DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	1	198
				(2)	WABBASEKA - STUTTGART (PASSING LANES) (S)			

ARKANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS FOR STATE HIGHWAY

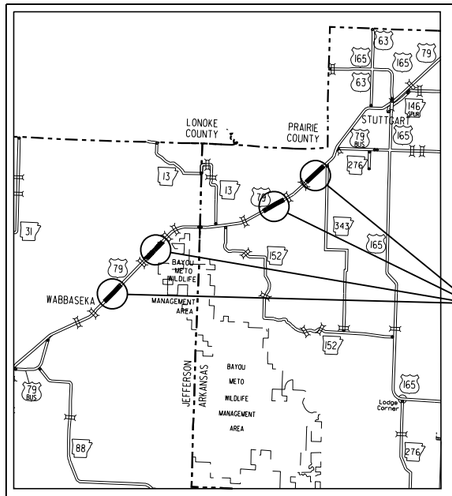
WABBASEKA - STUTTGART (PASSING LANES) (S)

JEFFERSON & ARKANSAS COUNTIES

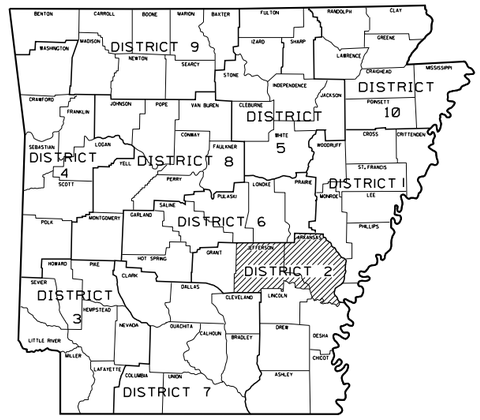
ROUTE 79 SECTIONS 10 & 11

JOB 020630

FEDERAL AID PROJECT NHPP-0135(2)

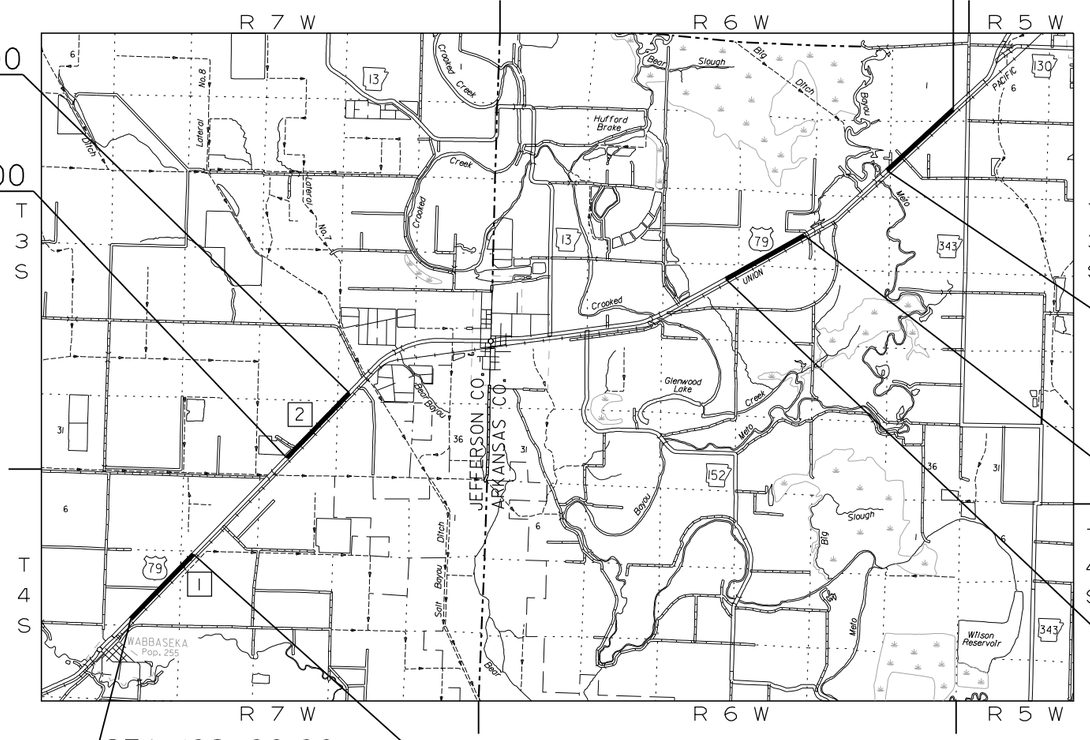


VICINITY MAP



ARKANSAS HIGHWAY DISTRICT 2

NOT TO SCALE



STA. 265+40.00
END SITE 2
L.M. 9.94

STA. 202+00.00
BEGIN SITE 2
L.M. 8.74

STA. 465+40.00
END JOB 020630
END SITE 4
L.M. 7.10

STA. 402+00.00
BEGIN SITE 4
L.M. 5.90

STA. 377+70.00
END SITE 3
L.M. 4.61

STA. 302+00.00
BEGIN SITE 3
L.M. 3.18

STA. 102+00.00
BEGIN JOB 020630
BEGIN SITE 1
L.M. 5.70

STA. 176+40.00
END SITE 1
L.M. 7.11

STRUCTURES OVER 20'-0" SPAN

1 STA. 159+97 IN PLACE
TRP. 6' X 4' X 76' R.C. BOX CULVERT
WITH 3:1 WINGS LT. AND RT.
RETAIN & EXTEND 25' LT.
FOR A COMPLETED LENGTH OF 101'
CONSTRUCT 6' X 4' X 101'
R.C. BOX CULVERT TO THE NORTH
WITH 3:1 WINGS LT. AND RT.
(SPAN = 27'-10")
Q50 = 769 CFS DA = 409 ACRES

2 STA. 232+02 IN PLACE
TRP. 6' X 6' X 76' R.C. BOX CULVERT
WITH 3:1 WINGS LT. AND RT.
RETAIN & EXTEND 24' LT.
FOR A COMPLETED LENGTH OF 100'
(SPAN = 20'-8")
DISCHARGE Q50 = 735 CFS DA = 659 ACRES

SITE 1 PROJECT COORDINATES

	BEGIN	MID-POINT	END
LATITUDE	N 34°22'02"	N 34°22'27"	N 34°22'54"
LONGITUDE	W 91°47'24"	W 91°46'54"	W 91°46'23"
STATION	102+00.00	139+20.00	176+40.00

SITE 2 PROJECT COORDINATES

	BEGIN	MID-POINT	END
LATITUDE	N 34°23'56"	N 34°24'19"	N 34°24'41"
LONGITUDE	W 91°45'13"	W 91°44'47"	W 91°44'21"
STATION	202+00.00	233+70.00	265+40.00

SITE 3 PROJECT COORDINATES

	BEGIN	MID-POINT	END
LATITUDE	N 34°25'59"	N 34°26'18"	N 34°26'36"
LONGITUDE	W 91°39'13"	W 91°38'34"	W 91°37'55"
STATION	302+00.00	339+85.00	377+70.00

SITE 4 PROJECT COORDINATES

	BEGIN	MID-POINT	END
LATITUDE	N 34°27'18"	N 34°27'40"	N 34°28'01"
LONGITUDE	W 91°36'52"	W 91°36'24"	W 91°35'57"
STATION	402+00.00	433+70.00	465+40.00

· DESIGN TRAFFIC DATA ·

DESIGN YEAR	2040
2020 ADT	3900
2040 ADT	4700
2040 DHV	517
DIRECTIONAL DISTRIBUTION	60%
TRUCKS	19%
AVERAGE RUNNING SPEED	55 MPH

GROSS LENGTH OF PROJECT	27690.00	FEET OR	5.244 MILES
NET LENGTH OF ROADWAY	27641.50	FEET OR	5.235 MILES
NET LENGTH OF BRIDGES	48.50	FEET OR	0.009 MILES
NET LENGTH OF PROJECT	27690.00	FEET OR	5.244 MILES

CERTIFICATE OF AUTHORIZATION
GARVER LLC
No. 766
ARKANSAS ENGINEER

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
DIGITALLY SIGNED 2-4-2021

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FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		020630	2	198

(2) INDEX OF SHEETS AND STANDARD DRAWINGS

STATE OF ARKANSAS
* * *
LICENSED
PROFESSIONAL
ENGINEER
* * *
No.13436
SHAUN A. ROBERSON

DIGITALLY SIGNED 2-4-2021

INDEX OF SHEETS

SHEET NO.		TITLE
1		TITLE SHEET
2		INDEX OF SHEETS AND STANDARD DRAWINGS
3		GOVERNING SPECIFICATIONS AND GENERAL NOTES
4	- 7	TYPICAL SECTIONS OF IMPROVEMENT
8	- 12	SPECIAL DETAILS
13	- 48	TEMPORARY EROSION CONTROL DETAILS
49	- 79	MAINTENANCE OF TRAFFIC DETAILS
80	- 81	PERMANENT PAVEMENT MARKING DETAILS
82		SOIL BORING LOGS
83	- 86	QUANTITIES
87		SUMMARY OF QUANTITIES AND REVISIONS
88	- 100	SURVEY CONTROL DETAILS
101	- 122	PLAN AND PROFILE SHEETS
123	- 198	CROSS SECTIONS

NOTE: CROSS SECTIONS NCT NORMALLY INCLUDED IN PLANS SOLD TO PROSPECTIVE BIDDERS, BUT MAY BE HAD UPON REQUEST.

ROADWAY STANDARD DRAWINGS

DRWG.NO.	TITLE	DATE
FES-1	FLARED END SECTION	10-18-96
FES-2	FLARED END SECTION	10-18-96
PCC-1	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PCM-1	METAL PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PCP-1	PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)	02-27-14
PCP-2	PLASTIC PIPE CULVERT (PVC F949)	02-27-14
PCP-3	PLASTIC PIPE CULVERT (POLYPROPYLENE)	02-27-20
PM-1	PAVEMENT MARKING DETAILS	02-27-20
PU-1	DETAILS OF PIPE UNDERDRAIN	12-08-16
RCB-1	REINFORCED CONCRETE BOX CULVERT DETAILS	07-26-12
RCB-2	EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS	11-20-03
RCB-3	METHOD OF EXTENDING EXISTING R.C. BOX CULVERTS	10-12-95
SI-1	DETAILS OF SPECIAL ITEMS	10-25-18
TC-1	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	11-07-19
TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	11-07-19
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	02-27-20
TC-4	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	11-07-19
TC-5	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	11-07-19
TEC-1	TEMPORARY EROSION CONTROL DEVICES	11-16-17
TEC-2	TEMPORARY EROSION CONTROL DEVICES	06-02-94
TEC-3	TEMPORARY EROSION CONTROL DEVICES	11-03-94
WF-3	CHAIN LINK FENCE	11-17-10
W-X003-1	DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS	05-10-66
R-100X-0	DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS	02-08-63
R-200X-0	DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS	02-15-63
R-300X-0	DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS	02-28-63

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				6	ARK.			
				JOB NO.		020630	3	198
				(2) GOVERNING SPECIFICATIONS AND GENERAL NOTES				

GOVERNING SPECIFICATIONS

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

NUMBER	TITLE
ERRATA_____	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273___	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273___	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273___	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273___	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA-1273___	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHWA-1273___	SUPPLEMENT - TRAINING PROGRAM - JOB 020630
FHWA-1273___	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273___	SUPPLEMENT - WAGE RATE DETERMINATION
100-3_____	CONTRACTOR'S LICENSE
100-4_____	DEPARTMENT NAME CHANGE
102-2_____	ISSUANCE OF PROPOSALS
108-1_____	LIQUIDATED DAMAGES
108-2_____	WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER
110-1_____	PROTECTION OF WATER QUALITY AND WETLANDS
210-1_____	UNCLASSIFIED EXCAVATION
303-1_____	AGGREGATE BASE COURSE
306-1_____	QUALITY CONTROL AND ACCEPTANCE
400-1_____	TACK COATS
400-4_____	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
400-5_____	PERCENT AIR VOIDS FOR ACHM MIX DESIGNS
400-6_____	LIQUID ANTI-STRIP ADDITIVE
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
505-1_____	PORTLAND CEMENT CONCRETE DRIVEWAY
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)
606-1_____	PIPE CULVERTS FOR SIDE DRAINS
620-1_____	MULCH COVER
800-1_____	STRUCTURES
804-2_____	REINFORCING STEEL FOR STRUCTURES
JOB 020630___	BIDDING REQUIREMENTS AND CONDITIONS
JOB 020630___	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 020630___	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 020630___	CARGO PREFERENCE ACT REQUIREMENTS
JOB 020630___	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 020630___	CONSTRUCTION PROJECT INFORMATION SIGN
JOB 020630___	DELAY IN RIGHT OF WAY OCCUPANCY
JOB 020630___	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB 020630___	EMBANKMENT CONSTRUCTION
JOB 020630___	ESTABLISHING CONTRACT TIME - WORKING DAY CONTRACT
JOB 020630___	EXTENSION FOR PIPE CULVERTS
JOB 020630___	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 020630___	MAINTENANCE OF TRAFFIC
JOB 020630___	MANDATORY ELECTRONIC CONTRACT
JOB 020630___	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB 020630___	NESTING SITES OF MIGRATORY BIRDS
JOB 020630___	PARTNERING REQUIREMENTS
JOB 020630___	PERCENT WITHIN LIMITS/PAVEMENT SMOOTHNESS (IRI)
JOB 020630___	PLASTIC PIPE
JOB 020630___	PRICE ADJUSTMENT FOR ASPHALT BINDER
JOB 020630___	SHORING FOR CULVERTS
JOB 020630___	SHOULDER NOTCH - MAINTENANCE OF TRAFFIC
JOB 020630___	SOIL STABILIZATION
JOB 020630___	STORM WATER POLLUTION PREVENTION PLAN
JOB 020630___	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 020630___	UTILITY ADJUSTMENTS
JOB 020630___	VALUE ENGINEERING
JOB 020630___	WARM MIX ASPHALT
JOB 020630___	WATER POLLUTION CONTROL
JOB 020630___	WELLHEAD PROTECTION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13436
SHAUN A. ROBERSON

DIGITALLY SIGNED 2-18-2021

GENERAL NOTES

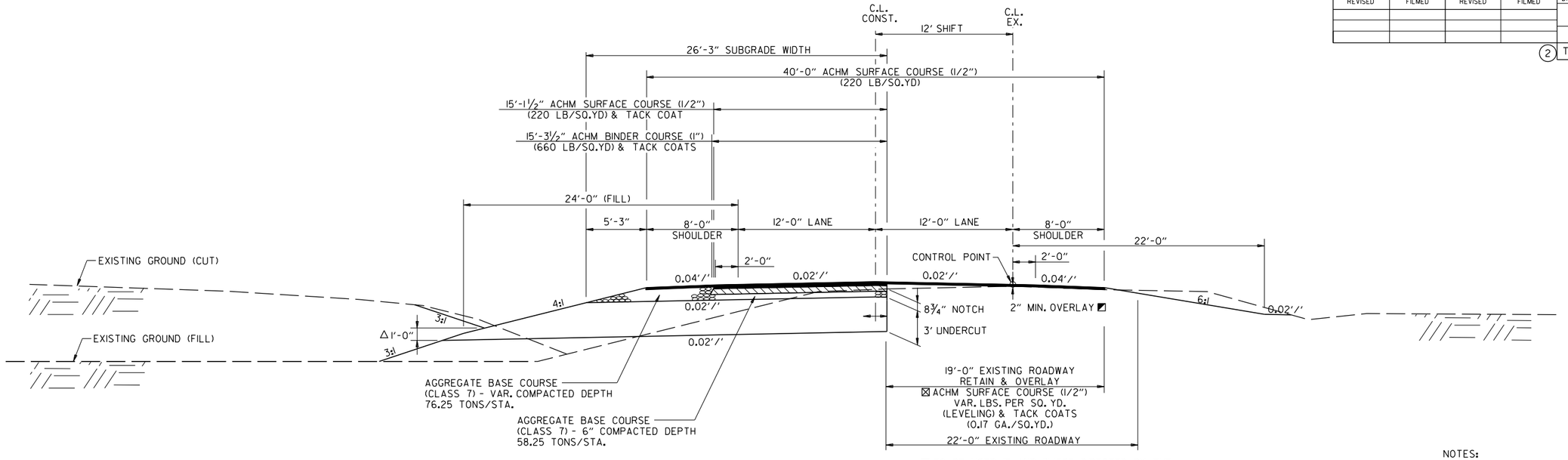
1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
2. ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
3. ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
4. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
5. 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.
6. 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.
7. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
8. 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.
9. THIS PROJECT IS COVERED UNDER A SECTION 404 NATIONWIDE 23 PERMIT. REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS, EDITION OF 2014, FOR PERMIT REQUIREMENTS.

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				6	ARK.			
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(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021



☒ TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

TYPICAL SECTION OF IMPROVEMENT NOTCH AND WIDENING NORTHBOUND PASSING LANE (SITE 1)

STA. 102+00.00 TO STA. 110+66.45
STA. 172+51.25 TO STA. 176+40.00

◩ TO MAINTAIN AN ADEQUATE OVERLAY THICKNESS AT THE SHOULDER EDGE, MORE THAN 2" OF ACHM SURFACE COURSE MAY BE REQUIRED AT THE CONTROL POINT. AN AVERAGE THICKNESS OF 3" HAS BEEN UTILIZED FOR SITE 1.

△ WHERE FEASIBLE, THE DITCH BOTTOM HAS BEEN PLACED AT THE BOTTOM OF UNDERCUT LAYER. HOWEVER, TO MAINTAIN POSITIVE DRAINAGE, THE DITCH BOTTOM MAY BE PLACED UP TO 1'-0" FROM THE BOTTOM OF THE UNDERCUT LAYER. SEE CROSS SECTIONS FOR DETAILS.

NOTES:

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

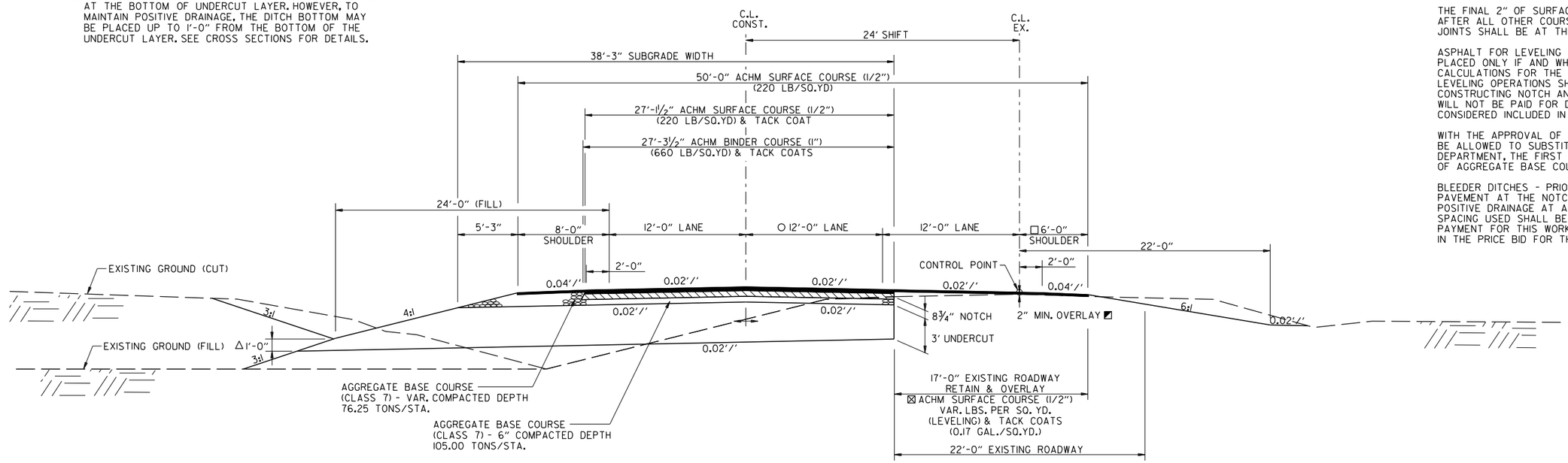
THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET THE TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

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

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.

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 (1/2") IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.

BLEEDER DITCHES - PRIOR TO AND DURING PLACEMENT OF PAVEMENT AT THE NOTCH, THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES. THE METHOD(S) AND SPACING USED SHALL BE APPROVED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.



☒ TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

○ TRANSITION LANE FROM
0' AT STA. 110+66.45 TO
12' AT STA. 112+66.45

TRANSITION LANE FROM
12' AT STA. 165+91.25 TO
0' AT STA. 172+51.25

□ TRANSITION SHOULDER FROM
8' AT STA. 110+66.45 TO
6' AT STA. 112+66.45

TRANSITION SHOULDER FROM
6' AT STA. 165+91.25 TO
8' AT STA. 172+51.25

TYPICAL SECTION OF IMPROVEMENT NOTCH AND WIDENING NORTHBOUND PASSING LANE (SITE 1)

STA. 110+66.45 TO STA. 172+51.25

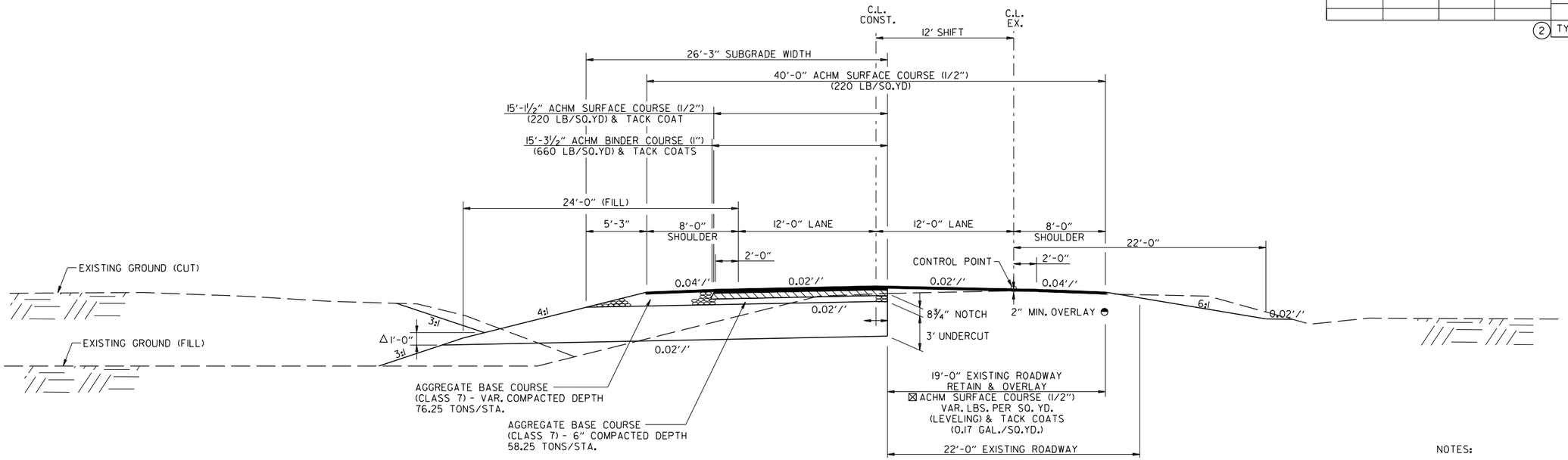
TYPICAL SECTIONS OF IMPROVEMENT

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				6	ARK.			
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(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021



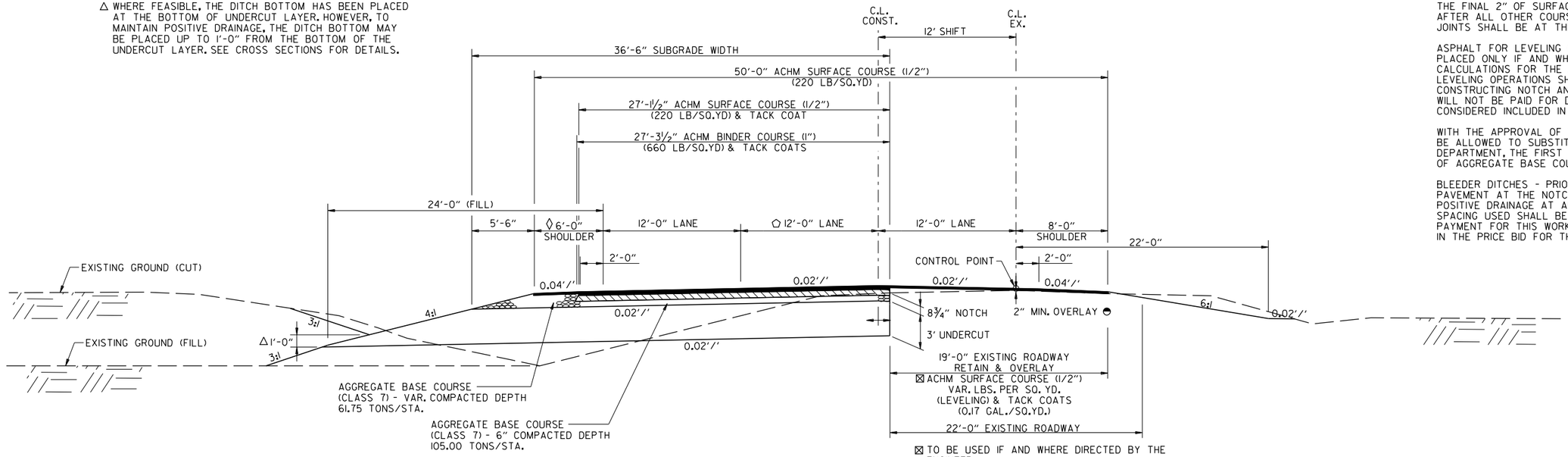
☒ TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

TYPICAL SECTION OF IMPROVEMENT NOTCH AND WIDENING SOUTHBOUND PASSING LANE (SITE 2)

STA. 202+00.00 TO STA. 202+81.68

◓ TO MAINTAIN AN ADEQUATE OVERLAY THICKNESS AT THE SHOULDER EDGE, MORE THAN 2" OF ACHM SURFACE COURSE MAY BE REQUIRED AT THE CONTROL POINT. AN AVERAGE THICKNESS OF 3 ¾" HAS BEEN UTILIZED FOR SITE 2.

△ WHERE FEASIBLE, THE DITCH BOTTOM HAS BEEN PLACED AT THE BOTTOM OF UNDERCUT LAYER. HOWEVER, TO MAINTAIN POSITIVE DRAINAGE, THE DITCH BOTTOM MAY BE PLACED UP TO 1'-0" FROM THE BOTTOM OF THE UNDERCUT LAYER. SEE CROSS SECTIONS FOR DETAILS.



☒ TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

⬠ TRANSITION LANE FROM
0' AT STA. 202+81.68 TO
12' AT STA. 209+41.68

TRANSITION LANE FROM
12' AT STA. 263+40.00 TO
0' AT STA. 265+40.00

◊ TRANSITION SHOULDER FROM
8' AT STA. 202+81.68 TO
6' AT STA. 209+41.68

TRANSITION SHOULDER FROM
6' AT STA. 263+40.00 TO
8' AT STA. 265+40.00

TYPICAL SECTION OF IMPROVEMENT NOTCH AND WIDENING SOUTHBOUND PASSING LANE (SITE 2)

STA. 202+81.68 TO STA. 265+40.00

NOTES:

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

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

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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 (1/2") IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS

BLEEDER DITCHES - PRIOR TO AND DURING PLACEMENT OF PAVEMENT AT THE NOTCH, THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES. THE METHOD(S) AND SPACING USED SHALL BE APPROVED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS..

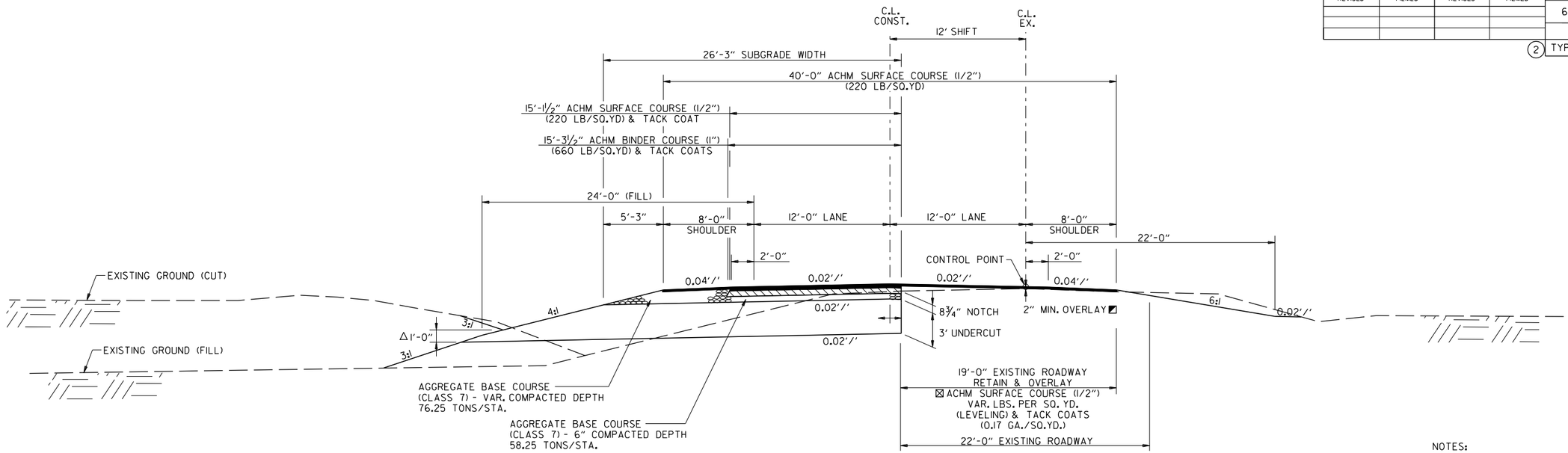
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				6	ARK.			
				JOB NO.		020630	6	198

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021



☒ TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

TYPICAL SECTION OF IMPROVEMENT NOTCH AND WIDENING NORTHBOUND PASSING LANE (SITE 3)

STA. 302+00.00 TO STA. 310+48.94
STA. 372+51.06 TO STA. 377+70.00

◩ TO MAINTAIN AN ADEQUATE OVERLAY THICKNESS AT THE SHOULDER EDGE, MORE THAN 2" OF ACHM SURFACE COURSE MAY BE REQUIRED AT THE CONTROL POINT. AN AVERAGE THICKNESS OF 2 ½" HAS BEEN UTILIZED FOR SITE 3.

△ WHERE FEASIBLE, THE DITCH BOTTOM HAS BEEN PLACED AT THE BOTTOM OF UNDERCUT LAYER. HOWEVER, TO MAINTAIN POSITIVE DRAINAGE, THE DITCH BOTTOM MAY BE PLACED UP TO 1'-0" FROM THE BOTTOM OF THE UNDERCUT LAYER. SEE CROSS SECTIONS FOR DETAILS.

NOTES:

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

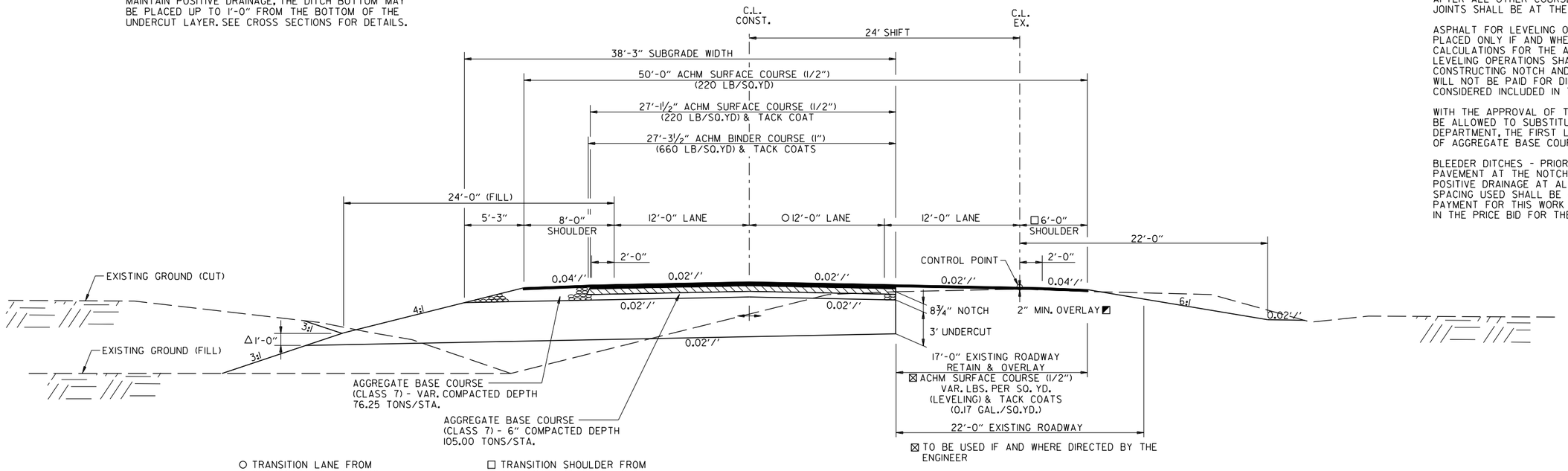
THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET THE TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

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

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.

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 (1/2") IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.

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☒ TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

○ TRANSITION LANE FROM
0' AT STA. 310+48.94 TO
12' AT STA. 312+48.94

TRANSITION LANE FROM
12' AT STA. 365+91.06 TO
0' AT STA. 372+51.06

□ TRANSITION SHOULDER FROM
8' AT STA. 310+48.94 TO
6' AT STA. 312+48.94

TRANSITION SHOULDER FROM
6' AT STA. 365+91.06 TO
8' AT STA. 372+51.06

TYPICAL SECTION OF IMPROVEMENT NOTCH AND WIDENING NORTHBOUND PASSING LANE (SITE 3)

STA. 310+48.94 TO STA. 372+51.06

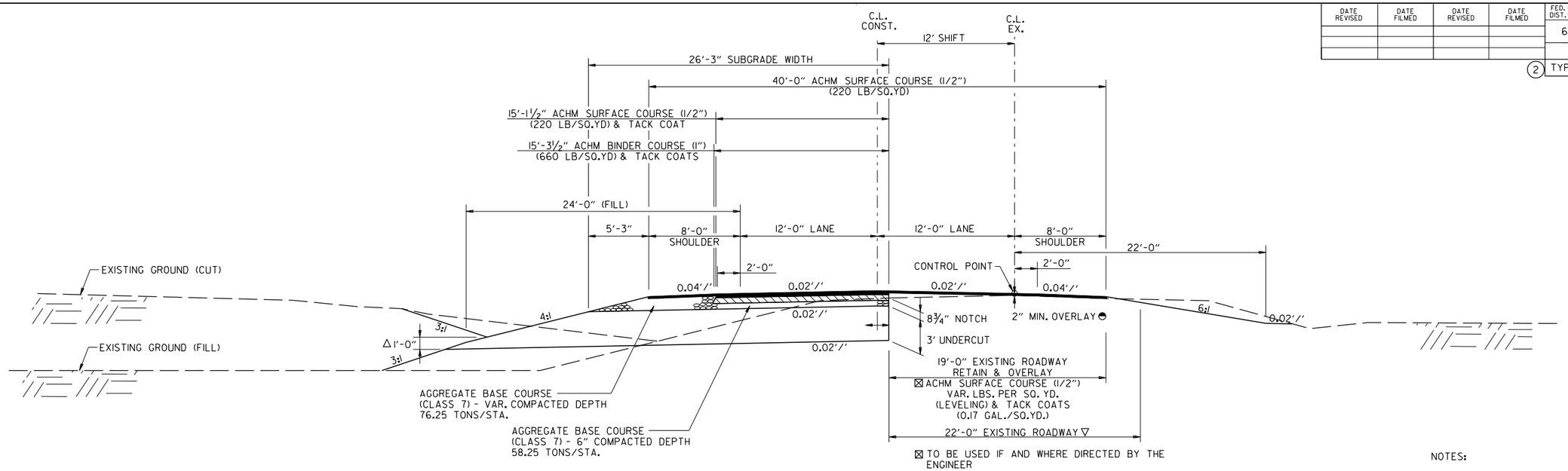
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				JOB NO.		020630	7	198

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021



☒ TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

TYPICAL SECTION OF IMPROVEMENT NOTCH AND WIDENING SOUTHBOUND PASSING LANE (SITE 4)

STA. 402+00.00 TO STA. 403+19.80

◓ TO MAINTAIN AN ADEQUATE OVERLAY THICKNESS AT THE SHOULDER EDGE, MORE THAN 2" OF ACHM SURFACE COURSE MAY BE REQUIRED AT THE CONTROL POINT. AN AVERAGE THICKNESS OF 3" HAS BEEN UTILIZED FOR SITE 4.

▽ NOTE:
AT THE BEGINNING AND END OF SITE 4, THE PAVEMENT WIDTH TIES INTO AN EXISTING 24'-0" PAVED WIDTH

Δ WHERE FEASIBLE, THE DITCH BOTTOM HAS BEEN PLACED AT THE BOTTOM OF UNDERCUT LAYER. HOWEVER, TO MAINTAIN POSITIVE DRAINAGE, THE DITCH BOTTOM MAY BE PLACED UP TO 1'-0" FROM THE BOTTOM OF THE UNDERCUT LAYER. SEE CROSS SECTIONS FOR DETAILS.

NOTES:

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

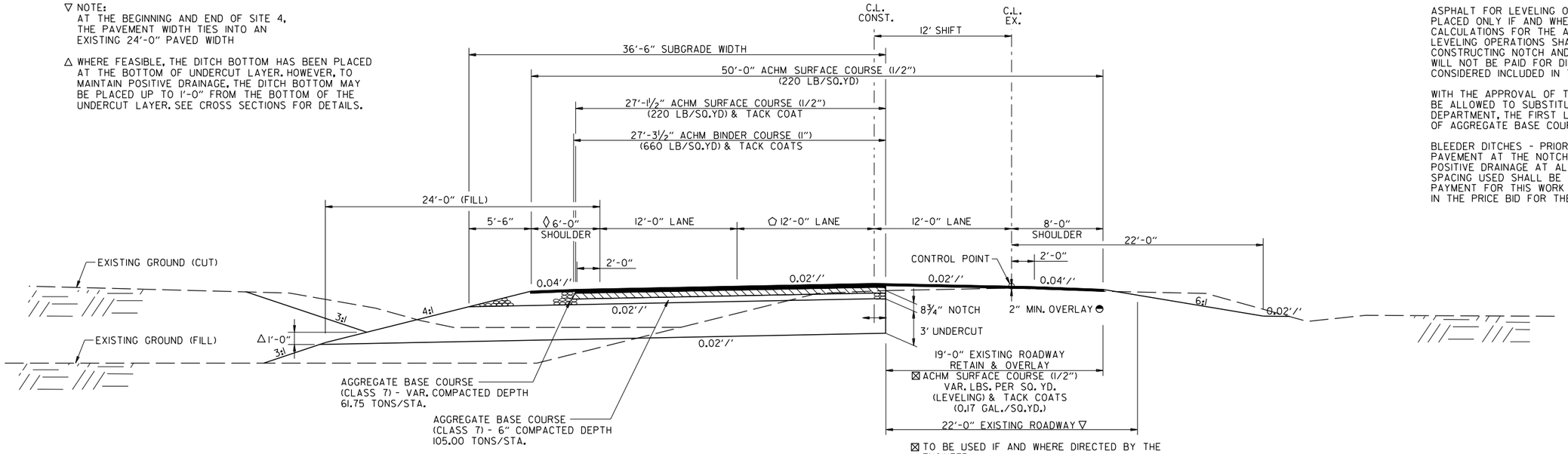
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THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAID. LONGITUDINAL JOINTS SHALL BE AT THE LANE LINES.

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☒ TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

⬠ TRANSITION LANE FROM
0' AT STA. 403+19.80 TO
12' AT STA. 409+79.80

TRANSITION LANE FROM
12' AT STA. 463+40.00 TO
0' AT STA. 465+40.00

◊ TRANSITION SHOULDER FROM
8' AT STA. 403+19.80 TO
6' AT STA. 409+79.80

TRANSITION SHOULDER FROM
6' AT STA. 463+40.00 TO
8' AT STA. 465+40.00

TYPICAL SECTION OF IMPROVEMENT NOTCH AND WIDENING SOUTHBOUND PASSING LANE (SITE 4)

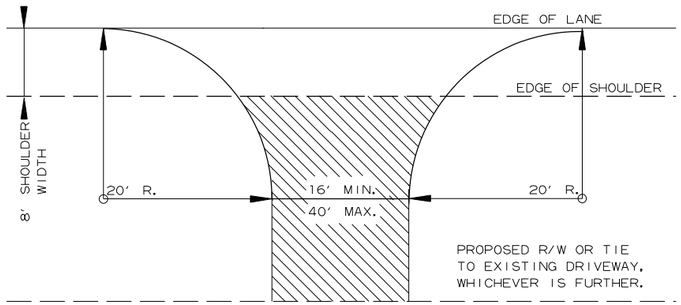
STA. 403+19.80 TO STA. 465+40.00

TYPICAL SECTIONS OF IMPROVEMENT

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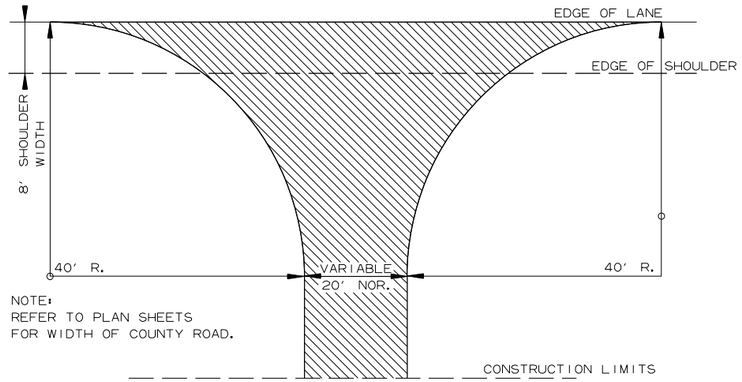
(2) SPECIAL DETAILS



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

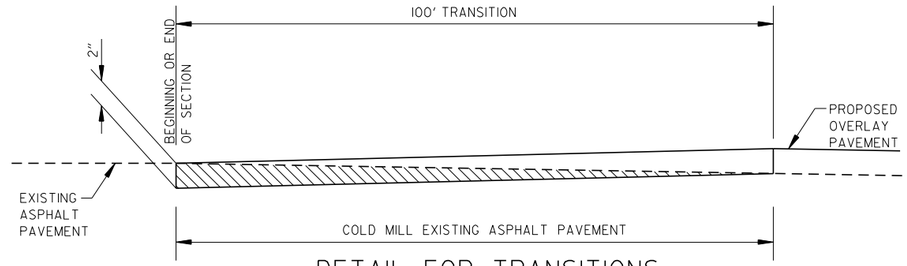


NOTE:
REFER TO PLAN SHEETS FOR WIDTH OF COUNTY ROAD.

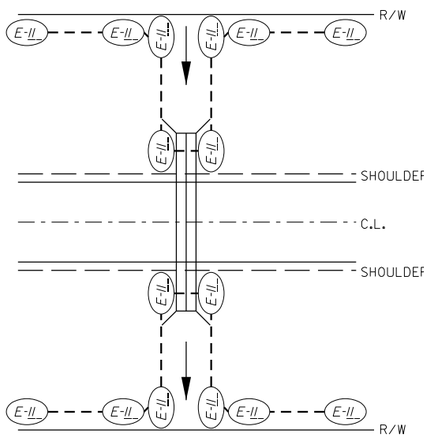
NOTE: TURNOUTS SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS AS DIRECTED BY THE ENGINEER.

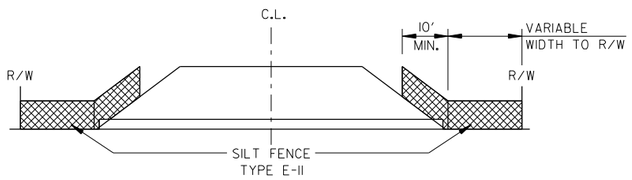
ACHM SURFACE COURSE (1/2") (220 LBS. PER SQ. YD.) AND AGGREGATE BASE COURSE (CLASS 7) 7" COMP. DEPTH

DETAIL FOR COUNTY ROAD TURNOUTS

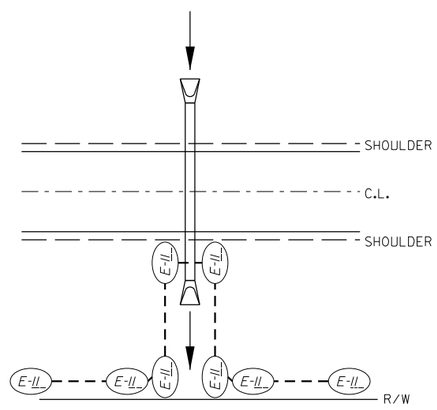


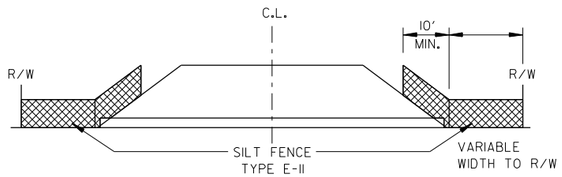
DETAIL FOR TRANSITIONS





DETAILS OF SILT FENCE AT R.C. BOX





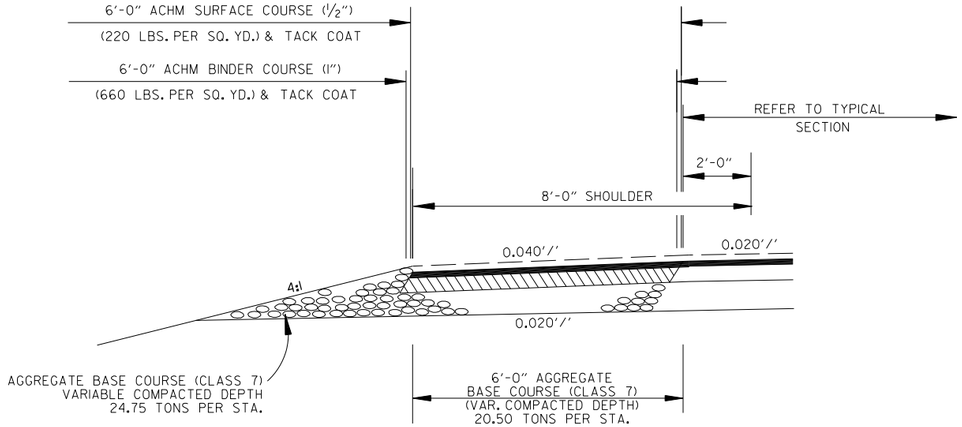
DETAILS OF SILT FENCE AT CROSS DRAINS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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SHAUN A. ROBERSON
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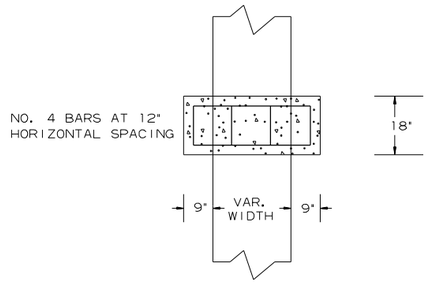
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(2) SPECIAL DETAILS



FULL DEPTH SHOULDER FOR MAINTENANCE OF TRAFFIC

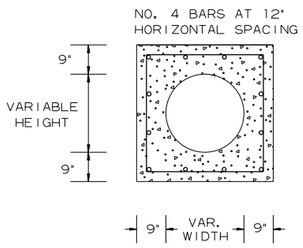
STA. 155+20 TO STA. 164+80



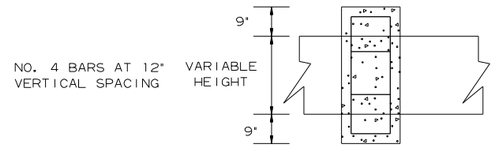
TOP VIEW

NOTE: PIPE COLLAR TO BE UTILIZED IF AND WHERE DIRECTED BY THE ENGINEER.

MIN 3" COVER



FRONT VIEW



SIDE VIEW

PIPE EXTENSION REINFORCED CONCRETE COLLAR DETAIL



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

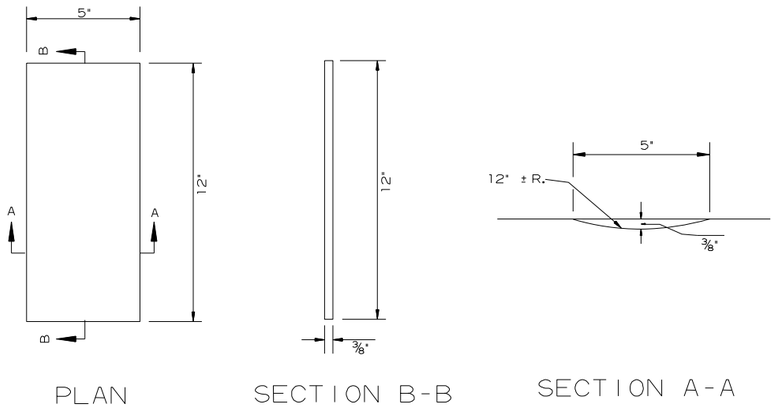
CONSTRUCTION PROJECT INFORMATION SIGN

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
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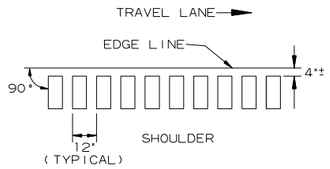
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				(2)	SPECIAL DETAILS			

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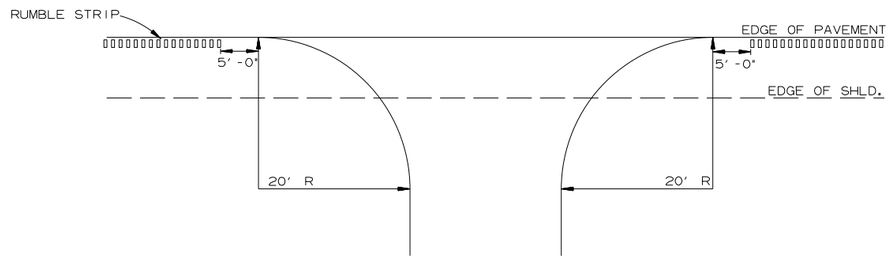


PLAN SECTION B-B SECTION A-A

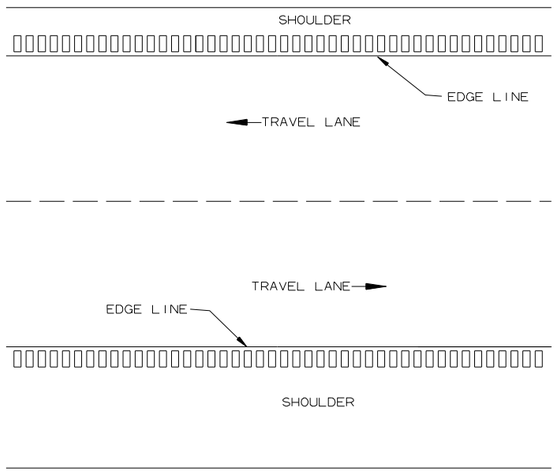
DETAILS OF RUMBLE STRIPS



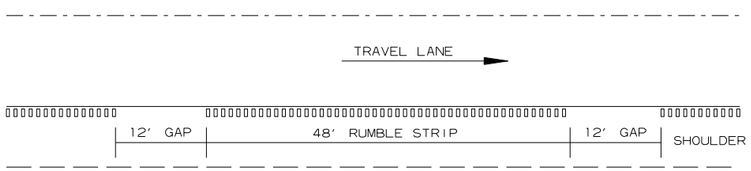
LOCATION PLAN OF RUMBLE STRIPS
LEFT OR RIGHT SHOULDER



DETAIL FOR RUMBLE STRIP GAP
AT DRIVEWAY TURNOUTS



PLAN VIEW



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

DETAIL FOR GAP PATTERN RUMBLE STRIP

GENERAL NOTES

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

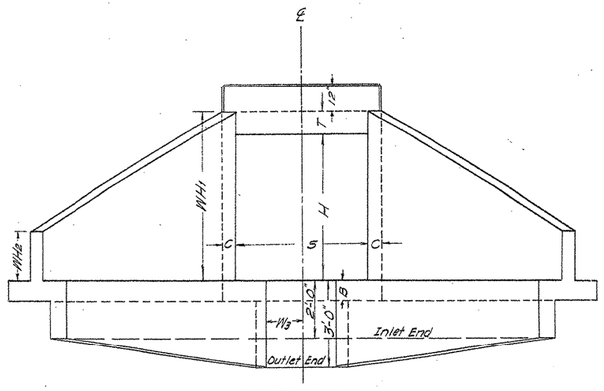
SPECIAL DETAILS

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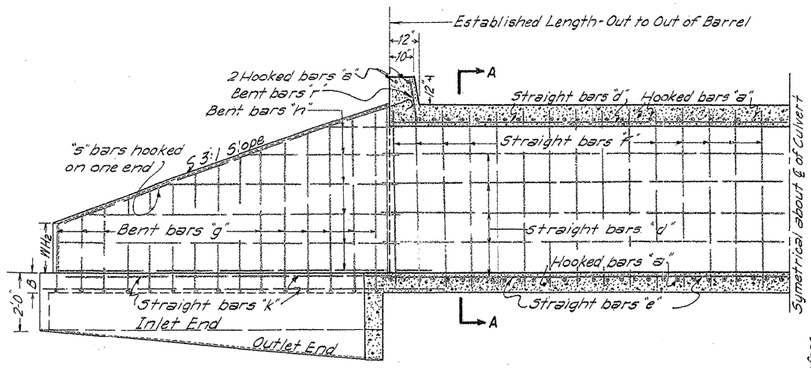
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(2) SPECIAL DETAILS

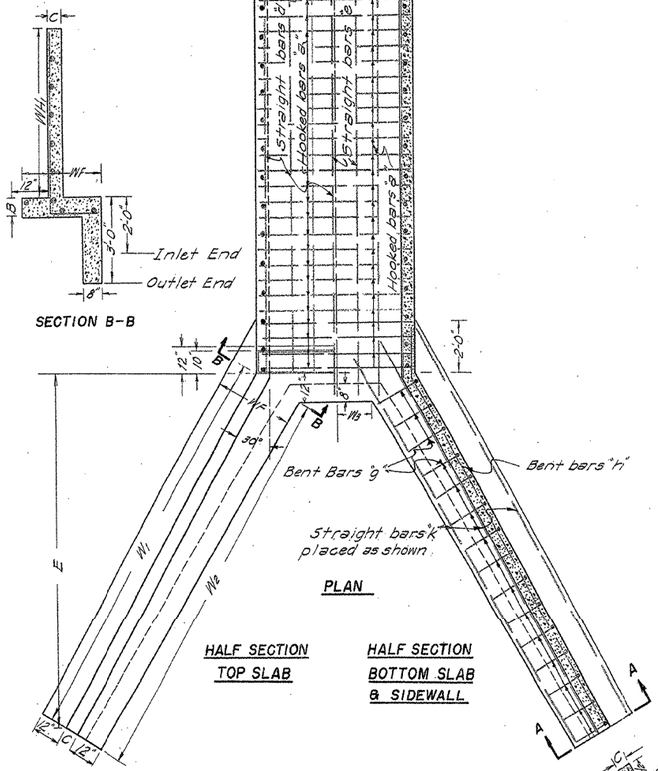
STATE OF ARKANSAS
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END ELEVATION



LONGITUDINAL SECTION



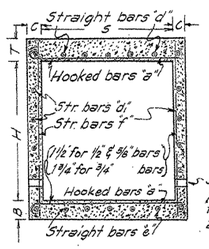
SECTION B-B

PLAN

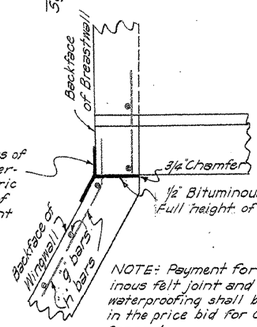
HALF SECTION TOP SLAB

HALF SECTION BOTTOM SLAB & SIDEWALL

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



SECTION A-A



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

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

DETAIL OF EXPANSION JOINT
FOR CULVERTS WHEN HEIGHT "H" = 8' OR MORE
SCALE 3/4" = 1'-0"

DIMENSIONS AND QUANTITIES

SPAN	HEIGHT	AREA OF OPENING SQ. FT.	MAXIMUM DEPTH OF CLOSURE POUR	THICKNESS OF TOP SLAB	THICKNESS OF WALLS & WINGWALLS	THICKNESS OF BOTTOM SLAB	WINGWALL HEIGHTS AT HEADWALL	WINGWALL HEIGHTS AT WING END	MAXIMUM WIDTH OF WING FOOTING	PERPENDICULAR DIST. FROM END OF WING TO END OF BARREL	LENGTH OF WINGWALLS	INSIDE LENGTH OF WING FOOTING	FOOTING DIMENSION FROM ℄ OF BOX	CONCRETE CU YD. HEADWALLS, WING WALLS & FOOTINGS	CONCRETE CU YD. PER LINEAR FT. OF BARREL	STEEL LB. HEADWALLS, WING WALLS & FOOTINGS	STEEL LB. PER LINEAR FT. OF BARREL	STEEL LB. ADDL STEEL FOR LAPS
S	H	A	D	T	C	B	WH1	WH2	WF	E	W1	W2	W3					
3	2	6	3'-6"	8"	6"	6⅛"	2'-9"	1'-0"	2'-6"	5'-3"	6'-0¾"	5'-9¼"	0'-10⅛"	3.65	0.253	236	25.26	13.4
	3	9			6"		3'-3"	1'-0"	2'-6"	5'-3"	8'-6¼"	8'-2¾"	0'-10⅛"	5.06	0.280	362	27.97	15.6
	4	12			6"		4'-9"	1'-4"	2'-6"	10'-3"	11'-10"	11'-6½"	0'-10⅛"	7.71	0.327	461	30.67	17.8
4	2	8	3'-9"	9"	6"	7⅛"	2'-9"	1'-0"	2'-6"	5'-3"	6'-0¾"	5'-9¼"	1'-1⅛"	4.02	0.329	246	31.22	15.6
	3	12			6"		3'-9"	1'-0"	2'-6"	8'-3"	8'-6¼"	8'-2¾"	1'-1⅛"	6.30	0.366	363	33.93	17.8
	4	16			6"		4'-8"	1'-4"	2'-6"	10'-3"	11'-10"	11'-6½"	1'-1⅛"	8.20	0.403	472	36.63	20.0
	6	24			7"		6'-8"	2'-0"	3'-4½"	14'-3"	16'-5⅛"	16'-1¼"	0'-5"	13.57	0.522	777	42.58	24.5
5	2	10	3'-6"	9½"	6"	8"	2'-10"	1'-0"	2'-6"	5'-6"	6'-4¼"	6'-0⅝"	1'-10⅛"	4.56	0.388	288	40.34	17.8
	3	15			6"		3'-10"	1'-0"	2'-6"	8'-6"	8'-8⅜"	8'-6¼"	1'-10⅛"	6.82	0.435	407	43.04	20.0
	4	20			6"		4'-10"	1'-4"	2'-6"	10'-6"	12'-1½"	11'-10"	1'-10⅛"	8.78	0.472	513	46.75	22.3
	5	25			6"		5'-10"	1'-8"	2'-11"	12'-6"	14'-5¼"	14'-4¾"	1'-4⅛"	11.20	0.509	650	48.45	24.5
	7	35			7½"		7'-10"	2'-4"	3'-11"	16'-6"	18'-0⅝"	18'-1⅞"	0'-4"	19.17	0.662	1291	54.04	28.9
6	3	18	3'-6"	10½"	6"	9"	3'-10"	1'-0"	2'-6"	8'-6"	9'-3¾"	9'-6¼"	2'-4⅛"	7.28	0.532	403	50.58	22.3
	4	24			6"		4'-10"	1'-4"	2'-6"	10'-6"	12'-1½"	11'-10"	2'-4⅛"	9.28	0.560	527	53.28	24.5
	5	30			6"		5'-10"	1'-8"	2'-11"	12'-6"	14'-5¼"	14'-4¾"	1'-10⅜"	11.80	0.606	664	55.09	26.7
	6	36			7"		6'-10"	2'-0"	3'-5"	14'-6"	16'-8"	17'-0"	1'-4½"	15.76	0.691	825	59.39	28.9
	8	48			8"		8'-10"	2'-8"	4'-5"	18'-6"	21'-4"	22'-3"	0'-3⅝"	24.98	0.836	1500	72.76	33.4
8	7	56	3'-6"	11½"	7½"	11"	6'-0"	2'-4"	4'-0"	17'-0"	19'-7½"	20'-3"	1'-8⅞"	22.58	0.966	1337	90.21	40.1
	8	64			8"		8'-0"	2'-8"	4'-6"	18'-0"	21'-11¼"	22'-10⅛"	1'-2½"	27.97	1.043	1592	100.81	42.3
	10	80			10"		11'-0"	3'-4"	5'-6"	23'-0"	26'-6¾"	28'-1⅛"	0'-2½"	43.93	1.289	2449	108.51	46.0
10	8	80	3'-6"	12½"	8"	12"	9'-0"	2'-8"	4'-6"	18'-0"	21'-11¼"	22'-10⅛"	2'-2½"	28.64	1.270	1628	130.58	44.5
	10	100			10"		11'-0"	3'-4"	5'-6"	23'-0"	26'-6¾"	28'-1⅛"	1'-2½"	46.15	1.517	2490	138.74	48.0
	12	120			12"		13'-0"	4'-0"	6'-6"	27'-0"	31'-2"	33'-1⅛"	0'-2¾"	68.21	1.815	3817	158.53	53.4

LAP NOTE: In computing quantities of Steel from the above table, add one lap for culverts up to 50'-0" in length, and one lap for each additional 25'-0" in length.
SPECIFICATION: Arkansas Standard Road and Bridge Specifications
* REINFORCING STEEL: To be deformed bars of structural or intermediate grade.
CHAMFER: All exposed corners to have ¾" Chamfer
CONCRETE: All concrete to be Class 'A'
*Reinforcing Steel to be deformed bars of intermediate or rail grade on all Interstate Highways.

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

SPAN	HEIGHT	'a' bars (3 for #4 & #5 bars, 6 for ⅜" bars; 2 in each headwall, balance in Top and Bottom Slab of Barrel) SIZE	'a' bars SPACING	'a' bars NUMBER	'a' bars LENGTH	'a' bars 'X'	'd' bars STRAIGHT In Bottom of Top Slab SIZE	SPACING	NUMBER	LENGTH	'd' bars STRAIGHT In Sidewalls SIZE	SPACING	NUMBER	LENGTH	'd' bars STRAIGHT In Top of Bottom Slab SIZE	SPACING	NUMBER	LENGTH	'f' bars STRAIGHT Vertical bars in Sidewalls SIZE	SPACING	NUMBER	LENGTH	'g' bars Vertical bars in back face of Wingwall, bent into bottom of footing SIZE	SPACING	NUMBER	LENGTH	X Min.	X Max.	Y Min.	Y Max.	'h' bars #4 bars @ 12" Ctrs NUMBER	LENGTH (Varies)	Z Min.	Z Max.	'k' bars #4 bars @ 12" Ctrs STRAIGHT NUMBER	LENGTH	'r' bars #4 bars @ 12" Ctrs Dowels in Headwalls NUMBER	LENGTH	's' bars #4 bars In top of each Wingwall NUMBER	LENGTH	Z
S	H	SIZE	SPACING	NUMBER	LENGTH	'X'	SIZE	SPACING	NUMBER	LENGTH	SIZE	SPACING	NUMBER	LENGTH	SIZE	SPACING	NUMBER	LENGTH	SIZE	SPACING	NUMBER	LENGTH	SIZE	SPACING	NUMBER	LENGTH					NUMBER	LENGTH			NUMBER	LENGTH	NUMBER	LENGTH	NUMBER	LENGTH	Z
3	2	#4	5½"	136	4'-6"	3'-9"	#4	10"	5	29'-9 for 30'-0" Length	#4	12"	2	29'-9 for 30'-0" Length	#4	10"	5	31'-9 for 30'-0" Length	#4	12"	62	2'-11½"	#4	12"	28	3'-6"	1'-3"	1'-3"	1'-3½"	3'-0½"	12	6'-3¼"	2'-4"	5'-9⅜"	12	7'-8"	10	3'-1"	4	7'-7⅛"	7'-1⅛"
	3			136	4'-6"	3'-9"			5				4				6				62	3'-11½"			40	3'-11"	1'-3"	1'-3"	1'-4½"	3'-1⅛"	16	6'-4"	2'-4"	9'-3⅛"	12	11'-1⅞"	10	3'-1"	4	11'-2⅛"	10'-8¼"
	4			136	4'-6"	3'-9"			5				6				5				62	4'-11½"			48	4'-7"	1'-3"	1'-3"	1'-9"	4'-11"	20	9'-9⅜"	2'-4"	11'-7"	12	13'-5⅛"	10	3'-1"	4	13'-7⅜"	13'-1⅜"
4	2	#4	5"	148	5'-6"	4'-9"			6				2				6				62	3'-1½"			28	3'-6"	1'-3"	1'-3"	1'-4½"	3'-1⅛"	12	6'-3¾"	2'-4"	5'-9⅝"	12	7'-9"	12	3'-2"	4	7'-7⅛"	7'-1⅛"
	3			148	5'-6"	4'-9"			6				4				6				62	4'-1½"			40	4'-0"	1'-3"	1'-3"	1'-5½"	4'-0⅛"	16	8'-4"	2'-4"	9'-3⅛"	12	11'-1⅛"	12	3'-2"	4	11'-2⅛"	10'-8¼"
	4			148	5'-6"	4'-9"			6				6				6				62	5'-1½"			48	4'-8"	1'-3"	1'-3"	1'-10"	5'-0"	20	9'-9⅜"	2'-4"	11'-7"	12	13'-5⅛"	12	3'-2"	4	13'-7⅜"	13'-1⅜"
	6			148	5'-8"	4'-11"			6				10				6				62	7'-1½"			68	6'-5½"	1'-4"	2'-1"	2'-5½"	7'-0⅛"	28	12'-11"	2'-4"	16'-2⅛"	12	19'-0⅜"	12	3'-2"	4	18'-4⅞"	17'-10⅞"
5	2	#5	6"	116	6'-6"	5'-8"	#4	10"	7		#4	12"	2		#4	10"	7		#4	12"	62	3'-2½"	#5	12"	28	3'-7"	1'-3"	1'-3"	1'-6"	3'-2"	12	6'-7¼"	2'-7½"	6'-1⅛"	12	7'-11⅜"	14	3'-2½"	4	7'-10⅜"	7'-9¾"
	3			116	6'-6"	5'-8"			7				4				7				62	4'-2½"			40	4'-1"	1'-3"	1'-3"	1'-6½"	4'-1⅝"	16	8'-7½"	2'-7½"	9'-6⅝"	12	11'-5"	14	3'-2½"	4	11'-6"	11'-0"
	4			116	6'-6"	5'-8"			7				6				7				62	5'-2½"			52	4'-8"	1'-3"	1'-3"	1'-9"	5'-3"	20	10'-0¾"	2'-7½"	11'-10⅛"	12	13'-4⅜"	14	3'-2½"	4	13'-10⅜"	13'-4¾"
	5			116	6'-6"	5'-8"			7				8				7				62	6'-2½"			60	5'-7½"	1'-3"	1'-3"	2'-2"	6'-2"	24	11'-7⅜"	2'-7½"	14'-2⅛"	12	16'-0⅛"	14	3'-2½"	4	16'-3⅜"	15'-9⅛"
	7			116	6'-8"	6'-0"			7				12				7				62	8'-2½"	⅝"		80	7'-8½"	1'-4½"	2'-8"	2'-8"	8'-3"	32	14'-8⅜"	2'-7½"	18'-8¾"	12	20'-8"	14	3'-2½"	4	21'-1⅜"	20'-7⅜"
6	3	#5	6"	124	7'-6"	6'-8"	#4	10"	8		#4	12"	4		#4	10"	8		#4	12"	62	4'-4½"	#5	12"	40	4'-2"	1'-3"	1'-3"	1'-7½"	4'-2¾"	16	8'-7½"	2'-7½"	9'-6¼"	12	11'-5"	16	3'-3½"	4	11'-6"	11'-0"
	4			124	7'-6"	6'-8"			8				6				8				62	5'-4½"			52	4'-10"	1'-3"	1'-3"	1'-10"	5'-4"	20	10'-0¾"	2'-7½"	11'-10⅛"	12	13'-9¾"	16	3'-3½"	4	13'-10⅜"	13'-4¾"
	5			124	7'-6"	6'-8"			8				8				8				62	6'-4½"			60	5'-4½"	1'-3"	1'-8"	2'-3"	6'-3"	24	11'-7⅜"	2'-7½"	14'-2⅛"	12	16'-0⅛"	16	3'-3½"	4	16'-3⅝"	15'-9⅝"
	6			124	7'-8"	6'-11"			8				10				8				62	7'-4½"			68	6'-6"	1'-4"	2'-2"	2'-7¼"	7'-2¾"	28	13'-2⅛"	2'-7½"	16'-6"	12	18'-6¼"	16	3'-3½"	4	18'-8⅛"	18'-2⅛"
	8			124	7'-10"	7'-1"			8				14				8				62	9'-4⅛"	⅝"	12"	88	8'-6½"	1'-5"	3'-2"	3'-2⅝"	9'-3⅜"	36	16'-2⅞"	2'-7½"	21'-1⅜"	12	22'-11⅛"	16	3'-3½"	4	23'-6"	23'-0"
8	7	#6	7"	108	10'-5½"	8'-11⅝"	#4	10"	12		#4	12"	12		#4	10"	12		#4	12"	⅝"	12"	62	6'-7⅛"			80	7'-10¾"	1'-4½"	2'-9"	3'-1"	8'-7"	32	15'-3⅛"	3'-2¼"	19'-4⅞"	12	21'-2⅜"	20	3'-4½"	4	21'-8⅜"	21'-2⅜"
	8			108	10'-6⅛"	9'-0⅛"			12				14				12				¾"	12"	62	9'-7⅛"			88	8'-10"	1'-5"	3'-3"	3'-5½"	9'-6⅜"	36	16'-9⅝"	3'-2¼"	21'-8⅛"	12	23'-6⅛"	20	3'-4½"	4	24'-1¼"	23'-7⅛"
	10			108	10'-10⅛"	9'-4⅛"			12				18				12						62	11'-7⅛"			108	10'-9"	1'-7"	4'-3"	4'-1"	11'-7"	44	19'-10⅝"	3'-2¼"	26'-3⅜"	12	28'-2"	20	3'-4½"	4	28'-11"	28'-5"
10	8	#6	5½"	136	12'-6½"	11'-0⅝"	#4	10"	13		#4	12"	14		#4	10"	13		#4	12"	⅝"	12"	62	9'-10"			88	8'-11⅛"	1'-5"	3'-3"	3'-7⅛"	9'-7¾"	36	16'-9⅝"	3'-2¼"	21'-8⅛"	12	23'-6⅛"	24	3'-5½"	4	24'-1¼"	23'-7⅛"
	10			136	12'-0⅜"	11'-4½"			13				18				13				⅝"	12"	62	11'-10"			108	10'-10⅛"	1'-7"	4'-3"	4'-2½"	11'-8½"	44	19'-10⅝"	3'-2¼"	26'-3⅜"	12	28'-2"	24	3'-5½"	4	28'-11"	28'-5"
	12			136	13'-2½"	11'-8⅝"			13				22				13				⅝"	9"	82	13'-10"			128	12'-9½"	1'-9"	5'-3"	4'-9¾"	13'-9⅛"	52	23'-0"	3'-2¼"	30-11⅝"	12	32'-9¼"	26	3'-5½"	4	33'-9⅛"	33'-2½"

NOTE: Lengths given above do not include Lap

REVISIONS	
12-18-56	Redrawn
Nov, 1957	Military Loading

A.A.S.H.O. DESIGN LIVE LOADING H20-S10
UNIT STRESSES

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

SPECIAL MILITARY LOADING
Add'l Loading For Interstate Highways
2-24,000 Lb. Axles @ 4'-0" Ctrs.
Concrete (n-15) - 840 Lbs. per Sq. In.
Reinf. Steel (Int or Rail) - 20000 Lbs. per Sq. In.

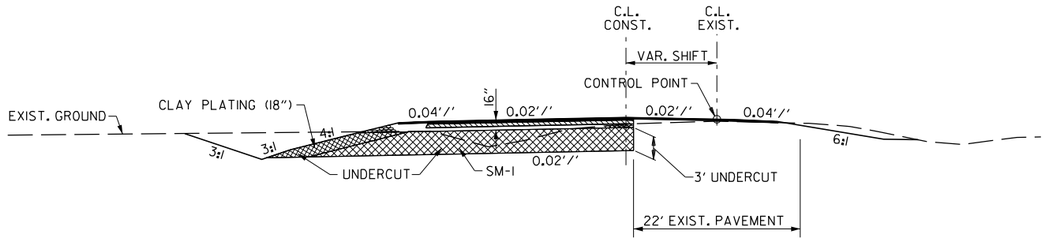
SPECIAL DETAILS

rnfortner
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	12	198
				(2) SPECIAL DETAILS				

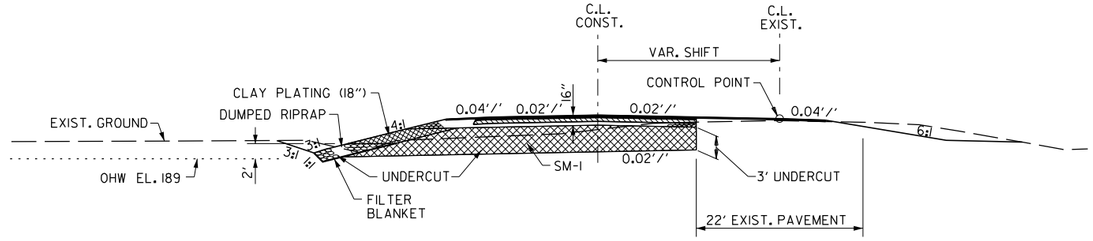
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

NOTE:
SEE "EMBANKMENT CONSTRUCTION" SPECIAL PROVISION FOR ADDITIONAL INFORMATION REGARDING MATERIAL REQUIREMENTS AND PAY ITEMS FOR THE EMBANKMENT CONSTRUCTION.



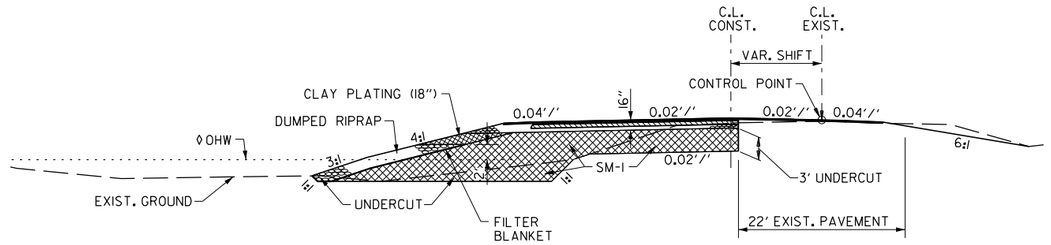
EMBANKMENT OVER DITCHES THAT CAN BE FULLY DRAINED (SITES 1, 2 & 4)

STA. 102+00 TO STA. 128+00
STA. 202+00 TO STA. 205+00
STA. 402+00 TO STA. 465+40



EMBANKMENT OVER DITCHES THAT CAN BE FULLY DRAINED (SITE 1)

STA. 128+00 TO STA. 159+00
STA. 173+00 TO STA. 176+40

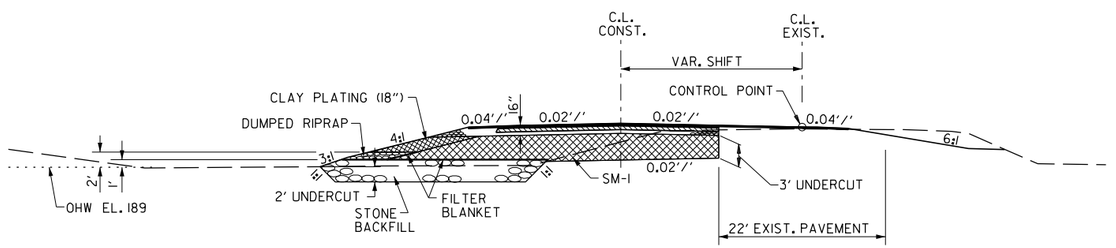


EMBANKMENT OVER DITCHES THAT CAN BE FULLY DRAINED (SITE 2)

STA. 265+00 TO STA. 265+40

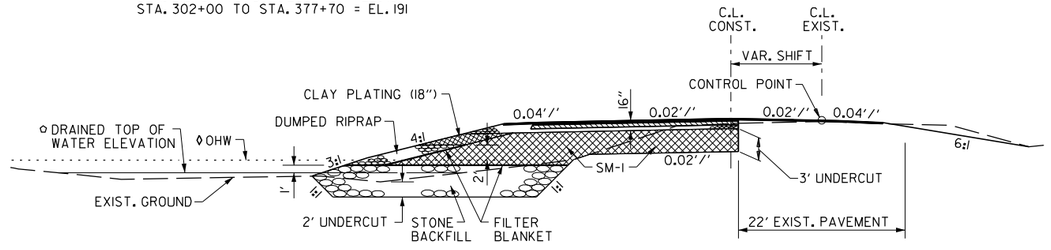
○ STA. 202+00 TO STA. 210+54 = EL. 184.50
STA. 210+54 TO STA. 265+40 = EL. 184.75
STA. 302+00 TO STA. 377+70 = EL. 190.50

◊ STA. 202+00 TO STA. 210+54 = EL. 186
STA. 210+54 TO STA. 265+40 = EL. 187
STA. 302+00 TO STA. 377+70 = EL. 191



EMBANKMENT OVER DITCHES THAT CANNOT BE FULLY DRAINED (SITE 1)

STA. 159+00 TO STA. 173+00



EMBANKMENT OVER DITCHES THAT CANNOT BE FULLY DRAINED (SITES 2 & 3)

STA. 205+00 TO STA. 265+00
STA. 302+00 TO STA. 377+70

SPECIAL DETAILS

rnfortner 2/4/2021 8:42 AM
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REVISED DATE:

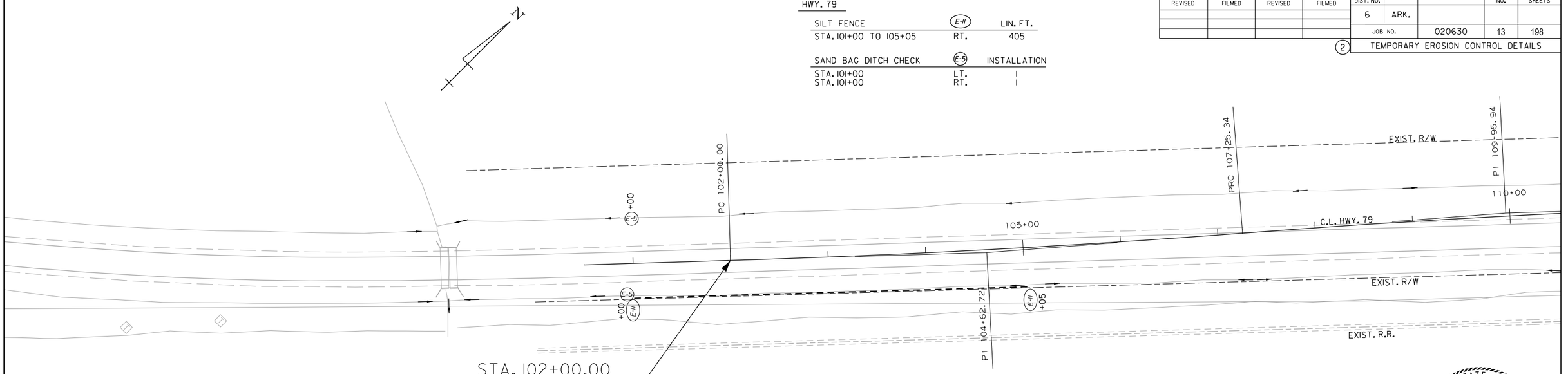
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	13	198

(2) TEMPORARY EROSION CONTROL DETAILS

HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 101+00 TO 105+05	RT.	405

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 101+00	LT.	1
STA. 101+00	RT.	1



STA. 102+00.00
BEGIN JOB 020630
BEGIN SITE 1
L.M. 5.70

LEGEND

(E-5) = SAND BAG DITCH CHECKS

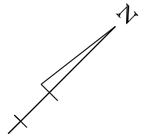
(E-6) = ROCK DITCH CHECKS (E-11) = SILT FENCE

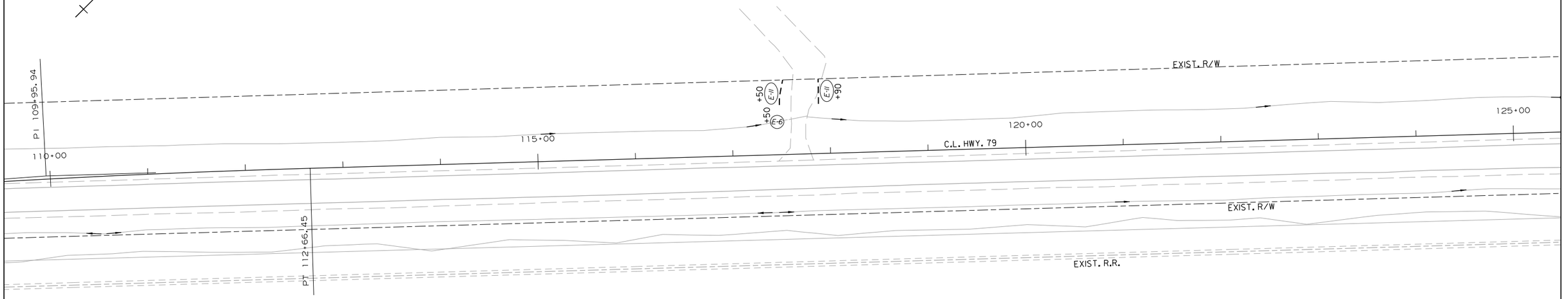
EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

REVISIONS

DATE	REVISION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021





HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 117+50 TO 117+50	LT.	25
STA. 117+90 TO 117+90	LT.	25

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 117+50	LT.	1

SITE 1
TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING STAGE

rnfortner 2/4/2021 8:11:46 AM
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REVISED DATE:

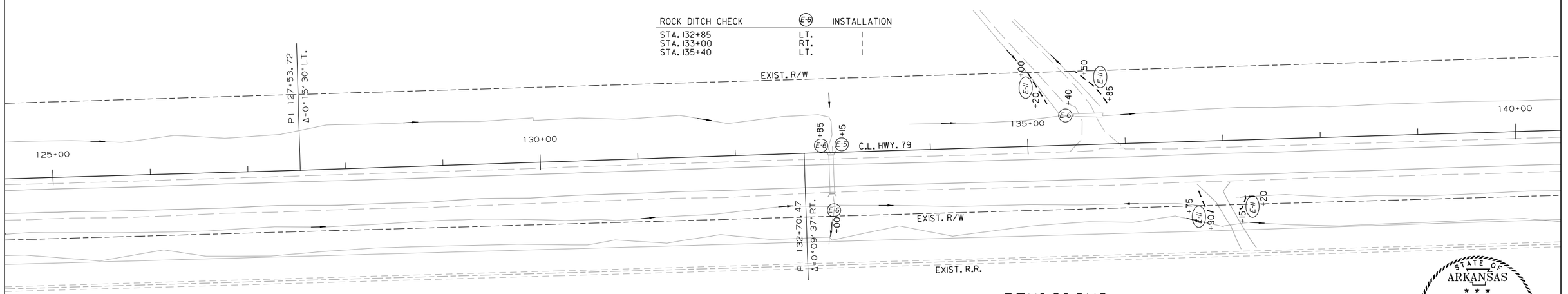
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				6	ARK.			
				JOB NO.		020630	14	198
				(2)	TEMPORARY EROSION CONTROL DETAILS			

HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 136+75 TO 136+90	RT.	30
STA. 137+15 TO 137+20	RT.	20
STA. 135+00 TO 135+20	LT.	40
STA. 135+50 TO 135+85	LT.	45

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 133+15	LT.	1

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 132+85	LT.	1
STA. 133+00	RT.	1
STA. 135+40	LT.	1



LEGEND

(E-5) = SAND BAG DITCH CHECKS

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

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

REVISIONS

DATE	REVISION

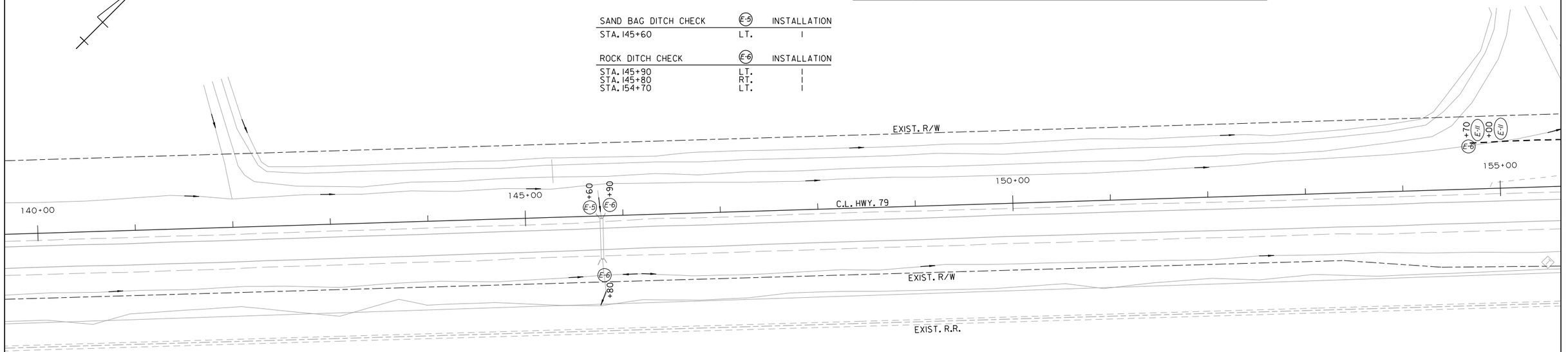
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 154+70 TO 155+00	LT.	30

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 145+60	LT.	1

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 145+90	LT.	1
STA. 145+80	RT.	1
STA. 154+70	LT.	1



SITE I
TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUGGING STAGE

rnfortner 2/4/2021 8:11:46 AM
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	15	198
				(2)	TEMPORARY EROSION CONTROL DETAILS			

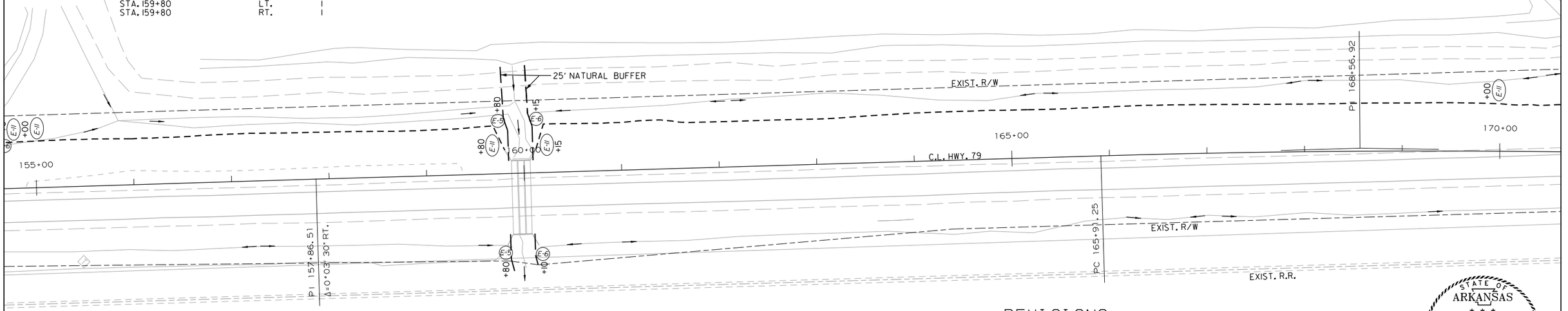
HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 155+00 TO 159+80	LT.	495
STA. 160+15 TO 170+00	LT.	1010

HWY. 79

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 160+10	RT.	1
STA. 160+15	LT.	1

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 159+80	LT.	1
STA. 159+80	RT.	1



LEGEND

(E-5) = SAND BAG DITCH CHECKS

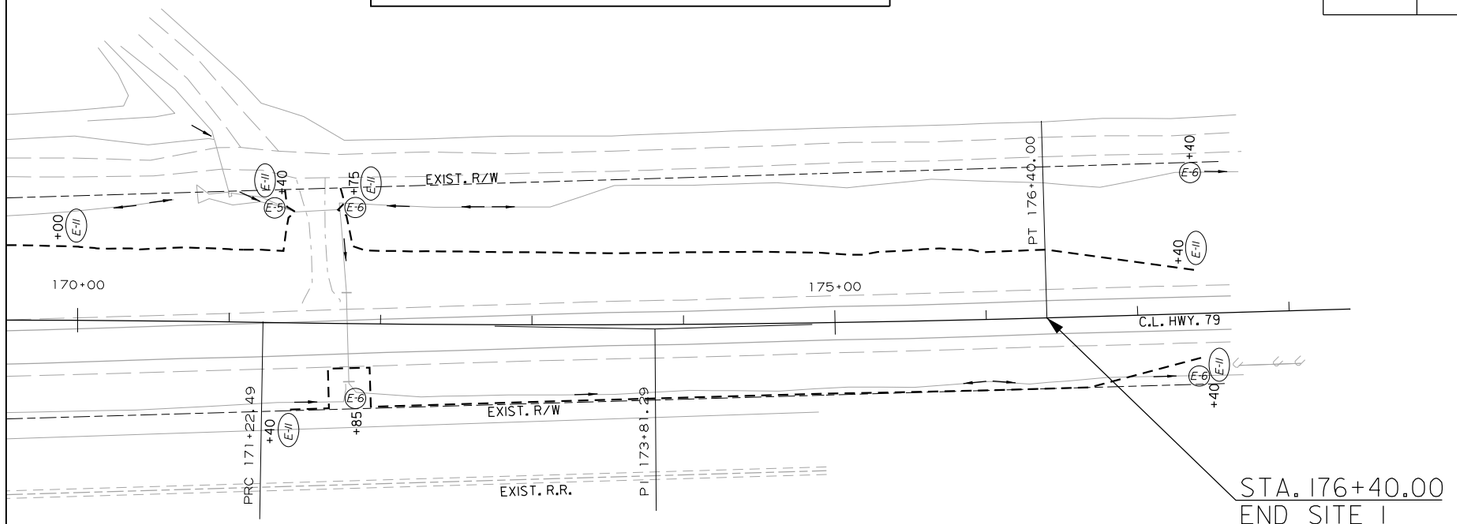
(E-6) = ROCK DITCH CHECKS (E-11) = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

REVISIONS

DATE	REVISION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021



STA. 176+40.00
END SITE 1
L.M. 7.11

HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 171+40 TO 177+40	RT.	655
STA. 170+00 TO 171+40	LT.	180
STA. 171+75 TO 177+40	LT.	605

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 171+40	LT.	1

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 171+75	LT.	1
STA. 171+85	RT.	1
STA. 177+40	LT.	1
STA. 177+40	RT.	1

SITE 1
TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING STAGE

rnfortner 2/4/2021 8:11:46 AM
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	16	198

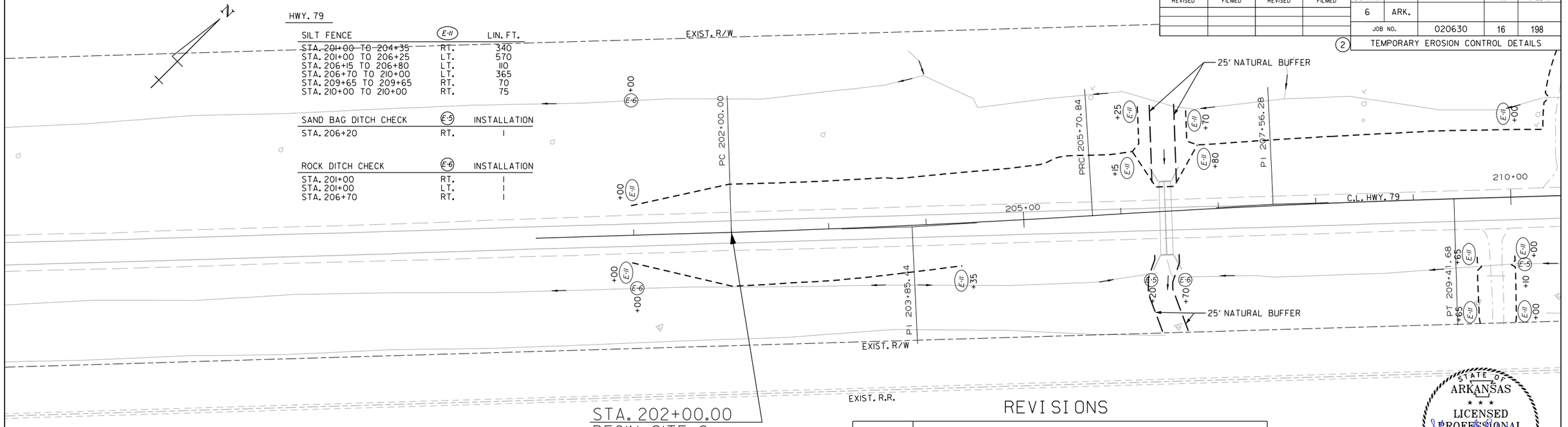
(2) TEMPORARY EROSION CONTROL DETAILS

HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 201+00 TO 204+35	RT.	340
STA. 201+00 TO 206+25	LT.	570
STA. 206+15 TO 206+80	LT.	110
STA. 206+70 TO 210+00	LT.	365
STA. 209+65 TO 209+65	RT.	70
STA. 210+00 TO 210+00	RT.	75

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 206+20	RT.	1

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 201+00	RT.	1
STA. 201+00	LT.	1
STA. 206+70	RT.	1



STA. 202+00.00
BEGIN SITE 2
L.M. 8.74

LEGEND

(E-5) = SAND BAG DITCH CHECKS

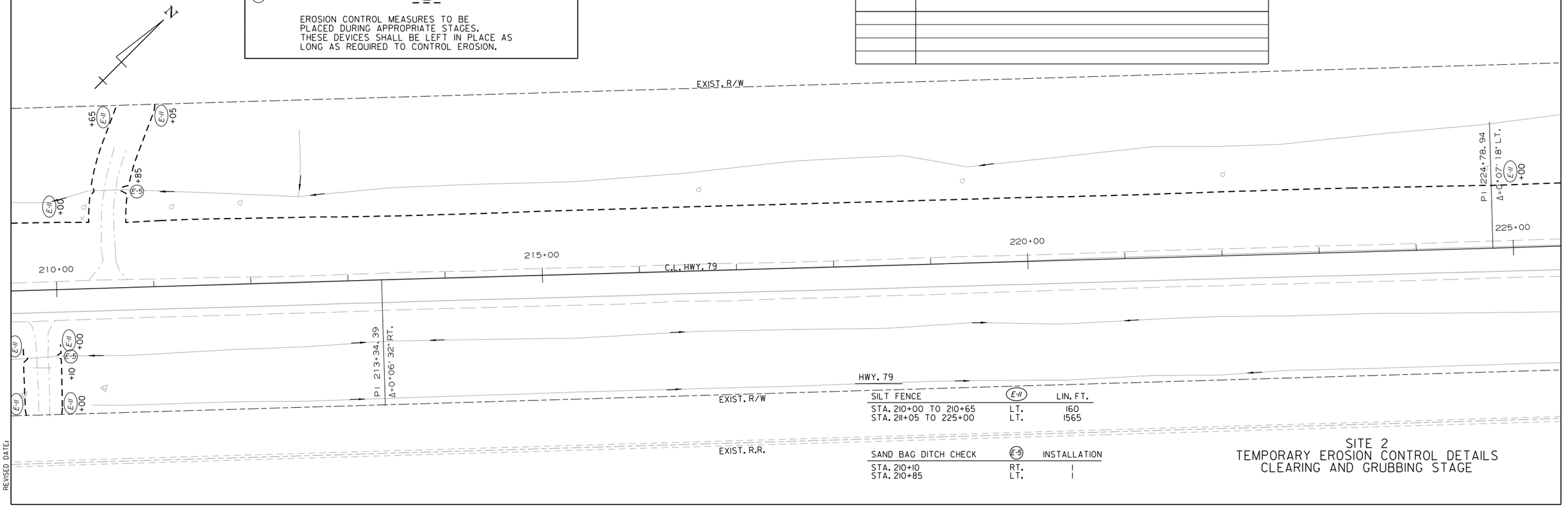
(E-6) = ROCK DITCH CHECKS (E-11) = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

REVISIONS

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STATE OF ARKANSAS
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DIGITALLY SIGNED 2-4-2021



HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 210+00 TO 210+65	LT.	160
STA. 211+05 TO 225+00	LT.	1565

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 210+10	RT.	1
STA. 210+85	LT.	1

SITE 2
TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING STAGE

rnfortner 2/4/2021 8:11:47 AM
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	17	198

(2) TEMPORARY EROSION CONTROL DETAILS

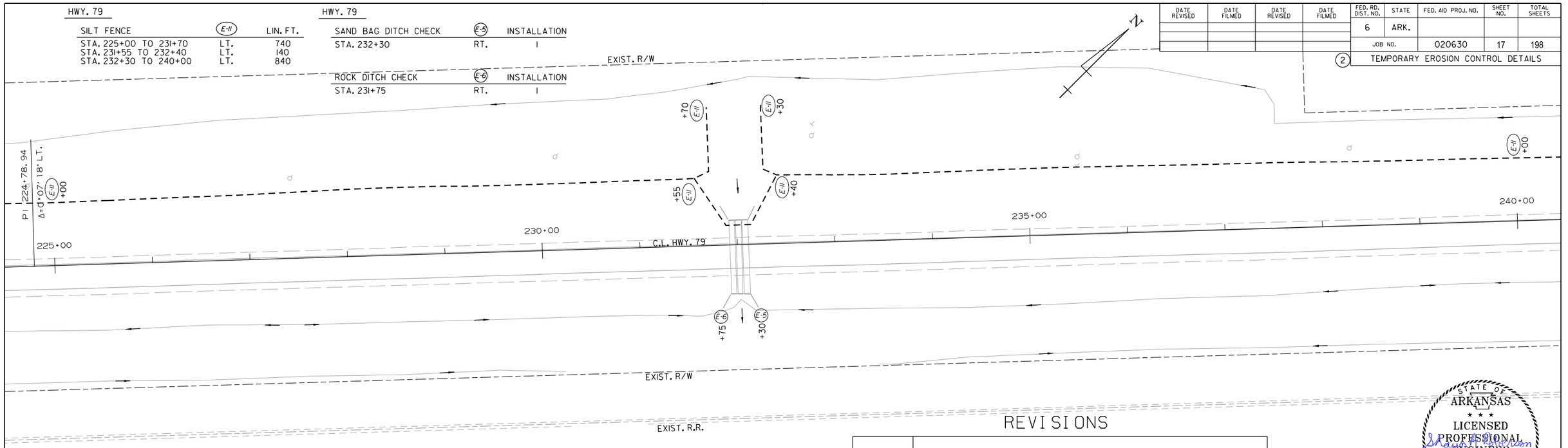
HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 225+00 TO 231+70	LT.	740
STA. 231+55 TO 232+40	LT.	140
STA. 232+30 TO 240+00	LT.	840

HWY. 79

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 232+30	RT.	1

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 231+75	RT.	1



LEGEND

(E-5) = SAND BAG DITCH CHECKS

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

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

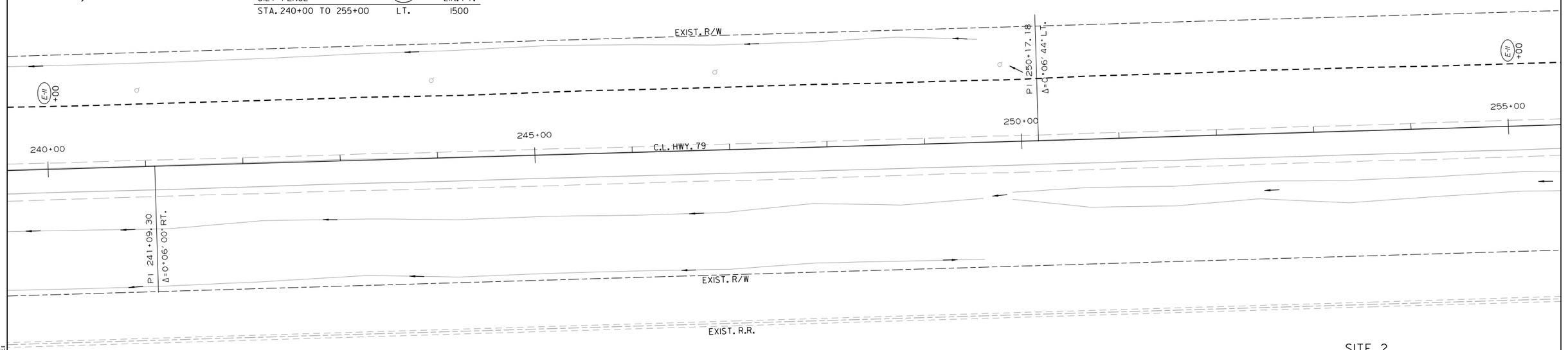
REVISIONS

DATE	REVISION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 240+00 TO 255+00	LT.	1500

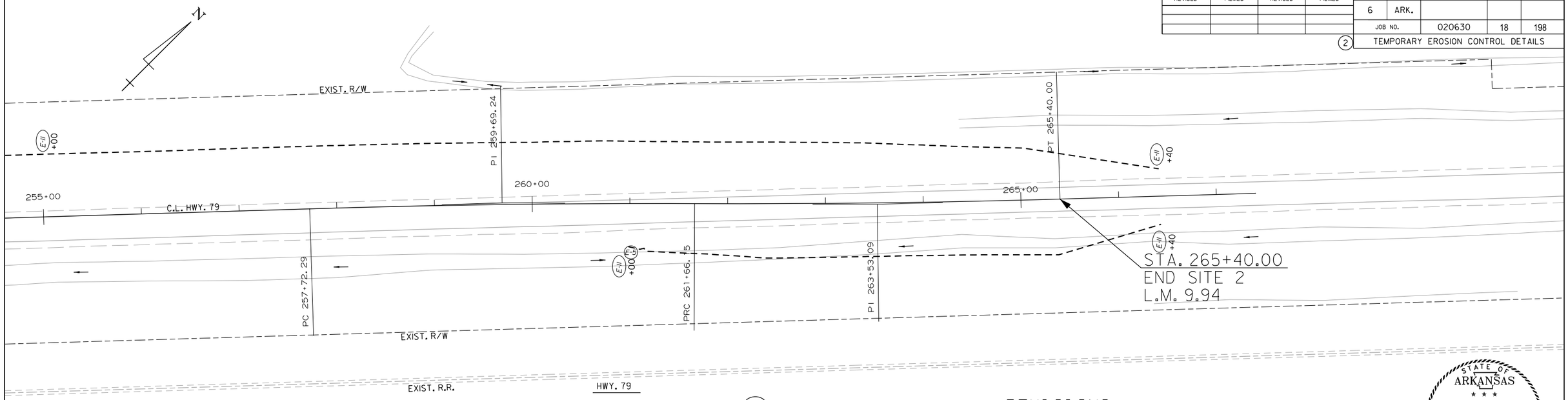


SITE 2
TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING STAGE

rnfortner 2/4/2021 8:11:47 AM
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	18	198

(2) TEMPORARY EROSION CONTROL DETAILS



SILT FENCE	E-11	LIN. FT.
STA. 255+00 TO 266+40	LT.	1145
STA. 261+00 TO 266+40	RT.	550

SAND BAG DITCH CHECK	E-5	INSTALLATION
STA. 261+00	LT.	1

LEGEND

E-5 = SAND BAG DITCH CHECKS

E-6 = ROCK DITCH CHECKS

E-11 = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

REVISIONS

DATE	REVISION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

SITE 2
TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING STAGE

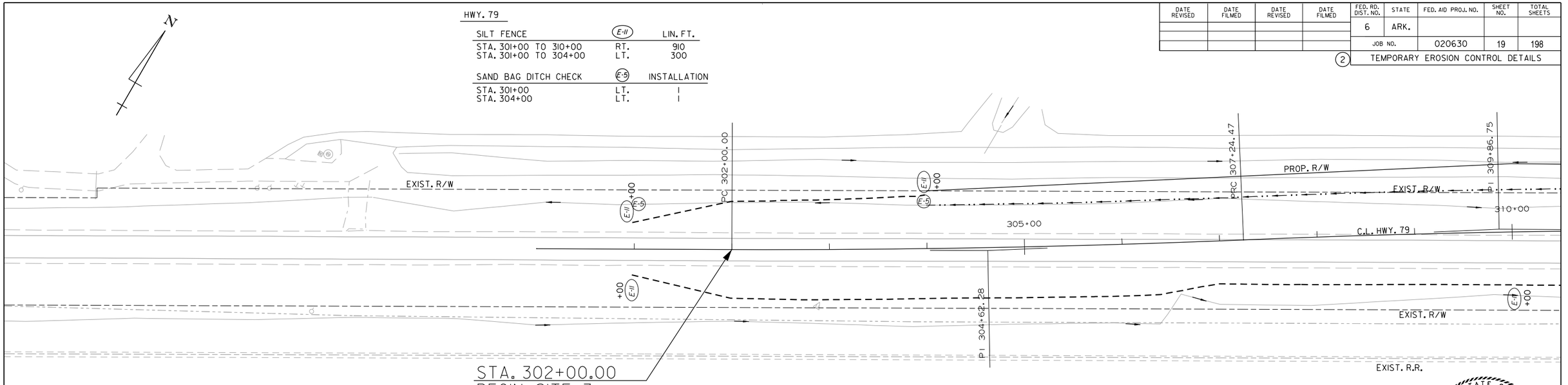
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				6	ARK.			
				JOB NO.		020630	19	198
				(2)	TEMPORARY EROSION CONTROL DETAILS			

HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 301+00 TO 310+00	RT.	910
STA. 301+00 TO 304+00	LT.	300

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 301+00	LT.	1
STA. 304+00	LT.	1



LEGEND

(E-5) = SAND BAG DITCH CHECKS

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

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

REVISIONS

DATE	REVISION

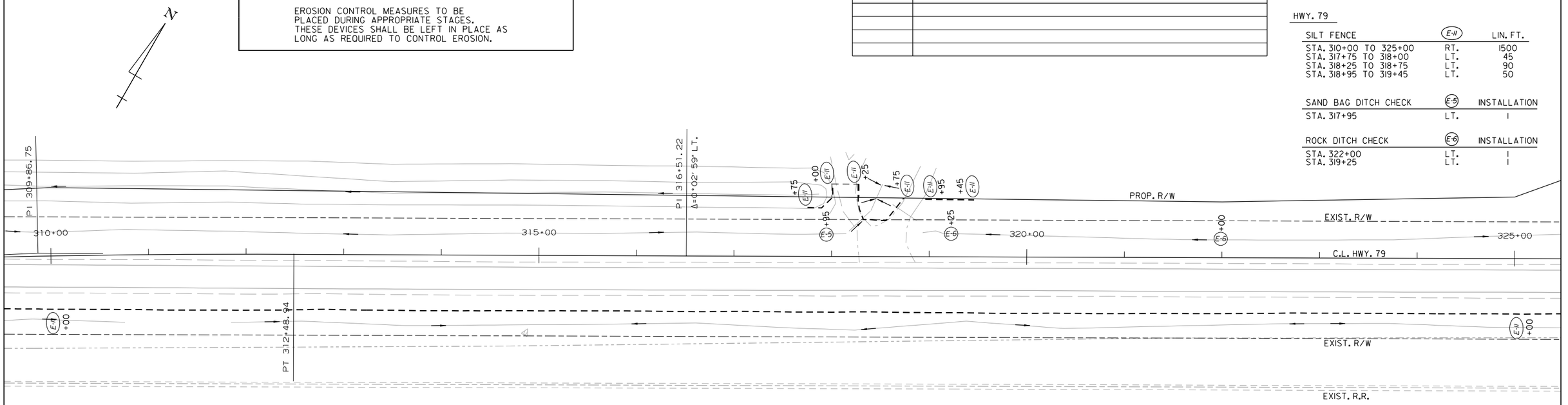
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 310+00 TO 325+00	RT.	1500
STA. 317+75 TO 318+00	LT.	45
STA. 318+25 TO 318+75	LT.	90
STA. 318+95 TO 319+45	LT.	50

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 317+95	LT.	1

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 322+00	LT.	1
STA. 319+25	LT.	1



SITE 3
TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING STAGE

rnfortner 2/4/2021 8:11:47 AM
WORKSPACE: AHTD
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REVISED DATE:

HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 325+00 TO 339+15	RT.	1445
STA. 325+90 TO 339+10	LT.	1380
STA. 339+15 TO 339+55	RT.	45
STA. 339+10 TO 339+60	LT.	145
STA. 339+55 TO 340+00	RT.	75
STA. 339+60 TO 340+00	LT.	100

HWY. 79

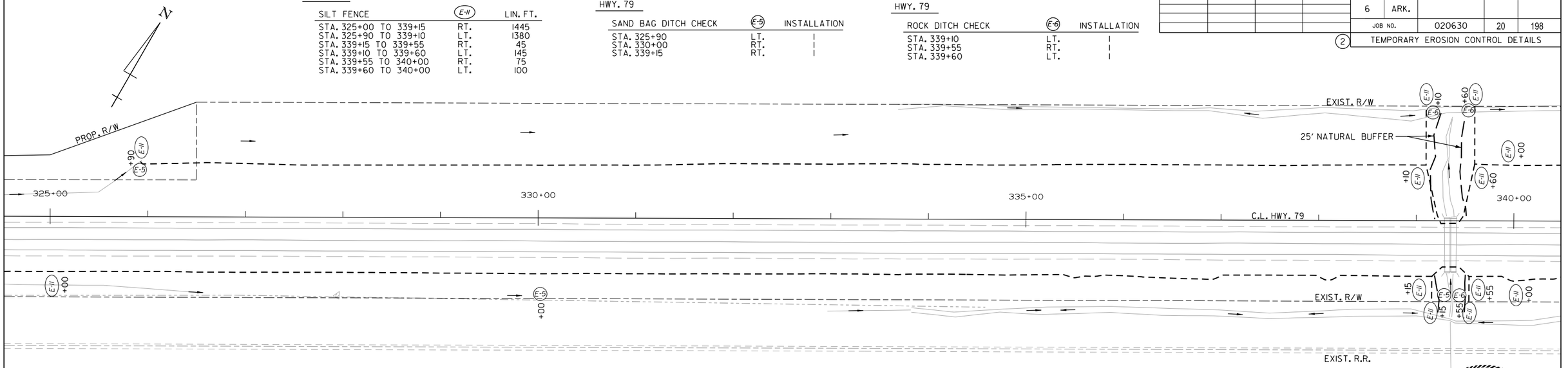
SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 325+90	LT.	1
STA. 330+00	RT.	1
STA. 339+15	RT.	1

HWY. 79

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 339+10	LT.	1
STA. 339+55	RT.	1
STA. 339+60	LT.	1

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	20	198

(2) TEMPORARY EROSION CONTROL DETAILS



LEGEND

(E-5) = SAND BAG DITCH CHECKS

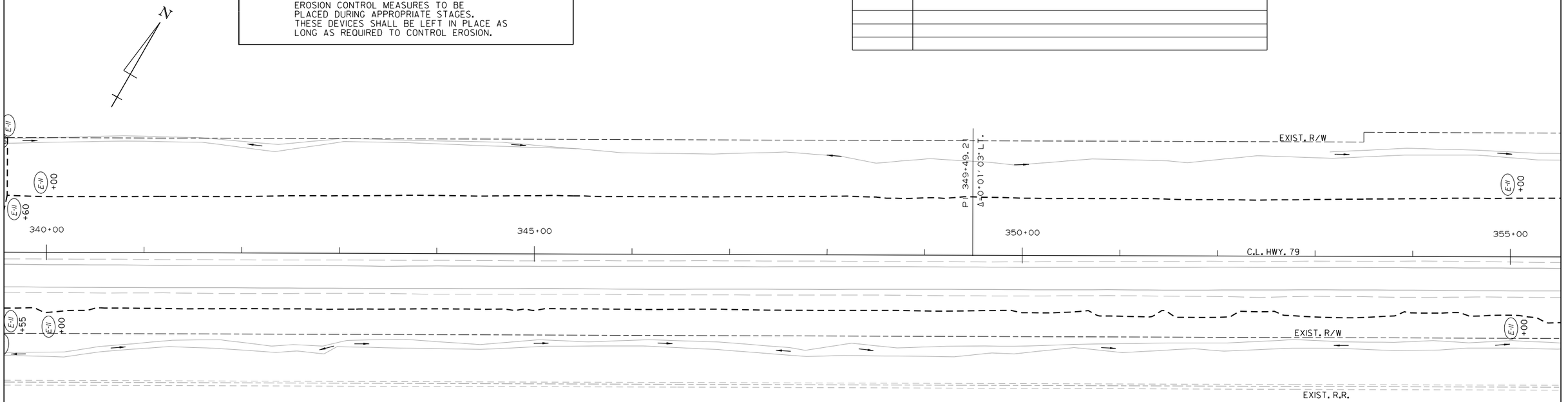
(E-6) = ROCK DITCH CHECKS (E-11) = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

REVISIONS

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HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 340+00 TO 355+00	RT.	1510
STA. 340+00 TO 355+00	LT.	1500

SITE 3
TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING STAGE

rnfortner 2/4/2021 8:11:48 AM
WORKSPACE: AHTD
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REVISED DATE:

HWY. 79

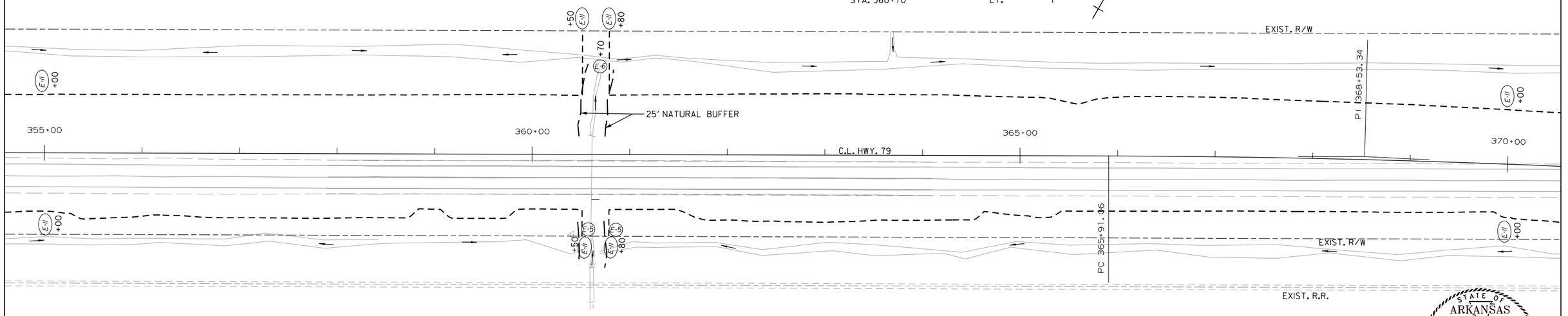
SILT FENCE	(E-11)	LIN. FT.
STA. 355+00 TO 360+50	RT.	590
STA. 355+00 TO 360+50	LT.	620
STA. 360+80 TO 370+00	RT.	955
STA. 360+80 TO 370+00	LT.	990

HWY. 79

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 360+50	RT.	1
STA. 360+80	RT.	1

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 360+70	LT.	1

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	21	198
				(2)	TEMPORARY EROSION CONTROL DETAILS			



LEGEND

(E-5) = SAND BAG DITCH CHECKS

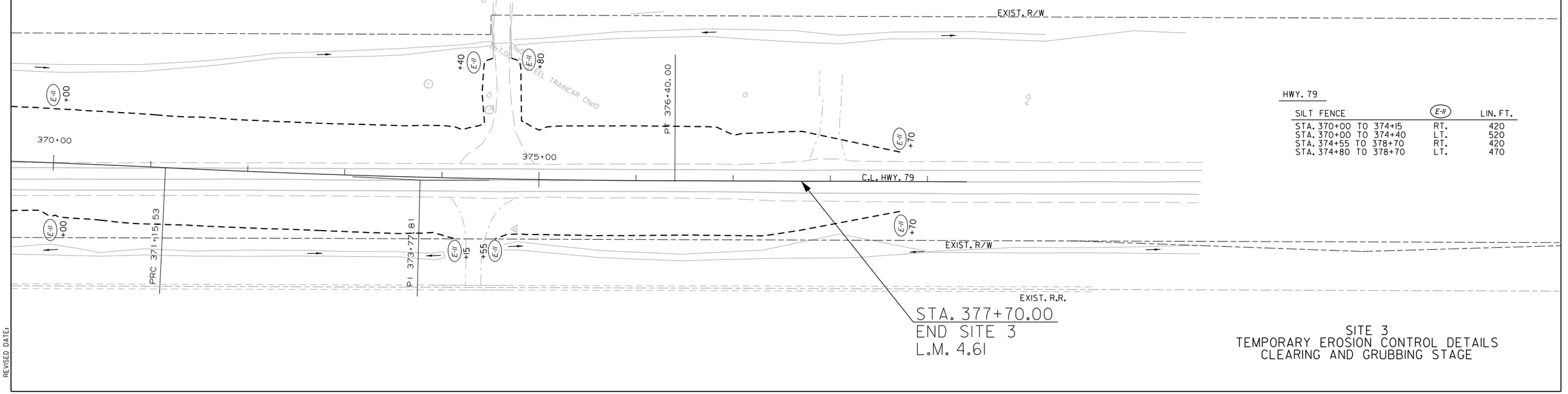
(E-6) = ROCK DITCH CHECKS (E-11) = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

REVISIONS

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DIGITALLY SIGNED 2-4-2021



HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 370+00 TO 374+15	RT.	420
STA. 370+00 TO 374+40	LT.	520
STA. 374+55 TO 378+70	RT.	420
STA. 374+80 TO 378+70	LT.	470

STA. 377+70.00
END SITE 3
L.M. 4.61

SITE 3
TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING STAGE

rnfortner 2/4/2021 8:11:48 AM
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		020630	22	198

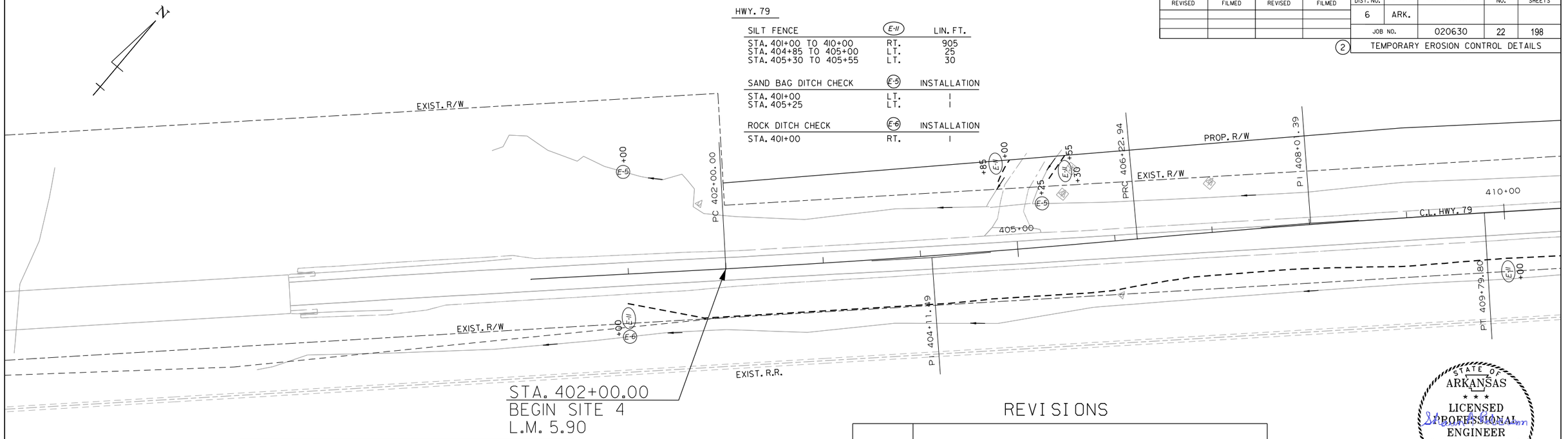
(2) TEMPORARY EROSION CONTROL DETAILS

HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 401+00 TO 410+00	RT.	905
STA. 404+85 TO 405+00	LT.	25
STA. 405+30 TO 405+55	LT.	30

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 401+00	LT.	1
STA. 405+25	LT.	1

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 401+00	RT.	1



LEGEND

(E-5) = SAND BAG DITCH CHECKS

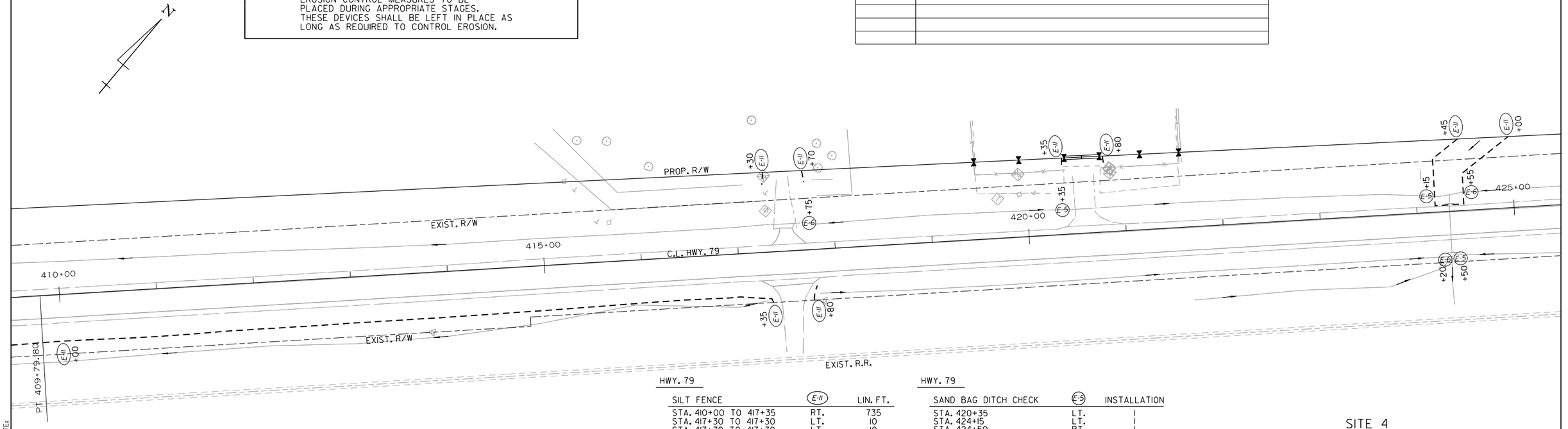
(E-6) = ROCK DITCH CHECKS (E-11) = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

REVISIONS

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LICENSED PROFESSIONAL ENGINEER
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SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021



HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 410+00 TO 417+35	RT.	735
STA. 417+30 TO 417+30	LT.	10
STA. 417+70 TO 417+70	LT.	10
STA. 417+80 TO 417+80	RT.	15
STA. 420+35 TO 420+35	LT.	10
STA. 420+80 TO 420+80	LT.	10
STA. 424+45 TO 425+00	LT.	200

HWY. 79

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 420+35	LT.	1
STA. 424+15	LT.	1
STA. 424+50	RT.	1

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 417+75	LT.	1
STA. 424+20	RT.	1
STA. 424+55	LT.	1

SITE 4
TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING STAGE

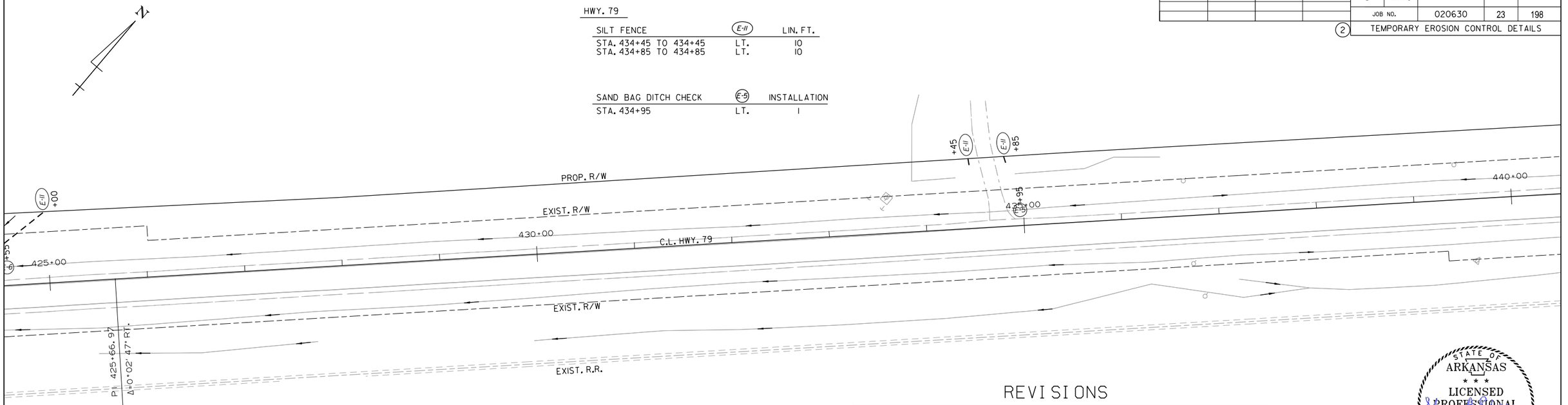
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WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	23	198
				(2)	TEMPORARY EROSION CONTROL DETAILS			

HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 434+45 TO 434+45	LT.	10
STA. 434+85 TO 434+85	LT.	10

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 434+95	LT.	1



LEGEND

(E-5) = SAND BAG DITCH CHECKS

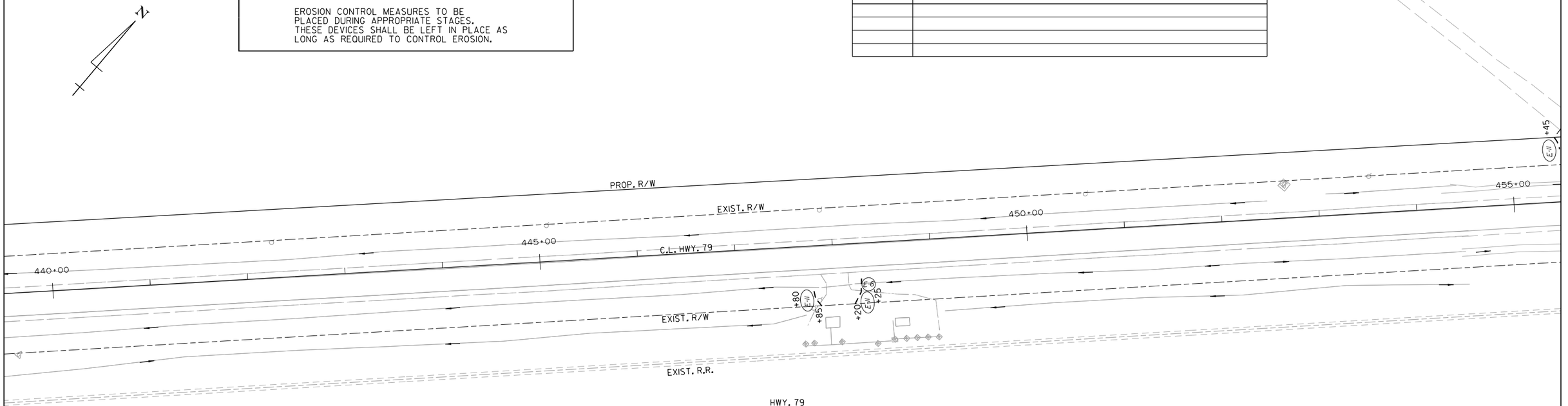
(E-6) = ROCK DITCH CHECKS (E-11) = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

REVISIONS

DATE	REVISION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021



HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 447+80 TO 447+85	RT.	20
STA. 448+20 TO 448+25	RT.	30

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 448+25	RT.	1

SITE 4
TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING STAGE

rnfortner 2/4/2021 8:11:49 AM
WORKSPACE: AHTD
L:\201\101\7525 - Wabbaseka - Stuttgart\Drawings\r020630_EC_CG_SITE 4_02.dgn
REVISED DATE:

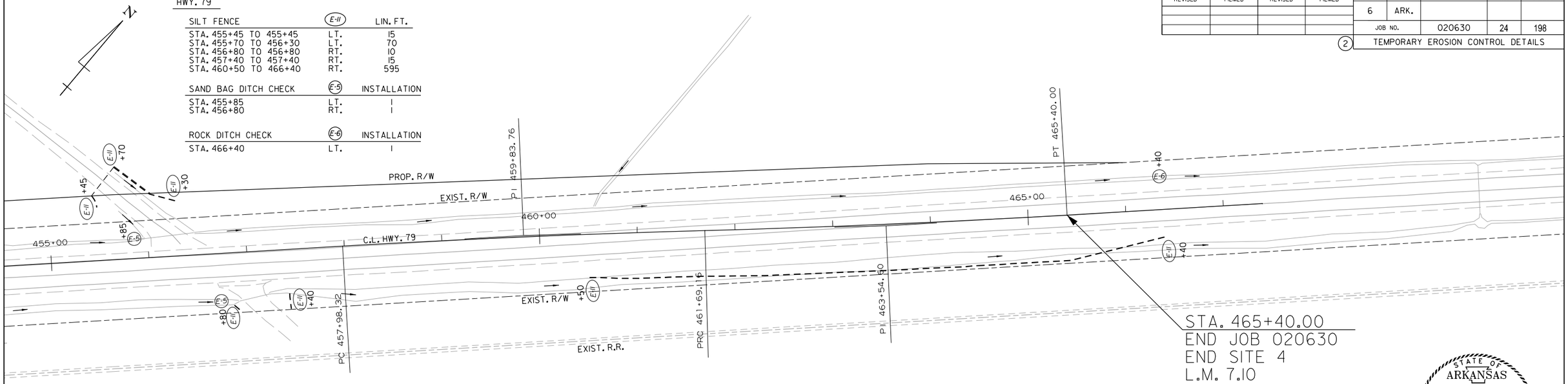
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				6	ARK.			
				JOB NO.		020630	24	198
				(2)	TEMPORARY EROSION CONTROL DETAILS			

HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 455+45 TO 455+45	LT.	15
STA. 455+70 TO 456+30	LT.	70
STA. 456+80 TO 456+80	RT.	10
STA. 457+40 TO 457+40	RT.	15
STA. 460+50 TO 466+40	RT.	595

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 455+85	LT.	1
STA. 456+80	RT.	1

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 466+40	LT.	1



STA. 465+40.00
END JOB 020630
END SITE 4
L.M. 7.10

STATE OF ARKANSAS
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SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

LEGEND

(E-5) = SAND BAG DITCH CHECKS

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

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

REVISIONS

DATE	REVISION

SITE 4
TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING STAGE

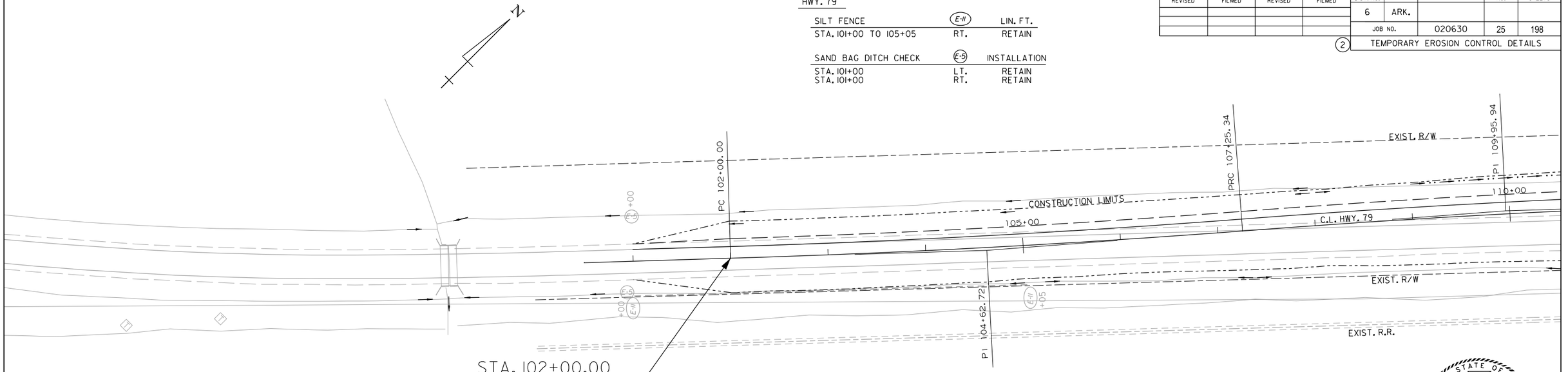
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WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	25	198
				(2)	TEMPORARY EROSION CONTROL DETAILS			

HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 101+00 TO 105+05	RT.	RETAIN

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 101+00	LT.	RETAIN
STA. 101+00	RT.	RETAIN



STA. 102+00.00
BEGIN JOB 020630
BEGIN SITE 1
L.M. 5.70

LEGEND

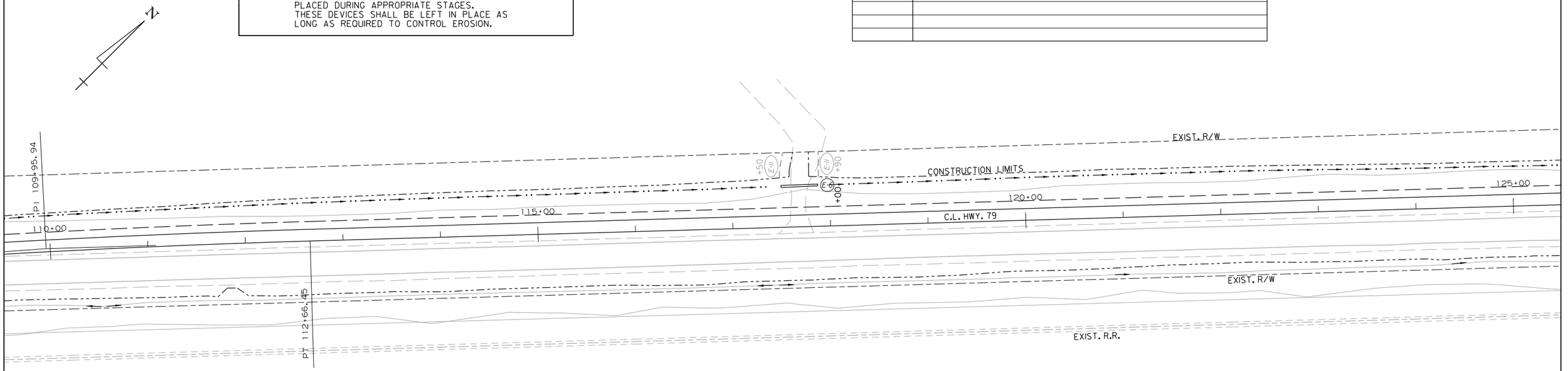
(E-5) = SAND BAG DITCH CHECKS
(E-6) = ROCK DITCH CHECKS
(E-11) = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

REVISIONS

DATE	REVISION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021



HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 117+50 TO 117+50	LT.	RETAIN
STA. 117+90 TO 117+90	LT.	RETAIN

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 118+00	LT.	1

SITE 1
TEMPORARY EROSION CONTROL DETAILS
STAGE 1

rnfortner 2/4/2021 8:11:49 AM
WORKSPACE: AHTD
L:\2017\1701525 - Wabbaseka - Stuttgart\Drawings\r020630_EC_STG 1_SITE 1.0.dgn
REVISED DATE:

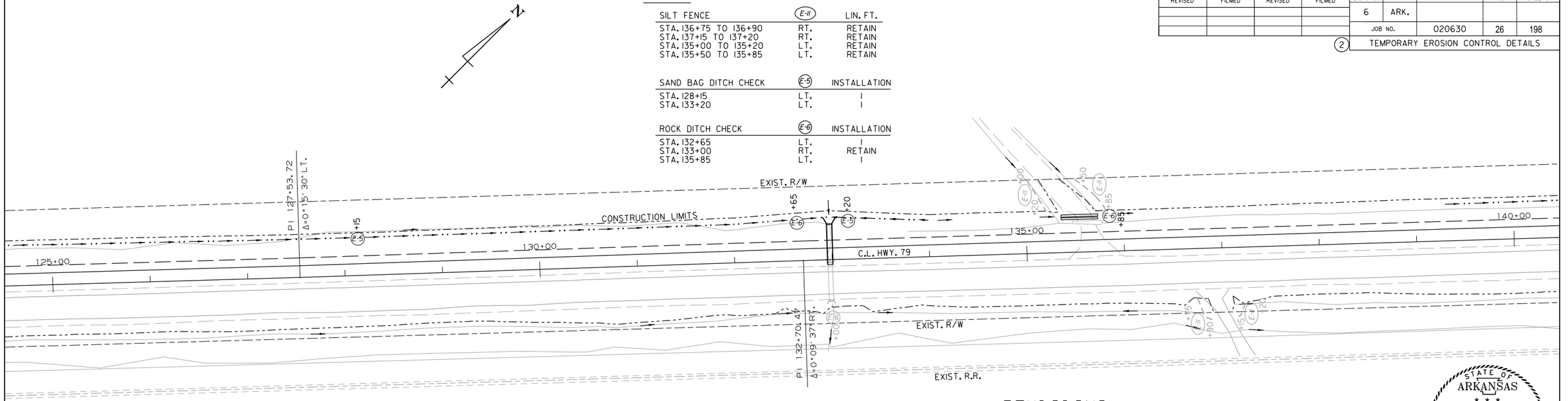
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				6	ARK.			
				JOB NO.		020630	26	198
				(2)	TEMPORARY EROSION CONTROL DETAILS			

HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 136+75 TO 136+90	RT.	RETAIN
STA. 137+15 TO 137+20	RT.	RETAIN
STA. 135+00 TO 135+20	LT.	RETAIN
STA. 135+50 TO 135+85	LT.	RETAIN

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 128+15	LT.	I
STA. 133+20	LT.	I

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 132+65	LT.	I
STA. 133+00	RT.	RETAIN
STA. 135+85	LT.	I



LEGEND

(E-5) = SAND BAG DITCH CHECKS

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

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

REVISIONS

DATE	REVISION

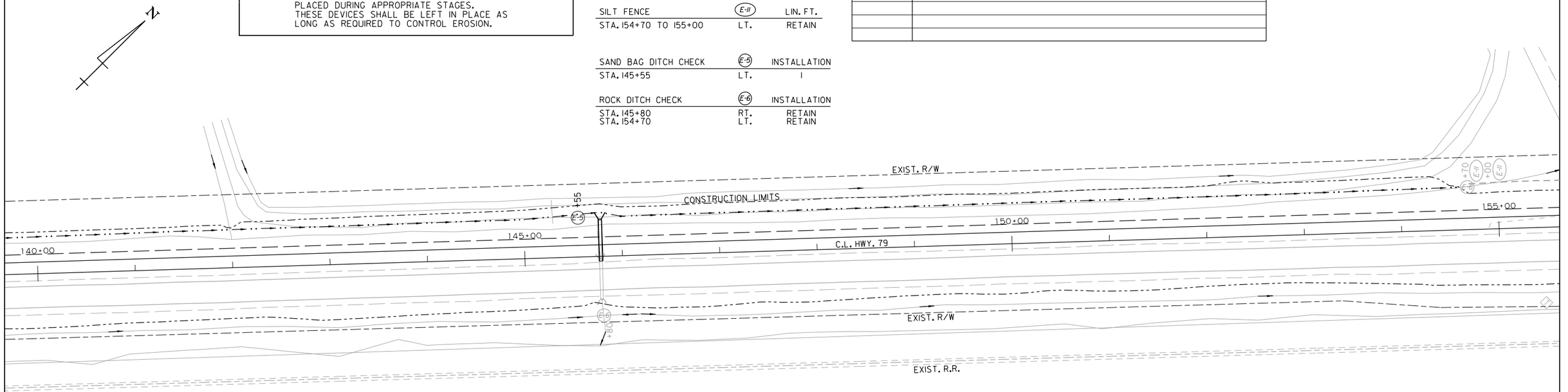
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 154+70 TO 155+00	LT.	RETAIN

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 145+55	LT.	I

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 145+80	RT.	RETAIN
STA. 154+70	LT.	RETAIN



SITE I
TEMPORARY EROSION CONTROL DETAILS
STAGE I

rnfortner 2/4/2021 8:11:49 AM
WORKSPACE: AHTD
L:\201\170\7525 - Wabbaseka - Stuttgart\Drawings\r020630_EC_STG 1_SITE 1_02.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
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				(2)	TEMPORARY EROSION CONTROL DETAILS			

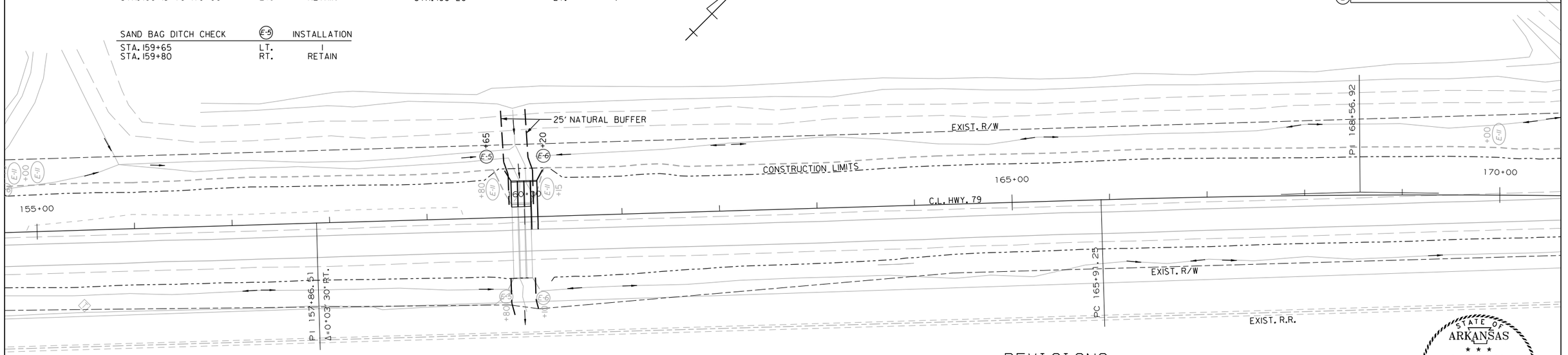
HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 155+00 TO 159+80	LT.	RETAIN
STA. 160+15 TO 170+00	LT.	RETAIN

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 159+65	LT.	I
STA. 159+80	RT.	RETAIN

HWY. 79

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 160+10	RT.	RETAIN
STA. 160+20	LT.	I



LEGEND

(E-5) = SAND BAG DITCH CHECKS

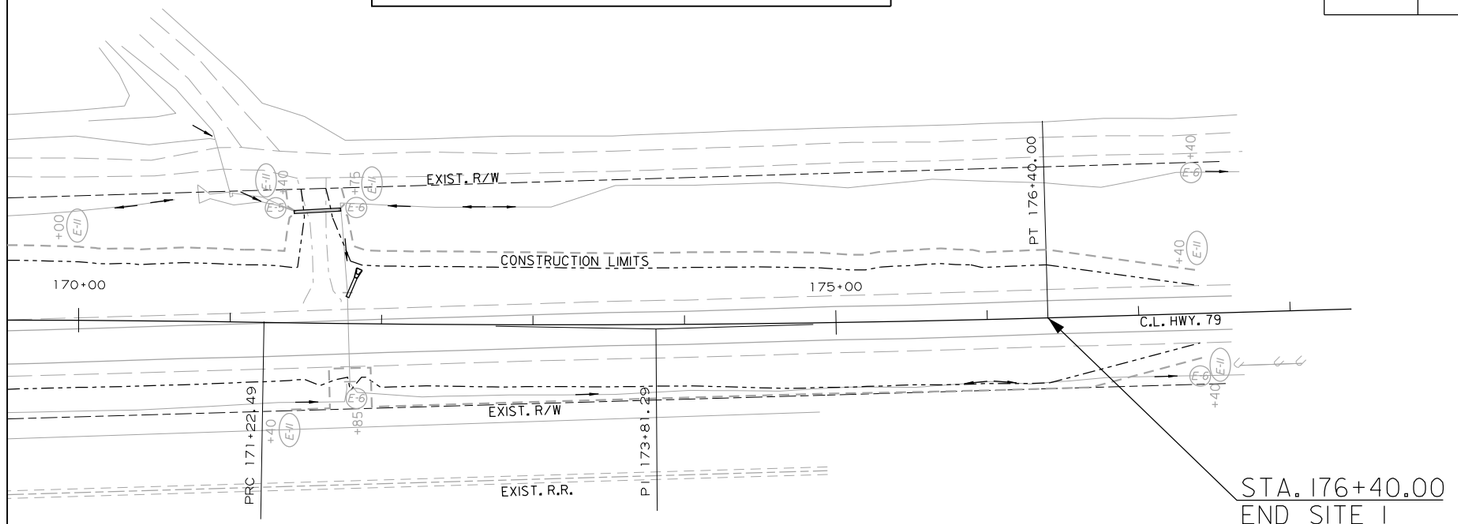
(E-6) = ROCK DITCH CHECKS (E-11) = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

REVISIONS

DATE	REVISION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
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HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 171+40 TO 177+40	RT.	RETAIN
STA. 170+00 TO 171+40	LT.	RETAIN
STA. 171+75 TO 177+40	LT.	RETAIN

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 171+40	LT.	RETAIN

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 171+75	LT.	RETAIN
STA. 171+85	RT.	RETAIN
STA. 177+40	LT.	RETAIN
STA. 177+40	RT.	RETAIN

SITE I
TEMPORARY EROSION CONTROL DETAILS
STAGE I

rnfortner 2/4/2021 8:11:50 AM
WORKSPACE: AHTD
L:\201\1701\7525 - Wabbaseka - Stuttgart\Drawings\r020630_EC_STG 1_SITE 1_03.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	28	198

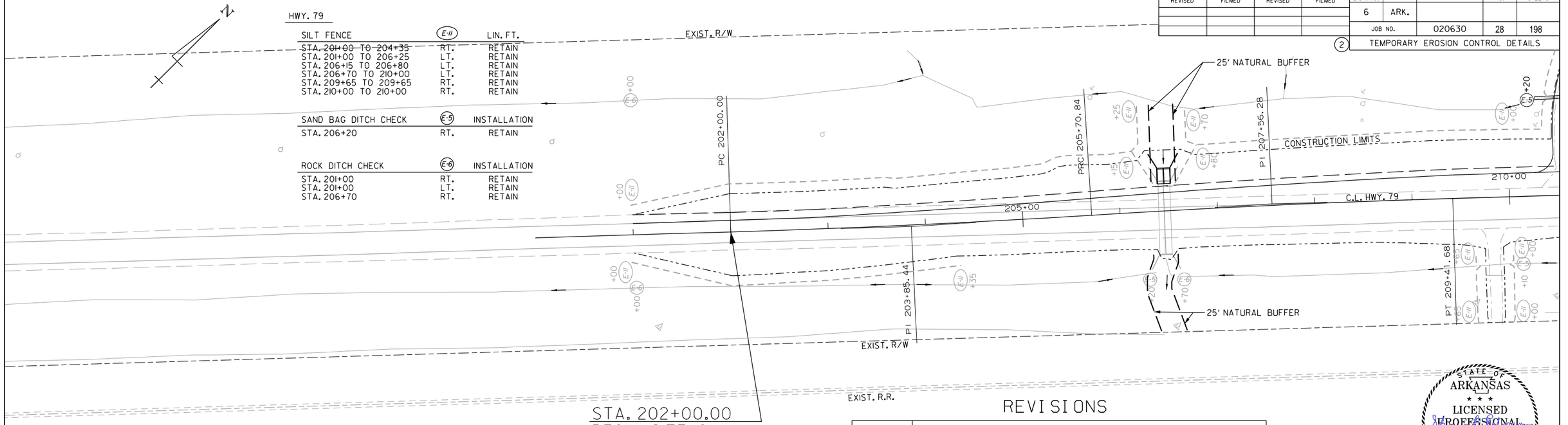
(2) TEMPORARY EROSION CONTROL DETAILS

HWY. 79

SILT FENCE	(E-11)	LIN. FT.
~~STA. 201+00 TO 204+35~~	~~RT.~~	~~RETAIN~~
STA. 201+00 TO 206+25	LT.	RETAIN
STA. 206+15 TO 206+80	LT.	RETAIN
STA. 206+70 TO 210+00	LT.	RETAIN
STA. 209+65 TO 209+65	RT.	RETAIN
STA. 210+00 TO 210+00	RT.	RETAIN

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 206+20	RT.	RETAIN

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 201+00	RT.	RETAIN
STA. 201+00	LT.	RETAIN
STA. 206+70	RT.	RETAIN



STA. 202+00.00
BEGIN SITE 2
L.M. 8.74

LEGEND

(E-5) = SAND BAG DITCH CHECKS

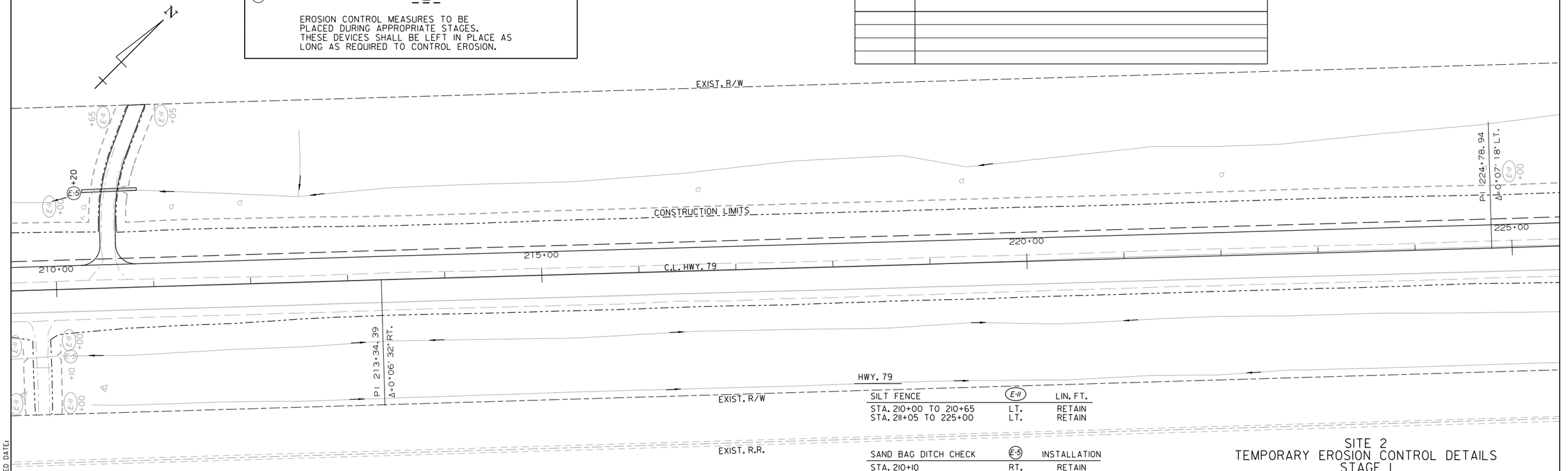
(E-6) = ROCK DITCH CHECKS (E-11) = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

REVISIONS

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No. 13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021



HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 210+00 TO 210+65	LT.	RETAIN
STA. 211+05 TO 225+00	LT.	RETAIN

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 210+10	RT.	RETAIN
STA. 210+20	LT.	I

SITE 2
TEMPORARY EROSION CONTROL DETAILS
STAGE I

rnfortner 2/4/2021 8:11:50 AM
WORKSPACE: AHTD
L:\2017\17017525 - Wabbaseka - Stuttgart\Drawings\r020630_EC_STG 1_SITE 2.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	29	198

(2) TEMPORARY EROSION CONTROL DETAILS

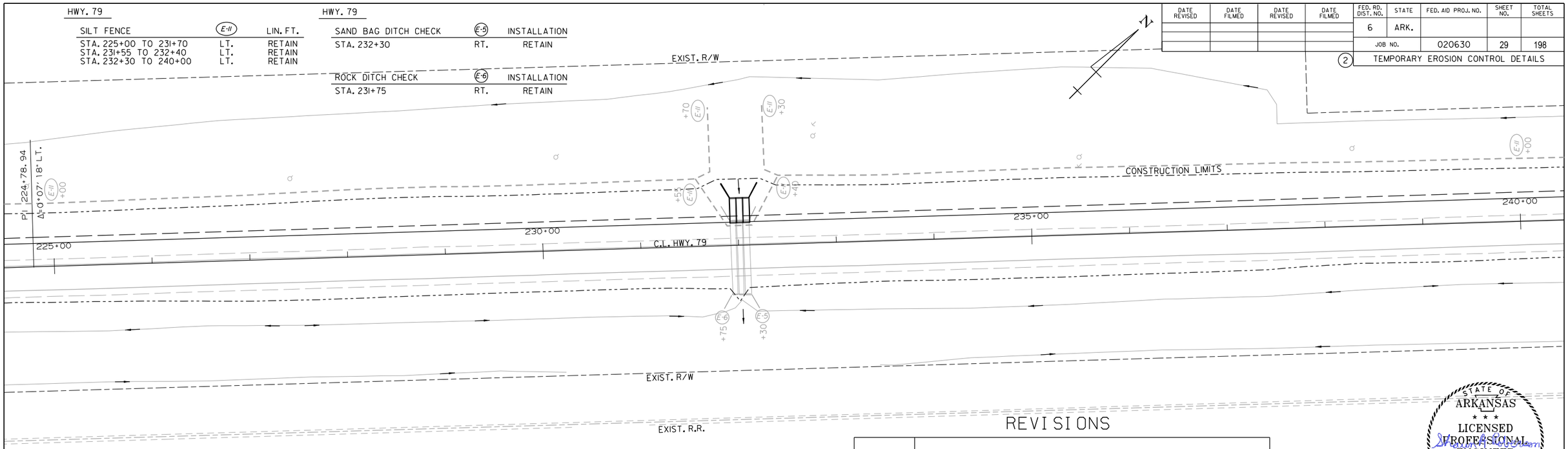
HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 225+00 TO 231+70	LT.	RETAIN
STA. 231+55 TO 232+40	LT.	RETAIN
STA. 232+30 TO 240+00	LT.	RETAIN

HWY. 79

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 232+30	RT.	RETAIN

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 231+75	RT.	RETAIN



LEGEND

(E-5) = SAND BAG DITCH CHECKS

(E-6) = ROCK DITCH CHECKS

(E-11) = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

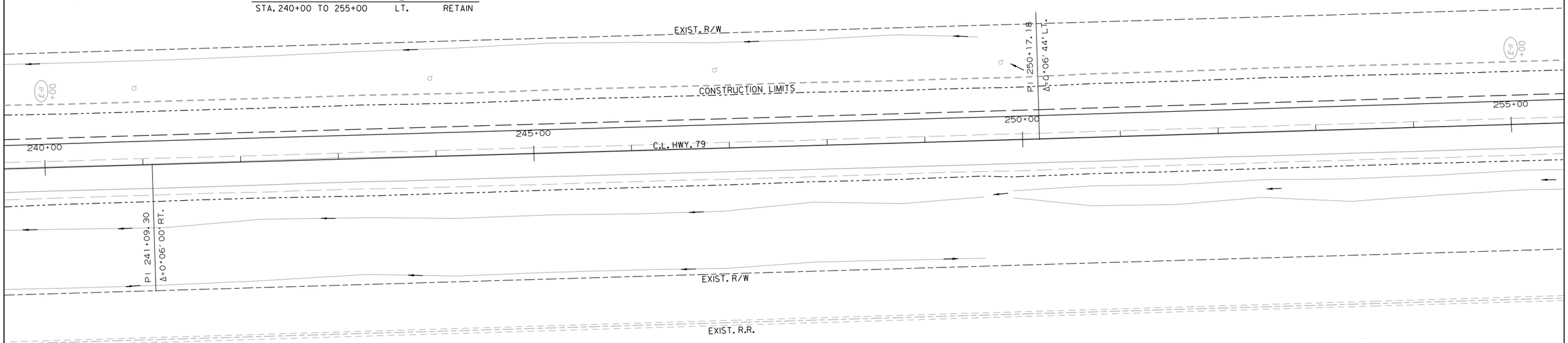
REVISIONS

DATE	REVISION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 240+00 TO 255+00	LT.	RETAIN

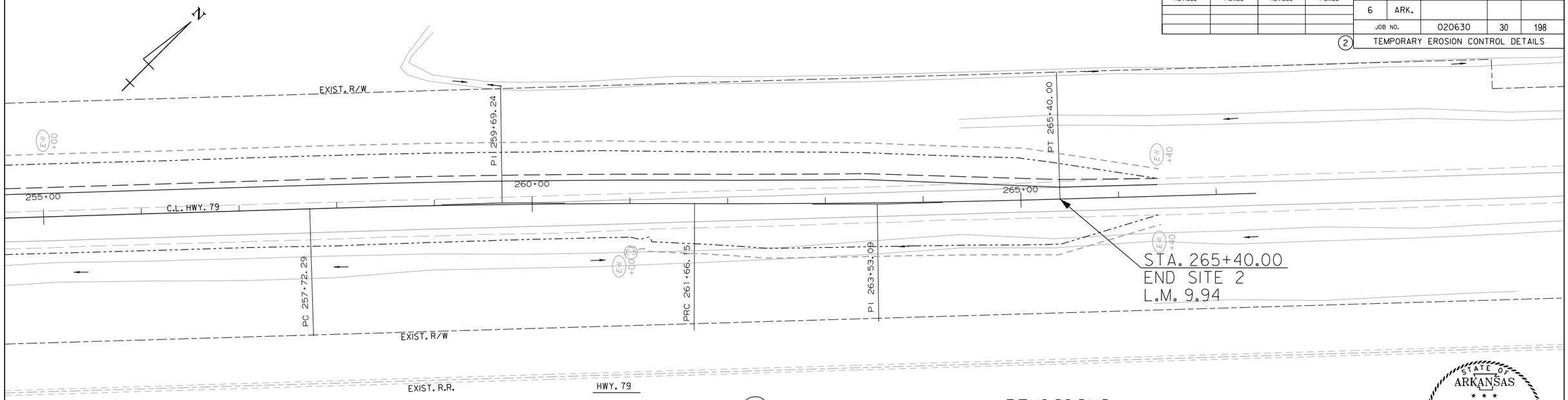


SITE 2
TEMPORARY EROSION CONTROL DETAILS
STAGE I

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WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	30	198

(2) TEMPORARY EROSION CONTROL DETAILS



SILT FENCE	(E-11)	LIN. FT.
STA. 255+00 TO 266+40	LT.	RETAIN
STA. 261+00 TO 266+40	RT.	RETAIN

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 261+00	LT.	RETAIN

LEGEND

(E-5) = SAND BAG DITCH CHECKS

(E-6) = ROCK DITCH CHECKS

(E-11) = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

REVISIONS

DATE	REVISION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

SITE 2
TEMPORARY EROSION CONTROL DETAILS
STAGE I

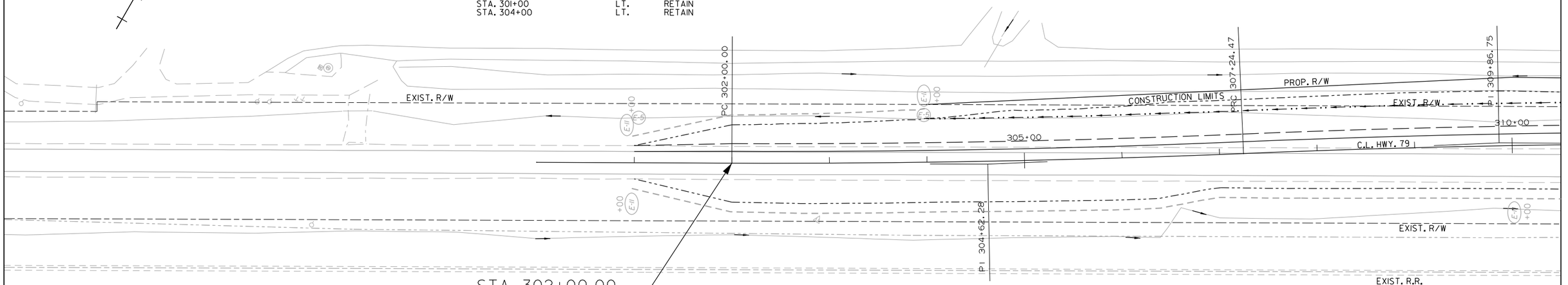
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	31	198
				(2)	TEMPORARY EROSION CONTROL DETAILS			

HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 301+00 TO 310+00	RT.	RETAIN
STA. 301+00 TO 304+00	LT.	RETAIN

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 301+00	LT.	RETAIN
STA. 304+00	LT.	RETAIN



STA. 302+00.00
BEGIN SITE 3
L.M. 3.18

LEGEND

(E-5) = SAND BAG DITCH CHECKS

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

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

REVISIONS

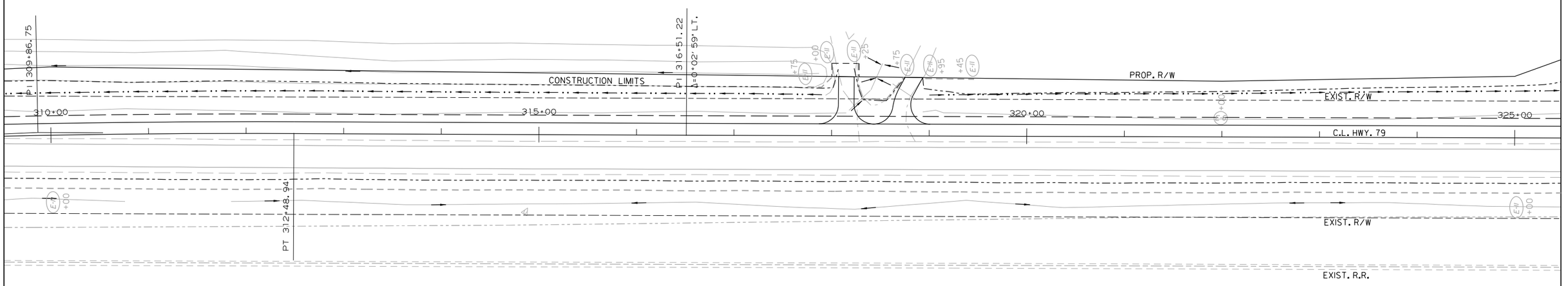
DATE	REVISION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 310+00 TO 325+00	RT.	RETAIN
STA. 317+75 TO 318+00	LT.	RETAIN
STA. 318+25 TO 318+75	LT.	RETAIN
STA. 318+95 TO 319+45	LT.	RETAIN

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 322+00	LT.	RETAIN



SITE 3
TEMPORARY EROSION CONTROL DETAILS
STAGE I

rnfortner 2/4/2021 8:11:51 AM
WORKSPACE: AHTD
L:\201\170\7525 - Wabbaseka - Stuttgart\Drawings\r020630_EC_STG 1_SITE 3.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		020630	32	198
				(2)	TEMPORARY EROSION CONTROL DETAILS			

HWY. 79

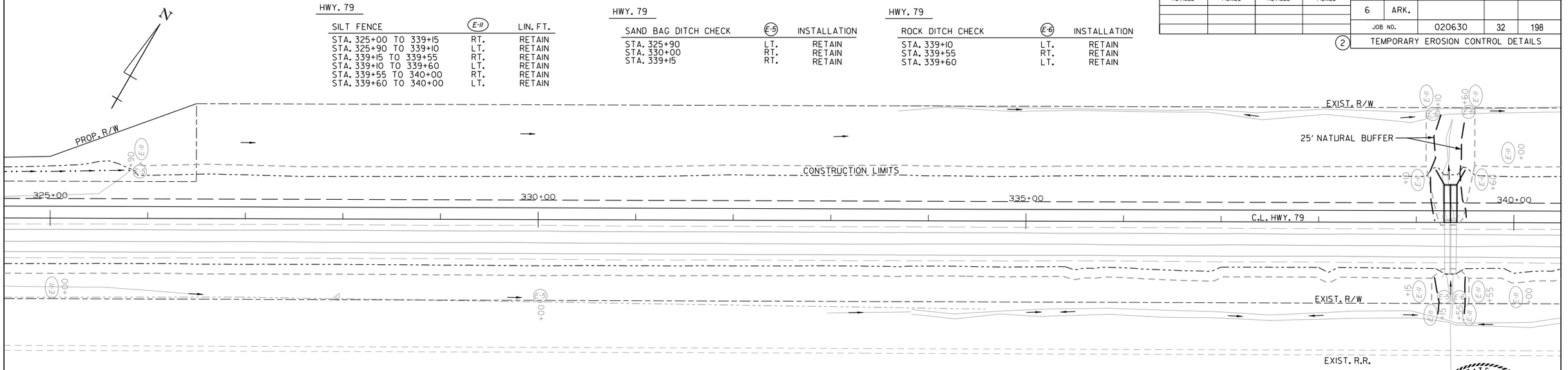
SILT FENCE	(E-11)	LIN. FT.
STA. 325+00 TO 339+15	RT.	RETAIN
STA. 325+90 TO 339+10	LT.	RETAIN
STA. 339+15 TO 339+55	RT.	RETAIN
STA. 339+10 TO 339+60	LT.	RETAIN
STA. 339+55 TO 340+00	RT.	RETAIN
STA. 339+60 TO 340+00	LT.	RETAIN

HWY. 79

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 325+90	LT.	RETAIN
STA. 330+00	RT.	RETAIN
STA. 339+15	RT.	RETAIN

HWY. 79

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 339+10	LT.	RETAIN
STA. 339+55	RT.	RETAIN
STA. 339+60	LT.	RETAIN



LEGEND

(E-5) = SAND BAG DITCH CHECKS

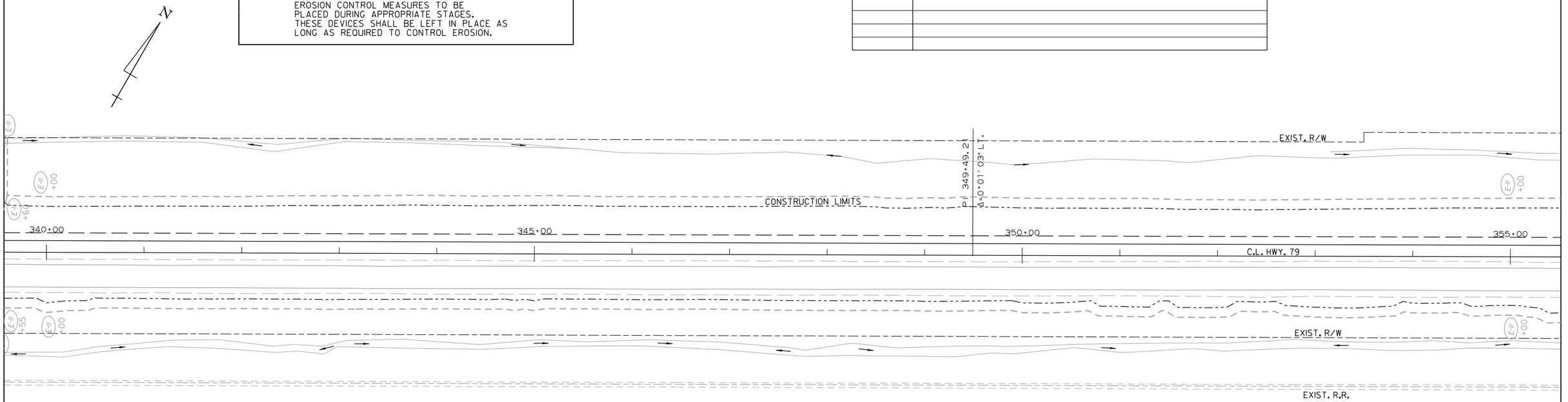
(E-6) = ROCK DITCH CHECKS (E-11) = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

REVISIONS

DATE	REVISION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021



HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 340+00 TO 355+00	RT.	RETAIN
STA. 340+00 TO 355+00	LT.	RETAIN

SITE 3
TEMPORARY EROSION CONTROL DETAILS
STAGE I

rnfortner 2/4/2021 8:11:51 AM
WORKSPACE: AHTD
L:\201\1701\7525 - Wabbaseka - Stuttgart\Drawings\r020630_EC_STG 1_SITE 3.02.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	33	198
				(2)	TEMPORARY EROSION CONTROL DETAILS			

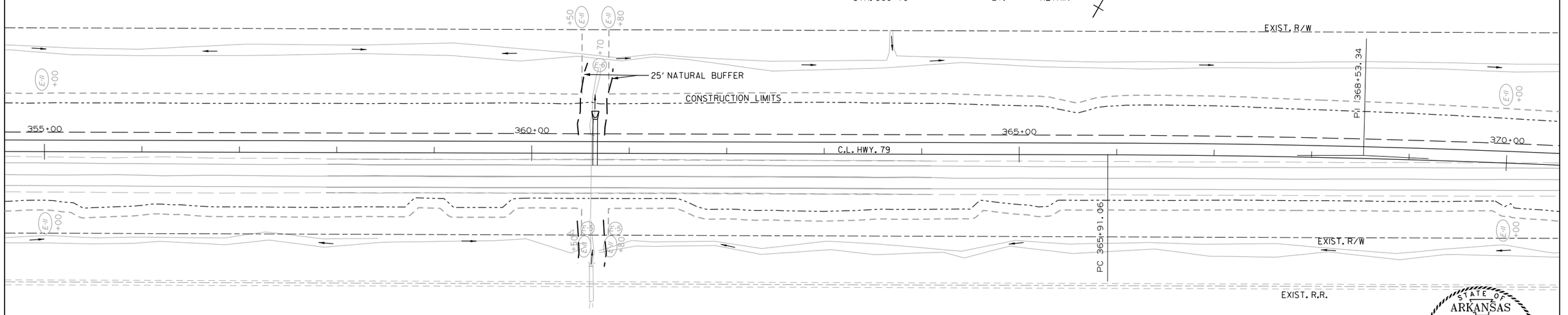
HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 355+00 TO 360+50	RT.	RETAIN
STA. 355+00 TO 360+50	LT.	RETAIN
STA. 360+80 TO 370+00	RT.	RETAIN
STA. 360+80 TO 370+00	LT.	RETAIN

HWY. 79

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 360+50	RT.	RETAIN
STA. 360+80	RT.	RETAIN

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 360+70	LT.	RETAIN



LEGEND

(E-5) = SAND BAG DITCH CHECKS

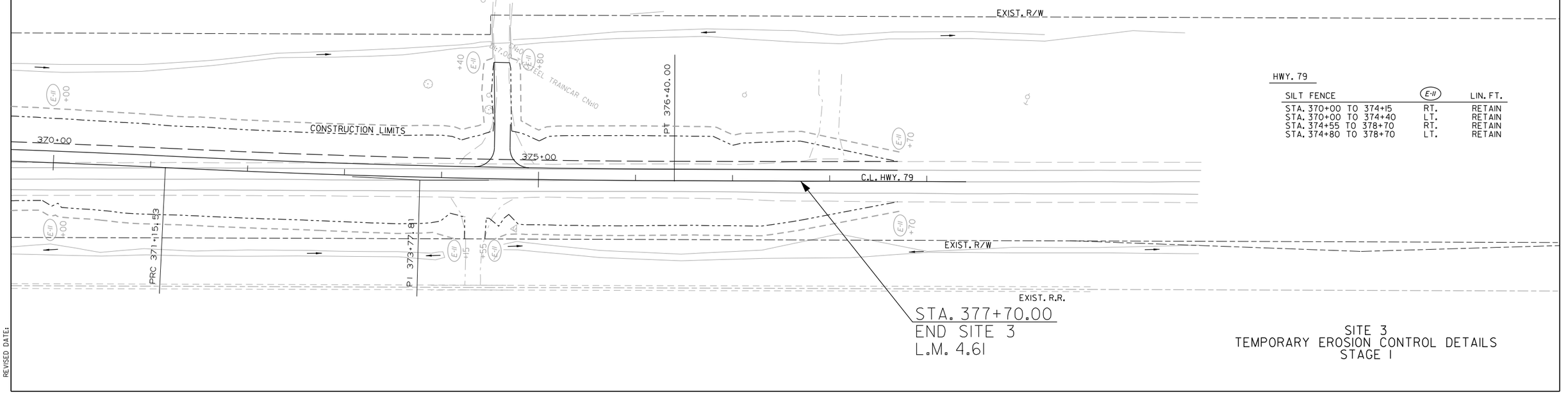
(E-6) = ROCK DITCH CHECKS (E-11) = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

REVISIONS

DATE	REVISION

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No.13436
SHAUN A. ROBERSON
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HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 370+00 TO 374+15	RT.	RETAIN
STA. 370+00 TO 374+40	LT.	RETAIN
STA. 374+55 TO 378+70	RT.	RETAIN
STA. 374+80 TO 378+70	LT.	RETAIN

STA. 377+70.00
END SITE 3
L.M. 4.61

SITE 3
TEMPORARY EROSION CONTROL DETAILS
STAGE 1

rnfortner 2/4/2021 8:11:52 AM
WORKSPACE: AHTD
L:\201\1701\7525 - Wabbaseka - Stuttgart\Drawings\r020630_EC_STG 1_SITE 3.03.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	34	198

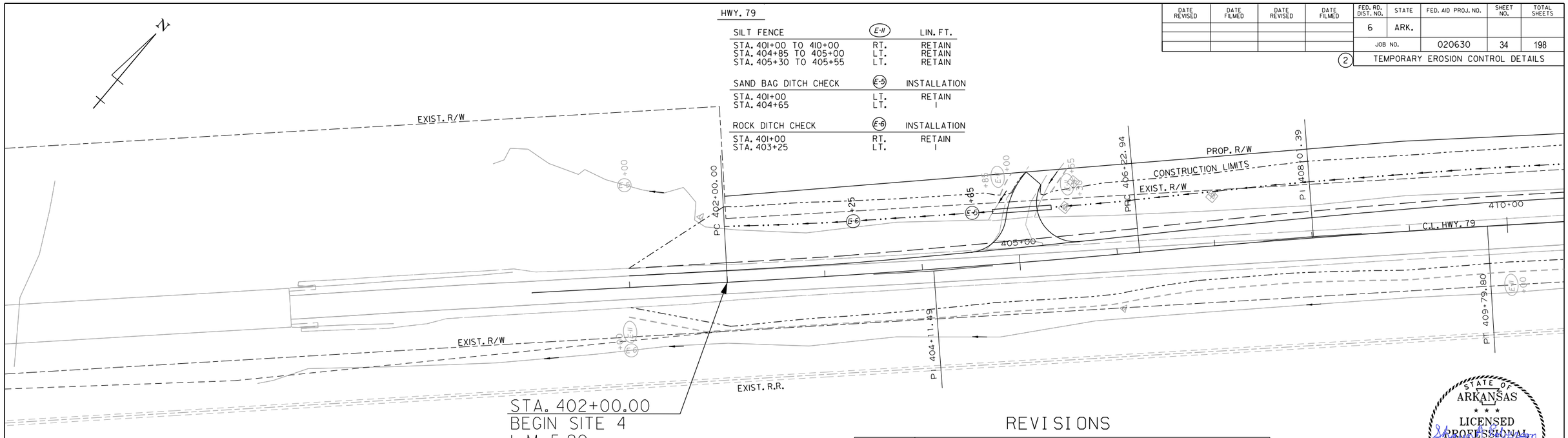
(2) TEMPORARY EROSION CONTROL DETAILS

HWY. 79

SILT FENCE (E-11)		LIN. FT.
STA. 401+00 TO 410+00	RT.	RETAIN
STA. 404+85 TO 405+00	LT.	RETAIN
STA. 405+30 TO 405+55	LT.	RETAIN

SAND BAG DITCH CHECK (E-5)		INSTALLATION
STA. 401+00	LT.	RETAIN
STA. 404+65	LT.	I

ROCK DITCH CHECK (E-6)		INSTALLATION
STA. 401+00	RT.	RETAIN
STA. 403+25	LT.	I



LEGEND

(E-5) = SAND BAG DITCH CHECKS

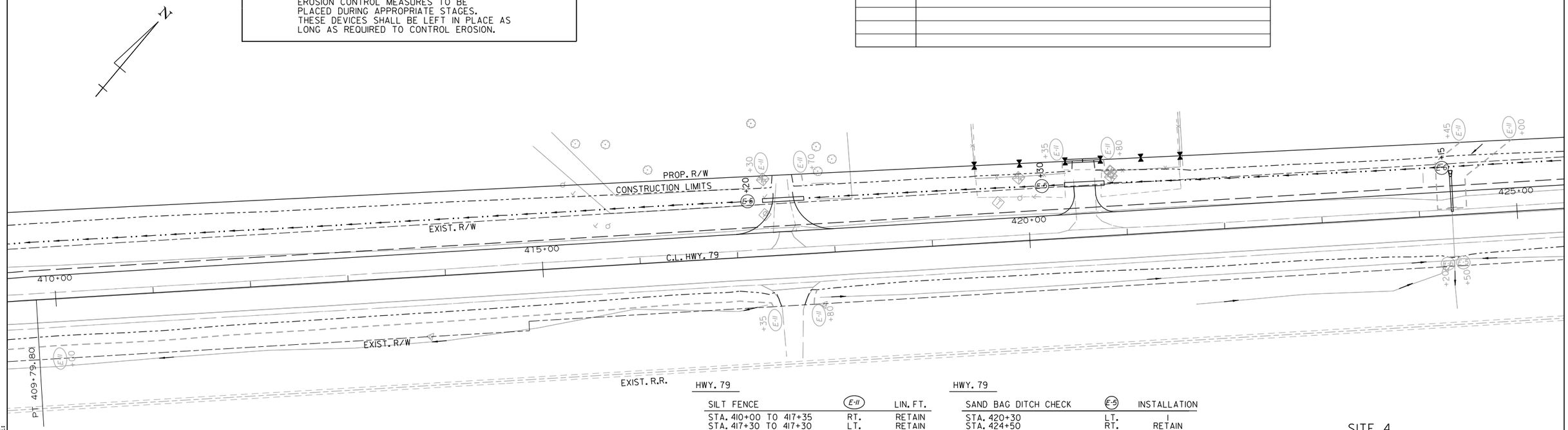
(E-6) = ROCK DITCH CHECKS (E-11) = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

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SHAUN A. ROBERSON
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HWY. 79

SILT FENCE (E-11)		LIN. FT.
STA. 410+00 TO 417+35	RT.	RETAIN
STA. 417+30 TO 417+30	LT.	RETAIN
STA. 417+70 TO 417+70	LT.	RETAIN
STA. 417+80 TO 417+80	RT.	RETAIN
STA. 420+35 TO 420+35	LT.	RETAIN
STA. 420+80 TO 420+80	LT.	RETAIN
STA. 424+45 TO 425+00	LT.	RETAIN

HWY. 79

SAND BAG DITCH CHECK (E-5)		INSTALLATION
STA. 420+30	LT.	I
STA. 424+50	RT.	RETAIN

ROCK DITCH CHECK (E-6)		INSTALLATION
STA. 417+20	LT.	I
STA. 424+20	RT.	RETAIN
STA. 424+15	LT.	I

SITE 4
TEMPORARY EROSION CONTROL DETAILS
STAGE I

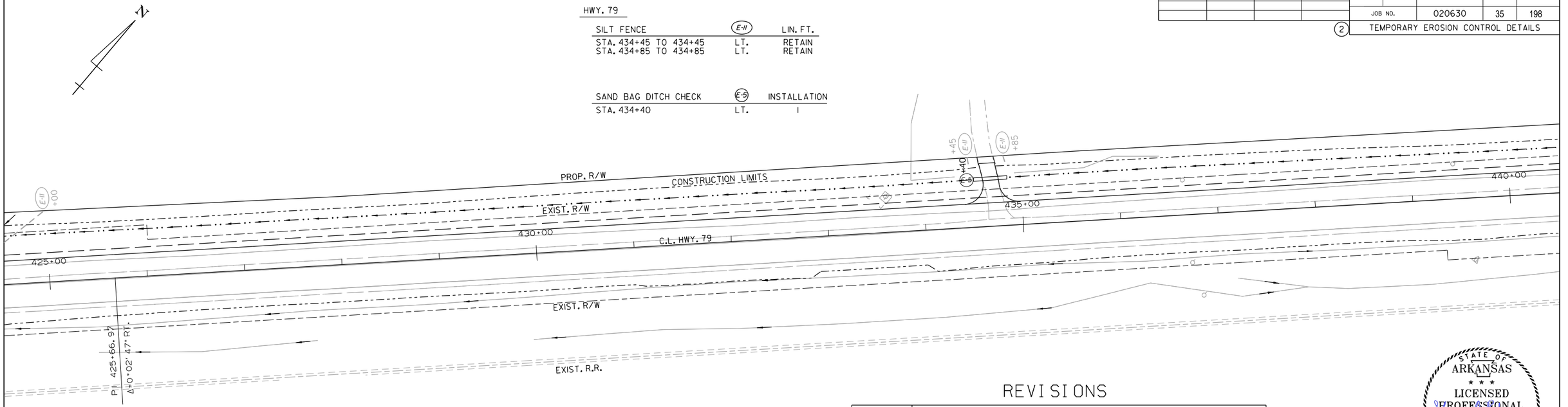
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REVISED DATE:

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				6	ARK.			
				JOB NO.		020630	35	198
				(2)	TEMPORARY EROSION CONTROL DETAILS			

HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 434+45 TO 434+45	LT.	RETAIN
STA. 434+85 TO 434+85	LT.	RETAIN

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 434+40	LT.	1



LEGEND

(E-5) = SAND BAG DITCH CHECKS

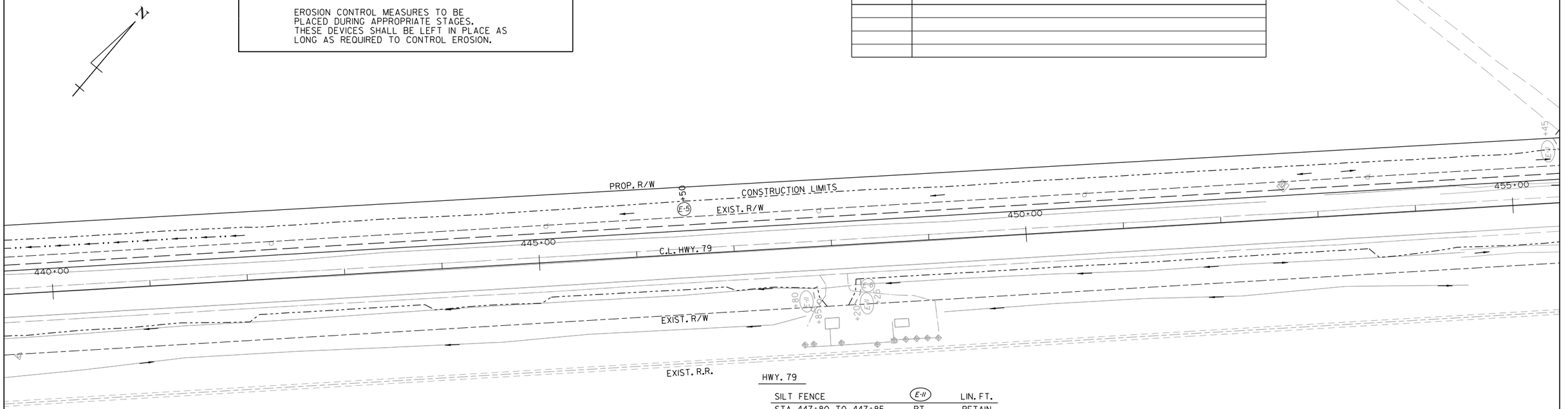
(E-6) = ROCK DITCH CHECKS (E-11) = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

REVISIONS

DATE	REVISION

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DIGITALLY SIGNED 2-4-2021



HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 447+80 TO 447+85	RT.	RETAIN
STA. 448+20 TO 448+25	RT.	RETAIN

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 446+50	LT.	1

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 448+25	RT.	RETAIN

SITE 4
TEMPORARY EROSION CONTROL DETAILS
STAGE 1

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REVISED DATE:

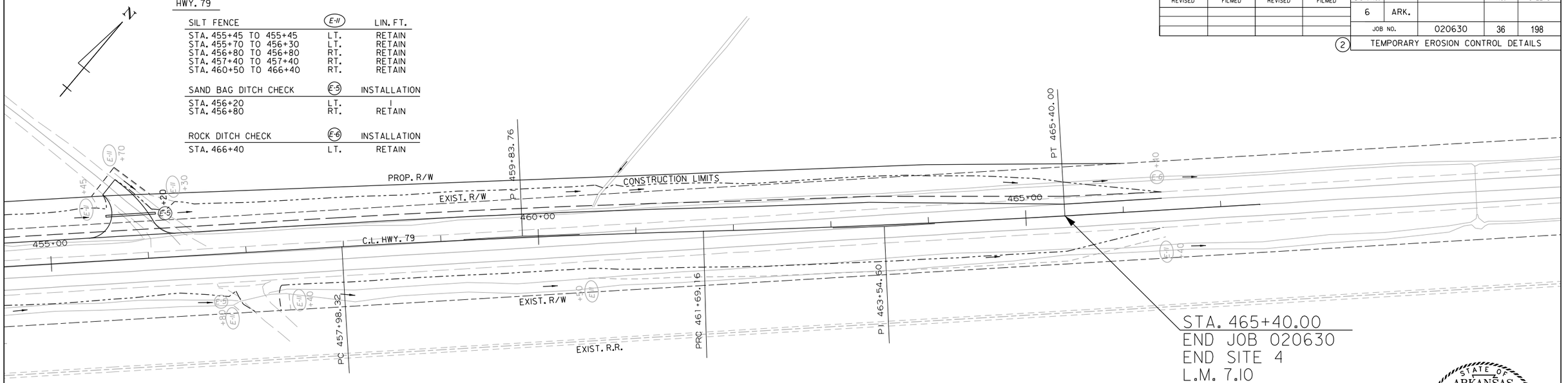
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				6	ARK.			
				JOB NO.		020630	36	198
				(2)	TEMPORARY EROSION CONTROL DETAILS			

HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 455+45 TO 455+45	LT.	RETAIN
STA. 455+70 TO 456+30	LT.	RETAIN
STA. 456+80 TO 456+80	RT.	RETAIN
STA. 457+40 TO 457+40	RT.	RETAIN
STA. 460+50 TO 466+40	RT.	RETAIN

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 456+20	LT.	I
STA. 456+80	RT.	RETAIN

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 466+40	LT.	RETAIN



STA. 465+40.00
END JOB 020630
END SITE 4
L.M. 7.10

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LEGEND

(E-5) = SAND BAG DITCH CHECKS

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

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

REVISIONS

DATE	REVISION

SITE 4
TEMPORARY EROSION CONTROL DETAILS
STAGE I

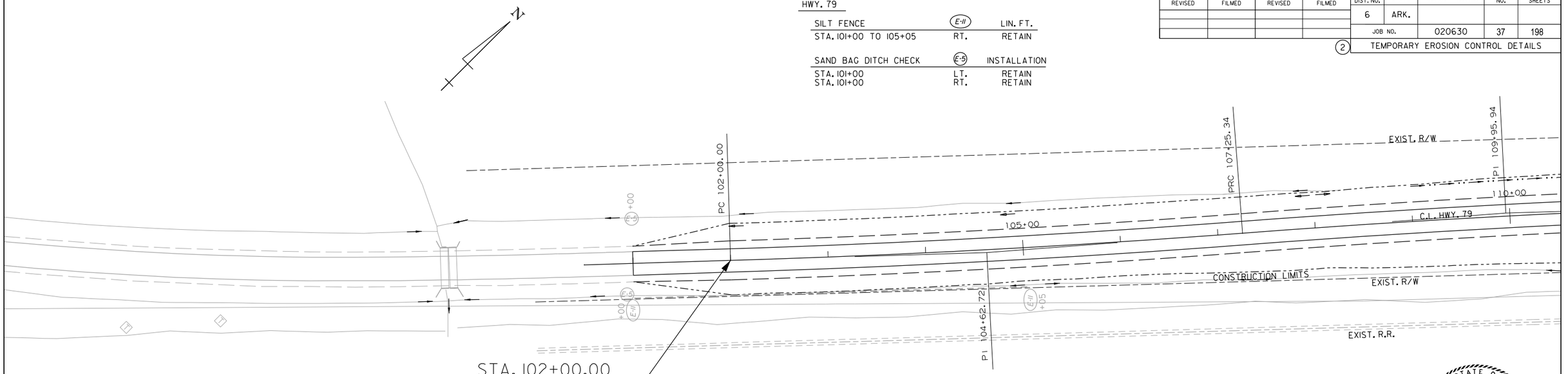
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	37	198
				(2)	TEMPORARY EROSION CONTROL DETAILS			

HWY. 79

SILT FENCE	E-11	LIN. FT.
STA. 101+00 TO 105+05	RT.	RETAIN

SAND BAG DITCH CHECK	E-5	INSTALLATION
STA. 101+00	LT.	RETAIN
STA. 101+00	RT.	RETAIN



STA. 102+00.00
BEGIN JOB 020630
BEGIN SITE 1
L.M. 5.70

LEGEND

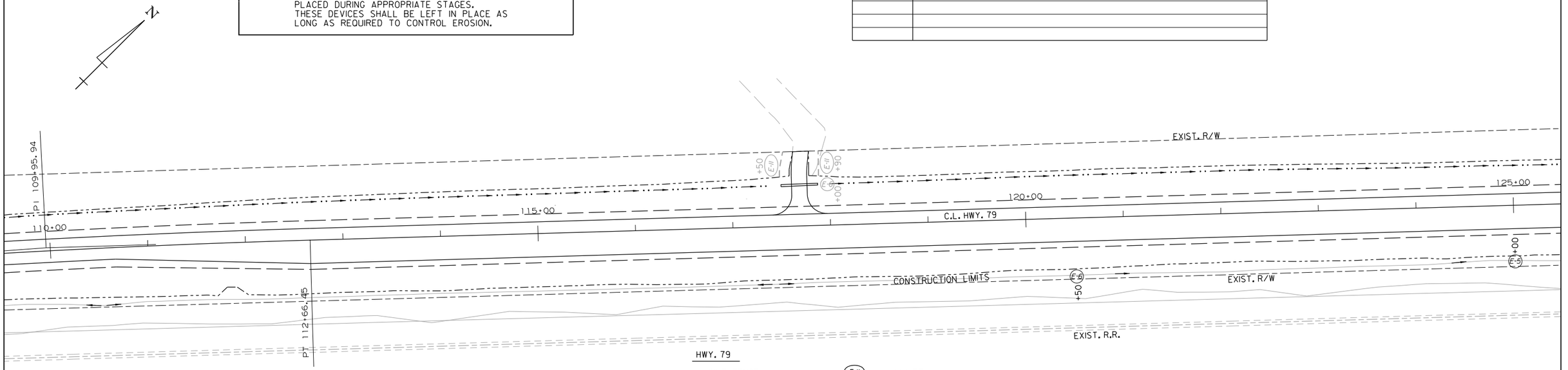
E-5 = SAND BAG DITCH CHECKS
E-6 = ROCK DITCH CHECKS
E-11 = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

REVISIONS

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HWY. 79

SILT FENCE	E-11	LIN. FT.
STA. 117+50 TO 117+50	LT.	RETAIN
STA. 117+90 TO 117+90	LT.	RETAIN

SAND BAG DITCH CHECK	E-5	INSTALLATION
STA. 125+00	RT.	1

ROCK DITCH CHECK	E-6	INSTALLATION
STA. 118+00	LT.	RETAIN
STA. 120+50	RT.	1

SITE 1
TEMPORARY EROSION CONTROL DETAILS
STAGE 2

rnfortner 2/4/2021 8:11:53 AM
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REVISED DATE:

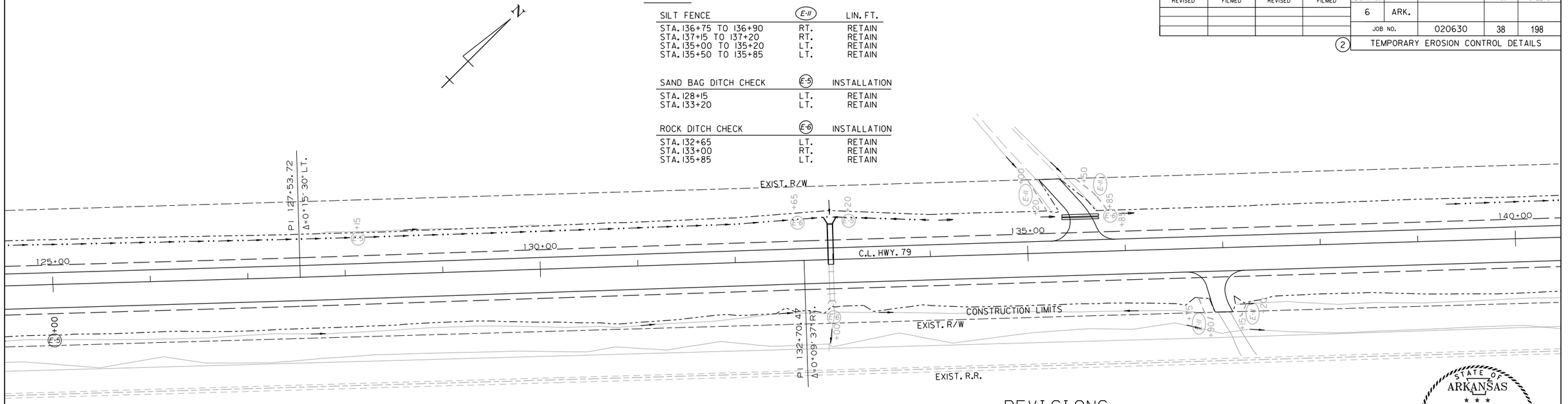
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				6	ARK.			
				JOB NO.		020630	38	198
				(2)	TEMPORARY EROSION CONTROL DETAILS			

HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 136+75 TO 136+90	RT.	RETAIN
STA. 137+15 TO 137+20	RT.	RETAIN
STA. 135+00 TO 135+20	LT.	RETAIN
STA. 135+50 TO 135+85	LT.	RETAIN

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 128+15	LT.	RETAIN
STA. 133+20	LT.	RETAIN

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 132+65	LT.	RETAIN
STA. 133+00	RT.	RETAIN
STA. 135+85	LT.	RETAIN



LEGEND

(E-5) = SAND BAG DITCH CHECKS

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

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

REVISIONS

DATE	REVISION

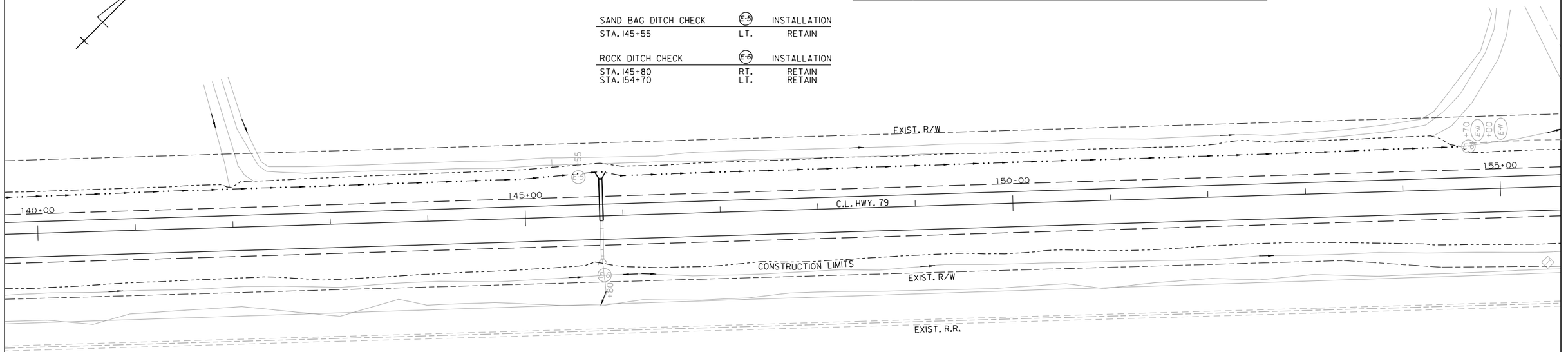
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 154+70 TO 155+00	LT.	RETAIN

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 145+55	LT.	RETAIN

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 145+80	RT.	RETAIN
STA. 154+70	LT.	RETAIN



SITE I
TEMPORARY EROSION CONTROL DETAILS
STAGE 2

rnfortner 2/4/2021 8:11:53 AM
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				(2)	TEMPORARY EROSION CONTROL DETAILS			

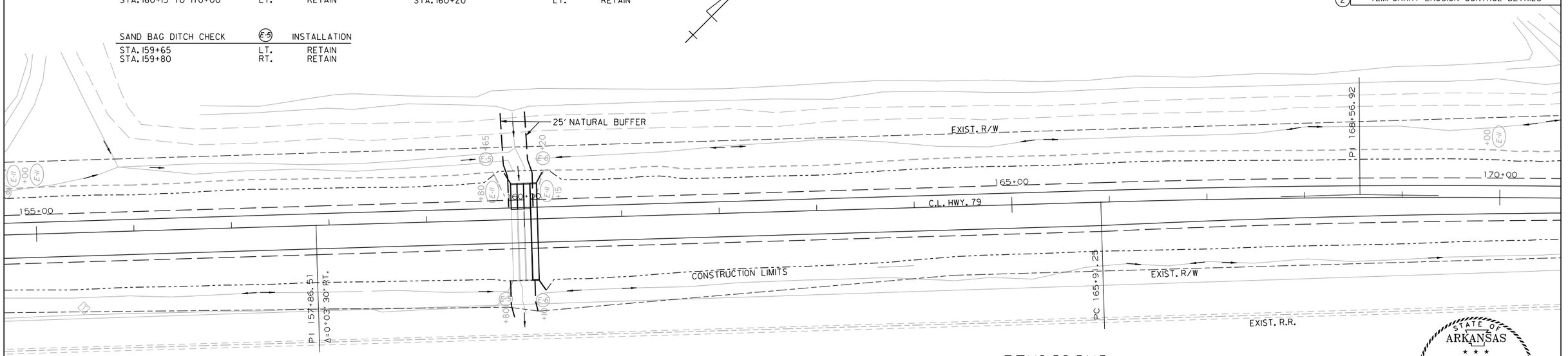
HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 155+00 TO 159+80	LT.	RETAIN
STA. 160+15 TO 170+00	LT.	RETAIN

HWY. 79

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 160+10	RT.	RETAIN
STA. 160+20	LT.	RETAIN

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 159+65	LT.	RETAIN
STA. 159+80	RT.	RETAIN



LEGEND

(E-5) = SAND BAG DITCH CHECKS

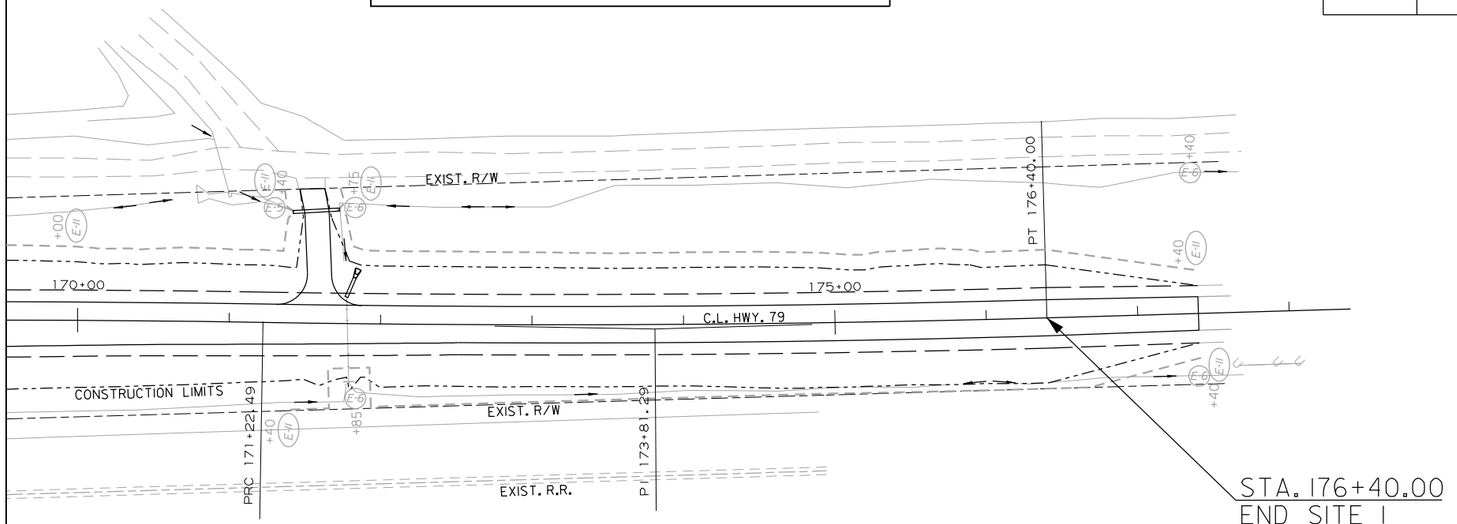
(E-6) = ROCK DITCH CHECKS (E-11) = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

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STA. 176+40.00
END SITE 1
L.M. 7.11

HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 171+40 TO 177+40	RT.	RETAIN
STA. 170+00 TO 171+40	LT.	RETAIN
STA. 171+75 TO 177+40	LT.	RETAIN

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 171+40	LT.	RETAIN

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 171+75	LT.	RETAIN
STA. 171+85	RT.	RETAIN
STA. 177+40	LT.	RETAIN
STA. 177+40	RT.	RETAIN

SITE 1
TEMPORARY EROSION CONTROL DETAILS
STAGE 2

rnfortner 2/4/2021 8:11:54 AM
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	40	198

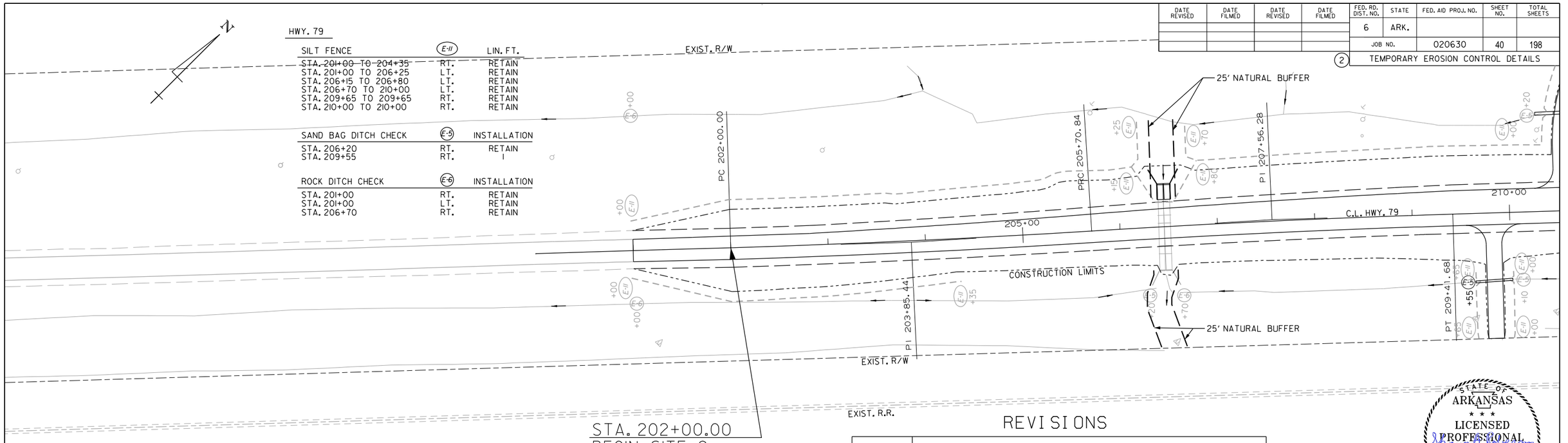
(2) TEMPORARY EROSION CONTROL DETAILS

HWY. 79

SILT FENCE	(E-11)	LIN. FT.
~~STA. 201+00 TO 204+35~~	~~RT.~~	~~RETAIN~~
STA. 201+00 TO 206+25	LT.	RETAIN
STA. 206+15 TO 206+80	LT.	RETAIN
STA. 206+70 TO 210+00	LT.	RETAIN
STA. 209+65 TO 209+65	RT.	RETAIN
STA. 210+00 TO 210+00	RT.	RETAIN

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 206+20	RT.	RETAIN
STA. 209+55	RT.	I

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 201+00	RT.	RETAIN
STA. 201+00	LT.	RETAIN
STA. 206+70	RT.	RETAIN



STA. 202+00.00
BEGIN SITE 2
L.M. 8.74

LEGEND

(E-5) = SAND BAG DITCH CHECKS

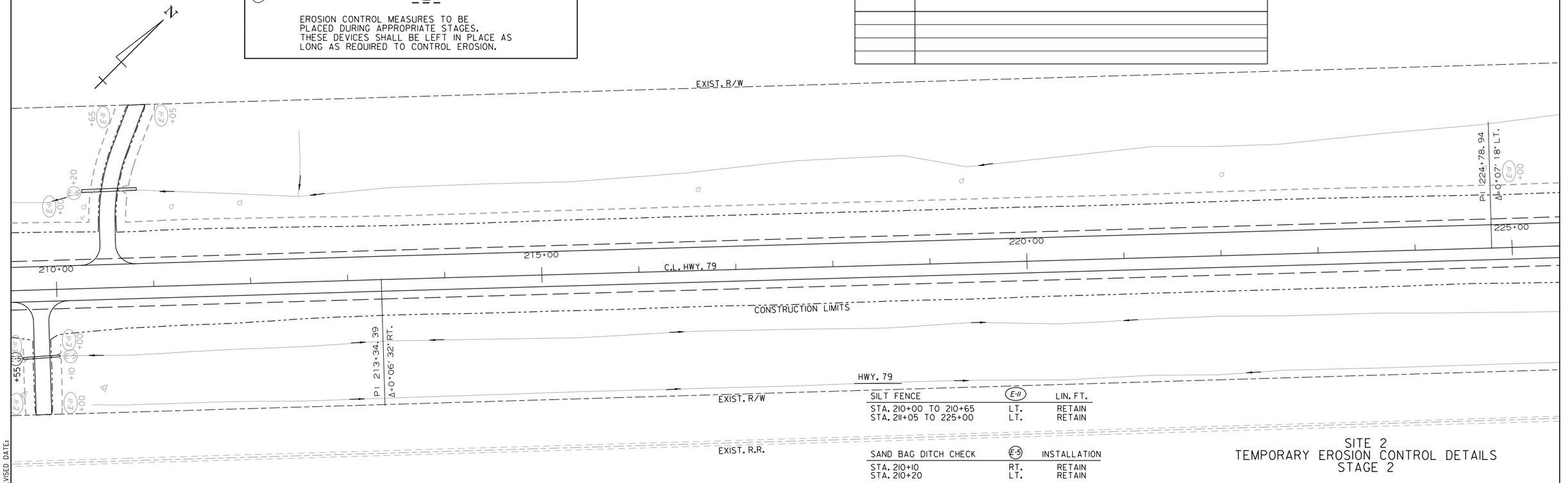
(E-6) = ROCK DITCH CHECKS (E-11) = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

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SILT FENCE	(E-11)	LIN. FT.
STA. 210+00 TO 210+65	LT.	RETAIN
STA. 211+05 TO 225+00	LT.	RETAIN

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 210+10	RT.	RETAIN
STA. 210+20	LT.	RETAIN

SITE 2
TEMPORARY EROSION CONTROL DETAILS
STAGE 2

rnfortner 2/4/2021 8:11:54 AM
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	41	198

(2) TEMPORARY EROSION CONTROL DETAILS

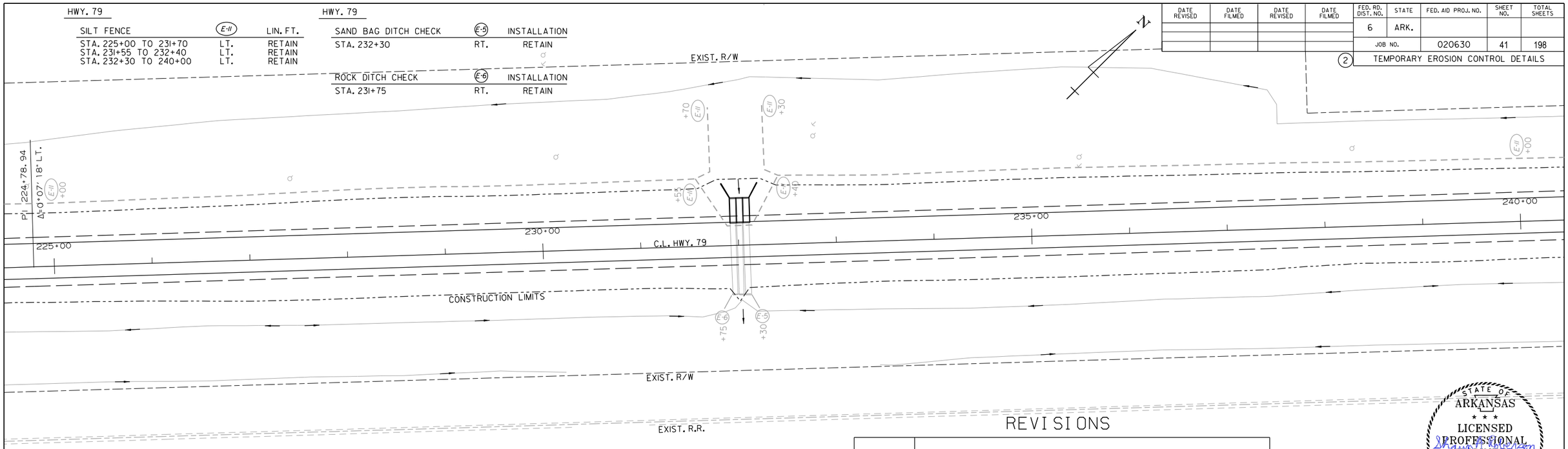
HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 225+00 TO 231+70	LT.	RETAIN
STA. 231+55 TO 232+40	LT.	RETAIN
STA. 232+30 TO 240+00	LT.	RETAIN

HWY. 79

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 232+30	RT.	RETAIN

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 231+75	RT.	RETAIN



LEGEND

(E-5) = SAND BAG DITCH CHECKS

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

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

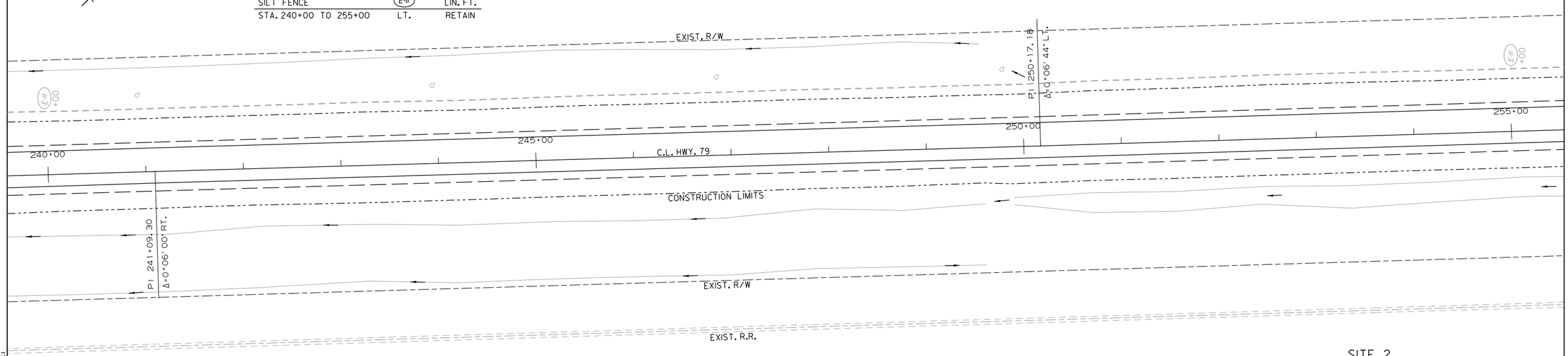
REVISIONS

DATE	REVISION

STATE OF ARKANSAS
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No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 240+00 TO 255+00	LT.	RETAIN

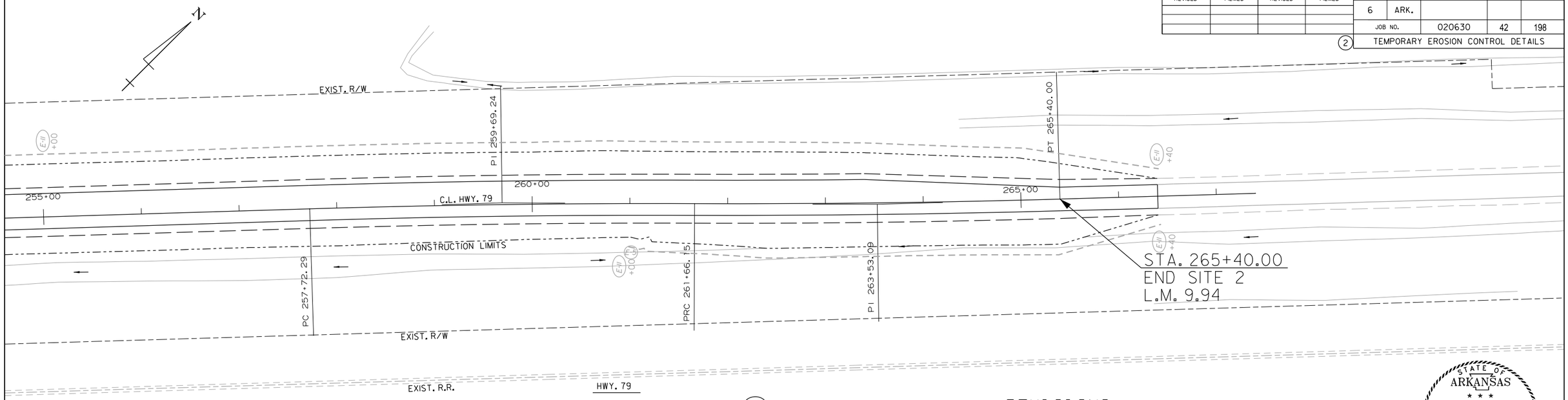


SITE 2
TEMPORARY EROSION CONTROL DETAILS
STAGE 2

rnfortner 2/4/2021 8:11:54 AM
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	42	198

(2) TEMPORARY EROSION CONTROL DETAILS



SILT FENCE	E-11	LIN. FT.
STA. 255+00 TO 266+40	LT.	RETAIN
STA. 261+00 TO 266+40	RT.	RETAIN

SAND BAG DITCH CHECK	E-5	INSTALLATION
STA. 261+00	LT.	RETAIN

LEGEND

E-5 = SAND BAG DITCH CHECKS

E-6 = ROCK DITCH CHECKS

E-11 = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

REVISIONS

DATE	REVISION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

SITE 2
TEMPORARY EROSION CONTROL DETAILS
STAGE 2

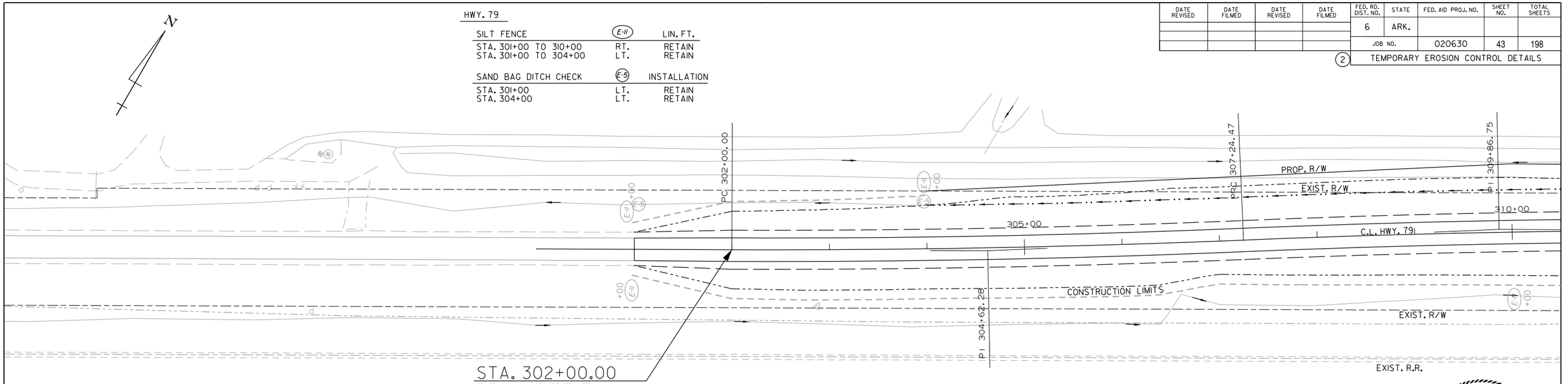
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REVISED DATE:

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				6	ARK.			
				JOB NO.		020630	43	198
				(2)	TEMPORARY EROSION CONTROL DETAILS			

HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 301+00 TO 310+00	RT.	RETAIN
STA. 301+00 TO 304+00	LT.	RETAIN

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 301+00	LT.	RETAIN
STA. 304+00	LT.	RETAIN



STA. 302+00.00
BEGIN SITE 3
L.M. 3.18

LEGEND

(E-5) = SAND BAG DITCH CHECKS

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

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

REVISIONS

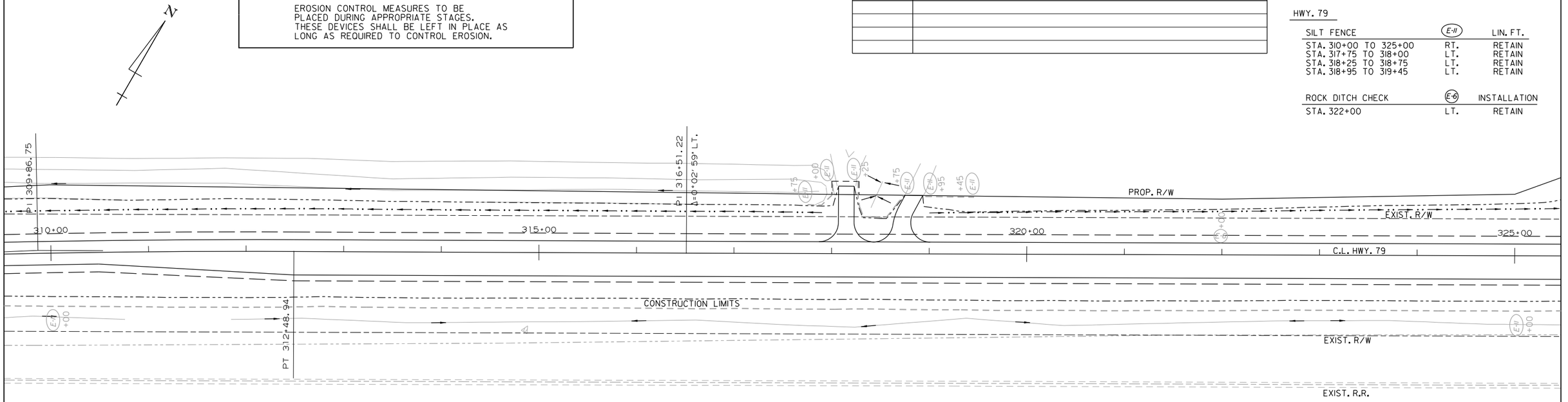
DATE	REVISION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 310+00 TO 325+00	RT.	RETAIN
STA. 317+75 TO 318+00	LT.	RETAIN
STA. 318+25 TO 318+75	LT.	RETAIN
STA. 318+95 TO 319+45	LT.	RETAIN

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 322+00	LT.	RETAIN



SITE 3
TEMPORARY EROSION CONTROL DETAILS
STAGE 2

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REVISED DATE:

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				(2)	TEMPORARY EROSION CONTROL DETAILS			

HWY. 79

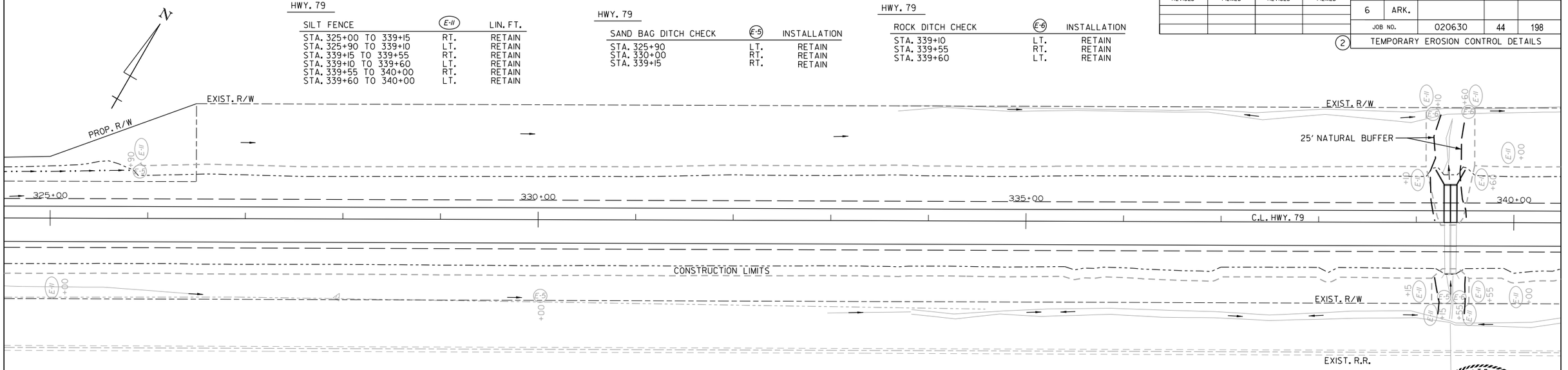
SILT FENCE	(E-11)	LIN. FT.
STA. 325+00 TO 339+15	RT.	RETAIN
STA. 325+90 TO 339+10	LT.	RETAIN
STA. 339+15 TO 339+55	RT.	RETAIN
STA. 339+10 TO 339+60	LT.	RETAIN
STA. 339+55 TO 340+00	RT.	RETAIN
STA. 339+60 TO 340+00	LT.	RETAIN

HWY. 79

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 325+90	LT.	RETAIN
STA. 330+00	RT.	RETAIN
STA. 339+15	RT.	RETAIN

HWY. 79

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 339+10	LT.	RETAIN
STA. 339+55	RT.	RETAIN
STA. 339+60	LT.	RETAIN



LEGEND

(E-5) = SAND BAG DITCH CHECKS

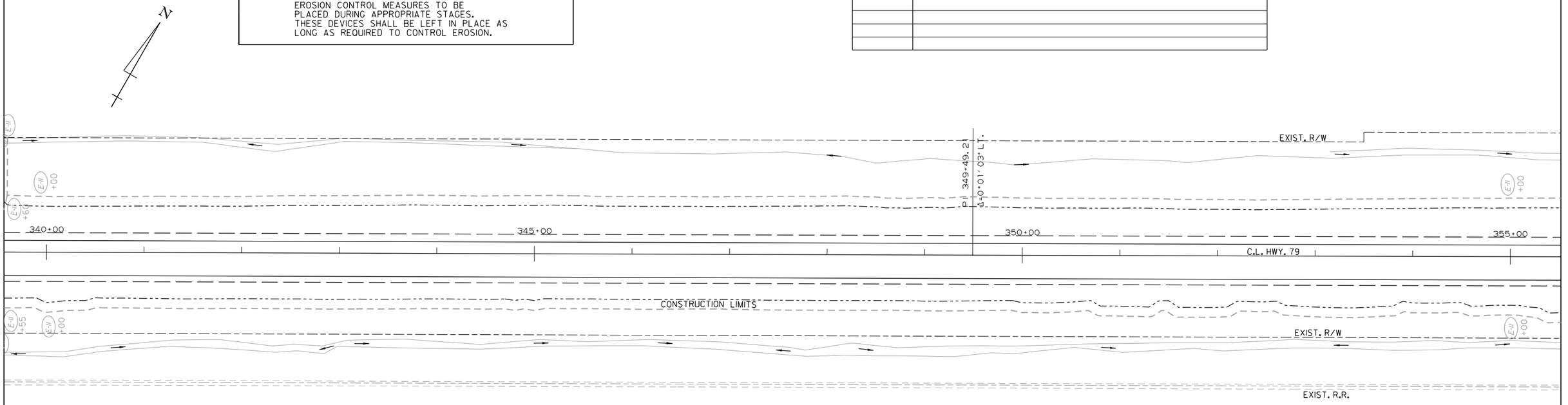
(E-6) = ROCK DITCH CHECKS (E-11) = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

REVISIONS

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SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021



HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 340+00 TO 355+00	RT.	RETAIN
STA. 340+00 TO 355+00	LT.	RETAIN

SITE 3
TEMPORARY EROSION CONTROL DETAILS
STAGE 2

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WORKSPACE: AHTD
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REVISED DATE:

HWY. 79

SILT FENCE	E-11	LIN. FT.
STA. 355+00 TO 360+50	RT.	RETAIN
STA. 355+00 TO 360+50	LT.	RETAIN
STA. 360+80 TO 370+00	RT.	RETAIN
STA. 360+80 TO 370+00	LT.	RETAIN

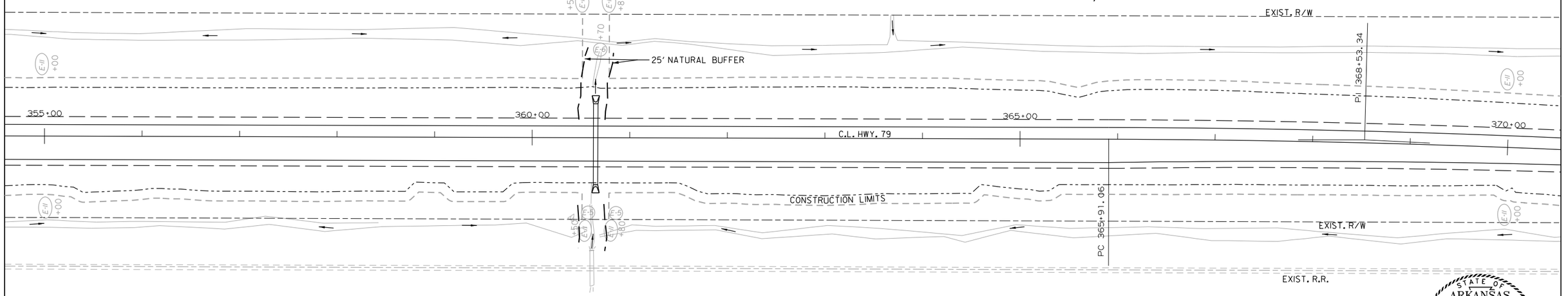
HWY. 79

SAND BAG DITCH CHECK	E-5	INSTALLATION
STA. 360+50	RT.	RETAIN
STA. 360+80	RT.	RETAIN

ROCK DITCH CHECK	E-6	INSTALLATION
STA. 360+70	LT.	RETAIN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	45	198

(2) TEMPORARY EROSION CONTROL DETAILS



LEGEND

E-5 = SAND BAG DITCH CHECKS

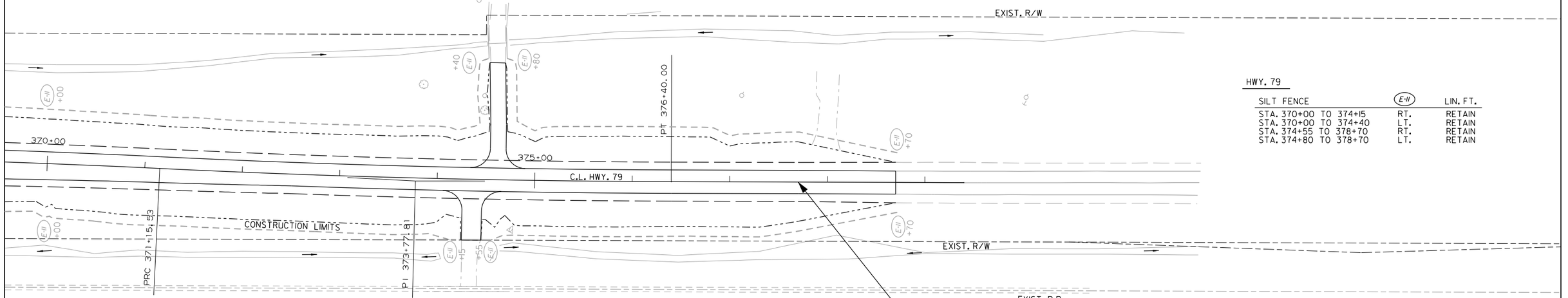
E-6 = ROCK DITCH CHECKS E-11 = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

REVISIONS

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HWY. 79

SILT FENCE	E-11	LIN. FT.
STA. 370+00 TO 374+15	RT.	RETAIN
STA. 370+00 TO 374+40	LT.	RETAIN
STA. 374+55 TO 378+70	RT.	RETAIN
STA. 374+80 TO 378+70	LT.	RETAIN

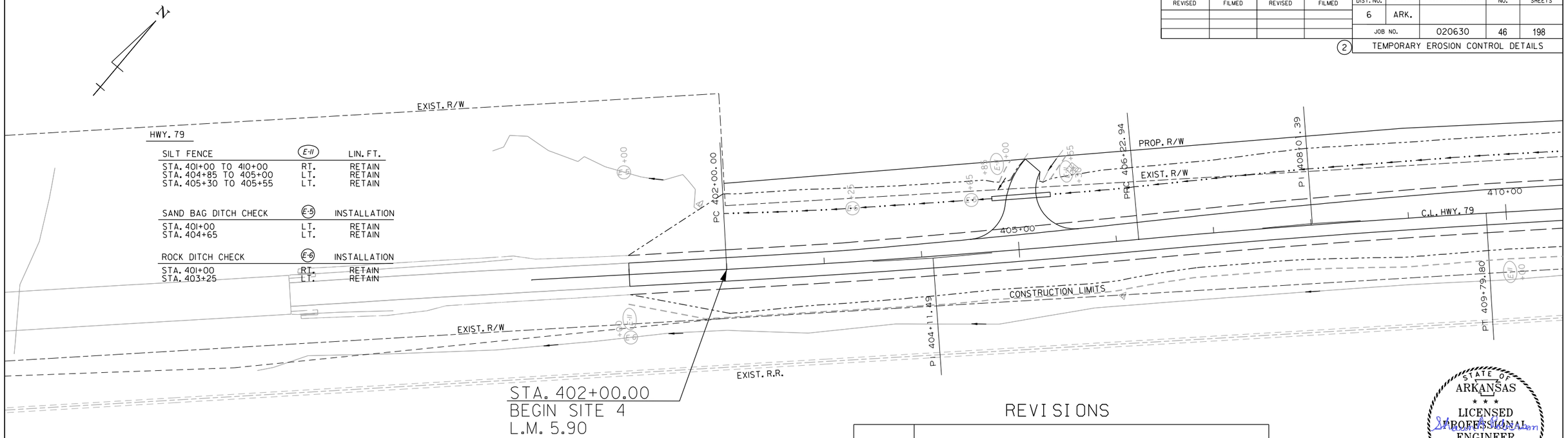
STA. 377+70.00
END SITE 3
L.M. 4.61

SITE 3
TEMPORARY EROSION CONTROL DETAILS
STAGE 2

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				6	ARK.			
				JOB NO.		020630	46	198

(2) TEMPORARY EROSION CONTROL DETAILS



LEGEND

(E-5) = SAND BAG DITCH CHECKS

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

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

REVISIONS

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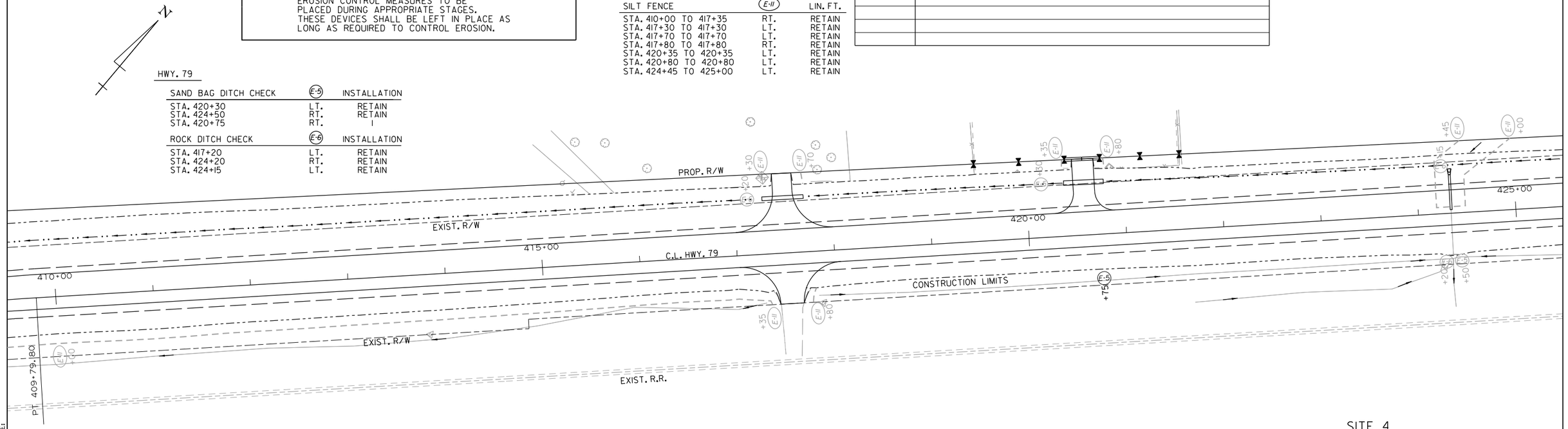
HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 410+00 TO 417+35	RT.	RETAIN
STA. 417+30 TO 417+30	LT.	RETAIN
STA. 417+70 TO 417+70	LT.	RETAIN
STA. 417+80 TO 417+80	RT.	RETAIN
STA. 420+35 TO 420+35	LT.	RETAIN
STA. 420+80 TO 420+80	LT.	RETAIN
STA. 424+45 TO 425+00	LT.	RETAIN

HWY. 79

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 420+30	LT.	RETAIN
STA. 424+50	RT.	RETAIN
STA. 420+75	RT.	I

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 417+20	LT.	RETAIN
STA. 424+20	RT.	RETAIN
STA. 424+15	LT.	RETAIN



SITE 4
TEMPORARY EROSION CONTROL DETAILS
STAGE 2

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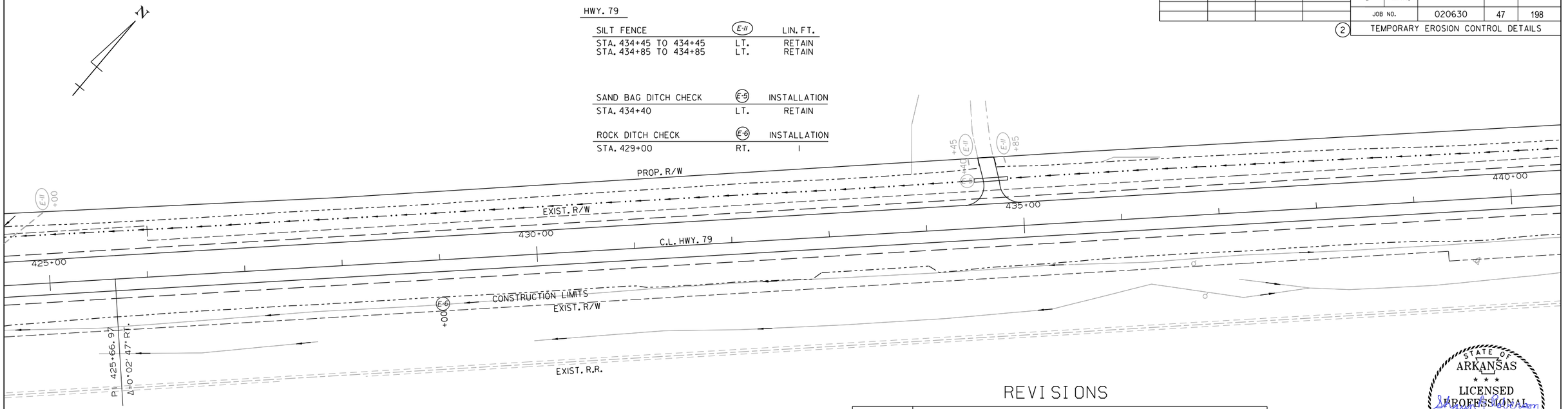
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				6	ARK.			
				JOB NO.		020630	47	198
				(2)	TEMPORARY EROSION CONTROL DETAILS			

HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 434+45 TO 434+45	LT.	RETAIN
STA. 434+85 TO 434+85	LT.	RETAIN

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 434+40	LT.	RETAIN

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 429+00	RT.	1



LEGEND

(E-5) = SAND BAG DITCH CHECKS

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

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

REVISIONS

DATE	REVISION

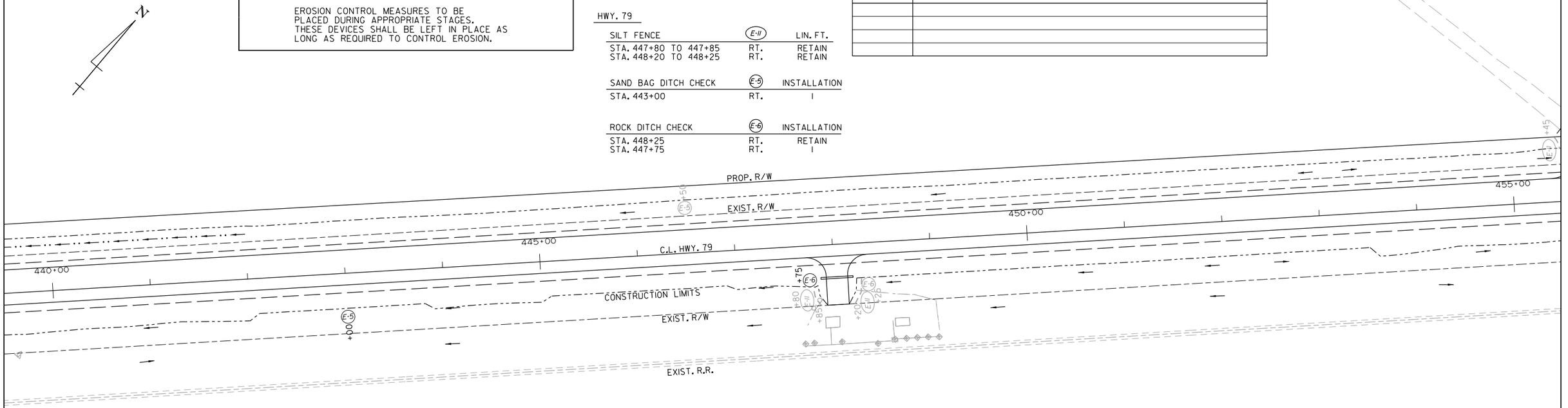
STATE OF ARKANSAS
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No. 13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 447+80 TO 447+85	RT.	RETAIN
STA. 448+20 TO 448+25	RT.	RETAIN

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 443+00	RT.	1

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 448+25	RT.	RETAIN
STA. 447+75	RT.	1



SITE 4
TEMPORARY EROSION CONTROL DETAILS
STAGE 2

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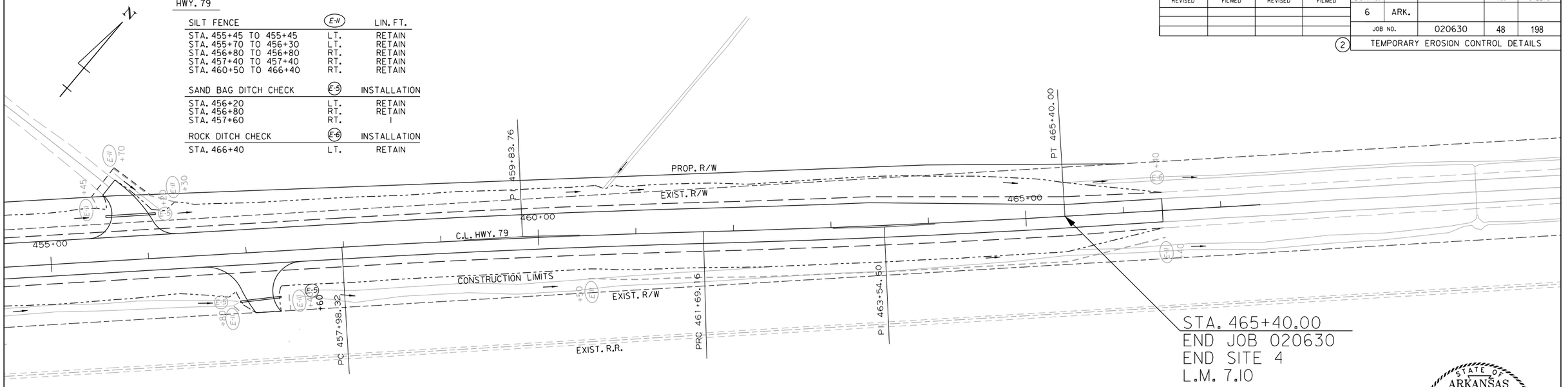
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				6	ARK.			
				JOB NO.		020630	48	198
				(2)	TEMPORARY EROSION CONTROL DETAILS			

HWY. 79

SILT FENCE	(E-11)	LIN. FT.
STA. 455+45 TO 455+45	LT.	RETAIN
STA. 455+70 TO 456+30	LT.	RETAIN
STA. 456+80 TO 456+80	RT.	RETAIN
STA. 457+40 TO 457+40	RT.	RETAIN
STA. 460+50 TO 466+40	RT.	RETAIN

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 456+20	LT.	RETAIN
STA. 456+80	RT.	RETAIN
STA. 457+60	RT.	I

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 466+40	LT.	RETAIN



LEGEND

(E-5) = SAND BAG DITCH CHECKS

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

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

REVISIONS

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SHAUN A. ROBERSON
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SITE 4
TEMPORARY EROSION CONTROL DETAILS
STAGE 2

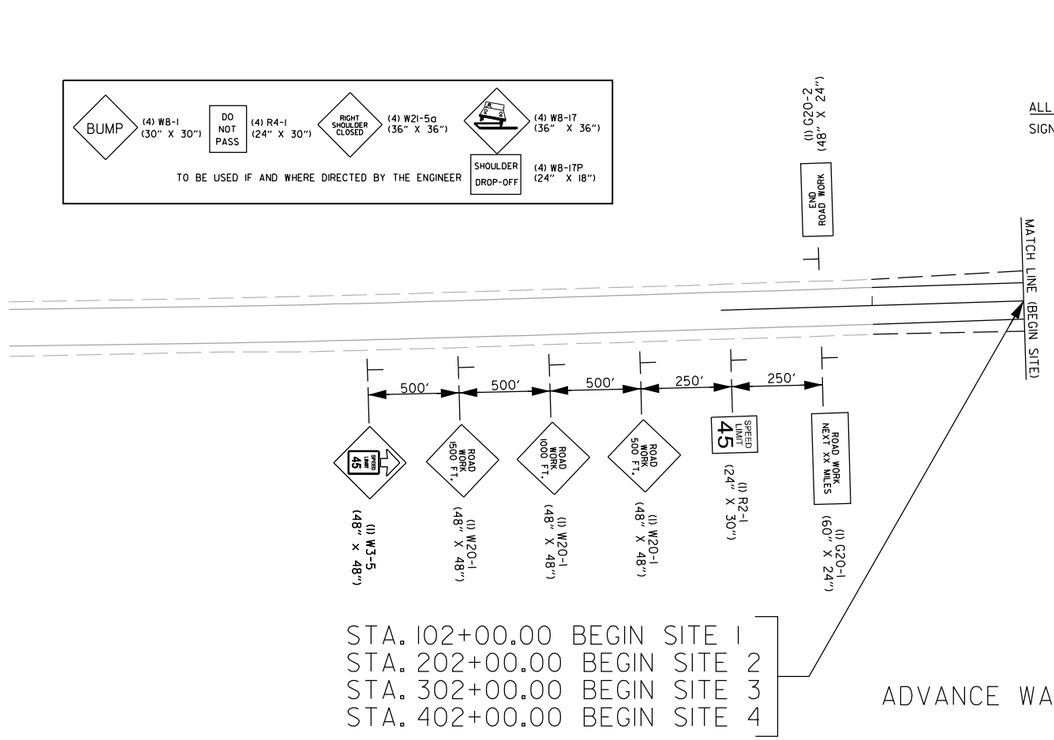
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				(2)	MAINTENANCE OF TRAFFIC DETAILS			

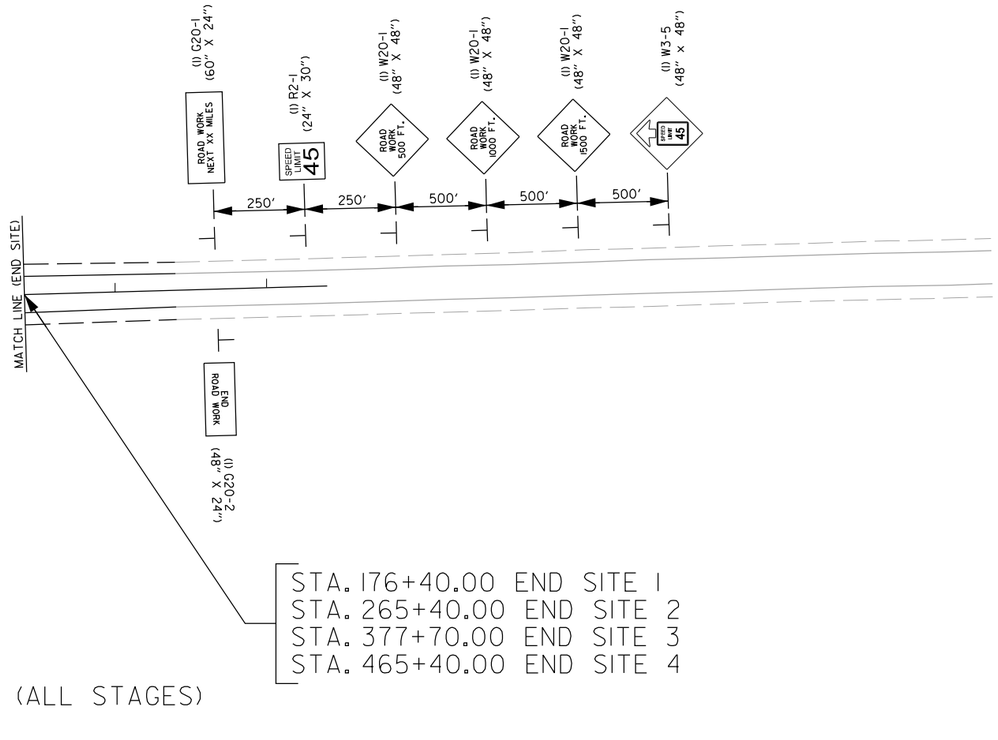
STATE OF ARKANSAS
* * *
LICENSED PROFESSIONAL ENGINEER
* * *
No.13436
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BUMP (4) W8-1 (30" X 30")
DO NOT PASS (4) R4-1 (24" X 30")
RIGHT SHOULDER CLOSED (4) W21-5a (36" X 36")
(4) W8-17 (36" X 36")
SHOULDER DROP-OFF (4) W8-17P (24" X 18")
TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

ALL STAGES FOR EACH SITE
SIGNS = 303 SQ. FT.



STA. 102+00.00 BEGIN SITE 1
STA. 202+00.00 BEGIN SITE 2
STA. 302+00.00 BEGIN SITE 3
STA. 402+00.00 BEGIN SITE 4



STA. 176+40.00 END SITE 1
STA. 265+40.00 END SITE 2
STA. 377+70.00 END SITE 3
STA. 465+40.00 END SITE 4

ADVANCE WARNING SIGNS (ALL STAGES)

MAINTENANCE OF TRAFFIC DETAILS

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WORKSPACE: AHTD
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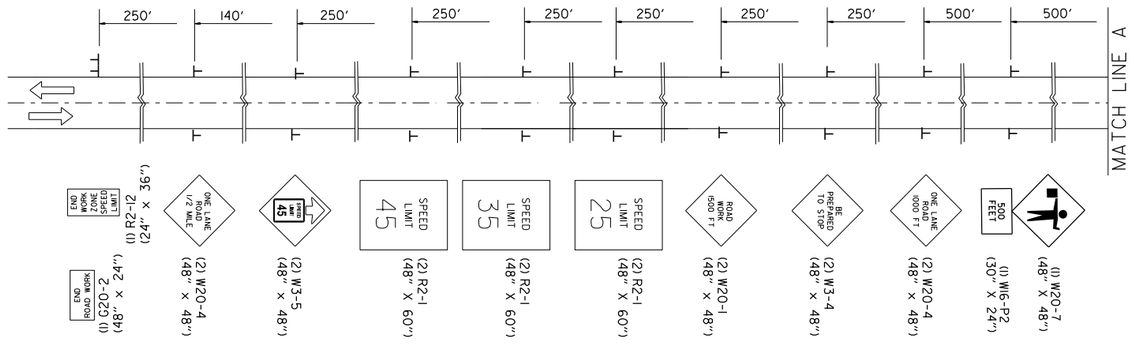
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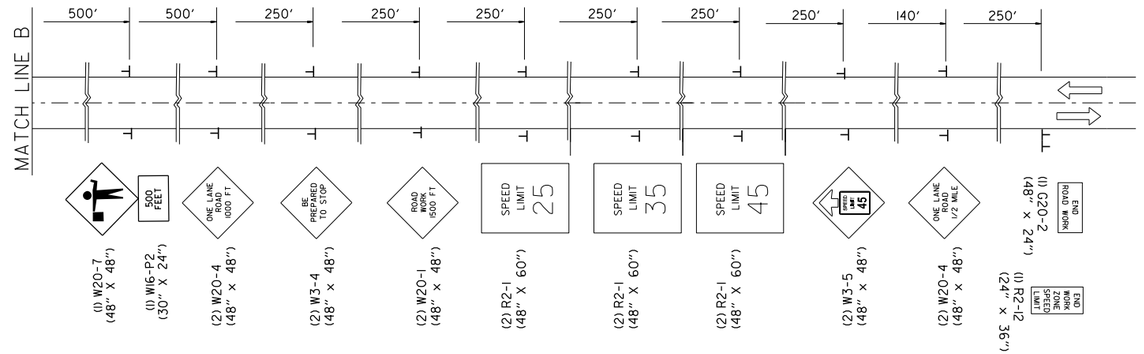
(2) MAINTENANCE OF TRAFFIC DETAILS

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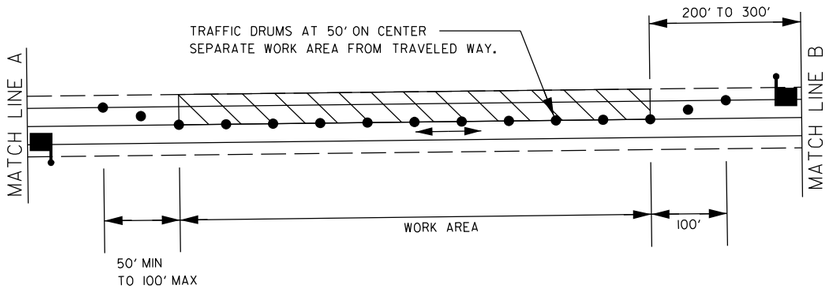
1. FLOOD LIGHTS SHOULD BE PROVIDED TO MARK FLAGGER STATIONS AT NIGHT AS NEEDED.
2. CHANNELIZING DEVICES ARE TO BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
3. AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD) OPTIONAL. REFER TO MUTCD.

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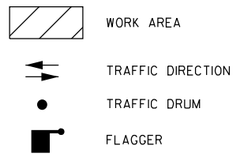




ALL SITES FOR STAGE I
BARRIER PLACEMENT
SIGNS = 672 SQ. FT.
156 TRAFFIC DRUMS



LANE CLOSURE FOR TEMPORARY PRECAST
CONCRETE BARRIER INSTALLATION



MAINTENANCE OF TRAFFIC DETAILS

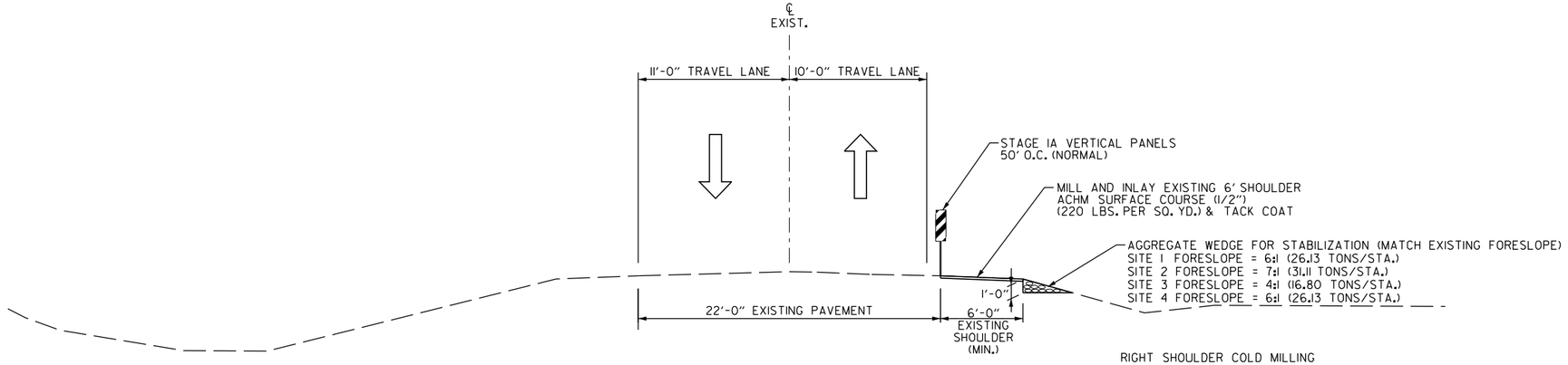
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	51	198
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

STAGE I
CONSTRUCTION SEQUENCE NOTES

1. MAINTAIN TRAFFIC ON EXISTING LANES.
2. INSTALL ADVANCE WARNING SIGNS AS SHOWN.
3. IN STAGE IA PERFORM LEVELING OPERATIONS AS APPLICABLE. MILL AND OVERLAY EXISTING N.B. SHOULDER AND CONSTRUCT AGGREGATE WEDGE FOR SHOULDER STABILIZATION. IN STAGE IB INSTALL PRECAST CONCRETE BARRIER. PLACE CONSTRUCTION PAVEMENT MARKINGS AS SHOWN AND MOVE TRAFFIC TO SHIFTED LANES.
4. NOTCH AND WIDEN ON LT.
5. PLACE CONSTRUCTION PAVEMENT MARKINGS FOR STAGE 2 TRAFFIC CONFIGURATION.

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STAGE IA
SITE 1, 2, 3 & 4

RIGHT SHOULDER COLD MILLING
SITE 1 101+00.00 TO 177+40.00
SITE 2 201+00.00 TO 266+40.00
SITE 3 301+00.00 TO 378+70.00
SITE 4 401+00.00 TO 466+40.00

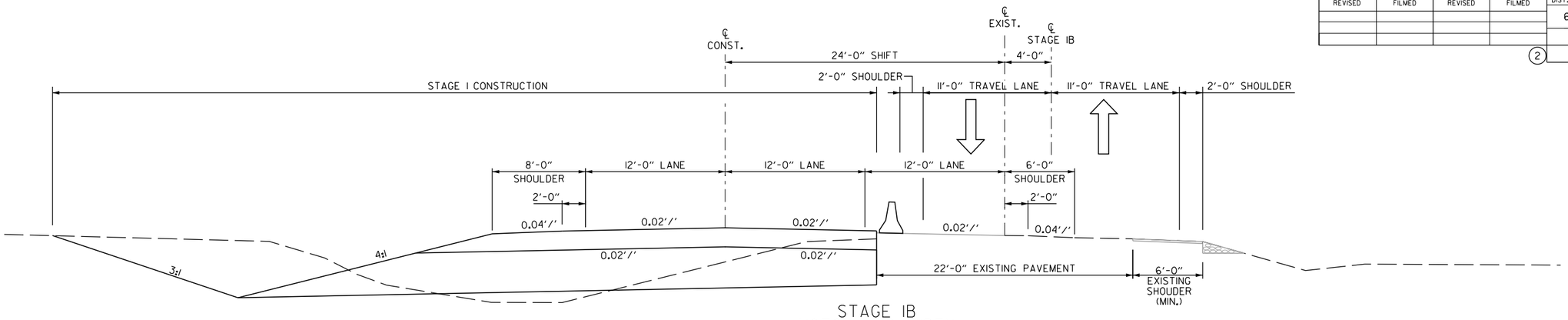
MAINTENANCE OF TRAFFIC DETAILS
STAGE I

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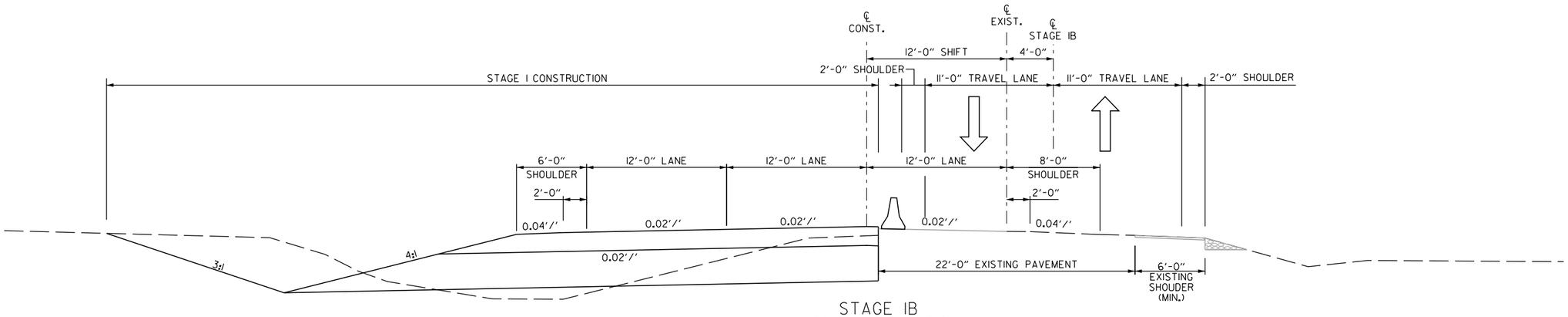
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FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		020630	52	198
(2)	MAINTENANCE OF TRAFFIC DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021



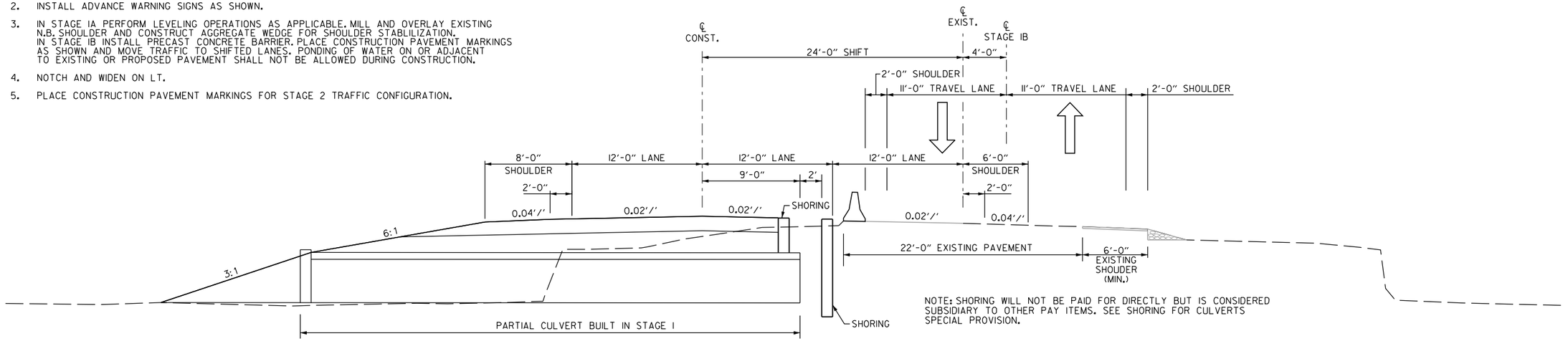
STAGE IB
NOTCH AND WIDEN
NORTHBOUND PASSING LANE
SITE 1& 3



STAGE IB
NOTCH AND WIDEN
SOUTHBOUND PASSING LANE
SITE 2 & 4

STAGE I
CONSTRUCTION SEQUENCE NOTES

1. MAINTAIN TRAFFIC ON EXISTING LANES.
2. INSTALL ADVANCE WARNING SIGNS AS SHOWN.
3. IN STAGE IA PERFORM LEVELING OPERATIONS AS APPLICABLE. MILL AND OVERLAY EXISTING N.B. SHOULDER AND CONSTRUCT AGGREGATE WEDGE FOR SHOULDER STABLILIZATION. IN STAGE IB INSTALL PRECAST CONCRETE BARRIER. PLACE CONSTRUCTION PAVEMENT MARKINGS AS SHOWN AND MOVE TRAFFIC TO SHIFTED LANES. PONDING OF WATER ON OR ADJACENT TO EXISTING OR PROPOSED PAVEMENT SHALL NOT BE ALLOWED DURING CONSTRUCTION.
4. NOTCH AND WIDEN ON LT.
5. PLACE CONSTRUCTION PAVEMENT MARKINGS FOR STAGE 2 TRAFFIC CONFIGURATION.



NOTE: SHORING WILL NOT BE PAID FOR DIRECTLY BUT IS CONSIDERED SUBSIDIARY TO OTHER PAY ITEMS. SEE SHORING FOR CULVERTS SPECIAL PROVISION.

STAGE IB
PARTIAL BOX CULVERT CONSTRUCTION
SITE 1 AT STA. 159+97.00

MAINTENANCE OF TRAFFIC DETAILS
STAGE I

rntfortner 2/4/2021 8:11:58 AM
WORKSPACE: AHTD
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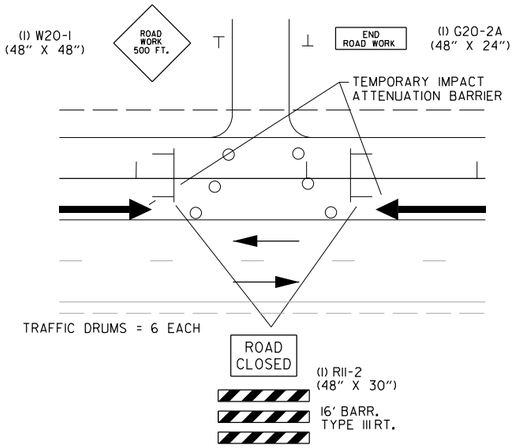
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FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		020630	53	198

(2) MAINTENANCE OF TRAFFIC DETAILS

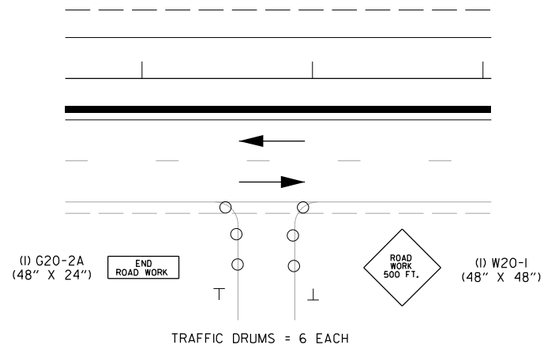
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

NOTE: DRAWING NOT TO SCALE.
TEMPORARY IMPACT ATTENUATION BARRIERS
TO BE PLACED ACCORDING TO STANDARD DRAWING TC-5.



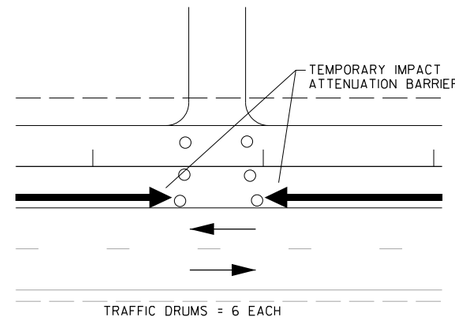
COUNTY ROAD, STATE HIGHWAY AND CITY STREET DETAIL

STA. 404+98.00
STA. 417+50.00
STA. 456+10.00



COUNTY ROAD, STATE HIGHWAY AND CITY STREET DETAIL

STA. 417+54.00
STA. 456+92.00



DRIVEWAY/TRAFFIC DRUM DETAIL

TRAFFIC DRUMS = 114 EACH SIGNS = 180 SQ. FT. BARRICADES = 96 LIN. FT.

STAGE I QUANTITY TOTALS

MAINTENANCE OF TRAFFIC DETAILS
STAGE I

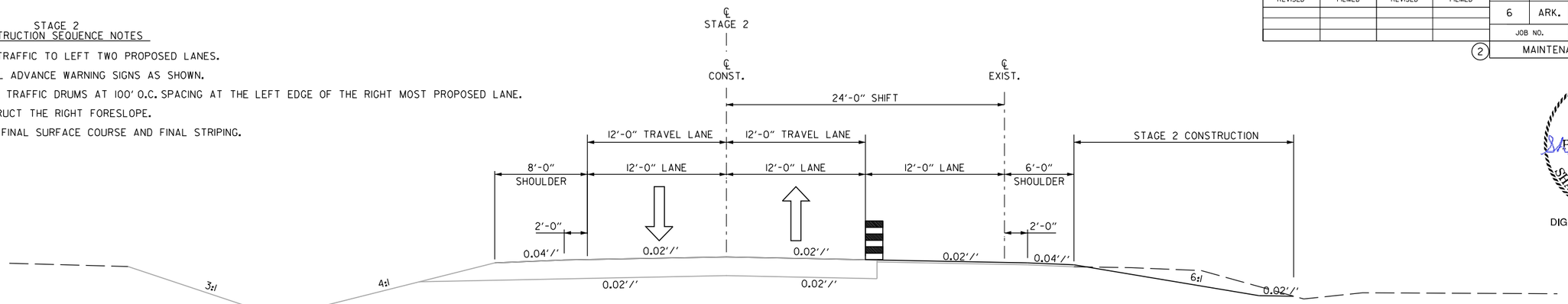
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		020630	54	198
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

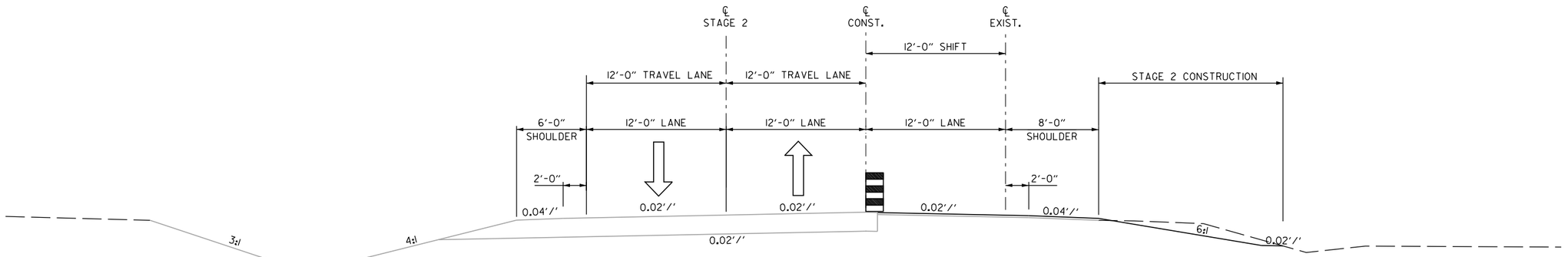
STAGE 2
CONSTRUCTION SEQUENCE NOTES

1. MOVE TRAFFIC TO LEFT TWO PROPOSED LANES.
2. INSTALL ADVANCE WARNING SIGNS AS SHOWN.
3. UTILIZE TRAFFIC DRUMS AT 100' O.C. SPACING AT THE LEFT EDGE OF THE RIGHT MOST PROPOSED LANE.
4. CONSTRUCT THE RIGHT FORESLOPE.
5. PLACE FINAL SURFACE COURSE AND FINAL STRIPING.

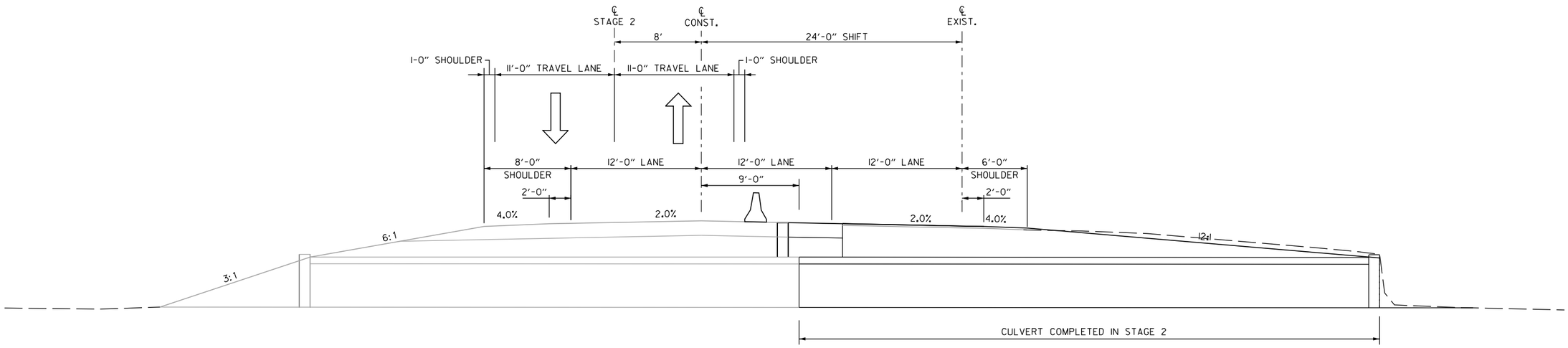
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021



STAGE 2
RT. FORESLOPE CONSTRUCTION AND FINAL SURFACE COURSE
NORTHBOUND PASSING LANE
SITE 1 & 3



STAGE 2
RT. FORESLOPE CONSTRUCTION AND FINAL SURFACE COURSE
SOUTHBOUND PASSING LANE
SITE 2 & 4



STAGE 2
FINAL CULVERT CONSTRUCTION
SITE 1 AT STA. 159+97.00

MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

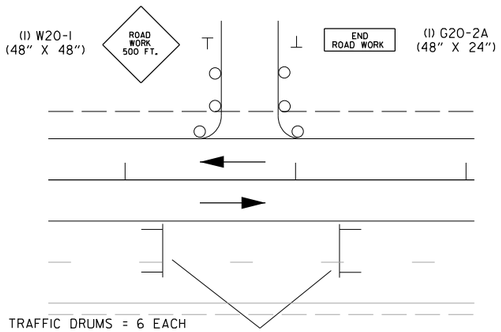
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REVISED DATE:

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JOB NO.		020630	55	198

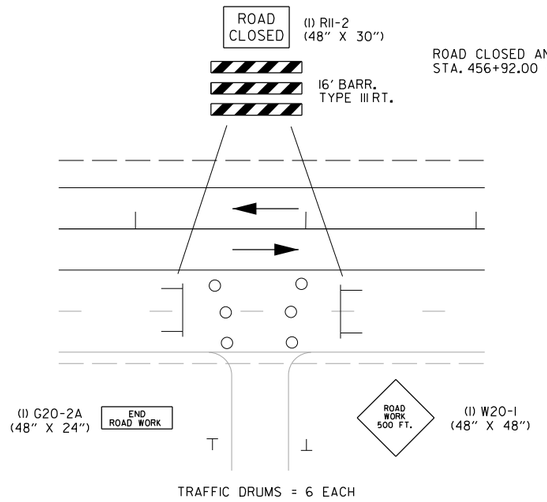
(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
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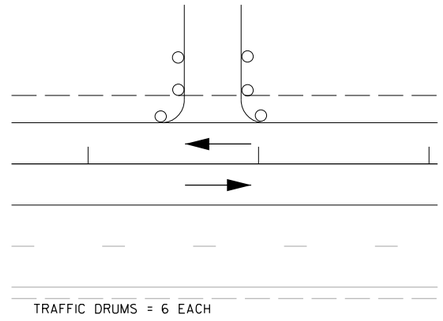
COUNTY ROAD, STATE HIGHWAY AND CITY STREET DETAIL

STA. 404+98.00
STA. 417+50.00
STA. 456+10.00



COUNTY ROAD, STATE HIGHWAY AND CITY STREET DETAIL

STA. 417+54.00
STA. 456+92.00



DRIVEWAY/TRAFFIC DRUM DETAIL

TRAFFIC DRUMS = 114 EACH SIGNS = 220 SQ. FT. BARRICADES = 160 LIN. FT.

STAGE 2 QUANTITY TOTALS

MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

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REVISED DATE:

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(2) MAINTENANCE OF TRAFFIC DETAILS

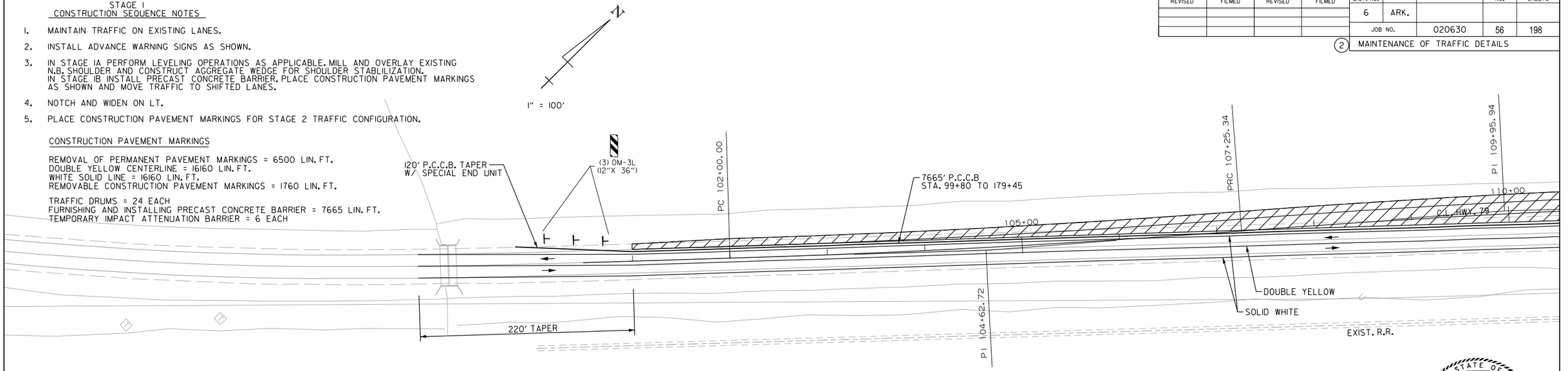
STAGE I
CONSTRUCTION SEQUENCE NOTES

1. MAINTAIN TRAFFIC ON EXISTING LANES.
2. INSTALL ADVANCE WARNING SIGNS AS SHOWN.
3. IN STAGE IA PERFORM LEVELING OPERATIONS AS APPLICABLE. MILL AND OVERLAY EXISTING N.B. SHOULDER AND CONSTRUCT AGGREGATE WEDGE FOR SHOULDER STABILIZATION. IN STAGE IB INSTALL PRECAST CONCRETE BARRIER. PLACE CONSTRUCTION PAVEMENT MARKINGS AS SHOWN AND MOVE TRAFFIC TO SHIFTED LANES.
4. NOTCH AND WIDEN ON LT.
5. PLACE CONSTRUCTION PAVEMENT MARKINGS FOR STAGE 2 TRAFFIC CONFIGURATION.

CONSTRUCTION PAVEMENT MARKINGS

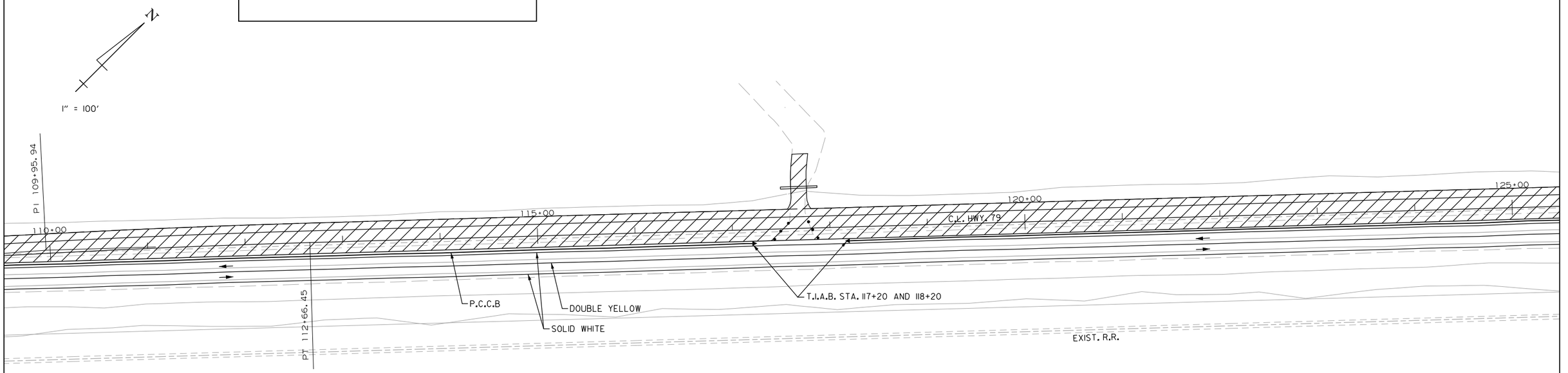
REMOVAL OF PERMANENT PAVEMENT MARKINGS = 6500 LIN. FT.
DOUBLE YELLOW CENTERLINE = 16160 LIN. FT.
WHITE SOLID LINE = 16160 LIN. FT.
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS = 1760 LIN. FT.

TRAFFIC DRUMS = 24 EACH
FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER = 7665 LIN. FT.
TEMPORARY IMPACT ATTENUATION BARRIER = 6 EACH



STATE OF ARKANSAS
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STAGE I CONSTRUCTION
STAGE I TRAFFIC
TRAFFIC DRUMS

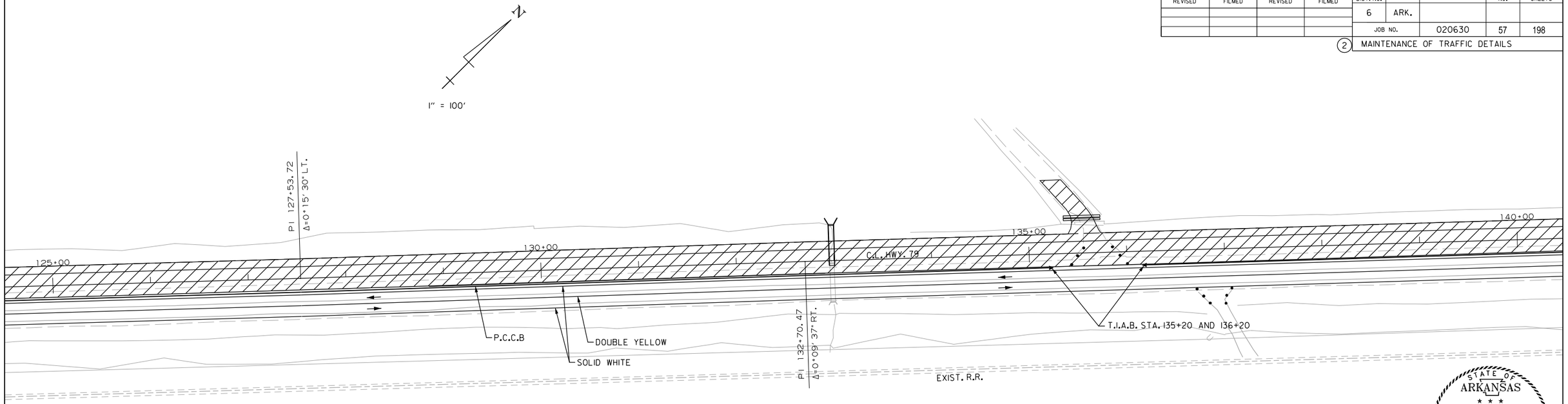


SITE I
MAINTENANCE OF TRAFFIC DETAILS
STAGE I

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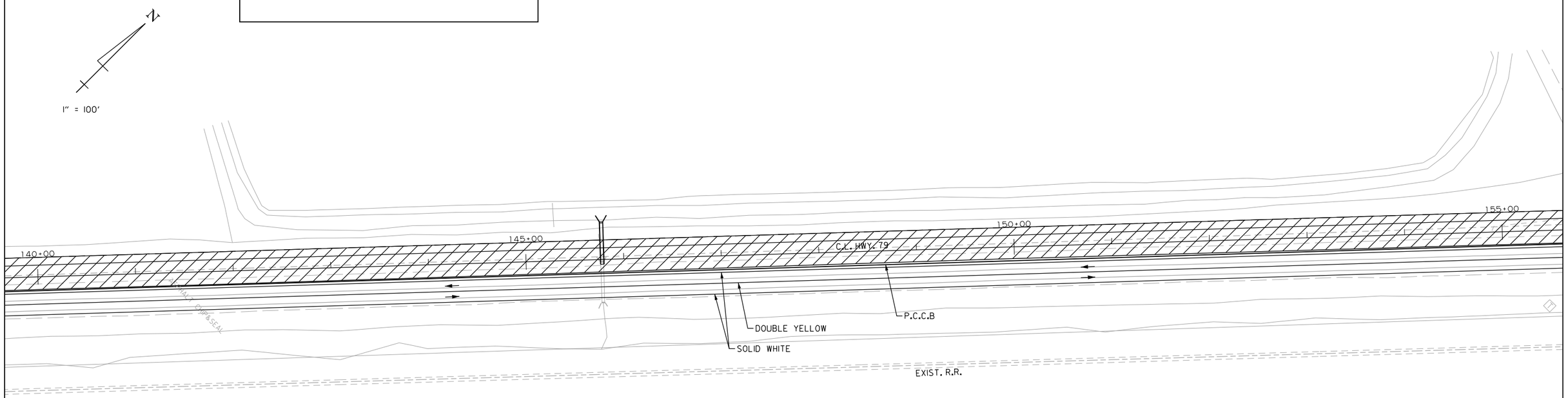
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				JOB NO.		020630	57	198

(2) MAINTENANCE OF TRAFFIC DETAILS



STAGE I CONSTRUCTION
STAGE I TRAFFIC
TRAFFIC DRUMS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021



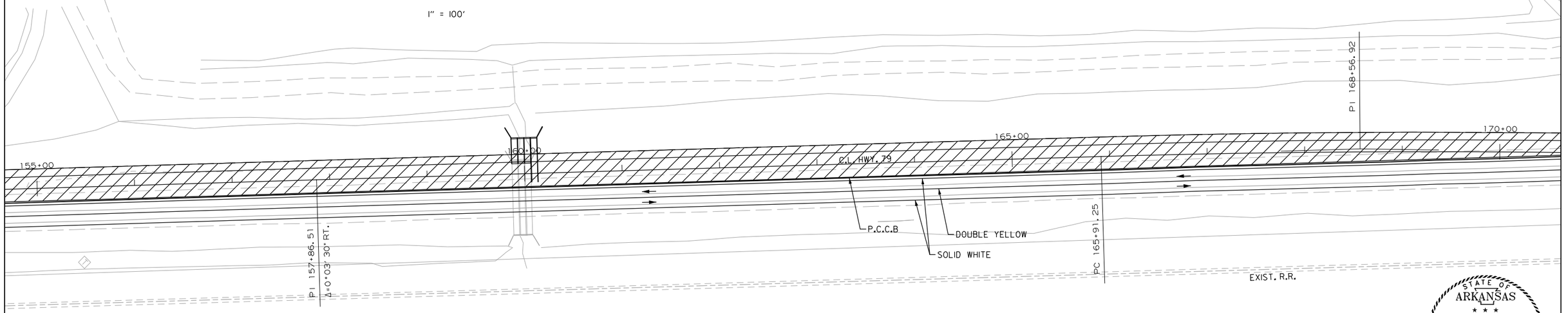
SITE I
MAINTENANCE OF TRAFFIC DETAILS
STAGE I

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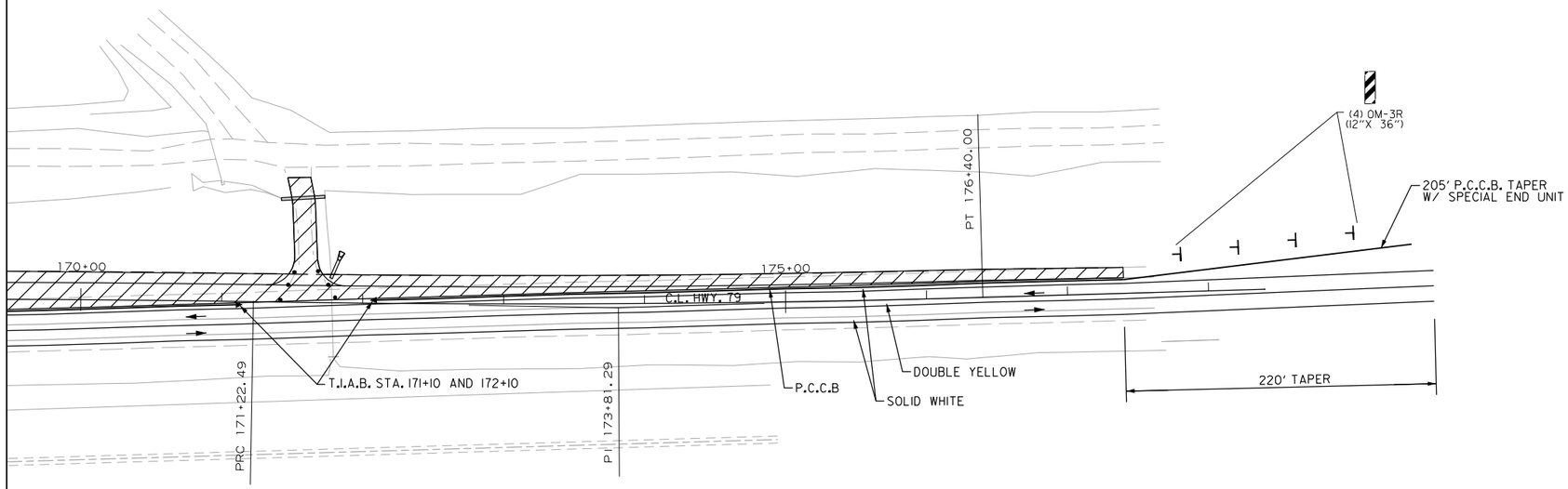
(2) MAINTENANCE OF TRAFFIC DETAILS

1" = 100'



STAGE I CONSTRUCTION
STAGE I TRAFFIC
TRAFFIC DRUMS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021



SITE I
MAINTENANCE OF TRAFFIC DETAILS
STAGE I

rnfortner 2/4/2021 8:11:59 AM
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				JOB NO.		020630	59	198

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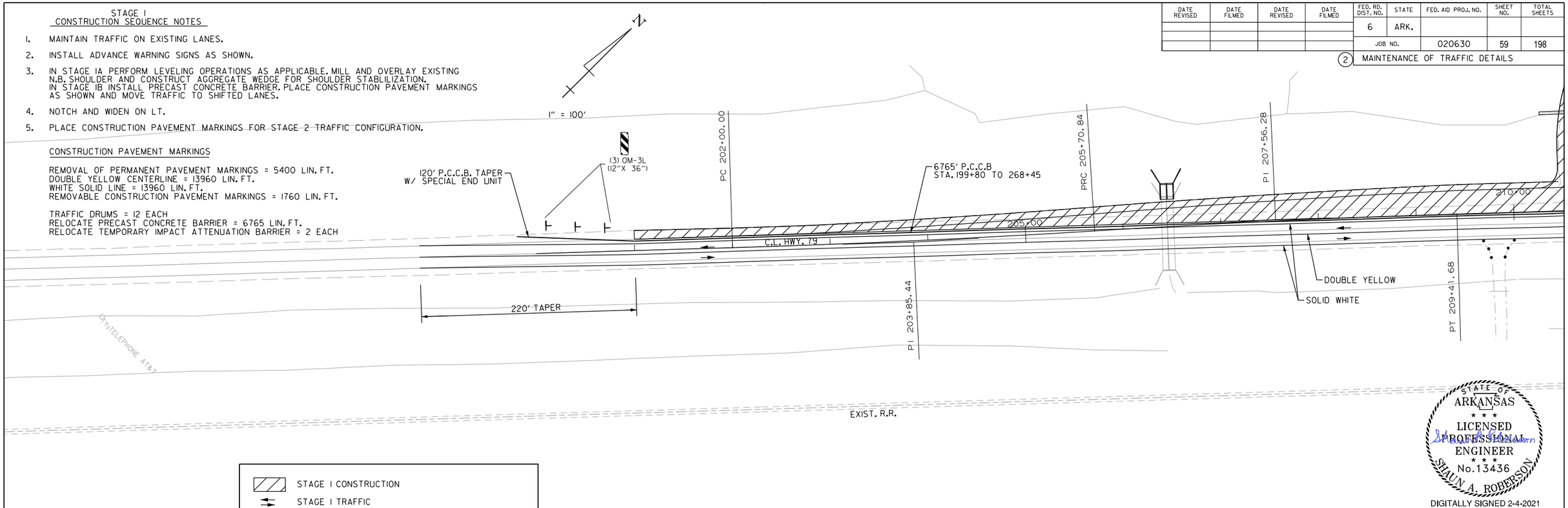
STAGE I
CONSTRUCTION SEQUENCE NOTES

1. MAINTAIN TRAFFIC ON EXISTING LANES.
2. INSTALL ADVANCE WARNING SIGNS AS SHOWN.
3. IN STAGE IA PERFORM LEVELING OPERATIONS AS APPLICABLE. MILL AND OVERLAY EXISTING N.B. SHOULDER AND CONSTRUCT AGGREGATE WEDGE FOR SHOULDER STABLILIZATION. IN STAGE IB INSTALL PRECAST CONCRETE BARRIER. PLACE CONSTRUCTION PAVEMENT MARKINGS AS SHOWN AND MOVE TRAFFIC TO SHIFTED LANES.
4. NOTCH AND WIDEN ON LT.
5. PLACE CONSTRUCTION PAVEMENT MARKINGS FOR STAGE 2 TRAFFIC CONFIGURATION.

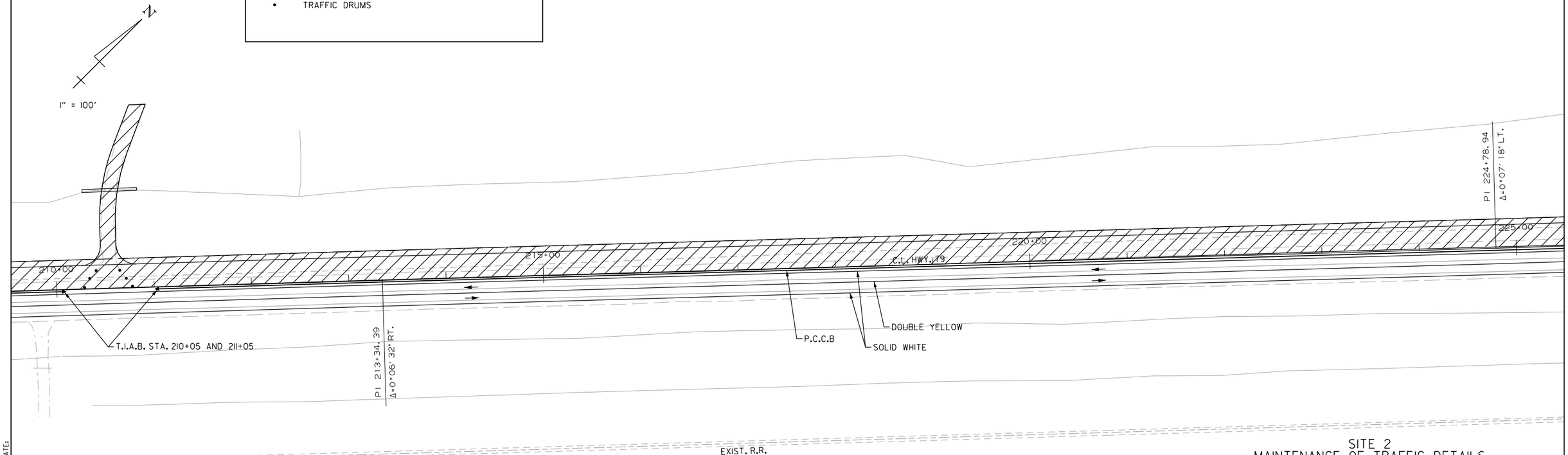
CONSTRUCTION PAVEMENT MARKINGS

REMOVAL OF PERMANENT PAVEMENT MARKINGS = 5400 LIN. FT.
DOUBLE YELLOW CENTERLINE = 13960 LIN. FT.
WHITE SOLID LINE = 13960 LIN. FT.
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS = 1760 LIN. FT.

TRAFFIC DRUMS = 12 EACH
RELOCATE PRECAST CONCRETE BARRIER = 6765 LIN. FT.
RELOCATE TEMPORARY IMPACT ATTENUATION BARRIER = 2 EACH



STAGE I CONSTRUCTION
STAGE I TRAFFIC
TRAFFIC DRUMS



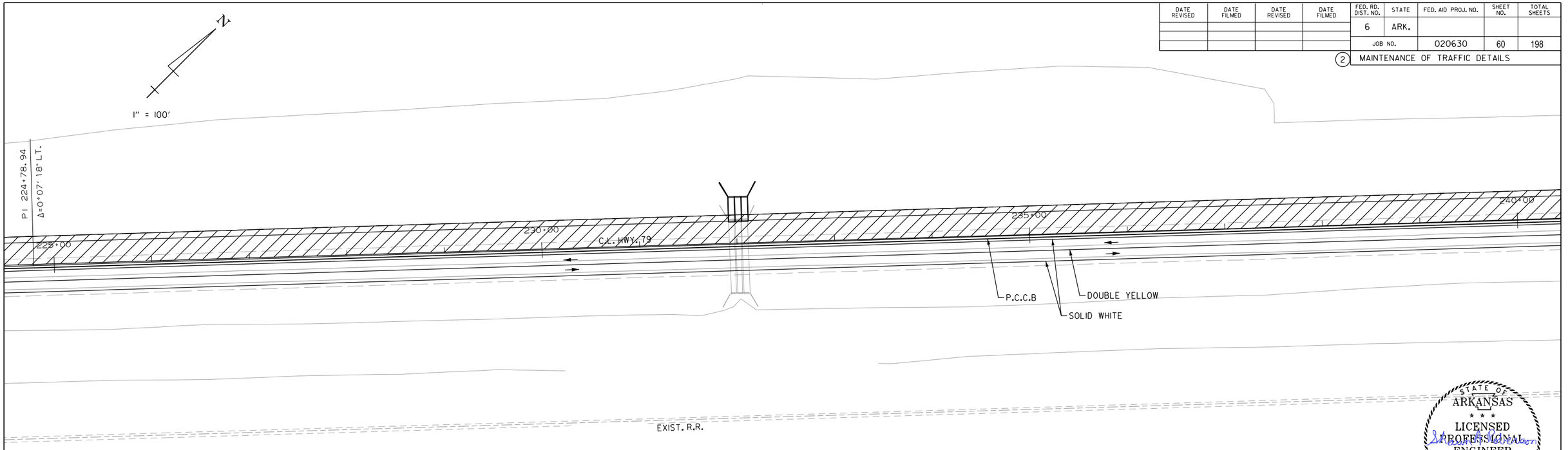
SITE 2
MAINTENANCE OF TRAFFIC DETAILS
STAGE I

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

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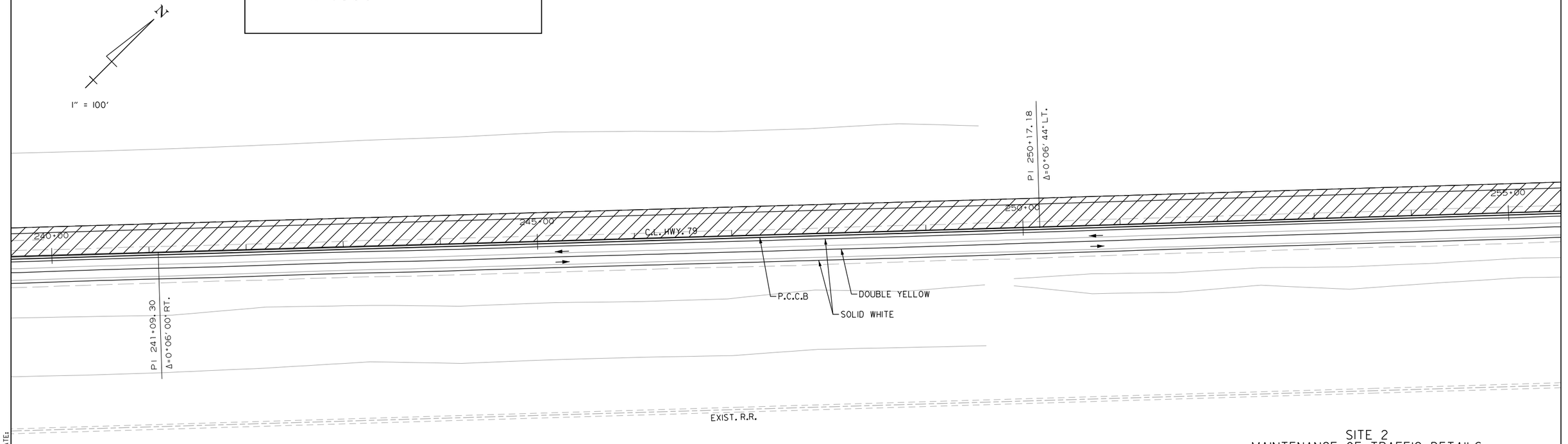
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				6	ARK.			
				JOB NO.		020630	60	198

(2) MAINTENANCE OF TRAFFIC DETAILS



STAGE I CONSTRUCTION
STAGE I TRAFFIC
TRAFFIC DRUMS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

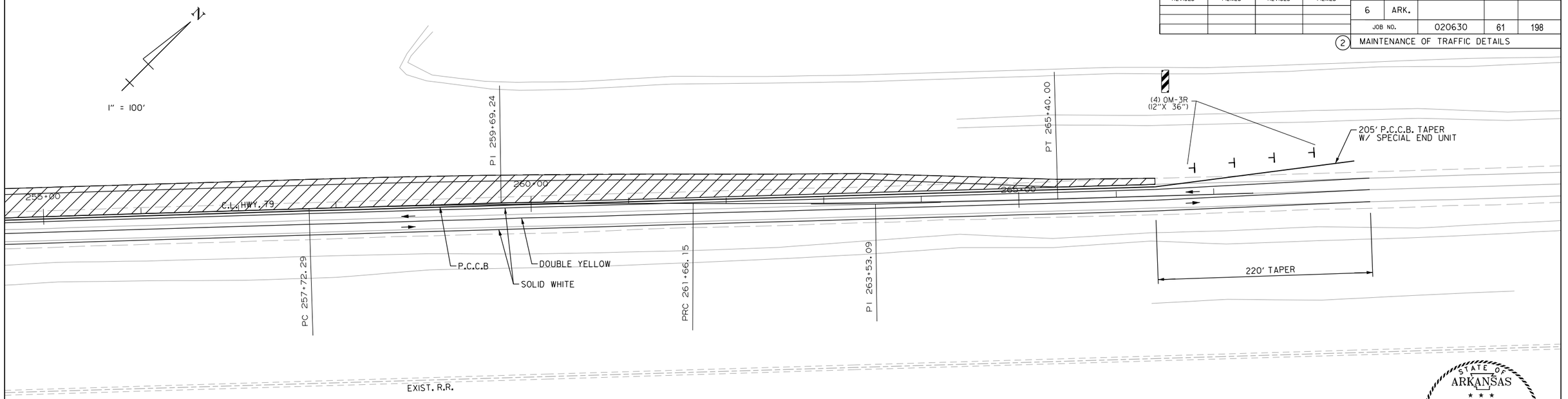


SITE 2
MAINTENANCE OF TRAFFIC DETAILS
STAGE I

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				6	ARK.			
				JOB NO.		020630	61	198

(2) MAINTENANCE OF TRAFFIC DETAILS



STAGE I CONSTRUCTION
STAGE I TRAFFIC
• TRAFFIC DRUMS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

SITE 2
MAINTENANCE OF TRAFFIC DETAILS
STAGE I

rnfortner 2/4/2021 8:12:00 AM
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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(2) MAINTENANCE OF TRAFFIC DETAILS

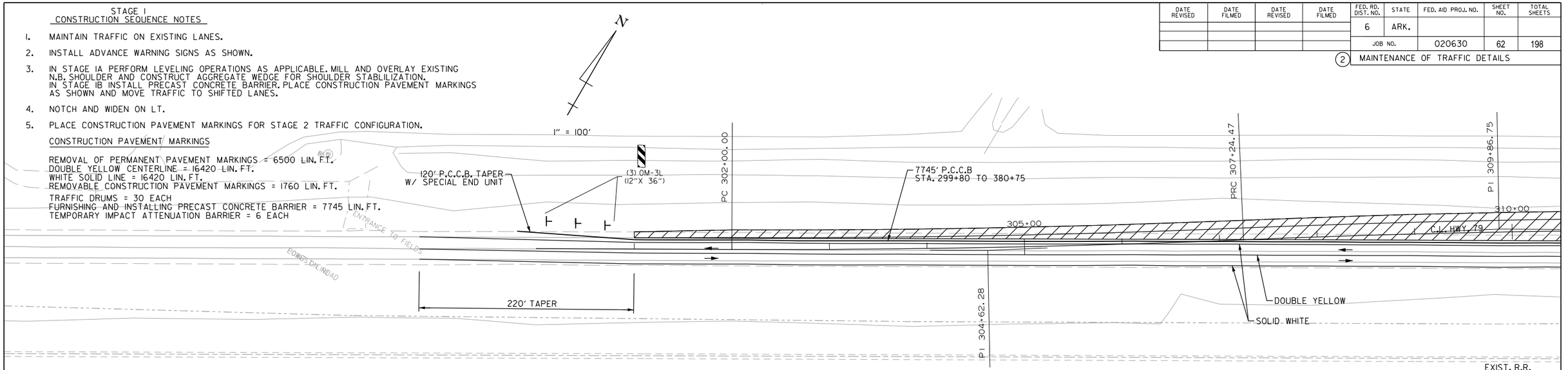
STAGE I
CONSTRUCTION SEQUENCE NOTES

1. MAINTAIN TRAFFIC ON EXISTING LANES.
2. INSTALL ADVANCE WARNING SIGNS AS SHOWN.
3. IN STAGE IA PERFORM LEVELING OPERATIONS AS APPLICABLE. MILL AND OVERLAY EXISTING N.B. SHOULDER AND CONSTRUCT AGGREGATE WEDGE FOR SHOULDER STABLILIZATION. IN STAGE IB INSTALL PRECAST CONCRETE BARRIER. PLACE CONSTRUCTION PAVEMENT MARKINGS AS SHOWN AND MOVE TRAFFIC TO SHIFTED LANES.
4. NOTCH AND WIDEN ON LT.
5. PLACE CONSTRUCTION PAVEMENT MARKINGS FOR STAGE 2 TRAFFIC CONFIGURATION.

CONSTRUCTION PAVEMENT MARKINGS

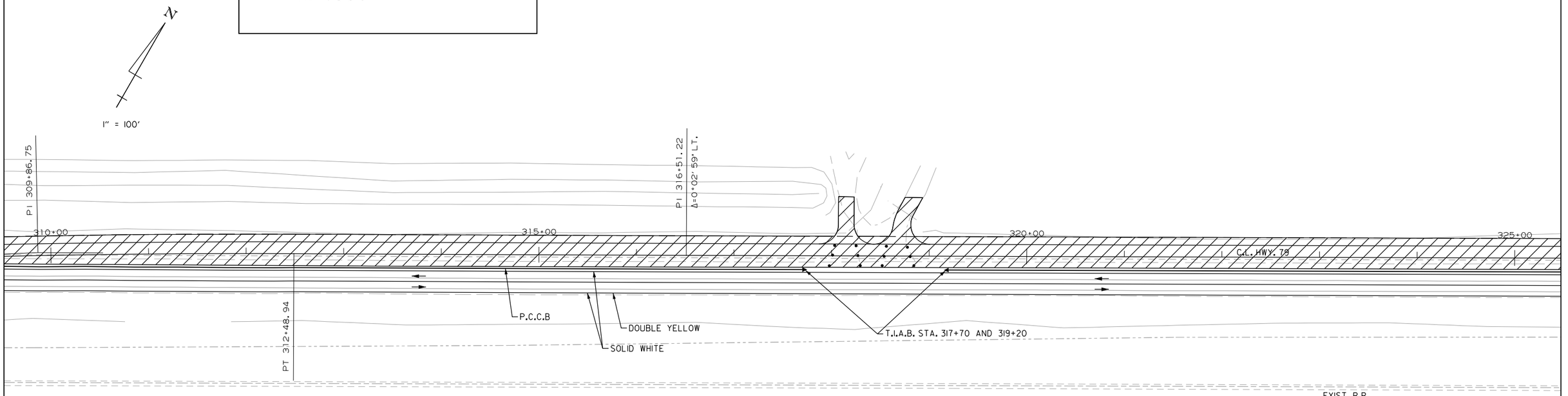
REMOVAL OF PERMANENT PAVEMENT MARKINGS = 6500 LIN. FT.
DOUBLE YELLOW CENTERLINE = 16420 LIN. FT.
WHITE SOLID LINE = 16420 LIN. FT.
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS = 1760 LIN. FT.

TRAFFIC DRUMS = 30 EACH
FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER = 7745 LIN. FT.
TEMPORARY IMPACT ATTENUATION BARRIER = 6 EACH



STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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DIGITALLY SIGNED 2-4-2021

STAGE I CONSTRUCTION
STAGE I TRAFFIC
TRAFFIC DRUMS

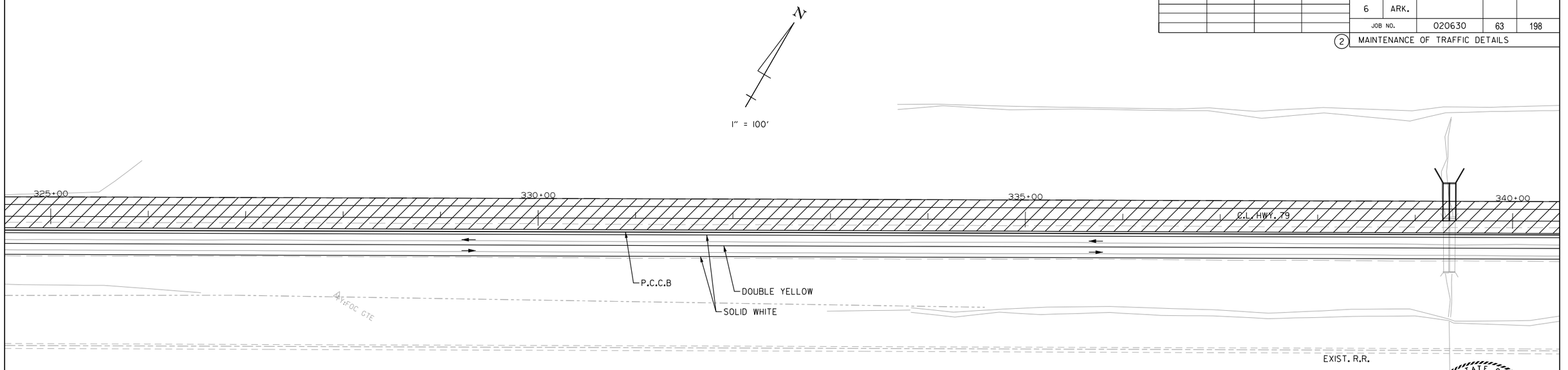


SITE 3
MAINTENANCE OF TRAFFIC DETAILS
STAGE I

rnfortner 2/4/2021 8:12:00 AM
WORKSPACE: AHTD
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REVISED DATE:

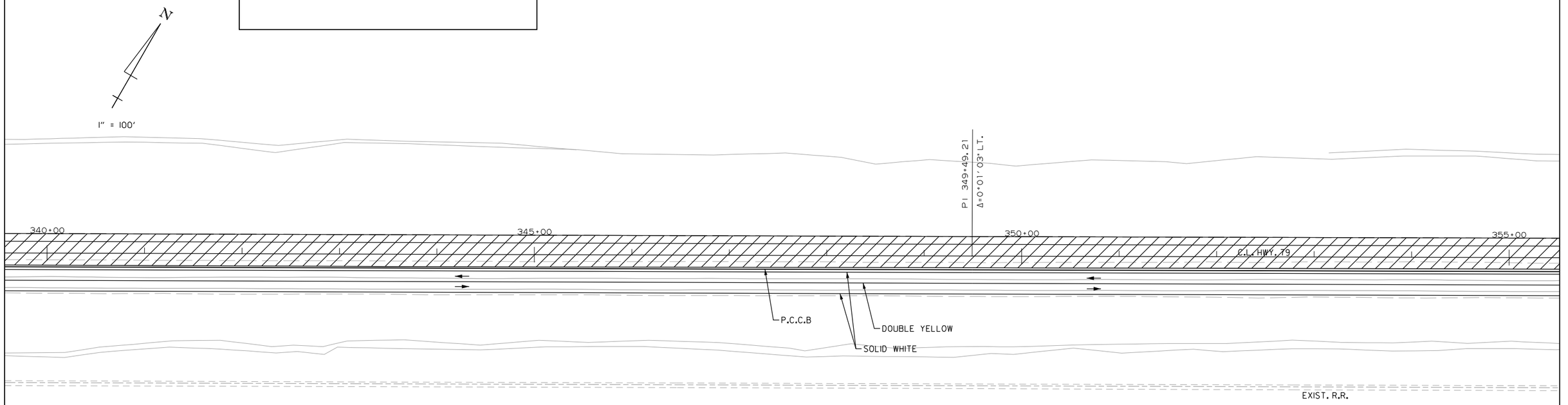
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				6	ARK.			
				JOB NO.		020630	63	198

(2) MAINTENANCE OF TRAFFIC DETAILS



STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

STAGE I CONSTRUCTION
STAGE I TRAFFIC
TRAFFIC DRUMS

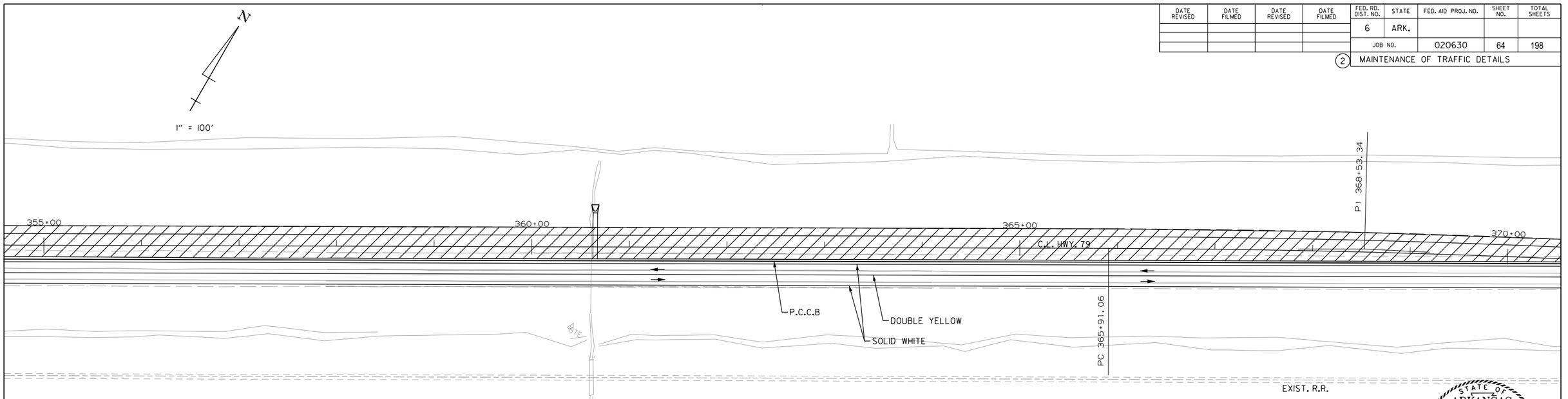


SITE 3
MAINTENANCE OF TRAFFIC DETAILS
STAGE I

rnfortner 2/4/2021 8:12:00 AM
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REVISED DATE:

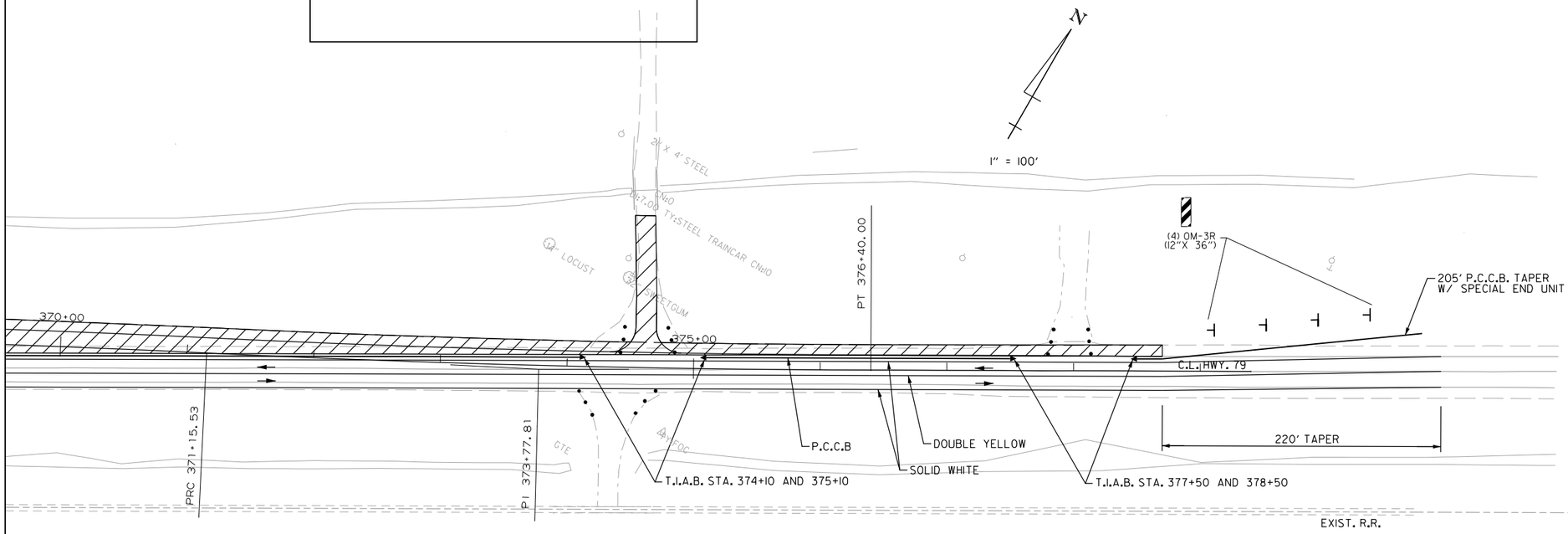
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				6	ARK.			
				JOB NO.		020630	64	198

(2) MAINTENANCE OF TRAFFIC DETAILS



STAGE I CONSTRUCTION
STAGE I TRAFFIC
TRAFFIC DRUMS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021



SITE 3
MAINTENANCE OF TRAFFIC DETAILS
STAGE I

rnfortner 2/4/2021 8:12:01 AM
WORKSPACE: AHTD
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(2) MAINTENANCE OF TRAFFIC DETAILS

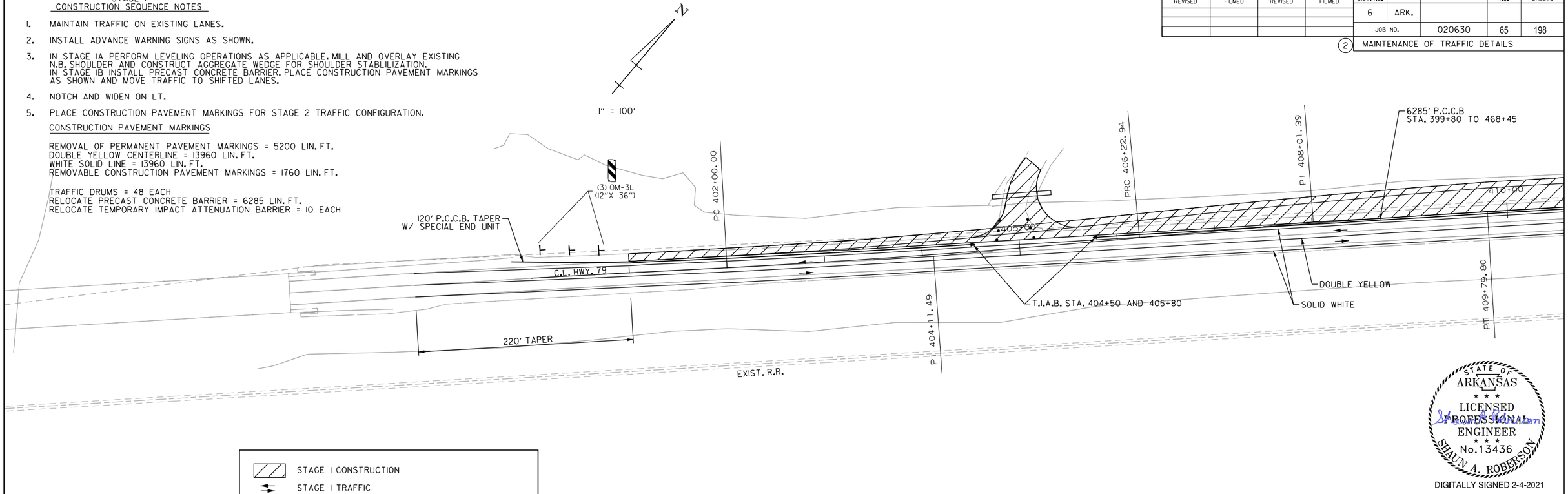
STAGE I
CONSTRUCTION SEQUENCE NOTES

1. MAINTAIN TRAFFIC ON EXISTING LANES.
2. INSTALL ADVANCE WARNING SIGNS AS SHOWN.
3. IN STAGE IA PERFORM LEVELING OPERATIONS AS APPLICABLE. MILL AND OVERLAY EXISTING N.B. SHOULDER AND CONSTRUCT AGGREGATE WEDGE FOR SHOULDER STABLILIZATION. IN STAGE IB INSTALL PRECAST CONCRETE BARRIER. PLACE CONSTRUCTION PAVEMENT MARKINGS AS SHOWN AND MOVE TRAFFIC TO SHIFTED LANES.
4. NOTCH AND WIDEN ON LT.
5. PLACE CONSTRUCTION PAVEMENT MARKINGS FOR STAGE 2 TRAFFIC CONFIGURATION.

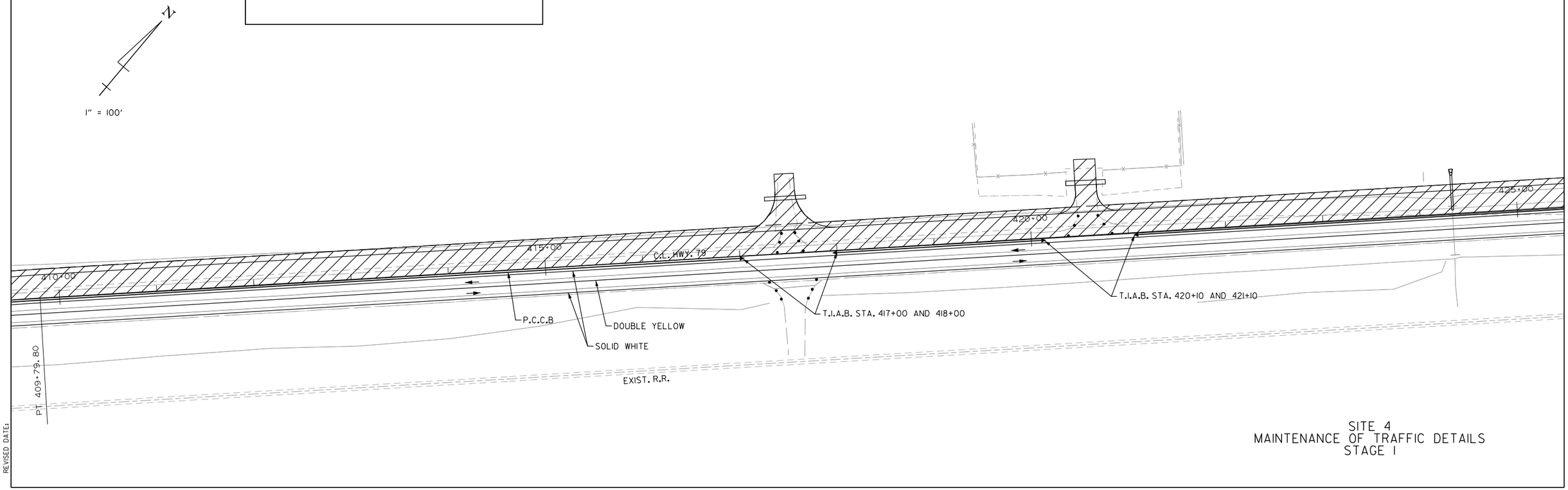
CONSTRUCTION PAVEMENT MARKINGS

REMOVAL OF PERMANENT PAVEMENT MARKINGS = 5200 LIN. FT.
DOUBLE YELLOW CENTERLINE = 13960 LIN. FT.
WHITE SOLID LINE = 13960 LIN. FT.
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS = 1760 LIN. FT.

TRAFFIC DRUMS = 48 EACH
RELOCATE PRECAST CONCRETE BARRIER = 6285 LIN. FT.
RELOCATE TEMPORARY IMPACT ATTENUATION BARRIER = 10 EACH



STAGE I CONSTRUCTION
STAGE I TRAFFIC
TRAFFIC DRUMS

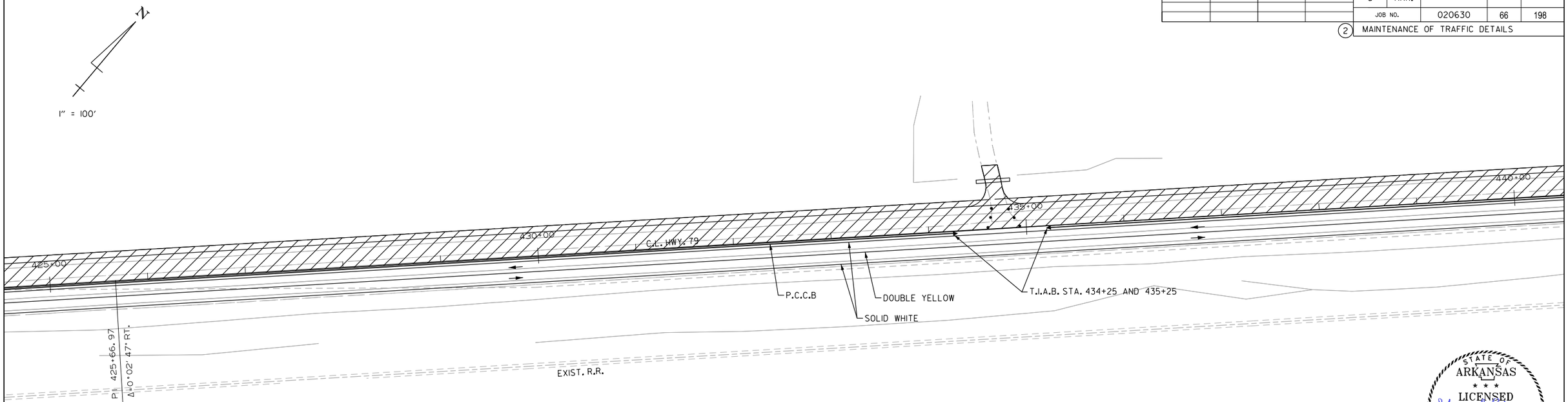


STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

SITE 4
MAINTENANCE OF TRAFFIC DETAILS
STAGE I

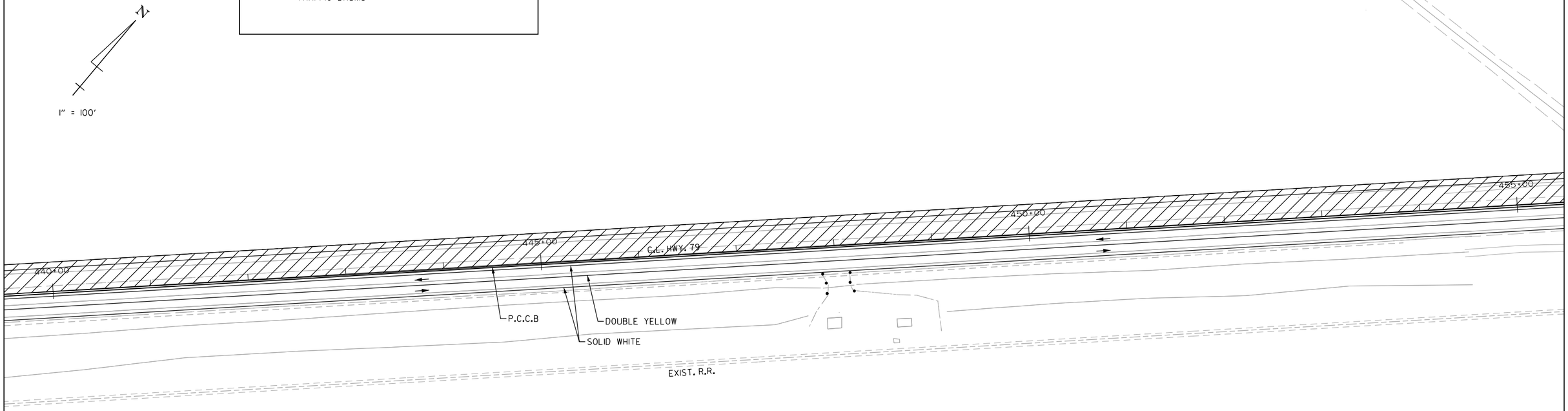
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	66	198
				(2) MAINTENANCE OF TRAFFIC DETAILS				



STAGE I CONSTRUCTION
STAGE I TRAFFIC
TRAFFIC DRUMS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

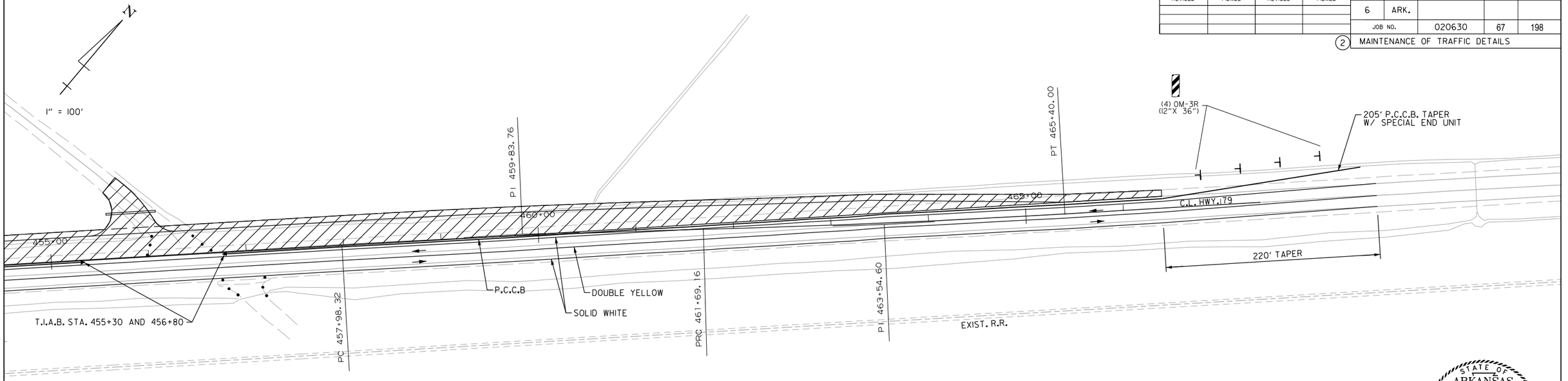


SITE 4
MAINTENANCE OF TRAFFIC DETAILS
STAGE I

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				6	ARK.			
				JOB NO.		020630	67	198

(2) MAINTENANCE OF TRAFFIC DETAILS



STAGE I CONSTRUCTION
STAGE I TRAFFIC
TRAFFIC DRUMS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

SITE 4
MAINTENANCE OF TRAFFIC DETAILS
STAGE I

rnfortner 2/4/2021 8:12:02 AM
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	68	198

(2) MAINTENANCE OF TRAFFIC DETAILS

STAGE 2
CONSTRUCTION SEQUENCE NOTES

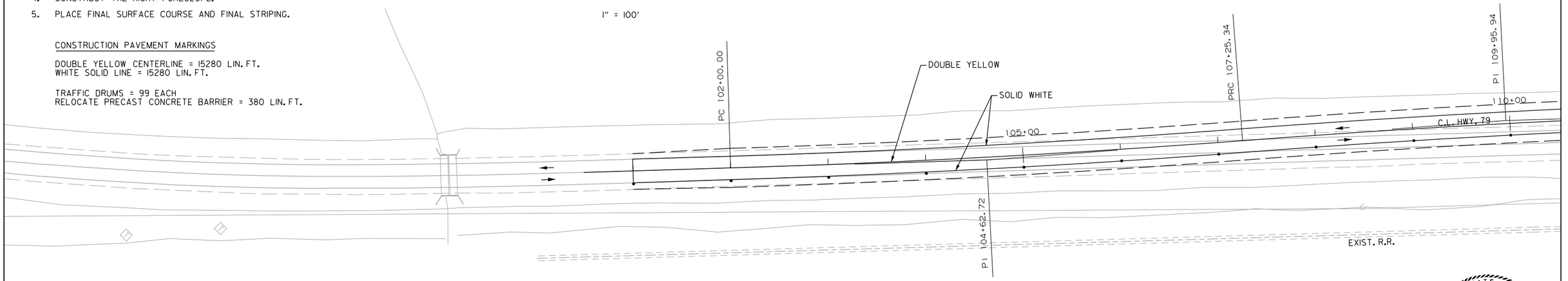
1. MOVE TRAFFIC TO LEFT TWO PROPOSED LANES.
2. INSTALL ADVANCE WARNING SIGNS AS SHOWN.
3. UTILIZE TRAFFIC DRUMS AT 100' O.C. SPACING AT THE LEFT EDGE OF THE RIGHT MOST PROPOSED LANE.
4. CONSTRUCT THE RIGHT FORESLOPE.
5. PLACE FINAL SURFACE COURSE AND FINAL STRIPING.

CONSTRUCTION PAVEMENT MARKINGS

DOUBLE YELLOW CENTERLINE = 15280 LIN. FT.
WHITE SOLID LINE = 15280 LIN. FT.

TRAFFIC DRUMS = 99 EACH
RELOCATE PRECAST CONCRETE BARRIER = 380 LIN. FT.

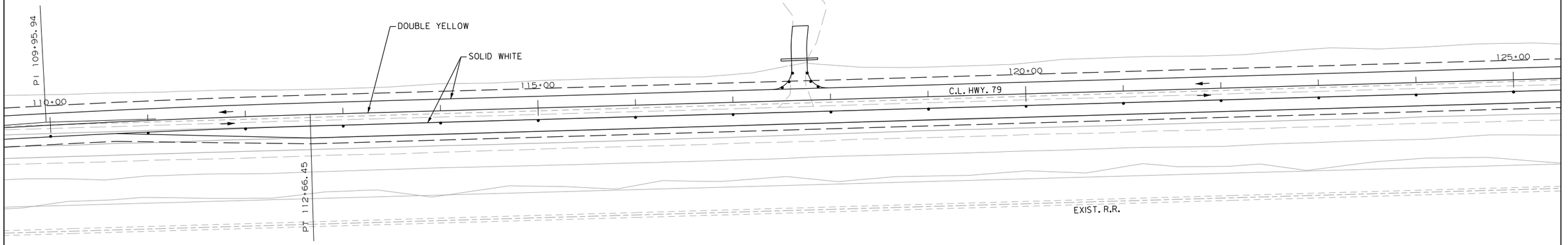
1" = 100'



- STAGE 2 CONSTRUCTION
- STAGE 2 TRAFFIC
- TRAFFIC DRUMS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

1" = 100'

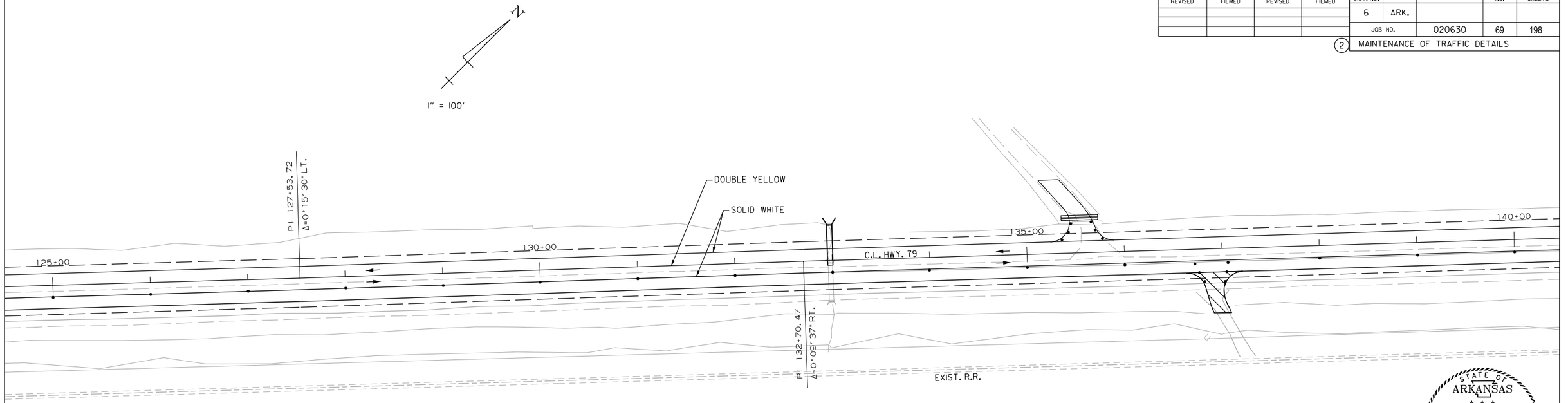


SITE 1
MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

rnfortner 2/4/2021 8:12:02 AM
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REVISED DATE:

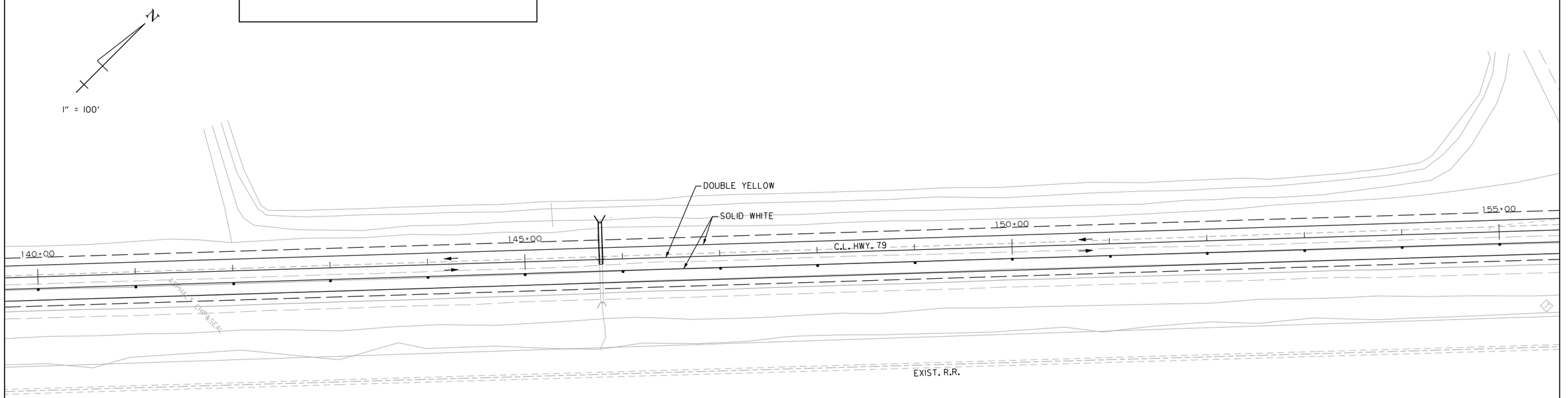
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				6	ARK.			
				JOB NO.		020630	69	198

(2) MAINTENANCE OF TRAFFIC DETAILS



STAGE 2 CONSTRUCTION
STAGE 2 TRAFFIC
TRAFFIC DRUMS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

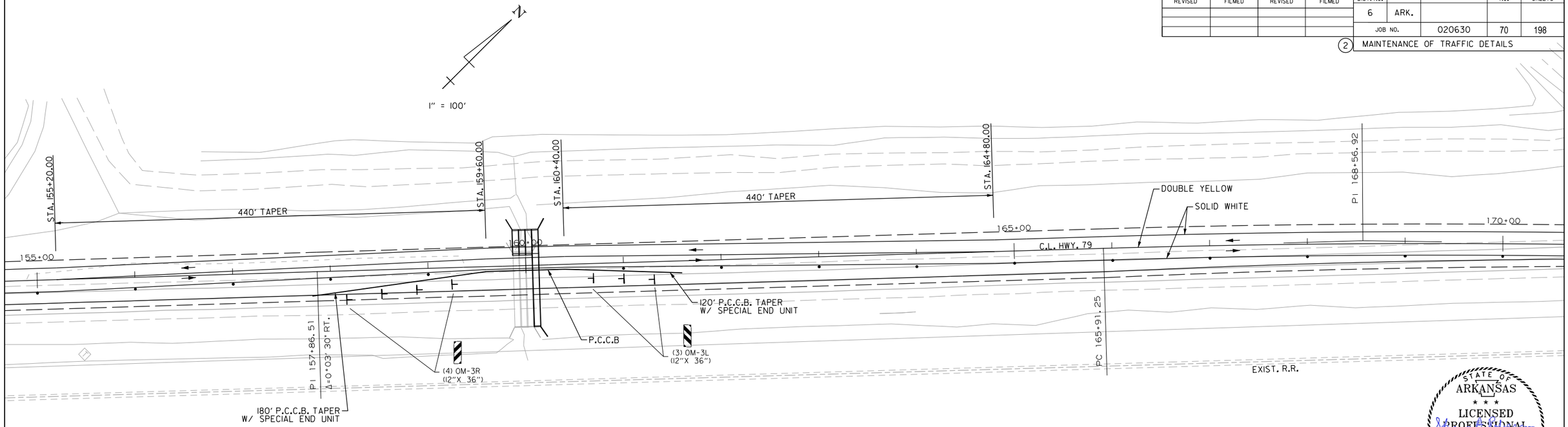


SITE 1
MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

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REVISED DATE:

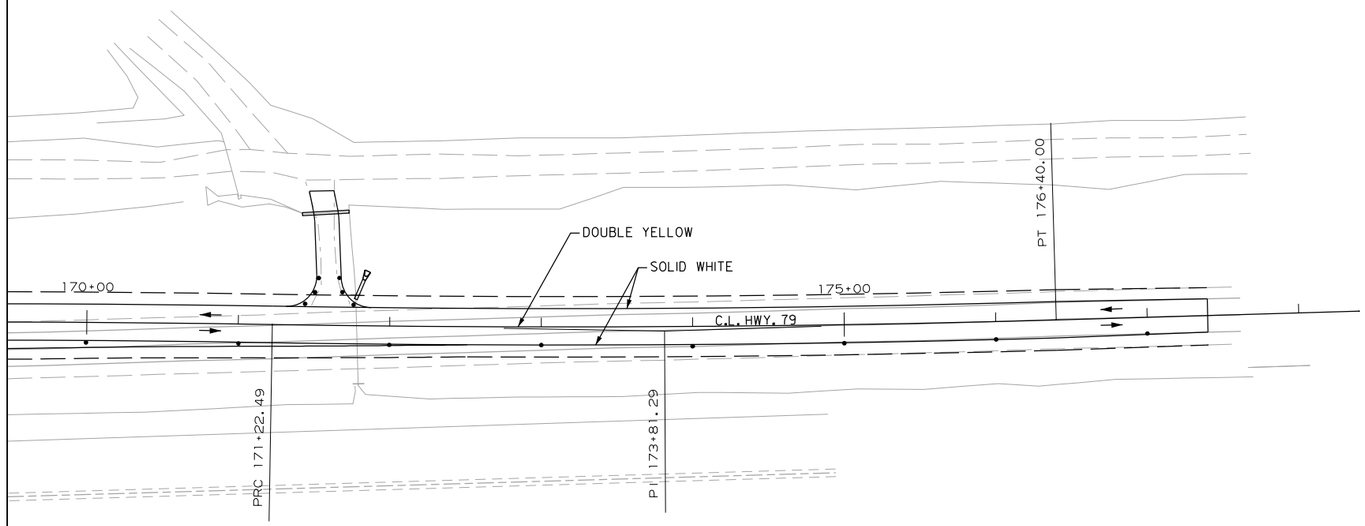
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				6	ARK.			
				JOB NO.		020630	70	198

(2) MAINTENANCE OF TRAFFIC DETAILS



STAGE 2 CONSTRUCTION
STAGE 2 TRAFFIC
TRAFFIC DRUMS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021



SITE I
MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

rnfortner 2/4/2021 8:12:02 AM
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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(2) MAINTENANCE OF TRAFFIC DETAILS

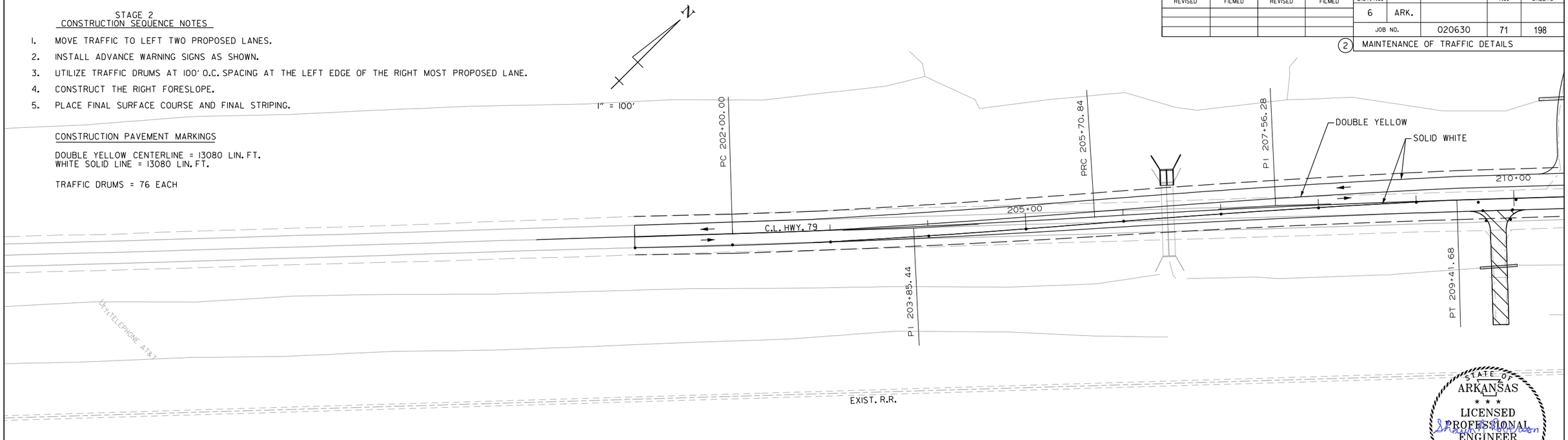
STAGE 2
CONSTRUCTION SEQUENCE NOTES

1. MOVE TRAFFIC TO LEFT TWO PROPOSED LANES.
2. INSTALL ADVANCE WARNING SIGNS AS SHOWN.
3. UTILIZE TRAFFIC DRUMS AT 100' O.C. SPACING AT THE LEFT EDGE OF THE RIGHT MOST PROPOSED LANE.
4. CONSTRUCT THE RIGHT FORESLOPE.
5. PLACE FINAL SURFACE COURSE AND FINAL STRIPING.

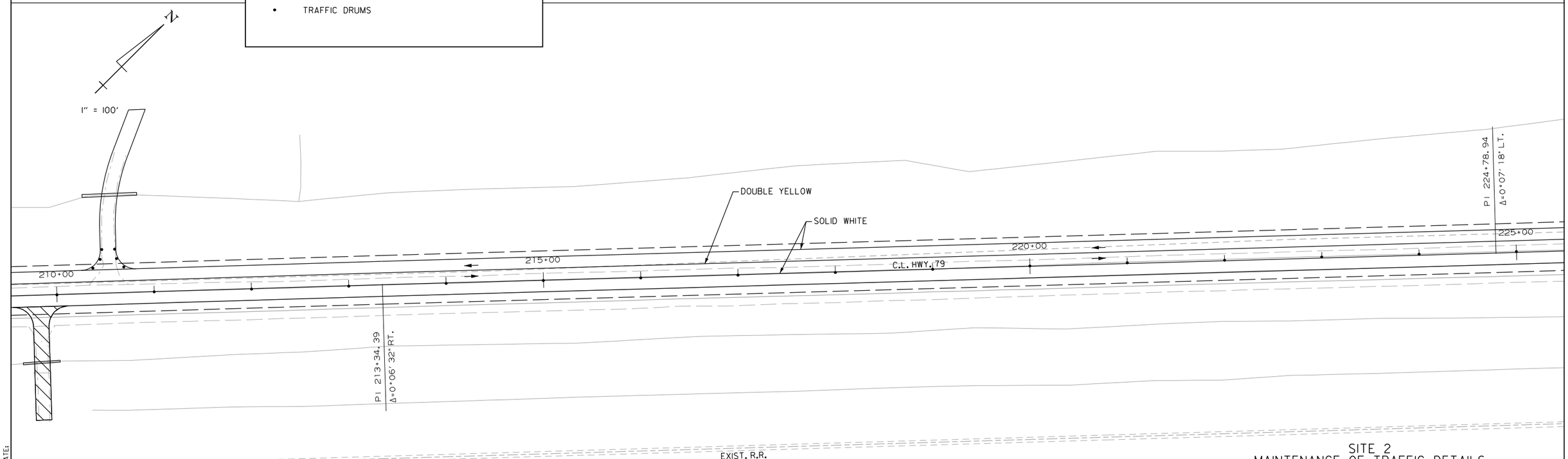
CONSTRUCTION PAVEMENT MARKINGS

DOUBLE YELLOW CENTERLINE = 13080 LIN. FT.
WHITE SOLID LINE = 13080 LIN. FT.

TRAFFIC DRUMS = 76 EACH



STAGE 2 CONSTRUCTION
STAGE 2 TRAFFIC
TRAFFIC DRUMS



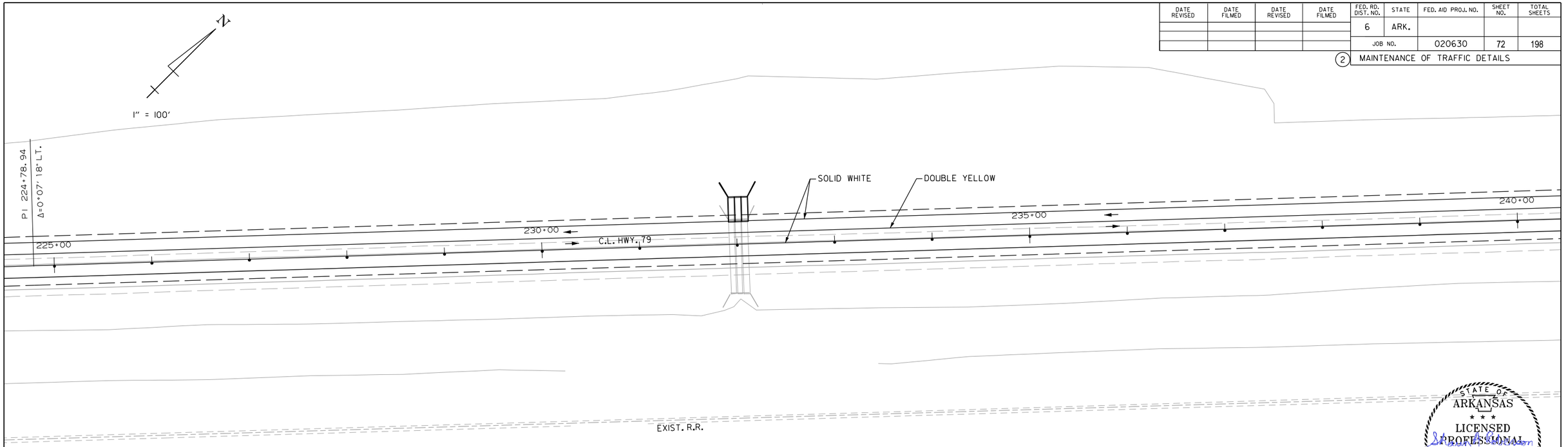
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

SITE 2
MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

rnfortner 2/4/2021 8:12:03 AM
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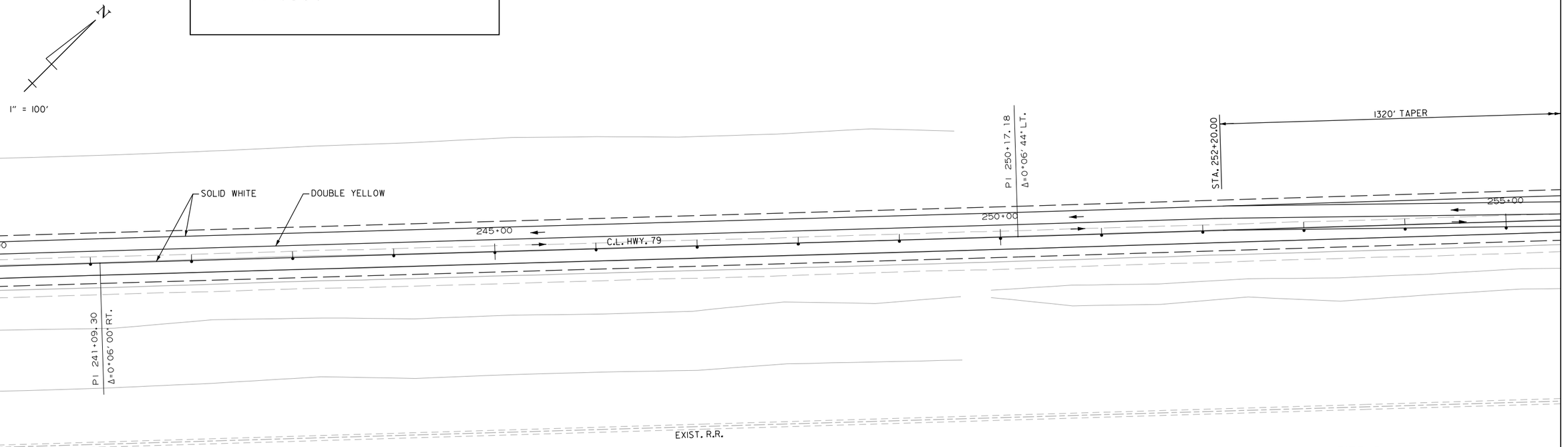
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				JOB NO.		020630	72	198

(2) MAINTENANCE OF TRAFFIC DETAILS



STAGE 2 CONSTRUCTION
STAGE 2 TRAFFIC
TRAFFIC DRUMS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

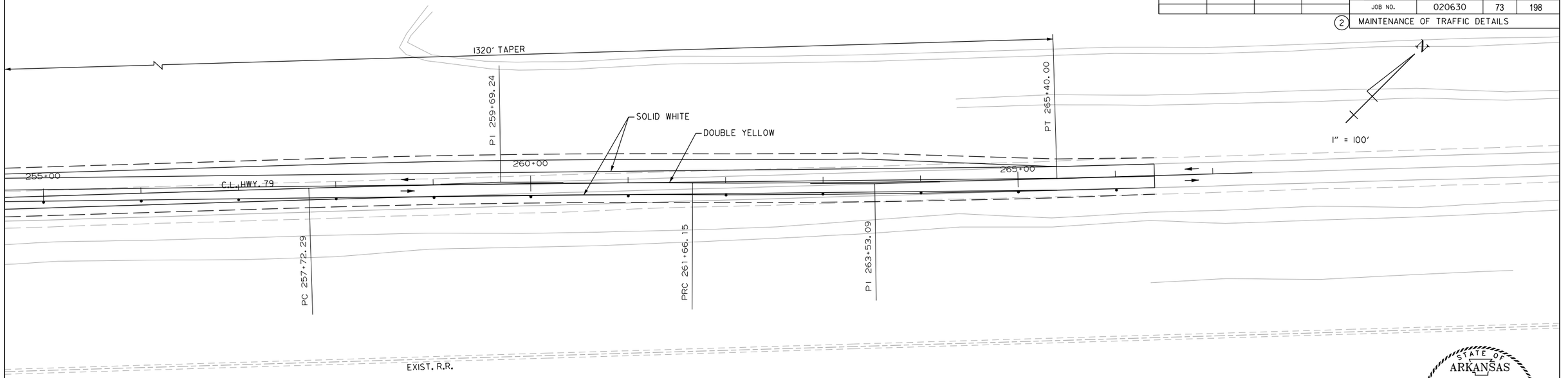


SITE 2
MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

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REVISED DATE:

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				JOB NO.		020630	73	198

(2) MAINTENANCE OF TRAFFIC DETAILS



STAGE 2 CONSTRUCTION
STAGE 2 TRAFFIC
• TRAFFIC DRUMS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

SITE 2
MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

rnfortner 2/4/2021 8:12:03 AM
WORKSPACE: AHTD
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				(2) MAINTENANCE OF TRAFFIC DETAILS				

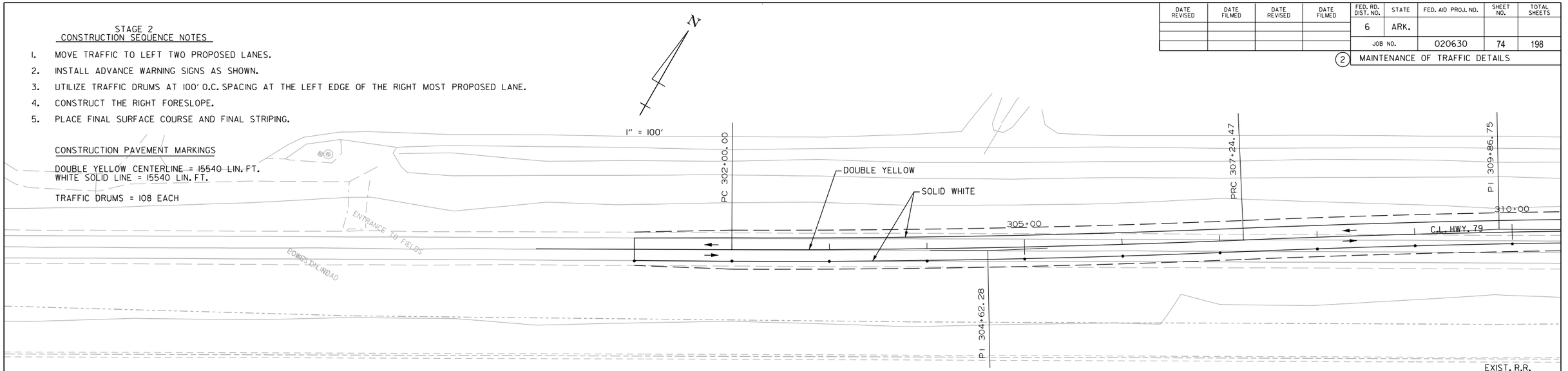
STAGE 2
CONSTRUCTION SEQUENCE NOTES

1. MOVE TRAFFIC TO LEFT TWO PROPOSED LANES.
2. INSTALL ADVANCE WARNING SIGNS AS SHOWN.
3. UTILIZE TRAFFIC DRUMS AT 100' O.C. SPACING AT THE LEFT EDGE OF THE RIGHT MOST PROPOSED LANE.
4. CONSTRUCT THE RIGHT FORESLOPE.
5. PLACE FINAL SURFACE COURSE AND FINAL STRIPING.

CONSTRUCTION PAVEMENT MARKINGS

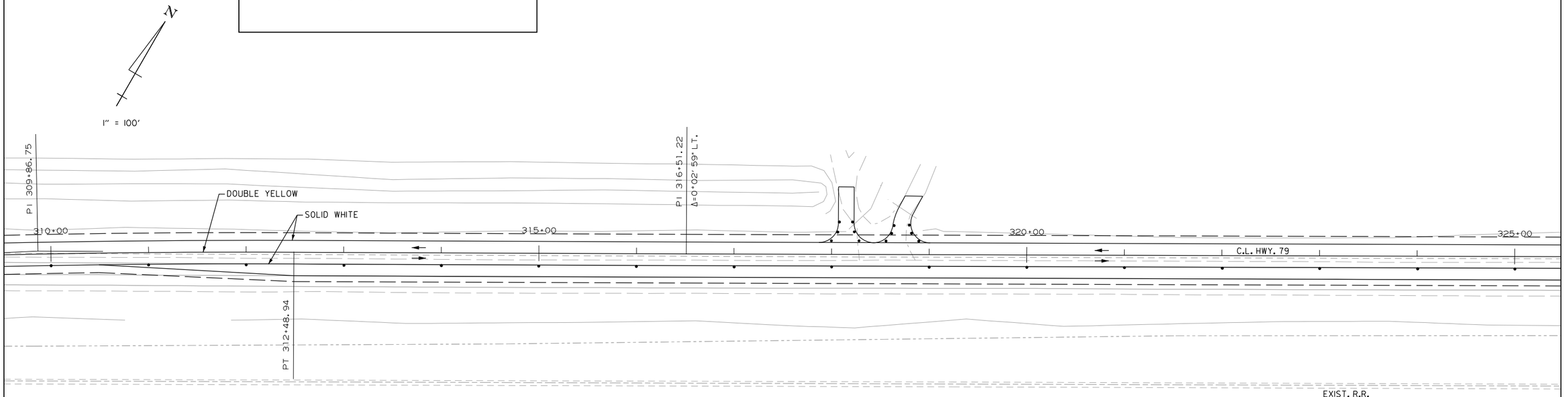
DOUBLE YELLOW CENTERLINE = 15540 LIN. FT.
WHITE SOLID LINE = 15540 LIN. FT.

TRAFFIC DRUMS = 108 EACH



STAGE 2 CONSTRUCTION
STAGE 2 TRAFFIC
TRAFFIC DRUMS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

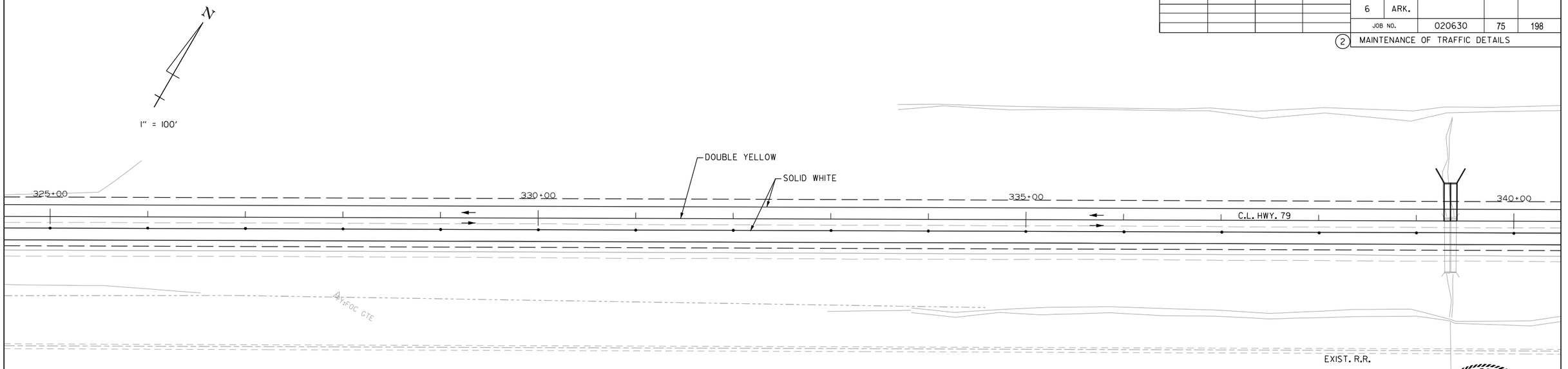


SITE 3
MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

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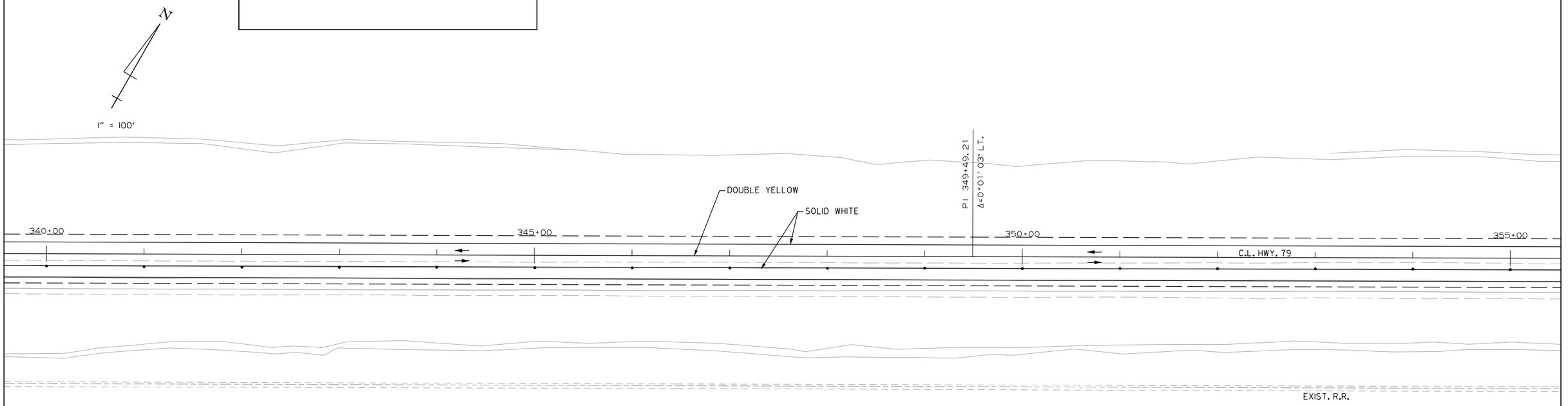
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(2) MAINTENANCE OF TRAFFIC DETAILS



STAGE 2 CONSTRUCTION
STAGE 2 TRAFFIC
TRAFFIC DRUMS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

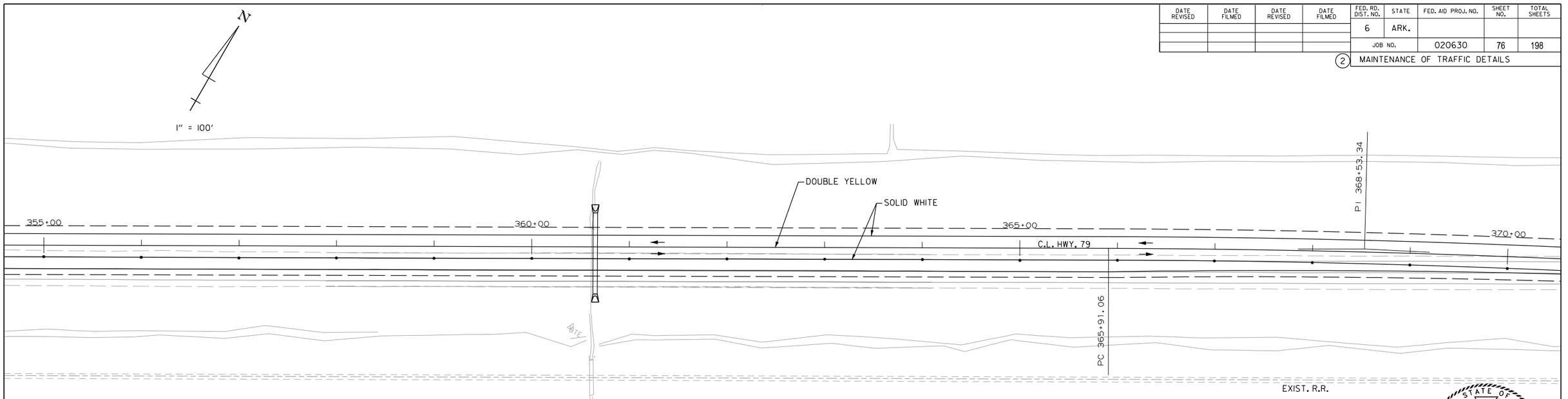


SITE 3
MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

rnfortner 2/4/2021 8:12:04 AM
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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(2) MAINTENANCE OF TRAFFIC DETAILS



STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

STAGE 2 CONSTRUCTION
STAGE 2 TRAFFIC
TRAFFIC DRUMS



SITE 3
MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

rnfortner 2/4/2021 8:12:04 AM
WORKSPACE: AHTD
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		020630	77	198
				(2) MAINTENANCE OF TRAFFIC DETAILS				

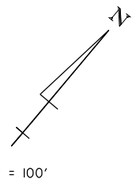
STAGE 2
CONSTRUCTION SEQUENCE NOTES

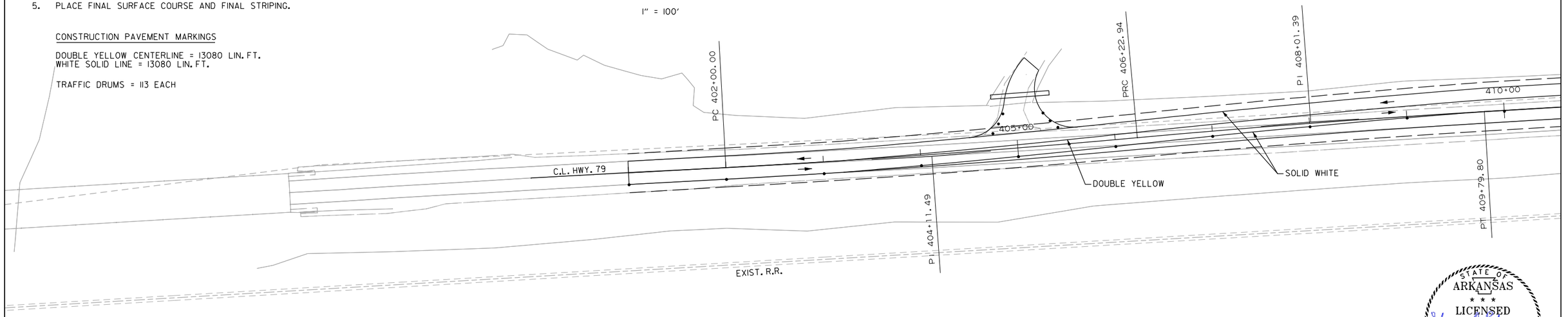
1. MOVE TRAFFIC TO LEFT TWO PROPOSED LANES.
2. INSTALL ADVANCE WARNING SIGNS AS SHOWN.
3. UTILIZE TRAFFIC DRUMS AT 100' O.C. SPACING AT THE LEFT EDGE OF THE RIGHT MOST PROPOSED LANE.
4. CONSTRUCT THE RIGHT FORESLOPE.
5. PLACE FINAL SURFACE COURSE AND FINAL STRIPING.

CONSTRUCTION PAVEMENT MARKINGS

DOUBLE YELLOW CENTERLINE = 13080 LIN. FT.
WHITE SOLID LINE = 13080 LIN. FT.

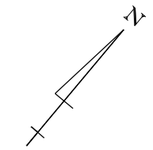
TRAFFIC DRUMS = 113 EACH

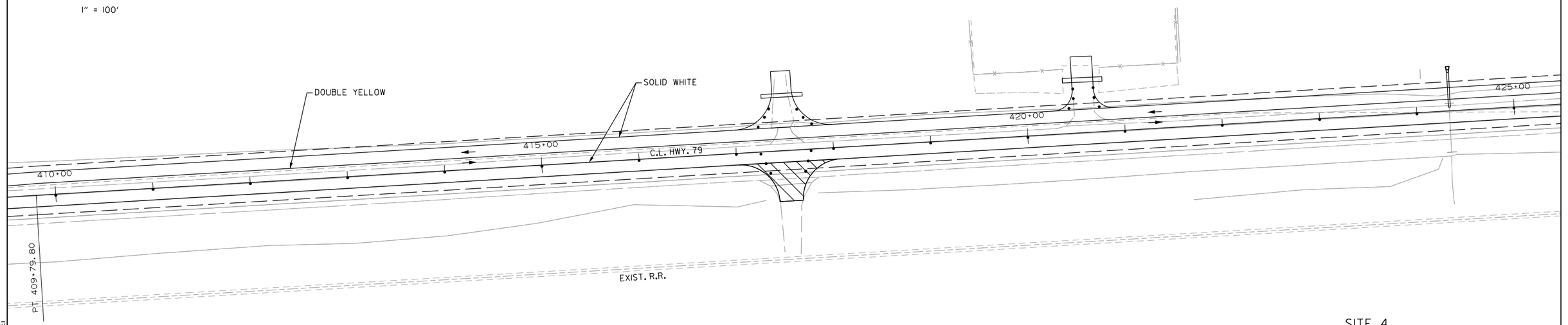




STAGE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

- STAGE 2 CONSTRUCTION
- STAGE 2 TRAFFIC
- TRAFFIC DRUMS



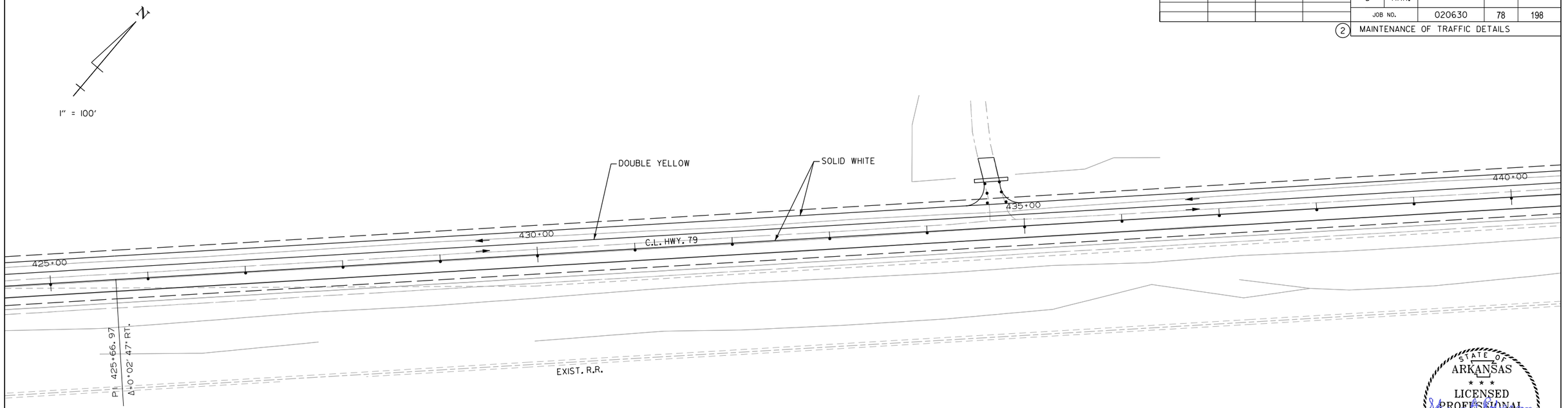


SITE 4
MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

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REVISED DATE:

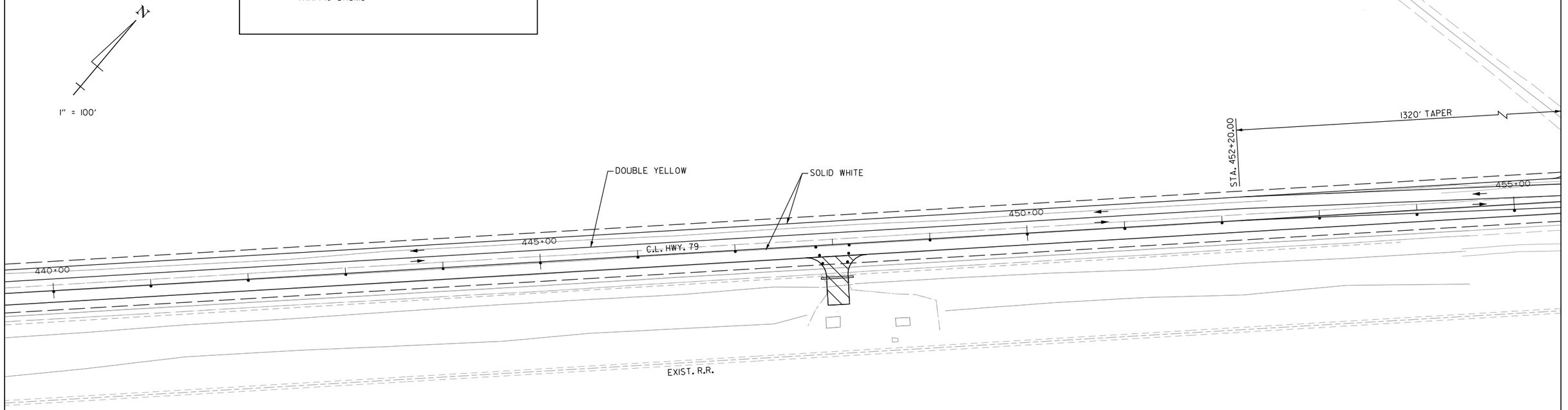
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				6	ARK.			
				JOB NO.		020630	78	198

(2) MAINTENANCE OF TRAFFIC DETAILS



STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

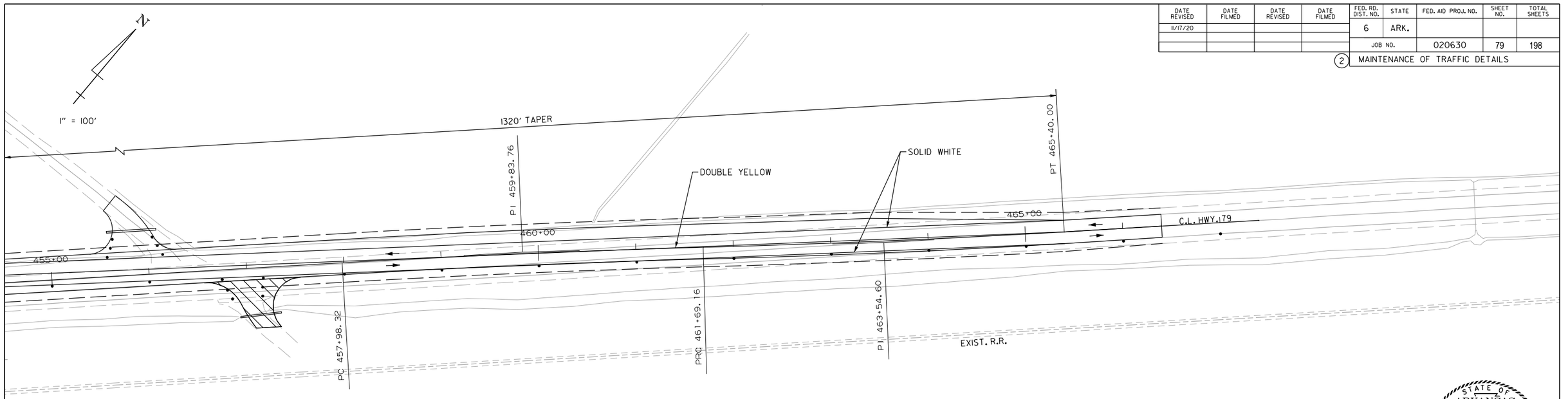
- STAGE 2 CONSTRUCTION
- STAGE 2 TRAFFIC
- TRAFFIC DRUMS



SITE 4
MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

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11/17/20				6	ARK.			
				JOB NO.		020630	79	198
				(2) MAINTENANCE OF TRAFFIC DETAILS				



STAGE 2 CONSTRUCTION
STAGE 2 TRAFFIC
• TRAFFIC DRUMS

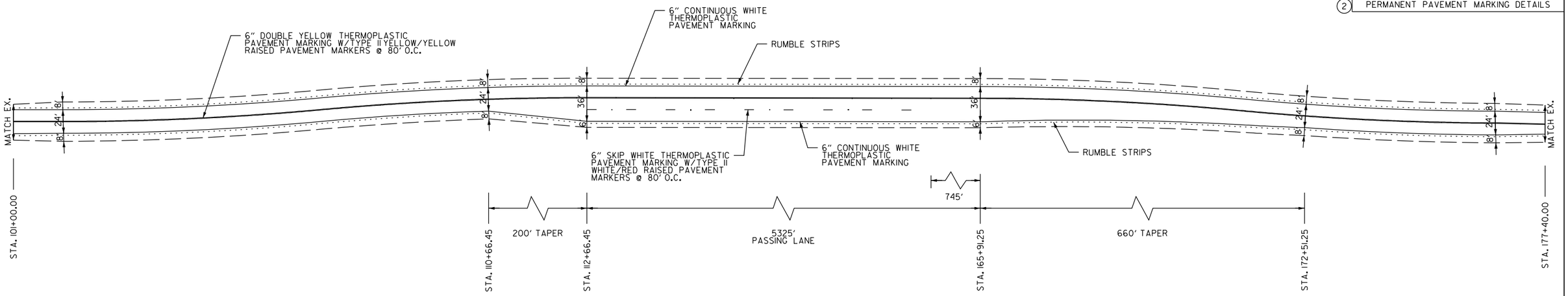
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

SITE 4
MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	80	198

(2) PERMANENT PAVEMENT MARKING DETAILS

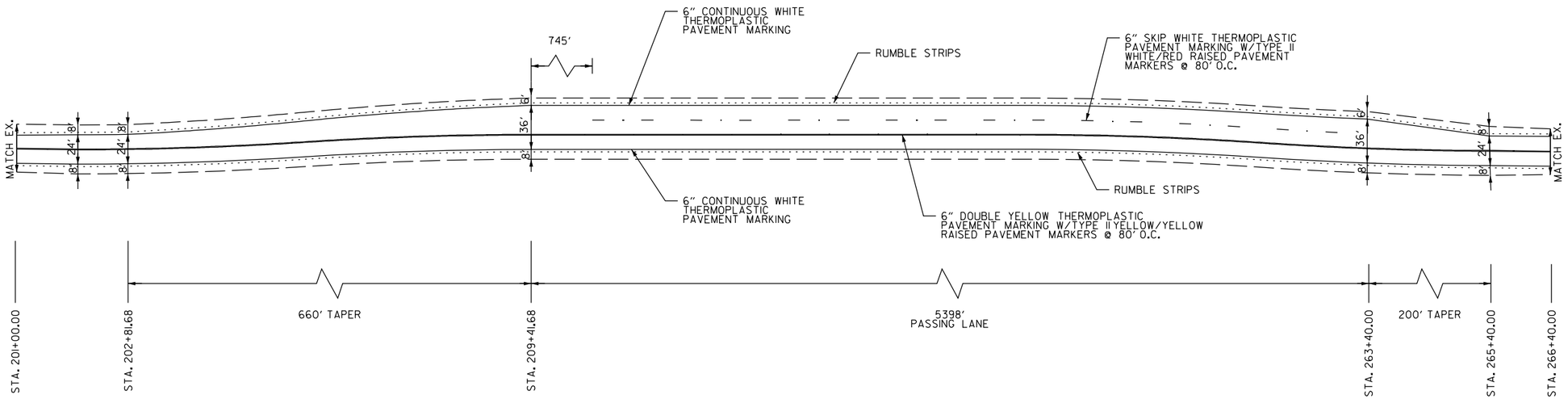


THE 6" YELLOW STRIPING QUANTITY HAS BEEN ESTIMATED BASED ON A DOUBLE YELLOW CENTERLINE STRIPE FOR THE ENTIRE PROJECT. THE PROJECT MUST BE MARKED FOR PASSING/NO PASSING ZONES PRIOR TO THE PLACEMENT OF ANY FINAL STRIPING. CONTACT THE MAINTENANCE DIVISION AFTER THE FINAL LIFT OF SURFACE COURSE HAS BEEN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

SITE 1

PERMANENT PAVEMENT MARKING QUANTITES - SITE 1

THERMOPLASTIC PAVEMENT MARKING DOUBLE YELLOW (6") = 15280 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING WHITE SOLID (6") = 15280 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING WHITE SKIP (6") = 1145 LIN. FT.
TYPE II RAISED PAVEMENT MARKERS WHITE/RED = 58 EACH
TYPE II RAISED PAVEMENT MARKERS YELLOW/YELLOW = 96 EACH



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.

SITE 2

PERMANENT PAVEMENT MARKING QUANTITES - SITE 2

THERMOPLASTIC PAVEMENT MARKING DOUBLE YELLOW (6") = 13080 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING WHITE SOLID (6") = 13080 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING WHITE SKIP (6") = 1164 LIN. FT.
TYPE II RAISED PAVEMENT MARKERS WHITE/RED = 59 EACH
TYPE II RAISED PAVEMENT MARKERS YELLOW/YELLOW = 82 EACH

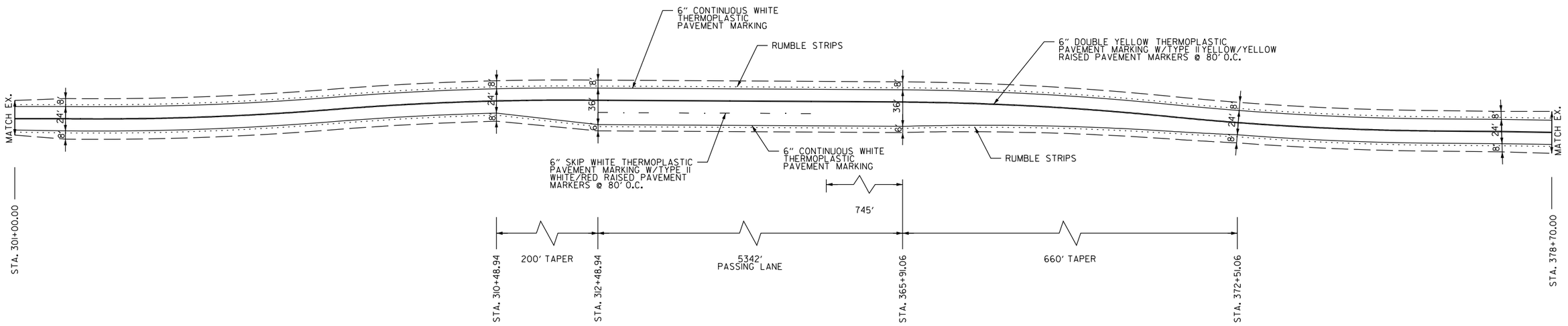
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

PERMANENT PAVEMENT MARKING DETAILS
SITE 1 & 2

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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	81	198

(2) PERMANENT PAVEMENT MARKING DETAILS

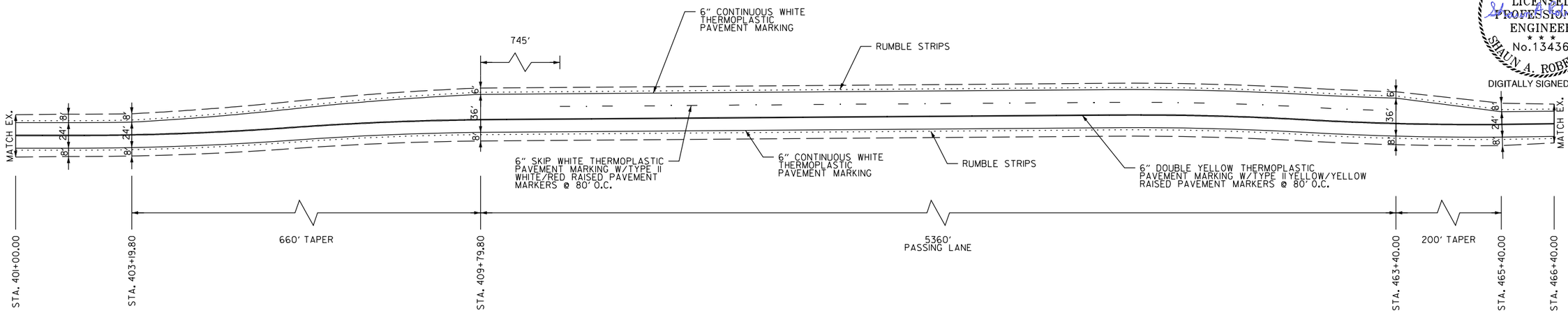


THE 6" YELLOW STRIPING QUANTITY HAS BEEN ESTIMATED BASED ON A DOUBLE YELLOW CENTERLINE STRIPE FOR THE ENTIRE PROJECT. THE PROJECT MUST BE MARKED FOR PASSING/NO PASSING ZONES PRIOR TO THE PLACEMENT OF ANY FINAL STRIPING. CONTACT THE MAINTENANCE DIVISION AFTER THE FINAL LIFT OF SURFACE COURSE HAS BEEN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

SITE 3

PERMANENT PAVEMENT MARKING QUANTITES - SITE 3

THERMOPLASTIC PAVEMENT MARKING DOUBLE YELLOW (6") = 15540 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING WHITE SOLID (6") = 15540 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING WHITE SKIP (6") = 1150 LIN. FT.
TYPE II RAISED PAVEMENT MARKERS WHITE/RED = 58 EACH
TYPE II RAISED PAVEMENT MARKERS YELLOW/YELLOW = 98 EACH



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.

SITE 4

PERMANENT PAVEMENT MARKING QUANTITES - SITE 4

THERMOPLASTIC PAVEMENT MARKING DOUBLE YELLOW (6") = 13080 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING WHITE SOLID (6") = 13080 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING WHITE SKIP (6") = 1154 LIN. FT.
TYPE II RAISED PAVEMENT MARKERS WHITE/RED = 58 EACH
TYPE II RAISED PAVEMENT MARKERS YELLOW/YELLOW = 82 EACH

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSSON
DIGITALLY SIGNED 2-4-2021

PERMANENT PAVEMENT MARKING DETAILS
SITE 3 & 4

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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	82	198

(2) SOIL BORING LOG

SOIL BORING LOG

BORING or TEST PIT NO.	APPROX. STATION	SAMPLE DEPTH (ft)	WATER CONTENT (%)	ATTERBERG LIMITS			PERCENT PASSING #200, %	UNIFIED CLASS.	AASHTO CLASS.
				LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX			
SB-1	101+52, 17' LT	-	-	-	-	-	-	-	-
SB-2	106+50, 17' LT	3.5	20	70	20	50	-	CH	A-7-6
SB-2	106+50, 17' LT	6.0	25	38	19	19	96	CL	A-6 (19)
SB-3	111+50, 17' LT	4.0	24	38	21	17	88	CL	A-6 (15)
SB-4	116+45, 18' LT	-	-	-	-	-	-	-	-
SB-5	121+42, 20' LT	13.5	42	111	33	78	-	CH	A-7-5
SB-6	126+41, 18' LT	-	-	-	-	-	-	-	-
SB-7	131+41, 18' LT	1.1	20	44	19	25	74	CL	A-7-6 (17)
SB-8	136+37, 17' LT	-	-	-	-	-	-	-	-
SB-9	141+36, 17' LT	-	-	-	-	-	-	-	-
SB-10	146+34, 20' LT	-	-	-	-	-	-	-	-
SB-11	151+38, 19' LT	1.0	15	39	28	11	55	ML	A-6 (4)
SB-12	156+37, 18' LT	-	-	-	-	-	-	-	-
SB-13	161+36, 19' LT	5.0	50	101	36	65	95	CH	A-7-5 (74)
SB-14	166+28, 20' LT	-	-	-	-	-	-	-	-
SB-15	201+67, 20' LT	1.6	16	56	15	41	69	CH	A-7-6 (26)
SB-15	201+67, 20' LT	13.5	23	46	20	26	81	CL	A-7-6 (25)
SB-16	206+66, 18' LT	1.4	10	18	16	2	47	SM	A-4 (0)
SB-16	206+66, 18' LT	13.5	22	35	15	20	-	CL	A-6
SB-17	211+59, 15' LT	-	-	-	-	-	-	-	-
SB-18	216+60, 17' LT	3.5	20.0	71.0	19.0	52	-	CH	A-7-6
SB-19	221+55, 19' LT	-	-	-	-	-	-	-	-
SB-20	226+60, 20' LT	-	-	-	-	-	-	-	-
SB-21	231+58, 20' LT	3.8	15	22	15	7	46		
SB-22	236+61, 16' LT	3.5	33	88	23	65	-	CH	A-7-6
SB-23	241+60, 17' LT	1.8	37	111	27	84	85	CH	A-7-6 (79)
SB-24	246+56, 17' LT	1.5	5	94	24	70	56	CH	A-7-6 (34)
SB-25	251+62, 20' LT	3.0	24	99	42	57	65	MH	A-7-2 (38)
SB-26	256+71, 17' LT	-	-	-	-	-	-	-	-
SB-27	261+59, 18' LT	8.5	42	108	34	74	-	CH	A-7-5
SB-28	266+50, 19' LT	4.0		63	24	39	16	SC	A-2-7 (0)
SB-29	301+78, 18' LT	-	-	-	-	-	-	-	-
SB-30	306+77, 16' LT	3.5	18	57	21	36	48	SC	A-7-6 (12)
SB-31	311+77, 18' LT	1.1	15	61	19	42	62	CH	A-7-6 (23)
SB-31	311+77, 18' LT	5.0	19	100	30	70	87	CH	A-7-6 (69)
SB-32	316+77, 17' LT	-	-	-	-	-	-	-	-
SB-33	321+74, 18' LT	-	-	-	-	-	-	-	-
SB-34	326+83, 16' LT	2.0	20	33	17	16	60	CL	A-6 (7)
SB-35	331+79, 18' LT	-	-	-	-	-	-	-	-
SB-36	336+78. 16' LT	-	-	-	-	-	-	-	-
SB-37	341+76, 17' LT	-	-	-	-	-	-	-	-
SB-38	346+76, 18' LT	8.5	45	105	29	76	98	CH	A-7-6 (88)
SB-39	351+76, 17' LT	1.1	15	102	27	75	55	CH	A-7-6 (36)
SB-40	356+76, 17' LT	3.0	27	81	24	57	-	CH	A-7-6
SB-41	361+77, 15' LT	-	-	-	-	-	-	-	-
SB-42	400+66, 21' LT	1.1	25	48	17	31	78	CL	A-7-6 (24)
SB-43	405+67, 17' LT	3.5	18	45	20	25	-	CL	A-7-6
SB-43	405+67, 17' LT	13.5	7	-	-	-	60	ML	A-4 (0)
SB-44	410+69, 17' LT	-	-	-	-	-	-	-	-
SB-45	415+62, 18' LT	5.0	25	64	21	43		CH	A-7-6
SB-46	420+98, 18' LT	-	-	-	-	-	-	-	-
SB-47	425+61, 17' LT	-	-	-	-	-	-	-	-
SB-48	430+63, 14' LT	-	-	-	-	-	-	-	-
SB-49	435+65, 16' LT	8.5	12	27	19	8	51	CL	A-4 (1)
SB-50	440+61, 17' LT	3.0	20	61	19	42	69	CH	A-7-6 (28)
SB-50	440+61, 17' LT	3.5	22	62	17	45	-	CH	A-7-6
SB-51	445+57, 17' LT	2.0	25	60	21	39	86	CH	A-7-6 (36)
SB-52	452+08, 17' LT	5.0	22	41	15	26	91	CL	A-7-6 (24)
SB-53	458+19, 53' LT	1.1	22	38	17	21	74	CL	A-6 (14)

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMIT SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

SOIL BORING LOG

BORING or TEST PIT NO.	APPROX. STATION	SAMPLE DEPTH (ft)	WATER CONTENT (%)	ATTERBERG LIMITS			PERCENT PASSING #200, %	UNIFIED CLASS.	AASHTO CLASS.
				LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX			
NB-1	101+25, 11' RT	3.0	30	49	19	30	93	CL	A-7-6 (30)
NB-1	101+25, 11' RT	6.0	28	42	19	23	93	CL	A-7-6 (22)
NB-2	106+49, 15' RT	3.5	40	64	18	46	-	CH	A-7-6
NB-3	111+54, 17' RT	8.5	40	80	25	55	88	CH	A-7-6 (54)
NB-4	116+47, 14' RT	-	-	-	-	-	-	-	-
NB-5	121+42, 15' RT	1.4	13	42	18	24	93	CL	A-7-6 (23)
NB-5	121+42, 15' RT	3.5	18	39	20	19	-	CL	A-6
NB-6	126+44, 17' RT	-	-	-	-	-	-	-	-
NB-7	131+38, 13' RT	-	-	-	-	-	-	-	-
NB-8	136+36, 15' RT	3.5	28	65	21	44	76	CH	A-7-6 (34)
NB-9	141+36, 14' RT	3.8	37	80	24	56	58	CH	A-7-6 (29)
NB-10	146+37, 14' RT	-	-	-	-	-	-	-	-
NB-11	151+35, 13' RT	4.0	35	90	30	60	-	CH	A-7-5
NB-12	156+39, 16' RT	-	-	-	-	-	-	-	-
NB-13	161+37, 15' RT	1.7	10	95	23	72	37	SC	A-7-6 (15)
NB-14	166+39, 10' RT	4.0	45	60	30	30	18	SC	A-2-7 (1)
NB-15	201+73, 9' RT	-	-	-	-	-	-	-	-
NB-16	206+60, 16' RT	-	-	-	-	-	-	-	-
NB-17	211+58, 16' RT	-	-	-	-	-	-	-	-
NB-18	216+57, 15' RT	1.0	-	-	-	-	-	SM	A-2-4
NB-19	221+55, 14' RT	-	-	-	-	-	-	-	-
NB-20	226+59, 16' RT	-	-	-	-	-	-	-	-
NB-21	231+61, 14' RT	-	-	-	-	-	-	-	-
NB-22	236+60, 16' RT	4.0	28	81	22	59	81	CH	A-7-6 (51)
NB-22	236+60, 16' RT	5.0	28	88	27	61	66	CH	A-7-6 (40)
NB-23	241+58, 17' RT	-	-	-	-	-	-	-	-
NB-24	246+58, 15' RT	-	-	-	-	-	-	-	-
NB-25	251+58, 17' RT	-	-	-	-	-	-	-	-
NB-26	256+57, 16' RT	1.5	10	24	19	5	18	SC-SM	A-2-4 (0)
NB-26	256+57, 16' RT	5.0	48	129	34	95	79	CH	A-7-5 (83)
NB-27	261+44, 28' RT	-	-	-	-	-	-	-	-
NB-28	266+52, 12' RT	-	-	-	-	-	-	-	-
NB-29	301+80, 12' RT	1.5	18	30	16	14	89	CL	A-6 (11)
NB-29	301+80, 12' RT	3.0	37	95	26	69	89	CL	A-6 (75)
NB-30	306+77, 15' RT	-	-	-	-	-	-	-	-
NB-31	311+77, 12' RT	-	-	-	-	-	-	-	-
NB-32	316+77, 13' RT	-	-	-	-	-	-	-	-
NB-33	321+73, 12' RT	1.5	20	73	25	48	82	CH	A-7-6 (43)
NB-33	321+73, 12' RT	5.0	42	91	26	65	-	CH	A-7-6
NB-34	326+85, 11' RT	-	-	-	-	-	-	-	-
NB-35	331+80, 10' RT	-	-	-	-	-	-	-	-
NB-36	336+79, 15' RT	8.0	22	86	22	0	-	CH	A-7-6
NB-37	341+77, 11' RT	1.0	18	46	14	32	70	CL	A-7-6 (20)
NB-37	341+77, 11' RT	3.0	28	76	25	51	90	CH	A-7-6 (52)
NB-38	346+76, 11' RT	2.0	48	125	33	92	-	CH	A-7-5
NB-39	351+75, 15' RT	-	-	-	-	-	-	-	-
NB-40	356+76, 13' RT	2.0	20	63	17	46	-	CH	A-7-6
NB-41	361+77, 15' RT	1.3	8	64	17	47	79	CH	A-7-6 (38)
NB-42	400+67, 15' RT	6.0	22	38	16	22	89	CL	A-6 (19)
NB-43	405+68, 11' RT	3.5	22	38	22	16	-	CL	A-6
NB-44	410+66, 12' RT	1.1	18	46	19	27	63	CL	A-7-6 (15)
NB-45	415+65, 12' RT	6.0	25	58	18	40	-	CH	A-7-6
NB-46	420+66, 13' RT	-	-	-	-	-	-	-	-
NB-47	425+61, 15' RT	-	-	-	-	-	-	-	-
NB-48	430+61, 15' RT	1.5	15	81	18	63	61	CH	A-7--6 (35)
NB-49	435+60, 13' RT	-	-	-	-	-	-	-	-
NB-50	440+58, 14' RT	3.0	20	53	19	34	92	CH	A-7-6 (34)
NB-51	445+58, 13' RT	-	-	-	-	-	-	-	-
NB-52	452+08, 13' RT	3.5	24	51	17	34	89	CH	A-7-6 (32)
NB-53	458+57, 15' RT	1.1	22	32	18	14	54	CL	A-6 (5)

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMIT SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

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WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		020630	83	198

(2) QUANTITIES

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		TRAFFIC DRUMS	VERTICAL PANELS	BARRICADES (TYPE III)	FURNISHING & INSTALLING PRECAST CONC. BARRIER	RELOCATING PRECAST CONCRETE BARRIER	TEMPORARY IMPACT ATTENUATION BARRIER	TEMP. IMPACT ATTEN.BARR. (REPAIR)	TEMP. IMPACT ATTEN.BARR. (RELOCATION)	CONSTRUCTION PROJECT INFORMATION SIGN UPDATE
										RIGHT						
			LIN. FT. - EACH			NO.	SQ. FT.	EACH			LIN. FT.		EACH			
W16-P2	500 FT.	30"x24"	4		4	4	20.0									
W3-4	BE PREPARED TO STOP	48"x48"	4		4	4	64.0									
W3-5	SPEED LIMIT 45 AHEAD	48"x48"	4	2	4	4	64.0									
W8-1	BUMP	30"x30"	4	4	4	4	25.0									
W8-17	SHOULDER DROP-OFF	36"x36"	4	4	4	4	36.0									
W8-17P	SHOULDER DROP-OFF	24"x18"	4	4	4	4	12.0									
W20-1	ROAD WORK 1500 FT.	48"x48"	6	2	6	6	96.0									
W20-1	ROAD WORK 1000 FT.	48"x48"	2	2	2	2	32.0									
W20-1	ROAD WORK 500 FT.	48"x48"	7	6	7	7	112.0									
W20-4	ONE LANE ROAD 1/2 MILE	48"x48"	4		4	4	64.0									
W20-4	ONE LANE ROAD 1000 FT.	48"x48"	4		4	4	64.0									
W20-7	FLAGGER	48"x48"	4		4	4	64.0									
G20-2	END ROAD WORK	48"x24"	9	6	9	9	72.0									
G20-1	ROAD WORK NEXT xx MILES	60"x24"	2	2	2	2	20.0									
OM-3L	OBJECT MARKER	12"x36"	12	3	12	12	36.0									
OM-3R	OBJECT MARKER	12"x36"	16	4	16	16	48.0									
R4-1	DO NOT PASS	24"x30"	4	4	4	4	20.0									
R11-2	ROAD CLOSED	48"x30"	6	10	10	10	100.0									
R2-1	SPEED LIMIT 45	24"x30"	2	2	2	2	10.0									
R2-1	SPEED LIMIT 25	48"x60"	4		4	4	80.0									
R2-1	SPEED LIMIT 35	48"x60"	4		4	4	80.0									
R2-1	SPEED LIMIT 45	48"x60"	4		4	4	80.0									
R2-12	END WORK ZONE SPEED LIMIT	24"x36"	2		2	2	12.0									
W21-5a	RIGHT SHOULDER CLOSED	36"x36"	4	4	4	4	36.0									
SPECIAL	CONSTRUCTION PROJECT INFORMATION SIGN	48"X96"	2	2	2	2	64.0									
	CONSTRUCTION PROJECT INFORMATION SIGN UPDATE															4
	TRAFFIC DRUMS		270	396	396			396								
	VERTICAL PANELS		152						152							
	TYPE III BARRICADE-RT. (16')		6	10	10					160						
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER		15410		15410						15410					
	RELOCATING PRECAST CONCRETE BARRIER		13050	380	13430							13430				
	TEMPORARY IMPACT ATTENUATION BARRIER		12		12								12			
	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)		24		24									24		
	TEMPORARY IMPACT ATTENUATION BARRIER (RELOCATION)		12		12										12	
TOTALS:							**1311.0**	**396**	**152**	**160**	**15410**	**13430**	**12**	**24**	**12**	**4**

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

REMOVAL AND DISPOSAL OF CULVERTS

STATION	DESCRIPTION	PIPE CULVERTS
		EACH
SITE 1		
117+68	HWY. 79 - LT.	1
135+63	HWY. 79 - LT.	2
145+29	HWY. 79 - LT.	1
171+57	HWY. 79 - LT.	1
SUBTOTAL SITE 1:		**5**
SITE 2		
209+83	HWY. 79 - RT.	1
210+55	HWY. 79 - LT.	1
SUBTOTAL SITE 2:		**2**
SITE 3		
318+29	HWY. 79 - LT.	1
360+65	HWY. 79 - RT. & LT.	1
SUBTOTAL SITE 3:		**2**
SITE 4		
404+96	HWY. 79 - LT.	1
417+50	HWY. 79 - LT.	1
420+58	HWY. 79 - LT.	1
434+74	HWY. 79 - LT.	1
448+02	HWY. 79 - RT.	1
456+22	HWY. 79 - LT.	1
457+05	HWY. 79 - RT.	1
SUBTOTAL SITE 4:		**7**
TOTAL:		**16**

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

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 1	STAGE 2	REMOVAL OF PERMANENT PAVEMENT MARKINGS	CONSTRUCTION PAVEMENT MARKINGS	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS		THERMOPLASTIC PAVEMENT MARKING 6"	
							TYPE II (WHITE/RED)	TYPE II (YELLOW/YELLOW)	WHITE	YELLOW
	LIN. FT. - EACH		LIN. FT.		LIN. FT.		EACH		LIN. FT.	
REMOVAL OF PERMANENT PAVEMENT MARKINGS	23600		23600							
CONSTRUCTION PAVEMENT MARKINGS	121000	113960		234960						
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	7040					7040				
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED)							233			
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW)								358		
THERMOPLASTIC PAVEMENT MARKING WHITE (6")									61593	
THERMOPLASTIC PAVEMENT MARKING YELLOW (6")										56980
*ENTIRE PROJECT (TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER)				15000	15000					
TOTALS:			**23600**	**249960**	**15000**	**7040**	**233**	**358**	**61593**	**56980**

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.

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

REMOVAL AND DISPOSAL OF ITEMS

STATION		LOCATION	CONCRETE DRIVEWAYS	SIGN FOUNDATIONS	SIGNS	SPRINKLER SYSTEM
			SQ. YD.	EACH	EACH	EACH
417+60		HWY. 79 - LT.		2	1	
424+10		HWY. 79 - LT.		2	1	
434+70		HWY. 79 - LT.	74			
418+28	424+10	HWY. 79 - LT.				1
TOTALS:			**74**	**4**	**2**	**1**

REMOVAL AND DISPOSAL OF FENCE

STATION	STATION	LOCATION	FENCE	GATES
			LIN. FT.	EACH
209+73	209+92	HWY. 79 - RT.		1
318+62	318+87	HWY. 79 - LT.		1
419+47	421+59	HWY. 79 - LT.	235	2
TOTALS:			**235**	**4**

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
SITE 1				
101+00	102+00	HWY. 79	1	1
105+50	106+00	HWY. 79	1	1
107+50	115+00	HWY. 79	8	8
116+50	134+50	HWY. 79	18	18
140+00	177+40	HWY. 79	38	38
SUBTOTALS SITE 1:			**66**	**66**
SITE 2				
201+00	266+40	HWY. 79	66	66
SUBTOTALS SITE 2:			**66**	**66**
SITE 3				
301+00	372+50	HWY. 79	72	72
374+00	375+00	HWY. 79	1	1
377+20	378+70	HWY. 79	2	2
SUBTOTALS SITE 3:			**75**	**75**
SITE 4				
401+00	418+50	HWY. 79	18	18
420+50	427+00	HWY. 79	7	7
433+50	437+00	HWY. 79	4	4
437+00	447+50	HWY. 79	11	11
461+00	466+40	HWY. 79	6	6
SUBTOTALS SITE 4:			**46**	**46**
TOTALS:			**253**	**253**

BENCH MARKS

STATION	LOCATION	BENCH MARKS
		EACH
160+00	HWY. 79 NE HEADWALL	1
232+02	HWY. 79 NW HEADWALL	1
339+35	HWY. 79 SW HEADWALL	1
TOTAL:		**3**

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

QUANTITIES

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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	84	198
				(2)	QUANTITIES			

EARTHWORK

	STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION			COMPACTED EMBANKMENT	STONE BACKFILL	**SOIL STABILIZATION
				UNDERCUT	TYPICAL	TOTAL			
				CU. YD.			CY. YD.	TON	TON
	SITE 1								
	101+00	177+50	HWY. 79 - STAGE 1	26939	3780	30719	37999	5608	
*	101+00	177+40	HWY. 79 - STAGE 1 MOT		950	950			
	101+00	177+50	HWY. 79 - STAGE 2		5087	5087	278		
	ENTIRE SITE		DRIVEWAYS LT. & RT.				109		
**	ENTIRE SITE								100
	SUBTOTALS SITE 1:			**26939**	**9817**	**36756**	**38386**	**5608**	**100**
	SITE 2								
	200+00	267+00	HWY. 79 - STAGE 1	12064	1143	13207	32175	29140	
*	201+00	266+40	HWY. 79 - STAGE 1 MOT		968	968			
	200+00	267+00	HWY. 79 - STAGE 2		2897	2897	381		
	ENTIRE SITE		DRIVEWAYS LT. & RT.				51		
**	ENTIRE SITE								100
	SUBTOTALS SITE 2:			**12064**	**5008**	**17072**	**32607**	**29140**	**100**
	SITE 3								
	300+00	379+00	HWY. 79 - STAGE 1	12307	2021	14328	47170	52984	
*	301+00	378+70	HWY. 79 - STAGE 1 MOT		622	622			
	300+00	379+00	HWY. 79 - STAGE 2		2278	2278	1282		
	ENTIRE SITE		DRIVEWAYS LT. & RT.				84		
**	ENTIRE SITE								100
	SUBTOTALS SITE 3:			**12307**	**4921**	**17228**	**48536**	**52984**	**100**
	SITE 4								
	400+00	467+00	HWY. 79 - STAGE 1	19729	11777	31506	29647		
*	401+00	466+40	HWY. 79 - STAGE 1 MOT		814	814			
	400+00	467+00	HWY. 79 - STAGE 2		1903	1903	470		
	ENTIRE SITE		DRIVEWAYS LT. & RT.				251		
**	ENTIRE SITE								100
	SUBTOTALS SITE 4:			**19729**	**14494**	**34223**	**30368**		**100**
*	ENTIRE	PROJECT	TO BE USED IF AND WHERE						
			DIRECTED BY THE ENGINEER						100
	TOTALS:			**71039**	**34240**	**105279**	**149897**	**87732**	**500**

* QUANTITY FOR PREPERATION OF AGGREGATE WEDGE PLACEMENT:
SITE 1 = 12.44 CU. YDS./STA.
SITE 2 = 14.80 CU. YDS./STA.
SITE 3 = 8.00 CU. YDS./STA.
SITE 4 = 12.44 CU. YDS./STA.

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

BASIS OF ESTIMATE FOR STONE BACKFILL IS 1.89 TON/CU. YD.

DUMPED RIPRAP AND FILTER BLANKET

STATION	STATION	LOCATION	DUMPED RIPRAP	FILTER BLANKET
			CU. YD.	SQ. YD.
SITE 1				
127+00	176+40	HWY. 79 LT.	1679	6623
SITE 2				
204+00	265+40	HWY. 79 LT.	4071	22037
SITE 3				
302+00	377+70	HWY. 79 LT.	2194	8646
TOTALS:			**7944**	**37306**

FENCING

STATION	STATION	LOCATION	*6' CHAIN LINK FENCE	*20'-0" GATES
			LIN. FT.	EACH
419+47	421+59	HWY. 79 - LT.	212	2
TOTALS:			**212**	**2**

* DENOTES ALTERNATE BID ITEM

CHAIN LINK FENCE BEING PLACED ON PRIVATE PROPERTY SHALL INCLUDE A TOP RAIL. ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER LINEAR FOOT OF CHAIN LINK FENCE.

STATE OF ARKANSAS
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No. 13436
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EROSION CONTROL MATTING

STATION	STATION	LOCATION	LENGTH	CLASS 3
			LIN. FT.	SQ. YD.
SITE 1				
102+00.00	117+50.00	HWY. 79 - LT	1550.00	1377.78
117+88.00	135+36.00	HWY. 79 - LT	1748.00	1553.78
135+74.00	154+60.00	HWY. 79 - LT	1886.00	1676.44
SUBTOTAL SITE 1:				**4608.00**
SITE 3				
304+00.00	317+90.00	HWY. 79 - LT	1390.00	1235.56
319+00.00	325+85.00	HWY. 79 - LT	685.00	608.89
SUBTOTAL SITE 3:				**1844.45**
SITE 4				
402+00.00	404+76.00	HWY. 79 - LT	276.00	245.33
405+37.00	417+28.50	HWY. 79 - LT	1191.50	1059.11
417+71.50	420+38.50	HWY. 79 - LT	267.00	237.33
420+79.50	434+51.50	HWY. 79 - LT	1372.00	1219.56
432+80.00	434+09.50	HWY. 79 - RT	129.50	115.11
434+86.00	455+50.00	HWY. 79 - LT	2064.00	1834.67
448+19.50	453+00.00	HWY. 79 - RT	480.50	427.11
456+10.00	465+00.00	HWY. 79 - LT	890.00	791.11
SUBTOTAL SITE 4:				**5929.33**
TOTAL:				**12381.78**

NOTE: AVERAGE WIDTH = 8'-0"

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL					TEMPORARY EROSION CONTROL								
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	TEMPORARY SEEDING	MULCH COVER	WATER	SAND BAG DITCH CHECKS (E-5)	ROCK DITCH CHECKS (E-6)	SILT FENCE (E-11)	SEDIMENT BASIN (E-14)	OBLITERATION OF SEDIMENT BASIN	*SEDIMENT REMOVAL & DISPOSAL
			ACRE	TON	ACRE	M.GAL.	ACRE	ACRE	ACRE	M.GAL.	BAG	CU.YD.	LIN. FT.	CU.YD.	CU.YD.	CU. YD.
SITE 1																
101+00	177+40	CLEARING AND GRUBBING									154	195	3565			152
101+00	177+40	STAGE 1									88	60				8
101+00	177+40	STAGE 2									22	15				2
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			8.02	16.04	8.02	818.0	8.02	8.02	8.02	163.6	44	30	100	100	100	108
SUBTOTALS SITE 1:			**8.02**	**16.04**	**8.02**	**818.0**	**8.02**	**8.02**	**8.02**	**163.6**	**308**	**300**	**3665**	**100**	**100**	**270**
SITE 2																
201+00	266+40	CLEARING AND GRUBBING									110	60	8170			312
201+00	266+40	STAGE 1									22					1
201+00	266+40	STAGE 2									22					1
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			6.62	13.24	6.62	675.2	6.62	6.62	6.62	135.0	44	30	100	100	100	108
SUBTOTALS SITE 2:			**6.62**	**13.24**	**6.62**	**675.2**	**6.62**	**6.62**	**6.62**	**135.0**	**198**	**90**	**8270**	**100**	**100**	**421**
SITE 3																
301+00	378+70	CLEARING AND GRUBBING									176	90	14080			535
301+00	378+70	STAGE 1														
301+00	378+70	STAGE 2														
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			8.40	16.80	8.40	856.8	8.40	8.40	8.40	171.4	44	30	100	100	100	108
SUBTOTALS SITE 3:			**8.40**	**16.80**	**8.40**	**856.8**	**8.40**	**8.40**	**8.40**	**171.4**	**220**	**120**	**14180**	**100**	**100**	**643**
SITE 4																
401+00	466+40	CLEARING AND GRUBBING									176	90	2725			115
401+00	466+40	STAGE 1									110	45				8
401+00	466+40	STAGE 2									66	30				5
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			7.21	14.42	7.21	735.4	7.21	7.21	7.21	147.1	44	30	100	100	100	108
SUBTOTALS SITE 4:			**7.21**	**14.42**	**7.21**	**735.4**	**7.21**	**7.21**	**7.21**	**147.1**	**396**	**195**	**2825**	**100**	**100**	**236**
TOTALS:			**30.25**	**60.50**	**30.25**	**3085.4**	**30.25**	**30.25**	**30.25**	**617.1**	**1122**	**705**	**28940**	**400**	**400**	**1570**

BASIS OF ESTIMATE:
LIME .....2 TONS / ACRE OF SEEDING
WATER.....102.0 M.G. / ACRE OF SEEDING
WATER.....20.4 M.G. / ACRE OF TEMPORARY SEEDING
SAND BAG DITCH CHECKS.....22 BAGS / LOCATION
ROCK DITCH CHECKS.....15 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.

QUANTITIES

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WORKSPACE: AHTD
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	85	198
				(2)		QUANTITIES		

DRIVEWAYS & TURNOUTS

STATION	SIDE	LOCATION	WIDTH	PORTLAND CEMENT CONCRETE DRIVEWAY	ACHM SURFACE COURSE (1/2") 220 LBS. PER SQ. YD. (PG 64-22)		AGGREGATE BASE COURSE (CLASS 7)	SIDE DRAINS							STANDARD DRAWINGS
								18"	24"	36"	48"	54"	21"X15"	42"X29"	57"X38"	
			FEET	SQ. YD.	SQ. YD.	TON	TON	LIN. FT.								
SITE 1																
117+69	LT.	HWY. 79 SITE 1	16		103.87	11.43	42.41		38							PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
135+70	LT.	HWY. 79 SITE 1 (DBL. 24" PIPE CULVERT)	16		141.86	15.60	57.93		76							PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
136+80	RT.	HWY. 79 SITE 1	16		74.91	8.24	30.59									
171+60	LT.	HWY. 79 SITE 1	16		126.20	13.88	51.53		31							PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
SUBTOTALS SITE 1:					**446.84**	**49.15**	**182.46**		**145**							
SITE 2																
209+83	RT.	HWY. 79 SITE 2	16		196.54	21.62	80.25		38							PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
210+54	LT.	HWY. 79 SITE 2	16		295.82	32.54	120.79			57						PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
SUBTOTALS SITE 2:					**492.36**	**54.16**	**201.04**		**38**	**57**						
SITE 3																
318+15	LT.	HWY. 79 SITE 3	16		90.51	9.96	36.96									
318+70	LT.	HWY. 79 SITE 3	16		82.99	9.13	33.89									
374+36	RT.	HWY. 79 SITE 3	20		97.35	10.71	39.75									
374+62	LT.	HWY. 79 SITE 3	16		181.26	19.94	74.01									
SUBTOTALS SITE 3:					**452.11**	**49.74**	**184.61**									
SITE 4																
404+98	LT.	HWY. 79 SITE 4	20		239.36	26.33	97.74					61				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
417+50	LT.	HWY. 79 SITE 4	20		157.37	17.31	64.26				43					PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
417+54	RT.	HWY. 79 SITE 4	20		105.61	11.62	43.12									
420+59	LT.	HWY. 79 SITE 4	22		123.74	13.61	50.53								41	PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
434+70	LT.	HWY. 79 SITE 4	16	81.32										35		PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
448+03	RT.	HWY. 79 SITE 4	22		105.61	11.62	43.12						33			PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
456+10	LT.	HWY. 79 SITE 4	20		181.01	19.91	73.91						51			PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
456+92	RT.	HWY. 79 SITE 4	20		153.21	16.85	62.56	42								PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
SUBTOTALS SITE 4:				**81.32**	**1065.91**	**117.25**	**435.24**	**42**			**43**	**61**	**84**	**35**	**41**	
* ENTIRE PROJECT TEMPORARY DRIVES						16.00	60.00									
TOTALS:				**81.32**	**2457.22**	**286.30**	**1063.35**	**42**	**183**	**57**	**43**	**61**	**84**	**35**	**41**	

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.

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

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
SITE 1				
101+00.00	102+00.00	MAIN LANES	34.00	377.78
176+40.00	177+40.00	MAIN LANES	34.00	377.78
SUBTOTAL SITE 1:				**755.56**
SITE 2				
201+00.00	202+00.00	MAIN LANES	34.00	377.78
265+40.00	266+40.00	MAIN LANES	34.00	377.78
SUBTOTAL SITE 2:				**755.56**
SITE 3				
301+00.00	302+00.00	MAIN LANES	34.00	377.78
377+70.00	378+70.00	MAIN LANES	34.00	377.78
SUBTOTAL SITE 3:				**755.56**
SITE 4				
401+00.00	402+00.00	MAIN LANES	34.00	377.78
465+40.00	466+40.00	MAIN LANES	34.00	377.78
SUBTOTAL SITE 4:				**755.56**
RIGHT SHOULDER COLD MILLING FOR MAINTENANCE OF TRAFFIC				
101+00.00	177+40.00	SITE 1	6.00	5093.33
201+00.00	266+40.00	SITE 2	6.00	4360.00
301+00.00	378+70.00	SITE 3	6.00	5180.00
401+00.00	466+40.00	SITE 4	6.00	4360.00
SUBTOTAL:				**18993.33**
TOTAL:				**22015.57**

NOTE: AVERAGE MILLING DEPTH 1".

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

STRUCTURES

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT (CLASS III) 24"	REINFORCED CONCRETE PIPE CULVERT (CLASS IV) 54"	FLARED END SECTIONS FOR R.C. PIPE CULVERTS 24"	FLARED END SECTIONS FOR R.C. PIPE CULVERTS 54"	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.	
SITE 1														
132+98	HWY. 79 SITE 1 EXTEND 5'X2' R.C. BOX CULVERT LT.					5	2	40	19.01	1854	11	5	0.06	SPECIAL DETAILS, RCB-1, RCB-2, RCB-3
145+78	HWY. 79 SITE 1 EXTEND 3'X2' R.C. BOX CULVERT LT.					3	2	42	12.79	1240	7	5	0.06	SPECIAL DETAILS, RCB-1, RCB-2, RCB-3
171+78	HWY. 79 SITE 1 EXTEND 24" R.C. PIPE CULVERT LT.	14		1								8	0.10	PCC-1, FES-1, FES-2
SUBTOTALS SITE 1:		**14**		**1**					**31.80**	**3094**	**18**	**18**	**0.22**	
SITE 2														
206+46	HWY.79 SITE 2 EXTEND DBL. 6'X6' R.C. BOX CULVERT LT.					6	6	14	25.14	2986	10	11	0.14	W-X003-1, R-200X-0, RCB-1, RCB-2, RCB-3
SUBTOTALS SITE 2:									**25.14**	**2986**	**10**	**11**	**0.14**	
SITE 3														
339+35	HWY. 79 SITE 3 EXTEND DBL. 6'X3' R.C. BOX CULVERT LT.					6	3	37	35.87	5981	18	11	0.14	W-X003-1, R-200X-0, RCB-1, RCB-2, RCB-3
360+65	HWY. 79 SITE 3 CONST. 54" R.C. PIPE CULVERT		84		2							70	0.88	PCC-1, FES-1, FES-2
SUBTOTALS SITE 3:			**84**		**2**				**35.87**	**5981**	**18**	**81**	**1.02**	
SITE 4														
424+34	HWY. 79 SITE 4 EXTEND 24" R.C. PIPE CULVERT LT.	36		1								8	0.10	PCC-1, FES-1, FES-2
SUBTOTALS SITE 4:		**36**		**1**								**8**	**0.10**	
SUBTOTALS:		**50**	**84**	**2**	**2**				**92.81**	**12061**	**46**	**118**	**1.48**	
STRUCTURES OVER 20' - 0" SPAN														
SITE 1														
159+97	HWY. 79 SITE 1 EXTEND TRP. 6'X4' R.C. BOX CULVERT LT.					6	4	25	90.34	13882	37	16	0.20	W-X003-1, R-300X-0, RCB-1, RCB-2, RCB-3
	HWY. 79 SITE 1 CONST. 6'X4' R.C BOX CULVERT					6	4	101						W-X003-1, R-100X-0, RCB-1, RCB-2, RCB-3
SUBTOTALS SITE 1:									**90.34**	**13882**	**37**	**16**	**0.20**	
SITE 2														
232+02	HWY. 79 SITE 2 EXTEND TRP. 6'X6' R.C. BOX CULVERT LT.					6	6	24	48.15	7191	17	12	0.15	W-X003-1, R-300X-0, RCB-1, RCB-2, RCB-3
SUBTOTALS SITE 2:									**48.15**	**7191**	**17**	**12**	**0.15**	
SUBTOTALS:									**138.49**	**21073**	**54**	**28**	**0.35**	
TOTALS:		**50**	**84**	**2**	**2**				**231.30**	**33134**	**100**	**146**	**1.83**	

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

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

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

RUMBLE STRIPS IN ASPHALT SHOULDERS

STATION	STATION	LOCATION	* RUMBLE STRIPS IN ASPHALT SHOULDERS
			LIN.FT.
SITE 1			
101+00	136+58	HWY. 79 RT.	2846
137+26	177+40	HWY. 79 RT.	3211
101+00	117+36	HWY. 79 LT.	1309
118+02	135+19	HWY. 79 LT.	1374
135+95	171+26	HWY. 79 LT.	2825
171+93	177+40	HWY. 79 LT.	438
SUBTOTAL SITE 1:			**12003**
SITE 2			
201+00	209+50	HWY. 79 RT.	680
210+16	266+40	HWY. 79 RT.	4499
201+00	210+21	HWY. 79 LT.	737
210+87	266+40	HWY. 79 LT.	4442
SUBTOTAL SITE 2:			**10358**
SITE 3			
301+00	374+01	HWY. 79 RT.	5841
374+71	378+70	HWY. 79 RT.	319
301+00	317+82	HWY. 79 LT.	1346
319+06	374+29	HWY. 79 LT.	4418
374+95	378+70	HWY. 79 LT.	300
SUBTOTAL SITE 3:			**12224**
SITE 4			
401+00	416+99	HWY. 79 RT.	1279
418+09	447+67	HWY. 79 RT.	2366
448+39	456+51	HWY. 79 RT.	650
457+84	466+40	HWY. 79 RT.	685
401+00	404+46	HWY. 79 LT.	277
405+69	416+95	HWY. 79 LT.	900
418+05	420+23	HWY. 79 LT.	174
420+95	434+36	HWY. 79 LT.	1073
435+03	455+35	HWY. 79 LT.	1626
456+34	466+40	HWY. 79 LT.	805
SUBTOTAL SITE 4:			**9835**
TOTAL:			**44420**

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

QUANTITIES

rnforfner 2/4/2021 8:12:33 AM
WORKSPACE: AHTD
L:\2017\17017525 - Wabbaseka - Stuttgart\Drawings\r020630_01Y_01.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	86	198
				(2)	QUANTITIES			

PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

STATION	LOCATION	WIDTH	LENGTH	TON
		FEET		
STAGE 1				
132+98	HWY. 79 SITE 1	8.00	22	7
145+78	HWY. 79 SITE 1	6.00	22	5
159+97	HWY. 79 SITE 1	29.00	22	25
171+76	HWY. 79 SITE 1	4.00	22	3
SUBTOTAL SITE 1:				**40**
STAGE 2				
206+46	HWY. 79 SITE 2	16.00	22	14
232+02	HWY. 79 SITE 2	23.00	22	20
SUBTOTAL SITE 2:				**34**
STAGE 3				
339+35	HWY. 79 SITE 3	16.00	22	14
360+65	HWY. 79 SITE 3	6.50	22	6
SUBTOTAL SITE 3:				**20**
STAGE 4				
424+34	HWY. 79 SITE 4	4.00	22	3
SUBTOTAL SITE 4:				**3**
TOTAL:				**97**

AVG. DEPTH (FT) = 0.5

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	TON	TACK COAT GALLON
RIGHT SHOULDER PATCHING FOR MOT		
*SITE 1	56	
*SITE 2	48	
*SITE 3	57	
*SITE 4	56	
**ENTIRE PROJECT - TO BE USED F AND WHERE	66	131
DIRECTED BY THE ENGINEER		
TOTALS:	**283**	**131**

BASIS OF ESTIMATE:
*10% OF ACHM SURFACE COURSE FOR RIGHT SHOULDER INLAY FOR MOT

**ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC....25 TON/MILE
TACK COAT FOR MAINTENANCE OF TRAFFIC.....50 GAL./MILE

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

ACHM PATCHING OF EXISTING ROADWAY

DESCRIPTION	TON
ENTIRE PROJECT - TO BE USED IF AND WHERE	350
DIRECTED BY THE ENGINEER	
TOTAL:	**350**

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

SELECTED PIPE BEDDING

LOCATION	SELECTED PIPE BEDDING CU.YD.
ENTIRE PROJECT TO BE USED IF	
AND WHERE DIRECTED BY THE	250
ENGINEER	
TOTAL:	**250**

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

4" PIPE UNDERDRAIN

STATION	STATION	LOCATIONS	4" PIPE UNDERDRAINS LIN. FT.	UNDERDRAIN OUTLET PROTECTORS EACH
* ENTIRE PROJECT TO BE USED IF AND			2500	4
WHERE DIRECTED BY THE ENGINEER				
TOTALS:			**2500**	**4**

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

BASE AND SURFACING

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT (0.05 GAL. PER SQ. YD.)			TACK COAT (0.17 GAL. PER SQ. YD.)			TOTAL GALLONS	ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")								
				TON / STATION	TON	TOTAL WID.	SQ.YD.	GALLON	TOTAL WID.	SQ.YD.	GALLON		AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	TOTAL PG 64-22
			FEET			FEET			FEET				FEET			TON	FEET			TON	FEET			TON	TON
MAIN LANES																								
SITE 1																								
101+00.00	102+00.00	TRANSITION	100.00	105.38	105.38	35.98	399.77	19.99				19.99	7.65	84.95	660	28.03	7.56	84.03	220	9.24	37.00	411.11	220	45.22	54.46
102+00.00	110+66.45	HWY. 79 - NOTCH AND WIDEN	866.45	134.50	1165.38	58.83	5664.02	283.20				283.20	15.29	1472.17	660	485.82	15.13	1456.12	220	160.17	40.00	3850.89	220	423.60	583.77
110+66.45	112+66.45	HWY. 79 - NOTCH AND WIDEN	200.00	157.88	315.75	76.83	1707.41	85.37				85.37	21.29	473.15	660	156.14	21.13	469.44	220	51.64	45.00	1000.00	220	110.00	161.64
112+66.45	155+20.00	HWY. 79 - NOTCH AND WIDEN	4253.55	181.25	7709.56	94.83	44819.85	2240.99				2240.99	27.29	12898.51	660	4256.51	27.13	12819.73	220	1410.17	50.00	23630.83	220	2599.39	4009.56
155+20.00	164+80.00	HWY. 79 - FULL DEPTH LT. SHOULDER	960.00	150.25	1442.40	112.83	12035.56	601.78				601.78	33.29	3551.11	660	1171.87	33.13	3533.33	220	388.67	56.00	5973.33	220	657.07	1045.74
164+80.00	165+91.25	HWY. 79 - NOTCH AND WIDEN	111.25	181.25	201.64	94.83	1172.25	58.61				58.61	27.29	337.36	660	111.33	27.13	335.30	220	36.88	50.00	618.06	220	67.99	104.87
165+91.25	172+51.25	HWY. 79 - NOTCH AND WIDEN	660.00	157.88	1041.98	76.83	5634.45	281.72				281.72	21.29	1561.39	660	515.26	21.13	1549.17	220	170.41	45.00	3300.00	220	363.00	533.41
172+51.25	176+40.00	HWY. 79 - NOTCH AND WIDEN	388.75	134.50	522.87	58.83	2541.28	127.06				127.06	15.29	660.52	660	217.97	15.13	653.32	220	71.87	40.00	1727.78	220	190.06	261.93
176+40.00	177+40.00	TRANSITION	100.00	105.38	105.38	35.98	399.77	19.99				19.99	7.65	84.95	660	28.03	7.56	84.03	220	9.24	37.00	411.11	220	45.22	54.46
101+00.00	177+40.00	RT. SHOULDER INLAY FOR MOT	7640.00	26.13	1996.59				6.00	5093.33	865.87	865.87									6.00	5093.33	220	560.27	560.27
SUBTOTALS SITE 1:					**14606.93**		**74374.36**	**371871**		**5093.33**	**865.87**	**4584.58**		**21124.11**		**6970.96**		**20984.47**		**2308.29**		**46016.44**		**5061.82**	**7370.11**
SITE 2																									
201+00.00	202+00.00	TRANSITION	100.00	105.38	105.38	35.98	399.77	19.99				19.99	7.65	84.95	660	28.03	7.56	84.03	220	9.24	37.00	411.11	220	45.22	54.46
202+00.00	202+81.68	HWY. 79 - NOTCH AND WIDEN	81.68	134.50	109.86	58.83	533.95	26.70				26.70	15.29	138.78	660	45.80	15.13	137.27	220	15.10	40.00	363.02	220	39.93	55.03
202+81.68	209+41.68	HWY. 79 - NOTCH AND WIDEN	660.00	150.63	994.13	76.83	5634.45	281.72				281.72	21.29	1561.39	660	515.26	21.13	1549.17	220	170.41	45.00	3300.00	220	363.00	533.41
209+41.68	263+40.00	HWY. 79 - NOTCH AND WIDEN	5398.32	166.75	9001.70	94.83	56882.34	2844.12				2844.12	27.29	16369.93	660	5402.08	27.13	16269.94	220	1789.69	50.00	29990.67	220	3298.97	5088.66
263+40.00	265+40.00	HWY. 79 - NOTCH AND WIDEN	200.00	150.63	301.25	76.83	1707.41	85.37				85.37	21.29	473.15	660	156.14	21.13	469.44	220	51.64	45.00	1000.00	220	110.00	161.64
265+40.00	266+40.00	TRANSITION	100.00	105.38	105.38	35.98	399.77	19.99				19.99	7.65	84.95	660	28.03	7.56	84.03	220	9.24	37.00	411.11	220	45.22	54.46
201+00.00	266+40.00	RT. SHOULDER INLAY FOR MOT	6540.00	31.11	2034.67				6.00	4360.00	741.20	741.20									6.00	4360.00	220	479.60	479.60
SUBTOTALS SITE 2:					**12652.37**		**65557.69**	**3277.89**		**4360.00**	**741.20**	**4019.09**		**18713.15**		**6175.34**		**18593.88**		**2045.32**		**39835.91**		**4381.94**	**6427.26**
SITE 3																									
301+00.00	302+00.00	TRANSITION	100.00	105.38	105.38	35.98	399.77	19.99				19.99	7.65	84.95	660	28.03	7.56	84.03	220	9.24	37.00	411.11	220	45.22	54.46
302+00.00	310+48.94	HWY. 79 - NOTCH AND WIDEN	848.94	134.50	1141.82	58.83	5549.56	277.48				277.48	15.29	1442.42	660	476.00	15.13	1426.69	220	156.94	40.00	3773.07	220	415.04	571.98
310+48.94	312+48.94	HWY. 79 - NOTCH AND WIDEN	200.00	157.88	315.75	76.83	1707.41	85.37				85.37	21.29	473.15	660	156.14	21.13	469.44	220	51.64	45.00	1000.00	220	110.00	161.64
312+48.94	365+91.06	HWY. 79 - NOTCH AND WIDEN	5342.12	181.25	9682.59	94.83	56290.16	2814.51				2814.51	27.29	16199.50	660	5345.84	27.13	16100.56	220	1771.06	50.00	29678.44	220	3264.63	5035.69
365+91.06	372+51.06	HWY. 79 - NOTCH AND WIDEN	660.00	157.88	1041.98	76.83	5634.45	281.72				281.72	21.29	1561.39	660	515.26	21.13	1549.17	220	170.41	45.00	3300.00	220	363.00	533.41
372+51.06	377+70.00	HWY. 79 - NOTCH AND WIDEN	518.94	134.50	697.97	58.83	3392.33	169.62				169.62	15.29	881.72	660	290.97	15.13	872.11	220	95.93	40.00	2306.40	220	253.70	349.63
377+70.00	378+70.00	TRANSITION	100.00	105.38	105.38	35.98	399.77	19.99				19.99	7.65	84.95	660	28.03	7.56	84.03	220	9.24	37.00	411.11	220	45.22	54.46
301+00.00	378+70.00	RT. SHOULDER INLAY FOR MOT	7770.00	16.80	1305.36				6.00	5180.00	880.60	880.60									6.00	5180.00	220	569.80	569.80
SUBTOTALS SITE 3:					**14396.23**		**73373.45**	**3668.68**		**5180.00**	**880.60**	**4549.28**		**20728.08**		**6840.27**		**20586.03**		**2264.46**		**46060.13**		**5066.61**	**7331.07**
SITE 4																									
401+00.00	402+00.00	TRANSITION	100.00	105.38	105.38	35.98	399.77	19.99				19.99	7.65	84.95	660	28.03	7.56	84.03	220	9.24	37.00	411.11	220	45.22	54.46
402+00.00	403+19.80	HWY. 79 - NOTCH AND WIDEN	119.80	134.50	161.13	58.83	783.14	39.16				39.16	15.29	203.55	660	67.17	15.13	201.33	220	22.15	40.00	532.44	220	58.57	80.72
403+19.80	409+79.80	HWY. 79 - NOTCH AND WIDEN	660.00	150.63	994.13	76.83	5634.45	281.72				281.72	21.29	1561.39	660	515.26	21.13	1549.17	220	170.41	45.00	3300.00	220	363.00	533.41
409+79.80	463+40.00	HWY. 79 - NOTCH AND WIDEN	5360.20	166.75	8938.13	94.83	56480.67	2824.03				2824.03	27.29	16254.33	660	5363.93	27.13	16155.05	220	1777.06	50.00	29778.89	220	3275.68	5052.74
463+40.00	465+40.00	HWY. 79 - NOTCH AND WIDEN	200.00	150.63	301.25	76.83	1707.41	85.37				85.37	21.29	473.15	660	156.14	21.13	469.44	220	51.64	45.00	1000.00	220	110.00	161.64
465+40.00	466+40.00	TRANSITION	100.00	105.38	105.38	35.98	399.77	19.99				19.99	7.65	84.95	660	28.03	7.56	84.03	220	9.24	37.00	411.11	220	45.22	54.46
401+00.00	466+40.00	RT. SHOULDER INLAY FOR MOT	6540.00	26.13	1709.12				6.00	4360.00	741.20	741.20									6.00	4360.00	220	479.60	479.60
SUBTOTALS SITE 4:					**12314.52**		**65405.21**	**3270.26**		**4360.00**	**741.20**	**4011.46**		**18662.32**		**6158.56**		**18543.05**		**2039.74**		**39793.55**		**4377.29**	**6417.03**
ADDITIONAL FOR LEVELING																									
SITE 1																									
101+00.00	177+40.00	HWY. 79 - NOTCH AND WIDEN	7640.00						17.00	14431.11	2453.29	2453.29					17.00	14431.11	VAR.	1909.33					1909.33
SITE 2																									
201+00.00	266+40.00	HWY. 79 - NOTCH AND WIDEN	6540.00						19.00	13806.67	2347.13	2347.13					19.00	13806.67	VAR.	2255.82					2255.82
SITE 3																									
301+00.00	378+70.00	HWY. 79 - NOTCH AND WIDEN	7770.00						17.00	14676.67	2495.03	2495.03					17.00	14676.67	VAR.	1879.74					1879.74
SITE 4																									
401+00.00	466+40.00	HWY. 79 - NOTCH AND WIDEN	6540.00						19.00	13806.67	2347.13	2347.13					19.00	13806.67	VAR.	1791.79					1791.79
SUBTOTALS:										**56721.12**	**9642.58**	**9642.58**						**56721.12**		**7836.68**					**7836.68**
TOTALS:					**53970.05**		**278710.71**	**13935.54**		**75714.45**	**12871.45**	**26806.99**		**79227.66**		**26145.13**		**135428.55**		**16494.49**		**171706.03**		**18887.66**	**35382.15**

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
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

QUANTITIES

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WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	87	198
				(2)	SUMMARY OF QUANTITIES & REVISIONS			

SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM		QUANTITY	UNIT
201	CLEARING		253	STATION
201	GRUBBING		253	STATION
202	REMOVAL AND DISPOSAL OF FENCE		235	LIN. FT.
202	REMOVAL AND DISPOSAL OF GATES		4	EACH
202	REMOVAL AND DISPOSAL OF CONCRETE DRIVEWAYS		74	SQ. YD.
202	REMOVAL AND DISPOSAL OF SIGN FOUNDATIONS		4	EACH
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS		16	EACH
202	REMOVAL AND DISPOSAL OF SIGNS		2	EACH
202	REMOVAL AND DISPOSAL OF SPRINKLER SYSTEM		1	EACH
207	STONE BACKFILL		87732	TON
SS & 210	UNCLASSIFIED EXCAVATION		105279	CU. YD.
SP & 210	COMPACTED EMBANKMENT		149897	CU. YD.
SP & 210	SOIL STABILIZATION		500	TON
SS & 303	AGGREGATE BASE COURSE (CLASS 7)		55033	TON
SS & 401	TACK COAT		26938	GAL.
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")		25047	TON
SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")		1098	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")		33814	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")		1855	TON
412	COLD MILLING ASPHALT PAVEMENT		22016	SQ. YD.
SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC		283	TON
SP, SS, & 415	ACHM PATCHING OF EXISTING ROADWAY		350	TON
SS & 505	PORTLAND CEMENT CONCRETE DRIVEWAY		81.32	SQ. YD.
601	MOBILIZATION		1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE		1	EACH
SP, SS, & 603	MAINTENANCE OF TRAFFIC		1.00	LUMP SUM
SS & 604	SIGNS		1311	SQ. FT.
SP, SS, & 604	CONSTRUCTION PROJECT INFORMATION SIGN UPDATE		4	EACH
SS & 604	BARRICADES		160	LIN. FT.
SS & 604	TRAFFIC DRUMS		396	EACH
SS & 604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER		15410	LIN. FT.
SS & 604	RELOCATING PRECAST CONCRETE BARRIER		13430	LIN. FT.
604	CONSTRUCTION PAVEMENT MARKINGS		249960	LIN. FT.
604	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS		7040	LIN. FT.
604	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS		15000	LIN. FT.
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS		23600	LIN. FT.
SS & 604	VERTICAL PANELS		152	EACH
606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		50	LIN. FT.
606	54" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV)		84	LIN. FT.
SP, SS, & 606	18" SIDE DRAIN		42	LIN. FT.
SP, SS, & 606	24" SIDE DRAIN		183	LIN. FT.
SP, SS, & 606	36" SIDE DRAIN		57	LIN. FT.
SP, SS, & 606	48" SIDE DRAIN		43	LIN. FT.
SS & 606	54" SIDE DRAIN		61	LIN. FT.
SS & 606	21" X 15" SIDE DRAIN		84	LIN. FT.
SS & 606	42" X 29" SIDE DRAIN		35	LIN. FT.
SS & 606	57" X 38" SIDE DRAIN		41	LIN. FT.
606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		2	EACH
606	54" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		2	EACH
606	SELECTED PIPE BEDDING		250	CU. YD.
SS & 611	4" PIPE UNDERDRAINS		2500	LIN. FT.
SS & 611	UNDERDRAIN OUTLET PROTECTORS		4	EACH
615	PAVEMENT REPAIR OVER CULVERTS (ASPHALT)		97	TON
* 619	6' STEEL CHAIN LINK FENCE	(ALTERNATE NO. 1)	212	LIN. FT.
* 619	6' ALUMINUM CHAIN LINK FENCE	(ALTERNATE NO. 2)	212	LIN. FT.
* 619	20' STEEL GATES	(ALTERNATE NO. 1)	2	EACH
* 619	20' ALUMINUM GATES	(ALTERNATE NO. 2)	2	EACH
620	LIME		61	TON
620	SEEDING		30.25	ACRE
SS & 620	MULCH COVER		60.50	ACRE
620	WATER		3704.3	M. GAL.
621	TEMPORARY SEEDING		30.25	ACRE
621	SILT FENCE		28940	LIN. FT.
621	SAND BAG DITCH CHECKS		1122	BAG
621	SEDIMENT BASIN		400	CU. YD.
621	OBLITERATION OF SEDIMENT BASIN		400	CU. YD.
621	SEDIMENT REMOVAL AND DISPOSAL		1570	CU. YD.
621	ROCK DITCH CHECKS		705	CU. YD.
623	SECOND SEEDING APPLICATION		30.25	ACRE
624	SOLID SODDING		146	SQ. YD.
626	EROSION CONTROL MATTING (CLASS 3)		12382	SQ. YD.
635	ROADWAY CONSTRUCTION CONTROL		1.00	LUMP SUM
642	RUMBLE STRIPS IN ASPHALT SHOULDERS		44420	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (6")		61593	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING YELLOW (6")		56980	LIN. FT.
721	RAISED PAVEMENT MARKERS (TYPE II)		591	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER		12	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)		24	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER (RELOCATION)		12	EACH
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY		46	CU. YD.
SS & 802	CLASS S CONCRETE-ROADWAY		92.81	CU. YD.
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)		12061	POUND
816	FILTER BLANKET		37306	SQ. YD.
816	DUMPED RIPRAP		7944	CU. YD.
	STRUCTURES OVER 20' SPAN			
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY		54	CU. YD.
SS & 802	CLASS S CONCRETE-ROADWAY		138.49	CU. YD.
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)		21073	POUND

* DENOTES ALTERNATE BID ITEMS.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

REVISIONS

DATE	REVISION	SHEET NUMBER

SUMMARY OF QUANTITIES & REVISIONS

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WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	88	198
				(2)	SURVEY CONTROL DETAILS			

SURVEY CONTROL COORDINATES

Project Name: s020630
Date: 10/4/2017
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	1930487.9060	1375114.3165	196.84	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
2	1931017.2822	1375635.3192	197.53	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
3	1931587.6930	1376170.4197	197.67	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
4	1932182.7234	1376732.0360	197.70	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
5	1932811.7050	1377324.4112	195.95	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
6	1933480.9093	1377948.6235	192.98	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
7	1934101.1133	1378529.4121	192.32	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
8	1934701.5191	1379092.0634	191.89	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
9	1935306.8802	1379657.4179	193.53	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
10	1935910.0601	1380238.5974	193.15	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
11	1936493.0668	1380781.8735	191.53	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
12	1941201.5049	1385211.5756	193.69	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
13	1941945.3659	1385831.6286	192.84	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
14	1942568.2921	1386422.4578	189.87	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
15	1943155.0250	1386973.5834	191.91	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
16	1943775.6691	1387559.3012	189.31	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
17	1944383.2193	1388120.6364	186.41	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
18	1945013.2360	1388717.4510	191.28	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
19	1945637.4033	1389305.4360	186.85	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
20	1953682.3989	1413895.2869	195.65	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
21	1954147.3789	1414619.0607	194.96	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
22	1954494.8943	1415230.8822	195.34	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
23	1954856.5277	1415945.1963	195.60	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
24	1955364.5235	1416745.0300	194.52	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
25	1955778.9222	1417471.9959	195.45	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
26	1956228.7203	1418259.0348	196.20	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
27	1956591.7957	1418891.6976	195.17	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
28	1957003.8904	1419608.1789	194.53	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
29	1962660.1566	1427868.6803	198.28	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
30	1963234.1457	1428400.9327	198.66	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
31	1963694.2324	1428897.1768	198.99	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
32	1964338.3980	1429577.1187	198.33	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
33	1964903.1245	1430173.1392	196.61	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
34	1965403.9708	1430764.9034	197.50	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
35	1965931.1669	1431322.8884	199.22	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
36	1966496.0623	1431920.2240	199.40	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
37	1967043.3097	1432499.3324	200.19	CTL	5/8" REBAR W/ 2" ALUMINUM CAP
100	1961924.9271	1426981.7061	191.92	GPS	AHTD GPS MON. 010002
101	1960762.9231	1425760.9402	192.43	GPS	AHTD GPS MON. 010002A
102	1963274.3453	1434318.3798	196.83	GPS	AHTD GPS MON. 010015
103	1963228.6713	1432296.3923	198.79	GPS	AHTD GPS MON. 010015A
104	1941715.6451	1381786.8344	188.35	GPS	AHTD GPS MON. 350036
105	1941714.1740	1379900.3256	192.76	GPS	AHTD GPS MON. 350036A
106	1931497.8292	1376077.4987	196.33	GPS	USACOE BM BMD3
900	1938628.3977	1382818.7611	188.38	TBM	SQ CUT IN FRENCH DRAIN WABBASEKA
901	1934666.9069	1374026.5533	193.96	TBM	AHTD CAP SW END OF BR WABBASEKA
902	1947444.1070	1391261.1293	189.62	TBM	AHTD CAP CENTER OF HW AHTD CAP
903	1962013.4519	1427151.6310	189.66	TBM	SQ CUT IN RCP STUTTGART
904	1957643.0306	1420718.3826	196.49	TBM	AHTD CAP SE END HW LOG MILE 4.71
905	1959779.4956	1424479.8105	202.13	TBM	AHTD CAP SE END OF BR STUTTGART

*Note - Rebar and Cap - Standard - 5/8" Rebar with 2" Aluminum Cap stamped
*(standard markings common to all caps), or as indicated
(other markings indicated in the point description of the individual point).
ALL DISTANCES ARE GROUND.
USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT.
A PROJECT CAF OF 0.999935421 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 s020630gi.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: 880088-880088A
CONVERGENCE ANGLE: 00-11-18 RIGHT AT LAT N 34-25-42 LON W091-39-48 (POINT NUMBER 20)
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

ALIGNMENT NAME: HWY. 79 - SITE 1

POINT	STATION	TYPE	NORTHING	EASTING
8000	100+50.00	POB	1931050.3315	1375694.6854
8001	102+00.00	PC	1931159.5684	1375797.4823
8002	107+25.34	PRC	1931550.2614	1376148.6117
8003	112+66.45	PT	1931952.4329	1376510.5574
8004	127+53.72	PI	1933034.1240	1377531.2937
8005	132+70.47	PI	1933411.5539	1377884.2519
8006	157+86.51	PI	1935244.4248	1379607.9260
8007	165+91.25	PC	1935830.0992	1380159.8311
8008	171+22.49	PRC	1936208.1383	1380532.9897
8009	176+40.00	PT	1936576.1942	1380896.7293
8010	178+40.00	POE	1936721.5852	1381034.0664

ALIGNMENT NAME: HWY. 79 - SITE 2

POINT	STATION	TYPE	NORTHING	EASTING
8100	200+00.00	POB	1942711.8328	1386589.2018
8101	202+00.00	PC	1942857.4736	1386726.2740
8102	205+70.84	PRC	1943131.5852	1386976.0193
8103	209+41.68	PT	1943405.6968	1387225.7645
8104	213+34.39	PI	1943691.6686	1387494.9116
8105	224+78.94	PI	1944523.6431	1388280.9237
8106	241+09.30	PI	1945711.1323	1389398.0469
8107	250+17.18	PI	1946371.3062	1390021.2759
8108	257+72.29	PC	1946921.4016	1390538.5509
8109	261+66.15	PRC	1947203.6420	1390813.2424
8110	265+40.00	PT	1947471.3119	1391074.2088
8111	267+40.00	POE	1947616.7759	1391211.4736

ALIGNMENT NAME: HWY. 79 - SITE 3

POINT	STATION	TYPE	NORTHING	EASTING
8200	300+00.00	POB	1955303.0256	1416683.8502
8201	302+00.00	PC	1955402.3206	1416857.4604
8202	307+24.47	PRC	1955673.0321	1417306.6097
8203	312+48.94	PT	1955943.7435	1417755.7590
8204	316+51.22	PI	1956143.4642	1418104.9564
8205	349+49.21	PI	1957783.3119	1420966.3710
8206	365+91.06	PC	1958600.1200	1422390.6214
8207	371+15.53	PRC	1958850.5390	1422851.3926
8208	376+40.00	PT	1959100.9581	1423312.1637
8209	379+40.00	POE	1959250.2060	1423572.4041

ALIGNMENT NAME: HWY. 79 - SITE 4

POINT	STATION	TYPE	NORTHING	EASTING
8300	400+00.00	POB	1963361.9295	1428574.2125
8301	402+00.00	PC	1963498.5690	1428720.2593
8302	406+22.94	PRC	1963793.1550	1429023.7037
8303	409+79.80	PT	1964042.4567	1429279.0248
8304	425+66.97	PI	1965133.4688	1430431.7536
8305	457+98.32	PC	1967352.7929	1432780.4218
8306	461+69.16	PRC	1967603.0835	1433054.0356
8307	465+40.00	PT	1967853.3741	1433327.6493
8308	467+40.00	POE	1967990.7360	1433473.0168

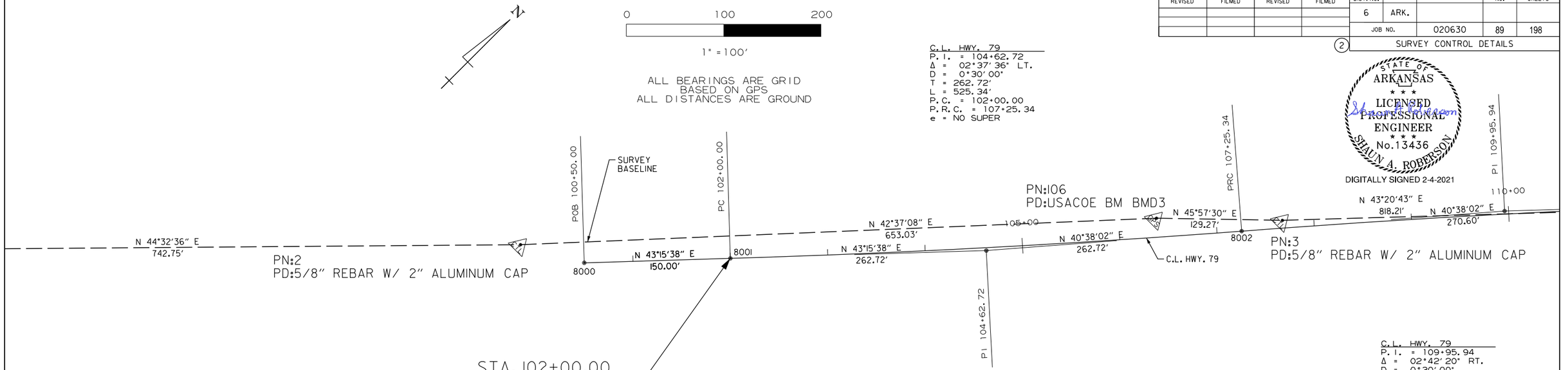
SURVEY CONTROL DETAILS

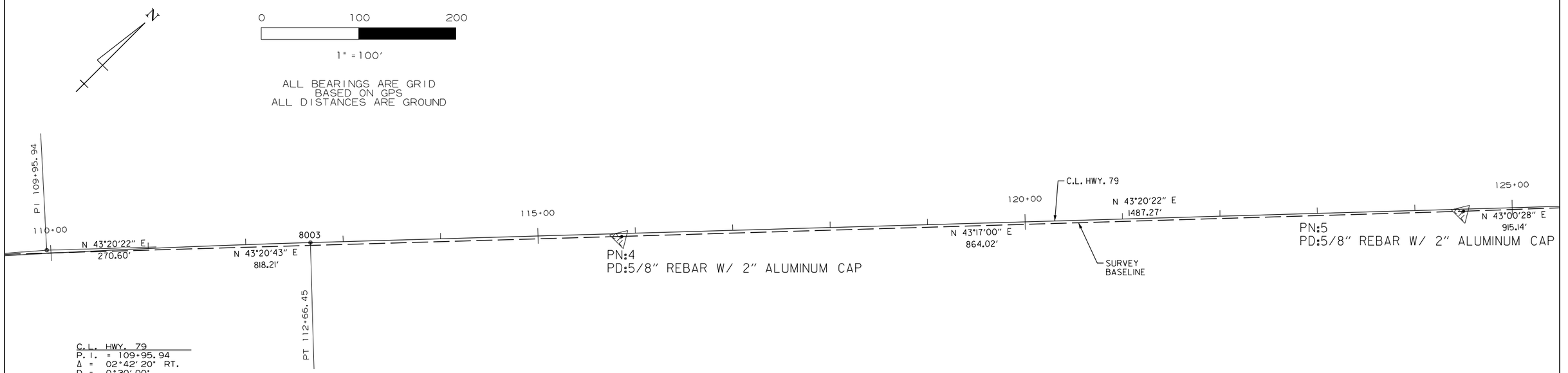
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		020630	89	198

(2) SURVEY CONTROL DETAILS





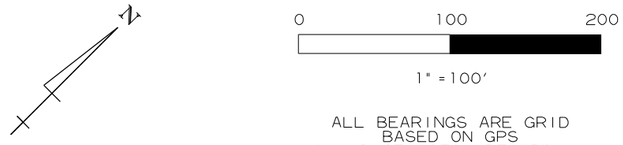
SURVEY CONTROL DETAILS

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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

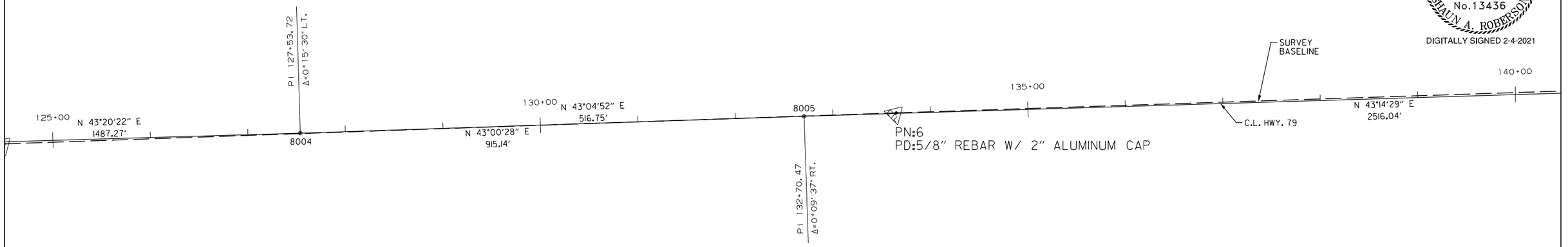
FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		020630	90	198

(2) SURVEY CONTROL DETAILS

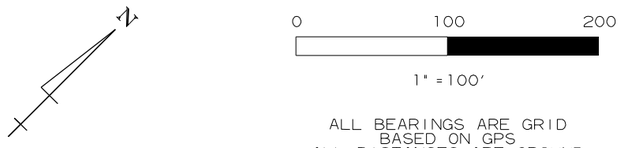


ALL BEARINGS ARE GRID
BASED ON GPS
ALL DISTANCES ARE GROUND

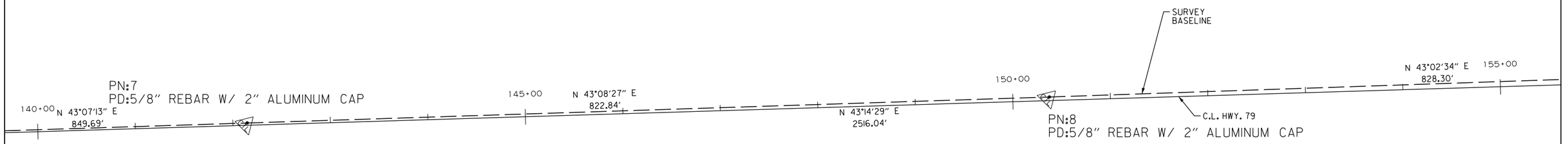
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021



PN:6
PD:5/8" REBAR W/ 2" ALUMINUM CAP



ALL BEARINGS ARE GRID
BASED ON GPS
ALL DISTANCES ARE GROUND



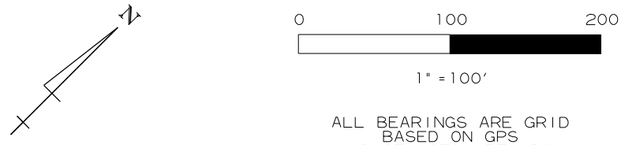
PN:7
PD:5/8" REBAR W/ 2" ALUMINUM CAP

PN:8
PD:5/8" REBAR W/ 2" ALUMINUM CAP

SURVEY CONTROL DETAILS

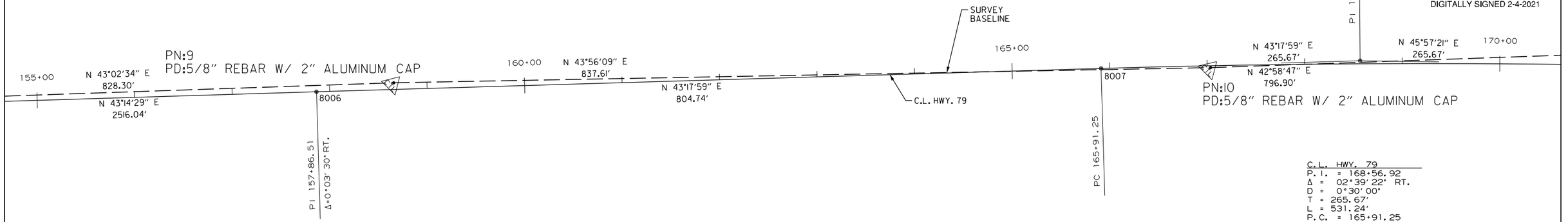
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	91	198
				(2)	SURVEY CONTROL DETAILS			



ALL BEARINGS ARE GRID
BASED ON GPS
ALL DISTANCES ARE GROUND

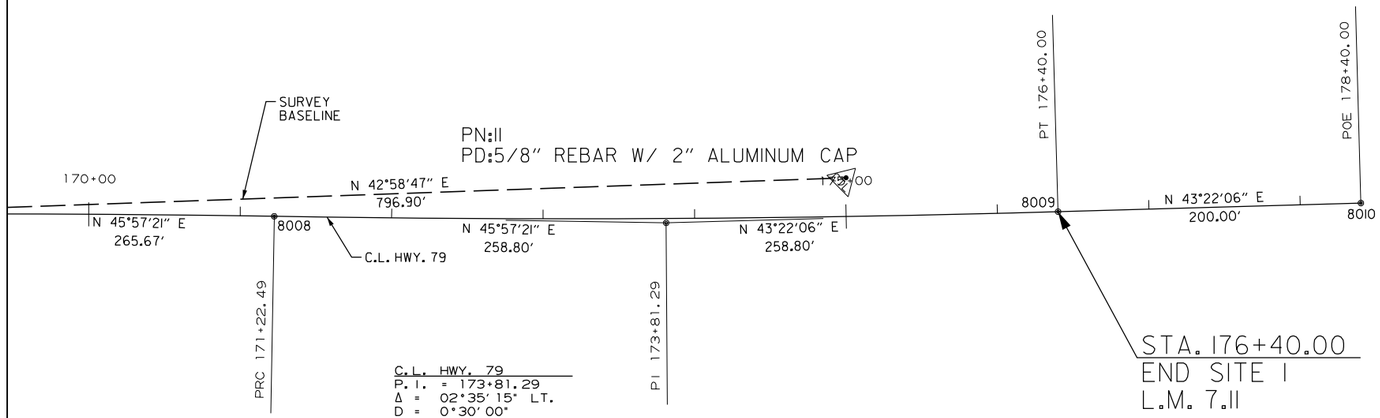
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021



C.L. HWY. 79
P.I. = 168+56.92
Δ = 02°39'22" RT.
D = 0°30'00"
T = 265.67'
L = 531.24'
P.C. = 165+91.25
P.R.C. = 171+22.49
e = NO SUPER



ALL BEARINGS ARE GRID
BASED ON GPS
ALL DISTANCES ARE GROUND

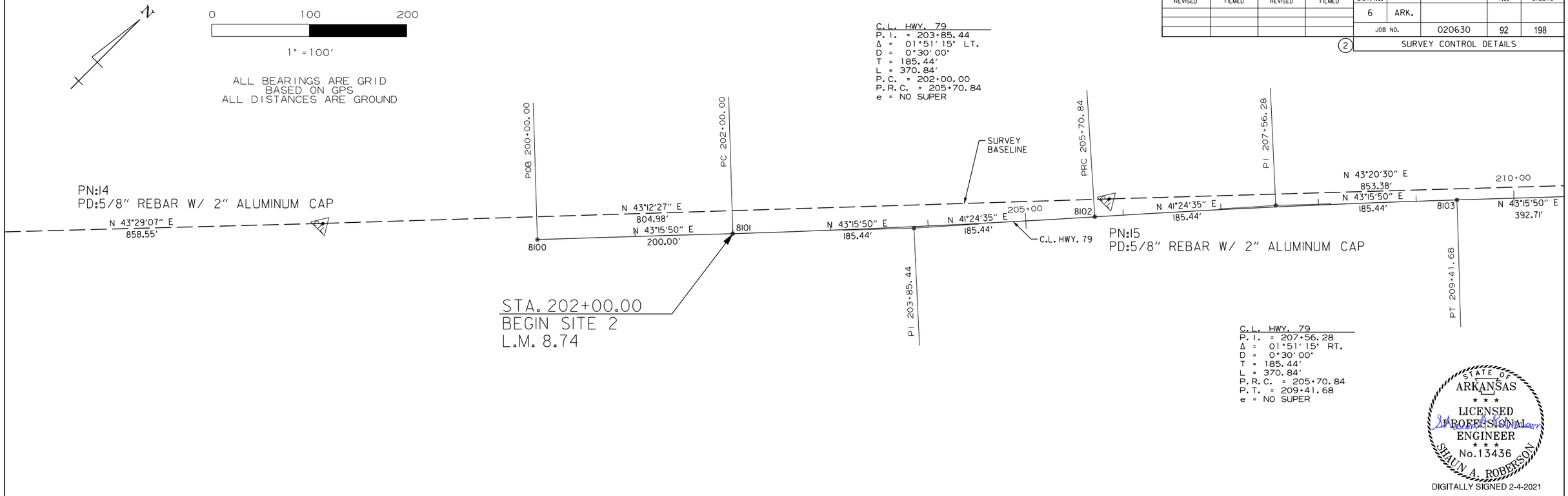


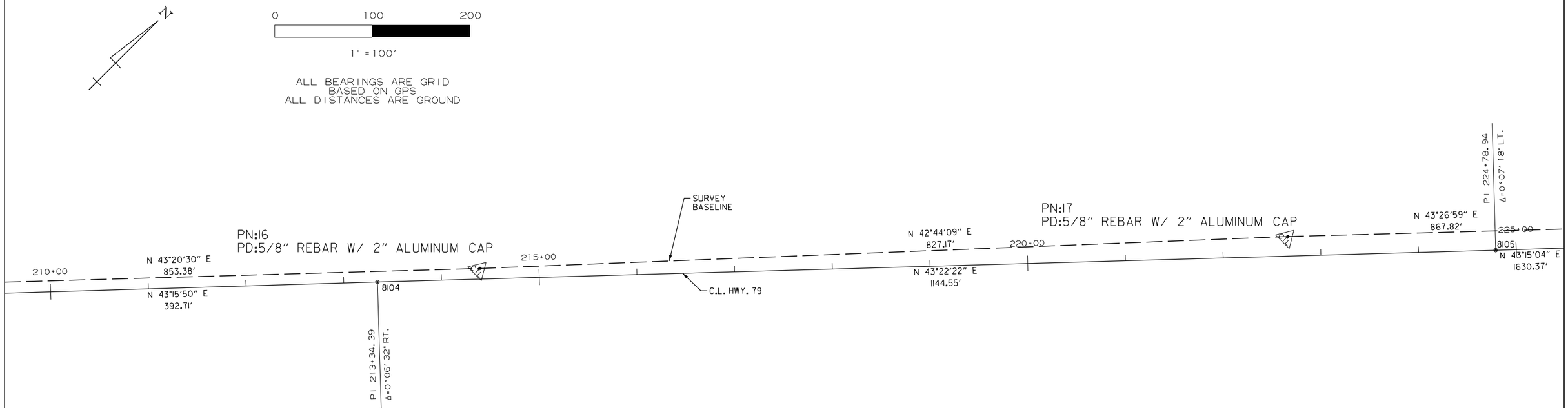
C.L. HWY. 79
P.I. = 173+81.29
Δ = 02°35'15" LT.
D = 0°30'00"
T = 258.80'
L = 517.51'
P.R.C. = 171+22.49
P.T. = 176+40.00
e = NO SUPER

SURVEY CONTROL DETAILS

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WORKSPACE: AHTD
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REVISED DATE:

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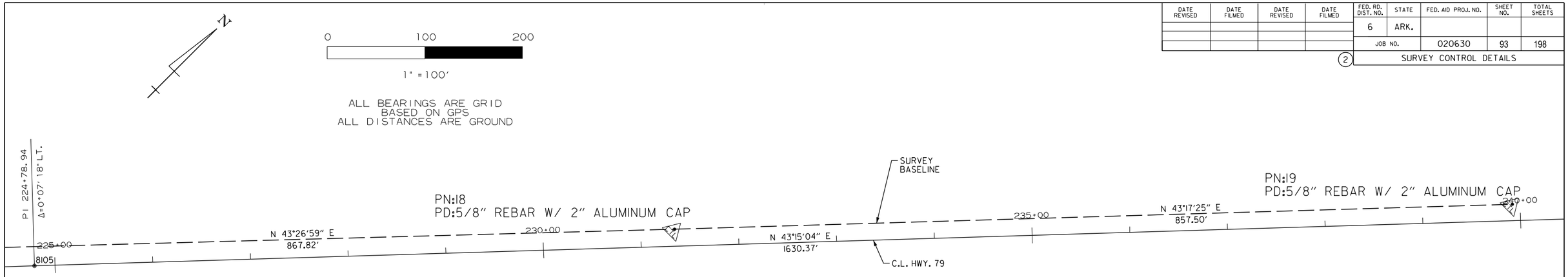




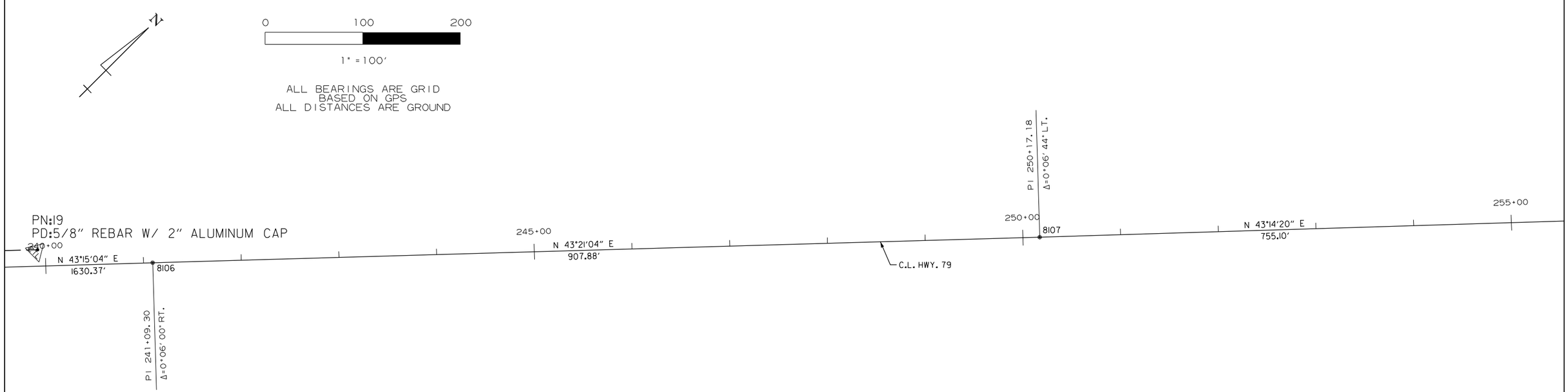
SURVEY CONTROL DETAILS

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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	93	198
				(2)	SURVEY CONTROL DETAILS			



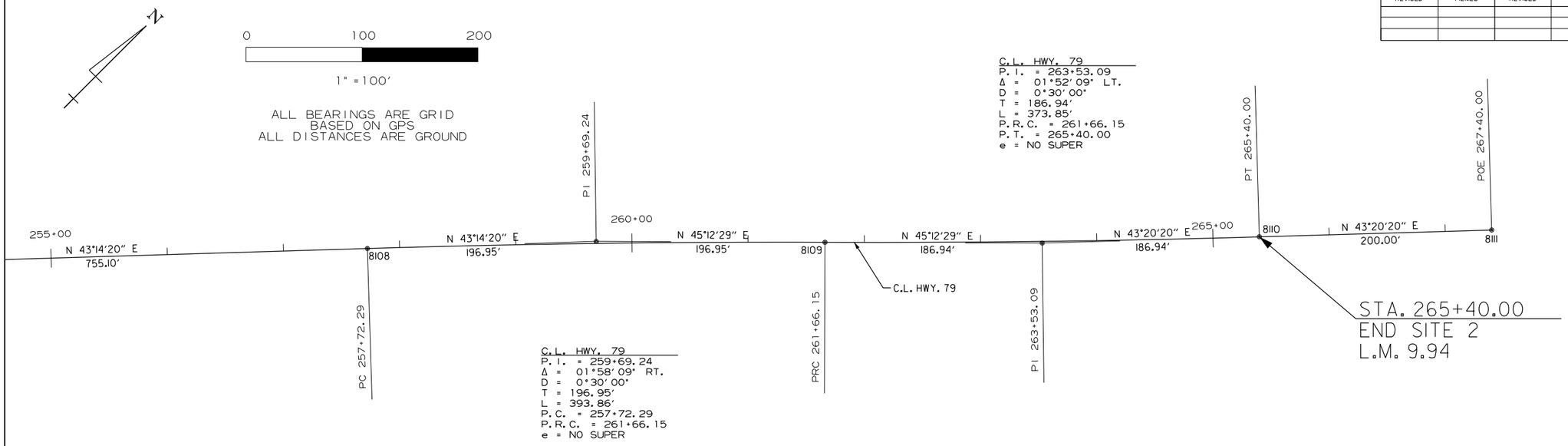
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021



SURVEY CONTROL DETAILS

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WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		020630	94	198
				(2)	SURVEY CONTROL DETAILS			



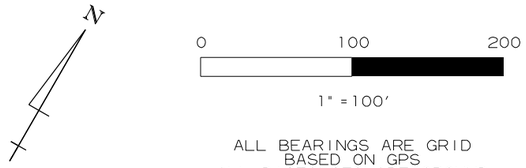
STATE OF
ARKANSAS
LICENSED
PROFESSIONAL
ENGINEER
No.13436
SHAUN A. ROBERSON

DIGITALLY SIGNED 2-4-2021

SURVEY CONTROL DETAILS

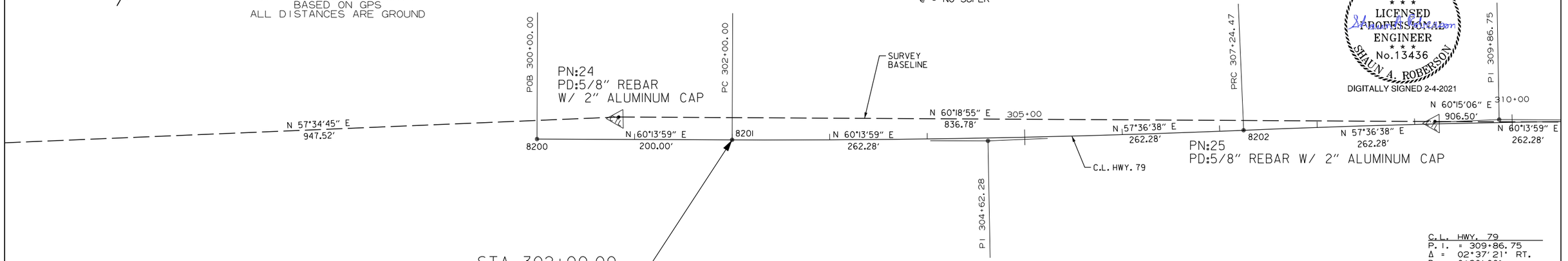
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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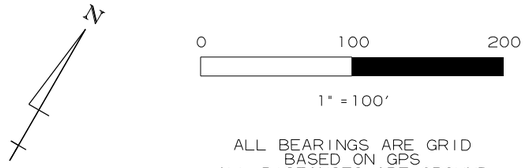
C.L. HWY. 79
P.I. = 304+62.28
Δ = 02°37'21" LT.
D = 0°30'00"
T = 262.28'
L = 524.47'
P.C. = 302+00.00
P.R.C. = 307+24.47
e = NO SUPER

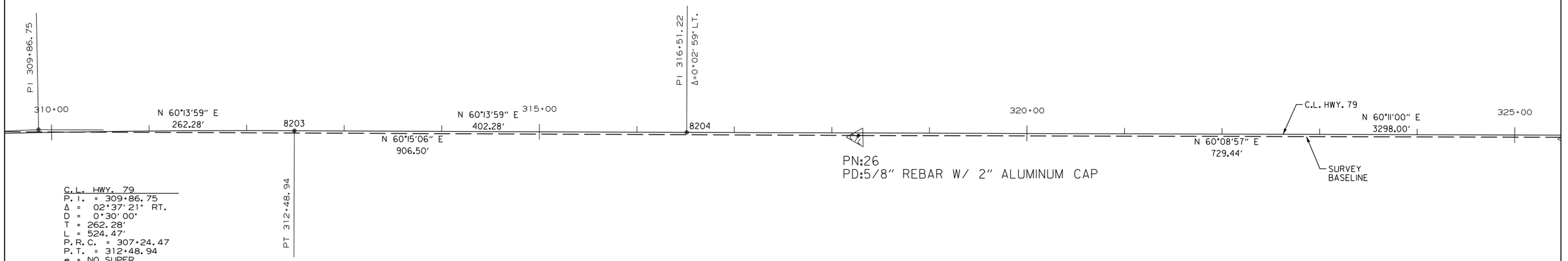
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021



STA. 302+00.00
BEGIN SITE 3
L.M. 3.18

C.L. HWY. 79
P.I. = 309+86.75
Δ = 02°37'21" RT.
D = 0°30'00"
T = 262.28'
L = 524.47'
P.R.C. = 307+24.47
P.T. = 312+48.94
e = NO SUPER





C.L. HWY. 79
P.I. = 309+86.75
Δ = 02°37'21" RT.
D = 0°30'00"
T = 262.28'
L = 524.47'
P.R.C. = 307+24.47
P.T. = 312+48.94
e = NO SUPER

SURVEY CONTROL DETAILS

rnfortner 2/4/2021 8:13:06 AM
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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(2) SURVEY CONTROL DETAILS

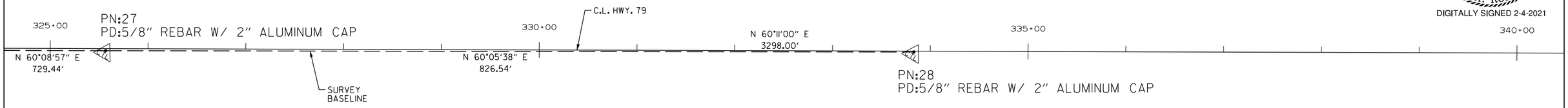


0 100 200

1" = 100'

ALL BEARINGS ARE GRID
BASED ON GPS
ALL DISTANCES ARE GROUND

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

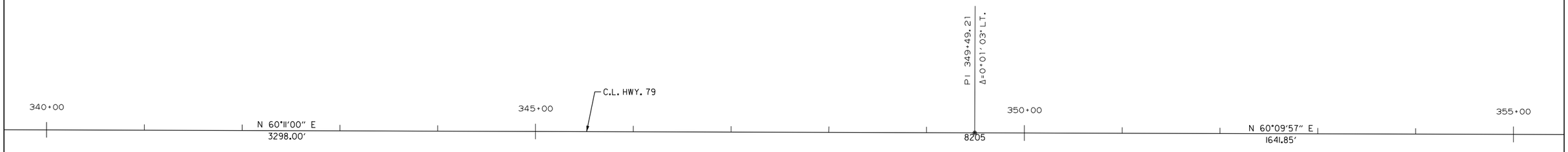




0 100 200

1" = 100'

ALL BEARINGS ARE GRID
BASED ON GPS
ALL DISTANCES ARE GROUND



SURVEY CONTROL DETAILS

rnfortner 2/4/2021 8:13:06 AM
WORKSPACE: AHTD
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REVISED DATE:

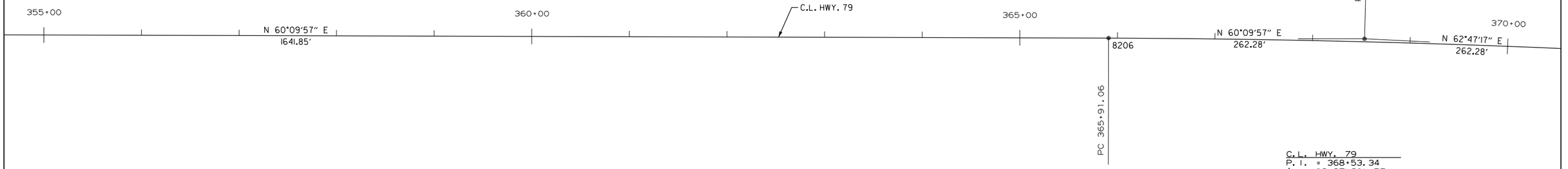
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	97	198
				(2)	SURVEY CONTROL DETAILS			

0 100 200

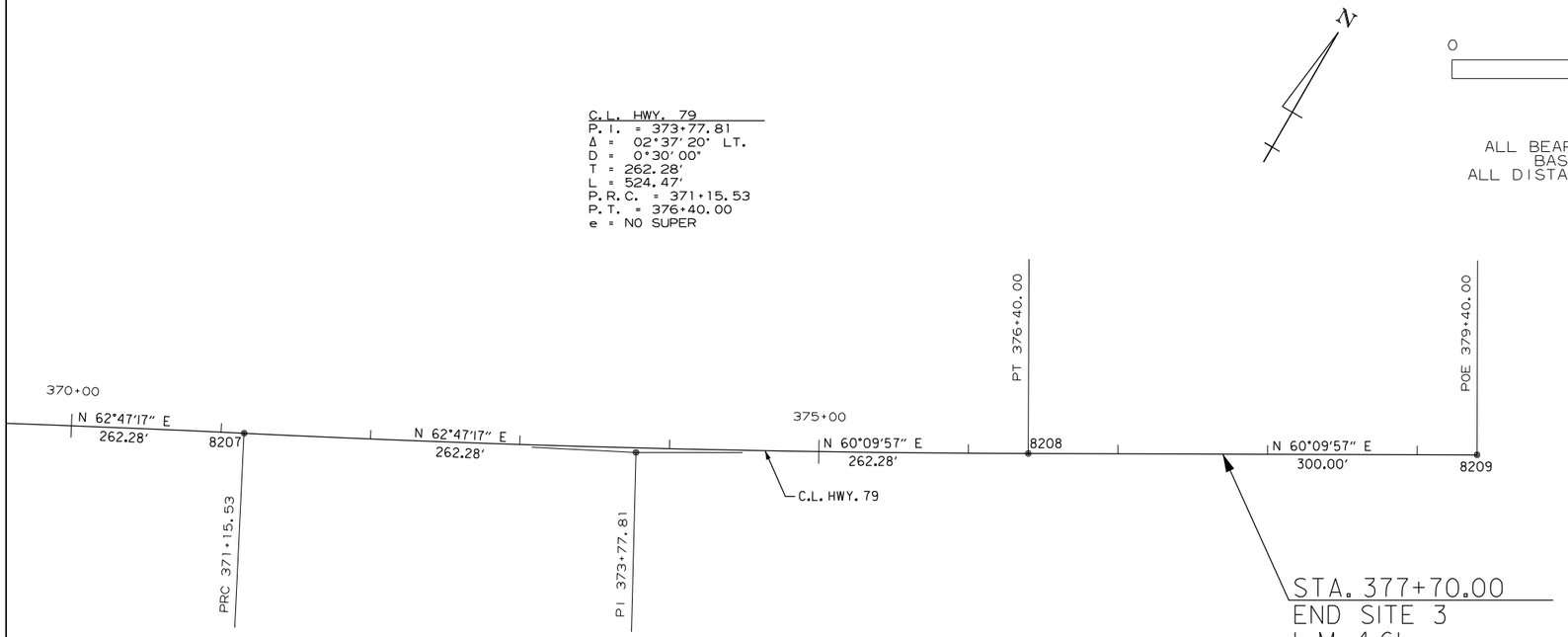
1" = 100'

ALL BEARINGS ARE GRID
BASED ON GPS
ALL DISTANCES ARE GROUND

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021



C.L. HWY. 79
P.I. = 368+53.34
Δ = 02°37'20" RT.
D = 0°30'00"
T = 262.28'
L = 524.47'
P.C. = 365+91.06
P.R.C. = 371+15.53
e = NO SUPER



C.L. HWY. 79
P.I. = 373+77.81
Δ = 02°37'20" LT.
D = 0°30'00"
T = 262.28'
L = 524.47'
P.R.C. = 371+15.53
P.T. = 376+40.00
e = NO SUPER

0 100 200

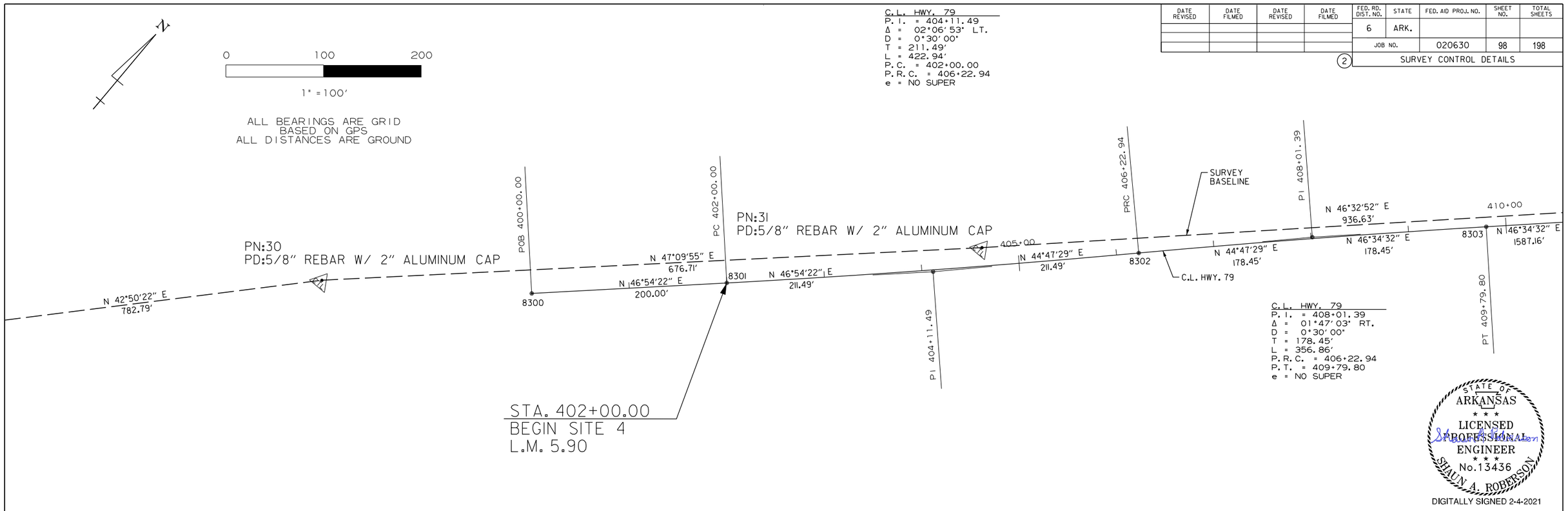
1" = 100'

ALL BEARINGS ARE GRID
BASED ON GPS
ALL DISTANCES ARE GROUND

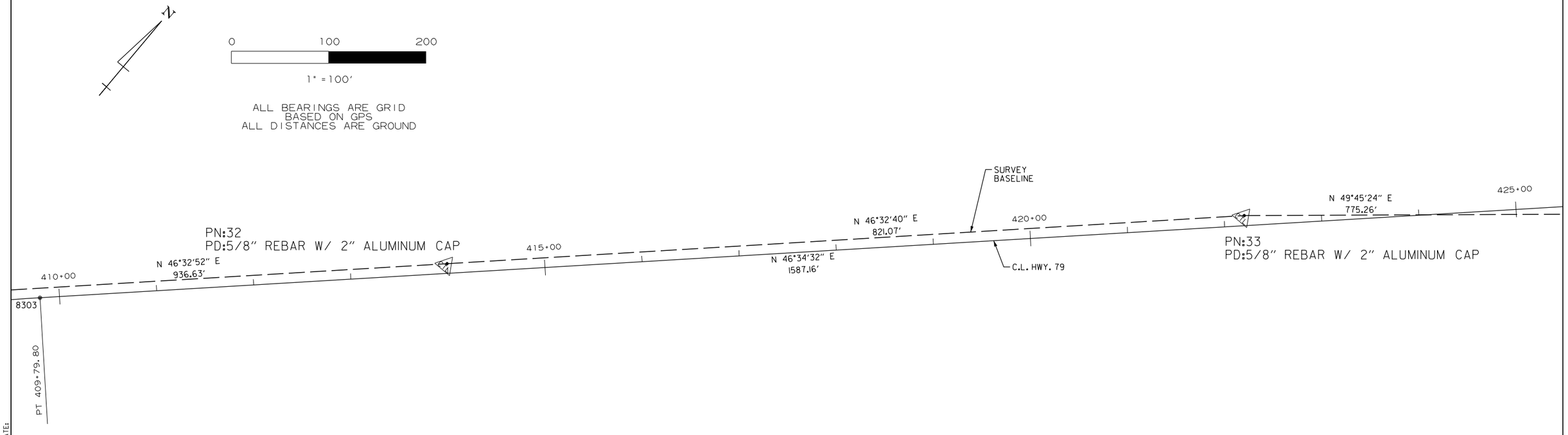
SURVEY CONTROL DETAILS

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WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				(2)	SURVEY CONTROL DETAILS			



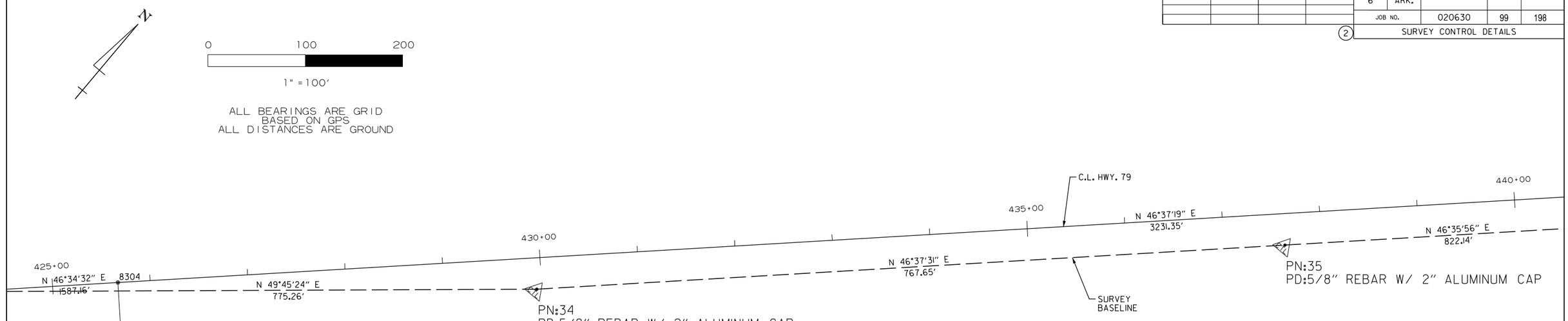
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021



SURVEY CONTROL DETAILS

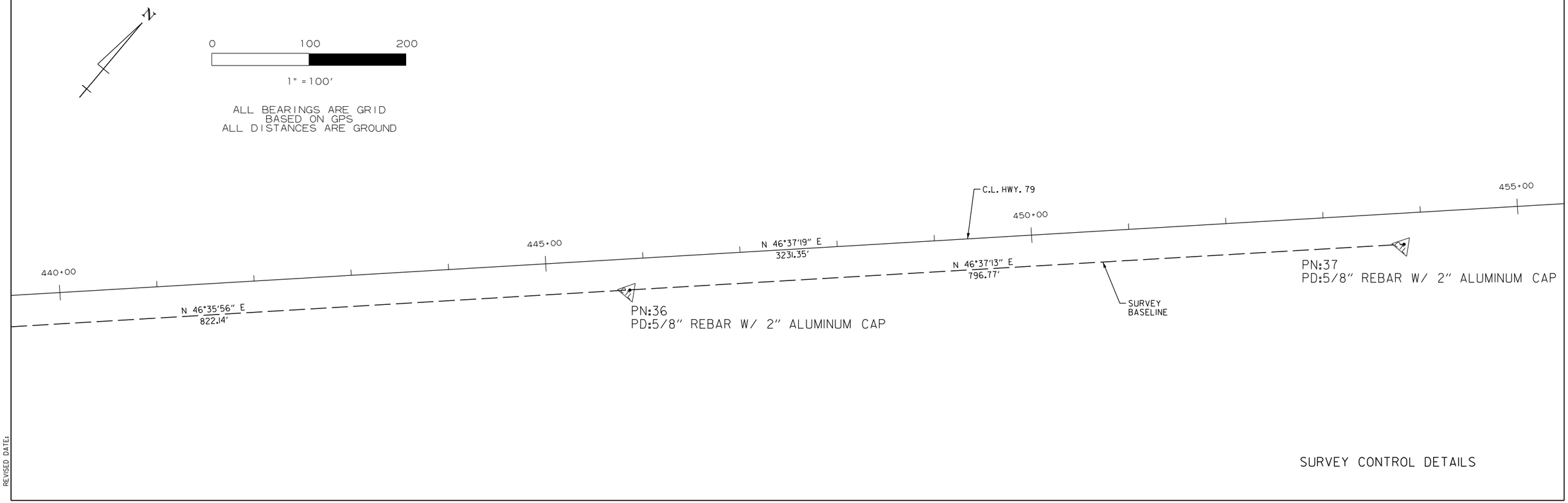
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				(2)	SURVEY CONTROL DETAILS			



STATE OF
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ENGINEER
No.13436
SHAUN A. ROBERTSON

DIGITALLY SIGNED 2-4-2021

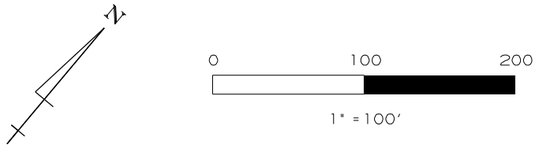


SURVEY CONTROL DETAILS

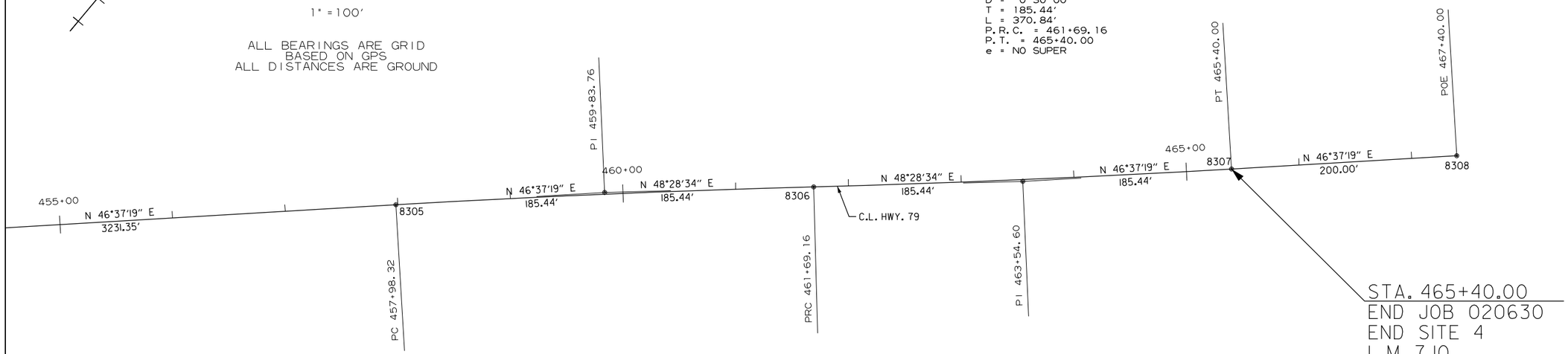
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		020630	100	198
(2)	SURVEY CONTROL DETAILS			



ALL BEARINGS ARE GRID
BASED ON GPS
ALL DISTANCES ARE GROUND



C.L. HWY. 79
P.I. = 463+54.60
Δ = 01°51'15" LT.
D = 0°30'00"
T = 185.44'
L = 370.84'
P.R.C. = 461+69.16
P.T. = 465+40.00
e = NO SUPER

C.L. HWY. 79
P.I. = 459+83.76
Δ = 01°51'15" RT.
D = 0°30'00"
T = 185.44'
L = 370.84'
P.C. = 457+98.32
P.R.C. = 461+69.16
e = NO SUPER

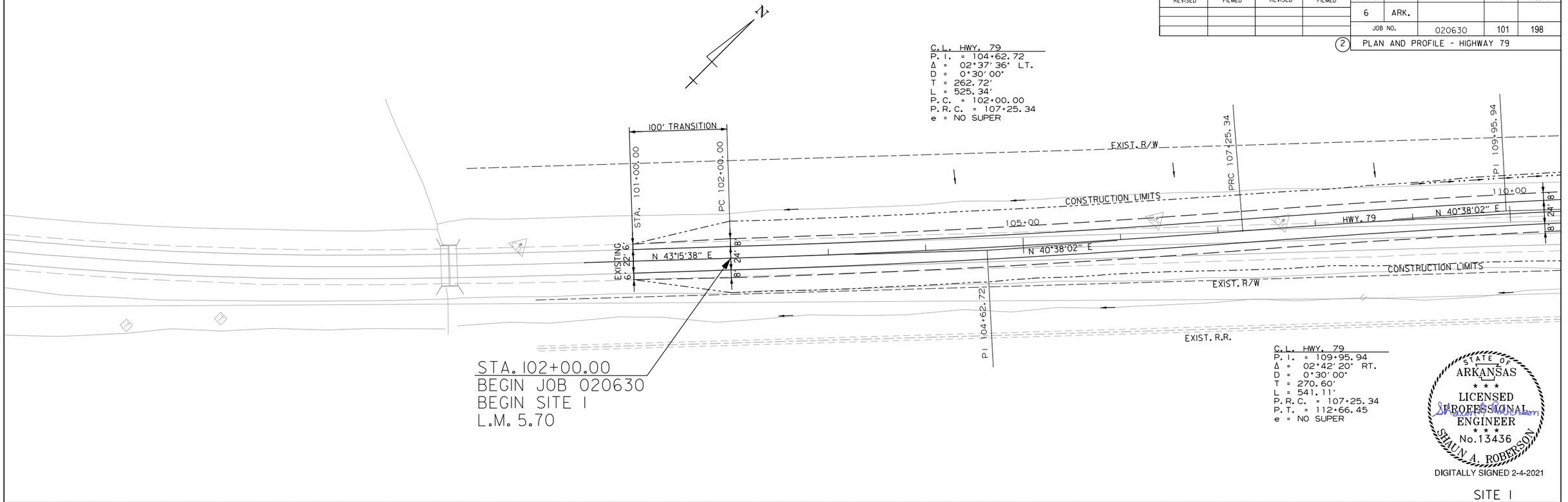
STATE OF
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ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

SURVEY CONTROL DETAILS

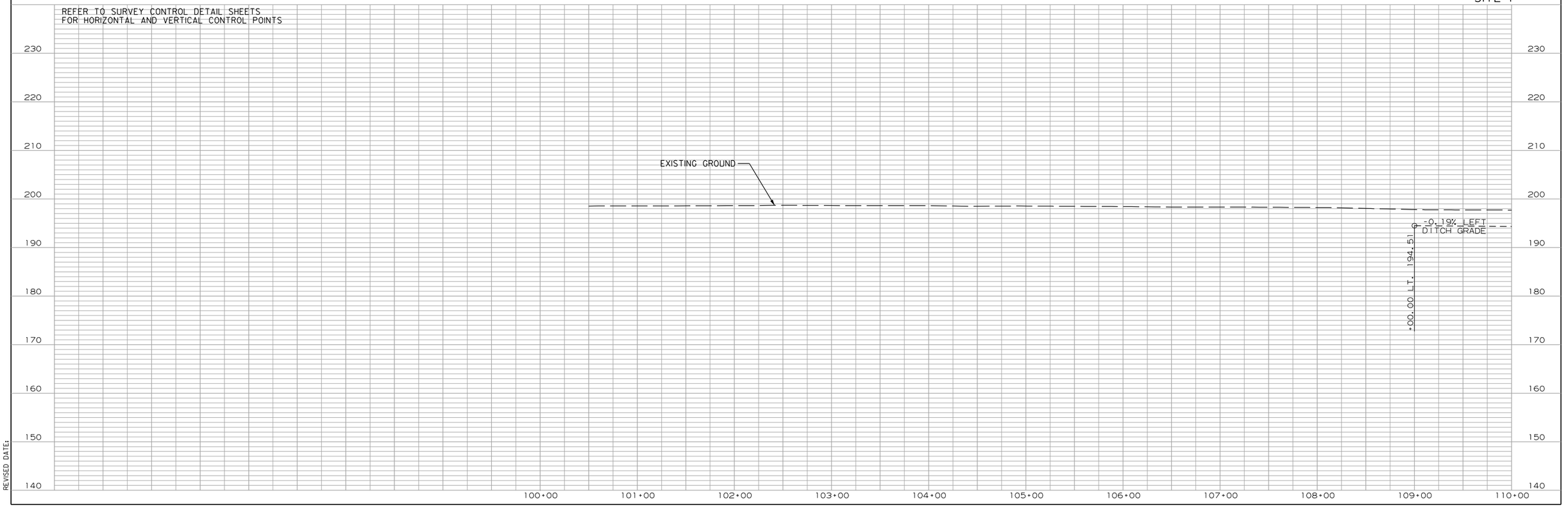
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	101	198

(2) PLAN AND PROFILE - HIGHWAY 79



SITE 1



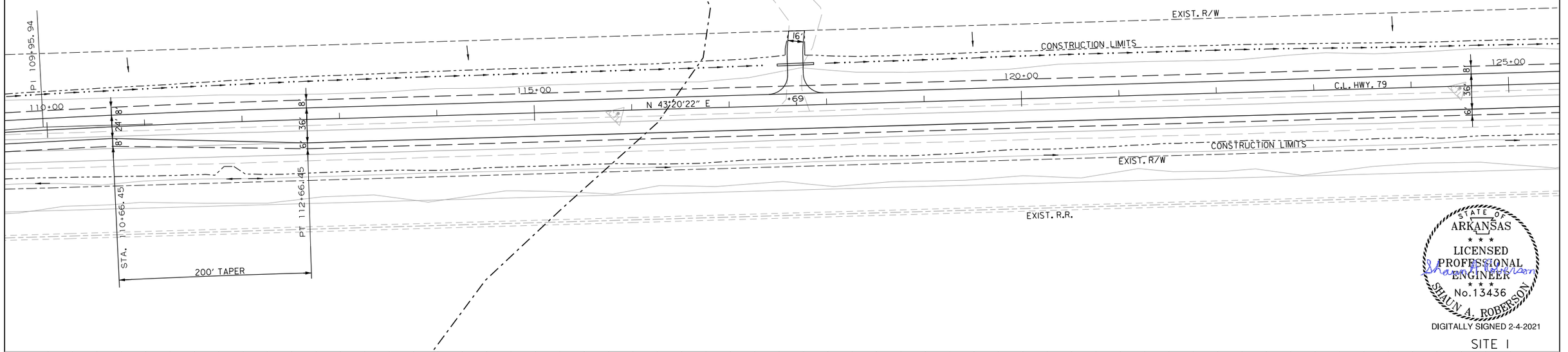
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	102	198
				(2)	PLAN AND PROFILE - HIGHWAY 79			

C.L. HWY. 79
P.I. = 109+95.94
Δ = 02°42'20" RT.
D = 0°30'00"
T = 270.60'
L = 541.11'
P.R.C. = 107+25.34
P.T. = 112+66.45
e = NO SUPER

APPROXIMATE FEMA 100 YR. FLOODPLAIN LIMITS

STA. 117+69 IN PLACE
18" X 20' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
24" X 38' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 26 CU. YDS.



STATE OF ARKANSAS
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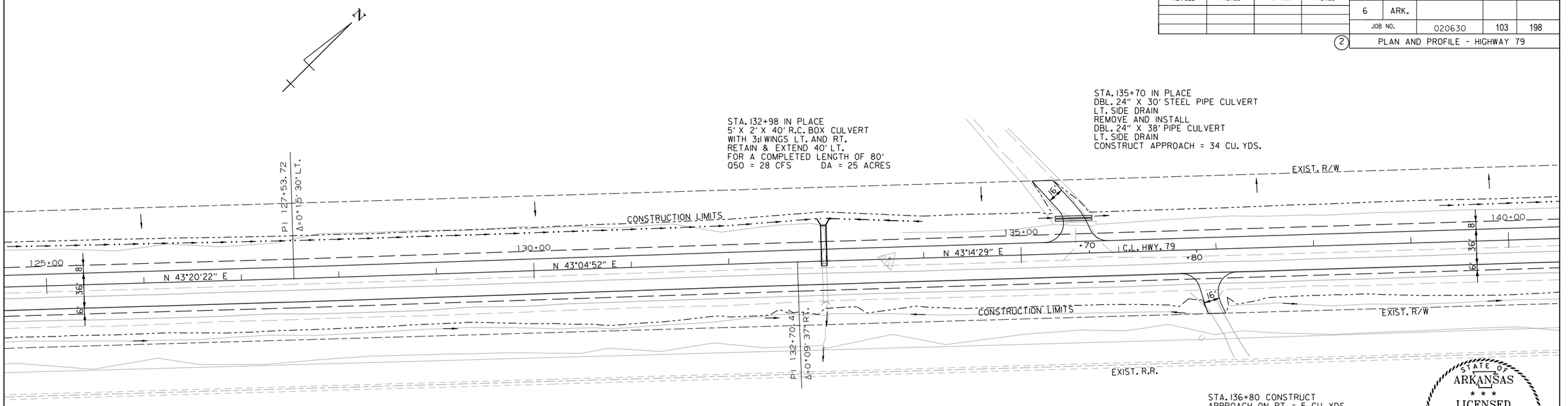
SITE 1

REFER TO SURVEY CONTROL DETAIL SHEETS
FOR HORIZONTAL AND VERTICAL CONTROL POINTS



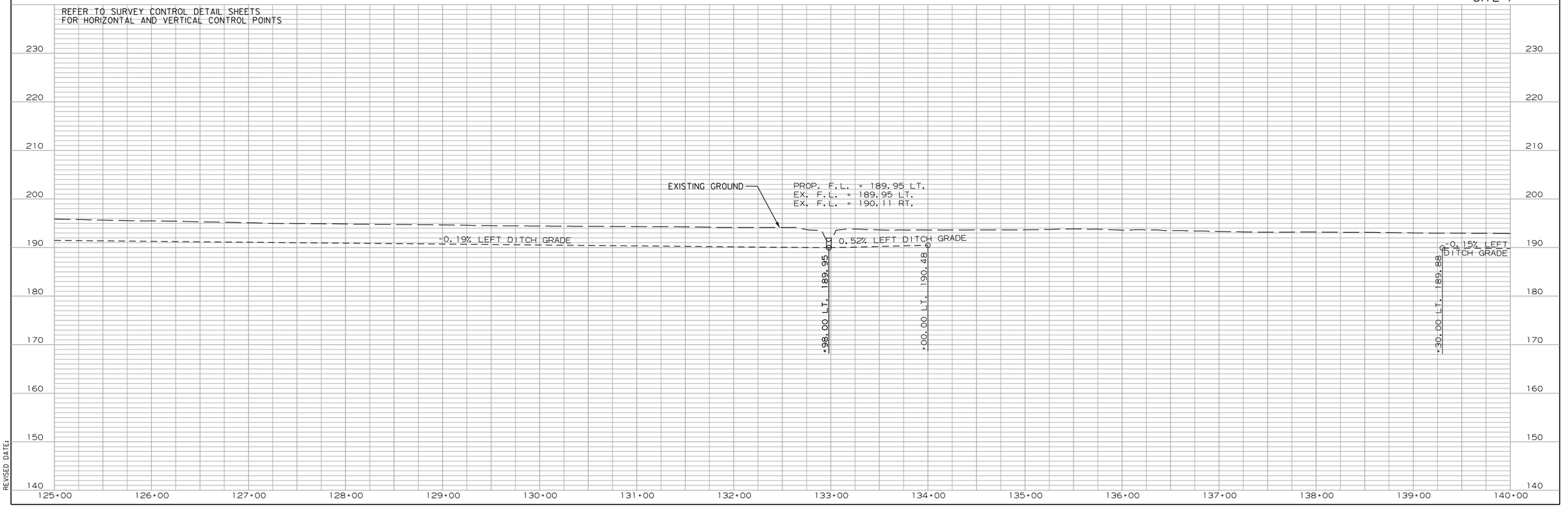
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	103	198
				(2)	PLAN AND PROFILE - HIGHWAY 79			



STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

SITE 1



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REVISED DATE:

STA. 145+29 IN PLACE
15" X 24' PVC PIPE CULVERT
LT. SIDE DRAIN
REMOVE

STA. 145+78 IN PLACE
3' X 2' X 42' R.C. BOX CULVERT
WITH 3:1 WINGS LT. AND RT.
RETAIN & EXTEND 42' LT.
FOR A COMPLETED LENGTH OF 84'
Q50 = 49 CFS DA = 409 ACRES ▲

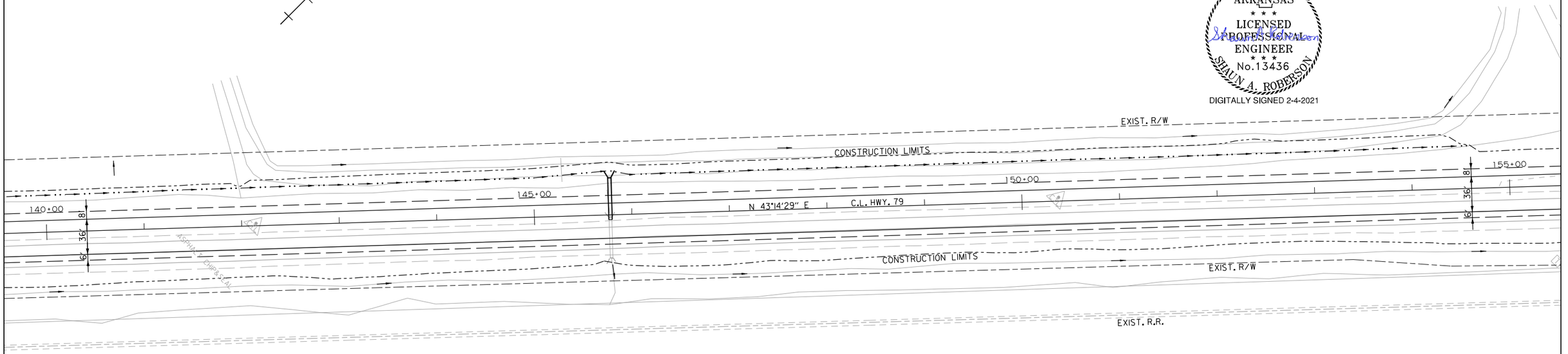
▲ TOTAL DISCHARGE Q50 = 818 CFS
TOTAL DISCHARGE INCLUDES WATER THROUGH
STRUCTURES AT STA. 145+78 AND AT STA. 159+97

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

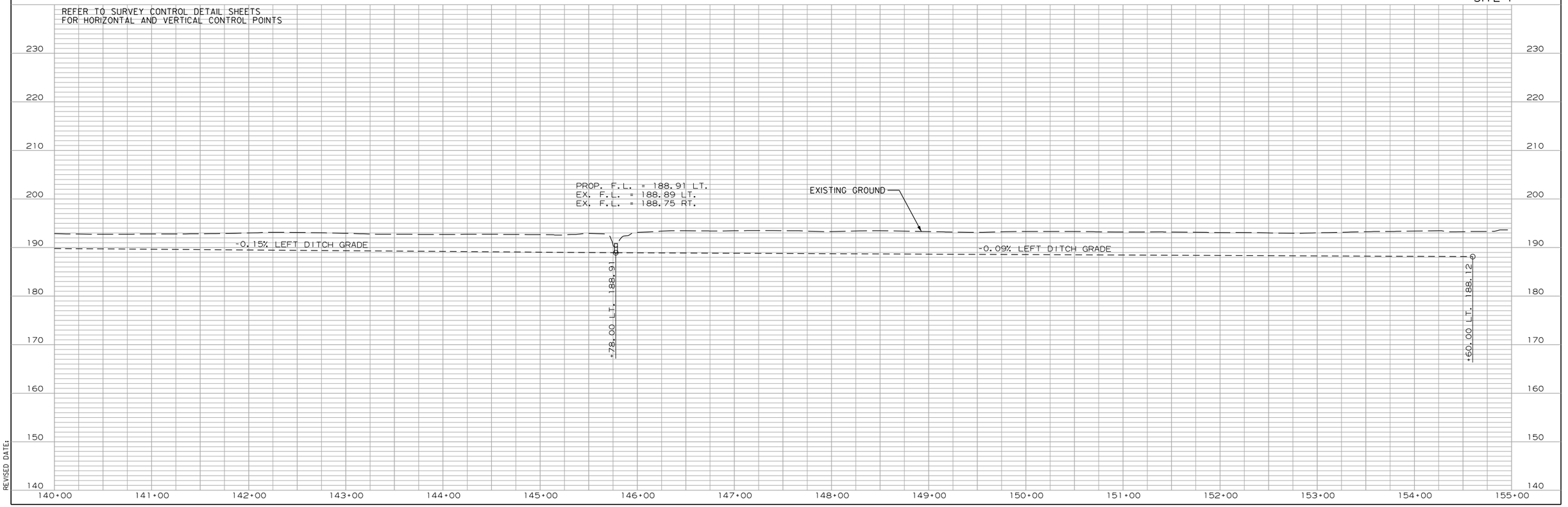
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		020630	104	198

(2) PLAN AND PROFILE - HIGHWAY 79

STATE OF ARKANSAS
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No. 13436
SHAUN A. ROBERSON
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SITE I



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REVISED DATE:

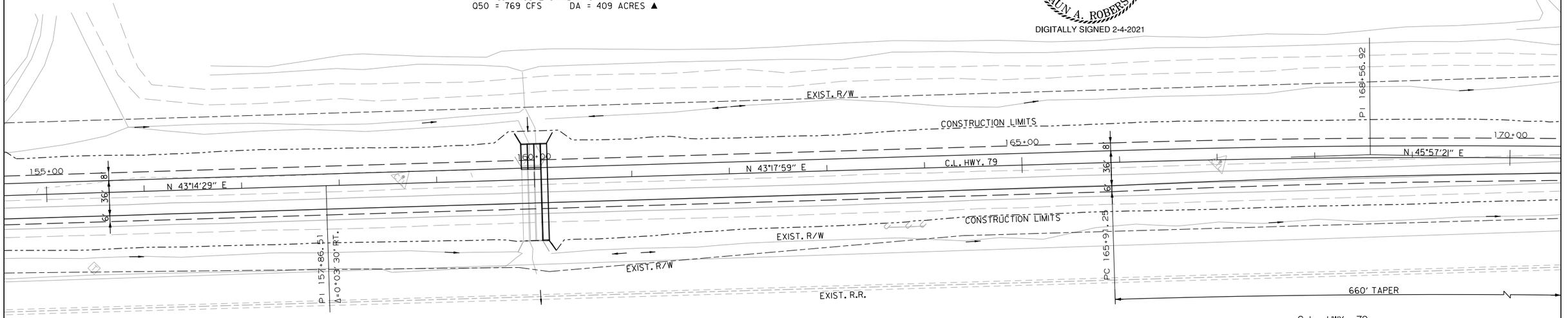
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	105	198
				(2)	PLAN AND PROFILE - HIGHWAY 79			

STA. 159+93 IN PLACE
18" X 38' CPP PIPE CULVERT
LT. SIDE DRAIN
REMAIN

STA. 159+97 IN PLACE
TRP. 6' X 4' X 76' R.C. BOX CULVERT
WITH 31 WINGS LT. AND RT.
RETAIN & EXTEND 25' LT.
FOR A COMPLETED LENGTH OF 101'
CONSTRUCT 6' X 4' X 101'
R.C. BOX CULVERT TO THE NORTH
WITH 31 WINGS LT. AND RT.
Q50 = 769 CFS DA = 409 ACRES ▲

▲ TOTAL DISCHARGE Q50 = 818 CFS
TOTAL DISCHARGE INCLUDES WATER THROUGH
STRUCTURES AT STA. 145+78 AND AT STA. 159+97

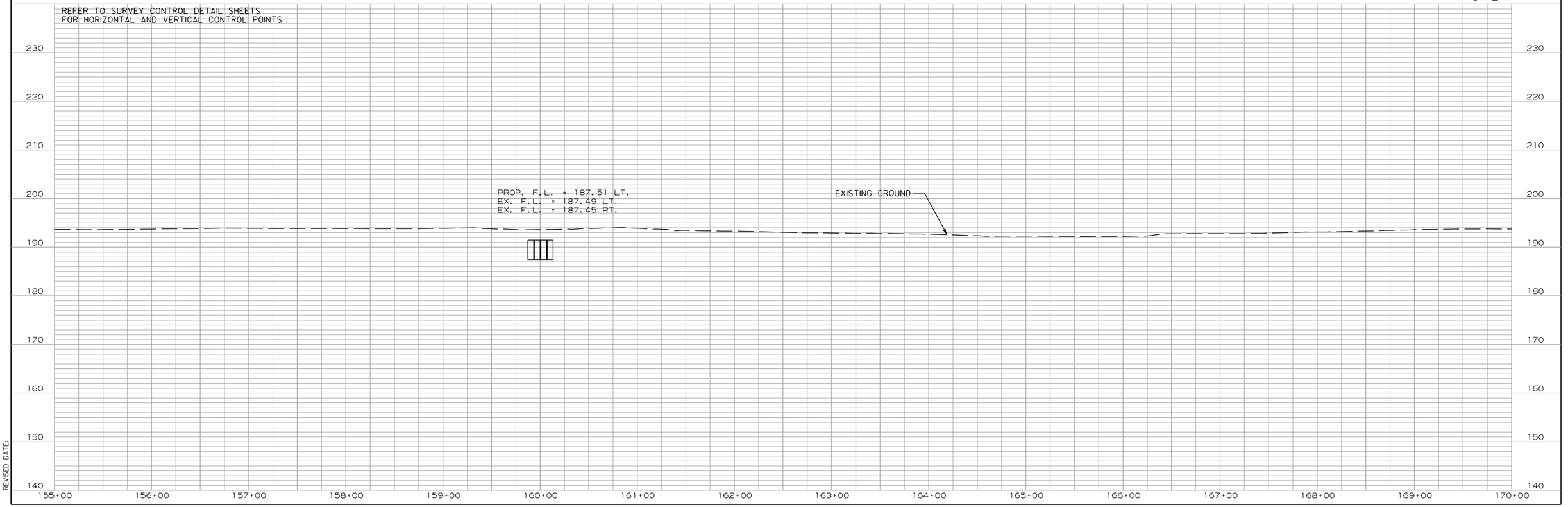
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021



C.L. HWY. 79
P.I. = 168+56.92
Δ = 02°39'22" RT.
D = 0°30'00"
T = 265.67'
L = 531.24'
P.C. = 165+91.25
P.R.C. = 171+22.49
e = NO SUPER

SITE 1

REFER TO SURVEY CONTROL DETAIL SHEETS
FOR HORIZONTAL AND VERTICAL CONTROL POINTS



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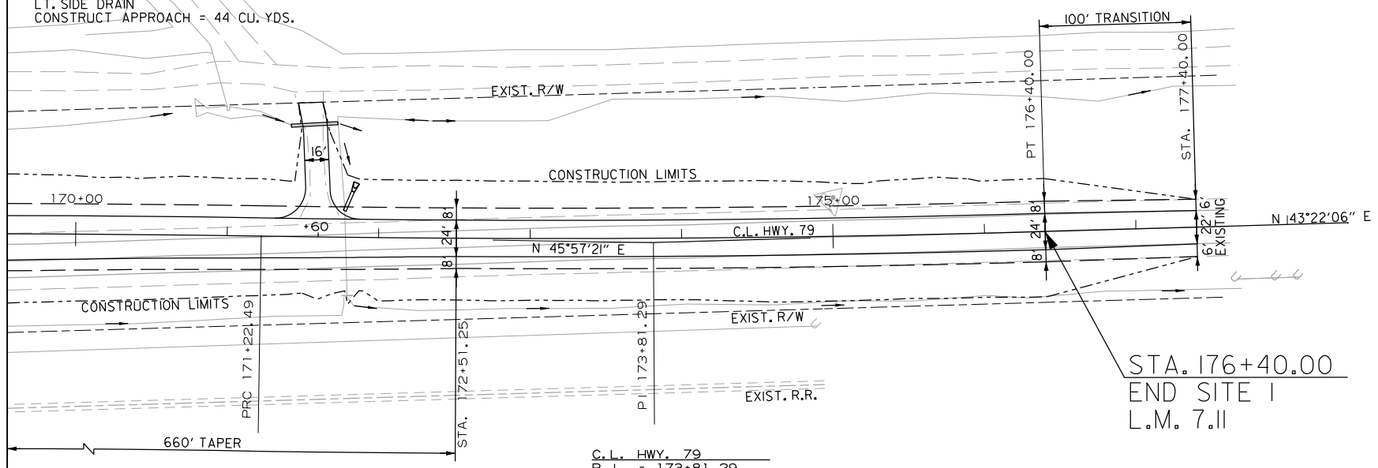
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	106	198
				(2)	PLAN AND PROFILE - HIGHWAY 79			

STATE OF ARKANSAS
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STA. 170+94 IN PLACE
18" X 37' CPP PIPE CULVERT
LT. SIDE DRAIN
REMAIN

STA. 171+60 IN PLACE
24" X 31' STEEL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
24" X 31' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 44 CU. YDS.

STA. 171+78 IN PLACE
24" X 61' R.C. PIPE CULVERT
WITH HDWLS. LT. AND RT.
REMOVE HDWL. LT.
AND EXTEND R.C. PIPE 11' LT.
20° LT. FWD. SKEW
CLASS III (TYPE 3 BEDDING) W/
F.E.S. LT.
Q50 = 9 CFS DA = 2 ACRES
24" R.C. PIPE = 14 LIN. FT.
24" F.E.S. = 1EA.

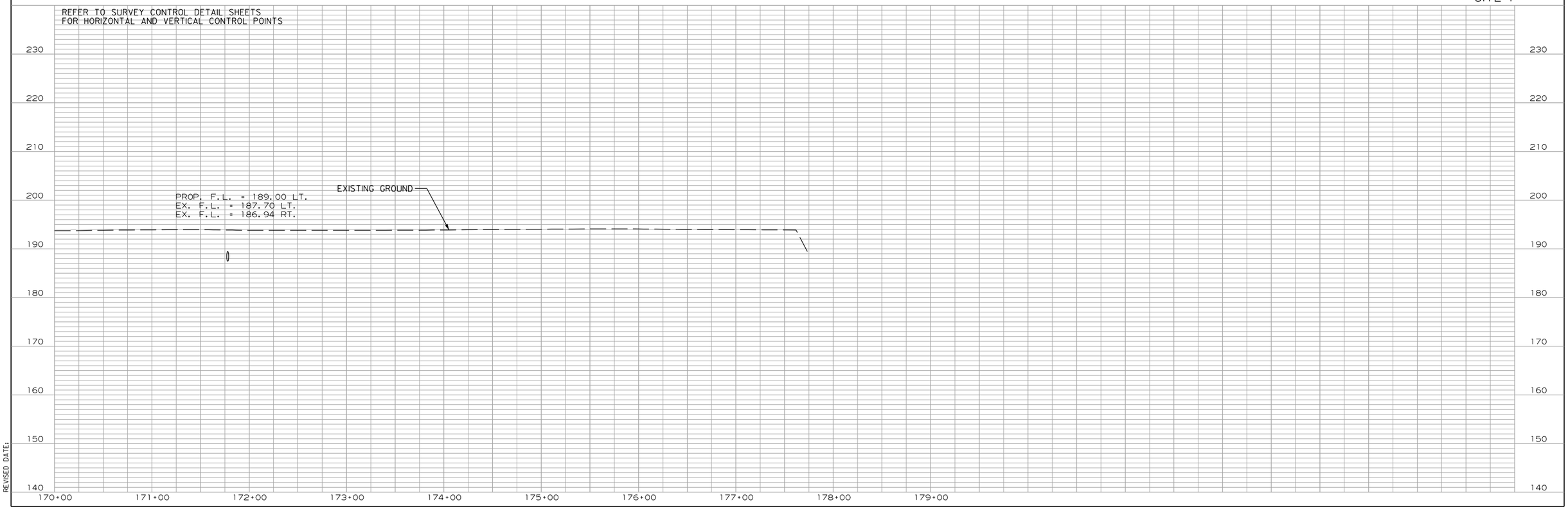


C.L. HWY. 79
P.I. = 168+56.92
Δ = 02°39'22" RT.
D = 0°30'00"
T = 265.67'
L = 531.24'
P.C. = 165+91.25
P.R.C. = 171+22.49
e = NO SUPER

C.L. HWY. 79
P.I. = 173+81.29
Δ = 02°35'15" LT.
D = 0°30'00"
T = 258.80'
L = 517.51'
P.R.C. = 171+22.49
P.T. = 176+40.00
e = NO SUPER

SITE I

REFER TO SURVEY CONTROL DETAIL SHEETS
FOR HORIZONTAL AND VERTICAL CONTROL POINTS



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C.L. HWY. 79
P.I. = 203+85.44
Δ = 01°51'15" LT.
D = 0°30'00"
T = 185.44'
L = 370.84'
P.C. = 202+00.00
P.R.C. = 205+70.84
e = NO SUPER

▲ TOTAL DISCHARGE Q50 = 1125 CFS
TOTAL DISCHARGE INCLUDES WATER THROUGH STRUCTURES AT STA. 206+46 AND AT STA. 232+02 AND BRIDGE STRUCTURE AT HOLMES DITCH

STA. 206+46 IN PLACE
DBL. 6' X 6' X 75' R.C. BOX CULVERT
WITH 3:1 WINGS LT. AND RT.
RETAIN & EXTEND 14' LT.
FOR A COMPLETED LENGTH OF 89'
Q50 = 310 CFS DA = 126 ACRES ▲

STATE OF ARKANSAS
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	107	198
				(2)	PLAN AND PROFILE - HIGHWAY 79			

EXIST. R/W
TO HOLMES DITCH
100' TRANSITION
660' TAPER
STA. 201+00.00
PC 202+00.00
STA. 202+81.68
PRC 205+70.84
PI 207+56.28
STA. 209+41.68
CONSTRUCTION LIMITS
205+00
210+00
+83
N 43°15'50" E
N 41°24'35" E
EXISTING 8' 22' 8'
8' 24' 8'
36'
STA. 202+00.00
BEGIN SITE 2
L.M. 8.74
PI 203+85.44
PT 209+41.68
16'
UTY-TELEPHONE AT&T
EXIST. R.R.

C.L. HWY. 79
P.I. = 207+56.28
Δ = 01°51'15" RT.
D = 0°30'00"
T = 185.44'
L = 370.84'
P.R.C. = 205+70.84
P.T. = 209+41.68
e = NO SUPER

STA. 209+83 IN PLACE
24" X 34' STEEL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
24" X 38' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 21 CU. YDS.

SITE 2

REFER TO SURVEY CONTROL DETAIL SHEETS
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EXISTING GROUND
PROP. F.L. = 183.55 LT.
EX. F.L. = 183.31 LT.
EX. F.L. = 182.62 RT.

240 230 220 210 200 190 180 170 160 150

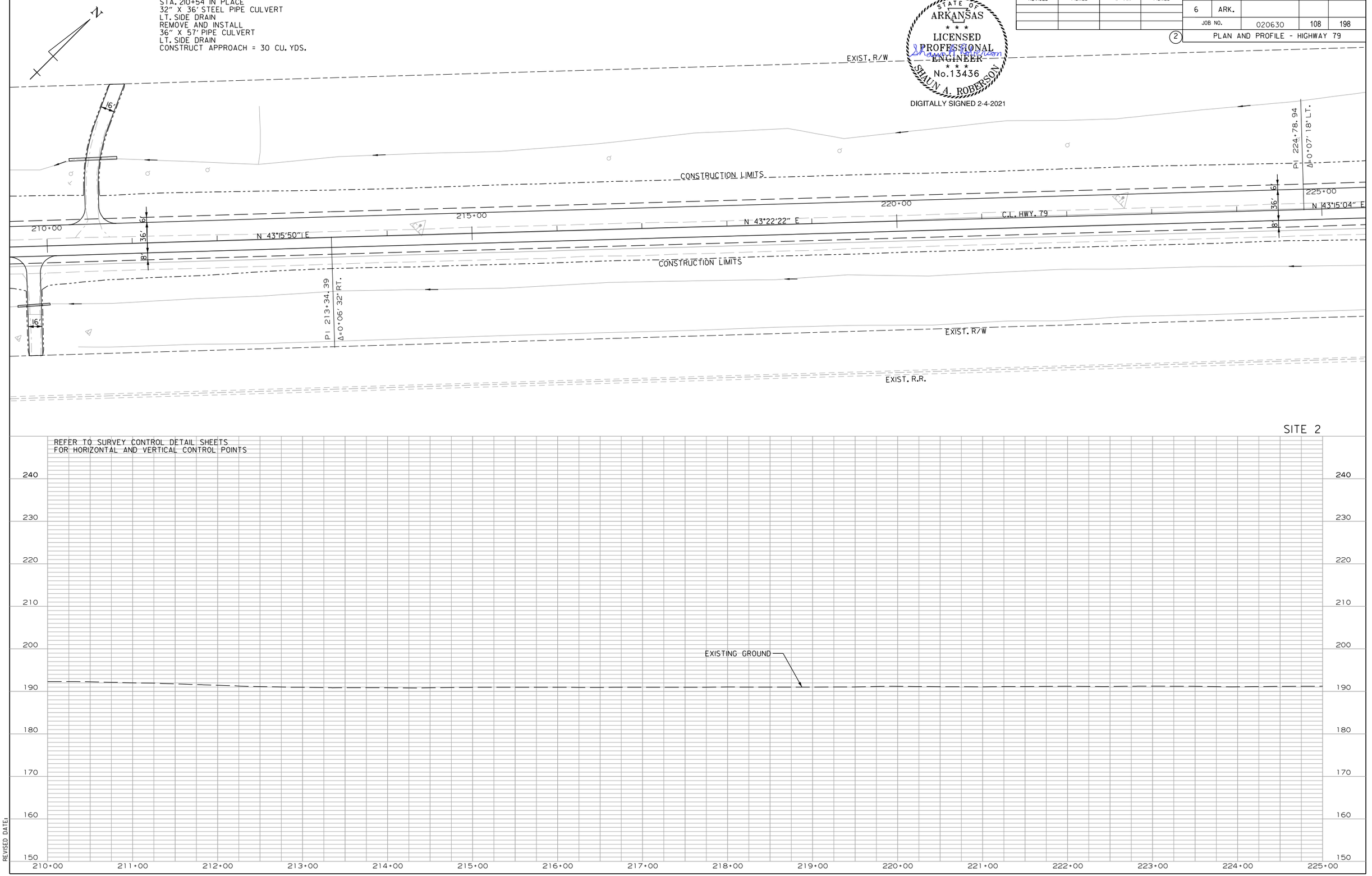
200+00 201+00 202+00 203+00 204+00 205+00 206+00 207+00 208+00 209+00 210+00

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	108	198
				(2)	PLAN AND PROFILE - HIGHWAY 79			

STATE OF ARKANSAS
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STA. 210+54 IN PLACE
32" X 36' STEEL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
36" X 57' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 30 CU. YDS.



SITE 2

rnfortner 2/4/2021 8:13:13 AM
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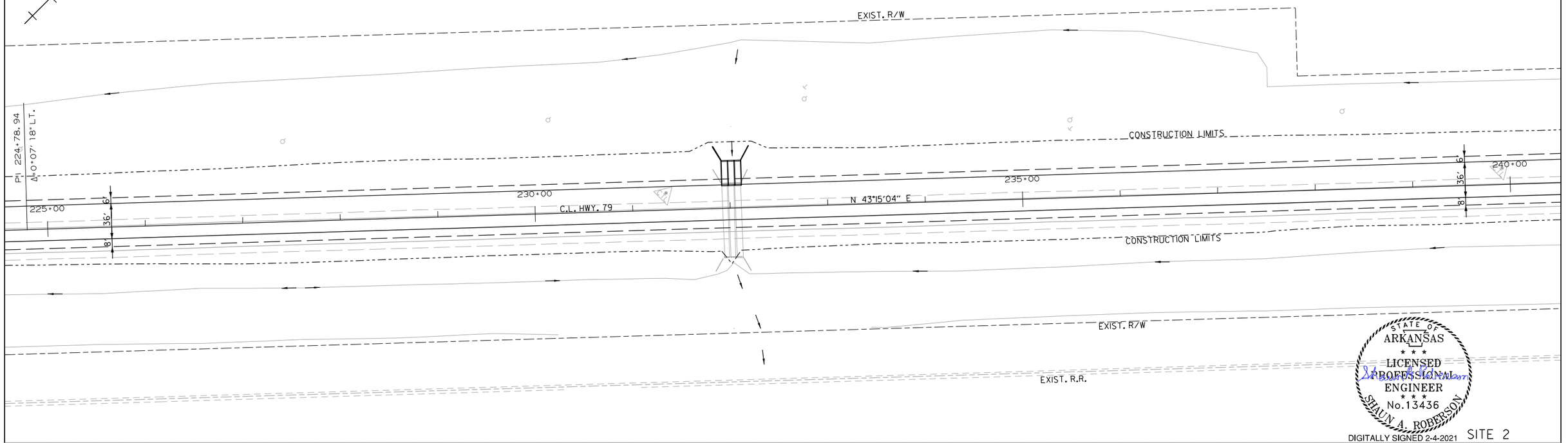
STA. 232+02 IN PLACE
TRP. 6' X 6' X 76' R.C. BOX CULVERT
WITH 31 WINGS LT. AND RT.
RETAIN & EXTEND 24' LT.
FOR A COMPLETED LENGTH OF 100'
Q50 = 735 CFS DA = 659 ACRES ▲

▲ TOTAL DISCHARGE Q50 = 1125 CFS
TOTAL DISCHARGE INCLUDES WATER THROUGH
STRUCTURES AT STA. 206+46 AND AT STA. 232+02
AND BRIDGE STRUCTURE AT HOLMES DITCH

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		020630	109	198

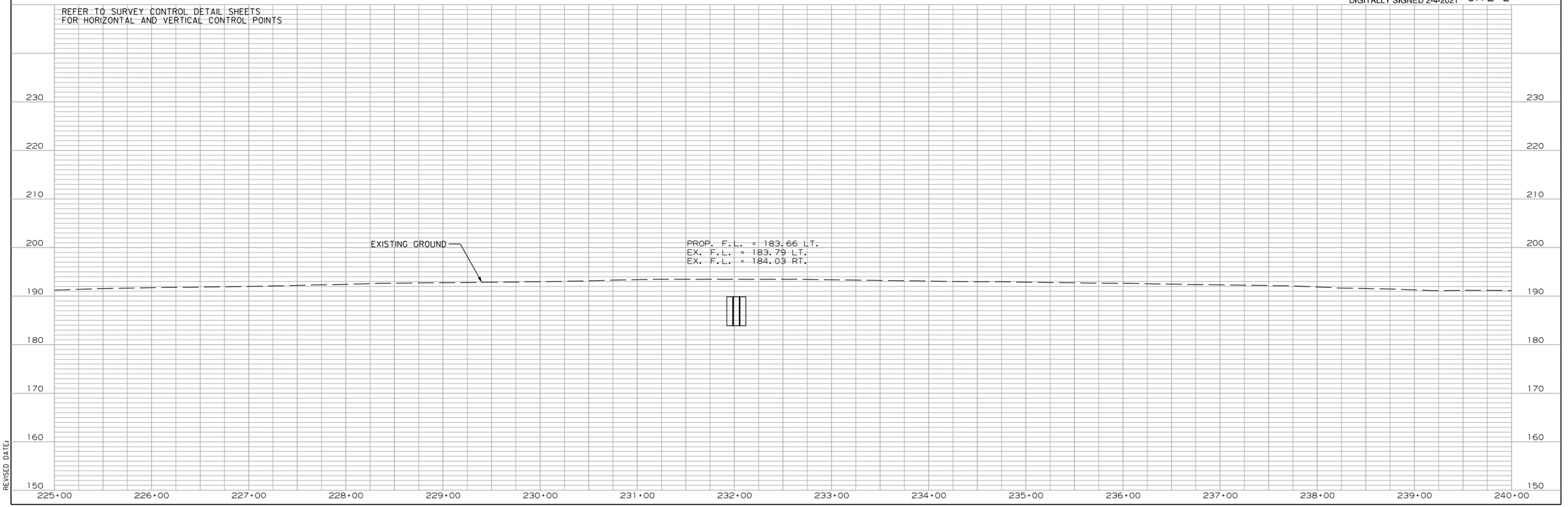
(2) PLAN AND PROFILE - HIGHWAY 79



STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

SITE 2

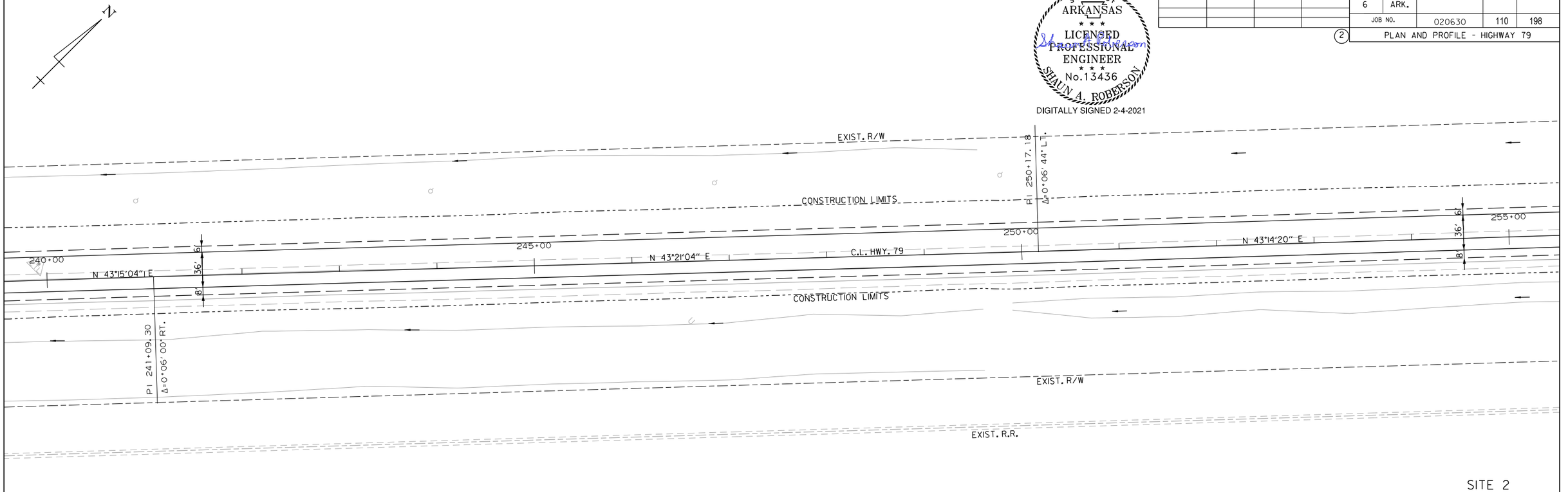
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FOR HORIZONTAL AND VERTICAL CONTROL POINTS



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REVISED DATE:

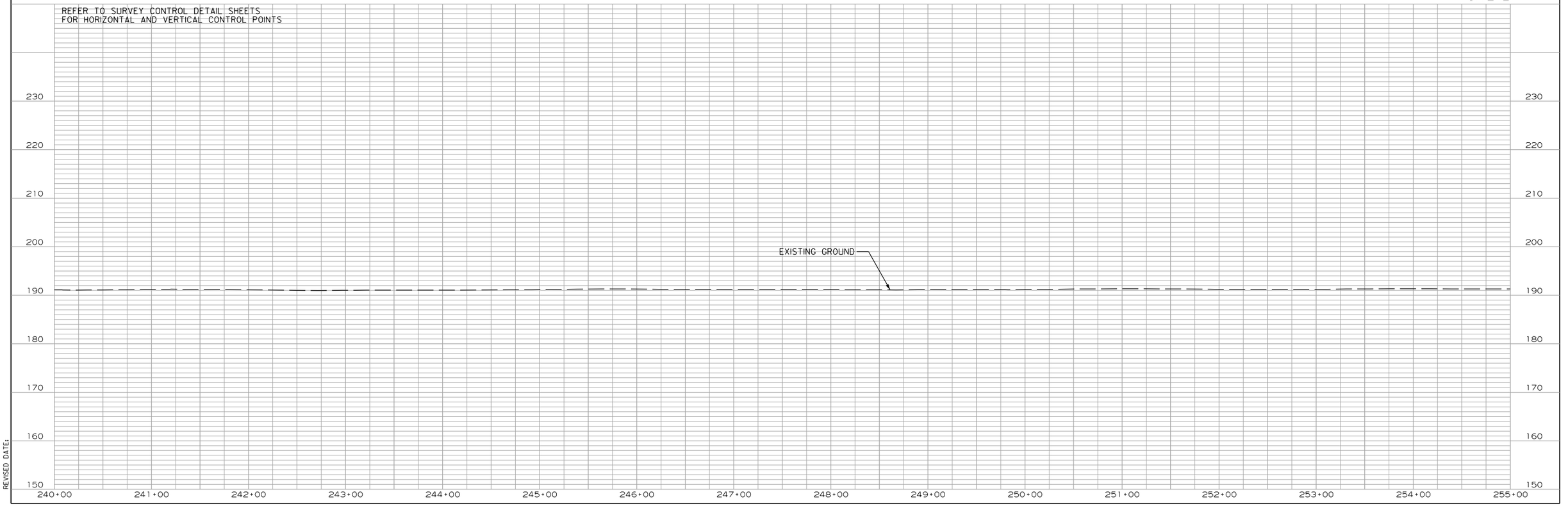
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				6	ARK.			
				JOB NO.		020630	110	198
				(2)	PLAN AND PROFILE - HIGHWAY 79			

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SITE 2

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FOR HORIZONTAL AND VERTICAL CONTROL POINTS



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REVISED DATE:

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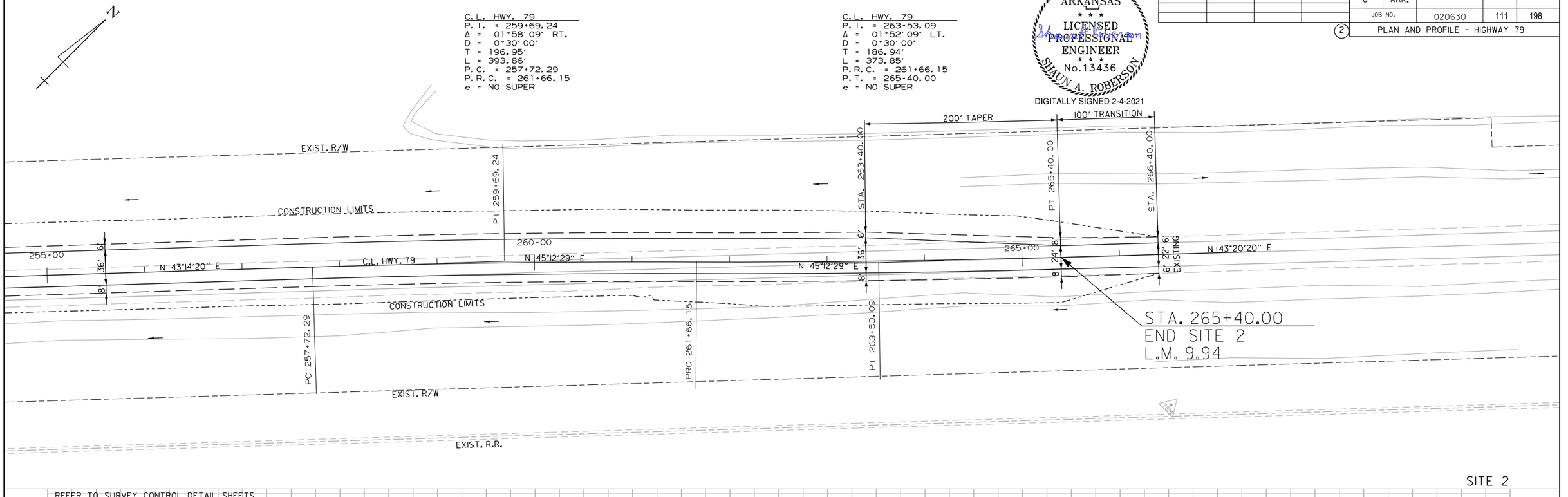
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6	ARK.			
JOB NO.		020630	111	198

(2) PLAN AND PROFILE - HIGHWAY 79

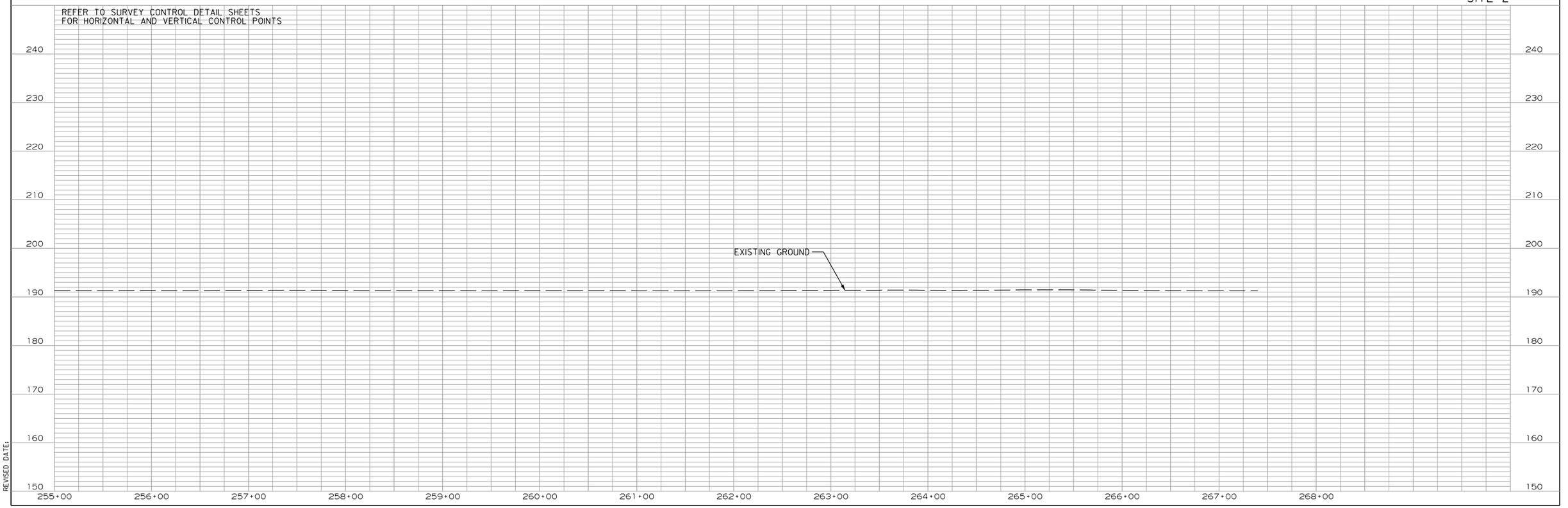
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

C.L. HWY. 79
P.I. = 259+69.24
Δ = 01°58'09" RT.
D = 0°30'00"
T = 196.95'
L = 393.86'
P.C. = 257+72.29
P.R.C. = 261+66.15
e = NO SUPER

C.L. HWY. 79
P.I. = 263+53.09
Δ = 01°52'09" LT.
D = 0°30'00"
T = 186.94'
L = 373.85'
P.R.C. = 261+66.15
P.T. = 265+40.00
e = NO SUPER



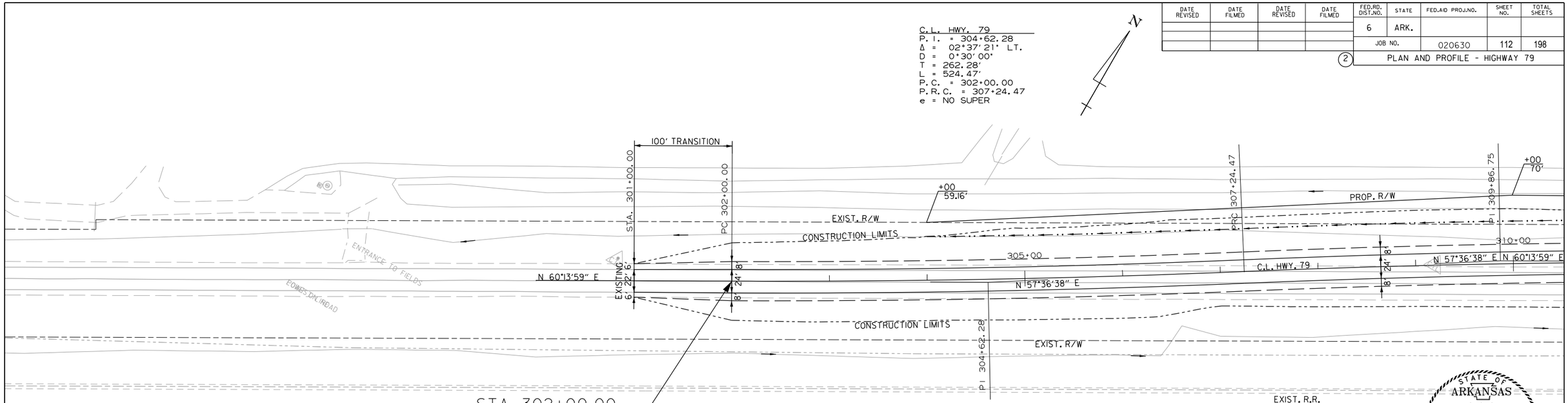
SITE 2



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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	112	198
				(2)	PLAN AND PROFILE - HIGHWAY 79			

C.L. HWY. 79
P.I. = 304+62.28
Δ = 02°37'21" LT.
D = 0°30'00"
T = 262.28'
L = 524.47'
P.C. = 302+00.00
P.R.C. = 307+24.47
e = NO SUPER



STA. 302+00.00
BEGIN SITE 3
L.M. 3.18

C.L. HWY. 79
P.I. = 309+86.75
Δ = 02°37'21" RT.
D = 0°30'00"
T = 262.28'
L = 524.47'
P.R.C. = 307+24.47
P.T. = 312+48.94
e = NO SUPER

STATE OF ARKANSAS
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SITE 3

REFER TO SURVEY CONTROL DETAIL SHEETS
FOR HORIZONTAL AND VERTICAL CONTROL POINTS



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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	113	198
				(2)	PLAN AND PROFILE - HIGHWAY 79			

STATE OF ARKANSAS
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STA. 318+29 IN PLACE
16" X 30' STEEL PIPE CULVERT
LT. SIDE DRAIN
REMOVE

STA. 318+15 CONSTRUCT
APPROACH ON LT. = 38 CU. YDS.

STA. 318+70 CONSTRUCT
APPROACH ON LT. = 21 CU. YDS.

N

PI 309+86.75
+00 70'
CONSTRUCTION LIMITS
310+00
315+00
320+00
325+00
N 60°13'59" E
N 60°11'00" E
PI 316+51.22
Δ=0°02'59" LT.
+00 74'
+28 74'
+00 60.61'
+28 60.36'
T.C.E.
16'
+15
+70
PROP. R/W
EXIST. R/W
+00 57'
+00 63'
C.L. HWY. 79
8 24' 8
8 36' 8
6
CONSTRUCTION LIMITS
STA. 310+48.94
PT 312+48.94
200' TAPER
EXIST. R.R.

C.L. HWY. 79
P.I. = 309+86.75
Δ = 02°37'21" RT.
D = 0°30'00"
T = 262.28'
L = 524.47'
P.R.C. = 307+24.47
P.T. = 312+48.94
e = NO SUPER

SITE 3

REFER TO SURVEY CONTROL DETAIL SHEETS
FOR HORIZONTAL AND VERTICAL CONTROL POINTS

EXISTING GROUND
0.11% LEFT DITCH GRADE
-0.35% LEFT DITCH GRADE
+90.00 LT. 192.13
+00.00 LT. 192.15

240 230 220 210 200 190 180 170 160 150

310+00 311+00 312+00 313+00 314+00 315+00 316+00 317+00 318+00 319+00 320+00 321+00 322+00 323+00 324+00 325+00

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WORKSPACE: AHTD
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▲ TOTAL DISCHARGE Q50 = 504 CFS
TOTAL DISCHARGE INCLUDES WATER THROUGH
STRUCTURES AT STA. 339+35 AND AT STA. 360+65

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	114	198

(2) PLAN AND PROFILE - HIGHWAY 79

STA. 339+35 IN PLACE
DBL. 6' X 3' X 55' R.C. BOX CULVERT
WITH 3:1 WINGS LT. AND RT.
RETAIN & EXTEND 37' LT.
FOR A COMPLETED LENGTH OF 92'
Q50 = 350 CFS DA = 248 ACRES▲

N

+49.70
117.63'

+00
63'

PROP. R/W

EXIST. R/W

CONSTRUCTION LIMITS

325+00 330+00 335+00 340+00

8'
36'
6'

N 60°11'00" E

C.L. HWY. 79

CONSTRUCTION LIMITS

EXIST. R/W

EXIST. R.R.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

SITE 3

REFER TO SURVEY CONTROL DETAIL SHEETS
FOR HORIZONTAL AND VERTICAL CONTROL POINTS

EXISTING GROUND

-0.35% LEFT
DITCH GRADE

+85.00 LT. 189.75

PROP. F.L. = 189.07 LT.
EX. F.L. = 189.15 LT.
EX. F.L. = 189.25 RT.

240 230 220 210 200 190 180 170 160 150

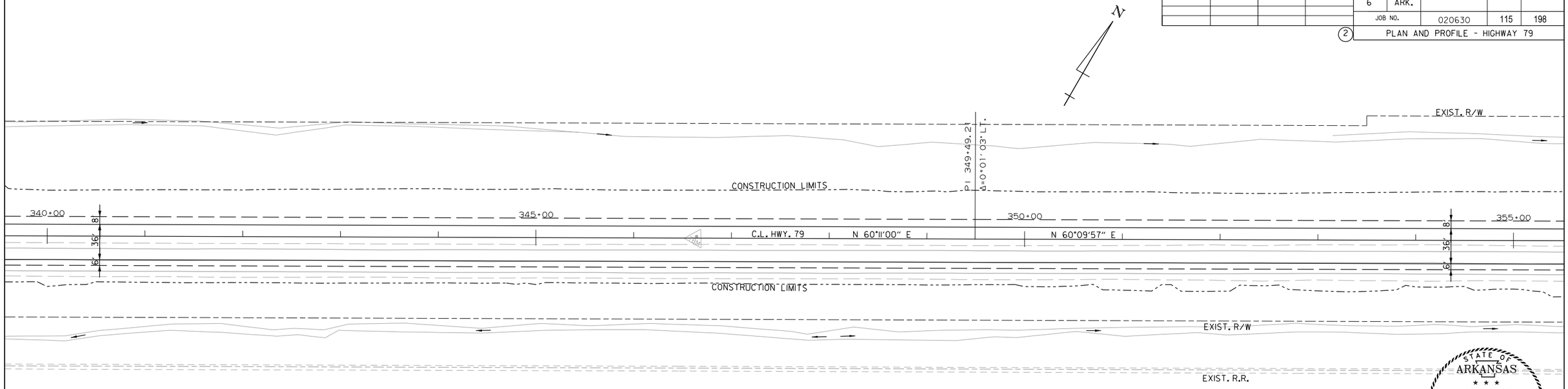
325+00 326+00 327+00 328+00 329+00 330+00 331+00 332+00 333+00 334+00 335+00 336+00 337+00 338+00 339+00 340+00

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REVISED DATE:

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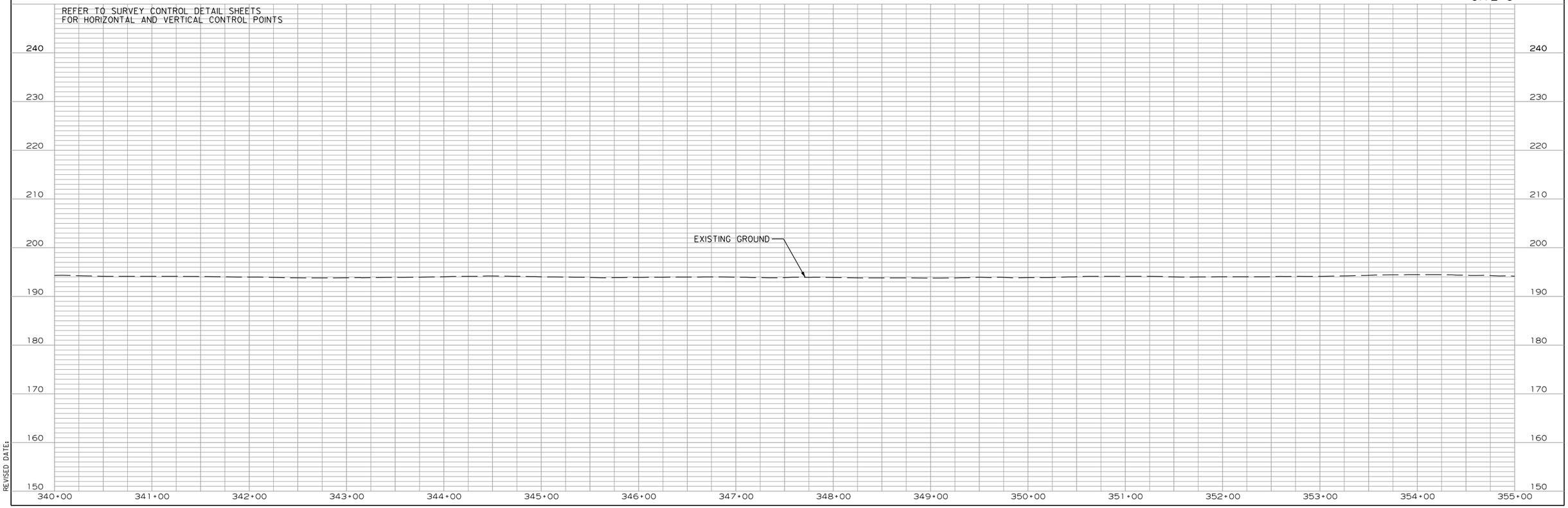
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		020630	115	198

(2) PLAN AND PROFILE - HIGHWAY 79



STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 2-4-2021

SITE 3



rnfortner 2/4/2021 8:13:15 AM
WORKSPACE: AHTD
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REVISED DATE:

STA. 360+65 IN PLACE
24" X 87' R.C. PIPE CULVERT
WITH HDWLS. LT. AND RT.
REMOVE R.C. PIPE CULVERT
AND CONSTRUCT 54" X 84' R.C. PIPE CULVERT
CLASS IV (TYPE 3 BEDDING) W/
F.E.S. LT. & RT.
Q50 = 154 CFS DA = 248 ACRES ▲
54" R.C. PIPE = 84 LIN. FT.
54" F.E.S. = 2 EA.

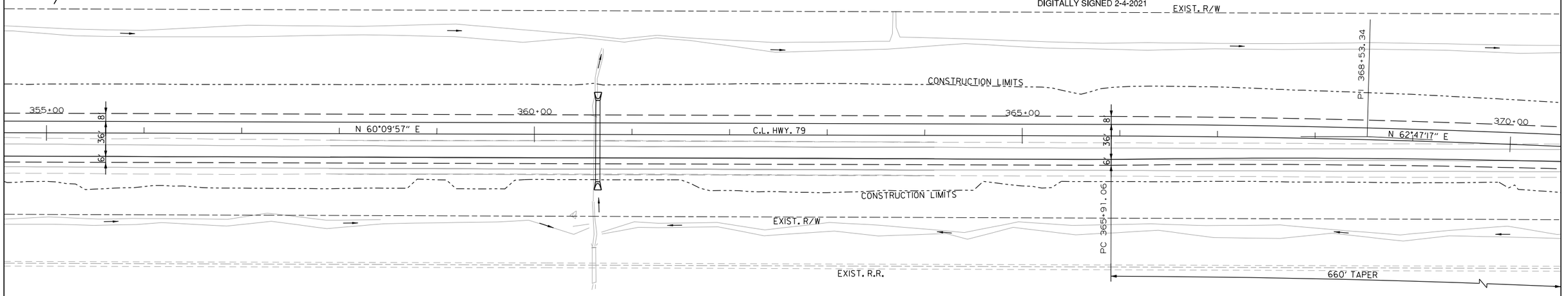
▲ TOTAL DISCHARGE Q50 = 504 CFS
TOTAL DISCHARGE INCLUDES WATER THROUGH
STRUCTURES AT STA. 339+35 AND AT STA. 360+65

STATE OF ARKANSAS
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		020630	116	198

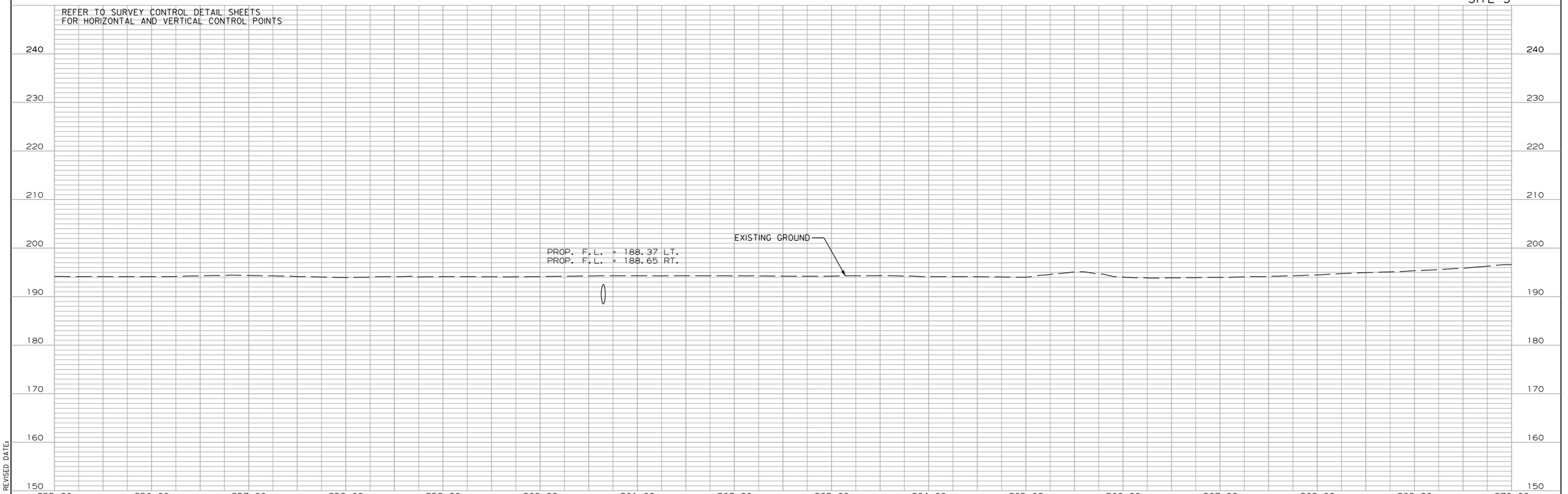
(2) PLAN AND PROFILE - HIGHWAY 79



C.L. HWY. 79
P.I. = 368+53.34
Δ = 02°37'20" RT.
D = 0°30'00"
T = 262.28'
L = 524.47'
P.C. = 365+91.06
P.R.C. = 371+15.53
e = NO SUPER

SITE 3

REFER TO SURVEY CONTROL DETAIL SHEETS
FOR HORIZONTAL AND VERTICAL CONTROL POINTS



rnfortner 2/4/2021 8:13:16 AM
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	117	198
				(2)	PLAN AND PROFILE - HIGHWAY 79			

C.L. HWY. 79
P.I. = 373+77.81
Δ = 02°37'20" LT.
D = 0°30'00"
T = 262.28'
L = 524.47'
P.R.C. = 371+15.53
P.T. = 376+40.00
e = NO SUPER

STA. 374+59 IN PLACE
7' X 20' STEEL TRAINCAR
LT. SIDE DRAIN
REMAIN

STA. 374+62 CONSTRUCT
APPROACH ON LT. = 14 CU. YDS.

EXIST. R/W

100' TRANSITION

STA. 377+70.00

STA. 378+70.00

PT 376+40.00

16'

CONSTRUCTION LIMITS

370+00

375+00

+62

N 62°47'17" E

N 60°09'57"E

+36

8' 24' 8'

EXISTING

C.L. HWY. 79

20'

PRC 371+15.53

STA. 372+51.06

PI 373+77.81

CONSTRUCTION LIMITS

EXIST. R/W

EXIST. R.R.

660' TAPER

STA. 374+36 CONSTRUCT
APPROACH ON RT. = 11 CU. YDS.

STA. 377+70.00
END SITE 3
L.M. 4.61

C.L. HWY. 79
P.I. = 368+53.34
Δ = 02°37'20" RT.
D = 0°30'00"
T = 262.28'
L = 524.47'
P.C. = 365+91.06
P.R.C. = 371+15.53
e = NO SUPER

STATE OF ARKANSAS
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SITE 3

REFER TO SURVEY CONTROL DETAIL SHEETS
FOR HORIZONTAL AND VERTICAL CONTROL POINTS

EXISTING GROUND

240 230 220 210 200 190 180 170 160 150

370+00 371+00 372+00 373+00 374+00 375+00 376+00 377+00 378+00 379+00 380+00

rnfortner 2/4/2021 8:13:16 AM
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REVISED DATE:

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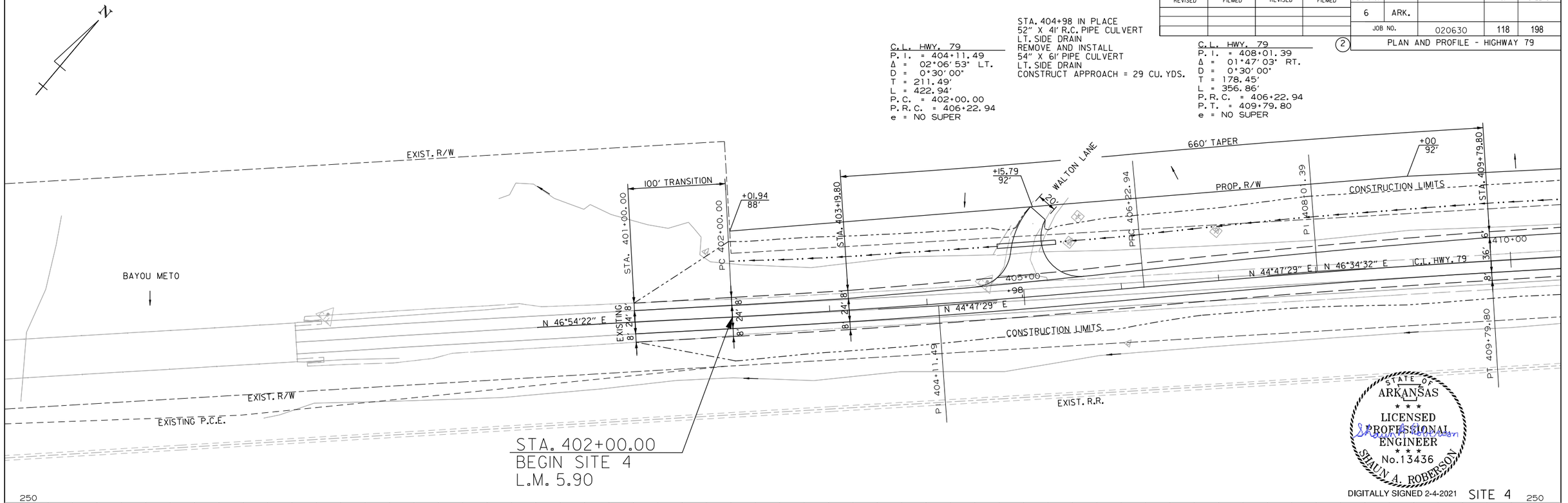
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		020630	118	198

(2) PLAN AND PROFILE - HIGHWAY 79

C.L. HWY. 79
P.I. = 404+11.49
Δ = 02°06'53" LT.
D = 0°30'00"
T = 211.49'
L = 422.94'
P.C. = 402+00.00
P.R.C. = 406+22.94
e = NO SUPER

STA. 404+98 IN PLACE
52" X 41' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
54" X 61' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 29 CU. YDS.

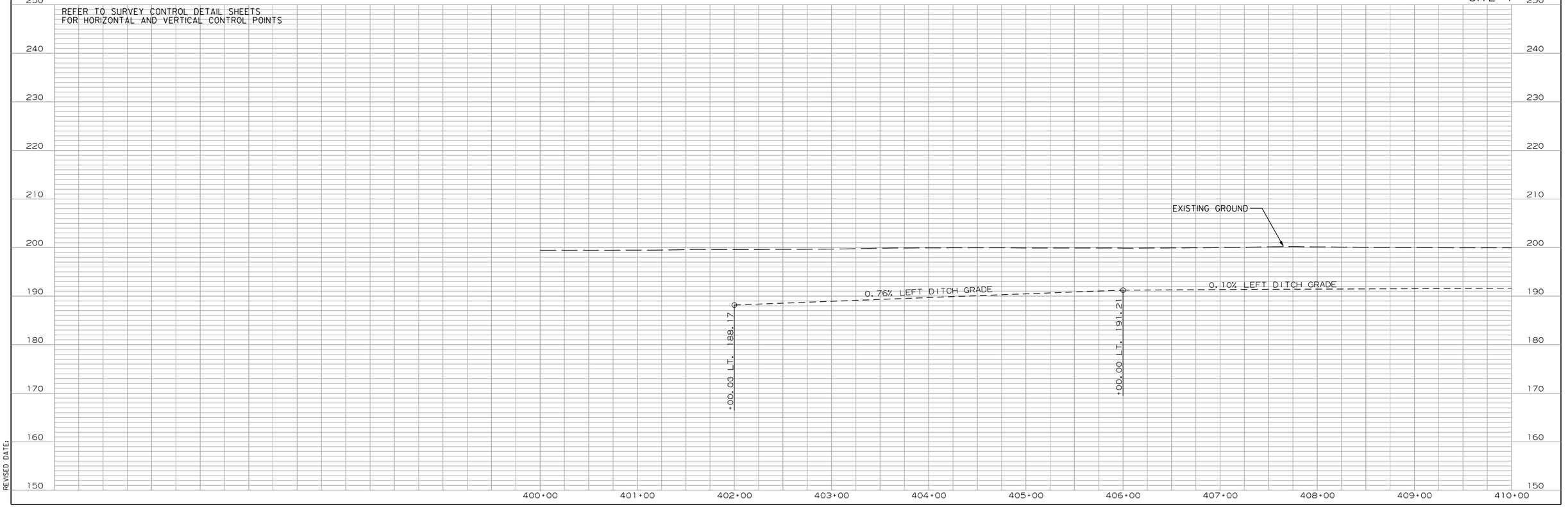
C.L. HWY. 79
P.I. = 408+01.39
Δ = 01°47'03" RT.
D = 0°30'00"
T = 178.45'
L = 356.86'
P.R.C. = 406+22.94
P.T. = 409+79.80
e = NO SUPER



STATE OF ARKANSAS
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SITE 4

REFER TO SURVEY CONTROL DETAIL SHEETS
FOR HORIZONTAL AND VERTICAL CONTROL POINTS



rnfortner
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	119	198
				(2)	PLAN AND PROFILE - HIGHWAY 79			

▲ TOTAL DISCHARGE Q50 = 99 CFS
TOTAL DISCHARGE INCLUDES WATER THROUGH STRUCTURE AT STA. 424+34 AND BRIDGE STRUCTURE AT BAYOU METO

APPROXIMATE FEMA 100 YR. FLOODPLAIN LIMITS

STA. 417+50 IN PLACE
36" X 30' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
48" X 43' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 38 CU. YDS.

STA. 420+59 IN PLACE
24" X 28' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
57" X 38" X 41' ARCH PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 20 CU. YDS.

STA. 424+34 IN PLACE
24" X 52' R.C. PIPE CULVERT
WITH HDWLS. LT. AND RT.
REMOVE HDWL. LT.
AND EXTEND R.C. PIPE 32' LT.
CLASS III (TYPE 3 BEDDING) WITH
F.E.S. LT.
Q50 = 22 CFS DA = 87 ACRES ▲
24" R.C. PIPE = 36 LIN. FT.
24" F.E.S. = 1EA.

HINES LANE
+64
84.05'
20'
22'
PROP. R/W
CONSTRUCTION LIMITS
EXIST. R/W
425+00
420+00
+59
415+00
N 46°34'32" E
+50
+54
C.L. HWY. 79
410+00
6'
36'
8'
CONSTRUCTION LIMITS
EXIST. R/W
24'
GOLDMAN LOOP
EXIST. R.R.
PT 409+79.80

STA. 417+54
CONSTRUCT APPROACH ON RT.
= 47 CU. YDS.

REMOVAL AND DISPOSAL OF FENCE

STA.	STA.	SIDE	UNIT
419+47	421+59	LT.	235 LIN. FT.

FENCING

STA.	STA.	SIDE	6' CHAIN LINK FENCE	20' GATE
419+47	421+59	HWY. 79 - LT.	212 LIN. FT	2 EACH

STATE OF ARKANSAS
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SITE 4

REFER TO SURVEY CONTROL DETAIL SHEETS
FOR HORIZONTAL AND VERTICAL CONTROL POINTS

EXISTING GROUND

PROP. F.L. = 193.04 LT.
EX. F.L. = 193.00 LT.
EX. F.L. = 192.95 RT.

0.10% LEFT DITCH GRADE

0.15% LEFT DITCH GRADE

+34.00 LT. 193.04

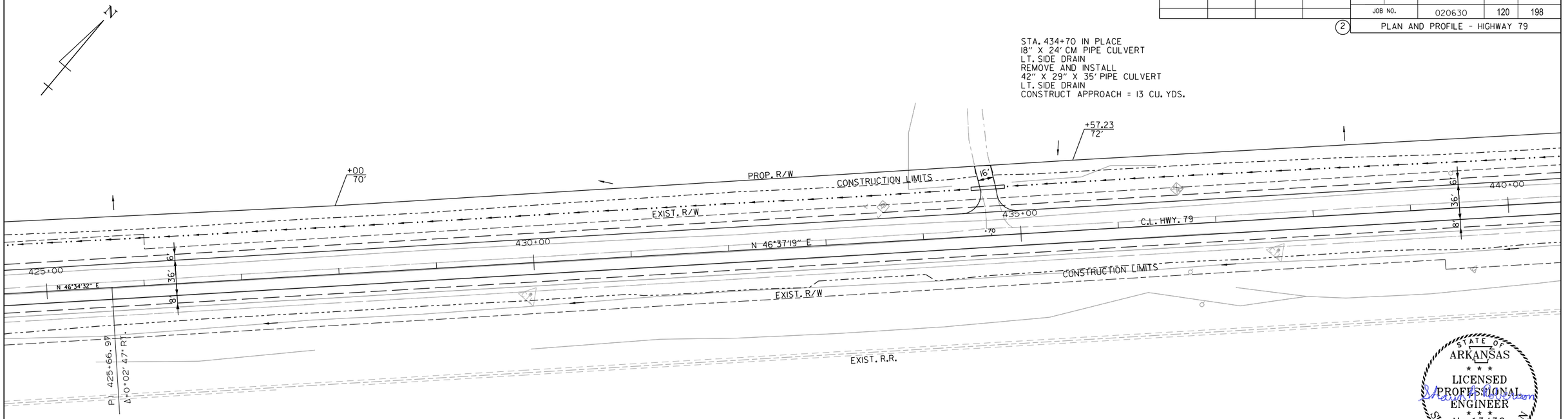
250 240 230 220 210 200 190 180 170 160 150

410+00 411+00 412+00 413+00 414+00 415+00 416+00 417+00 418+00 419+00 420+00 421+00 422+00 423+00 424+00 425+00

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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	120	198
				(2)	PLAN AND PROFILE - HIGHWAY 79			

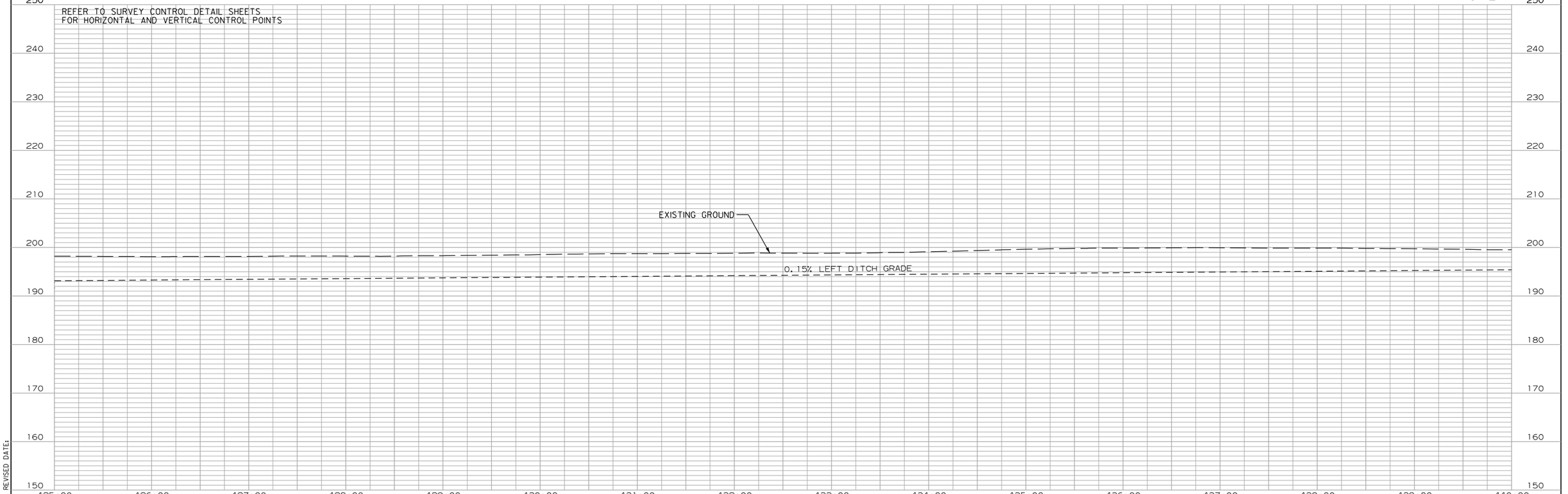
STA. 434+70 IN PLACE
18" X 24' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
42" X 29" X 35' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 13 CU. YDS.



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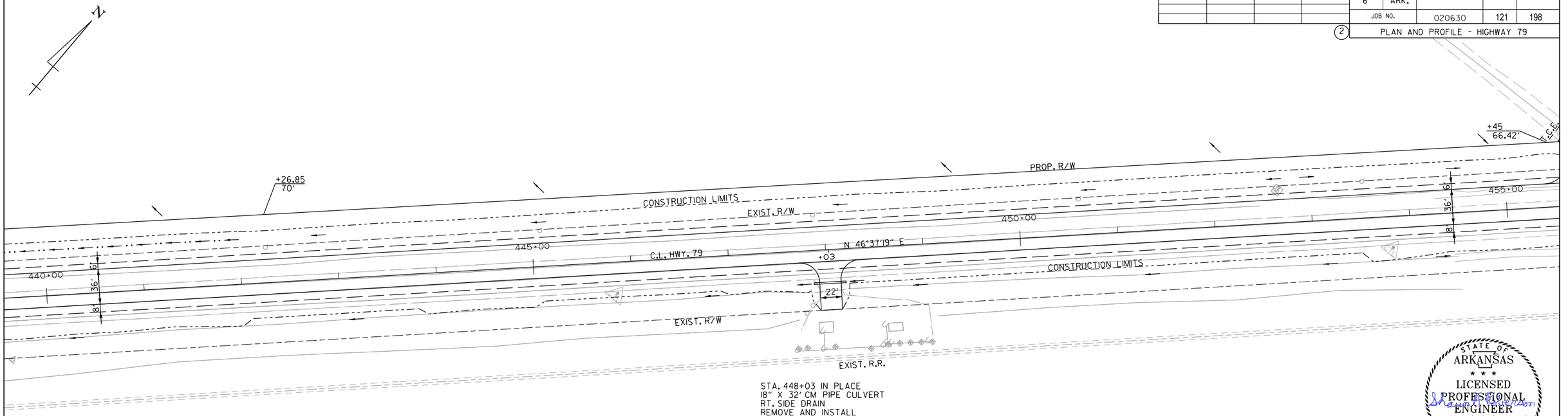
SITE 4

REFER TO SURVEY CONTROL DETAIL SHEETS
FOR HORIZONTAL AND VERTICAL CONTROL POINTS



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REVISED DATE:

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				6	ARK.			
				JOB NO.		020630	121	198
				(2)	PLAN AND PROFILE - HIGHWAY 79			

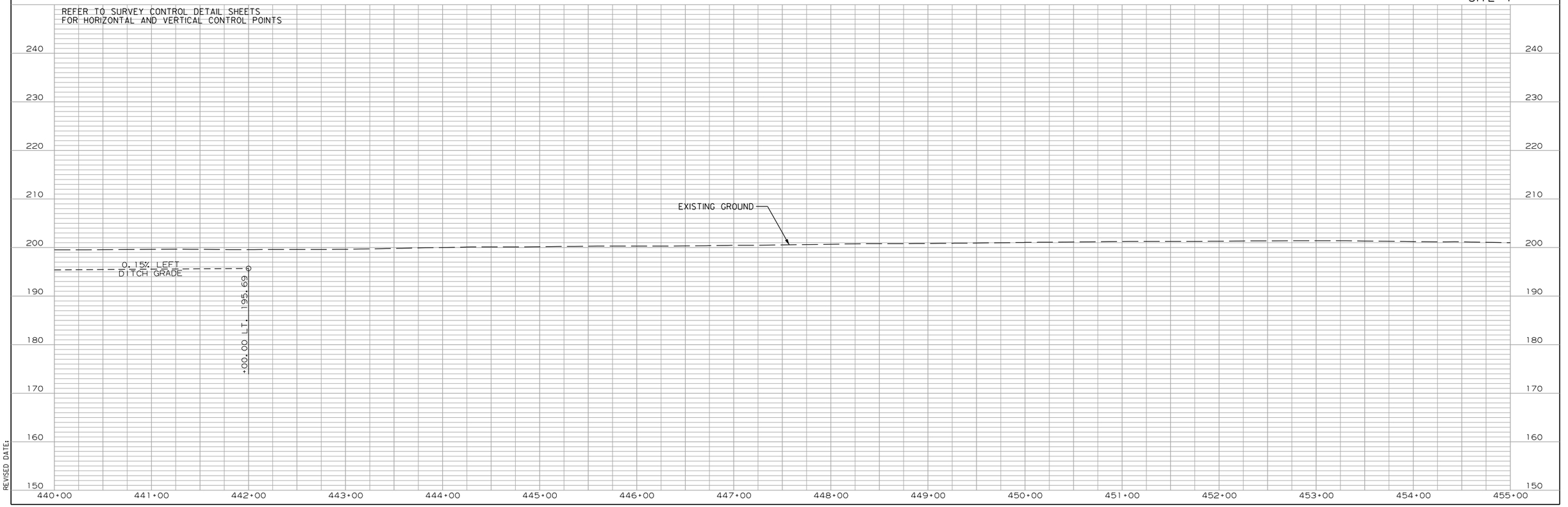


STA. 448+03 IN PLACE
18" X 32' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
21" X 15" X 33' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 24 CU. YDS.

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SITE 4

REFER TO SURVEY CONTROL DETAIL SHEETS
FOR HORIZONTAL AND VERTICAL CONTROL POINTS



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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	122	198
				(2)	PLAN AND PROFILE - HIGHWAY 79			

C.L. HWY. 79
P.I. = 459+83.76
Δ = 01°51'15" RT.
D = 0°30'00"
T = 185.44'
L = 370.84'
P.C. = 457+98.32
P.R.C. = 461+69.16
e = NO SUPER

C.L. HWY. 79
P.I. = 463+54.60
Δ = 01°51'15" LT.
D = 0°30'00"
T = 185.44'
L = 370.84'
P.R.C. = 461+69.16
P.T. = 465+40.00
e = NO SUPER

APPROXIMATE FEMA 100 YR. FLOODPLAIN LIMITS

STA. 456+10 IN PLACE
18" X 51' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
21" X 15" X 51' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 31 CU. YDS.

WARD HARRIS LANE

+70 95'
+66.65 66.36'
+05 65.55'
+45 66.42'

CONSTRUCTION LIMITS
EXIST. R/W
PROP. R/W
P.I. 459+83.76
+65.96 59'
460+00
N 48°28'34" E
455+00
+10 C.L. HWY. 79 N 46°37'19" E
+92
40' R
30' R
12' GREGORY FISHER RD.
PC 457+98.32
EXIST. R.R.
PRC 461+69.16
PI 463+54.60
STA. 463+40.00
200' TAPER
100' TRANSITION
+00 60'
PT 465+40.00
+00 50.19'
STA. 466+40.00
465+00
36'
8'
24'
22' 6" EXISTING
N 46°37'19" E

STA. 456+92 IN PLACE
18" X 31' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 42' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 49 CU. YDS.

STA. 465+40.00
END JOB 020630
END SITE 4
L.M. 7.10

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SITE 4

REFER TO SURVEY CONTROL DETAIL SHEETS
FOR HORIZONTAL AND VERTICAL CONTROL POINTS

EXISTING GROUND

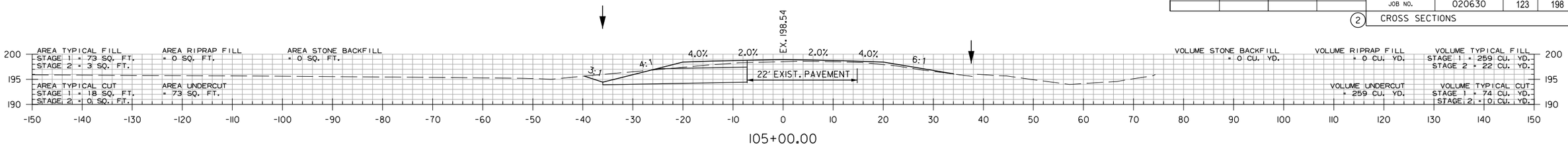
240 230 220 210 200 190 180 170 160 150

455+00 456+00 457+00 458+00 459+00 460+00 461+00 462+00 463+00 464+00 465+00 466+00 467+00 468+00

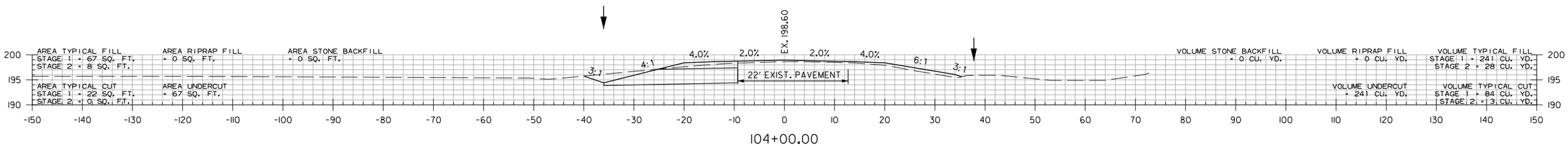
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REVISED DATE:

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				6	ARK.			
				JOB NO.		020630	123	198

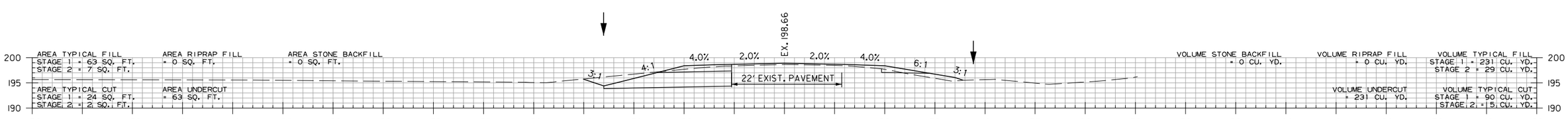
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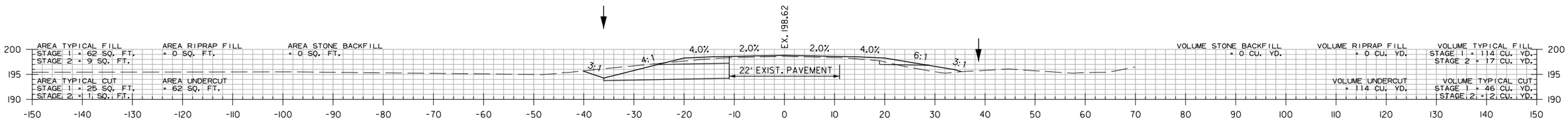
105+00.00



104+00.00

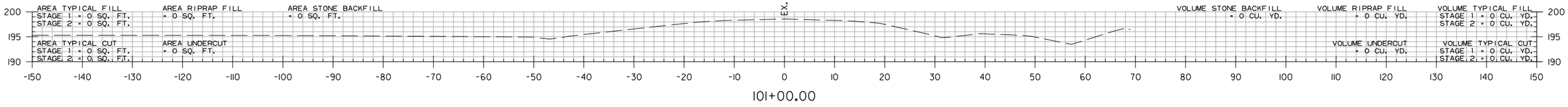


103+00.00



102+00.00

STA. 102+00.00
BEGIN JOB 020630
BEGIN SITE 1



101+00.00

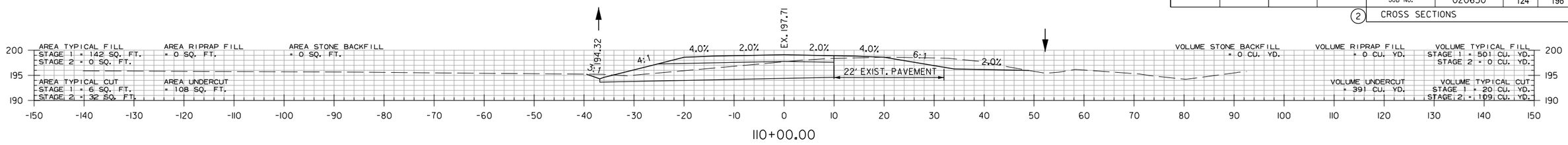
STA. 101+00.00 BEGIN TRANSITION

SITE 1
STA. 101+00 TO STA. 105+00

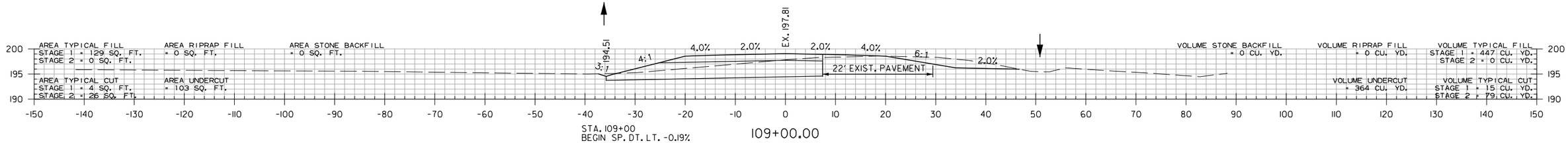
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	124	198

(2) CROSS SECTIONS

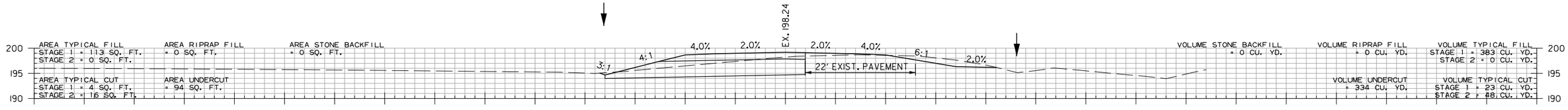


110+00.00

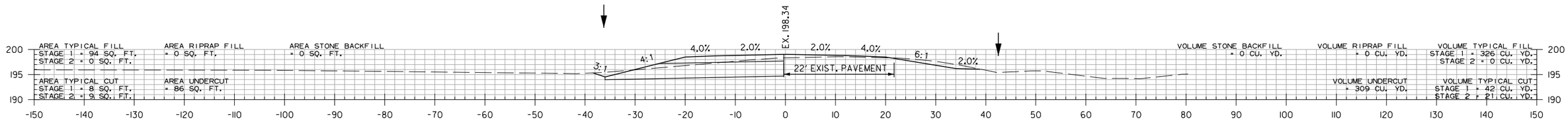


STA. 109+00
BEGIN SP. DT. LT. -0.19%
ELEV. 194.51

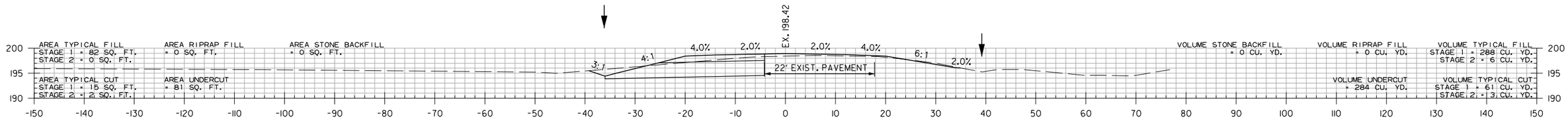
109+00.00



108+00.00



107+00.00



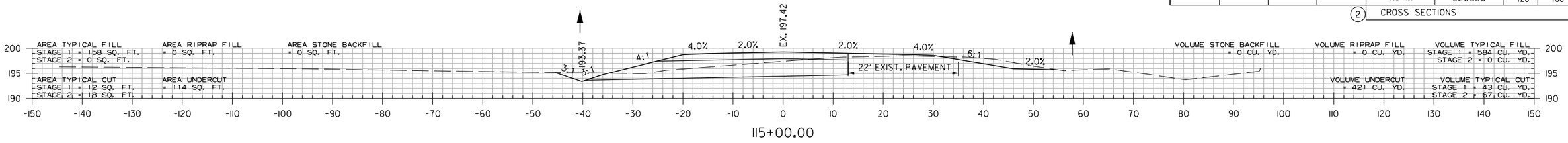
106+00.00

SITE 1
STA. 106+00 TO STA. 110+00

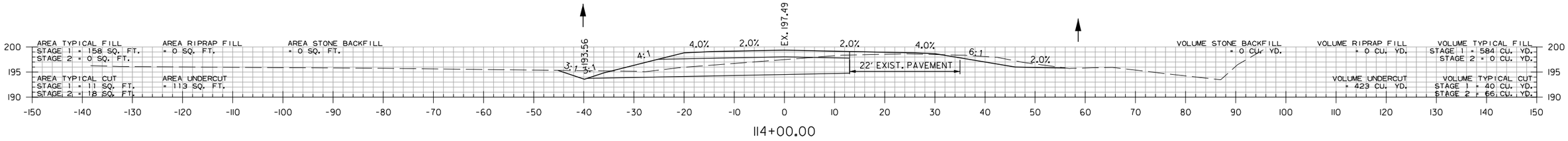
rnfortner 2/4/2021 8:38:18 AM
WORKSPACE: AHTD
L:\2017\170175\25 - Wabbaseka - Stuttgart\Drawings\r020630_CX_SITE1.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	125	198

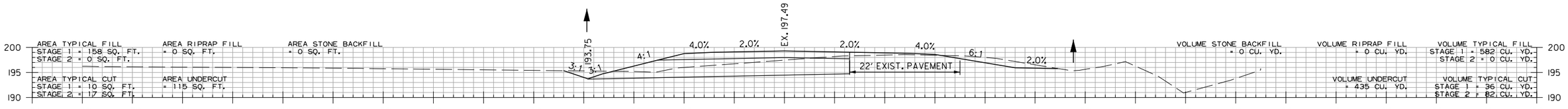
(2) CROSS SECTIONS



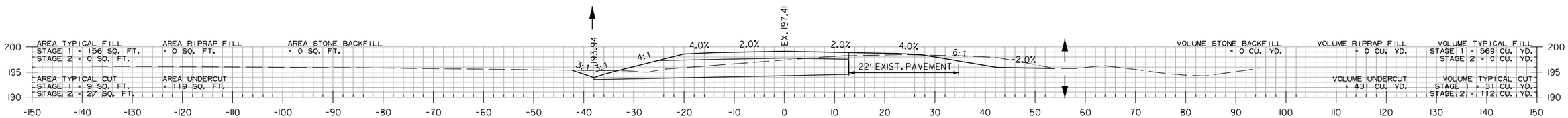
115+00.00



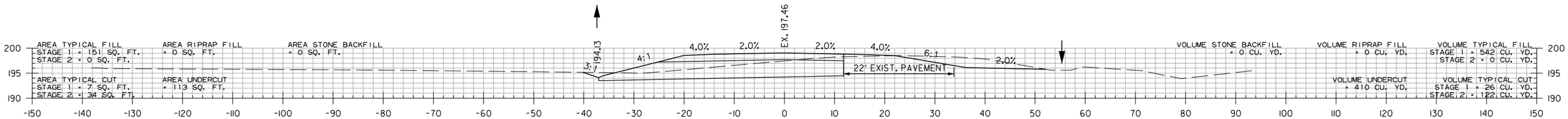
114+00.00



113+00.00



112+00.00



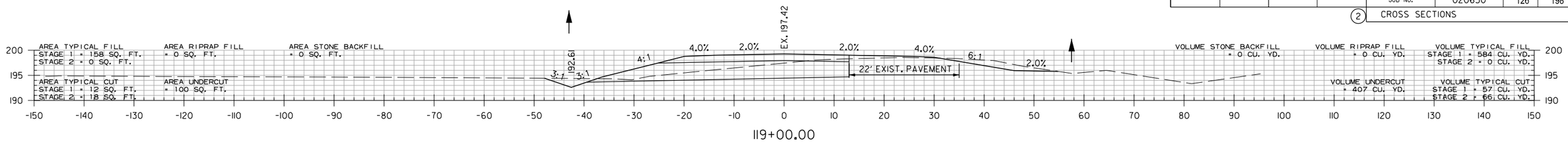
111+00.00

SITE 1
STA. 111+00 TO STA. 115+00

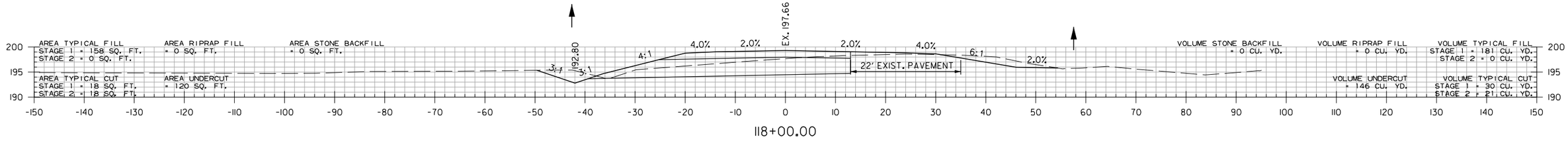
rnfortner 2/4/2021 8:38:18 AM
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	126	198

(2) CROSS SECTIONS

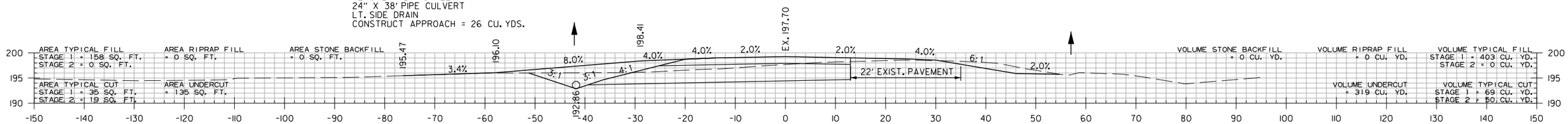


119+00.00

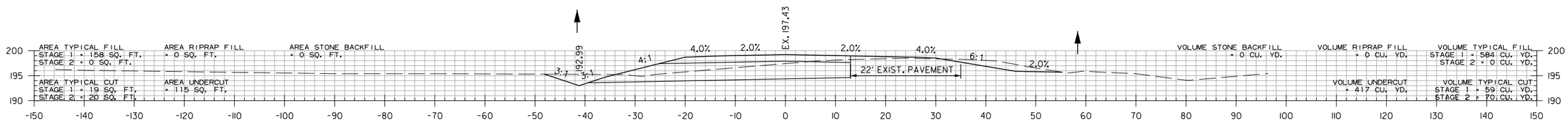


118+00.00

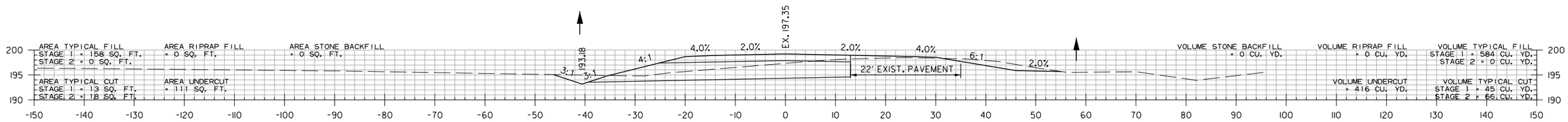
STA. 117+69 IN PLACE
18" X 20' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
24" X 38' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 26 CU. YDS.



117+69.00



117+00.00



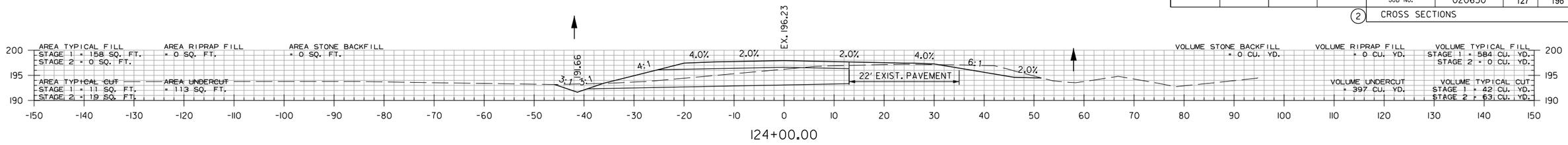
116+00.00

SITE 1
STA. 116+00 TO STA. 119+00

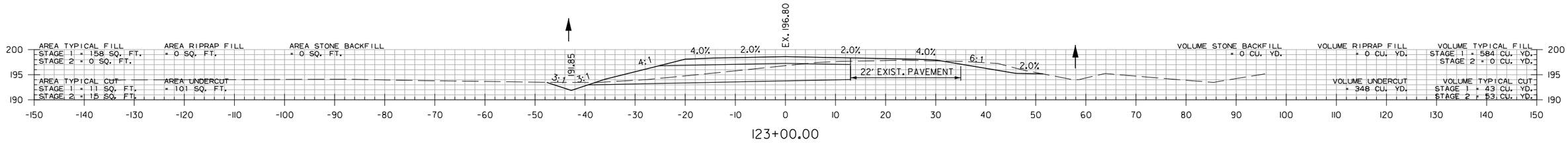
rnfortner 2/4/2021 8:13:19 AM
WORKSPACE: AHTD
L:\2017\17017525 - Wabbaseka - Stuttgart\Drawings\r020630_CX_SITE1.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	127	198

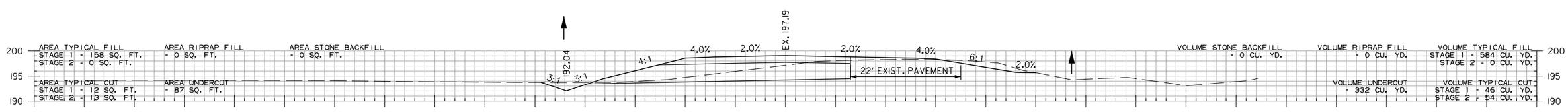
(2) CROSS SECTIONS



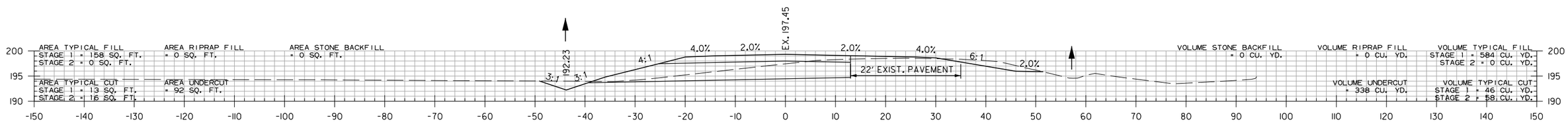
124+00.00



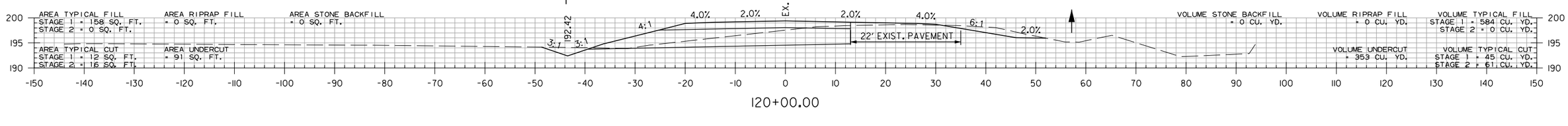
123+00.00



122+00.00



121+00.00



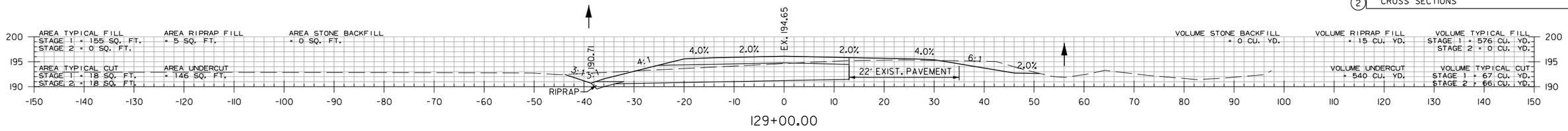
120+00.00

SITE 1
STA. 120+00 TO STA. 124+00

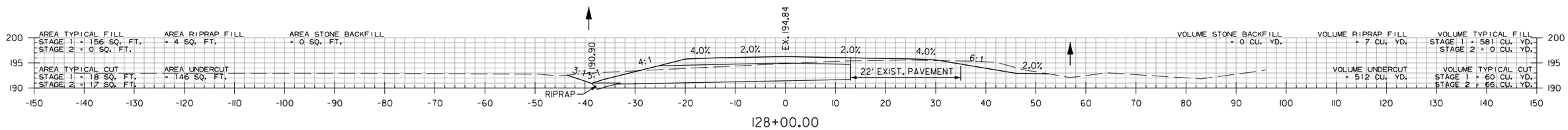
rnfortner 2/4/2021 8:13:19 AM
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	128	198

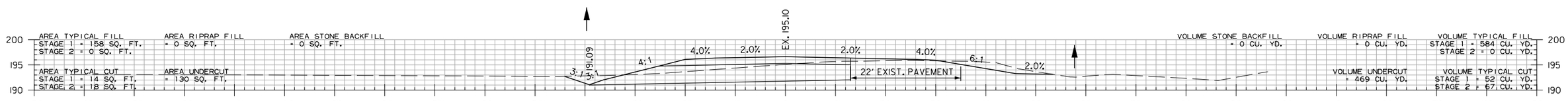
(2) CROSS SECTIONS



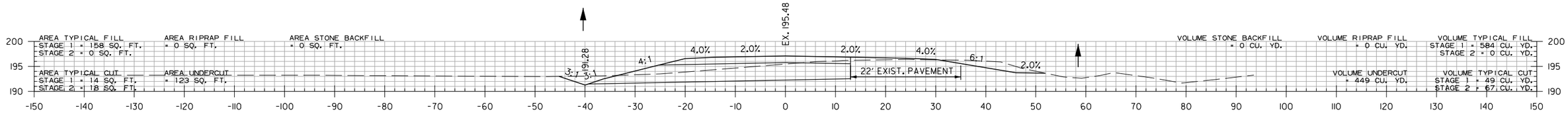
129+00.00



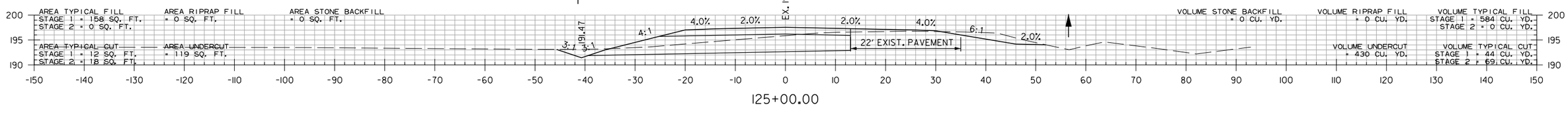
128+00.00



127+00.00



126+00.00



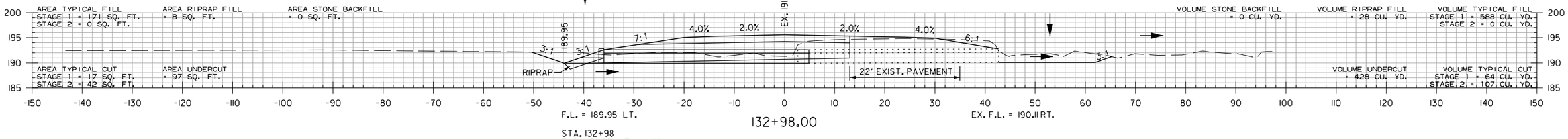
125+00.00

SITE 1
STA. 125+00 TO STA. 129+00

rnfortner 2/4/2021 8:13:19 AM
WORKSPACE: AHTD
L:\2017\1701525 - Wabbaseka - Stuttgart\Drawings\r020630_CX_SITE1.dgn
REVISED DATE:

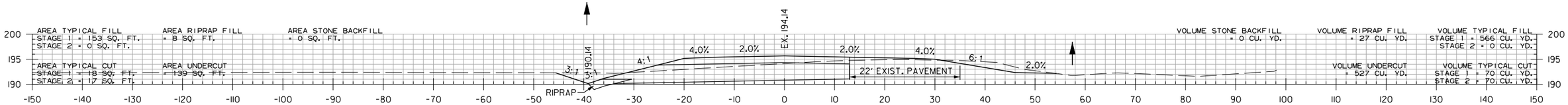
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	129	198
				(2) CROSS SECTIONS				

STA. 132+98 IN PLACE
5' X 2' X 40' R.C. BOX CULVERT
WITH 3:1 WINGS LT. AND RT.
RETAIN & EXTEND 40' LT.
FOR A COMPLETED LENGTH OF 80'
Q50 = 28 CFS DA = 25 ACRES

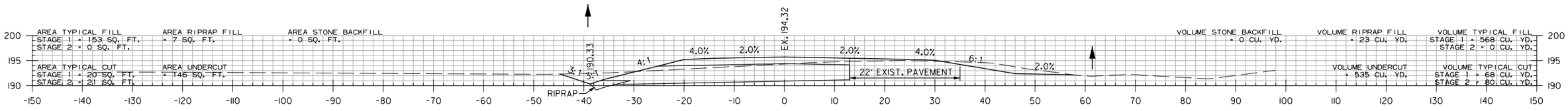


132+98.00

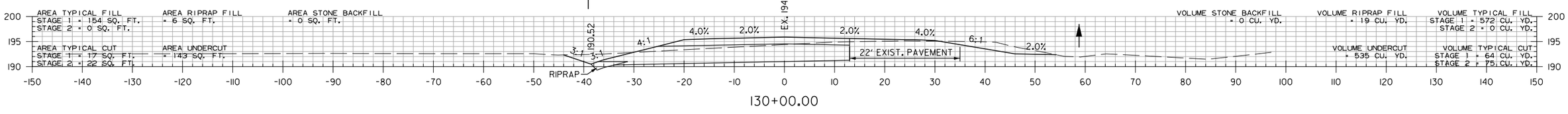
STA. 132+98
END SP. DT. LT. -0.19%
BEGIN SP. DT. LT. 0.52%
ELEV. 189.95



132+00.00



131+00.00



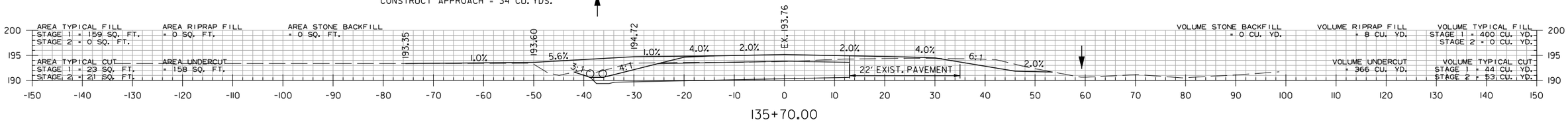
130+00.00

SITE 1
STA. 130+00 TO STA. 132+98

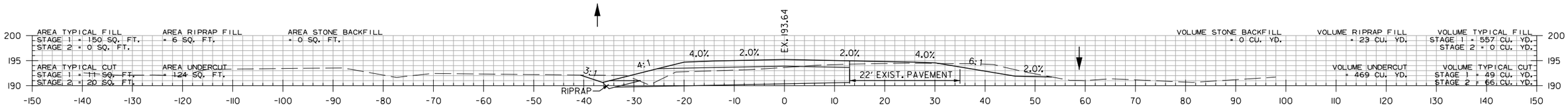
rnfortner 2/4/2021 8:13:19 AM
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	130	198
				(2) CROSS SECTIONS				

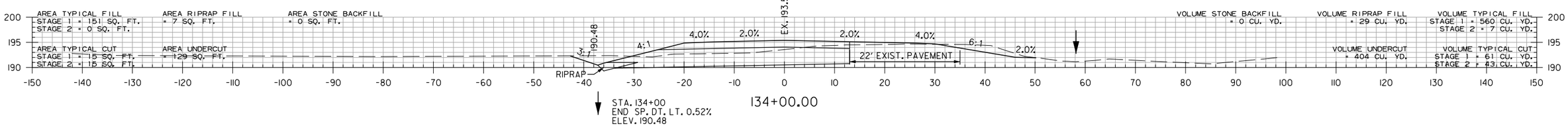
STA. 135+70 IN PLACE
DBL. 24" X 30' STEEL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
DBL. 24" X 38' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 34 CU. YDS.



135+70.00

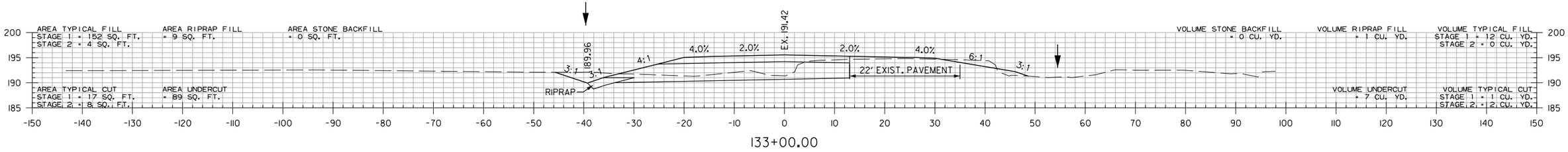


135+00.00



134+00.00

STA. 134+00
END SP. DT. LT. 0.52%
ELEV. 190.48

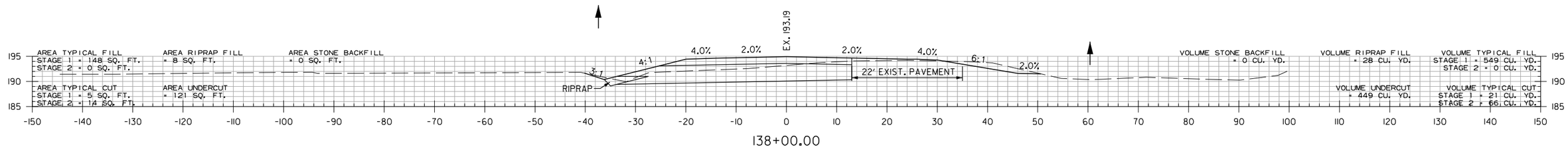


133+00.00

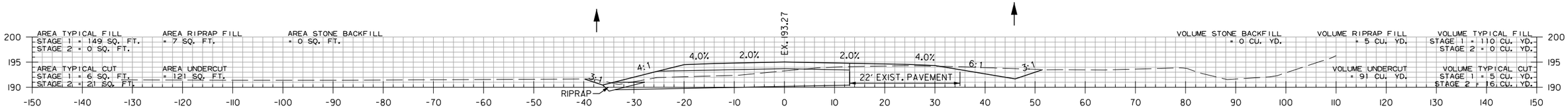
SITE 1
STA. 133+00 TO STA. 135+70

rnfortner 2/4/2021 8:13:19 AM
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	131	198
				(2) CROSS SECTIONS				

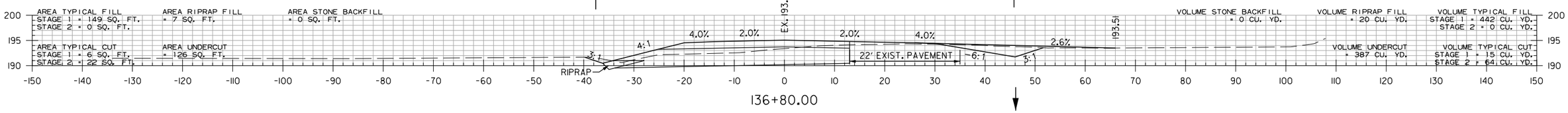


138+00.00

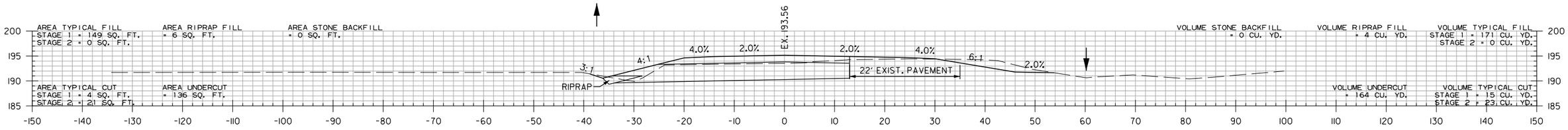


137+00.00

STA. 136+80 CONSTRUCT
APPROACH ON RT. = 5 CU. YDS.



136+80.00



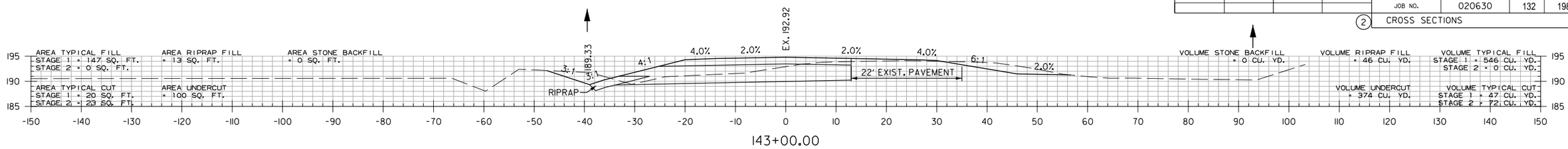
136+00.00

SITE 1
STA. 136+00 TO STA. 138+00

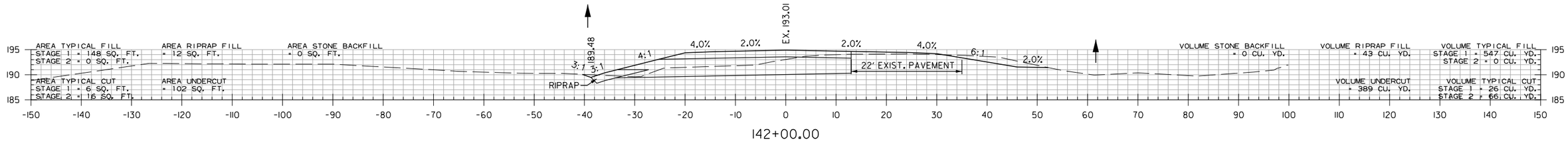
rnfortner 2/4/2021 8:43:20 AM
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	132	198

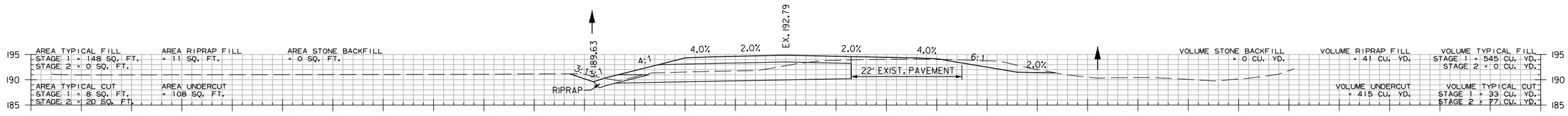
(2) CROSS SECTIONS



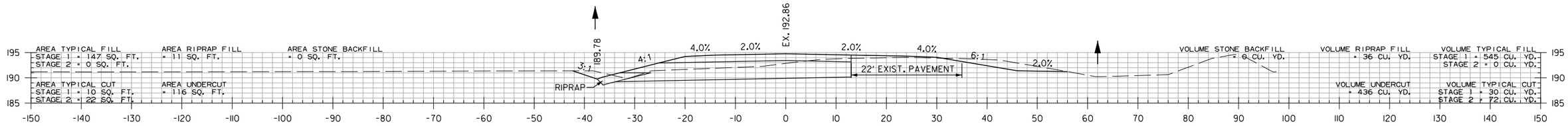
143+00.00



142+00.00

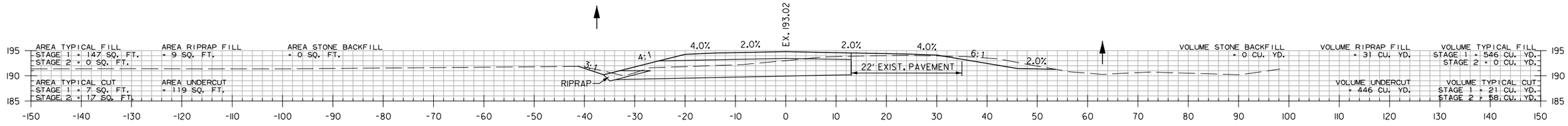


141+00.00



140+00.00

STA. 139+30
BEGIN SP. DT. LT. -0.15%
ELEV. 189.88



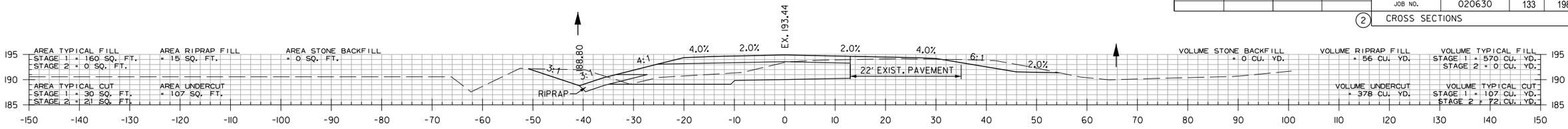
139+00.00

SITE 1
STA. 139+00 TO STA. 143+00

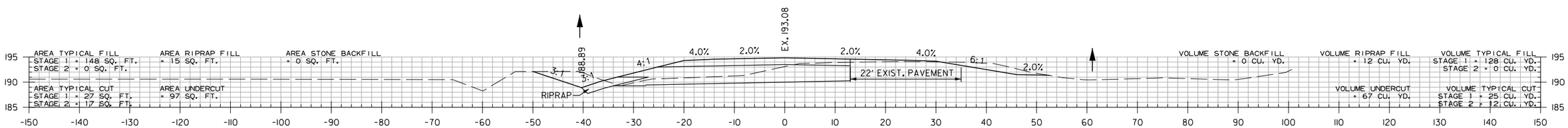
rnfortner 2/4/2021 8:3:20 AM
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	133	198

(2) CROSS SECTIONS

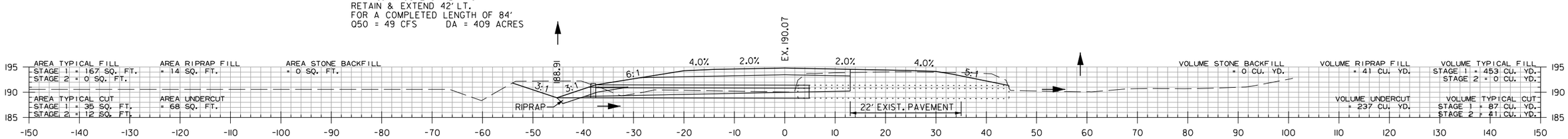


147+00.00



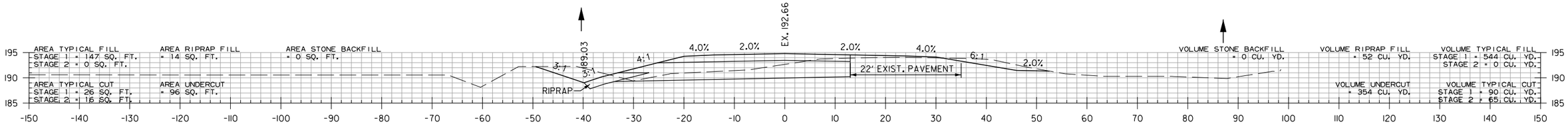
146+00.00

STA. 145+78 IN PLACE
3' X 2' X 42' R.C. BOX CULVERT
WITH 3:1 WINGS LT. AND RT.
RETAIN & EXTEND 42' LT.
FOR A COMPLETED LENGTH OF 84'
Q50 = 49 CFS DA = 409 ACRES

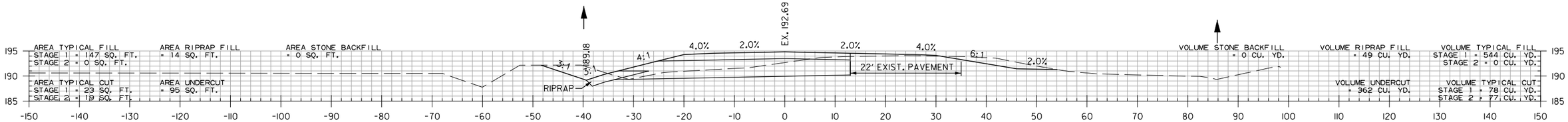


F.L. = 188.91 LT. 145+78.00 EX. F.L. = 188.75 RT.

STA. 145+78
END SP. DT. LT. -0.15%
BEGIN SP. DT. LT. -0.09%
ELEV. 188.91



145+00.00



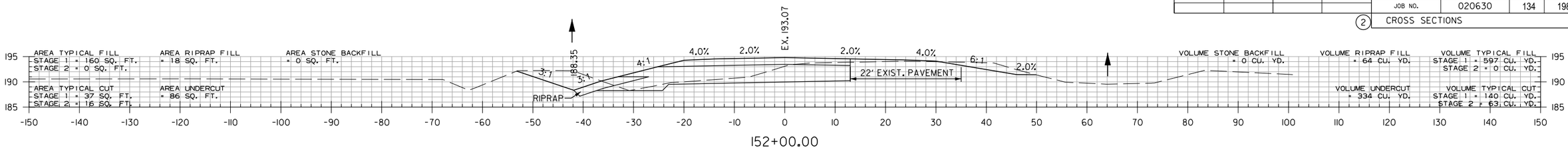
144+00.00

SITE 1
STA. 144+00 TO STA. 147+00

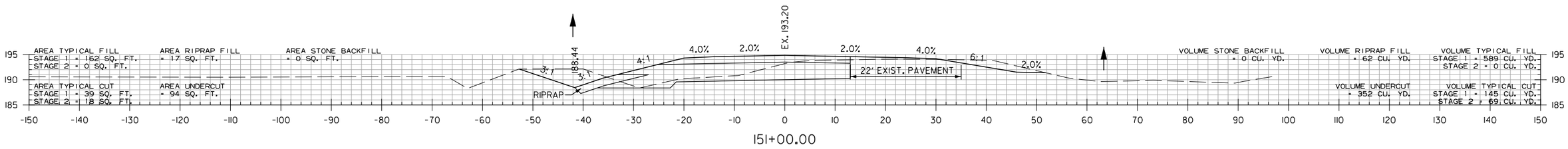
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	134	198

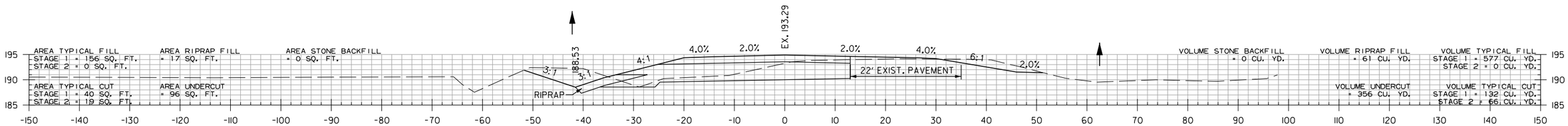
(2) CROSS SECTIONS



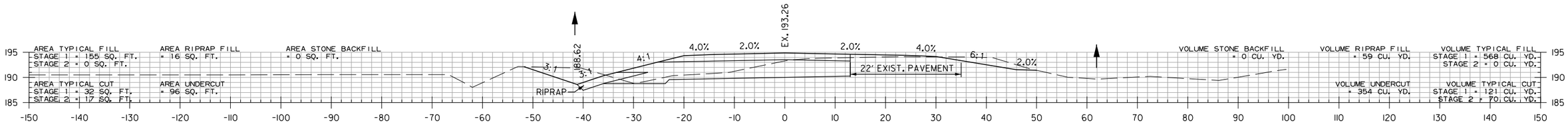
152+00.00



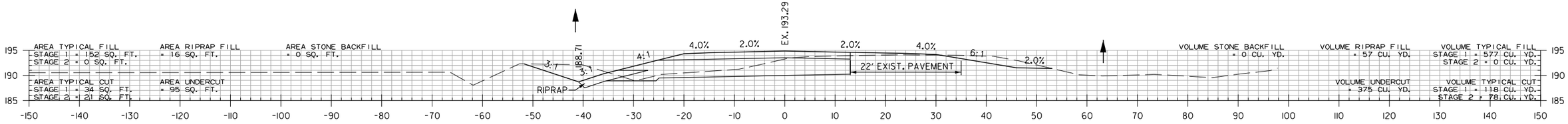
151+00.00



150+00.00



149+00.00

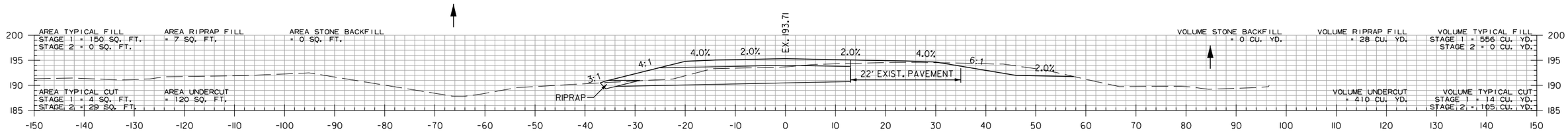


148+00.00

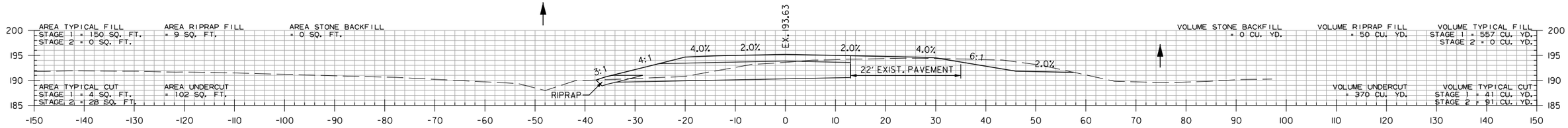
SITE 1
STA. 148+00 TO STA. 152+00

rnfortner 2/4/2021 8:3:20 AM
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	135	198
				(2)	CROSS SECTIONS			

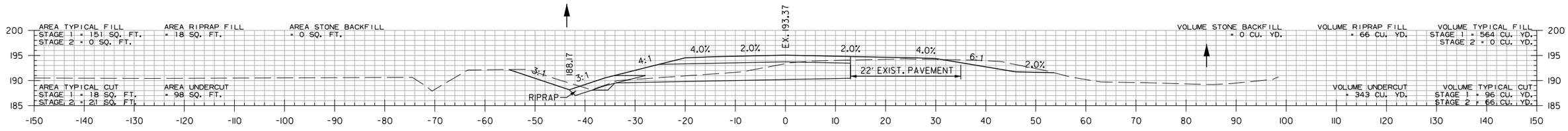


156+00.00

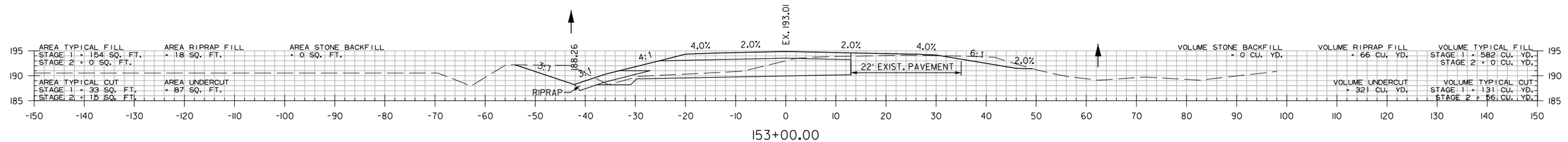


155+00.00

STA. 154+60
END SP. DT. LT. -0.09%
ELEV. 188.12



154+00.00



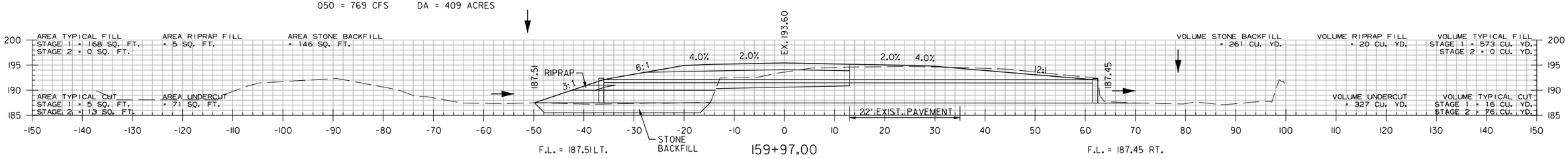
153+00.00

SITE 1
STA. 153+00 TO STA. 156+00

rnfortner 2/4/2021 8:13:20 AM
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	136	198
				(2) CROSS SECTIONS				

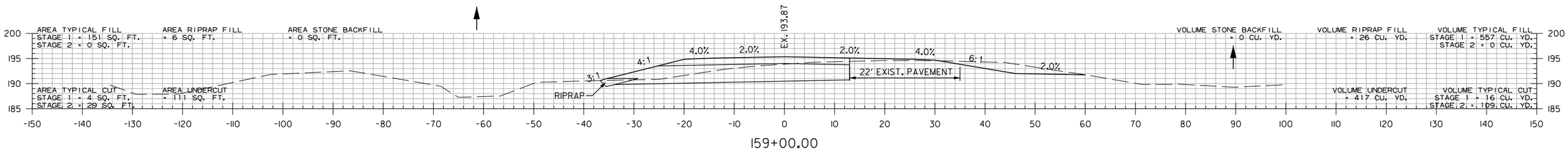
STA. 159+97 IN PLACE
TRP. 6' X 4' X 76' R.C. BOX CULVERT
WITH 3:1 WINGS LT. AND RT.
RETAIN & EXTEND 25' LT.
FOR A COMPLETED LENGTH OF 101'
CONSTRUCT 6' X 4' X 101'
R.C. BOX CULVERT TO THE NORTH
WITH 3:1 WINGS LT. AND RT.
050 = 769 CFS DA = 409 ACRES



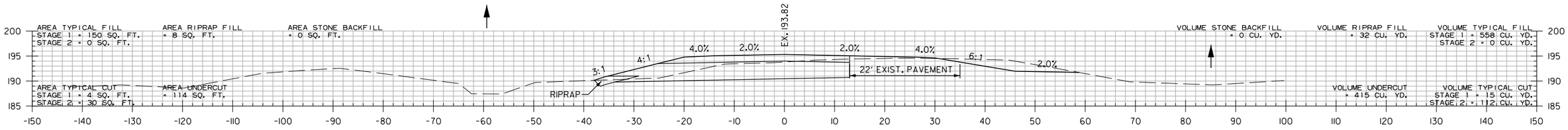
F.L. = 187.51 LT.

159+97.00

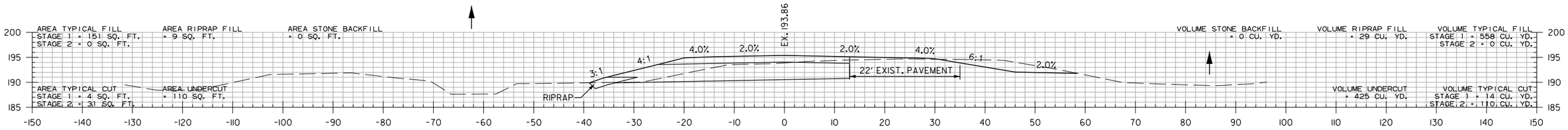
F.L. = 187.45 RT.



159+00.00



158+00.00

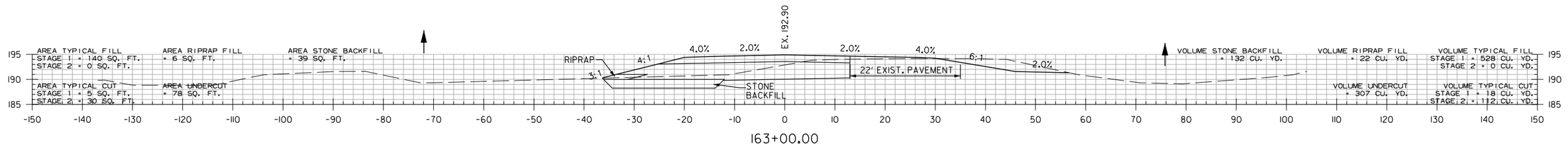


157+00.00

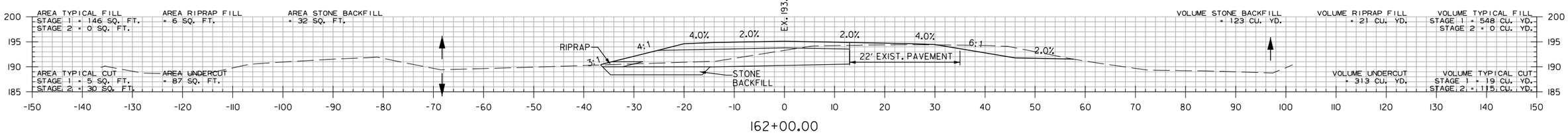
SITE 1
STA. 157+00 TO STA. 159+97

rnfortner 2/4/2021 8:43:21 AM
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REVISED DATE:

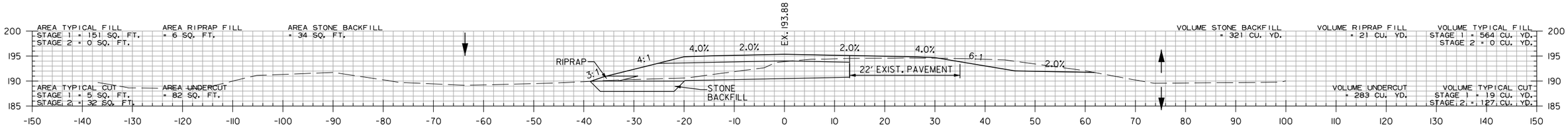
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	137	198
				(2) CROSS SECTIONS				



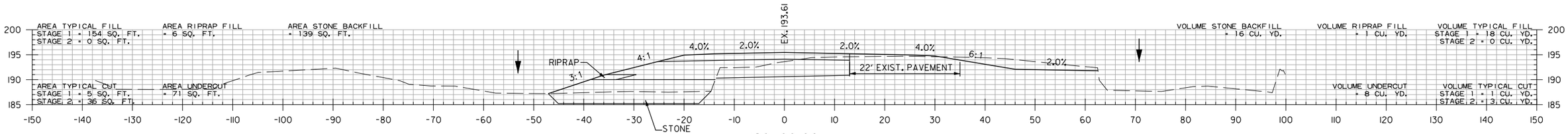
163+00.00



162+00.00



161+00.00



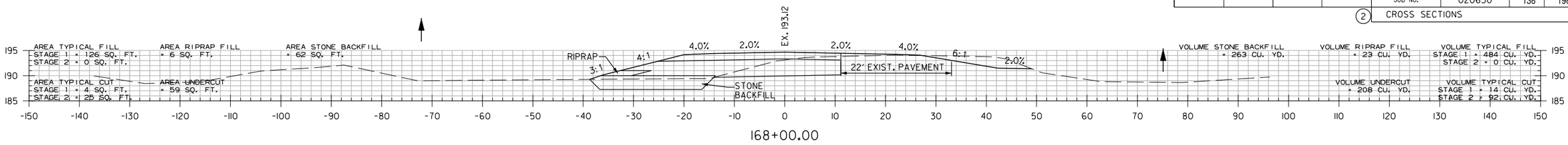
160+00.00

SITE 1
STA. 160+00 TO STA. 163+00

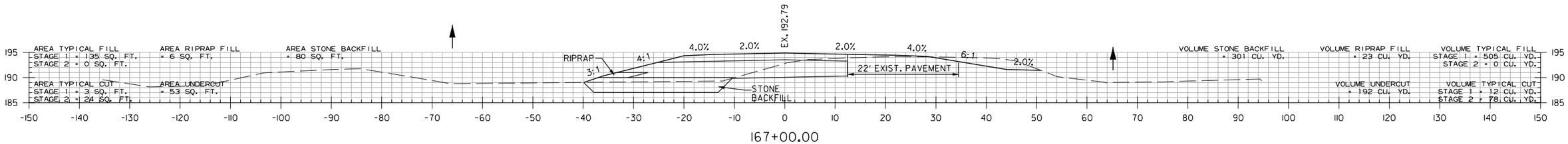
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	138	198

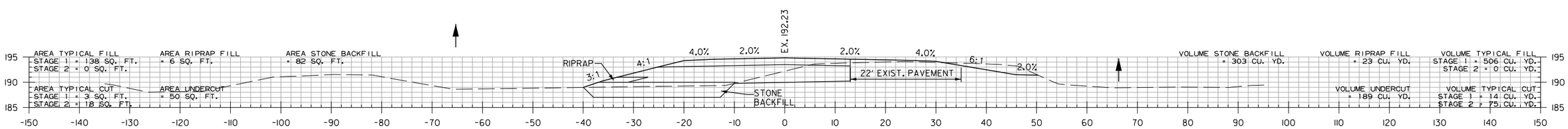
(2) CROSS SECTIONS



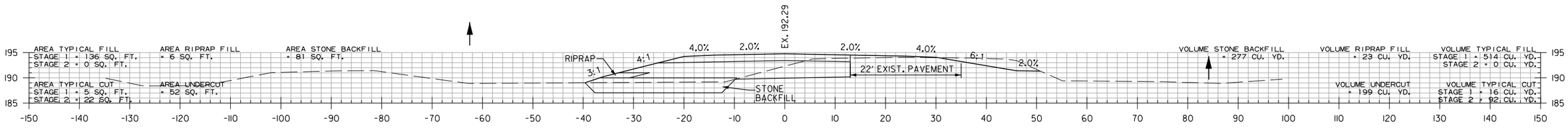
168+00.00



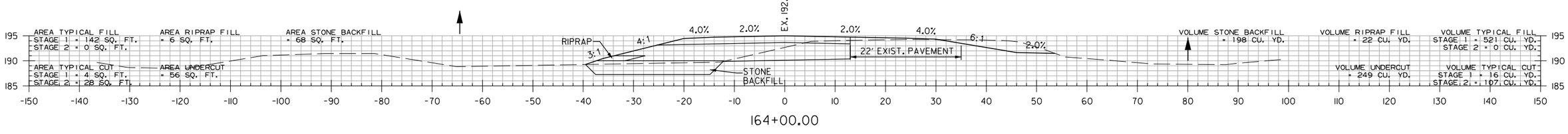
167+00.00



166+00.00



165+00.00



164+00.00

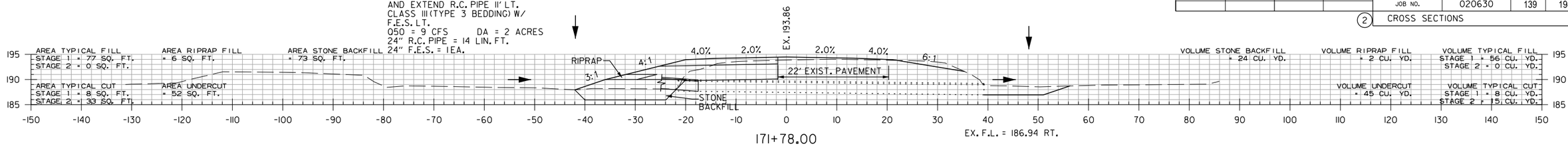
SITE 1
STA. 164+00 TO STA. 168+00

rnfortner 2/4/2021 8:13:21 AM
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		020630	139	198

(2) CROSS SECTIONS

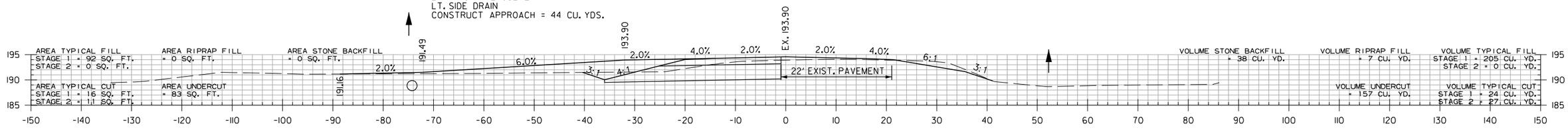
STA. 171+78 IN PLACE
24" X 61' R.C. PIPE CULVERT
WITH HDWLS. LT. AND RT.
REMOVE HDWL. LT.
AND EXTEND R.C. PIPE 11' LT.
CLASS III (TYPE 3 BEDDING) W/
F.E.S. LT.
Q50 = 9 CFS DA = 2 ACRES
24" R.C. PIPE = 14 LIN. FT.
24" F.E.S. = 1EA.



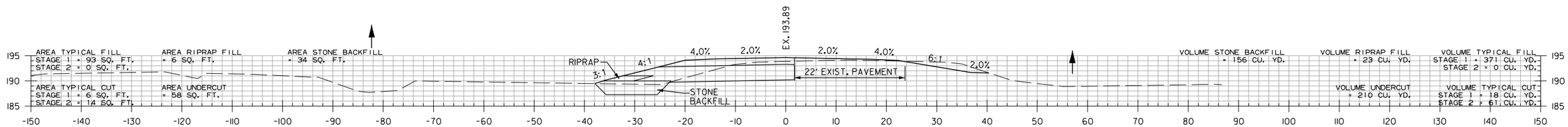
171+78.00

EX. F.L. = 186.94 RT.

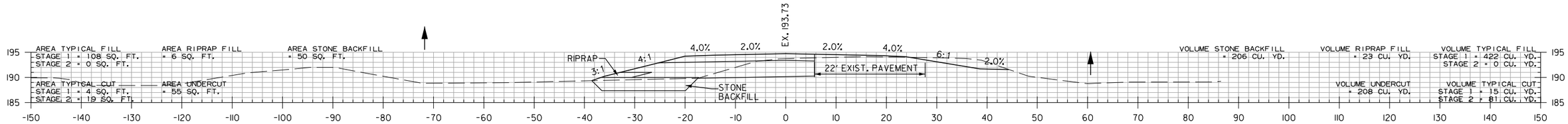
STA. 171+60 IN PLACE
24" X 31' STEEL PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
24" X 31' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 44 CU. YDS.



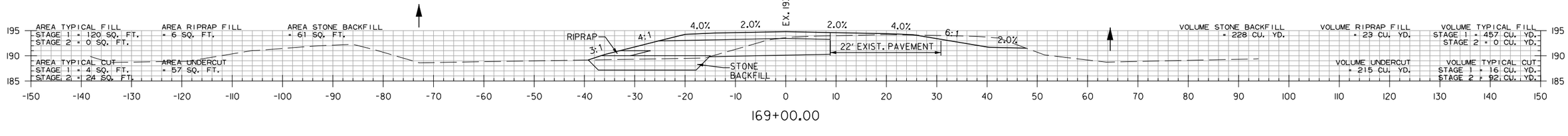
171+60.00



171+00.00



170+00.00



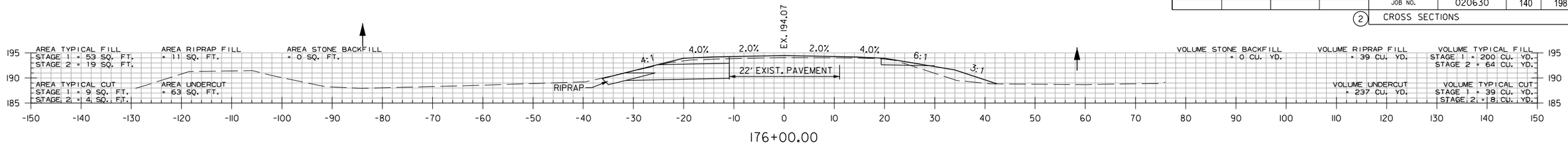
169+00.00

SITE 1
STA. 169+00 TO STA. 171+78

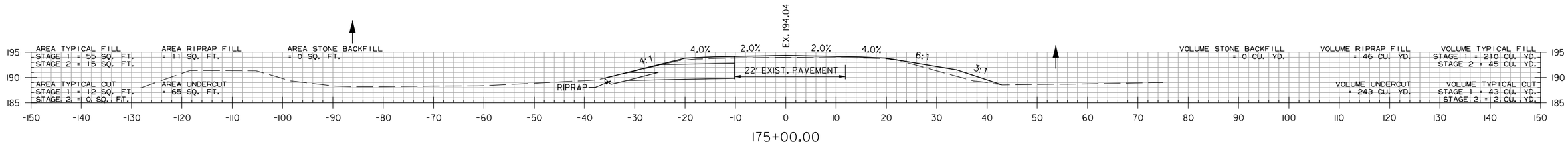
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WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	140	198

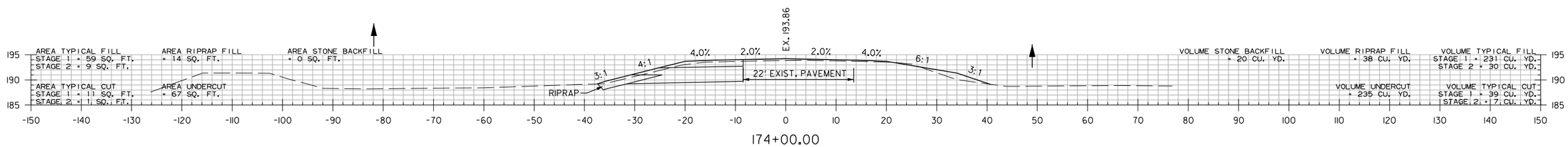
(2) CROSS SECTIONS



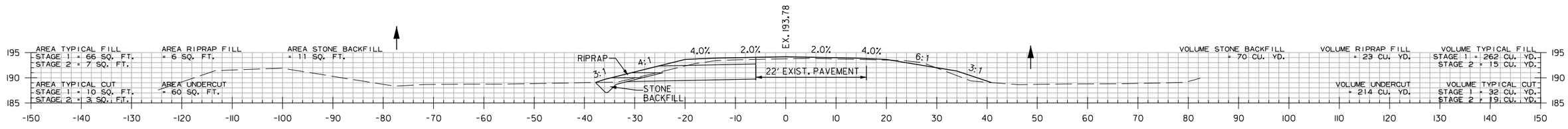
176+00.00



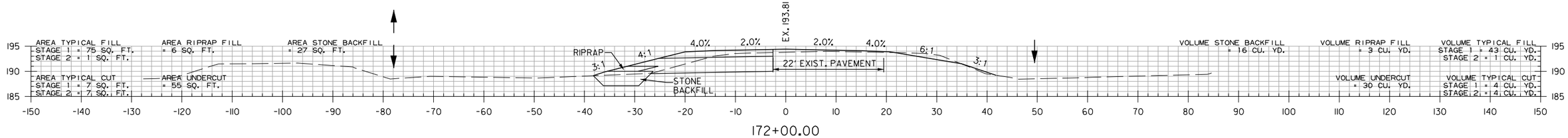
175+00.00



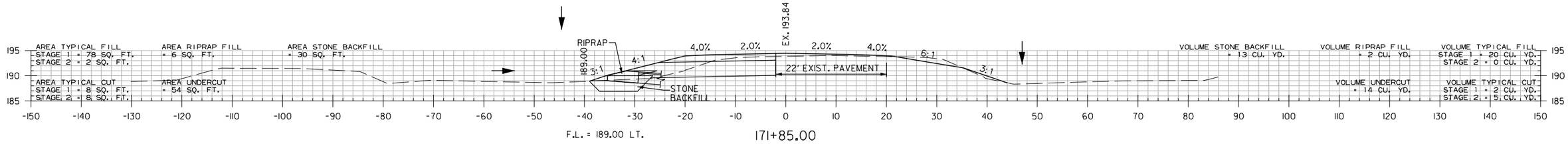
174+00.00



173+00.00



172+00.00



F.L. = 189.00 LT.

171+85.00

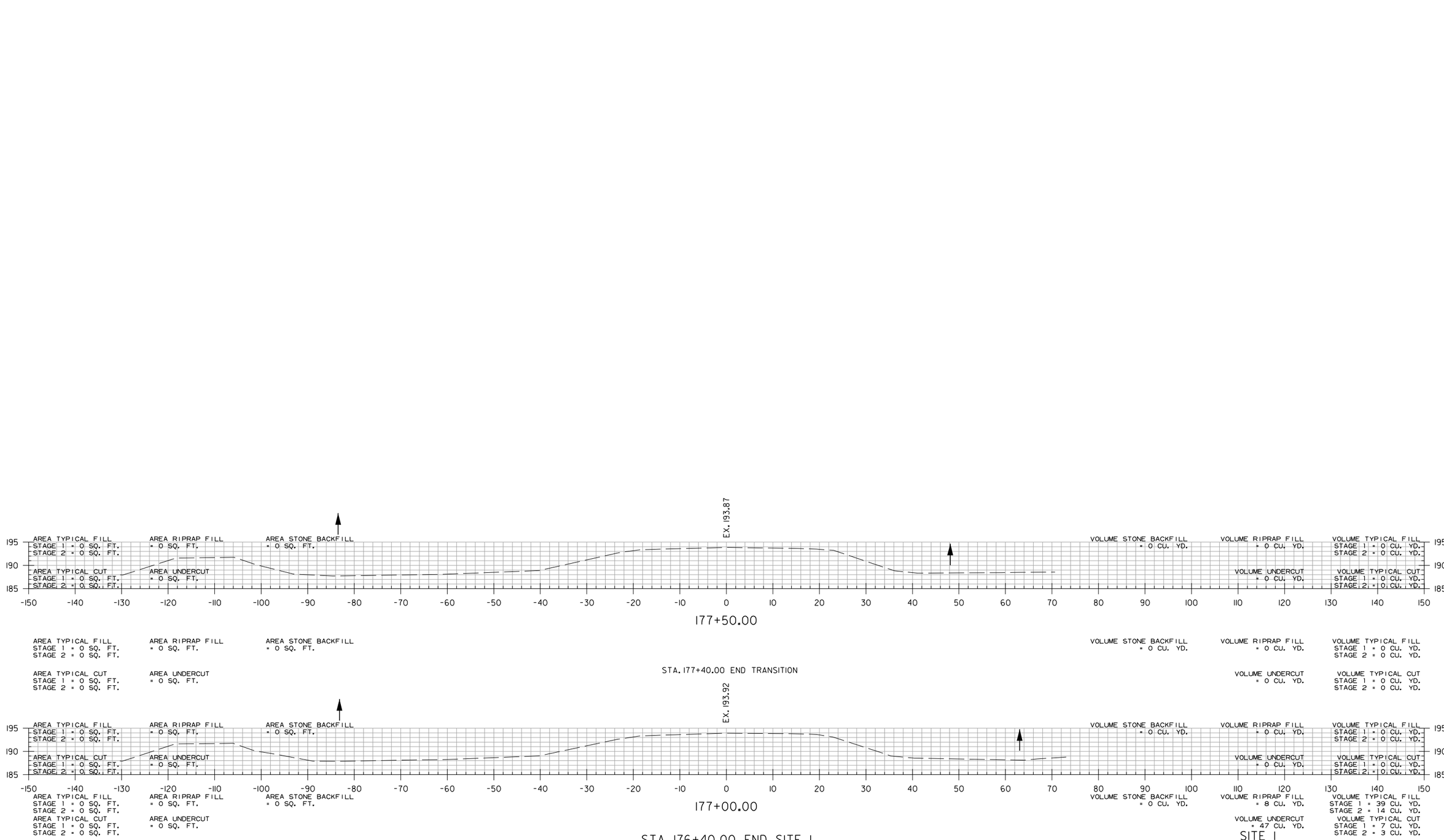
SITE 1
STA. 171+85 TO STA. 176+00

rnfortner 2/4/2021 8:13:21 AM
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

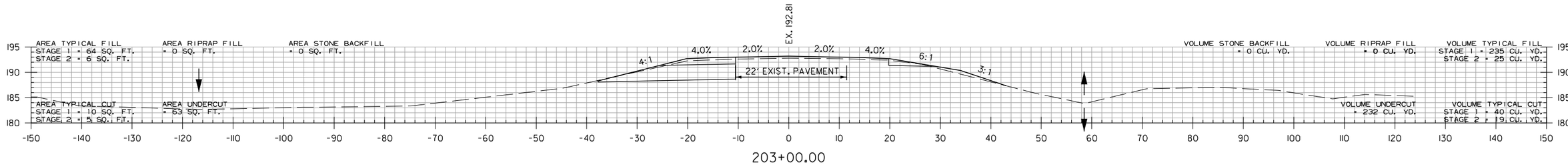
FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		020630	141	198

(2) CROSS SECTIONS

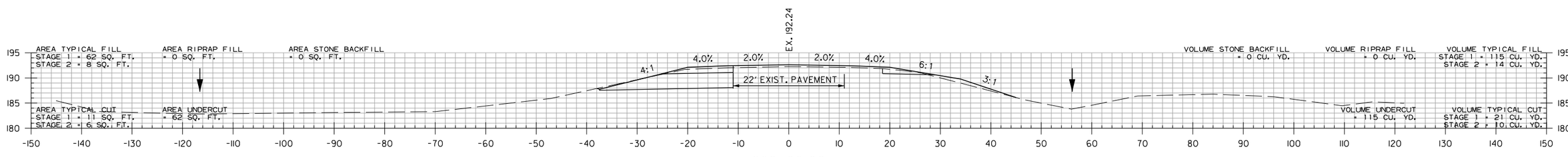


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				6	ARK.			
				JOB NO.		020630	142	198
				(2)	CROSS SECTIONS			

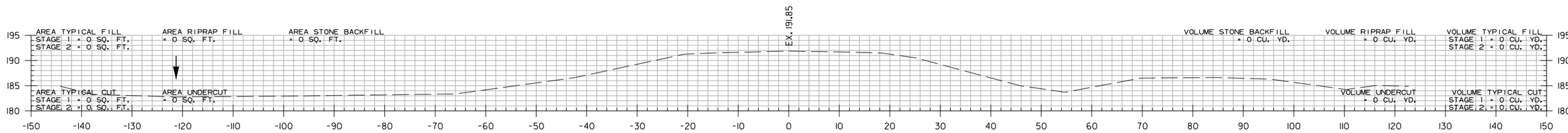


203+00.00



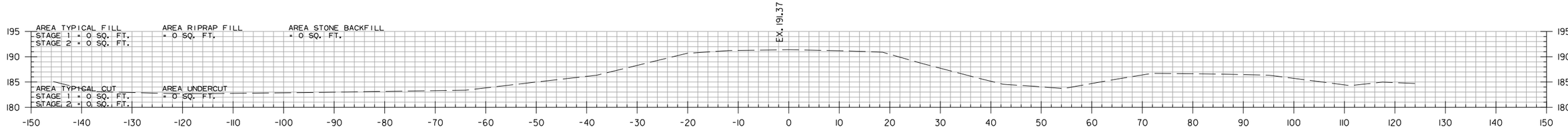
202+00.00

STA. 202+00.00 BEGIN SITE 2



201+00.00

STA. 201+00.00 BEGIN TRANSITION



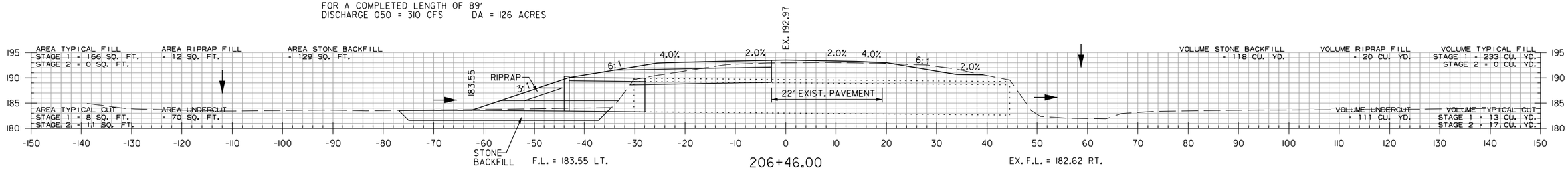
200+00.00

SITE 2
STA. 200+00 TO STA. 203+00

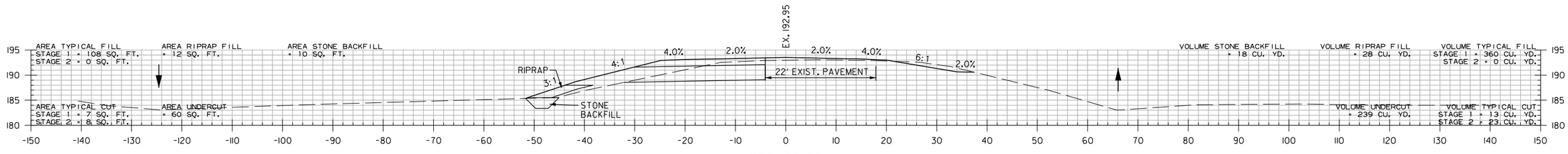
rnfortner 2/4/2021 8:13:22 AM
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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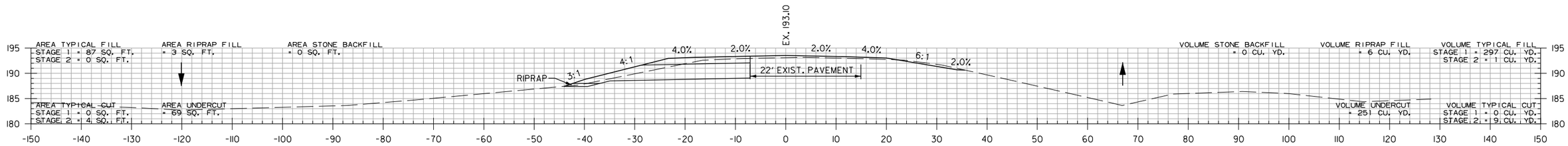
STA. 206+46 IN PLACE
DBL. 6' X 6' X 75' R.C. BOX CULVERT
WITH 3:1 WINGS LT. AND RT.
RETAIN & EXTEND 14' LT.
FOR A COMPLETED LENGTH OF 89'
DISCHARGE Q50 = 310 CFS DA = 126 ACRES



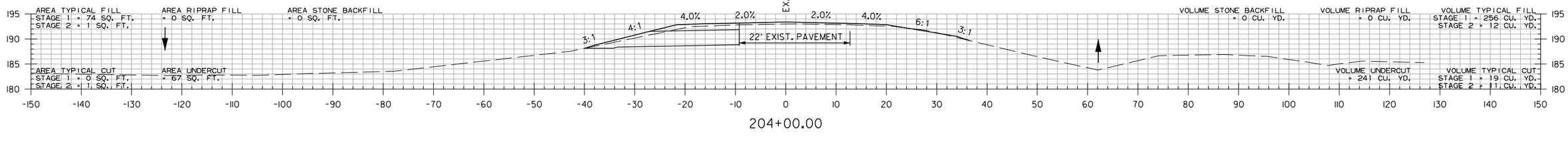
206+46.00



206+00.00



205+00.00



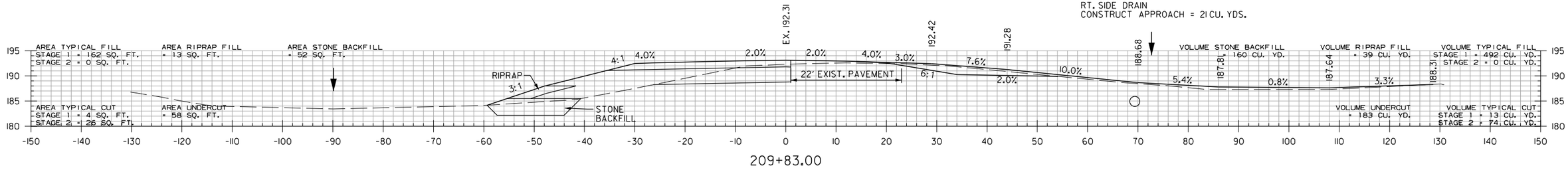
204+00.00

SITE 2
STA. 204+00 TO STA. 206+46

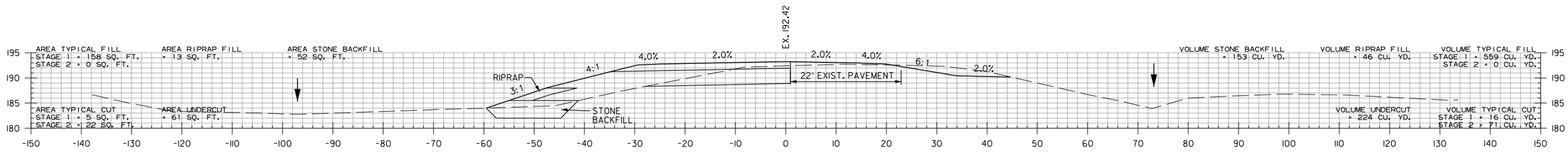
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REVISED DATE:

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				6	ARK.			
				JOB NO.		020630	144	198
				(2) CROSS SECTIONS				

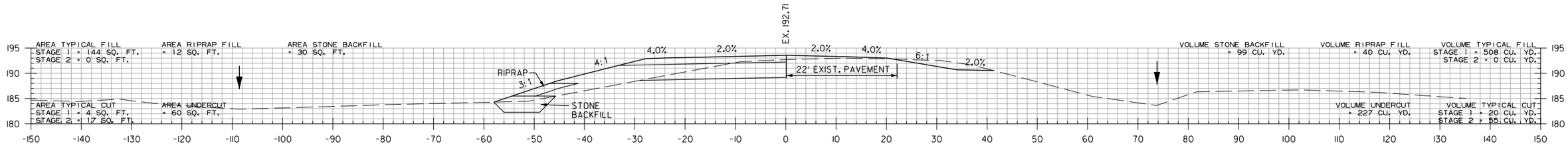
STA. 209+83 IN PLACE
24" X 34' STEEL PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
24" X 38' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 21 CU. YDS.



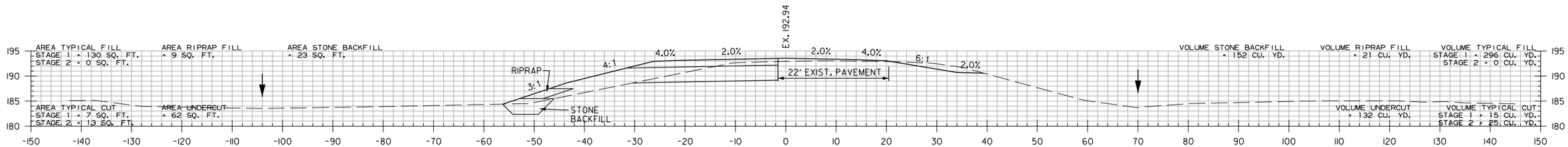
209+83.00



209+00.00



208+00.00

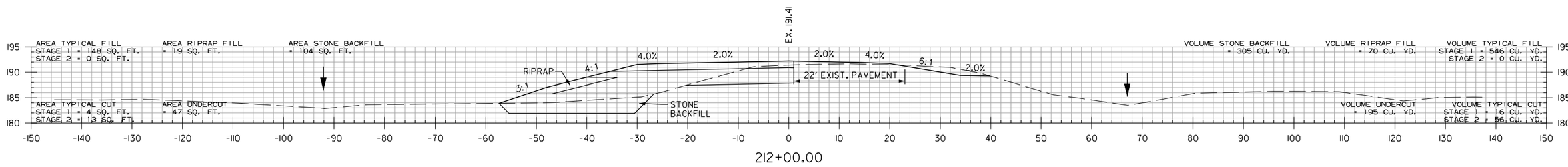


207+00.00

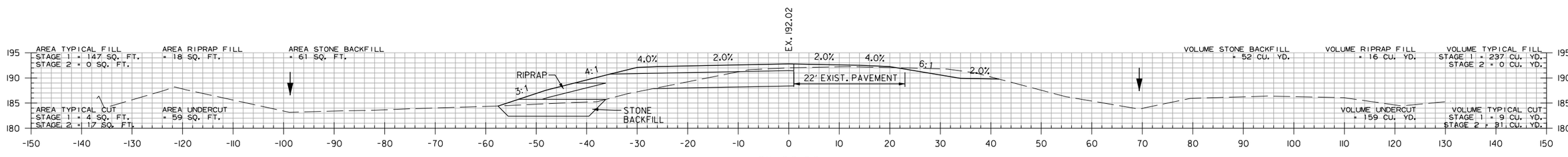
SITE 2
STA. 207+00 TO STA. 209+83

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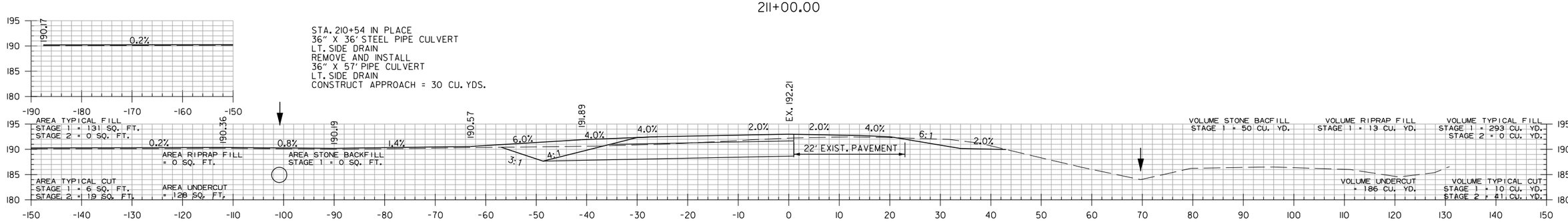
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				6	ARK.			
				JOB NO.		020630	145	198
				(2) CROSS SECTIONS				



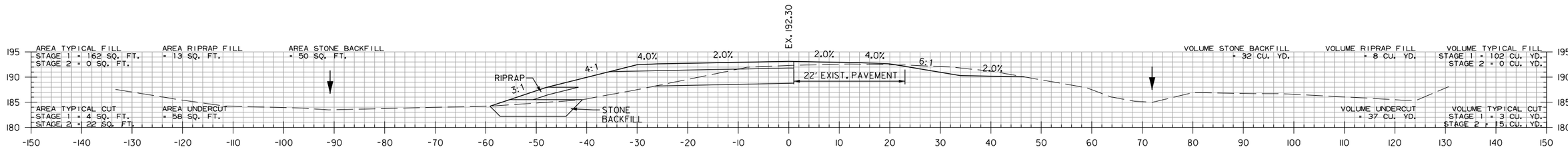
212+00.00



211+00.00



210+54.00

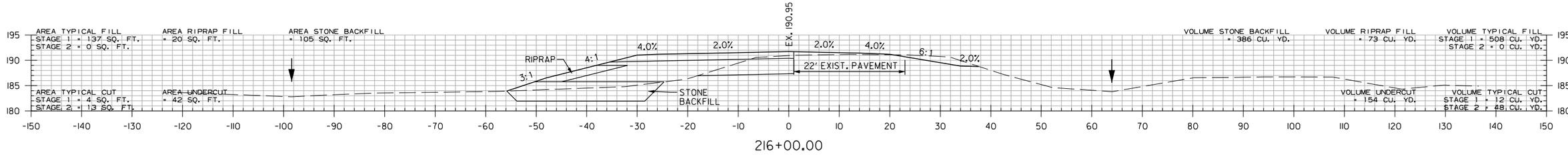


210+00.00

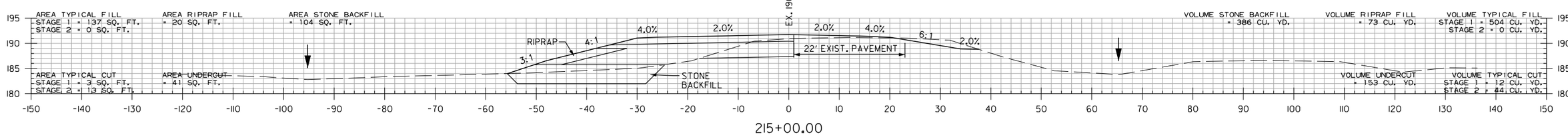
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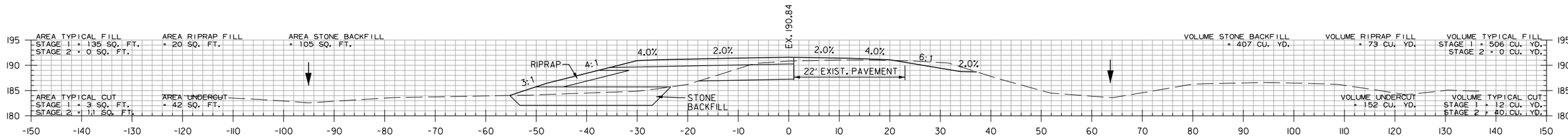
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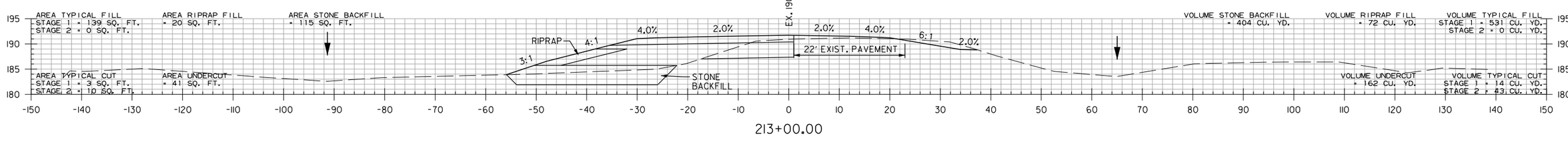
216+00.00



215+00.00



214+00.00

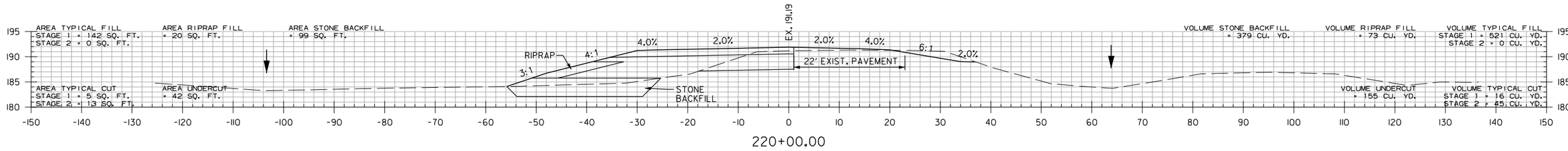


213+00.00

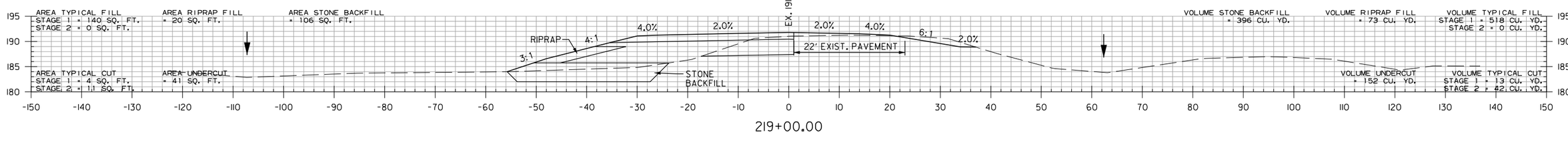
SITE 2
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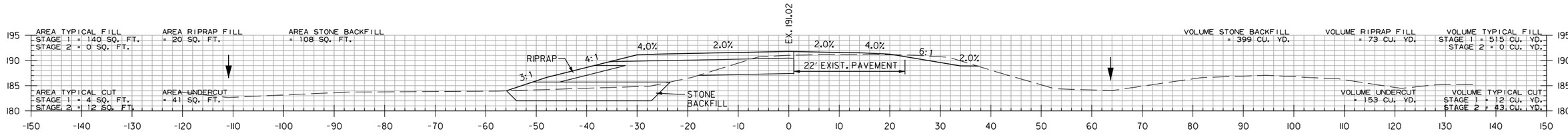
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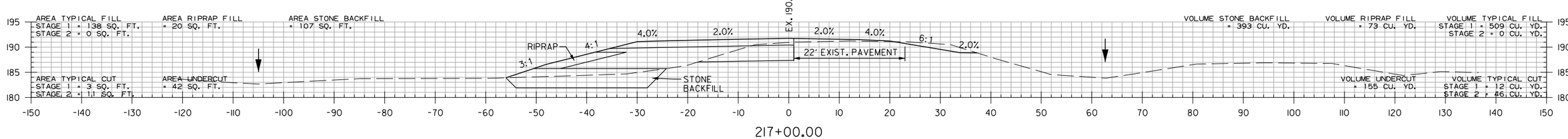
220+00.00



219+00.00



218+00.00

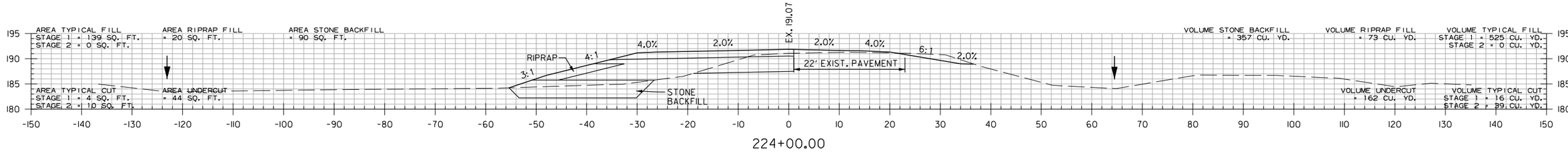


217+00.00

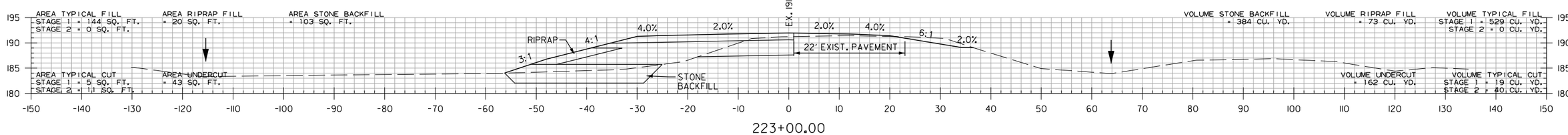
SITE 2
STA. 217+00 TO STA. 220+00

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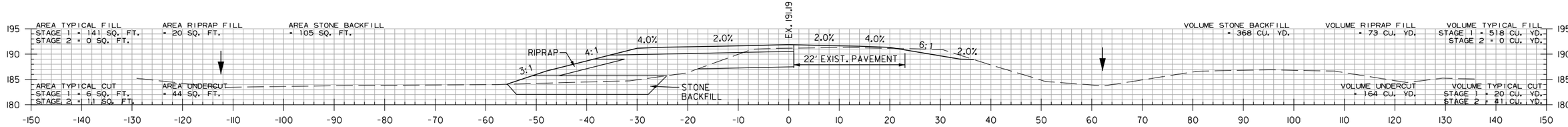
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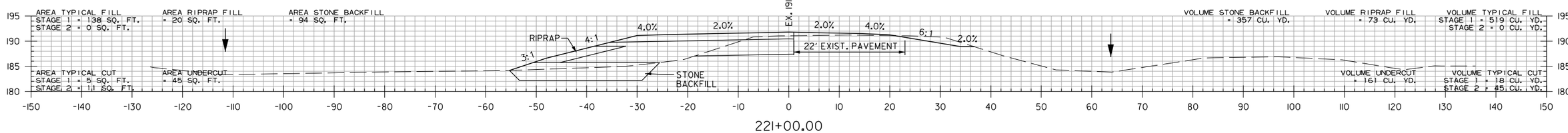
224+00.00



223+00.00



222+00.00

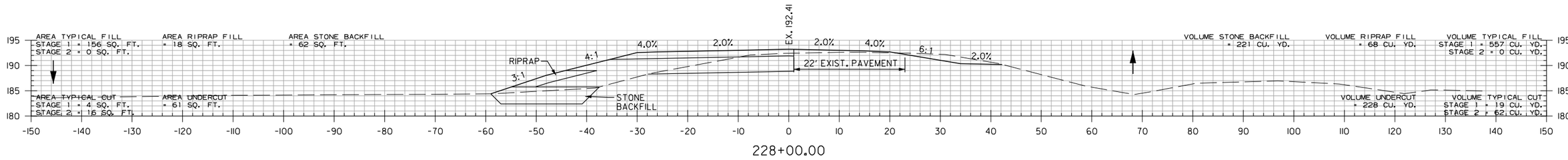


221+00.00

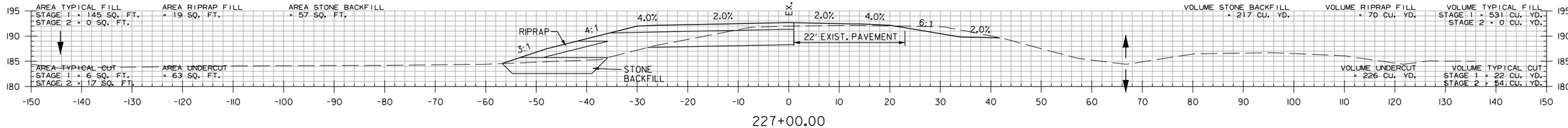
SITE 2
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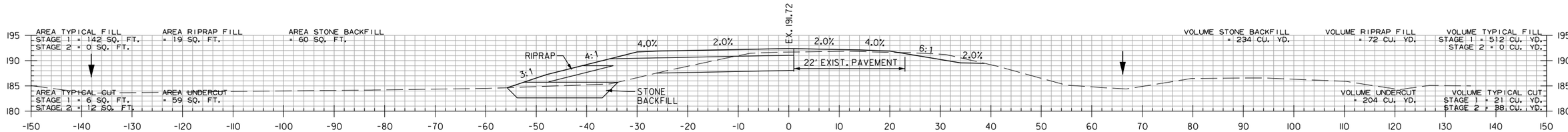
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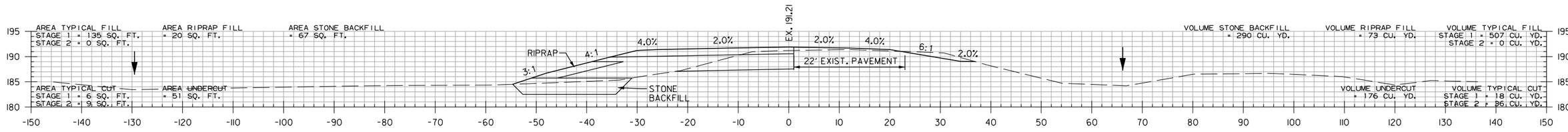
228+00.00



227+00.00



226+00.00

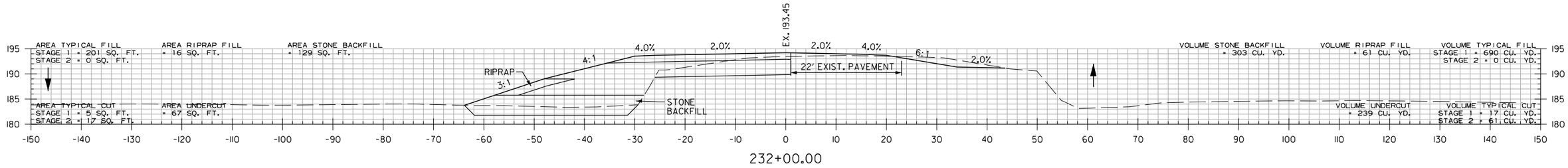


225+00.00

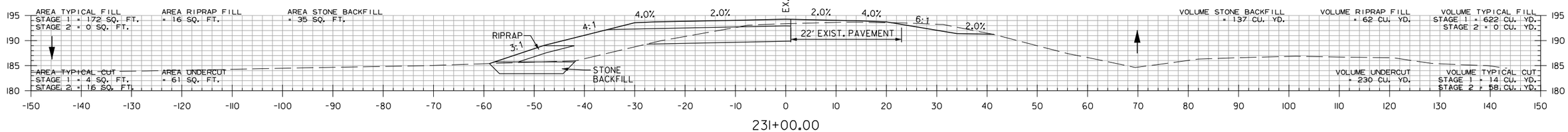
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STA. 225+00 TO STA. 228+00

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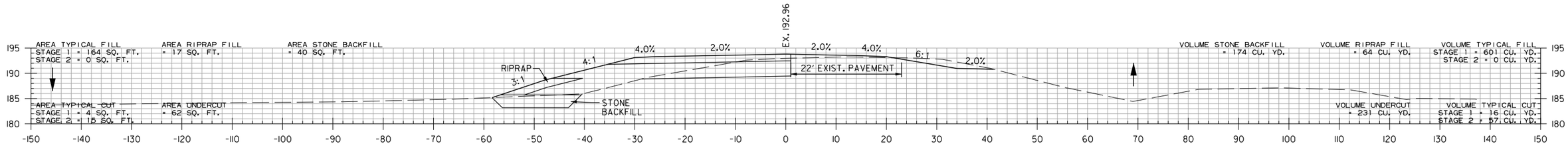
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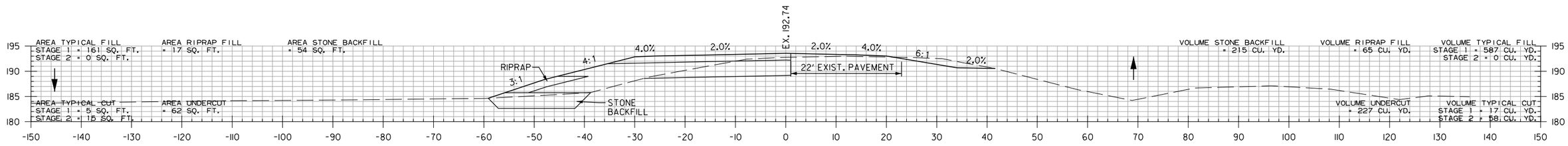
232+00.00



231+00.00



230+00.00

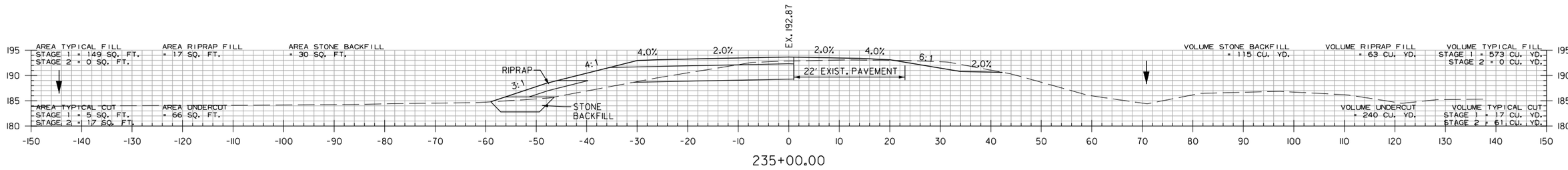


229+00.00

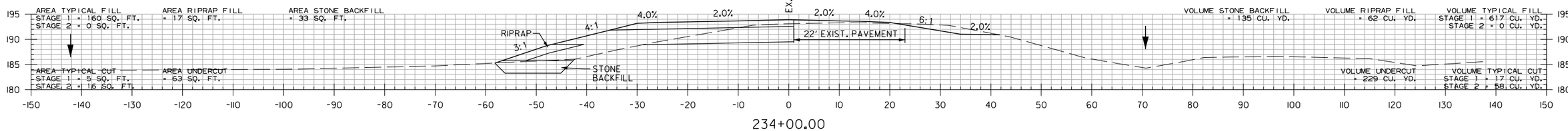
SITE 2
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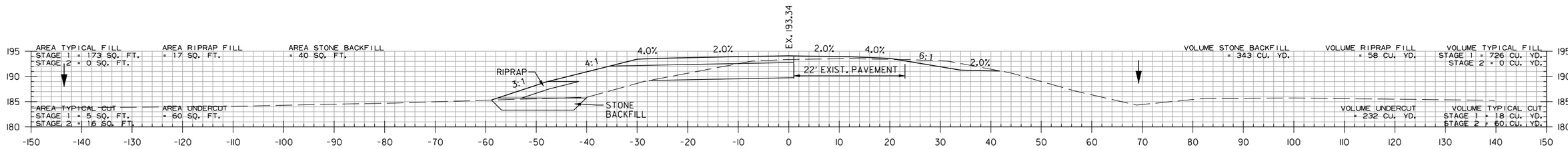
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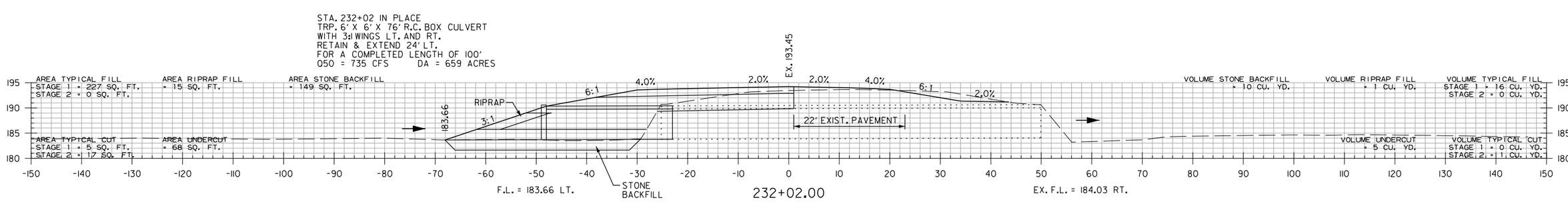
235+00.00



234+00.00



233+00.00

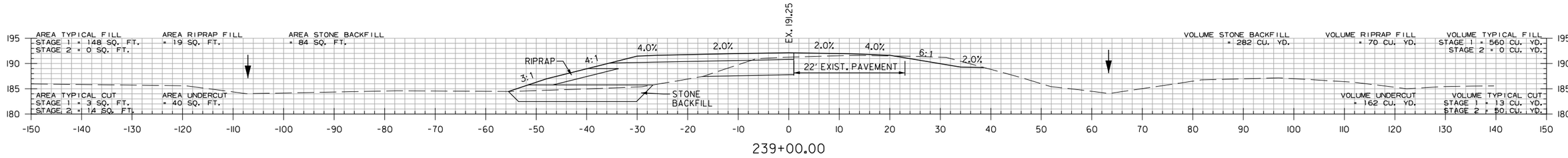


232+02.00

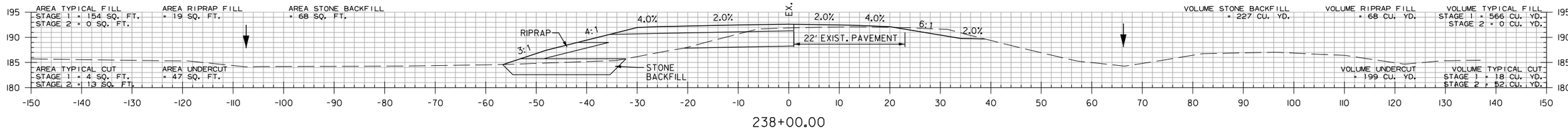
SITE 2
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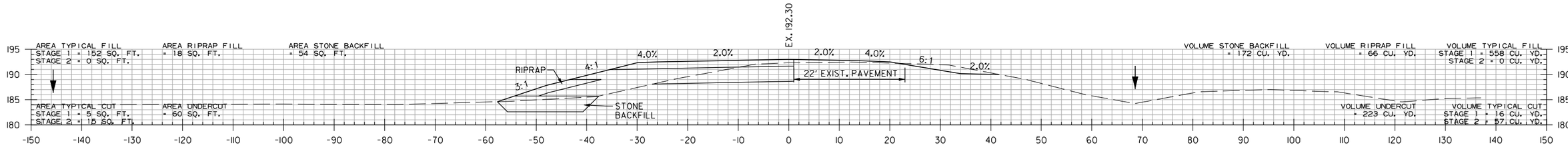
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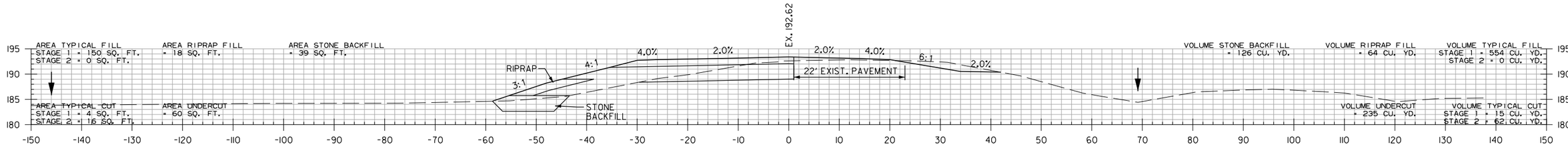
239+00.00



238+00.00



237+00.00

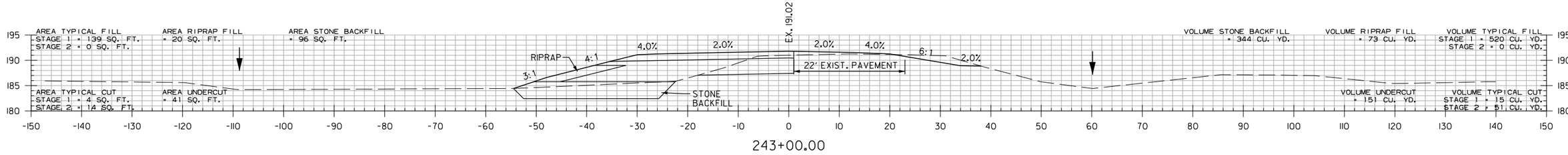


236+00.00

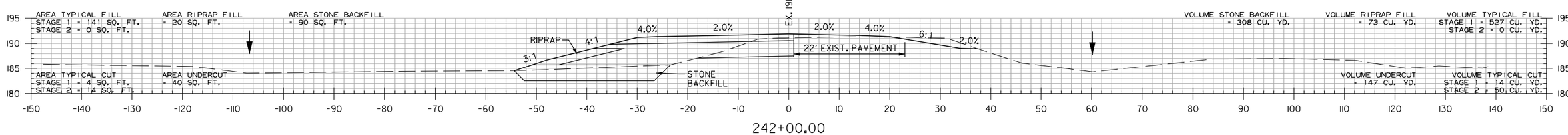
SITE 2
STA. 236+00 TO STA. 239+00

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REVISED DATE:

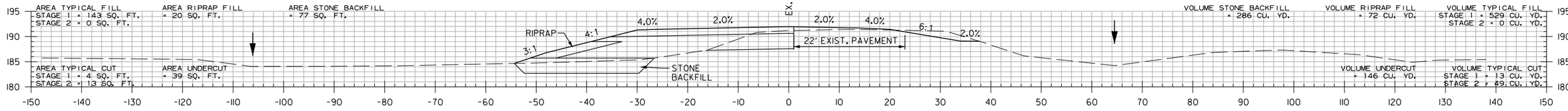
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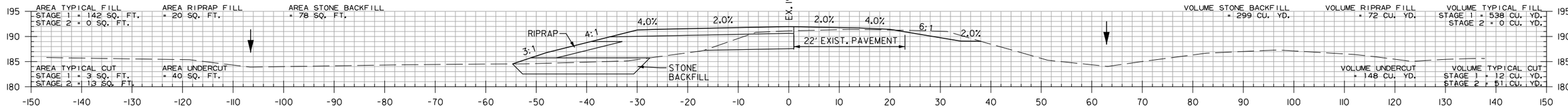
243+00.00



242+00.00



241+00.00



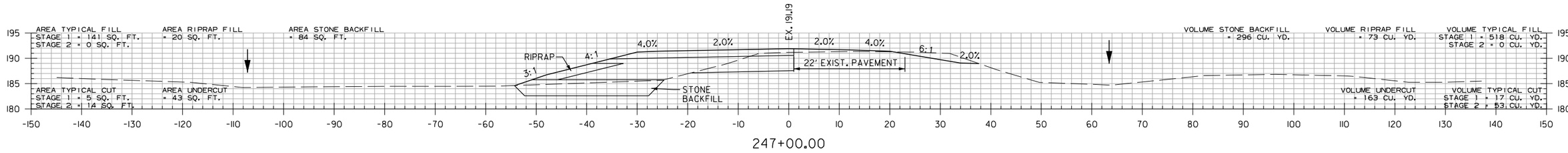
240+00.00

SITE 2
STA. 240+00 TO STA. 243+00

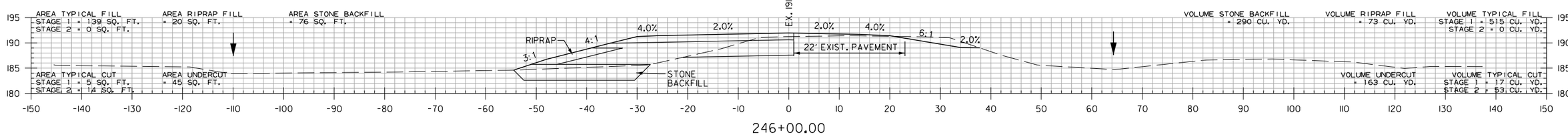
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
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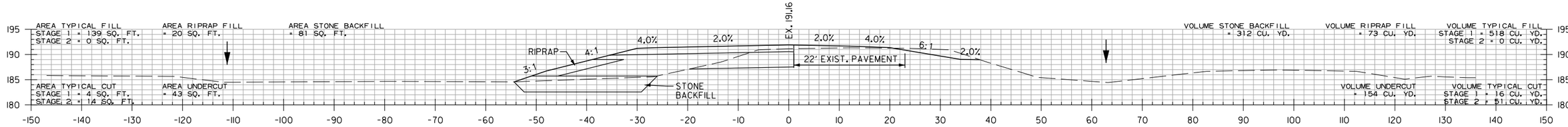
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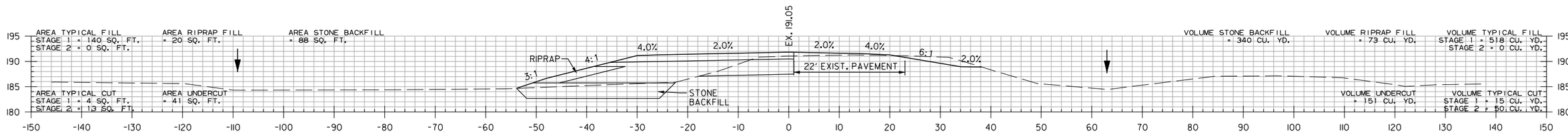
247+00.00



246+00.00



245+00.00



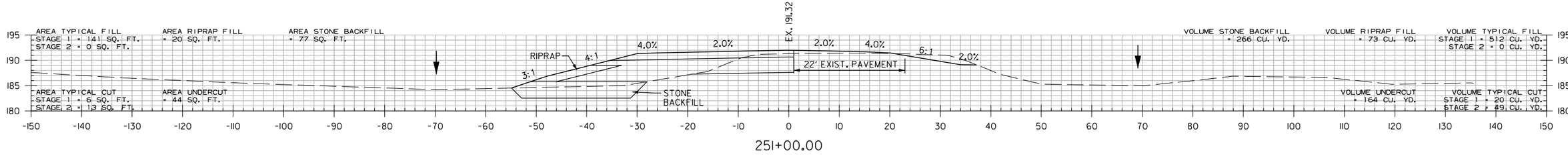
244+00.00

SITE 2
STA. 244+00 TO STA. 247+00

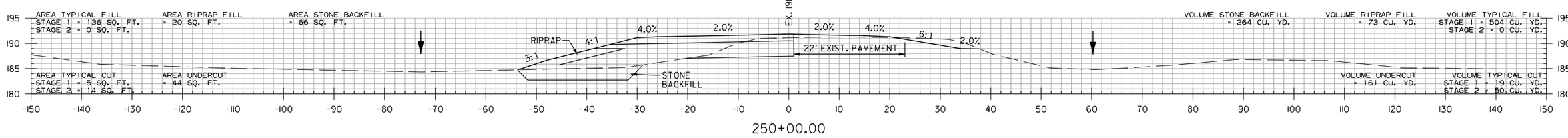
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REVISED DATE:

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				JOB NO.		020630	155	198

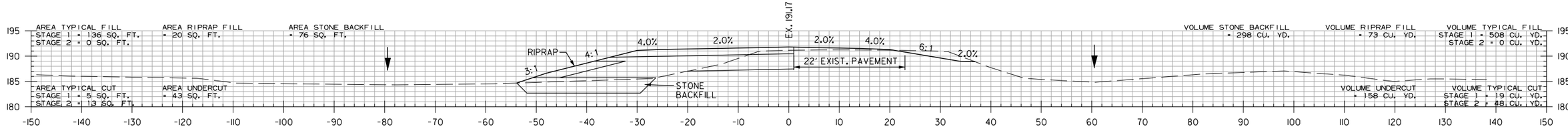
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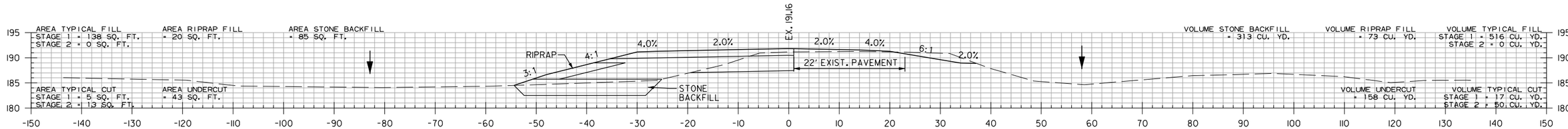
251+00.00



250+00.00



249+00.00

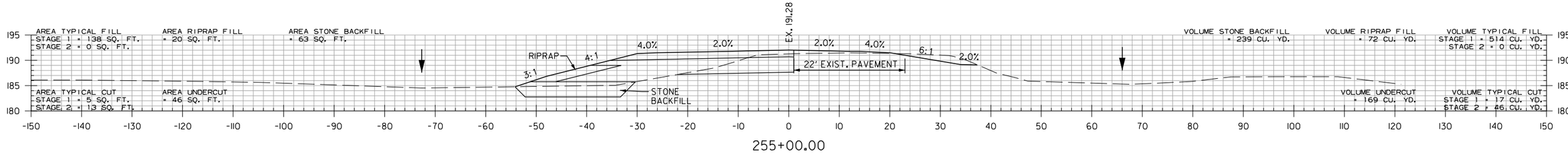


248+00.00

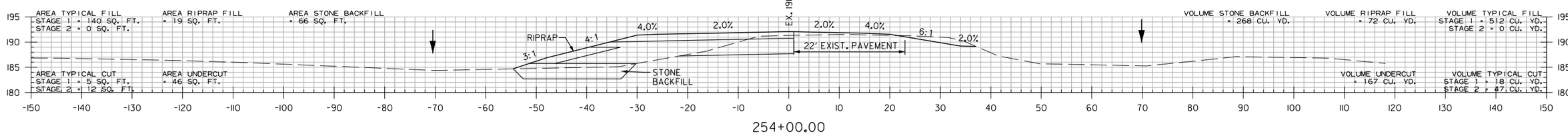
SITE 2
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REVISED DATE:

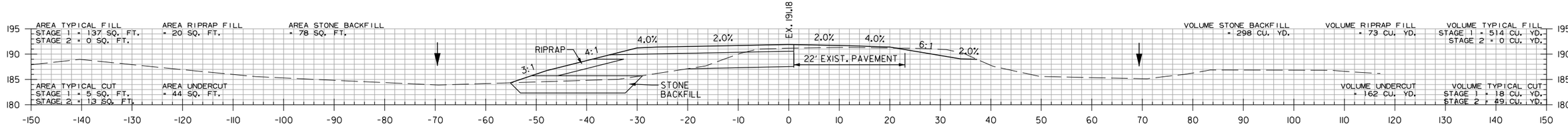
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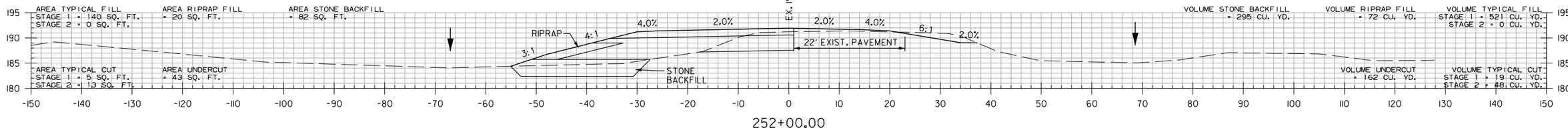
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254+00.00



253+00.00

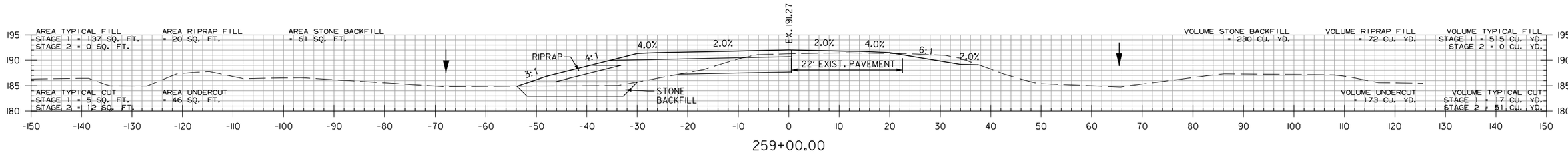


252+00.00

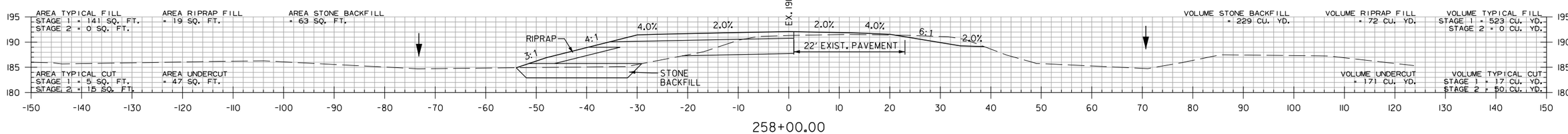
SITE 2
STA. 252+00 TO STA. 255+00

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REVISED DATE:

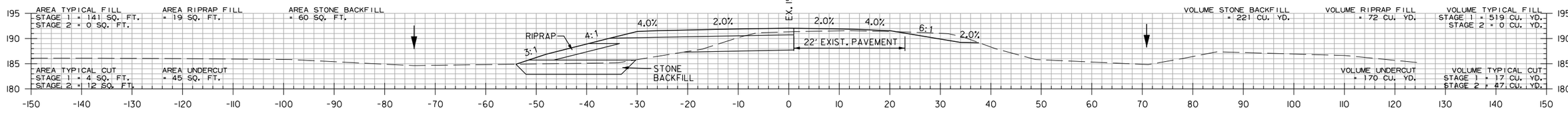
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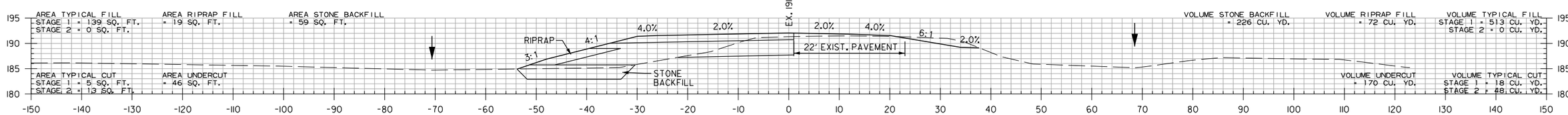
259+00.00



258+00.00



257+00.00

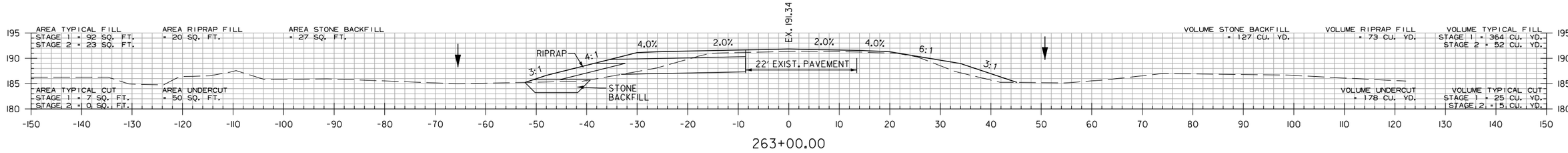


256+00.00

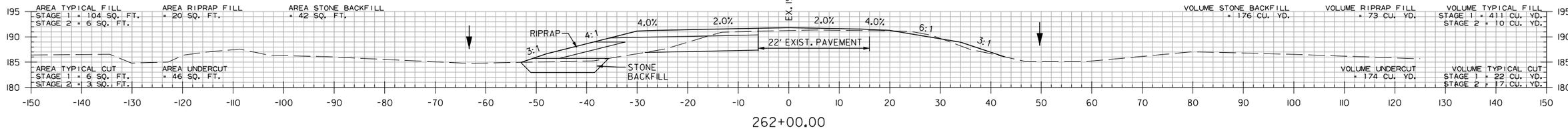
SITE 2
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REVISED DATE:

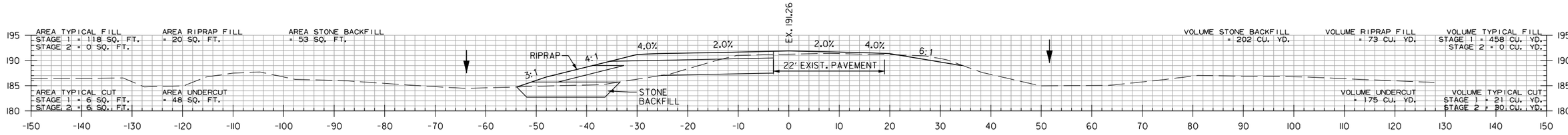
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
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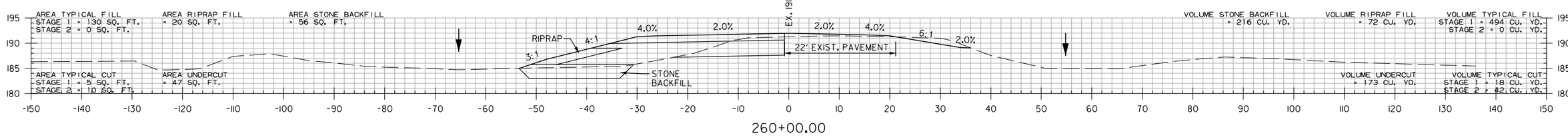
263+00.00



262+00.00



261+00.00

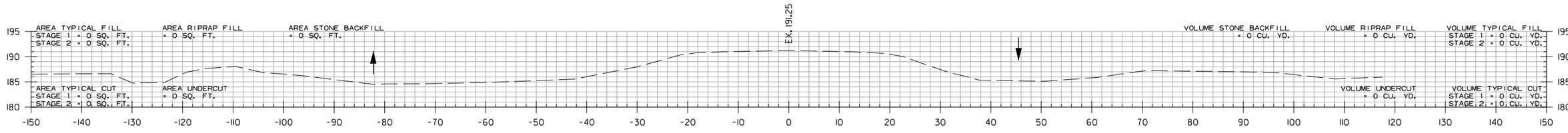


260+00.00

SITE 2
STA. 260+00 TO STA. 263+00

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	159	198
				(2) CROSS SECTIONS				



267+00.00

AREA TYPICAL FILL
STAGE 1 = 0 SQ. FT.
STAGE 2 = 0 SQ. FT.

AREA RIPRAP FILL
= 0 SQ. FT.

AREA STONE BACKFILL
= 0 SQ. FT.

VOLUME STONE BACKFILL
= 0 CU. YD.

VOLUME RIPRAP FILL
= 0 CU. YD.

VOLUME TYPICAL FILL
STAGE 1 = 0 CU. YD.
STAGE 2 = 0 CU. YD.

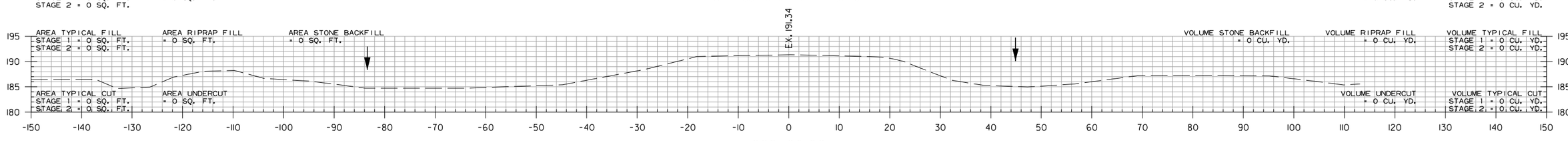
AREA TYPICAL CUT
STAGE 1 = 0 SQ. FT.
STAGE 2 = 0 SQ. FT.

AREA UNDERCUT
= 0 SQ. FT.

VOLUME UNDERCUT
= 0 CU. YD.

VOLUME TYPICAL CUT
STAGE 1 = 0 CU. YD.
STAGE 2 = 0 CU. YD.

STA. 266+40.00 END TRANSITION



266+00.00

AREA TYPICAL FILL
STAGE 1 = 0 SQ. FT.
STAGE 2 = 0 SQ. FT.

AREA RIPRAP FILL
= 0 SQ. FT.

AREA STONE BACKFILL
= 0 SQ. FT.

VOLUME STONE BACKFILL
= 5 CU. YD.

VOLUME RIPRAP FILL
= 14 CU. YD.

VOLUME TYPICAL FILL
STAGE 1 = 41 CU. YD.
STAGE 2 = 30 CU. YD.

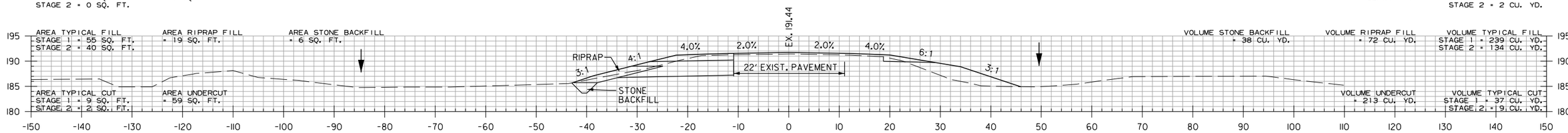
STA. 265+40.00 END SITE 2

AREA TYPICAL CUT
STAGE 1 = 0 SQ. FT.
STAGE 2 = 0 SQ. FT.

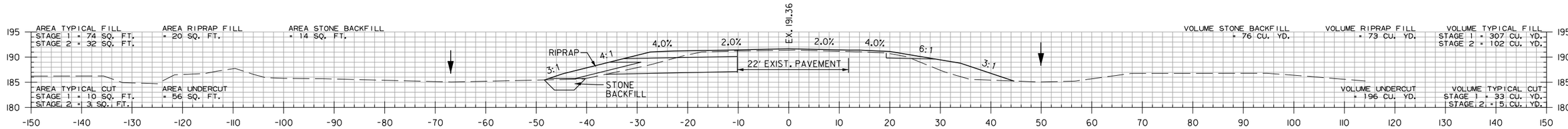
AREA UNDERCUT
= 0 SQ. FT.

VOLUME UNDERCUT
= 44 CU. YD.

VOLUME TYPICAL CUT
STAGE 1 = 7 CU. YD.
STAGE 2 = 2 CU. YD.



265+00.00



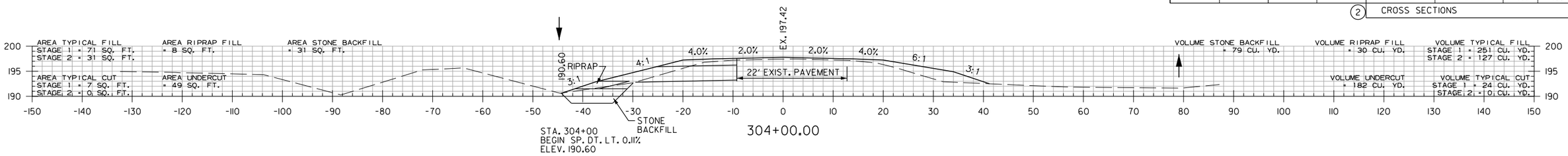
264+00.00

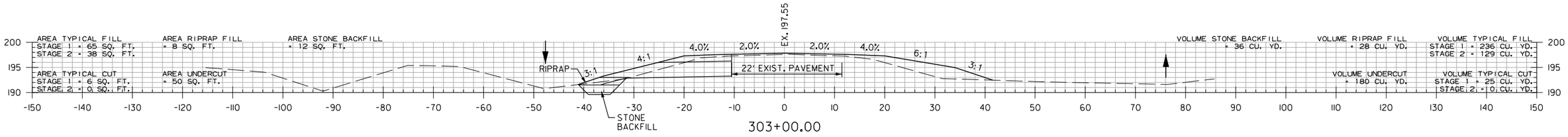
SITE 2
STA. 264+00 TO STA. 267+00

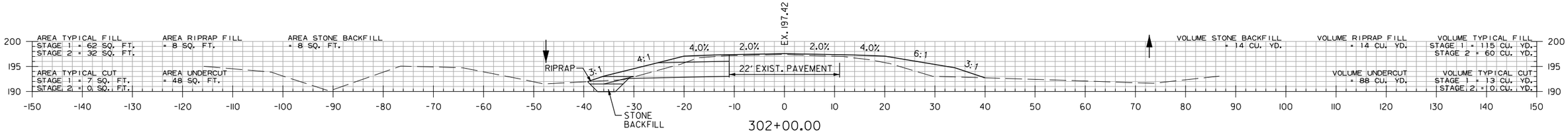
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WORKSPACE: AHTD
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2/4/2021 8:3:26 AM
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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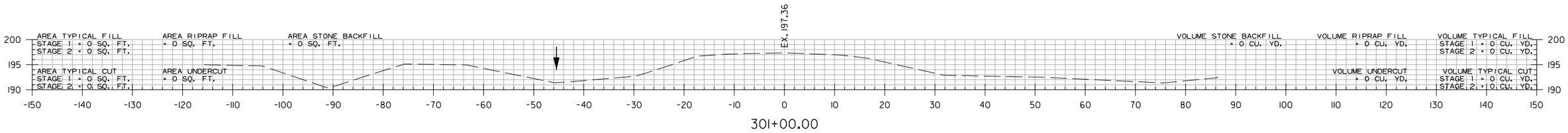
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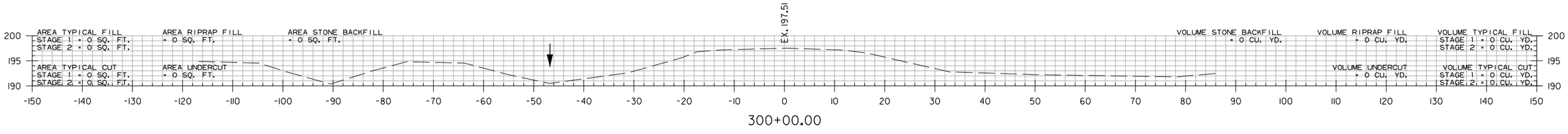




STA. 302+00.00 BEGIN SITE 3



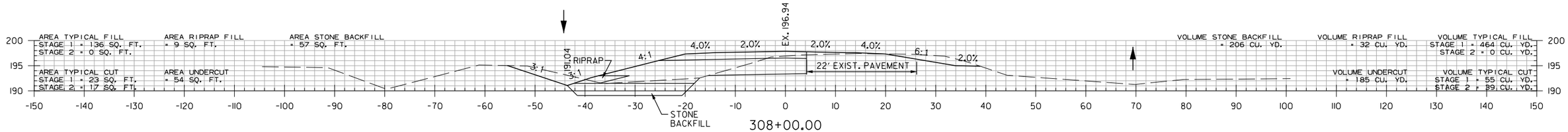
STA. 301+00.00 BEGIN TRANSITION



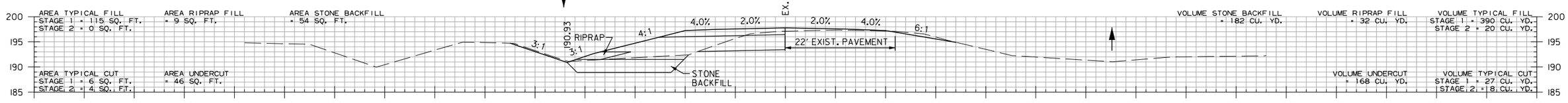
SITE 3
STA. 300+00 TO STA. 304+00

rnfortner 2/4/2021 8:13:26 AM
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REVISED DATE:

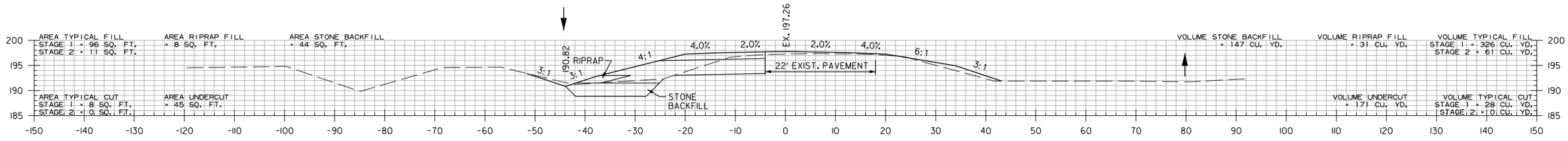
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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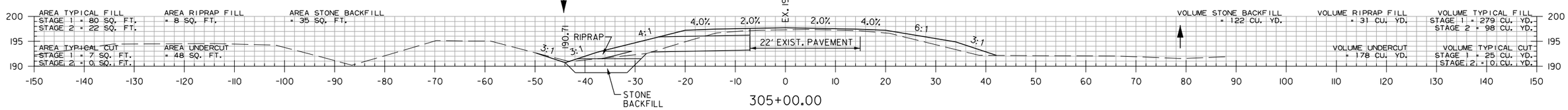
308+00.00



307+00.00



306+00.00

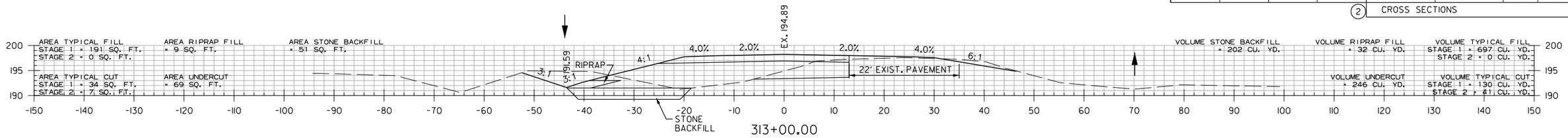


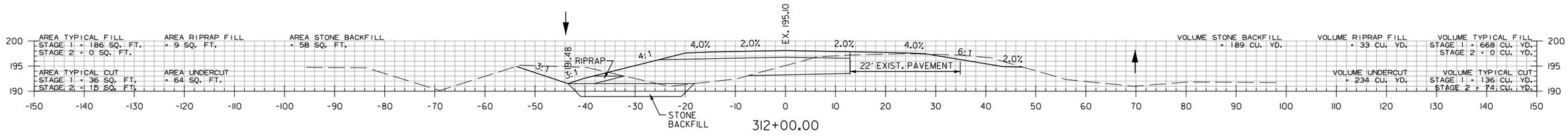
305+00.00

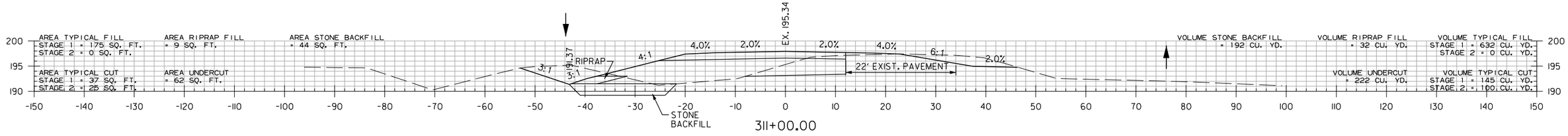
SITE 3
STA. 305+00 TO STA. 308+00

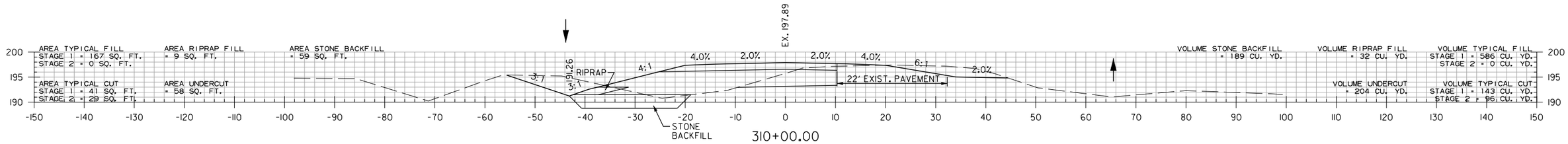
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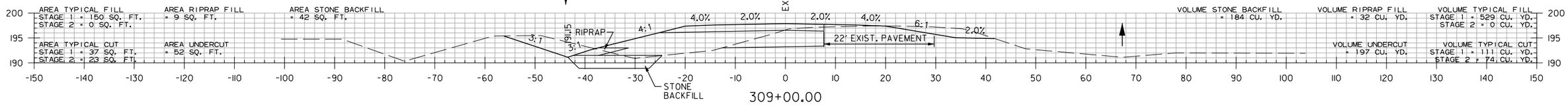
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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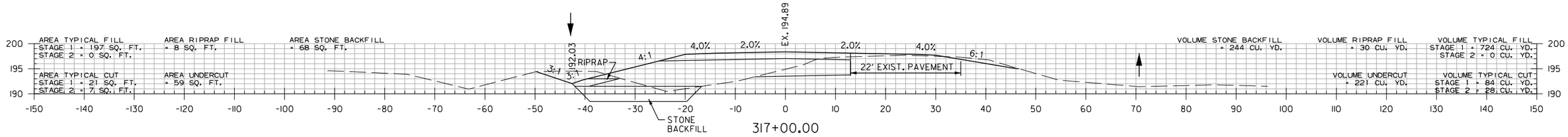




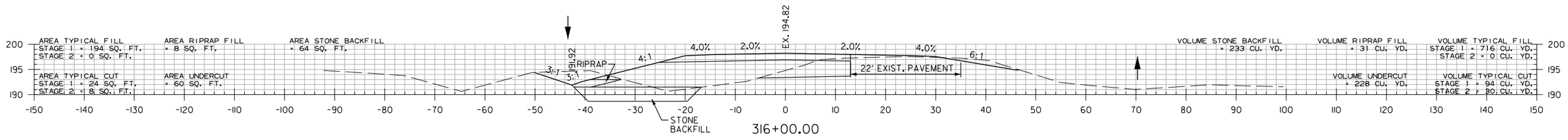
SITE 3
STA. 309+00 TO STA. 313+00

rnfortner 2/4/2021 8:13:27 AM
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REVISED DATE:

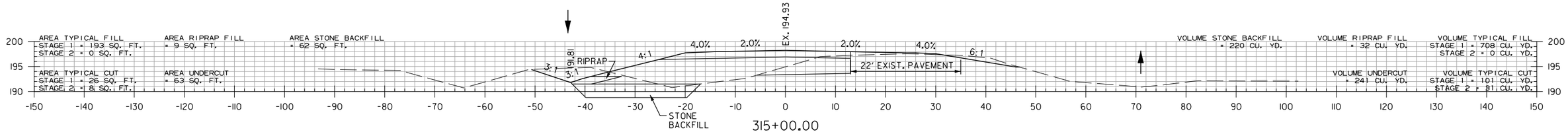
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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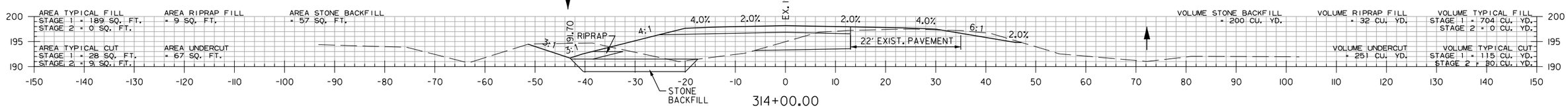
317+00.00



316+00.00



315+00.00

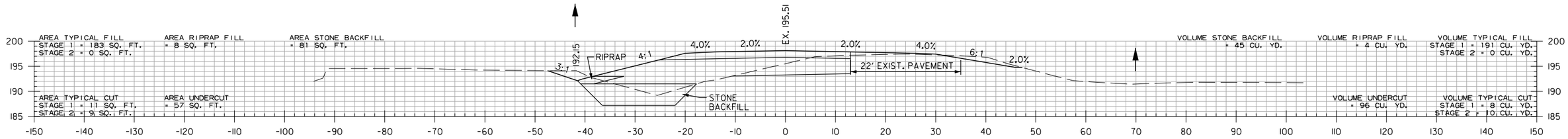


314+00.00

SITE 3
STA. 314+00 TO STA. 317+00

rnfortner 2/4/2021 8:13:27 AM
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REVISED DATE:

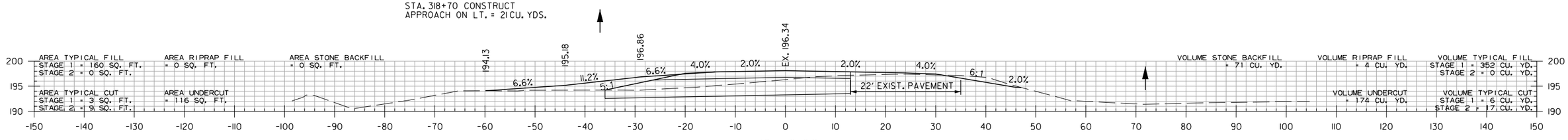
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	164	198
				(2)	CROSS SECTIONS			



319+00.00

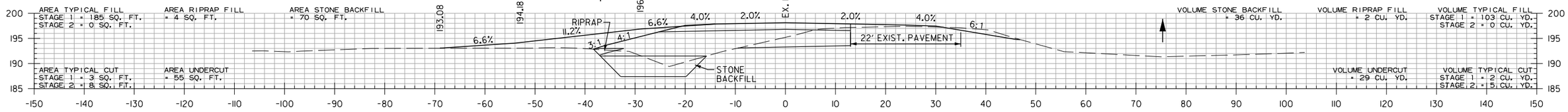
STA. 319+00
BEGIN SP. DT. LT. -0.35%
ELEV. 192.15

STA. 318+70 CONSTRUCT
APPROACH ON LT. = 21 CU. YDS.

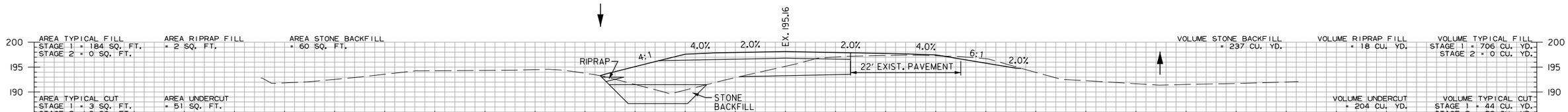


318+70.00

STA. 318+15 CONSTRUCT
APPROACH ON LT. = 38 CU. YDS.



318+15.00



318+00.00

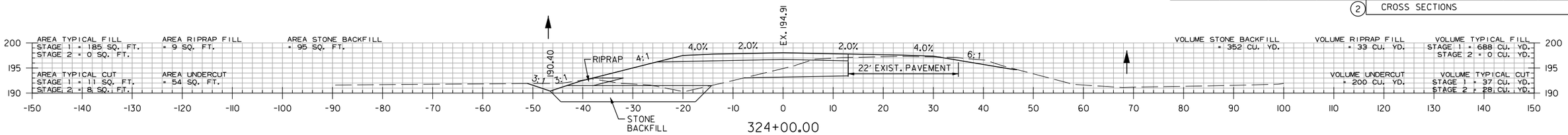
STA. 317+90
END SP. DT. LT. 0.11%
ELEV. 192.13

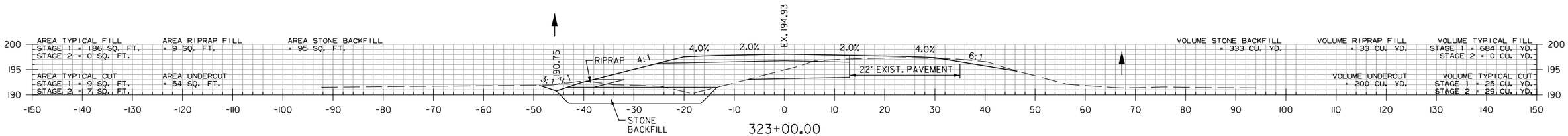
SITE 3
STA. 318+00 TO STA. 319+00

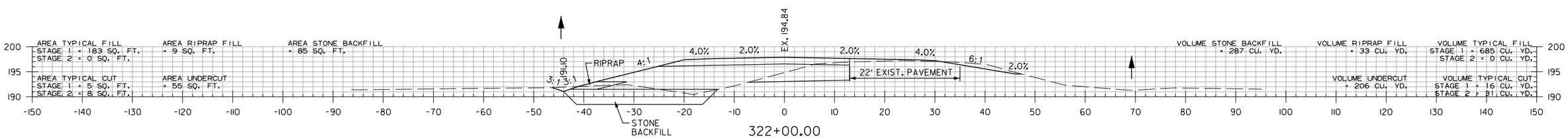
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REVISED DATE:

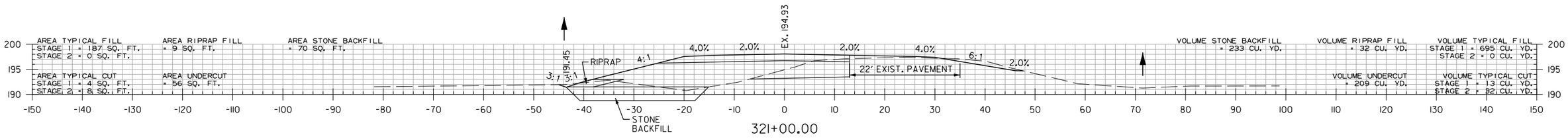
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		020630	165	198

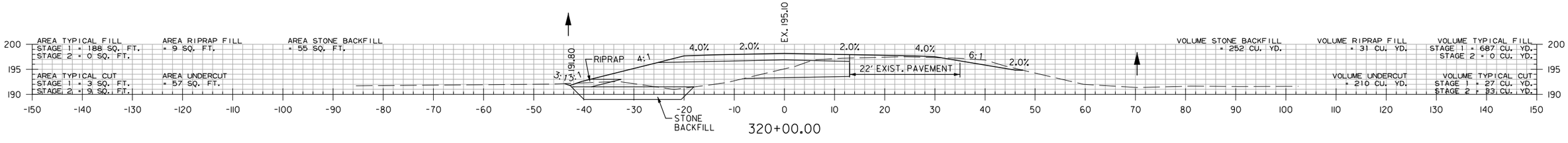
(2) CROSS SECTIONS







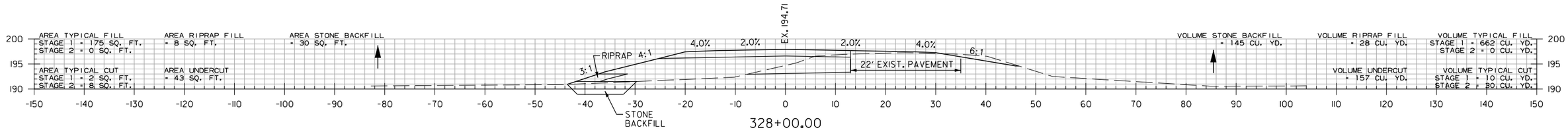


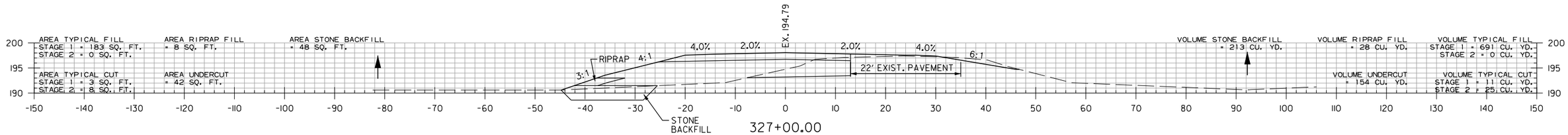


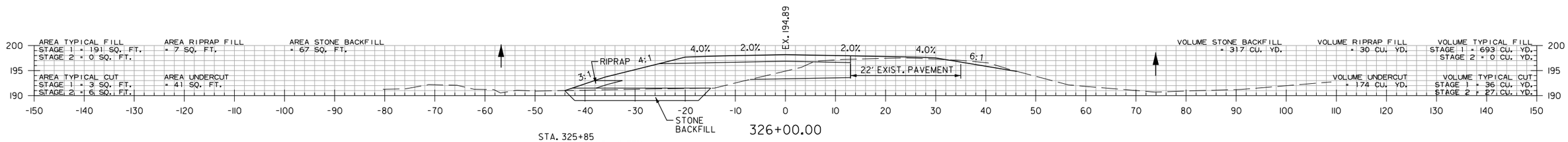
SITE 3
STA. 320+00 TO STA. 324+00

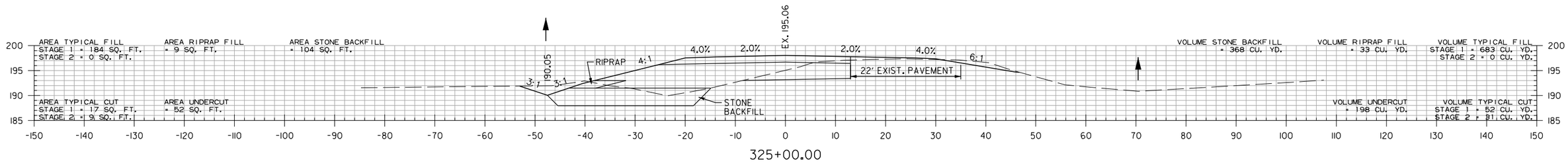
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		020630	166	198
				(2) CROSS SECTIONS				





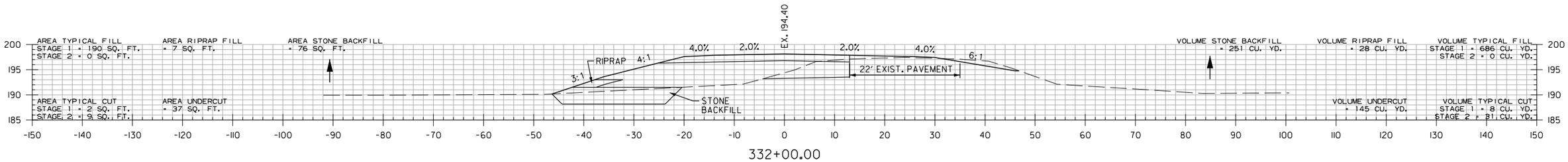


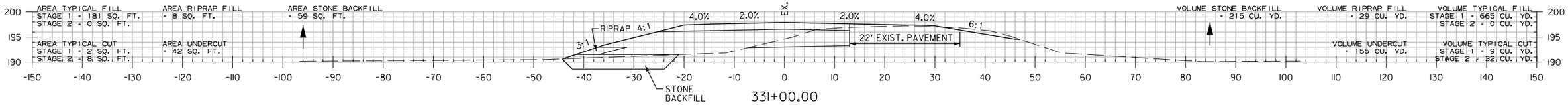


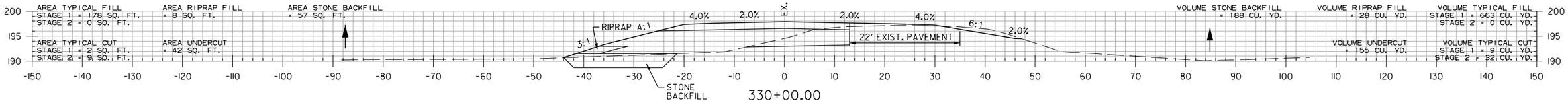
SITE 3
STA. 325+00 TO STA. 328+00

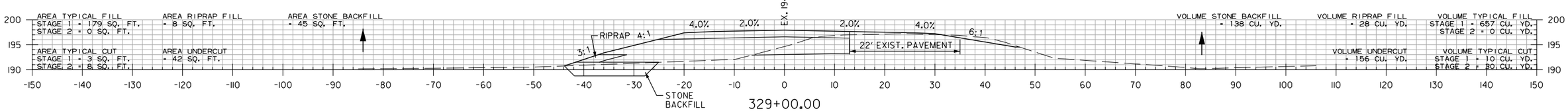
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				JOB NO.		020630	167	198
				(2)	CROSS SECTIONS			





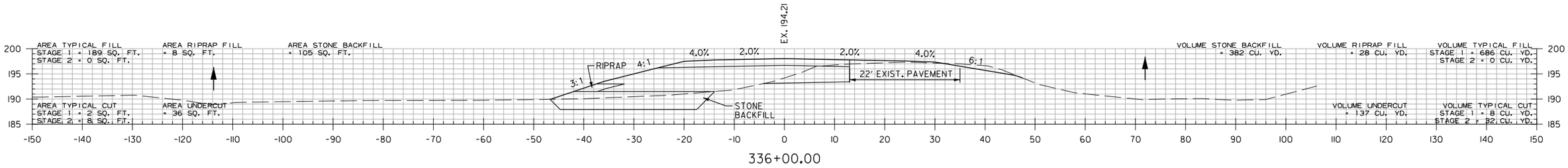




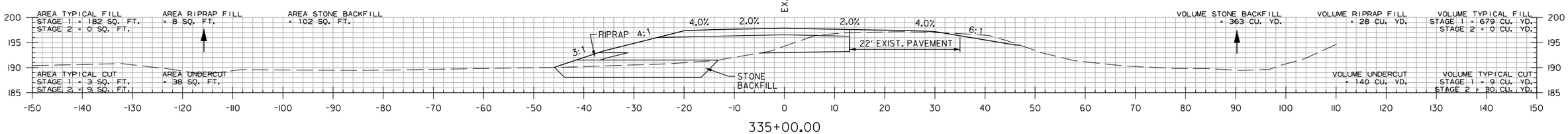
SITE 3
STA. 329+00 TO STA. 332+00

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REVISED DATE:

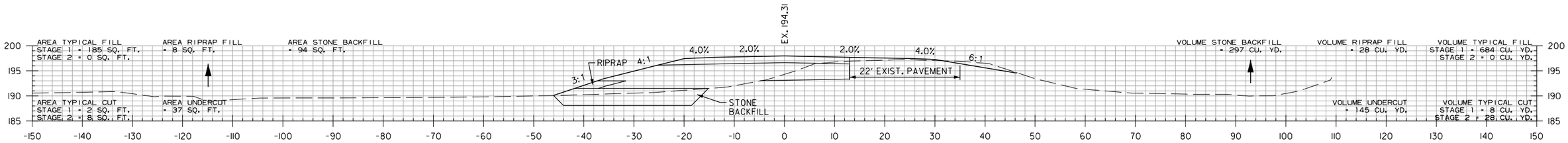
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		020630	168	198
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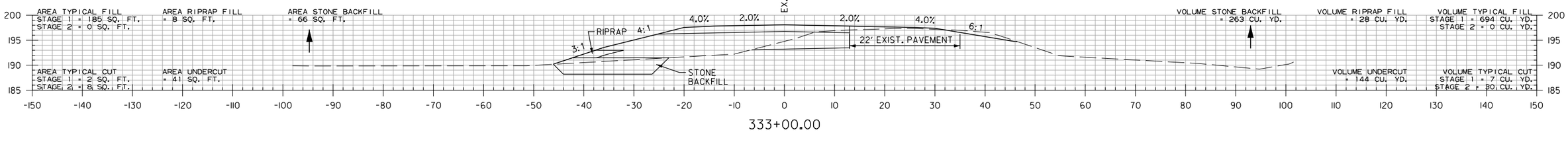
336+00.00



335+00.00



334+00.00



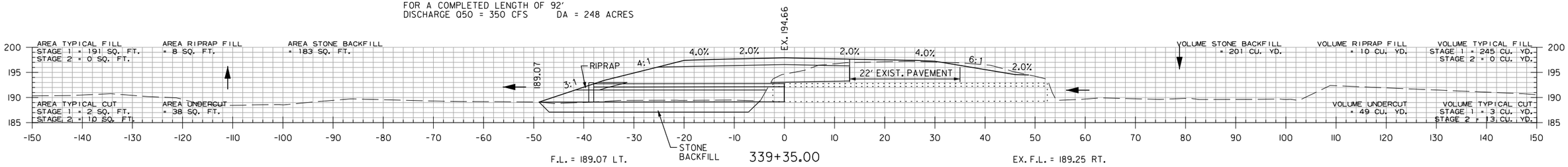
333+00.00

SITE 3
STA. 333+00 TO STA. 336+00

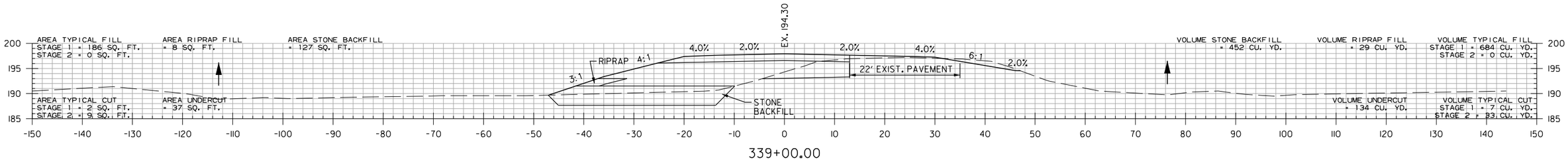
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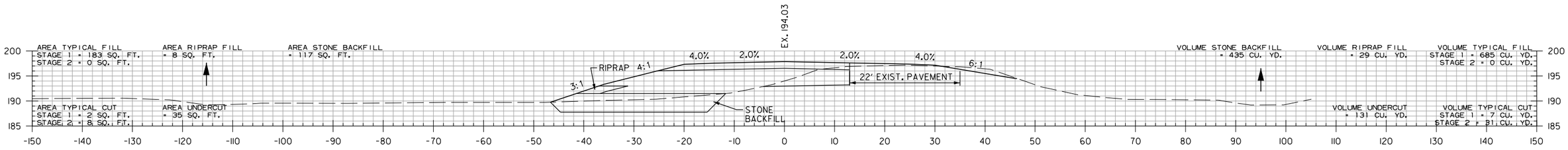
STA. 339+35 IN PLACE
DBL. 6' X 3' X 55' R.C. BOX CULVERT
WITH 3:1 WINGS LT. AND RT.
RETAIN & EXTEND 37' LT.
FOR A COMPLETED LENGTH OF 92'
DISCHARGE Q50 = 350 CFS DA = 248 ACRES



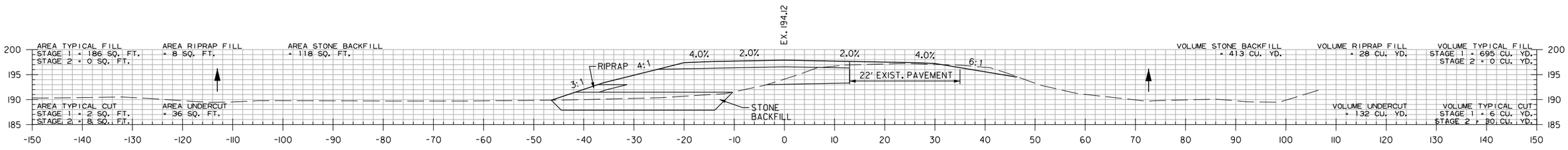
339+35.00



339+00.00



338+00.00

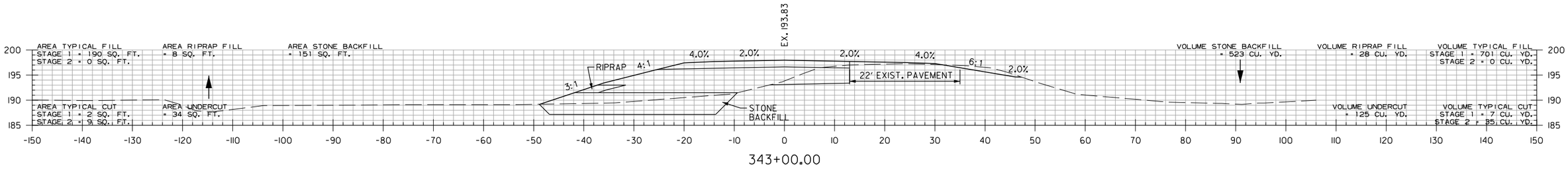


337+00.00

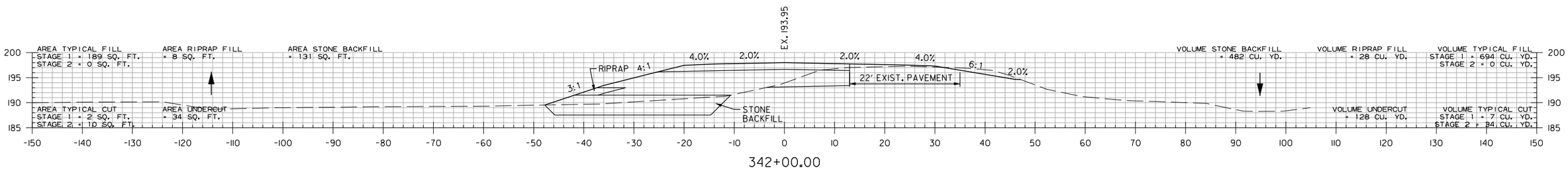
SITE 3
STA. 337+00 TO STA. 339+35

rnfortner 2/4/2021 8:13:28 AM
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REVISED DATE:

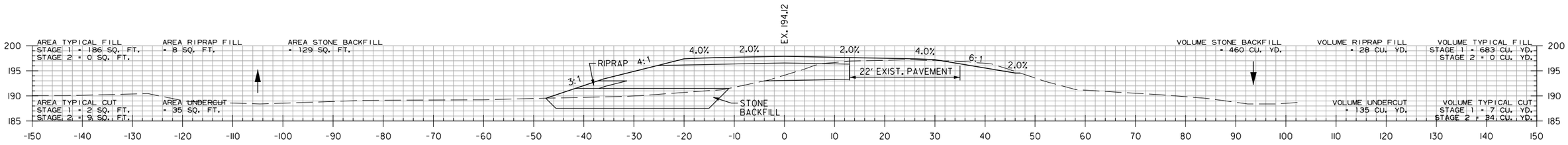
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		020630	170	198
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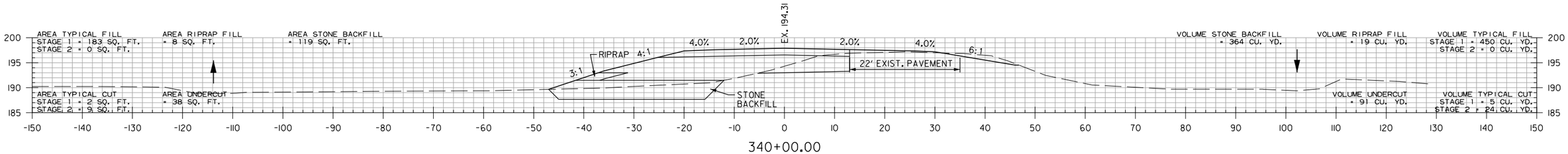
343+00.00



342+00.00



341+00.00

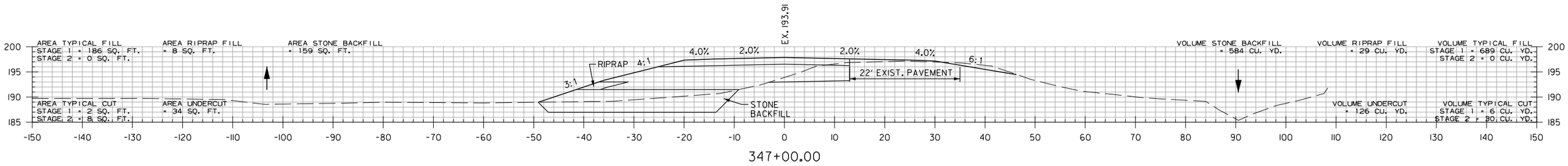


340+00.00

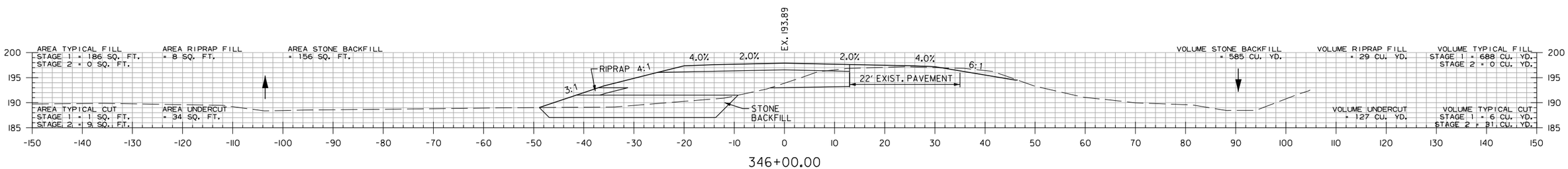
SITE 3
STA. 340+00 TO STA. 343+00

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REVISED DATE:

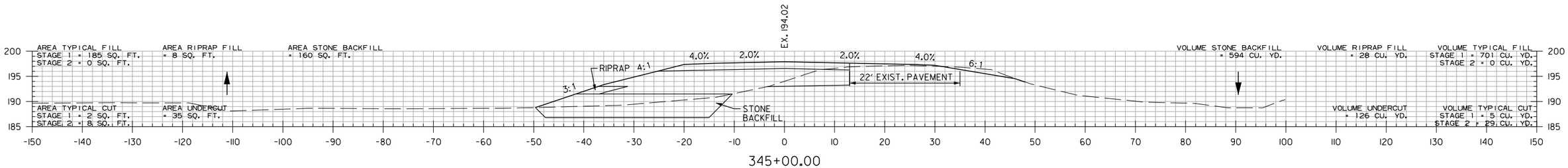
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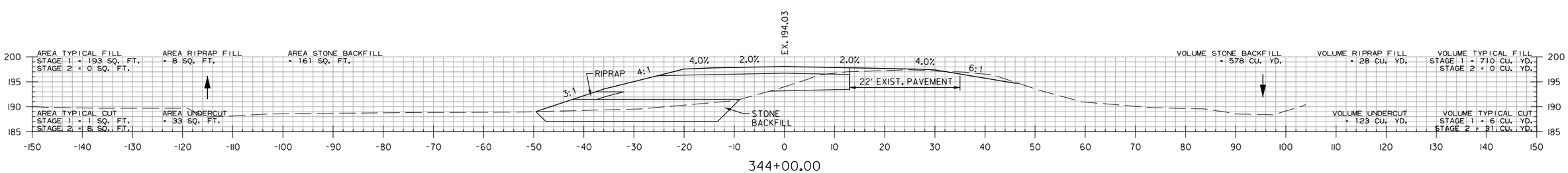
347+00.00



346+00.00



345+00.00

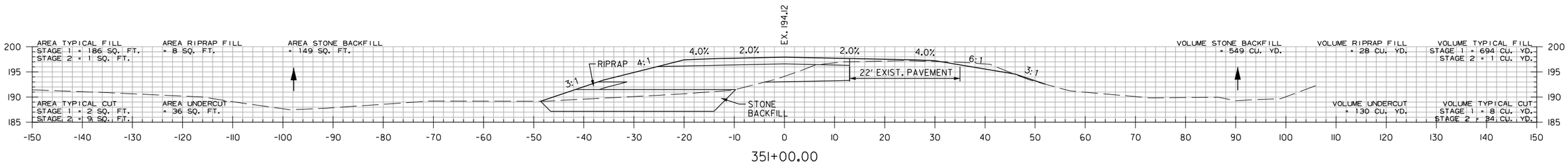


344+00.00

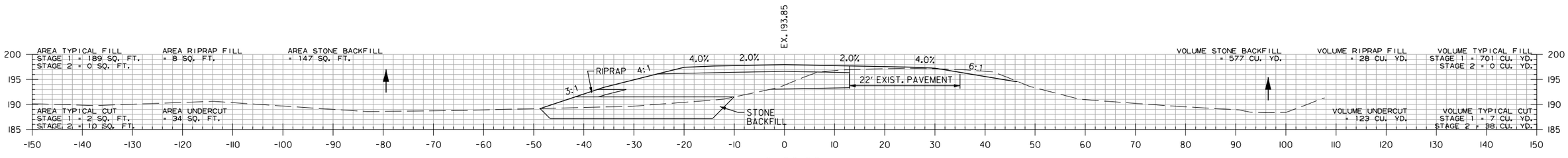
SITE 3
STA. 344+00 TO STA. 347+00

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REVISED DATE:

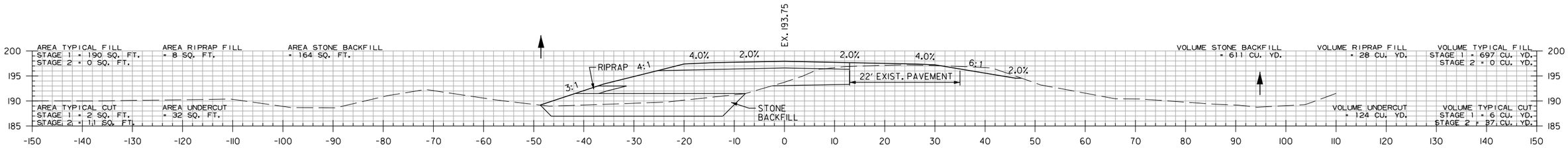
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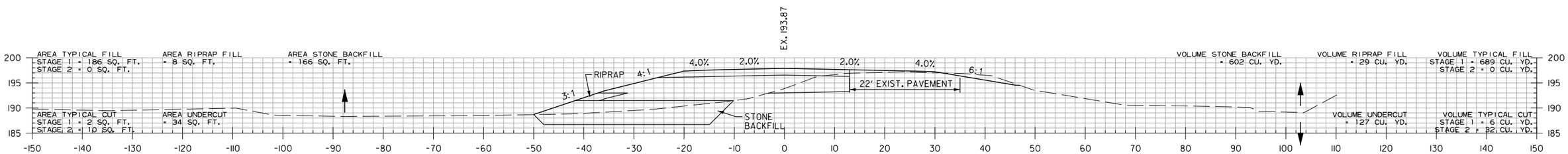
351+00.00



350+00.00



349+00.00

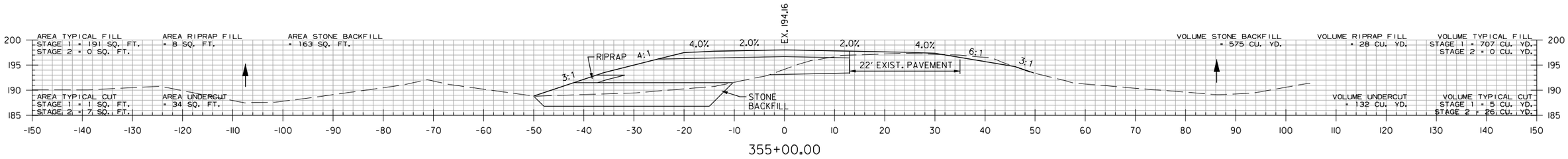


348+00.00

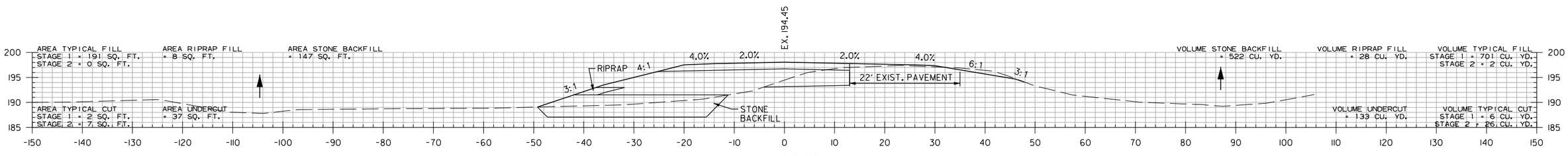
SITE 3
STA. 348+00 TO STA. 351+00

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REVISED DATE:

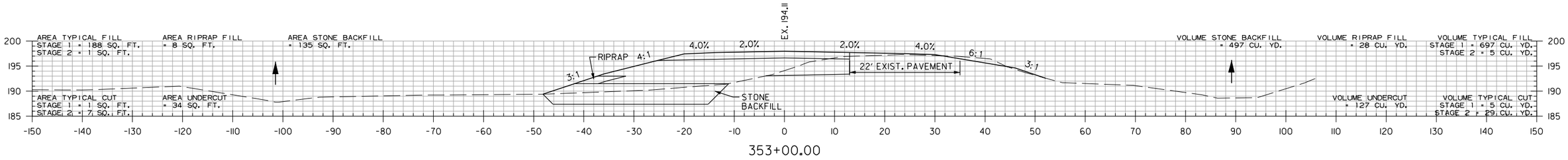
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
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				(2) CROSS SECTIONS				



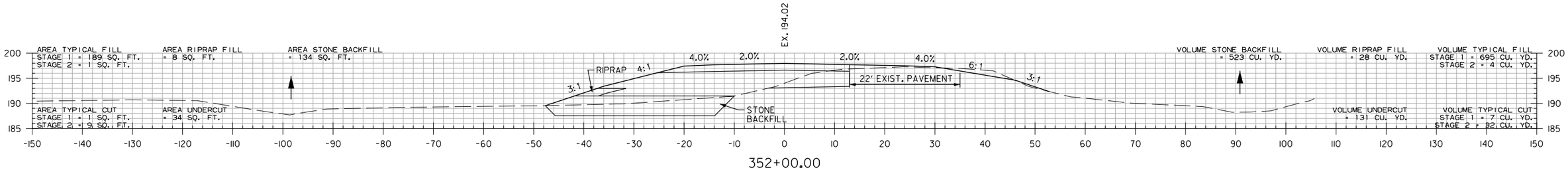
355+00.00



354+00.00



353+00.00

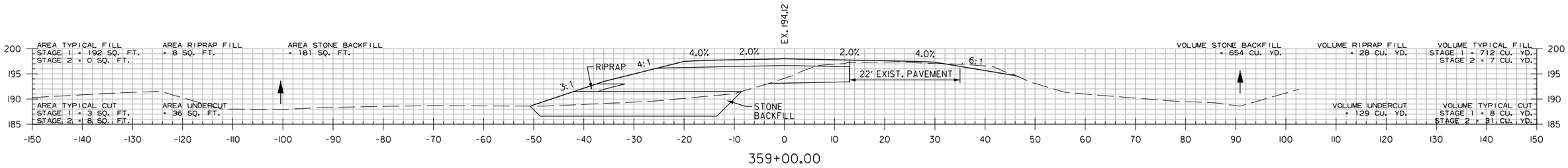


352+00.00

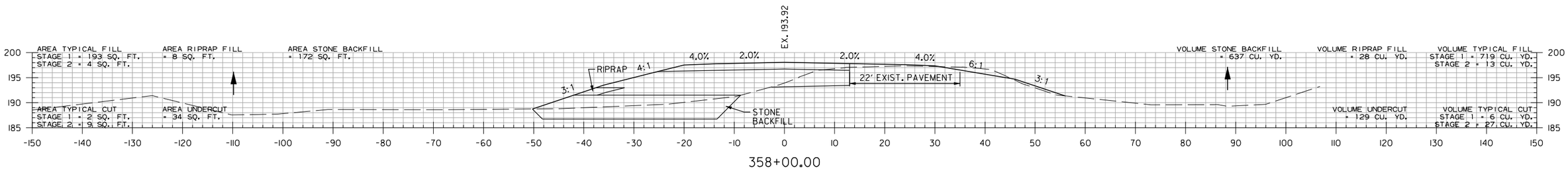
SITE 3
STA. 352+00 TO STA. 355+00

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REVISED DATE:

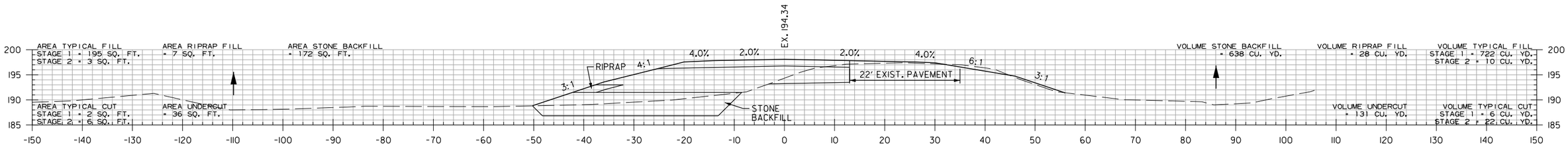
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	174	198
				(2) CROSS SECTIONS				



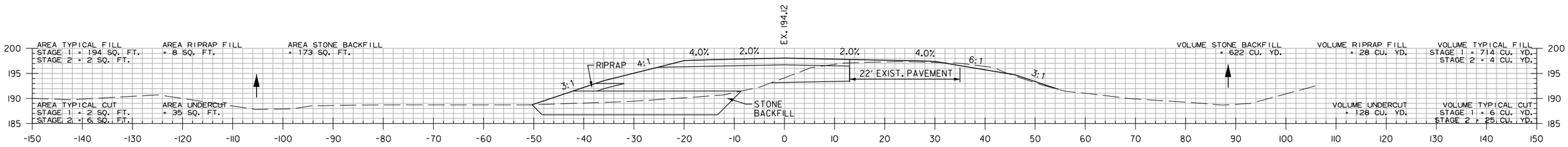
359+00.00



358+00.00



357+00.00



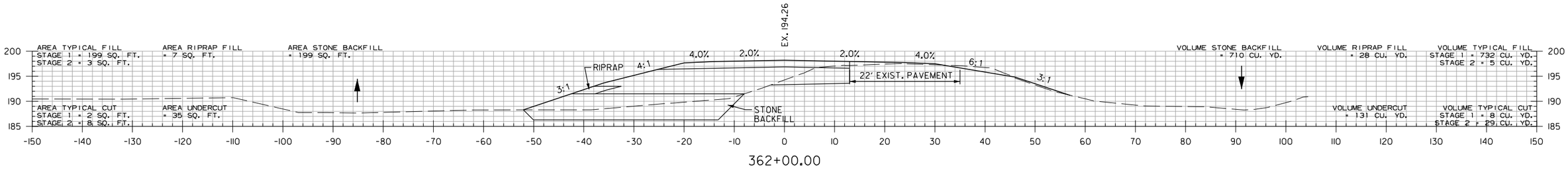
356+00.00

SITE 3
STA. 356+00 TO STA. 359+00

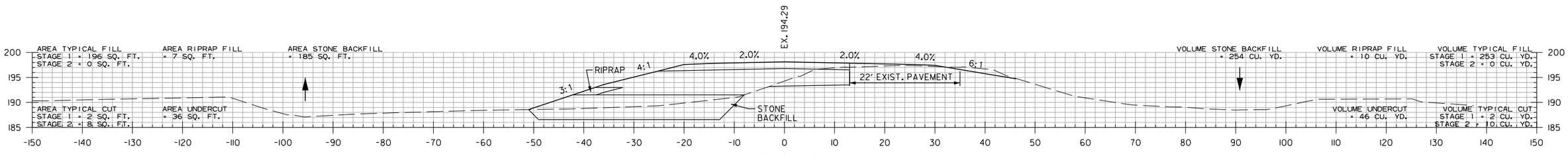
rnfortner 2/4/2021 8:13:29 AM
WORKSPACE: AHTD
L:\2017\1701525 - Wabbaseka - Stuttgart\Drawings\r020630_CX_SITE 3.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	175	198

(2) CROSS SECTIONS

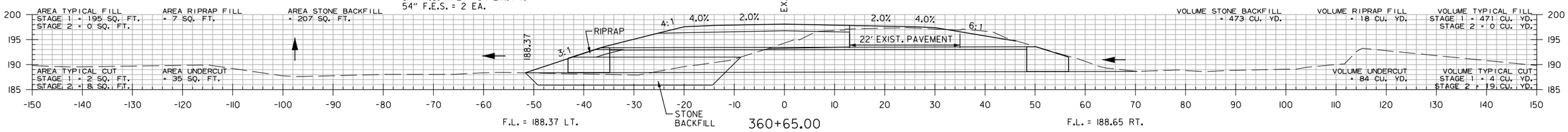


362+00.00



361+00.00

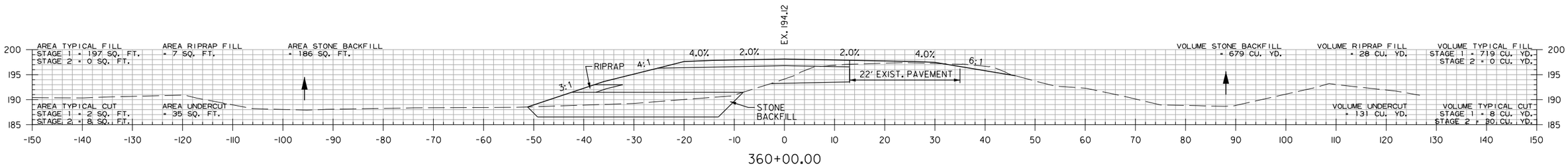
STA. 360+65 IN PLACE
24" X 87' R.C. PIPE CULVERT
WITH HDWLS. LT. AND RT.
REMOVE R.C. PIPE CULVERT
AND CONSTRUCT 54" X 84' R.C. PIPE CULVERT
CLASS IV (TYPE 3 BEDDING) W/
F.E.S. LT. & RT.
Q50 = 154 CFS DA = 248 ACRES
54" R.C. PIPE = 84 LIN. FT.
54" F.E.S. = 2 EA.



F.L. = 188.37 LT.

360+65.00

F.L. = 188.65 RT.

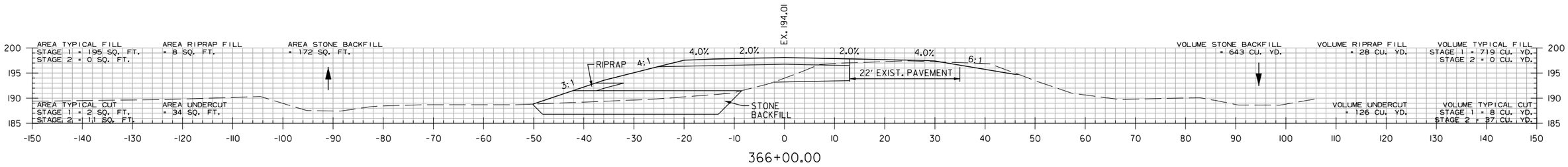


360+00.00

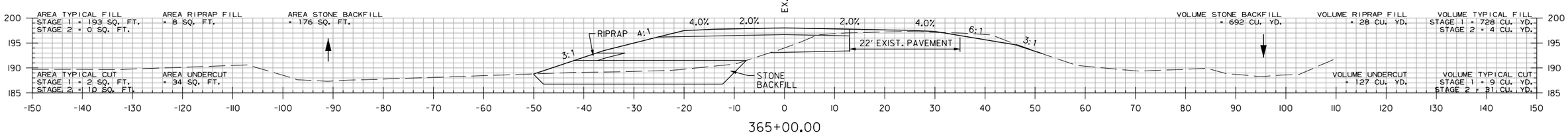
SITE 3
STA. 360+00 TO STA. 362+00

rnfortner 2/4/2021 8:3:29 AM
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L:\2017\170\7525 - Wabbaseka - Stuttgart\Drawings\r020630_CX_SITE 3.dgn
REVISED DATE:

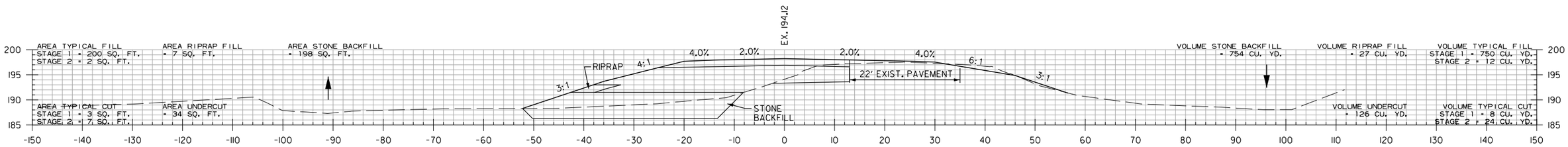
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	176	198
				(2) CROSS SECTIONS				



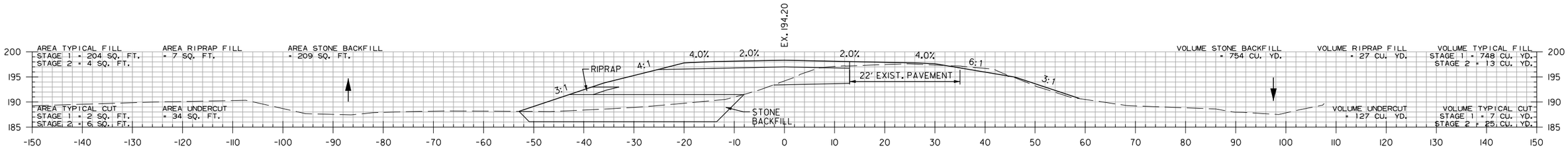
366+00.00



365+00.00



364+00.00

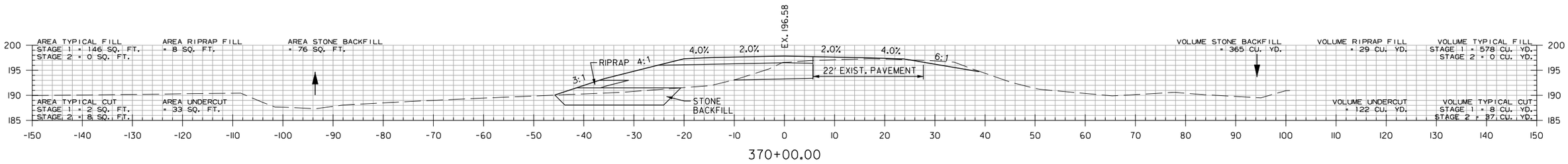


363+00.00

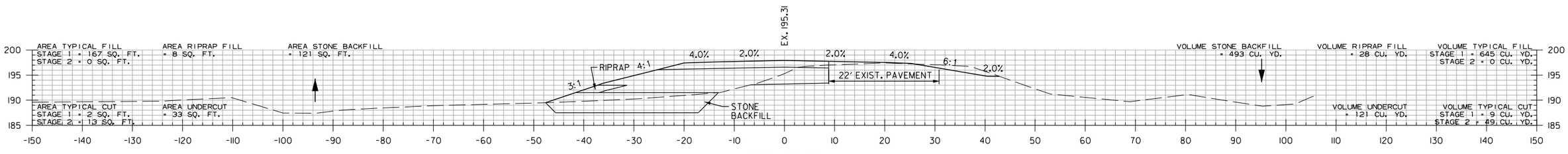
SITE 3
STA. 363+00 TO STA. 366+00

rnfortner 2/4/2021 8:13:29 AM
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REVISED DATE:

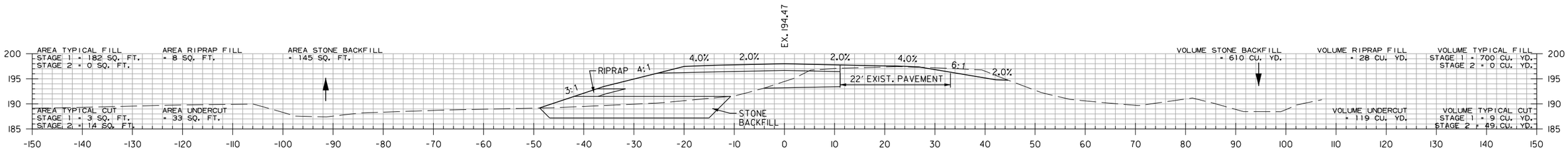
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	177	198
				(2)	CROSS SECTIONS			



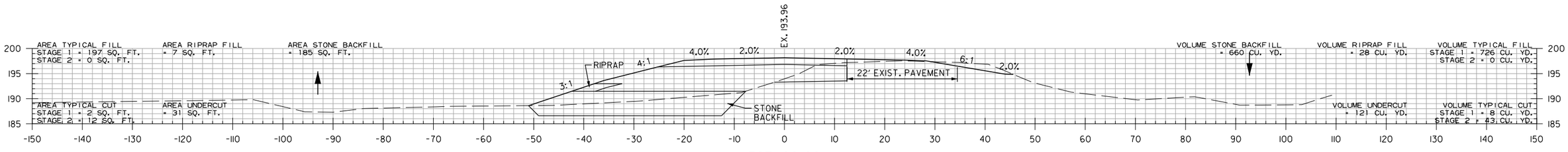
370+00.00



369+00.00



368+00.00

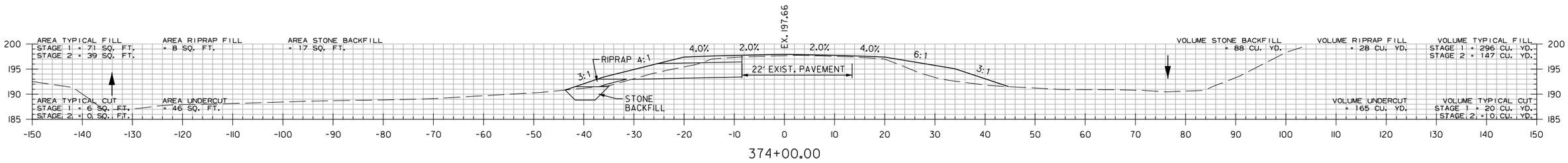


367+00.00

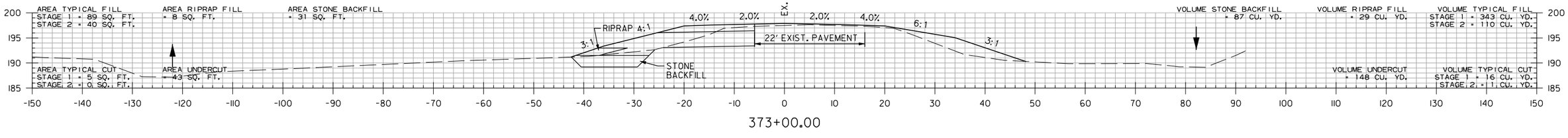
SITE 3
STA. 367+00 TO STA. 370+00

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REVISED DATE:

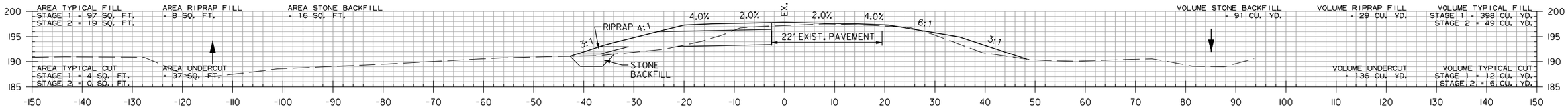
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	178	198
				(2) CROSS SECTIONS				



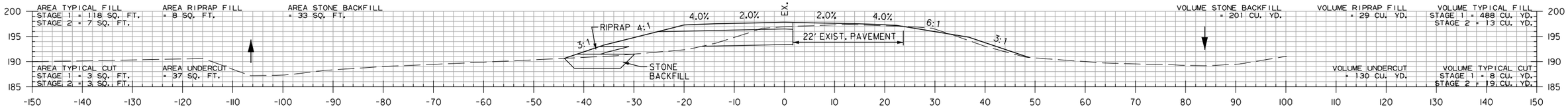
374+00.00



373+00.00



372+00.00

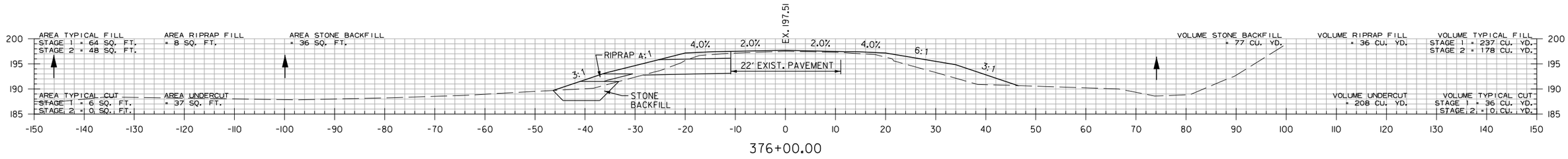


371+00.00

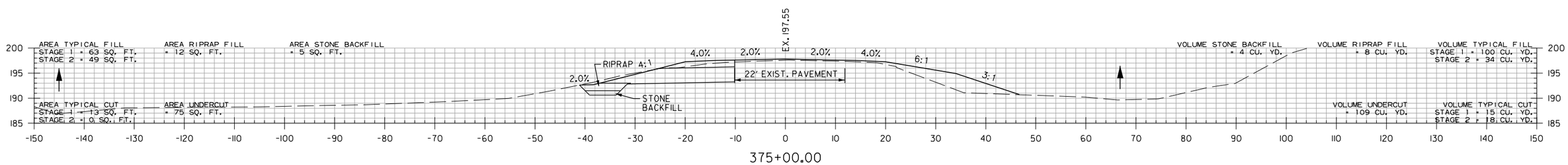
SITE 3
STA. 371+00 TO STA. 374+00

rnfortner 2/4/2021 8:13:30 AM
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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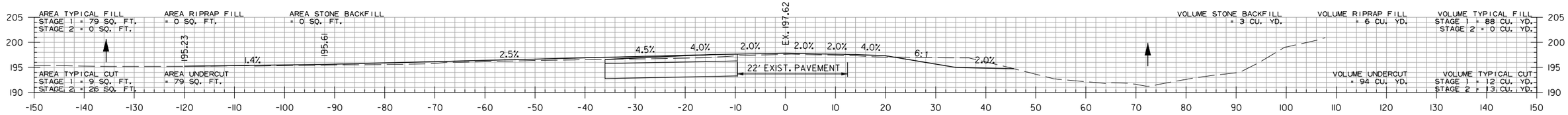


376+00.00



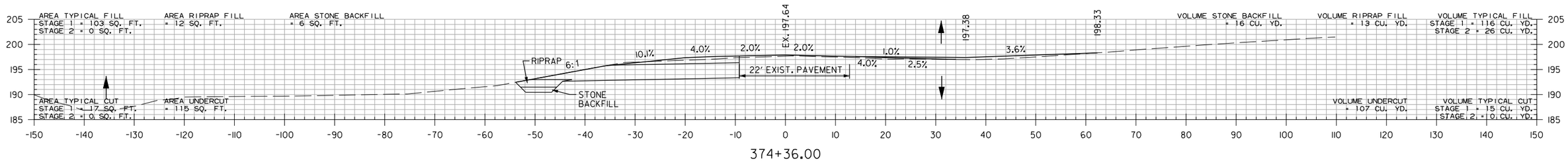
375+00.00

STA. 374+62 CONSTRUCT
APPROACH ON LT. = 14 CU. YDS.



374+62.00

STA. 374+36 CONSTRUCT
APPROACH ON RT. = 11 CU. YDS.



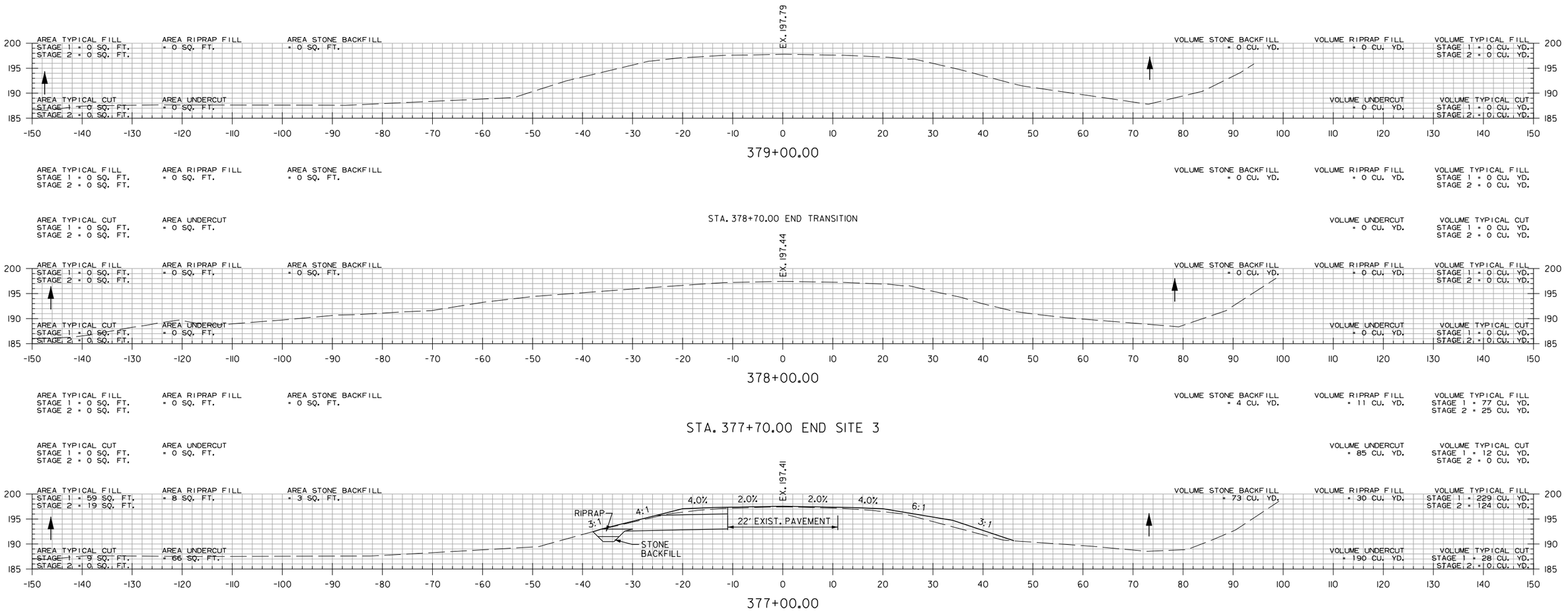
374+36.00

SITE 3
STA. 374+36 TO STA. 376+00

rnfortner 2/4/2021 8:13:30 AM
WORKSPACE: AHTD
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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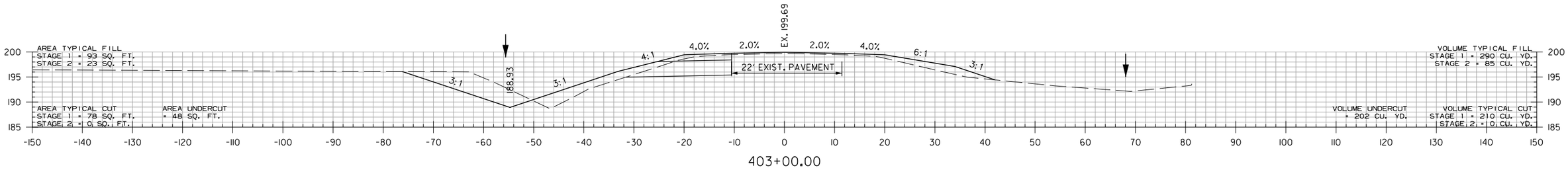
(2) CROSS SECTIONS



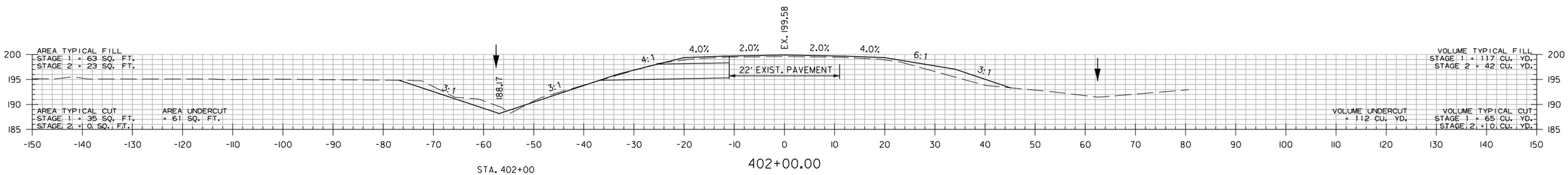
SITE 3
STA. 377+00 TO STA. 379+00

rnfortner 2/4/2021 8:13:30 AM
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
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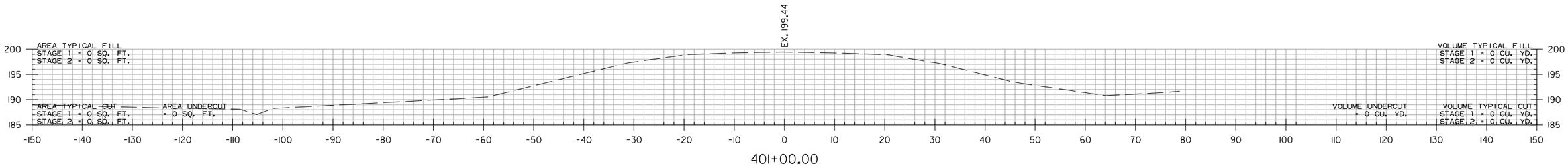
403+00.00



402+00.00

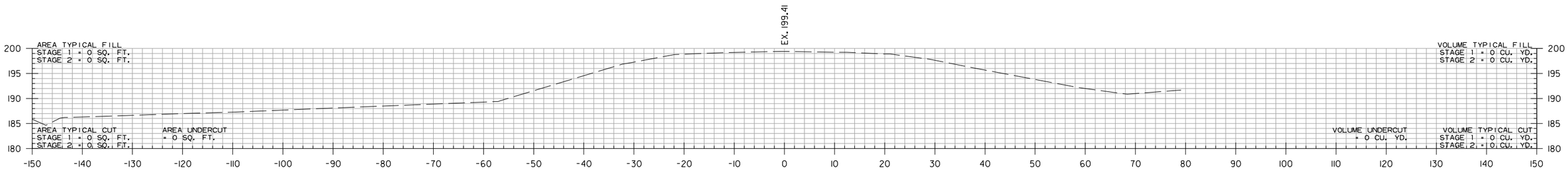
STA. 402+00
BEGIN SP. DT. LT. 0.76%
ELEV. 188.17

STA. 402+00.00 BEGIN SITE 4



401+00.00

STA. 401+00.00 BEGIN TRANSITION

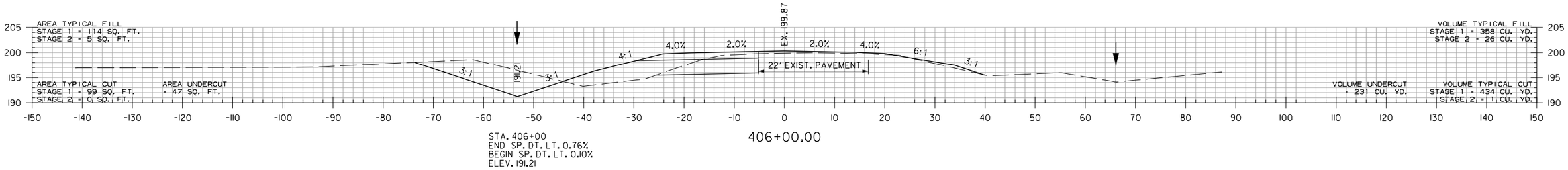


400+00.00

SITE 4
STA. 400+00 TO STA. 403+00

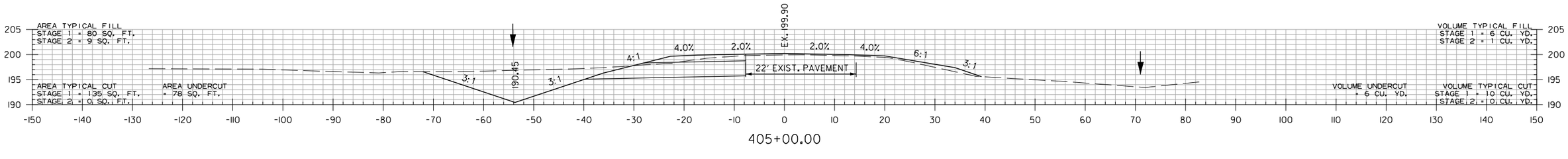
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WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		020630	182	198
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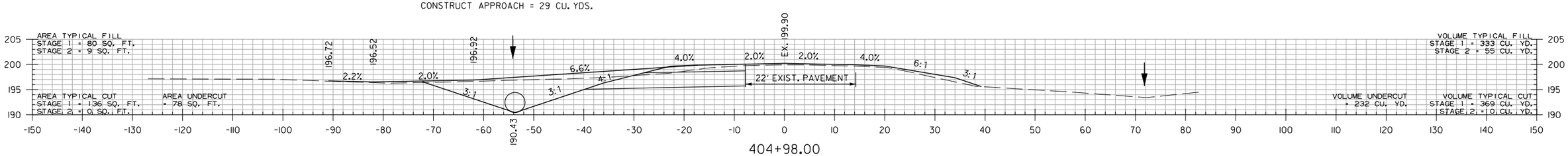
STA. 406+00
END SP. DT. LT. 0.76%
BEGIN SP. DT. LT. 0.10%
ELEV. 191.21

406+00.00

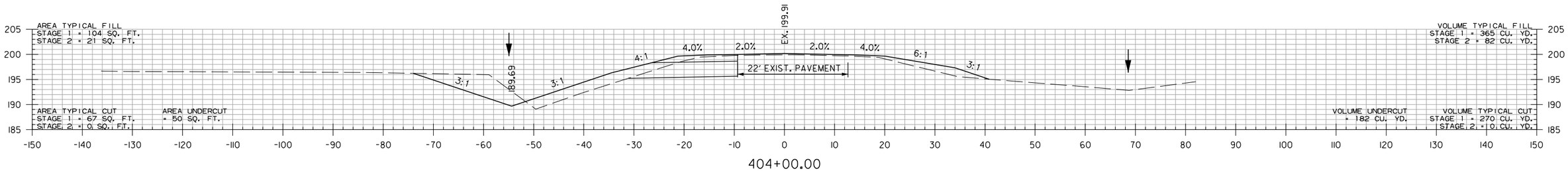


405+00.00

STA. 404+98 IN PLACE
54" X 41' R.C. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
54" X 61' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 29 CU. YDS.



404+98.00

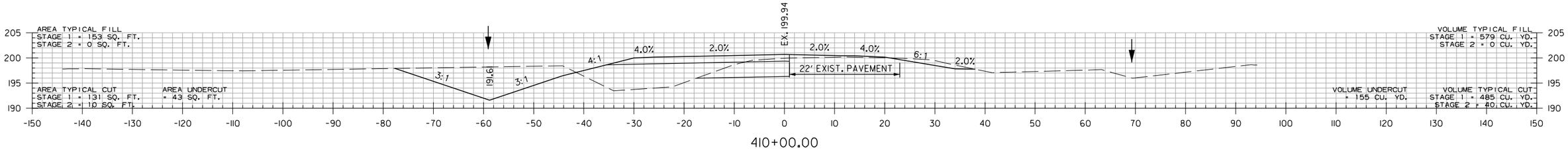


404+00.00

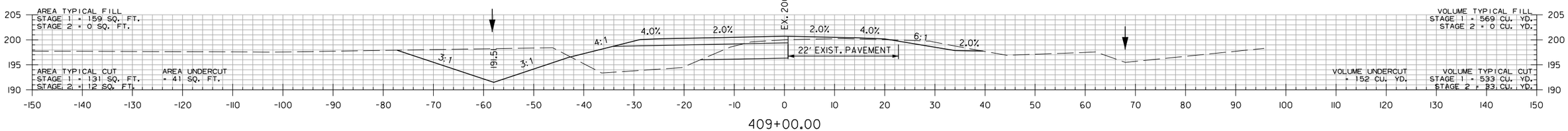
SITE 4
STA. 404+00 TO STA. 406+00

rnfortner 2/4/2021 8:13:31 AM
WORKSPACE: AHTD
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REVISED DATE:

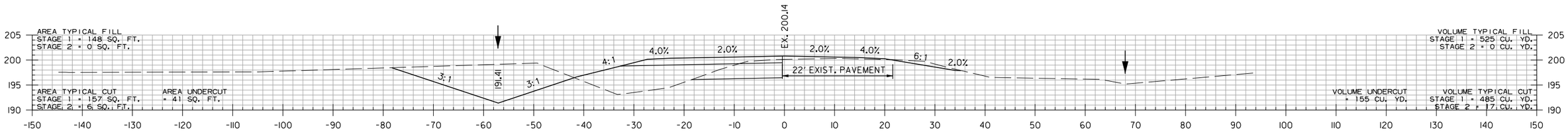
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	183	198
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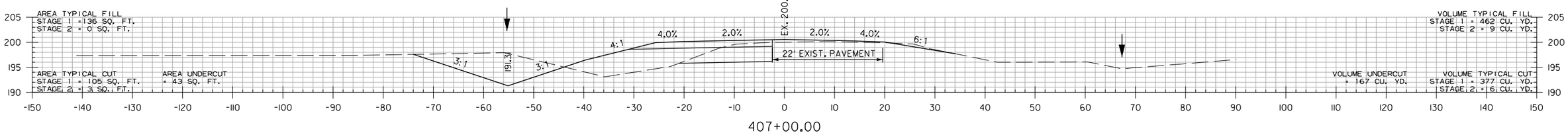
410+00.00



409+00.00



408+00.00

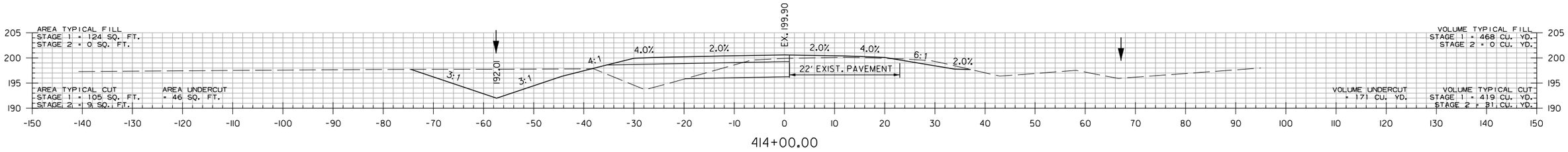


407+00.00

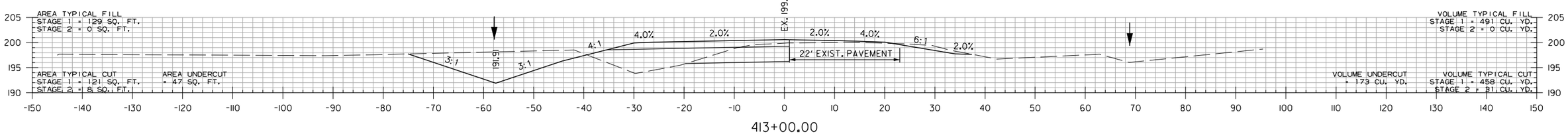
SITE 4
STA. 407+00 TO STA. 410+00

rnfortner 2/4/2021 8:33:31 AM
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REVISED DATE:

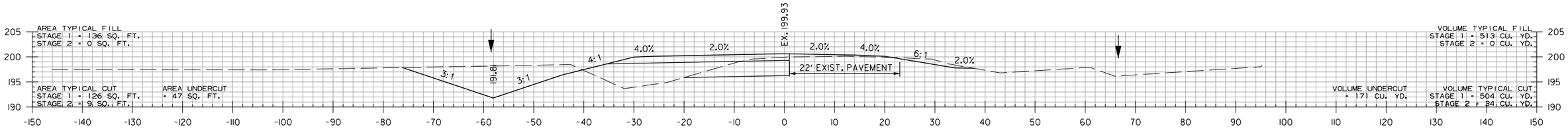
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	184	198
				(2) CROSS SECTIONS				



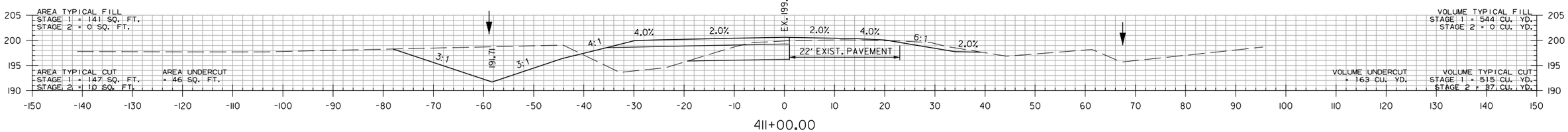
414+00.00



413+00.00



412+00.00



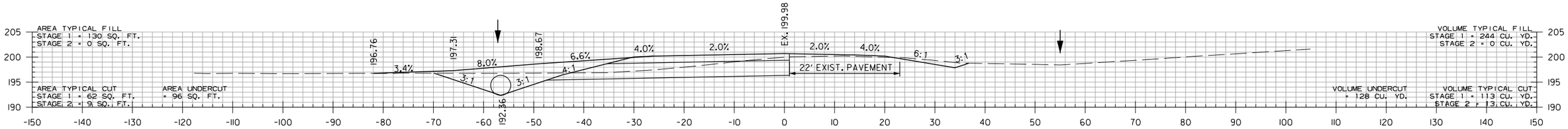
411+00.00

SITE 4
STA. 411+00 TO STA. 414+00

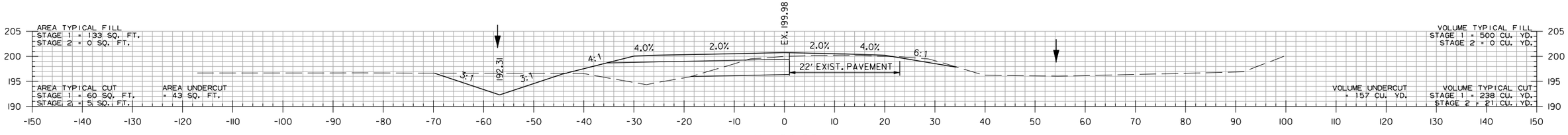
rnfortner 2/4/2021 8:13:31 AM
WORKSPACE: AHTD
L:\2017\170\7525 - Wabbaseka - Stuttgart\Drawings\r020630_CX_SITE_4.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	185	198
				(2)	CROSS SECTIONS			

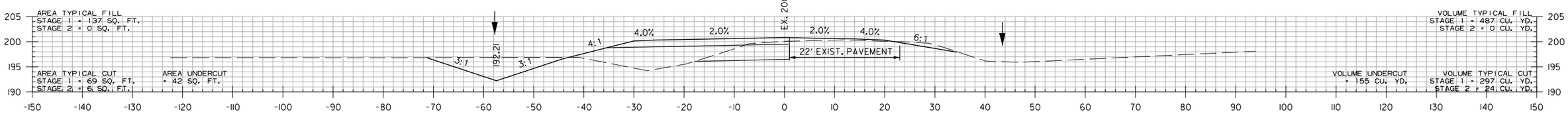
STA. 417+50 IN PLACE
36" X 30' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
48" X 43' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 38 CU. YDS.



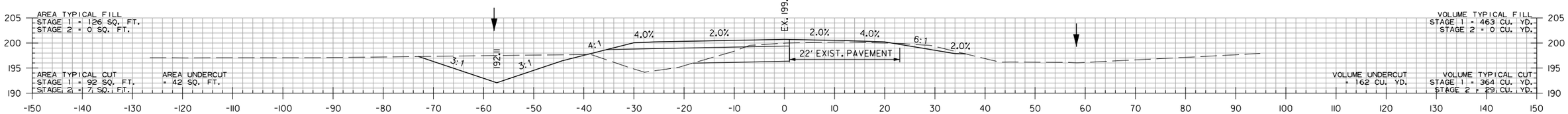
417+50.00



417+00.00



416+00.00

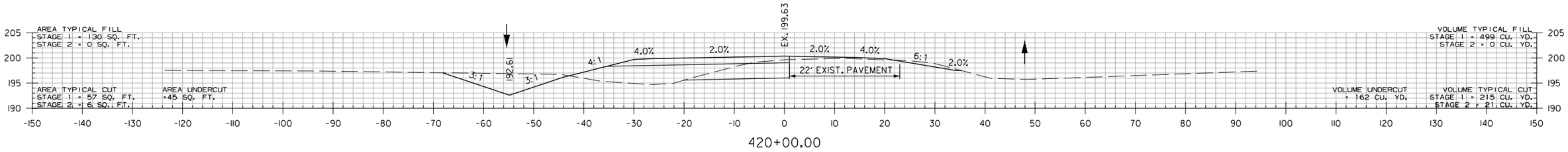


415+00.00

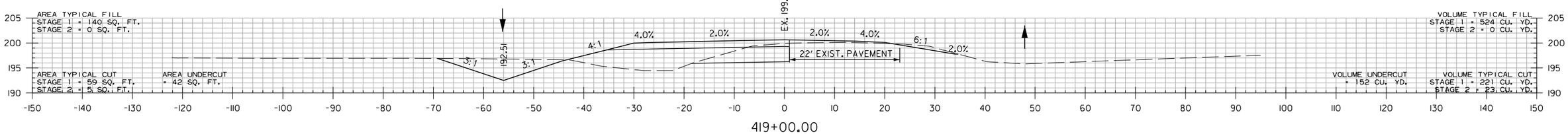
SITE 4
STA. 415+00 TO STA. 417+50

rnfortner 2/4/2021 8:33:31 AM
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REVISED DATE:

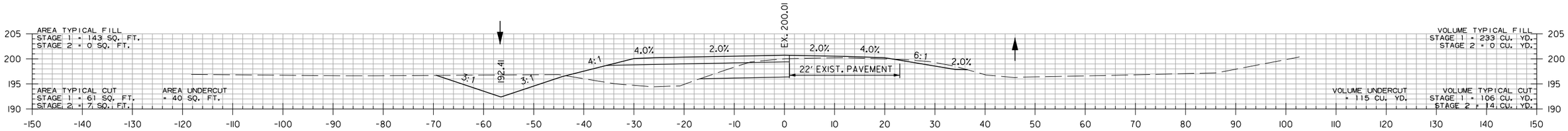
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	186	198
				(2)	CROSS SECTIONS			



420+00.00

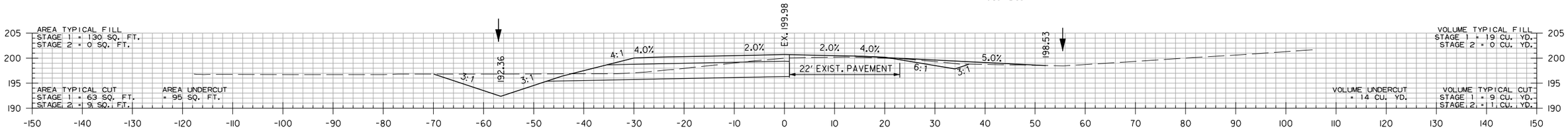


419+00.00



418+00.00

STA. 417+54
CONSTRUCT CO. RD. ON RT.
= 47 CU. YDS.

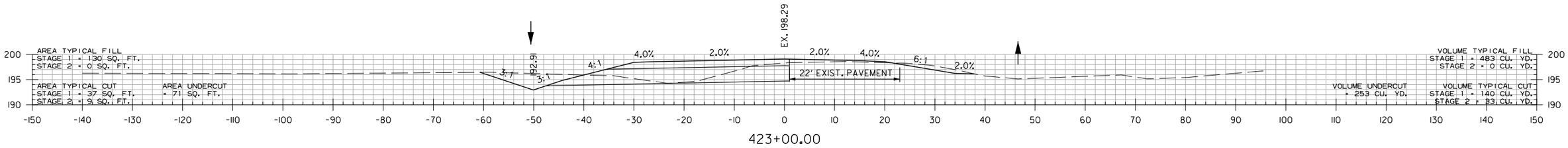


417+54.00

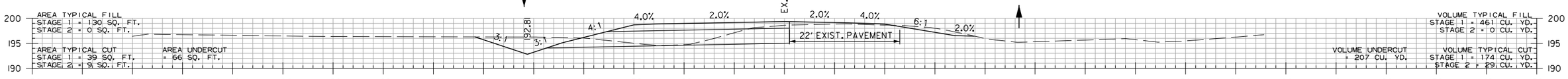
SITE 4
STA. 417+54 TO STA. 420+00

rnfortner 2/4/2021 8:13:32 AM
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REVISED DATE:

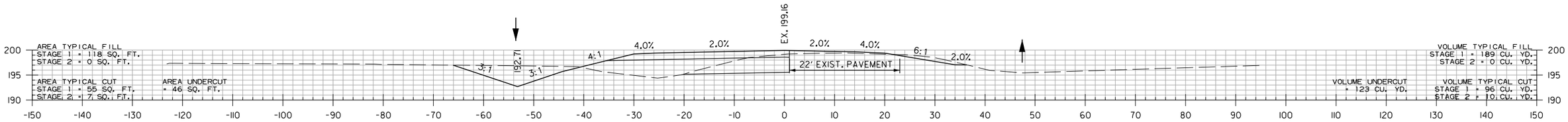
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	187	198
				(2)	CROSS SECTIONS			



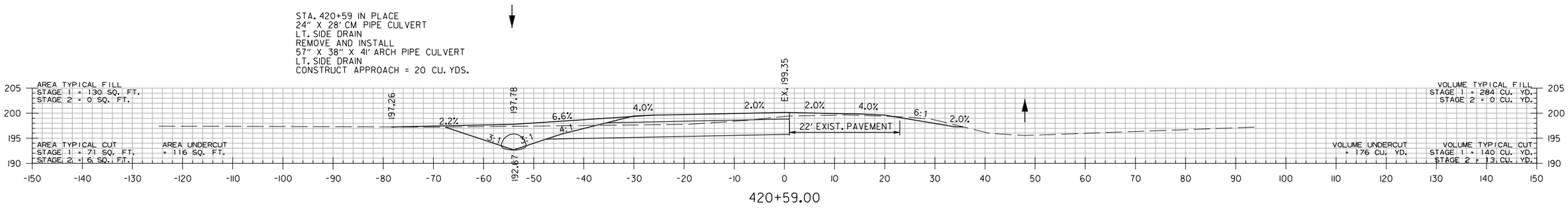
423+00.00



422+00.00



421+00.00



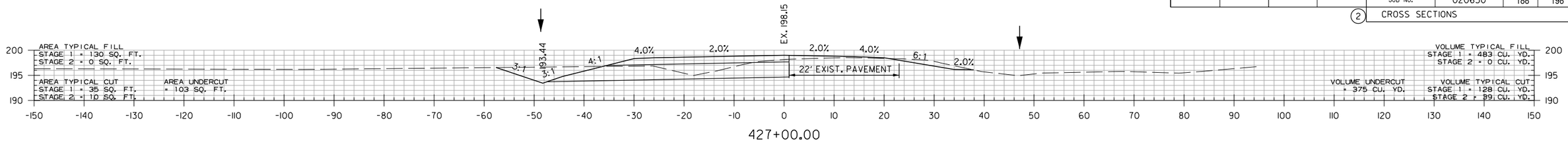
420+59.00

SITE 4
STA. 420+59 TO STA. 423+00

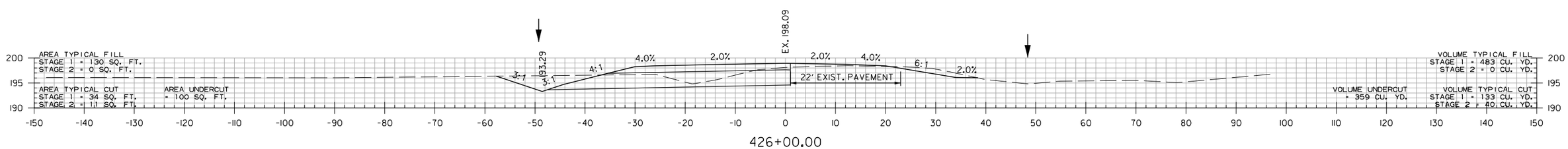
rnfortner 2/4/2021 8:13:32 AM
WORKSPACE: AHTD
L:\2017\1701525 - Wabbaseka - Stuttgart\Drawings\r020630_CX_SITE_4.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	188	198

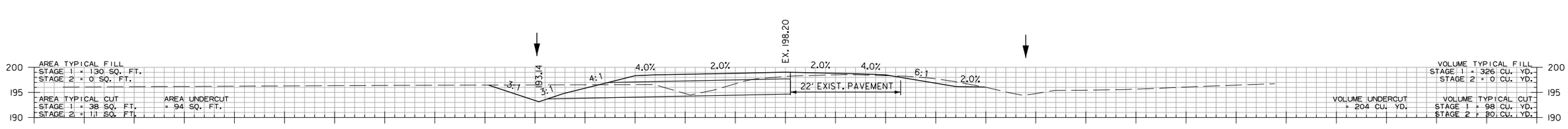
(2) CROSS SECTIONS



427+00.00

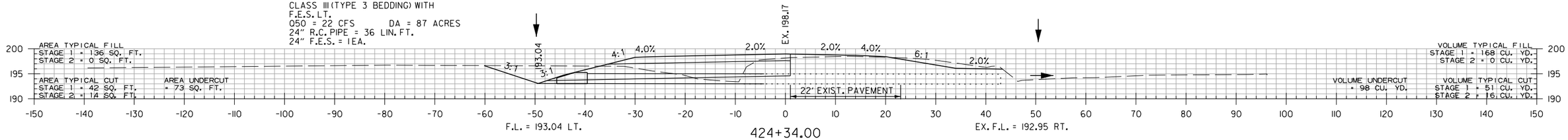


426+00.00



425+00.00

STA. 424+34 IN PLACE
24" X 52' R.C. PIPE CULVERT
WITH HDWLS. LT. AND RT.
REMOVE HDWL. LT.
AND EXTEND R.C. PIPE 32' LT.
CLASS III (TYPE 3 BEDDING) WITH
F.E.S. LT.
Q50 = 22 CFS DA = 87 ACRES
24" R.C. PIPE = 36 LIN. FT.
24" F.E.S. = 1EA.

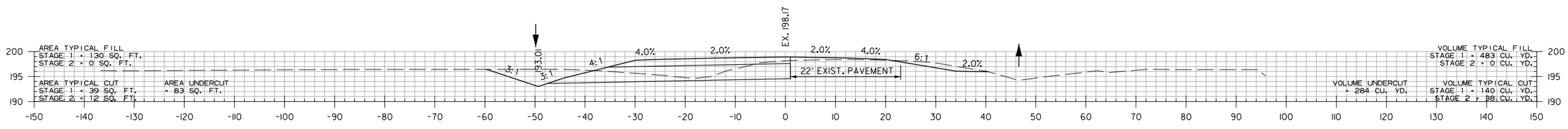


F.L. = 193.04 LT.

EX. F.L. = 192.95 RT.

424+34.00

STA. 424+34
END SP. DT. LT. 0.10%
BEGIN SP. DT. LT. 0.15%
ELEV. 193.04

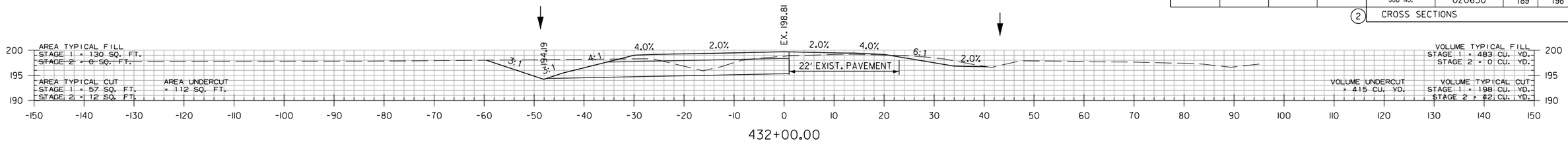


424+00.00

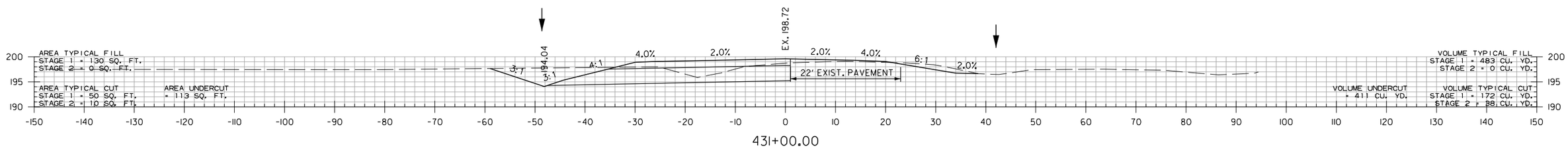
SITE 4
STA. 424+00 TO STA. 427+00

rnfortner 2/4/2021 8:33:32 AM
WORKSPACE: AHTD
L:\2017\1701525 - Wabbaseka - Stuttgart\Drawings\r020630_CX_SITE_4.dgn
REVISED DATE:

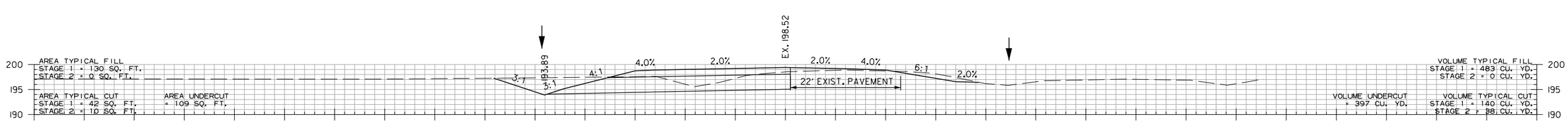
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	189	198
				(2) CROSS SECTIONS				



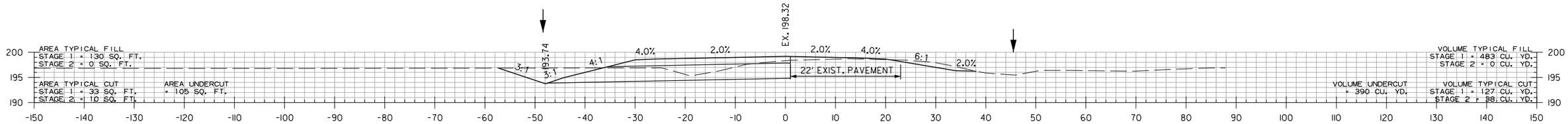
432+00.00



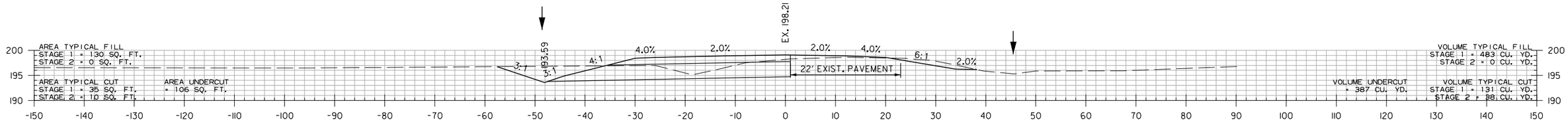
431+00.00



430+00.00



429+00.00

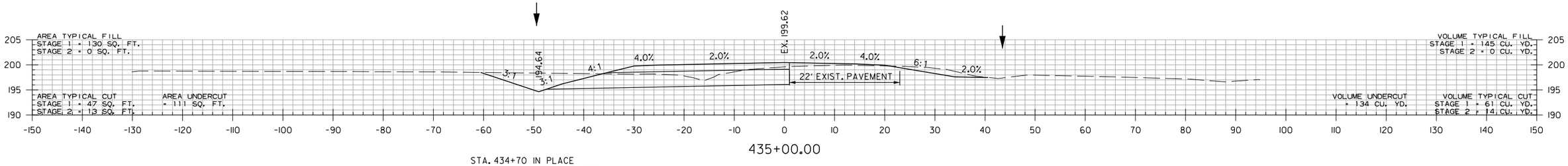


428+00.00

SITE 4
STA. 428+00 TO STA. 432+00

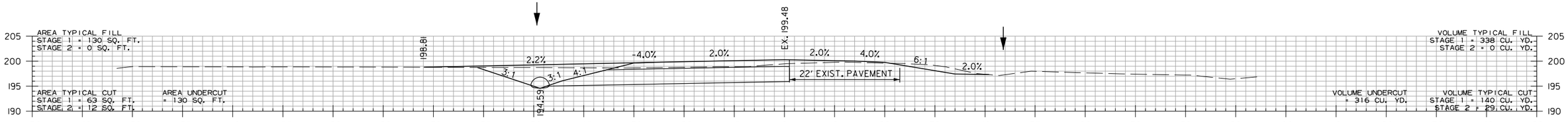
rnfortner 2/4/2021 8:33:32 AM
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	190	198
				(2)	CROSS SECTIONS			

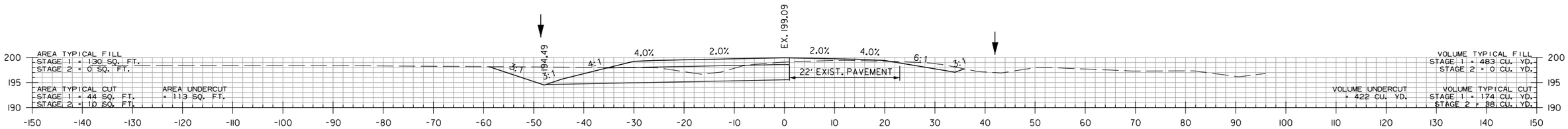


435+00.00

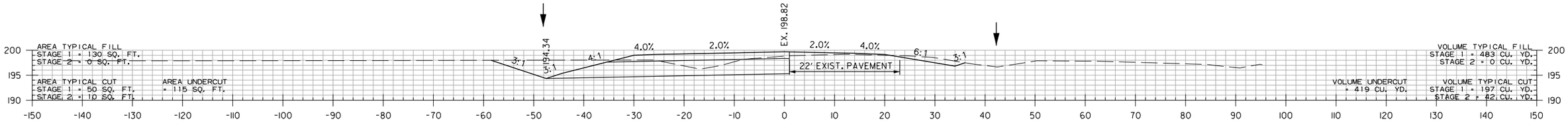
STA. 434+70 IN PLACE
18" X 24' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
42" X 29" X 35' ARCH PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 13 CU. YDS.



434+70.00



434+00.00

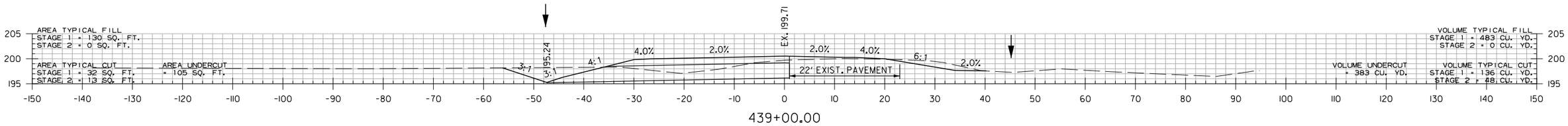


433+00.00

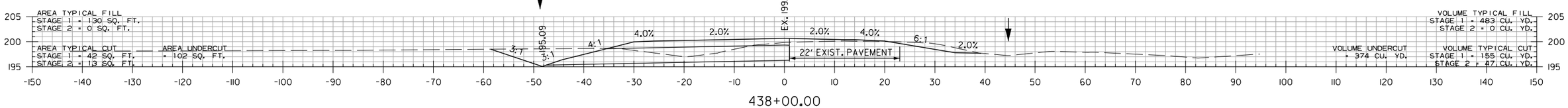
SITE 4
STA. 433+00 TO STA. 435+00

rnfortner 2/4/2021 8:33:32 AM
WORKSPACE: AHTD
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REVISED DATE:

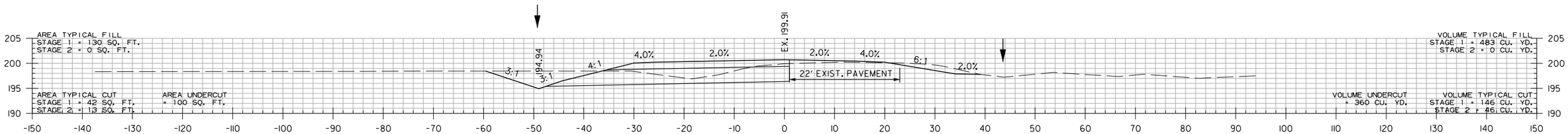
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	191	198
				(2)	CROSS SECTIONS			



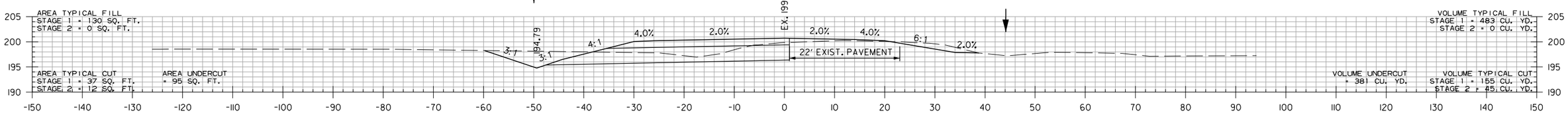
439+00.00



438+00.00



437+00.00



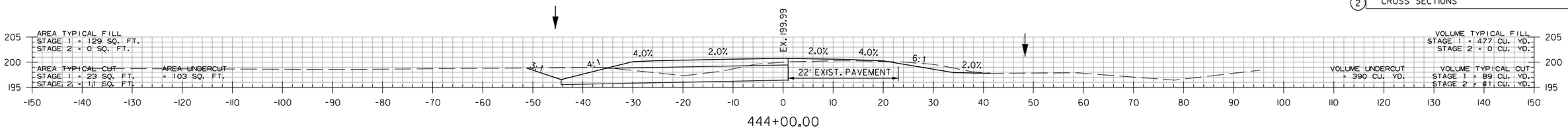
436+00.00

SITE 4
STA. 436+00 TO STA. 439+00

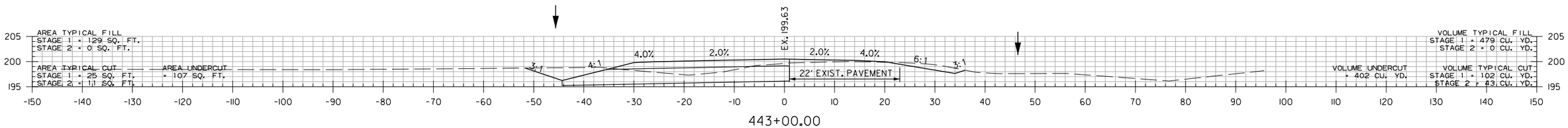
rnfortner 2/4/2021 8:13:33 AM
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	192	198

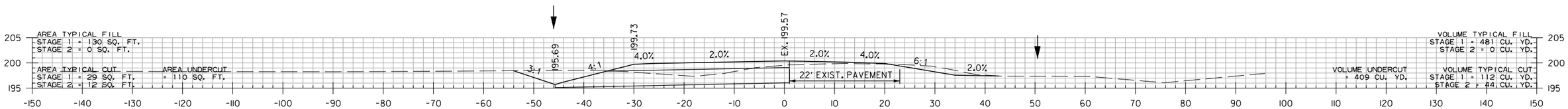
(2) CROSS SECTIONS



444+00.00

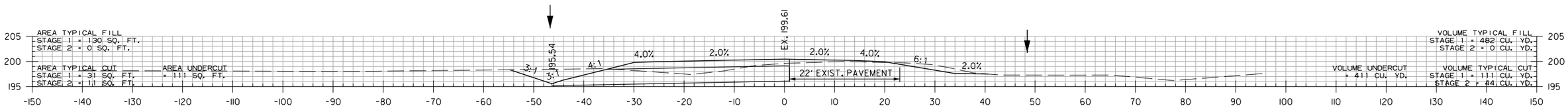


443+00.00

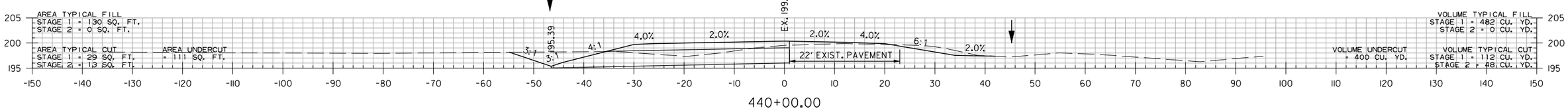


STA. 442+00
END SP. DT. LT. 0.15%
ELEV. 195.69

442+00.00



441+00.00



440+00.00

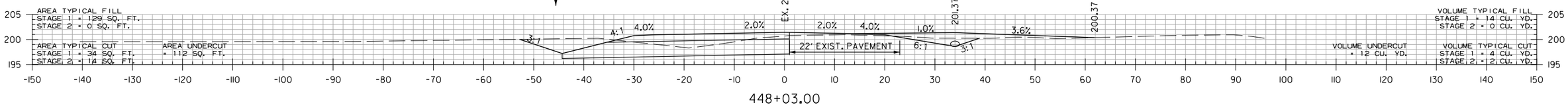
SITE 4
STA. 440+00 TO STA. 444+00

rnfortner 2/4/2021 8:33:33 AM
WORKSPACE: AHTD
L:\2017\170175\25 - Wabbaseka - Stuttgart\Drawings\r020630_CX_SITE_4.dgn
REVISED DATE:

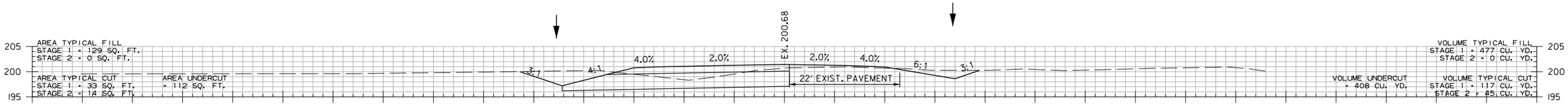
STA. 448+03 IN PLACE
18" X 32' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
21" X 15" X 33' ARCH PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 24 CU. YDS.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	193	198

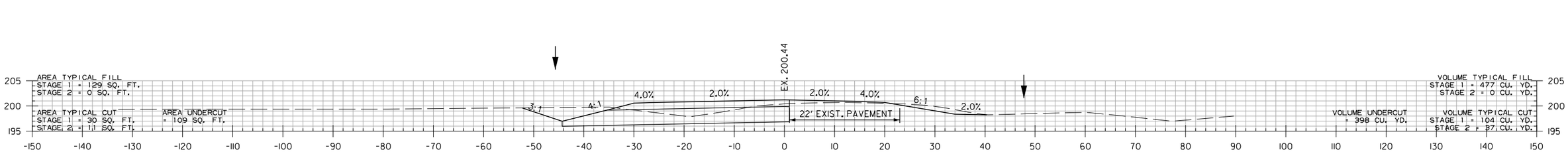
(2) CROSS SECTIONS



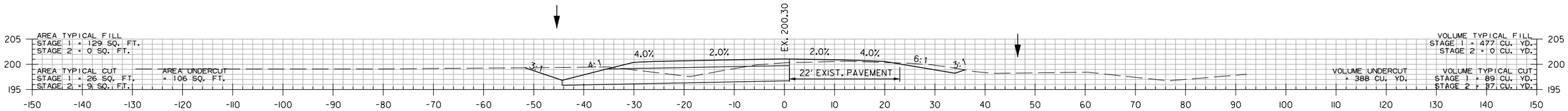
448+03.00



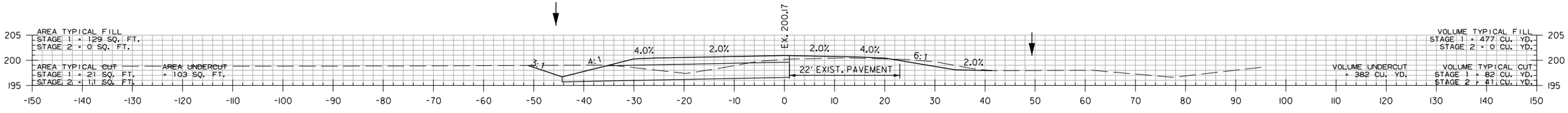
448+00.00



447+00.00



446+00.00



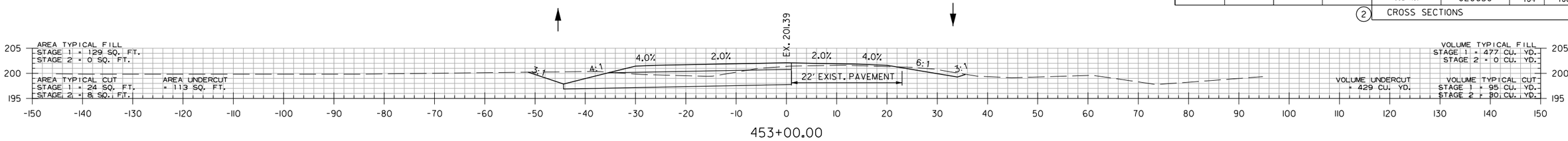
445+00.00

SITE 4
STA. 445+00 TO STA. 448+03

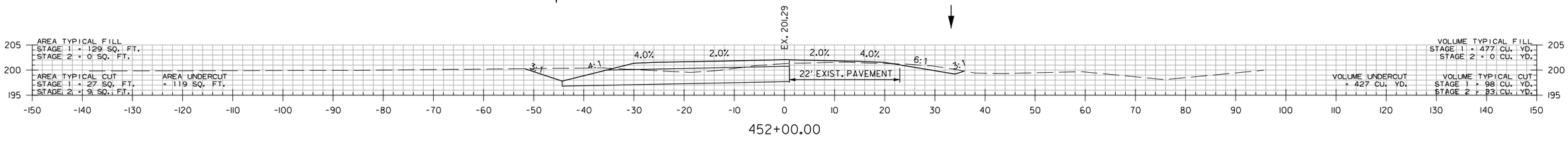
rnfortner 2/4/2021 8:33:33 AM
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	194	198

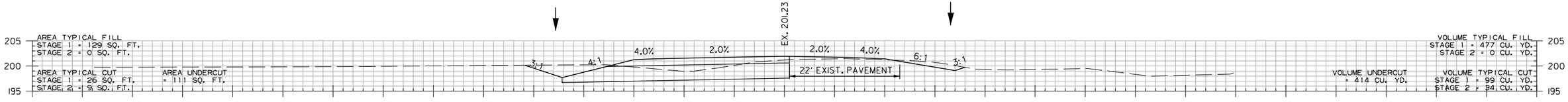
(2) CROSS SECTIONS



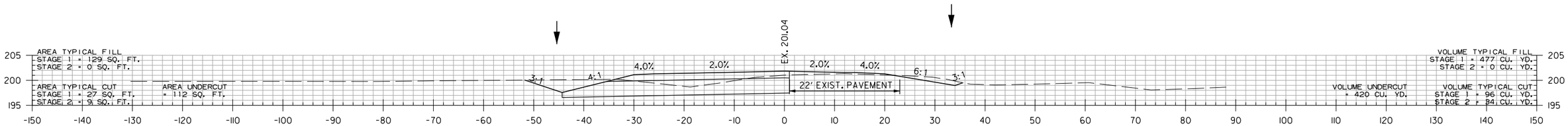
453+00.00



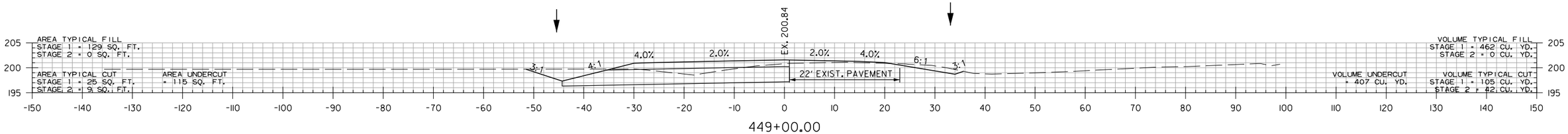
452+00.00



451+00.00



450+00.00



449+00.00

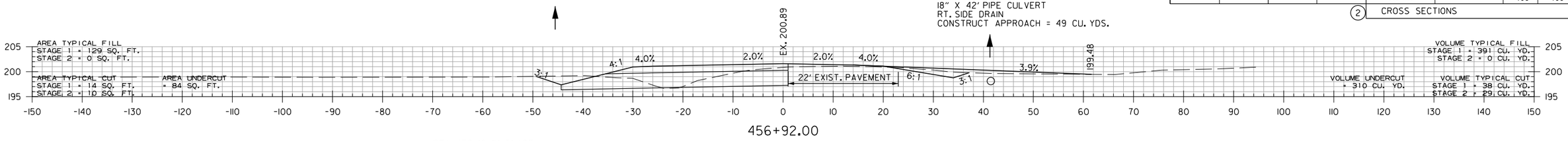
SITE 4
STA. 449+00 TO STA. 453+00

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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	195	198

(2) CROSS SECTIONS

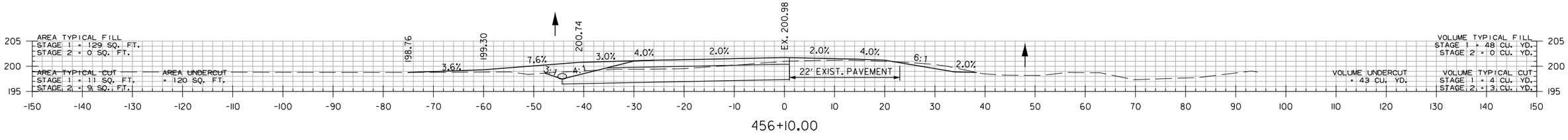
STA. 456+92 IN PLACE
18" X 31' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 42' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 49 CU. YDS.



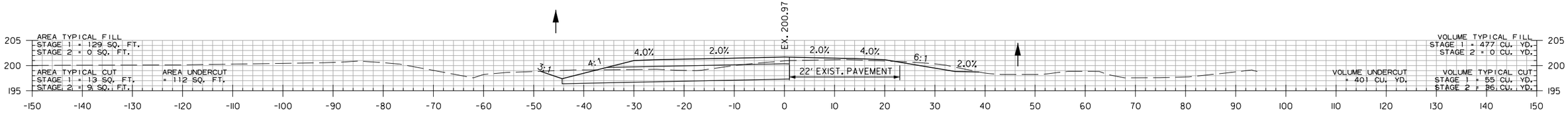
456+92.00

NOTE: SIDE DRAIN AT 456+92 ALIGNS WITH EXISTING ROAD SIDE DITCH.

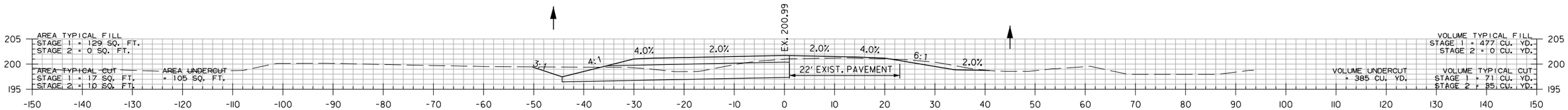
STA. 456+10 IN PLACE
18" X 51' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
21" X 15" X 51' ARCH PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 31 CU. YDS.



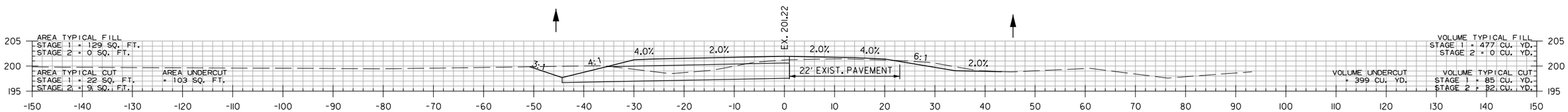
456+10.00



456+00.00



455+00.00



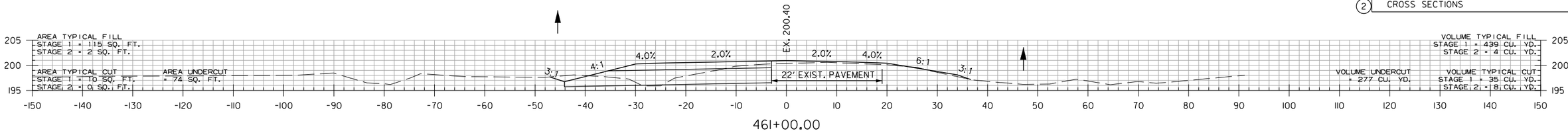
454+00.00

SITE 4
STA. 454+00 TO STA. 456+92

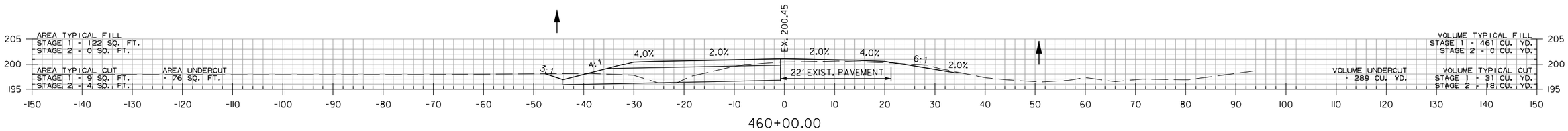
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	196	198

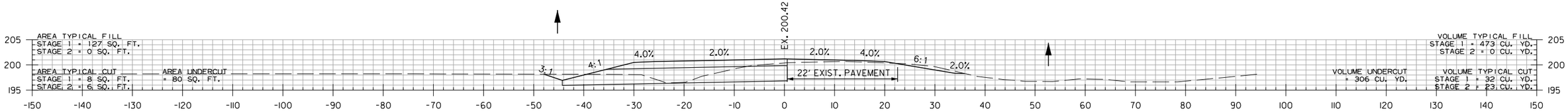
(2) CROSS SECTIONS



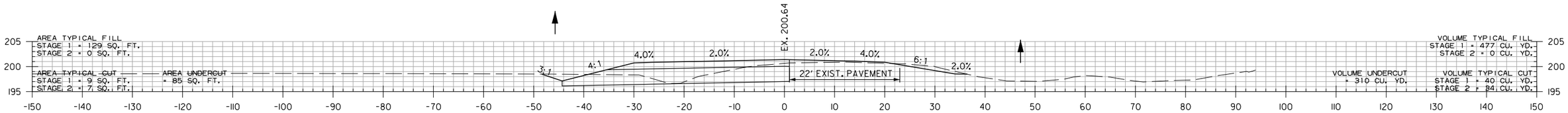
461+00.00



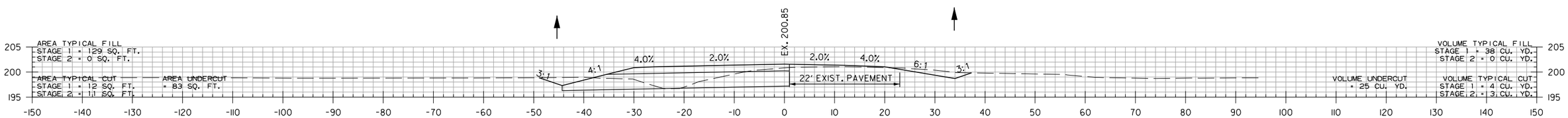
460+00.00



459+00.00



458+00.00



457+00.00

SITE 4
STA. 457+00 TO STA. 461+00

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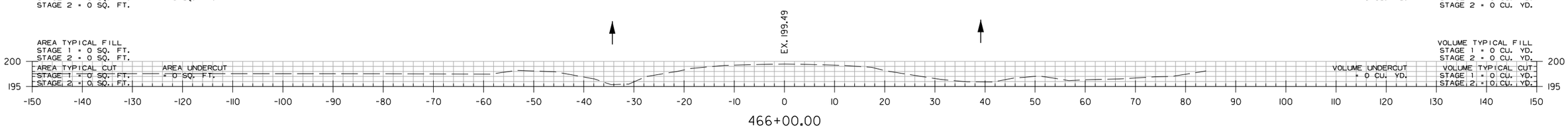
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		020630	197	198

(2) CROSS SECTIONS

AREA TYPICAL FILL
STAGE 1 = 0 SQ. FT.
STAGE 2 = 0 SQ. FT.
AREA TYPICAL CUT
STAGE 1 = 0 SQ. FT.
STAGE 2 = 0 SQ. FT.
AREA UNDERCUT
= 0 SQ. FT.

STA. 466+40.00 END TRANSITION

VOLUME TYPICAL FILL
STAGE 1 = 0 CU. YD.
STAGE 2 = 0 CU. YD.
VOLUME UNDERCUT
= 0 CU. YD.
VOLUME TYPICAL CUT
STAGE 1 = 0 CU. YD.
STAGE 2 = 0 CU. YD.

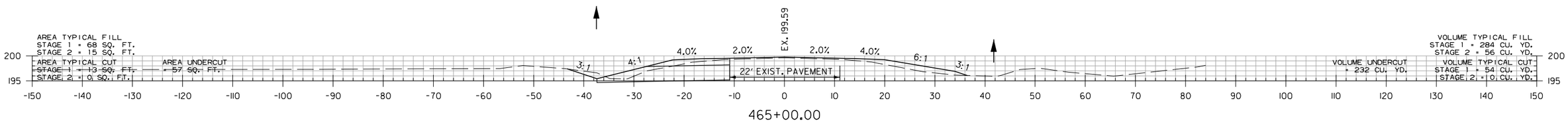


466+00.00

AREA TYPICAL FILL
STAGE 1 = 0 SQ. FT.
STAGE 2 = 0 SQ. FT.
AREA TYPICAL CUT
STAGE 1 = 0 SQ. FT.
STAGE 2 = 0 SQ. FT.
AREA UNDERCUT
= 0 SQ. FT.

STA. 465+40.00
END JOB 020630
END SITE 4

VOLUME TYPICAL FILL
STAGE 1 = 51 CU. YD.
STAGE 2 = 11 CU. YD.
VOLUME UNDERCUT
= 42 CU. YD.
VOLUME TYPICAL CUT
STAGE 1 = 9 CU. YD.
STAGE 2 = 0 CU. YD.



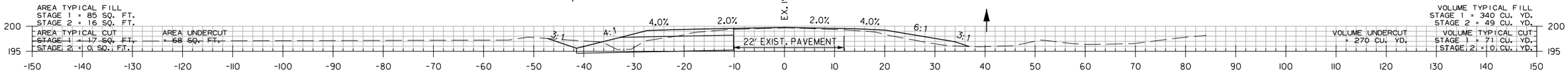
465+00.00

AREA TYPICAL FILL
STAGE 1 = 68 SQ. FT.
STAGE 2 = 15 SQ. FT.
AREA TYPICAL CUT
STAGE 1 = 13 SQ. FT.
STAGE 2 = 0 SQ. FT.
AREA UNDERCUT
= 57 SQ. FT.

VOLUME TYPICAL FILL
STAGE 1 = 284 CU. YD.
STAGE 2 = 56 CU. YD.
VOLUME UNDERCUT
= 232 CU. YD.
VOLUME TYPICAL CUT
STAGE 1 = 54 CU. YD.
STAGE 2 = 0 CU. YD.

AREA TYPICAL FILL
STAGE 1 = 85 SQ. FT.
STAGE 2 = 16 SQ. FT.
AREA TYPICAL CUT
STAGE 1 = 17 SQ. FT.
STAGE 2 = 0 SQ. FT.
AREA UNDERCUT
= 68 SQ. FT.

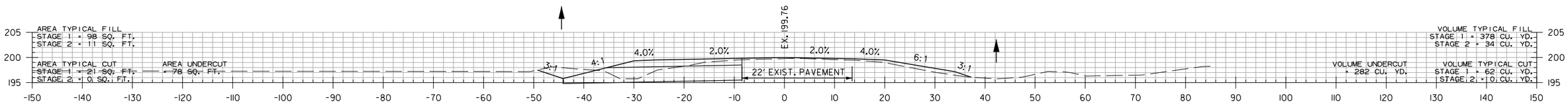
VOLUME TYPICAL FILL
STAGE 1 = 340 CU. YD.
STAGE 2 = 49 CU. YD.
VOLUME UNDERCUT
= 270 CU. YD.
VOLUME TYPICAL CUT
STAGE 1 = 71 CU. YD.
STAGE 2 = 0 CU. YD.



464+00.00

AREA TYPICAL FILL
STAGE 1 = 98 SQ. FT.
STAGE 2 = 11 SQ. FT.
AREA TYPICAL CUT
STAGE 1 = 21 SQ. FT.
STAGE 2 = 0 SQ. FT.
AREA UNDERCUT
= 78 SQ. FT.

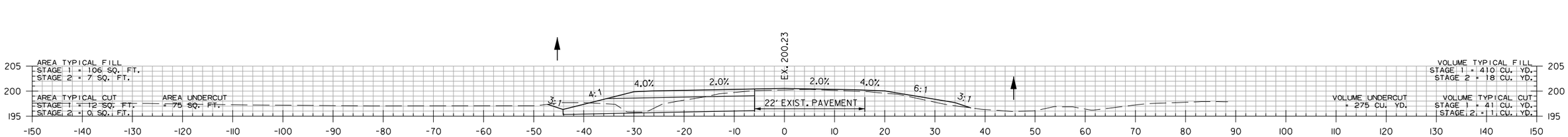
VOLUME TYPICAL FILL
STAGE 1 = 378 CU. YD.
STAGE 2 = 34 CU. YD.
VOLUME UNDERCUT
= 282 CU. YD.
VOLUME TYPICAL CUT
STAGE 1 = 62 CU. YD.
STAGE 2 = 0 CU. YD.



463+00.00

AREA TYPICAL FILL
STAGE 1 = 106 SQ. FT.
STAGE 2 = 7 SQ. FT.
AREA TYPICAL CUT
STAGE 1 = 12 SQ. FT.
STAGE 2 = 0 SQ. FT.
AREA UNDERCUT
= 75 SQ. FT.

VOLUME TYPICAL FILL
STAGE 1 = 410 CU. YD.
STAGE 2 = 18 CU. YD.
VOLUME UNDERCUT
= 275 CU. YD.
VOLUME TYPICAL CUT
STAGE 1 = 41 CU. YD.
STAGE 2 = 1 CU. YD.



462+00.00

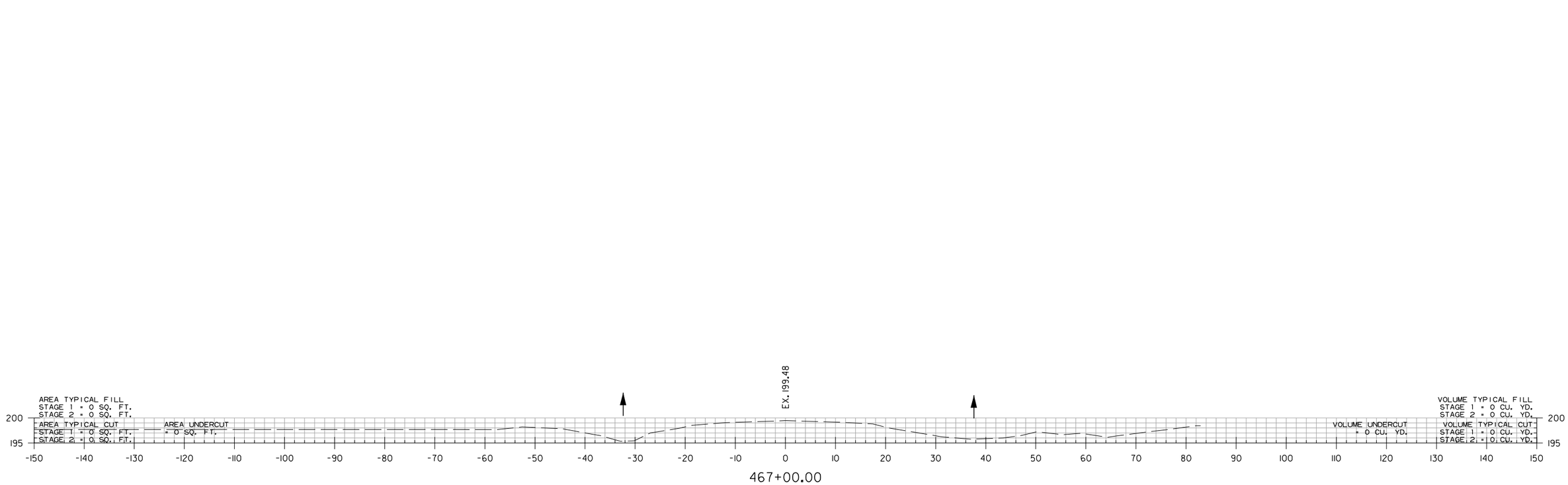
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REVISED DATE:

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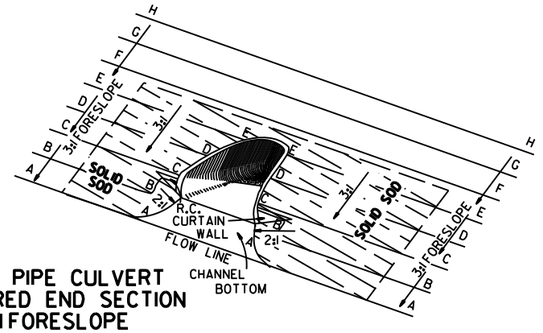
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6	ARK.			
JOB NO.		020630	198	198

(2) CROSS SECTIONS

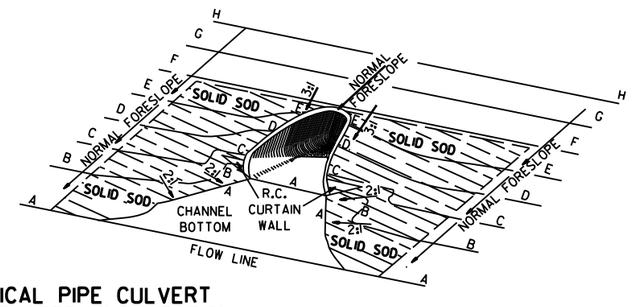


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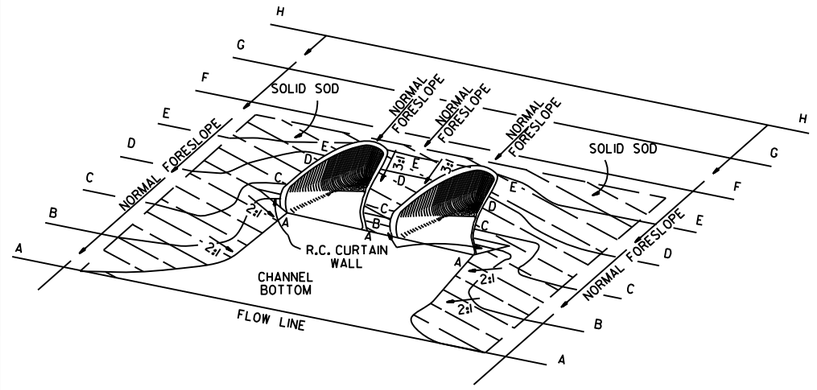
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REVISED DATE:



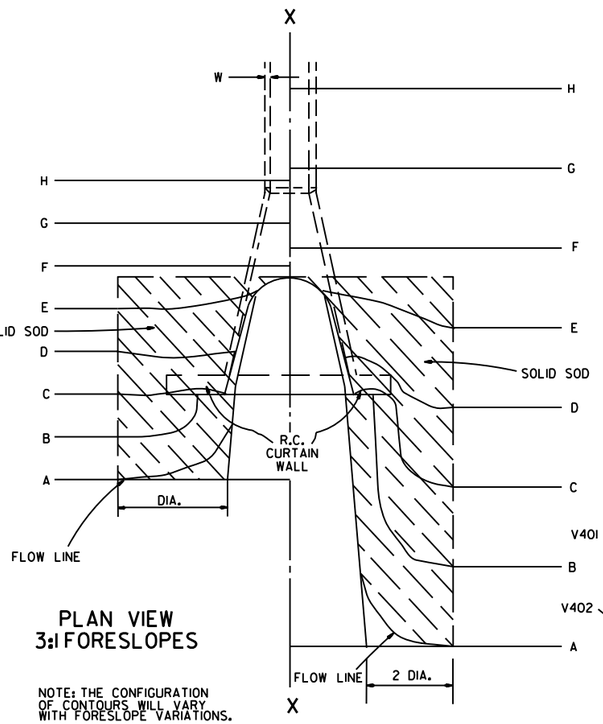
TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& 3:1 FORESLOPE



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

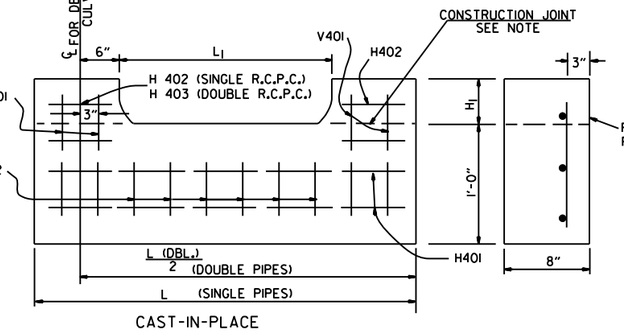
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW
FLATTENED FORESLOPES

R.C. CURTAIN WALL
DIMENSIONS & QUANTITIES

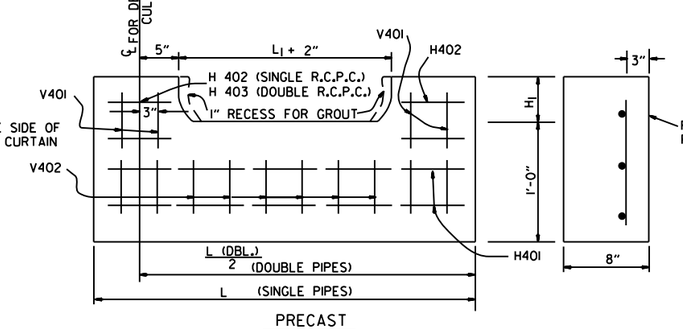
PIPE DIA.	H_1	L_1	L	L (DBL.) / 2	SINGLE R.C.P.C. CONC.	SINGLE R.C.P.C. REINF. STEEL	DOUBLE R.C.P.C. CONC.	DOUBLE R.C.P.C. REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	1'-11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	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

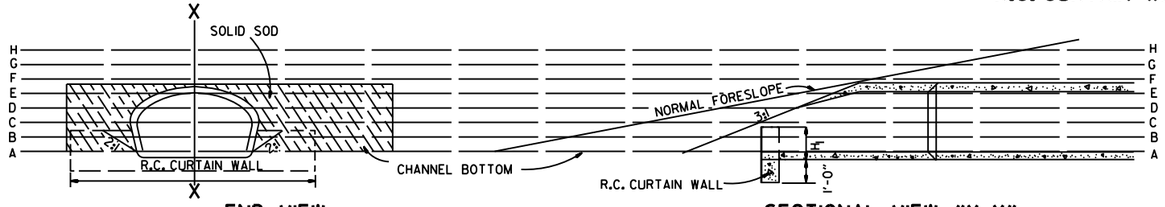
NOTE: THE PORTION OF THE R.C. CURTAIN WALL BENEATH THE FLARED END SECTION (LOWER 1'-0") SHALL BE PLACED MONOLITHICALLY. THE FLARED END SECTION SHALL THEN BE SET IN PLACE & THE REMAINING PORTIONS OF THE R.C. CURTAIN WALL PLACED.



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



END VIEW

SECTIONAL VIEW "X-X"

REINFORCING STEEL SCHEDULE

PIPE DIA.	SINGLE R.C. PIPE CULVERT H401 L	H401 NO.	H402 L	H402 NO.	V401 L	V401 NO.	V402 L	V402 NO.	DOUBLE R.C. PIPE CULVERT H401 L	H401 NO.	H402 L	H402 NO.	H403 L	H403 NO.	V401 L	V401 NO.	V402 L	V402 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.

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

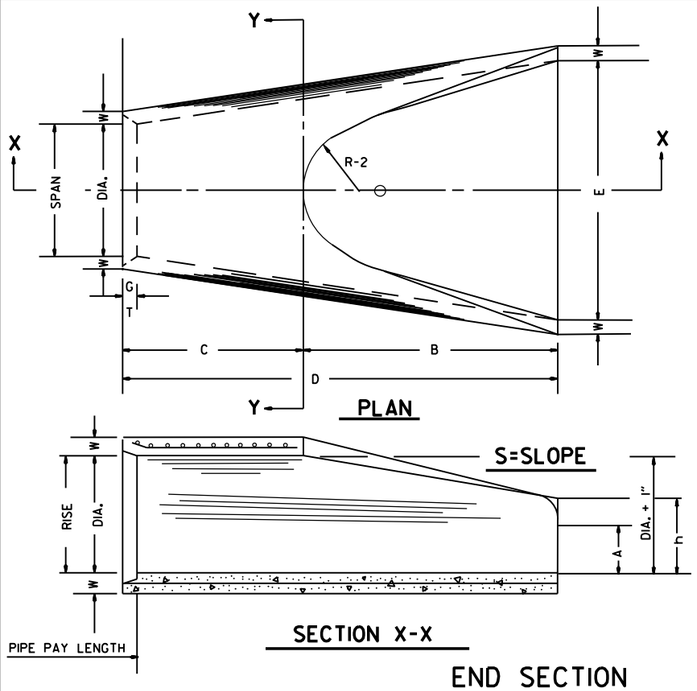
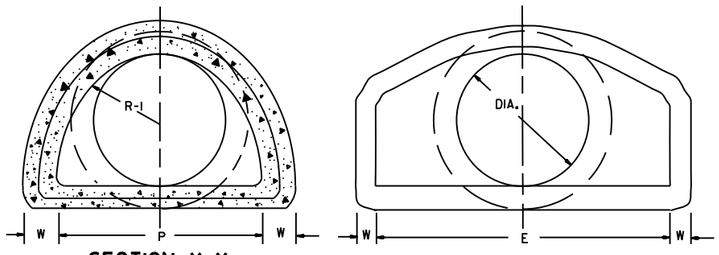


TABLE OF DIMENSIONS

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"

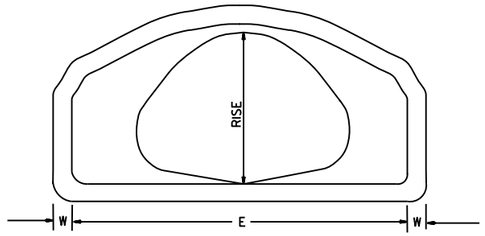


NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

ARCH PIPE

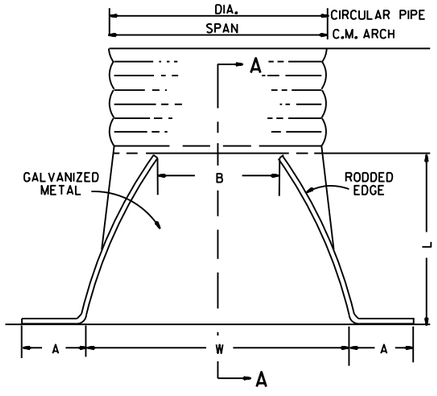
EQUIV. DIA.	• SPAN AASHTO M 206	• SPAN AHD NOMINAL	• RISE AASHTO M 206	• RISE AHD NOMINAL	W	A	B	C	D	E	P	R2	G-T	S
	INCHES													
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1½"	2½:1
18	22	22	13½	14	2½"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32⅛"	13"	2½"	2½:1
21	26	26	15½	16	2¾"	7"	2'-3"	3'-10"	6'-1"	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'-11½"	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

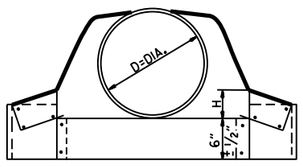
• THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.



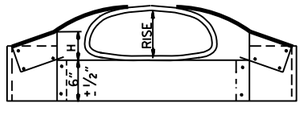
END VIEW
CONCRETE ARCH PIPE

END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS





CIRCULAR PIPE



C.M. ARCH PIPE

CIRCULAR PIPE

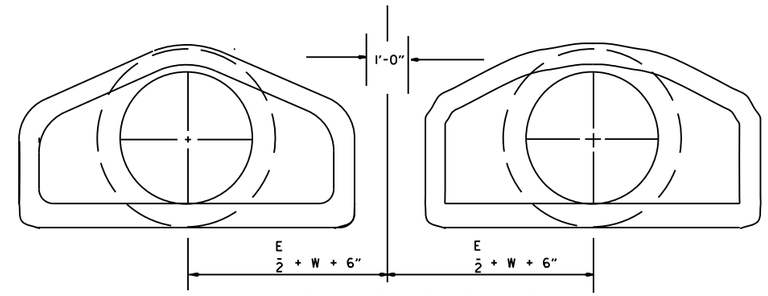
D. DIA.	GAUGE	A 1" ±	B. MAX.	H 1" ±	L 1½" ±	W 2" ±	S
		INCHES					
12	16	6	6	6	21	24	2½:1
15	16	7	8	6	26	30	2½:1
18	16	8	10	6	31	36	2½:1
21	16	9	12	6	36	42	2½:1
24	16	10	13	6	41	48	2½:1
30	14	12	16	8	51	60	2½:1
36	14	14	19	9	60	72	2½:1
42	12	16	22	11	69	84	2½:1
48	12	18	27	12	78	90	2½:1
54	12	18	30	12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

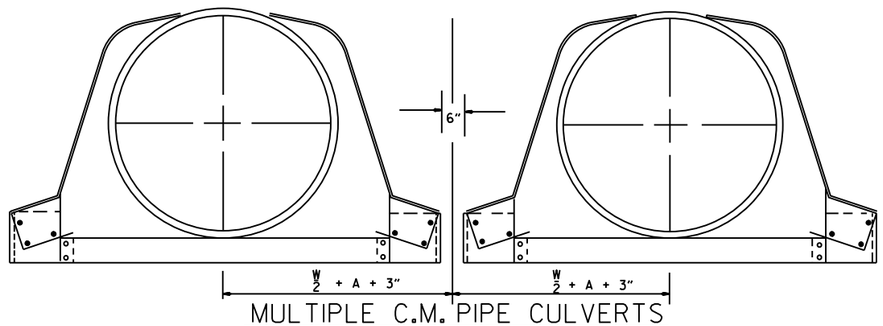
EQUIV. DIA.	SPAN	RISE	A 1" ±	B MAX.	H 1" ±	L 1½" ±	W 2" ±	S	GAUGE
	INCHES								
15"	17	13	7	9	6	19	30	2½:1	16
18"	21	15	7	10	6	23	36	2½:1	16
21"	24	18	8	12	6	28	42	2½:1	16
24"	28	20	9	14	6	32	48	2½:1	16
30"	35	24	10	16	6	39	60	2½:1	14
36"	42	29	12	18	8	46	75	2½:1	14
42"	49	33	13	21	9	53	85	2½:1	12
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	FILMED
10-18-96	REVISED ASTM REF. TO AASHTO	
5-15-80	REVISED DISTANCE BETWEEN MULTIPLE R.C.P. F.E.S.	664-5-15-80
7-14-78	C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES	752-7-14-78
8-22-75	ADDED MULTIPLE PIPE CULVERTS	517-8-22-75
12-5-74	REMOVED NOTE RE REINF. FOR R.C. F.E.S.	500-12-5-74
5-24-73	CMP END SECTION, SHOW PIPE PAY LENGTH	627-5-24-73
10-2-72	REVISED AND REDRAWN	760-10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

STANDARD DRAWING FES-2

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.

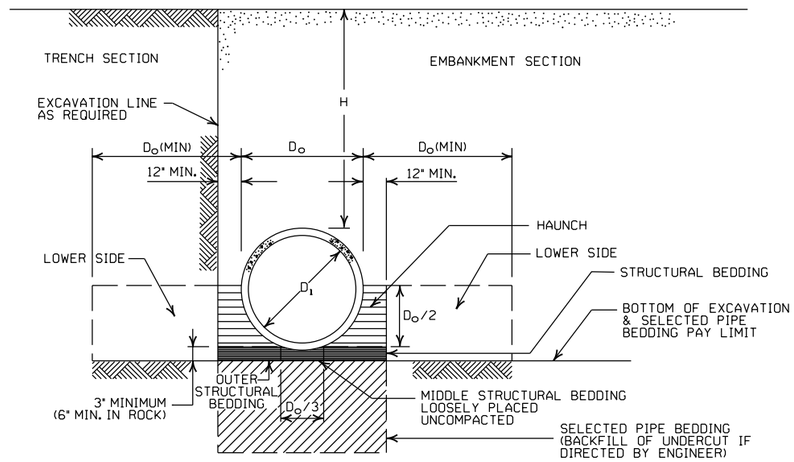
- LEGEND -

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

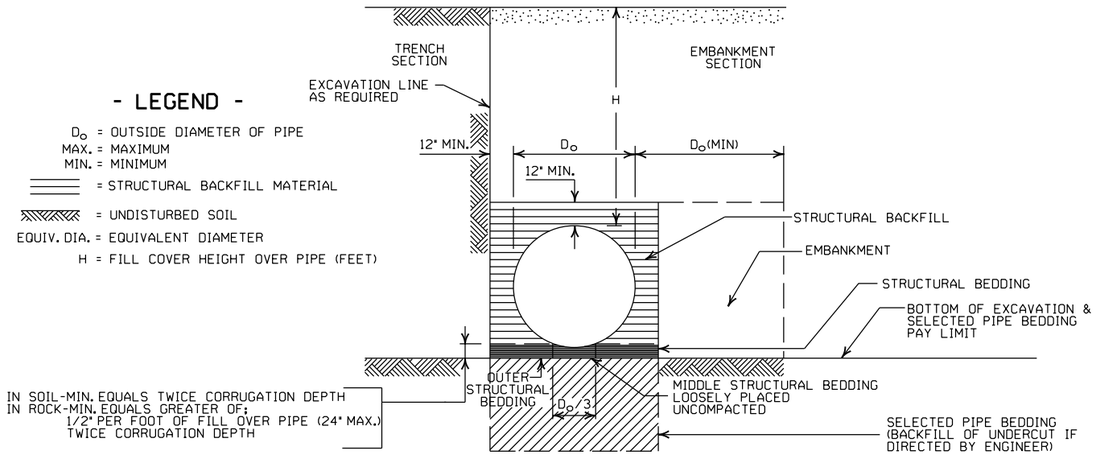
EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINUMUM CORNER RADIUS (INCHES)	STEEL				ALUMINUM			
			MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)	MAX. HEIGHT OF FILL, "H" (FT.)		MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)	MAX. HEIGHT OF FILL, "H" (FT.)	
				INSTALLATION	INSTALLATION			INSTALLATION	INSTALLATION	
				TYPE 1	TYPE 1			TYPE 1	TYPE 1	
			2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM				2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM			
15	17x13	3	0.064	2	15		0.060	2	15	
18	21x15	3	0.064	2	15		0.060	2	15	
21	24x18	3	0.064	2.25	15		0.060	2.25	15	
24	28x20	3	0.064	2.5	15		0.075	2.5	15	
30	35x24	3	0.079	3	12		0.075	3	12	
36	42x29	3½	0.079	3	12		0.105	3	12	
42	49x33	4	0.079	3	12		0.105	3	12	
48	57x38	5	0.109	3	13		0.135	3	13	
54	64x43	6	0.109	3	14		0.135	3	14	
60	71x47	7	0.138	3	15		0.164	3	15	
66	77x52	8	0.168	3	15					
72	83x57	9	0.168	3	15					
			② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM							
				INSTALLATION		INSTALLATION				
				TYPE 2	TYPE 1	TYPE 2	TYPE 1			
36	40x31	5	0.079	3	2	12	15			
42	46x36	6	0.079	3	2	13	15			
48	53x41	7	0.079	3	2	13	15			
54	60x46	8	0.079	3	2	13	15			
60	66x51	9	0.079	3	2	13	15			
66	73x55	12	0.079	3	2	15	15			
72	81x59	14	0.079	3	2	15	15			
78	87x63	14	0.079	3	2	15	15			
84	95x67	16	0.109	3	2	15	15			
90	103x71	16	0.109	3	2	15	15			
96	112x75	18	0.109	3	2	15	15			
102	117x79	18	0.109	3	2	15	15			
108	128x83	18	0.138	3	2	15	15			

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"

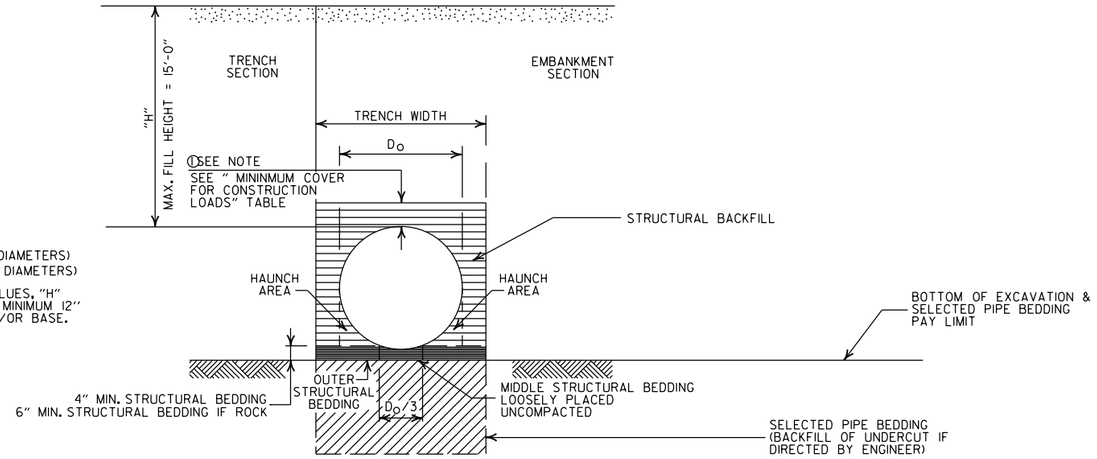
①NOTE:
18" MIN. (18" - 30" DIAMETERS)
24" MIN. (36" - 48" DIAMETERS)

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 = 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

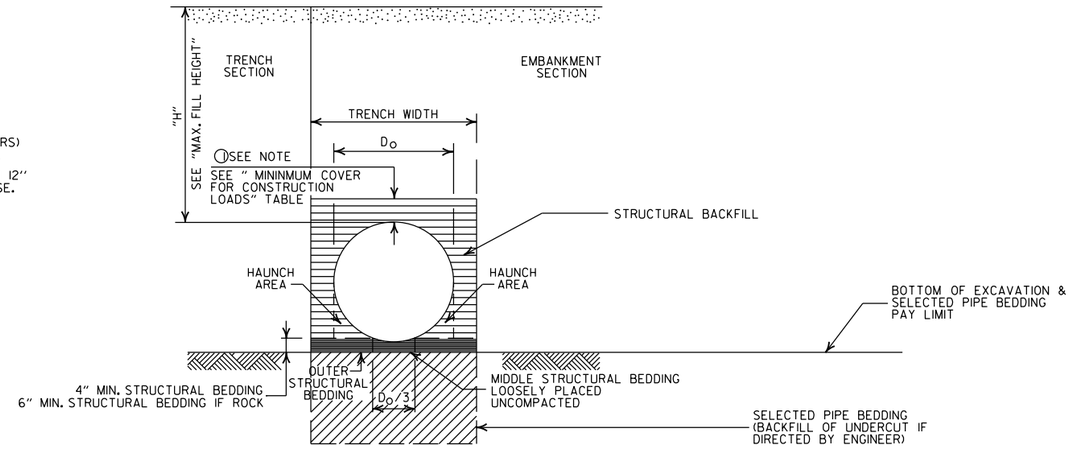
PIPE DIAMETER	"H"
18"	45'-0"
24"	45'-0"
30"	40'-0"
36"	40'-0"

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"

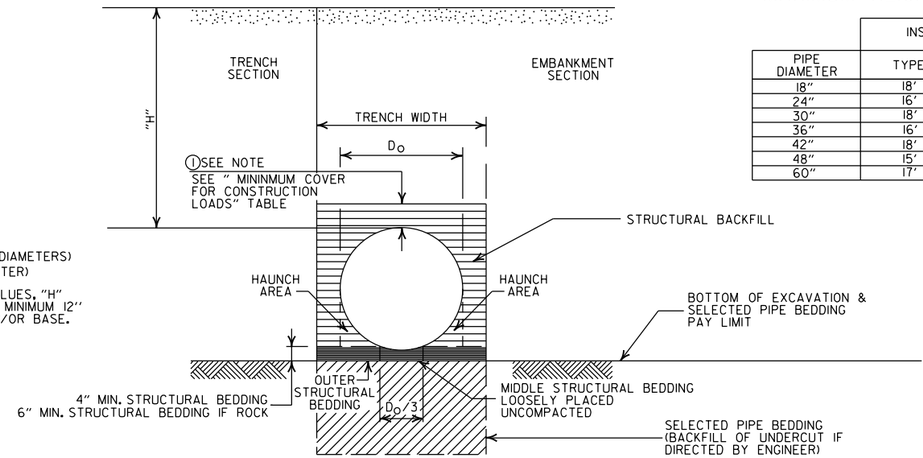
PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" >OR= 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"
42"	7'-0"	10'-6"
48"	8'-0"	12'-0"
60"	10'-0"	15'-0"

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'



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.

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

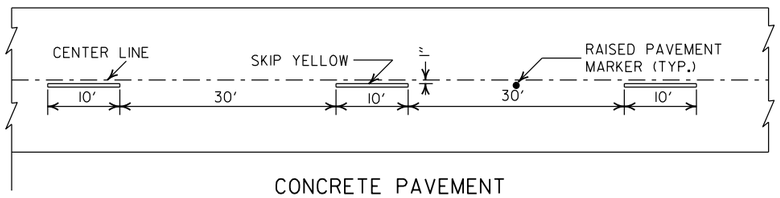
= UNDISTURBED SOIL

DATE	REVISION	DATE FILMED
02-27-20	REVISED	
11-07-19	ISSUED	

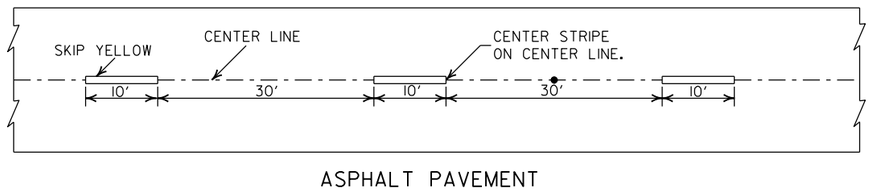
ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (POLYPROPYLENE)

STANDARD DRAWING PCP-3

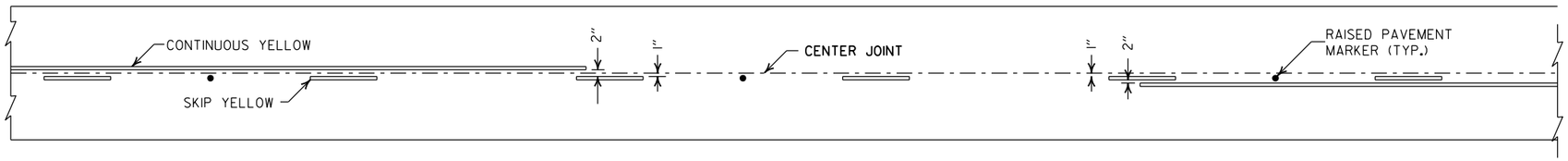


CONCRETE PAVEMENT

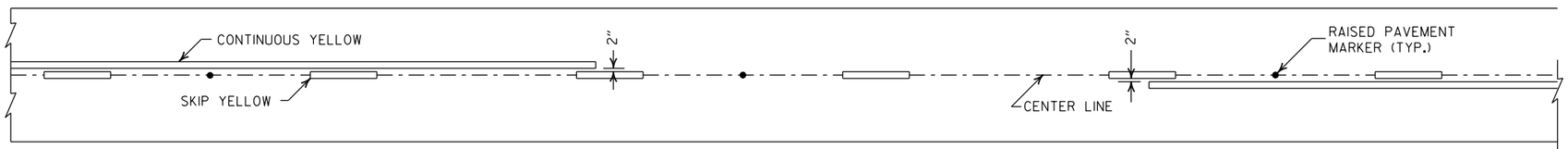


ASPHALT PAVEMENT

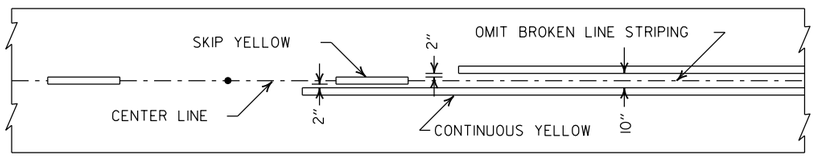
BROKEN LINE STRIPING



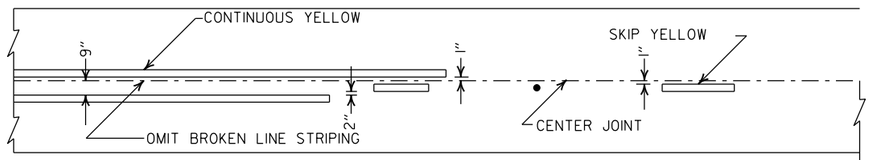
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

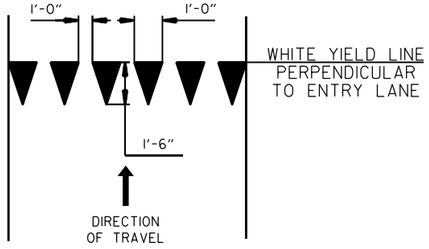


ASPHALT PAVEMENT

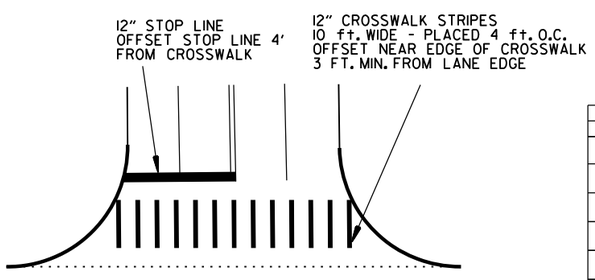


CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

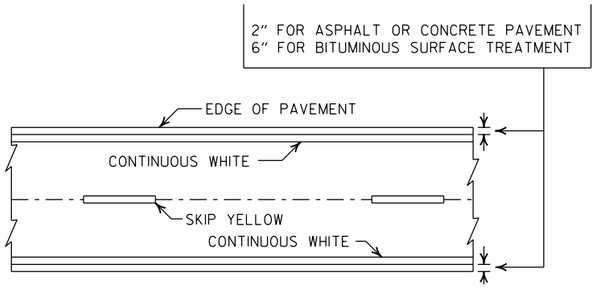


YIELD LINE DETAIL



CROSSWALK AND STOP LINE DETAILS

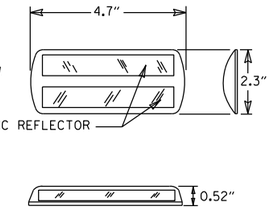
NOTES:
1. REFER TO THE STRIPING DETAILS FOR PAVEMENT MARKING LINE WIDTHS.
2. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
3. RAISED PAVEMENT MARKERS SHALL BE PLACED ON AN 80 FEET SPACING UNLESS OTHERWISE SHOWN IN THE PLANS.



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

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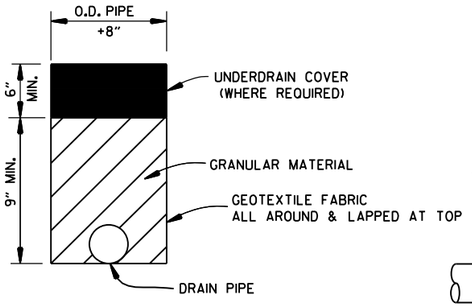
PAVEMENT MARKING DETAILS

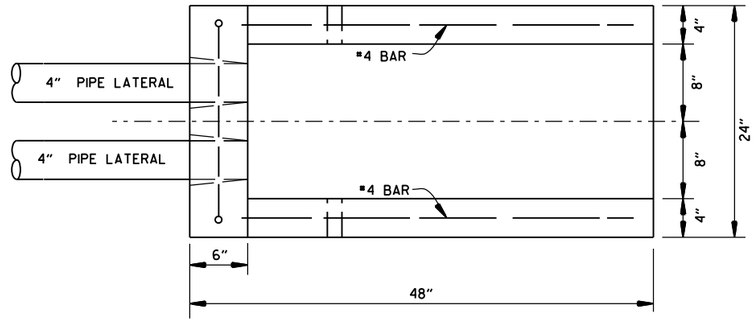
STANDARD DRAWING PM-1

NOTE:

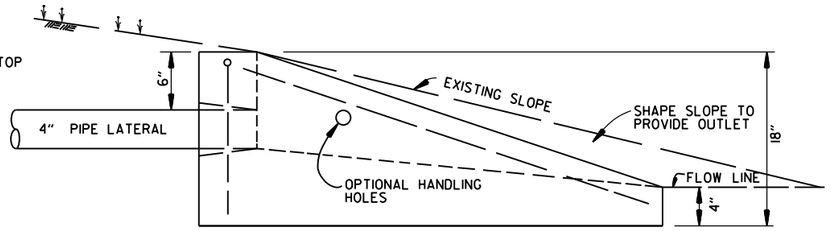
1. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.

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

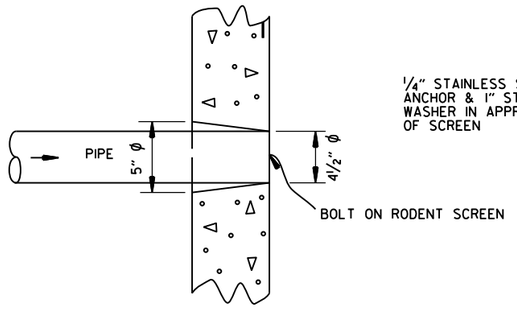




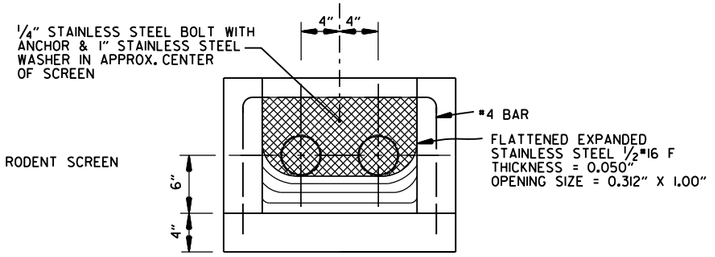
PLAN VIEW



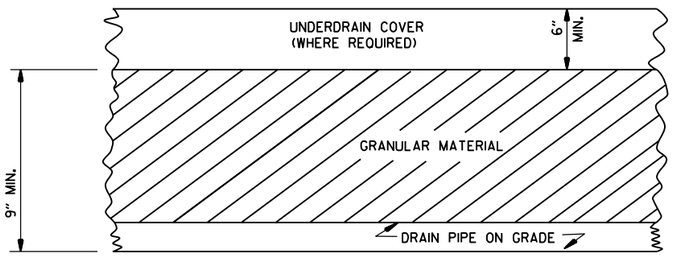
SIDE VIEW



DETAIL OF HOLE
FOR 4" PIPE



FRONT VIEW
(DETAIL OF RODENT SCREEN)



DETAILS OF PIPE UNDERDRAIN

NOTES FOR PIPE UNDERDRAINS

1. GEOTEXTILE FABRIC SHALL MEET THE REQUIREMENTS OF SECTION 625 FOR TYPE 1. PAYMENT FOR GEOTEXTILE FABRIC AND GRANULAR FILTER MATERIAL SHALL BE INCLUDED IN THE PRICE BID PER LIN. FT. FOR "4" PIPE UNDERDRAINS" IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

2. 4" NON-PERFORATED SCHEDULE 40 PVC PIPE LATERALS WITH OUTLET PROTECTORS SHALL BE INSTALLED AS SHOWN HEREON. LATERALS WILL BE MEASURED AND PAID FOR AS "4" PIPE UNDERDRAINS." UNDERDRAIN OUTLET PROTECTORS WILL BE MEASURED AND PAID FOR BY THE UNIT IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

3. EXISTING 4" PIPE UNDERDRAINS MAY BE CONNECTED TO PROPOSED DROP INLETS OR EXTENDED WHERE DIRECTED BY THE ENGINEER. PAYMENT FOR CONNECTING TO DROP INLETS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR "4" PIPE UNDERDRAINS."

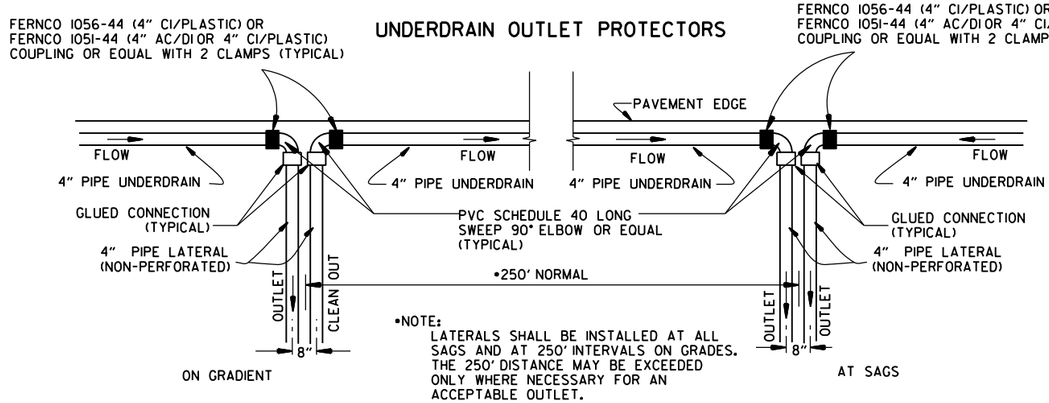
4. THE LOCATION OF ALL LATERALS SHALL BE MARKED WITH 4" X 12" PERMANENT PAVEMENT MARKING TAPE (TYPE III WHITE) AT THE OUTSIDE EDGE OF THE SHOULDER, PLACED TRANSVERSE TO TRAFFIC. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

5. PAYMENT FOR THE RODENT SCREEN SHALL BE INCLUDED IN THE PRICE BID PER EACH FOR "UNDERDRAIN OUTLET PROTECTORS."

6. ANY EXISTING UNDERDRAINS THAT INTERFERE WITH INSTALLATION OF THE NEW UNDERDRAIN SYSTEM SHALL BE REMOVED AND DISPOSED OF AS DIRECTED BY THE ENGINEER. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS. EXISTING UNDERDRAIN OUTLET PROTECTORS SHALL BE REMOVED UNDER THE ITEM "REMOVAL AND DISPOSAL OF UNDERDRAIN OUTLET PROTECTORS."

7. AT LOCATIONS WHERE A SINGLE LATERAL IS USED THE CONTRACTOR SHALL HAVE THE FOLLOWING OPTIONS: 1. INSTALL OUTLET PROTECTOR AS SHOWN ON STANDARD DRAWING PU-1 AND GROUT THE UNUSED HOLE OR 2. INSTALL AN OUTLET PROTECTOR WITH A SINGLE HOLE.

UNDERDRAIN OUTLET PROTECTORS



DETAIL OF PIPE UNDERDRAIN LATERALS
WHEN PLACED ALONG PAVEMENT EDGE

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

DATE	REVISION	DATE FILMED
12-8-16	ADDED NOTES FOR PIPE UNDERDRAINS, REVISED RODENT SCREEN DETAIL AND NOTES, REMOVED NOTE 1 FOR GRANULAR MATERIAL, ADDED NOTE FOR GEOTEXTILE FABRIC	
4-10-03	REVISED NOTE 3	
1-12-00	REVISED DETAIL OF UNDERDRAIN LATERALS	
11-18-98	REVISED NOTE	
10-18-96	REVISED MIN. DEPTH & GEOTEXTILE FABRIC	
4-26-96	ADDED LATERAL NOTE; 5½" TO 5"	
11-22-95	REVISED LATERALS	
7-20-95	REVISED LATERALS & ADDED NOTE	
11- 3-94	REVISED FOR DUAL LATERALS	11- 3-94
10- 1-92	SUBSTITUTED GEOTEXTILE	10- 1-92
8-15-91	ADDED POLYEDTHYLENE PIPE	8-15-91
11- 8-90	DELETED ALTERNATE NOTE	11- 8-90
1-25-90	ADDED 4" SNAP ADAPTER	1-25-90
11-30-89	DEL. (SUBGRADE); ADDED (WHERE REQUIRED)	11-30-89
7-15-88	ISSUED P.L.M.	647-7-15-88

ARKANSAS STATE HIGHWAY COMMISSION

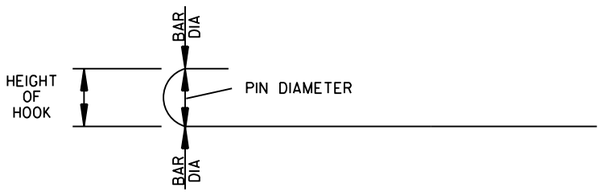
DETAILS OF PIPE UNDERDRAIN

STANDARD DRAWING PU-1

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

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

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



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

OVERALL HEIGHT OF HOOKED BAR DIAGRAM

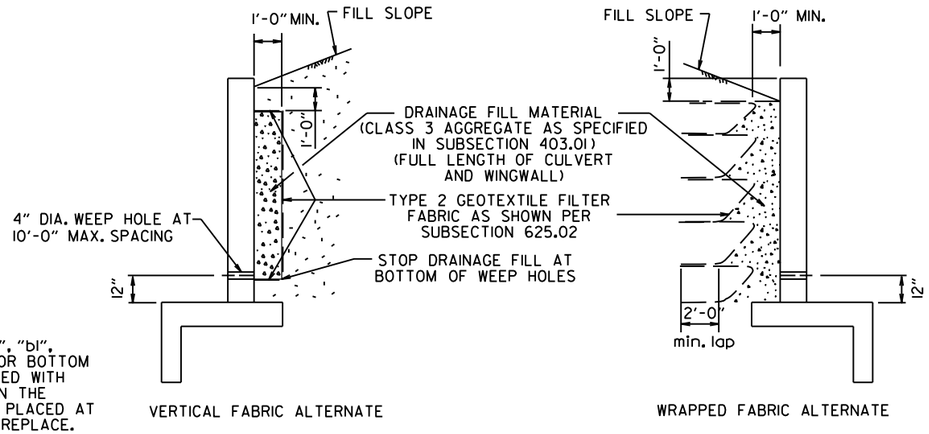
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

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

REPLACEMENT BAR LENGTHS TABLE

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

L = "OW" - 3 INCHES



WINGWALL & CULVERT DRAINAGE DETAIL

REINFORCED CONCRETE BOX CULVERT GENERAL NOTES

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

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

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

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

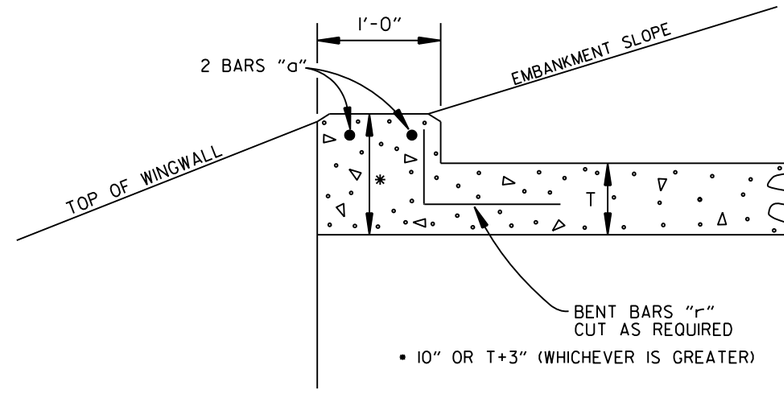
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

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

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

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

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



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

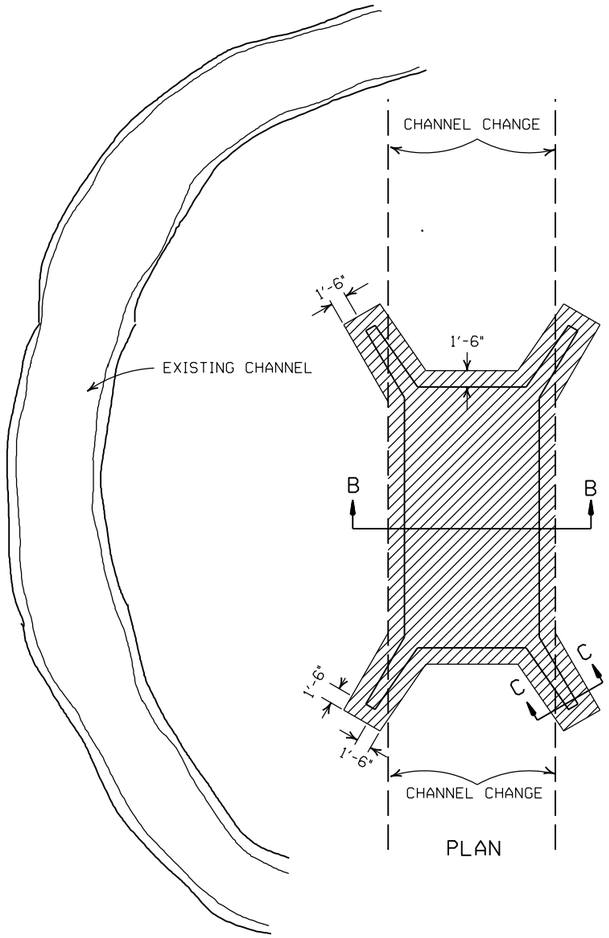
R.C. BOX CULVERT HEADWALL MODIFICATIONS

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

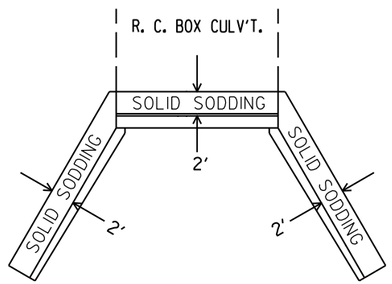
ARKANSAS STATE HIGHWAY COMMISSION

REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1



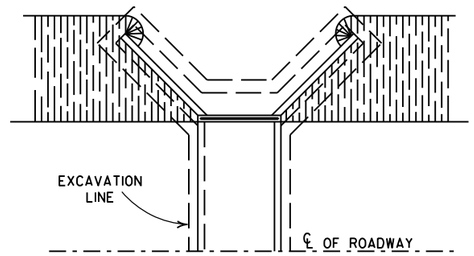
PLAN



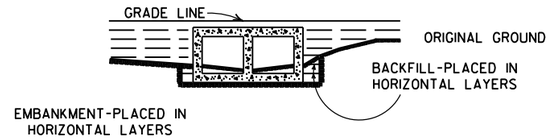
PLAN

PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

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

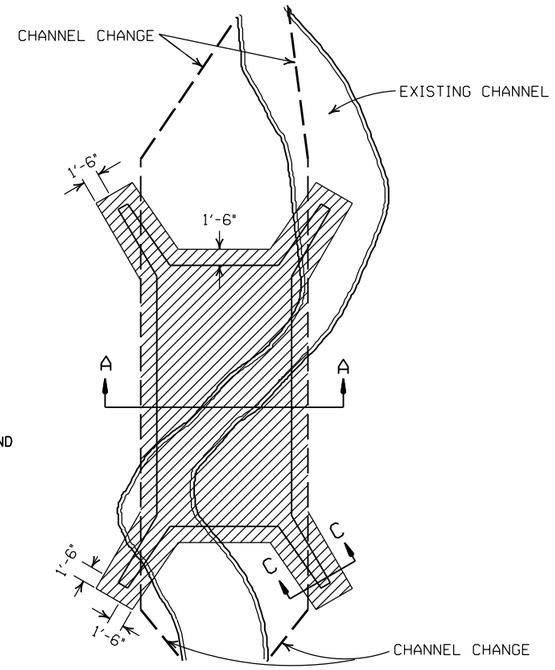


PLAN

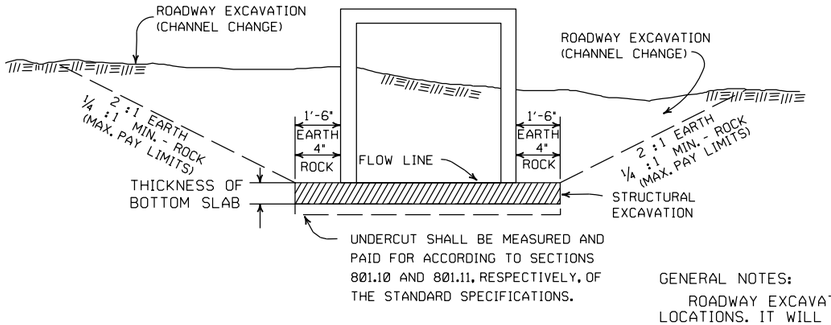


LONGITUDINAL SECTION

BACKFILL DETAILS FOR BOX CULVERT

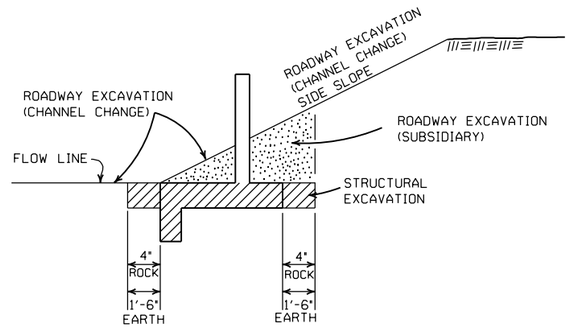


PLAN

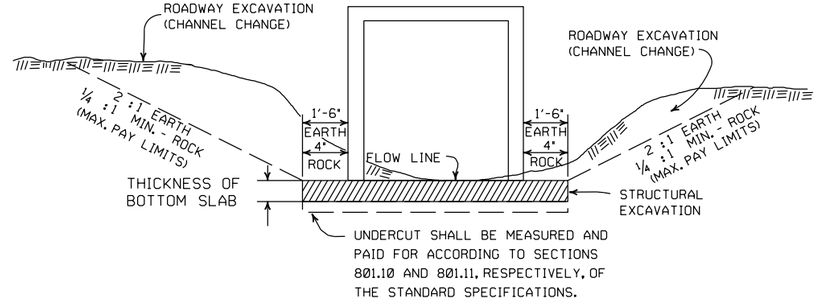


SECTION B-B

DETAILS FOR NEW CHANNELS



SECTION C-C



SECTION A-A

DETAILS THROUGH EXISTING CHANNELS

GENERAL NOTES:

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

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

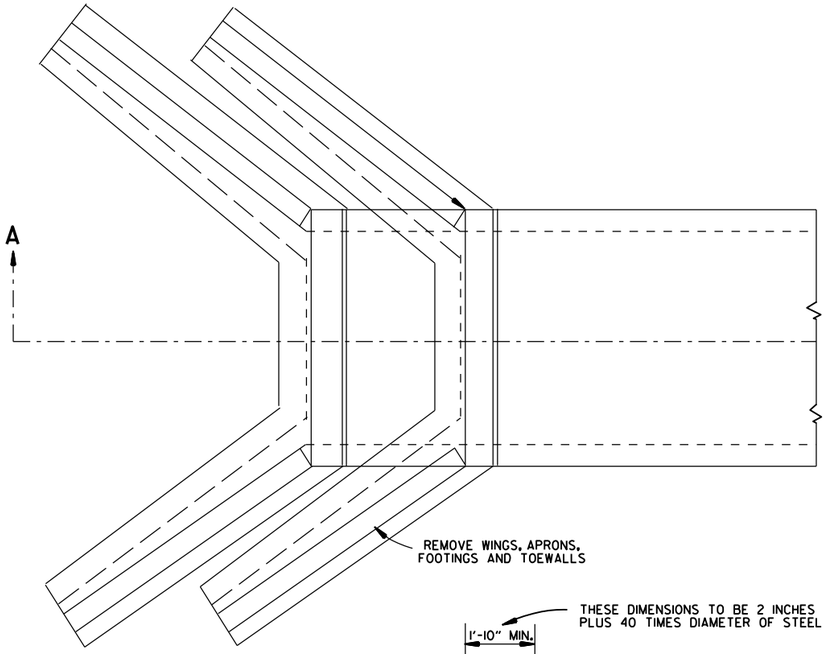
ROADWAY EXCAVATION SHOWN IN SECTION C-C ABOVE AS SUBSIDIARY WILL NOT BE MEASURED OR PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION.

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

ARKANSAS STATE HIGHWAY COMMISSION

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

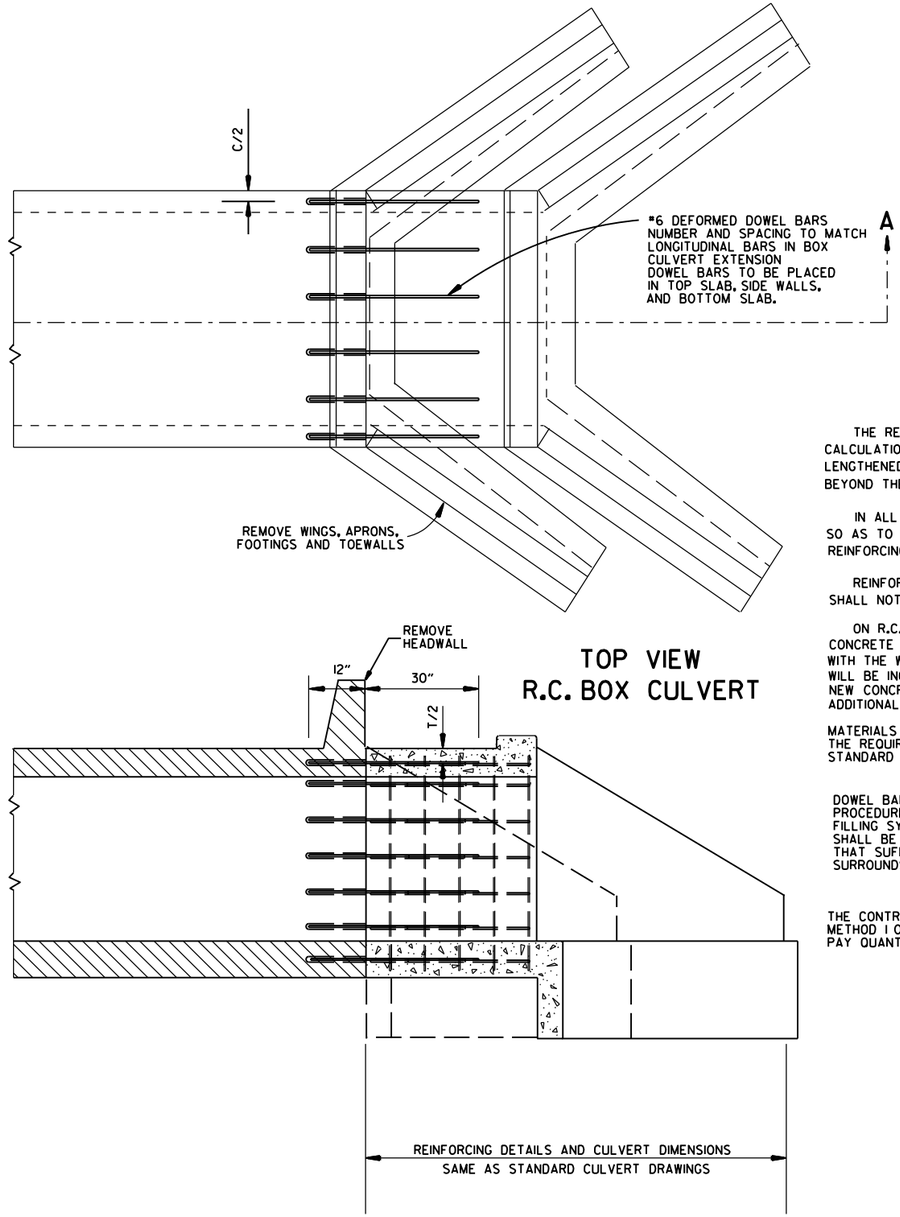
STANDARD DRAWING RCB-2



TOP VIEW
R.C. BOX CULVERT

SECTION A-A

METHOD 1



TOP VIEW
R.C. BOX CULVERT

SECTION A-A

METHOD 2

GENERAL NOTES

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

NOTE:
NO PART OF THIS STANDARD IS TO BE USED FOR ANY DETAILS RELATIVE TO NEW CONSTRUCTION.

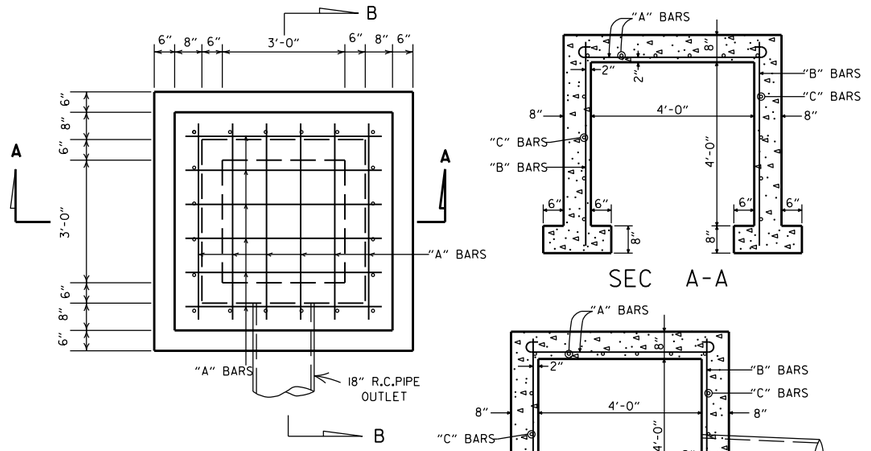
SEE STANDARD DRAWING LISTED IN TABULATION OF STRUCTURES FOR ALL NEW CONSTRUCTION DETAILS.

DATE	REVISION	DATE FILM
10-12-95	CHANGED DRAWING # FROM 144-A	
4-1-93	ADDED GENERAL NOTE	
10-1-92	ADDED ALT. METHOD OF EXTENSION	
11-30-89	REDRAWN	
1-4-83	ELIMINATED CONCRETE CLASS	
12-20-56	RETRACED	

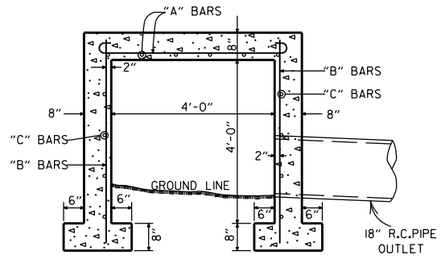
ARKANSAS STATE HIGHWAY COMMISSION

METHOD OF EXTENDING EXISTING R.C. BOX CULVERTS

STANDARD DRAWING RCB-3



SEC A-A



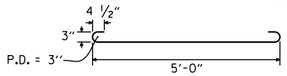
SEC B-B

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

STEEL SCHEDULE

BARS	NUMBER	LENGTH	SPACING
"A"	12	6'-0"	10"
"B"	20	5'-0"	10 ½"
"C"	16	5'-0"	12"

ALL STEEL TO BE #4 BARS



"A" BARS

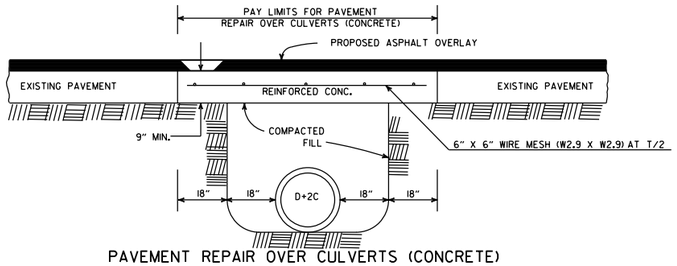
QUANTITIES

CONCRETE 3.31 CU. YDS.
REINFORCING STEEL 168 LB.

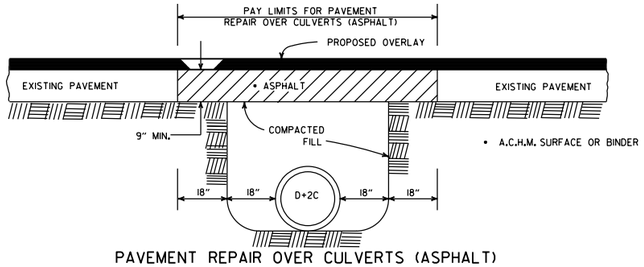
GENERAL NOTE:

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

REINFORCED CONCRETE SPRING BOX



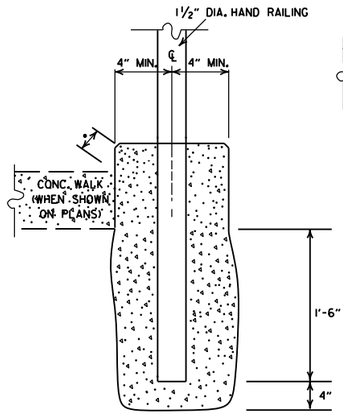
PAVEMENT REPAIR OVER CULVERTS (CONCRETE)



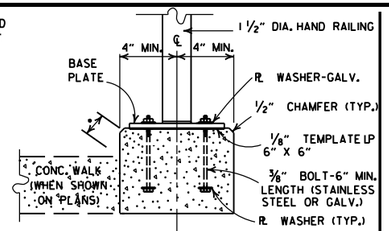
PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS

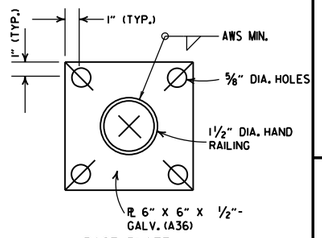
• A 2" MIN. HIGH CURB IS REQUIRED WHEN CONCRETE WALK IS ADJACENT TO THE HAND RAILING. PAYMENT FOR CURB SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR CONCRETE WALKS.



DETAIL OF HAND RAILING SET IN CONCRETE

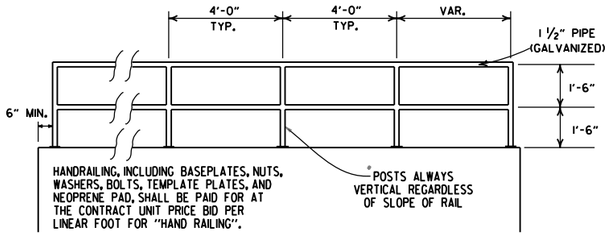


POST CONNECTION TO WALL

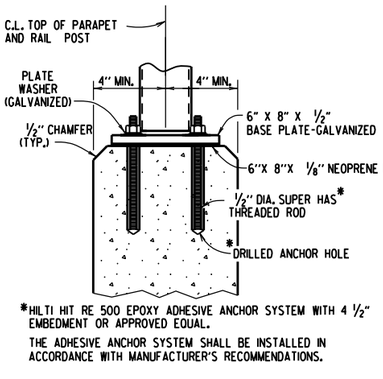


BASE PLATE

POST CONNECTION DETAILS



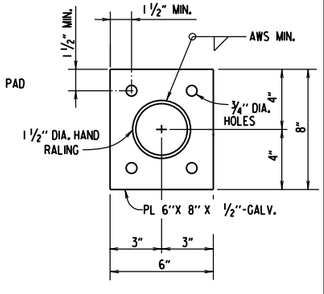
HAND RAILING SHALL CONFORM TO SECTION 633.



*HILTI HIT RE 500 EPOXY ADHESIVE ANCHOR SYSTEM WITH 4 ½" EMBEDMENT OR APPROVED EQUAL.

THE ADHESIVE ANCHOR SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

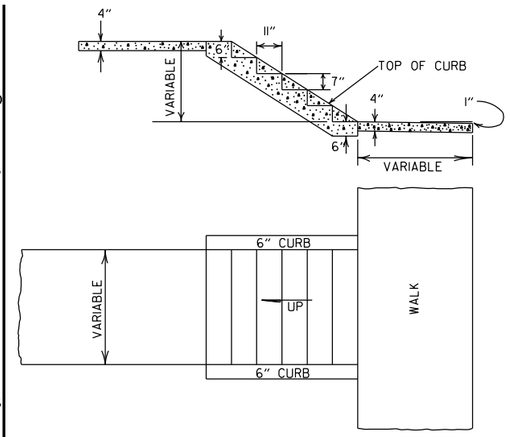
POST CONNECTION TO WALL



BASE PLATE

DETAILS OF ALTERNATE POST ANCHOR SYSTEM (EPOXY ADHESIVE ANCHORS)

HAND RAILING DETAILS



GENERAL NOTES

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

DETAILS OF CONCRETE STEPS & WALKS

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

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF SPECIAL ITEMS

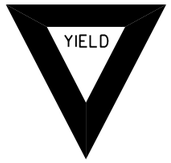
STANDARD DRAWING SI - 1

R1-1



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

R1-2



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

R2-1



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

W3-5



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

W3-5a



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

R4-1



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

R4-2



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

R5-1



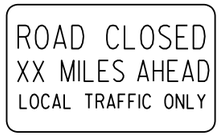
STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

R11-2



48"X30"

R11-3A



60"X30"

R11-4



60"X30"

W21-5a



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

W1-1



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

W1-2



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

W1-3



STD. 48"X48"

W1-4



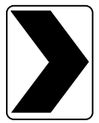
STD. 48"X48"

W1-6



STD. 48"X24"
SPECIAL 60"X30"

W1-8



STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

W3-1



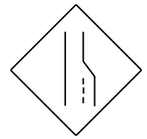
STD. 36"X36"
SPECIAL 48"X48"

W3-2



STD. 36"X36"
SPECIAL 48"X48"

W4-2



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

W5-1



STD. 36"X36"
SPECIAL 48"X48"

W6-3



EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7



EXPWY. 36"X36"
FWY. 48"X48"

W9-2



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

W13-1



STD. 24"X24"

W20-1



STD. 48"X48"

W20-2



STD. 48"X48"

W20-3



STD. 48"X48"

W20-4



STD. 48"X48"

W20-5



STD. 48"X48"

W20-7a



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

W21-2



STD. 30"X30"
SPECIAL 36"X36"

W21-5



STD. 30"X30"
SPECIAL 36"X36"

W24-1



STD. 36"X36"

W1-4b



STD. 48"X48"

R56-1



STD. 18"X18"

W8-11



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

W8-9



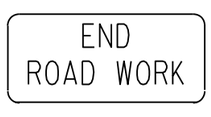
STD. 36"X36"
FWY. 48"X48"

G20-1



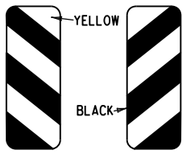
60"X24"

G20-2



48"X24"

OM-3L OM-3R



12"X36"

M4-9



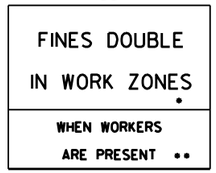
STD. 30"X24"
SPECIAL 48"X36"
SPECIAL 60"X48"

M4-10



48"X18"

R55-1



36"X60"

• USE 6" C LETTERS
•• USE 4" D LETTERS

ADVANCE DISTANCES
(XXXX)

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

GENERAL NOTES:

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

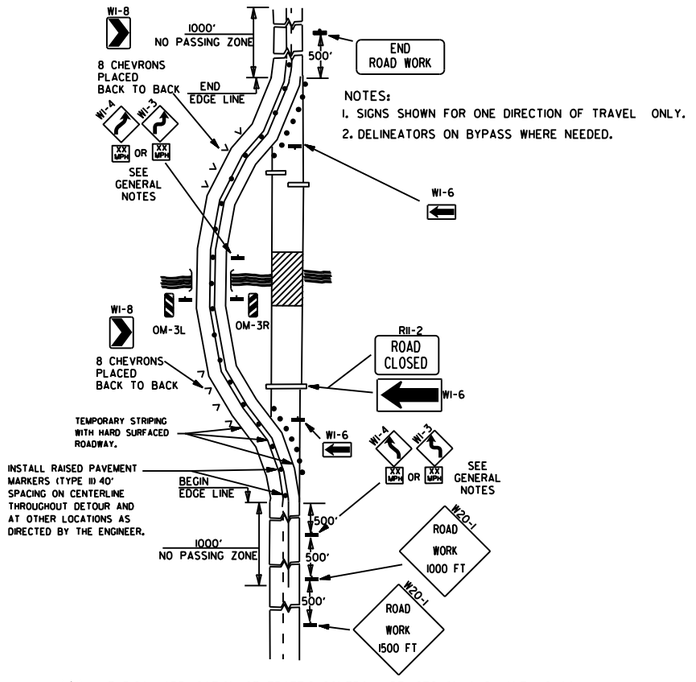
- NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED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

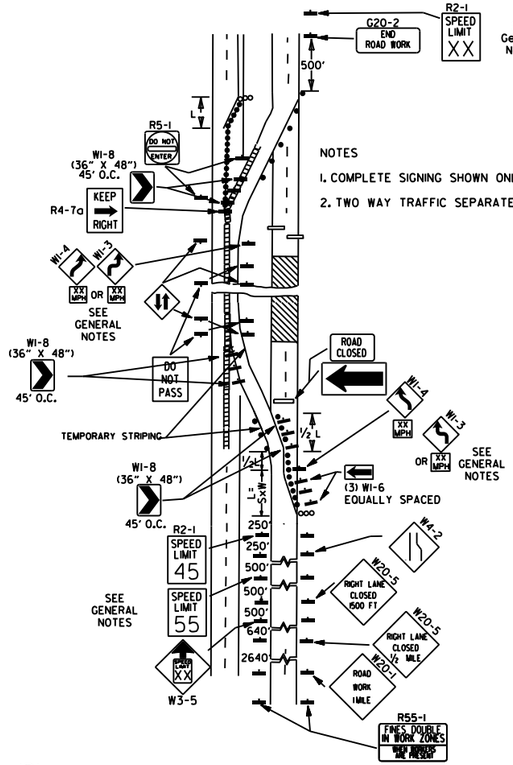
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



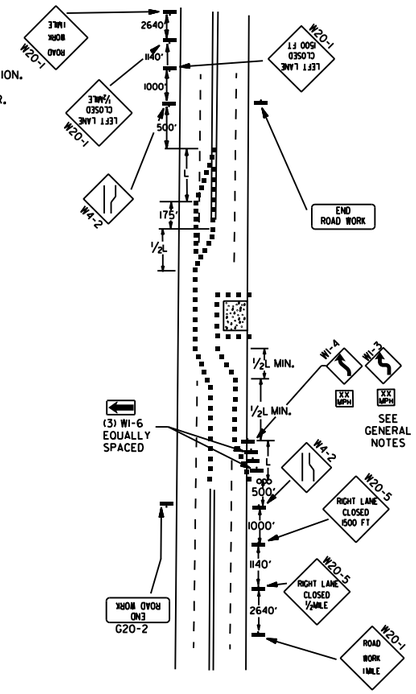
NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

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

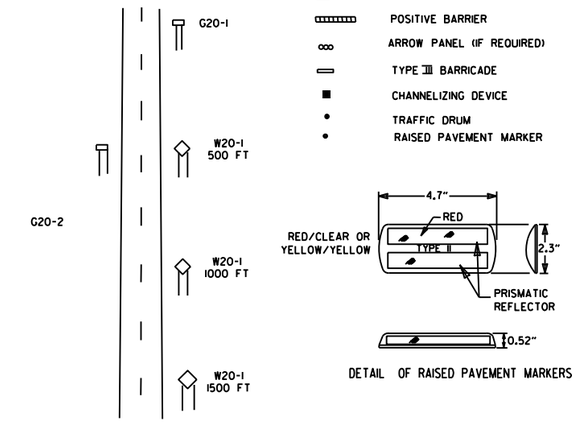


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

(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.



TYPICAL ADVANCE WARNING SIGN PLACEMENT

TAPER FORMULAE:

L=SXW FOR SPEEDS OF 45MPH OR MORE.

$L = \frac{WS^2}{60}$ FOR SPEEDS OF 40MPH OR LESS.

WHERE:

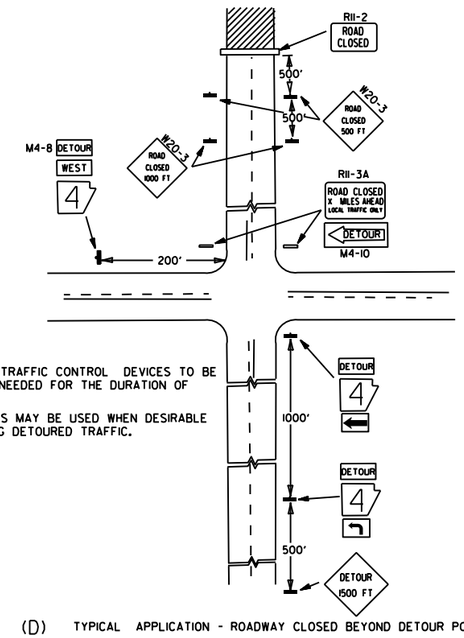
L= MINIMUM LENGTH OF TAPER.

S= NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.

W= WIDTH OF OFFSET.

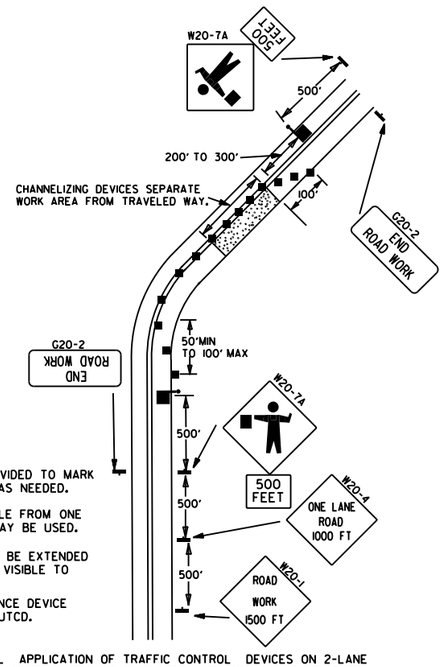
GENERAL NOTES:

1. THE MAINTENANCE DIVISION SHALL CONDUCT A BALL BANK STUDY TO DETERMINE THE ADVISORY SPEED LIMIT PRIOR TO OPENING TO TRAFFIC. THE ADVISORY SPEED WILL BE POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-145MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-155MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE.
8. DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE ARDOT QUALIFIED PRODUCTS LIST.
9. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).



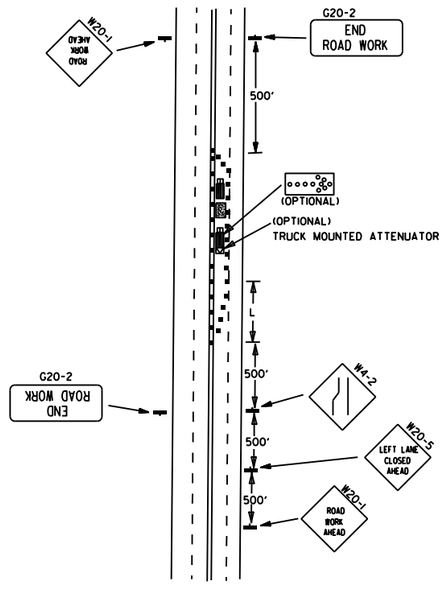
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

(D) TYPICAL APPLICATION - ROADWAY CLOSED BEYOND DETOUR POINT.



NOTES:
1. FLOOD LIGHTS SHOULD BE PROVIDED TO MARK FLAGGER STATIONS AT NIGHT AS NEEDED.
2. IF ENTIRE WORK AREA IS VISIBLE FROM ONE STATION, A SINGLE FLAGGER MAY BE USED.
3. CHANNELIZING DEVICES ARE TO BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
4. AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD) OPTIONAL. REFER TO MUTCD.

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



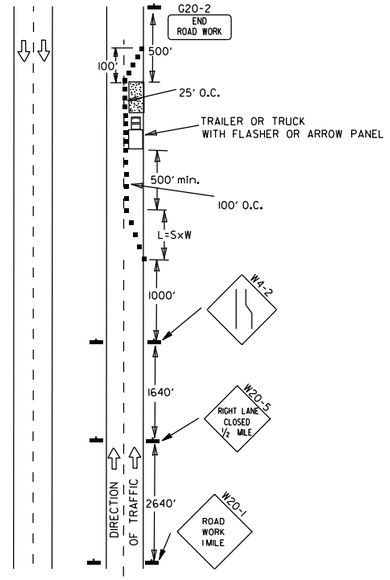
(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

11-07-19	REVISED NOTE 1, ADDED NOTE 9	
9-2-15	REVISED NOTE 2, ADDED NOTE 8, REVISED DRAWING (A) & REPLACED R2-5A WITH W3-5	
9-12-13	REVISED DETAIL OF RAISED PAVEMENT MARKERS	
3-11-10	ADDED (AFAD)	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (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	
DATE	REVISION	FILMED

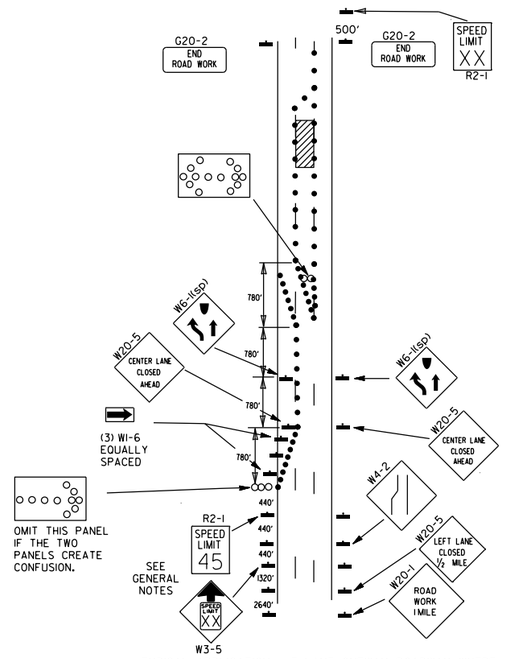
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

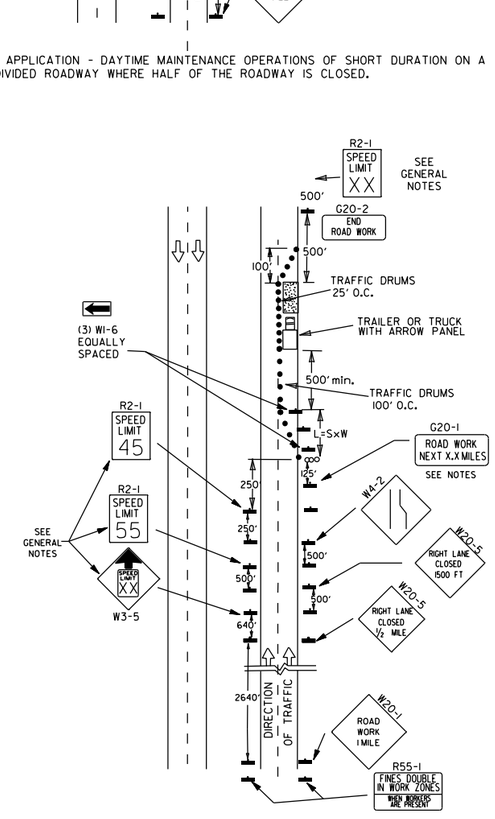
STANDARD DRAWING TC-2



(A) TYPICAL APPLICATION - DAYTIME MAINTENANCE OPERATIONS OF SHORT DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



(B) TYPICAL APPLICATION - 3-LANE ONEWAY ROADWAY WHERE CENTER LANE IS CLOSED.



(C) TYPICAL APPLICATION - CONSTRUCTION OPERATIONS OF INTERMEDIATE TO LONG TERM DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.

KEY:

ooo ARROW PANEL (IF REQUIRED)

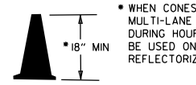
■ CHANNELIZING DEVICE

● TRAFFIC DRUM

GENERAL NOTES:

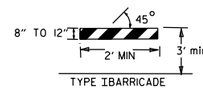
1. A SPEED LIMIT REDUCTION MAY BE IMPLEMENTED ONLY WHEN DESIGNATED IN THE PLAN OR WHEN RECOMMENDED BY THE ROADWAY DESIGN DIVISION.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-145MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-155MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. THE G20-1 SIGN WILL BE REQUIRED ON JOBS OF OVER TWO MILES IN LENGTH. WHEN THE LANE CLOSURE IS NOT AT THE BEGINNING OF THE PROJECT, THE G20-1 SIGN SHALL BE ERECTED 125' IN ADVANCE OF THE JOB LIMIT. ADDITIONAL W20-1 (1 MILE) SIGNS ARE NOT REQUIRED IN ADVANCE OF LANE CLOSURES THAT BEGIN INSIDE THE PROJECT LIMITS.
8. FLAGGERS SHALL USE STOP/SLOW PADDLES FOR CONTROLLING TRAFFIC THROUGH WORK ZONES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. ALL PLASTIC DRUMS AND CONES SHALL MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
10. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE.
11. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).

CHANNELIZING DEVICES

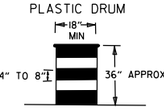


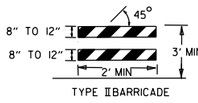
* WHEN CONES ARE USED ON FREEWAYS AND MULTI-LANE HIGHWAYS, THEY SHALL BE 28" MIN. DURING HOURS OF DARKNESS, 28" CONES SHALL BE USED ON ALL ROADWAYS, AND SHALL BE REFLECTORIZED IN ACCORDANCE WITH THE M.U.T.C.D.

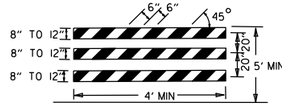
CONES



PLASTIC DRUM

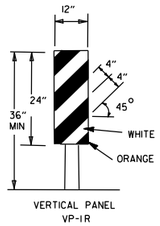




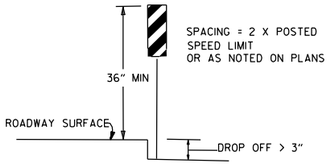


TYPE III BARRICADE

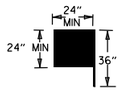
NOTE:
FOR ALL ROAD CLOSURES, THE TYPE III BARRICADES SHALL BE OF SUFFICIENT LENGTH TO EXTEND ACROSS ENTIRE ROADWAY.



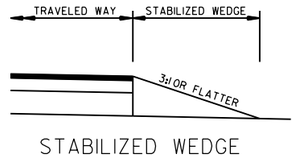
VERTICAL PANEL PLACEMENT



FLAG

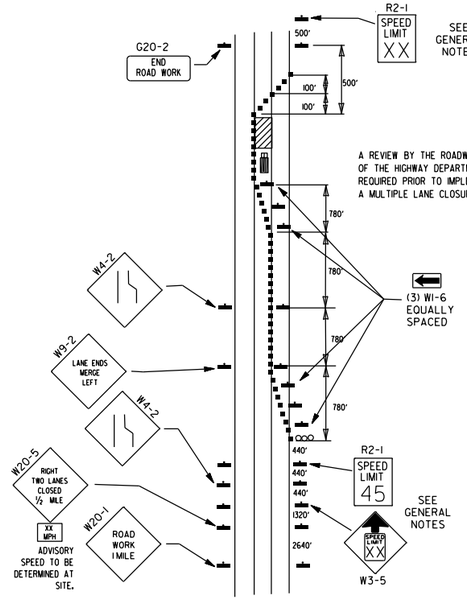


FLAG SHALL BE OF GOOD GRADE RED MATERIAL



STABILIZED WEDGE

NOTE:
MATERIALS FOR THE STABILIZED WEDGE SHALL MEET THE REQUIREMENTS PROVIDED IN SECTION 603.02 OF THE STANDARD SPECIFICATIONS.



(D) TYPICAL APPLICATION - CLOSING MULTIPLE LANES OF A MULTILANE HIGHWAY.

TRAFFIC CONTROL DEVICES

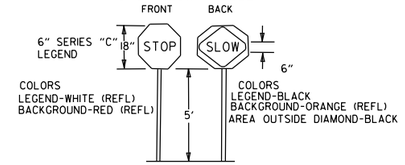
NON-INTERSTATE			
VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL	
		≤ 45 MPH	> 45 MPH
≤ 2"	CENTERLINE	W8-11 AND LANE STRIPING	W8-11 AND LANE STRIPING
> 2"	CENTERLINE	STANDARD LANE CLOSURE	STANDARD LANE CLOSURE
≤ 3"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9, EDGE LINE STRIPING, AND VERTICAL PANELS	W8-9, EDGE LINE STRIPING, AND VERTICAL PANELS
> 3" ≤ 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND VERTICAL PANELS	W8-17, EDGE LINE STRIPING, AND VERTICAL PANELS
> 6" ≤ 18"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS(1)	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS(2)
> 18" ≤ 24"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS(1)	A STABILIZED WEDGE, W8-17, EDGE LINE STRIPING AND TRAFFIC DRUMS(3)
> 24"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	PRECAST CONCRETE BARRIER(4) & EDGE LINES	PRECAST CONCRETE BARRIER(4) & EDGE LINES

INTERSTATE		
VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL
≤ 2"	CENTERLINE	W8-11 AND LANE STRIPING
≤ 2"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9, EDGE LINE STRIPING, AND TRAFFIC DRUMS(2)
> 2" ≤ 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS(2)
> 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	PRECAST CONCRETE BARRIER & EDGE LINES

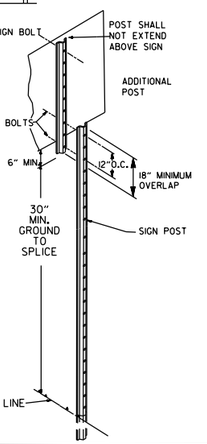
INTERSTATE AND NON-INTERSTATE		
FORESLOPE	HEIGHT	TRAFFIC CONTROL
1:1	> 2 FT	PRECAST CONCRETE BARRIER
2:1	≤ 5 FT	TRAFFIC DRUMS
2:1	> 5 FT	PRECAST CONCRETE BARRIER
Flatter than 2:1	N/A	TRAFFIC DRUMS

GENERAL NOTES:
1. WHEN THE SHOULDER AREA IS USED AS PART OF THE TRAVELED LANE AND THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, THEN VERTICAL PANELS SHALL BE USED.
2. WHEN THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, A STABILIZED WEDGE SHALL BE USED.
3. PRECAST CONCRETE BARRIER WALL CAN BE USED IN LIEU OF A STABILIZED WEDGE, W8-17 SIGN, EDGE LINE STRIPING, AND TRAFFIC DRUMS, IF AND WHERE DIRECTED BY THE ENGINEER.
4. A STABILIZED WEDGE, W8-17 SIGN, EDGE LINE STRIPING, AND TRAFFIC DRUMS CAN BE USED IN LIEU OF PRECAST CONCRETE BARRIER WALL, IF AND WHERE DIRECTED BY THE ENGINEER.
5. W21-5, W21-5a, AND/OR W21-5b SIGNS SHALL BE USED WHERE THE ROADWAY IS UNOBSTRUCTED IF AND WHERE DIRECTED BY THE ENGINEER.

STOP SLOW PADDLE



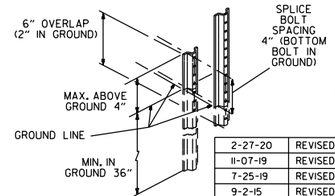
DETAIL OF SPLICES



NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-21)

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

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



DATE	REVISION	FILMED
2-27-20	REVISED TRAFFIC CONTROL DEVICES DETAILS	
11-07-19	REVISED NOTE 9, ADDED NOTE 11	
7-25-19	REVISED TRAFFIC CONTROL DEVICES DETAILS	
9-2-15	REVISED NOTE 2 & REPLACED R2-5A WITH W3-5	
10-15-09	ADDED REFERENCE TO MASH	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED NOTE	
10-1-98	ADDED NOTE	
4-03-97	ADDED (SP) TO W6-1& REVISED TRAFFIC CONTROL DEVICES NOTE	
10-18-96	ADDED R55-1	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL, TEXT	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

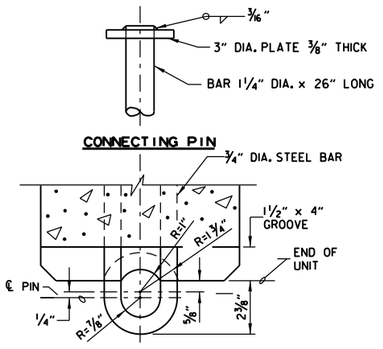
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-3

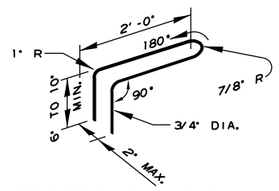
REINFORCING BAR TABLE PER BARRIER UNIT

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

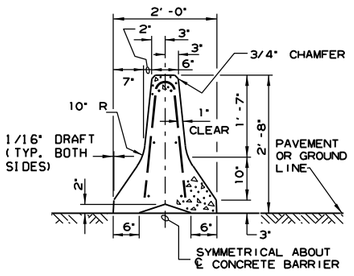


SECTION E-E

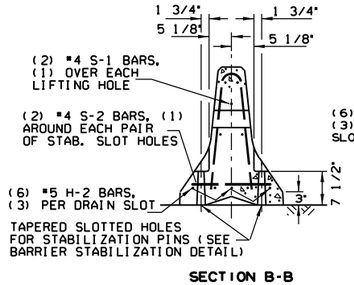
CONNECTION DETAILS



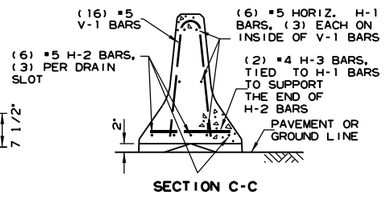
CONNECTION LOOP



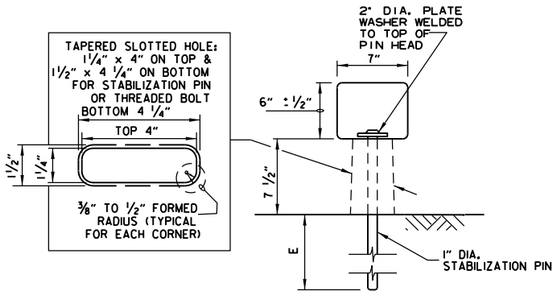
SECTION A-A



SECTION B-B



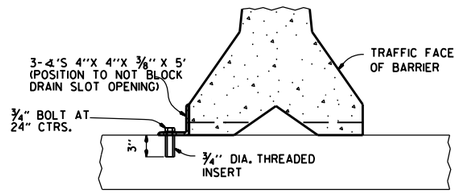
SECTION C-C



BARRIER STABILIZATION DETAIL

ROADWAY SECTION

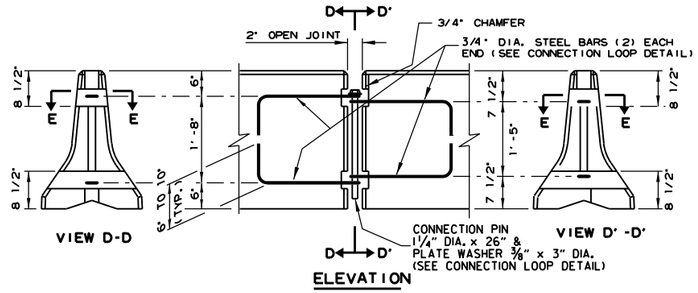
(E) 4" - CONCRETE PAVEMENT
8" - ASPHALT PAVEMENT
12" - SHOULDER AREAS



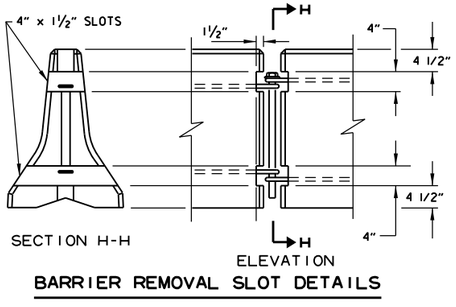
NOTE: " THREADED INSERTS SHALL BE CAST IN PLACE FOR ALL NEW BRIDGE DECKS AND DRILLED AND GROUTED FOR EXISTING BRIDGE DECKS. INSERTS SHALL HAVE A MINIMUM ULTIMATE LOAD CAPACITY OF 8000 LBS. IN TENSION. AFTER REMOVAL OF BARRIER, BOLTS, AND ANGLES, THE INSERTS SHALL BE FILLED WITH APPROVED NON-SHRINK EPOXY.

BARRIER STABILIZATION DETAIL

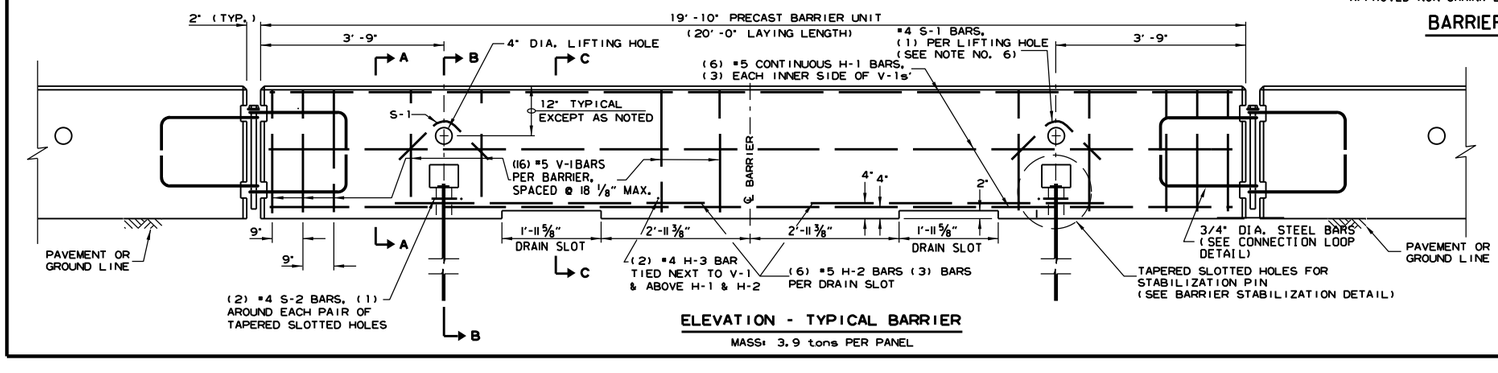
BRIDGE DECKS



ELEVATION



BARRIER REMOVAL SLOT DETAILS



ELEVATION - TYPICAL BARRIER

MASS: 3.9 tons PER PANEL

GENERAL NOTES

(1) THE CONTRACTOR SHALL FURNISH THE PRECAST CONCRETE BARRIER UNITS AND SHALL BE RESPONSIBLE FOR THE MANUFACTURE, SHIPMENT, STORAGE, PLACEMENT AND REMOVAL. AT THE COMPLETION OF THE PROJECT, THE PRECAST UNITS WILL REMAIN THE PROPERTY OF THE CONTRACTOR.

(2) MATERIALS SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS:
CONCRETE: 2500 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
REINFORCING STEEL: AASHTO M 31 OR M 53, GRADE 60
STRUCTURAL STEEL: AASHTO-M270 GRADE 36 SHALL BE USED FOR THE CONNECTION PIN, CONNECTION LOOPS, AND STABILIZATION PINS. A ONE PIECE PIN WITH A 3" ROUNDED TOP MAY BE USED IN PLACE OF THE DETAILED CONNECTION PIN.
DELINEATORS: DELINEATORS SHALL BE MOUNTED AT 10' SPACING ON TOP OF PRECAST BARRIER.

IN APPLICATIONS WHERE BARRIER WALL IS WITHIN 6 FEET OF A TRAFFIC LANE, ADDITIONAL DELINEATORS SHALL BE PLACED ON THE BARRIER AT 10' SPACING APPROXIMATELY ONE (1) FOOT FROM THE TOP OF THE BARRIER. DELINEATORS SHALL BE ON THE 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.

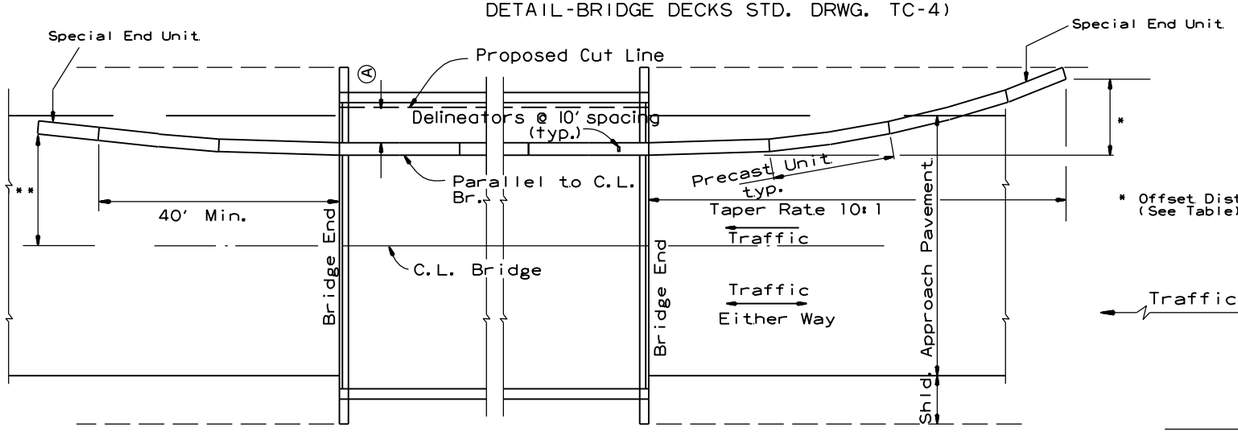
DATE	REVISION	FILMED
11-07-19	REVISED NOTE 3	
2-27-14	REVISED BARRIER STABILIZATION DETAIL	
10-15-09	ADDED REFERENCE TO WASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED 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

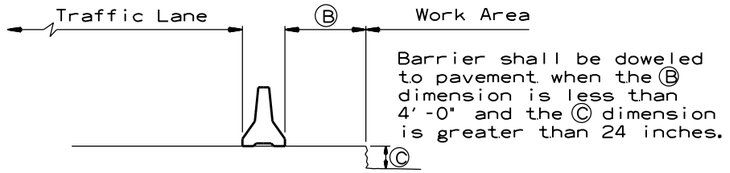
Ⓐ 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)



* Offset Distance (See Table)

BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

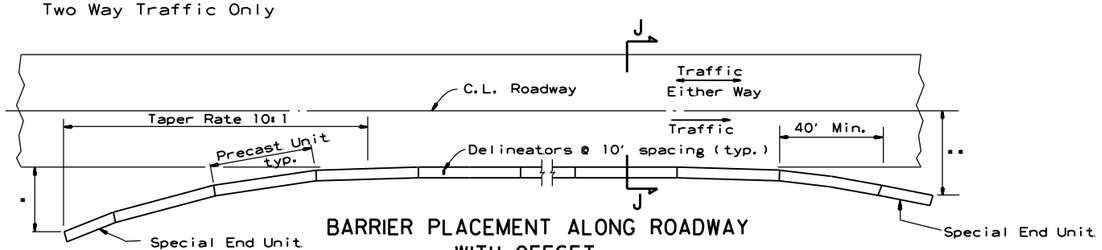


Barrier shall be doweled to pavement when the Ⓑ dimension is less than 4'-0" and the Ⓒ dimension is greater than 24 inches.

SECTION J-J

No Scale

** Offset Distance for Two Way Traffic Only



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

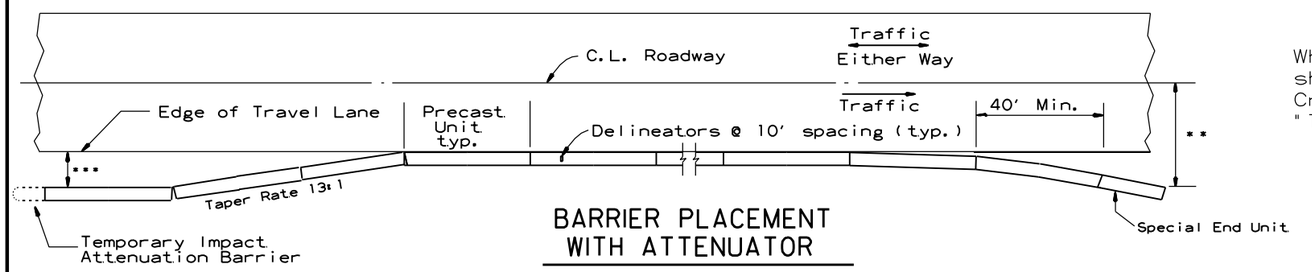
* Offset Distance (See Table)

** Offset Distance For Two Way Traffic Only

Offset Distance Table

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

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

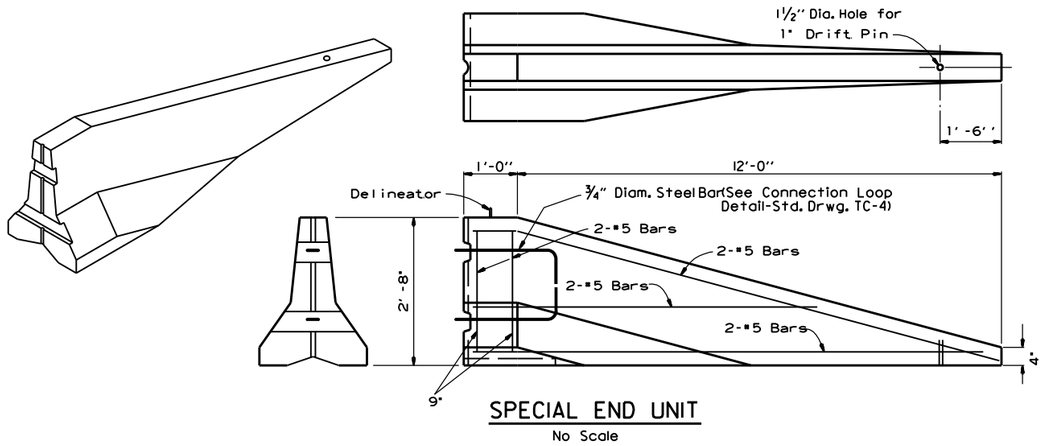


BARRIER PLACEMENT WITH ATTENUATOR

No Scale

** Offset Distance For Two Way Traffic Only

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



SPECIAL END UNIT

No Scale

General Notes

When shown on the Plans, the ends of the Temporary Precast Concrete Barrier shall be protected with 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	

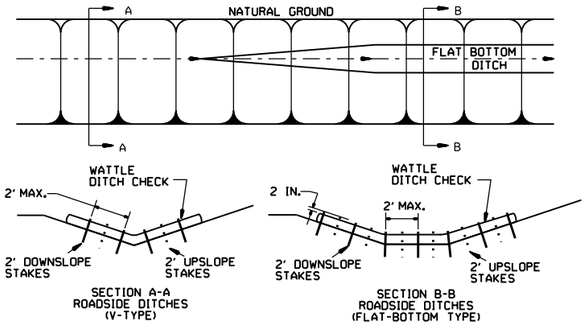
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

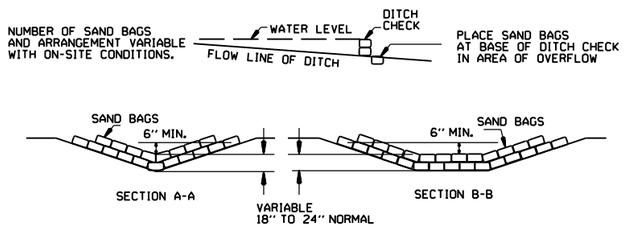
STANDARD DRAWING TC-5

GENERAL NOTES

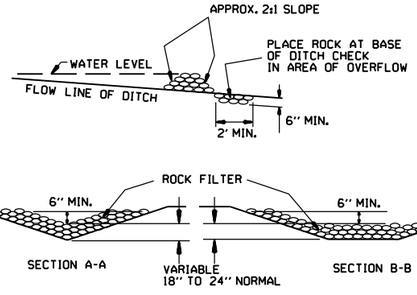
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



SAND BAG DITCH CHECK (E-5)

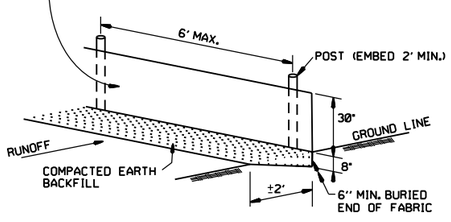


ROCK DITCH CHECK (E-6)

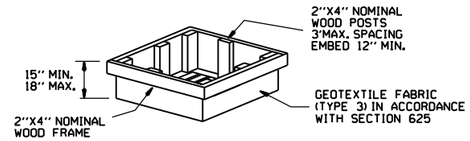
GENERAL NOTES

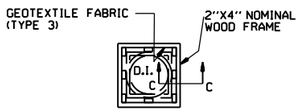
GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625

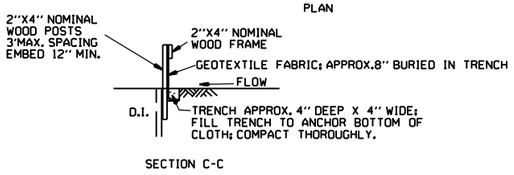
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



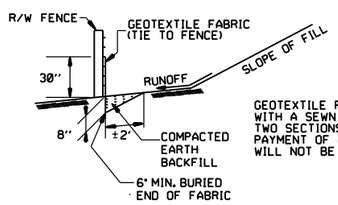
SILT FENCE (E-11)





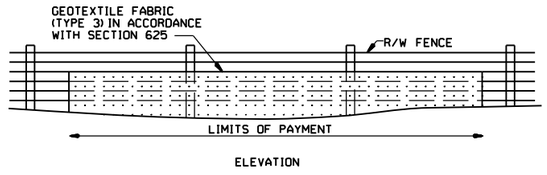


DROP INLET SILT FENCE (E-7)



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.



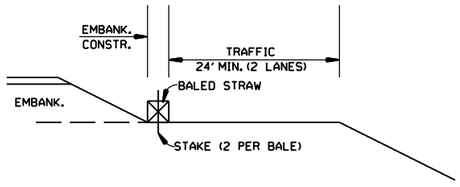
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

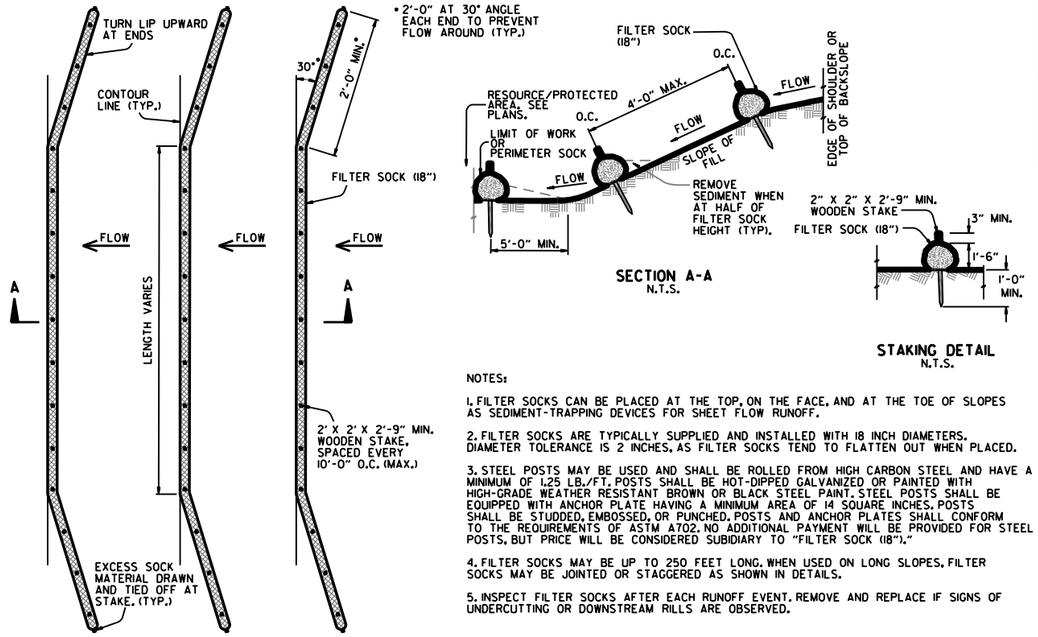
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

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.

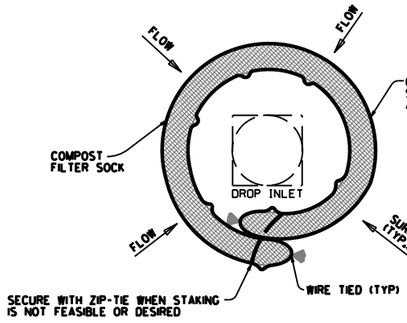
2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES, AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.

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")."

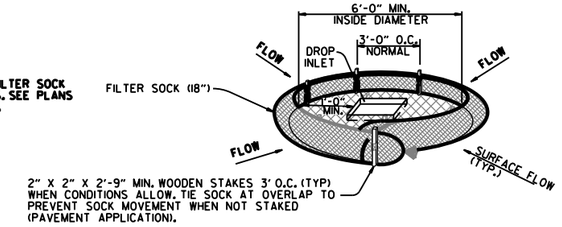
4. FILTER SOCKS MAY BE UP TO 250 FEET LONG. WHEN USED ON LONG SLOPES, FILTER SOCKS MAY BE JOINTED OR STAGGERED AS SHOWN IN DETAILS.

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)



DROP INLET PLAN VIEW
N.T.S.



DROP INLET PERSPECTIVE VIEW
N.T.S.

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.

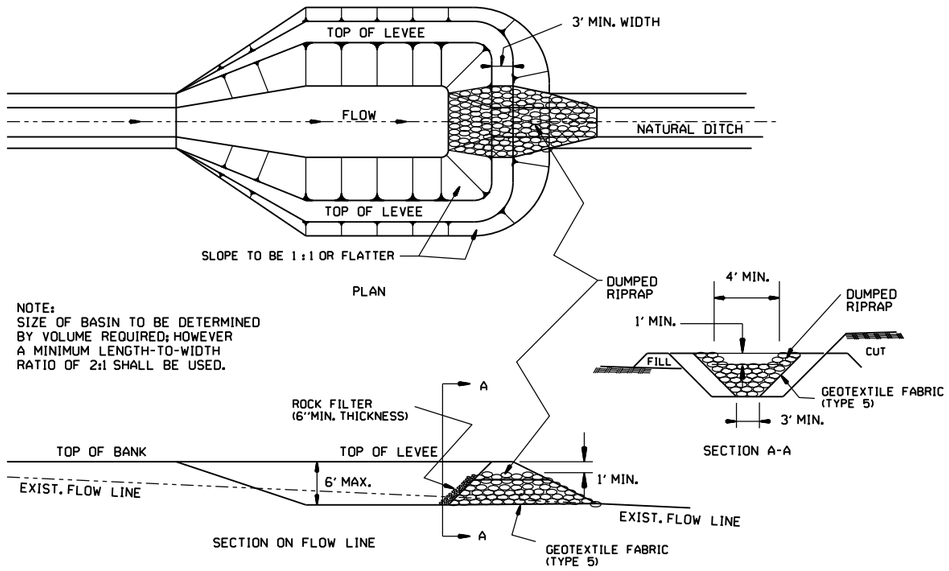
COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)

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

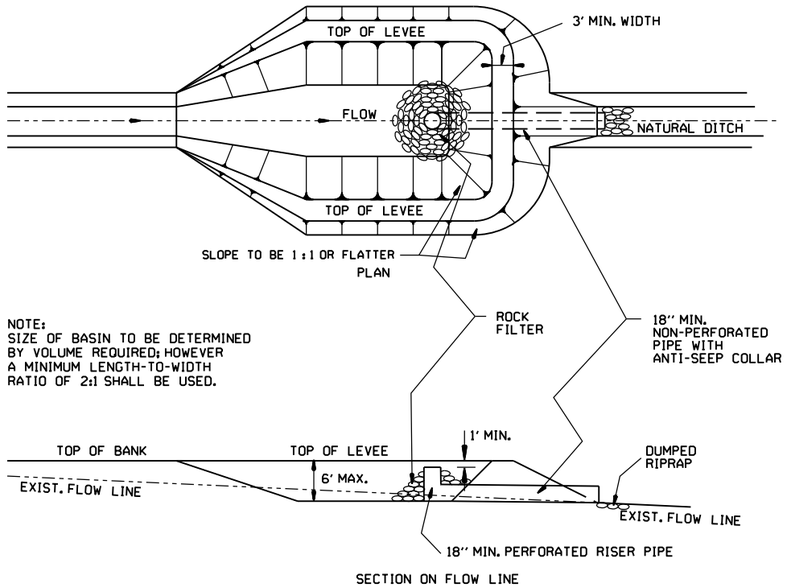
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

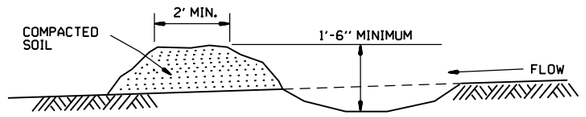
STANDARD DRAWING TEC-1



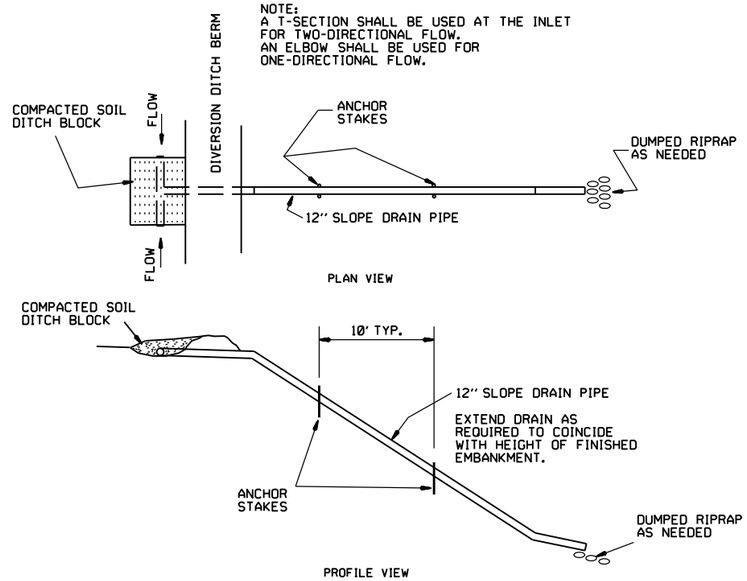
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



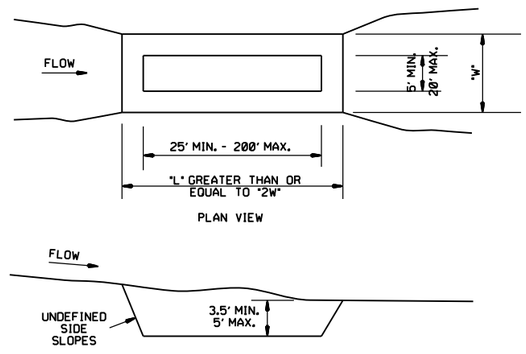
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



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

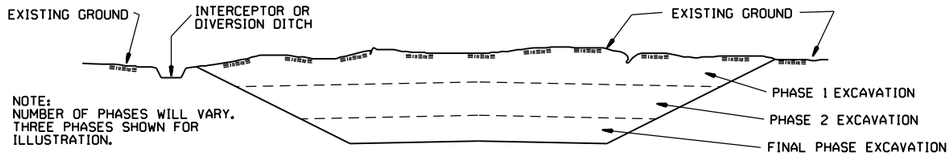
STANDARD DRAWING TEC-2

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



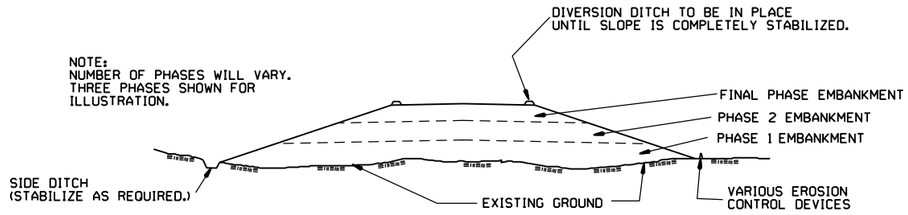
GENERAL NOTE

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

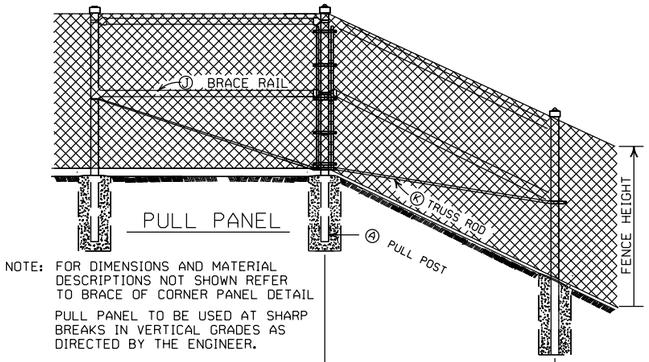
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD 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.

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

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

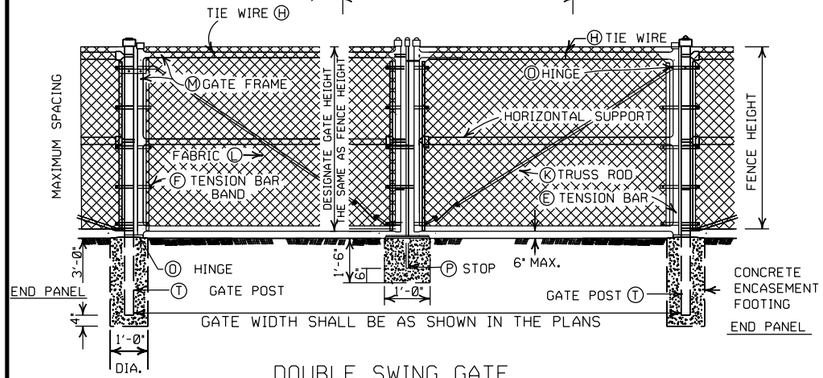
STANDARD DRAWING TEC-3



PULL PANEL

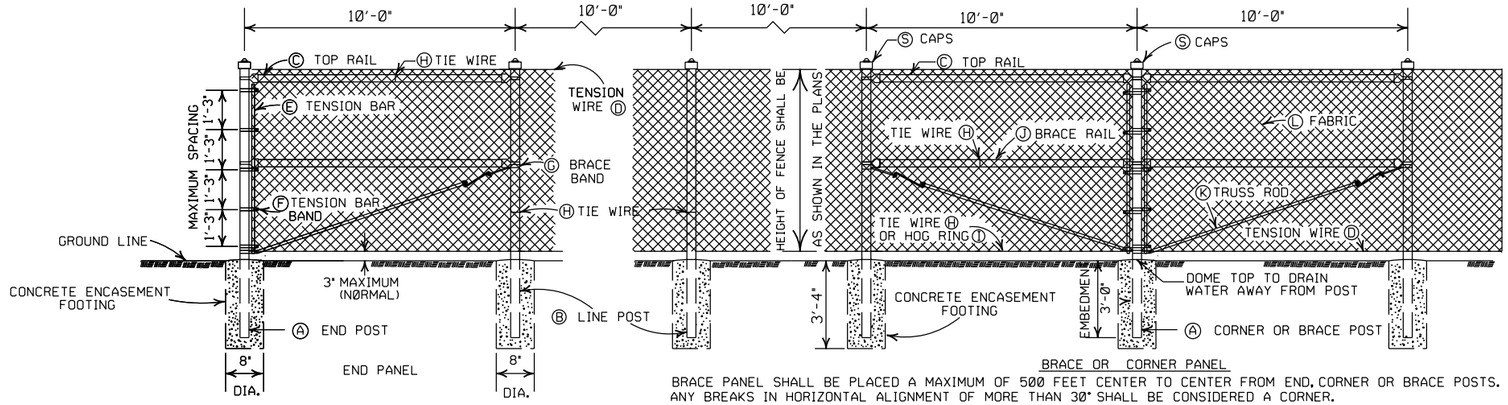
NOTE: FOR DIMENSIONS AND MATERIAL DESCRIPTIONS NOT SHOWN REFER TO BRACE OF CORNER PANEL DETAIL

PULL PANEL TO BE USED AT SHARP BREAKS IN VERTICAL GRADES AS DIRECTED BY THE ENGINEER.



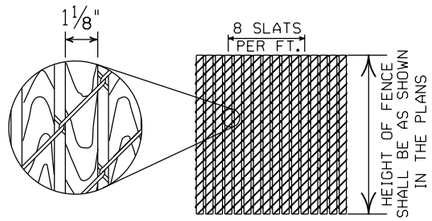
DOUBLE SWING GATE

POST SPACING DETAIL



BRACE OR CORNER PANEL

BRACE PANEL SHALL BE PLACED A MAXIMUM OF 500 FEET CENTER TO CENTER FROM END, CORNER OR BRACE POSTS. ANY BREAKS IN HORIZONTAL ALIGNMENT OF MORE THAN 30° SHALL BE CONSIDERED A CORNER.



1⅛" X ¼" REDWOOD SLATS(LENGTH TO MATCH HEIGHT OF FENCE)

DETAIL OF REDWOOD SLAT INSTALLATION

(WHERE APPLICABLE)

GENERAL NOTES:

(C) CHAIN LINK FENCE BEING PLACED ON PRIVATE PROPERTY SHALL INCLUDE A TOP RAIL. ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER LIN. FT. OF CHAIN LINK FENCE.

(D) TENSION WIRE: SHALL BE SECURED TO ALL TERMINAL, PULL, BRACE OR CORNER POSTS WITH TENSION BAR BANDS.

(J) BRACE RAIL: BRACE RAILS SHALL BE PROVIDED AT ALL TERMINAL, PULL, BRACE OR CORNER POSTS HALFWAY BETWEEN THE TOP RAIL AND GROUND LEVEL WHEN TOPRAIL IS SPECIFIED AND TWELVE INCHES (12") DOWN FROM TOP OF FABRIC WHEN TOP TENSION WIRE IS SPECIFIED. BRACE RAIL SHALL EXTEND FROM SUCH POST TO THE FIRST ADJACENT LINE POST.

(L) FABRIC: SHALL CONFORM TO THE SPECIFICATIONS.

(M) GATE FRAMES: SHALL BE CONSTRUCTED OF TUBULAR MEMBERS ASSEMBLED BY USE OF HEAVY PRESSED STEEL, MALLEABLE FITTINGS OR BY WELDING. ALL GATES SHALL HAVE ONE HORIZONTAL SUPPORT EXTENDING THE WIDTH OF THE GATE AT THE MIDPOINTS OF VERTICAL FRAME MEMBERS. THE COMPLETE FRAME SHALL BE RIGID AND HAVE AMPLE STRENGTH TO BE FREE FROM SAG AND TWIST.

(O) HINGES: SHALL BE OF HEAVY PATTERN, OF ADEQUATE STRENGTH FOR GATE, AND WITH LARGE BEARING SURFACES FOR CLAMPING IN POSITION. THE HINGE SHALL BE OF THE PROPER TYPE TO ALLOW FOR THE DESIGNATED DEGREE OF SWING. THE HINGE SHALL NOT TWIST OR TURN UNDER THE ACTION OF THE GATE. THE GATES SHALL BE CAPABLE OF BEING OPENED AND CLOSED EASILY BY ONE PERSON.

(P) LATCHES AND STOPS: SHALL BE PROVIDED FOR ALL GATES. GATES SHALL HAVE A DROP BAR LATCH. LATCHES SHALL BE ARRANGED FOR LOCKING. THE STOP FOR DROP BAR LATCHES SHALL BE SET IN CONCRETE AND ENGAGE THE PLUNGER OF THE BAR LATCH.

(S) CAPS: ALL POSTS, EXCEPT ROLL FORMED POSTS AND "T" POSTS SHALL BE CAPPED OVER THE EXTERIOR OF THE POST, AND SHALL CONFORM TO ASTM F626.

CONCRETE REQUIRED FOR THE EMBEDMENT OF ALL POSTS SHALL NOT BE PAID FOR DIRECTLY BUT SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR CHAIN LINK FENCE.

POSTS SHALL BE SPACED EQUIDISTANT ON A MAXIMUM OF 10' CENTERS.

EXCAVATION FOR POSTS: IN OTHER THAN ROCK SHALL BE OF THE DIMENSIONS INDICATED. IF ROCK IS ENCOUNTERED BEFORE REACHING THE REQUIRED DEPTH, THE EXCAVATION SHALL BE CONTINUED TO THE DEPTH INDICATED OR 1'-6" INTO THE ROCK, WHICHEVER IS LESS, AND SHALL BE A MINIMUM OF 8 INCHES IN DIAMETER.

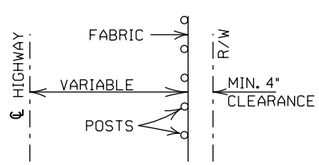
HEIGHT OF FENCE FABRIC	(A) END, PULL, CORNER OR BRACE POST	(B) LINE POSTS SIZE	(B) LINE POSTS TIE SPACING	(C) TOP RAIL SIZE	(C) TOP RAIL TIE SPACING	(C) TOP RAIL MIN. LENGTH	(D) TENSION WIRE SIZE	(D) TENSION WIRE TIE SPACING	(E) TENSION BAR SIZE	(E) TENSION BAR LENGTH	(F) TENSION BAR BAND SIZE	(F) TENSION BAR BAND BOLT SIZE	(F) TENSION BAR BAND SPACING	(G) BRACE BAND SIZE	(G) BRACE BAND BOLT SIZE
6' AND LESS	2½" O.D.	2" O.D.	1 TIE EVERY 1'-2" OF FABRIC HEIGHT	1⅝" O.D.	1 TIE EVERY 2'-0"	10'-0"	7 GAUGE COIL SPRING WIRE	1 TIE EVERY 1'-0"	MIN. OF ⅜" X ¾"	MIN. OF 2" LESS THAN FABRIC HEIGHT	MIN. OF ¾" X 0.074	⅝" X 1¼"	1 BAND AT TOP AND BOTTOM 15" MAX. INTERVAL BETWEEN BANDS	MIN. OF ¾" X 0.105	⅝" X 1¼"
OVER 6' TO 12' INCL.	3 " O.D.	2½" O.D.													

HEIGHT OF FENCE FABRIC	(H) TIE WIRE	(I) HOG RING	(J) BRACE RAIL SIZE	(J) BRACE RAIL TIE SPACING	(K) TRUSS ROD	(L) FABRIC SIZE	(L) FABRIC MESH	(L) FABRIC SELVAGE	(M) GATE FRAME SIZE	(M) GATE FRAME TIE SPACING	(N) HORIZONTAL SUPPORT SIZE	(N) HORIZONTAL SUPPORT TIE SPACING	(O) HINGE TYPE 180° SWING	(T) GATE POST GATE WIDTH 12' AND LESS	(T) GATE POST GATE WIDTH OVER 12' TO 24' INCL.
6' AND LESS	MIN. OF 12 GA. STEEL OR 9 GA. ALUM.	SAME GAUGE AS FABRIC	1⅝" O.D.	1 TIE EVERY 2'-0"	MIN. OF ⅝" ROUND WITH TIGHTNERS AND FITTINGS	9 GA.	2"	KNUCK -ING AND/OR TWIST -ING	2" O.D.	1 TIE EVERY 1'-0"	2" O.D.	1 TIE EVERY 1'-0"	OFFSET	3" O.D.	4" O.D.
OVER 6' TO 12' INCL.														4" O.D.	

NOTE: POST SIZES SHOWN ARE FOR STEEL. WHERE ALUMINUM IS PROVIDED, LINE POSTS SHALL HAVE AN OUT SIDE DIAMETER OF 2½" FOR FENCE HEIGHT OF 6' AND LESS, AN OUTSIDE DIAMETER OF 3" FOR FENCE HEIGHT OF 6' TO 12'. END, PULL, CORNER OR BRACE POSTS SHALL HAVE AN OUTSIDE DIAMETER OF 3" FOR FENCE HEIGHT OF 6' AND LESS; AN OUTSIDE DIAMETER OF 3½" FOR FENCE HEIGHTS OF 6' TO 12'. GATE POSTS WHERE GATE WIDTH IS 12' AND LESS SHALL HAVE AN OUTSIDE DIAMETER OF 3½" FOR FENCE HEIGHT OF 6' AND LESS. ALUMINUM TENSION WIRE SHALL BE 0.192" IN DIAMETER. MINIMUM THICKNESS OF MATERIAL FROM WHICH EXPANSION SLEEVES SHALL BE MADE WILL BE 0.078". POSTS AND RAILS MAY HAVE ANY CROSS-SECTIONAL SHAPE THAT WILL MEET THE SPECIFICATIONS.

OTHER DETAILS APPLY TO BOTH STEEL AND ALUMINUM FENCE.

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



INSTALLATION MAY BE MODIFIED AS SHOWN IN THE PLANS

TYPICAL INSTALLATION DIAGRAM

POSTS AND RAILS

SIZE O.D.	GRADE 1 AND ALUMINUM ALLOY O.D. INCHES	WALL THICKNESS	LBS. PER LINEAR FT. STEEL	LBS. PER LINEAR FT. ALUMINUM	GRADE 2 O.D. INCHES	WALL THICKNESS	LBS. PER LINEAR FT.
1⅝	1.660	0.140	2.27	0.786	1.660	0.111	1.84
2	1.900	0.145	2.72	0.940	1.900	0.120	2.28
2½	2.375	0.154	3.65	1.264	2.375	0.130	3.11
3	2.875	0.203	5.79	2.004	2.875	0.160	4.64
3½	3.500	0.216	7.58	2.621	3.500	0.160	5.71
4	4.000	0.226	9.11	3.151	4.000	0.160	6.56

TOLERANCES ON DIMENSIONS AND WEIGHTS ACCORDING TO AASHTO M 181

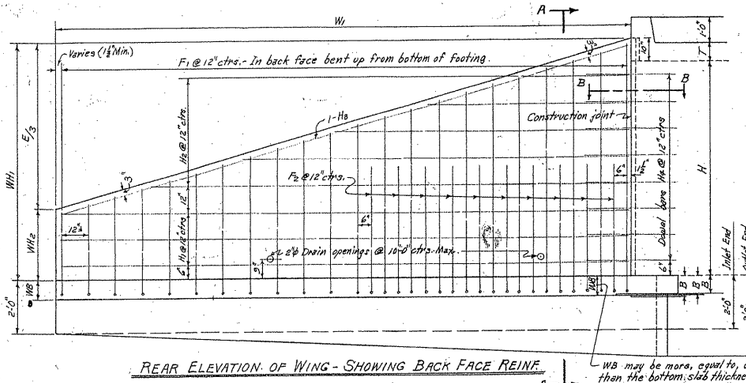
DATE	REVISION	FILMED
11-17-10	REVISED TRUSS ROD	
12-10-09	REVISED POSTS & RAILS TABLE	
5-21-09	ADDED TABLE & GEN. NOTE (C)	
8-22-02	REVISED NOTES, REMOVED TABLE, & REMOVED FENCE ALTERNATE	
4-3-97	REVISED BRACE RAIL NOTE	
10-18-96	REVISED AASHTO & ASTM REF.	
11-3-94	REVISED NOTE (L)	
10-1-92	DELETED ALTERNATE POST	10-1-92
8-15-91	DELETED ROLL FORMED POST DETAIL & ADDED NOTE	8-15-91 8-15-91
11-30-89	DELETED CLASS CONCRETE	11-30-89
11-17-88	REVISED O.D. SIZES	668-11-17-88
10-30-87	GENERAL REVISIONS	548-10-30-87
4-20-79	REVISED TOP RAIL & TENSION WIRE	695-4-20-79
10-2-72	REVISED AND REDRAWN	530-10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

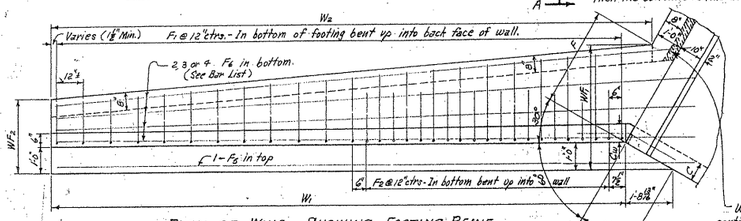
CHAIN LINK FENCE

STANDARD DRAWING WF-3

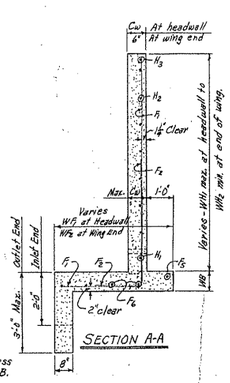
FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.				
JOB No.					



REAR ELEVATION OF WING - SHOWING BACK FACE REINF.

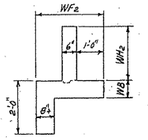


PLAN OF WING - SHOWING FOOTING REINF.



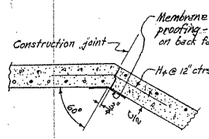
SECTION A-A

WB may be more, equal to, or less than the bottom slab thickness B.

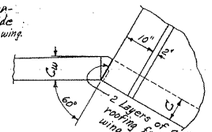


END VIEW OF WING

When B is more than WB, the shaded portion of the apron shall be made the same thickness as the barrel base B.



SECTION B-B THRU CONSTRUCTION JOINT



DETAIL AT TOP OF WING

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

WING DIMENSIONS

CLEAR HEIGHT OF BOX	THICKNESS OF WING FOOTING	THICKNESS OF WING AT HEADWALL = C	WINGWALL HEIGHTS		WIDTHS OF WING FOOTINGS		PERPENDICULAR FOOTING DIMENSION	PERPENDICULAR DIST. FROM HDWL. TO END OF WING	LENGTH OF WING WALLS	INSIDE FOOTING DIMENSION	* QUANTITY PER WING CLASS S CONCRETE	
			AT HEADWALL	AT END OF WING	AT HEADWALL	AT END OF WING					INLET END	OUTLET END
H	WB	Cw	WH1	WH2	WF1	WF2	F	E	W1	W2	Cu.Yd.	Cu.Yd.
2'	7"	6"	2'-10"	0'-8"	2'-4"	2'-0"	0'-11⅞"	6'-6"	7'-6"	7'-1½"	0.889	0.986
3'	7"	6"	3'-10"	1'-0"	2'-8"	2'-1⅛"	1'-1⅜"	8'-6"	9'-3⅜"	9'-2⅝"	1.338	1.466
4'	7"	6"	4'-10"	1'-2"	3'-0"	2'-3"	1'-3"	10'-6"	12'-1⅝"	12'-1⅝"	1.868	2.027
5'	7"	6"	5'-10"	1'-8"	3'-4"	2'-9⅜"	2'-1⅞"	12'-6"	14'-5⅝"	14'-7⅛"	2.478	2.668
		7"	5'-10"	1'-8"	3'-4"	2'-4⅞"	2'-1⅞"	12'-6"	14'-5⅝"	14'-7⅛"	2.582	2.772
6'	8"	7"	6'-10"	2'-0"	3'-8"	2'-6"	2'-2⅝"	14'-6"	16'-5"	16'-7⅛"	3.440	3.661
		7⅞"	6'-10"	2'-0"	3'-8"	2'-6"	2'-2⅝"	14'-6"	16'-5"	17'-1⅝"	3.511	3.732
		8"	6'-10"	2'-0"	3'-8"	2'-6"	2'-2⅝"	14'-6"	16'-5"	17'-1⅝"	3.582	3.803
7'	8⅝"	7⅞"	7'-10"	2'-4"	4'-2"	2'-7⅞"	3'-1⅜"	16'-6"	19'-0⅝"	19'-8⅜"	4.505	4.758
		8"	7'-10"	2'-4"	4'-2"	2'-7⅝"	3'-1⅜"	16'-6"	19'-0⅝"	19'-8⅜"	4.597	4.851
8'	9"	8"	8'-10"	2'-8"	4'-8"	2'-9"	3'-8"	18'-6"	21'-4⅝"	22'-0⅛"	5.761	6.047

* Quantity per wing does not include headwall or that portion of apron or toewall for the length W3.

APRON DIMENSION W3

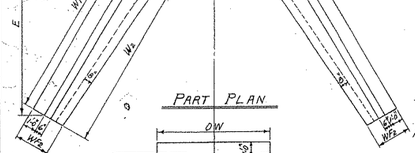
W3 = (OW - 2F)

CLEAR SPAN	CLEAR HEIGHT	2 x FOOTING DIMENSION	SINGLE BARREL CULVERT		DOUBLE BARREL CULVERT		TRIPLE BARREL CULVERT		QUADRUPLE BARREL CULVERT		QUINTUPLE BARREL CULVERT	
S	H	2F	OW	W3	OW	W3	OW	W3	OW	W3	OW	W3
4'	2'	1'-11⅞"	5'-0"	3'-0⅛"	9'-8"	7'-8⅛"	14'-4"	12'-4⅛"	19'-0"	17'-0⅛"	23'-8"	21'-8⅛"
	3'	2'-8⅛"	5'-0"	2'-3⅜"	9'-8"	6'-11⅛"	14'-4"	11'-7⅛"	19'-0"	16'-3⅛"	23'-8"	20'-11⅛"
	4'	3'-6"	5'-0"	1'-6"	9'-8"	6'-2"	14'-4"	10'-10"	19'-0"	15'-6"	23'-8"	20'-2"
	5'	4'-3⅜"	5'-0"	0'-8⅝"	9'-8"	5'-4⅜"	14'-4"	10'-0⅜"	19'-0"	14'-8⅜"	23'-8"	19'-8⅜"
	6'	5'-0⅝"	5'-2"	0'-1⅛"	9'-11"	4'-10⅛"	14'-8"	9'-7⅛"	19'-5"	14'-4⅛"	24'-2"	19'-1⅛"
5'	3'	2'-8⅛"	6'-0"	3'-3⅜"	11'-8"	8'-11⅛"	17'-4"	14'-7⅛"	23'-0"	20'-3⅛"	28'-8"	25'-11⅛"
	4'	3'-6"	6'-0"	2'-6"	11'-8"	8'-2"	17'-4"	13'-10"	23'-0"	19'-6"	28'-8"	25'-2"
	5'	4'-3⅜"	6'-0"	1'-8⅝"	11'-8"	7'-5⅜"	17'-4"	13'-0⅜"	23'-0"	18'-8⅜"	28'-8"	24'-8⅜"
	6'	5'-0⅝"	6'-2"	1'-1⅛"	11'-11"	6'-10⅛"	17'-8"	12'-7⅛"	23'-5"	18'-4⅛"	29'-2"	24'-1⅛"
	7'	6'-2⅛"	6'-5"	0'-0⅝"	12'-1"	5'-10⅝"	17'-11"	11'-8⅝"	23'-9"	17'-8⅝"	29'-7"	23'-6⅝"
6'	3'	2'-8⅛"	7'-0"	4'-3⅜"	13'-8"	10'-11⅛"	20'-4"	17'-7⅛"	27'-0"	24'-3⅛"	33'-8"	30'-11⅛"
	4'	3'-6"	7'-0"	3'-6"	13'-8"	10'-2"	20'-4"	16'-10"	27'-0"	23'-6"	33'-8"	30'-2"
	5'	4'-3⅜"	7'-0"	2'-8⅝"	13'-8"	9'-5⅜"	20'-4"	16'-0⅜"	27'-0"	22'-8⅜"	33'-8"	29'-8⅜"
	6'	5'-0⅝"	7'-2"	2'-1⅛"	13'-11"	8'-10⅛"	20'-8"	15'-7⅛"	27'-5"	22'-2⅛"	34'-2"	29'-1⅛"
	7'	6'-2⅛"	7'-5"	1'-6"	14'-1"	7'-10⅝"	20'-11"	14'-8⅝"	27'-9"	21'-6⅝"	34'-7"	28'-6⅝"
	8'	7'-1⅝"	7'-8"	0'-10⅝"	14'-5"	6'-10⅛"	21'-0"	13'-8⅛"	27'-10"	20'-6⅛"	34'-8"	27'-10⅛"
8'	4'	3'-6"	9'-0"	5'-6"	17'-6"	14'-2"	26'-1"	22'-10"	35'-0"	31'-6"	43'-8"	40'-2"
	5'	4'-3⅜"	9'-2"	4'-10⅜"	17'-11"	13'-7⅜"	26'-8"	21'-11⅜"	35'-5"	31'-1⅜"	44'-2"	39'-10⅜"
	6'	5'-0⅝"	9'-2"	4'-1⅛"	17'-11"	12'-10⅛"	26'-8"	21'-1⅛"	35'-5"	30'-3⅛"	44'-2"	39'-1⅛"
	7'	6'-2⅛"	9'-5"	3'-0⅝"	18'-1"	11'-10⅝"	26'-11"	20'-0⅝"	35'-9"	29'-4⅝"	44'-7"	38'-0⅝"
	8'	7'-1⅝"	9'-9"	2'-0"	18'-2"	10'-11"	27'-0"	19'-0"	35'-10"	28'-6"	44'-8"	37'-11"
9'	5'	4'-3⅜"	10'-2"	5'-10⅜"	19'-11"	15'-7⅜"	29'-8"	25'-4⅜"	39'-5"	35'-1⅜"	49'-2"	44'-10⅜"
	6'	5'-0⅝"	10'-3"	5'-2⅛"	20'-1"	15'-0⅛"	29'-11"	24'-6⅛"	39'-9"	34'-3⅛"	49'-7"	44'-1⅛"
	7'	6'-2⅛"	10'-5"	4'-0⅝"	20'-1"	13'-10⅝"	29'-11"	23'-5⅝"	39'-9"	33'-4⅝"	49'-7"	43'-1⅝"
	8'	7'-1⅝"	10'-9"	3'-0"	20'-2"	12'-11"	29'-10"	22'-3"	39'-10"	32'-6"	49'-8"	42'-3"
10'	5'	4'-3⅜"	11'-2"	6'-10⅜"	21'-11"	17'-7⅜"	32'-8"	28'-4⅜"	43'-5"	39'-1⅜"	54'-2"	49'-10⅜"
	6'	5'-0⅝"	11'-3"	6'-2⅛"	22'-1"	17'-0⅛"	32'-11"	27'-10⅛"	43'-9"	38'-3⅛"	54'-7"	49'-1⅛"
	7'	6'-2⅛"	11'-5"	5'-0⅝"	22'-1"	15'-10⅝"	32'-11"	26'-5⅝"	43'-9"	37'-4⅝"	54'-7"	48'-1⅝"
	8'	7'-1⅝"	11'-9"	4'-0"	22'-2"	14'-11"	33'-0"	25'-3"	43'-10"	36'-6"	54'-8"	47'-4"
11'	6'	5'-0⅝"	12'-3"	7'-3⅛"	24'-2"	19'-1⅛"	36'-0"	30'-11⅛"	47'-10"	42'-3⅛"		
	7'	6'-2⅛"	12'-5"	6'-1⅝"	24'-2"	17'-11⅝"	36'-0"	29'-5⅝"	47'-10"	41'-1⅝"		
	8'	7'-1⅝"	12'-9"	5'-0"	24'-2"	16'-10"	36'-0"	28'-3"	47'-10"	40'-6"		
12'	6'	5'-0⅝"	13'-3"	8'-3⅛"	26'-2"	21'-1⅛"	39'-0"	33'-11⅛"	51'-10"	46'-3⅛"		
	7'	6'-2⅛"	13'-5"	7'-1⅝"	26'-2"	19'-11⅝"	39'-0"	32'-5⅝"	51'-10"	45'-1⅝"		
	8'	7'-1⅝"	13'-8"	6'-0"	26'-2"	18'-10"	39'-0"	31'-3"	51'-10"	44'-6"		

QUANTITIES

CLEAR SPAN	CLEAR HEIGHT	THICKNESS OF WING AT HEADWALL	THICKNESS OF WING FOOTING	REINFORCING STEEL - FOR 4 WINGS @	CLASS S CONCRETE - 4 WINGS HEADWALLS, WINGWALLS, FOOTINGS, TOEWALLS AND APRONS				
					SINGLE BARREL CULVERT	DOUBLE BARREL CULVERT	TRIPLE BARREL CULVERT	QUADRUPLE BARREL CULVERT	QUINTUPLE BARREL CULVERT
S	H	Cw	WB	LB.	CU.YD.	CU.YD.	CU.YD.	CU.YD.	CU.YD.
4'	2'	6"	7"	108.0	4.50	5.96	6.42	7.38	8.34
	3'	6"	7"	169.4	6.26	7.21	8.17	9.13	10.09
	4'	6"	7"	259.6	8.33	9.28	10.24	11.20	12.16
	5'	6"	7"	357.8	10.72	11.68	12.64	13.60	14.56
	6'	7"	8"	583.1	14.55	15.53	16.52	17.51	18.49
5'	3'	6"	7"	169.4	6.97	7.68	8.79	9.96	11.12
	4'	6"	7"	259.6	8.54	9.70	10.87	10.03	12.20
	5'	6"	7"	357.8	10.94	12.10	13.26	14.43	15.59
	6'	7"	8"	583.1	14.77	15.96	17.15	18.34	19.54
	7'	7⅞"	8⅝"	1139.6	18.94	20.15	21.37	22.59	23.80
6'	3'	6"	7"	169.4	6.68	8.06	9.42	10.80	12.18
	4'	6"	7"	259.6	8.75	10.12	11.49	12.87	14.25
	5'	7"	7"	357.8	11.15	12.53	13.89	15.27	16.65
	6'	7"	8"	583.1	14.98	16.39	17.78	19.18	20.59
	7'	7⅞"	8⅝"	1139.6	19.15	20.58	22.00	23.43	24.86
	8'	8"	9"	1925.6	25.09	25.53	26.96	28.39	29.83
7'	4'	6"	7"	259.6	8.97	10.58	12.15	13.76	15.35
	5'	6"	7"	357.8	11.36	12.97	14.58	16.15	17.75
	6'	7"	8"	583.1	15.20	16.82	18.42	20.04	21.66
	7'	7⅞"	8⅝"	1139.6	19.38	21.02	22.68	24.28	25.92
	8'	8"	9"	1925.6	24.32	25.97	27.60	29.25	30.89
8'	4'	6"	7"	259.6	9.19	11.03	12.82	14.65	16.45
	5'	7"	7"	357.8	12.03	13.89	15.70	17.55	19.34
	6'	7"	8"	583.1	15.92	17.27	19.09	20.93	22.75
	7'	7⅞"	8⅝"	1139.6	19.59	21.46	23.30	25.16	26.99
	8'	8"	9"	1925.6	24.54	26.41	28.28	30.11	31.96
9'	5'	7"	7"	357.8	12.26	14.39	16.87	18.95	20.97
	6'	7⅞"	8"	583.1	15.94	18.09	20.09	22.19	24.23
	7'	7⅞"	8⅝"	1139.6	19.81	21.91	23.96	26.06	28.10
	8'	8"	9"	1925.6	24.76	26.86	28.91	31.00	33.05
10'	5'	7"	7"	357.8	12.49	14.80	17.05	19.24	21.52
	6'	7⅞"	8"	583.1	16.17	18.50	20.77	22.99	25.28
	7'	7⅞"	8⅝"	1139.6	20.04	22.37	24.64	26.87	29.15
	8'	8"	9"	1925.6	24.98	27.31	29.58	31.81	34.10
11'	6'	8"	8"	583.1	16.69	19.27	21.76	24.23	
	7'	8"	8⅝"	1139.6	20.64	23.22	25.71	28.18	
	8'	8"	9"	1925.6	25.19	27.77	30.27	32.74	
12'	6'	8"	8"	583.1	16.92	19.75	22.45	25.18	
	7'	8"	8⅝"	1139.6	20.87	23.69	26.40	29.18	
	8'	8"	9"	1925.6	25.42	28.25	30.96	33.69	

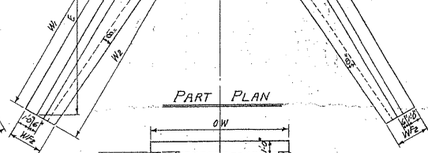
* For reinforcing steel in Headwalls and Aprons, See Details of Standard Barrel Sections for R.C. Box Culverts for the desired Span and Height.



PART PLAN

END ELEVATION

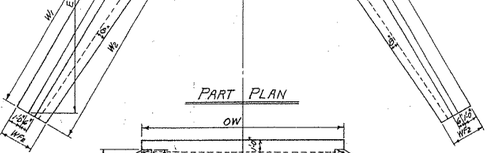
SINGLE BARREL CULVERT



PART PLAN

END ELEVATION

DOUBLE BARREL CULVERT

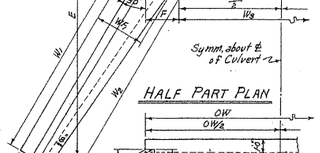


PART PLAN

END ELEVATION

TRIPLE BARREL CULVERT

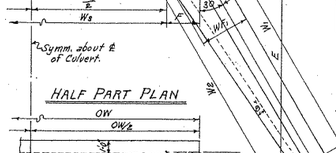
NOTE:- Plans and Elevations are not to scale.



HALF PART PLAN

HALF END ELEVATION

QUADRUPLE BARREL CULVERT



HALF PART PLAN

HALF END ELEVATION

QUINTUPLE BARREL CULVERT

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

BAR LIST FOR ONE WING - 4 REQUIRED

CLEAR HEIGHT	F1 Bent: In bottom of footing, bent up into back face of wing. One bar of each length.								F2 Bent: In bottom of footing, bent up into back face of wing. Alt. with F1 bars.						F5 Straight: Longitudinal in top of wing footing heel.			F6 Straight: Longitudinal in bottom of wing footing toe.			H1 Straight: Horizontal in back face of wing.			H2 Straight: Horizontal in back face of wing. One bar of each length.					H3 Straight: In back face of wing at top - on slope.			H4 Bent: Dowels thru construction joint at headwall.				QUANTITY REINFORCING STEEL PER WING	BAR BENDING DIAGRAMS
				LENGTHS VARY																					LENGTHS VARY												
H	SIZE	SPACING	NO. REQD	MIN.	MAX.	X MIN.	X MAX.	Y MIN.	Y MAX.	SIZE	SPACING	NO. REQD	LENGTH	X	Y	SIZE	NO. REQD	LENGTH	SIZE	NO. REQD	LENGTH	SIZE	SPACING	NO. REQD	LENGTH	MAX.	MIN.	SIZE	NO. REQD	LENGTH	SIZE	SPACING	NO. REQD	LENGTH	X	LB.	
2'	#3	12"	8	1'-6"	3'-10"	0'-8"	1'-0"	0'-11"	2'-11"	—	—	—	—	—	—	#3	1	9'-8"	#3	2	8'-6"	#3	12"	1	7'-2"	—	—	#3	1	9'-6"	#3	12"	2	2'-8"	1'-9"	27.0	
3'	#3	12"	10	2'-2"	5'-2"	0'-10"	1'-3"	1'-5"	4'-0"	—	—	—	—	—	—	#3	1	12'-0"	#3	2	11'-0"	#3	12"	1	9'-6"	#3	12"	#3	1	7'-6"	#3	12"	3	2'-8"	1'-9"	41.1	
4'	#3	12"	13	2'-9"	6'-6"	0'-11"	1'-7"	1'-8"	5'-0"	—	—	—	—	—	—	#3	1	14'-9"	#3	3	13'-6"	#3	12"	1	11'-10"	#3	12"	#3	1	10'-11"	#3	12"	4	2'-8"	1'-9"	63.7	
5'	#3	12"	15	2'-11"	7'-10"	1'-1"	1'-11"	1'-11"	6'-0"	#3	12"	4	3'-6"	1'-1"	2'-6"	#3	1	16'-8"	#3	3	16'-0"	#3	12"	2	14'-2"	#3	12"	#3	1	14'-1"	#3	12"	5	2'-8"	1'-9"	89.5	
6'	#4	12"	17	3'-6"	9'-3"	1'-2"	2'-3"	2'-5"	7'-1"	#3	12"	4	4'-6"	1'-4"	3'-3"	#3	1	19'-0"	#3	3	18'-6"	#3	12"	2	16'-6"	#3	12"	#4	1	19'-5"	#3	12"	6	2'-8"	1'-9"	145.8	
7'	#4	12"	20	3'-9"	10'-9"	1'-3"	2'-9"	2'-7"	8'-1"	#4	12"	7	5'-6"	1'-7"	4'-0"	#4	1	21'-4"	#4	4	21'-0"	#4	12"	2	18'-9"	#4	12"	#5	1	17'-9"	#4	12"	7	3'-6"	1'-9"	283.7	
8'	#4	12"	22	4'-4"	12'-3"	1'-5"	3'-2"	3'-0"	9'-2"	#4	12"	10	6'-6"	1'-10"	4'-9"	#4	1	23'-8"	#4	4	23'-6"	#4	12"	3	21'-1"	#4	12"	#5	1	17'-9"	#4	12"	8	3'-6"	1'-9"	356.4	

NOTE:- Dimensions are to bar centers.

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

Designed By:- W.C.H. 8-20-62. Checked By:-
Drawn By:- W.C.H. 12-4-62. Checked By:- RMS. 1-31-63
Quantities By:- W.C.H. 12-14-62. Checked By:- RMS. 3-29-63
Rechecked By:-

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS

4', 5', 6', 7', 8', 9', 10', 11' & 12' SPANS — 3:1 SLOPES

SINGLES, DOUBLES, TRIPLES, QUADRUPLES & QUINTUPLES. — ALL DEPTHS OF COVER FOR H = 8'-0" OR LESS

STANDARD DRAWING NO. W-X003-1

GENERAL NOTES:-

CONCRETE:- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have ¾ chamfers.

REINFORCING STEEL:- Reinforcing steel to be deformed bars of intermediate or hard grade.

CONSTRUCTION JOINTS:- Construction joints between wingwall, footings and sidewalls shall be only where shown on plans.

SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.

UNIT STRESSES:-

Class S Concrete (n=10) 1200 #/□"

Reinforcing Steel 20,000 #/□"

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

SINGLES	DOUBLES	TRIPLES	QUADRUPLES	QUINTUPLES
R-100X-0	R-200X-0	R-300X-0	R-400X-0	R-500X-0
R-100X-X1	R-200X-X1	R-300X-X1	R-400X-X1	R-500X-X1
R-100X-X2	R-200X-X2	R-300X-X2	R-400X-X2	
	R-200X-X3	R-300X-X3		

CLASS S CONCRETE

Mylar

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.				
JOB No.					

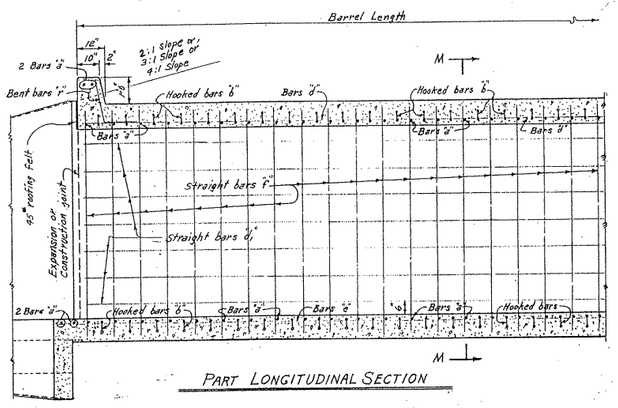
BAR LIST FOR BARREL SECTION 60'-0" IN LENGTH

DEPTH OF COVER	CLEAR SPAN	CLEAR HEIGHT	"a" bars STRAIGHT — In Top and Bottom Slabs of Barrel. 2 Add'l in Apron and Headwall- Each.					"b" bars BENT - See Diagram below. — In Top and Bottom Slabs of Barrel. Alternate with "a" bars.						"d" bars STRAIGHT — Longitudinal in Top Slab of Barrel				"d1" bars STRAIGHT — Longitudinal in Sidewalls				"e" bars. STRAIGHT — Longitudinal in Bottom Slab of Barrel				"f" bars STRAIGHT — Verticals in Sidewalls			
			SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH	SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH	X	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH
D	S	H																											
0'-0" TO 5'-0" MAXIMUM	1 @ 4'	2'			120	120	4'-9"			110	110	5'-10"	4'-8"	#5	10½"	6		#4	16"	4		#4	12"	5		#4	12"	120	120	2'-11"	
		3'			120	120	4'-9"			110	110	5'-10"	4'-8"			6				6				5				120	120	3'-11"	
		4'			120	120	4'-9"			110	110	5'-10"	4'-8"			8				8				5				120	120	4'-11"	
		5'			120	120	4'-9"			110	110	5'-10"	4'-8"			10				10				5				120	120	6'-11"	
		6'			120	120	4'-11"			110	110	6'-0"	4'-10"			12				12				5				120	120	7'-11"	
	1 @ 5'	3'			120	120	5'-9"			110	110	6'-10"	5'-8"			7				7				6				120	120	5'-0"	
		4'			120	120	5'-9"			110	110	6'-10"	5'-8"			8				8				6				120	120	6'-0"	
		5'	#6	13"	120	120	5'-9"	#6	13"	110	110	6'-10"	5'-8"	#5	10½"	10		#4	12"	10		#4	12"	6		#4	12"	120	120	7'-0"	
		6'			120	120	5'-11"			110	110	7'-0"	5'-10"			12				12				6				120	120	8'-0"	
		7'			120	120	6'-0"			110	110	7'-1"	5'-11"			14				14				6				120	120	9'-0"	
	1 @ 6'	3'			128	128	6'-9"			118	118	7'-10"	6'-8"			8				8				7				120	120	4'-1"	
		4'			128	128	6'-9"			118	118	7'-10"	6'-8"			8				8				7				120	120	5'-1"	
		5'			128	128	6'-9"			118	118	7'-10"	6'-8"			10				10				7				120	120	6'-1"	
		6'	#6	12"	128	128	6'-11"	#6	12"	118	118	8'-1"	6'-10"	#5	10½"	12		#4	12"	12		#4	12"	7		#4	12"	120	120	7'-1"	
		7'			128	128	7'-0"			118	118	8'-1"	6'-11"			14				14				7				120	120	8'-1"	
		8'			128	128	7'-1"			118	118	8'-2"	7'-0"			16				16				7				120	120	9'-1"	
		4'			140	140	7'-9"			130	130	8'-10"	7'-8"			9				9				8				120	120	5'-2"	
		5'			140	140	7'-9"			130	130	8'-10"	7'-8"			9				9				8				120	120	6'-2"	
	1 @ 7'	6'	#6	11"	140	140	7'-11"	#6	11"	130	130	9'-1"	7'-10"	#5	10½"	9		#4	12"	9		#4	12"	8		#4	12"	120	120	7'-2"	
		7'			140	140	8'-0"			130	130	9'-2"	8'-0"			11				11				8				120	120	8'-2"	
		8'			140	140	8'-1"			130	130	9'-3"	8'-1"			14				14				8				120	120	9'-2"	
		9'			140	140	8'-3"			130	130	9'-4"	8'-2"			16				16				8				120	120	10'-2"	
		4'			128	128	8'-9"			118	118	9'-10"	8'-8"			8				8				9				120	120	5'-6"	
		5'			128	128	8'-11"			118	118	10'-0"	8'-10"			10				10				9				120	120	6'-6"	
	1 @ 8'	6'			128	128	8'-11"			118	118	10'-0"	8'-10"			12				12				9				120	120	7'-6"	
		7'	#7	12"	128	128	9'-0"	#6	12"	118	118	10'-1"	8'-11"	#5	10"	14		#4	12"	14		#4	12"	9		#4	12"	120	120	8'-6"	
		8'			128	128	9'-1"			118	118	10'-2"	9'-0"			16				16				9				120	120	9'-6"	
		9'			128	128	9'-3"			118	118	10'-4"	9'-2"			18				18				9				120	120	10'-6"	
		10'			128	128	9'-5"			118	118	10'-5"	9'-3"			20				20				9				120	120	11'-6"	
		5'			140	140	9'-11"			130	130	11'-0"	9'-10"			12				12				10				120	120	6'-6"	
		6'			140	140	10'-0"			130	130	11'-1"	9'-11"			12				12				10				120	120	7'-5"	
	1 @ 9'	7'			140	140	10'-0"			130	130	11'-1"	9'-11"			12				12				10				120	120	8'-5"	
		8'	#7	11"	140	140	10'-1"	#6	11"	130	130	11'-2"	10'-0"	#5	10"	12		#4	12"	12		#4	12"	10		#4	12"	144	144	9'-5"	
		9'			140	140	10'-3"			130	130	11'-4"	10'-2"			12				12				10				144	144	10'-4"	
		10'			140	140	10'-5"			130	130	11'-6"	10'-4"			12				12				10				144	144	11'-4"	
		11'			140	140	10'-7"			130	130	11'-8"	10'-6"			12				12				10				144	144	12'-4"	
		5'			128	128	10'-11"			118	118	12'-2"	10'-10"			13				10				11				120	120	6'-6"	
		6'			128	128	11'-0"			118	118	12'-3"	10'-11"			13				12				11				120	120	7'-6"	
	1 @ 10'	7'			128	128	11'-0"			118	118	12'-3"	10'-11"			13				14				11				120	120	8'-6"	
		8'	#7	12"	128	128	11'-1"	#7	12"	118	118	12'-4"	11'-0"	#5	10"	13		#4	12"	16		#4	12"	11		#4	12"	144	144	9'-6"	
		9'			128	128	11'-3"			118	118	12'-6"	11'-2"			13				18				11				144	144	10'-6"	
		10'			128	128	11'-5"			118	118	12'-8"	11'-4"			13				20				11				144	144	11'-6"	
		11'			128	128	11'-7"			118	118	12'-10"	11'-6"			13				22				11				144	144	12'-6"	
		12'			128	128	11'-9"			118	118	13'-0"	11'-8"			13				24				11				144	144	13'-6"	
		6'			140	140	12'-1"			130	130	13'-4"	12'-0"			15				12				12				120	120	7'-7"	
		7'			140	140	12'-1"			130	130	13'-4"	12'-0"			15				14				12				120	120	8'-7"	
	1 @ 11'	8'			140	140	12'-1"			130	130	13'-4"	12'-0"			15				16				12				144	144	9'-7"	
		9'	#7	11"	140	140	12'-3"	#7	11"	130	130	13'-6"	12'-2"	#5	9½"	15		#4	12"	18		#4	12"	12		#5	12"	144	144	10'-7"	
		10'			140	140	12'-5"			130	130	13'-8"	12'-4"			15				20				12				144	144	11'-7"	
		11'			140	140	12'-7"			130	130	13'-10"	12'-6"			15				22				12				144	144	12'-7"	
		12'			140	140	12'-9"			130	130	14'-0"	12'-8"			15				24				12				144	144	13'-7"	
		6'			128	128	13'-1"			118	118	14'-4"	13'-0"			16				12				13				120	120	7'-9"	
		7'			128	128	13'-1"			118	118	14'-4"	13'-0"			16				14				13				120	120	8'-9"	
	1 @ 12'	8'			128	128	13'-1"			118	118	14'-4"	13'-0"			16				16				13				144	144	9'-9"	
		9'	#8	12"	128	128	13'-3"	#7	12"	118	118	14'-6"	13'-2"	#5	9½"	16		#4	12"	18		#4	12"	13		#5	12"	144	144	10'-9"	
		10'			128	128	13'-5"			118	118	14'-8"	13'-4"			16				20				13				144	144	11'-9"	
		11'			128	128	13'-7"			118	118	14'-10"	13'-6"			16				22				13				144	144	12'-9"	
		12'			128	128	13'-9"			118	118	15'-0"	13'-8"			16				24				13				144	144	13'-9"	

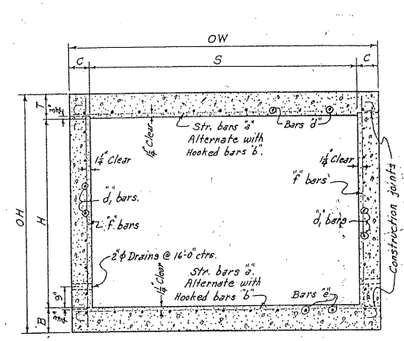
Note:- For details of wings and bar lists, see Drawing Nos. W-X002-1, W-X002-2, W-X003-1 or W-X003-2, and W-X004-1 or W-X004-2.

DIMENSIONS AND QUANTITIES

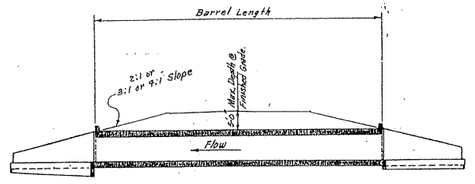
MAX. DESIGN DEPTH OF COVER	BARREL DIMENSIONS: CLEAR SPAN	CLEAR HEIGHT	SQ. FT. OPENING	OVERALL WIDTH	THICKNESS OF TOP SLAB	THICKNESS OF SIDEWALLS	THICKNESS OF BOTTOM SLAB	OVERALL HEIGHT	UNIT QUANTITIES: CLASS S CONC. PER LIN. FT. OF BARREL	REINFORCING STEEL PER LIN. FT. OF BARREL	ADDITIONAL PER LAP	ADDITIONAL TWO HEADWALLS & APRONS
D	S	H	A	OW	T	C	B	OH	CU.YD.	LB.	LB.	LB.
5'-0"	1 @ 4'	2'	8	5'-0"	7"	6"	6½"	3'-1½"	0.282	41.99	17.95	66.35
		3'	12	5'-0"		6"		4'-1⅝"	0.319	44.16	19.62	66.35
		4'	16	5'-0"		6"		5'-1⅞"	0.356	46.83	21.29	66.35
		5'	20	5'-0"		6"		6'-1⅞"	0.394	49.50	22.96	66.35
		6'	24	5'-2"		7"		7'-1⅞"	0.474	52.96	24.63	67.75
	1 @ 5'	3'	15	6'-0"	7"	6"	6½"	4'-2⅝"	0.380	55.55	22.19	101.27
		4'	20	6'-0"		6"		5'-2⅝"	0.417	58.23	23.86	101.27
		5'	25	6'-0"		6"		6'-2⅝"	0.454	60.90	25.53	101.27
		6'	30	6'-2"		7"		7'-2⅝"	0.535	64.99	27.20	103.27
		7'	35	6'-3"		7½"		8'-2⅝"	0.609	67.63	28.87	104.27
	1 @ 6'	3'	18	7'-0"	8"	6"	7½"	4'-3½"	0.496	66.29	29.76	118.96
		4'	24	7'-0"		6"		5'-3½"	0.483	68.96	26.93	118.96
		5'	30	7'-0"		6"		6'-3½"	0.520	71.64	28.10	118.96
		6'	36	7'-2"		7"		7'-3½"	0.602	75.31	29.77	120.96
		7'	42	7'-3"		7½"		8'-3½"	0.671	78.98	31.44	121.97
		8'	48	7'-4"		8"		9'-3½"	0.746	88.47	33.11	122.97
	1 @ 7'	4'	28	8'-0"	8½"	6"	8½"	5'-5"	0.568	81.32	29.01	136.88
		5'	35	8'-0"		6"		6'-5"	0.605	84.00	30.68	136.88
		6'	42	8'-2"		7"		7'-5"	0.688	87.76	32.35	138.88
		7'	49	8'-3"		7½"		8'-5"	0.757	90.98	34.02	139.88
		8'	56	8'-4"		8"		9'-5"	0.832	96.65	35.69	140.88
		9'	63	8'-6"		9"		10'-5"	0.996	105.59	37.36	142.89
	1 @ 8'	4'	32	9'-0"	9½"	7"	9½"	5'-7"	0.676	95.26	33.32	198.07
		5'	40	9'-2"		7"		6'-7"	0.758	99.12	34.99	196.80
		6'	48	9'-2"		7"		7'-7"	0.797	101.79	36.66	196.80
		7'	56	9'-3"		7½"		8'-7"	0.867	105.05	38.33	198.16
		8'	64	9'-4"		8"		9'-7"	0.942	110.81	40.00	199.52
		9'	72	9'-6"		9"		10'-7"	1.057	119.92	41.67	202.25
		10'	80	9'-8"		10"		11'-7"	1.186	126.67	43.34	204.97
	1 @ 9'	5'	45	10'-2"	10"	7"	10"	6'-8"	0.849	119.72	37.56	213.61
		6'	54	10'-3"		7½"		7'-8"	0.910	118.04	39.23	220.97
		7'	63	10'-3"		7½"		8'-8"	0.957	120.71	40.90	220.97
		8'	72	10'-4"		8"		9'-8"	1.033	126.54	42.57	222.33
		9'	81	10'-6"		9"		10'-8"	1.148	135.80	44.24	225.06
		10'	90	10'-8"		10"		11'-8"	1.276	142.68	45.91	227.78
		11'	99	10'-10"		11"		12'-8"	1.416	150.90	47.58	230.51
	1 @ 10'	5'	50	11'-2"	10½"	7"	11"	6'-9½"	0.957	130.64	40.13	242.64
		6'	60	11'-3"		7½"		7'-9½"	1.024	133.99	41.80	244.00
		7'	70	11'-3"		7½"		8'-9½"	1.071	136.66	43.47	244.00
		8'	80	11'-4"		8"		9'-9½"	1.147	142.55	45.14	245.36
		9'	90	11'-6"		9"		10'-9½"	1.263	151.92	96.81	248.09
		10'	100	11'-8"		10"		11'-9½"	1.391	158.89	98.98	250.81
		11'	110	11'-10"		11"		12'-9½"	1.532	166.71	50.15	253.54
		12'	120	12'-0"		12"		13'-9½"	1.685	178.67	51.82	256.26
	1 @ 11'	6'	66	12'-3"	11"	8"	11½"	7'-10½"	1.153	155.16	96.12	268.62
		7'	77	12'-3"		8"		8'-10½"	1.202	157.83	97.79	268.62
		8'	88	12'-4"		8"		9'-10½"	1.252	163.06	99.46	268.62
		9'	99	12'-6"		9"		10'-10½"	1.368	172.60	51.13	271.34
		10'	110	12'-8"		10"		11'-10½"	1.497	179.70	52.80	274.07
		11'	121	12'-10"		11"		12'-10½"	1.638	187.67	54.97	276.79
		12'	132	13'-0"		12"		13'-10½"	1.792	199.79	56.14	279.52
	1 @ 12'	6'	72	13'-3"	12"	8"	12½"	8'-0"	1.284	172.20	98.69	357.62
		7'	84	13'-3"		8"		9'-0"	1.333	174.87	50.36	357.62
		8'	96	13'-4"		8"		10'-0"	1.383	180.15	52.03	357.62
		9'	108	13'-6"		9"		11'-0"	1.500	189.85	58.70	361.18
		10'	120	13'-8"		10"		12'-0"	1.630	197.07	55.37	364.74
		11'	132	13'-10"		11"		13'-0"	1.772	205.16	57.04	368.30
		12'	144	14'-0"		12"		14'-0"	1.926	217.95	58.71	371.86



PART LONGITUDINAL SECTION



TYPICAL SECTION M-M



LONGITUDINAL SECTION

GENERAL NOTES:-

CONCRETE:- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have ¾" chamfers.

REINFORCING STEEL:- Reinforcing to be deformed bars of intermediate or hard grade.

BAR LAP:- In computing the quantities of steel from the tables add one lap for each additional 33'-0" length of barrel over 32'-0". Lap longitudinal bars 30 diameters.

CONSTRUCTION JOINTS:- Construction joints between wingwalls, sidewalls and slabs shall be only where shown on plans.

SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.

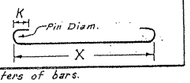
DESIGN LIVE LOAD

H20-S16 LOADING A.A.S.H.O. 1961
AND
SPECIAL MILITARY LOADING
Two 24,000 Lb. Axles @ 4'-0" ctrs.

UNIT STRESSES:-
Class S Concrete (n=10) 1200 #/□"
Reinforcing Steel 20,000 #/□"

BAR SIZE	PIN DIAM.	K	ADD FOR 2 HOOKS
#6	3"	5"	1'-2"
#7	3½"	5⅝"	1'-4"

BENDING DIAGRAM Bars "b"

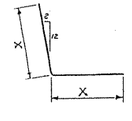


NOTE:- Dimensions are to centers of bars.

DOWEL BARS FOR TWO HEADWALLS

SPAN	SIZE	SPACING	NO. REQ'D	LENGTH	X
4'	#4	11"±	12	2'-6"	1'-3"
5'	#4	11"±	14	2'-7"	1'-3⅛"
6'	#4	11"±	16	2'-8"	1'-4"
7'	#4	11"±	18	2'-9"	1'-4⅛"
8'	#4	11⅛"±	20	2'-11"	1'-5⅛"
9'	#4	11⅛"±	22	3'-0"	1'-6"
10'	#4	11⅛"±	24	3'-1"	1'-6⅛"
11'	#4	12"±	26	3'-2"	1'-7"
12'	#4	12"±	28	3'-3"	1'-7⅛"

Bars "i" Dowel bars in Headwalls.



W-X002-1, W-X002-2, or W-X003-1, or W-X003-2, or W-X004-1, or W-X004-2.

NOTE:- This drawing to be used in conjunction with Standard Drawing Nos. W-X003-1 or W-X003-2 and W-X004-1 or W-X004-2. Also Drawing Nos. W-X002-1 or W-X002-2.

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS

4', 5', 6', 7', 8', 9', 10', 11' & 12' SPANS — 3:1 OR 4:1 SLOPES
SINGLES — UNDER 5'-0" COVER

STANDARD DRAWING NO. R-100X-0

Designed By:- W.C.H. 1-23-63. Checked By:- RBG. 5-8-63
Drawn By:- W.C.H. 2-8-63. Checked By:- RBG. 5-8-63
Quantities By:- W.C.H. 2-12-63. Checked By:- RBG. 5-24-63

FED. ROAD No.	STATE	FED. AID PROJECT.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.				
JOB No.					

BAR LIST FOR BARREL SECTION 60'-0" IN LENGTH

DIMENSIONS — QUANTITIES

| DEPTH OF COVER D | CLEAR SPAN S | CLEAR HEIGHT H | "a" bars STRAIGHT In Top and Bottom Slab of Barrel, 2 Add'l in Apron and Headwall - Each. SIZE | SPACING | NUMBER REQ'D 3:1 | NUMBER REQ'D 4:1 | LENGTH | "b" bars BENT - See Diagram below. In Bottom of Top Slab bent up over Division Wall - hooked. Alternate with "a" and "c" bars. SIZE | SPACING | NUMBER REQ'D 3:1 | NUMBER REQ'D 4:1 | LENGTH | X | Y | Z | "b_2" bars BENT - See Diagram below. In Top of Bottom Slab bent down under Division Wall - hooked. Alternate with "a" and "c" bars. SIZE | SPACING | NUMBER REQ'D 3:1 | NUMBER REQ'D 4:1 | LENGTH | X | Y | Z | "c" bars STRAIGHT In Top and Bottom Slab of Barrel. Alternate with "b" and "b_2" bars. SIZE | SPACING | NUMBER REQ'D 3:1 | NUMBER REQ'D 4:1 | LENGTH | "d" bars STRAIGHT Longitudinal in Top Slab of Barrel. SIZE | SPACING | NO. REQ'D | LENGTH | "d_1" bars STRAIGHT Longitudinal in Sidewalls and Division Walls. SIZE | SPACING | NO. REQ'D | LENGTH | "e" bars STRAIGHT Longitudinal in Bottom Slab of Barrel. SIZE | SPACING | NO. REQ'D | LENGTH | "f" bars STRAIGHT Vertical in Sidewalls and Division Walls. SIZE | SPACING | NUMBER REQ'D 3:1 | NUMBER REQ'D 4:1 | LENGTH |
|---|---|---|---|---|---

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.				
JOB No.					

BAR LIST FOR BARREL SECTION 60'-0" IN LENGTH

DEPTH OF COVER	CLEAR SPAN	CLEAR HEIGHT	'S' bars STRAIGHT In Top and Bottom Slab of Barrel. 2 Add'l in Apron and Headwall - Each. SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH
D	S	H					
0'-0" TO 5'-0" MAXIMUM	3	2'			128	128	14'-1"
	3 @ 4	3'			128	128	14'-1"
		4'	#5	12"	128	128	14'-1"
		5'			128	128	14'-1"
		6'			128	128	14'-5"
	3 @ 5	3'			128	128	17'-1"
		4'			128	128	17'-1"
		5'	#6	12"	128	128	17'-1"
		6'			128	128	17'-5"
		7'			128	128	17'-8"
	3 @ 6	3'			140	140	20'-1"
		4'			190	190	20'-1"
		5'	#6	11"	190	190	20'-1"
		6'			140	140	20'-5"
		7'			190	140	20'-8"
		8'			190	190	20'-9"
	3 @ 7	4'			128	128	23'-1"
		5'			128	128	23'-1"
		6'	#6	12"	128	128	23'-5"
		7'			128	128	23'-8"
		8'			128	128	23'-9"
		9'			128	128	24'-1"
	3 @ 8	4'			140	140	26'-1"
		5'			190	140	26'-5"
		6'			140	140	26'-5"
		7'	#6	11"	140	140	26'-8"
		8'			140	140	26'-9"
		9'			140	140	27'-1"
		10'			140	140	27'-5"
	3 @ 9	5'			140	140	29'-5"
		6'			140	190	29'-8"
		7'			140	140	29'-8"
		8'	#6	11"	140	140	29'-9"
		9'			140	190	30'-1"
		10'			140	190	30'-5"
		11'			190	190	30'-7"
	3 @ 10	5'			128	128	32'-5"
		6'			128	128	32'-8"
		7'			128	128	32'-8"
		8'	#7	12"	128	128	32'-9"
		9'			128	128	33'-1"
		10'			128	128	33'-5"
		11'			128	128	33'-7"
		12'			128	128	33'-9"
	3 @ 11	6'			140	140	35'-9"
		7'			140	140	35'-9"
		8'			140	140	35'-9"
		9'	#7	11"	140	140	36'-1"
		10'			140	140	36'-5"
		11'			140	140	36'-7"
		12'			140	140	36'-9"
	3 @ 12	6'			140	140	38'-9"
		7'			140	140	38'-9"
		8'			140	140	38'-9"
		9'	#7	11"	140	140	39'-1"
		10'			140	140	39'-5"
		11'			140	140	39'-7"
		12'			140	140	39'-9"

DEPTH OF COVER	CLEAR SPAN	CLEAR HEIGHT	'b' bars STRAIGHT BENT - See Diagram below. In Bottom of Top Slab bent up over Division Walls - hooked. Alternate with 'd' and 'e' bars. SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH	X	Y	Z
D	S	H								
0'-0" TO 5'-0" MAXIMUM	3 @ 4	2'								
		3'								
		4'	#5	12"	59	59	15'-9"	0'-3"	2'-2"	3'-9⅝"
		5'			59	59	15'-9"	0'-3"	2'-2"	3'-9⅝"
		6'			59	59	15'-8"	0'-3"	2'-3"	3'-5⅝"
	3 @ 5	3'			59	59	18'-5"	0'-3⅜"	2'-7"	4'-1⅜"
		4'			59	59	18'-5"	0'-3⅜"	2'-7"	4'-1⅜"
		5'	#6	12"	59	59	18'-5"	0'-3⅜"	2'-7"	4'-1⅜"
		6'			59	59	18'-9"	0'-3⅜"	2'-8"	4'-2⅛"
		7'			59	59	19'-0"	0'-3⅜"	2'-9"	4'-2⅜"
	3 @ 6	3'			65	65	21'-5"	0'-3⅜"	3'-1"	4'-10⅝"
		4'			65	65	21'-6"	0'-3"	3'-0"	4'-10⅜"
		5'	#6	11"	65	65	21'-6"	0'-3"	3'-0"	4'-10⅜"
		6'			65	65	21'-10"	0'-3"	3'-1"	4'-11⅜"
		7'			65	65	22'-1"	0'-3"	3'-2"	4'-11⅝"
		8'			65	65	22'-2"	0'-3"	3'-2"	5'-0⅛"
	3 @ 7	4'			65	65	24'-8"	0'-3½"	3'-5"	5'-7"
		5'			59	59	24'-8"	0'-4½"	3'-5"	5'-7"
		6'	#6	12"	59	59	25'-0"	0'-4½"	3'-6"	5'-8"
		7'			59	59	25'-3"	0'-4½"	3'-7"	5'-8½"
		8'			59	59	25'-4"	0'-4½"	3'-7"	5'-9"
		9'			59	59	25'-8"	0'-4½"	3'-8"	5'-10"
	3 @ 8	4'			65	65	27'-9"	0'-5"	3'-10"	6'-4"
		5'			65	65	28'-1"	0'-5"	3'-11"	6'-5"
		6'			65	65	28'-1"	0'-5"	3'-11"	6'-5"
		7'	#6	11"	65	65	28'-6"	0'-5"	4'-0"	6'-5½"
		8'			65	65	28'-6"	0'-5"	4'-0"	6'-6"
		9'			65	65	28'-9"	0'-5"	4'-1"	6'-7"
		10'			65	65	29'-1"	0'-5"	4'-2"	6'-8"
	3 @ 9	5'			65	65	31'-2"	0'-5½"	4'-4"	7'-2"
		6'			65	65	31'-5"	0'-5½"	4'-5"	7'-2½"
		7'			65	65	31'-5"	0'-5½"	4'-5"	7'-2½"
		8'	#6	11"	65	65	31'-6"	0'-5½"	4'-5"	7'-3"
		9'			65	65	31'-10"	0'-5½"	4'-6"	7'-4"
		10'			65	65	32'-2"	0'-5½"	4'-7"	7'-5"
		11'			65	65	32'-6"	0'-5½"	4'-7"	7'-6"
	3 @ 10	5'			59	59	34'-3"	0'-6"	4'-9"	7'-11"
		6'			59	59	34'-4"	0'-6"	4'-10"	7'-11½"
		7'			59	59	34'-4"	0'-6"	4'-10"	7'-11½"
		8'	#7	12"	59	59	34'-5"	0'-6"	4'-10"	8'-0"
		9'			59	59	34'-11"	0'-6"	4'-11"	8'-1"
		10'			59	59	35'-3"	0'-6"	5'-0"	8'-2"
		11'			59	59	35'-5"	0'-6"	5'-0"	8'-2"
		12'			59	59	35'-7"	0'-6"	5'-0"	8'-4"
	3 @ 11	6'			65	65	37'-8"	0'-6½"	5'-3"	8'-9"
		7'			65	65	37'-8"	0'-6½"	5'-3"	8'-9"
		8'			65	65	37'-8"	0'-6½"	5'-3"	8'-9"
		9'	#7	11"	65	65	38'-0"	0'-6½"	5'-4"	8'-10"
		10'			65	65	38'-4"	0'-6½"	5'-5"	8'-11"
		11'			65	65	38'-6"	0'-6½"	5'-5"	9'-0"
		12'			65	65	38'-8"	0'-6½"	5'-5"	9'-1"
	3 @ 12	6'			65	65	40'-9"	0'-7"	5'-8"	9'-6"
		7'			65	65	40'-9"	0'-7"	5'-8"	9'-6"
		8'			65	65	40'-9"	0'-7"	5'-8"	9'-6"
		9'	#7	11"	65	65	41'-1"	0'-7"	5'-9"	9'-7"
		10'			65	65	41'-5"	0'-7"	5'-10"	9'-8"
		11'			65	65	41'-7"	0'-7"	5'-10"	9'-9"
		12'			65	65	41'-9"	0'-7"	5'-10"	9'-10"

DEPTH OF COVER	CLEAR SPAN	CLEAR HEIGHT	'b2' bars STRAIGHT BENT - See Diagram below. In Top of Bottom Slab bent down under Division Walls - hooked. Alternate with 'd' and 'e' bars. SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH	X	Y	Z
D	S	H								
0'-0" TO 5'-0" MAXIMUM	3 @ 4	2'								
		3'								
		4'	#5	12"	59	59	15'-8"	0'-2½"	2'-3"	3'-0⅝"
		5'			59	59	15'-3"	0'-2½"	2'-3"	3'-0⅝"
		6'			59	59	15'-7"	0'-2½"	2'-4"	3'-5⅝"
	3 @ 5	3'			59	59	18'-6"	0'-3"	2'-8"	4'-1⅛"
		4'			59	59	18'-6"	0'-3"	2'-8"	4'-1⅛"
		5'	#6	12"	59	59	18'-6"	0'-3"	2'-8"	4'-1⅛"
		6'			59	59	18'-8"	0'-3"	2'-9"	4'-2⅛"
		7'			59	59	18'-11"	0'-3"	2'-10"	4'-2⅝"
	3 @ 6	3'			65	65	21'-5"	0'-3½"	3'-1"	4'-10⅝"
		4'			65	65	21'-5"	0'-3½"	3'-1"	4'-10⅝"
		5'	#6	11"	65	65	21'-5"	0'-3½"	3'-1"	4'-10⅝"
		6'			65	65	21'-9"	0'-3½"	3'-2"	4'-11⅛"
		7'			65	65	22'-0"	0'-3½"	3'-3"	4'-11⅜"
		8'			65	65	22'-1"	0'-3½"	3'-3"	5'-0⅛"
	3 @ 7	4'			65	65	24'-8"	0'-4"	3'-5"	5'-7"
		5'			59	59	24'-8"	0'-4"	3'-5"	5'-7"
		6'	#6	12"	59	59	25'-0"	0'-4"	3'-6"	5'-8"
		7'			59	59	25'-3"	0'-4"	3'-7"	5'-8½"
		8'			59	59	25'-4"	0'-4"	3'-7"	5'-9"
		9'			59	59	25'-8"	0'-4"	3'-8"	5'-10"
	3 @ 8	4'			65	65	27'-9"	0'-5"	3'-10"	6'-4"
		5'			65	65	28'-1"	0'-5"	3'-11"	6'-5"
		6'			65	65	28'-1"	0'-5"	3'-11"	6'-5"
		7'	#6	11"	65	65	28'-6"	0'-5"	4'-0"	6'-5½"
		8'			65	65	28'-6"	0'-5"	4'-0"	6'-6"
		9'			65	65	28'-9"	0'-5"	4'-1"	6'-7"
		10'			65	65	29'-1"	0'-5"	4'-2"	6'-8"
	3 @ 9	5'			65	65	31'-2"	0'-5½"	4'-4"	7'-2"
		6'			65	65	31'-5"	0'-5½"	4'-5"	7'-2½"
		7'			65	65	31'-5"	0'-5½"	4'-5"	7'-2½"
		8'	#6	11"	65	65	31'-6"	0'-5½"	4'-5"	7'-3"
		9'			65	65	31'-10"	0'-5½"	4'-6"	7'-4"
		10'			65	65	32'-2"	0'-5½"	4'-7"	7'-5"
		11'			65	65	32'-6"	0'-5½"	4'-7"	7'-6"
	3 @ 10	5'			59	59	34'-3"	0'-6"	4'-9"	7'-11"
		6'			59	59	34'-4"	0'-6"	4'-10"	7'-11½"
		7'			59	59	34'-4"	0'-6"	4'-10"	7'-11½"
		8'	#7	12"	59	59	34'-5"	0'-6"	4'-10"	8'-0"
		9'			59	59	34'-11"	0'-6"	4'-11"	8'-1"
		10'			59	59	35'-3"	0'-6"	5'-0"	8'-2"
		11'			59	59	35'-5"	0'-6"	5'-0"	8'-2"
		12'			59	59	35'-7"	0'-6"	5'-0"	8'-4"
	3 @ 11	6'			65	65	37'-8"	0'-6½"	5'-3"	8'-9"
		7'			65	65	37'-8"	0'-6½"	5'-3"	8'-9"
		8'			65	65	37'-8"	0'-6½"	5'-3"	8'-9"
		9'	#7	11"	65	65	38'-0"	0'-6½"	5'-4"	8'-10"
		10'			65	65	38'-4"	0'-6½"	5'-5"	8'-11"
		11'			65	65	38'-6"	0'-6½"	5'-5"	9'-0"
		12'			65	65	38'-8"	0'-6½"	5'-5"	9'-1"
	3 @ 12	6'			65	65	40'-9"	0'-7"	5'-8"	9'-6"
		7'			65	65	40'-9"	0'-7"	5'-8"	9'-6"
		8'			65	65	40'-9"	0'-7"	5'-8"	9'-6"
		9'	#7	11"	65	65	41'-1"	0'-7"	5'-9"	9'-7"
		10'			65	65	41'-5"	0'-7"	5'-10"	9'-8"
		11'			65	65	41'-7"	0'-7"	5'-10"	9'-9"
		12'			65	65	41'-9"	0'-7"	5'-10"	9'-10"

'c' bars STRAIGHT In Top and Bottom Slab of Barrel, Alternate with 'b' and 'b2' bars. SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH
#5	12"	120	120	9'-4"
#6	12"	120	120	11'-0"
		120	120	11'-4"
		120	120	11'-8"
#7	11"	120	120	13'-0"
		120	120	13'-4"
		120	120	13'-8"
		120	120	14'-0"
		120	120	14'-4"
		120	120	14'-8"
		120	120	15'-0"
		120	120	15'-4"
		120	120	15'-8"
		120	120	16'-0"
		120	120	16'-4"
		120	120	16'-8"
		120	120	17'-0"
		120	120	17'-4"
		120	120	17'-8"
		120	120	18'-0"
		120	120	18'-4"
		120	120	18'-8"
		120	120	19'-0"
		120	120	19'-4"
		120	120	19'-8"
		120	120	20'-0"
		120	120	20'-4"
		120	120	20'-8"
		120	120	21'-0"
		120	120	21'-4"
		120	120	21'-8"
		120	120	22'-0"
		120	120	22'-0"
#6	12"	132	132	23'-8"
		132	132	23'-8"
		132	132	23'-8"
		132	132	23'-10"
#5	11½"	132	132	24'-0"
		132	132	24'-0"
		132	132	24'-0"
#6	12"	132	132	25'-8"
		132	132	25'-8"
		132	132	25'-8"
#5	11½"	132	132	25'-10"
		132	132	26'-0"
		132	132	26'-0"
#6	12"	132	132	27'-6"
		132	132	27'-6"
		132	132	27'-6"
#5	11½"	132	132	27'-8"
		132	132	27'-8"
		132	132	27'-8"
#6	11"	132	132	29'-4"
		132	132	29'-4"
		132	132	29'-4"
#5	11½"	132	132	29'-6"
		132	132	29'-6"
		132	132	29'-6"
#6	11"	132	132	31'-2"
		132	132	31'-2"
		132	132	31'-2"
#7	11"	132	132	31'-4"
		132	132	31'-4"
		132	132	31'-4"
#5	11½"	132	132	31'-6"
		132	132	31'-6"
		132	132	31'-6"
#6	12"	132	132	33'-0"
		132	132	33'-0"
		132	132	33'-0"
#7	11"	132	132	33'-2"
		132	132	33'-2"
		132	132	33'-2"
#5	11½"	132	132	33'-4"
		132	132	33'-4"
		132	132	33'-4"
#6	12"	132	132	34'-10"
		132	132	34'-10"
		132	132	34'-10"
#7	11"	132	132	35'-0"
		132	132	35'-0"
		132	132	35'-0"
#5	11½"	132	132	35'-2"
		132	132	35'-2"
		132	132	35'-2"
#6	12"	132	132	36'-8"
		132	132	36'-8"
		132	132	36'-8"
#7	11"	132	132	36'-10"
		132	132	36'-10"
		132	132	36'-10"
#5	11½"	132	132	37'-0"
		132	132	37'-0"
		132	132	37'-0"
#6	12"	132	132	38'-6"
		132	132	38'-6"
		132	132	38'-6"
#7	11"	132	132	38'-8"
		132	132	38'-8"
		132	132	38'-8"
#5	11½"	132	132	38'-10"
		132	132	38'-10"
		132	132	38'-10"

'd' bars STRAIGHT Longitudinal in Top Slab of Barrel SIZE	SPACING	NO. REQ'D	LENGTH
#5	12"	22	
		22	
		22	
#6	12"	22	
		22	
		22	
#5	11½