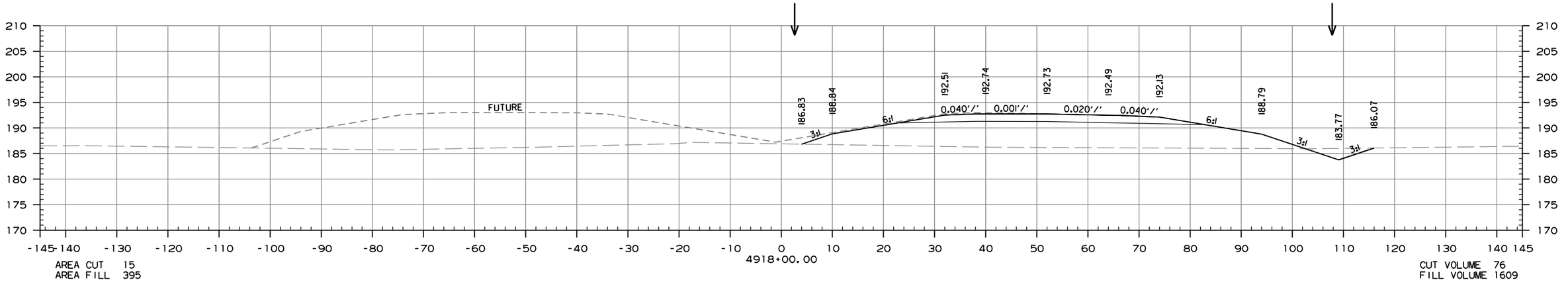


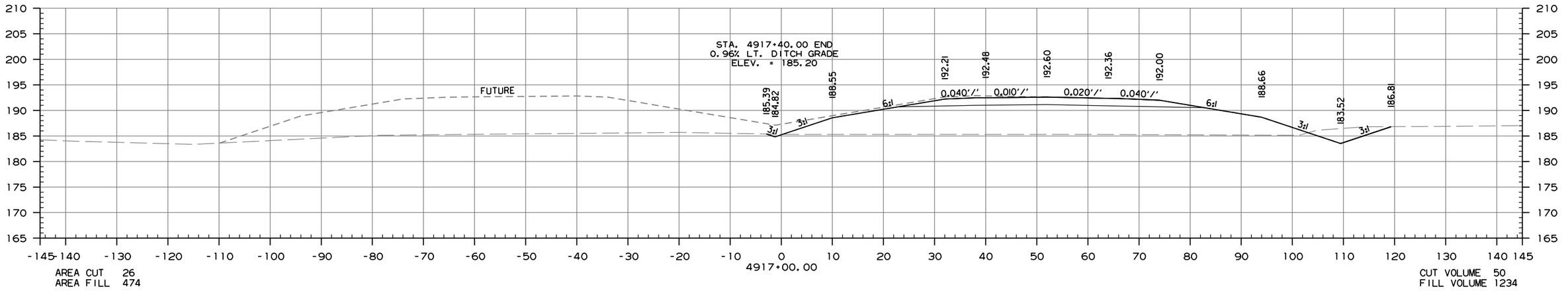


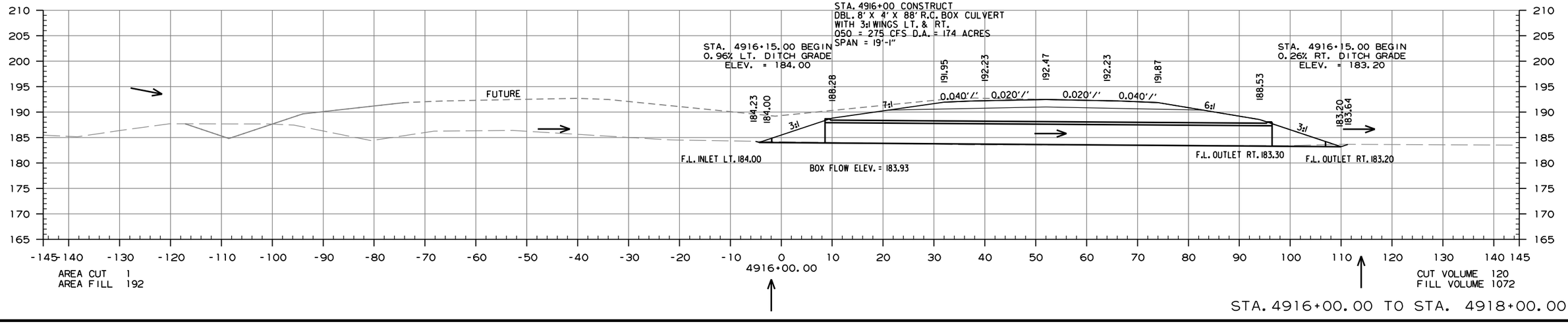
STA. 4914+00.00 TO STA. 4915+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	228	368
		CROSS SECTIONS				



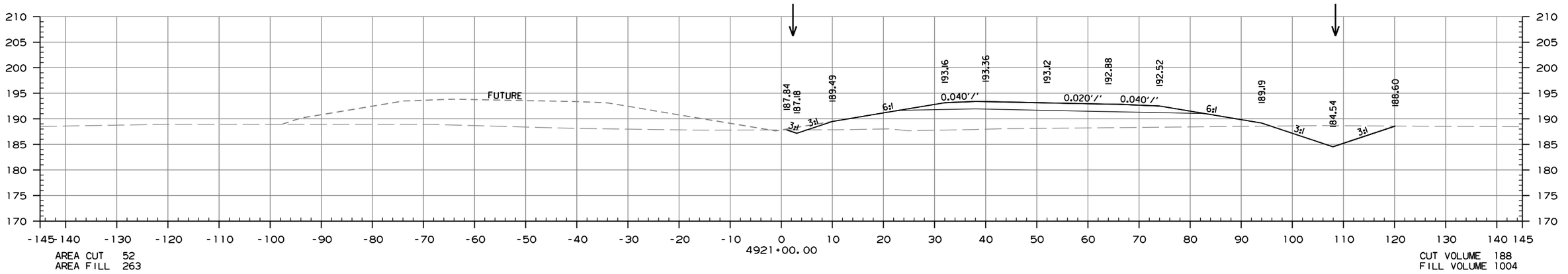


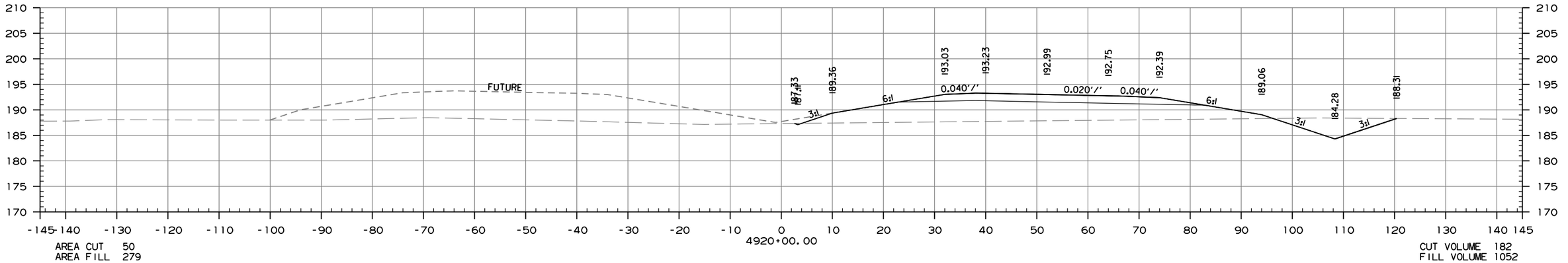


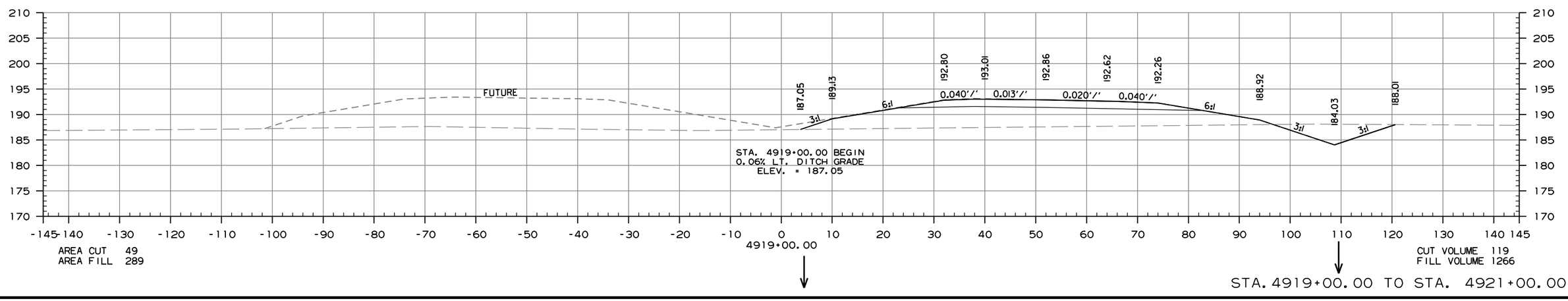
STA. 4916+00.00 TO STA. 4918+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	229	368
		CROSS SECTIONS				

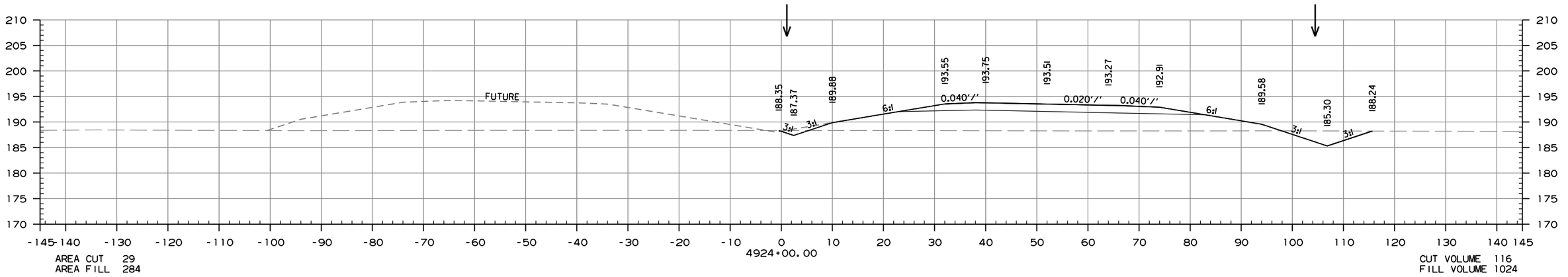


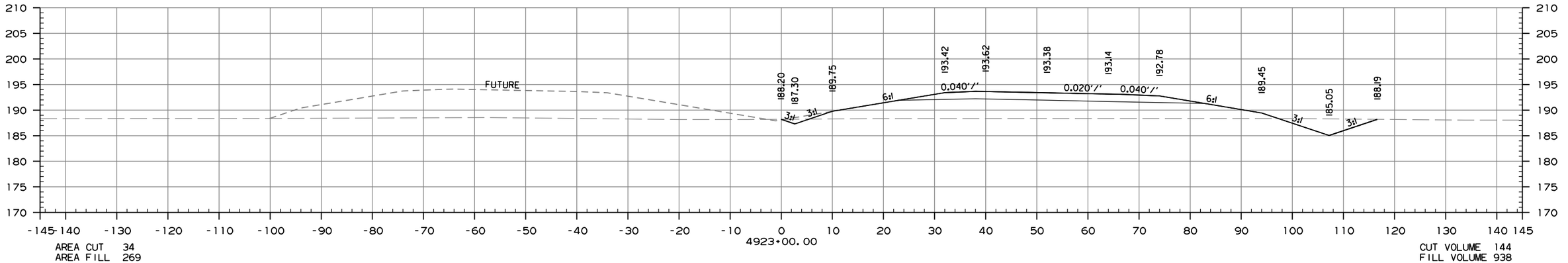


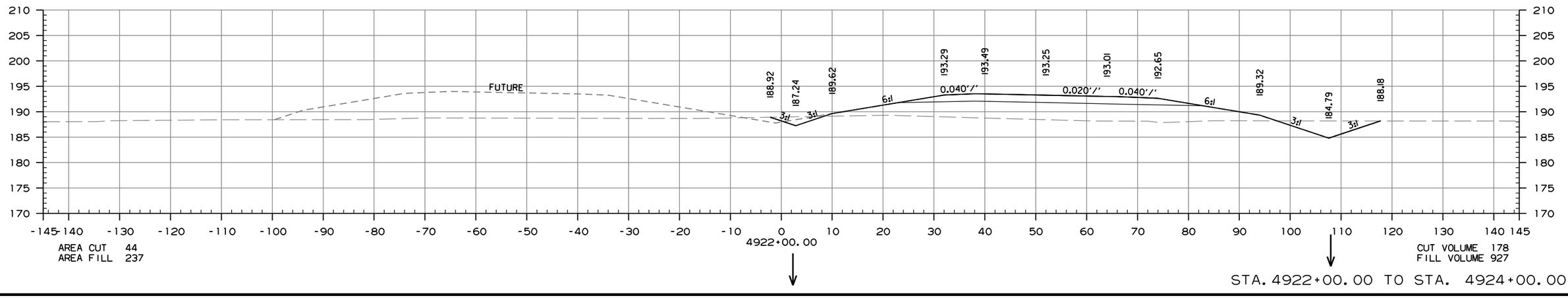


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R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	230	368
		CROSS SECTIONS				



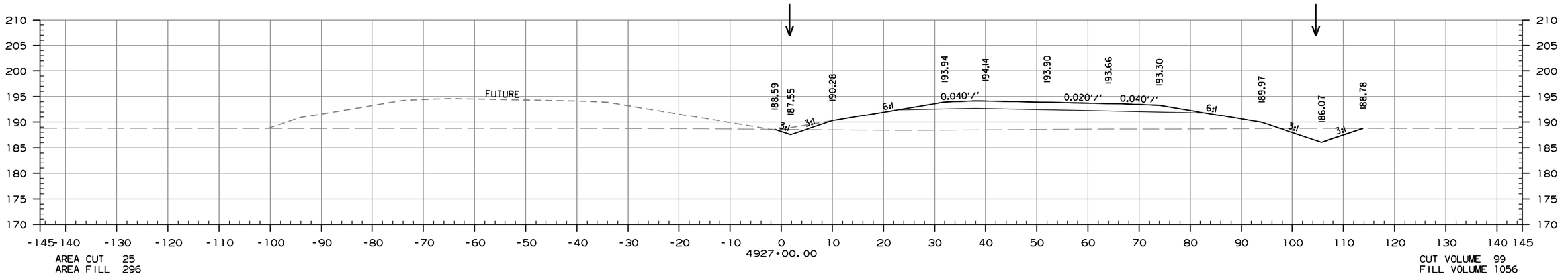


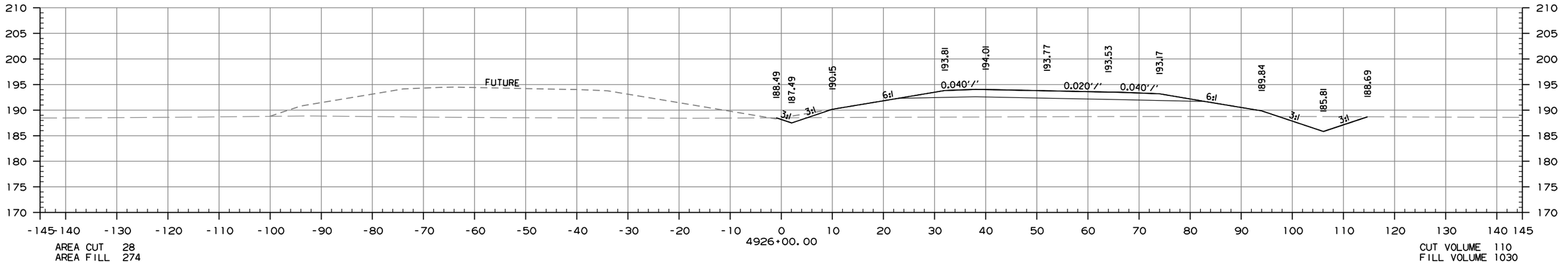


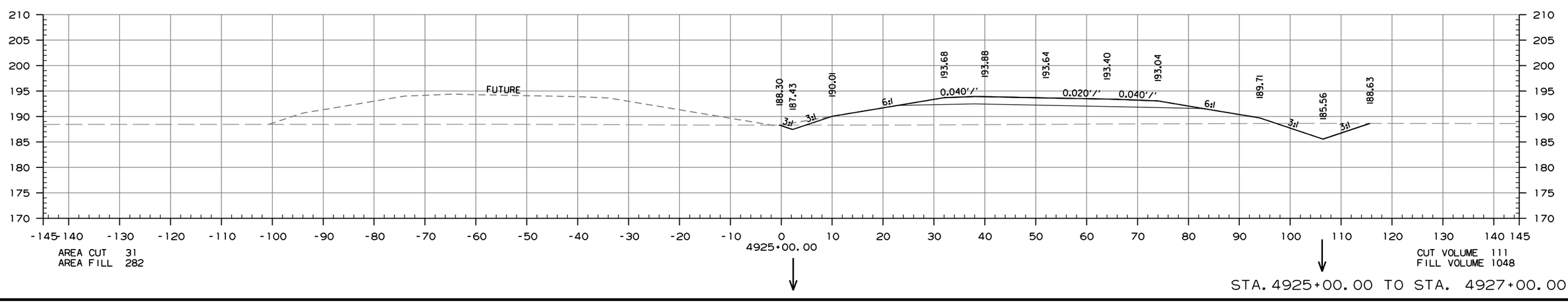
STA. 4922+00.00 TO STA. 4924+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	231	368
		CROSS SECTIONS				



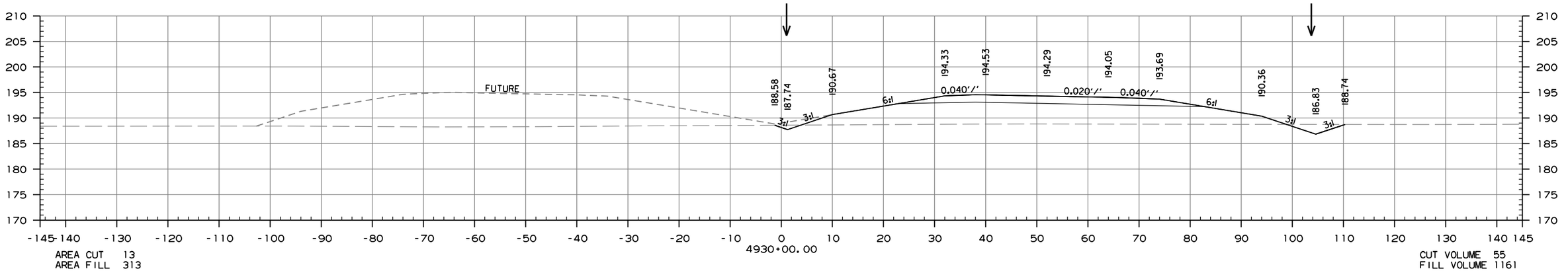


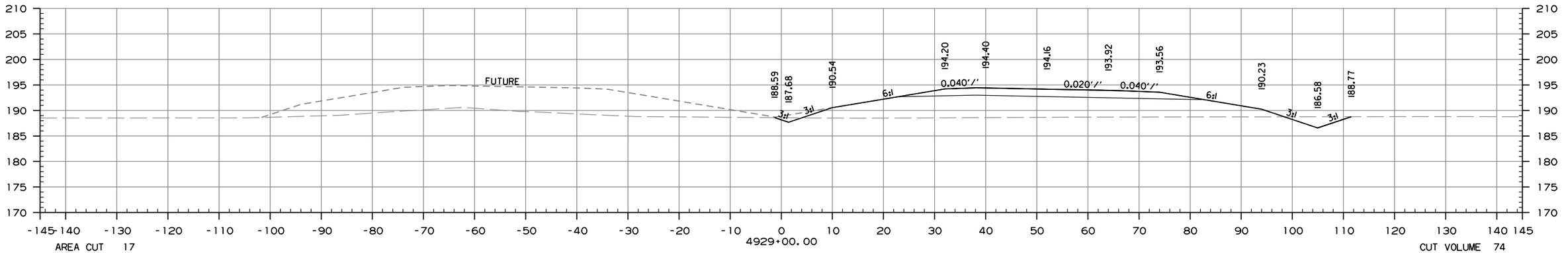


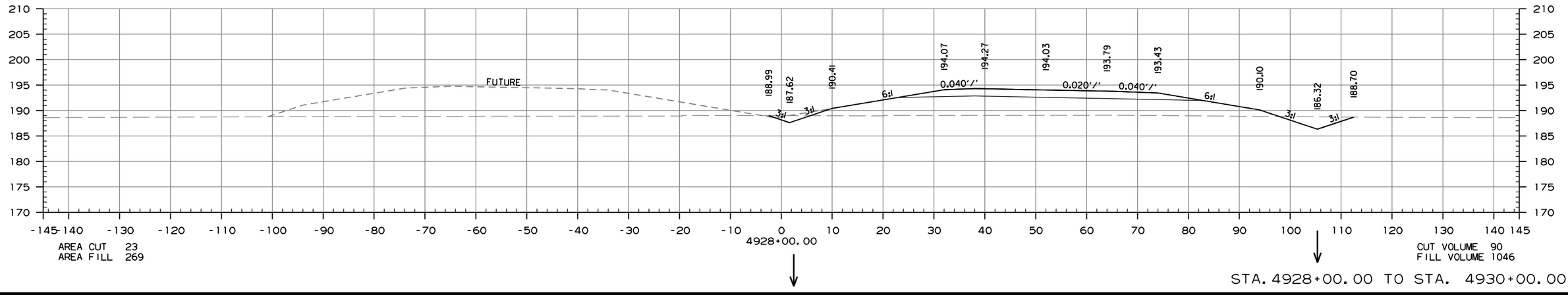
STA. 4925+00.00 TO STA. 4927+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	232	368
		CROSS SECTIONS				



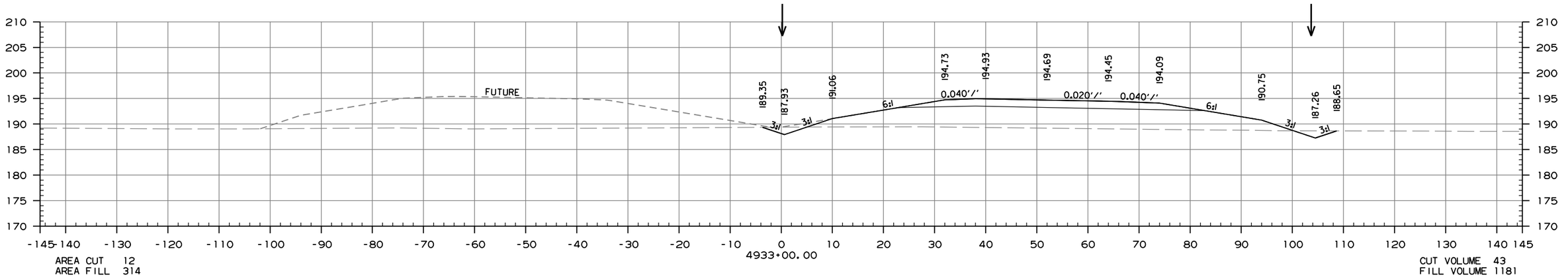


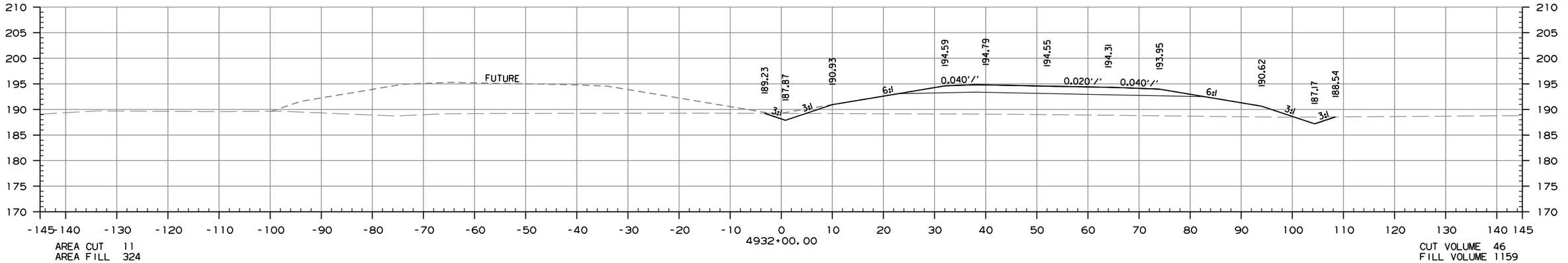


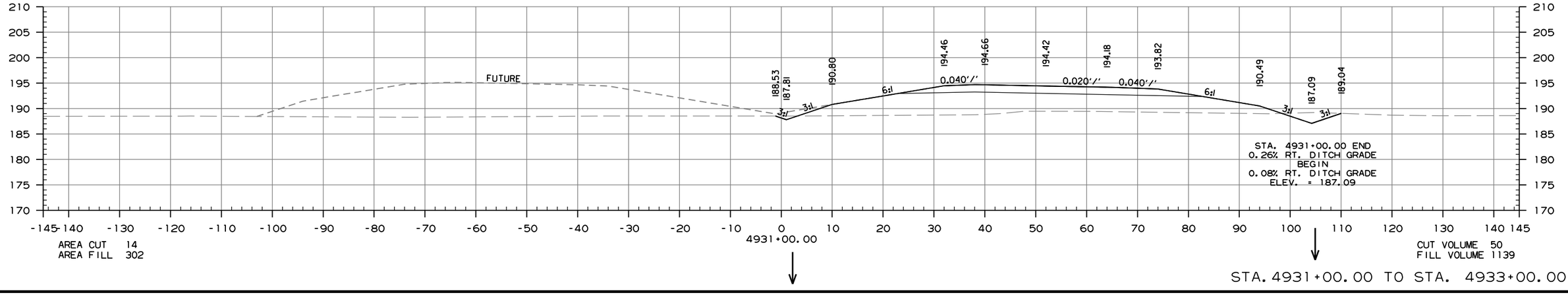
STA. 4928+00.00 TO STA. 4930+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	233	368
		CROSS SECTIONS				



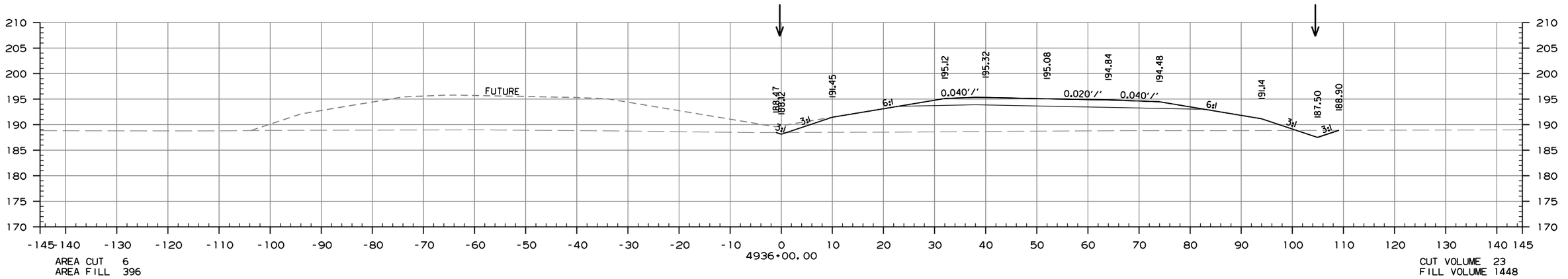


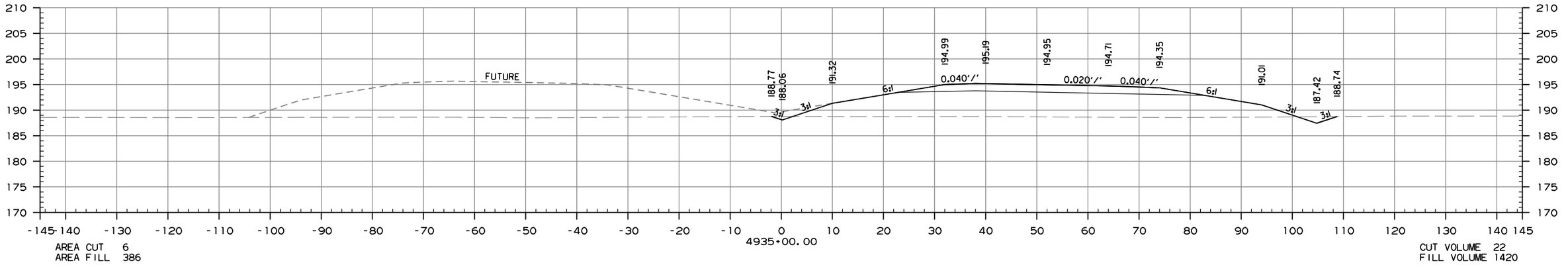


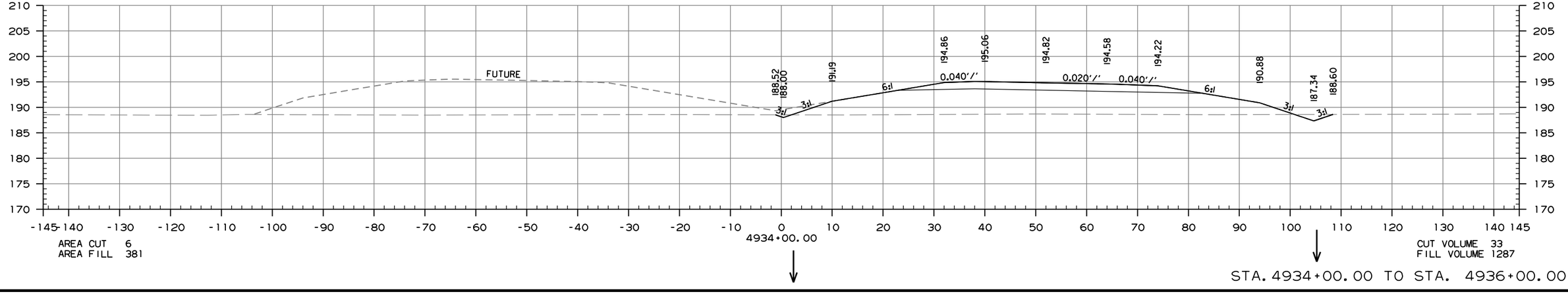
STA. 4931+00.00 TO STA. 4933+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	234	368
		CROSS SECTIONS				



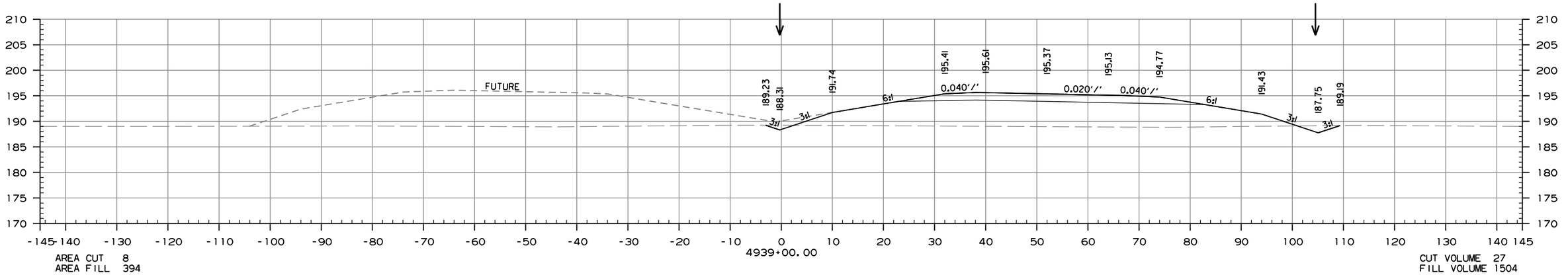




STA. 4934+00.00 TO STA. 4936+00.00

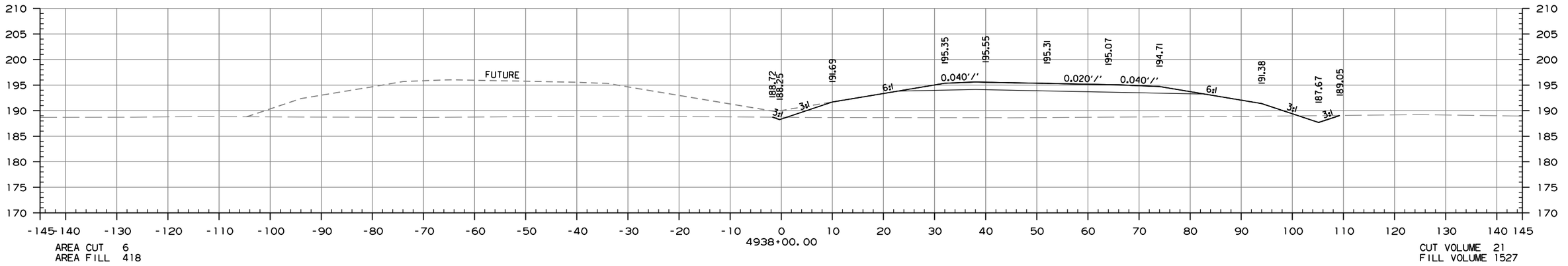
mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	235	368
		CROSS SECTIONS				



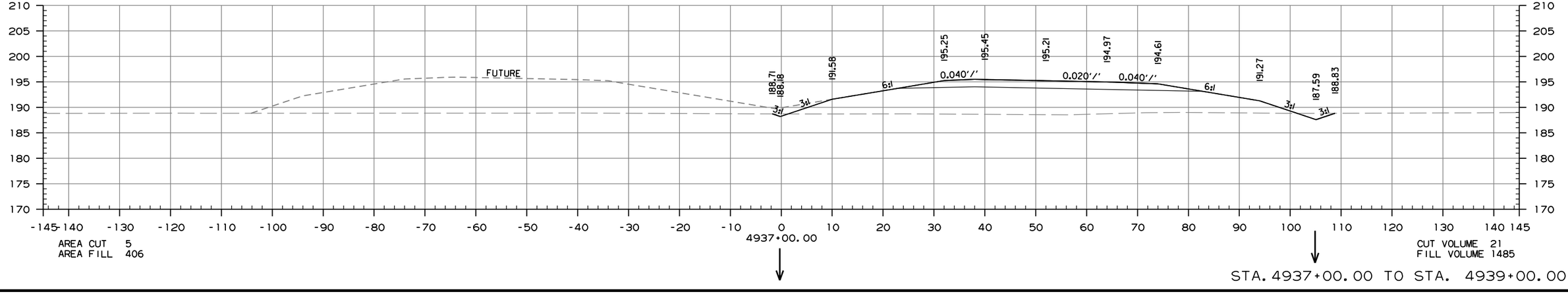
AREA CUT 8
AREA FILL 394

CUT VOLUME 27
FILL VOLUME 1504



AREA CUT 6
AREA FILL 418

CUT VOLUME 21
FILL VOLUME 1527



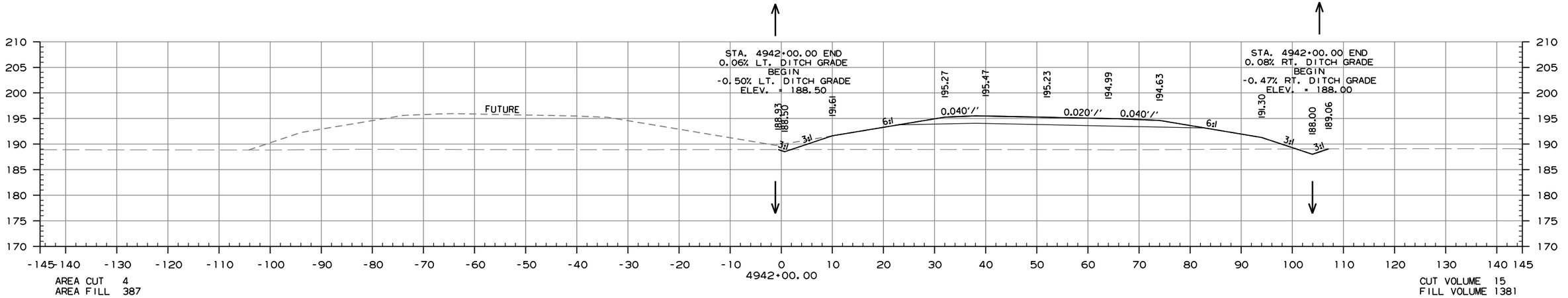
AREA CUT 5
AREA FILL 406

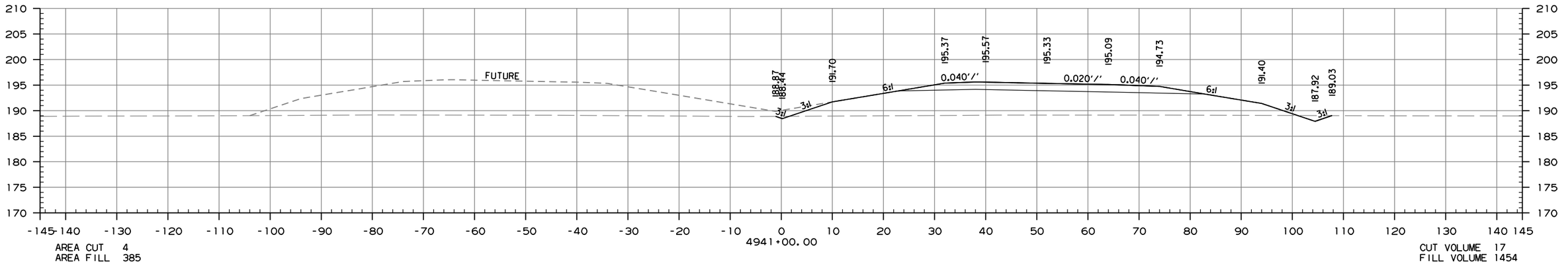
CUT VOLUME 21
FILL VOLUME 1485

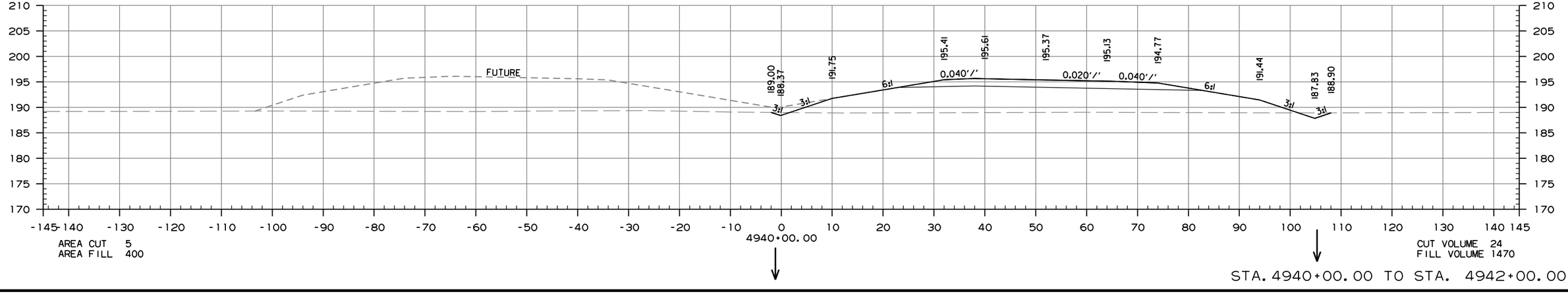
STA. 4937+00.00 TO STA. 4939+00.00

mh39735 7/14/2022
RO20678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	236	368
		CROSS SECTIONS				



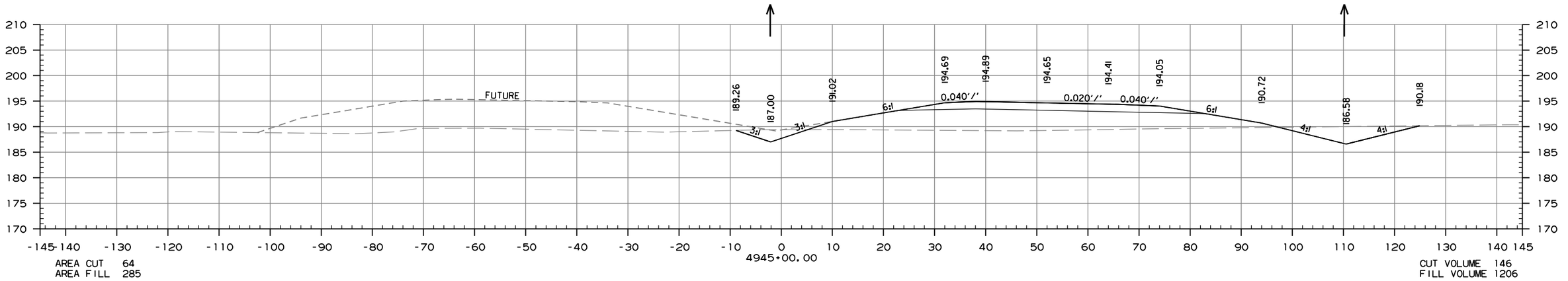


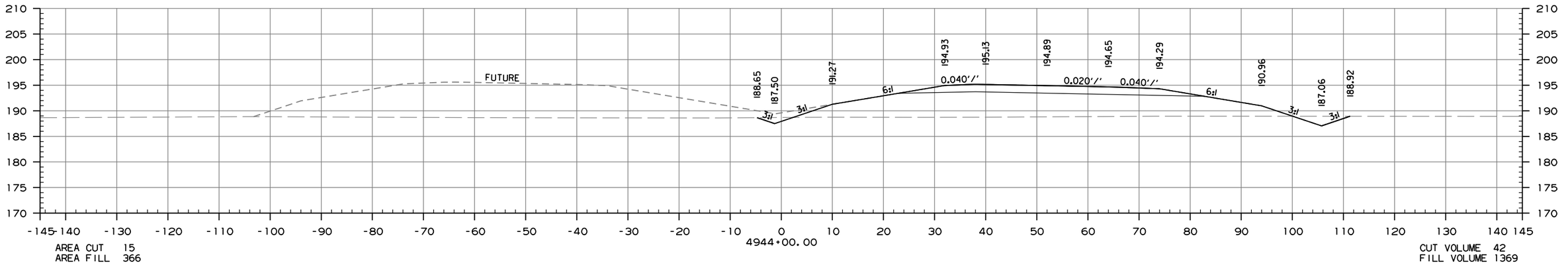


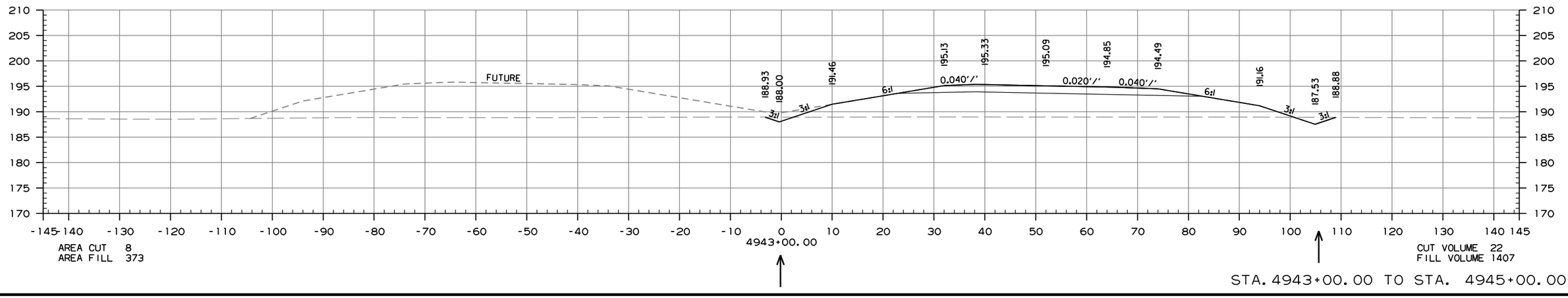
STA. 4940+00.00 TO STA. 4942+00.00

mh39735 7/14/2022
RO20678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	237	368
		CROSS SECTIONS				



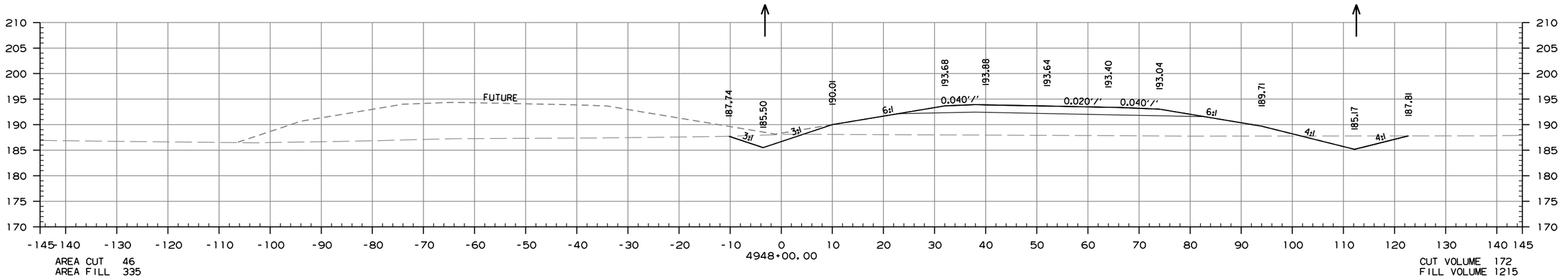


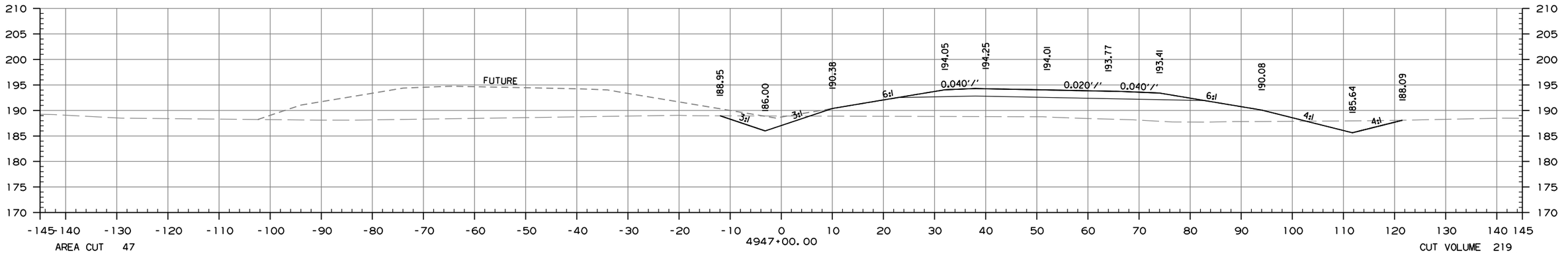


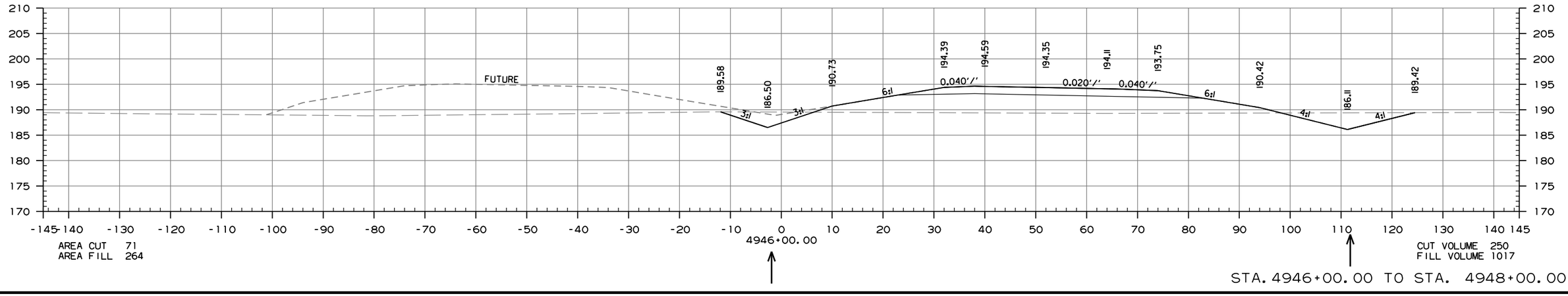
STA. 4943+00.00 TO STA. 4945+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	238	368
		CROSS SECTIONS				



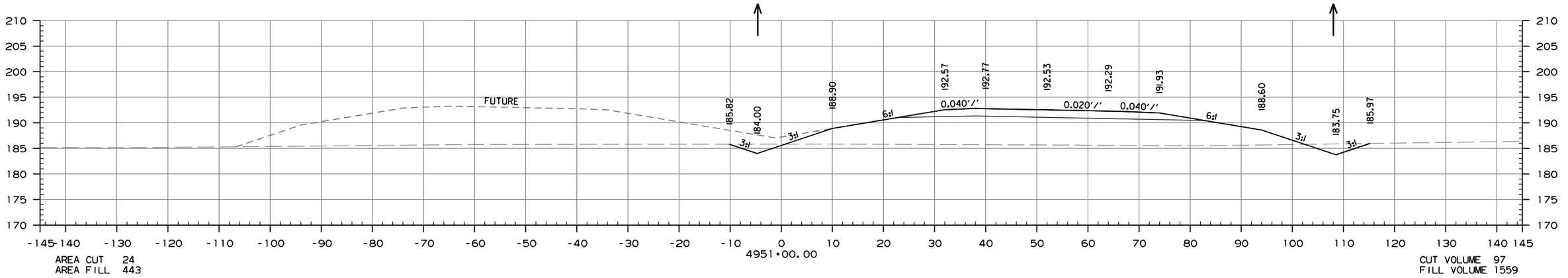


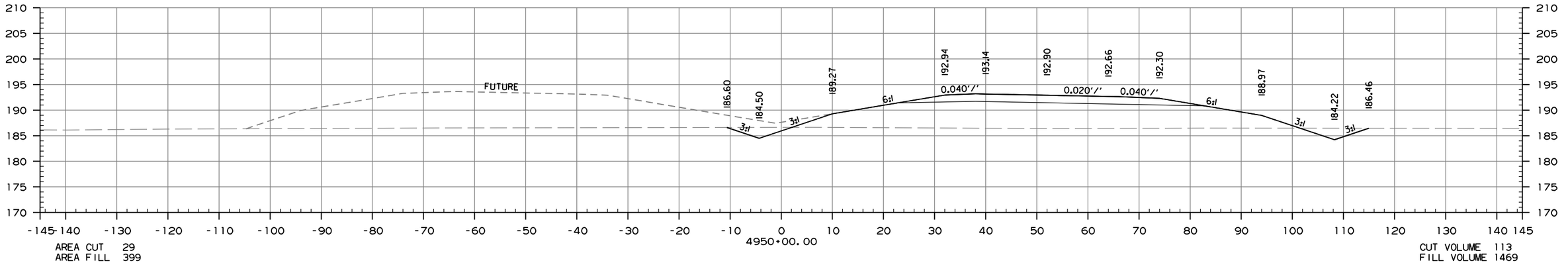


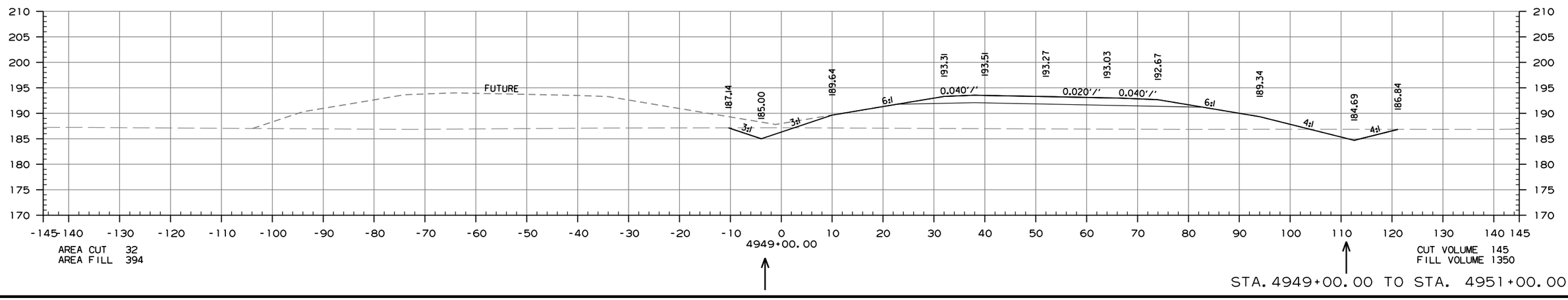
STA. 4946+00.00 TO STA. 4948+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	239	368
		CROSS SECTIONS				



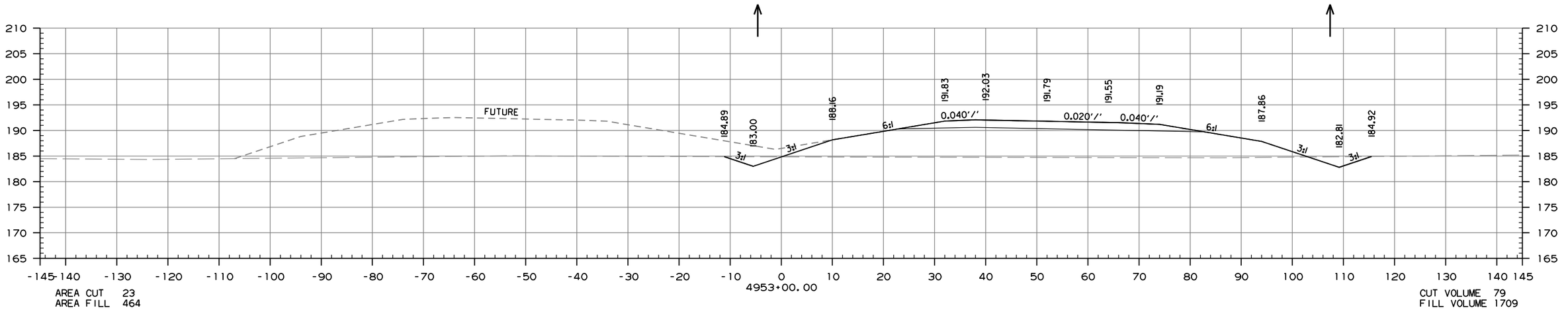


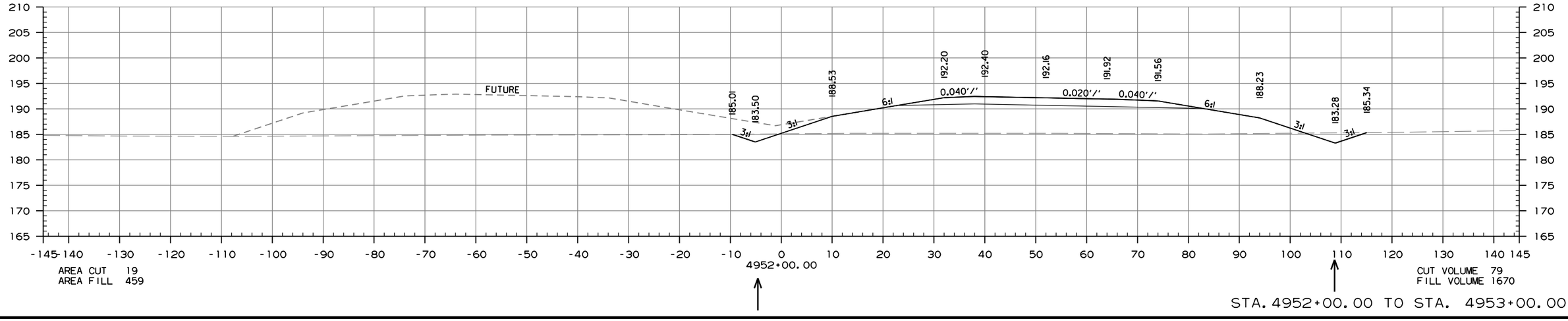


STA. 4949+00.00 TO STA. 4951+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	240	368
		CROSS SECTIONS				

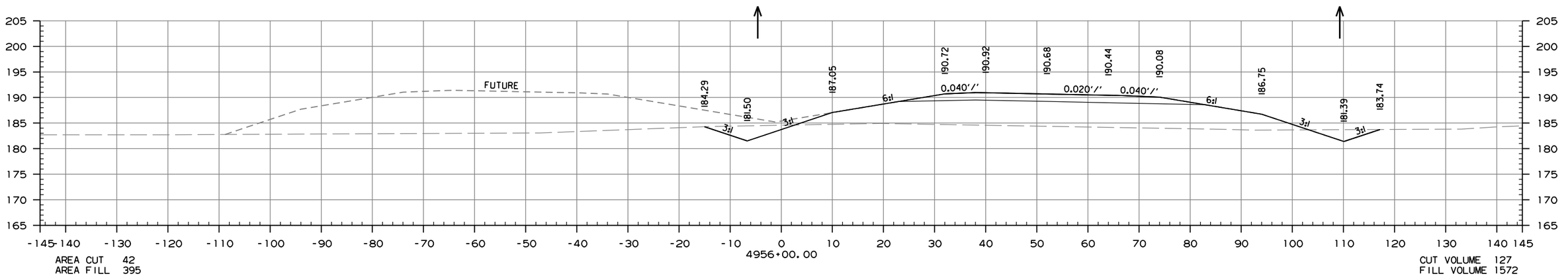


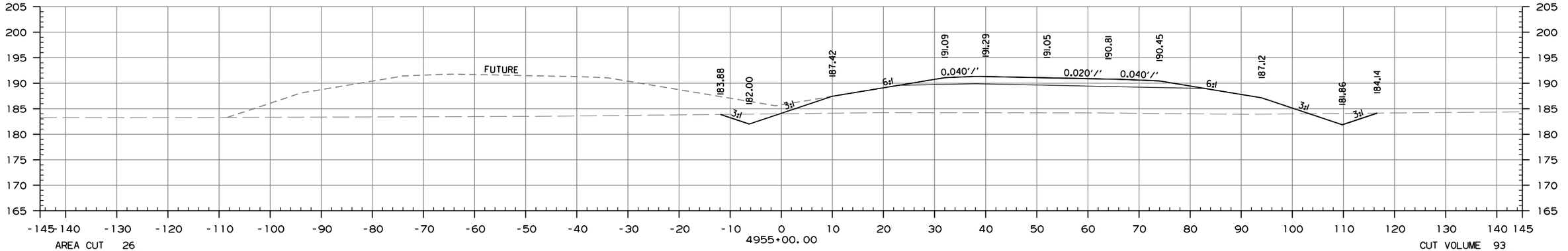


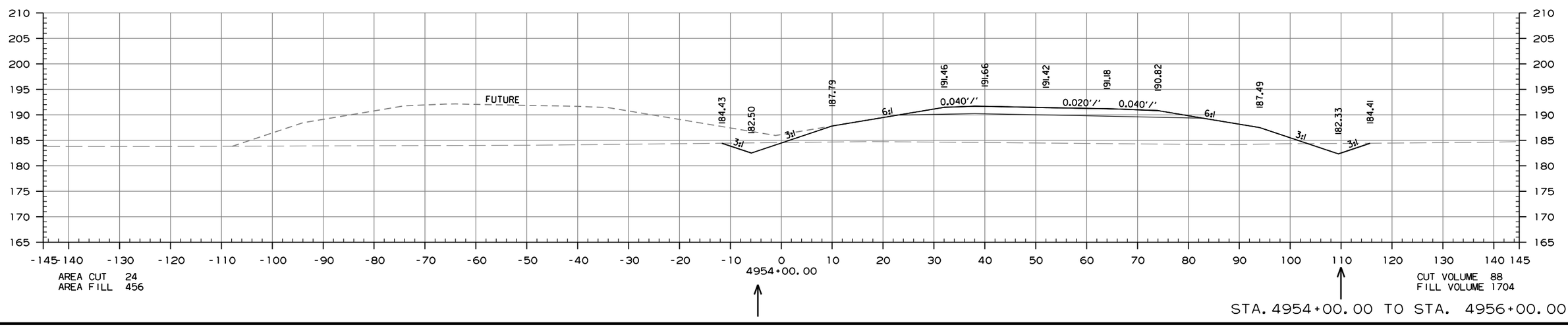
STA. 4952+00.00 TO STA. 4953+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	241	368
		CROSS SECTIONS				

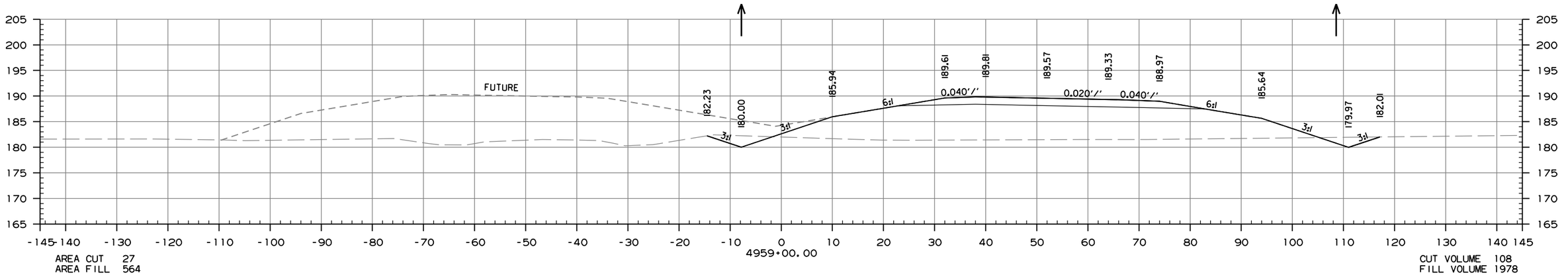


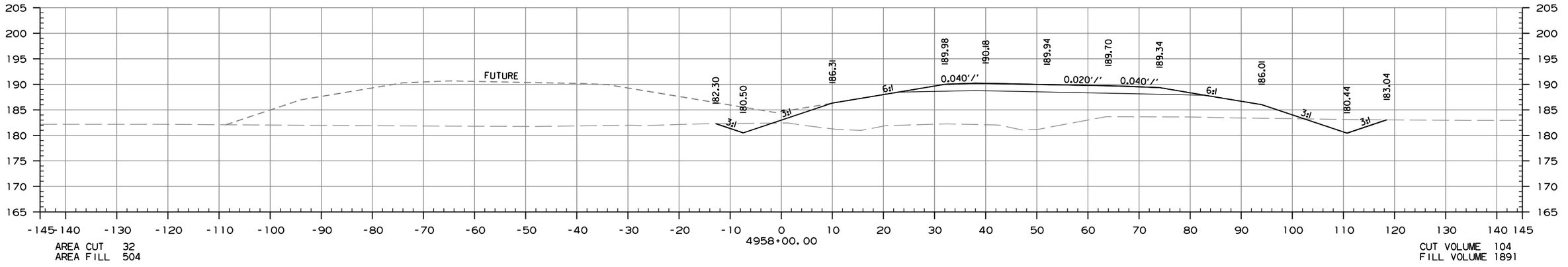


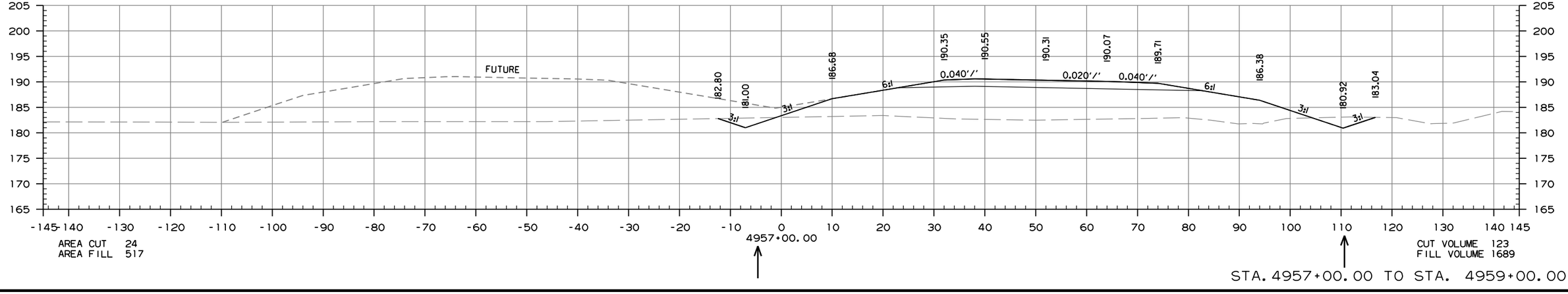


mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	242	368
		CROSS SECTIONS				



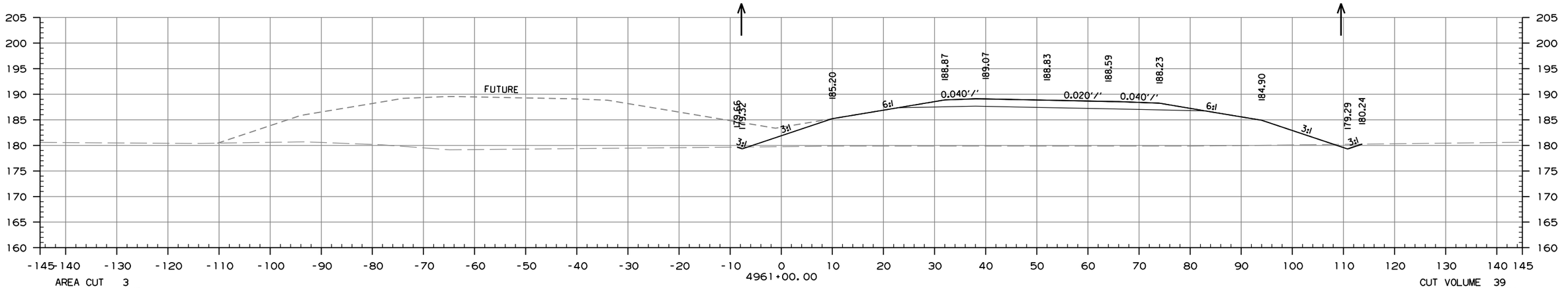


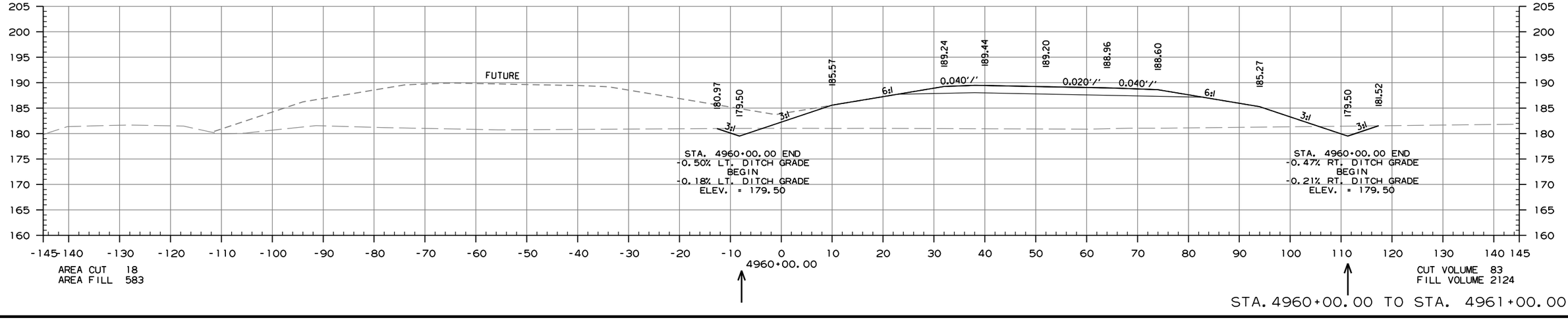


STA. 4957+00.00 TO STA. 4959+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	243	368
		CROSS SECTIONS				

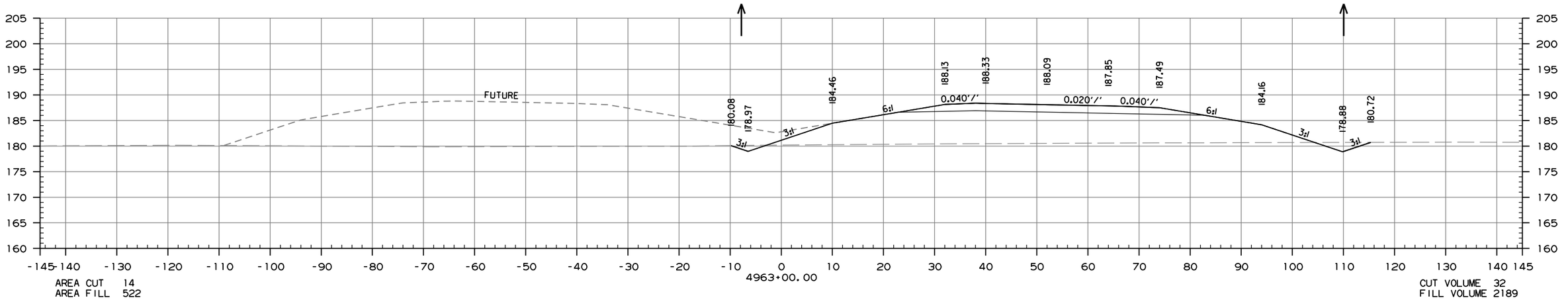


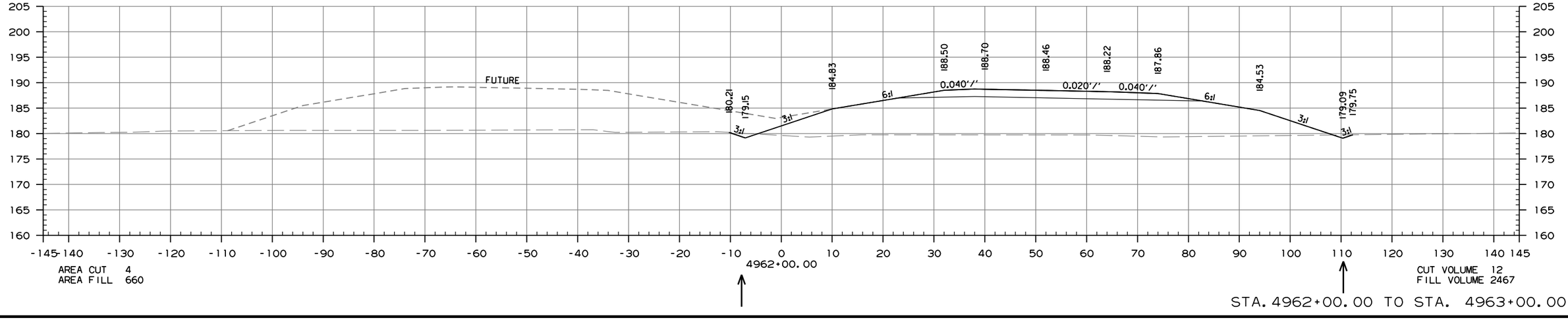


STA. 4960+00.00 TO STA. 4961+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	244	368
		CROSS SECTIONS				

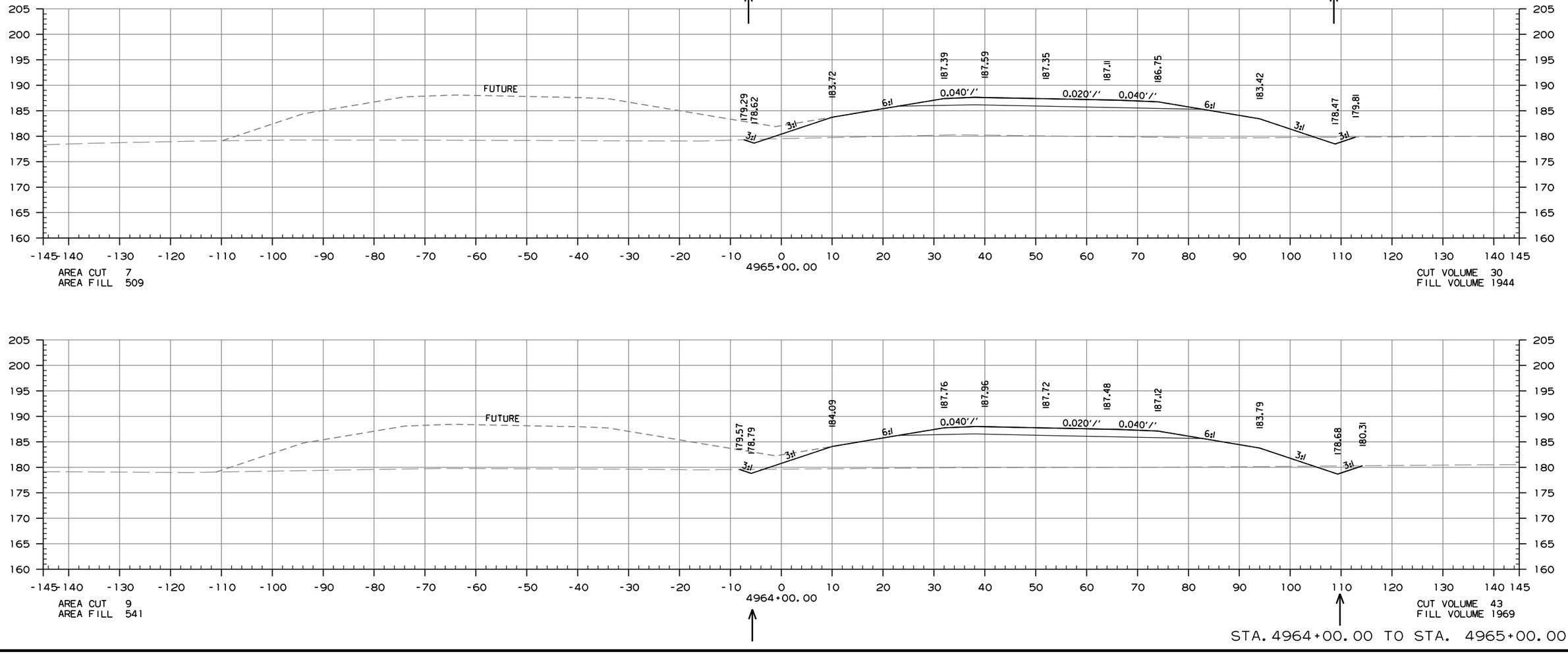




STA. 4962+00.00 TO STA. 4963+00.00

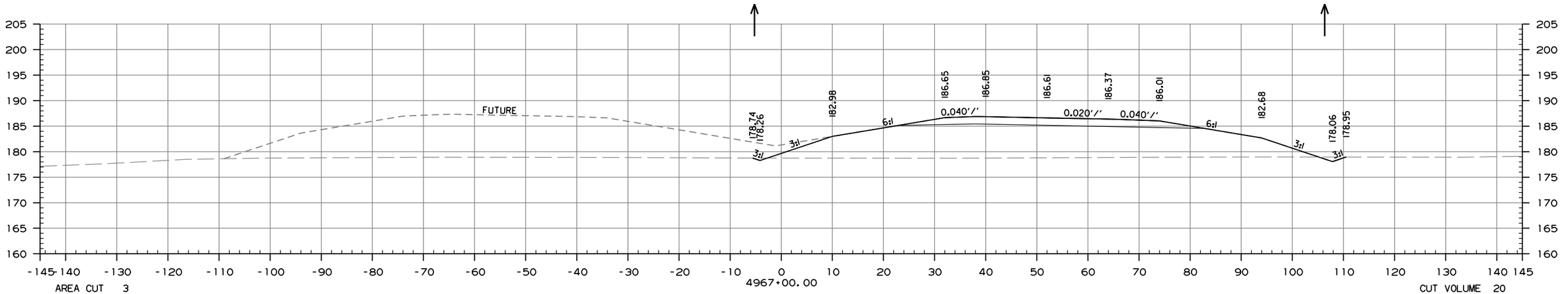
mh39735 7/14/2022
R020678.DGN

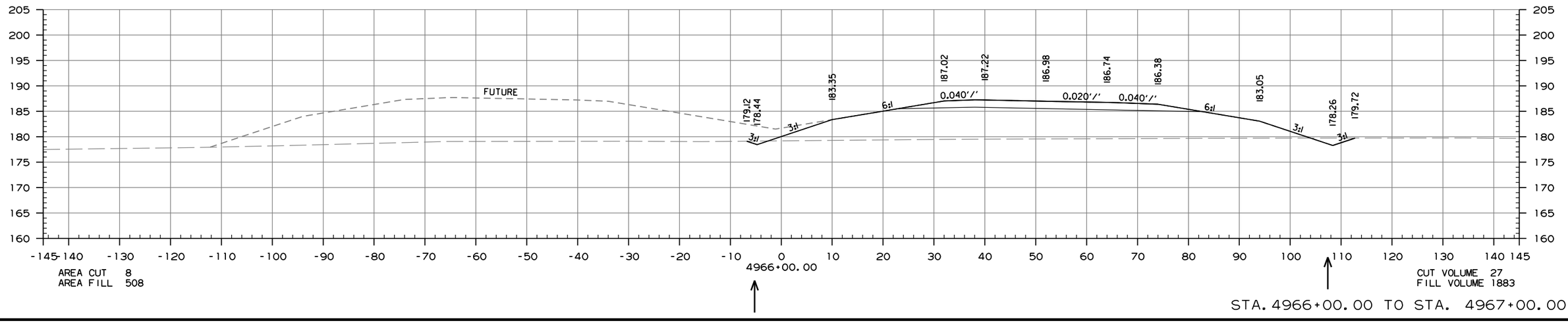
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	245	368
		CROSS SECTIONS				



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R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	246	368
		CROSS SECTIONS				

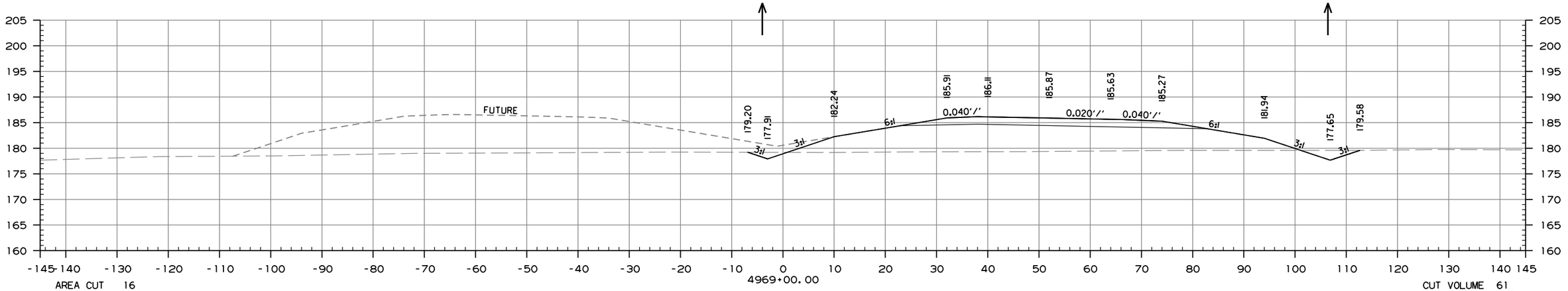


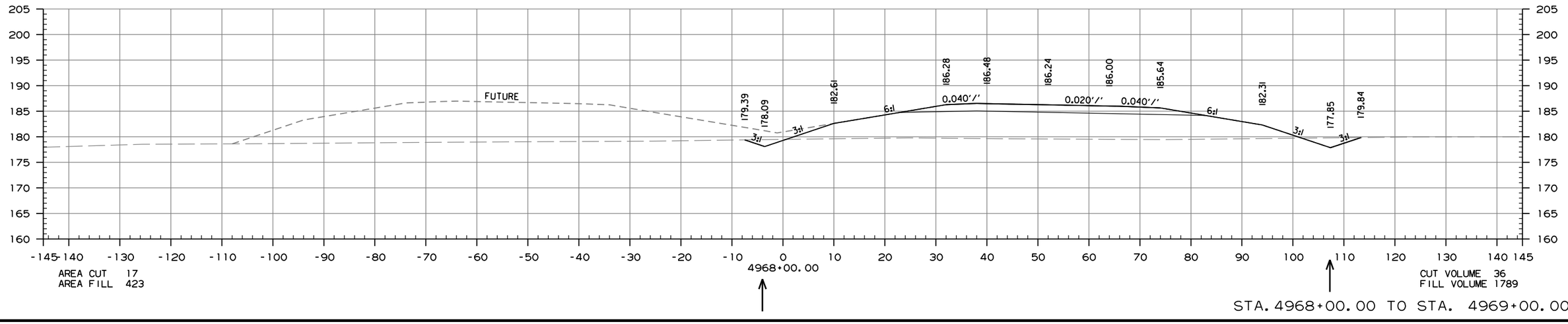


STA. 4966+00.00 TO STA. 4967+00.00

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R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	247	368
		CROSS SECTIONS				

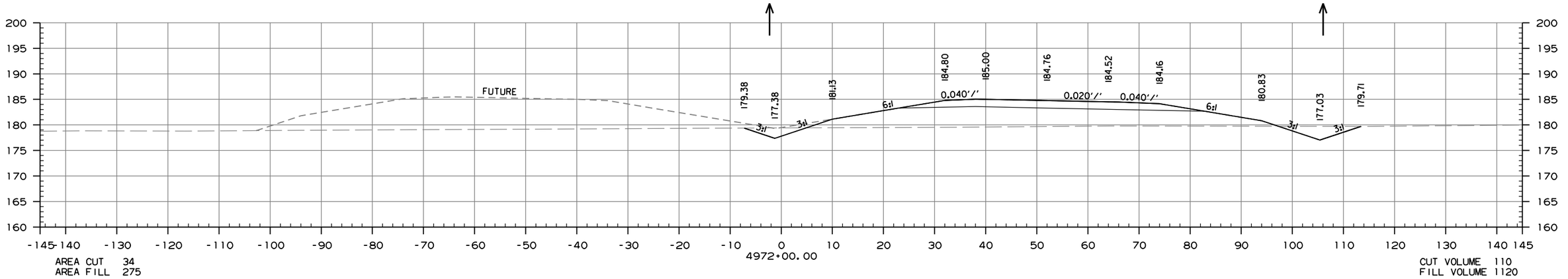


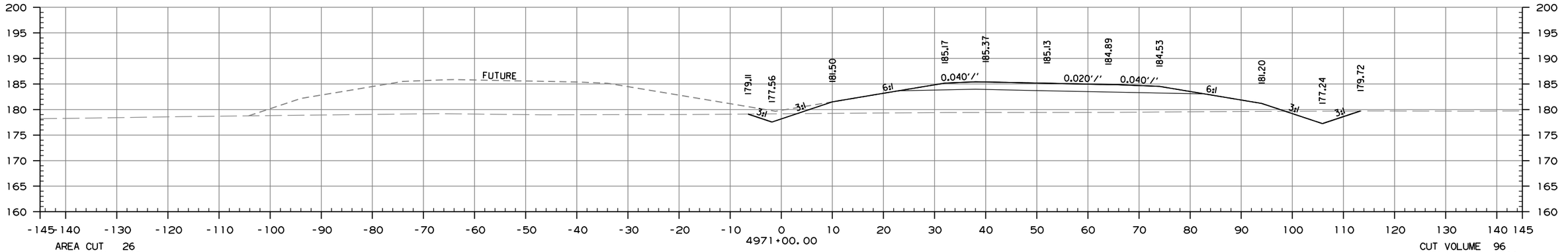


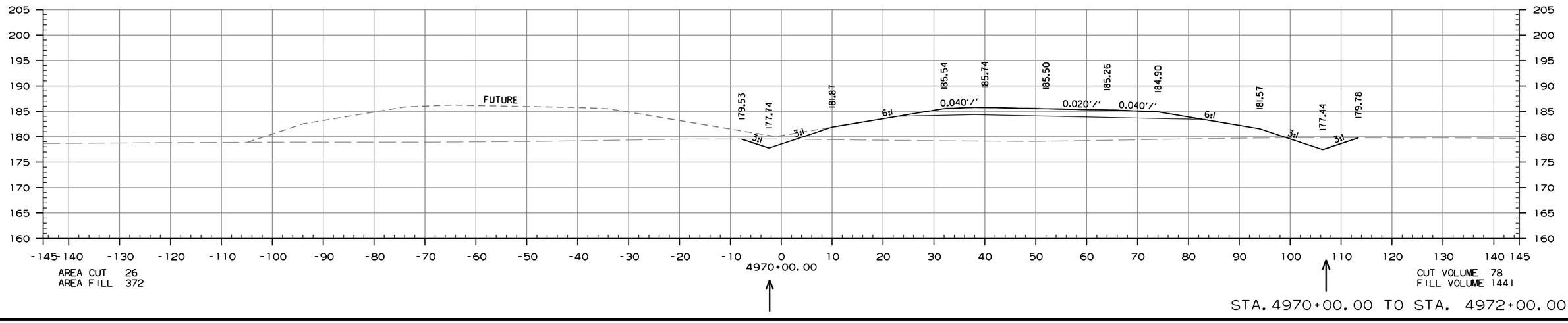
STA. 4968+00.00 TO STA. 4969+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	248	368
		CROSS SECTIONS				



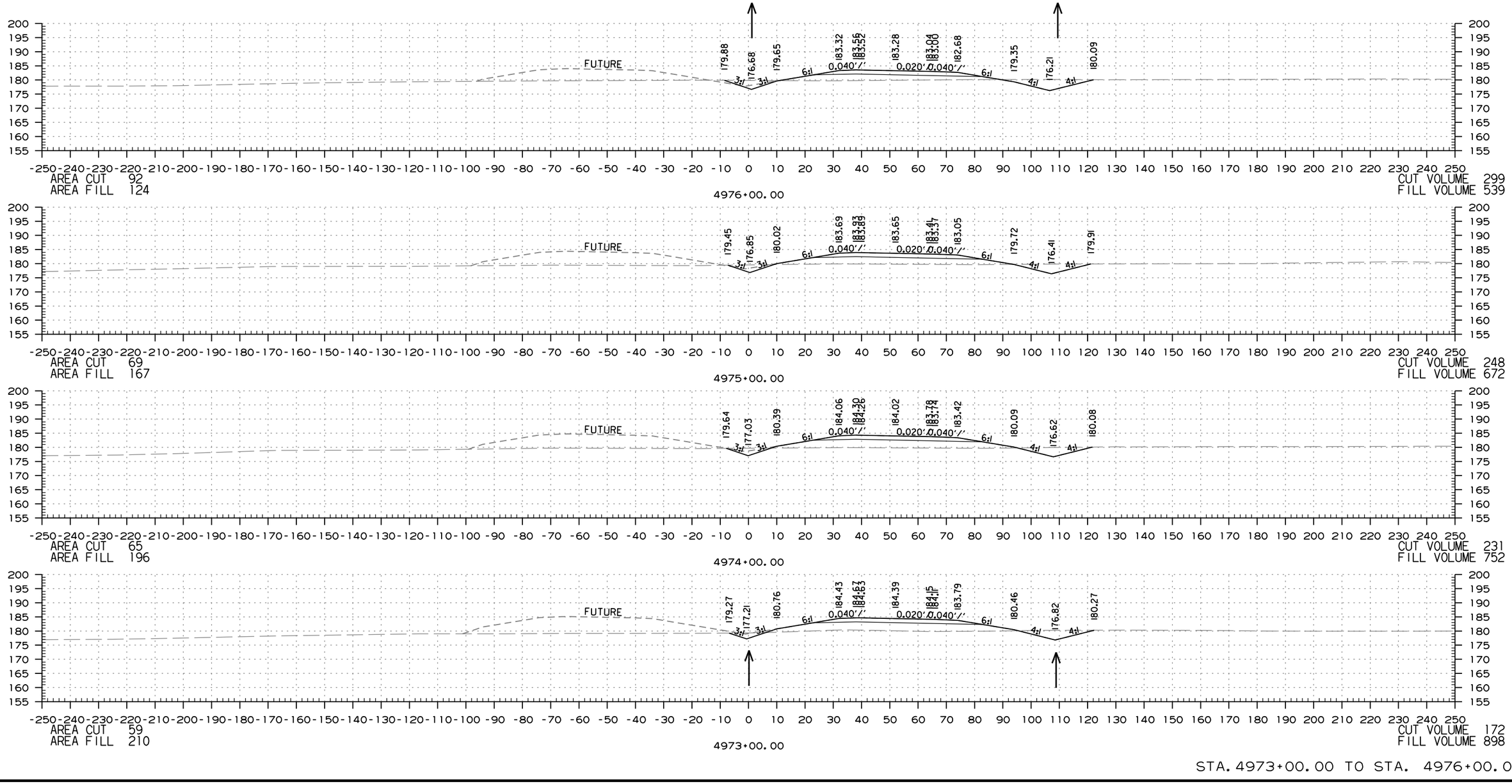




STA. 4970+00.00 TO STA. 4972+00.00

mh39735 7/14/2022
R020678.DGN

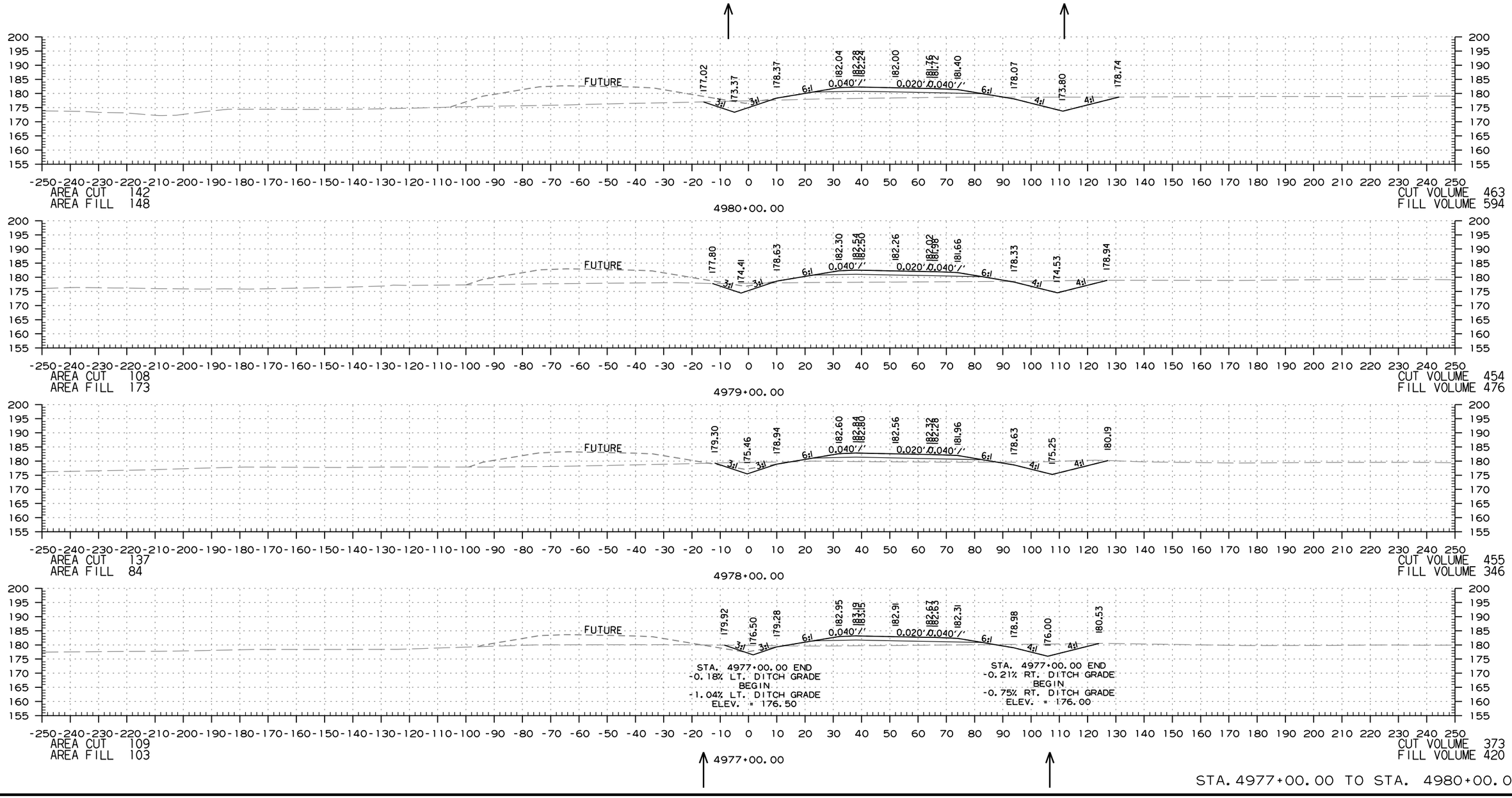
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	249	368
		CROSS SECTIONS				



STA. 4973+00.00 TO STA. 4976+00.00

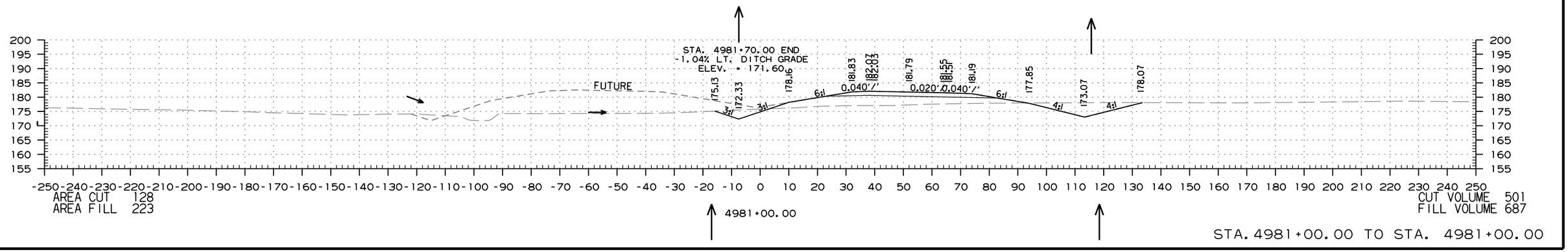
mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	250	368
		CROSS SECTIONS				



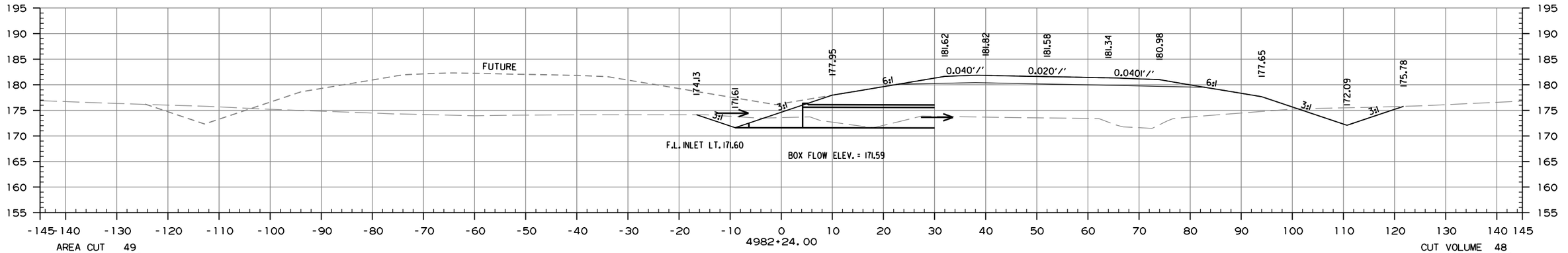
mh39735 7/14/2022
R020678.DGN

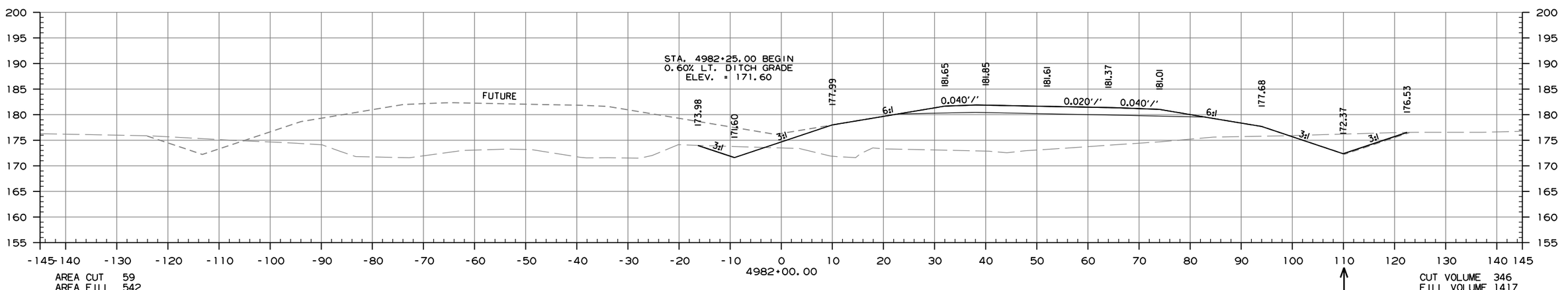
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	251	368
		CROSS SECTIONS				



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R020678.DGN

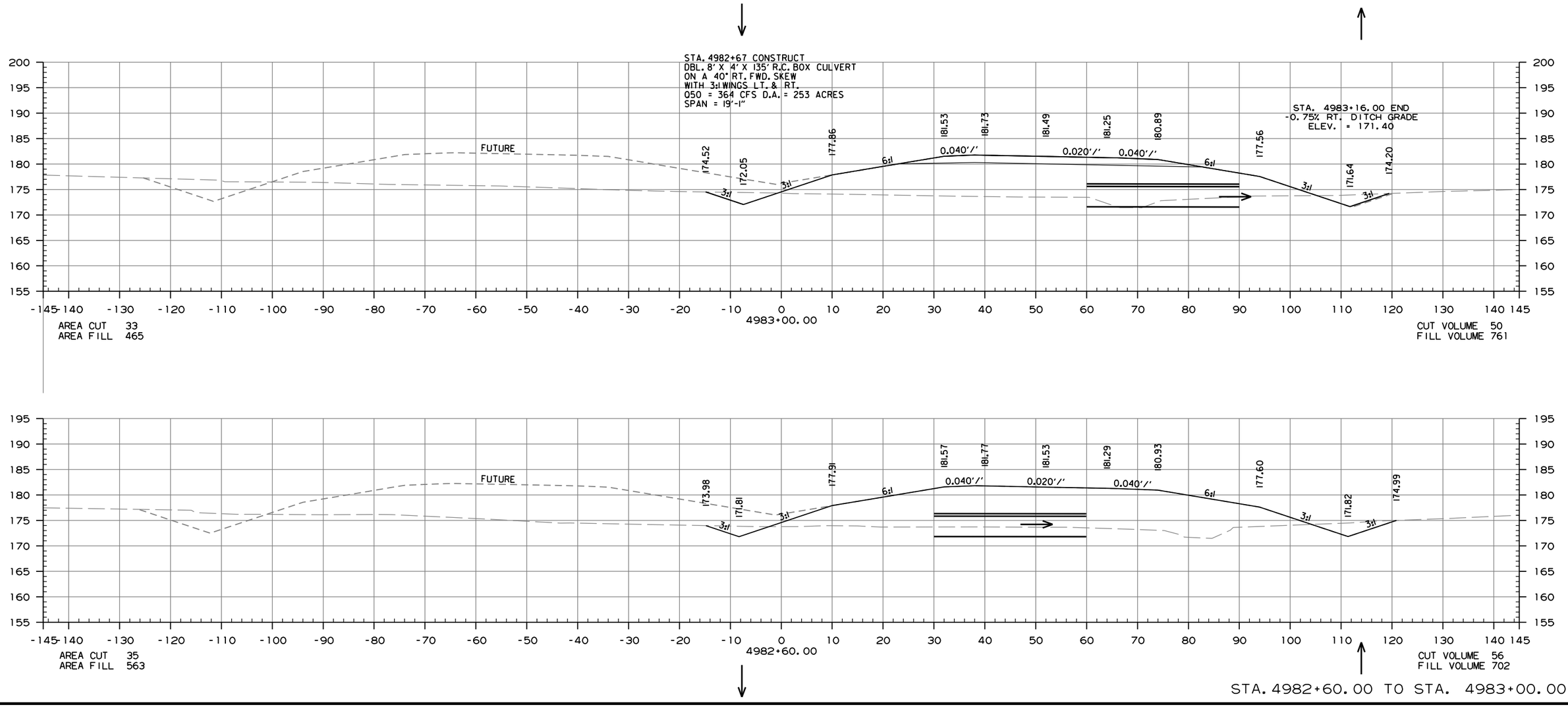
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	252	368
		CROSS SECTIONS				





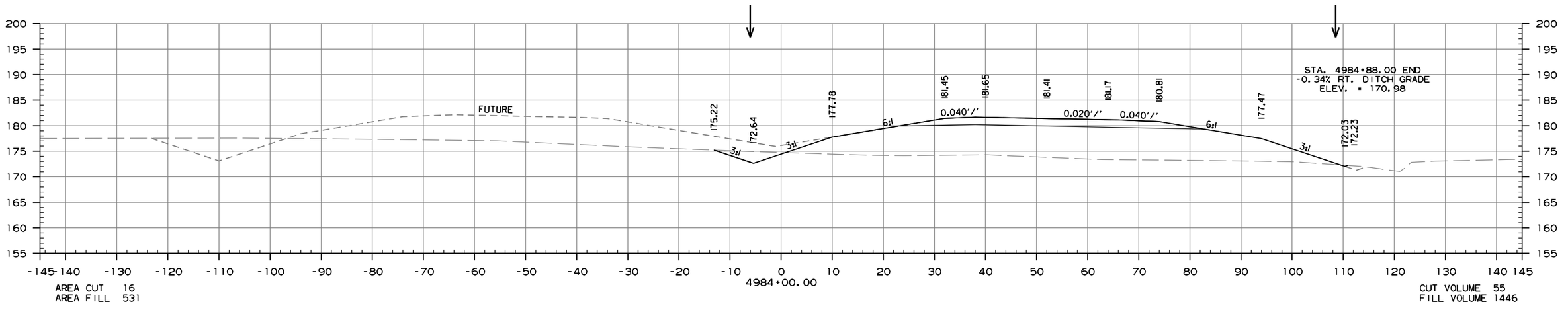
mh39735 7/14/2022
R020678.DGN

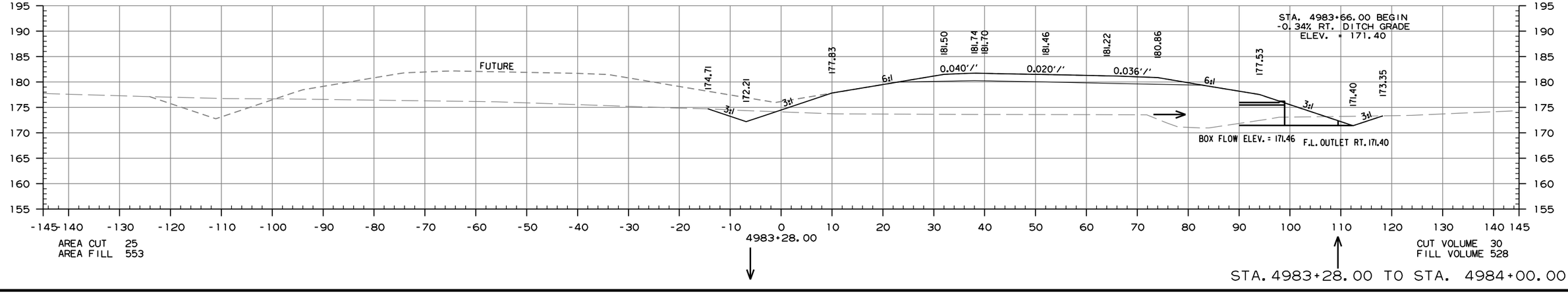
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	253	368
		CROSS SECTIONS				



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R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	254	368
		CROSS SECTIONS				

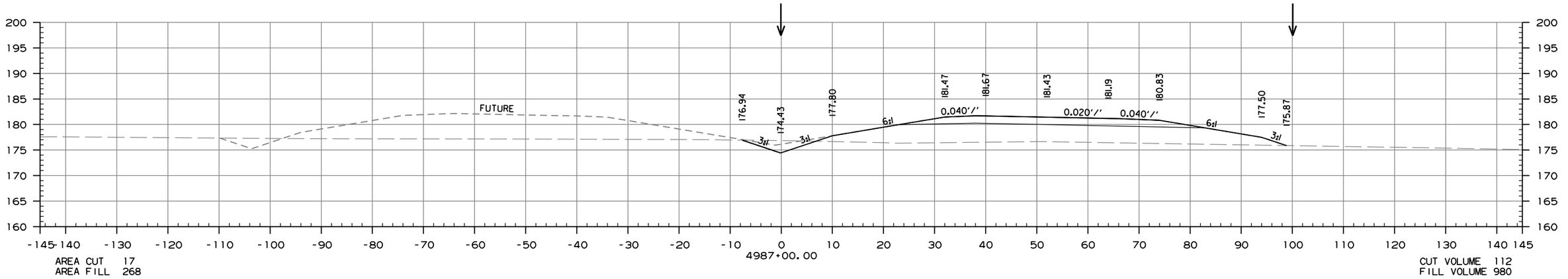


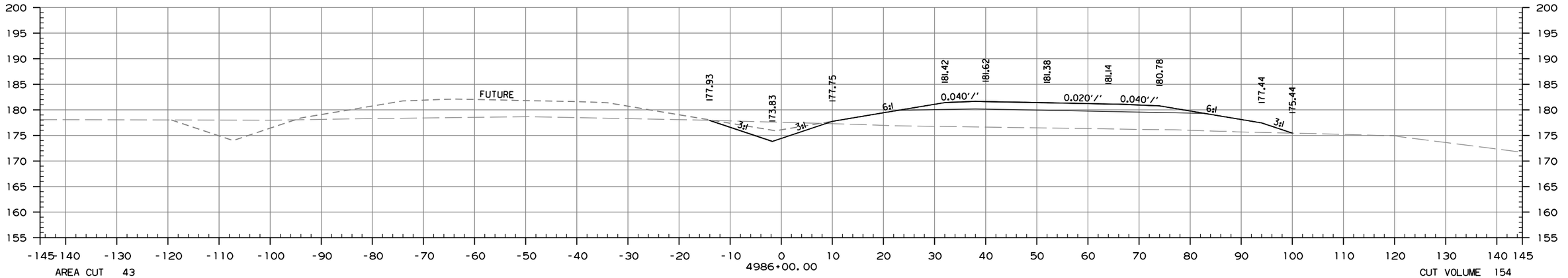


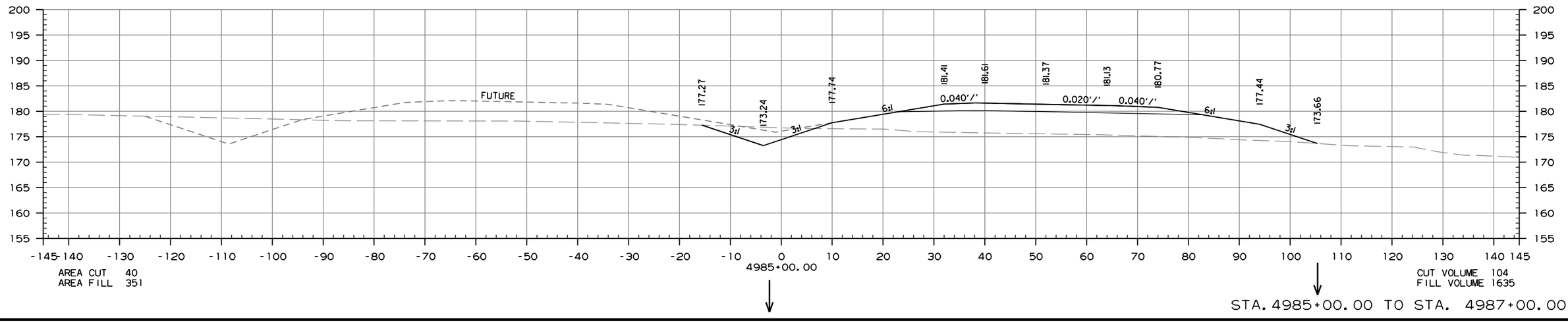
STA. 4983+28.00 TO STA. 4984+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	255	368
		CROSS SECTIONS				



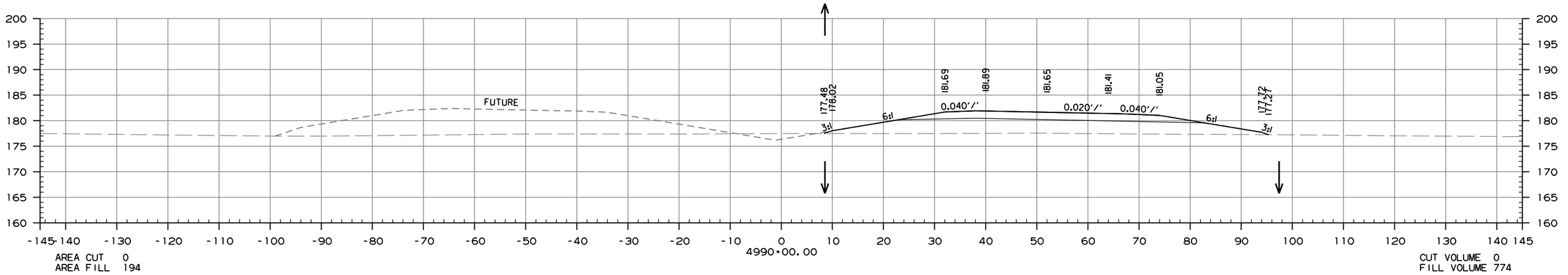


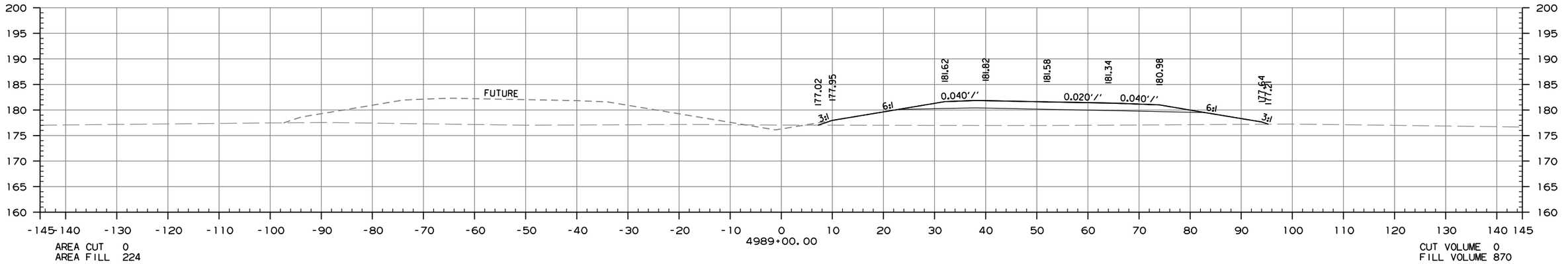


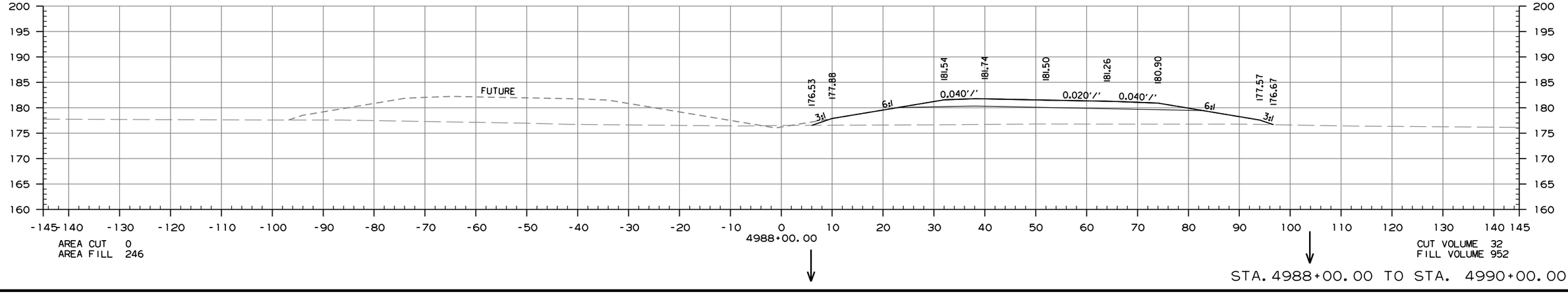
STA. 4985+00.00 TO STA. 4987+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	256	368
		CROSS SECTIONS				



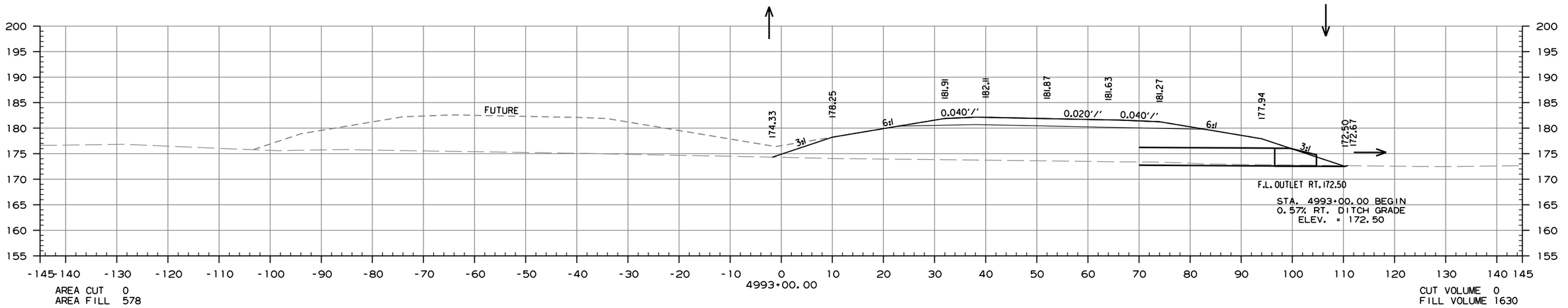


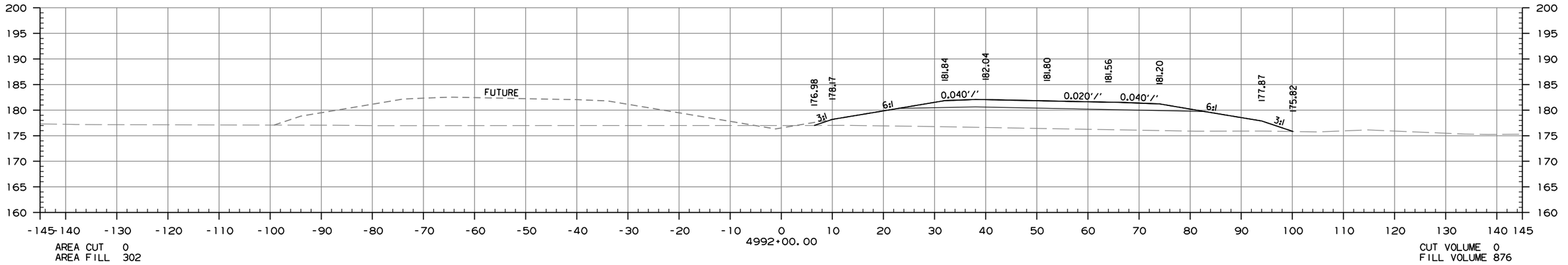


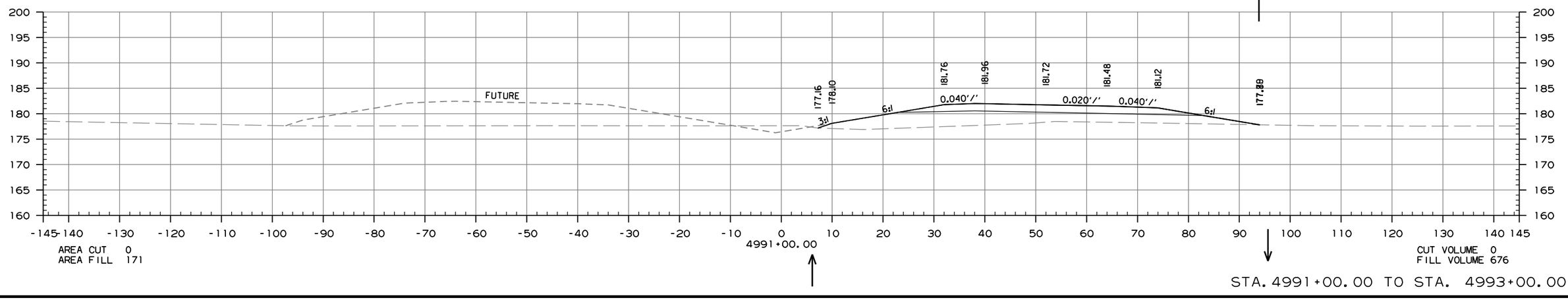
STA. 4988+00.00 TO STA. 4990+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	257	368
		CROSS SECTIONS				



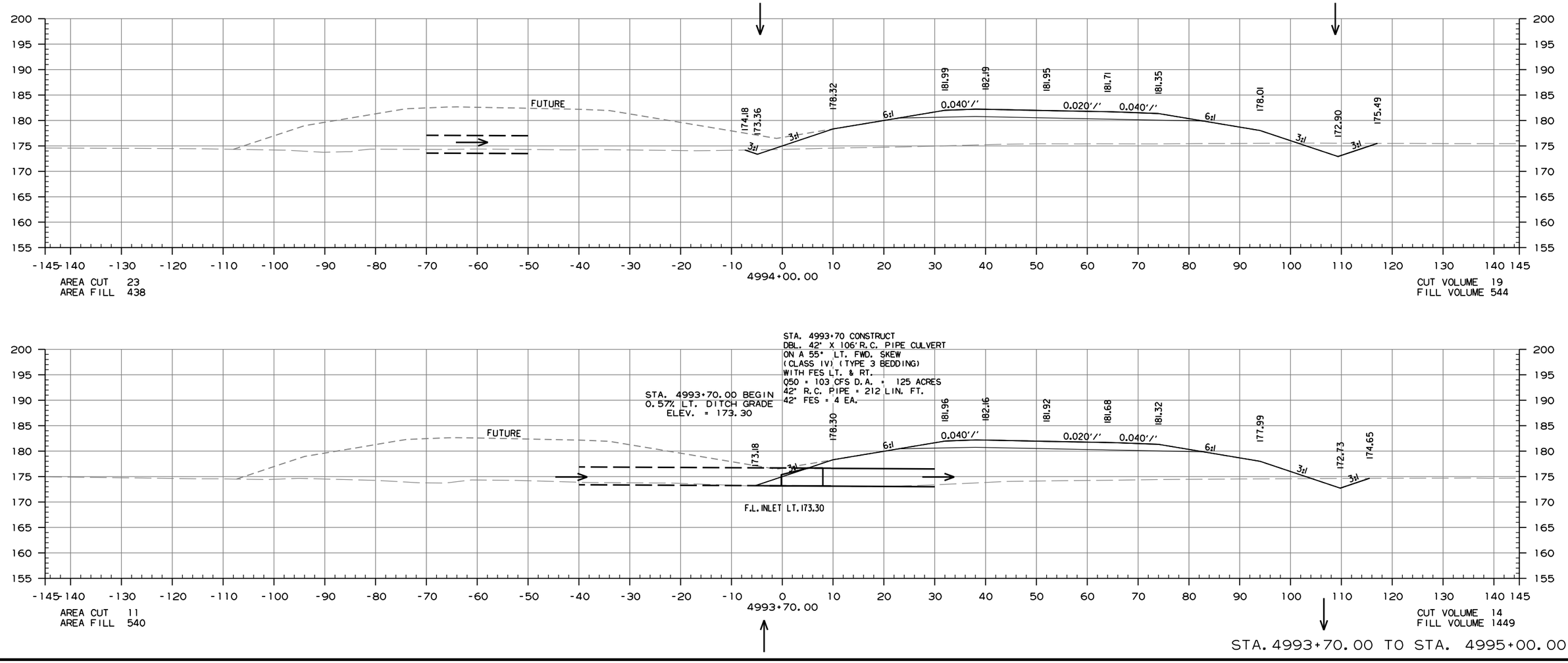




STA. 4991+00.00 TO STA. 4993+00.00

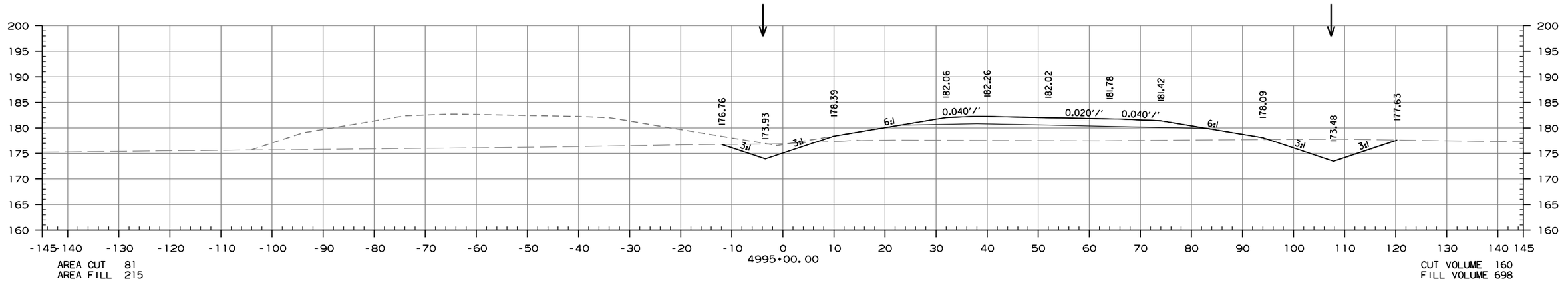
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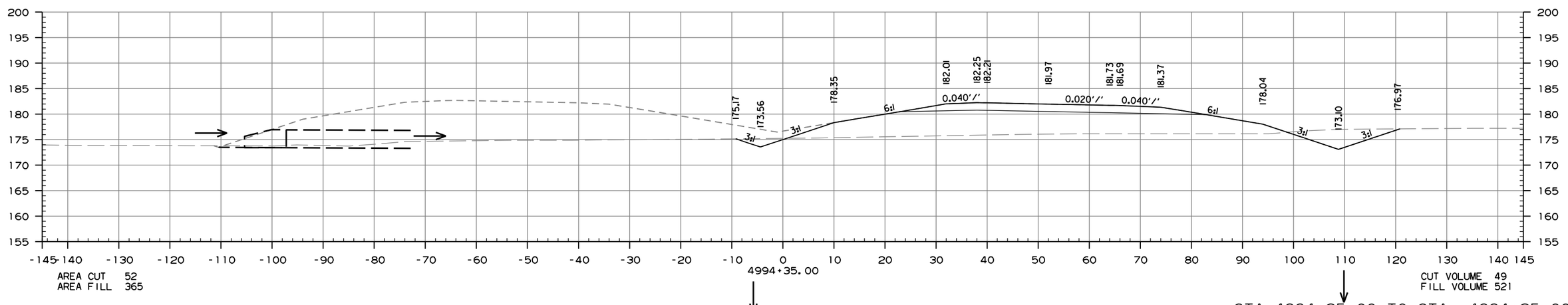
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	258	368
		CROSS SECTIONS				



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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	259	368
		CROSS SECTIONS				

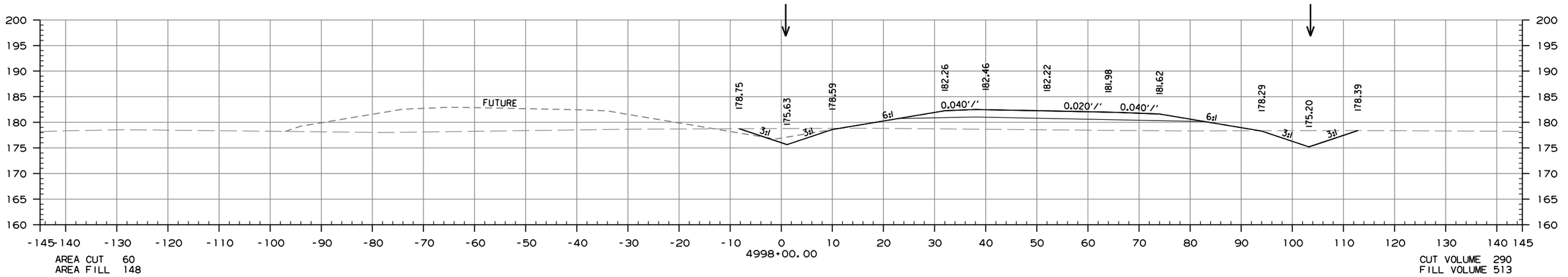


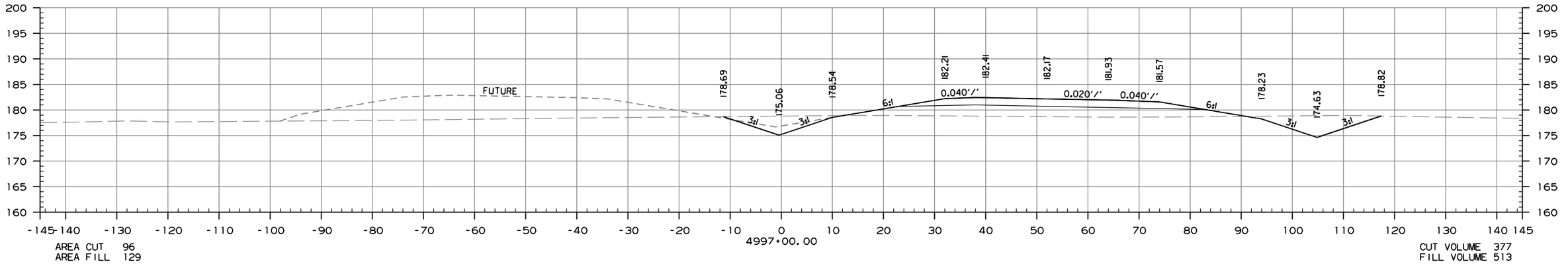


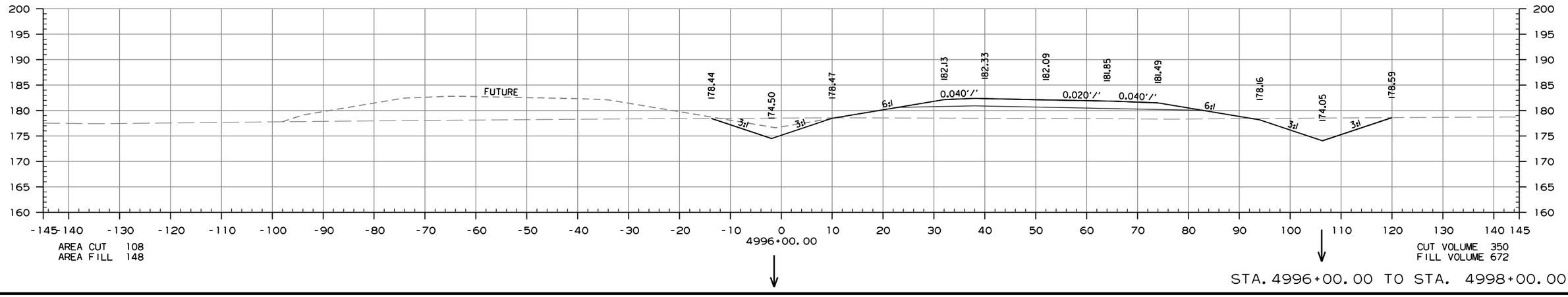
STA. 4994+35.00 TO STA. 4994+35.00

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	260	368
		CROSS SECTIONS				



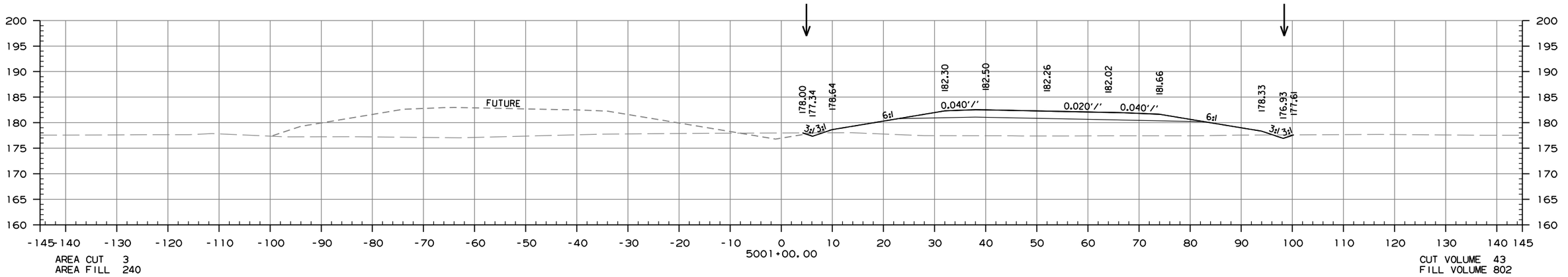


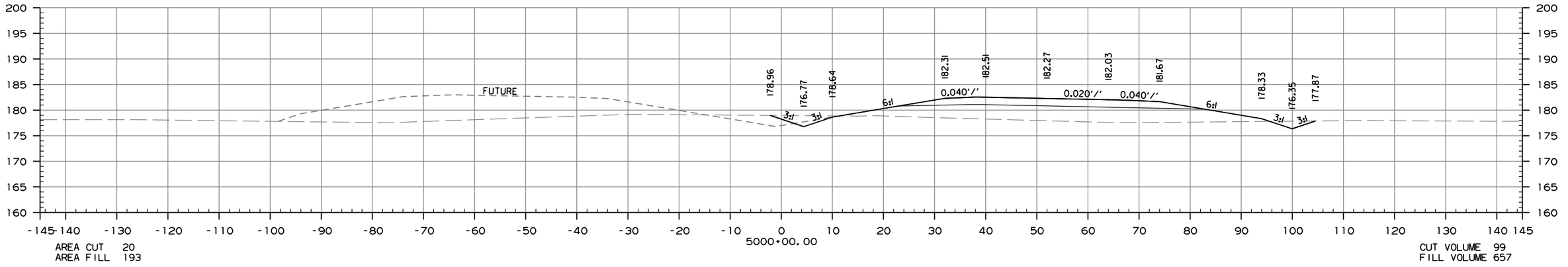


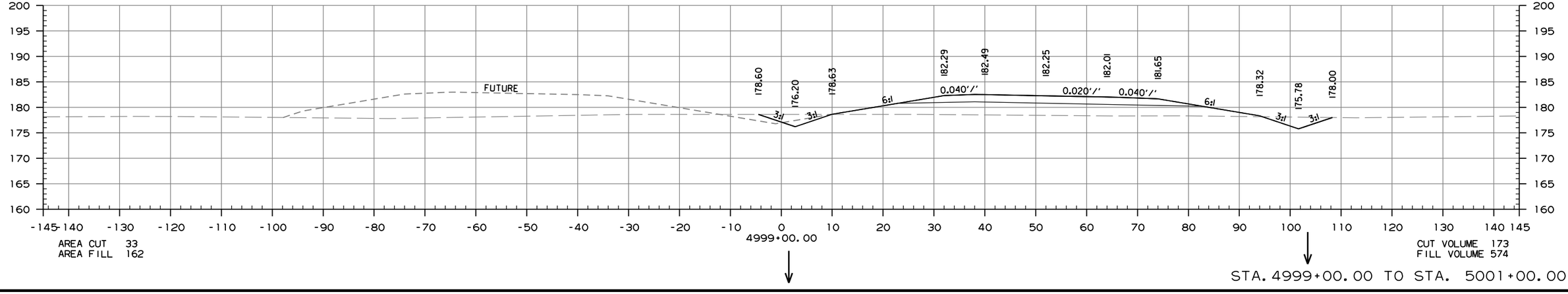
STA. 4996+00.00 TO STA. 4998+00.00

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	261	368
		CROSS SECTIONS				



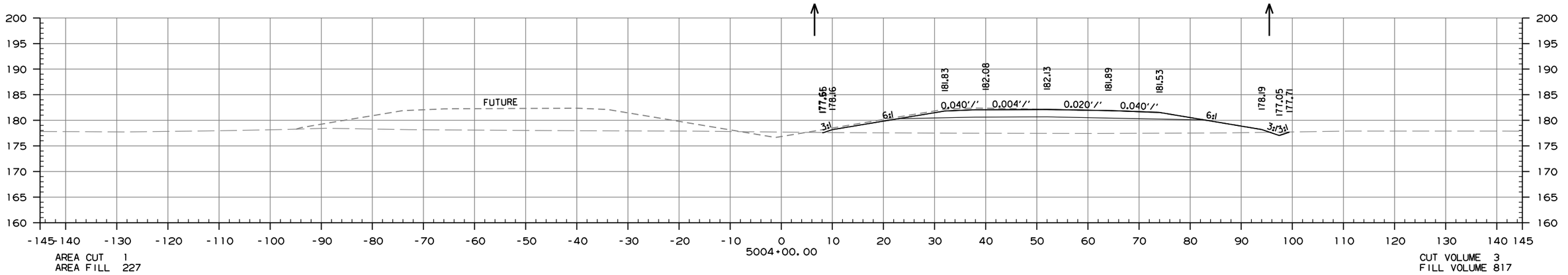


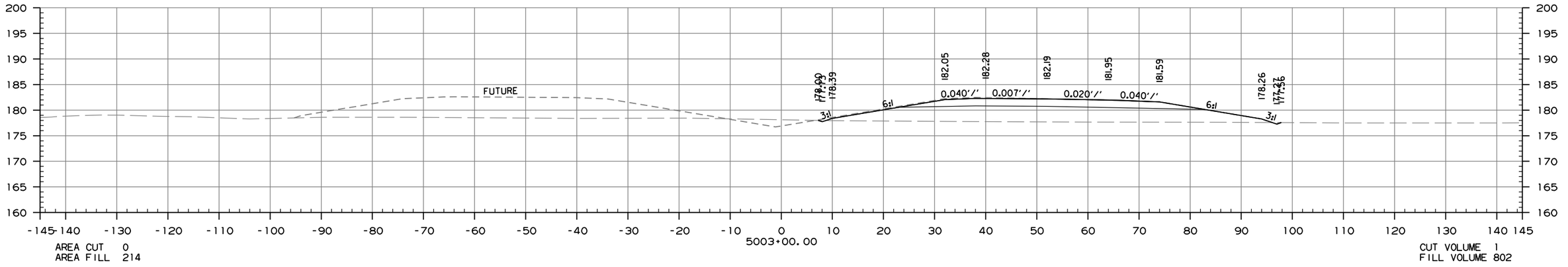


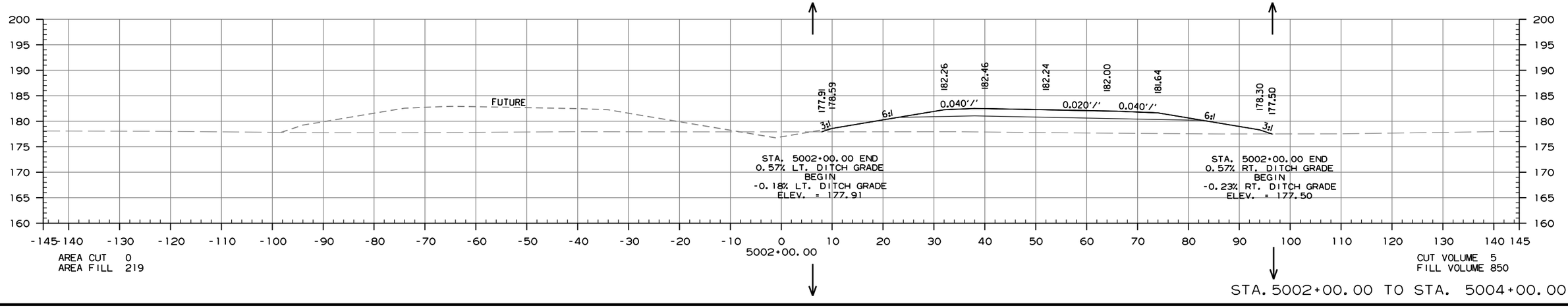
STA. 4999+00.00 TO STA. 5001+00.00

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	262	368
		CROSS SECTIONS				



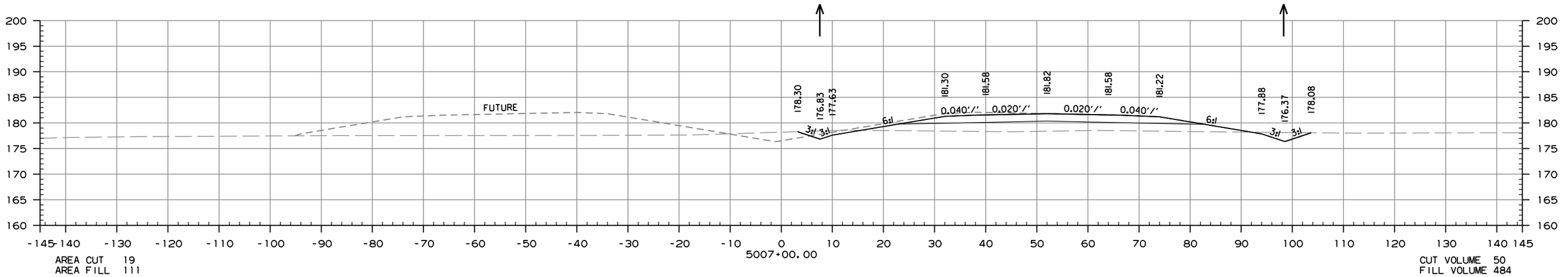


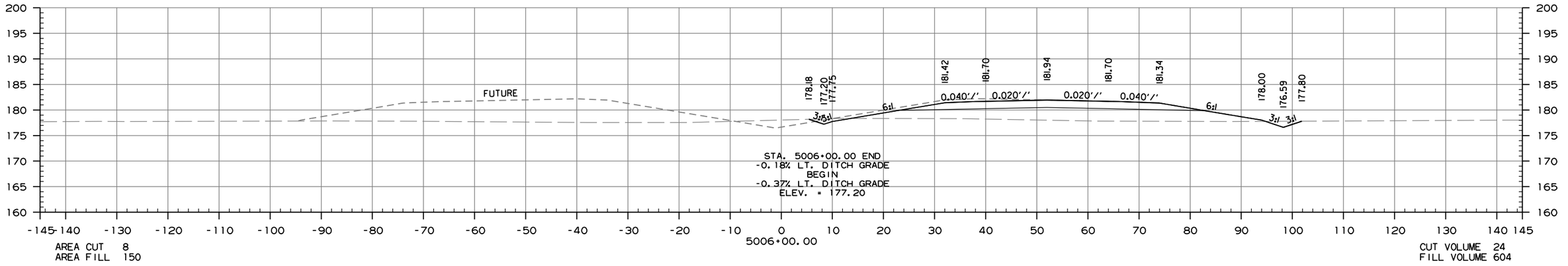


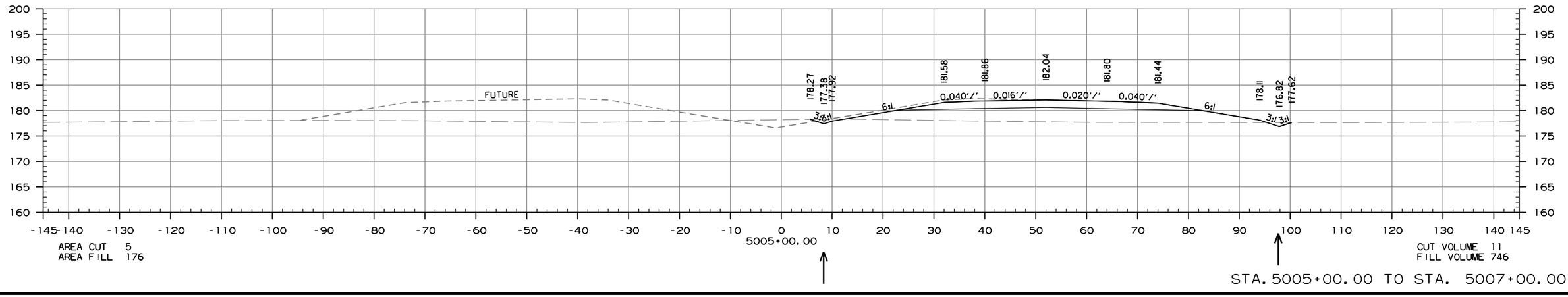
STA. 5002+00.00 TO STA. 5004+00.00

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	263	368
		CROSS SECTIONS				



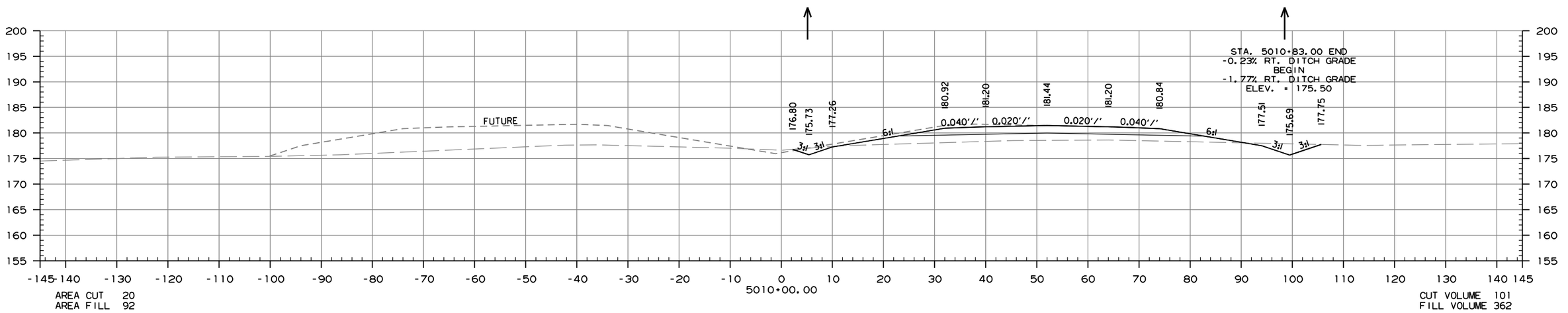


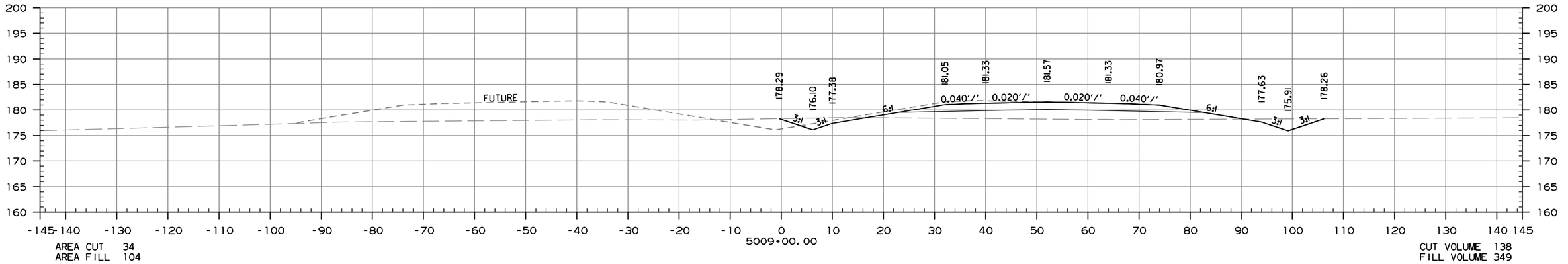


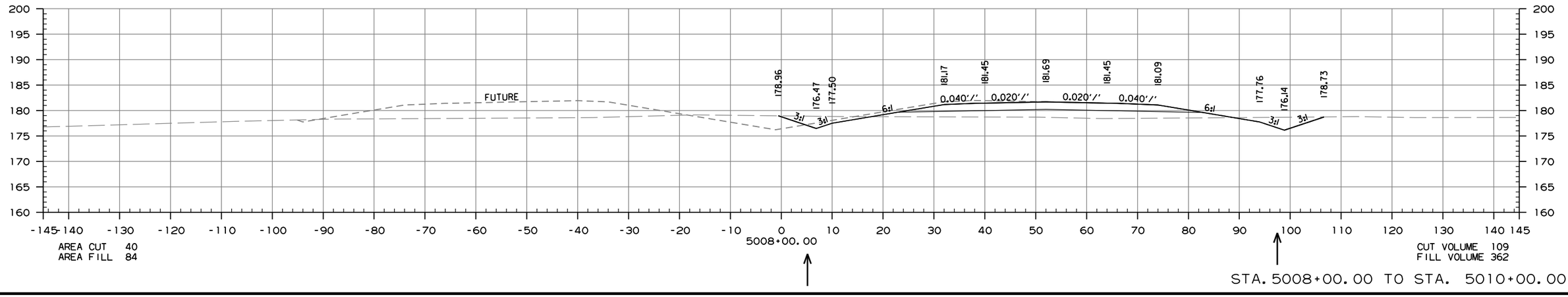
STA. 5005+00.00 TO STA. 5007+00.00

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	264	368
		CROSS SECTIONS				

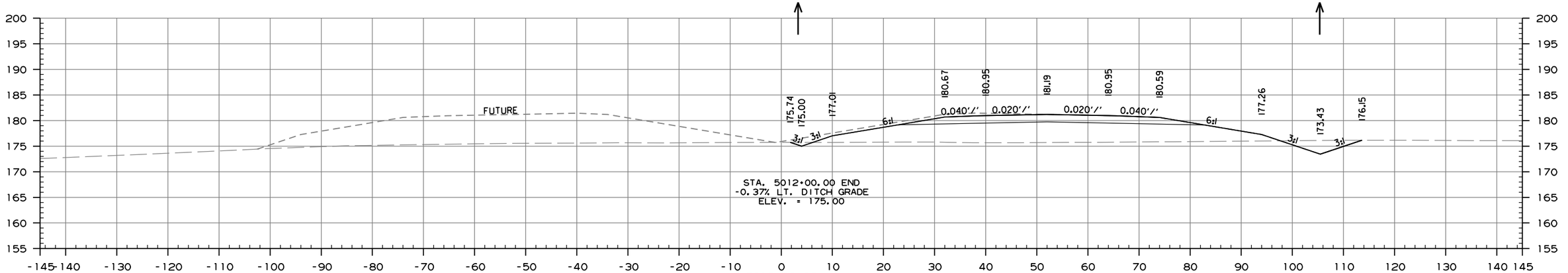


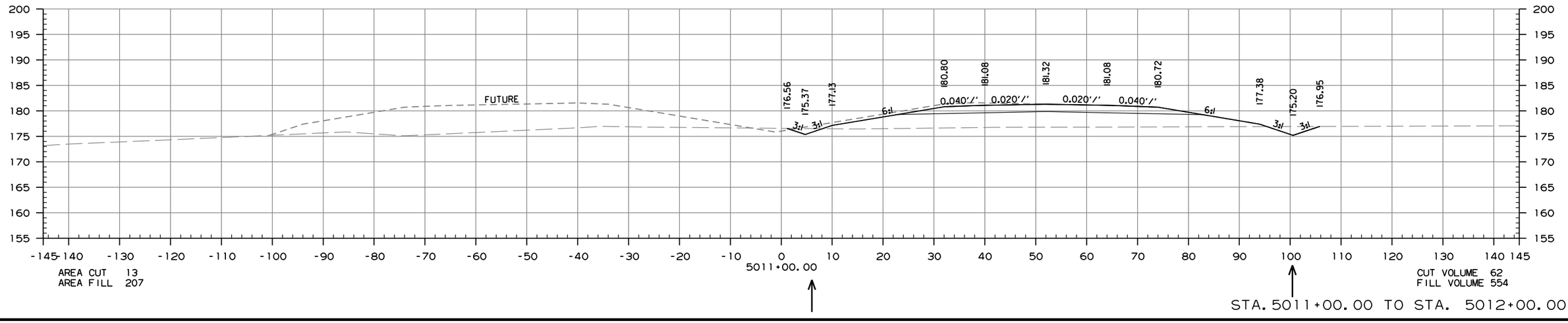




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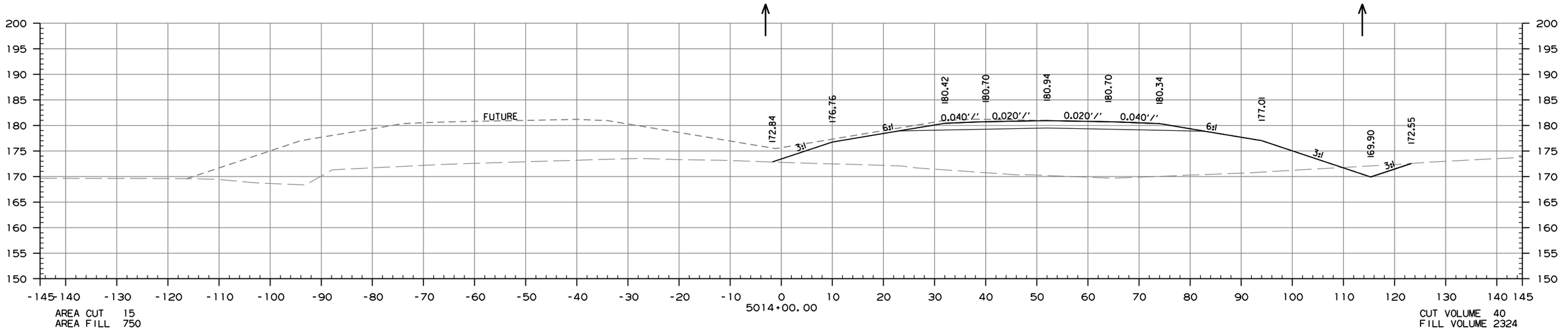
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	265	368
		CROSS SECTIONS				

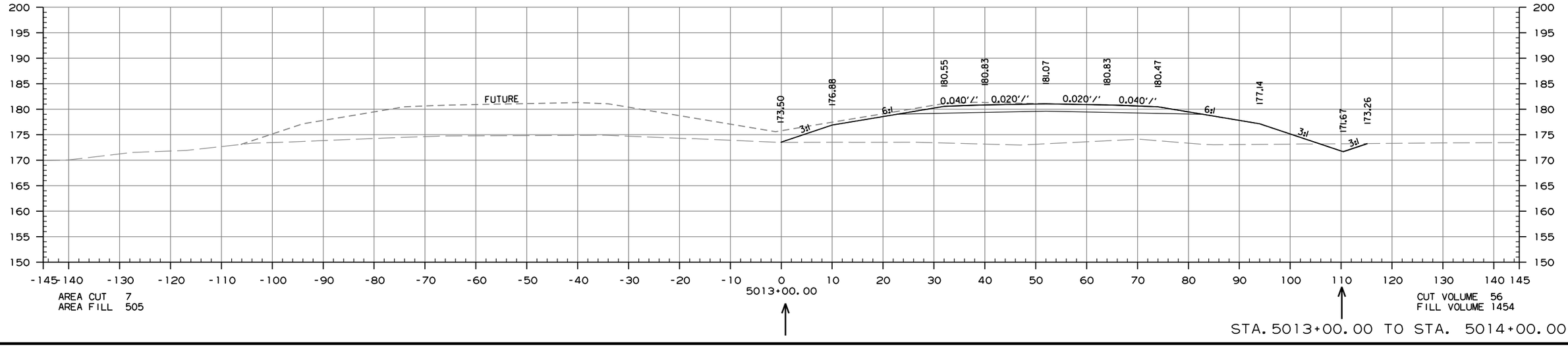




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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	266	368
		CROSS SECTIONS				

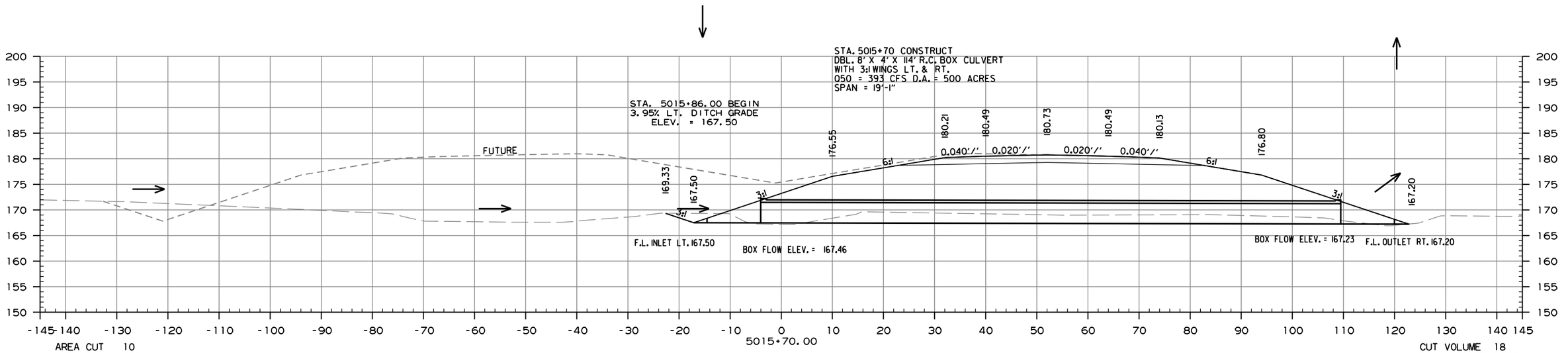




STA. 5013+00.00 TO STA. 5014+00.00

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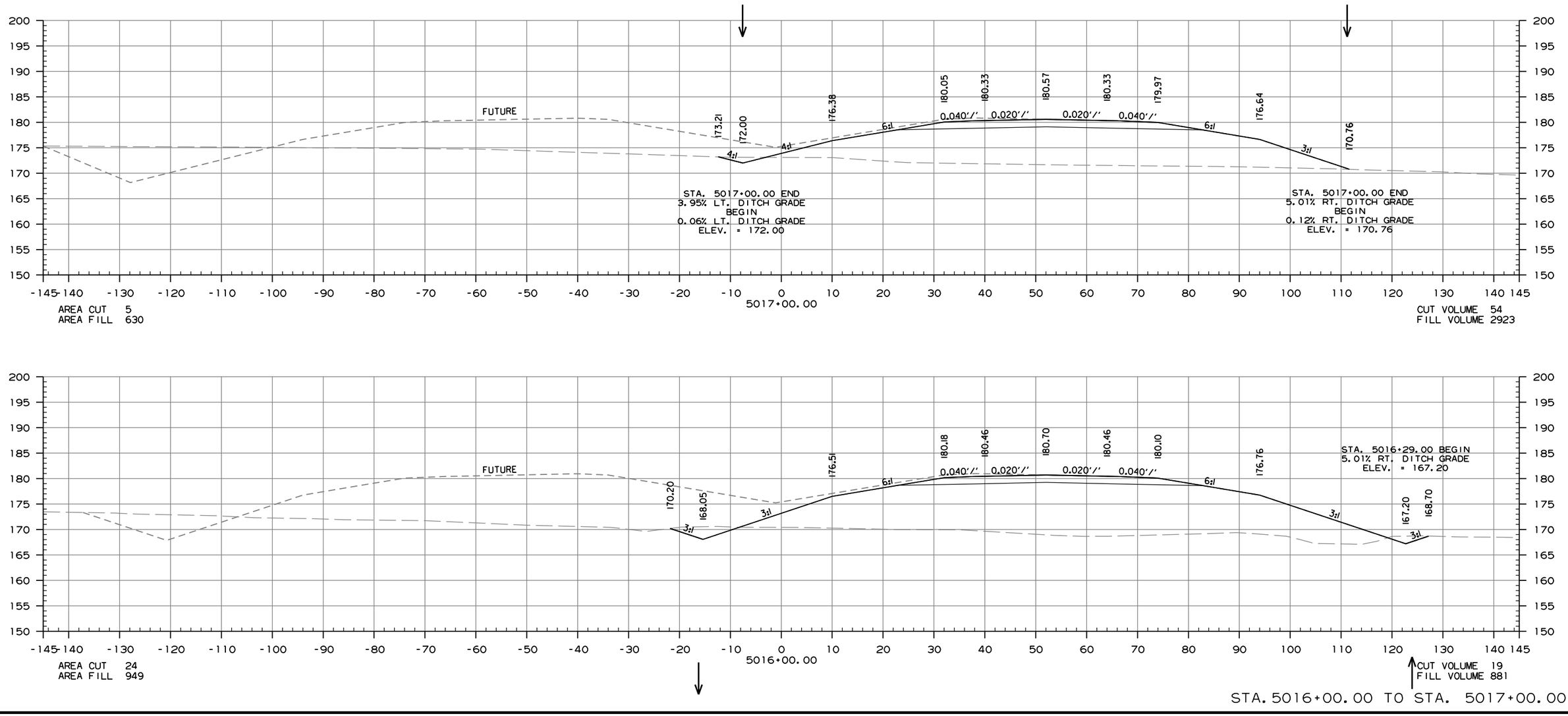
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	267	368
		CROSS SECTIONS				



STA. 5015+00.00 TO STA. 5015+70.00

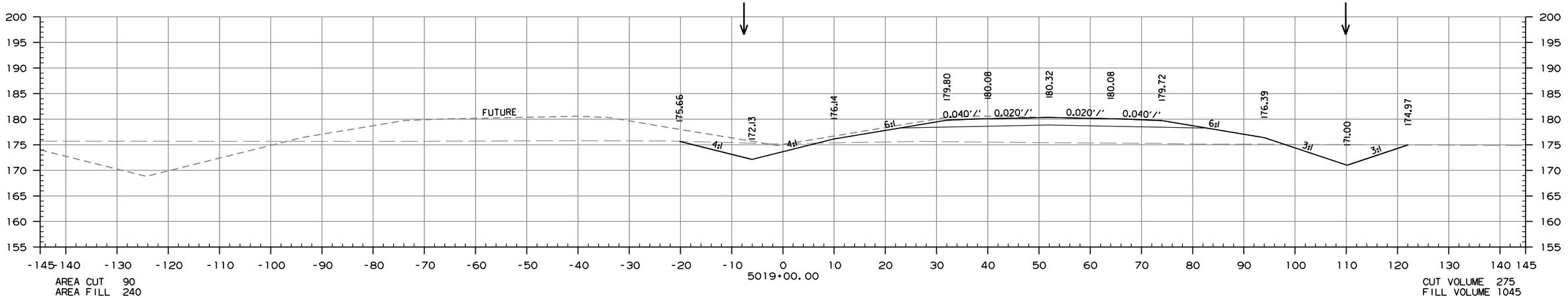
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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	268	368
		CROSS SECTIONS				



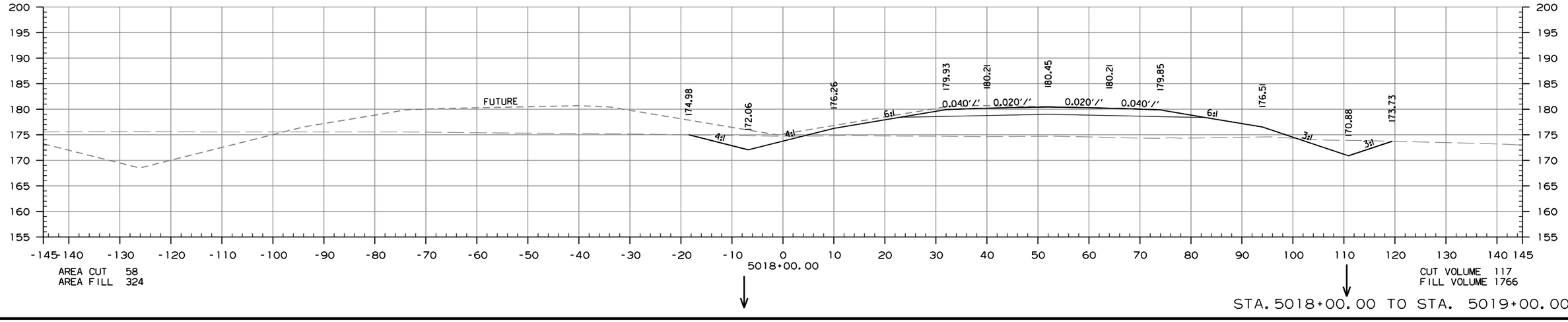
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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	269	368
		CROSS SECTIONS				



AREA CUT 90
AREA FILL 240

CUT VOLUME 275
FILL VOLUME 1045



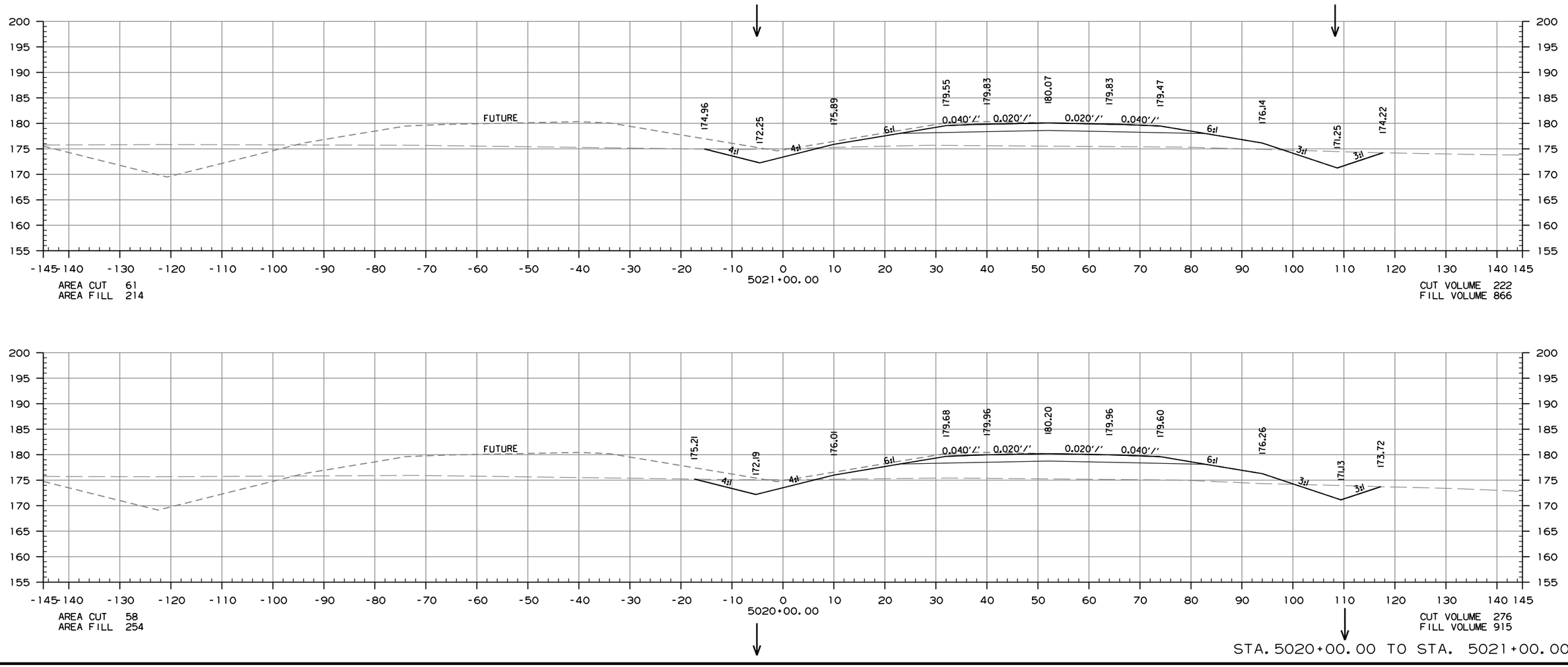
AREA CUT 58
AREA FILL 324

CUT VOLUME 117
FILL VOLUME 1766

STA. 5018+00.00 TO STA. 5019+00.00

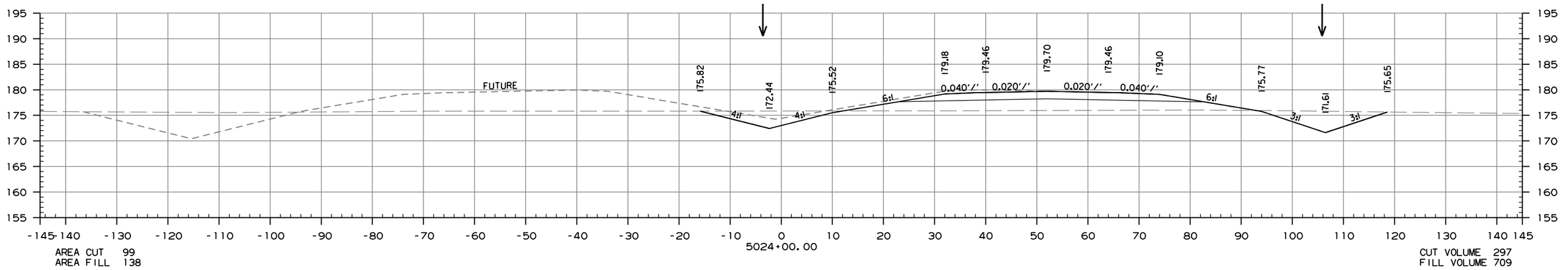
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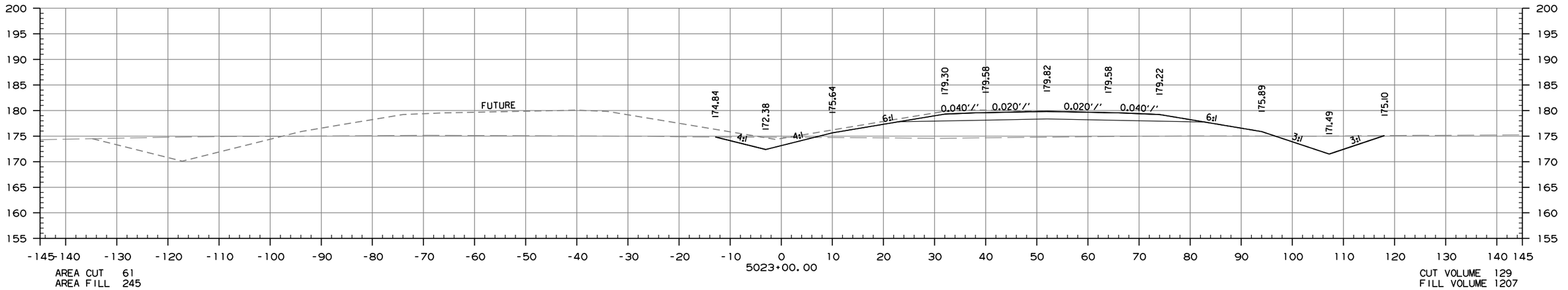
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	270	368
		CROSS SECTIONS				

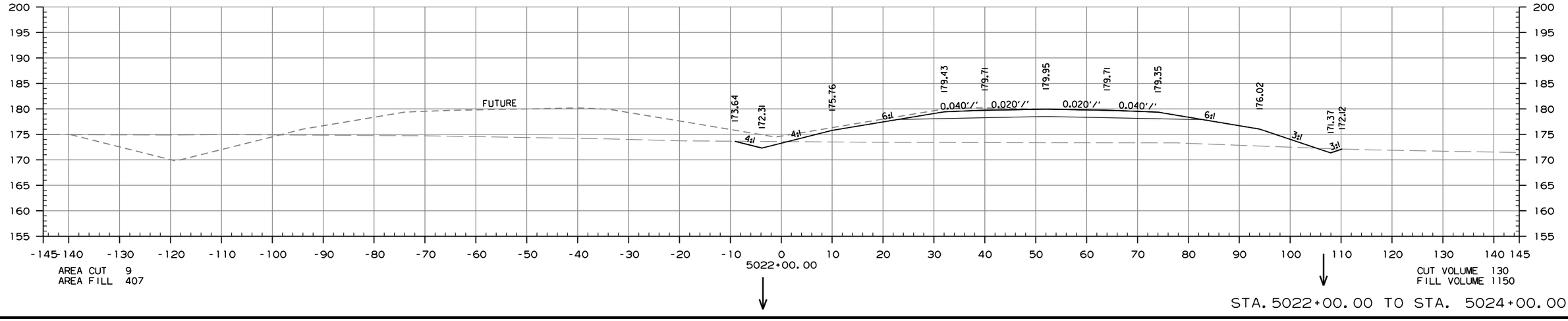


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07-27-2022		6	ARK.	020678	271	368
		CROSS SECTIONS				



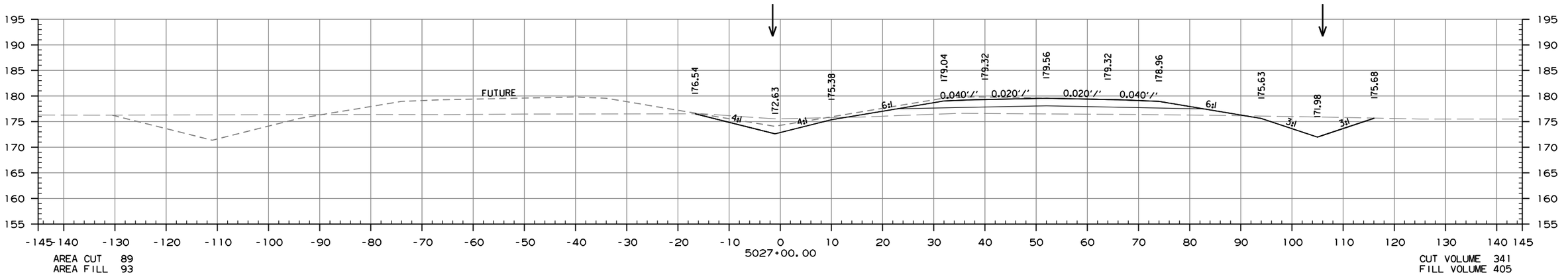


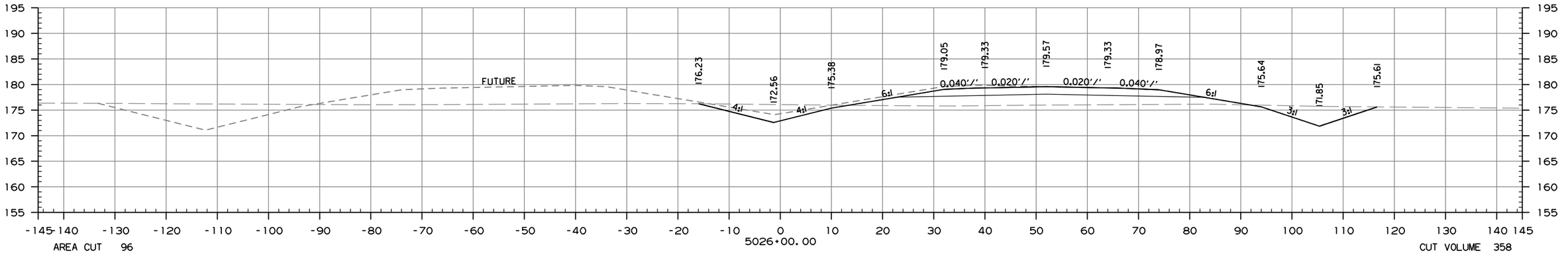


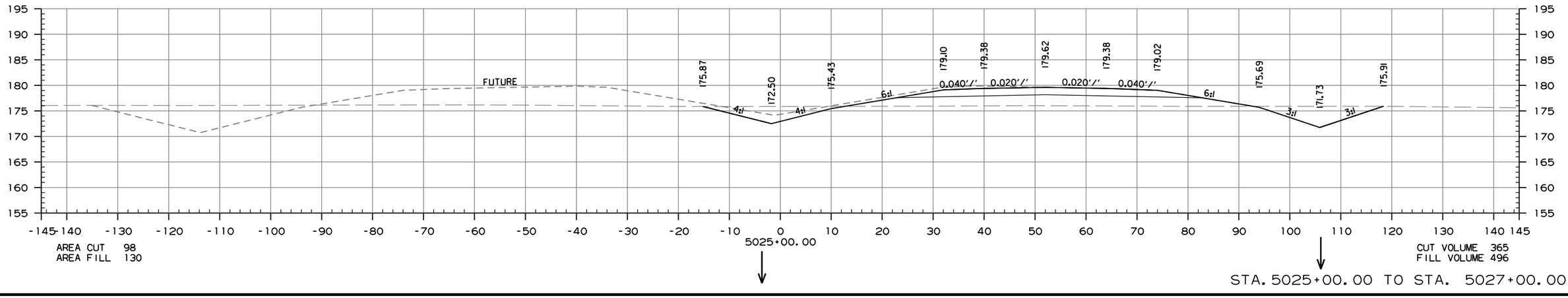
STA. 5022+00.00 TO STA. 5024+00.00

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	272	368
		CROSS SECTIONS				





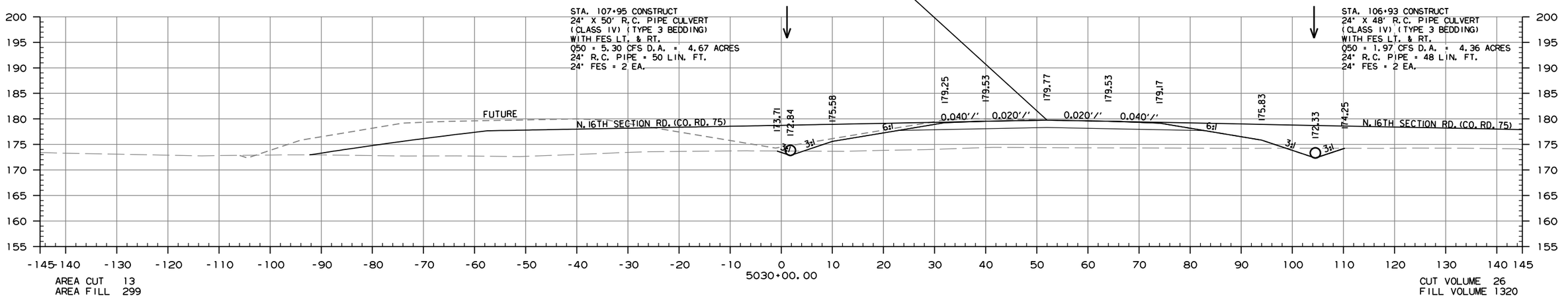


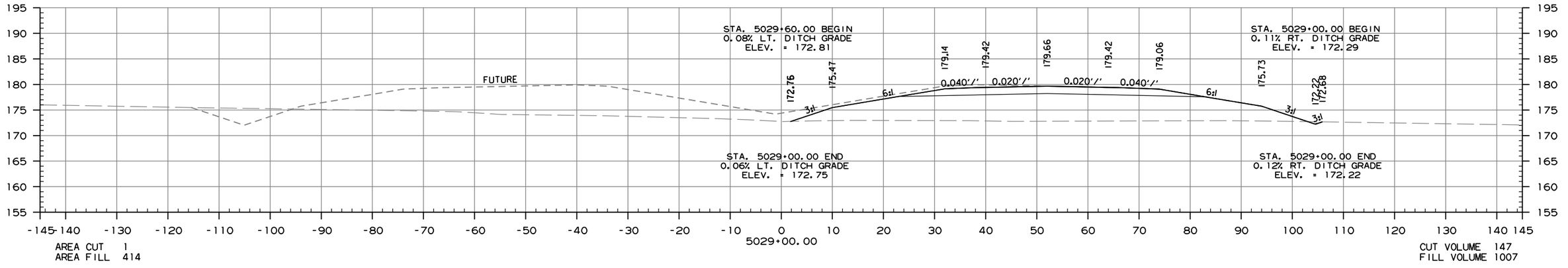
STA. 5025+00.00 TO STA. 5027+00.00

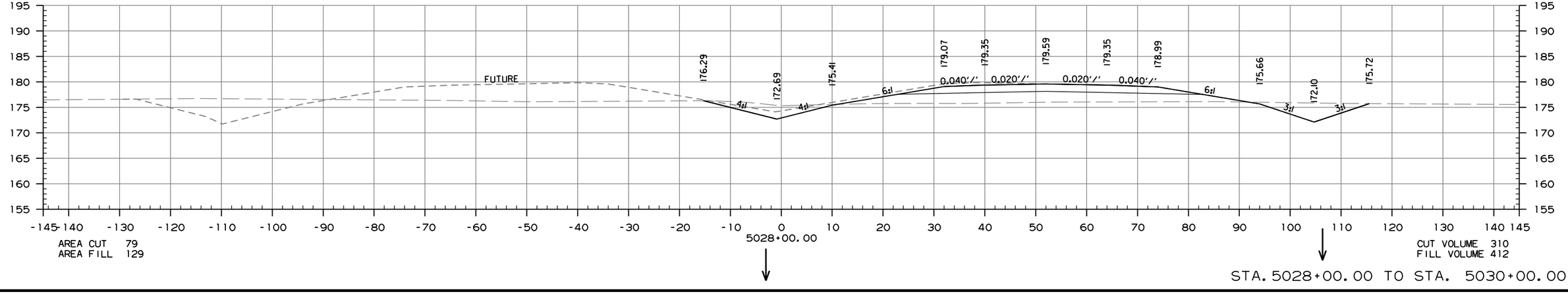
mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	273	368
		CROSS SECTIONS				

STA. 5030+00.00 52' RT. OF I-69 CL =
STA. 107+45.61 CO. RD. 75 CL
Δ = 90° 00' 00"



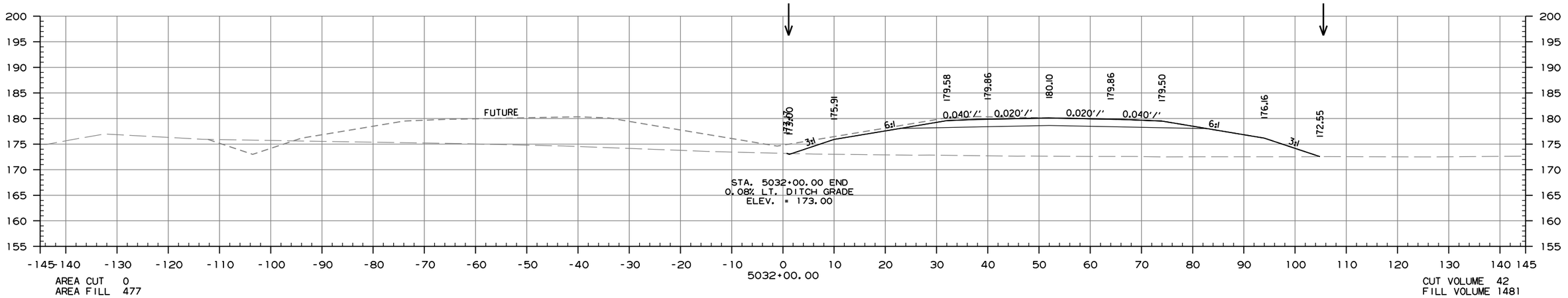


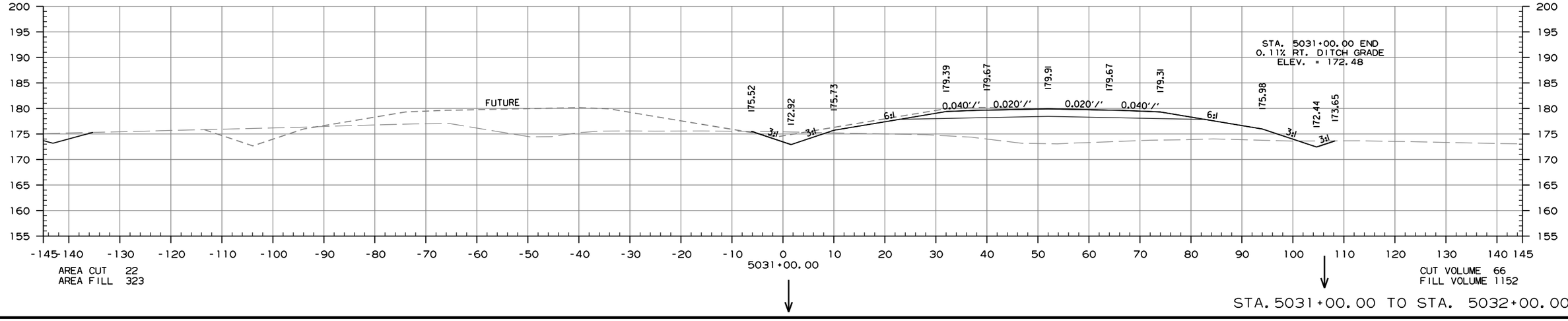


STA. 5028+00.00 TO STA. 5030+00.00

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	274	368
		CROSS SECTIONS				

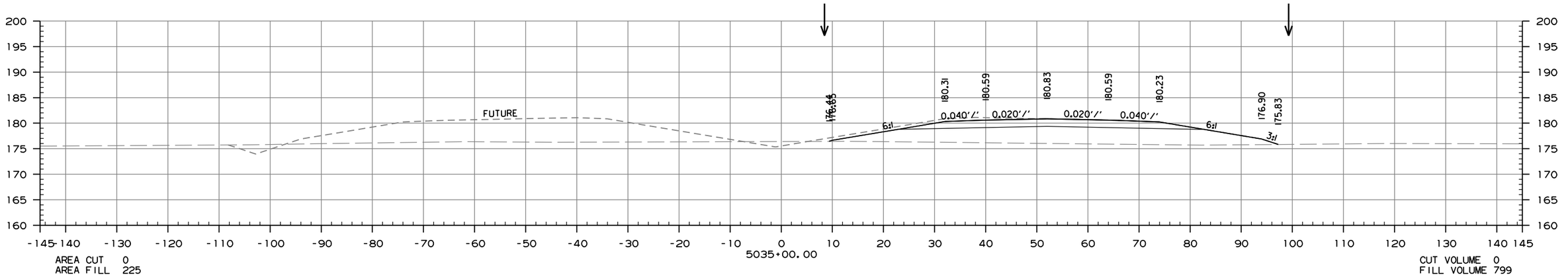


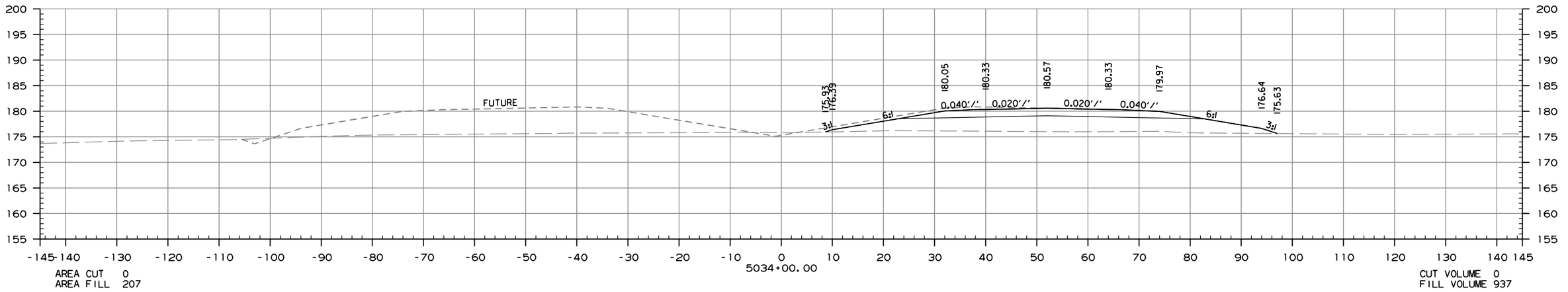


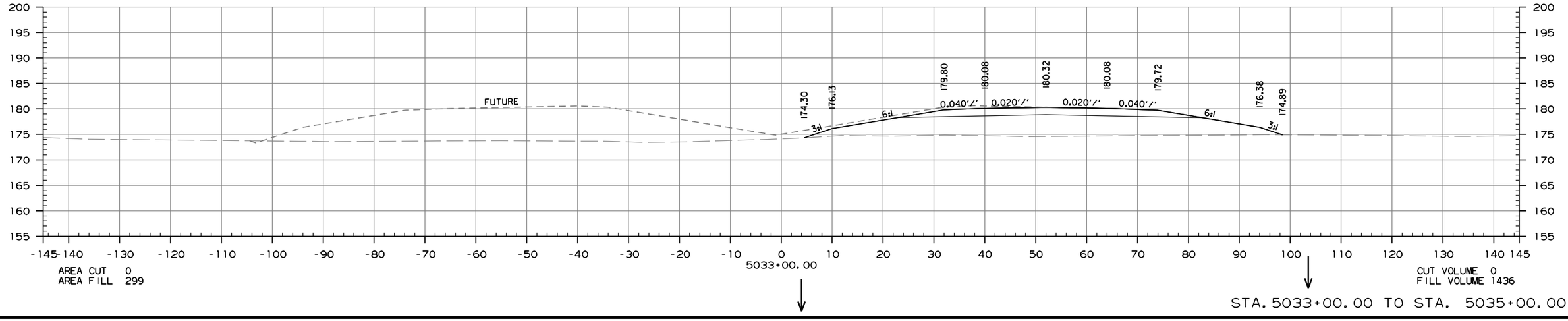
STA. 5031+00.00 TO STA. 5032+00.00

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	275	368
		CROSS SECTIONS				



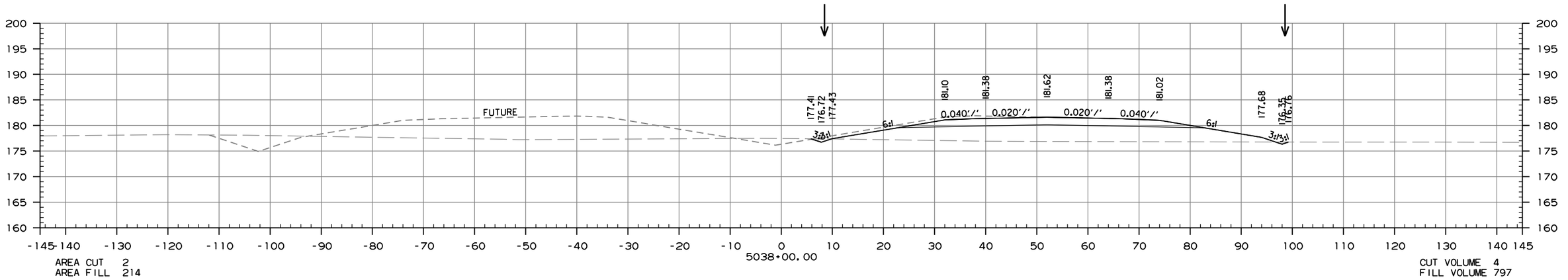


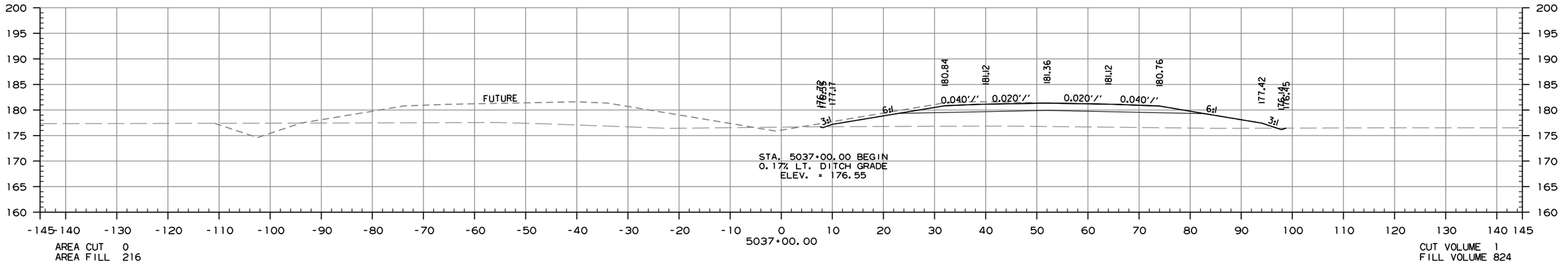


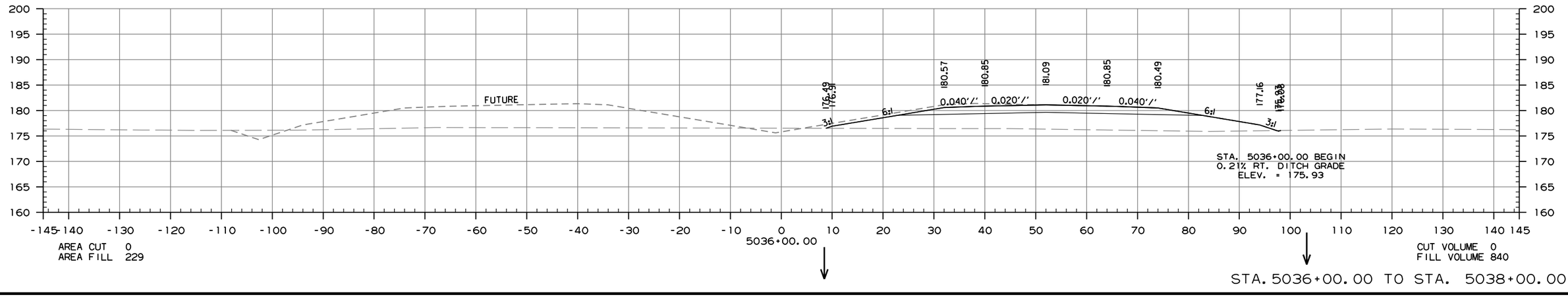
STA. 5033+00.00 TO STA. 5035+00.00

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R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	276	368
		CROSS SECTIONS				



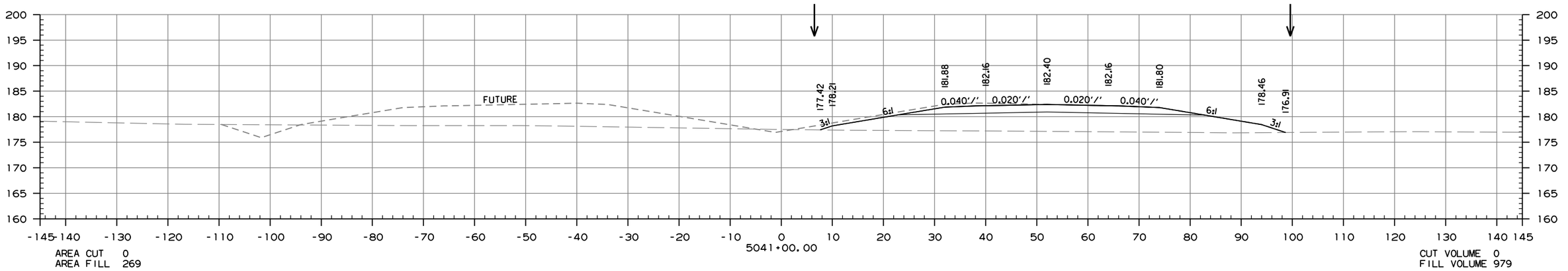


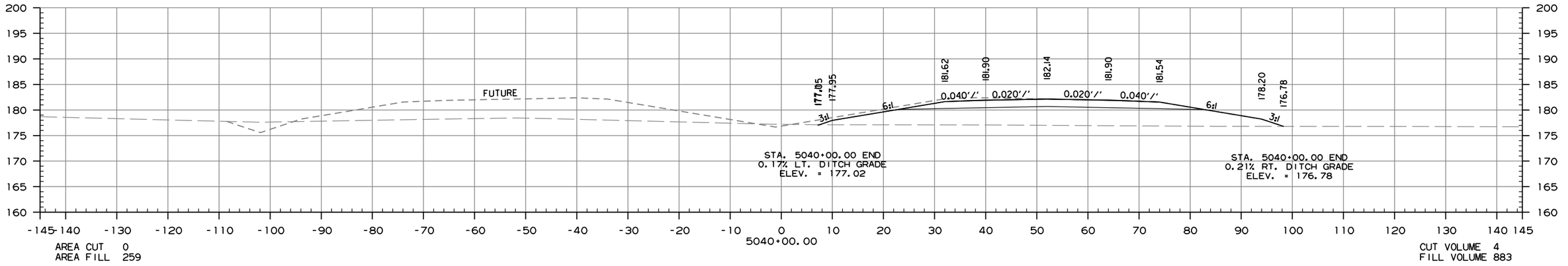


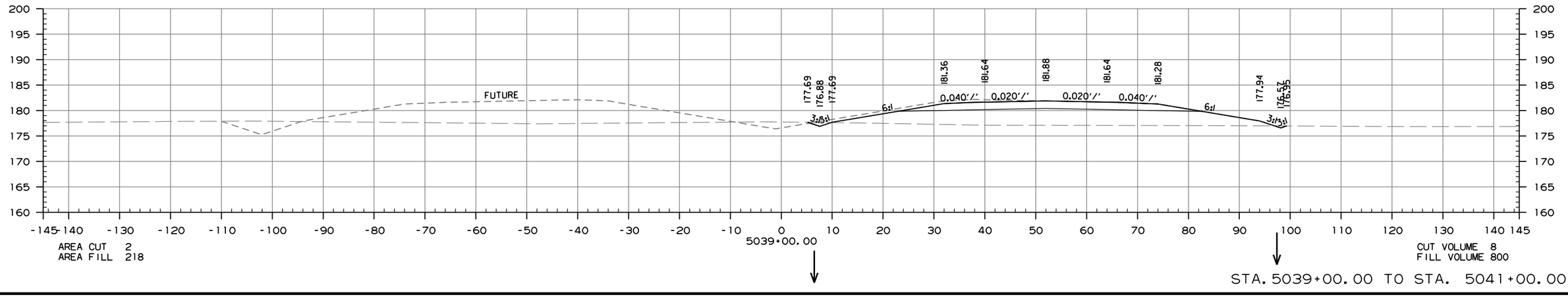
STA. 5036+00.00 TO STA. 5038+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	277	368
		CROSS SECTIONS				



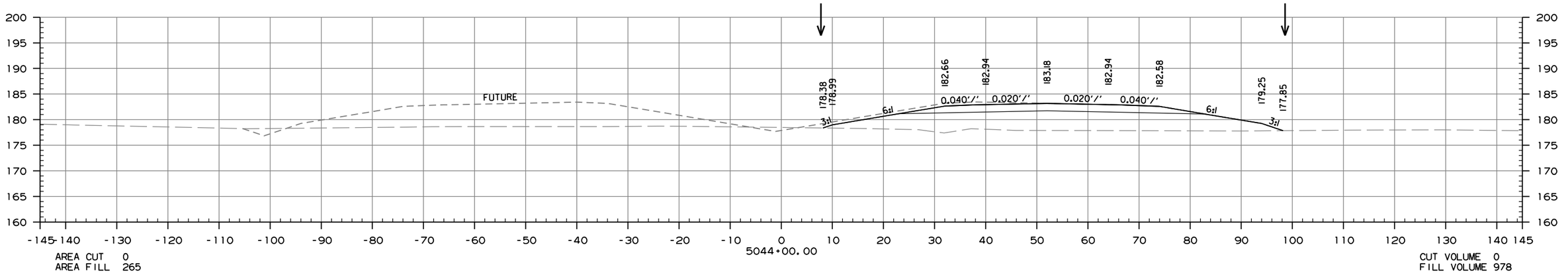


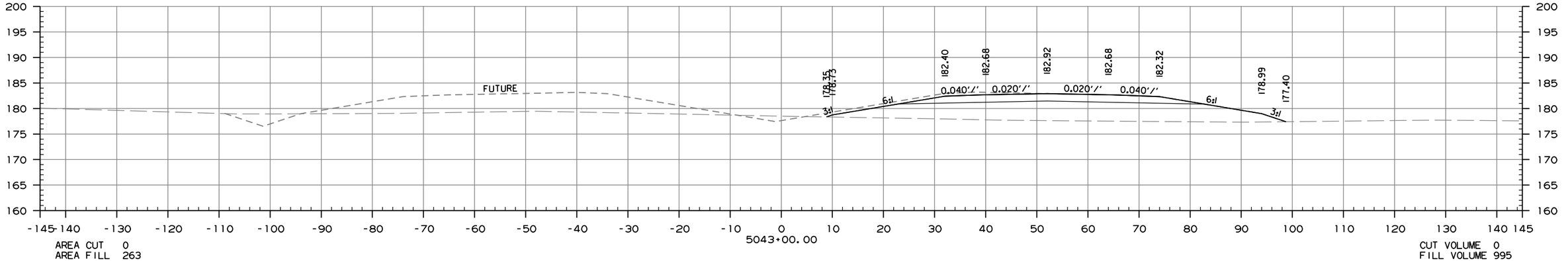


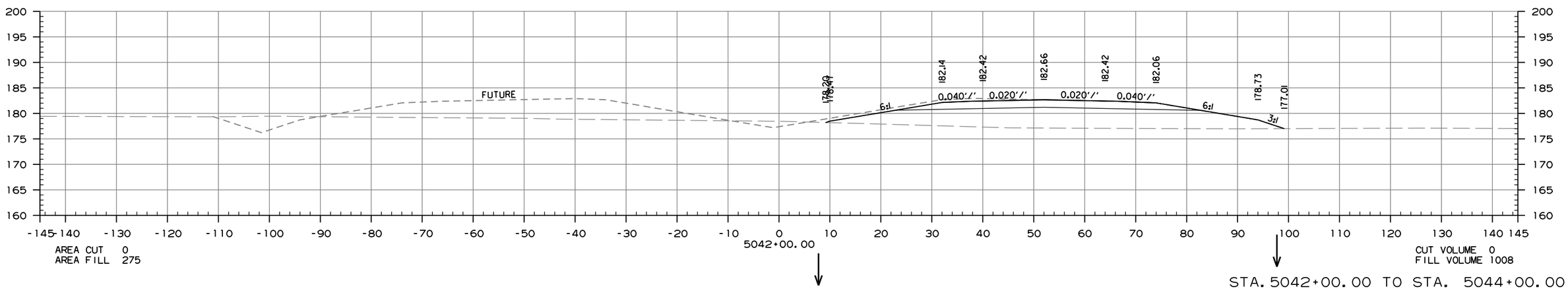
STA. 5039+00.00 TO STA. 5041+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	278	368
		CROSS SECTIONS				



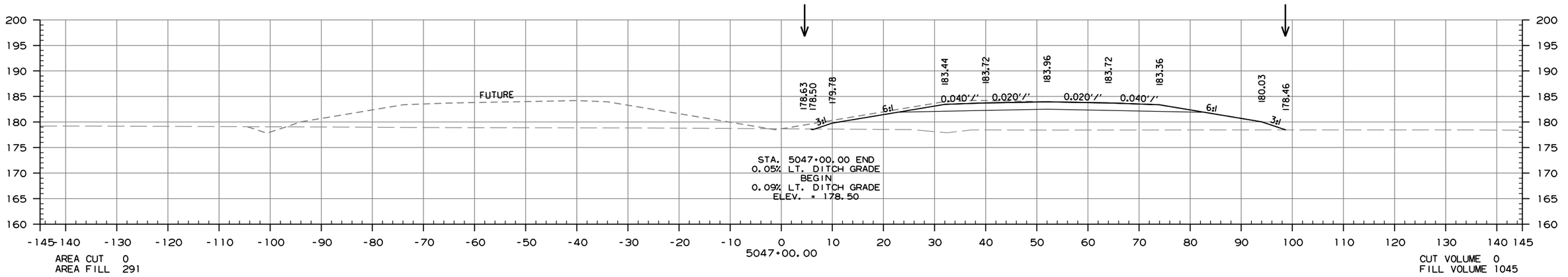


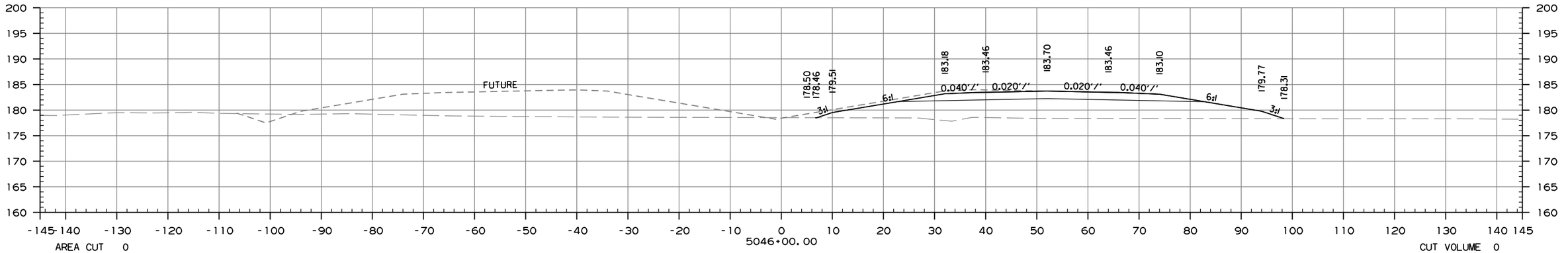


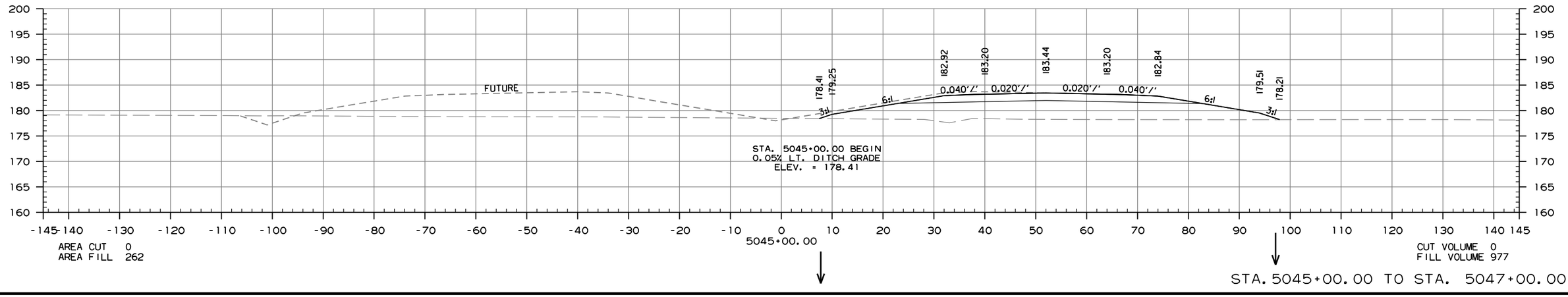
STA. 5042+00.00 TO STA. 5044+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	279	368
		CROSS SECTIONS				

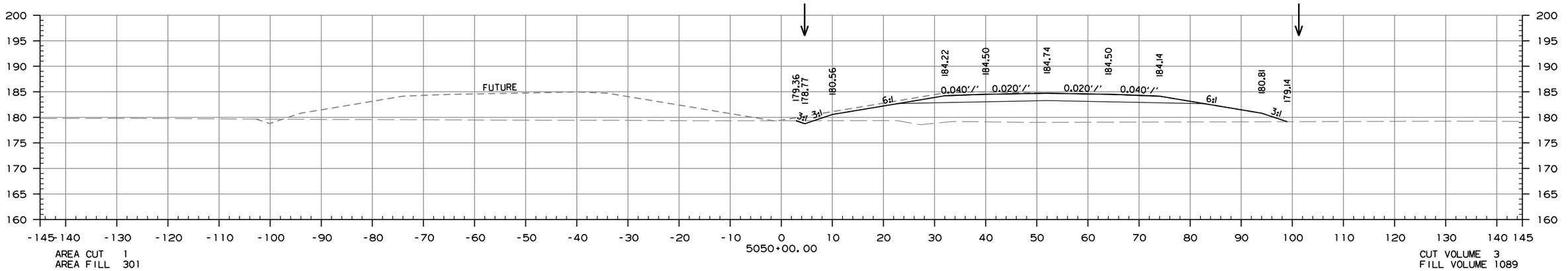


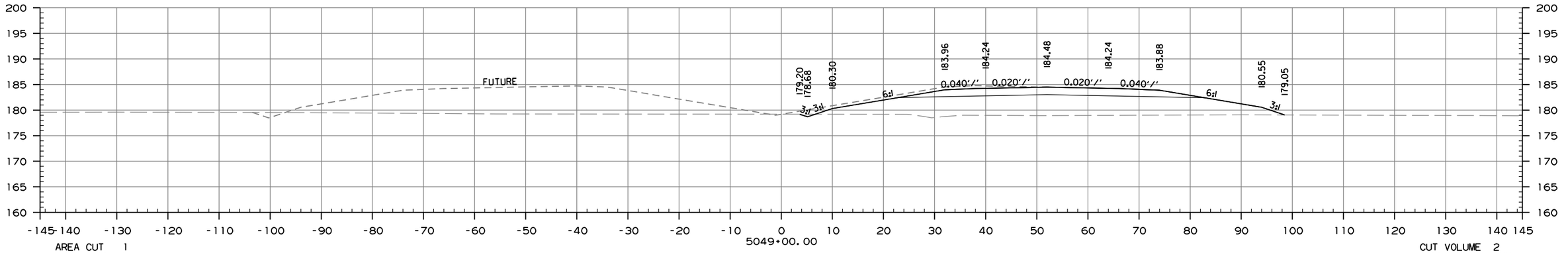


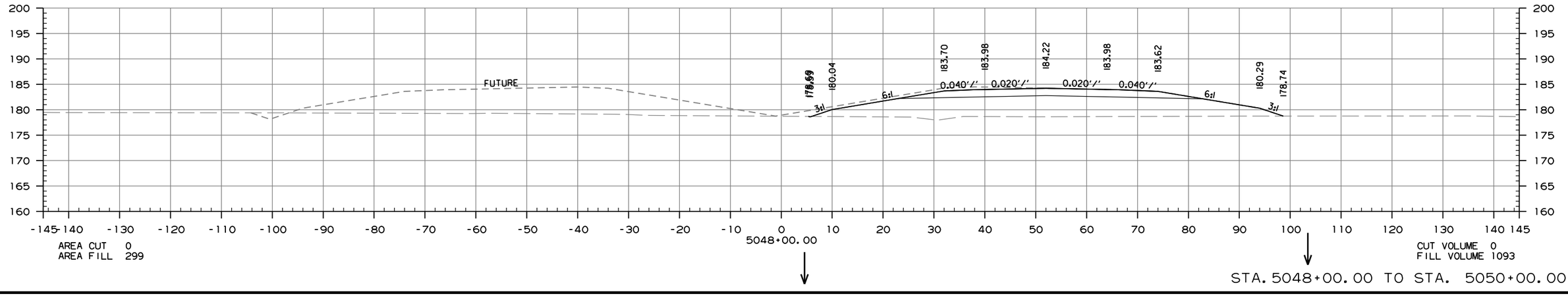


mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	280	368
		CROSS SECTIONS				



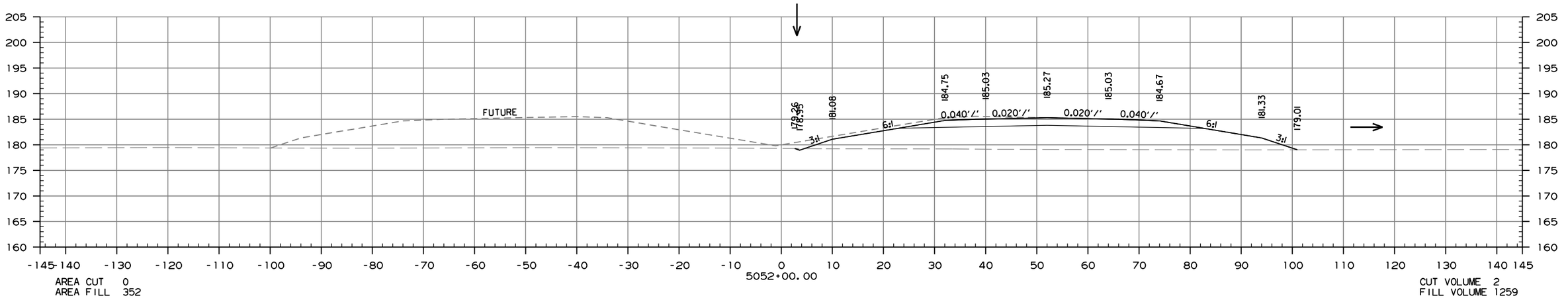


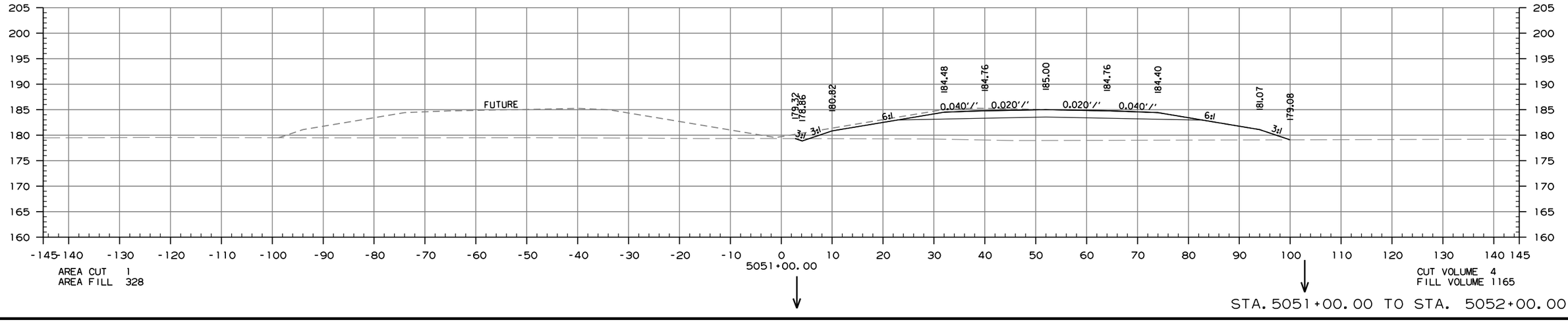


STA. 5048+00.00 TO STA. 5050+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	281	368
		CROSS SECTIONS				

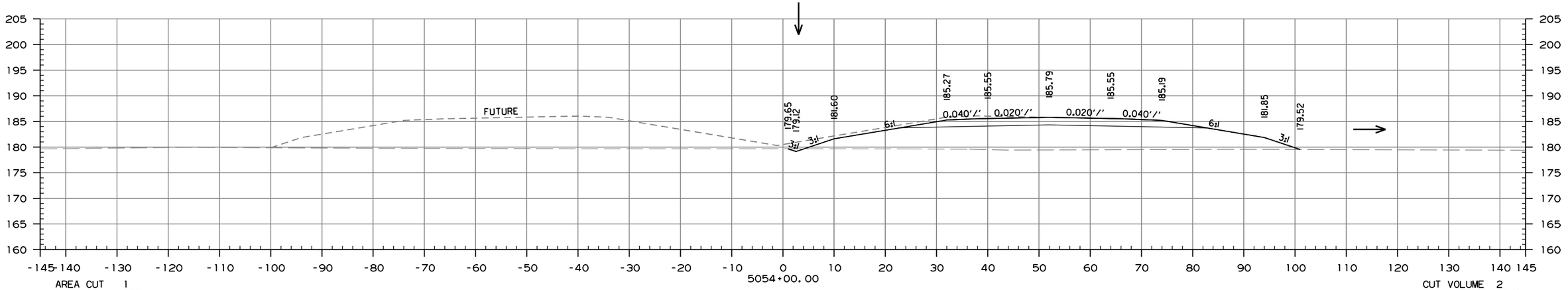


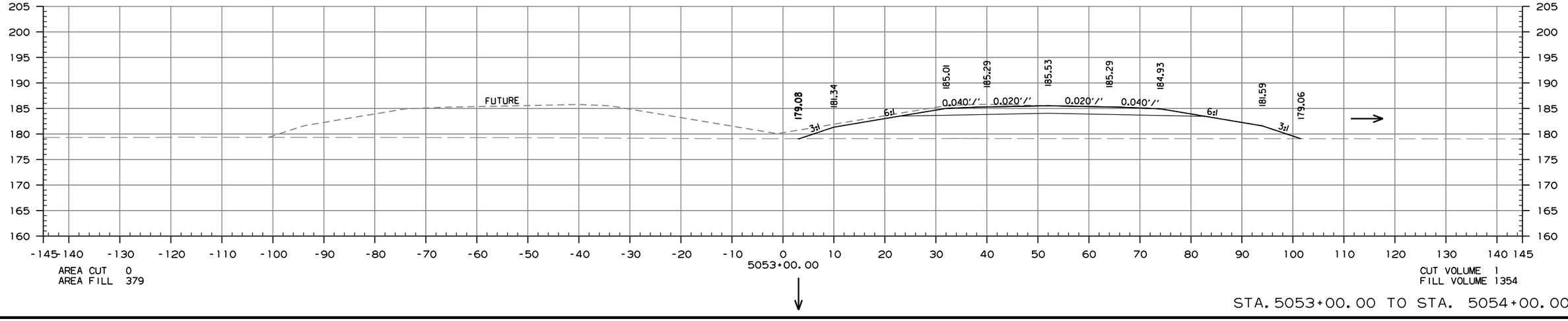


STA. 5051+00.00 TO STA. 5052+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	282	368
		CROSS SECTIONS				

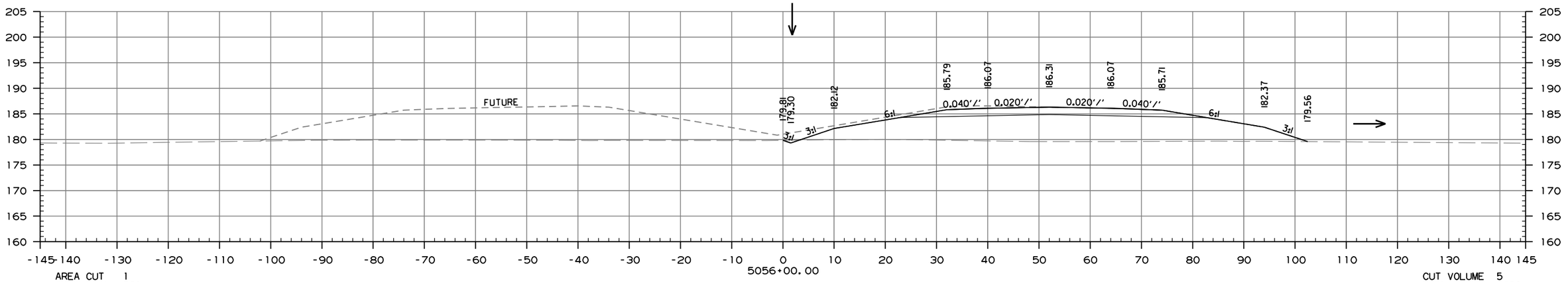


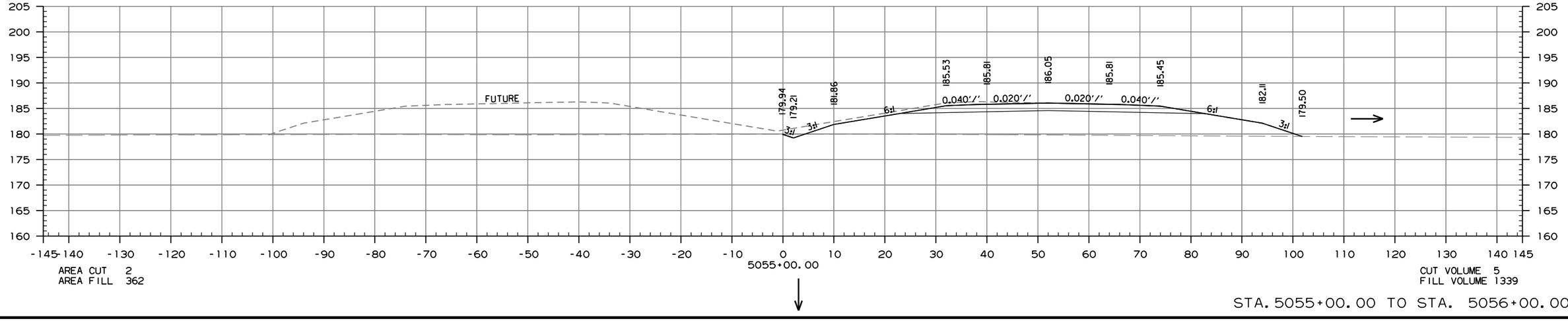


STA. 5053+00.00 TO STA. 5054+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	283	368
		CROSS SECTIONS				

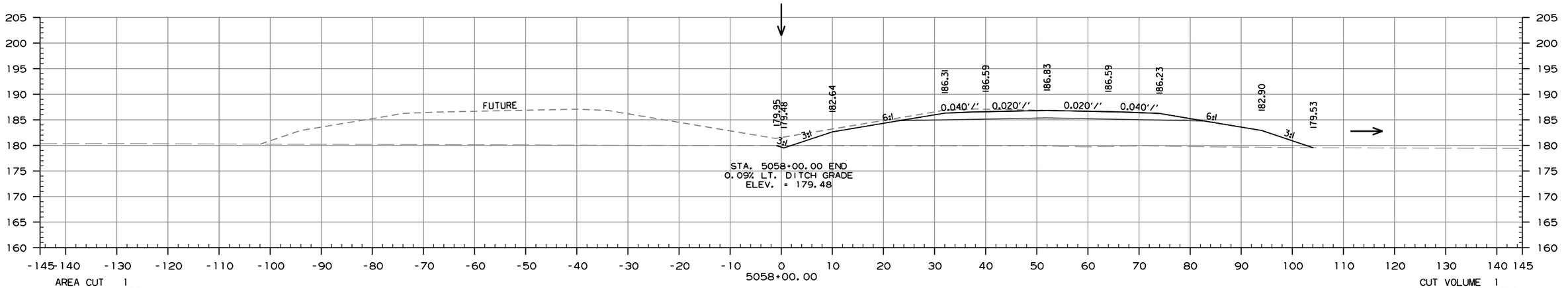


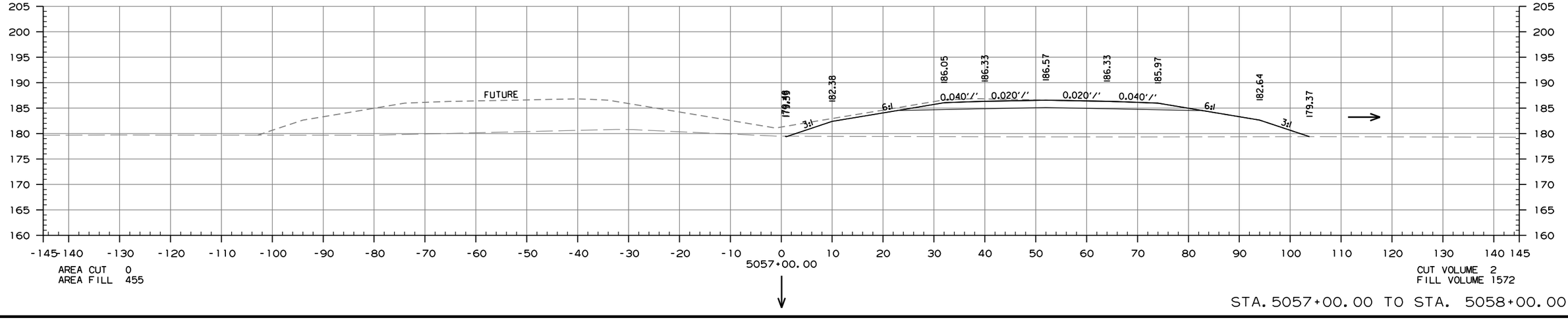


STA. 5055+00.00 TO STA. 5056+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	284	368
		CROSS SECTIONS				

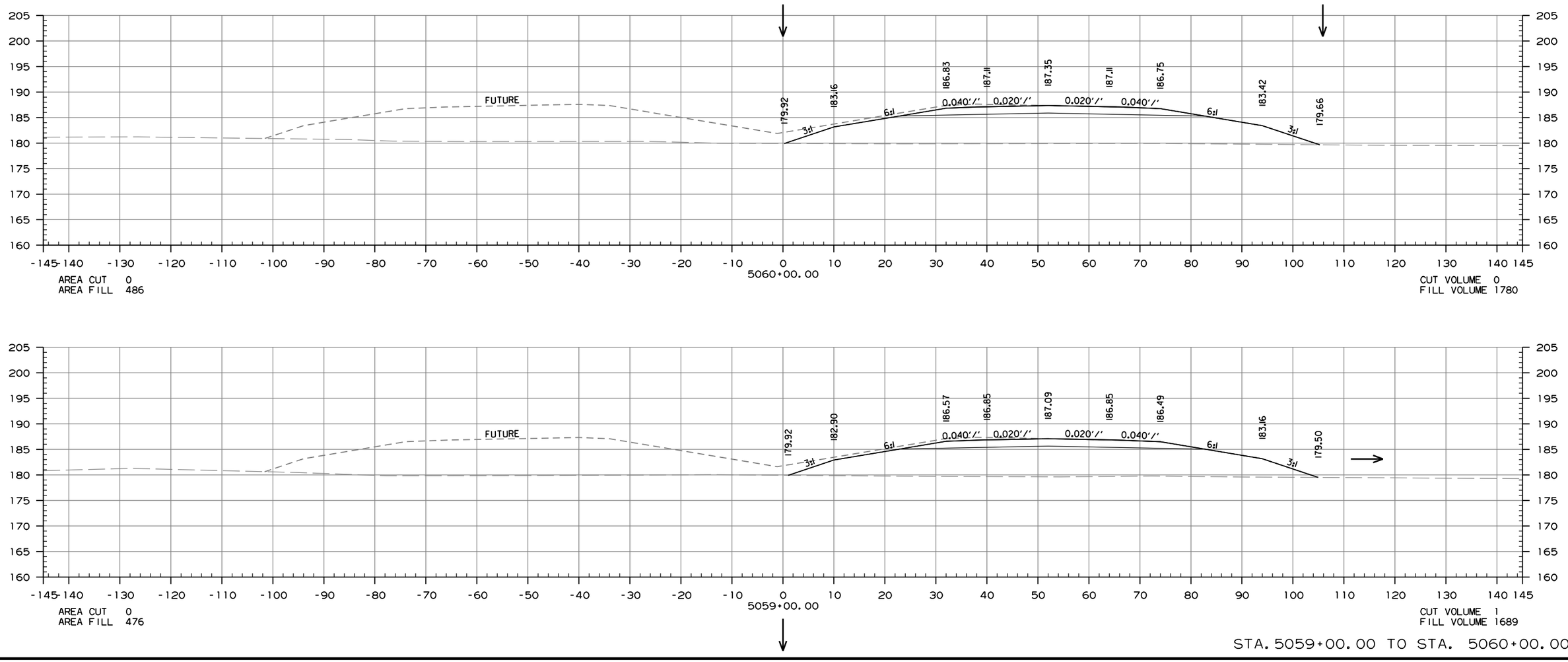




STA. 5057+00.00 TO STA. 5058+00.00

mh39735 7/14/2022
R020678.DGN

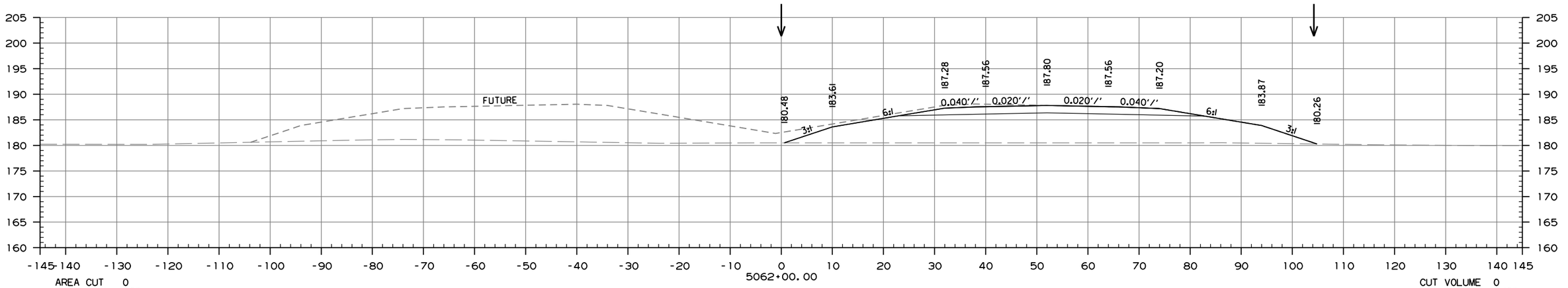
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	285	368
		CROSS SECTIONS				

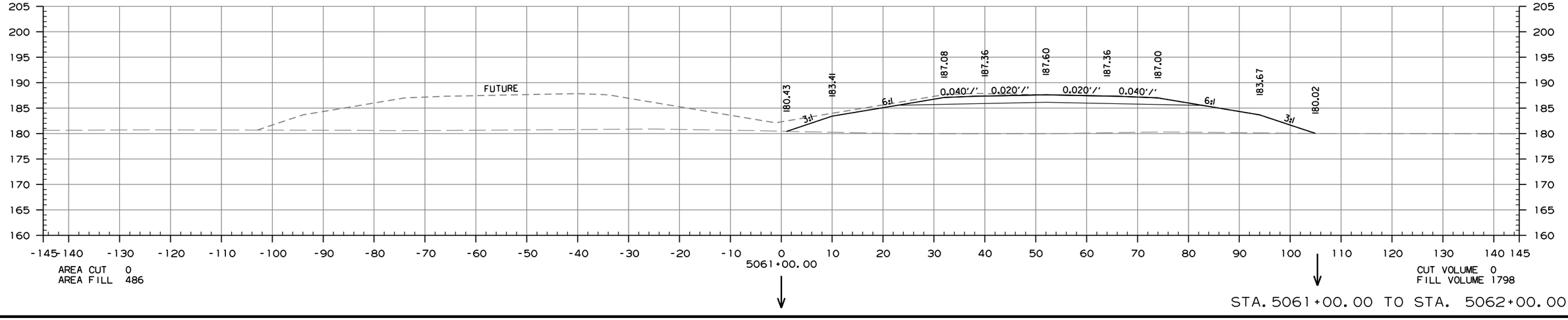


STA. 5059+00.00 TO STA. 5060+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	286	368
		CROSS SECTIONS				

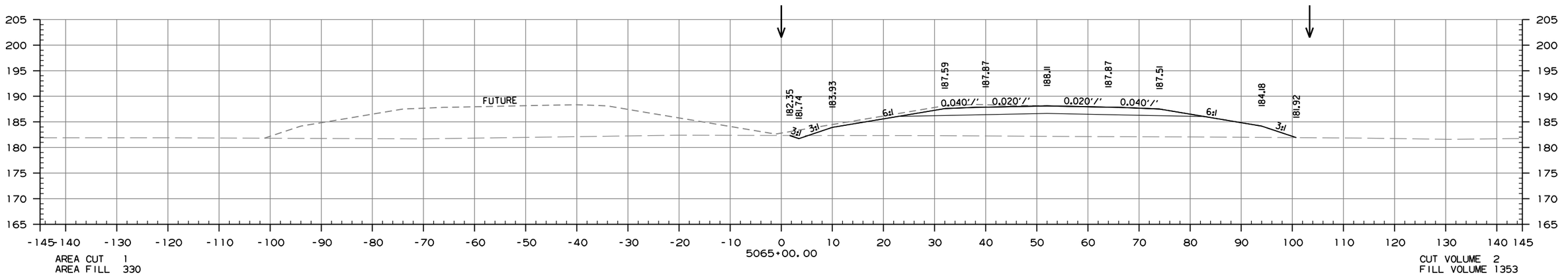


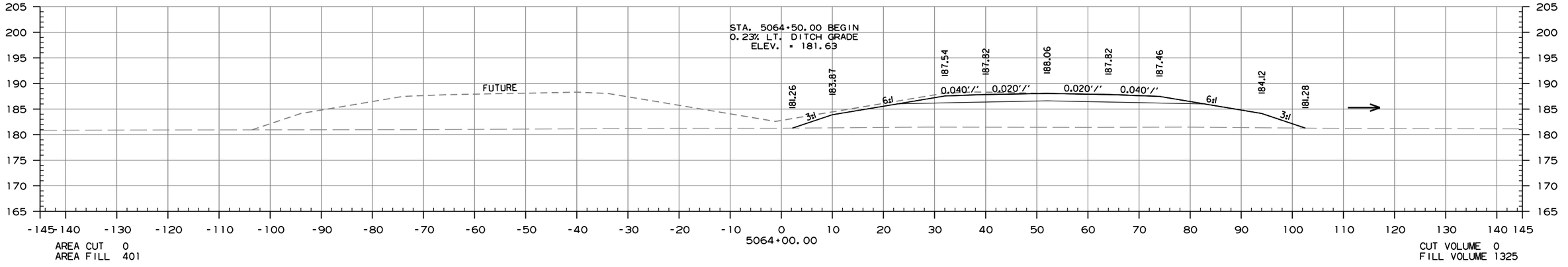


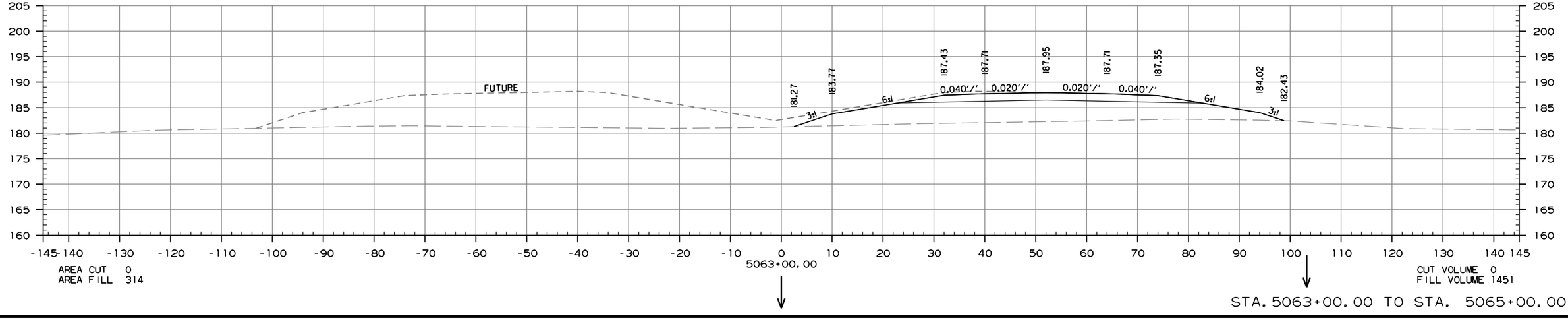
STA. 5061+00.00 TO STA. 5062+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	287	368
		CROSS SECTIONS				



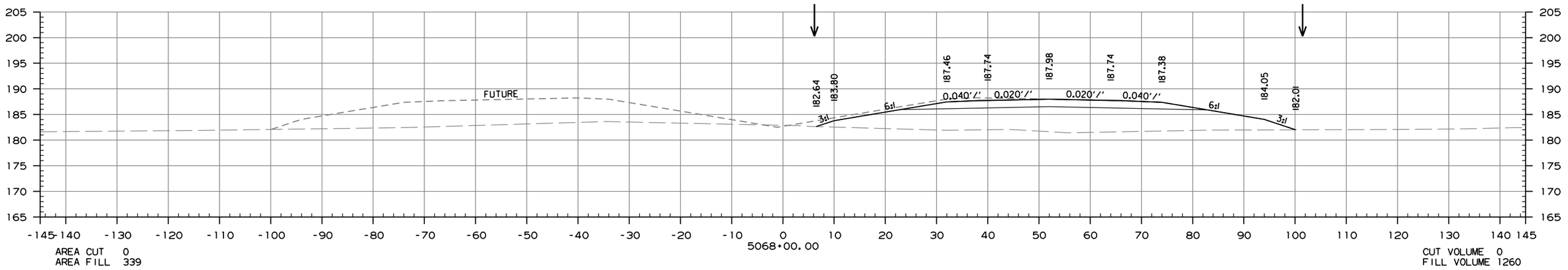


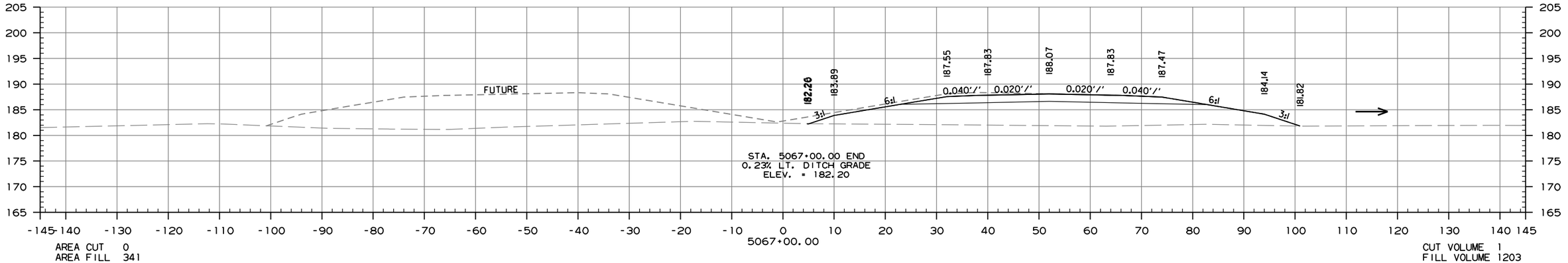


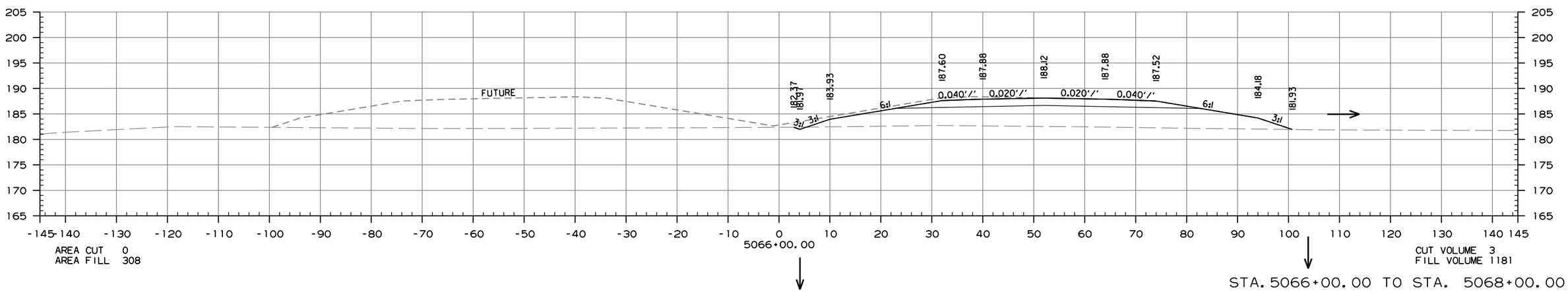
STA. 5063+00.00 TO STA. 5065+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	288	368
		CROSS SECTIONS				



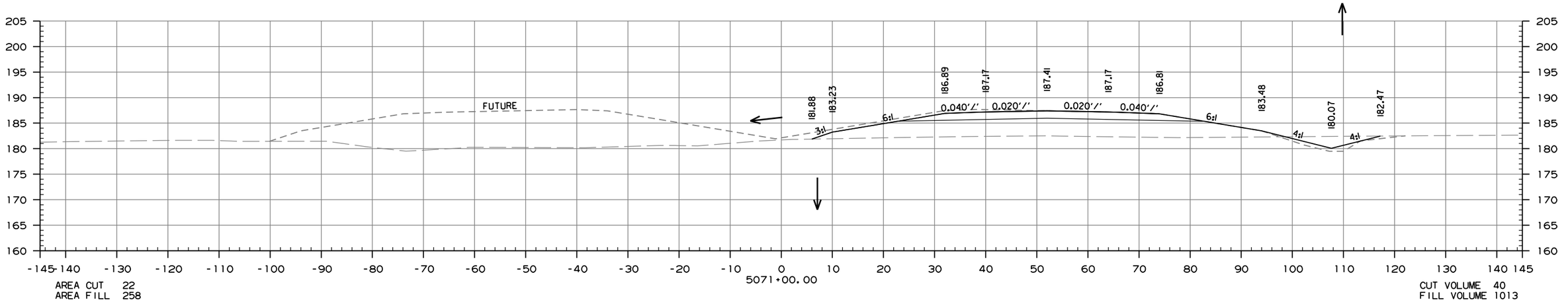


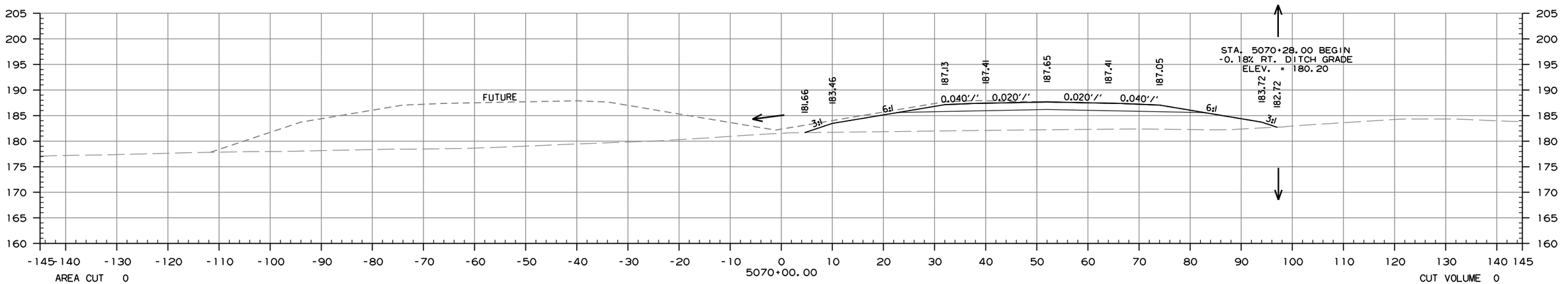


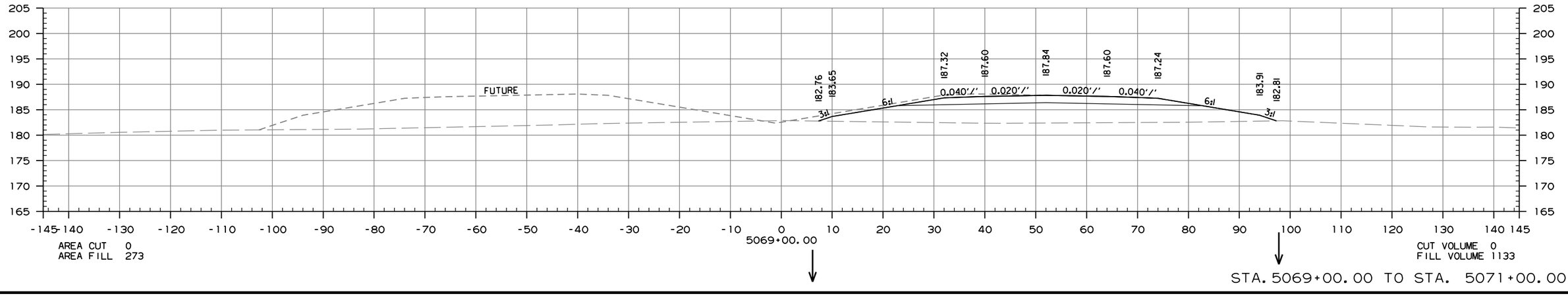
STA. 5066+00.00 TO STA. 5068+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	289	368
		CROSS SECTIONS				



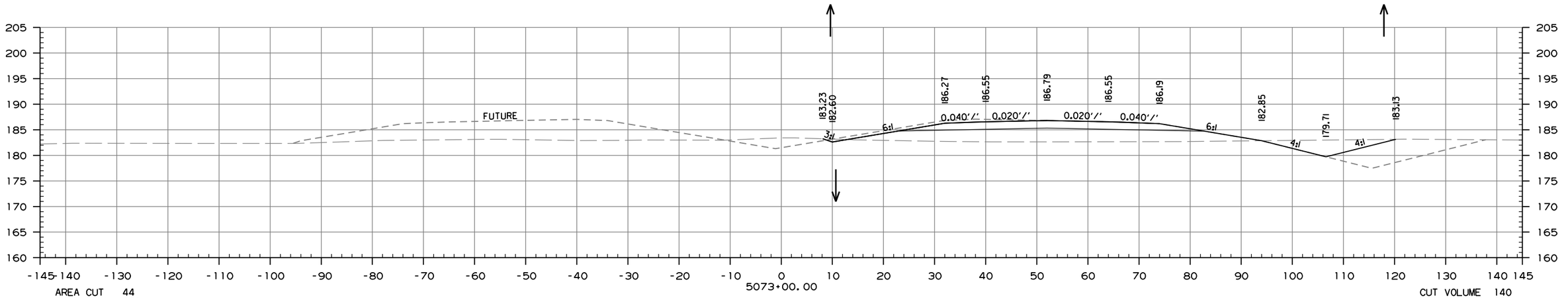


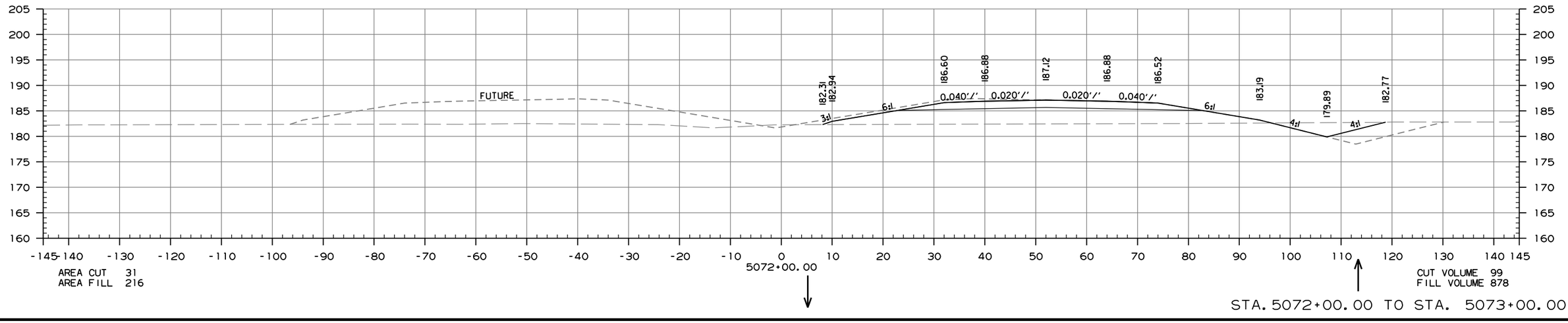


STA. 5069+00.00 TO STA. 5071+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	290	368
		CROSS SECTIONS				

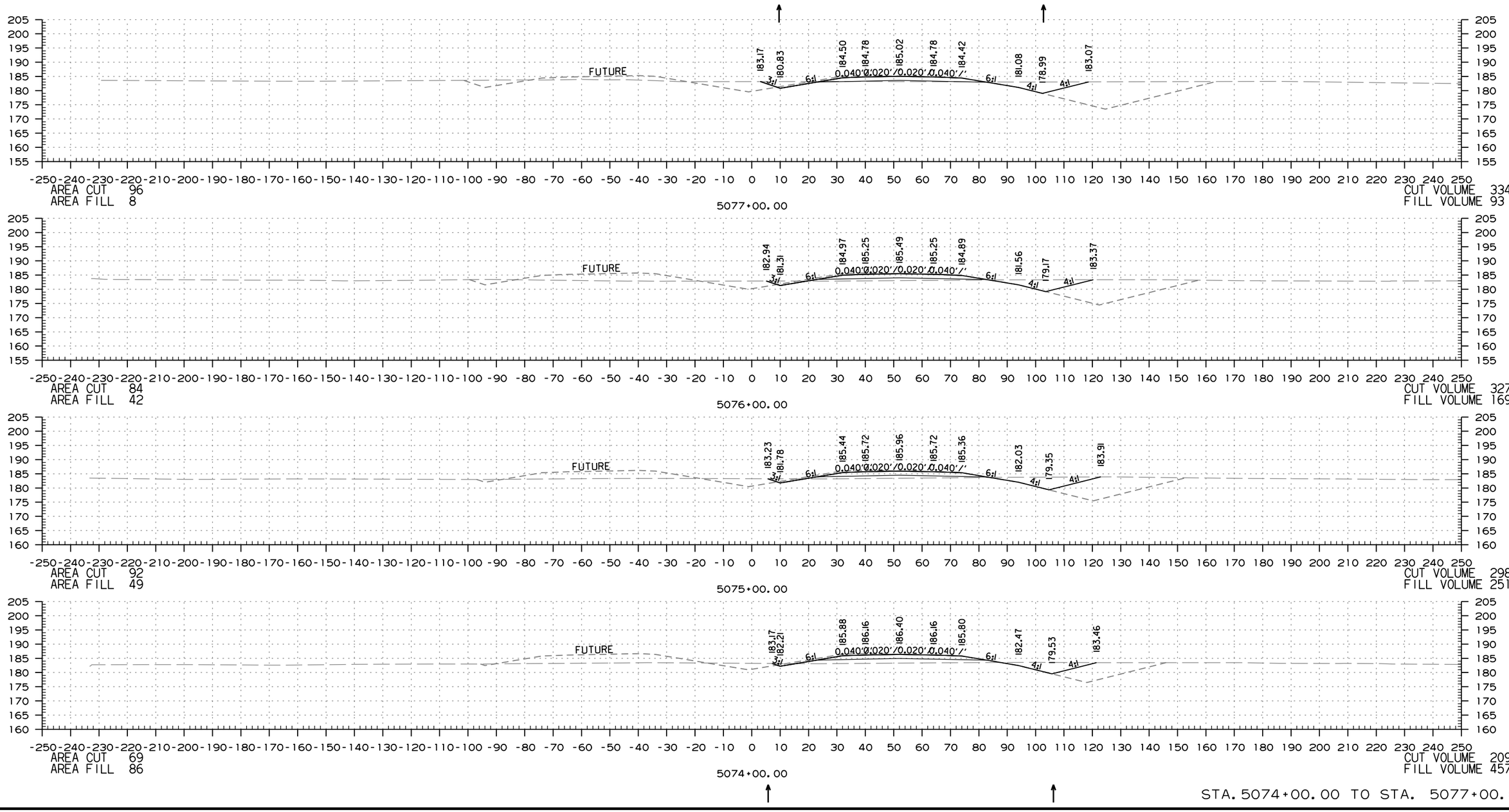




STA. 5072+00.00 TO STA. 5073+00.00

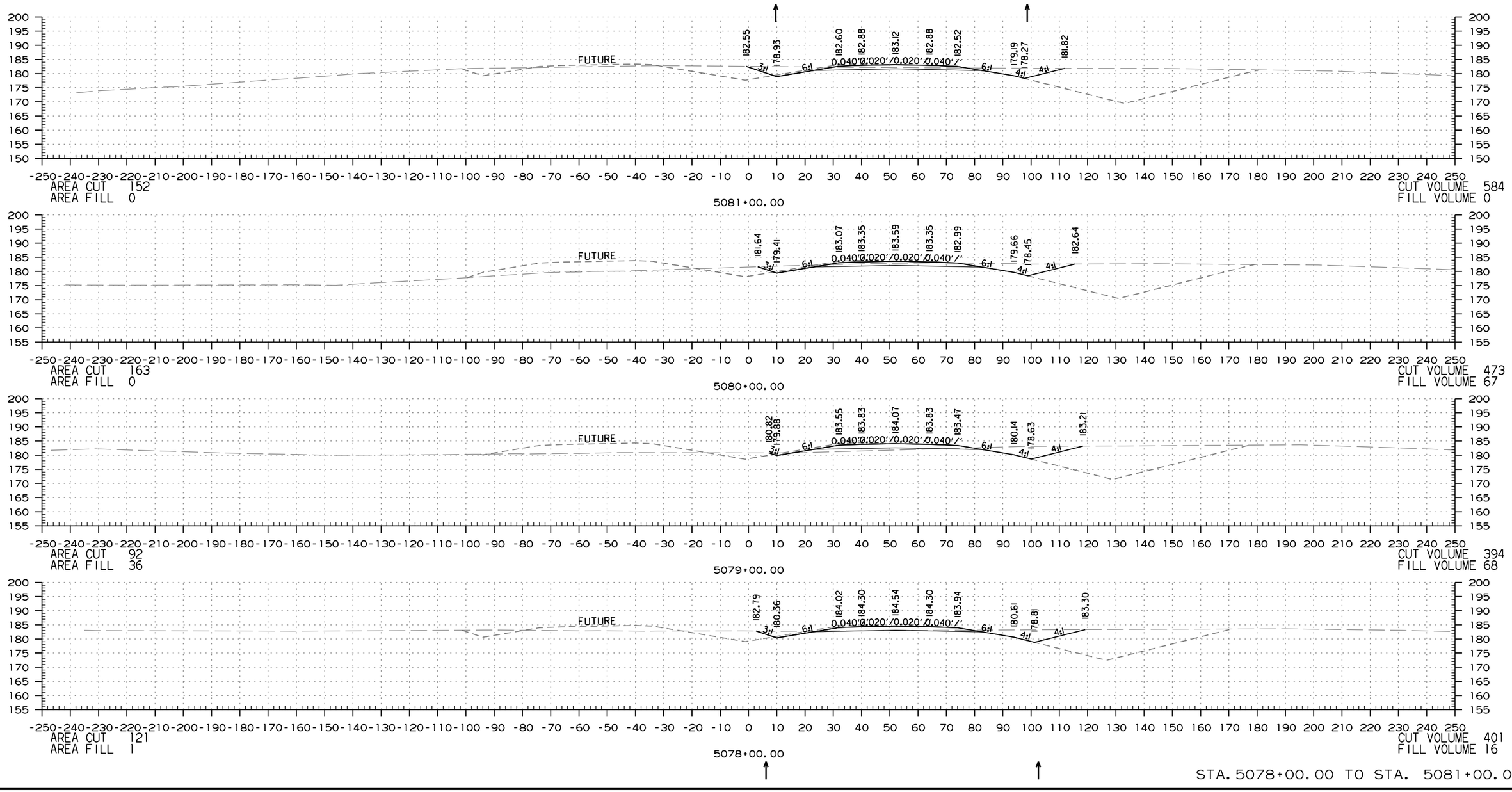
mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	291	368
		CROSS SECTIONS				



mh39735 7/14/2022
R020678.DGN

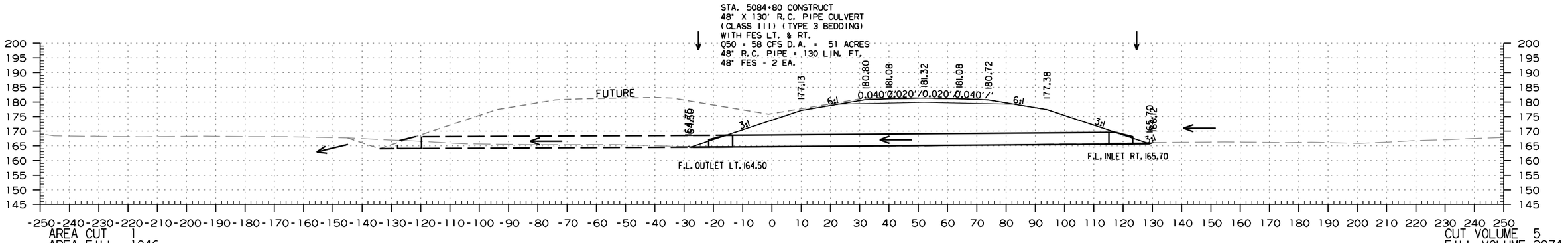
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	292	368
		CROSS SECTIONS				

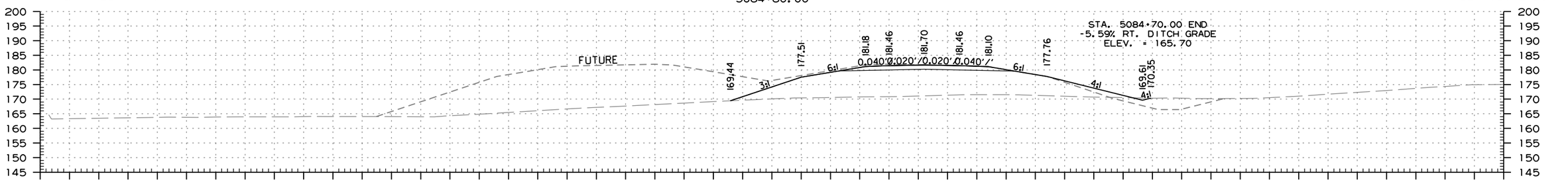


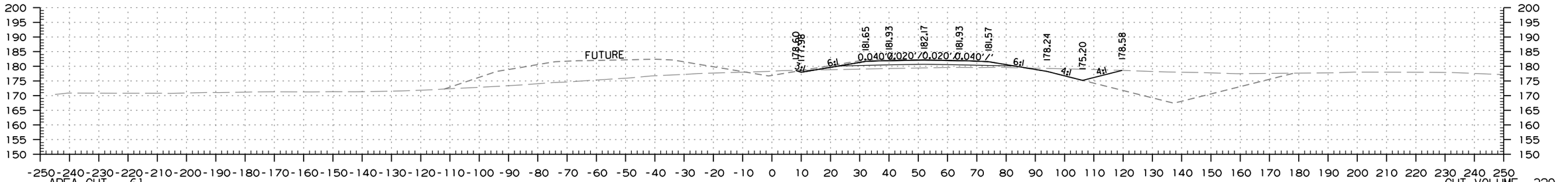
STA. 5078+00.00 TO STA. 5081+00.00

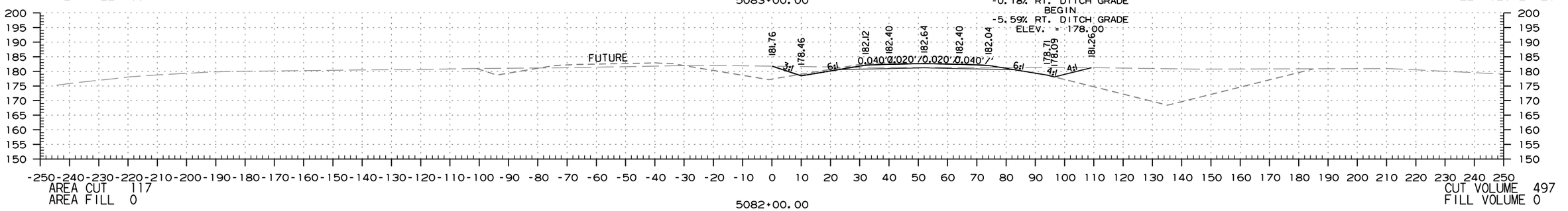
mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	293	368
		CROSS SECTIONS				





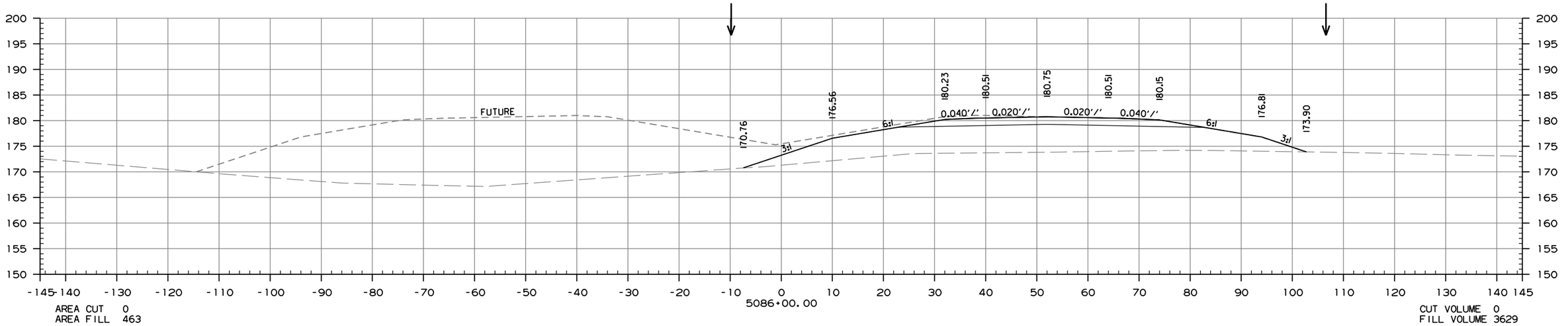


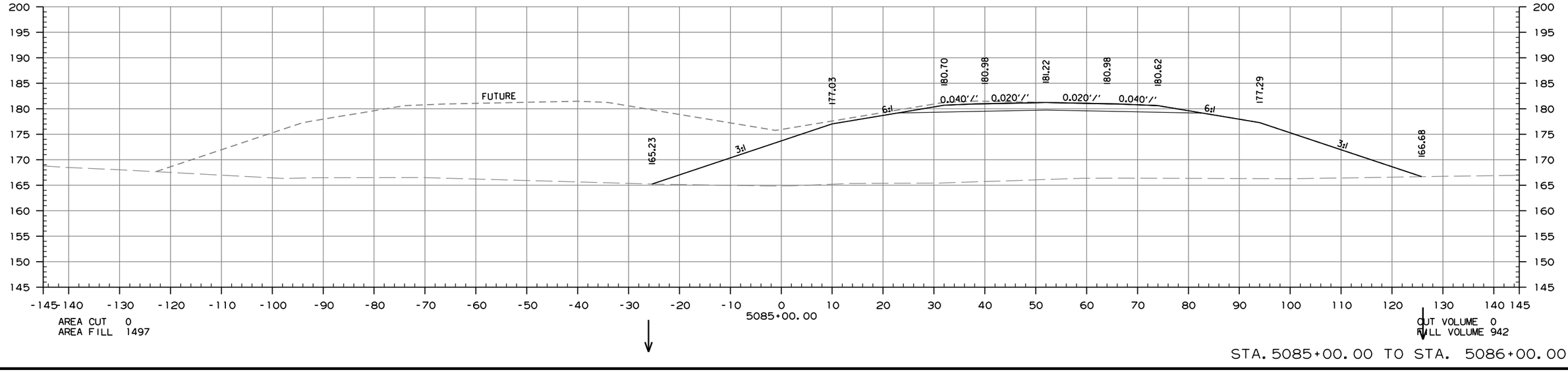


STA. 5082+00.00 TO STA. 5084+80.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	294	368
		CROSS SECTIONS				

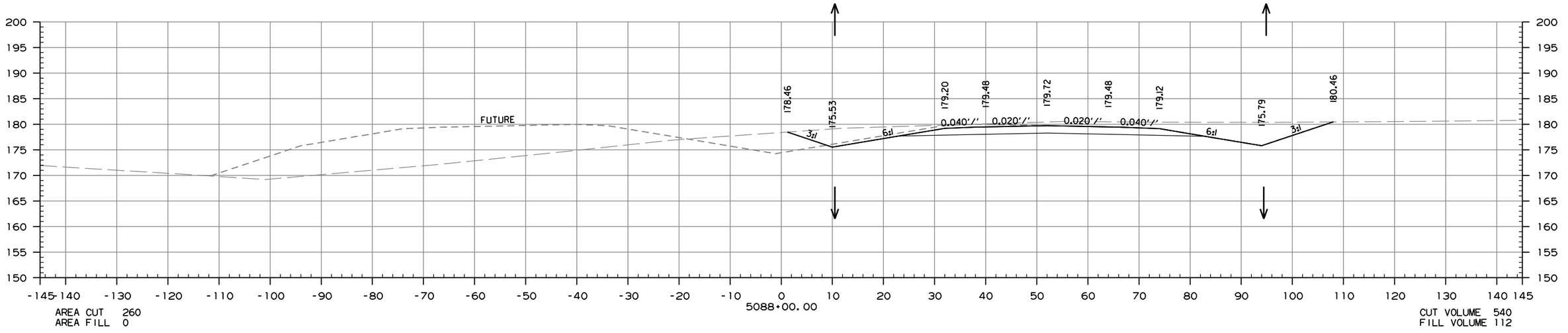


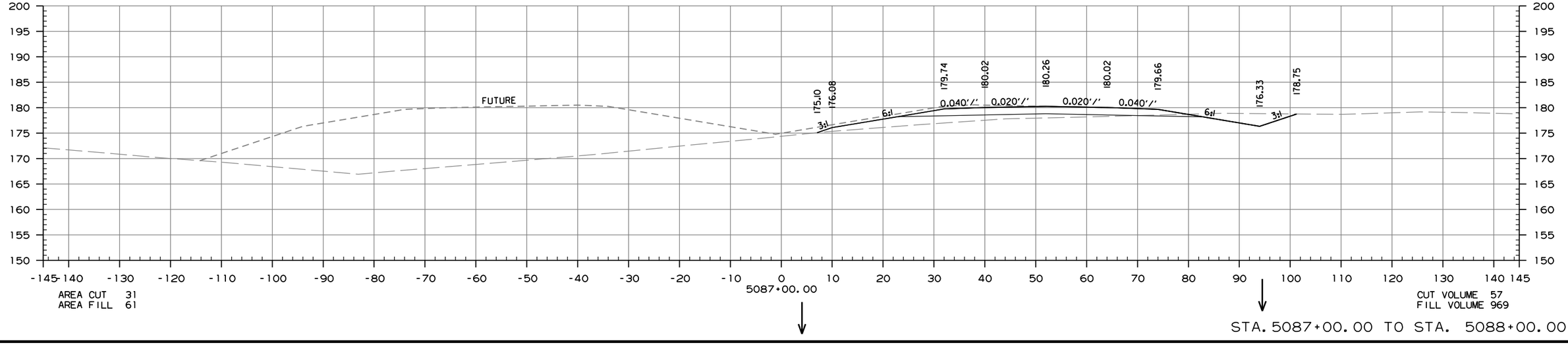


STA. 5085+00.00 TO STA. 5086+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	295	368
		CROSS SECTIONS				

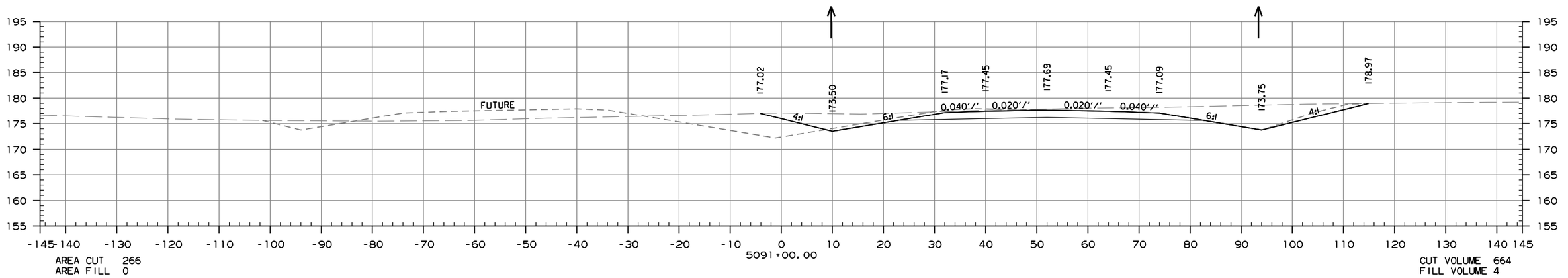


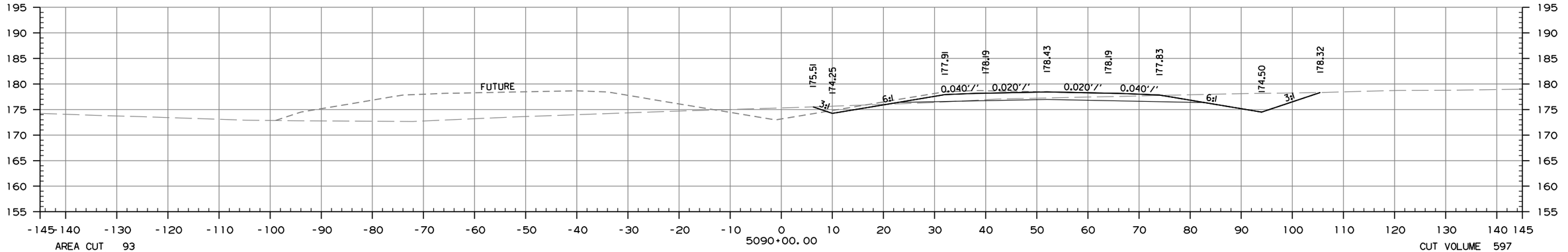


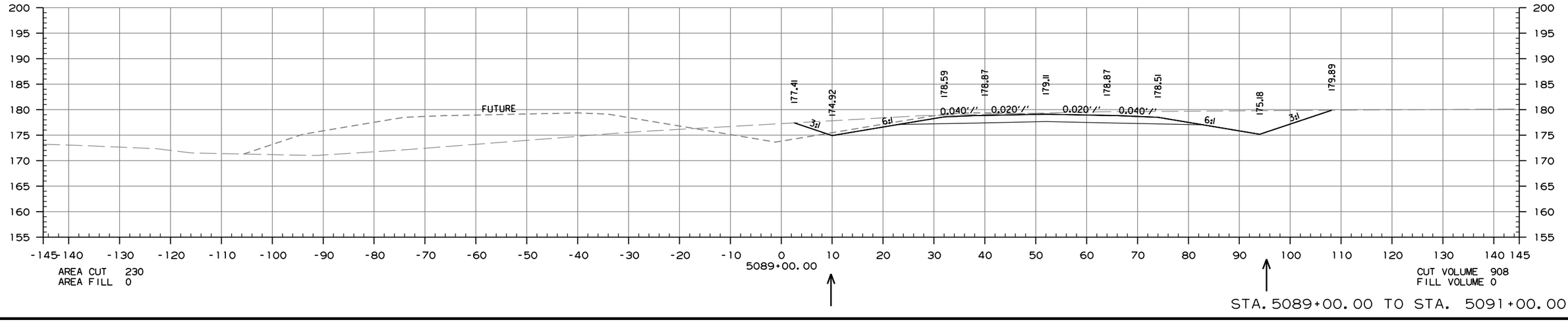
STA. 5087+00.00 TO STA. 5088+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	296	368
		CROSS SECTIONS				



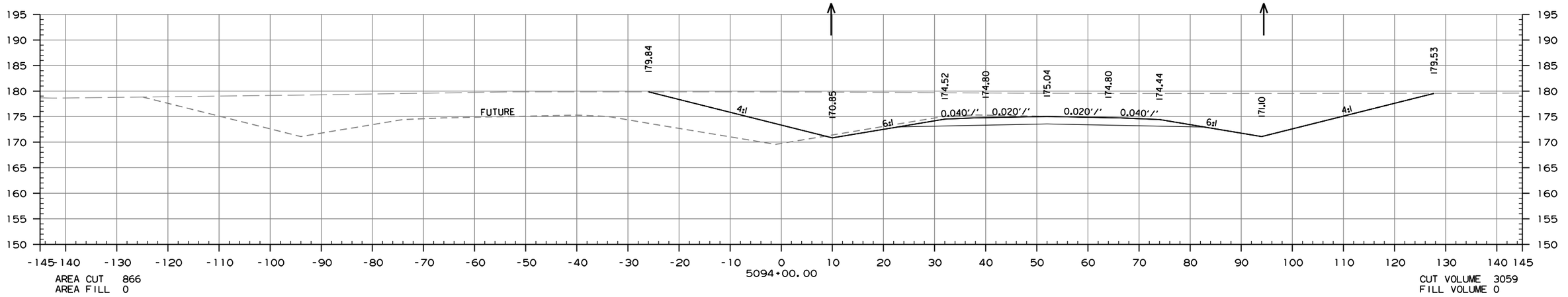


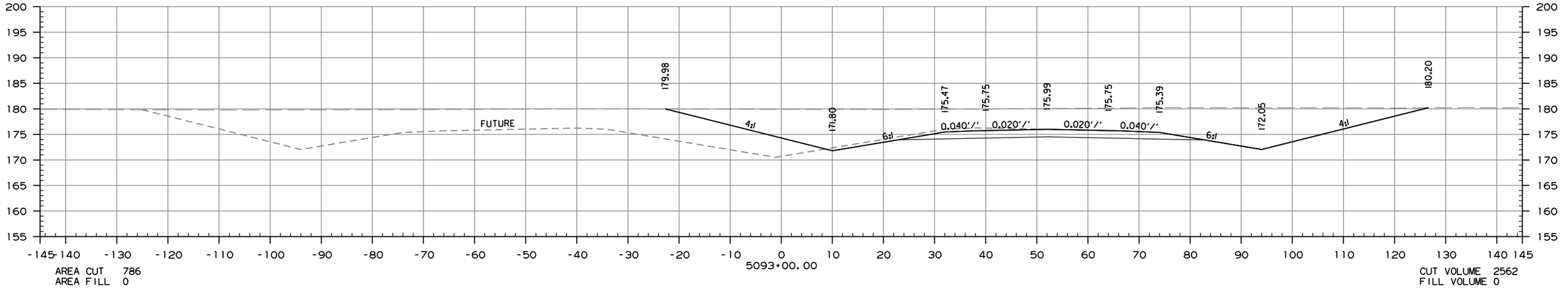


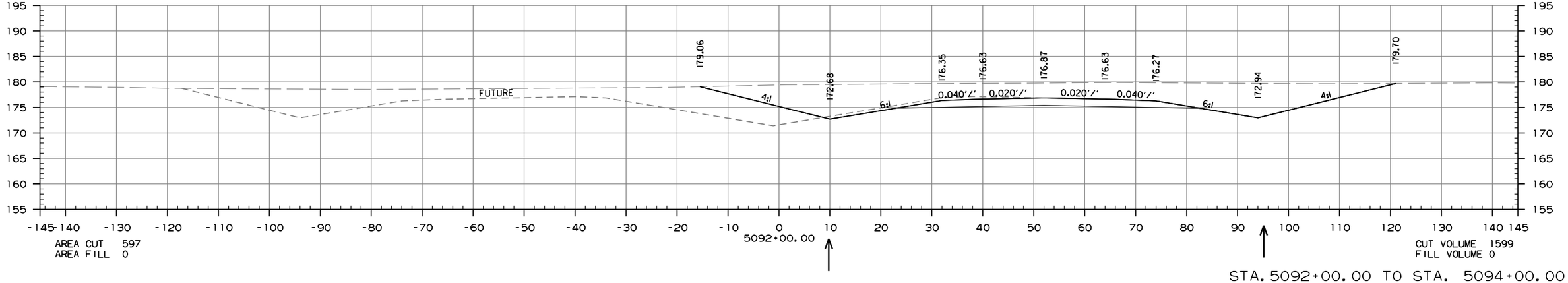
STA. 5089+00.00 TO STA. 5091+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	297	368
		CROSS SECTIONS				



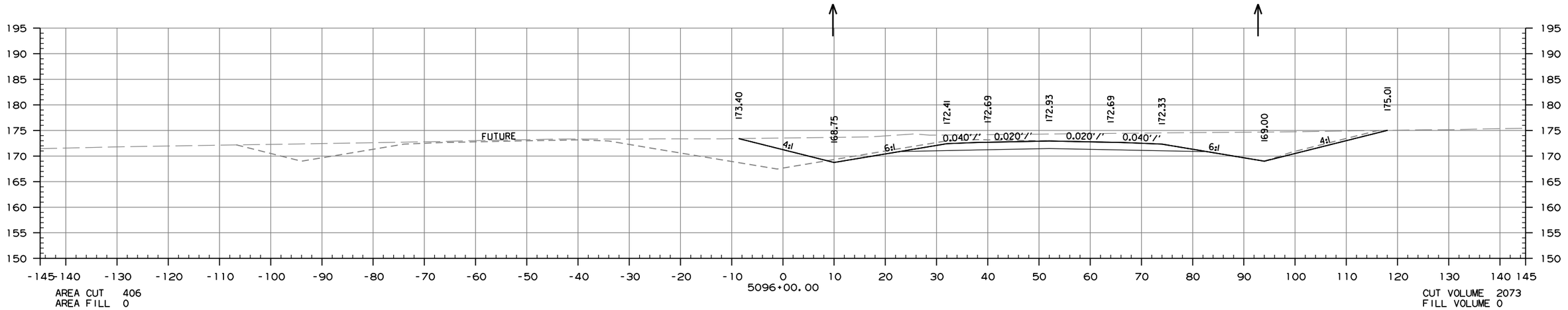


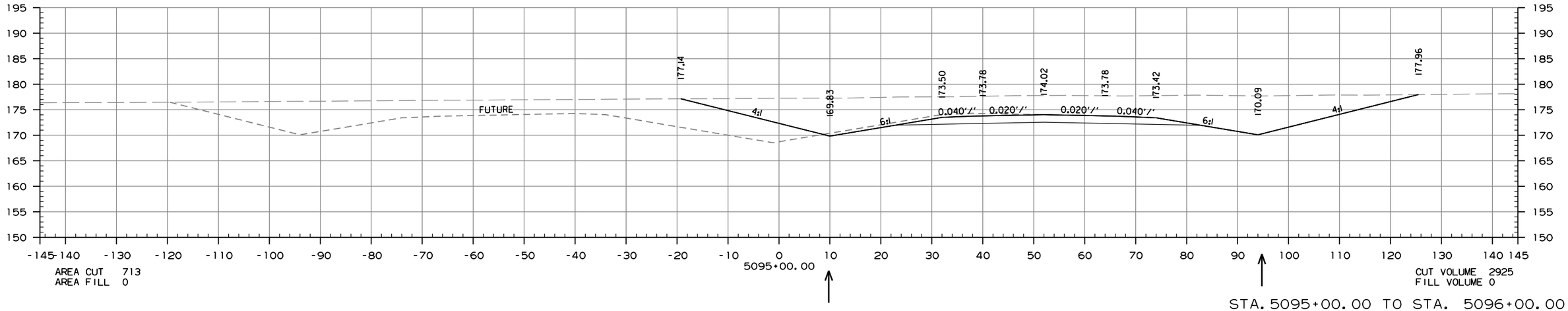


STA. 5092+00.00 TO STA. 5094+00.00

mh39735 7/14/2022
RO20678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	298	368
		CROSS SECTIONS				

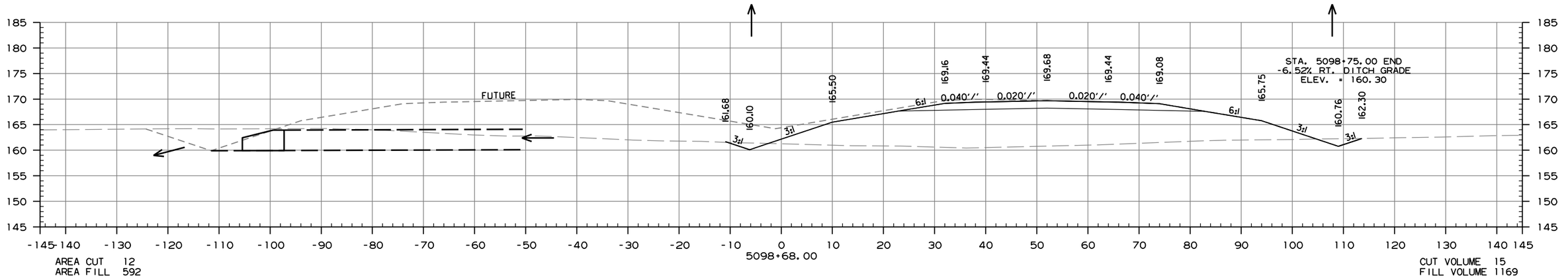


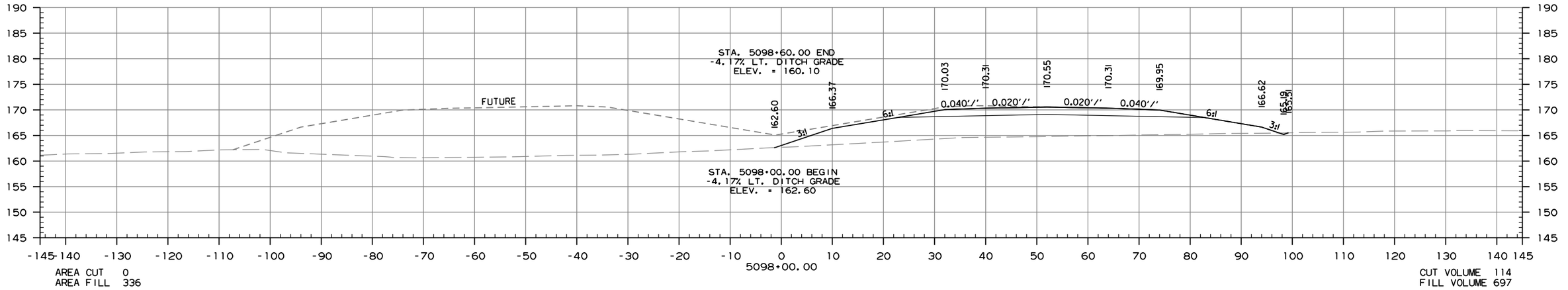


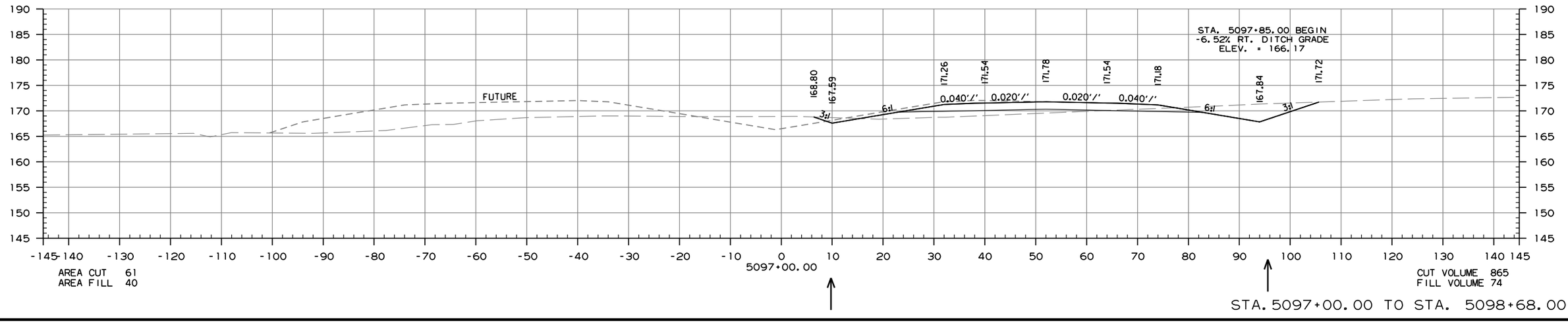
STA. 5095+00.00 TO STA. 5096+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	299	368
		CROSS SECTIONS				

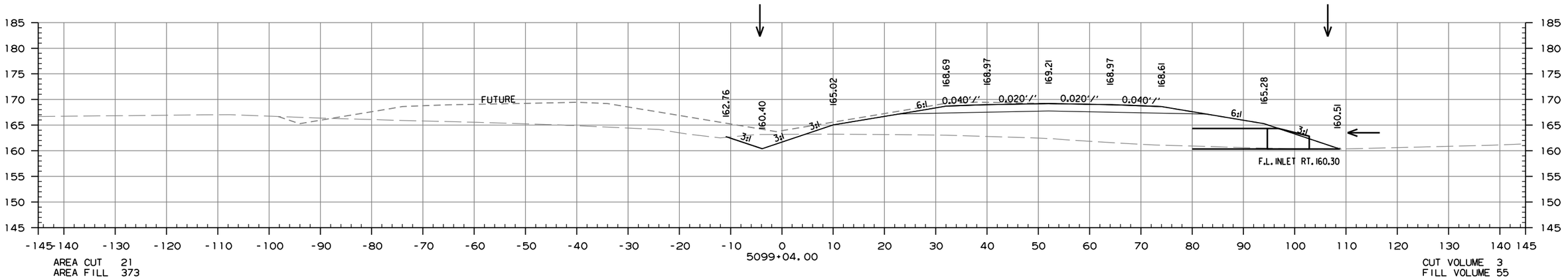


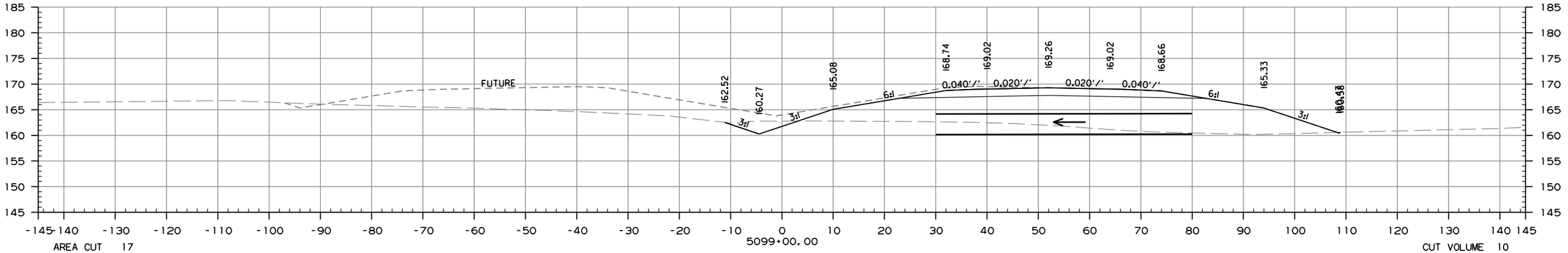


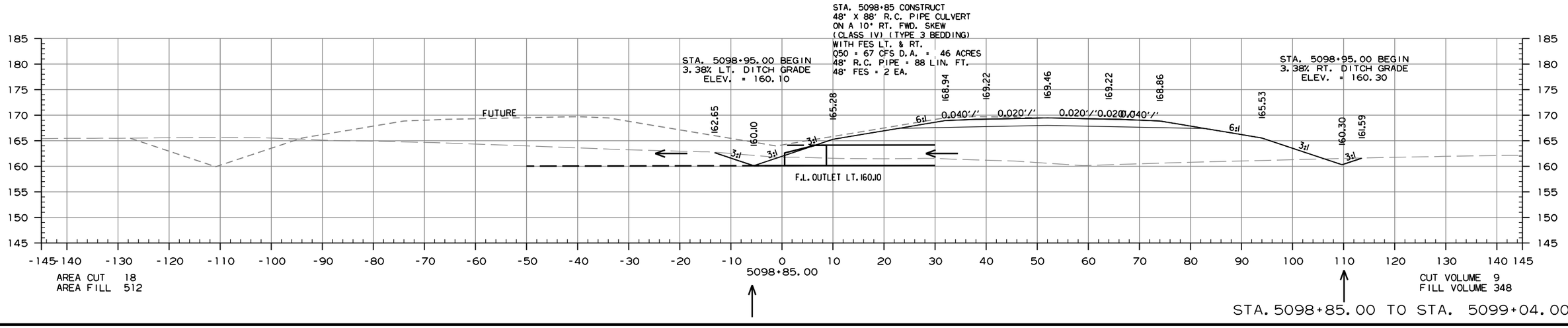


mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	300	368
		CROSS SECTIONS				

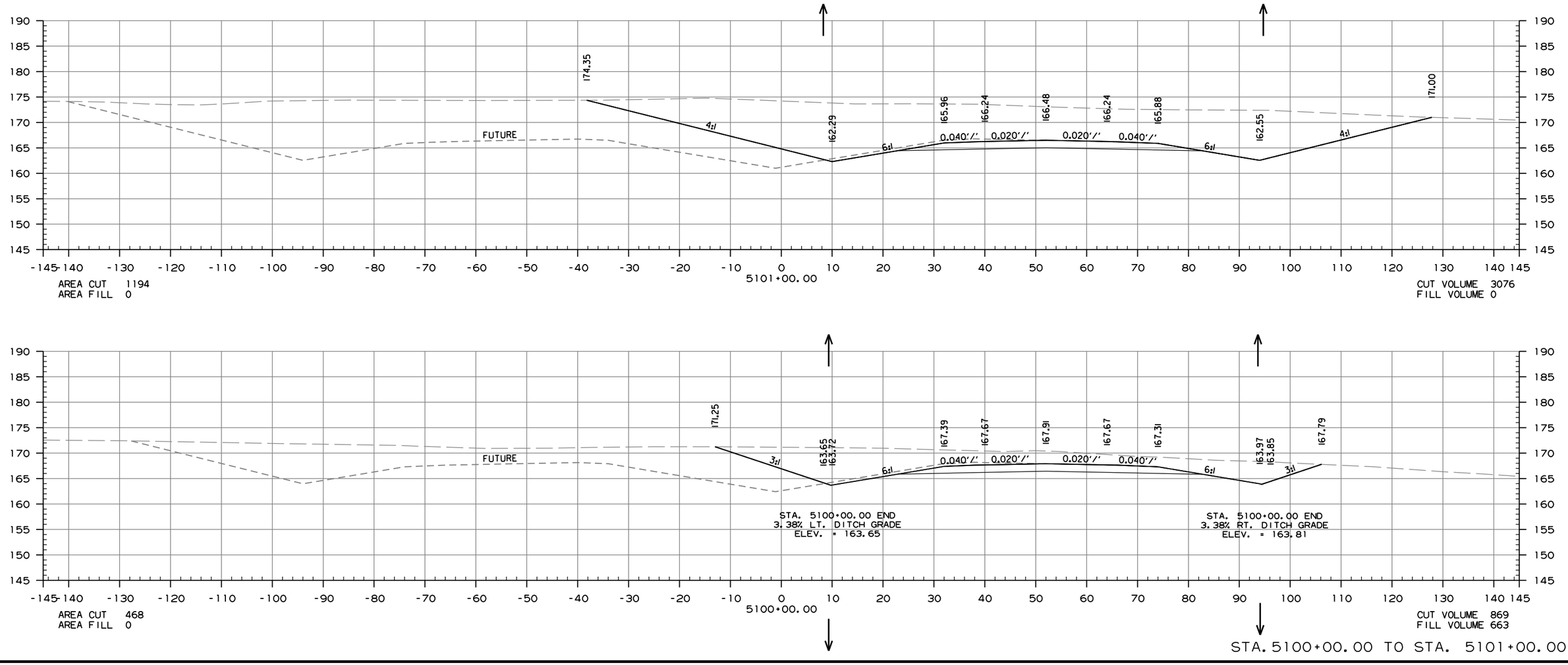






mh39735 7/14/2022
R020678.DGN

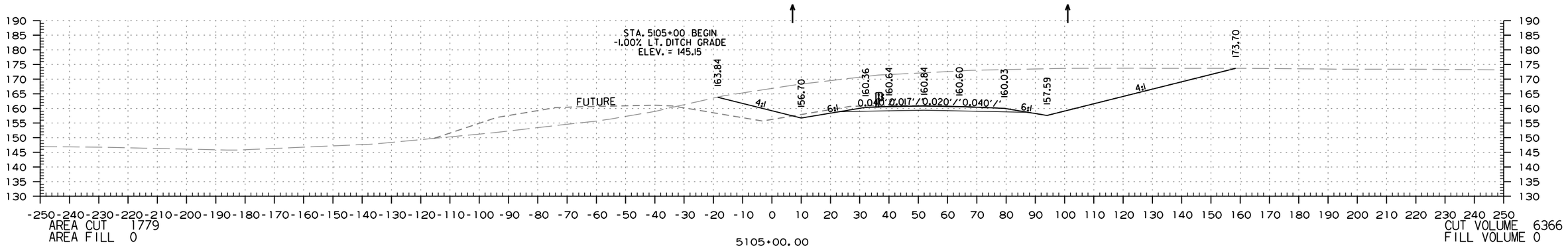
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	301	368
		CROSS SECTIONS				



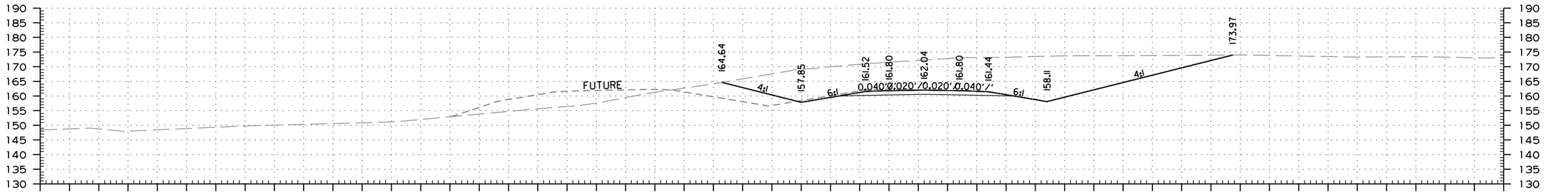
STA. 5100+00.00 TO STA. 5101+00.00

mh39735 7/14/2022
RO20678.DGN

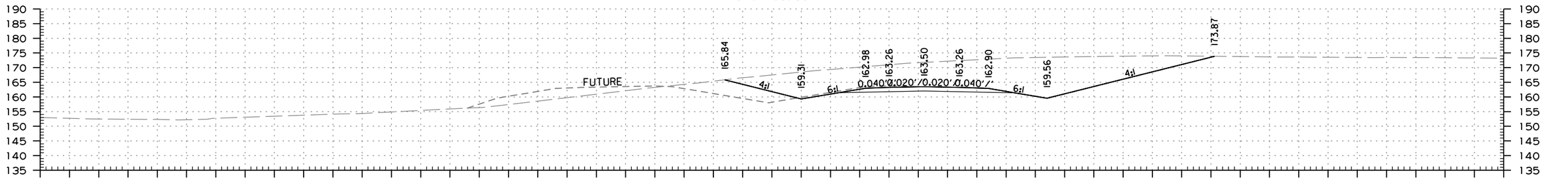
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	302	368
		CROSS SECTIONS				



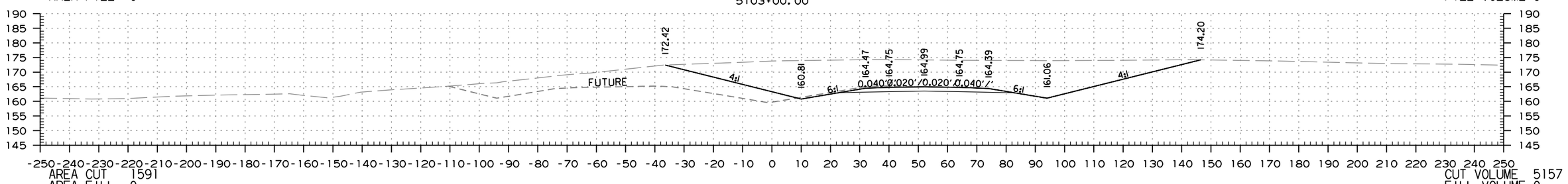
5105+00.00



5104+00.00



5103+00.00

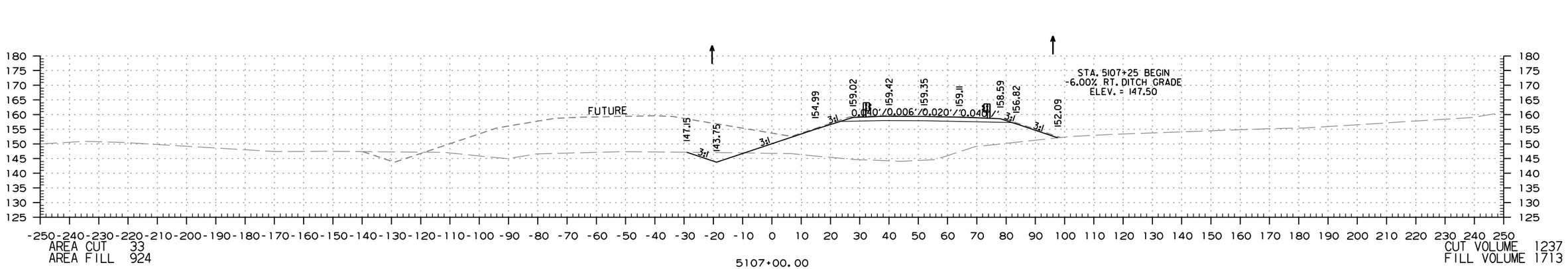


5102+00.00

STA. 5102+00.00 TO STA. 5105+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	303	368
		CROSS SECTIONS				



STA. 5106+00.00 TO STA. 5107+00.00

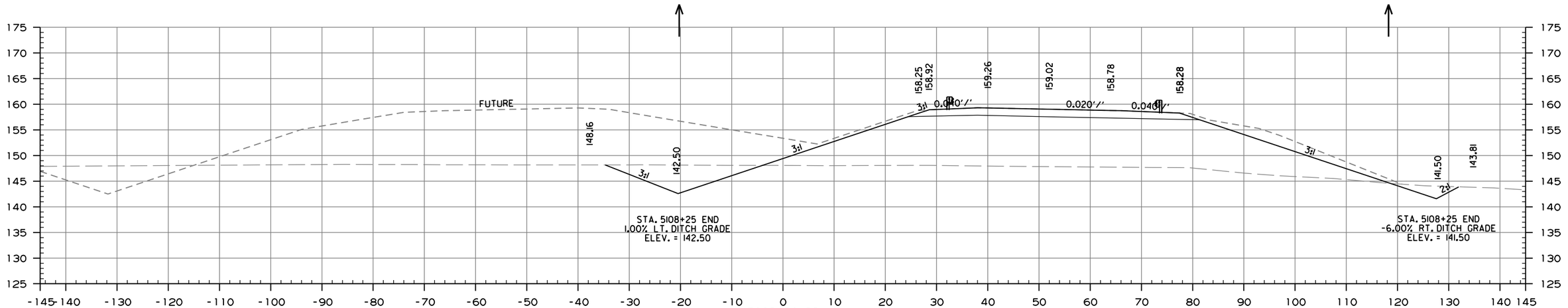
mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	304	368
		CROSS SECTIONS				

AREA CUT 0
AREA FILL 0

5108+32.22
TOE OF SLOPE

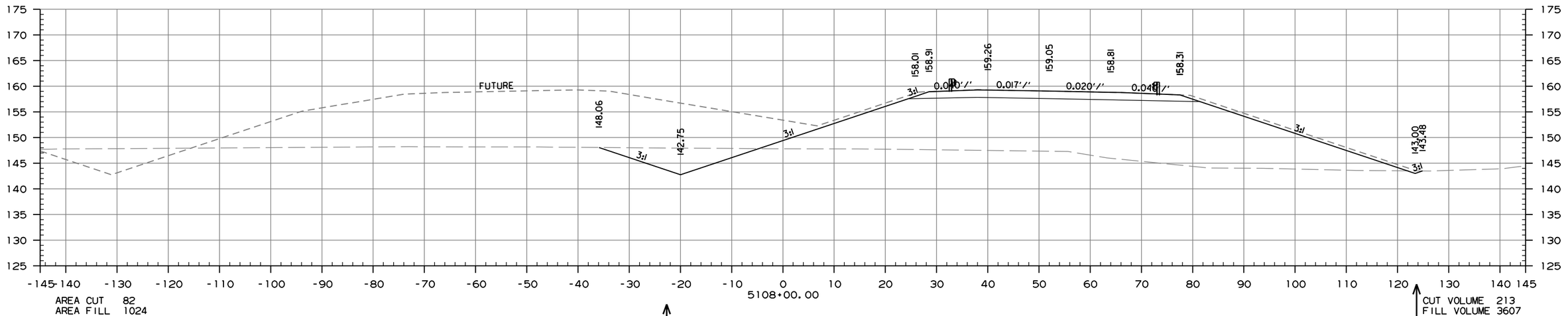
CUT VOLUME 10
FILL VOLUME 117



AREA CUT 101
AREA FILL 865

5108+24.92
BRIDGE END

CUT VOLUME 84
FILL VOLUME 872



AREA CUT 82
AREA FILL 1024

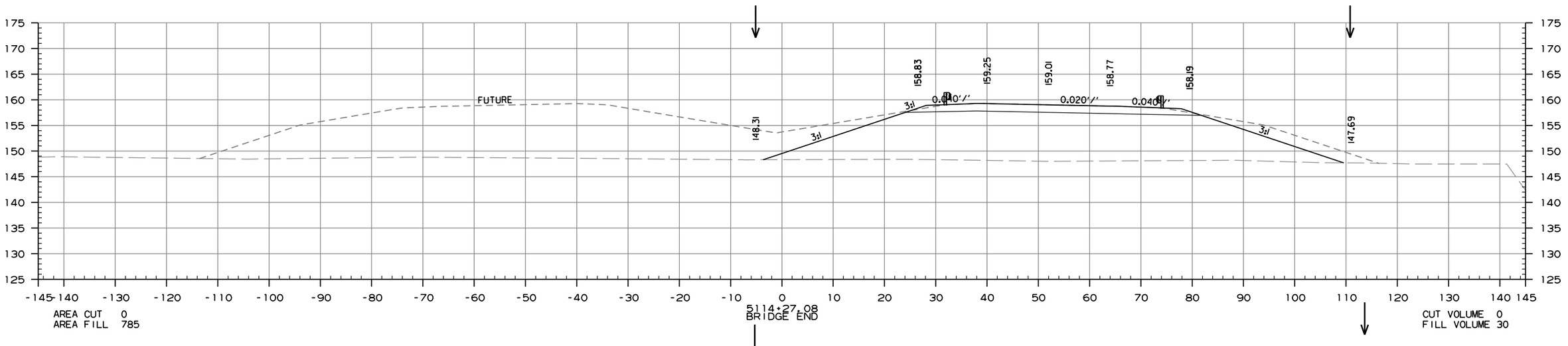
5108+00.00

CUT VOLUME 213
FILL VOLUME 3607

STA. 5108+00.00 TO STA. 5108+24.92

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	305	368
		CROSS SECTIONS				



AREA CUT 0
AREA FILL 785

5114+27.08
BRIDGE END

CUT VOLUME 0
FILL VOLUME 30

AREA CUT 0
AREA FILL 0

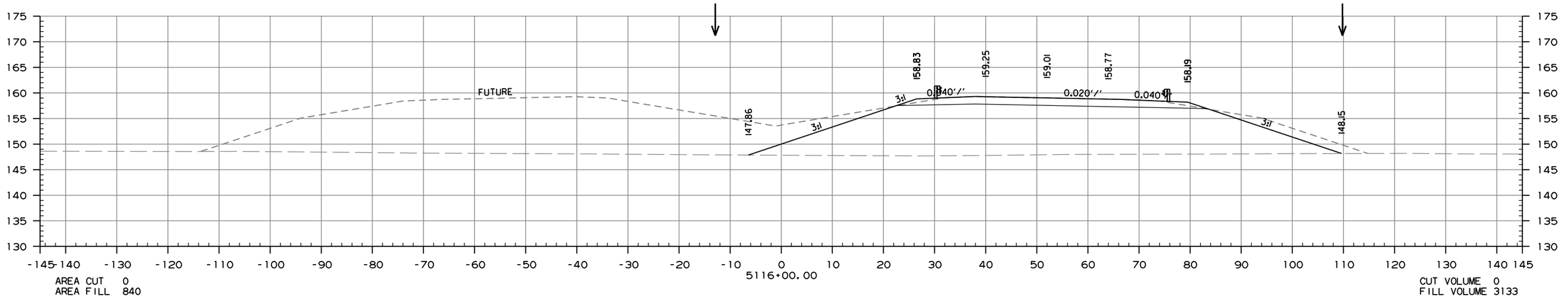
5114+19.75
TOE OF SLOPE

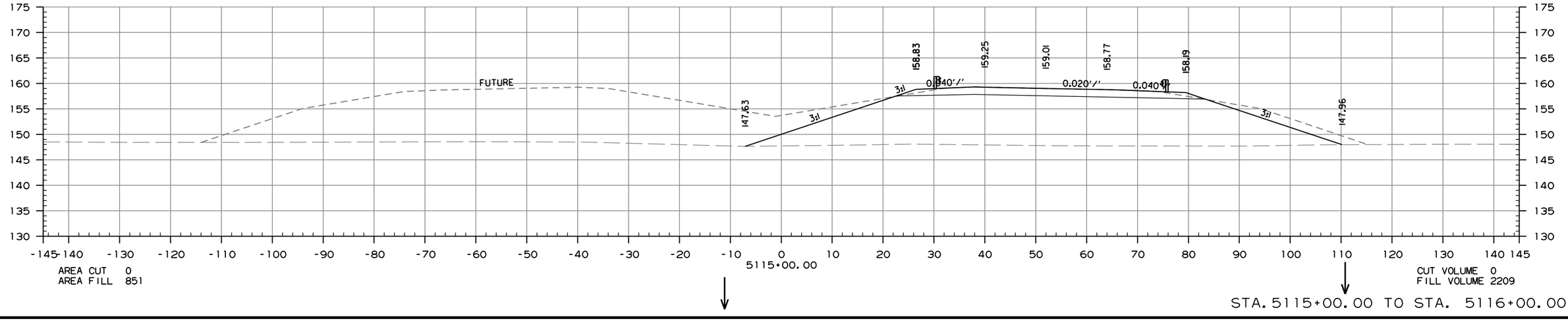
CUT VOLUME 0
FILL VOLUME 0

STA. 5114+27.08

mh39735 7/14/2022
RO20678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	306	368
		CROSS SECTIONS				

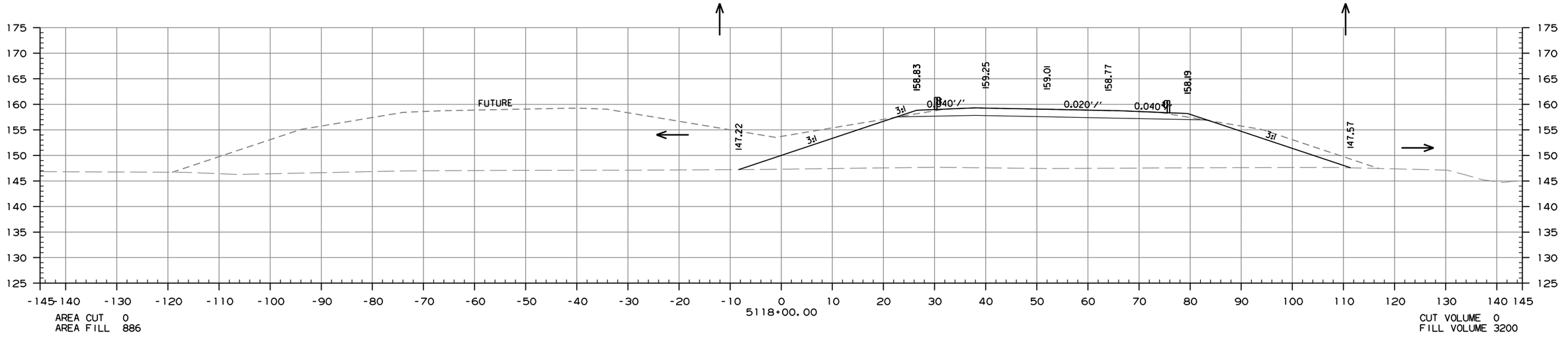


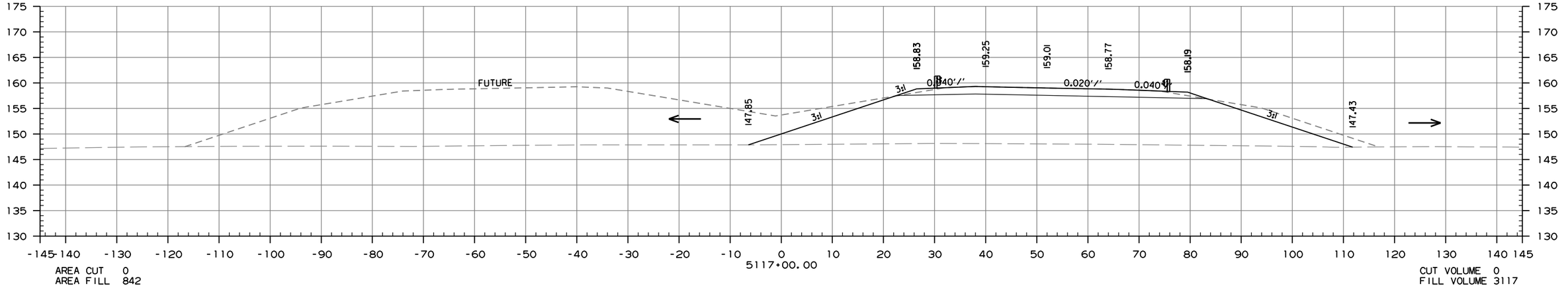


STA. 5115+00.00 TO STA. 5116+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	307	368
		CROSS SECTIONS				





STA. 5117+00.00 TO STA. 5118+00.00

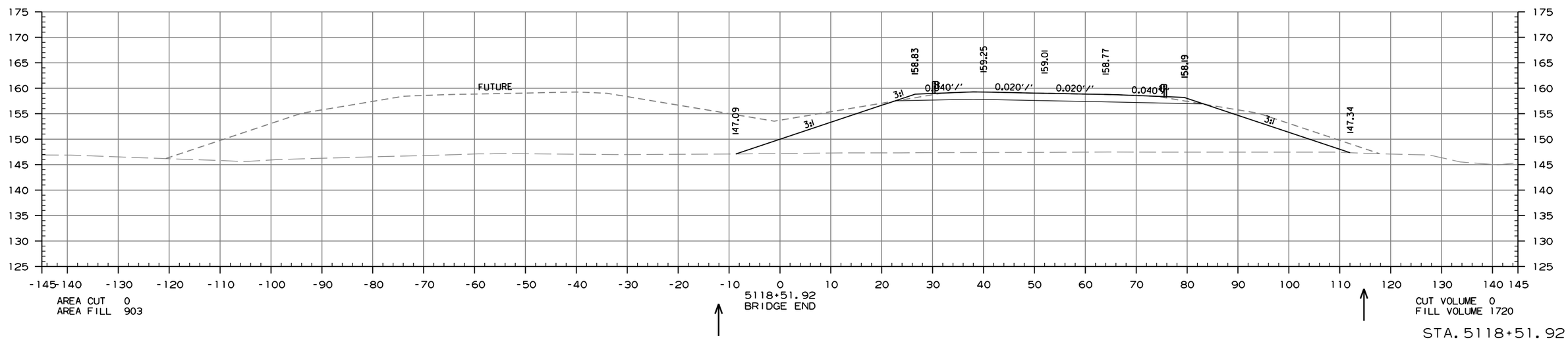
mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	308	368
		CROSS SECTIONS				

AREA CUT 0
AREA FILL 0

5118+59.54
TOE OF SLOPE

CUT VOLUME 0
FILL VOLUME 127



AREA CUT 0
AREA FILL 903

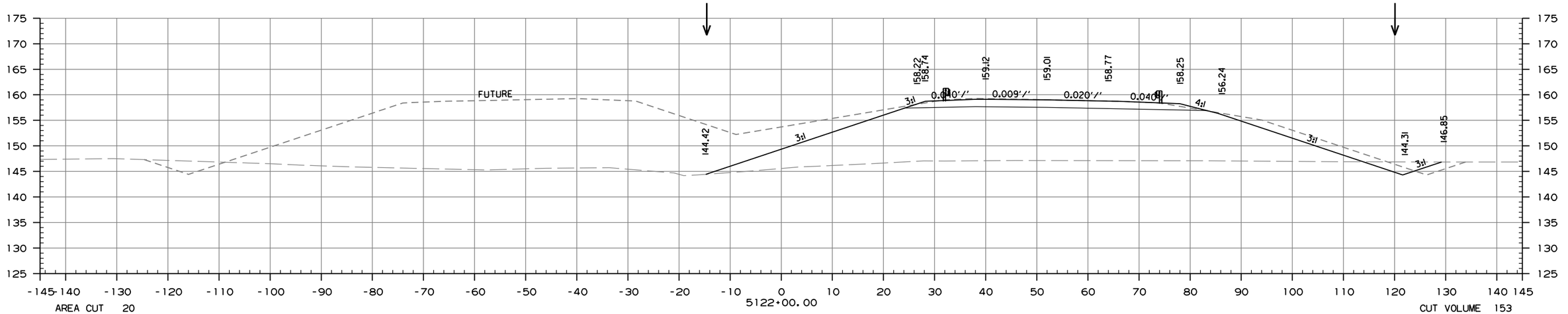
5118+51.92
BRIDGE END

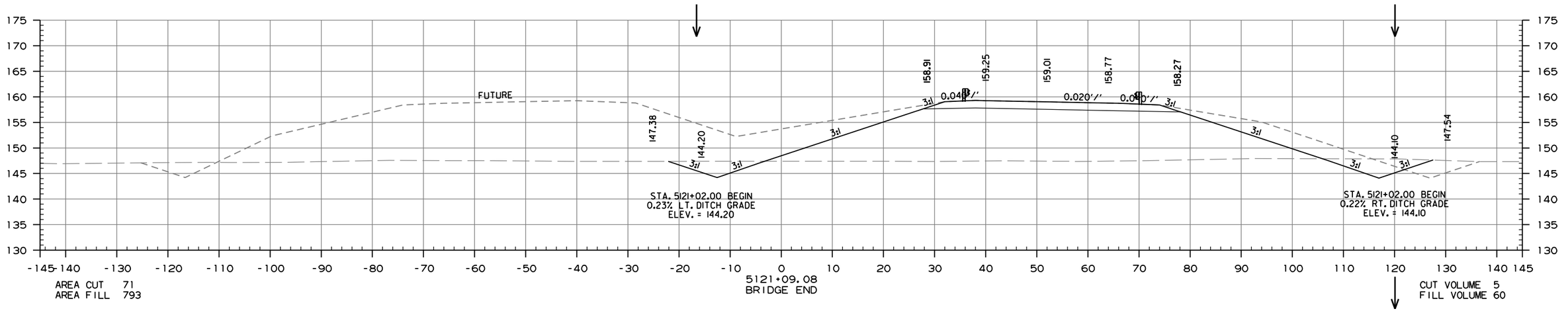
CUT VOLUME 0
FILL VOLUME 1720

STA. 5118+51.92

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	309	368
		CROSS SECTIONS				





AREA CUT 0
AREA FILL 0

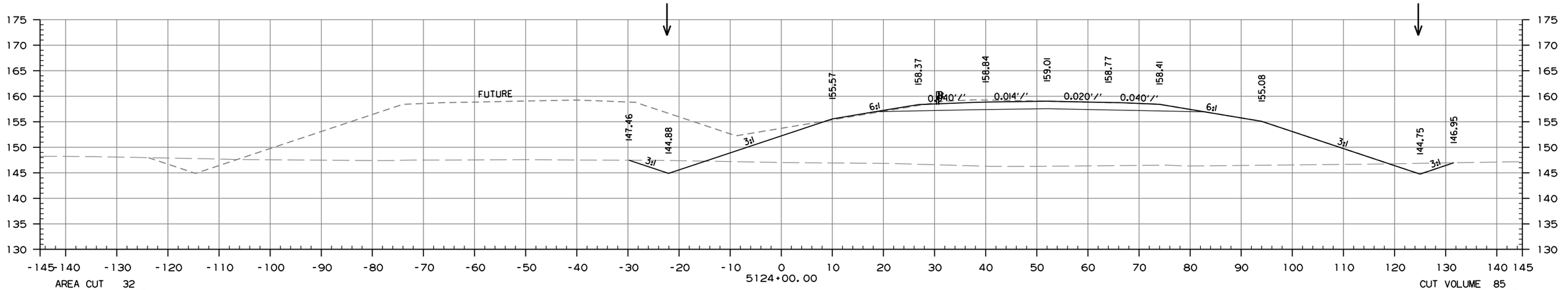
5120+99.78
TOE OF SLOPE

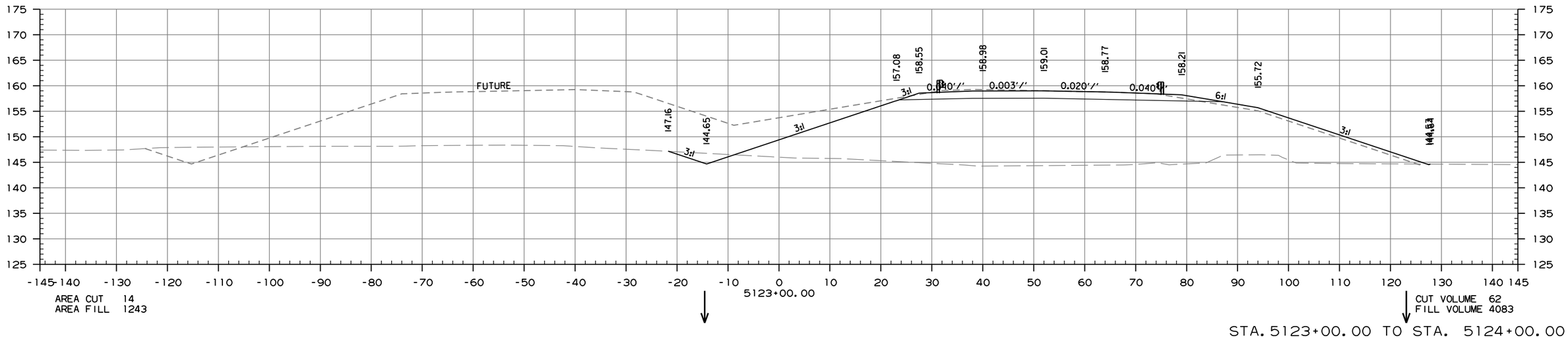
CUT VOLUME 0
FILL VOLUME 0

STA. 5121+09.08 TO STA. 5122+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	310	368
		CROSS SECTIONS				

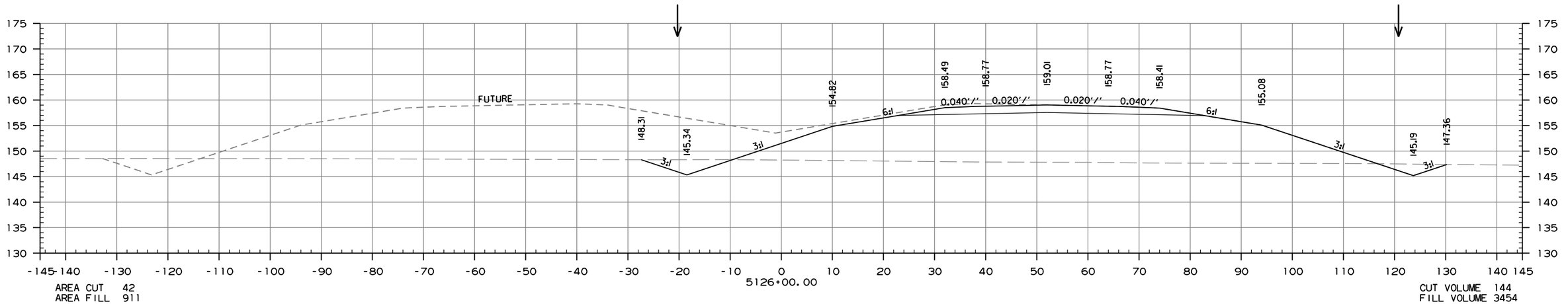


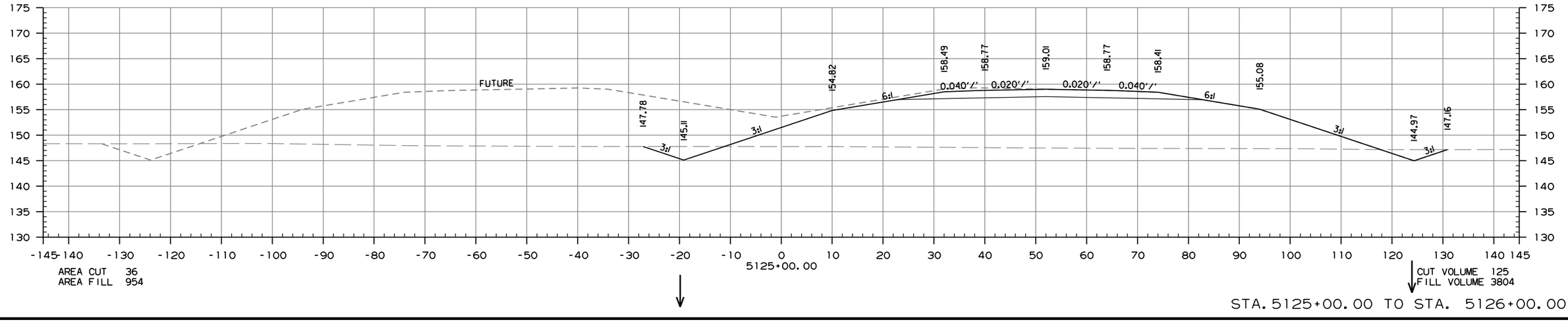


STA. 5123+00.00 TO STA. 5124+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	311	368
		CROSS SECTIONS				

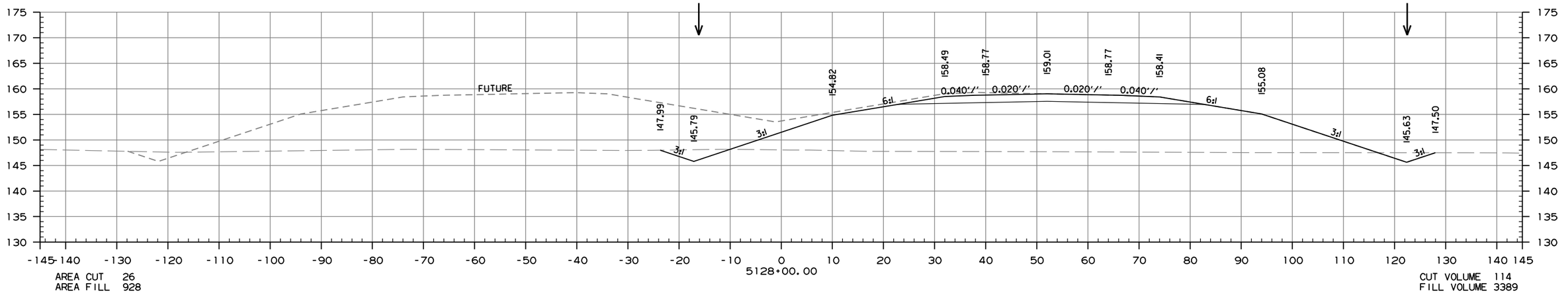


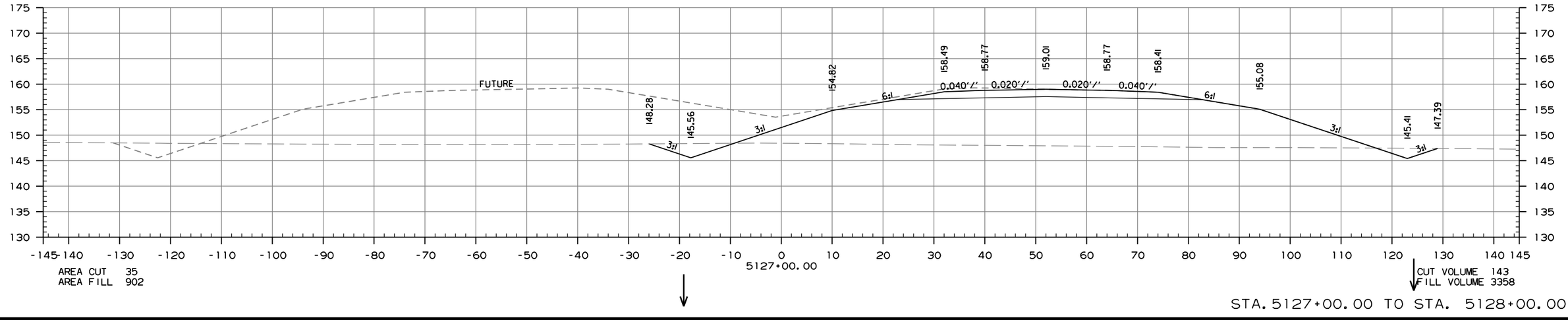


STA. 5125+00.00 TO STA. 5126+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	312	368
		CROSS SECTIONS				

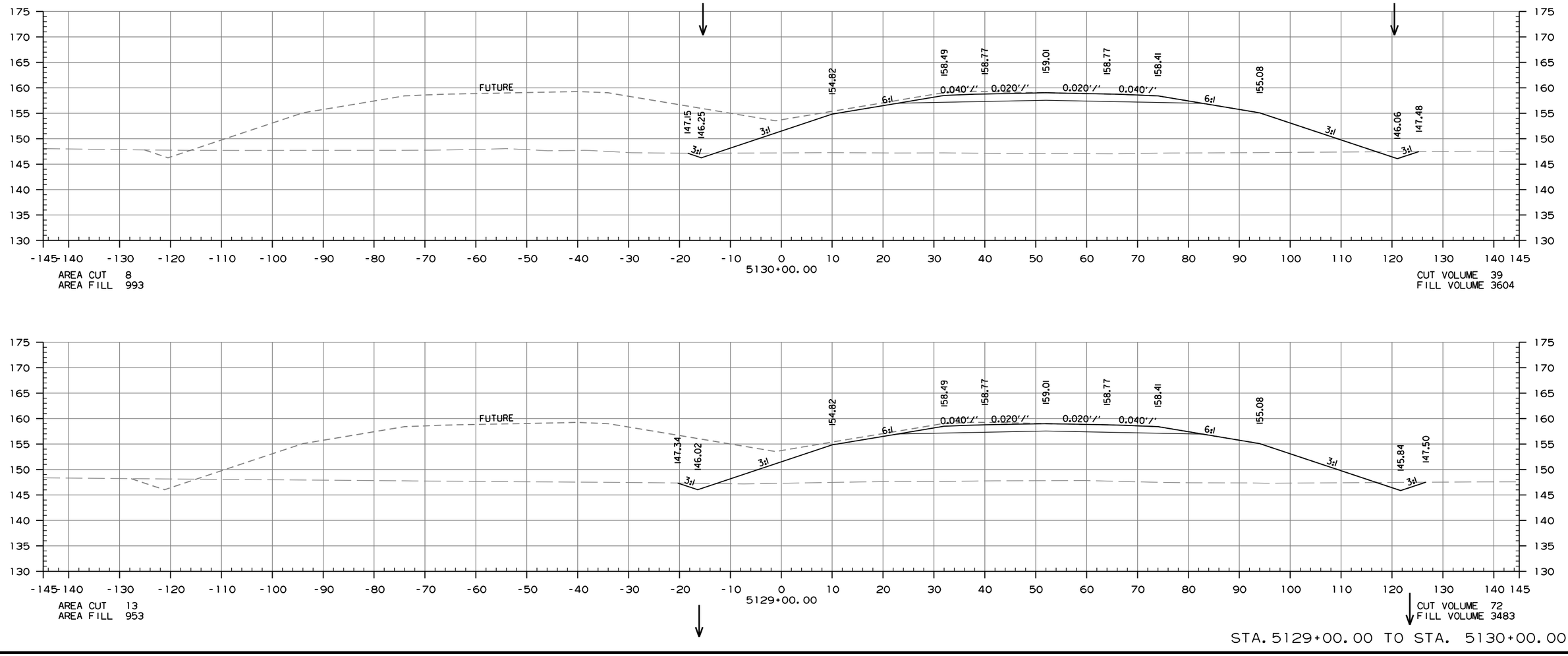




STA. 5127+00.00 TO STA. 5128+00.00

mh39735 7/14/2022
R020678.DGN

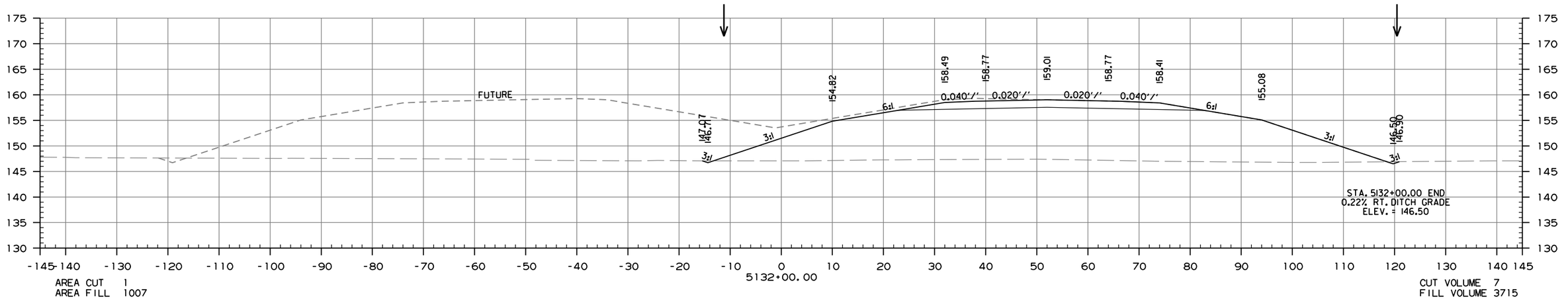
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	313	368
		CROSS SECTIONS				

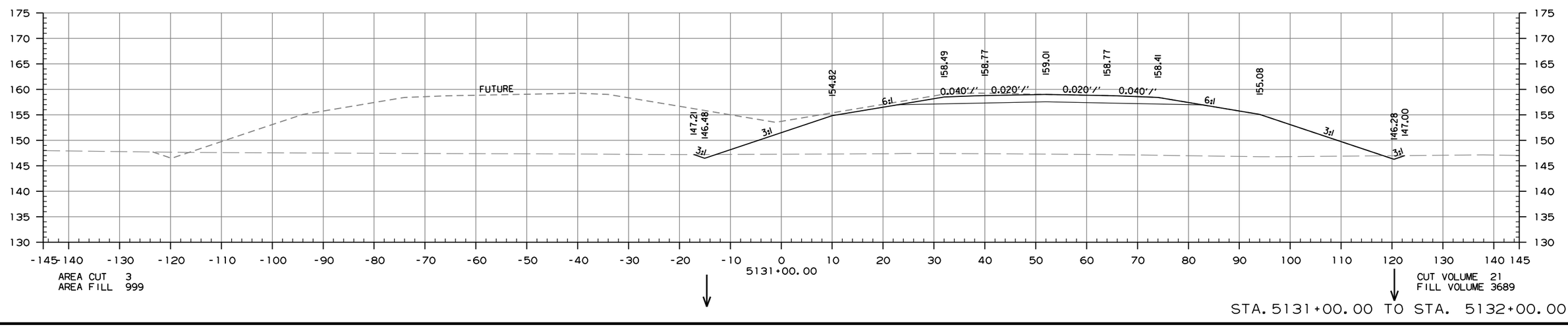


STA. 5129+00.00 TO STA. 5130+00.00

mh39735 7/14/2022
RO20678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	314	368
		CROSS SECTIONS				

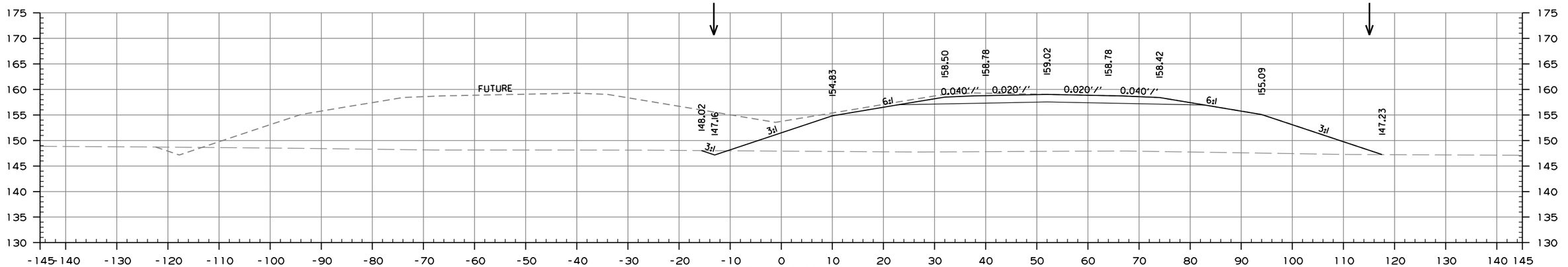


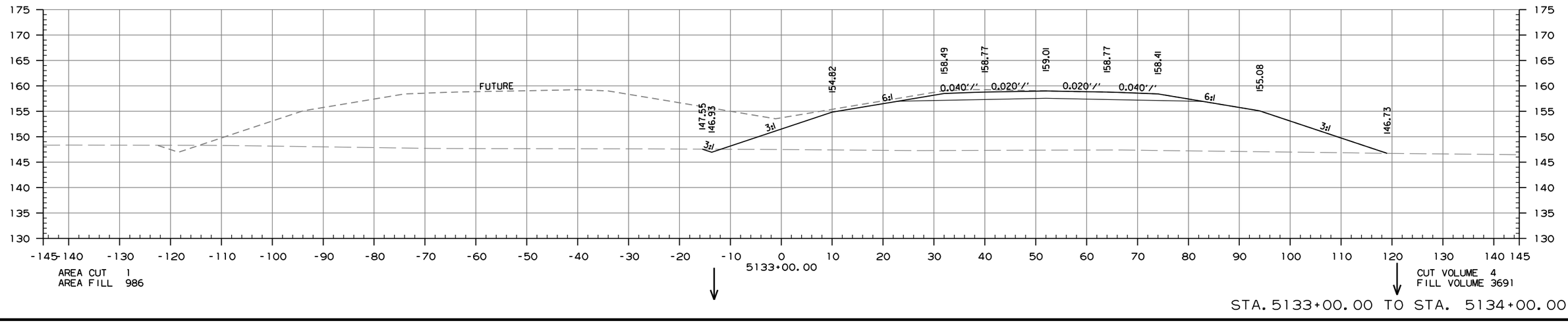


STA. 5131+00.00 TO STA. 5132+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	315	368
		CROSS SECTIONS				

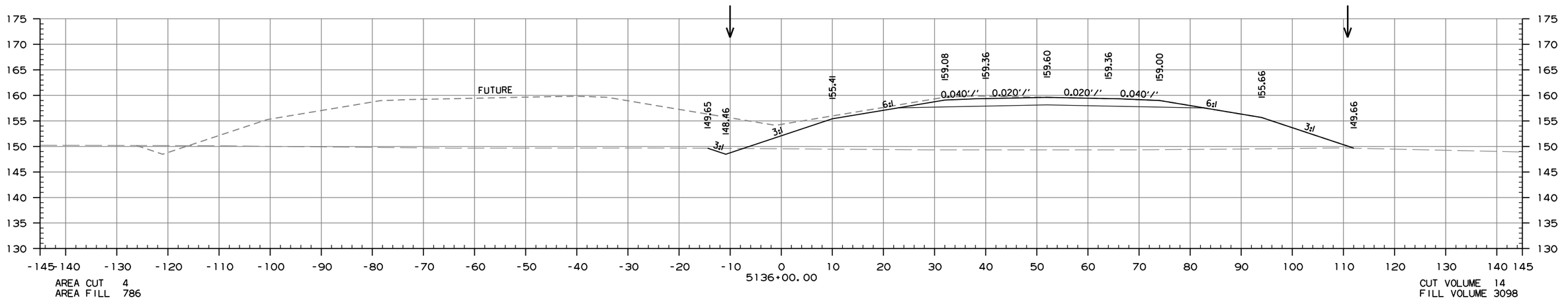


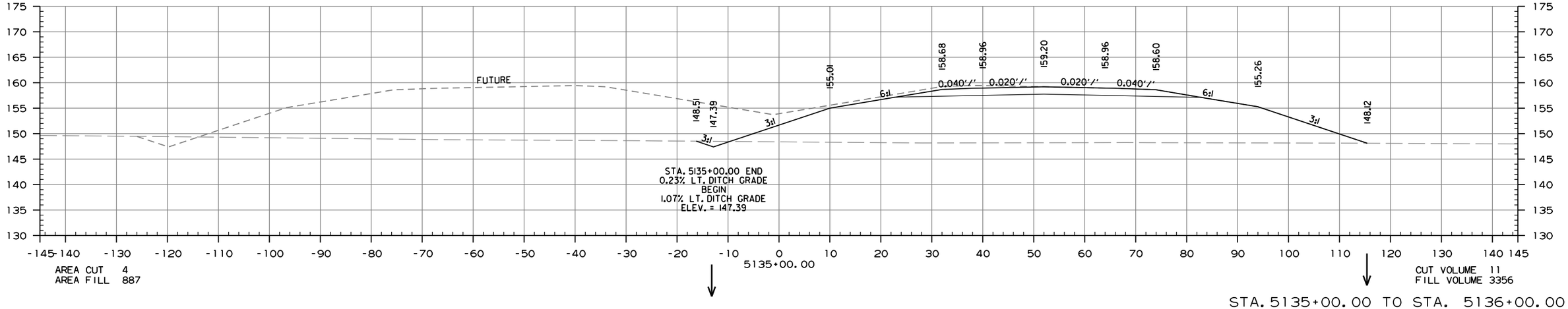


STA. 5133+00.00 TO STA. 5134+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	316	368
		CROSS SECTIONS				

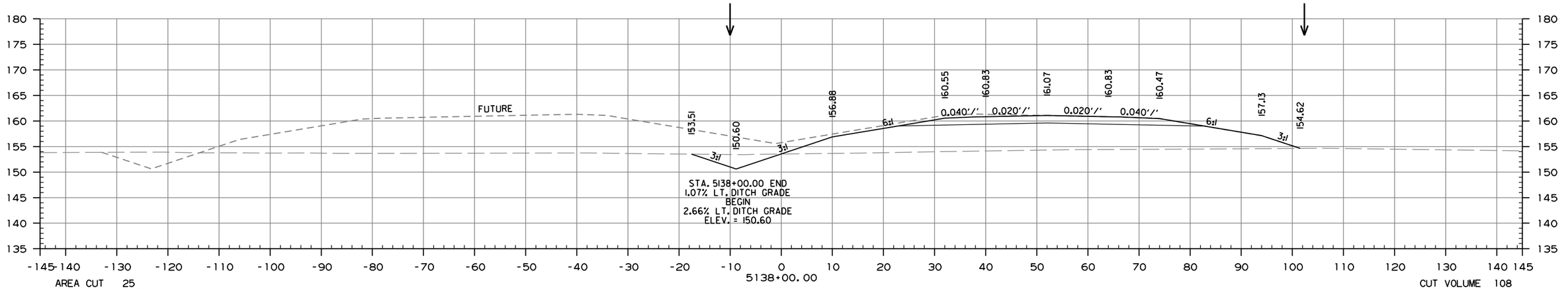


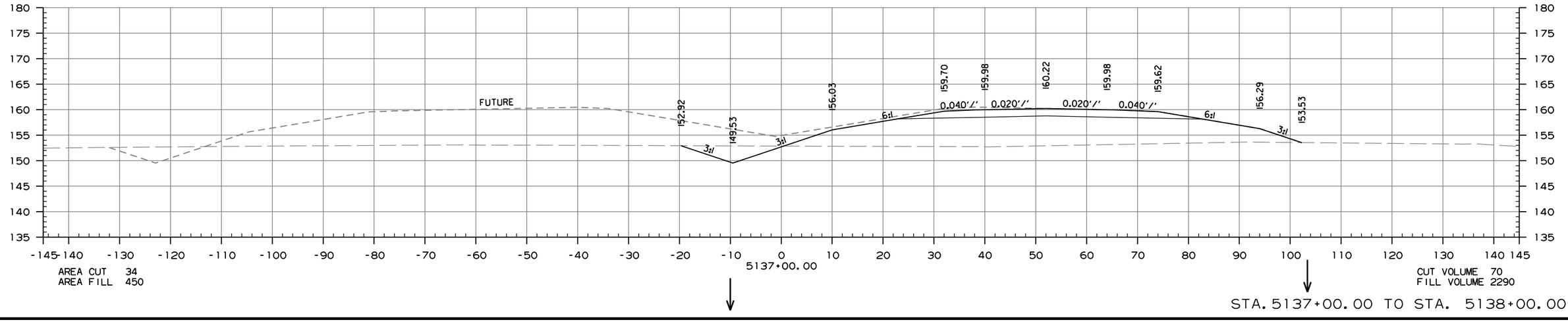


STA. 5135+00.00 TO STA. 5136+00.00

mh39735 7/14/2022
R020678.DGN

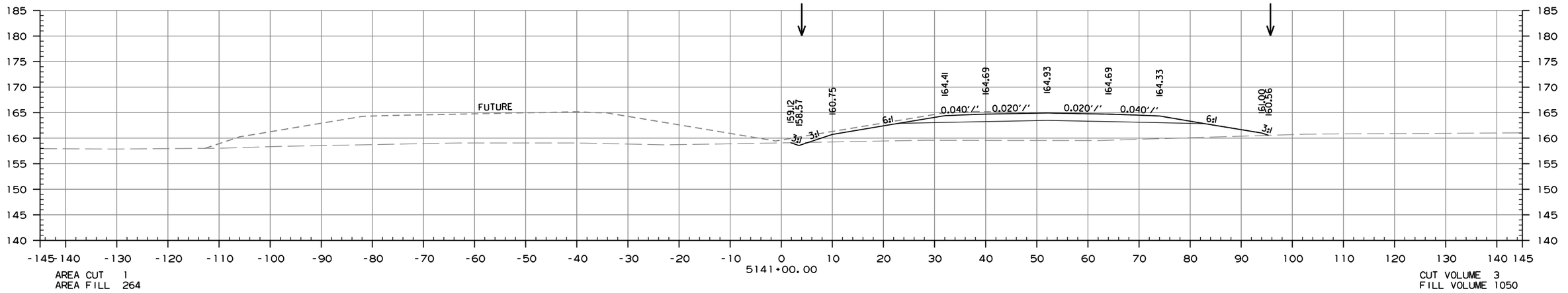
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	317	368
		CROSS SECTIONS				

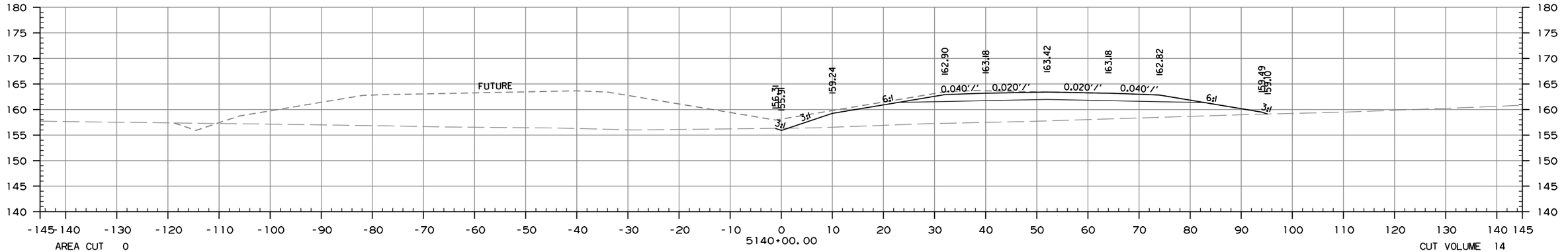


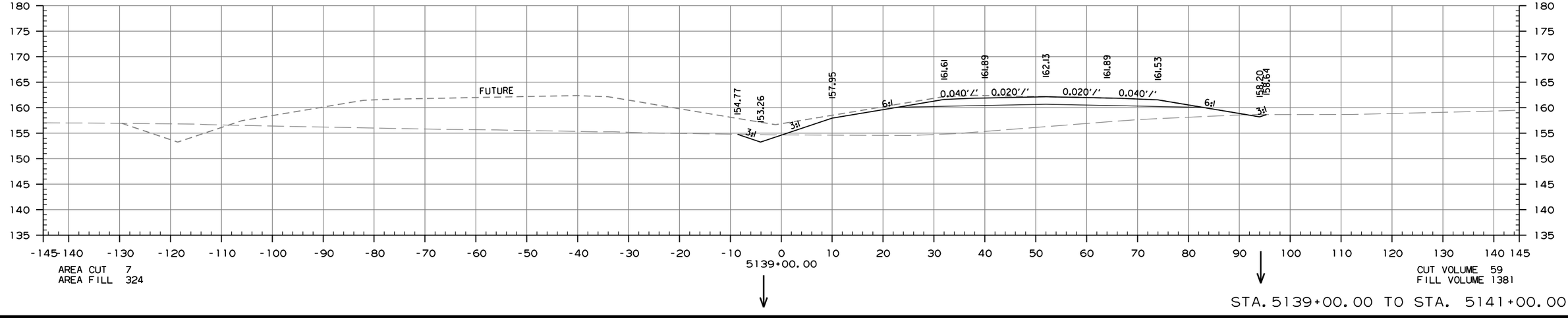


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R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	318	368
		CROSS SECTIONS				



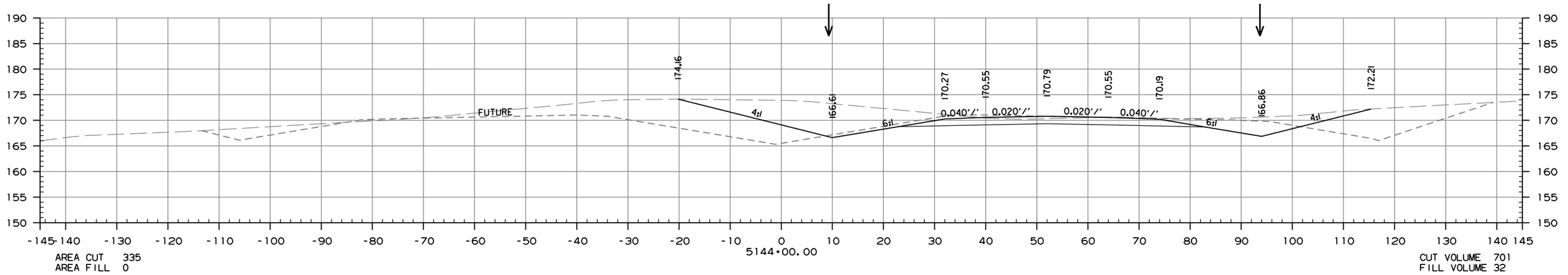


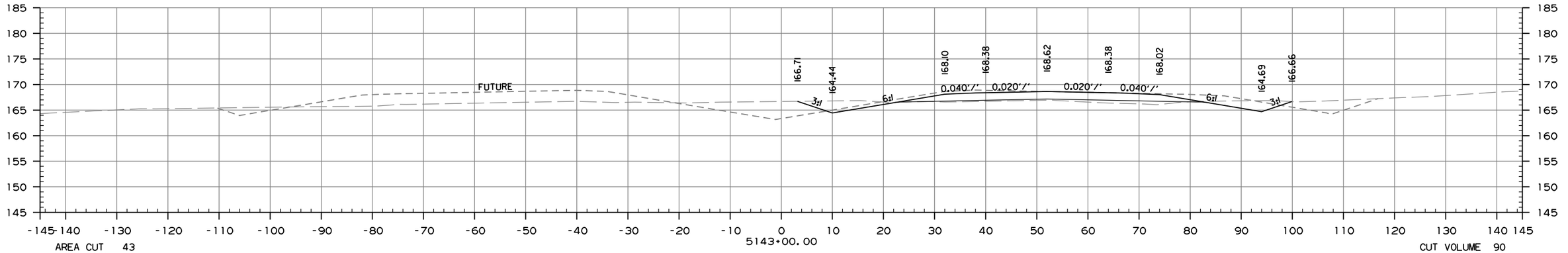


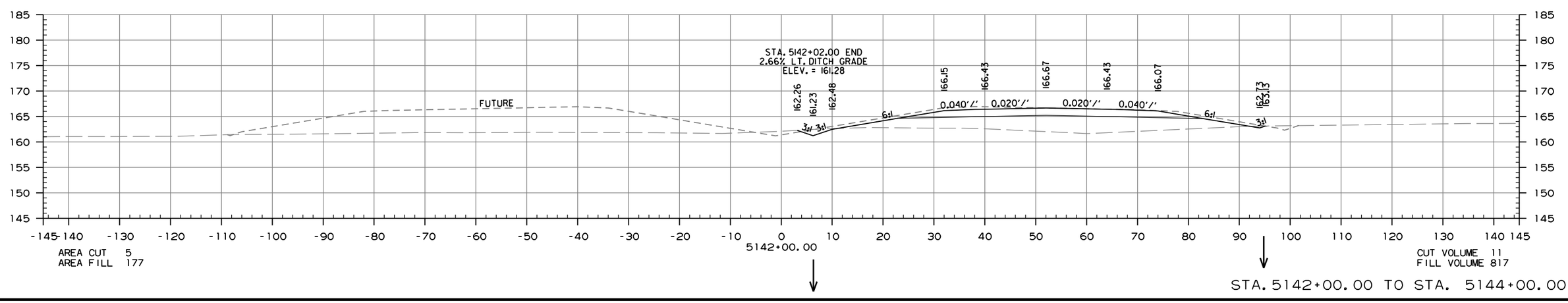
STA. 5139+00.00 TO STA. 5141+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	319	368
		CROSS SECTIONS				

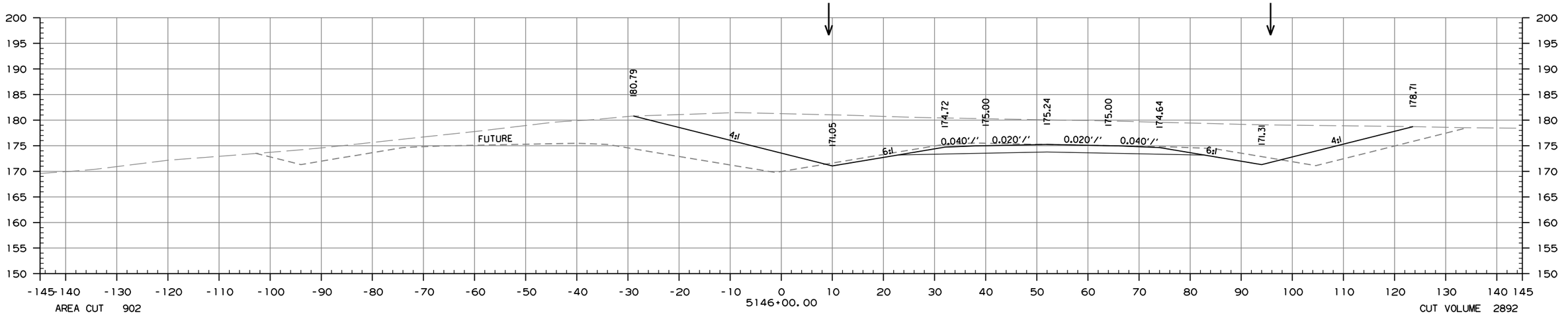


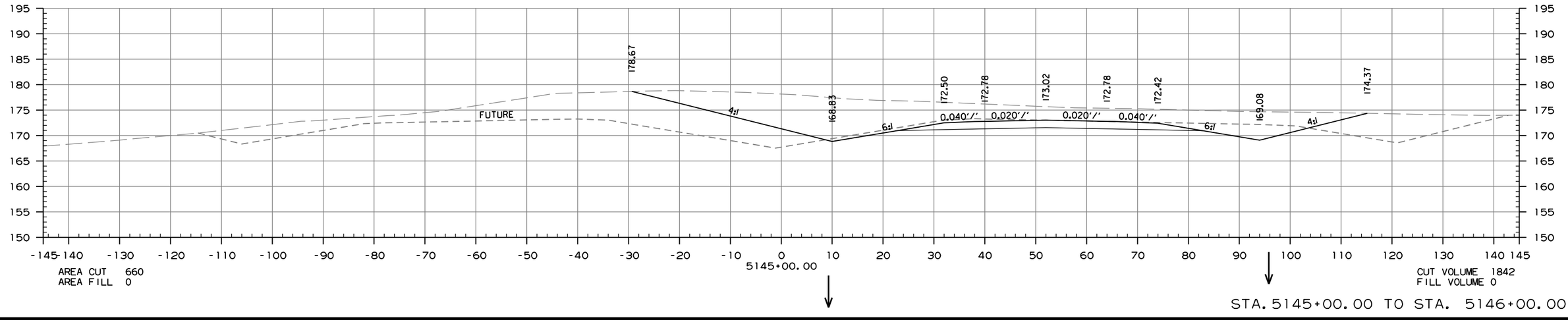




mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	320	368
		CROSS SECTIONS				

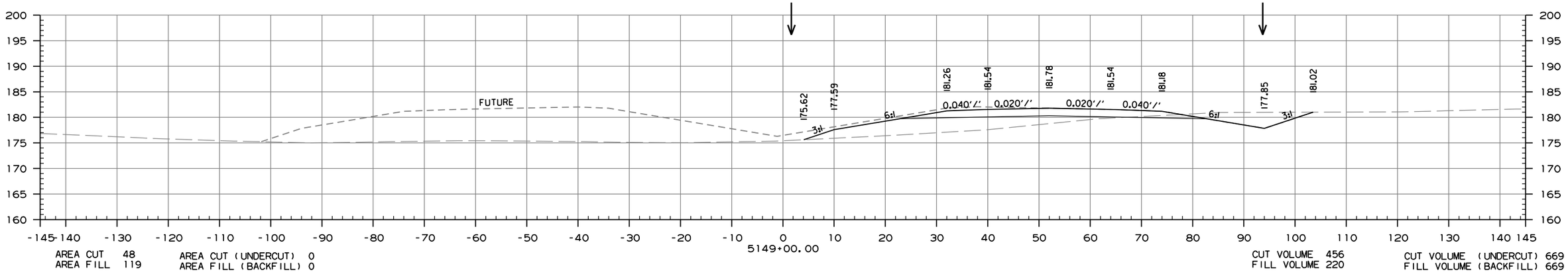


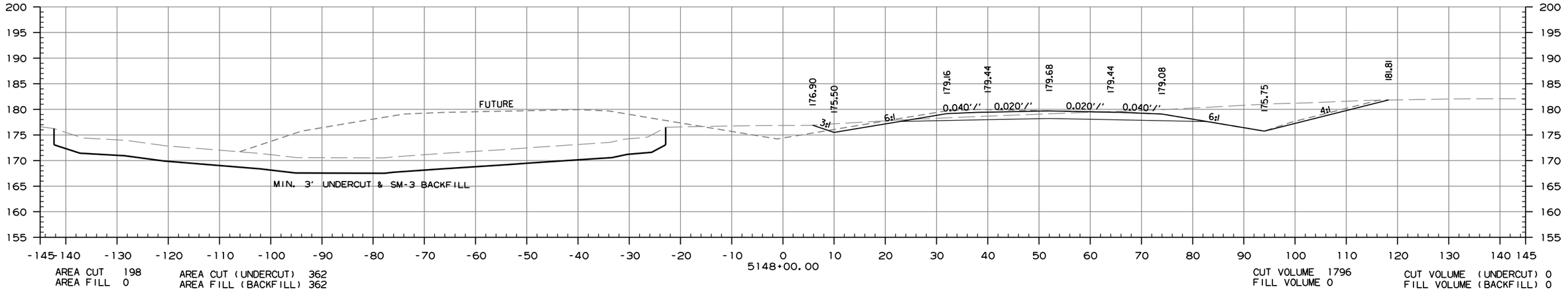


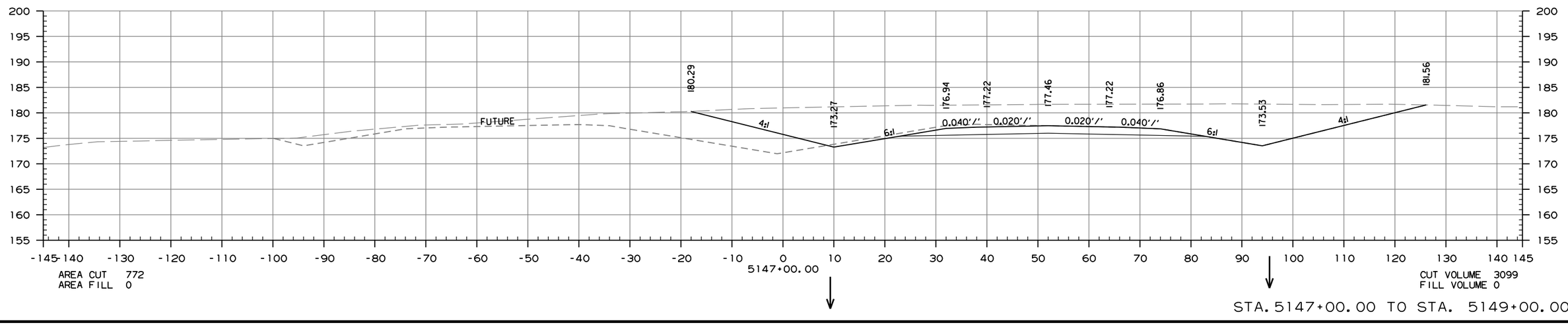
STA. 5145+00.00 TO STA. 5146+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	321	368
		CROSS SECTIONS				



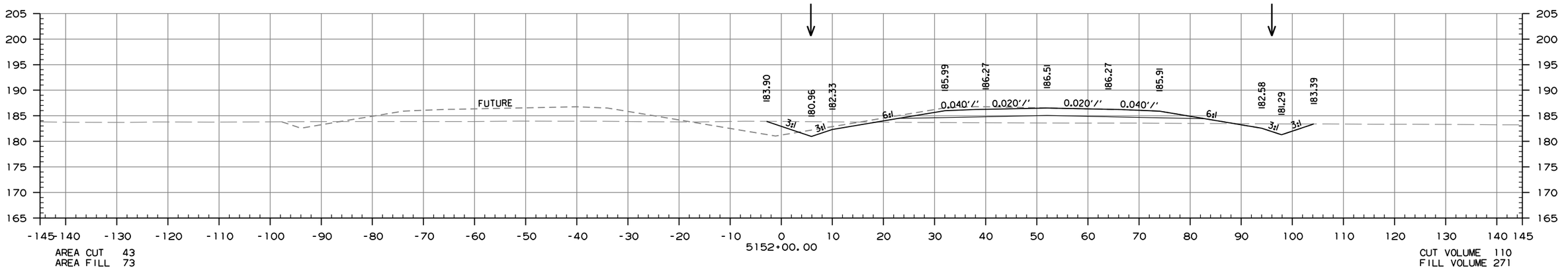


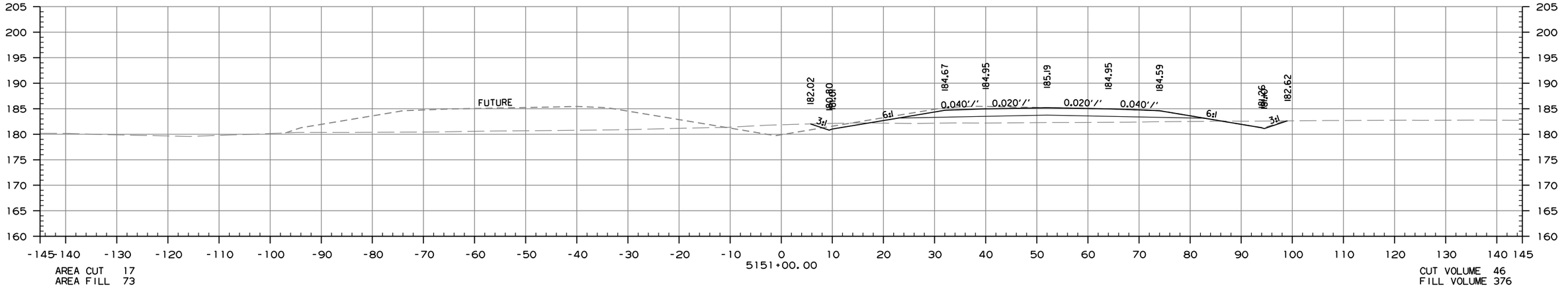


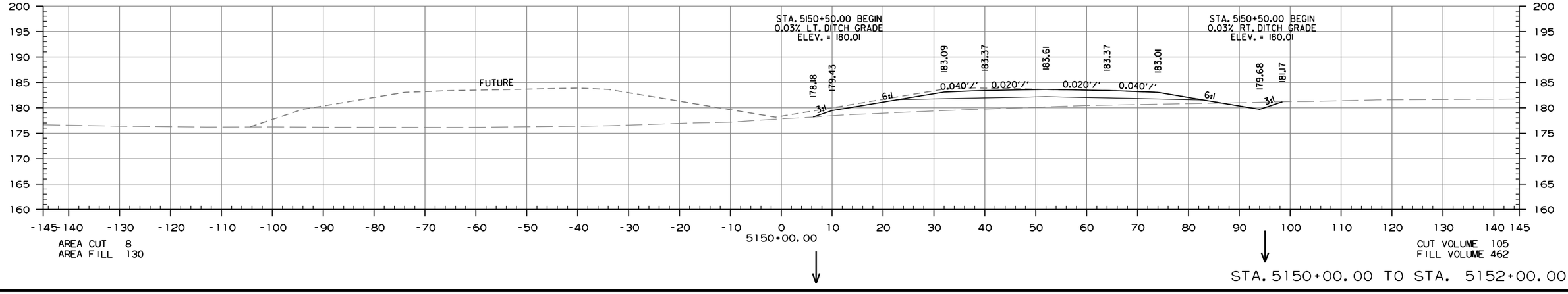
STA. 5147+00.00 TO STA. 5149+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	322	368
		CROSS SECTIONS				

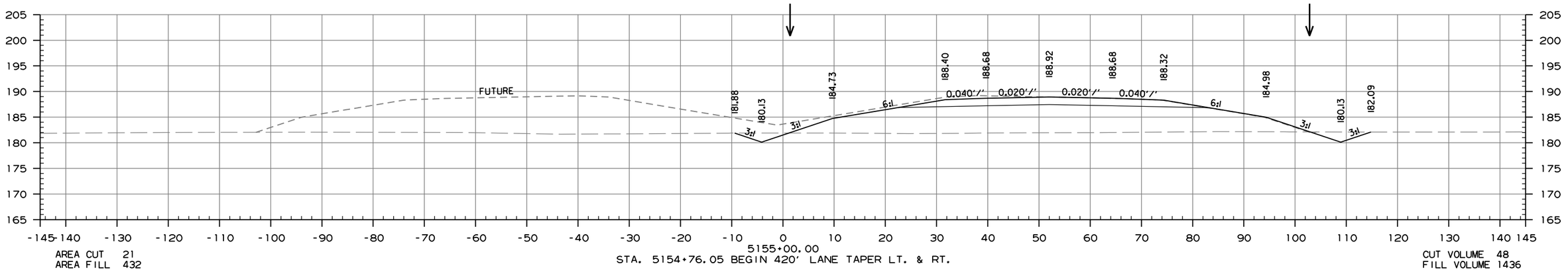






mh39735 7/14/2022
R020678.DGN

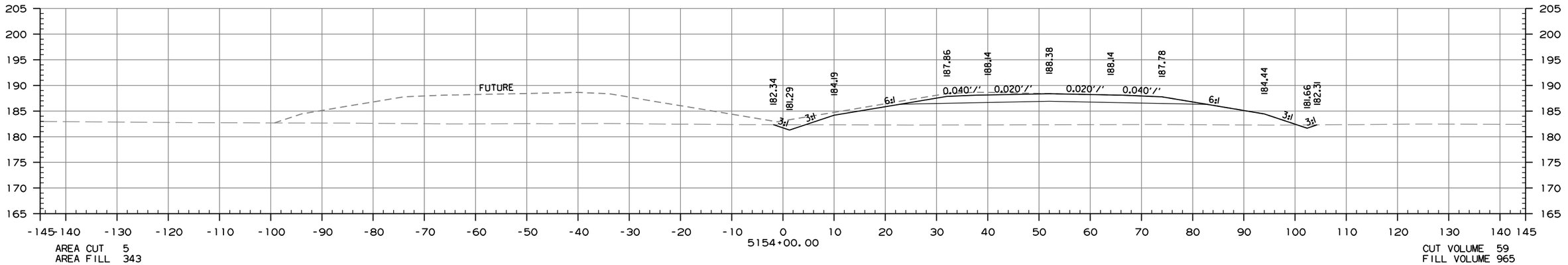
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	323	368
		CROSS SECTIONS				



AREA CUT 21
AREA FILL 432

5155+00.00
STA. 5154+76.05 BEGIN 420' LANE TAPER LT. & RT.

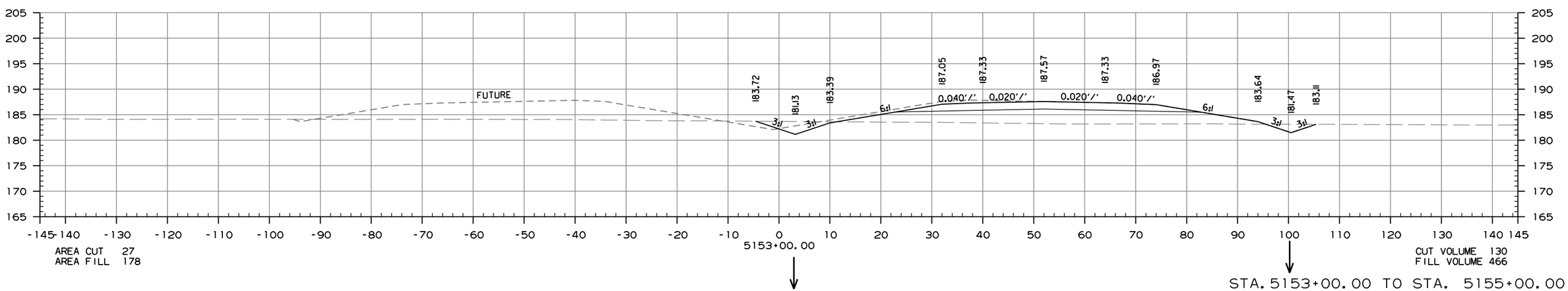
CUT VOLUME 48
FILL VOLUME 1436



AREA CUT 5
AREA FILL 343

5154+00.00

CUT VOLUME 59
FILL VOLUME 965



AREA CUT 27
AREA FILL 178

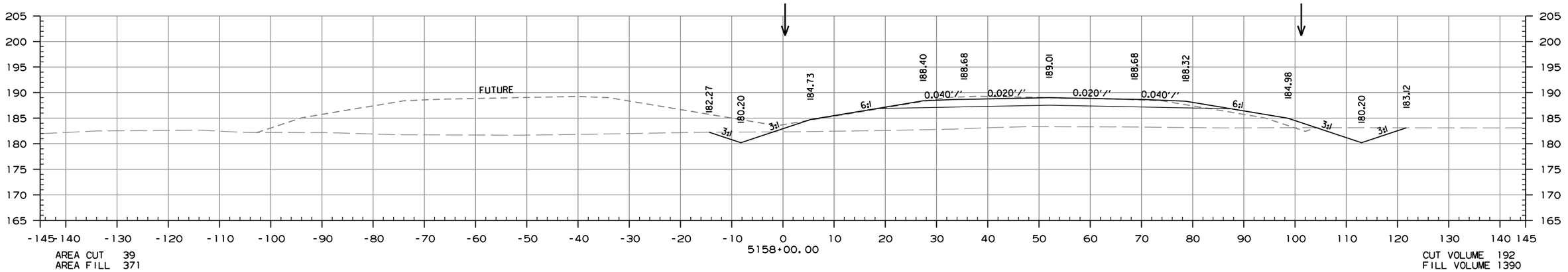
5153+00.00

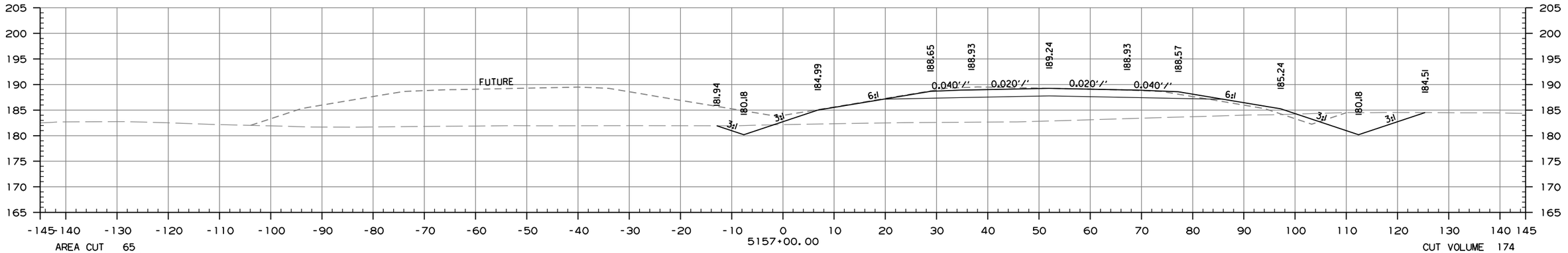
CUT VOLUME 130
FILL VOLUME 466

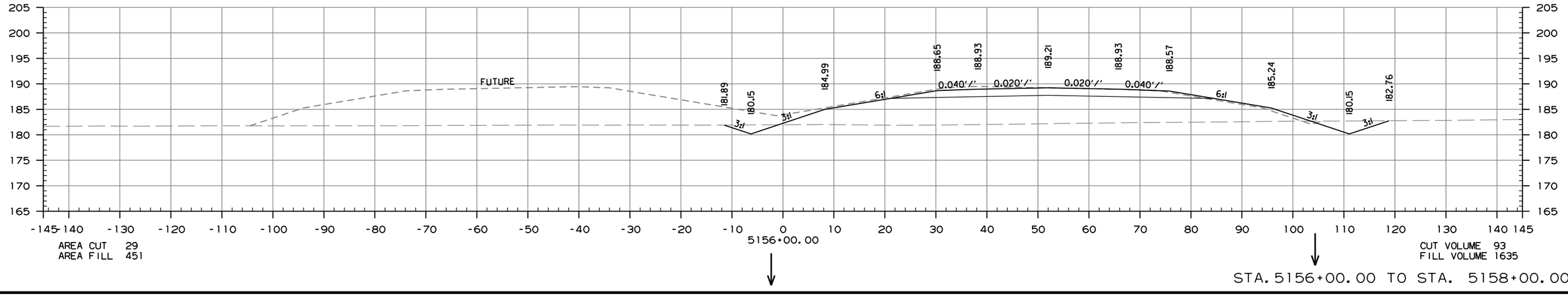
STA. 5153+00.00 TO STA. 5155+00.00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	324	368
		CROSS SECTIONS				





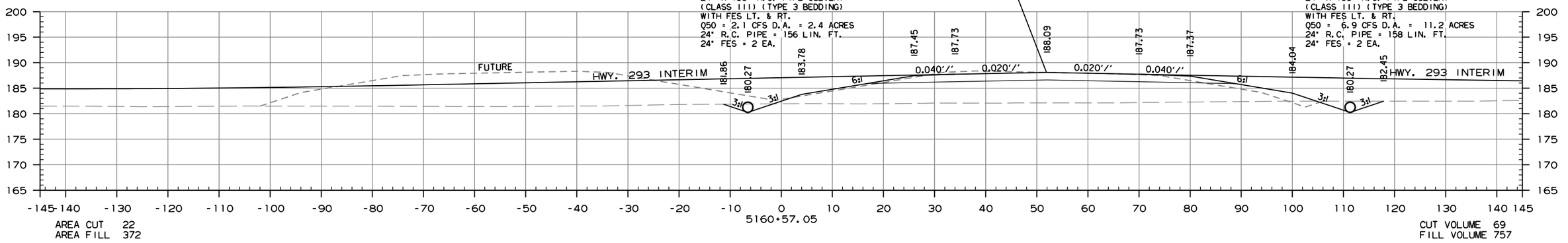


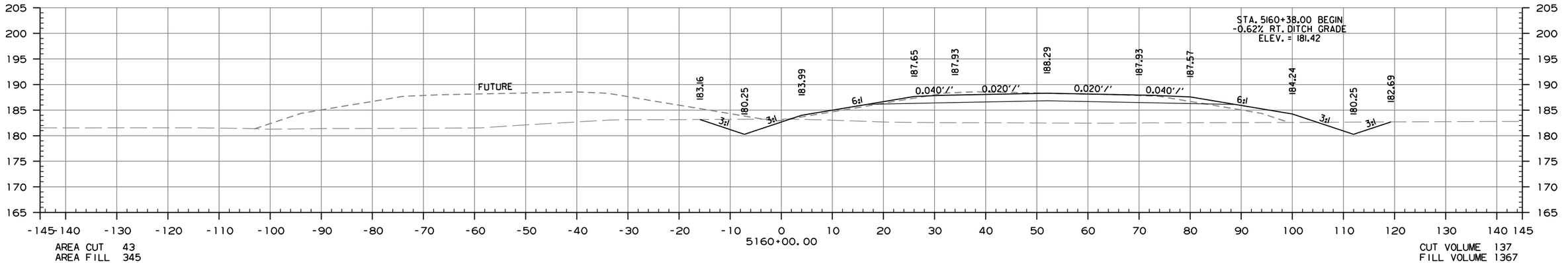
STA. 5156+00.00 TO STA. 5158+00.00

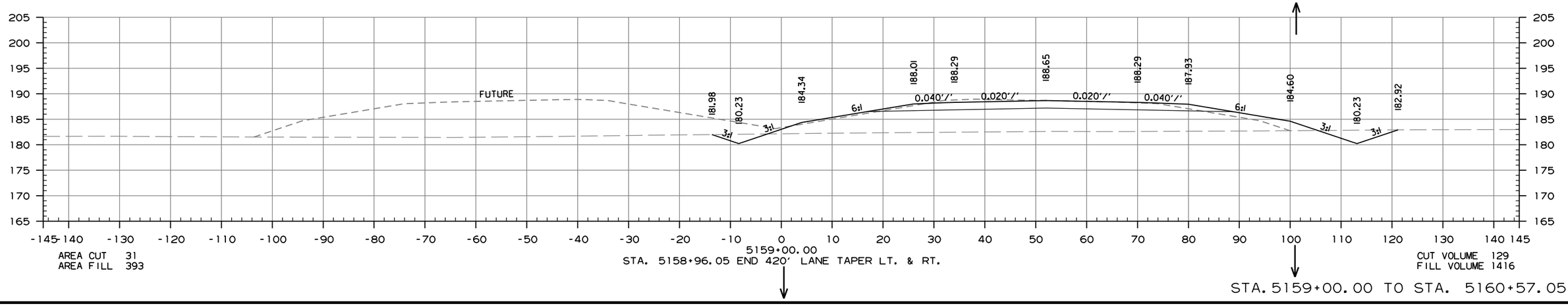
mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	325	368
		CROSS SECTIONS				

STA. 5160+57.05 52' RT. OF I-69 CL =
STA. 312+52.59 HWY. 293 CL
Δ = 90° 00' 00"





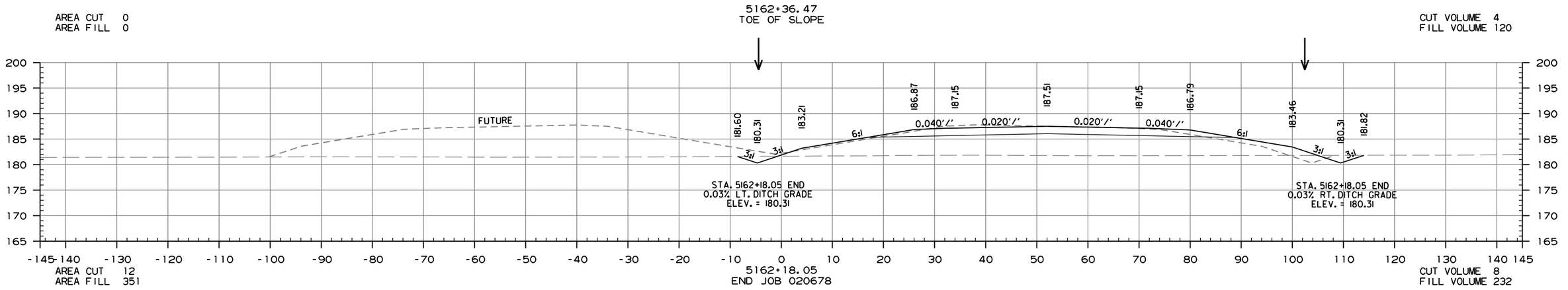


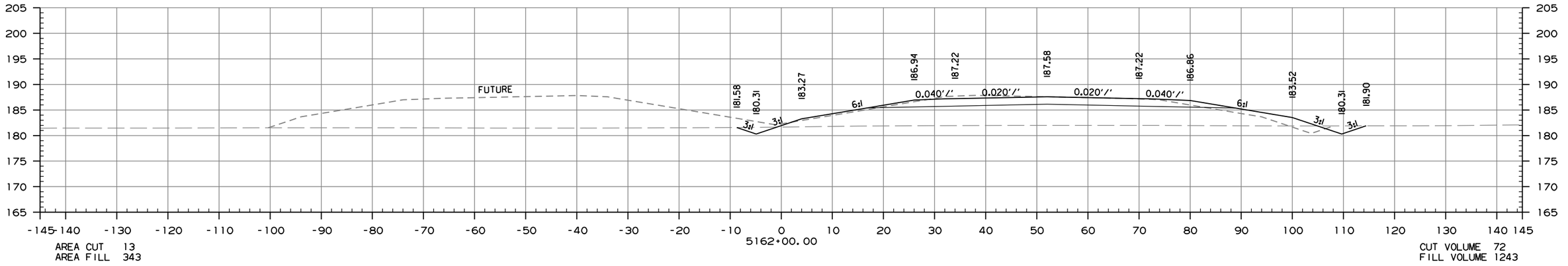
STA. 5158+96.05 END 420' LANE TAPER LT. & RT.

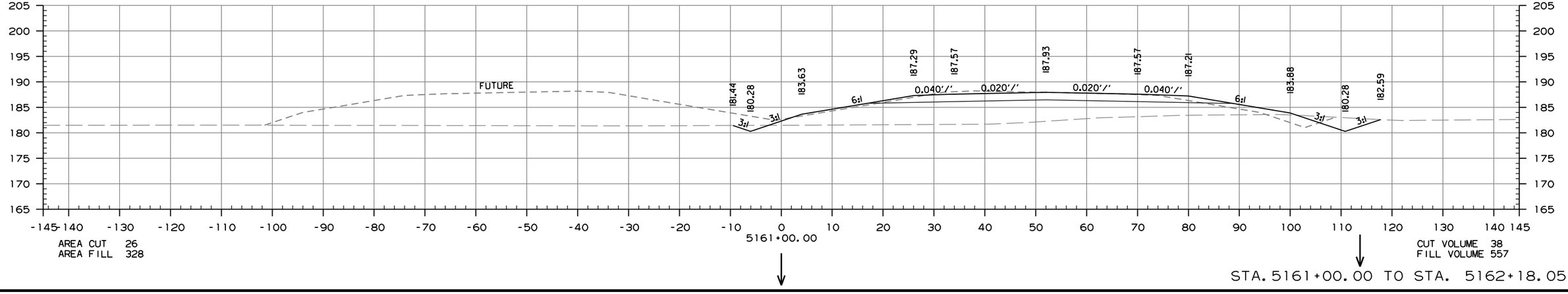
STA. 5159+00.00 TO STA. 5160+57.05

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	326	368
		CROSS SECTIONS				

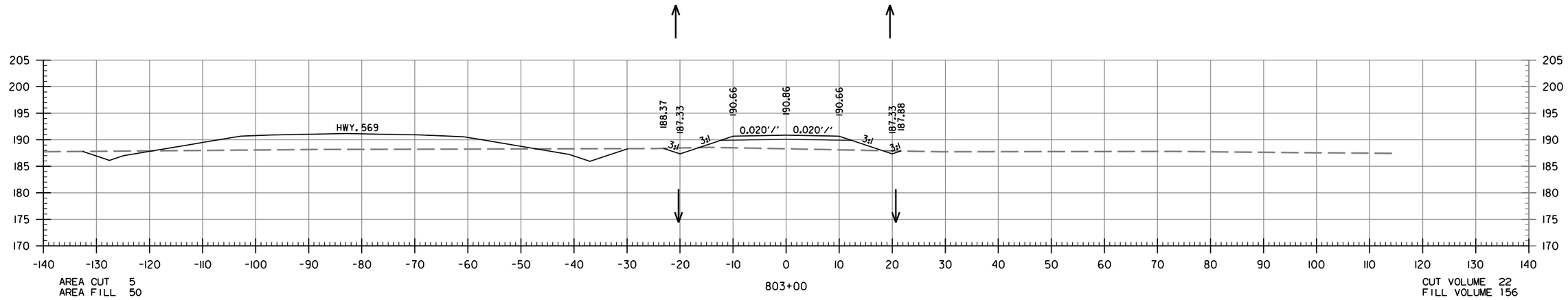


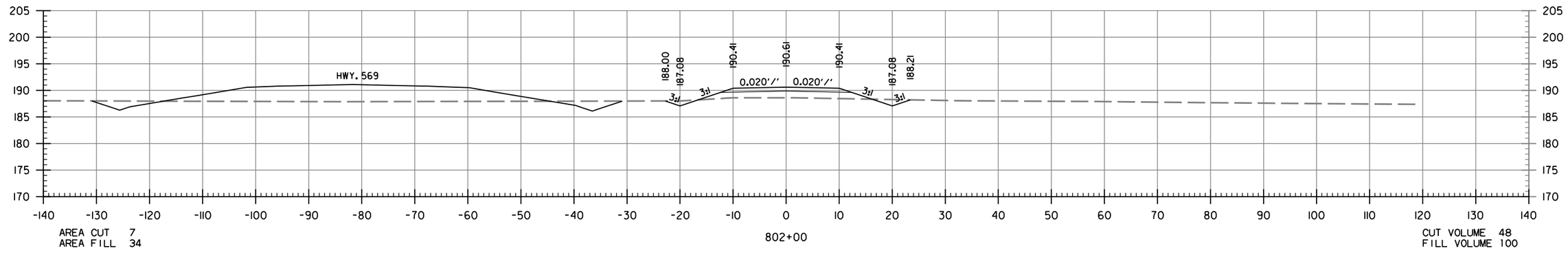


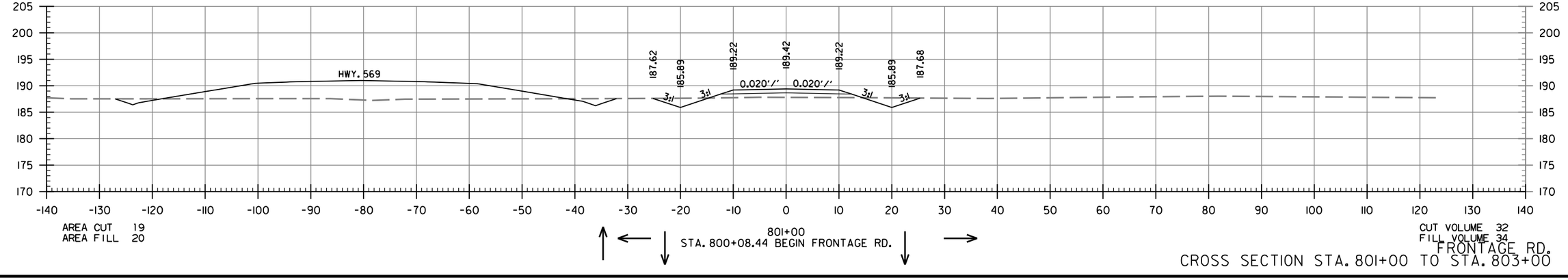


mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	327	368
		CROSS SECTIONS				



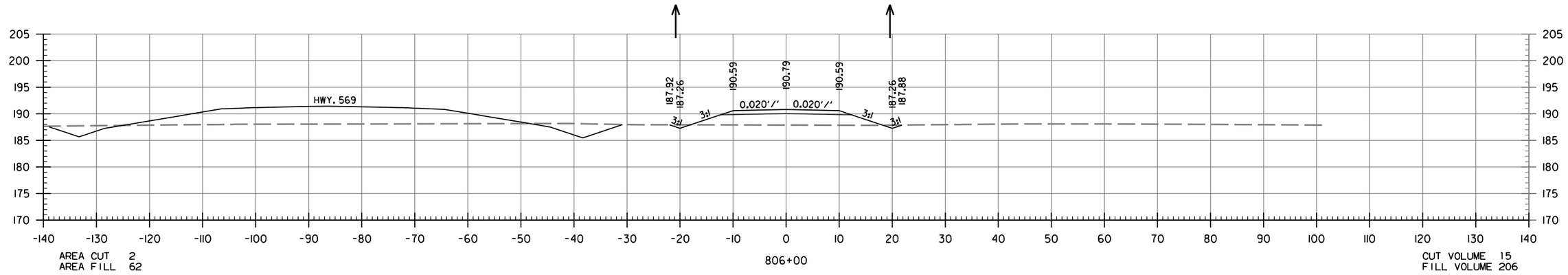


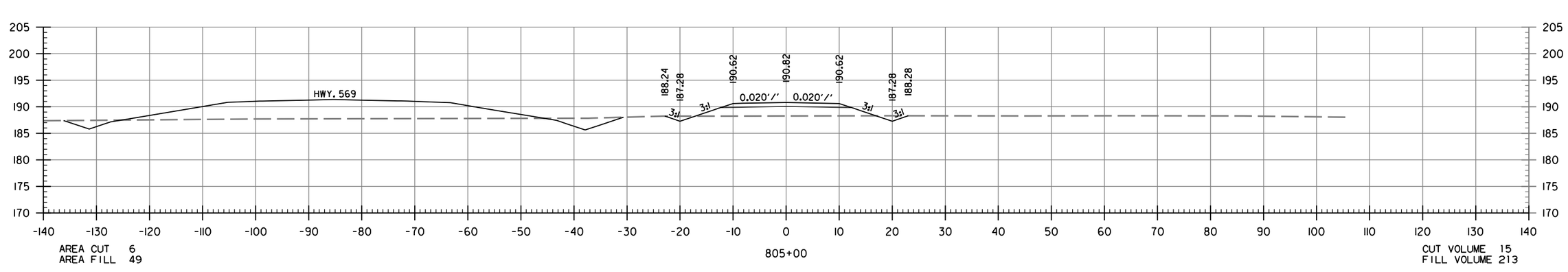


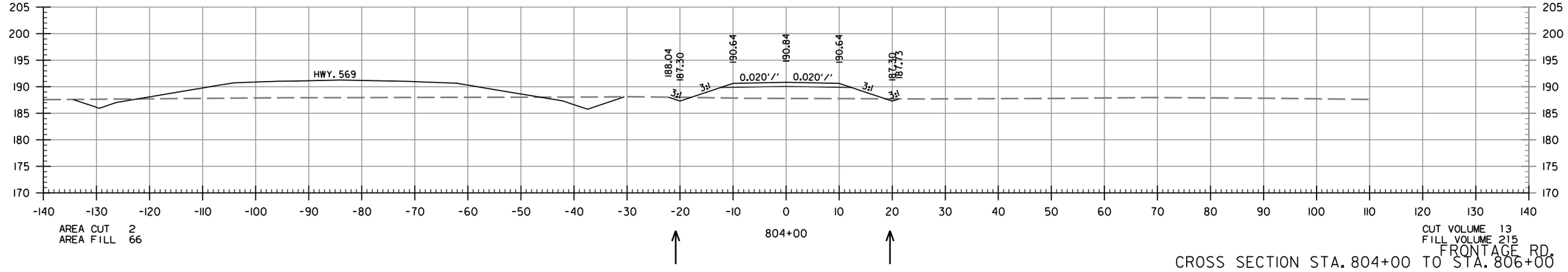
FRONTAGE RD.
CROSS SECTION STA. 801+00 TO STA. 803+00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	328	368
		CROSS SECTIONS				



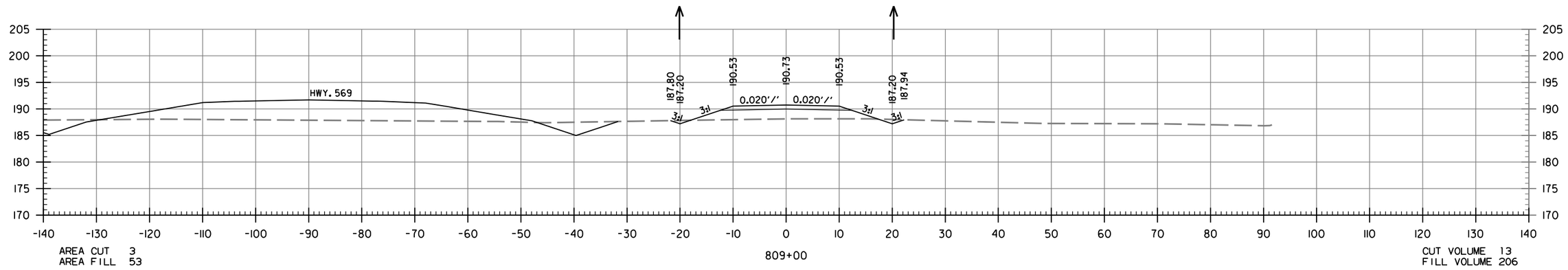


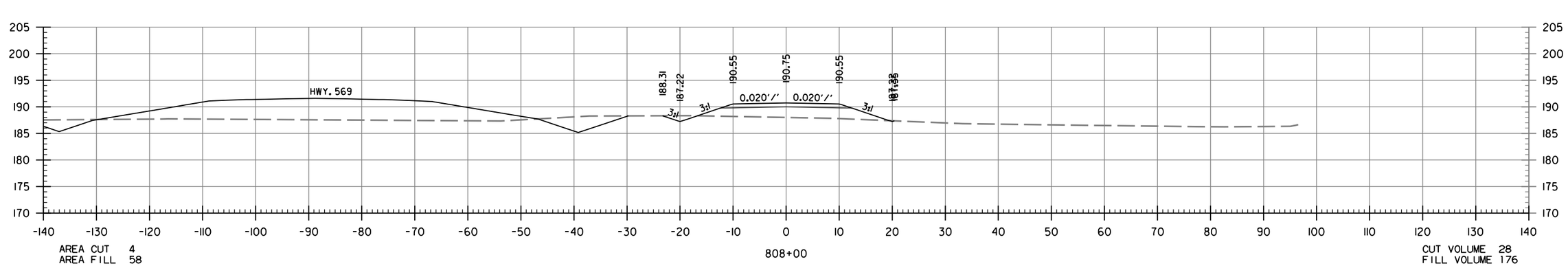


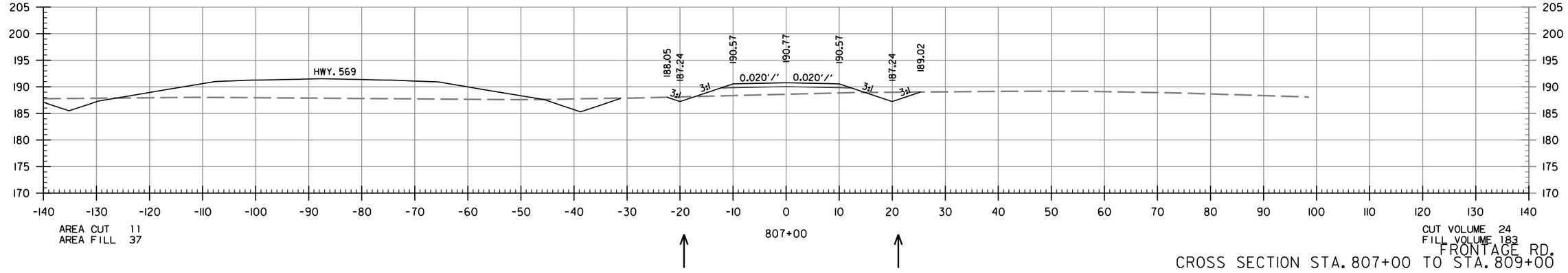
FRONTAGE RD.
CROSS SECTION STA. 804+00 TO STA. 806+00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	329	368
		CROSS SECTIONS				



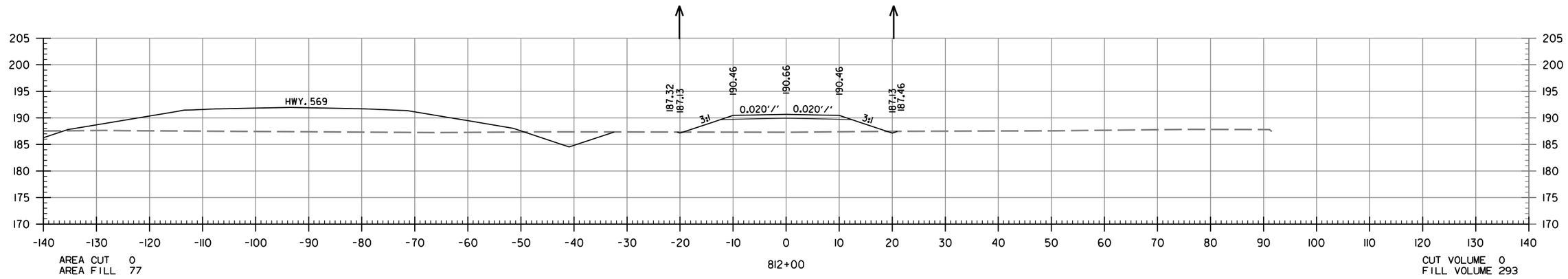


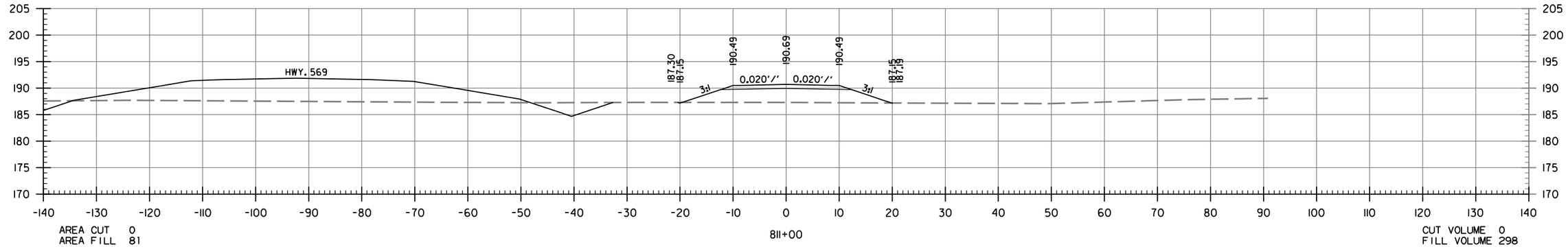


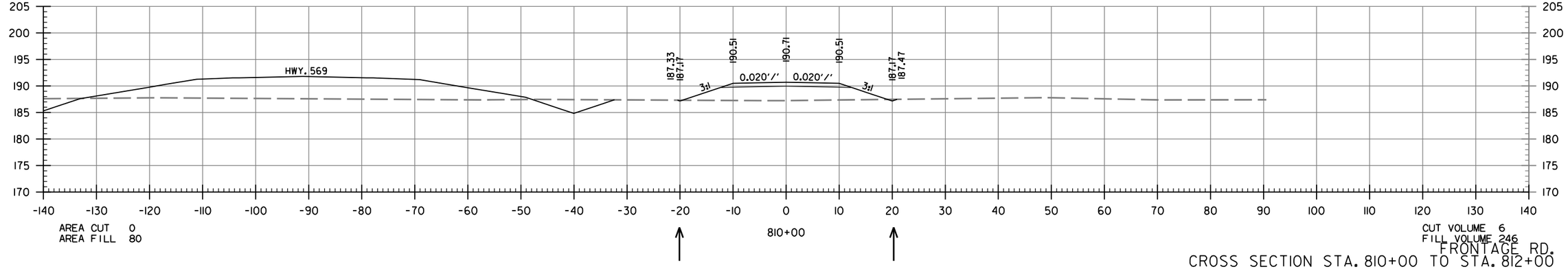
CROSS SECTION STA. 807+00 TO STA. 809+00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	330	368
		CROSS SECTIONS				



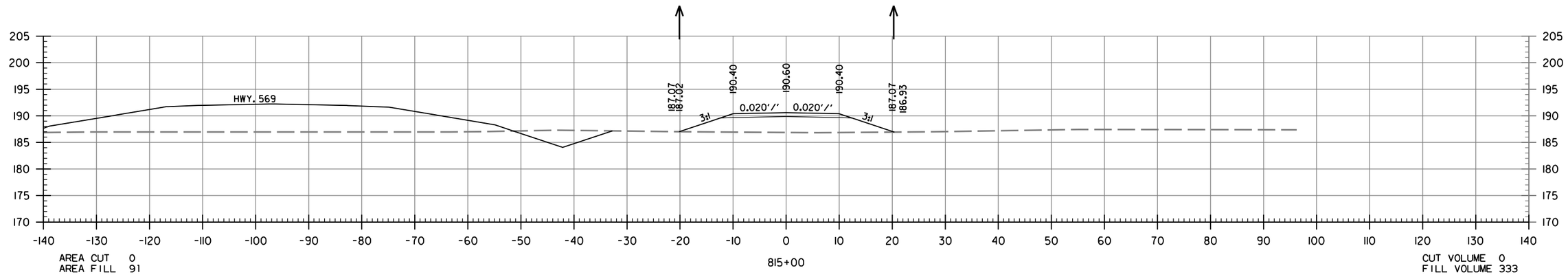


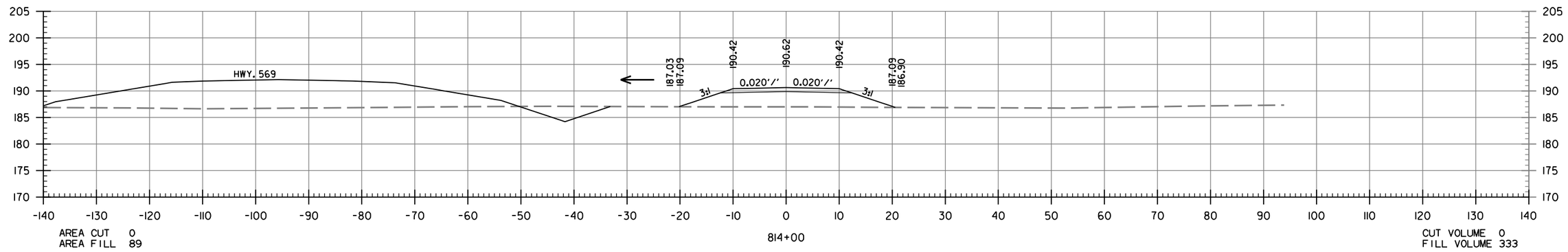


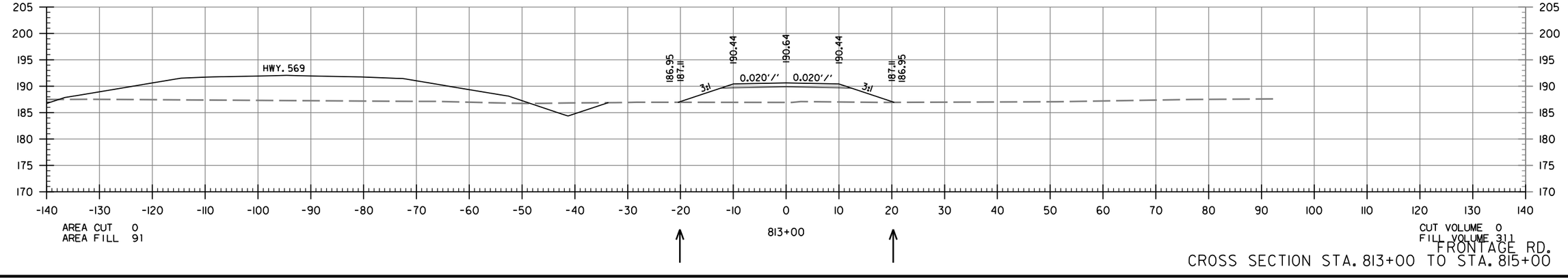
FRONTAGE RD.
CROSS SECTION STA. 810+00 TO STA. 812+00

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R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	331	368
		CROSS SECTIONS				



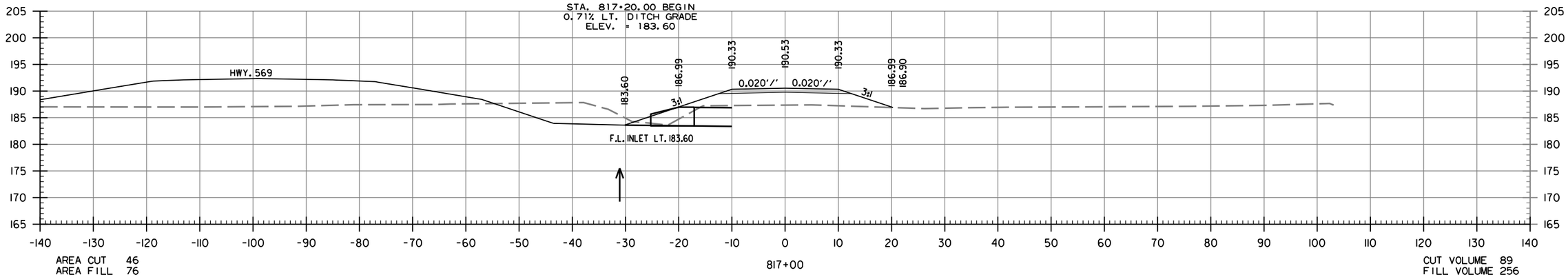




FRONTAGE RD.
CROSS SECTION STA. 813+00 TO STA. 815+00

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R020678.DGN

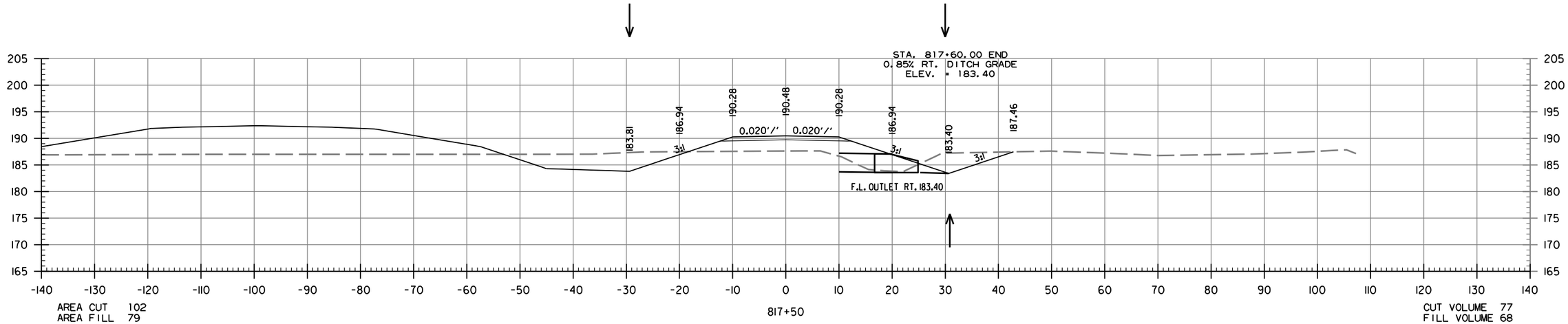
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	332	368
		CROSS SECTIONS				



FRONTAGE RD.
CROSS SECTION STA. 816+00 TO STA. 817+00

mh39735 7/14/2022
R020678.DGN

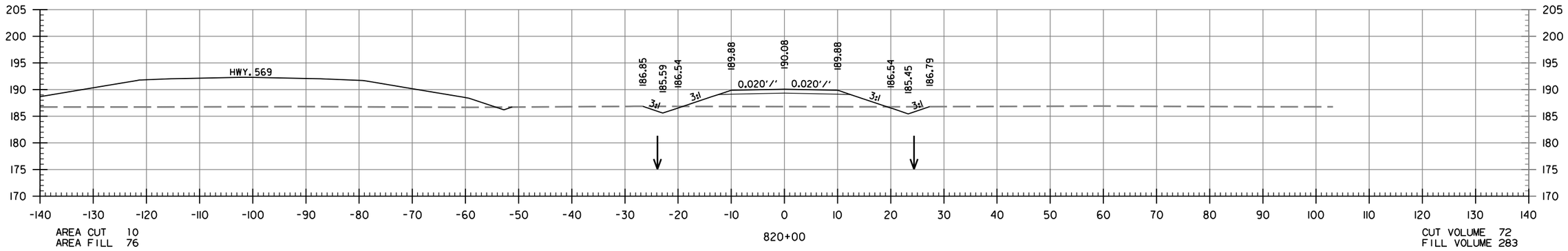
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	333	368
		CROSS SECTIONS				

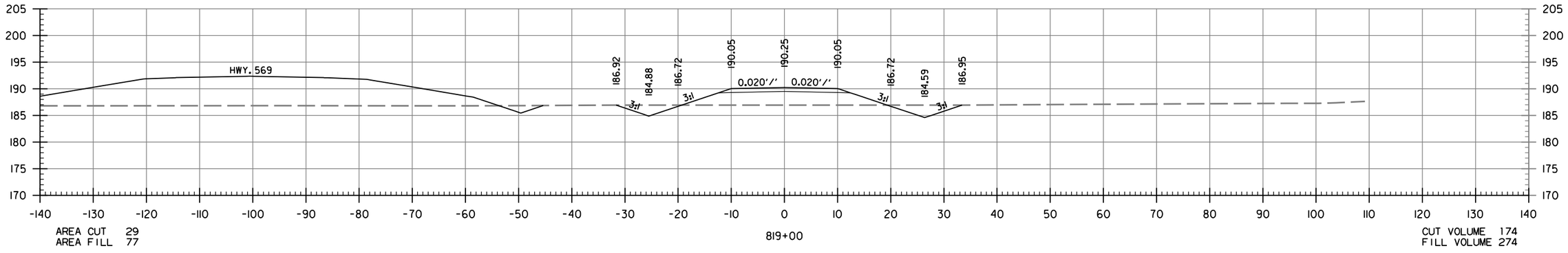


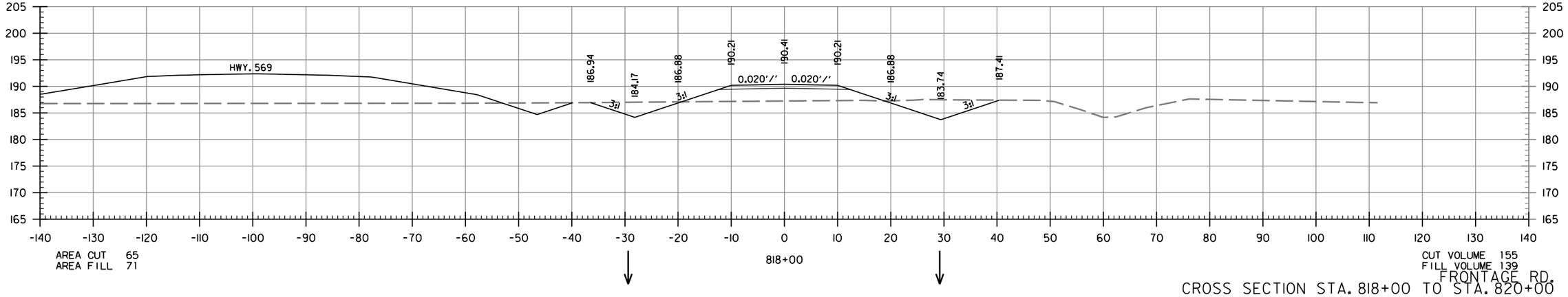
FRONTAGE RD.
CROSS SECTION STA. 817+27 TO STA. 817+50

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-21-2022		6	ARK.	020678	334	368
		CROSS SECTIONS				



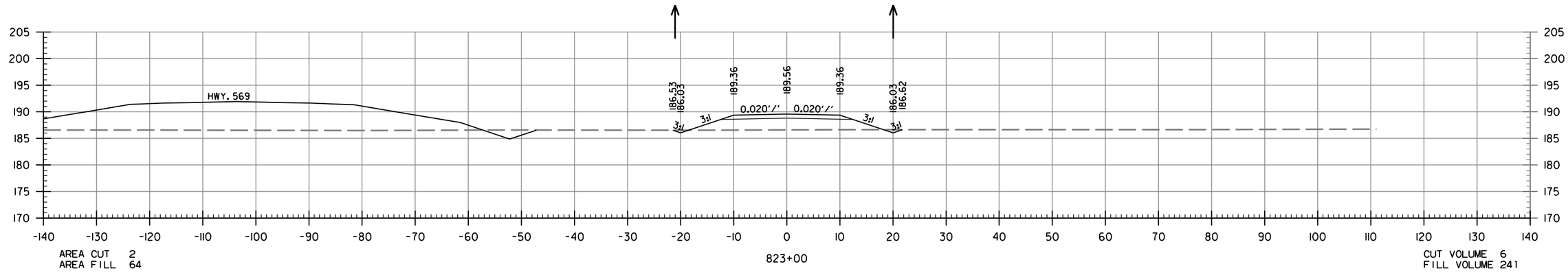


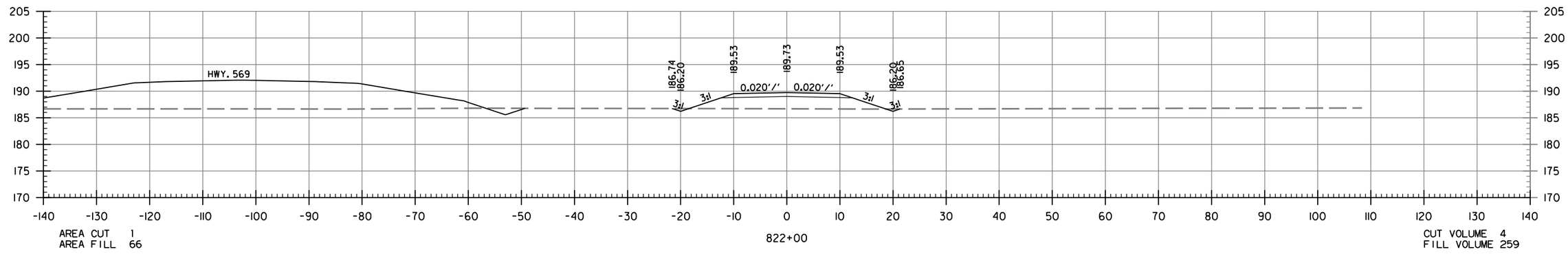


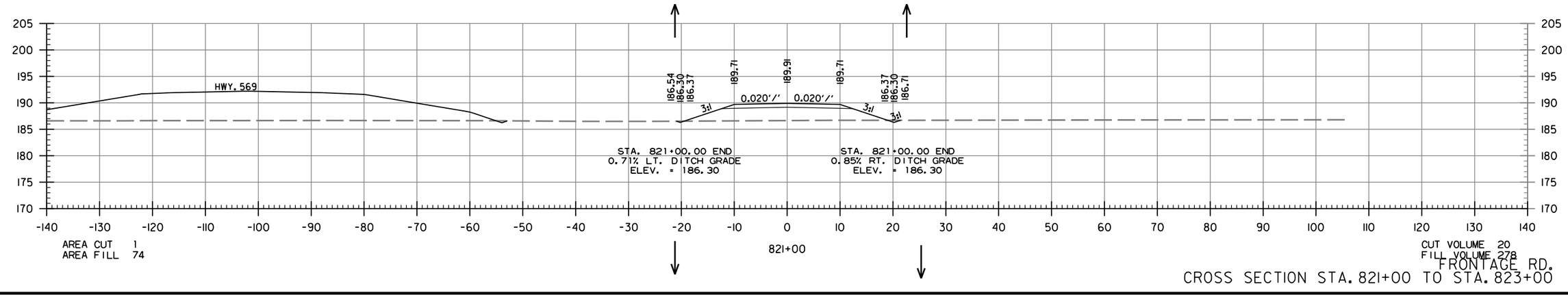
FRONTAGE RD.
CROSS SECTION STA. 818+00 TO STA. 820+00

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R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	335	368
		CROSS SECTIONS				



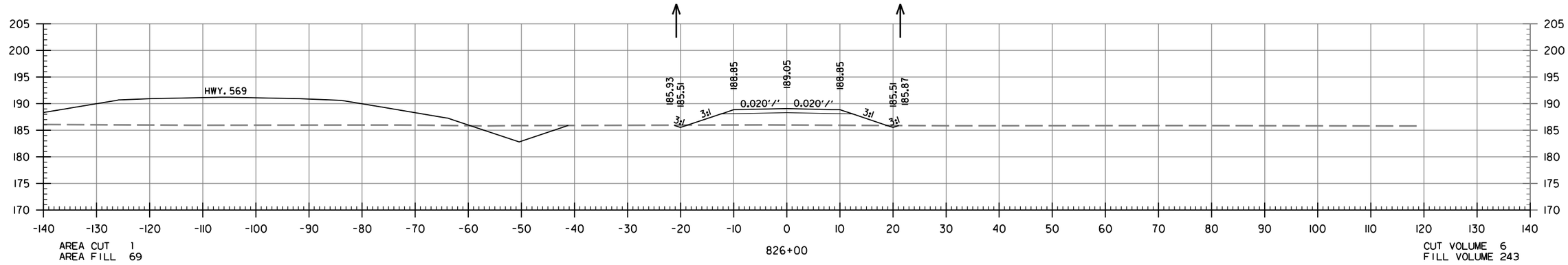


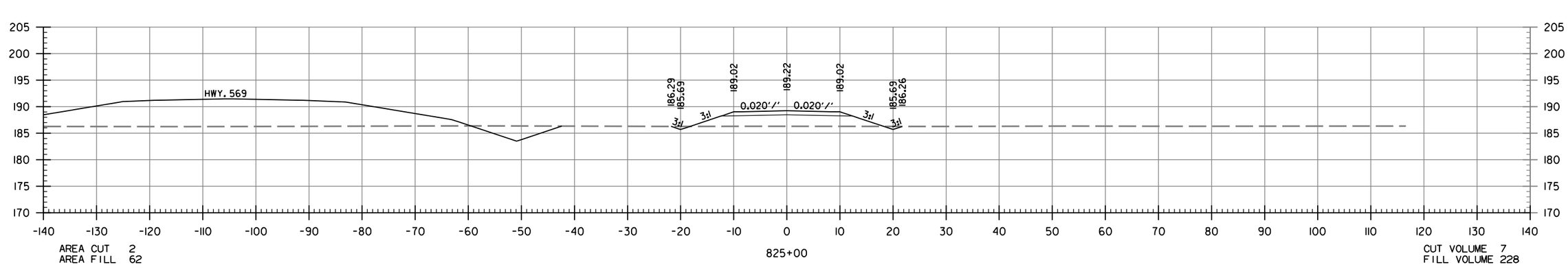


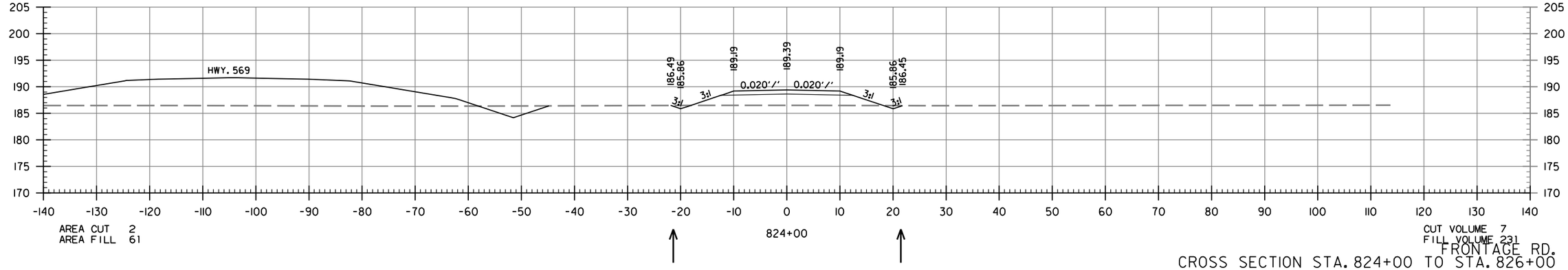
FRONTAGE RD.
CROSS SECTION STA. 821+00 TO STA. 823+00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	336	368
		CROSS SECTIONS				



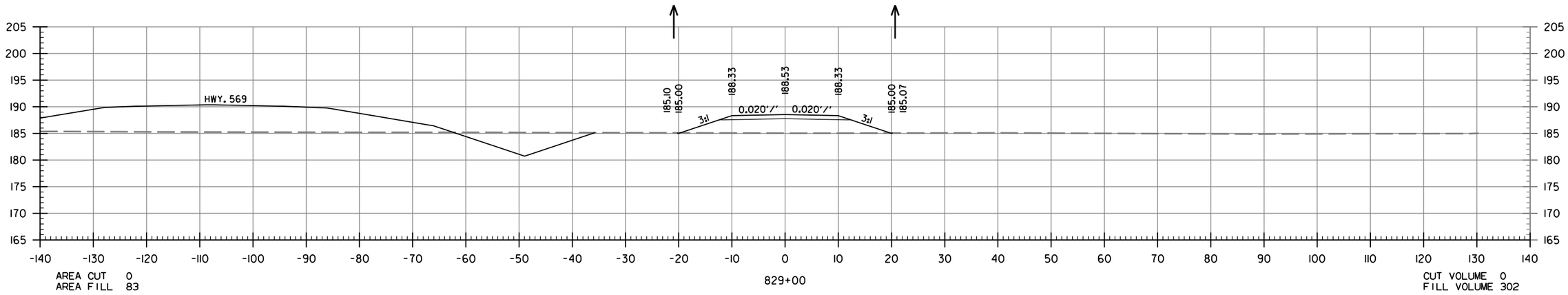


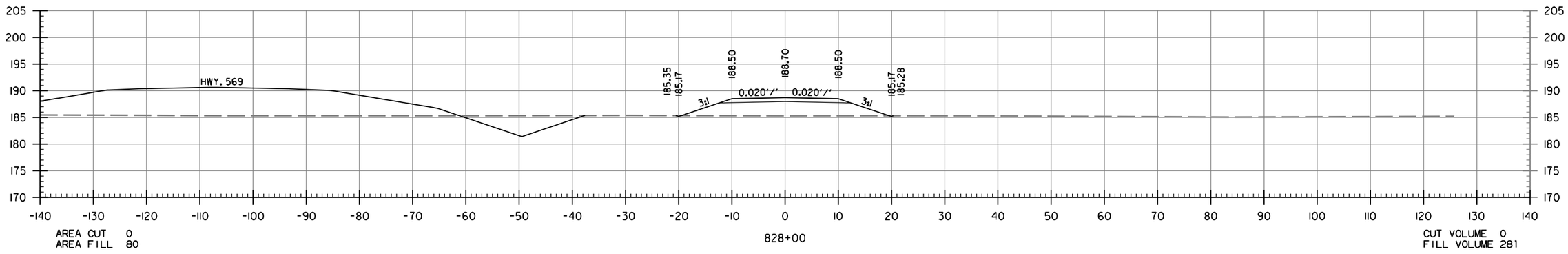


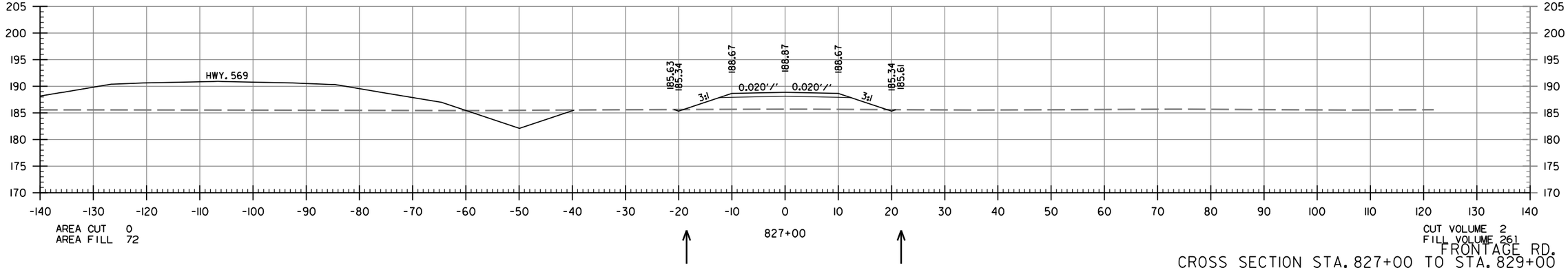
FRONTAGE RD.
CROSS SECTION STA. 824+00 TO STA. 826+00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	337	368
		CROSS SECTIONS				



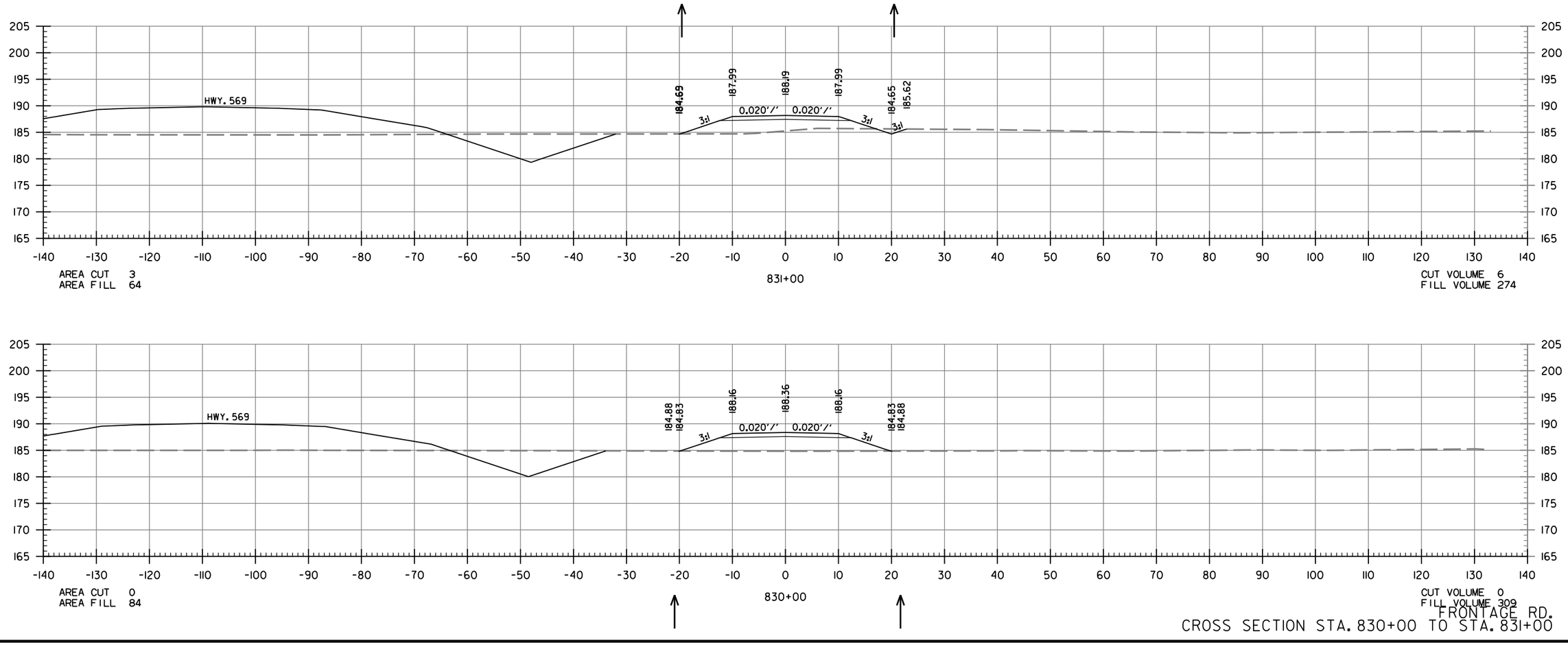




FRONTAGE RD.
CROSS SECTION STA. 827+00 TO STA. 829+00

mh39735 7/14/2022
R020678.DGN

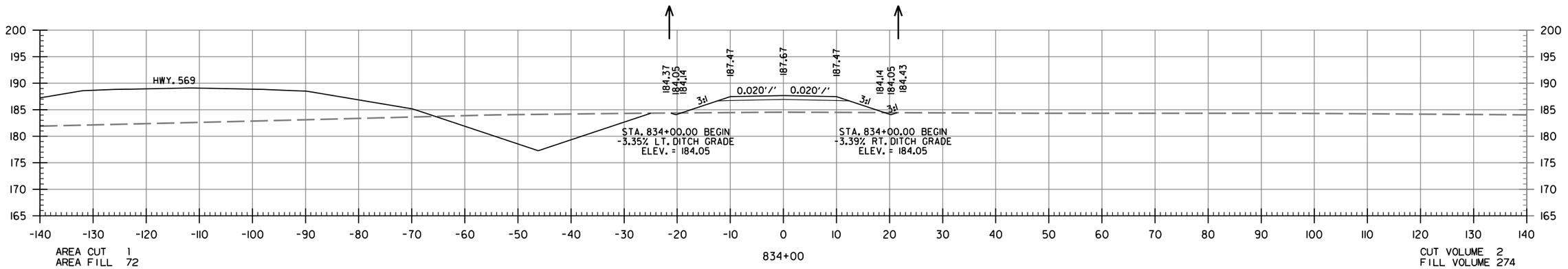
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	338	368
		CROSS SECTIONS				

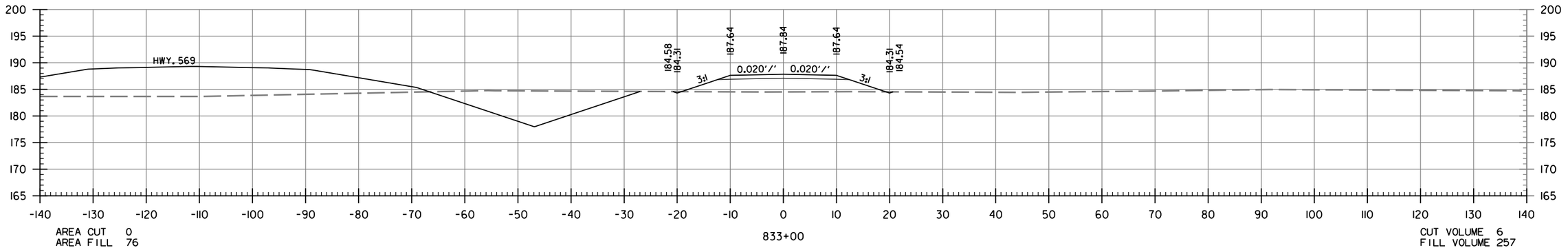


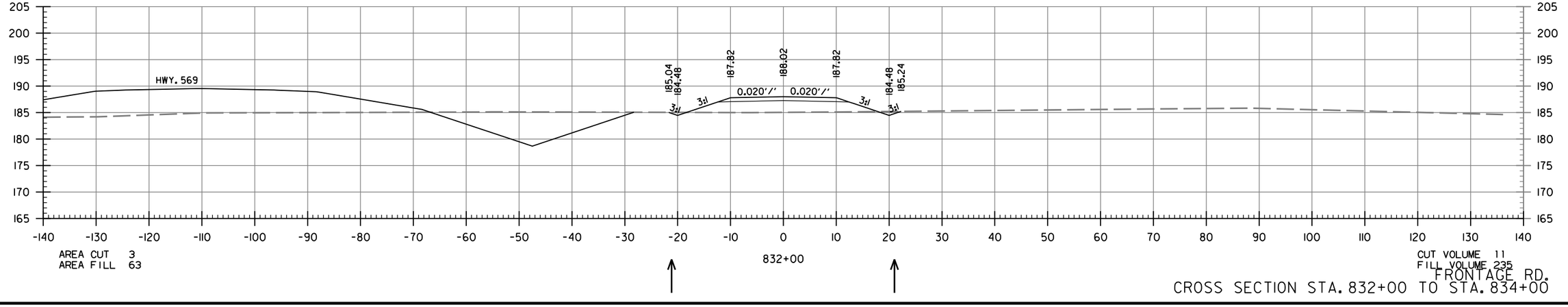
FRONTAGE RD.
CROSS SECTION STA. 830+00 TO STA. 831+00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	339	368
		CROSS SECTIONS				



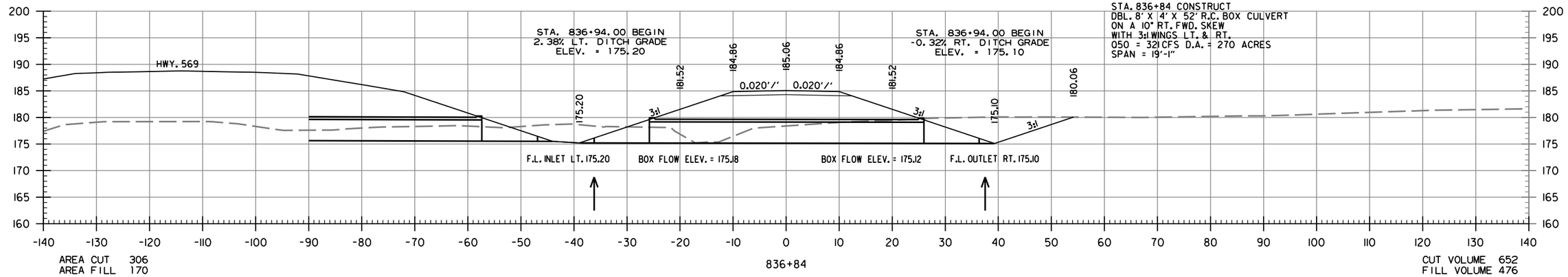


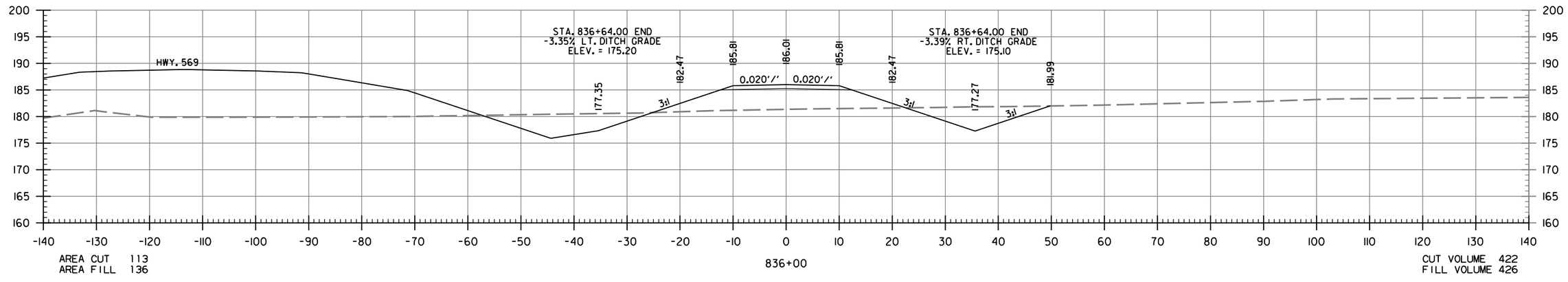


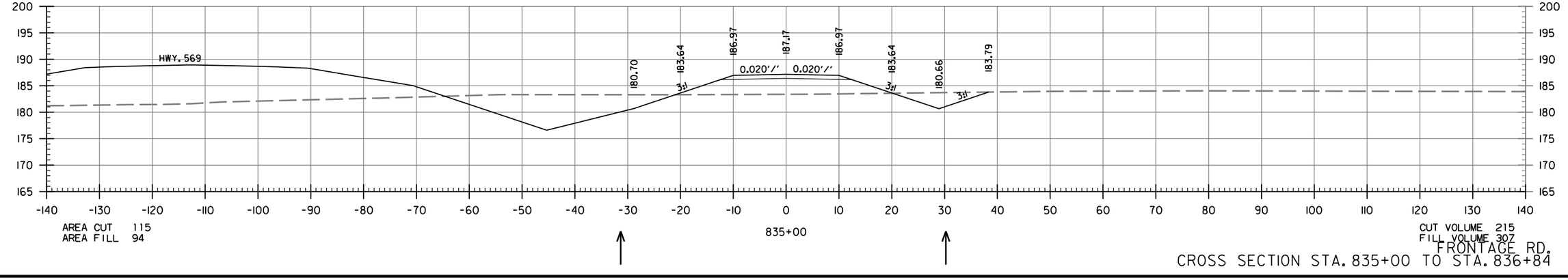
FRONTAGE RD.
CROSS SECTION STA. 832+00 TO STA. 834+00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	340	368
		CROSS SECTIONS				







FRONTAGE RD.
CROSS SECTION STA. 835+00 TO STA. 836+84

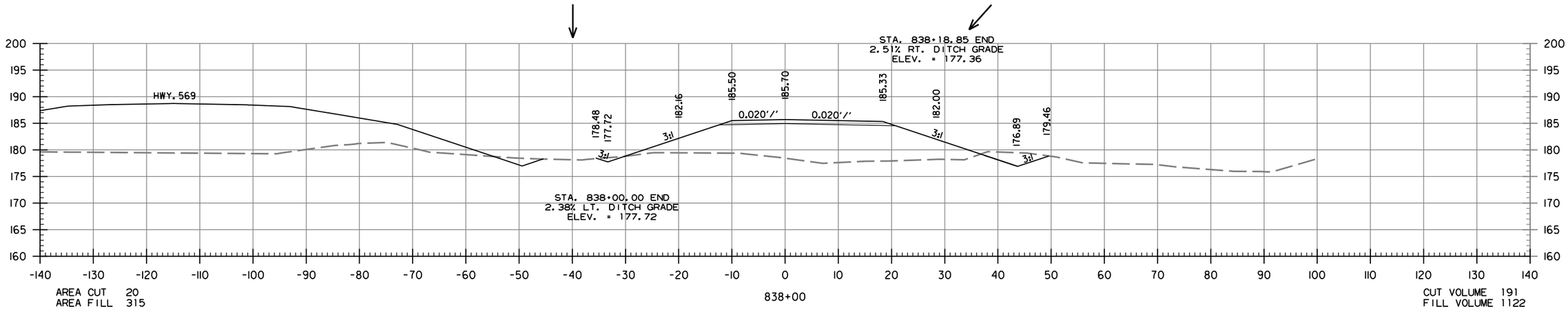
mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	341	368
		CROSS SECTIONS				

AREA CUT 0
AREA FILL 0

STA. 838+47.40 END FRONTAGE RD.

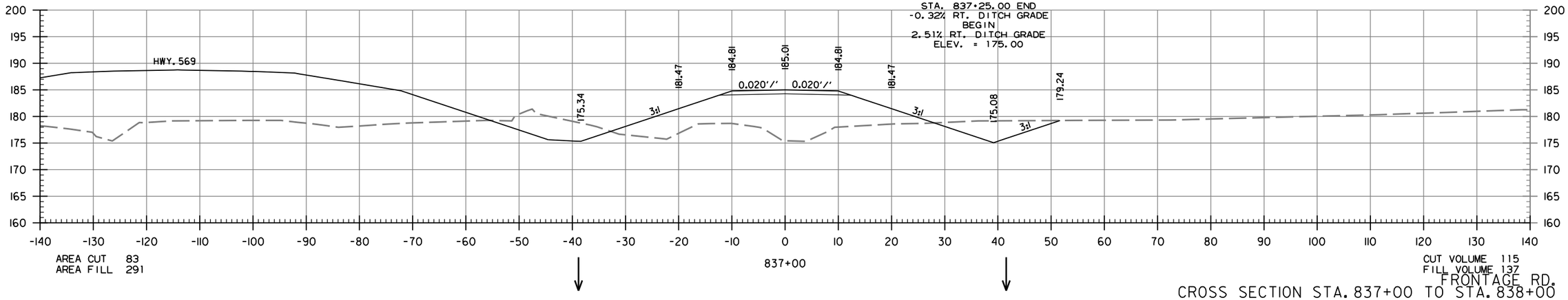
CUT VOLUME 18
FILL VOLUME 276



AREA CUT 20
AREA FILL 315

838+00

CUT VOLUME 191
FILL VOLUME 1122



AREA CUT 83
AREA FILL 291

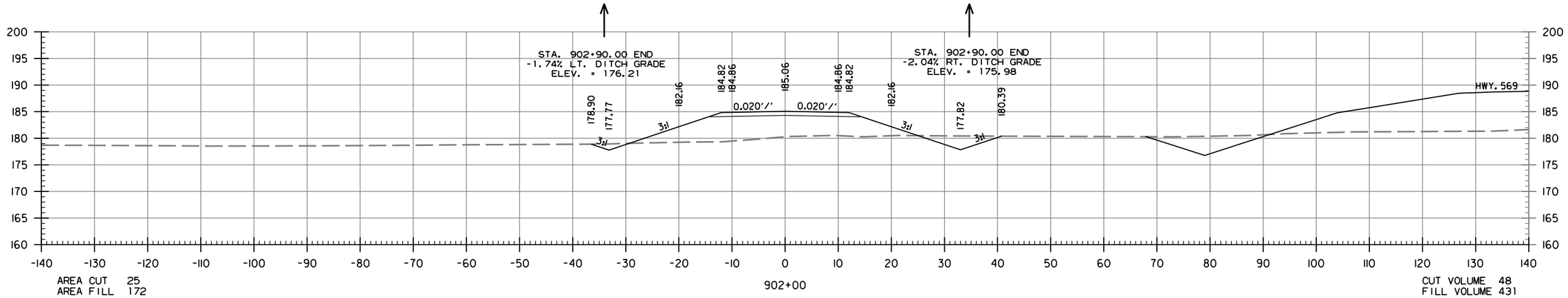
837+00

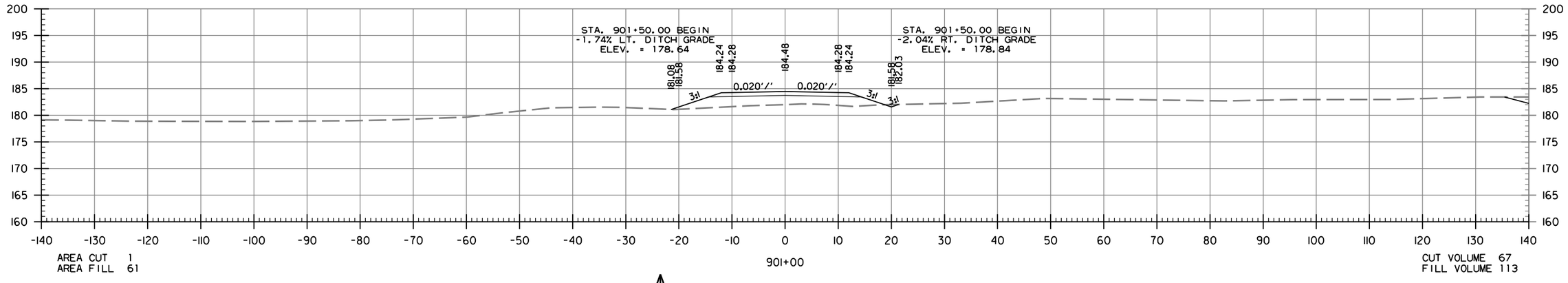
CUT VOLUME 115
FILL VOLUME 137

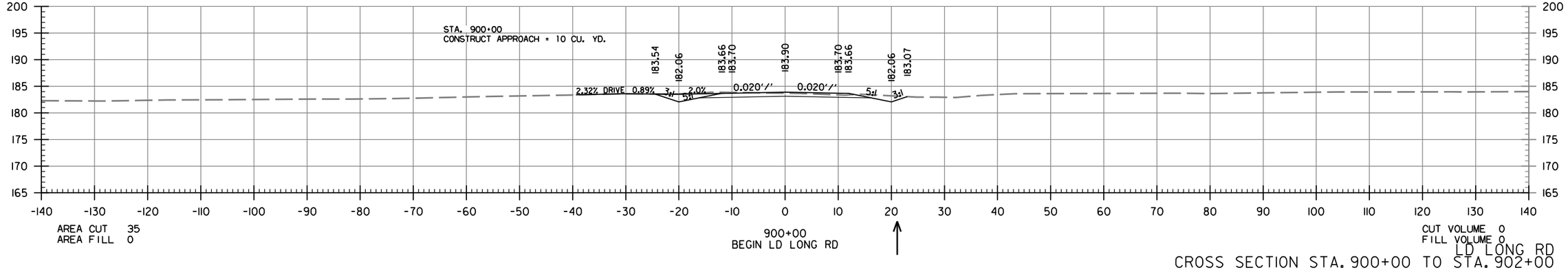
FRONTAGE RD.
CROSS SECTION STA. 837+00 TO STA. 838+00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	342	368
		CROSS SECTIONS				





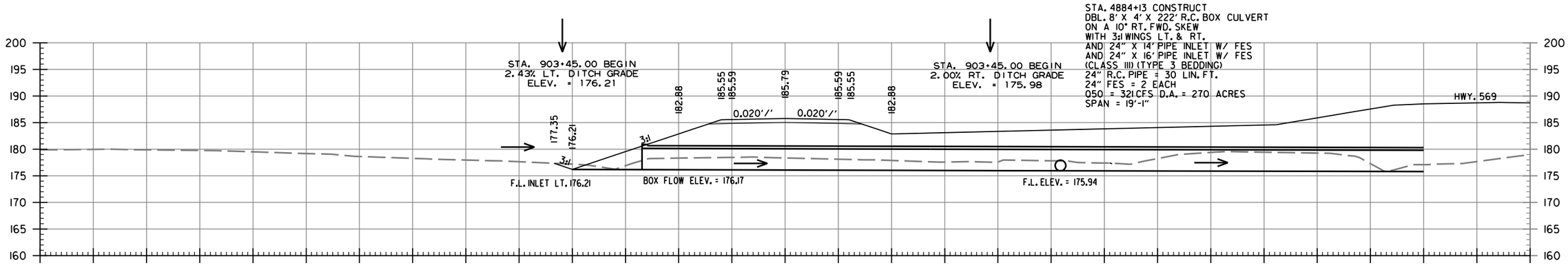


LD LONG RD

CROSS SECTION STA. 900+00 TO STA. 902+00

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	343	368
		CROSS SECTIONS				

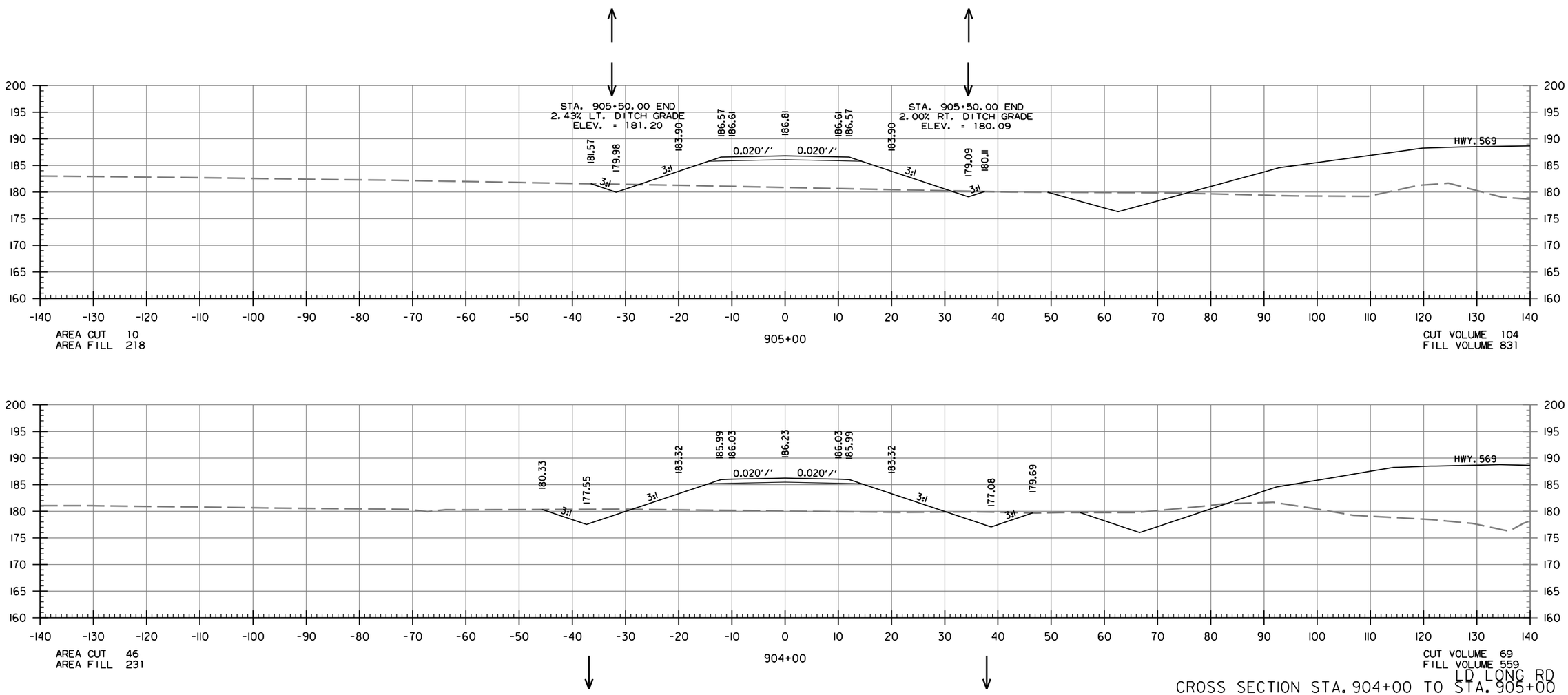


LD LONG RD

CROSS SECTION STA. 903+00 TO STA. 903+24

mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	344	368
		CROSS SECTIONS				



mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	345	368
		CROSS SECTIONS				

AREA CUT 0
AREA FILL 0

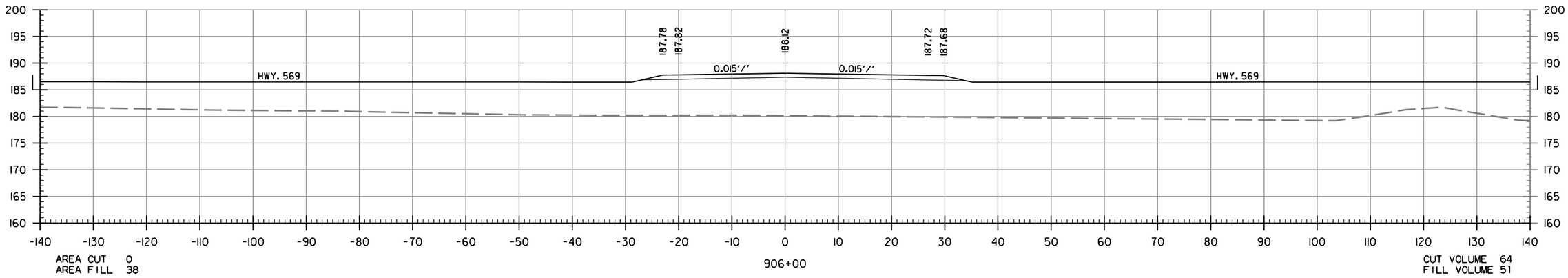
STATION 906+42.59

CUT VOLUME 0
FILL VOLUME 0

AREA CUT 0
AREA FILL 0

STATION 906+18.59

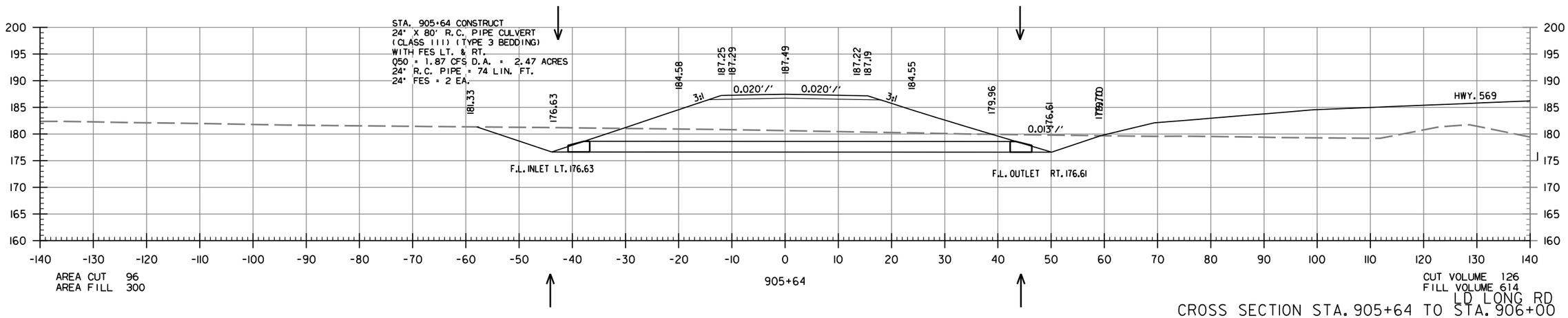
CUT VOLUME 0
FILL VOLUME 150



AREA CUT 0
AREA FILL 38

906+00

CUT VOLUME 64
FILL VOLUME 51



AREA CUT 96
AREA FILL 300

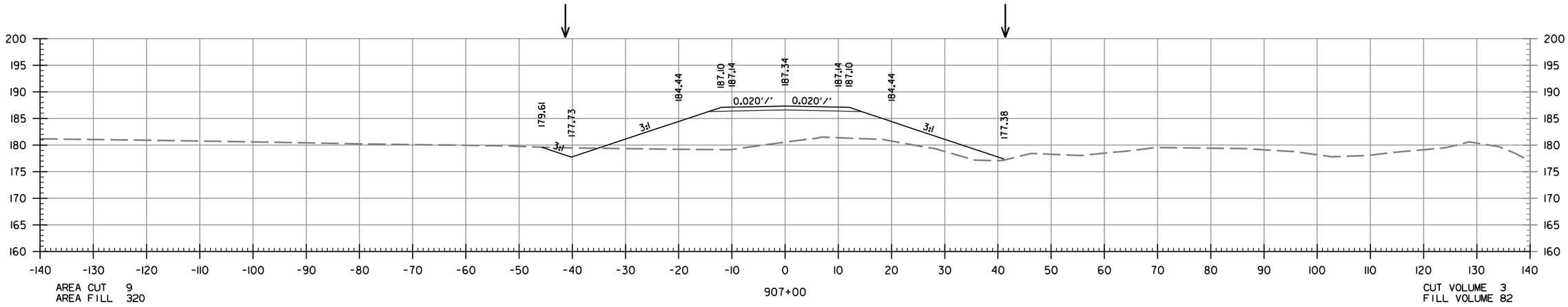
905+64

CUT VOLUME 126
FILL VOLUME 614

LD LONG RD
CROSS SECTION STA. 905+64 TO STA. 906+00

mh39735 7/14/2022
R020678.DGN

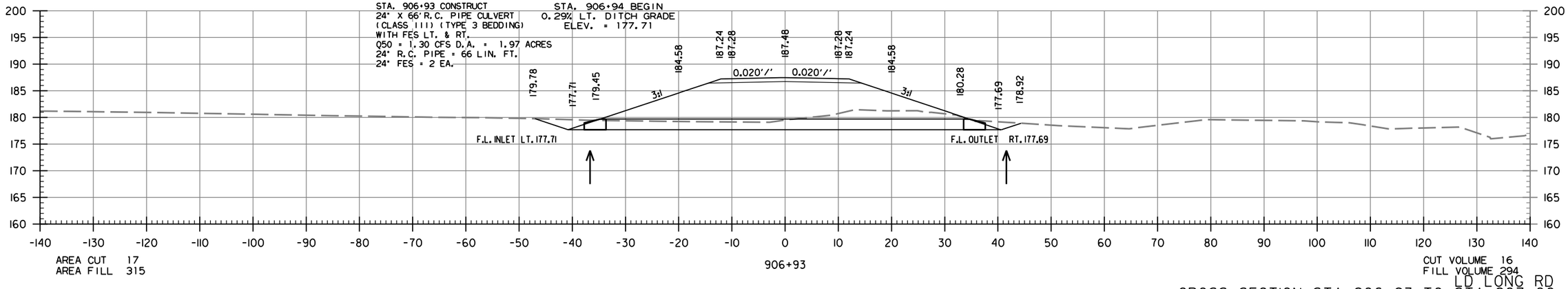
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	346	368
		CROSS SECTIONS				



AREA CUT 9
AREA FILL 320

907+00

CUT VOLUME 3
FILL VOLUME 82



AREA CUT 17
AREA FILL 315

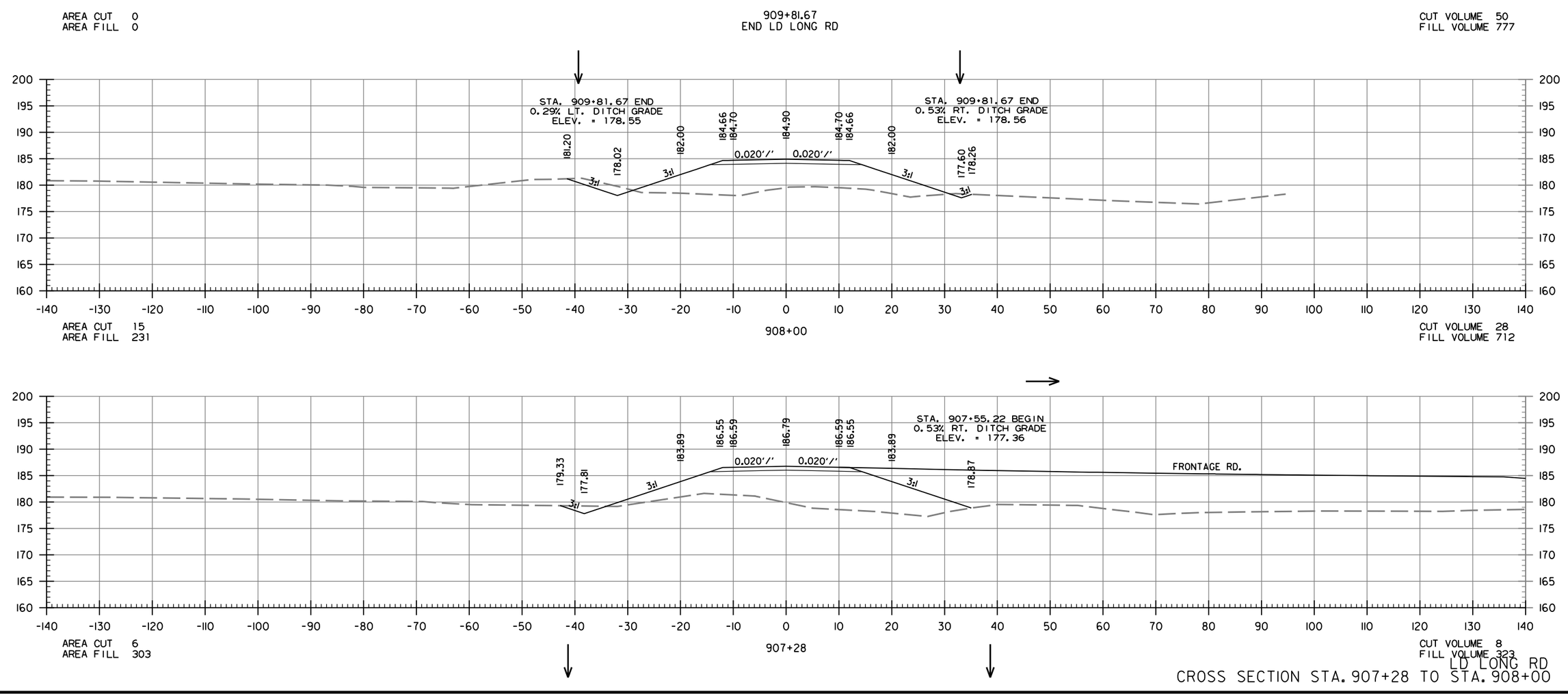
906+93

CUT VOLUME 16
FILL VOLUME 294

LD LONG RD
CROSS SECTION STA. 906+93 TO STA. 907+00

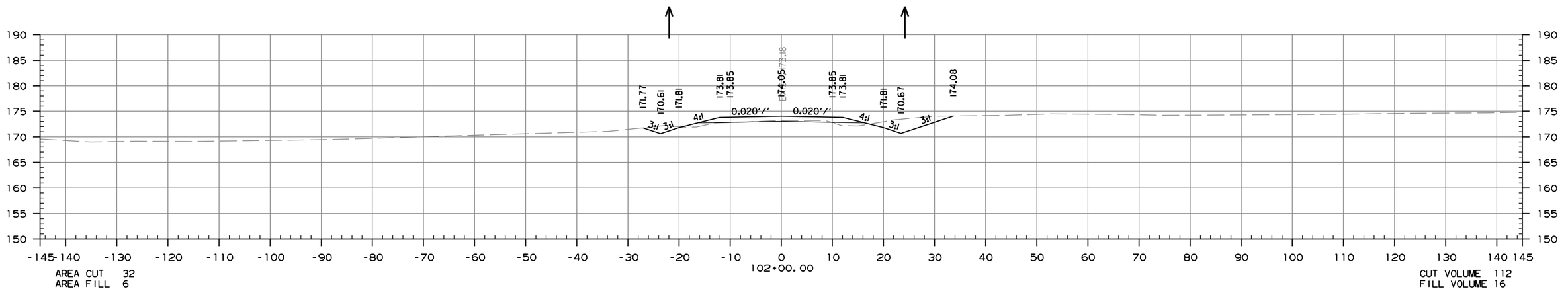
mn39735 7/14/2022
R020678.DGN

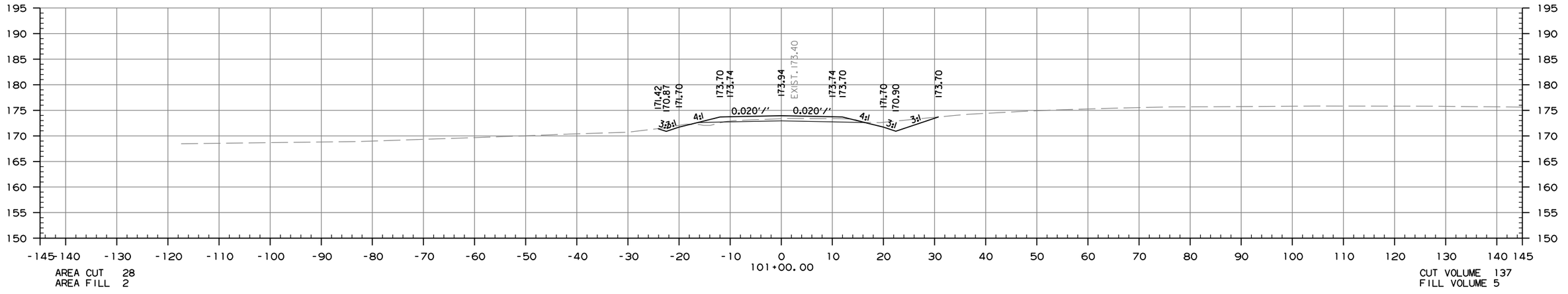
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	347	368
		CROSS SECTIONS				

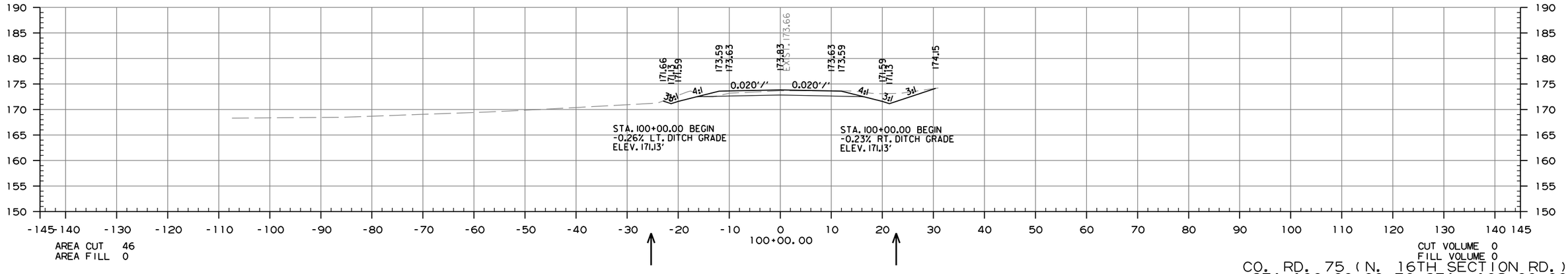


mh39735 7/14/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	348	368
		CROSS SECTIONS				



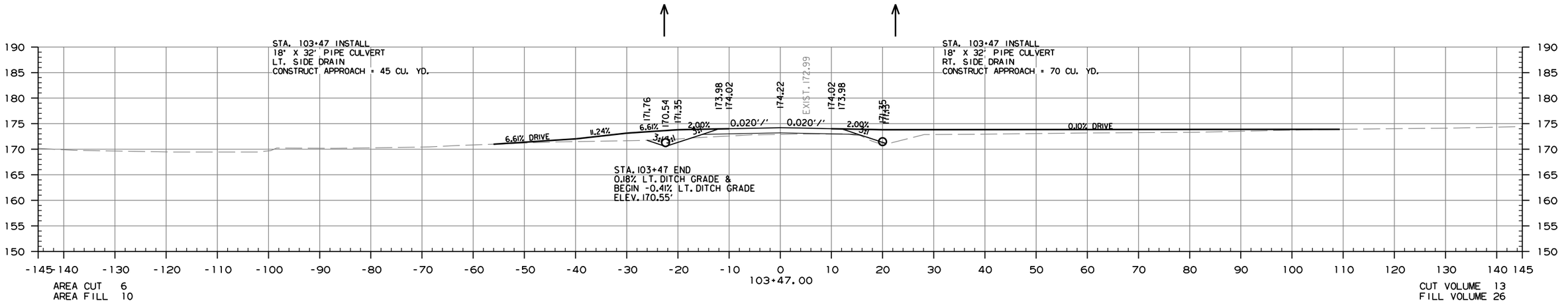


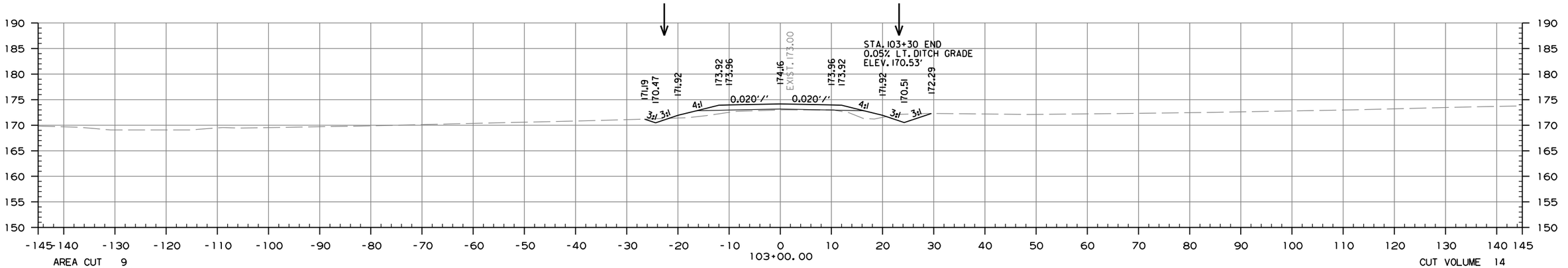


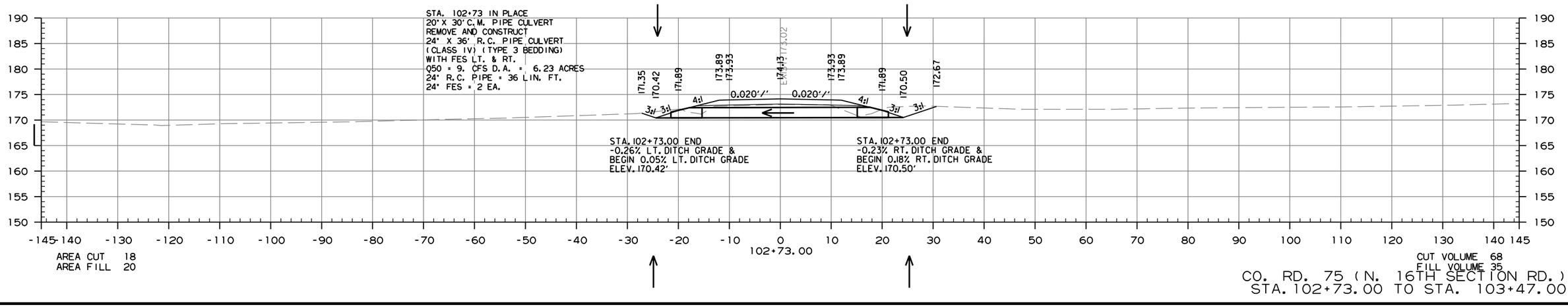
CO. RD. 75 (N. 16TH SECTION RD.)
STA. 100+00.00 TO STA. 102+00.00

mh39735 10/21/2021
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	349	368
		CROSS SECTIONS				



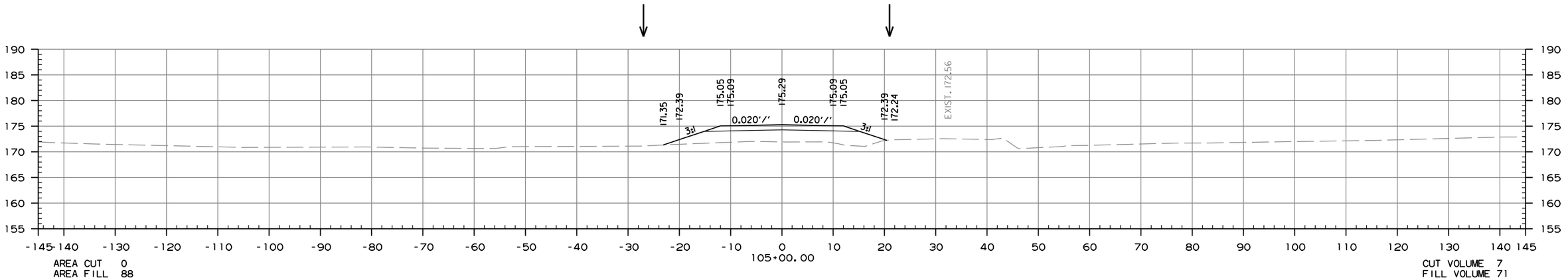


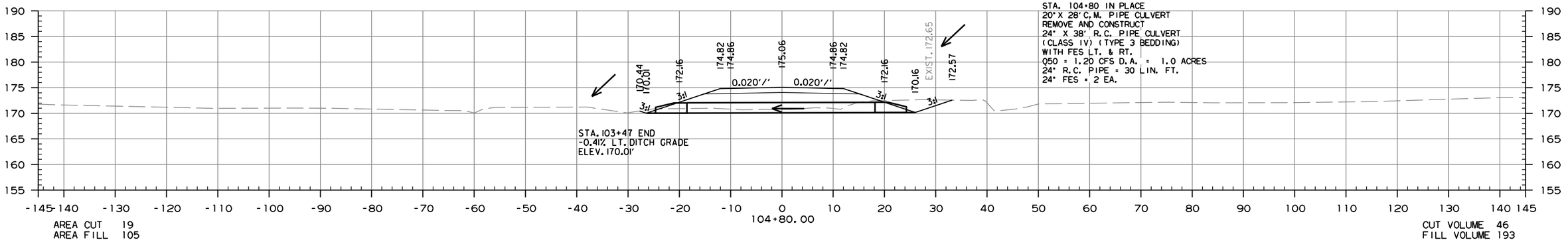


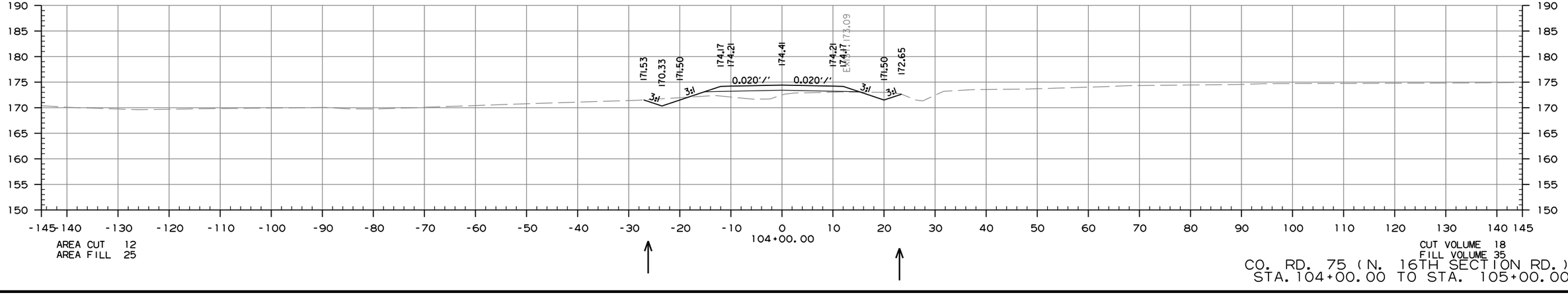
CO. RD. 75 (N. 16TH SECTION RD.)
STA. 102+73.00 TO STA. 103+47.00

mh39735 10/21/2021
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	350	368
		CROSS SECTIONS				



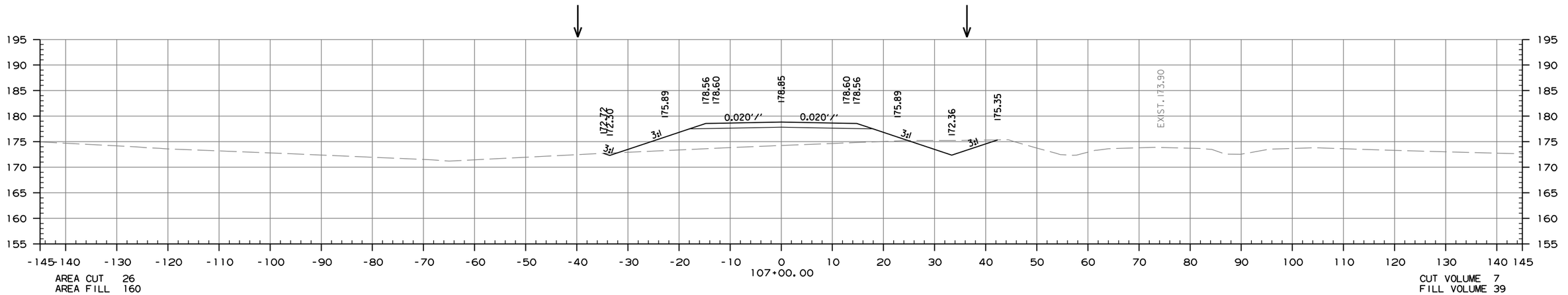


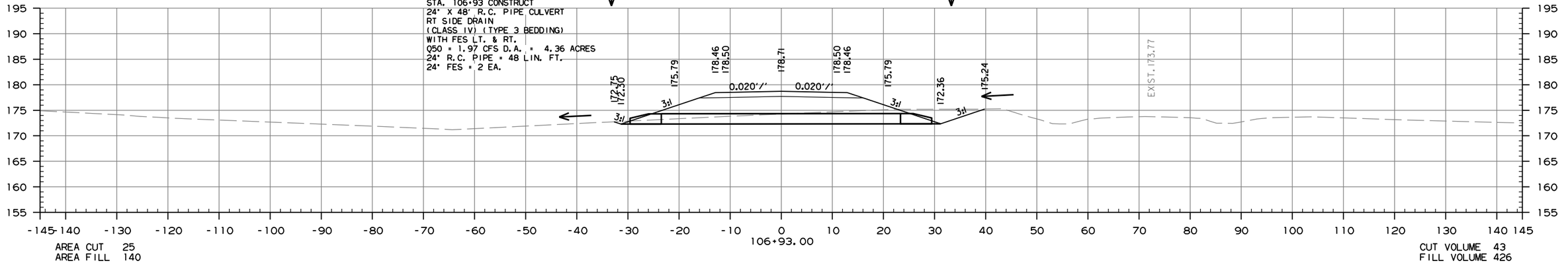


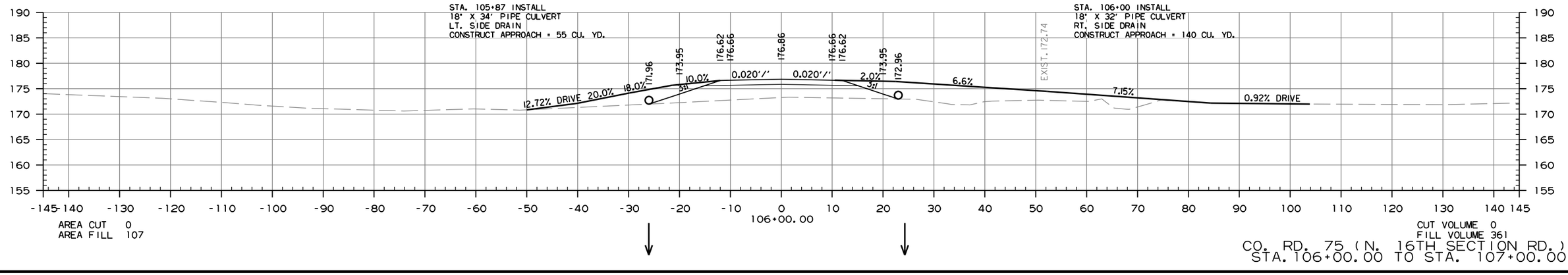
CO. RD. 75 (N. 16TH SECTION RD.)
STA. 104+00.00 TO STA. 105+00.00

mh39735 10/21/2021
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	351	368
		CROSS SECTIONS				



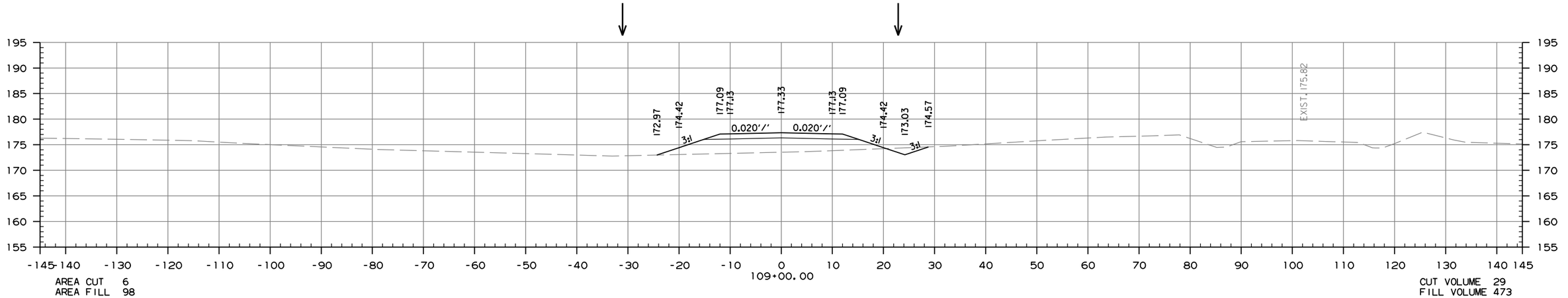


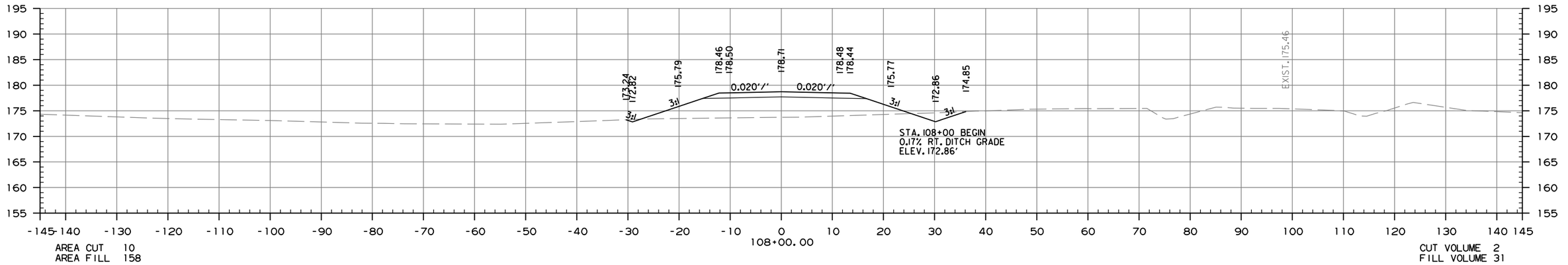


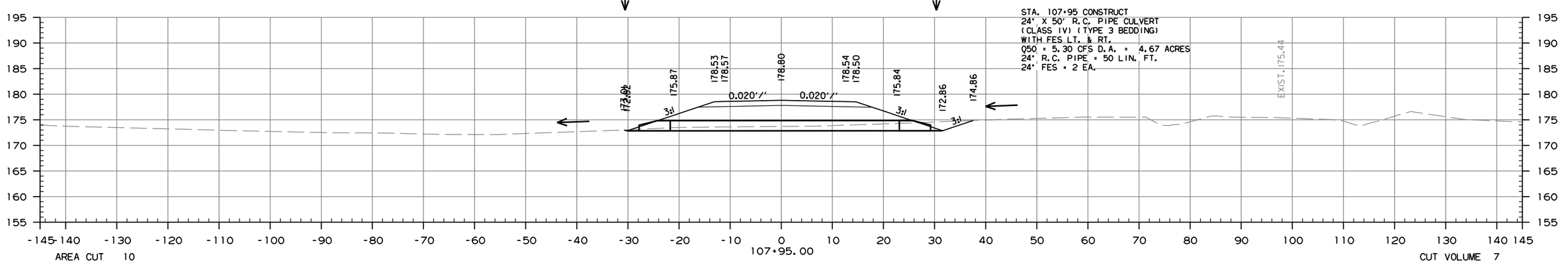
CO. RD. 75 (N. 16TH SECTION RD.)
STA. 106+00.00 TO STA. 107+00.00

mh39735 10/21/2021
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	352	368
		CROSS SECTIONS				



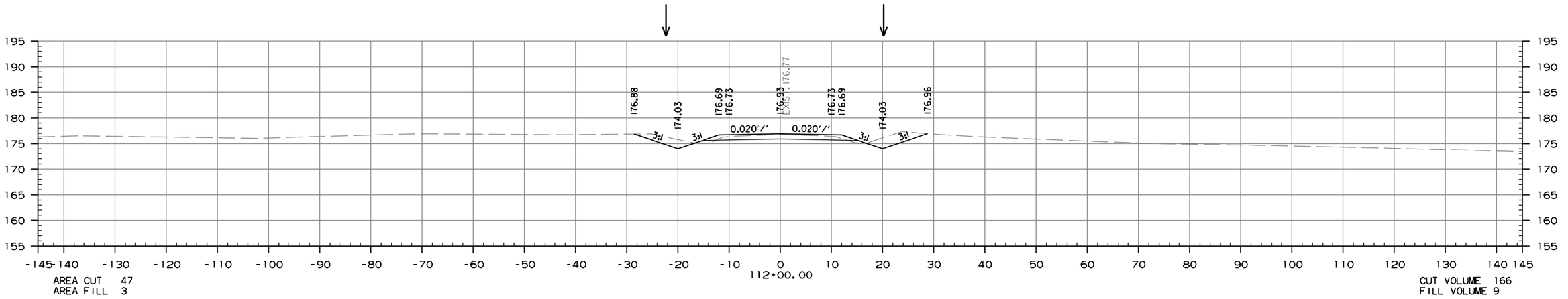


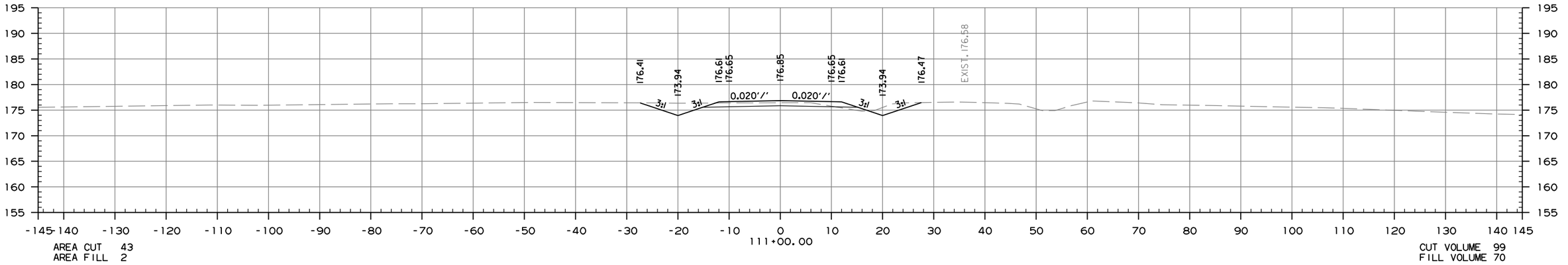


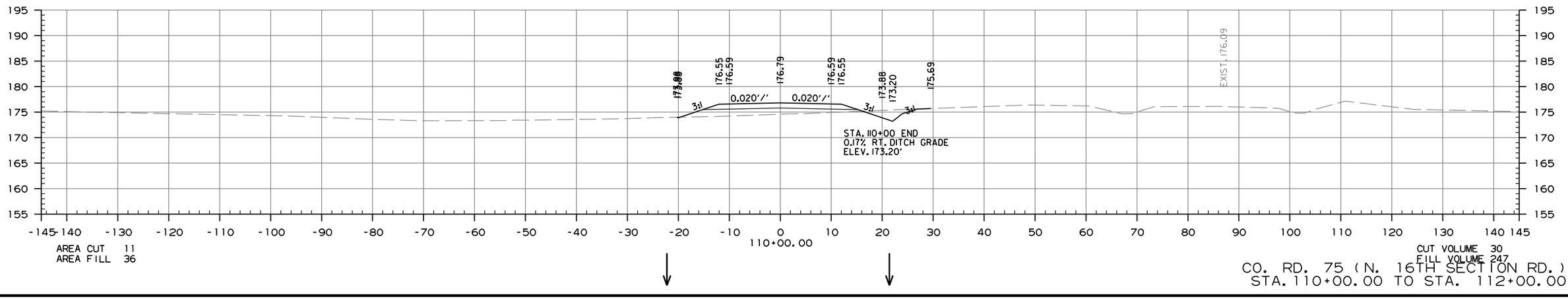
CO. RD. 75 (N. 16TH SECTION RD.)
STA. 107+95.00 TO STA. 109+00.00

mh39735 10/21/2021
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	353	368
		CROSS SECTIONS				



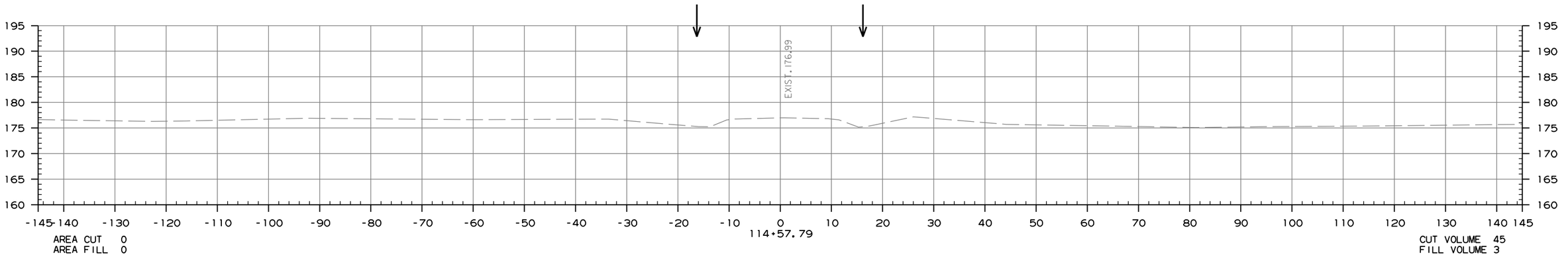


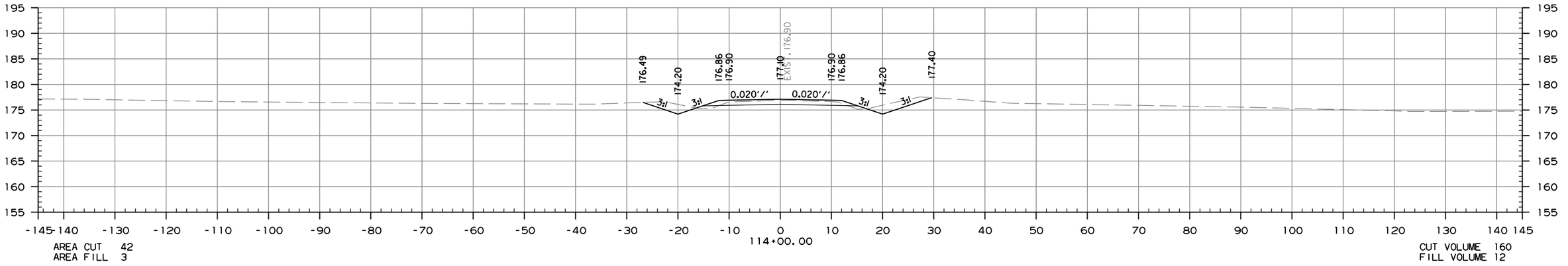


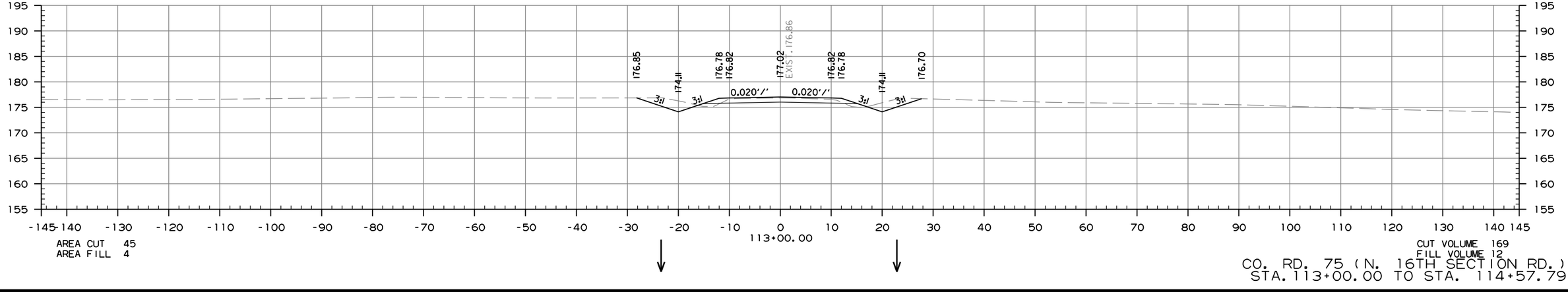
CO. RD. 75 (N. 16TH SECTION RD.)
STA. 110+00.00 TO STA. 112+00.00

mn39735 10/21/2021
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	354	368
		CROSS SECTIONS				



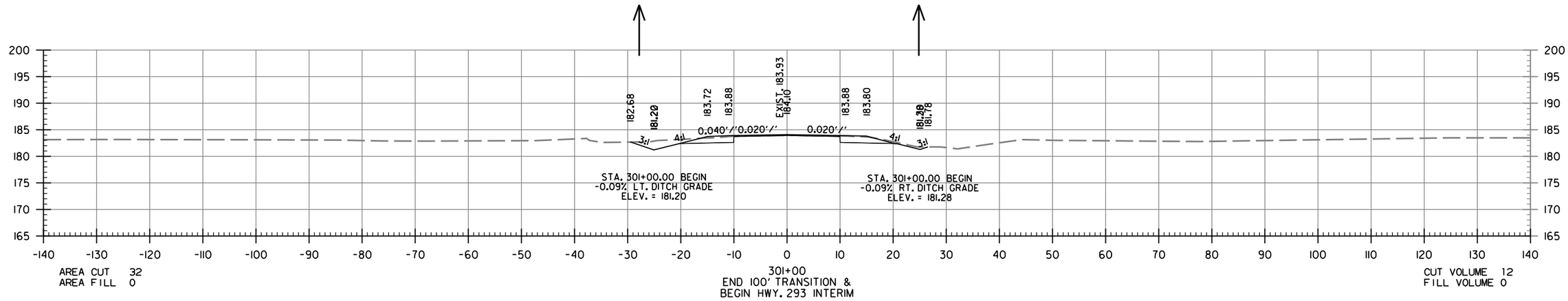


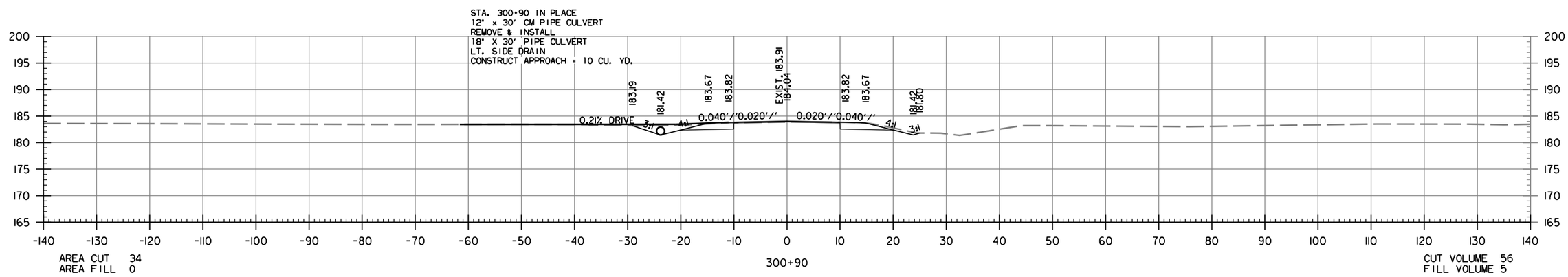


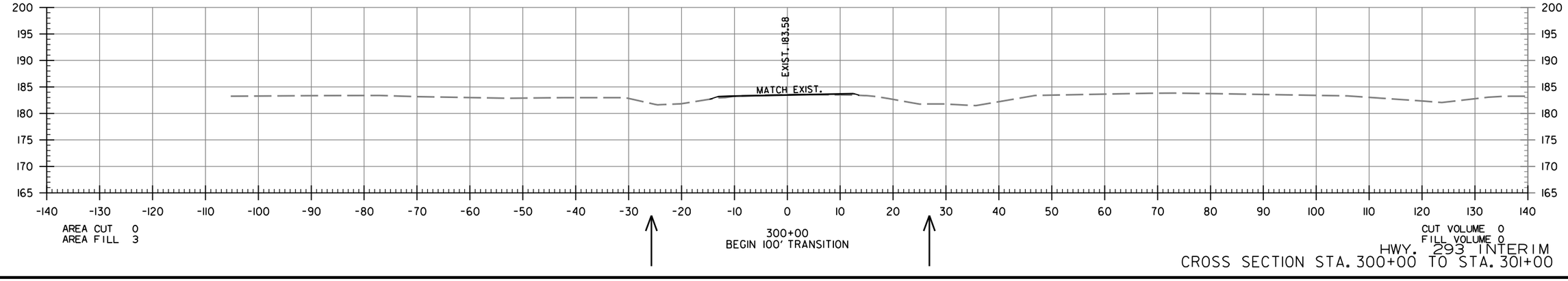
CO. RD. 75 (N. 16TH SECTION RD.)
STA. 113+00.00 TO STA. 114+57.79

mh39735 10/21/2021
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	355	368
		CROSS SECTIONS				



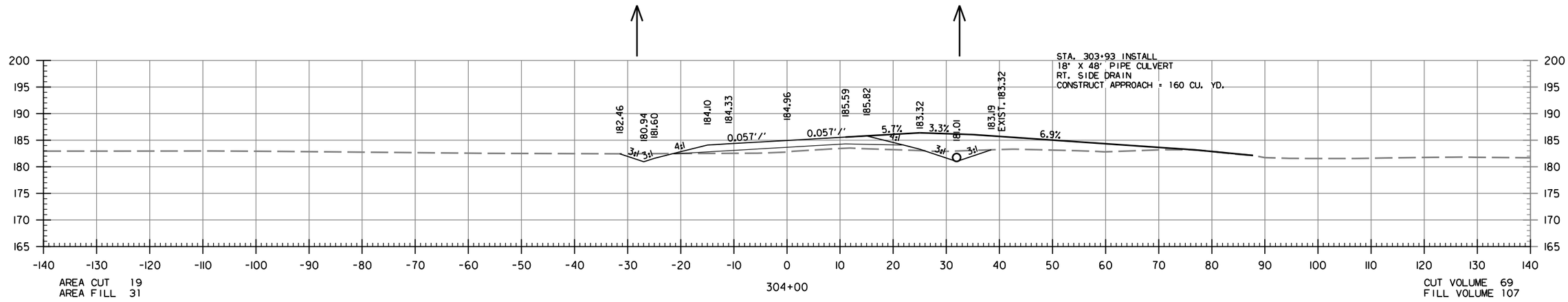


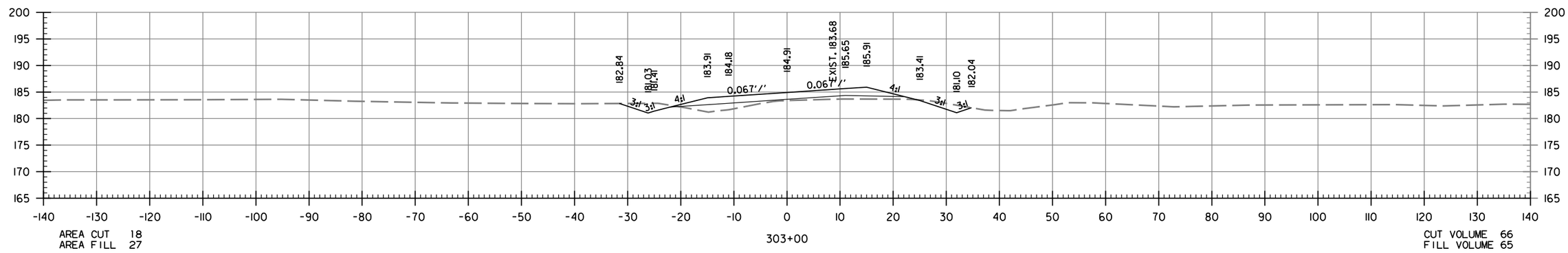


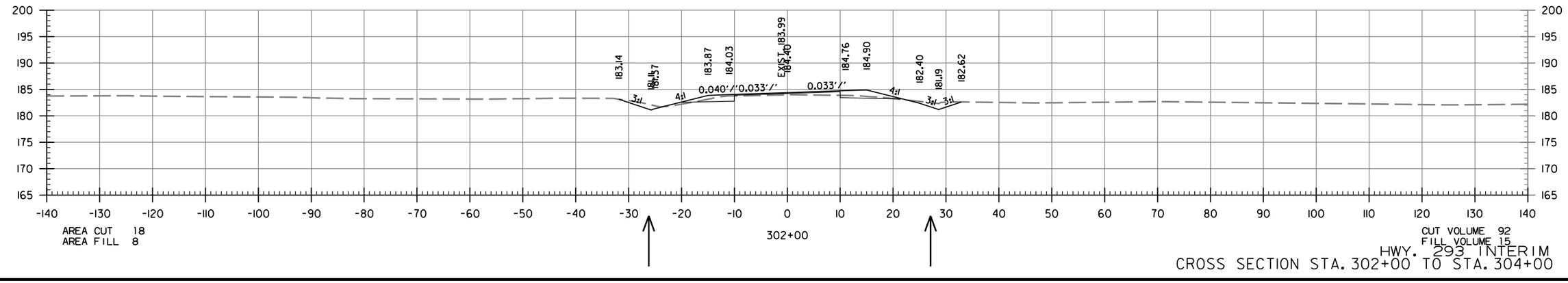
HWY. 293 INTERIM
CROSS SECTION STA. 300+00 TO STA. 301+00

mh39735 6/23/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	356	368
		CROSS SECTIONS				



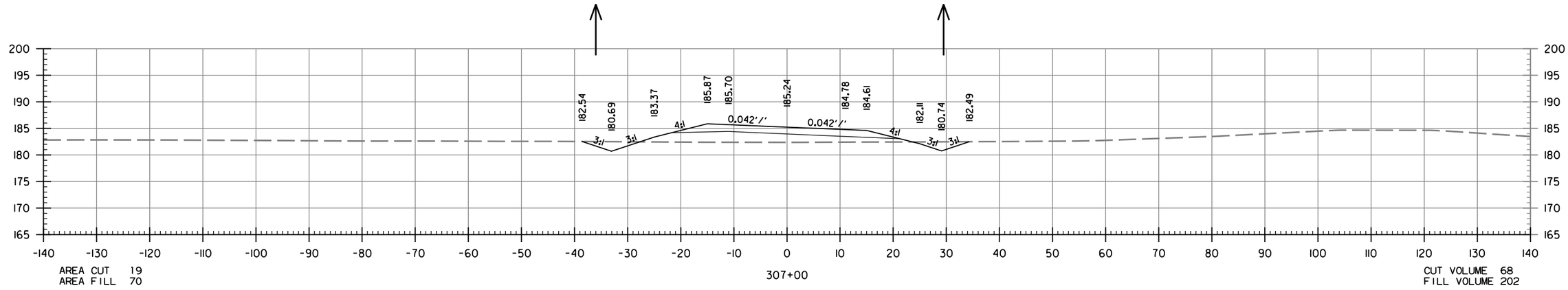


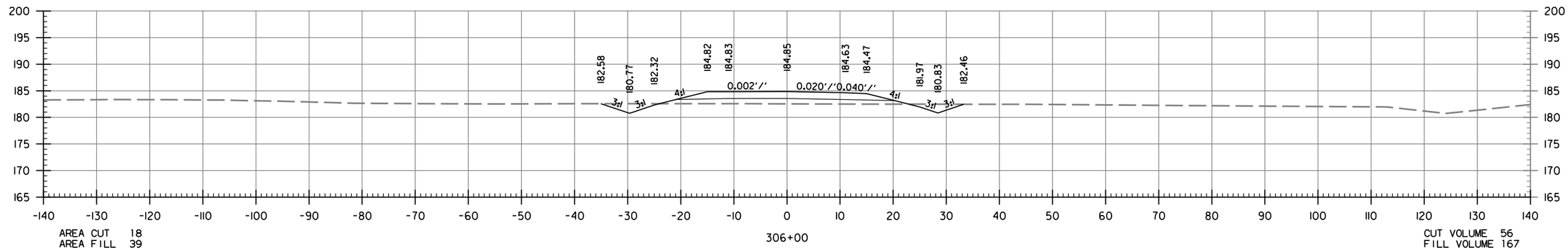


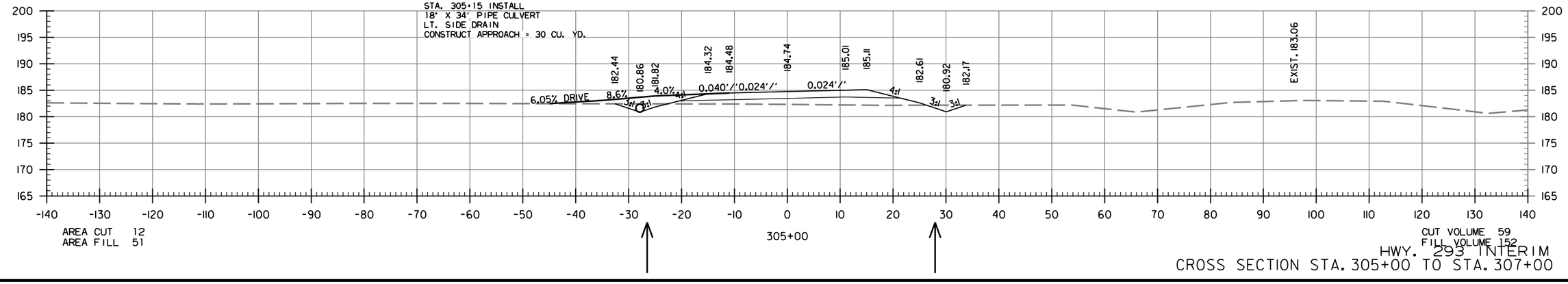
HWY. 293 INTERIM
CROSS SECTION STA. 302+00 TO STA. 304+00

mh39735 6/23/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	357	368
		CROSS SECTIONS				



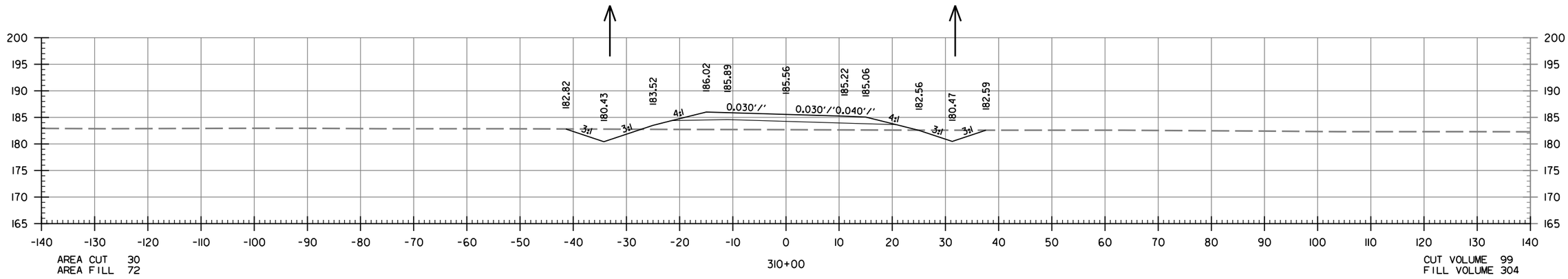




HWY. 293 INTERIM
CROSS SECTION STA. 305+00 TO STA. 307+00

mh39735 6/23/2022
R020678.DGN

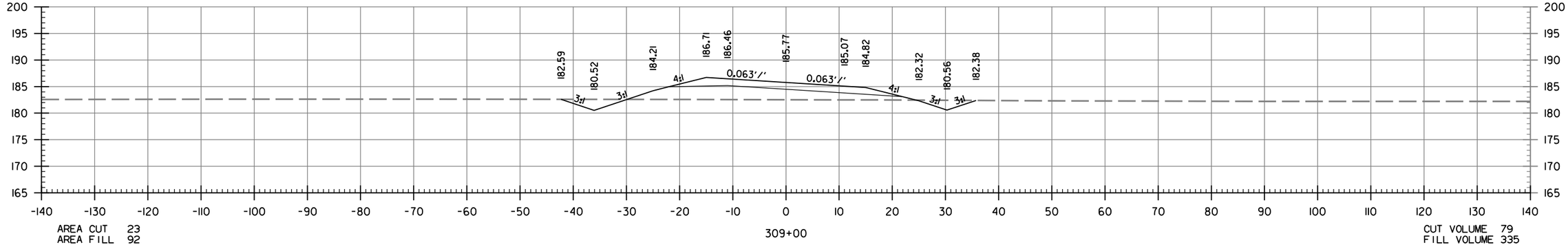
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	358	368
		CROSS SECTIONS				



AREA CUT 30
AREA FILL 72

310+00

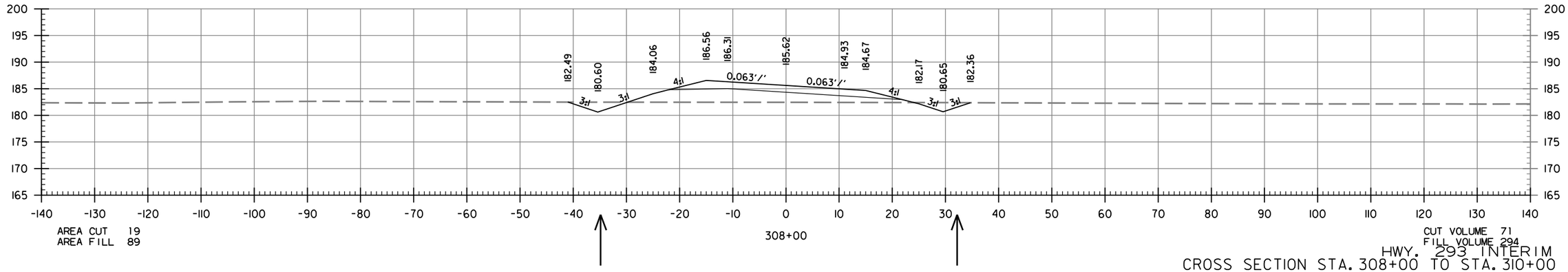
CUT VOLUME 99
FILL VOLUME 304



AREA CUT 23
AREA FILL 92

309+00

CUT VOLUME 79
FILL VOLUME 335



AREA CUT 19
AREA FILL 89

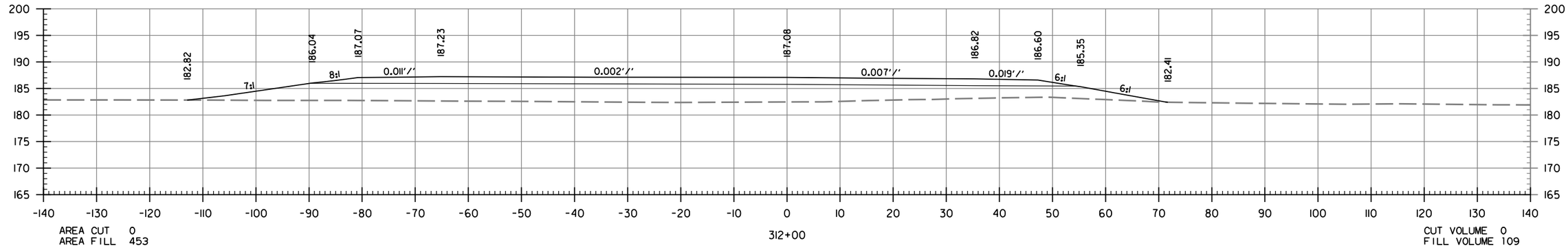
308+00

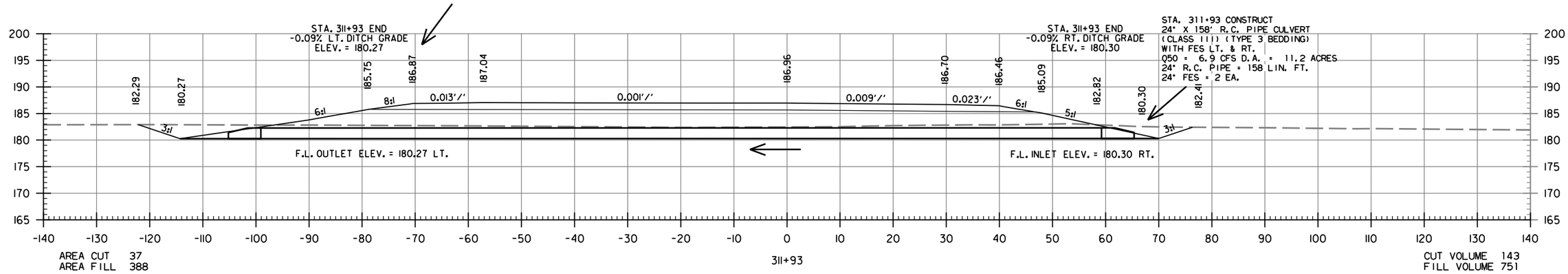
CUT VOLUME 71
FILL VOLUME 294

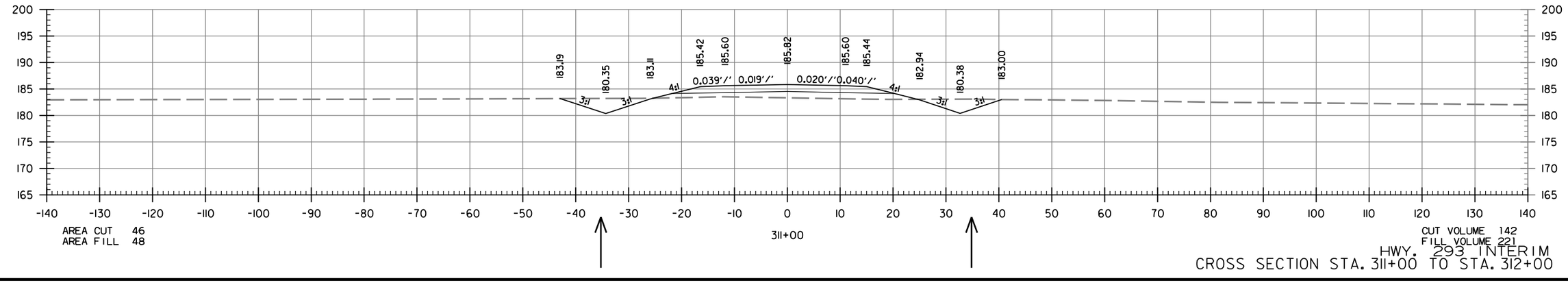
HWY. 293 INTERIM
CROSS SECTION STA. 308+00 TO STA. 310+00

mh39735 6/23/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	359	368
		CROSS SECTIONS				



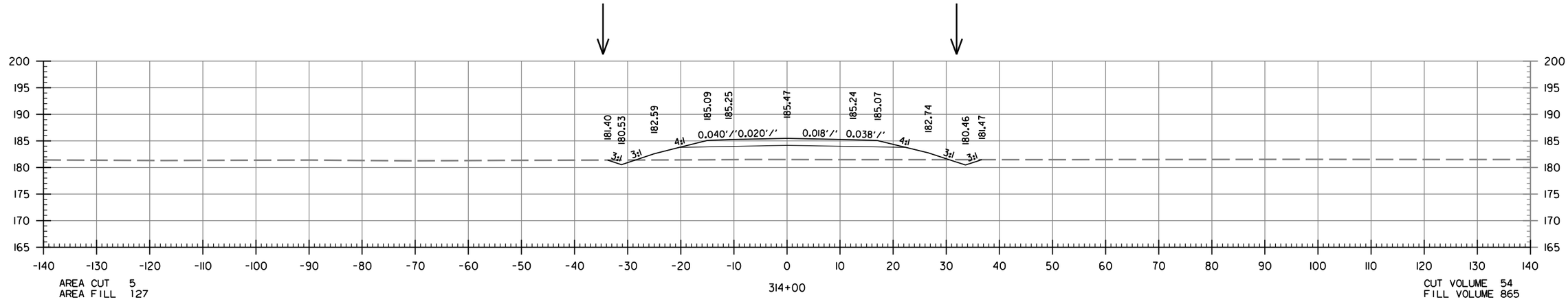


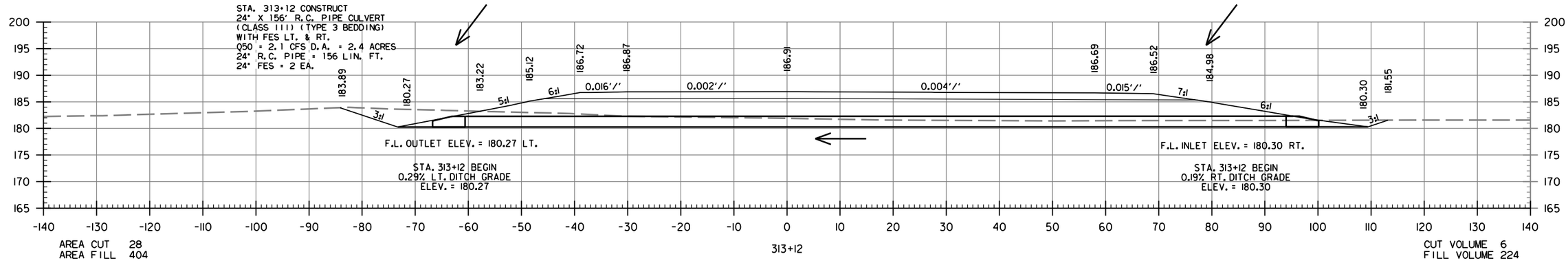


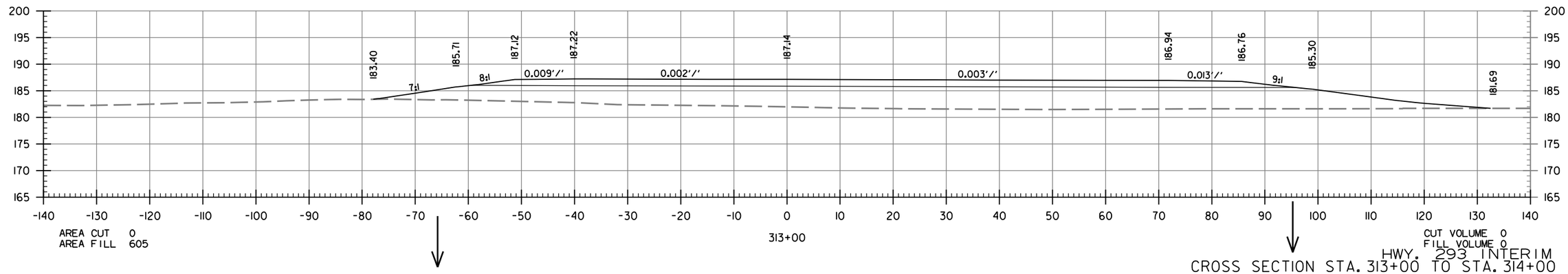
HWY. 293 INTERIM
CROSS SECTION STA. 311+00 TO STA. 312+00

mh39735 6/23/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	360	368
		CROSS SECTIONS				



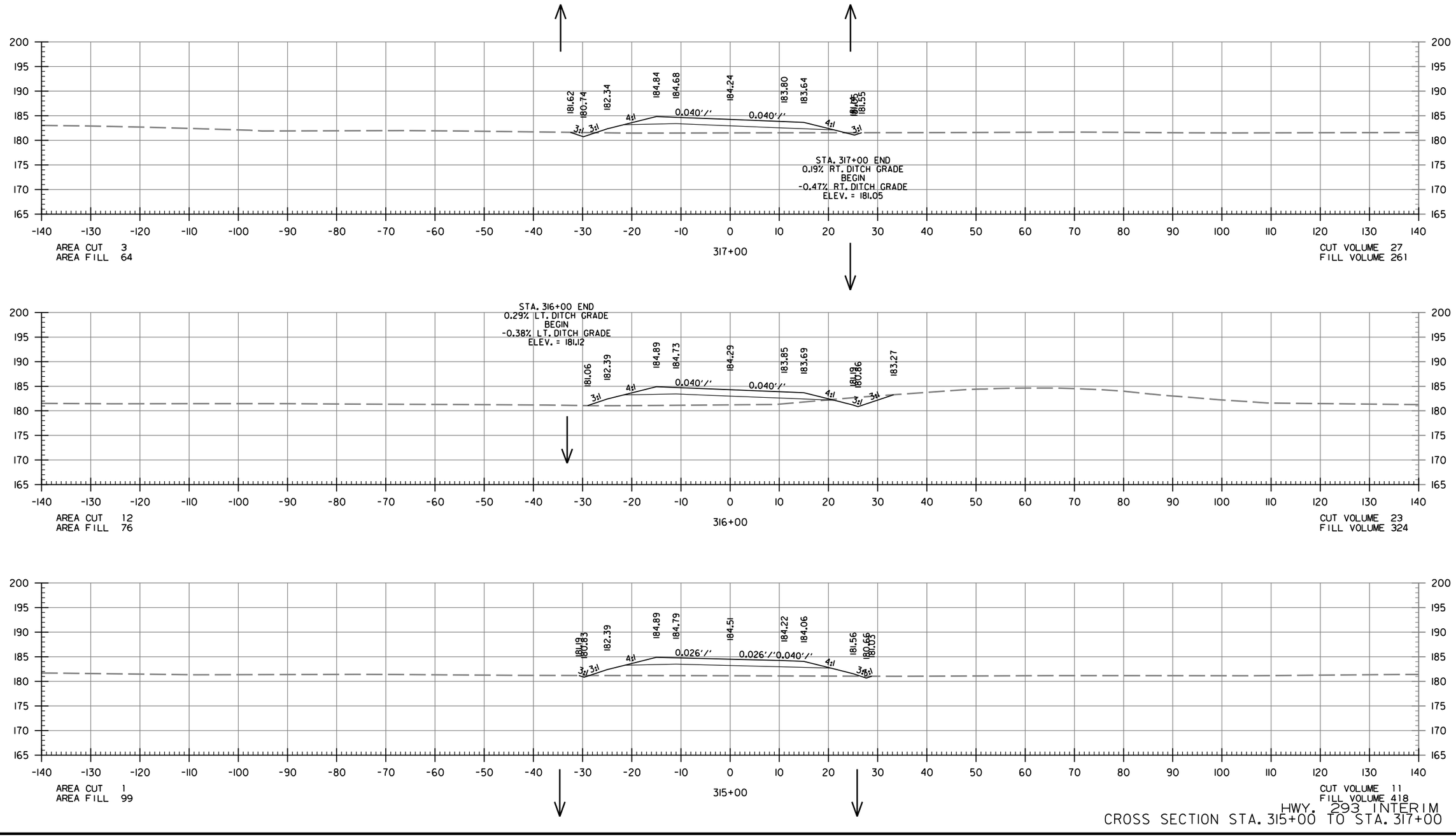




HWY. 293 INTERIM
CROSS SECTION STA. 313+00 TO STA. 314+00

mh39735 6/23/2022
R020678.DGN

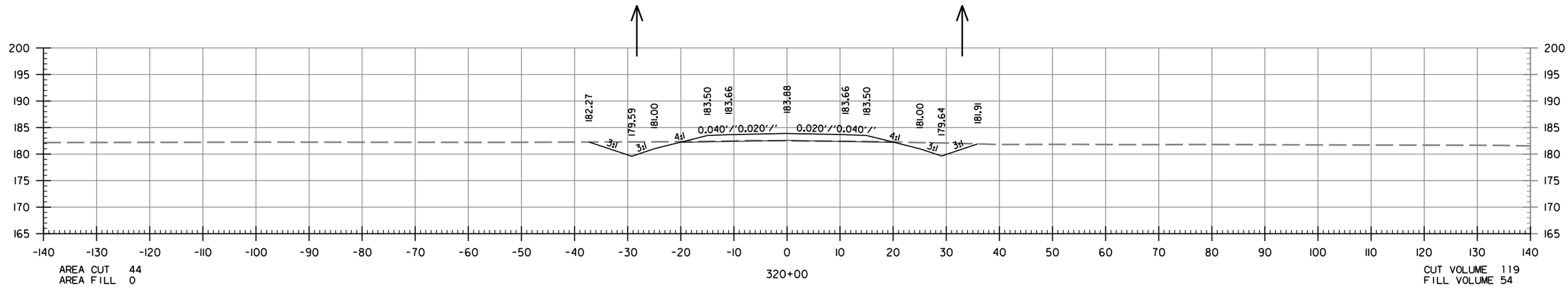
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	361	368
		CROSS SECTIONS				

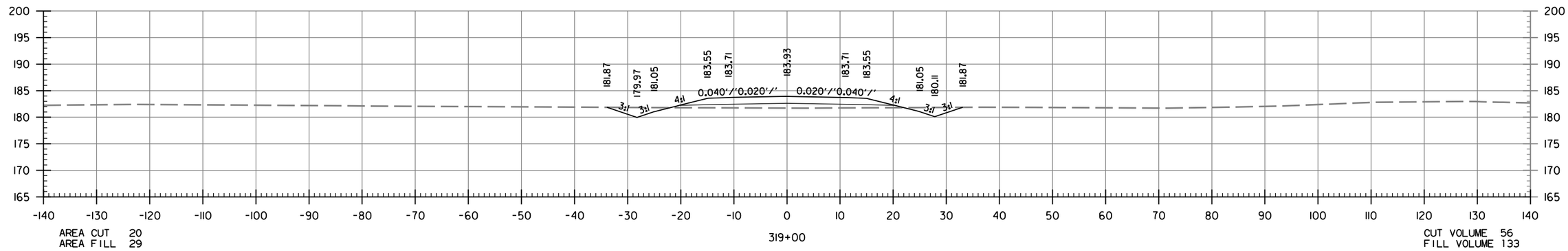


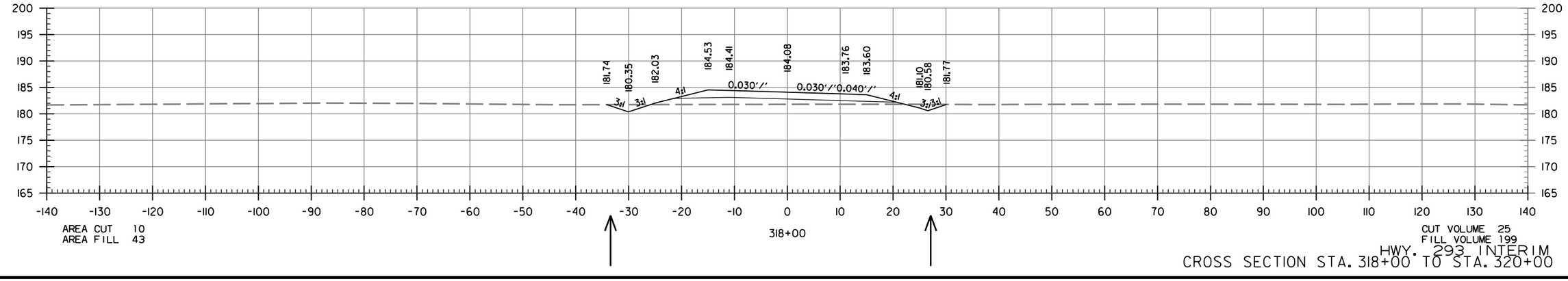
HWY. 293 INTERIM
CROSS SECTION STA. 315+00 TO STA. 317+00

mh39735 6/23/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	362	368
		CROSS SECTIONS				



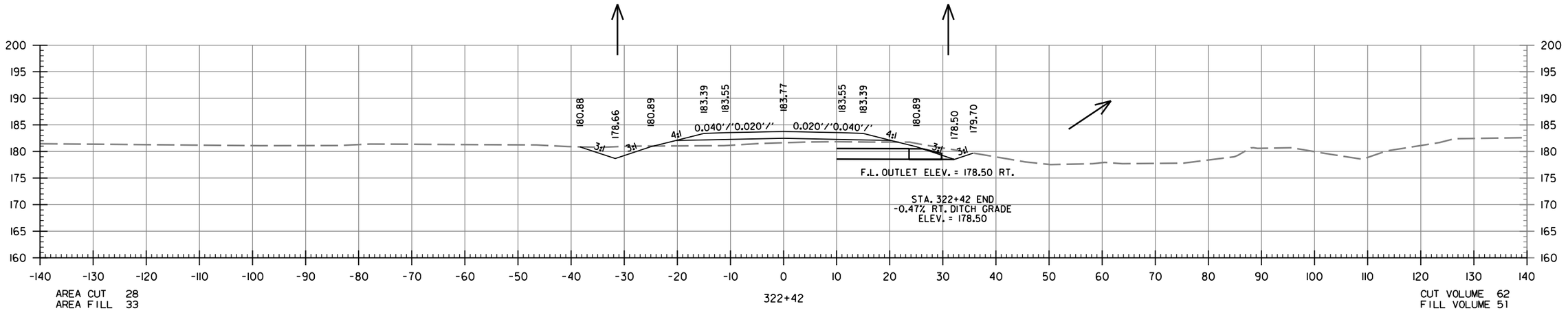


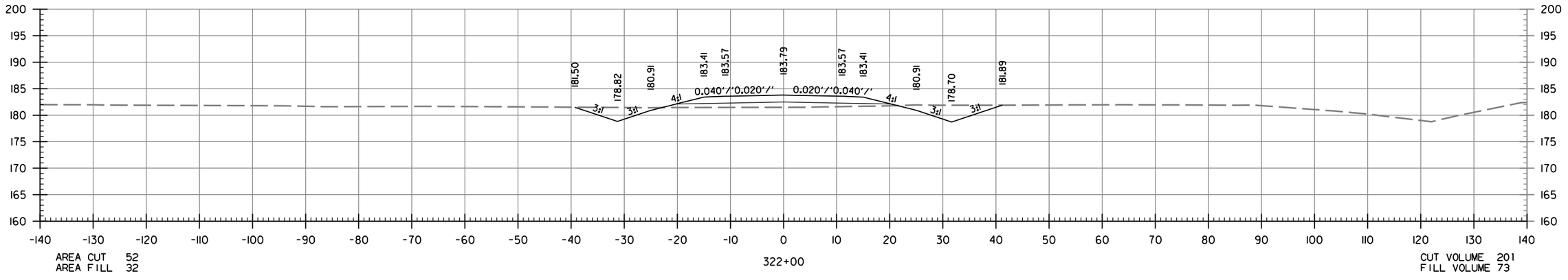


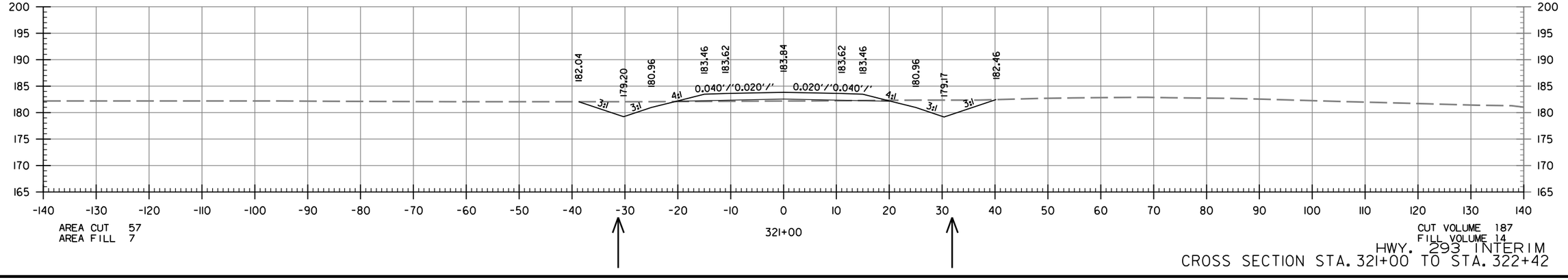
HWY. 293 INTERIM
CROSS SECTION STA. 318+00 TO STA. 320+00

mh39735 6/23/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	363	368
		CROSS SECTIONS				



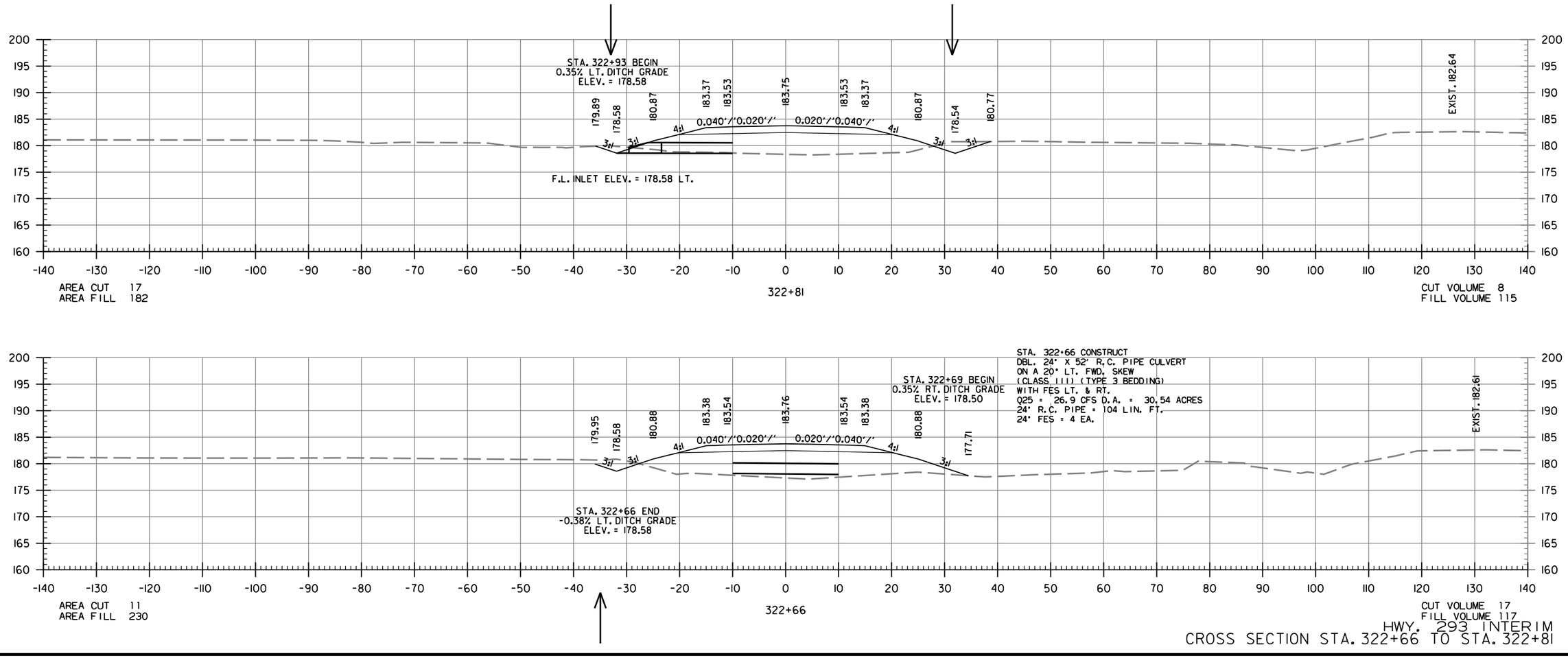




HWY. 293 INTERIM
CROSS SECTION STA. 321+00 TO STA. 322+42

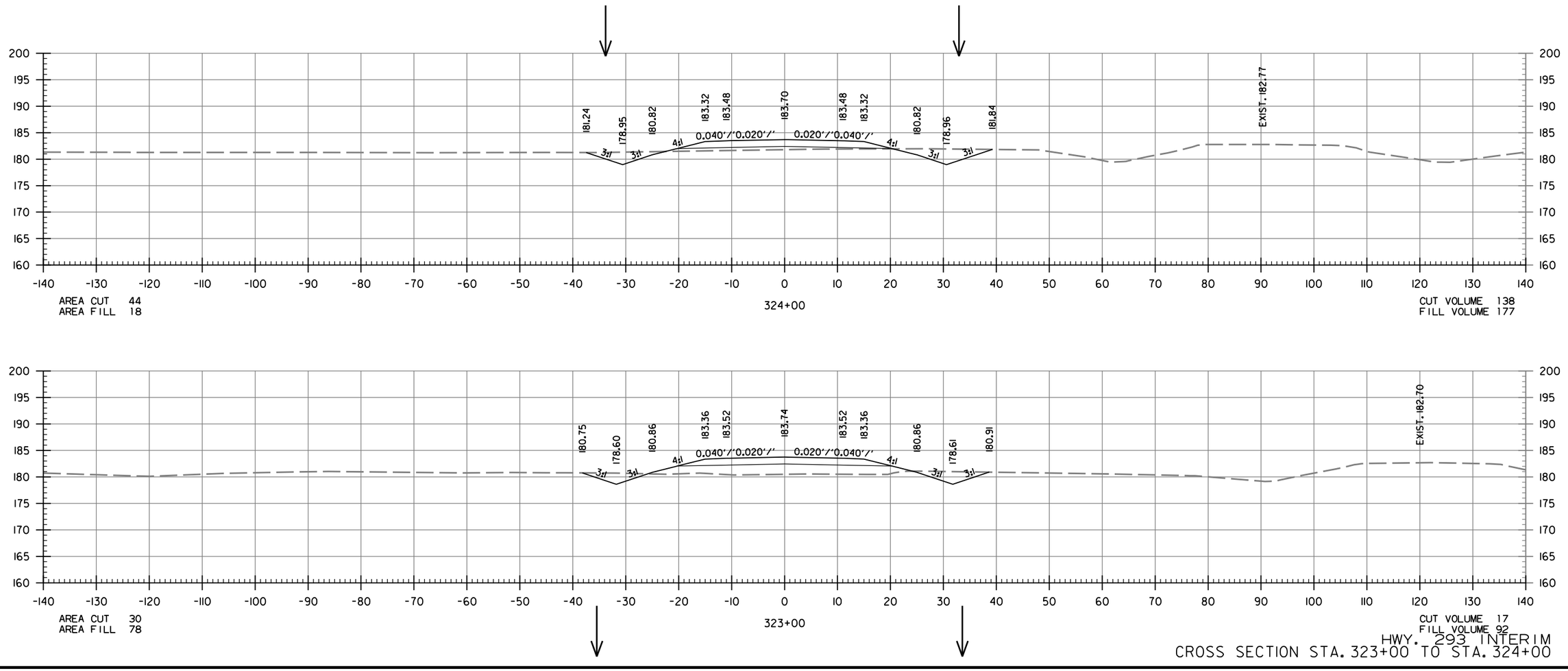
mh39735 6/23/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	364	368
		CROSS SECTIONS				



mh39735 6/23/2022
R020678.DGN

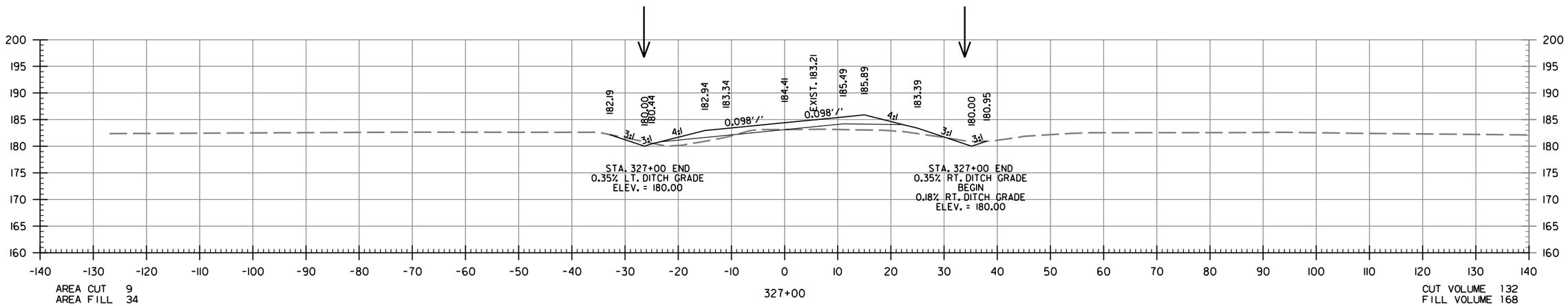
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
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		CROSS SECTIONS				

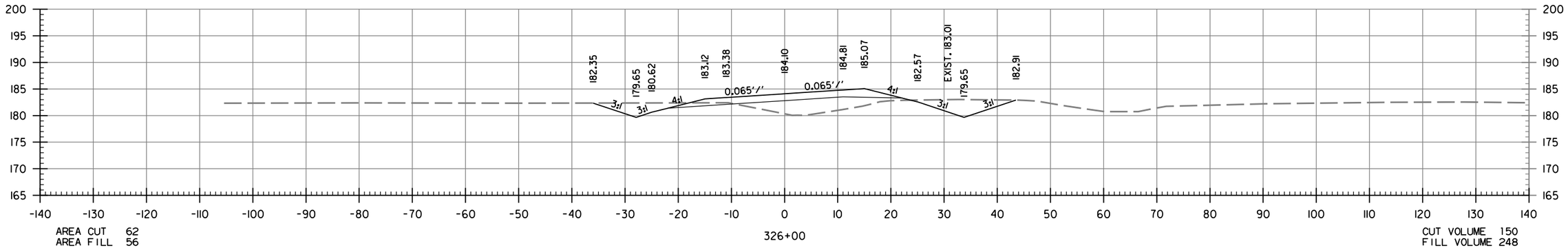


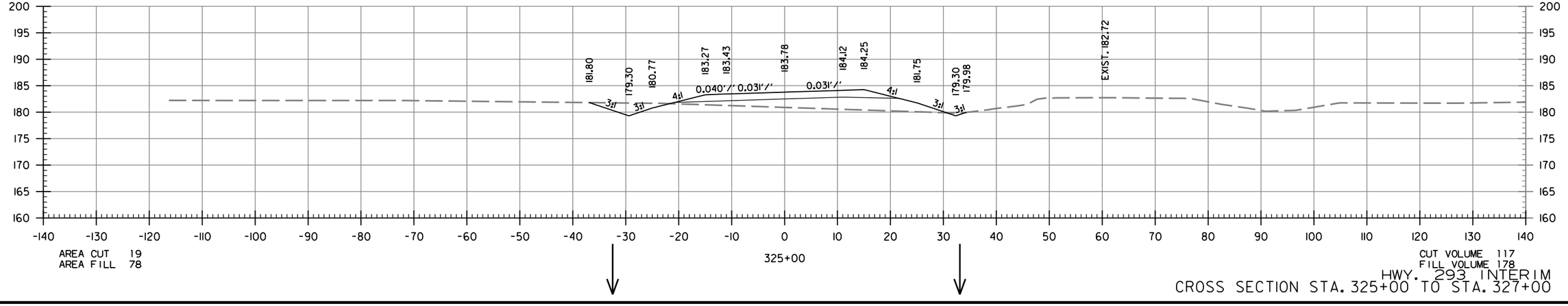
HWY. 293 INTERIM
CROSS SECTION STA. 323+00 TO STA. 324+00

mh39735 6/23/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	366	368
		CROSS SECTIONS				



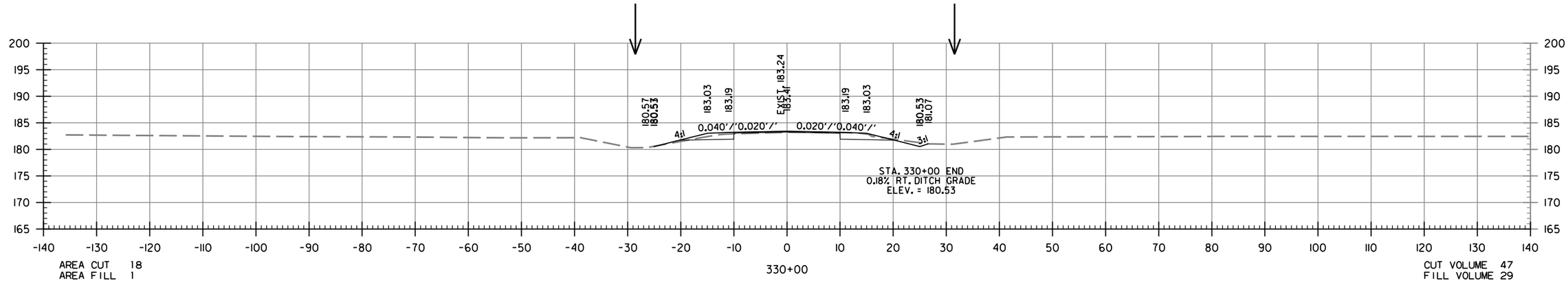


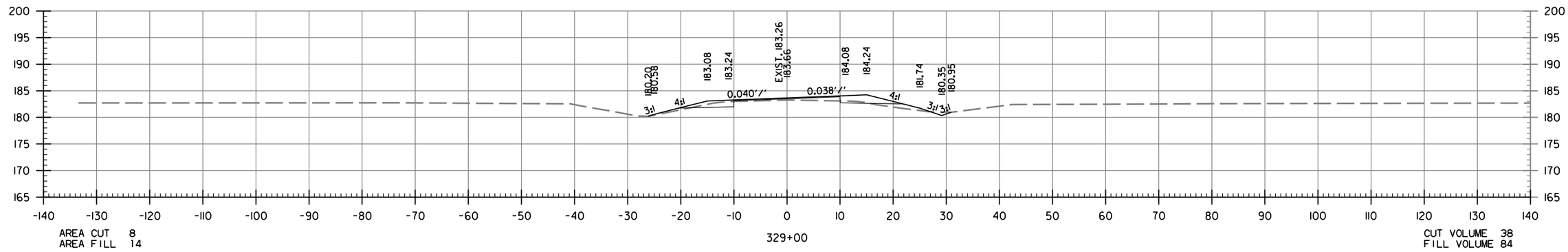


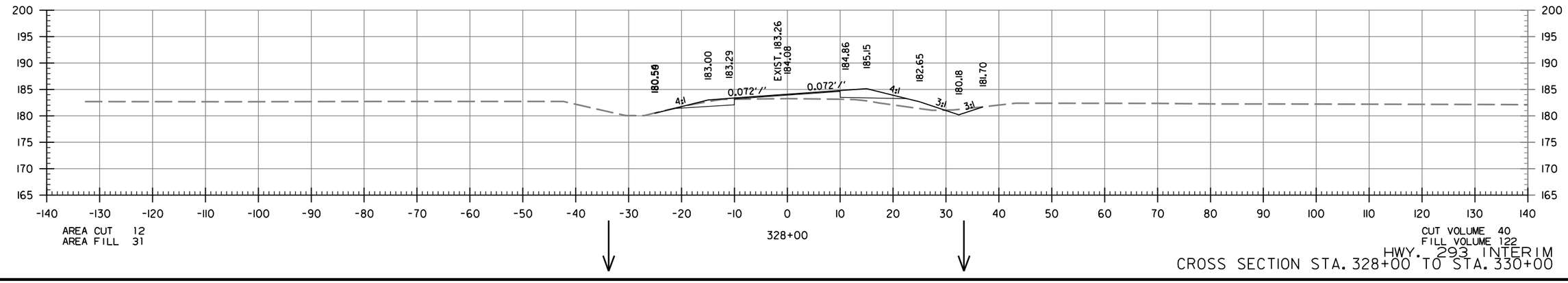
HWY. 293 INTERIM
CROSS SECTION STA. 325+00 TO STA. 327+00

mh39735 6/23/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	367	368
		CROSS SECTIONS				



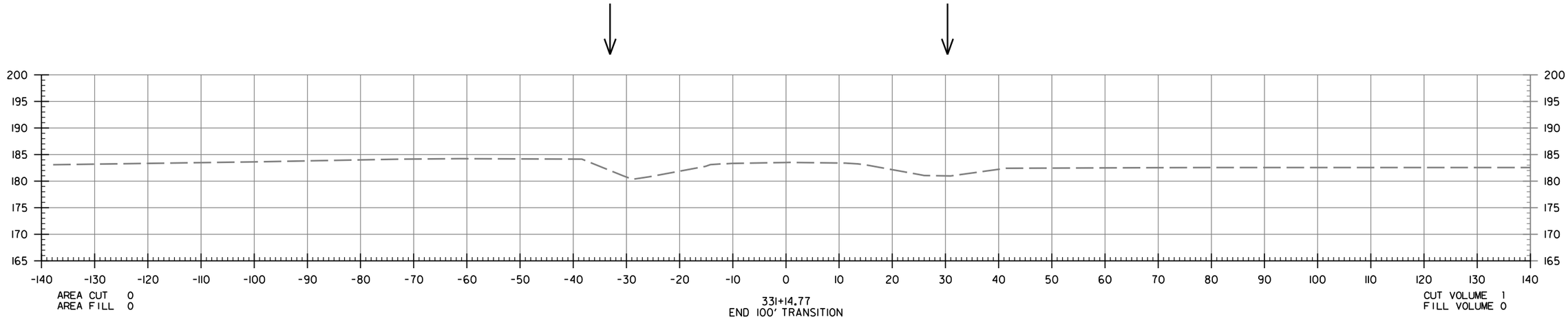


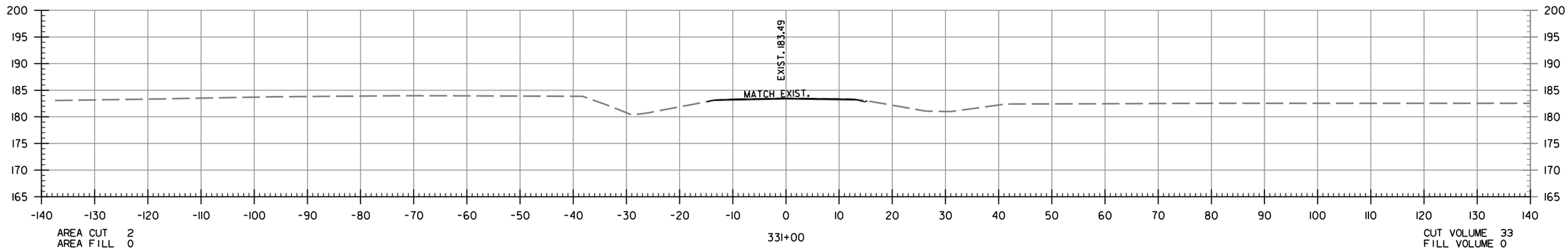


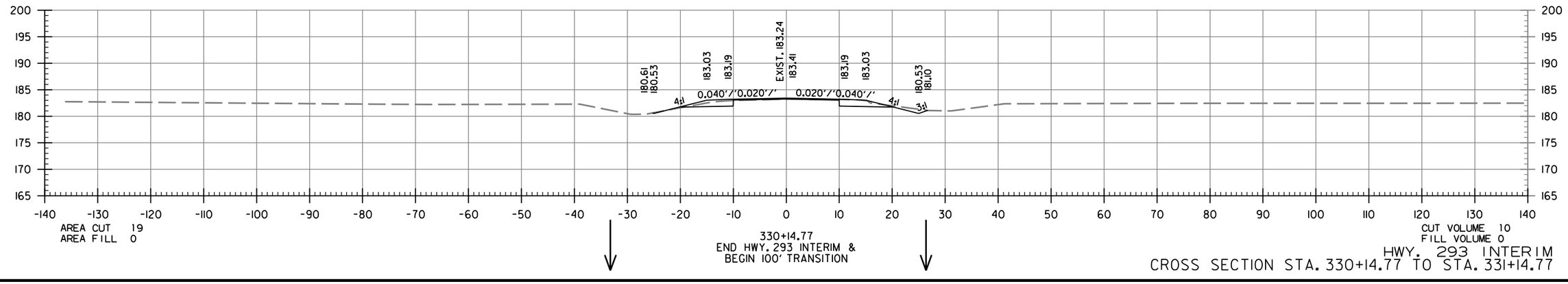
HWY. 293 INTERIM
CROSS SECTION STA. 328+00 TO STA. 330+00

mh39735 6/23/2022
R020678.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
07-27-2022		6	ARK.	020678	368	368
		CROSS SECTIONS				





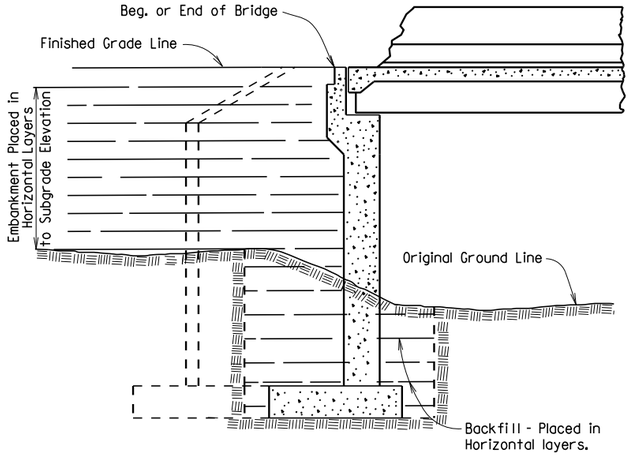


HWY. 293 INTERIM
CROSS SECTION STA. 330+14.77 TO STA. 331+14.77

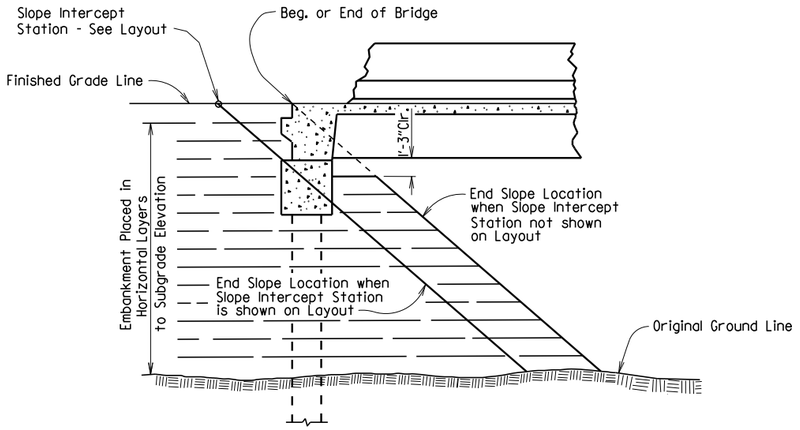
mh39735 6/23/2022
R020678.DGN

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.				

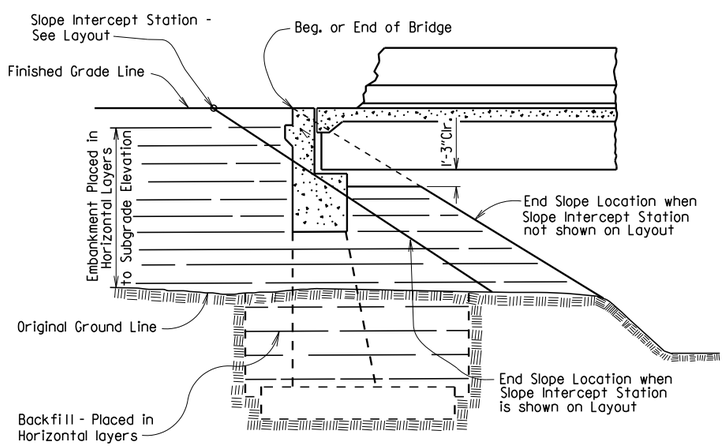
1 EMBANKMENT & BACKFILL 55000



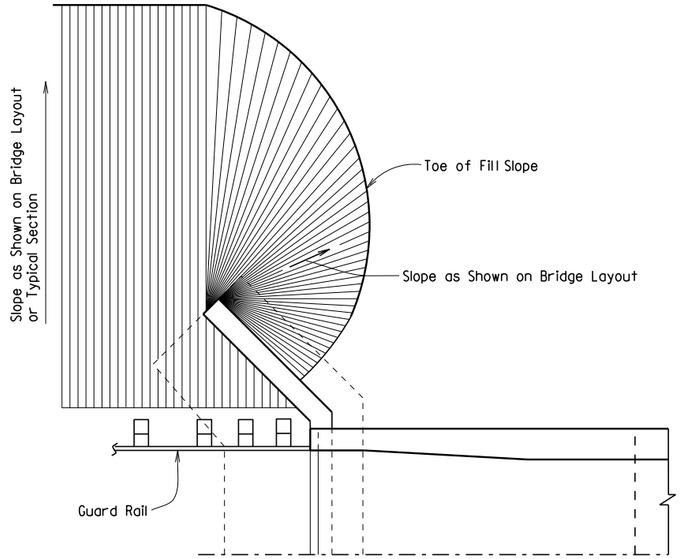
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT VERTICAL WALL ABUTMENTS



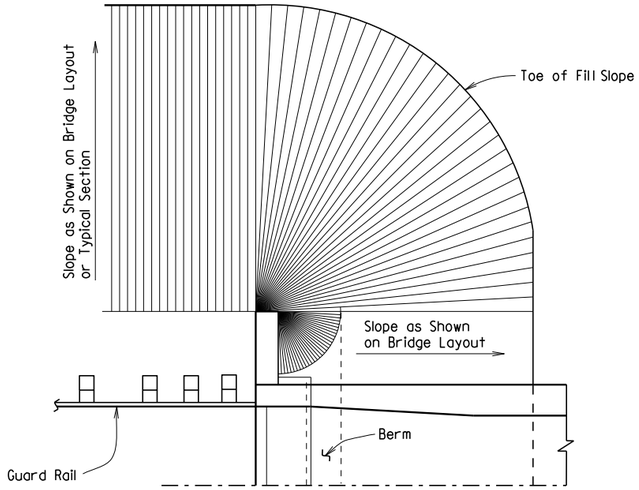
EMBANKMENT CONSTRUCTION AT SPILL-THROUGH PILE END BENTS



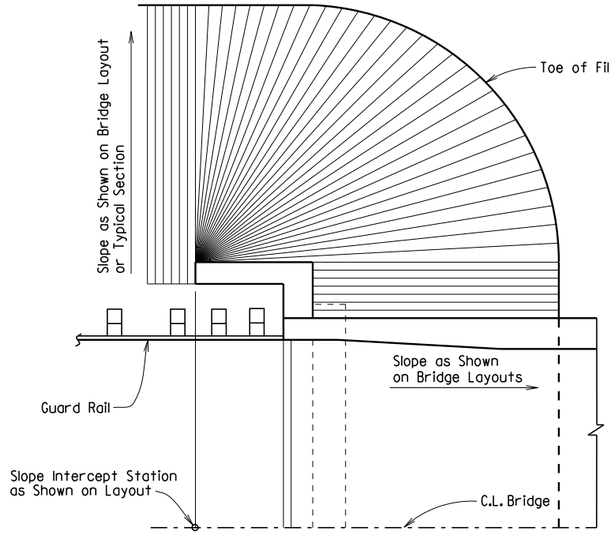
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT SPILL-THROUGH END BENTS



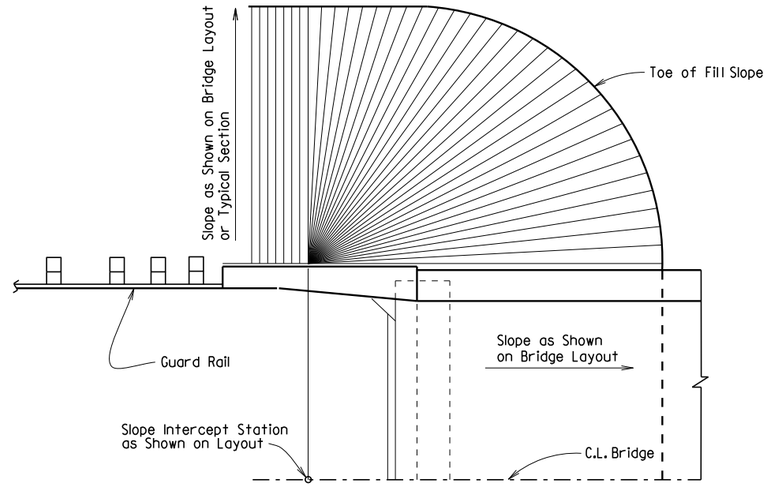
VERTICAL WALL ABUTMENTS



SPILL-THROUGH END BENTS WITH STUB WING



SPILL-THROUGH END BENTS WITH TURNBACK WING



SPILL-THROUGH END BENTS WITH TRANSITION WING

METHOD OF DETERMINING FILL SLOPE LOCATION AT BRIDGE ENDS

GENERAL NOTES

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

STANDARD DETAILS FOR EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55000.dgn

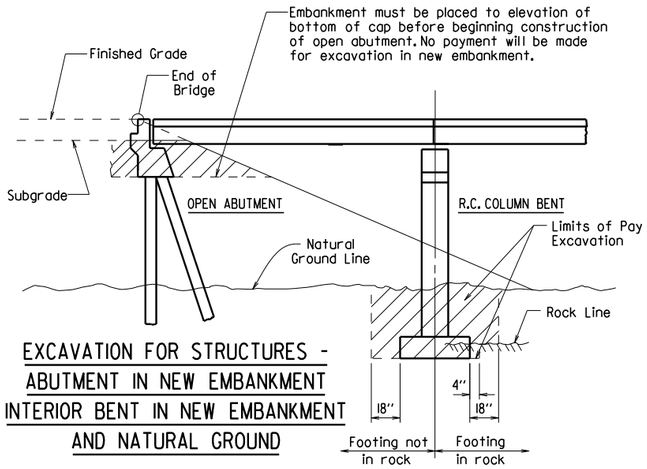
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE

DESIGNED BY: STD. DATE: -

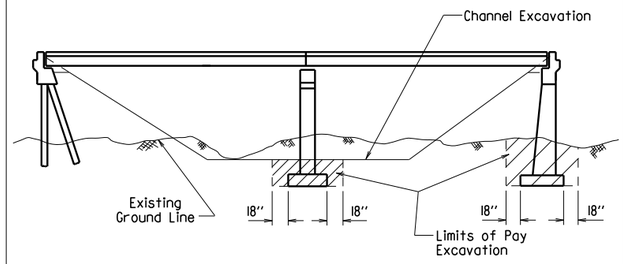
DRAWING NO. 55000

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.				

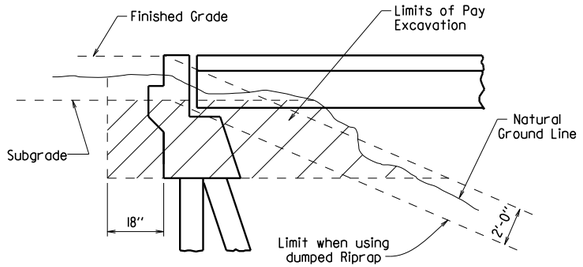
1 RIPRAP & EXCAV. 55001



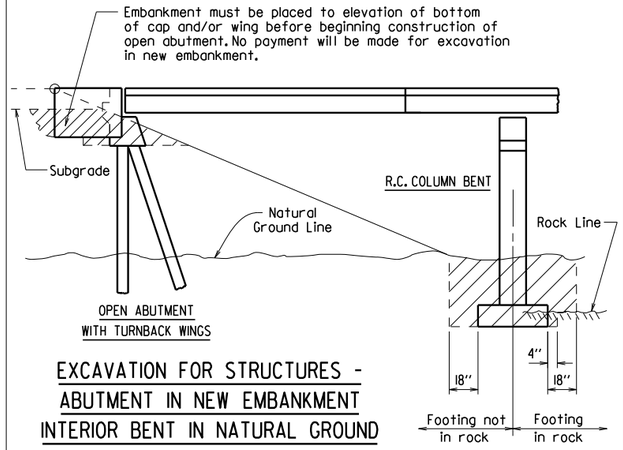
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NEW EMBANKMENT AND NATURAL GROUND



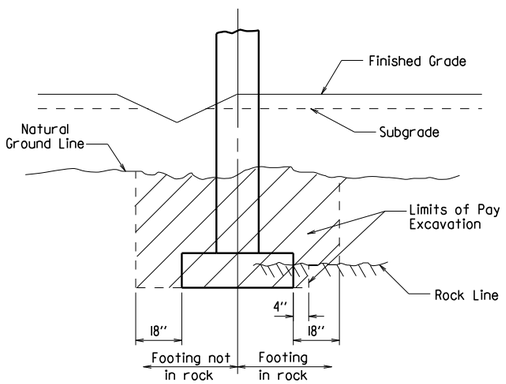
EXCAVATION FOR STRUCTURES - BRIDGE LOCATION WITH DESIGNATED CHANNEL CHANGE



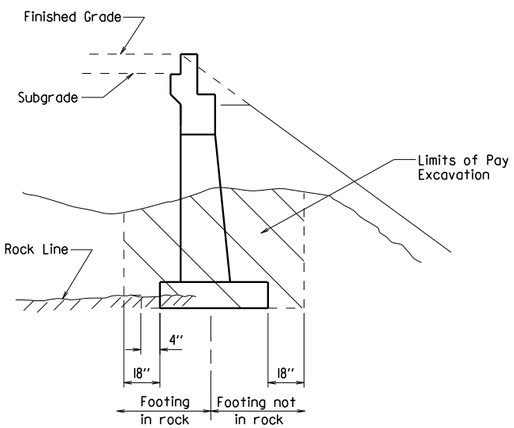
EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND



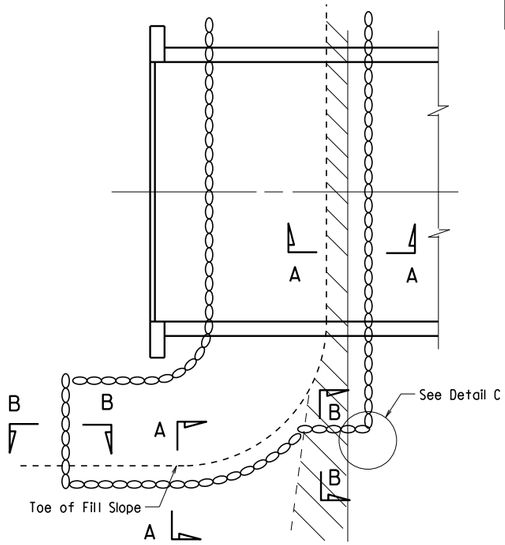
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NATURAL GROUND



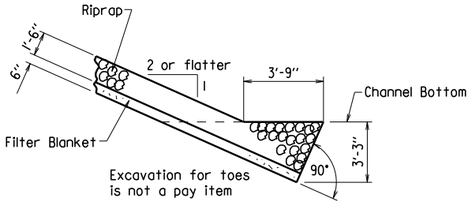
EXCAVATION FOR STRUCTURES - BENT IN ROADWAY FILL SECTION AND NATURAL GROUND



EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND AND NEW EMBANKMENT

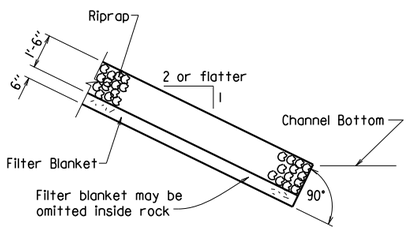


PLAN OF DUMPED RIPRAP



SECTION A-A

(Toe Excavation in Soil)



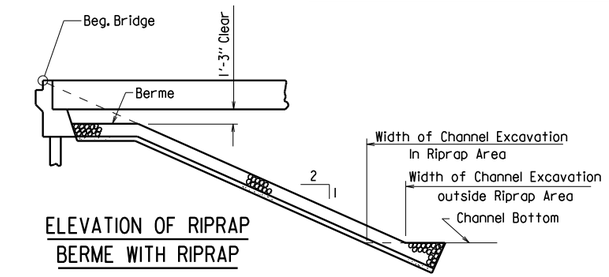
SECTION A-A

(Toe Excavation in Rock)

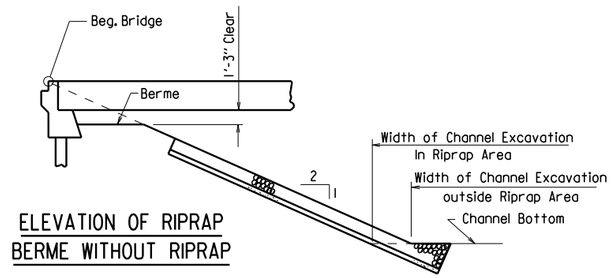
Note : Use this type of toe when rock is encountered which is in a stable condition.

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

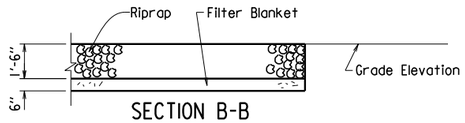
Note : Details for computing excavation for structures are included for information as to how plan quantities were calculated and for use when adjusting quantities when changing footing elevation.



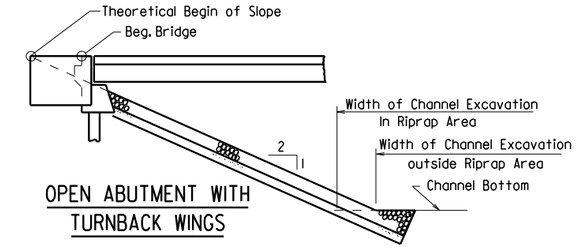
ELEVATION OF RIPRAP BERME WITH RIPRAP



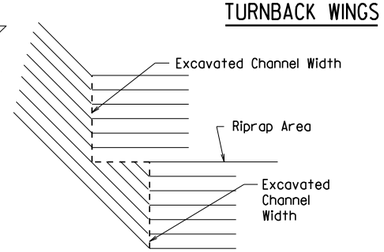
ELEVATION OF RIPRAP BERME WITHOUT RIPRAP



SECTION B-B



OPEN ABUTMENT WITH TURNBACK WINGS



DETAIL C

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

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

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

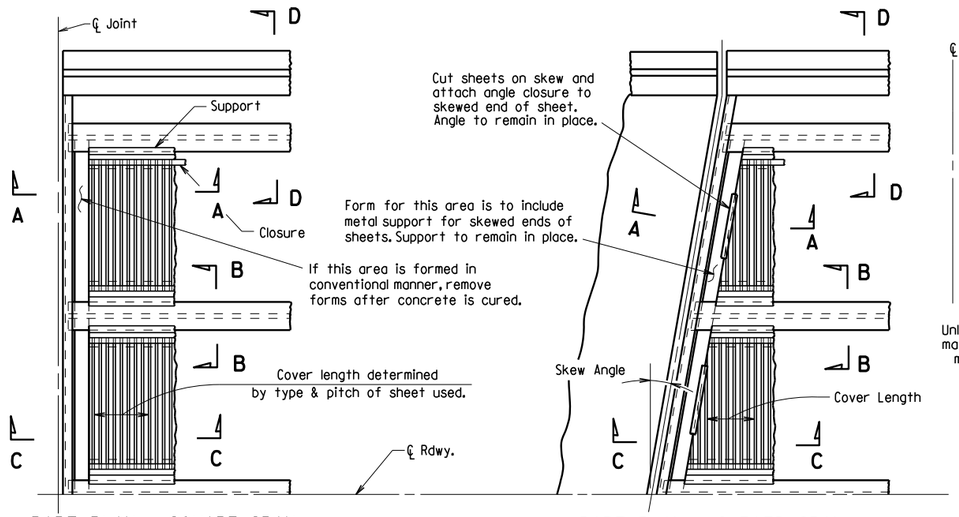
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE

DESIGNED BY: STD. DATE:

DRAWING NO. 55001

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3/24/16				6	ARK.			
				JOB NO.				

① BRIDGE DECK FORMS 55005

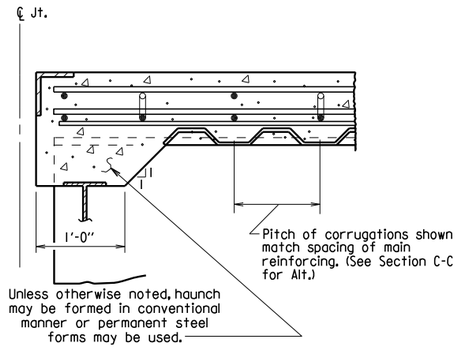


PART PLAN - SQUARE SPAN

3/8" = 1'-0"

PART PLAN - SKEWED SPAN

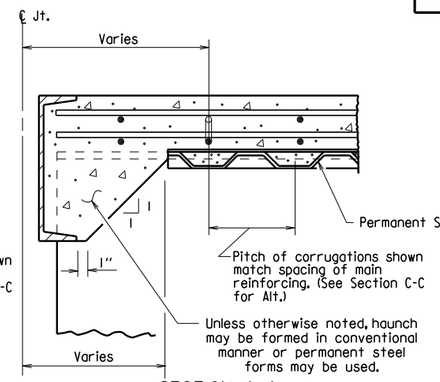
3/8" = 1'-0"



SECTION A-A

N.T.S.

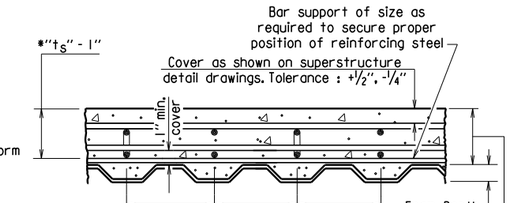
(Angle at end of span)



SECTION A-A

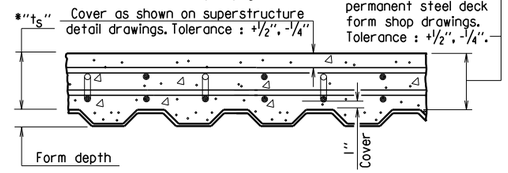
N.T.S.

(Channel at end of span)



SECTION C-C

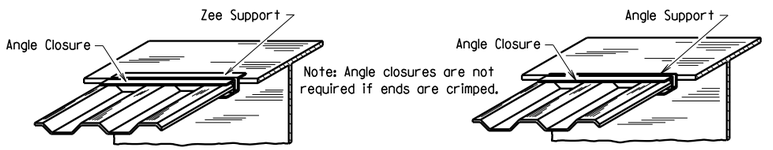
1" = 1'-0"



SECTION C-C - ALTERNATE

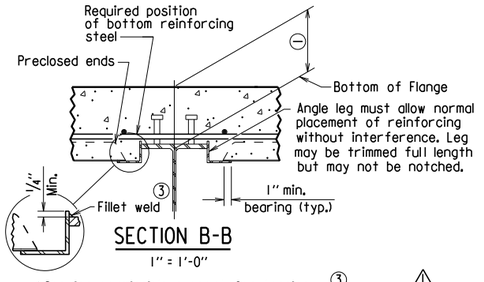
1" = 1'-0"

(Applicable when corrugations do not match spacing of main reinforcement)



SKETCH OF PERMISSIBLE SUPPORTS

N.T.S.

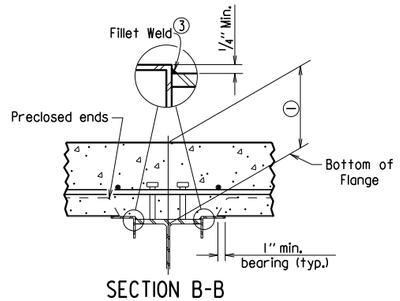


SECTION B-B

1" = 1'-0"

(Showing permissible support for tension flange where shear connectors are used, and for all compression flanges)

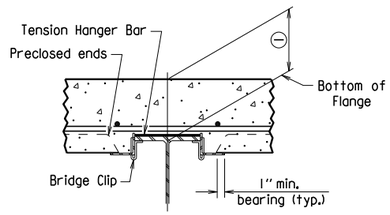
③ ⚠ Minimum weld: 1/8" x 1" @ 18". More weld may be required; maximum length per weld = 1 1/2" (typ.)



SECTION B-B

1" = 1'-0"

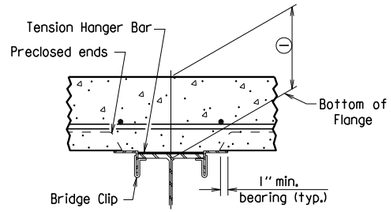
(Showing permissible support for tension flange where shear connectors are used and for all compression flanges)



SECTION B-B

1" = 1'-0"

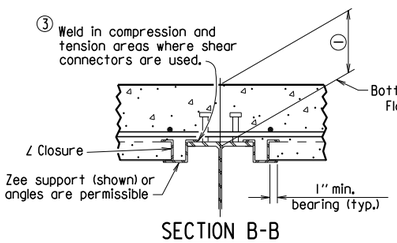
(Showing permissible support for tension flange where shear connectors are not used)



SECTION B-B

1" = 1'-0"

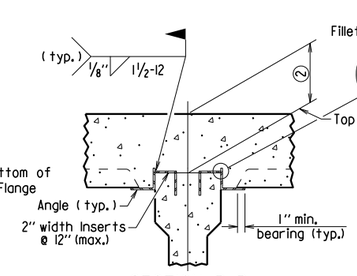
(Showing permissible support for tension flange where shear connectors are not used)



SECTION B-B

1" = 1'-0"

(Showing ∠ Closure)

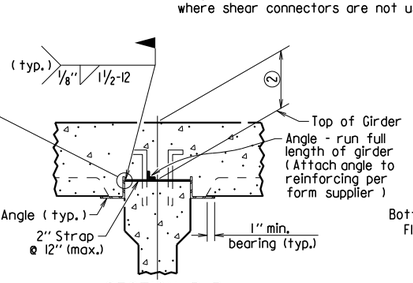


SECTION B-B

(FOR CONCRETE GIRDERS)

1" = 1'-0"

(Showing support by Insert cast in girder)

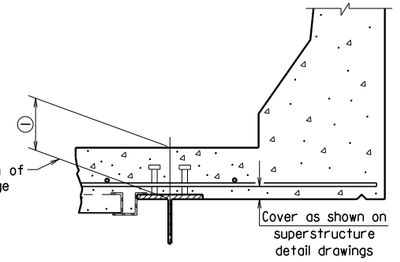


SECTION B-B

(FOR CONCRETE GIRDERS)

1" = 1'-0"

(Showing support by Strap)



SECTION D-D

1" = 1'-0"

Note: Only Bottom Reinforcing is shown.

① Distance from top of slab to bottom of top flange as measured at centerline girder and as shown on superstructure detail drawings. This dimension may vary within the following limits to maintain the grade and slab thickness tolerances : Minimum - occurs when either the top flange or the support angle leg contacts the bottom reinforcing steel; Maximum = t_S + 1 3/4" + flange thickness. See Section C-C for slab thickness tolerance between adjacent girder flanges.

② Distance from top of slab to top of girder as measured at centerline girder and as shown on superstructure detail drawings. This dimension may vary within the following limits to maintain the grade and slab thickness tolerances : Minimum - occurs when either the top of girder or the support angle leg contacts the bottom reinforcing steel; Maximum - value shown on the superstructure detail drawings when removable forms are used. See Section C-C for slab thickness tolerance between adjacent girder flanges.

⚠ Revised weld dimension by KWY, Ck'd. by BEF, 3/24/16.

*t_S = slab thickness as shown on superstructure detail drawings.

GENERAL NOTES

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

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

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

Form sheets shall be fastened to supporting members and to each other with galvanized metal screws sufficient in size and number to provide a secure attachment. Alternate methods of attachment must be approved by the Engineer.

When the pitch of form corrugations match the reinforcing spacing, transversely align form sheets across the bridge to maintain the correct orientation of continuous reinforcing bars in the corrugations.

Bar support rods, when used, shall be sized and spaced to adequately support the bottom reinforcing mat at the required position.

High chairs shall be sized to support the top mat of reinforcing at the proper position. High chairs shall be placed at locations shown on the detail drawings.

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

STANDARD DETAILS FOR PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55005.dgn

CHECKED BY: BEF DATE: 2-27-2014 SCALE: NONE

DESIGNED BY: STD. DATE: —

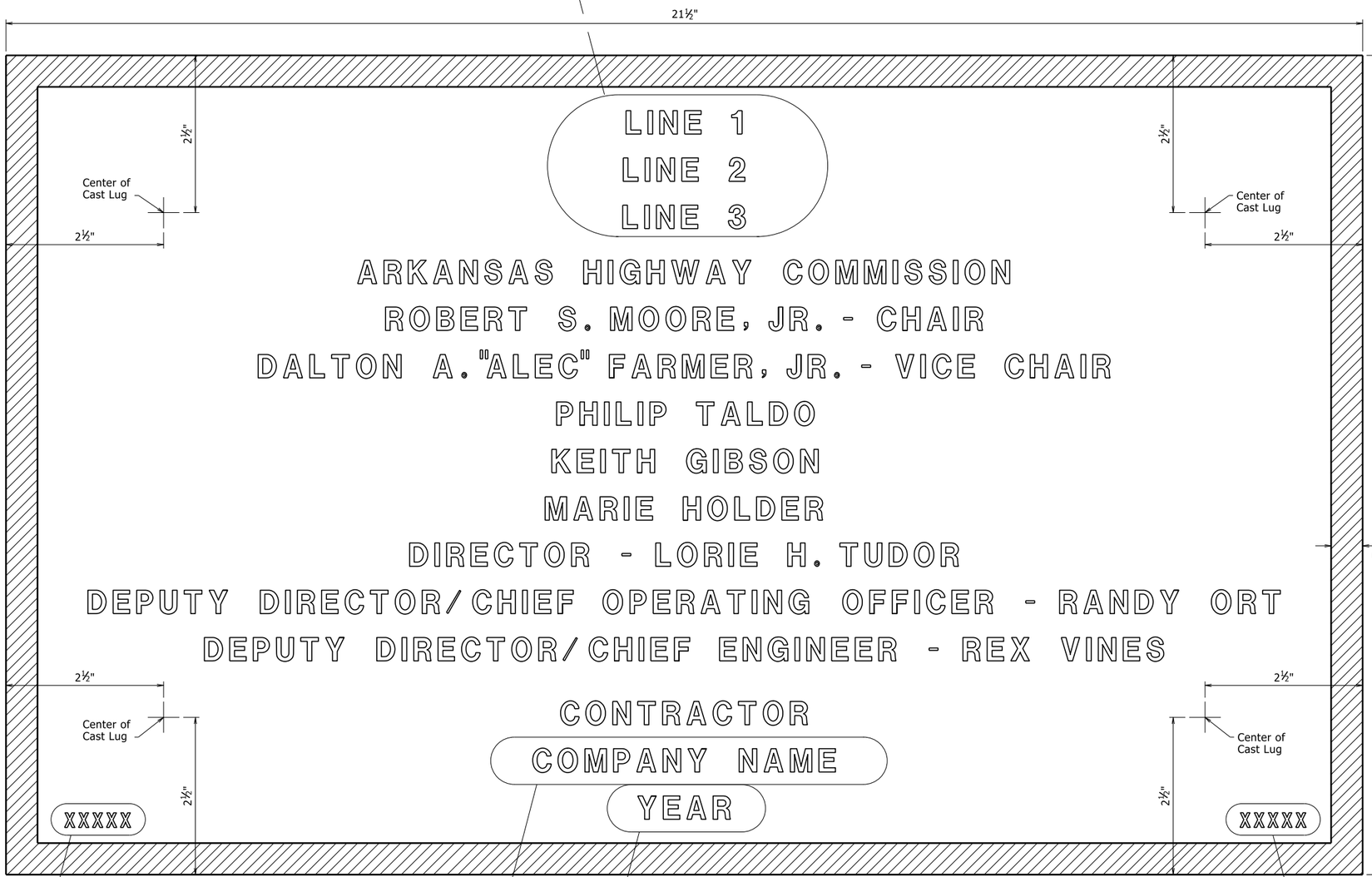
DRAWING NO. 55005

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
12-1-14		1-15-19		6	ARK.			
1-14-15		3-24-2020		JOB NO.				
1-17-17		5-11-2021						

1 TYPE D NAME PLATE - 55010

The name of the bridge as shown on the plans shall be placed on Lines 1-3 using ⅛" raised letters and numerals ⅜" high.

	Example 1	Example 2	Example 3	Example 4
Line 1	Red River	Southern	Saline	
Line 2	Relief	Railroad	River	Highway 5
Line 3		Overpass	Relief	



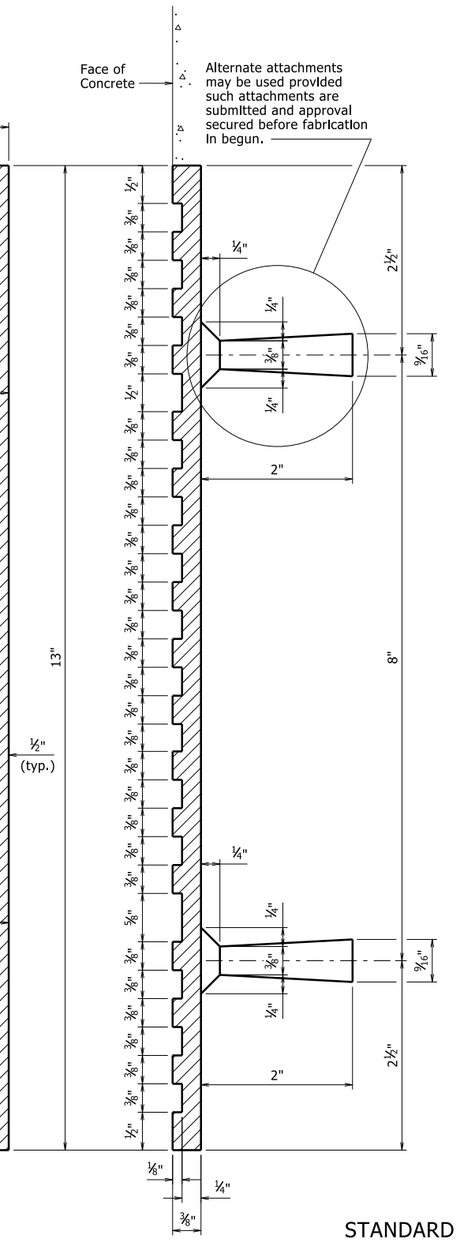
Place the design live loading here using ⅛" raised letters and numerals ¼" high. Examples: HS20, HL-93

Place the Year in which Contract was awarded here using ⅛" raised numerals ⅜" high. Example: 2001

Place the name of the company awarded the construction contract here using ⅛" raised letters and numerals ⅜" high. Example: ABCD CONSTRUCTION, INC.

Place the Bridge number here using ⅛" raised letters and numerals ¼" high. Examples: A1234, 05432

TYPICAL BRIDGE NAME PLATE



GENERAL NOTES

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

Name plates shall be cast bronze and shall meet the material requirements as specified in Section 812.

Body of plate shall be ¼" thick and shall include four tapering cone lugs ⅜" to 9/16" x 2" long. The border and all lettering shall be raised ⅛" above the face of plate and shall be polished.

All lettering shall be plain gothic, square cut and not tapered.

The number of plates required and the location and name on the plate for each bridge shall be as designated on the plans.

6 Revised Deputy Director/ Chief Engineer
5-11-2021 CGP Checked By: CRE

5 Revised Director, Deputy Director/Chief Operating Officer, Chair, Vice Chair and added New Commissioner
3-24-2020 CGP Checked By: CRE

4 Revised Chair and Vice Chair Added New Commissioner
1-15-19 CGP Checked By: CRE

3 Added New Commissioner
1-17-17 KDH Checked By: CRE

2 Revised Chair and Vice Chair Added New Commissioner
1-14-15 KDH Checked By: CRE

1 Revised Deputy Director/ Chief Engineer Added Deputy Director/ Chief Operating Officer
12-1-14 KDH Checked By: CRE

STANDARD DETAILS FOR
TYPE D BRIDGE NAME PLATE

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

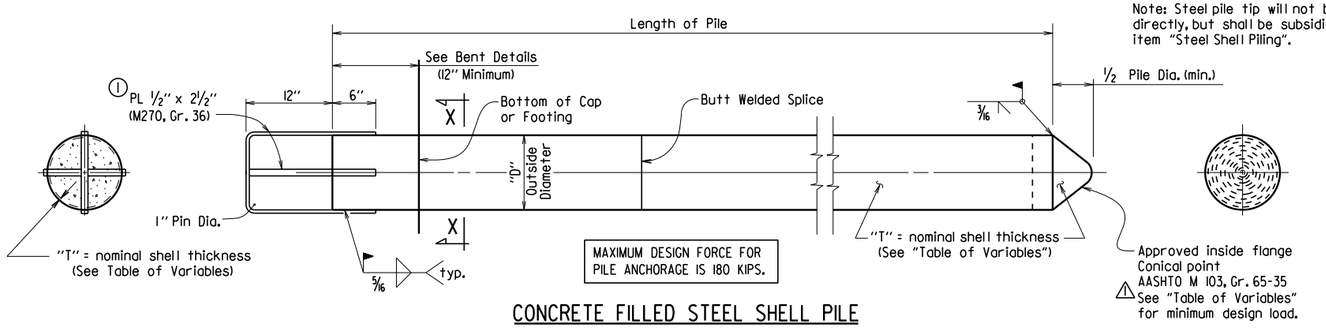
DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55010.dgn
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE
DESIGNED BY: STD. DATE:

DRAWING NO. 55010

PRINT DATE: 5/11/2021

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3/24/16				6	ARK.			
				JOB NO.				

(1) STEEL SHELL PILES 55021

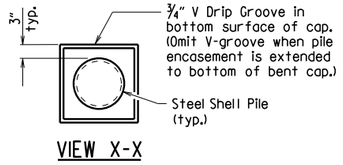


Note: Steel pile tip will not be paid for directly, but shall be subsidiary to the item "Steel Shell Piling".

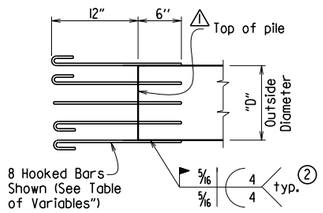
CONCRETE FILLED STEEL SHELL PILE

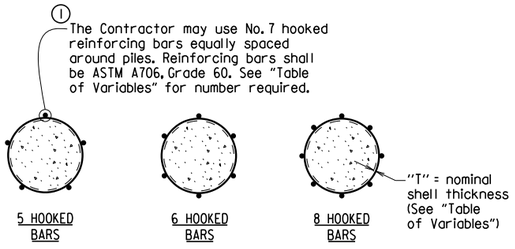
(1) Pile anchorage shall be placed to minimize interference with anchor bolts and reinforcing in cap or footing.

(2) Welding shall comply with ANSI/AWS D1.4 Structural Welding Code-Reinforcing Steel and applicable portions of ANSI/AWS D1.5 Bridge Welding Code.



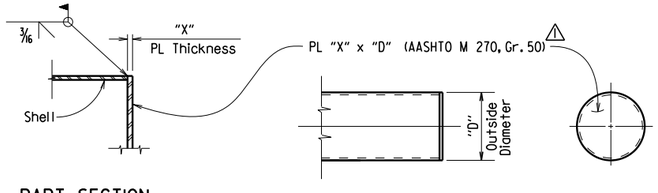
VIEW X-X





ALTERNATE PILE ANCHORAGE DETAIL

Note: Hooked bars shall be oriented to provide the required concrete clearances shown in the plans.

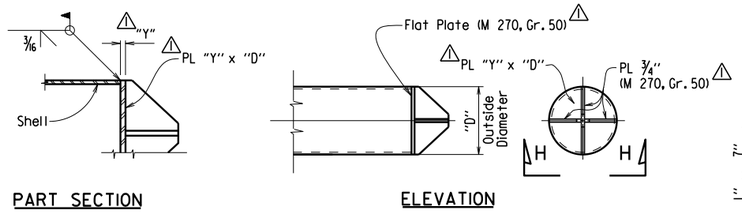


PART SECTION

ELEVATION

ALTERNATE FLAT TIP DETAIL

Note: The alternate flat tip detail shall not be used on steel shell piling to be driven through embankments constructed with internal geosynthetic reinforcement.



PART SECTION

ELEVATION

VIEW H-H

ALTERNATE VANED TIP DETAIL

GENERAL NOTES FOR CONCRETE FILLED STEEL SHEEL PILES:

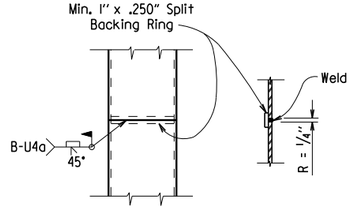
Steel shells shall conform ASTM A252, Grade 3 (Fy = 45,000 psi.)

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

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

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

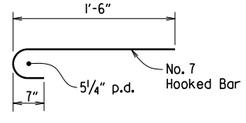
Concrete, structural steel, reinforcing steel (including welding), and painting shall not be paid for directly, but shall be considered subsidiary to the item "Steel Shell Piling".



TYPICAL SPLICE DETAILS

TABLE OF VARIABLES

OUTSIDE DIAMETER "D"	NOMINAL SHELL THICKNESS "T"	⚠ PLATE THICKNESS "X"	⚠ PLATE THICKNESS "Y"	NO. OF HOOKED BARS FOR ALTERNATE PILE ANCHORAGE	⚠ MINIMUM CONICAL TIP DESIGN LOAD (KIPS)
14"	0.50"	2 1/4"	1 1/2"	5	859
16"	0.50"	2 1/4"	1 1/2"	5	986
18"	0.50"	2 1/2"	1 1/2"	6	1,114
20"	0.50"	2 1/2"	1 3/4"	6	1,241
24"	0.50"	2 3/4"	1 3/4"	8	1,495



HOOKED BAR DETAIL

⚠ Revised and added various details by KWY, Ck'd. by BEF, 3/24/16.

GENERAL NOTES FOR PILE ENCASEMENTS:

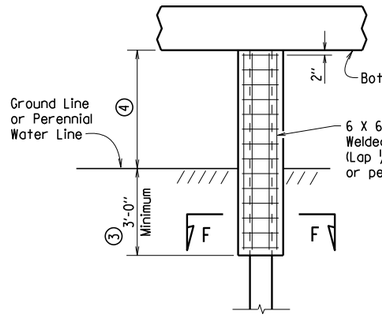
⚠ See Bridge Layout for additional notes, any pile encasement restrictions and required location of pile encasements.

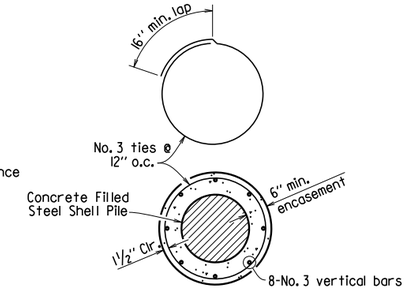
Concrete shall be Class S with a minimum 28-day compressive strength, f'c = 3,500 psi. If concrete cannot be placed in the dry, Seal Concrete may be used from top to bottom of encasement.

Reinforcing steel shall be Grade 60 conforming to AASHTO M 31 or M 322, Type A.

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

Concrete, welded wire fabric or reinforcing steel, and galvanized pipe shall not be paid for directly, but shall be considered subsidiary to the item "Pile Encasement".





SECTION F-F (REINF. ALTERNATE)

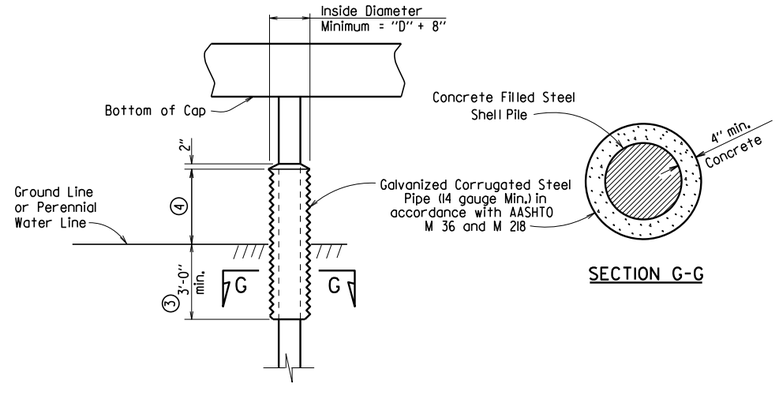
PILE ENCASEMENT DETAIL FOR STEEL SHELL PILES

(5) (Shown with Encasement to Bottom of Cap)

(3) Unless otherwise noted on Bridge Layout.

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

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



SECTION G-G

ALTERNATE PILE ENCASEMENT DETAIL FOR STEEL SHELL PILES

(Shown with Partial Height Encasement)

This document was originally issued and sealed by Charles R. Ellis, PE No. 9235, on March 24, 2016. This copy is not a signed and sealed document.

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

BRIDGE ENGINEER

STANDARD DETAILS FOR CONCRETE FILLED STEEL SHELL PILES AND PILE ENCASEMENTS

ARKANSAS STATE HIGHWAY COMMISSION

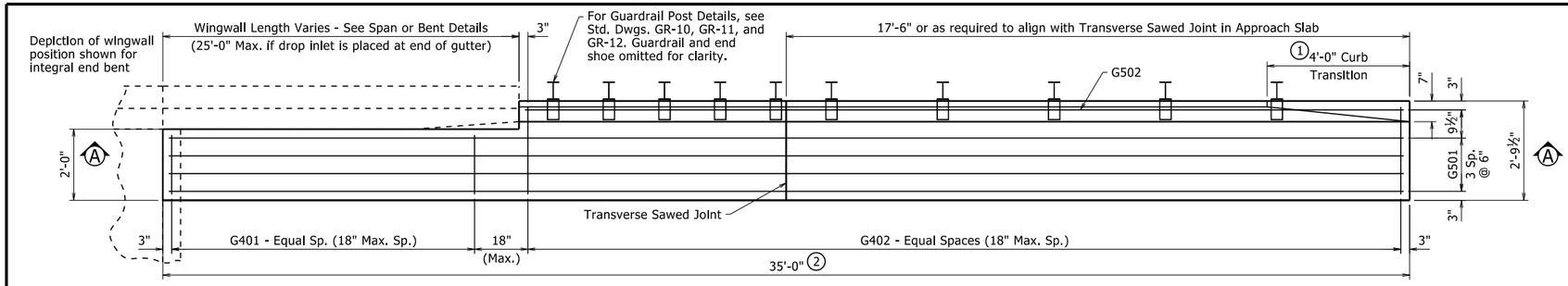
LITTLE ROCK, ARK.

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CHECKED BY:	B.E.F.	DATE:	2/27/2014	SCALE:	NO SCALE
DESIGNED BY:	STD.	DATE:	—		

DRAWING NO. 55021

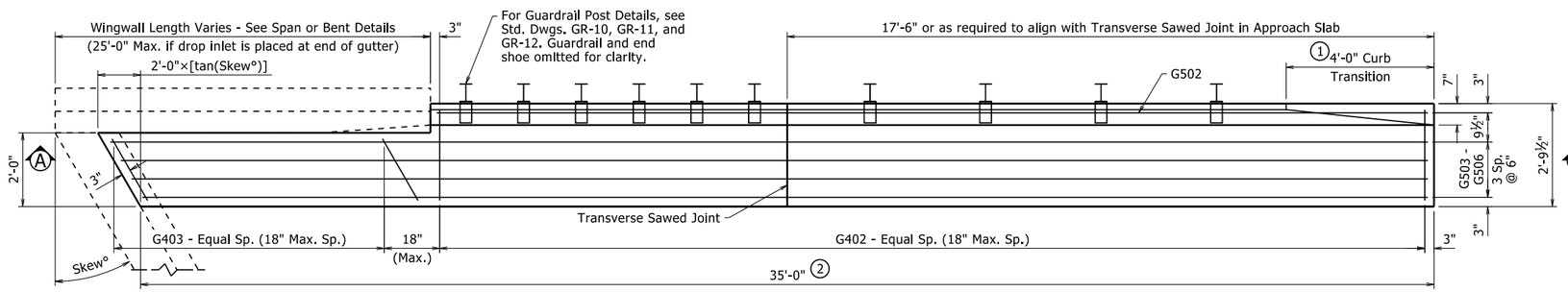
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.				

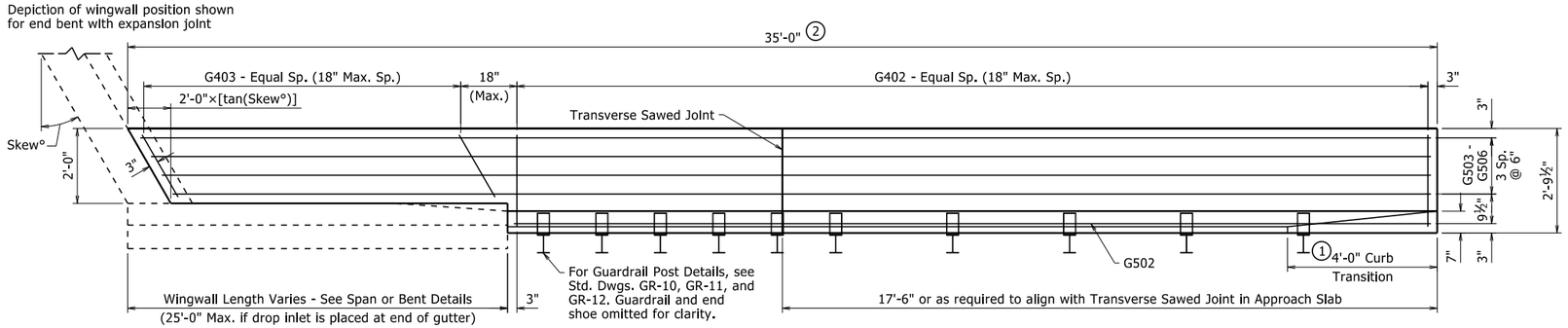
(1) Type F Approach Gutters - 55030F



HALF PLAN OF APPROACH GUTTERS FOR SQUARE END BENT

½" = 1'-0"





PLAN OF SKEWED APPROACH GUTTERS FOR SKEWED END BENT

½" = 1'-0"

QUANTITIES FOR ONE APPROACH GUTTER

(For Information Only)

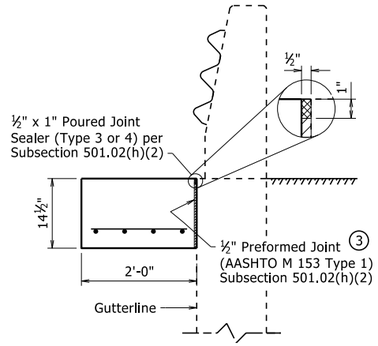
Reinforcing Steel (Lbs.)	Concrete (Cu. Yds.)
210	4.20

Quantities are based on one gutter for a square, integral end bent and a wingwall length of 10'-0"

BAR LIST FOR ONE APPROACH GUTTER

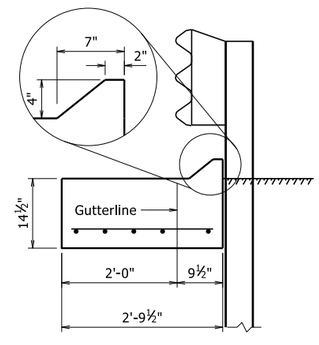
	Mark	No. Req'd.	Length
Square End Bent	G401	(4)	1'-8"
	G402	(4)	2'-5½"
	G501	4	34'-8"
	G502	1	(4)
Skewed End Bent	G402	(4)	2'-5½"
	G403	(4)	(4)
	G502	1	(4)
	G503 - G506	1 ea.	(4)

(4) Varies with Skew and/or Wingwall Length



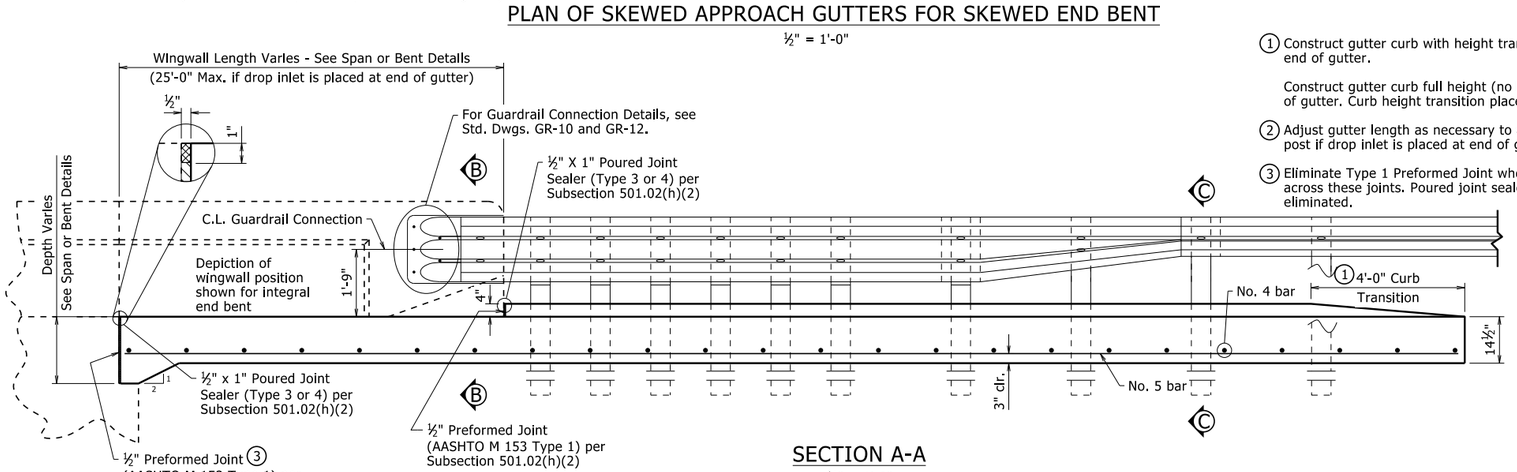
SECTION B-B

¾" = 1'-0"



SECTION C-C

¾" = 1'-0"



SECTION A-A

½" = 1'-0"

(Approach Gutter for Square End Bent Shown)

(1) Construct gutter curb with height transition as shown if drop inlet is not placed at end of gutter.

Construct gutter curb full height (no height transition) if drop inlet is placed at end of gutter. Curb height transition placed on drop inlet.

(2) Adjust gutter length as necessary to avoid outlet pipe interference with guardrail post if drop inlet is placed at end of gutter.

(3) Eliminate Type 1 Preformed Joint when bridge details show reinforcing dowels across these joints. Poured joint sealer is required, however, backer rod shall be eliminated.

GENERAL NOTES

All concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi and shall be poured in the dry.

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

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

All longitudinal lines within the limits of horizontal curves shall be on curves concentric to C.L. Bridge. Adjustment to longitudinal bar lengths may be required. Transverse reinforcing shall be placed on radial lines to C.L. Bridge.

Scales shown are for 22"x34" drawings. When using 11"x17" drawings, reduce scale by one half.

STANDARD DETAILS FOR TYPE F APPROACH GUTTERS

ARKANSAS STATE HIGHWAY COMMISSION

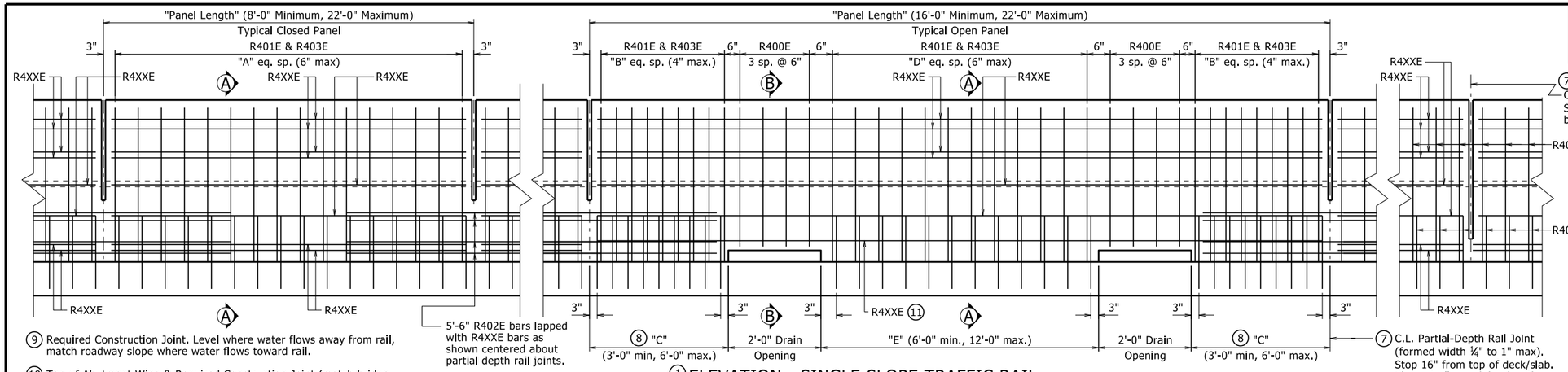
LITTLE ROCK, ARK.

DRAWN BY:	NAC	DATE:	4-8-2021	FILENAME:	b55030f.dgn
CHECKED BY:	LJB	DATE:	4-8-2021	SCALE:	AS NOTED
DESIGNED BY:	STD	DATE:	-		

DRAWING NO. 55030F

PRINT DATE: 4/9/2021

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.			
		TYPE SSTR42 - 55071				



1 ELEVATION - SINGLE SLOPE TRAFFIC RAIL

9 Required Construction Joint. Level where water flows away from rail, match roadway slope where water flows toward rail.

10 Top of Abutment Wing & Required Construction Joint (match bridge deck/slab construction joint slope). See Plans for Wing reinforcing.

11 These bars shall be raised up over drain opening as shown in "SECTION B-B".

1 All measurements shown are along gutterline at base of rail.

2 Minimum embedment into deck/slab.

3 Eliminate recess when formliner with architectural finish is used. See Plans for additional information.

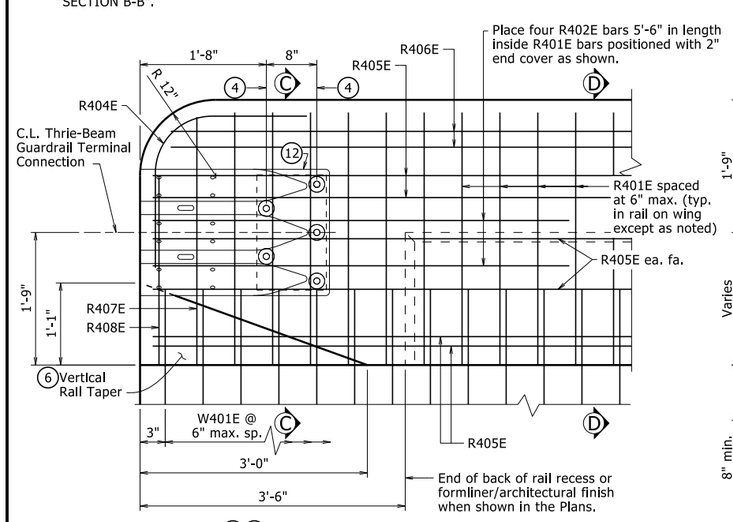
4 C.L. 1" ø formed holes for ⅞" ø bolts. See Standard Drawings GR-10 and GR-12 for additional information.

5 These bars will not be included in the "TABLE OF VARIABLES", see plans for additional information.

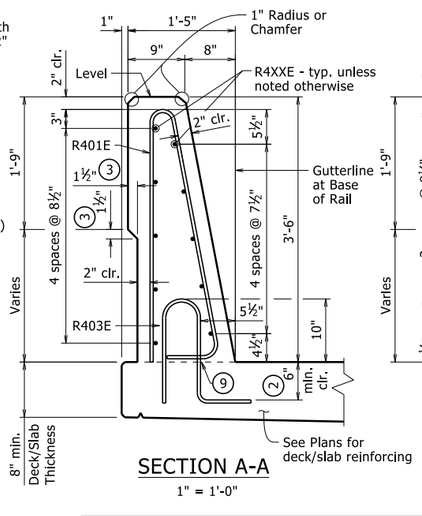
6 Field bend front leg of R401E bar as required to maintain minimum 1½" front face clearance within limits of taper.

7 When optional slip forming is used: to control cracking, all rail joints must be V-grooved around the perimeter of the rail prior to concrete set and sawing. Depth of V-groove shall be ½". Sawing of the joints shall be done as soon as practical to a width of ¼", and must be controlled so it will follow the V-Groove.

8 End posts shall be the same length within a panel.

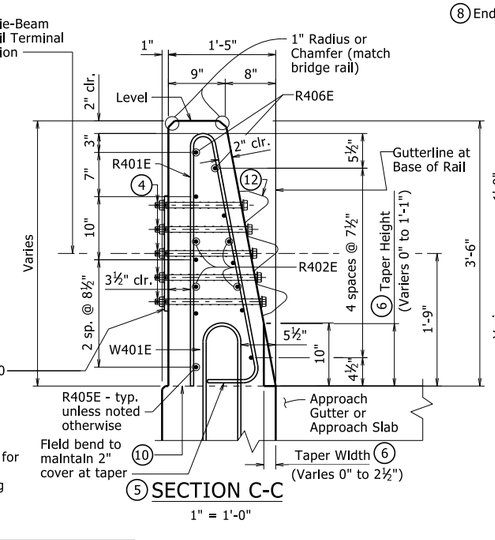


1 5 RAIL TERMINUS DETAIL
1" = 1'-0"

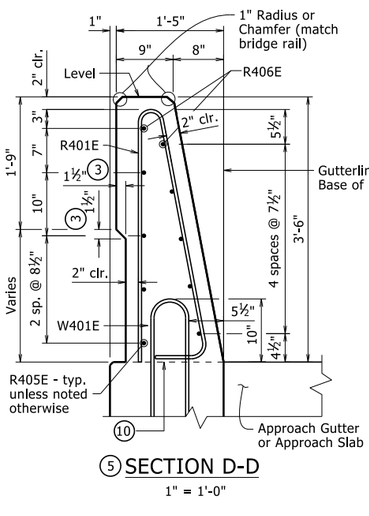


SECTION A-A
1" = 1'-0"

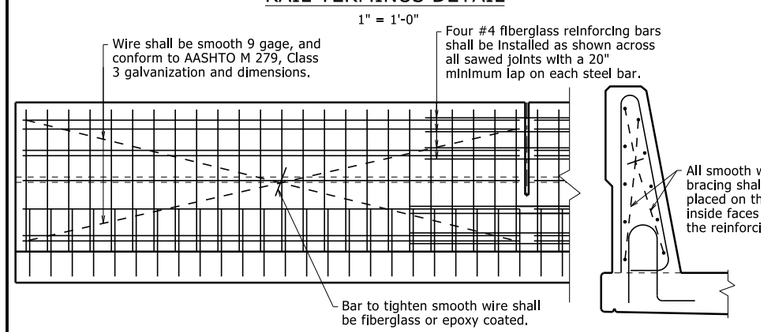
SECTION B-B
1" = 1'-0"



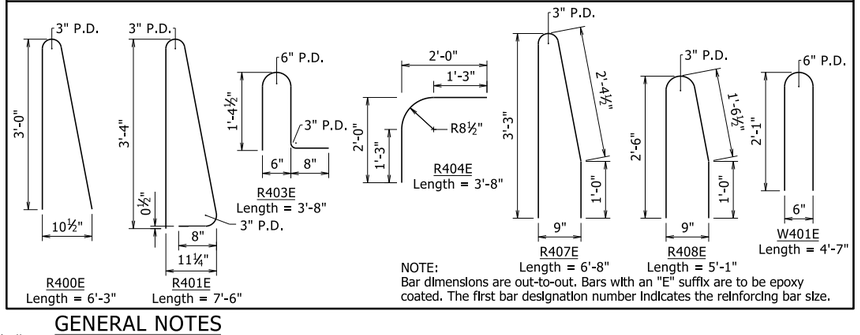
5 SECTION C-C
1" = 1'-0"



5 SECTION D-D
1" = 1'-0"



BENDING DIAGRAM



NOTE:
Bar dimensions are out-to-out. Bars with an "E" suffix are to be epoxy coated. The first bar designation number indicates the reinforcing bar size.

12 Bolt Special End Shoe to face of rail as shown. Tapered washers are not required between the head of the bolts and the sloped face of the rail. Tighten the five terminal connection bolts in a well distributed pattern to prevent damage or distortion of the thrie-beam connection. Cut bolts off after installation so as to extend no more than ⅜" beyond nut. Paint ends of cut-off bolts with zinc-rich paint. This work and material will not be paid for directly but shall be considered subsidiary to associated contract items.

TABLE OF VARIABLES

Closed Rail Panels			Open Rail Panels					
Panel Length	A	R4XXE	Panel Length	B	C	D	E	R4XXE

See Plans for table with values.

This document was originally issued and sealed by Charles R. Ellis, PE No. 9235, on July 06, 2022. This copy is not a signed and sealed document.

THESE DETAILS ARE APPLICABLE UNLESS OTHERWISE SHOWN IN THE PLAN DETAILS, SPECIAL PROVISIONS, OR SUPPLEMENTAL SPECIFICATIONS.

GENERAL NOTES

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

All panels shall be braced as required to prevent racking.

Slip forming will not be allowed on bridges where formliner with architectural treatment is used unless approval from the Engineer is obtained.

DETAILS OF OPTIONAL SLIP FORMING OF BRIDGE TRAFFIC RAIL

No Scale

This rail has been evaluated and accepted to be of equal strength to railings with similar geometry, which have been evaluated by full-scale crash test to meet MASH TL-4 criteria.

For Table of Variables, Rail Bar List, locations of Full and Partial Depth Rail Joints, and Wing & Rail Bar Lists, see Plans.

For location of drain openings, see Plans. Drain openings will not be allowed over Railroad Right of Way, travelled roadways, and protected waterways.

Rail Terminus details, including Rail Taper, are not applicable when bridge railing is continuous with roadway railing.

Scales shown are for full size 22"x34" drawings. When using 11"x17" drawings, reduce scale by one half.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
BRIDGE ENGINEER

STANDARD DETAILS FOR BRIDGE TRAFFIC RAIL TYPE SSTR42

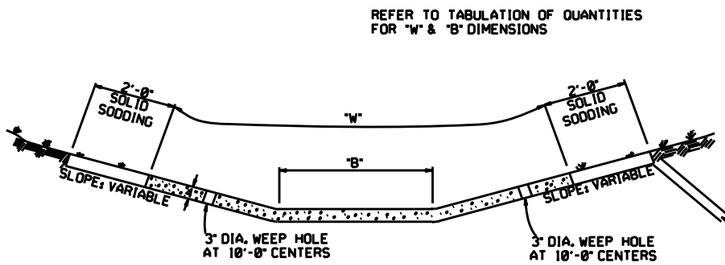
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 06/30/2022 FILENAME: b55071.dgn
CHECKED BY: CMW DATE: 07/01/2022 SCALE: AS NOTED
DESIGNED BY: STD. DATE: -

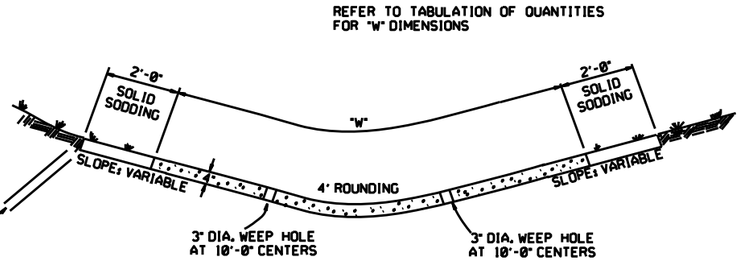
DRAWING NO. 55071

PRINT DATE: 7/6/2022



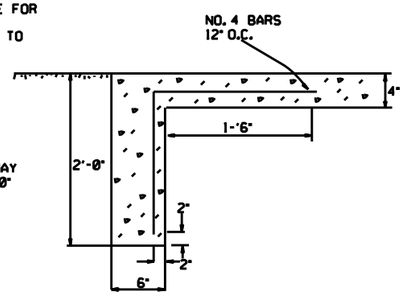
EXCAVATE TO NEAT LINES TO CONSTRUCT DITCH PAVING AND SOLID SODDING.

TYPE A



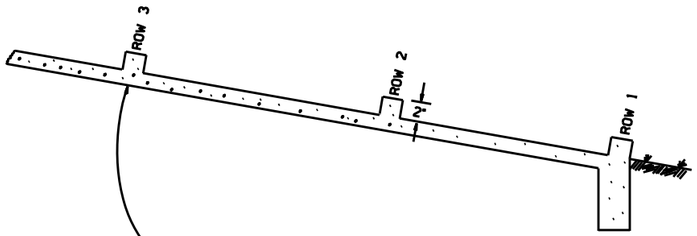
TYPE B

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 DEPTH MAY BE ALTERED TO 1'-0" WHEN DIRECTED BY THE ENGINEER IN ROCK EXCAVATION

TOE WALL DETAIL FOR CONCRETE DITCH PAVING



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.

ENERGY DISSIPATORS
(NO SCALE)

GENERAL NOTES:

THE FULL WIDTH OF EACH SECTION SHALL BE POURED MONOLITHICALLY.

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

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

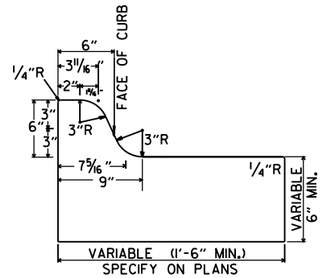
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45° INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

DATE	REVISION	DATE FILM'D
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

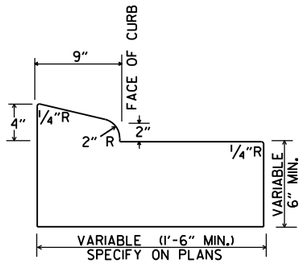
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

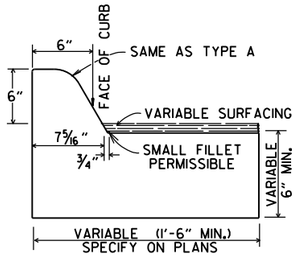
STANDARD DRAWING CDP-1



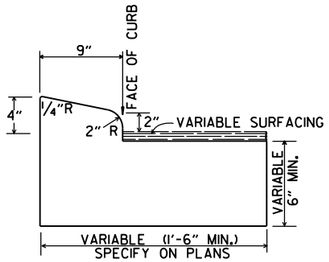
TYPE A



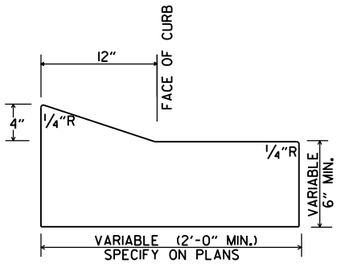
TYPE B-1



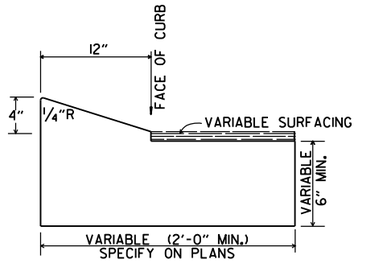
TYPE C



TYPE B-2

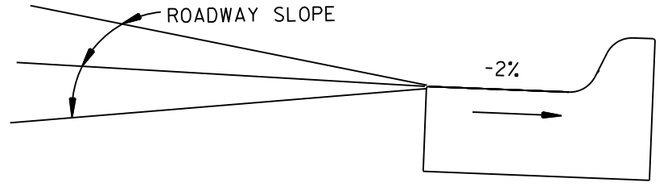


TYPE E-1



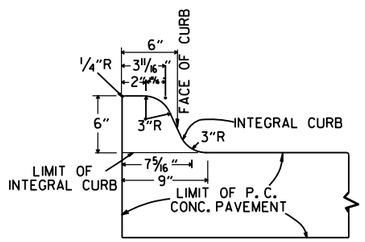
TYPE E-2

CONCRETE COMBINATION CURB AND GUTTER

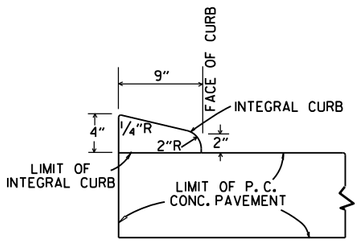


DETAIL OF GUTTER SLOPE

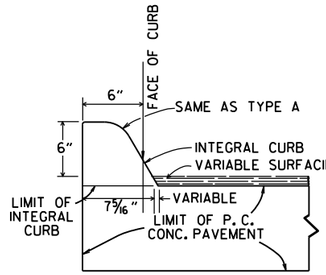
GUTTER SHALL BE CONSTRUCTED ON 2% SLOPE AWAY FROM ROADWAY, REGARDLESS OF ROADWAY SLOPE.



TYPE A

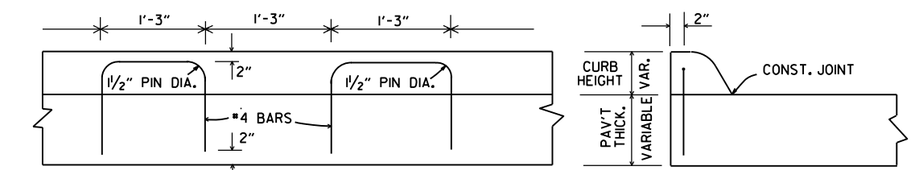


TYPE B



TYPE C

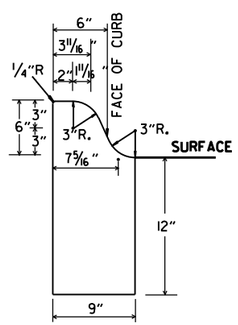
INTEGRAL CURB



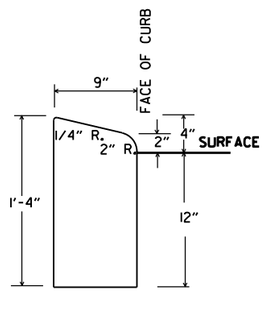
LONGITUDINAL SECTION

ELEVATION

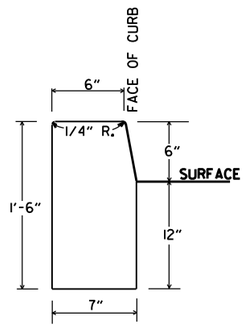
ALTERNATE CONSTRUCTION METHOD FOR INTEGRAL CURB



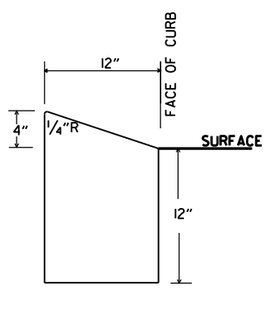
TYPE A



TYPE B

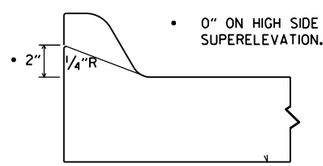


TYPE D



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.

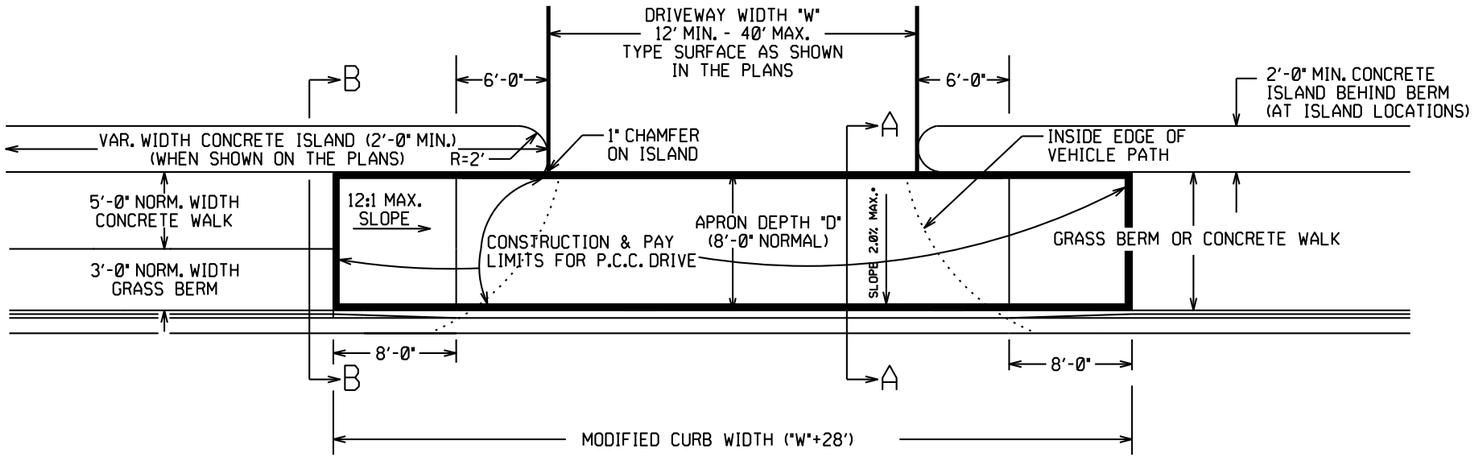
DETAILS OF MODIFIED CURB

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

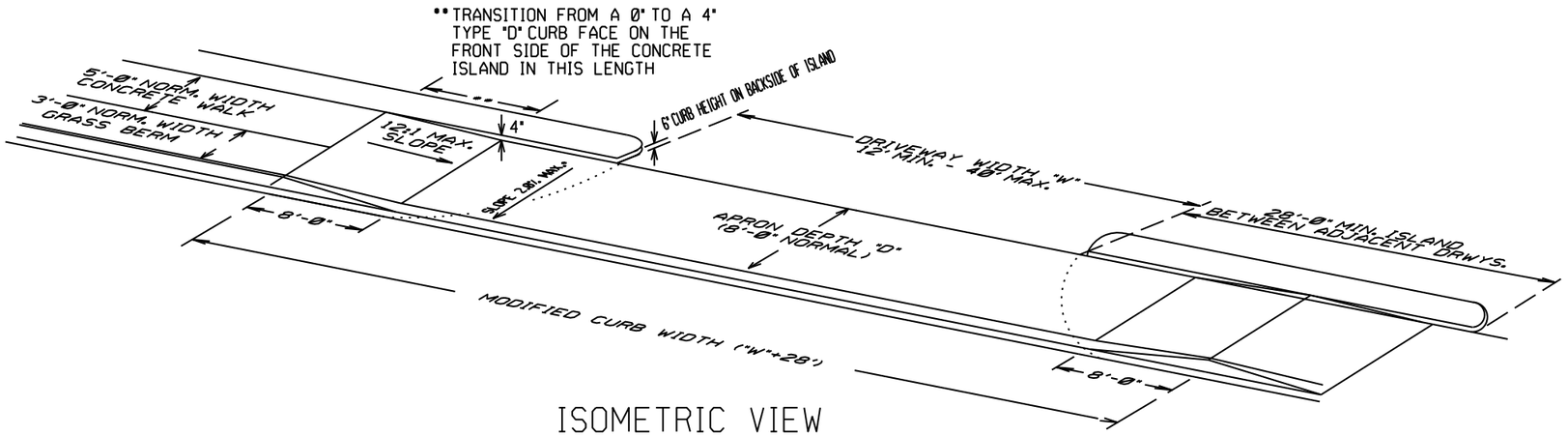
ARKANSAS STATE HIGHWAY COMMISSION

CURBING DETAILS

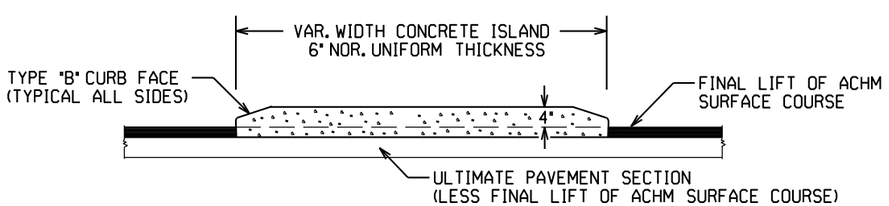
STANDARD DRAWING CG-1



PLAN VIEW



ISOMETRIC VIEW

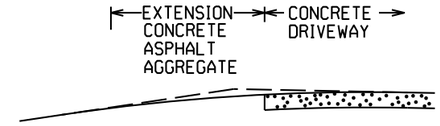


CURBED ISLANDS FOR CHANNELIZATION

CONCRETE ISLAND NOTES:

1. 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".

2. TRANSVERSE EXPANSION JOINTS, NOT LESS THAN 1/2" WIDE, SHALL BE PLACED AT MINIMUM INTERVAL OF 45'. TRANSVERSE JOINT SHALL BE CONSTRUCTED USING A JOINT FILLER COMPLYING WITH AASHTO M213.



EXTENSION TYPICAL SECTIONS

1: CONCRETE - 6" P.C. CONCRETE DRIVEWAY

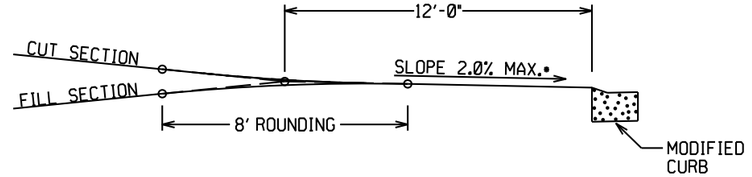
2: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
4" ACHM BINDER COURSE (1") OR
4" ACHM BASE COURSE (1-1/2")

3: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
7" AGGREGATE BASE COURSE

4: AGGREGATE - 6" AGGREGATE BASE COURSE

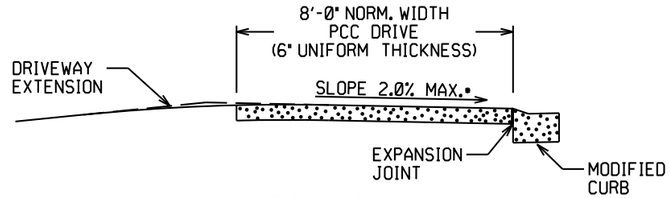
THE TYPE OF EXTENSION SHALL BE AS SHOWN IN THE PLANS. THE CONTRACTOR MAY, WITH THE APPROVAL OF THE ENGINEER, SUBSTITUTE A LOWER NUMBERED TYPE OF EXTENSION IN LIEU OF THE TYPE SPECIFIED IN THE PLANS, BUT AT NO ADDITIONAL COST TO THE DEPARTMENT.

DRIVEWAY EXTENSION DETAILS

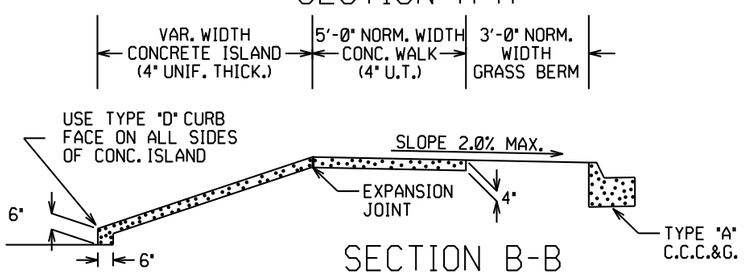


DRIVEWAY VERTICAL ALIGNMENT DETAILS

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



SECTION A-A



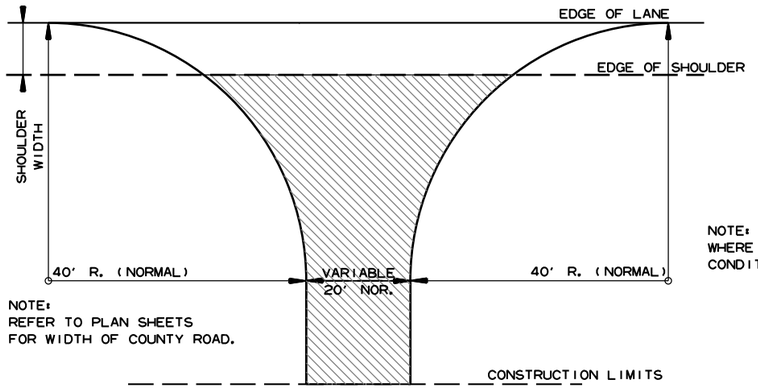
SECTION B-B
CURBED ISLAND BEHIND WALK

DATE REV	DATE FILMED	DESCRIPTION
5-19-22		REVISED ISLAND NOTES
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

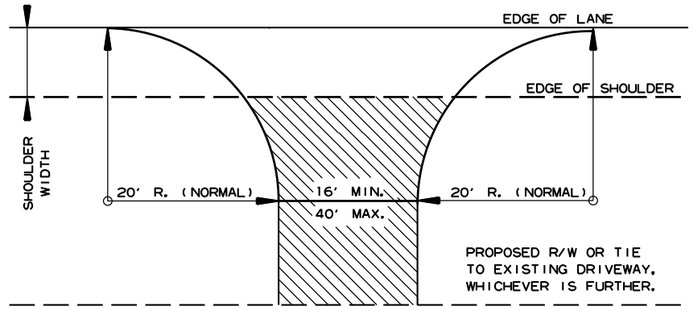


NOTE:
REFER TO PLAN SHEETS
FOR WIDTH OF COUNTY ROAD.

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

ACHM SURFACE COURSE (1/2")
(220 LBS. PER SQ. YD.) AND
AGGREGATE BASE COURSE (CLASS 7)
7" COMP. DEPTH, UNLESS OTHERWISE
SPECIFIED IN PLANS.

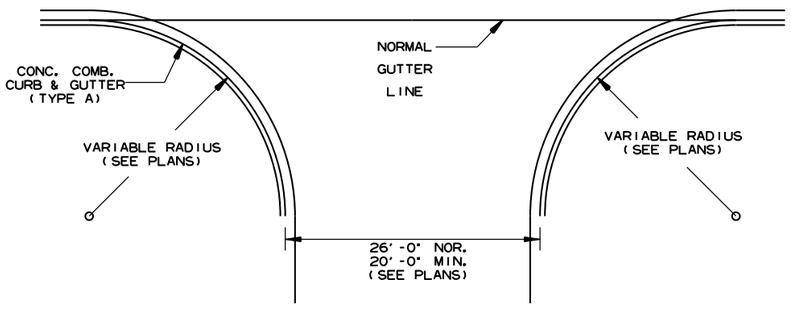
DETAIL FOR COUNTY ROAD TURNOUTS OPEN SHOULDER SECTION



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

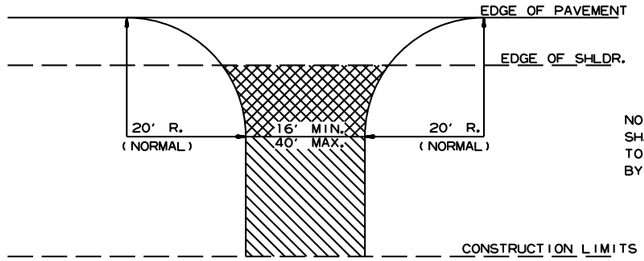
ACHM SURFACE COURSE (1/2")
(220 LBS. PER SQ. YD.) AND
AGGREGATE BASE COURSE (CLASS 7)
7" COMP. DEPTH IF ASPHALT OR
GRAVEL DRIVE EXISTING; OR 6"
CONCRETE IF CONCRETE DRIVE
EXISTING.

DETAIL FOR DRIVEWAY TURNOUTS OPEN SHOULDER SECTION (ARTERIALS)



NOTE:
PAVEMENT STRUCTURE FOR STATE HIGHWAYS, CITY STREETS,
& COUNTY ROADS TO BE SAME AS MAIN LANES.

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.

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

AGGREGATE BASE COURSE (CLASS 7)
9" COMP. DEPTH OR CONFORM
TO EXISTING DRIVEWAY

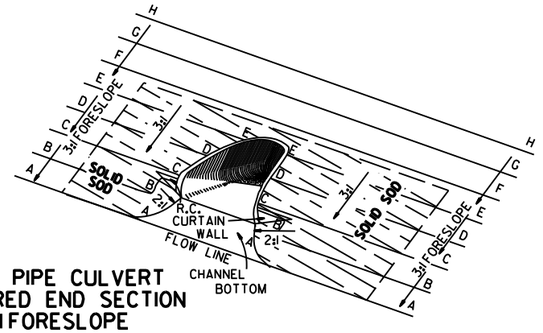
DETAIL FOR DRIVEWAY TURNOUTS (COLLECTORS)

DATE REV	DATE FILMED	DESCRIPTION
5-19-22		ISSUED

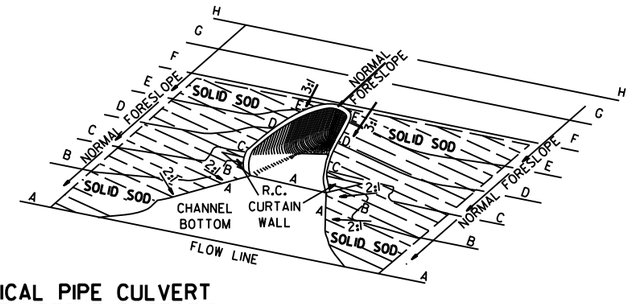
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DRIVEWAYS & STREET TURNOUTS

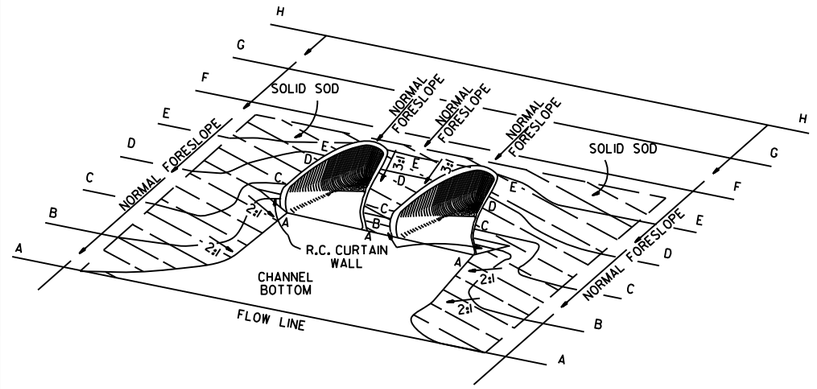
STANDARD DRAWING DR-2



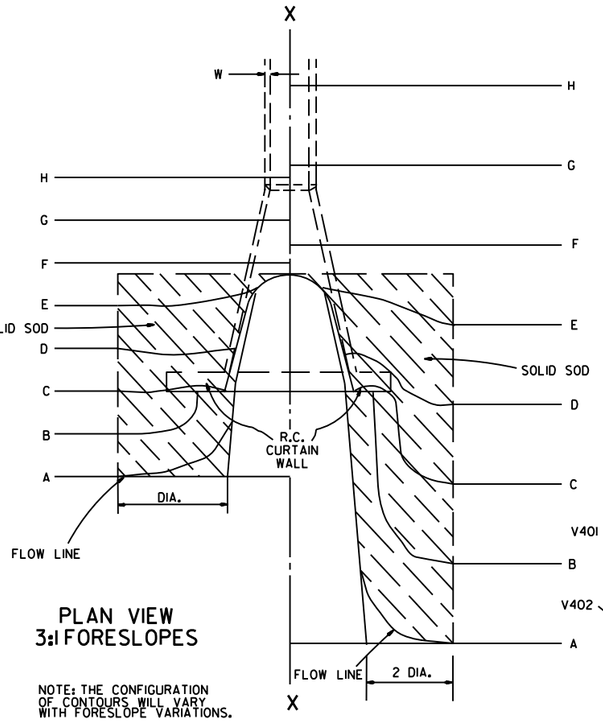
TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& 3:1 FORESLOPE



TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& FLATTENED ADJACENT SLOPES



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



PLAN VIEW
3:1 FORESLOPES

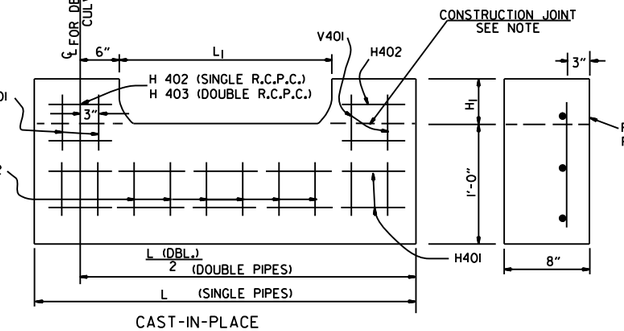
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW
FLATTENED FORESLOPES

R.C. CURTAIN WALL
DIMENSIONS & QUANTITIES

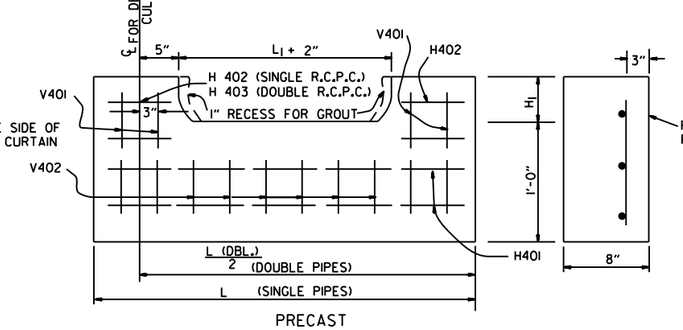
PIPE DIA.	H_1	L_1	L	L (DBL.)/2	SINGLE R.C.P.C. CONC. CU. YDS.	SINGLE R.C.P.C. REINF. STEEL LBS.	DOUBLE R.C.P.C. CONC. CU. YDS.	DOUBLE R.C.P.C. REINF. STEEL LBS.
18"	1'-11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	39.0	0.67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



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

REINFORCING STEEL SCHEDULE

PIPE DIA.	SINGLE R.C. PIPE CULVERT H401 L	NO.	H402 L	NO.	V401 L	NO.	V402 L	NO.	DOUBLE R.C. PIPE CULVERT H401 L	NO.	H402 L	NO.	H403 L	NO.	V401 L	NO.	V402 L	NO.
18"	7'-8"	2	1'-11½"	4	1'-7½"	8	8"	8	12'-2"	2	1'-11½"	4	8"	2	1'-7½"	10	8"	14
24"	9'-2"	2	2'-2"	4	1'-8½"	10	8"	9	14'-8"	2	2'-2"	4	8"	2	1'-8½"	12	8"	18
30"	10'-8"	2	2'-4½"	4	1'-11½"	10	8"	12	17'-8"	2	2'-4½"	4	8"	2	1'-11½"	14	8"	22
36"	12'-8"	2	2'-10"	6	2'-3"	12	8"	14	20'-8"	2	2'-10"	6	8"	3	2'-3"	14	8"	28
42"	15'-2"	2	3'-9½"	8	2'-9½"	16	8"	15	23'-8"	2	3'-9½"	8	8"	4	2'-9½"	18	8"	30
48"	16'-8"	2	4'-3"	10	3'-1"	18	8"	16	25'-8"	2	4'-3"	10	8"	5	3'-1"	20	8"	32
54"	18'-2"	2	4'-8½"	12	3'-5½"	20	8"	17	27'-8"	2	4'-9"	12	8"	6	3'-5½"	22	8"	34
60"	20'-2"	2	5'-5"	14	4'-0"	24	8"	18	30'-8"	2	5'-5"	14	8"	7	4'-0"	26	8"	36
72"	25'-2"	2	7'-4"	18	5'-1"	30	8"	20	36'-8"	2	7'-4"	18	8"	9	5'-1"	33	8"	40

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

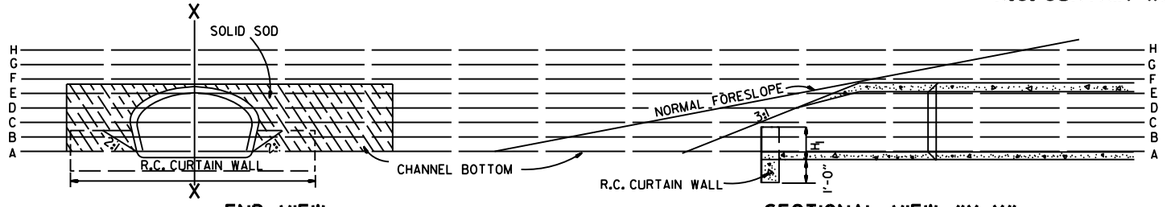
SOLID SODDING

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

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

GENERAL NOTES

1. A CAST-IN-PLACE OR PRECAST CURTAIN WALL MAY BE USED. PAYMENT FOR THE CURTAIN WALL SHALL BE CONSIDERED TO BE INCLUDED IN THE UNIT PRICE BID EACH FOR FLARED END SECTIONS OF THE SEVERAL SIZES, WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS INCLUDING REINFORCING STEEL AND CONCRETE: FOR FORMS, MIXING AND PLACING; FOR EXCAVATION AND BACKFILL, AND FOR ALL LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED 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

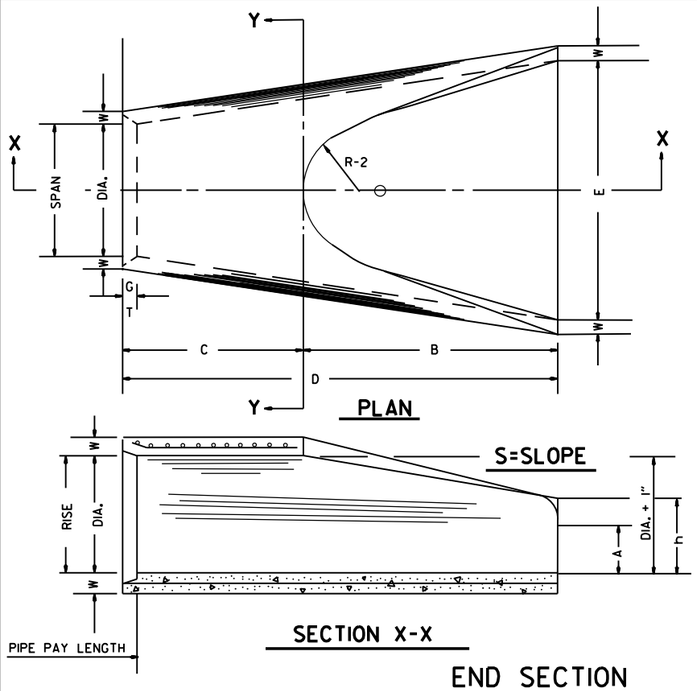
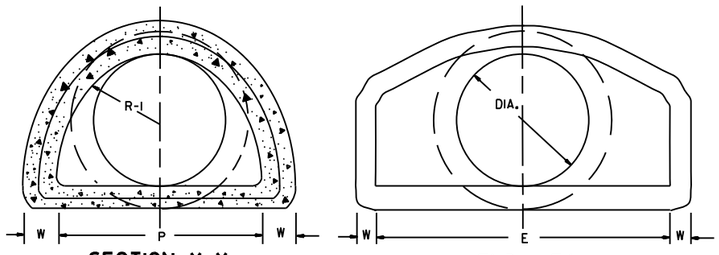


TABLE OF DIMENSIONS

DIA.	WALL	A	B	C	D	E	S	DIA. + 1"	P	R-1	R-2	G-T	WT.	h
18"	2½"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3:1	19"	29"	15½"	12"	2"	1000	1'-0½"
24"	3"	9½"	3'-7½"	2'-6"	6'-1½"	4'-0"	3:1	25"	33 3/16"	16 15/16"	14"	2½"	1600	1'-1½"
30"	3½"	1'-0"	4'-6"	1'-7 3/4"	6'-1 3/4"	5'-0"	3:1	31"	37"	18½"	15"	3¼"	1940	1'-4 5/8"
36"	4"	1'-3"	5'-3"	2'-10 3/4"	8'-1 3/4"	6'-0"	3:1	37"	47 13/16"	24 5/16"	20"	3½"	4100	1'-8"
42"	4½"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3:1	43"	53⅞"	27½"	22"	3½"	5380	2'-2½"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3:1	49"	56½"	28½"	22"	3½"	6550	2'-6"
54"	5½"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3:1	55"	65½"	33⅛"	24"	4"	8750	2'-10½"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3:1	61"	72½"	36 11/16"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3:1	73"	77 13/16"	38 15/16"	24"	5"	13250	4'-6"

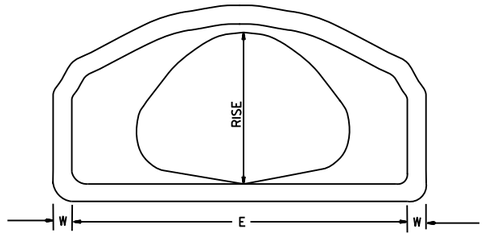


NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

ARCH PIPE

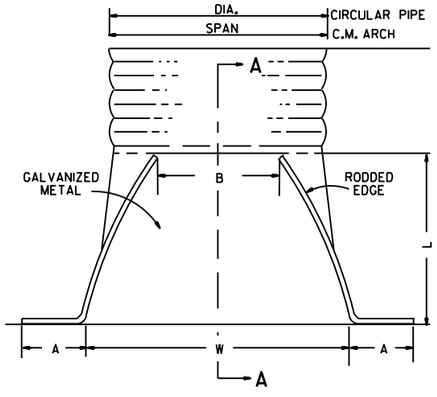
EQUIV. DIA.	• SPAN AASHTO M 206	• SPAN AHD NOMINAL	• RISE AASHTO M 206	• RISE AHD NOMINAL	W	A	B	C	D	E	P	R2	G-T	S
	INCHES													
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1½"	2½:1
18	22	22	13½	14	2½"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32⅛"	13"	2½"	2½:1
21	26	26	15½	16	2¾"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34⅛"	14"	2½"	2½:1
24	28½	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36 11/16"	15"	2½"	2½:1
30	36¼	36	22½	23	3½"	10"	3'-1"	3'-0½"	6'-1½"	6'-0"	47 11/16"	20"	3"	2½:1
36	43¾	44	26⅜	27	4"	10½"	4'-0"	2'-1½"	6'-1½"	6'-6"	54 5/16"	22"	3½"	2½:1
42	51⅛	51	31 5/16	31	4½"	11½"	4'-7"	1-10¼"	6'-5¼"	7'-2"	59½"	23"	3¾"	2½:1
48	58½	59	36	36	5"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	7'-10"	70 5/16"	24"	4¼"	2½:1
54	65	65	40	40	5½"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72 1/16"	24"	4¾"	2¼:1
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77 1/16"	24"	5"	2¼:1

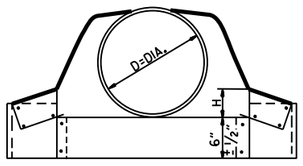
• THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.

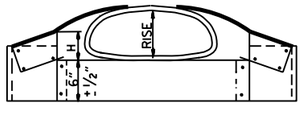


END VIEW
CONCRETE ARCH PIPE

END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS







CIRCULAR PIPE

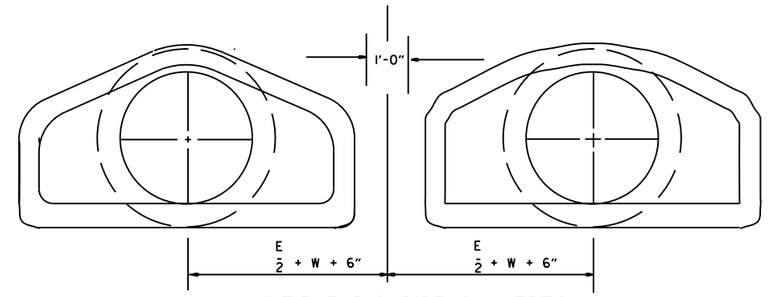
D. DIA.	GAUGE	A 1" ±	B. MAX.	H 1" ±	L 1½" ±	W 2" ±	S
		INCHES					
12	16	6	6	6	21	24	2½:1
15	16	7	8	6	26	30	2½:1
18	16	8	10	6	31	36	2½:1
21	16	9	12	6	36	42	2½:1
24	16	10	13	6	41	48	2½:1
30	14	12	16	8	51	60	2½:1
36	14	14	19	9	60	72	2½:1
42	12	16	22	11	69	84	2½:1
48	12	18	27	12	78	90	2½:1
54	12	18	30	12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

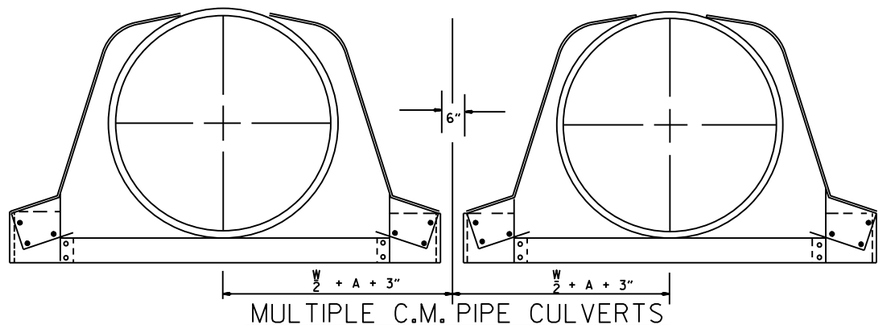
EQUIV. DIA.	SPAN	RISE	A 1" ±	B MAX.	H 1" ±	L 1½" ±	W 2" ±	S	GAUGE
	INCHES								
15"	17	13	7	9	6	19	30	2½:1	16
18"	21	15	7	10	6	23	36	2½:1	16
21"	24	18	8	12	6	28	42	2½:1	16
24"	28	20	9	14	6	32	48	2½:1	16
30"	35	24	10	16	6	39	60	2½:1	14
36"	42	29	12	18	8	46	75	2½:1	14
42"	49	33	13	21	9	53	85	2½:1	12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

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

END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS



MULTIPLE R.C. PIPE CULVERTS



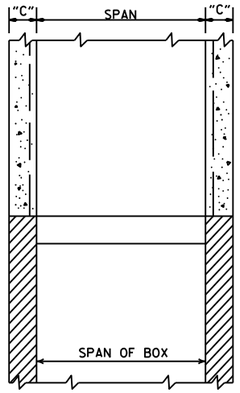
MULTIPLE C.M. PIPE CULVERTS

DATE	REVISION	BY	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

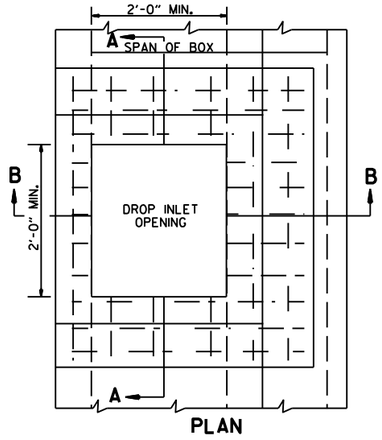
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FLARED END SECTION

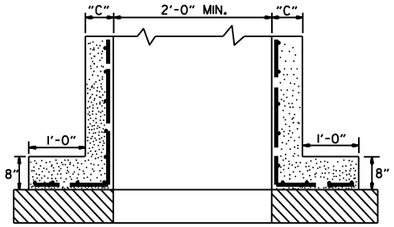
STANDARD DRAWING FES-2



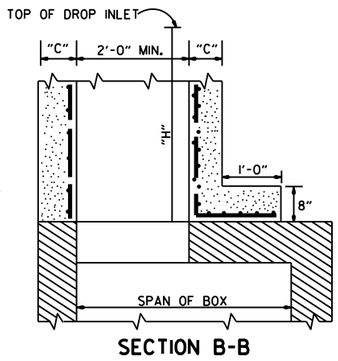
SECTION B-B



PLAN

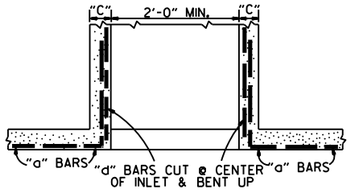


SECTION A-A

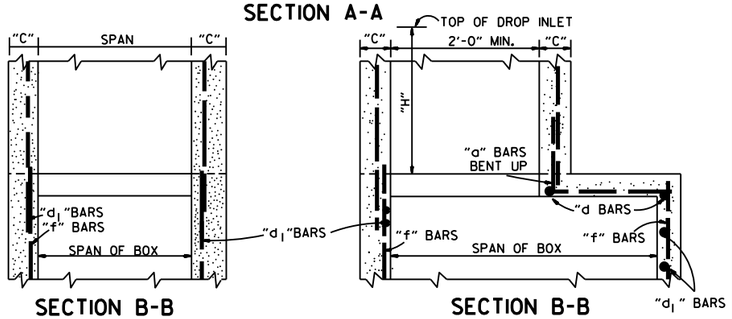


SECTION B-B

METHOD OF CONSTRUCTING DROP INLET ON EXISTING R.C. BOX CULVERT



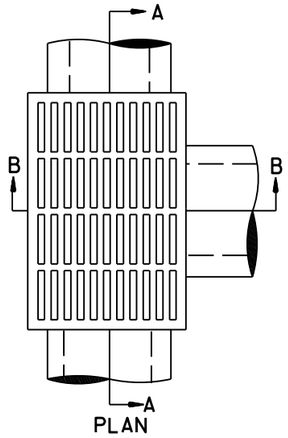
SECTION A-A



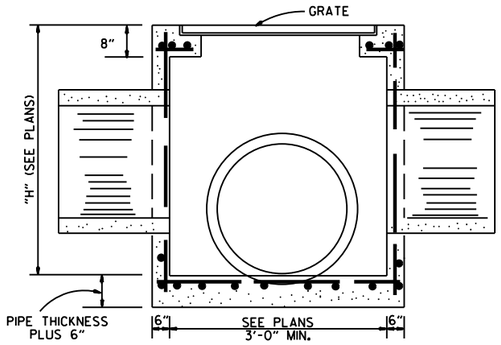
SECTION B-B SECTION B-B

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.

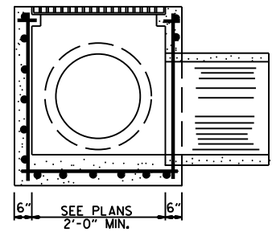


PLAN



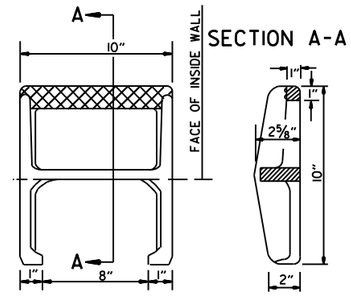
SECTION A-A

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)



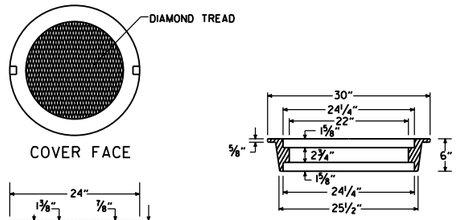
SECTION A-A

APPROX. WEIGHT = 11 LBS. (CAST IRON)

PLAN

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

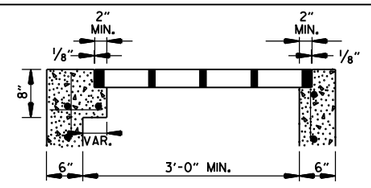
DETAIL OF STEP FOR DROP INLET



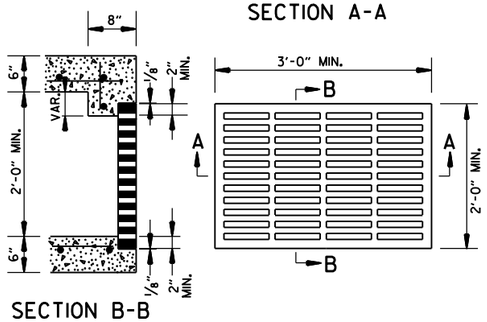
COVER SECTION RING SECTION

APPROXIMATE TOTAL WEIGHT = 333 LBS.

HEAVY DUTY RING & COVER



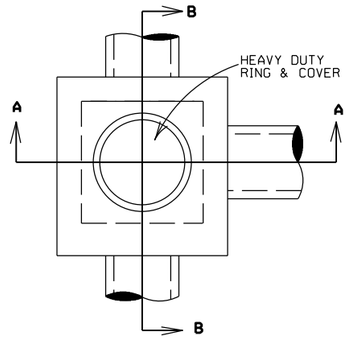
SECTION A-A



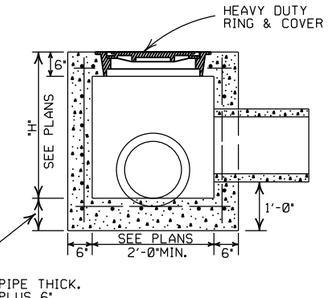
SECTION B-B

APPROXIMATE MINIMUM WATERWAY OPENING = 260 SQ. IN.

GRATE FOR TYPE E DROP INLET

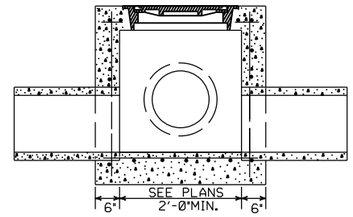


PLAN



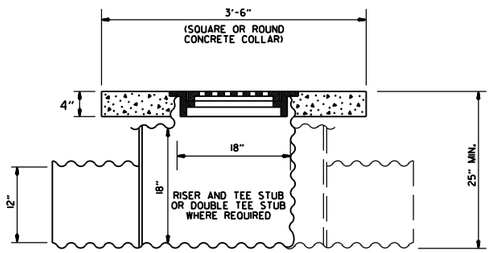
SECTION A-A

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.

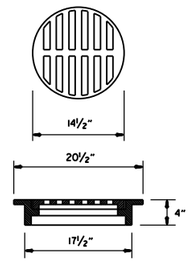


SECTION B-B

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	

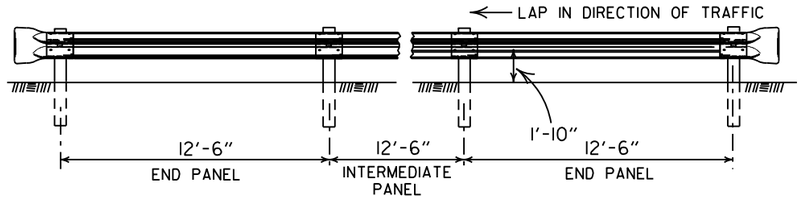
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS & JUNCTION BOXES

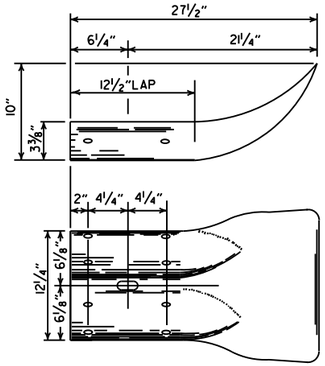
STANDARD DRAWING FPC-9



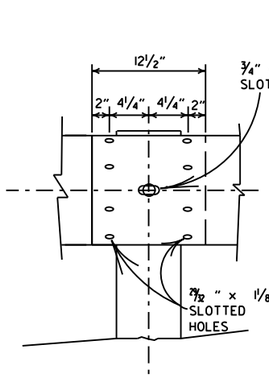
PLAN



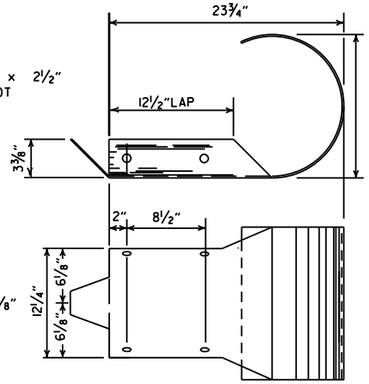
ELEVATION



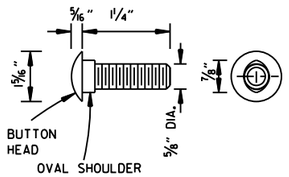
TERMINAL SECTION



RAIL SPLICE

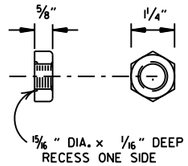


TERMINAL SECTION

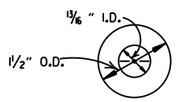


SPLICE BOLT

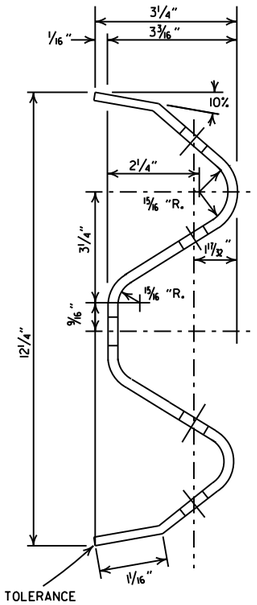
NOTE: POST BOLT SAME EXCEPT LENGTH.



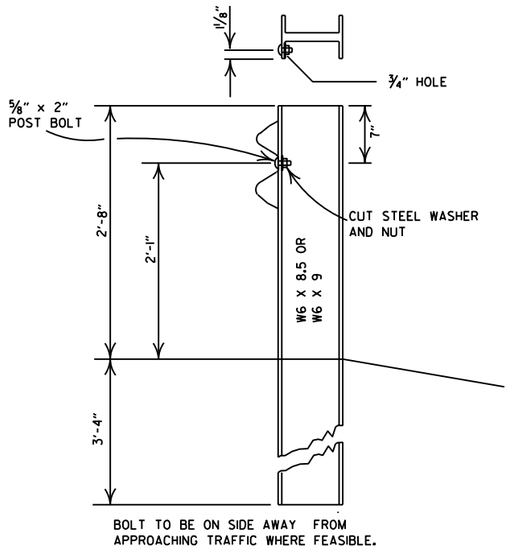
NUT



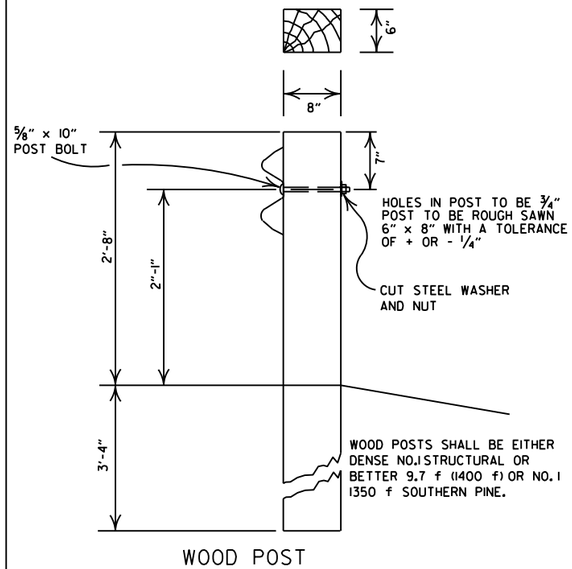
CUT STEEL WASHER



SECTION THRU RAIL



STEEL POST



WOOD POST

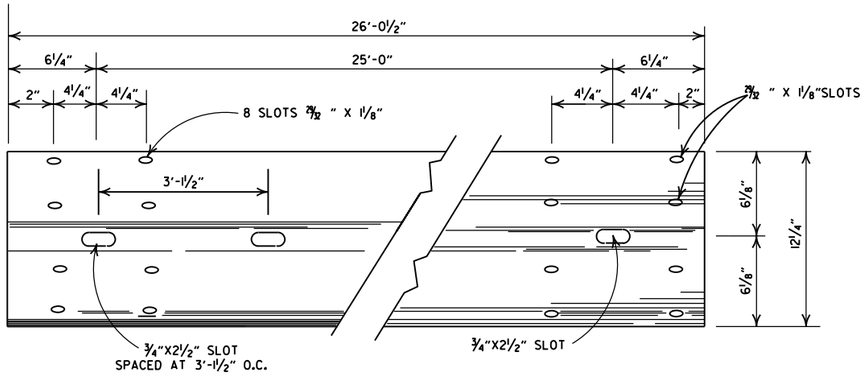
DETAILS OF POST CONNECTIONS

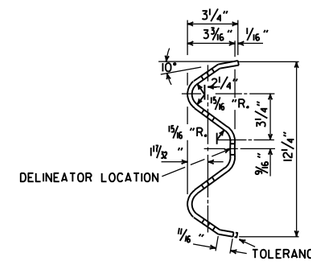
DATE	REVISION	FILMED
11-07-19	RENUMBERED AND RENAMED	
11-16-17	REVISED GUARDRAIL HEIGHT	
07-14-10	RAISED HEIGHT OF GUARDRAIL 1"	
08-22-02	REVISED DIMENSION ON STEEL POST	
11-16-01	REVISED STEEL AND WOOD POST	
08-12-98	REMOVED CONCRETE POST	
10-18-96	CHANGED WOOD POST NOTE	10-18-96
06-02-94	ADDED ALTERNATE STEEL POST SIZE	
08-05-93	REVISED STEEL POSTS SIZE	8-5-93
08-15-91	DELETE STEEL PLATE WASHER & ADDED TYPE C TO TITLE	8-15-91
10-30-87	REMOVED DET. PLCMNT. ON HWY.	555-11-20-87
01-04-83	GRADE FOR WOOD POSTS	679-1-4-83
10-01-77	HARDENED WASHER	922-10-1-72
10-02-72	REVISED & REDRAWN	521-10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS (TYPE C) STREET / ROAD BARRICADE OR TEMPORARY INSTALLATION

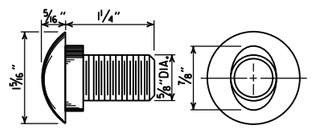
STANDARD DRAWING GR-5



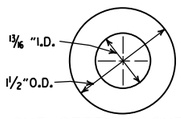


DETAILS OF W-BEAM GUARDRAIL

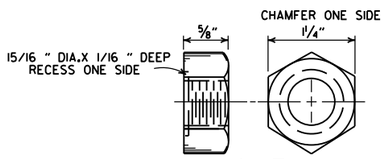
RAIL SECTION OF CLOSELY SIMILAR DIMENSIONS AND COMPARABLE STRENGTH MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.



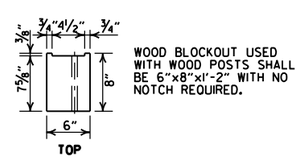
SPLICE BOLT
POST BOLT - SAME EXCEPT LENGTH



CUT STEEL WASHER

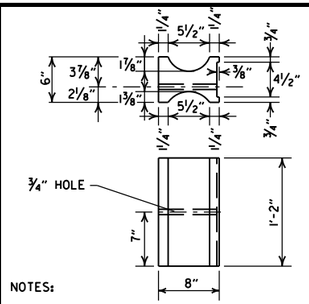


NUT



WOOD BLOCKOUT USED WITH WOOD POSTS SHALL BE 6"x8"x1'-2" WITH NO NOTCH REQUIRED.

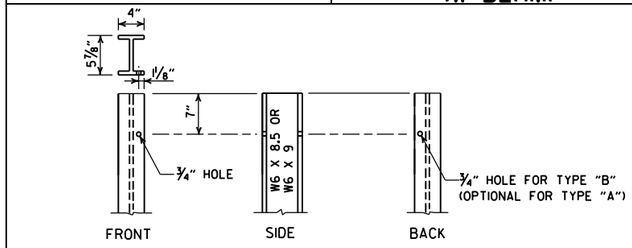
WOOD BLOCKOUT (W-BEAM)



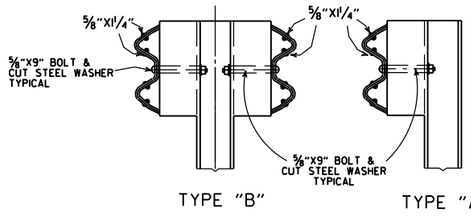
NOTES:

1. SIMILAR SHAPED PLASTIC BLOCKOUTS MAY BE USED AS LONG AS THEY MEET REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
2. DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCES.

PLASTIC BLOCKOUT (W-BEAM)



STEEL POST



DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)

-GENERAL NOTES-

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN ¾" BEYOND IT.

WHERE W-BEAM GUARDRAIL CONTINUES, THE INTERMEDIATE SECTIONS SHALL HAVE A POST SPACING OF 6'-3" UNLESS OTHERWISE NOTED.

W-BEAM GUARDRAIL REPRESENTING INTERMEDIATE SECTIONS WILL BE MEASURED ALONG THE ROADWAY FACE FROM CENTERLINE OF POST TO CENTERLINE OF POST.

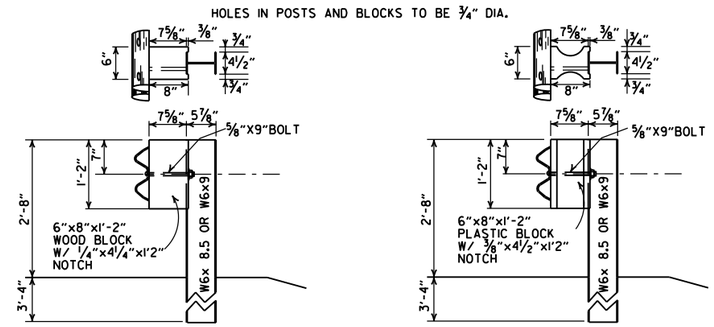
USE W-BEAM GUARDRAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB. FOR EXTENSIONS OR MODIFICATION OF EXISTING GUARDRAIL, W-BEAM GUARDRAIL COMPONENTS OF THE SAME TYPE AS THOSE EXISTING SHALL BE USED.

ANY BACKFILLING UNDER OR AROUND POST SHALL BE DAMP SAND THOROUGHLY TAMPED IN PLACE.

WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7 f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

CONTRACTOR SHALL HAVE THE OPTION OF USING WOOD BLOCKOUTS FOR W-BEAM GUARDRAIL OR PLASTIC BLOCKOUTS, AS LONG AS BLOCKOUT USED MEETS REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) FOR W-BEAM GUARDRAIL.

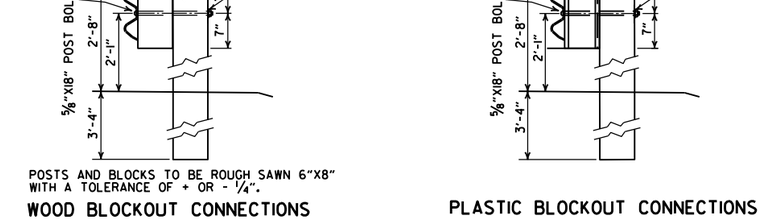
DELINEATORS SHALL BE MOUNTED AT 37.5' SPACING ON THE FRONT FACE OF THE GUARDRAIL. SPACING MAY BE REDUCED IN CURVES, AS DIRECTED BY THE ENGINEER. COLOR SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR DELINEATORS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID PER LIN. FT. FOR GUARDRAIL.



WOOD BLOCKOUT CONNECTIONS

PLASTIC BLOCKOUT CONNECTIONS

DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)



POSTS AND BLOCKS TO BE ROUGH SAWN 6"X8" WITH A TOLERANCE OF + OR - ¼".

WOOD BLOCKOUT CONNECTIONS

PLASTIC BLOCKOUT CONNECTIONS

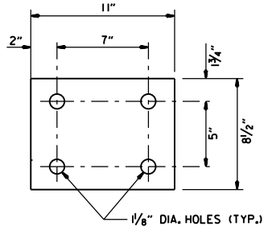
DETAILS OF WOOD LINE POST CONNECTIONS (W-BEAM)

DATE	REVISION	FILMED
05-19-22	REVISED GENERAL NOTES, ADDED DELINEATOR LOCATION.	
11-07-19	RENUMBERED AND RENAMED	
11-16-17	REVISED GENERAL NOTES AND RAISED GUARDRAIL HEIGHT 3"	
07-14-10	RAISED HEIGHT OF GUARDRAIL 1"	
10-15-09	ADDED REFERENCE TO MASH	
04-10-03	REVISED GENERAL NOTES	
08-22-02	REVISED DIMENSION ON WOOD & PLASTIC BLOCKOUT CONNECTIONS & STEEL POST	
11-16-01	REVISED WOOD BLOCKOUT & DETAILS OF WOOD LINE POST CONNECTIONS	
03-30-00	REMOVED GUARDRAIL AT BRIDGE ENDS	
01-12-00	ADDED PLASTIC BLOCKOUT	
08-12-98	REV. BLOCKOUTS TO WOOD, DELETED CONC. POST & REV. GENERAL NOTE, DELETED DET. OF GUARDRAIL REPLACE. BEHIND CURB & DET. OF POST PLACE. IN SOLID ROCK, & ADDED DETAILS OF STEEL LINE POST CONN. REMOVED BACK-UP PLATE, REVISED HOLES IN STEEL POLES	
04-03-97	REMOVED "LAP IN DIRECTION OF TRAFFIC" NOTE & PLACED ARROWS ON WASHERS	
10-18-96	REVISED WOOD POST NOTE	
06-02-94	ADDED ALT. STEEL POST SIZE	
08-05-93	REVISED STEEL POST SIZE	8-5-93
10-01-92	REDRAWN & REVISED	10-1-92
08-15-91	REVISED WASHER NOTE	8-15-91
08-02-90	REV. GEN. NOTE & DEPTH OF ANC. POST IN ROCK	8-2-90
07-15-88	REVISED SECTION 3 & GENERAL NOTES	
03-04-88	REV. ANCHOR POST, ELEV. NOTES & POST IN ROCK	780-3-4-88
10-30-87	REVISED WOOD LINE POST DETAIL	546-10-30-87
10-09-87	REDRAWN & REVISED	802-10-9-87

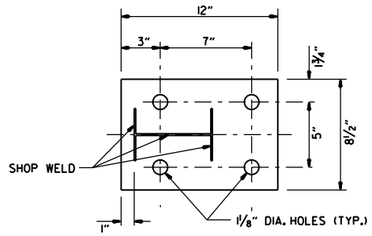
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

STANDARD DRAWING GR-6

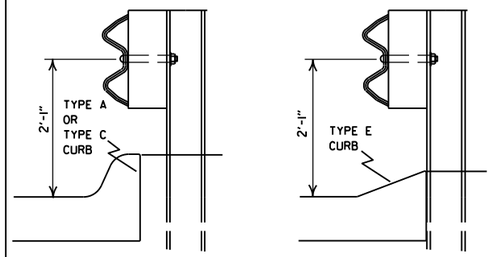


WASHER PLATE



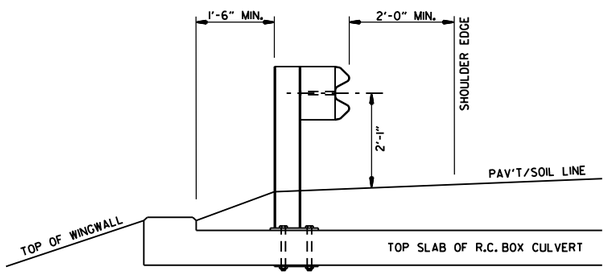
BASE PLATE

Note: Bolts, nuts, washers and plates shall be galvanized in accordance with Section 807 of the Standard Specifications.

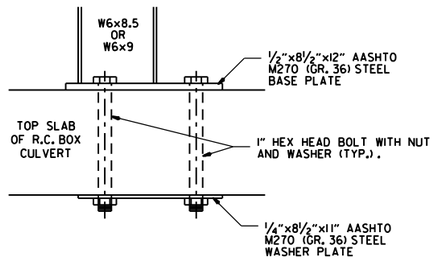


DETAIL OF GUARDRAIL PLACEMENT BEHIND CURB (W-BEAM)

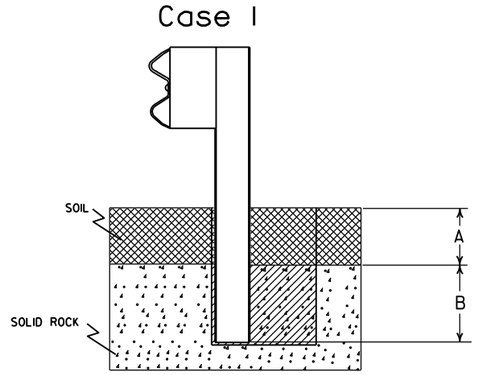
FOR DESIGN SPEEDS OF 50 MPH OR LESS ALL CURB FACES, AS SHOWN ON STD. DRWG. CG-1, MAY BE USED. FOR DESIGN SPEEDS OF 55 MPH OR MORE TYPE "E" CURB FACE SHALL BE USED.

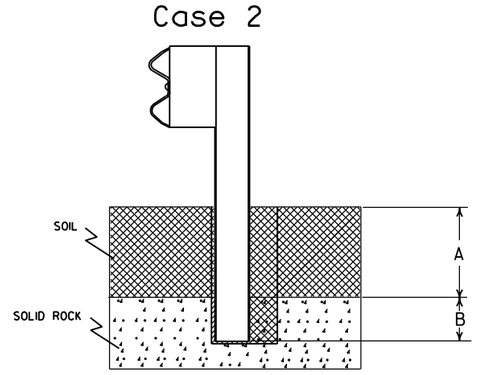


SECTION A-A



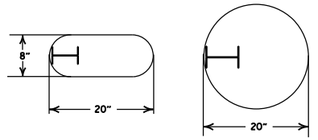
DETAIL OF CONNECTION

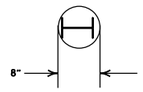




Plan View Steel Posts

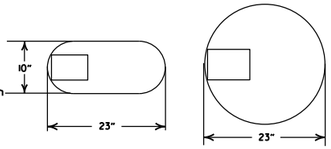
Either hole configuration acceptable

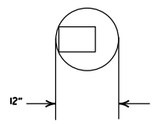




Plan View Wood Posts

Either hole configuration acceptable





Notes: For overlying soil depths (A) ranging from 0 to 18", the depth of required drilling (B) is equal to 24".

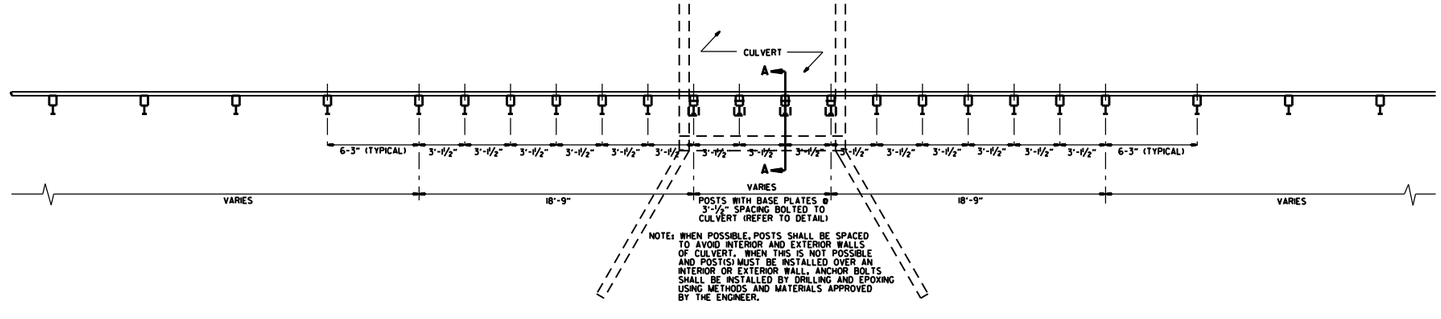
Zone A:
Backfill according to Section 617.03(a).

Zone B:
Backfill hole in 6" lifts with material meeting the requirements of Section 802.02(c) - Alternate gradation. Compact to 95% maximum dry density per ASTM D-698.

Notes: For overlying soil depths (A) ranging from 18" to 44", the depth of required drilling (B) is equal to either 12" or 44" minus the depth of soil whichever is less.

Zone A & B:
Backfill according to Section 617.03(a).

DETAIL OF POST PLACEMENT IN SOLID ROCK (W-BEAM)



PLAN LAYOUT OF TYPE A GUARDRAIL AT LOW-FILL CULVERTS

NOTE: THIS DETAIL IS TO BE USED ONLY WHEN THE COVER OVER THE CULVERT DOES NOT PERMIT FULL EMBEDMENT OF GUARDRAIL POSTS AS SHOWN ON STD. DWG. GR-6.

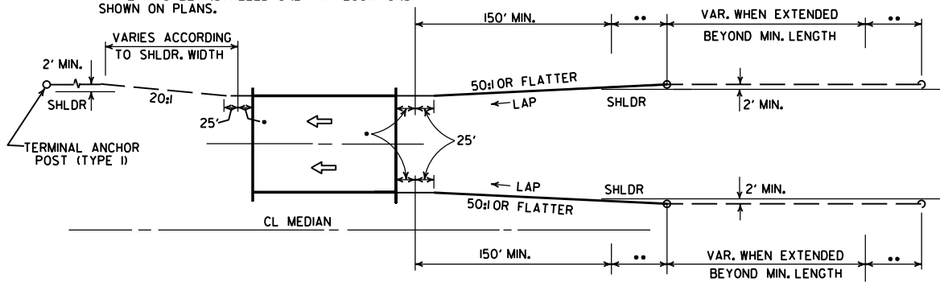
DATE	REVISION	FILMED
11-07-19	RENUMBERED, RENAMED, REVISED REFERENCE	
11-16-17	REVISED GUARDRAIL HEIGHT	
07-14-10	RAISED HEIGHT OF GUARDRAIL 1"	
04-12-07	REVISED DETAIL OF GUARDRAIL PLACEMENT BEHIND CURB	
11-10-05	ADDED GUARDRAIL PLACEMENT BEHIND CURB; REVISED DETAIL OF CONNECTION	
11-18-04	REVISED POST PLACEMENT IN ROCK & CULVERT CONNECTION DETAILS. ADDED DETAIL FOR GUARDRAIL PLACEMENT AT LOW-FILL CULVERTS	
03-30-00	REMOVED CONCRETE INSERT ANCHOR	
08-12-98	CHANGED STEEL SPACER BLOCK TO WOOD BLOCKOUT, ADDED DET. OF GUARDRAIL CONNECTION TO R.C. BOX CULV'T., DELETED DET. OF STEEL LINE POST CONN. & ADDED DET. OF GUARDRAIL PLACE. BEHIND CURB & DET. OF POSTPLACE. IN SOLID ROCK	
04-03-96	PLACED ARROWS AT CUT STEEL WASHERS	4-3-96
10-18-96	REV. ASTM REF. TO AASHTO	
11-22-95	ADDED OPTIONAL HOLES	
06-02-94	REVISED ALTERNATE POST SIZE	
08-05-93	REVISED STEEL POST SIZE	
10-01-92	REDRAWN & REVISED	10-1-92
08-02-90	DEL. WASHER ON ANCHOR ASSEMBLY	8-2-90
07-15-88	CONFORMED TO 1988 SPECS	
03-04-88	REVISED ANCHOR NOTE	
10-30-87	REVISED ANCHOR ASSEMBLY	712-10-30-87
10-30-87	REVISED PLACEMENT BEHIND CURB	547-10-30-87
10-09-87	REDRAWN & REVISED	803-10-9-87

ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

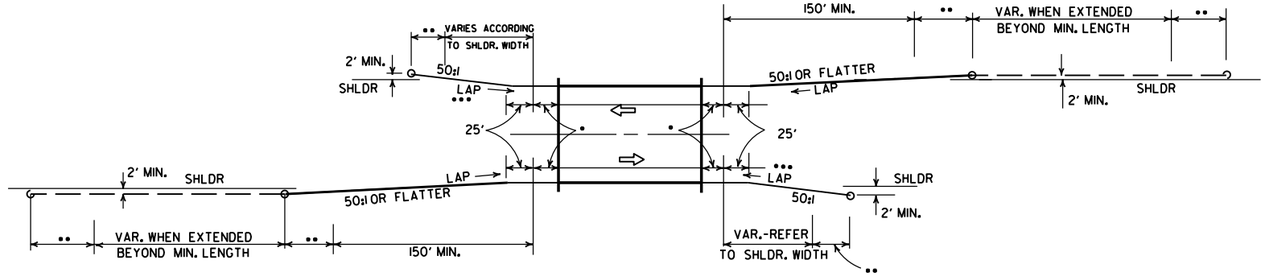
STANDARD DRAWING GR-7

NOTE: GUARDRAIL WITH GUARDRAIL TERMINAL (TYPE 1) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS.



ONE-WAY TRAFFIC

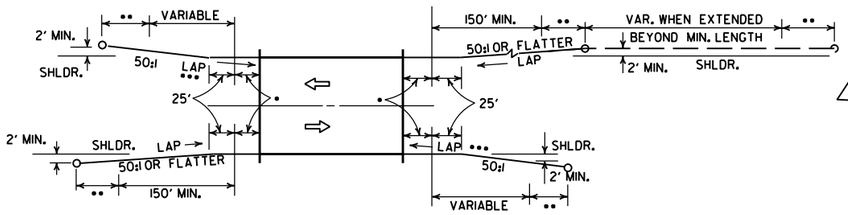
••• LAP OF GUARDRAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200'. CHANGE TO LAP IN DIRECTION OF TRAVEL.



TWO-WAY TRAFFIC

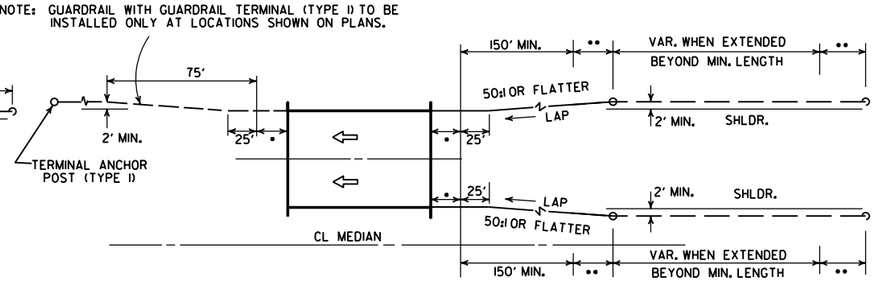
METHODS OF INSTALLATION OF GUARDRAIL AT LESS THAN FULL SHOULDER WIDTH BRIDGES USING GUARDRAIL TERMINAL (TYPE 2)

••• LAP OF GUARDRAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200'. CHANGE TO LAP IN DIRECTION OF TRAVEL.



TWO-WAY TRAFFIC

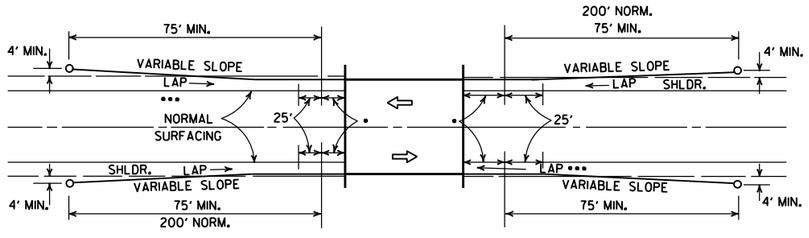
NOTE: GUARDRAIL WITH GUARDRAIL TERMINAL (TYPE 1) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS.



ONE-WAY TRAFFIC

METHOD OF INSTALLATION OF GUARDRAIL AT FULL SHOULDER WIDTH BRIDGES USING GUARDRAIL TERMINAL (TYPE 2)

••• LAP OF GUARDRAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200'. CHANGE TO LAP IN DIRECTION OF TRAVEL.



METHOD OF INSTALLATION OF GUARDRAIL USING GUARDRAIL TERMINAL (TYPE 1) (FULL SHOULDER WIDTH OR LESS BRIDGES)

LEGEND

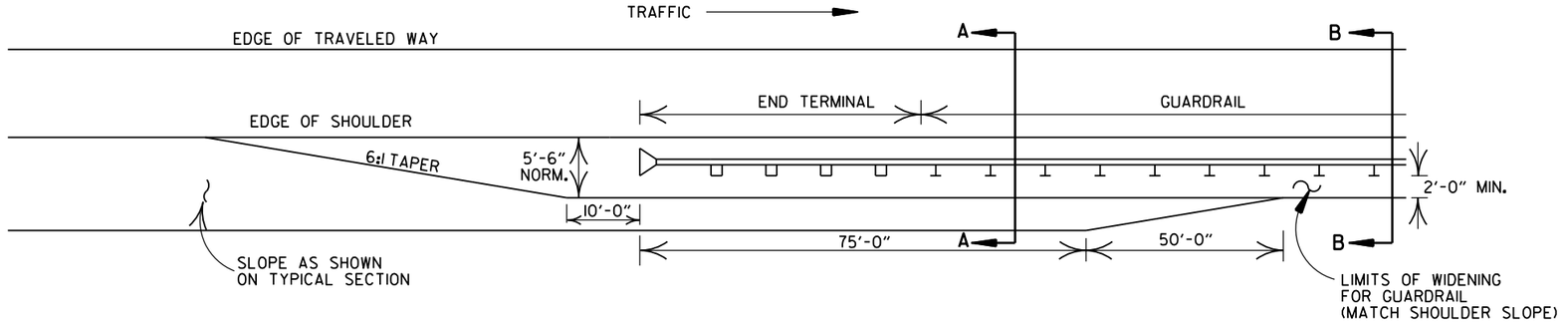
- • THRIE BEAM GUARDRAIL TERMINAL
- •• GUARDRAIL TERMINAL (TYPE 2)

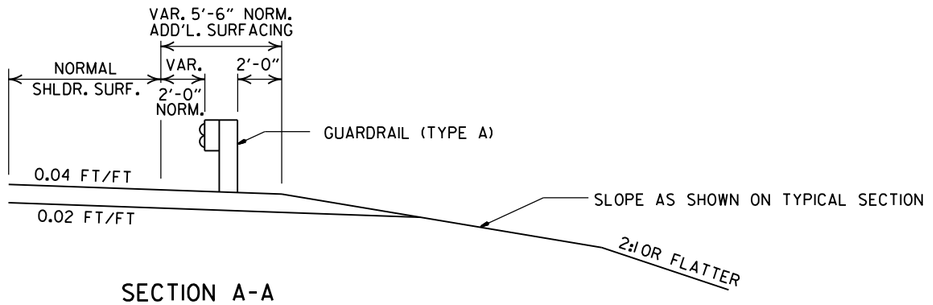
DATE	REVISION	DATE FILM
11-07-19	RENUMBERED AND RENAMED	
4-17-08	REVISED LAYOUTS	
11-10-05	REMOVED GUARDRAIL NOTES AND DETAILS	
11-16-01	DELETED NOTE-METHOD OF INSTALLATION OF GUARDRAIL USING GUARDRAIL TERM. (TY. 1)	
1-12-00	ADDED CONSTRUCTION NOTE	1-12-00
6-26-97	REVISED LAYOUT	
10-1-92	REDRAWN & REVISED	10-1-92
	ADDED NOTE	
10-9-87	REDRAWN & REVISED	

ARKANSAS STATE HIGHWAY COMMISSION

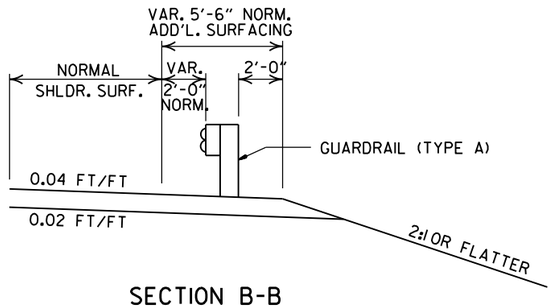
GUARDRAIL DETAILS

STANDARD DRAWING GR-8



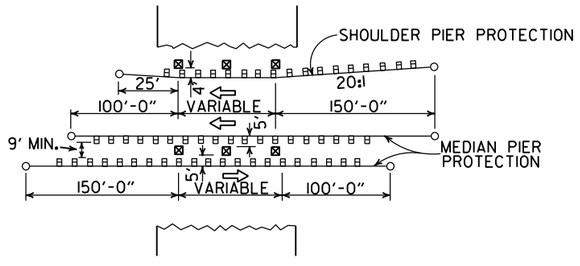


SECTION A-A



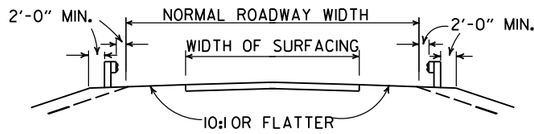
SECTION B-B

DETAILS OF WIDENING FOR GUARDRAIL

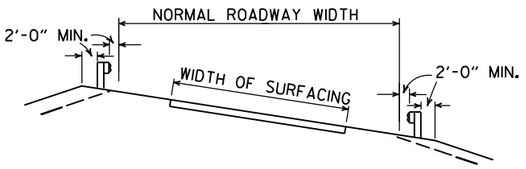


METHOD OF INSTALLATION OF GUARDRAIL AT FIXED OBSTACLE

NOTE: NORMAL SECTION TO BE WIDENED APPROX. 5'-6" EACH SIDE TO SUPPORT GUARDRAIL.



SECTION ON TANGENT



SECTION ON CURVE

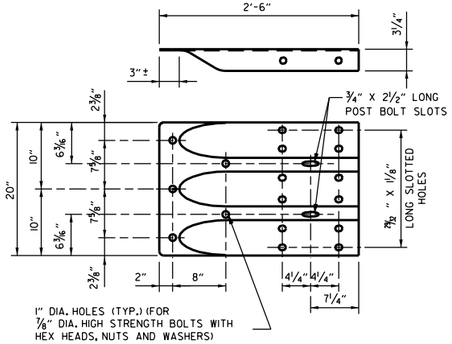
DETAILS SHOWING POSITION OF GUARDRAIL ON HIGHWAY

DATE	REVISION	DATE FILM
11-07-19	RENUMBERED AND RENAMED	
4-17-08	MINOR REVISION	
11-10-05	DRAWN	

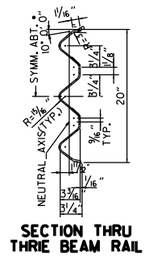
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

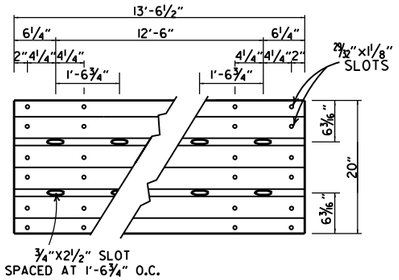
STANDARD DRAWING GR-9



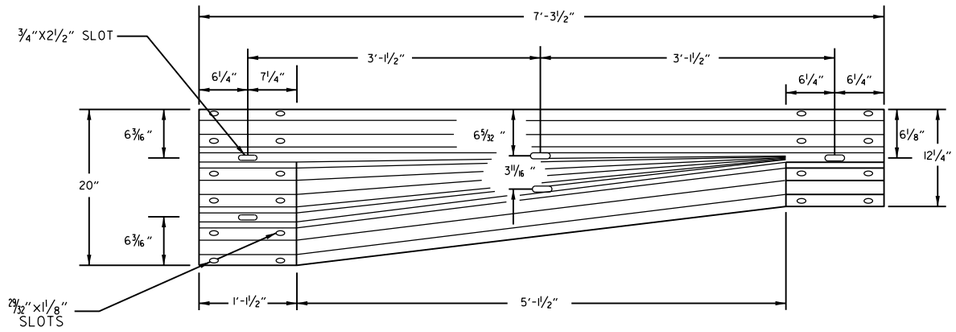
SPECIAL END SHOE



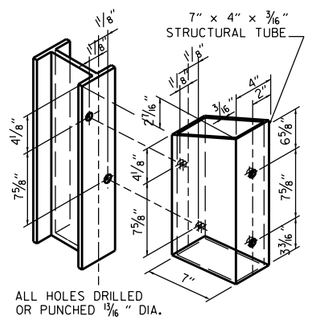
SECTION THRU THRIE BEAM RAIL



THRIE BEAM RAIL

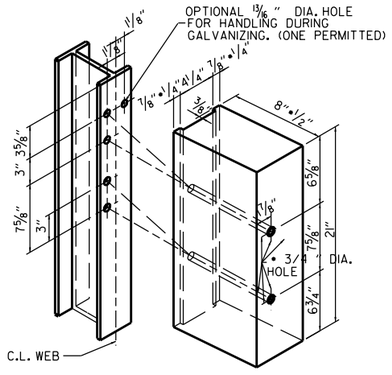


TRANSITION SECTION



ATTACH BLOCKOUT TO POST USING ⅝" DIA. HEX HEAD BOLTS WITH 1½" O.D. CUT STEEL WASHERS AND NUT.

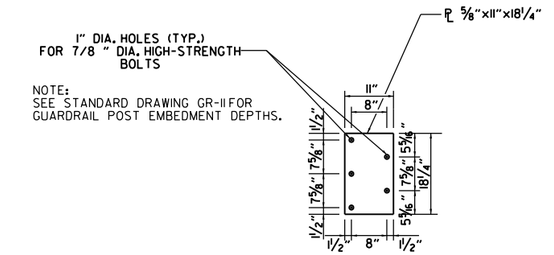
STRUCTURAL STEEL TUBING BLOCKOUT DETAIL



ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED

HOLE PUNCHING DETAIL FOR STEEL POST & WOOD OR PLASTIC BLOCKOUTS

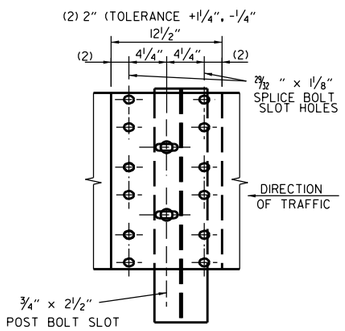
NOTE: BLOCKS SHALL BE THE SAME TYPE THROUGHOUT THE PROJECT LIMITS.



NOTE:
SEE STANDARD DRAWING GR-11 FOR GUARDRAIL POST EMBEDMENT DEPTHS.

CONNECTOR PLATE

CONNECTOR PLATE SHALL BE AASHTO M270, GR. 36 AND SHALL BE GALVANIZED AFTER FABRICATION. GALVANIZING SHALL CONFORM TO SUBSECTION 807.19 OF THE STANDARD SPECIFICATIONS. CONNECTOR PLATE TO BE BOLTED TO SPECIAL END SHOE USING ⅞" DIA. HIGH STRENGTH BOLTS, WITH THE HEADS PLACED ON THE TRAFFIC FACE. WASHERS SHALL BE USED UNDER THE HEAD AND NUT. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AND SHALL CONFORM TO SUBSECTION 807.06.



THRIE BEAM RAIL SPLICE AT POST

GENERAL NOTES:

THE THRIE BEAM RAIL, SPECIAL END SHOE, AND THE TRANSITION SECTION SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE. ZINC COATING SHALL BE TYPE 1.

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN 3"4" BEYOND IT.

ALL LAP SPLICES, INCLUDING SPECIAL END SHOES, SHALL BE MADE IN THE DIRECTION SHOWN ON STANDARD DRAWINGS GR-8 & GR-13.

REFER TO STD. DRWG. GR-11 FOR POST DETAILS.

USE THRIE BEAM GUARDRAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB.

THRIE BEAM POSTS SHALL BE SAME MATERIAL AS W-BEAM POSTS FOR ENTIRE JOB.

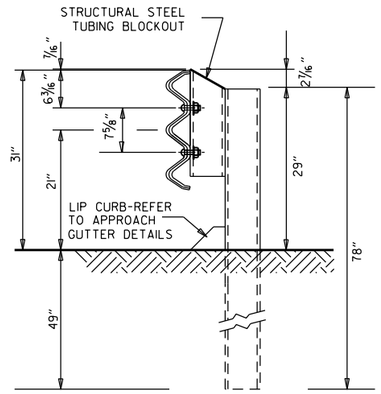
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7 f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	FILMED
11-07-19	RENAMED AND REVISED REFERENCES	
11-16-17	REVISED TRANSITION SECTION, GUARD RAIL HEIGHT, AND GENERAL NOTES; MOVED THRIE BEAM GUARD RAIL CONNECTIONS AT BRIDGES ENDS TO STD. DRWG. GR-12	
07-14-10	RAISED HEIGHT OF W-BEAM 1"	
11-29-07	ADDED PLASTIC BLOCKOUTS	
11-10-05	ADDED NOTE FOR ATTACHING STEEL BLOCKOUT	
11-18-04	REVISED GENERAL NOTES	
10-9-03	REVISED GENERAL NOTES	
04-10-03	REVISED GENERAL NOTES	
08-22-02	REVISED NOTE (2)	
06-29-00	MOVED DIMENSION LINES	
05-18-00	ADDED NOTE	
03-30-00	DRAWN & ISSUED	

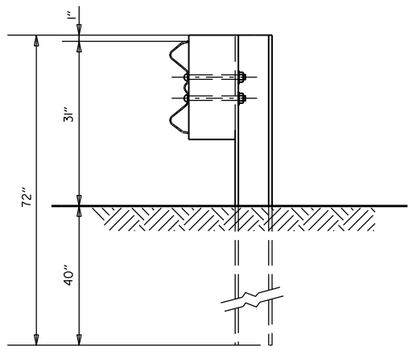
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

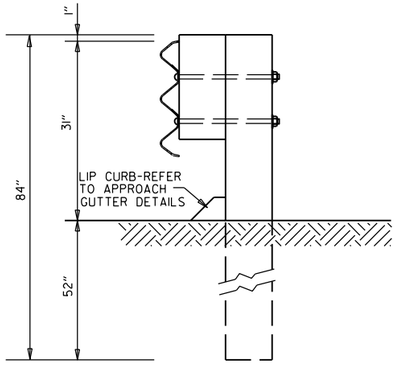
STANDARD DRAWING GR-10



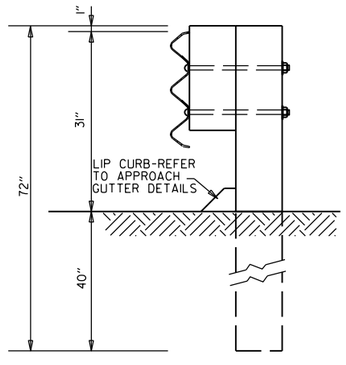
THRIE BEAM RAIL WITH STEEL TUBING BLOCKOUT
AND STEEL POST
POSTS 1-7



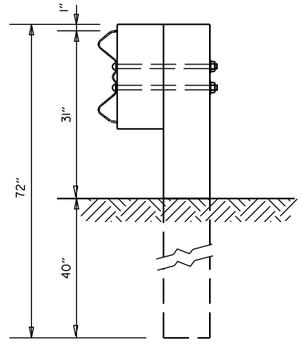
W-BEAM TO THRIE BEAM TRANSITION RAIL
WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST
POST 8



THRIE BEAM RAIL
WITH WOOD OR PLASTIC
BLOCKOUTS & WOOD POSTS
POSTS 1-6



THRIE BEAM RAIL
WITH WOOD OR PLASTIC
BLOCKOUT & WOOD POST
POST 7



W-BEAM TO THRIE BEAM
TRANSITION RAIL WITH WOOD OR
PLASTIC BLOCKOUT & WOOD POST
POST 8

GENERAL NOTES:

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

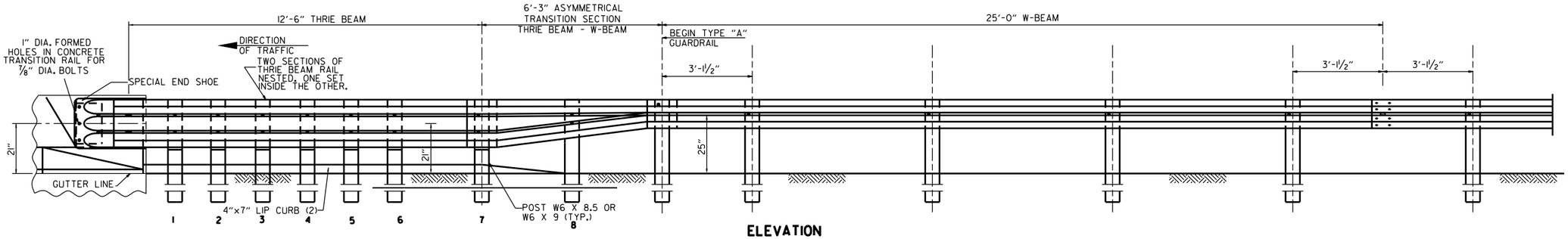
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	FILMED
11-07-19	RENAMED	
11-16-17	REVISED GUARDRAIL HEIGHT, CHANGED STD. DWG. NUMBER FROM GR-10A TO GR-11	
07-14-10	REVISED POST 8 DIMENSIONS	
11-29-07	ADDED PLASTIC BLOCKOUTS	
08-22-02	REVISED LIP CURB NOTE	
03-30-00	DRAWN & ISSUED	

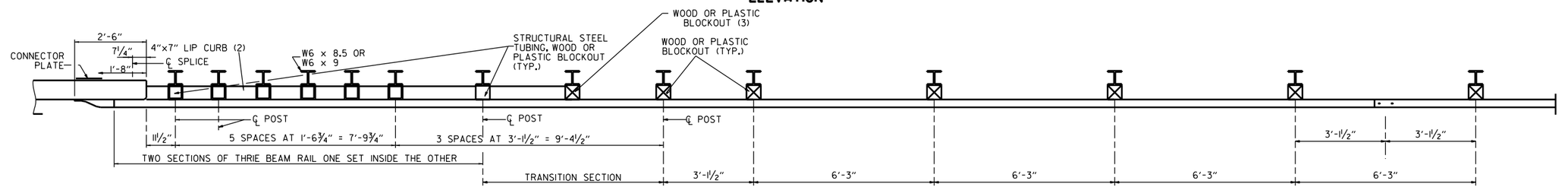
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

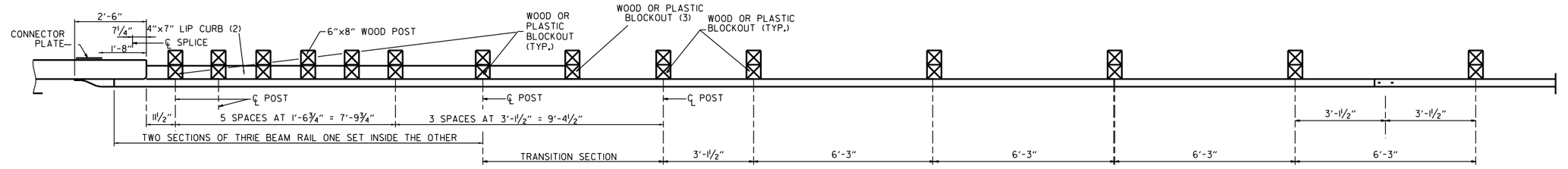
STANDARD DRAWING GR-11



ELEVATION



PLAN



PLAN

(1) VERIFY BOLT SPACING FROM RAIL TRANSITION PRODUCER.
(2) REFER TO APPROACH GUTTER DETAILS.
(3) LENGTH OF BLOCKOUT ON POST 8 TO BE MODIFIED TO FIT RAIL WIDTH.

THRIE BEAM GUARDRAIL CONNECTION AT BRIDGE ENDS

GENERAL NOTES:

THE THRIE BEAM RAIL, SPECIAL END SHOE, AND THE TRANSITION SECTION SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE. ZINC COATING SHALL BE TYPE I.

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN 3/4" BEYOND IT.

ALL LAP SPLICES, INCLUDING SPECIAL END SHOES, SHALL BE MADE IN THE DIRECTION SHOWN ON STANDARD DRAWINGS GR-8 & GR-13.

REFER TO STD. DRWG. GR-11 FOR POST DETAILS.

USE THRIE BEAM GUARDRAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB.

THRIE BEAM POSTS SHALL BE SAME MATERIAL AS W-BEAM POSTS FOR ENTIRE JOB.

POSTS SHALL NOT BE PLACED AT SPLICE LOCATIONS ALONG W-BEAM RAILS.

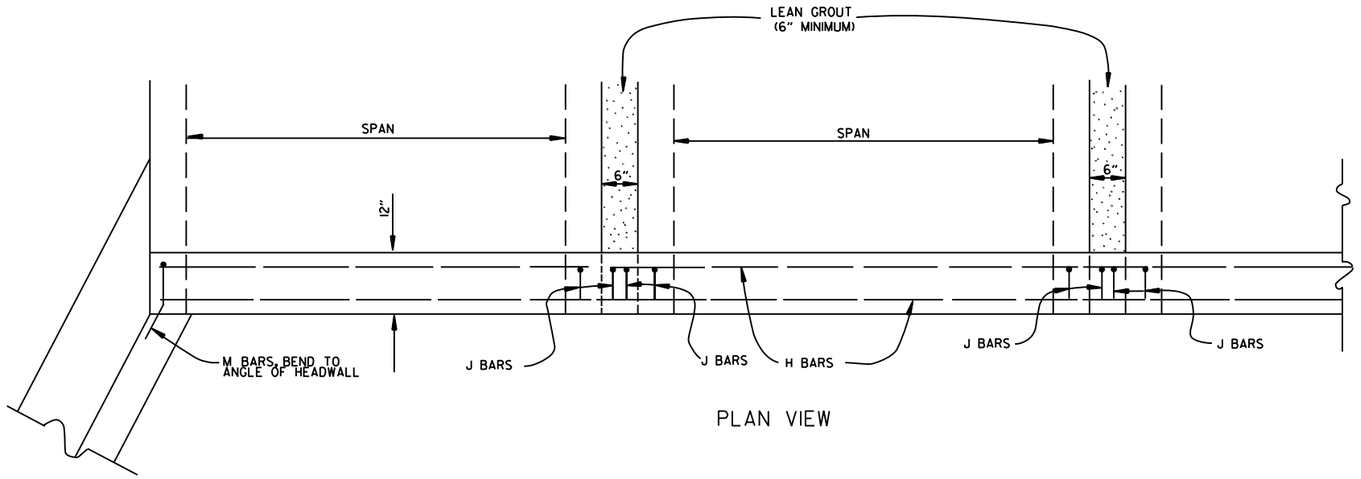
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	FILMED
05-14-20	REVISED NOTES	
11-07-19	RENAMED & REVISED REFERENCES	
11-16-17	RE-DRAWN FROM STD. DWG. GR-10 & ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

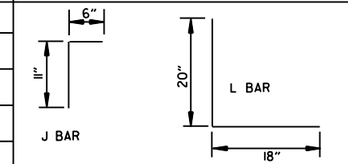
STANDARD DRAWING GR-12



PLAN VIEW

BAR LIST

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



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

GENERAL NOTES

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

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

ALL EXPOSED CORNERS TO HAVE 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.

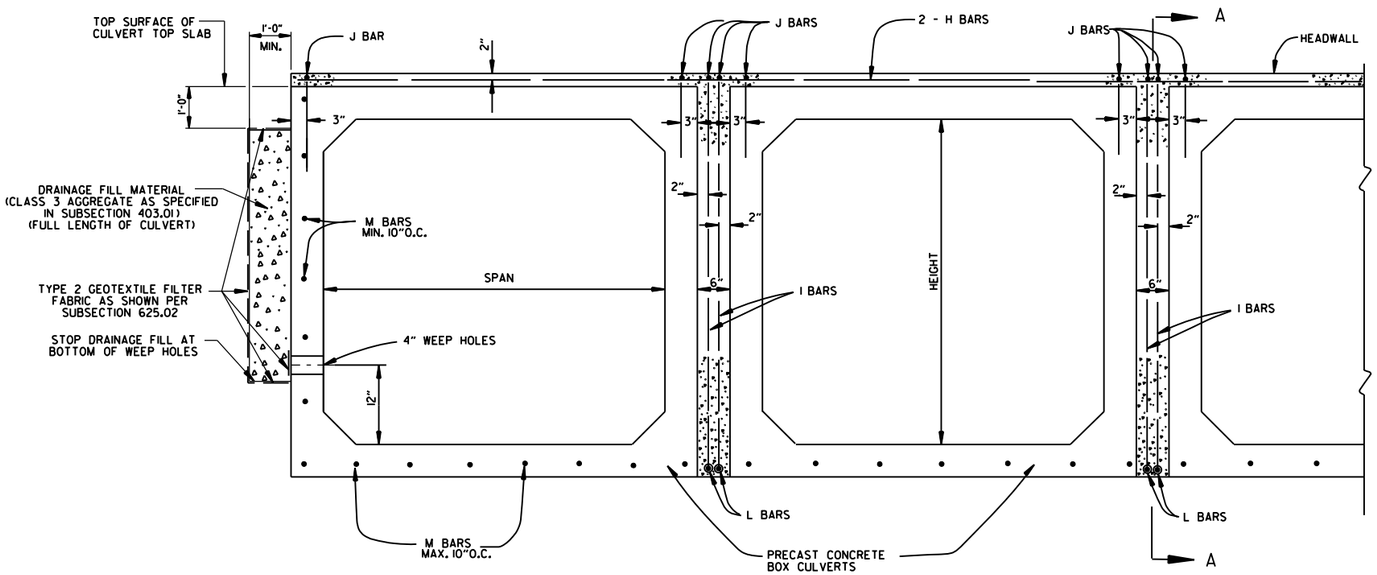
THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

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.

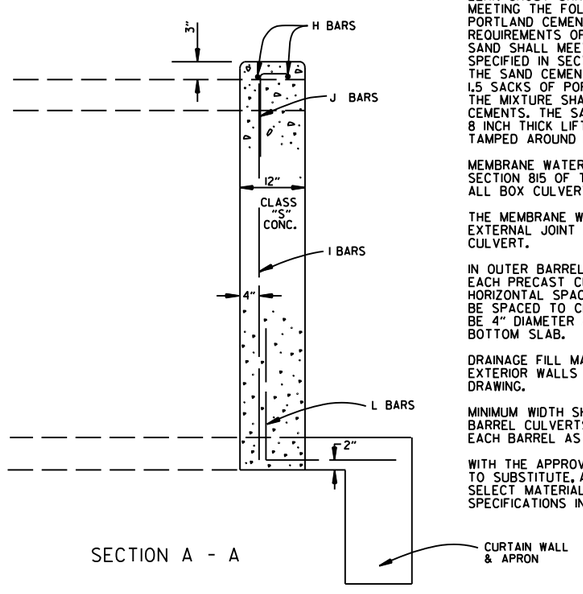
DRAINAGE FILL MATERIAL WITH GEOTEXTILE FABRIC IS REQUIRED AT THE EXTERIOR WALLS OF THE ASSEMBLED CULVERT, SEE DETAILS ON THIS DRAWING.

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.



END VIEW



SECTION A - A

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	31⅜	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.

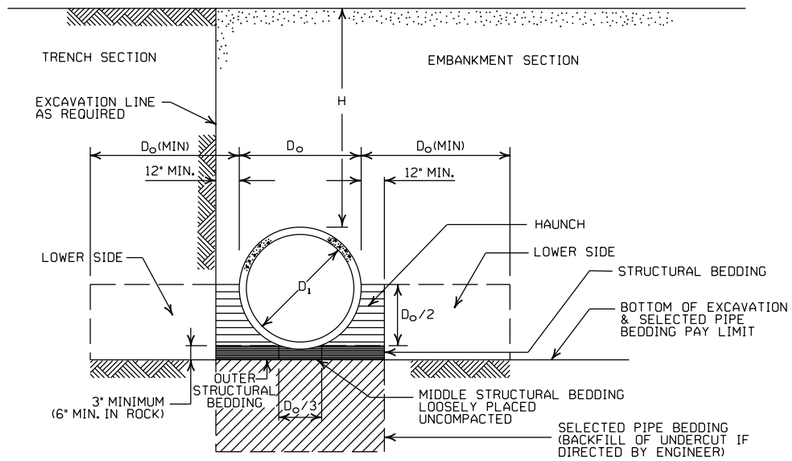
- LEGEND -

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

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

CORRUGATED METAL PIPE ARCHES

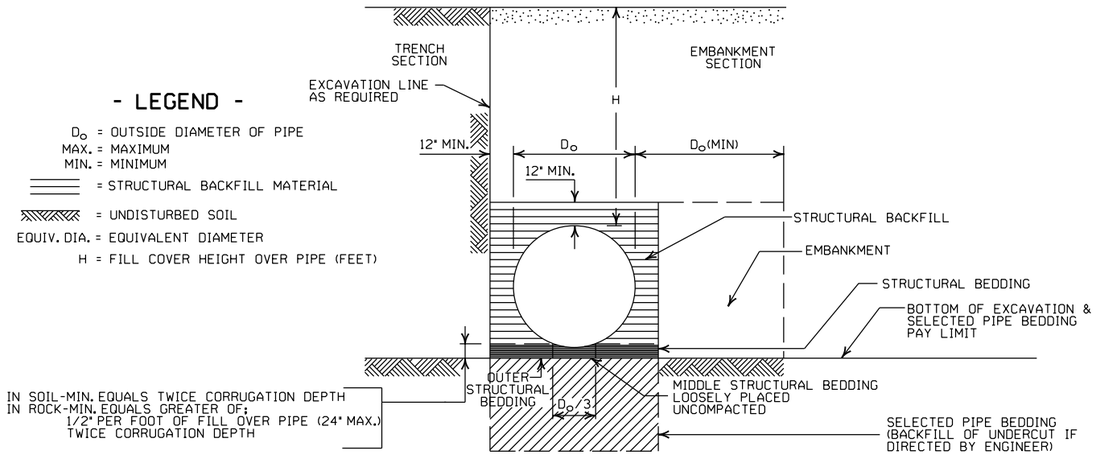
EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINUMUM CORNER RADIUS (INCHES)	STEEL			ALUMINUM		
			MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)	MAX. HEIGHT OF FILL, "H" (FT.)	MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)	MAX. HEIGHT OF FILL, "H" (FT.)
				INSTALLATION TYPE 1	INSTALLATION TYPE 1		INSTALLATION TYPE 1	INSTALLATION 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 TYPE 2	INSTALLATION TYPE 1		INSTALLATION TYPE 2	INSTALLATION TYPE 1
36	40x31	5	0.079	3	2		12	15
42	46x36	6	0.079	3	2		13	15
48	53x41	7	0.079	3	2		13	15
54	60x46	8	0.079	3	2		13	15
60	66x51	9	0.079	3	2		13	15
66	73x55	12	0.079	3	2		15	15
72	81x59	14	0.079	3	2		15	15
78	87x63	14	0.079	3	2		15	15
84	95x67	16	0.109	3	2		15	15
90	103x71	16	0.109	3	2		15	15
96	112x75	18	0.109	3	2		15	15
102	117x79	18	0.109	3	2		15	15
108	128x83	18	0.138	3	2		15	15

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

② WHERE THE STANDARD 2 2/3"x 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.

- LEGEND -

D_o = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM
= STRUCTURAL BACKFILL MATERIAL
= UNDISTURBED SOIL
EQUIV. DIA. = EQUIVALENT DIAMETER
H = FILL COVER HEIGHT OVER PIPE (FEET)



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."

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 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 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"

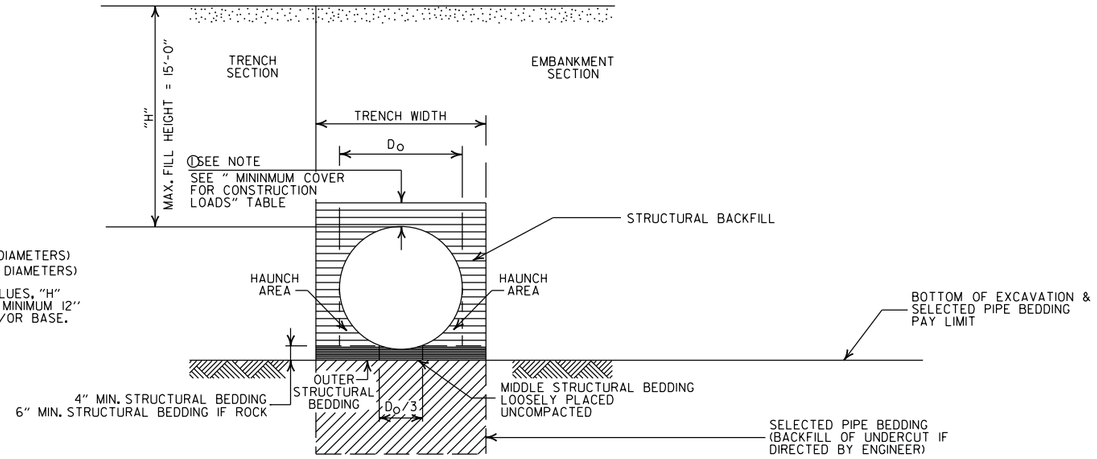
PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" >OR= 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"
42"	7'-0"	10'-6"
48"	8'-0"	12'-0"

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_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	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

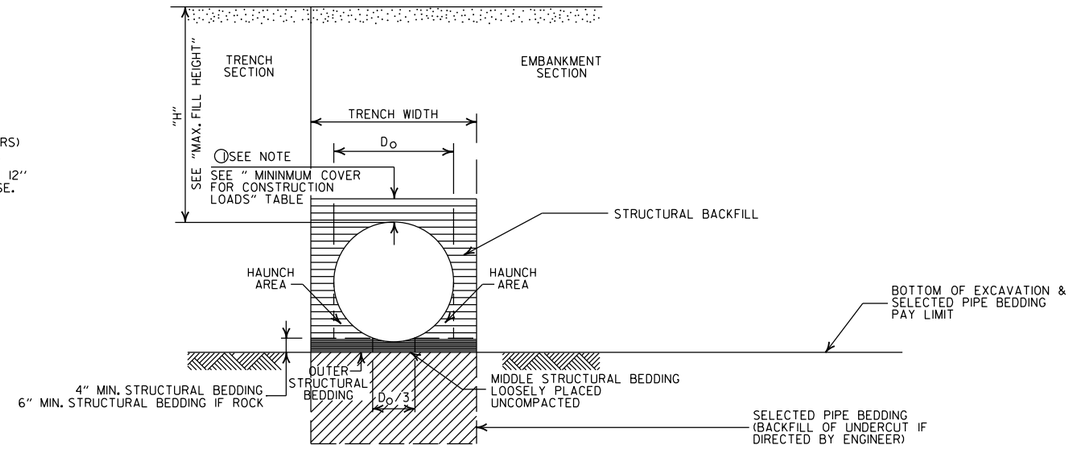
PIPE DIAMETER	"H"
18"	45'-0"
24"	45'-0"
30"	40'-0"
36"	40'-0"

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"

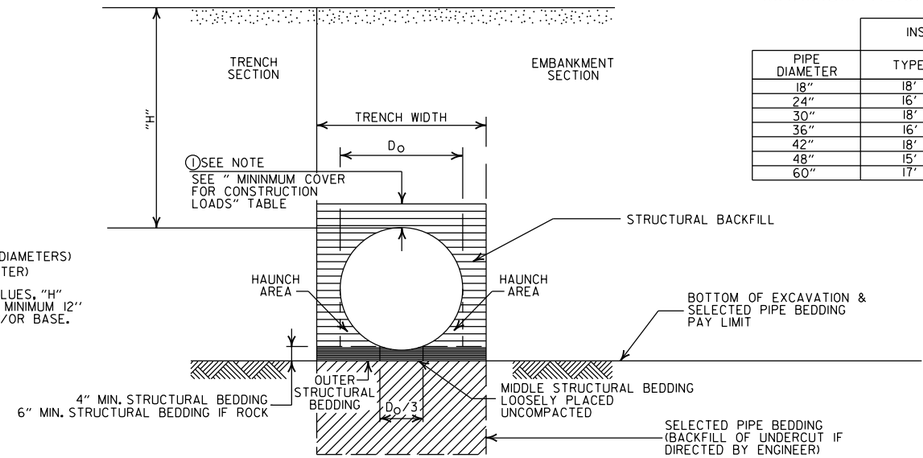
MINIMUM COVER FOR CONSTRUCTION LOADS

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

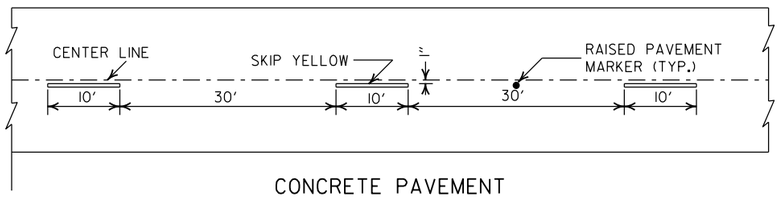
DATE	REVISION	DATE FILMED
02-27-20	REVISED	
11-07-19	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

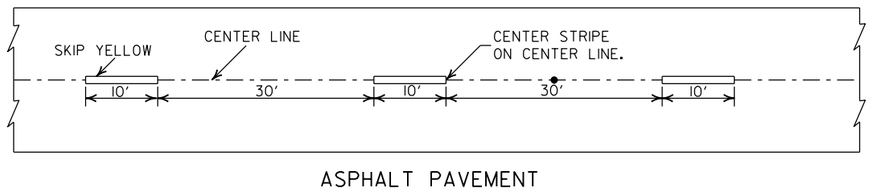
PLASTIC PIPE CULVERT (POLYPROPYLENE)

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.

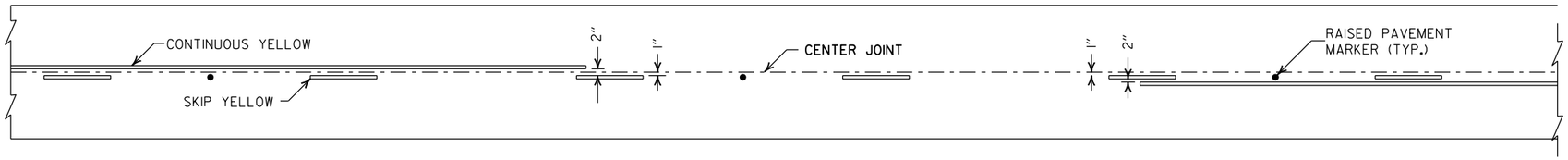


CONCRETE PAVEMENT

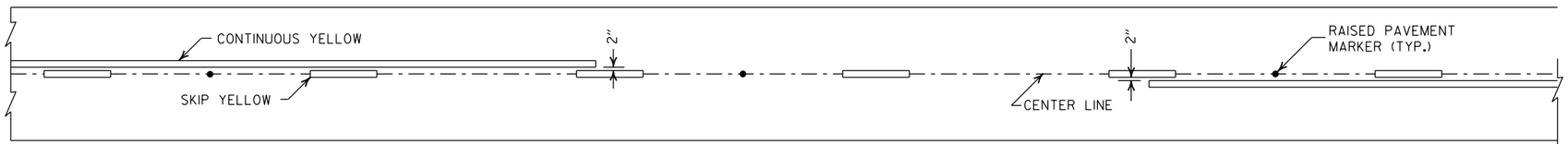


ASPHALT PAVEMENT

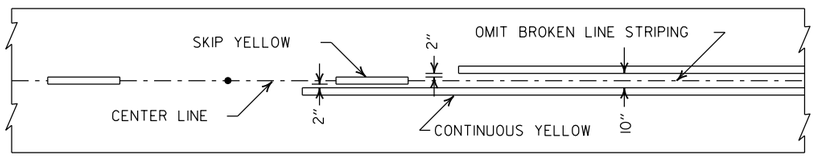
BROKEN LINE STRIPING



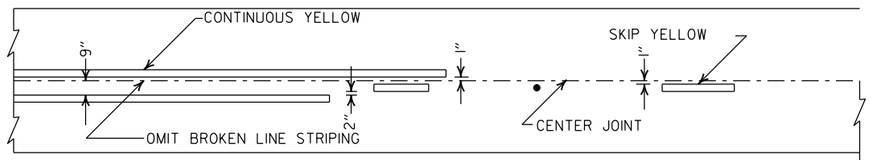
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

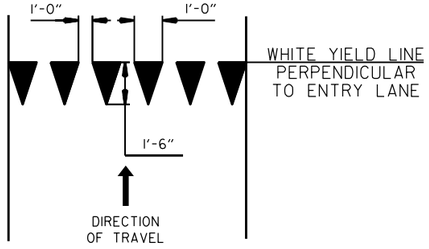


ASPHALT PAVEMENT

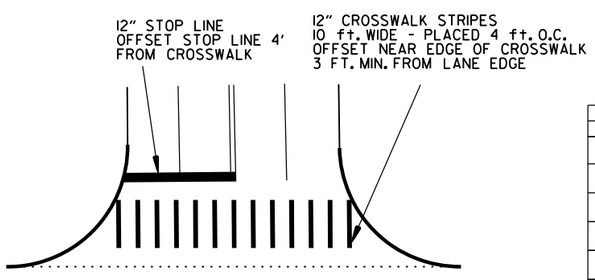


CONCRETE PAVEMENT

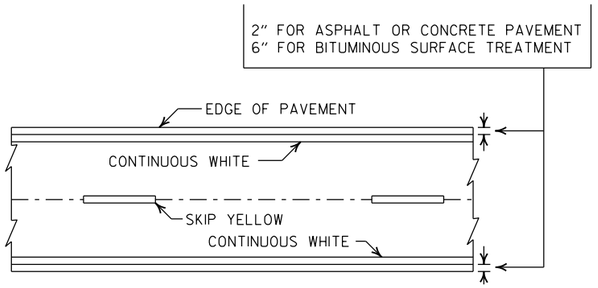
STRIPING AT ADJACENT NO PASSING LANES



YIELD LINE DETAIL



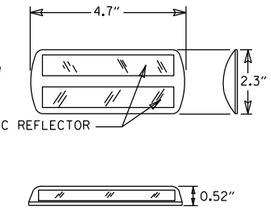
CROSSWALK AND STOP LINE DETAILS



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

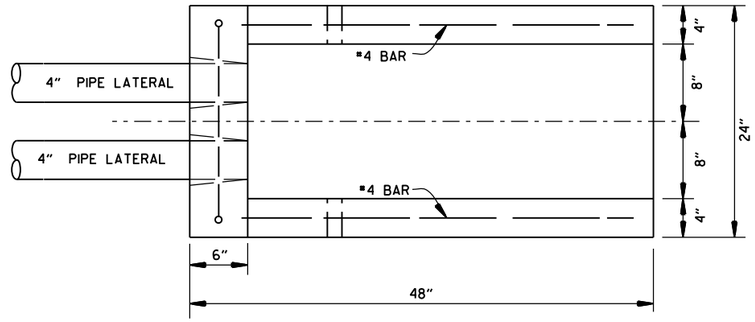
PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

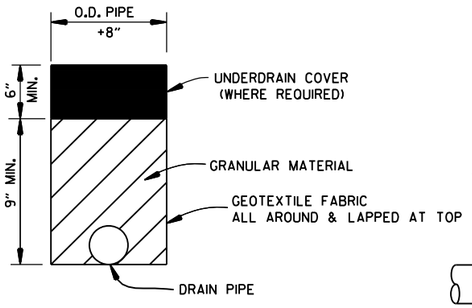
NOTE:

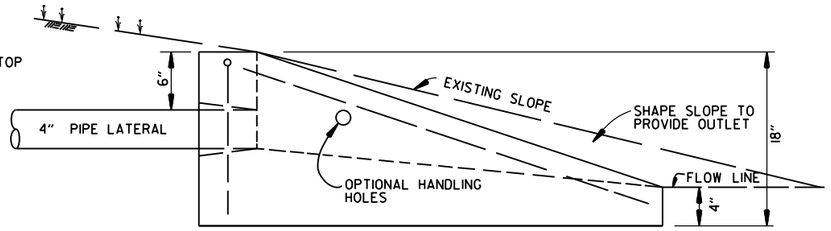
1. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.

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

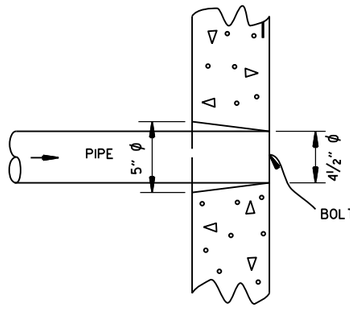


PLAN VIEW

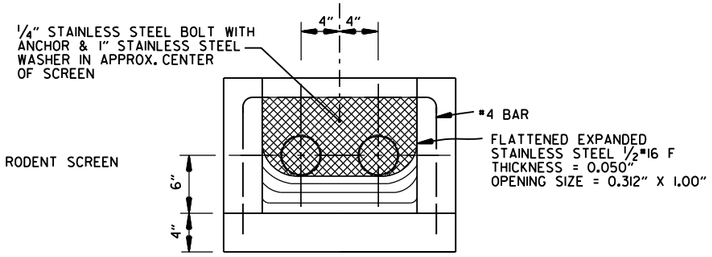




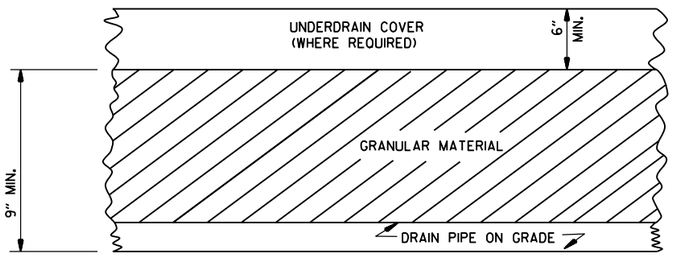
SIDE VIEW



DETAIL OF HOLE FOR 4" PIPE

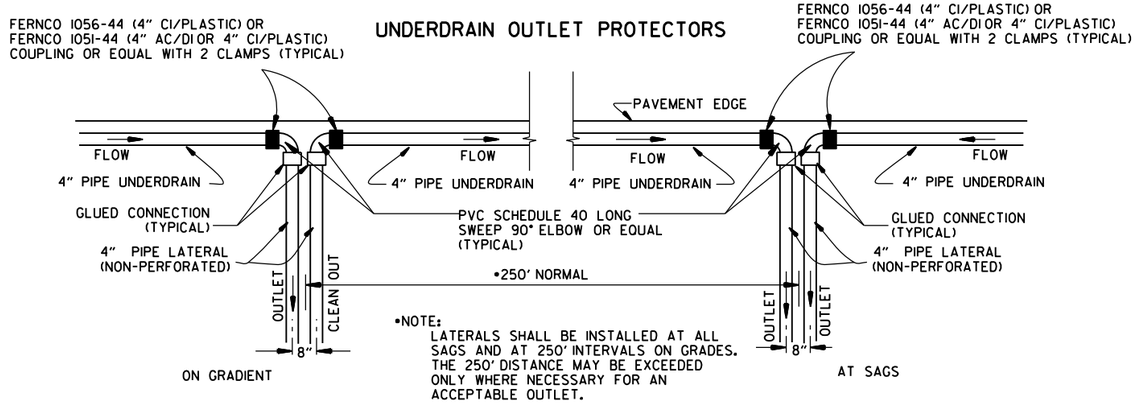


FRONT VIEW
(DETAIL OF RODENT SCREEN)



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 I. 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

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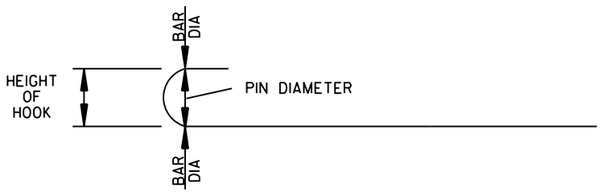
DETAILS OF PIPE UNDERDRAIN

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

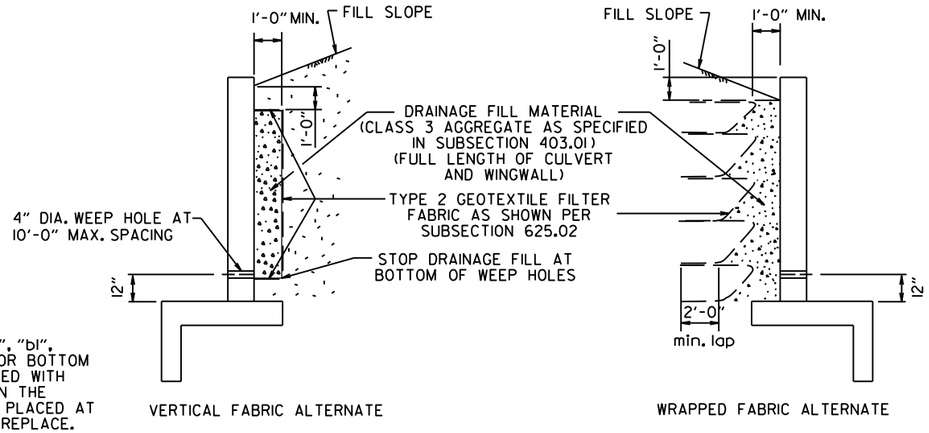
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

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.

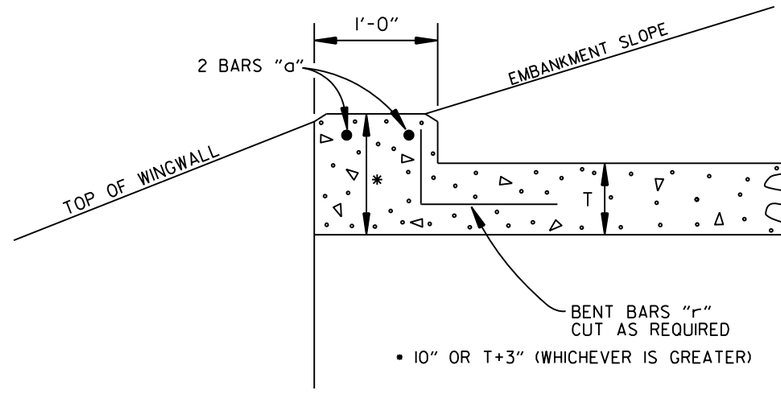
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

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.

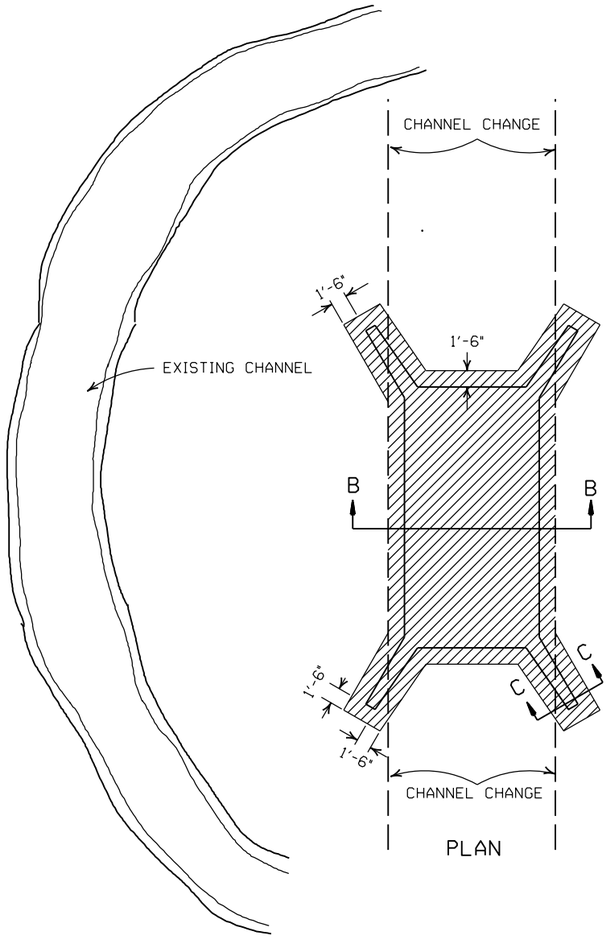
R.C. BOX CULVERT HEADWALL MODIFICATIONS

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	

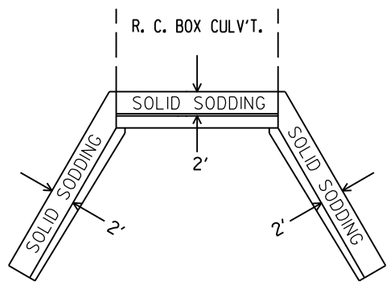
ARKANSAS STATE HIGHWAY COMMISSION

REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1



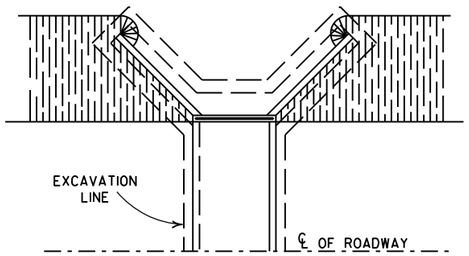
PLAN



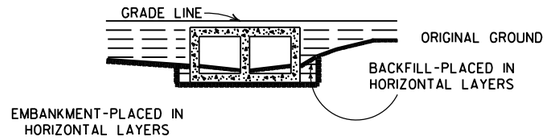
PLAN

PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

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

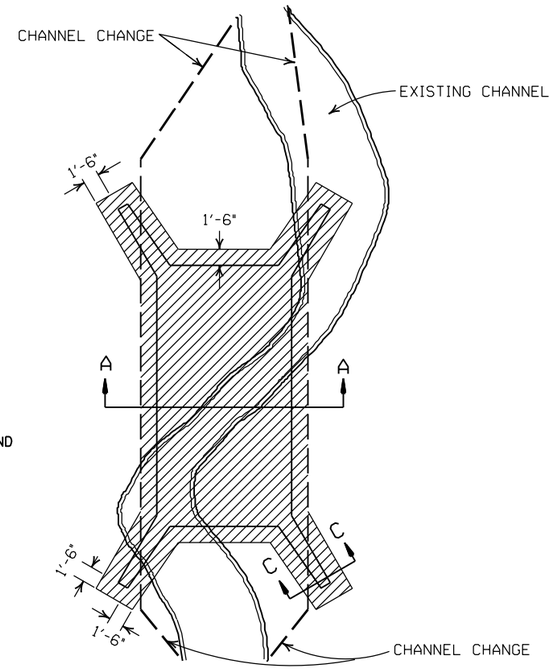


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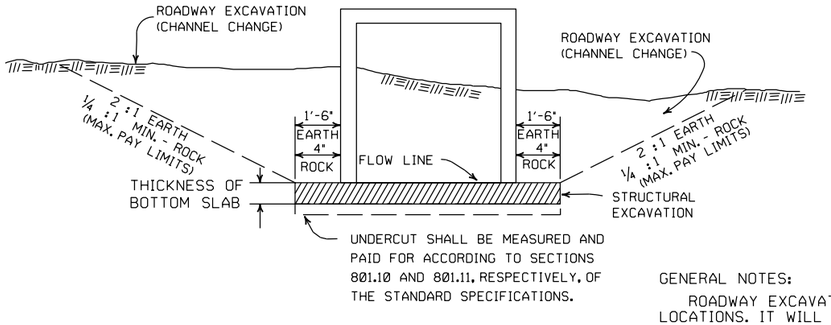


LONGITUDINAL SECTION

BACKFILL DETAILS FOR BOX CULVERT

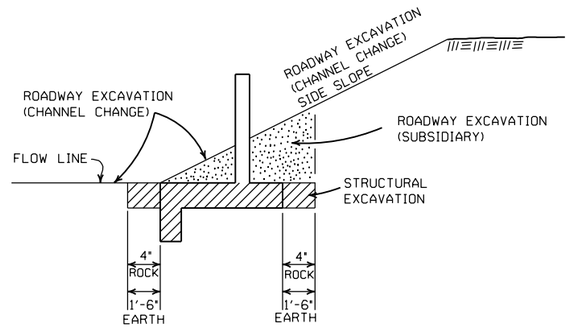


PLAN

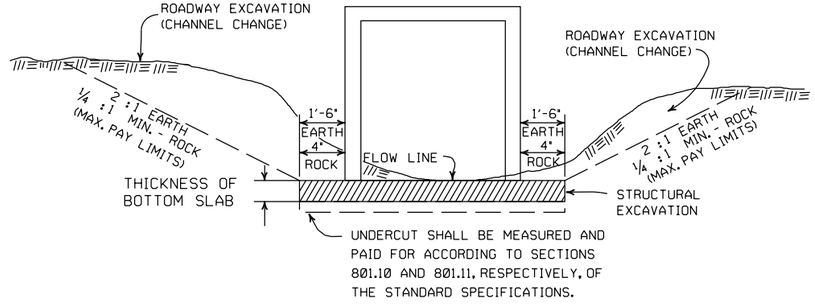


SECTION B-B

DETAILS FOR NEW CHANNELS



SECTION C-C



SECTION A-A

DETAILS THROUGH EXISTING CHANNELS

GENERAL NOTES:

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

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

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

DATE	REVISION	FILMED
11-20-03	REVISED SECTION A-A NOTE	
8-22-02	REVISED SECTION B-B NOTE	
10-12-95	COMBINED 1891B AND 1888A	
1-4-83	REVISED GENERAL NOTES	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

SUPERELEVATION TABLE FOR ONE - 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			RC	115		RC	115		RC	115		RC	115		0.022	121	
0° 45'	NC			NC			NC			RC	115		RC	115		0.024	127		0.026	132		0.030	144		0.032	150				
1° 00'	NC			NC			NC			0.022	121		0.026	132		0.030	144		0.034	156		0.038	167		0.042	179	350			
1° 15'	NC			NC			RC	101		0.022	114		0.028	138		0.032	150		0.038	167		0.042	179		0.046	190		0.052	208	
1° 30'	NC			RC	94		0.022	106		0.028	130		0.032	150		0.038	167		0.044	185		0.050	202	350	0.056	218		0.062	236	
1° 45'	RC	86		RC	94		0.026	116		0.030	136		0.036	161		0.044	185		0.050	202	350	0.056	218		0.064	242		0.070	259	
2° 00'	RC	86		0.024	103		0.028	121		0.034	146		0.042	179		0.048	196		0.056	218		0.064	242		0.070	259		0.080	288	400
2° 15'	RC	86		0.026	108		0.032	131		0.038	157		0.046	190		0.054	214		0.062	236		0.070	259		0.078	282	400	0.088	311	
2° 30'	0.022	90		0.028	113		0.034	136		0.042	168		0.050	202		0.058	224	350	0.068	253		0.076	276		0.086	305		0.096	334	450
2° 45'	0.024	95		0.030	118		0.038	146		0.046	179		0.054	214		0.064	242		0.072	265		0.082	294		0.092	323		0.100	346	
3° 00'	0.026	100		0.034	126		0.040	151		0.050	190	300	0.058	224		0.068	253		0.078	282		0.088	311		0.098	340	450	D MAX = 2° 45'		
3° 15'	0.028	103		0.036	131		0.044	161		0.052	194		0.062	236		0.072	265		0.082	294		0.092	323		0.100	346				
3° 30'	0.030	108		0.038	136		0.046	167	250	0.056	205		0.066	247		0.076	276		0.086	305		0.096	334		D MAX = 3° 30'					
3° 45'	0.032	112		0.040	140		0.050	176		0.058	211		0.070	259		0.080	288		0.090	317		0.098	340							
4° 00'	0.034	116		0.042	145	250	0.052	181		0.062	222		0.072	265		0.084	300		0.094	329	400	0.100	346							
4° 15'	0.036	120		0.044	150		0.054	186		0.064	227		0.076	276		0.086	305		0.096	334		D MAX = 4° 15'								
4° 30'	0.036	120		0.046	155		0.056	192		0.068	238		0.078	282		0.090	317	400	0.098	340										
4° 45'	0.038	125		0.048	160		0.060	202		0.070	244		0.082	294		0.092	323		0.100	346										
5° 00'	0.040	130		0.050	164		0.062	206		0.072	248		0.084	300		0.094	329		D MAX = 5° 15'										
5° 30'	0.044	138		0.054	173		0.066	217		0.078	265		0.088	311		0.098	340												
6° 00'	0.046	143	250	0.058	182		0.070	227		0.082	276		0.092	323		0.100	346												
6° 30'	0.050	151		0.062	192		0.074	238		0.086	287		0.096	334	350	D MAX = 6° 30'													
7° 00'	0.052	156		0.064	197		0.078	247		0.090	298		0.098	340															
7° 30'	0.054	160		0.068	206		0.080	252		0.092	302	350	0.100	346															
8° 00'	0.058	168		0.070	211		0.084	263		0.094	308		D MAX = 8° 25'																
8° 30'	0.060	173		0.072	215		0.086	268	300	0.096	313																		
9° 00'	0.062	178		0.076	224		0.088	272		0.098	319																		
9° 30'	0.064	181		0.078	229		0.092	282		0.100	324																		
10° 00'	0.066	186		0.080	234		0.094	288		D MAX = 10° 30'																			
11° 00'	0.070	194		0.084	244		0.096	293																					
12° 00'	0.074	203		0.088	253	300	0.098	298																					
13° 00'	0.076	208		0.090	258		0.100	302	350																				
14° 00'	0.080	216		0.094	266		D MAX = 13° 45'																						
15° 00'	0.082	221		0.096	271																								
16° 00'	0.086	229		0.098	276																								
17° 00'	0.088	233		0.100	281																								
18° 00'	0.090	238		D MAX = 19° 30'																									
19° 00'	0.092	242																											
20° 00'	0.094	246																											
21° 00'	0.096	251	300																										
22° 00'	0.096	251																											
23° 00'	0.098	254																											
24° 00'	0.098	254																											
25° 00'	0.100	259																											
D MAX = 28° 30'																													

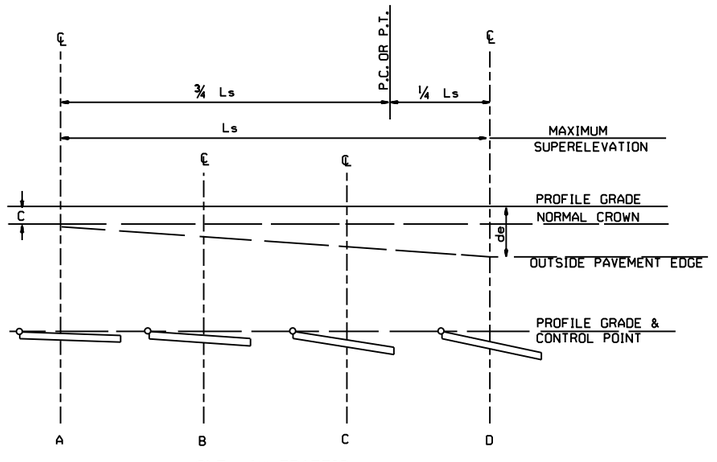
GENERAL NOTES

1. ON PAVEMENT WITH ONE-WAY TRAFFIC, THE SUPERELEVATION SHALL BE REVOLVED ON THE PROFILE GRADE POINT.
2. SUPERELEVATION VALUES SHOWN ON THE CROSS SECTIONS ARE VALUES (+) OR (-) TO BE ADDED OR SUBTRACTED FROM THE POINT OF CONTROL.
3. LENGTHS FOR Ls MAY BE ROUNDED IN MULTIPLES OF 25 FT. OR 50 FT. TO PERMIT SIMPLER CALCULATIONS.
4. MINIMUM Ls VALUES MAY BE USED FOR RAMPS; DESIRABLE VALUES SHALL APPLY TO MAIN LANES.
5. DIVIDED PAVEMENTS WIDER THAN 4 LANES SHALL HAVE ADDITIONAL TRANSITION LENGTHS AS FOLOWS:

6 LANE DIVIDED---------+20%
8 LANE DIVIDED---------+50%

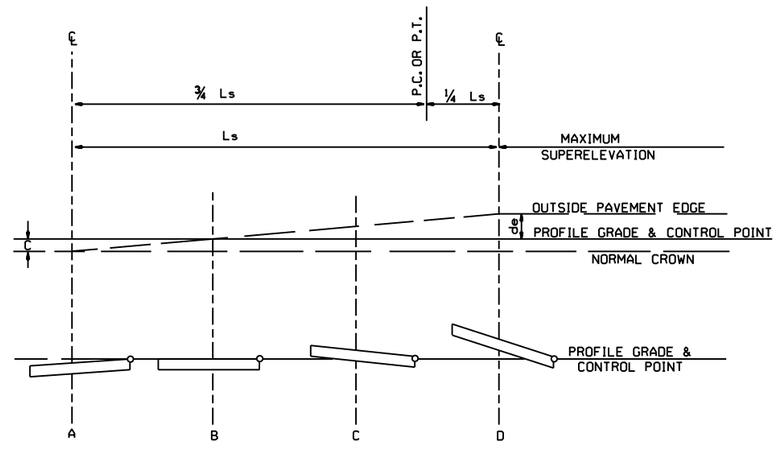
ABBREVIATIONS

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



ONE-WAY TRAFFIC
INSIDE LANE

SUPERELEVATION FORMULA = $S = -\frac{L(de-C)}{Ls} - C$



ONE-WAY TRAFFIC
OUTSIDE LANE

SUPERELEVATION FORMULA = $S = +\frac{L(de+C)}{Ls} - C$

DATE	REVISION	DATE FILLMED
11-07-19	REVISED SUPERELEVATION TABLE	
01-09-87	ISSUED	578-1-15-87

ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR ONE-WAY TRAFFIC

STANDARD DRAWING SE-1

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	300	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		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	300	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	300	0.062	197		0.070	216		0.078	235	350	0.088	259	350
2° 30'	0.022	75		0.028	94		0.034	113		0.042	140		0.050	168		0.058	187		0.068	211		0.076	230		0.086	254		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	250	0.068	211		0.078	235		0.088	259		0.098	283	400	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	200	0.056	171		0.066	206		0.076	230		0.086	254		0.096	278	350	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	350	0.100	288							
4° 15'	0.036	100		0.044	125		0.054	155		0.064	189		0.076	230		0.086	254	350	0.096	278		D MAX = 4° 15'								
4° 30'	0.036	100	200	0.046	129		0.056	160		0.068	198		0.078	235		0.090	264		0.098	283										
4° 45'	0.038	104		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	300	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	250	0.086	239		0.096	278		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	300	0.100	288																
8° 00'	0.058	140		0.070	176		0.084	219		0.094	257		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%

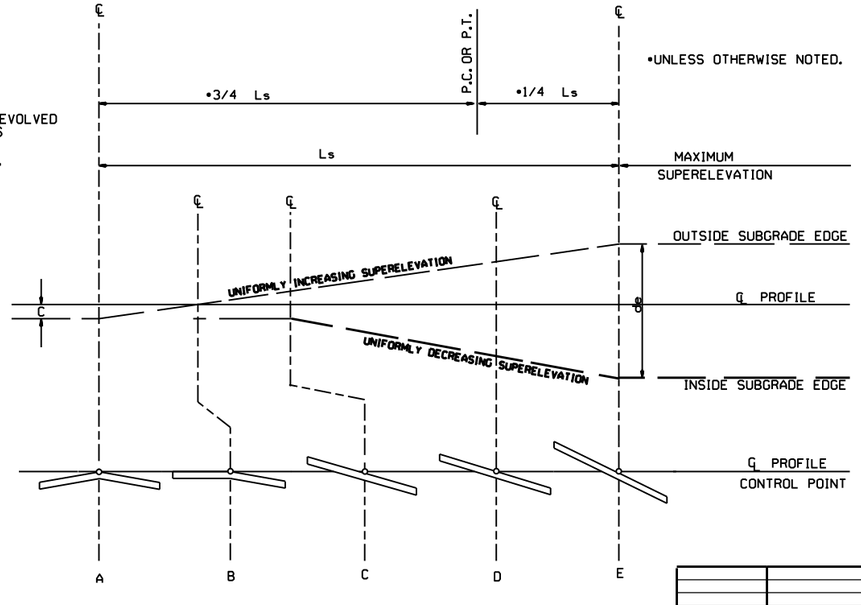
NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

RATE OF SUPERELEVATION SHALL BE COMPUTED ON STRAIGHT LINE METHOD USING APPLICABLE Ls.

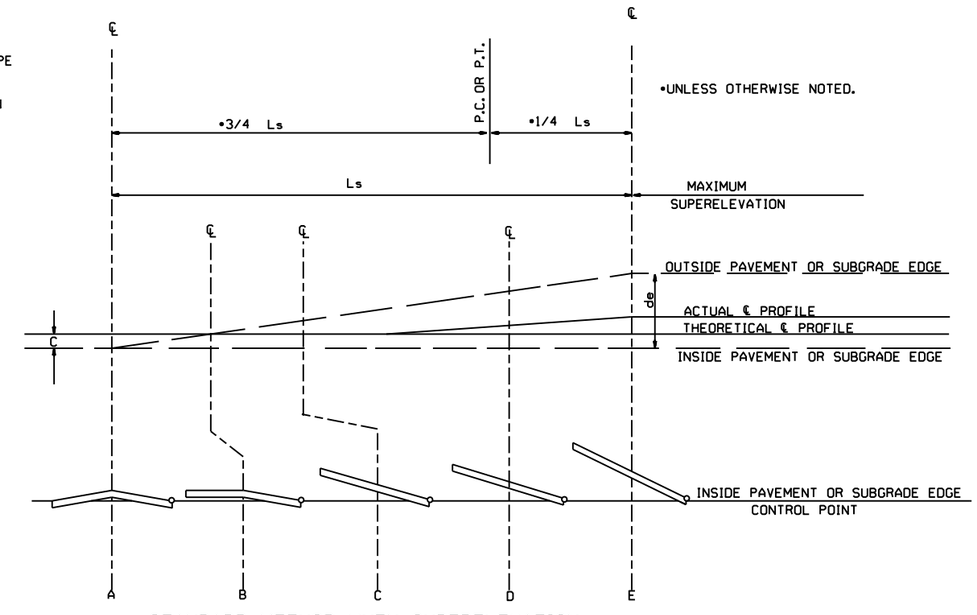
SUPERELEVATION FORMULA = $\frac{Lde}{Ls}$

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

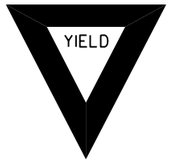
STANDARD DRAWING SE-2

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



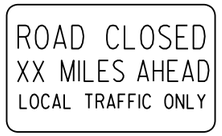
STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

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



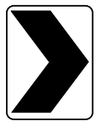
STD. 48"X48"

WI-6



STD. 48"X24"
SPECIAL 60"X30"

WI-8



STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

W3-1



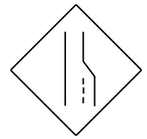
STD. 36"X36"
SPECIAL 48"X48"

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



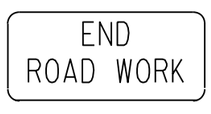
STD. 36"X36"
FWY. 48"X48"

G20-1



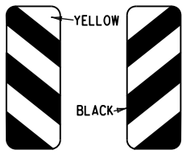
60"X24"

G20-2



48"X24"

OM-3L OM-3R



12"X36"

M4-9



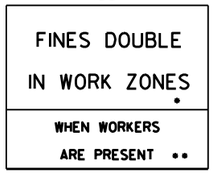
STD. 30"X24"
SPECIAL 48"X36"
SPECIAL 60"X48"

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.

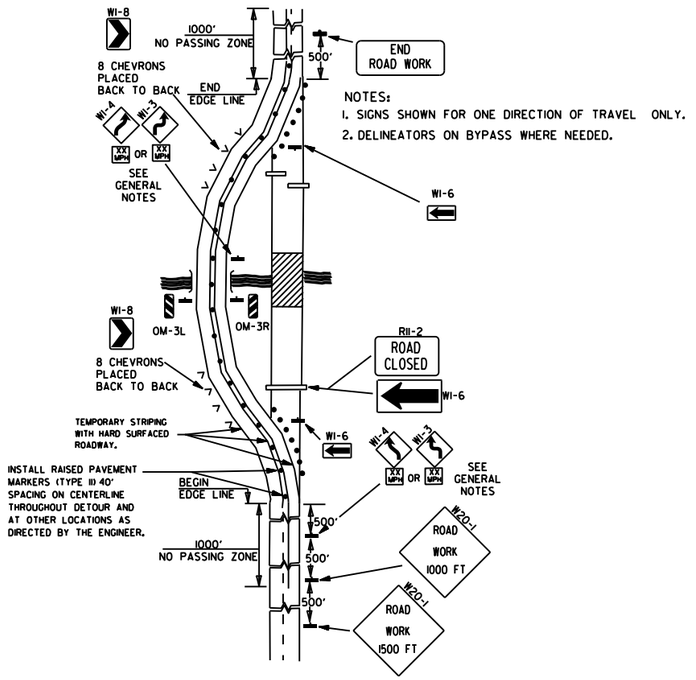
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED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

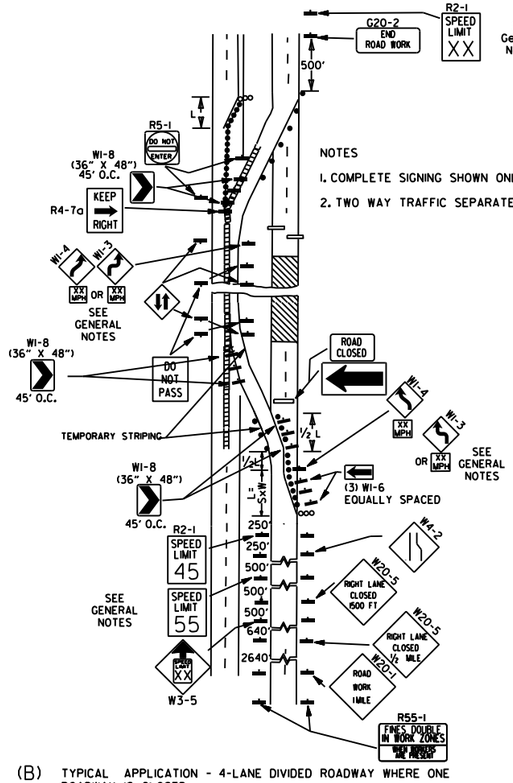
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



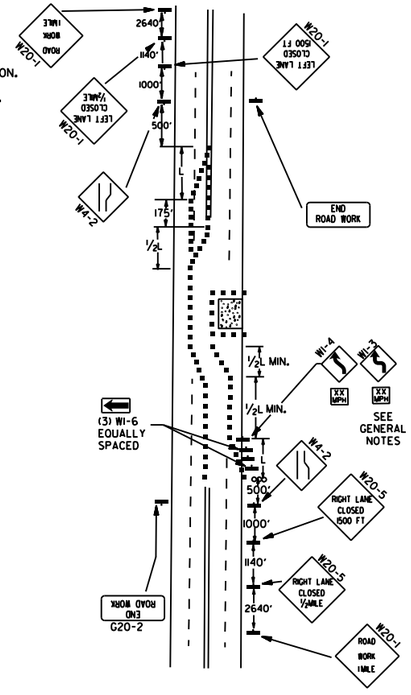
NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

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

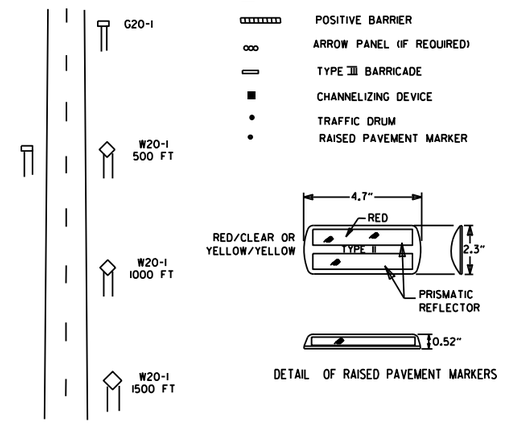


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

(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:

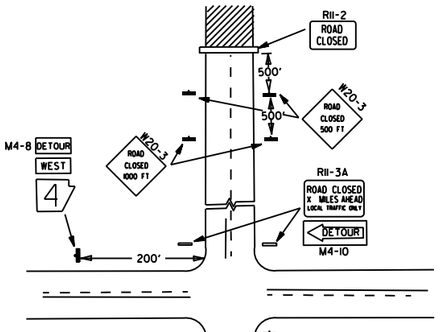
L=SXW FOR SPEEDS OF 45MPH OR MORE.

$L = \frac{WS^2}{60}$ FOR SPEEDS OF 40MPH OR LESS.

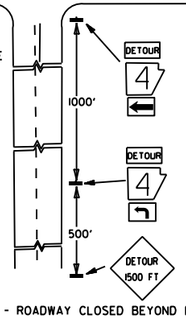
WHERE:
L= MINIMUM LENGTH OF TAPER.
S= NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.
W= WIDTH OF OFFSET.

GENERAL NOTES:

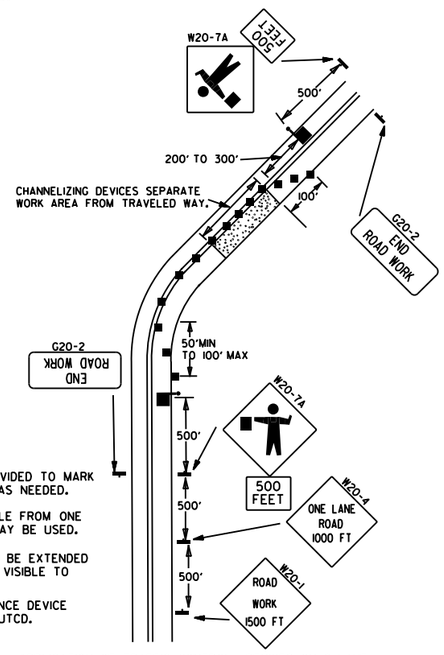
1. THE MAINTENANCE DIVISION SHALL CONDUCT A BALL BANK STUDY TO DETERMINE THE ADVISORY SPEED LIMIT PRIOR TO OPENING TO TRAFFIC. THE ADVISORY SPEED WILL BE POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS
2. WHEN THE EXISTING SPEED LIMIT 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 R2-1 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-1 55MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE. PAYMENT FOR TRAFFIC DRUMS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR VARIOUS TRAILER MOUNTED DEVICES.
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.

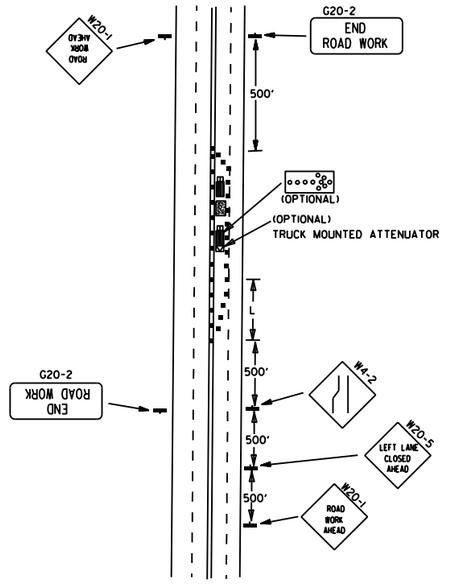


(D) TYPICAL APPLICATION - ROADWAY CLOSED BEYOND DETOUR POINT.



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.



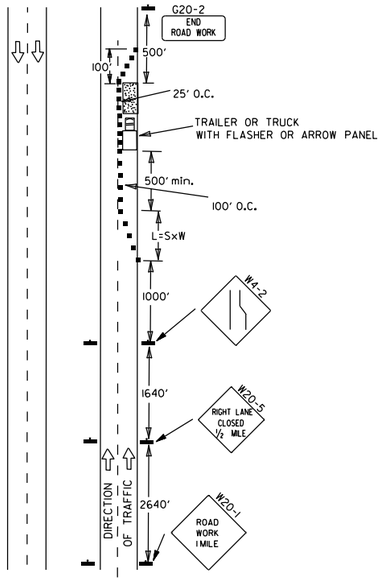
(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

DATE	REVISION	FILMED
05-20-21	REVISED NOTE 7	
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 (a) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON W1-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

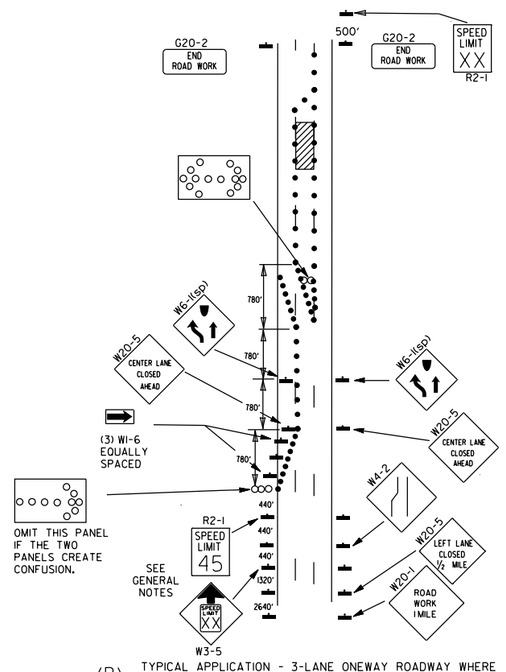
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-2



(A) TYPICAL APPLICATION - DAYTIME MAINTENANCE OPERATIONS OF SHORT DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



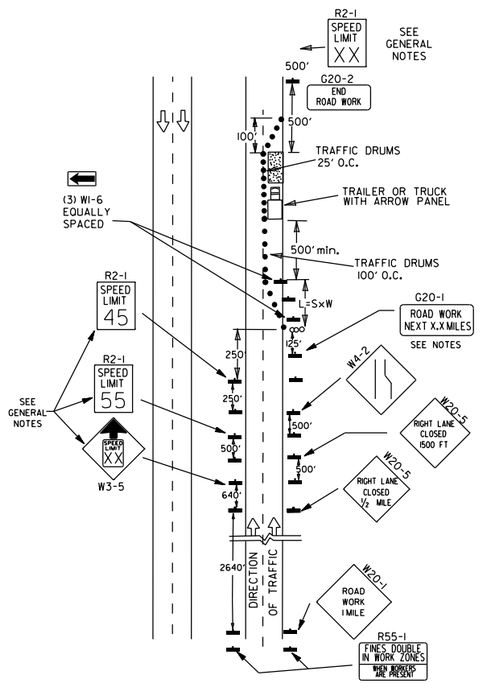
(B) TYPICAL APPLICATION - 3-LANE ONEWAY ROADWAY WHERE CENTER LANE IS CLOSED.

KEY:

- ARROW PANEL (IF REQUIRED)
- ■ CHANNELIZING DEVICE
- ● TRAFFIC DRUM

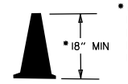
GENERAL NOTES:

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. PAYMENT FOR TRAFFIC DRUMS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR VARIOUS TRAILER MOUNTED DEVICES.
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).



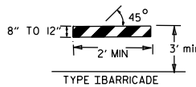
(C) TYPICAL APPLICATION - CONSTRUCTION OPERATIONS OF INTERMEDIATE TO LONG TERM DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.

CHANNELIZING DEVICES



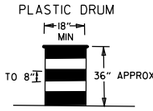
* WHEN CONES ARE USED ON FREEWAYS AND MULTI-LANE HIGHWAYS, THEY SHALL BE 28" MIN. DURING HOURS OF DARKNESS, 28" CONES SHALL BE USED ON ALL ROADWAYS, AND SHALL BE REFLECTORIZED IN ACCORDANCE WITH THE M.U.T.C.D.

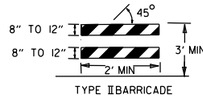
CONES



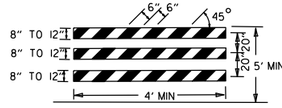
TYPE I BARRICADE

PLASTIC DRUM



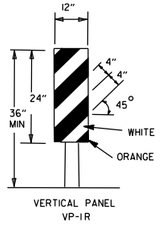


TYPE II BARRICADE



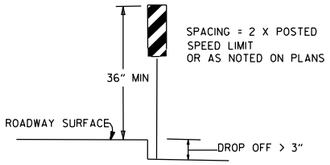
TYPE III BARRICADE

NOTE:
FOR ALL ROAD CLOSURES, THE TYPE III BARRICADES SHALL BE OF SUFFICIENT LENGTH TO EXTEND ACROSS ENTIRE ROADWAY.

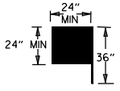


VERTICAL PANEL VP-1R

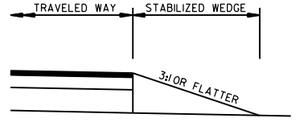
VERTICAL PANEL PLACEMENT



FLAG



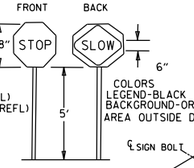
FLAG SHALL BE OF GOOD GRADE RED MATERIAL

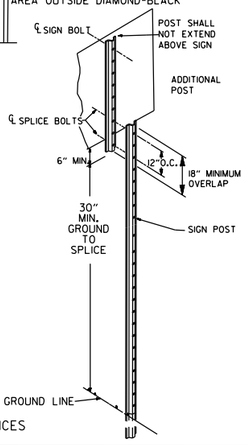


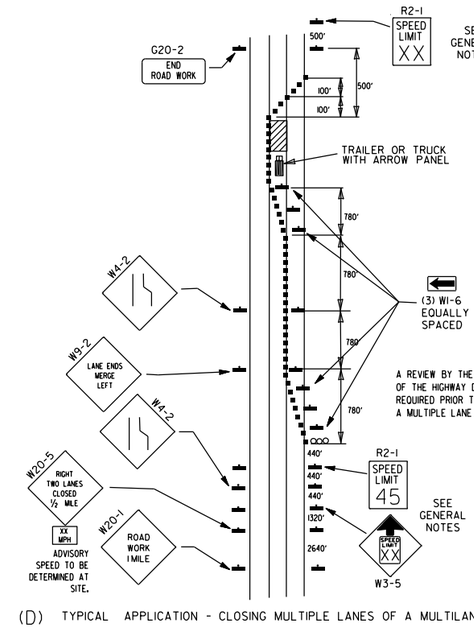
STABILIZED WEDGE

NOTE:
MATERIALS FOR THE STABILIZED WEDGE SHALL MEET THE REQUIREMENTS PROVIDED IN SECTION 603.02 OF THE STANDARD SPECIFICATIONS.

STOP SLOW PADDLE







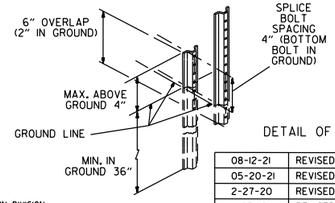
A REVIEW BY THE ROADWAY DESIGN DIVISION OF THE HIGHWAY DEPARTMENT WILL BE REQUIRED PRIOR TO IMPLEMENTING A MULTIPLE LANE CLOSURE.

(D) TYPICAL APPLICATION - CLOSING MULTIPLE LANES OF A MULTILANE HIGHWAY.

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.



DETAIL OF SPLICES

TRAFFIC CONTROL DEVICES

NON-INTERSTATE

VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL	
		≤ 45 MPH	> 45 MPH
≤ 1"	CENTERLINE	W8-11	W8-11
> 1" ≤ 3"	CENTERLINE	W8-11 AND CENTERLINE LANE STRIPING	W8-11 AND CENTERLINE LANE STRIPING
> 3"	CENTERLINE	STANDARD LANE CLOSURE[6]	STANDARD LANE CLOSURE[6]
≤ 3"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9 AND TRAFFIC DRUMS[1]	W8-9 AND TRAFFIC DRUMS[1]
> 3" ≤ 6"	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[1]
> 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
≤ 3"	CENTERLINE	W8-11 AND LANE STRIPING
≤ 3"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9, EDGE LINE STRIPING, AND TRAFFIC DRUMS[2]
> 3" ≤ 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.
6. TIME LIMITATIONS MUST CONFORM TO SECTION 603 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).

DATE	REVISION	FILMED
08-12-21	REVISED TRAFFIC CONTROL DEVICES AND NOTES	
05-20-21	REVISED NOTE 10	
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	

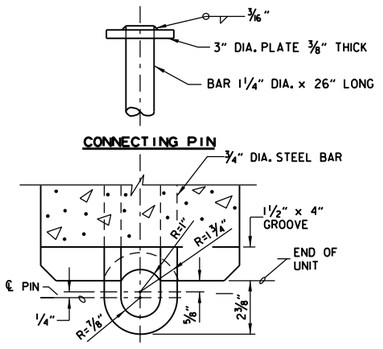
ARKANSAS STATE HIGHWAY COMMISSION

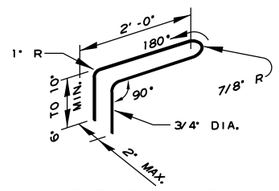
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

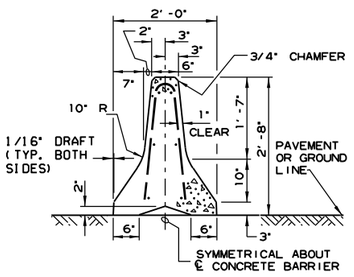
STANDARD DRAWING TC-3

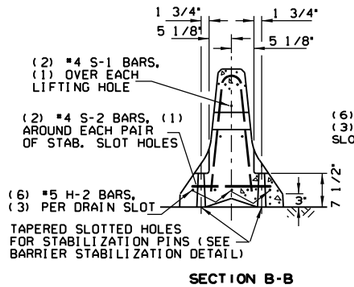
REINFORCING BAR TABLE PER BARRIER UNIT

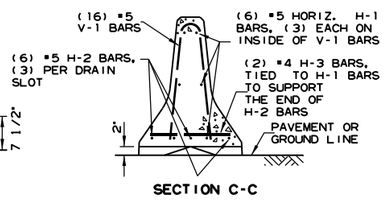
MARK	LOCATION	BAR SIZE	(NO. BARS)	SKETCH
H-1	HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS	#5	(6)	19'-3"
H-2	CENTERED ABOVE DRAIN SLOTS LONG. & TRANSVERSELY	#5	(6)	6'-6"
H-3	TIED ABOVE H-1 BARS TO SUPPORT H-2, TIED TO V-1	#4	(2)	1'-6"
S-1	OVER LIFT HOLES	#4	(2)	2'-5", LIFTING HOLE, 90°, 3 3/8" R
S-2	HORIZ. 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°; 1 1/2"; 9"; 2'-1 3/8"; 4 3/8"

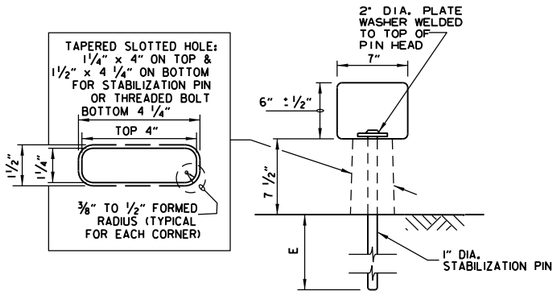




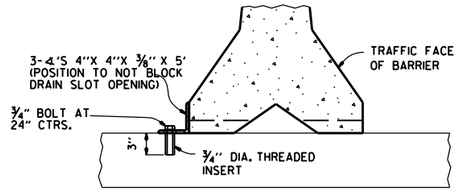








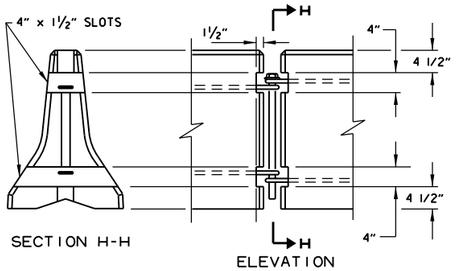
Ⓔ 4" - CONCRETE PAVEMENT
8" - ASPHALT PAVEMENT
12" - SHOULDER AREAS

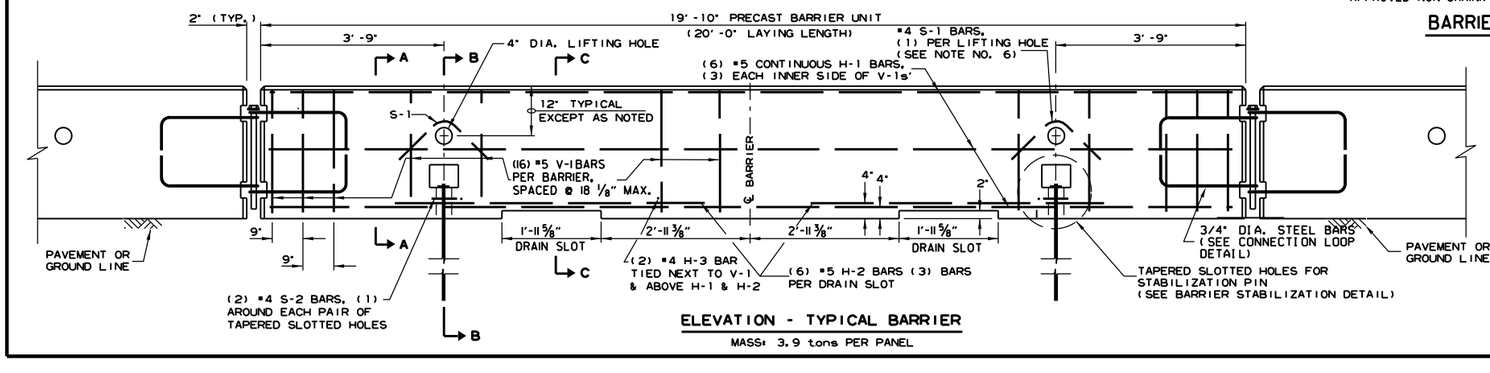


NOTE: " THREADED INSERTS SHALL BE CAST IN PLACE FOR ALL NEW BRIDGE DECKS AND DRILLED AND GROUTED FOR EXISTING BRIDGE DECKS. INSERTS SHALL HAVE A MINIMUM ULTIMATE LOAD CAPACITY OF 8000 LBS. IN TENSION. AFTER REMOVAL OF BARRIER, BOLTS, AND ANGLES, THE INSERTS SHALL BE FILLED WITH APPROVED NON-SHRINK EPOXY.

BARRIER STABILIZATION DETAIL
BRIDGE DECKS







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.

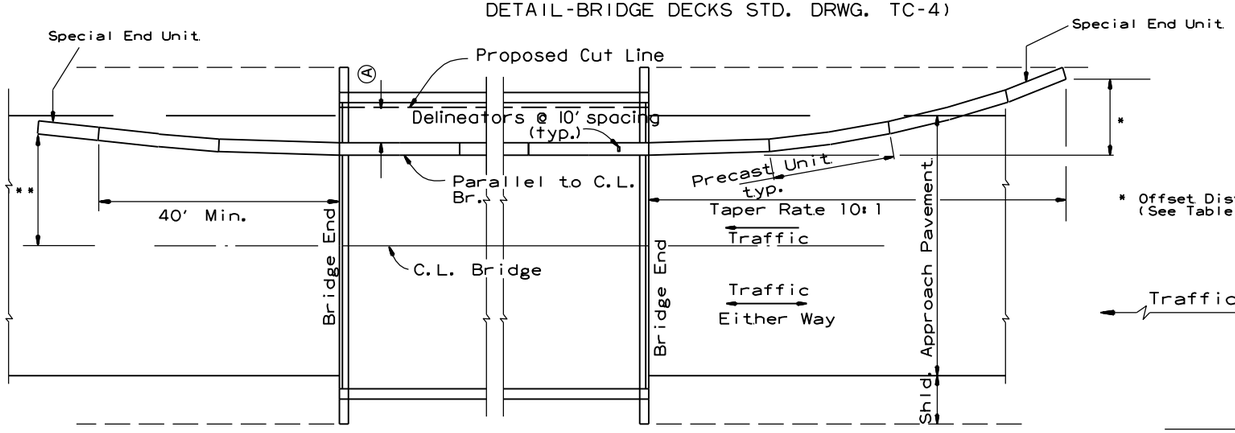
DATE	REVISION	FILMED
11-07-19	REVISED NOTE 3	
2-27-14	REVISED BARRIER STABILIZATION DETAIL	
10-15-09	ADDED REFERENCE TO WASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED 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

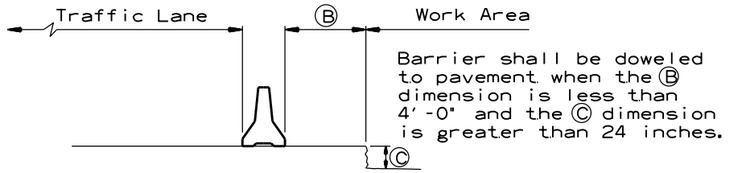
Ⓐ 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)



BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

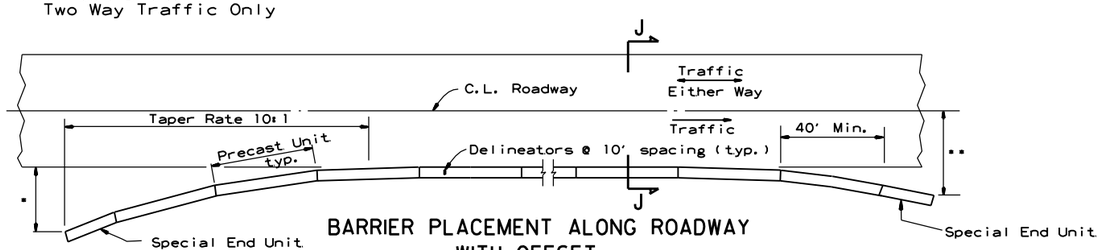
** Offset Distance for Two Way Traffic Only



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

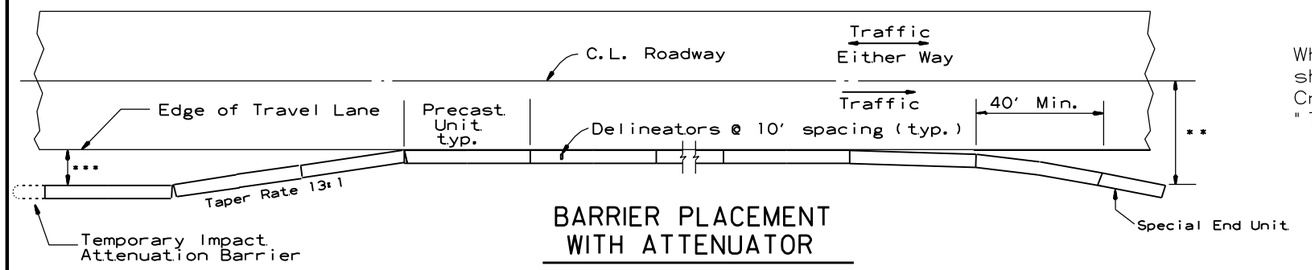
** Offset Distance For Two Way Traffic Only

* 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.

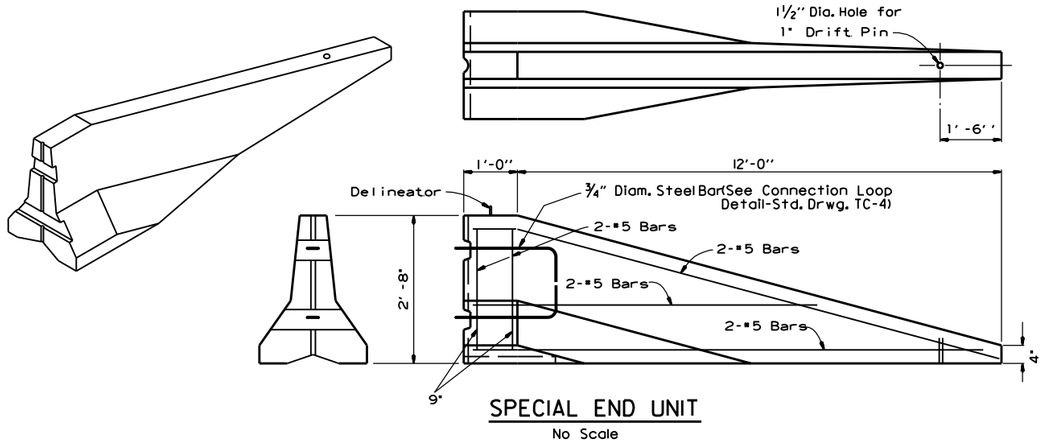


BARRIER PLACEMENT WITH ATTENUATOR

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	

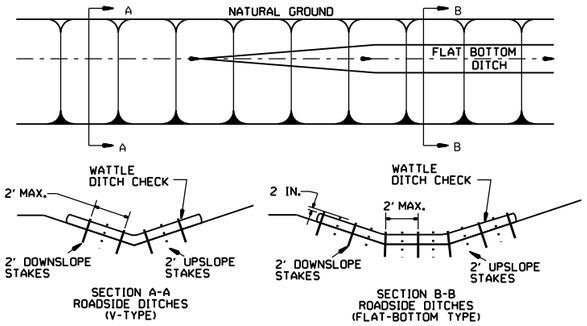
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

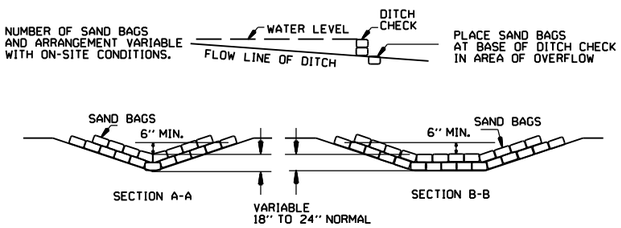
STANDARD DRAWING TC-5

GENERAL NOTES

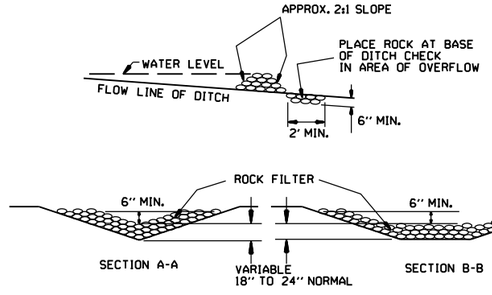
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



SAND BAG DITCH CHECK (E-5)

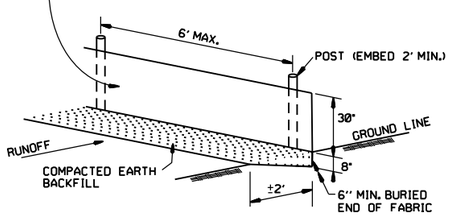


ROCK DITCH CHECK (E-6)

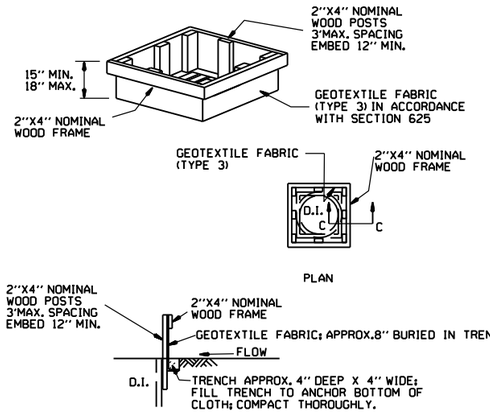
GENERAL NOTES

GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625

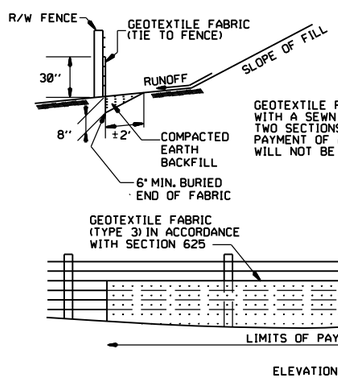
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



SILT FENCE (E-11)

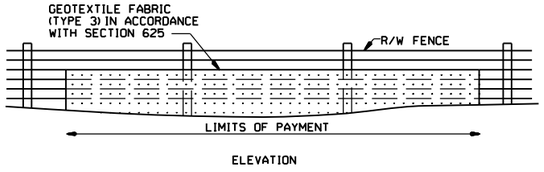


DROP INLET SILT FENCE (E-7)



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.



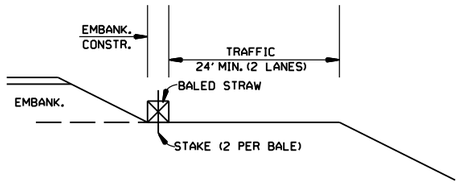
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

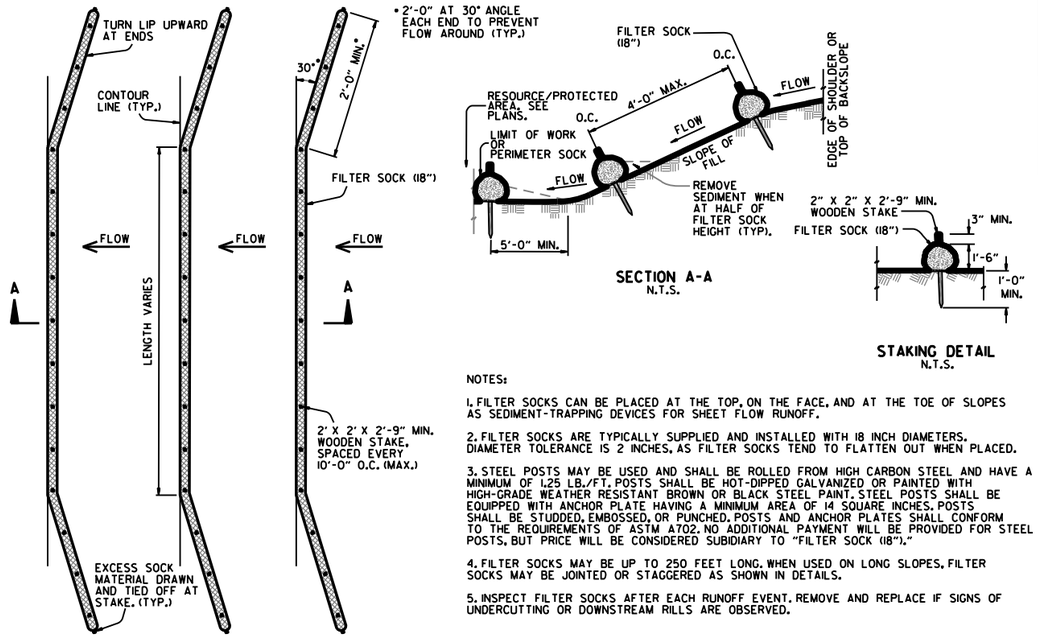
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

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.

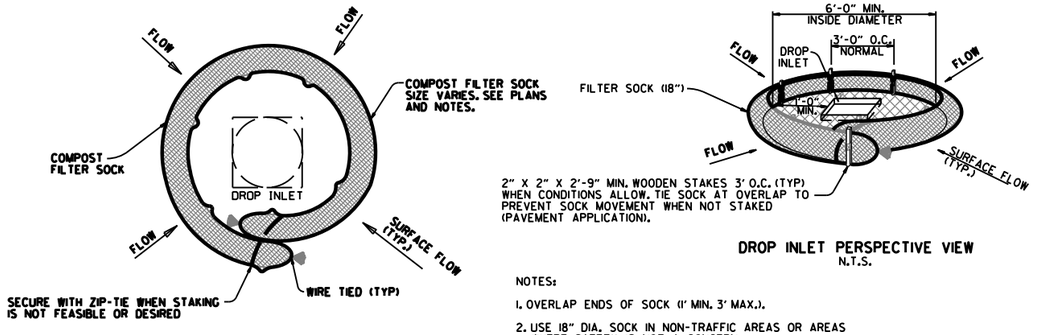
2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES, AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.

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.

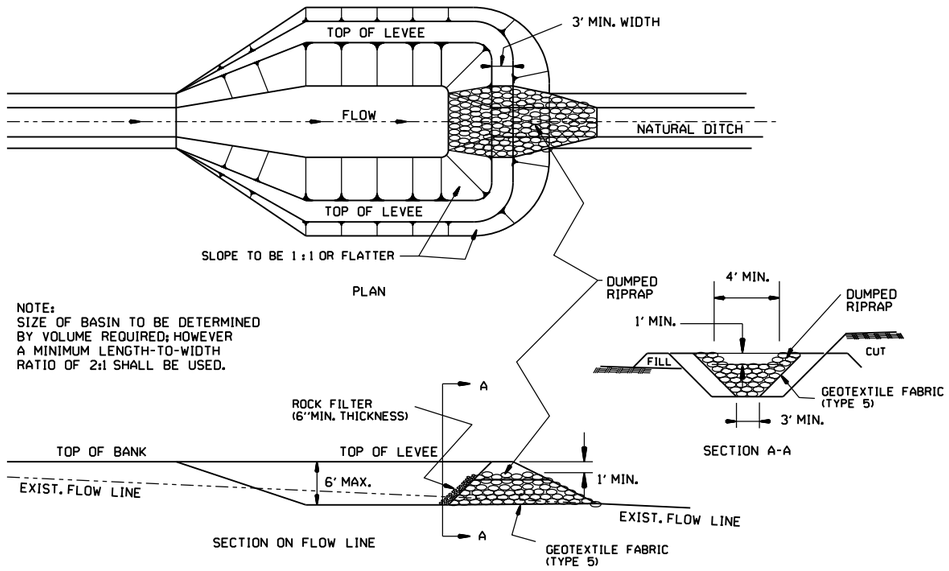
COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)

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

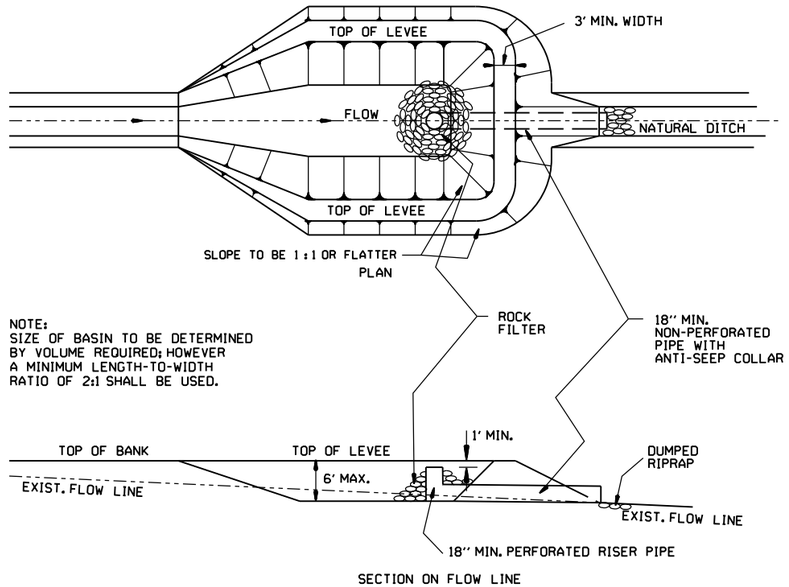
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

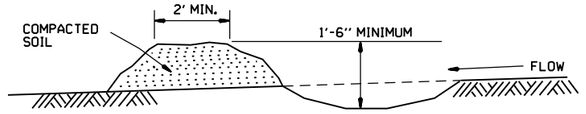
STANDARD DRAWING TEC-1



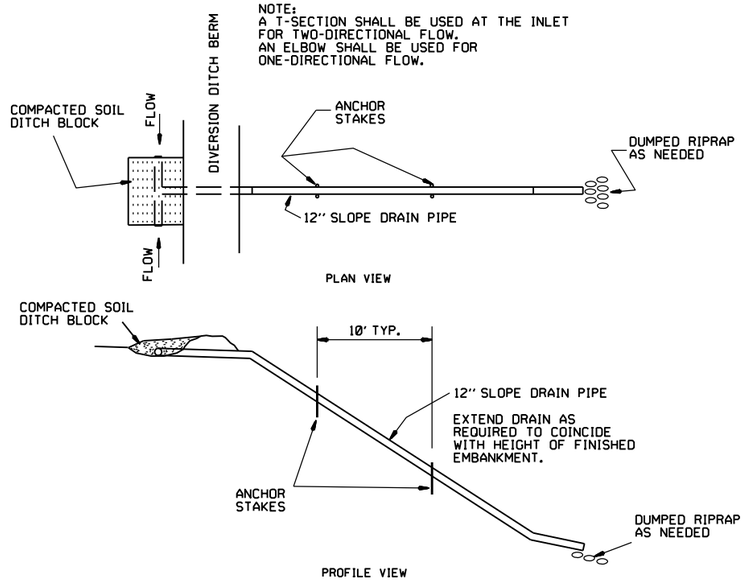
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



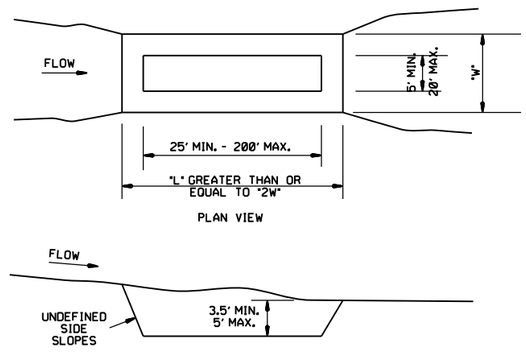
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



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

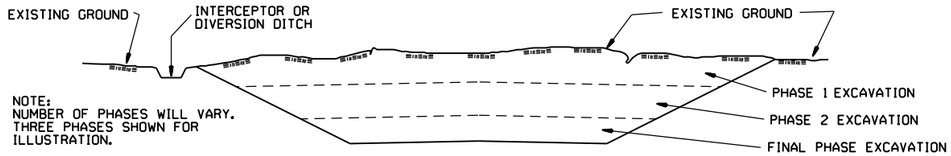
STANDARD DRAWING TEC-2

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



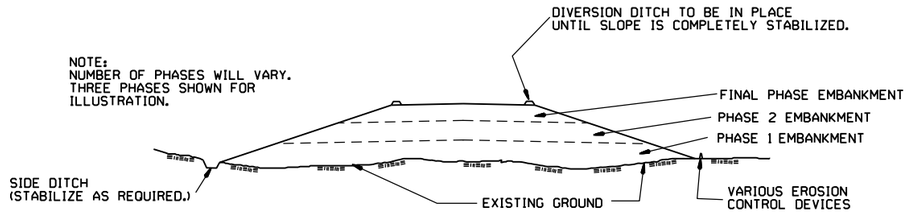
GENERAL NOTE

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

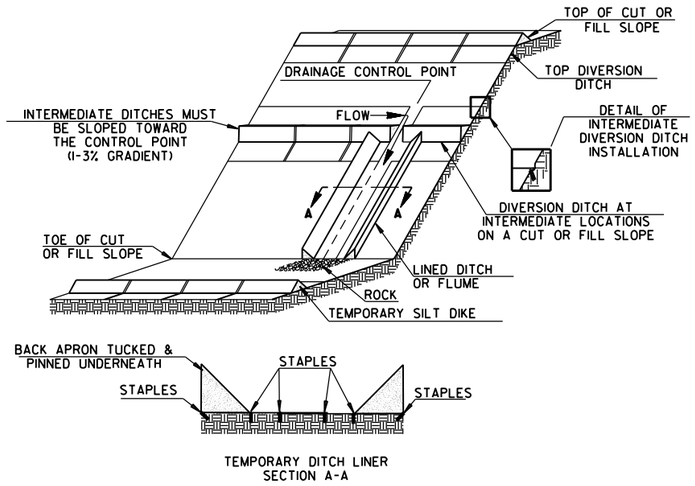
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD 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

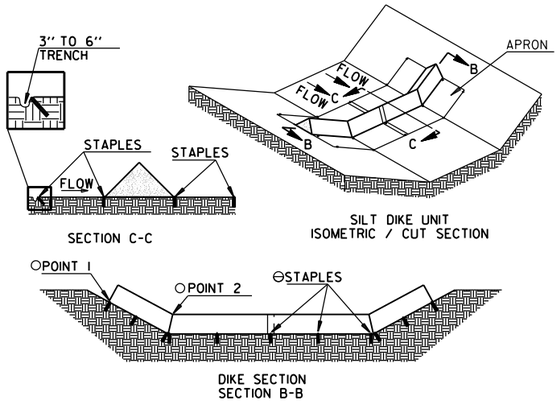
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3



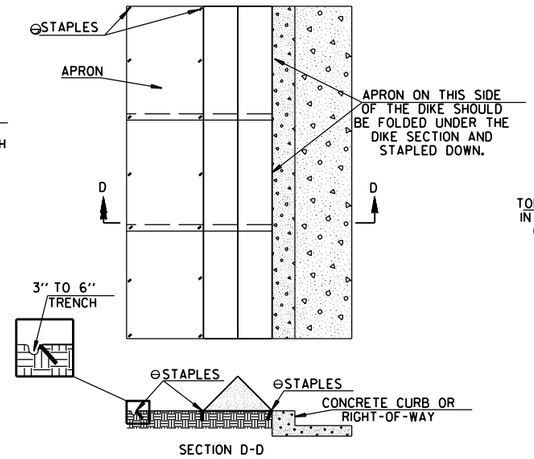
TRIANGULAR SILT DIKE INSTALLATION FOR DIVERSION DITCH AND/OR DITCH LINER



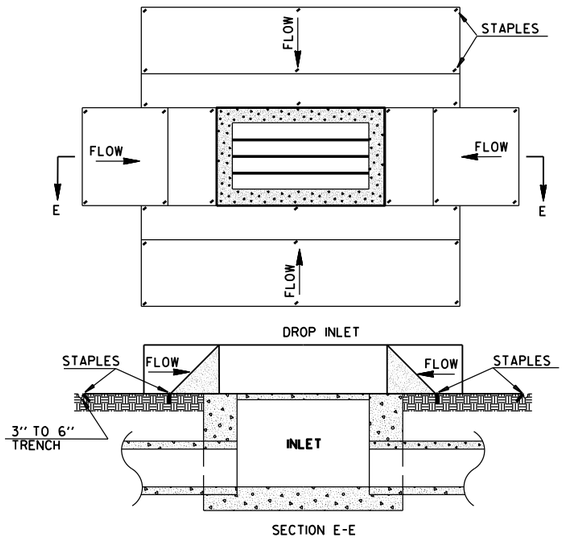
TRIANGULAR SILT DIKE INSTALLATION FOR ROADWAY DITCH OR DRAINAGE DITCH

○ POINT "1" MUST BE HIGHER THAN POINT "2" TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.

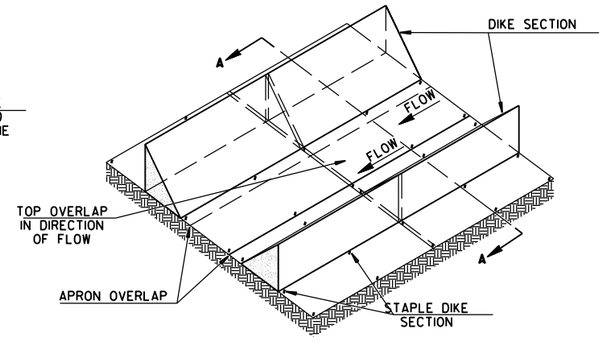
⊖ STAPLES SHALL BE PLACED WHERE THE UNITS OVERLAP AND IN THE CENTER OF THE UNIT AS SHOWN ON THE DIAGRAM.



TRIANGULAR SILT DIKE INSTALLATION FOR CONTINUOUS BARRIER



TRIANGULAR SILT DIKE INSTALLATION FOR DROP INLETS



TRIANGULAR SILT DIKE INSTALLATION FOR TEMPORARY DITCH LINER

GENERAL NOTES

1. THIS WORK SHALL CONSIST OF FURNISHING, INSTALLING, AND MAINTAINING THE TRIANGULAR SILT DIKE. THE DIKES SHALL BE USED AS A CONTINUOUS LINE BARRIER AT THE TOE OF SLOPE OR ACROSS THE ROADWAY DITCH TO CONTAIN SEDIMENT AND MINIMIZE EROSION, OR AS DIRECTED BY THE ENGINEER. THESE DIKES SHALL BE INSTALLED AND LOCATED AS SOON AS CONSTRUCTION WILL ALLOW OR AS DIRECTED BY THE ENGINEER.

2. TRIANGULAR SILT DIKE SHALL BE TRIANGULAR SHAPED HAVING A HEIGHT OF AT LEAST 8" TO 10" IN THE CENTER WITH EQUAL SIDES AND A 16" TO 20" BASE. THE TRIANGULAR SHAPED INNER MATERIAL SHALL BE URETHANE FOAM. THE OUTER COVER SHALL BE A WOVEN GEOTEXTILE FABRIC PLACED AROUND THE INNER MATERIAL & ALLOWED TO EXTEND BEYOND BOTH SIDES OF THE TRIANGLE 24" TO 36". THIS FABRIC SHOULD BE MILDEW RESISTANT, ROT-PROOF AND RESISTANT TO HEAT AND ULTRAVIOLET RADIATION MEETING REQUIREMENTS FOR SEDIMENT CONTROL IN AASHTO M288. THE DIKES SHALL BE ATTACHED TO THE GROUND WITH WIRE STAPLES. THE STAPLES SHALL BE NO. 11 GAUGE WIRE AND BE AT LEAST 6" TO 8" LONG. STAPLES SHALL BE PLACED AS SHOWN ON THESE DETAILS.

   THE CONTRACTOR SHALL INSPECT ALL DIKES AFTER EACH RAINFALL EVENT OF AT LEAST 0.5" OR GREATER. ANY DEFICIENCIES OR DAMAGE SHALL BE REPAIRED BY THE CONTRACTOR. ACCUMULATED SILT OR DEBRIS SHALL BE REMOVED AND RELOCATED AS DIRECTED BY THE ENGINEER. IF THE DIKES ARE DAMAGED OR INADVERTENTLY MOVED DURING THE SILT REMOVAL PROCESS, THE CONTRACTOR SHALL IMMEDIATELY REPLACE AFTER DAMAGE OCCURS.

3. ACCEPTED TRIANGULAR SILT DIKE, MEASURED AS PROVIDED ABOVE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR TRIANGULAR SILT DIKE. PRICE BID WILL INCLUDE THE COST OF FURNISHING THE DIKES, INSTALLING, MAINTAINING AND REMOVAL WHEN DIRECTED BY THE ENGINEER.

SYMBOLOGY

SYMBOL TO BE USED TO DENOTE DEVICE ON PLANS

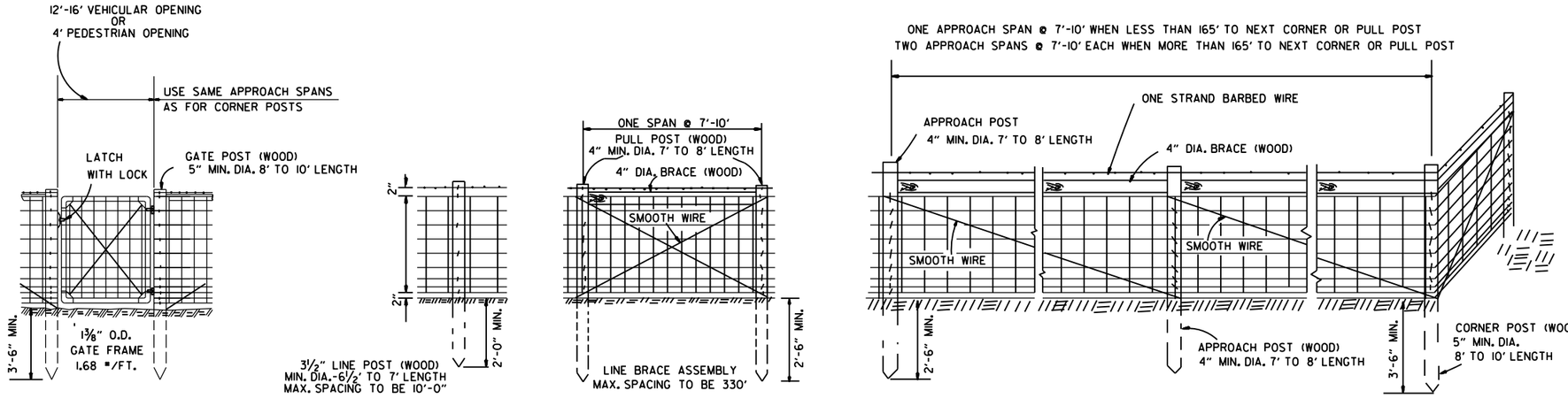
NOTE: SILT DIKE SHOULD ONLY BE USED FOR DROP INLETS IN SUMP LOCATIONS.

DATE	REVISION	FILMED
7-26-12	REVISED GENERAL NOTE 2.	
12-15-11	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

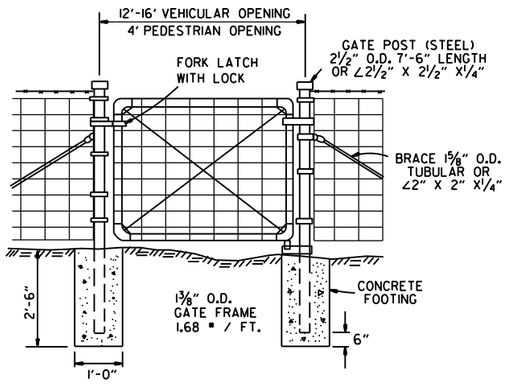
TEMPORARY EROSION CONTROL DEVICES

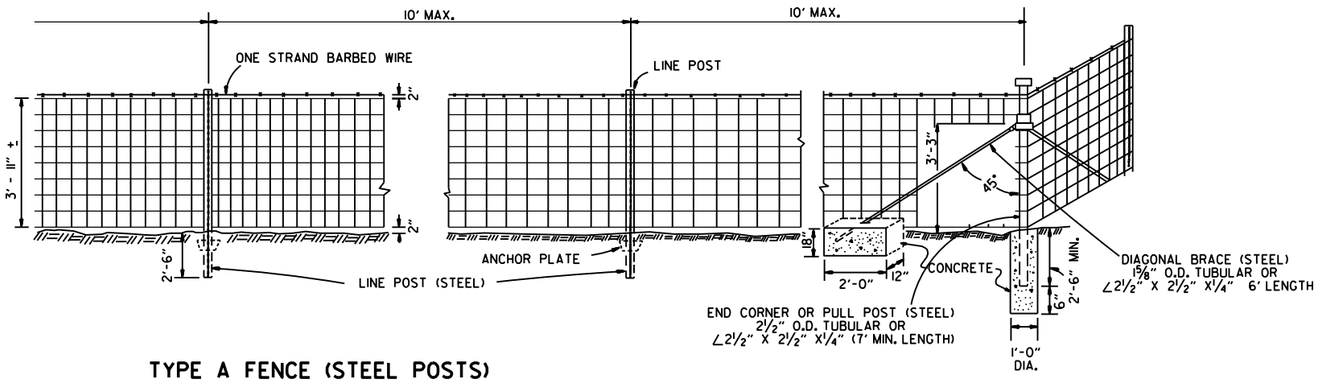
STANDARD DRAWING TEC-4



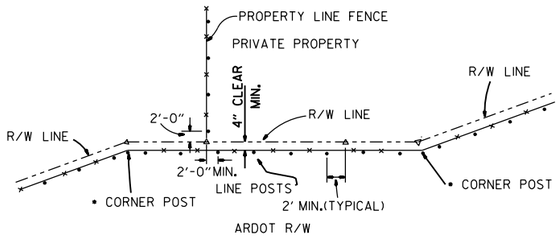
NOTE: STAPLE AT LEAST TOP, BOTTOM AND ALTERNATE WIRES OF WOVEN FABRIC FOR WOOD LINE POSTS.

TYPE A FENCE (WOOD POSTS)





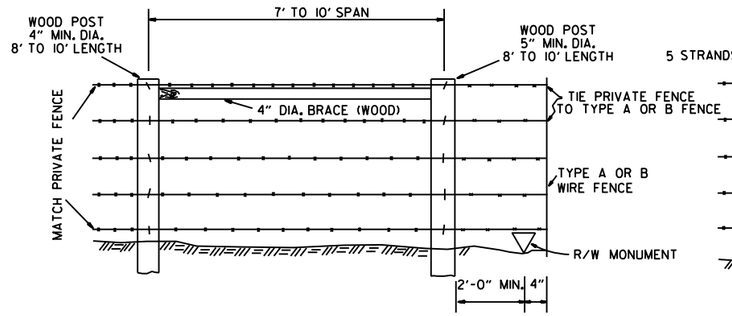
TYPE A FENCE (STEEL POSTS)



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

△ - R/W MONUMENTS
• - FENCE POSTS

RIGHT-OF-WAY FENCE LOCATION



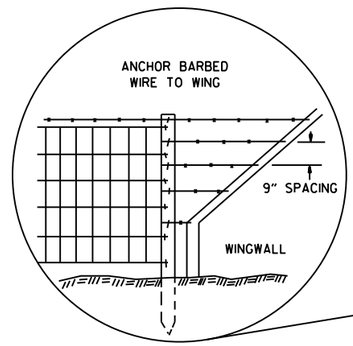
WHERE EXISTING PRIVATE FENCE CONSISTS OF STEEL POSTS, USE END POST ASSEMBLY AS SHOWN WITH TYPE A FENCE OR OTHER END POST ASSEMBLY AS APPROVED BY THE ENGINEER.

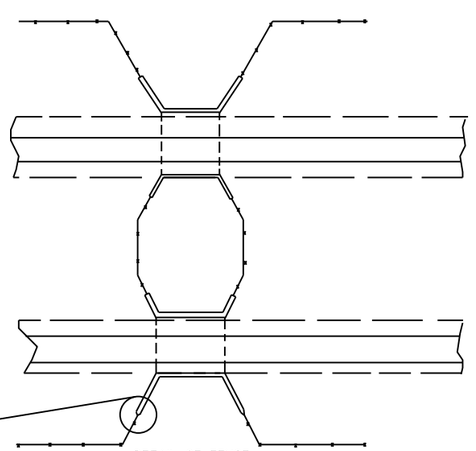
PRIVATE FENCE TERMINAL INSTALLATION



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

TYPE B FENCE





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

GENERAL NOTES:

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

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

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

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

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

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

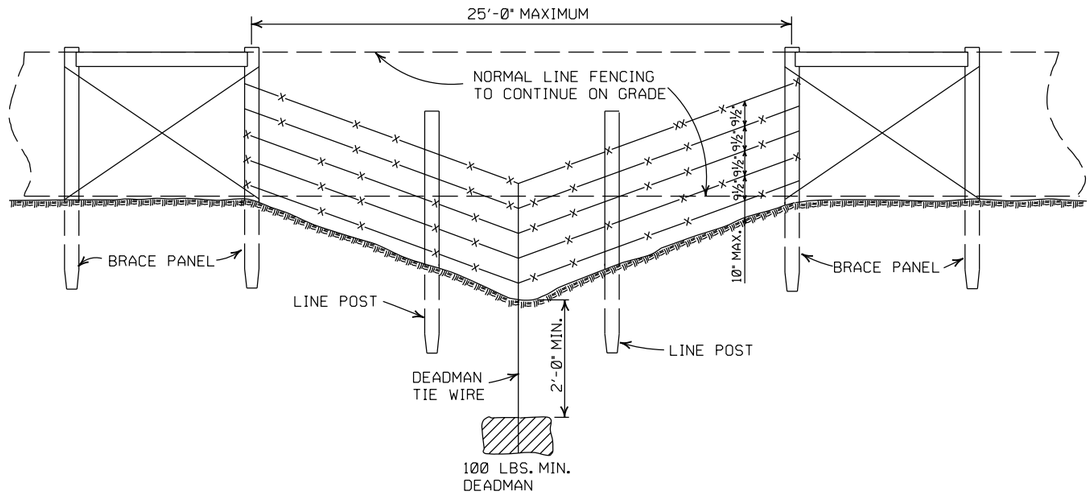
SPLICE FOR BARBED WIRE BETWEEN PULL POST ASSEMBLY SHALL BE BY THE "EYE METHOD": AS DESCRIBED AS FOLLOWS: THE ENDS OF THE BARBED WIRE SHALL BE BENT TO FORM A LOOP. THE LOOPS SHALL BE CONNECTED. AFTER THE LOOPS ARE CONNECTED THE ENDS OF THE WIRE SHALL BE WRAPPED AROUND THE PROJECTING WIRE A MINIMUM OF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

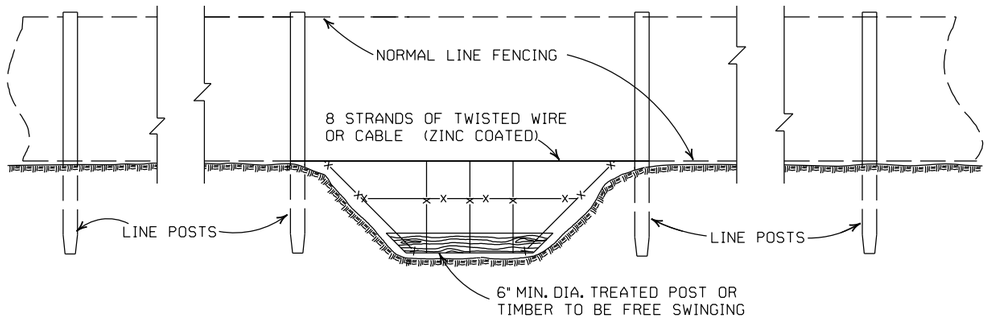
DATE	REVISION	DATE FILMED
8-22-02	REVISED GENERAL NOTES	
10-18-96	REVISED ASTM REF. TO AASHTO	
11-22-95	REVISED R-O-W LOCATION DETAIL	
6-2-94	ADDED CORNER POST NOTE	6-2-94
8-5-93	REVISED R-O-W LOCATION DETAIL	8-5-93
10-1-92	ADDED STAPLE NOTE	
8-2-90	REV'D PULL POST LENGTH	
11-30-89	DELETED CLASS CONC.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

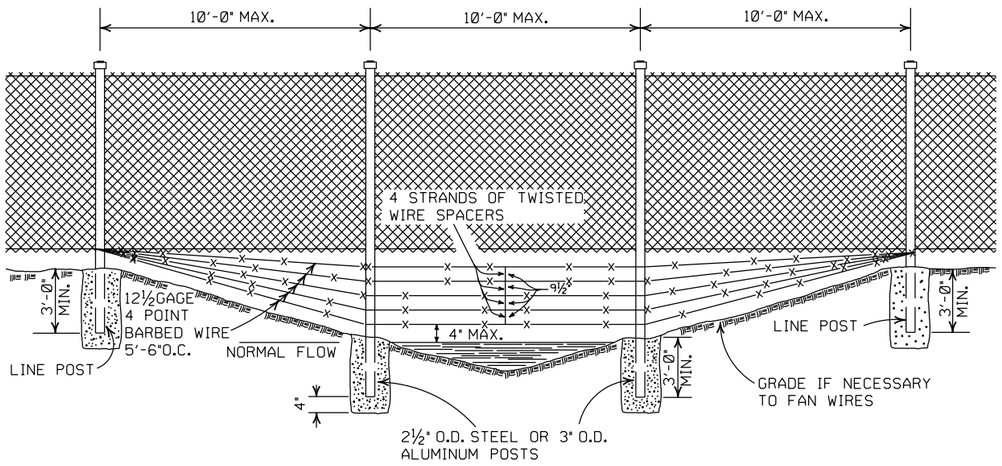
ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE
TYPE A AND B

STANDARD DRAWING WF-1







GENERAL NOTES:

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

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

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

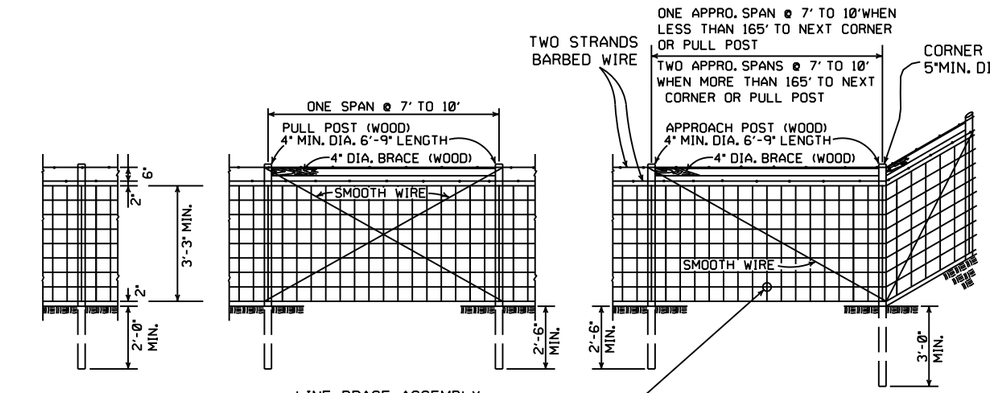
PAYMENT FOR THE TYPE INSTALLATION USED WILL NOT BE MADE DIRECTLY BUT WILL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR WIRE FENCE OR CHAIN LINK FENCE.

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

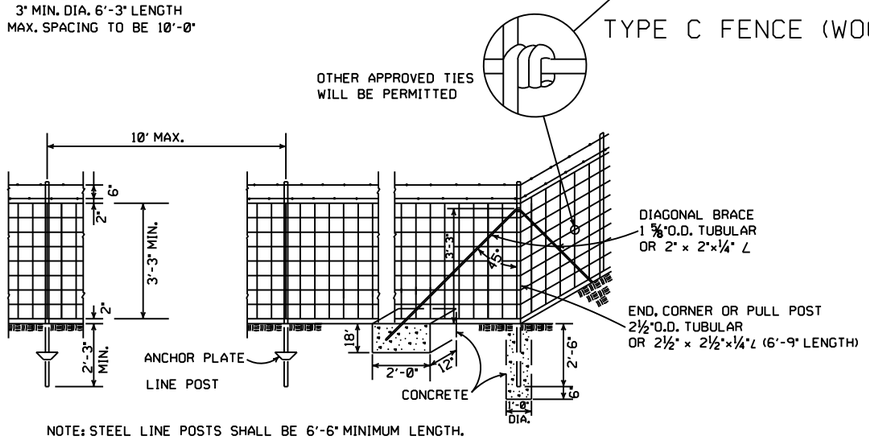
ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE WATER GAPS

STANDARD DRAWING WF-2

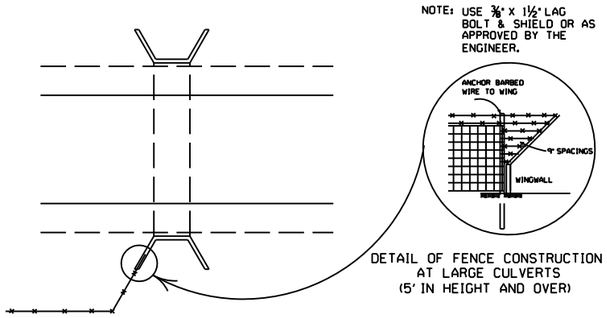


TYPE C FENCE (WOOD POSTS)



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

TYPE C FENCE (STEEL POSTS)



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

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.

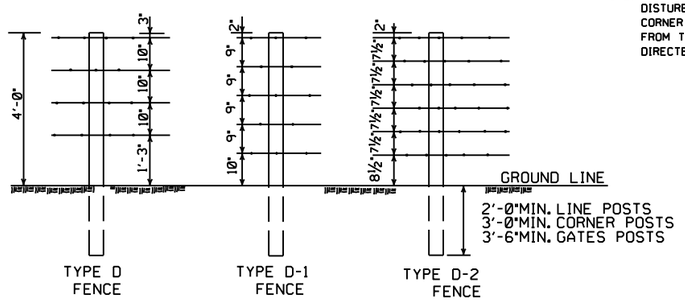
AT STREAM CROSSINGS, THE FENCE SHALL NOT BE CONSTRUCTED ACROSS LARGE STREAMS. WHERE CLEARANCE IS SUFFICIENT FROM THE TOP OF THE BANK TO THE BRIDGE STRUCTURE A CROSS CONNECTION SHALL BE CONSTRUCTED BETWEEN THE FENCE ON EACH SIDE OF THE ROAD. WHERE THE CLEARANCE IS NOT SUFFICIENT, THE FENCE SHALL BE TERMINATED 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.

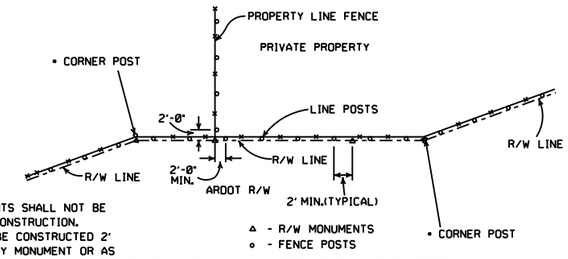
SPLICE FOR WOVEN WIRE BETWEEN PULL POST SHALL BE BY THE "WESTERN UNION METHOD" AS DESCRIBED AS FOLLOWS: THE VERTICAL WIRES FOR EACH END OF THE FENCE FABRIC SHALL BE PLACED SIDE BY SIDE AND THE PROJECTING HORIZONTAL WIRES SHALL BE WRAPPED A MINIMUM OF 4 TIMES AROUND THE HORIZONTAL WIRES OF THE FIRST WEB.

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

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

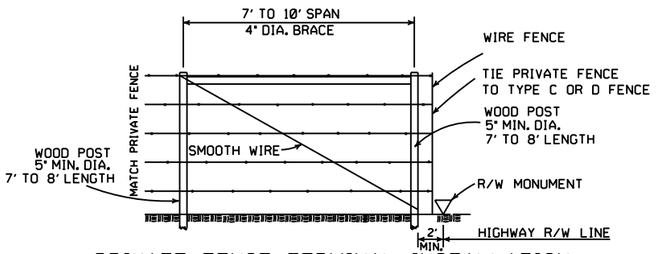


NOTE: SPACING AND SIZE (EXCEPT LENGTH) OF POSTS, APPROACH SPANS, PULL POST ASSEMBLIES, AND CORNER BRACING FOR TYPE D FENCE SHALL CONFORM TO TYPE C FENCE. USE GALVANIZED STAPLES ON WOOD POSTS AND APPROVED FASTENERS ON STEEL POSTS.



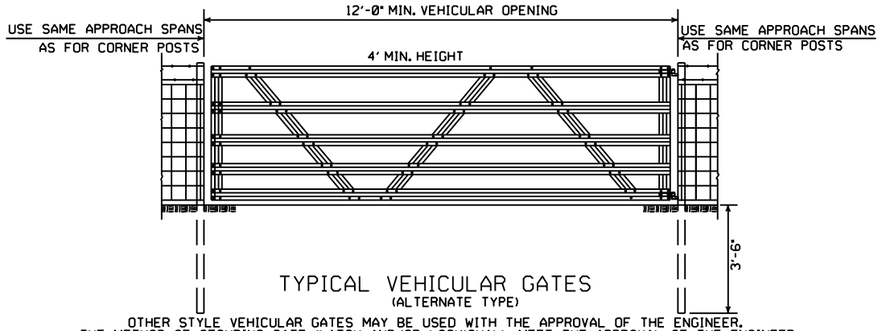
• NOTE: RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY FENCE CONSTRUCTION. CORNER POSTS SHALL BE CONSTRUCTED 2' FROM THE RIGHT-OF-WAY MONUMENT OR AS DIRECTED BY THE ENGINEER.

RIGHT-OF-WAY FENCE LOCATION



PRIVATE FENCE TERMINAL INSTALLATION

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



TYPICAL VEHICULAR GATES
(ALTERNATE TYPE)

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

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

ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE TYPE C AND D

STANDARD DRAWING WF-4