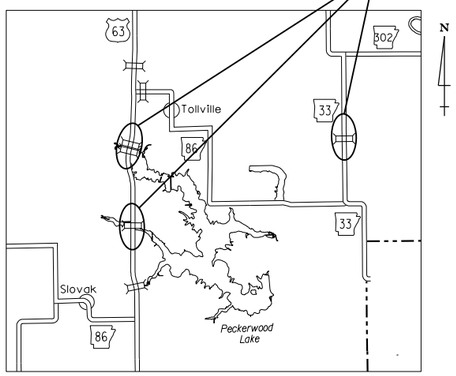
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		1	136
				JOB NO.		061615		
				(2)	LA GRUE BAYOU, WOLF ISLAND SLASH & HONEY CREEK STRS. & APPRS. (S)			



VICINITY MAP

ARKANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS FOR STATE HIGHWAY

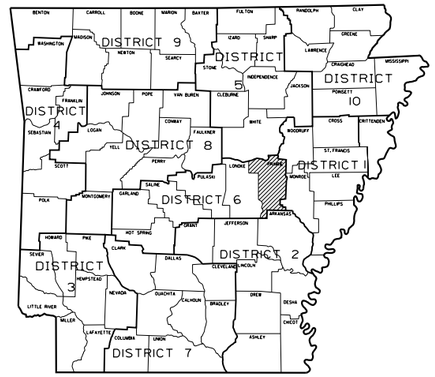
LA GRUE BAYOU, WOLF ISLAND SLASH & HONEY CREEK STRS. & APPRS. (S)

PRAIRIE COUNTY

ROUTE 63 SECTION 11
ROUTE 33 SECTION 5

JOB 061615

FED. AID PROJ. NHPP-0059(16)



ARKANSAS HIGHWAY DISTRICT 6

STRUCTURES OVER 20'-0" SPAN

(1) HWY. 63 STA. 113+02.00 BRIDGE END
BRIDGE NO. 07635 OVER WOLF ISLAND SLASH
100'-0" INTEGRAL PRESTRESSED
GIRDER SPAN (99.00')
75'-0" CLEAR ROADWAY
100'-0" BRIDGE LENGTH
STA. 114+02.00 BRIDGE END

(2) HWY. 63 STA. 216+12.00 BRIDGE END
BRIDGE NO. 07636 OVER LA GRUE BAYOU SOUTH
110'-0" INTEGRAL PRESTRESSED
GIRDER SPAN (109.00')
75'-0" CLEAR ROADWAY
110'-0" BRIDGE LENGTH
STA. 217+22.00 BRIDGE END

(3) HWY. 63 STA. 225+69.50 BRIDGE END
BRIDGE NO. 07637 OVER LA GRUE BAYOU NORTH
110'-0" INTEGRAL PRESTRESSED
GIRDER SPAN (109.00')
75'-0" CLEAR ROADWAY
110'-0" BRIDGE LENGTH
STA. 226+79.50 BRIDGE END

(4) HWY. 33 STA. 27+00 CONSTRUCT
QUAD. 12' X 12' X 72' R.C. BOX CULVERT
WITH 3:1 WINGS LT. AND RT.
Q25 = 1852 CFS D.A. = 10,555 ACRES
SPAN = 51.83'

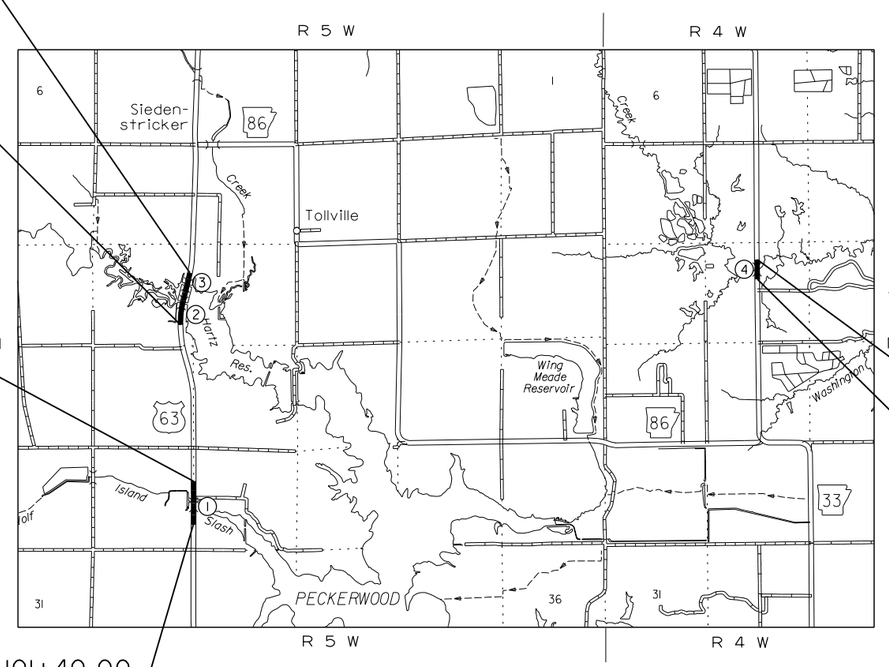
NOT TO SCALE

STA. 233+00.00
END SITE 2
L.M. 8.45

STA. 205+00.00
BEGIN SITE 2

STA. 124+40.00
END SITE 1
L.M. 10.55

STA. 101+40.00
BEGIN SITE 1



STA. 32+50.00
END SITE 3

STA. 22+00.00
BEGIN SITE 3
L.M. 3.04

DESIGN TRAFFIC DATA (SITE 1 & 2)

DESIGN YEAR	2044
2024 ADT	4100
2044 ADT	4800
2044 DHV	528
DIRECTIONAL DISTRIBUTION	60%
TRUCKS	8%
DESIGN SPEED	60 MPH

DESIGN TRAFFIC DATA (SITE 3)

DESIGN YEAR	2044
2024 ADT	640
2044 ADT	750
2044 DHV	83
DIRECTIONAL DISTRIBUTION	60%
TRUCKS	8%
DESIGN SPEED	55 MPH

SITE 1 PROJECT COORDINATES

	BEGIN	MID-POINT	END
LATITUDE	N 34°40'24"	N 34°40'36"	N 34°40'47"
LONGITUDE	W 91°33'19"	W 91°33'19"	W 91°33'18"
STATION	101+40.00	112+90.00	124+40.00

SITE 2 PROJECT COORDINATES

	BEGIN	MID-POINT	END
LATITUDE	N 34°42'09"	N 34°42'22"	N 34°42'36"
LONGITUDE	W 91°33'23"	W 91°33'20"	W 91°33'16"
STATION	205+00.00	219+00.00	233+00.00

SITE 3 PROJECT COORDINATES

	BEGIN	MID-POINT	END
LATITUDE	N 34°42'22"	N 34°42'27"	N 34°42'32"
LONGITUDE	W 91°27'17"	W 91°27'17"	W 91°27'17"
STATION	22+00.00	27+25.00	32+50.00

	HWY. 63				HWY. 33			
GROSS LENGTH OF PROJECT	5100.00	FEET	OR	0.966 MILES	1050.00	FEET	OR	0.199 MILES
NET LENGTH OF ROADWAY	4780.00	FEET	OR	0.905 MILES	998.17	FEET	OR	0.189 MILES
NET LENGTH OF BRIDGES	320.00	FEET	OR	0.061 MILES	51.83	FEET	OR	0.010 MILES
NET LENGTH OF PROJECT	5100.00	FEET	OR	0.966 MILES	1050.00	FEET	OR	0.199 MILES

CERTIFICATE OF AUTHORIZATION GARVER LLC No. 766 ARKANSAS ENGINEER

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No.13422 JOHN F. CANTABERY

DIGITALLY SIGNED 1/2/2024

CGervasini 12/13/2023 7:59:10 AM
WORKSPACE: AHTD
L:\2017\7017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\r061615_CO_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.		2	136
				JOB NO.		061615		
				(2)		INDEX OF SHEETS		

INDEX OF SHEETS

DIGITALLY SIGNED 1/2/2024

SHEET NO.			TITLE	BRIDGE NO.	DRWG.NO.
1			TITLE SHEET		
2			INDEX OF SHEETS		
3			STANDARD DRAWINGS, GOVERNING SPECIFICATIONS, AND GENERAL NOTES		
4	-	8	TYPICAL SECTIONS OF IMPROVEMENT		
9	-	19	SPECIAL DETAILS		
20	-	30	TEMPORARY EROSION CONTROL DETAILS		
31	-	38	MAINTENANCE OF TRAFFIC DETAILS		
39	-	42	PERMANENT PAVEMENT MARKING DETAILS		
43			SOIL BORING LOG		
44	-	47	QUANTITIES		
48			SCHEDULE OF BRIDGE QUANTITIES	07635, 07636, 07637	66491
49			SUMMARY OF QUANTITIES AND REVISIONS		
50	-	56	SURVEY CONTROL DETAILS		
57	-	62	PLAN AND PROFILE SHEETS		
63			LAYOUT OF BRIDGE HIGHWAY 63 OVER WOLF ISLAND SLASH (SHEET 1 OF 2)	07635	66492
64			LAYOUT OF BRIDGE HIGHWAY 63 OVER WOLF ISLAND SLASH (SHEET 2 OF 2)	07635	66493
65			DETAILS OF STAGED CONSTRUCTION HIGHWAY 63 OVER WOLF ISLAND SLASH	07635	66494
66			DETAILS OF END BENTS WOLF ISLAND SLASH (SHEET 1 OF 2)	07635	66495
67			DETAILS OF END BENTS WOLF ISLAND SLASH (SHEET 2 OF 2)	07635	66496
68			DETAILS OF 99'-0" INTEGRAL PRESTRESSED CONCRETE GIRDER SPAN WOLF ISLAND SLASH (SHEET 1 OF 7)	07635	66497
69			DETAILS OF 99'-0" INTEGRAL PRESTRESSED CONCRETE GIRDER SPAN WOLF ISLAND SLASH (SHEET 2 OF 7)	07635	66498
70			DETAILS OF 99'-0" INTEGRAL PRESTRESSED CONCRETE GIRDER SPAN WOLF ISLAND SLASH (SHEET 3 OF 7)	07635	66499
71			DETAILS OF 99'-0" INTEGRAL PRESTRESSED CONCRETE GIRDER SPAN WOLF ISLAND SLASH (SHEET 4 OF 7)	07635	66500
72			DETAILS OF 99'-0" INTEGRAL PRESTRESSED CONCRETE GIRDER SPAN WOLF ISLAND SLASH (SHEET 5 OF 7)	07635	66501
73			DETAILS OF 99'-0" INTEGRAL PRESTRESSED CONCRETE GIRDER SPAN WOLF ISLAND SLASH (SHEET 6 OF 7)	07635	66502
74			DETAILS OF 99'-0" INTEGRAL PRESTRESSED CONCRETE GIRDER SPAN WOLF ISLAND SLASH (SHEET 7 OF 7)	07635	66503
75			LAYOUT OF BRIDGE HIGHWAY 63 OVER LA GRUE BAYOU SOUTH (SHEET 1 OF 3)	07636	66504
76			LAYOUT OF BRIDGE HIGHWAY 63 OVER LA GRUE BAYOU SOUTH (SHEET 2 OF 3)	07636	66505
77			LAYOUT OF BRIDGE HIGHWAY 63 OVER LA GRUE BAYOU SOUTH (SHEET 3 OF 3)	07636	66506
78			DETAILS OF STAGED CONSTRUCTION HIGHWAY 63 OVER LA GRUE BAYOU SOUTH	07636	66507
79			DETAILS OF END BENTS LA GRUE BAYOU SOUTH (SHEET 1 OF 3)	07636	66508
80			DETAILS OF END BENTS LA GRUE BAYOU SOUTH (SHEET 2 OF 3)	07636	66509
81			DETAILS OF END BENTS LA GRUE BAYOU SOUTH (SHEET 3 OF 3)	07636	66510
82			DETAILS OF 109'-0" INTEGRAL PRESTRESSED CONCRETE GIRDER SPAN LA GRUE BAYOU SOUTH (SHEET 1 OF 7)	07636	66511
83			DETAILS OF 109'-0" INTEGRAL PRESTRESSED CONCRETE GIRDER SPAN LA GRUE BAYOU SOUTH (SHEET 2 OF 7)	07636	66512
84			DETAILS OF 109'-0" INTEGRAL PRESTRESSED CONCRETE GIRDER SPAN LA GRUE BAYOU SOUTH (SHEET 3 OF 7)	07636, 07637	66513
85			DETAILS OF 109'-0" INTEGRAL PRESTRESSED CONCRETE GIRDER SPAN LA GRUE BAYOU SOUTH (SHEET 4 OF 7)	07636	66514
86			DETAILS OF 109'-0" INTEGRAL PRESTRESSED CONCRETE GIRDER SPAN LA GRUE BAYOU SOUTH (SHEET 5 OF 7)	07636	66515
87			DETAILS OF 109'-0" INTEGRAL PRESTRESSED CONCRETE GIRDER SPAN LA GRUE BAYOU SOUTH (SHEET 6 OF 7)	07636, 07637	66516
88			DETAILS OF 109'-0" INTEGRAL PRESTRESSED CONCRETE GIRDER SPAN LA GRUE BAYOU SOUTH (SHEET 7 OF 7)	07636	66517
89			LAYOUT OF BRIDGE HIGHWAY 63 OVER LA GRUE BAYOU NORTH (SHEET 1 OF 2)	07637	66518
90			LAYOUT OF BRIDGE HIGHWAY 63 OVER LA GRUE BAYOU NORTH (SHEET 2 OF 2)	07637	66519
91			DETAILS OF STAGED CONSTRUCTION HIGHWAY 63 OVER LA GRUE BAYOU NORTH	07637	66520
92			DETAILS OF END BENTS LA GRUE BAYOU NORTH (SHEET 1 OF 2)	07637	66521
93			DETAILS OF END BENTS LA GRUE BAYOU NORTH (SHEET 2 OF 2)	07637	66522
94			DETAILS OF 109'-0" INTEGRAL PRESTRESSED CONCRETE GIRDER SPAN LA GRUE BAYOU NORTH (SHEET 1 OF 5)	07637	66523
95			DETAILS OF 109'-0" INTEGRAL PRESTRESSED CONCRETE GIRDER SPAN LA GRUE BAYOU NORTH (SHEET 2 OF 5)	07637	66524
96			DETAILS OF 109'-0" INTEGRAL PRESTRESSED CONCRETE GIRDER SPAN LA GRUE BAYOU NORTH (SHEET 3 OF 5)	07637	66525
97			DETAILS OF 109'-0" INTEGRAL PRESTRESSED CONCRETE GIRDER SPAN LA GRUE BAYOU NORTH (SHEET 4 OF 5)	07637	66526
98			DETAILS OF 109'-0" INTEGRAL PRESTRESSED CONCRETE GIRDER SPAN LA GRUE BAYOU NORTH (SHEET 5 OF 5)	07637	66527
99			COMMON SUPERSTRUCTURE DETAILS (SHEET 1 OF 2)	07635, 07636, 07637	66528
100			COMMON SUPERSTRUCTURE DETAILS (SHEET 2 OF 2)	07635, 07636, 07637	66529
101			DETAILS OF TYPE SPECIAL APPROACH GUTTERS	07635, 07636, 07637	66530
102			DETAILS OF TYPE SPECIAL APPROACH SLABS (SHEET 1 OF 2)	07635, 07636, 07637	66531
103			DETAILS OF TYPE SPECIAL APPROACH SLABS (SHEET 2 OF 2)	07635, 07636, 07637	66532
104	-	136	CROSS SECTIONS		

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

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
01-24-24				6	ARK.		3	136
				JOB NO.		061615		

(2) STANDARD DRAWINGS, GOVERNING SPECIFICATIONS, AND GENERAL NOTES

BRIDGE STANDARD DRAWINGS

DRWG.NO.	TITLE	DATE
55000	STANDARD DETAILS FOR EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS	02-27-14
55001	STANDARD DETAILS FOR DUMPED RIPRAP AND FILTER BLANKET AND COMPUTING EXCAVATION FOR STRUCTURES	02-27-14
55005	STANDARD DETAILS FOR PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS	03-24-16
55010	STANDARD DETAILS FOR TYPE D BRIDGE NAME PLATE	04-14-23
55021	STANDARD DETAILS FOR CONCRETE FILLED STEEL SHELL PILES AND PILE ENCASEMENTS	03-24-16
55070	STANDARD DETAILS FOR BRIDGE TRAFFIC RAIL TYPE SSTR36	09-27-22

ROADWAY STANDARD DRAWINGS

DRWG.NO.	TITLE	DATE
DR-2	DETAILS OF DRIVEWAYS & STREET TURNOUTS	05-19-22
FES-1	FLARED END SECTION	10-18-96
FES-2	FLARED END SECTION	10-18-96
GR-6	GUARDRAIL DETAILS	05-19-22
GR-8	GUARDRAIL DETAILS	11-07-19
GR-9	GUARDRAIL DETAILS	11-07-19
GR-10	GUARDRAIL DETAILS	11-07-19
GR-11	GUARDRAIL DETAILS	11-07-19
GR-12	GUARDRAIL DETAILS	05-14-20
MB-1	MAILBOX DETAILS	11-18-04
PBC-1	PRECAST CONCRETE BOX CULVERTS	01-28-15
PCC-1	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PCM-1	METAL PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PCP-1	PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)	02-27-14
PCP-2	PLASTIC PIPE CULVERT (PVC F949)	02-27-14
PCP-3	PLASTIC PIPE CULVERT (POLYPROPYLENE)	02-27-20
PM-1	PAVEMENT MARKING DETAILS	02-27-20
PU-1	DETAILS OF PIPE UNDERDRAIN	12-08-16
RCB-1	REINFORCED CONCRETE BOX CULVERT DETAILS	07-26-12
RCB-2	EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS	11-20-03
SE-2	TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC	11-07-19
TC-1	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	11-07-19
TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	05-20-21
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	08-12-21
TC-4	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	11-07-19
TC-5	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	11-07-19
TEC-1	TEMPORARY EROSION CONTROL DEVICES	11-16-17
TEC-2	TEMPORARY EROSION CONTROL DEVICES	06-02-94
TEC-3	TEMPORARY EROSION CONTROL DEVICES	11-03-94
TEC-4	TEMPORARY EROSION CONTROL DEVICES	07-26-12
WF-2	WIRE FENCE WATER GAPS	04-20-79
WF-4	WIRE FENCE TYPE C AND D	08-22-02

GENERAL NOTES

1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
2. ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
3. ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING U. S. MAILBOXES WITHIN THE PROJECT LIMITS IN SUCH A MANNER THAT THE PUBLIC MAY RECEIVE CONTINUED MAIL SERVICE. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS BID ITEMS.
5. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
6. ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED AS DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO ENSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FENCE TO CONTROL LIVESTOCK IN AREAS WHERE PASTURES ARE SEVERED. WIRE FENCE MAY BE CONSTRUCTED INITIALLY, OR IN LIEU THEREOF, THE CONTRACTOR AT HIS OWN EXPENSE, MAY ELECT TO PROVIDE TEMPORARY FENCING SUITABLE TO CONTAIN LIVESTOCK.
8. THE SEQUENCE AS SHOWN ON THE MAINTENANCE OF TRAFFIC PLANS IS A GENERAL OUTLINE FOR THE CONSTRUCTION OF THIS PROJECT, AND IN NO WAY IS IT INTENDED TO COVER EVERY ITEM IN THE PROJECT. ITEMS NOT CRITICAL TO THE CONSTRUCTION SEQUENCE MAY BE CONSTRUCTED IN ANY STAGE AS APPROVED BY THE RESIDENT ENGINEER.
9. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 2^0 - UNCLASSIFIED EXCAVATION.
10. THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. AFTER SAWING, THE PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN. ANY DAMAGE OF THE ASPHALT PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
11. THIS PROJECT IS COVERED UNDER A SECTION 404 NATIONWIDE 14 PERMIT. REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS, EDITION OF 2014, FOR PERMIT REQUIREMENTS.

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 - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273	SUPPLEMENT - WAGE RATE DETERMINATION
FHWA-1273	SUPPLEMENT - TRAINING PROGRAM - JOB 061615
100-3	CONTRACTOR'S LICENSE
100-4	DEPARTMENT NAME CHANGE
102-2	ISSUANCE OF PROPOSALS
103-2	CONTACT INFORMATION FOR MOTORIST DAMAGE CLAIMS
105-4	MAINTENANCE DURING CONSTRUCTION
107-2	RESTRAINING CONDITIONS
108-1	LIQUIDATED DAMAGES
108-2	WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER
110-1	PROTECTION OF WATER QUALITY AND WETLANDS
210-1	UNCLASSIFIED EXCAVATION
303-1	AGGREGATE BASE COURSE
306-1	QUALITY CONTROL AND ACCEPTANCE
307-1	CEMENT
308-1	CEMENT
400-1	TACK COATS
400-4	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
400-5	PERCENT AIR VOIDS FOR ACHM MIX DESIGNS
400-6	LIQUID ANTI-STRIP ADDITIVE
400-7	TRACKLESS TACK
404-3	DESIGN OF ASPHALT MIXTURES
409-2	ASPHALT LABORATORY FACILITY
410-1	CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
410-2	DEVICES FOR MEASURING DENSITY FOR ROLLING PATTERNS
410-4	EVALUATION OF ACHM SUBLOT REPLACEMENT MATERIAL
416-1	RECYCLED ASPHALT PAVEMENT
501-2	CEMENT
600-2	INCIDENTAL CONSTRUCTION
603-1	LANE CLOSURE NOTIFICATION
604-1	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
604-3	TRAFFIC CONTRCL DEVICES IN CONSTRUCTION ZONES (MASH)
606-1	PIPE CULVERTS FOR SIDE DRAINS
617-1	GUARDRAIL TERMINAL (TYPE 2)
617-2	GUARDRAIL DELINEATORS
620-1	MULCH COVER
621-1	FILTER SOCKS
800-1	STRUCTURES
802-3	CONCRETE FOR STRUCTURES
802-4	CEMENT
804-2	REINFORCING STEEL FOR STRUCTURES
JOB 061615	BIDDING REQUIREMENTS AND CONDITIONS
JOB 061615	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 061615	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 061615	BUY AMERICA - CONSTRUCTION MATERIALS
JOB 061615	CARGO PREFERENCE ACT REQUIREMENTS
JOB 061615	CLASS C FLY ASH IN PORTLAND CEMENT CONCRETE PAVEMENT AND CLASS S(AE) CONCRETE
JOB 061615	COLD MILLING - COUNTY PROPERTY
JOB 061615	CONCRETE BRIDGE DECK CURING AND SURFACE TREATMENT RESTRICTIONS
JOB 061615	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 061615	CONSTRUCTION PROJECT INFORMATION SIGN
JOB 061615	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
JOB 061615	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB 061615	ESTABLISHING CONTRACT TIME – WORKING DAY CONTRACT
JOB 061615	FLEXIBLE BEGINNING OF WORK
JOB 061615	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 061615	LIQUIDATED DAMAGES PROCEDURE FOR BID LETTING
JOB 061615	LONGITUDINAL JOINT DENSITIES FOR ACHM SURFACE COURSES
JOB 061615	MAINTENANCE OF TRAFFIC
JOB 061615	MANDATORY ELECTRONIC CONTRACT
JOB 061615	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB 061615	NESTING SITES OF MIGRATORY BIRDS
JOB 061615	PARTNERING REQUIREMENTS
JOB 061615	PERCENT AIR VOIDS AND NDESIGN FOR ACHM SURFACE MIX DESIGNS
JOB 061615	PLASTIC PIPE
JOB 061615	PRICE ADJUSTMENT FOR ASPHALT BINDER
JOB 061615	PRICE ADJUSTMENT FOR FUEL
JOB 061615	PROHIBITION OF CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT
JOB 061615	ROCK FILL
JOB 061615	RUMBLE STRIPS
JOB 061615	SHORING
JOB 061615	SHORING FOR CULVERTS
JOB 061615	SOIL STABILIZATION
JOB 061615	STORM WATER POLLUTION PREVENTION PLAN
JOB 061615	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 061615	TOTAL SOLAR ECLIPSE
JOB 061615	UTILITY ADJUSTMENTS
JOB 061615	VALUE ENGINEERING
JOB 061615	WARM MIX ASPHALT

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

DIGITALLY SIGNED 1/24/2024

STANDARD DRAWINGS, GOVERNING SPECIFICATIONS, AND GENERAL NOTES

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WORKSPACE: AHTD
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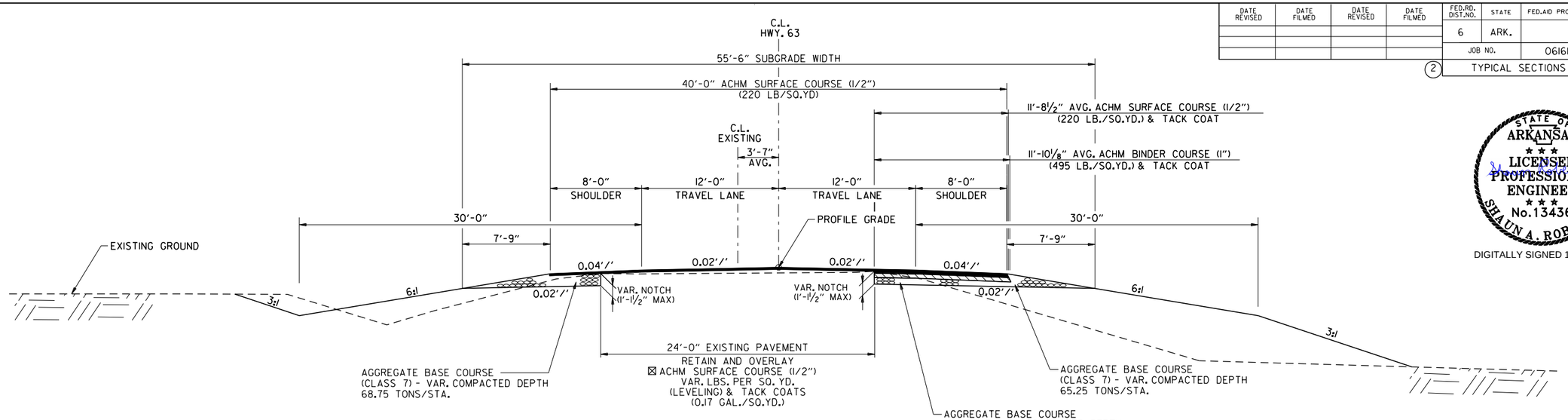
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		4	136
JOB NO.		061615		

(2) TYPICAL SECTIONS OF IMPROVEMENT



HWY. 63 TYPICAL 2-LANE NOTCH AND WIDEN SECTION

STA. 101+40.00 TO STA. 110+00.00
STA. 117+00.00 TO STA. 124+00.00

NOTES:

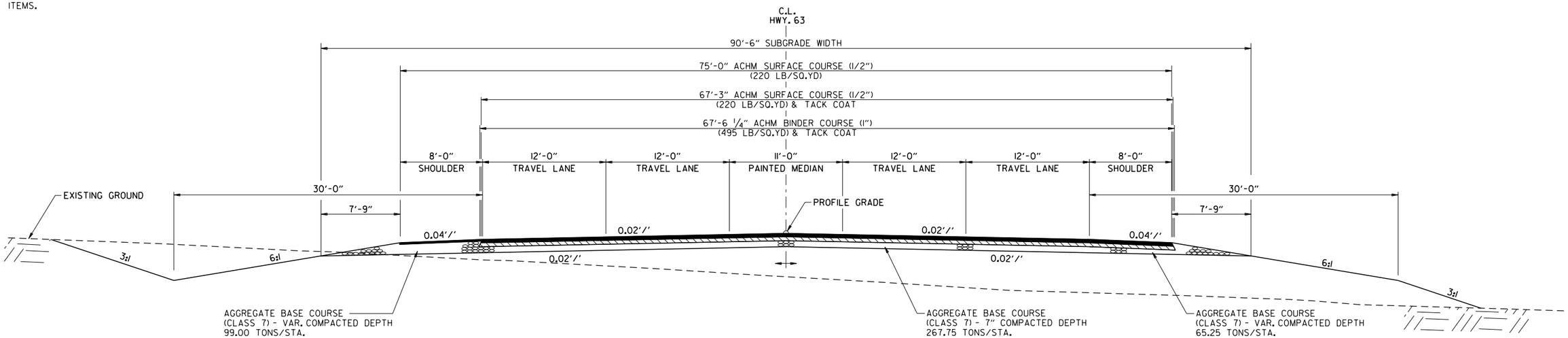
REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

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.

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

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

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 SHALL BE APPROVED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.



HWY. 63 TYPICAL 5-LANE SECTION

STA. 110+00.00 TO STA. 112+65.50
STA. 114+38.50 TO STA. 117+00.00
STA. 223+18.00 TO STA. 225+33.00
STA. 227+16.00 TO STA. 229+44.37

NOTE: SEE BRIDGE LAYOUTS FOR APPROACH SLABS AND BRIDGE STRUCTURES FROM STA. 112+65.50 TO STA. 114+38.50 AND FROM STA. 225+33.00 TO STA. 227+16.00

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 1/2/2024

TYPICAL SECTIONS OF IMPROVEMENT

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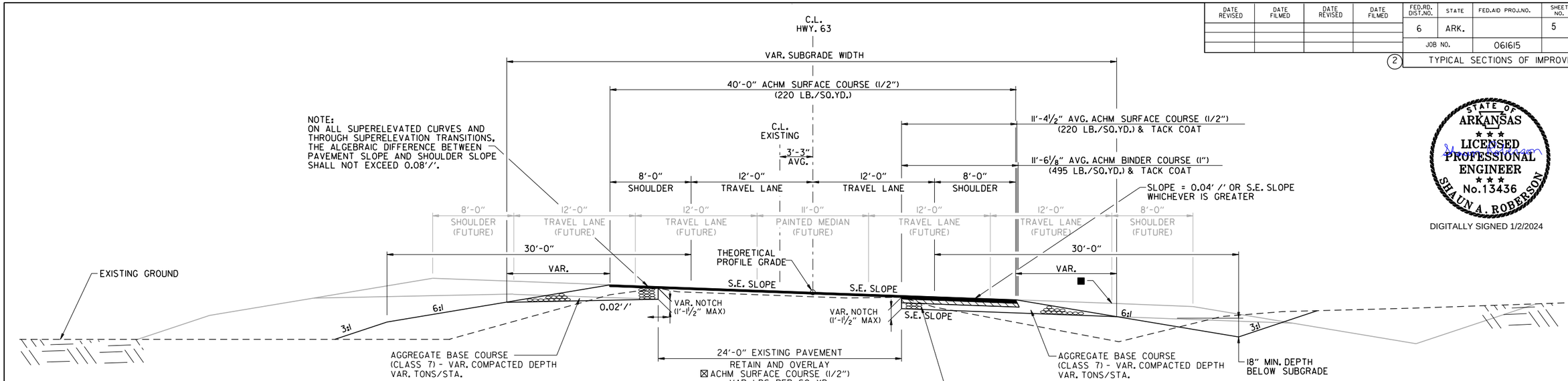
				JOB NO.		061615		
				(2)	TYPICAL SECTIONS OF IMPROVEMENT			



HWY. 63 TYPICAL 2-LANE SUPERELEVATED NOTCH AND WIDEN SECTION

STA. 205+00.00 TO STA. 213+00.00

■ POINT OF SUPERELEVATION ROTATION LOCATED AT INSIDE LANE EDGE OF FUTURE 5-LANE SECTION (0.59' BELOW PROFILE GRADE)

☒ TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

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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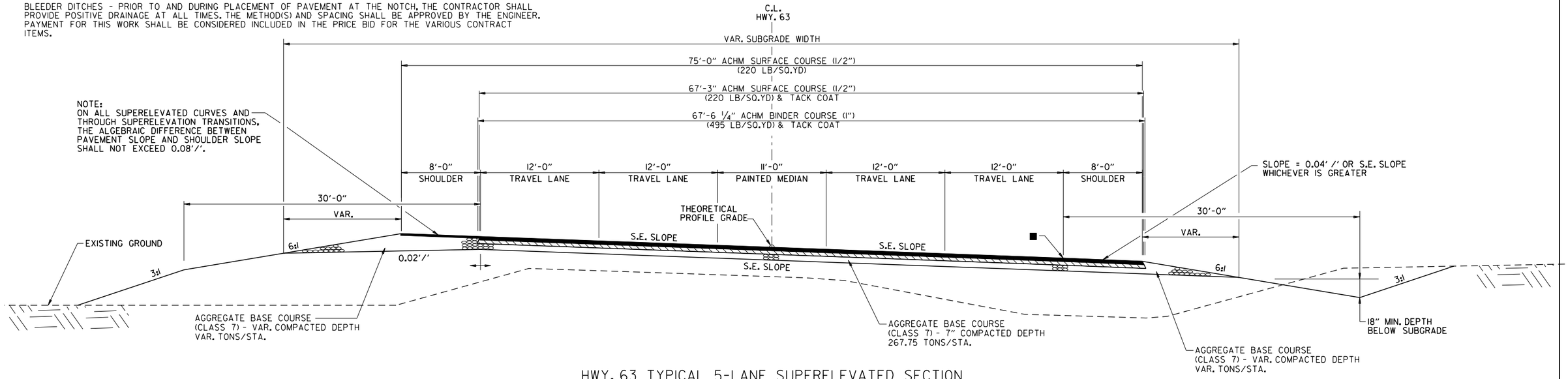

HWY. 63 TYPICAL 5-LANE SUPERELEVATED SECTION

STA. 213+00.00 TO STA. 215+75.50
STA. 217+58.50 TO STA. 220+09.00

■ POINT OF SUPERELEVATION ROTATION (0.59' BELOW PROFILE GRADE)

NOTE: SEE BRIDGE LAYOUTS FOR APPROACH SLABS AND BRIDGE STRUCTURES FROM STA. 215+75.50 TO STA. 217+58.50

TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
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SHAUN A. ROBERSON
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(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
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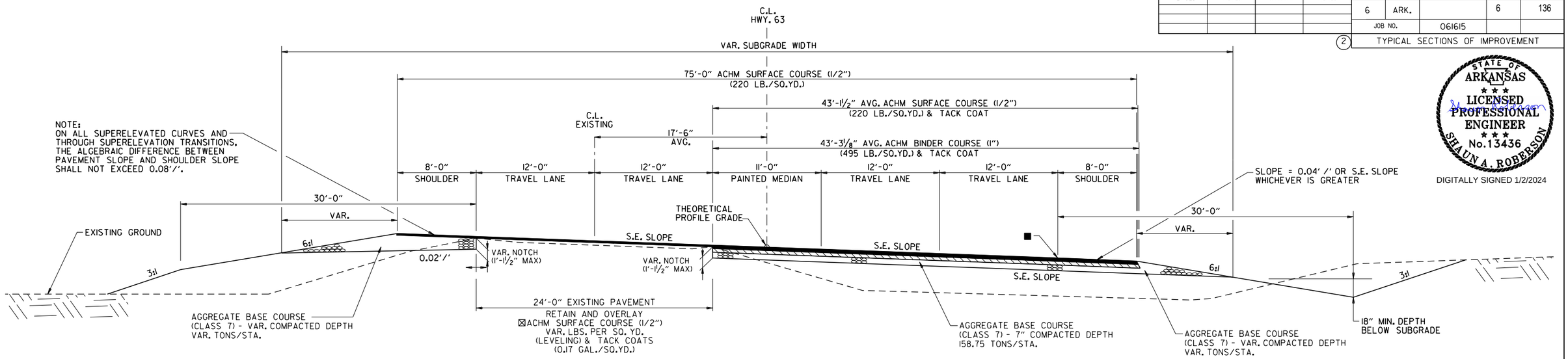

HWY. 63 TYPICAL 5-LANE SUPERELEVATED NOTCH AND WIDEN SECTION

STA. 220+09.00 TO STA. 221+82.93

■ POINT OF SUPERELEVATION ROTATION (0.59' BELOW PROFILE GRADE)

☒ TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

NOTES:

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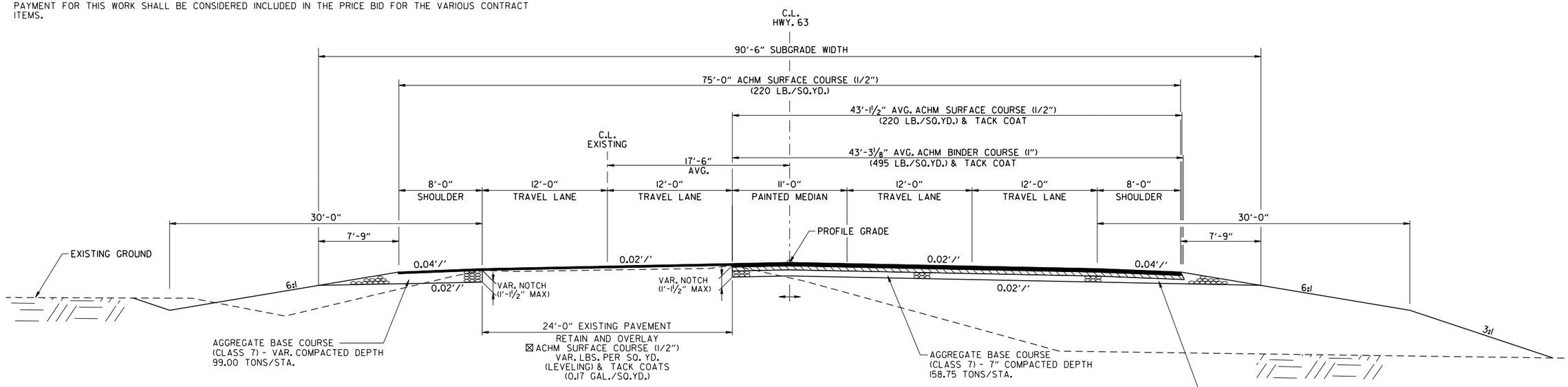

HWY. 63 TYPICAL 5-LANE NOTCH AND WIDEN SECTION

STA. 221+82.93 TO STA. 223+18.00

☒ TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

TYPICAL SECTIONS OF IMPROVEMENT

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(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
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SHAUN A. ROBERSON

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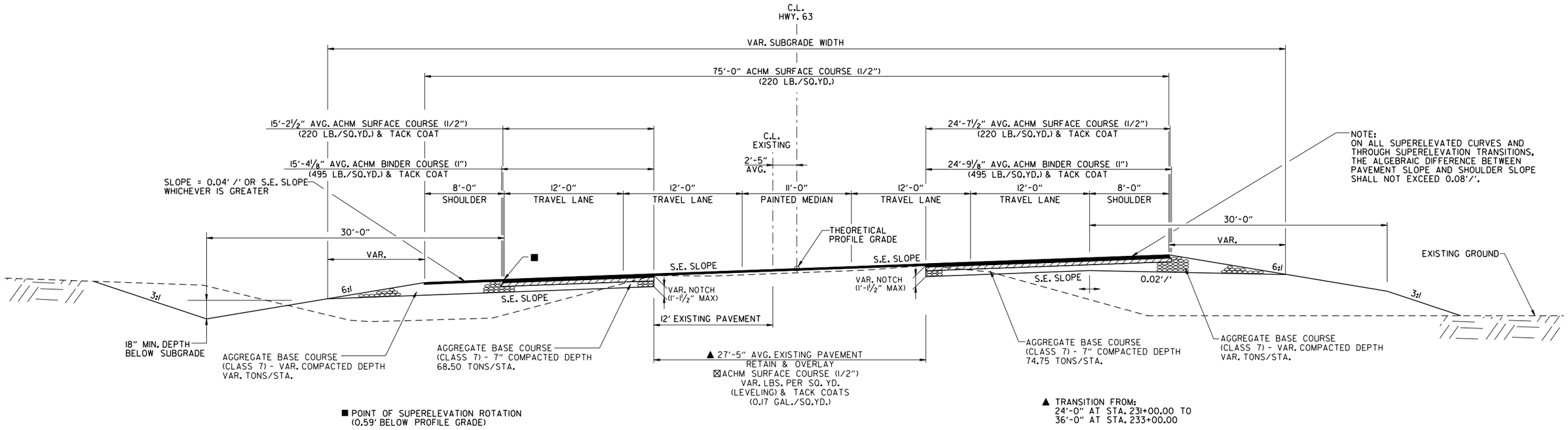

NOTE:
ON ALL SUPERELEVATED CURVES AND THROUGH SUPERELEVATION TRANSITIONS, THE ALGEBRAIC DIFFERENCE BETWEEN PAVEMENT SLOPE AND SHOULDER SLOPE SHALL NOT EXCEED 0.08'/'.

HWY. 63 TYPICAL 5-LANE SUPERELEVATED NOTCH AND WIDEN SECTION

STA. 229+44.37 TO STA. 233+00.00

NOTES:

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(2) TYPICAL SECTIONS OF IMPROVEMENT

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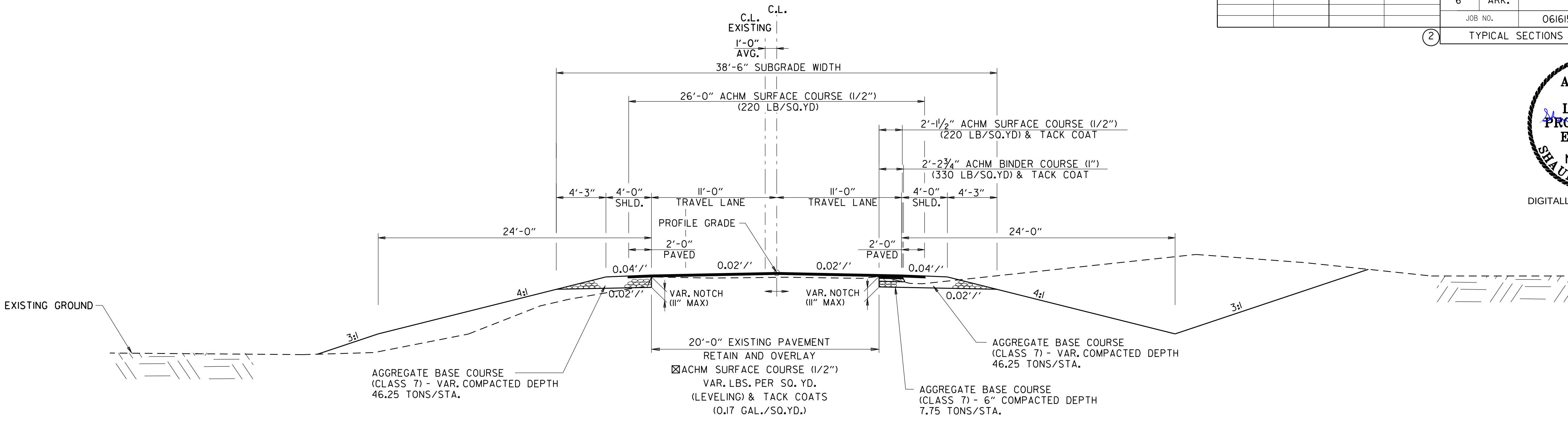

HWY. 33 NOTCH AND WIDENING SECTION

STA. 22+00.00 TO STA. 23+00.00
STA. 31+20.00 TO STA. 32+50.00

☒ TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

NOTES:

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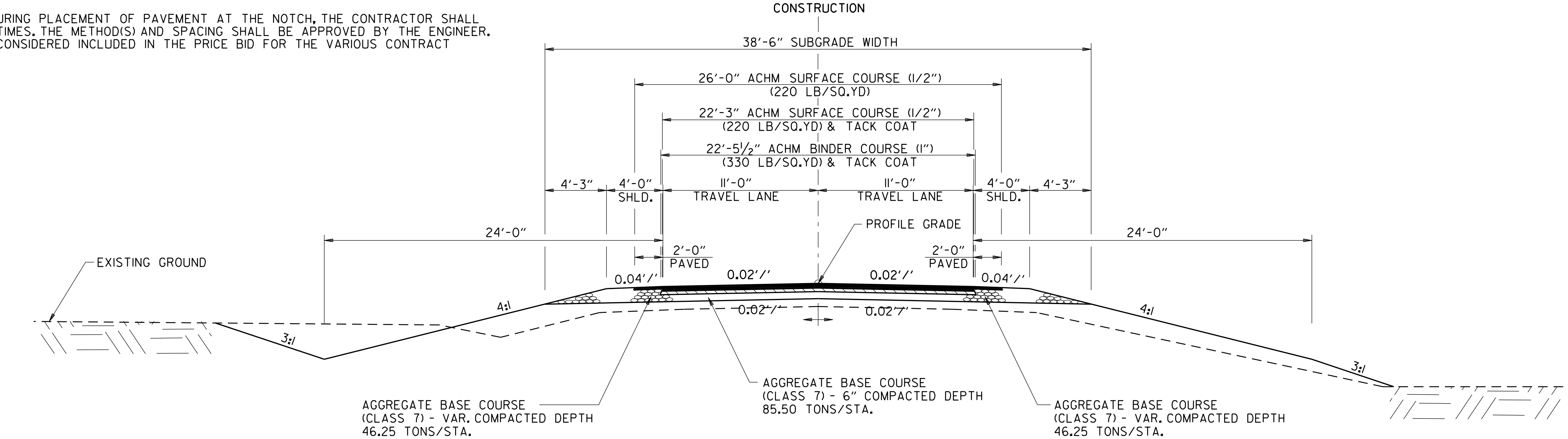

HWY. 33 TYPICAL SECTION

STA. 23+00.00 TO STA. 31+20.00

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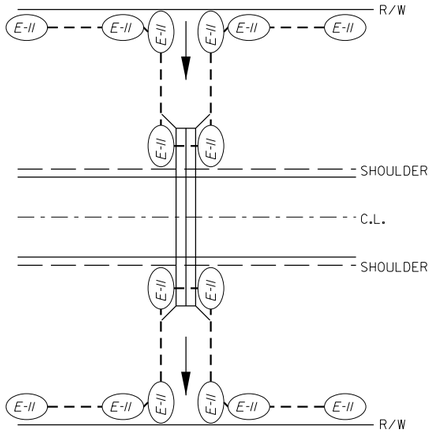
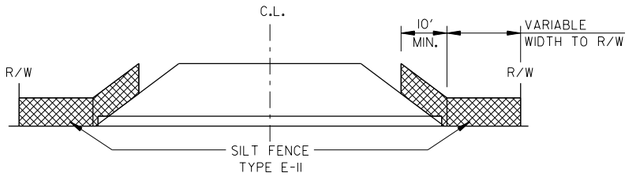
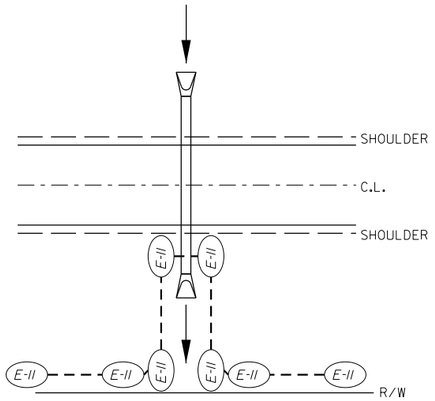
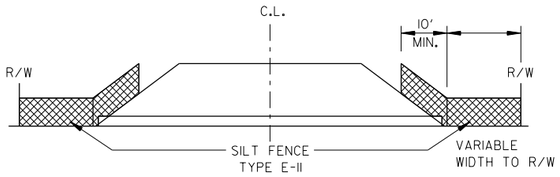
				JOB NO.		061615		
				(2)	SPECIAL DETAILS			



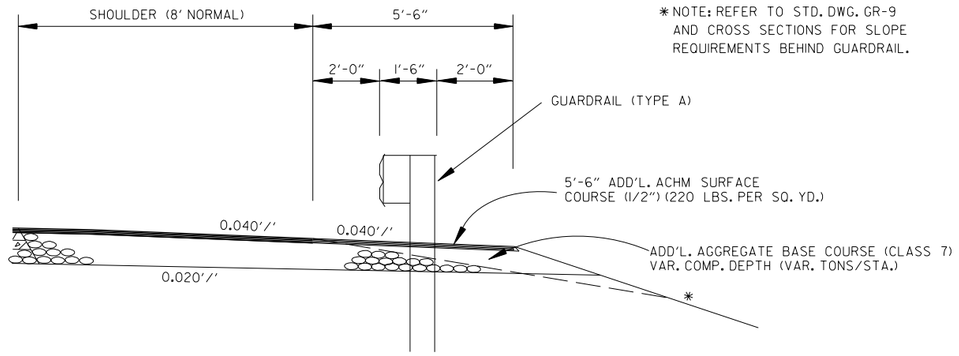


DETAILS OF SILT FENCE
AT R.C. BOX





DETAILS OF SILT FENCE
AT CROSS DRAINS



* NOTE: REFER TO STD. DWG. GR-9 AND CROSS SECTIONS FOR SLOPE REQUIREMENTS BEHIND GUARDRAIL.

WIDENING FOR GUARDRAIL

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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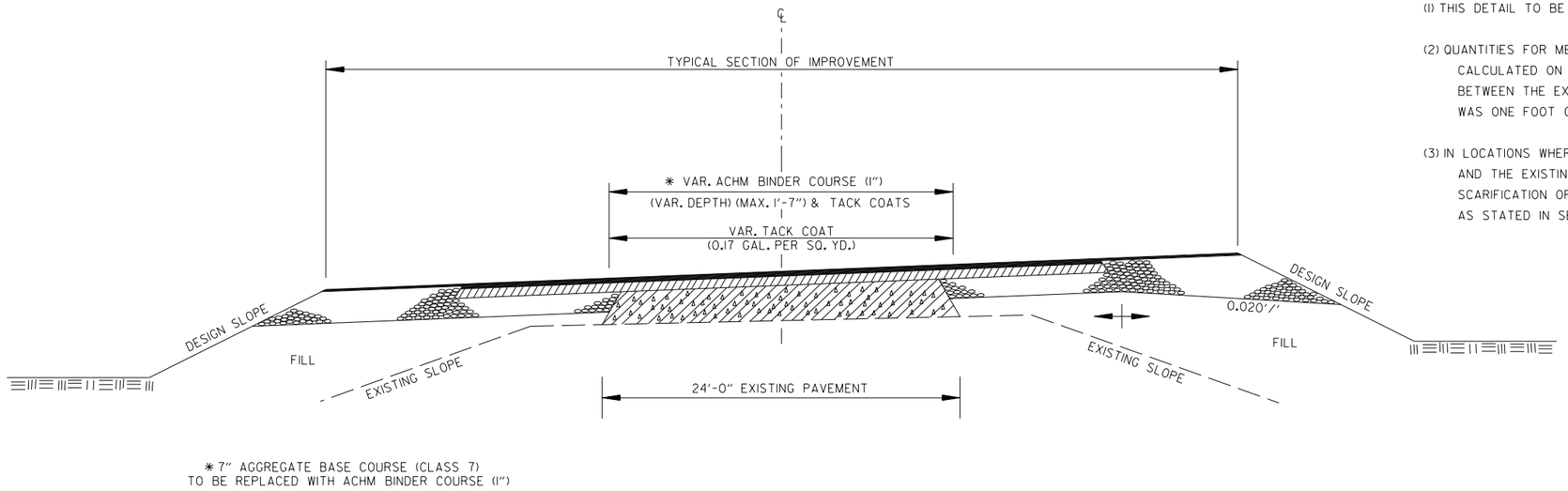
DIGITALLY SIGNED 1/2/2024



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

METHOD OF RAISING GRADE

NOTES:

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

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

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

SPECIAL DETAILS

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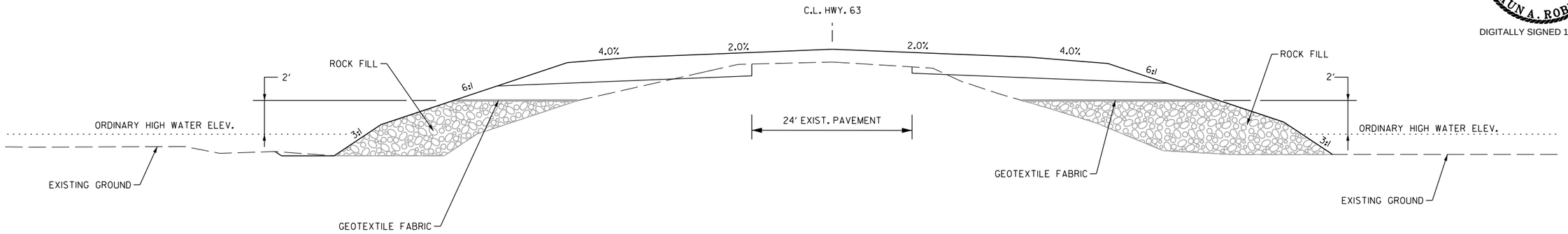
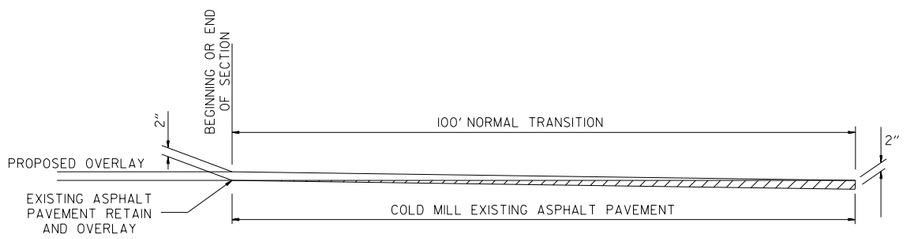


NOTE:
- SEE CROSS SECTIONS FOR ROCK FILL

LOCATION	LT. SIDE	RT. SIDE	O.H.W. ELEV.
SITE 1	STA. 109+00 TO STA. 112+80	STA. 109+00 TO STA. 112+80	206 FT.
	STA. 114+24 TO STA. 119+50	STA. 114+24 TO STA. 120+00	
SITE 2	STA. 205+35 TO STA. 215+90	STA. 205+00 TO STA. 215+90	208 FT.
	STA. 217+44 TO STA. 225+50	STA. 217+44 TO STA. 225+50	
	STA. 227+00 TO STA. 233+00	STA. 227+00 TO STA. 233+00	

DETAIL FOR ROCK FILL



DETAIL FOR TRANSITIONS

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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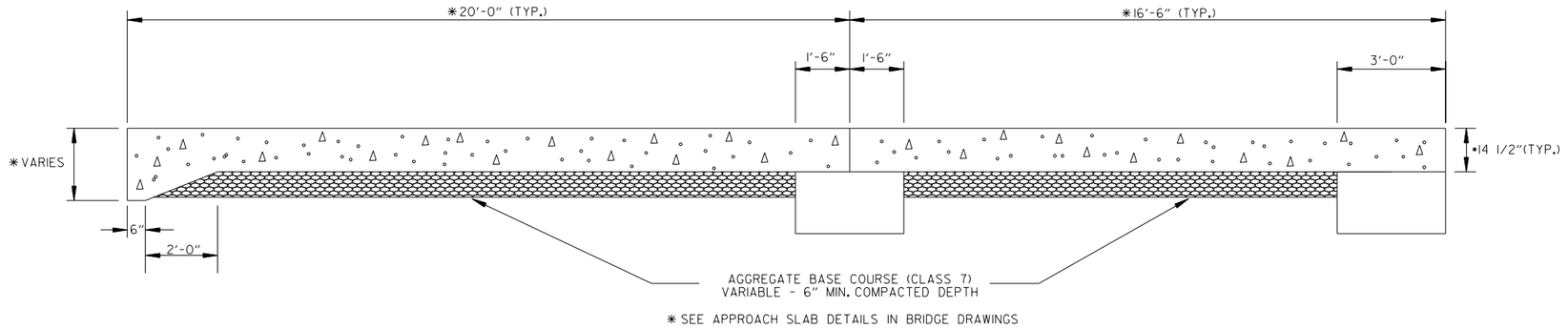
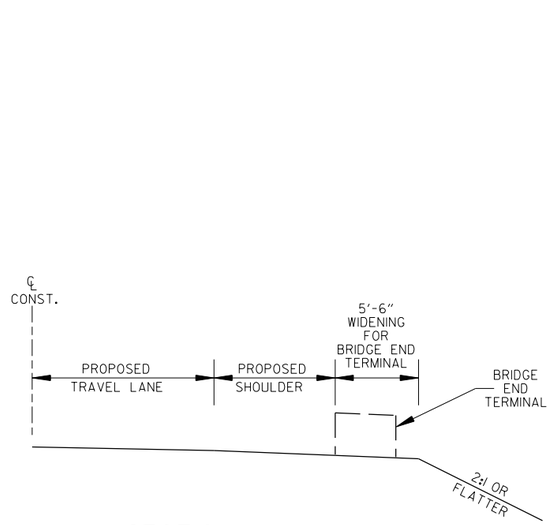


* SEE APPROACH SLAB DETAILS IN BRIDGE DRAWINGS

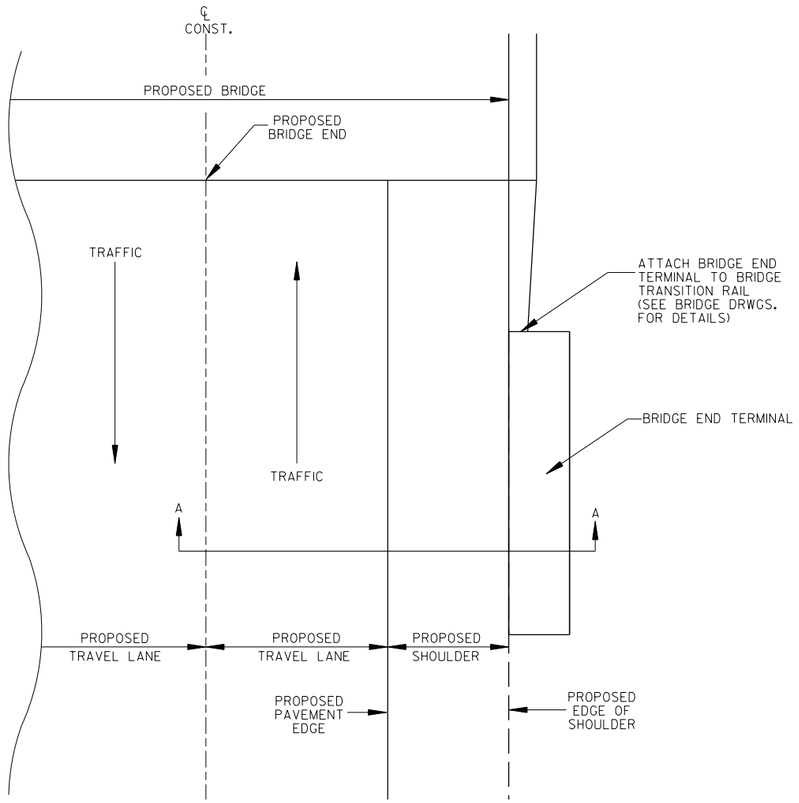
SECTION OF APPROACH SLAB



SECTION A-A

NOTE:
ELIMINATE OR MODIFY APPROACH CURB SECTION TO FIT BRIDGE END TERMINAL. NO PAYMENT SHALL BE MADE FOR ELIMINATING OR MODIFYING THIS CURB, BUT SHALL BE CONSIDERED IN PAYMENT MADE FOR APPROACH GUTTERS OF THE TYPE SPECIFIED.

NOTE:
BRIDGE END TERMINAL SHALL CONFORM TO THE FOLLOWING:
-MAXIMUM LENGTH: 20'
-MAXIMUM HEIGHT: 2.75'
-DESIGN SPEED: 60 MPH



PLAN VIEW

BRIDGE END TERMINAL DETAILS

STATE OF ARKANSAS
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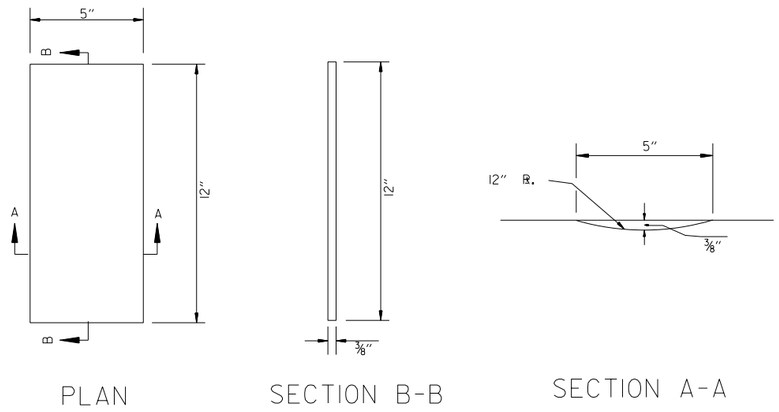
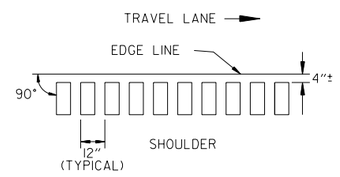
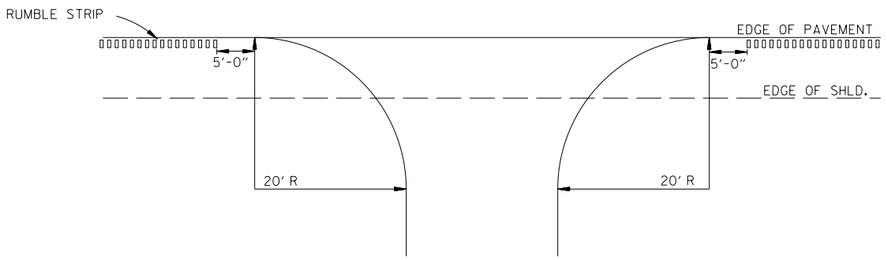


DETAILS OF RUMBLE STRIPS

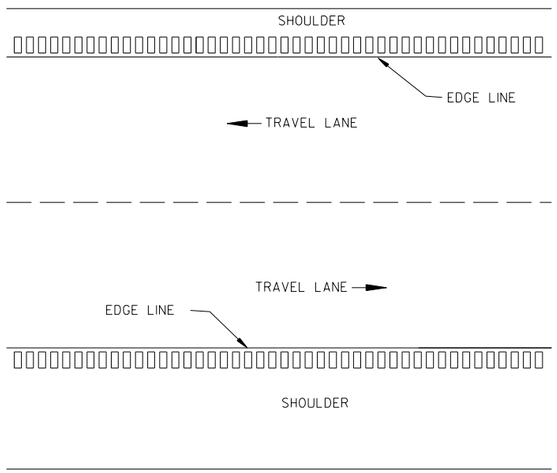
NOTE:
RUMBLE STRIPS LOCATED WITHIN THE FUTURE 5-LANE SECTION SHALL BE PLACE AT THE INTERIM 2-LANE EDGE LINE AS SHOWN IN THE PERMANENT PAVEMENT MARKING DETAILS.



LOCATION PLAN OF RUMBLE STRIPS
LEFT OR RIGHT SHOULDER



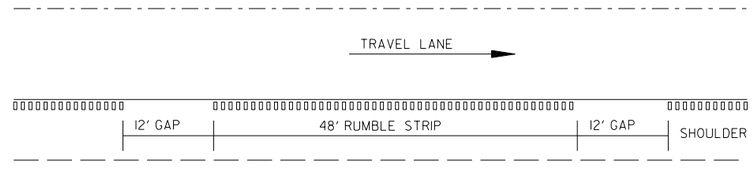
DETAIL FOR RUMBLE STRIP GAP
AT DRIVEWAY TURNOUTS



PLAN VIEW

GENERAL NOTES

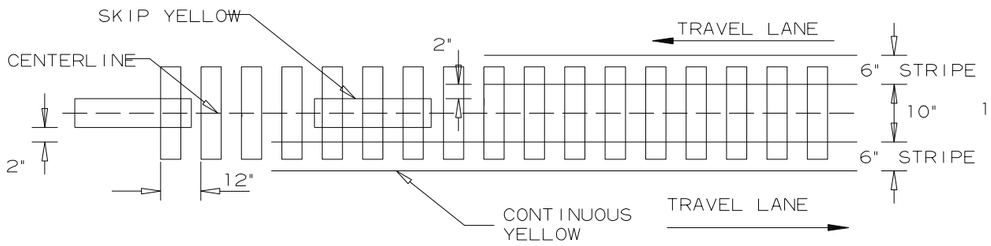
1. RUMBLE STRIPS SHALL NOT BE INSTALLED ON CURB SECTIONS, BRIDGE DECKS, APPROACH SLABS, INTERSECTING STREETS OR ROADWAYS, RESIDENTIAL OR COMMERCIAL DRIVEWAYS OR ACROSS TRANSVERSE JOINTS OF CONCRETE SHOULDERS.
2. RUMBLE STRIPS SHALL NOT BE INSTALLED ON A PAVED SHOULDER THAT IS USED AS A DECELERATION LANE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



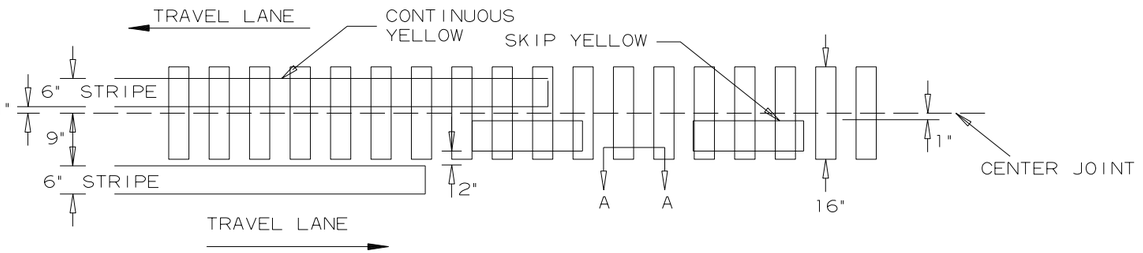
NOTE: GAP PATTERN SHALL BE ADJUSTED BY THE ENGINEER IN THE FIELD ALLOWING FOR DRIVEWAYS TO SERVE AS THE GAP.

DETAIL FOR GAP PATTERN RUMBLE STRIP

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		13	136
				JOB NO.		061615		
				(2)		SPECIAL DETAILS		



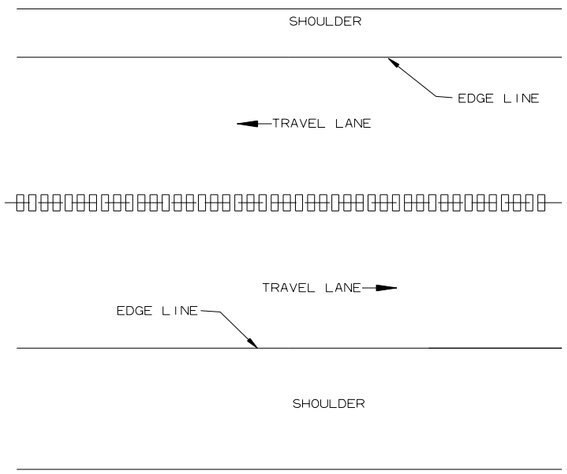
ASPHALT PAVEMENT



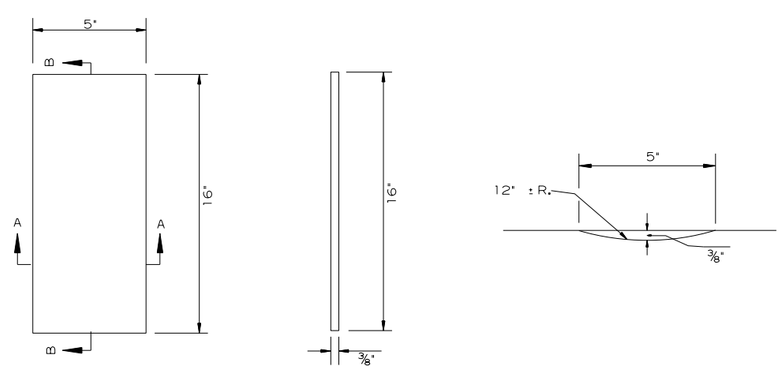
CONCRETE PAVEMENT

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 1/2/2024

LOCATION PLAN OF CENTERLINE RUMBLE STRIPES



PLAN VIEW



PLAN SECTION B-B SECTION A-A

DETAILS OF CENTERLINE RUMBLE STRIPES

GENERAL NOTES

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

CGervasini 12/13/2023 7:59:49 AM
WORKSPACE: AHTD
L:\20\T\70\T628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\r061615_SD_ALL.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.		14	136
				JOB NO.		061615		
				① SPECIAL DETAILS				

INLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT		WINGWALL ANGLE (DEGREE)		FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL		FOOTING DIMENSION PARALLEL WITH HDWL		LENGTH OF WINGWALLS		LENGTH OF FOOTING HEEL	
								AT HDWL	AT WING END	WING A	WING B		WING A	WING B	WING A	WING B	WING A	WING B	WING A	WING B
OW	**H**	**WB**	**CW**	**SK**	**SL**	**K**	**HL**	**WH1**	**WH2**	**AF1**	**AF2**	**WE**	**WF1**	**WF2**	**G1**	**G2**	**W1**	**W2**	**W3**	**W4**
51'-10"	12'-0"	1'-1"	1'-0"	0	3:1	50'-1"	2'-0"	12'-10"	4'-0"	30	30	3'-6"	6'-6"	6'-6"	3'-5 1/2"	3'-5 1/2"	30'-6"	30'-6"	33'-11 3/8"	33'-11 3/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
INLET	INLET
CU.YD	**LBS.**
35.80	2806

WING	F1						F2					F3					F4				F5				F6					
	BAR SIZE	MAX. SPACING	NO. REQ'D	LENGTHS VARY			BAR SIZE	SPACING	NO. REQ'D	LENGTHS		BAR SIZE	SPACING	NO. REQ'D	LENGTHS		BAR SIZE	SPACING	NO. REQ'D	LENGTHS VARY	BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS VARY		
WING A	4	12	31	L	Min	5'-8"	6	12	11	L	10'-3"	4	12	7	L	6'-1"	4	18	10	Min	4	18	6	30'-2"	4	18	21	L	Min	7'-3"
					Max	17'-3"														5'-7"									Max	15'-11"
				X	Min	1'-1"				X	3'-0"				X	2'-4"												X	Min	2'-8"
					Max	4'-0"														Max									Max	2'-8"
				Y	Min	4'-8"				Y	7'-4"				Y	3'-10"				26'-4"								Y	Min	4'-8"
					Max	13'-4"																							Max	13'-4"
WING B	4	12	31	L	Min	5'-8"	6	12	11	L	10'-3"	4	12	7	L	6'-1"	4	18	10	Min	4	18	6	30'-2"	4	18	21	L	Min	7'-3"
					Max	17'-3"														5'-7"									Max	15'-11"
				X	Min	1'-1"				X	3'-0"				X	2'-4"												X	Min	2'-8"
					Max	4'-0"														Max									Max	2'-8"
				Y	Min	4'-8"				Y	7'-4"				Y	3'-10"				26'-4"								Y	Min	4'-8"
					Max	13'-4"																							Max	13'-4"

WING	F7			F8				F9				F10			F11			F12					REINF. STEEL QTY. PER WING (LBS)
	BAR SIZE	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS VARY	BAR SIZE	SPACING	NO. REQ'D	LENGTHS	BAR SIZE	NO. REQ'D	LENGTHS	BAR SIZE	NO. REQ'D	LENGTHS	BAR SIZE	SPACING	NO. REQ'D	LENGTHS		
WING A	4	8	34'-9"	6	18	21	Min	4	18	4	Min	4	2	31'-3"	4	2	33'-7"	6	12	12	L	3'-4"	1403
							3'-0"				17'-8"												
							Max				Max										X	1'-8"	
							5'-11"				33'-4"												
WING B	4	8	34'-9"	6	18	21	Min	4	18	4	Min	4	2	31'-3"	4	2	33'-7"	6	12	12	L	3'-4"	1403
							3'-0"				17'-8"												
							Max				Max										X	1'-8"	
							5'-11"				33'-4"												

MID-SECTION

BAR LAP TABLE

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

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

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

TABULAR DATA BY: CGG DATE: 6/5/2020
CHECKED BY: AEW DATE: 6/18/2020

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

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

INLET SKEWED END SECTION

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

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

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

DIGITALLY SIGNED 1/2/2024

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

INLET SLOPE SECTION(S)

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	TOP SLAB THK.	BOTTOM SLAB THK	SIDE WALL THK	INTERIOR WALL THK.	OVER ALL WIDTH	OVER ALL HEIGHT	SECTION LENGTH (FT.)	TOP SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS								BOTTOM SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS								SIDE WALL REINFORCING STEEL "f0" LENGTH = OH - 4"				INTERIOR WALL REINFORCING STEEL "f1" LENGTH = OH - 4"				TOP SLAB DISTRIBUTION REINF. STEEL "g" LENGTH = SL			BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL			SIDE WALL DISTRIBUTION REINF. STEEL "d1" LENGTH = SL			INTERIOR WALL DISTRIBUTION REINF. STEEL "d2" LENGTH = SL			CLASS "S" CONCRETE	REINFORCING STEEL (GR. 60)
											"a"		Bent "b"		"c"				"d"		Bent "b1"		"f"																									
	D	S	H	T	B	C	W	OW	OH	SL	SIZE	L	SIZE	L	SIZE	L	SPACING	NO. REQ'D	SIZE	L	SIZE	L	SIZE	L	SPACING	NO. REQ'D	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	SIZE	SPACING	NO. REQ'D	SIZE	SPACING	NO. REQ'D	SIZE	SPACING	NO. REQ'D	CU. YDS.	LBS.
	5	12	12																																													

TOTAL	
0.48	142

HDWL DEPTH.	ADDITIONAL REINF. FOR HDWL	"h" HDWL BARS			
HD	LBS.	SIZE	Y	LENGTH	NO. REQ'D
3"	69	4	1'-1"	2'-1"	53

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

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

MID-SECTION

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	TOP SLAB THK.	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVER ALL WIDTH	OVER ALL HEIGHT	SECTION LENGTH (FT.)	TOP SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS								BOTTOM SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS								SIDE WALL REINFORCING STEEL "f0" LENGTH = OH - 4"				INTERIOR WALL REINFORCING STEEL "f1" LENGTH = OH - 4"				TOP SLAB DISTRIBUTION REINF. STEEL "g" LENGTH = SL			BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL			SIDE WALL DISTRIBUTION REINF. STEEL "d1" LENGTH = SL			INTERIOR WALL DISTRIBUTION REINF. STEEL "d2" LENGTH = SL			CLASS "S" CONCRETE	REINFORCING STEEL (GR. 60)
											"a"		Bent "b"		"c"				"d'		Bent "b1"		"f"																									
	D	S	H	T	B	C	W	OW	OH	SL	SIZE	L	SIZE	L	SIZE	L	SPACING	NO. REQ'D	SIZE	L	SIZE	L	SIZE	L	SPACING	NO. REQ'D	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	SIZE	SPACING	NO. REQ'D	SIZE	SPACING	NO. REQ'D	SIZE	SPACING	NO. REQ'D	CU. YDS.	LBS.
A	5	12	12	14	14	11	8	51'-10"	14'-4"	72	5	51'-6"	8	52'-10"	4	51'-6"	18	48	4	51'-6"	5	52'-9"	5	51'-6"	13	66	8	8.5	202	14'-0"	4	12	432	14'-0"	5	12	103	5	12	103	4	10	30	4	12	72	445.19	54243

SHEET 1 OF 2
DETAILS OF R.C. BOX CULVERT
QUADRUPLE BARREL BOX CULVERT
Sta. 27+00

SPECIAL DETAILS

CGGervasini 12/13/2023 7:59:51 AM
WORKSPACE: AHTD
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REVISED DATE: V 1.117

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		15	136
				JOB NO.		061615		
				(1)	SPECIAL DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 1/2/2024

TABULAR DATA BY: CGG DATE: 6/5/2020
CHECKED BY: AEW DATE: 6/18/2020

OUTLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	LENGTH OF FOOTING HEEL WING A	LENGTH OF FOOTING HEEL WING B
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4
51'-10"	12'-0"	1'-1"	1'-0"	0	3:1	50'-1"	2'-0"	12'-10"	4'-0"	30	30	3'-6"	6'-6"	6'-6"	3'-5 1/2"	3'-5 1/2"	30'-6"	30'-6"	33'-11 3/8"	33'-11 3/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
OUTLET	OUTLET
CU.YD	LBS.
37.64	2806

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY			F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS		F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS		F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY
WING A	4	12	31	L	Min	5'-8"	6	12	11	L	10'-3"	4	12	7	L	6'-1"	4	18	10	Min
					Max	17'-3"														5'-7"
				X	Min	1'-1"				X	3'-0"				X	2'-4"				Max
					Max	4'-0"														26'-4"
				Y	Min	4'-8"				Y	7'-4"				Y	3'-10"				
					Max	13'-4"														
WING B	4	12	31	L	Min	5'-8"	6	12	11	L	10'-3"	4	12	7	L	6'-1"	4	18	10	Min
					Max	17'-3"														5'-7"
				X	Min	1'-1"				X	3'-0"				X	2'-4"				Max
					Max	4'-0"														26'-4"
				Y	Min	4'-8"				Y	7'-4"				Y	3'-10"				
					Max	13'-4"														

WING	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY		F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS		REINF. STEEL QTY. PER WING (LBS)
WING A	4	18	6	30'-2"	4	18	21	L	Min 7'-3"	4	8	34'-9"	5	18	21	Min	4	18	4	Min	4	2	31'-3"	4	2	33'-7"	6	12	12	L	3'-4"	1403
									Max 15'-11"							3'-0"				17'-8"										X	1'-8"	
								X	Min 2'-8"							Max				Max												
									Max 2'-8"							5'-11"				33'-4"												
								Y	Min 4'-8"																							
									Max 13'-4"																							
WING B	4	18	6	30'-2"	4	18	21	L	Min 7'-3"	4	8	34'-9"	5	18	21	Min	4	18	4	Min	4	2	31'-3"	4	2	33'-7"	6	12	12	L	3'-4"	1403
									Max 15'-11"							3'-0"				17'-8"										X	1'-8"	
								X	Min 2'-8"							Max				Max												
									Max 2'-8"							5'-11"				33'-4"												
								Y	Min 4'-8"																							
									Max 13'-4"																							

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

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

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

OUTLET SKEWED END SECTION

SKEW (DEGREE)	SLOPE	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THK.	HDWL DEPTH	BOTTOM SLAB THK.	SIDE WALL THK.	INTER OR WALL THK.	OVER ALL WIDTH	OVER ALL HEIGHT
SK	SL	D	S	H	LL	T	HD	B	C	W	OW	OH

TOP SLAB REINFORCING STEEL "a" SIZE	"a" SPACING	"a" LENGTHS VARY	"a" NO. REQ'D	"c" SIZE	"c" SPACING	"c" LENGTHS VARY	"c" NO. REQ'D
		Max				Max	
		Min				Min	

BOTTOM SLAB REINFORCING STEEL "d" SIZE	"d" SPACING	"d" LENGTHS VARY	"d" NO. REQ'D	"f" SIZE	"f" SPACING	"f" LENGTHS VARY	"f" NO. REQ'D
		Max				Max	
		Min				Min	

SIDE WALL REINFORCING STEEL "f0" SIZE	"f0" SPACING	"f0" NO. REQ'D	"f0" LENGTH

INTERIOR WALL REINFORCING STEEL "f1" SIZE	"f1" SPACING	"f1" NO. REQ'D	"f1" LENGTH

TOP SLAB DISTRIBUTION REINFORCING STEEL "g" SIZE	"g" SPACING	"g" NO. REQ'D	"g" LENGTHS VARY
			Max
			Min

BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY
			Max
			Min

SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH
			LONG
			SHORT

INTERIOR WALL DISTRIBUTION REINFORCING STEEL "d2" SIZE	"d2" SPACING	"d2" NO. REQ'D	"d2" LENGTH
			LONG
			MID
			SHORT

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

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

OUTLET SLOPE SECTION(S)

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

TOP SLAB REINFORCING STEEL — LENGTH = OW - 4" + BENDS

"a" SIZE	"a" L	Bent "b" SIZE	Bent "b" L	"c" SIZE	"c" L	SPACING	NO. REQ'D

BOTTOM SLAB REINFORCING STEEL — LENGTH = OW - 4" + BENDS

"d" SIZE	"d" L	Bent "b1" SIZE	Bent "b1" L	"f" SIZE	"f" L	SPACING	NO. REQ'D

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

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

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

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

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

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

HDWL DEPTH HD	ADDITIONAL REINF. FOR HDWL LBS.	"h" HDWL BARS SIZE	Y	LENGTH	NO. REQ'D
3"	69	4	1'-1"	2'-1"	53

CLASS "S" CONCRETE CU. YDS.	REINFORCING STEEL (GR. 60) LBS.
TOTAL	
0.48	142

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

Unless otherwise noted, all dimensions are in inches.

SHEET 2 OF 2
DETAILS OF R.C. BOX CULVERT
QUADRUPLE BARREL BOX CULVERT
Sta. 27+00

SPECIAL DETAILS

CGervasini 12/13/2023 8:00:11 AM
WORKSPACE: AHTD
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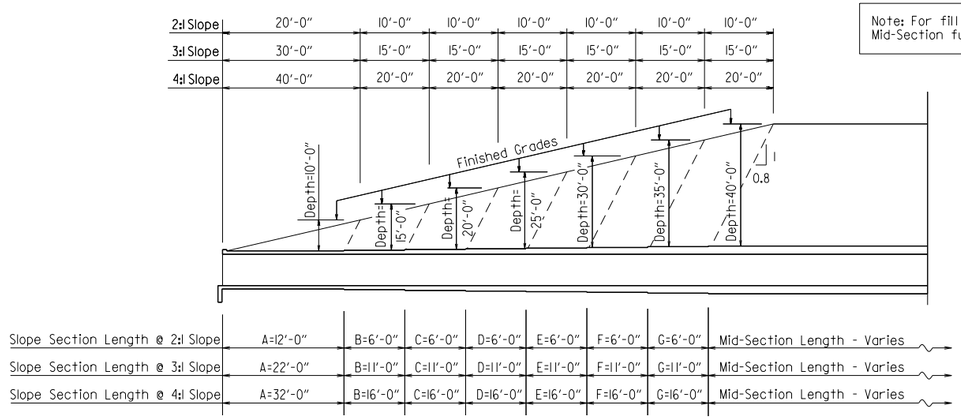
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		16	136
				JOB NO.		061615		

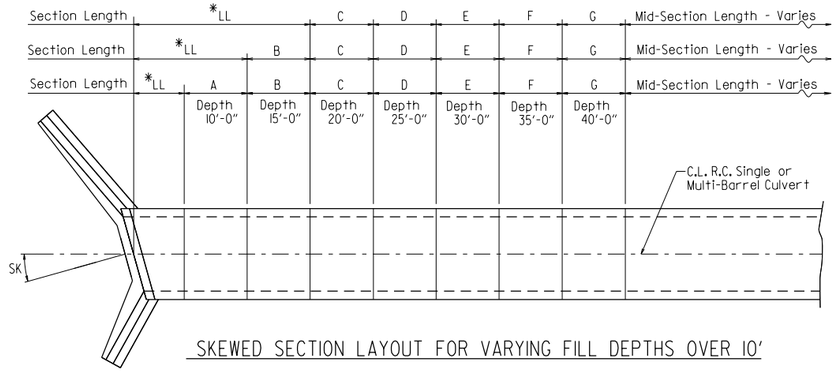
(1) SPECIAL DETAILS

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

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



LONGITUDINAL SECTION LENGTH SCHEDULE FOR VARYING FILL DEPTHS OVER 10'

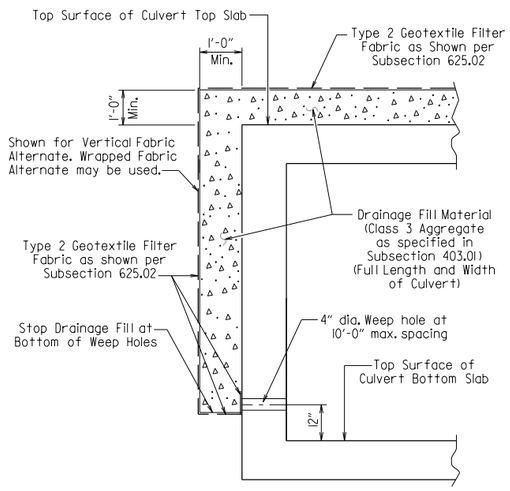


SKEWED SECTION LAYOUT FOR VARYING FILL DEPTHS OVER 10'

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

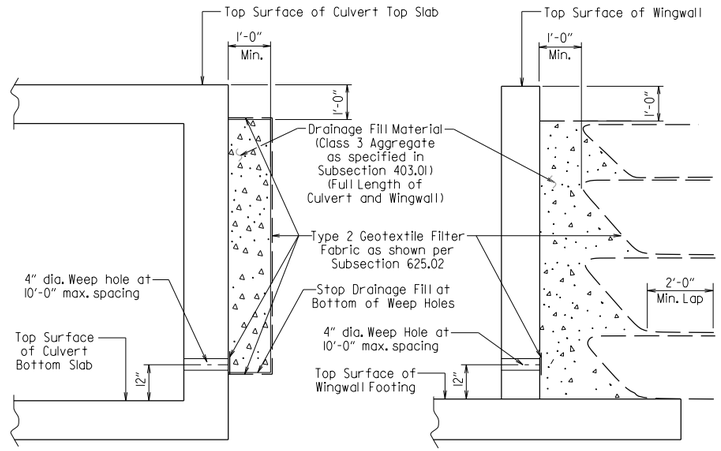
DIGITALLY SIGNED 1/2/2024

Lengths for Non-Skewed Boxes



CULVERT DRAINAGE DETAIL FOR ROCK FILL

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

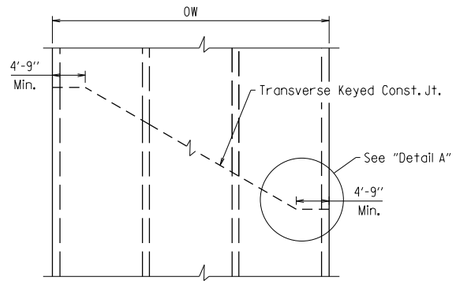


For Details of Excavation and Pay Limits, see Standard Drawing RCB-2.

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

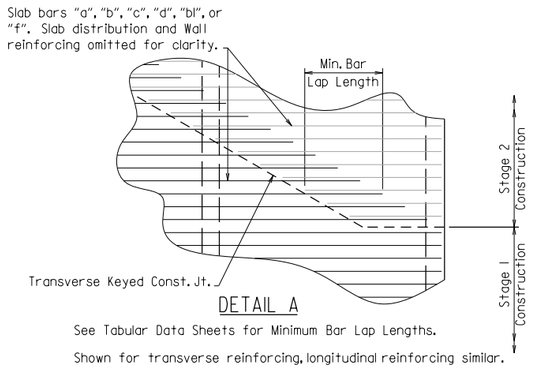
WRAPPED FABRIC ALTERNATE
(Shown for Wingwall, Similar for Culvert)

WINGWALL & CULVERT DRAINAGE DETAIL



SKEWED TRANSVERSE JOINT DETAIL

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



DETAIL A

See Tabular Data Sheets for Minimum Bar Lap Lengths.

Shown for transverse reinforcing, longitudinal reinforcing similar.

GENERAL NOTES:

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

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

LIVE LOADING: HL-93

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

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

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

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

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

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

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

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

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

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

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

SHEET 1 OF 4

GENERAL DETAILS OF R.C. BOX CULVERT

GENERAL NOTES &
LONGITUDINAL SECTION LENGTH SCHEDULE

SPECIAL DETAILS

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WORKSPACE: AHTD
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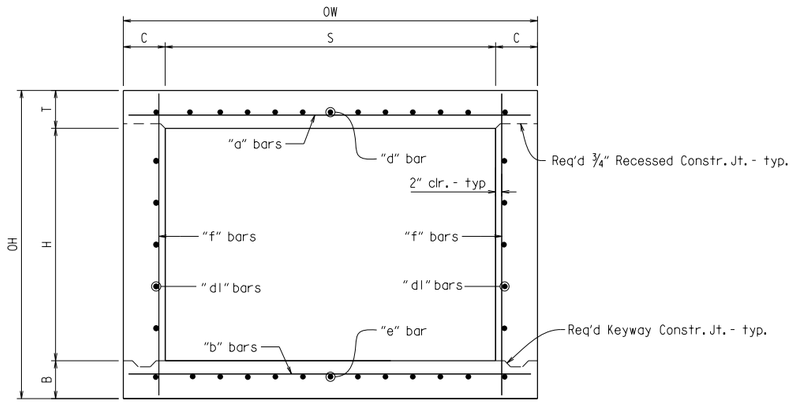
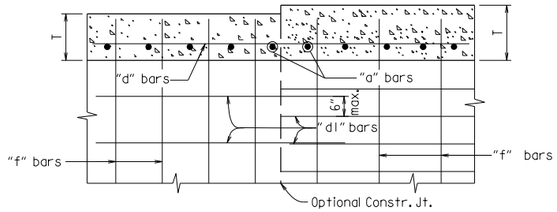
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		17	136
				JOB NO.		061615		
				(1)		SPECIAL DETAILS		

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



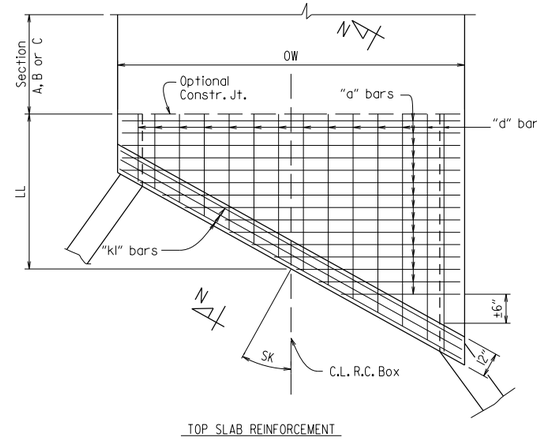
TYPICAL SECTION M-M



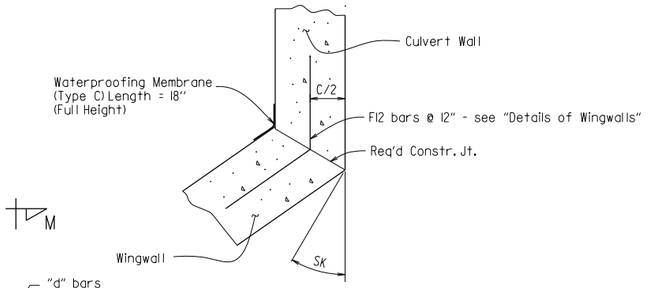
Longitudinal Bar Spacing at individual sections shall be maintained, which may result in noncontact bar laps.

LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

TOP SLAB SHOWN, BOTTOM SLAB SIMILAR

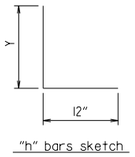


TOP SLAB REINFORCEMENT

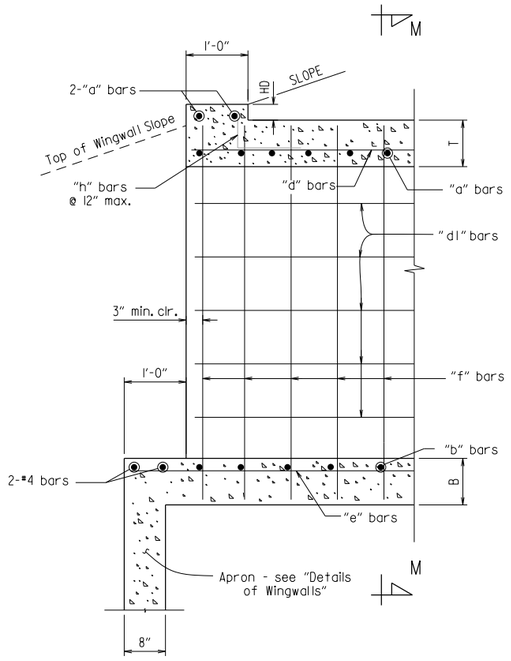


WINGWALL ATTACHMENT

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

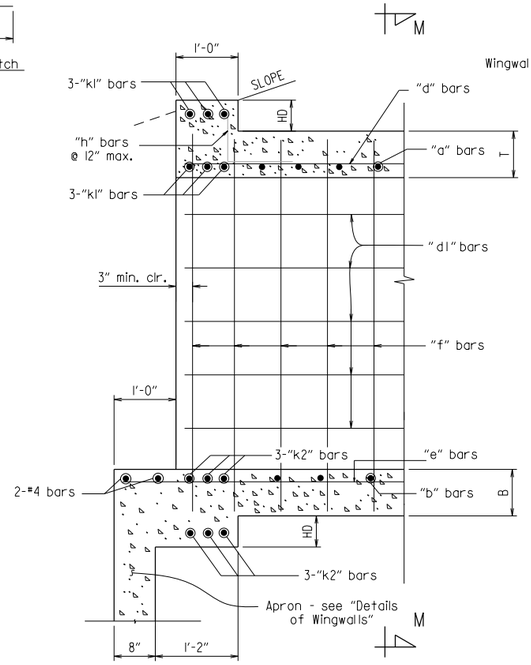


"h" bars sketch



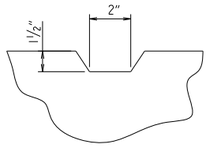
PART LONGITUDINAL SECTION

(Non-Skewed Ends)



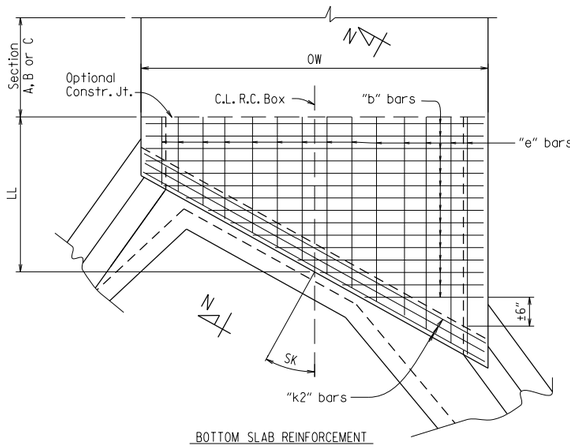
PART LONGITUDINAL SECTION N-N

(Skewed Ends)



TYPICAL KEYWAY DETAIL

(All Construction Joints)



BOTTOM SLAB REINFORCEMENT

SKEWED END SECTION DETAILS

SHEET 2 OF 4

GENERAL DETAILS OF R.C. BOX CULVERT

DETAILS OF SINGLE BARREL R.C. BOX CULVERT

SPECIAL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 1/2/2024

CGervasini 12/13/2023 8:00:40 AM
WORKSPACE: AHTD
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V 1.1.17
REVISED DATE:

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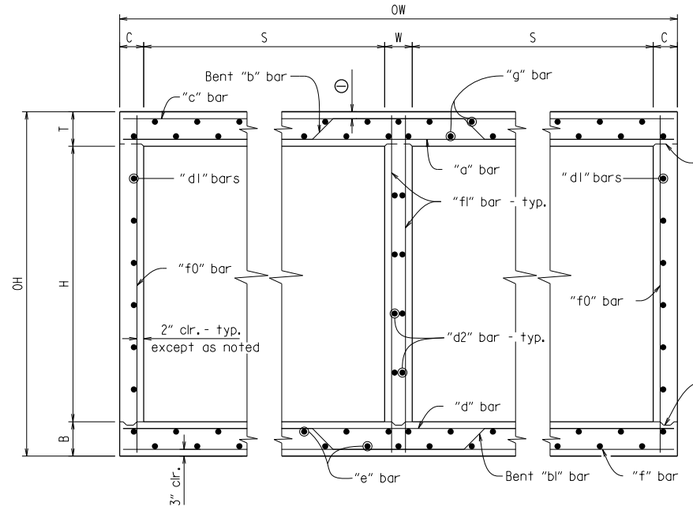
				6	ARK.		18	136
				JOB NO.		061615		

(1) SPECIAL DETAILS

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

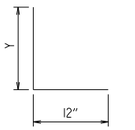
Note: When top slab of culvert serves as finished roadway surface, see General Notes on Sheet 1 of 4.



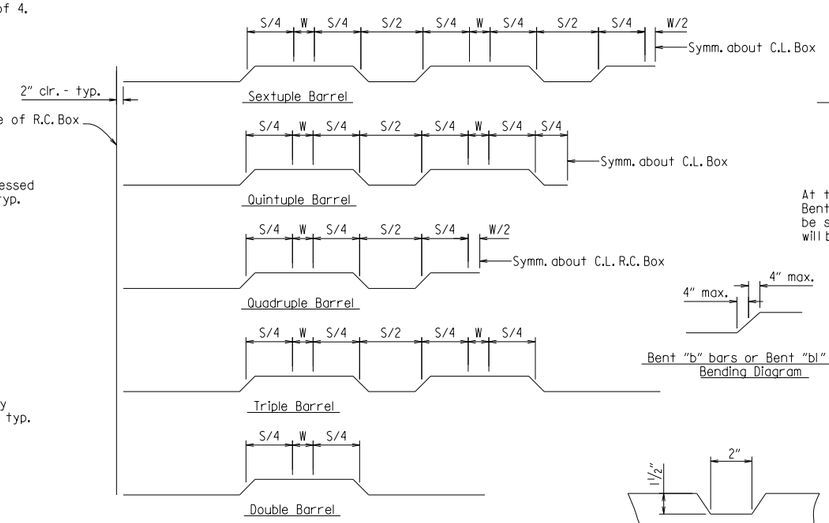
TYPICAL SECTION M-M

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

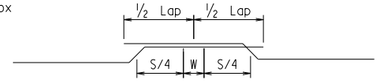
Bottom Slab
Straight "d" bars shall alternate with Bent "bl" bars in top.
Straight "f" bars shall alternate with Bent "bl" bars in bottom.



"h" bars sketch



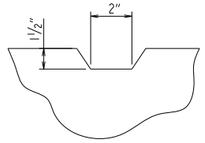
Bent "b" bars or Bent "bl" bars sketch



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

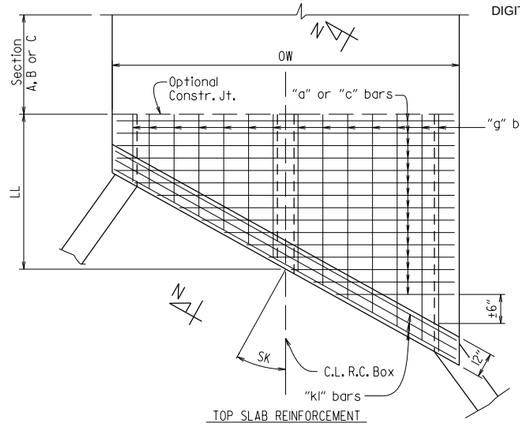
At the Contractor's option in lieu of providing Bent "b" or Bent "bl" bars, one bar top and bottom of equivalent size may be substituted for each bent bar. Payment for the reinforcing will be based on the weight of the "b" or "bl" bar.

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

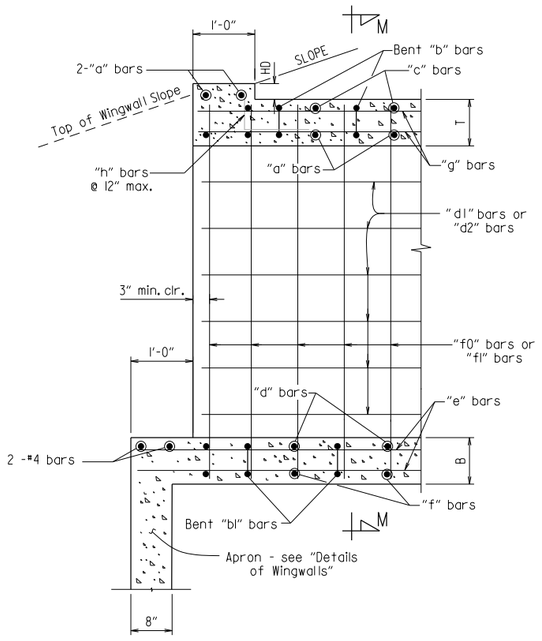


TYPICAL KEYWAY DETAIL

(All Construction Joints)

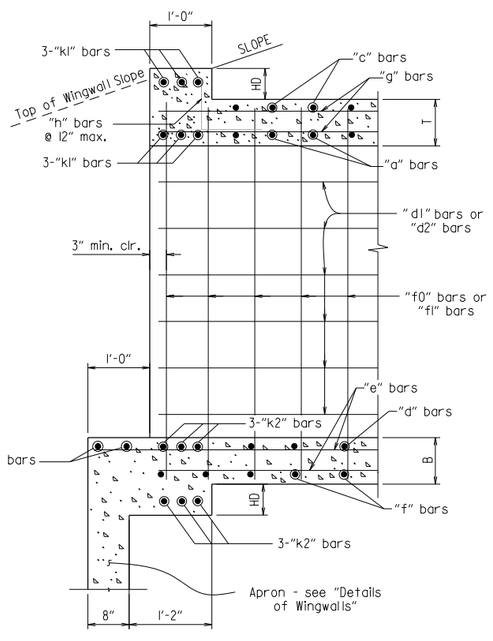


TOP SLAB REINFORCEMENT
Straight "c" bars in top.
Straight "a" bars in bottom.



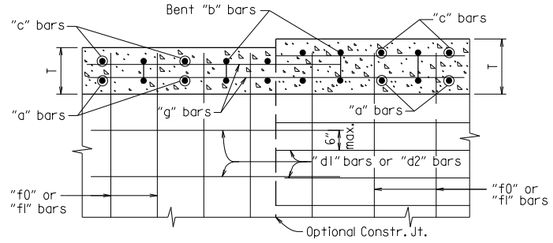
PART LONGITUDINAL SECTION

(Non-Skewed Ends)



PART LONGITUDINAL SECTION N-N

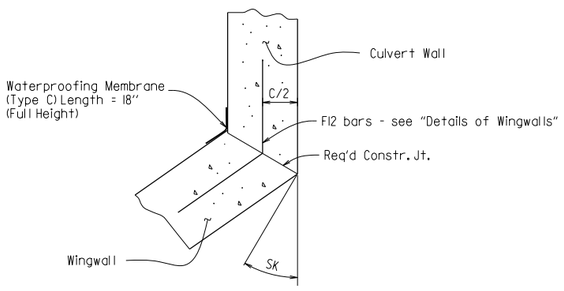
(Skewed Ends)



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

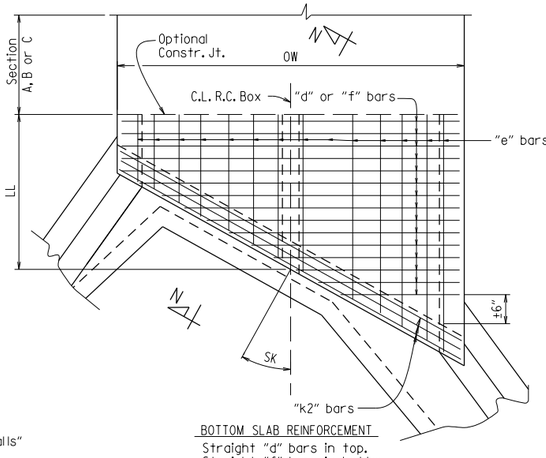
LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

TOP SLAB SHOWN, BOTTOM SLAB SIMILAR



WINGWALL ATTACHMENT

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



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

SKEWED END SECTION DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 1/2/2024

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

DETAILS OF MULTI-BARREL R.C. BOX CULVERT

SPECIAL DETAILS

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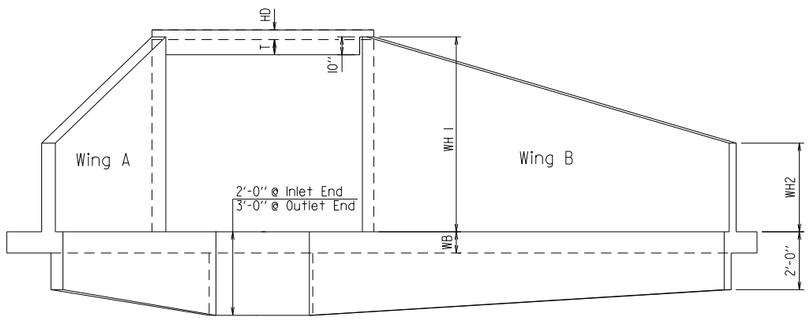
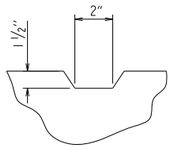


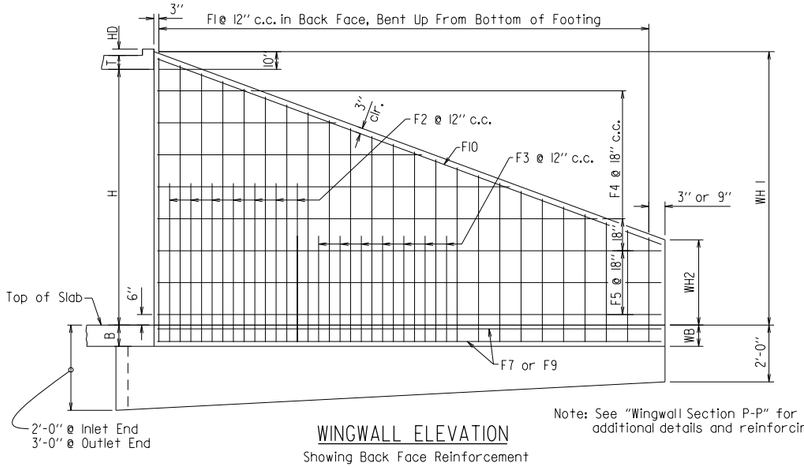
END ELEVATION

Flared Wingwalls Shown



TYPICAL KEYWAY DETAIL

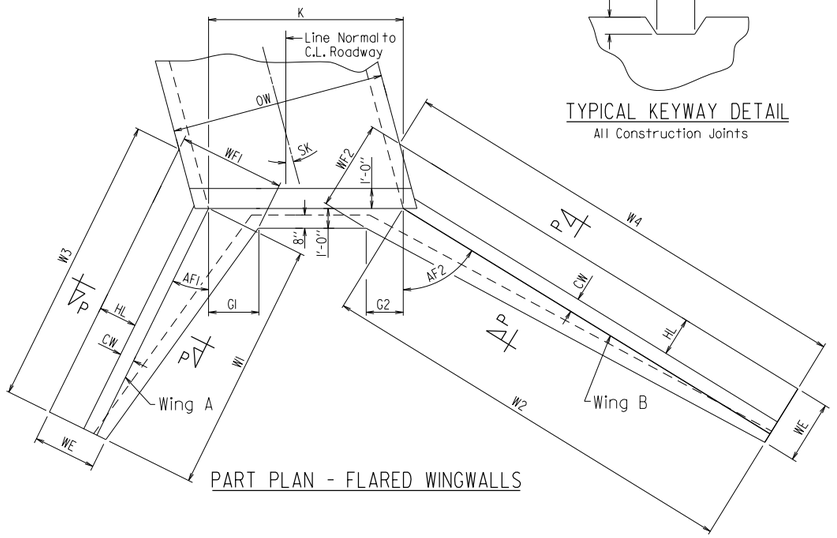
All Construction Joints



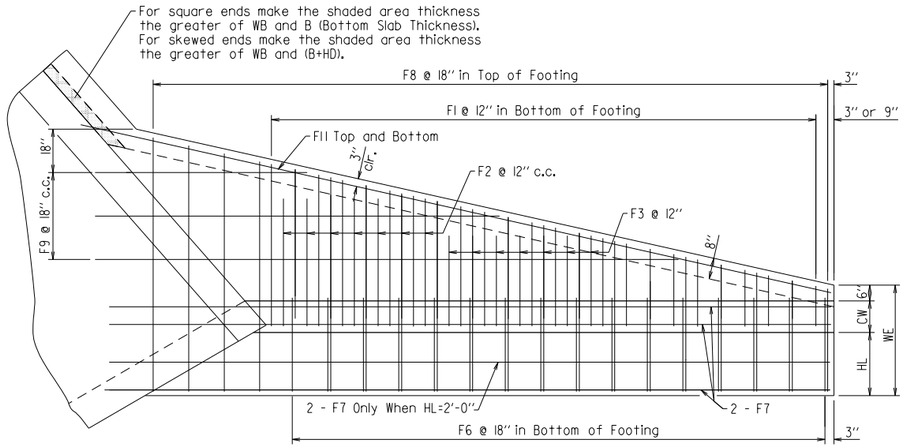
WINGWALL ELEVATION

Showing Back Face Reinforcement

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

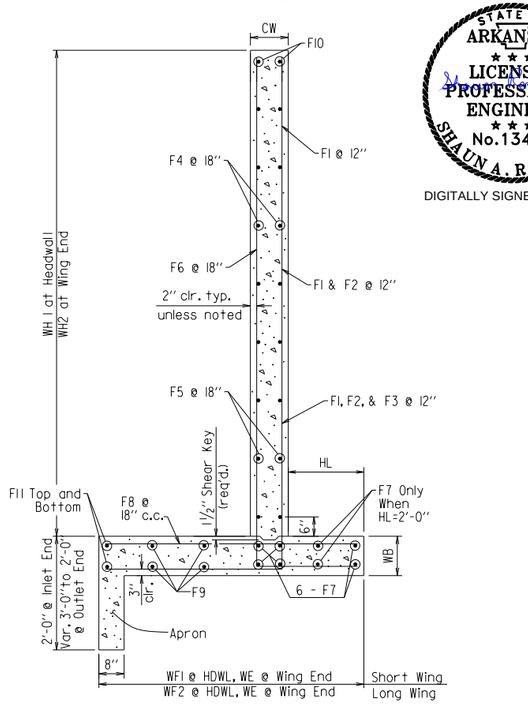


PART PLAN - FLARED WINGWALLS

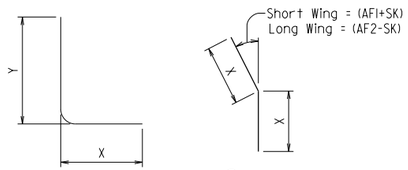


PLAN - FLARED WINGWALLS

Showing Footing Reinforcement



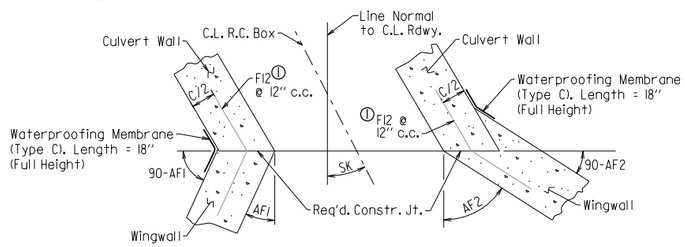
WINGWALL SECTION P-P



F1, F2, F3, & F6 BARS

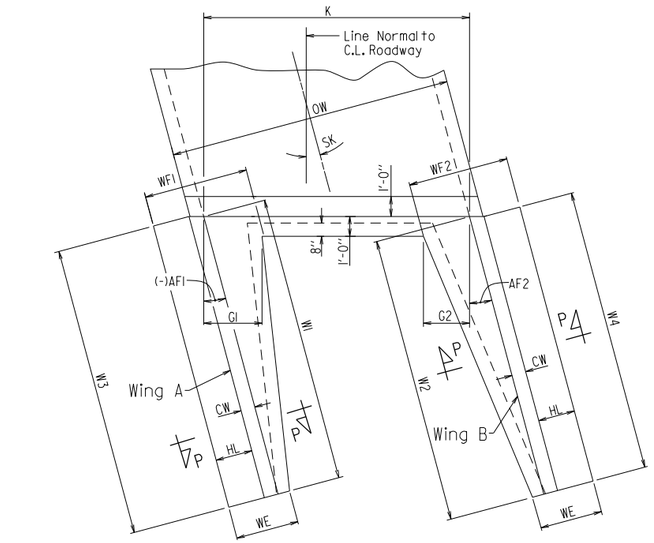
(1) F12 BAR

(1) F12 is a straight bar for parallel wingwalls

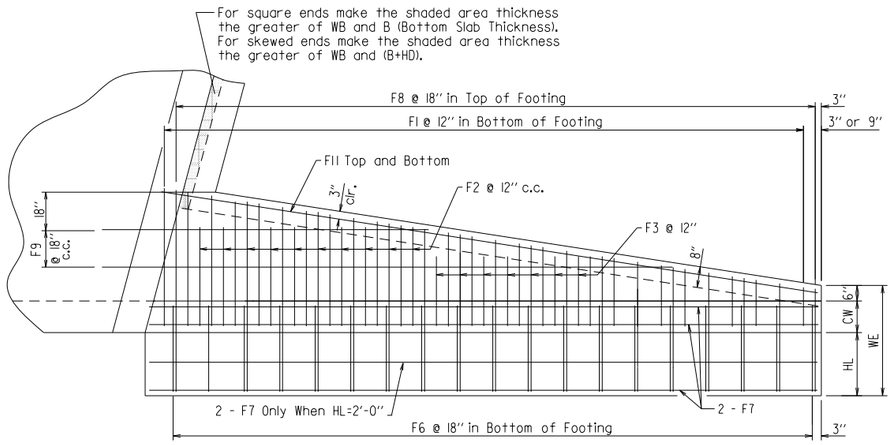


CONSTRUCTION JOINTS

Flared Wingwalls Shown



PART PLAN - PARALLEL WINGWALLS



PLAN - PARALLEL WINGWALLS

Showing Footing Reinforcement

SHEET 4 OF 4

GENERAL DETAILS OF R.C. BOX CULVERT

DETAILS OF WINGWALLS

SPECIAL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 1/2/2024

LRFD

CGGervasini 12/13/2023 8:00:40 AM
WORKSPACE: AHTD
L:\2017\17017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\r061615_SD01.dgn
REVISED DATE:
V 1.17

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		20	136
				JOB NO.		061615		
				(2) TEMPORARY EROSION CONTROL DETAILS				

N

STA. 101+40.00
BEGIN SITE 1

EXIST. R/W +40 (E-6)

100+00

PROP. R/W

104+11.45

+35 (E-6)

105+00

25' NATURAL BUFFER

EXIST. R/W

+00 (E-6) (E-11)

PT 112+80.00

WOLF ISLAND SLASH

PC 114+40.00

25' NATURAL BUFFER

110+00

C.L. HWY. 63

115+00

EXIST. R/W +40 (E-6)

PC 101+44.14

HWY. 63

PROP. R/W

PRC 106+78.73

PI 109+79.38

25' NATURAL BUFFER

+85 (E-6) (E-11)

EXIST. R/W

PROP. R/W

+00 (E-6) (E-11)

SILT FENCE	(E-11)	LIN. FT.
STA. 110+00 TO 113+35	LT.	405
STA. 110+45 TO 113+35	LT.	360
STA. 113+85 TO 115+00	RT.	265

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 100+40	LT.	1
STA. 100+40	RT.	1
STA. 106+35	LT.	1
STA. 110+00	LT.	1
STA. 110+45	RT.	1
STA. 113+85	RT.	1

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 1/2/2024

LEGEND

(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

N

25' NATURAL BUFFER

25' NATURAL BUFFER

PRC 119+35.91

+75 (E-11) (E-6)

PI 121+83.88

EXIST. R/W

+40 (E-6)

115+00

C.L. HWY. 63

120+00

125+00

25' NATURAL BUFFER

PI 116+87.97

+90 (E-11)

+40 (E-11)

+05 (E-11)

+10 (E-6) (E-11)

HWY. 63

EXIST. R/W

PT 124+31.82

+40 (E-6)

STA. 124+40.00
END SITE 1
L.M. 10.55

SILT FENCE	(E-11)	LIN. FT.
STA. 115+00 TO 120+75	LT.	585
STA. 115+10 TO 119+90	RT.	505
STA. 120+05 TO 120+40	RT.	55

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 115+10	RT.	1
STA. 120+75	LT.	1
STA. 125+40	LT.	1
STA. 125+40	RT.	1

SITE 1
TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING STAGE

CGGervasini 12/13/2023 8:00:41 AM
WORKSPACE: AHTD
L:\2017\170\7628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\r061615_EC_CG_HWY 63_SITE 1.dgn
REVISED DATE:

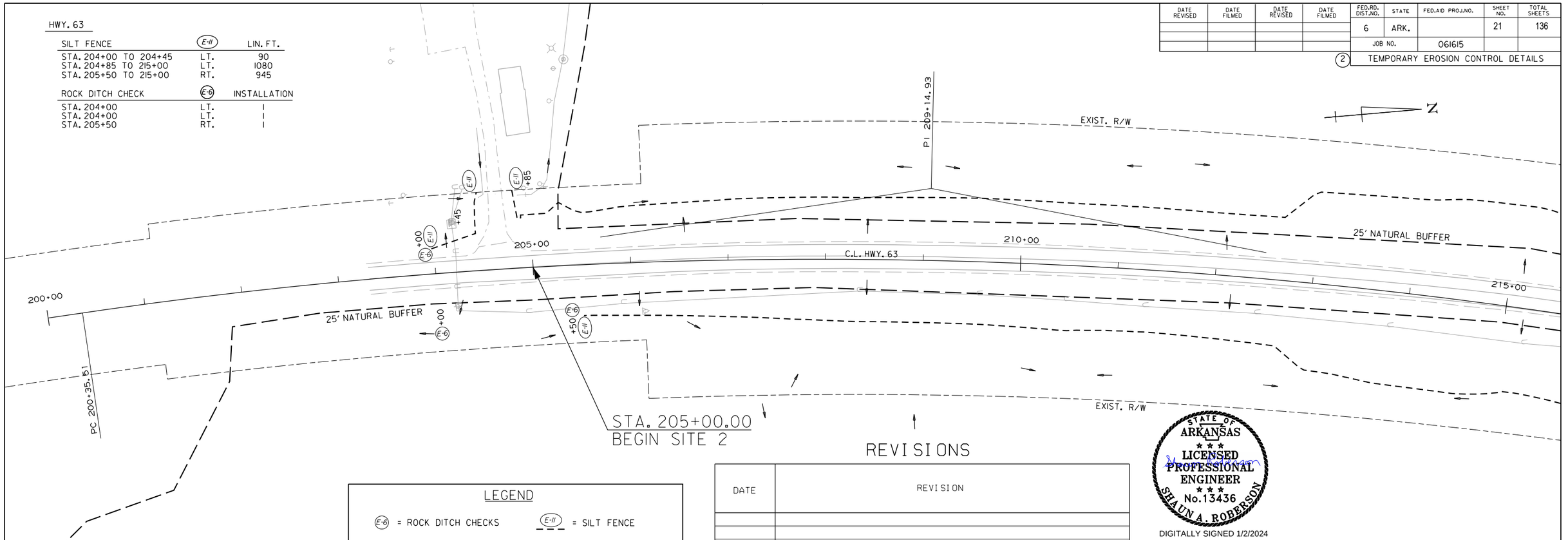
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		21	136
				JOB NO.		061615		

(2) TEMPORARY EROSION CONTROL DETAILS

HWY. 63

SILT FENCE	(E-11)	LIN. FT.
STA. 204+00 TO 204+45	LT.	90
STA. 204+85 TO 215+00	LT.	1080
STA. 205+50 TO 215+00	RT.	945

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 204+00	LT.	1
STA. 204+00	LT.	1
STA. 205+50	RT.	1



LEGEND

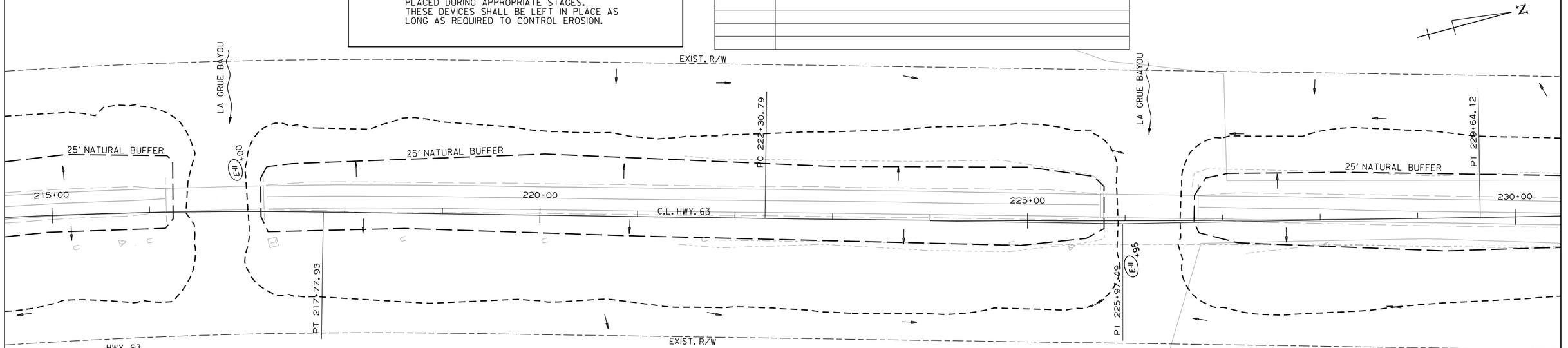
(E-6) = ROCK DITCH CHECKS (E-11) = SILT FENCE

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 1/2/2024



HWY. 63

SILT FENCE	(E-11)	LIN. FT.
STA. 215+00 TO 216+40	LT.	285
STA. 215+00 TO 216+40	RT.	275
STA. 217+00 TO 225+95	LT.	1055
STA. 217+00 TO 225+95	RT.	1040
STA. 226+55 TO 230+00	LT.	410
STA. 226+55 TO 230+00	RT.	420

SITE 2
TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING STAGE

CGGervasini 12/13/2023 8:00:41 AM
WORKSPACE: AHTD
L:\2017\170176\28 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\r-061615_EC_CG_HWY 63_SITE 2.0i.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.		22	136
				JOB NO.		061615		

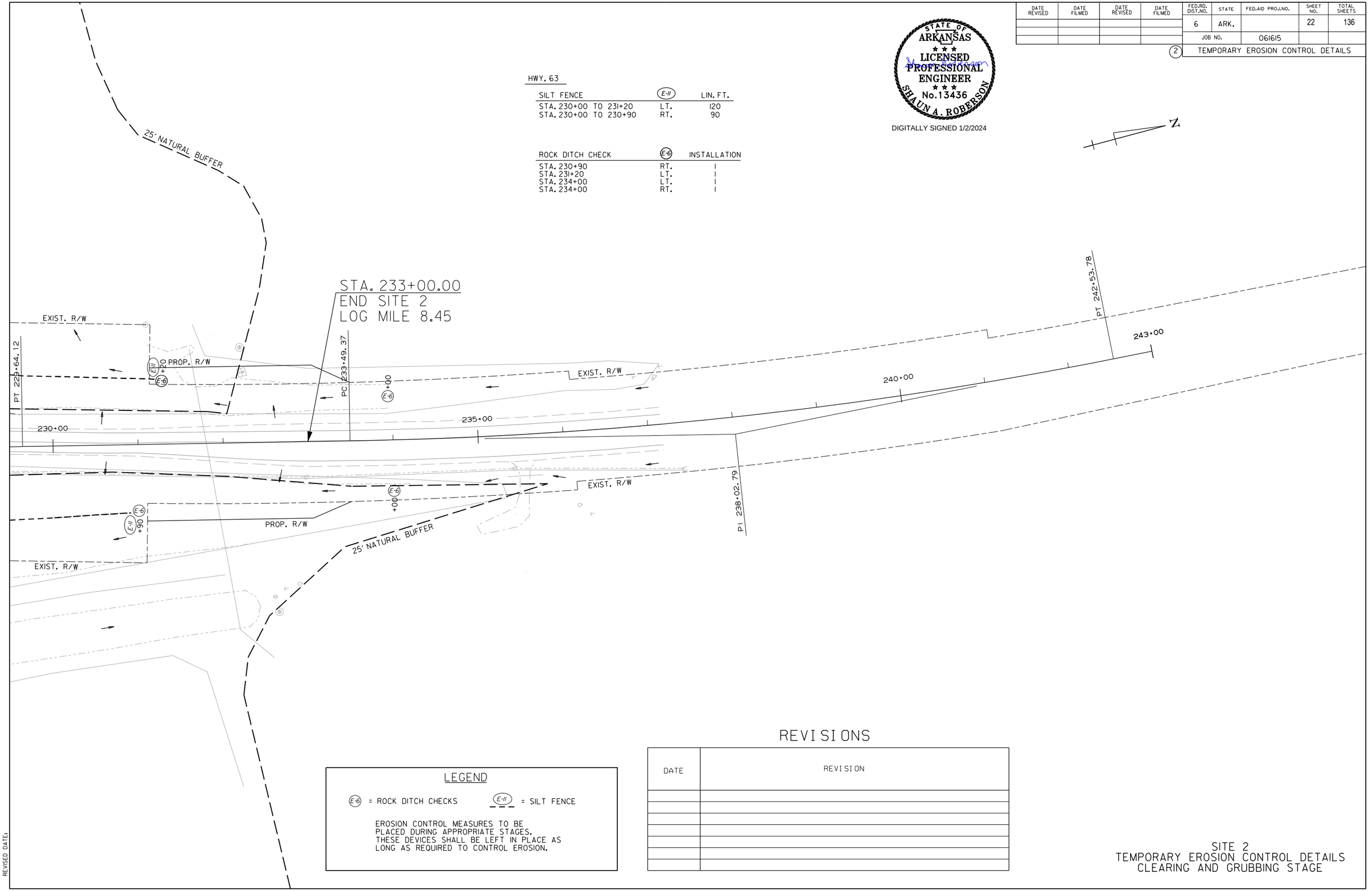
(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 1/2/2024

HWY. 63

SILT FENCE	(E-11)	LIN. FT.
STA. 230+00 TO 231+20	LT.	120
STA. 230+00 TO 230+90	RT.	90

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 230+90	RT.	1
STA. 231+20	LT.	1
STA. 234+00	LT.	1
STA. 234+00	RT.	1



LEGEND

(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 2
TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING STAGE

CGGervasini 12/13/2023 8:00:42 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.		23	136
				JOB NO.		061615		

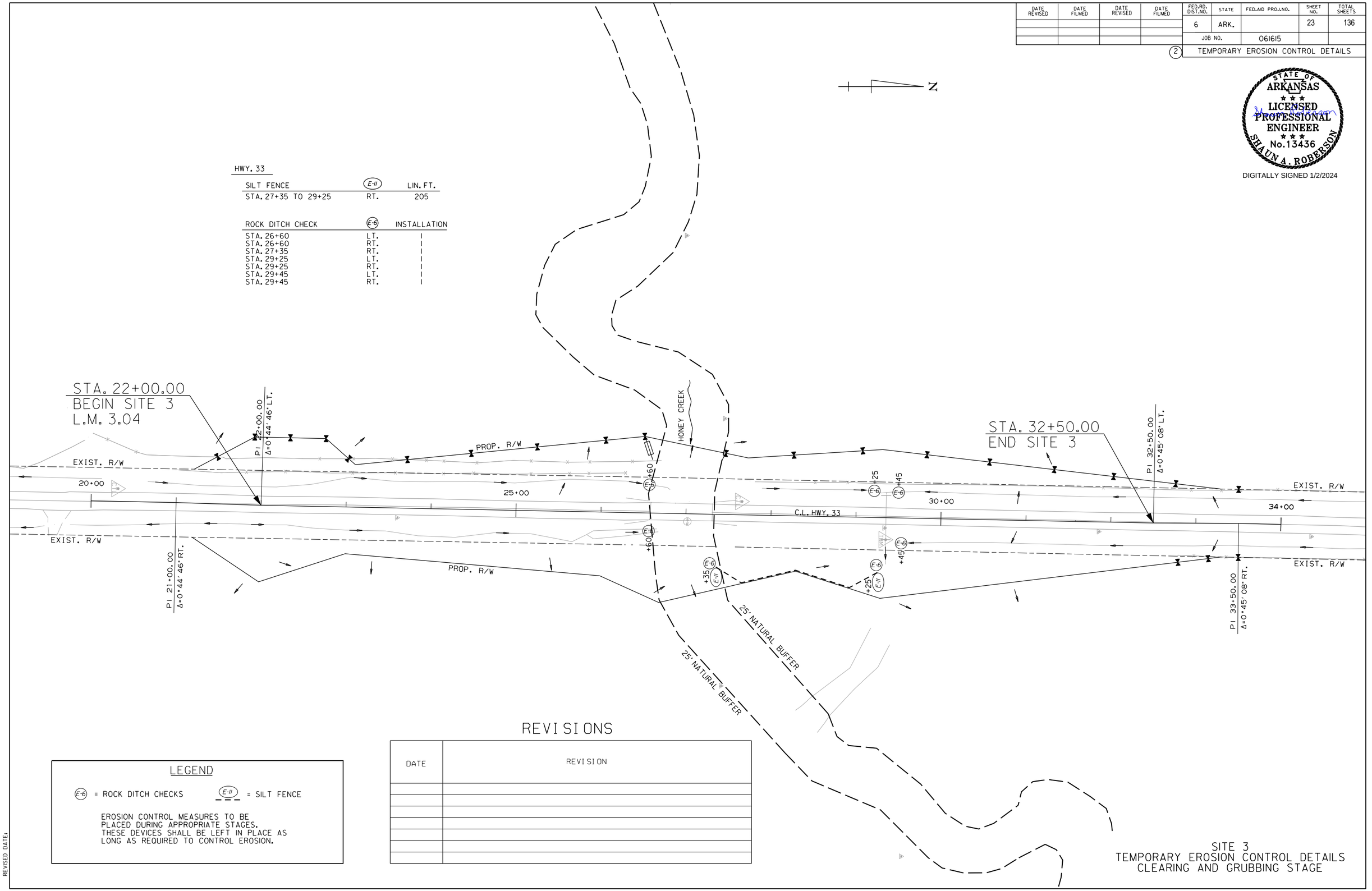
(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 1/2/2024

HWY. 33

SILT FENCE (E-11)		LIN. FT.
STA. 27+35 TO 29+25	RT.	205

ROCK DITCH CHECK (E-6)		INSTALLATION
STA. 26+60	LT.	1
STA. 26+60	RT.	1
STA. 27+35	RT.	1
STA. 29+25	LT.	1
STA. 29+25	RT.	1
STA. 29+45	LT.	1
STA. 29+45	RT.	1



LEGEND

(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

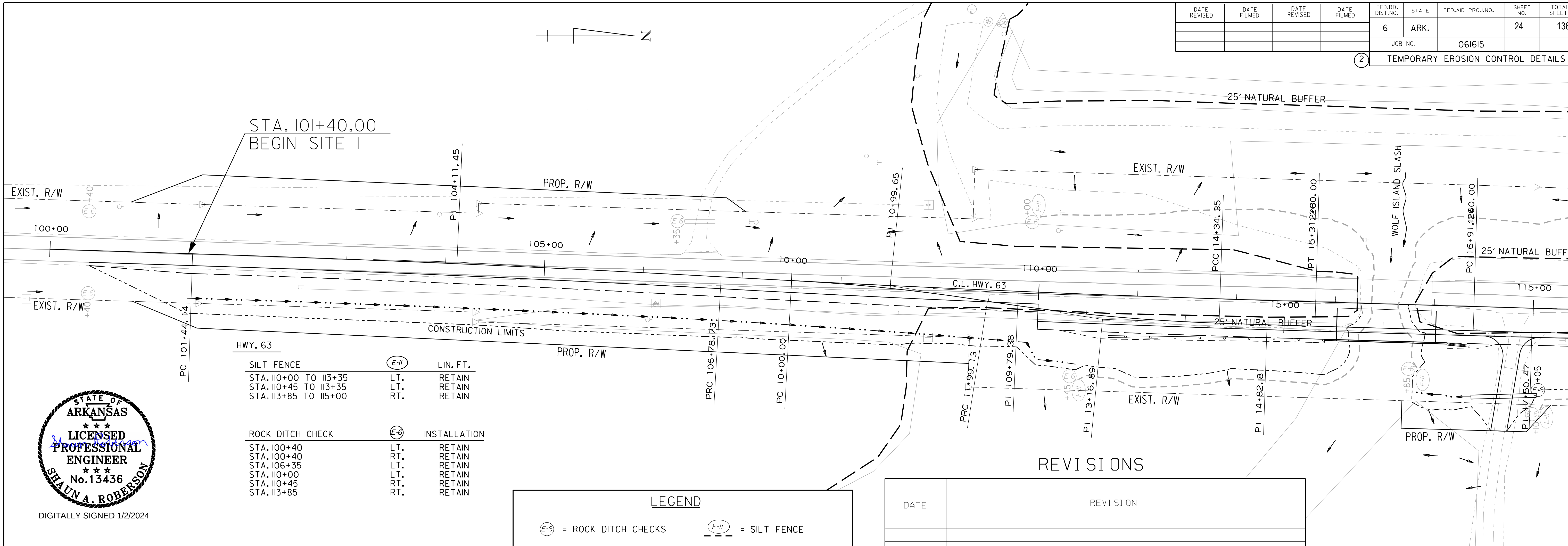
DATE	REVISION

SITE 3
TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING STAGE

CGervasini 12/13/2023 8:00:42 AM
WORKSPACE: AHTD
L:\20\7\701628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\r061615_EC_CG_HWY 33.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.		24	136
					JOB NO.	061615		

(2) TEMPORARY EROSION CONTROL DETAILS



HWY. 63

SILT FENCE	(E-11)	LIN. FT.
STA. 110+00 TO 113+35	LT.	RETAIN
STA. 110+45 TO 113+35	LT.	RETAIN
STA. 113+85 TO 115+00	RT.	RETAIN

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 100+40	LT.	RETAIN
STA. 100+40	RT.	RETAIN
STA. 106+35	LT.	RETAIN
STA. 110+00	LT.	RETAIN
STA. 110+45	RT.	RETAIN
STA. 113+85	RT.	RETAIN

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 1/2/2024

LEGEND

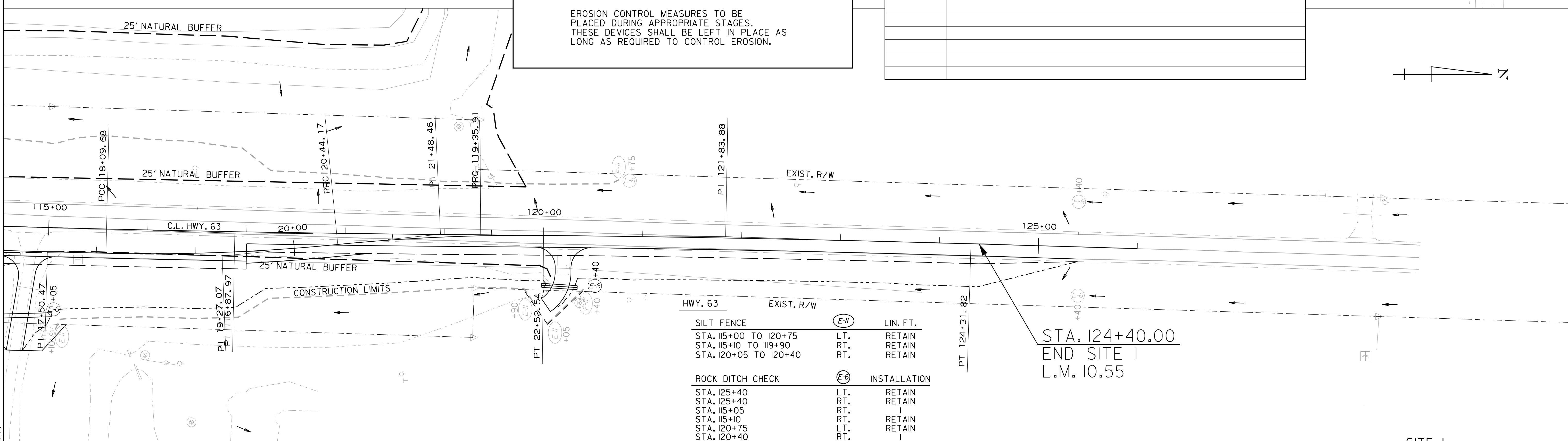
(E-6) = ROCK DITCH CHECKS

(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



HWY. 63

SILT FENCE	(E-11)	LIN. FT.
STA. 115+00 TO 120+75	LT.	RETAIN
STA. 115+10 TO 119+90	RT.	RETAIN
STA. 120+05 TO 120+40	RT.	RETAIN

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 125+40	LT.	RETAIN
STA. 125+40	RT.	RETAIN
STA. 115+05	RT.	1
STA. 115+10	RT.	RETAIN
STA. 120+75	LT.	RETAIN
STA. 120+40	RT.	1

SITE 1
TEMPORARY EROSION CONTROL DETAILS
STAGE 1

CGGervasini 12/13/2023 8:00:42 AM
WORKSPACE: AHTD
L:\2017\7017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\r061615_EC_STG1_HWY 63_SITE 1.dgn
REVISED DATE:

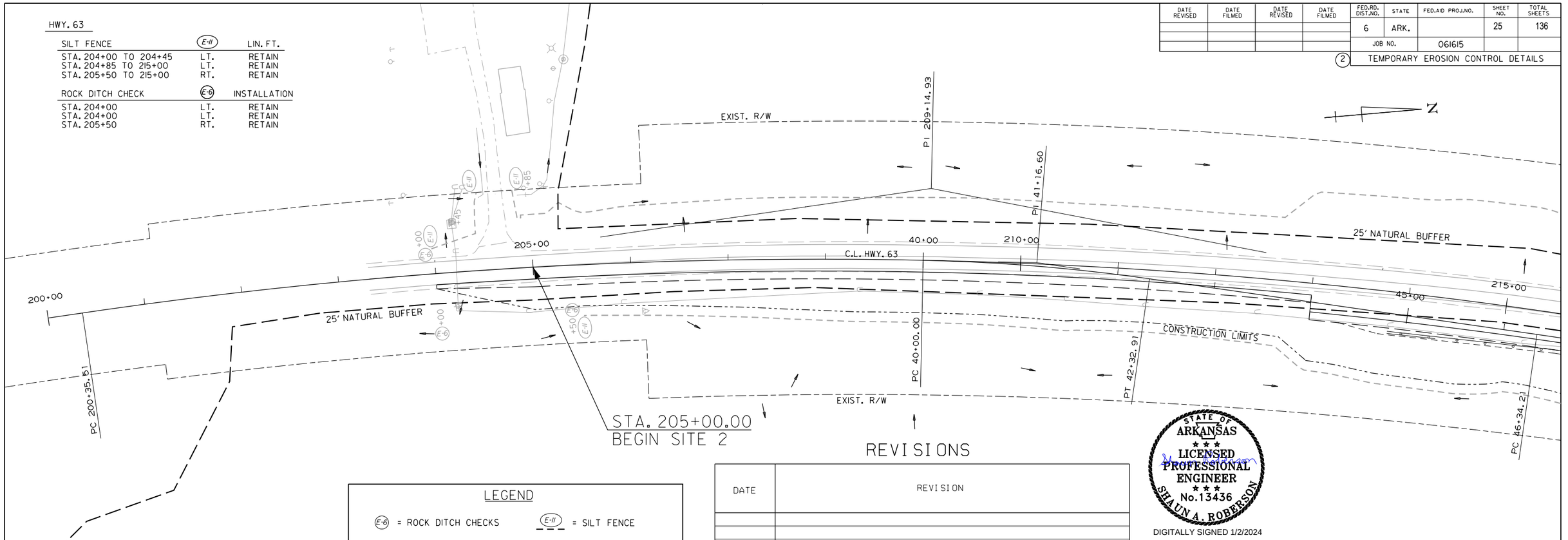
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		25	136
				JOB NO.		061615		

(2) TEMPORARY EROSION CONTROL DETAILS

HWY. 63

SILT FENCE	(E-11)	LIN. FT.
STA. 204+00 TO 204+45	LT.	RETAIN
STA. 204+85 TO 215+00	LT.	RETAIN
STA. 205+50 TO 215+00	RT.	RETAIN

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 204+00	LT.	RETAIN
STA. 204+00	LT.	RETAIN
STA. 205+50	RT.	RETAIN



LEGEND

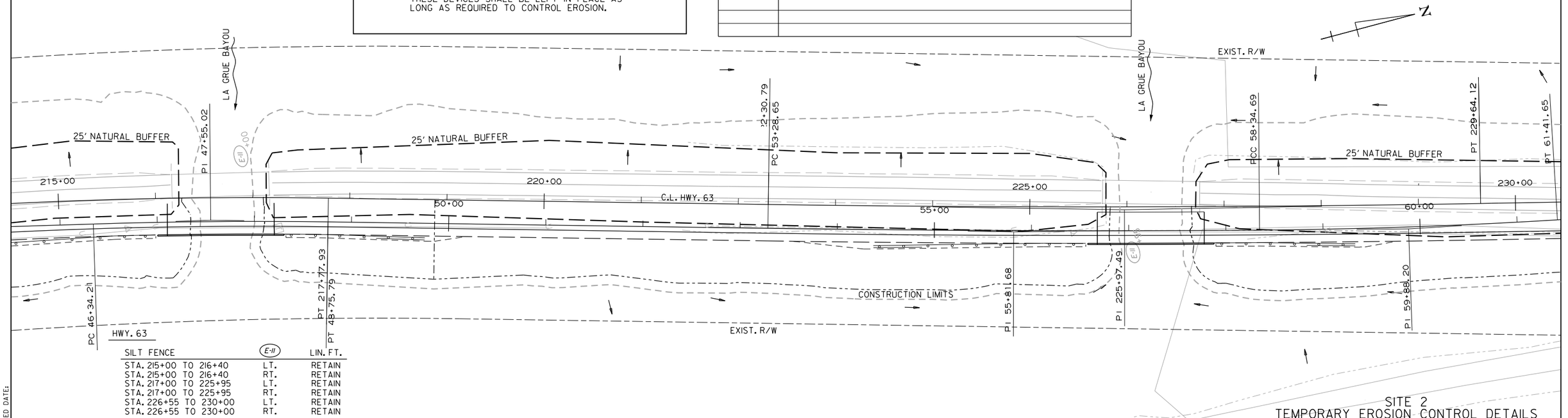
(E-6) = ROCK DITCH CHECKS (E-11) = SILT FENCE

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 1/2/2024



HWY. 63

SILT FENCE	(E-11)	LIN. FT.
STA. 215+00 TO 216+40	LT.	RETAIN
STA. 215+00 TO 216+40	RT.	RETAIN
STA. 217+00 TO 225+95	LT.	RETAIN
STA. 217+00 TO 225+95	RT.	RETAIN
STA. 226+55 TO 230+00	LT.	RETAIN
STA. 226+55 TO 230+00	RT.	RETAIN

SITE 2
TEMPORARY EROSION CONTROL DETAILS
STAGE 1

CGGervasini 12/13/2023 8:00:43 AM
WORKSPACE: AHTD
L:\2017\170176\28 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\r-061615_EC_STG1.HWY 63-SITE 2.0i.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.		26	136
JOB NO.		061615		

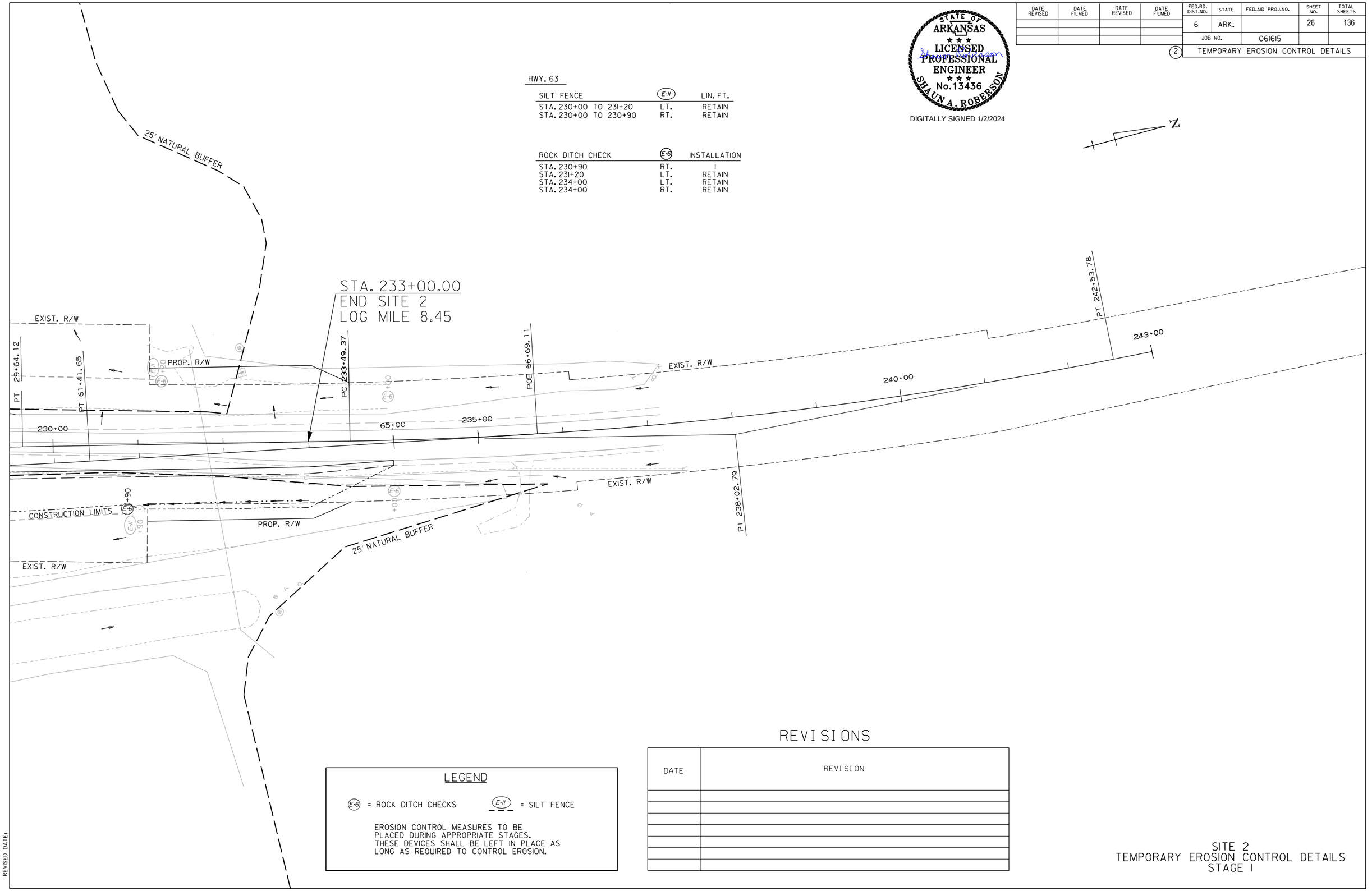
(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 1/2/2024

HWY. 63

SILT FENCE (E-II)		LIN. FT.
STA. 230+00 TO 231+20	LT.	RETAIN
STA. 230+00 TO 230+90	RT.	RETAIN

ROCK DITCH CHECK (E-6)		INSTALLATION
STA. 230+90	RT.	I
STA. 231+20	LT.	RETAIN
STA. 234+00	LT.	RETAIN
STA. 234+00	RT.	RETAIN



LEGEND

(E-6) = ROCK DITCH CHECKS (E-II) = 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 2
TEMPORARY EROSION CONTROL DETAILS
STAGE I

CGervasini 12/13/2023 8:00:43 AM
WORKSPACE: AHTD
L:\20\T\T01T628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\r061615_EC_STGI_HWY 63_SITE 2.02.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.		27	136
				JOB NO.		061615		

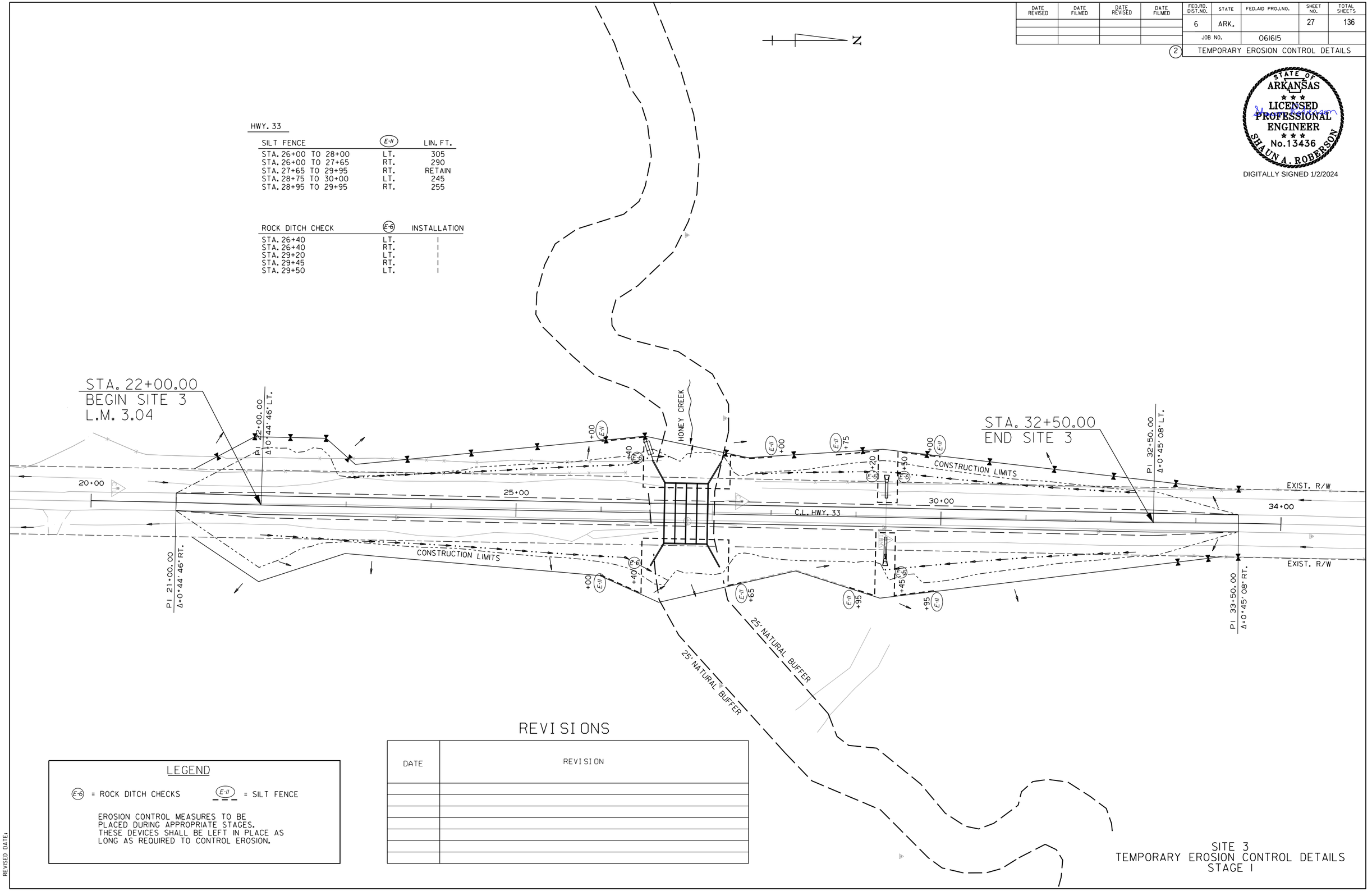
(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 1/2/2024

HWY. 33

SILT FENCE (E-II)		LIN. FT.
STA. 26+00 TO 28+00	LT.	305
STA. 26+00 TO 27+65	RT.	290
STA. 27+65 TO 29+95	RT.	RETAIN
STA. 28+75 TO 30+00	LT.	245
STA. 28+95 TO 29+95	RT.	255

ROCK DITCH CHECK (E-6)		INSTALLATION
STA. 26+40	LT.	I
STA. 26+40	RT.	I
STA. 29+20	LT.	I
STA. 29+45	RT.	I
STA. 29+50	LT.	I



LEGEND

(E-6) = ROCK DITCH CHECKS (E-II) = 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 3
TEMPORARY EROSION CONTROL DETAILS
STAGE I

CGervasini 12/13/2023 8:00:43 AM
WORKSPACE: AHTD
L:\20\T\T01T628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\r061615_EC_STG1_HWY 33.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.		28	136
				JOB NO.		061615		

(2) TEMPORARY EROSION CONTROL DETAILS

N

STA. 101+40.00
BEGIN SITE 1

EXIST. R/W

PROP. R/W

CONSTRUCTION LIMITS

25' NATURAL BUFFER

C.L. HWY. 63

HWY. 63

PC 101+44.14

104+11.45

105+00

106+78.73

PRC 106+78.73

109+79.38

PI 109+79.38

110+00

112+80.00

PT 112+80.00

WOLF ISLAND SLASH

114+40.00

PC 114+40.00

115+00

+35

+30

+50

+85

+05

SILT FENCE	(E-11)	LIN. FT.
STA. 110+00 TO 113+35	LT.	RETAIN
STA. 110+45 TO 113+35	LT.	RETAIN
STA. 113+85 TO 115+00	RT.	RETAIN

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 100+40	LT.	RETAIN
STA. 100+40	RT.	RETAIN
STA. 106+35	LT.	I
STA. 109+50	LT.	I
STA. 109+30	LT.	I
STA. 110+00	LT.	RETAIN
STA. 110+45	RT.	RETAIN
STA. 113+85	RT.	RETAIN

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13436
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LEGEND

(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

N

25' NATURAL BUFFER

CONSTRUCTION LIMITS

C.L. HWY. 63

EXIST. R/W

HWY. 63

PRC 119+35.91

121+83.88

PI 121+83.88

115+00

116+87.97

PI 116+87.97

120+00

125+00

124+31.82

PT 124+31.82

+75

+90

+05

+40

SILT FENCE	(E-11)	LIN. FT.
STA. 115+00 TO 120+75	LT.	RETAIN
STA. 115+10 TO 119+90	RT.	RETAIN
STA. 120+05 TO 120+40	RT.	RETAIN

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 115+05	RT.	RETAIN
STA. 115+10	RT.	RETAIN
STA. 120+75	LT.	I
STA. 120+40	RT.	RETAIN
STA. 125+40	LT.	RETAIN
STA. 125+40	RT.	RETAIN

STA. 124+40.00
END SITE 1
L.M. 10.55

SITE 1
TEMPORARY EROSION CONTROL DETAILS
STAGE 2

CGGervasini 12/13/2023 8:00:44 AM
WORKSPACE: AHTD
L:\2017\17017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\r061615_EC_ST02_HWY 63_SITE 1.dgn
REVISED DATE:

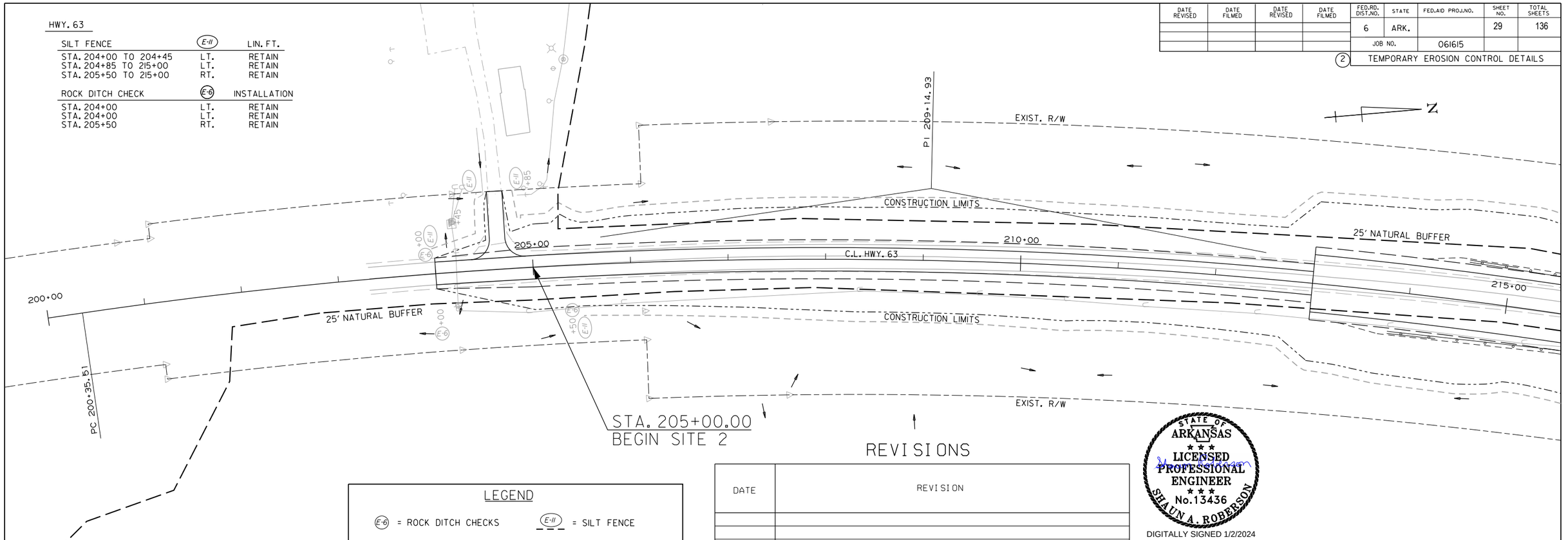
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		29	136
				JOB NO.		061615		

(2) TEMPORARY EROSION CONTROL DETAILS

HWY. 63

SILT FENCE	(E-11)	LIN. FT.
STA. 204+00 TO 204+45	LT.	RETAIN
STA. 204+85 TO 215+00	LT.	RETAIN
STA. 205+50 TO 215+00	RT.	RETAIN

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 204+00	LT.	RETAIN
STA. 204+00	LT.	RETAIN
STA. 205+50	RT.	RETAIN



LEGEND

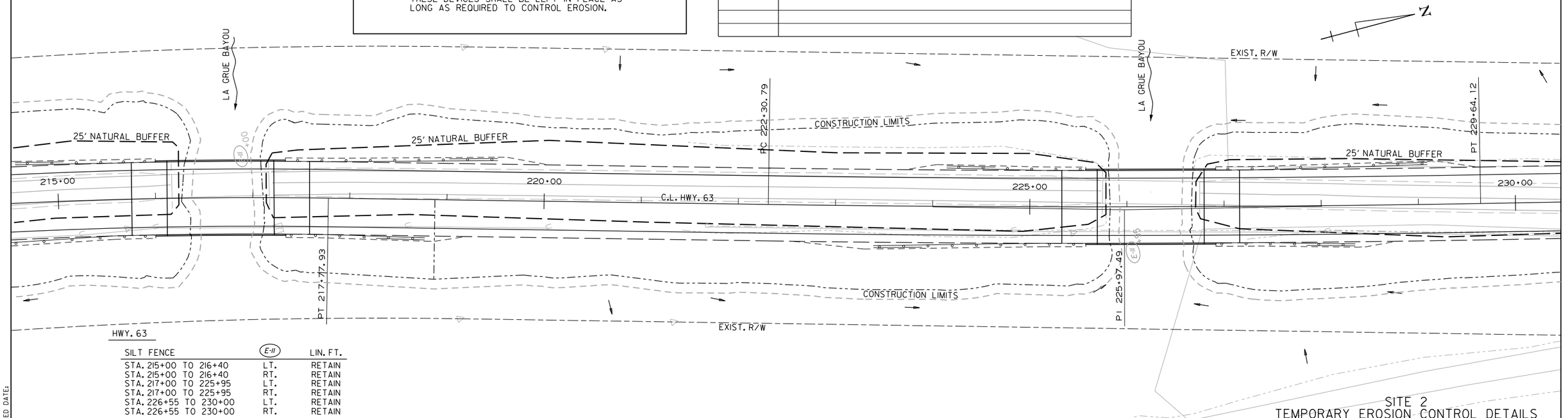
(E-6) = ROCK DITCH CHECKS (E-11) = SILT FENCE

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 1/2/2024



HWY. 63

SILT FENCE	(E-11)	LIN. FT.
STA. 215+00 TO 216+40	LT.	RETAIN
STA. 215+00 TO 216+40	RT.	RETAIN
STA. 217+00 TO 225+95	LT.	RETAIN
STA. 217+00 TO 225+95	RT.	RETAIN
STA. 226+55 TO 230+00	LT.	RETAIN
STA. 226+55 TO 230+00	RT.	RETAIN

SITE 2
TEMPORARY EROSION CONTROL DETAILS
STAGE 2

CGGervasini 12/3/2023 8:00:44 AM
WORKSPACE: AHTD
L:\2017\170\7628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\r-061615_EC_ST02_HWY 63_SITE 2.01.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.		30	136
				JOB NO.		061615		

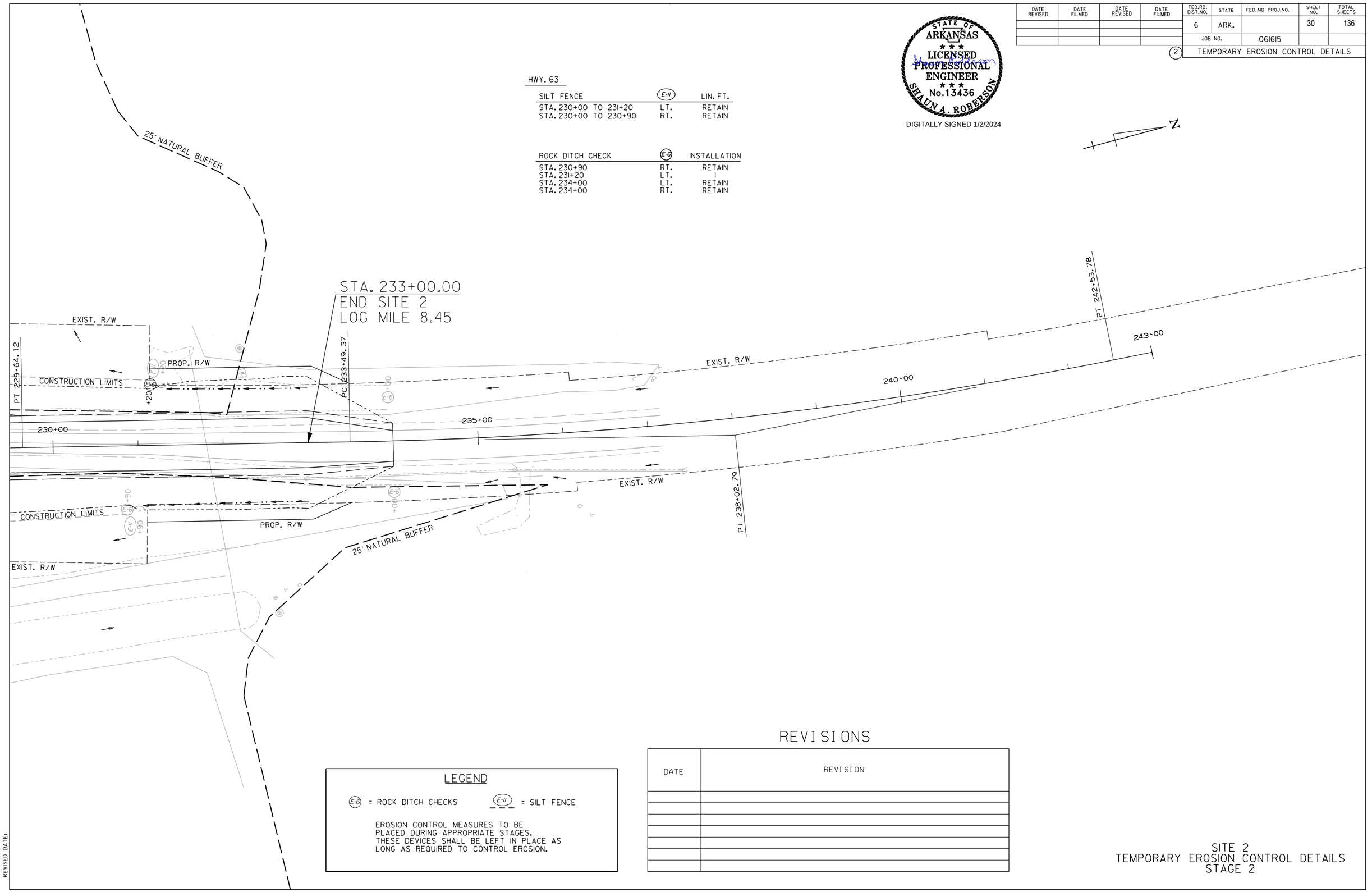
(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 1/2/2024

HWY. 63

SILT FENCE (E-11)		LIN. FT.
STA. 230+00 TO 231+20	LT.	RETAIN
STA. 230+00 TO 230+90	RT.	RETAIN

ROCK DITCH CHECK (E-6)		INSTALLATION
STA. 230+90	RT.	RETAIN
STA. 231+20	LT.	I
STA. 234+00	LT.	RETAIN
STA. 234+00	RT.	RETAIN



LEGEND

(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 2
TEMPORARY EROSION CONTROL DETAILS
STAGE 2

CGervasini 12/13/2023 8:00:44 AM
WORKSPACE: AHTD
L:\20\T\T01T628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\r061615_EC_ST02_HWY 63_SITE 2_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.		31	136
JOB NO.		061615		

(2) MAINTENANCE OF TRAFFIC DETAILS

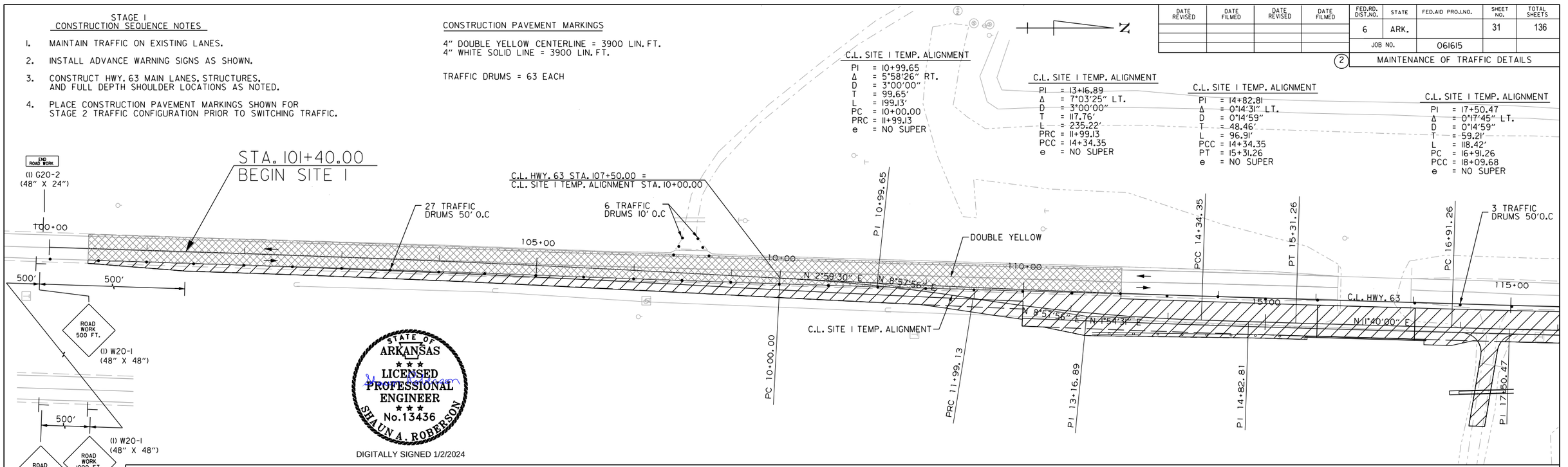
STAGE I
CONSTRUCTION SEQUENCE NOTES

1. MAINTAIN TRAFFIC ON EXISTING LANES.
2. INSTALL ADVANCE WARNING SIGNS AS SHOWN.
3. CONSTRUCT HWY. 63 MAIN LANES, STRUCTURES, AND FULL DEPTH SHOULDER LOCATIONS AS NOTED.
4. PLACE CONSTRUCTION PAVEMENT MARKINGS SHOWN FOR STAGE 2 TRAFFIC CONFIGURATION PRIOR TO SWITCHING TRAFFIC.

CONSTRUCTION PAVEMENT MARKINGS

4" DOUBLE YELLOW CENTERLINE = 3900 LIN. FT.
4" WHITE SOLID LINE = 3900 LIN. FT.

TRAFFIC DRUMS = 63 EACH



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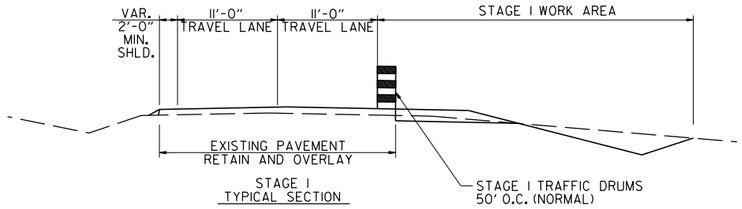
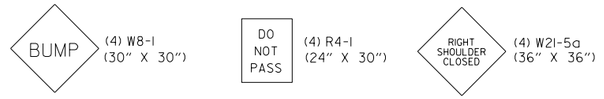
STAGE I CONSTRUCTION

STAGE I OVERLAY OR METHOD OF RAISING GRADE UNDER TRAFFIC

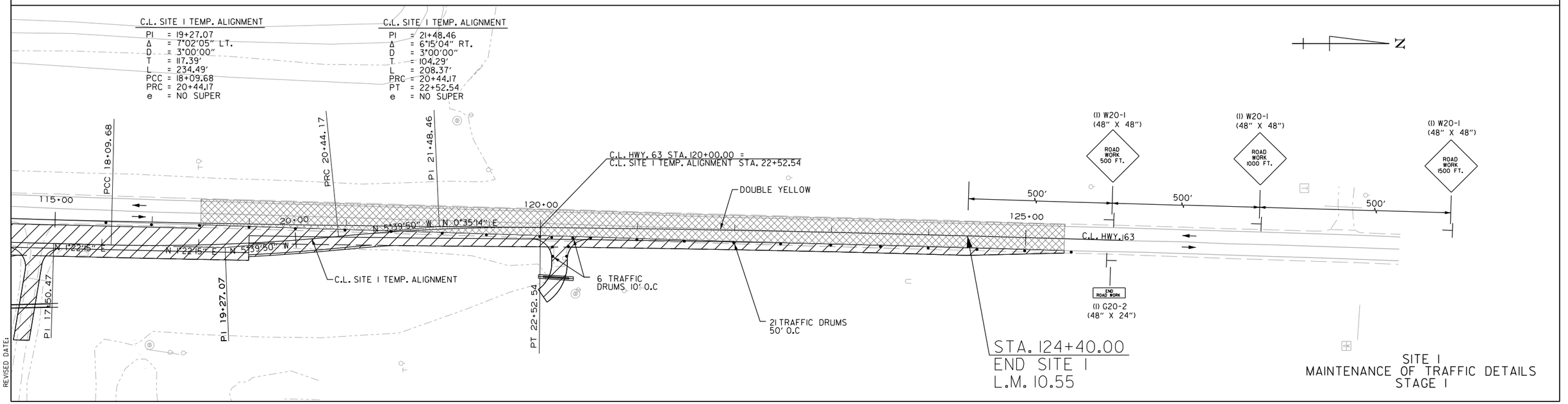
STAGE I TRAFFIC

TRAFFIC DRUMS





TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER



STA. 124+40.00
END SITE I
L.M. 10.55

SITE I
MAINTENANCE OF TRAFFIC DETAILS
STAGE I

CGervasini 12/13/2023 8:00:45 AM
WORKSPACE: AHTD
L:\201\1701\7628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\r061615_MOT_STGI_HWY 63_SITE I.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.		32	136
JOB NO.		061615		

(2) MAINTENANCE OF TRAFFIC DETAILS

STAGE I
CONSTRUCTION SEQUENCE NOTES

1. MAINTAIN TRAFFIC ON EXISTING LANES.
2. INSTALL ADVANCE WARNING SIGNS AS SHOWN.
3. CONSTRUCT HWY. 63 MAIN LANES, STRUCTURES, AND FULL DEPTH SHOULDER LOCATIONS AS NOTED.
4. PLACE CONSTRUCTION PAVEMENT MARKINGS SHOWN FOR STAGE 2 TRAFFIC CONFIGURATION PRIOR TO SWITCHING TRAFFIC.

CONSTRUCTION PAVEMENT MARKINGS

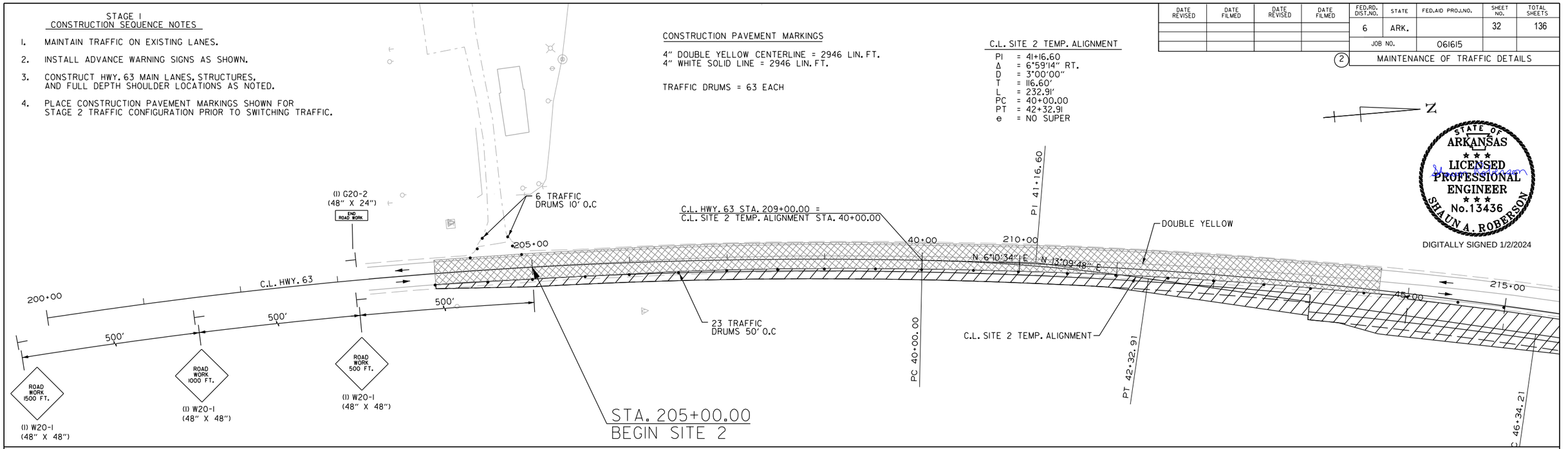
4" DOUBLE YELLOW CENTERLINE = 2946 LIN. FT.
4" WHITE SOLID LINE = 2946 LIN. FT.

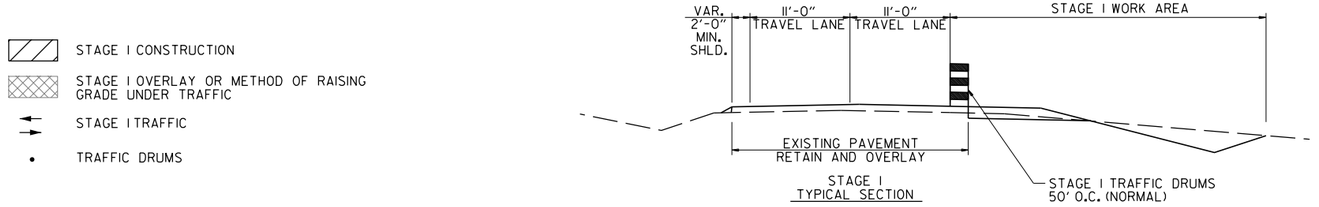
TRAFFIC DRUMS = 63 EACH

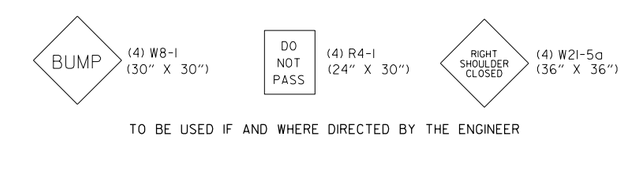
C.L. SITE 2 TEMP. ALIGNMENT

PI = 41+16.60
Δ = 6°59'14" RT.
D = 3°00'00"
T = 116.60'
L = 232.91'
PC = 40+00.00
PT = 42+32.91
e = NO SUPER

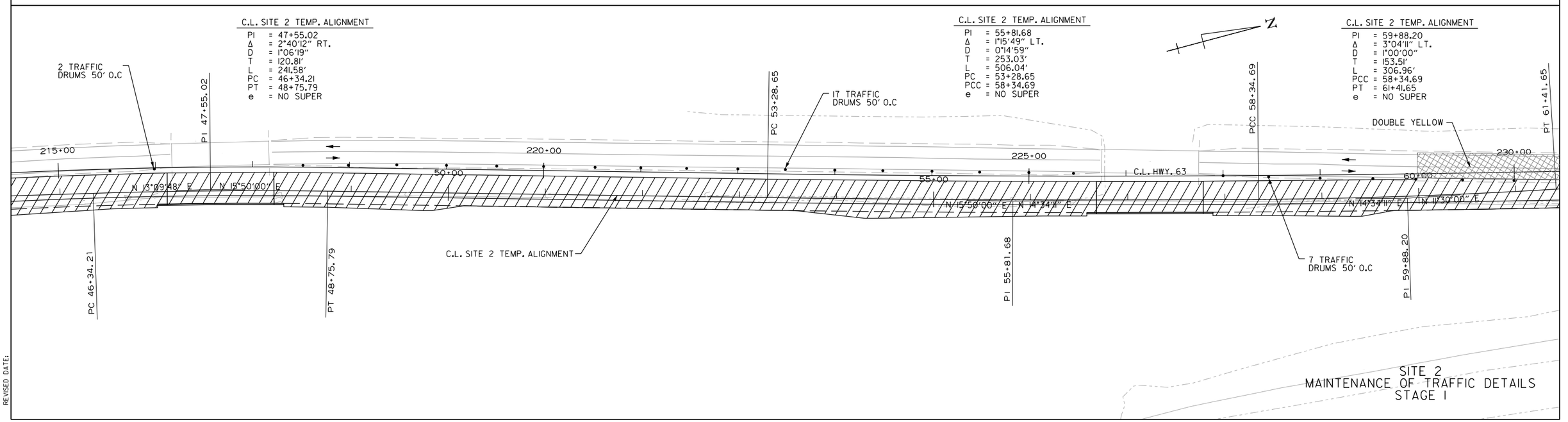
DIGITALLY SIGNED 1/2/2024







TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER



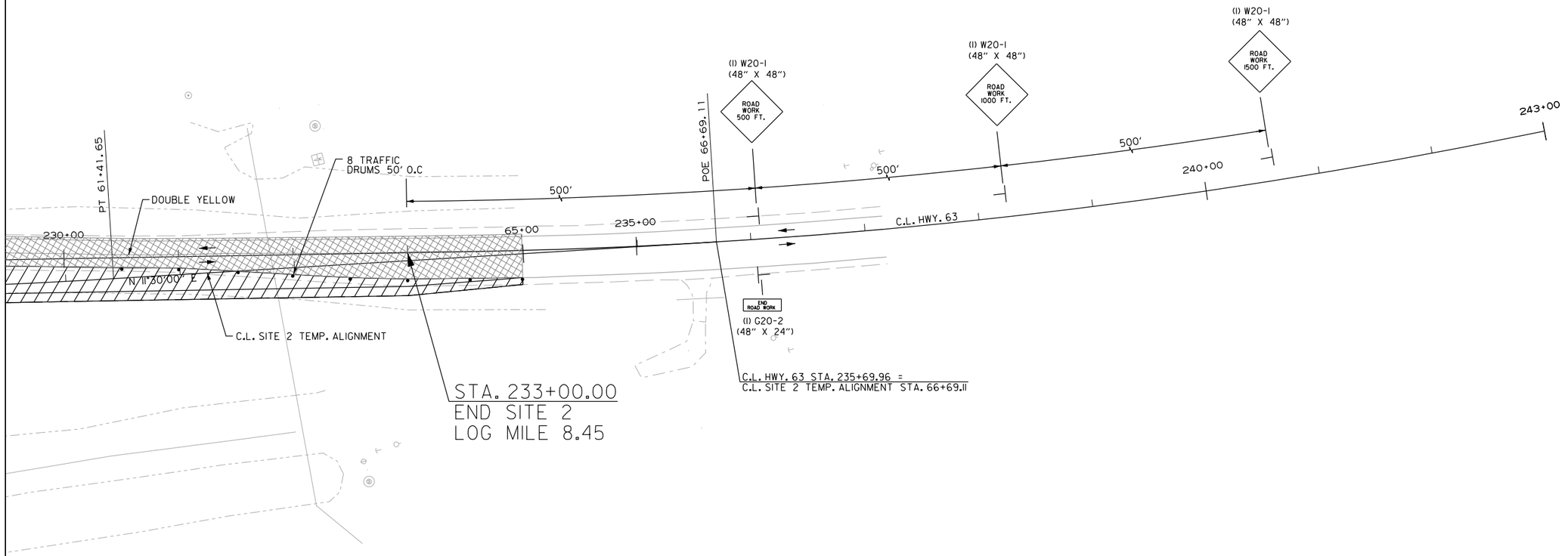
CGervasini 12/13/2023 8:00:45 AM
WORKSPACE: AHTD
L:\2017\1701628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\r061615_MOT_STG1_HWY 63_SITE 2_01.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		33	136
JOB NO.		061615		

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 1/2/2024

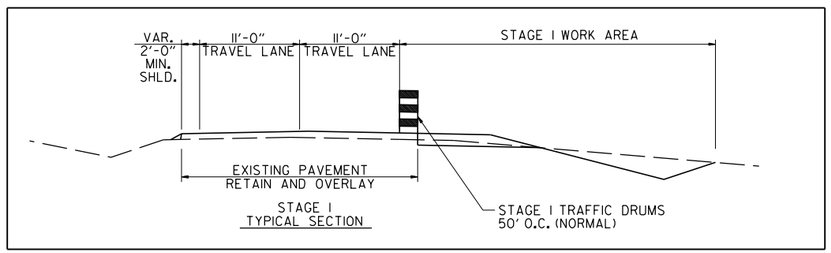


STAGE I CONSTRUCTION

STAGE I OVERLAY OR METHOD OF RAISING GRADE UNDER TRAFFIC

STAGE I TRAFFIC

TRAFFIC DRUMS



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")

TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

SITE 2
MAINTENANCE OF TRAFFIC DETAILS
STAGE I

CGGervasini 12/13/2023 8:00:45 AM
WORKSPACE: AHTD
L:\20\T\T01T628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\r061615_MOT_ST01.HWY 63.SITE 2.02.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.		34	136
				JOB NO.		061615		

(2) MAINTENANCE OF TRAFFIC DETAILS

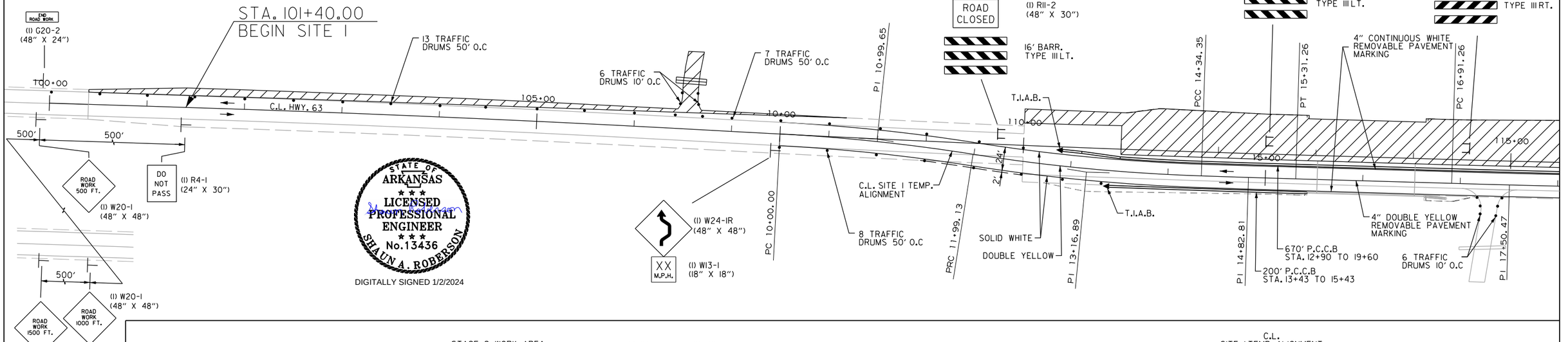
STAGE 2 CONSTRUCTION SEQUENCE NOTES

1. SHIFT TRAFFIC TO PROPOSED ALIGNMENT.
2. INSTALL ADVANCE WARNING SIGNS AS SHOWN.
3. CONSTRUCT HWY. 63 AS SHOWN AND REMOVE THE EXISTING BRIDGE STRUCTURE.
4. CONSTRUCT THE FINAL 2" OF ACHM SURFACE COURSE ON HWY. 82.
5. PLACE FINAL PERMANENT PAVEMENT MARKINGS.

CONSTRUCTION PAVEMENT MARKINGS

4" DOUBLE YELLOW CENTERLINE = 2186 LIN. FT.
4" WHITE SOLID LINE = 2186 LIN. FT.
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS = 640 LIN. FT.

TRAFFIC DRUMS = 72 EACH
FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER = 870 LIN. FT.
TEMPORARY IMPACT ATTENUATION BARRIER= 3 EACH



STATE OF ARKANSAS
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SHAUN A. ROBERSON
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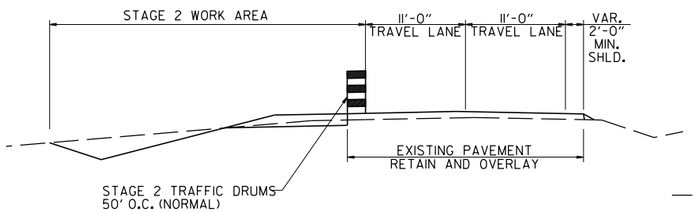
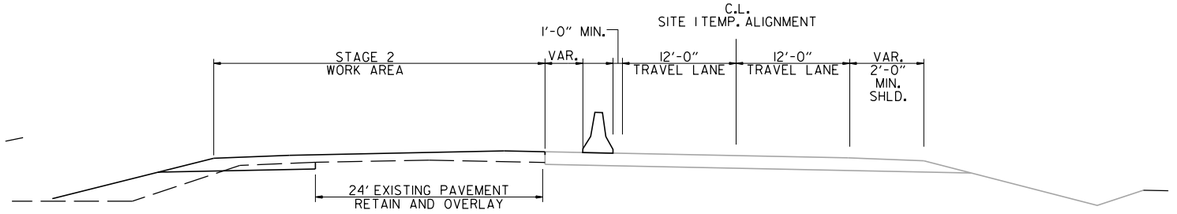
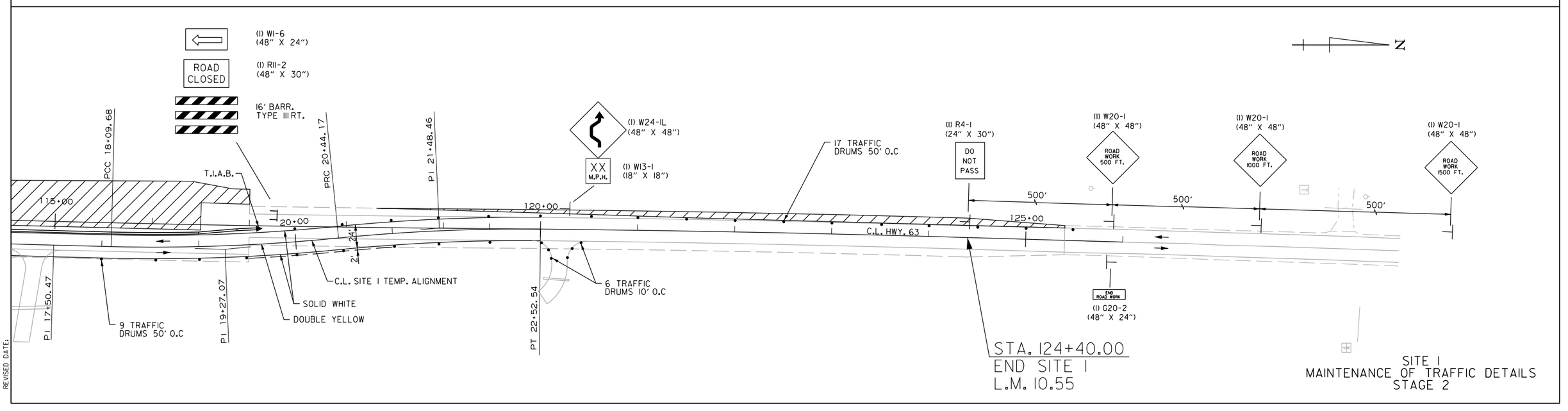
STAGE 2 CONSTRUCTION
STAGE 2 TRAFFIC
TRAFFIC DRUMS
PRECAST CONCRETE BARRIER (P.C.C.B.)
TEMPORARY IMPACT ATTENUATION BARRIER (T.I.A.B.)







SITE 1
MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

CGGer-vasini 12/13/2023 8:00:46 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.		35	136
				JOB NO.		061615		

(2) MAINTENANCE OF TRAFFIC DETAILS

STAGE 2
CONSTRUCTION SEQUENCE NOTES

1. SHIFT TRAFFIC TO PROPOSED ALIGNMENT.
2. INSTALL ADVANCE WARNING SIGNS AS SHOWN.
3. CONSTRUCT HWY. 63 AS SHOWN AND REMOVE THE EXISTING BRIDGE STRUCTURE.
4. CONSTRUCT THE FINAL 2" OF ACHM SURFACE COURSE ON HWY. 82.
5. PLACE FINAL PERMANENT PAVEMENT MARKINGS.

CONSTRUCTION PAVEMENT MARKINGS

4" DOUBLE YELLOW CENTERLINE = 4658 LIN. FT.
4" WHITE SOLID LINE = 4658 LIN. FT.
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS = 1360 LIN. FT.

TRAFFIC DRUMS = 58 EACH
FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER = 2586 LIN. FT.
TEMPORARY IMPACT ATTENUATION BARRIER= 4 EACH

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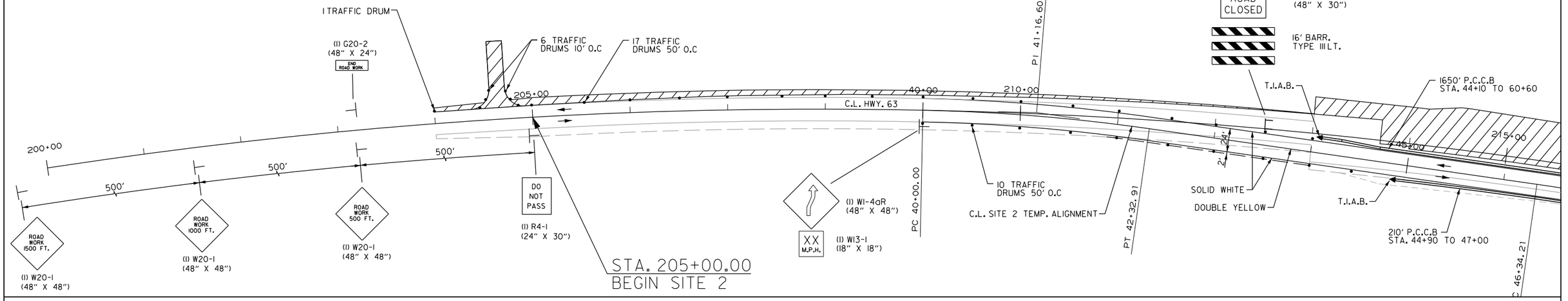
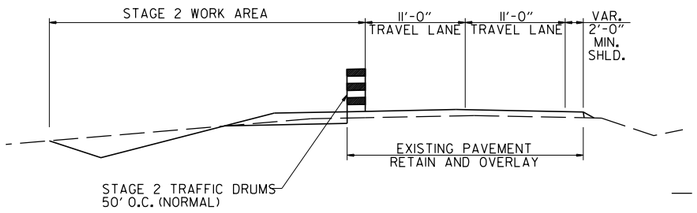
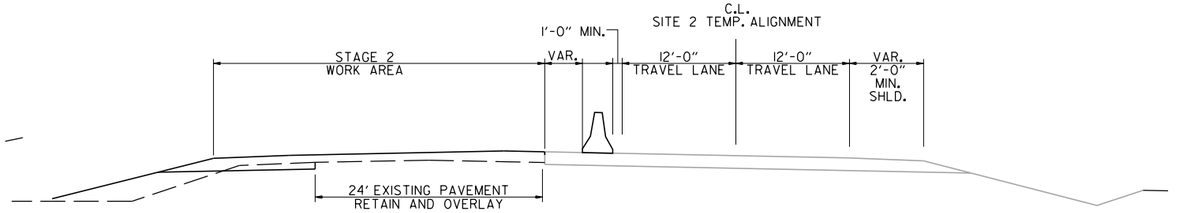
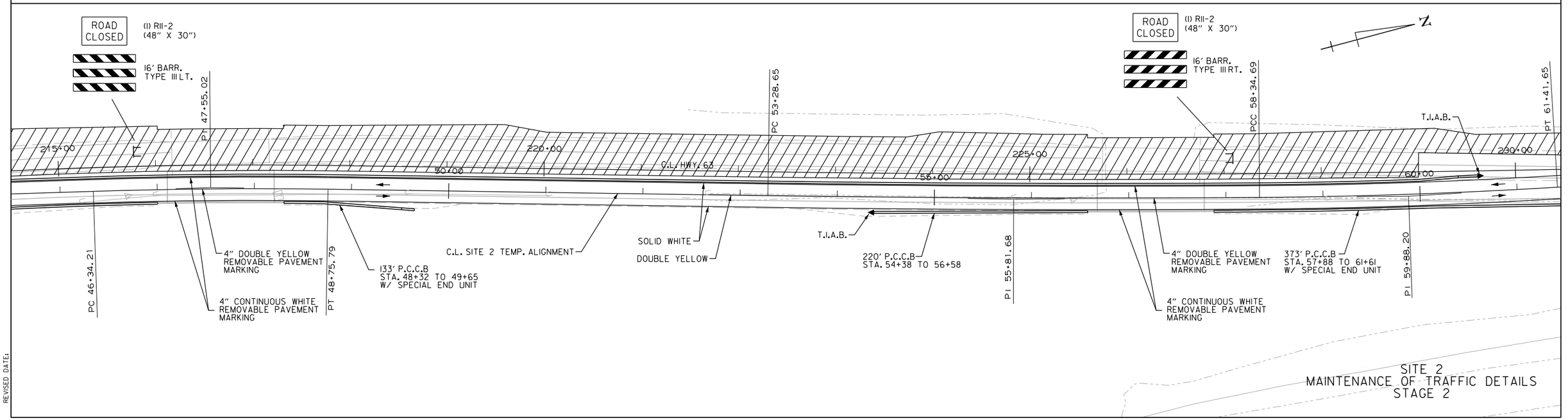


- STAGE 2 CONSTRUCTION
- STAGE 2 TRAFFIC
- TRAFFIC DRUMS
- PRECAST CONCRETE BARRIER (P.C.C.B.)
- TEMPORARY IMPACT ATTENUATION BARRIER (T.I.A.B.)







SITE 2
MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

CGGervasini 12/13/2023 8:00:46 AM
WORKSPACE: AHTD
L:\2017\1701628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\r061615_MOT_STG2_HWY 63_SITE 2.0i.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.		36	136
JOB NO.		061615		

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 1/2/2024

N

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

ROAD CLOSED

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

16' BARR. TYPE III RT.

PT 61+41.65

230+00

(I) R4-1 (24" X 30")

DO NOT PASS

12 TRAFFIC DRUMS 50' O.C

63+00

500'

POE 66+69.11

235+00

(I) W1-4aL (48" X 48")

XX M.P.H.

(I) W13-1 (18" X 18")

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

ROAD WORK 500 FT.

500'

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

ROAD WORK 1000 FT.

240+00

500'

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

ROAD WORK 1500 FT.

243+00

C.L. HWY. 63

END ROAD WORK

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

SOLID WHITE

DOUBLE YELLOW

C.L. SITE 2 TEMP. ALIGNMENT

12 TRAFFIC DRUMS 50' O.C

STA. 233+00.00
END SITE 2
LOG MILE 8.45

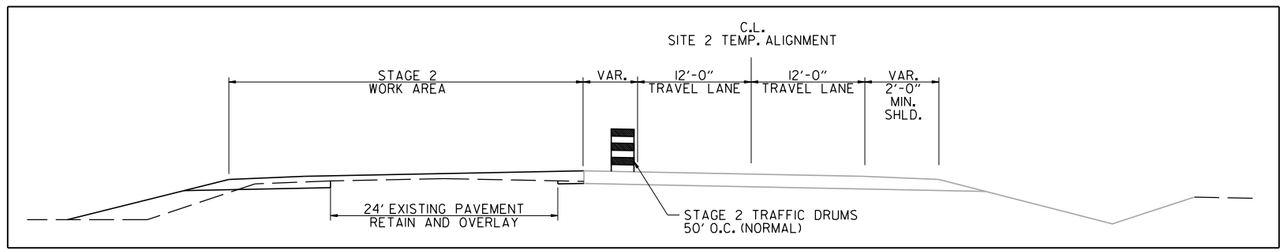
STAGE 2 CONSTRUCTION

STAGE 2 TRAFFIC

TRAFFIC DRUMS

PRECAST CONCRETE BARRIER (P.C.C.B.)

TEMPORARY IMPACT ATTENUATION BARRIER (T.I.A.B.)



SITE 2
MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

CGGervasini 12/13/2023 8:00:46 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.		37	136
					JOB NO.	061615		

2 MAINTENANCE OF TRAFFIC DETAILS

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

2 — ROAD CLOSED 500 FT — (1) W20-3 (48" X 48")

3 — ROAD CLOSED 1000 FT — (1) W20-3 (48" X 48")

4 — ROAD CLOSED 1500 FT — (1) W20-3 (48" X 48")

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

6 — ROAD CLOSED 1.6 MILES AHEAD LOCAL TRAFFIC ONLY — (1) R11-3A (60" X 30")

7 — ROAD CLOSED 5.1 MILES AHEAD LOCAL TRAFFIC ONLY — (1) R11-3A (60" X 30")

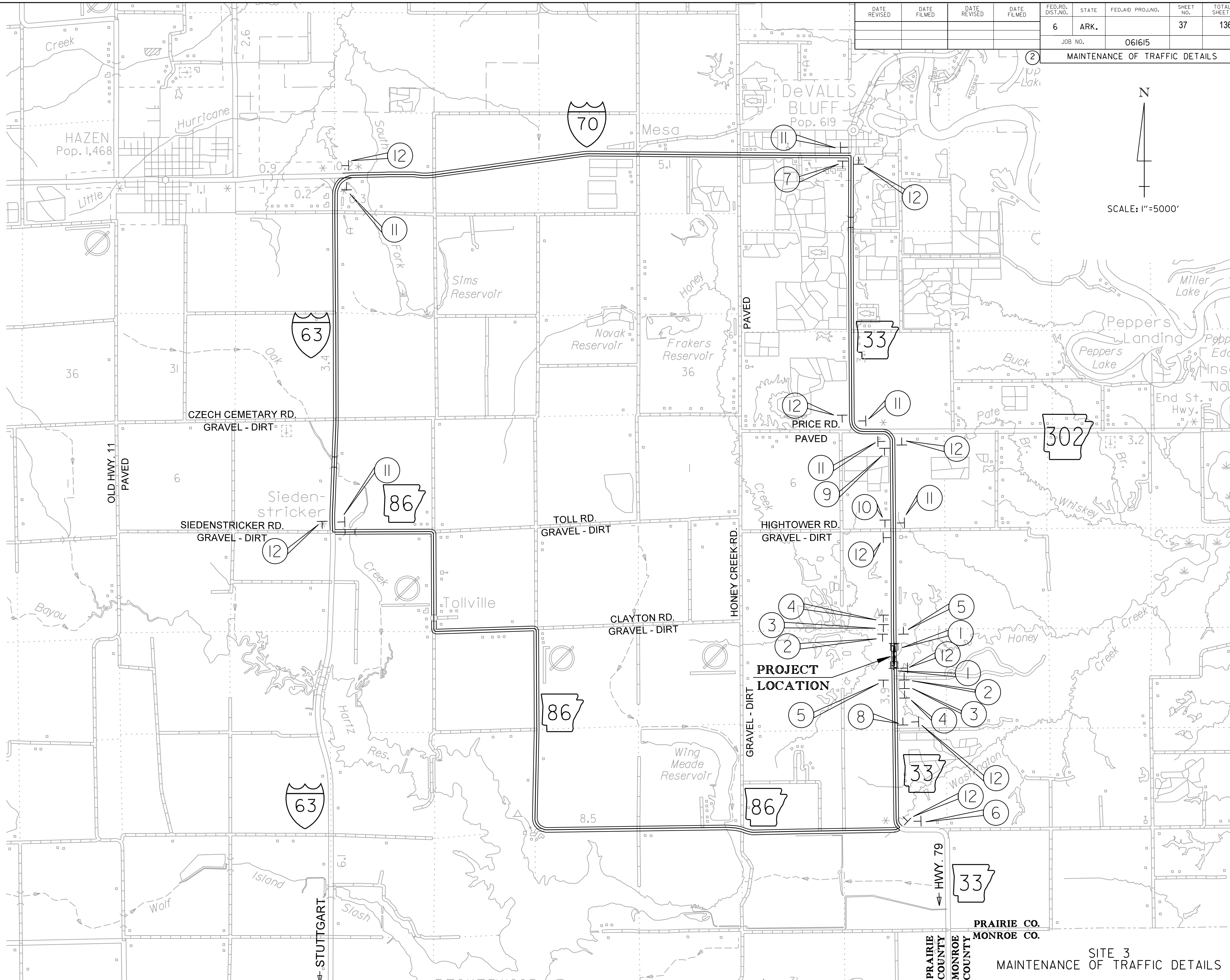
8 — ROAD CLOSED 0.7 MILES AHEAD LOCAL TRAFFIC ONLY — (1) R11-3A (60" X 30")

9 — ROAD CLOSED 2.2 MILES AHEAD LOCAL TRAFFIC ONLY — (1) R11-3A (60" X 30")

10 — ROAD CLOSED 1.2 MILES AHEAD LOCAL TRAFFIC ONLY — (1) R11-3A (60" X 30")

11 — DETOUR → 33 — (1) M4-10R (48" X 18"); (1) M1-5 (MODIFIED) (24" X 24")

12 — ← DETOUR 33 — (1) M4-10L (48" X 18"); (1) M1-5 (MODIFIED) (24" X 24")



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

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SITE 3
MAINTENANCE OF TRAFFIC DETAILS

CGervasini 12/13/2023 8:00:47 AM
WORKSPACE: AHTD
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REVISED DATE:

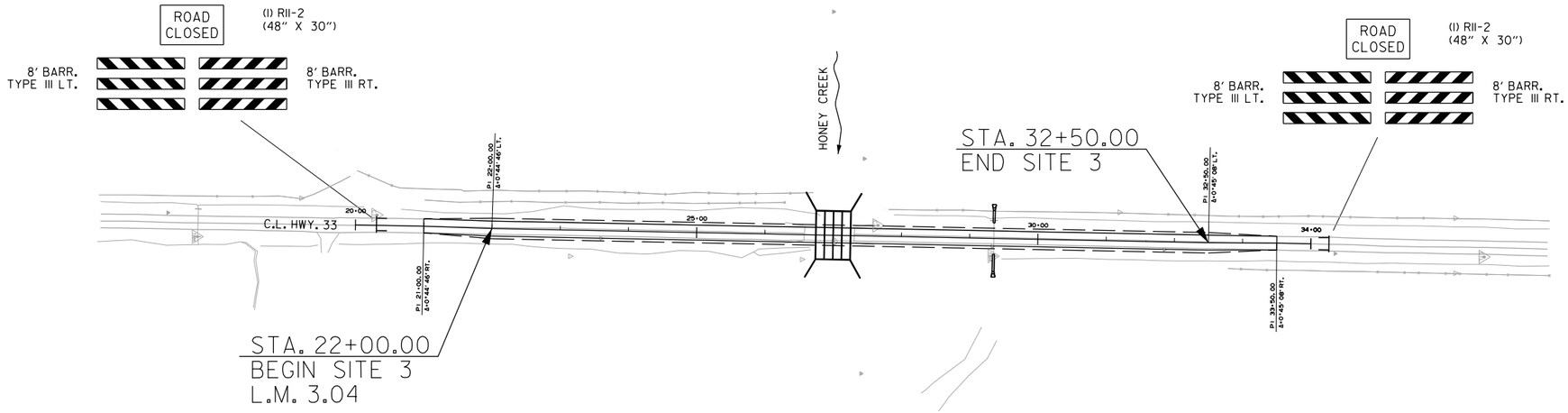
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		38	136
				JOB NO.		061615		
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

CONSTRUCTION SEQUENCE NOTES

1. INSTALL ADVANCE WARNING SIGNS AND DETOUR SIGNS.
2. CONSTRUCT HWY. 33.
3. PLACE PERMANENT PAVEMENT MARKINGS AND OPEN TO TRAFFIC.

N

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 1/2/2024



SITE 3
MAINTENANCE OF TRAFFIC DETAILS

CGGer-vasini 12/13/2023 8:00:47 AM
WORKSPACE: AHTD
L:\2017\17017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\r-061615_MOT_HWY 33.0.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.		39	136
				JOB NO.		061615		

(2) PERMANENT PAVEMENT MARKING DETAILS

6" WHITE THERMOPLASTIC PAVEMENT MARKING

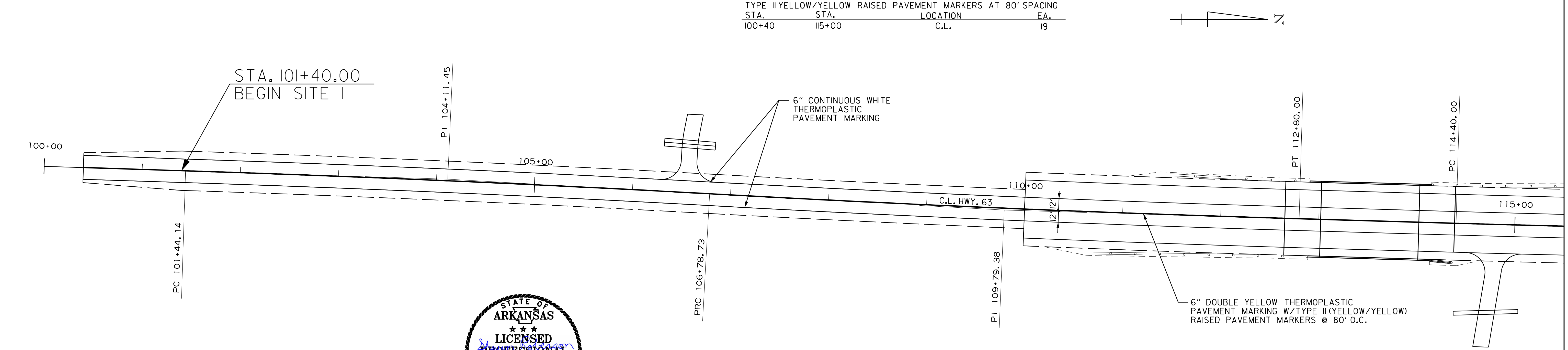
STA.	STA.	LOCATION	LIN. FT.
100+40	115+00	LT.	1460
100+40	115+00	RT.	1460

6" YELLOW THERMOPLASTIC PAVEMENT MARKING

STA.	STA.	LOCATION	LIN. FT.
100+40	115+00	C.L.	2920

TYPE II YELLOW/YELLOW RAISED PAVEMENT MARKERS AT 80' SPACING

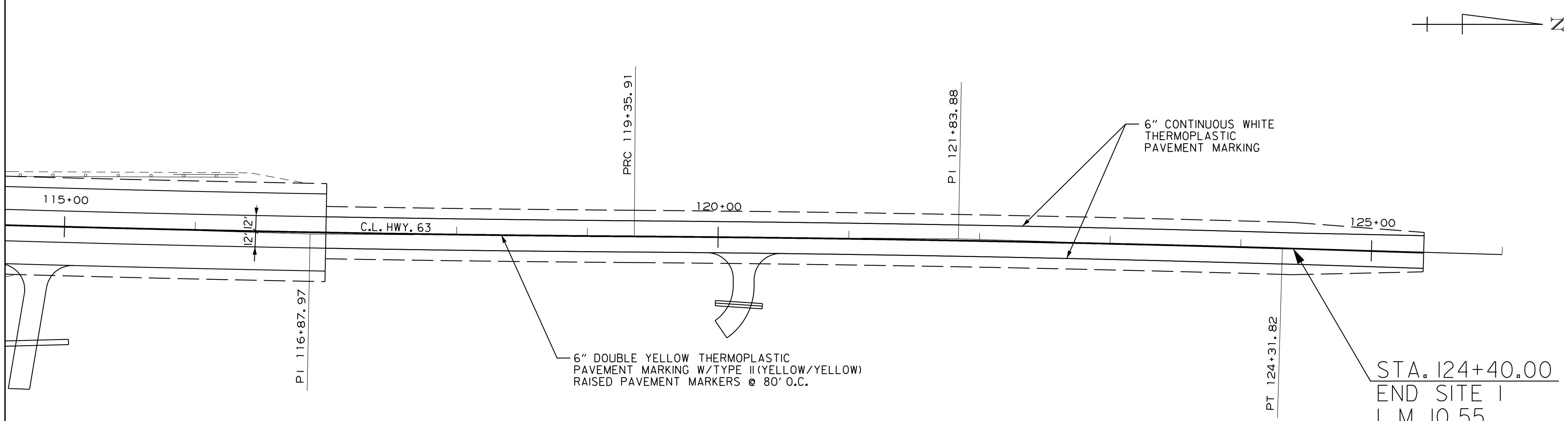
STA.	STA.	LOCATION	EA.
100+40	115+00	C.L.	19



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

DIGITALLY SIGNED 1/2/2024

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.



6" WHITE THERMOPLASTIC PAVEMENT MARKING

STA.	STA.	LOCATION	LIN. FT.
115+00	125+40	LT.	1040
115+00	125+40	RT.	1040

6" YELLOW THERMOPLASTIC PAVEMENT MARKING

STA.	STA.	LOCATION	LIN. FT.
115+00	125+40	C.L.	2080

TYPE II YELLOW/YELLOW RAISED PAVEMENT MARKERS AT 80' SPACING

STA.	STA.	LOCATION	EA.
115+00	125+40	C.L.	13

SITE I
PERMANENT PAVEMENT MARKING DETAILS

CGGervasini 12/13/2023 8:00:48 AM
WORKSPACE: AHTD
L:\2017\1017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\r061615_PM_HWY 63_SITE 1.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.		40	136
				JOB NO.		061615		

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUNA A. ROBERSON
DIGITALLY SIGNED 1/2/2024

6" WHITE THERMOPLASTIC PAVEMENT MARKING

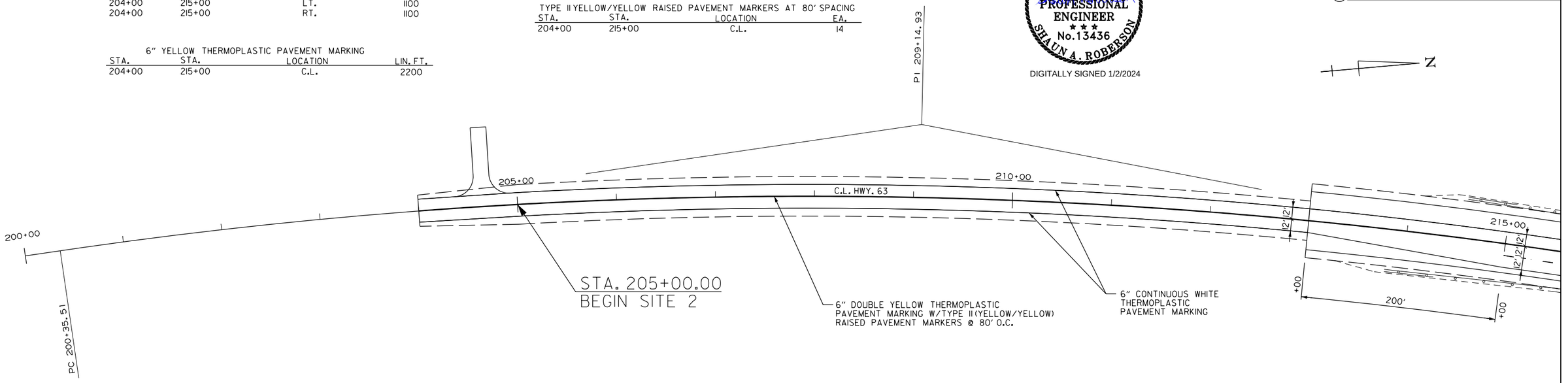
STA.	STA.	LOCATION	LIN. FT.
204+00	215+00	LT.	1100
204+00	215+00	RT.	1100

6" YELLOW THERMOPLASTIC PAVEMENT MARKING

STA.	STA.	LOCATION	LIN. FT.
204+00	215+00	C.L.	2200

TYPE II YELLOW/YELLOW RAISED PAVEMENT MARKERS AT 80' SPACING

STA.	STA.	LOCATION	EA.
204+00	215+00	C.L.	14



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6" WHITE THERMOPLASTIC PAVEMENT MARKING

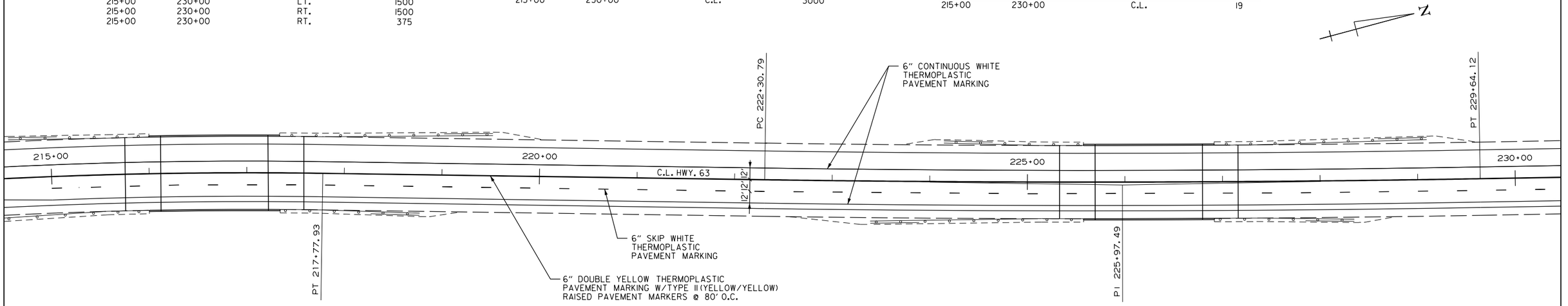
STA.	STA.	LOCATION	LIN. FT.
215+00	230+00	LT.	1500
215+00	230+00	RT.	1500
215+00	230+00	RT.	375

6" YELLOW THERMOPLASTIC PAVEMENT MARKING

STA.	STA.	LOCATION	LIN. FT.
215+00	230+00	C.L.	3000

TYPE II YELLOW/YELLOW RAISED PAVEMENT MARKERS AT 80' SPACING

STA.	STA.	LOCATION	EA.
215+00	230+00	C.L.	19



SITE 2
PERMANENT PAVEMENT MARKING DETAILS

CGervasini 12/13/2023 8:00:48 AM
WORKSPACE: AHTD
L:\201\170\170628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\r061615_PM_HWY 63_SITE 2_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.		41	136
JOB NO.		061615		

(2) PERMANENT PAVEMENT MARKING DETAILS

6" YELLOW THERMOPLASTIC PAVEMENT MARKING

STA.	STA.	LOCATION	LIN. FT.
230+00	234+00	C.L.	800

TYPE II YELLOW/YELLOW RAISED PAVEMENT MARKERS AT 80' SPACING

STA.	STA.	LOCATION	EA.
230+00	234+00	C.L.	5

6" WHITE THERMOPLASTIC PAVEMENT MARKING

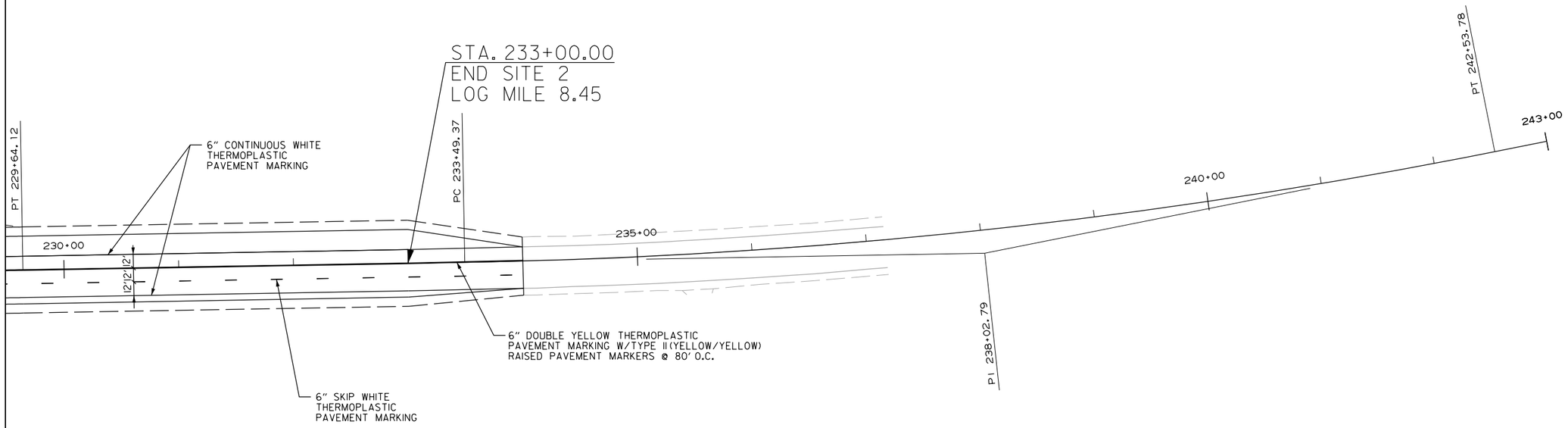
STA.	STA.	LOCATION	LIN. FT.
230+00	234+00	LT.	400
230+00	234+00	RT.	400
230+00	234+00	RT.	100

N

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

DIGITALLY SIGNED 1/2/2024

STA. 233+00.00
END SITE 2
LOG MILE 8.45



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 DETAILS

CGGervasini 12/13/2023 8:00:49 AM
WORKSPACE: AHTD
L:\201\101\7628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\r061615.PM.HWY 63.SITE 2.02.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.		42	136
				JOB NO.		061615		
				(2)	PERMANENT PAVEMENT MARKING DETAILS			

DIGITALLY SIGNED 1/2/2024

6" WHITE REFLECTORIZED PAINT PAVEMENT MARKING

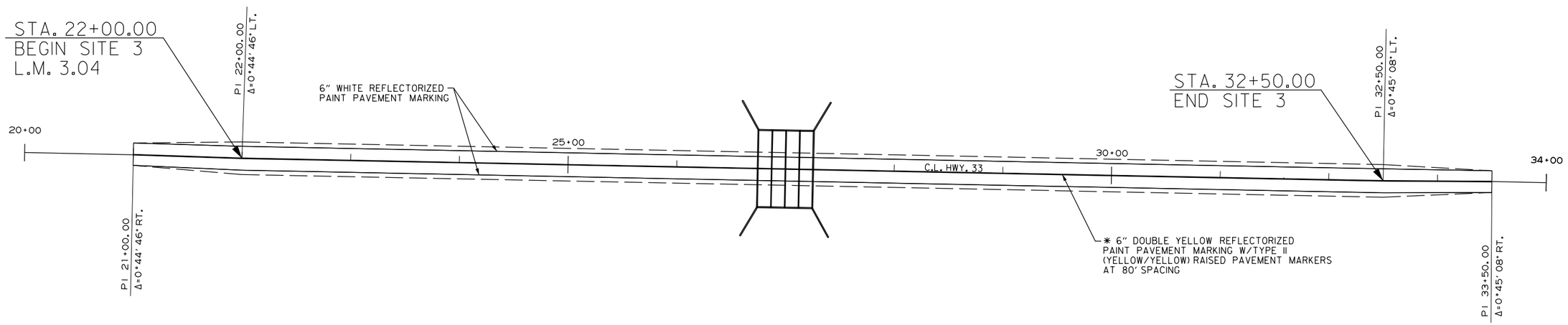
STA.	STA.	LOCATION	LIN. FT.
21+00.00	33+50.00	LT.	1250
21+00.00	33+50.00	RT.	1250

6" YELLOW REFLECTORIZED PAINT PAVEMENT MARKING

STA.	STA.	LOCATION	LIN. FT.
21+00.00	33+50.00	C.L.	2500

TYPE II (YELLOW/YELLOW) RAISED PAVEMENT MARKERS AT 80' SPACING

STA.	STA.	LOCATION	EA.
21+00.00	33+50.00	C.L.	16



* 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 DETAILS

CGervasini 12/13/2023 8:00:49 AM
WORKSPACE: AHTD
L:\20\7\7017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\r061615_PM_HWY 33.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.		43	136
JOB NO.		061615		

(2) SOIL BORING LOG

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 1/2/2024

SOIL BORING LOG

BORING NO. or TEST PIT NO.	APPROX. LOG MILE	APPROX. STATION	LOCATION	SAMPLE DEPTH (ft)	WATER CONTENT (%)	ATTERBERG LIMITS			PERCENT PASSING #200, %	UNIFIED CLASS.	AASHTO CLASS.	COLOR
						LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX				
SITE 1 - HWY. 63												
W-1	10.76	113+15	RT.	8.0	-	24	17	7	83	CL-ML	A-4 (4)	BROWN, GRAY
W-1	10.76	113+15	RT.	40.0	49	69	33	36	-	CH	A-7-5	RED, GRAY
W-2	10.75	114+10	RT.	3.5	-	29	16	13	69	CL	A-6 (7)	BROWN, GRAY
W-2	10.75	114+10	RT.	8.0	23	24	15	9	89	CL	A-4 (6)	BROWN, GRAY
W-2	10.75	114+10	RT.	20.0	23	26	19	7	66	CL	A-4 (3)	BROWN, GRAY
W-2	10.75	114+10	RT.	38.0	39	67	28	39	98	CH	A-7-6 (45)	BROWN, GRAY, RED
W-2	10.75	114+10	RT.	45.0	47	93	33	60	-	CH	A-7-5	BROWN, GRAY, RED
W-2	10.75	114+10	RT.	48.0	39	82	29	53	-	CH	A-7-5	BROWN, GRAY, RED
SITE 2 - HWY. 63												
L-1	8.79	215+05	RT.	10.0	23	37	22	15	84	CL	A-6 (13)	GRAY
L-1	8.79	215+05	RT.	18.0	22	34	16	18	-	CL	A-6	GRAY
L-1	8.79	215+05	RT.	23.0	29	34	22	12	-	CL	A-6	GRAY
L-1	8.79	215+05	RT.	33.0	30	46	23	23	-	CL	A-7-6	GRAY
L-2	8.77	216+30	RT.	3.0	22	46	23	23	82	CL	A-7-6 (20)	BROWN
L-2	8.77	216+30	RT.	8.0	21	34	29	5	-	ML	A-4	BROWN
L-2	8.77	216+30	RT.	36.0	29	54	25	29	-	CH	A-7-6	RED, GRAY
L-2	8.77	216+30	RT.	50.0	42	104	35	69	-	CH	A-7-5	RED, GRAY
L-3	8.59	225+60	RT.	8.5	27	50	25	25	51	CH	A-7-6 (9)	GRAY, TAN, RED
L-3	8.59	225+60	RT.	18.0	22	31	20	11	95	CL	A-6 (18)	TAN, RED
L-3	8.59	225+60	RT.	35.0	29	61	29	32	96	CH	A-7-6 (36)	TAN, RED
L-3	8.59	225+60	RT.	43.0	38	87	30	57	99	CH	A-7-5 (65)	TAN, RED
L-3	8.59	225+60	RT.	58.0	50	76	28	48	98	CH	A-7-6 (55)	TAN, RED
L-3	8.59	225+60	RT.	63.5	18	32	24	8	62	ML	A-4 (3)	TAN, RED
L-4	8.56	226+95	RT.	8.0	26	38	20	18	97	CL	A-6 (18)	GRAY, TAN, RED
L-4	8.56	226+95	RT.	18.0	4	32	21	11	94	CL	A-6 (10)	GRAY, TAN, RED
L-4	8.56	226+95	RT.	28.0	32	61	39	22	56	MH	A-7-5 (11)	TAN, RED
L-4	8.56	226+95	RT.	43.0	36	81	35	46	72	CH	A-7-5 (17)	TAN, RED
L-4	8.56	226+95	RT.	58.5	50	90	33	57	97	CH	A-7-5 (66)	TAN, RED

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.

CGGervasini 12/13/2023 8:00:49 AM
WORKSPACE: AHTD
L:\2017\1701628 - 061615 Wolf Bayou Honey-Lg Grue Creeks\Drawings\r-061615_SBL.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.		44	136
				JOB NO.		061615		
				(2)		QUANTITIES		

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED	TRAFFIC DRUMS	BARRICADES (TYPE III)		FURNISHING & INSTALLING PRECAST CONC. BARRIER	TEMPORARY IMPACT ATTENUATION BARRIER	TEMP. IMPACT ATTEN.BARR. (REPAIR)	CONSTRUCTION PROJECT INFORMATION SIGN UPDATE
								RIGHT	LEFT				
			LIN. FT. - EACH			SQ. FT.	EACH	LIN. FT.			EACH	EACH	EACH
W20-1	ROAD WORK 1500 FT.	48"x48"	4	4	4	64.0							
W20-1	ROAD WORK 1000 FT.	48"x48"	4	4	4	64.0							
W20-1	ROAD WORK 500 FT.	48"x48"	4	4	4	64.0							
W20-3	ROAD CLOSED 1500 FT.	48"x48"	2		2	32.0							
W20-3	ROAD CLOSED 1000 FT.	48"x48"	2		2	32.0							
W20-3	ROAD CLOSED 500 FT.	48"x48"	2		2	32.0							
G20-2	END ROAD WORK	48"x24"	6	4	6	48.0							
W1-4AR	REVERSE CURVE RT.	48"x48"		1	1	16.0							
W1-4AL	REVERSE CURVE LT.	48"x48"		1	1	16.0							
W13-1	SPEED LIMIT (ADVISORY)	18"x18"		4	4	9.0							
R11-2	ROAD CLOSED	48"x30"	2	8	8	80.0							
R11-3A	ROAD CLOSED __ XX MILES AHEAD LOCAL TRAFFIC ONLY	60"x30"	5		5	62.5							
MI-5 (MODIFIED)	STATE ROUTE 33	24"x24"	15		15	60.0							
M4-10L	DETOUR LEFT	48"x18"	9		9	54.0							
M4-10R	DETOUR RIGHT	48"x18"	6		6	36.0							
W1-6	LARGE ARROW	48"x24"		4	4	32.0							
* R4-1	DO NOT PASS	24"x30"	12	4	12	60.0							
* W21-5a	RIGHT SHOULDER CLOSED	36"x36"	12		12	108.0							
* W8-1	BUMP	30"x30"	12		12	75.0							
W24-1R	DOUBLE REVERSE CURVE RT.	48"x48"		1	1	16.0							
W24-1L	DOUBLE REVERSE CURVE LT.	48"x48"		1	1	16.0							
SPECIAL	CONSTRUCTION PROJECT INFORMATION SIGN	48"x96"	2	2	2	64.0							
	CONSTRUCTION PROJECT INFORMATION SIGN UPDATE			2	2								2
	TRAFFIC DRUMS		126	130	130		130						
	TYPE III BARRICADE-RT. (8')		2		2			16					
	TYPE III BARRICADE-LT. (8')		2		2				16				
	TYPE III BARRICADE-RT. (16')			4	4			64					
	TYPE III BARRICADE-LT. (16')			4	4				64				
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER			3456	3456					3456			
	TEMPORARY IMPACT ATTENUATION BARRIER			7	7						7		
	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)			7	7							7	
TOTALS:						**1040.5**	**130**	**80**	**80**	**3456**	**7**	**7**	**2**

NOTE: HWY. 63 IS A HIGH TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
HWY. 33 IS A LOW TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

NOTE: THE QUANTITY OF TRAFFIC DRUMS PROVIDED IS FOR BOTH SIDES OF THE ROADWAY FOR THE FULL LENGTH OF THE JOB. HOWEVER, THE INSTALLATION OF TRAFFIC DRUMS SHALL NEVER EXCEED THE ACTUAL WORK AREA BY MORE THAN 1/4 MILE, UNLESS APPROVED BY THE ENGINEER.

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

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 1	STAGE 2	END OF JOB	CONSTRUCTION PAVEMENT MARKINGS	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS	THERMOPLASTIC PAVEMENT MARKING		REFLECTORIZED PAINT PAVEMENT MARKING	
						TYPE II	6"		6"	
						(YELLOW/YELLOW)	WHITE	YELLOW	WHITE	YELLOW
	LIN. FT. - EACH			LIN. FT.	LIN. FT.	EACH	LIN. FT.		LIN. FT.	
CONSTRUCTION PAVEMENT MARKINGS	13692	13688		27380						
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS		2000			2000					
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW)			86			86				
THERMOPLASTIC PAVEMENT MARKING WHITE (6")			11475				11475			
THERMOPLASTIC PAVEMENT MARKING YELLOW (6")			11000					11000		
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")			2500						2500	
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")			2500							2500
TOTALS:				**27380**	**2000**	**86**	**11475**	**11000**	**2500**	**2500**

NOTE: HWY. 63 IS A HIGH TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
HWY. 33 IS A LOW TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

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

DIGITALLY SIGNED 1/18/2024

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
SITE 1				
104+60	113+00	HWY. 63	9	9
114+00	120+70	HWY. 63	7	7
SUBTOTALS SITE 1:			**16**	**16**
SITE 2				
204+00	216+30	HWY. 63	13	13
217+25	226+10	HWY. 63	9	9
227+00	234+00	HWY. 63	7	7
SUBTOTALS SITE 2:			**29**	**29**
SITE 3				
21+00	33+50	HWY. 33	13	13
SUBTOTALS SITE 3:			**13**	**13**
TOTALS:			**58**	**58**

REMOVAL AND DISPOSAL OF CULVERTS

STATION	DESCRIPTION	PIPE CULVERTS
		EACH
106+56	HWY. 63 - LT.	2
114+86	HWY. 63 - RT.	1
120+20	HWY. 63 - RT.	1
TOTAL:		**4**

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

REMOVAL AND DISPOSAL OF FENCE

STATION	STATION	LOCATION	FENCE	GATES
			LIN. FT.	EACH
21+00	26+29	HWY. 33 SITE 3 LT.	529	
21+47	23+02	HWY. 33 SITE 3 LT.	155	
23+71	26+70	HWY. 33 SITE 3 LT.	299	
27+81	33+50	HWY. 33 SITE 3 LT.	569	1
32+79	33+50	HWY. 33 SITE 3 RT.	71	
TOTALS:			**1623**	**1**

REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	GUARDRAIL	MAILBOXES
			LIN. FT.	EACH
SITE 2				
204+80	204+80	HWY. 63 LT.		1
SITE 3				
26+29	26+55	HWY. 33 LT.	26	
26+28	26+56	HWY. 33 RT.	28	
27+32	27+60	HWY. 33 LT.	28	
27+33	27+60	HWY. 33 RT.	27	
29+35	29+35	HWY. 33 LT. & RT.		
TOTALS:			**109**	**1**

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

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
01-24-24				6	ARK.		45	136
				JOB NO.		061615		
				(2)		QUANTITIES		

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

DIGITALLY SIGNED 1/24/2024

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	ROCK FILL
			CU. YD.		TON
SITE 1					
100+40	125+40	HWY. 63 - STAGE 1	1230	8188	11734
100+40	125+40	HWY. 63 - STAGE 2	1351	4550	5132
SUBTOTALS SITE 1:			**2581**	**12738**	**16866**
SITE 2					
204+00	234+00	HWY. 63 - STAGE 1	109	12771	43557
204+00	234+00	HWY. 63 - STAGE 2	185	9544	23431
SUBTOTALS SITE 2:			**294**	**22315**	**66988**
SITE 3					
21+00	33+50	HWY. 33 - STAGE 1	3158	14204	
SUBTOTALS SITE 3:			**3158**	**14204**	
ENTIRE	PROJECT	APPROACHES		125	
ENTIRE	PROJECT	TEMPORARY APPROACHES		13	
TOTALS:			**6033**	**49395**	**83854**

SOIL STABILIZATION

STATION	STATION	LOCATION / DESCRIPTION	SOIL STABILIZATION
			TON
ENTIRE	PROJECT	TO BE USED IF AND WHERE	1000
		DIRECTED BY THE ENGINEER	
TOTAL:			**1000**

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

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
100+40.00	101+40.00	HWY. 63	30.00	333.33
124+40.00	125+40.00	HWY. 63	30.00	333.33
204+00.00	205+00.00	HWY. 63	32.00	355.56
233+00.00	234+00.00	HWY. 63	50.00	555.56
21+00.00	22+00.00	HWY. 33	20.00	222.22
32+50.00	33+50.00	HWY. 33	20.00	222.22
TOTAL:				**2022.22**

COORDINATE COLD MILLING STOCKPILE LOCATIONS WITH DISTRICT ENGINEER.
LOCATIONS SHALL BE NO FURTHER THAN FIVE MILES FROM EACH SITE.

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	TON	TACK COAT
		GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE	5	9
DIRECTED BY THE ENGINEER		
TOTALS:	**5**	**9**

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

ACHM PATCHING OF EXISTING ROADWAY

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

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

APPROACH GUTTERS AND SLABS

STATION	STATION	LOCATION	APPROACH GUTTER TYPE 1 SPECIAL	APPROACH SLABS TYPE 1 SPECIAL	APPROACH SLABS TYPE 2 SPECIAL	REINFORCING STEEL-RDWY. (GR. 60)	AGGREGATE BASE CRS. (CLASS 7)
			CU.YD.	CU.YD.	CU.YD.	POUND	TON
SITE 1							
112+65.50	113+02.00	HWY. 63 LT.	14.04			791	10.4
112+65.50	113+02.00	HWY. 63 RT.	14.04			791	10.4
114+02.00	114+38.50	HWY. 63 LT.	14.04			791	10.4
114+02.00	114+38.50	HWY. 63 RT.	14.04			791	10.4
112+65.50	113+02.00	HWY. 63		48.97		5498	28.5
112+65.50	113+02.00	HWY. 63			71.43	8202	41.5
114+02.00	114+38.50	HWY. 63		48.97		5498	28.5
114+02.00	114+38.50	HWY. 63			71.43	8202	41.5
SITE 2							
215+75.50	216+12.00	HWY. 63 LT.	14.04			791	10.4
215+75.50	216+12.00	HWY. 63 RT.	14.04			791	10.4
217+22.00	217+58.50	HWY. 63 LT.	14.04			791	10.4
217+22.00	217+58.50	HWY. 63 RT.	14.04			791	10.4
225+33.00	225+69.50	HWY. 63 LT.	14.04			791	10.4
225+33.00	225+69.50	HWY. 63 RT.	14.04			791	10.4
226+79.50	227+16.00	HWY. 63 LT.	14.04			791	10.4
226+79.50	227+16.00	HWY. 63 RT.	14.04			791	10.4
215+75.50	216+12.00	HWY. 63		48.97		5498	28.5
215+75.50	216+12.00	HWY. 63			71.43	8202	41.5
217+22.00	217+58.50	HWY. 63		48.97		5498	28.5
217+22.00	217+58.50	HWY. 63			71.43	8202	41.5
225+33.00	225+69.50	HWY. 63		48.97		5498	28.5
225+33.00	225+69.50	HWY. 63			71.43	8202	41.5
226+79.50	227+16.00	HWY. 63		48.97		5498	28.5
226+79.50	227+16.00	HWY. 63			71.43	8202	41.5
TOTALS:			**168.48**	**293.82**	**428.58**	**91692**	**544.8**

STRUCTURES

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE (CLASS III)	FLARED END SECTIONS FOR R.C. PIPE CULVERTS	SPAN	HEIGHT	LENGTH	CLASS S CONCRETE-ROADWAY	REINF. STEEL-ROADWAY (GRADE 60)	UNCL.EXC. FOR STR.-ROADWAY	SOLID SODDING	WATER	STD. DWG. NOS.
		36"	36"									
		LIN. FT.		LIN. FT.			CU.YD.	POUND	CU.YD.	SQ.YD.	M.GAL.	
29+35	HWY. 33 EXTEND 36' R.C. PIPE CULVERT15' RT & 21' LT.	44	2							34	0.43	PCC-1, FES-1, FES-2
SUBTOTALS:		**44**	**2**							**34**	**0.43**	
STRUCTURES OVER 20' - 0" SPAN												
27+00	CONSTRUCT QUAD. 12'X12' R.C. BOX CULVERT			12	12	72	519.59	60139	198	51	0.64	SPECIAL DETAILS, RCB-1, RCB-2
SUBTOTALS:							**519.59**	**60139**	**198**	**51**	**0.64**	
TOTALS:		**44**	**2**				**519.59**	**60139**	**198**	**85**	**1.07**	

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.

BENCH MARKS

STATION	LOCATION	BENCH MARKS
		EACH
SITE 1		
113+02	SE. PARAPET WALL, HWY. 63	1
SITE 2		
217+22	NE. PARAPET WALL, HWY. 63	1
226+80	NW. PARAPET WALL, HWY. 63	1
SITE 3		
27+00	E. HEADWALL, HWY. 33	1
TOTAL:		**4**

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

SELECTED PIPE BEDDING

LOCATION	SELECTED PIPE BEDDING
	CU.YD.
ENTIRE PROJECT TO BE USED IF	100
AND WHERE DIRECTED BY THE	
ENGINEER	
TOTAL:	**100**

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

4" PIPE UNDERDRAIN

STATION	STATION	LOCATIONS	4" PIPE UNDERDRAINS	UNDERDRAIN OUTLET PROTECTORS
			LIN. FT.	EACH
* ENTIRE PROJECT TO BE USED IF AND			500	4
WHERE DIRECTED BY THE ENGINEER				
TOTALS:			**500**	**4**

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

FENCING

STATION	STATION	LOCATION	WIRE FENCE (TYPE D-1)	* 16'-0" GATES
			LIN. FT.	EACH
21+47	23+02	HWY. 33 SITE 3 LT.	169	
23+71	26+60	HWY. 33 SITE 3 LT.	310	1
27+40	33+50	HWY. 33 SITE 3 LT.	620	
32+79	33+50	HWY. 33 SITE 3 RT.	71	
TOTALS:			**1170**	**1**

* DENOTES ALTERNATE BID ITEM.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
01-24-24				6	ARK.		46	136
				JOB NO.		061615		
				(2)		QUANTITIES		

GUARDRAIL

STATION	STATION	LOCATION	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)
			LIN. FT.		EACH
110+73.85	112+92.60	HWY. 63 RT.	150	1	1
111+48.85	112+92.60	HWY. 63 LT.	75	1	1
114+11.40	116+30.15	HWY. 63 LT.	150	1	1
213+83.36	216+02.11	HWY. 63 RT.	150	1	1
214+59.33	216+03.08	HWY. 63 LT.	75	1	1
217+31.89	218+75.64	HWY. 63 RT.	75	1	1
217+30.92	219+49.67	HWY. 63 LT.	150	1	1
223+41.46	225+60.21	HWY. 63 RT.	150	1	1
224+16.24	225+59.99	HWY. 63 LT.	75	1	1
226+88.79	228+32.54	HWY. 63 RT.	75	1	1
226+89.01	229+07.76	HWY. 63 LT.	150	1	1
TOTALS:			**1275**	**11**	**11**

EROSION CONTROL MATTING

STATION	STATION	LOCATION	LENGTH	CLASS 3
			LIN. FT.	SQ. YD.
22+00.00	26+80.00	HWY. 33 RT.	480.00	426.67
22+00.00	26+90.00	HWY. 33 LT.	490.00	435.56
27+74.00	29+25.00	HWY. 33 LT.	151.00	134.22
29+45.00	32+50.00	HWY. 33 LT.	305.00	271.11
29+45.00	32+50.00	HWY. 33 RT.	305.00	271.11
TOTAL:				**1538.67**

NOTE: AVERAGE WIDTH = 8'-0"

MAILBOXES

STATION	LOCATION	MAILBOXES	MAILBOX SUPPORTS (SINGLE)
		EACH	
204+80	HWY. 63 LT.	1	1
TOTALS:		**1**	**1**

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL: SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	TEMPORARY EROSION CONTROL: TEMPORARY SEEDING	MULCH COVER	WATER	FILTER SOCK (18") (E-3)	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.	LIN. FT.	CU.YD.	LIN. FT.	CU.YD.	CU.YD.	CU. YD.
SITE 1																
ENTIRE	PROJECT	CLEARING AND GRUBBING										30	2175			91
ENTIRE	PROJECT	STAGE 1										6				2
ENTIRE	PROJECT	STAGE 2										12				4
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			3.77	7.54	3.77	384.5	3.77	3.77	3.77	76.9	100			100	100	100
SUBTOTALS SITE 1:			**3.77**	**7.54**	**3.77**	**384.5**	**3.77**	**3.77**	**3.77**	**76.9**	**100**	**48**	**2175**	**100**	**100**	**197**
SITE 2																
ENTIRE	PROJECT	CLEARING AND GRUBBING										21	5810			222
ENTIRE	PROJECT	STAGE 1										3				1
ENTIRE	PROJECT	STAGE 2										3				1
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			4.73	9.46	4.73	482.5	4.73	4.73	4.73	96.5	100			100	100	100
SUBTOTALS SITE 2:			**4.73**	**9.46**	**4.73**	**482.5**	**4.73**	**4.73**	**4.73**	**96.5**	**100**	**27**	**5810**	**100**	**100**	**324**
SITE 3																
ENTIRE	PROJECT	CLEARING AND GRUBBING										21	205			15
ENTIRE	PROJECT	STAGE 1										15	1095			46
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			1.92	3.84	1.92	195.8	1.92	1.92	1.92	39.2	100			100	100	100
SUBTOTALS SITE 3:			**1.92**	**3.84**	**1.92**	**195.8**	**1.92**	**1.92**	**1.92**	**39.2**	**100**	**36**	**1300**	**100**	**100**	**161**
TOTALS:			**10.42**	**20.84**	**10.42**	**1062.8**	**10.42**	**10.42**	**10.42**	**212.6**	**300**	**111**	**9285**	**300**	**300**	**682**

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
ROCK DITCH CHECKS.....3 CU.YD./LOCATION

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

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

DRIVEWAYS & TURNOUTS

STATION	SIDE	LOCATION	WIDTH	ACHM SURFACE COURSE (1/2") 220 LBS. PER SQ. YD. (PG 64-22)		AGGREGATE BASE COURSE (CLASS 7)	SIDE DRAINS 24"	SIDE DRAINS 48"	STANDARD DRAWINGS
			FEET	SQ. YD.	TON	TON	LIN. FT.		
SITE 1									
106+56	LT.	HWY. 63	16	110.08	12.11	44.95		104	DR-2, PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
114+86	RT.	HWY. 63	16	160.93	17.70	65.71		66	DR-2, PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
120+20	RT.	HWY. 63	16	102.98	11.33	42.05	72		DR-2, PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
SUBTOTALS SITE 1:				**373.99**	**41.14**	**152.71**	**72**	**170**	
SITE 2									
204+66	LT.	HWY. 63	16	114.59	12.60	46.79			DR-2
SUBTOTALS SITE 2:				**114.59**	**12.60**	**46.79**			
* ENTIRE PROJECT TEMPORARY DRIVES				25.00	2.75	10.21			
TOTALS:				**513.58**	**56.49**	**209.71**	**72**	**170**	

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2")...94.5% MIN. AGGR...5.5% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

THE CONTRACTOR, WITH THE APPROVAL OF THE ENGINEER, WILL BE ALLOWED TO SUBSTITUTE A HIGHER PERFORMANCE GRADE ASPHALT SURFACE COURSE FOR DRIVEWAYS AND MINOR SIDE STREET CONSTRUCTION AT NO ADDITIONAL COST TO THE DEPARTMENT.

* 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.

RUMBLE STRIPS

STATION	STATION	LOCATION	* CENTERLINE RUMBLE STRIPES IN ASPHALT ROADWAY	* RUMBLE STRIPS IN ASPHALT SHOULDERS
			LIN.FT.	LIN.FT.
SITE 1				
100+40	112+65	HWY. 63 C.L.	1225	
114+39	125+40	HWY. 63 C.L.	1101	
101+40	112+66	HWY. 63 RT.		901
115+12	119+87	HWY. 63 RT.		380
120+53	124+40	HWY. 63 RT.		310
101+40	106+23	HWY. 63 LT.		386
106+89	112+66	HWY. 63 LT.		462
114+39	124+40	HWY. 63 LT.		801
SUBTOTALS SITE 1:			**2326**	**3240**
SITE 2				
204+00	215+76	HWY. 63 C.L.	1176	
217+59	225+33	HWY. 63 C.L.	774	
227+16	233+00	HWY. 63 C.L.	584	
205+00	215+75	HWY. 63 RT.		860
217+59	225+33	HWY. 63 RT.		619
227+16	233+00	HWY. 63 RT.		467
205+00	215+76	HWY. 63 LT.		861
217+59	225+33	HWY. 63 LT.		619
227+16	233+00	HWY. 63 LT.		467
SUBTOTALS SITE 2:			**2534**	**3893**
TOTALS:			**4860**	**7133**

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

GEOTEXTILE FABRIC

STATION	STATION	LOCATION	GEOTEXTILE FABRIC (TYPE 8)
			SQ. YD.
SITE 1			
109+00	120+00	HWY. 63	5421
SITE 2			
205+00	233+00	HWY. 63	15308
TOTAL:			**20729**

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 1/24/2024

CGervasini 1/25/2024 2:38:56 PM
WORKSPACE: AHTD
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REVISED DATE:

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

DIGITALLY SIGNED 1/2/2024

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.)			TACK COAT	ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")								
				TON / STATION	TON	TOTAL WID.	SQ.YD.	GALLON	TOTAL WID.	SQ.YD.	GALLON	TOTAL GALLONS	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	TOTAL PG 64-22
			FEET			FEET			FEET				FEET			TON	FEET			TON	FEET			TON	TON
MAIN LANES																									
SITE 1																									
100+40.00	101+40.00	TRANSITION	100.00	70.38	70.38	15.01	166.78	8.34				8.34	7.57	84.14	495.00	20.82	7.44	82.64	220.00	9.09	35.00	388.89	220.00	42.78	51.87
101+40.00	110+00.00	HWY. 63 - NOTCH AND WIDEN	860.00	150.25	1292.15	23.55	2250.69	112.53				112.53	11.84	1131.74	495.00	280.11	11.71	1118.96	220.00	123.09	40.00	3822.22	220.00	420.44	543.53
110+00.00	111+00.00	HWY. 63 - FULL DEPTH	100.00	323.00	323.00	134.77	1497.45	74.87				74.87	67.52	750.23	495.00	185.68	67.25	747.22	220.00	82.19	75.00	833.33	220.00	91.67	173.86
111+00.00	112+65.50	HWY. 63 - FULL DEPTH	165.50	432.00	714.96	134.77	2478.29	123.91				123.91	67.52	1241.63	495.00	307.30	67.25	1236.65	220.00	136.03	75.00	1379.17	220.00	151.71	287.74
114+38.50	116+50.00	HWY. 63 - FULL DEPTH	211.50	432.00	913.68	134.77	3167.11	158.36				158.36	67.52	1586.74	495.00	392.72	67.25	1580.38	220.00	173.84	75.00	1762.50	220.00	193.88	367.72
116+50.00	117+00.00	HWY. 63 - FULL DEPTH	50.00	323.00	161.50	134.77	748.73	37.44				37.44	67.52	375.12	495.00	92.84	67.25	373.61	220.00	41.10	75.00	416.67	220.00	45.83	86.93
117+00.00	124+40.00	HWY. 63 - NOTCH AND WIDEN	740.00	150.25	1111.85	23.55	1936.64	96.83				96.83	11.84	973.82	495.00	241.02	11.71	962.82	220.00	105.91	40.00	3288.89	220.00	361.78	467.69
124+40.00	125+40.00	TRANSITION	100.00	70.38	70.38	15.01	166.78	8.34				8.34	7.57	84.14	495.00	20.82	7.44	82.64	220.00	9.09	35.00	388.89	220.00	42.78	51.87
SUBTOTALS SITE 1:					**4657.90**		**12412.47**	**620.62**				**620.62**		**6227.56**		**1541.31**		**6184.92**		**680.34**		**12280.56**		**1350.87**	**2031.21**
SITE 2																									
204+00.00	205+00.00	TRANSITION, SE.	100.00	71.75	71.75	15.65	173.89	8.69				8.69	7.90	87.78	495.00	21.73	7.75	86.11	220.00	9.47	36.00	400.00	220.00	44.00	53.47
205+00.00	213+00.00	HWY. 63 - NOTCH AND WIDEN, SE.	800.00	158.25	1266.00	22.89	2034.26	101.71				101.71	11.51	1023.15	495.00	253.23	11.38	1011.11	220.00	111.22	40.00	3555.56	220.00	391.11	502.33
213+00.00	215+75.50	HWY. 63 - FULL DEPTH, SE.	275.50	432.00	1190.16	134.77	4125.48	206.27				206.27	67.52	2066.89	495.00	511.56	67.25	2058.60	220.00	226.45	75.00	2295.83	220.00	252.54	478.99
217+58.50	220+09.00	HWY. 63 - FULL DEPTH, SE.	250.50	432.00	1082.16	134.77	3751.12	187.56				187.56	67.52	1879.33	495.00	465.13	67.25	1871.79	220.00	205.90	75.00	2087.50	220.00	229.63	435.53
220+09.00	221+82.93	HWY. 63 - NOTCH AND WIDEN, SE.	173.93	323.00	561.79	86.39	1669.45	83.47				83.47	43.26	836.03	495.00	206.92	43.13	833.41	220.00	91.68	75.00	1449.42	220.00	159.44	251.12
221+82.93	223+18.00	HWY. 63 - NOTCH AND WIDEN	135.07	323.00	436.28	86.39	1296.45	64.82				64.82	43.26	649.24	495.00	160.69	43.13	647.21	220.00	71.19	75.00	1125.58	220.00	123.81	195.00
223+18.00	225+33.00	HWY. 63 - FULL DEPTH	215.00	432.00	928.80	134.77	3219.52	160.98				160.98	67.52	1613.00	495.00	399.22	67.25	1606.53	220.00	176.72	75.00	1791.67	220.00	197.08	373.80
227+16.00	229+00.00	HWY. 63 - FULL DEPTH	184.00	432.00	794.88	134.77	2755.31	137.77				137.77	67.52	1380.43	495.00	341.66	67.25	1374.89	220.00	151.24	75.00	1533.33	220.00	168.67	319.91
229+00.00	229+44.37	HWY. 63 - FULL DEPTH	44.37	323.00	143.32	134.77	664.42	33.22				33.22	67.52	332.88	495.00	82.39	67.25	331.54	220.00	36.47	75.00	369.75	220.00	40.67	77.14
229+44.37	233+00.00	HWY. 63 - NOTCH AND WIDEN, SE.	355.63	307.50	1093.56	79.94	3158.67	157.93				157.93	40.10	1584.69	495.00	392.21	39.83	1573.98	220.00	173.14	75.00	2963.58	220.00	325.99	499.13
233+00.00	234+00.00	TRANSITION, SE.	100.00	82.13	82.13	54.35	603.93	30.20				30.20	27.31	303.47	495.00	75.11	27.04	300.46	220.00	33.05	62.50	694.44	220.00	76.39	109.44
SUBTOTALS SITE 2:					**7650.83**		**23452.50**	**1172.62**				**1172.62**		**11756.89**		**2909.85**		**11695.63**		**1286.53**		**18266.66**		**2009.33**	**3295.86**
SITE 3																									
21+00.00	22+00.00	TRANSITION	100.00	46.25	46.25	2.18	24.19	1.21				1.21	1.11	12.38	330.00	2.04	1.06	11.81	220.00	1.30	25.00	277.78	220.00	30.56	31.86
22+00.00	23+00.00	HWY. 33 - NOTCH AND WIDEN	100.00	100.25	100.25	4.35	48.33	2.42				2.42	2.23	24.78	330.00	4.09	2.13	23.61	220.00	2.60	26.00	288.89	220.00	31.78	34.38
23+00.00	31+20.00	HWY. 33 - FULL DEPTH	820.00	178.00	1459.60	44.71	4073.40	203.67				203.67	22.46	2046.17	330.00	337.62	22.25	2027.22	220.00	222.99	26.00	2388.89	220.00	260.58	483.57
31+20.00	32+50.00	HWY. 33 - NOTCH AND WIDEN	130.00	100.25	130.33	4.36	62.91	3.15				3.15	2.23	32.21	330.00	5.31	2.13	30.69	220.00	3.38	26.00	375.56	220.00	41.31	44.69
32+50.00	33+50.00	TRANSITION	100.00	46.25	46.25	2.18	24.19	1.21				1.21	1.11	12.38	330.00	2.04	1.06	11.81	220.00	1.30	25.00	277.78	220.00	30.56	31.86
SUBTOTALS SITE 3:					**1782.68**		**4233.02**	**211.66**				**211.66**		**2127.92**		**351.10**		**2105.14**		**231.57**		**3588.90**		**394.79**	**626.36**
ADDITIONAL FOR LEVELING																									
SITE 1																									
101+40.00	110+00.00	HWY. 63 - NOTCH AND WIDEN	860.00						24.00	2293.33	389.87	389.87					24.00	2293.33	VAR.	435.00					435.00
117+00.00	124+40.00	HWY. 63 - NOTCH AND WIDEN	740.00						24.00	1973.33	335.47	335.47					24.00	1973.33	VAR.	402.00					402.00
SUBTOTALS SITE 1:										**4266.66**	**725.34**	**725.34**						**4266.66**		**837.00**					**837.00**
SITE 2																									
205+00.00	213+00.00	HWY. 63 - NOTCH AND WIDEN, SE.	800.00						24.00	2133.33	362.67	362.67					24.00	2133.33	VAR.	1478.17					1478.17
220+09.00	221+82.93	HWY. 63 - NOTCH AND WIDEN, SE.	173.93						24.00	463.81	78.85	78.85					24.00	463.81	VAR.	110.25					110.25
221+82.93	223+18.00	HWY. 63 - NOTCH AND WIDEN	135.07						24.00	360.19	61.23	61.23					24.00	360.19	VAR.	235.08					235.08
229+44.37	233+00.00	HWY. 63 - NOTCH AND WIDEN, SE.	355.63						27.42	1083.35	184.17	184.17					27.42	1083.35	VAR.	308.47					308.47
SUBTOTALS SITE 2:										**4040.68**	**686.92**	**686.92**						**4040.68**		**2131.97**					**2131.97**
SITE 3																									
22+00.00	23+00.00	HWY. 33 - NOTCH AND WIDEN	100.00						20.00	222.22	37.78	37.78					20.00	222.22	VAR.	14.78					14.78
31+20.00	32+50.00	HWY. 33 - NOTCH AND WIDEN	130.00						20.00	288.89	49.11	49.11					20.00	288.89	VAR.	25.59					25.59
SUBTOTALS SITE 3:										**511.11**	**86.89**	**86.89**						**511.11**		**40.37**					**40.37**
ADDITIONAL FOR RAISING GRADE																									
SITE 1																									
110+00.00	111+00.00	HWY. 63 - FULL DEPTH	100.00						24.00	266.67	45.33	45.33	24.00	266.67	VAR.	450.10									
116+50.00	117+00.00	HWY. 63 - FULL DEPTH	50.00						24.00	133.33	22.67	22.67	24.00	133.33	VAR.	246.32									
SUBTOTALS SITE 1:										**400.00**	**68.00**	**68.00**		**400.00**		**696.42**									
SITE 2																									
229+00.00	229+44.37	HWY. 63 - FULL DEPTH	44.37						24.00	118.32	20.11	20.11			VAR.	131.83									
SUBTOTALS SITE 2:										**118.32**	**20.11**	**20.11**				**131.83**									
ADDITIONAL FOR SUPERELEVATION																									
SITE 2																									
204+00.00	205+00.00	TRANSITION, SE.	100.00	20.25	20.25																				
205+00.00	213+00.00	HWY. 63 - NOTCH AND WIDEN, SE.	800.00	95.00	760.00																				
213+00.00	215+75.50	HWY. 63 - FULL DEPTH, SE.	275.50	86.75	239.00																				
217+58.50	220+09.00	HWY. 63 - FULL DEPTH, SE.	250.50	44.25	110.85																				
220+09.00	221+82.93	HWY. 63 - NOTCH AND WIDEN, SE.	173.93	25.00	43.48																				
229+44.37	233+00.00	HWY. 63 - NOTCH AND WIDEN, SE.	355.63	30.75	109.36																				
233+00.00	234+00.00	TRANSITION, SE.	100.00	29.88	29.88																				
SUBTOTALS SITE 2:					**1312.82**																				
ADDITIONAL FOR GUARDRAILS																									
SITE 1																									
110+22.00	112+90.00	HWY. 63 RT.	268.00	VAR.	110.43																VAR.	140.23	220.00	15.43	15.43
111+04.00	112+90.00	HWY. 63 LT.	186.00	VAR.	65.45																VAR.	83.11	220.00	9.14	9.14
114+14.00	114+64.00	HWY. 63 RT.	50.00	VAR.	18.78																VAR.	23.84	220.00	2.62	2.62
114+14.00	116+84.00	HWY. 63 LT.	270.00	VAR.	113.91																VAR.	144.65	220.00	15.91	15.91
SUBTOTALS SITE 1:					**308.57**																	**391.83**		**43.10**	**43.10**
SITE 2																									
213+30.00	216+00.00	HWY. 63 RT.	270.00	VAR.	118.00																VAR.	149.84	220.00	16.48	16.48
214+14.00	216+00.00	HWY. 63 LT.	186.00	VAR.	64.96																VAR.	82.48	220.00	9.07	9.07
217+35.00	219+20.00	HWY. 63 RT.	185.00	VAR.	64.66																VAR.	82.10	220.00	9.03	9.03
217+33.00	220+04.00	HWY. 63 LT.	271.00	VAR.	113.52																VAR.	144.15	220.00	15.86	15.86
222+57.00	225+58.00	HWY. 63 RT.	301.00	VAR.	120.51																VAR.	153.02	220.00	16.83	16.83
223+71.00	225+57.00	HWY. 63 LT.	186.00	VAR.	65.43																VAR.	83.08	220.00	9.14	9.14
226+91.00	228+78.00	HWY. 63 RT.	187.00	VAR.	65.26																VAR.	82.87	220.00	9.12	9.12
226+92.00	229+62.00	HWY. 63 LT.	270.00	VAR.	113.84																VAR.	144.56	220.00	15.90	15.90
SUBTOTALS SITE 2:					**726.18**																	**922.10**		**101.43**	**101.43**
TOTALS:					**16438.98**		**40097.99**	**2004.90**		**9336.77**	**1587.26**	**3592.16**		**20512.37**		**5630.51**		**28804.14**		**5207.78**		**35450.05**		**3899.52**	**9107.30**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2")....................94.5% MIN. AGGR.................5.5% ASPHALT BINDER
ACHM BINDER COURSE (1")...........................95.6% MIN. AGGR.................4.4% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

CGGervasini 12/13/2023 8:01:57 AM
WORKSPACE: AHTD
L:\2017\170628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\r061615_QTY_01.dgn
REVISED DATE:

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	48	136
		07635, 07636, 07637		QUANTITIES		66491

SCHEDULE OF BRIDGE QUANTITIES - JOB NO. 061615

BRIDGE NO.	NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NO.	205	801	SP, SS & 802	SP, SS & 802	SS & 802	SP & 803	SS & 804	SS & 804	SS & 805	SS & 805	812	SS & 816	SS & 816
			ITEM	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. _)	UNCLASSIFIED EXCAVATION FOR STRUCTURES - BRIDGES	CLASS S CONCRETE - BRIDGE	CLASS S(AE) CONCRETE - BRIDGE	PRESTRESSED CONCRETE GIRDERS (TYPE IV)	CLASS 2 PROTECTIVE SURFACE TREATMENT	REINFORCING STEEL - BRIDGE (GRADE 60)	EPOXY COATED REINFORCING STEEL (GRADE 60)	STEEL SHELL PILING (16" DIA.) (1)	PREBORING	BRIDGE NAME PLATE (TYPE D)	FILTER BLANKET	DUMPED RIPRAP
			UNIT	LUMP SUM	CU. YD.	CU. YD.	CU. YD.	LIN. FT.	SQ. YD.	LB.	LB.	LIN. FT.	LIN. FT.	EACH	SQ. YD.	CU. YD.
07635	WOLF ISLAND SLASH	END BENT NO. 1			49	43.75				4,710	2,909	847	110		325	179
		END BENT NO. 2			40	43.75				4,710	2,909	869	110		316	176
		99'-0" INTEGRAL PRESTRESSED CONC. GIRDER SPAN TYPE IV					336.80	1,089.0	962.7		69,862			1		
		SITE NO. 1 (EXISTING BR. NO. 01858)		1												
		TOTALS FOR BRIDGE NO. 07635			89	87.50	336.80	1,089.0	962.7	9,420	75,680	1,716	220	1	641	355
07636	LA GRUE BAYOU SOUTH	END BENT NO. 1			31	41.47				4,315	2,908	1,023	110		621	333
		END BENT NO. 2			42	41.33				4,315	2,908	990	110		332	184
		109'-0" INTEGRAL PRESTRESSED CONC. GIRDER SPAN TYPE IV					357.80	1,199.0	1,057.0		75,094			1		
		SITE NO. 2 (EXISTING BR. NO. 01859)		1												
		TOTALS FOR BRIDGE NO. 07636			73	82.80	357.80	1,199.0	1,057.0	8,630	80,910	2,013	220	1	953	517
07637	LA GRUE BAYOU NORTH	END BENT NO. 1			53	43.70				4,880	2,908	847	110		381	209
		END BENT NO. 2			56	43.70				4,880	2,908	847	110		329	181
		109'-0" INTEGRAL PRESTRESSED CONC. GIRDER SPAN TYPE IV					357.60	1,199.0	1,057.0		75,254			1		
		SITE NO. 3 (EXISTING BR. NO. 01860)		1												
		TOTALS FOR BRIDGE NO. 07637			109	87.40	357.60	1,199.0	1,057.0	9,760	81,070	1,694	220	1	710	390
(2)		SITE NO. 4 (EXISTING BR. NO. M0756)		1												
		TOTALS FOR JOB NO. 061615			271	257.70	1,052.20	3,487.0	3,076.7	27,810	237,660	5,423	660	3	2,304	1,262

(1) Steel Shell Piles shall conform to ASTM A252, Grade 3 (Fy = 45,000 psi).

(2) Existing Bridge No. M0756 (Log Mile 3.15) is 73.7' in length, 22.2' wide (21.2' clear roadway) and consists of a concrete slab, with asphalt overlay, on timber girder spans (5 spans total) supported by timber pile bents with partial concrete pile encasement.

Plans of the existing bridge, if available, will be made available to the Contractor upon request to the Construction Contract Development Section of the Program Management Division.

The existing bridge shall be removed in accordance with Section 205. All material from the existing bridge shall become property of the Contractor.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14498
ADAM B. HALL

DIGITALLY SIGNED 11/3/2023
BRIDGE ENGINEER

SCHEDULE OF BRIDGE QUANTITIES
LA GRUE BAYOU, WOLF ISLAND SLASH
& HONEY CREEK STRS. & APPRS. (S)
PRAIRIE COUNTY

ROUTE 63 SEC. 11

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JJB DATE: DEC. 2020 FILENAME: b061615_q1.dgn
CHECKED BY: MRA DATE: MAY 2021 SCALE: No Scale
DESIGNED BY: JJB DATE: DEC. 2020

BRIDGE NO. 07635, 07636, 07637 DRAWING NO. 66491

SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM	QUANTITY	UNIT
201	CLEARING	58	STATION
201	GRUBBING	58	STATION
202	REMOVAL AND DISPOSAL OF FENCE	1623	LIN. FT.
202	REMOVAL AND DISPOSAL OF GATES	1	EACH
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS	4	EACH
202	REMOVAL AND DISPOSAL OF GUARDRAIL	109	LIN. FT.
202	REMOVAL AND DISPOSAL OF MAILBOXES	1	EACH
SP, SS, & 210	UNCLASSIFIED EXCAVATION	6033	CU. YD.
SP & 210	COMPACTED EMBANKMENT	49395	CU. YD.
SP & 210	ROCK FILL	83854	TON
SP & 210	SOIL STABILIZATION	1000	TON
SP, SS, & 303	AGGREGATE BASE COURSE (CLASS 7)	17193	TON
SS & 401	TACK COAT	3601	GAL.
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	5383	TON
SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")	248	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	8660	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")	504	TON
SP & 412	COLD MILLING ASPHALT PAVEMENT	2022	SQ. YD.
SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	5	TON
SP, SS, & 415	ACHM PATCHING OF EXISTING ROADWAY	100	TON
SP, SS, & 504	APPROACH SLABS	722.40	CU. YD.
SP, SS, & 504	APPROACH GUTTERS	168.48	CU. 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	1041	SQ. FT.
SP, SS, & 604	CONSTRUCTION PROJECT INFORMATION SIGN UPDATE	2	EACH
SS & 604	BARRICADES	160	LIN. FT.
SS & 604	TRAFFIC DRUMS	130	EACH
SS & 604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	3456	LIN. FT.
604	CONSTRUCTION PAVEMENT MARKINGS	27380	LIN. FT.
604	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	2000	LIN. FT.
SS & 606	36" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	44	LIN. FT.
SS & 606	36" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	2	EACH
SP, SS, & 606	24" SIDE DRAIN	72	LIN. FT.
SP, SS, & 606	48" SIDE DRAIN	170	LIN. FT.
SS & 606	SELECTED PIPE BEDDING	100	CU. YD.
SS & 611	4" PIPE UNDERDRAINS	500	LIN. FT.
SS & 611	UNDERDRAIN OUTLET PROTECTORS	4	EACH
SS & 617	GUARDRAIL (TYPE A)	1275	LIN. FT.
SS & 617	GUARDRAIL TERMINAL (TYPE 2)	11	EACH
SS & 617	THRIE BEAM GUARDRAIL TERMINAL	11	EACH
SS & 619	WIRE FENCE (TYPE D-1)	1170	LIN. FT.
* SS & 619	16' STEEL GATES (ALTERNATE NO. 1)	1	EACH
* SS & 619	16' ALUMINUM GATES (ALTERNATE NO. 2)	1	EACH
620	LIME	21	TON
620	SEEDING	10.42	ACRE
SS & 620	MULCH COVER	20.84	ACRE
620	WATER	1276.5	M. GAL.
621	TEMPORARY SEEDING	10.42	ACRE
621	SILT FENCE	9285	LIN. FT.
621	SEDIMENT BASIN	300	CU. YD.
621	OBLITERATION OF SEDIMENT BASIN	300	CU. YD.
621	SEDIMENT REMOVAL AND DISPOSAL	682	CU. YD.
621	ROCK DITCH CHECKS	111	CU. YD.
SS & 621	FILTER SOCK (18")	300	LIN. FT.
623	SECOND SEEDING APPLICATION	10.42	ACRE
624	SOLID SODDING	85	SQ. YD.
SP & 625	GEOTEXTILE FABRIC (TYPE 8)	20729	SQ. YD.
626	EROSION CONTROL MATTING (CLASS 3)	1539	SQ. YD.
635	ROADWAY CONSTRUCTION CONTROL	1.00	LUMP SUM
637	MAILBOXES	1	EACH
637	MAILBOX SUPPORTS (SINGLE)	1	EACH
642	RUMBLE STRIPS IN ASPHALT SHOULDERS	7133	LIN. FT.
SP & 642	CENTERLINE RUMBLE STRIPES IN ASPHALT ROADWAYS	4860	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")	2500	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")	2500	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (6")	11475	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING YELLOW (6")	11000	LIN. FT.
721	RAISED PAVEMENT MARKERS (TYPE II)	86	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER	7	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)	7	EACH
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)	91692	POUND
	STRUCTURES OVER 20' SPAN		
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)	1.00	LUMP SUM
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 2)	1.00	LUMP SUM
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 3)	1.00	LUMP SUM
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 4)	1.00	LUMP SUM
636	BRIDGE CONSTRUCTION CONTROL	1.00	LUMP SUM
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE	271	CU. YD.
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY	198	CU. YD.
SP, SS, & 802	CLASS S CONCRETE-ROADWAY	519.59	CU. YD.
SP, SS, & 802	CLASS S CONCRETE-BRIDGE	257.70	CU. YD.
SP, SS, & 802	CLASS S(AE) CONCRETE-BRIDGE	1052.20	CU. YD.
SS & 802	PRESTRESSED CONCRETE GIRDERS (TYPE IV)	3487.0	LIN. FT.
SP & 803	CLASS 2 PROTECTIVE SURFACE TREATMENT	3076.7	SQ. YD.
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)	60139	POUND
SS & 804	REINFORCING STEEL-BRIDGE (GRADE 60)	27810	POUND
SS & 804	EPOXY COATED REINFORCING STEEL (GRADE 60)	237660	POUND
SS & 805	STEEL SHELL PILING (16" DIAMETER)	5423	LIN. FT.
SS & 805	PREBORING	660	LIN. FT.
812	BRIDGE NAME PLATE (TYPE D)	3	EACH
SS & 816	FILTER BLANKET	2304	SQ. YD.
SS & 816	DUMPED RIPRAP	1262	CU. YD.

* DENOTES ALTERNATE BID ITEMS.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
01-24-24				6	ARK.		49	136
				JOB NO.		061615		

(2) SUMMARY OF QUANTITIES AND REVISIONS

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

DIGITALLY SIGNED 1/24/2024

REVISIONS

DATE	REVISION	SHEET NUMBER
01-24-2024	ADDED ROCK FILL SPECIAL PROVISION. REVISED ROCK FILL SPECIAL DETAIL, CROSS SECTIONS, AND ASSOCIATED QUANTITIES FOR ADDITIONAL ROCK FILL IN AREAS WITH STANDING WATER	3, 10,45, 46, 49, 104-130

SUMMARY OF QUANTITIES AND REVISIONS

CGGervasini 1/25/2024 2:39:35 PM
WORKSPACE: AHTD
L:\20\TO\7628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\r061615_QTY_SUM.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.		50	136
				JOB NO.		061615		

(2) SURVEY CONTROL DETAILS

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

DIGITALLY SIGNED 1/2/2024

SURVEY CONTROL COORDINATES

Project Name: s061615
Date: 10/30/2019
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	2042351.4798	1446018.3313	212.309	CTL	STD ASRDOT CAP STAMPED PN: 1
2	2043150.1178	1446044.9629	210.366	CTL	STD ASRDOT CAP STAMPED PN: 2
3	2044011.8392	1446070.2124	209.627	CTL	STD ASRDOT CAP STAMPED PN: 3
4	2044936.3108	1446101.9850	209.097	CTL	STD ASRDOT CAP STAMPED PN: 4
5	2045607.5443	1446119.1703	211.603	CTL	STD ASRDOT CAP STAMPED PN: 5
6	2052864.1472	1445684.8746	211.447	CTL	STD ASRDOT CAP STAMPED PN: 6
7	2053628.8886	1445673.9214	209.542	CTL	STD ASRDOT CAP STAMPED PN: 7
8	2054544.9530	1445807.1751	212.560	CTL	STD ASRDOT CAP STAMPED PN: 8
9	2055097.3081	1445952.8770	211.902	CTL	STD ASRDOT CAP STAMPED PN: 9
10	2055617.4836	1446102.7760	212.356	CTL	STD ASRDOT CAP STAMPED PN: 10
11	2056452.9764	1446375.1885	212.275	CTL	STD ASRDOT CAP STAMPED PN: 11
12	2057214.1457	1446469.6914	215.010	CTL	STD ASRDOT CAP STAMPED PN: 12
13	2052417.0582	1476202.0644	208.205	CTL	STD ASRDOT CAP STAMPED PN: 13
14	2053097.6649	1476182.1100	205.440	CTL	STD ASRDOT CAP STAMPED PN: 14
15	2053957.5122	1476224.7168	187.229	CTL	STD ASRDOT CAP STAMPED PN: 15
16	2054770.3375	1476209.4615	189.468	CTL	STD ASRDOT CAP STAMPED PN: 16
17	2055504.3673	1476224.6508	183.916	CTL	STD ASRDOT CAP STAMPED PN: 17
18	2056392.3472	1476270.8698	186.563	CTL	STD ASRDOT CAP STAMPED PN: 18
19	2057357.5346	1476291.1892	207.534	CTL	STD ASRDOT CAP STAMPED PN: 19
900	2042290.6445	1446014.4662	211.749	TBM	CHISELED SQUARE IN HEADWALL
901	2044086.0767	1446107.7591	211.848	TBM	BRONZE CAP, CAP IN S/E RAIL ON BRIDGE
902	2045791.6160	1446124.8075	212.515	TBM	CHISELED SQUARE IN HEADWALL
903	2053464.9143	1445610.9831	206.945	TBM	REBAR W/ALUM CAP
904	2054667.7525	1445871.2894	212.873	TBM	CHISELED SQUARE IN CONCRETE
905	2055598.6202	1446097.7359	212.996	TBM	CHISELED SQUARE IN BRIDGE CORNER
906	2057537.9772	1446414.3523	214.823	TBM	REBAR W/ALUM CAP
907	2052767.7733	1476217.1297	203.693	TBM	CHISELED SQUARE IN HEADWALL
908	2054507.0792	1476241.1382	186.460	TBM	CHISELED SQUARE IN HEADWALL
909	2055673.2067	1476269.6507	180.573	TBM	CHISELED SQUARE IN HEADWALL
910	2057880.1691	1476269.3297	207.138	TBM	REBAR W/ALUM CAP

*Note - Rebar and Cap - Standard - 5/8" Rebar with 2" Aluminum Cap stamped
*(standard markings common to all caps), or as indicated
(other markings indicated in the point description of the individual point).
USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT
A PROJECT CAF OF 0.999979888 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 s061615gi.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 - 00302-SOUTH ZONE
DETERMINED FROM GPS CONTROL POINTS: VT AND HZ BASED ON STATIC GPS CONSTRAINING ELEVATION ON NGS BM C-114
CONVERGENCE ANGLE: 00-14-56 RIGHT AT LT: N 34-42-24 LG: W091-33-19
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

ALIGNMENT NAME: HWY. 63 - SITE 1

POINT	STATION	TYPE	NORTHING	EASTING
8000	100+00.00	POB	2042757.9784	1446053.1892
8001	101+44.14	PC	2042902.0399	1446057.8004
8002	106+78.73	PRC	2043436.1174	1446081.1335
8003	112+80.00	PT	2044036.8303	1446106.5025
8004	114+40.00	PC	2044196.7627	1446111.1560
8005	119+35.91	PRC	2044692.5818	1446120.2155
8006	124+31.82	PT	2045188.4009	1446129.2750
8007	126+00.00	POE	2045356.5067	1446134.1664

ALIGNMENT NAME: HWY. 63 - SITE 2

POINT	STATION	TYPE	NORTHING	EASTING
8100	200+00.00	POB	2052967.1934	1445699.2812
8101	200+35.51	PC	2053002.6394	1445697.2167
8102	217+77.93	PT	2054726.6424	1445886.0257
8103	222+30.79	PC	2055162.3209	1446009.5841
8104	229+64.12	PT	2055870.9116	1446198.3463
8105	233+49.37	PC	2056244.7149	1446291.5459
8106	242+53.78	PT	2057137.1073	1446430.8919
8107	243+00.00	POE	2057183.2258	1446433.9147

ALIGNMENT NAME: HWY. 33 - SITE 3

POINT	STATION	TYPE	NORTHING	EASTING
8200	20+00.00	POB	2054738.5348	1476223.8682
8201	21+00.00	PI	2054838.5152	1476225.8461
8202	22+00.00	PI	2054938.4615	1476229.1258
8203	32+50.00	PI	2055988.2560	1476249.8938
8204	33+50.00	PI	2056088.2538	1476250.5590
8205	34+00.00	POE	2056138.2441	1476251.5479

ALIGNMENT NAME: SITE 1 TEMP. ALIGNMENT

POINT	STATION	TYPE	NORTHING	EASTING
8300	10+00.00	PC	2043507.2800	1446084.9635
8301	11+99.13	PRC	2043705.2350	1446105.6946
8302	14+34.35	PCC	2043939.2559	1446127.9690
8303	15+31.26	PT	2044036.1178	1446130.9921
8304	16+91.26	PC	2044196.0501	1446135.6457
8305	18+09.68	PCC	2044314.4201	1446138.7842
8306	20+44.17	PRC	2044548.6060	1446130.0066
8307	22+52.54	PT	2044756.6677	1446120.7826

ALIGNMENT NAME: SITE 2 TEMP. ALIGNMENT

POINT	STATION	TYPE	NORTHING	EASTING
8400	40+00.00	PC	2053865.8757	1445718.6361
8401	42+32.91	PT	2054095.3340	1445757.7334
8402	46+34.21	PC	2054486.0916	1445849.1214
8403	48+75.79	PT	2054719.9578	1445909.5962
8404	53+28.65	PC	2055155.6363	1446033.1546
8405	58+34.69	PCC	2055643.9528	1446165.8407
8406	61+41.65	PT	2055942.9680	1446235.0651
8407	66+69.11	POE	2056459.8469	1446340.2253

CGGervasini 12/13/2023 8:02:45 AM
WORKSPACE: AHTD
L:\20\TV\70\f628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\r061615_SC.0.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.		51	136
JOB NO.		061615		

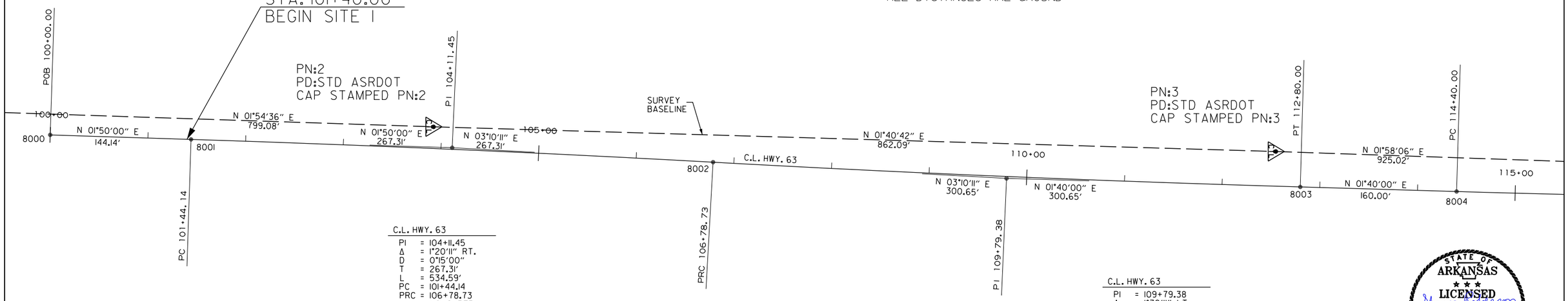
(2) SURVEY CONTROL DETAILS

0 100 200

1" = 100'

ALL BEARINGS ARE GRID
BASED ON GPS
ALL DISTANCES ARE GROUND

N



C.L. HWY. 63

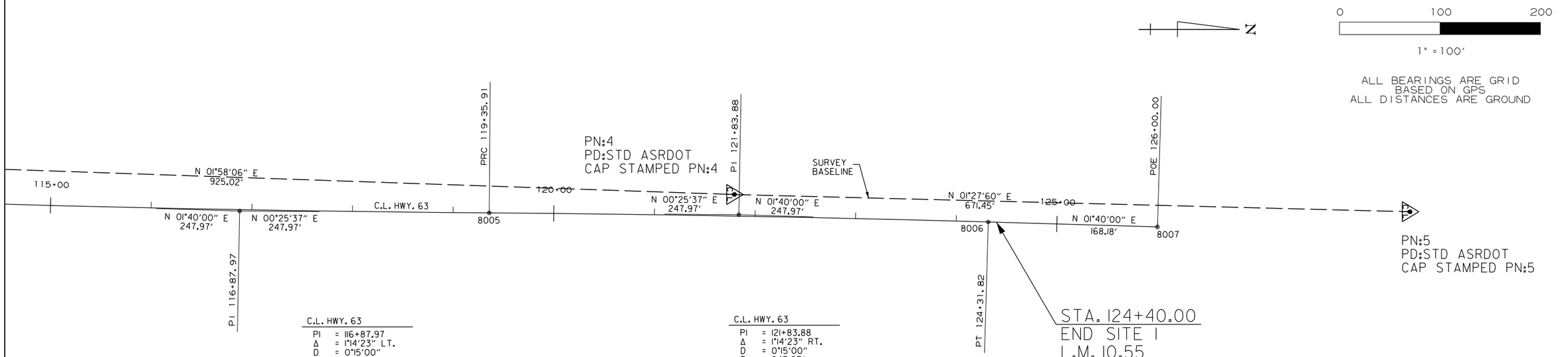
PI	= 104+11.45
Δ	= 1°20'11" RT.
D	= 0°15'00"
T	= 267.31'
L	= 534.59'
PC	= 101+44.14
PRC	= 106+78.73
e	= NO SUPER

C.L. HWY. 63

PI	= 109+79.38
Δ	= 1°30'11" LT.
D	= 0°15'00"
T	= 300.65'
L	= 601.27'
PRC	= 106+78.73
PT	= 112+80.00
e	= NO SUPER

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

DIGITALLY SIGNED 1/2/2024



C.L. HWY. 63

PI	= 116+87.97
Δ	= 1°14'23" LT.
D	= 0°15'00"
T	= 247.97'
L	= 495.91'
PC	= 114+40.00
PRC	= 119+35.91
e	= NO SUPER

C.L. HWY. 63

PI	= 121+83.88
Δ	= 1°14'23" RT.
D	= 0°15'00"
T	= 247.97'
L	= 495.91'
PRC	= 119+35.91
PT	= 124+31.82
e	= NO SUPER

SITE 1
SURVEY CONTROL DETAILS

CGGervasini 12/13/2023 8:02:49 AM
WORKSPACE: AHTD
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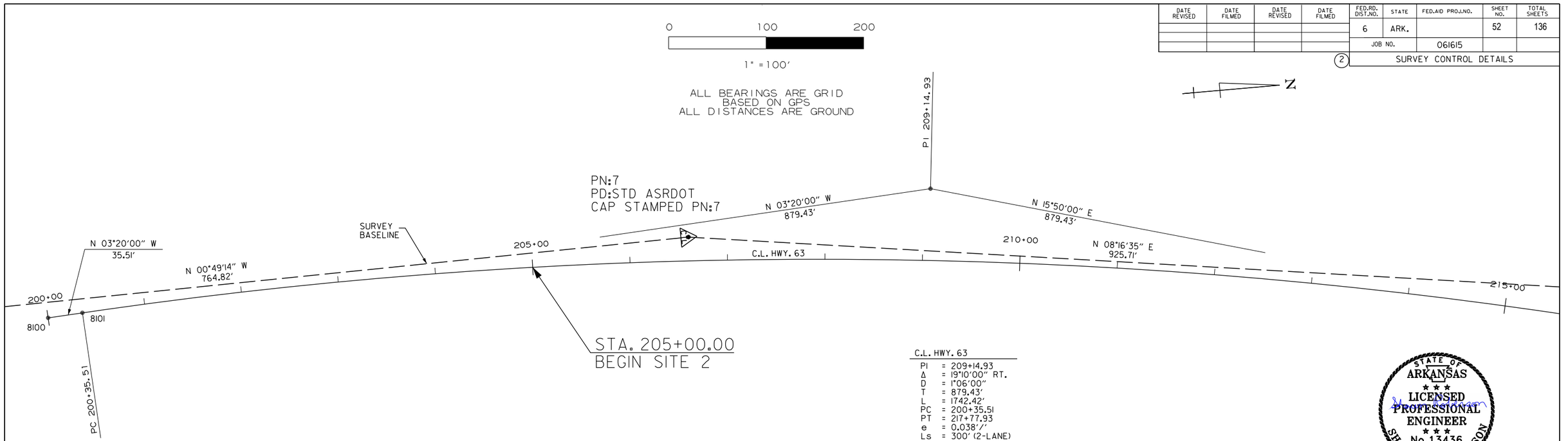
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		52	136
JOB NO.		061615		
(2)	SURVEY CONTROL DETAILS			



C.L. HWY. 63

PI	= 209+14.93
Δ	= 19°10'00" RT.
D	= 1°06'00"
T	= 879.43'
L	= 1742.42'
PC	= 200+35.51
PT	= 217+77.93
e	= 0.038'/'
Ls	= 300' (2-LANE)
Ls	= 540' (5-LANE)

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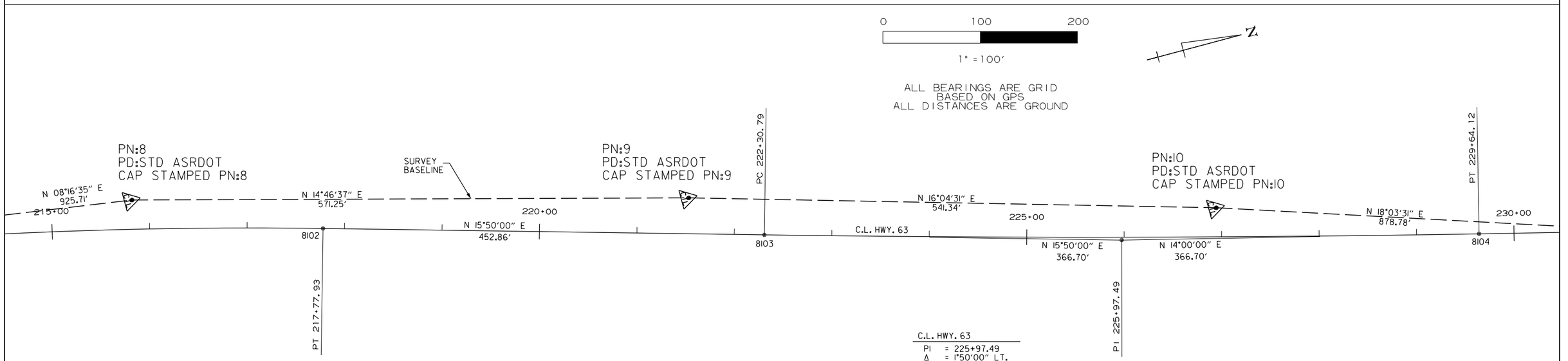

C.L. HWY. 63

PI	= 225+97.49
Δ	= 1°50'00" LT.
D	= 0°15'00"
T	= 366.70'
L	= 733.33'
PC	= 222+30.79
PT	= 229+64.12
e	= NO SUPER

SITE 2
SURVEY CONTROL DETAILS

CGervasini 12/13/2023 8:02:50 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.		53	136
				JOB NO.		061615		
				(2)	SURVEY CONTROL DETAILS			

0 100 200

1" = 100'

ALL BEARINGS ARE GRID
BASED ON GPS
ALL DISTANCES ARE GROUND

N

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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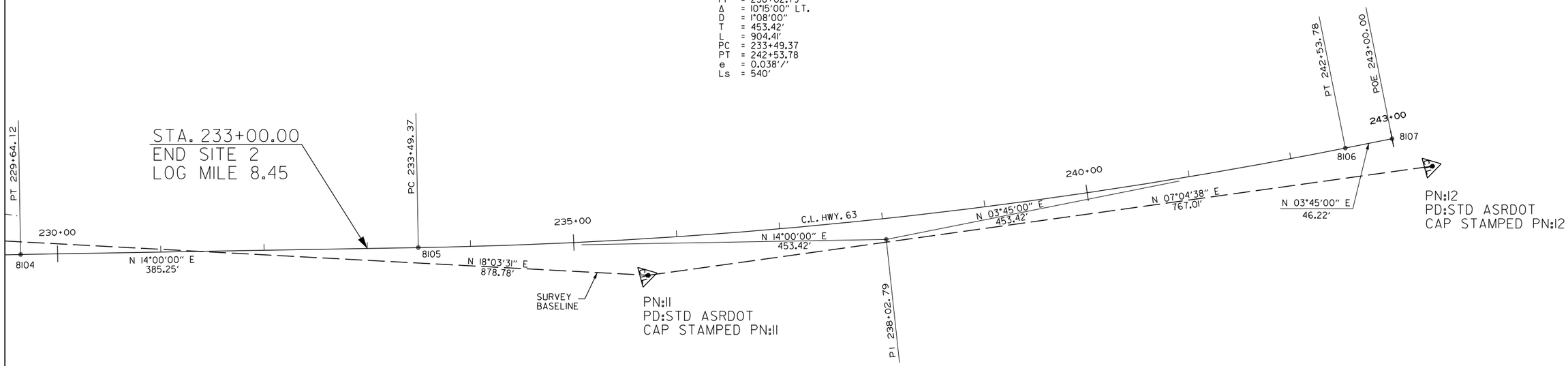
SHAUN A. ROBERSON

DIGITALLY SIGNED 1/2/2024

C.L. HWY. 63
PI = 238+02.79
Δ = 10°15'00" LT.
D = 1°08'00"
T = 453.42'
L = 904.41'
PC = 233+49.37
PT = 242+53.78
e = 0.038'/'
Ls = 540'



SITE 2
SURVEY CONTROL DETAILS

CGGervasini 12/13/2023 8:02:50 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.		54	136
				JOB NO.		061615		
				(2)	SURVEY CONTROL DETAILS			

0 100 200

1" = 100'

ALL BEARINGS ARE GRID
BASED ON GPS
ALL DISTANCES ARE GROUND

N

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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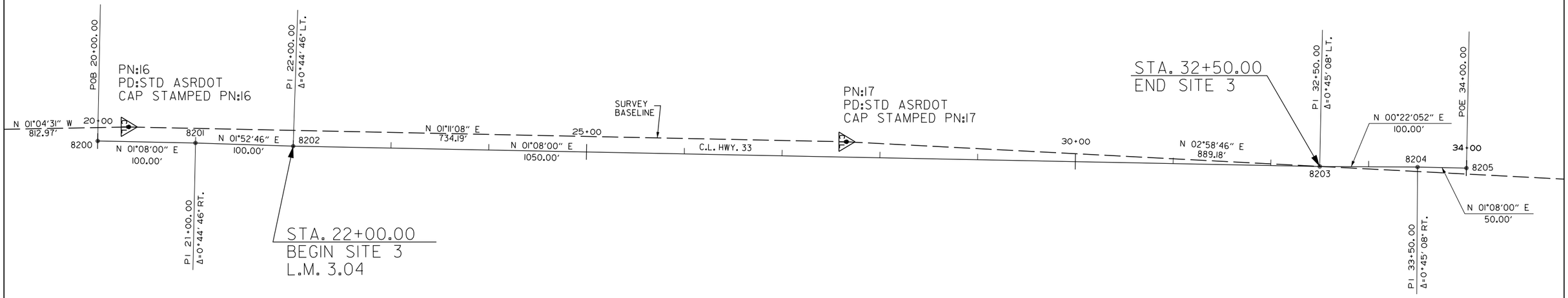
SHAUN A. ROBERSON

DIGITALLY SIGNED 1/2/2024



SITE 3
SURVEY CONTROL DETAILS

CGGervasini 12/13/2023 8:02:50 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.		55	136
JOB NO.		061615		
(2)	SURVEY CONTROL DETAILS			

0 100 200

1" = 100'

ALL BEARINGS ARE GRID
BASED ON GPS
ALL DISTANCES ARE GROUND

N

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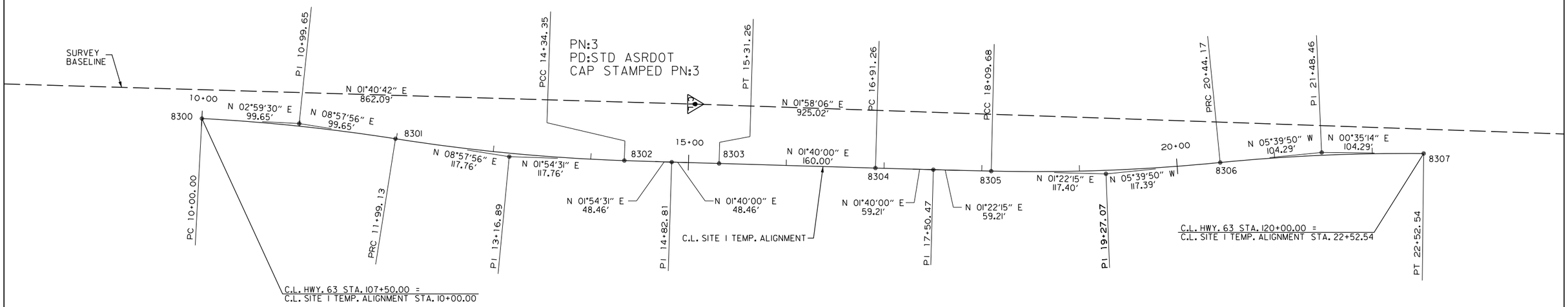

C.L. SITE 1 TEMP. ALIGNMENT

PI	= 10+99.65
Δ	= 5°58'26" RT.
D	= 3°00'00"
T	= 99.65'
L	= 199.13'
PC	= 10+00.00
PRC	= 11+99.13
e	= NO SUPER

C.L. SITE 1 TEMP. ALIGNMENT

PI	= 13+16.89
Δ	= 7°03'25" LT.
D	= 3°00'00"
T	= 117.76'
L	= 235.22'
PRC	= 11+99.13
PCC	= 14+34.35
e	= NO SUPER

C.L. SITE 1 TEMP. ALIGNMENT

PI	= 14+82.81
Δ	= 0°14'31" LT.
D	= 0°14'59"
T	= 48.46'
L	= 96.91'
PCC	= 14+34.35
PT	= 15+31.26
e	= NO SUPER

C.L. SITE 1 TEMP. ALIGNMENT

PI	= 17+50.47
Δ	= 0°17'45" LT.
D	= 0°14'59"
T	= 59.21'
L	= 118.42'
PC	= 16+91.26
PCC	= 18+09.68
e	= NO SUPER

C.L. SITE 1 TEMP. ALIGNMENT

PI	= 19+27.07
Δ	= 7°02'05" LT.
D	= 3°00'00"
T	= 117.39'
L	= 234.49'
PCC	= 18+09.68
PRC	= 20+44.17
e	= NO SUPER

C.L. SITE 1 TEMP. ALIGNMENT

PI	= 21+48.46
Δ	= 6°15'04" RT.
D	= 3°00'00"
T	= 104.29'
L	= 208.37'
PRC	= 20+44.17
PT	= 22+52.54
e	= NO SUPER

SITE 1
TEMPORARY SURVEY CONTROL DETAILS

CGGervasini 12/13/2023 8:02:51 AM
WORKSPACE: AHTD
L:\20IT\I70I628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\r061615_SC_MOT_HWY 63_SITE 1.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.		56	136
				JOB NO.		061615		

(2) SURVEY CONTROL DETAILS

0 100 200

1" = 100'

ALL BEARINGS ARE GRID
BASED ON GPS
ALL DISTANCES ARE GROUND

N

C.L. SITE 2 TEMP. ALIGNMENT
PI = 41+16.60
Δ = 6°59'14" RT.
D = 3°00'00"
T = 116.60'
L = 232.91'
PC = 40+00.00
PT = 42+32.91
e = NO SUPER

PN:8
PD:STD ASRDOT
CAP STAMPED PN:8

PN:9
PD:STD ASRDOT
CAP STAMPED PN:9

SURVEY BASELINE

PI 41+16.60
PI 47+55.02
PC 53+28.65

N 08°16'35" E 925.71'
N 14°46'37" E 571.25'
N 16°04'31" E 541.34'
N 06°10'34" E 116.60'
N 13°09'48" E 116.60'
N 13°09'48" E 401.30'
N 13°09'48" E 120.81'
N 15°50'00" E 120.81'
N 15°50'00" E 452.86'
N 15°50'00" E 253.03'

40+00 45+00 50+00 55+00

8400 8401 8402 8403 8404

PC 40+00.00
PT 42+32.91
PC 46+34.21
PT 48+75.79

C.L. SITE 2 TEMP. ALIGNMENT

C.L. HWY. 63 STA. 209+00.00 =
C.L. SITE 2 TEMP. ALIGNMENT STA. 40+00.00

C.L. SITE 2 TEMP. ALIGNMENT
PI = 47+55.02
Δ = 2°40'12" RT.
D = 1°06'19"
T = 120.81'
L = 241.58'
PC = 46+34.21
PT = 48+75.79
e = NO SUPER

STATE OF ARKANSAS
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C.L. SITE 2 TEMP. ALIGNMENT
PI = 55+81.68
Δ = 1°15'49" LT.
D = 0°14'59"
T = 253.03'
L = 506.04'
PC = 53+28.65
PCC = 58+34.69
e = NO SUPER

0 100 200

1" = 100'

ALL BEARINGS ARE GRID
BASED ON GPS
ALL DISTANCES ARE GROUND

N

C.L. SITE 2 TEMP. ALIGNMENT
PI = 55+81.68
Δ = 1°15'49" LT.
D = 0°14'59"
T = 253.03'
L = 506.04'
PC = 53+28.65
PCC = 58+34.69
e = NO SUPER

PN:10
PD:STD ASRDOT
CAP STAMPED PN:10

PN:11
PD:STD ASRDOT
CAP STAMPED PN:11

SURVEY BASELINE

PCC 58+34.69
PT 61+41.65
POE 66+69.11

C.L. HWY. 63 STA. 235+69.96 =
C.L. SITE 2 TEMP. ALIGNMENT STA. 66+69.11

N 16°04'31" E 541.34'
N 15°50'00" E 253.03'
N 14°34'11" E 253.03'
N 14°34'11" E 153.51'
N 11°30'00" E 153.51'
N 18°03'31" E 878.78'
N 11°30'00" E 527.46'
N 07°04'38" E 761.01'

55+00 60+00 65+00

8405 8406 8407

PI 55+81.68
PI 59+88.20

C.L. SITE 2 TEMP. ALIGNMENT

C.L. SITE 2 TEMP. ALIGNMENT
PI = 59+88.20
Δ = 3°04'11" LT.
D = 1°00'00"
T = 153.51'
L = 306.96'
PCC = 58+34.69
PT = 61+41.65
e = NO SUPER

SITE 2
TEMPORARY SURVEY CONTROL DETAILS

CGervasini 12/13/2023 8:02:51 AM
WORKSPACE: AHTD
L:\2017\17017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\r061615_SC_MOT_HWY 63_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.		57	136
				JOB NO.		061615		
				(2)	PLAN AND PROFILE - HIGHWAY 63			

C.L. HWY. 63
PI = 104+11.45
Δ = 1°20'11" RT.
D = 0°15'00"
T = 267.31'
L = 534.59'
PC = 101+44.14
PRC = 106+78.73
e = NO SUPER

STA. 106+56 IN PLACE
DBL. 36" X 30' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
DBL. 48" X 52' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 10 CU. YDS.

BRIDGE NO. 01858 IN PLACE
76'-0" X 25'-6" BRIDGE CONSISTING OF
A STEEL SUPERSTRUCTURE SUPPORTED
BY A CONCRETE PILE BENT SUBSTRUCTURE. REMOVE AS
EXISTING BRIDGE STRUCTURE = 1.00 LUMP SUM

STA. 113+02.00 - STA. 114+02.00 CONSTRUCT
100'-0" x 75'-0" BRIDGE.
100'-0" INTEGRAL PRESTRESSED CONCRETE
GIRDER SPAN (99.00')

FEMA 100 YR. FLOODPLAIN LIMITS

100' TRANSITION TO MATCH EXISTING

+80 49.99' +51.67 80'

PROP. R/W

EXIST. R/W

104+11.45

+80 80' +00 67.06'

16'

CONSTRUCTION LIMITS

100+00

EXISTING 24'

N 1°50'00" E

105+00

N 3°10'11" E

+56

110+00

PT 112+80.00

WOLF ISLAND SLASH

PC 114+40.00

END BRIDGE STA. 114+02.00

115+00

+86

N 1°40'00" E

C.L. HWY. 63

59'

8'

EXIST. R/W

+85 50.01'

PC 101+44.14

+51.04 75'

STA. 101+40.00
BEGIN SITE 1

PROP. R/W

PRC 106+78.73

+32.46 75'

PI 109+79.38

BEGIN BRIDGE STA. 113+02.00

CONSTRUCTION LIMITS

BRIDGE END TERMINAL

EXIST. R/W

16'

+70 97.22'

+70 125'

PROP. R/W

+96.14 125'

+20 97.71'

GENERAL TELEPHONE

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 1/2/2024

C.L. HWY. 277 STATIONING	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE II)
STA. 110+71.85 TO STA. 112+90.60 RT.	= 150 LIN. FT.	1 EACH	1 EACH
STA. 111+46.85 TO STA. 112+90.60 LT.	= 75 LIN. FT.	1 EACH	1 EACH
STA. 114+13.40 TO STA. 116+32.15 LT.	= 150 LIN. FT.	1 EACH	1 EACH

C.L. HWY. 63
PI = 109+79.38
Δ = 1°30'11" LT.
D = 0°15'00"
T = 300.65'
L = 601.27'
PRC = 106+78.73
PT = 112+80.00
e = NO SUPER

STA. 114+86 IN PLACE
48" X 27' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
48" X 66' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 73 CU. YDS.

HWY. 63 - SITE 1

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

100' VERTICAL TRANSITION TO MATCH EXISTING

PVI 101+40.00
ELEV. 212.44

+40.00 RT. 207.20
+40.00 LT. 206.20

STA. 101+40.00
BEGIN SITE 1
ELEV. 212.44

-0.28%

PVC 106+40.00
ELEV. 211.04

-0.22% RT. DITCH GRADE (5' FLAT BOTTOM)
-0.20% LT. DITCH GRADE (5' FLAT BOTTOM)

PVI 108+40.00
ELEV. 210.48

VC=400.00'
K=238.10
e=0.84'

+40.00 LT. 204.60

+90.00 LT. 205.85

+40.00 RT. 205.22

2.50% LT. DITCH GRADE (5' FLAT BOTTOM)

PVT 110+40.00
ELEV. 213.28

1.40%

PVC 111+37.50
ELEV. 214.64

PROFILE GRADE

EXISTING GROUND

BEGIN BRIDGE STA. 113+02.00

PVI 113+50.00
ELEV. 217.62

VC=425.00'
K=159.77
e=-1.41'

END BRIDGE STA. 114+02.00

-1.26%

DESIGN H.W. (050)
ELEV. 208.5

0.50% RT. DITCH GRADE (10' FLAT BOTTOM)

+80.00 RT. 201.90

+00.00 RT. 202.50

250 240 230 220 210 200 190 180 170 160

100+00 101+00 102+00 103+00 104+00 105+00 106+00 107+00 108+00 109+00 110+00 111+00 112+00 113+00 114+00 115+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.		58	136
JOB NO.		061615		

(2) PLAN AND PROFILE - HIGHWAY 63

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 1/2/2024

C.L. HWY. 63
PI = 121+83.88
Δ = 1°14'23" RT.
D = 0°15'00"
T = 247.97'
L = 495.91'
PRC = 119+35.91
PT = 124+31.82
e = NO SUPER

N

WOLF BAYOU

EXIST. R/W

CONSTRUCTION LIMITS

PRC 119+35.91

121+83.88

100' TRANSITION TO MATCH EXISTING

115+00

120+00

125+00

+86

N 1°40'00" E

N 0°25'37" E

+20

N 0°25'37" E

C.L. HWY. 63

N 1°40'00" E

59'

8'

8'

8'

24'

3'

24'

3'

EXISTING

16'

16'

CONSTRUCTION LIMITS

PI 116+87.97

+80
54.96'

T.C.E.

+40
56.20'

+05
90°

+20
97.71'

+96.14
125'

EXIST. R/W

EXIST. R/W

EXIST. R/W

PT 124+31.82

STA. 124+40.00
END SITE 1
L.M. 10.55

C.L. HWY. 63
PI = 116+87.97
Δ = 1°14'23" LT.
D = 0°15'00"
T = 247.97'
L = 495.91'
PC = 114+40.00
PRC = 119+35.91
e = NO SUPER

FEMA 100 YR. FLOODPLAIN LIMITS

STA. 120+20 IN PLACE
RT. SIDE DRAIN
REMOVE AND INSTALL
DBL. 24" X 36' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 18 CU. YDS.

FEMA 100 YR. FLOODPLAIN LIMITS

HWY. 63 - SITE 1

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

250
240
230
220
210
200
190
180
170
160

PROFILE GRADE

-1.26%

EXISTING GROUND

PVT 115+62.50
ELEV. 214.94

PVC 117+75.00
ELEV. 212.26

VC=350.00'
K=224.36
e=0.68'

PVI 119+50.00
ELEV. 210.06

PVT 121+25.00
ELEV. 210.58

0.30%

0.27% LT. DITCH GRADE (5' FLAT BOTTOM)

+80.00 LT. 205.82

PVI 124+40.00
ELEV. 211.53

+40.00 LT. 206.79

100' VERTICAL TRANSITION TO MATCH EXISTING

STA. 124+40.00
END SITE 1
ELEV. 211.53

115+00 116+00 117+00 118+00 119+00 120+00 121+00 122+00 123+00 124+00 125+00 126+00

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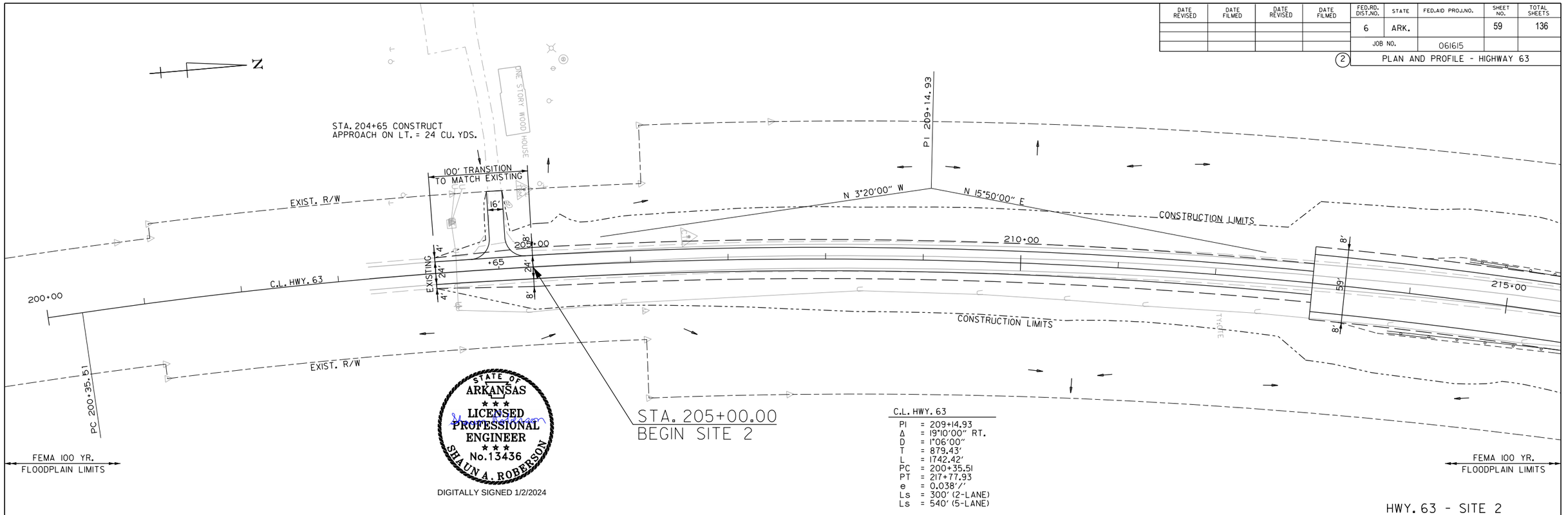
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		59	136
				JOB NO.		061615		
				(2)	PLAN AND PROFILE - HIGHWAY 63			



STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 1/2/2024

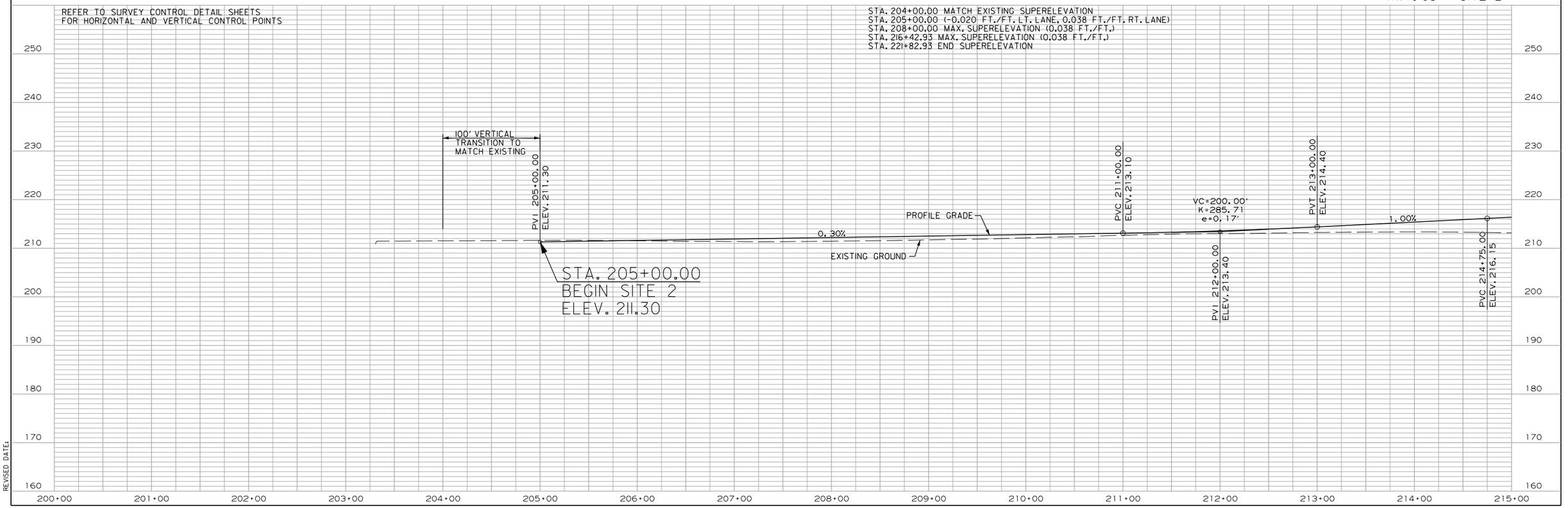
C.L. HWY. 63

PI	= 209+14.93
Δ	= 19°10'00" RT.
D	= 1°06'00"
T	= 879.43'
L	= 1742.42'
PC	= 200+35.51
PT	= 217+77.93
e	= 0.038'/'
Ls	= 300' (2-LANE)
Ls	= 540' (5-LANE)

HWY. 63 - SITE 2

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

STA. 204+00.00 MATCH EXISTING SUPERELEVATION
STA. 205+00.00 (-0.020 FT./FT. LT. LANE, 0.038 FT./FT. RT. LANE)
STA. 208+00.00 MAX. SUPERELEVATION (0.038 FT./FT.)
STA. 216+42.93 MAX. SUPERELEVATION (0.038 FT./FT.)
STA. 221+82.93 END SUPERELEVATION



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				6	ARK.		60	136
				JOB NO.		061615		

(2) PLAN AND PROFILE - HIGHWAY 63

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 1/2/2024

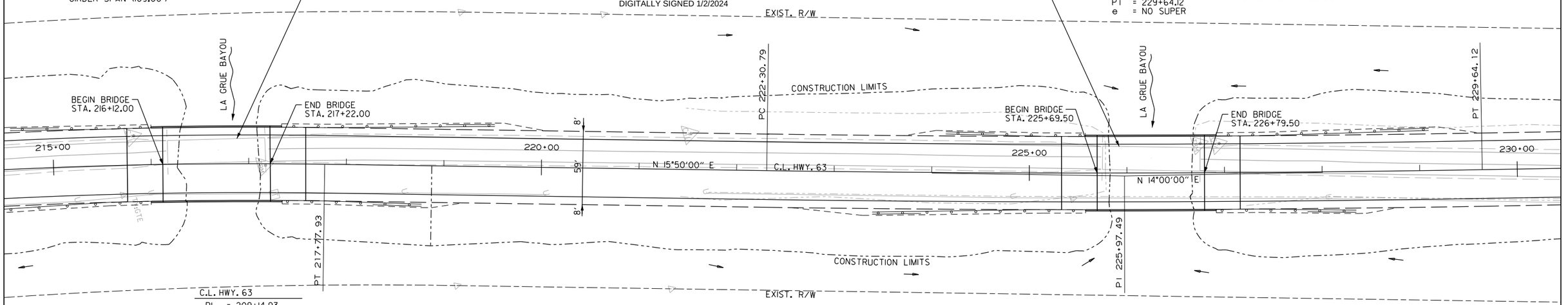
STA. 216+12 - STA. 217+22 CONSTRUCT
110'-0" x 75'-0" BRIDGE.
110'-0" INTEGRAL PRESTRESSED CONCRETE
GIRDER SPAN (109.00')

BRIDGE NO. 01859 IN PLACE
101'-0" X 25'-6" BRIDGE CONSISTING OF
A STEEL SUPERSTRUCTURE SUPPORTED
BY A CONCRETE PILE BENT SUBSTRUCTURE. REMOVE AS
EXISTING BRIDGE STRUCTURE = 1.00 LUMP SUM

BRIDGE NO. 01860 IN PLACE
101'-0" X 25'-6" BRIDGE CONSISTING OF
A STEEL SUPERSTRUCTURE SUPPORTED
BY A CONCRETE PILE BENT SUBSTRUCTURE. REMOVE AS
EXISTING BRIDGE STRUCTURE = 1.00 LUMP SUM

C.L. HWY. 63
PI = 225+97.49
Δ = 1°50'00" LT.
D = 0°15'00"
T = 366.70'
L = 733.33'
PC = 222+30.79
PT = 229+64.12
e = NO SUPER

STA. 225+69.50 - STA. 226+79.50 CONSTRUCT
110'-0" x 75'-0" BRIDGE.
110'-0" INTEGRAL PRESTRESSED CONCRETE
GIRDER SPAN (109.00')



C.L. HWY. 63
PI = 209+14.93
Δ = 19°10'00" RT.
D = 1°06'00"
T = 879.43'
L = 1742.42'
PC = 200+35.51
PT = 217+77.93
e = 0.038'/'
Ls = 300' (2-LANE)
Ls = 540' (5-LANE)

FEMA 100 YR. FLOODPLAIN LIMITS

C.L. HWY. 63 STATIONING	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE II)
STA. 213+81.36 TO STA. 216+00.11 RT.	= 150 LIN. FT.	1 EACH	1 EACH
STA. 214+57.33 TO STA. 216+01.08 LT.	= 75 LIN. FT.	1 EACH	1 EACH
STA. 217+33.89 TO STA. 218+77.64 RT.	= 75 LIN. FT.	1 EACH	1 EACH
STA. 217+32.92 TO STA. 219+51.67 LT.	= 150 LIN. FT.	1 EACH	1 EACH

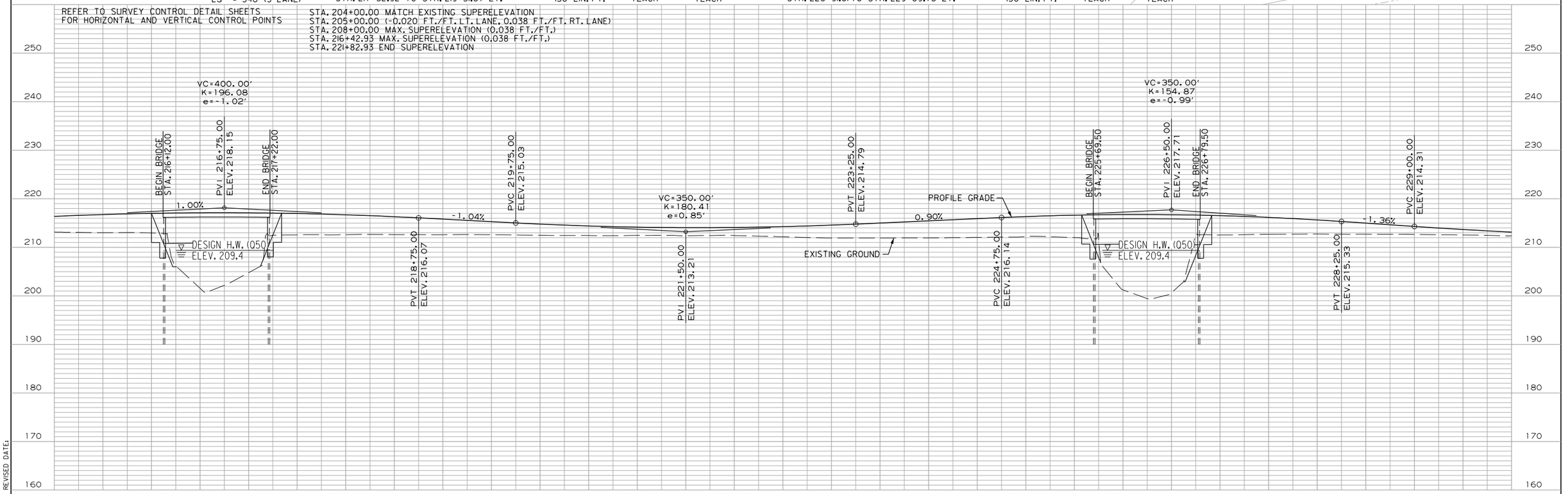
C.L. HWY. 63 STATIONING	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE II)
STA. 223+39.46 TO STA. 225+58.21 RT.	= 150 LIN. FT.	1 EACH	1 EACH
STA. 224+14.24 TO STA. 225+57.99 LT.	= 75 LIN. FT.	1 EACH	1 EACH
STA. 226+90.79 TO STA. 228+34.54 RT.	= 75 LIN. FT.	1 EACH	1 EACH
STA. 226+91.01 TO STA. 229+09.76 LT.	= 150 LIN. FT.	1 EACH	1 EACH

FEMA 100 YR. FLOODPLAIN LIMITS

HWY. 63 - SITE 2

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

STA. 204+00.00 MATCH EXISTING SUPERELEVATION
STA. 205+00.00 (-0.020 FT./FT. LT. LANE, 0.038 FT./FT. RT. LANE)
STA. 208+00.00 MAX. SUPERELEVATION (0.038 FT./FT.)
STA. 216+42.93 MAX. SUPERELEVATION (0.038 FT./FT.)
STA. 221+82.93 END SUPERELEVATION



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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.		61	136
JOB NO.		061615		

(2) PLAN AND PROFILE - HIGHWAY 63

C.L. HWY. 63
PI = 238+02.79
Δ = 10°15'00" LT.
D = 1°08'00"
T = 453.42'
L = 904.41'
PC = 233+49.37
PT = 242+53.78
e = 0.038'/'
Ls = 540'

STA. 233+00.00
END SITE 2
LOG MILE 8.45

PT 229+64.12
+14.89 90'
+05 90'
PROP. R/W
CONSTRUCTION LIMITS
PC 233+49.37
+50 68.67'
EXIST. R/W
8'
8'
59'
36' EXISTING
8'
6'
230+00
235+00
C.L. HWY. 63
N 14°00'00" E
N 3°45'00" E
240+00
243+00
PT 242+53.78
PI 238+02.79
CONSTRUCTION LIMITS
+09.54 90'
PROP. R/W
+05 90'
+50 71.34'
EXIST. R/W
100' TRANSITION TO MATCH EXISTING
FEMA 100 YR. FLOODPLAIN LIMITS
FEMA 100 YR. FLOODPLAIN LIMITS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13436
SHAUN A. ROBERSON
DIGITALLY SIGNED 1/2/2024

HWY. 63 - SITE 2

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

STA. 229+44.37 BEGIN SUPERELEVATION
STA. 233+00.00 MAX. SUPERELEVATION (0.025 FT./FT.) (MATCH EXISTING)

VC=400.00'
K=256.41
e=0.78'
PVI 231+00.00
ELEV. 211.59
PROFILE GRADE
-1.36%
0.20%
PVT 233+00.00
ELEV. 211.99
100' VERTICAL TRANSITION TO MATCH EXISTING
EXISTING GROUND
0.65% RT. DITCH GRADE
(5' FLAT BOTTOM)
0.25% LT. DITCH GRADE
(5' FLAT BOTTOM)
STA. 233+00.00
END SITE 2
ELEV. 211.99
+00.00 RT. 205.00
+20.00 LT. 205.34
+00.00 LT. 205.79
+00.00 RT. 206.30

250 240 230 220 210 200 190 180 170 160
230+00 231+00 232+00 233+00 234+00 235+00 236+00 237+00 238+00 239+00 240+00 241+00 242+00 243+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.		62	136
				JOB NO.		061615		
				(2)	PLAN AND PROFILE - HIGHWAY 33			

REMOVAL AND DISPOSAL OF FENCE

STA.	STA.	SIDE	UNIT
21+00	26+29	LT.	529 LIN. FT.
21+47	23+02	LT.	155 LIN. FT.
23+71	26+70	LT.	299 LIN. FT.
27+81	33+50	LT.	569 LIN. FT.
32+79	33+50	RT.	71 LIN. FT.

FENCING

STA.	STA.	SIDE	WIRE FENCE (TYPE D-1)	16' GATE
21+47	23+02	LT.	169 LIN. FT.	
23+71	26+60	LT.	310 LIN. FT.	1 EACH
27+40	33+50	LT.	620 LIN. FT.	
32+79	33+30	RT.	71 LIN. FT.	

STA. 27+00 CONSTRUCT
QUAD. 12' X 12' X 72' R.C. BOX CULVERT
WITH 3:1 WINGS LT. & RT.
Q25 = 1852 CFS D.A. = 10.555 ACRES
SPAN = 51.83'

N

BRIDGE NO. M0756 IN PLACE
73'-8" X 22'-2" BRIDGE CONSISTING OF
A TIMBER SUPERSTRUCTURE SUPPORTED
BY TIMBER PILING. REMOVE AS
EXISTING BRIDGE STRUCTURE = 1.00 LUMP SUM

STA. 32+50.00
END SITE 3

STA. 29+35 IN PLACE
36" X 54' R.C. PIPE CULVERT
WITH HDWLS. LT. & RT.
REMOVE HDWLS. & EXTEND 15' LT. & 21' RT.
TO A COMPLETED LENGTH OF 90'
CLASS III (TYPE 3 BEDDING)
WITH FES LT. & RT.
Q25 = 25 CFS DA = 17.7 ACRES

STA. 22+00.00
BEGIN SITE 3
L.M. 3.04

REMOVAL AND DISPOSAL OF GUARDRAIL

STA.	STA.	SIDE	UNIT
26+29	26+58	LT.	29 LIN. FT.
26+28	26+56	RT.	28 LIN. FT.
27+32	27+60	LT.	28 LIN. FT.
27+33	27+60	RT.	27 LIN. FT.

HWY. 33 - SITE 3

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

VC=450.00'
K=125.00
e=-2.02'

VC=300.00'
K=136.36
e=0.83'

VC=280.00'
K=124.44
e=0.79'

STA. 22+00.00
BEGIN SITE 3
ELEV. 189.28

STA. 32+50.00
END SITE 3
ELEV. 186.16

PROP. F.L. = 174.94 LT.
PROP. F.L. = 174.84 RT.

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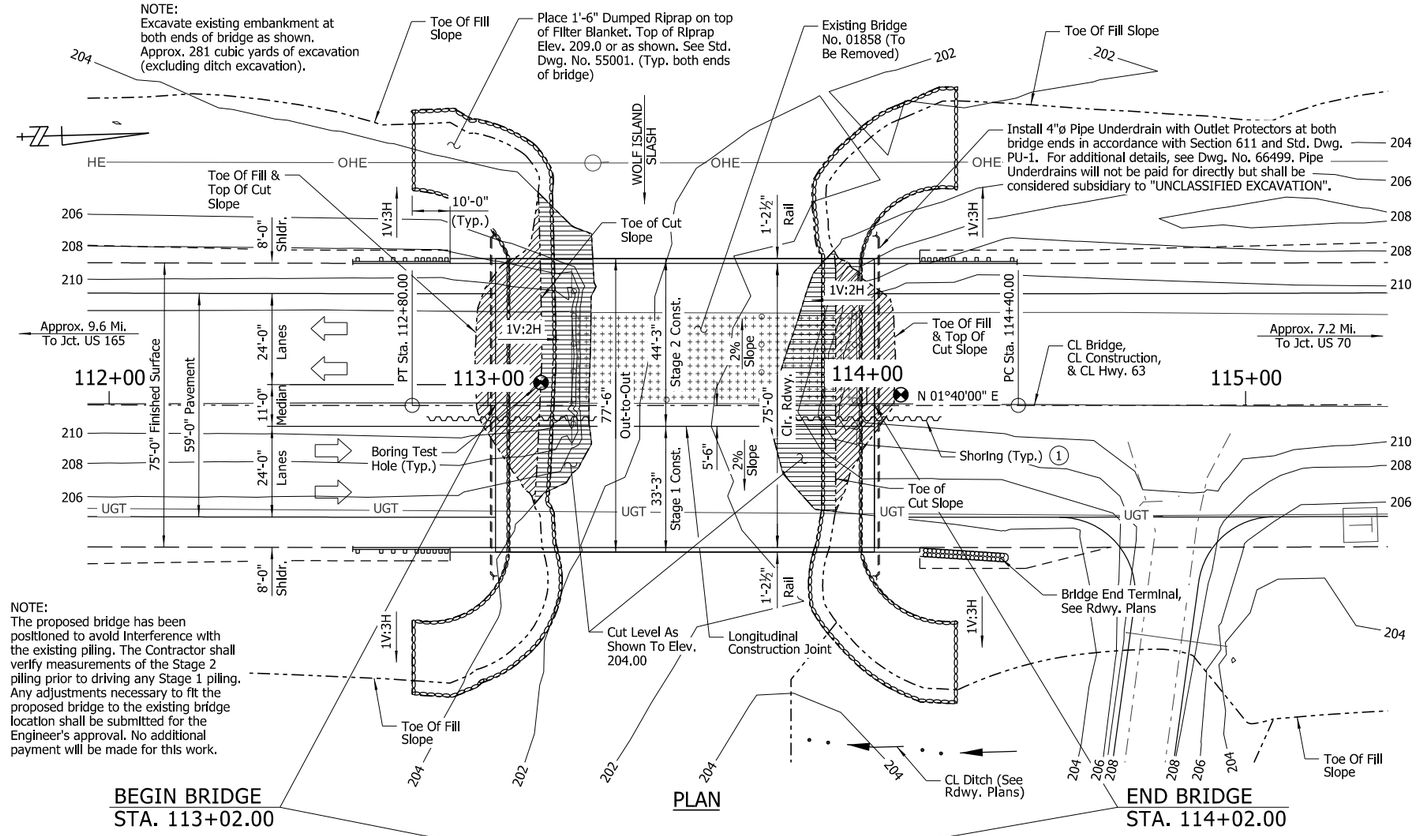
REVISED DATE:

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	63	136
		07635		LAYOUT		66492

NOTE:
Excavate existing embankment at both ends of bridge as shown. Approx. 281 cubic yards of excavation (excluding ditch excavation).

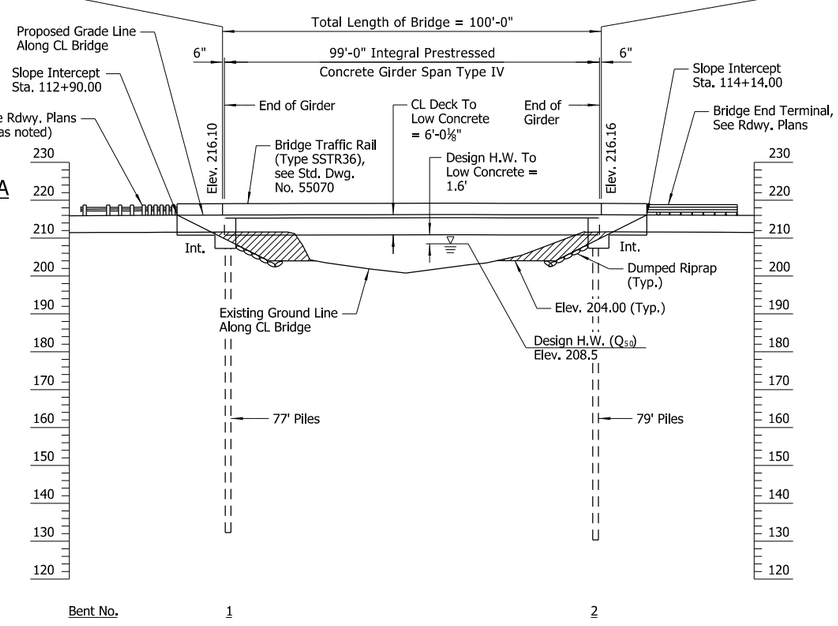


NOTE:
The proposed bridge has been positioned to avoid interference with the existing piling. The Contractor shall verify measurements of the Stage 2 piling prior to driving any Stage 1 piling. Any adjustments necessary to fit the proposed bridge to the existing bridge location shall be submitted for the Engineer's approval. No additional payment will be made for this work.

BEGIN BRIDGE
STA. 113+02.00

PLAN

END BRIDGE
STA. 114+02.00



HORIZONTAL CURVE DATA

CL Hwy. 63
PI = 109+79.38
Δ = 1°30'11" Lt.
D = 0°15'00"
T = 300.65'
L = 601.27'
e = N.C.
R = 22,918.31'

NOTE:
Stations shown are along CL Construction. Elevations shown are theoretical working point elevations at CL Bridge. Any vertical dimension referenced to CL Deck is based on theoretical working point elevation at CL Bridge. See "ROUNDING DETAIL" on Dwg. No. 66497 for additional information.

112+00 113+00 114+00 115+00

FOR R/W DATA, SEE ROADWAY PLANS

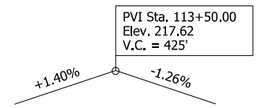
HORIZONTAL CURVE DATA

CL Hwy. 63
PI = 116+87.97
Δ = 1°14'23" Lt.
D = 0°15'00"
T = 247.97'
L = 495.91'
e = N.C.
R = 22,918.31'

NOTE:
For "ELEVATION OF SOIL BORINGS" and "HYDRAULIC DATA", see Dwg. No. 66493.

NOTES:
Use Type 1 and Type 2 Special Approach Slabs at each end of bridge. See Dwg. Nos. 66531 and 66532.

Use Type 1 Special Approach Gutters at each end of bridge. See Dwg. No. 66530. Eliminate or modify Approach Gutter curb section to fit bridge end terminal. No additional payment will be made for this work.



VERTICAL CURVE DATA

Hwy. 63
(Theoretical Grade Along CL Construction)

1 See Special Provision Job. No. 061615 "SHORING".

GENERAL NOTES

BENCHMARK: Vertical Control Data are shown on the Survey Control Data Sheets.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition) with applicable Supplemental Specifications and Special Provisions. Unless otherwise noted in the plans, Section and Subsection numbers refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications (2017, 8th Edition)

LIVE LOADING: HL-93

SEISMIC ZONE: 2 S_{D1} = 0.262g Site Class = D

SEISMIC OPERATIONAL CLASSIFICATION: Essential

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (Superstructure)	f'c = 4,000 psi
Class S Concrete (Prestressed Concrete Girders)	f'c = 8,000 psi
Prestressing Strands (AASHTO M 203, Gr. 270)	fpu = 270,000 psi
Class S Concrete (Substructure)	f'c = 3,500 psi
Reinforcing Steel (AASHTO M 31 or M 322, Type A)	fy = 60,000 psi
Structural Steel (ASTM A709, Gr. 50W)	Fy = 50,000 psi
Structural Steel (ASTM A709, Gr. 50)	Fy = 50,000 psi
Structural Steel (ASTM A709, Gr. 36)	Fy = 36,000 psi

BORING LOGS: Boring Logs may be obtained from the Construction Contract Development Section of the Program Management Division.

STEEL SHELL PILING: Piling in Bents 1 & 2 shall be 16" diameter concrete filled steel shell piles and shall be driven with an approved air, steam or diesel hammer to a minimum ultimate bearing capacity of 269 tons per pile and to a minimum tip elevation of 135.00 or lower. Piling in end bents shall be driven after embankment to bottom of cap is in place. Lengths of piling shown are assumed for estimating quantities only. Actual pile lengths are to be determined in the field. No additional payment will be made for cut-off or build-up. Test piles are not required but may be driven for the Contractor's information in accordance with Subsection 805.08(g). No piles will be paid for as Test Piles.

Water jetting or other methods as approved by the Engineer may be required to achieve minimum penetration. This work shall not be paid for directly but shall be considered incidental to the item "STEEL SHELL PILING (16" DIA.)."

PREBORING: Preboring is required for all piling at Bents 1 and 2. Prebored holes shall have a diameter 6" greater than the diameter of the pile for a depth of 10' below the bottom of cap. The void space around the pile after completion of driving shall be backfilled with sand or pea gravel. The Contractor shall be responsible for keeping prebored holes free of debris prior to backfilling, which may require the use of temporary casings or other approved methods. Any related cost for backfilling and temporary casing will not be paid for directly but shall be considered subsidiary to the item "PREBORING".

DRIVING SYSTEM: The driving system approval and the ultimate bearing capacity determination for piling shall be based on the requirements of Subsection 805.09(b), "Method B - Wave Equation Analysis (WEAP)". It is estimated that the minimum rated hammer energy required to obtain the minimum ultimate bearing capacity for all piles will be 52,000 foot-pounds per blow.

BRIDGE DECK: The concrete bridge deck shall be given a tine finish as specified for final finishing in Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish.

PROTECTIVE SURFACE TREATMENT: Class 2 Protective Surface Treatment shall be applied to the roadway surface and to the roadway face and top of the concrete rails in accordance with Section 803.

EXISTING BRIDGE: Existing Bridge No. 01858 (Log Mile 10.70) is 76.5' in length, 27.4' wide (24.0' clear roadway) and consists of a concrete slab on I-beam spans (3 spans total) supported by precast concrete pile bents. Plans of the existing bridge, if available, will be made available to the Contractor upon request to the Construction Contract Development Section of the Program Management Division.

REMOVAL AND SALVAGE: After Stage 1 Construction is complete and open to traffic, the Contractor shall remove existing Bridge No. 01858 in accordance with Section 205. All material from the existing bridge shall become property of the Contractor.

MAINTENANCE OF TRAFFIC: See Roadway Plans.

DETAIL DRAWINGS:	DRAWING NO(S).
Stage Construction	66494
End Bents	66495-66496
99'-0" Integral Prestressed Concrete Girder Span	66497-66503
Common Superstructure Details	66528-66529
Type Special Approach Gutters	66530
Type Special Approach Slabs	66531-66532
Dumped Riprap	55001
Concrete Filled Steel Shell Piling	55021
Bridge Traffic Rail	55070

EXISTING UTILITIES LEGEND

OHE = Overhead Electric Line
UGT = Underground Cable

NOTE:
Utilities shown are based on locations at time of survey and do not reflect any potential utility relocations prior to construction.

STATE OF ARKANSAS
ADAM B. HALL
LICENSED PROFESSIONAL ENGINEER
No.14498

DIGITALLY SIGNED 11/3/2023
BRIDGE ENGINEER

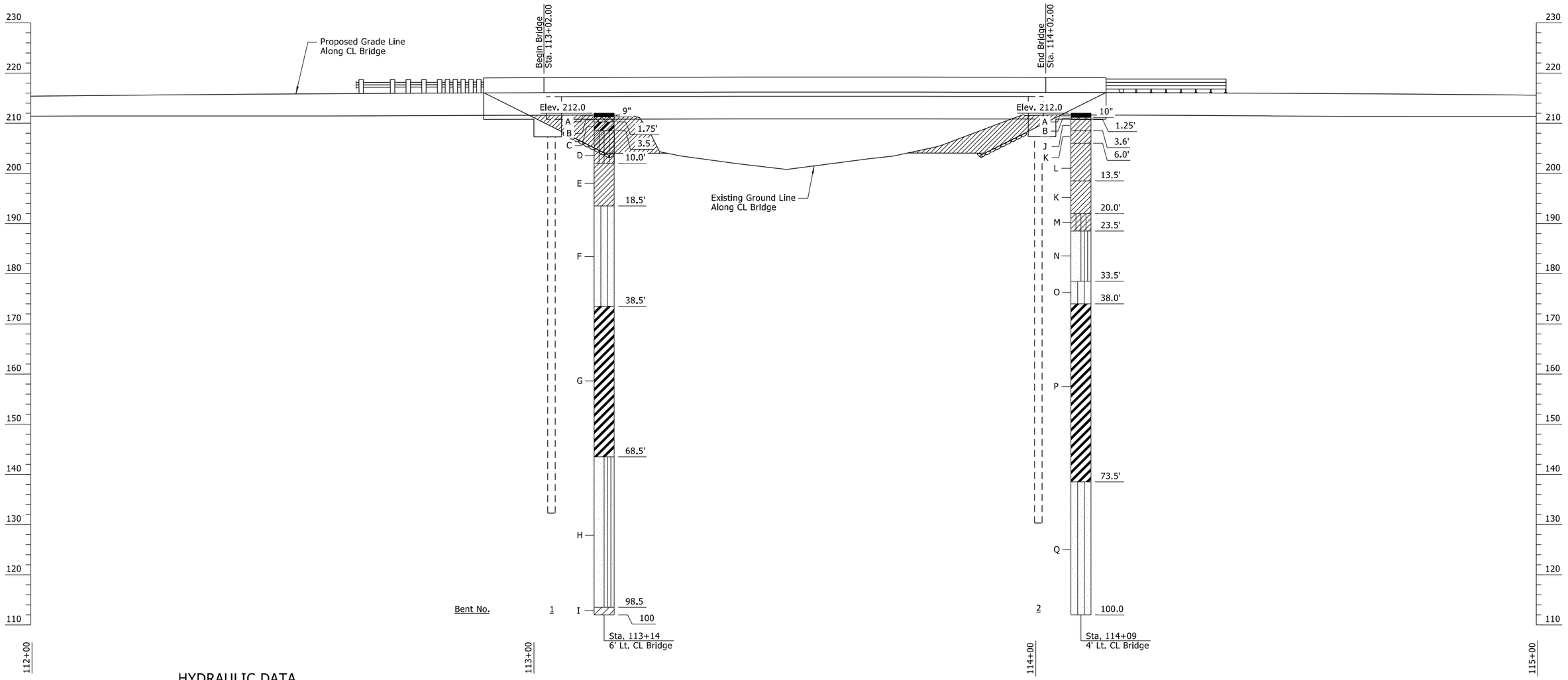
SHEET 1 OF 2
LAYOUT OF BRIDGE
HIGHWAY 63 OVER WOLF ISLAND SLASH
LA GRUE BAYOU, WOLF ISLAND SLASH
& HONEY CREEK STRS. & APPRS. (S)
PRAIRIE COUNTY
ROUTE 63 SEC. 11
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	CWT	DATE:	JUNE 2020	FILENAME:	b061615x1_l1.dgn
CHECKED BY:	ABH	DATE:	AUG. 2020	SCALE:	1" = 20'-0"
DESIGNED BY:	JME	DATE:	JUNE 2020		

BRIDGE NO. 07635 DRAWING NO. 66492

abhall 11/3/2023 3:11:28 PM
WORKSPACE: ARDOT Bridge (2019)
L:\2017\17017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\b061615x1_S101_LO.dgn

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	64	136
		07635		LAYOUT		66493



HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	DISCHARGE	① NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEVATION WITH BACKWATER
	YEARS	CFS	FEET	FEET
DESIGN	50	1,282	208.2	208.5
BASE	100	1,428	208.5	208.8
EXTREME	500	1,772	208.9	209.3
OVERTOPPING	>500	N/A	N/A	N/A

① Unconstricted water surface elevation without structure or roadway approaches

Q100 backwater elevation for existing structure = 208.8

Proposed Low Bridge Chord Elev. = 210.10 (Sta. 113+05.50)
Existing Low Bridge Chord Elev. = 208.82 (survey shot)

Drainage Area = 11.6 square miles
Historical High Water Elev. = N/A

ELEVATION OF SOIL BORINGS

BORING LEGEND

A - Asphalt
B - Base Materials
C - Brown, tan and red, FAT CLAY
D - Soft, brown and gray, SILTY CLAY
E - Stiff, brown and gray, LEAN CLAY
F - Medium dense to loose, tan to red-brown, SILTY SAND
G - Soft to medium stiff, red-brown to gray, FAT CLAY
H - Dense to very dense, gray SAND, trace silt
I - Very dense, brown and gray, CLAYEY SAND
J - Medium stiff, brown and gray, LEAN CLAY
K - Soft, brown and gray, sandy, LEAN CLAY
L - Soft to stiff, brown and gray, LEAN CLAY
M - Brown and gray, sandy, SILTY CLAY
N - Very loose, gray SAND with silt
O - Medium dense, gray to red-brown, SILTY SAND
P - Soft to stiff, brown, red and gray to gray, FAT CLAY
Q - Very dense, gray, SILTY SAND, trace clay partings

N-VALUES

Sta. 113+14 Offset 6' Lt.	Sta. 114+09 Offset 4' Lt.
1.0-2.5, N=6	1.0-2.5, N=5
3.5-5.0, N=3	3.5-5.0, N=4
6.0-7.5, N=3	6.0-7.5, N=3
13.5-15.0, N=10	13.5-15.0, N=9
18.5-20.0, N=21	18.5-20.0, N=2
23.5-25.0, N=8	23.5-25.0, N=2
28.5-30.0, N=6	28.5-30.0, N=2
33.5-35.0, N=8	33.5-35.0, N=11
38.5-40.0, N=3	43.5-45.0, N=3
43.5-45.0, N=3	53.5-55.0, N=6
48.5-50.0, N=5	63.5-65.0, N=4
53.5-55.0, N=5	73.5-75.0, N=56
58.5-60.0, N=4	83.5-85.0, N=54
68.5-70.0, N=30	93.5-95.0, N=50/5"
78.5-80.0, N=53	98.5-100.0, N=61
88.5-90.0, N=51	
98.5-100.0, N=54	

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14498
ADAM B. HALL

DIGITALLY SIGNED 11/3/2023
BRIDGE ENGINEER

SHEET 2 OF 2
LAYOUT OF BRIDGE
HIGHWAY 63 OVER WOLF ISLAND SLASH
LA GRUE BAYOU, WOLF ISLAND SLASH
& HONEY CREEK STRS. & APPRS. (S)
PRAIRIE COUNTY

ROUTE 63 SEC. 11

ARKANSAS STATE HIGHWAY COMMISSION

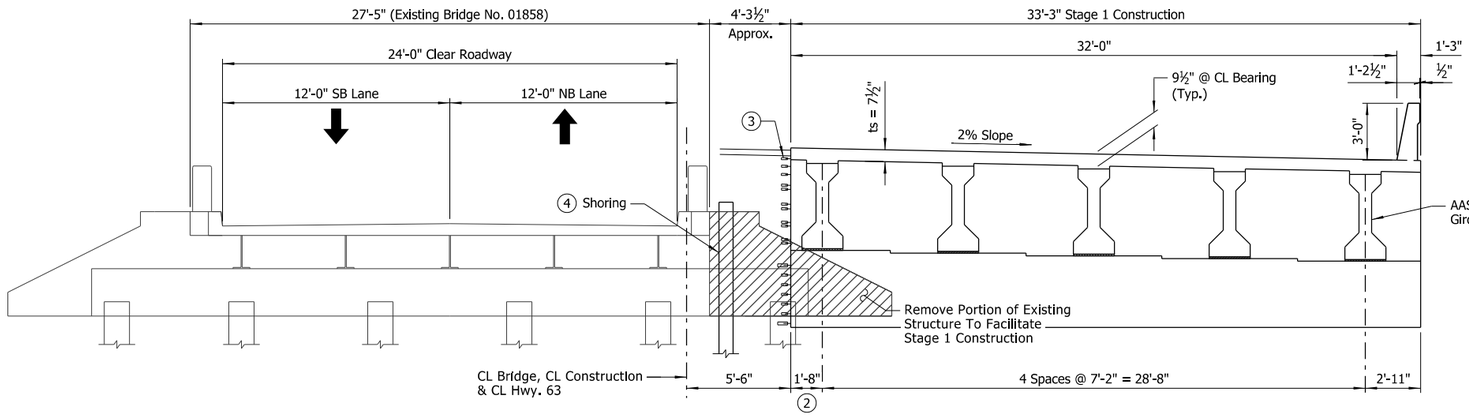
LITTLE ROCK, ARK.

DRAWN BY: JME DATE: JUNE 2020 FILENAME: b061615x1_l2.dgn
CHECKED BY: ABH DATE: AUG. 2020 SCALE: 1" = 10'-0"
DESIGNED BY: JME DATE: JUNE 2020

BRIDGE NO. 07635 DRAWING NO. 66493

abhall 11/3/2023 3:11:29 PM
WORKSPACE: ARDOT Bridge (2019)
L:\2017\17017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\b061615x1_S102_LO.dgn

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	65	136
		07635	STAGED CONSTRUCTION			66494

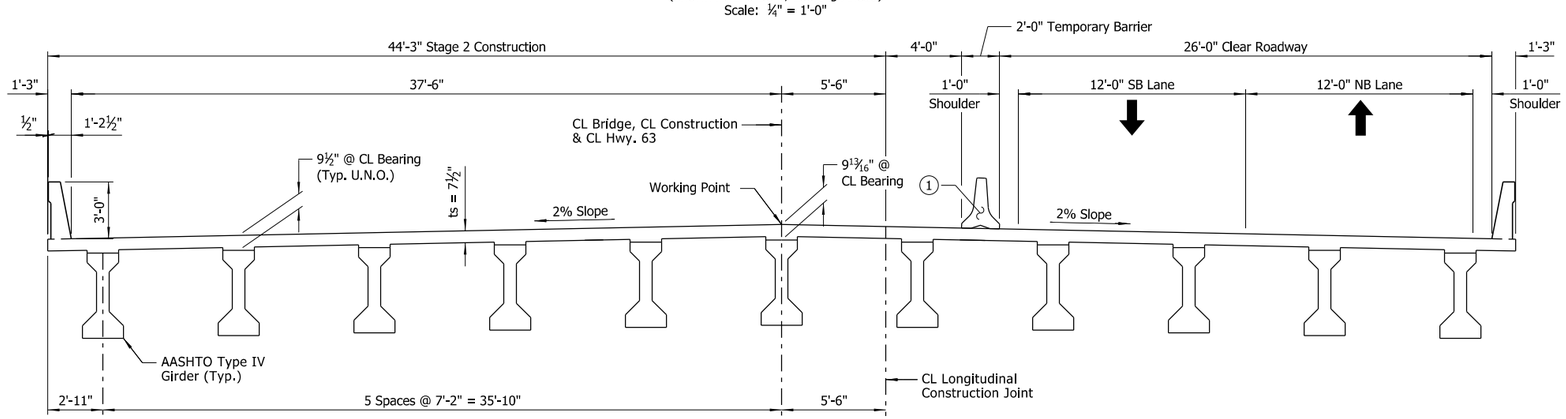


NOTE:
Details related to Maintenance of Traffic are shown on Bridge Plans for information only. For Maintenance of Traffic Plans and additional information, see Roadway Plans.

TYPICAL SECTION - STAGE 1 CONSTRUCTION

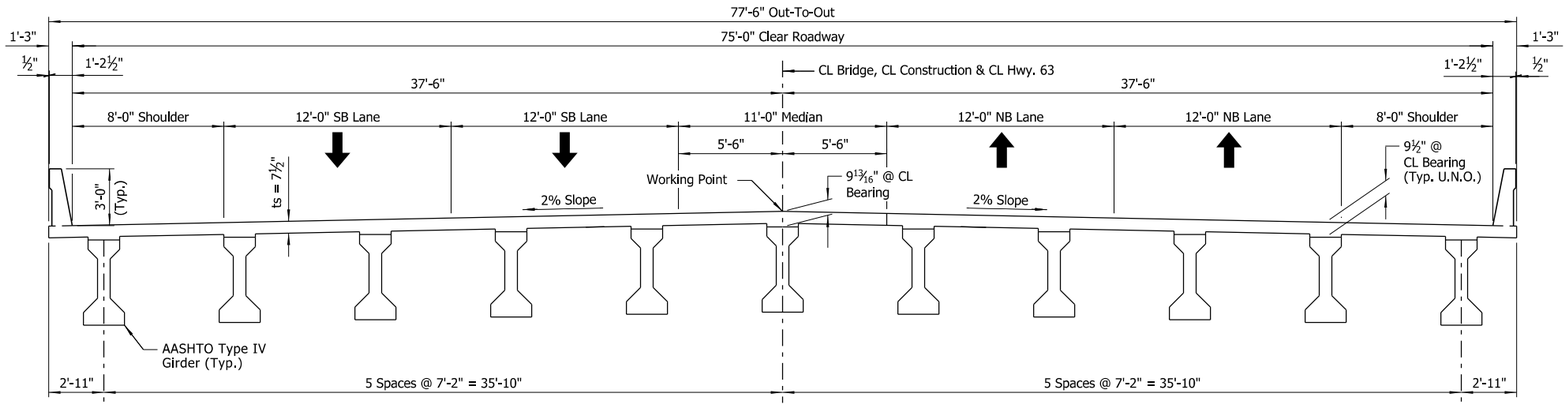
(Shown At End Bent; Looking Ahead)
Scale: ¼" = 1'-0"

NOTE:
New End Bent piling not shown for clarity.



TYPICAL SECTION - STAGE 2 CONSTRUCTION

(Shown In Span; Looking Ahead)
Scale: ¼" = 1'-0"



TYPICAL SECTION - FINAL CONDITION

(Shown In Span; Looking Ahead)
Scale: ¼" = 1'-0"

1. Temporary construction barrier. Do not connect to new deck (See Dwg. No. TC-4).
2. Construction vehicles shall not travel on cantilever portion of deck.
3. Mechanical bar couplers
4. Shoring shall be required to retain existing and new embankment during construction.

LEGEND

U.N.O. = Unless Noted Otherwise

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14498
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DIGITALLY SIGNED 11/3/2023
BRIDGE ENGINEER

DETAILS OF STAGED CONSTRUCTION
HIGHWAY 63 OVER WOLF ISLAND SLASH
LA GRUE BAYOU, WOLF ISLAND SLASH
& HONEY CREEK STRS. & APPRS. (S)
PRAIRIE COUNTY

ROUTE 63 SEC. 11

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

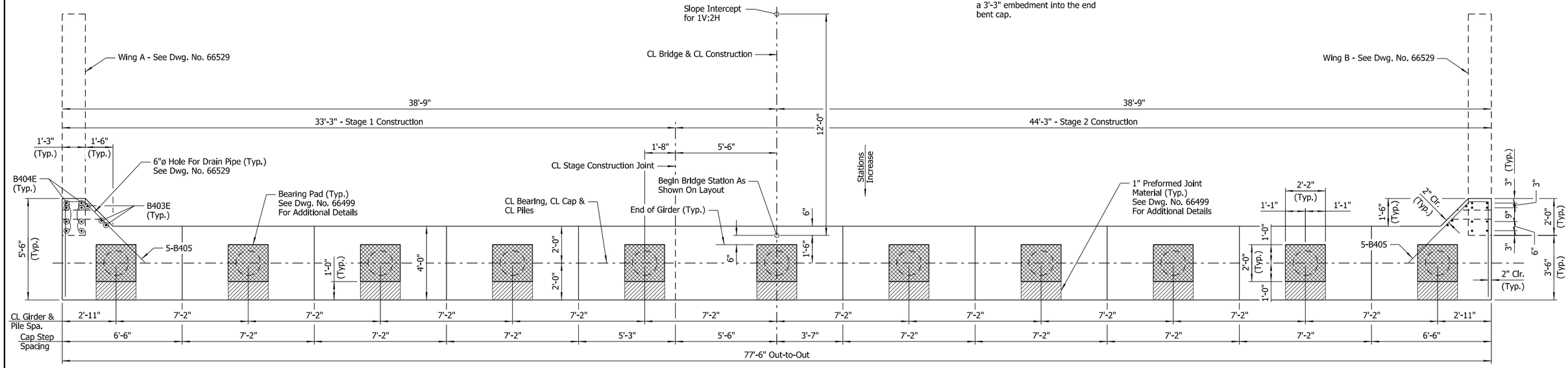
DRAWN BY: HEW DATE: JUNE 2020 FILENAME: b061615x1_sc.dgn
CHECKED BY: ABH DATE: AUG. 2020 SCALE: As Shown
DESIGNED BY: JME DATE: JUNE 2020

BRIDGE NO. 07635 DRAWING NO. 66494

abhall 11/3/2023 3:11:29 PM
WORKSPACE: ARDOT Bridge (2019)
L:\2017\17017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\b061615x1_S103_LO.dgn

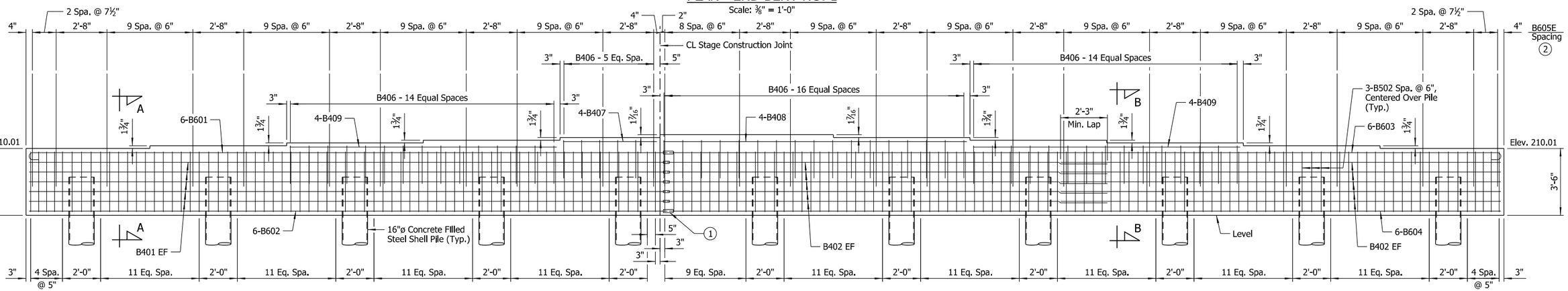
DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	66	136
		07635		END BENTS		66495

NOTE:
B403E & B404E bars shall have a 3'-3" embedment into the end bent cap.



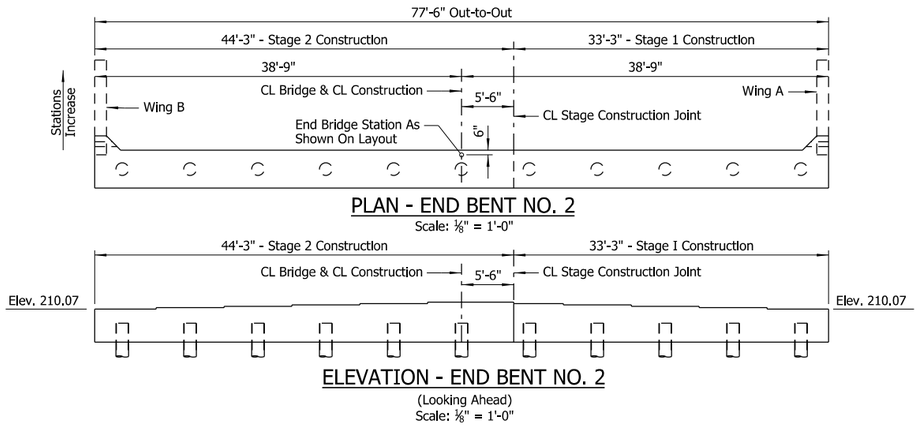
PLAN - END BENT NO. 1

Scale: ⅜" = 1'-0"



ELEVATION - END BENT NO. 1

(Looking Back)
Scale: ⅜" = 1'-0"



PLAN - END BENT NO. 2

Scale: ⅛" = 1'-0"

ELEVATION - END BENT NO. 2

(Looking Ahead)
Scale: ⅛" = 1'-0"

NOTE:
Dimensions and details at End Bent No. 2 are the same at End Bent No. 1 except as shown.

LEGEND

EF = Each Face

NOTE:
For "GENERAL NOTES", "SECTION A-A", "SECTION B-B", "BAR LIST" and "BAR BENDING DIAPHRAGMS", see Dwg. No. 66496.

① The mechanical bar couplers shall be Dayton Superior D250SCA Bar Lock Couplers or an alternate approved type in accordance with the ARDOT Qualified Products List (QPL). Couplers shall develop at least 125% of the specified yield strength of the bar and shall be installed according to the Manufacturer's recommendations. The cost of mechanical couplers shall not be measured for separate payment but shall be considered subsidiary to the item "CLASS S CONCRETE - BRIDGE". Couplers shall be installed with minimal projection beyond the longitudinal construction joint and shall be adquately protected from damage until the Stage 2 reinforcing is installed.

② Top of B605E bars shall maintain 2" clear of bottom of paving bracket in the end bent diaphragm.

STATE OF ARKANSAS
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BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS OF END BENTS
WOLF ISLAND SLASH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	JJB	DATE:	DEC. 2020	FILENAME:	b061615x1_a1.dgn
CHECKED BY:	NVW	DATE:	FEB. 2021	SCALE:	As Shown
DESIGNED BY:	JJB	DATE:	DEC. 2020		

BRIDGE NO. 07635 DRAWING NO. 66495

abhall 11/3/2023 3:11:30 PM
WORKSPACE: ARDOT Bridge (2019)
L:\2017\17017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\b061615x1_S201_AB.dgn

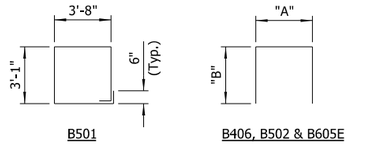
DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	67	136
		07635		END BENTS		66496

BAR LIST (EACH BENT)

	MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
③	B401	10	33'-5"			Str.
③	B402	20	23'-1"			Str.
	B403E	6	7'-4"			Str.
	B404E	16	8'-7"			Str.
	B405	10	10'-9"			2"
	B406	53	7'-6"	3'-8"	2'-0"	2"
	B407	4	4'-11"			Str.
	B408	4	15'-11"			Str.
	B409	8	14'-0"			Str.
	B501	130	14'-0"			2½"
	B502	33	9'-8"	3'-8"	3'-1"	2½"
③	B601	6	34'-2"	33'-6"		4½"
③	B602	6	33'-6"			Str.
③	B603	6	44'-3"	43'-7"		4½"
③	B604	6	43'-7"			Str.
	B605E	106	17'-6"	3'-8"	7'-1"	4½"

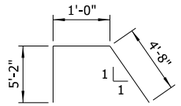
③ Length of bars shown shall be adjusted as required to accommodate length of mechanical coupler.

BAR BENDING DIAGRAMS

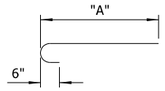


B501

B406, B502 & B605E



B405



B601 & B603

NOTES:
Number of bars shown is for one end bent only.

Dimensions of bars are out-to-out.

Bar designations ending in "E" indicate epoxy coated bars.

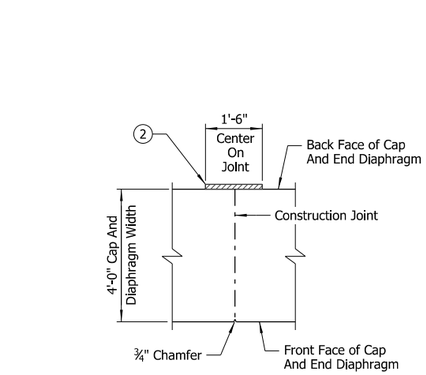
GENERAL NOTES

All concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 3500 psi and shall be poured in the dry. All exposed corners shall be chamfered ¾" unless otherwise noted.

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

Granular backfill and pipe underdrain required behind end bent caps. See Dwg. No. 66499 for details.

For additional information, see Layout.



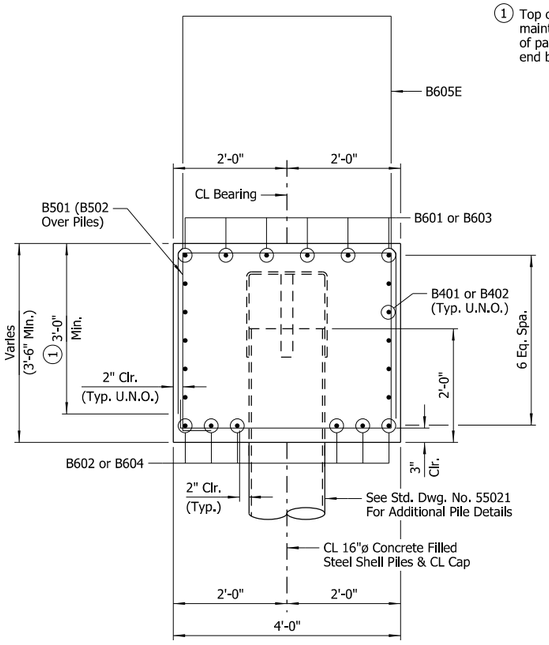
NOTE:
Payment for this work and material shall be considered subsidiary to other pay items.

② Membrane waterproofing Type "C" or approved equal, see Section 815. Membrane waterproofing shall extend from the bottom of the cap to the paving bracket.

CONSTRUCTION JOINT DETAIL

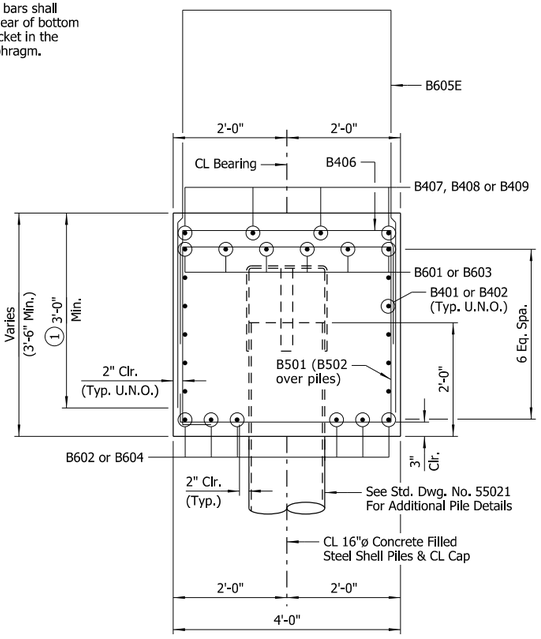
No Scale

① Top of B605E bars shall maintain 2" clear of bottom of paving bracket in the end bent diaphragm.



SECTION A-A

Scale: ¾" = 1'-0"



SECTION B-B

Scale: ¾" = 1'-0"

LEGEND

U.N.O. = Unless Noted Otherwise

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF END BENTS
WOLF ISLAND SLASH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	JJB	DATE:	DEC. 2020	FILENAME:	b061615x1_a2.dgn
CHECKED BY:	NVW	DATE:	FEB. 2021	SCALE:	As Shown
DESIGNED BY:	JJB	DATE:	DEC. 2020		

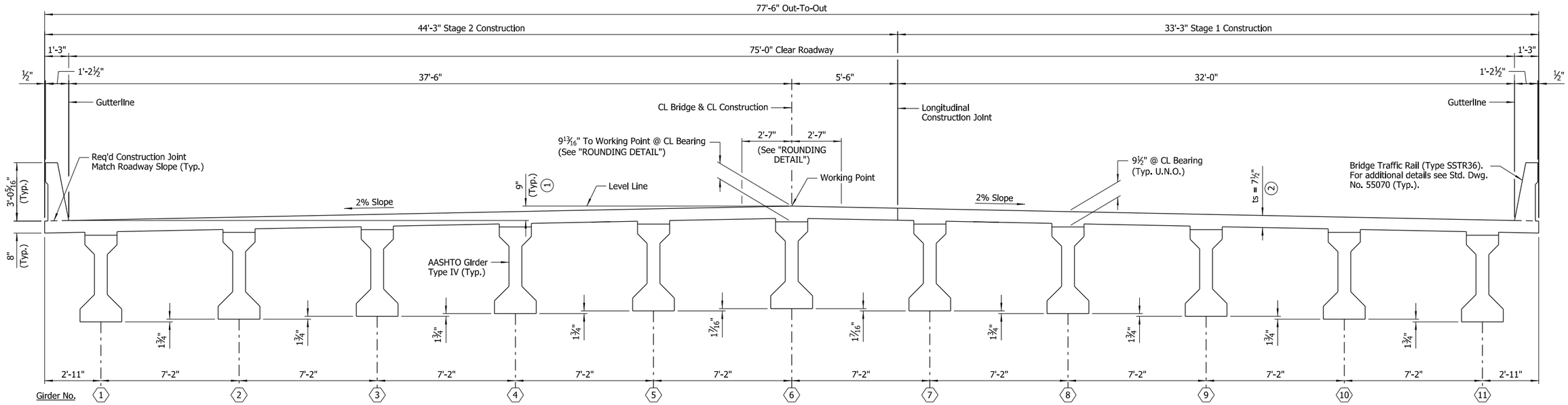
BRIDGE NO. 07635 DRAWING NO. 66496

abhall 11/3/2023 3:11:30 PM
WORKSPACE: ARDOT Bridge (2019)
L:\2017\17017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\b061615x1_S202_AB.dgn

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	68	136
		07635		99'-0" SPAN		66497

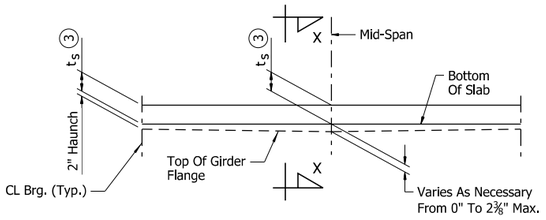
(1) Working Point to Gutterline

(2) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE"



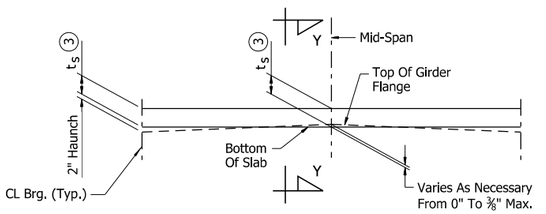
TYPICAL ROADWAY SECTION - FINAL CONDITION

(Looking Ahead)
Scale: ⅜" = 1'-0"



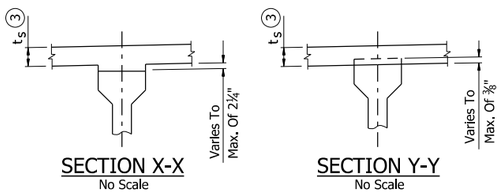
GIRDER ELEVATION

No Scale



GIRDER ELEVATION

No Scale



SECTION X-X

No Scale

SECTION Y-Y

No Scale

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

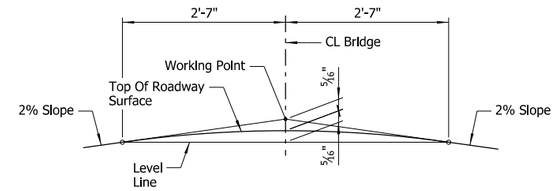
t_S = slab thickness as shown on superstructure details. See "TYPICAL ROADWAY SECTION - FINAL CONDITION".

(3) Tolerance when removable deck forming is used is +½", -¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance. See Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used.

"GIRDER ELEVATION" sketches show the range of acceptability of the top of girder relative to bottom of slab after the placement of the slab. When the top of the girder projects more than ⅜" into the slab, a raise in grade will be necessary. Girders shall be set in a sufficient number of spans over suitable increments so the revised grade line will produce a smooth riding surface. Variation of haunch height will be at the Contractor's expense.

LEGEND

U.N.O. = Unless Noted Otherwise



ROUNDING DETAIL

No Scale

NOTE:
Working Point matches Theoretical Roadway Grade.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14498
ADAM B. HALL

DIGITALLY SIGNED 11/3/2023
BRIDGE ENGINEER

SHEET 1 OF 7
DETAILS OF 99'-0" INTEGRAL PRESTRESSED CONCRETE GIRDER SPAN
WOLF ISLAND SLASH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JJB DATE: DEC. 2020 FILENAME: b061615x1_s1.dgn
CHECKED BY: NVW DATE: FEB. 2021 SCALE: As Shown
DESIGNED BY: JJB DATE: DEC. 2020

BRIDGE NO. 07635 DRAWING NO. 66497

abhall 11/3/2023 3:11:30 PM
WORKSPACE: ARDOT Bridge (2019)
L:\2017\17017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\b061615x1_S301_SX.dgn

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	69	136
		07635		99'-0" SPAN		66498

SLAB REINFORCING:

Transverse: Stage 1:
S503E @ 6" O.C in Top and Bottom
S502E @ 6" O.C. in Top of Right Overhang (Bundled with S503E)
Stage 2:
S504E @ 6" O.C. in Top and Bottom
S502E @ 6" O.C. in Top of Left Overhang (Bundled with S504E)

Longitudinal: Stage 1 & Stage 2:
S401E in Top as Shown
S501E in Bottom as Shown
S601E In Top as Shown At End Bents, See "REINFORCING PLAN & SLAB POURING SEQUENCE" on Dwg. No. 66501

(1) TOLERANCE:
Minus = ¼"
Plus = Amount of slab thickening used to meet slab thickness tolerance - see "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on Dwg. No. 66497.

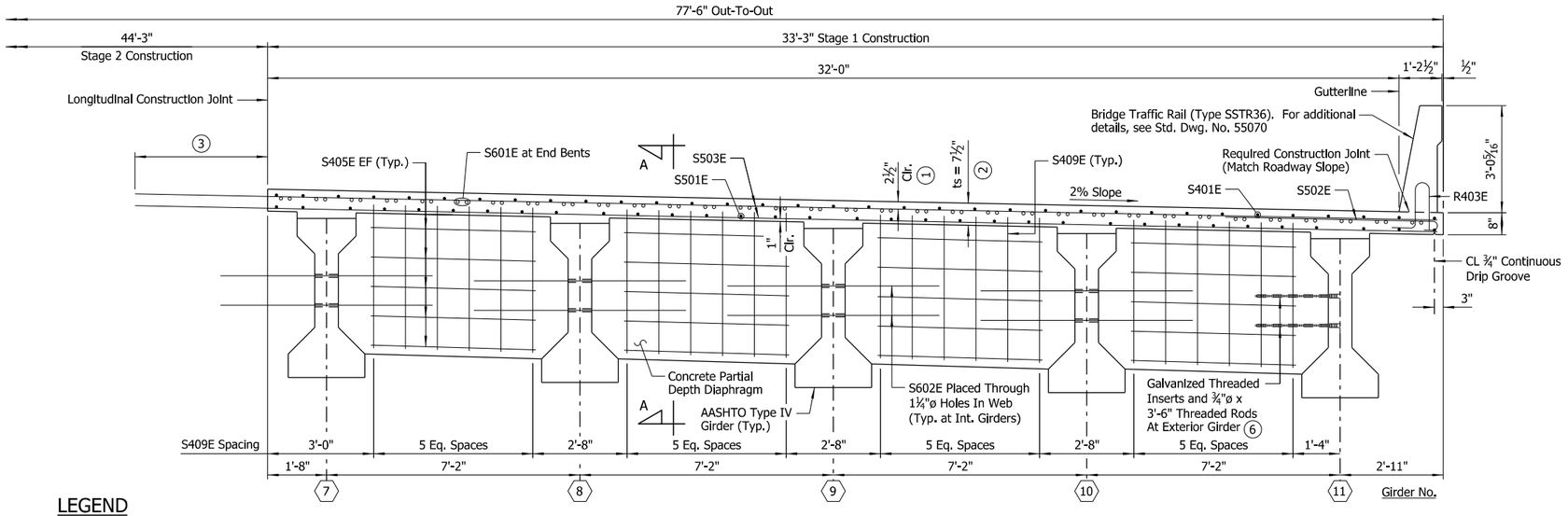
(2) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on Dwg. No. 66497.

(3) Bar Projection:
3'-9" for #5 bars
2'-9" for #4 bars

(4) 3'-7" min. lap for #5 bars
2'-7" min. lap for #4 bars

(5) For "ROUNDING DETAIL", see Dwg. No. 66497.

(6) See "TYPICAL GIRDER ELEVATION (TYPE IV) - 99'-0"" on Dwg. No. 66502 for number and location. Galvanized Threaded Inserts shall be Dayton-Richmond F-42 Loop Ferule Inserts or approved equal. ⅜"ø Galvanized Threaded Rods shall be ASTM A709, Grade 36 or AASHTO M 31 or M 322 Type A, Grade 60. Galvanizing shall be in accordance with AASHTO M 232, Class C or ASTM B695, Class 50. These items will not be paid for directly but shall be considered subsidiary to the Item "PRESTRESSED CONCRETE GIRDERS (TYPE IV)".

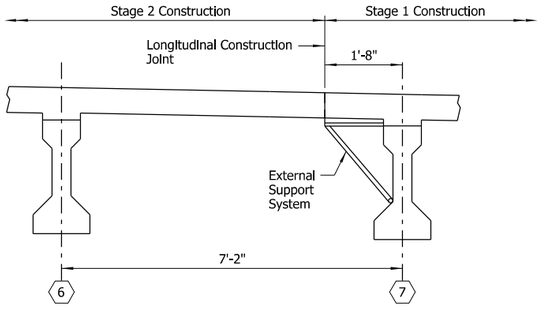


LEGEND

U.N.O. = Unless Noted Otherwise
EF = Each Face

TYPICAL ROADWAY SECTION - STAGE 1 CONSTRUCTION

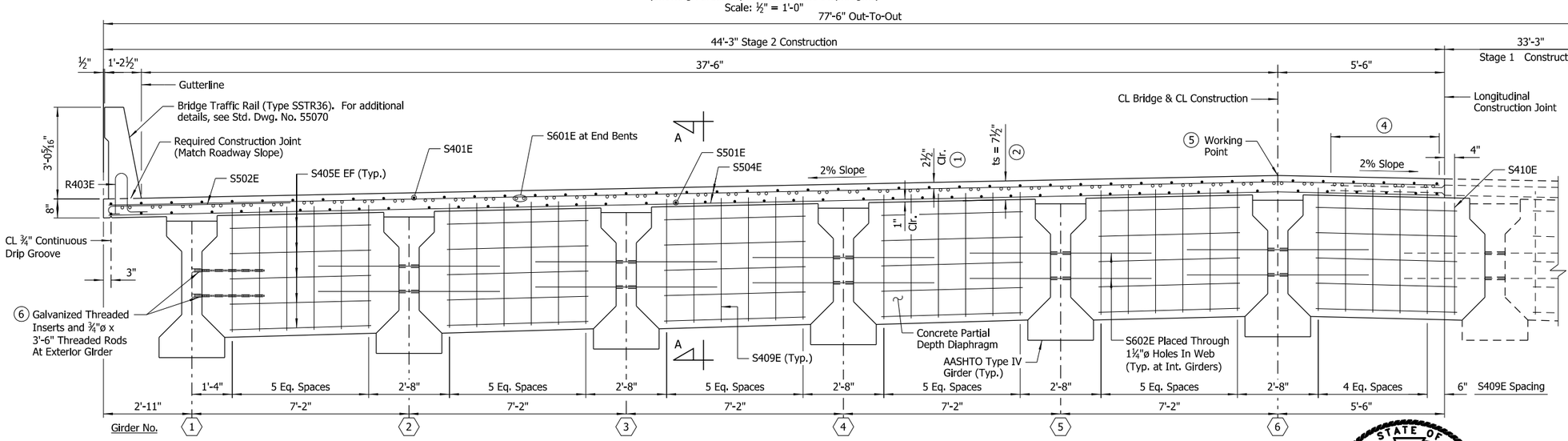
(Looking Ahead)
(Showing Partial Depth Intermediate Diaphragms)
Scale: ½" = 1'-0"



NOTE:
Stage 1 external supports at Girder 7 shall remain in place until after completion of the Stage 2 deck pour. See Subsection 802.15 for additional information regarding the removal of the support system.

DECK SUPPORT AT LONGITUDINAL CONSTRUCTION JOINT

(Looking Ahead)
No Scale



TYPICAL ROADWAY SECTION - STAGE 2 CONSTRUCTION

(Looking Ahead)
(Showing Partial Depth Intermediate Diaphragms)
Scale: ½" = 1'-0"

NOTE:
For "SECTION A-A", See Dwg. No. 66500.

NOTES:
Class 2 Protective Surface Treatment shall be applied to the roadway surface and to the roadway face and top of the concrete bridge rail.

Bar positions and clearances from the forms shall be maintained by means of stays, ties, hangers or other approved devices sufficient in size and number to prevent displacement during construction, per Subsection 804.06. Placement of slab bolsters or hi-chairs with full-length lower runners directly on removable deck forms will not be allowed.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14498
ADAM B. HALL
DIGITALLY SIGNED 11/3/2023
BRIDGE ENGINEER

SHEET 2 OF 7
DETAILS OF 99'-0" INTEGRAL PRESTRESSED CONCRETE GIRDER SPAN WOLF ISLAND SLASH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JJB DATE: DEC. 2020 FILENAME: b061615x1_s2.dgn
CHECKED BY: NVW DATE: FEB. 2021 SCALE: As Shown
DESIGNED BY: JJB DATE: DEC. 2020

BRIDGE NO. 07635 DRAWING NO. 66498

abhall 11/3/2023 3:11:31 PM
WORKSPACE: ARDOT Bridge (2019)
L:\2017\17017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\b061615x1_S302_SX.dgn

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
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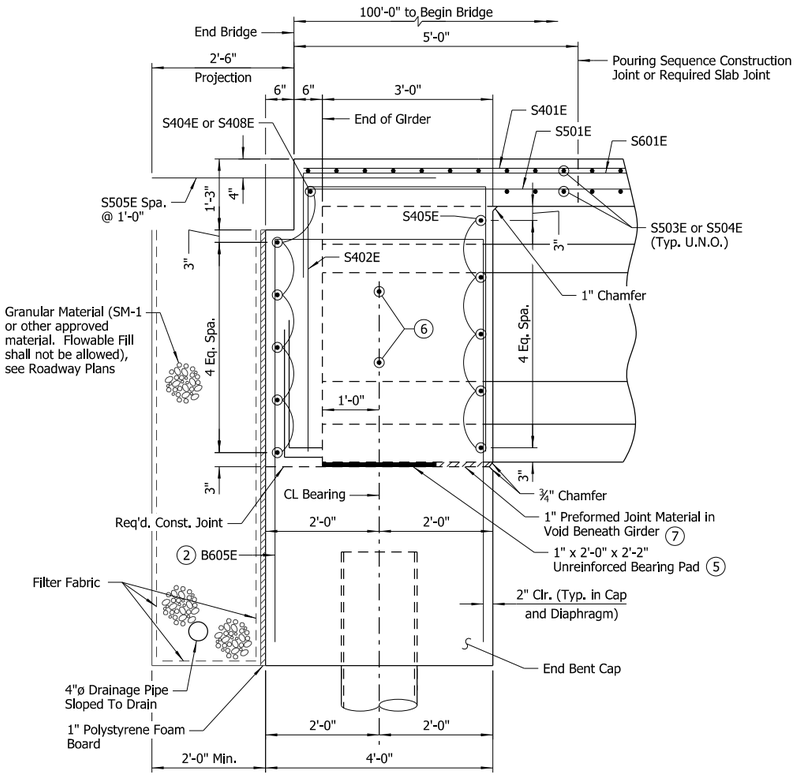
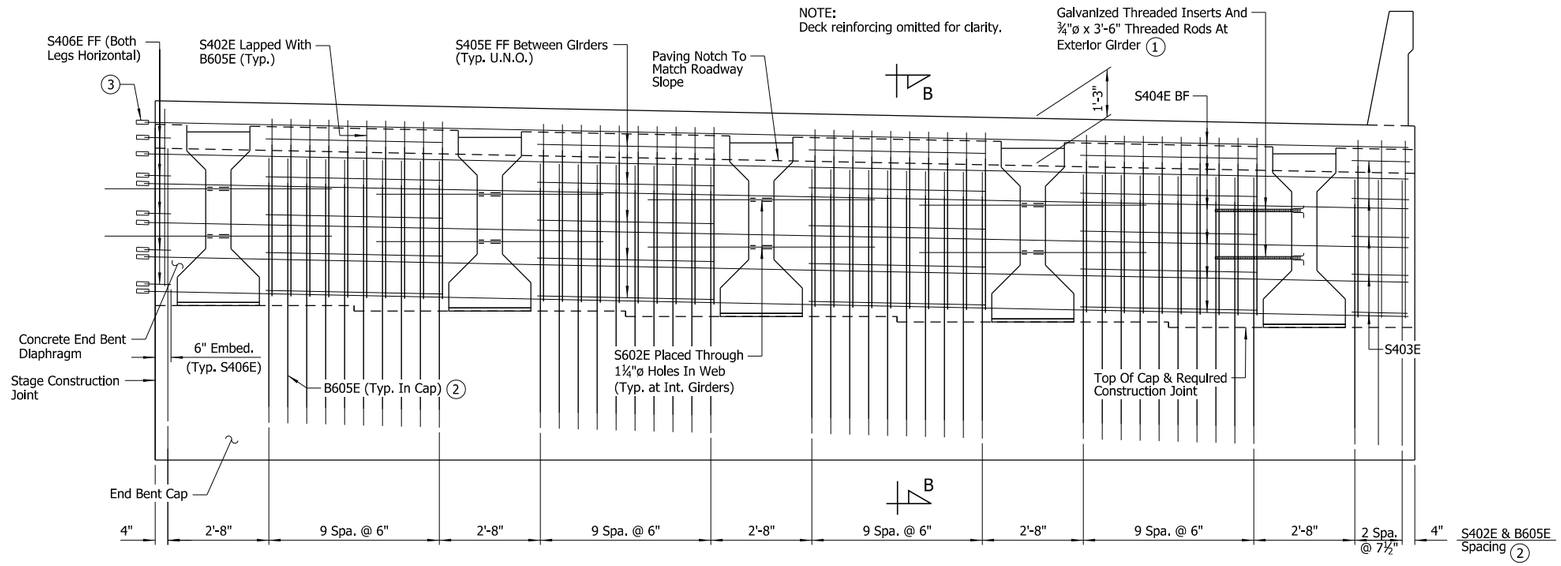
		07635		99'-0" SPAN		66499



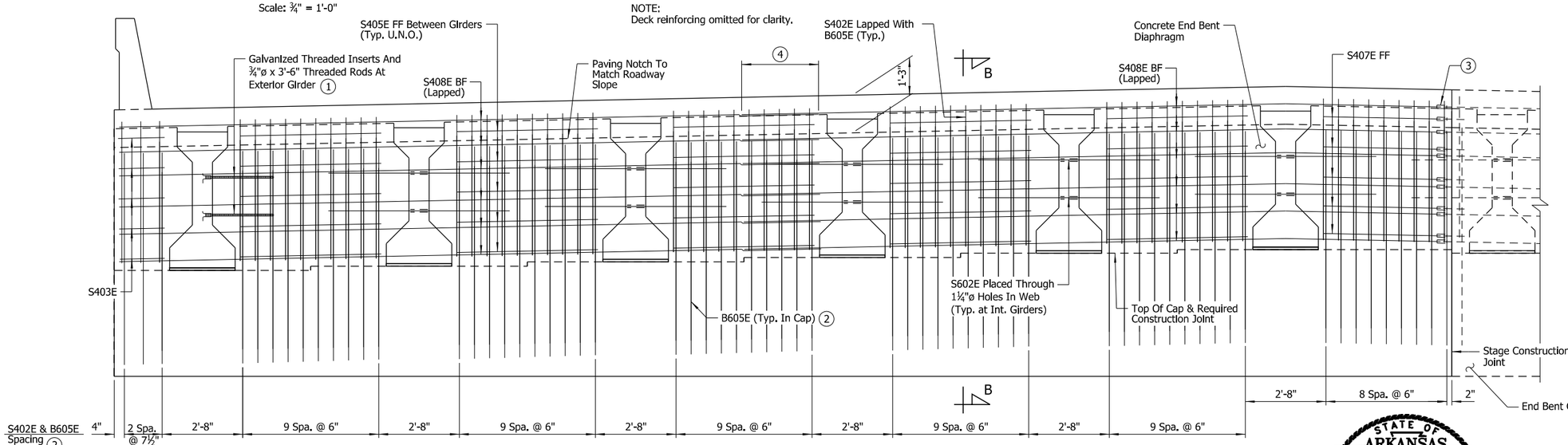
SECTION B-B

Scale: ¾" = 1'-0"



TYPICAL SECTION AT END BENT DIAPHRAGMS - STAGE 1 CONSTRUCTION

(Looking Ahead At Bent 2, Diaphragm at Bent 1 Similar)
Scale: ½" = 1'-0"



TYPICAL SECTION AT END BENT DIAPHRAGMS - STAGE 2 CONSTRUCTION

(Looking Ahead At Bent 2, Diaphragm at Bent 1 Similar)
Scale: ½" = 1'-0"

NOTES:
Limits of the concrete End Bent Diaphragm shall match plan dimension of End Bent Cap.

Preformed Joint Material shall not be paid for directly, but shall be considered subsidiary to the item "CLASS S(AE) CONCRETE - BRIDGE".

For additional details of pipe underdrain, see Std. Dwg. PU-1 and Section 611. Pipe underdrains will not be measured or paid for separately, but shall be considered subsidiary to the unit price bid for "UNCLASSIFIED EXCAVATION".

1" Polystyrene Foam Board, Filter Fabric and Granular Material shall not be paid for directly, but shall be considered subsidiary to the various bid items.

LEGEND

FF = Front Face
BF = Back Face
U.N.O. = Unless Noted Otherwise

(1) See "TYPICAL GIRDER ELEVATION (TYPE IV) - 99'-0"" on Dwg. No. 66502 for number and location. Galvanized Threaded Inserts shall be Dayton-Richmond F-42 Loop Ferule Inserts or Rods shall be ASTM A709, Grade 36 or AASHTO M 31 or M 322 Type A, Grade 60. Galvanizing shall be in accordance with AASHTO M 232, Class C or ASTM B695, Class 50. These items will not be paid for directly but shall be considered subsidiary to the item "PRESTRESSED CONCRETE GIRDERS (TYPE IV)."

(2) See "DETAILS OF END BENTS" on Dwg. No. 66495 for additional details.

(3) Epoxy coated mechanical bar couplers shall be Dayton Superior D250SCA Bar Lock Epoxy Couplers or an alternate approved type in accordance with the ARDOT Qualified Products List (QPL). Couplers shall develop at least 125% of the specified yield strength of the bar and shall be installed according to the Manufacturer's recommendations. The cost of mechanical couplers shall not be measured for separate payment but shall be considered subsidiary to the item "CLASS S(AE) CONCRETE - BRIDGE". Couplers shall be installed with minimal projection beyond the longitudinal construction joint and shall be adquately protected from damage until the Stage 2 reinforcing is installed.

(4) 2'-7" min. lap (Typ. #4 bars)

(5) Unreinforced bearing pads shall meet the requirements of Section 808 with the exception that hardness shall be 50 durometer. Unreinforced bearing pads shall not be paid for directly, but shall be considered subsidiary to the item "CLASS S(AE) CONCRETE-BRIDGE".

(6) S602E (typ. at int. girders) or ¾"ø threaded Inserts (typ. at ext. girders)

(7) 1" Preformed Joint material shall be AASHTO M 153, Type I per Subsection 501.02(h)(l)(b).

STATE OF ARKANSAS
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BRIDGE ENGINEER

SHEET 3 OF 7
DETAILS OF 99'-0" INTEGRAL PRESTRESSED CONCRETE GIRDER SPAN WOLF ISLAND SLASH

ROUTE SEC.

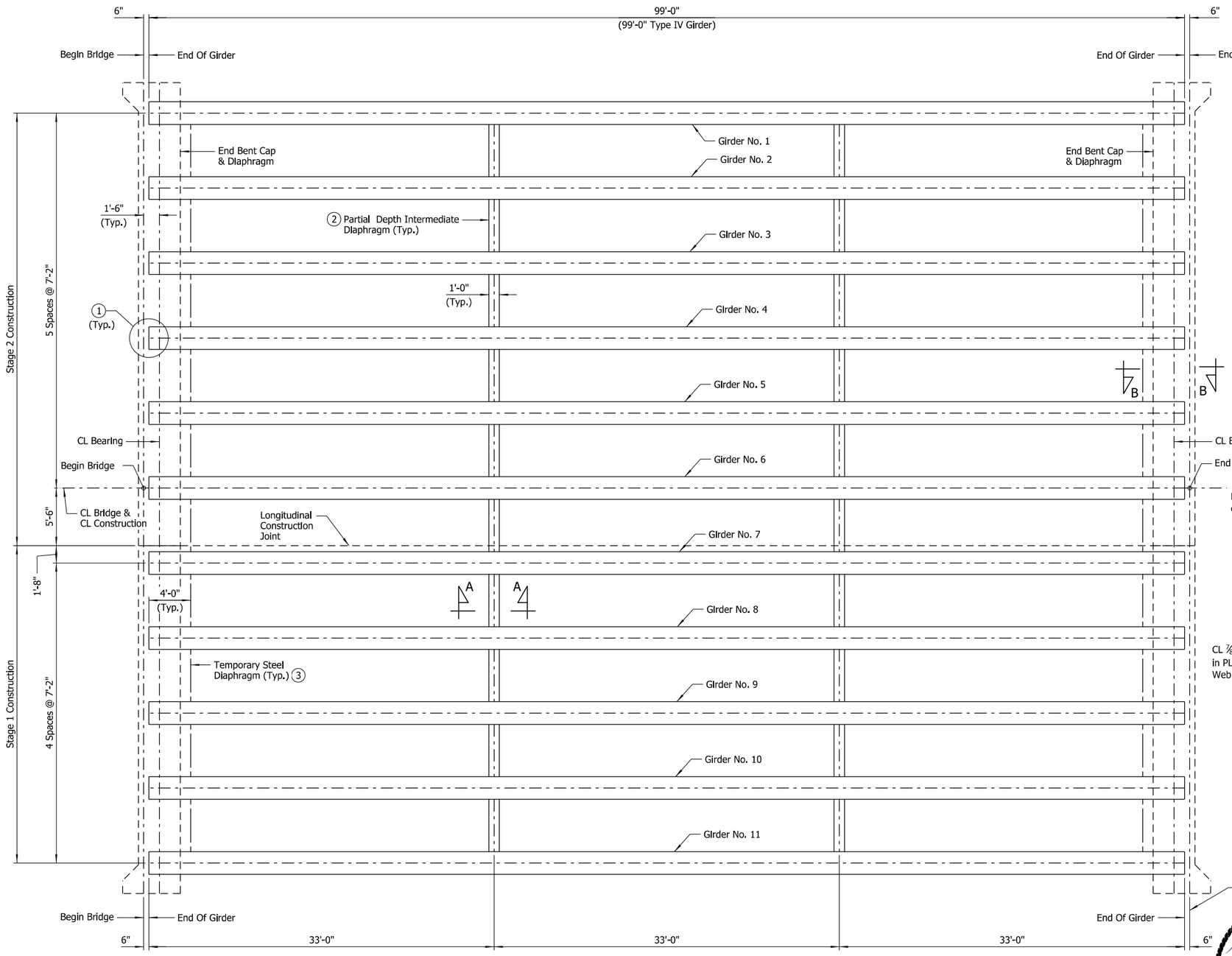
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY:	ERM	DATE:	NOV. 2020	FILENAME:	b061615x1_s3.dgn
CHECKED BY:	NVW	DATE:	FEB. 2021	SCALE:	As Shown
DESIGNED BY:	ERM	DATE:	NOV. 2020		

BRIDGE NO. 07635 DRAWING NO. 66499

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	71	136
		07635		99'-0" SPAN		66500



FRAMING PLAN

Scale: 3/16" = 1'-0"

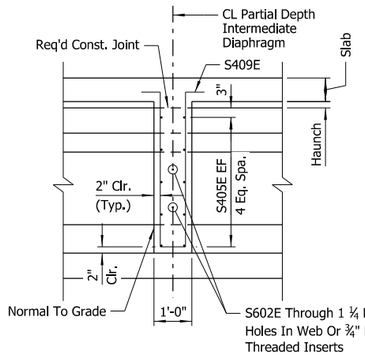
NOTES:
For "SECTION B-B" and additional details of End Bents Diaphrams, see 66499.

For additional details of Partial Depth Intermediate Diaphrams, see 66528.

LEGEND

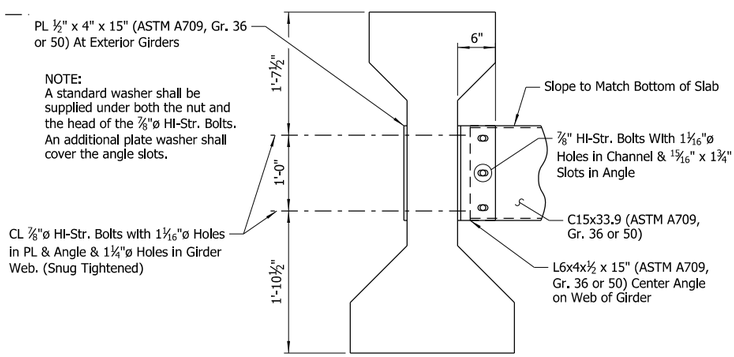
EF = Each Face

1. After erection, the ends of girders at all bents shall be blocked using temporary blocking to maintain proper location on bent caps. The ends of girders shall remain blocked until after the temporary steel diaphragms are in place.
2. For details of alternate steel diaphragm, see "DETAILS OF STEEL DIAPHRAGM".
3. After the concrete deck construction and curing are complete, the temporary steel diaphragm and connecting elements may remain in place or be removed and become the property of the Contractor and the holes in the girder webs filled with a QPL approved non-shrink epoxy grout. For additional diaphragm details, see "DETAILS OF STEEL DIAPHRAGM".



SECTION A-A

Scale: 1/2" = 1'-0"



DETAILS OF STEEL DIAPHRAGM

Scale: 1" = 1'-0"

Steel Diaphragms shall be used at locations noted as "Temporary Steel Diaphragm". The Temporary Steel Diaphragm and components will not be paid for directly, but shall be considered subsidiary to the Item "PRESTRESSED CONCRETE GIRDERS (TYPE IV)".

Permanent Steel Diaphragms may be used in lieu of concrete diaphragms at locations noted as "Partial Depth Intermediate Diaphragm". Payment will be based on concrete diaphragms.

All components of Steel Diaphragms (Permanent and Temporary) shall be galvanized in accordance with AASHTO M111.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14498
ADAM B. HALL

DIGITALLY SIGNED 11/3/2023
BRIDGE ENGINEER

SHEET 4 OF 7
DETAILS OF 99'-0" INTEGRAL PRESTRESSED CONCRETE GIRDER SPAN WOLF ISLAND SLASH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY:	RAK	DATE:	DEC. 2020	FILENAME:	b061615x1_s4.dgn
CHECKED BY:	NVW	DATE:	FEB. 2021	SCALE:	As Shown
DESIGNED BY:	RAK	DATE:	DEC. 2020		

BRIDGE NO. 07635 DRAWING NO. 66500

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
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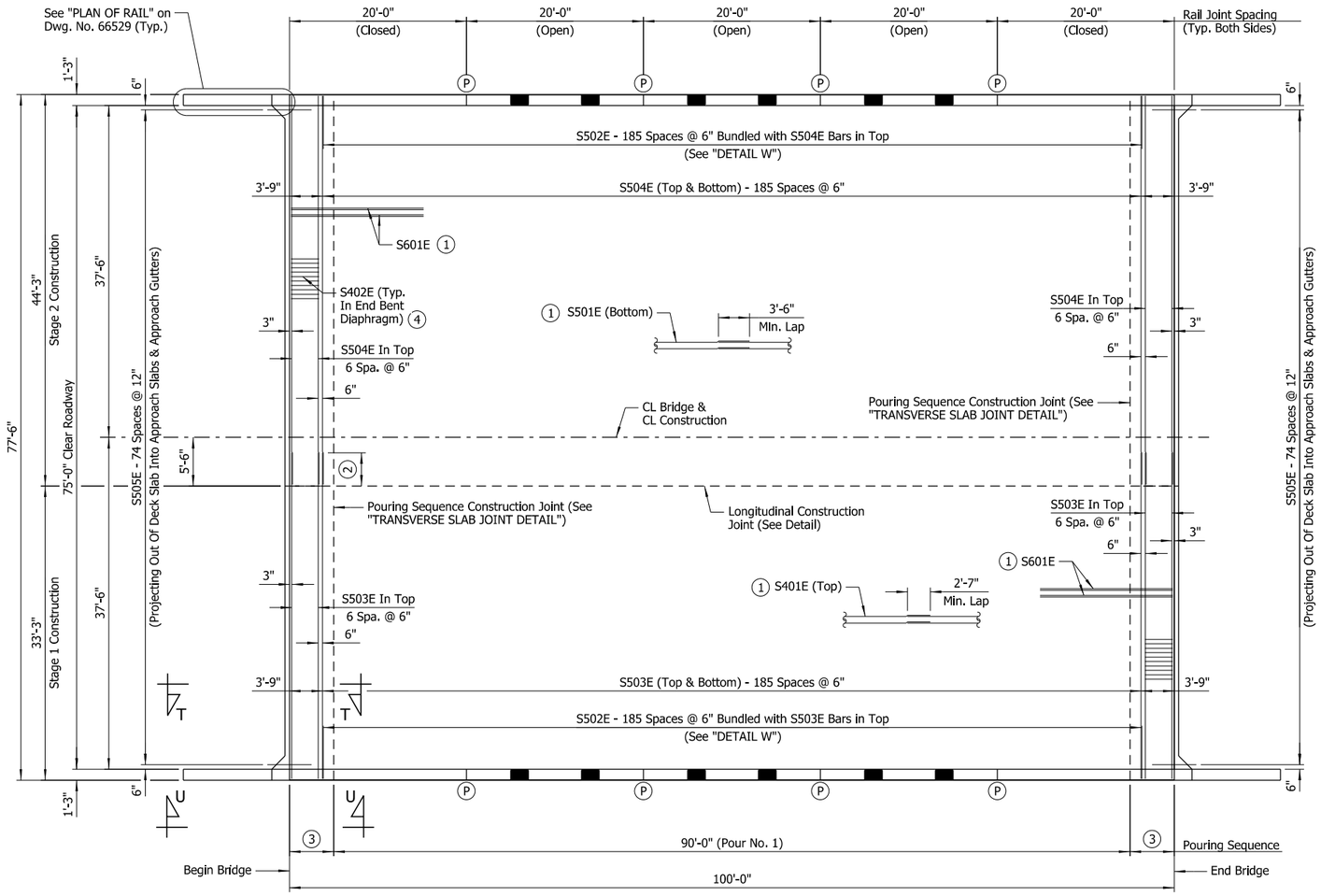
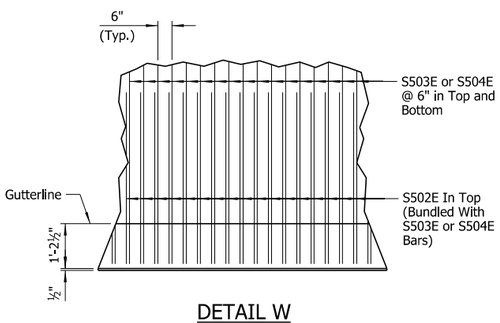


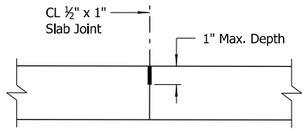
REINFORCING PLAN & SLAB POURING SEQUENCE

Scale: ⅛" = 1'-0"



DETAIL W

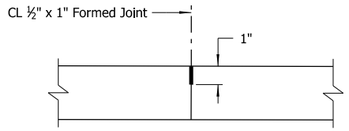
No Scale



TRANSVERSE SLAB JOINT DETAIL

No Scale

NOTE:
Use Type 3 or 4 Joint Sealer. See Subsections 501.02(h) and 501.05(j). Backer Rod filler will not be required. Joint Sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. Transverse Slab Joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations. The joint sealer shall extend across the deck from gutterline to gutterline.



LONGITUDINAL CONSTRUCTION JOINT

No Scale

NOTE:
Use ½" x 1" Type 3 or 4 Joint Sealer. See Subsections 501.02(h) and 501.05(j). Backer Rod filler will not be required. Joint Sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. This joint shall be formed. Seal color shall be gray or other color similar to concrete.

(1) Placed as shown in "TYPICAL ROADWAY SECTION - STAGE 1 CONSTRUCTION" and "TYPICAL ROADWAY SECTION - STAGE 2 CONSTRUCTION" on Dwg. No. 66498.

(2) 3'-9" bar projection

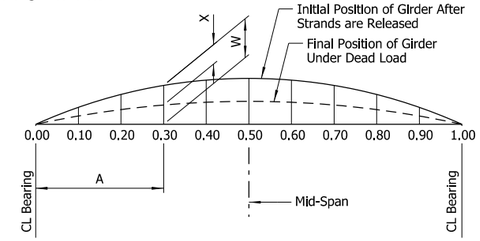
(3) 5'-0" (Pour No. 2)

(4) See Dwg. No. 66499 for additional details of reinforcing in concrete end bent diaphragms.

(5) NOTE:
Camber and Deflection Values shown are based on a concrete girder strength, f'c = 8000 psi. Greater strengths may require adjustments. See "SPECIAL CAMBER NOTES" on Dwg. No. 66528.

SPAN PT.	INCHES	
	W	X
0.00	0.000	0.000
0.10	0.688	0.383
0.20	1.145	0.767
0.30	1.427	1.070
0.40	1.578	1.263
0.50	1.626	1.329

Table symmetric about mid-span



"W" is Camber of Girder (Prestress + Dead Load of Girder @ 90 Days After Release)

"X" Is Dead Load Deflection of Slab + Diaphragms + Composite Dead Load

(5) CAMBER & DEFLECTION (INCHES) - 99'-0" GIRDER

No Scale

TABLE OF VARIABLES								
CLOSED RAIL PANELS			OPEN RAIL PANELS					
PANEL LENGTH	A	R4XXE	PANEL LENGTH	B	C	D	E	R4XXE
20'-0"	39	06	20'-0"	14	5'-0"	11	6'-0"	06

SLAB POURING SEQUENCE NOTES:
Pours with the same number may be placed simultaneously or separately. All Pour(s) 1 must be placed before Pour(s) 2 can be placed. A minimum of 48 hours shall elapse between the end of a pour and the start of the next pour. A minimum of 72 hours shall elapse between adjacent pours.

Concrete in bridge superstructure shall be placed, consolidated and screeded off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

A minimum of 72 hours shall elapse between completion of the slab and the pouring of the bridge railing. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer. Deviations from the pouring sequence(s) shown on this drawing are not permitted.

Concrete diaphragms at end bents shall be poured monolithically with the slab.

All partial depth diaphragms shall be cast in place and poured a minimum of 48 hours before the slab is poured.

Removable forms shall be used when pouring diaphragms.

The slab and diaphragms shall not be poured prior to 90 days following release of the prestressed girder strands.

NOTES:
Bridge rail spacing and joint depth shown are typical for both sides of roadway.
For reinforcing details, see Std. Dwg. No. 55070.

Rails and wings are included in span construction and are included in span quantities.
Rail and wing concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi.

For "GENERAL NOTES," see Dwg. No. 66528.

For "VIEW T-T" & "VIEW U-U", see Dwg. No. 66529.

For bar list and bar bending diagrams, see Dwg. No. 66503.

(P) Partial Depth Rail Joint at this location

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14498
ADAM B. HALL

DIGITALLY SIGNED 11/3/2023
BRIDGE ENGINEER

SHEET 5 OF 7
DETAILS OF 99'-0" INTEGRAL PRESTRESSED CONCRETE GIRDER SPAN
WOLF ISLAND SLASH

ROUTE SEC.

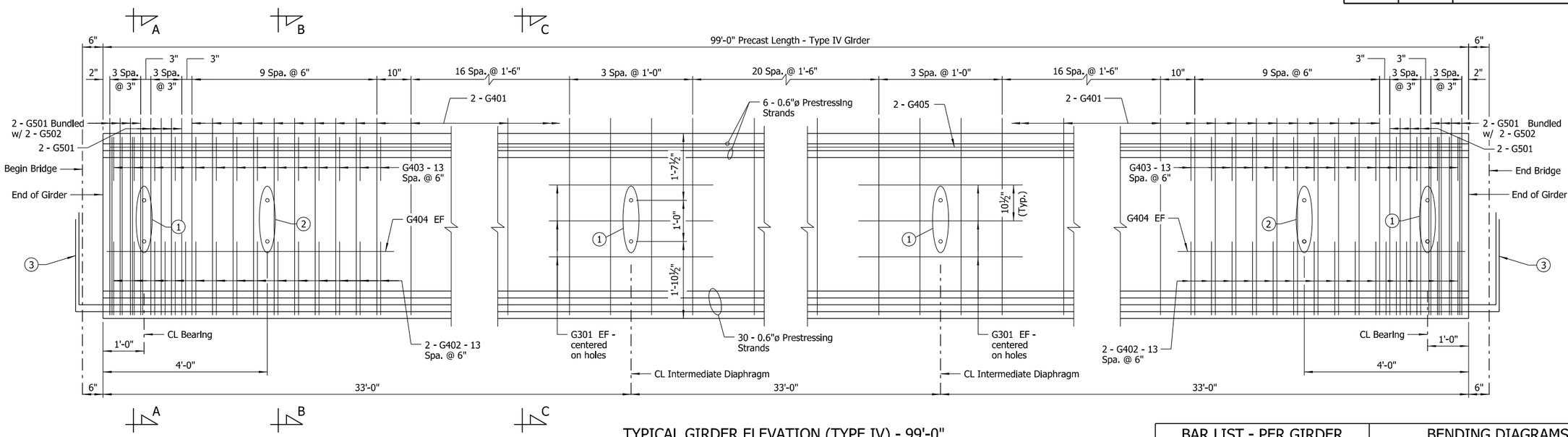
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JJB DATE: DEC. 2020 FILENAME: b061615x1_s5.dgn
CHECKED BY: NVW DATE: FEB. 2021 SCALE: As Shown
DESIGNED BY: JJB DATE: DEC. 2020

BRIDGE NO. 07635 DRAWING NO. 66501

abhall 11/3/2023 3:11:32 PM
WORKSPACE: ARDOT Bridge (2019)
L:\2017\17017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\b061615x1_S305_SB.dgn

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	73	136
		07635		99'-0" SPAN		66502



TYPICAL GIRDER ELEVATION (TYPE IV) - 99'-0"

No Scale

(1) Connection for End Bent or Partial Depth Intermediate Diaphragm: ¾"ø threaded Inserts at interior face of exterior girders or 1¼"ø holes at interior girders. See Dwg. Nos. 66498-66500 for additional details. Vertical placement of threaded Inserts shall match that shown for holes.

(2) Connection for Temporary Steel Diaphragm: 1¼"ø holes in web. See Dwg. No. 66500 for additional details.

(3) Prestressing Strands bent up into end bent diaphragm. See "END OF GIRDER VIEW AT END BENT".

NOTES:
Dimensions are measured along girders.

Prestressing strands will not be paid for directly, but will be considered subsidiary to the item "PRESTRESSED CONCRETE GIRDERS (TYPE IV)".

For "CAMBER & DEFLECTION (INCHES) - 99'-0" GIRDER", See Dwg. No. 66501.

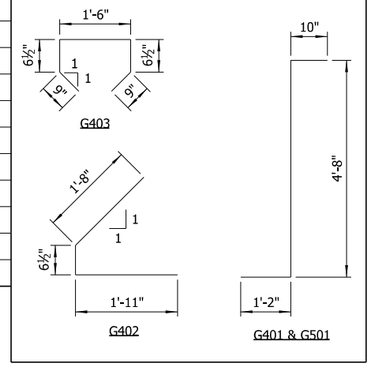
LEGEND

EF = Each Face
U.N.O. = Unless Noted Otherwise

(4) Length includes 2'-0" lap splice

BAR LIST - PER GIRDER			
MARK	NO. REQ'D	LENGTH	P.D.
G301	12	4'-0"	Str.
G401	158	6'-6"	2"
G402	56	4'-1"	2"
G403	28	3'-11"	2"
G404	4	7'-0"	Str.
(4) G405	2	100'-8"	Str.
G501	32	6'-5½"	2½"
G502	16	4'-2"	Str.

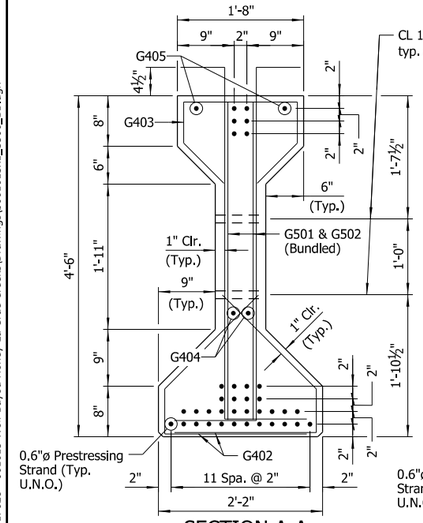
BENDING DIAGRAMS



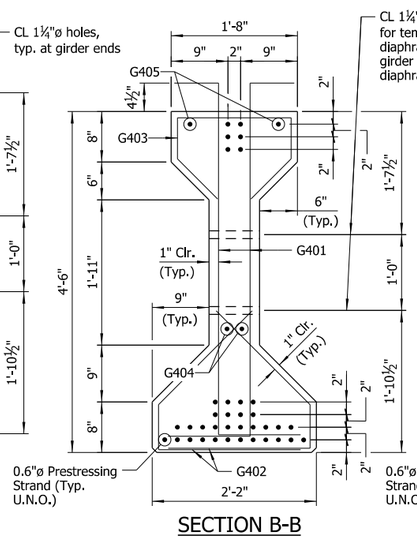
NOTES:
All bars in the Bar List will not be paid for directly, but will be considered subsidiary to the Item "PRESTRESSED CONCRETE GIRDERS (TYPE IV)".

At the Contractor's option, the two G402 bars may be furnished as one bar.

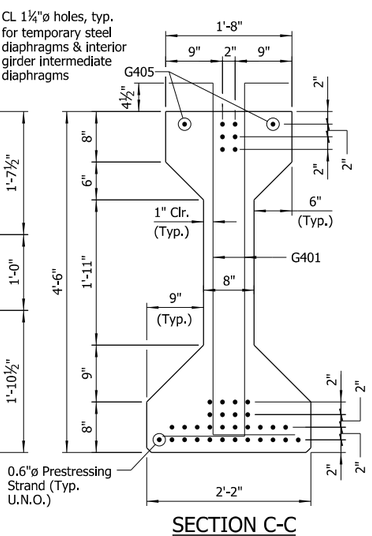
At the Contractor's option, ⅜" diameter strands pulled to 2,000 lbs. may be substituted for bars G405.



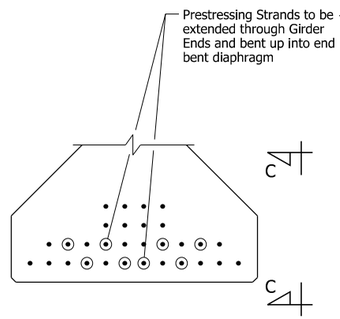
SECTION A-A
Scale: 1" = 1'-0"



SECTION B-B
Scale: 1" = 1'-0"



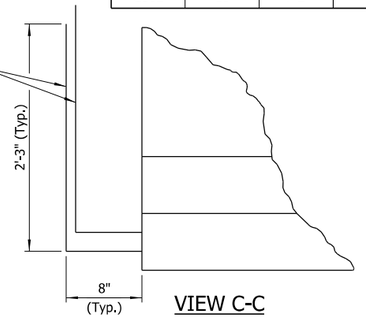
SECTION C-C
Scale: 1" = 1'-0"



END OF GIRDER VIEW AT END BENT
Scale: 1½" = 1'-0"

Shop bend 8 bottom prestressing strands from the end of the girder into end bent diaphragms as shown.

At the Contractor's option, the location for bent up strands may be varied. The total number of bent up strands per row shall not be changed. Saw cut or grind remaining strands to within 1" of the end of the girder.



VIEW C-C
Scale: 1½" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14498
ADAM B. HALL

DIGITALLY SIGNED 11/3/2023
BRIDGE ENGINEER

SHEET 6 OF 7
DETAILS OF 99'-0" INTEGRAL PRESTRESSED CONCRETE GIRDER SPAN
WOLF ISLAND SLASH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ERM DATE: NOV. 2020 FILENAME: b061615x1_s6.dgn
CHECKED BY: NVW DATE: FEB. 2021 SCALE: As Shown
DESIGNED BY: ERM DATE: NOV. 2020

BRIDGE NO. 07635 DRAWING NO. 66502

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WORKSPACE: ARDOT Bridge (2019)
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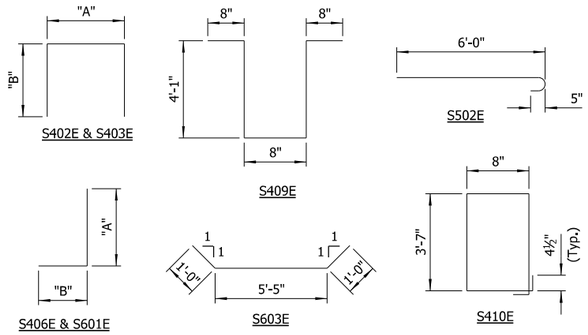
DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	74	136
		07635		99'-0" SPAN		66503

BAR BENDING DIAGRAMS



NOTES:
Dimensions of bars are out-to-out.

Bar designations ending with "E" indicate epoxy coated bars.

For bar bending diagrams of R400E, R401E, R403E and W401E, see Std. Dwg. No. 55070

BAR LIST

	MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
	S401E	237	35'-0"			Str.
	S402E	212	12'-6"	3'-2"	4'-9"	2"
	S403E	20	5'-10"	3'-0"	1'-6"	2"
(1)	S404E	12	33'-5"			Str.
	S405E	290	4'-8"			Str.
(1)	S406E	10	1'-7"	10"	10"	3"
(1)	S407E	10	3'-11"			Str.
(1)	S408E	24	23'-3"			Str.
	S409E	118	9'-10"			2"
	S410E	2	8'-10"			2"
	S501E	154	51'-9"			Str.
	S502E	372	6'-7"			3¾"
	S503E	386	36'-10"			Str.
	S504E	386	43'-11"			Str.
	S505E	150	5'-0"			Str.
	S601E	308	15'-11"	15'-0"	1'-0"	4½"
	S602E	72	6'-0"			Str.
	S603E	24	7'-5"			4½"
	R400E	48	5'-3"			2½"
	R401E	508	6'-4"			2½", 3"
	R402E	48	5'-6"			Str.
	R403E	412	3'-6"			3", 3¾"
	R404E	32	11'-8"			Str.
	R405E	32	4'-0"			Str.
	R406E	80	19'-8"			Str.
	W401E	96	3'-11"			3¾"
	W402E	160	4'-11"			Str.
	W701E	64	15'-2"			Str.

(1) Length of bars shown shall be adjusted as required to accommodate length of mechanical coupler.

STATE OF ARKANSAS
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SHEET 7 OF 7
DETAILS OF 99'-0" INTEGRAL
PRESTRESSED CONCRETE GIRDER SPAN
WOLF ISLAND SLASH

ROUTE SEC.

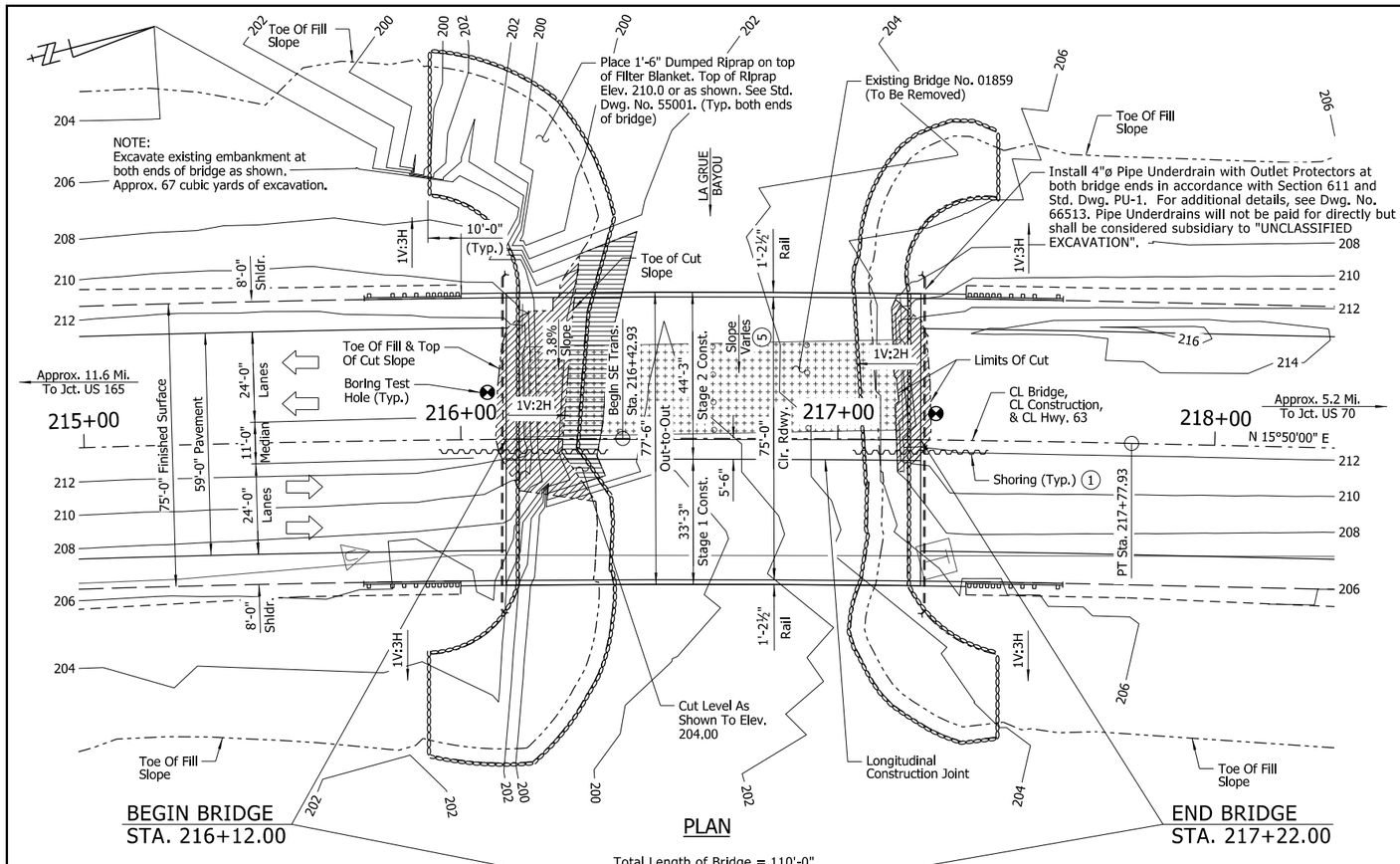
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JJB DATE: DEC. 2020 FILENAME: b061615x1_s7.dgn
CHECKED BY: NVW DATE: FEB. 2021 SCALE: As Shown
DESIGNED BY: JJB DATE: DEC. 2020

BRIDGE NO. 07635 DRAWING NO. 66503

abhall 11/3/2023 3:11:34 PM
WORKSPACE: ARDOT Bridge (2019)
L:\2017\17017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\b061615x1_S307_SD.dgn

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	75	136
		07636		LAYOUT		66504



(1) See Special Provision Job. No. 061615 "SHORING".

NOTES:
Use Type 1 and Type 2 Special Approach Slabs at each end of bridge. See Dwg. Nos. 66531 and 66532.

Use Type 1 Special Approach Gutters at each end of bridge. See Dwg. No. 66530.

NOTE:
CL Construction is on a 1°06'00" curve right. Except as noted, longitudinal lines of the bridge, approach slabs and approach gutters shall be constructed on curves concentric with CL Construction. CL Girders shall be constructed parallel to a chord line extending between bridge ends. See "ALIGNMENT SKETCH" for more information.

HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	TOTAL DISCHARGE (3)	DISCHARGE THIS SITE	(2) NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEVATION WITH BACKWATER
	YEARS	CFS	CFS	FEET	FEET
DESIGN	50	3,543	2,161	209.2	209.4
BASE	100	3,965	2,379	209.5	209.8
EXTREME	500	4,962	2,928	210.2	210.5
OVERTOPPING	>500	N/A	N/A	N/A	N/A

(2) Unconstricted water surface elevation without structure or roadway approaches

Q100 backwater elevation for existing structure = 209.8

(3) The total discharge includes flow at this site and the La Grue Bayou North site.

(4) Proposed Low Bridge Chord Elev. = 210.93 (Sta. 216+15.50)
Existing Low Bridge Chord Elev. = 209.96 (survey shot)

Drainage Area = 46.6 square miles
Historical High Water Elev. = 208.7

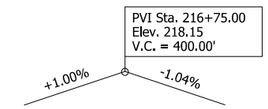
(5) See "CROSS-SLOPE TRANSITION SKETCH" on Dwg. No. 66505.

NOTE:
The proposed bridge has been positioned to avoid interference with the existing piling. The Contractor shall verify measurements of the Stage 2 piling prior to driving any Stage 1 piling. Any adjustments necessary to fit the proposed bridge to the existing bridge location shall be submitted for the Engineer's approval. No additional payment will be made for this work.

HORIZONTAL CURVE DATA

CL Hwy. 63

PI = 209+14.93
Δ = 19°10'00" Rt.
D = 1°06'00"
T = 879.43'
L = 1,742.42'
e = 3.8%
R = 5,208.71'



VERTICAL CURVE DATA

Hwy. 63
(Theoretical Grade Along CL Construction)

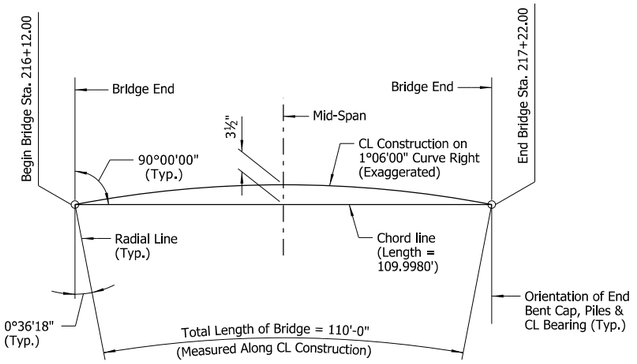
NOTES:
For "GENERAL NOTES", see Dwg. No. 66505.

For "ELEVATION OF SOIL BORINGS", see Dwg. No. 66506.

EXISTING UTILITIES LEGEND

UGT = Underground Cable

NOTE:
Utilities shown are based on locations at time of survey and do not reflect any potential utility relocations prior to construction.



ALIGNMENT SKETCH

No Scale

FOR R/W DATA, SEE ROADWAY PLANS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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SHEET 1 OF 3
LAYOUT OF BRIDGE
HIGHWAY 63 OVER LA GRUE BAYOU SOUTH
LA GRUE BAYOU, WOLF ISLAND SLASH & HONEY CREEK STRS. & APPRS. (S)
PRAIRIE COUNTY

ROUTE 63 SEC. 11

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: JUNE 2020 FILENAME: b061615x2_l1.dgn
CHECKED BY: ABH DATE: AUG. 2020 SCALE: 1" = 20'-0"
DESIGNED BY: JME DATE: JUNE 2020

BRIDGE NO. 07636 DRAWING NO. 66504

abhall 11/3/2023 3:11:34 PM
WORKSPACE: ARDOT Bridge (2019)
L:\2017\17017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\b061615x2_S101_LO.dgn

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	76	136
		07636		LAYOUT		66505

GENERAL NOTES

BENCHMARK: Vertical Control Data are shown on the Survey Control Data Sheets.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition) with applicable Supplemental Specifications and Special Provisions. Unless otherwise noted in the plans, Section and Subsection numbers refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications (2017, 8th Edition)

LIVE LOADING: HL-93

SEISMIC ZONE: 2 S_{D1} = 0.264g Site Class = D

SEISMIC OPERATIONAL CLASSIFICATION: Essential

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (Superstructure)	f'c = 4,000 psi
Class S Concrete (Prestressed Concrete Girders)	f'c = 8,000 psi
Prestressing Strands (AASHTO M 203, Gr. 270)	fpu = 270,000 psi
Class S Concrete (Substructure)	f'c = 3,500 psi
Reinforcing Steel (AASHTO M 31 or M 322, Type A)	fy = 60,000 psi
Structural Steel (ASTM A709, Gr. 50W)	Fy = 50,000 psi
Structural Steel (ASTM A709, Gr. 50)	Fy = 50,000 psi
Structural Steel (ASTM A709, Gr. 36)	Fy = 36,000 psi

BORING LOGS: Boring Logs may be obtained from the Construction Contract Development Section of the Program Management Division.

STEEL SHELL PILING: Piling in Bents 1 & 2 shall be 16" diameter concrete filled steel shell piles and shall be driven with an approved air, steam or diesel hammer to a minimum ultimate bearing capacity of 283 tons per pile and to a minimum tip elevation of 170.00 or lower. Piling in end bents shall be driven after embankment to bottom of cap is in place. Lengths of piling shown are assumed for estimating quantities only. Actual pile lengths are to be determined in the field. No additional payment will be made for cut-off or build-up. Test piles are not required but may be driven for the Contractor's information in accordance with Subsection 805.08(g). No piles will be paid for as Test Piles.

Water jetting or other methods as approved by the Engineer may be required to achieve minimum penetration. This work shall not be paid for directly but shall be considered incidental to the item "STEEL SHELL PILING (16" DIA.)."

PREBORING: Preboring is required for all piling at Bents 1 and 2. Prebored holes shall have a diameter 6" greater than the diameter of the pile for a depth of 10' below the bottom of cap. The void space around the pile after completion of driving shall be backfilled with sand or pea gravel. The Contractor shall be responsible for keeping prebored holes free of debris prior to backfilling, which may require the use of temporary casings or other approved methods. Any related cost for backfilling and temporary casing will not be paid for directly but shall be considered subsidiary to the item "PREBORING".

DRIVING SYSTEM: The driving system approval and the ultimate bearing capacity determination for piling shall be based on the requirements of Subsection 805.09(b), "Method B - Wave Equation Analysis (WEAP)". It is estimated that the minimum rated hammer energy required to obtain the minimum ultimate bearing capacity for all piles will be 67,000 foot-pounds per blow.

BRIDGE DECK: The concrete bridge deck shall be given a tine finish as specified for final finishing in Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish.

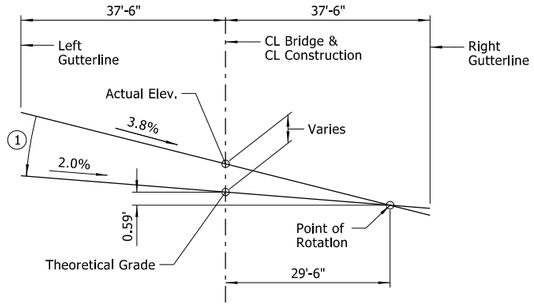
PROTECTIVE SURFACE TREATMENT: Class 2 Protective Surface Treatment shall be applied to the roadway surface and to the roadway face and top of the concrete rails in accordance with Section 803.

EXISTING BRIDGE: Existing Bridge No. 01859 (Log Mile 8.69) is 101.5' in length, 27.4' wide (24.0' clear roadway) and consists of a concrete slab on I-beam spans (4 spans total) supported by precast concrete pile bents. Plans of the existing bridge, if available, will be made available to the Contractor upon request to the Construction Contract Development Section of the Program Management Division.

REMOVAL AND SALVAGE: After Stage 1 Construction is complete and open to traffic, the Contractor shall remove existing Bridge No. 01859 in accordance with Section 205. All material from the existing bridge shall become property of the Contractor.

MAINTENANCE OF TRAFFIC: See Roadway Plans.

DETAIL DRAWINGS:	DRAWING NO(S).
Stage Construction	66507
End Bents	66508-66510
109'-0" Integral Prestressed Concrete Girder Span	66511-66517
Common Superstructure Details	66528-66529
Type Special Approach Gutters	66530
Type Special Approach Slabs	66531-66532
Dumped Riprap	55001
Concrete Filled Steel Shell Piling	55021
Bridge Traffic Rail	55070



STATION 216+42.93 TO 218+98.72 (REVERSE CROWN)

(Looking Ahead)

CROSS-SLOPE TRANSITION SKETCH

(1) Cross slope varies from 3.8% (Sta. 216+42.93) to 2.0% (Sta. 218+98.72)

STATE OF ARKANSAS
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SHEET 2 OF 3
LAYOUT OF BRIDGE
HIGHWAY 63 OVER LA GRUE BAYOU SOUTH
LA GRUE BAYOU, WOLF ISLAND SLASH
& HONEY CREEK STRS. & APPRS. (S)
PRAIRIE COUNTY

ROUTE 63 SEC. 11

ARKANSAS STATE HIGHWAY COMMISSION

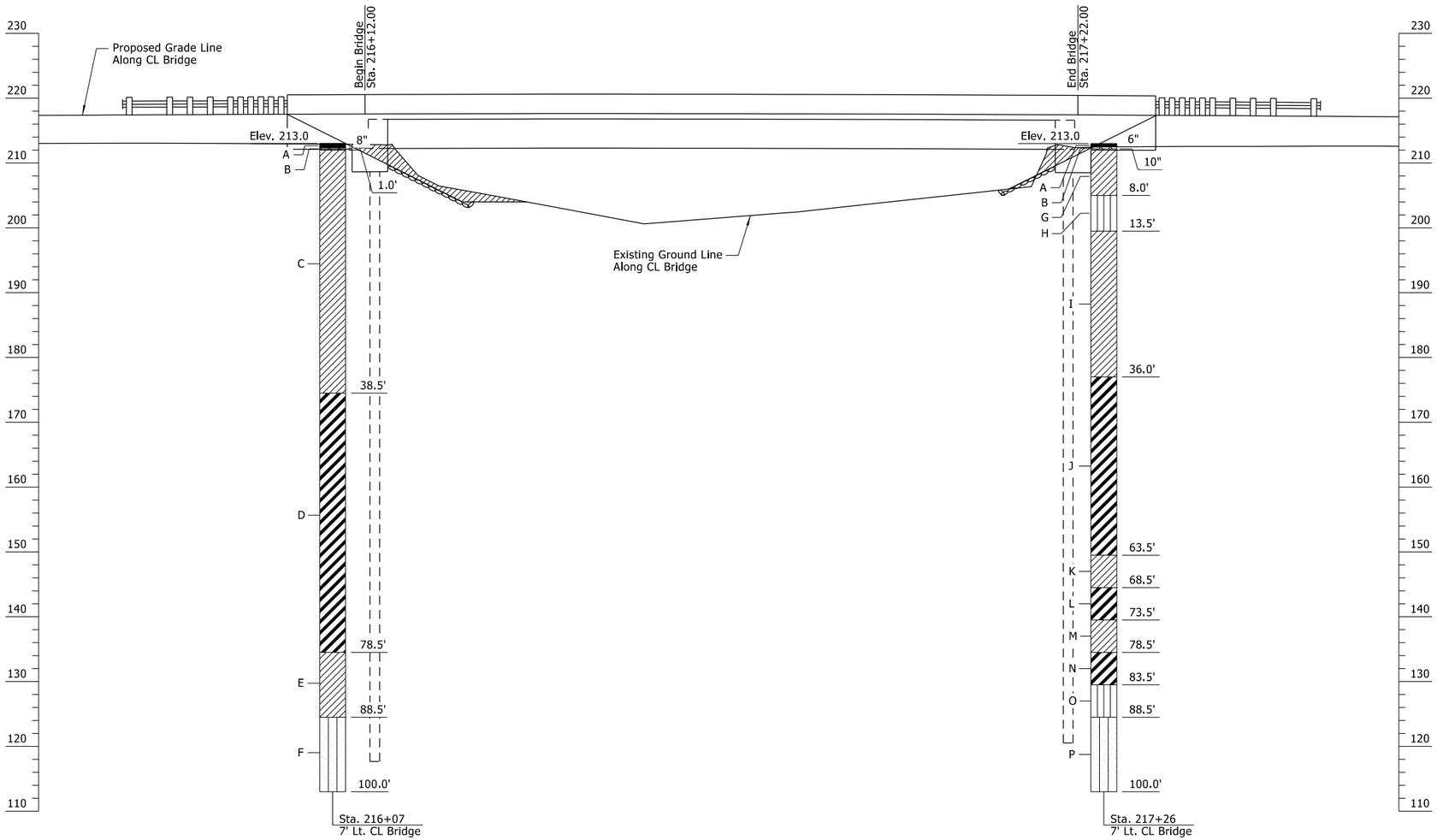
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: JUNE 2020 FILENAME: b061615x2_l2.dgn
CHECKED BY: ABH DATE: AUG. 2020 SCALE: No Scale
DESIGNED BY: JME DATE: JUNE 2020

BRIDGE NO. 07636 DRAWING NO. 66505

abhall 11/3/2023 3:11:35 PM
WORKSPACE: ARDOT Bridge (2019)
L:\2017\17017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\b061615x2_S102_L0.dgn

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	77	136
		07636		LAYOUT		66506



BORING LEGEND

A - Asphalt
B - Base Materials
C - Soft to very stiff, gray, LEAN CLAY
D - Stiff to soft, red to gray, FAT CLAY
E - Soft, gray, LEAN CLAY
F - Very dense, gray, SILTY SAND
G - Medium stiff, brown, LEAN CLAY, trace sand
H - Brown SILT
I - Very stiff to soft, brown, LEAN CLAY, trace sand
J - Very stiff to soft, red and gray to gray, FAT CLAY
K - Medium stiff, gray, LEAN CLAY, trace sand
L - Stiff, gray, FAT CLAY
M - Stiff, gray, LEAN CLAY, trace sand seams
N - Soft, gray, FAT CLAY
O - Very stiff, gray SILT
P - Dense to very dense, gray, SILTY SAND

N-VALUES

Sta. 216+07 Offset 7' Lt.	Sta. 217+26 Offset 7' Lt.
1.0-2.5, N=8	1.0-2.5, N=8
3.5-5.0, N=5	6.0-7.5, N=3
6.0-7.5, N=4	13.5-15.0, N=23
8.5-10.0, N=3	23.5-25.0, N=4
13.5-15.0, N=11	28.5-30.0, N=12
28.5-30.0, N=11	33.5-35.0, N=10
38.5-40.0, N=8	38.5-40.0, N=7
43.5-45.0, N=9	43.5-45.0, N=8
48.5-50.0, N=2	48.5-50.0, N=4
58.5-60.0, N=3	53.5-55.0, N=11
68.5-70.0, N=10	58.5-60.0, N=3
78.5-80.0, N=4	63.5-65.0, N=7
88.5-90.0, N=58	68.5-70.0, N=9
98.5-100.0, N=88	73.5-75.0, N=10
	78.5-80.0, N=3
	83.5-85.0, N=16
	88.5-90.0, N=43
	93.5-95.0, N=36
	98.5-100.0, N=63

ELEVATION OF SOIL BORINGS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14498
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DIGITALLY SIGNED 11/3/2023
BRIDGE ENGINEER

SHEET 3 OF 3
LAYOUT OF BRIDGE
HIGHWAY 63 OVER LA GRUE BAYOU SOUTH
LA GRUE BAYOU, WOLF ISLAND SLASH
& HONEY CREEK STRS. & APPRS. (S)
PRAIRIE COUNTY

ROUTE 63 SEC. 11

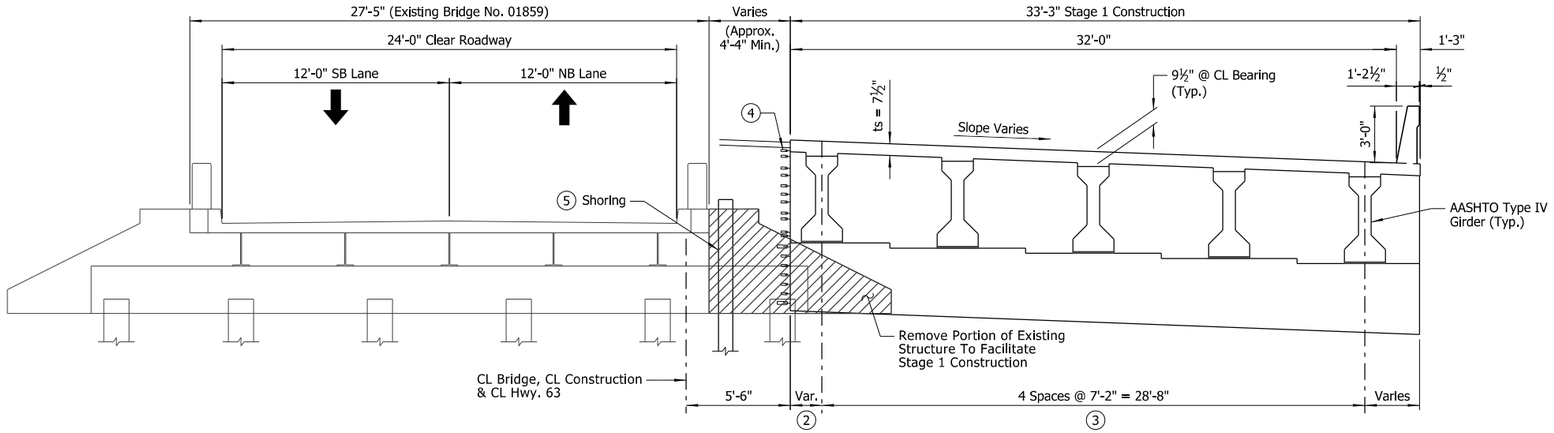
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JUNE 2020 FILENAME: b061615x2_l3.dgn
CHECKED BY: ABH DATE: AUG. 2020 SCALE: 1" = 10'-0"
DESIGNED BY: JME DATE: JUNE 2020

BRIDGE NO. 07636 DRAWING NO. 66506

abhall 11/3/2023 3:11:35 PM
WORKSPACE: ARDOT Bridge (2019)
L:\2017\17017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\b061615x2_S103_LO.dgn

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	78	136
		07636	STAGED CONSTRUCTION			66507



TYPICAL SECTION - STAGE 1 CONSTRUCTION

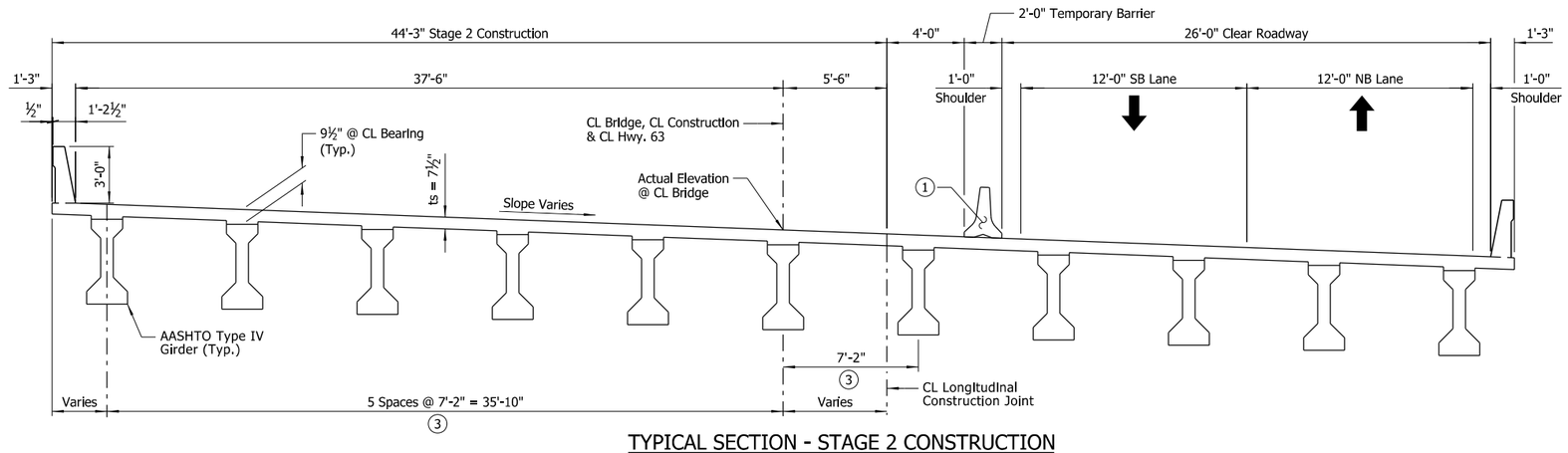
(Shown At End Bent; Looking Ahead)
Scale: ¼" = 1'-0"

NOTE:
Details related to Maintenance of Traffic are shown on Bridge Plans for information only. For Maintenance of Traffic Plans and additional information, see Roadway Plans.

NOTE:
New End Bent piling not shown for clarity.

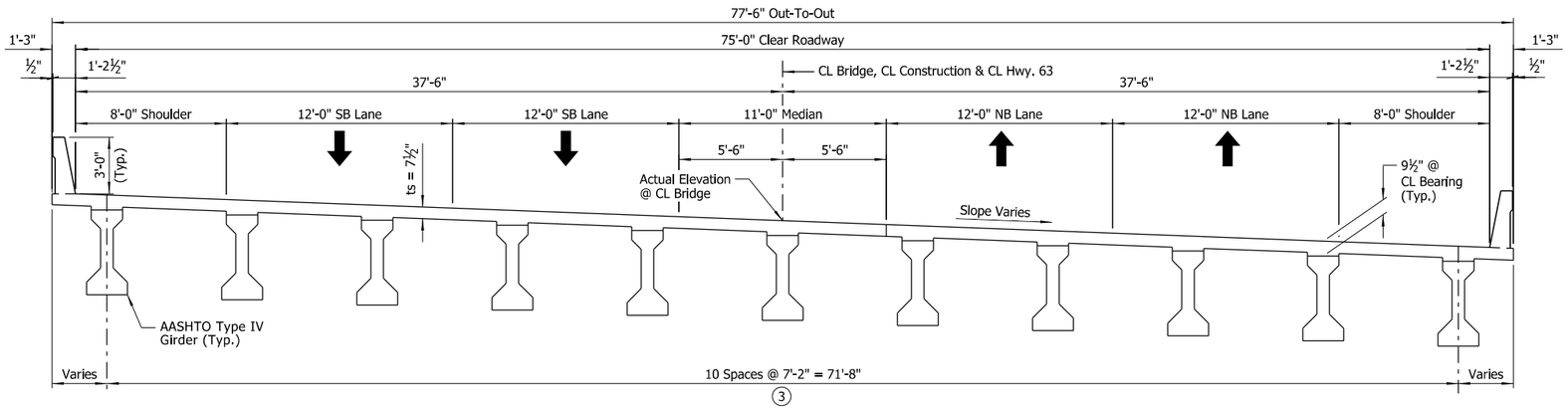
1. Temporary construction barrier. Do not connect to new deck (See Dwg. No. TC-4).
2. Construction vehicles shall not travel on cantilever portion of deck.
3. Measured perpendicular to chord line extending between bridge ends. See "ALIGNMENT SKETCH" on Dwg. No. 66504.
4. Mechanical bar couplers
5. Shoring shall be required to retain existing and new embankment during construction.

NOTE:
Unless noted otherwise, horizontal dimensions shown are measured along a line radial to CL Construction.



TYPICAL SECTION - STAGE 2 CONSTRUCTION

(Shown In Span; Looking Ahead)
Scale: ¼" = 1'-0"



TYPICAL SECTION - FINAL CONDITION

(Shown In Span; Looking Ahead)
Scale: ¼" = 1'-0"

LEGEND

U.N.O. = Unless Noted Otherwise

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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ADAM B. HALL

DIGITALLY SIGNED 11/3/2023
BRIDGE ENGINEER

DETAILS OF STAGED CONSTRUCTION
HIGHWAY 63 OVER LA GRUE BAYOU SOUTH
LA GRUE BAYOU, WOLF ISLAND SLASH & HONEY CREEK STRS. & APPRS. (S)
PRAIRIE COUNTY

ROUTE 63 SEC. 11

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JUNE 2020 FILENAME: b061615x2_sc.dgn
CHECKED BY: ABH DATE: AUG. 2020 SCALE: As Shown
DESIGNED BY: JME DATE: JUNE 2020

BRIDGE NO. 07636 DRAWING NO. 66507

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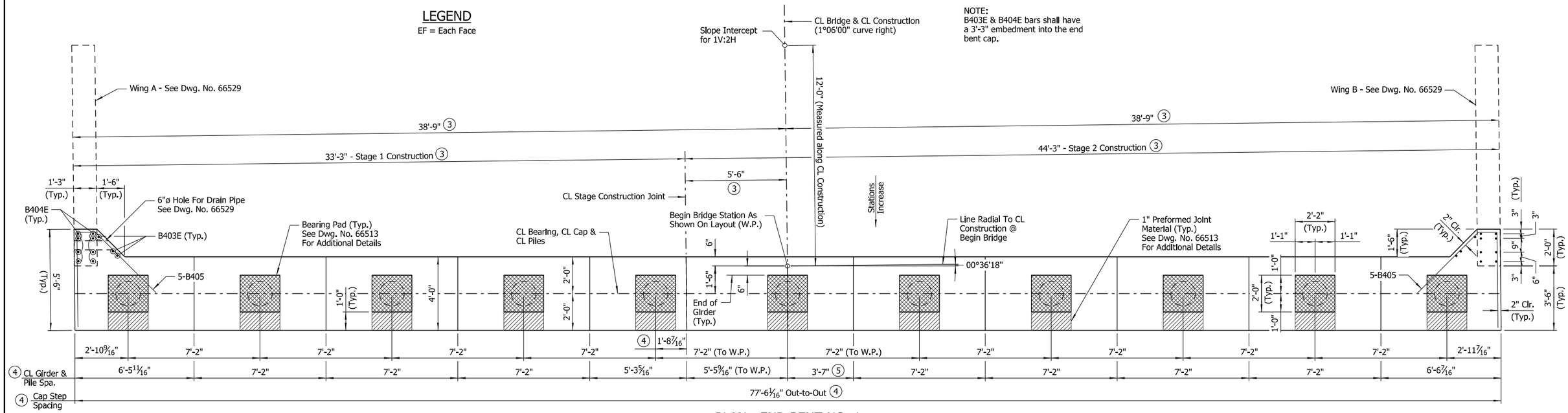
WORKSPACE: ARDOT Bridge (2019)
L:\2017\17017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\b061615x2_S104_LO.dgn

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	79	136
		07636		END BENTS		66508

LEGEND

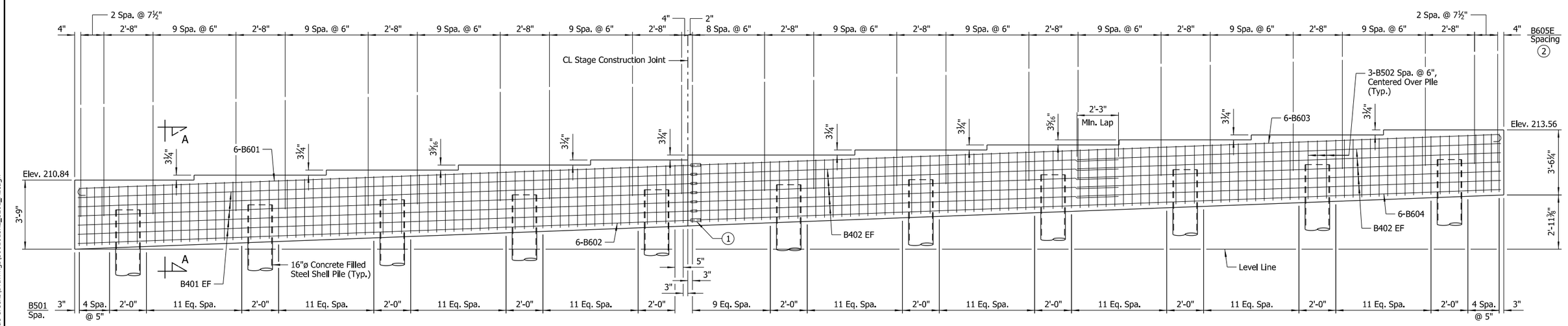
EF = Each Face

NOTE:
B403E & B404E bars shall have a 3'-3" embedment into the end bent cap.



PLAN - END BENT NO. 1

Scale: ⅜" = 1'-0"



ELEVATION - END BENT NO. 1

(Looking Back)
Scale: ⅜" = 1'-0"

(1) The mechanical bar couplers shall be Dayton Superior D250SCA Bar Lock Couplers or an alternate approved type in accordance with the ARDOT Qualified Products List (QPL). Couplers shall develop at least 125% of the specified yield strength of the bar and shall be installed according to the Manufacturer's recommendations. The cost of mechanical couplers shall not be measured for separate payment but shall be considered subsidiary to the item "CLASS S CONCRETE - BRIDGE". Couplers shall be installed with minimal projection beyond the longitudinal construction joint and shall be adquately protected from damage until the Stage 2 reinforcing is installed.

(2) Top of B605E bars shall maintain 2" clear of bottom of paving bracket in the end bent diaphragm.

(3) Measured Radial to CL Construction

(4) Measured at front face of cap and perpendicular to Chord Line extending between bridge ends. See "ALIGNMENT SKETCH" on Dwg. No. 66504.

(5) To W.P.

NOTES:
CL Construction is on a 1°06'00" curve right.

Wings and ends of caps shall be constructed on curves concentric with CL Construction.

CL Bearing, CL Cap, CL Piles, and cap edges shall be oriented perpendicular to Chord Line extending between bridge ends. See "ALIGNMENT SKETCH" on Dwg. No. 66504.

For "GENERAL NOTES", "SECTION A-A", "BAR LIST" and "BAR BENDING DIAGRAMS", see Dwg. No. 66510.

STATE OF ARKANSAS
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SHEET 1 OF 3
DETAILS OF END BENTS
LA GRUE BAYOU SOUTH
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	JJB	DATE:	DEC. 2020	FILENAME:	b061615x2_a1.dgn
CHECKED BY:	NVW	DATE:	MAR. 2021	SCALE:	As Shown
DESIGNED BY:	JJB	DATE:	DEC. 2020		

BRIDGE NO. 07636 DRAWING NO. 66508

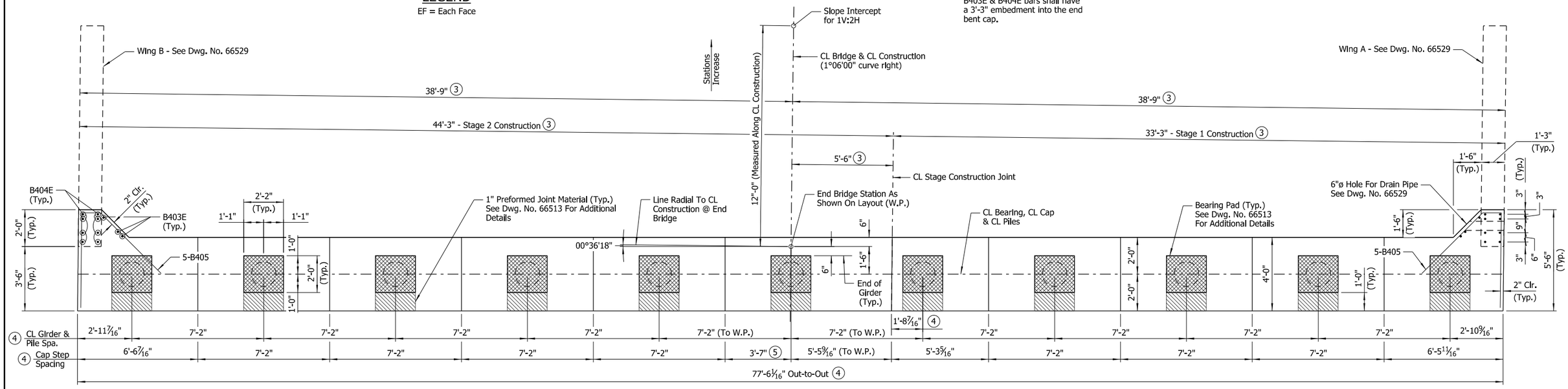
abhall 11/3/2023 3:11:36 PM
WORKSPACE: ARDOT Bridge (2019)
L:\2017\17017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\b061615x2_S201_A8.dgn

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	80	136
		07636		END BENTS		66509

LEGEND

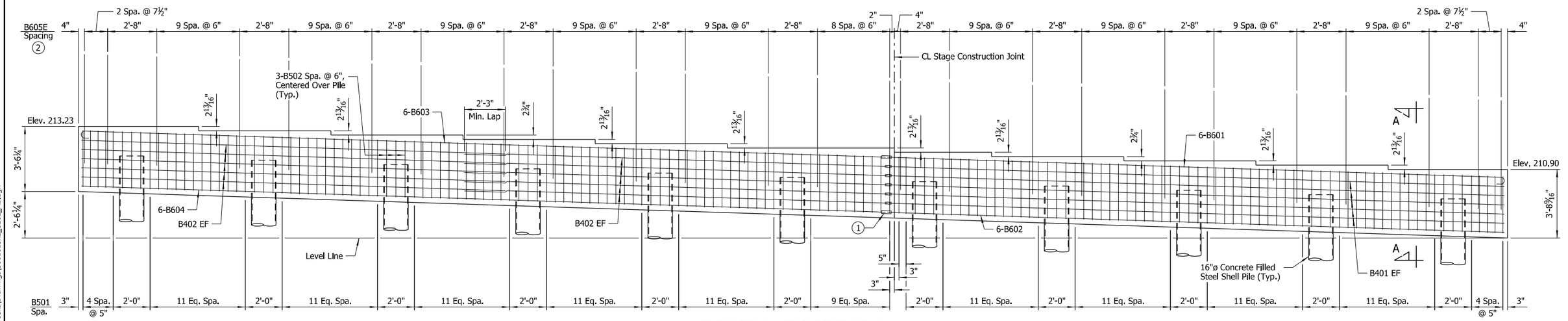
EF = Each Face

NOTE:
B403E & B404E bars shall have a 3'-3" embedment into the end bent cap.



PLAN - END BENT NO. 2

Scale: ⅜" = 1'-0"



ELEVATION - END BENT NO. 2

(Looking Ahead)
Scale: ⅜" = 1'-0"

(1) The mechanical bar couplers shall be Dayton Superior D250SCA Bar Lock Couplers or an alternate approved type in accordance with the ARDOT Qualified Products List (QPL). Couplers shall develop at least 125% of the specified yield strength of the bar and shall be installed according to the Manufacturer's recommendations. The cost of mechanical couplers shall not be measured for separate payment but shall be considered subsidiary to the item "CLASS S CONCRETE - BRIDGE". Couplers shall be installed with minimal projection beyond the longitudinal construction joint and shall be adquately protected from damage until the Stage 2 reinforcing is installed.

(2) Top of B605E bars shall maintain 2" clear of bottom of paving bracket in the end bent diaphragm.

(3) Measured Radial to CL Construction

(4) Measured at front face of cap and perpendicular to Chord Line extending between bridge ends. See "ALIGNMENT SKETCH" on Dwg. No. 66504.

(5) To W.P.

NOTES:
CL Construction is on a 1°06'00" curve right.

Wings and ends of caps shall be constructed on curves concentric with CL Construction.

CL Bearing, CL Cap, CL Piles, and cap edges shall be oriented perpendicular to Chord Line extending between bridge ends. See "ALIGNMENT SKETCH" on Dwg. No. 66504.

For "GENERAL NOTES", "SECTION A-A", "BAR LIST" and "BAR BENDING DIAGRAMS", see Dwg. No. 66510.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14498
ADAM B. HALL
DIGITALLY SIGNED 11/3/2023
BRIDGE ENGINEER

SHEET 2 OF 3
DETAILS OF END BENTS
LA GRUE BAYOU SOUTH
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JJB DATE: DEC. 2020 FILENAME: b061615x2_a2.dgn
CHECKED BY: NVW DATE: MAR. 2021 SCALE: As Shown
DESIGNED BY: JJB DATE: DEC. 2020
BRIDGE NO. 07636 DRAWING NO. 66509

abhall 11/3/2023 3:11:36 PM
WORKSPACE: ARDOT Bridge (2019)
L:\2017\17017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\b061615x2_S202_AB.dgn

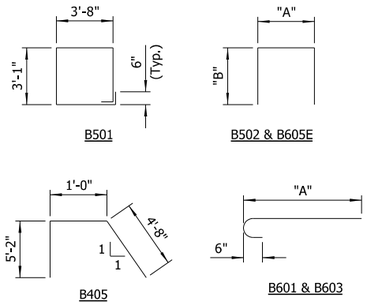
DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	81	136
		07636		END BENTS		66510

BAR LIST (EACH BENT)

MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
(3) B401	10	33'-5"			Str.
(3) B402	20	23'-1"			Str.
B403E	6	7'-4"			Str.
B404E	16	8'-7"			Str.
B405	10	10'-9"			2"
B501	130	14'-0"			2½"
B502	33	9'-8"	3'-8"	3'-1"	2½"
(3) B601	6	34'-2"	33'-6"		4½"
(3) B602	6	33'-6"			Str.
(3) B603	6	44'-3"	43'-7"		4½"
(3) B604	6	43'-7"			Str.
B605E	106	17'-6"	3'-8"	7'-1"	4½"

(3) Length of bars shown shall be adjusted as required to accommodate length of mechanical coupler.

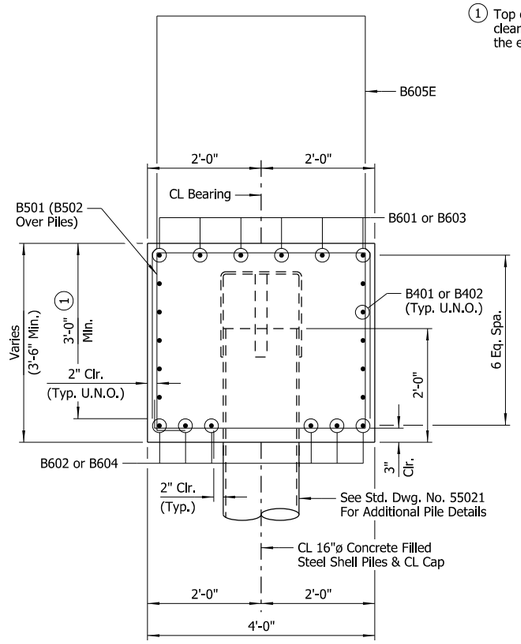
BAR BENDING DIAGRAMS



NOTES:
Number of bars shown is for one end bent only.

Dimensions of bars are out-to-out.

Bar designations ending in "E" indicate epoxy coated bars.



SECTION A-A
Scale: ¾" = 1'-0"

(1) Top of B605E bars shall maintain 2" clear of bottom of paving bracket in the end bent diaphragm.

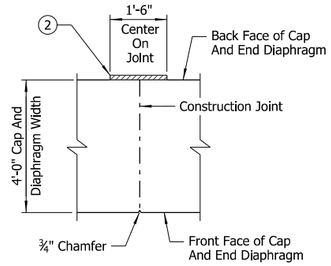
GENERAL NOTES

All concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 3500 psi and shall be poured in the dry. All exposed corners shall be chamfered ¾" unless otherwise noted.

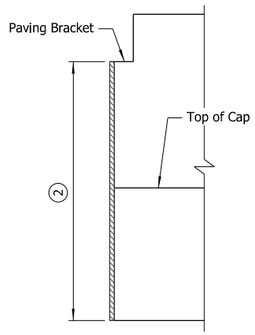
All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

Granular backfill and pipe underdrain required behind end bent caps. See Dwg. No. 66513 for details.

For additional information, see Layout.



NOTE:
Payment for this work and material shall be considered subsidiary to other pay items.



(2) Membrane waterproofing Type "C" or approved equal, see Section 815. Membrane waterproofing shall extend from the bottom of the cap to the paving bracket.

CONSTRUCTION JOINT DETAIL

No Scale

LEGEND

U.N.O. = Unless Noted Otherwise

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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DIGITALLY SIGNED 11/3/2023
BRIDGE ENGINEER

SHEET 3 OF 3
DETAILS OF END BENTS
LA GRUE BAYOU SOUTH
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JJB DATE: DEC. 2020 FILENAME: b061615x2_a3.dgn
CHECKED BY: NVW DATE: MAR. 2021 SCALE: As Shown
DESIGNED BY: JJB DATE: DEC. 2020

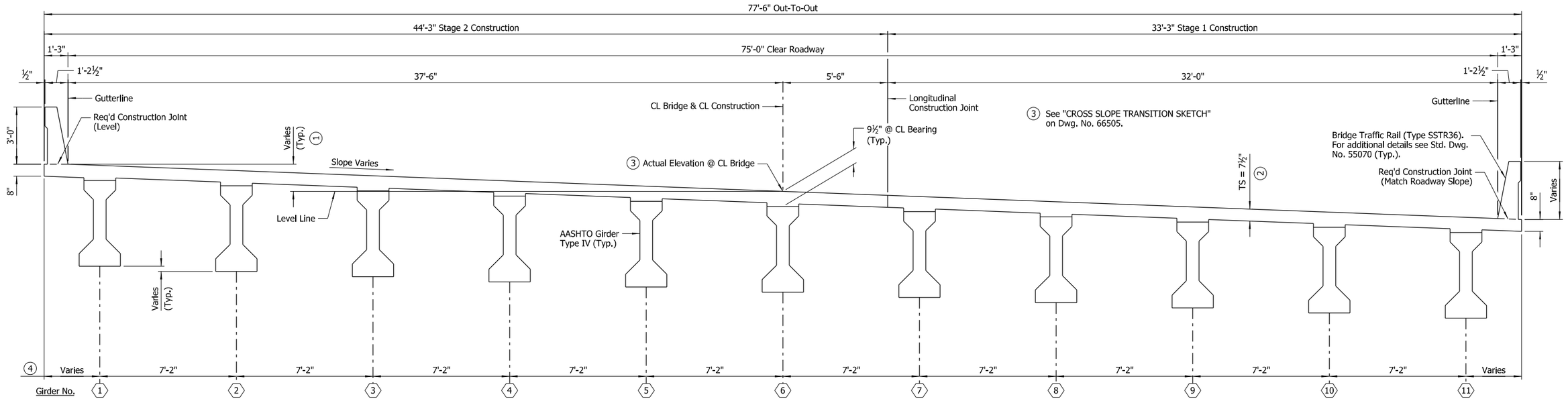
BRIDGE NO. 07636 DRAWING NO. 66510

abhall 11/3/2023 3:11:37 PM
WORKSPACE: ARDOT Bridge (2019)
L:\2017\1701628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\b061615x2_S203_AB.dgn

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	82	136
		07636		109'-0" SPAN		66511

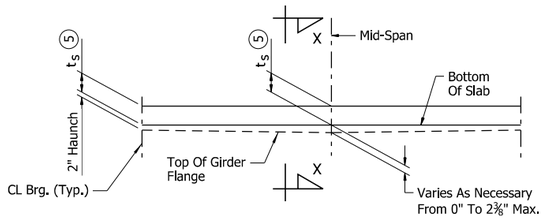
(1) CL Bridge to Gutterline

(2) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE"



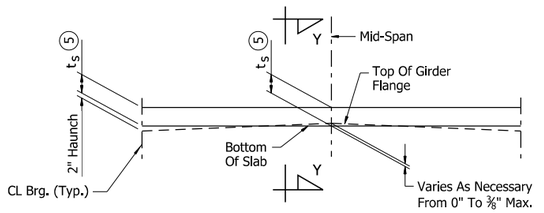
TYPICAL ROADWAY SECTION - FINAL CONDITION

(Looking Ahead)
Scale ⅜" = 1'-0"



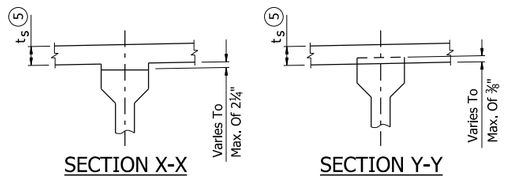
GIRDER ELEVATION

No Scale



GIRDER ELEVATION

No Scale



SECTION X-X

No Scale

SECTION Y-Y

No Scale

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

t_s = slab thickness as shown on superstructure details. See "TYPICAL ROADWAY SECTION - FINAL CONDITION".

(5) Tolerance when removable deck forming is used is +½", -¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance. See Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used.

"GIRDER ELEVATION" sketches show the range of acceptability of the top of girder relative to bottom of slab after the placement of the slab. When the top of the girder projects more than ⅜" into the slab, a raise in grade will be necessary. Girders shall be set in a sufficient number of spans over suitable increments so the revised grade line will produce a smooth riding surface. Variation of haunch height will be at the Contractor's expense.

NOTE:
Unless noted otherwise, horizontal dimensions shown are measured along a line radial to CL Construction.

(4) Measured perpendicular to chord line extending between bridge ends. See "ALIGNMENT SKETCH" on Dwg. No. 66504.

LEGEND

U.N.O = UNLESS NOTED OTHERWISE

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14498
ADAM B. HALL

DIGITALLY SIGNED 11/3/2023
BRIDGE ENGINEER

SHEET 1 OF 7
DETAILS OF 109'-0" INTEGRAL PRESTRESSED CONCRETE GIRDER SPAN
LA GRUE BAYOU SOUTH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	JJB	DATE:	DEC. 2020	FILENAME:	b061615x2_s1.dgn
CHECKED BY:	NVW	DATE:	MAR. 2021	SCALE:	As Shown
DESIGNED BY:	JJB	DATE:	DEC. 2020		

BRIDGE NO. 07636 DRAWING NO. 66511

abhall 11/3/2023 3:11:37 PM
WORKSPACE: ARDOT Bridge (2019)
L:\2017\17017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\b061615x2_S301_SX.dgn

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	83	136
		07636		109'-0" SPAN		66512

SLAB REINFORCING:

Transverse: Stage 1:
S503E @ 6" O.C in Top and Bottom
S502E @ 6" O.C. in Top of Right Overhang (Bundled with S503E)
Stage 2:
S504E @ 6" O.C. in Top and Bottom
S502E @ 6" O.C. in Top of Left Overhang (Bundled with S504E)

Longitudinal: Stage 1 & Stage 2:
S401E in Top as Shown
S501E in Bottom as Shown
S601E In Top as Shown At End Bents, See "REINFORCING PLAN & SLAB POURING SEQUENCE" on Dwg. No. 66515

(1) TOLERANCE:
Minus = ¼"
Plus = Amount of slab thickening used to meet slab thickness tolerance - see "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on Dwg. No. 66511.

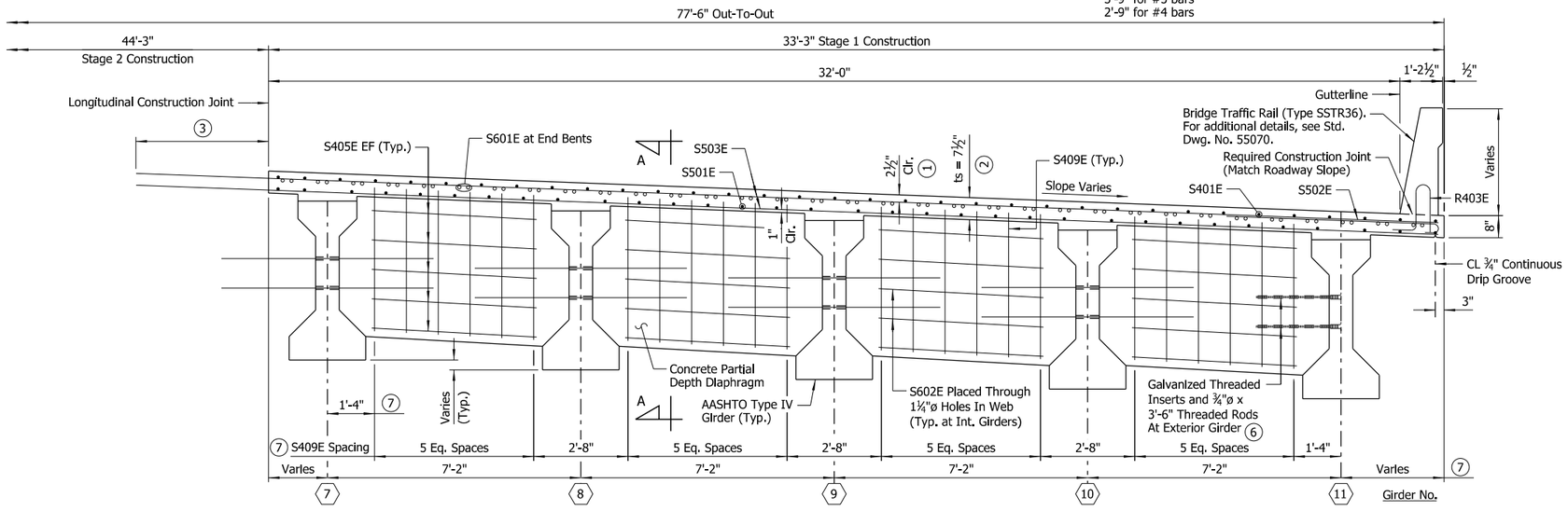
(2) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on Dwg. No. 66511.

(3) Bar Projection:
3'-9" for #5 bars
2'-9" for #4 bars

(4) 3'-7" min. lap for #5 bars
2'-7" min. lap for #4 bars

(5) See "CROSS-SLOPE TRANSITION SKETCH" on Dwg. No. 66505

(6) See "TYPICAL GIRDER ELEVATION (TYPE IV) - 109'-0"" on Dwg. No. 66516 for number and location. Galvanized Threaded Inserts shall be Dayton-Richmond F-42 Loop Ferule Inserts or approved equal. ¾" ø Galvanized Threaded Rods shall be ASTM A709, Grade 36 or AASHTO M 31 or M 322 Type A, Grade 60. Galvanizing shall be in accordance with AASHTO M 232, Class C or ASTM B695, Class 50. These Items will not be paid for directly but shall be considered subsidiary to the item "PRESTRESSED CONCRETE GIRDERS (TYPE IV)".

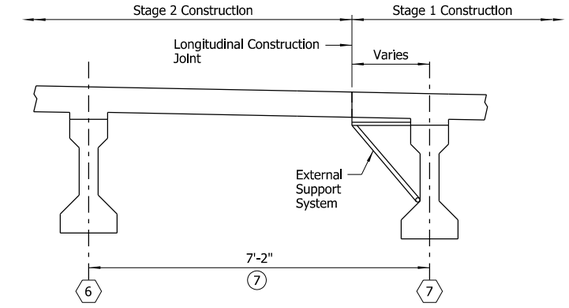


LEGEND

U.N.O. = Unless Noted Otherwise
EF = Each Face

TYPICAL ROADWAY SECTION - STAGE 1 CONSTRUCTION

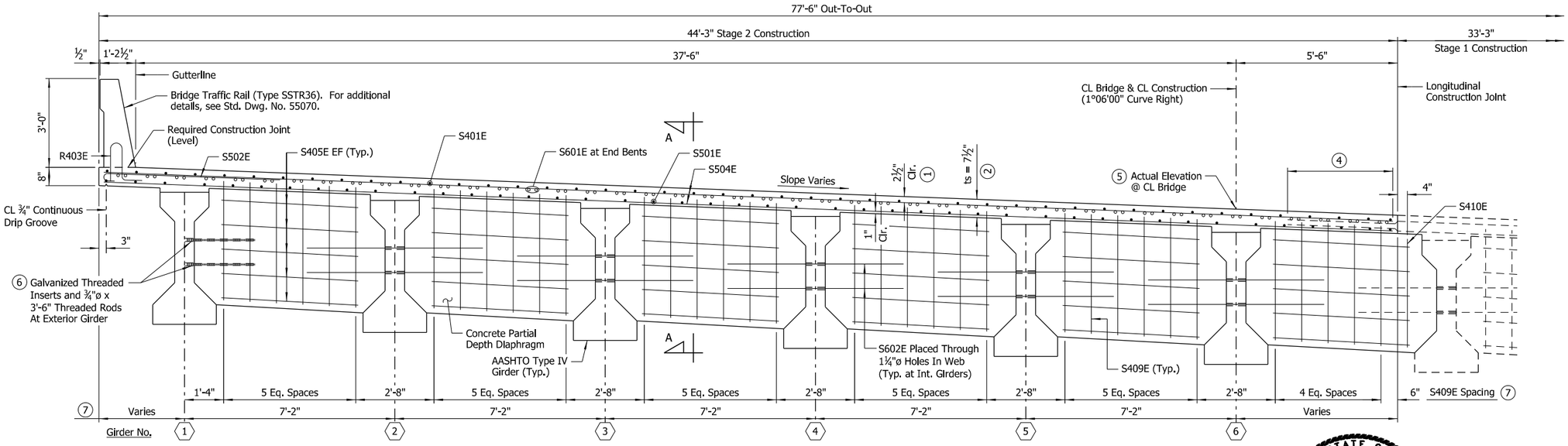
(Looking Ahead)
(Showing Partial Depth Intermediate Diaphragms)
Scale: ½" = 1'-0"



NOTE:
Stage 1 external supports at Girder 7 shall remain in place until after completion of the Stage 2 deck pour. See Subsection 802.15 for additional information regarding the removal of the support system.

DECK SUPPORT AT LONGITUDINAL CONSTRUCTION JOINT

(Looking Ahead)
No Scale



TYPICAL ROADWAY SECTION - STAGE 2 CONSTRUCTION

(Looking Ahead)
(Showing Partial Depth Intermediate Diaphragms)
Scale: ½" = 1'-0"

NOTE:
For "SECTION A-A", See Dwg. No. 66514.

NOTES:
Class 2 Protective Surface Treatment shall be applied to the roadway surface and to the roadway face and top of the concrete bridge rail.

Bar positions and clearances from the forms shall be maintained by means of stays, ties, hangers or other approved devices sufficient in size and number to prevent displacement during construction, per Subsection 804.06. Placement of slab bolsters or hl-chairs with full-length lower runners directly on removable deck forms will not be allowed.

NOTE:
Unless noted otherwise, horizontal dimensions shown are measured along a line radial to CL Construction.

(7) Measured perpendicular to chord line extending between bridge ends. See "ALIGNMENT SKETCH" on Dwg. No. 66504.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14498
ADAM B. HALL

DIGITALLY SIGNED 11/3/2023
BRIDGE ENGINEER

SHEET 2 OF 7
DETAILS OF 109'-0" INTEGRAL PRESTRESSED CONCRETE GIRDER SPAN LA GRUE BAYOU SOUTH

ROUTE SEC.

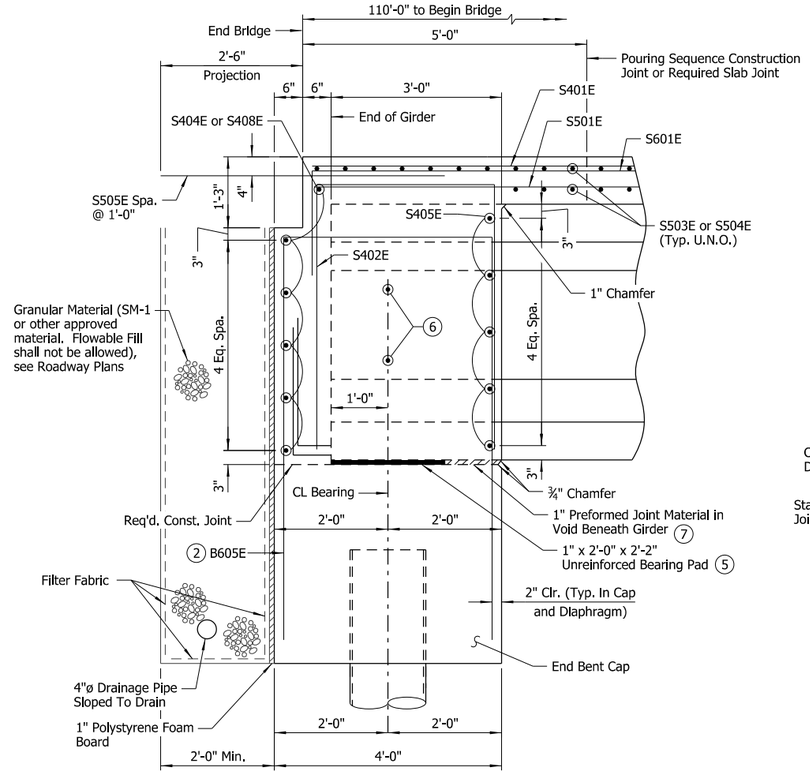
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JJB DATE: DEC. 2020 FILENAME: b061615x2_s2.dgn
CHECKED BY: NVW DATE: MAR. 2021 SCALE: As Shown
DESIGNED BY: JJB DATE: DEC. 2020

BRIDGE NO. 07636 DRAWING NO. 66512

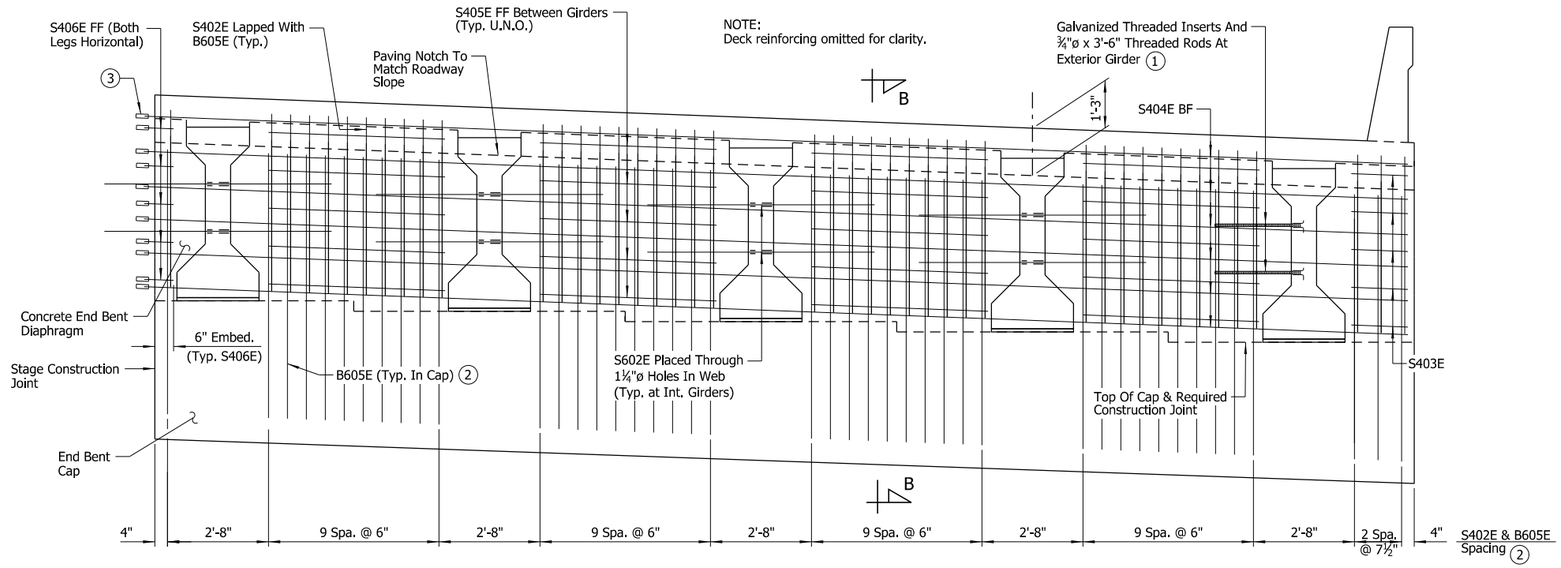
abhall 11/3/2023 3:11:38 PM
WORKSPACE: ARDOT Bridge (2019)
L:\2017\17017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\b061615x2_S302_SX.dgn

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	84	136
		07636, 07637		109'-0" SPAN		66513



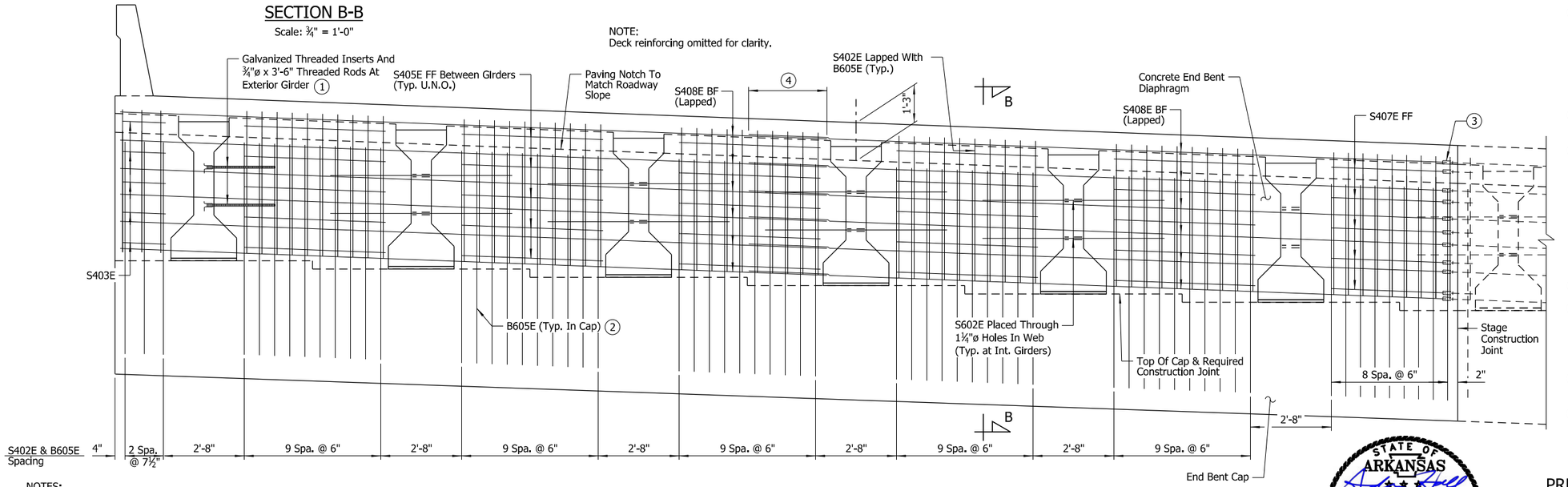
SECTION B-B

Scale: ¾" = 1'-0"



TYPICAL SECTION AT END BENT DIAPHRAGMS - STAGE 1 CONSTRUCTION

(Looking Ahead At Bent 2, Diaphragm at Bent 1 Similar)
Scale: ½" = 1'-0"



TYPICAL SECTION AT END BENT DIAPHRAGMS - STAGE 2 CONSTRUCTION

(Looking Ahead At Bent 2, Diaphragm at Bent 1 similar)
Scale: ½" = 1'-0"

NOTES:
Limits of the concrete End Bent Diaphragm shall match plan dimension of End Bent Cap.

Preformed Joint Material shall not be paid for directly, but shall be considered subsidiary to the item "CLASS S(AE) CONCRETE - BRIDGE".

For additional details of pipe underdrain, see Std. Dwg. PU-1 and Section 611. Pipe underdrains will not be measured or paid for separately, but shall be considered subsidiary to the unit price bid for "UNCLASSIFIED EXCAVATION".

1" Polystyrene Foam Board, Filter Fabric and Granular Material shall not be paid for directly, but shall be considered subsidiary to the various bid items.

LEGEND

FF = Front Face
BF = Back Face
U.N.O. = Unless Noted Otherwise

(1) See "TYPICAL GIRDER ELEVATION (TYPE IV) - 109'-0"" on Dwg. No. 66516 for number and location. Galvanized Threaded Inserts shall be Dayton-Richmond F-42 Loop Ferule Inserts or Rods shall be ASTM A709, Grade 36 or AASHTO M 31 or M 322 Type A, Grade 60. Galvanizing shall be in accordance with AASHTO M 232, Class C or ASTM B695, Class 50. These items will not be paid for directly but shall be considered subsidiary to the item "PRESTRESSED CONCRETE GIRDERS (TYPE IV)."

(2) See "DETAILS OF END BENTS" on Dwg. No. 66508 for additional details.

(3) Epoxy coated mechanical bar couplers shall be Dayton Superior D250SCA Bar Lock Epoxy Couplers or an alternate approved type in accordance with the ARDOT Qualified Products List (QPL). Couplers shall develop at least 125% of the specified yield strength of the bar and shall be installed according to the Manufacturer's recommendations. The cost of mechanical couplers shall not be measured for separate payment but shall be considered subsidiary to the item "CLASS S(AE) CONCRETE - BRIDGE". Couplers shall be installed with minimal projection beyond the longitudinal construction joint and shall be adquately protected from damage until the Stage 2 reinforcing is installed.

(4) 2'-7" min. lap (Typ. #4 bars)

(5) Unreinforced bearing pads shall meet the requirements of Section 808 with the exception that hardness shall be 50 durometer. Unreinforced bearing pads shall not be paid for directly, but shall be considered subsidiary to the item "CLASS S(AE) CONCRETE-BRIDGE".

(6) S602E (typ. at Int. girders) or ¾"ø threaded Inserts (typ. at ext. girders)

(7) 1" Preformed Joint material shall be AASHTO M 153, Type I per Subsection 501.02(h)(I)(b).

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14498
ADAM B. HALL

DIGITALLY SIGNED 11/3/2023
BRIDGE ENGINEER

SHEET 3 OF 7
DETAILS OF 109'-0" INTEGRAL PRESTRESSED CONCRETE GIRDER SPAN LA GRUE BAYOU SOUTH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY:	ERM	DATE:	NOV. 2020	FILENAME:	b061615x2_s3.dgn
CHECKED BY:	NVW	DATE:	MAR 2021	SCALE:	As Shown
DESIGNED BY:	ERM	DATE:	NOV. 2020		

BRIDGE NO. 07636, 07637 DRAWING NO. 66513

abhall 11/3/2023 3:11:38 PM
WORKSPACE: ARDOT Bridge (2019)
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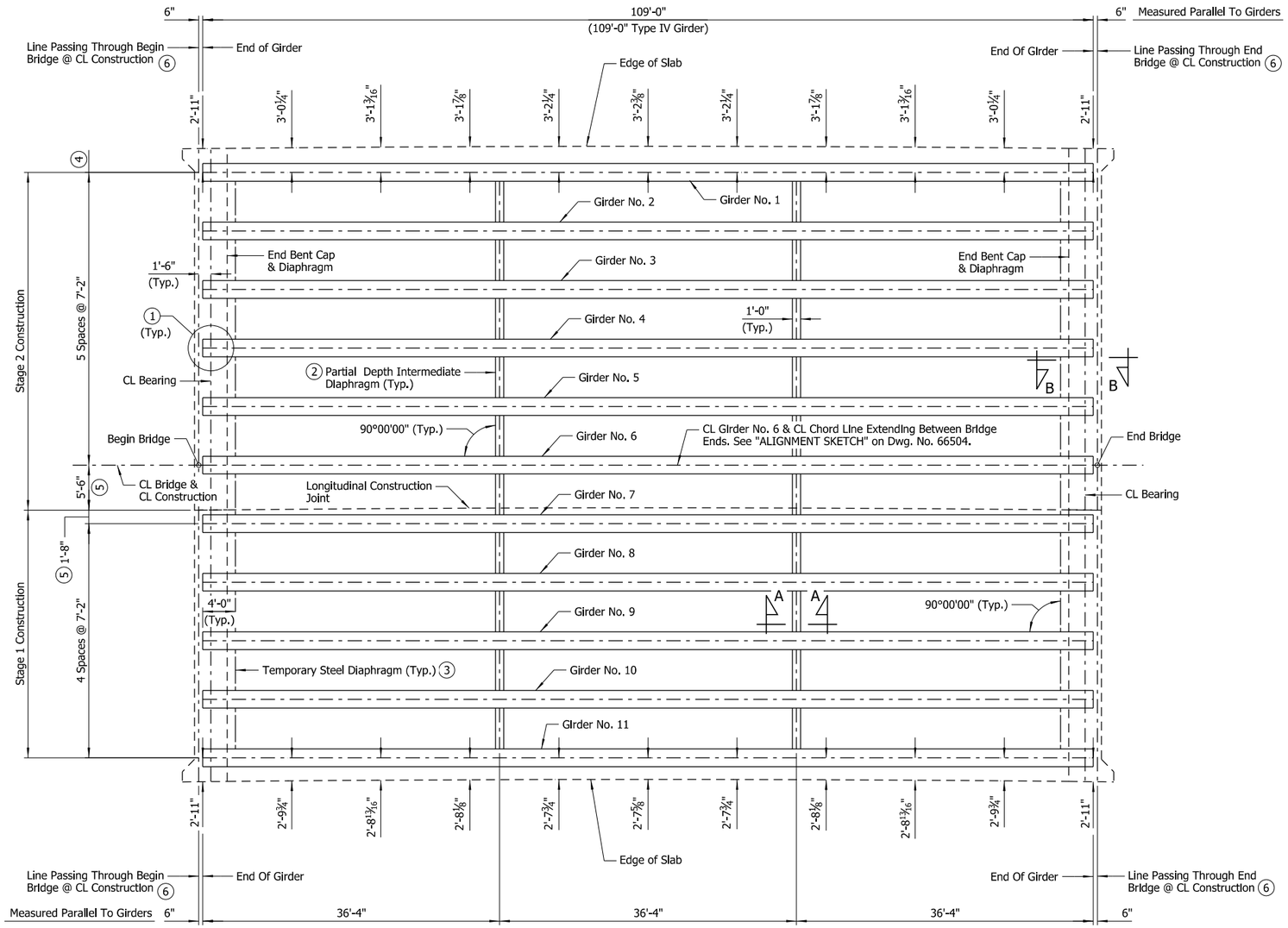
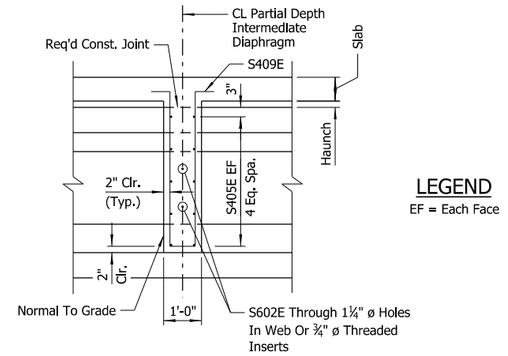
DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	85	136
		07636		109'-0" SPAN		66514



FRAMING PLAN

Scale: ⅛" = 1'-0"

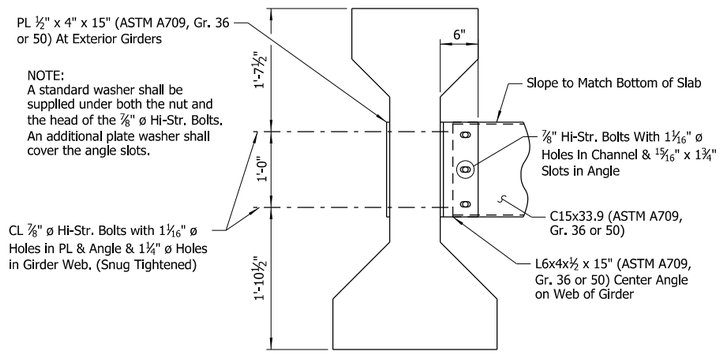


SECTION A-A

Scale: ½" = 1'-0"

LEGEND

EF = Each Face



DETAILS OF STEEL DIAPHRAGM

Scale: 1" = 1'-0"

Steel Diaphragms shall be used at locations noted as "Temporary Steel Diaphragm". The Temporary Steel Diaphragm and components will not be paid for directly, but shall be considered subsidiary to the item "PRESTRESSED CONCRETE GIRDERS (TYPE IV)".

Permanent Steel Diaphragms may be used in lieu of concrete diaphragms at locations noted as "Partial Depth Intermediate Diaphragm". Payment will be based on concrete diaphragms.

All components of Steel Diaphragms (Permanent and Temporary) shall be galvanized in accordance with AASHTO M111.

NOTES:
For "SECTION B-B" and additional details of End Bents Diaphrams, see Dwg. 66513.

For additional details of Partial Depth Intermediate Diaphrams, see Dwg. 66528.

All cantilever dimensions are measured at girder tenth points along edges of slab and normal to exterior girders.

(1) After erection, the ends of girders at all bents shall be blocked using temporary blocking to maintain proper location on bent caps. The ends of girders shall remain blocked until after the temporary steel diaphragms are in place.

(2) For details of alternate steel diaphragm, see "DETAILS OF STEEL DIAPHRAGM".

(3) After the concrete deck construction and curing are complete, the temporary steel diaphragm and connecting elements may remain in place or be removed and become the property of the Contractor and the holes in the girder webs filled with a QPL approved non-shrink epoxy grout. For additional diaphragm details, see "DETAILS OF STEEL DIAPHRAGM".

(4) Measured perpendicular to chord line extending between bridge ends. See "ALIGNMENT SKETCH" on Dwg. No. 66504.

(5) Measured to Longitudinal Construction Joint at Begin Bridge

(6) Line is perpendicular to chord line extending between bridge ends. See "ALIGNMENT SKETCH" on Dwg. No. 66504.

STATE OF ARKANSAS
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BRIDGE ENGINEER

SHEET 4 OF 7
DETAILS OF 109'-0" INTEGRAL PRESTRESSED CONCRETE GIRDER SPAN
LA GRUE BAYOU SOUTH

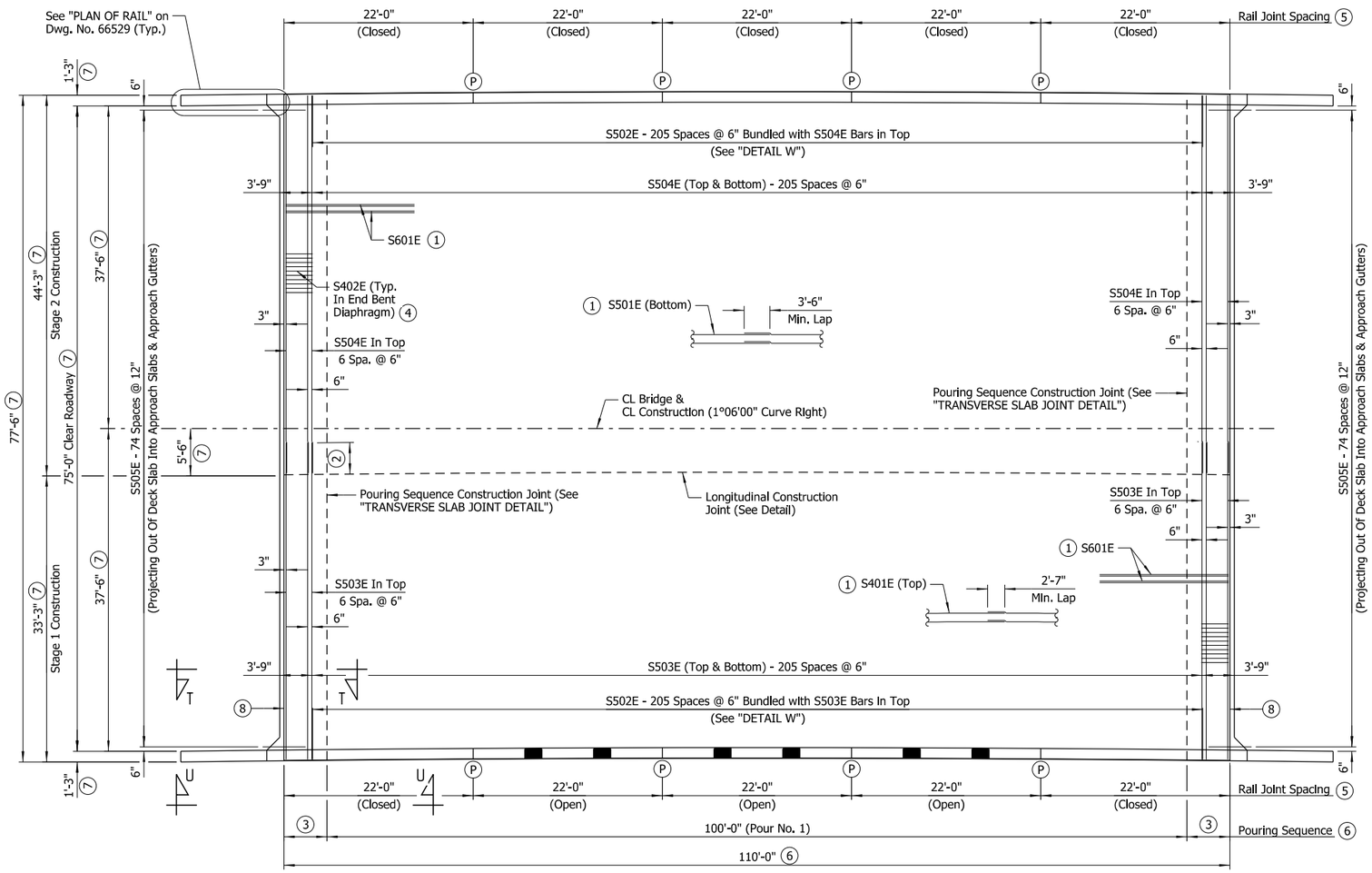
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	RAK	DATE:	DEC. 2020	FILENAME:	b061615x2_s4.dgn
CHECKED BY:	NVW	DATE:	MAR. 2021	SCALE:	As Shown
DESIGNED BY:	RAK	DATE:	DEC. 2020		

BRIDGE NO. 07636 DRAWING NO. 66514

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	86	136
		07636		109'-0" SPAN		66515



REINFORCING PLAN & SLAB POURING SEQUENCE

Scale: ⅛" = 1'-0"

(1) Placed as shown in "TYPICAL ROADWAY SECTION - STAGE 1 CONSTRUCTION" and "TYPICAL ROADWAY SECTION - STAGE 2 CONSTRUCTION" on Dwg. No. 66512.

(2) 3'-9" bar projection

(3) 5'-0" (Pour No. 2)

(4) See Dwg. No. 66513 for additional details of reinforcing in concrete end bent diaphragms.

(5) Measured along gutterline

(6) Measured along CL Construction

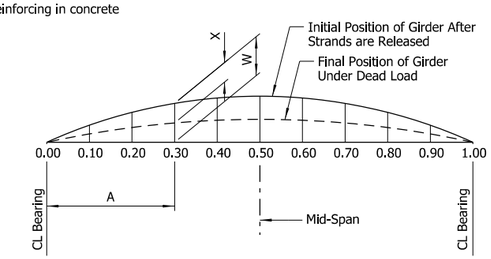
(7) Measured along line radial to CL Construction

(8) End of Deck Along Line Passing Through Begin or End Bridge @ CL Construction. This line is perpendicular to chord line extending between bridge ends. See "ALIGNMENT SKETCH" on Dwg. No. 66504.

(9) NOTE:
Camber and Deflection Values shown are based on a concrete girder strength, f'c = 8000 psi. Greater strengths may require adjustments. See "SPECIAL CAMBER NOTES" on Dwg. No. 66528.

SPAN PT.	INCHES	
	W	X
0.00	0.000	0.000
0.10	1.052	0.506
0.20	1.792	1.134
0.30	2.255	1.576
0.40	2.507	1.859
0.50	2.587	1.956

Table symmetric about mid-span



"W" is Camber of Girder (Prestress + Dead Load of Girder @ 90 Days After Release)

"X" Is Dead Load Deflection of Slab + Diaphragms + Composite Dead Load

(9) CAMBER & DEFLECTION (INCHES) - 109'-0" GIRDER

No Scale

TABLE OF VARIABLES								
CLOSED RAIL PANELS			OPEN RAIL PANELS					
PANEL LENGTH	A	R4XXE	PANEL LENGTH	B	C	D	E	R4XXE
22'-0"	43	06	22'-0"	17	6'-0"	11	6'-0"	06

SLAB POURING SEQUENCE NOTES:
Pours with the same number may be placed simultaneously or separately. All Pour(s) 1 must be placed before Pour(s) 2 can be placed. A minimum of 48 hours shall elapse between the end of a pour and the start of the next pour. A minimum of 72 hours shall elapse between adjacent pours.

Concrete in bridge superstructure shall be placed, consolidated and screeded off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

A minimum of 72 hours shall elapse between completion of the slab and the pouring of the bridge railing. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer. Deviations from the pouring sequence(s) shown on this drawing are not permitted.

Concrete diaphragms at end bents shall be poured monolithically with the slab.

All partial depth diaphragms shall be cast in place and poured a minimum of 48 hours before the slab is poured.

Removable forms shall be used when pouring diaphragms.

The slab and diaphragms shall not be poured prior to 90 days following release of the prestressed girder strands.

NOTES:
All longitudinal lines and longitudinal slab reinforcing shall be placed along curves concentric with CL bridge.

All transverse lines and transverse slab reinforcing shall be placed on lines perpendicular to chord line extending between bridge ends. See "ALIGNMENT SKETCH" on Dwg. No. 66504. Spacing of transverse slab reinforcing shown is measured along chord line.

For reinforcing details of rail, see Std. Dwg. No. 55070.

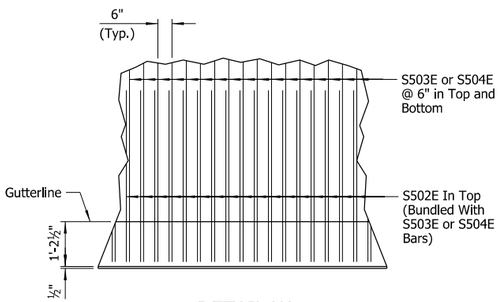
Rails and wings are included in span construction and are included in span quantities. Rail and wing concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi.

For "GENERAL NOTES," see Dwg. No. 66528.

For "VIEW T-T" & "VIEW U-U", see Dwg. No. 66529.

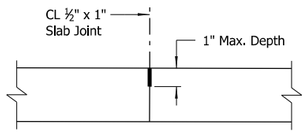
For bar list and bar bending diagrams, see Dwg. No. 66517.

(P) Partial Depth Rail Joint at this location



DETAIL W

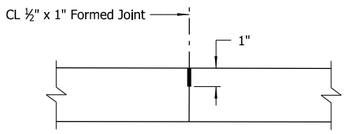
No Scale



TRANSVERSE SLAB JOINT DETAIL

No Scale

NOTE:
Use Type 3 or 4 Joint Sealer. See Subsections 501.02(h) and 501.05(j). Backer Rod filler will not be required. Joint Sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. Transverse Slab Joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations. The joint sealer shall extend across the deck from gutterline to gutterline.



LONGITUDINAL CONSTRUCTION JOINT

No Scale

NOTE:
Use ½" x 1" Type 3 or 4 Joint Sealer. See Subsections 501.02(h) and 501.05(j). Backer Rod filler will not be required. Joint Sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. This joint shall be formed. Seal color shall be gray or other color similar to concrete.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14498
ADAM B. HALL

DIGITALLY SIGNED 11/3/2023
BRIDGE ENGINEER

SHEET 5 OF 7
DETAILS OF 109'-0" INTEGRAL PRESTRESSED CONCRETE GIRDER SPAN
LA GRUE BAYOU SOUTH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

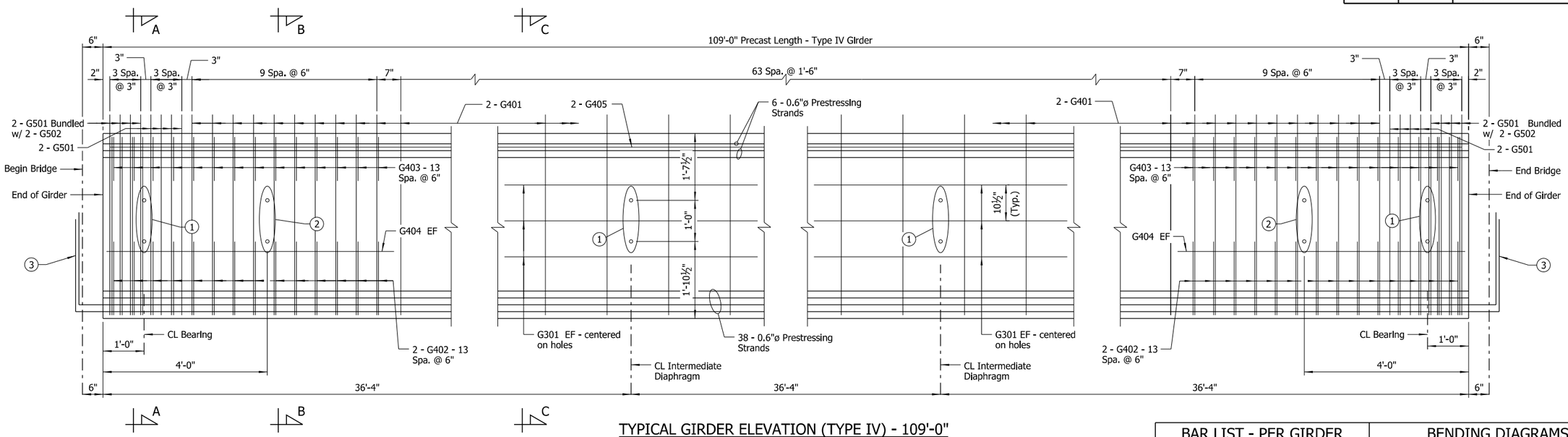
LITTLE ROCK, ARK.

DRAWN BY: JJB DATE: DEC. 2020 FILENAME: b061615x2_s5.dgn
CHECKED BY: NVW DATE: MAR. 2021 SCALE: As Shown
DESIGNED BY: JJB DATE: DEC. 2020

BRIDGE NO. 07636 DRAWING NO. 66515

abhall 11/3/2023 3:11:39 PM
WORKSPACE: ARDOT Bridge (2019)
L:\2017\17017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\b061615x2_S305_S8.dgn

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	87	136
		07636, 07637		109'-0" SPAN		66516



TYPICAL GIRDER ELEVATION (TYPE IV) - 109'-0"

No Scale

(1) Connection for End Bent or Partial Depth Intermediate Diaphragm: ¾"ø threaded inserts at interior face of exterior girders or 1⅛"ø holes at interior girders. See Dwg. Nos. 66512-66514 for additional details. Vertical placement of threaded inserts shall match that shown for holes.

(2) Connection for Temporary Steel Diaphragm: 1⅛"ø holes in web. See Dwg. No. 66514 for additional details.

(3) Prestressing Strands bent up into end bent diaphragm. See "END OF GIRDER VIEW AT END BENT".

(4) Length includes 2'-0" lap splice

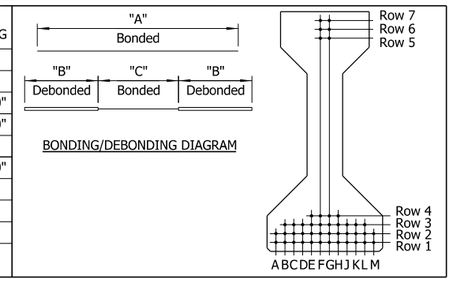
NOTES:
Dimensions are measured along girders.

Prestressing strands will not be paid for directly, but will be considered subsidiary to the item "PRESTRESSED CONCRETE GIRDERS (TYPE IV)".

For "CAMBER & DEFLECTION (INCHES) - 109'-0" GIRDER", See Dwg. No. 66515.

TABLE OF GIRDER VARIABLES

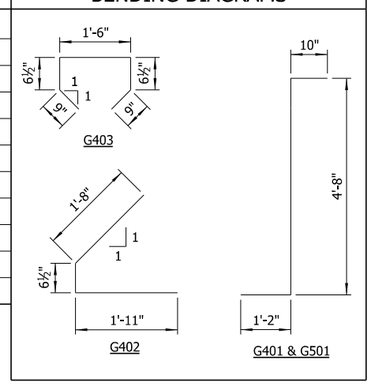
STRAND DESIGNATION		VARIABLES OF BONDING/DEBONDING		
ROW	LINE	"A"	"B"	"C"
1	A,B,D,F,G,J,L,M	109'-0"		
1	E,H		6'-0"	97'-0"
1	C,K		12'-0"	85'-0"
2	A,B,C,E,F,G,H,K,L,M	109'-0"		
2	D,J		6'-0"	97'-0"
3	B,C,D,E,F,G,H,J,K,L	109'-0"		
4	E,F,G,H	109'-0"		
5,6,7	F,G	109'-0"		



BONDING/DEBONDING DIAGRAM

BAR LIST - PER GIRDER			
MARK	NO. REQ'D	LENGTH	P.D.
G301	12	4'-0"	Str.
G401	168	6'-6"	2"
G402	56	4'-1"	2"
G403	28	3'-11"	2"
G404	4	7'-0"	Str.
(4) G405	2	110'-8"	Str.
G501	32	6'-5½"	2½"
G502	16	4'-2"	Str.

BENDING DIAGRAMS



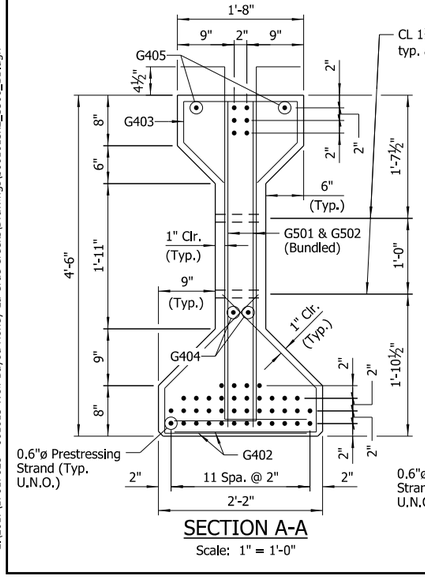
NOTES:
All bars in the Bar List will not be paid for directly, but will be considered subsidiary to the Item "PRESTRESSED CONCRETE GIRDERS (TYPE IV)".

At the Contractor's option, the two G402 bars may be furnished as one bar.

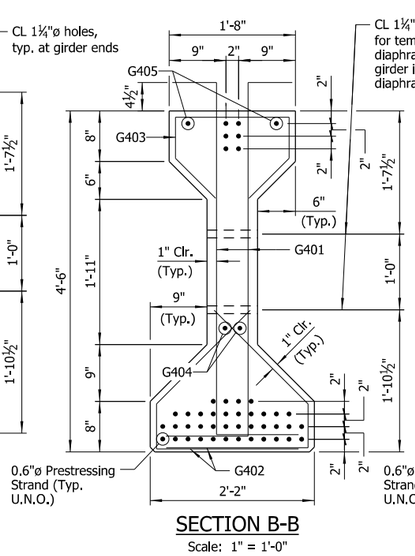
At the Contractor's option, ⅜" diameter strands pulled to 2,000 lbs. may be substituted for bars G405.

LEGEND

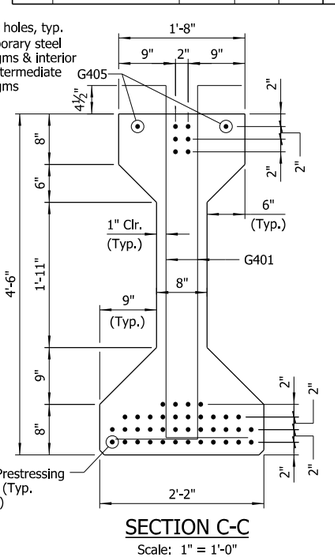
EF = Each Face
U.N.O. = Unless Noted Otherwise



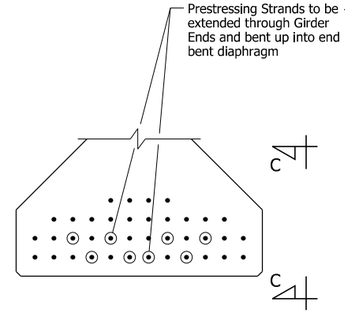
SECTION A-A
Scale: 1" = 1'-0"



SECTION B-B
Scale: 1" = 1'-0"



SECTION C-C
Scale: 1" = 1'-0"

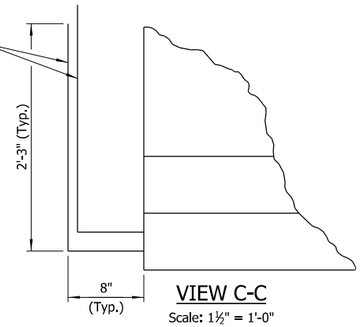


END OF GIRDER VIEW AT END BENT

Scale: 1½" = 1'-0"

Shop bend 8 bottom prestressing strands from the end of the girder into end bent diaphragms as shown.

At the Contractor's option, the location for bent up strands may be varied. The total number of bent up strands per row shall not be changed. Saw cut or grind remaining strands to within 1" of the end of the girder.



VIEW C-C
Scale: 1½" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14498
ADAM B. HALL

DIGITALLY SIGNED 11/3/2023
BRIDGE ENGINEER

SHEET 6 OF 7
DETAILS OF 109'-0" INTEGRAL PRESTRESSED CONCRETE GIRDER SPAN
LA GRUE BAYOU SOUTH
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	ERM	DATE:	NOV. 2020	FILENAME:	b061615x2_s6.dgn
CHECKED BY:	NVW	DATE:	MAR. 2021	SCALE:	As Shown
DESIGNED BY:	ERM	DATE:	NOV. 2020		

BRIDGE NO. 07636, 07637 DRAWING NO. 66516

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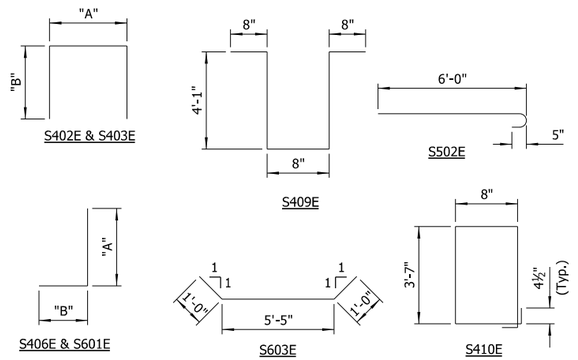
WORKSPACE: ARDOT Bridge (2019)
L:\2017\17017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\b061615x2_S306_BB.dgn

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	88	136
		07636		109'-0" SPAN		66517

BAR BENDING DIAGRAMS



NOTES:
Dimensions of bars are out-to-out.

Bar designations ending with "E" indicate epoxy coated bars.

For bar bending diagrams of R400E, R401E, R403E and W401E, see Std. Dwg. No. 55070

BAR LIST

	MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
	S401E	237	38'-4"			Str.
	S402E	212	12'-6"	3'-2"	4'-9"	2"
	S403E	20	5'-10"	3'-0"	1'-6"	2"
(1)	S404E	12	33'-5"			Str.
	S405E	290	4'-8"			Str.
(1)	S406E	10	1'-7"	10"	10"	3"
(1)	S407E	10	3'-11"			Str.
(1)	S408E	24	23'-3"			Str.
	S409E	118	9'-10"			2"
	S410E	2	8'-10"			2"
	S501E	154	56'-7"			Str.
	S502E	412	6'-7"			3¾"
	S503E	426	36'-10"			Str.
	S504E	426	43'-11"			Str.
	S505E	150	5'-0"			Str.
	S601E	308	15'-11"	15'-0"	1'-0"	4½"
	S602E	72	6'-0"			Str.
	S603E	24	7'-5"			4½"
	R400E	24	5'-3"			2½"
	R401E	548	6'-4"			2½"
	R402E	48	5'-6"			Str.
	R403E	452	3'-6"			3", 3¾"
	R404E	32	11'-8"			Str.
	R405E	32	4'-0"			Str.
	R406E	80	21'-8"			Str.
	W401E	96	3'-11"			3¾"
	W402E	160	4'-11"			Str.
	W701E	64	15'-2"			Str.

(1) Length of bars shown shall be adjusted as required to accommodate length of mechanical coupler.

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SHEET 7 OF 7
DETAILS OF 109'-0" INTEGRAL PRESTRESSED CONCRETE GIRDER SPAN
LA GRUE BAYOU SOUTH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JJB DATE: DEC. 2020 FILENAME: b061615x2_s7.dgn
CHECKED BY: NVW DATE: MAR. 2021 SCALE: As Shown
DESIGNED BY: JJB DATE: DEC. 2020

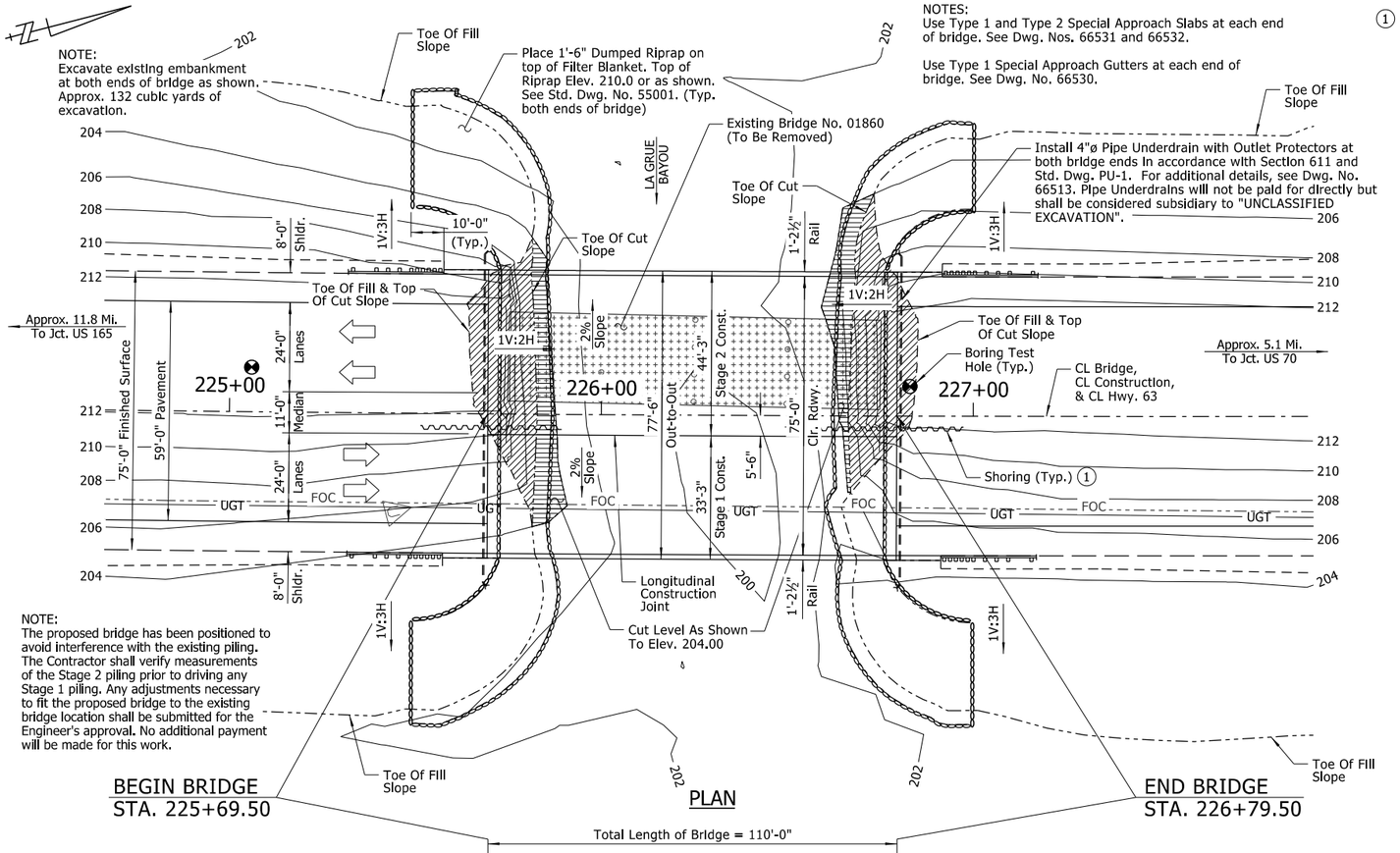
BRIDGE NO. 07636 DRAWING NO. 66517

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	89	136
		07637		LAYOUT		66518

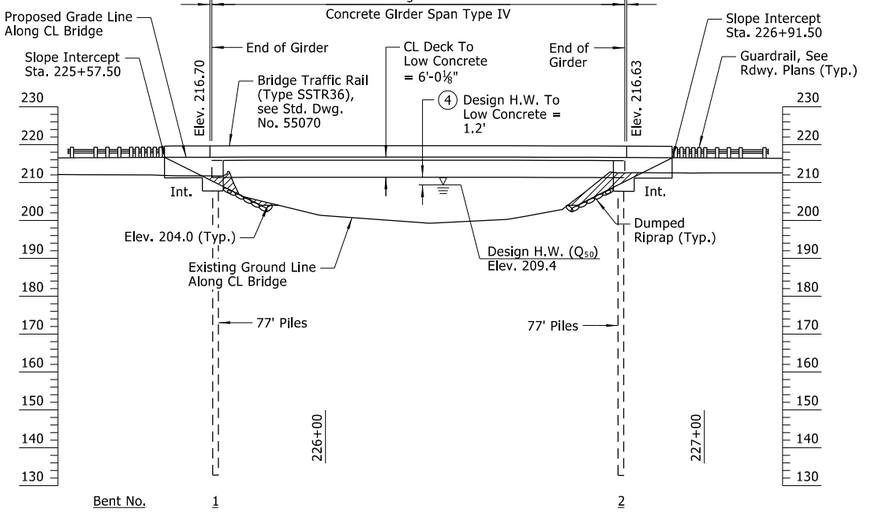
NOTE:
Excavate existing embankment at both ends of bridge as shown. Approx. 132 cubic yards of excavation.

NOTES:
Use Type 1 and Type 2 Special Approach Slabs at each end of bridge. See Dwg. Nos. 66531 and 66532.

Use Type 1 Special Approach Gutters at each end of bridge. See Dwg. No. 66530.



NOTE:
The proposed bridge has been positioned to avoid interference with the existing piling. The Contractor shall verify measurements of the Stage 2 piling prior to driving any Stage 1 piling. Any adjustments necessary to fit the proposed bridge to the existing bridge location shall be submitted for the Engineer's approval. No additional payment will be made for this work.

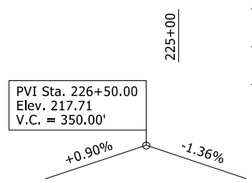


ELEVATION

FOR R/W DATA, SEE ROADWAY PLANS

HORIZONTAL CURVE DATA

CL Hwy. 63
PI = 225+97.49
Δ = 1°50'00" Lt.
D = 0°15'00"
T = 366.70'
L = 733.33'
e = NC
R = 22,918.31'



VERTICAL CURVE DATA

Hwy. 63
(Theoretical Grade Along CL Construction)

NOTE:
Stations shown are along CL Construction. Elevations shown are theoretical working point elevations at CL Bridge. Any vertical dimension referenced to CL Deck is based on theoretical working point elevation at CL Bridge. See "ROUNDING DETAIL" on Dwg. No. 66523 for additional information.

EXISTING UTILITIES LEGEND

FOC = Underground Fiber Optic Cable
UGT = Underground Cable

NOTE:
Utilities shown are based on locations at time of survey and do not reflect any potential utility relocations prior to construction.

(1) See Special Provision Job. No. 061615 "SHORING".

GENERAL NOTES

BENCHMARK: Vertical Control Data are shown on the Survey Control Data Sheets.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition) with applicable Supplemental Specifications and Special Provisions. Unless otherwise noted in the plans, Section and Subsection numbers refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications (2017, 8th Edition)

LIVE LOADING: HL-93

SEISMIC ZONE: 2 S_{D1} = 0.264g Site Class = D

SEISMIC OPERATIONAL CLASSIFICATION: Essential

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (Superstructure)	f'c = 4,000 psi
Class S Concrete (Prestressed Concrete Girders)	f'c = 8,000 psi
Prestressing Strands (AASHTO M 203, Gr. 270)	fpu = 270,000 psi
Class S Concrete (Substructure)	f'c = 3,500 psi
Reinforcing Steel (AASHTO M 31 or M 322, Type A)	fy = 60,000 psi
Structural Steel (ASTM A709, Gr. 50W)	Fy = 50,000 psi
Structural Steel (ASTM A709, Gr. 50)	Fy = 50,000 psi
Structural Steel (ASTM A709, Gr. 36)	Fy = 36,000 psi

BORING LOGS: Boring Logs may be obtained from the Construction Contract Procurement Section of the Program Development Division.

STEEL SHELL PILING: Piling in Bents 1 & 2 shall be 16" diameter concrete filled steel shell piles and shall be driven with an approved air, steam or diesel hammer to a minimum ultimate bearing capacity of 283 tons per pile and to a minimum tip elevation of 170.00 or lower. Piling in end bents shall be driven after embankment to bottom of cap is in place. Lengths of piling shown are assumed for estimating quantities only. Actual pile lengths are to be determined in the field. No additional payment will be made for cut-off or build-up. Test piles are not required but may be driven for the Contractor's information in accordance with Subsection 805.08(g). No piles will be paid for as Test Piles.

Water jetting or other methods as approved by the Engineer may be required to achieve minimum penetration. This work shall not be paid for directly but shall be considered incidental to the item "STEEL SHELL PILING (16" DIA.)."

PREBORING: Preboring is required for all piling at Bents 1 and 2. Prebored holes shall have a diameter 6" greater than the diameter of the pile for a depth of 10' below the bottom of cap. The void space around the pile after completion of driving shall be backfilled with sand or pea gravel. The Contractor shall be responsible for keeping prebored holes free of debris prior to backfilling, which may require the use of temporary casings or other approved methods. Any related cost for backfilling and temporary casing will not be paid for directly but shall be considered subsidiary to the item "PREBORING".

DRIVING SYSTEM: The driving system approval and the ultimate bearing capacity determination for piling shall be based on the requirements of Subsection 805.09(b), "Method B - Wave Equation Analysis (WEAP)". It is estimated that the minimum rated hammer energy required to obtain the minimum ultimate bearing capacity for all piles will be 64,000 foot-pounds per blow.

BRIDGE DECK: The concrete bridge deck shall be given a tine finish as specified for final finishing in Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish.

PROTECTIVE SURFACE TREATMENT: Class 2 Protective Surface Treatment shall be applied to the roadway surface and to the roadway face and top of the concrete rails in accordance with Section 803.

EXISTING BRIDGE: Existing Bridge No. 01860 (Log Mile 8.51) is 101.5' in length, 27.4' wide (24.0' clear roadway) and consists of a concrete slab on I-beam spans (4 spans total) supported by precast concrete pile bents. Plans of the existing bridge, if available, will be made available to the Contractor upon request to the Construction Contract Development Section of the Program Management Division.

REMOVAL AND SALVAGE: After Stage 1 Construction is complete and open to traffic, the Contractor shall remove existing Bridge No. 01860 in accordance with Section 205. All material from the existing bridge shall become property of the Contractor.

MAINTENANCE OF TRAFFIC: See Roadway Plans.

HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	TOTAL DISCHARGE (3)	DISCHARGE THIS SITE	(2) NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEVATION WITH BACKWATER
	YEARS	CFS	CFS	FEET	FEET
DESIGN	50	3,543	1,382	209.2	209.4
BASE	100	3,965	1,586	209.5	209.8
EXTREME	500	4,962	2,034	210.2	210.5
OVERTOPPING	>500	N/A	N/A	N/A	N/A

(2) Unconstricted water surface elevation without structure or roadway approaches

Q100 backwater elevation for existing structure = 209.8

(3) The total discharge includes flow at this site and the La Grue Bayou South site.

(4) Proposed Low Bridge Chord Elev. = 210.63 (Sta. 226+76.00)
Existing Low Bridge Chord Elev. = 210.16 (survey shot)

Drainage Area = 46.6 square miles
Historical High Water Elev. = 208.7

NOTE:
For "ELEVATION OF SOIL BORINGS", see Dwg. No. 66519.

DETAIL DRAWINGS:	DRAWING NO(S).
Stage Construction	66520
End Bents	66521-66522
109'-0" Integral Prestressed Concrete Girder Span	66513, 66516, 66523-66527
Common Superstructure Details	66528-66529
Type Special Approach Gutters	66530
Type Special Approach Slabs	66531-66532
Dumped Riprap	55001
Concrete Filled Steel Shell Piling	55021
Bridge Traffic Rail	55070

NOTE:
CL Construction is on a 0°15'00" curve left. Except as noted, longitudinal lines of the bridge, approach slabs and approch gutters shall be constructed on curves concentric with CL Construction. CL Girders shall be constructed parallel to a chord line extending between bridge ends. See "ALIGNMENT SKETCH" on Dwg. No. 66519 for more information.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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DIGITALLY SIGNED 11/3/2023
BRIDGE ENGINEER

SHEET 1 OF 2
LAYOUT OF BRIDGE
HIGHWAY 63 OVER LA GRUE BAYOU NORTH
LA GRUE BAYOU, WOLF ISLAND SLASH & HONEY CREEK STRS. & APPRS. (S)
PRAIRIE COUNTY

ROUTE 63 SEC. 11

ARKANSAS STATE HIGHWAY COMMISSION

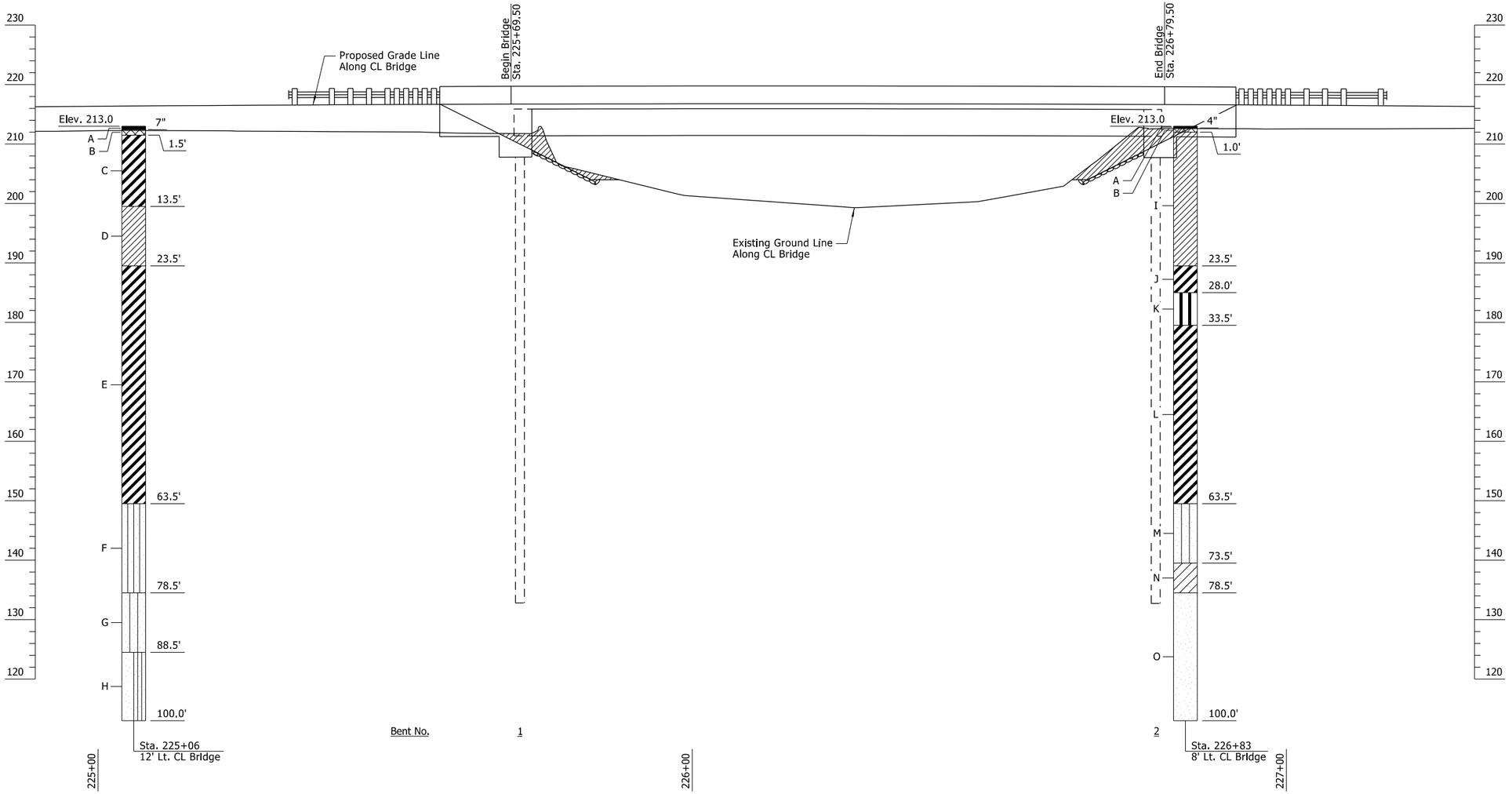
LITTLE ROCK, ARK.

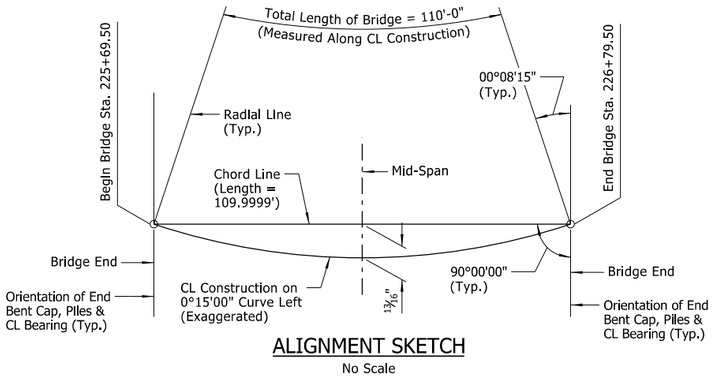
DRAWN BY:	CWT	DATE:	JUNE 2020	FILENAME:	b061615x3_l1.dgn
CHECKED BY:	ABH	DATE:	SEP. 2020	SCALE:	1" = 20'-0"
DESIGNED BY:	JME	DATE:	JUNE 2020		

BRIDGE NO. 07637 DRAWING NO. 66518

abhall 11/3/2023 3:11:41 PM
WORKSPACE: ARDOT Bridge (2019)
L:\2017\17017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\b061615x3_S101_L0.dgn

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	90	136
		07637		LAYOUT		66519





ALIGNMENT SKETCH

No Scale

ELEVATION OF SOIL BORINGS

BORING LEGEND

A - Asphalt
B - Base Materials
C - Medium stiff to very soft, gray to tan and red, FAT CLAY
D - Stiff to very stiff, tan and red, LEAN CLAY
E - Medium stiff to stiff, tan and red, FAT CLAY
F - Stiff to very stiff, gray, sandy SILT
G - Dense, gray, SILTY SAND
H - Medium dense to very dense, gray SAND, trace silt and gravel
I - Soft to very stiff, gray to tan and red, LEAN CLAY
J - Medium stiff, tan and red, FAT CLAY
K - Stiff, tan and red, sandy, ELASTIC SILT
L - Very stiff to soft, tan and red, FAT CLAY
M - Medium dense to dense, gray, SILTY SAND
N - Medium dense, gray, CLAYEY SAND
O - Dense to very dense, gray SAND

N-VALUES

Sta. 225+06 Offset 12' Lt.	Sta. 226+83 Offset 8' Lt.
3.5-5.0, N=5	1.0-2.5, N=4
6.0-7.5, N=1	6.0-7.5, N=2
8.5-10.0, N=0	13.5-15.0, N=18
13.5-15.0, N=15	23.5-25.0, N=7
23.5-25.0, N=7	33.5-35.0, N=7
28.5-30.0, N=7	38.5-40.0, N=8
33.5-35.0, N=7	48.5-50.0, N=7
38.5-40.0, N=7	53.5-55.0, N=7
48.5-50.0, N=7	58.5-60.0, N=3
63.5-65.0, N=9	63.5-65.0, N=12
68.5-70.0, N=20	68.5-70.0, N=49
78.5-80.0, N=35	73.5-75.0, N=20
88.5-90.0, N=25	78.5-80.0, N=36
98.5-100.0, N=53	83.5-85.0, N=62
	88.5-90.0, N=50/0"
	93.5-95.0, N=92
	98.5-100.0, N=91

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14498
ADAM B. HALL

DIGITALLY SIGNED 11/3/2023

BRIDGE ENGINEER

SHEET 2 OF 2
LAYOUT OF BRIDGE
HIGHWAY 63 OVER LA GRUE BAYOU NORTH
LA GRUE BAYOU, WOLF ISLAND SLASH
& HONEY CREEK STRS. & APPRS. (S)
PRAIRIE COUNTY

ROUTE 63 SEC. 11

ARKANSAS STATE HIGHWAY COMMISSION

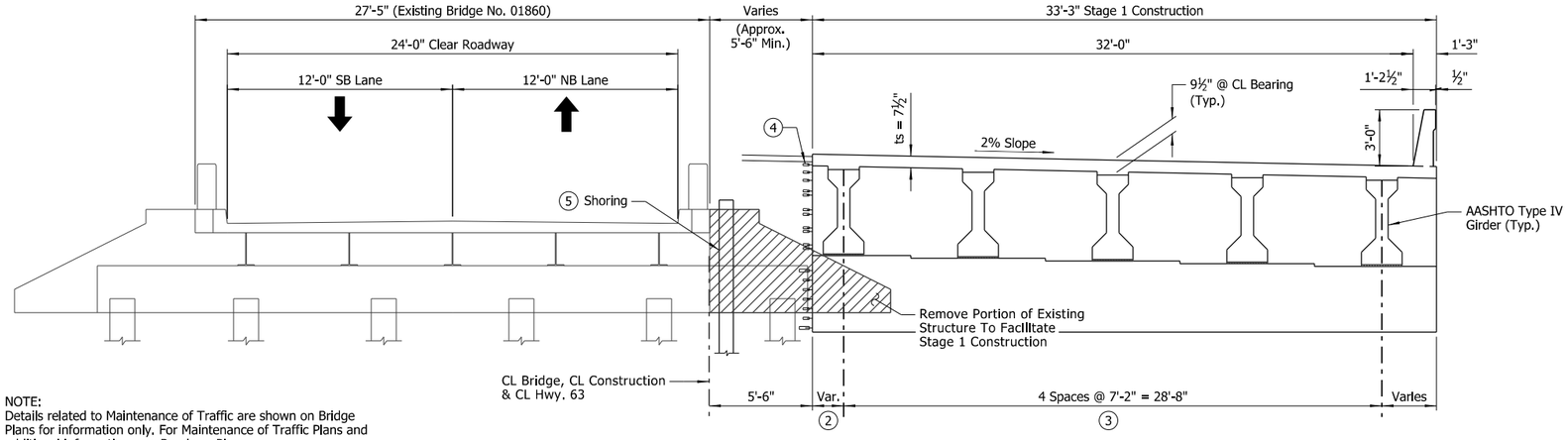
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JUNE 2020 FILENAME: b061615x3_l2.dgn
CHECKED BY: ABH DATE: SEP. 2020 SCALE: 1" = 10'-0"
DESIGNED BY: JME DATE: JUNE 2020

BRIDGE NO. 07637 DRAWING NO. 66519

abhall 11/3/2023 3:11:41 PM
WORKSPACE: ARDOT Bridge (2019)
L:\2017\17017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\b061615x3_S102_LO.dgn

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	91	136
		07637	STAGED CONSTRUCTION			66520



NOTE:
Details related to Maintenance of Traffic are shown on Bridge Plans for information only. For Maintenance of Traffic Plans and additional information, see Roadway Plans.

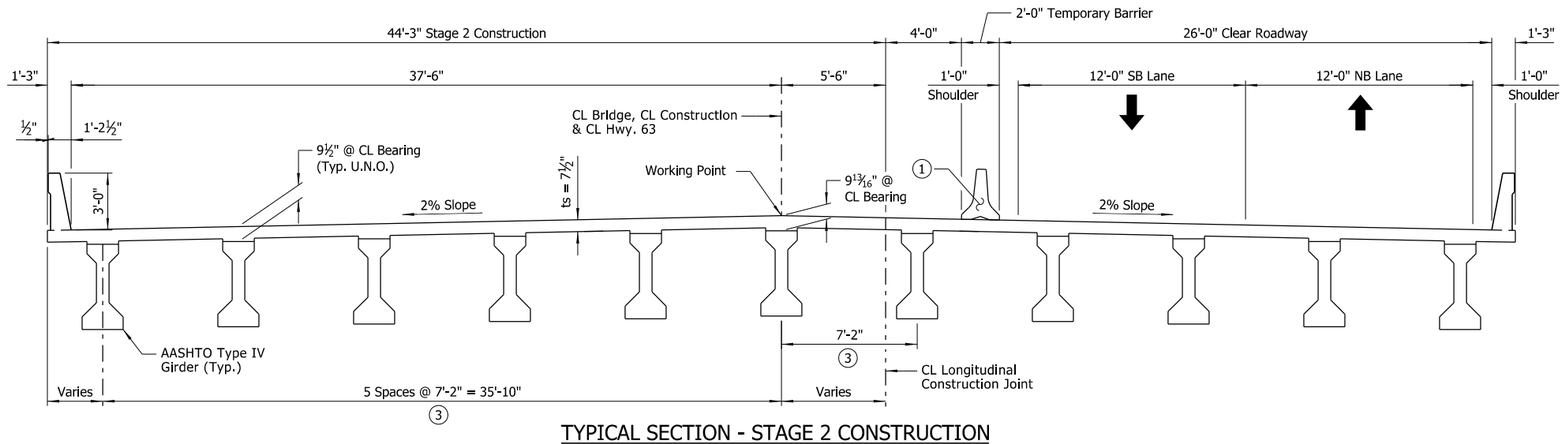
TYPICAL SECTION - STAGE 1 CONSTRUCTION

(Showing At End Bent; Looking Ahead)
Scale: ¼" = 1'-0"

NOTE:
New End Bent Piling not shown for clarity.

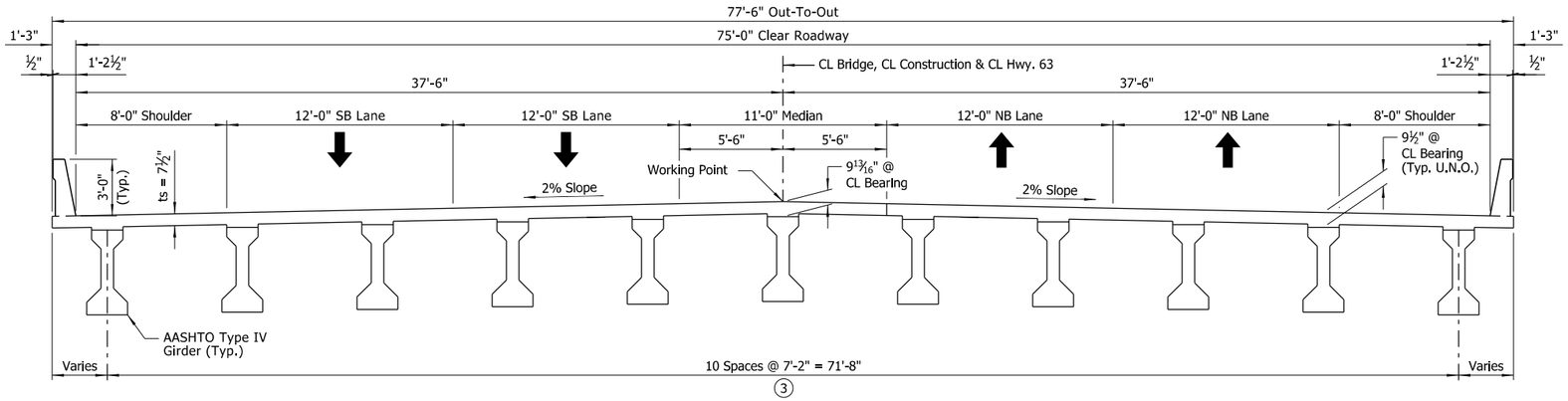
1. Temporary construction barrier. Do not connect to new deck (See Dwg. No. TC-4).
2. Construction vehicles shall not travel on cantilever portion of deck.
3. Measured perpendicular to chord line extending between bridge ends. See "ALIGNMENT SKETCH" on Dwg. No. 66519.
4. Mechanical bar couplers
5. Shoring shall be required to retain existing and new embankment during construction.

NOTE:
Unless noted otherwise, horizontal dimensions shown are measured along a line radial to CL Construction.



TYPICAL SECTION - STAGE 2 CONSTRUCTION

(Shown In Span; Looking Ahead)
Scale: ¼" = 1'-0"



TYPICAL SECTION - FINAL CONDITION

(Shown In Span; Looking Ahead)
Scale: ¼" = 1'-0"

LEGEND

U.N.O. = Unless Noted Otherwise

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14498
ADAM B. HALL

DIGITALLY SIGNED 11/3/2023
BRIDGE ENGINEER

DETAILS OF STAGED CONSTRUCTION
HIGHWAY 63 OVER LA GRUE BAYOU NORTH
LA GRUE BAYOU, WOLF ISLAND SLASH
& HONEY CREEK STRS. & APPRS. (S)
PRAIRIE COUNTY

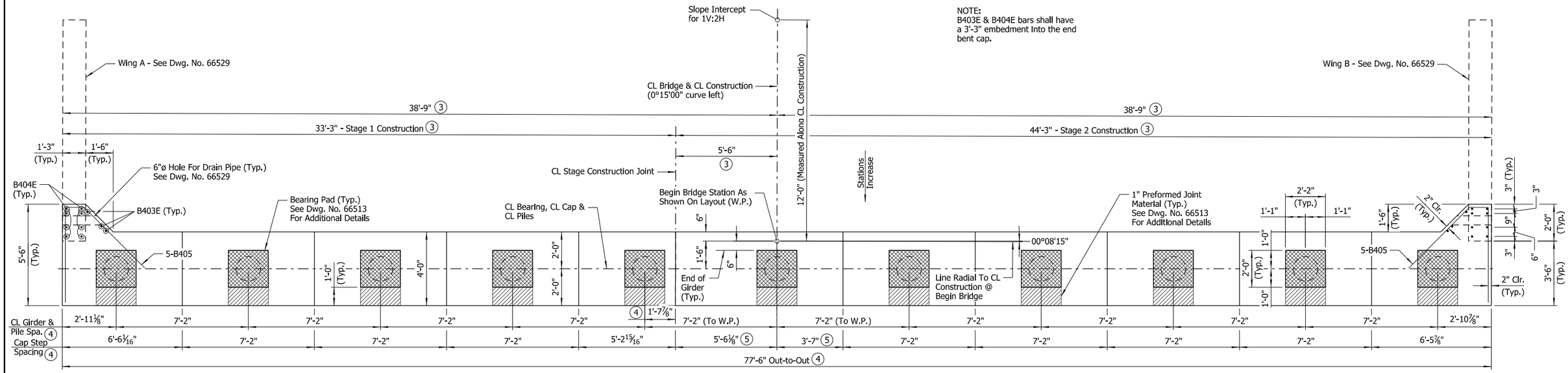
ROUTE 63 SEC. 11

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: AUG. 2020 FILENAME: b061615x3_sc.dgn
CHECKED BY: ABH DATE: SEP. 2020 SCALE: As Shown
DESIGNED BY: JME DATE: JUNE 2020

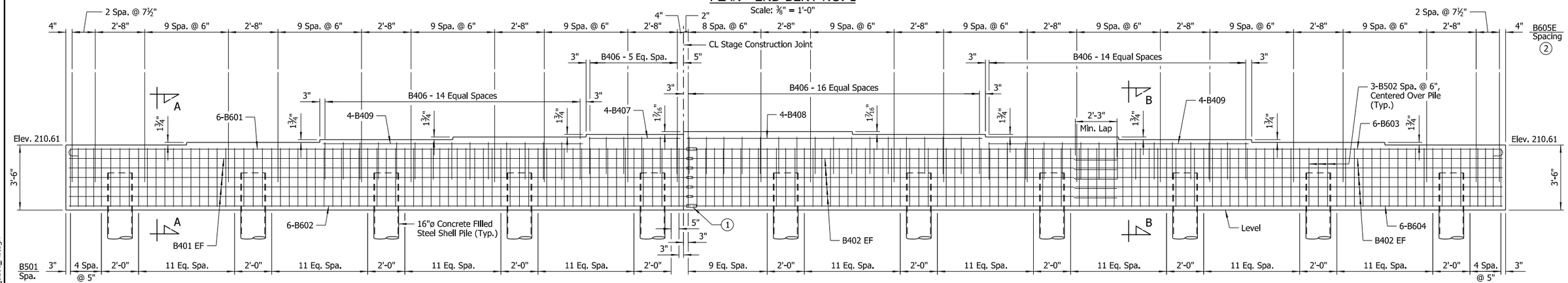
BRIDGE NO. 07637 DRAWING NO. 66520

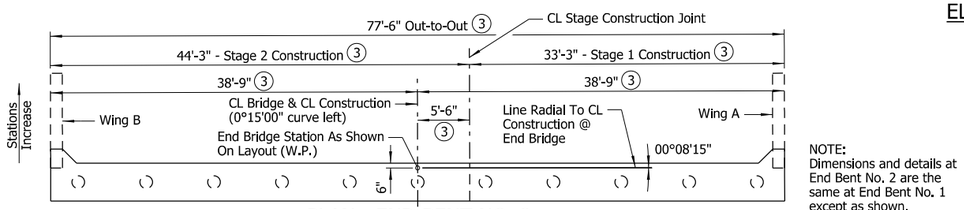
DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	92	136
		07637		END BENTS		66521



PLAN - END BENT NO. 1

Scale: ⅜" = 1'-0"

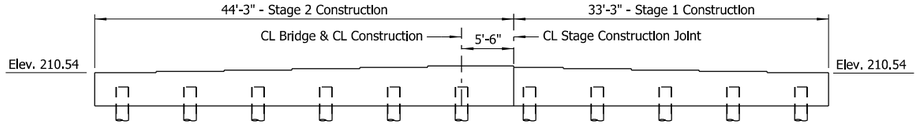




PLAN - END BENT NO. 2

Scale: ⅛" = 1'-0"

NOTE: Dimensions and details at End Bent No. 2 are the same at End Bent No. 1 except as shown.



ELEVATION - END BENT NO. 2

(Looking Ahead)
Scale: ⅛" = 1'-0"

ELEVATION - END BENT NO. 1

(Looking Back)
Scale: ⅜" = 1'-0"

(1) The mechanical bar couplers shall be Dayton Superior D250SCA Bar Lock Couplers or an alternate approved type in accordance with the ARDOT Qualified Products List (QPL). Couplers shall develop at least 125% of the specified yield strength of the bar and shall be installed according to the Manufacturer's recommendations. The cost of mechanical couplers shall not be measured for separate payment but shall be considered subsidiary to the item "CLASS S CONCRETE - BRIDGE". Couplers shall be installed with minimal projection beyond the longitudinal construction joint and shall be adquately protected from damage until the Stage 2 reinforcing is installed.

(2) Top of B605E bars shall maintain 2" clear of bottom of paving bracket in the end bent diaphragm.

(3) Measured Radial to CL Construction

(4) Measured at front face of cap and perpendicular to Chord Line extending between bridge ends. See "ALIGNMENT SKETCH" on Dwg. No. 66519.

(5) To W.P.

LEGEND

EF = Each Face

NOTES:
CL Construction is on a 0°15'00" curve left.

Wings and ends of caps shall be constructed on curves concentric with CL Construction.

CL Bearing, CL Cap, CL Piles, and cap edges shall be oriented perpendicular to Chord Line extending between bridge ends. See "ALIGNMENT SKETCH" on Dwg. No. 66519.

For "GENERAL NOTES", "SECTION A-A", "SECTION B-B", "BAR LIST" and "BAR BENDING DIAPHRAGMS", see Dwg. No. 66522.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14498
ADAM B. HALL

DIGITALLY SIGNED 11/3/2023
BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS OF END BENTS
LA GRUE BAYOU NORTH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	JJB	DATE:	DEC. 2020	FILENAME: b061615x3_a1.dgn
CHECKED BY:	NVW	DATE:	MAR. 2021	SCALE: As Shown
DESIGNED BY:	JJB	DATE:	DEC. 2020	

BRIDGE NO. 07637 DRAWING NO. 66521

abhall 11/3/2023 3:11:42 PM
WORKSPACE: ARDOT Bridge (2019)
L:\2017\17017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\b061615x3_S201_AB.dgn

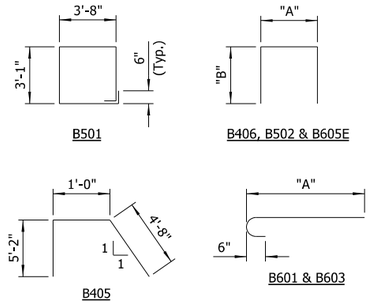
DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	93	136
		07637		END BENTS		66522

BAR LIST (EACH BENT)

	MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
③	B401	10	33'-5"			Str.
③	B402	20	23'-1"			Str.
	B403E	6	7'-4"			Str.
	B404E	16	8'-7"			Str.
	B405	10	10'-9"			2"
	B406	53	7'-6"	3'-8"	2'-0"	2"
	B407	4	4'-11"			Str.
	B408	4	15'-11"			Str.
	B409	8	14'-0"			Str.
	B501	130	14'-0"			2½"
	B502	33	9'-8"	3'-8"	3'-1"	2½"
③	B601	6	34'-2"	33'-6"		4½"
③	B602	6	33'-6"			Str.
③	B603	6	44'-3"	43'-7"		4½"
③	B604	6	43'-7"			Str.
	B605E	106	17'-6"	3'-8"	7'-1"	4½"

③ Length of bars shown is for one end bent only, as required to accommodate length of mechanical coupler.

BAR BENDING DIAGRAMS



NOTES:
Number of bars shown is for one end bent only.

Dimensions of bars are out-to-out.

Bar designations ending in "E" indicate epoxy coated bars.

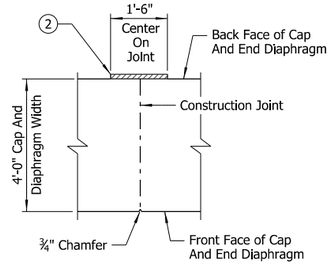
GENERAL NOTES

All concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 3500 psi and shall be poured in the dry. All exposed corners shall be chamfered ¾" unless otherwise noted.

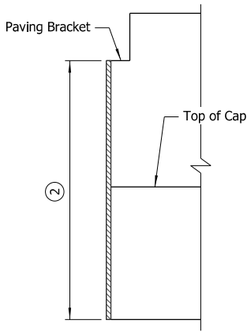
All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

Granular backfill and pipe underdrain required behind end bent caps. See Dwg. No. 66513 for details.

For additional information, see Layout.



NOTE:
Payment for this work and material shall be considered subsidiary to other pay items.

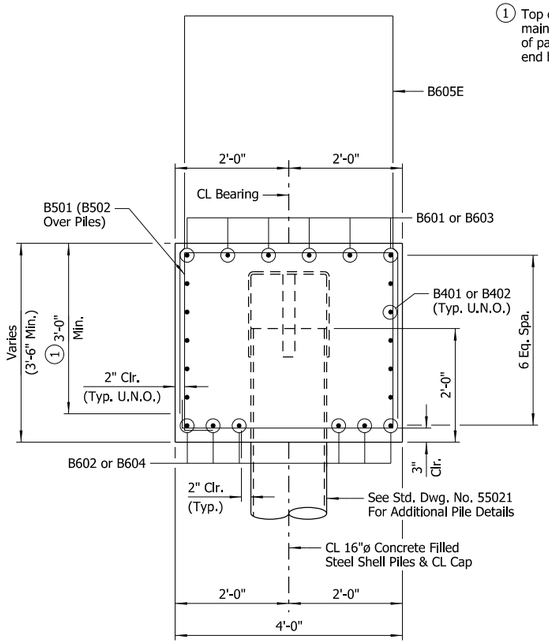


② Membrane waterproofing Type "C" or approved equal, see Section 815. Membrane waterproofing shall extend from the bottom of the cap to the paving bracket.

CONSTRUCTION JOINT DETAIL

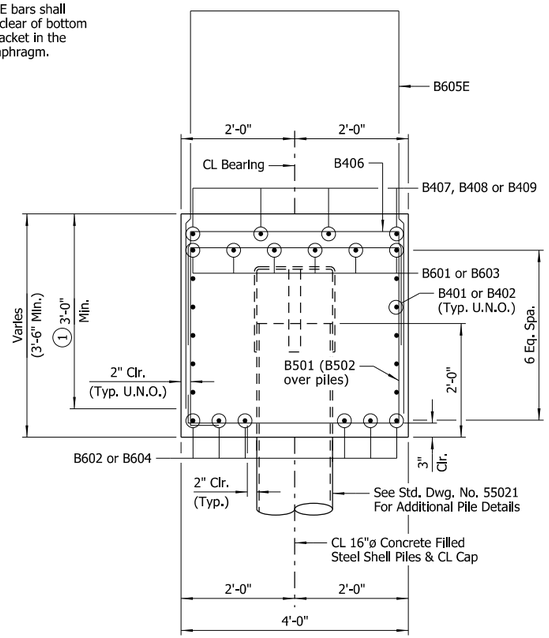
No Scale

① Top of B605E bars shall maintain 2" clear of bottom of paving bracket in the end bent diaphragm.



SECTION A-A

Scale: ¾" = 1'-0"



SECTION B-B

Scale: ¾" = 1'-0"

LEGEND

U.N.O. = Unless Noted Otherwise

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14498
ADAM B. HALL

DIGITALLY SIGNED 11/3/2023
BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF END BENTS
LA GRUE BAYOU NORTH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	JJB	DATE:	DEC. 2020	FILENAME:	b061615x3_a2.dgn
CHECKED BY:	NVW	DATE:	MAR. 2021	SCALE:	As Shown
DESIGNED BY:	JJB	DATE:	DEC. 2020		

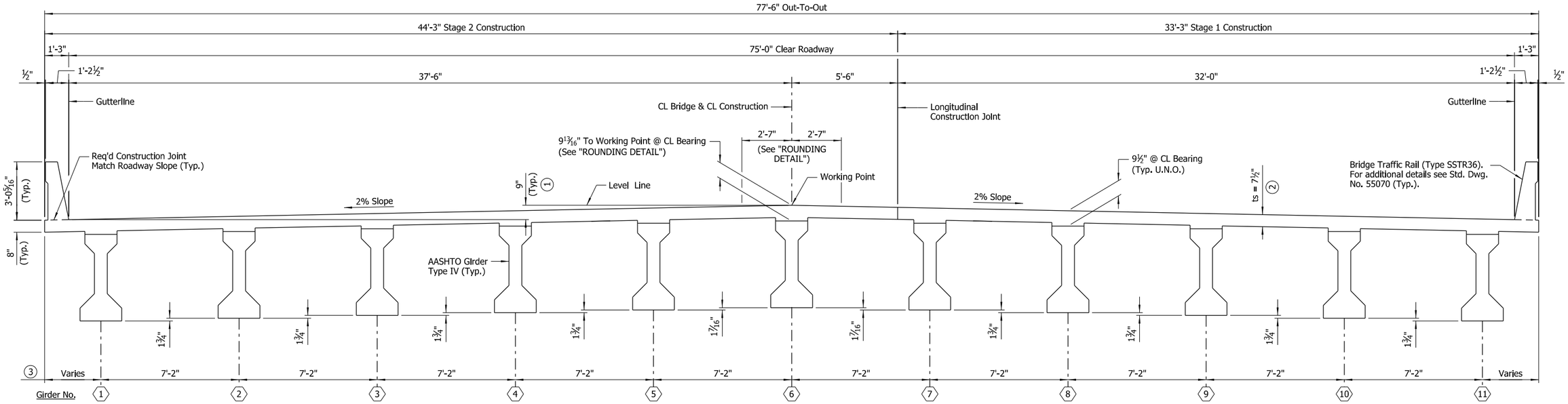
BRIDGE NO. 07637 DRAWING NO. 66522

abhall 11/3/2023 3:11:43 PM
WORKSPACE: ARDOT Bridge (2019)
L:\2017\1701628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\b061615x3_S202_AB.dgn

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	94	136
		07637		109'-0" SPAN		66523

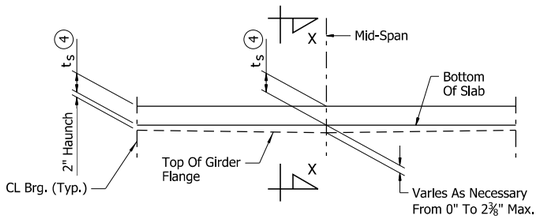
(1) Working Point to Gutterline

(2) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE"

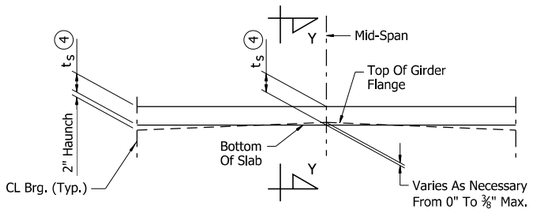


TYPICAL ROADWAY SECTION - FINAL CONDITION

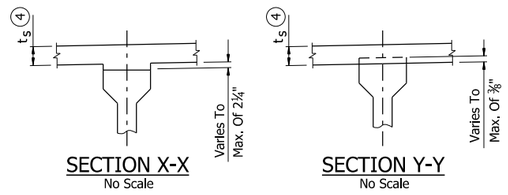
(Looking Ahead)
Scale: ⅜" = 1'-0"



GIRDER ELEVATION
No Scale



GIRDER ELEVATION
No Scale



SECTION X-X
No Scale

SECTION Y-Y
No Scale

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

t_S = slab thickness as shown on superstructure details. See "TYPICAL ROADWAY SECTION - FINAL CONDITION".

(4) Tolerance when removable deck forming is used is +½", -¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance. See Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used.

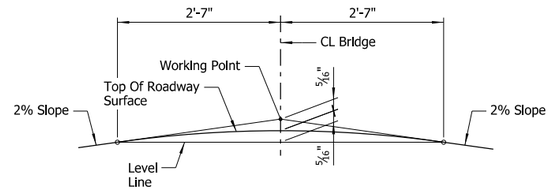
"GIRDER ELEVATION" sketches show the range of acceptability of the top of girder relative to bottom of slab after the placement of the slab. When the top of the girder projects more than ⅜" into the slab, a raise in grade will be necessary. Girders shall be set in a sufficient number of spans over suitable increments so the revised grade line will produce a smooth riding surface. Variation of haunch height will be at the Contractor's expense.

NOTE:
Unless noted otherwise, horizontal dimensions shown are measured along a line radial to CL Construction.

(3) Measured perpendicular to chord line extending between bridge ends. See "ALIGNMENT SKETCH" on Dwg. No. 66519.

LEGEND

U.N.O. = Unless Noted Otherwise



ROUNDING DETAIL
No Scale

NOTE:
Working Point matches Theoretical Roadway Grade.

STATE OF ARKANSAS
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BRIDGE ENGINEER

SHEET 1 OF 5
DETAILS OF 109'-0" INTEGRAL PRESTRESSED CONCRETE GIRDER SPAN LA GRUE BAYOU NORTH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JJB DATE: DEC. 2020 FILENAME: b061615x3_s1.dgn
CHECKED BY: NVW DATE: MAR. 2021 SCALE: As Shown
DESIGNED BY: JJB DATE: DEC. 2020

BRIDGE NO. 07637 DRAWING NO. 66523

abhall 11/3/2023 3:11:43 PM
WORKSPACE: ARDOT Bridge (2019)
L:\2017\17017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\b061615x3_S301_SX.dgn

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	95	136
		07637		109'-0" SPAN		66524

SLAB REINFORCING:

Transverse: Stage 1:
S503E @ 6" O.C in Top and Bottom
S502E @ 6" O.C. in Top of Right Overhang (Bundled with S503E)
Stage 2:
S504E @ 6" O.C. in Top and Bottom
S502E @ 6" O.C. in Top of Left Overhang (Bundled with S504E)

Longitudinal: Stage 1 & Stage 2:
S401E in Top as Shown
S501E in Bottom as Shown
S601E In Top as Shown At End Bents, See "REINFORCING PLAN & SLAB POURING SEQUENCE" on Dwg. No. 66526

(1) TOLERANCE:
Minus = ¼"
Plus = Amount af slab thickening used to meet slab thickness tolerance - see "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on Dwg. No. 66523.

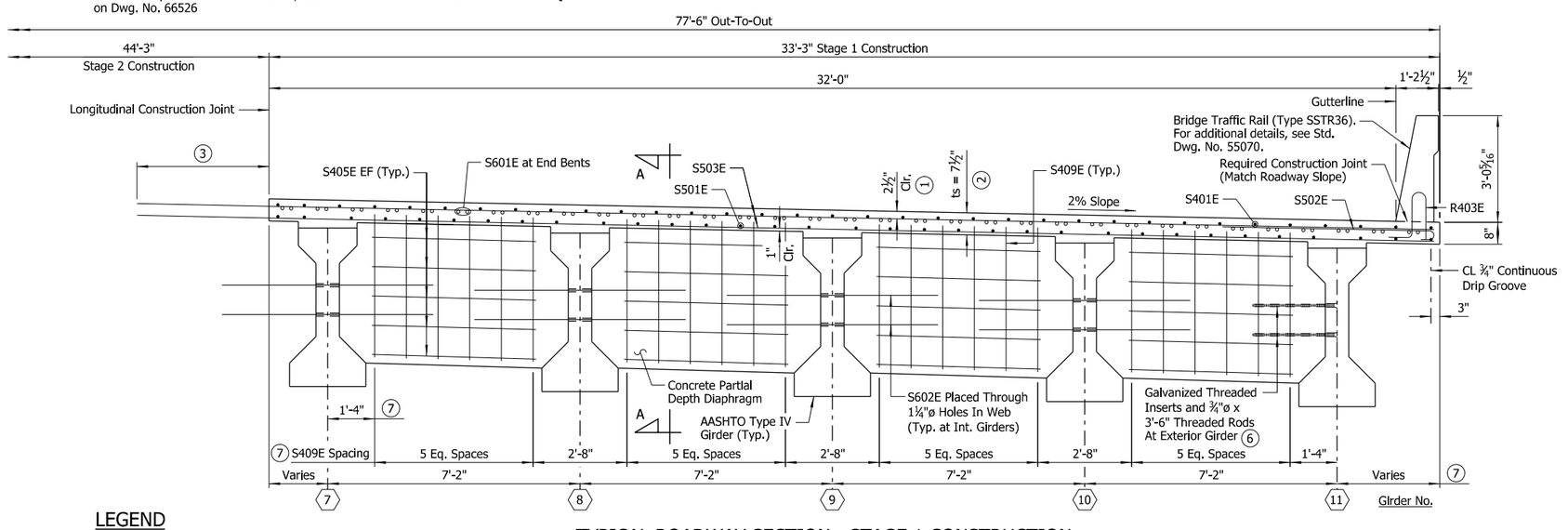
(2) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on Dwg. No. 66523.

(3) Bar Projection:
3'-9" for #5 bars
2'-9" for #4 bars

(4) 3'-7" min. lap for #5 bars
2'-7" min. lap for #4 bars

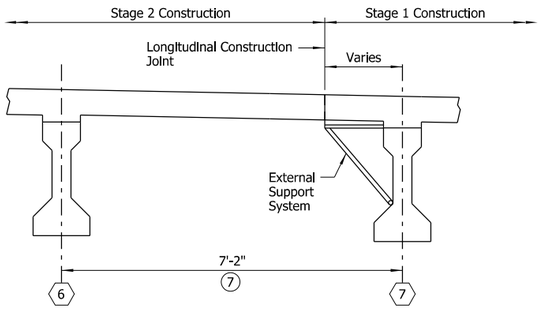
(5) For "ROUNDING DETAIL", see Dwg. No. 66523.

(6) See "TYPICAL GIRDER ELEVATION (TYPE IV) - 109'-0"" on Dwg. No. 66516 for number and location. Galvanized Threaded Inserts shall be Dayton-Richmond F-42 Loop Ferule or approved equal. 3/4" ø Galvanized Threaded Inserts Rods shall be ASTM A709, Grade 36 or AASHTO M 31 or M 322 Type A, Grade 60. Galvanizing shall be in accordance with AASHTO M 232, Class C or ASTM B695, Class 50. These items will not be paid for directly but shall be considered subsidiary to the Item "PRESTRESSED CONCRETE GIRDERS (TYPE IV)".



TYPICAL ROADWAY SECTION - STAGE 1 CONSTRUCTION

(Looking Ahead)
(Showing Partial Depth Intermediate Diaphragms)
Scale: ½" = 1'-0"



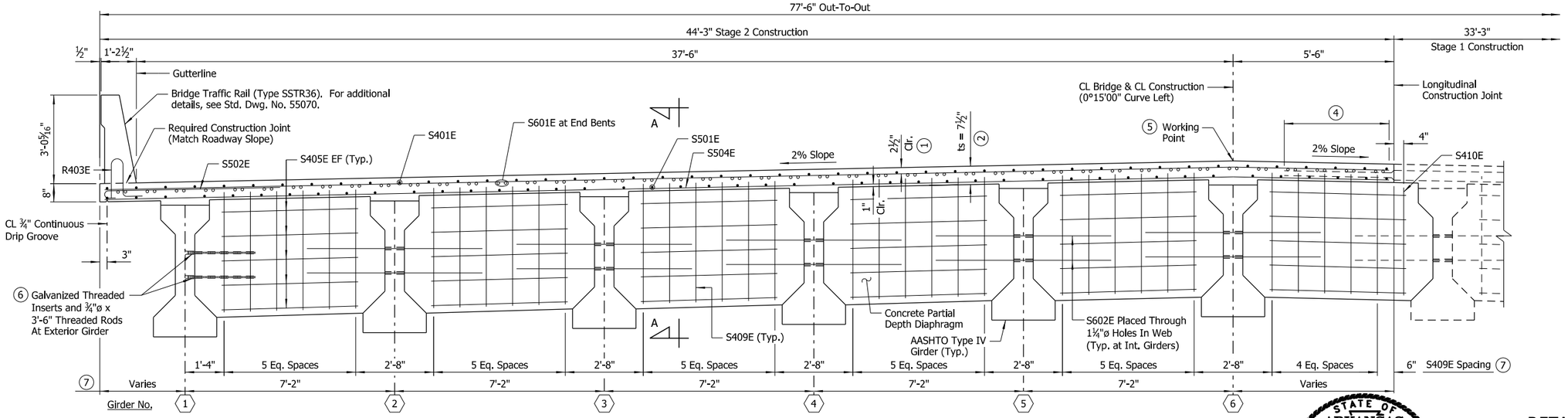
NOTE:
Stage 1 external supports at Girder 7 shall remain in place until after completion of the Stage 2 deck pour. See Subsection 802.15 for additional information regarding the removal of the support system.

DECK SUPPORT AT LONGITUDINAL CONSTRUCTION JOINT

(Looking Ahead)
No Scale

LEGEND

U.N.O. = Unless Noted Otherwise
EF = Each Face



TYPICAL ROADWAY SECTION - STAGE 2 CONSTRUCTION

(Looking Ahead)
(Showing Partial Depth Intermediate Diaphragms)
Scale: ½" = 1'-0"

NOTE:
For "SECTION A-A", See Dwg. No. 66525.

NOTES:
Class 2 Protective Surface Treatment shall be applied to the roadway surface and to the roadway face and top of the concrete bridge rail.

Bar positions and clearances from the forms shall be maintained by means of stays, ties, hangers or other approved devices sufficient in size and number to prevent displacement during construction, per Subsection 804.06. Placement of slab bolsters or hi-chairs with full-length lower runners directly on removable deck forms will not be allowed.

NOTE:
Unless noted otherwise, horizontal dimensions shown are measured along a line radial to CL Construction.

(7) Measured perpendicular to chord line extending between bridge ends. See "ALIGNMENT SKETCH" on Dwg. No. 66519.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14498
ADAM B. HALL

DIGITALLY SIGNED 11/3/2023
BRIDGE ENGINEER

SHEET 2 OF 5
DETAILS OF 109'-0" INTEGRAL PRESTRESSED CONCRETE GIRDER SPAN LA GRUE BAYOU NORTH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JJB DATE: DEC. 2020 FILENAME: b061615x3_s2.dgn
CHECKED BY: NVW DATE: MAR. 2021 SCALE: As Shown
DESIGNED BY: JJB DATE: DEC. 2020

BRIDGE NO. 07637 DRAWING NO. 66524

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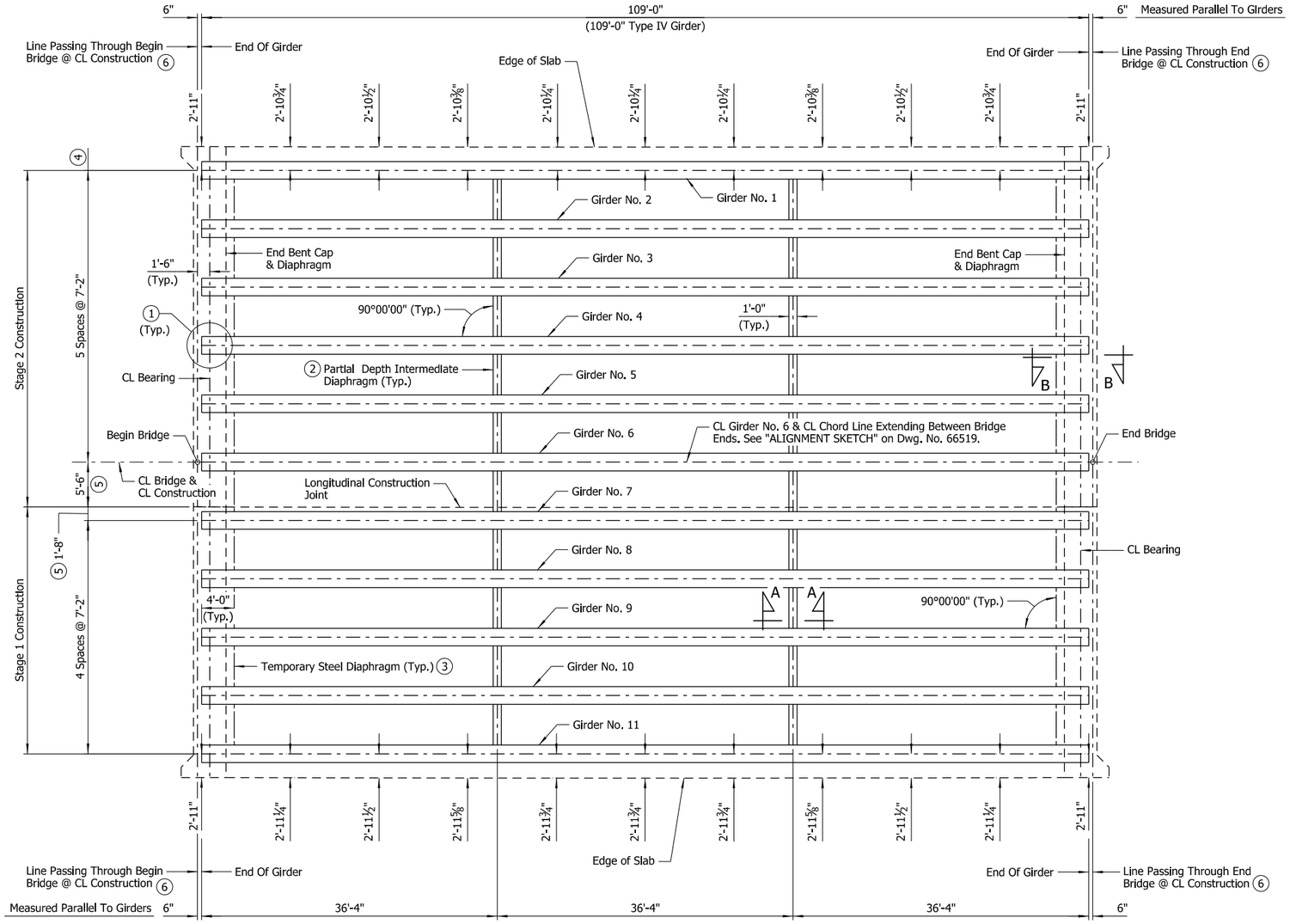
WORKSPACE: ARDOT Bridge (2019)
L:\2017\17017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\b061615x3_S302_SX.dgn

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	96	136
		07637		109'-0" SPAN		66525



FRAMING PLAN

Scale: ⅛" = 1'-0"

NOTES:
For "SECTION B-B" and additional details of End Bent Diaphrams, see Dwg. No. 66513.

For additional details of Partial Depth Intermediate Diaphrams, see Dwg. No. 66528.

For girder details, see Dwg. No. 66516.

All cantilever dimensions are measured at girder tenth points along edges of slab and normal to exterior girders.

(1) After erection, the ends of girders at all bents shall be blocked using temporary blocking to maintain proper location on bent caps. The ends of girders shall remain blocked until after the temporary steel diaphragms are in place.

(2) For details of alternate steel diaphragm, see "DETAILS OF STEEL DIAPHRAGM".

(3) After the concrete deck construction and curing are complete, the temporary steel diaphragm and connecting elements may remain in place or be removed and become the property of the Contractor and the holes in the girder webs filled with a QPL approved non-shrink epoxy grout. For additional diaphragm details, see "DETAILS OF STEEL DIAPHRAGM".

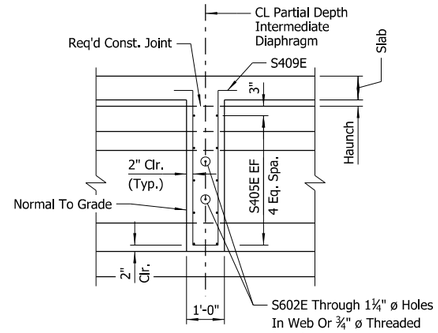
(4) Measured perpendicular to chord line extending between bridge ends. See "ALIGNMENT SKETCH" on Dwg. No. 66519.

(5) Measured to Longitudinal Construction Joint at Begin Bridge

(6) Line is perpendicular to chord line extending between bridge ends. See "ALIGNMENT SKETCH" on Dwg. No. 66519.

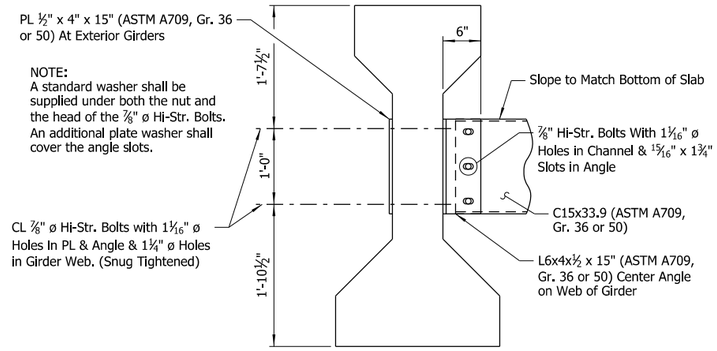
LEGEND

EF = Each Face



SECTION A-A

Scale: ½" = 1'-0"



DETAILS OF STEEL DIAPHRAGM

Scale: 1" = 1'-0"

Steel Diaphragms shall be used at locations noted as "Temporary Steel Diaphragm". The Temporary Steel Diaphragm and components will not be paid for directly, but shall be considered subsidiary to the item "PRESTRESSED CONCRETE GIRDERS (TYPE IV)".

Permanent Steel Diaphragms may be used in lieu of concrete diaphragms at locations noted as "Partial Depth Intermediate Diaphragm". Payment will be based on concrete diaphragms.

All components of Steel Diaphragms (Permanent and Temporary) shall be galvanized in accordance with AASHTO M111.

STATE OF ARKANSAS
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SHEET 3 OF 5
DETAILS OF 109'-0" INTEGRAL PRESTRESSED CONCRETE GIRDER SPAN LA GRUE BAYOU NORTH

ROUTE SEC.

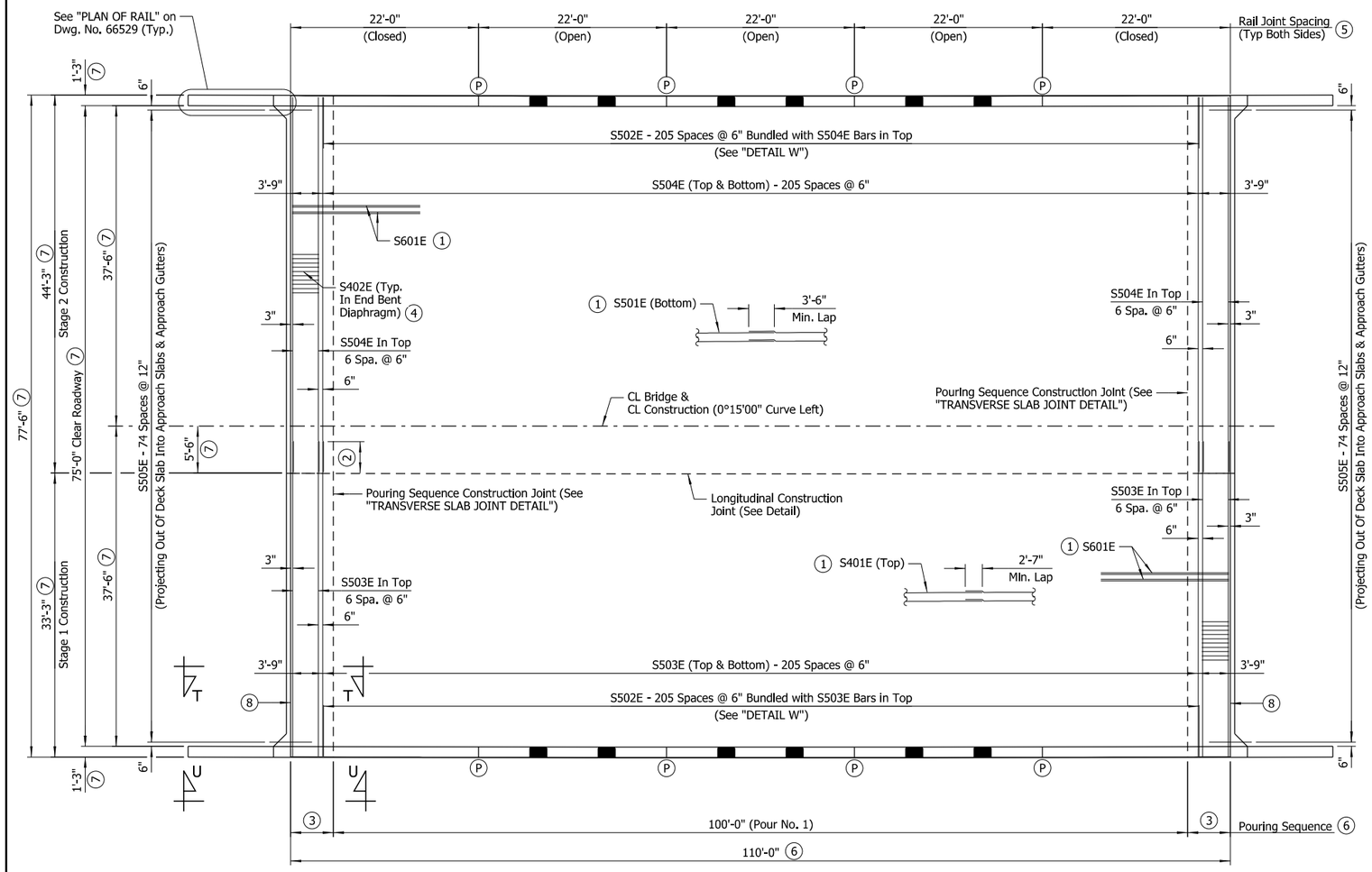
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY:	RAK	DATE:	DEC. 2020	FILENAME:	b061615x3_s3.dgn
CHECKED BY:	NVW	DATE:	MAR. 2021	SCALE:	As Shown
DESIGNED BY:	RAK	DATE:	DEC. 2020		

BRIDGE NO. 07637 DRAWING NO. 66525

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	97	136
		07637		109'-0" SPAN		66526



REINFORCING PLAN & SLAB POURING SEQUENCE

Scale: ⅛" = 1'-0"

(1) Placed as shown in "TYPICAL ROADWAY SECTION - STAGE 1 CONSTRUCTION" and "TYPICAL ROADWAY SECTION - STAGE 2 CONSTRUCTION" on Dwg. No. 66524.

(2) 3'-9" bar projection

(3) 5'-0" (Pour No. 2)

(4) See Dwg. No. 66499 for additional details of reinforcing in concrete end bent diaphragms.

(5) Measured along gutterline

(6) Measured along CL Construction

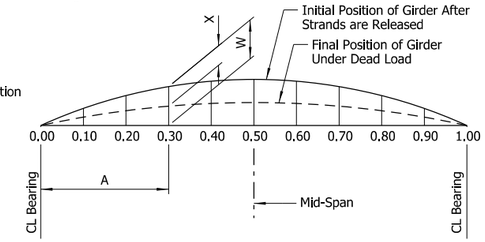
(7) Measured along line radial to CL Construction

(8) End of Deck Along Line Passing Through Begin or End Bridge @ CL Construction. This line is perpendicular to chord line extending between bridge ends. See "ALIGNMENT SKETCH" on Dwg. No. 66519.

(9) NOTE:
Camber and Deflection Values shown are based on a concrete girder strength, f'c = 8000 psi. Greater strengths may require adjustments. See "SPECIAL CAMBER NOTES" on Dwg. No. 66528.

SPAN PT.	INCHES	
	W	X
0.00	0.000	0.000
0.10	1.052	0.506
0.20	1.792	1.134
0.30	2.255	1.576
0.40	2.507	1.859
0.50	2.587	1.956

Table symmetric about mid-span



"W" is Camber of Girder (Prestress + Dead Load of Girder @ 90 Days After Release)

"X" Is Dead Load Deflection of Slab + Diaphragms + Composite Dead Load

(9) CAMBER & DEFLECTION (INCHES) - 109'-0" GIRDER

No Scale

TABLE OF VARIABLES								
CLOSED RAIL PANELS			OPEN RAIL PANELS					
PANEL LENGTH	A	R4XXE	PANEL LENGTH	B	C	D	E	R4XXE
22'-0"	43	06	22'-0"	17	6'-0"	11	6'-0"	06

SLAB POURING SEQUENCE NOTES:
Pours with the same number may be placed simultaneously or separately. All Pour(s) 1 must be placed before Pour(s) 2 can be placed. A minimum of 48 hours shall elapse between the end of a pour and the start of the next pour. A minimum of 72 hours shall elapse between adjacent pours.

Concrete in bridge superstructure shall be placed, consolidated and screeded off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

A minimum of 72 hours shall elapse between completion of the slab and the pouring of the bridge railing. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer. Deviations from the pouring sequence(s) shown on this drawing are not permitted.

Concrete diaphragms at end bents shall be poured monolithically with the slab.

All partial depth diaphragms shall be cast in place and poured a minimum of 48 hours before the slab is poured.

Removable forms shall be used when pouring diaphragms.

The slab and diaphragms shall not be poured prior to 90 days following release of the prestressed girder strands.

NOTES:
All longitudinal lines and longitudinal slab reinforcing shall be placed along curves concentric with CL bridge.

All transverse lines and transverse slab reinforcing shall be placed on lines perpendicular to chord line extending between bridge ends. See "ALIGNMENT SKETCH" on Dwg. No. 66519. Spacing of transverse slab reinforcing shown is measured along chord line.

For reinforcing details of rail, see Std. Dwg. No. 55070.

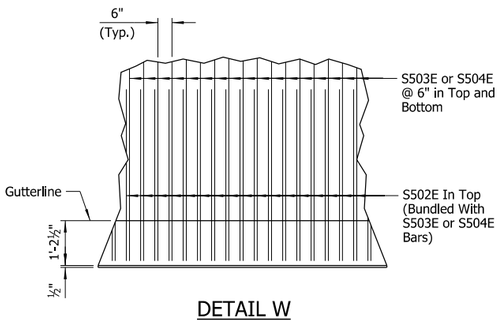
Rails and wings are included in span construction and are included in span quantities. Rail and wing concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi.

For "GENERAL NOTES," see Dwg. No. 66528.

For "VIEW T-T" & "VIEW U-U", see Dwg. No. 66529.

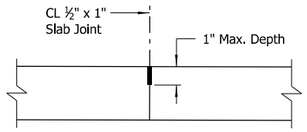
For bar list and bar bending diagrams, see Dwg. No. 66527.

(P) Partial Depth Rail Joint at this location



DETAIL W

No Scale



TRANSVERSE SLAB JOINT DETAIL

No Scale

NOTE:
Use Type 3 or 4 Joint Sealer. See Subsections 501.02(h) and 501.05(j). Backer Rod filler will not be required. Joint Sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. Transverse Slab Joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations. The joint sealer shall extend across the deck from gutterline to gutterline.

LONGITUDINAL CONSTRUCTION JOINT

No Scale

NOTE:
Use ½" x 1" Type 3 or 4 Joint Sealer. See Subsections 501.02(h) and 501.05(j). Backer Rod filler will not be required. Joint Sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. This joint shall be formed. Seal color shall be gray or other color similar to concrete.

STATE OF ARKANSAS
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SHEET 4 OF 5
DETAILS OF 109'-0" INTEGRAL PRESTRESSED CONCRETE GIRDER SPAN LA GRUE BAYOU NORTH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JJB DATE: DEC. 2020 FILENAME: b061615x3_s4.dgn
CHECKED BY: NVW DATE: MAR. 2021 SCALE: As Shown
DESIGNED BY: JJB DATE: DEC. 2020

BRIDGE NO. 07637 DRAWING NO. 66526

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WORKSPACE: ARDOT Bridge (2019)
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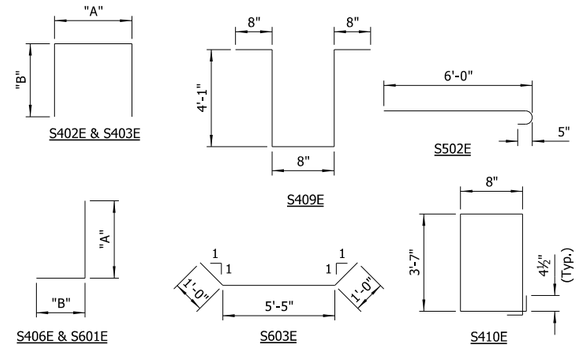
DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	98	136
		07637		109'-0" SPAN		66527

BAR BENDING DIAGRAMS



NOTES:
Dimensions of bars are out-to-out.

Bar designations ending with "E" indicate epoxy coated bars.

For bar bending diagrams of R400E, R401E, R403E and W401E, see Std. Dwg. No. 55070

BAR LIST

	MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
	S401E	237	38'-4"			Str.
	S402E	212	12'-6"	3'-2"	4'-9"	2"
	S403E	20	5'-10"	3'-0"	1'-6"	2"
(1)	S404E	12	33'-5"			Str.
	S405E	290	4'-8"			Str.
(1)	S406E	10	1'-7"	10"	10"	3"
(1)	S407E	10	3'-11"			Str.
(1)	S408E	24	23'-3"			Str.
	S409E	118	9'-10"			2"
	S410E	2	8'-10"			2"
	S501E	154	56'-7"			Str.
	S502E	412	6'-7"			3¾"
	S503E	426	36'-10"			Str.
	S504E	426	43'-11"			Str.
	S505E	150	5'-0"			Str.
	S601E	308	15'-11"	15'-0"	1'-0"	4½"
	S602E	72	6'-0"			Str.
	S603E	24	7'-5"			4½"
	R400E	48	5'-3"			2½"
	R401E	560	6'-4"			2½"
	R402E	48	5'-6"			Str.
	R403E	464	3'-6"			3", 3¾"
	R404E	32	11'-8"			Str.
	R405E	32	4'-0"			Str.
	R406E	80	21'-8"			Str.
	W401E	96	3'-11"			3¾"
	W402E	160	4'-11"			Str.
	W701E	64	15'-2"			Str.

(1) Length of bars shown shall be adjusted as required to accommodate length of mechanical coupler.

STATE OF ARKANSAS
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SHEET 5 OF 5
DETAILS OF 109'-0" INTEGRAL
PRESTRESSED CONCRETE GIRDER SPAN
LA GRUE BAYOU NORTH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JJB DATE: DEC. 2020 FILENAME: b061615x3_s5.dgn
CHECKED BY: NVW DATE: MAR. 2021 SCALE: As Shown
DESIGNED BY: JJB DATE: DEC. 2020

BRIDGE NO. 07637 DRAWING NO. 66527

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WORKSPACE: ARDOT Bridge (2019)
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DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	99	136
		07635, 07636, 07637		COMMON		66528

GENERAL NOTES

PRESTRESSED CONCRETE GIRDERS:

Pretensioning steel shall be 0.6" dia. low relaxation strands with a minimum ultimate strength of 270 ksi and shall conform to AASHTO M 203.

Distances from the forms and spacing of the prestressing steel shall be maintained by stays, ties, hangers, spacers, or other approved supports which shall be shown on the shop drawings.

All girders shall be of the type noted on the details and shall be the standard prestressing sections adopted by the Joint Committee of AASHTO and the Prestressed Concrete Institute. All girders shall be cast in floored pallets and in metal forms. All work and materials shall be as specified in Subsection 802.22.

Concrete shall be Class S and shall have a minimum 28-day compressive strength f'c = 8,000 psi. The initial tensile force applied to each 0.6" dia. strand shall be 44,000 lbs. except as noted. Transfer of this tensioning load to the girder shall not be done until the compressive strength of the concrete is 6,000 psi.

Dimensions shown are to the center of the strands.

The Contractor shall submit the method and sequence for release of strands to the Engineer for approval prior to casting of the girders.

Holes and Inserts shall be cast into the girders. Field drilling of holes shall not be permitted.

The tops of girders shall be rough floated at approximately the time of set. The tops of girders shall be scrubbed transversely with a coarse wire brush to remove all laitance and to produce a roughened surface with an amplitude of ¼" to produce an adequate surface for bonding the slab.

Extreme care shall be exercised in handling and moving precast prestressed concrete girders. Girders must be maintained in an upright position at all times and must be picked up from points near the girder ends. Disregard of this requirement may lead to collapse of the girder. The Contractor's proposed lifting details shall be submitted on shop drawings to the Engineer for approval. The use of holes for lifting purposes will not be permitted.

The points of support and directions of the reactions with respect to the member shall be approximately the same during transportation and storage as when the member is in its final position.

Girder lengths shown on the design plans are net lengths measured horizontally along the girder centerlines. The girder manufacturer shall make the necessary allowances for grade and shortening due to elastic shortening, creep, and shrinkage.

Reinforcing steel shall be AASHTO M 31 or M 32 Type A, Gr. 60 (Fy = 60,000 psi), with mill test reports.

After detensioning, saw cut, grind, or bend up strands as designated by the plans. Heat-cutting or bending methods shall not be used within 6" of the girder.

The Contractor may submit alternate strand patterns with design calculations for review and approval in accordance with Subsection 802.22.

Drawings show general features of design only. Shop drawings shall be made in accordance with the specifications, submitted, and approval secured before fabrication is begun.

REINFORCING STEEL:

All reinforcing steel shall conform to AASHTO M 31 or M 322 Type A, Gr. 60, with mill test reports and shall be epoxy coated. The reinforcing steel is to be accurately located in the forms and firmly held in place by steel wire supports, sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly but will be considered subsidiary to the Item "EPOXY COATED REINFORCING STEEL (GRADE 60)".

CONCRETE:

Concrete shall be poured in the dry, and all exposed corners shall be chamfered ¾" unless otherwise noted. All concrete in slab, rail and diaphragms shall be Class S(AE) with a minimum 28 day compressive strength, f'c = 4,000 psi.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurement of Class S(AE) Concrete. See Standard Drawing No. 55005 for allowable modifications and for tolerances when Permanent Steel Bridge Deck Forms are used.

The concrete deck (roadway surface) shall be given a tine finish in accordance with Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the girder. When permitted, the use of a longitudinal strike-off will require that a vertical camber adjustment be made in the strike-off to account for the future dead load deflection due to any railings.

STRUCTURAL STEEL:

Structural steel shall be ASTM A709 with grade and payment as specified in the plans. Grade 50W steel shall not be painted, and all exposed surfaces shall be cleaned in accordance with Subsection 807.84(e) unless noted otherwise. Grade 36 and Grade 50 steel shall be painted unless otherwise noted, and all exposed surfaces shall be cleaned in accordance with Subsection 807.84. Structural steel completely embedded in concrete may be ASTM A709, Gr. 36, Gr. 50 or Gr. 50W unless otherwise noted.

Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on approved shop drawings. Shapes and materials shown in the plans will be the basis of payment, and no additional compensation will be made for any adjustments due to substitutions.

Drawings show general features of design only. Shop drawings shall be prepared in accordance with the specifications, submitted and approval secured before fabrication is begun.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, whether temporary or permanent, a formal request with detailed drawings shall be submitted to the Engineer for approval. All welding shall conform to Subsection 807.26.

SPECIAL CAMBER NOTES

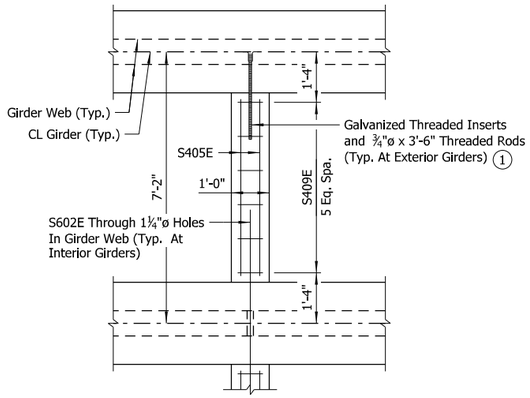
The camber and dead load deflection values shown on the plans are estimated based on the required minimum concrete strength for the prestressed concrete girders. The Contractor shall provide the Engineer with the following information:

A. Actual 28-Day concrete strength of prestressed concrete girders

B. Estimated age of prestressed concrete girders at time of erection

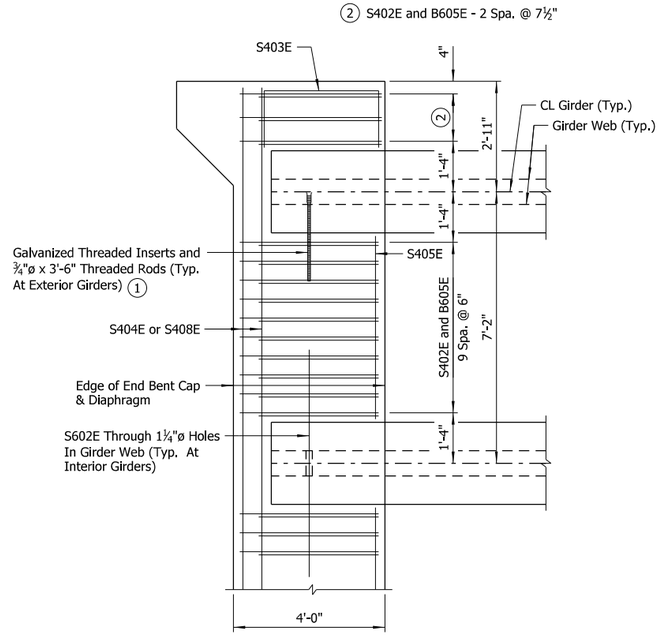
C. Profile of each girder under its own weight in final position

Following receipt of the above data, the Engineer will evaluate the dead load and. if necessary, will provide an updated deflection diagram to the Contractor.



PLAN - PARTIAL DEPTH INTERMEDIATE DIAPHRAGM

Scale: ½" = 1'-0"



PLAN - END BENT DIAPHRAGM

Scale: ½" = 1'-0"

1 See "TYPICAL GIRDER ELEVATION (TYPE IV) - 99'-0"" on Dwg. No. 66502 and "TYPICAL GIRDER ELEVATION (TYPE IV) - 109'-0"" on Dwg. No. 66516 for number and location. Galvanized Threaded Inserts shall be Dayton-Richmond F-42 Loop Ferule Inserts or approved equal. ¾"ø Galvanized Threaded Rods shall be ASTM A709, Grade 36 or AASHTO M 31 or M 322 Type A, Grade 60. Galvanizing shall be in accordance with AASHTO M 232, Class C or ASTM B695, Class 50. These items will not be paid for directly but shall be considered subsidiary to the item "PRESTRESSED CONCRETE GIRDERS (TYPE IV)."

STATE OF ARKANSAS
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SHEET 1 OF 2
COMMON SUPERSTRUCTURE DETAILS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: RAK DATE: DEC. 2020 FILENAME: b061615_s1.dgn
CHECKED BY: NVW DATE: FEB. 2021 SCALE: As Shown
DESIGNED BY: RAK DATE: DEC. 2020

BRIDGE NO. 07635, 07636, 07637 DRAWING NO. 66528

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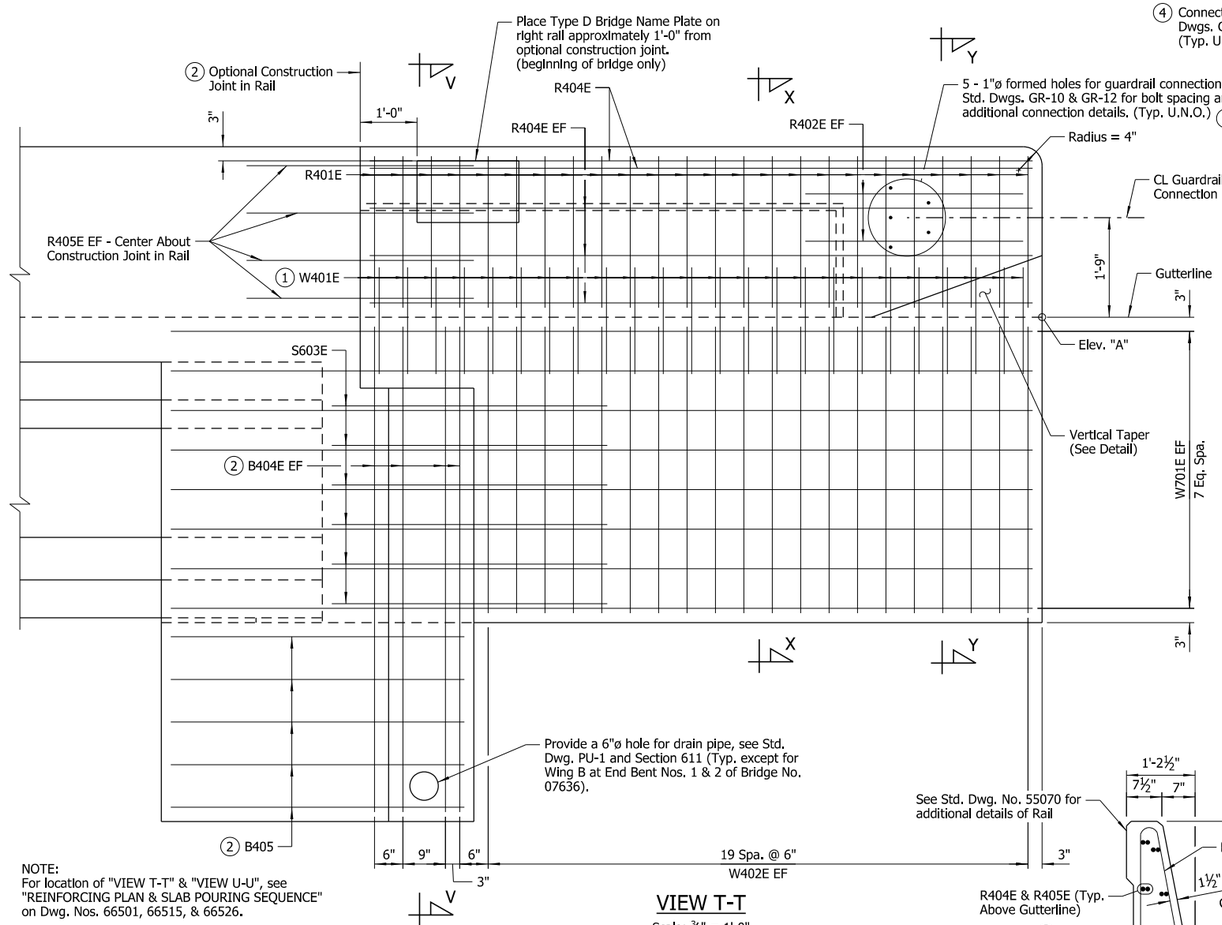
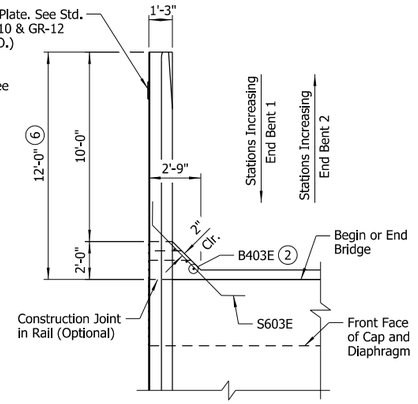
WORKSPACE: ARDOT Bridge (2019)
L:\2017\17017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\b061615x5_SS01_GN.dgn

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	100	136
		07635, 07636, 07637		COMMON		66529



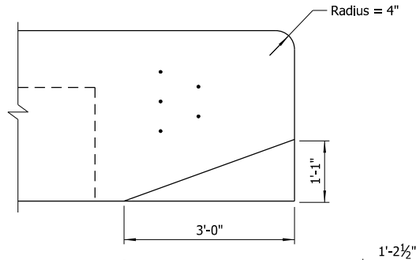
VIEW T-T

Scale: ¾" = 1'-0"



PLAN OF RAIL

Scale: ⅜" = 1'-0"



VERTICAL TAPER

Scale: ¾" = 1'-0"

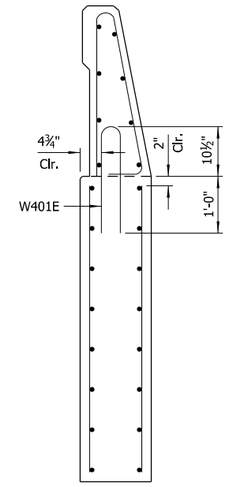
(4) Bridge end terminal is required for rail at Bridge No. 07635, Bent No. 2, Wing A only.

Modify the wing rail and connection detail above the gutterline as required by the manufacturer of the bridge end terminal. Reinforcing bars that are relocated or bent to fit the modified bridge rail should have minimum concrete cover.

Connector Plate not required at location of bridge end terminal, unless required by manufacturer of the bridge end terminal.

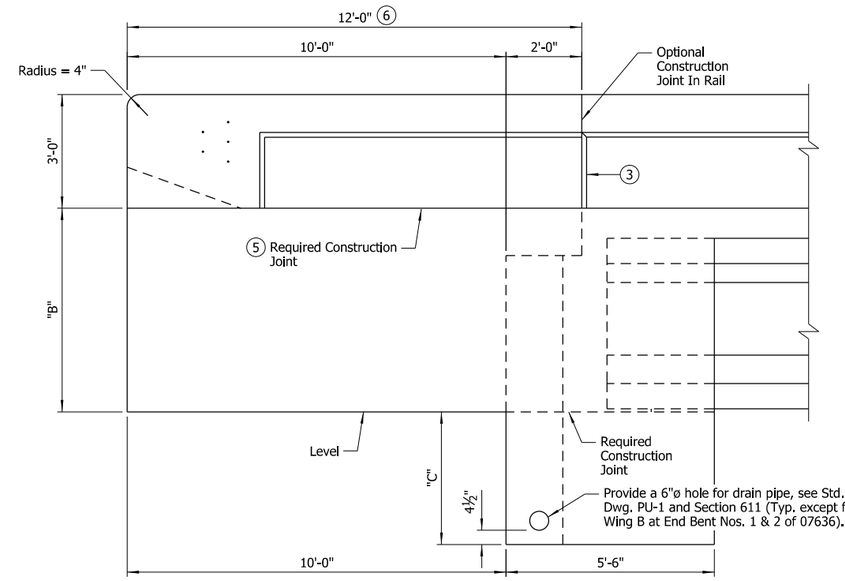
TABLE OF VARIABLES

Bridge No.	Bent No.	Wing	"A"	"B"	"C"
07635	1	A	215.30	5'-3½"	3'-6"
		B	215.30	5'-3½"	3'-6"
	2	A	215.37	5'-3½"	3'-6"
		B	215.37	5'-3½"	3'-6"
07636	1	A	216.11	5'-3¼"	3'-8 15/16"
		B	218.96	5'-4¾"	3'-6 5/16"
	2	A	216.19	5'-3½"	3'-8 5/16"
		B	218.56	5'-4"	3'-6 5/16"
07637	1	A	215.91	5'-3⅝"	3'-6"
		B	215.91	5'-3⅝"	3'-6"
	2	A	215.82	5'-3⅜"	3'-6"
		B	215.82	5'-3⅜"	3'-6"



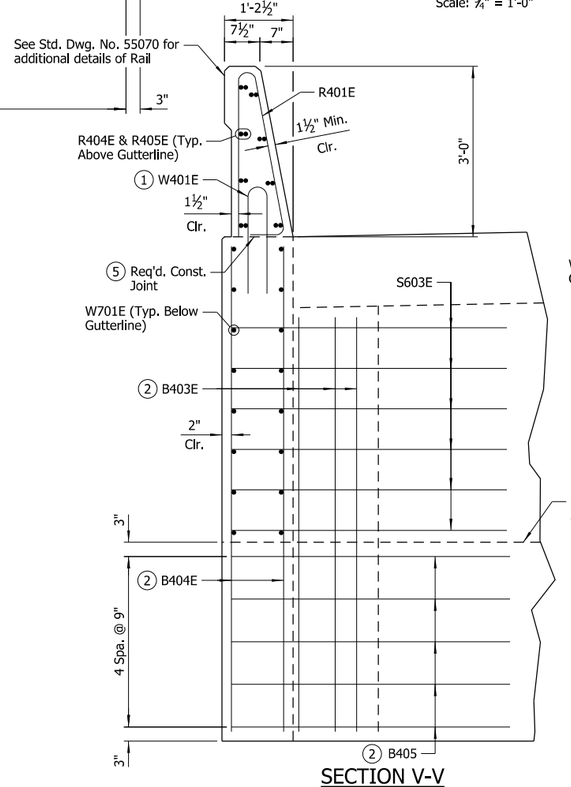
DETAIL A

Scale: ¾" = 1'-0"



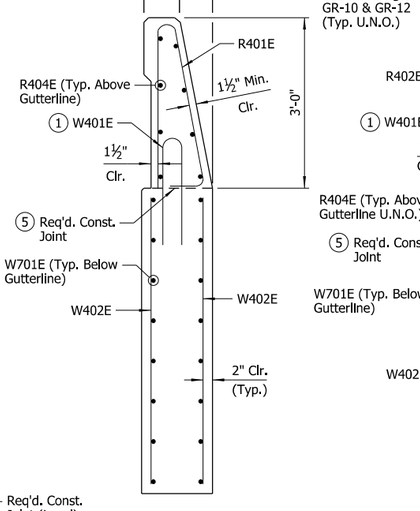
VIEW U-U

Scale: ½" = 1'-0"



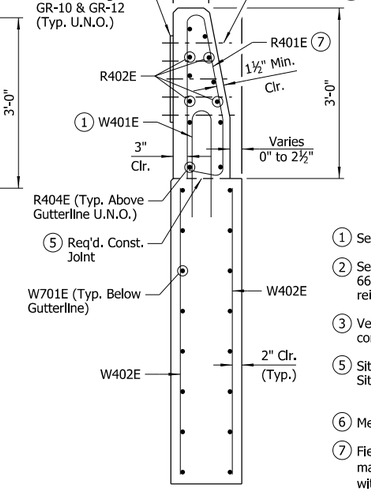
SECTION V-V

Scale: ¾" = 1'-0"



SECTION X-X

Scale: ¾" = 1'-0"



SECTION Y-Y

Scale: ¾" = 1'-0"

LEGEND

U.N.O. = Unless Noted Otherwise
EF = Each Face

(1) See "DETAIL A" for placement of Bars W401E.

(2) See "DETAILS OF END BENTS" on Dwg. Nos. 66495-66496, 66508-66510, & 66521-66522 for reinforcing and additional details.

(3) Vertical chamfer not required if optional construction joint is used.

(5) Site 1 & 3: match roadway slope
Site 2: match roadway slope (low side) level (high side)

(6) Measured along gutterline

(7) Field bend front leg of R401E bar as required to maintain minimum 1½" front face clearance within limits of taper

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14498
ADAM B. HALL

DIGITALLY SIGNED 11/3/2023
BRIDGE ENGINEER

SHEET 2 OF 2
COMMON SUPERSTRUCTURE DETAILS

ROUTE SEC.

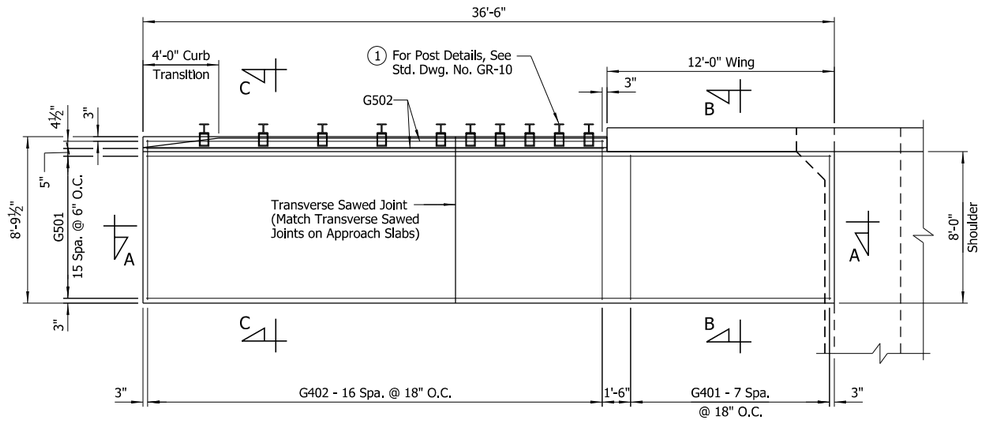
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	RAK	DATE:	DEC. 2020	FILENAME:	b061615_s2.dgn
CHECKED BY:	NVW	DATE:	FEB. 2021	SCALE:	As Shown
DESIGNED BY:	RAK	DATE:	DEC. 2020		

BRIDGE NO. 07635, 07636, 07637 DRAWING NO. 66529

abhall 11/3/2023 3:11:46 PM
WORKSPACE: ARDOT Bridge (2019)
L:\2017\1701628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\b061615x5_SS02_MD.dgn

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	101	136
		07635, 07636, 07637		APPROACH GUTTERS		66530



PLAN - TYPE 1 SPECIAL APPROACH GUTTER

(Shown For Begin Bridge Nos. 07635, 07636, & 07637.
End Bridge Nos. 07635, 07636, & 07637 Similar.)
Scale: ¼" = 1'-0"

NOTE:
All longitudinal lines within the limits of horizontal curves shall be on curves concentric with CL Construction. Adjustment to longitudinal bar lengths may be required. Transverse reinforcing shall be placed on lines radial to CL Construction.

BAR LIST - TYPE 1 SPECIAL APPROACH GUTTER

Mark	No. Req'd	Length	Pin Dia.
G401	8	7'-8"	Str.
G402	17	8'-5"	Str.
G501	16	36'-2"	Str.
G502	2	24'-2"	Str.

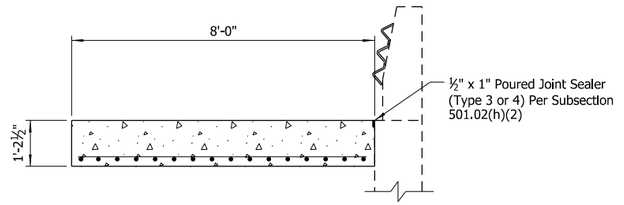
NOTE:
Bars shown are for Stage 2 Construction at Begin Bridge. Bars for Stage 1 Construction at Begin Bridge and Stage 1 and Stage 2 Construction at End Bridge are similar.

QUANTITIES
(FOR INFORMATION ONLY)

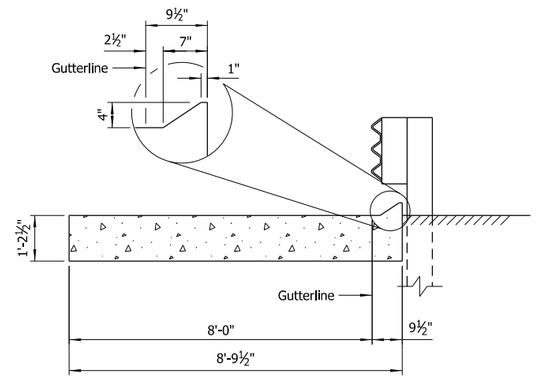
Type	Concrete	Reinforcing Steel (Gr. 60)
Type 1 Special	14.04 Cu. Yds.	791 lb.

NOTE:
Quantities shown are for one Type 1 Special Approach Gutter. Twelve Type 1 Special Approach Gutters are required.

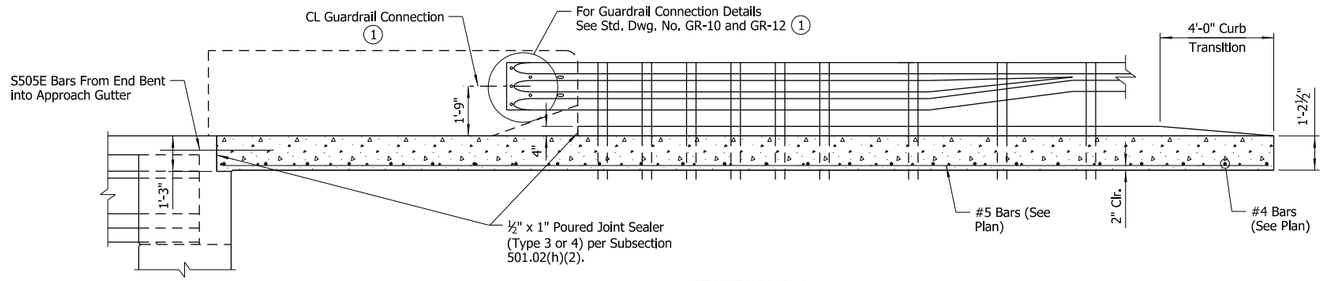
1 See Bridge Layouts for locations of guardrails.



SECTION B-B
No Scale



SECTION C-C
(Reinforcing Not Shown)
No Scale



SECTION A-A
No Scale

GENERAL NOTES

All concrete shall be Class S or Class S(AE) or mixture used for Portland Cement Concrete Pavement and shall be poured in the dry.

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

Approch Gutters will be measured and paid for in accordance with Section 504.

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DETAILS OF TYPE SPECIAL APPROACH GUTTERS

ROUTE SEC.

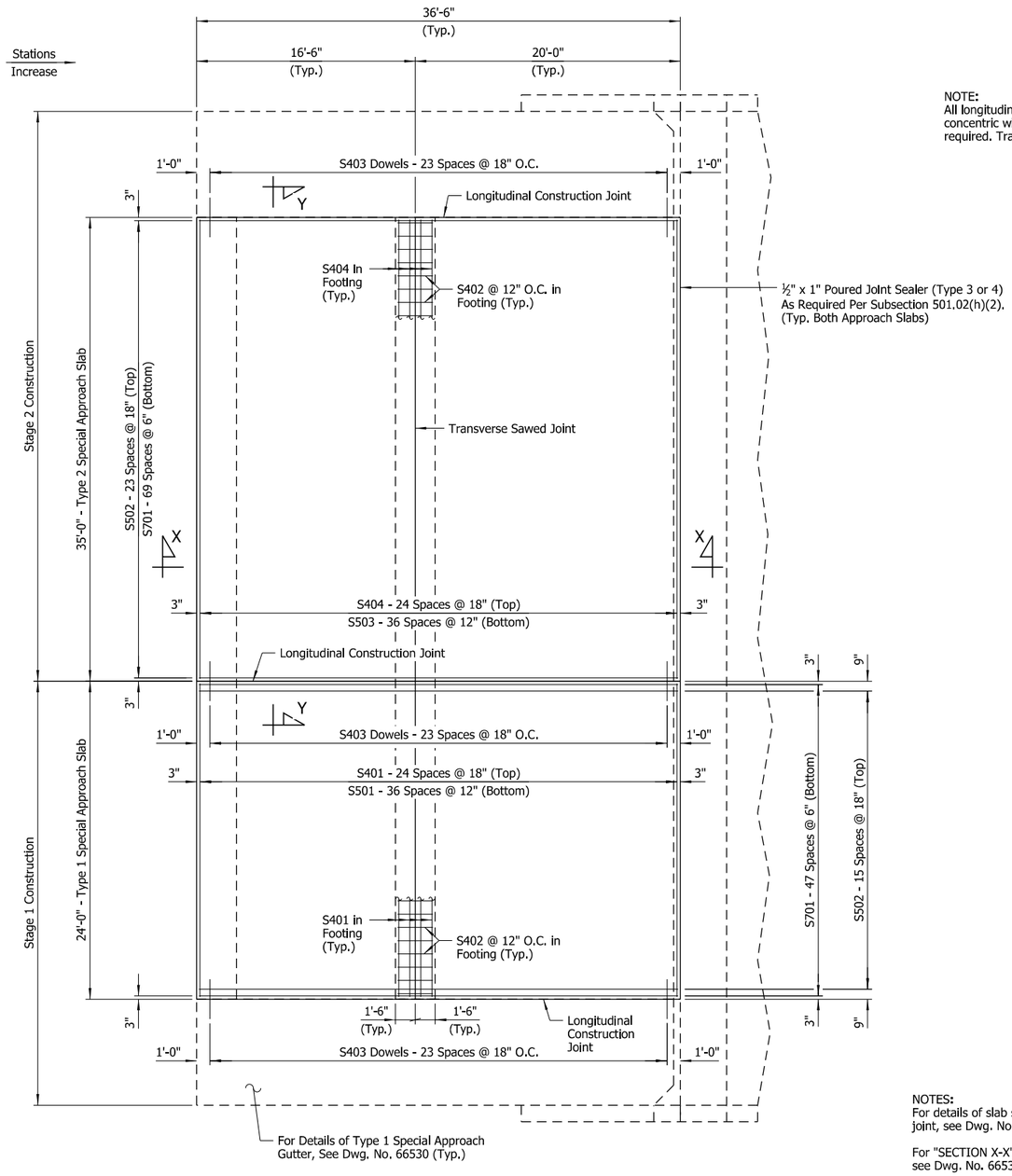
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JJB DATE: DEC. 2020 FILENAME: b061615_ag1.dgn
CHECKED BY: NVW DATE: MAR, 2021 SCALE: As Shown
DESIGNED BY: JJB DATE: DEC. 2020

BRIDGE NO. 07635, 07636, 07637 DRAWING NO. 66530

abhall 11/3/2023 3:11:47 PM
WORKSPACE: ARDOT Bridge (2019)
L:\2017\17017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\b061615x6_S601_AG.dgn

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	102	136
		07635, 07636, 07637	APPROACH SLABS			66531



PLAN - TYPES 1 & 2 SPECIAL APPROACH SLABS

(Shown For Begin Bridge Nos. 07635, 07636, & 07637, End Bridge Similar)

Scale: 3/16" = 1'-0"

NOTE:
All longitudinal lines within the limits of horizontal curves shall be on curves concentric with CL Construction. Adjustment to longitudinal bar lengths may be required. Transverse reinforcing shall be placed on lines radial to CL Construction.

NOTES:
For details of slab supports and longitudinal construction joint, see Dwg. No. 66532.

For "SECTION X-X", "SECTION Y-Y" & "GENERAL NOTES", see Dwg. No. 66532.

BAR LIST - TYPE 1 SPECIAL APPROACH SLAB

Mark	No. Req'd	Length	Pin Dia.
S401	29	23'-8"	Str.
S402	25	2'-8"	Str.
S403	48	3'-0"	Str.
S501	37	23'-8"	Str.
S502	16	36'-2"	Str.
S701	48	36'-2"	Str.

BAR LIST - TYPE 2 SPECIAL APPROACH SLAB

Mark	No. Req'd	Length	Pin Dia.
S402	36	2'-8"	Str.
S403	24	3'-0"	Str.
S404	29	34'-8"	Str.
S502	24	36'-2"	Str.
S503	37	34'-8"	Str.
S701	70	36'-2"	Str.

QUANTITIES
(FOR INFORMATION ONLY)

TYPE	Class S(AE) Concrete	Reinforcing Steel (Gr. 60)
Type 1 Special	48.97 Cu. Yds.	5,498 lb.
Type 2 Special	71.43 Cu. Yds.	8,202 lb.

NOTE:
Quantities shown are for one Type 1 Special Approach Slab and one Type 2 Special Approach Slab. Six Type 1 Special Approach Slabs and six Type 2 Special Approach Slabs are required.

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SHEET 1 OF 2
DETAILS OF TYPE SPECIAL APPROACH SLABS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JJB DATE: DEC. 2020 FILENAME: b061615_as1.dgn
CHECKED BY: NVW DATE: MAR. 2021 SCALE: As Shown
DESIGNED BY: JJB DATE: DEC. 2020

BRIDGE NO. 07635, 07636, 07637 DRAWING NO. 66531

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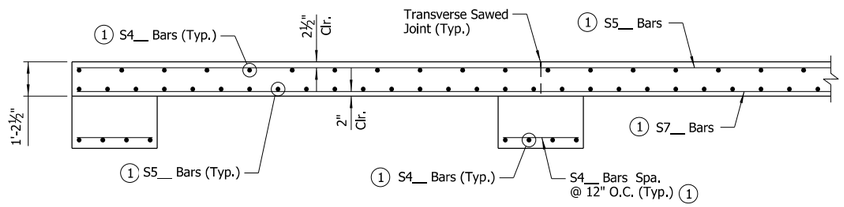
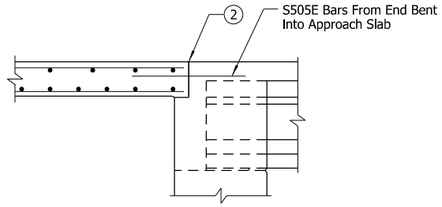
WORKSPACE: ARDOT Bridge (2019)
L:\2017\17017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\b061615x6_S602_AS.dgn

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	061615	103	136
		07635, 07636, 07637 APPROACH SLABS				66532

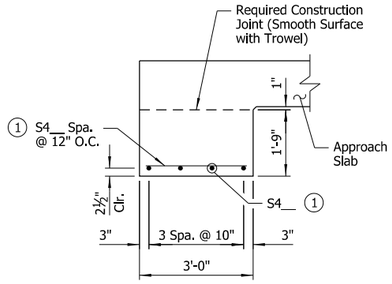


SECTION X-X

No Scale

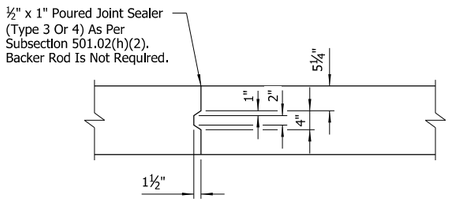


NOTE:
Bar positions and clearances from the forms shall be maintained by means of stays, ties, hangers or other approved devices sufficient in size and number to prevent displacement during construction, per Subsection 804.06.



DETAILS OF SUPPORT AT END OF SLAB

No Scale



DETAILS OF LONGITUDINAL CONSTRUCTION JOINT

No Scale

GENERAL NOTES

All concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi and shall be poured in the dry.

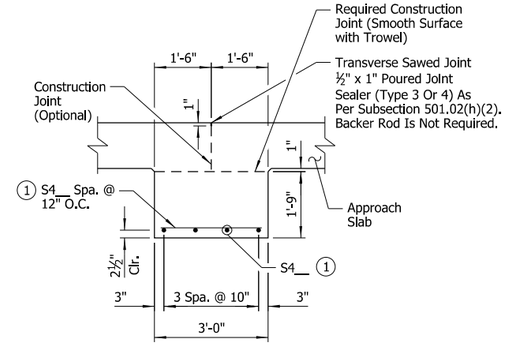
All reinforcing steel shall be Grade 60 (Yield Strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

Approach Slabs will be measured and paid for in accordance with Section 504.

The surface finish for Approach Slabs shall match that used on the bridge deck.

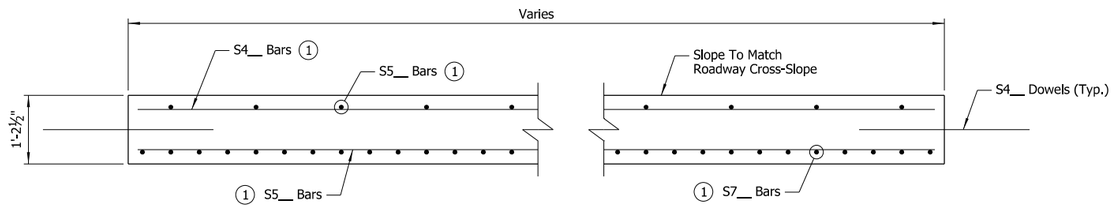
1 See Approach Slab Plans for bar marks.

2 ½" x 1" Poured Joint Sealer (Type 3 or 4) as per Subsection 501.02(h)(2).



DETAILS OF INTERIOR SUPPORT OF SLAB

No Scale



SECTION Y-Y

No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14498
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BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF TYPE SPECIAL APPROACH SLABS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY:	JJB	DATE:	DEC. 2020	FILENAME:	b061615_as2.dgn
CHECKED BY:	NVW	DATE:	MAR. 2021	SCALE:	As Shown
DESIGNED BY:	JJB	DATE:	DEC. 2020		

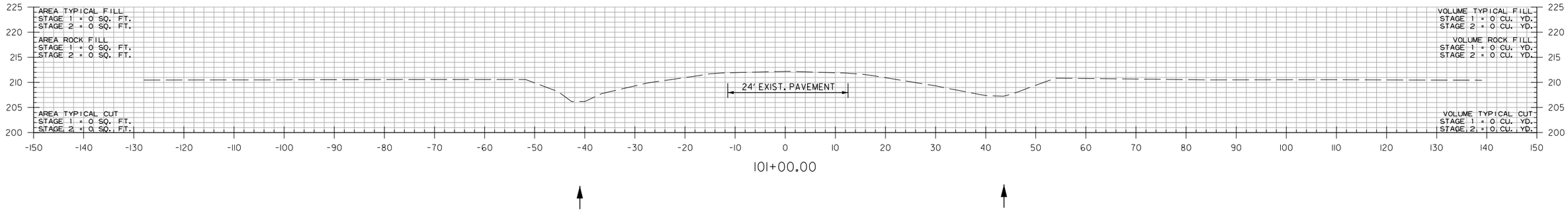
BRIDGE NO. 07635, 07636, 07637 DRAWING NO. 66532

abhall 11/3/2023 3:11:47 PM
WORKSPACE: ARDOT Bridge (2019)
L:\2017\17017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\b061615x6_5603_AS.dgn

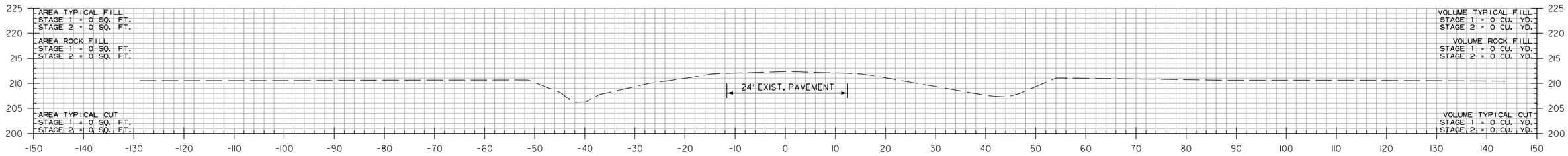
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
01-24-24			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		104	136
JOB NO.		061615		

(2) CROSS SECTIONS



101+00.00



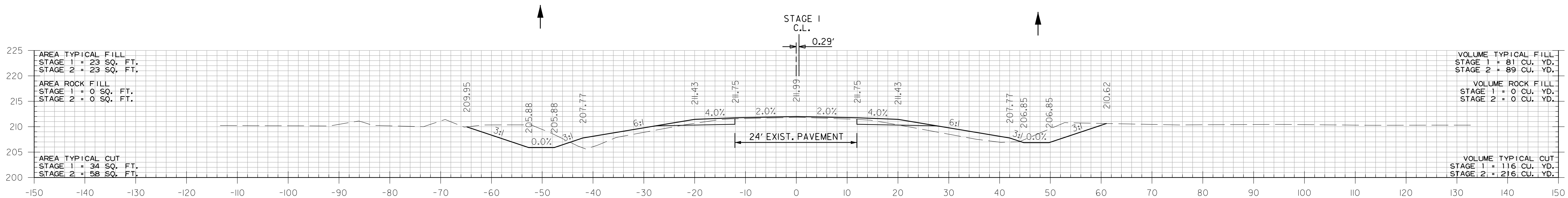
100+40.00

STA. 100+40.00 BEGIN 100' TRANSITION

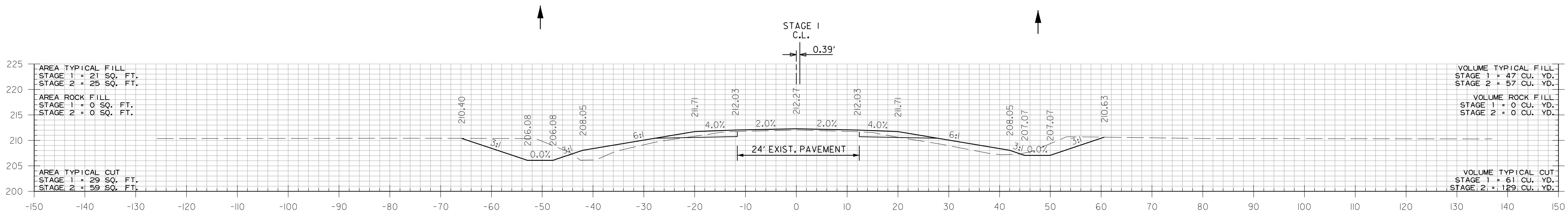
100+00.00

SITE 1
STA. 100+00 TO STA. 101+00

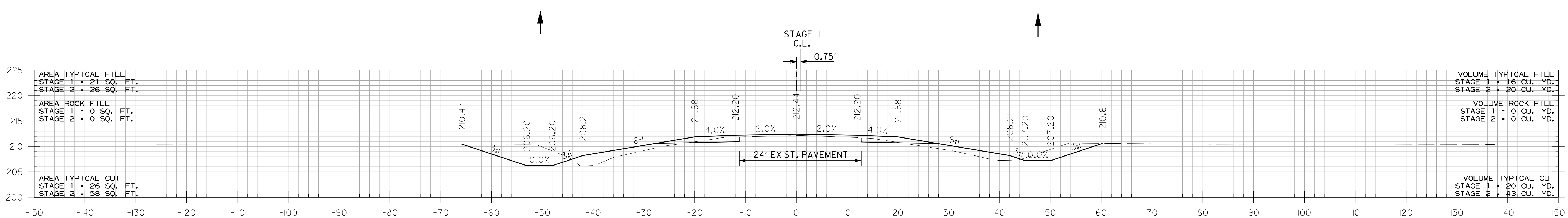
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
01-24-24				6	ARK.		105	136
				JOB NO.		061615		
				(2)	CROSS SECTIONS			



103+00.00



102+00.00



STA. 101+40.00
BEGIN SP. DT. LT. -0.20%
ELEV. 206.20

101+40.00
STA. 101+40.00
BEGIN SITE 1

STA. 101+40.00
BEGIN SP. DT. RT. -0.22%
ELEV. 207.20

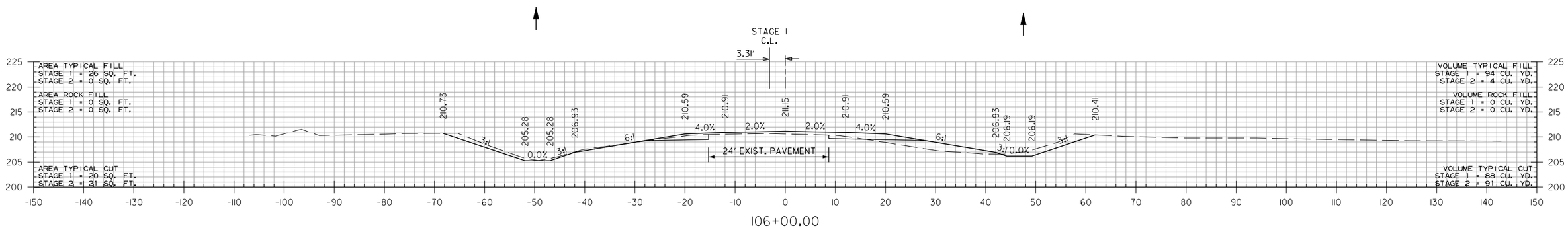
SITE 1
STA. 101+40 TO STA. 103+00

CGGervasini 1/25/2024 2:40:26 PM
WORKSPACE: AHTD
L:\2017\170628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\r061615_CX_HWY 63_SITE 1.dgn
REVISED DATE:

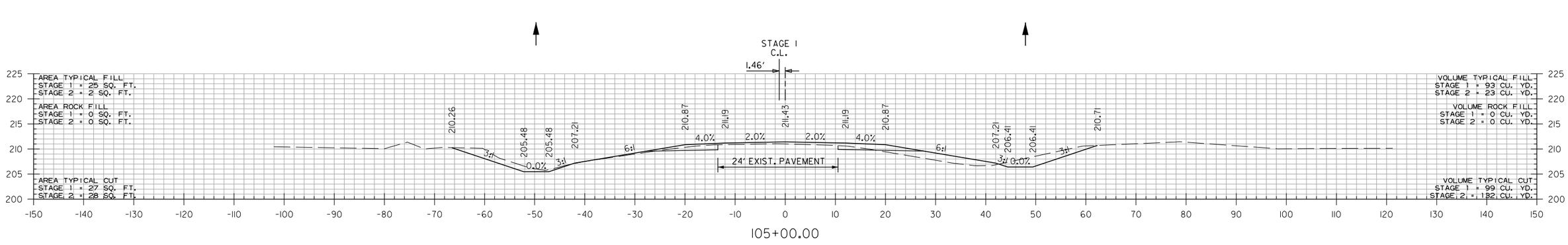
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
01-24-24			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		106	136
JOB NO.		061615		

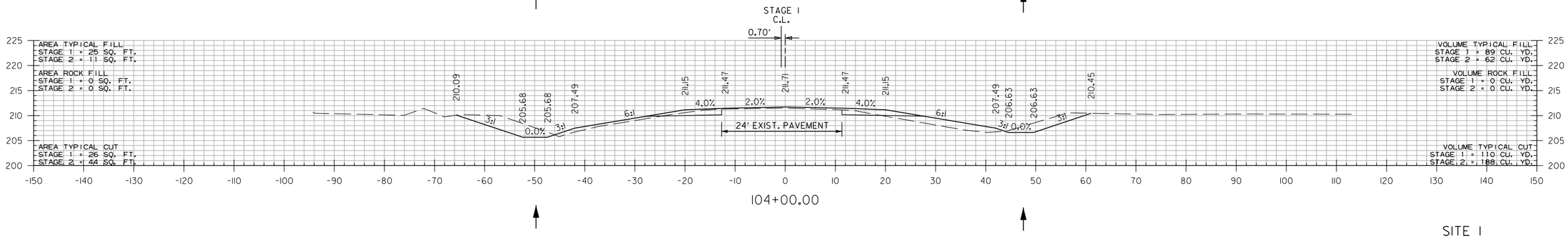
(2) CROSS SECTIONS



106+00.00



105+00.00



104+00.00

SITE 1
STA. 104+00 TO STA. 106+00

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WORKSPACE: AHTD
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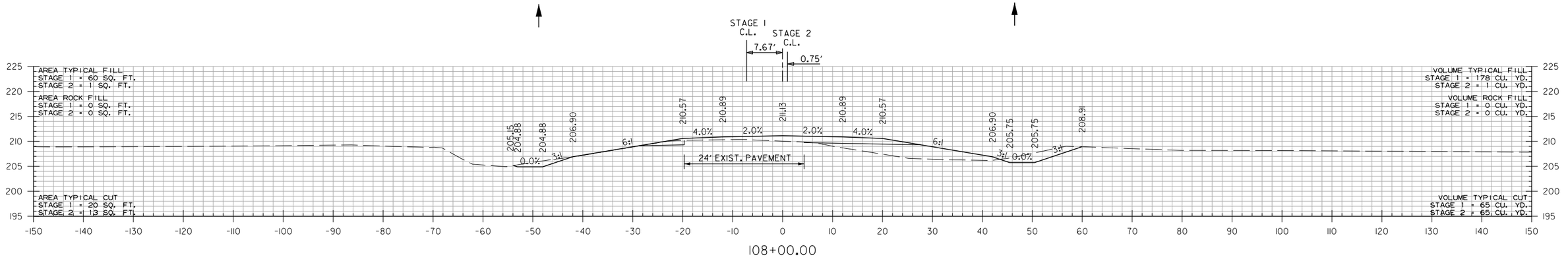
REVISED DATE:

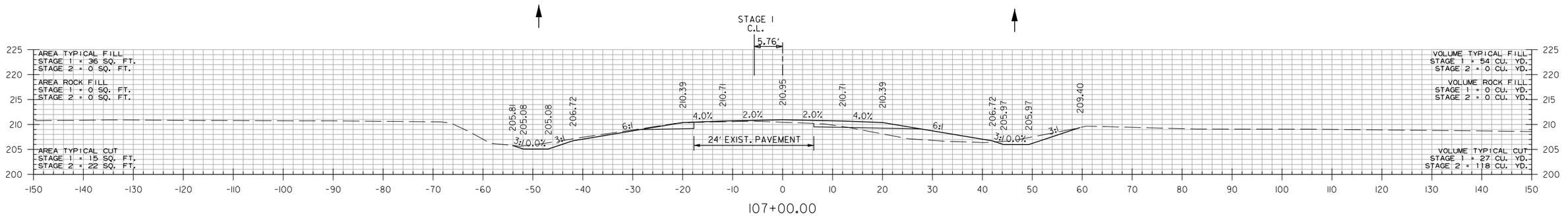
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
01-24-24			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		107	136
JOB NO.		061615		

(2) CROSS SECTIONS

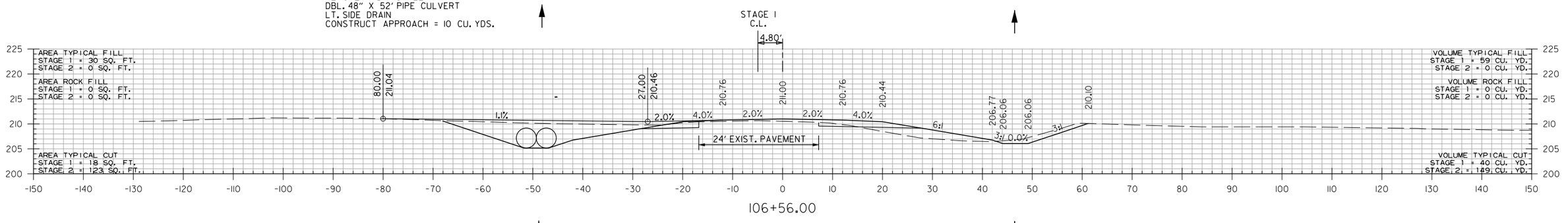


108+00.00



107+00.00

STA. 106+56 IN PLACE
DBL. 36" X 30' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
DBL. 48" X 52' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 10 CU. YDS.



106+56.00

SITE 1
STA. 106+56 TO STA. 108+00

CGGervasini 1/25/2024 2:40:27 PM
WORKSPACE: AHTD
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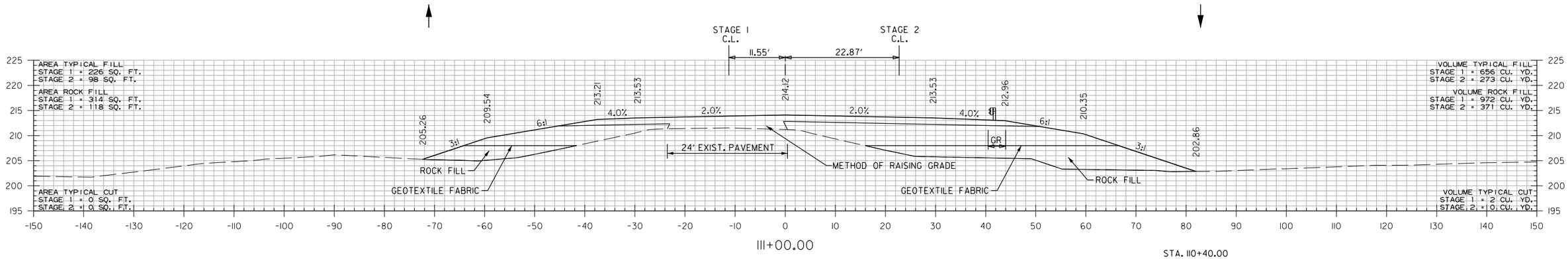
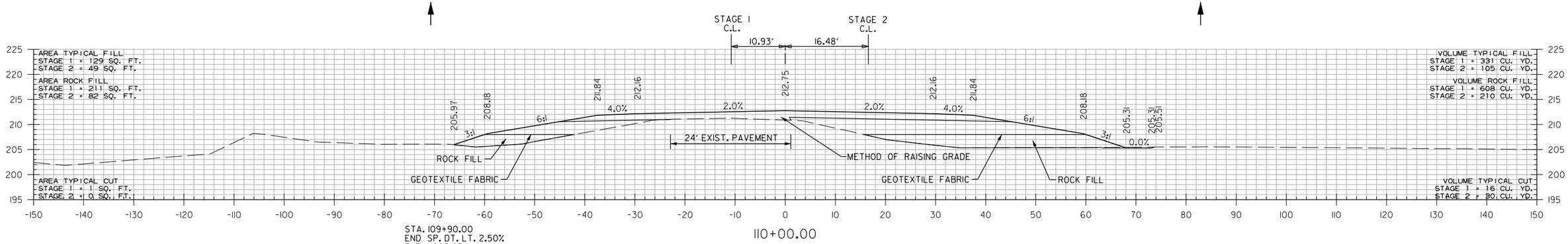
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
01-24-24				6	ARK.		108	136
				JOB NO.		061615		
				(2)		CROSS SECTIONS		



111+00.00

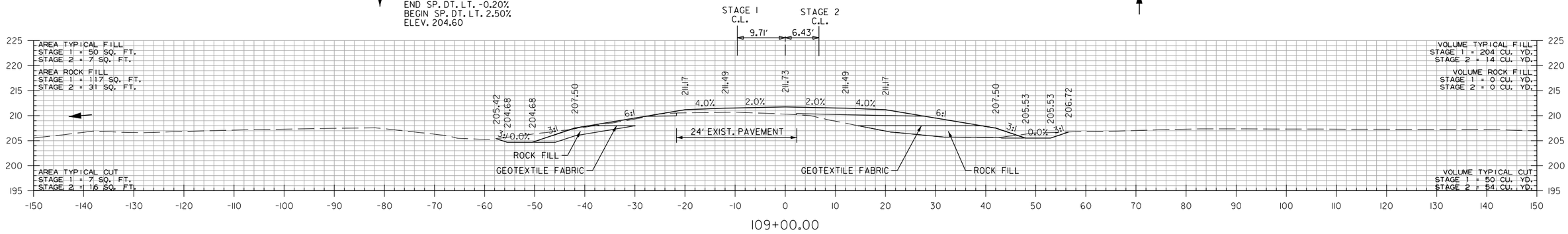
STA. 110+40.00
END SP. DT. RT. -.022%
ELEV. 205.22



STA. 109+90.00
END SP. DT. LT. 2.50%
ELEV. 205.85

110+00.00

STA. 109+40.00
END SP. DT. LT. -0.20%
BEGIN SP. DT. LT. 2.50%
ELEV. 204.60



109+00.00

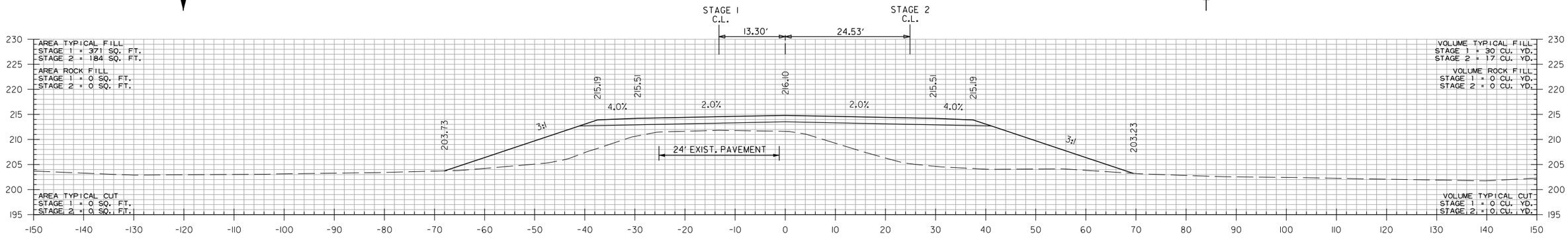
STA. 109+00.00
BEGIN ROCK FILL LT.

STA. 109+00.00
BEGIN ROCK FILL RT.

SITE 1
STA. 109+00 TO STA. 111+00

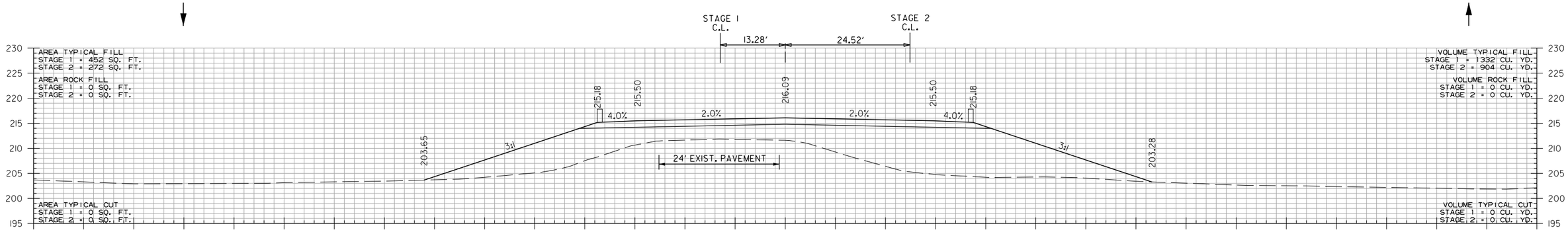
CGGervasini 1/25/2024 2:40:27 PM
WORKSPACE: AHTD
L:\2017\17017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\r061615_CX_HWY 63_SITE 1.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
01-24-24				6	ARK.		109	136
				JOB NO.		061615		
				(2) CROSS SECTIONS				



113+02.00

STA. 113+02.00 BEGIN BRIDGE



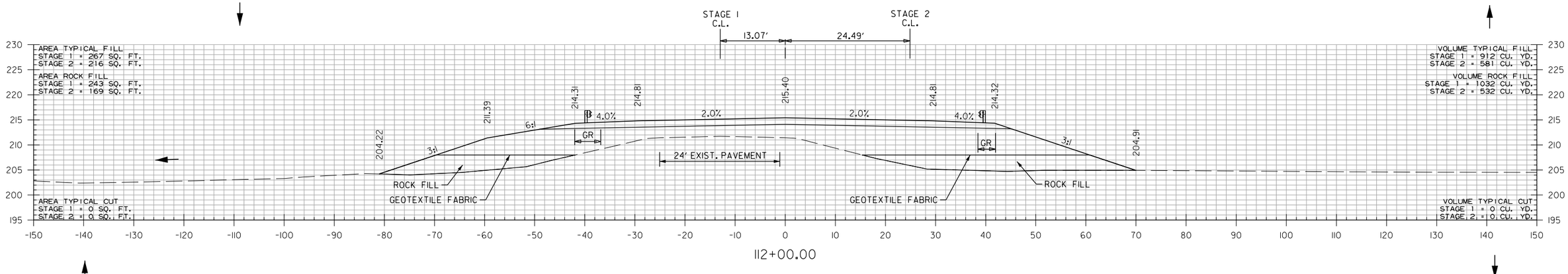
113+00.00

AREA ROCK FILL
STAGE 1 = 267 SQ. FT.
STAGE 2 = 136 SQ. FT.

STA. 112+80.00
END ROCK FILL LT.

STA. 112+80.00
END ROCK FILL RT.

VOLUME ROCK FILL
STAGE 1 = 756 CU. YD.
STAGE 2 = 452 CU. YD.

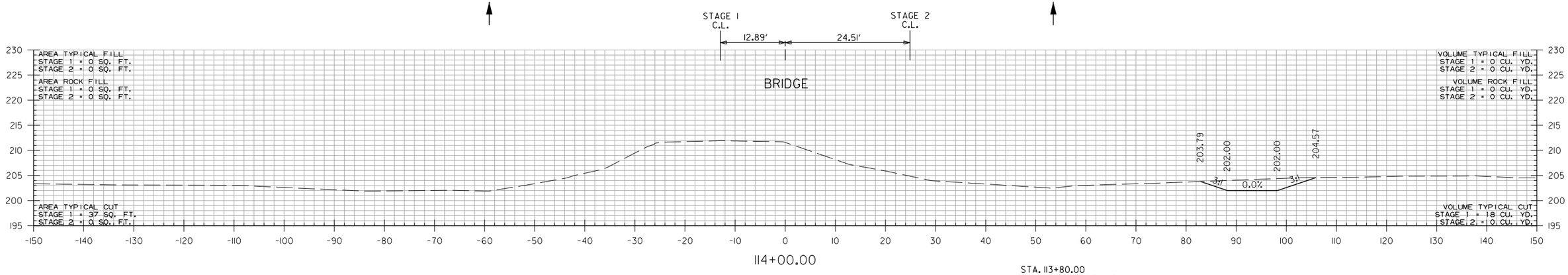


112+00.00

SITE 1
STA. 112+00 TO STA. 113+02

CGGervasini 1/25/2024 2:40:27 PM
WORKSPACE: AHTD
L:\20IT\170I7628 - 06165 Wolf Bayou Honey-La Grue Creeks\Drawings\r06165_CX.HWY 63.SITE 1.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
01-24-24				6	ARK.		110	136
				JOB NO.		061615		
				(2)		CROSS SECTIONS		

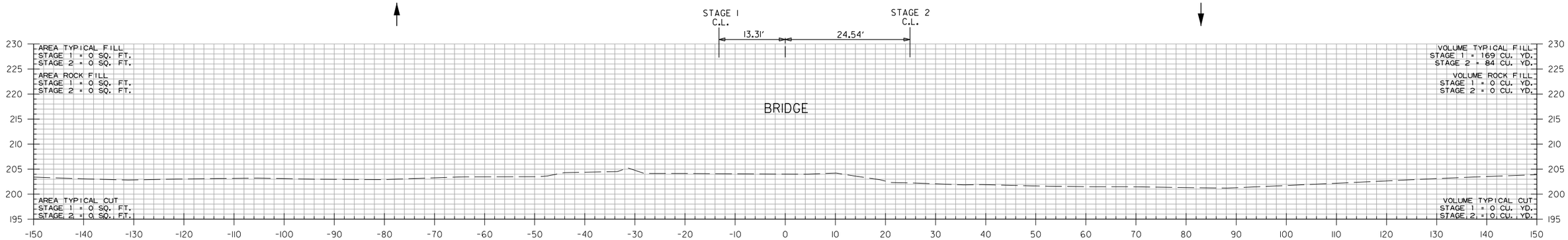


114+00.00

STA. 113+80.00
BEGIN SP. DT. RT. 0.50%
ELEV. 201.90

113+74.12

STA. 113+74.12 BEGIN TOE OF SLOPE
AT ELEVATION 204.00



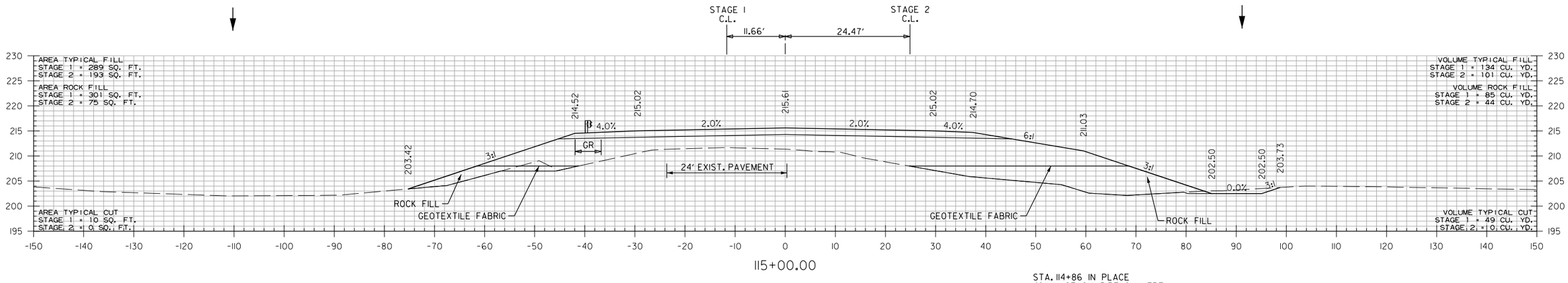
113+26.67

STA. 113+26.67 END TOE OF SLOPE
AT ELEVATION 203.96

SITE 1
STA. 113+27 TO STA. 114+00

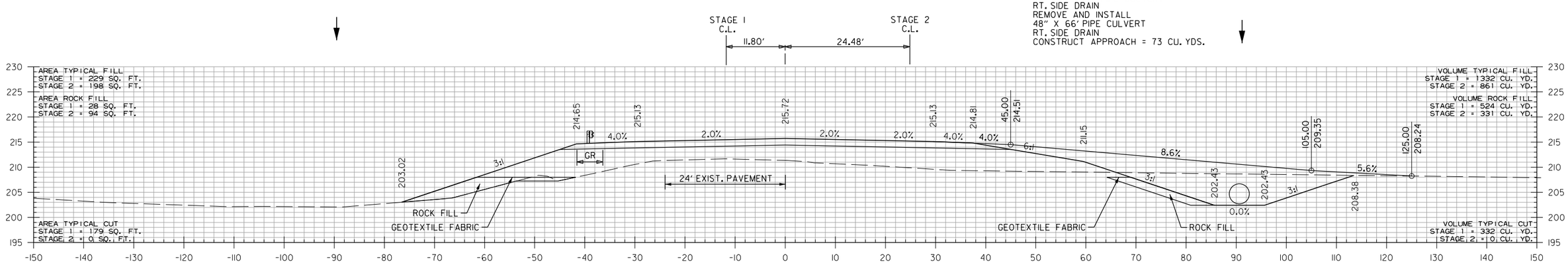
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
01-24-24				6	ARK.		111	136
				JOB NO.		061615		
				(2)		CROSS SECTIONS		

STA. 115+00.00
END SP. DT. RT. 0.50%
ELEV. 202.50



115+00.00

STA. 114+86 IN PLACE
48" X 27' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
48" X 66' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 73 CU. YDS.



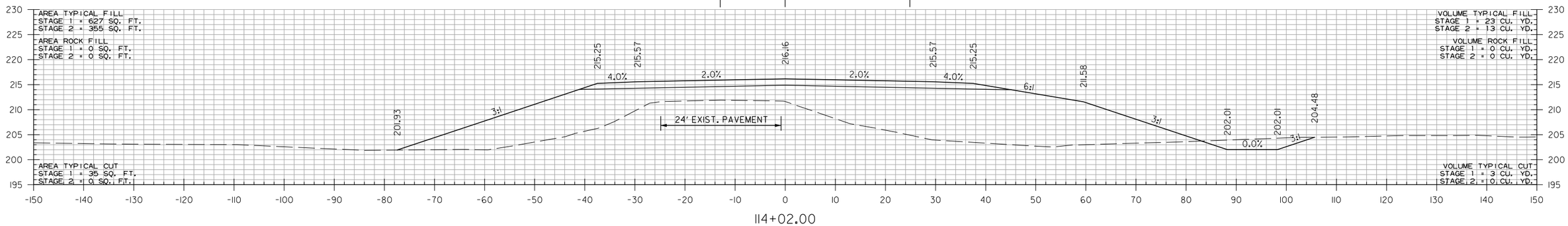
114+86.00

AREA ROCK FILL
STAGE 1 = 428 SQ. FT.
STAGE 2 = 194 SQ. FT.

STA. 114+24.00
BEGIN ROCK FILL LT.

STA. 114+24.00
BEGIN ROCK FILL RT.

VOLUME ROCK FILL
STAGE 1 = 0 CU. YD.
STAGE 2 = 0 CU. YD.



114+02.00

STA. 114+02.00 END BRIDGE

SITE 1
STA. 114+02 TO STA. 115+00

CGGervosini 1/25/2024 2:40:28 PM
WORKSPACE: AHTD
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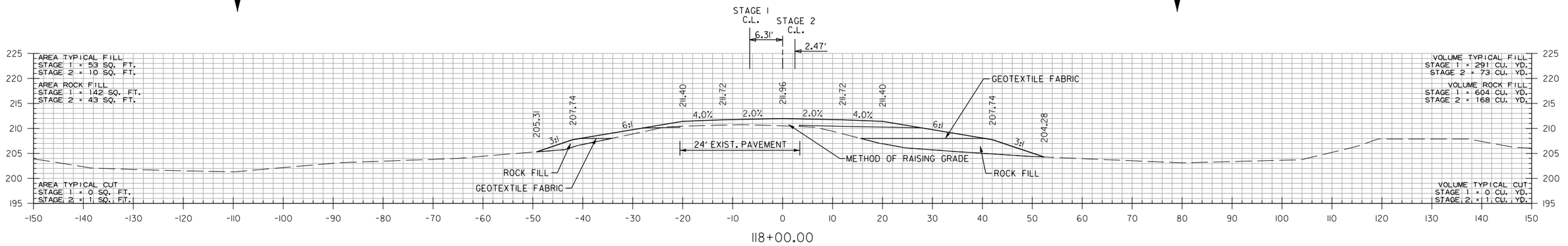
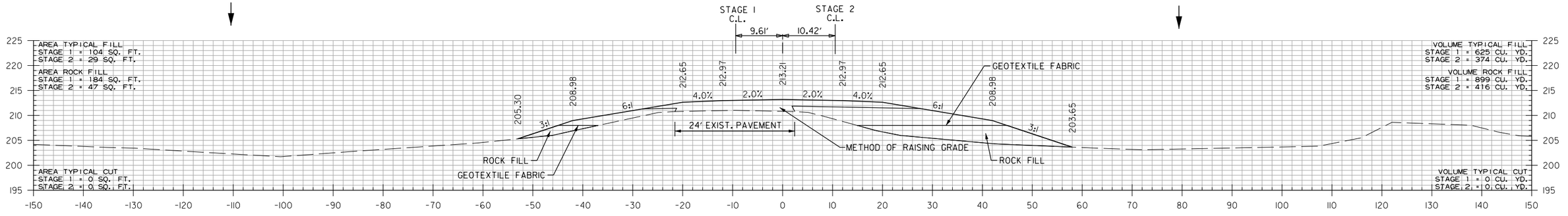
REVISED DATE:

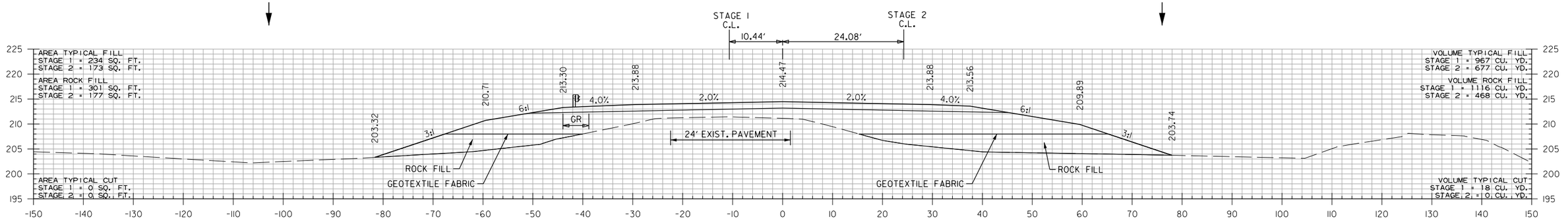
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
01-24-24				6	ARK.		112	136
				JOB NO.		061615		
				(2) CROSS SECTIONS				



118+00.00



117+00.00



116+00.00

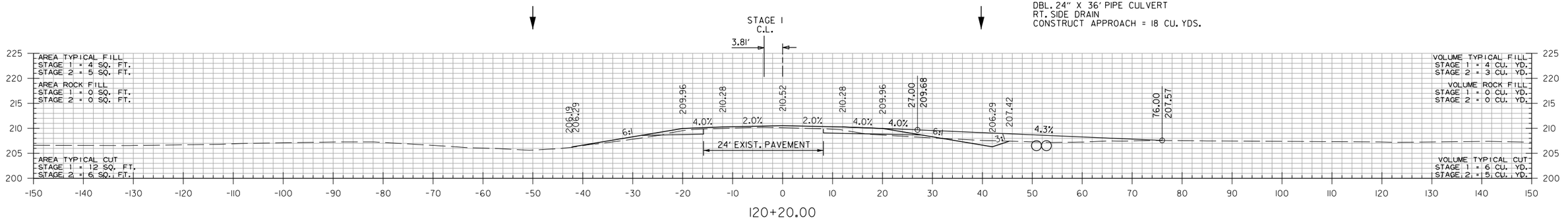
SITE 1
STA. 116+00 TO STA. 118+00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
01-24-24			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		113	136
JOB NO.		061615		

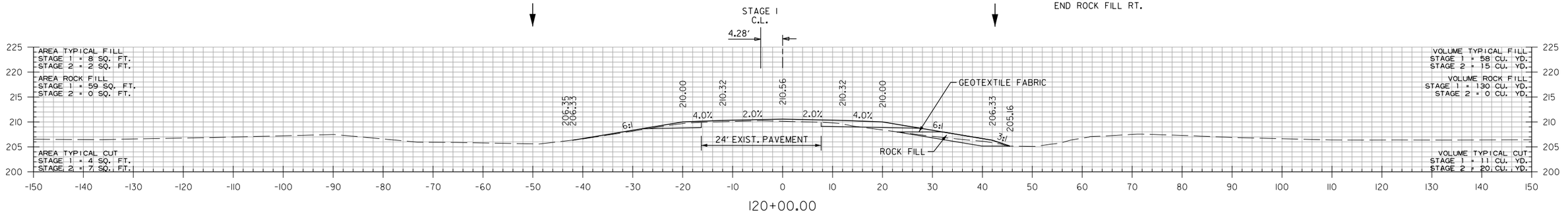
(2) CROSS SECTIONS

STA. 120+20 IN PLACE
RT. SIDE DRAIN
REMOVE AND INSTALL
DBL. 24" X 36' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 18 CU. YDS.



120+20.00

STA. 120+00.00
END ROCK FILL RT.

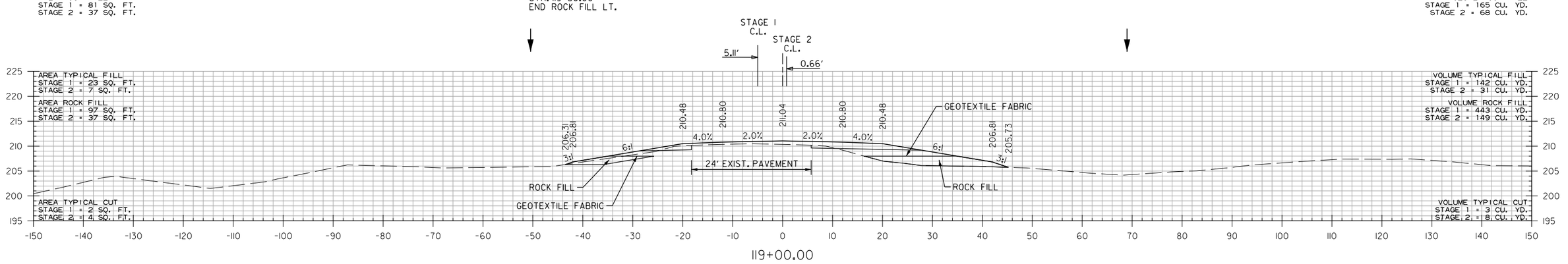


120+00.00

AREA ROCK FILL
STAGE 1 = 81 SQ. FT.
STAGE 2 = 37 SQ. FT.

STA. 119+50.00
END ROCK FILL LT.

VOLUME ROCK FILL
STAGE 1 = 165 CU. YD.
STAGE 2 = 68 CU. YD.



119+00.00

SITE 1
STA. 119+00 TO STA. 120+20

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WORKSPACE: AHTD
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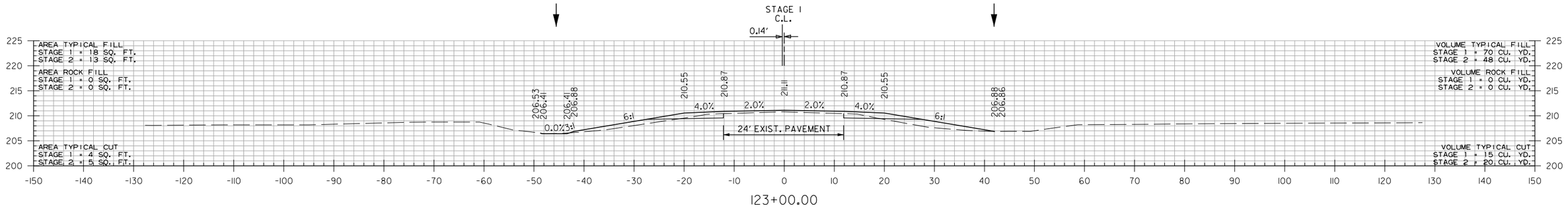
REVISED DATE:

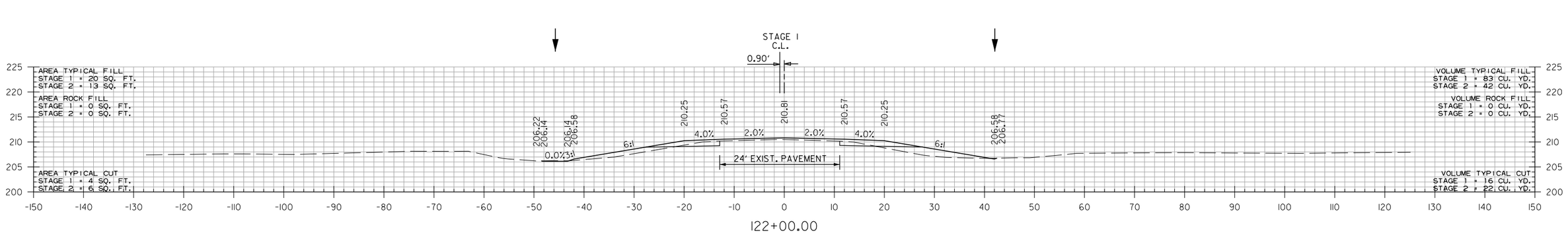
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
01-24-24			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		114	136
JOB NO.		061615		

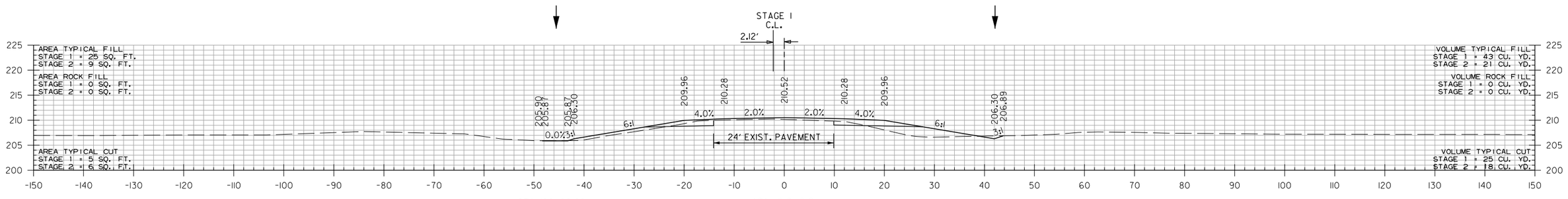
(2) CROSS SECTIONS



123+00.00



122+00.00



STA. 120+80.00
BEGIN SP. DT. LT. 0.27%
ELEV. 205.82

121+00.00

SITE 1
STA. 121+00 TO STA. 123+00

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WORKSPACE: AHTD
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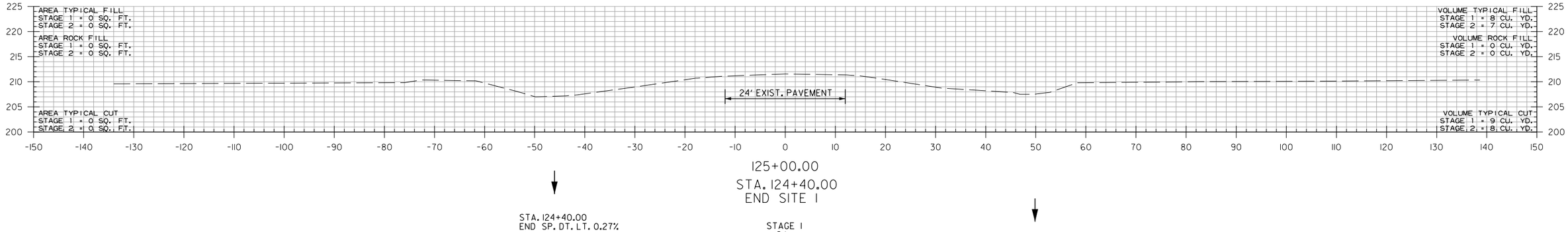
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
01-24-24			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		115	136
JOB NO.		061615		

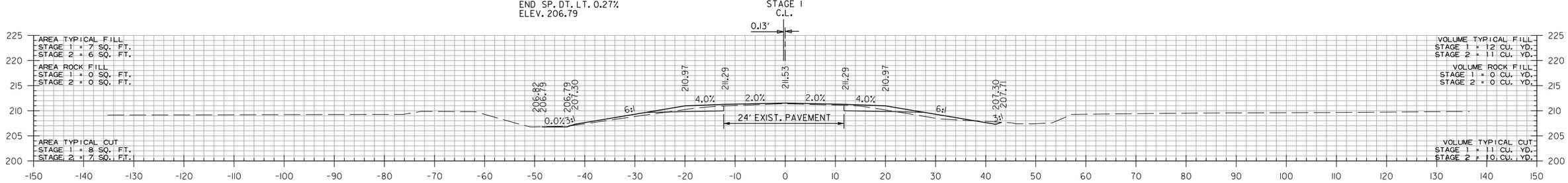
(2) CROSS SECTIONS



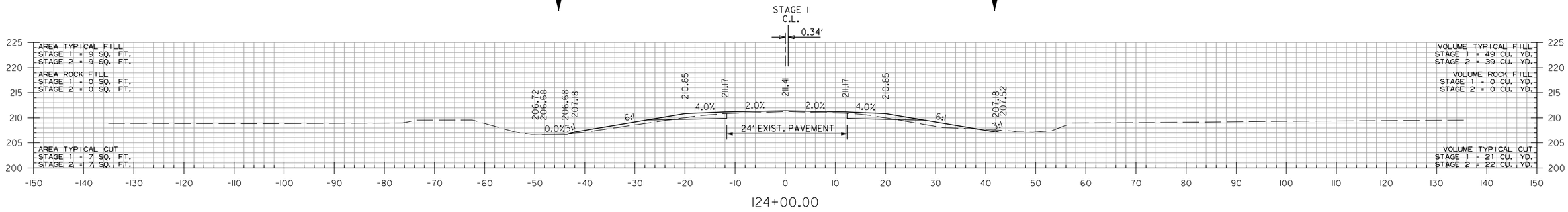
125+00.00

STA. 124+40.00
END SITE 1

STA. 124+40.00
END SP. DT. LT. 0.27%
ELEV. 206.79



124+40.00



124+00.00

SITE 1
STA. 124+00 TO STA. 125+00

CGGervasini 1/25/2024 2:40:29 PM
WORKSPACE: AHTD
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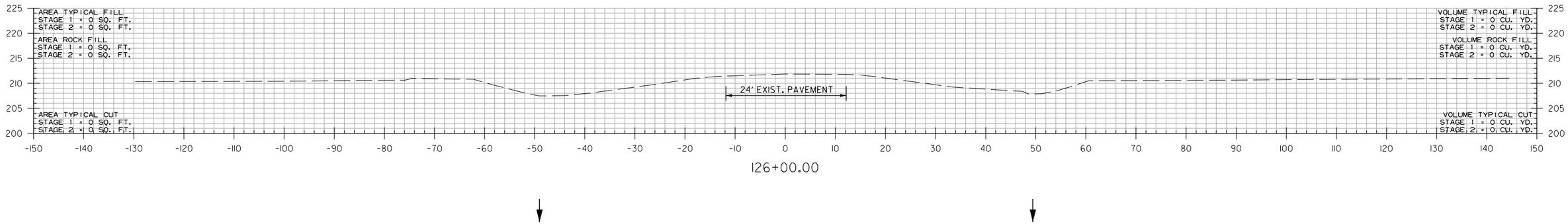
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
01-24-24			

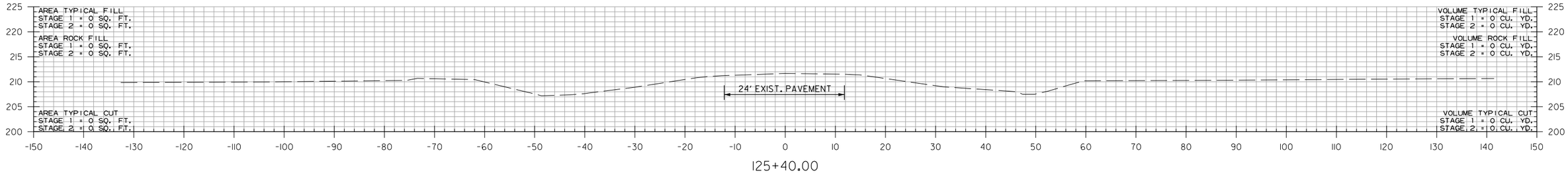
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		116	136
JOB NO.		061615		

(2) CROSS SECTIONS



126+00.00

STA. 125+40.00 END 100' TRANSITION



125+40.00

SITE 1
STA. 125+40 TO STA. 126+00

CGervasini 1/25/2024 2:40:29 PM
WORKSPACE: AHTD
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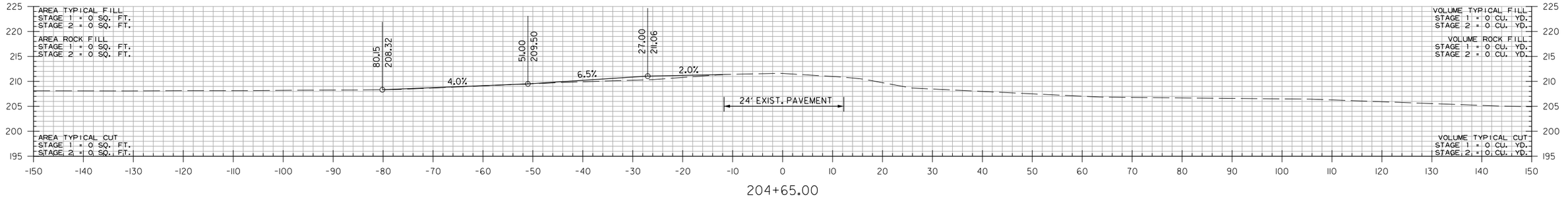
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
01-24-24			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		117	136
JOB NO.		061615		
(2)	CROSS SECTIONS			

STA. 204+65 CONSTRUCT
APPROACH ON LT. = 24 CU. YDS.

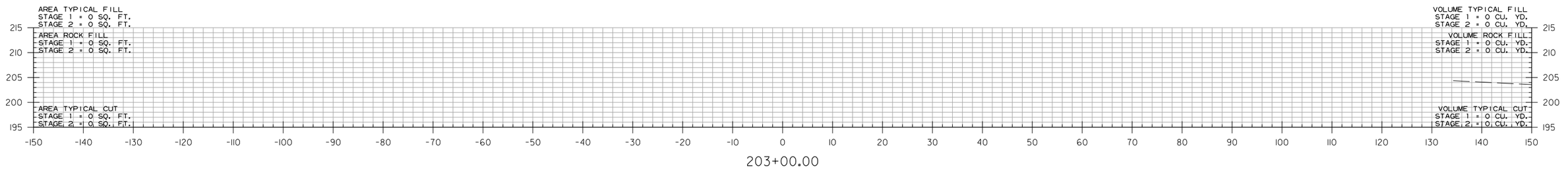


204+65.00

204+00.00

STA. 204+00.00 BEGIN 100' TRANSITION

STA. 204+00.00 MATCH EXIST. SUPERELEVATION



203+00.00

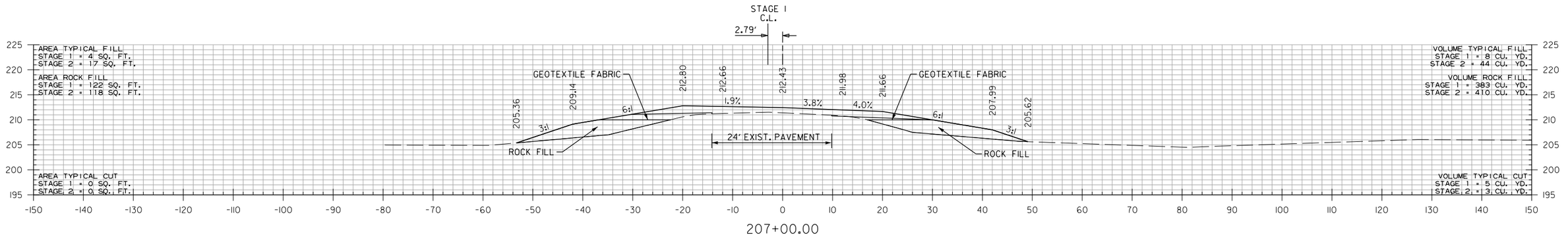
SITE 2
STA. 203+00 TO STA. 204+65

CGGervasini 1/25/2024 2:40:29 PM
WORKSPACE: AHTD
L:\2017\17017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\r061615_CX_HWY 63_SITE 2.dgn
REVISED DATE:

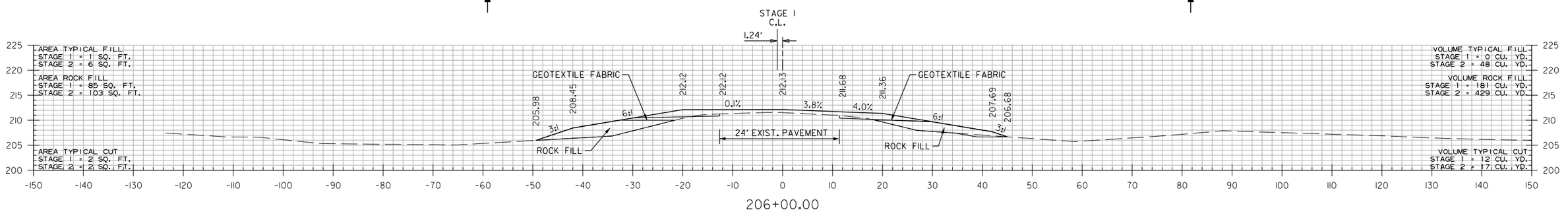
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
01-24-24			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		118	136
JOB NO.		061615		

(2) CROSS SECTIONS



207+00.00

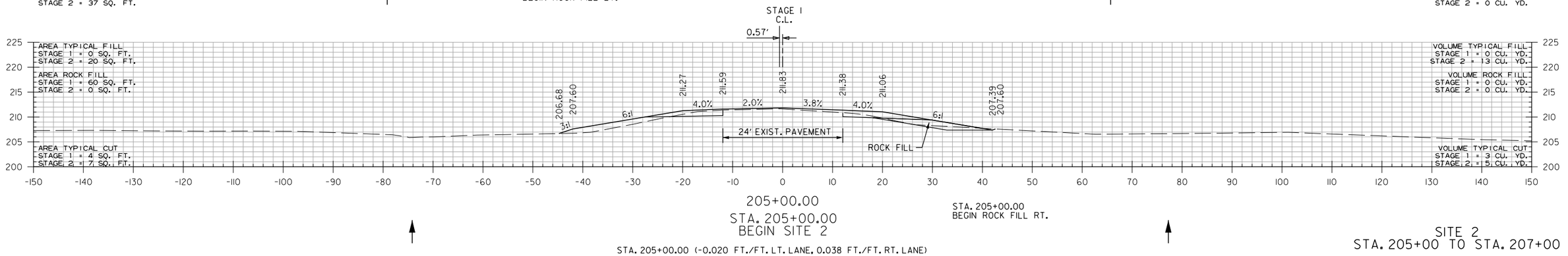


206+00.00

AREA ROCK FILL
STAGE 1 = 65 SQ. FT.
STAGE 2 = 37 SQ. FT.

STA. 205+35.00
BEGIN ROCK FILL LT.

VOLUME ROCK FILL
STAGE 1 = 82 CU. YD.
STAGE 2 = 0 CU. YD.



205+00.00

STA. 205+00.00
BEGIN SITE 2

STA. 205+00.00
BEGIN ROCK FILL RT.

STA. 205+00.00 (-0.020 FT./FT. LT. LANE, 0.038 FT./FT. RT. LANE)

SITE 2
STA. 205+00 TO STA. 207+00

CGGervasini 1/25/2024 2:40:30 PM
WORKSPACE: AHTD
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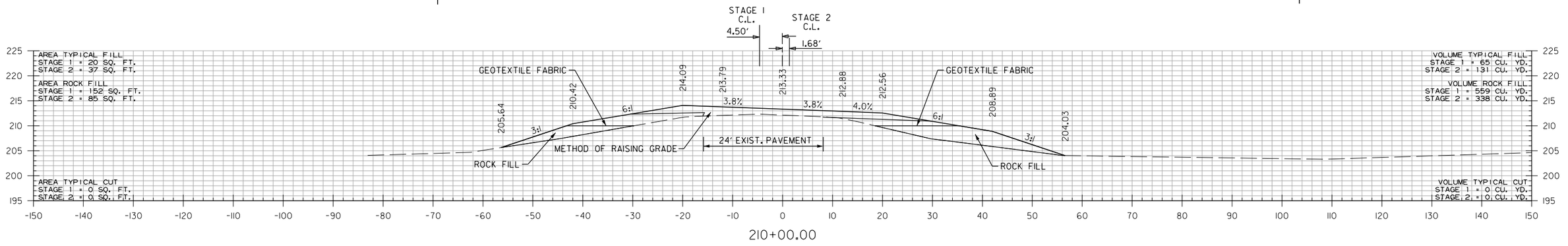
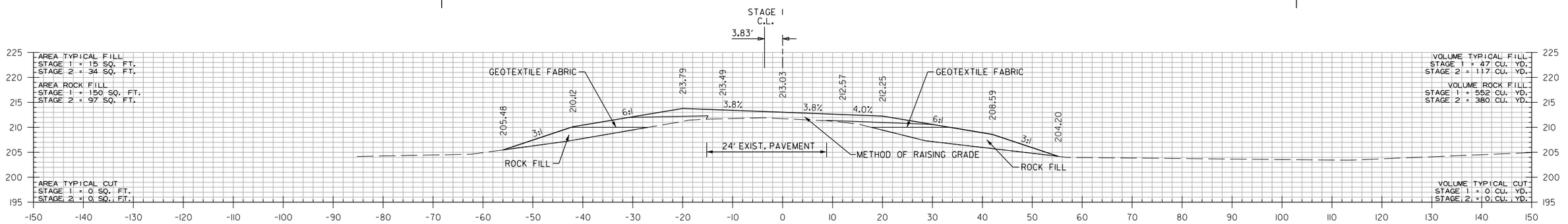
REVISED DATE:

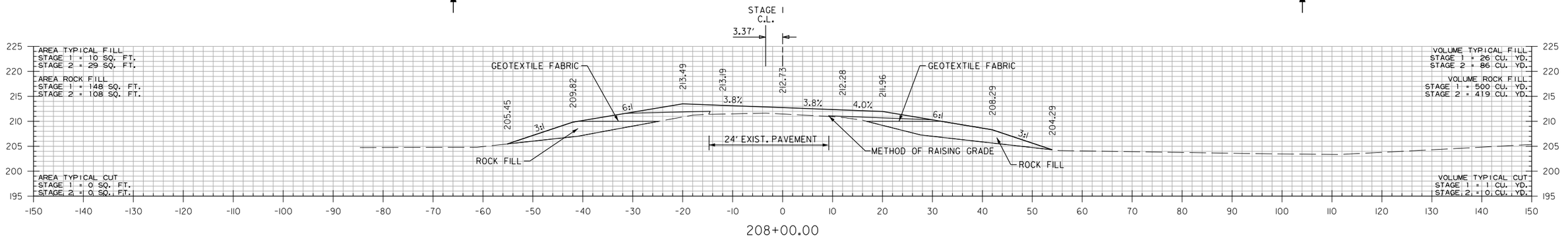
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
01-24-24			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		119	136
JOB NO.		061615		

(2) CROSS SECTIONS







STA. 208+00.00 MAX. SUPERELEVATION (0.038 FT./FT.)

SITE 2
STA. 208+00 TO STA. 210+00

CGervasini 1/25/2024 2:40:30 PM
WORKSPACE: AHTD
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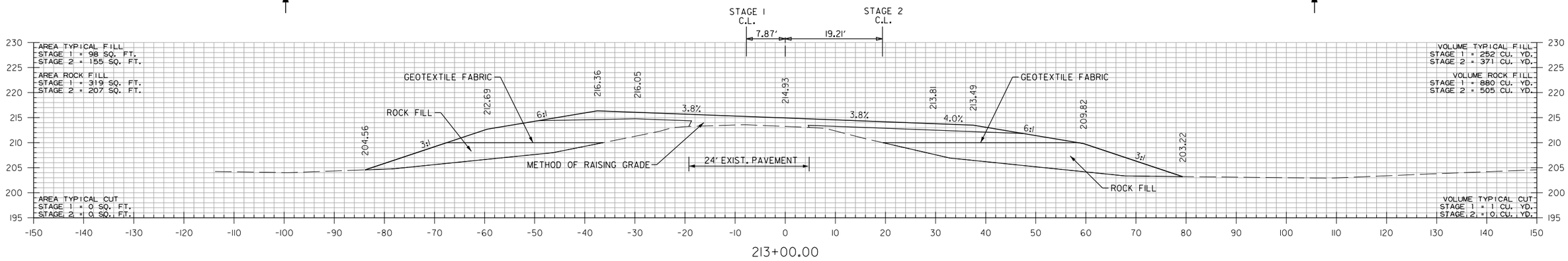
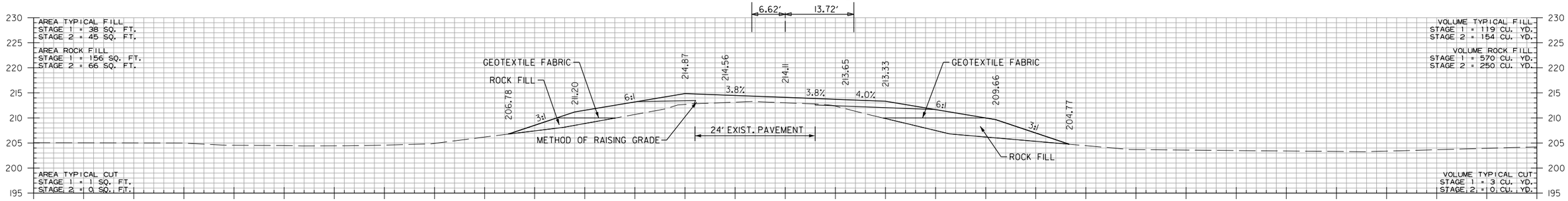
REVISED DATE:

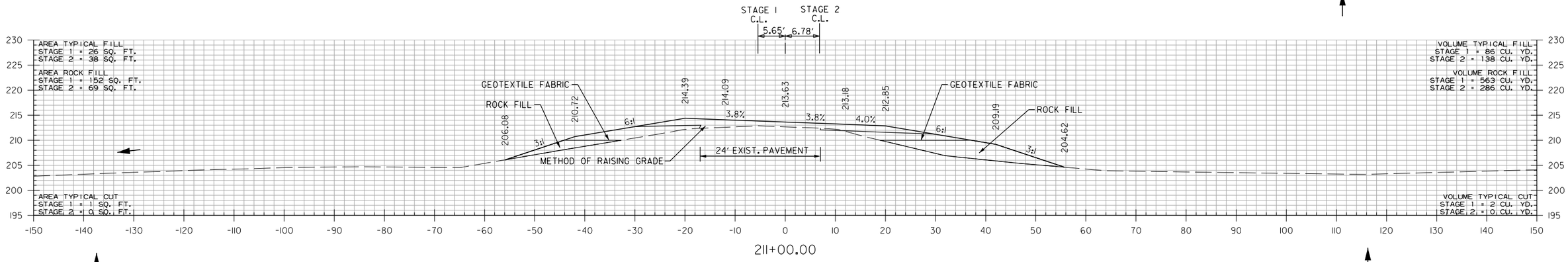
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
01-24-24			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		120	136
JOB NO.		061615		

(2) CROSS SECTIONS







SITE 2
STA. 211+00 TO STA. 213+00

CGGervosini 1/25/2024 2:40:30 PM
WORKSPACE: AHTD
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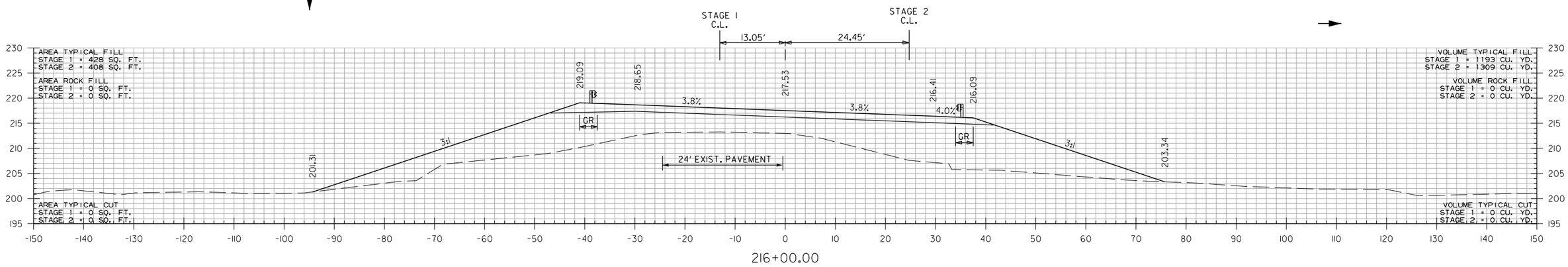
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
01-24-24				6	ARK.		121	136
				JOB NO.		061615		
				(2)		CROSS SECTIONS		



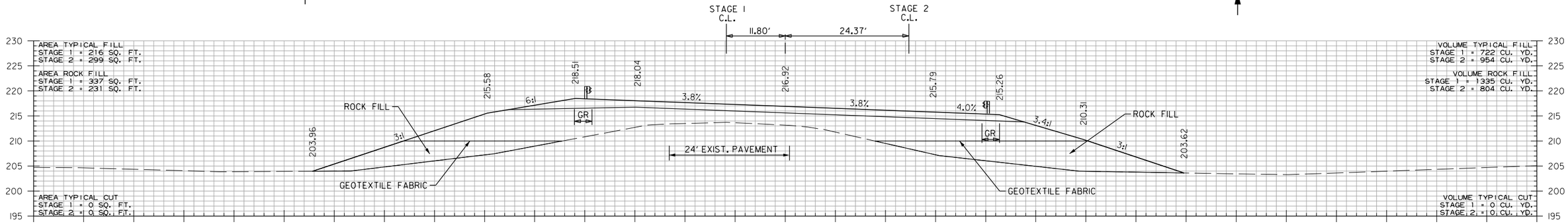
216+00.00

AREA ROCK FILL
STAGE 1 = 448 SQ. FT.
STAGE 2 = 417 SQ. FT.

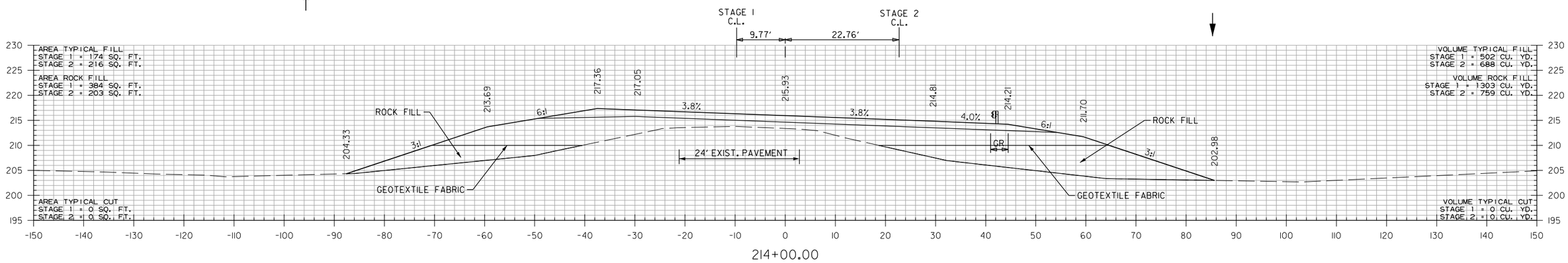
STA. 215+90.00
END ROCK FILL LT.

STA. 215+90.00
END ROCK FILL RT.

VOLUME ROCK FILL
STAGE 1 = 1308 CU. YD.
STAGE 2 = 1079 CU. YD.



215+00.00



214+00.00

SITE 2
STA. 214+00 TO STA. 216+00

CGervasini 1/25/2024 2:40:30 PM
WORKSPACE: AHTD
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REVISED DATE:

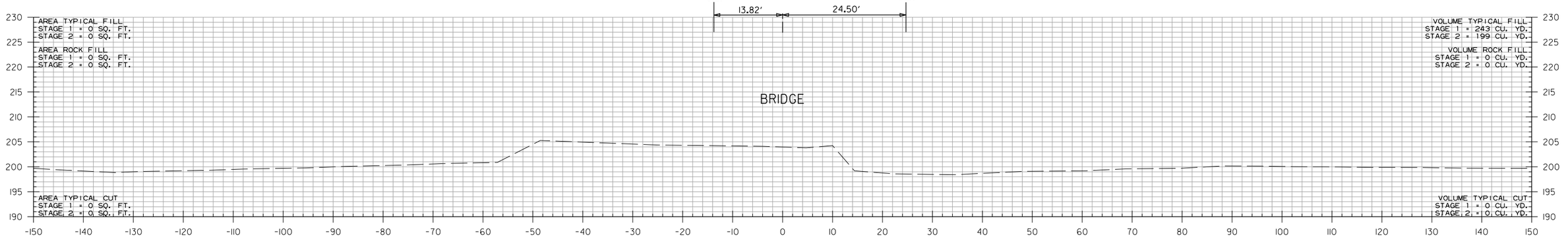
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
01-24-24			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		122	136
JOB NO.		061615		
(2)	CROSS SECTIONS			

216+97.00

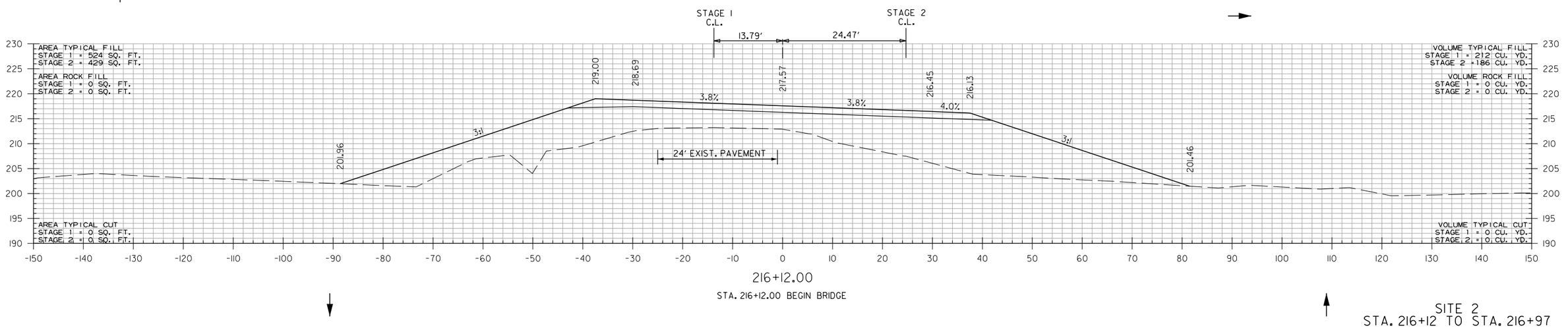
STA. 216+97.00 BEGIN TOE OF SLOPE
AT ELEVATION 205.00

STA. 216+42.93 MAX. SUPERELEVATION (0.038 FT./FT.)



216+37.00

STA. 216+37.00 END TOE OF SLOPE
AT ELEVATION 203.49.00



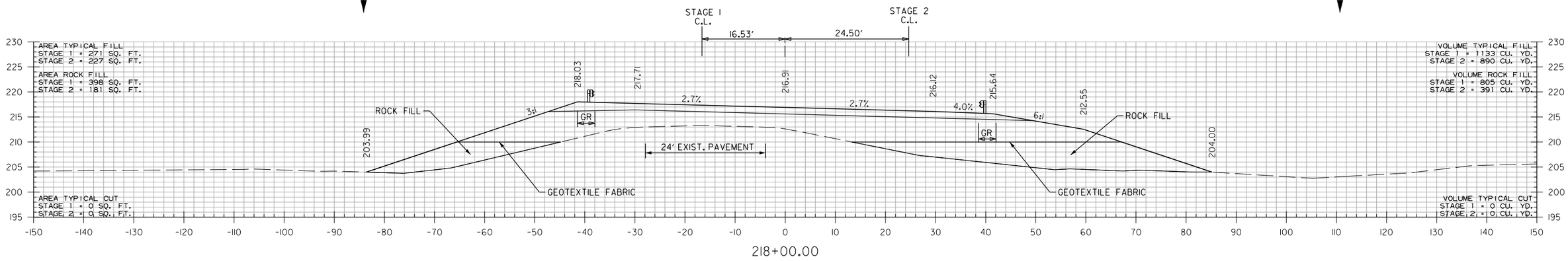
216+12.00

STA. 216+12.00 BEGIN BRIDGE

SITE 2
STA. 216+12 TO STA. 216+97

CGGervasini 1/25/2024 2:40:31PM
WORKSPACE: AHTD
L:\20IT\17017628 - 06165 Wolf Bayou Honey-La Grue Creeks\Drawings\r06165_CX_HWY 63_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
01-24-24				6	ARK.		123	136
				JOB NO.		061615		
				(2)				



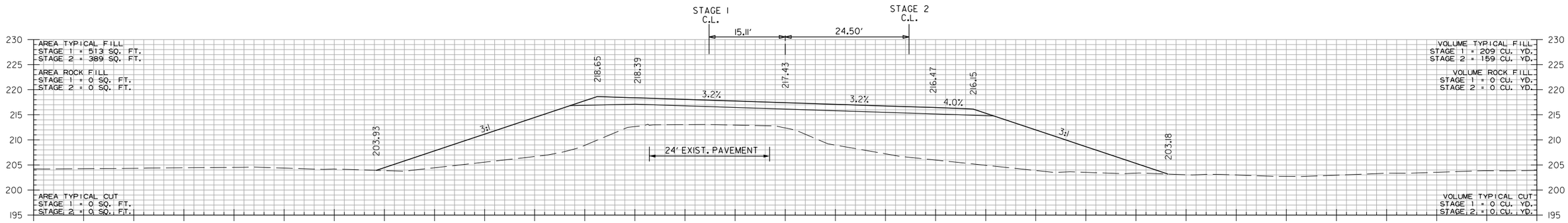
218+00.00

AREA ROCK FILL
STAGE 1 = 378 SQ. FT.
STAGE 2 = 196 SQ. FT.

STA. 217+44.00
BEGIN ROCK FILL LT.

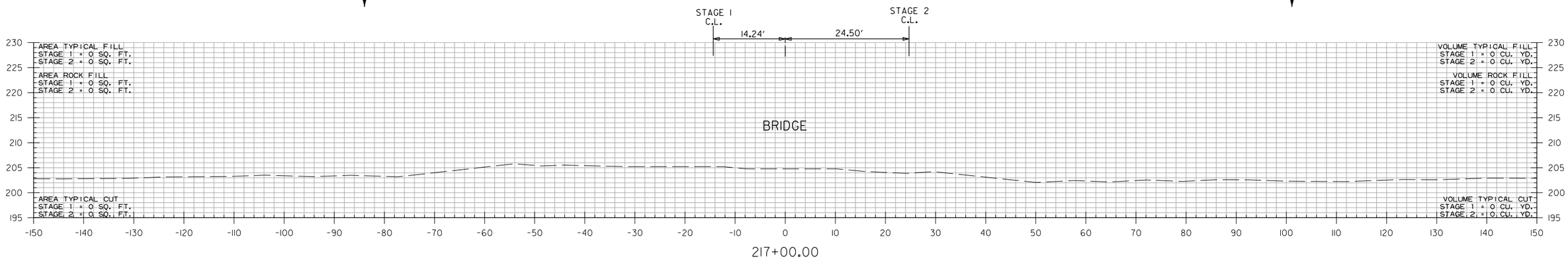
STA. 217+44.00
BEGIN ROCK FILL RT.

VOLUME ROCK FILL
STAGE 1 = 0 CU. YD.
STAGE 2 = 0 CU. YD.



217+22.00

STA. 217+22.00 END BRIDGE



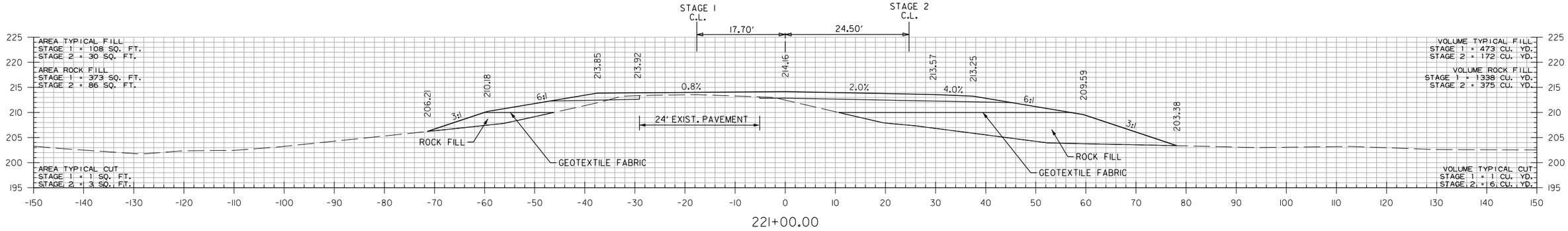
217+00.00

SITE 2
STA. 217+00 TO STA. 218+00

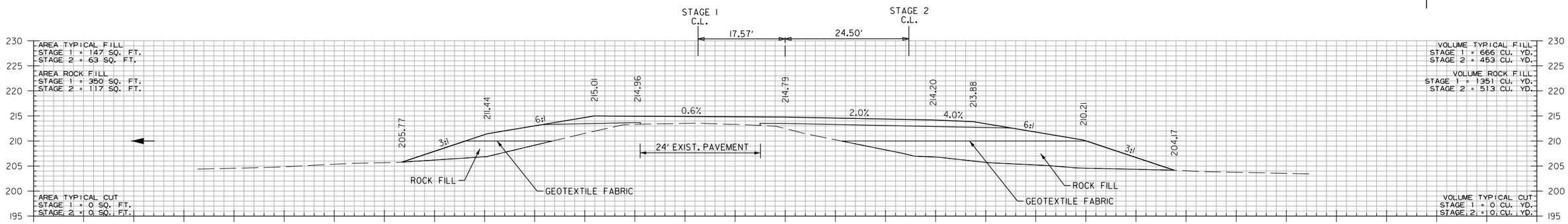
CGGervasIni 1/25/2024 2:40:31 PM
WORKSPACE: AHTD
L:\2017\1701628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\r061615_CX_HWY 63_SITE 2.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
01-24-24				6	ARK.		124	136
				JOB NO.		061615		
				(2)		CROSS SECTIONS		

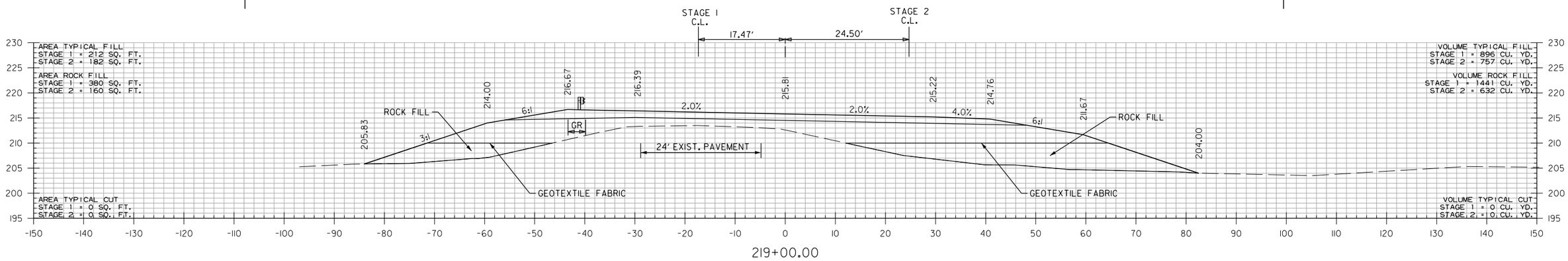
STA. 221+82.93 END SUPERELEVATION



221+00.00



220+00.00

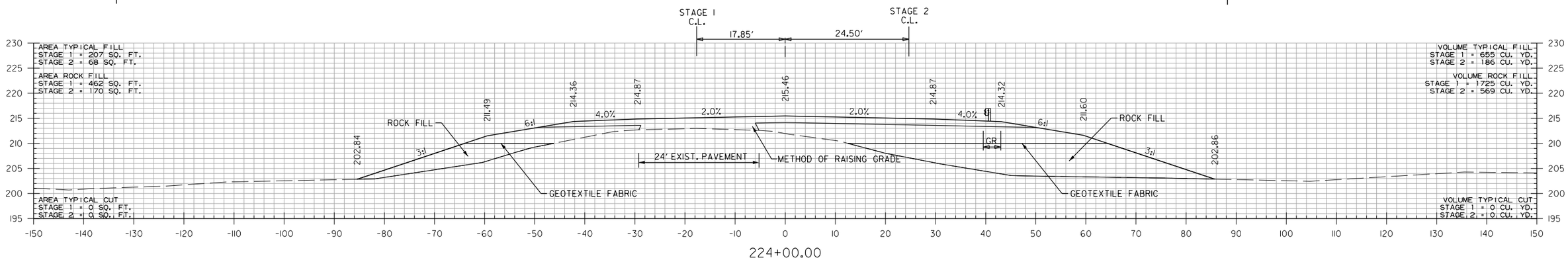


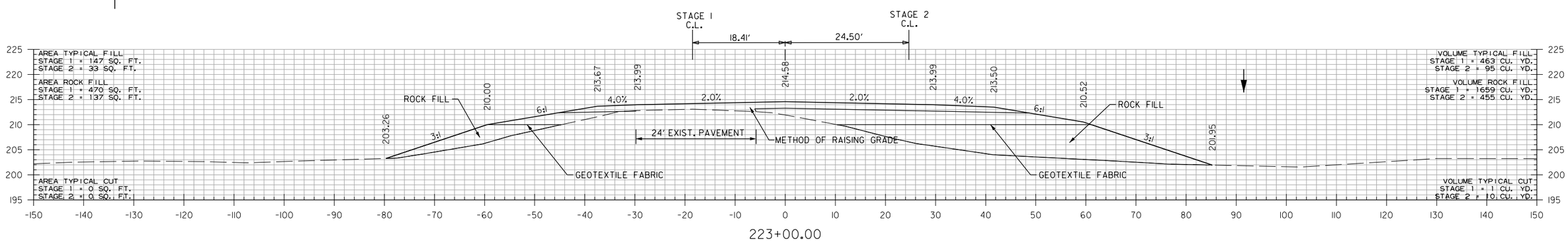
219+00.00

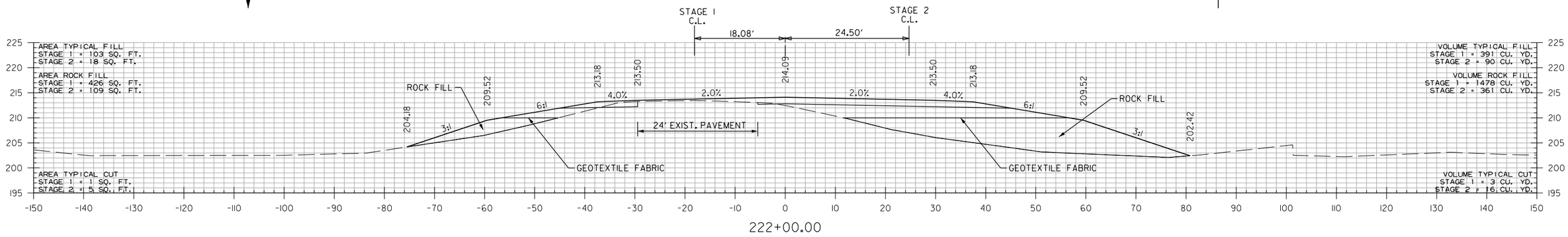
SITE 2
STA. 219+00 TO STA. 221+00

CGervasini 1/25/2024 2:40:31PM
WORKSPACE: AHTD
L:\2017\17017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\r061615_CX_HWY 63_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
01-24-24				6	ARK.		125	136
				JOB NO.		061615		
				(2)		CROSS SECTIONS		







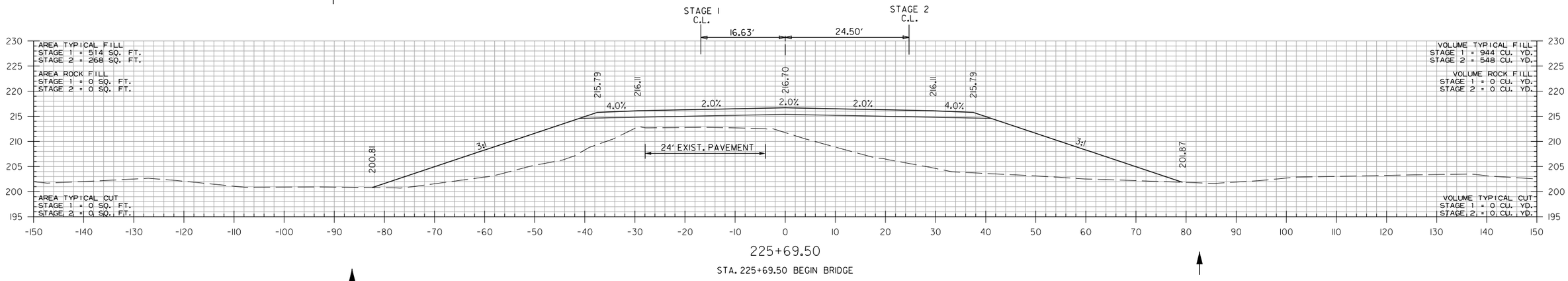
SITE 2
STA. 222+00 TO STA. 224+00

CGGervasini 1/25/2024 2:40:32 PM
WORKSPACE: AHTD
L:\20\T\T01T628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\r061615_CX_HWY 63_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
01-24-24				6	ARK.		126	136
				JOB NO.		061615		
				(2)		CROSS SECTIONS		

225+95.00

STA. 225+95.00 END TOE OF SLOPE
AT ELEVATION 202.00



225+69.50

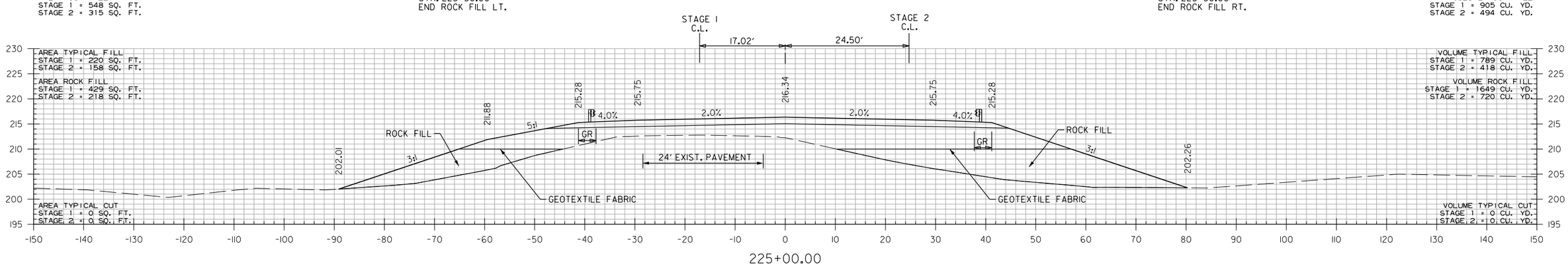
STA. 225+69.50 BEGIN BRIDGE

AREA ROCK FILL
STAGE 1 = 548 SQ. FT.
STAGE 2 = 315 SQ. FT.

STA. 225+50.00
END ROCK FILL LT.

STA. 225+50.00
END ROCK FILL RT.

VOLUME ROCK FILL
STAGE 1 = 905 CU. YD.
STAGE 2 = 494 CU. YD.

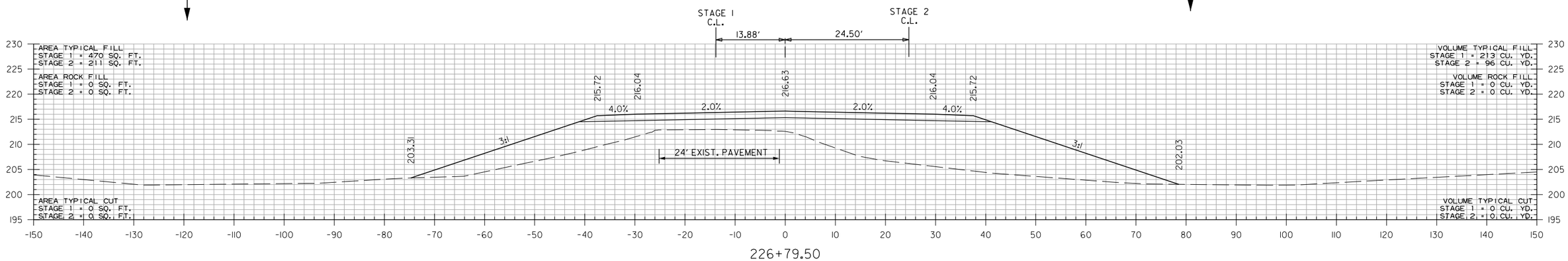


225+00.00

SITE 2
STA. 225+00 TO STA. 225+95

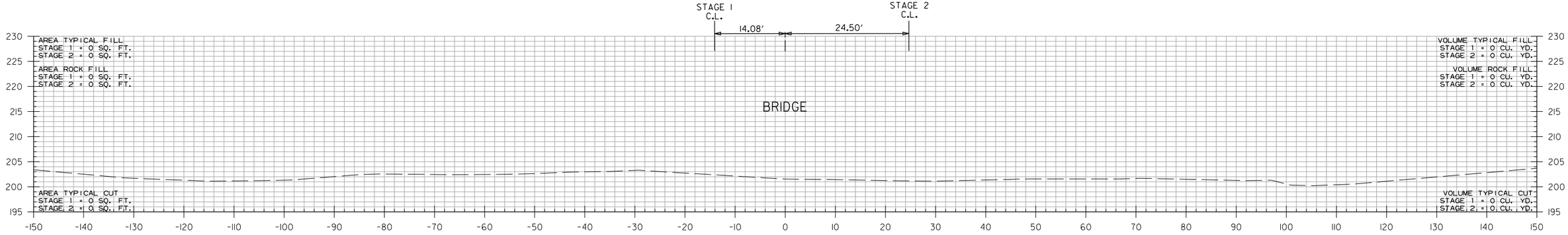
CGervasini 1/25/2024 2:40:32 PM
WORKSPACE: AHTD
L:\2017\17017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\r061615_CX_HWY 63_SITE 2.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
01-24-24				6	ARK.		127	136
				JOB NO.		061615		
				(2)		CROSS SECTIONS		



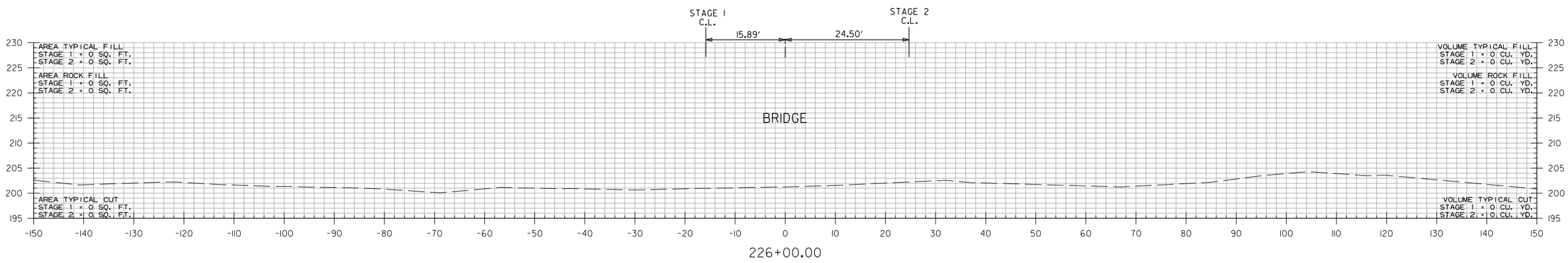
226+79.50

STA. 226+79.50 END BRIDGE



226+55.00

STA. 226+55.00 BEGIN TOE OF SLOPE
AT ELEVATION 201.50



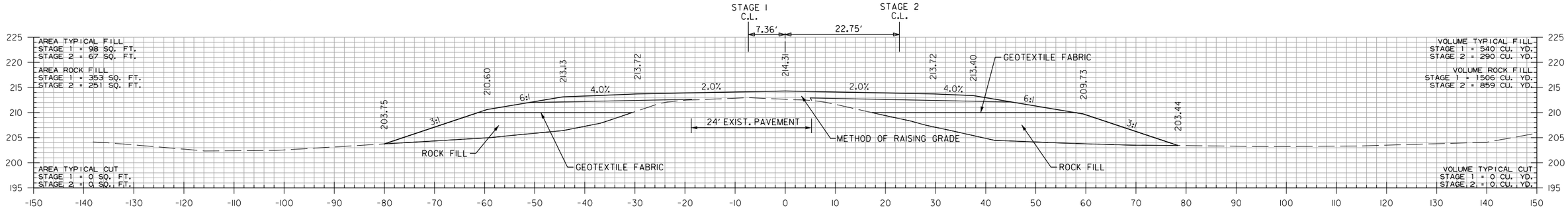
226+00.00

SITE 2
STA. 226+00 TO STA. 226+80

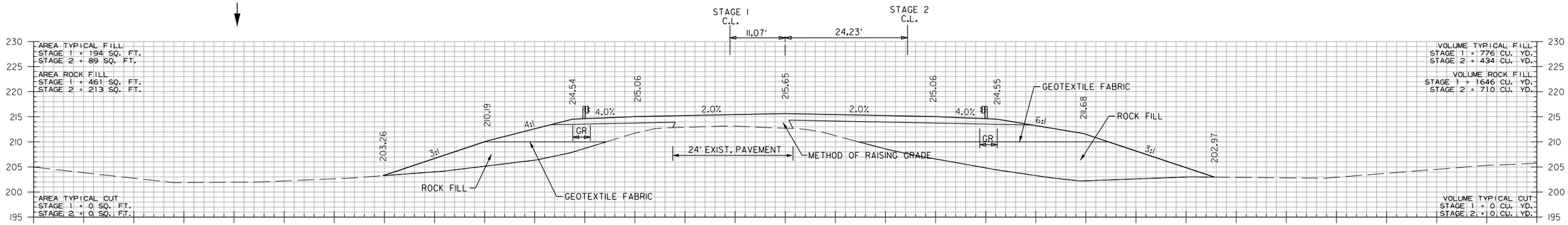
CGGervasini 1/25/2024 2:40:32 PM
WORKSPACE: AHTD
L:\20\T\170\T628 - 06165 Wolf Bayou Honey-La Grue Creeks\Drawings\r06165_CX_HWY 63_SITE 2.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
01-24-24				6	ARK.		128	136
				JOB NO.		061615		
				(2)		CROSS SECTIONS		

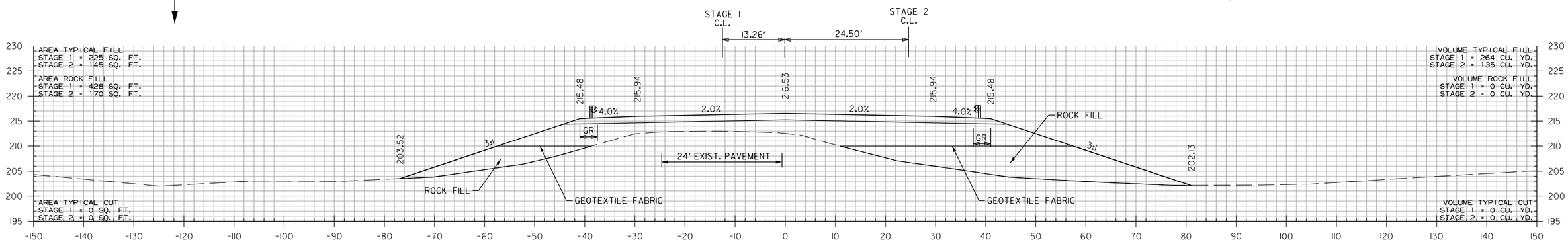
STA. 229+44.37 BEGIN SUPERELEVATION



229+00.00



228+00.00



227+00.00

STA. 227+00.00
BEGIN ROCK FILL LT.

STA. 227+00.00
BEGIN ROCK FILL RT.

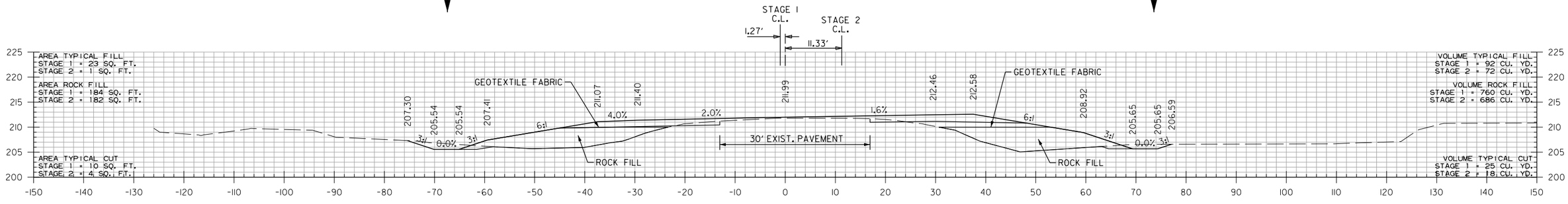
SITE 2
STA. 227+00 TO STA. 229+00

CGervasini 1/25/2024 2:40:32 PM
WORKSPACE: AHTD
L:\2017\17017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\r061615_CX_HWY 63_SITE 2.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
01-24-24			

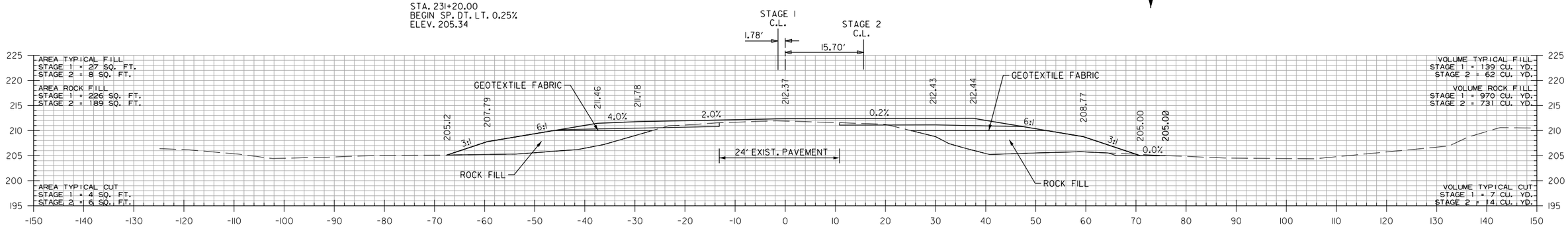
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		129	136
JOB NO.		061615		

(2) CROSS SECTIONS



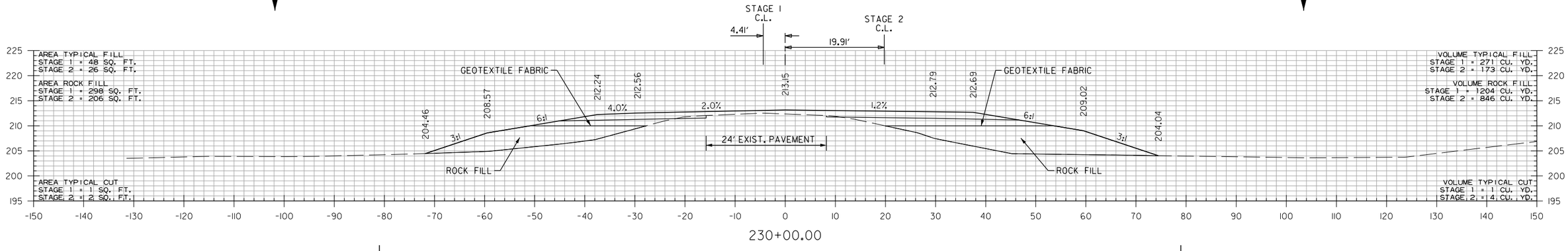
232+00.00

STA. 231+20.00
BEGIN SP. DT. LT. 0.25%
ELEV. 205.34



231+00.00

STA. 231+00.00
BEGIN SP. DT. RT. 0.65%
ELEV. 205.00



230+00.00

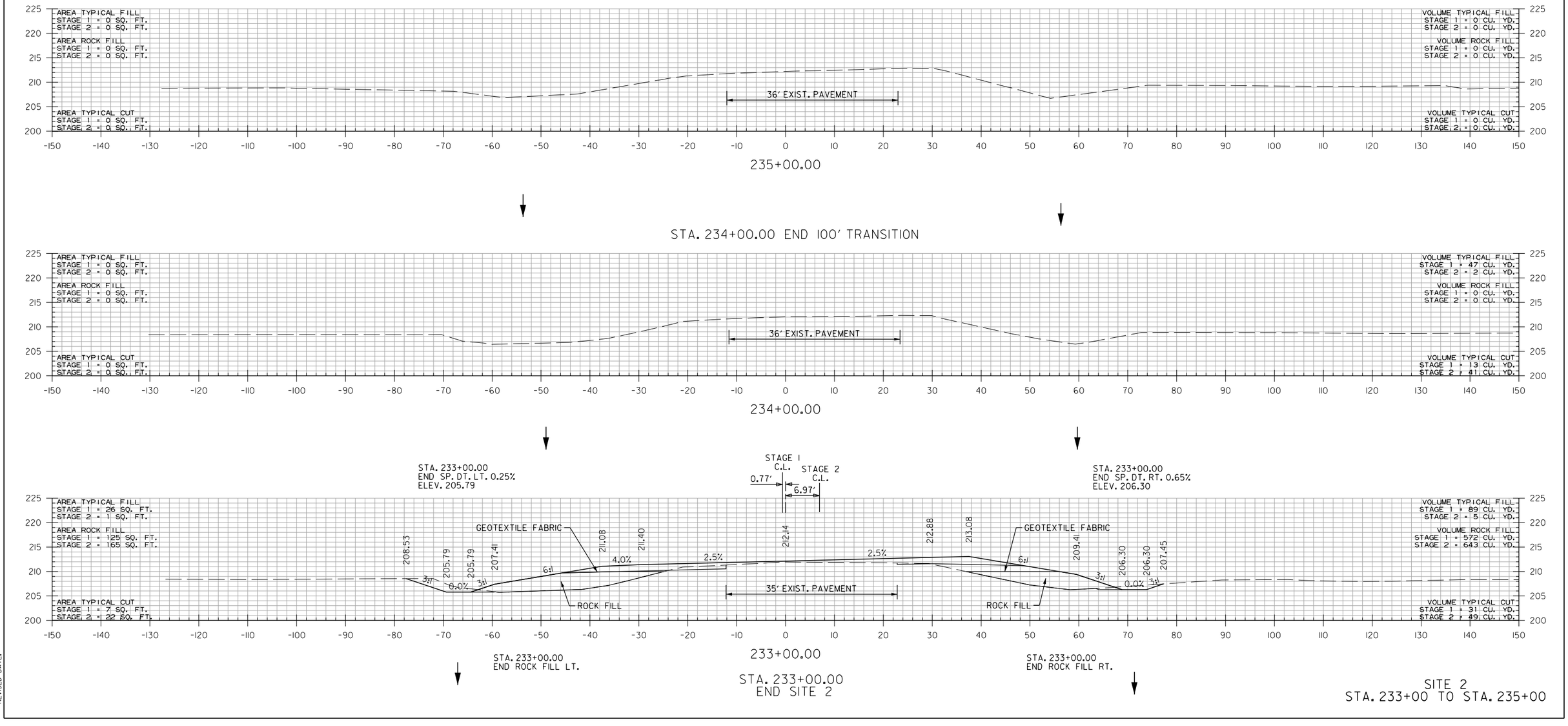
SITE 2
STA. 230+00 TO STA. 232+00

CGervasini 1/25/2024 2:40:33 PM
WORKSPACE: AHTD
L:\201\1701628 - 06165 Wolf Bayou Honey-La Grue Creeks\Drawings\r06165_CX_HWY 63_SITE 2.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
01-24-24			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		130	136
JOB NO.		061615		

(2) CROSS SECTIONS

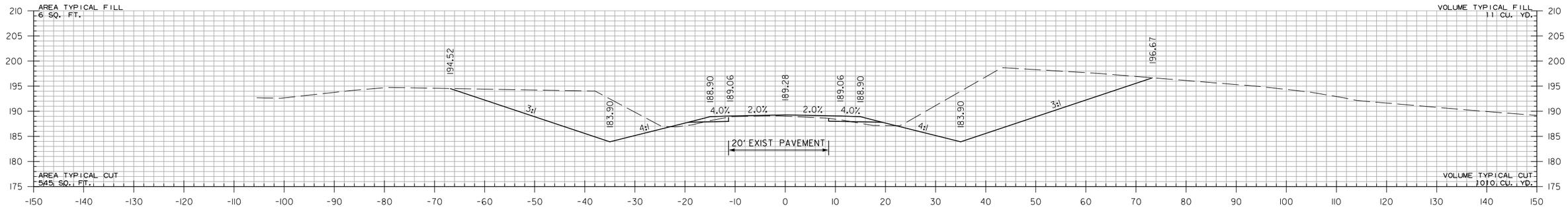


CGervasini 1/25/2024 2:40:33 PM
WORKSPACE: AHTD
L:\20\T\T01\T628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\r061615_CX_HWY 63_SITE 2.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		131	136
JOB NO.		061615		

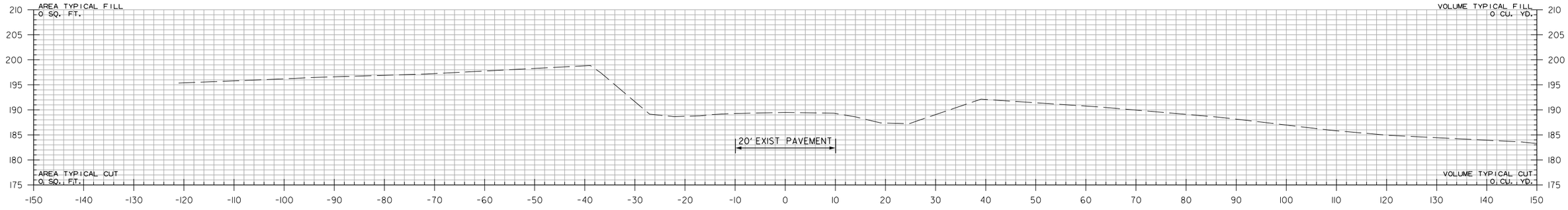
(2) CROSS SECTIONS



22+00.00

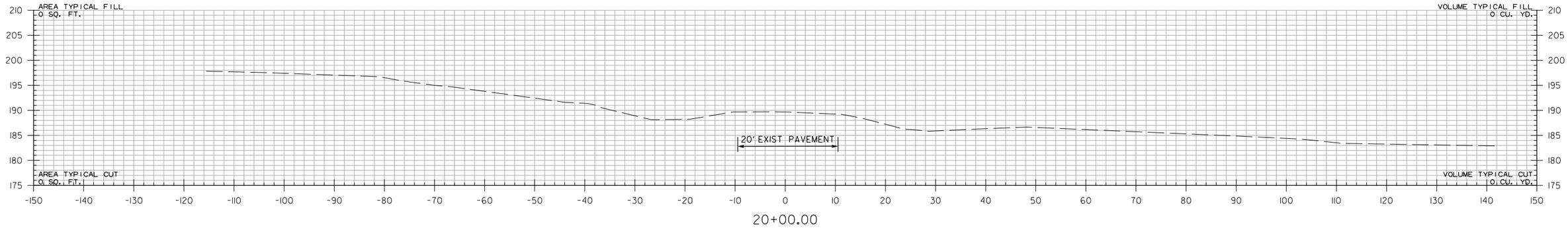
STA. 22+00.00
BEGIN SITE 3

STA. 22+00.00
BEGIN SP. DT. RT. -1.90%
ELEV. 183.90



21+00.00

STA. 21+00.00 BEGIN 100' TRANSITION



20+00.00

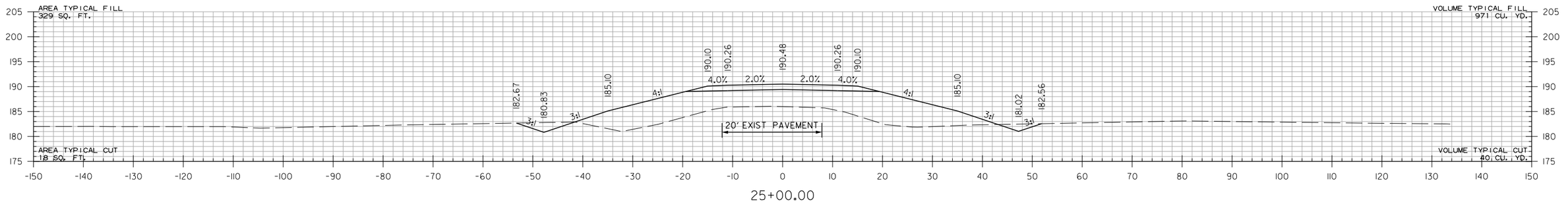
SITE 3
STA. 20+00 TO STA. 22+00

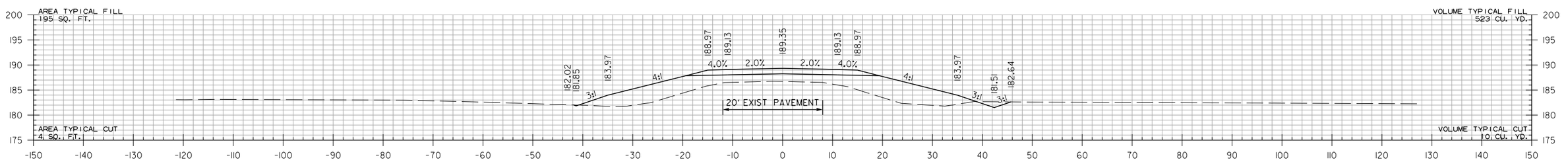
CGervasini 12/13/2023 8:03:03 AM
WORKSPACE: AHTD
L:\2017\17017628 - 06615 Wolf Bayou Honey-La Grue Creeks\Drawings\r06615_CX_HWY 33.dgn
REVISED DATE:

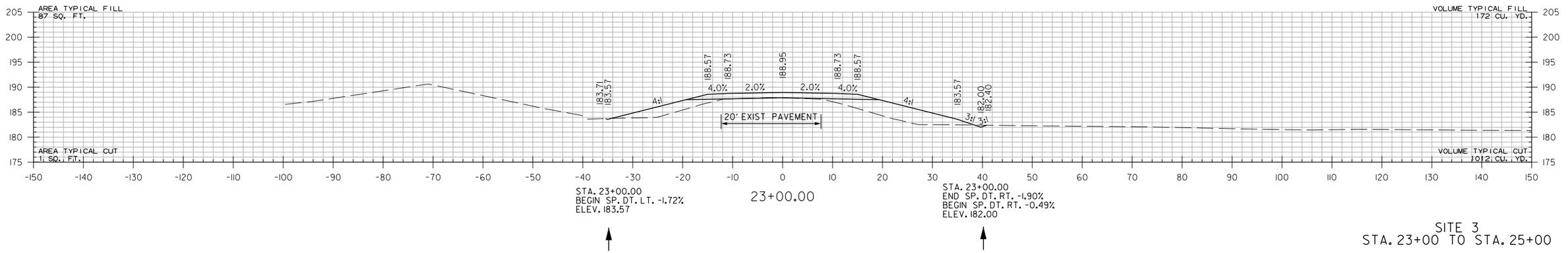
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		132	136
JOB NO.		061615		

(2) CROSS SECTIONS



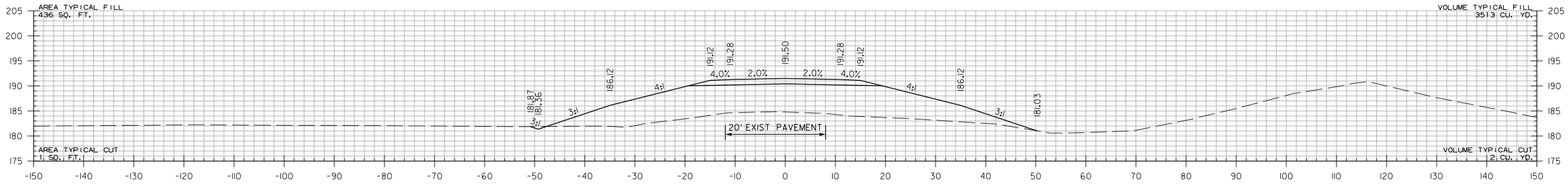




SITE 3
STA. 23+00 TO STA. 25+00

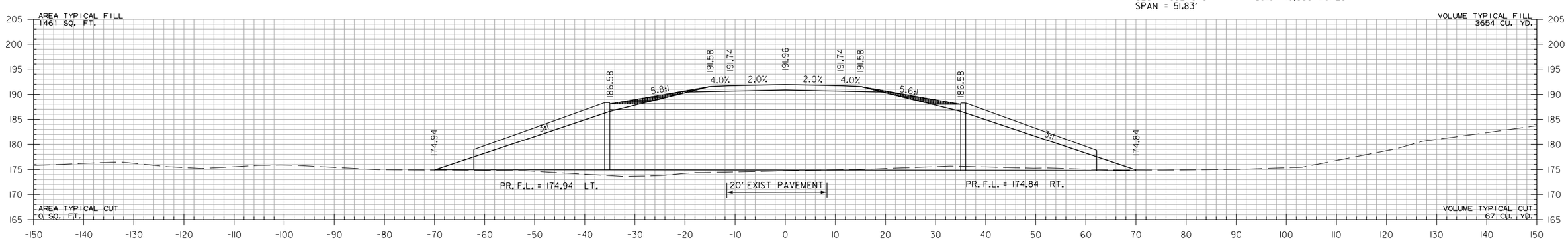
CGGervasini 12/13/2023 8:03:04 AM
WORKSPACE: AHTD
L:\2017\17017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\r061615_CX_HWY 33.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		133	136
				JOB NO.		061615		
				(2)	CROSS SECTIONS			



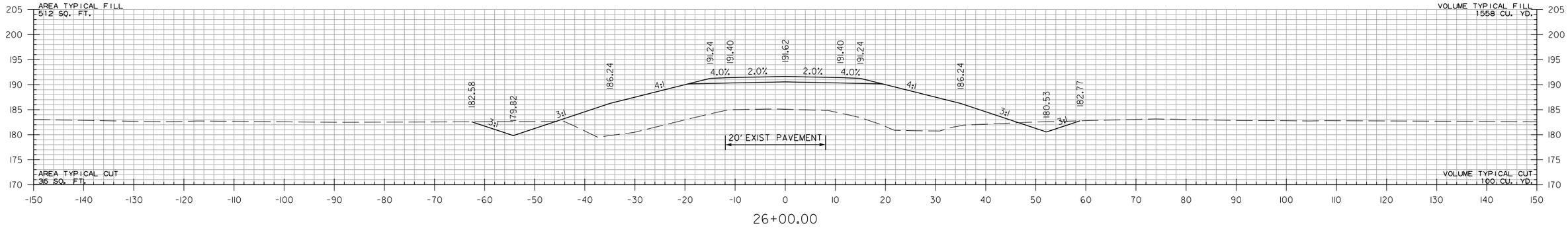
STA. 27+74.00
BEGIN SP. DT. LT. -2.48%
ELEV. 182.00

STA. 27+00 CONSTRUCT
QUAD. 12' X 12' X 72' R.C. BOX CULVERT
WITH 3:1 WINGS LT. & RT.
Q25 = 1852 CFS D.A. = 10.555 ACRES
SPAN = 51.83'



STA. 26+90.00
END SP. DT. LT. -1.02%
ELEV. 178.90

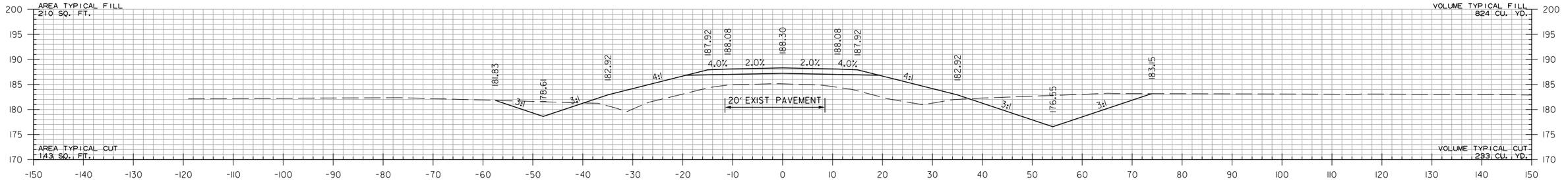
STA. 26+80.00
END SP. DT. RT. -0.49%
ELEV. 180.14



SITE 3
STA. 26+00 TO STA. 28+00

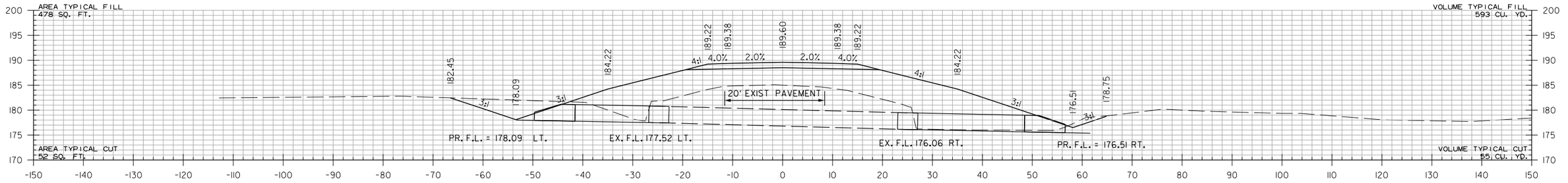
CGervasini 12/13/2023 8:03:04 AM
WORKSPACE: AHTD
L:\2017\17017628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\r-061615_CX_HWY 33.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		134	136
				JOB NO.		061615		
				(2)		CROSS SECTIONS		



30+00.00

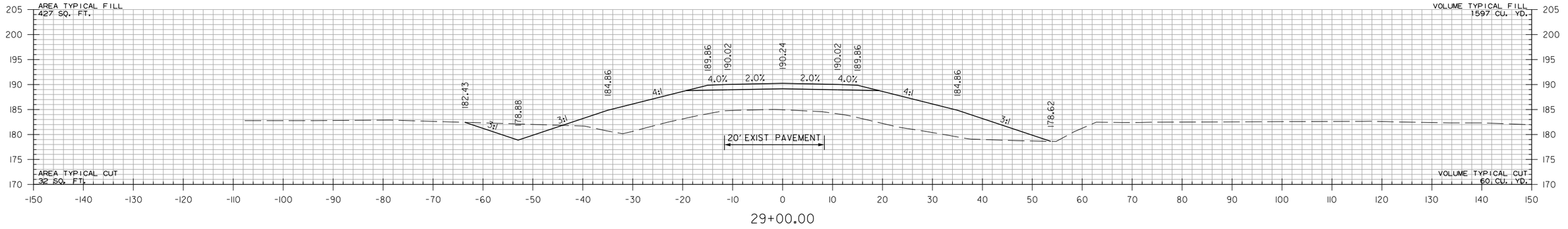
STA. 29+35 IN PLACE
36" X 54' R.C. PIPE CULVERT
WITH HDWLS. LT. & RT.
REMOVE HDWLS. & EXTEND 15' LT. & 21' RT.
TO A COMPLETED LENGTH OF 90'
WITH FES LT. & RT.
Q25 = 25 CFS DA = 17.7 ACRES



29+35.38

STA. 29+35.38
END SP. DT. LT. -2.48%
BEGIN SP. DT. LT. 0.94%
ELEV. 178.00

STA. 29+35.38
BEGIN SP. DT. RT. 1.84%
ELEV. 175.36

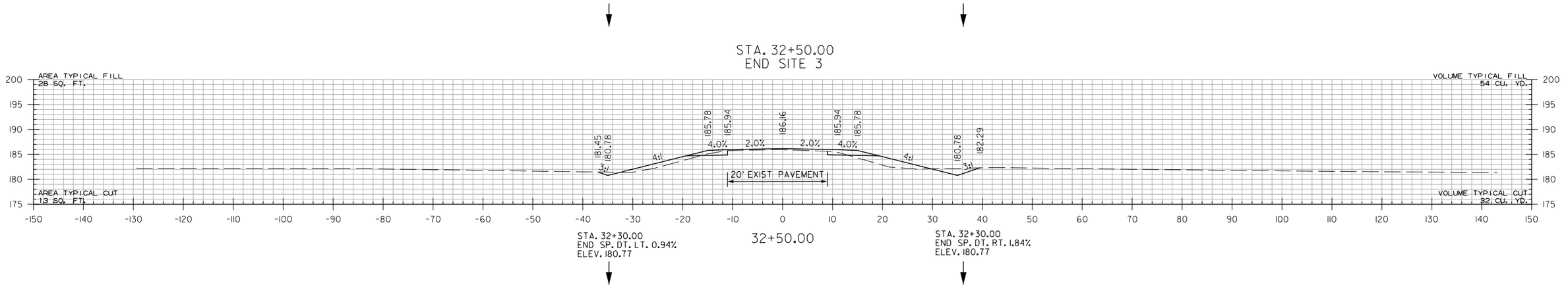


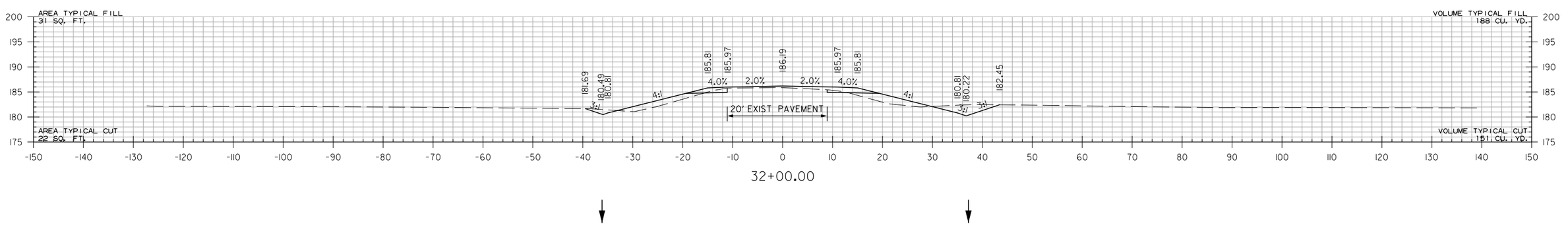
29+00.00

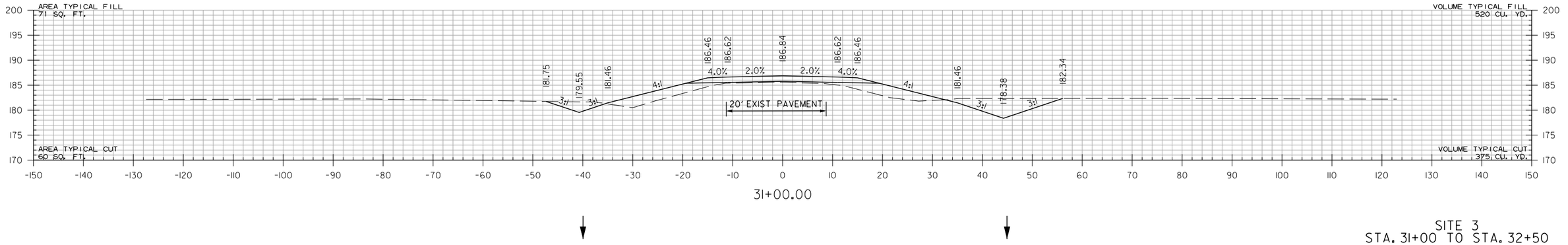
SITE 3
STA. 29+00 TO STA. 30+00

CGGervaisInl 12/13/2023 8:03:04 AM
WORKSPACE: AHTD
L:\2017\1701628 - 061615 Wolf Bayou Honey-La Grue Creeks\Drawings\r061615_CX_HWY 33.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.		135	136
				JOB NO.		061615		
				(2)	CROSS SECTIONS			







SITE 3
STA. 31+00 TO STA. 32+50

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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.		136	136
JOB NO.		061615		
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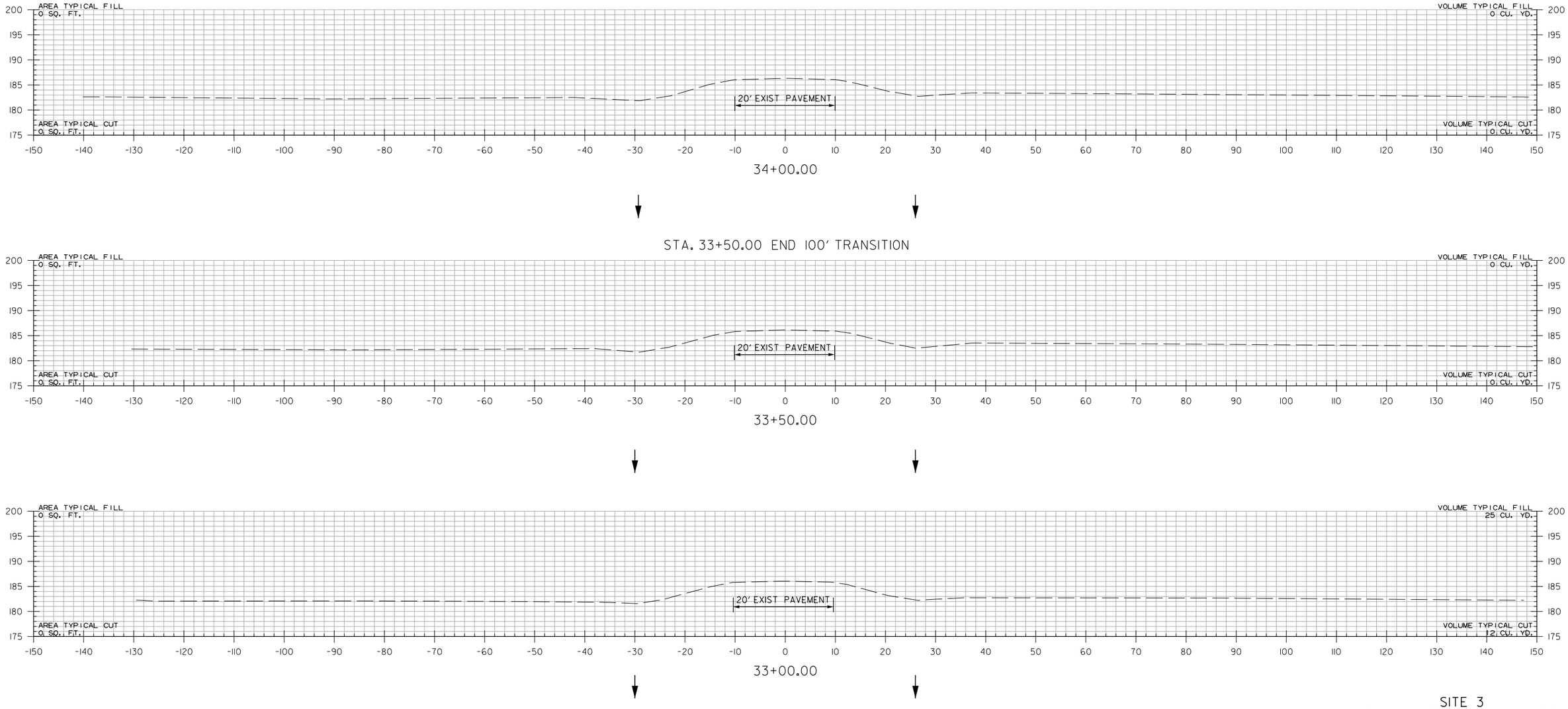

SITE 3
STA. 33+00 TO STA. 34+00

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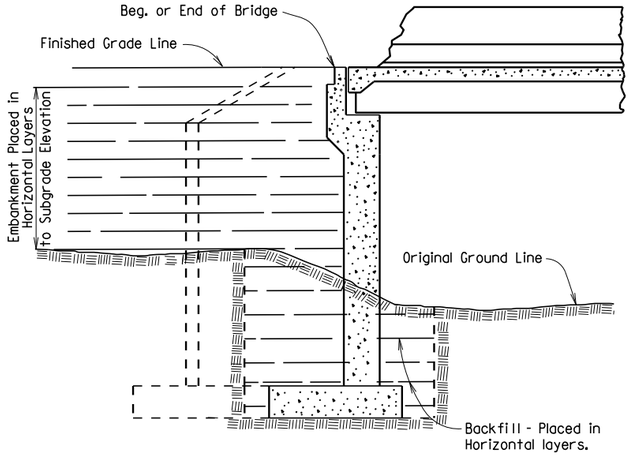
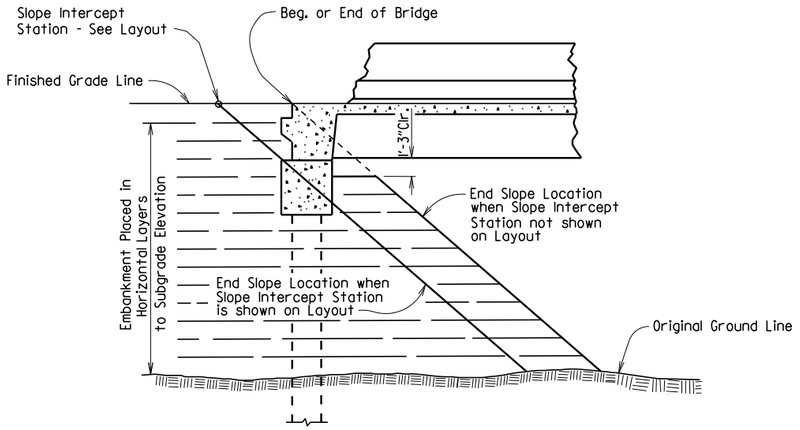
REVISED DATE:

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

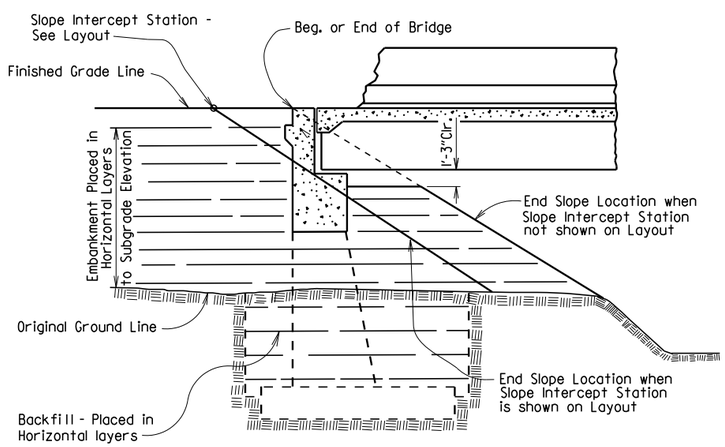
1 EMBANKMENT & BACKFILL 55000



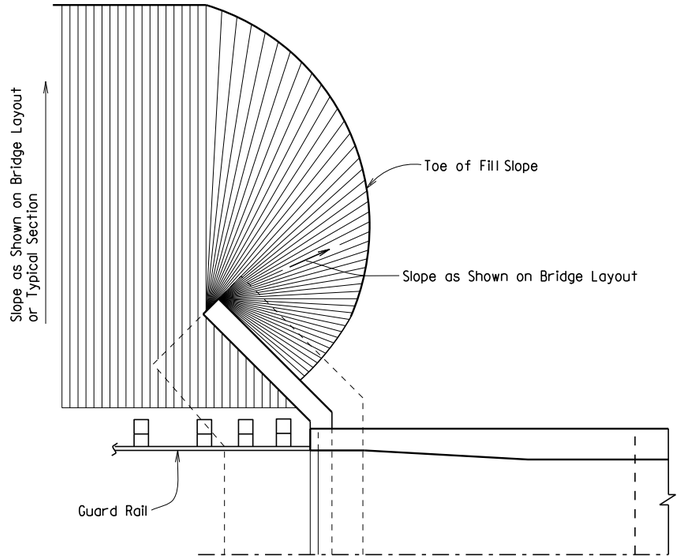
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT VERTICAL WALL ABUTMENTS



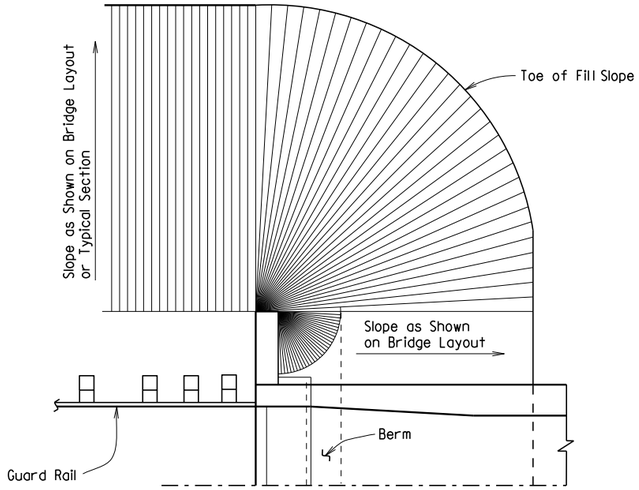
EMBANKMENT CONSTRUCTION AT SPILL-THROUGH PILE END BENTS



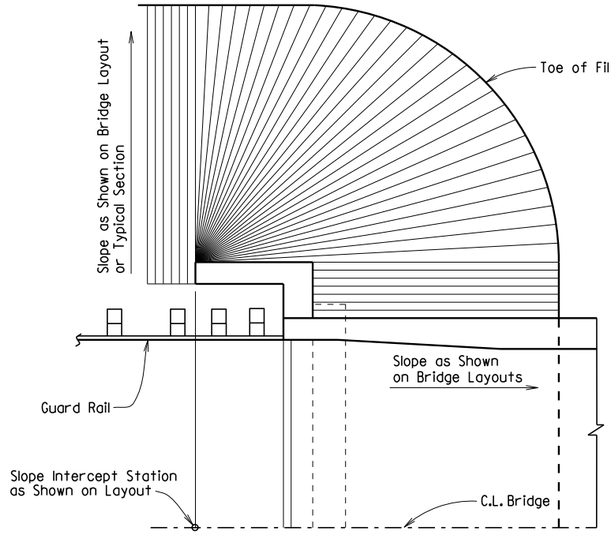
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT SPILL-THROUGH END BENTS



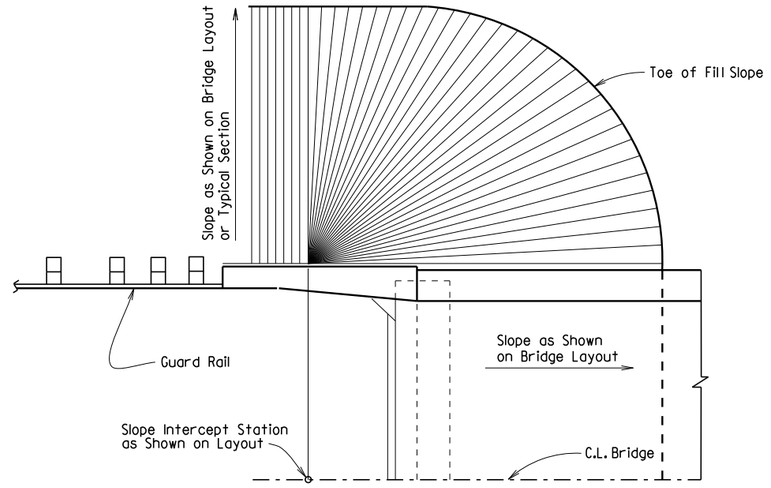
VERTICAL WALL ABUTMENTS



SPILL-THROUGH END BENTS WITH STUB WING



SPILL-THROUGH END BENTS WITH TURNBACK WING



SPILL-THROUGH END BENTS WITH TRANSITION WING

METHOD OF DETERMINING FILL SLOPE LOCATION AT BRIDGE ENDS

GENERAL NOTES

The Bridge End Embankment shall be defined as a section of embankment, not less than 20 feet long adjacent to the bridge end, together with the side slopes and slopes under the bridge end including around the end of wingwalls. Embankment adjacent to structures shall be constructed in 6 inch horizontal layers (loose measure) and compacted by the use of mechanical equipment to the satisfaction of the Engineer. Refer to Subsections 210.09, 210.10 and 801.08 for construction requirements.

STANDARD DETAILS FOR EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55000.dgn

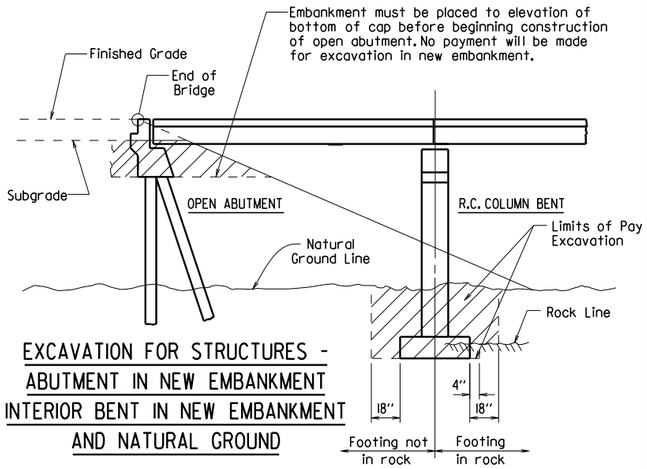
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE

DESIGNED BY: STD. DATE: -

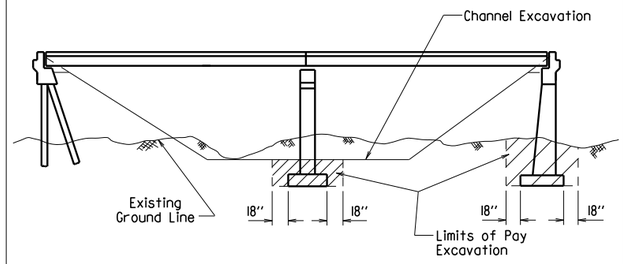
DRAWING NO. 55000

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

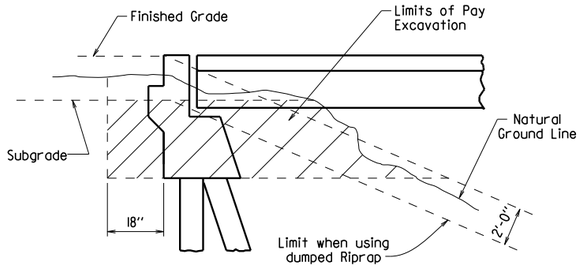
1 RIPRAP & EXCAV. 55001



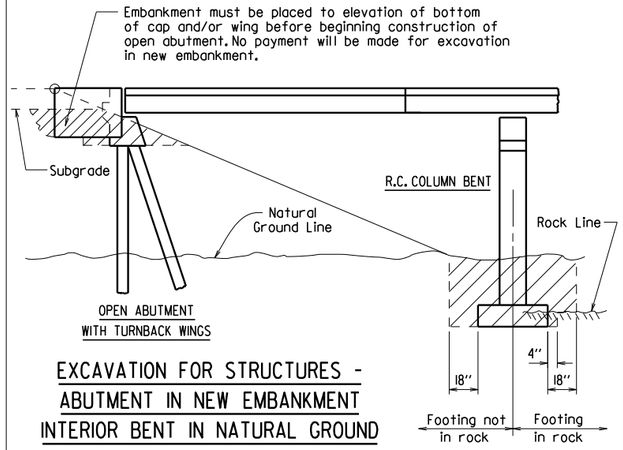
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NEW EMBANKMENT AND NATURAL GROUND



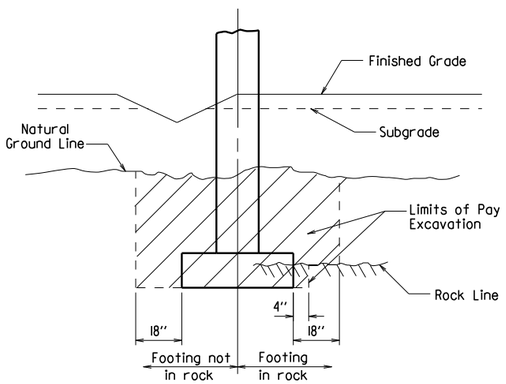
EXCAVATION FOR STRUCTURES - BRIDGE LOCATION WITH DESIGNATED CHANNEL CHANGE



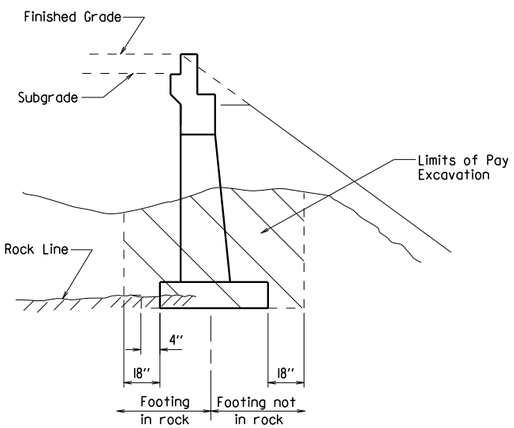
EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND



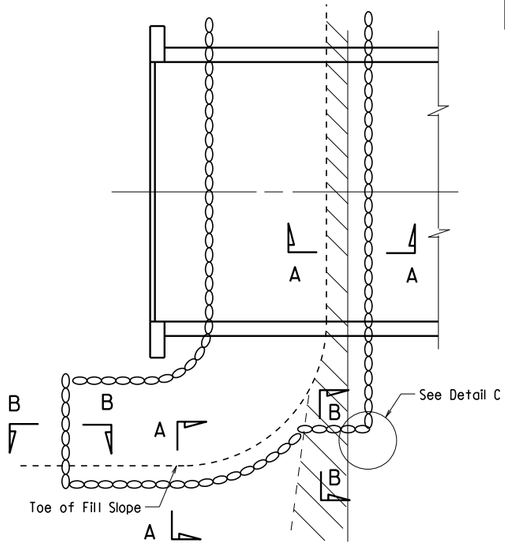
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NATURAL GROUND



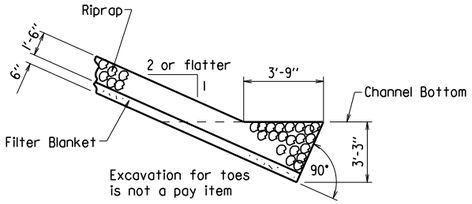
EXCAVATION FOR STRUCTURES - BENT IN ROADWAY FILL SECTION AND NATURAL GROUND



EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND AND NEW EMBANKMENT

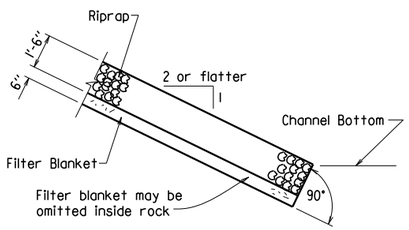


PLAN OF DUMPED RIPRAP



SECTION A-A

(Toe Excavation in Soil)



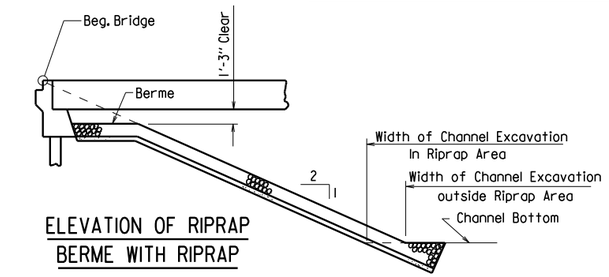
SECTION A-A

(Toe Excavation in Rock)

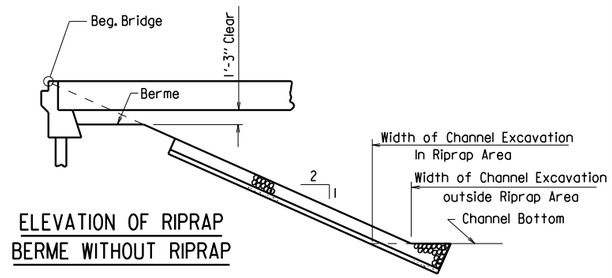
Note : Use this type of toe when rock is encountered which is in a stable condition.

Note : In lieu of an aggregate filter blanket, a synthetic fiber geotextile fabric complying with the requirements of Subsection 816.02(e) may be used.

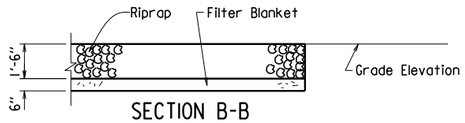
Note : Details for computing excavation for structures are included for information as to how plan quantities were calculated and for use when adjusting quantities when changing footing elevation.



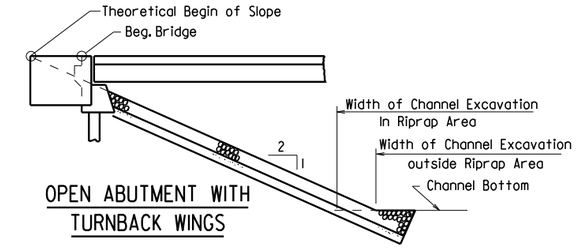
ELEVATION OF RIPRAP BERME WITH RIPRAP



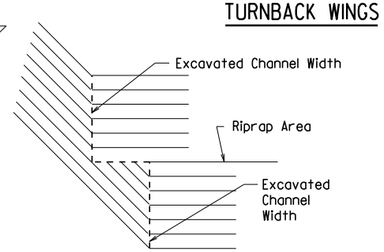
ELEVATION OF RIPRAP BERME WITHOUT RIPRAP



SECTION B-B



OPEN ABUTMENT WITH TURNBACK WINGS



DETAIL C

STANDARD DETAILS FOR DUMPED RIPRAP AND FILTER BLANKET AND COMPUTING EXCAVATION FOR STRUCTURES

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55001.dgn

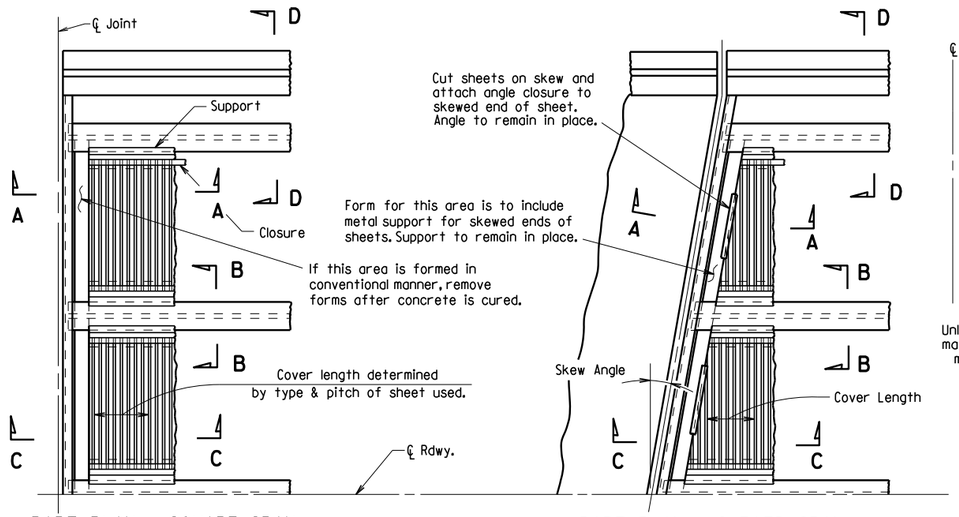
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE

DESIGNED BY: STD. DATE:

DRAWING NO. 55001

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3/24/16				6	ARK.			
				JOB NO.				

① BRIDGE DECK FORMS 55005

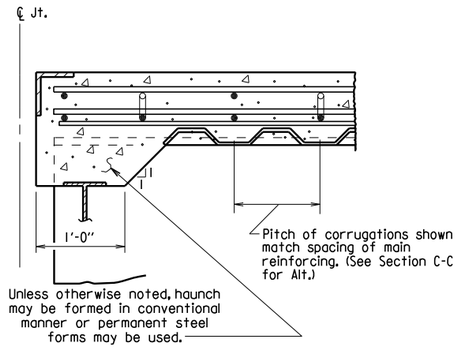


PART PLAN - SQUARE SPAN

3/8" = 1'-0"

PART PLAN - SKEWED SPAN

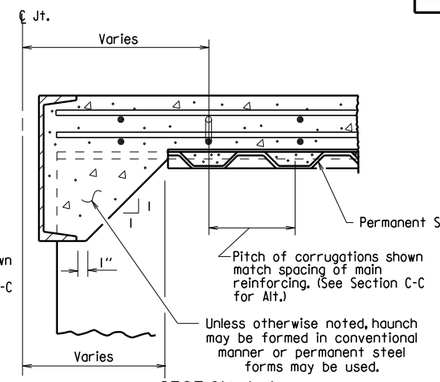
3/8" = 1'-0"



SECTION A-A

N.T.S.

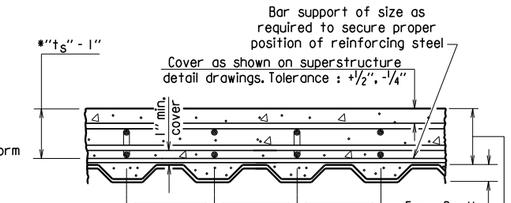
(Angle at end of span)



SECTION A-A

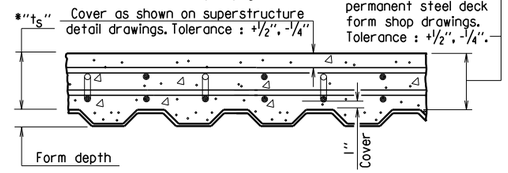
N.T.S.

(Channel at end of span)



SECTION C-C

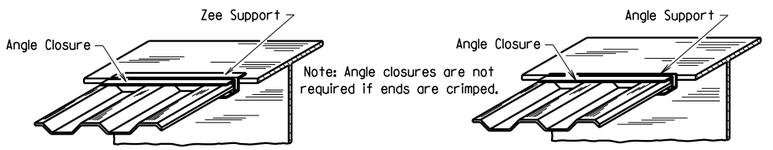
1" = 1'-0"



SECTION C-C - ALTERNATE

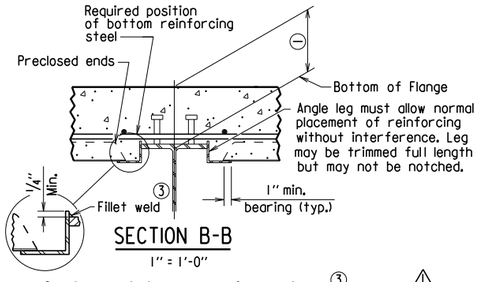
1" = 1'-0"

(Applicable when corrugations do not match spacing of main reinforcement)



SKETCH OF PERMISSIBLE SUPPORTS

N.T.S.

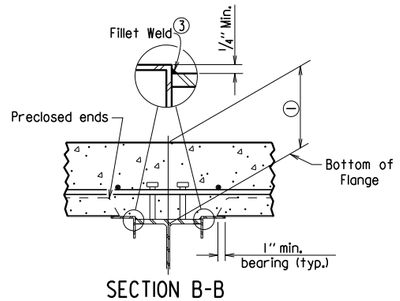


SECTION B-B

1" = 1'-0"

(Showing permissible support for tension flange where shear connectors are used, and for all compression flanges)

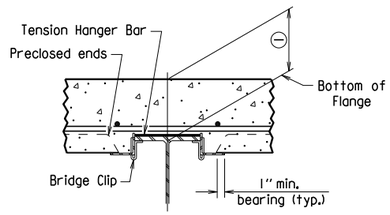
③ ⚠ Minimum weld: 1/8" x 1" @ 18". More weld may be required; maximum length per weld = 1 1/2" (typ.)



SECTION B-B

1" = 1'-0"

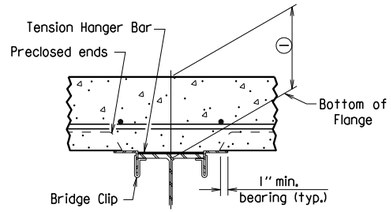
(Showing permissible support for tension flange where shear connectors are used and for all compression flanges)



SECTION B-B

1" = 1'-0"

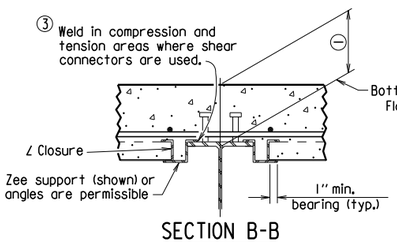
(Showing permissible support for tension flange where shear connectors are not used)



SECTION B-B

1" = 1'-0"

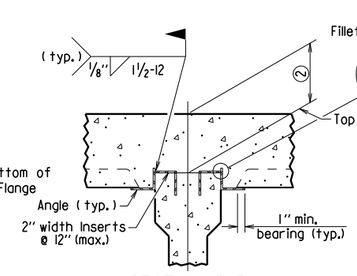
(Showing permissible support for tension flange where shear connectors are not used)



SECTION B-B

1" = 1'-0"

(Showing ∠ Closure)

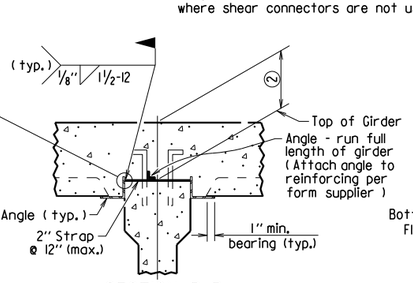


SECTION B-B

(FOR CONCRETE GIRDERS)

1" = 1'-0"

(Showing support by Insert cast in girder)

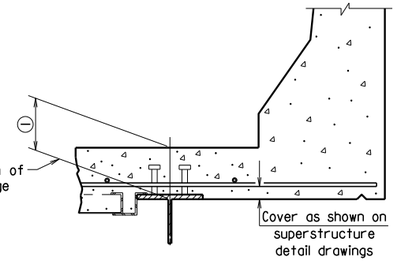


SECTION B-B

(FOR CONCRETE GIRDERS)

1" = 1'-0"

(Showing support by Strap)



SECTION D-D

1" = 1'-0"

Note: Only Bottom Reinforcing is shown.

① Distance from top of slab to bottom of top flange as measured at centerline girder and as shown on superstructure detail drawings. This dimension may vary within the following limits to maintain the grade and slab thickness tolerances : Minimum - occurs when either the top flange or the support angle leg contacts the bottom reinforcing steel; Maximum = t_S + 1 3/4" + flange thickness. See Section C-C for slab thickness tolerance between adjacent girder flanges.

② Distance from top of slab to top of girder as measured at centerline girder and as shown on superstructure detail drawings. This dimension may vary within the following limits to maintain the grade and slab thickness tolerances : Minimum - occurs when either the top of girder or the support angle leg contacts the bottom reinforcing steel; Maximum - value shown on the superstructure detail drawings when removable forms are used. See Section C-C for slab thickness tolerance between adjacent girder flanges.

⚠ Revised weld dimension by KWY, Ck'd. by BEF, 3/24/16.

*t_S = slab thickness as shown on superstructure detail drawings.

GENERAL NOTES

Permanent steel deck forms may be used at the Contractor's option and shall be at no additional cost to the Department. Such use may result in changes to the dead load deflection of the girder. Any cost for adjustments due to a change in the dead load deflection will be borne by the Contractor. Payment for deck concrete and structural steel will not be increased due to use of permanent steel deck forms.

Permanent steel deck forms shall conform to Subsection 802.14(b). Detailed plans, including detailed calculations and manufacturer's technical brochure, shall be submitted to and approved by the Engineer before work of forming the bridge deck is started.

Welding of form supports to the tension flange of steel girders will be permitted only in areas where shear connectors are used. When welding is not allowed, the method of fastening Z or ∠ supports to the flange must be approved by the Engineer.

Form sheets shall be fastened to supporting members and to each other with galvanized metal screws sufficient in size and number to provide a secure attachment. Alternate methods of attachment must be approved by the Engineer.

When the pitch of form corrugations match the reinforcing spacing, transversely align form sheets across the bridge to maintain the correct orientation of continuous reinforcing bars in the corrugations.

Bar support rods, when used, shall be sized and spaced to adequately support the bottom reinforcing mat at the required position.

High chairs shall be sized to support the top mat of reinforcing at the proper position. High chairs shall be placed at locations shown on the detail drawings.

Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition), with applicable Supplemental Specifications and Special Provisions.

STANDARD DETAILS FOR PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55005.dgn

CHECKED BY: BEF DATE: 2-27-2014 SCALE: NONE

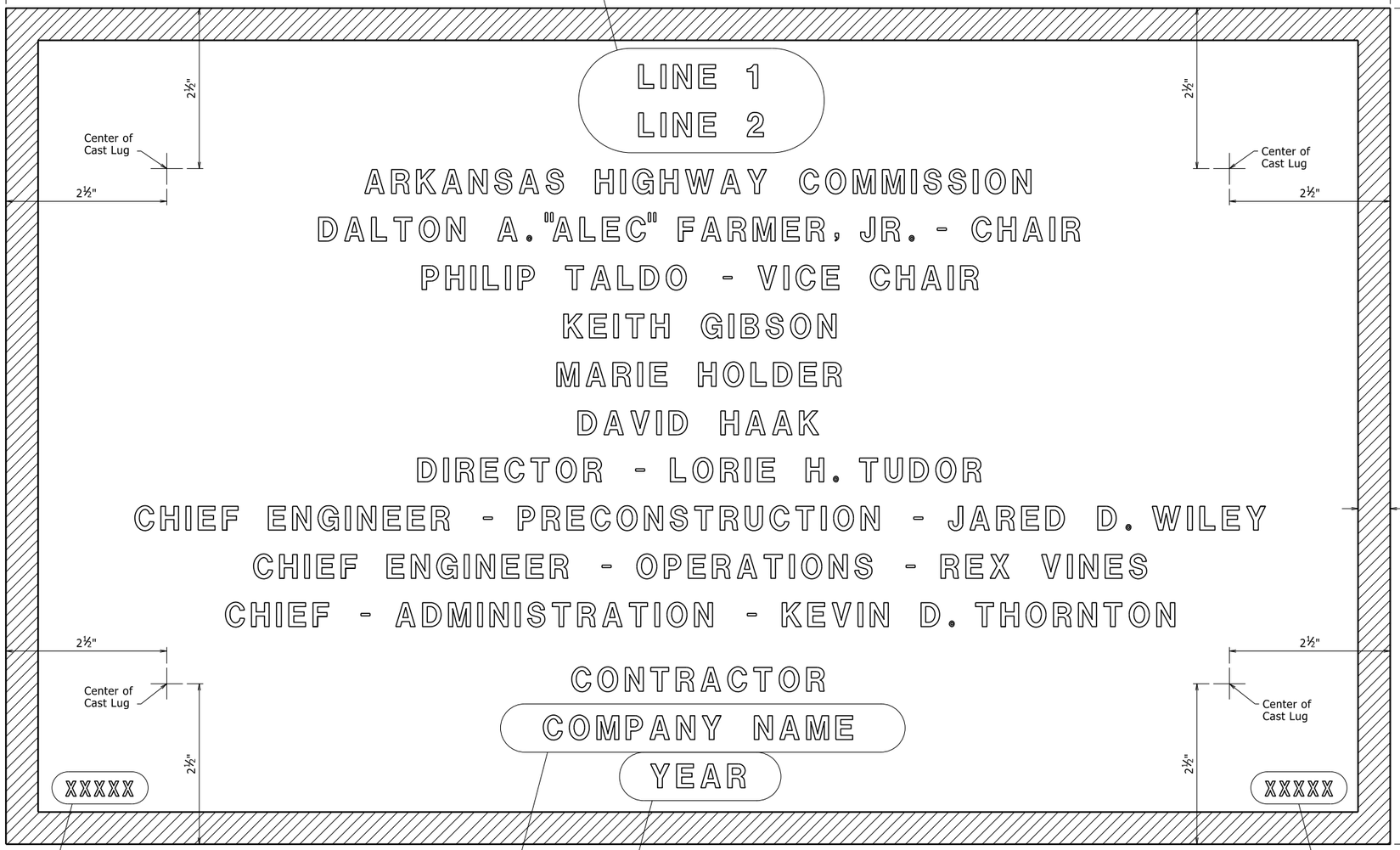
DESIGNED BY: STD. DATE: —

DRAWING NO. 55005

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
4-14-23		6	ARK.			
		TYPE D NAME PLATE - 55010				

The name of the bridge as shown on the plans shall be placed on Lines 1 & 2 using ⅛" raised letters and numerals ⅜" high.

	Example 1	Example 2	Example 3	Example 4
Line 1	RED RIVER	SOUTHERN RAILROAD	SALINE RIVER	HIGHWAY 5
Line 2	RELIEF	OVERPASS	RELIEF	



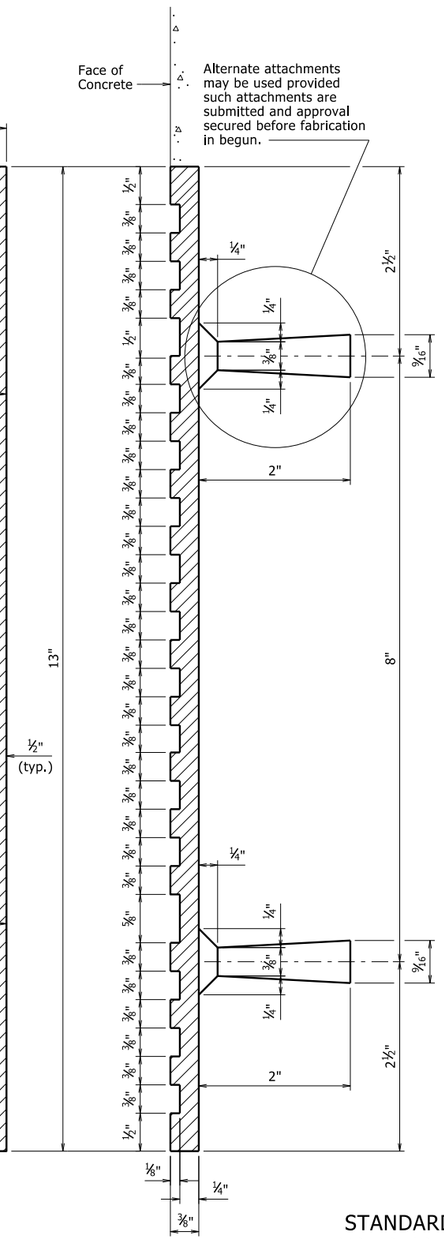
Place the design live loading here using ⅛" raised letters and numerals ¼" high. Examples: HS20, HL-93

Place the Year in which Contract was awarded here using ⅛" raised numerals ⅜" high. Example: 2001

Place the name of the company awarded the construction contract here using ⅛" raised letters and numerals ⅜" high. Example: ABCD CONSTRUCTION, INC.

Place the Bridge number here using ⅛" raised letters and numerals ¼" high. Examples: A1234, 05432

TYPICAL BRIDGE NAME PLATE



GENERAL NOTES

Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, (2014 Edition) with applicable Supplemental Specifications and Special Provisions.

Name plates shall be cast bronze and shall meet the material requirements as specified in Section 812.

Body of plate shall be ¼" thick and shall include four tapering cone lugs ⅜" to 9/16" x 2" long. The border and all lettering shall be raised ⅛" above the face of plate and shall be polished.

All lettering shall be plain gothic, square cut and not tapered.

The number of plates required and the location and name on the plate for each bridge shall be as designated on the plans.

1 Revised and Redrawn
4-14-23 CGP Checked By: CRE

STANDARD DETAILS FOR
TYPE D BRIDGE NAME PLATE

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

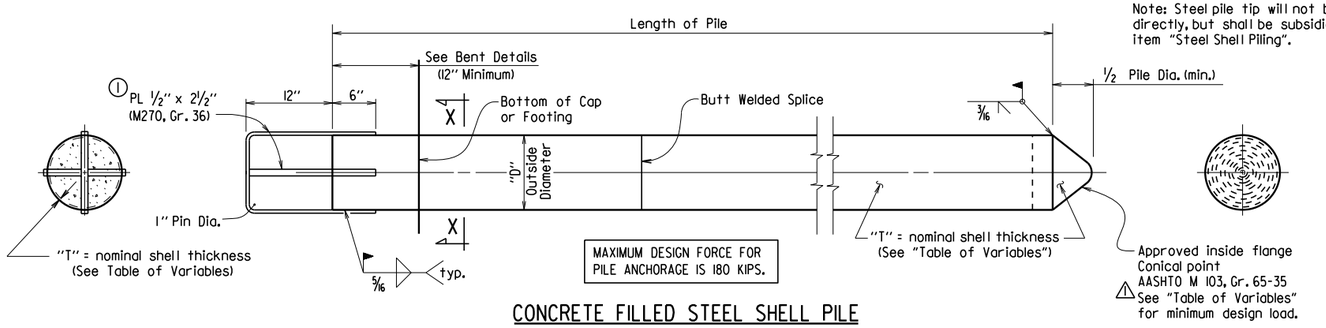
DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55010.dgn
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE
DESIGNED BY: STD. DATE:

DRAWING NO. 55010

PRINT DATE: 4/20/2023

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3/24/16				6	ARK.			
				JOB NO.				

(1) STEEL SHELL PILES 55021

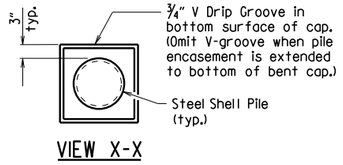


Note: Steel pile tip will not be paid for directly, but shall be subsidiary to the item "Steel Shell Piling".

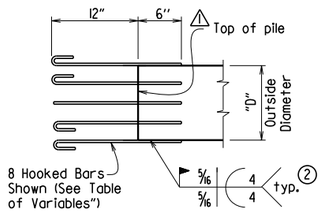
CONCRETE FILLED STEEL SHELL PILE

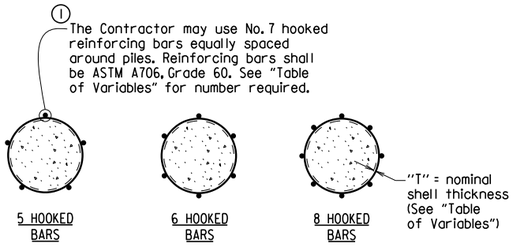
(1) Pile anchorage shall be placed to minimize interference with anchor bolts and reinforcing in cap or footing.

(2) Welding shall comply with ANSI/AWS D1.4 Structural Welding Code-Reinforcing Steel and applicable portions of ANSI/AWS D1.5 Bridge Welding Code.



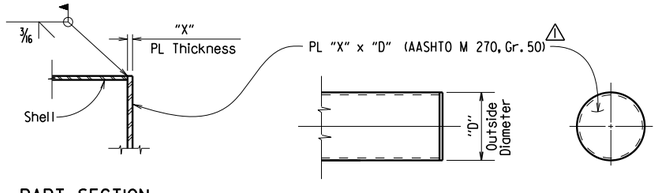
VIEW X-X





ALTERNATE PILE ANCHORAGE DETAIL

Note: Hooked bars shall be oriented to provide the required concrete clearances shown in the plans.

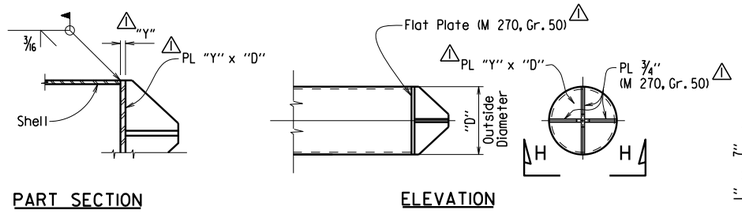


PART SECTION

ELEVATION

ALTERNATE FLAT TIP DETAIL

Note: The alternate flat tip detail shall not be used on steel shell piling to be driven through embankments constructed with internal geosynthetic reinforcement.



PART SECTION

ELEVATION

VIEW H-H

ALTERNATE VANED TIP DETAIL

GENERAL NOTES FOR CONCRETE FILLED STEEL SHEEL PILES:

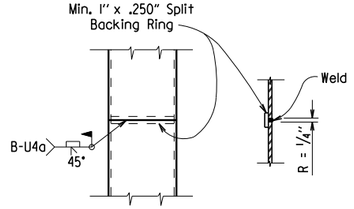
Steel shells shall conform ASTM A252, Grade 3 (Fy = 45,000 psi.)

Concrete used for filling of steel shell shall be Class S with a minimum 28-day compressive strength, f'c = 3,500 psi. and shall be poured in the dry.

Steel shell piling that extends above the ground and is not protected by pile encasement shall be painted in accordance with Subsection 805.02.

See Bridge Layout for size and estimated length of steel shell piles and for driving information.

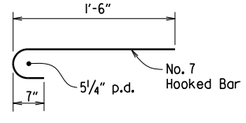
Concrete, structural steel, reinforcing steel (including welding), and painting shall not be paid for directly, but shall be considered subsidiary to the item "Steel Shell Piling".



TYPICAL SPLICE DETAILS

TABLE OF VARIABLES

OUTSIDE DIAMETER "D"	NOMINAL SHELL THICKNESS "T"	⚠ PLATE THICKNESS "X"	⚠ PLATE THICKNESS "Y"	NO. OF HOOKED BARS FOR ALTERNATE PILE ANCHORAGE	⚠ MINIMUM CONICAL TIP DESIGN LOAD (KIPS)
14"	0.50"	2 1/4"	1 1/2"	5	859
16"	0.50"	2 1/4"	1 1/2"	5	986
18"	0.50"	2 1/2"	1 1/2"	6	1,114
20"	0.50"	2 1/2"	1 3/4"	6	1,241
24"	0.50"	2 3/4"	1 3/4"	8	1,495



HOOKED BAR DETAIL

⚠ Revised and added various details by KWY, Ck'd. by BEF, 3/24/16.

GENERAL NOTES FOR PILE ENCASEMENTS:

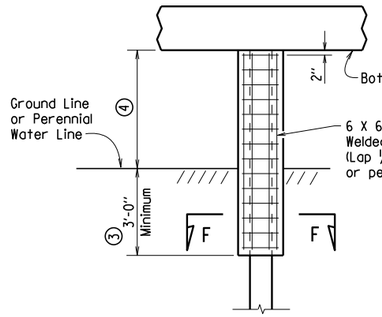
⚠ See Bridge Layout for additional notes, any pile encasement restrictions and required location of pile encasements.

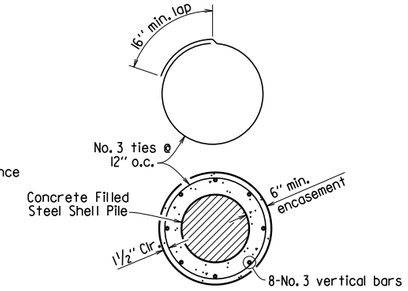
Concrete shall be Class S with a minimum 28-day compressive strength, f'c = 3,500 psi. If concrete cannot be placed in the dry, Seal Concrete may be used from top to bottom of encasement.

Reinforcing steel shall be Grade 60 conforming to AASHTO M 31 or M 322, Type A.

Welded wire fabric shall conform to AASHTO M 55 or M 221.

Concrete, welded wire fabric or reinforcing steel, and galvanized pipe shall not be paid for directly, but shall be considered subsidiary to the item "Pile Encasement".





SECTION F-F (REINF. ALTERNATE)

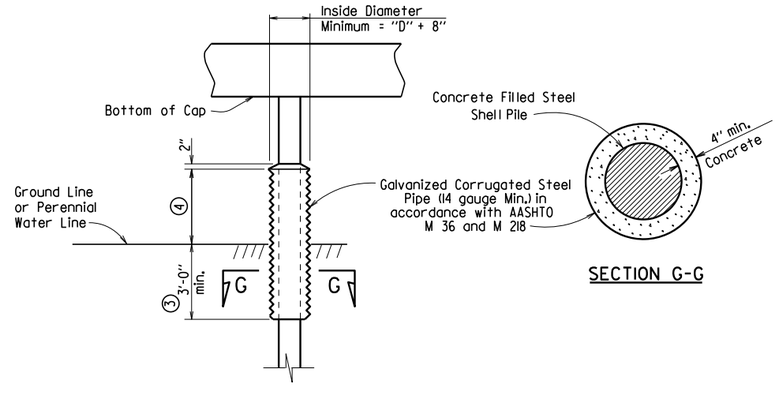
PILE ENCASEMENT DETAIL FOR STEEL SHELL PILES

(5) (Shown with Encasement to Bottom of Cap)

(3) Unless otherwise noted on Bridge Layout.

(4) See Bridge Layout for height of pile encasement (3'-0" Minimum).

(5) Pile encasement, when not extended to bottom of cap, shall have 2" concrete taper for water runoff as shown in the detail for partial height encasement.



SECTION G-G

ALTERNATE PILE ENCASEMENT DETAIL FOR STEEL SHELL PILES

(Shown with Partial Height Encasement)

This document was originally issued and sealed by Charles R. Ellis, PE No. 9235, on March 24, 2016. This copy is not a signed and sealed document.

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

BRIDGE ENGINEER

STANDARD DETAILS FOR CONCRETE FILLED STEEL SHELL PILES AND PILE ENCASEMENTS

ARKANSAS STATE HIGHWAY COMMISSION

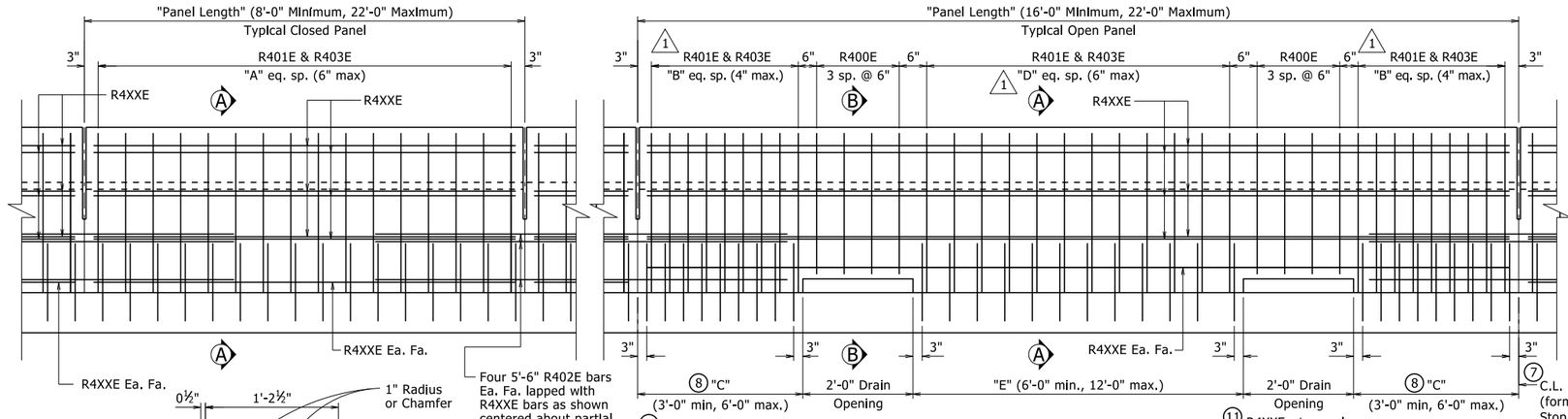
LITTLE ROCK, ARK.

DRAWN BY:	A.M.S.	DATE:	2/27/2014	FILENAME:	b55021.dgn
CHECKED BY:	B.E.F.	DATE:	2/27/2014	SCALE:	NO SCALE
DESIGNED BY:	STD.	DATE:	—		

DRAWING NO. 55021

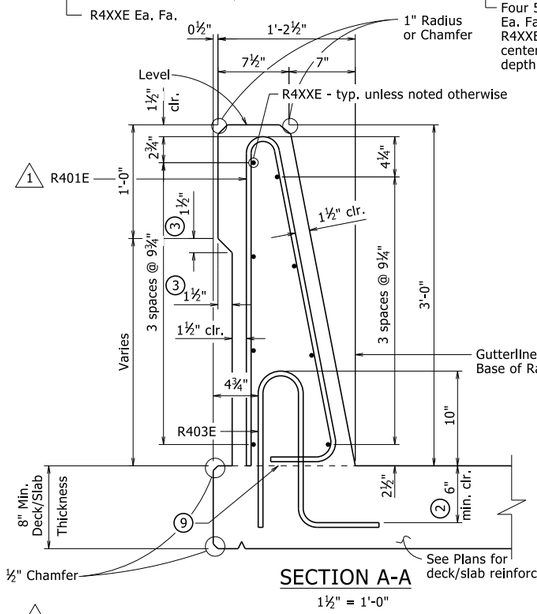
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
09/27/2022				6	ARK.			
				JOB NO.				

TYPE SSTR36 - 55070



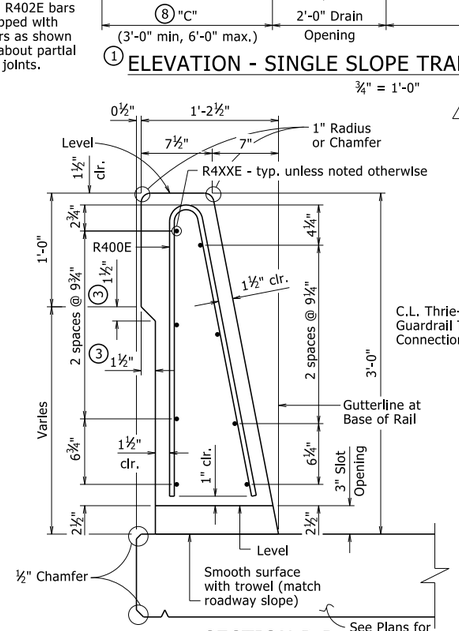
(1) ELEVATION - SINGLE SLOPE TRAFFIC RAIL

¾" = 1'-0"



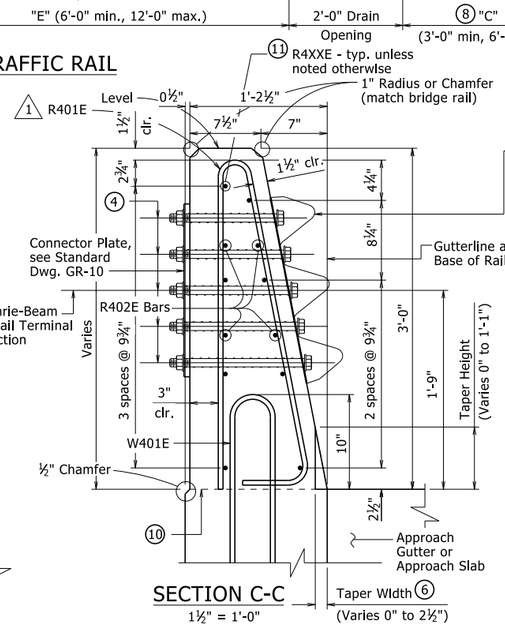
SECTION A-A

1½" = 1'-0"



SECTION B-B

1½" = 1'-0"



SECTION C-C

1½" = 1'-0"

(9) Required Construction Joint. Level where water flows away from rail, match roadway slope where water flows toward rail.

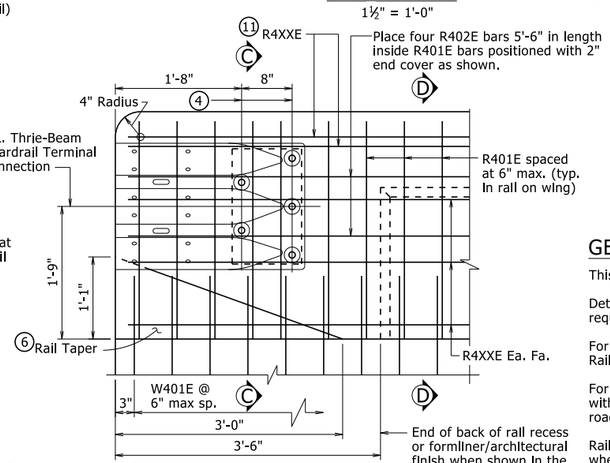
(10) Top of Abutment Wing & Required Construction Joint (match bridge deck/slab construction joint slope). See Plans for Wing reinforcing.

(11) These bars will not be included in the "Table of Variables". See Plans for details.

Bolt Special End Shoe to face of rail as shown. Tapered washers are not required between the head of the bolts and the sloped face of the rail. Tighten the five terminal connection bolts in a well distributed pattern to prevent damage or distortion of the thrie-beam connection. Cut bolts off after installation so as to extend no more than ¾" beyond nut. Paint ends of cut-off bolts with zinc-rich paint. This work and material will not be paid for directly but shall be considered subsidiary to associated contract items.

SECTION D-D

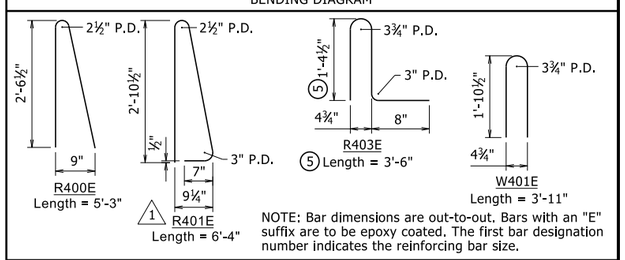
1½" = 1'-0"



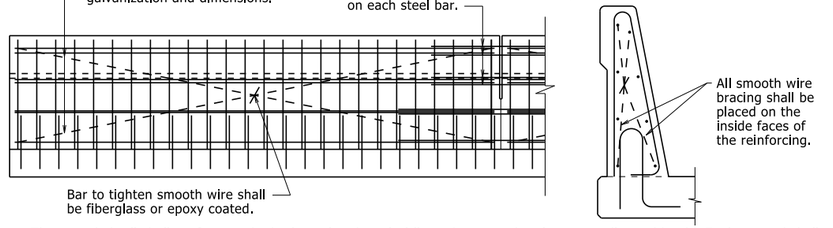
(1) RAIL TERMINUS DETAILS

1" = 1'-0"

BENDING DIAGRAM



NOTE: Bar dimensions are out-to-out. Bars with an "E" suffix are to be epoxy coated. The first bar designation number indicates the reinforcing bar size.



The extruded rail shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and texture. Unless otherwise noted, exposed surfaces may be given a light brush finish or a Class 3, Textured Coating Finish in place of Class 2, Rubbed Finish.

All panels shall be braced as required to prevent racking.

Slip forming will not be allowed on bridges where formliner with architectural treatment is used unless approval from the Engineer is obtained.

TABLE OF VARIABLES

Closed Rail Panels			Open Rail Panels					
Panel Length	A	R4XXE	Panel Length	B	C	D	E	R4XXE

See Plans for table with values.

GENERAL NOTES

This rail has been successfully evaluated by full-scale crash test to meet MASH TL-4 criteria.

Details shown are general for bridges without sidewalks. See Plans for additional details and requirements specific to bridges with sidewalks.

For Table of Variables, Rail Bar List, locations of Full and Partial Depth Rail Joints, and Wing & Rail Bar Lists, see Plans.

For location of drain openings, see Plans. Drain openings shown are not applicable for bridges with sidewalks. Drain openings will not be allowed over Railroad Right of Way, travelled roadways, and protected waterways.

Rail Terminus details, including Rail Taper, are not applicable for bridges with sidewalks or when bridge railing is continuous with roadway railing.

Scales shown are for 22"x34" drawings. When using 11"x17" drawings, reduce scale by one half.

(1) Modified bending diagram and spacing for R401E bar.

By: CGP, Checked by: CMW 09/27/2022

No Scale

This document was originally issued and sealed by Charles R. Ellis, PE No. 9235, on November 5, 2020. This copy is not a signed and sealed document.

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

BRIDGE ENGINEER

THESE DETAILS ARE APPLICABLE UNLESS OTHERWISE SHOWN IN THE PLAN DETAILS, SPECIAL PROVISIONS, OR SUPPLEMENTAL SPECIFICATIONS.

STANDARD DETAILS FOR BRIDGE TRAFFIC RAIL TYPE SSTR36

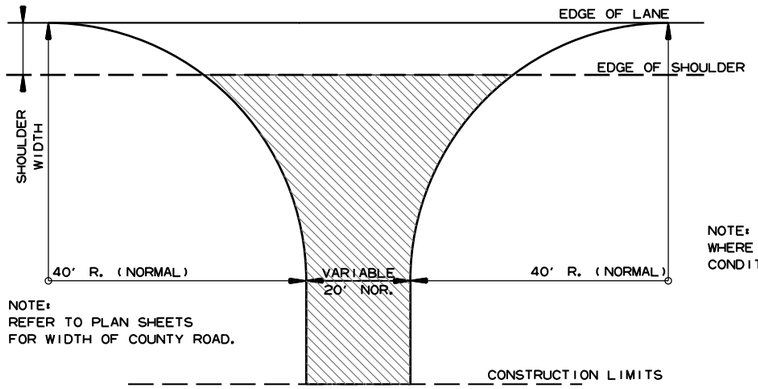
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KWY DATE: 11/5/2020 FILENAME: b55070.dgn
CHECKED BY: LJB DATE: 11/5/2020 SCALE: As Noted
DESIGNED BY: STD. DATE: -----

DRAWING NO. 55070

PRINT DATE: 10/6/2022

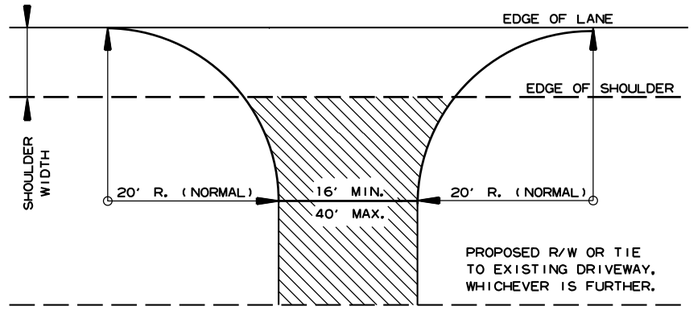


NOTE:
REFER TO PLAN SHEETS
FOR WIDTH OF COUNTY ROAD.

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

ACHM SURFACE COURSE (1/2")
(220 LBS. PER SQ. YD.) AND
AGGREGATE BASE COURSE (CLASS 7)
7" COMP. DEPTH, UNLESS OTHERWISE
SPECIFIED IN PLANS.

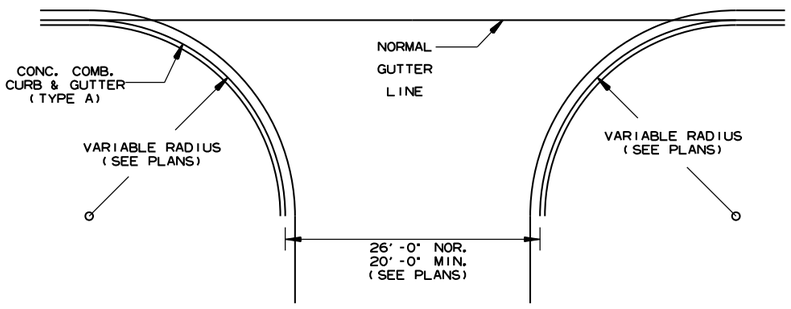
DETAIL FOR COUNTY ROAD TURNOUTS OPEN SHOULDER SECTION



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

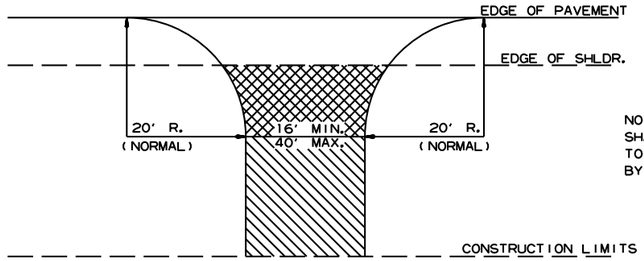
ACHM SURFACE COURSE (1/2")
(220 LBS. PER SQ. YD.) AND
AGGREGATE BASE COURSE (CLASS 7)
7" COMP. DEPTH IF ASPHALT OR
GRAVEL DRIVE EXISTING; OR 6"
CONCRETE IF CONCRETE DRIVE
EXISTING.

DETAIL FOR DRIVEWAY TURNOUTS OPEN SHOULDER SECTION (ARTERIALS)



NOTE:
PAVEMENT STRUCTURE FOR STATE HIGHWAYS, CITY STREETS,
& COUNTY ROADS TO BE SAME AS MAIN LANES.

DETAIL OF TURNOUTS, ASPHALT STREETS, COUNTY ROADS & STATE HIGHWAYS CURB & GUTTER SECTION



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

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

AGGREGATE BASE COURSE (CLASS 7)
9" COMP. DEPTH OR CONFORM
TO EXISTING DRIVEWAY

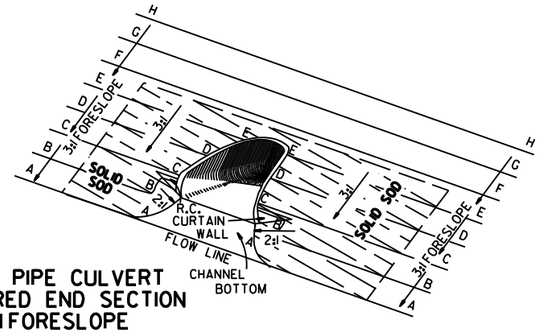
DETAIL FOR DRIVEWAY TURNOUTS (COLLECTORS)

DATE REV	DATE FILMED	DESCRIPTION
5-19-22		ISSUED

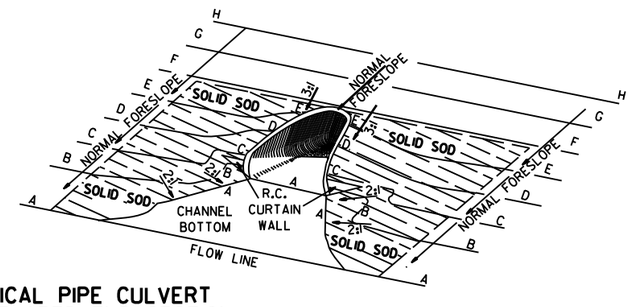
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DRIVEWAYS & STREET TURNOUTS

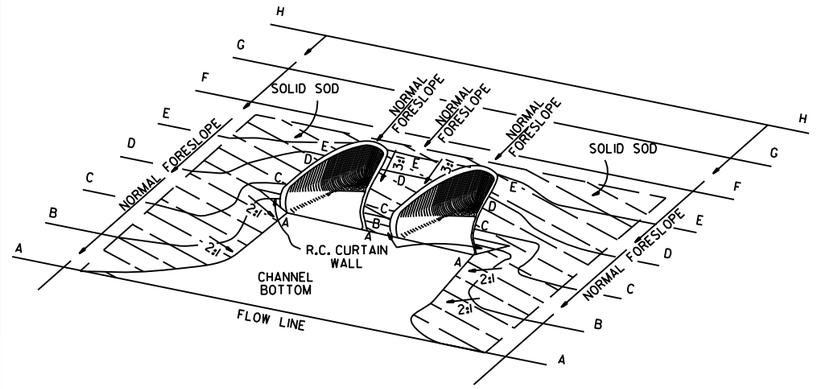
STANDARD DRAWING DR-2



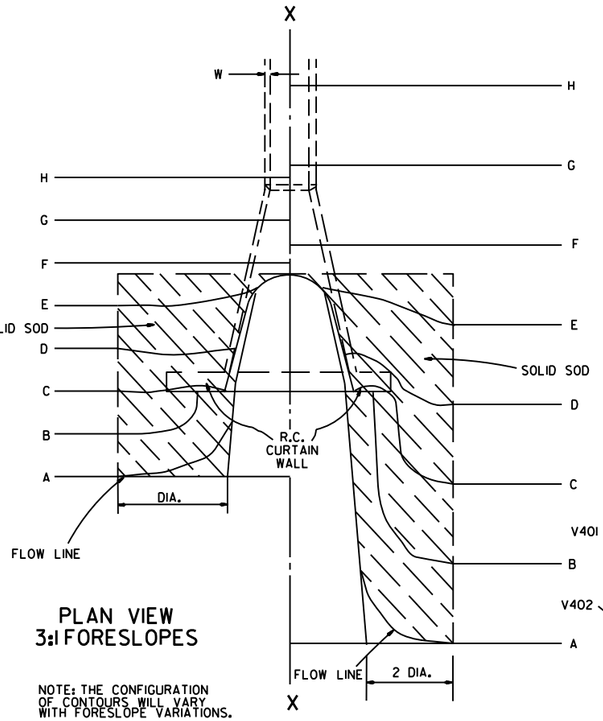
TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& 3:1 FORESLOPE



TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& FLATTENED ADJACENT SLOPES



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



PLAN VIEW
3:1 FORESLOPES

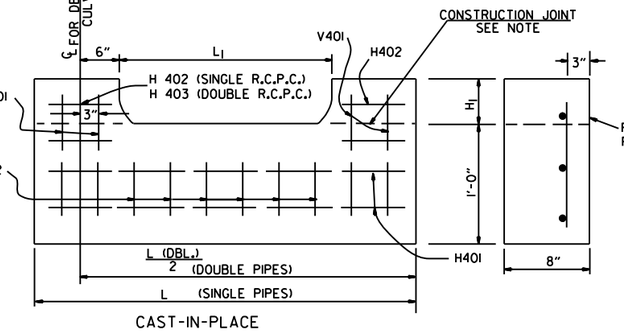
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW
FLATTENED FORESLOPES

R.C. CURTAIN WALL
DIMENSIONS & QUANTITIES

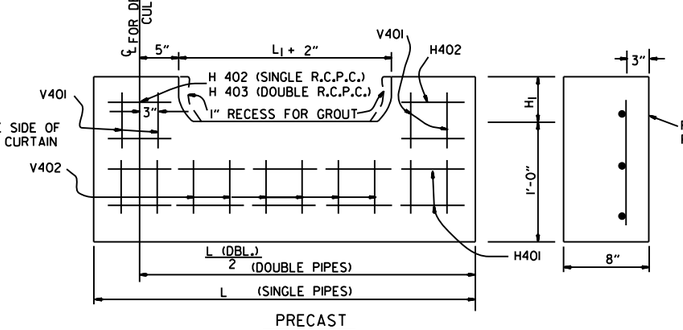
PIPE DIA.	H_1	L_1	L	L (DBL.)/2	SINGLE R.C.P.C. CONC.	SINGLE R.C.P.C. REINF. STEEL	DOUBLE R.C.P.C. CONC.	DOUBLE R.C.P.C. REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	1'-11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	39.0	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

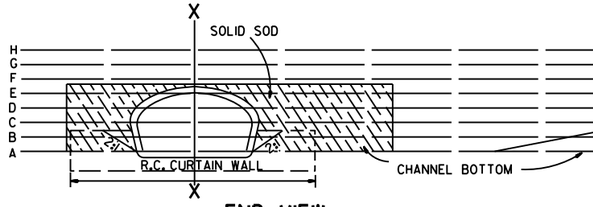
NOTE: THE PORTION OF THE R.C. CURTAIN WALL BENEATH THE FLARED END SECTION (LOWER 1'-0") SHALL BE PLACED MONOLITHICALLY. THE FLARED END SECTION SHALL THEN BE SET IN PLACE & THE REMAINING PORTIONS OF THE R.C. CURTAIN WALL PLACED.



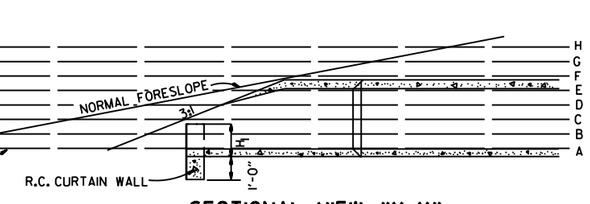
PRECAST

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

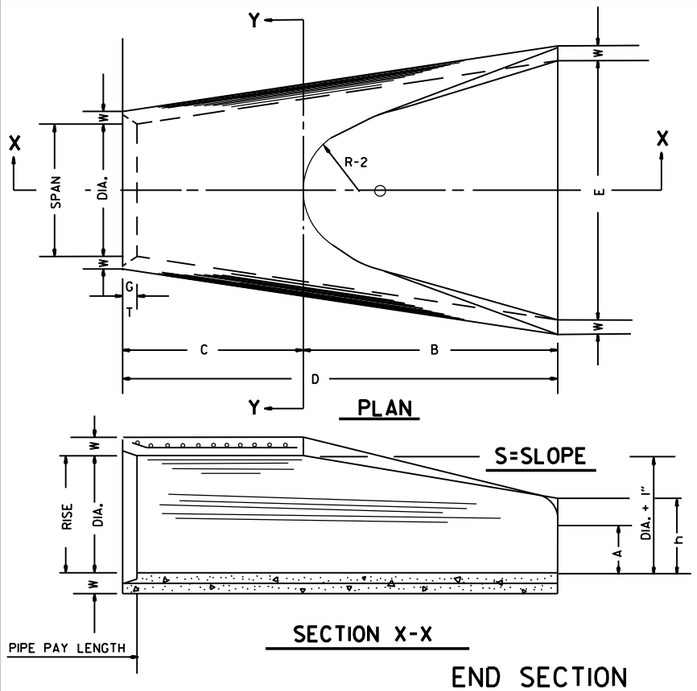
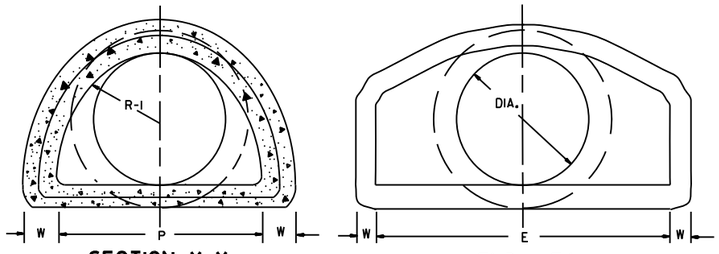


TABLE OF DIMENSIONS

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"

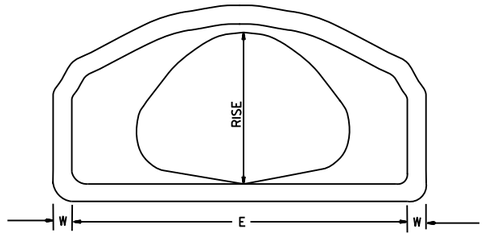


NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

ARCH PIPE

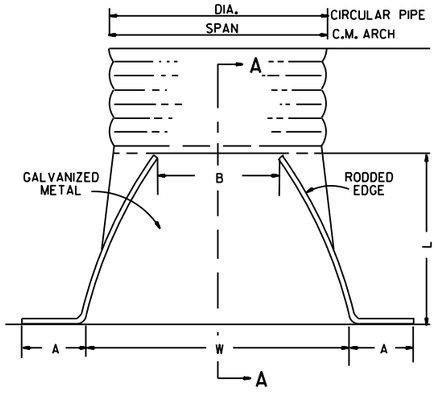
EQUIV. DIA.	• SPAN AASHTO M 206	• SPAN AHD NOMINAL	• RISE AASHTO M 206	• RISE AHD NOMINAL	W	A	B	C	D	E	P	R2	G-T	S
	INCHES													
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1½"	2½:1
18	22	22	13½	14	2½"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32⅛"	13"	2½"	2½:1
21	26	26	15½	16	2¾"	7"	2'-3"	3'-10"	6'-1"	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'-1½"	6'-1½"	6'-6"	54 5/16"	22"	3½"	2½:1
42	51⅛	51	31 5/16	31	4½"	11½"	4'-7"	1-10¼"	6'-5¼"	7'-2"	59½"	23"	3¾"	2½:1
48	58½	59	36	36	5"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	7'-10"	70 5/16"	24"	4¼"	2½:1
54	65	65	40	40	5½"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72 1/16"	24"	4¾"	2¼:1
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77 1/16"	24"	5"	2¼:1

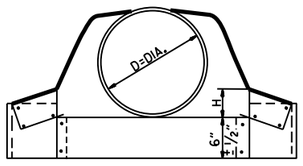
• THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.

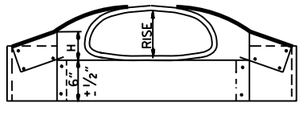


END VIEW
CONCRETE ARCH PIPE

END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS







CIRCULAR PIPE

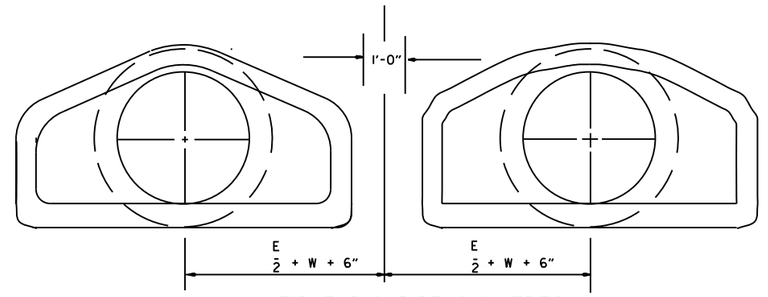
D. DIA.	GAUGE	A 1" ±	B. MAX.	H 1" ±	L 1½" ±	W 2" ±	S
		INCHES					
12	16	6	6	6	21	24	2½:1
15	16	7	8	6	26	30	2½:1
18	16	8	10	6	31	36	2½:1
21	16	9	12	6	36	42	2½:1
24	16	10	13	6	41	48	2½:1
30	14	12	16	8	51	60	2½:1
36	14	14	19	9	60	72	2½:1
42	12	16	22	11	69	84	2½:1
48	12	18	27	12	78	90	2½:1
54	12	18	30	12	84	102	2:1
60	12	18	33	12	87	114	1¾:1
66	12	18	36	12	87	120	1½:1
72	12	18	39	12	87	126	1 1/3:1

C.M. ARCH PIPE

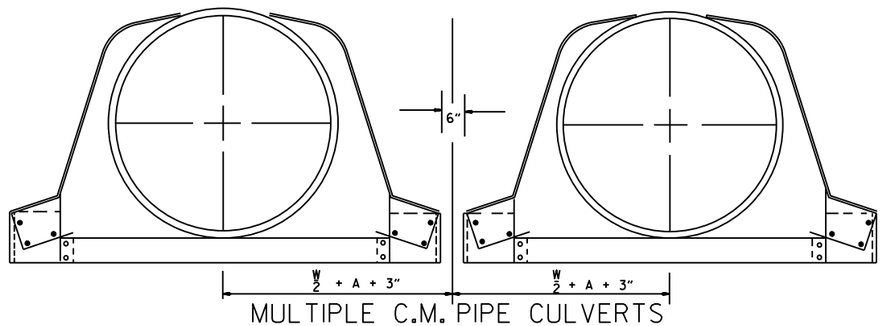
EQUIV. DIA.	SPAN	RISE	A 1" ±	B. MAX.	H 1" ±	L 1½" ±	W 2" ±	S	GAUGE
	INCHES								
15"	17	13	7	9	6	19	30	2½:1	16
18"	21	15	7	10	6	23	36	2½:1	16
21"	24	18	8	12	6	28	42	2½:1	16
24"	28	20	9	14	6	32	48	2½:1	16
30"	35	24	10	16	6	39	60	2½:1	14
36"	42	29	12	18	8	46	75	2½:1	14
42"	49	33	13	21	9	53	85	2½:1	12
48"	57	38	18	26	12	63	90	2½:1	12
54"	64	43	18	30	12	70	102	2¼:1	12
60"	71	47	18	33	12	77	114	2¼:1	12

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

END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS



MULTIPLE R.C. PIPE CULVERTS



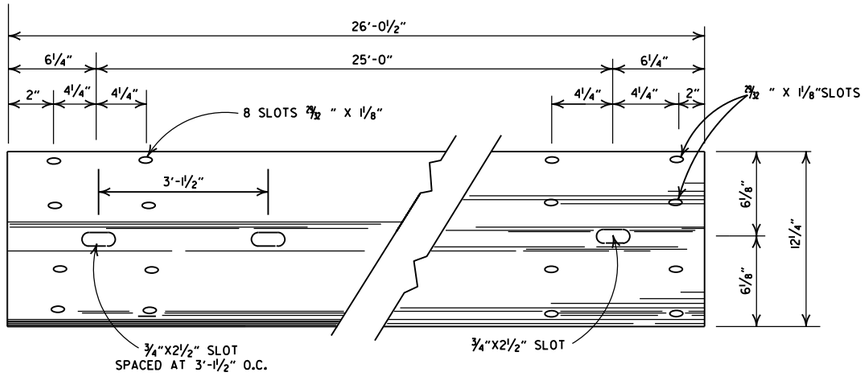
MULTIPLE C.M. PIPE CULVERTS

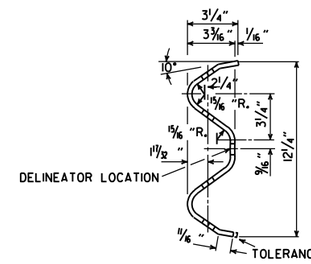
DATE	REVISION	FILMED
10-18-96	REVISED ASTM REF. TO AASHTO	
5-15-80	REVISED DISTANCE BETWEEN MULTIPLE R.C.P. F.E.S.	664-5-15-80
7-14-78	C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES	752-7-14-78
8-22-75	ADDED MULTIPLE PIPE CULVERTS	517-8-22-75
12-5-74	REMOVED NOTE RE REINF. FOR R.C. F.E.S.	500-12-5-74
5-24-73	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

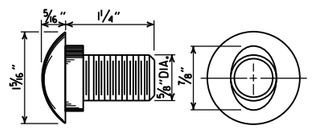
STANDARD DRAWING FES-2



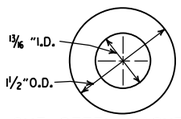


DETAILS OF W-BEAM GUARDRAIL

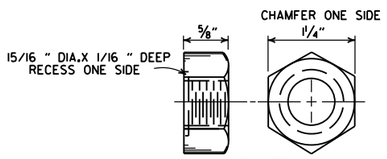
RAIL SECTION OF CLOSELY SIMILAR DIMENSIONS AND COMPARABLE STRENGTH MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.



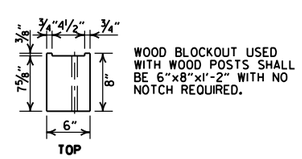
SPLICE BOLT
POST BOLT - SAME EXCEPT LENGTH



CUT STEEL WASHER

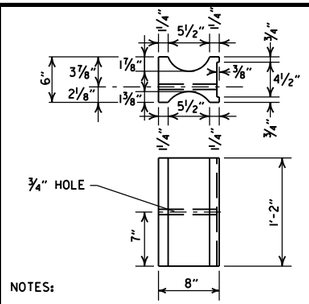


NUT



WOOD BLOCKOUT USED WITH WOOD POSTS SHALL BE 6"x8"x1'-2" WITH NO NOTCH REQUIRED.

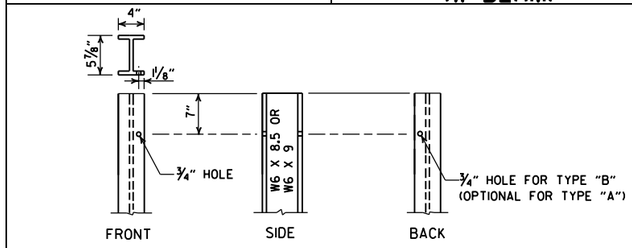
WOOD BLOCKOUT (W-BEAM)



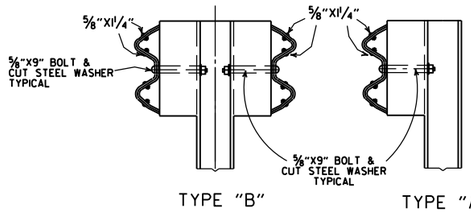
NOTES:

1. SIMILAR SHAPED PLASTIC BLOCKOUTS MAY BE USED AS LONG AS THEY MEET REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
2. DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCES.

PLASTIC BLOCKOUT (W-BEAM)



STEEL POST



DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)

-GENERAL NOTES-

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN ¾" BEYOND IT.

WHERE W-BEAM GUARDRAIL CONTINUES, THE INTERMEDIATE SECTIONS SHALL HAVE A POST SPACING OF 6'-3" UNLESS OTHERWISE NOTED.

W-BEAM GUARDRAIL REPRESENTING INTERMEDIATE SECTIONS WILL BE MEASURED ALONG THE ROADWAY FACE FROM CENTERLINE OF POST TO CENTERLINE OF POST.

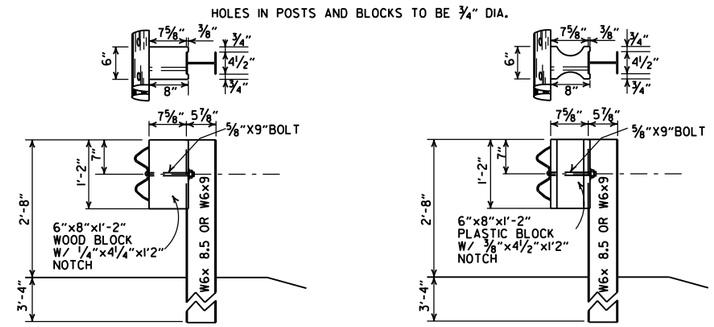
USE W-BEAM GUARDRAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB. FOR EXTENSIONS OR MODIFICATION OF EXISTING GUARDRAIL, W-BEAM GUARDRAIL COMPONENTS OF THE SAME TYPE AS THOSE EXISTING SHALL BE USED.

ANY BACKFILLING UNDER OR AROUND POST SHALL BE DAMP SAND THOROUGHLY TAMPED IN PLACE.

WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7 f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

CONTRACTOR SHALL HAVE THE OPTION OF USING WOOD BLOCKOUTS FOR W-BEAM GUARDRAIL OR PLASTIC BLOCKOUTS, AS LONG AS BLOCKOUT USED MEETS REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) FOR W-BEAM GUARDRAIL.

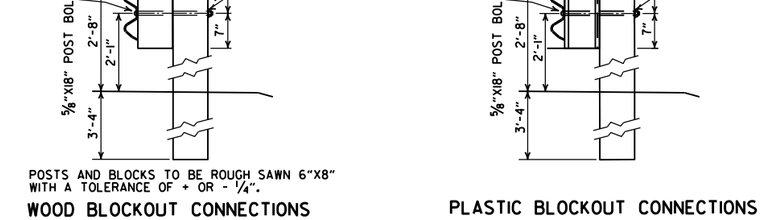
DELINEATORS SHALL BE MOUNTED AT 37.5' SPACING ON THE FRONT FACE OF THE GUARDRAIL. SPACING MAY BE REDUCED IN CURVES, AS DIRECTED BY THE ENGINEER. COLOR SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR DELINEATORS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID PER LIN. FT. FOR GUARDRAIL.



WOOD BLOCKOUT CONNECTIONS

PLASTIC BLOCKOUT CONNECTIONS

DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)



POSTS AND BLOCKS TO BE ROUGH SAWN 6"X8" WITH A TOLERANCE OF + OR - ¼".

WOOD BLOCKOUT CONNECTIONS

PLASTIC BLOCKOUT CONNECTIONS

DETAILS OF WOOD LINE POST CONNECTIONS (W-BEAM)

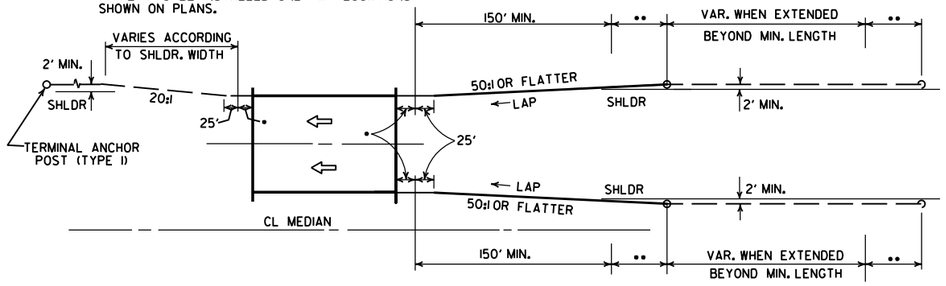
DATE	REVISION	FILMED
05-19-22	REVISED GENERAL NOTES, ADDED DELINEATOR LOCATION.	
11-07-19	RENUMBERED AND RENAMED	
11-16-17	REVISED GENERAL NOTES AND RAISED GUARDRAIL HEIGHT 3"	
07-14-10	RAISED HEIGHT OF GUARDRAIL 1"	
10-15-09	ADDED REFERENCE TO MASH	
04-10-03	REVISED GENERAL NOTES	
08-22-02	REVISED DIMENSION ON WOOD & PLASTIC BLOCKOUT CONNECTIONS & STEEL POST	
11-16-01	REVISED WOOD BLOCKOUT & DETAILS OF WOOD LINE POST CONNECTIONS	
03-30-00	REMOVED GUARDRAIL AT BRIDGE ENDS	
01-12-00	ADDED PLASTIC BLOCKOUT	
08-12-98	REV. BLOCKOUTS TO WOOD, DELETED CONC. POST & REV. GENERAL NOTE, DELETED DET. OF GUARDRAIL REPLACE. BEHIND CURB & DET. OF POST PLACE. IN SOLID ROCK, & ADDED DETAILS OF STEEL LINE POST CONN. REMOVED BACK-UP PLATE, REVISED HOLES IN STEEL POLES	
04-03-97	REMOVED "LAP IN DIRECTION OF TRAFFIC" NOTE & PLACED ARROWS ON WASHERS	
10-18-96	REVISED WOOD POST NOTE	
06-02-94	ADDED ALT. STEEL POST SIZE	
08-05-93	REVISED STEEL POST SIZE	8-5-93
10-01-92	REDRAWN & REVISED	10-1-92
08-15-91	REVISED WASHER NOTE	8-15-91
08-02-90	REV. GEN. NOTE & DEPTH OF ANC. POST IN ROCK	8-2-90
07-15-88	REVISED SECTION 3 & GENERAL NOTES	
03-04-88	REV. ANCHOR POST, ELEV. NOTES & POST IN ROCK	780-3-4-88
10-30-87	REVISED WOOD LINE POST DETAIL	546-10-30-87
10-09-87	REDRAWN & REVISED	802-10-9-87

ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

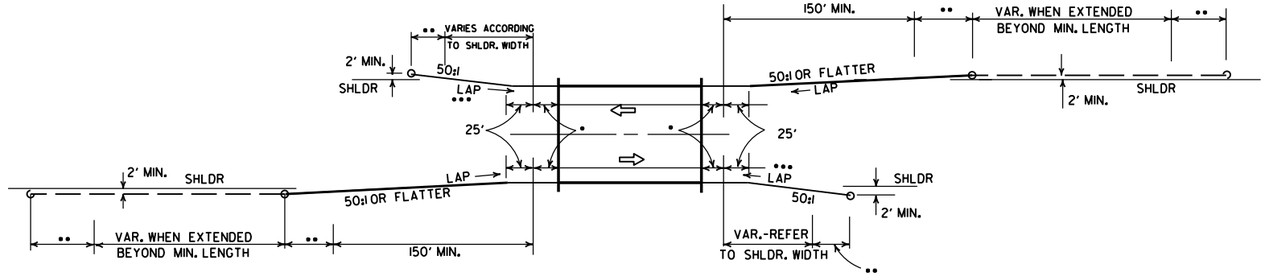
STANDARD DRAWING GR-6

NOTE: GUARDRAIL WITH GUARDRAIL TERMINAL (TYPE 1) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS.



ONE-WAY TRAFFIC

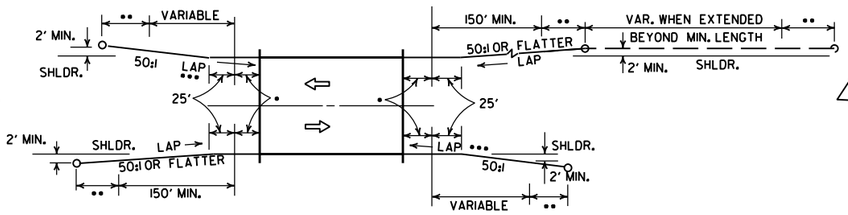
••• LAP OF GUARDRAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200'. CHANGE TO LAP IN DIRECTION OF TRAVEL.



TWO-WAY TRAFFIC

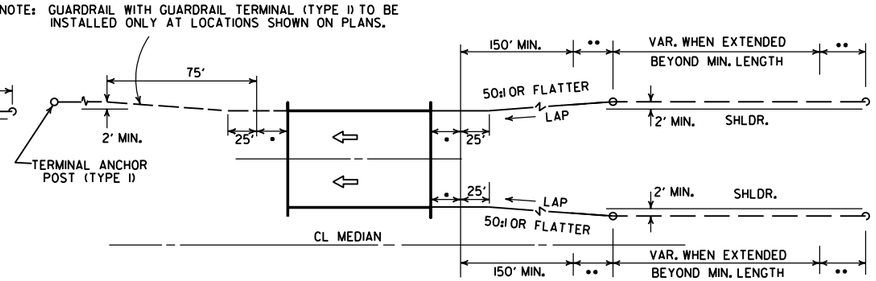
METHODS OF INSTALLATION OF GUARDRAIL AT LESS THAN FULL SHOULDER WIDTH BRIDGES USING GUARDRAIL TERMINAL (TYPE 2)

••• LAP OF GUARDRAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200'. CHANGE TO LAP IN DIRECTION OF TRAVEL.



TWO-WAY TRAFFIC

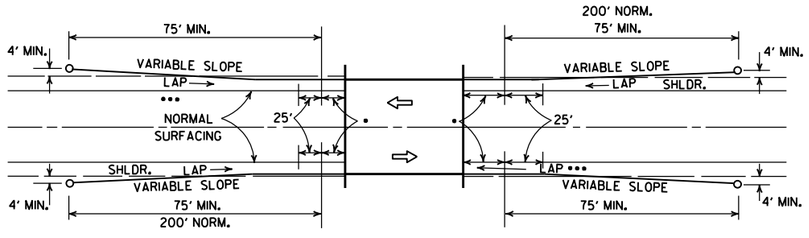
NOTE: GUARDRAIL WITH GUARDRAIL TERMINAL (TYPE 1) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS.



ONE-WAY TRAFFIC

METHOD OF INSTALLATION OF GUARDRAIL AT FULL SHOULDER WIDTH BRIDGES USING GUARDRAIL TERMINAL (TYPE 2)

••• LAP OF GUARDRAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200'. CHANGE TO LAP IN DIRECTION OF TRAVEL.



METHOD OF INSTALLATION OF GUARDRAIL USING GUARDRAIL TERMINAL (TYPE 1) (FULL SHOULDER WIDTH OR LESS BRIDGES)

LEGEND

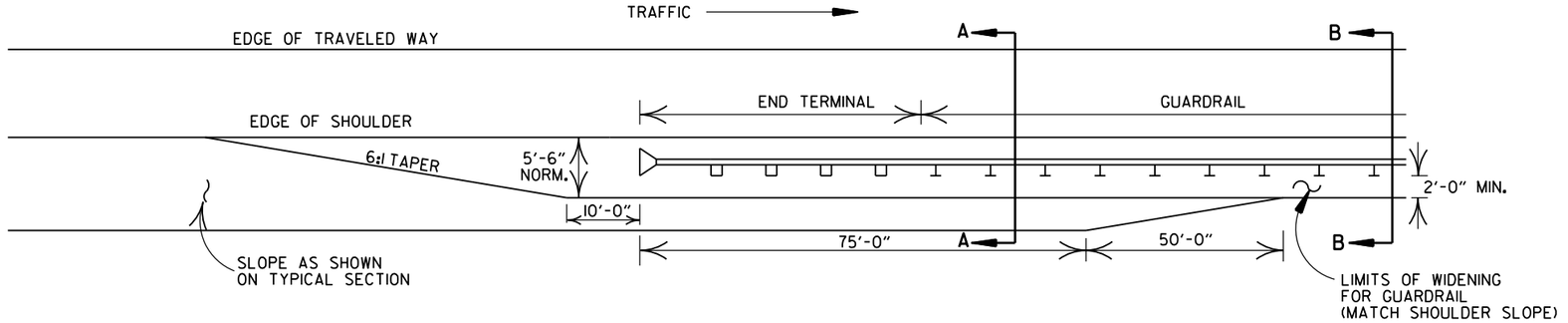
- • THRIE BEAM GUARDRAIL TERMINAL
- •• GUARDRAIL TERMINAL (TYPE 2)

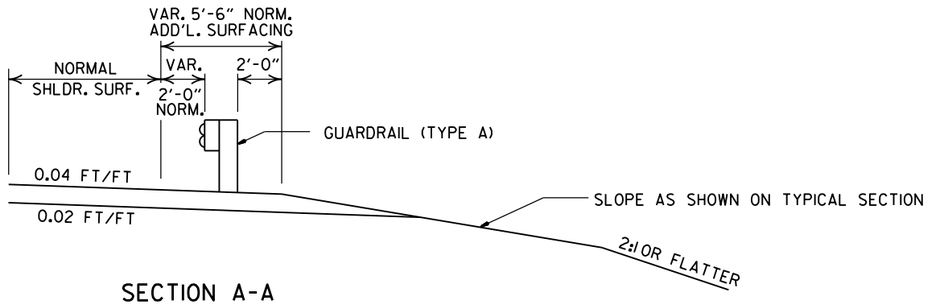
DATE	REVISION	DATE FILM
11-07-19	RENUMBERED AND RENAMED	
4-17-08	REVISED LAYOUTS	
11-10-05	REMOVED GUARDRAIL NOTES AND DETAILS	
11-16-01	DELETED NOTE-METHOD OF INSTALLATION OF GUARDRAIL USING GUARDRAIL TERM. (TY. 1)	
1-12-00	ADDED CONSTRUCTION NOTE	1-12-00
6-26-97	REVISED LAYOUT	
10-1-92	REDRAWN & REVISED	10-1-92
	ADDED NOTE	
10-9-87	REDRAWN & REVISED	

ARKANSAS STATE HIGHWAY COMMISSION

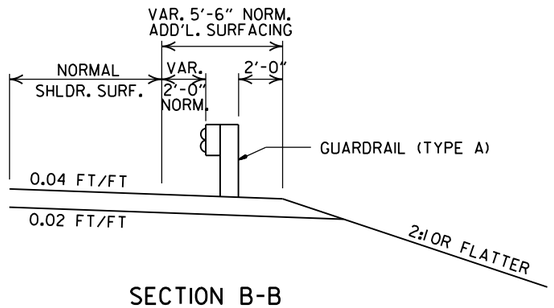
GUARDRAIL DETAILS

STANDARD DRAWING GR-8



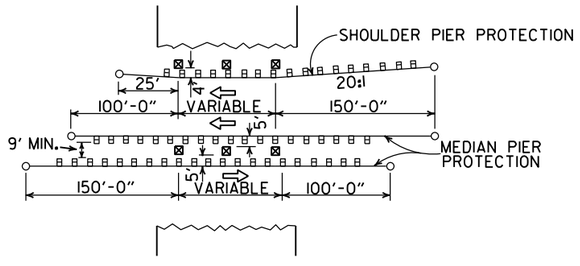


SECTION A-A



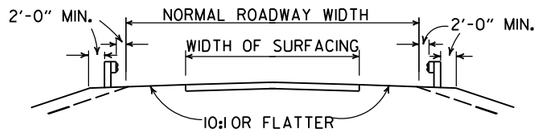
SECTION B-B

DETAILS OF WIDENING FOR GUARDRAIL

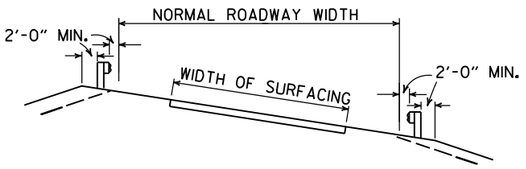


METHOD OF INSTALLATION OF GUARDRAIL AT FIXED OBSTACLE

NOTE: NORMAL SECTION TO BE WIDENED APPROX. 5'-6" EACH SIDE TO SUPPORT GUARDRAIL.



SECTION ON TANGENT



SECTION ON CURVE

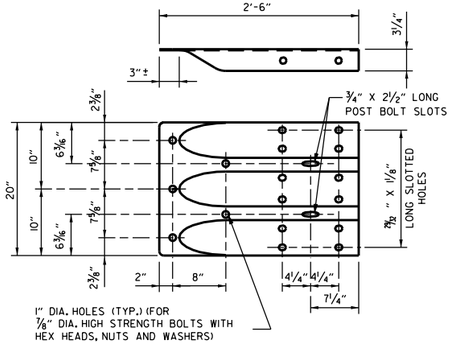
DETAILS SHOWING POSITION OF GUARDRAIL ON HIGHWAY

DATE	REVISION	DATE FILM
11-07-19	RENUMBERED AND RENAMED	
4-17-08	MINOR REVISION	
11-10-05	DRAWN	

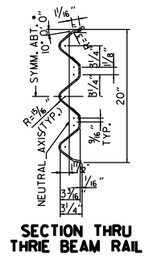
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

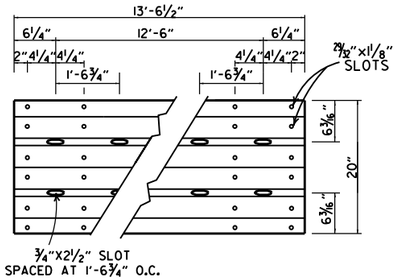
STANDARD DRAWING GR-9



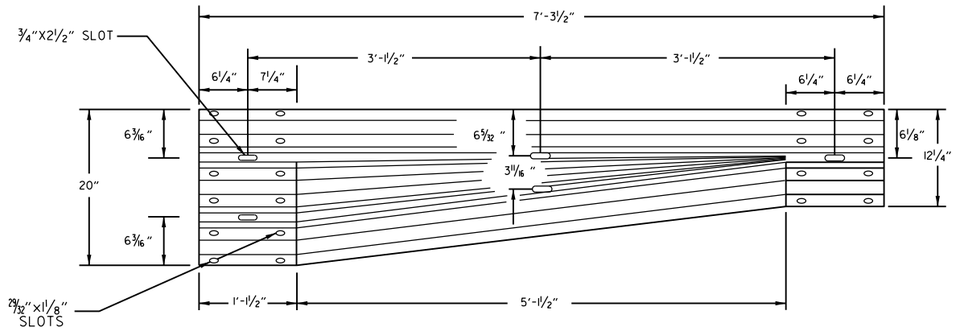
SPECIAL END SHOE



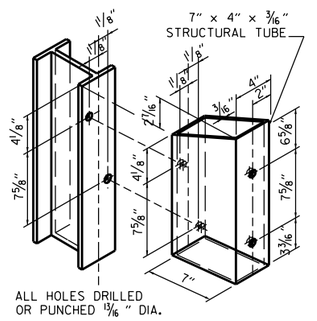
SECTION THRU THRIE BEAM RAIL



THRIE BEAM RAIL

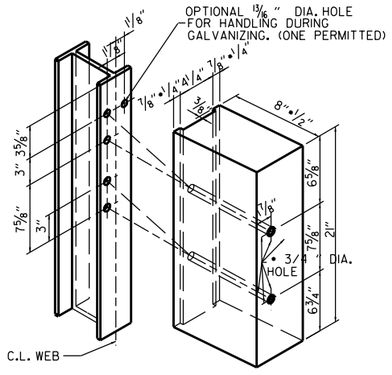


TRANSITION SECTION



ATTACH BLOCKOUT TO POST USING ⅝" DIA. HEX HEAD BOLTS WITH 1½" O.D. CUT STEEL WASHERS AND NUT.

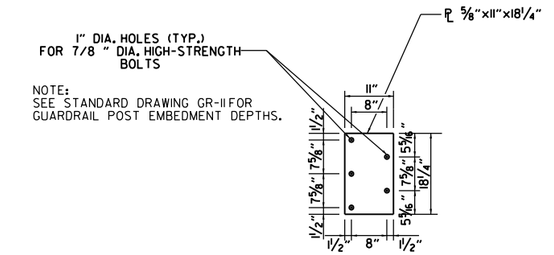
STRUCTURAL STEEL TUBING BLOCKOUT DETAIL



ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED

HOLE PUNCHING DETAIL FOR STEEL POST & WOOD OR PLASTIC BLOCKOUTS

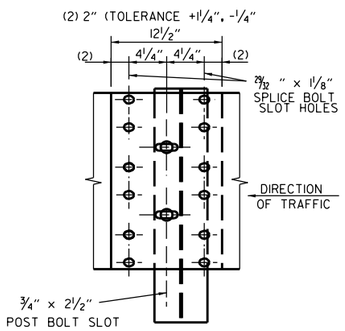
NOTE: BLOCKS SHALL BE THE SAME TYPE THROUGHOUT THE PROJECT LIMITS.



NOTE:
SEE STANDARD DRAWING GR-11 FOR GUARDRAIL POST EMBEDMENT DEPTHS.

CONNECTOR PLATE

CONNECTOR PLATE SHALL BE AASHTO M270, GR. 36 AND SHALL BE GALVANIZED AFTER FABRICATION. GALVANIZING SHALL CONFORM TO SUBSECTION 807.19 OF THE STANDARD SPECIFICATIONS. CONNECTOR PLATE TO BE BOLTED TO SPECIAL END SHOE USING ⅞" DIA. HIGH STRENGTH BOLTS, WITH THE HEADS PLACED ON THE TRAFFIC FACE. WASHERS SHALL BE USED UNDER THE HEAD AND NUT. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AND SHALL CONFORM TO SUBSECTION 807.06.



THRIE BEAM RAIL SPLICE AT POST

GENERAL NOTES:

THE THRIE BEAM RAIL, SPECIAL END SHOE, AND THE TRANSITION SECTION SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE. ZINC COATING SHALL BE TYPE 1.

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN 3"4" BEYOND IT.

ALL LAP SPLICES, INCLUDING SPECIAL END SHOES, SHALL BE MADE IN THE DIRECTION SHOWN ON STANDARD DRAWINGS GR-8 & GR-13.

REFER TO STD. DRWG. GR-11 FOR POST DETAILS.

USE THRIE BEAM GUARDRAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB.

THRIE BEAM POSTS SHALL BE SAME MATERIAL AS W-BEAM POSTS FOR ENTIRE JOB.

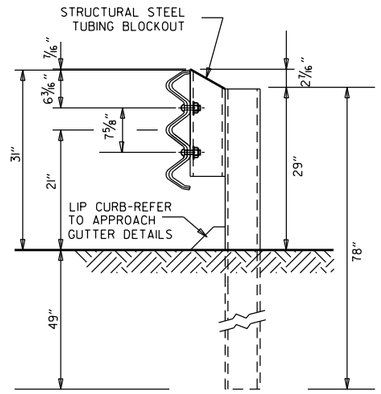
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7 f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	FILMED
11-07-19	RENAMED AND REVISED REFERENCES	
11-16-17	REVISED TRANSITION SECTION, GUARD RAIL HEIGHT, AND GENERAL NOTES; MOVED THRIE BEAM GUARD RAIL CONNECTIONS AT BRIDGES ENDS TO STD. DRWG. GR-12	
07-14-10	RAISED HEIGHT OF W-BEAM 1"	
11-29-07	ADDED PLASTIC BLOCKOUTS	
11-10-05	ADDED NOTE FOR ATTACHING STEEL BLOCKOUT	
11-18-04	REVISED GENERAL NOTES	
10-9-03	REVISED GENERAL NOTES	
04-10-03	REVISED GENERAL NOTES	
08-22-02	REVISED NOTE (2)	
06-29-00	MOVED DIMENSION LINES	
05-18-00	ADDED NOTE	
03-30-00	DRAWN & ISSUED	

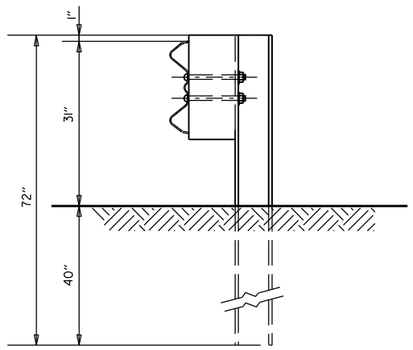
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

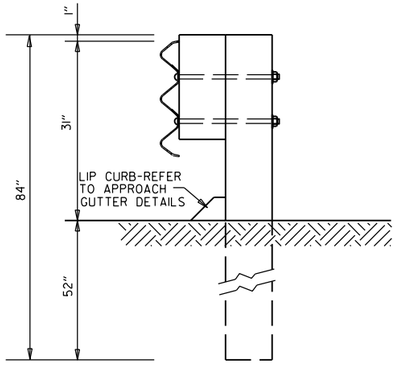
STANDARD DRAWING GR-10



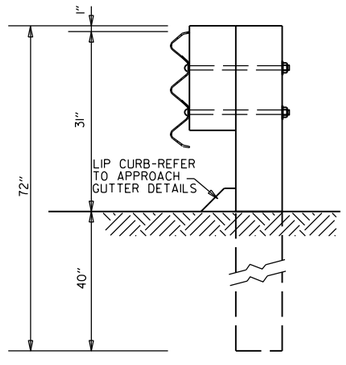
THRIE BEAM RAIL WITH STEEL TUBING BLOCKOUT
AND STEEL POST
POSTS 1-7



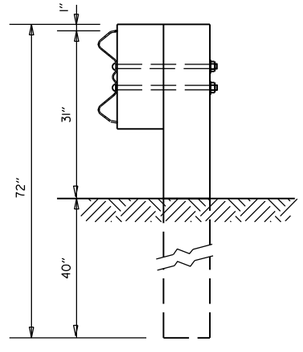
W-BEAM TO THRIE BEAM TRANSITION RAIL
WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST
POST 8



THRIE BEAM RAIL
WITH WOOD OR PLASTIC
BLOCKOUTS & WOOD POSTS
POSTS 1-6



THRIE BEAM RAIL
WITH WOOD OR PLASTIC
BLOCKOUT & WOOD POST
POST 7



W-BEAM TO THRIE BEAM
TRANSITION RAIL WITH WOOD OR
PLASTIC BLOCKOUT & WOOD POST
POST 8

GENERAL NOTES:

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

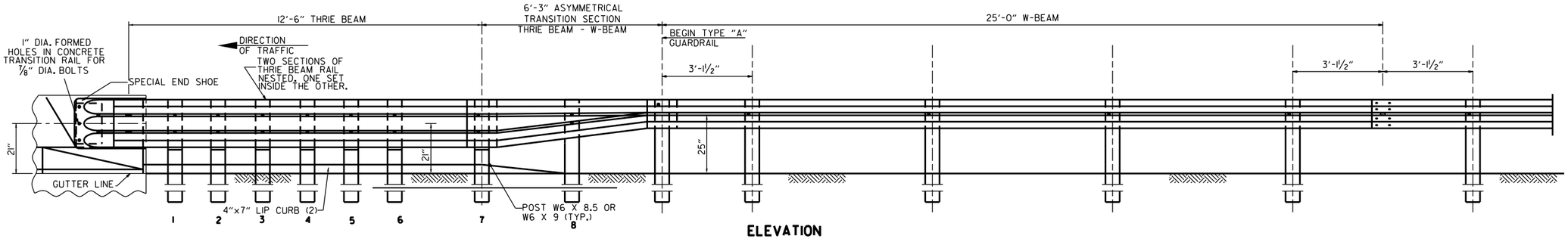
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	FILMED
11-07-19	RENAMED	
11-16-17	REVISED GUARDRAIL HEIGHT, CHANGED STD. DWG. NUMBER FROM GR-10A TO GR-11	
07-14-10	REVISED POST 8 DIMENSIONS	
11-29-07	ADDED PLASTIC BLOCKOUTS	
08-22-02	REVISED LIP CURB NOTE	
03-30-00	DRAWN & ISSUED	

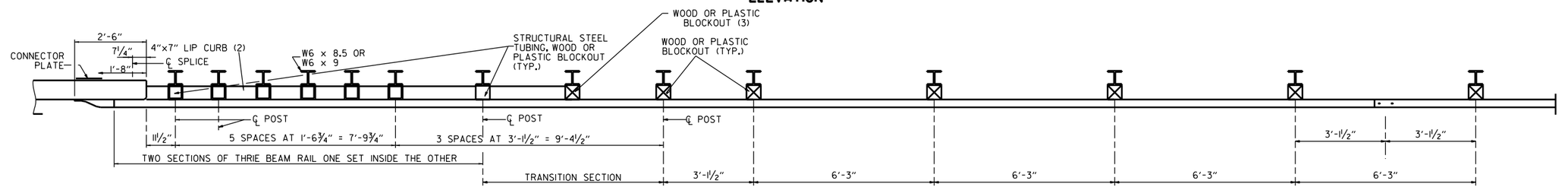
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

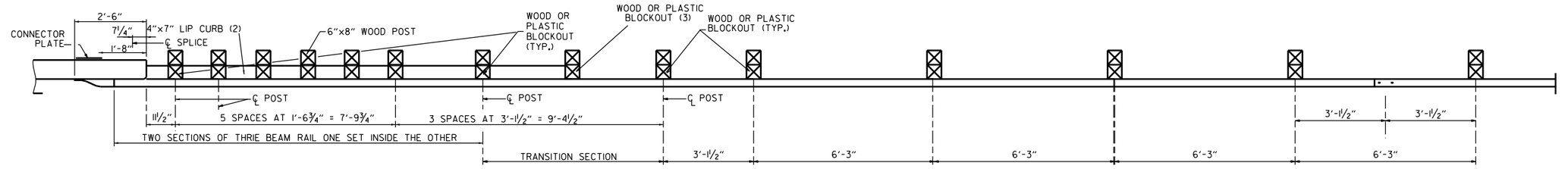
STANDARD DRAWING GR-11



ELEVATION



PLAN



PLAN

(1) VERIFY BOLT SPACING FROM RAIL TRANSITION PRODUCER.
(2) REFER TO APPROACH GUTTER DETAILS.
(3) LENGTH OF BLOCKOUT ON POST 8 TO BE MODIFIED TO FIT RAIL WIDTH.

THRIE BEAM GUARDRAIL CONNECTION AT BRIDGE ENDS

GENERAL NOTES:

THE THRIE BEAM RAIL, SPECIAL END SHOE, AND THE TRANSITION SECTION SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE. ZINC COATING SHALL BE TYPE I.

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN 3/4" BEYOND IT.

ALL LAP SPLICES, INCLUDING SPECIAL END SHOES, SHALL BE MADE IN THE DIRECTION SHOWN ON STANDARD DRAWINGS GR-8 & GR-13.

REFER TO STD. DRWG. GR-11 FOR POST DETAILS.

USE THRIE BEAM GUARDRAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB.

THRIE BEAM POSTS SHALL BE SAME MATERIAL AS W-BEAM POSTS FOR ENTIRE JOB.

POSTS SHALL NOT BE PLACED AT SPLICE LOCATIONS ALONG W-BEAM RAILS.

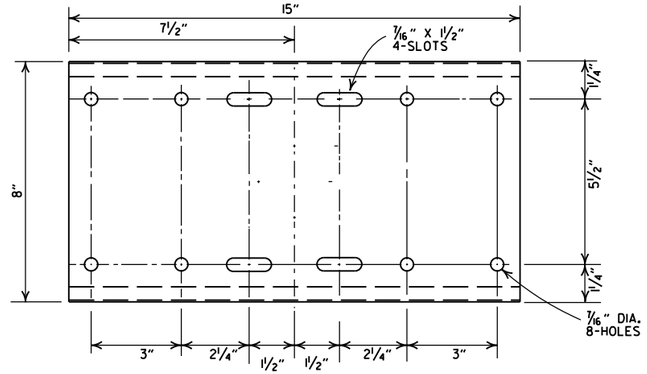
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	FILMED
05-14-20	REVISED NOTES	
11-07-19	RENAMED & REVISED REFERENCES	
11-16-17	RE-DRAWN FROM STD. DWG. GR-10 & ISSUED	

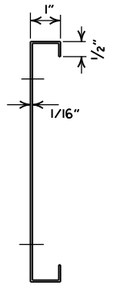
ARKANSAS STATE HIGHWAY COMMISSION

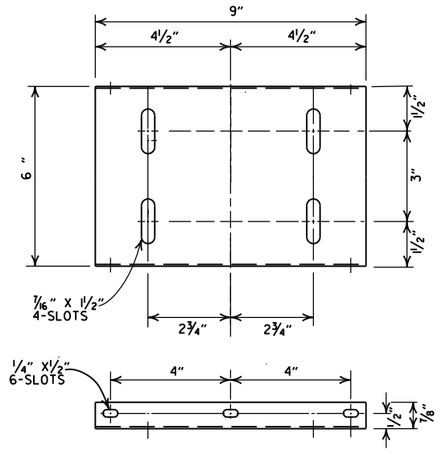
GUARDRAIL DETAILS

STANDARD DRAWING GR-12

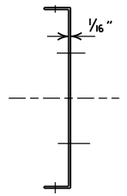


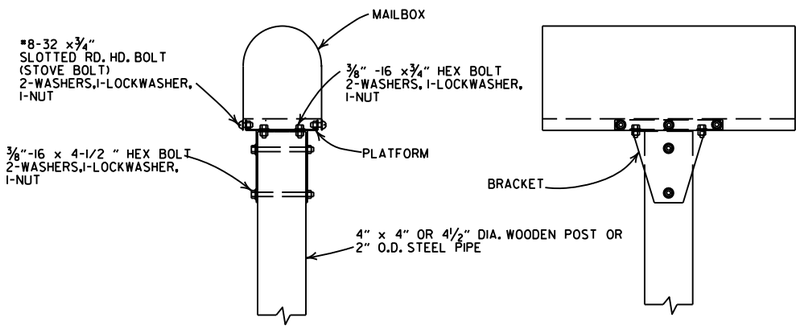
SHELF



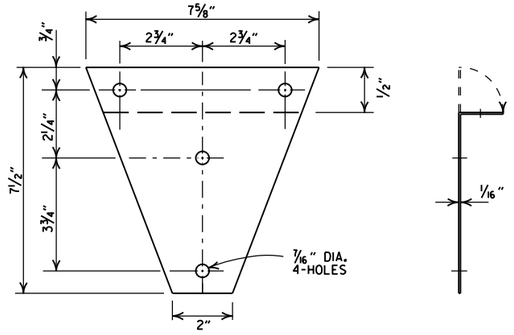


PLATFORM





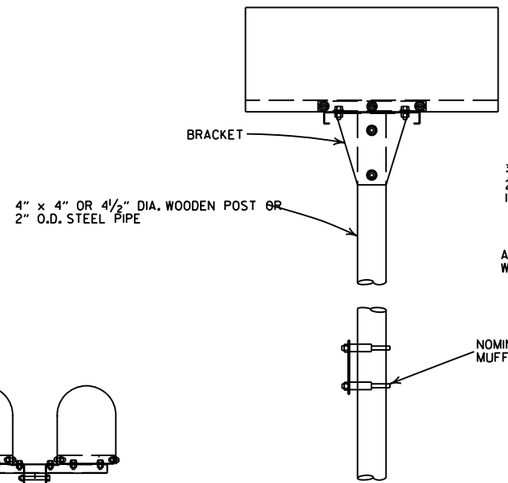
SINGLE INSTALLATION



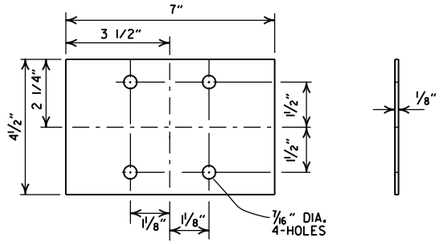
BRACKET

GENERAL NOTES

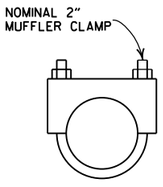
1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
2. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
3. MAILBOX SHELF, BRACKET & PLATFORM SHALL BE GALVANIZED OR PAINTED STEEL, HOWEVER TREATED WOOD MAY BE USED WITH WOODEN POSTS. THE WOODEN SHELF, BRACKET & PLATFORM SHALL BE A MINIMUM OF ¾" THICK AND SHALL BE ASSEMBLED WITH BOLTS OF THE APPROPRIATE LENGTH WITH SIX 8 X¾" FLATHEAD WOOD SCREWS USED TO ATTACH THE MAILBOX TO THE PLATFORM.
4. THE MAILBOX SHELF AND PLATFORM THAT IS SHOWN IS FOR STANDARD SIZE MAILBOXES. THE SHELF AND PLATFORM SIZE SHALL BE MODIFIED TO FIT MAILBOXES OF A DIFFERENT SIZE.
5. METAL PIPE FOR MAILBOX SUPPORT SHALL BE 2" OUTSIDE DIAMETER STEEL WITH A WALL THICKNESS OF 0.145" AND A WEIGHT OF 2.72 LBS PER FT. OUTSIDE DIAMETER AND WEIGHT SHALL HAVE A TOLERANCE OF +/- 5% ACCORDING TO AASHTO M 181.
6. MAILBOX SUPPORT SYSTEM DIFFERING FROM THOSE SHOWN MAY BE USED, PROVIDED THEY ARE ON THE ARDOT QUALIFIED PRODUCTS LIST FOR MAILBOX SUPPORTS.



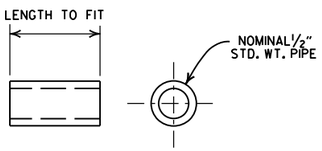
DOUBLE INSTALLATION



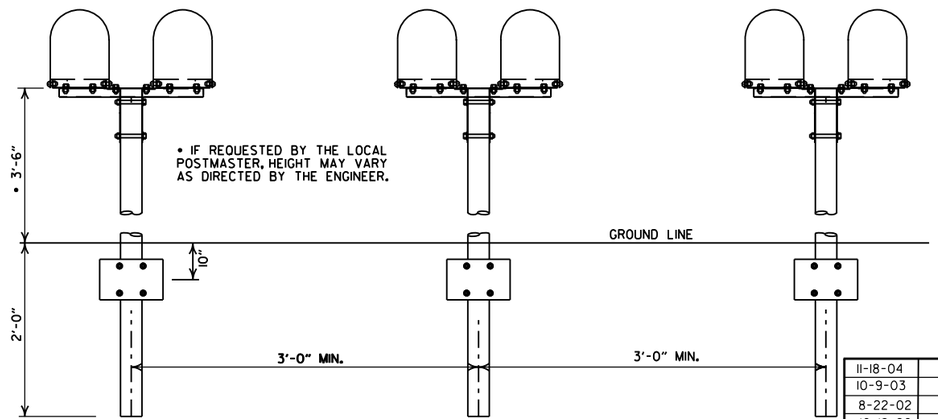
ANTI-TWIST PLATE



CLAMP



SPACER



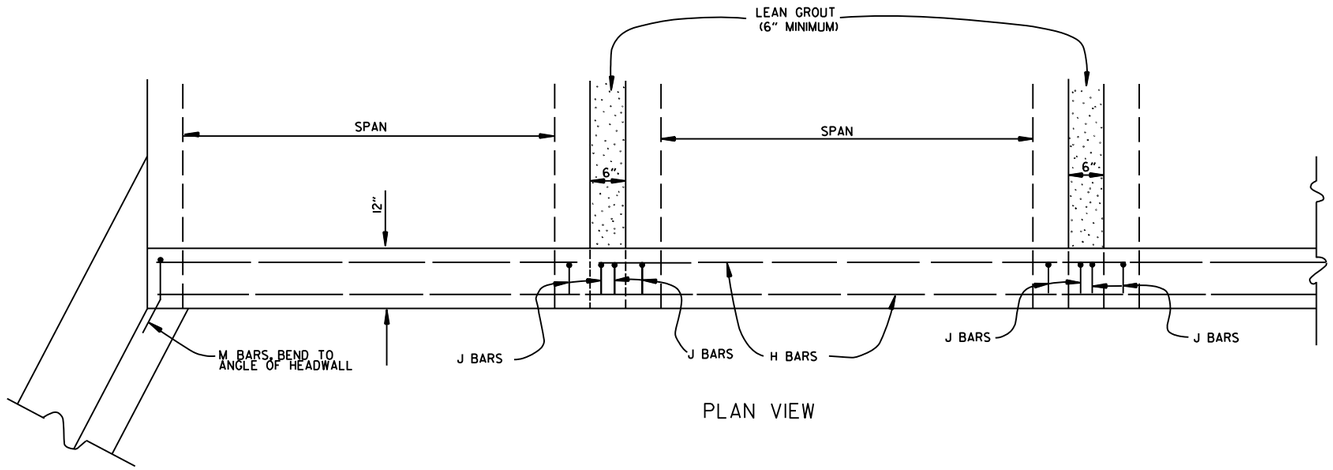
SPACING FOR MULTIPLE POST INSTALLATION

DATE	FILMED	REVISION
11-18-04		REVISED NOTES
10-9-03		REVISED NOTE 6
8-22-02		REVISED NOTE 6
10-18-96		CORRECTED AASHTO
10-1-92		CORRECTED SPELLING
9-26-91		NEW PHONE NUMBER
8-15-91		ADDED NOTE
11-30-89		ADJUSTED HEIGHT & ADDED NOTE
2-16-89		DELETED SLOTS FROM SHELF & PLTF
11-17-88	10-1-92	ADJUSTED DIMENSIONS OF STEEL POSTS
7-15-88	20-7-15-88	ISSUED

ARKANSAS STATE HIGHWAY COMMISSION

MAILBOX DETAILS

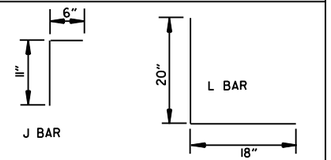
STANDARD DRAWING MB-1



PLAN VIEW

BAR LIST

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



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

GENERAL NOTES

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

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

ALL EXPOSED CORNERS TO HAVE ¾" CHAMFERS.

WINGWALLS AND FOOTINGS MAY BE ADJUSTED IN THE FIELD AS DIRECTED BY THE ENGINEER.

ALL CONCRETE, REINFORCING STEEL, LEAN GROUT, MEMBRANE WATERPROOFING, DRAINAGE FILL MATERIAL, GEOTEXTILE FILTER FABRIC, LABOR, MATERIALS AND EQUIPMENT REQUIRED FOR INSTALLING PRECAST BOX CULVERTS WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR THE ITEMS AS SPECIFIED IN SECTION 607 OF THE STANDARD SPECIFICATIONS.

LEAN GROUT SHALL CONSIST OF A SAND CEMENT MIXTURE MEETING THE FOLLOWING REQUIREMENTS:
PORTLAND CEMENT SHALL BE TYPE I AND SHALL MEET THE REQUIREMENTS OF AASHTO M 85.
SAND SHALL MEET THE REQUIREMENTS OF FINE AGGREGATE AS SPECIFIED IN SECTION 802.02 OF THE STANDARD SPECIFICATIONS.
THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE.
THE MIXTURE SHALL CONTAIN SUFFICIENT WATER TO HYDRATE THE CEMENTS. THE SAND CEMENT MIXTURE SHALL BE PLACED IN MAXIMUM 8 INCH THICK LIFTS, LOOSE MEASURE, AND THOROUGHLY RODDED AND TAMPED AROUND BOX TO THOROUGHLY FILL ALL VOIDS.

MEMBRANE WATERPROOFING CONFORMING TO THE REQUIREMENTS OF SECTION 815 OF THE STANDARD SPECIFICATIONS SHALL BE APPLIED TO ALL BOX CULVERT JOINTS.

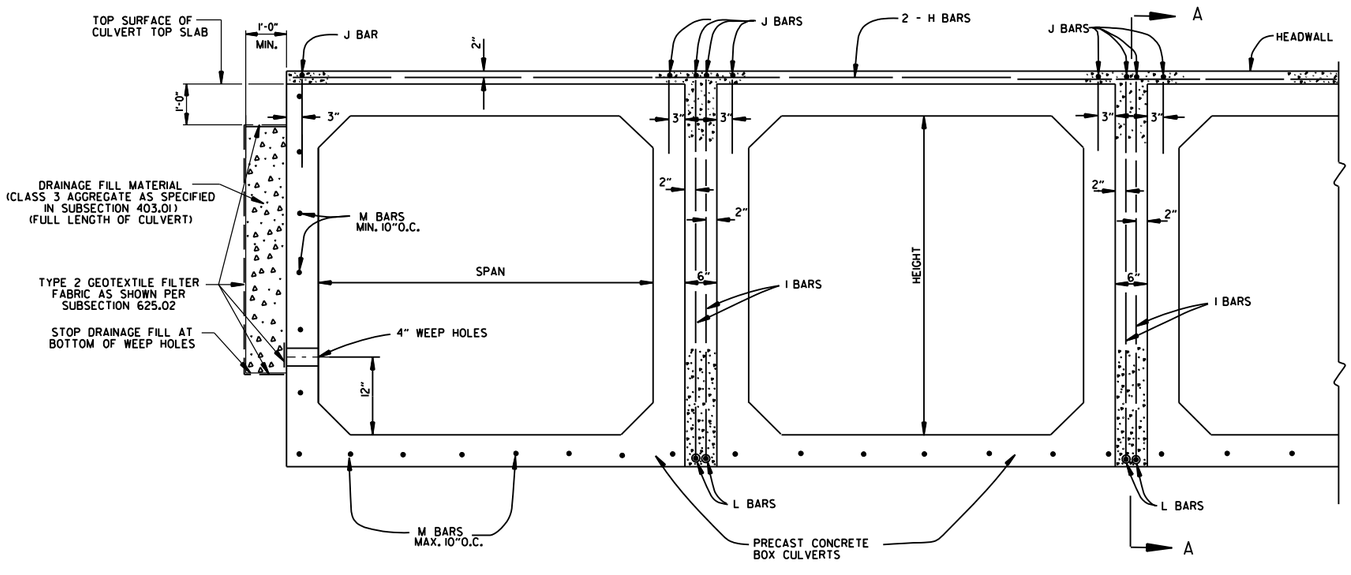
THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

IN OUTER BARRELS, ONE WEEP HOLE IS REQUIRED IN EXTERIOR WALLS OF EACH PRECAST CULVERT SECTION. WEEP HOLES SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" IN THE ASSEMBLED CULVERT AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE BOTTOM SLAB.

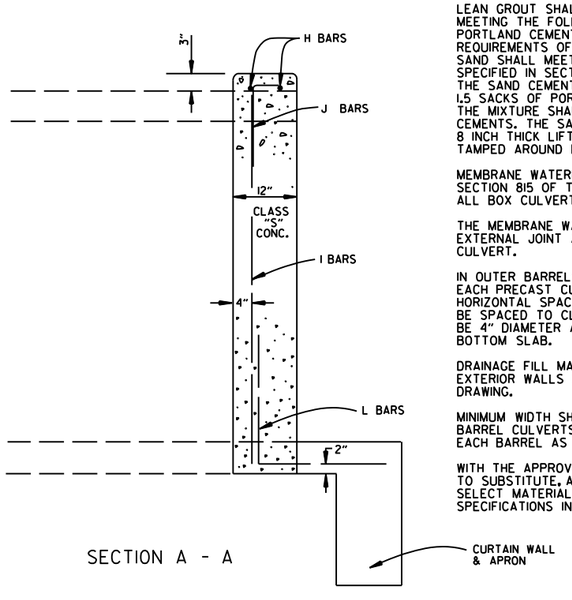
DRAINAGE FILL MATERIAL WITH GEOTEXTILE FABRIC IS REQUIRED AT THE EXTERIOR WALLS OF THE ASSEMBLED CULVERT, SEE DETAILS ON THIS DRAWING.

MINIMUM WIDTH SHALL BE 12" (6" ON EACH SIDE OF JOINT). ON MULTIPLE BARREL CULVERTS, MEMBRANE WATERPROOFING SHALL BE APPLIED TO EACH BARREL AS DESCRIBED ABOVE.

WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, FLOWABLE SELECT MATERIAL CONFORMING TO SECTION 206 OF THE STANDARD SPECIFICATIONS IN LIEU OF LEAN GROUT.



END VIEW



SECTION A - A

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

ARKANSAS STATE HIGHWAY COMMISSION

PRECAST CONCRETE BOX CULVERTS

STANDARD DRAWING PBC-1

REINFORCED CONCRETE ARCH PIPE DIMENSIONS

EQUIV. DIA.	SPAN		RISE	
	AASHTO M 206	ARDOT NOMINAL	AASHTO M 206	ARDOT NOMINAL
INCHES	INCHES			
15	18	18	11	11
18	22	22	13½	14
21	26	26	15½	16
24	28½	29	18	18
30	36¼	36	22½	23
36	43⅜	44	26⅝	27
42	51⅛	51	31⅜	31
48	58½	59	36	36
54	65	65	40	40
60	73	73	45	45
72	88	88	54	54
84	102	102	62	62
90	115	115	72	72
96	122	122	77½	77
108	138	138	87⅛	87
120	154	154	96⅞	97
132	168¾	169	106½	107

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

REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE DIMENSIONS

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

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

CONSTRUCTION SEQUENCE

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

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

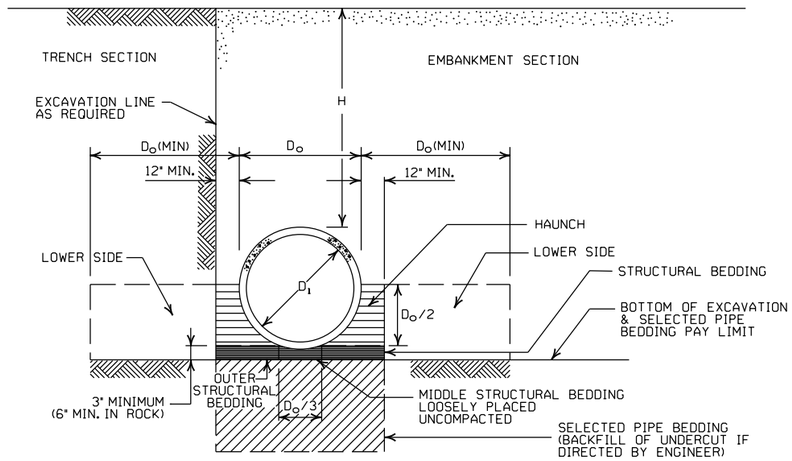
- LEGEND -

D_1 = NORMAL INSIDE DIAMETER OF PIPE
D_O = OUTSIDE DIAMETER OF PIPE
H = FILL COVER HEIGHT OVER PIPE (FEET)
MIN. = MINIMUM
▨ = UNDISTURBED SOIL

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

* SM-3 WILL NOT BE ALLOWED.

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



EMBANKMENT AND TRENCH INSTALLATIONS

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

GENERAL NOTES

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

MINIMUM HEIGHT OF FILL "H" OVER CIRCULAR R.C. PIPE CULVERTS

	CLASS OF PIPE			
	CLASS III		CLASS IV	CLASS V
INSTALLATION TYPE	TYPE 1 OR 2	TYPE 3	ALL	ALL
PIPE ID (IN.)	FEET			
12-15	2	2.5	2	1
18-24	2.5	3	2	1
27-33	3	4	2	1
36-42	3.5	5	2	1
48	4.5	5.5	2	1
54-60	5	7	2	1
66-78	6	8	2	1
84-108	7.5	8	2	1

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

MAXIMUM HEIGHT OF FILL "H" OVER CIRCULAR R.C. PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE		
	CLASS III	CLASS IV	CLASS V
	FEET		
TYPE 1	21	32	50
TYPE 2	16	25	39
TYPE 3	12	20	30

NOTE: IF FILL HEIGHT EXCEEDS 50 FEET, A SPECIAL DESIGN CONCRETE PIPE WILL BE REQUIRED USING TYPE 1 INSTALLATION.

MINIMUM HEIGHT OF FILL "H" OVER R.C. ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE	
	CLASS III	CLASS IV
	FEET	
TYPE 2 OR TYPE 3	2.5	1.5

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

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

MAXIMUM HEIGHT OF FILL "H" OVER R.C. ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS

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

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

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

ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1

CORRUGATED STEEL PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS (INCHES)				
		0.064	0.079	0.109	0.138	0.168
2⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM						
12	1	84	91			
15	1	67	73			
18	1	56	61			
24	1	42	46	59		
30	2	34	36	47		
36	2		30	39	41	
42	2		43	67	70	73
48	2		37	58	61	64
② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, BOLTED, OR HELICAL LOCK-SEAM						
36	1	48	60	88	111	118
42	1	41	51	72	90	102
48	1	36	45	64	77	85
54	2	32	40	59	71	79
60	2	29	36	53	64	71
66	2	26	33	47	58	64
72	2	24	30	44	53	59
78	2		28	41	49	54
84	2		26	38	45	51
90	2		24	35	43	45
96	2		22	33	40	44
102	2			31	38	42
108	2			30	35	39
114	2			28	34	37
120	2			27	32	35

CORRUGATED ALUMINUM PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS IN INCHES				
		0.060	0.075	0.105	0.135	0.164
		2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM				
12	1	45	45			
18	2	30	30	52		
24	2	22	22	39	41	
30	2		18	31	32	34
36	2.5		15	26	27	28
42	2			43	43	44
48	2			40	41	43
54	2			35	37	38
60	2				33	34
66	2					31
72	2					29

CONSTRUCTION SEQUENCE

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

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

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

③ SM-3 WILL NOT BE ALLOWED.

EQUIVALENT METAL THICKNESSES AND GAUGES

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

CORRUGATED METAL PIPE ARCHES

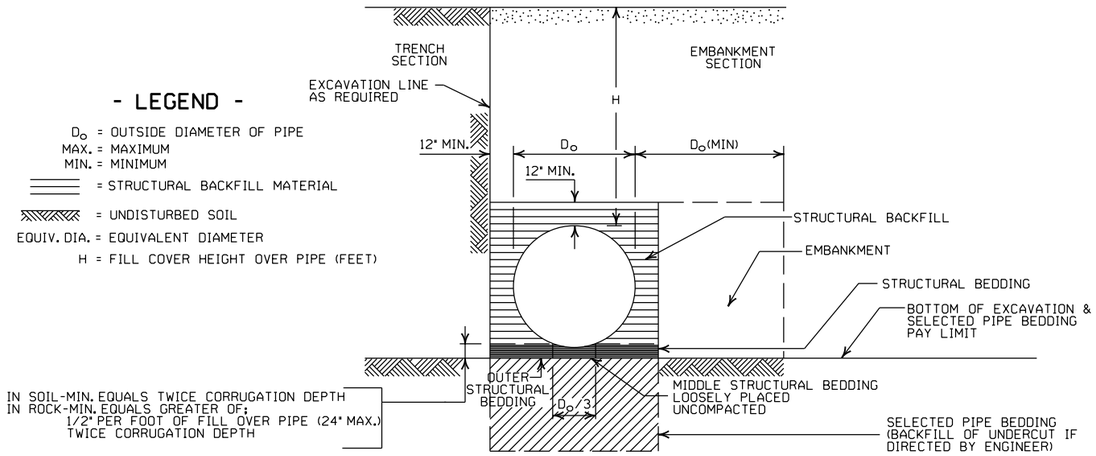
EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINUMUM CORNER RADIUS (INCHES)	STEEL			ALUMINUM		
			MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)	MAX. HEIGHT OF FILL, "H" (FT.)	MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)	MAX. HEIGHT OF FILL, "H" (FT.)
				INSTALLATION TYPE 1	INSTALLATION TYPE 1		INSTALLATION TYPE 1	INSTALLATION TYPE 1
			2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM			2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM		
15	17x13	3	0.064	2	15	0.060	2	15
18	21x15	3	0.064	2	15	0.060	2	15
21	24x18	3	0.064	2.25	15	0.060	2.25	15
24	28x20	3	0.064	2.5	15	0.075	2.5	15
30	35x24	3	0.079	3	12	0.075	3	12
36	42x29	3½	0.079	3	12	0.105	3	12
42	49x33	4	0.079	3	12	0.105	3	12
48	57x38	5	0.109	3	13	0.135	3	13
54	64x43	6	0.109	3	14	0.135	3	14
60	71x47	7	0.138	3	15	0.164	3	15
66	77x52	8	0.168	3	15			
72	83x57	9	0.168	3	15			
			② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM					
				INSTALLATION TYPE 2	INSTALLATION TYPE 1		INSTALLATION TYPE 2	INSTALLATION TYPE 1
36	40x31	5	0.079	3	2		12	15
42	46x36	6	0.079	3	2		13	15
48	53x41	7	0.079	3	2		13	15
54	60x46	8	0.079	3	2		13	15
60	66x51	9	0.079	3	2		13	15
66	73x55	12	0.079	3	2		15	15
72	81x59	14	0.079	3	2		15	15
78	87x63	14	0.079	3	2		15	15
84	95x67	16	0.109	3	2		15	15
90	103x71	16	0.109	3	2		15	15
96	112x75	18	0.109	3	2		15	15
102	117x79	18	0.109	3	2		15	15
108	128x83	18	0.138	3	2		15	15

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

② WHERE THE STANDARD 2 2/3"x ½" CORRUGATION AND GAUGE IS SPECIFIED FOR A GIVEN DIAMETER, A PIPE OF THE SAME DIAMETER WITH A 3" x 1" OR 5" x 1" CORRUGATION MAY BE SUBSTITUTED, PROVIDING IT IS GAUGED FOR A FILL HEIGHT CONDITION EQUAL TO OR GREATER THAN THE MAXIMUM FILL HEIGHT CONDITION FOR THE SPECIFIED GAUGE AND CORRUGATION.

- LEGEND -

D_o = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM
= STRUCTURAL BACKFILL MATERIAL
= UNDISTURBED SOIL
EQUIV. DIA. = EQUIVALENT DIAMETER
H = FILL COVER HEIGHT OVER PIPE (FEET)



EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE (ROUND).
3. INSTALALTION TYPE 1 SHALL BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 2⅔" X ½" CORRUGATION.
4. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 3" X 1" OR 5" X 1" CORRUGATION.

GENERAL NOTES

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

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

ARKANSAS STATE HIGHWAY COMMISSION

METAL PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCM-1

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

• AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL.

SM3 WILL NOT BE ALLOWED.

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

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

MULTIPLE INSTALLATION OF HIGH DENSITY POLYETHYLENE PIPES

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

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

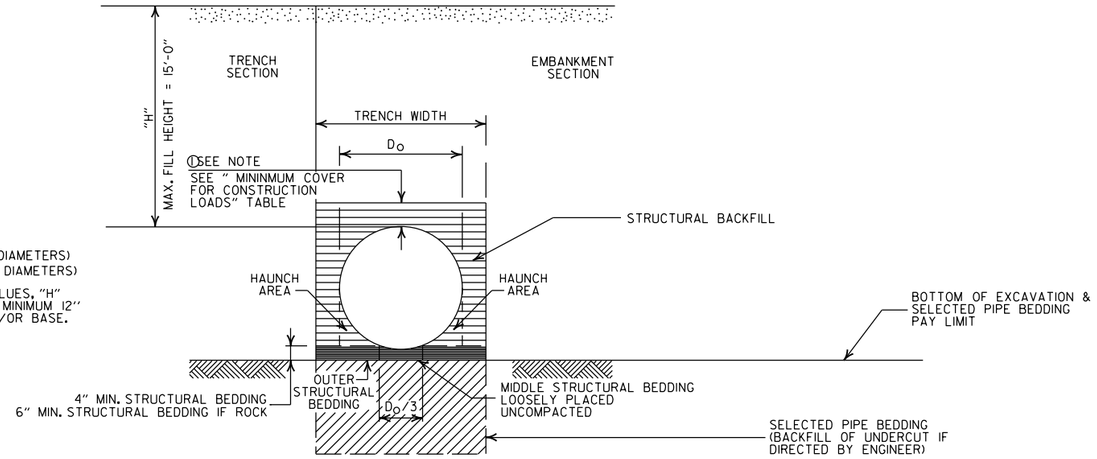
PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" >OR= 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"
42"	7'-0"	10'-6"
48"	8'-0"	12'-0"

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

MINIMUM COVER FOR CONSTRUCTION LOADS

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

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



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

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

CONSTRUCTION SEQUENCE

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

GENERAL NOTES

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

- LEGEND -

H = FILL HEIGHT (FT.)
D_O = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

= STRUCTURAL BACKFILL MATERIAL

= UNDISTURBED SOIL

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

ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)

STANDARD DRAWING PCP-1

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

• AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL.

SM3 WILL NOT BE ALLOWED.

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

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

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

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

MULTIPLE INSTALLATION OF PVC PIPES

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

MAXIMUM FILL HEIGHT BASED ON STRUCTURAL BACKFILL

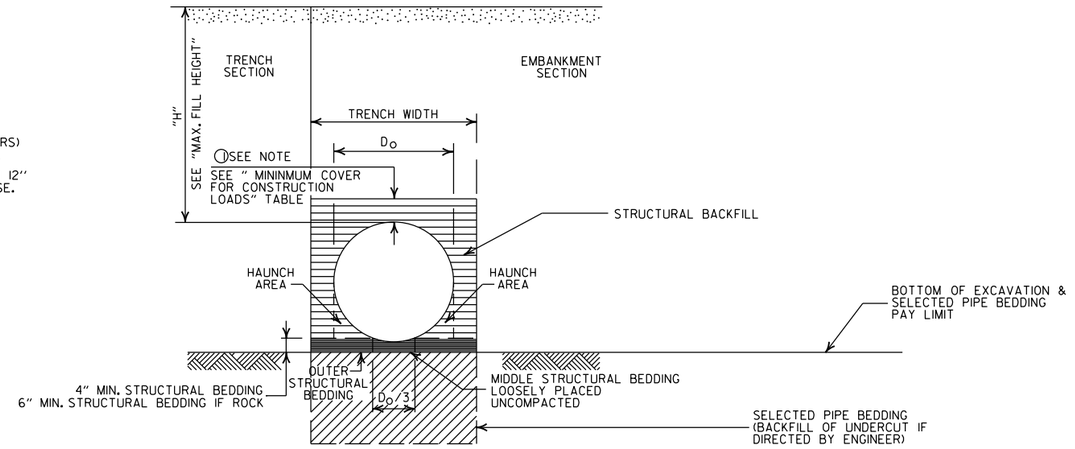
PIPE DIAMETER	"H"
18"	45'-0"
24"	45'-0"
30"	40'-0"
36"	40'-0"

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

MINIMUM COVER FOR CONSTRUCTION LOADS

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

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



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

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

CONSTRUCTION SEQUENCE

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

GENERAL NOTES

1. PIPE SHALL CONFORM TO ASTM F949, CELL CLASS 12454. INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
5. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
6. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. PVC PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR PVC PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

- LEGEND -

H = FILL HEIGHT (FT.)
D_O = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

= STRUCTURAL BACKFILL MATERIAL

= UNDISTURBED SOIL

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

ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (PVC F949)

STANDARD DRAWING PCP-2

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

*SM3 WILL NOT BE ALLOWED.

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

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

MULTIPLE INSTALLATION OF POLYPROPYLENE PIPES

PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"
42"	3'-6"
48"	4'-0"
60"	5'-0"

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" >OR= 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"
42"	7'-0"	10'-6"
48"	8'-0"	12'-0"
60"	10'-0"	15'-0"

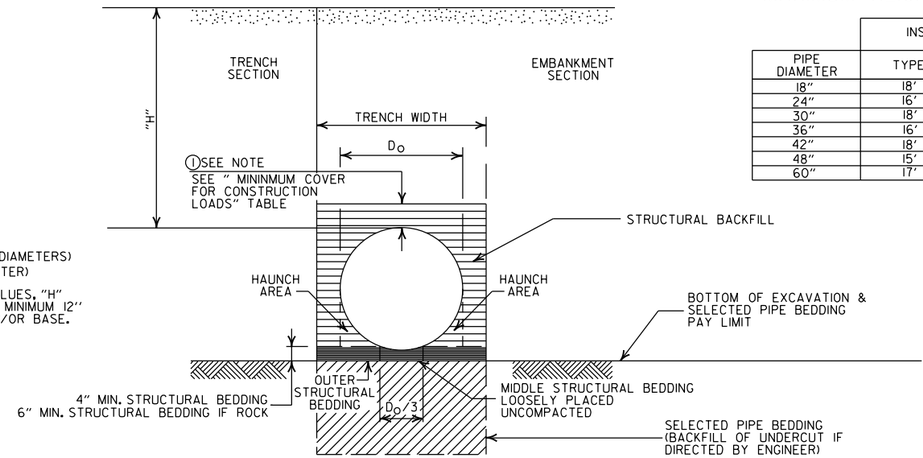
MINIMUM COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS			
	18.0-50.0 (KIPS)	50.0-75.0 (KIPS)	75.0-110.0 (KIPS)	110.0-150.0 (KIPS)
36" OR LESS	2'-0"	2'-6"	3'-0"	3'-0"
42" OR GREATER	3'-0"	3'-0"	3'-6"	4'-0"

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

①NOTE:
12" MIN. (18" - 42" DIAMETERS)
24" MIN. (60" DIAMETER)

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



MAXIMUM HEIGHT OF FILL "H"

PIPE DIAMETER	INSTALLATION TYPE	
	TYPE 1	TYPE 2
18"	18'	14'
24"	16'	12'
30"	18'	14'
36"	16'	12'
42"	18'	13'
48"	15'	11'
60"	17'	12'

EMBANKMENT AND TRENCH INSTALLATIONS

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

CONSTRUCTION SEQUENCE

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

GENERAL NOTES

1. PIPE SHALL CONFORM TO AASHTO M330, TYPE S, INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICIATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SIXTH EDITION (2012) WITH 2013 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
5. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
6. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. POLYPROPYLENE PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR POLYPROPYLENE PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN SECTION 26.4.2.4 AND 30.4.2 OF THE AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS 3RD EDITION (2010) WITH 2012 INTERIMS. JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

- LEGEND -

H = FILL HEIGHT (FT.)
D_O = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

= STRUCTURAL BACKFILL MATERIAL

= UNDISTURBED SOIL

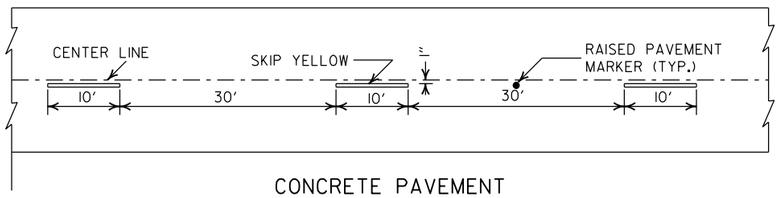
DATE	REVISION	DATE FILMED
02-27-20	REVISED	
11-07-19	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

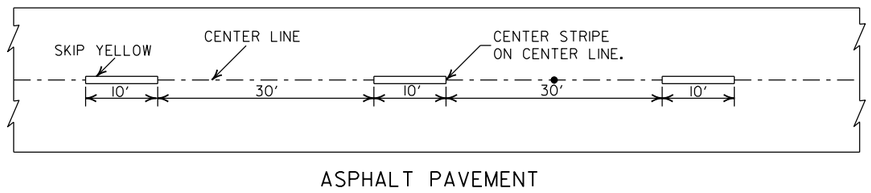
PLASTIC PIPE CULVERT (POLYPROPYLENE)

STANDARD DRAWING PCP-3

NOTES:
1. REFER TO THE STRIPING DETAILS FOR PAVEMENT MARKING LINE WIDTHS.
2. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
3. RAISED PAVEMENT MARKERS SHALL BE PLACED ON AN 80 FEET SPACING UNLESS OTHERWISE SHOWN IN THE PLANS.

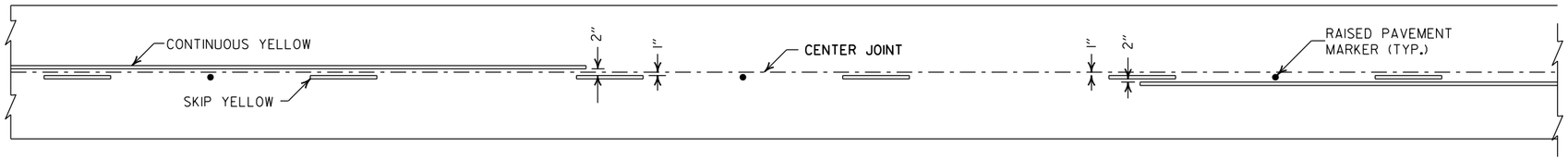


CONCRETE PAVEMENT

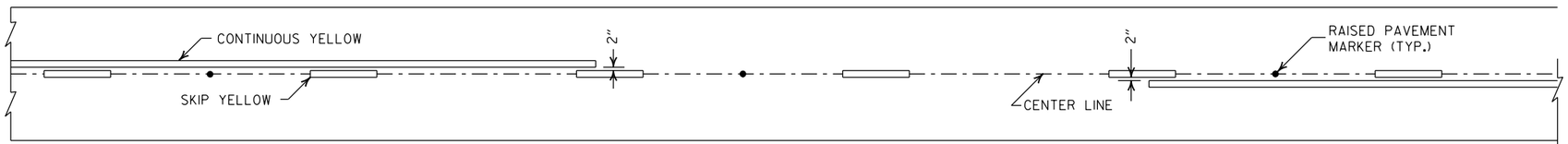


ASPHALT PAVEMENT

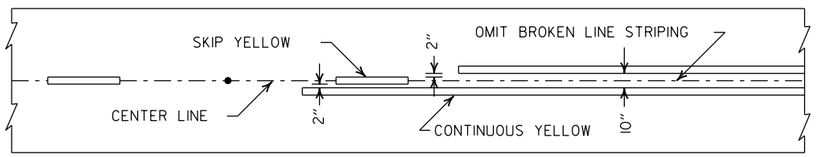
BROKEN LINE STRIPING



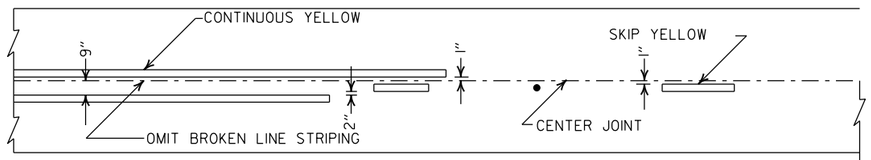
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

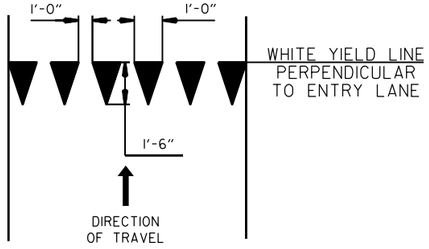


ASPHALT PAVEMENT

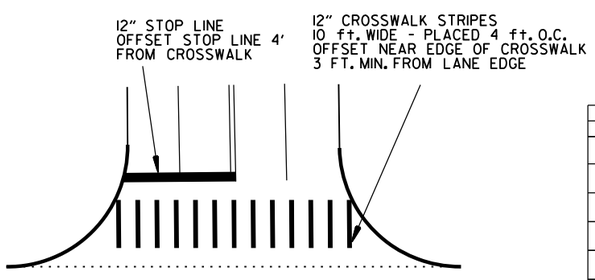


CONCRETE PAVEMENT

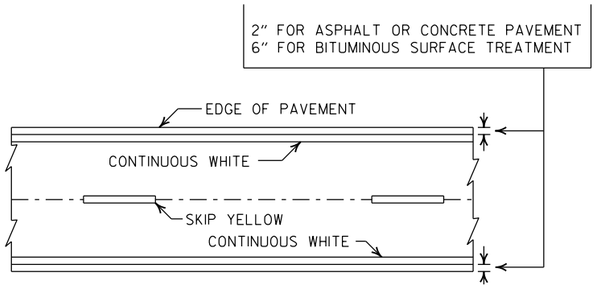
STRIPING AT ADJACENT NO PASSING LANES



YIELD LINE DETAIL



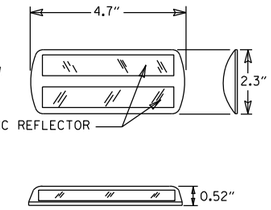
CROSSWALK AND STOP LINE DETAILS



PAVEMENT EDGE LINE MARKING

NOTE:
THE RED LENS OF THE TYPE II R.P.M. SHALL FACE THE INCORRECT TRAFFIC MOVEMENT.

TYPE II
RED/CLEAR OR YELLOW/YELLOW



NOTE:
DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE ARDOT QUALIFIED PRODUCTS LIST.

DETAIL OF STANDARD RAISED PAVEMENT MARKERS

DATE	REVISION	FILMED
2-27-20	REVISED STOP LINE DETAILS	
6-1-17	ADDED YIELD LINE DETAIL	
5-12-16	REVISED LINE WIDTHS, SPACING, & NOTES	
9-12-13	REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS	
11-17-10	REVISED GENERAL NOTES & REMOVED PLOWABLE PVMT MRKRS	
11-18-04	REVISED NOTE 2 & GENERAL NOTES	
8-22-02	ADDED CROSSWALK & STOPBAR DTLS.	
7-02-98	ADDED DETAILS OF STD. RAISED PAV'T. MARKERS	
4-26-96	REV. NOTES 3&4; ADDED R.P.M.	
9-30-80	DRAWN	1-9-30-80

ARKANSAS STATE HIGHWAY COMMISSION

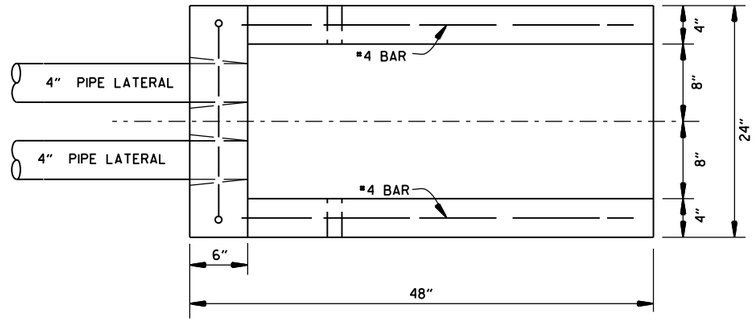
PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

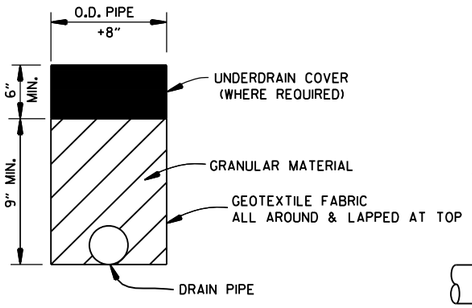
NOTE:

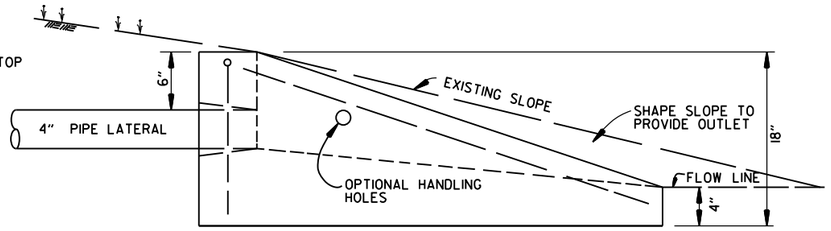
1. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.

2. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC. LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.

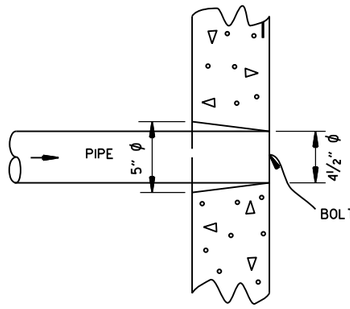


PLAN VIEW

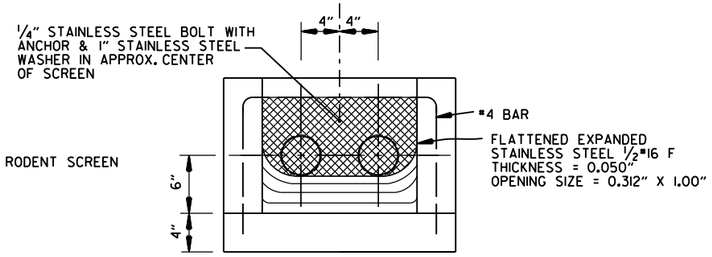




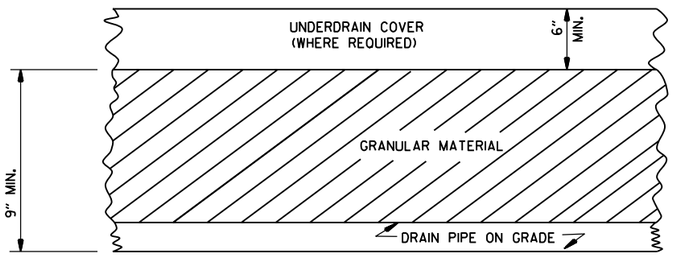
SIDE VIEW



DETAIL OF HOLE FOR 4" PIPE

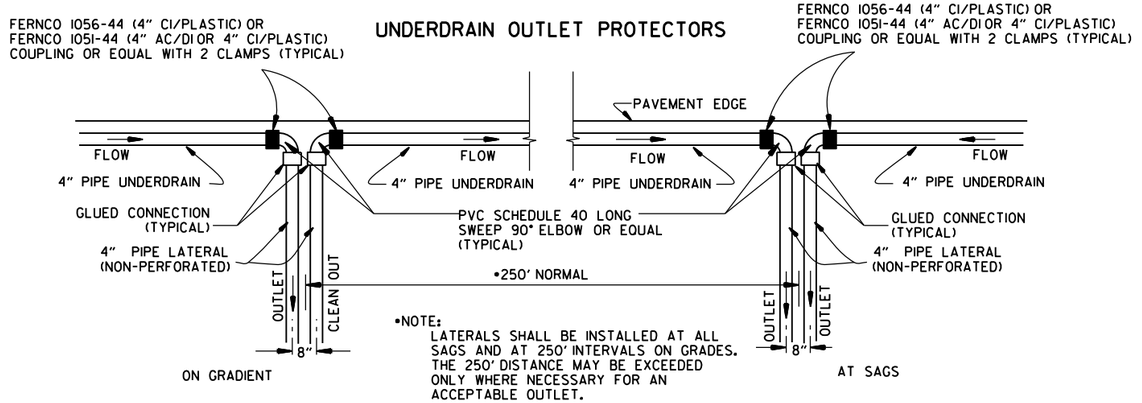


FRONT VIEW
(DETAIL OF RODENT SCREEN)



DETAILS OF PIPE UNDERDRAIN

UNDERDRAIN OUTLET PROTECTORS



DETAIL OF PIPE UNDERDRAIN LATERALS WHEN PLACED ALONG PAVEMENT EDGE

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

NOTES FOR PIPE UNDERDRAINS

1. GEOTEXTILE FABRIC SHALL MEET THE REQUIREMENTS OF SECTION 625 FOR TYPE I. PAYMENT FOR GEOTEXTILE FABRIC AND GRANULAR FILTER MATERIAL SHALL BE INCLUDED IN THE PRICE BID PER LIN. FT. FOR "4" PIPE UNDERDRAINS" IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

2. 4" NON-PERFORATED SCHEDULE 40 PVC PIPE LATERALS WITH OUTLET PROTECTORS SHALL BE INSTALLED AS SHOWN HEREON. LATERALS WILL BE MEASURED AND PAID FOR AS "4" PIPE UNDERDRAINS." UNDERDRAIN OUTLET PROTECTORS WILL BE MEASURED AND PAID FOR BY THE UNIT IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

3. EXISTING 4" PIPE UNDERDRAINS MAY BE CONNECTED TO PROPOSED DROP INLETS OR EXTENDED WHERE DIRECTED BY THE ENGINEER. PAYMENT FOR CONNECTING TO DROP INLETS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR "4" PIPE UNDERDRAINS."

4. THE LOCATION OF ALL LATERALS SHALL BE MARKED WITH 4" X 12" PERMANENT PAVEMENT MARKING TAPE (TYPE III WHITE) AT THE OUTSIDE EDGE OF THE SHOULDER, PLACED TRANSVERSE TO TRAFFIC. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

5. PAYMENT FOR THE RODENT SCREEN SHALL BE INCLUDED IN THE PRICE BID PER EACH FOR "UNDERDRAIN OUTLET PROTECTORS."

6. ANY EXISTING UNDERDRAINS THAT INTERFERE WITH INSTALLATION OF THE NEW UNDERDRAIN SYSTEM SHALL BE REMOVED AND DISPOSED OF AS DIRECTED BY THE ENGINEER. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS. EXISTING UNDERDRAIN OUTLET PROTECTORS SHALL BE REMOVED UNDER THE ITEM "REMOVAL AND DISPOSAL OF UNDERDRAIN OUTLET PROTECTORS."

7. AT LOCATIONS WHERE A SINGLE LATERAL IS USED THE CONTRACTOR SHALL HAVE THE FOLLOWING OPTIONS: 1. INSTALL OUTLET PROTECTOR AS SHOWN ON STANDARD DRAWING PU-1 AND GROUT THE UNUSED HOLE OR 2. INSTALL AN OUTLET PROTECTOR WITH A SINGLE HOLE.

DATE	REVISION	DATE FILMED
12-8-16	ADDED NOTES FOR PIPE UNDERDRAINS, REVISED RODENT SCREEN DETAIL AND NOTES, REMOVED NOTE 1 FOR GRANULAR MATERIAL, ADDED NOTE FOR GEOTEXTILE FABRIC	
4-10-03	REVISED NOTE 3	
1-12-00	REVISED DETAIL OF UNDERDRAIN LATERALS	
11-18-98	REVISED NOTE	
10-18-96	REVISED MIN. DEPTH & GEOTEXTILE FABRIC	
4-26-96	ADDED LATERAL NOTE; 5½" TO 5"	
11-22-95	REVISED LATERALS	
7-20-95	REVISED LATERALS & ADDED NOTE	
11- 3-94	REVISED FOR DUAL LATERALS	11- 3-94
10- 1-92	SUBSTITUTED GEOTEXTILE	10- 1-92
8-15-91	ADDED POLYEDTHYLENE PIPE	8-15-91
11- 8-90	DELETED ALTERNATE NOTE	11- 8-90
1-25-90	ADDED 4" SNAP ADAPTER	1-25-90
11-30-89	DEL. (SUBGRADE); ADDED (WHERE REQUIRED)	11-30-89
7-15-88	ISSUED P.L.M.	647-7-15-88

ARKANSAS STATE HIGHWAY COMMISSION

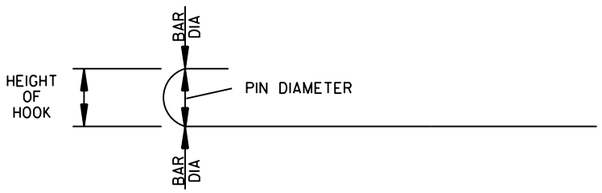
DETAILS OF PIPE UNDERDRAIN

STANDARD DRAWING PU-1

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

BAR SIZE	PIN DIAMETER	HOOK EXTENSION "K"
3	2¼"	4"
4	3 "	4½"
5	3¾"	5"
6	4½"	6"
7	5¼"	7"
8	6"	8"

IF THE OVERALL HEIGHT OF THE HOOK (SEE DIAGRAM BELOW) FOR A "b", "b1", "b2" or "b3" BENT BAR IS GREATER THAN THE CORRESPONDING TOP OR BOTTOM SLAB THICKNESS, LESS 2¾ INCHES, EACH BENT BAR SHALL BE REPLACED WITH ONE HOOKED BAR AND ONE STRAIGHT BAR, USING LENGTHS AS SHOWN IN THE TABLE BELOW. THE TWO BARS SHALL BE THE SAME DIAMETER AS, AND PLACED AT THE SAME SPACING AS, THE "b", "b1", "b2" OR "b3" BENT BARS THEY REPLACE.



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

OVERALL HEIGHT OF HOOKED BAR DIAGRAM

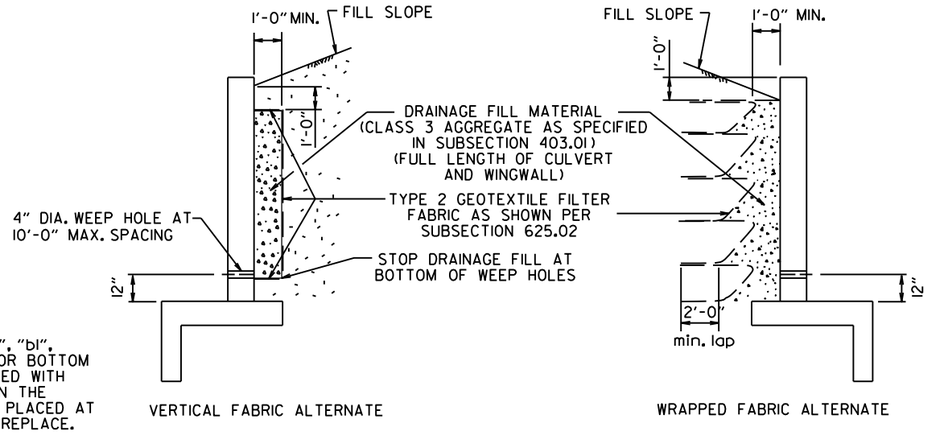
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

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

REPLACEMENT BAR LENGTHS TABLE

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

L = "OW" - 3 INCHES



WINGWALL & CULVERT DRAINAGE DETAIL

REINFORCED CONCRETE BOX CULVERT GENERAL NOTES

CONCRETE SHALL BE CLASS S WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3500 PSI.

REINFORCING STEEL SHALL BE AASHTO M 31 OR M 53, GRADE 60.

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

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

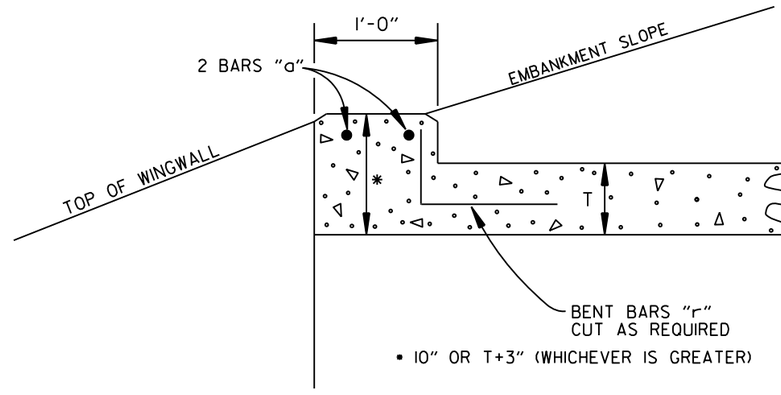
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

REINFORCING STEEL TOLERANCES: THE TOLERANCES FOR REINFORCING STEEL SHALL MEET THOSE LISTED IN "MANUAL OF STANDARD PRACTICE" PUBLISHED BY CONCRETE REINFORCING STEEL INSTITUTE (CRSI) EXCEPT THAT THE TOLERANCE FOR TRUSS BARS SUCH AS FIGURE 3 ON PAGE 7-4 OF THE CRSI MANUAL SHALL BE MINUS ZERO TO PLUS ½ INCH.

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

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

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



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

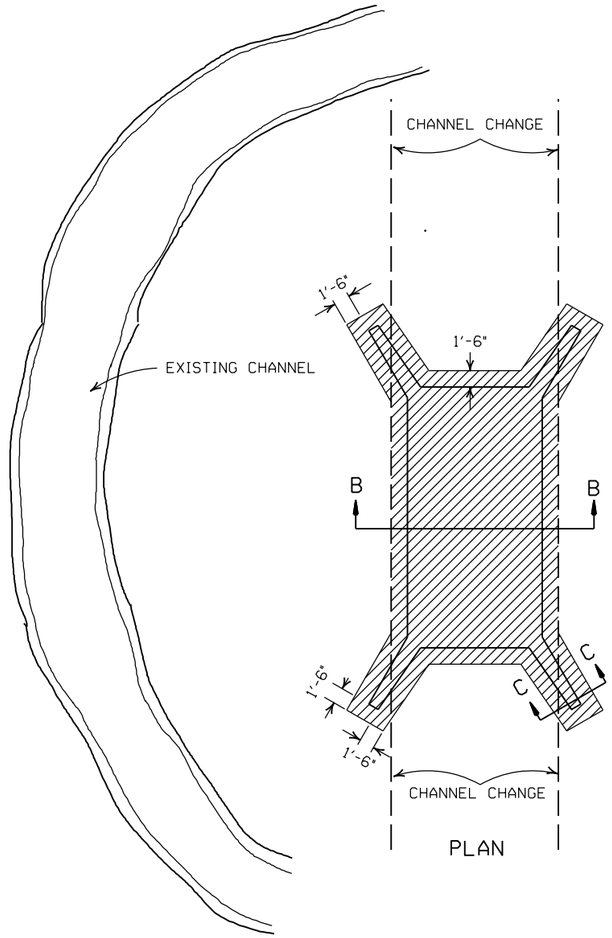
R.C. BOX CULVERT HEADWALL MODIFICATIONS

DATE	REVISION	DATE FILMED
7/26/12	REV. DRAINAGE FILL MATERIAL & DETAIL	
12/15/11	REQUIRE WEEP HOLES IN BOX CULVERT WALLS	
5-25-06	REV. GEN. NOTES AND DETAILS FOR WEEP HOLES; BAR DIAGRAM	
11-16-01	ADDED WINGWALL DRAINAGE DETAIL/EDITED GEN. NOTES	
10-18-96	REV. ASTM REF. TO AASHTO & ADDED BAR DIAGRAM	
10-12-95	MOVED SOLID SODDING DETAIL TO RCB-2	
6-2-94	ADDED SOLID SODDING PLAN DETAIL	
8-5-93	REVISED PIN DIAMETER TO SPECS.	
8-15-91	DRAWN AND ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

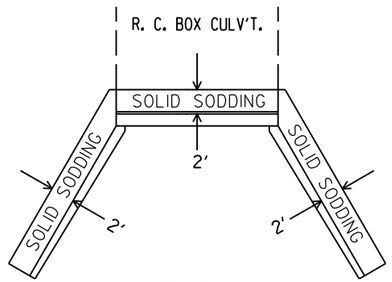
REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1



PLAN

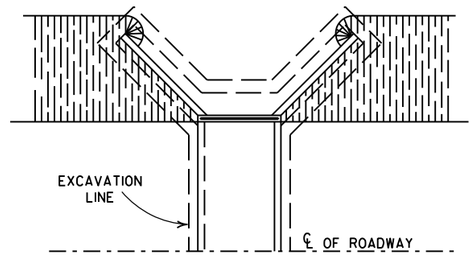
SOLID SODDING



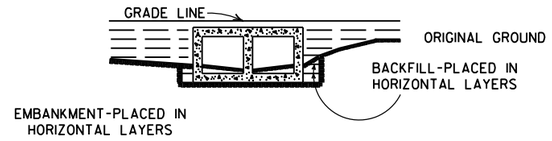
PLAN

PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

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

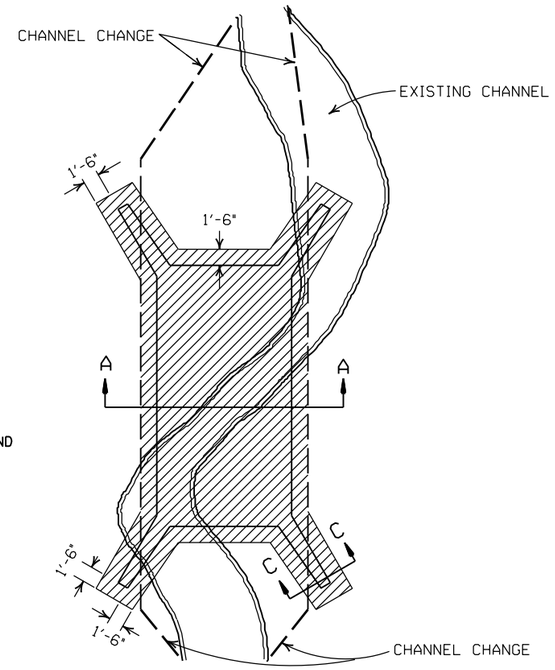


PLAN

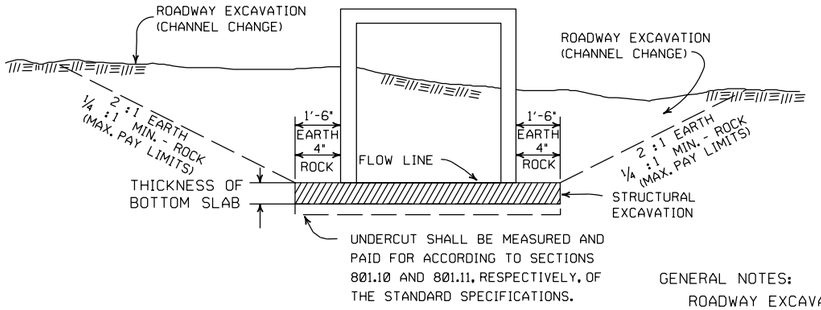


LONGITUDINAL SECTION

BACKFILL DETAILS FOR BOX CULVERT

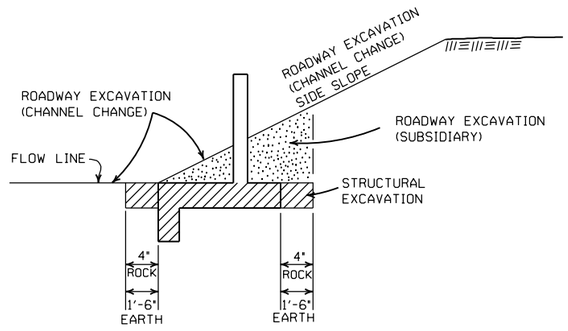


PLAN

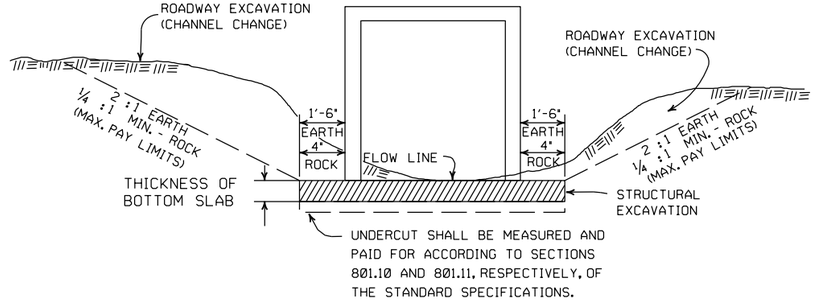


SECTION B-B

DETAILS FOR NEW CHANNELS



SECTION C-C



SECTION A-A

DETAILS THROUGH EXISTING CHANNELS

GENERAL NOTES:

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

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

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

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

ARKANSAS STATE HIGHWAY COMMISSION

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

STANDARD DRAWING RCB-2

SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

DEGREE OF CURVE	30 MPH			35 MPH			40 MPH			45 MPH			50 MPH			55 MPH			60 MPH			65 MPH			70 MPH			75 MPH		
	e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)	
		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE
0° 15'	NC			NC			NC			NC			NC			NC			NC			NC			NC			NC		
0° 30'	NC			NC			NC			NC			NC			NC			RC	96		RC	96		RC	96		0.022	101	
0° 45'	NC			NC			NC			NC			RC	96		RC	96		0.024	106		0.026	110		0.030	120		0.032	125	
1° 00'	NC			NC			NC			RC	90		0.022	101		0.026	110		0.030	120		0.034	130		0.038	139	300	0.042	149	300
1° 15'	NC			NC			RC	84		0.022	95		0.028	115		0.032	125		0.038	139		0.042	149		0.046	158		0.052	173	
1° 30'	NC			RC	78		0.022	88		0.028	108		0.032	125		0.038	139		0.044	154		0.050	168	300	0.056	182		0.062	197	
1° 45'	RC	72		RC	78		0.026	97		0.030	113		0.036	134		0.044	154		0.050	168	300	0.056	182		0.064	202		0.070	216	
2° 00'	RC	72		0.024	86		0.028	101		0.034	122		0.042	149		0.048	163		0.056	182		0.064	202		0.070	216		0.080	240	
2° 15'	RC	72		0.026	90		0.032	109		0.038	131		0.046	158		0.054	178	300	0.062	197		0.070	216		0.078	235	350	0.088	259	350
2° 30'	0.022	75		0.028	94		0.034	113		0.042	140		0.050	168		0.058	187		0.068	211		0.076	230		0.086	254		0.096	278	
2° 45'	0.024	79		0.030	98		0.038	122		0.046	149	200	0.054	178		0.064	202		0.072	221		0.082	245		0.092	269		0.100	288	400
3° 00'	0.026	83		0.034	105		0.040	126		0.050	158		0.058	187	250	0.068	211		0.078	235		0.088	259		0.098	283	400	D MAX = 2° 45'		
3° 15'	0.028	86		0.036	109		0.044	134		0.052	162		0.062	197		0.072	221		0.082	245		0.092	269		0.100	288				
3° 30'	0.030	90		0.038	113		0.046	139	200	0.056	171		0.066	206		0.076	230		0.086	254		0.096	278	350	D MAX = 3° 30'					
3° 45'	0.032	93		0.040	117		0.050	147		0.058	176		0.070	216		0.080	240		0.090	264		0.098	283							
4° 00'	0.034	97		0.042	121	200	0.052	151		0.062	185		0.072	221		0.084	250		0.094	274	350	0.100	288							
4° 15'	0.036	100		0.044	125		0.054	155		0.064	189		0.076	230		0.086	254	350	0.096	278		D MAX = 4° 15'								
4° 30'	0.036	100	200	0.046	129		0.056	160		0.068	198		0.078	235		0.090	264		0.098	283										
4° 45'	0.038	104		0.048	133		0.060	168		0.070	203		0.082	245		0.092	269		0.100	288										
5° 00'	0.040	108		0.050	137		0.062	172		0.072	207		0.084	250		0.094	274		D MAX = 5° 15'										
5° 30'	0.044	115		0.054	144		0.066	181		0.078	221	250	0.088	259	300	0.098	283												
6° 00'	0.046	119		0.058	152		0.070	189		0.082	230		0.092	269		0.100	288												
6° 30'	0.050	126		0.062	160		0.074	198	250	0.086	239		0.096	278		D MAX = 6° 30'														
7° 00'	0.052	130		0.064	164		0.078	206		0.090	248		0.098	283																
7° 30'	0.054	133		0.068	172		0.080	210		0.092	252	300	0.100	288																
8° 00'	0.058	140		0.070	176		0.084	219		0.094	257		D MAX = 8° 25'																	
8° 30'	0.060	144		0.072	179		0.086	223	250	0.096	261																			
9° 00'	0.062	148		0.076	187		0.088	227		0.098	266																			
9° 30'	0.064	151		0.078	191		0.092	235		0.100	270																			
10° 00'	0.066	155		0.080	195		0.094	240		D MAX = 10° 30'																				
11° 00'	0.070	162		0.084	203		0.096	244																						
12° 00'	0.074	169		0.088	211	250	0.098	248																						
13° 00'	0.076	173		0.090	215		0.100	252	300																					
14° 00'	0.080	180		0.094	222		D MAX = 13° 45'																							
15° 00'	0.082	184		0.096	226																									
16° 00'	0.086	191		0.098	230																									
17° 00'	0.088	194		0.100	234																									
18° 00'	0.090	198	250	D MAX = 19° 30'																										
19° 00'	0.092	202																												
20° 00'	0.094	205																												
21° 00'	0.096	209																												
22° 00'	0.096	209																												
23° 00'	0.098	212																												
24° 00'	0.098	212																												
25° 00'	0.100	216																												

D MAX = 28° 30'

GENERAL NOTES

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

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

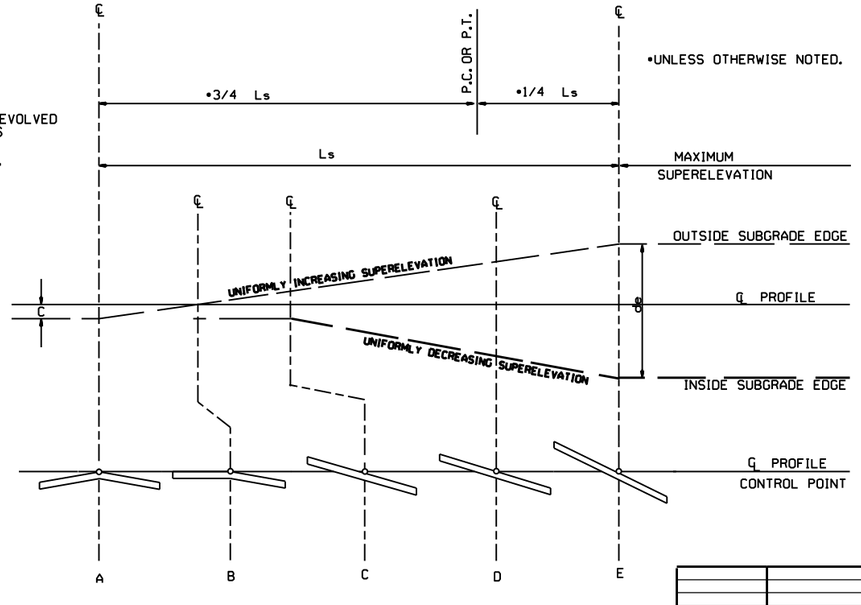
NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

RATE OF SUPERELEVATION SHALL BE COMPUTED ON STRAIGHT LINE METHOD USING APPLICABLE Ls.

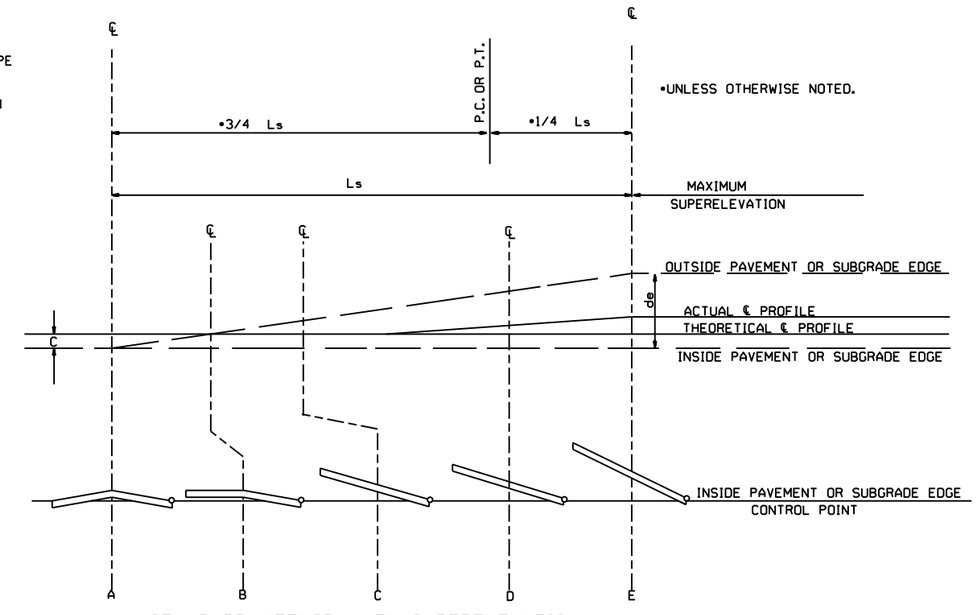
SUPERELEVATION FORMULA = $\frac{Lde}{Ls}$

ABBREVIATIONS

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



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE



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

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

DATE	REVISION	DATE FILMED
11-07-19	REVISED SUPERELEVATION TABLE	
10-18-96	ADDED FORMULA	
01-09-87	ISSUED	534-1-9-87

ARKANSAS STATE HIGHWAY COMMISSION

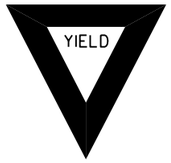
TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

STANDARD DRAWING SE-2

R1-1

STANDARD 30"X30"
EXPRESSWAY 36"X36"
SPECIAL 48"X48"

R1-2



STD. 36"X36"X36"
EXPWY. 48"X48"X48"
FWY. 60"X60"X60"

R2-1

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

W3-5

STD. 36"X36"
EXPWY. 48"X48"
FWY. 48"X48"

W3-5a

STD. 36"X36"
EXPWY. 48"X48"
FWY. 48"X48"

R4-1

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R4-2

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

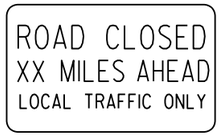
R5-1

STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

RII-2

48"X30"

RII-3A



60"X30"

RII-4

60"X30"

W21-5a

STD. 36"X36"
FWY. 48"X48"

WI-1

STD. 36"X36"
FWY. 48"X48"

WI-2

STD. 36"X36"
FWY. 48"X48"

WI-3

STD. 48"X48"

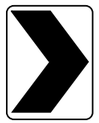
WI-4

STD. 48"X48"

WI-6

STD. 48"X24"
SPECIAL 60"X30"

WI-8



STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

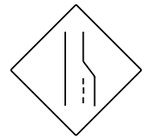
W3-1

STD. 36"X36"
SPECIAL 48"X48"

W3-2

STD. 36"X36"
SPECIAL 48"X48"

W4-2



STD. 36"X36"
FWY. 48"X48"

W5-1

STD. 36"X36"
SPECIAL 48"X48"

W6-3

EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7

EXPWY. 36"X36"
FWY. 48"X48"

W9-2

STD. 36"X36"
FWY. 48"X48"

WI3-1

STD. 24"X24"

W20-1

STD. 48"X48"

W20-2

STD. 48"X48"

W20-3

STD. 48"X48"

W20-4

STD. 48"X48"

W20-5

STD. 48"X48"

W20-7a

STD. 36"X36"
FWY. 48"X48"

W21-2

STD. 30"X30"
SPECIAL 36"X36"

W21-5

STD. 30"X30"
SPECIAL 36"X36"

W24-1

STD. 36"X36"

WI-4b

STD. 48"X48"

R56-1

STD. 18"X18"

W8-11

STD. 36"X36"
FWY. 48"X48"

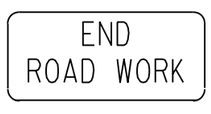
W8-9

STD. 36"X36"
FWY. 48"X48"

G20-1

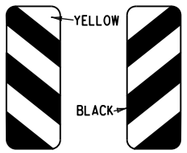
60"X24"

G20-2



48"X24"

OM-3L OM-3R



12"X36"

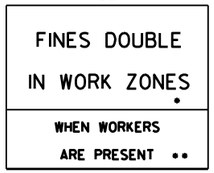
M4-9

STD. 30"X24"
SPECIAL 48"X36"
SPECIAL 60"X48"

M4-10

48"X18"

R55-1



36"X60"

• USE 6" C LETTERS
•• USE 4" D LETTERS

ADVANCE DISTANCES
(XXXX)

500 FT	½ MILE
1000 FT	¾ MILE
1500 FT	1 MILE AHEAD

GENERAL NOTES:

1. ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.
2. TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND REMOVED THEREAFTER.
3. EXISTING SIGNS AND CONSTRUCTION SIGNS SHALL BE KEPT IN PROPER POSITION, AND BE CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED. SIGNS THAT ARE DAMAGED, DEFACED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED.
- 4. SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SQ. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE.
- 5. SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3.
6. POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE.
7. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE, EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS.
8. FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. MOST OF THE SIGNS SHOWN ARE ORIENTED TO THE RIGHT. HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT.
10. R55-1 SIGNS SHALL BE PLACED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE SIGN SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN.

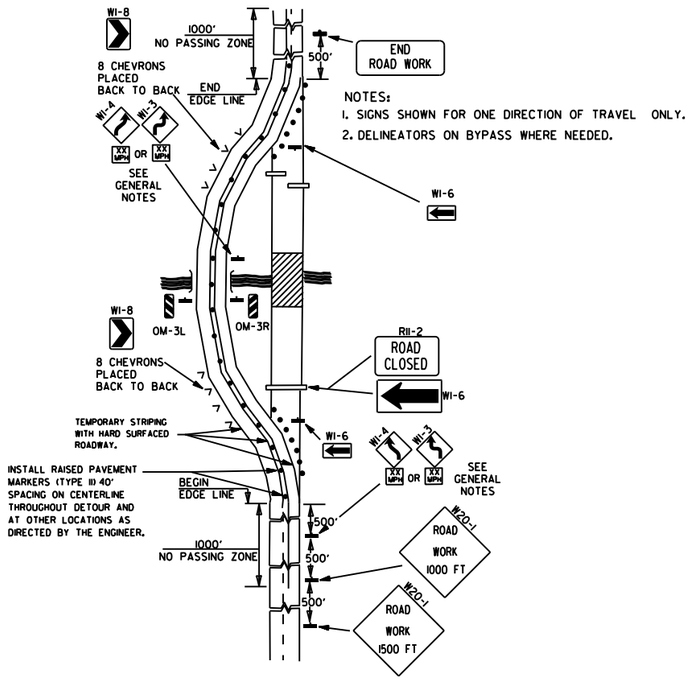
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED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

DATE	REVISION	FILMED
11-07-19	REVISED FOR MASH	
4-13-17	DELETED RSP-1 & ADDED W21-5a	
9-2-15	REVISED REDUCED SPEED LIMIT AHEAD SIGNS REVISED ROAD WORK NEXT XX MILES	
12-15-11	REVISED W24-1	
11-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
11-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
11-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
11-18-98	ADDED NOTE	
6-26-97	REVISED NOTE 5	
4-03-97	REVISED NOTE 5	
10-18-96	ADDED CONTROLLED ACCESS HWY. SIGN & TO NOTE 7	
10-12-95	ADDED R55-1	
6-8-95	REVISED TO CORRECT SIGN ILLUSTRATIONS	6-8-95
2-2-95	REVISED PER PART VI, MUTCD SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

ARKANSAS STATE HIGHWAY COMMISSION

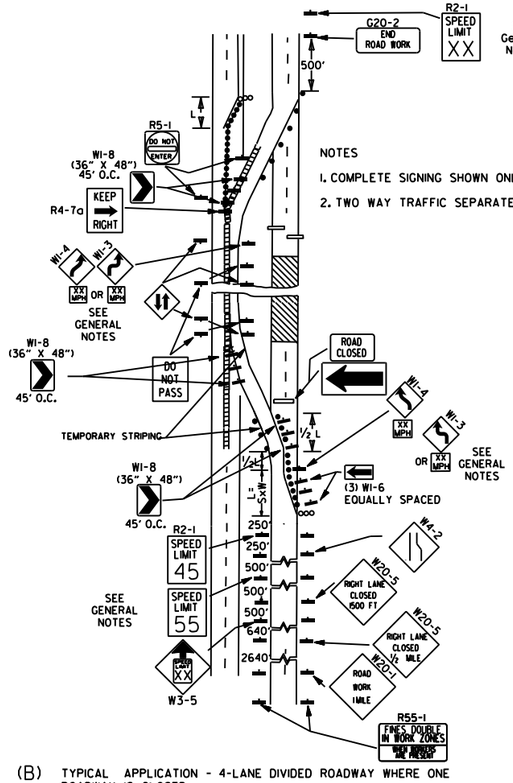
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



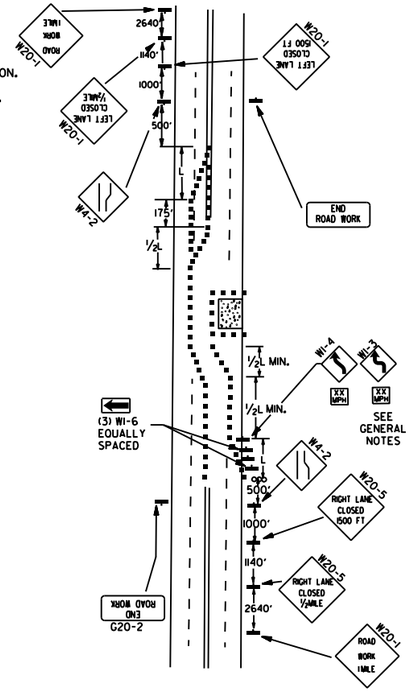
NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

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

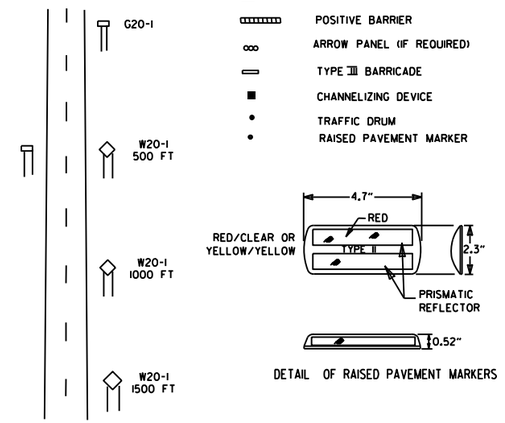


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

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



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



DETAIL OF RAISED PAVEMENT MARKERS

TYPICAL ADVANCE WARNING SIGN PLACEMENT

TAPER FORMULAE:

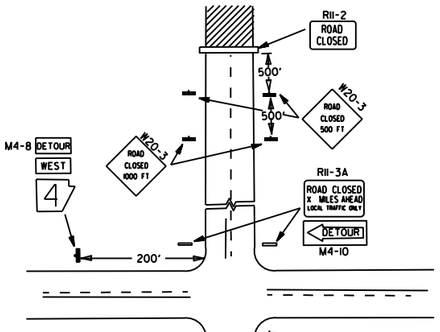
L=SXW FOR SPEEDS OF 45MPH OR MORE.

$L = \frac{WS^2}{60}$ FOR SPEEDS OF 40MPH OR LESS.

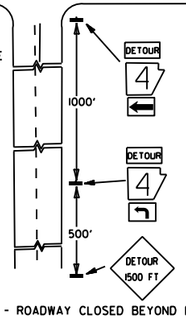
WHERE:
L= MINIMUM LENGTH OF TAPER.
S= NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.
W= WIDTH OF OFFSET.

GENERAL NOTES:

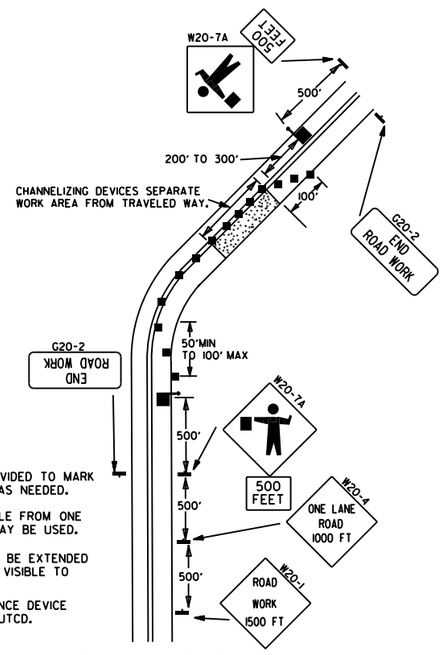
1. THE MAINTENANCE DIVISION SHALL CONDUCT A BALL BANK STUDY TO DETERMINE THE ADVISORY SPEED LIMIT PRIOR TO OPENING TO TRAFFIC. THE ADVISORY SPEED WILL BE POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-1 55MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE. PAYMENT FOR TRAFFIC DRUMS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR VARIOUS TRAILER MOUNTED DEVICES.
8. DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE ARDOT QUALIFIED PRODUCTS LIST.
9. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).



NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

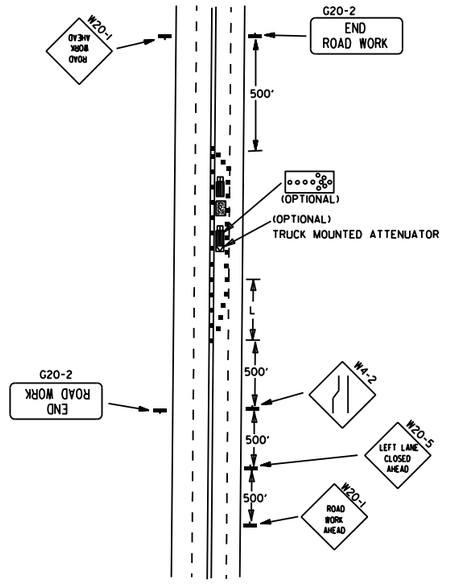


(D) TYPICAL APPLICATION - ROADWAY CLOSED BEYOND DETOUR POINT.



NOTES:
1. FLOOD LIGHTS SHOULD BE PROVIDED TO MARK FLAGGER STATIONS AT NIGHT AS NEEDED.
2. IF ENTIRE WORK AREA IS VISIBLE FROM ONE STATION, A SINGLE FLAGGER MAY BE USED.
3. CHANNELIZING DEVICES ARE TO BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
4. AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD) OPTIONAL. REFER TO MUTCD.

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



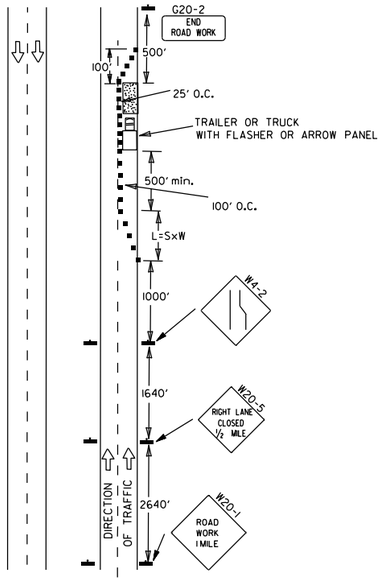
(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

DATE	REVISION	FILMED
05-20-21	REVISED NOTE 7	
11-07-19	REVISED NOTE 1, ADDED NOTE 9	
9-2-15	REVISED NOTE 2, ADDED NOTE 8, REVISED DRAWING (A) & REPLACED R2-5A WITH W3-5	
9-12-13	REVISED DETAIL OF RAISED PAVEMENT MARKERS	
3-11-10	ADDED (AFAD)	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (a) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON W1-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

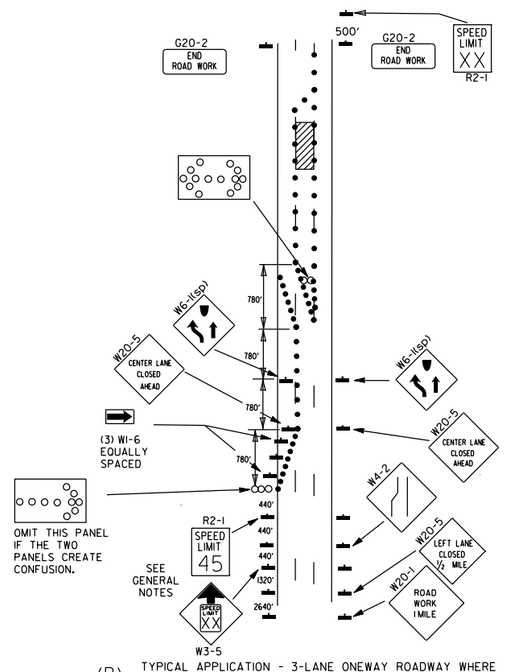
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-2



(A) TYPICAL APPLICATION - DAYTIME MAINTENANCE OPERATIONS OF SHORT DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



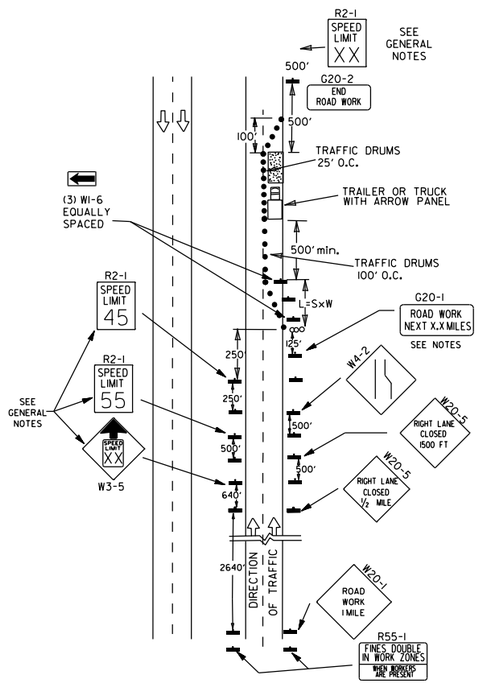
(B) TYPICAL APPLICATION - 3-LANE ONEWAY ROADWAY WHERE CENTER LANE IS CLOSED.

KEY:

- ARROW PANEL (IF REQUIRED)
- ■ CHANNELIZING DEVICE
- ● TRAFFIC DRUM

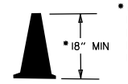
GENERAL NOTES:

1. A SPEED LIMIT REDUCTION MAY BE IMPLEMENTED ONLY WHEN DESIGNATED IN THE PLAN OR WHEN RECOMMENDED BY THE ROADWAY DESIGN DIVISION.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-1 55MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS, AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. THE G20-1 SIGN WILL BE REQUIRED ON JOBS OF OVER TWO MILES IN LENGTH. WHEN THE LANE CLOSURE IS NOT AT THE BEGINNING OF THE PROJECT, THE G20-1 SIGN SHALL BE ERECTED 125' IN ADVANCE OF THE JOB LIMIT. ADDITIONAL W20-1 (1 MILE) SIGNS ARE NOT REQUIRED IN ADVANCE OF LANE CLOSURES THAT BEGIN INSIDE THE PROJECT LIMITS.
8. FLAGGERS SHALL USE STOP/SLOW PADDLES FOR CONTROLLING TRAFFIC THROUGH WORK ZONES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. ALL PLASTIC DRUMS AND CONES SHALL MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
10. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE. PAYMENT FOR TRAFFIC DRUMS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR VARIOUS TRAILER MOUNTED DEVICES.
11. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).



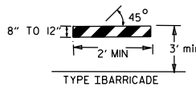
(C) TYPICAL APPLICATION - CONSTRUCTION OPERATIONS OF INTERMEDIATE TO LONG TERM DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.

CHANNELIZING DEVICES



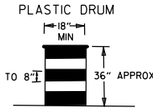
* WHEN CONES ARE USED ON FREEWAYS AND MULTI-LANE HIGHWAYS, THEY SHALL BE 28" MIN. DURING HOURS OF DARKNESS, 28" CONES SHALL BE USED ON ALL ROADWAYS, AND SHALL BE REFLECTORIZED IN ACCORDANCE WITH THE M.U.T.C.D.

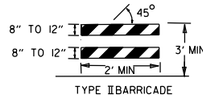
CONES



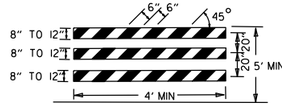
TYPE I BARRICADE

PLASTIC DRUM



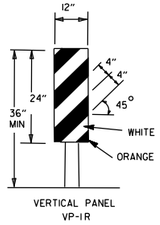


TYPE II BARRICADE



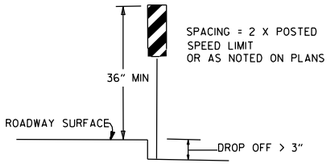
TYPE III BARRICADE

NOTE:
FOR ALL ROAD CLOSURES, THE TYPE III BARRICADES SHALL BE OF SUFFICIENT LENGTH TO EXTEND ACROSS ENTIRE ROADWAY.

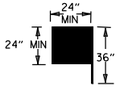


VERTICAL PANEL VP-1R

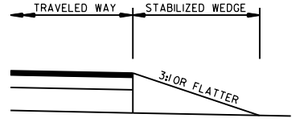
VERTICAL PANEL PLACEMENT



FLAG



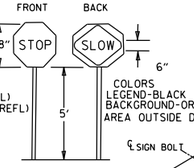
FLAG SHALL BE OF GOOD GRADE RED MATERIAL

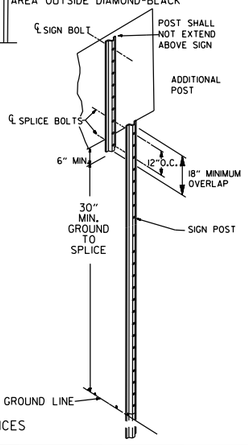


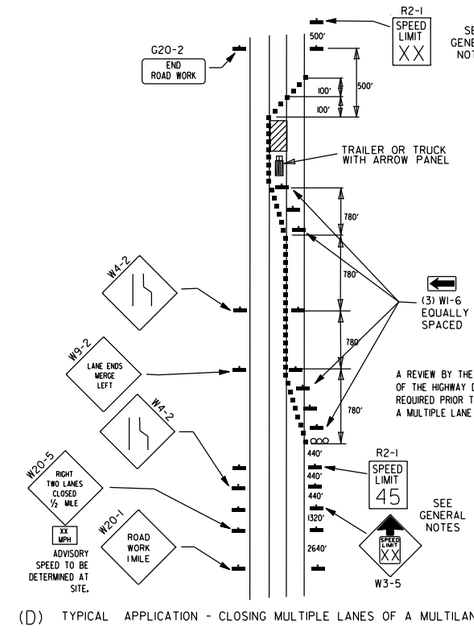
STABILIZED WEDGE

NOTE:
MATERIALS FOR THE STABILIZED WEDGE SHALL MEET THE REQUIREMENTS PROVIDED IN SECTION 603.02 OF THE STANDARD SPECIFICATIONS.

STOP SLOW PADDLE







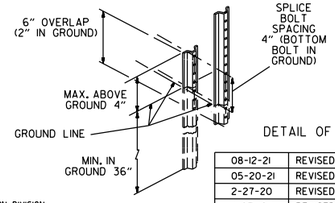
A REVIEW BY THE ROADWAY DESIGN DIVISION OF THE HIGHWAY DEPARTMENT WILL BE REQUIRED PRIOR TO IMPLEMENTING A MULTIPLE LANE CLOSURE.

(D) TYPICAL APPLICATION - CLOSING MULTIPLE LANES OF A MULTILANE HIGHWAY.

NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-21)

NORMAL INSTALLATIONS WILL REQUIRE 1/4" DIA. BOLTS TO MOUNT SIGNS TO POST AND 5/16" DIA. BOLTS TO ASSEMBLE THE VARIOUS POST SUPPORTS. EACH OF THESE BOLTS SHALL BE CARRIAGE BOLTS.

SIGN POSTS SHALL BE PAINTED GREEN; SIGNS SHALL NOT BE PAINTED, AND ALL SIGN POSTS SHALL BE PLUMB.



DETAIL OF SPLICES

TRAFFIC CONTROL DEVICES

NON-INTERSTATE

VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL	
		≤ 45 MPH	> 45 MPH
≤ 1"	CENTERLINE	W8-11	W8-11
> 1" ≤ 3"	CENTERLINE	W8-11 AND CENTERLINE LANE STRIPING	W8-11 AND CENTERLINE LANE STRIPING
> 3"	CENTERLINE	STANDARD LANE CLOSURE[6]	STANDARD LANE CLOSURE[6]
≤ 3"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9 AND TRAFFIC DRUMS[1]	W8-9 AND TRAFFIC DRUMS[1]
> 3" ≤ 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[1]	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[1]
> 6" ≤ 18"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[1]	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[2]
> 18" ≤ 24"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[1]	A STABILIZED WEDGE, W8-17, EDGE LINE STRIPING AND TRAFFIC DRUMS[3]
> 24"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	PRECAST CONCRETE BARRIER[4] & EDGE LINES	PRECAST CONCRETE BARRIER[4] & EDGE LINES

INTERSTATE

VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL
≤ 3"	CENTERLINE	W8-11 AND LANE STRIPING
≤ 3"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9, EDGE LINE STRIPING, AND TRAFFIC DRUMS[2]
> 3" ≤ 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[2]
> 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	PRECAST CONCRETE BARRIER & EDGE LINES

INTERSTATE AND NON-INTERSTATE

FORESLOPE	HEIGHT	TRAFFIC CONTROL
1:1	> 2 FT	PRECAST CONCRETE BARRIER
2:1	≤ 5 FT	TRAFFIC DRUMS
2:1	> 5 FT	PRECAST CONCRETE BARRIER
Flatter than 2:1	N/A	TRAFFIC DRUMS

GENERAL NOTES:

1. WHEN THE SHOULDER AREA IS USED AS PART OF THE TRAVELED LANE AND THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, THEN VERTICAL PANELS SHALL BE USED.
2. WHEN THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, A STABILIZED WEDGE SHALL BE USED.
3. PRECAST CONCRETE BARRIER WALL CAN BE USED IN LIEU OF A STABILIZED WEDGE, W8-17 SIGN, EDGE LINE STRIPING, AND TRAFFIC DRUMS, IF AND WHERE DIRECTED BY THE ENGINEER.
4. A STABILIZED WEDGE, W8-17 SIGN, EDGE LINE STRIPING, AND TRAFFIC DRUMS CAN BE USED IN LIEU OF PRECAST CONCRETE BARRIER WALL, IF AND WHERE DIRECTED BY THE ENGINEER.
5. W21-5, W21-5a, AND/OR W21-5b SIGNS SHALL BE USED WHERE THE ROADWAY IS UNOBSTRUCTED IF AND WHERE DIRECTED BY THE ENGINEER.
6. TIME LIMITATIONS MUST CONFORM TO SECTION 603 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).

DATE	REVISION	FILMED
08-12-21	REVISED TRAFFIC CONTROL DEVICES AND NOTES	
05-20-21	REVISED NOTE 10	
2-27-20	REVISED TRAFFIC CONTROL DEVICES DETAILS	
11-07-19	REVISED NOTE 9, ADDED NOTE 11	
7-25-19	REVISED TRAFFIC CONTROL DEVICES DETAILS	
9-2-15	REVISED NOTE 2 & REPLACED R2-5A WITH W3-5	
10-15-09	ADDED REFERENCE TO MASH	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED NOTE	
10-1-98	ADDED NOTE	
4-03-97	ADDED (SP) TO W6-1& REVISED TRAFFIC CONTROL DEVICES NOTE	
10-18-96	ADDED R55-1	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL, TEXT	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

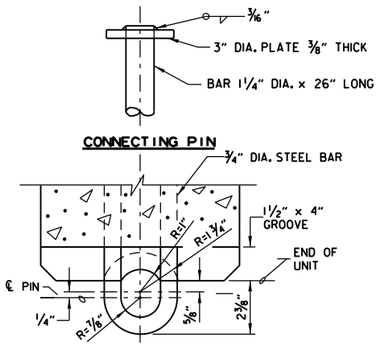
ARKANSAS STATE HIGHWAY COMMISSION

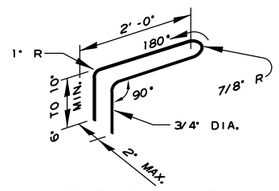
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

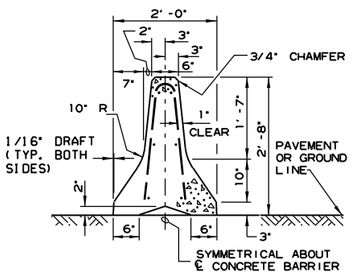
STANDARD DRAWING TC-3

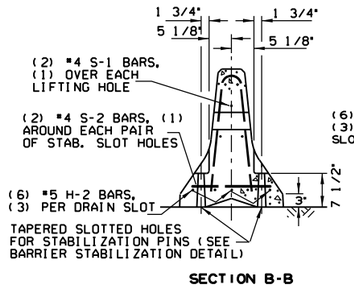
REINFORCING BAR TABLE PER BARRIER UNIT

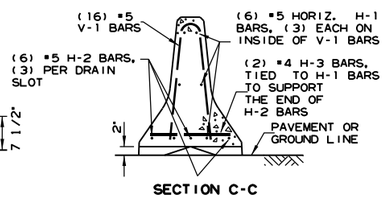
MARK	LOCATION	BAR SIZE	(NO. BARS)	SKETCH
H-1	HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS	#5	(6)	19'-3"
H-2	CENTERED ABOVE DRAIN SLOTS LONG. & TRANSVERSELY	#5	(6)	6'-6"
H-3	TIED ABOVE H-1 BARS TO SUPPORT H-2, TIED TO V-1	#4	(2)	1'-6"
S-1	OVER LIFT HOLES	#4	(2)	2'-5", LIFTING HOLE, 90°, 3 3/8" R
S-2	HORIZ. AROUND SLOTS BETWEEN V-1'S @ DRAIN SLOTS	#4	(2)	1 1/2" R, SLOTS, 7", 1'-6", 1" MIN. CLEAR TO BAR; 5'-1" BAR W/(4) 1 1/2" R BENDS & MIN. 1'-0" OVERLAP
V-1	VERTICAL IN BARRIER(3) EACH END & (2) AT EACH DRAIN SLOTS	#5	(16)	TOTAL LENGTH 4'-9"; 2 3/16" R; 12°; 1 1/2"; 9"; 2'-1 3/8"; 4 3/8"

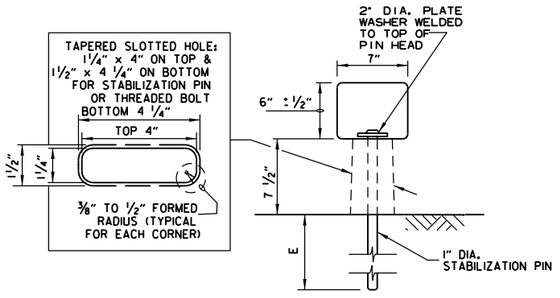




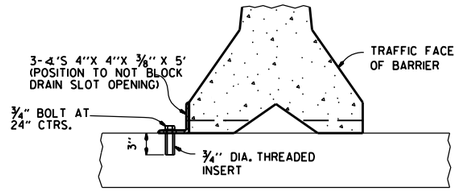






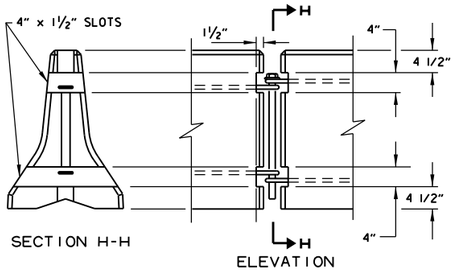


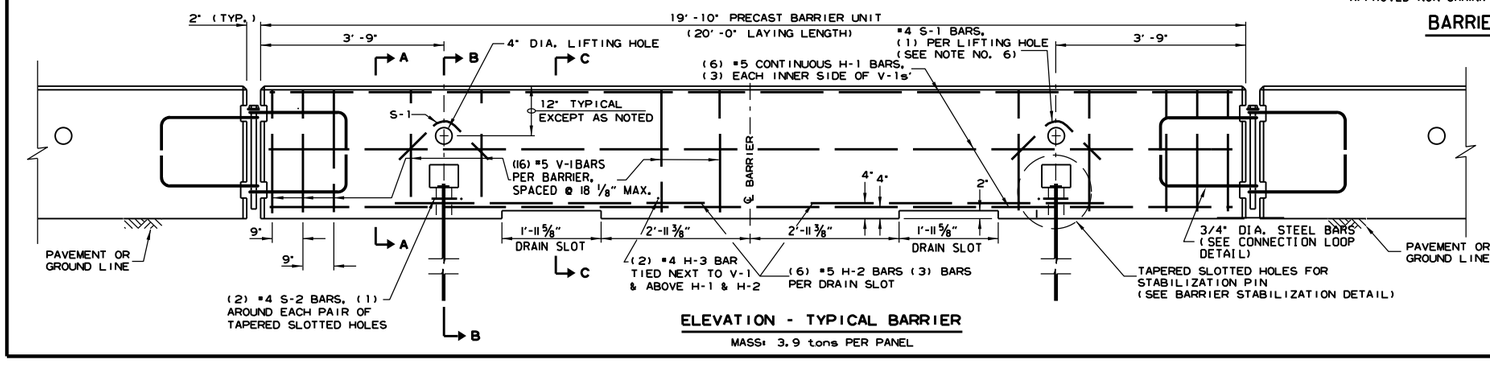
Ⓔ 4" - CONCRETE PAVEMENT
8" - ASPHALT PAVEMENT
12" - SHOULDER AREAS



NOTE: " THREADED INSERTS SHALL BE CAST IN PLACE FOR ALL NEW BRIDGE DECKS AND DRILLED AND GROUTED FOR EXISTING BRIDGE DECKS. INSERTS SHALL HAVE A MINIMUM ULTIMATE LOAD CAPACITY OF 8000 LBS. IN TENSION. AFTER REMOVAL OF BARRIER, BOLTS, AND ANGLES, THE INSERTS SHALL BE FILLED WITH APPROVED NON-SHRINK EPOXY.

BARRIER STABILIZATION DETAIL
BRIDGE DECKS





MASS: 3.9 tons PER PANEL

GENERAL NOTES

1. THE CONTRACTOR SHALL FURNISH THE PRECAST CONCRETE BARRIER UNITS AND SHALL BE RESPONSIBLE FOR THE MANUFACTURE, SHIPMENT, STORAGE, PLACEMENT AND REMOVAL. AT THE COMPLETION OF THE PROJECT, THE PRECAST UNITS WILL REMAIN THE PROPERTY OF THE CONTRACTOR.

2. MATERIALS SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS:
   CONCRETE: 2500 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
   REINFORCING STEEL: AASHTO M 31 OR M 53, GRADE 60
   STRUCTURAL STEEL: AASHTO-M270 GRADE 36 SHALL BE USED FOR THE CONNECTION PIN, CONNECTION LOOPS, AND STABILIZATION PINS. A ONE PIECE PIN WITH A 3" ROUNDED TOP MAY BE USED IN PLACE OF THE DETAILED CONNECTION PIN.
   DELINEATORS: DELINEATORS SHALL BE MOUNTED AT 10' SPACING ON TOP OF PRECAST BARRIER.

   IN APPLICATIONS WHERE BARRIER WALL IS WITHIN 6 FEET OF A TRAFFIC LANE, ADDITIONAL DELINEATORS SHALL BE PLACED ON THE BARRIER AT 10' SPACING APPROXIMATELY ONE (1) FOOT FROM THE TOP OF THE BARRIER. DELINEATORS SHALL BE ON THE ARDOT QUALIFIED PRODUCTS LIST FOR CONSTRUCTION CONCRETE BARRIER MARKERS.
   DELINEATOR COLOR SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
   PAYMENT FOR DELINEATORS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID PER LIN. FT. FOR "FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER". THE CONTRACTOR SHALL CERTIFY TO THE ENGINEER THAT THE MATERIAL AND THE DESIGN USED IN THE PRECAST BARRIER UNITS MEETS THE REQUIREMENTS AS SHOWN ON THIS STANDARD DRAWING.

3. OTHER PRECAST CONCRETE BARRIERS THAT HAVE BEEN CRASH TESTED AND APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION TO MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) WILL BE ACCEPTED IN LIEU OF THE BARRIER SHOWN. DRAIN SLOTS SHALL BE PROVIDED AS NEEDED OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL FURNISH A CERTIFICATION OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) COMPLIANCE FOR ANY OTHER TYPES OF PRECAST BARRIER TO BE USED. THE CERTIFICATION SHALL STATE THAT THE PRECAST CONCRETE BARRIER MEETS THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH). MIXING OF SHAPES WILL NOT BE ALLOWED IN A CONTINUOUS LINE OF UNITS.

4. DOWEL HOLES IN PAVEMENT OR BRIDGE SLABS THAT ARE TO REMAIN IN PLACE SHALL BE FILLED. HOLES IN CONCRETE PAVEMENT AND BRIDGE SLABS SHALL BE FILLED WITH AN APPROVED NON-SHRINK EPOXY GROUT. HOLES IN ASPHALT PAVEMENT SHALL BE FILLED WITH AN APPROVED ASPHALT JOINT FILLER. PAYMENT FOR DRILLING AND FILLING HOLES TO BE INCLUDED IN THE PRICE FOR VARIOUS BARRIER ITEMS.

5. ATTACH UNITS TO ROADWAY SURFACE WITH STABILIZATION PINS AND TO DECK SLABS USING BOLTS WHEN REQUIRED.

6. A 4" WHITE PVC SLEEVE MAY BE USED TO FORM THE LIFTING HOLE AND IF USED THE SLEEVE IS TO BE LEFT IN PLACE.

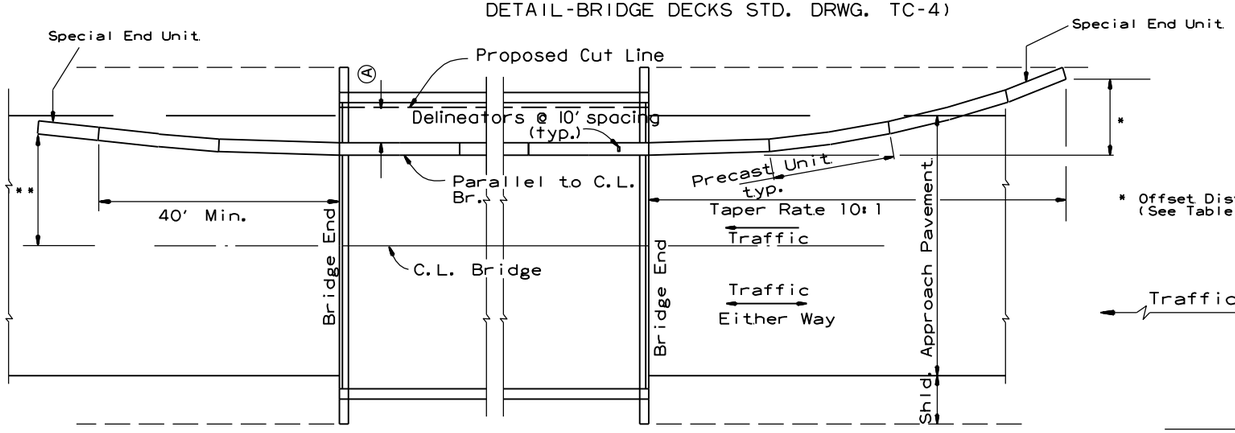
DATE	REVISION	FILMED
11-07-19	REVISED NOTE 3	
2-27-14	REVISED BARRIER STABILIZATION DETAIL	
10-15-09	ADDED REFERENCE TO WASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02	ISSUED NEW DRAWING	

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

STANDARD DRAWING TC-4

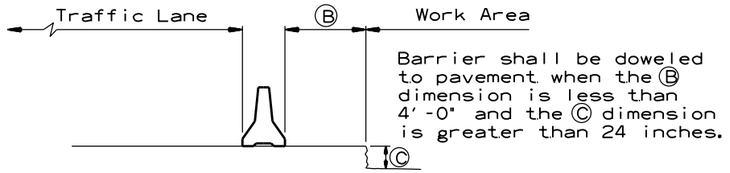
Ⓐ 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)



BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

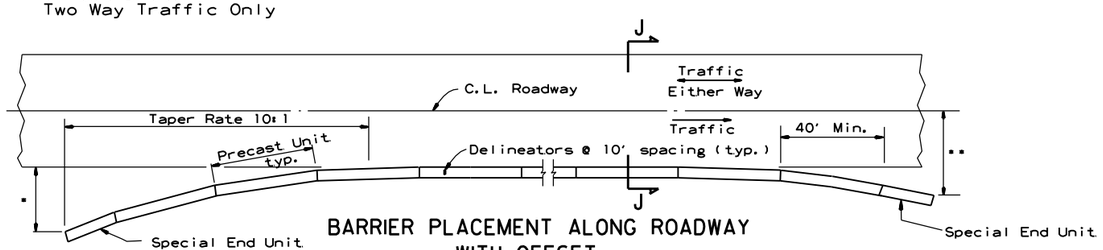
** Offset Distance for Two Way Traffic Only



Barrier shall be doweled to pavement when the Ⓑ dimension is less than 4'-0" and the Ⓒ dimension is greater than 24 inches.

SECTION J-J

No Scale



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

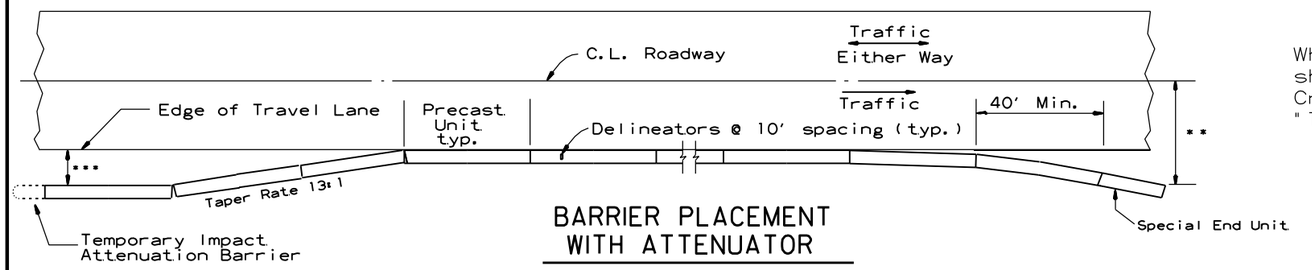
** Offset Distance For Two Way Traffic Only

* Offset Distance (See Table)

Offset Distance Table

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

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

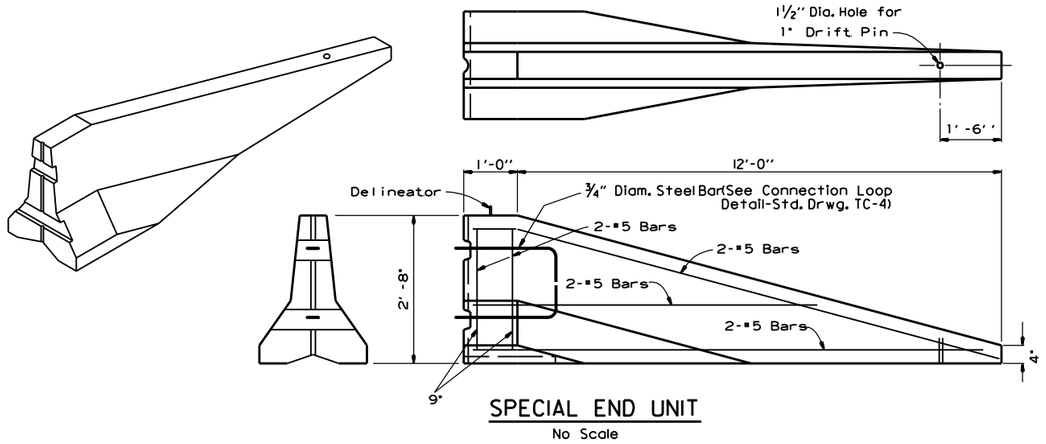


BARRIER PLACEMENT WITH ATTENUATOR

No Scale

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

** Offset Distance For Two Way Traffic Only



SPECIAL END UNIT

No Scale

General Notes

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

DATE	REVISION	FILMED
11-07-19	REVISED NOTE	
10-15-09	ADDED REFERENCE TO MASH	
5-25-06	REVISED BARRIER PLACEMENT	
8-22-02	ISSUED NEW DRAWING	

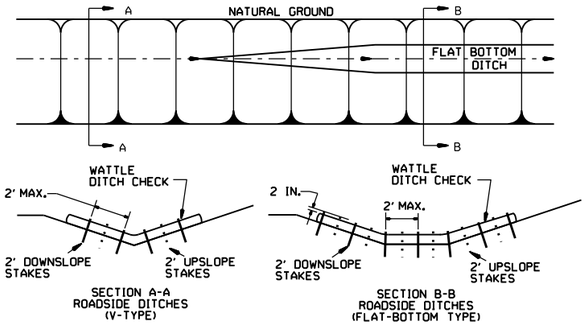
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

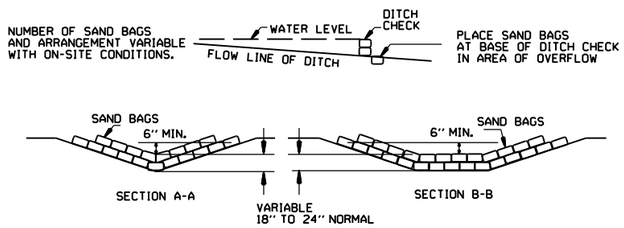
STANDARD DRAWING TC-5

GENERAL NOTES

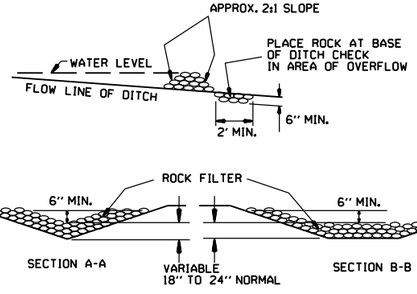
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



SAND BAG DITCH CHECK (E-5)

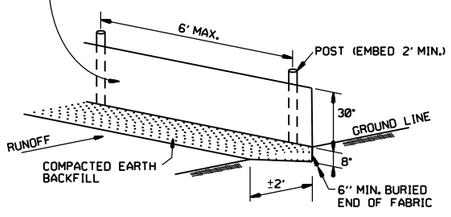


ROCK DITCH CHECK (E-6)

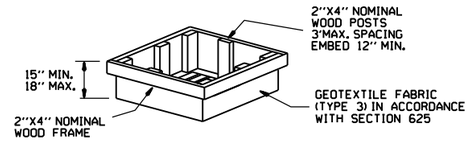
GENERAL NOTES

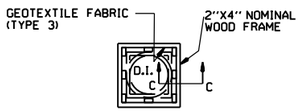
GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625

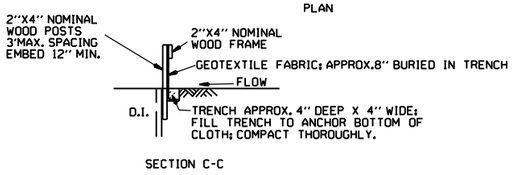
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



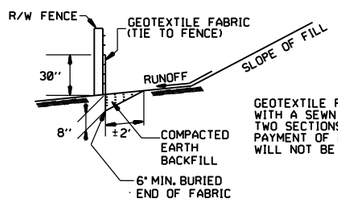
SILT FENCE (E-11)





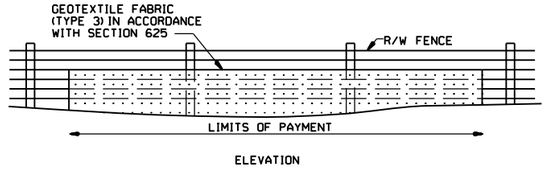


DROP INLET SILT FENCE (E-7)



GENERAL NOTES

GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



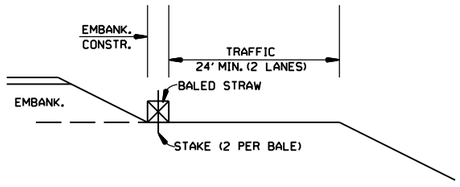
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

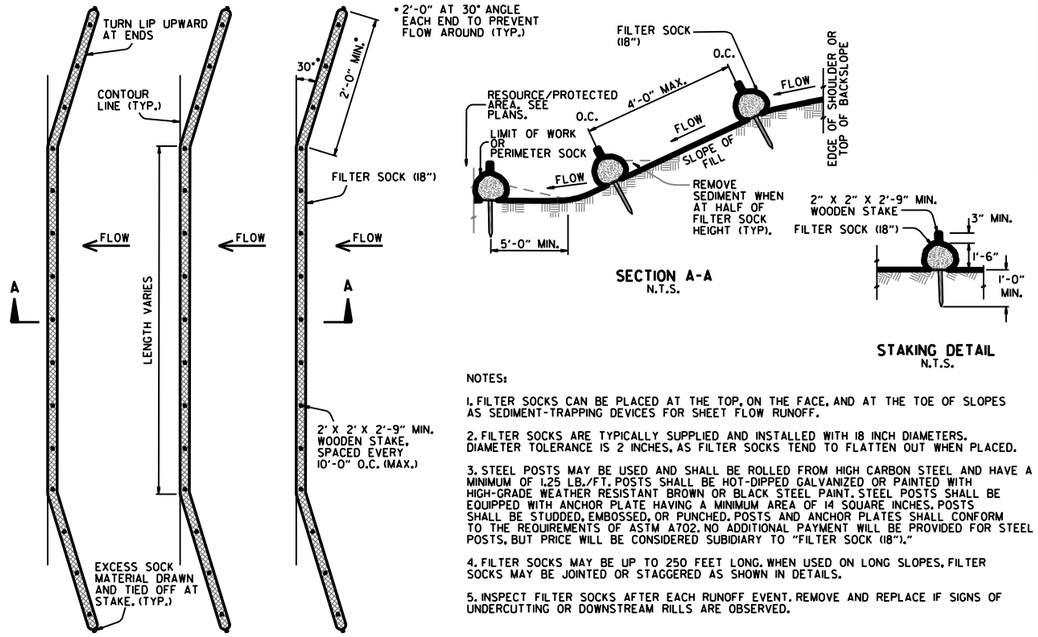
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

2. NO GAPS SHALL BE LEFT BETWEEN BALES.

3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.



BALED STRAW FILTER BARRIER (E-2)



NOTES:

1. FILTER SOCKS CAN BE PLACED AT THE TOP, ON THE FACE, AND AT THE TOE OF SLOPES AS SEDIMENT-TRAPPING DEVICES FOR SHEET FLOW RUNOFF.

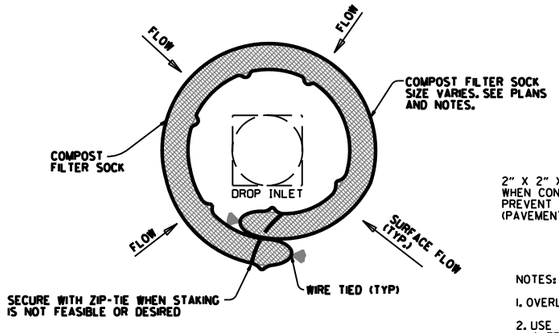
2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES, AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.

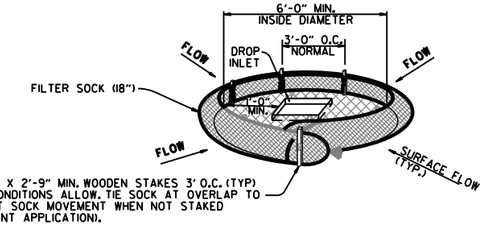
3. STEEL POSTS MAY BE USED AND SHALL BE ROLLED FROM HIGH CARBON STEEL AND HAVE A MINIMUM OF 1.25 LB./FT. POSTS SHALL BE HOT-DIPPED GALVANIZED OR PAINTED WITH HIGH-GRADE WEATHER RESISTANT BROWN OR BLACK STEEL PAINT. STEEL POSTS SHALL BE EQUIPPED WITH ANCHOR PLATE HAVING A MINIMUM AREA OF 14 SQUARE INCHES. POSTS SHALL BE STUDDED, EMBOSSED, OR PUNCHED. POSTS AND ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR STEEL POSTS, BUT PRICE WILL BE CONSIDERED SUBIDIARY TO "FILTER SOCK (18")."

4. FILTER SOCKS MAY BE UP TO 250 FEET LONG. WHEN USED ON LONG SLOPES, FILTER SOCKS MAY BE JOINTED OR STAGGERED AS SHOWN IN DETAILS.

5. INSPECT FILTER SOCKS AFTER EACH RUNOFF EVENT. REMOVE AND REPLACE IF SIGNS OF UNDERCUTTING OR DOWNSTREAM RILLS ARE OBSERVED.

FILTER SOCK ALONG SLOPE (E-3)





NOTES:

1. OVERLAP ENDS OF SOCK (1' MIN. 3' MAX.).

2. USE 18" DIA. SOCK IN NON-TRAFFIC AREAS OR AREAS WHERE SAFETY IS NOT A CONCERN.

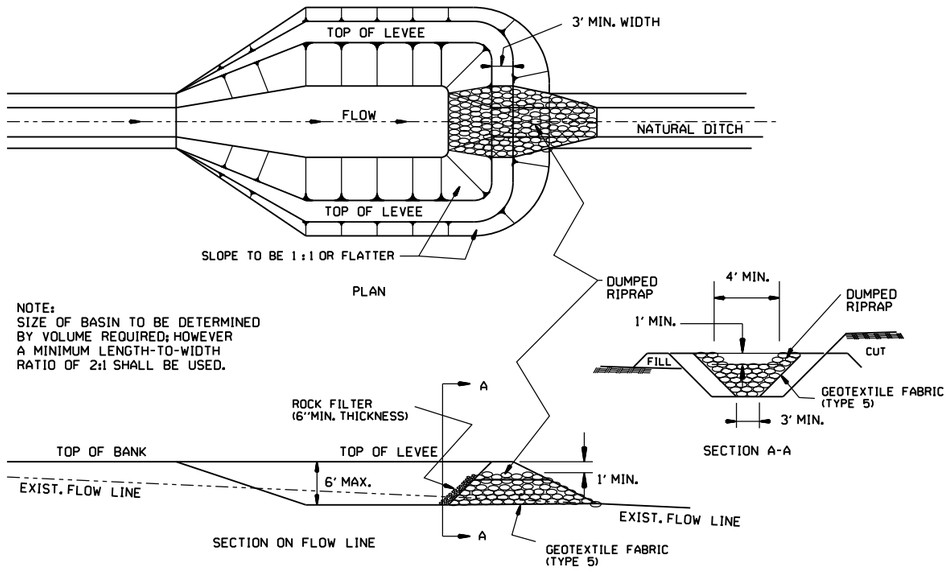
COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)

DATE	REVISION	FILMED
11-16-17	ADDED FILTER SOCK E-3 AND E-13	
12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK	
11-18-98	ADDED NOTES	
07-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)	
07-20-95	REVISED SILT FENCE E-4 AND E-11	7-20-95
07-15-94	REV. E-4 & E-11 MIN. 13" BURIED END OF FABRIC	
06-02-94	REVISED E-1,4,7 & 11; DELETED E-2 & 3	6-2-94
04-01-93	REDRAWN	
10-01-92	REDRAWN	
08-02-76	ISSUED R.D.M.	298-7-28-76

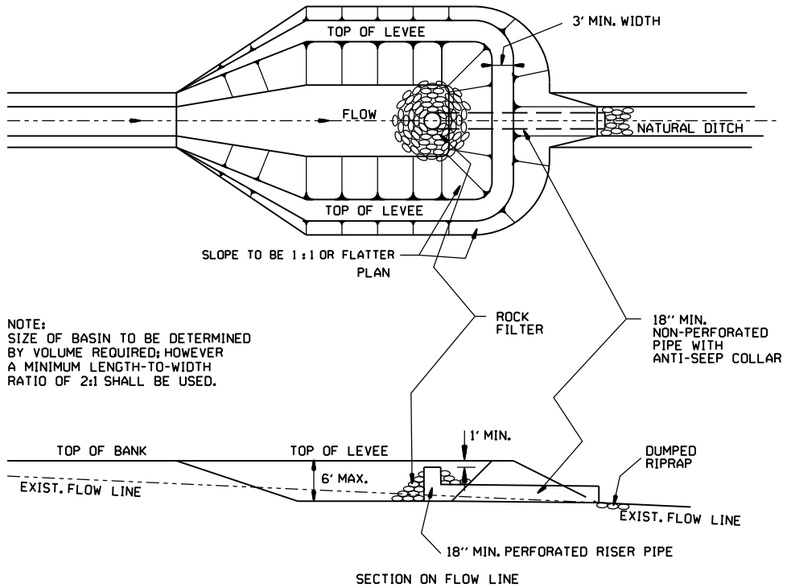
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

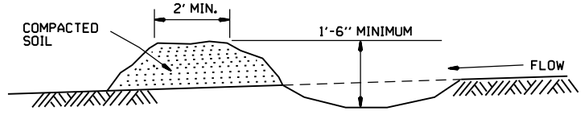
STANDARD DRAWING TEC-1



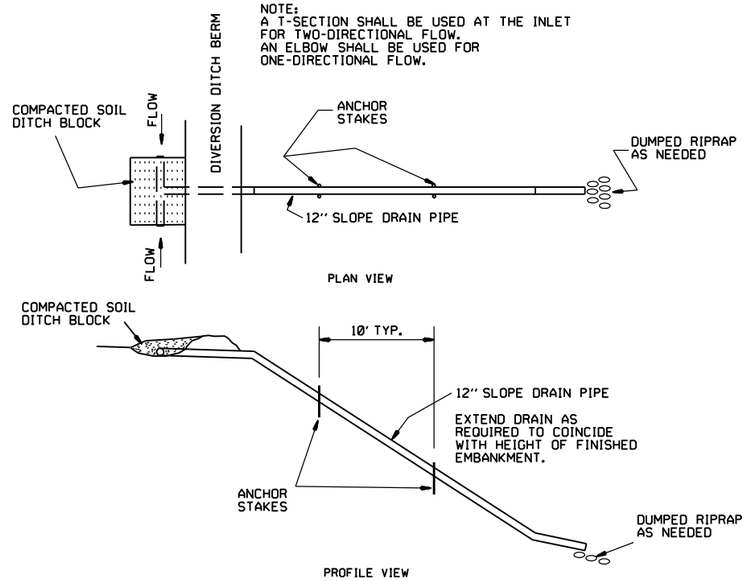
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



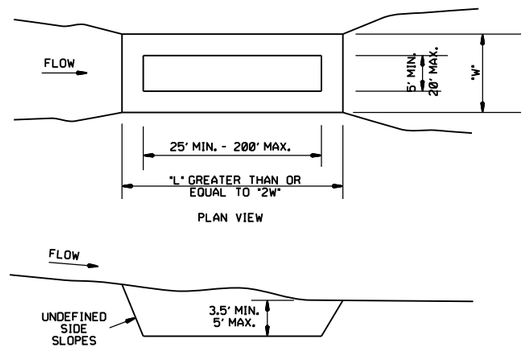
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



SEDIMENT BASIN (E-14)

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

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

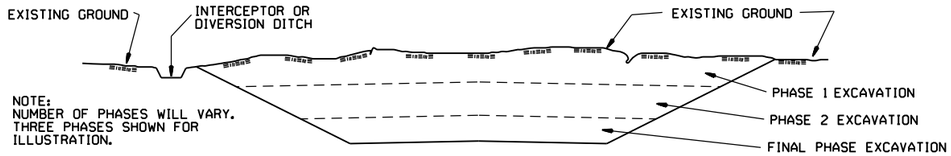
STANDARD DRAWING TEC-2

CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE

1. PLACE PERIMETER CONTROLS (I.E. SILT FENCES , DIVERSION DITCHES, SEDIMENT BASINS, ETC.)
2. PERFORM CLEARING AND GRUBBING OPERATION.

EXCAVATION



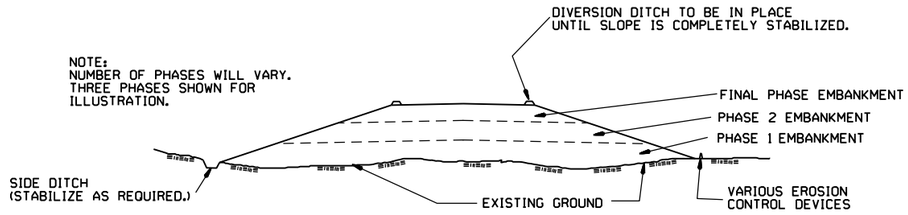
GENERAL NOTE

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

CONSTRUCTION SEQUENCE

1. EXCAVATE AND STABILIZE INTERCEPTOR AND/OR DIVERSION DITCHES.
2. PERFORM PHASE 1 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
3. PERFORM PHASE 2 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
4. PERFORM FINAL PHASE OF EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING. STABILIZE DITCHES. CONSTRUCT DITCH CHECKS, DIVERSION DITCHES, SEDIMENT BASINS, OR OTHER EROSION CONTROL DEVICES AS REQUIRED.

EMBANKMENT



GENERAL NOTE

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

CONSTRUCTION SEQUENCE

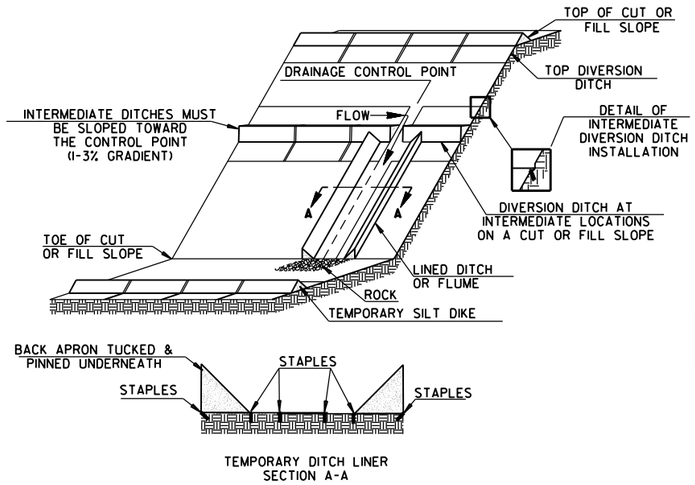
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD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

11-03-94	CORRECTED SPELLING	
6-2-94	Drawn & Issued	6-2-94
DATE	REVISION	FILMED

ARKANSAS STATE HIGHWAY COMMISSION

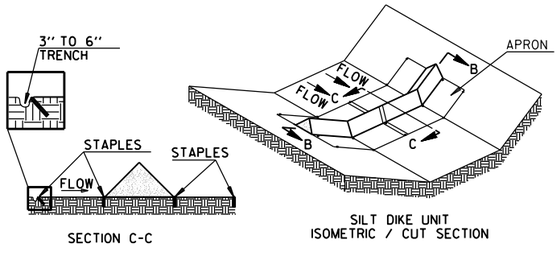
TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3



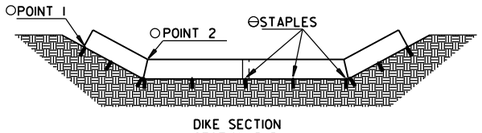
TEMPORARY DITCH LINER
SECTION A-A

TRIANGULAR SILT DIKE INSTALLATION FOR DIVERSION DITCH AND/OR DITCH LINER



SECTION C-C

SILT DIKE UNIT
ISOMETRIC / CUT SECTION

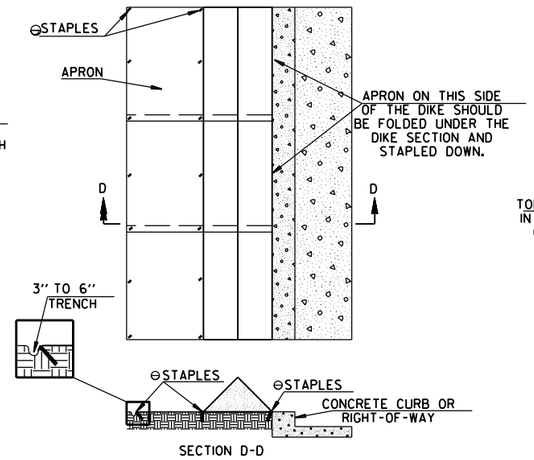


DIKE SECTION
SECTION B-B

TRIANGULAR SILT DIKE INSTALLATION FOR ROADWAY DITCH OR DRAINAGE DITCH

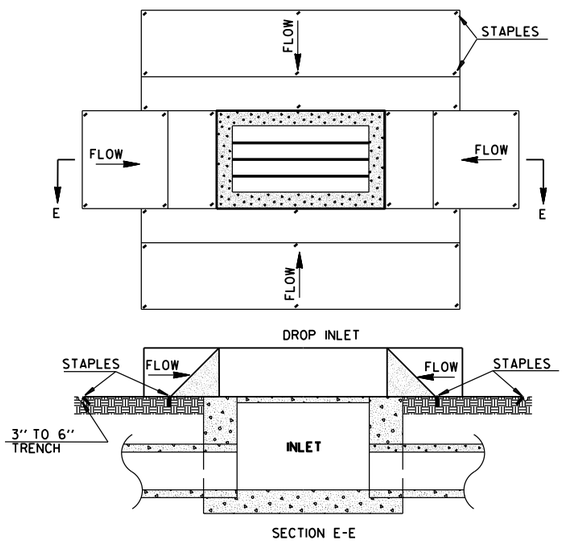
○ POINT "1" MUST BE HIGHER THAN POINT "2" TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.

⊖ STAPLES SHALL BE PLACED WHERE THE UNITS OVERLAP AND IN THE CENTER OF THE UNIT AS SHOWN ON THE DIAGRAM.



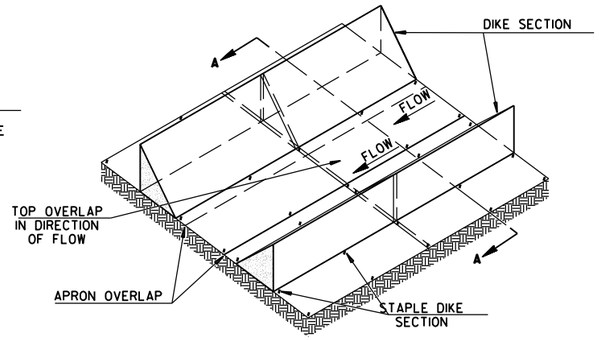
SECTION D-D

TRIANGULAR SILT DIKE INSTALLATION FOR CONTINUOUS BARRIER



SECTION E-E

TRIANGULAR SILT DIKE INSTALLATION FOR DROP INLETS



TRIANGULAR SILT DIKE INSTALLATION FOR TEMPORARY DITCH LINER

GENERAL NOTES

1. THIS WORK SHALL CONSIST OF FURNISHING, INSTALLING, AND MAINTAINING THE TRIANGULAR SILT DIKE. THE DIKES SHALL BE USED AS A CONTINUOUS LINE BARRIER AT THE TOE OF SLOPE OR ACROSS THE ROADWAY DITCH TO CONTAIN SEDIMENT AND MINIMIZE EROSION, OR AS DIRECTED BY THE ENGINEER. THESE DIKES SHALL BE INSTALLED AND LOCATED AS SOON AS CONSTRUCTION WILL ALLOW OR AS DIRECTED BY THE ENGINEER.

2. TRIANGULAR SILT DIKE SHALL BE TRIANGULAR SHAPED HAVING A HEIGHT OF AT LEAST 8" TO 10" IN THE CENTER WITH EQUAL SIDES AND A 16" TO 20" BASE. THE TRIANGULAR SHAPED INNER MATERIAL SHALL BE URETHANE FOAM. THE OUTER COVER SHALL BE A WOVEN GEOTEXTILE FABRIC PLACED AROUND THE INNER MATERIAL & ALLOWED TO EXTEND BEYOND BOTH SIDES OF THE TRIANGLE 24" TO 36". THIS FABRIC SHOULD BE MILDEW RESISTANT, ROT-PROOF AND RESISTANT TO HEAT AND ULTRAVIOLET RADIATION MEETING REQUIREMENTS FOR SEDIMENT CONTROL IN AASHTO M288. THE DIKES SHALL BE ATTACHED TO THE GROUND WITH WIRE STAPLES. THE STAPLES SHALL BE NO. 11 GAUGE WIRE AND BE AT LEAST 6" TO 8" LONG. STAPLES SHALL BE PLACED AS SHOWN ON THESE DETAILS.

   THE CONTRACTOR SHALL INSPECT ALL DIKES AFTER EACH RAINFALL EVENT OF AT LEAST 0.5" OR GREATER. ANY DEFICIENCIES OR DAMAGE SHALL BE REPAIRED BY THE CONTRACTOR. ACCUMULATED SILT OR DEBRIS SHALL BE REMOVED AND RELOCATED AS DIRECTED BY THE ENGINEER. IF THE DIKES ARE DAMAGED OR INADVERTENTLY MOVED DURING THE SILT REMOVAL PROCESS, THE CONTRACTOR SHALL IMMEDIATELY REPLACE AFTER DAMAGE OCCURS.

3. ACCEPTED TRIANGULAR SILT DIKE, MEASURED AS PROVIDED ABOVE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR TRIANGULAR SILT DIKE. PRICE BID WILL INCLUDE THE COST OF FURNISHING THE DIKES, INSTALLING, MAINTAINING AND REMOVAL WHEN DIRECTED BY THE ENGINEER.

SYMBOLOGY
SYMBOL TO BE USED TO DENOTE DEVICE ON PLANS

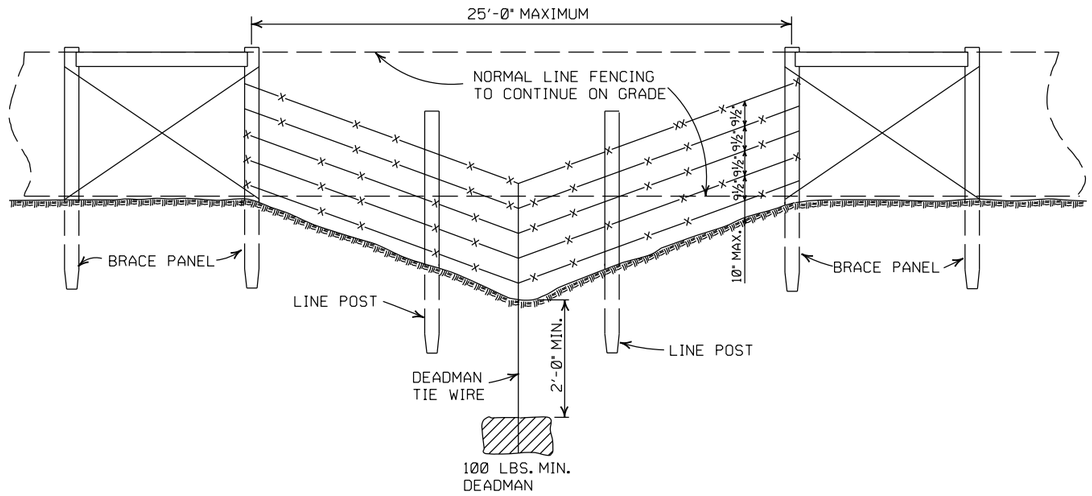
NOTE: SILT DIKE SHOULD ONLY BE USED FOR DROP INLETS IN SUMP LOCATIONS.

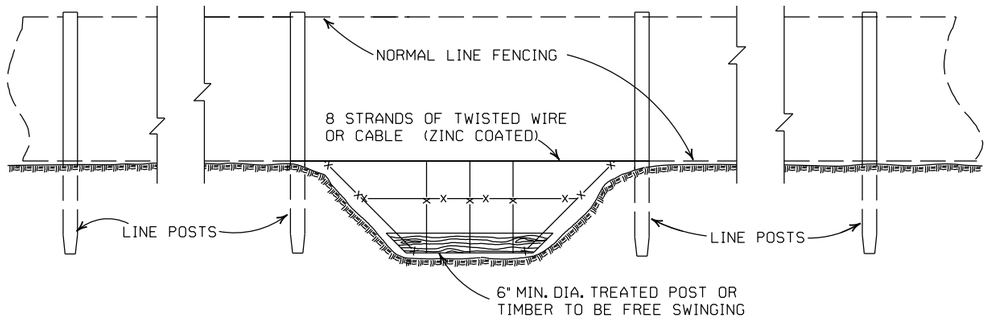
DATE	REVISION	FILMED
7-26-12	REVISED GENERAL NOTE 2.	
12-15-11	ISSUED	

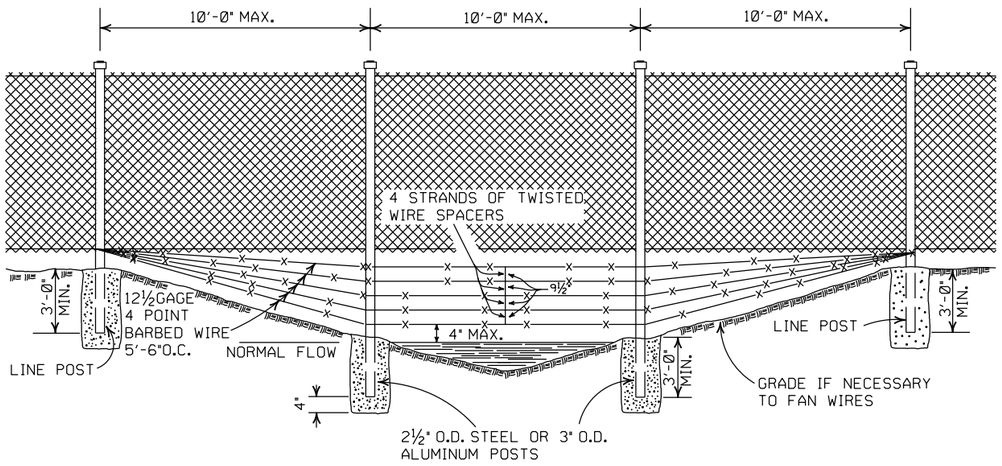
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-4







GENERAL NOTES:

THESE INSTALLATIONS TO BE USED WHERE NORMAL FENCING INSTALLATION WOULD CAUSE THE COLLECTING OF DRIFT IN THE CHANNEL OR THE DEPRESSION WILL NOT PERMIT NORMAL INSTALLATION. INSTALLATIONS WILL BE MADE ONLY WHERE DIRECTED BY THE ENGINEER.

WHEN A FENCE LINE APPROACHES A DITCH, GULLY OR DEPRESSION, THE LAST POST ON LEVEL GROUND SHALL BE PLACED CLOSE ENOUGH TO THE EDGE OF THE DROP OFF THAT THE FENCE MAY BE STRUNG TO THE POST IN THE DEPRESSION WITHOUT TOUCHING THE GROUND.

IN TERRAIN OF SUCH EXTREME IRREGULARITY THAT MINOR GRADING WILL NOT BE FEASIBLE, THE NORMAL FENCE SHALL CONTINUE ON GRADE AND THE GULLIES OR DEPRESSIONS TREATED BY AUXILIARY FENCES AS SHOWN.

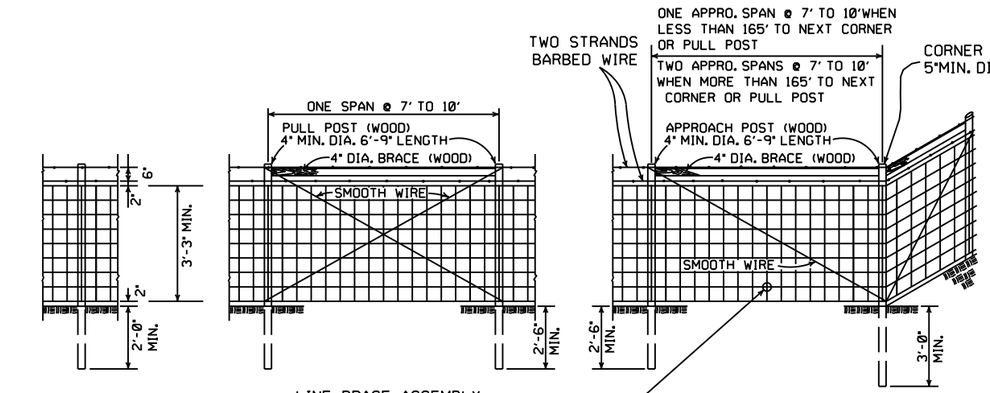
PAYMENT FOR THE TYPE INSTALLATION USED WILL NOT BE MADE DIRECTLY BUT WILL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR WIRE FENCE OR CHAIN LINK FENCE.

DATE	REVISION	FILMED
4-20-79	REVISED TOP RAIL & TENSION WIRE	696-4-20-79
10-2-72	REVISED AND REDRAWN	529-10-2-72

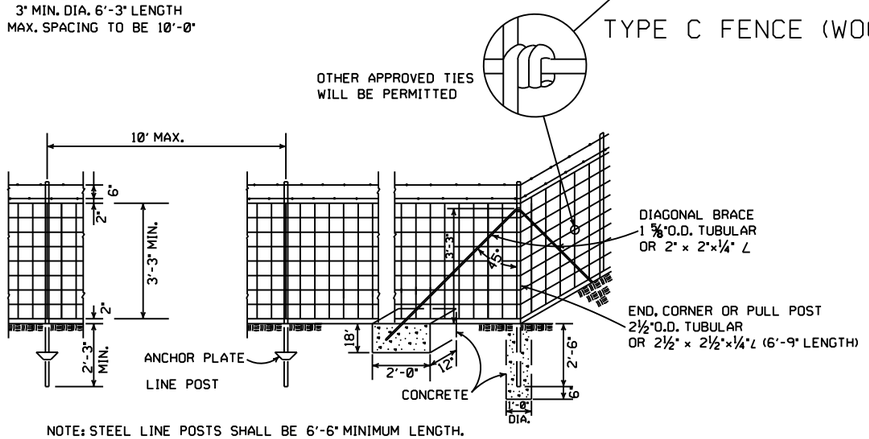
ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE WATER GAPS

STANDARD DRAWING WF-2

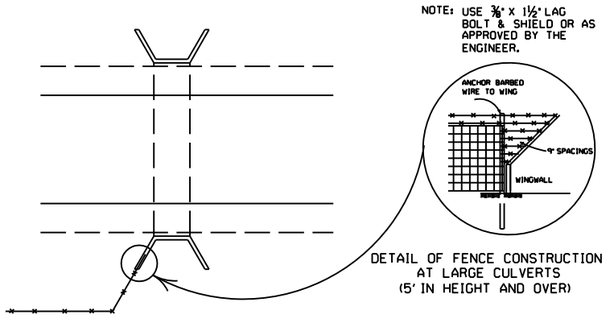


TYPE C FENCE (WOOD POSTS)



NOTE: STEEL LINE POSTS SHALL BE 6'-6" MINIMUM LENGTH.

TYPE C FENCE (STEEL POSTS)



DETAIL OF FENCE CONSTRUCTION AT LARGE CULVERTS (5' IN HEIGHT AND OVER)

GENERAL NOTES:

STEEL LINE POSTS SHALL BE PAINTED OR GALVANIZED. TUBULAR END, CORNER, PULL, OR DIAGONAL BRACES MUST CONFORM TO THE DIMENSIONS AND WEIGHTS SPECIFIED ON STANDARD DRAWING WF-3 (CHAIN LINK). APPROVED ALTERNATES ARE ACCEPTABLE.
AN ACCEPTABLE TOLERANCE IN LENGTH OF TUBULAR OR WOODEN POSTS SHALL BE - 1" TO +2".
TUBULAR POSTS MUST BE PAINTED OR GALVANIZED.

THE CONTRACTOR SHALL FURNISH AT LEAST 25% OF TIMBER LINE POSTS OF 7 FOOT LENGTHS IN ORDER TO PROVIDE SUFFICIENT SET IN SOFT GROUND OR SMALL DEPRESSIONS.

DRIVEWAY GATES, EITHER SINGLE 12' TO 16' OR DOUBLE 6' TO 8' OPENING OF THE SAME TYPE AS THE PEDESTRIAN GATE, SHALL BE INSTALLED ON THE RIGHT SIDE OF EACH THROUGH LANE ROAD AT LARGE CULVERTS OR BRIDGE CROSS FENCE, FOR USE OF MAINTENANCE EQUIPMENT. LOCATION OF GATES TO BE SHOWN ON PLANS OR AS DESIGNATED BY THE ENGINEER.

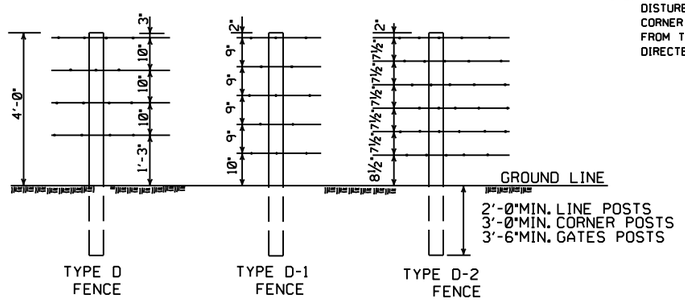
AT STREAM CROSSINGS, THE FENCE SHALL NOT BE CONSTRUCTED ACROSS LARGE STREAMS. WHERE CLEARANCE IS SUFFICIENT FROM THE TOP OF THE BANK TO THE BRIDGE STRUCTURE A CROSS CONNECTION SHALL BE CONSTRUCTED BETWEEN THE FENCE ON EACH SIDE OF THE ROAD. WHERE THE CLEARANCE IS NOT SUFFICIENT, THE FENCE SHALL BE TERMINATED WITH CROSS CONNECTIONS AND END POSTS ADJACENT TO BRIDGE ABUTMENTS OR CULVERT WINGWALLS.

SPLICE FOR BARBED WIRE BETWEEN PULL POST ASSEMBLY SHALL BE BY THE "EYE METHOD" AS DESCRIBED AS FOLLOWS: THE ENDS OF THE BARBED WIRE SHALL BE BENT TO FORM A LOOP. THE LOOPS SHALL BE CONNECTED. AFTER THE LOOPS ARE CONNECTED THE ENDS OF THE WIRE SHALL BE WRAPPED AROUND THE PROJECTING WIRES A MINIMUM OF 4 TIMES FOR EACH WIRE LOOP.

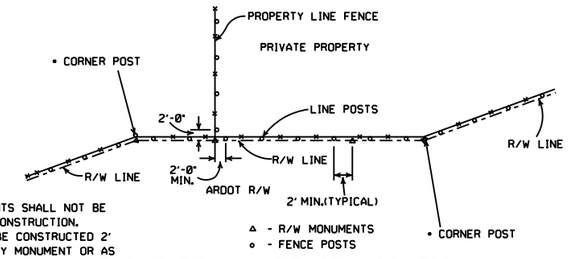
SPLICE FOR WOVEN WIRE BETWEEN PULL POST SHALL BE BY THE "WESTERN UNION METHOD" AS DESCRIBED AS FOLLOWS: THE VERTICAL WIRES FOR EACH END OF THE FENCE FABRIC SHALL BE PLACED SIDE BY SIDE AND THE PROJECTING HORIZONTAL WIRES SHALL BE WRAPPED A MINIMUM OF 4 TIMES AROUND THE HORIZONTAL WIRES OF THE FIRST WEB.

STAPLE AT LEAST TOP, BOTTOM AND ALTERNATE WIRES OF WOVEN FABRIC FOR WOOD LINE POSTS.

4 STRANDS BARBED WIRE (D)
5 STRANDS BARBED WIRE (D-1)
6 STRANDS BARBED WIRE (D-2)

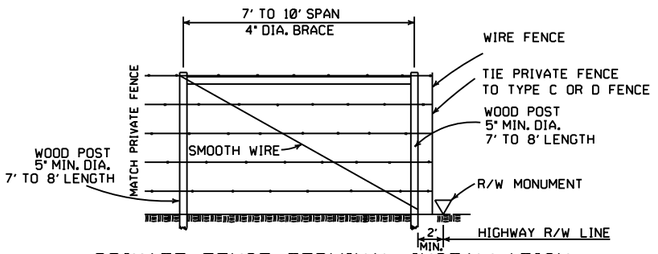


NOTE: SPACING AND SIZE (EXCEPT LENGTH) OF POSTS, APPROACH SPANS, PULL POST ASSEMBLIES, AND CORNER BRACING FOR TYPE D FENCE SHALL CONFORM TO TYPE C FENCE. USE GALVANIZED STAPLES ON WOOD POSTS AND APPROVED FASTENERS ON STEEL POSTS.



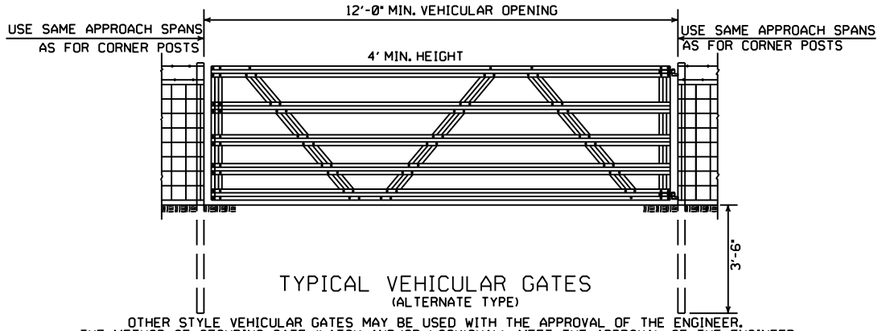
• NOTE: RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY FENCE CONSTRUCTION. CORNER POSTS SHALL BE CONSTRUCTED 2' FROM THE RIGHT-OF-WAY MONUMENT OR AS DIRECTED BY THE ENGINEER.

RIGHT-OF-WAY FENCE LOCATION



PRIVATE FENCE TERMINAL INSTALLATION

WHERE EXISTING FENCE CONSISTS OF STEEL POSTS, USE END POST ASSEMBLY AS SHOWN IN TYPE C FENCE OR OTHER END POST ASSEMBLY AS APPROVED BY THE ENGINEER.



TYPICAL VEHICULAR GATES
(ALTERNATE TYPE)

OTHER STYLE VEHICULAR GATES MAY BE USED WITH THE APPROVAL OF THE ENGINEER.
THE METHOD OF SECURING GATE (LATCH AND/OR LOCK) SHALL MEET THE APPROVAL OF THE ENGINEER.

DATE	REVISION	FILMED
8-22-02	REVISED GENERAL NOTES	
10-18-96	REVISED AASHTO	
11-22-95	REVISED R-O-W LOCATION DETAIL	
6-2-94	REVISED BARB WIRE AND ADDED CORNER POST NOTES	6-2-94
8-5-93	REVISED R/W INSTALLATION FENCE	8-5-93
10-1-92	ADDED STAPLE NOTE	10-1-92
8-15-91	ADDED TYPE D-2 FENCE	8-15-91
11-30-89	DELETED CLASS CONCRETE	11-30-89
7-15-88	ADDED SPLICE NOTE	700-7-15-88
10-30-87	GENERAL REVISIONS	549-10-30-87
11-1-84	MAX. POST SPACING MIN. WIRE GAUGE	507-11-1-84
1-4-83	MIN. DIA. LINE POST	648-1-4-83
3-2-81	TOLERANCE FOR POST LENGTH	722-3-2-81
12-1-72	ADDED D-1 & FENCE INSTALLATION	564-12-1-72
10-2-72	REVISED AND REDRAWN	540-10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE TYPE C AND D

STANDARD DRAWING WF-4