DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	1	136
		BARON FORK & FLY CREEK STRS.& APPRS.(S)				

ARKANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS FOR STATE HIGHWAY

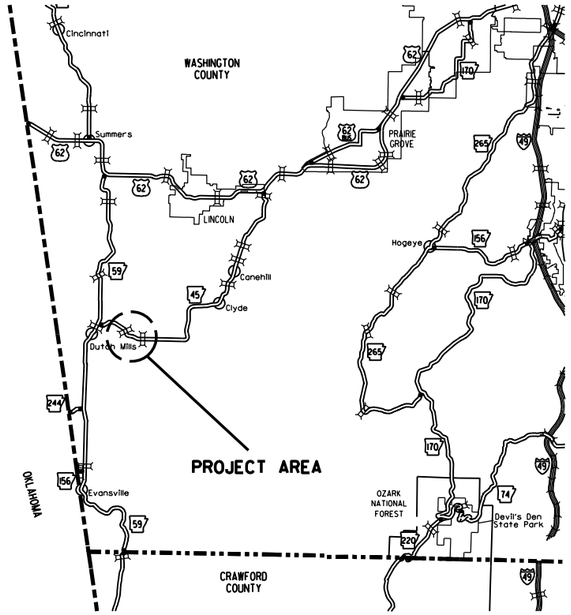
BARON FORK & FLY CREEK STRS. & APPRS. (S)

WASHINGTON COUNTY

ROUTE 45 SECTION 3

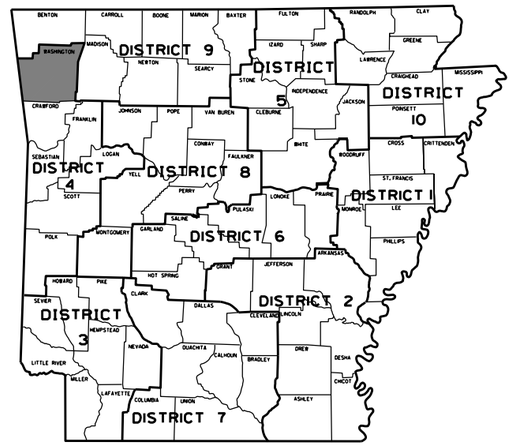
JOB 040866

FED. AID PROJ. NHPP-0072(67)



VICINITY MAP

NOT TO SCALE



ARK. HWY. DIST. NO. 4

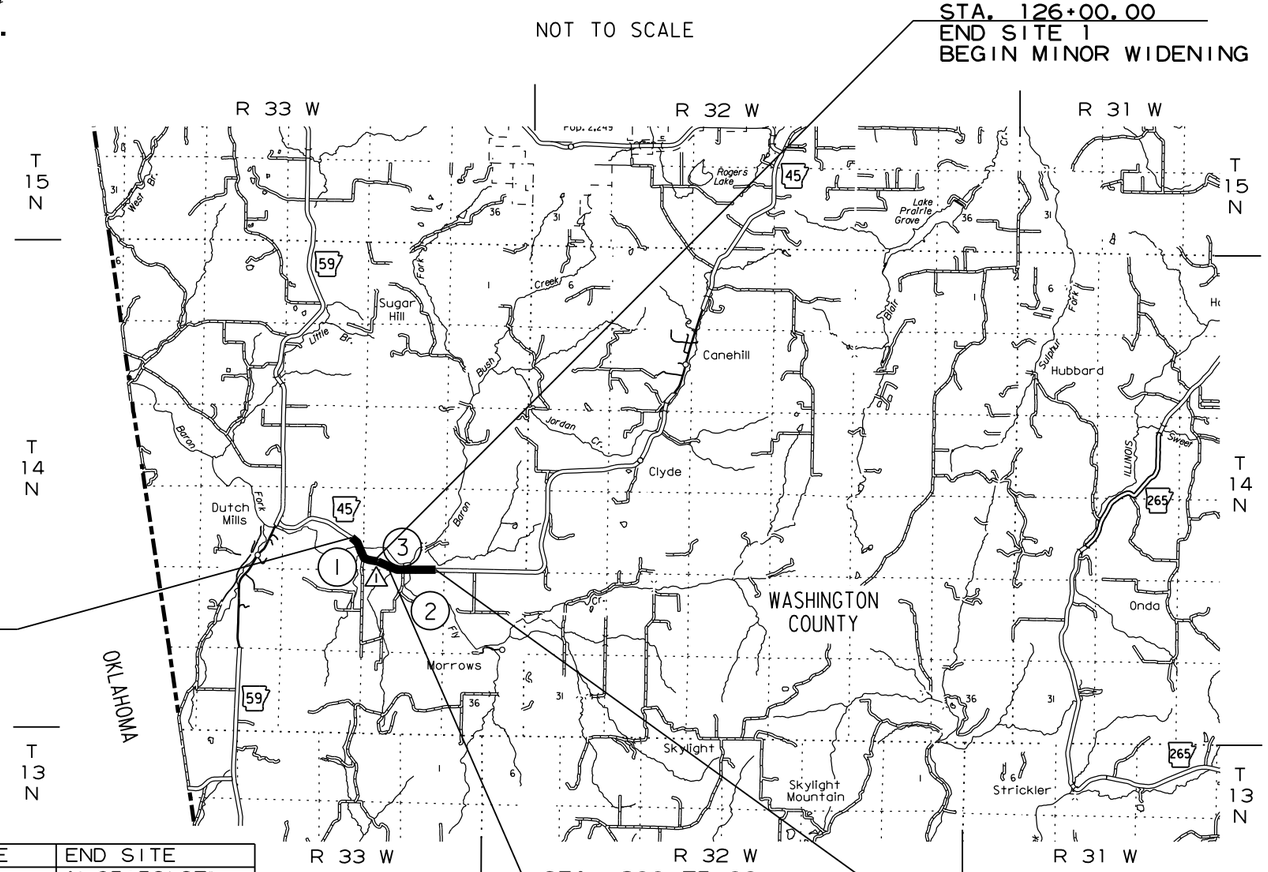
BRIDGE DATA

(1) BR. END STA. 110+28.00
BRIDGE NO. 07686
30'-0" CLEAR ROADWAY
262.31' TOTAL LENGTH
260'-0" CONTINUOUS W-BEAM UNIT
(55'-75'-75'-55')
BR. END STA. 112+90.30

(2) BR. END STA. 215+57.50
BRIDGE NO. 07687
30'-0" CLEAR ROADWAY
169.00' TOTAL LENGTH
168'-0" INTEGRAL CONTINUOUS W-BEAM UNIT
(50'-68'-50')
BR. END STA. 217+26.50

DESIGN TRAFFIC DATA

DESIGN YEAR	2045
2025 ADT	1200
2045 ADT	1400
2045 DHV	154
DIRECTIONAL DISTRIBUTION	0.60
TRUCKS	5%
DESIGN SPEED	45 MPH(SITE 1) 55 MPH(SITE 2)



N

STATION EQUATION

⚠ STA. EQUATION
STA. 134+77.82 BACK =
STA. 200+00.00 AHEAD

SITE 1

	BEGIN SITE	MID-POINT OF SITE	END SITE
LATITUDE	N 35°52'44"	N 35°52'33"	N 35°52'27"
LONGITUDE	W 94°28'14"	W 94°28'04"	W 94°27'57"

SITE 2

	BEGIN SITE	MID-POINT OF SITE	END SITE
LATITUDE	N 35°52'24"	N 35°52'21"	N 35°52'21"
LONGITUDE	W 94°27'44"	W 94°27'27"	W 94°27'09"

LENGTH OF PROJECT CALCULATED ALONG C.L.

GROSS LENGTH OF PROJECT	6170.83	FEET	OR	1.169	MILES
NET : ROADWAY	5739.52	:		1.087	MILES
NET : BRIDGES	431.31	:		0.082	MILES
NET : PROJECT	6170.83	:		1.169	MILES

APPROVED

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 12547
JESSIE XU JONES

Date: 2025.03.27 12:36:28-05'00'

CHIEF ENGINEER - PRECONSTRUCTION

JY43338 11/6/2024
R040866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	2	136
		INDEX OF SHEETS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8533
CHARLES MARTIN

2025.04.08 10:12:37-05'00'

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2	INDEX OF SHEETS AND STANDARD DRAWINGS		
3	GOVERNING SPECIFICATIONS AND GENERAL NOTES		
4 - 6	TYPICAL SECTIONS OF IMPROVEMENT		
7 - 16	SPECIAL DETAILS		
17 - 31	TEMPORARY EROSION CONTROL DETAILS		
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43	PERMANENT PAVEMENT MARKING DETAILS		
44 - 48	QUANTITIES		
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50	SUMMARY OF QUANTITIES AND REVISIONS		
51 - 58	SURVEY CONTROL DETAILS		
59 - 65	PLAN AND PROFILE SHEETS		
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70	DETAILS OF BENT 1 (SHEET 3 OF 4)	07686	68240
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75	DETAILS OF BENT 3 & 4 (SHEET 2 OF 2)	07686	68245
76	DETAILS OF BENT 5 (SHEET 1 OF 4)	07686	68246
77	DETAILS OF BENT 5 (SHEET 2 OF 4)	07686	68247
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79	DETAILS OF BENT 5 (SHEET 4 OF 4)	07686	68249
80	DETAILS OF ELASTOMERIC BEARINGS	07686 & 07687	68250
81	DETAILS OF 260'-0" CONTINUOUS W-BEAM UNIT (SHEET 1 OF 8)	07686	68251
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83	DETAILS OF 260'-0" CONTINUOUS W-BEAM UNIT (SHEET 3 OF 8)	07686	68253
84	DETAILS OF 260'-0" CONTINUOUS W-BEAM UNIT (SHEET 4 OF 8)	07686	68254
85	DETAILS OF 260'-0" CONTINUOUS W-BEAM UNIT (SHEET 5 OF 8)	07686	68255
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96	DETAILS OF 168'-0" INTEGRAL W-BEAM UNIT (SHEET 3 OF 6)	07687	68266
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100 - 136	CROSS SECTIONS		

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

ROADWAY STANDARD DRAWINGS

DRWG.NO.	TITLE	DATE
CDP-1	CONCRETE DITCH PAVING	12-08-16
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
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
TEC-1	TEMPORARY EROSION CONTROL DEVICES	11-16-17
TEC-2	TEMPORARY EROSION CONTROL DEVICES	06-02-94
TEC-3	TEMPORARY EROSION CONTROL DEVICES	11-03-94
WF-2	WIRE FENCE WATER GAPS	04-20-79
WF-4	WIRE FENCE TYPE C AND D	08-22-02

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
55006	STANDARD GENERAL NOTES FOR STEEL BRIDGE STRUCTURES	09-02-15
55007	STANDARD DETAILS FOR STEEL BRIDGE STRUCTURES	02-11-16
55008	STANDARD DETAILS FOR POURED SILICONE JOINTS	02-11-16
55010	STANDARD DETAILS FOR TYPE D BRIDGE NAME PLATE	04-14-23
55020	STANDARD DETAILS FOR STEEL H-PILES AND PILE ENCASEMENTS	03-24-16
55030F	STANDARD DETAILS FOR TYPE F APPROACH GUTTERS	04-08-21
55040F1	STANDARD DETAILS FOR TYPE F APPROACH SLAB	09-07-23
55070	STANDARD DETAILS FOR BRIDGE TRAFFIC RAIL TYPE SSTR36	09-27-22

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INDEX OF SHEETS AND STANDARD DRAWINGS

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	3	136
		INDEX OF SHEETS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8533
CHARLES MARTIN

04/08/2025

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 040866
100-3_____ CONTRACTOR'S LICENSE
100-4_____ DEPARTMENT NAME CHANGE
102-2_____ ISSUANCE OF PROPOSALS
102-3_____ PREQUALIFICATION OF BIDDERS
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
307-2_____ CEMENT TREATED BASE COURSE
308-2_____ CEMENT STABILIZED CRUSHED STONE BASE COURSE
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
501-3_____ PORTLAND CEMENT CONCRETE PAVEMENT
600-2_____ INCIDENTAL CONSTRUCTION
603-1_____ LANE CLOSURE NOTIFICATION
604-1_____ RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
604-3_____ TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES (MASH)
605-1_____ CONCRETE DITCH PAVING
606-1_____ PIPE CULVERTS FOR SIDE DRAINS
617-1_____ GUARDRAIL TERMINAL (TYPE 2)
617-2_____ GUARDRAIL DELINEATORS
619-1_____ FENCES
620-1_____ MULCH COVER
621-1_____ FILTER SOCKS
800-1_____ STRUCTURES
802-3_____ CONCRETE FOR STRUCTURES
802-5_____ CONCRETE FOR STRUCTURES
804-2_____ REINFORCING STEEL FOR STRUCTURES
807-2_____ STEEL STRUCTURES
808-1_____ INSTALLATION OF ELASTOMERIC BEARINGS
808-2_____ ELASTOMERIC BEARINGS
JOB 040866__ BIDDING REQUIREMENTS AND CONDITIONS
JOB 040866__ BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 040866__ BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 040866__ BUY AMERICA - CONSTRUCTION MATERIALS
JOB 040866__ CARGO PREFERENCE ACT REQUIREMENTS
JOB 040866__ CAVE DISCOVERY
JOB 040866__ CLASS C FLY ASH IN PORTLAND CEMENT CONCRETE PAVEMENT AND CLASS S(AE) CONCRETE
JOB 040866__ COLD MILLING – COUNTY PROPERTY
JOB 040866__ CONCRETE BRIDGE DECK CURING AND SURFACE TREATMENT RESTRICTIONS
JOB 040866__ CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 040866__ CONSTRUCTION PROJECT INFORMATION SIGN
JOB 040866__ DESIGN AND QUALITY CONTROL ASPHALT MIXTURES
JOB 040866__ DESIGN OF ASPHALT MIXTURES - AGGREGATES
JOB 040866__ DIRECT TENSION INDICATORS FOR HIGH STRENGTH BOLT ASSEMBLIES
JOB 040866__ DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB 040866__ FOUNDATION PROTECTION RIPRAP
JOB 040866__ GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 040866__ LIQUIDATED DAMAGES PROCEDURE FOR BID LETTINGS
JOB 040866__ MANDATORY ELECTRONIC CONTRACT
JOB 040866__ MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB 040866__ NESTING SITES OF MIGRATORY BIRDS
JOB 040866__ OFF-SITE RESTRAINING CONDITIONS FOR INDIANA AND NORTHERN LONG-EARED BATS
JOB 040866__ PARTNERING REQUIREMENTS
JOB 040866__ PLASTIC PIPE
JOB 040866__ PRE-BID ON SITE INVESTIGATION OF SOIL CONDITIONS
JOB 040866__ PRICE ADJUSTMENT FOR ASPHALT BINDER
JOB 040866__ PRICE ADJUSTMENT FOR FUEL
JOB 040866__ PROHIBITION OF CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT
JOB 040866__ SECTION 404 NATIONWIDE 27 PERMIT REQUIREMENTS
JOB 040866__ SHORING
JOB 040866__ SHORING FOR CULVERTS
JOB 040866__ SOIL STABILIZATION
JOB 040866__ STORM WATER POLLUTION PREVENTION PLAN
JOB 040866__ SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 040866__ UTILITY ADJUSTMENTS
JOB 040866__ VALUE ENGINEERING
JOB 040866__ WARM MIX ASPHALT
JOB 040866__ WATER POLLUTION CONTROL
JOB 040866__ WOVEN GEOTEXTILE FABRIC FOR TEMPORARY SLOPES

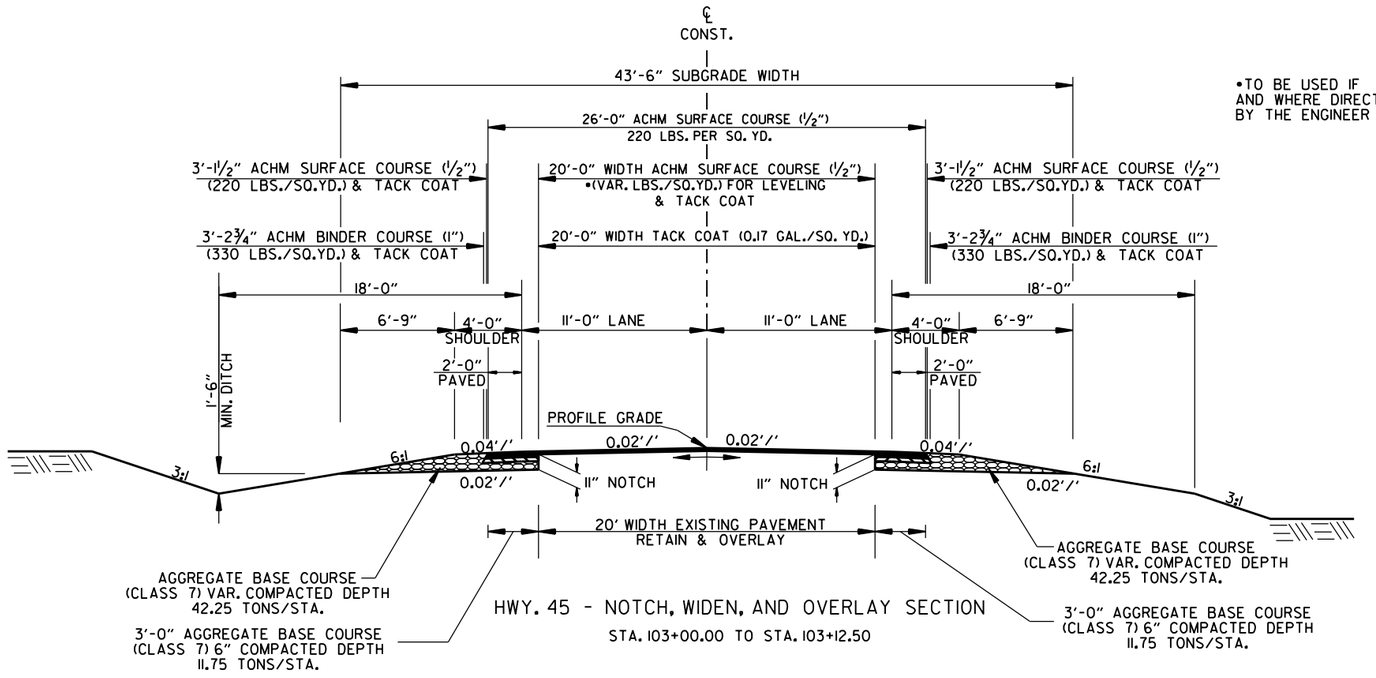
GENERAL NOTES

1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
2. ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
3. ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
4. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
5. ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED AS DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO ENSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.
6. THE 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.
7. 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.
8. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
9. THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. AFTER SAWING, THE PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN. ANY DAMAGE OF THE ASPHALT PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

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GOVERNING SPECIFICATIONS & GENERAL NOTES

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	4	136
		TYPICAL SECTIONS OF IMPROVEMENT				



•TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

HWY. 45 - NOTCH, WIDEN, AND OVERLAY SECTION

STA. 103+00.00 TO STA. 103+12.50

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8533
CHARLES MARTIN

04/08/2025

NOTES:

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

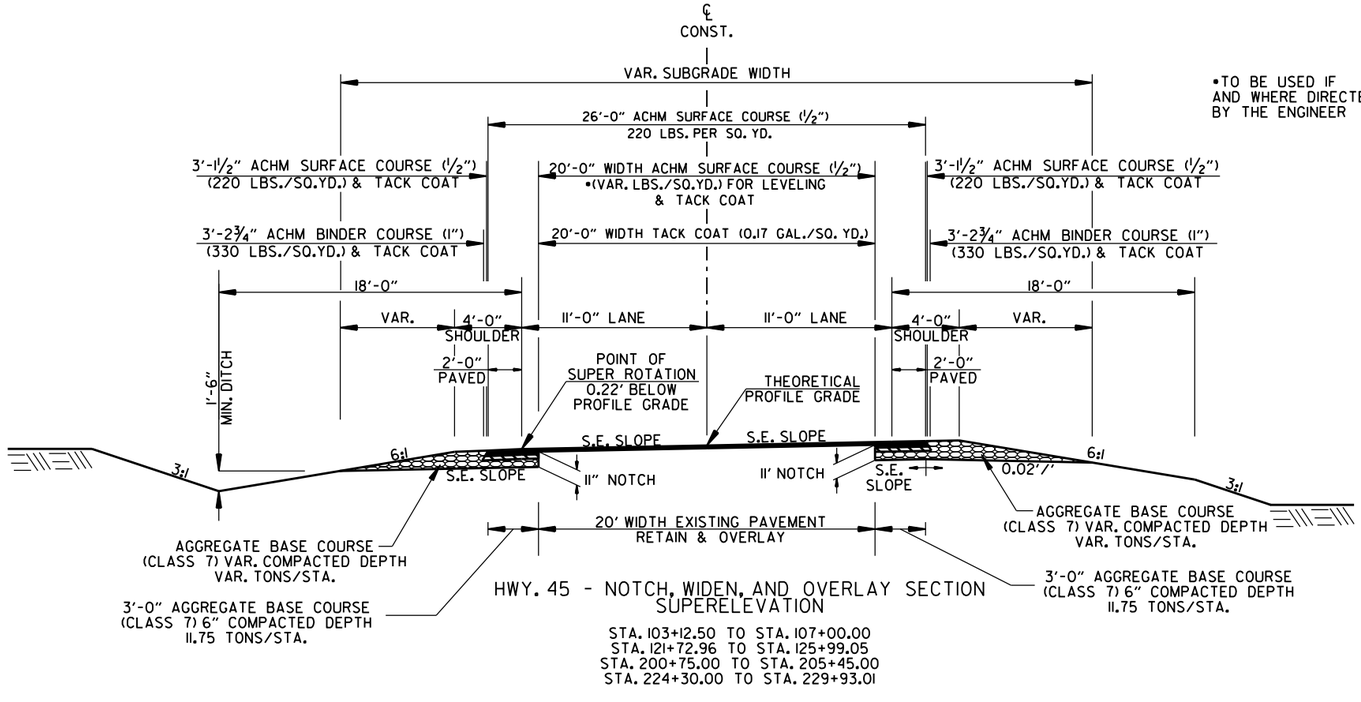
THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

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

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

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.

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.



•TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

HWY. 45 - NOTCH, WIDEN, AND OVERLAY SECTION SUPERELEVATION

STA. 103+12.50 TO STA. 107+00.00
STA. 121+72.96 TO STA. 125+99.05
STA. 200+75.00 TO STA. 205+45.00
STA. 224+30.00 TO STA. 229+93.01

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

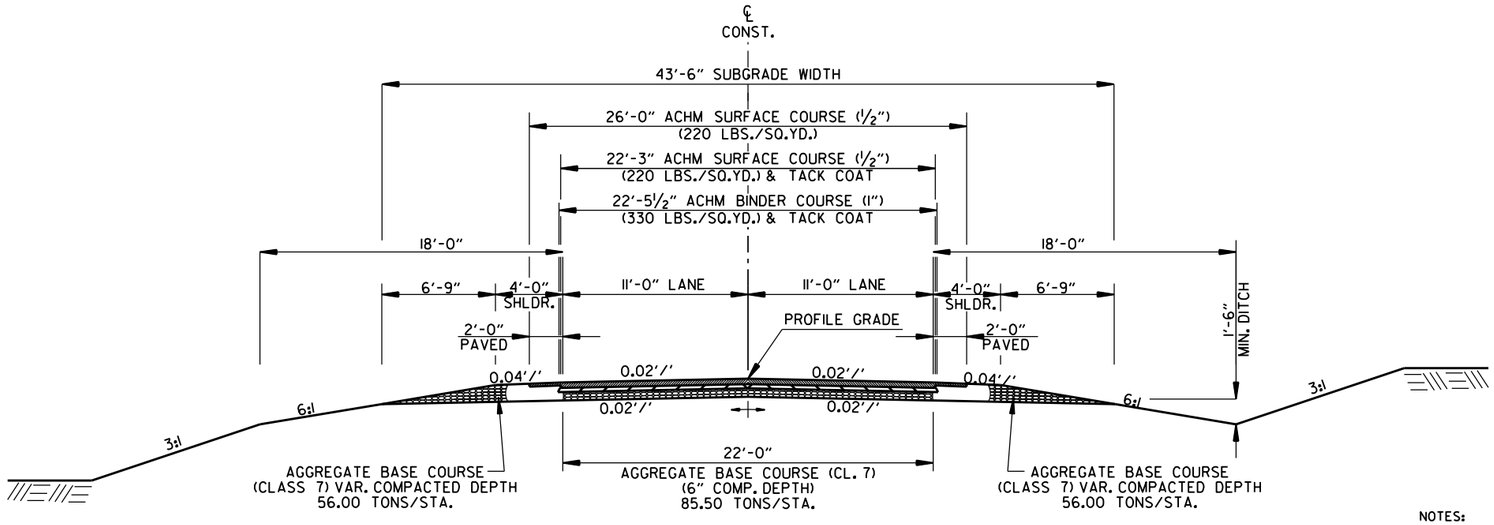
JY43338 10/14/2024
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TYPICAL SECTIONS OF IMPROVEMENT

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	5	136
		TYPICAL SECTIONS OF IMPROVEMENT				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8533
CHARLES MARTIN

04/08/2025



HWY.45 - FULL DEPTH SECTION

STA. 113+25.31 - STA. 113+75.38
STA. 211+94.20 - STA. 215+22.50

NOTES:

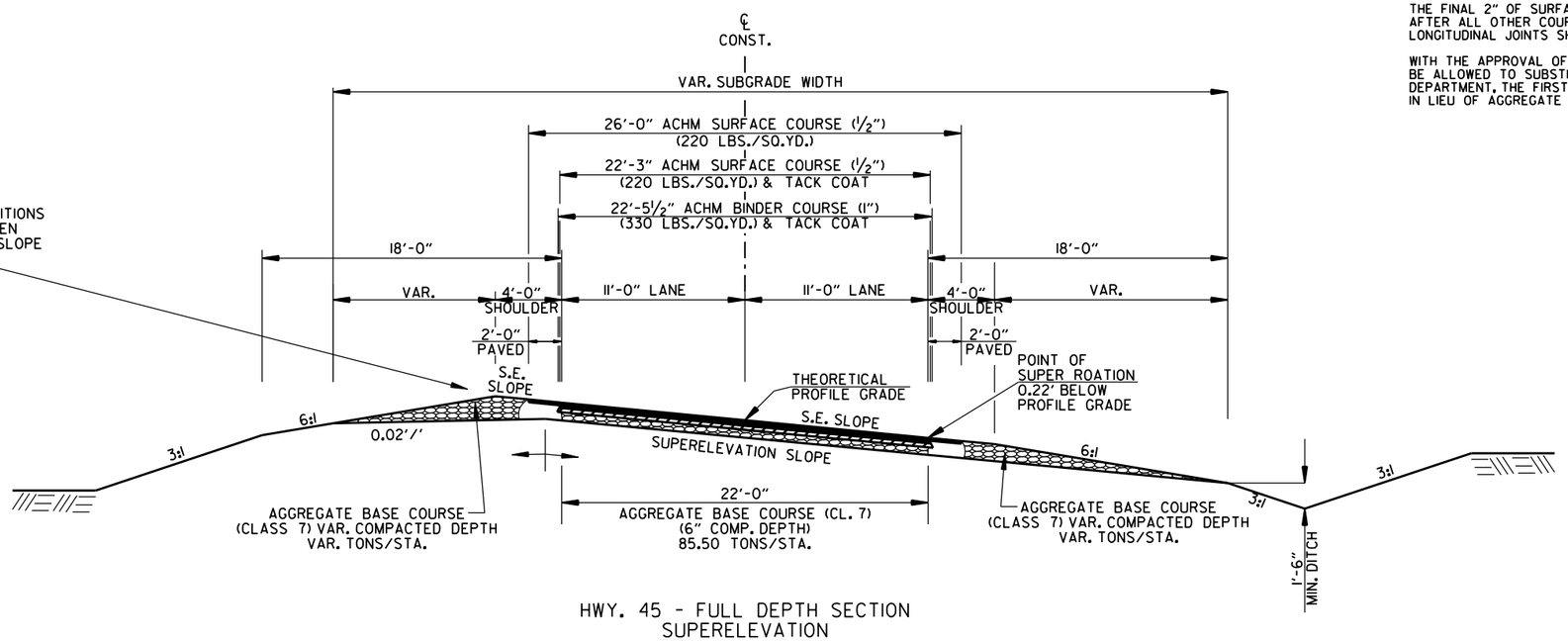
REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

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

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

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

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



HWY. 45 - FULL DEPTH SECTION
SUPERELEVATION

STA. 107+00.00 TO STA. 109+93.00
STA. 113+75.38 TO STA. 121+72.96
STA. 205+45.00 - STA. 211+94.20
STA. 217+61.50 - STA. 224+30.00

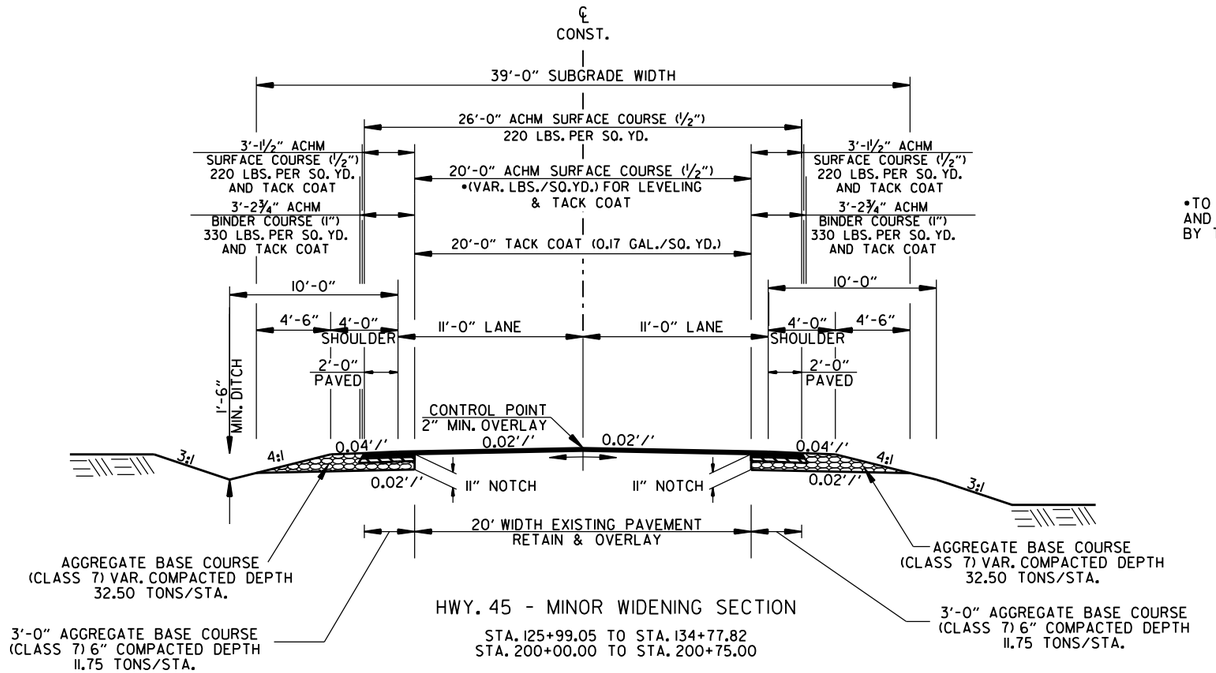
JY43338 10/14/2024
R040866.DGN MicroStation v8.11.9.578

TYPICAL SECTIONS OF IMPROVEMENT

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	6	136
		TYPICAL SECTIONS OF IMPROVEMENT				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8533
CHARLES MARTIN

04/08/2025



HWY. 45 - MINOR WIDENING SECTION

STA. 125+99.05 TO STA. 134+77.82
STA. 200+00.00 TO STA. 200+75.00

•TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

NOTES:

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

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

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

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

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.

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.

JY43338 10/14/2024
R040866.DGN MicroStation v8.11.9.578

TYPICAL SECTIONS OF IMPROVEMENT

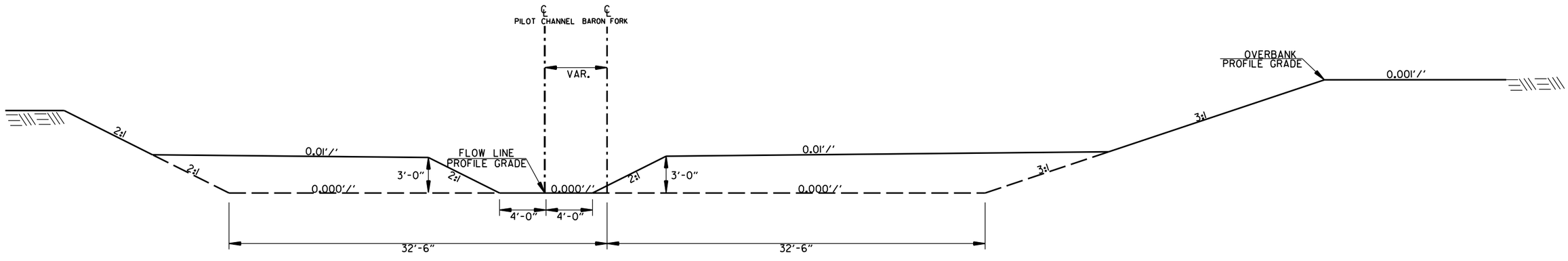
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	7	136
		SPECIAL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8533
CHARLES MARTIN

04/08/2025

NOTES:

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



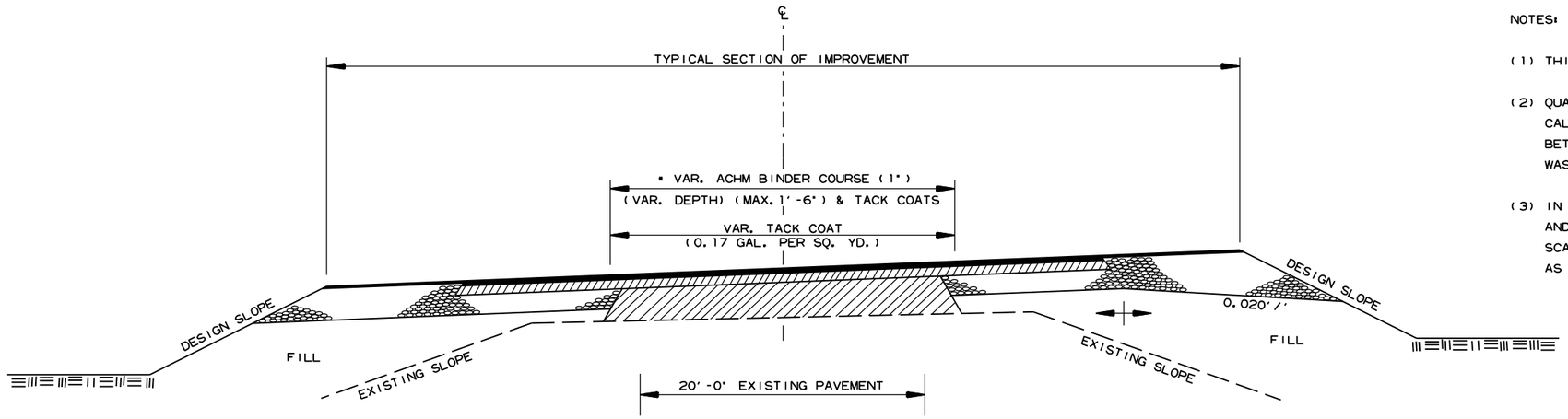
BARON FORK CHANNEL CHANGE
STA. 0+00.00 TO STA. 14+44.28

JY43338 10/14/2024
R040866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	8	136
		SPECIAL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8533
CHARLES MARTIN

04/08/2025



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

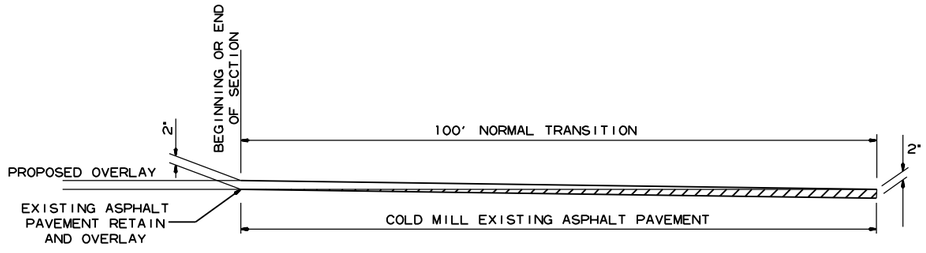
METHOD OF RAISING GRADE

NOTES:

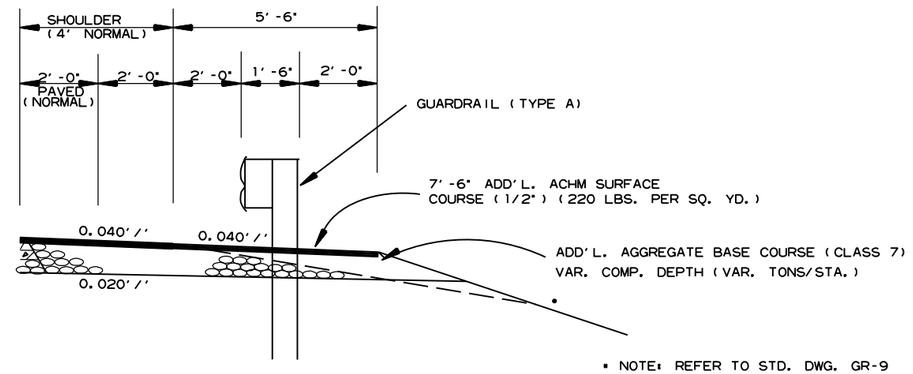
(1) THIS DETAIL TO BE USED ONLY WHERE DIRECTED BY THE ENGINEER.

(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.



DETAIL FOR TRANSITIONS



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

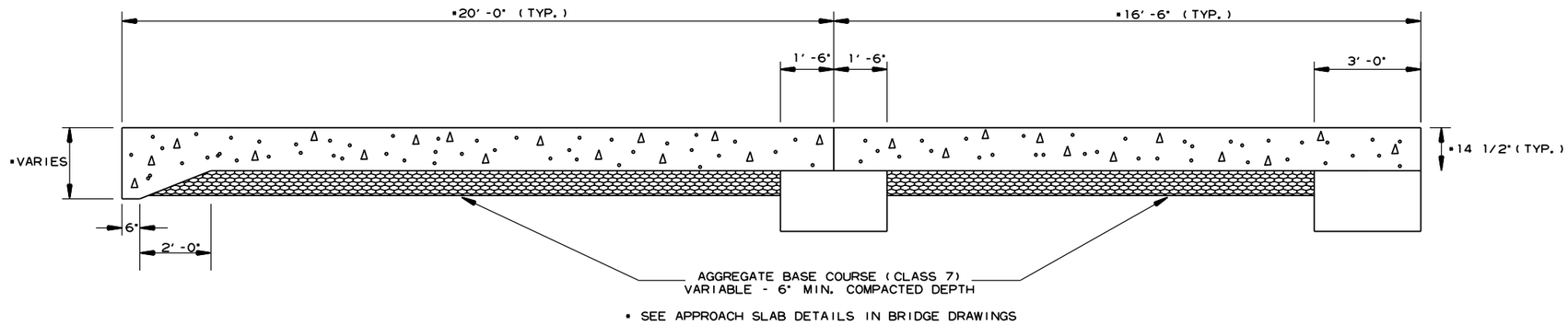
WIDENING FOR GUARDRAIL

JY43338 9/23/2024
R040866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	9	136
		SPECIAL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8533
CHARLES MARTIN

04/08/2025



* SEE APPROACH SLAB DETAILS IN BRIDGE DRAWINGS

SECTION OF APPROACH SLAB



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

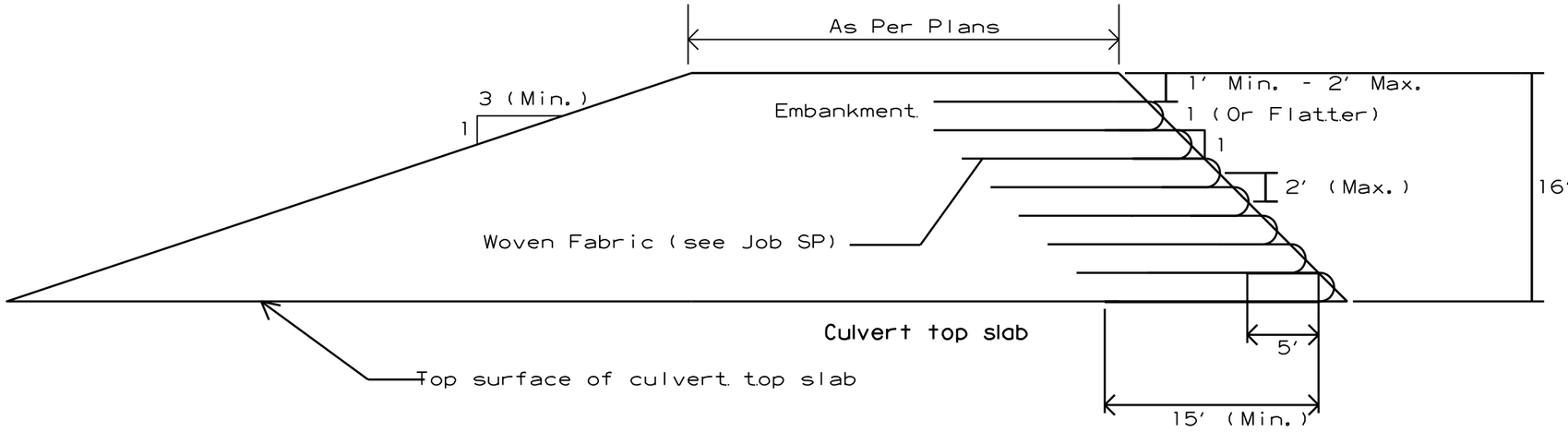
CONSTRUCTION PROJECT INFORMATION SIGN

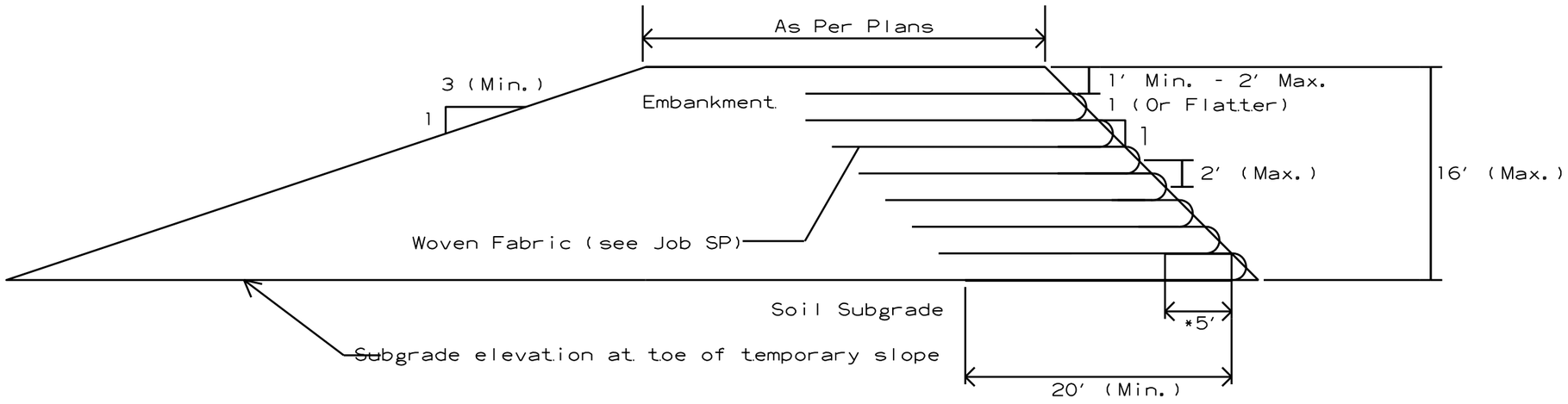
JY43338 9/23/2024
R040866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	10	136
		SPECIAL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8533
CHARLES MARTIN

04/08/2025





Notes: Embankment shall be constructed and compacted in accordance with Sub-Sections 210.09 and 210.10 of the Standard Specifications for Highway Construction or any applicable job SP.

Reinforced slope shall be no steeper than 1:1.

Longitudinal overlap should be a minimum of 18".

*5' minimum turnback with 3' minimum overlap.

Furnishing, installing, removing and disposing of woven fabric shall be considered subsidary to other contract items.

Future fill placed against the reinforced soil slope shall not disturb or undermine the geotextile.

WOVEN FABRIC REINFORCED SLOPE DETAIL

STA. 107+00.00 TO STA. 117+00.00 - HWY. 45

JY43338 9/23/2024
R040866.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		11	136
				JOB NO.		040866		

① SPECIAL DETAILS

INLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	LENGTH OF FOOTING HEEL WING A	LENGTH OF FOOTING HEEL WING B
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4
17'-10"	6'-0"	0'-9"	0'-8"	45	3:1	23'-6 7/8"	2'-0"	6'-10"	2'-0"	0	60	3'-2"	3'-2"	3'-9"	0'-6"	0'-5 1/8"	14'-6"	29'-0"	16'-4 1/8"	36'-8 3/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
INLET	INLET
CU.YD	LBS.
11.71	1109

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY	F1 LENGTHS	F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS	F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS	F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY	F6 LENGTHS	F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS	REINF. STEEL QTY. PER WING (LBS)
WING A	4	12	15	L	Min 3'-0"	-	-	-	L -	-	-	-	L -	4	18	4	Min 4'-10"	4	18	4	14'-2"	4	18	10	L Min 4'-9"	4	4	8	17'-2"	6	18	10	Min 2'-8"	-	-	-	Min -	4	2	14'-10"	4	2	15'-4"	6	12	6	L 3'-4"	376
					Max 7'-8"												Max 9'-4"								Min 2'-4"								Max 2'-8"				Max -									X 1'-8"	
				X	Min 0'-9"				X -				X -												Max 2'-4"																					
					Max 0'-9"																																											
				Y	Min 2'-4"				Y -				Y -												Max 2'-6"																					
					Max 7'-0"																																										
WING B	4	12	29	L	Min 3'-0"	-	-	-	L -	-	-	-	L -	4	18	4	Min 9'-10"	4	18	4	28'-8"	4	18	20	L Min 4'-7"	4	4	8	37'-6"	6	18	20	Min 2'-8"	-	-	-	Min -	4	2	28'-11"	4	2	31'-9"	6	12	6	L 3'-4"	733
					Max 8'-3"												Max 18'-10"								Min 2'-4"								Max 3'-3"				Max -									X 1'-8"	
				X	Min 0'-9"				X -				X -												Max 2'-4"																					
					Max 1'-4"																																										
				Y	Min 2'-4"				Y -				Y -												Max 2'-4"																					
					Max 7'-0"																																										

MID-SECTION BAR LAP TABLE

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

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

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
11/4/24
CHARLES R. ELLIS

TABULAR DATA BY: RD DATE: 10/31/2024
CHECKED BY: NLL DATE: 10/31/2024

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

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

INLET SKEWED END SECTION

SKEW (DEGREE)	SLOPE	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THK.	HDWL DEPTH	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVER ALL WIDTH	OVER ALL HEIGHT	TOP SLAB REINFORCING STEEL "a" SIZE	"a" SPACING	"a" LENGTHS VARY	"a" NO. REQ'D	TOP SLAB REINFORCING STEEL "c" SIZE	"c" SPACING	"c" LENGTHS VARY	"c" NO. REQ'D	BOTTOM SLAB REINFORCING STEEL "d" SIZE	"d" SPACING	"d" LENGTHS VARY	"d" NO. REQ'D	BOTTOM SLAB REINFORCING STEEL "f" SIZE	"f" SPACING	"f" LENGTHS VARY	"f" NO. REQ'D	SIDE WALL REINFORCING STEEL "f0" SIZE	"f0" SPACING	"f0" NO. REQ'D	"f0" LENGTH	INTERIOR WALL REINFORCING STEEL "f1" SIZE	"f1" SPACING	"f1" NO. REQ'D	"f1" LENGTH	TOP SLAB DISTRIBUTION REINFORCING STEEL "g" SIZE	"g" SPACING	"g" NO. REQ'D	"g" LENGTHS VARY	BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY	SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH	INTERIOR WALL DISTRIBUTION REINFORCING STEEL "d2" SIZE	"d2" SPACING	"d2" NO. REQ'D	"d2" LENGTH
SK	SL	D	S	H	LL	T	HD	B	C	W	OW	OH																																													
45	3:1	10	8	6	10'-11"	8	3	9.5	7	8	17'-10"	7'-5 1/2"	4	5.5	Max 17'-6" Min 2'-2" 17'-6"	34 5	6	6.5	Max 17'-6" Min 2'-2" 17'-6"	29 4	4	4	Max 17'-6" Min 2'-2" 17'-6"	47 6	4	7	Max 17'-6" Min 2'-2" 17'-6"	27 4	5	7	38	7'-2"	4	12	22	7'-2"	4	12	35	Max 19'-8" Min 1'-10"	4	11	39	Max 19'-8" Min 1'-10"	4	12	6	LONG 19'-3" SHORT 2'-3"	4	12	12	10'-9"

CLASS "S" CONCRETE (Includes HDWL)	① REINFORCING STEEL (GR 60) (Includes HDWL)
CU. YDS.	LBS.
15.47	2849

"k1" HDWL BARS SIZE	"k1" HDWL BARS LENGTH	"k1" HDWL BARS NO. REQ'D	"k2" HDWL BARS SIZE	"k2" HDWL BARS LENGTH	"k2" HDWL BARS NO. REQ'D	"h" HDWL BARS SIZE	"h" HDWL BARS LENGTH	"h" HDWL BARS Y	"h" HDWL BARS NO. REQ'D
5	24'-8"	6	5	24'-8"	6	4	1'-7"	0'-7"	27

INLET SLOPE SECTION(S)

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

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

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

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

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

MID-SECTION

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	TOP SLAB THK.	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVER ALL WIDTH	OVER ALL HEIGHT	SECTION LENGTH (FT.)	TOP SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS "a" SIZE	"a" L	Bent "b" SIZE	Bent "b" L	"c" SIZE	"c" L	"c" SPACING	"c" NO. REQ'D	BOTTOM SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS "d" SIZE	"d" L	Bent "b1" SIZE	Bent "b1" L	"f" SIZE	"f" L	"f" SPACING	"f" NO. REQ'D	SIDE WALL REINFORCING STEEL "f0" LENGTH = OH - 4" SIZE	"f0" SPACING	"f0" NO. REQ'D	"f0" LENGTH	INTERIOR WALL REINFORCING STEEL "f1" LENGTH = OH - 4" SIZE	"f1" SPACING	"f1" NO. REQ'D	"f1" LENGTH	TOP SLAB DISTRIBUTION REINF. STEEL "g" LENGTH = SL SIZE	"g" SPACING	"g" NO. REQ'D	BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE	"e" SPACING	"e" NO. REQ'D	SIDE WALL DISTRIBUTION STEEL "d1" LENGTH = SL SIZE	"d1" SPACING	"d1" NO. REQ'D	INTERIOR WALL DISTRIBUTION STEEL "d2" LENGTH = SL SIZE	"d2" SPACING	"d2" NO. REQ'D
D	S	H	T	B	C	W	OW	OH	SL																																												
A	10	8	6	9.0	10	7.0	8	17'-10"	7'-7"	112.167	4	17'-6"	6	17'-8"	5	17'-6"	14	96	4	17'-6"	5	17'-9"	5	17'-6"	9	149	4	4	672	7'-3"	4	12	224	7'-3"	4	12	35	4	11	39	4	12	12	4	12	12

CLASS "S" CONCRETE CU. YDS.	REINFORCING STEEL (GR. 60) LBS.
163.00	24595

SHEET 1 OF 2
DETAILS OF R.C. BOX CULVERT
DOUBLE BARREL BOX CULVERT
STA. 209+06

SPECIAL DETAILS

Ver. 1.1 17 FILENAME

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		12	136
				JOB NO.		040866		

① SPECIAL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
11/4/24
CHARLES R. ELLIS

TABULAR DATA BY: RD DATE: 10/31/2024
CHECKED BY: NLL DATE: 10/31/2024

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
17'-10"	6'-0"	0'-9"	0'-8"	45	3:1	23'-6 7/8"	2'-0"	6'-10"	2'-0"	0	60	3'-2"	3'-2"	3'-9"	0'-6"	0'-5 1/8"	14'-6"	29'-0"	16'-4 1/8"	36'-8 3/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
OUTLET	OUTLET
CU.YD	LBS.
12.79	1109

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY	F1 LENGTHS	F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS	F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS	F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F4 LENGTHS	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY	F6 LENGTHS	F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F8 LENGTHS	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS	REINF. STEEL QTY. PER WING (LBS)
WING A	4	12	15	L Min	3'-0"	-	-	-	L -	-	-	-	L -	4	18	4	Min	4'-10"	4	18	4	14'-2"	4	18	10	L Min	4'-9"	4	8	17'-2"	6	18	10	Min	2'-8"	-	-	-	Min	4	2	14'-10"	4	2	15'-4"	6	12	6	L	3'-4"	376
					Max 7'-8"													Max 9'-3"								X Min 2'-4"																							
				X	Min 0'-9"				X -				X -																																				
					Max 0'-9"													Max 2'-4"																															
				Y	Min 2'-4"				Y -				Y -					Min 2'-6"								Y Min 2'-6"																							
					Max 7'-0"													Max 7'-0"								Max 7'-0"																							
WING B	4	12	29	L Min	3'-0"	-	-	-	L -	-	-	-	L -	4	18	4	Min	9'-10"	4	18	4	28'-8"	4	18	20	L Min	4'-7"	4	8	37'-6"	6	18	20	Min	2'-8"	-	-	-	Min	4	2	28'-11"	4	2	31'-9"	6	12	6	L	3'-4"	733
					Max 8'-3"													Max 9'-3"								X Min 2'-4"																							
				X	Min 0'-9"				X -				X -																																				
					Max 1'-4"													Max 2'-4"																															
				Y	Min 2'-4"				Y -				Y -					Min 2'-4"								Y Min 2'-4"																							
					Max 7'-0"													Max 7'-0"								Max 7'-0"																							

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

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

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

OUTLET SKEWED END SECTION

SKEW (DEGREE)	SLOPE	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THK.	HDWL DEPTH	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVER ALL WIDTH	OVER ALL HEIGHT	TOP SLAB REINFORCING STEEL "a" SIZE	"a" SPACING	"a" LENGTHS VARY	"a" NO. REQ'D	TOP SLAB REINFORCING STEEL "c" SIZE	"c" SPACING	"c" LENGTHS VARY	"c" NO. REQ'D	BOTTOM SLAB REINFORCING STEEL "d" SIZE	"d" SPACING	"d" LENGTHS VARY	"d" NO. REQ'D	BOTTOM SLAB REINFORCING STEEL "f" SIZE	"f" SPACING	"f" LENGTHS VARY	"f" NO. REQ'D	SIDE WALL REINFORCING STEEL "f0" SIZE	"f0" SPACING	"f0" NO. REQ'D	"f0" LENGTH	INTERIOR WALL REINFORCING STEEL "f1" SIZE	"f1" SPACING	"f1" NO. REQ'D	"f1" LENGTH	TOP SLAB DISTRIBUTION REINFORCING STEEL "g" SIZE	"g" SPACING	"g" NO. REQ'D	"g" LENGTHS VARY	BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY	SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH	INTERIOR WALL DISTRIBUTION REINFORCING STEEL "d2" SIZE	"d2" SPACING	"d2" NO. REQ'D	"d2" LENGTH
SK	SL	D	S	H	LL	T	HD	B	C	W	OW	OH																																																	
45	3:1	10	8	6	10'-11"	8	3	9.5	7	8	17'-10"	7'-5 1/2"	4	5.5	Max 17'-6" Min 2'-2" 17'-6"	34 5	6	6.5	Max 17'-6" Min 2'-2" 17'-6"	29 4	4	4	Max 17'-6" Min 2'-2" 17'-6"	47 6	4	7	Max 17'-6" Min 2'-2" 17'-6"	27 4	5	7	38	7'-2"	4	12	22	7'-2"	4	12	35	Max 19'-8" Min 1'-10"	4	11	39	Max 19'-8" Min 1'-10"	4	12	6 LONG 19'-3" 6 SHORT 2'-3"	4	12	12	10'-9"

CLASS "S" CONCRETE (Includes HDWL) CU. YDS.	① REINFORCING STEEL (GR 60) (Includes HDWL) LBS.
15.47	2849

"k1" HDWL BARS SIZE	"k1" HDWL BARS LENGTH	"k1" HDWL BARS NO. REQ'D	"k2" HDWL BARS SIZE	"k2" HDWL BARS LENGTH	"k2" HDWL BARS NO. REQ'D	"h" HDWL BARS SIZE	"h" HDWL BARS LENGTH	"h" HDWL BARS Y	"h" HDWL BARS NO. REQ'D
5	24'-8"	6	5	24'-8"	6	4	1'-7"	0'-7"	27

OUTLET SLOPE SECTION(S)

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

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

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

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

Unless otherwise noted, all dimensions are in inches.

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

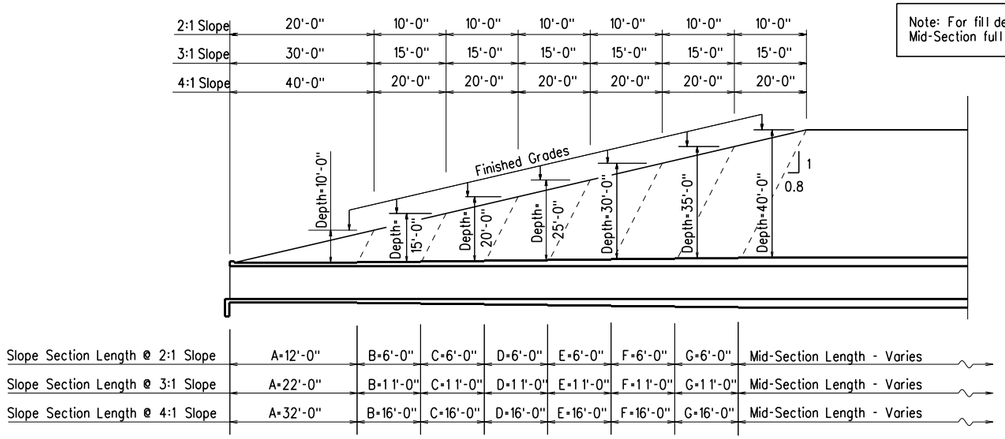
DOUBLE BARREL BOX CULVERT
STA. 209+06

SPECIAL DETAILS

Ver. 1.1 17FILENAME

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		13	136
				JOB NO.		040866		

(1) SPECIAL DETAILS

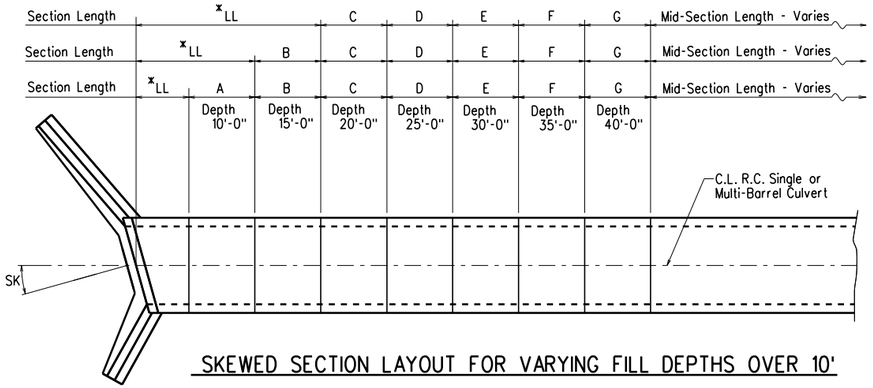


LONGITUDINAL SECTION LENGTH SCHEDULE FOR VARYING FILL DEPTHS OVER 10'

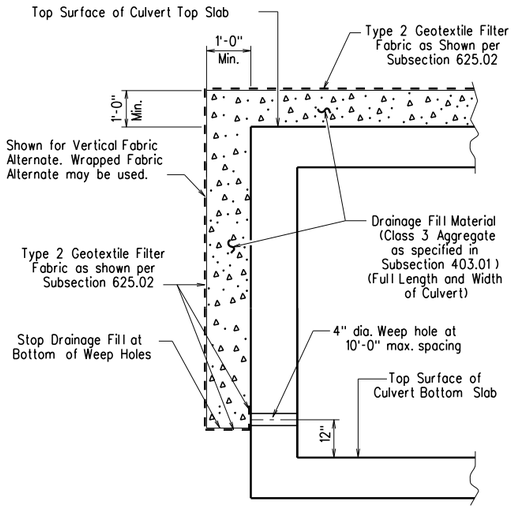
Lengths for Non-Skewed Boxes

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

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

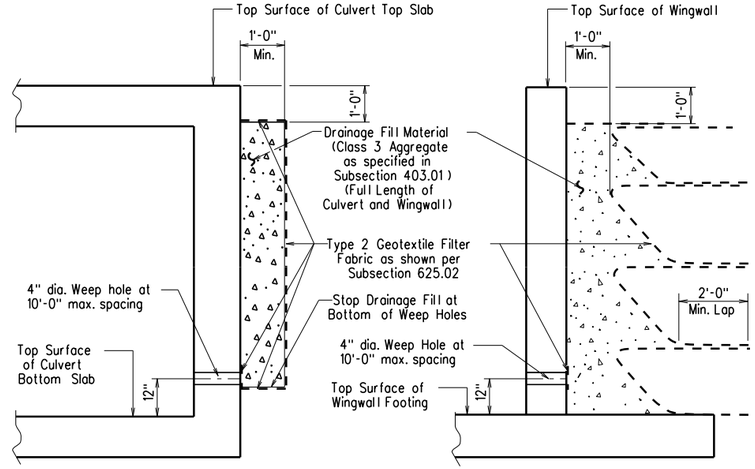


SKEWED SECTION LAYOUT FOR VARYING FILL DEPTHS OVER 10'



CULVERT DRAINAGE DETAIL FOR ROCK FILL

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

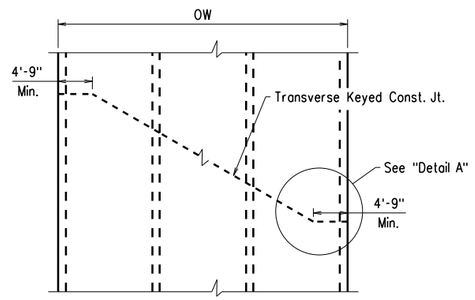


For Details of Excavation and Pay Limits, see Standard Drawing RCB-2.

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

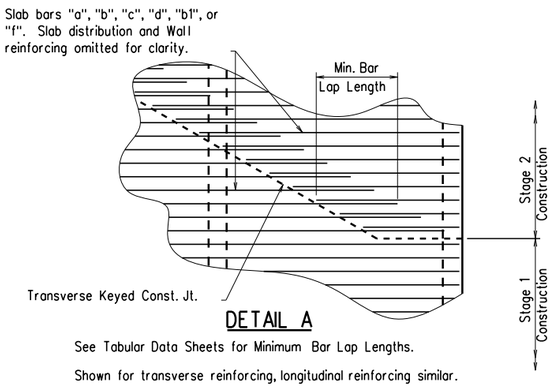
WRAPPED FABRIC ALTERNATE
(Shown for Wingwall, Similar for Culvert)

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.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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11/4/24
CHARLES R. ELLIS

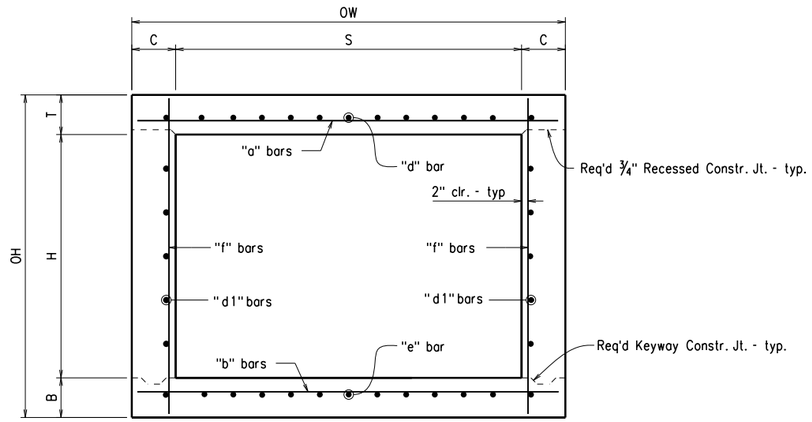
SHEET 1 OF 4
GENERAL DETAILS OF R.C. BOX CULVERT
GENERAL NOTES & LONGITUDINAL SECTION LENGTH SCHEDULE
SPECIAL DETAILS

V 1.1 1FILENAME

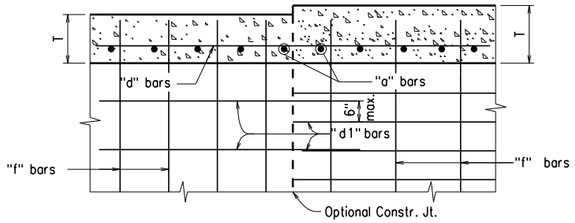
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				6	ARK.		14	136
				JOB NO.		040866		

(1) SPECIAL DETAILS

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



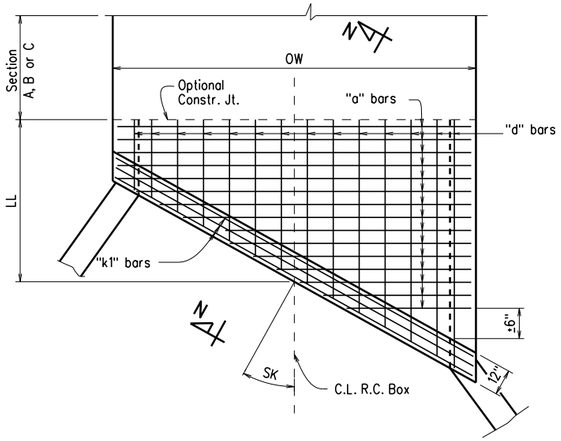
TYPICAL SECTION M-M



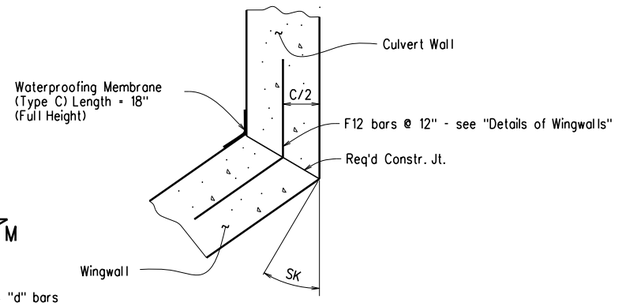
Longitudinal Bar Spacing at individual sections shall be maintained, which may result in noncontact bar laps.

LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

TOP SLAB SHOWN, BOTTOM SLAB SIMILAR

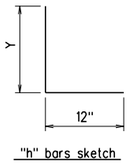


TOP SLAB REINFORCEMENT

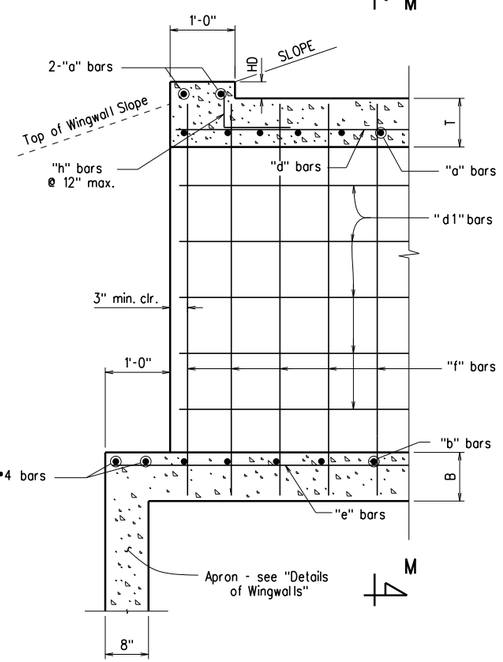


WINGWALL ATTACHMENT

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

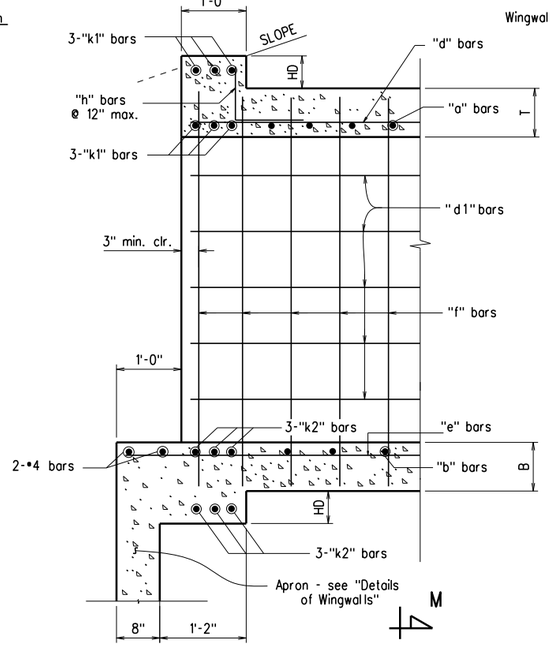


"h" bars sketch



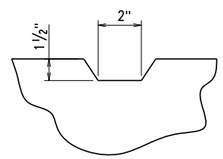
PART LONGITUDINAL SECTION

(Non-Skewed Ends)



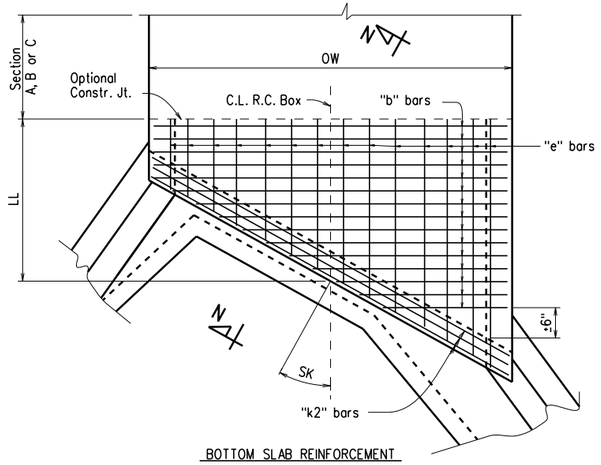
PART LONGITUDINAL SECTION N-N

(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. 9235
11/4/24
CHARLES R. ELLIS

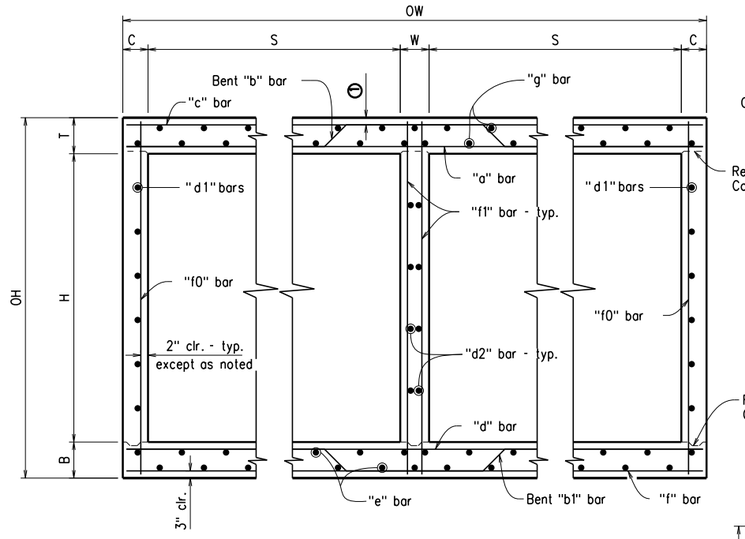
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				6	ARK.		15	136
				JOB NO.		040866		

(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.

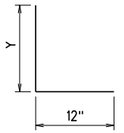
Note: When top slab of culvert serves as finished roadway surface, see General Notes on Sheet 1 of 4.



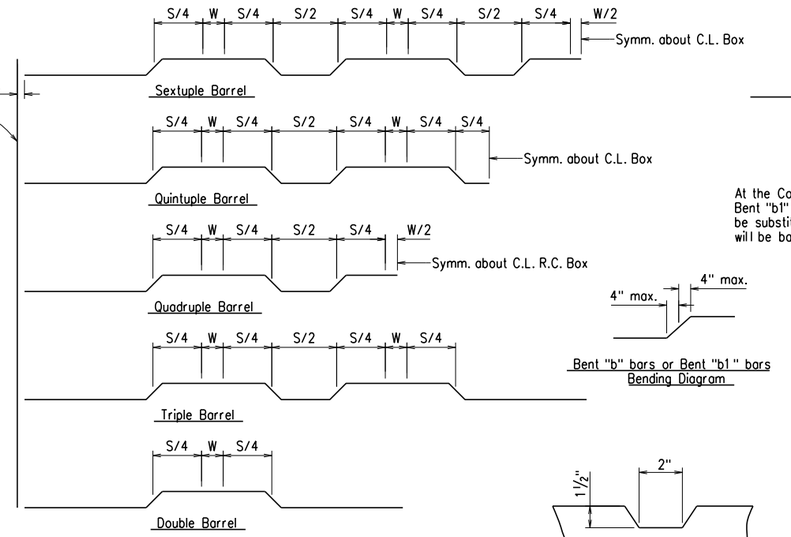
TYPICAL SECTION M-M

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

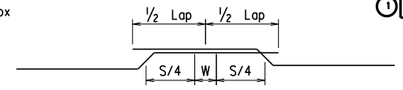
Bottom Slab
Straight "d" bars shall alternate with Bent "b1" bars in top.
Straight "f" bars shall alternate with Bent "b1" bars in bottom.



"h" bars sketch



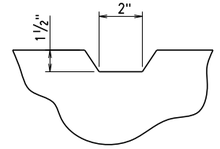
Bent "b" bars or Bent "b1" bars sketch



Lap Detail
For Bent "b" bars and Bent "b1" bars

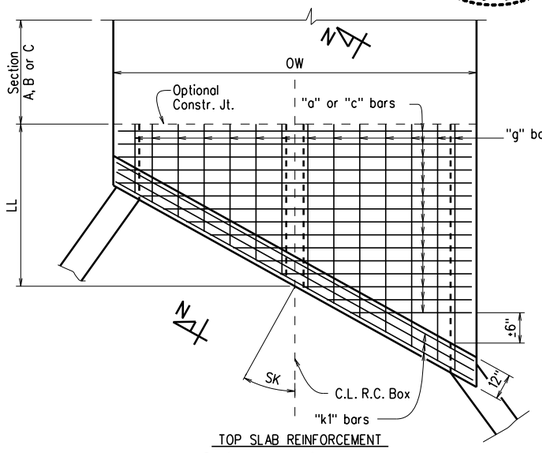
At the Contractor's option in lieu of providing Bent "b" or Bent "b1" bars, one bar top and bottom of equivalent size may be substituted for each bent bar. Payment for the reinforcing will be based on the weight of the "b" or "b1" bar.

Bent "b" bars or Bent "b1" bars Bending Diagram

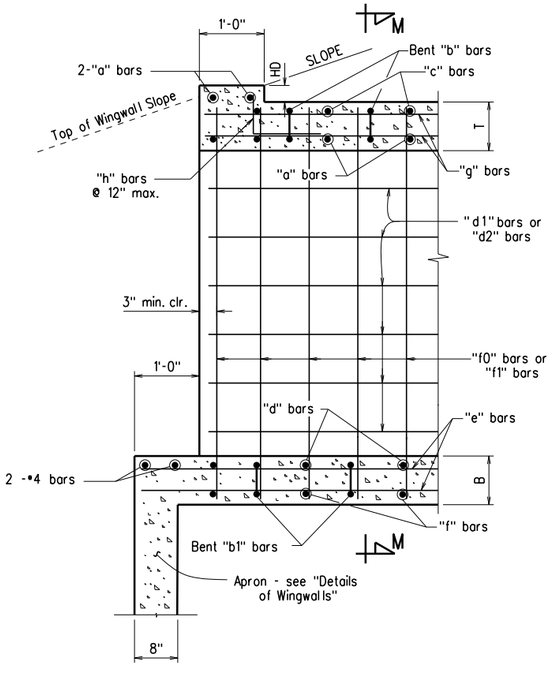


TYPICAL KEYWAY DETAIL

(All Construction Joints)

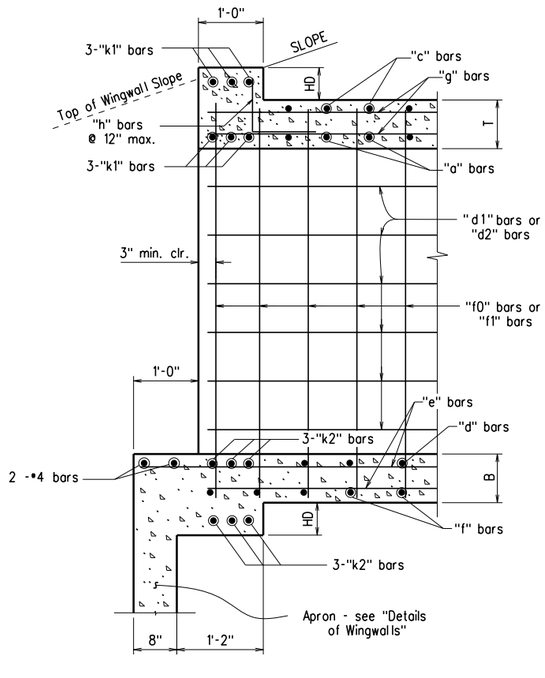


TOP SLAB REINFORCEMENT
Straight "c" bars in top.
Straight "a" bars in bottom.



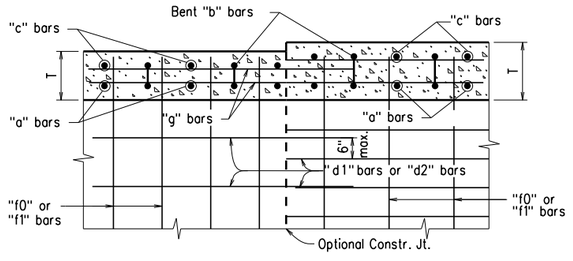
PART LONGITUDINAL SECTION

(Non-Skewed Ends)



PART LONGITUDINAL SECTION N-N

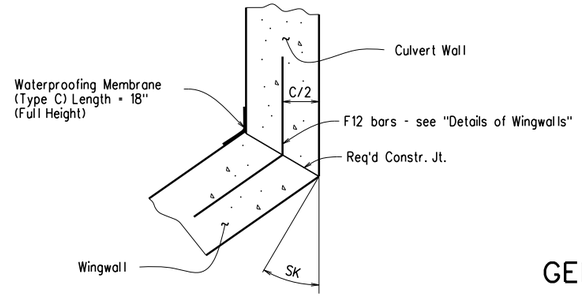
(Skewed Ends)



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

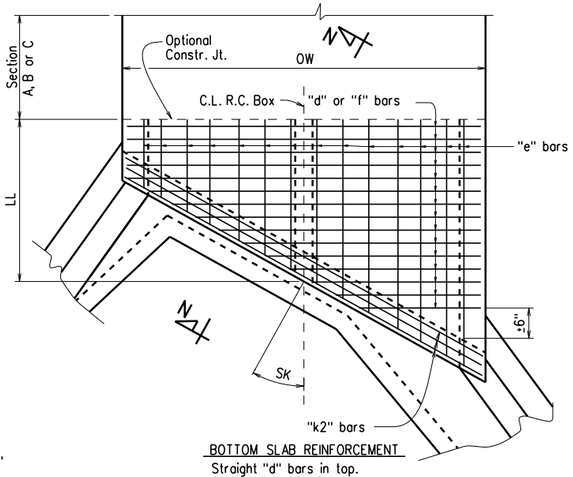
LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

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. 9235
11/4/24
CHARLES R. ELLIS

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

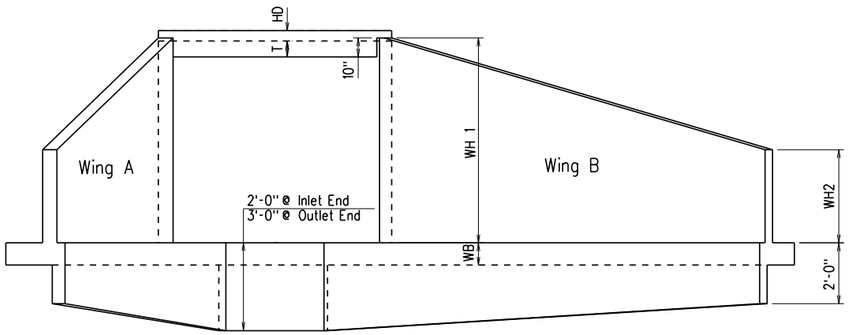
DETAILS OF MULTI-BARREL R.C. BOX CULVERT

SPECIAL DETAILS

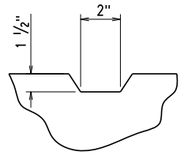
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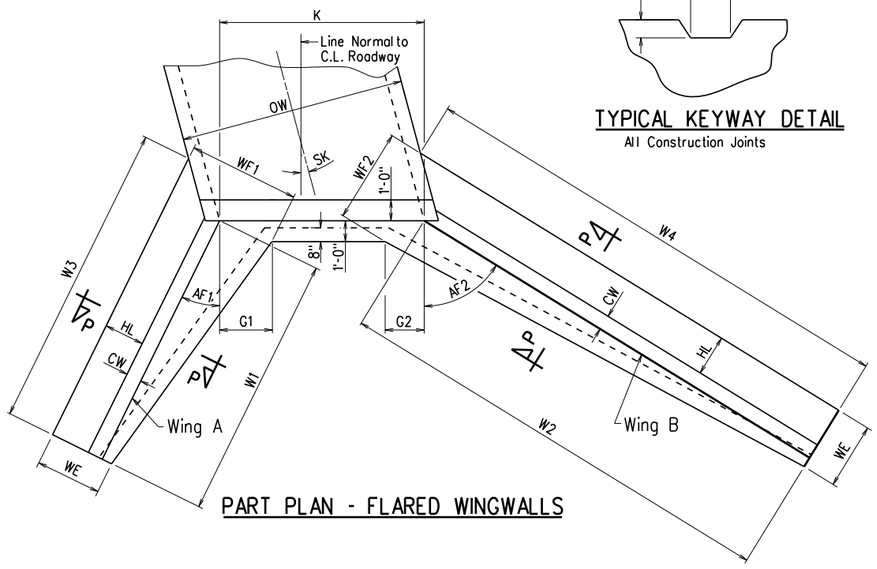
① SPECIAL DETAILS



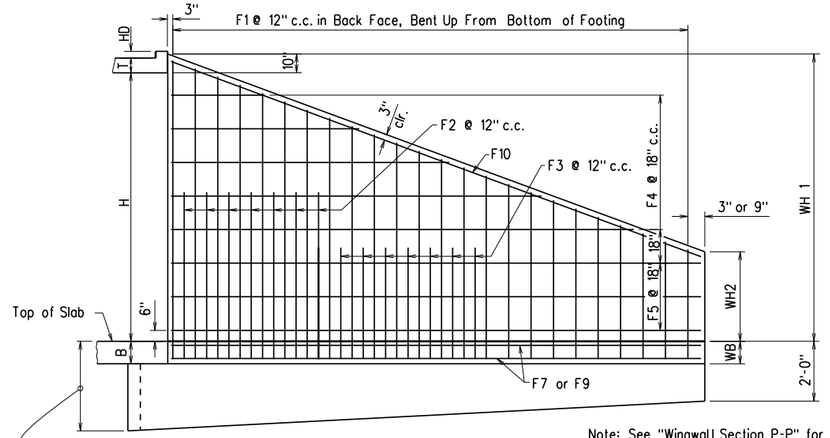
END ELEVATION
Flared Wingwalls Shown



TYPICAL KEYWAY DETAIL
All Construction Joints

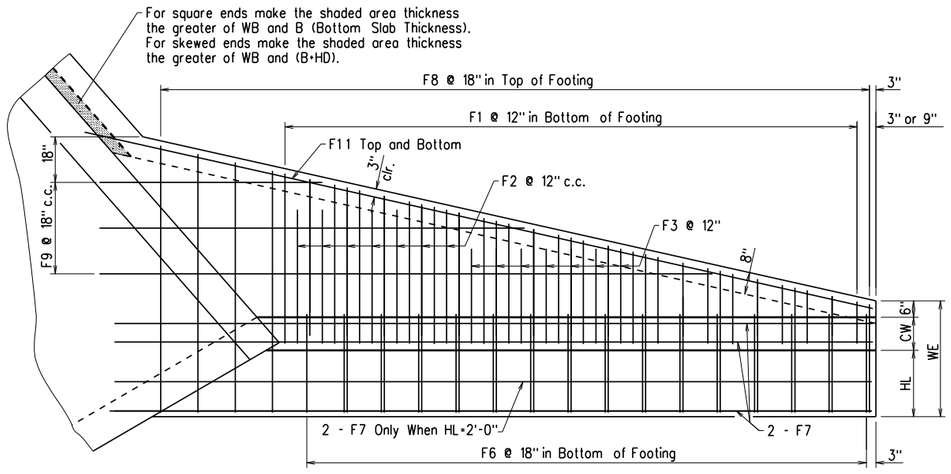


PART PLAN - FLARED WINGWALLS

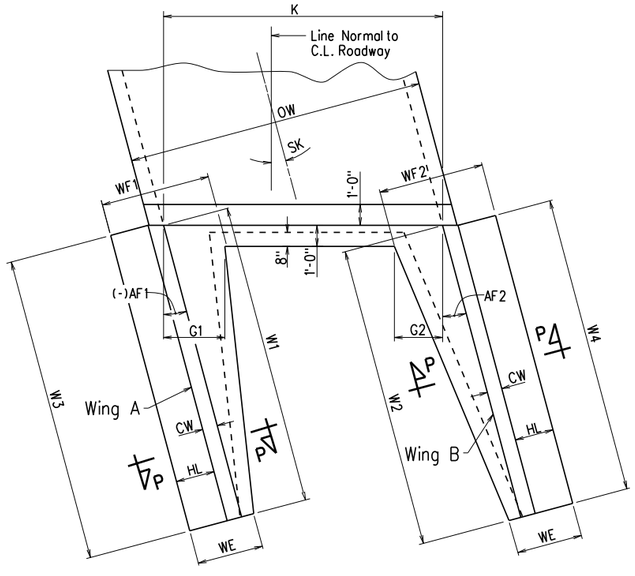


Note: See "Wingwall Section P-P" for additional details and reinforcing.

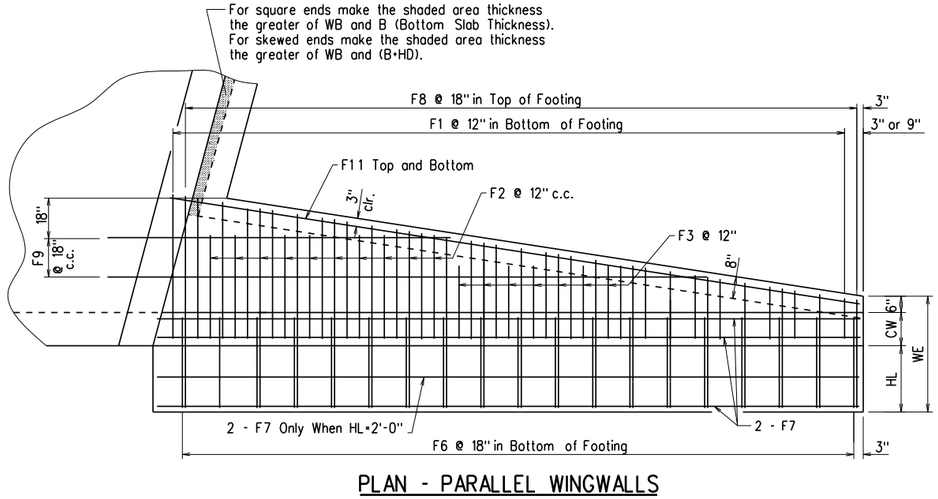
WINGWALL ELEVATION
Showing Back Face Reinforcement



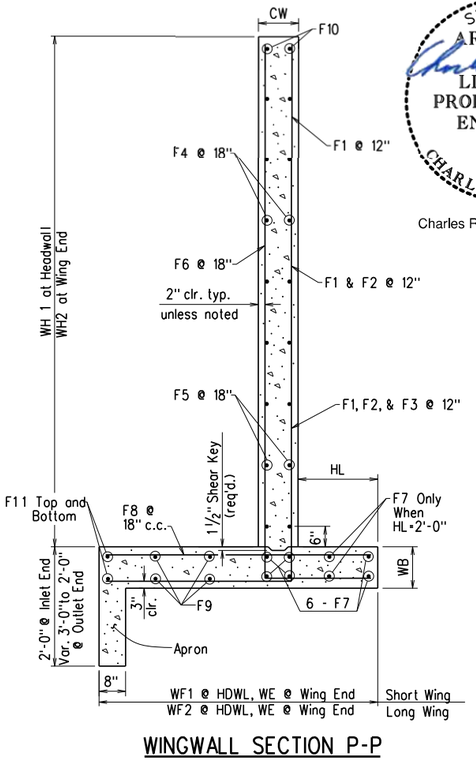
PLAN - FLARED WINGWALLS
Showing Footing Reinforcement



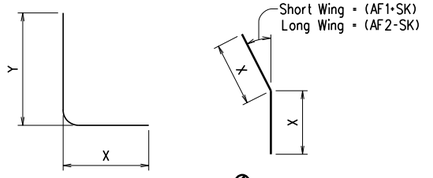
PART PLAN - PARALLEL WINGWALLS



PLAN - PARALLEL WINGWALLS
Showing Footing Reinforcement



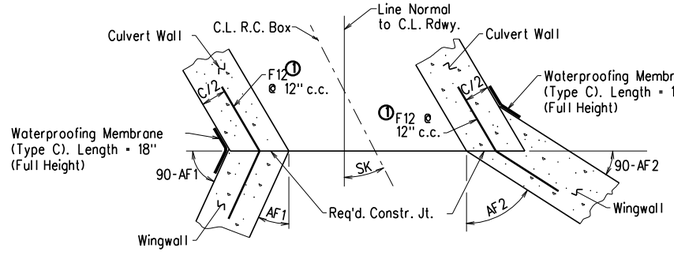
WINGWALL SECTION P-P



F1, F2, F3, & F6 BARS

①F12 BAR

①F12 is a straight bar for parallel wingwalls



CONSTRUCTION JOINTS
Flared Wingwalls Shown

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
11/4/24
CHARLES R. ELLIS

Charles R. Ellis
Digitally signed by Charles R. Ellis
Date: 2024.11.04 15:44:37-06'00'

V 1.11 FILENAME

REVISIONS

DATE OF REVISION	REVISION

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION. UNLESS OTHERWISE NOTED.

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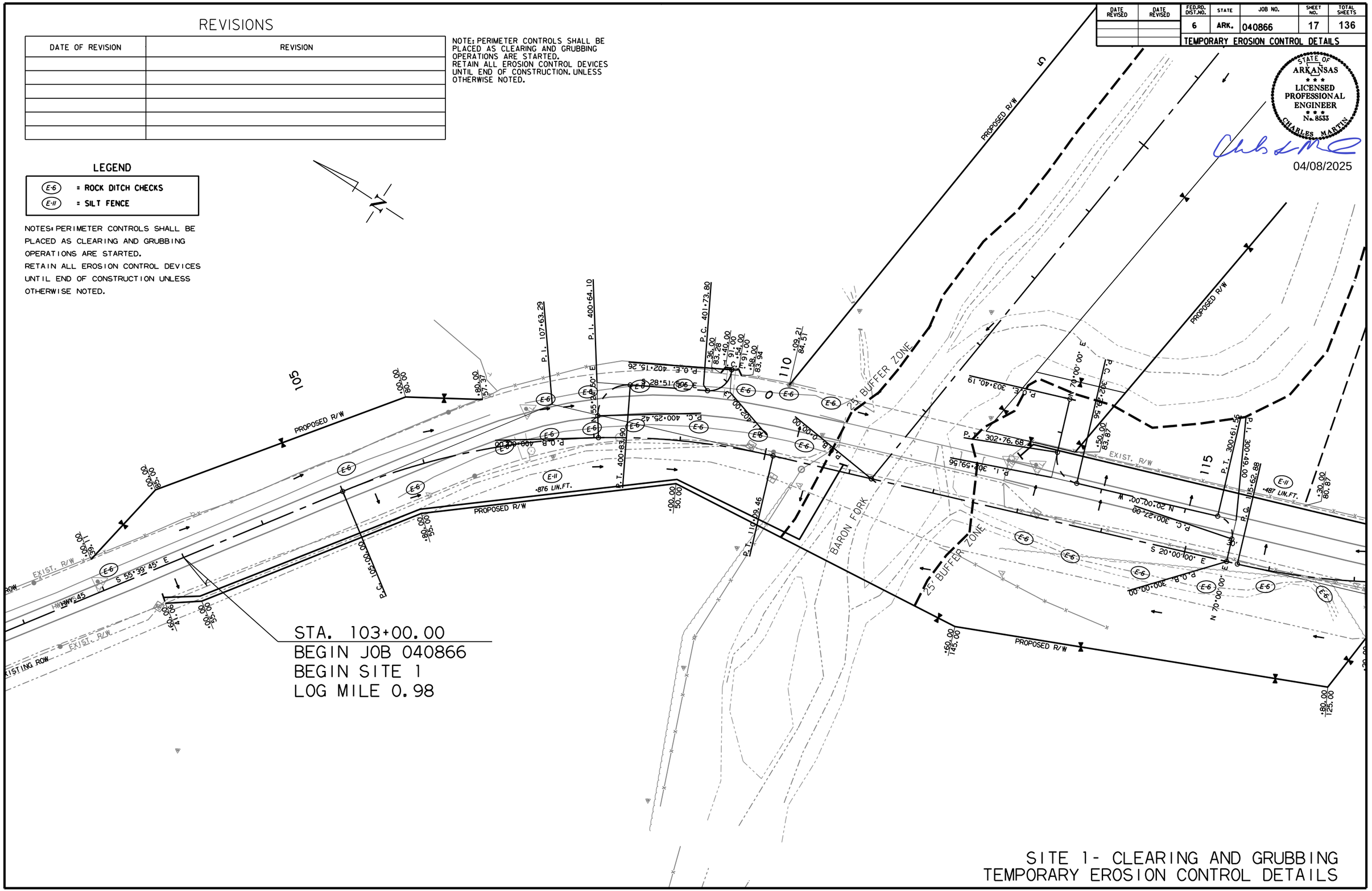
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8533
CHARLES MARTIN

04/08/2025

LEGEND

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

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SITE 1- CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

JY43338 9/23/2024
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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
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TEMPORARY EROSION CONTROL DETAILS

LEGEND

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

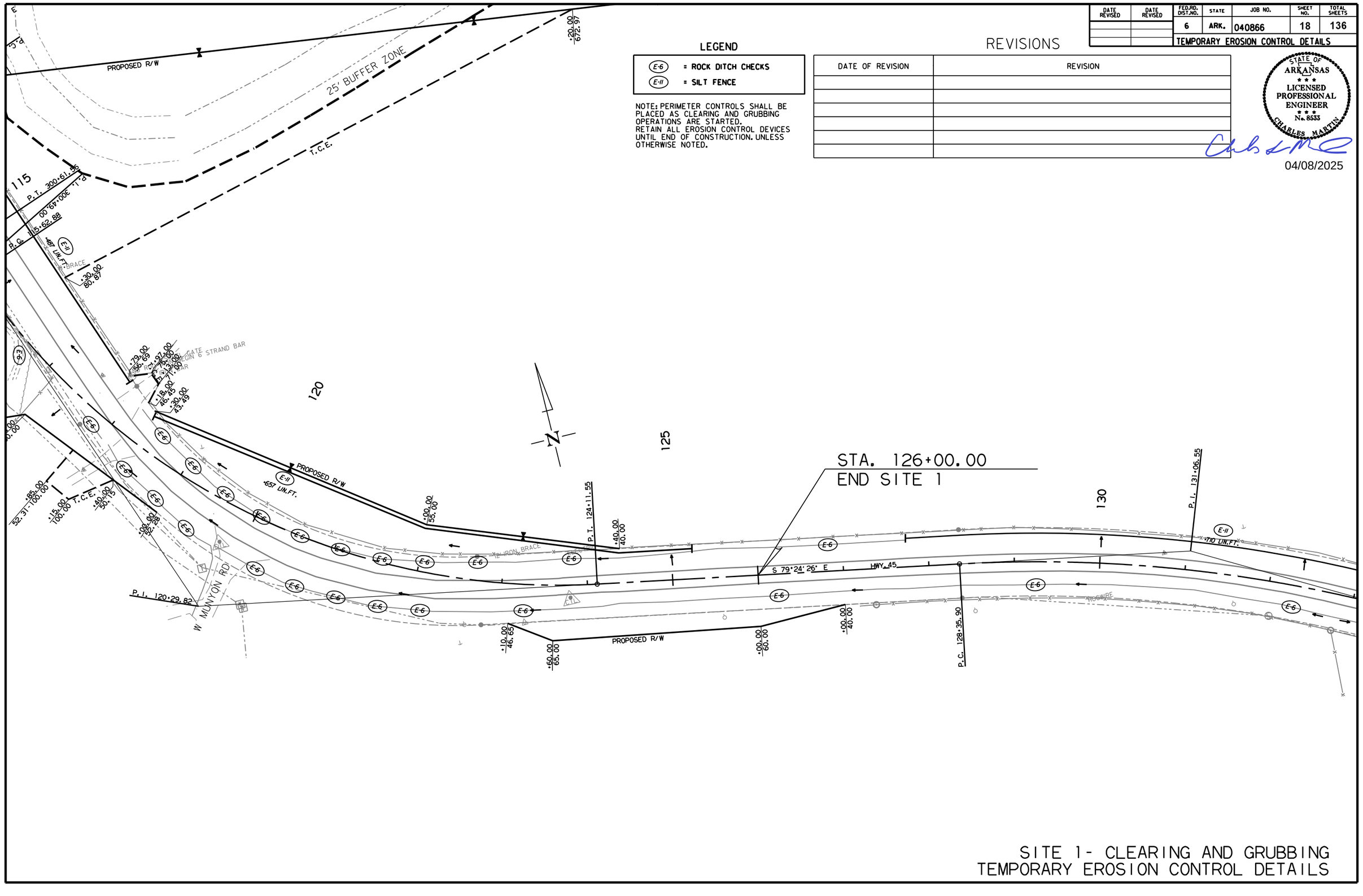
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SITE 1- CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

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TEMPORARY EROSION CONTROL DETAILS

LEGEND

E-6	= ROCK DITCH CHECKS
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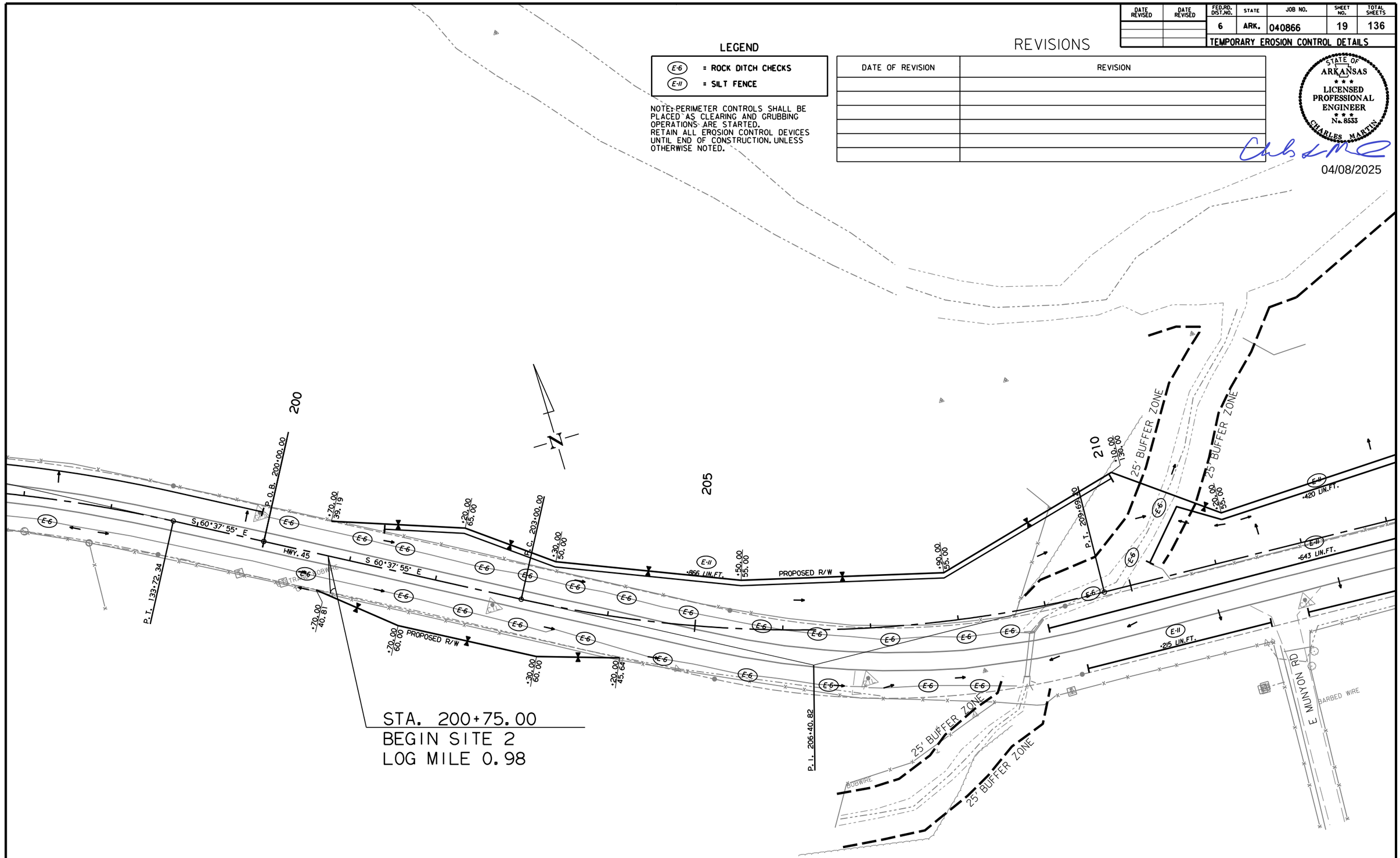
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STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8533
CHARLES MARTIN

04/08/2025



SITE 2 - CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

JY43338 9/23/2024
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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
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TEMPORARY EROSION CONTROL DETAILS

LEGEND

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E-11 = SILT FENCE

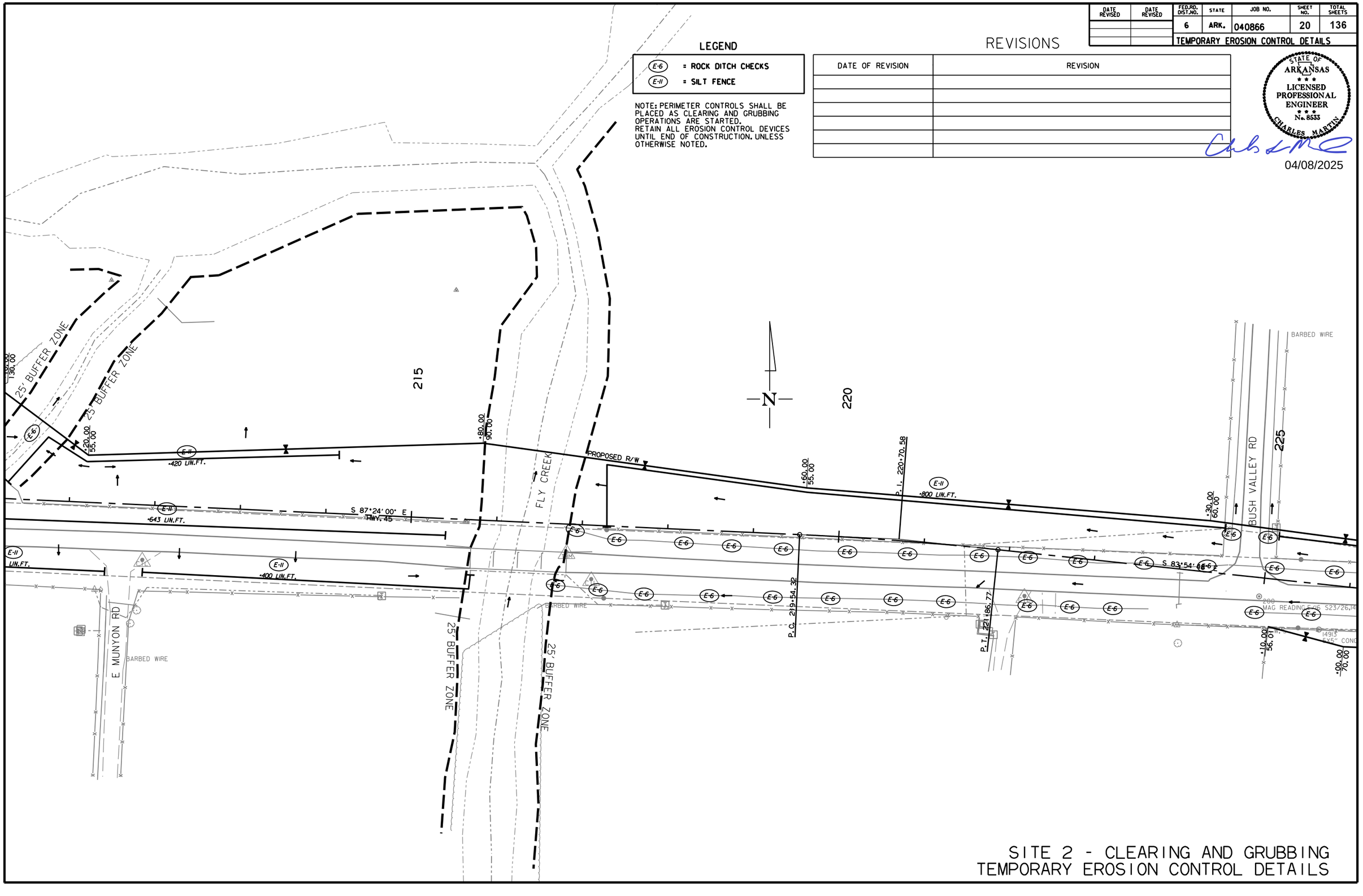
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SITE 2 - CLEARING AND GRUBBING
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JY43338 9/23/2024
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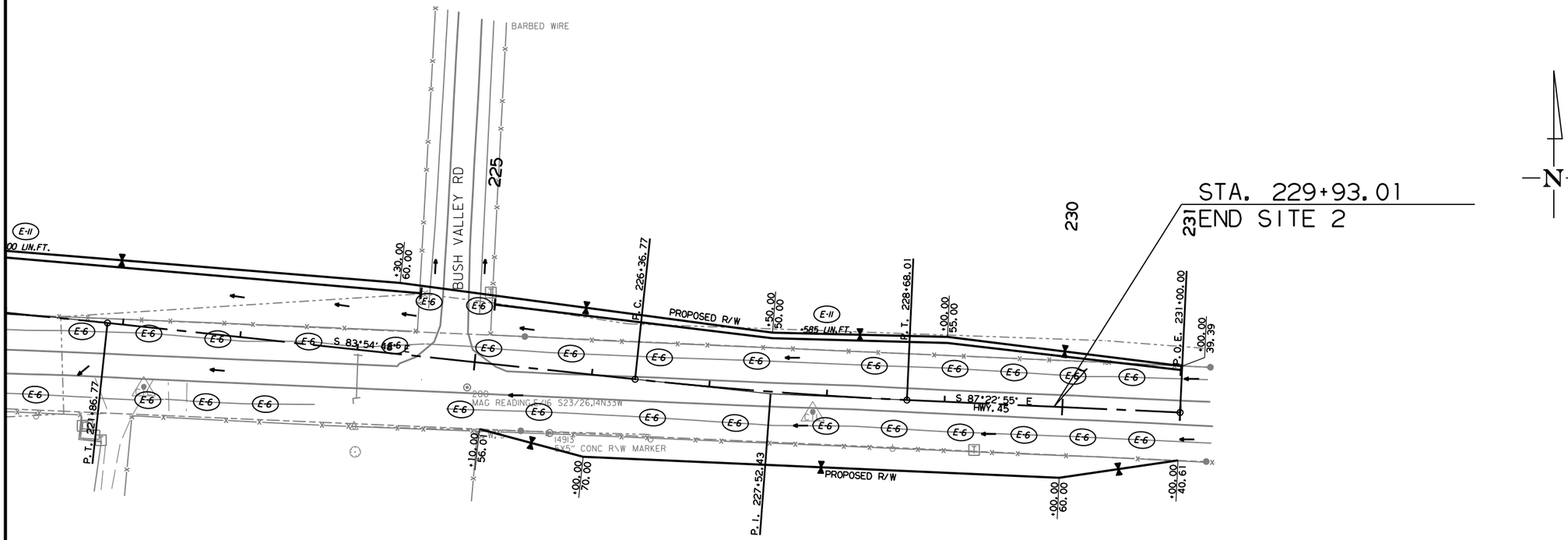
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SITE 2 - CLEARING AND GRUBBING
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TEMPORARY EROSION CONTROL DETAILS

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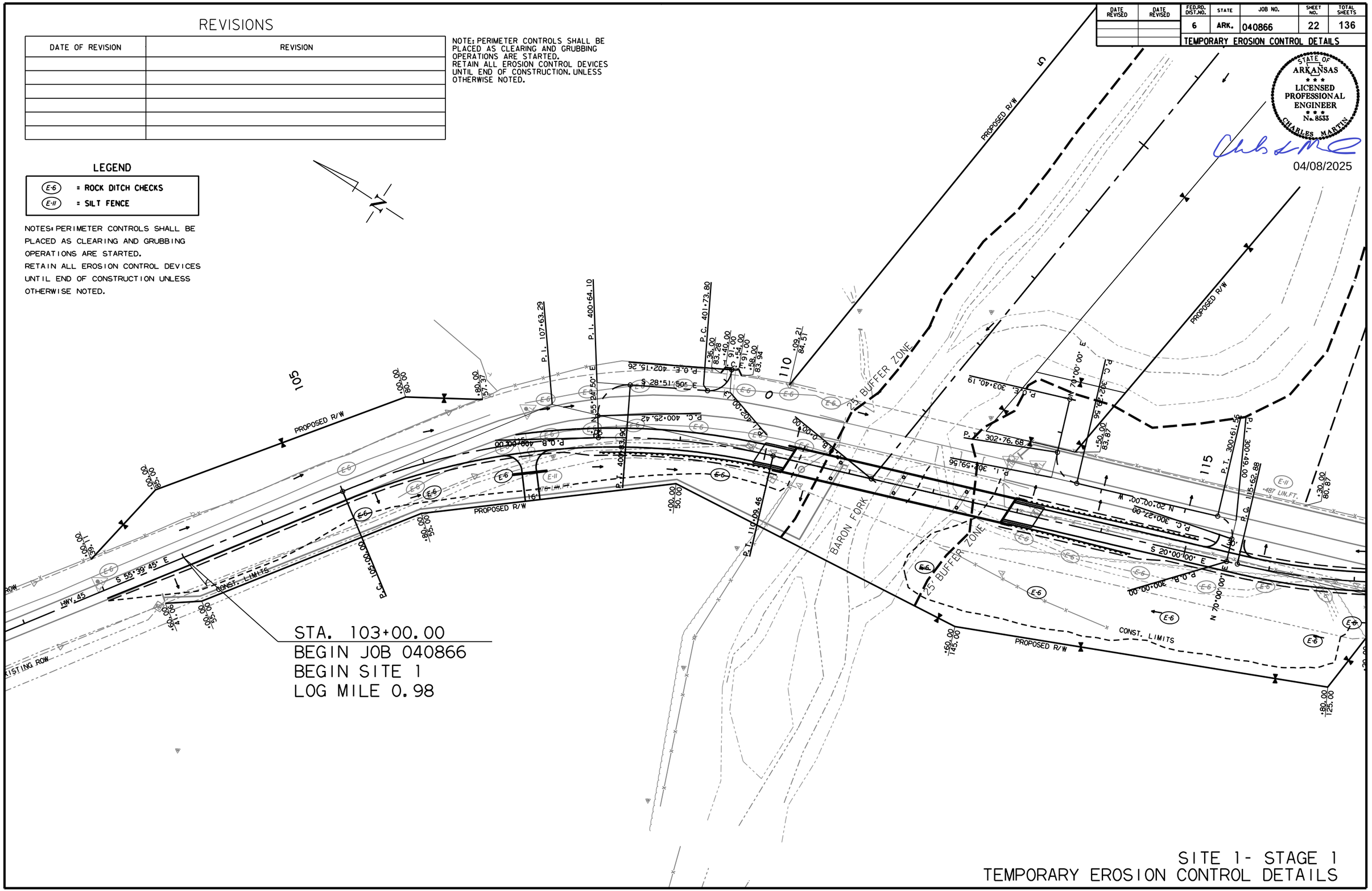
STATE OF ARKANSAS
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No. 8533
CHARLES MARTIN

04/08/2025

LEGEND

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

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LOG MILE 0.98

SITE 1- STAGE 1
TEMPORARY EROSION CONTROL DETAILS

JY43338 9/23/2024
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TEMPORARY EROSION CONTROL DETAILS

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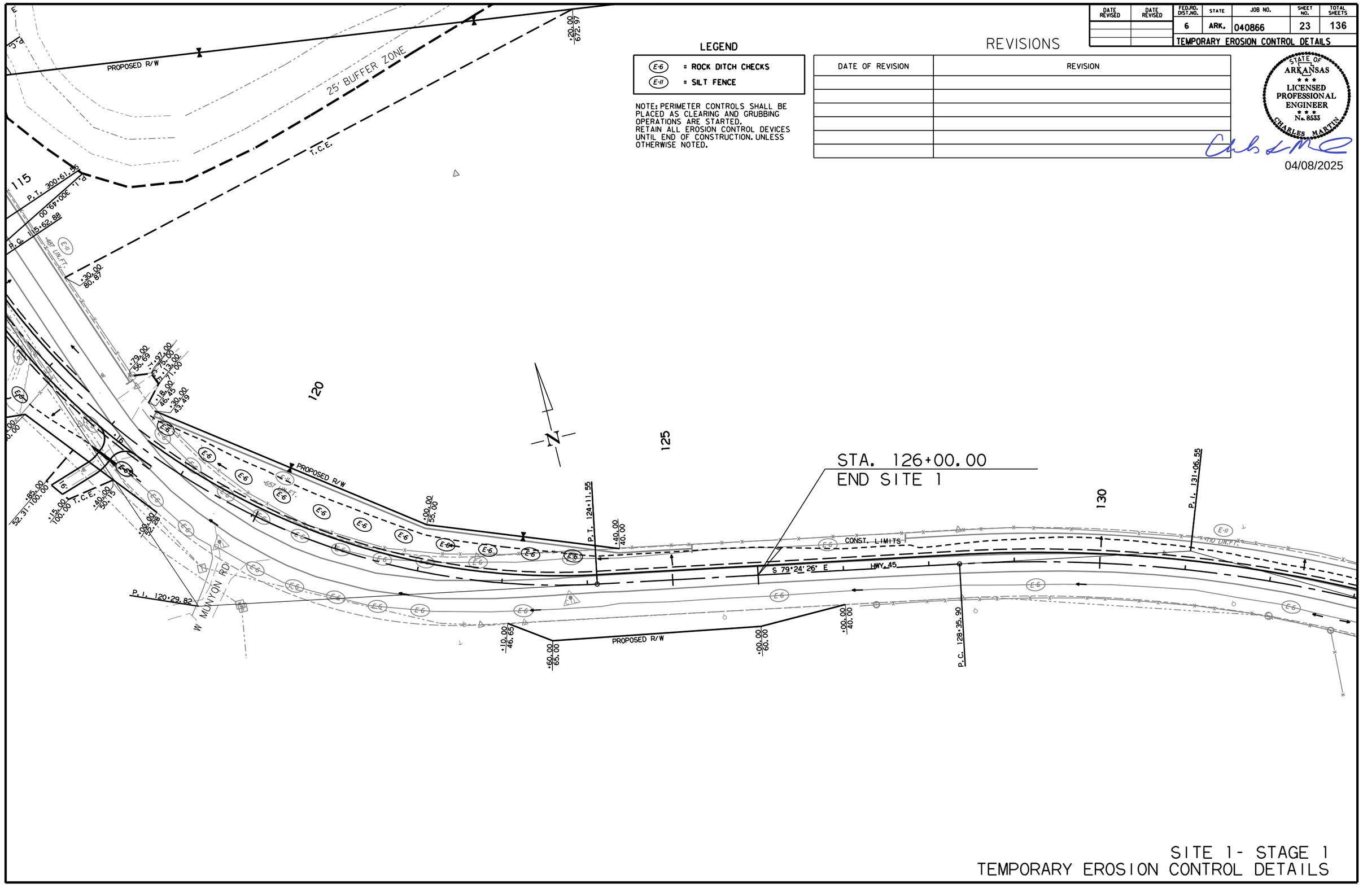
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SITE 1- STAGE 1
TEMPORARY EROSION CONTROL DETAILS

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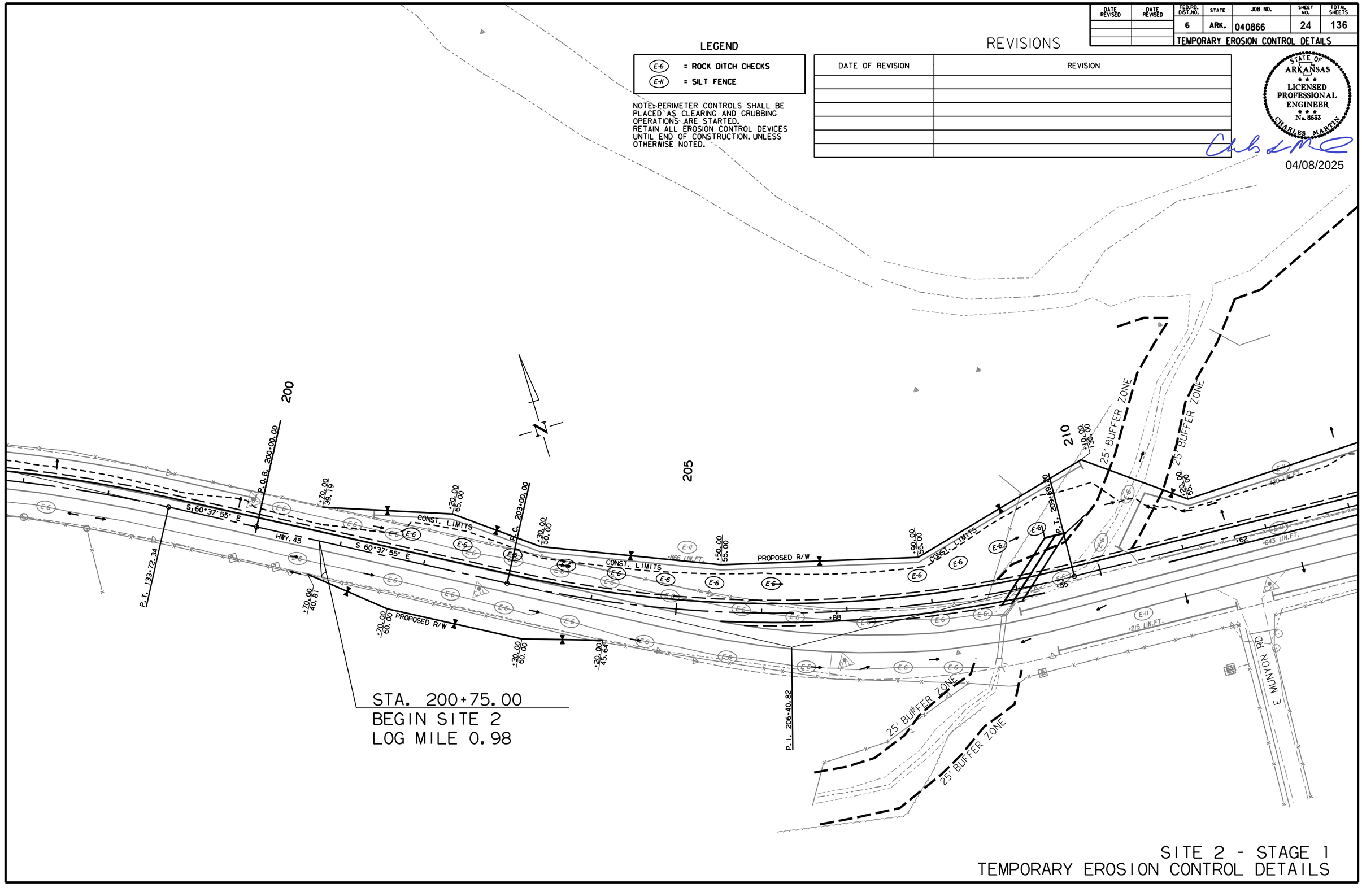
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STATE OF ARKANSAS
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04/08/2025



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SITE 2 - STAGE 1
TEMPORARY EROSION CONTROL DETAILS

JY43338 9/23/2024
R040866.DGN

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TEMPORARY EROSION CONTROL DETAILS

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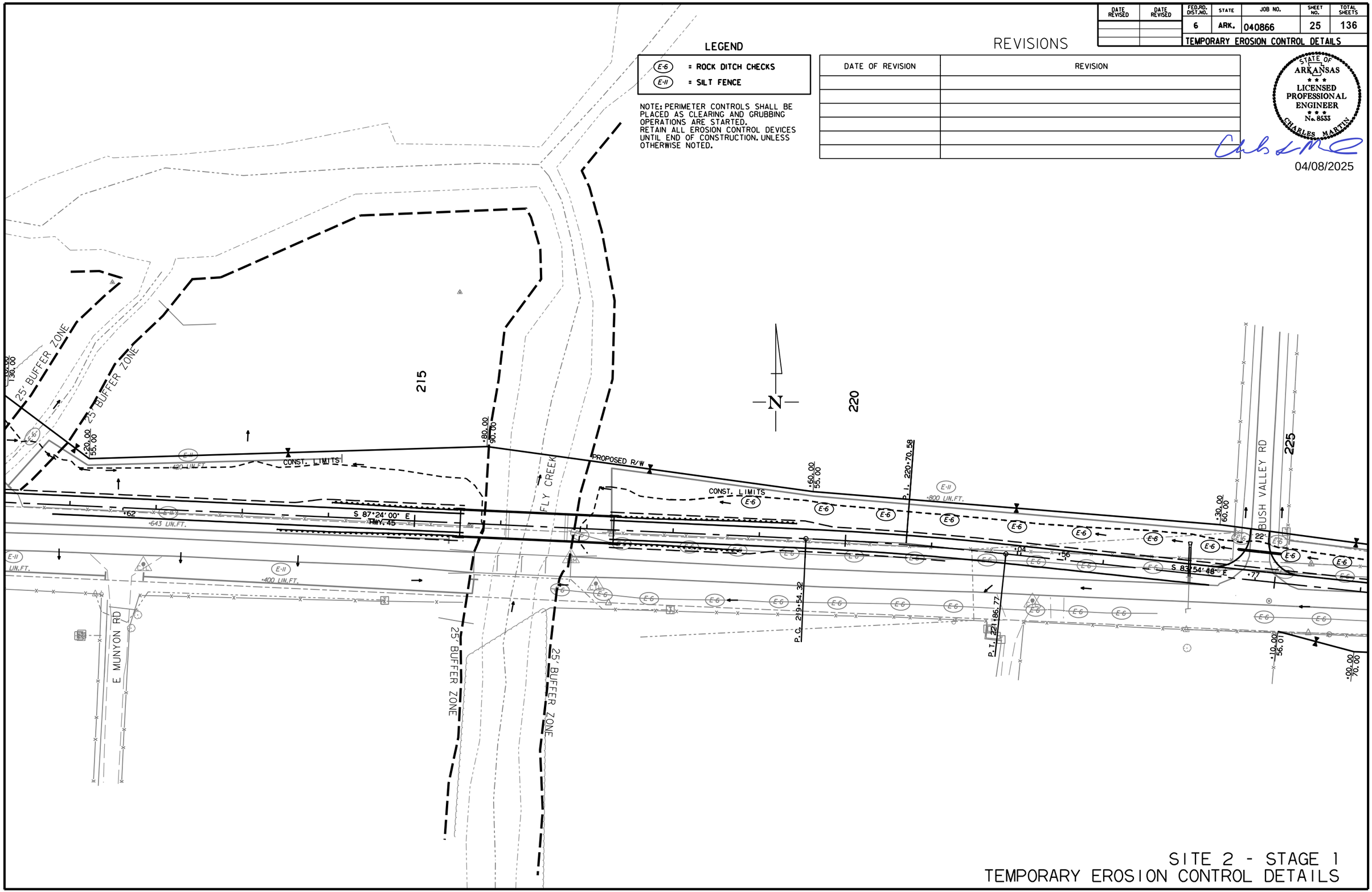
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04/08/2025



SITE 2 - STAGE 1
TEMPORARY EROSION CONTROL DETAILS

JY43338 9/23/2024
R040866.DGN

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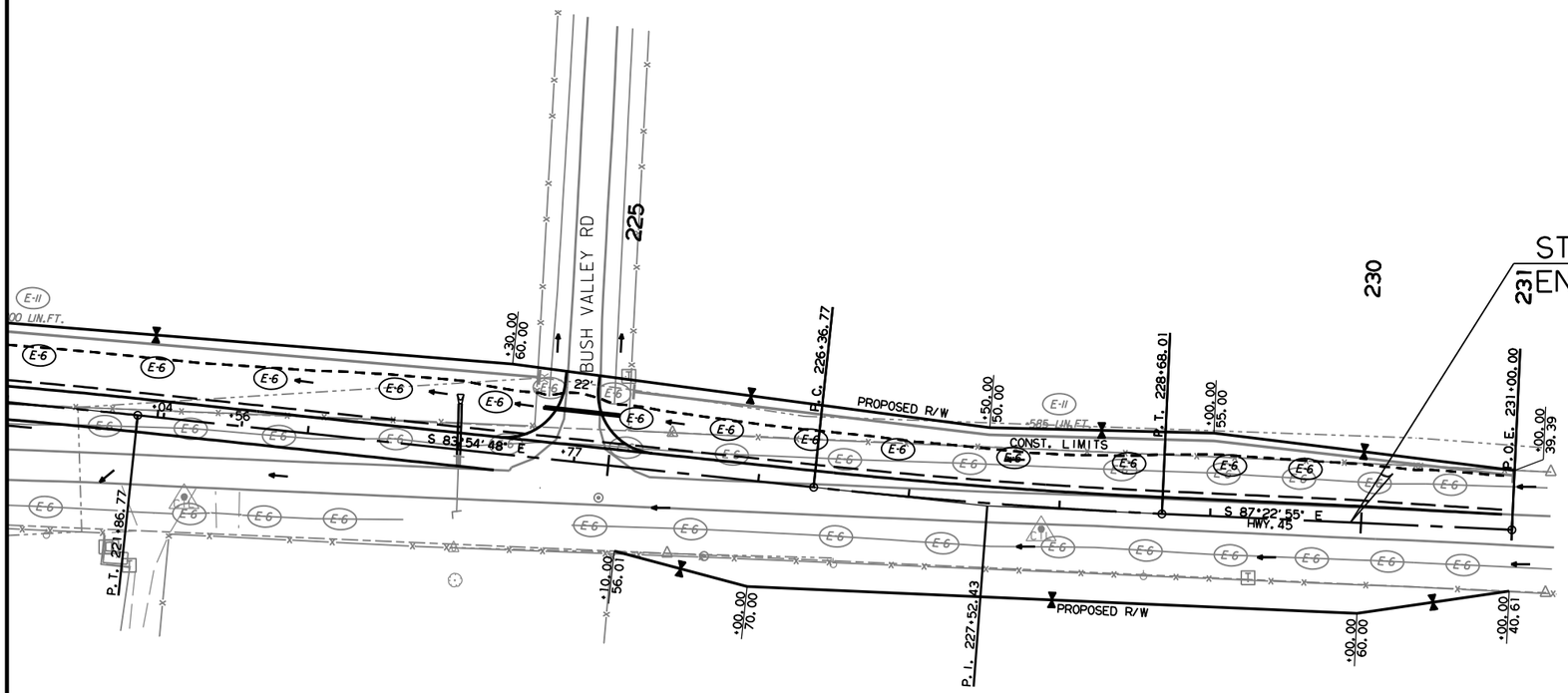
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04/08/2025



SITE 2 - STAGE 1
TEMPORARY EROSION CONTROL DETAILS

JY43338 9/23/2024
R040866.DGN

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TEMPORARY EROSION CONTROL DETAILS

REVISIONS

DATE OF REVISION	REVISION

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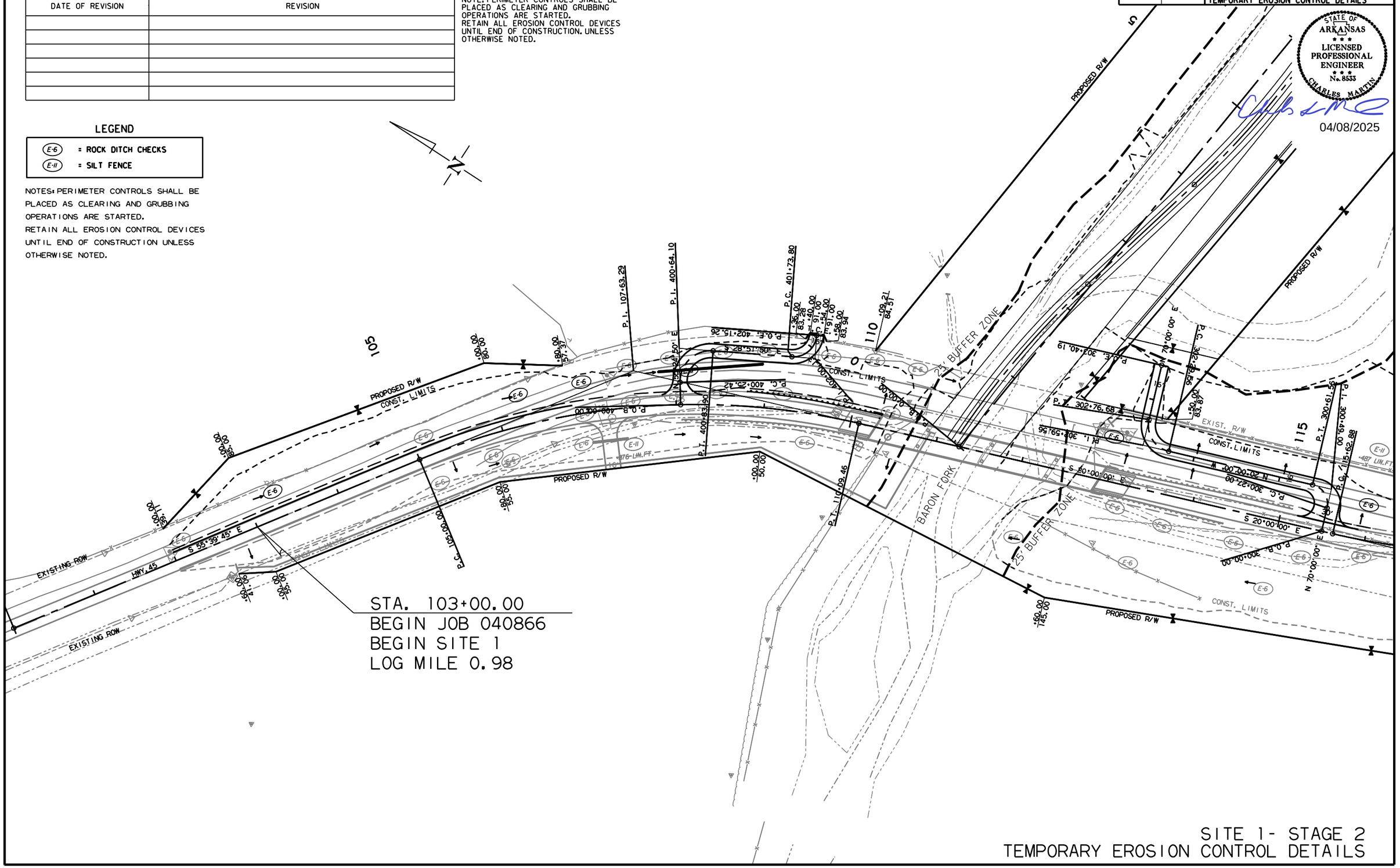
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8533
CHARLES MARTIN

04/08/2025

LEGEND

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

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SITE 1- STAGE 2
TEMPORARY EROSION CONTROL DETAILS

JY43338 9/23/2024
R040866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
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LEGEND

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

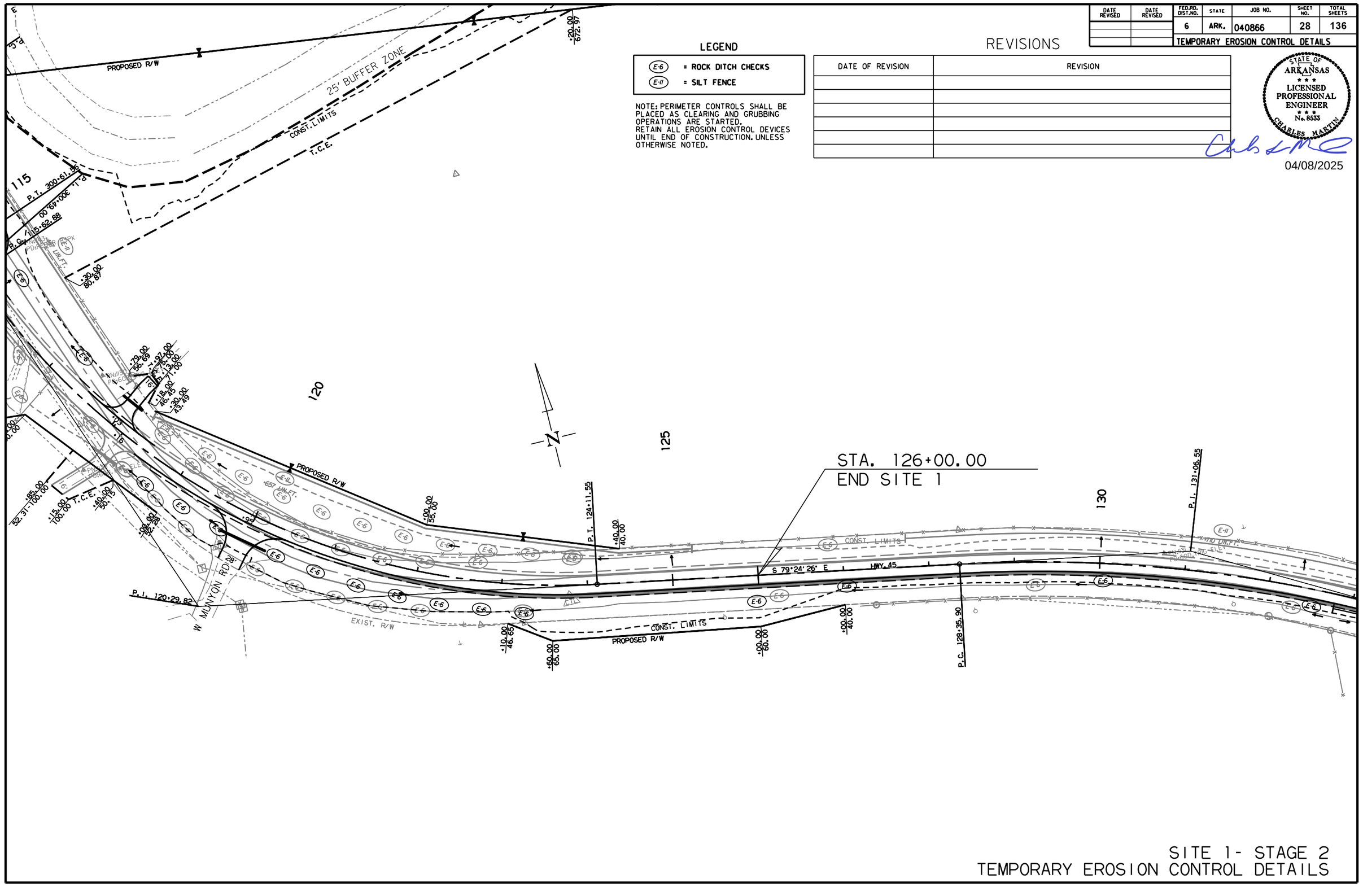
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LICENSED PROFESSIONAL ENGINEER
No. 8533
CHARLES MARTIN

04/08/2025



SITE 1- STAGE 2
TEMPORARY EROSION CONTROL DETAILS

JY43338 9/23/2024
R040866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	29	136

TEMPORARY EROSION CONTROL DETAILS

LEGEND

(E-6) = ROCK DITCH CHECKS

(E-11) = SILT FENCE

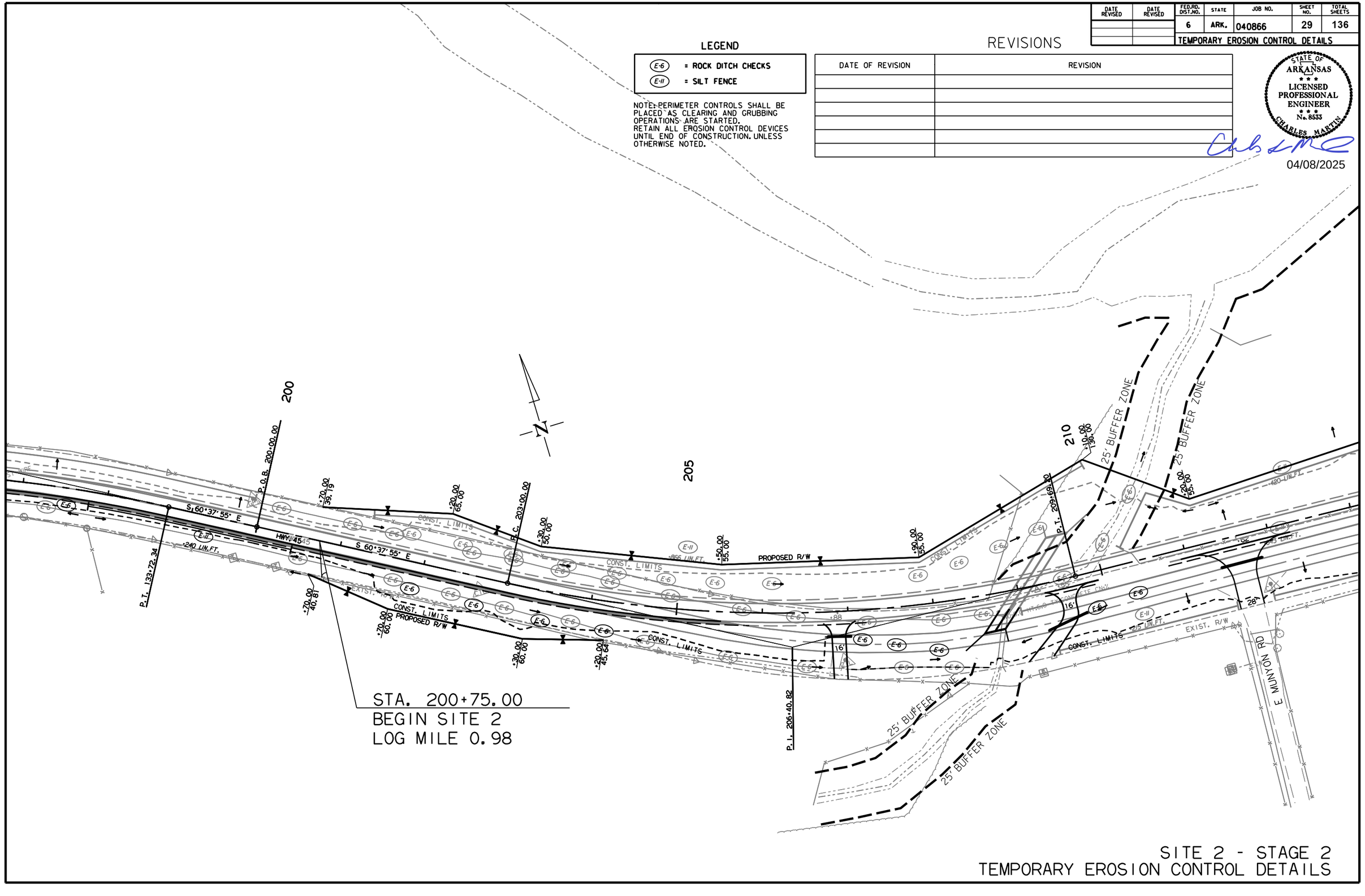
NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION. UNLESS OTHERWISE NOTED.

REVISIONS

DATE OF REVISION	REVISION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8533
CHARLES MARTIN

04/08/2025



SITE 2 - STAGE 2
TEMPORARY EROSION CONTROL DETAILS

JY43338 9/23/2024
R040866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	30	136

TEMPORARY EROSION CONTROL DETAILS

LEGEND

E-6 = ROCK DITCH CHECKS

E-11 = SILT FENCE

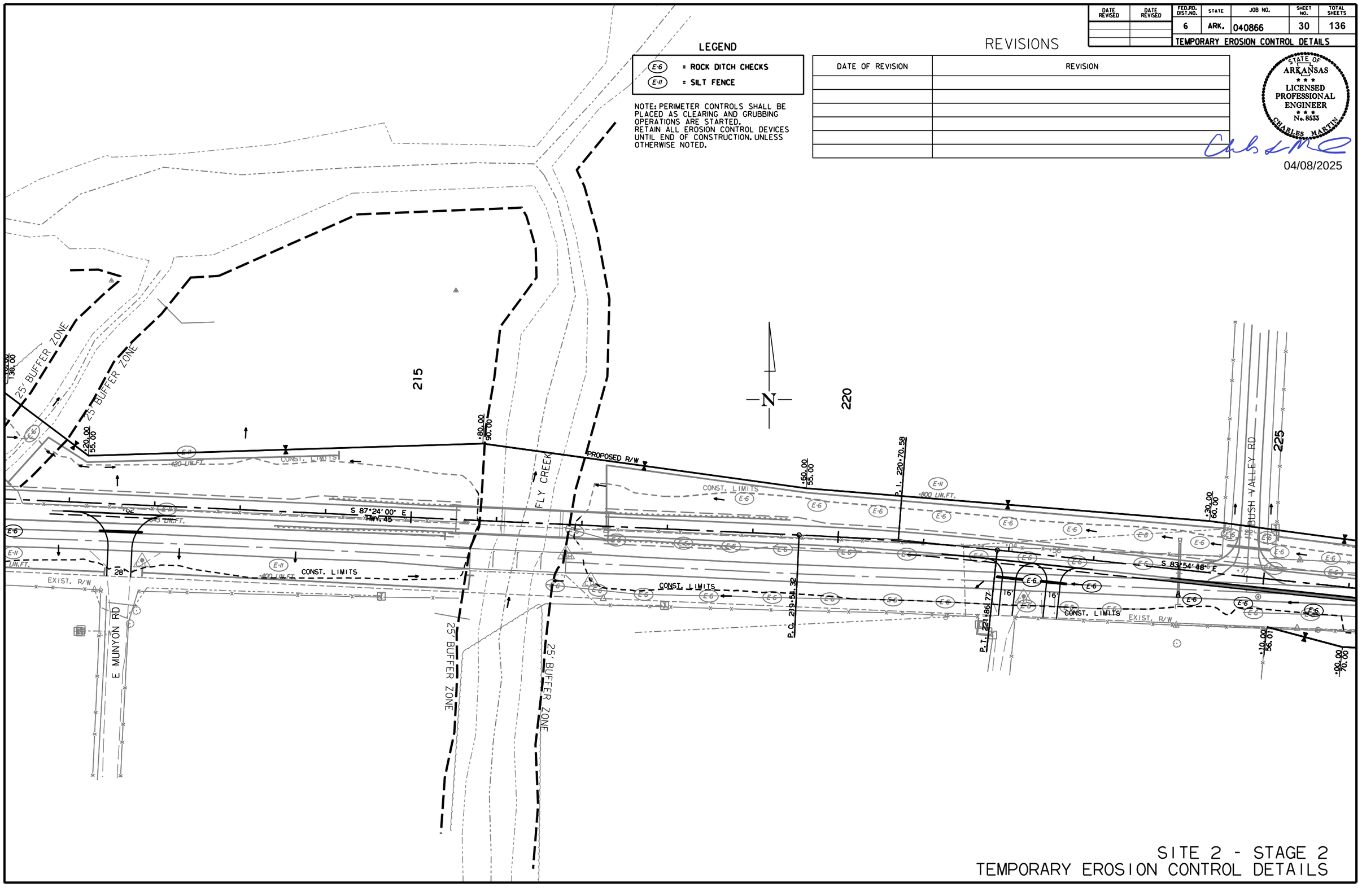
NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION. UNLESS OTHERWISE NOTED.

REVISIONS

DATE OF REVISION	REVISION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8533
CHARLES MARTIN

04/08/2025



SITE 2 - STAGE 2
TEMPORARY EROSION CONTROL DETAILS

JY43338 9/23/2024
R040866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	31	136

TEMPORARY EROSION CONTROL DETAILS

LEGEND

(E-6) = ROCK DITCH CHECKS

(E-11) = SILT FENCE

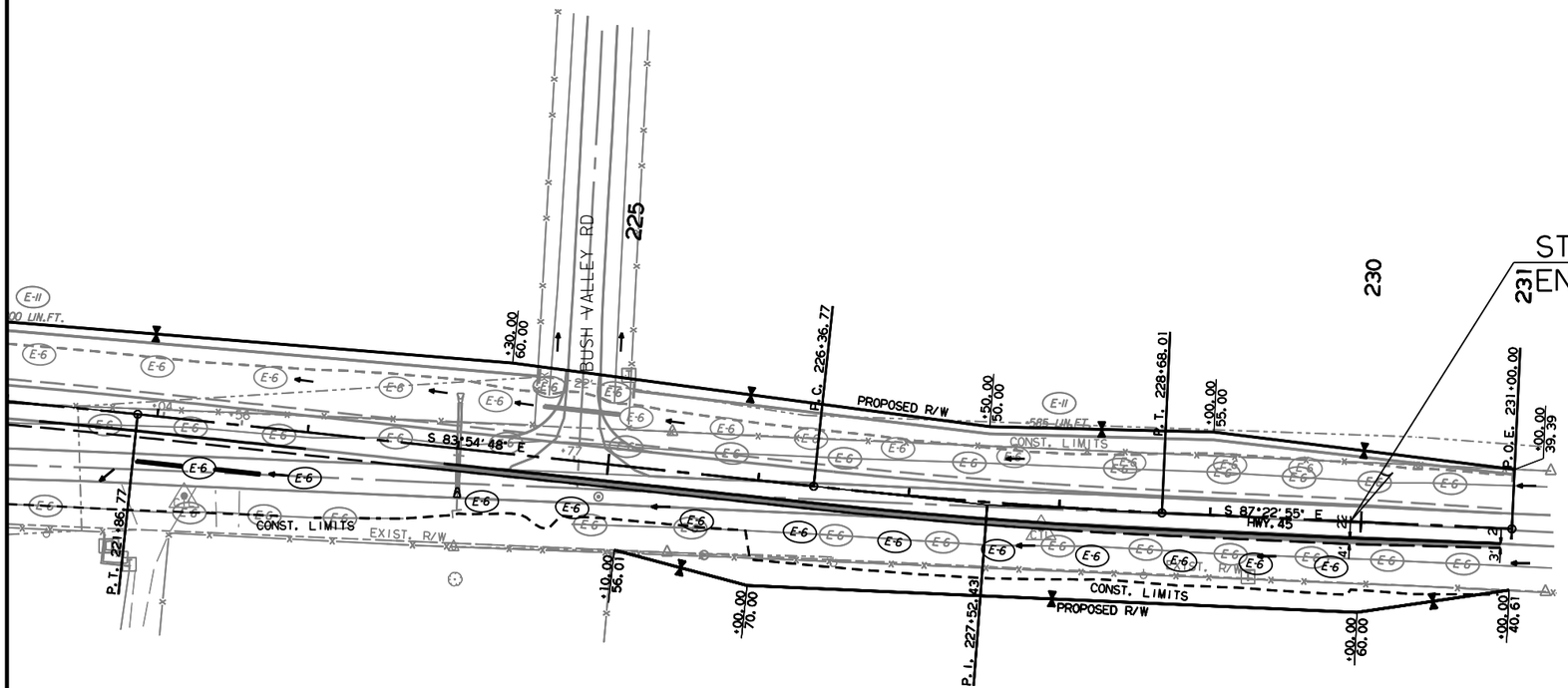
NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION. UNLESS OTHERWISE NOTED.

REVISIONS

DATE OF REVISION	REVISION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8533
CHARLES MARTIN

04/08/2025



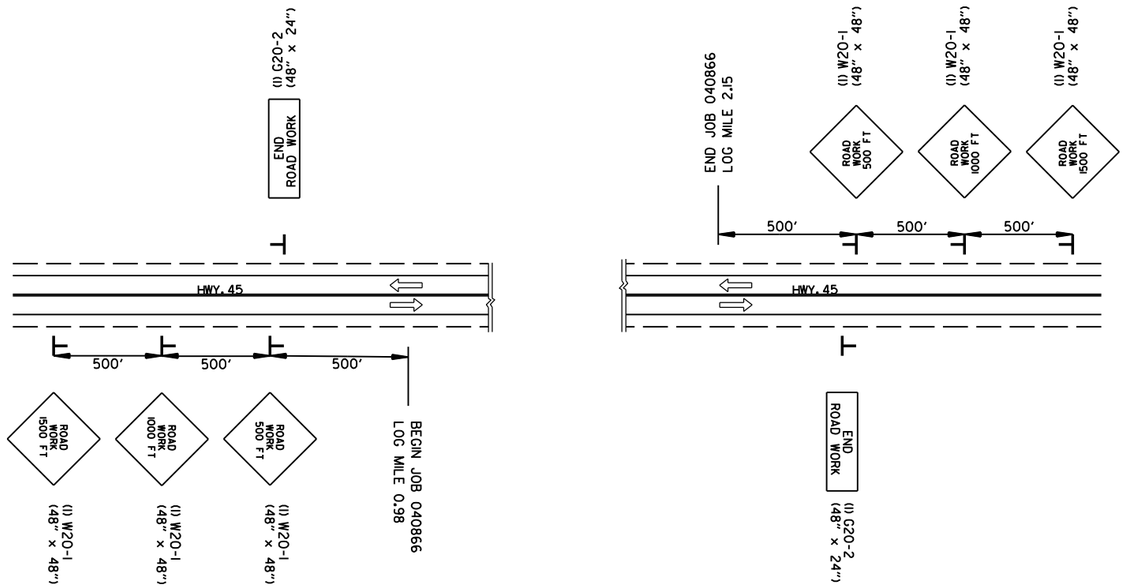
SITE 2 - STAGE 2
TEMPORARY EROSION CONTROL DETAILS

JY43338 9/23/2024
R040866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	32	136
		MAINTENANCE OF TRAFFIC DETAILS				

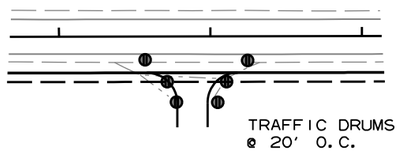
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8533
CHARLES MARTIN

04/08/2025

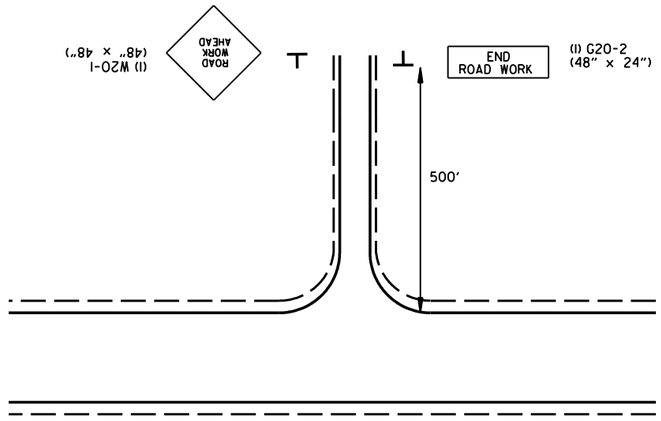


ADVANCE WARNING (ALL STAGES)

RIGHT SHOULDER CLOSED	(2) W21-5a (36" x 36")	ALL STAGES TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER
DO NOT PASS	(2) R4-1 (24" X 30")	ALL STAGES TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER
BUMP	(4) W8-1 (30" X 30")	ALL STAGES TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER



DRIVEWAY/TRAFFIC DRUM DETAIL



ADVANCE WARNING - SIDE ROADS
(ALL STAGES)

L.M. 1.30, W MUNYON ROAD
L.M. 1.80, E MUNYON ROAD
L.M. 2.05, BUSH VALLEY ROAD

NOTE: ALL LOG MILES BASED OFF HWY. 45.

JY43338 11/6/2024
R040866.DGN

ADVANCE WARNING
MAINTENANCE OF TRAFFIC DETAILS

STAGE 1 CONSTRUCTION SEQUENCE:

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE BEGINNING AND END OF JOB AS SHOWN ON THE ADVANCE WARNING DETAIL.

FURNISH AND INSTALL P.C.C.B. AND T.I.A.B. AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

USE VERTICAL PANELS AND TRAFFIC DRUMS SPACED 35' O.C. TO DELINEATE THE WORK ZONE. USE TRAFFIC DRUMS TO DELINEATE DRIVEWAYS.

CONSTRUCT HWY. 45 BRIDGES AND LT. SIDE OF R.C. BOX CULVERT AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCT HWY. 45 RT. FROM STA. 102+00.00 TO STA. 118+45.00 AND HWY. 45 LT. FROM STA. 118+45.00 TO STA. 230+93.01 AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

APPLY LEVELING COURSE TO EXISTING LANES IF AND WHERE DIRECTED BY THE ENGINEER.

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	33	136

MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8533
CHARLES MARTIN

04/08/2025

ROAD CLOSED

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

(I) 8' BARR. TYP. III RT.
(I) 8' BARR. TYP. III LT.

VERTICAL PANELS SPACED 35' O.C.

C.L. HWY. 45

PROPOSED R/W

CONST. LIMITS

EXISTING ROW

HWY. 45

STA. 103+00.00
BEGIN JOB 040866
BEGIN SITE 1
LOG MILE 0.98

FURNISH AND INSTALL
220' P.C.C.B.
1 T.I.A.B.
1 S.E.U.

FURNISH AND INSTALL
360' P.C.C.B.
2 S.E.U.

BARON FORK

SITE 1- STAGE 1
MAINTENANCE OF TRAFFIC DETAILS

JY43338 11/6/2024
R040866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	34	136
		MAINTENANCE OF TRAFFIC DETAILS				

STAGE 1 CONSTRUCTION SEQUENCE:

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE BEGINNING AND END OF JOB AS SHOWN ON THE ADVANCE WARNING DETAIL.

FURNISH AND INSTALL P.C.C.B. AND T.I.A.B. AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

USE VERTICAL PANELS AND TRAFFIC DRUMS SPACED 35' O.C. TO DELINEATE THE WORK ZONE. USE TRAFFIC DRUMS TO DELINEATE DRIVEWAYS.

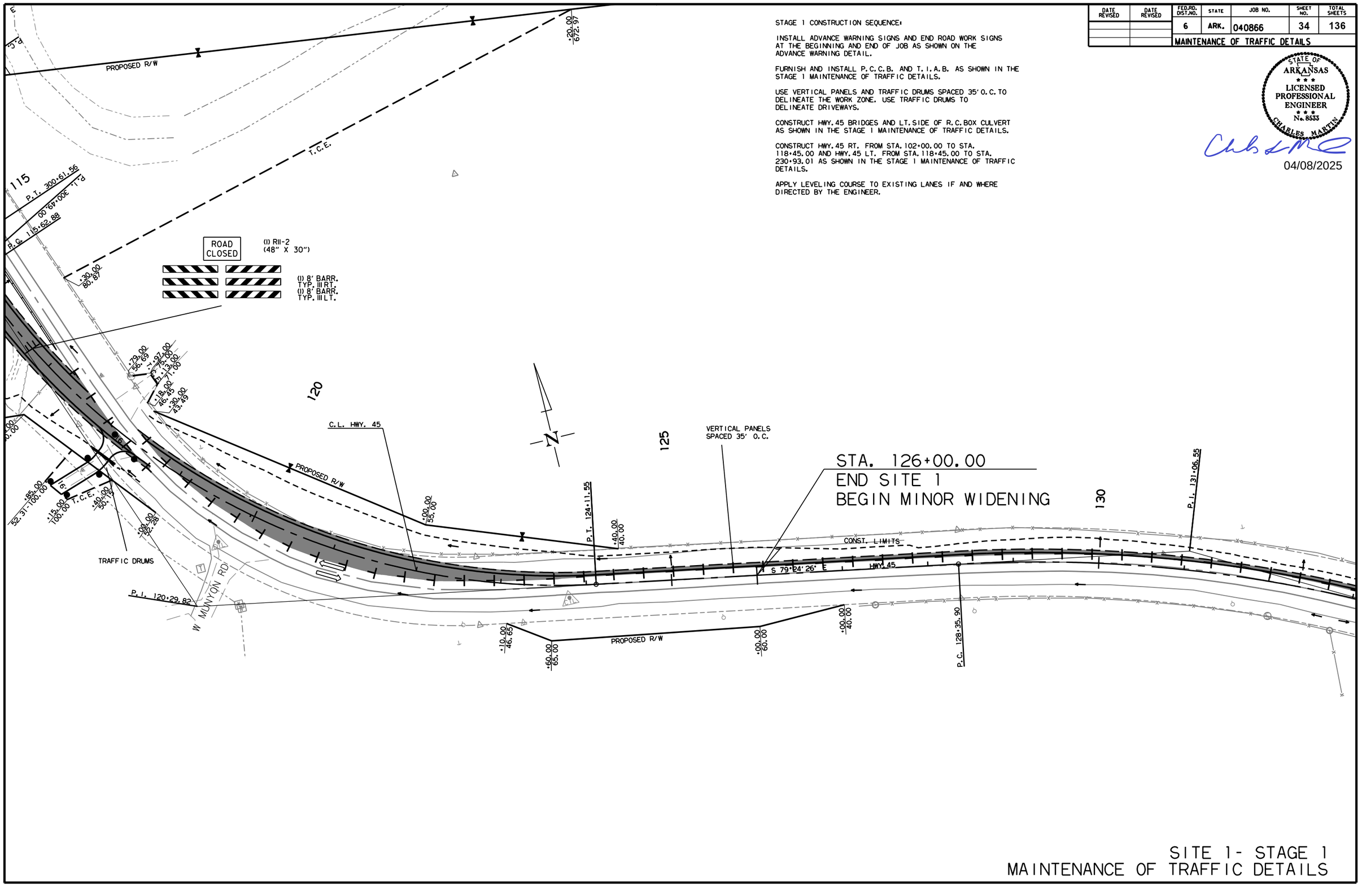
CONSTRUCT HWY. 45 BRIDGES AND LT. SIDE OF R.C. BOX CULVERT AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCT HWY. 45 RT. FROM STA. 102+00.00 TO STA. 118+45.00 AND HWY. 45 LT. FROM STA. 118+45.00 TO STA. 230+93.01 AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

APPLY LEVELING COURSE TO EXISTING LANES IF AND WHERE DIRECTED BY THE ENGINEER.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8533
CHARLES MARTIN

04/08/2025



SITE 1- STAGE 1
MAINTENANCE OF TRAFFIC DETAILS

JY43338 11/6/2024
R040866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	35	136

MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8533
CHARLES MARTIN

04/08/2025

STAGE 1 CONSTRUCTION SEQUENCE:

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE BEGINNING AND END OF JOB AS SHOWN ON THE ADVANCE WARNING DETAIL.

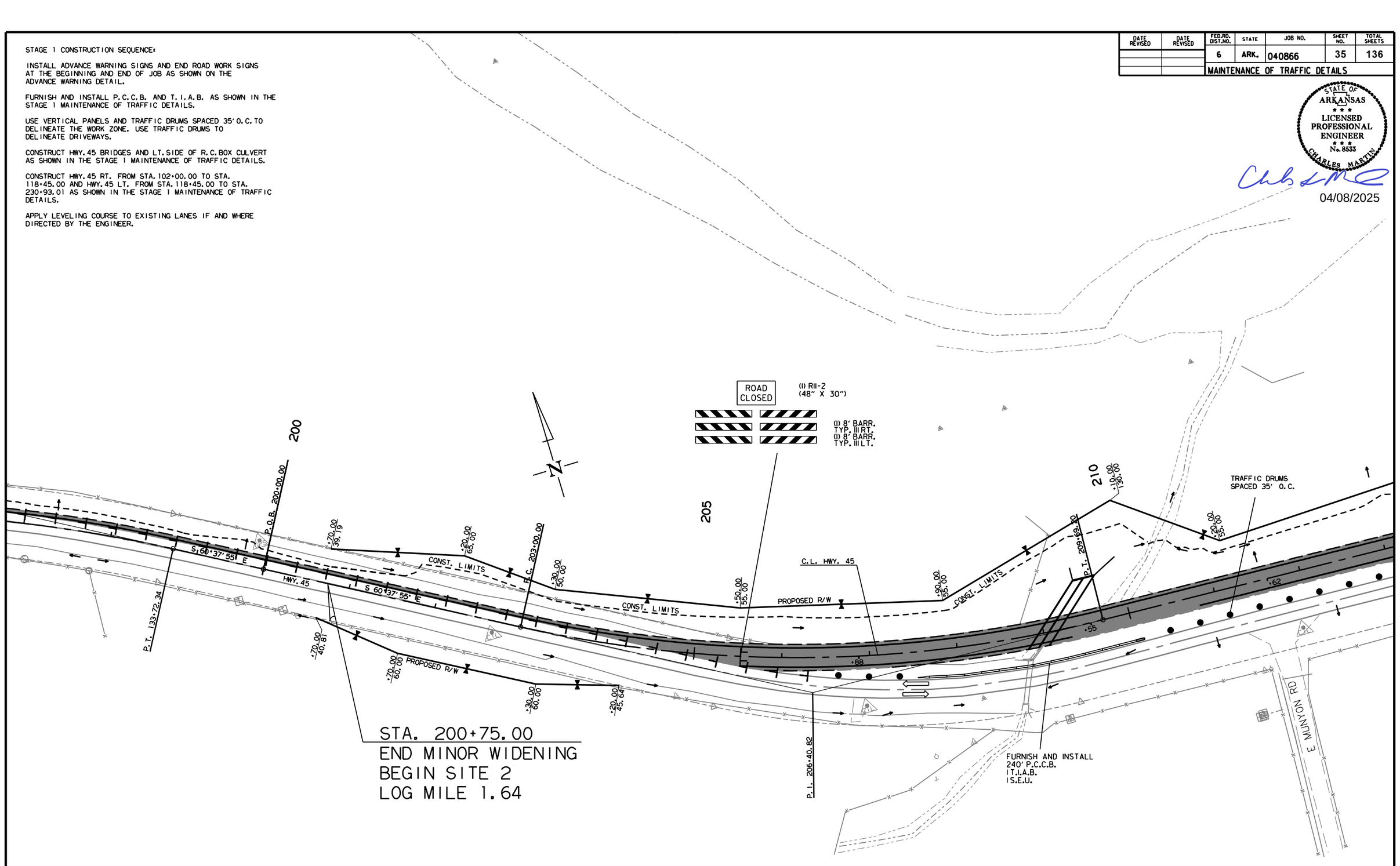
FURNISH AND INSTALL P.C.C.B. AND T.I.A.B. AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

USE VERTICAL PANELS AND TRAFFIC DRUMS SPACED 35' O.C. TO DELINEATE THE WORK ZONE. USE TRAFFIC DRUMS TO DELINEATE DRIVEWAYS.

CONSTRUCT HWY. 45 BRIDGES AND LT. SIDE OF R.C. BOX CULVERT AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCT HWY. 45 RT. FROM STA. 102+00.00 TO STA. 118+45.00 AND HWY. 45 LT. FROM STA. 118+45.00 TO STA. 230+93.01 AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

APPLY LEVELING COURSE TO EXISTING LANES IF AND WHERE DIRECTED BY THE ENGINEER.



SITE 2 - STAGE 1
MAINTENANCE OF TRAFFIC DETAILS

JY43338 11/6/2024
R040866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	36	136
		MAINTENANCE OF TRAFFIC DETAILS				

STAGE 1 CONSTRUCTION SEQUENCE:

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE BEGINNING AND END OF JOB AS SHOWN ON THE ADVANCE WARNING DETAIL.

FURNISH AND INSTALL P.C.C.B. AND T.I.A.B. AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

USE VERTICAL PANELS AND TRAFFIC DRUMS SPACED 35' O.C. TO DELINEATE THE WORK ZONE. USE TRAFFIC DRUMS TO DELINEATE DRIVEWAYS.

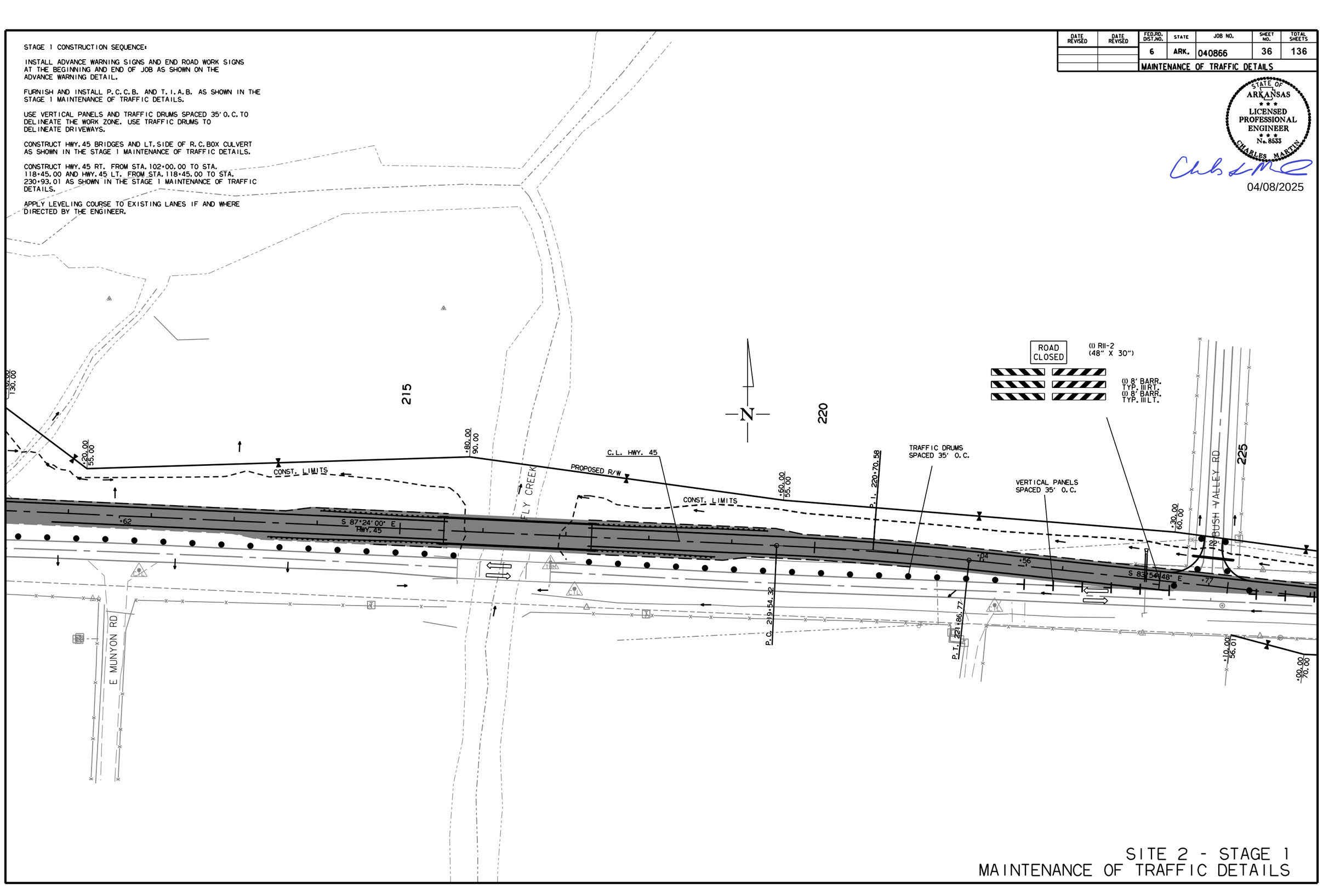
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CONSTRUCT HWY. 45 RT. FROM STA. 102+00.00 TO STA. 118+45.00 AND HWY. 45 LT. FROM STA. 118+45.00 TO STA. 230+93.01 AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

APPLY LEVELING COURSE TO EXISTING LANES IF AND WHERE DIRECTED BY THE ENGINEER.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8533
CHARLES MARTIN

04/08/2025



SITE 2 - STAGE 1
MAINTENANCE OF TRAFFIC DETAILS

JY43338 11/6/2024
R040866.DGN

STAGE 1 CONSTRUCTION SEQUENCE:

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE BEGINNING AND END OF JOB AS SHOWN ON THE ADVANCE WARNING DETAIL.

FURNISH AND INSTALL P.C.C.B. AND T.I.A.B. AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

USE VERTICAL PANELS AND TRAFFIC DRUMS SPACED 35' O.C. TO DELINEATE THE WORK ZONE. USE TRAFFIC DRUMS TO DELINEATE DRIVEWAYS.

CONSTRUCT HWY. 45 BRIDGES AND LT. SIDE OF R.C. BOX CULVERT AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

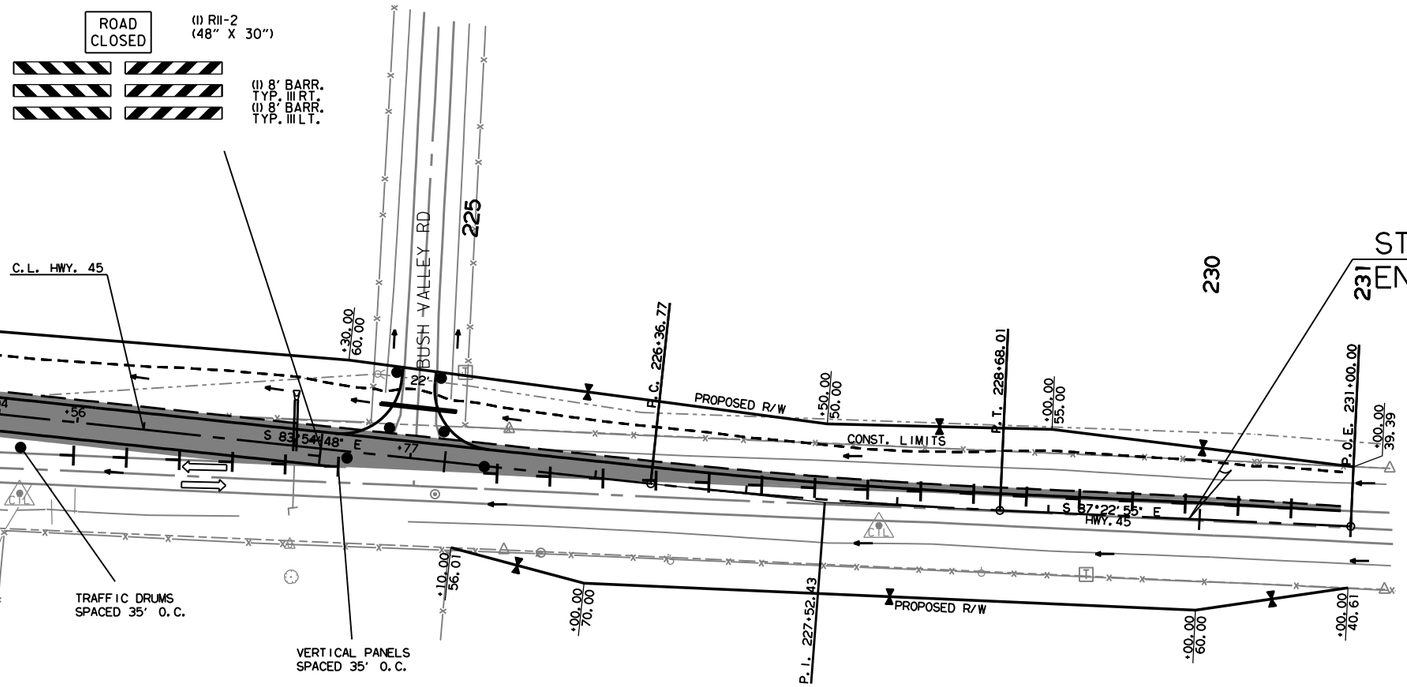
CONSTRUCT HWY. 45 RT. FROM STA. 102+00.00 TO STA. 118+45.00 AND HWY. 45 LT. FROM STA. 118+45.00 TO STA. 230+93.01 AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

APPLY LEVELING COURSE TO EXISTING LANES IF AND WHERE DIRECTED BY THE ENGINEER.

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	37	136
		MAINTENANCE OF TRAFFIC DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8533
CHARLES MARTIN

04/08/2025



SITE 2 - STAGE 1
MAINTENANCE OF TRAFFIC DETAILS

JY43338 11/6/2024
R040866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	38	136
		MAINTENANCE OF TRAFFIC DETAILS				

STAGE 2 CONSTRUCTION SEQUENCE:

RELOCATE P.C.C.B. AND T.I.A.B. AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

INSTALL CONSTRUCTION PAVEMENT MARKINGS AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

SHIFT TRAFFIC ONTO THE PROPOSED HWY. 45 LANES.

USE VERTICAL PANELS AND TRAFFIC DRUMS SPACED 35' O.C. TO DELINEATE THE WORK ZONE. USE TRAFFIC DRUMS TO DELINEATE DRIVEWAYS.

REMOVE EXISTING BRIDGES AND CONSTRUCT RT. SIDE OF R.C.BOX CULVERT AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCT HWY. 45 LT. FROM STA. 102+00.00 TO STA. 118+45.00 AND HWY. 45 RT. FROM STA. 118+45.00 TO STA. 230+93.01 AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

APPLY FINAL 2" LIFT OF ACHM SURFACE COURSE AND INSTALL PERMANENT PAVEMENT MARKINGS AS SHOWN IN THE PERMANENT PAVEMENT MARKING DETAILS.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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(1) RII-2 (48" X 30")
(1) WI-6 (48" X 24")
(2) 8' BARR. TYP. III LT.
ROAD CLOSED

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

TRAFFIC DRUMS
VERTICAL PANELS SPACED 35' O.C.
DBL. YELLOW CONSTRUCTION PAVEMENT MARKING
RELOCATE 140' P.C.C.B. I.S.E.U. I.T.I.A.B.
RELOCATE 40' P.C.C.B. I.T.I.A.B. I.S.E.U.
WHITE CONSTRUCTION PAVEMENT MARKING
DBL. YELLOW REMOVABLE CONSTRUCTION PAVEMENT MARKING
WHITE REMOVABLE CONSTRUCTION PAVEMENT MARKING

C.L. HWY. 45
PROPOSED R/W
CONST. LIMITS
EXISTING ROW
HWY. 45
BARON FORK
P.I. 107+63.29
P.I. 400+64.10
P.C. 401+73.80
P.O.E. 402+15.26
P.C. 400+25.42
P.O.B. 400+39.90
P.T. 400+13.90
P.I. 110+09.46
P.O.E. 303+40.19
P.C. 302+23.56
P.T. 302+76.68
P.I. 302+59.36
P.I. 300+61.56
P.O.B. 300+49.00
P.C. 300+27.00
P.T. 300+11.00
P.O.B. 300+00.00
P.C. 105+00.00
S 55°39'45" E
S 20°00'00" E
N 70°00'00" E
N 30°00'00" W
R/W 115+62.88
105
110
115

STA. 103+00.00
BEGIN JOB 040866
BEGIN SITE 1
LOG MILE 0.98

SITE 1- STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

JY43338 11/6/2024
R040866.DGN

STAGE 2 CONSTRUCTION SEQUENCE:

RELOCATE P.C.C.B. AND T.I.A.B. AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

INSTALL CONSTRUCTION PAVEMENT MARKINGS AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

SHIFT TRAFFIC ONTO THE PROPOSED HWY. 45 LANES.

USE VERTICAL PANELS AND TRAFFIC DRUMS SPACED 35' O.C. TO DELINEATE THE WORK ZONE. USE TRAFFIC DRUMS TO DELINEATE DRIVEWAYS.

REMOVE EXISTING BRIDGES AND CONSTRUCT RT. SIDE OF R.C. BOX CULVERT AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

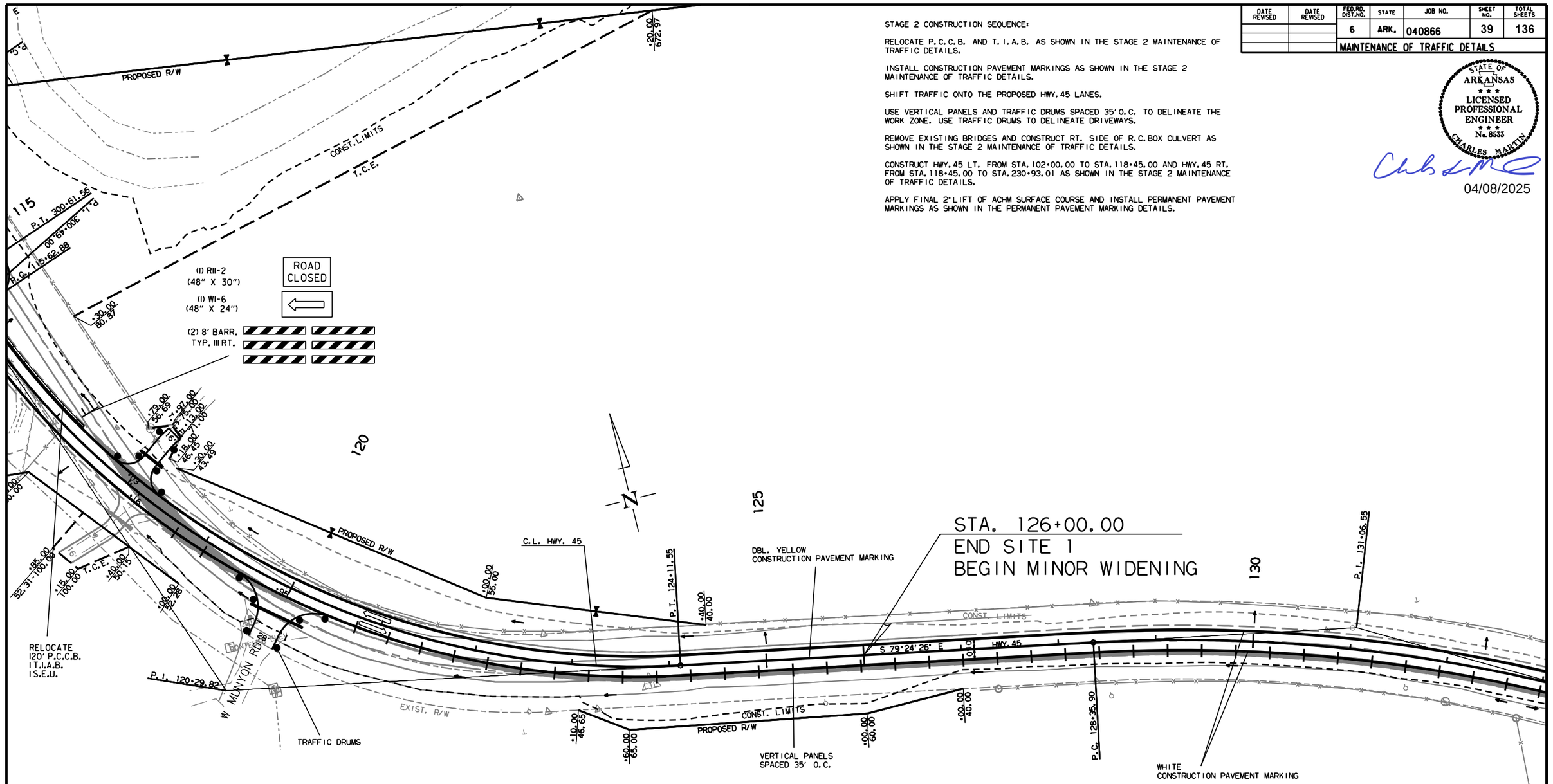
CONSTRUCT HWY. 45 LT. FROM STA. 102+00.00 TO STA. 118+45.00 AND HWY. 45 RT. FROM STA. 118+45.00 TO STA. 230+93.01 AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

APPLY FINAL 2" LIFT OF ACHM SURFACE COURSE AND INSTALL PERMANENT PAVEMENT MARKINGS AS SHOWN IN THE PERMANENT PAVEMENT MARKING DETAILS.

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	39	136
		MAINTENANCE OF TRAFFIC DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8533
CHARLES MARTIN

04/08/2025



SITE 1- STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

JY43338 11/6/2024
R040866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	40	136

MAINTENANCE OF TRAFFIC DETAILS

STAGE 2 CONSTRUCTION SEQUENCE:

RELOCATE P.C.C.B. AND T.I.A.B. AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

INSTALL CONSTRUCTION PAVEMENT MARKINGS AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

SHIFT TRAFFIC ONTO THE PROPOSED HWY. 45 LANES.

USE VERTICAL PANELS AND TRAFFIC DRUMS SPACED 35' O.C. TO DELINEATE THE WORK ZONE. USE TRAFFIC DRUMS TO DELINEATE DRIVEWAYS.

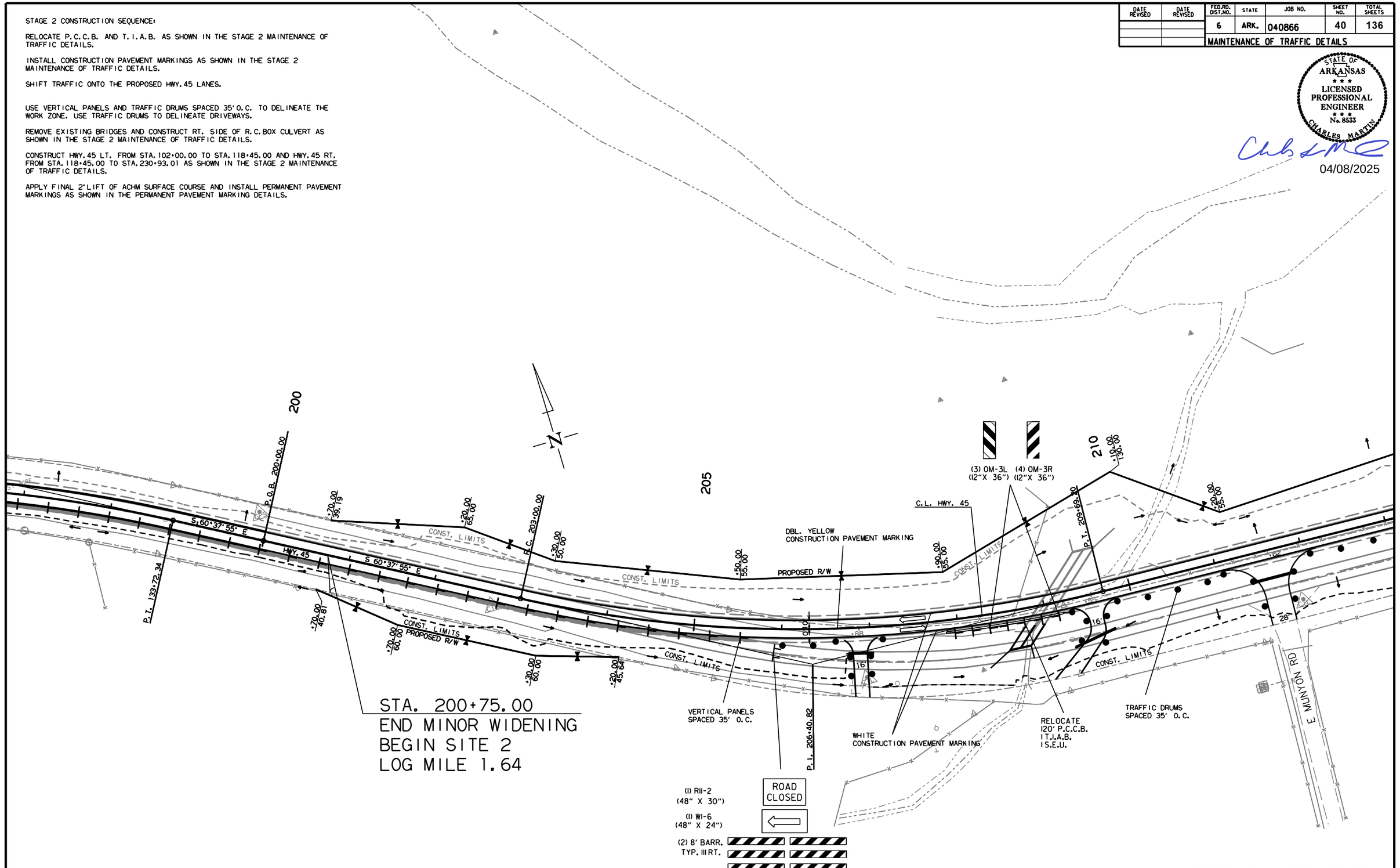
REMOVE EXISTING BRIDGES AND CONSTRUCT RT. SIDE OF R.C.BOX CULVERT AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCT HWY. 45 LT. FROM STA. 102+00.00 TO STA. 118+45.00 AND HWY. 45 RT. FROM STA. 118+45.00 TO STA. 230+93.01 AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

APPLY FINAL 2" LIFT OF ACHM SURFACE COURSE AND INSTALL PERMANENT PAVEMENT MARKINGS AS SHOWN IN THE PERMANENT PAVEMENT MARKING DETAILS.

STATE OF ARKANSAS
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STA. 200+75.00
END MINOR WIDENING
BEGIN SITE 2
LOG MILE 1.64

SITE 2 - STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

JY43338 11/6/2024
R040866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	41	136
		MAINTENANCE OF TRAFFIC DETAILS				

STAGE 2 CONSTRUCTION SEQUENCE:

RELOCATE P.C.C.B. AND T.I.A.B. AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

INSTALL CONSTRUCTION PAVEMENT MARKINGS AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

SHIFT TRAFFIC ONTO THE PROPOSED HWY. 45 LANES.

USE VERTICAL PANELS AND TRAFFIC DRUMS SPACED 35' O.C. TO DELINEATE THE WORK ZONE. USE TRAFFIC DRUMS TO DELINEATE DRIVEWAYS.

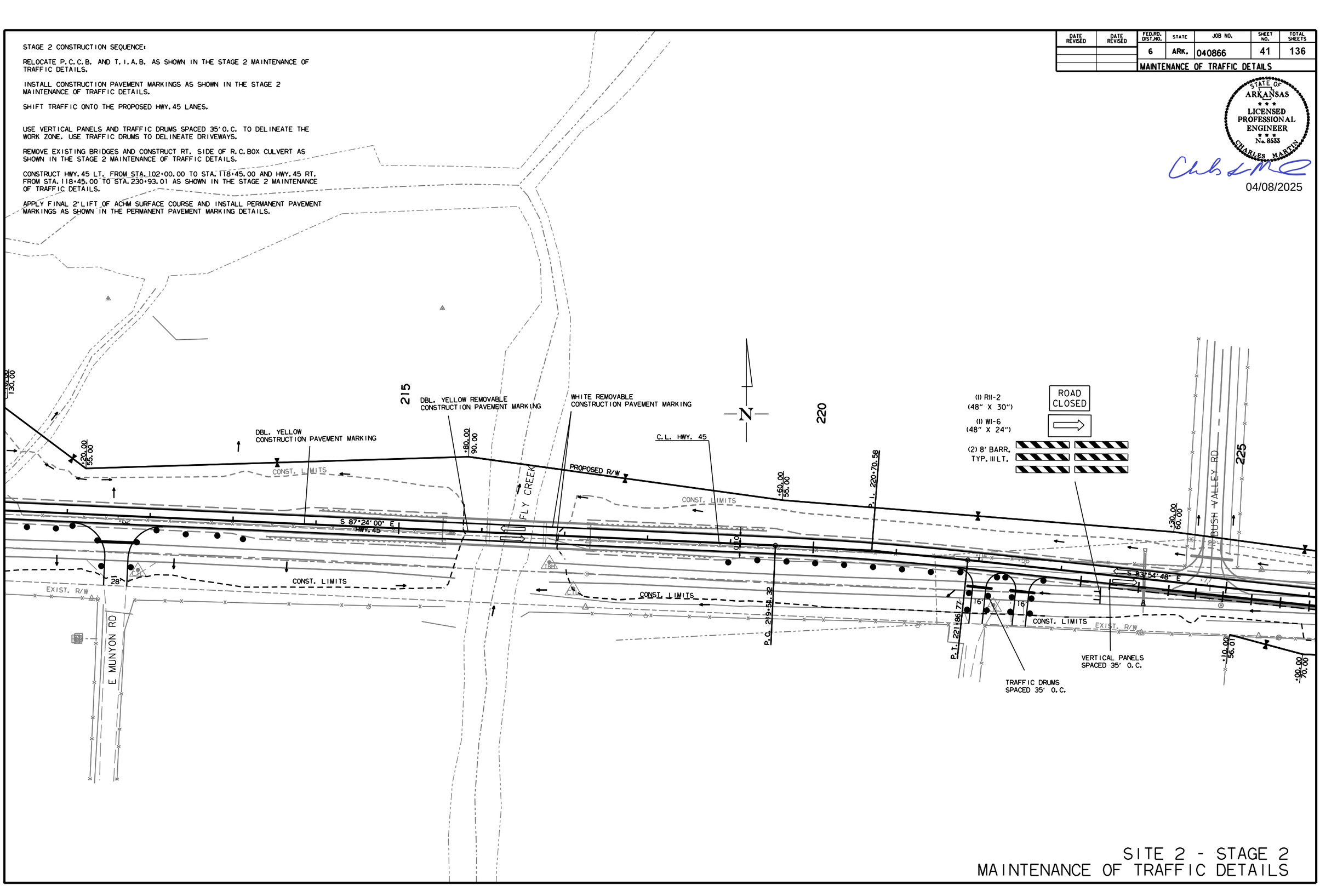
REMOVE EXISTING BRIDGES AND CONSTRUCT RT. SIDE OF R.C. BOX CULVERT AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCT HWY. 45 LT. FROM STA. 102+00.00 TO STA. 118+45.00 AND HWY. 45 RT. FROM STA. 118+45.00 TO STA. 230+93.01 AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

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STATE OF ARKANSAS
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SITE 2 - STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	42	136
		MAINTENANCE OF TRAFFIC DETAILS				

STAGE 2 CONSTRUCTION SEQUENCE:

RELOCATE P.C.C.B. AND T.I.A.B. AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

INSTALL CONSTRUCTION PAVEMENT MARKINGS AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

SHIFT TRAFFIC ONTO THE PROPOSED HWY. 45 LANES.

USE VERTICAL PANELS AND TRAFFIC DRUMS SPACED 35' O.C. TO DELINEATE THE WORK ZONE. USE TRAFFIC DRUMS TO DELINEATE DRIVEWAYS.

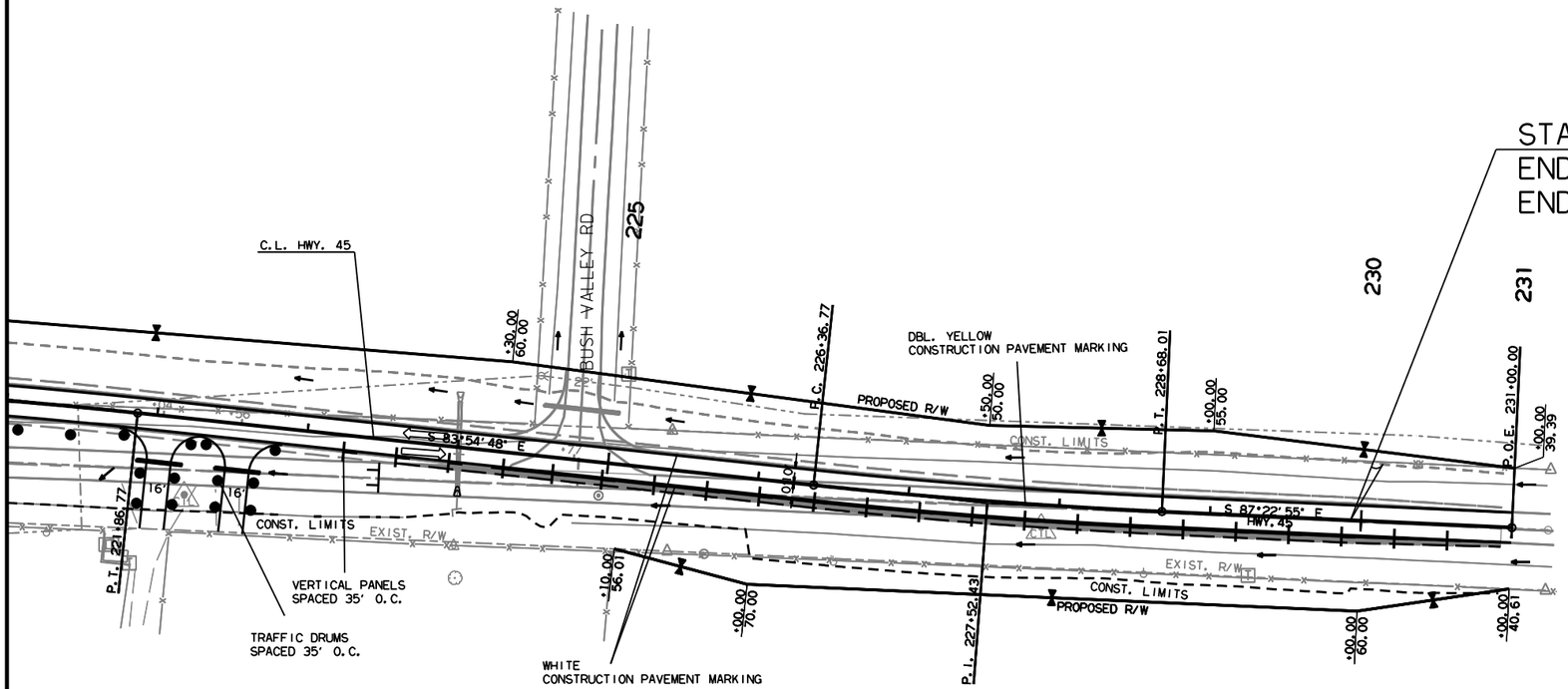
REMOVE EXISTING BRIDGES AND CONSTRUCT RT. SIDE OF R.C.BOX CULVERT AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCT HWY. 45 LT. FROM STA. 102+00.00 TO STA. 118+45.00 AND HWY. 45 RT. FROM STA. 118+45.00 TO STA. 230+93.01 AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

APPLY FINAL 2" LIFT OF ACHM SURFACE COURSE AND INSTALL PERMANENT PAVEMENT MARKINGS AS SHOWN IN THE PERMANENT PAVEMENT MARKING DETAILS.

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SITE 2 - STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

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		6	ARK.	040866	43	136

PERMANENT PAVEMENT MARKING DETAILS

SITE 1
PERMANENT PAVEMENT MARKINGS

RAISED PAVEMENT MARKERS TYPE II (YEL/YEL)(80' O.C.) = 30 EACH
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6") = 4692 LIN.FT.
REFLECTORIZED PAINT PAVEMENT YELLOW (6") = 4700 LIN.FT

MINOR WIDENING
PERMANENT PAVEMENT MARKINGS

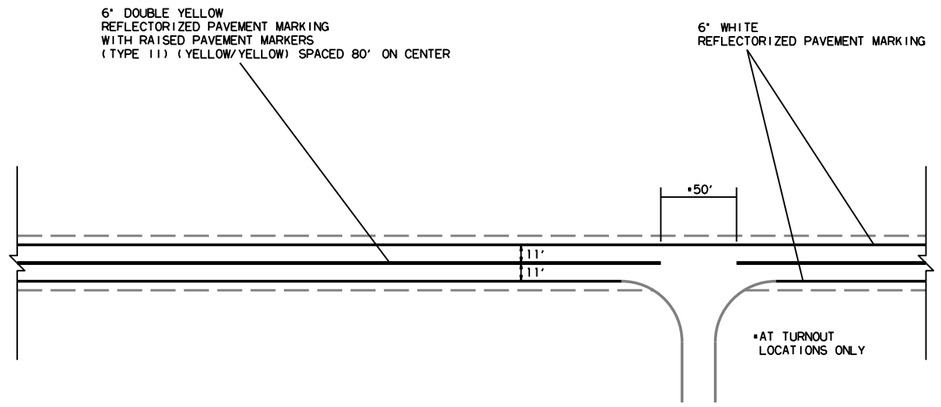
RAISED PAVEMENT MARKERS TYPE II (YEL/YEL)(80' O.C.) = 13 EACH
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6") = 2106 LIN.FT.
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6") = 2106 LIN.FT.

SITE 2
PERMANENT PAVEMENT MARKINGS

RAISED PAVEMENT MARKERS TYPE II (YEL/YEL)(80' O.C.) = 36 EACH
RELECTORIZED PAINT PAVEMENT MARKING WHITE (6") = 5626 LIN.FT.
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6") = 5636 LIN.FT.

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TYPICAL PERMANENT PAVEMENT MARKING LAYOUT
ALL SITES

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

jy43338 11/4/2024
R040866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	44	136
		QUANTITIES				

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CHARLES MARTIN

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ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		CONSTRUCTION PROJECT INFORMATION SIGN UPDATE	VERTICAL PANELS	TRAFFIC DRUMS	BARRICADES (TYPE III)		FURNISHING & INSTALLING PRECAST CONC. BARRIER	RELOCATING PRECAST CONCRETE BARRIER	TEMPORARY IMPACT ATTENUATION BARRIER	TEMP. IMPACT ATTEN.BARR. (REPAIR)	TEMP. IMPACT ATTEN. BARR. (RELOCATION)
											RIGHT	LEFT					
			LIN. FT. - EACH			NO.	SQ. FT.		EACH				LIN. FT.			EACH	
W20-1	ROAD WORK 1500 FT.	48"x48"	2	2	2	2	32.0										
W20-1	ROAD WORK 1000 FT.	48"x48"	2	2	2	2	32.0										
W20-1	ROAD WORK 500 FT.	48"x48"	2	2	2	2	32.0										
W20-1	ROAD WORK AHEAD	48"x48"	3	3	3	3	48.0										
G20-2	END ROAD WORK	48"x24"	5	5	5	5	40.0										
R11-2	ROAD CLOSED	48"x30"	4	6	6	6	60.0										
OM-3L	OBJECT MARKER	12"x36"		3	3	3	9.0										
OM-3R	OBJECT MARKER	12"x36"		4	4	4	12.0										
W1-6	LARGE ARROW	48"x24"		4	4	4	32.0										
R4-1	DO NOT PASS	24"x30"	2	2	2	2	10.0										
W21-5a	RIGHT SHOULDER CLOSED	36"x36"	2	2	2	2	18.0										
W8-1	BUMP	30"x30"	4	4	4	4	25.0										
	VERTICAL PANELS		108	99	108				108								
	TRAFFIC DRUMS		52	70	70					70							
SPECIAL	CONSTRUCTION PROJECT INFORMATION SIGN	48"X96"	2	2	2	2	64.0										
	CONSTRUCTION PROJECT INFORMATION SIGN UPDATE							2									
	TYPE III BARRICADE-RT. (8')		4	6	6						48						
	TYPE III BARRICADE-LT. (8')		4	6	6							48					
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER		872	472	872								872				
	RELOCATING PRECAST CONCRETE BARRIER			472	472									472			
	TEMPORARY IMPACT ATTENUATION BARRIER		2		2										2		
	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)		2	4	4											4	
	TEMPORARY IMPACT ATTENUATION BARRIER (RELOCATION)			4	4												4
TOTALS:							**414.0**	**2**	**108**	**70**	**48**	**48**	**872**	**472**	**2**	**4**	**4**

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

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 2	END OF JOB	REMOVAL OF PERMANENT PAVEMENT MARKINGS	CONSTRUCTION PAVEMENT MARKINGS	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS	REFLECTORIZED PAINT PAVEMENT MARKING	
						TYPE II	6"	
						(YELLOW/YELLOW)	WHITE	YELLOW
	LIN. FT. - EACH		LIN. FT.		LIN. FT.	EACH	LIN. FT.	
REMOVAL OF PERMANENT PAVEMENT MARKINGS	2950		2950					
CONSTRUCTION PAVEMENT MARKINGS	23787			23787				
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	1725				1725			
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW)		79				79		
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")		12424					12424	
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")		12442						12442
TOTALS:			**2950**	**23787**	**1725**	**79**	**12424**	**12442**

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

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

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	45	136
		QUANTITIES				

STATE OF ARKANSAS
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CHARLES MARTIN

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EROSION CONTROL MATTING

STATION	STATION	LOCATION	LENGTH	CLASS 3
			LIN. FT.	SQ. YD.
106+20.00	108+25.16	HWY. 45 LT.	205.16	182.36
109+38.37	110+60.00	HWY. 45 LT.	121.63	108.12
122+00.00	124+13.74	HWY. 45 LT.	213.74	189.99
201+75.00	206+00.00	HWY. 45 LT.	425.00	377.78
221+00.00	221+89.28	HWY. 45 RT.	89.28	79.36
222+71.17	223+33.82	HWY. 45 RT.	62.65	55.69
224+00.00	224+53.82	HWY. 45 LT.	53.82	47.84
225+03.82	227+00.00	HWY. 45 LT.	196.18	174.38
225+00.00	228+80.00	HWY. 45 RT.	380.00	337.78
TOTAL:				1553.30

NOTE: AVERAGE WIDTH = 8'-0"

REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	GUARDRAIL
			LIN. FT.
110+52	110+80	HWY. 45 LT.	28
110+52	110+80	HWY. 45 RT.	28
112+78	113+07	HWY. 45 LT.	28
112+78	113+07	HWY. 45 RT.	28
215+42	215+70	HWY. 45 LT.	28
215+42	215+70	HWY. 45 RT.	28
216+85	217+13	HWY. 45 LT.	28
216+85	217+13	HWY. 45 RT.	28
TOTAL:			224

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

CONCRETE DITCH PAVING

STATION	STATION	LOCATION	LENGTH	"W"	CONC. DITCH PAVING (TYPE B)	SOLID SODDING	WATER
			LIN. FT.	FEET	SQ. YD.	SQ. YD.	M. GAL.
118+32.00	119+71.00	HWY. 45 RT.	139.00	6.32	97.61	61.78	0.78
119+00.00	122+00.00	HWY. 45 LT.	300.00	6.32	210.67	133.33	1.68
120+27.00	123+00.00	HWY. 45 RT.	273.00	6.32	191.71	121.33	1.53
207+00.00	208+20.00	HWY. 45 RT.	120.00	6.32	84.27	53.33	0.67
208+00.00	209+50.00	HWY. 45 LT.	150.00	6.32	105.33	66.67	0.84
208+90.00	209+25.00	HWY. 45 RT.	35.00	6.32	24.58	15.56	0.20
209+73.00	210+00.00	HWY. 45 RT.	27.00	6.32	18.96	12.00	0.15
224+00.00	225+00.00	HWY. 45 RT.	100.00	6.32	70.22	44.44	0.56
228+80.00	229+93.01	HWY. 45 RT.	113.01	6.32	79.36	50.23	0.63
229+00.00	230+93.01	HWY. 45 LT.	193.01	6.32	135.54	85.78	1.08
TOTALS:					1018.25	644.45	8.12

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

REMOVAL AND DISPOSAL OF FENCE

STATION	STATION	LOCATION	FENCE	GATES
			LIN. FT.	EACH
8+82	14+75	BARON FORK RT.	607	
102+05	106+76	HWY. 45 LT.	483	
110+18	110+80	HWY. 45 RT.	132	
112+21	114+33	HWY. 45 RT.	217	
112+77	117+17	HWY. 45 LT. & RT.	513	
112+81	113+50	HWY. 45 LT.	80	
118+35	124+40	HWY. 45 LT.	590	
200+70	209+27	HWY. 45 LT.	916	
200+70	204+20	HWY. 45 RT.	350	
210+28	215+67	HWY. 45 LT. & RT.	551	1
217+18	224+47	HWY. 45 LT. & RT.	770	
225+09	231+00	HWY. 45 LT.	621	
225+10	231+00	HWY. 45 RT.	590	
TOTAL:			6420	1

REMOVAL AND DISPOSAL OF CULVERTS

STATION	DESCRIPTION	PIPE CULVERTS	BOX CULVERTS
		EACH	EACH
107+15	15" X 20' C.M. SIDE DRAIN	1	
108+50	15" X 24' C.M. SIDE DRAIN	1	
118+03	24" X 30' C.M. SIDE DRAIN	1	
118+16	24" X 24' C.M. SIDE DRAIN	1	
119+95	24" X 46' PLASTIC SIDE DRAIN	1	
206+88	12" X 18' C.M. SIDE DRAIN	1	
209+24	6' X 6' X 51' R.C. BOX CULVERT		1
222+04	18" X 30' C.M. SIDE DRAIN	1	
222+56	18" X 20' C.M. SIDE DRAIN	1	
224+00	24" X 15' R.C. CROSS DRAIN	1	
224+77	18" X 40' C.M. SIDE DRAIN	1	
TOTALS:		10	1

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

SOIL STABILIZATION

STATION	STATION	LOCATION / DESCRIPTION	SOIL STABILIZATION
			TON
ENTIRE	PROJECT	TO BE USED IF AND WHERE	100
		DIRECTED BY THE ENGINEER	
TOTAL:			100

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

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
102+00	106+80	HWY. 45	5	5
110+00	117+00	HWY. 45	7	7
208+00	210+00	HWY. 45	2	2
215+00	218+00	HWY. 45	3	3
TOTALS:			17	17

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT
			CU. YD.	
ENTIRE	PROJECT	STAGE 1-MAIN LANES	11431	32198
ENTIRE	PROJECT	STAGE 2-MAIN LANES	11677	3122
ENTIRE	PROJECT	APPROACHES	240	1290
0+00.00	14+44.28	BARON FORK CHANNEL CHANGE	11828	44869
209+06.00	209+06.00	CHANNEL CHANGE DOUBLE 8' X 6' X 137' R.C. BOX CULVERT	580	
TOTALS:			35756	81479

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL					TEMPORARY EROSION CONTROL						
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	TEMPORARY SEEDING	MULCH COVER	WATER	18" FILTER SOCK (E-3)	ROCK DITCH CHECKS (E-6)	SILT FENCE (E-11)	*SEDIMENT REMOVAL & DISPOSAL
			ACRE	TON	ACRE	M.GAL.	ACRE	ACRE	ACRE	M.GAL.	LIN. FT.	CU.YD.	LIN. FT.	CU. YD.
ENTIRE	PROJECT	CLEARING AND GRUBBING						25.33	25.33	516.7		351	6659	364
ENTIRE	PROJECT	STAGE 1						6.32	6.32	128.9		144		48
ENTIRE	PROJECT	STAGE 2	15.67	31.34	15.67	1598.3	15.67	19.01	19.01	387.8		126	1565	100
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			3.92	7.84	3.92	399.8	3.92	12.67	12.67	258.5	500	156	2056	128
TOTALS:			19.59	39.18	19.59	1998.1	19.59	63.33	63.33	1291.9	500	777	10280	640

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 ELIMINATION SYSTEM PERMIT.

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

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QUANTITIES

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	46	136
		QUANTITIES				

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CHARLES MARTIN

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BENCH MARKS

STATION	LOCATION	BENCH MARKS
		EACH
110+28	HWY. 45 - BRIDGE END	1
209+24	HWY. 45 - R.C. BOX HEADWALL	1
215+58	HWY. 45 - BRIDGE END	1
TOTAL:		3

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

4" PIPE UNDERDRAIN

STATION	STATION	LOCATIONS	4" PIPE UNDERDRAINS	UNDERDRAIN OUTLET PROTECTORS
			LIN. FT.	EACH
* ENTIRE PROJECT TO BE USED IF AND			3000	12
WHERE DIRECTED BY THE ENGINEER				
TOTALS:			3000	12

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

GUARDRAIL

STATION	STATION	LOCATION	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)
			LIN. FT.	EACH	
108+80.31	110+24.06	LT. SIDE	75	1	1
107+94.39	110+13.14	RT. SIDE	150	1	1
113+05.16	115+23.91	LT. SIDE	150	1	1
112+94.24	114+37.99	RT. SIDE	75	1	1
214+54.35	215+48.10	LT. SIDE	75	1	1
213+29.35	215+48.10	RT. SIDE	150	1	1
217+35.90	219+54.65	LT. SIDE	150	1	1
217+35.90	218+29.65	RT. SIDE	75	1	1
TOTALS:			900	8	8

SELECTED PIPE BEDDING

LOCATION	SELECTED PIPE BEDDING
	CU.YD.
ENTIRE PROJECT TO BE USED IF	
AND WHERE DIRECTED BY THE	40
ENGINEER	
TOTAL:	40

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

APPROACH GUTTERS AND SLABS

STATION	STATION	LOCATION	APPROACH GUTTER (TYPE F)	APPROACH SLABS	REINFORCING STEEL-RDWY. (GR. 60)	AGGREGATE BASE CRS. (CLASS 7)
			CU.YD.	CU.YD.	POUND	TON
109+86.04	110+22.54	RT. SIDE	4.03		104.5	2.72
109+91.50	110+28.00	HWY. 45		59.48	6306.0	29.32
109+96.96	110+33.46	LT. SIDE	4.03		104.5	2.72
112+84.84	113+21.34	RT. SIDE	4.03		104.5	2.72
112+90.30	113+26.80	HWY. 45		59.48	6306.0	29.32
112+95.76	113+32.26	LT. SIDE	4.03		104.5	2.72
215+21.00	215+57.50	LT. SIDE	4.20		105.0	2.72
215+21.00	215+57.50	HWY. 45		55.89	6213.0	29.32
215+21.00	215+57.50	RT. SIDE	4.20		105.0	2.72
217+26.50	217+63.00	LT. SIDE	4.20		105.0	2.72
217+26.50	217+63.00	HWY. 45		55.89	6213.0	29.32
217+26.50	217+63.00	RT. SIDE	4.20		105.0	2.72
TOTALS:			32.92	230.74	25876.0	139.04

NOTE: USE T =13" FOR 4' SHOULDER.

FENCING

STATION	STATION	LOCATION	WIRE FENCE (TYPE D-2)	* 16'-0" GATES
			LIN. FT.	EACH
1+27	14+75	BARON FORK RT.	1348	1
1+74	14+75	BARON FORK RT.	1302	1
14+75	14+75	BARON FORK RT.	93	
102+05	106+76	HWY. 45 LT.	500	
112+20	117+17	HWY. 45 RT.	731	
112+44	113+50	HWY. 45 LT.	106	1
112+84	113+91	HWY. 45 LT.	106	1
118+35	124+40	HWY. 45 LT.	563	
200+70	209+27	HWY. 45 LT.	920	
200+70	204+20	HWY. 45 RT.	358	
210+82	215+57	HWY. 45 LT.	470	1
217+18	224+47	HWY. 45 LT.	730	
225+10	231+00	HWY. 45 LT.	589	
225+10	231+00	HWY. 45 RT.	597	
TOTALS:			8413	5

* DENOTES ALTERNATE BID ITEM.

ACHM PATCHING OF EXISTING ROADWAY

DESCRIPTION	TON
ENTIRE PROJECT - TO BE USED IF AND WHERE	30
DIRECTED BY THE ENGINEER	
TOTAL:	30

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

STRUCTURES

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT (CLASS V)	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.
		24"	24"									
		LIN. FT.	EACH	LIN. FT.			CU.YD.	POUND	CU.YD.	SQ.YD.	M.GAL.	
209+06	DBL. 8' X 6' 137' R.C. BOX CULVERT			8	6	134	218.44	32511	96	34	0.43	PBC-1, RCB-1, RCB-2, SPECIAL DETAILS
224+00	EXTEND 24" PIPE CULVERT 34' LT.	34	2							16	0.20	FES-1, FES-2, PCC-1
TOTALS:		34	2				218.44	32511	96	50	0.63	

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.

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	47	136
		QUANTITIES				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8533
CHARLES MARTIN

04/08/2025

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		STANDARD DRAWINGS
							18"	24"	
			FEET	SQ. YD.	TON	TON	LIN. FT.		
107+15	RT.	HWY. 45	16	37.01	4.07	51.33	40		PCC-1, PCM-1, PCP-1, PCP-2, PCP-3, DR-2
108+05	LT.	HWY. 45	16	37.01	4.07	190.71	120		PCC-1, PCM-1, PCP-1, PCP-2, PCP-3, DR-2
115+50	LT.	HWY. 45	30	40.27	4.43	309.52			
118+03	LT.	HWY. 45	16	37.01	4.07	51.88		28	PCC-1, PCM-1, PCP-1, PCP-2, PCP-3, DR-2
118+16	RT.	HWY. 45	16	37.01	4.07	82.70		38	PCC-1, PCM-1, PCP-1, PCP-2, PCP-3, DR-2
119+95	RT.	HWY. 45 - W MUNYON RD.	28	211.47	23.26	86.35		64	PCC-1, PCM-1, PCP-1, PCP-2, PCP-3, DR-2
206+88	RT.	HWY. 45	16	37.01	4.07	60.90	28		PCC-1, PCM-1, PCP-1, PCP-2, PCP-3, DR-2
209+55	RT.	HWY. 45	16	37.01	4.07	131.36	50		PCC-1, PCM-1, PCP-1, PCP-2, PCP-3, DR-2
211+62	RT.	HWY. 45 - E MUNYON RD.	28	267.85	29.46	109.37	50		PCC-1, PCM-1, PCP-1, PCP-2, PCP-3, DR-2
222+04	RT.	HWY. 45	16	37.01	4.07	56.89	30		PCC-1, PCM-1, PCP-1, PCP-2, PCP-3, DR-2
222+56	RT.	HWY. 45	16	37.01	4.07	53.86	30		PCC-1, PCM-1, PCP-1, PCP-2, PCP-3, DR-2
224+77	LT.	HWY. 45 - BUSH VALLEY RD.	22	158.18	17.40	64.59	50		PCC-1, PCM-1, PCP-1, PCP-2, PCP-3, DR-2
* ENTIRE PROJECT TEMPORARY DRIVES						120.00			
TOTALS:				**936.84**	**103.04**	**1318.13**	**358**	**130**	

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.3% MIN. AGGR.....5.7% ASPHALT BINDER

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

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

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
102+00.00	103+00.00	MAIN LANES	20.00	222.22
229+93.01	230+93.01	MAIN LANES	20.00	222.22
TOTAL:				**444.44**

NOTE: COORDINATE COLD MILLING STOCKPILE LOCATIONS WITH DISTRICT ENGINEER.
STOCKPILE 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	30	60
DIRECTED BY THE ENGINEER		
TOTALS:	**30**	**60**

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

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

FLOWABLE SELECT MATERIAL

STATION	LOCATION	CU. YD.
209+06.00	HWY.45	25.00
TOTAL:		**25.00**

WOVEN GEOTEXTILE FOR TEMPORARY SLOPES

STATION	STATION	LOCATION	AVG. WIDTH	GEOTEXTILE FABRIC (Type Special)
			FEET	SQ. YD.
107+00.00	108+00.00	MAIN LANES	20.00	222.22
108+00.00	109+00.00	MAIN LANES	60.00	444.44
109+00.00	110+00.00	MAIN LANES	60.00	666.67
110+00.00	110+28.00	MAIN LANES	80.00	217.78
112+90.30	113+00.00	MAIN LANES	100.00	107.78
113+00.00	114+00.00	MAIN LANES	80.00	1000.00
114+00.00	115+00.00	MAIN LANES	60.00	777.78
115+00.00	116+00.00	MAIN LANES	60.00	666.67
116+00.00	117+00.00	MAIN LANES	40.00	555.56
TOTAL:				**4658.90**

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	48	136
		QUANTITIES				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8533
CHARLES MARTIN

04/08/2025

BASE AND SURFACING

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT							ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")								
						(0.05 GAL. PER SQ. YD.)			(0.17 GAL. PER SQ. YD.)			TOTAL GALLONS													
				TON / STATION	TON	TOTAL WID.	SQ.YD.	GALLON	TOTAL WID.	SQ.YD.	GALLON		AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	TOTAL PG 64-22
			FEET			FEET			FEET				FEET			TON	FEET			TON	FEET			TON	TON
MAIN LANES																									
102+00.00	103+00.00	HWY. 45 - MAIN LANE TRANSITION	100.00	106.25	106.25	6.36	70.67	3.53	20.00	222.22	37.78	41.31	3.23	35.89	330.00	5.92	3.13	34.78	220.00	3.83	23.00	255.56	220.00	28.11	31.94
103+00.00	107+00.00	HWY. 45 - NOTCH, WIDEN, & OVERLAY	400.00	108.00	432.00	12.71	564.89	28.24				28.24	6.46	287.11	330.00	47.37	6.25	277.78	220.00	30.56	26.00	1155.56	220.00	127.11	157.67
107+00.00	109+93.00	HWY. 45 - FULL DEPTH	293.00	197.50	578.68	44.71	1455.56	72.78				72.78	22.46	731.20	330.00	120.65	22.25	724.36	220.00	79.68	26.00	846.44	220.00	93.11	172.79
113+25.31	117+55.00	HWY. 45 - FULL DEPTH	429.69	197.50	848.64	44.71	2134.60	106.73				106.73	22.46	1072.32	330.00	176.93	22.25	213.85	220.00	23.52	26.00	1241.33	220.00	136.55	160.07
117+55.00	119+90.00	HWY. 45 - FULL DEPTH	235.00	112.00	244.30	12.71	331.87	16.59				16.59	22.46	322.00	330.00	53.13	22.25	322.00	220.00	35.42	26.00	678.89	220.00	74.68	110.10
119+90.00	121+72.96	HWY. 45 - FULL DEPTH	182.96	197.50	361.35	44.71	908.90	45.45				45.45	22.46	456.59	330.00	75.34	22.25	452.32	220.00	49.76	26.00	528.55	220.00	58.14	107.90
121+72.96	125+99.05	HWY. 45 - NOTCH, WIDEN, & OVERLAY	426.09	108.00	460.18	12.71	601.73	30.09				30.09	6.46	305.84	330.00	50.46	6.25	304.00	220.00	33.44	26.00	1230.93	220.00	135.40	168.84
125+99.05	134+77.82	HWY. 45 - MINOR WIDENING	878.77	88.50	777.71	12.71	1241.02	62.05				62.05	6.46	630.75	330.00	104.08	6.25	610.26	220.00	67.13	26.00	2538.67	220.00	279.25	346.38
200+00.00	201+75.00	HWY. 45 - MINOR WIDENING	175.00	88.50	154.88	12.71	247.14	12.36				12.36	6.46	125.61	330.00	20.73	6.25	121.53	220.00	13.37	26.00	505.56	220.00	55.61	68.98
201+75.00	205+45.00	HWY. 45 - NOTCH, WIDEN, & OVERLAY	370.00	108.00	399.60	12.71	522.52	26.13				26.13	6.46	265.58	330.00	43.82	6.25	256.94	220.00	28.26	26.00	1068.89	220.00	117.58	145.84
205+45.00	215+22.50	HWY. 45 - FULL DEPTH	977.50	197.50	1393.21	44.71	4856.00	242.80				242.80	22.46	2439.41	330.00	402.50	22.25	2416.60	220.00	265.83	26.00	2823.89	220.00	310.63	576.46
217+26.50	224+30.00	HWY. 45 - FULL DEPTH	703.50	197.50	1389.41	44.71	3494.83	174.74				174.74	22.46	1755.62	330.00	289.68	22.25	1739.21	220.00	191.31	26.00	2032.33	220.00	223.56	414.87
224+30.00	229+93.01	HWY. 45 - NOTCH, WIDEN, & OVERLAY	563.01	108.00	825.00	12.71	968.33	48.42				48.42	6.46	404.12	330.00	66.68	VAR.	564.21	220.00	62.06	26.00	1626.47	220.00	178.91	240.97
229+93.01	230+93.01	HWY. 45 - MAIN LANE TRANSITION	100.00	106.25	106.25	6.36	70.67	3.53	20.00	222.22	37.78	41.31	3.23	35.89	330.00	5.92	3.08	34.22	220.00	3.76	23.00	255.56	220.00	28.11	31.87
ADDITIONAL FOR LEVELING & GRADE RAISE																									
102+00.00	107+00.00	LEVELING	500.00			40.00	2222.22	111.11	20.00	1111.11	188.89	300.00					20.00	1111.11	VAR.	316.80					316.80
107+00.00	108+80.00	LEVELING (TRANSITION)	180.00			40.00	800.00	40.00	20.00	400.00	68.00	108.00					20.00	400.00	VAR.	198.00					198.00
117+55.00	119+90.00	GRADE RAISE	235.00						VAR.	84.75	14.41	14.41	VAR.	84.75	VAR.	167.80									
121+72.96	126+00.00	LEVELING	427.04			40.00	1897.96	94.90	20.00	948.98	161.33	256.23					20.00	948.98	VAR.	257.40					257.40
126+00.00	134+77.82	LEVELING	877.82			20.00	1950.71	97.54	20.00	1950.71	331.62	429.16					20.00	1950.71	VAR.	53.64					53.64
200+00.00	200+75.00	LEVELING	75.00			20.00	166.67	8.33	20.00	166.67	28.33	36.66					20.00	166.67	VAR.	4.58					4.58
200+75.00	205+45.00	LEVELING	470.00			40.00	2088.89	104.44	20.00	1044.44	177.55	281.99					20.00	1044.44	VAR.	267.30					267.30
224+30.00	230+93.01	LEVELING	663.01			20.00	1473.36	73.67	20.00	1473.36	250.47	324.14					20.00	1473.36	VAR.	112.86					112.86
ADDITIONAL FOR SUPERELEVATION																									
103+12.50	105+62.50	SUPERELEVATION TRANSITION	250.00	47.88	119.70																				
105+62.50	109+46.96	MAX SUPERELEVATION	384.46	95.75	368.12																				
109+46.96	109+93.00	SUPERELEVATION TRANSITION	46.04	78.92	36.33																				
113+75.38	116+25.38	SUPERELEVATION TRANSITION	250.00	47.88	119.70																				
116+25.38	123+49.05	MAX SUPERELEVATION	723.67	95.75	692.91																				
123+49.05	125+99.05	SUPERELEVATION TRANSITION	250.00	47.88	119.70																				
200+75.00	203+75.00	SUPERELEVATION TRANSITION	300.00	45.82	137.46																				
203+75.00	208+94.20	MAX SUPERELEVATION	519.20	91.63	475.74																				
208+94.20	211+94.20	SUPERELEVATION TRANSITION	300.00	45.82	137.46																				
217+29.32	220+29.32	SUPERELEVATION TRANSITION	300.00	36.94	110.82																				
220+29.32	221+11.77	MAX SUPERELEVATION	82.45	73.88	60.91																				
221+11.77	224+11.77	SUPERELEVATION TRANSITION	300.00	36.94	110.82																				
224+11.77	227+11.77	SUPERELEVATION TRANSITION	300.00	36.94	110.82																				
227+11.77	227+93.01	MAX SUPERELEVATION	81.24	73.88	60.02																				
227+93.01	230+93.01	SUPERELEVATION TRANSITION	300.00	36.94	110.82																				
ADDITIONAL FOR GUARDRAIL WIDENING																									
107+63.50	107+96.50	HWY. 45 - WIDENING TAPER RT.	33.00	12.63	4.17																3.75	13.75	220.00	1.51	1.51
107+96.50	110+20.50	HWY. 45 - WIDENING RT.	224.00	25.25	56.56																7.50	186.67	220.00	20.53	20.53
108+36.73	108+69.73	HWY. 45 - WIDENING TAPER LT.	33.00	12.63	4.17																3.75	13.75	220.00	1.51	1.51
108+69.73	110+35.48	HWY. 45 - WIDENING LT.	165.75	25.25	41.85																7.50	138.13	220.00	15.19	15.19
112+82.85	114+48.60	HWY. 45 - WIDENING RT.	165.75	25.25	41.85																7.50	138.13	220.00	15.19	15.19
114+48.60	114+81.60	HWY. 45 - WIDENING TAPER RT.	33.00	12.63	4.17																3.75	13.75	220.00	1.51	1.51
112+97.77	115+22.02	HWY. 45 - WIDENING LT.	224.25	25.25	56.62																7.50	186.88	220.00	20.56	20.56
115+22.02	115+55.02	HWY. 45 - WIDENING TAPER LT.	33.00	12.63	4.17																3.75	13.75	220.00	1.51	1.51
212+98.25	213+31.25	HWY. 45 - WIDENING TAPER RT.	33.00	12.63	4.17																3.75	13.75	220.00	1.51	1.51
213+31.25	215+57.50	HWY. 45 - WIDENING RT.	226.25	25.25	57.13																7.50	188.54	220.00	20.74	20.74
213+60.75	213+93.75	HWY. 45 - WIDENING TAPER LT.	33.00	12.63	4.17																3.75	13.75	220.00	1.51	1.51
213+93.75	215+57.50	HWY. 45 - WIDENING LT.	163.75	25.25	41.35																7.50	136.46	220.00	15.01	15.01
217+26.50	218+90.25	HWY. 45 - WIDENING RT.	163.75	25.25	41.35																7.50	136.46	220.00	15.01	15.01
218+90.25	219+23.25	HWY. 45 - WIDENING TAPER RT.	33.00	12.63	4.17																3.75	13.75	220.00	1.51	1.51
217+26.50	219+53.25	HWY. 45 - WIDENING LT.	226.75	25.25	57.25																7.50	188.96	220.00	20.79	20.79
219+53.25	219+86.25	HWY. 45 - WIDENING TAPER LT.	33.00	12.63	4.17																3.75	13.75	220.00	1.51	1.51
TOTALS:					**11276.11**		**28068.54**	**1403.43**		**7624.46**	**1296.16**	**2699.59**		**8952.69**		**1631.01**		**15167.33**		**2098.51**		**18198.86**		**2001.85**	**4100.36**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.3% MIN. AGGR.....5.7% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.6% MIN. AGGR.....4.4% ASPHALT BINDER
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

JY43338 10/7/2024
R040866.DGN

QUANTITIES

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	49	136
		07686 & 07687- QUANTITIES - 68235				

TYPE F APROACH SLAB AND APPROACH GUTTER QUANTITIES - PER BRIDGE END

(For information only)

BRIDGE NO.	APPROACH SLAB		APPROACH GUTTER	
	Reinforcing Steel (lbs.)	Concrete (cu. yds.)	Reinforcing Steel (lbs.)	Concrete (cu. yds.)
07686	6,306	59.48	209	8.06
07687	6,213	55.89	210	8.40

SCHEDULE OF BRIDGE QUANTITIES - JOB NO. 040866

BRIDGE NO.	NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NO.	205	801	SP, SS, & 802	SP, SS, & 802	SP & 803	SP, SS, & 804	SS & 804	SS & 805	SS & 805	SP, SS & 807	SS & 807	SS & 808	SS & 809	812	SS & 816	SP & 816
			ITEM	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO.)	UNCLASSIFIED EXCAVATION FOR STRUCTURES - BRIDGE	CLASS S CONCRETE - BRIDGE	CLASS S(AE) CONCRETE - BRIDGE	CLASS 2 PROTECTIVE SURFACE TREATMENT	REINFORCING STEEL - BRIDGE (GRADE 60)	EPOXY COATED REINFORCING STEEL (GRADE 60)	② STEEL PILING (HP 14X73)	PREBORING	STRUCTURAL STEEL IN BEAM SPANS (A709, GR. 50W)	③ PAINTING STRUCTURAL STEEL	ELASTOMERIC BEARINGS	SILICONE JOINT SEALANT	BRIDGE NAME PLATE (TYPE D)	FILTER BLANKET	FOUNDATION PROTECTION RIPRAP
			UNIT	LUMP SUM	CU. YD.	CU. YD.	CU. YD.	SQ. YD.	LB.	LB.	LIN. FT.	LIN. FT.	LB.	TON	CU. IN.	LIN. FT.	EACH	SQ. YD.	TON
07686	HIGHWAY 45 OVER BARON FORK	BENT 1			8	39.09		9.1	5,704	445	125	120	626		2,772.0	35		146	587
		BENT 2			166	58.67			10,379						1,524.3				302
		BENT 3			117	58.56			10,342						1,524.3				193
		BENT 4			116	58.41			10,342						1,524.3				191
		BENT 5				39.03		9.1	5,699	445	125	120	626		2,772.0	35		403	1,277
		260'-0" CONTINUOUS W-BEAM UNIT					268.20	1,080.8		75,954			216,381	29.8			1		
		SITE NO. 1 (EXISTING BR. NO. 03096)		1															
		TOTAL FOR BRIDGE NO. 07686			407	253.76	268.20	1,099.0	42,466	76,844	250	240	217,633	29.8	10,116.9	70	1	549	2,550
07687	HIGHWAY 45 OVER FLY CREEK	BENT 1				12.42		8.3	1,195	381	88	82						246	837
		BENT 2			104	55.67			9,701						1,321.3				153
		BENT 3			165	55.67			9,701						1,321.3				292
		BENT 4				12.42		8.3	1,195	381	88	82						244	840
		168'-0" CONT. INTEGRAL W-BEAM UNIT					207.10	698.4		53,218			112,555	14.5			1		
		SITE NO. 2 (EXISTING BR. NO. 03097)		1															
		TOTAL FOR BRIDGE NO. 07687			269	136.18	207.10	715.0	21,792	53,980	176	164	112,555	14.5	2,642.6		1	490	2,122
		TOTALS FOR JOB NO. 040866			① 676	389.94	475.30	1,814.0	64,258	130,824	426	404	330,188	44.3	12,759.5	70	2	1,039	4,672

①Includes approx. 160 cubic yards of rock excavation.

THOMAS GERARD
DESIGN SECTION SUPERVISOR

② All steel piling shall be Grade 50 and shall have approved driving points, which will not be paid for directly, but will be considered subsidiary to the item "Steel Piling (HP 14x73)". All piles shall conform to Standard Drawing No. 55020.

③ The following weathering steel surfaces shall be painted as specified in Subsection 807.75:

Bridge 07687: All steel surfaces within five feet of beam ends, including the section encased in concrete.

Bridge 07686: All steel surfaces within five feet of bridge deck expansion joints, including diaphragms, cross frames, connection bolts, and bearings.

Bridges 07686 & 07687: All steel surfaces exposed to the outside face of the bridge, including outside faces and bottom of exterior beams or girders, splice plates and bolts, stiffeners, drip plates, and bearings.

Galvanized members, the expansion device, and surfaces in contact with concrete, with the exception of the concrete diaphragm, shall not be painted. The color of paint shall be Brown equal or close to Federal Std. 595B, Color Chip No. 30070 and as approved by the Engineer. The finish system may be applied in the shop. Any damage to the paint system occurring during transport or installation shall be corrected according to the manufacturer's recommendations at no cost to the Department.

Charles R. Ellis
Digitally signed by Charles R. Ellis
Date: 2025.03.11 15:56:25 -05'00'

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
3/11/25
CHARLES R. ELLIS

BRIDGE ENGINEER

SCHEDULE OF BRIDGE QUANTITIES
BARON FORK & FLY CREEK STRS. & APPRS. (S)
WASHINGTON COUNTY

ROUTE 45 SEC. 3

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: RD DATE: 04/09/2024 FILENAME: b040866_q1.dgn
CHECKED BY: JJ DATE: 11/7/2024 SCALE: No Scale
DESIGNED BY: --- DATE: ---

BRIDGE NO. 07686 & 07687 DRAWING NO. 68235

PRINT DATE: 3/11/2025

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
4-29-2025		6	ARK.	040866	50	136
5-6-2025		QUANTITIES				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8533
CHARLES MARTIN

2025.05.06 20:21:38-05'00'

SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM	QUANTITY	UNIT
201	CLEARING	17	STATION
201	GRUBBING	17	STATION
202	REMOVAL AND DISPOSAL OF FENCE	6420	LIN. FT.
202	REMOVAL AND DISPOSAL OF GATES	1	EACH
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS	10	EACH
202	REMOVAL AND DISPOSAL OF BOX CULVERTS	1	EACH
202	REMOVAL AND DISPOSAL OF GUARDRAIL	224	LIN. FT.
SS & 206	FLOWABLE SELECT MATERIAL	25	CU. YD.
SP, SS, & 210	UNCLASSIFIED EXCAVATION	35756	CU. YD.
SP & 210	COMPACTED EMBANKMENT	81479	CU. YD.
SP & 210	SOIL STABILIZATION	100	TON
SP, SS, & 303	AGGREGATE BASE COURSE (CLASS 7)	12733	TON
SS & 401	TACK COAT	2760	GAL.
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	1559	TON
SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")	72	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	3964	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")	240	TON
SP & 412	COLD MILLING ASPHALT PAVEMENT	444	SQ. YD.
SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	30	TON
SP, SS, & 415	ACHM PATCHING OF EXISTING ROADWAY	30	TON
SP, SS, & 504	APPROACH SLABS	239.74	CU. YD.
SP, SS, & 504	APPROACH GUTTERS	32.92	CU. YD.
601	MOBILIZATION	1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE	1	EACH
SS & 603	MAINTENANCE OF TRAFFIC	1.00	LUMP SUM
SS & 604	SIGNS	414	SQ. FT.
SP, SS, & 604	CONSTRUCTION PROJECT INFORMATION SIGN UPDATE	2	EACH
SS & 604	BARRICADES	96	LIN. FT.
SS & 604	TRAFFIC DRUMS	70	EACH
SS & 604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	872	LIN. FT.
SS & 604	RELOCATING PRECAST CONCRETE BARRIER	472	LIN. FT.
604	CONSTRUCTION PAVEMENT MARKINGS	2387	LIN. FT.
604	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	1725	LIN. FT.
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS	2950	LIN. FT.
SS & 604	VERTICAL PANELS	108	EACH
SP, SS, & 605	CONCRETE DITCH PAVING (TYPE B)	1018	SQ. YD.
SS & 606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS V)	34	LIN. FT.
SP, SS, & 606	18" SIDE DRAIN	358	LIN. FT.
SP, SS, & 606	24" SIDE DRAIN	130	LIN. FT.
SS & 606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	2	EACH
SS & 606	SELECTED PIPE BEDDING	40	CU. YD.
SS & 611	4" PIPE UNDERDRAINS	3000	LIN. FT.
SS & 611	UNDERDRAIN OUTLET PROTECTORS	12	EACH
SP, SS, & 617	GUARDRAIL (TYPE A)	900	LIN. FT.
SS & 617	GUARDRAIL TERMINAL (TYPE 2)	8	EACH
SS & 617	THRIE BEAM GUARDRAIL TERMINAL	8	EACH
SS & 619	WIRE FENCE (TYPE D-2)	8413	LIN. FT.
* SS & 619	16' STEEL GATES (ALTERNATE NO. 1)	5	EACH
* SS & 619	16' ALUMINUM GATES (ALTERNATE NO. 2)	5	EACH
620	LIME	39	TON
620	SEEDING	1959	ACRE
SS & 620	MULCH COVER	8292	ACRE
620	WATER	3298.8	M. GAL.
621	TEMPORARY SEEDING	6333	ACRE
621	SILT FENCE	10280	LIN. FT.
621	SEDIMENT REMOVAL AND DISPOSAL	640	CU. YD.
621	ROCK DITCH CHECKS	777	CU. YD.
SS & 621	FILTER SOCK (18")	500	LIN. FT.
623	SECOND SEEDING APPLICATION	1959	ACRE
624	SOLID SODDING	694	SQ. YD.
SP & 625	GEOTEXTILE FABRIC (TYPE SPECIAL)	4659	SQ. YD.
626	EROSION CONTROL MATTING (CLASS 3)	1553	SQ. YD.
635	ROADWAY CONSTRUCTION CONTROL	1.00	LUMP SUM
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")	12424	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")	12442	LIN. FT.
721	RAISED PAVEMENT MARKERS (TYPE II)	79	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER	2	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)	4	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER (RELOCATION)	4	EACH
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY	96	CU. YD.
SP, SS, & 802	CLASS S CONCRETE-ROADWAY	218.44	CU. YD.
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)	58387	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
636	BRIDGE CONSTRUCTION CONTROL	1.00	LUMP SUM
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE	676	CU. YD.
SP, SS, & 802	CLASS S CONCRETE-BRIDGE	389.94	CU. YD.
SP, SS, & 802	CLASS S(AE) CONCRETE-BRIDGE	475.30	CU. YD.
SP & 803	CLASS 2 PROTECTIVE SURFACE TREATMENT	1814.00	SQ. YD.
SS & 804	REINFORCING STEEL-BRIDGE (GRADE 60)	64258	POUND
SS & 804	EPOXY COATED REINFORCING STEEL (GRADE 60)	130824	POUND
SS & 805	STEEL PILING (HP 14X73)	426	LIN. FT.
SS & 805	PREBORING	404	LIN. FT.
SP, SS, & 807	STRUCTURAL STEEL IN W-BEAM SPANS (A709, GR. 50W)	330188	POUND
SS & 807	PAINTING STRUCTURAL STEEL	44.3	TON
SS & 808	ELASTOMERIC BEARINGS	12759.5	CU. IN.
SS & 809	SILICONE JOINT SEALANT	70	LIN. FT.
812	BRIDGE NAME PLATE (TYPE D)	2	EACH
SS & 816	FILTER BLANKET	1039	SQ. YD.
SP & 816	FOUNDATION PROTECTION RIPRAP	4672	TON

* DENOTES ALTERNATE BID ITEMS.

REVISIONS

DATE	REVISION	SHEET NUMBER
4/29/2025	REVISED PLAN SHEET NUMBER 2 FOR SIGNATURE	2 & 50
5/6/2025	REVISED THE SURVEY CONTROL PLAN SHEETS TO INCLUDE THE ALIGNMENT FOR THE DRIVEWAY AT STA. 108+05 AND THE PLAN AND PROFILE SHEET FOR THE DRIVEWAY AT STA. 108+05 TO INCLUDE THE CURVE NOTES.	50, 51, 56, & 64

JY43338 10/7/2024
R040866.DGN

SUMMARY OF QUANTITIES AND REVISIONS

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
5-6-2025		6	ARK.	040866	51	136
		SURVEY CONTROL DETAILS				

SURVEY CONTROL COORDINATES

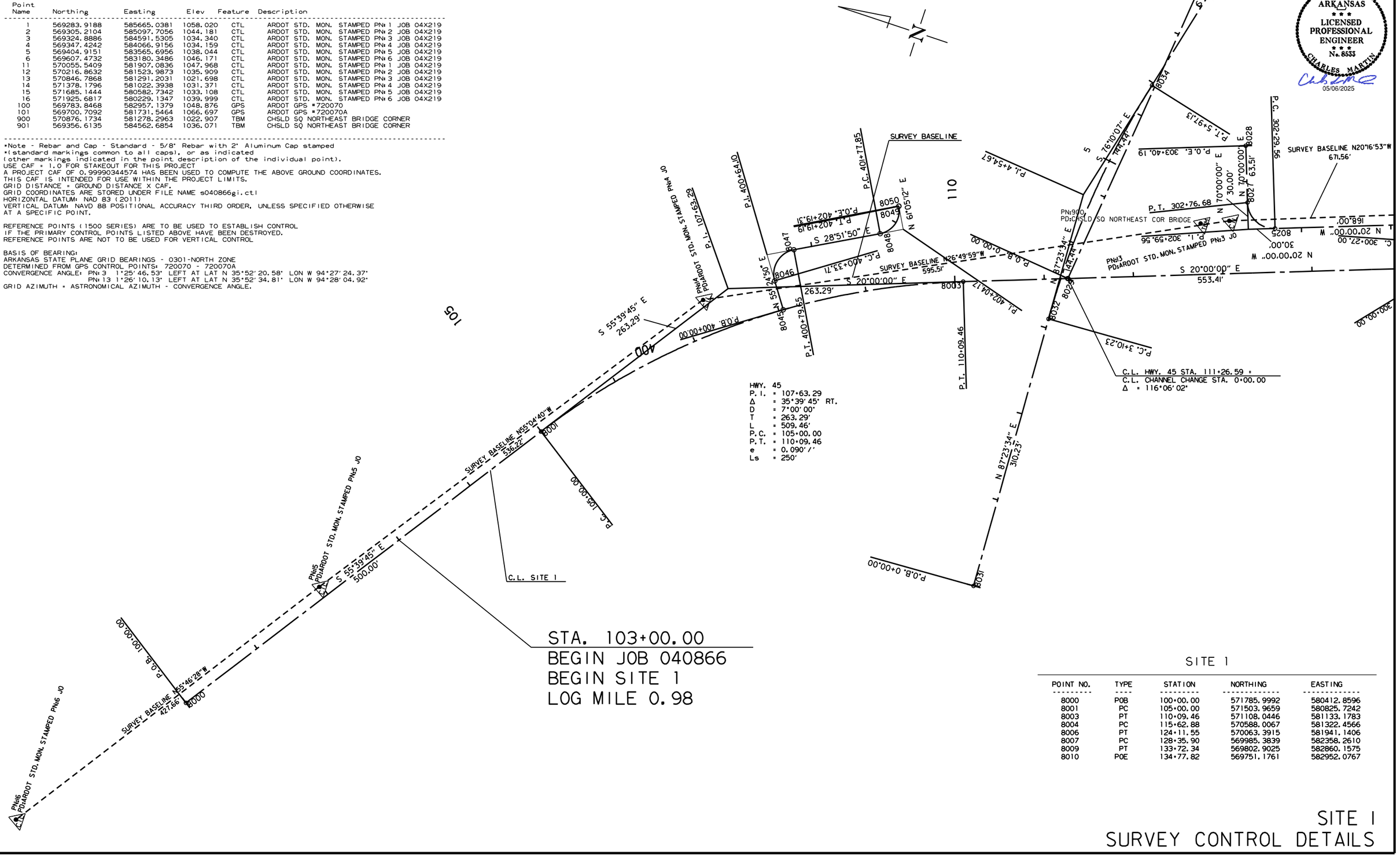
Project Name: s040866
Date: 5/24/2021
Coordinate System: ARKANSAS STATE PLANE - NORTH ZONE BASED ON GPS CONTROL.
PROJECTED TO GROUND.
Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
1	569283.9188	585665.0381	1058.020	CTL	ARDOT STD. MON. STAMPED PN=1 JOB 04X219
2	569305.2104	585097.7056	1044.181	CTL	ARDOT STD. MON. STAMPED PN=2 JOB 04X219
3	569324.8886	584591.5305	1034.340	CTL	ARDOT STD. MON. STAMPED PN=3 JOB 04X219
4	569347.4242	584066.9156	1034.159	CTL	ARDOT STD. MON. STAMPED PN=4 JOB 04X219
5	569404.9151	583565.6956	1038.044	CTL	ARDOT STD. MON. STAMPED PN=5 JOB 04X219
6	569607.4732	583180.3486	1046.171	CTL	ARDOT STD. MON. STAMPED PN=6 JOB 04X219
11	570055.5409	581907.0836	1047.968	CTL	ARDOT STD. MON. STAMPED PN=1 JOB 04X219
12	570216.8632	581523.9873	1035.909	CTL	ARDOT STD. MON. STAMPED PN=2 JOB 04X219
13	570846.7868	581291.2031	1021.698	CTL	ARDOT STD. MON. STAMPED PN=3 JOB 04X219
14	571378.1796	581022.3938	1031.371	CTL	ARDOT STD. MON. STAMPED PN=4 JOB 04X219
15	571685.1444	580582.7342	1033.108	CTL	ARDOT STD. MON. STAMPED PN=5 JOB 04X219
16	571925.6817	580229.1347	1039.999	CTL	ARDOT STD. MON. STAMPED PN=6 JOB 04X219
100	569783.8468	582957.1379	1048.876	GPS	ARDOT GPS =720070
101	569700.7092	581731.5464	1066.697	GPS	ARDOT GPS =720070A
900	570876.1734	581278.2963	1022.907	TBM	CHSLD SQ NORTHEAST BRIDGE CORNER
901	569356.6135	584562.6854	1036.071	TBM	CHSLD SQ NORTHEAST BRIDGE CORNER

*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 0.99990344574 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 s040866gi.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 - 0301-NORTH ZONE
DETERMINED FROM GPS CONTROL POINTS: 720070 - 720070A
CONVERGENCE ANGLE: PN=3 1°25'46.53" LEFT AT LAT N 35°52'20.58" LON W 94°27'24.37"
PN=13 1°26'10.13" LEFT AT LAT N 35°52'34.81" LON W 94°28'04.92"
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.



HWY. 45
P.I. = 107+63.29
Δ = 35°39'45" RT.
D = 7°00'00"
T = 263.29'
L = 509.46'
P.C. = 105+00.00
P.T. = 110+09.46
e = 0.090'/'
Ls = 250'

STA. 103+00.00
BEGIN JOB 040866
BEGIN SITE 1
LOG MILE 0.98

SITE 1

POINT NO.	TYPE	STATION	NORTHING	EASTING
8000	POB	100+00.00	571785.9992	580412.8596
8001	PC	105+00.00	571503.9659	580825.7242
8003	PT	110+09.46	571108.0446	581133.1783
8004	PC	115+62.88	570588.0067	581322.4566
8006	PT	124+11.55	570063.3915	581941.1406
8007	PC	128+35.90	569985.3839	582358.2610
8009	PT	133+72.34	569802.9025	582860.1575
8010	POE	134+77.82	569751.1761	582952.0767

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8533
CHARLES MARTIN
05/06/2025

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SITE 1
SURVEY CONTROL DETAILS

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	52	136
		SURVEY CONTROL DETAILS				

STATE OF ARKANSAS
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04/08/2025

STA. 125+99.05
END SITE 1
BEGIN MINOR WIDENING

HWY. 45
P.I. = 131+06.55
Δ = 18°46'31" RT.
D = 3°30'00"
T = 270.65'
L = 536.44'
P.C. = 128+35.90
P.T. = 133+72.34
MATCH EXIST. SUPER

HWY. 45
P.I. = 120+29.82
Δ = 59°24'26" LT.
D = 7°00'00"
T = 466.94'
L = 848.67'
P.C. = 115+62.88
P.T. = 124+11.55
e = 0.090'/'
Ls = 250'

C.L. HWY. 45 STA. 115+50.00 =
C.L. DRIVEWAY STA. 300+00.00
Δ = 90°00'00"

PNt2
PD:ARDOT STD. MON. STAMPED PN:2 JO

PNt1
PD:ARDOT STD. MON. STAMPED PN:1 JO

PNt01
PD:ARDOT GPS +1200704

SURVEY BASELINE N20°16'53"W 671.56'
SURVEY BASELINE N67°09'50"W 415.68'
SURVEY BASELINE N75°29'36"W 1084.63'

S 76°10'07" E 144.44'
S 76°10'07" E 165.78'
S 79°24'26" E 270.65'
S 79°24'26" E 424.35'
S 20°00'00" E 466.94'
S 79°24'26" E 466.94'
N 70°00'00" E 27.00'
N 20°00'00" W 168.00'
N 20°00'22" W 300.00'
N 00°00'02" W 22.00'

P.I. 9+07.36
P.I. 124+11.55
P.I. 131+06.55
P.I. 300+61.56
P.C. 302+29.56
P.C. 128+35.90
P.T. 133+72.34
P.O.B. 300+00.00

8035
8028
8027
8022
8004
8007
8006

115
120
121
130

C.L. SITE 1

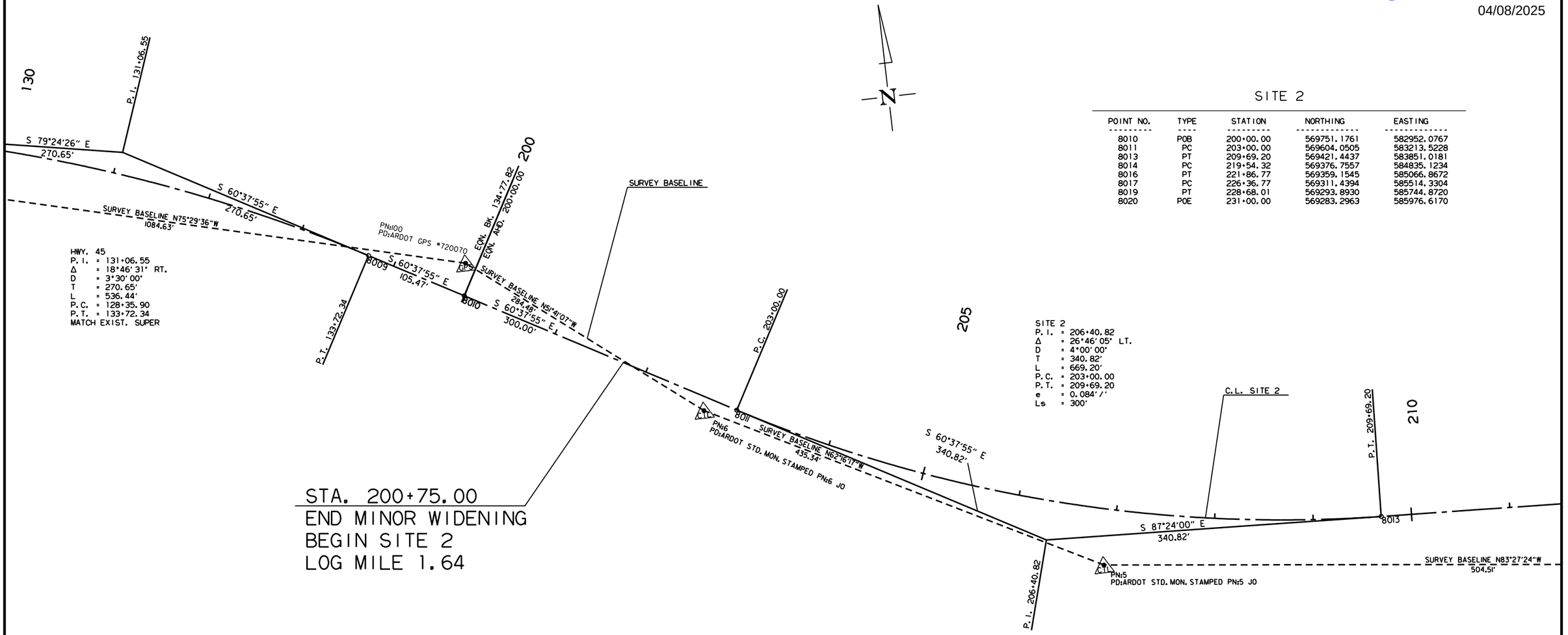
SITE 1
SURVEY CONTROL DETAILS

JY43338 11/6/2024
RO40866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	53	136
		SURVEY CONTROL DETAILS				

STATE OF ARKANSAS
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04/08/2025



SITE 2

POINT NO.	TYPE	STATION	NORTHING	EASTING
8010	POB	200+00.00	569751.1761	582952.0767
8011	PC	203+00.00	569604.0505	583213.5228
8013	PT	209+69.20	569421.4437	583851.0181
8014	PC	219+54.32	569376.7557	584835.1234
8016	PT	221+86.77	569359.1545	585066.8672
8017	PC	226+36.77	569311.4394	585514.3304
8019	PT	228+68.01	569293.8930	585744.8720
8020	POE	231+00.00	569283.2963	585976.6170

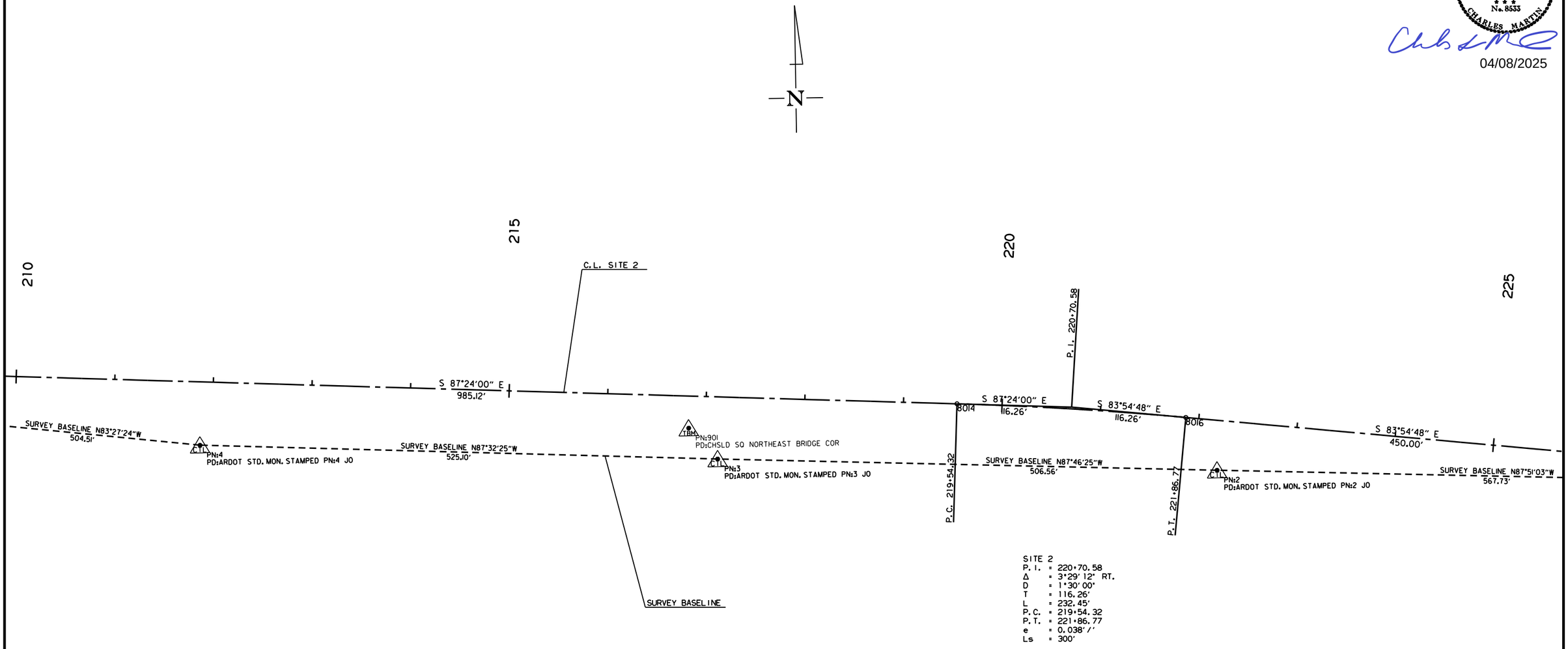
JY43338 9/23/2024
R040866.DGN

SITE 2
SURVEY CONTROL DETAILS

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	54	136
		SURVEY CONTROL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8533
CHARLES MARTIN

04/08/2025



SITE 2
P.I. = 220+70.58
Δ = 3°29'12" RT.
D = 1°30'00"
T = 116.26'
L = 232.45'
P.C. = 219+54.32
P.T. = 221+86.77
e = 0.038'/'
Ls = 300'

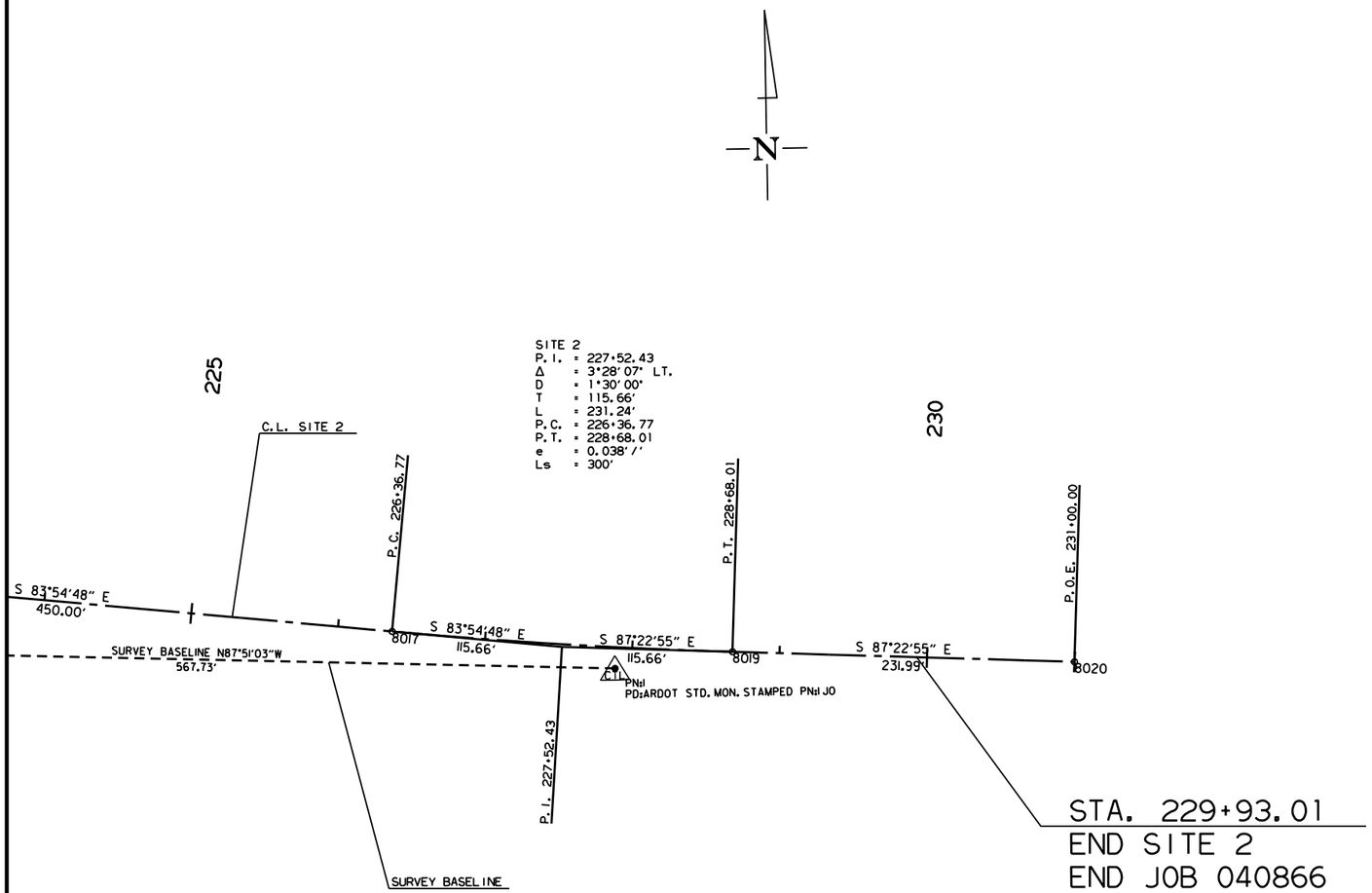
JY43338 9/23/2024
R040866.DGN

SITE 2
SURVEY CONTROL DETAILS

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	55	136
		SURVEY CONTROL DETAILS				

STATE OF ARKANSAS
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SITE 2
SURVEY CONTROL DETAILS

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
5-6-2025		6	ARK.	040866	56	136
		SURVEY CONTROL DETAILS				

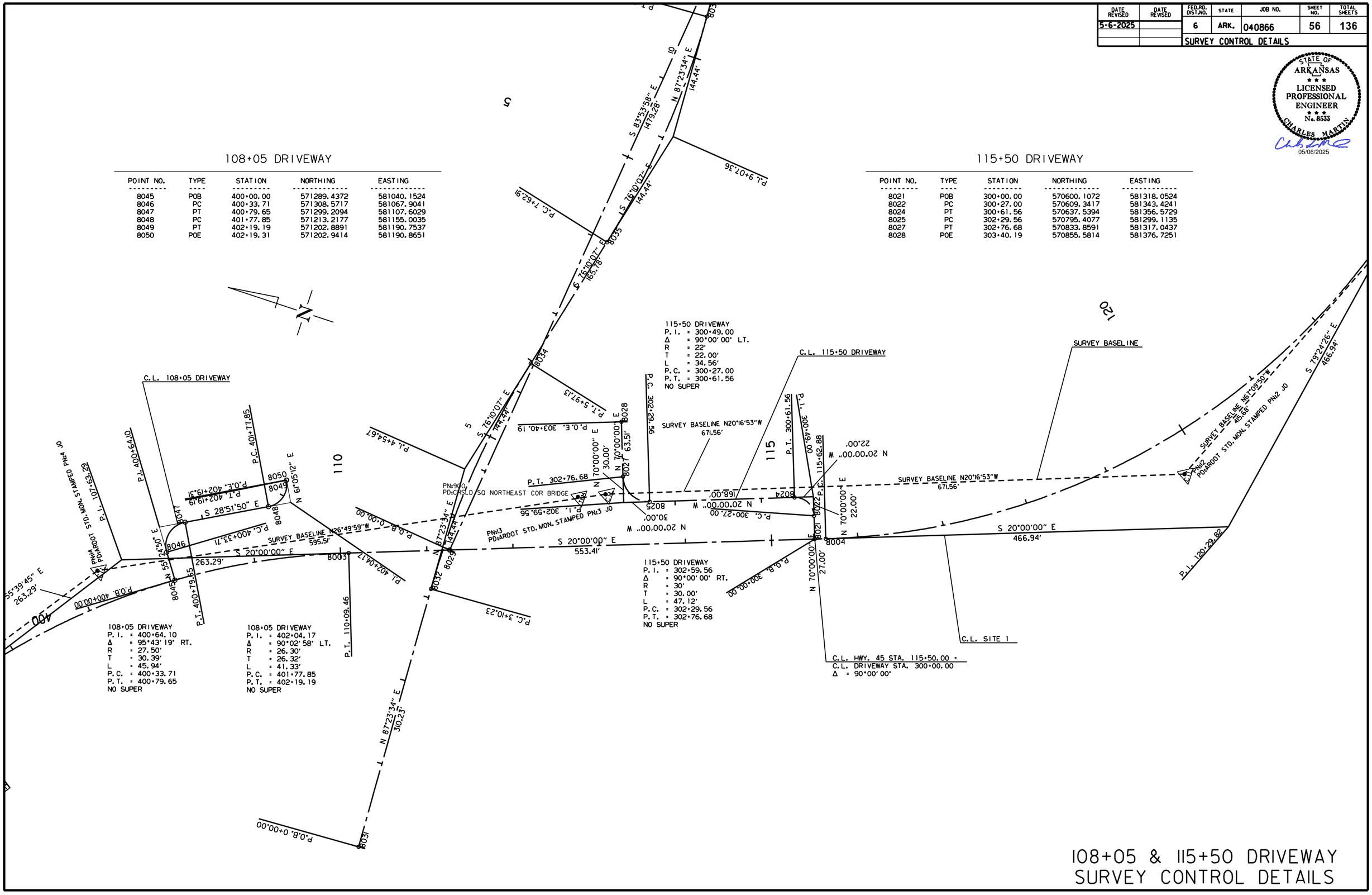
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8533
CHARLES MARTIN
05/06/2025

108+05 DRIVEWAY

POINT NO.	TYPE	STATION	NORTHING	EASTING
8045	POB	400+00.00	571289.4372	581040.1524
8046	PC	400+33.71	571308.5717	581067.9041
8047	PT	400+79.65	571299.2094	581107.6029
8048	PC	401+77.85	571213.2177	581155.0035
8049	PT	402+19.19	571202.8891	581190.7537
8050	POE	402+19.31	571202.9414	581190.8651

115+50 DRIVEWAY

POINT NO.	TYPE	STATION	NORTHING	EASTING
8021	POB	300+00.00	570600.1072	581318.0524
8022	PC	300+27.00	570609.3417	581343.4241
8024	PT	300+61.56	570637.5394	581356.5729
8025	PC	302+29.56	570795.4077	581299.1135
8027	PT	302+76.68	570833.8591	581317.0437
8028	POE	303+40.19	570855.5814	581376.7251



JY43338 9/23/2024
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108+05 & 115+50 DRIVEWAY SURVEY CONTROL DETAILS

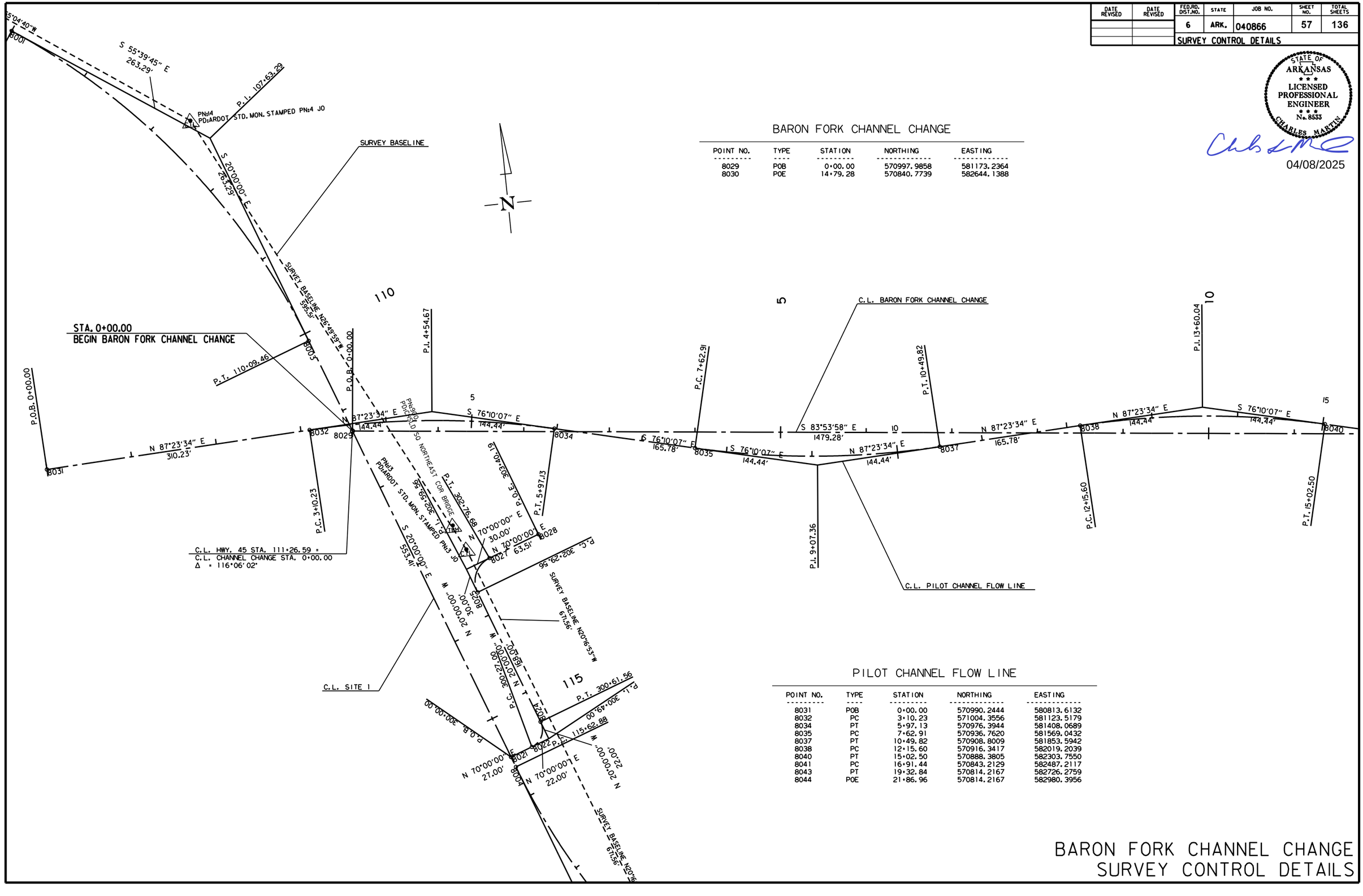
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	57	136
		SURVEY CONTROL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8533
CHARLES MARTIN

04/08/2025

BARON FORK CHANNEL CHANGE

POINT NO.	TYPE	STATION	NORTHING	EASTING
8029	POB	0+00.00	570997.9858	581173.2364
8030	POE	14+79.28	570840.7739	582644.1388



PILOT CHANNEL FLOW LINE

POINT NO.	TYPE	STATION	NORTHING	EASTING
8031	POB	0+00.00	570990.2444	580813.6132
8032	PC	3+10.23	571004.3556	581123.5179
8034	PT	5+97.13	570976.3944	581408.0689
8035	PC	7+62.91	570936.7620	581569.0432
8037	PT	10+49.82	570908.8009	581853.5942
8038	PC	12+15.60	570916.3417	582019.2039
8040	PT	15+02.50	570888.3805	582303.7550
8041	PC	16+91.44	570843.2129	582487.2117
8043	PT	19+32.84	570814.2167	582726.2759
8044	POE	21+86.96	570814.2167	582980.3956

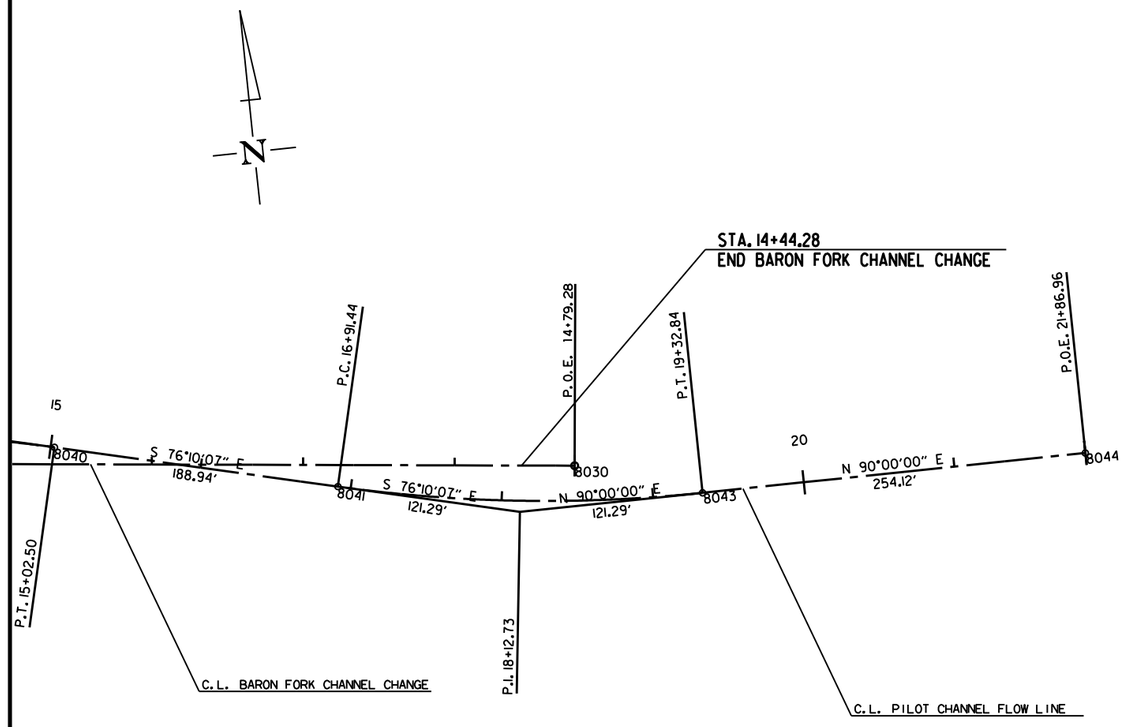
JY43338 9/23/2024
RO40866.DGN

BARON FORK CHANNEL CHANGE
SURVEY CONTROL DETAILS

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	58	136
		SURVEY CONTROL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8533
CHARLES MARTIN

04/08/2025



JY43338 9/23/2024
R040866.DGN

BARON FORK CHANNEL CHANGE
SURVEY CONTROL DETAILS

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	59	136

PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8533
CHARLES MARTIN
04/08/2025

REMOVAL AND DISPOSAL OF FENCE

STA.	STA.	SIDE	LIN. FT.
8+82	14+75	RT.	607
102+05	106+76	LT.	483
110+18	110+80	RT.	132
112+21	114+33	RT.	217
112+77	117+17	LT.&RT.	513
112+81	113+50	LT.	80
118+35	124+40	LT.	590

WIRE FENCE

STA.	STA.	SIDE	TYPE	LIN. FT.
1+27	14+75	RT.	D-2	1348
1+74	14+75	RT.	D-2	1302
14+75	14+75	RT.	D-2	93
102+05	106+76	LT.	D-2	500
112+20	113+50	RT.	D-2	731
112+44	117+17	LT.	D-2	106
112+84	113+91	LT.	D-2	106
118+35	124+40	LT.	D-2	563

STA. 108+05 - IN PLACE
15' X 24' C.M. PIPE CULV'T
LT. SIDE DRAIN
REMOVE AND INSTALL
18' X 120' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPROACH=255 CU. YDS.

STA. 110+81.20 - STA. 112+76.94 IN PLACE
BRIDGE NO. 03096
196' X 28' CONCRETE SLAB
REMOVE AS EXISTING BRIDGE STRUCTURE
(SITE NO. 1) = 1.00 LUMP SUM

BR. END STA. 110+28.00
BRIDGE NO. 07686
30'-0" CLEAR ROADWAY
262.31' TOTAL LENGTH
260'-0" CONTINUOUS W-BEAM UNIT
(55'-75'-75'-55')
BR. END STA. 112+90.30

PROPOSED R/W
CONST. LIMITS
EXISTING ROW
HWY. 45
S 55°39'45" E
100' TRANSITION
P.I. 107+63.29
P.I. 400+64.10
P.C. 400+25.42
P.O.B. 400+00.00
P.O.E. 402+15.26
P.T. 110+09.46
P.I. 400+33.90
P.C. 105+00.00
P.T. 302+76.68
P.O.B. 300+00.00
P.O.E. 302+40.19
P.C. 302+29.56
P.T. 302+59.56
P.I. 300+63.29
BARON FORK
GATE
N 70°00'00" E
S 20°00'00" E
113.2'
SPECIAL FLOOD HAZARD AREA

STA. 103+00.00
BEGIN JOB 040866
BEGIN SITE 1
LOG MILE 0.98

HWY. 45
P.I. = 107+63.29
Δ = 35°39'45" RT.
D = 7°00'00"
T = 263.29'
L = 509.46'
P.C. = 105+00.00
P.T. = 110+09.46
e = 0.090'/'
Ls = 250'

C.L. HWY. 45 STA. 111+26.59 =
C.L. CHANNEL CHANGE STA. 0+00.00
Δ = 116°06'02"

STA.	STA.	SIDE	GUARDRAIL (TYPE A) LIN. FT.	GUARDRAIL TERMINAL (TYPE 2) EACH	THRIE BEAM GUARDRAIL TERMINAL EACH
108+80.31	110+24.06	LT	75	1	1
107+94.39	110+13.14	RT.	150	1	1
112+05.16	115+23.91	LT.	150	1	1
112+94.24	114+37.99	RT.	75	1	1

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

SITE 1

STA. 103+12.50 BEGIN SUPERELEVATION
STA. 105+62.50 MAX. SUPERELEVATION (0.090'/')
STA. 109+46.96 MAX. SUPERELEVATION (0.090'/')
STA. 111+96.96 END SUPERELEVATION

STA. 113+75.38 BEGIN SUPERELEVATION
STA. 116+25.38 MAX. SUPERELEVATION (0.090'/')
STA. 123+49.05 MAX. SUPERELEVATION (0.090'/')
STA. 125+99.05 END SUPERELEVATION

BRIDGE END
STA. 110+28.00
ELEV. 1029.75

BRIDGE END
STA. 112+90.30
ELEV. 1029.30

P.V.I. 103+00.00 ELEV. 1033.80
P.V.C. 104+80.00 ELEV. 1033.80
P.V.I. 105+50.00 ELEV. 1033.80
P.V.T. 106+20.00 ELEV. 1032.30
P.V.C. 106+70.00 ELEV. 1031.23
P.V.I. 107+60.00 ELEV. 1029.30
P.V.T. 108+50.00 ELEV. 1029.30
P.V.C. 113+50.00 ELEV. 1029.30
P.V.I. 114+10.00 ELEV. 1029.30
P.V.C. 115+00.00 ELEV. 1027.61
P.V.T. 114+70.00 ELEV. 1028.17

K=65.42
VC=140'
e=-0.38'
K=84.11
VC=180'
e=0.48'
K=63.83
VC=120'
e=-0.28'

0.00%
LT. D.G. -0.28%
RT. D.G. -1.82%
-2.14%
LT. D.G. -2.27%
RT. D.G. -0.46%
-1.88%
LT. D.G. 0.36%
RT. D.G. 0.97%

103+00.00 1030.90 LT.
105+00.00 1029.56 RT.
106+20.00 1030.00 LT.
107+50.00 1025.00 RT.
109+60.00 1024.00 RT.
110+60.00 1020.00 LT.
111+90.00 1006.69 RT.
112+90.31 1018.50 LT.

Q25 DESIGN HIGH WATER 1022.51

BARON FORK CREEK AT L.M. 1.16 TO L.M. 1.17 IS CLASSIFIED AS A PERENNIAL STREAM. THE TOP OF CHANNEL ELEVATION IS 1016 FT. MSL. REFER TO SECTION 110.05(c) TEMPORARY FILL OF THE 2014 STANDARD SPECIFICATIONS.

1045 1040 1035 1030 1025 1020 1015 1010 1005 1000

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

JY43338 9/23/2024
R040866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	60	136
		PLAN AND PROFILE SHEETS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8533
CHARLES MARTIN
04/08/2025

SPECIAL FLOOD HAZARD AREA

STA. 115+50 CONST.
APPROACH ON LT. = 720 CU. YDS. COMP. EMB.
15 CU. YDS. UNCL. EXC.

HWY. 45
P. I. = 120+29.82
Δ = 59°24'26" LT.
D = 7°00'00"
T = 466.94'
L = 848.67'
P. C. = 115+62.88
P. T. = 124+11.55
e = 0.090'/'
Ls = 250'

STA. 118+03 - IN PLACE
24" X 30' PIPE CULV'T
LT. SIDE DRAIN
REMOVE AND INSTALL
24" X 28' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPROACH = 45 CU. YDS

C.L. HWY. 45 STA. 115+50.00 =
C.L. DRIVEWAY STA. 300+00.00
Δ = 90°00'00"

STA. 119+00.00 TO STA. 122+00.00 ON LT.
CONC. DITCH PAVING (TYPE B) = 210.67 SQ. YD.

STA. 118+16 - IN PLACE
24" X 24' C.M.I. PIPE CULV'T
RT. SIDE DRAIN
REMOVE AND INSTALL
24" X 38' PIPE CULV'T.
RT. SIDE DRAIN
CONST. APPROACH = 195 CU. YDS.

STA. 118+32.00 TO STA. 119+71.00 ON RT.
CONC. DITCH PAVING (TYPE B) = 97.61 SQ. YD.

STA. 119+95 - IN PLACE
24" X 46' PIPE CULV'T.
RT. SIDE DRAIN
REMOVE AND INSTALL
24" X 64' PIPE CULV'T
RT. SIDE DRAIN
CONST. TURNOUT = 125 CU. YDS.

P. I. 120+29.82

STA. 120+27.00 TO STA. 123+00.00 ON RT.
CONC. DITCH PAVING (TYPE B) = 191.71 SQ. YD.

HWY. 45
P. I. = 131+06.55
Δ = 18°46'31" RT.
D = 3°30'00"
T = 270.65'
L = 536.44'
P. C. = 128+35.90
P. T. = 133+72.34
MATCH EXIST. SUPER

STA. 125+99.05
END SITE 1
BEGIN MINOR WIDENING
SITE 1

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

STA. 113+75.38 BEGIN SUPERELEVATION
STA. 116+25.38 MAX. SUPERELEVATION (0.090'/')
STA. 123+49.05 MAX. SUPERELEVATION (0.090'/')
STA. 125+99.05 END SUPERELEVATION

P.V.C. 115+00.00 ELEV. 1027.61
P.V.I. 118+00.00 ELEV. 1021.97
P.V.C. 121+10.00 ELEV. 1039.14
P.V.T. 121+00.00 ELEV. 1038.59
P.V.I. 122+80.00 ELEV. 1048.56
P.V.T. 124+50.00 ELEV. 1048.81
P.V.I. 126+00.00 ELEV. 1049.03

K=80.86
VC=600'
e=5.56'

K=63.08
VC=340'
e=-2.29'

116+50.00 1019.80 LT.
116+85.00 1011.50 RT.
118+00.00 1025.62 RT.
118+60.00 1027.60 RT.
119+00.00 1024.50 LT.
120+00.00 1032.50 RT.
121+00.00 1033.18 LT.
122+00.00 1038.43 LT.
122+00.00 1041.86 RT.
123+00.00 1045.60 RT.
124+13.74 1044.65 LT.
126+00.00 1046.00 RT.

RT. D.G. 0.97%
LT. D.G. 0.36%
LT. D.G. 1.88%
RT. D.G. 3.30%
RT. D.G. 3.50%
RT. D.G. 4.68%
LT. D.G. 4.34%
LT. D.G. 5.25%
RT. D.G. 3.74%
LT. D.G. 2.91%
RT. D.G. 0.13%
0.15%
-1.88%

115+00 116+00 117+00 118+00 119+00 120+00 121+00 122+00 123+00 124+00 125+00 126+00 127+00 128+00 129+00 130+00
1055 1050 1045 1040 1035 1030 1025 1020 1015 1010

JY43338 9/23/2024
R040866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	61	136
		PLAN AND PROFILE SHEETS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8533
CHARLES MARTIN
04/08/2025

SPECIAL FLOOD HAZARD AREA

STA. 209+06 - IN PLACE
6' X 6' X 51' R.C. BOX
REMOVE AND INSTALL
DBL. 8' X 6' X 134' R.C. BOX
ON 45° LT. FWD. SKEW
WITH 3:1 WINGS LT. AND RT.
Q25 = 1030 CFS; D.A. = 1 SQ MI
SPAN = 17'-10"

STA. 208+00.00 TO STA. 209+50.00 ON LT.
CONC. DITCH PAVING (TYPE B) = 105.33 SQ. YD.

SITE 2
P.I. = 206+40.82
Δ = 26°46'05" LT.
D = 4°00'00"
T = 340.82'
L = 669.20'
P.C. = 203+00.00
P.T. = 209+69.20
e = 0.084'/'
Ls = 300'

HWY. 45
P.I. = 131+06.55
Δ = 18°46'31" RT.
D = 3°30'00"
T = 270.65'
L = 536.44'
P.C. = 128+35.90
P.T. = 133+72.34
MATCH EXIST. SUPER

STA. 207+00.00 TO STA. 208+20.00 ON RT.
CONC. DITCH PAVING (TYPE B) = 84.27 SQ. YD.

STA. 208+90.00 TO STA. 209+25.00 ON RT.
CONC. DITCH PAVING (TYPE B) = 24.58 SQ. YD.

STA. 206+88 - IN PLACE
12' X 18' C.M. PIPE CULV'T
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 28' PIPE CULV'T
RT. SIDE DRAIN
CONST. APPROACH = 65 CU. YDS.

STA. 209+55 - CONST.
18" X 50' PIPE CULV'T
RT. SIDE DRAIN
CONST. APPROACH = 195 CU. YDS.

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

SITE 2

STA. 200+75.00
END MINOR WIDENING
BEGIN SITE 2
LOG MILE 1.64

STA. 200+75.00 BEGIN SUPERELEVATION
STA. 203+75.00 MAX. SUPERELEVATION (0.084'/')
STA. 208+94.20 MAX. SUPERELEVATION (0.084'/')
STA. 211+94.20 END SUPERELEVATION

P.V.I. 200+75.00 ELEV. 1050.02
P.V.I. 201+75.00 ELEV. 1048.58
P.V.C. 202+80.00 ELEV. 1046.70
P.V.I. 203+60.00 ELEV. 1045.27
P.V.T. 204+40.00 ELEV. 1042.91
P.V.C. 204+50.00 ELEV. 1042.61
P.V.I. 206+30.00 ELEV. 1037.30
P.V.T. 208+10.00 ELEV. 1037.30

-1.44% -1.79% -1.98% -2.52% -0.95% -0.85% 0.00% 6.73% -3.28% -6.07% 0.00%

K=137.62 VC=160' e=-0.23'
K=121.96 VC=360' e=1.33'

201+75.00 1046.10 RT.
201+75.00 1045.00 LT.
204+15.00 1041.33 RT.
206+00.00 1034.30 LT.
207+00.00 1036.75 RT.
208+00.00 1032.60 LT.
208+20.00 1025.60 RT.
208+90.00 1025.60 RT.
209+50.00 1020.50 LT.
210+00.00 1033.00 RT.

+06
P.L. INLET (RT.) = 1025.60
F.L. OUTLET (LT.) = 1020.50

Q25 DESIGN HIGH WATER 1033.98

RT. D.G. 0.00%
LT. D.G. 0.00%

1060 1055 1050 1045 1040 1035 1030 1025 1020 1015

195+00 196+00 197+00 198+00 199+00 200+00 201+00 202+00 203+00 204+00 205+00 206+00 207+00 208+00 209+00 210+00

JY43338 9/23/2024
R040866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	62	136
		PLAN AND PROFILE SHEETS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8533
CHARLES MARTIN
04/08/2025

REMOVAL AND DISPOSAL OF FENCE

STA.	STA.	SIDE	LIN. FT.
200+70	209+27	LT.	716
200+70	204+20	RT.	350
210+28	215+67	LT. & RT.	551
217+18	224+47	LT. & RT.	770
225+09	231+00	LT.	621
225+10	231+00	RT.	590

WIRE FENCE

STA.	STA.	SIDE	TYPE	LIN. FT.
200+70	209+27	LT.	D-2	920
200+70	204+20	RT.	D-2	358
210+82	215+57	LT.	D-2	470
217+18	224+47	LT.	D-2	730
225+10	231+00	LT.	D-2	589
225+10	231+00	RT.	D-2	597

STA.	STA.	SIDE	GUARDRAIL (TYPE A) LIN. FT.	GUARDRAIL TERMINAL (TYPE 2) EACH	THRIE BEAM GUARDRAIL TERMINAL EACH
214+54.35	215+48.10	LT	75	1	1
213+29.35	215+48.10	RT.	150	1	1
217+35.90	219+54.65	LT.	150	1	1
217+35.90	218+29.65	RT.	75	1	1

BR. END STA. 215+57.50
BRIDGE NO. 07687
30'-0" CLEAR ROADWAY
169.00' TOTAL LENGTH
168'-0" INTEGRAL CONTINUOUS W-BEAM UNIT
(50'-68'-50')
BR. END STA. 217+26.50

STA. 215+71.21 - STA. 216+83.28 IN PLACE
BRIDGE NO. 03097
112' X 26.5' CONCRETE SLAB
REMOVE AS EXISTING BRIDGE STRUCTURE
(SITE NO. 2) = 1.00 LUMP SUM

STA. 224+00 IN PLACE
24" X 36" X 38' R.C. PIPE CULVERT
WITH HDWLS LT. & RT.
REMOVE HDWLS AND EXTEND
34' LT. WITH CONCRETE COLLAR
AND REMOVE 15' RT.
TO A COMPLETE LENGTH OF 57'
(CLASS V)(TYPE 3 BEDDING)
WITH FES LT. & RT.
Q25=7 CFS, D.A.=8 ACRES
24" R.C. PIPE = 38 LIN. FT.
24" FES = 2 EACH

STA. 224+77 - IN PLACE
18" X 40' C.M. PIPE CULV'T.
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 50' PIPE CULV'T
LT. SIDE DRAIN
CONST. TURNOUT = 85 CU. YDS.

SPECIAL FLOOD HAZARD AREA

PROPOSED R/W

CONST. LIMITS

25 BUFFER ZONE

FLY CREEK

BUSH VALLEY

S 87°24'00" E
RWY. 45

S 83°54'48" E

STA. 209+73.00 TO STA. 210+00.00 ON RT.
CONC. DITCH PAVING (TYPE B) = 18.96 SQ. YD.

STA. 211+62 - IN PLACE
18" X 34' C.M. PIPE CULV'T
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 50' PIPE CULV'T
RT. SIDE DRAIN
CONST. TURNOUT = 135 CU. YDS.

E MUNYON RD

SITE 2
P.I. = 220+70.58
Δ = 3°29'12" RT.
D = 1°30'00"
T = 116.26'
L = 232.45'
P.C. = 219+54.32
P.T. = 221+86.77
e = 0.038'/'
Ls = 300'

STA. 222+04 - IN PLACE
18" X 30' C.M. PIPE CULV'T.
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 30' PIPE CULV'T
RT. SIDE DRAIN
CONST. APPROACH = 25 CU. YDS.

STA. 222+56 - IN PLACE
18" X 20' C.M. PIPE CULV'T.
RT. SIDE DRAIN
REMOVE AND INSTALL
18" X 30' PIPE CULV'T
RT. SIDE DRAIN
CONST. APPROACH = 40 CU. YDS.

STA. 224+00.00 TO STA. 225+00.00 ON RT.
CONC. DITCH PAVING (TYPE B) = 70.22 SQ. YD.

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

SITE 2

STA. 200+75.00 BEGIN SUPERELEVATION
STA. 203+75.00 MAX. SUPERELEVATION (0.084'/')
STA. 208+94.20 MAX. SUPERELEVATION (0.084'/')
STA. 211+94.20 END SUPERELEVATION

STA. 217+29.32 BEGIN SUPERELEVATION
STA. 220+29.32 MAX. SUPERELEVATION (0.038'/')
STA. 221+11.77 MAX. SUPERELEVATION (0.038'/')
STA. 224+11.77 END SUPERELEVATION

STA. 224+11.77 BEGIN SUPERELEVATION
STA. 227+11.77 MAX. SUPERELEVATION (0.038'/')
STA. 227+93.01 MAX. SUPERELEVATION (0.038'/')
STA. 230+93.01 END SUPERELEVATION

BRIDGE END
STA. 215+57.50
ELEV. 1040.20

BRIDGE END
STA. 217+26.50
ELEV. 1040.20

FLY CREEK AT L.M.1.90 TO L.M.1.93
IS CLASSIFIED AS A PERENNIAL STREAM. THE TOP OF
CHANNEL ELEVATION IS 1027 FT. MSL.
REFER TO SECTION 110.05(c) TEMPORARY
FILL OF THE 2014 STANDARD SPECIFICATIONS.

Q25 DESIGN
HIGH WATER
1033.18

P.V.C. 211+40.00 ELEV. 1037.30
P.V.I. 212+30.00 ELEV. 1037.30
K=117.65 VC=180' e=0.34'
P.V.T. 213+20.00 ELEV. 1038.67
P.V.C. 213+30.00 ELEV. 1038.83
P.V.I. 214+20.00 ELEV. 1040.20
K=117.65 VC=180' e=-0.34'
P.V.T. 215+10.00 ELEV. 1040.20
P.V.C. 218+60.00 ELEV. 1040.20
K=125.49 VC=320' e=1.02'
P.V.T. 221+80.00 ELEV. 1044.28
P.V.C. 224+00.00 ELEV. 1049.89
K=227.27 VC=100' e=-0.06'
P.V.I. 224+50.00 ELEV. 1051.17
P.V.T. 225+00.00 ELEV. 1052.22

0.00%
1.53%
2.55%
2.11%
3.29%
2.59%
1.96%
2.64%
1.89%
2.72%
1.34%
0.80%
3.18%
-0.49%

RT. D.G. 0.80%
RT. D.G. -3.18%
RT. D.G. -0.49%
LT. D.G. 0.00%
RT. D.G. 1.89%
RT. D.G. 2.72%
LT. D.G. 1.34%
LT. D.G. 1.96%
RT. D.G. 2.64%
RT. D.G. 3.29%
RT. D.G. 2.59%

210+00.00 1033.00 RT.
210+40.00 1020.50 LT.
211+62.00 1034.30 RT.
212+50.00 1031.50 RT.
215+57.50 1030.00 RT.
217+26.50 1032.50 RT.
217+88.35 1034.21 LT.
218+00.00 1034.50 RT.
219+00.00 1035.70 LT.
219+80.00 1037.90 RT.
220+20.00 1040.20
221+00.00 1038.74 RT.
223+33.82 1044.90 RT.
224+00.00 1045.52 LT.
224+00.00 1046.11 RT.
225+00.00 1049.40 RT.

F.L. INLET (RT.) = 1046.11
F.L. OUTLET (LT.) = 1045.52

1060 1055 1050 1045 1040 1035 1030 1025 1020 1015

210+00 211+00 212+00 213+00 214+00 215+00 216+00 217+00 218+00 219+00 220+00 221+00 222+00 223+00 224+00 225+00

JY43338 9/23/2024
R040866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	63	136
		PLAN AND PROFILE SHEETS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8533
CHARLES MARTIN

04/08/2025

SITE 2
P.I. = 227+52.43
Δ = 3°28'07" LT.
D = 1°30'00"
T = 115.66'
L = 231.24'
P.C. = 226+36.77
P.T. = 228+68.01
e = 0.038'/'
Ls = 300'

+93.01 100' TRANSITION +93.01
230 231

STA. 229+00.00 TO STA. 230+93.01 ON RT.
CONC. DITCH PAVING (TYPE B) = 135.54 SQ. YD.

STA. 228+80.00 TO STA. 229+93.01 ON RT.
CONC. DITCH PAVING (TYPE B) = 79.36 SQ. YD.

BUSH VALLEY RD 225
22'
+77
P.C. 226+36.77
PROPOSED R/W +50.00 50.00
CONST. LIMITS
P.T. 228+68.01 +00.00 55.00
P.O.E. 231+00.00 +00.00 39.39
S 87°22'55" E HWY. 45
4' 2' 20' 3' 3' 4'
CONST. LIMITS
PROPOSED R/W
+10.00 56.01
+00.00 70.00
P.I. 227+52.43
+00.00 60.00
+00.00 40.61

STA. 229+93.01
END SITE 2
END JOB 040866

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

STA. 224+11.77 BEGIN SUPERELEVATION
STA. 227+11.77 MAX. SUPERELEVATION (0.038'/')
STA. 227+93.01 MAX. SUPERELEVATION (0.038'/')
STA. 230+93.01 END SUPERELEVATION

P.V.T. 225+00.00 ELEV. 1052.22
2.11%
P.V.I. 226+10.00 ELEV. 1054.54
2.26%
P.V.C. 227+80.00 ELEV. 1058.38
K=125.00 VC=140' e=0.20'
P.V.I. 228+50.00 ELEV. 1059.97
3.38%
P.V.T. 229+20.00 ELEV. 1062.34
P.V.I. 229+93.01 ELEV. 1064.81
RT. D.G. 2.39%
LT. D.G. 2.59%
LT. D.G. 1.95%
RT. D.G. 3.13%
LT. D.G. 3.50%
LT. D.G. 4.19%
225+00.00 1049.40 RT.
227+00.00 1053.30 LT.
228+80.00 1058.50 RT.
229+00.00 1057.20 LT.
230+00.00 1060.70 LT.
229+93.01 1062.04 RT.
230+93.01 1064.60 LT.

1085 1080 1075 1070 1065 1060 1055 1050 1045 1040
225+00 226+00 227+00 228+00 229+00 230+00 231+00 232+00 233+00 234+00 235+00 236+00 237+00 238+00 239+00 240+00

SITE 2

JY43338 9/23/2024
R040866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
5-6-2025		6	ARK.	040866	64	136
		PLAN AND PROFILE SHEETS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8533
CHARLES MARTIN
05/06/2025

108+05 & 115+50 DRIVEWAY

SPECIAL FLOOD HAZARD AREA

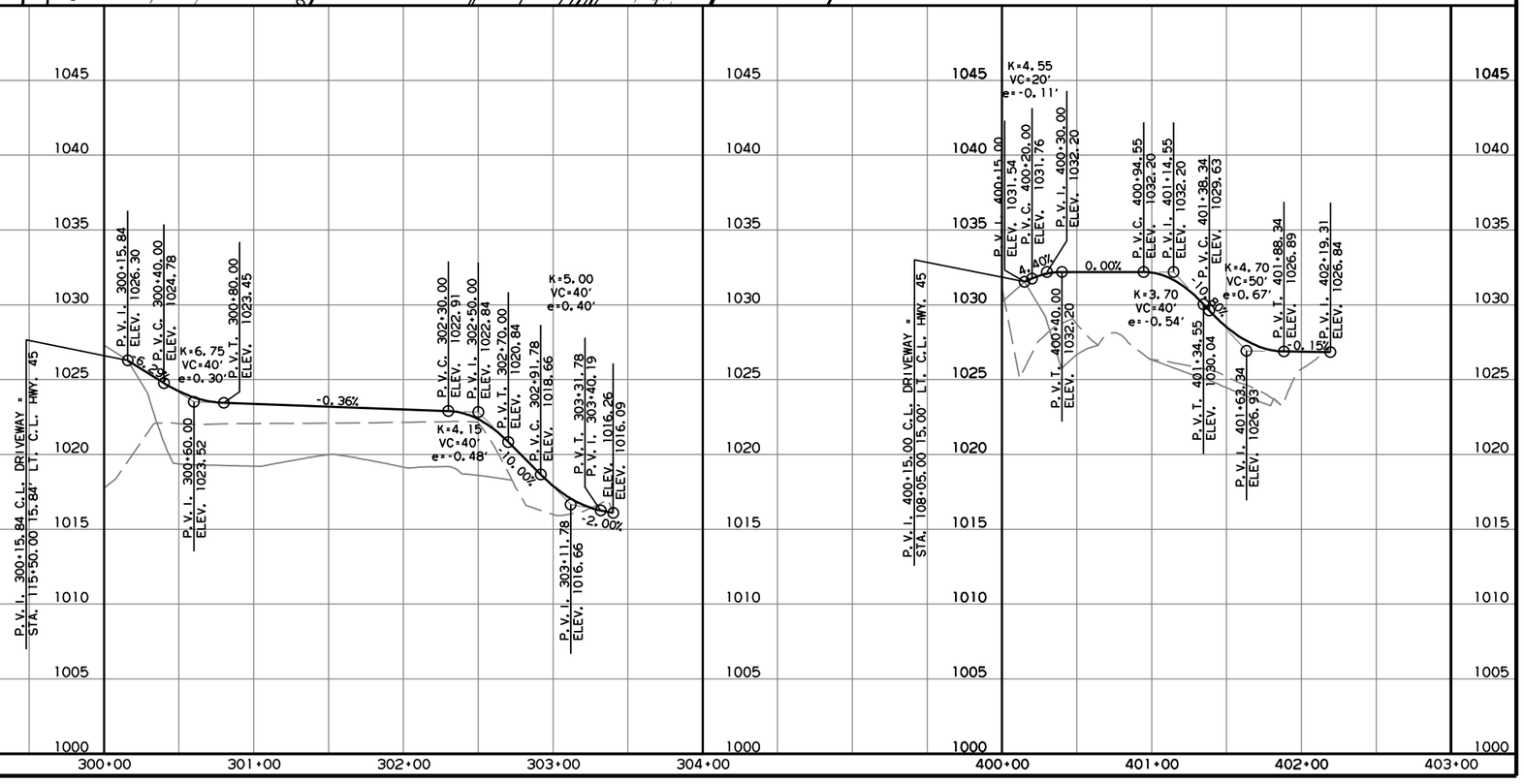
115+50 DRIVEWAY
P.I. = 300+49.00
Δ = 90°00'00" LT.
R = 22'
T = 22.00'
L = 34.56'
P.C. = 300+27.00
P.T. = 300+61.56
NO SUPER

115+50 DRIVEWAY
P.I. = 302+59.56
Δ = 90°00'00" RT.
R = 30'
T = 30.00'
L = 47.12'
P.C. = 302+29.56
P.T. = 302+76.68
NO SUPER

108+05 DRIVEWAY
P.I. = 400+64.10
Δ = 95°43'19" RT.
R = 27.50'
T = 30.39'
L = 45.94'
P.C. = 400+33.71
P.T. = 400+79.65
NO SUPER

108+05 DRIVEWAY
P.I. = 402+04.17
Δ = 90°02'58" LT.
R = 26.30'
T = 26.32'
L = 41.33'
P.C. = 401+77.85
P.T. = 402+19.19
NO SUPER

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

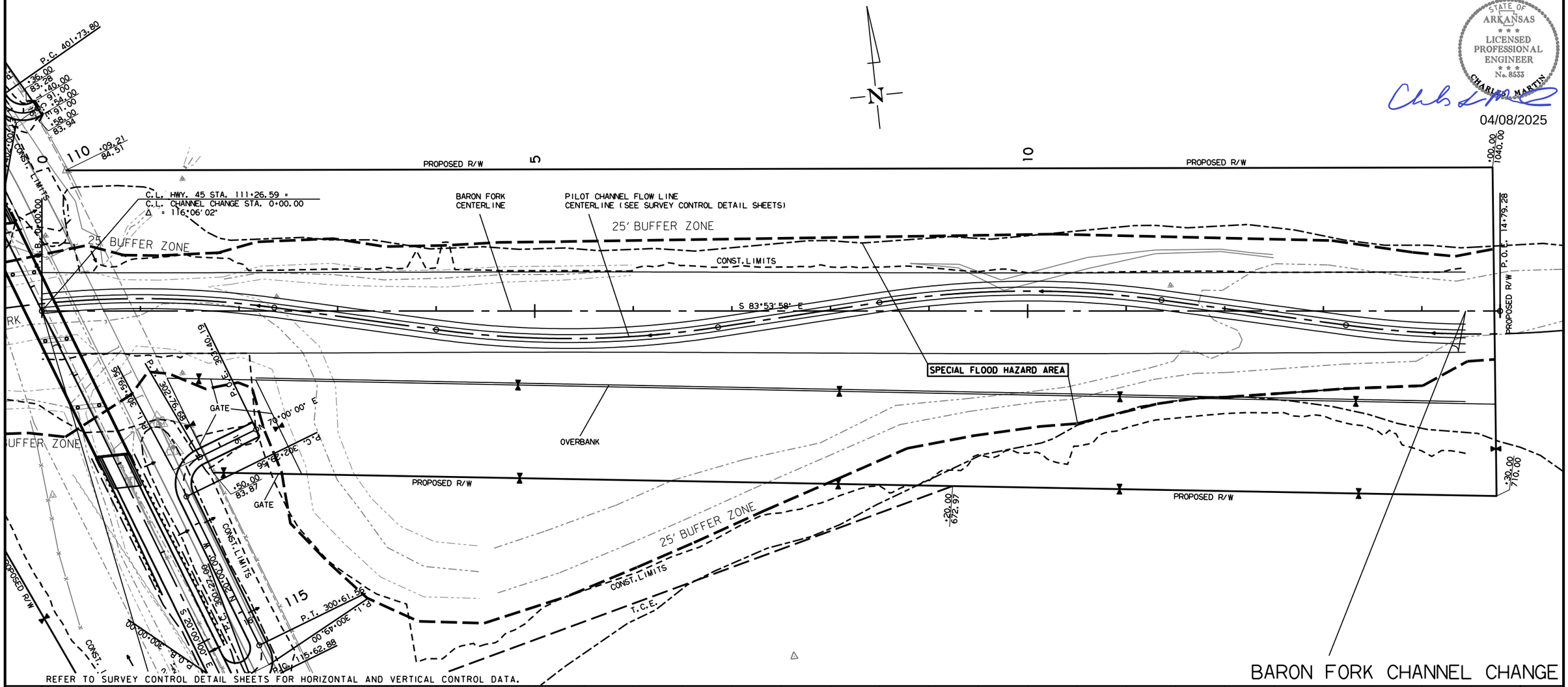


JY43338 9/23/2024
R040866.DGN

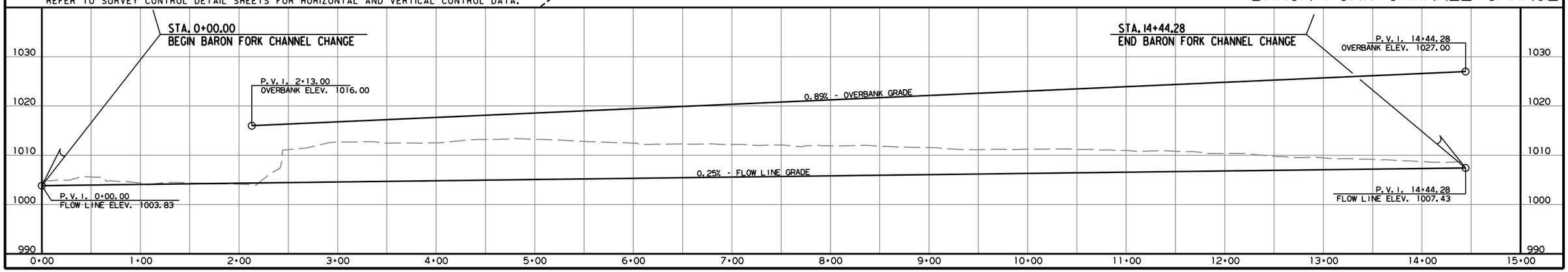
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	65	136
		PLAN AND PROFILE SHEETS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8533
CHARLES L. MARTIN

04/08/2025

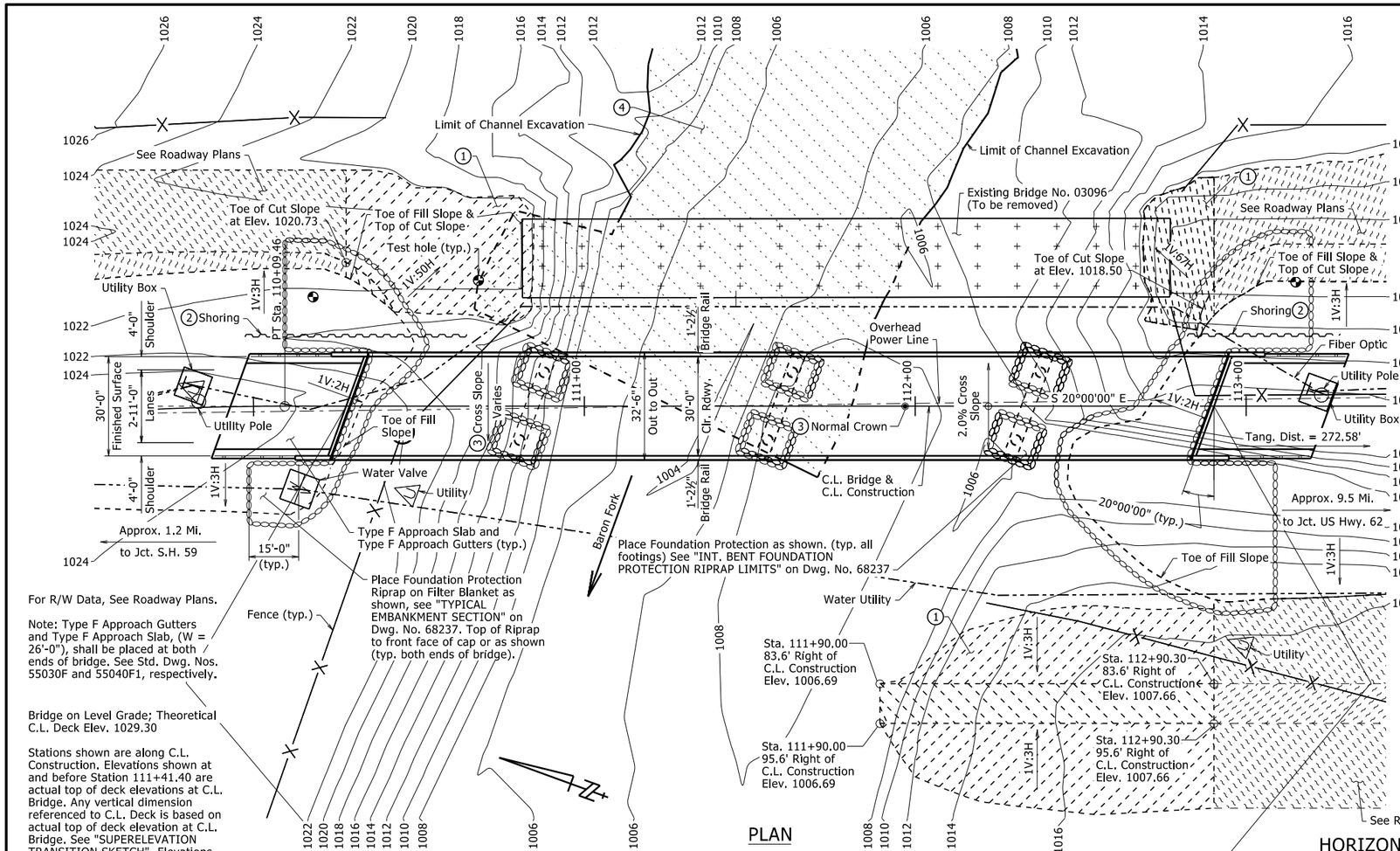


BARON FORK CHANNEL CHANGE



JY43338 9/23/2024
R040866.DGN

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	66	136
		07686 - LAYOUT - 68236				



For R/W Data, See Roadway Plans.

Note: Type F Approach Gutters and Type F Approach Slab, (W = 26'-0"), shall be placed at both ends of bridge. See Std. Dwg. Nos. 55030F and 55040F1, respectively.

Bridge on Level Grade; Theoretical C.L. Deck Elev. 1029.30

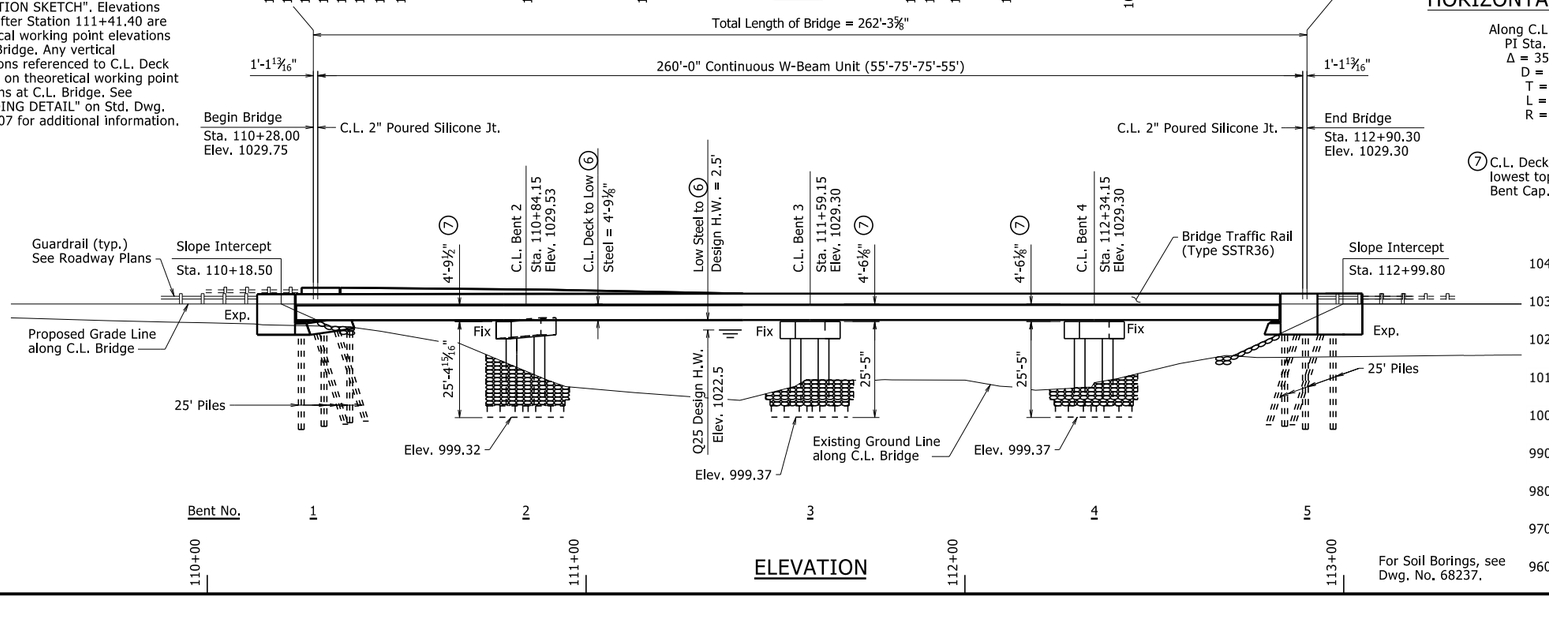
Stations shown are along C.L. Construction. Elevations shown at and before Station 111+41.40 are actual top of deck elevations at C.L. Bridge. Any vertical dimension referenced to C.L. Deck is based on actual top of deck elevation at C.L. Bridge. See "SUPERELEVATION TRANSITION SKETCH". Elevations shown after Station 111+41.40 are theoretical working point elevations at C.L. Bridge. Any vertical dimensions referenced to C.L. Deck is based on theoretical working point elevations at C.L. Bridge. See "ROUNDING DETAIL" on Std. Dwg. No. 55007 for additional information.

PLAN

HORIZONTAL CURVE DATA

Along C.L. Construction
PI Sta. 107+63.29
Δ = 35°39'45" Rt.
D = 7°00'00"
T = 263.29'
L = 509.46'
R = 818.51'

(7) C.L. Deck at C.L. Bent to lowest top of pedestal on Bent Cap.



ELEVATION

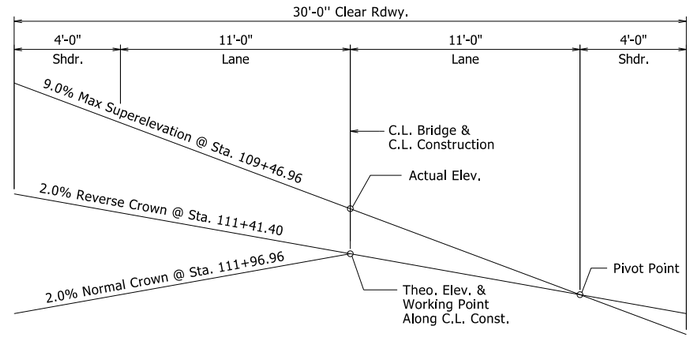
For Soil Borings, see Dwg. No. 68237.

(1) The Contractor shall excavate the bridge ends at Bents 1 and 5 as shown. Approx. 905 cu. yds. of excavation. See Roadway Plans for additional existing embankment excavation details.

(2) Shoring may be required to retain existing and/or new embankment to maintain traffic during the removal of Bridge No. 03096 and construction of Bridge No. 07686. See Special Provision Job No. 040866 "Shoring".

(3) Cross slope varies. See "SUPERELEVATION TRANSITION SKETCH" for additional information.

(4) Baron Fork Channel Change. See Roadway Plans for additional information.



SUPERELEVATION TRANSITION SKETCH

Looking Ahead
No Scale

HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	DISCHARGE	(5) NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEVATION WITH BACKWATER
	YEARS	CFS	FEET	FEET
Design	25	14080	1021.5	1022.5
Base	100	22390	1022.8	1024.3
Extreme	500	34520	1023.9	1026.1
Overtopping	>500	-	-	-

(5) Unconstricted water surface elevation without structure or roadway approaches.

Q100 backwater elevation for existing structure = 1024.6 feet
(6) Proposed Low Bridge Chord Elev. = 1025.00 feet @ Sta. 110+24.44

Drainage Area = 38.8 square miles
Historical H.W. Elev. = N/A

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
1/29/25
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 1 OF 2
LAYOUT OF BRIDGE
HIGHWAY 45 OVER BARON FORK
BARON FORK & FLY CREEK STRS. & APPRS. (S)
WASHINGTON COUNTY

ROUTE 45 SEC. 3

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: ARK/RD DATE: 7/01/2022
CHECKED BY: BAB DATE: 4/17/2024
DESIGNED BY: ARK DATE: 5/25/2022
FILENAME: b040866x1_l1.dgn
SCALE: 1" = 20'-0"

BRIDGE NO. 07686 DRAWING NO. 68236

PRINT DATE: 1/29/2025

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	67	136
		07686 - LAYOUT - 68237				

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. Section and Subsection refer to the Standard Construction Specifications unless otherwise noted in the Plans.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Ninth Edition (2020).

LIVE LOADING: HL-93

SEISMIC ZONE: 1 SD1: 0.085 SITE CLASS: C

SEISMIC OPERATIONAL CLASSIFICATION: Other

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (superstructure)	f'c = 4,000 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. 50 or 50W)	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 PILING: All piling shall be HP 14x73 (Grade 50) and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 133 tons per pile and into the material designated as chert on the boring legend. Minimum penetration shall be 10' below bottom of cap for all piles in Bents 1 and 5. Piling in end bents shall be driven after embankment to bottom of cap is in place. Lengths of piling shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with Section 805. Actual pile lengths are to be determined in the field. The Contractor shall use approved steel H-Pile driving points on all piles.

PREBORING: Preboring is required for all piles in Bents 1 and 5. The depth of preboring shall be to a depth sufficient to provide the specified minimum penetration and to a minimum 3' depth into material designated as slightly weathered to unweathered chert on the boring legend, whichever is lower. The actual size and depth of preboring shall be determined in the field by the Engineer. The Contractor shall be responsible for keeping prebored holes free of debris prior to driving piles and backfilling which may require the use of temporary casings or other approved methods. After driving is completed, the prebored hole shall be backfilled with Class S Concrete to the top of the rock and the remaining length backfilled in accordance with Subsection 805.08(a). Any related cost for backfilling and temporary casing will not be paid for directly, but shall be considered subsidiary to the item "Preboring".

SPREAD FOOTINGS: Footings in Bent 2, and footings in Bent 3 & Bent 4, shall be fully embedded into material designated as slightly weathered to unweathered limestone and slightly weathered to unweathered chert, respectively, on the boring legend. The top of the footings at Bents 2 thru 4 shall be set a minimum 2' below the channel bottom as determined by the lowest channel elevation within the footprint of the footing. Foundations for footings shall be prepared in accordance with Subsection 801.04. Rock excavations shall be made to neat lines of the concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting. Concrete in footings shall be poured directly against excavated surfaces of rock. Excavations shall be backfilled and compacted as shown in "INT. BENT FOUNDATION PROTECTION RIPRAP LIMITS" and in accordance with Special Provision Job No. 040866 "FOUNDATION PROTECTION RIPRAP".

PAINTING: The following weathering steel surfaces shall be painted as specified in Subsection 807.75:

All steel surfaces within five feet of bridge deck expansion joints, including diaphragms, cross frames, connection bolts, and bearings.

All steel surfaces exposed to the outside face of the bridge, including outside faces and bottom of exterior beams or girders, splice plates and bolts, stiffeners, drip plates, and bearings.

The expansion device, galvanized members, and surfaces in contact with concrete shall not be painted. The color of paint shall be Brown equal or close to Federal Std. 595B, Color Chip No. 30070 and as approved by the Engineer. The finish system may be applied in the shop. Any damage to the paint system occurring during transport or installation shall be corrected according to the manufacturer's recommendations at no cost to the Department. ASTM F3125, Grade A325 Type 3 bolts shall be used within these painted zones and shall be painted.

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 bridge rails in accordance with Section 803.

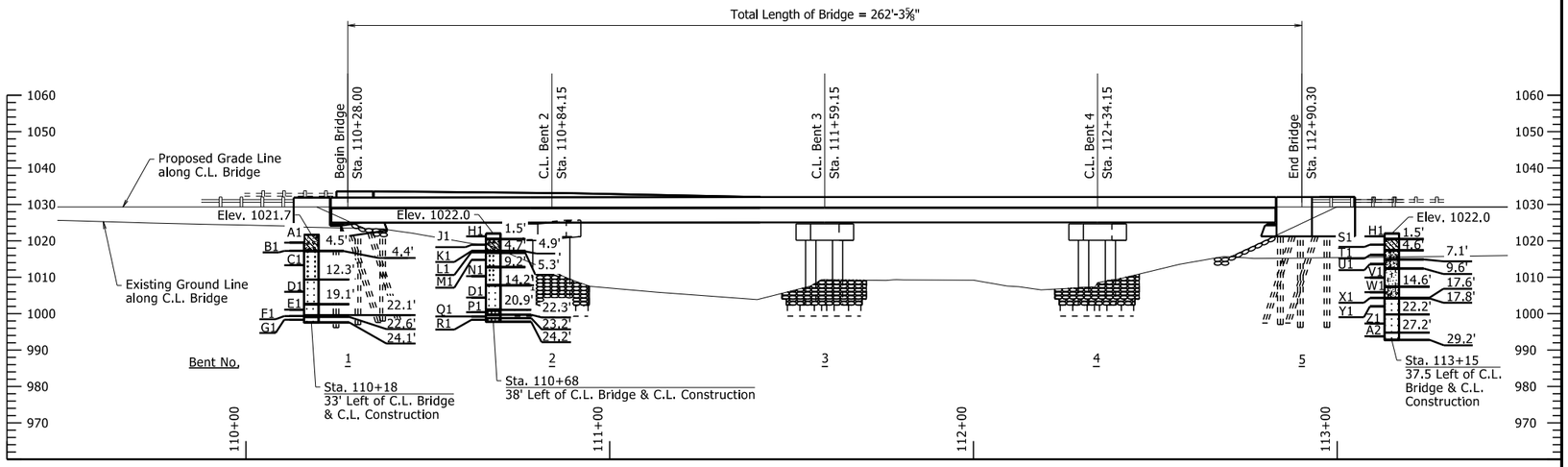
DETAIL DRAWINGS:	DRAWING NO(S).
Bent 1	68238-68241
Intermediate Bents	68242-68245
Bent 5	68246-68249
Elastomeric Bearings	68250
260'-0" Continuous W-Beam Unit	68251-68258
General Notes For Steel Bridge Structures	55006
Details For Steel Bridge Structures	55007
Poured Silicone Joints	55008
Steel H-Piling	55020
Type F Approach Gutters	55030F
Type F Approach Slab	55040F1
Bridge Traffic Rail (Type SSTR36)	55070

EXISTING BRIDGE: Existing Bridge No. 03096 (Log Mile 1.15) is 28.0' wide (24' clear roadway) and 196' long and consists of 28' reinforced concrete slab spans (7 spans total) supported by concrete columns on spread footings. The existing bridge is located approximately 45' upstream from the proposed bridge. Plans of the existing structure, if available, may be obtained upon request to the Construction Contract Development Section of the Program Management Division.

REMOVAL AND SALVAGE: After the new bridge is open to traffic, the Contractor shall remove existing Bridge No. 03096 in accordance with Section 205. Existing riprap shall also be removed; this will not be paid for directly but shall be subsidiary to the item "Foundation Protection Riprap". All material from the existing bridge shall become the property of the Contractor.

MAINTENANCE OF TRAFFIC: See Roadway Plans.

PRINT DATE: 12/16/2024



ELEVATION OF SOIL BORINGS

BORING LEGEND

A1-Moist, Very Stiff, Brown Sandy Clay with Gravel
B1-CHERT - Slightly Weathered, Moderately Hard to Hard, Frequent Fractures, Gray
C1-CHERT - Slightly Weathered, Moderately Hard to Hard, Occasional Fractures, Gray
D1-CALCAREOUS CHERT WITH OCCASIONAL LIMESTONE SEAMS AND LAYERS - Unweathered, Moderately Hard to Hard, Gray
E1-CALCAREOUS CHERT WITH OCCASIONAL LIMESTONE SEAMS AND LAYERS - Unweathered, Moderately Hard to Hard, Occasional Fractures, Gray
F1-Cavity
G1-CALCAREOUS CHERT WITH FREQUENT LIMESTONE LAYERS - Unweathered, Moderately Hard to Hard, Gray
H1-Asphalt
J1-Moist, Medium Stiff, Sandy Clay with Gravel
K1-Moist, Very Hard, Brown Sandy Clay with Gravel
L1-CHERT
M1-CHERT - Slightly Weathered, Moderately Hard, to Hard, Frequent Fractures, Gray
N1-CALCAREOUS CHERT - Slightly Weathered, Moderately Hard to Hard, Gray
P1-LIMESTONE - Unweathered, Moderately Hard, Gray
Q1-CALCAREOUS CHERT - Unweathered, Moderately Hard to Hard, Gray
R1-LIMESTONE - Unweathered, Moderately Hard to Hard, Gray
S1-Moist, Medium Stiff, Brown Sandy Lean Clay with Some Gravel
T1-Moist, Dense, Brown Clayey Sand with Gravel
U1-Moist, Medium Dense, Brown Clayey Gravel with Sand
V1-Moist, Loose, Brown Silty Sand (Water encountered at 13.8' bgl)
W1-Wet, Medium Dense, Brown Gravel with Silt and Sand
X1-Wet, Very Dense, Brown Sand with Silt and Gravel
Y1-CALCAREOUS CHERT WITH FREQUENT LIMESTONE LAYERS - Slightly Weathered, Moderately Hard to Hard, Frequent Fractures, Gray
Z1-CALCAREOUS CHERT WITH OCCASIONAL LIMESTONE LAYERS - Slightly Weathered, Moderately Hard to Hard, Frequent Fractures, Gray
A2-CALCAREOUS CHERT WITH OCCASIONAL LIMESTONE LAYERS - Slightly Weathered, Moderately Hard to Hard, Gray

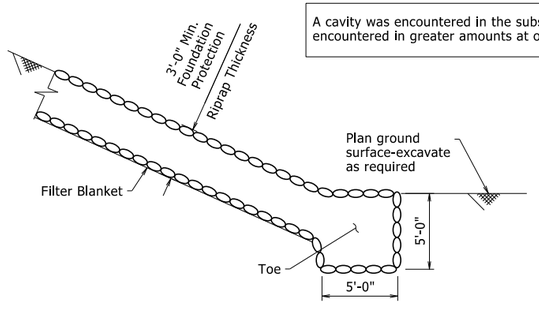
A cavity was encountered in the substructure investigation. Cavities may be encountered in greater amounts at other locations within the project area.

"N" VALUES

Sta. 110+18 - 33' Left of C.L. Bridge & C.L. Construction
2.5- 3.5,N=29
4.4- 4.5,N=10(1")

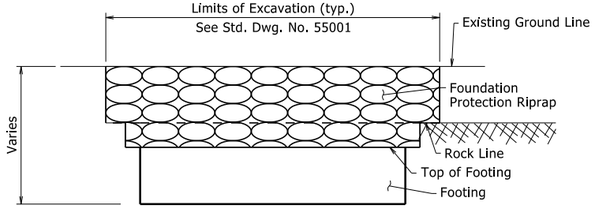
Sta. 110+68 - 38' Left of C.L. Bridge & C.L. Construction
3.0- 4.0,N=7
4.7- 4.9,N=10(2")

Sta. 113+15 - 37.5 Left of C.L. Bridge & C.L. Construction
3.0- 4.0,N=8
5.1- 6.1,N=33
7.6- 8.6,N=17
10.1- 11.1,N=5
15.1- 16.1,N=18
17.6- 17.8,N=10(2")



TYPICAL EMBANKMENT SECTION

No Scale



INT. BENT FOUNDATION PROTECTION RIPRAP LIMITS

No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
12/16/24
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 2 OF 2
LAYOUT OF BRIDGE
HIGHWAY 45 OVER BARON FORK
BARON FORK & FLY CREEK STRS. & APPRS. (S)
WASHINGTON COUNTY

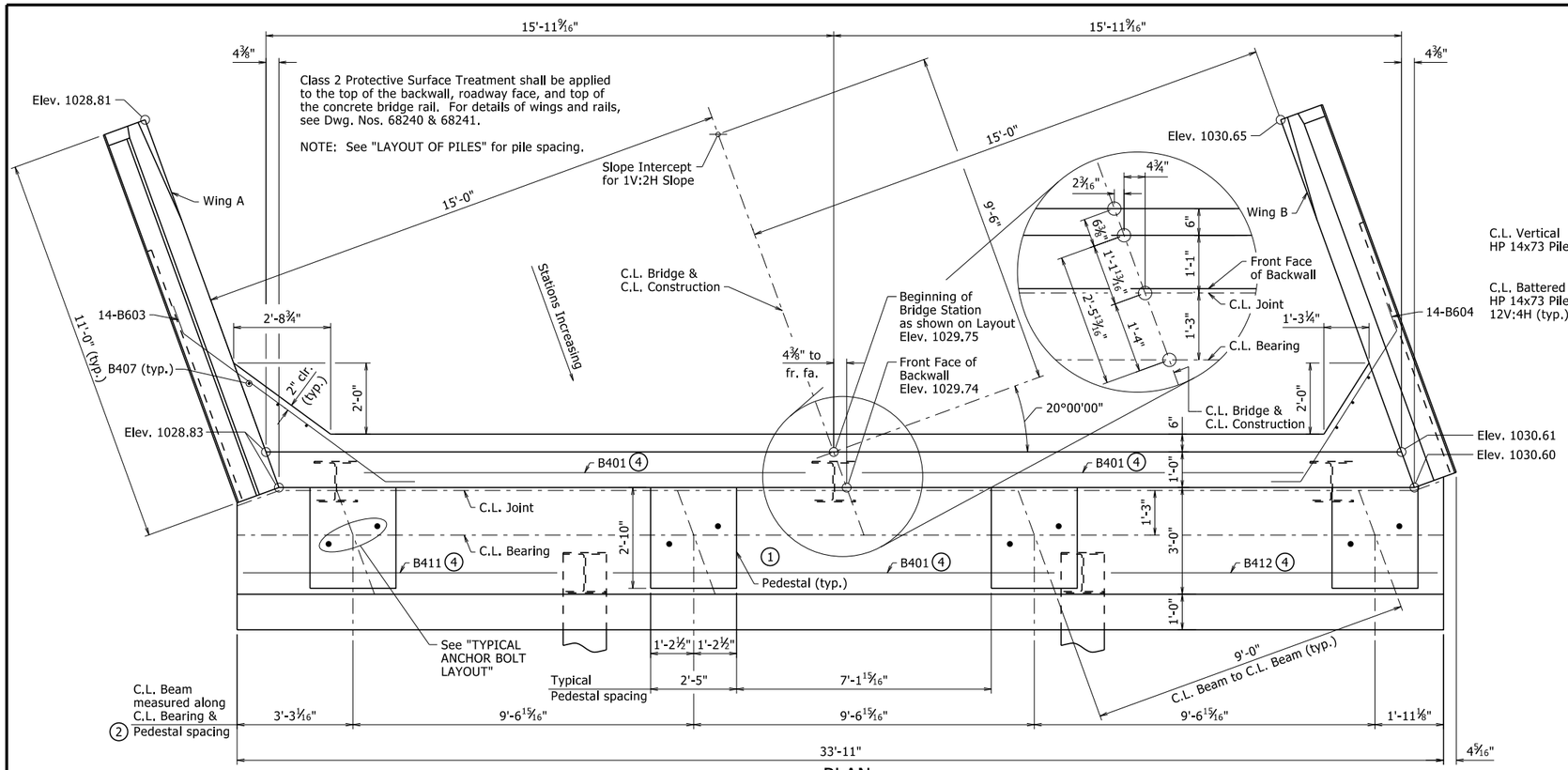
ROUTE 45 SEC. 3

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

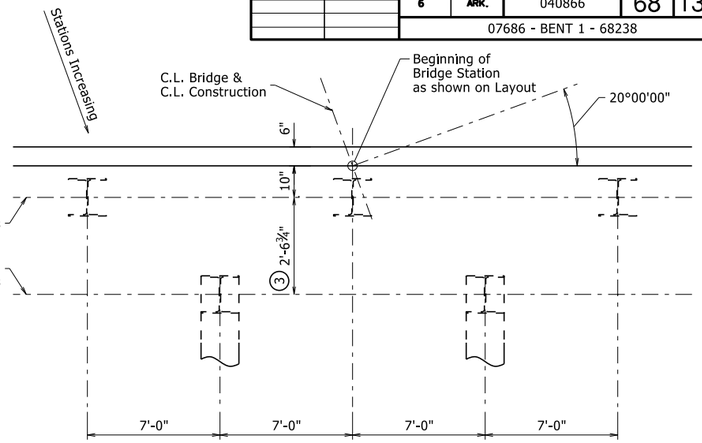
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CHECKED BY: BAB DATE: 4/17/2024 SCALE: 1" = 20'-0"
DESIGNED BY: ARK DATE: 5/25/2022

BRIDGE NO. 07686 DRAWING NO. 68237

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	68	136
		07686 - BENT 1 - 68238				

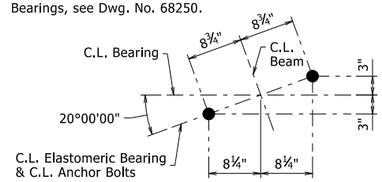


PLAN
½" = 1'-0"

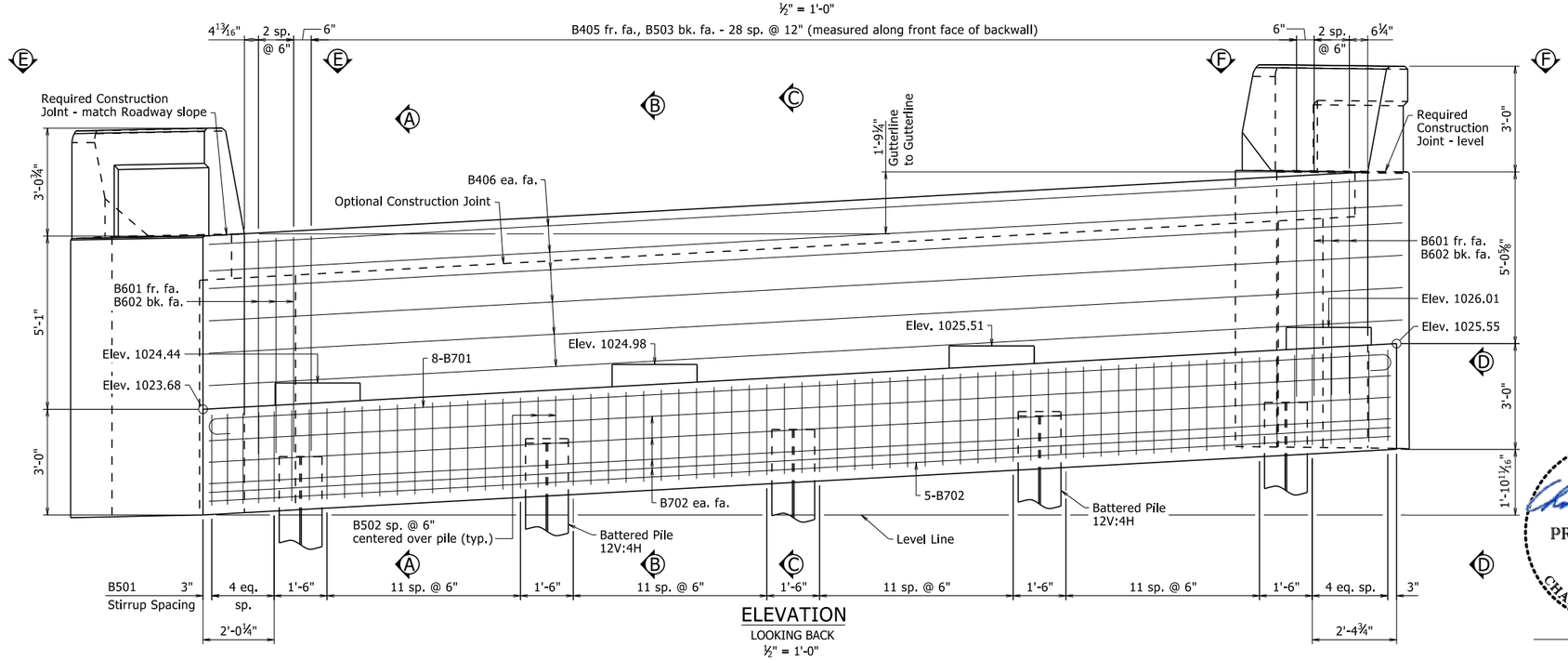


LAYOUT OF PILES
NO SCALE

For details of Elastomeric Bearings, see Dwg. No. 68250.



TYPICAL ANCHOR BOLT LAYOUT
NO SCALE



ELEVATION
LOOKING BACK
½" = 1'-0"

NOTES:

For "GENERAL NOTES", see Std. Dwg. No. 55006.

For Joint Details see Std. Dwg. No. 55008.

All piling shall be HP14x73 (ASTM A709, Gr. 50). See Std. Dwg. No. 55020 for additional details.

See Dwg. No. 68239 for "SECTION A-A", "SECTION B-B", "SECTION C-C", "VIEW D-D", "VIEW E-E", & "VIEW F-F".

Structural steel, unless noted otherwise, in end bents shall be ASTM A709, Gr. 50W and shall be paid for as "Structural Steel in Beam Spans (A709, Gr.50W)".

No portion of the backwall shall be poured before beams are in place. The portion of the backwall above the optional construction joint at the paving bracket shall not be placed until the deck pour has been made. Refer to the "EXPANSION DEVICE INSTALLATION AT END BENTS" note, see Std. Dwg. No. 55008.

No heavy construction equipment shall be allowed within 10' of the backwall before the deck concrete placement for the adjacent span has been completed.

For additional information, see Layout.

(1) Top of Pedestals shall be cast level at the elevations shown.

(2) See Dwg. No. 68239 for "PEDESTAL PLAN" & "TYPICAL PEDESTAL DETAILS".

(3) Measured at bottom of cap.

(4) Placed between piles.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
12/16/24
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 1 OF 4
DETAILS OF BENT 1
BARON FORK

ROUTE SEC.

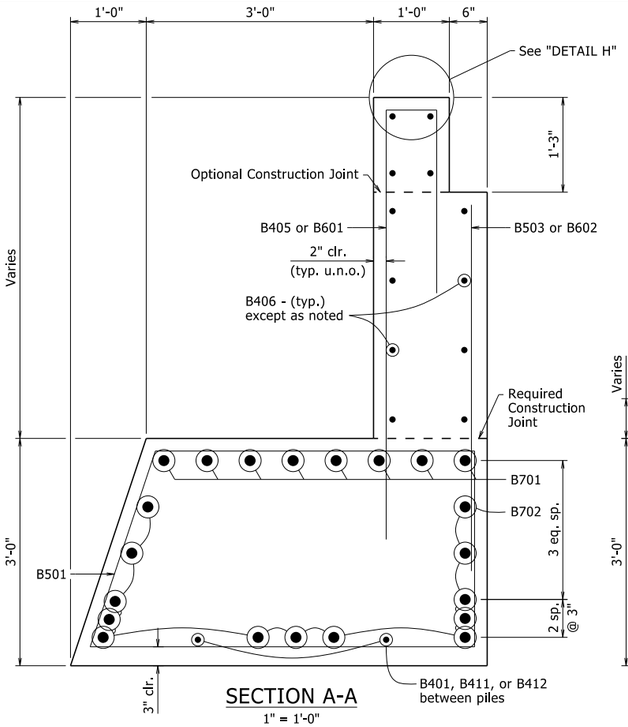
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 10/25/2023 FILENAME: b040866x1_b1.dgn
CHECKED BY: RD DATE: 03/19/2024 SCALE: AS NOTED
DESIGNED BY: RD DATE: 08/2023

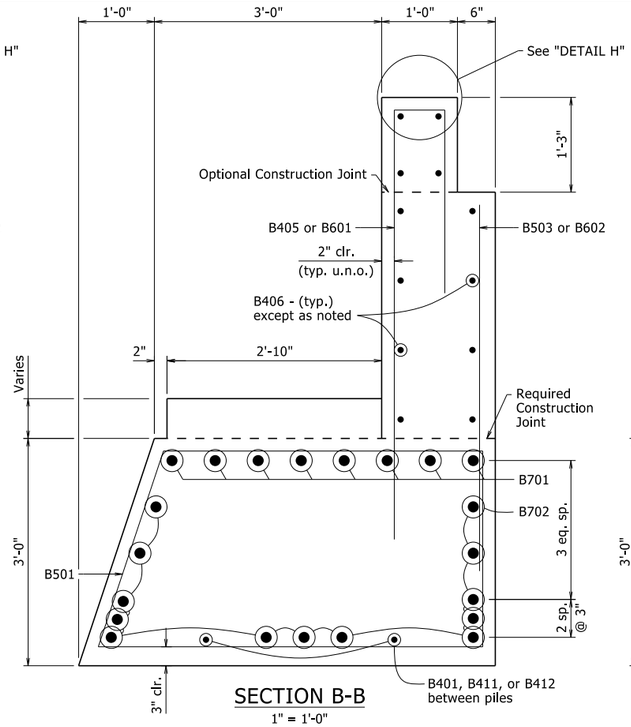
BRIDGE NO. 07686 DRAWING NO. 68238

PRINT DATE: 12/2/2024

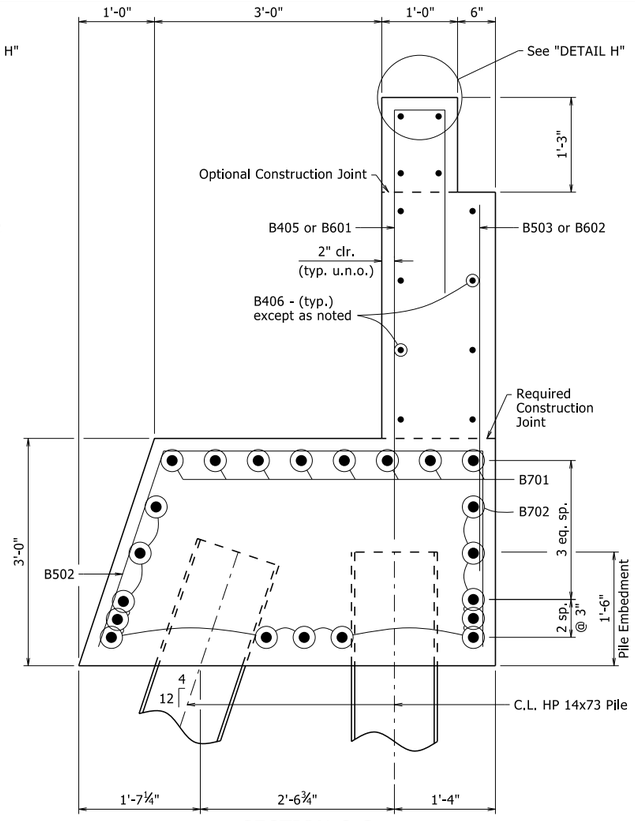
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	69	136
		07686 - BENT 1 - 68239				



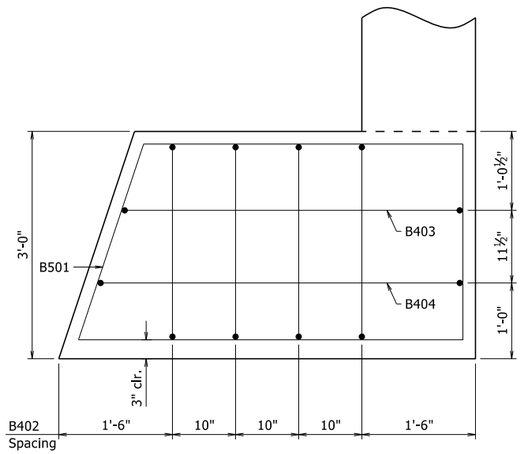
SECTION A-A
1" = 1'-0"



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



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



VIEW D-D
1" = 1'-0"

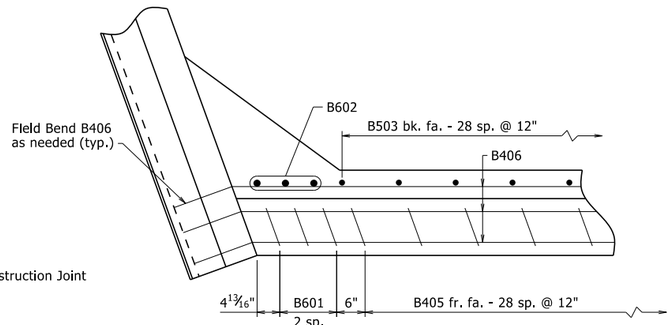
PEDESTAL PLAN
1" = 1'-0"

NOTES:

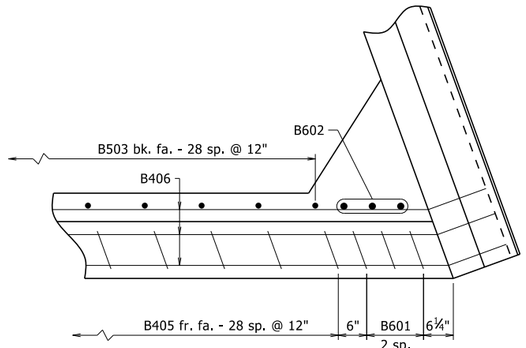
Place one B410 tie on pedestals 9" in height or less.

TYPICAL PEDESTAL DETAILS
1" = 1'-0"
LOOKING BACK

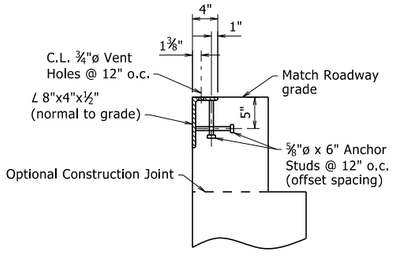
SECTION G-G
1" = 1'-0"



VIEW E-E
¾" = 1'-0"



VIEW F-F
¾" = 1'-0"



DETAIL H
NO SCALE

NOTES: Transverse spacing between vertical anchor studs and vent holes shall be 6".

Concrete shall be hand packed under the joint armor.

For additional joint details, see Std. Dwg. No. 55008.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
12/16/24
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 2 OF 4
DETAILS OF BENT 1
BARON FORK

ROUTE SEC.

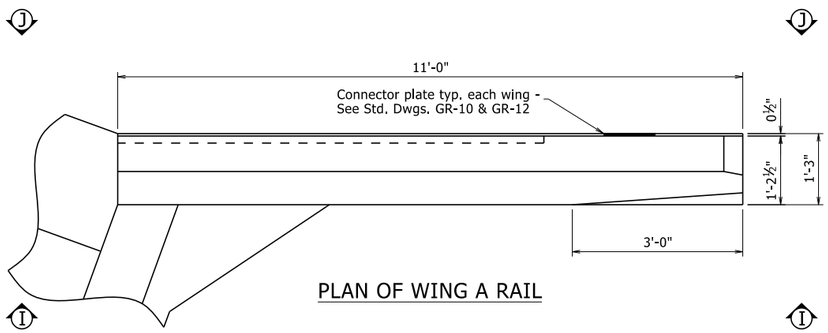
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 10/25/2023 FILENAME: b040866x1_b1.dgn
CHECKED BY: RD DATE: 03/19/2024 SCALE: AS NOTED
DESIGNED BY: RD DATE: 08/2023

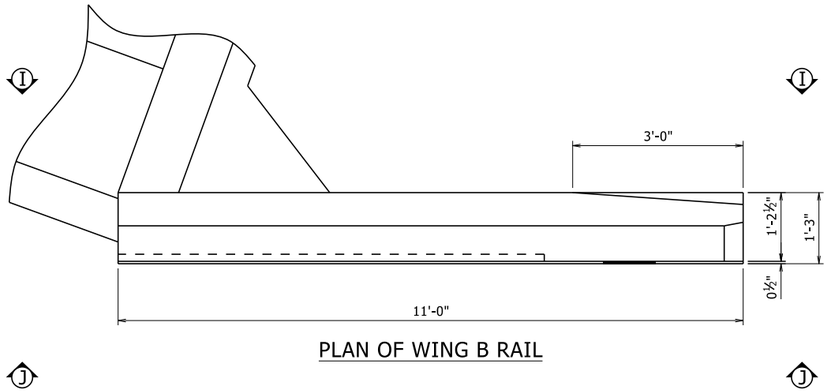
BRIDGE NO. 07686 DRAWING NO. 68239

PRINT DATE: 12/2/2024

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	70	136
		07686 - BENT 1 - 68240				



PLAN OF WING A RAIL

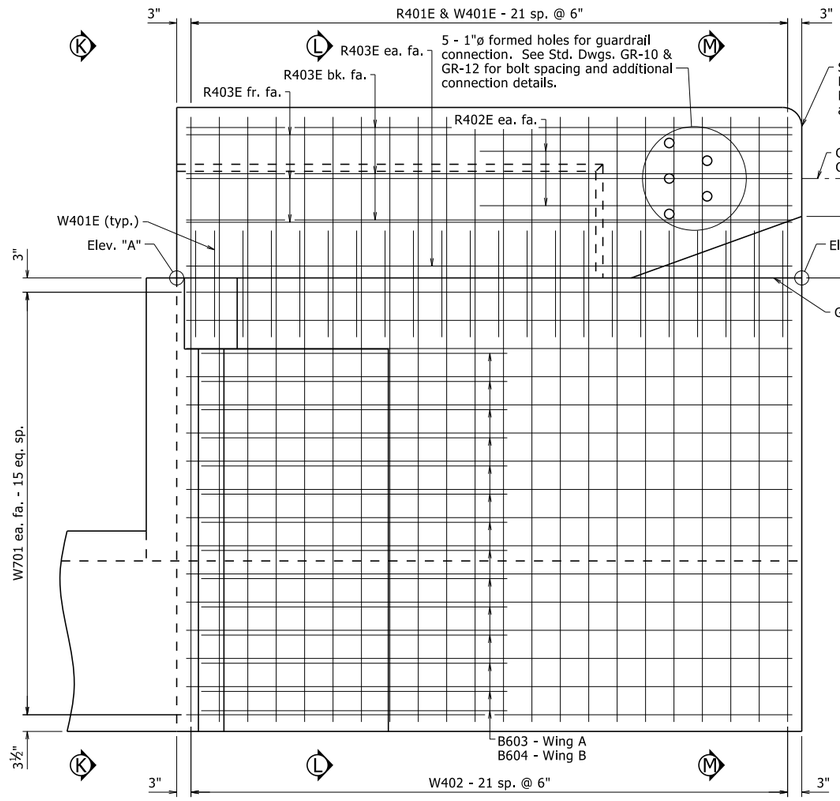


PLAN OF WING B RAIL

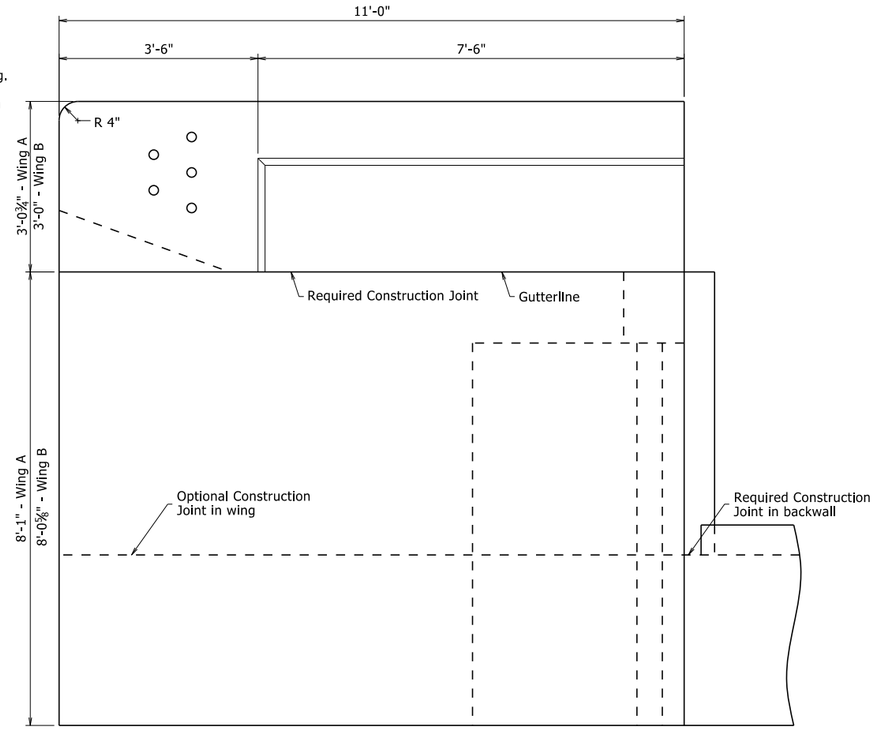
NOTE:

See Dwg. No. 68241 for "VIEW K-K", "SECTION L-L", & "SECTION M-M".

	"Elev. "A"	Elev. "B"
Wing A	1028.83	1028.81
Wing B	1030.60	1030.65



VIEW I-I



VIEW J-J

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
12/16/24
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 3 OF 4
DETAILS OF BENT 1
BARON FORK

ROUTE SEC.

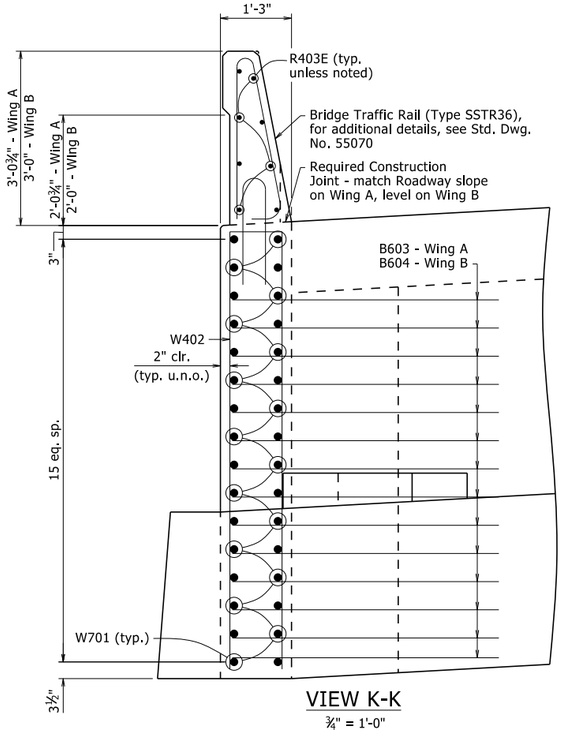
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 10/25/2023
CHECKED BY: RD DATE: 03/19/2024
DESIGNED BY: RD DATE: 08/2023
FILENAME: b040866x1_b1.dgn
SCALE: ¾" = 1'-0"

BRIDGE NO. 07686 DRAWING NO. 68240

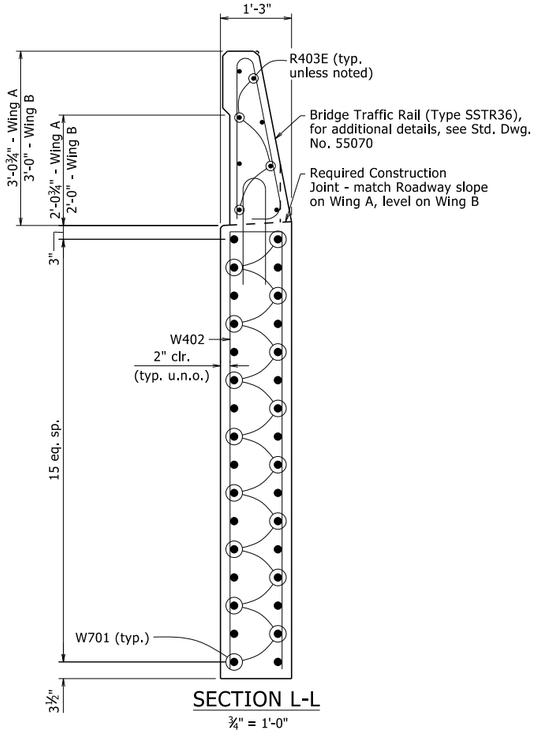
PRINT DATE: 12/2/2024

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	71	136
		07686 - BENT 1 - 68241				



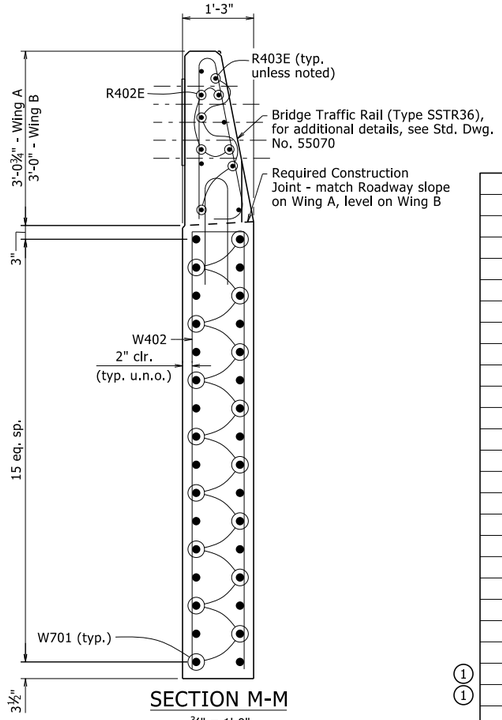
VIEW K-K

¾" = 1'-0"



SECTION L-L

¾" = 1'-0"



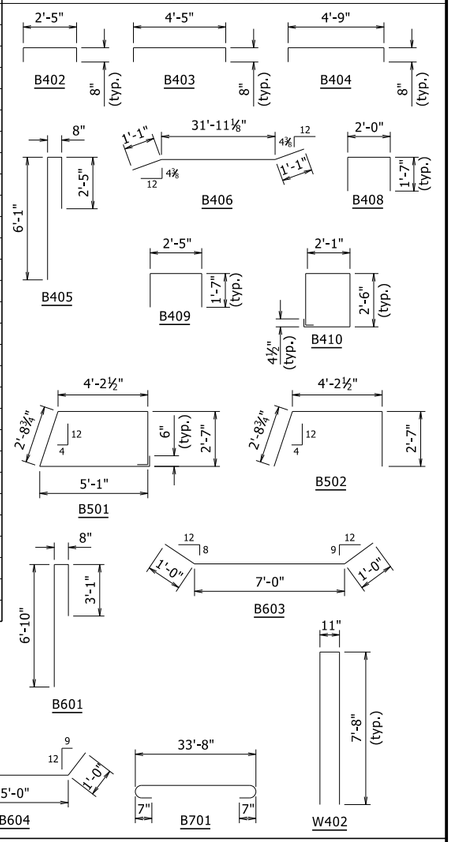
SECTION M-M

¾" = 1'-0"

BAR LIST

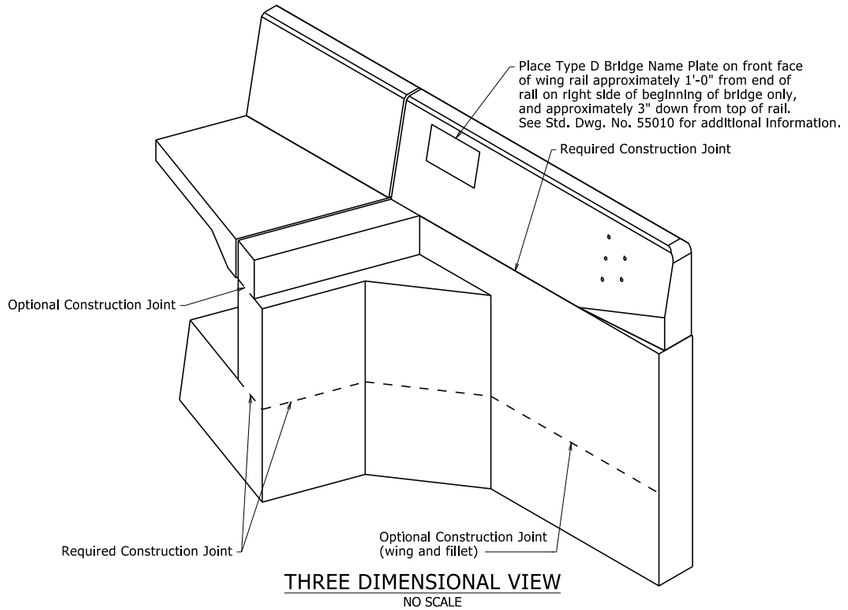
MARK	NO. REQ'D	LENGTH	P.D.
B401	3	12'-5"	Str.
B402	8	3'-7"	2"
B403	2	5'-7"	2"
B404	2	5'-11"	2"
B405	29	9'-0"	2"
B406	12	34'-1"	2"
B407	6	6'-5"	Str.
B408	16	5'-0"	2"
B409	16	5'-5"	2"
B410	4	9'-6"	2"
B411	1	8'-10"	Str.
B412	1	9'-2"	Str.
B501	58	15'-1"	2½"
B502	10	9'-5"	2½"
B503	29	5'-4"	Str.
B601	6	10'-3"	4½"
B602	6	5'-7"	Str.
B603	14	9'-0"	4½"
B604	14	7'-0"	4½"
B701	8	35'-4"	5¼"
B702	13	33'-8"	Str.
(1) R401E	44	6'-4"	2½"
(1) R402E	8	5'-6"	Str.
R403E	16	10'-8"	Str.
(1) W401E	44	3'-11"	3¾"
W402	44	16'-1"	2"
W701	64	10'-8"	Str.

BENDING DIAGRAMS



Dimensions are out to out of bars.
Bars with the "E" suffix shall be epoxy coated.

(1) See Std. Dwg. No. 55070 for details of rail reinforcing.



THREE DIMENSIONAL VIEW

NO SCALE

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
12/16/24
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 4 OF 4
DETAILS OF BENT 1
BARON FORK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

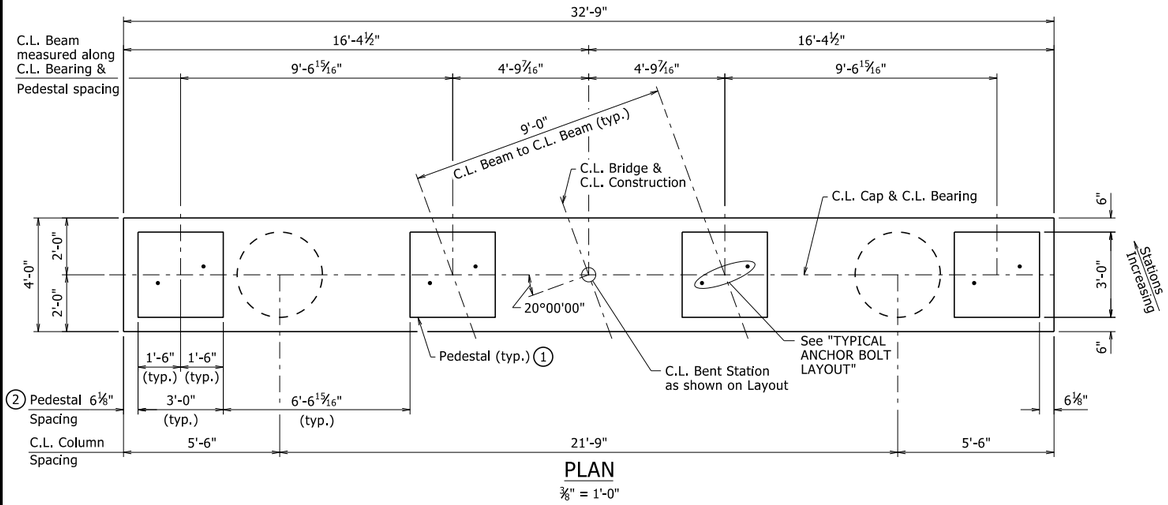
LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 10/25/2023 FILENAME: b040866x1_b1.dgn
CHECKED BY: RD DATE: 03/19/2024 SCALE: AS NOTED
DESIGNED BY: RD DATE: 08/2023

BRIDGE NO. 07686 DRAWING NO. 68241

PRINT DATE: 12/2/2024

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	72	136
		07686 - BENT 2 - 68242				



PLAN

⅜" = 1'-0"

NOTES:

For "GENERAL NOTES", see Std. Dwg. No. 55006.

For additional information, see Layout.

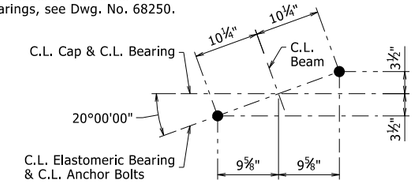
See Dwg. No. 68243 for "SECTION A-A", "SECTION B-B", "SECTION C-C", "SECTION D-D", & "VIEW F-F".

(1) Top of Pedestals shall be cast level at the elevations shown.

(2) See Dwg. No. 68243 for "PEDESTAL PLAN" and "TYPICAL PEDESTAL DETAILS".

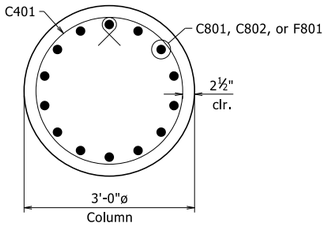
(3) F801 bars to rest on bottom mat of footing reinforcing steel as shown.

For details of Elastomeric Bearings, see Dwg. No. 68250.



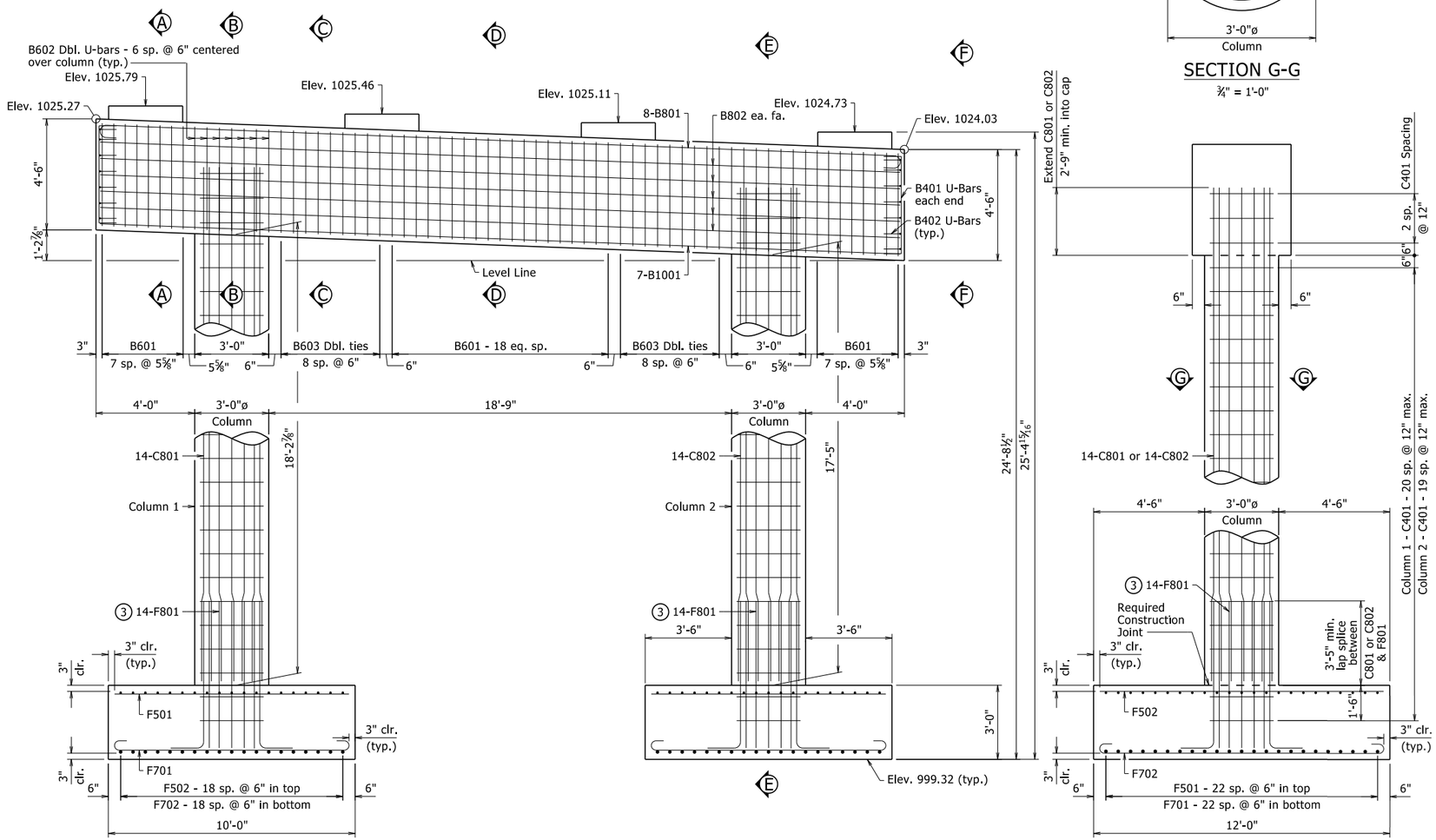
TYPICAL ANCHOR BOLT LAYOUT

NO SCALE



SECTION G-G

¾" = 1'-0"



ELEVATION

LOOKING AHEAD

⅜" = 1'-0"

SECTION E-E

⅜" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
12/16/24
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS OF BENT 2
BARON FORK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

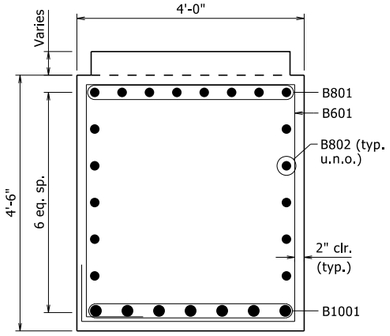
LITTLE ROCK, ARK.

DRAWN BY:	CGP	DATE: 12/07/2023	FILENAME:	b040866x1_b2.dgn
CHECKED BY:	RD	DATE: 03/19/2024	SCALE:	AS NOTED
DESIGNED BY:	RD	DATE: 08/2023		

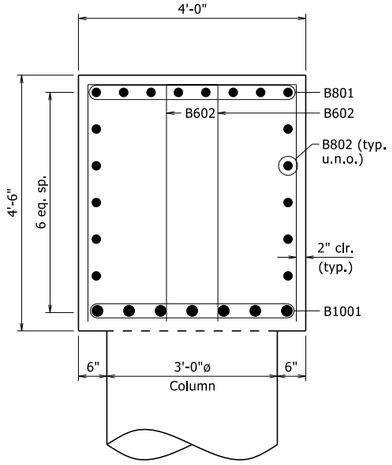
BRIDGE NO. 07686 DRAWING NO. 68242

PRINT DATE: 12/2/2024

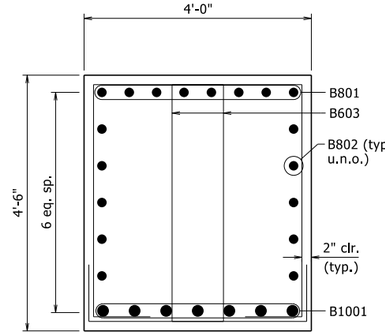
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	73	136
		07686 - BENT 2 - 68243				



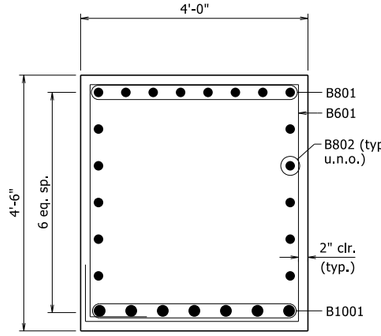
SECTION A-A



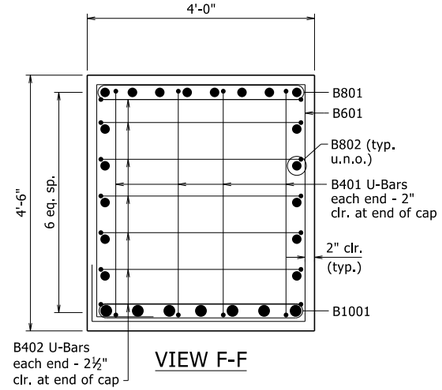
SECTION B-B



SECTION C-C



SECTION D-D

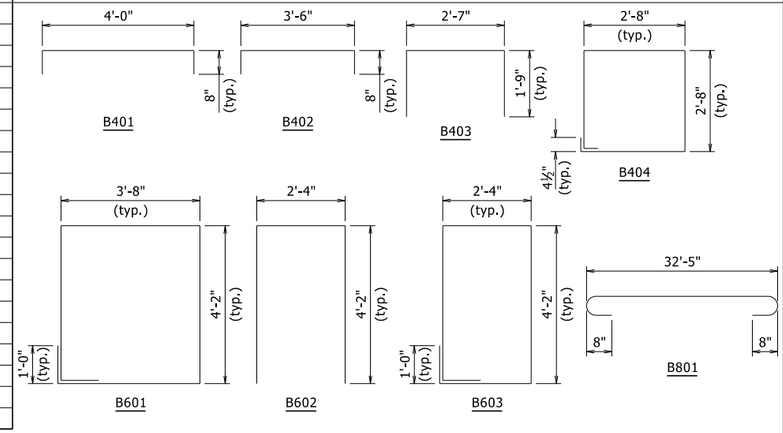


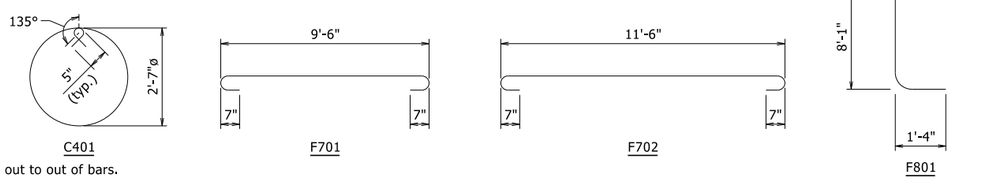
VIEW F-F

BAR LIST

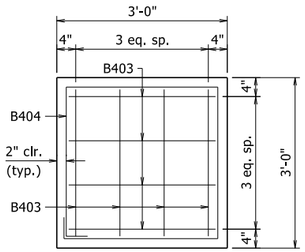
MARK	NO. REQ'D	LENGTH	P.D.
B401	8	5'-2"	2"
B402	14	4'-8"	2"
B403	32	5'-11"	2"
B404	4	11'-0"	2"
B601	35	16'-10"	4½"
B602	28	10'-4"	4½"
B603	36	14'-2"	4½"
B801	8	34'-3"	6"
B802	10	32'-5"	Str.
B1001	7	32'-5"	Str.
C401	47	9'-3"	3"
C801	14	20'-11"	Str.
C802	14	20'-1"	Str.
F501	46	9'-6"	Str.
F502	38	11'-6"	Str.
F701	46	11'-2"	5¼"
F702	38	13'-2"	5¼"
F801	28	9'-2"	6"

BENDING DIAGRAMS





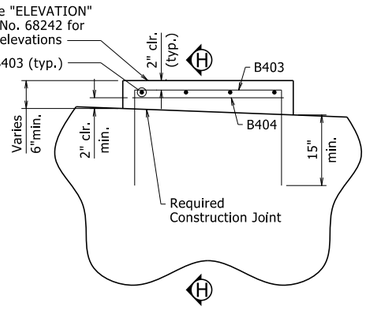
Dimensions are out to out of bars.



PEDESTAL PLAN

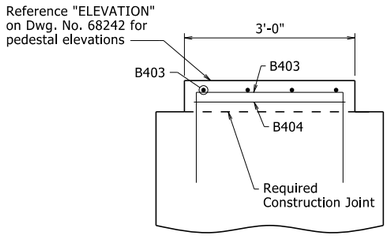
NOTE:

Place one B404 tie on pedestals 9" in height or less.

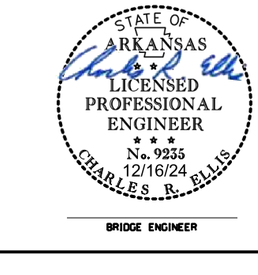


TYPICAL PEDESTAL DETAILS

LOOKING AHEAD



SECTION H-H



BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF BENT 2
BARON FORK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

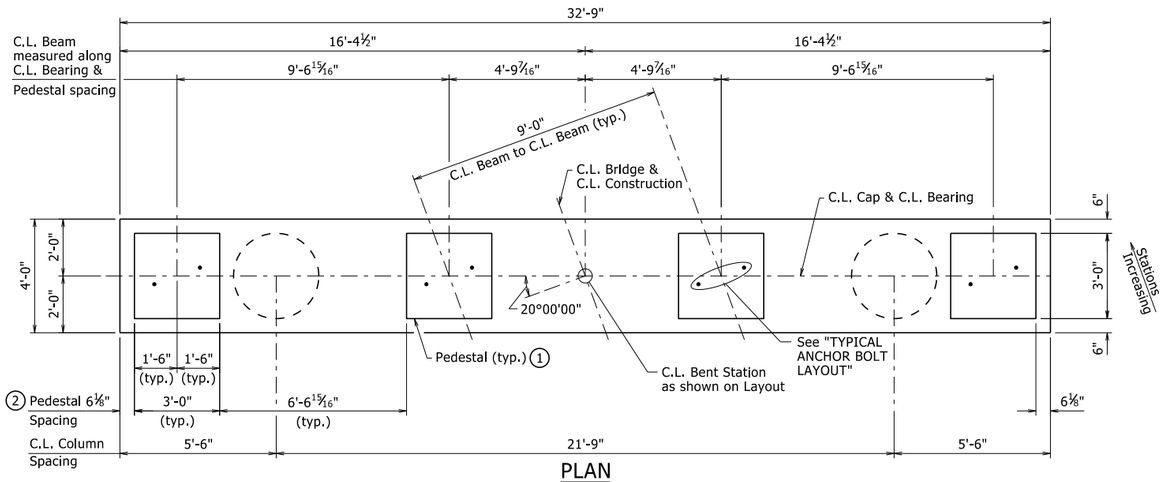
LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 12/07/2023 FILENAME: b040866x1_b2.dgn
CHECKED BY: RD DATE: 03/19/2024 SCALE: 3/4" = 1'-0"
DESIGNED BY: RD DATE: 08/2023

BRIDGE NO. 07686 DRAWING NO. 68243

PRINT DATE: 12/2/2024

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	74	136
		07686 - BENTS 3 & 4 - 68244				



PLAN

⅜" = 1'-0"

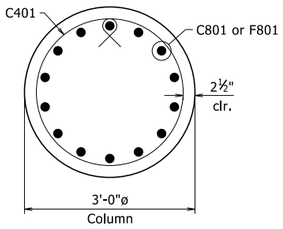
NOTES:

For "GENERAL NOTES", see Std. Dwg. No. 55006.

For additional information, see Layout.

See Dwg. No. 68245 for "SECTION A-A", "SECTION B-B", "SECTION C-C", "SECTION D-D", & "VIEW F-F".

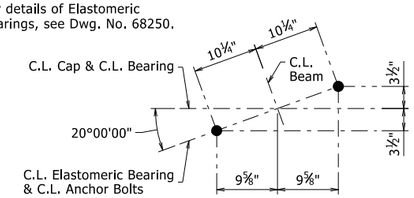
1. Top of Pedestals shall be cast level at the elevations shown.
2. See Dwg. No. 68245 for "PEDESTAL PLAN" and "TYPICAL PEDESTAL DETAILS".
3. F801 bars to rest on bottom mat of footing reinforcing steel as shown.



SECTION G-G

¾" = 1'-0"

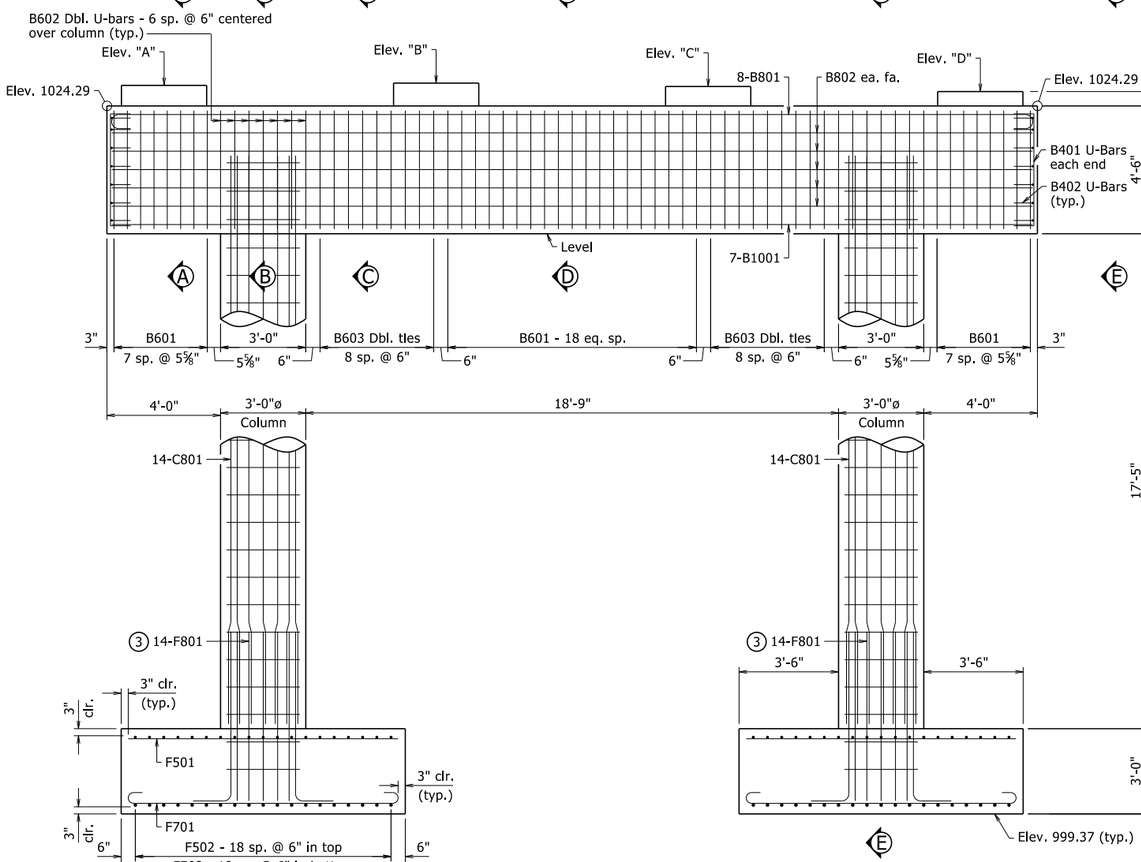
For details of Elastomeric Bearings, see Dwg. No. 68250.



TYPICAL ANCHOR BOLT LAYOUT

NO SCALE

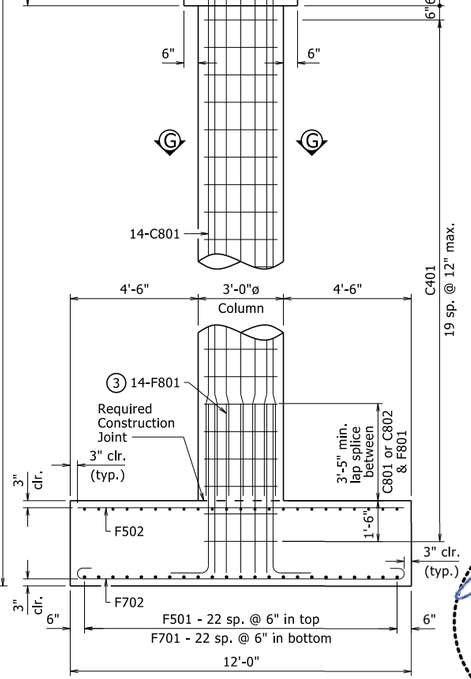
	Elev. "A"	Elev. "B"	Elev. "C"	Elev. "D"
Bent 3	1025.11	1025.09	1024.97	1024.79
Bent 4	1024.79	1024.97	1024.97	1024.79



ELEVATION

LOOKING AHEAD

⅜" = 1'-0"



SECTION E-E

⅜" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
12/16/24
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS OF BENTS 3 & 4
BARON FORK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

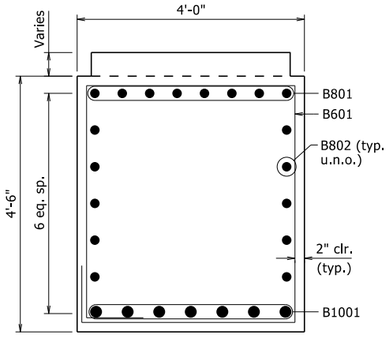
LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 12/07/2023 FILENAME: b040866x1_b3.dgn
CHECKED BY: RD DATE: 03/19/2024 SCALE: AS NOTED
DESIGNED BY: RD DATE: 08/2023

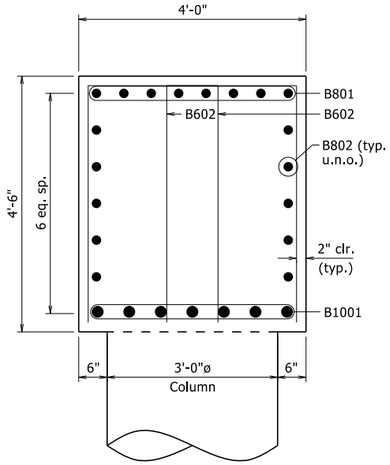
BRIDGE NO. 07686 DRAWING NO. 68244

PRINT DATE: 12/2/2024

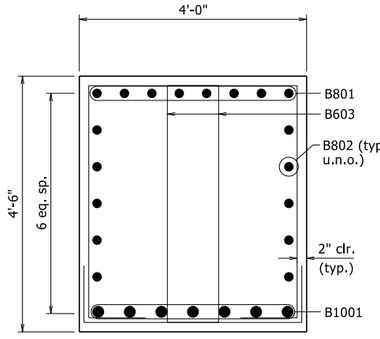
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	75	136
		07686 - BENTS 3 & 4 - 68245				



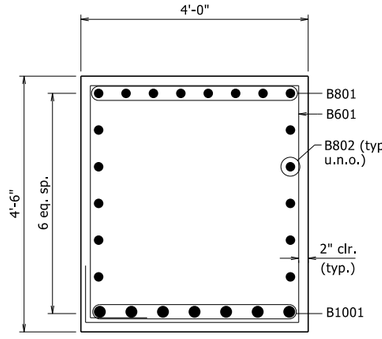
SECTION A-A



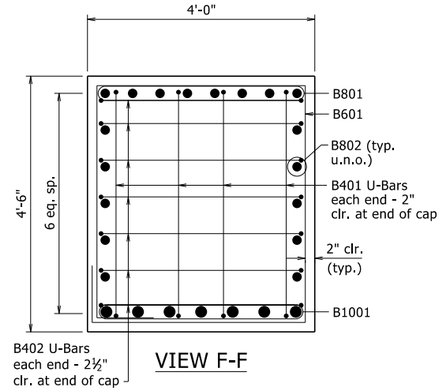
SECTION B-B



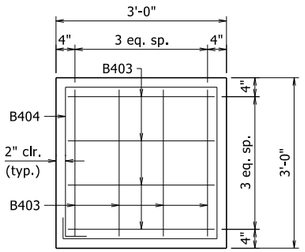
SECTION C-C



SECTION D-D



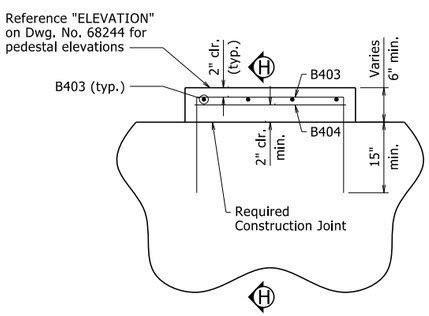
VIEW F-F



PEDESTAL PLAN

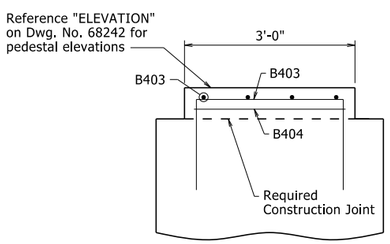
NOTE:

Place one B404 tie on pedestals 9" in height or less.



TYPICAL PEDESTAL DETAILS

LOOKING AHEAD

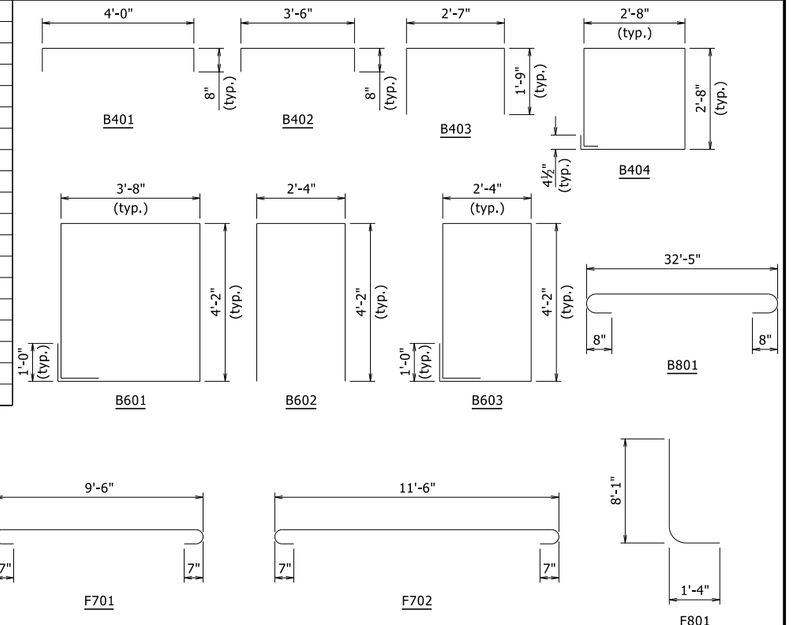


SECTION H-H

BAR LIST - PER BENT

MARK	NO. REQ'D	LENGTH	P.D.
B401	8	5'-2"	2"
B402	14	4'-8"	2"
B403	32	5'-11"	2"
B404	4	11'-0"	2"
B601	35	16'-10"	4½"
B602	28	10'-4"	4½"
B603	36	14'-2"	4½"
B801	8	34'-3"	6"
B802	10	32'-5"	Str.
B1001	7	32'-5"	Str.
C401	46	9'-3"	3"
C801	28	20'-1"	Str.
F501	46	9'-6"	Str.
F502	38	11'-6"	Str.
F701	46	11'-2"	5¼"
F702	38	13'-2"	5¼"
F801	28	9'-2"	6"

BENDING DIAGRAMS



Dimensions are out to out of bars.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
12/16/24
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF BENTS 3 & 4
BARON FORK

ROUTE SEC.

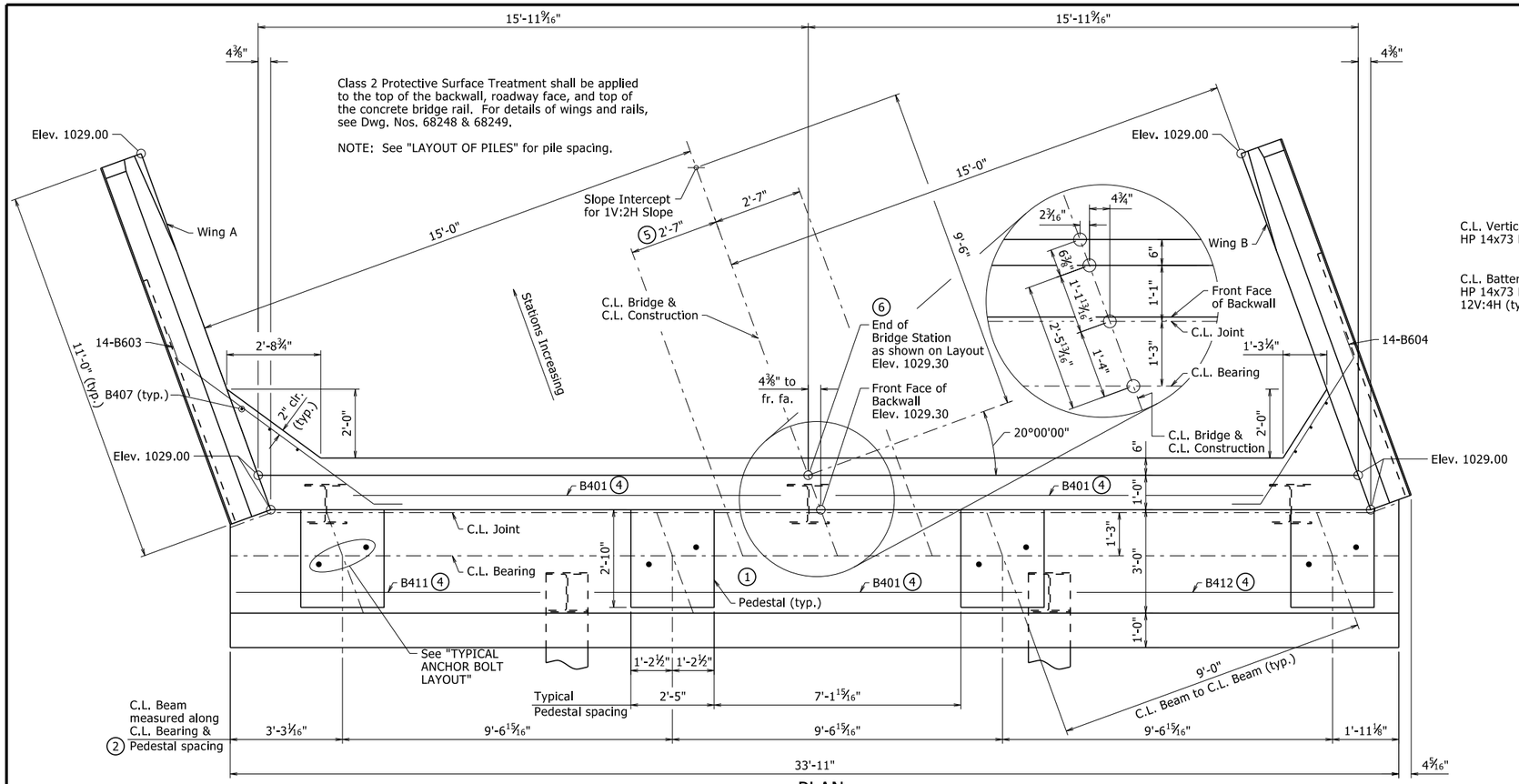
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 12/07/2023
CHECKED BY: RD DATE: 03/19/2024
DESIGNED BY: RD DATE: 08/2023
FILENAME: b040866x1_b3.dgn
SCALE: 3/4" = 1'-0"

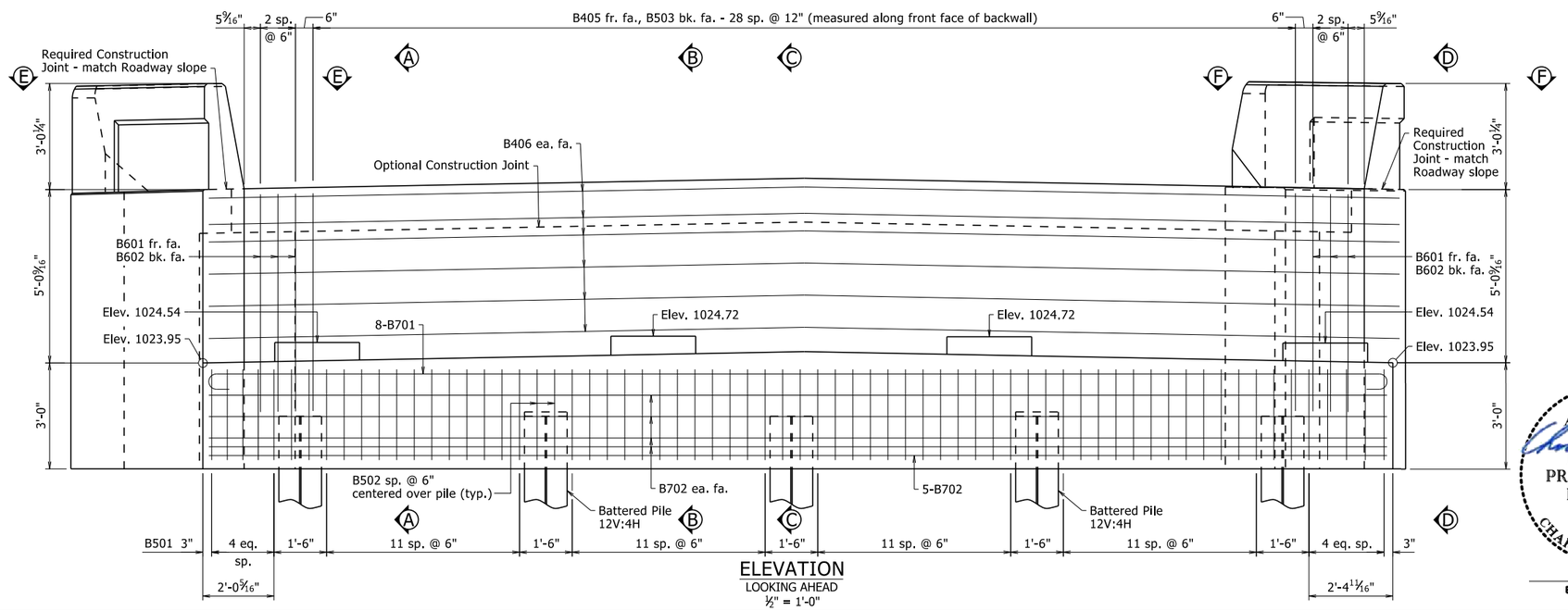
BRIDGE NO. 07686 DRAWING NO. 68245

PRINT DATE: 12/2/2024

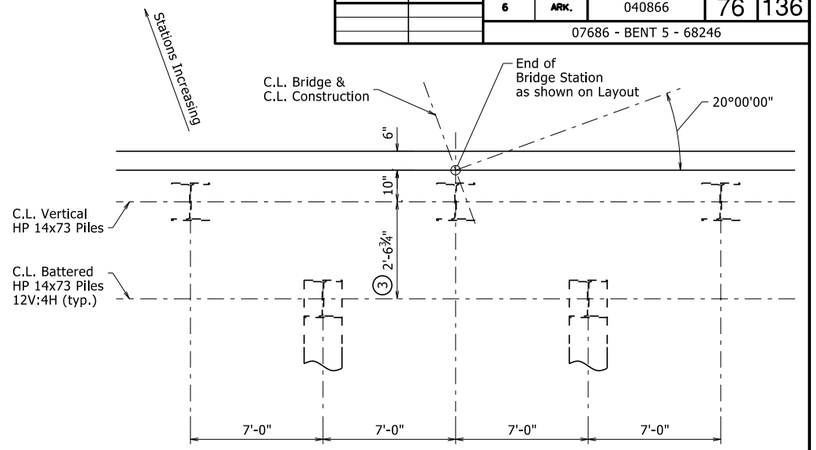
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	76	136
		07686 - BENT 5 - 68246				



PLAN
½" = 1'-0"

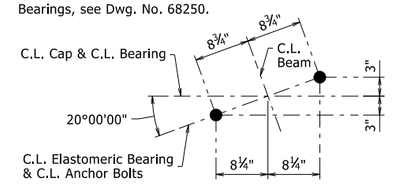


ELEVATION
LOOKING AHEAD
½" = 1'-0"



LAYOUT OF PILES
NO SCALE

For details of Elastomeric Bearings, see Dwg. No. 68250.



TYPICAL ANCHOR BOLT LAYOUT
NO SCALE

NOTES:

For "GENERAL NOTES", see Std. Dwg. No. 55006.

For Joint Details see Std. Dwg. No. 55008.

All piling shall be Grade 50.

See Dwg. No. 68247 for "SECTION A-A", "SECTION B-B", "SECTION C-C", "VIEW D-D", "VIEW E-E", & "VIEW F-F".

Structural steel, unless noted otherwise, in end bents shall be ASTM A709, Gr. 50W and shall be paid for as "Structural Steel in Beam Spans (A709, Gr. 50W)".

No portion of the backwall shall be poured before beams are in place. The portion of the backwall above the optional construction joint at the paving bracket shall not be placed until the deck pour has been made. Refer to the "EXPANSION DEVICE INSTALLATION AT END BENTS" note, see Std. Dwg. No. 55008. No heavy construction equipment shall be allowed within 10' of the backwall before the deck concrete placement for the adjacent span has been completed.

For additional information, see Layout.

(1) Top of Pedestals shall be cast level at the elevations shown.

(2) See Dwg. No. 68247 for "PEDESTAL PLAN" & "TYPICAL PEDESTAL DETAILS".

(3) Measured at bottom of cap.

(4) Placed between piles.

(5) See "ROUNDING DETAIL" on Std. Dwg. No. 55007.

(6) Measured at Working Point.

STATE OF ARKANSAS
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CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 1 OF 4
DETAILS OF BENT 5
BARON FORK

ROUTE SEC.

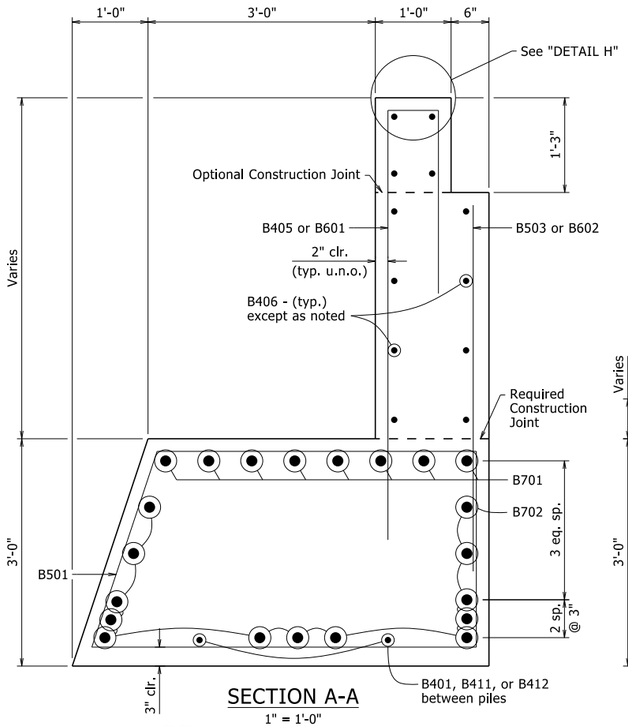
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 01/11/2024 FILENAME: b040866x1_b5.dgn
CHECKED BY: RD DATE: 03/19/2024 SCALE: AS NOTED
DESIGNED BY: RD DATE: 08/2023

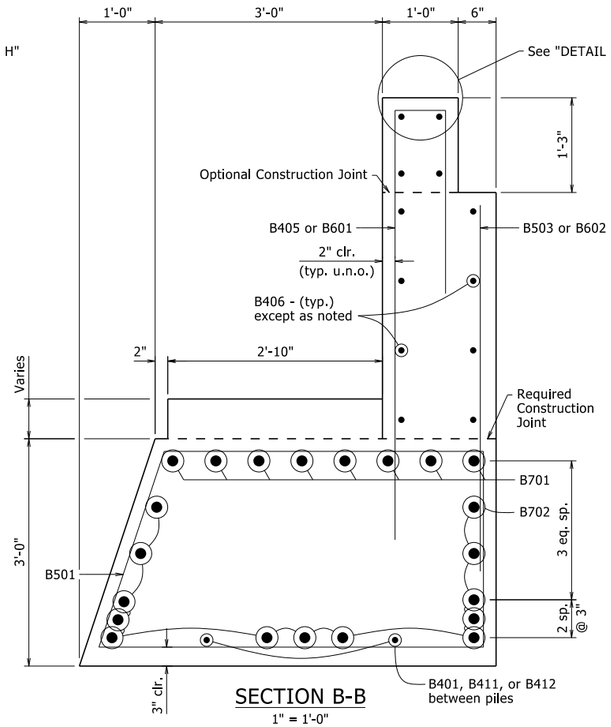
BRIDGE NO. 07686 DRAWING NO. 68246

PRINT DATE: 12/2/2024

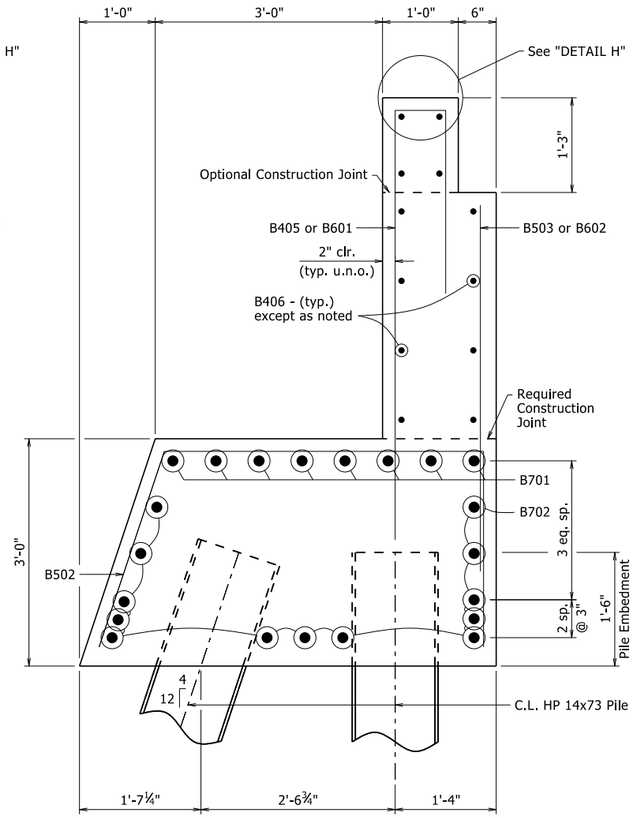
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	77	136
		07686 - BENT 5 - 68247				



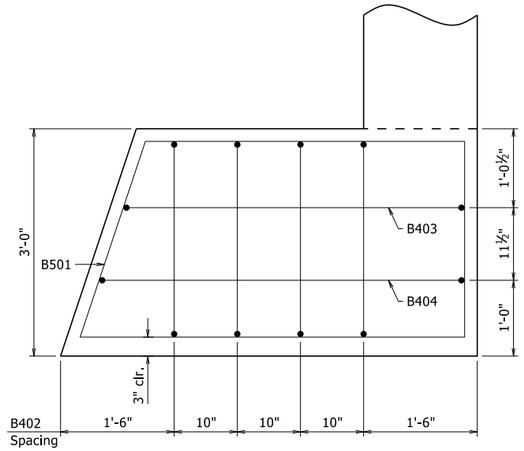
SECTION A-A
1" = 1'-0"



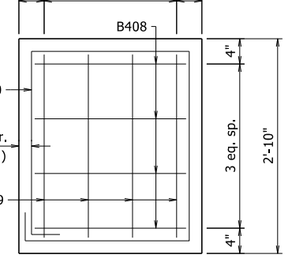
SECTION B-B
1" = 1'-0"



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



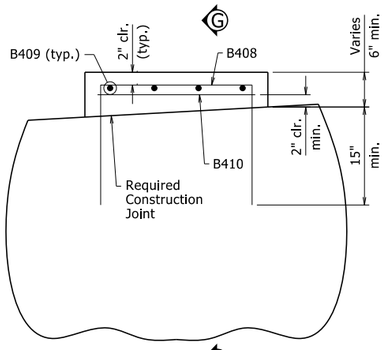
VIEW D-D
1" = 1'-0"



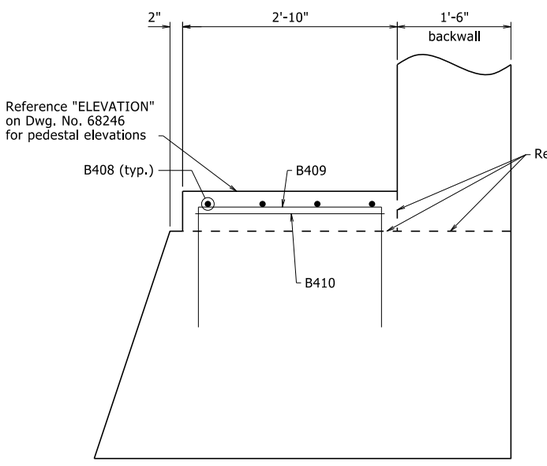
PEDESTAL PLAN
1" = 1'-0"

NOTES:

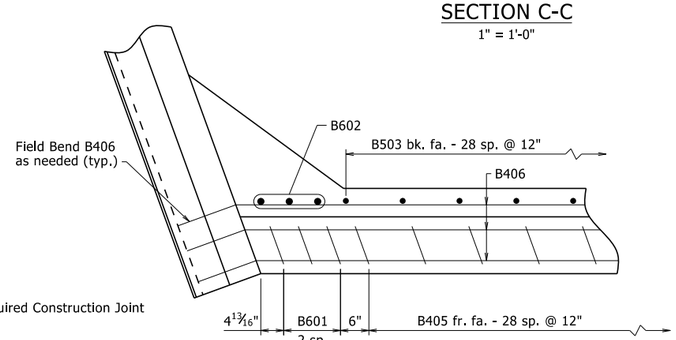
Place one B410 tie on pedestals 9" in height or less, and place two B410 ties on pedestals greater than 9" in height.



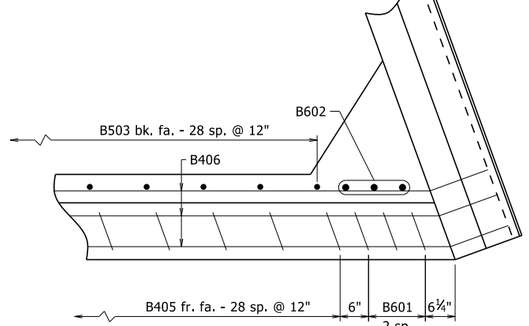
TYPICAL PEDESTAL DETAILS
1" = 1'-0"
LOOKING AHEAD



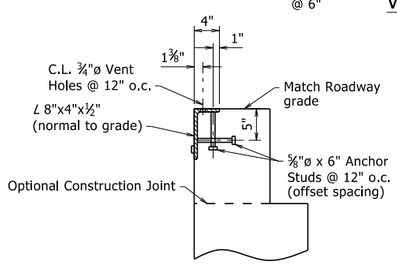
SECTION G-G
1" = 1'-0"



VIEW E-E
¾" = 1'-0"



VIEW F-F
¾" = 1'-0"



DETAIL H
NO SCALE

NOTES: Transverse spacing between vertical anchor studs and vent holes shall be 6".

Concrete shall be hand packed under the joint armor.

For additional joint details, see Std. Dwg. No. 55008.

STATE OF ARKANSAS
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BRIDGE ENGINEER

SHEET 2 OF 4
DETAILS OF BENT 5
BARON FORK

ROUTE SEC.

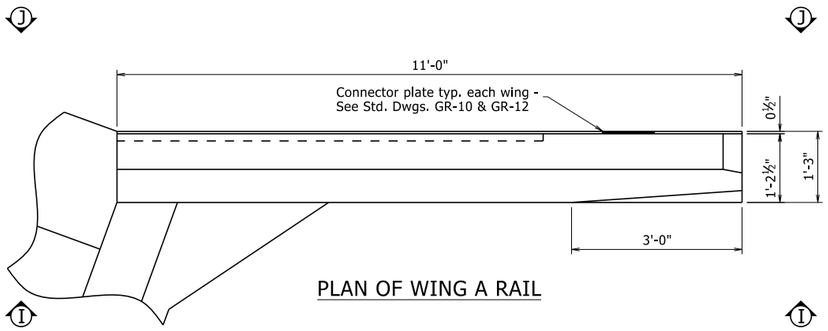
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 01/11/2024
CHECKED BY: RD DATE: 03/19/2024
DESIGNED BY: RD DATE: 08/2023
FILENAME: b040866x1_b5.dgn
SCALE: AS NOTED

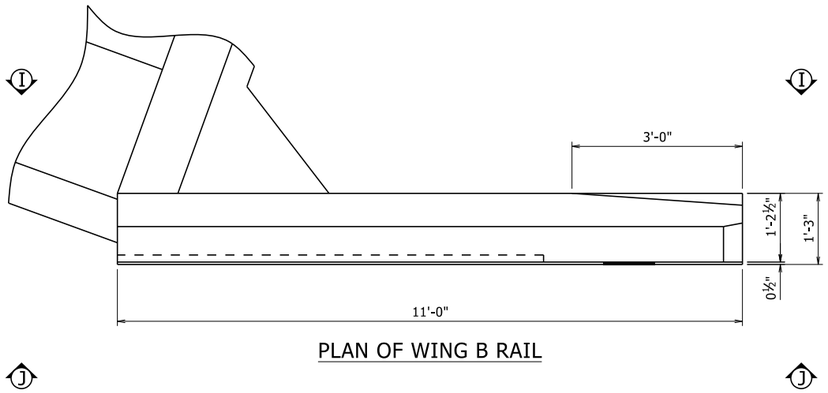
BRIDGE NO. 07686
DRAWING NO. 68247

PRINT DATE: 12/2/2024

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	78	136
		07686 - BENT 5 - 68248				



PLAN OF WING A RAIL

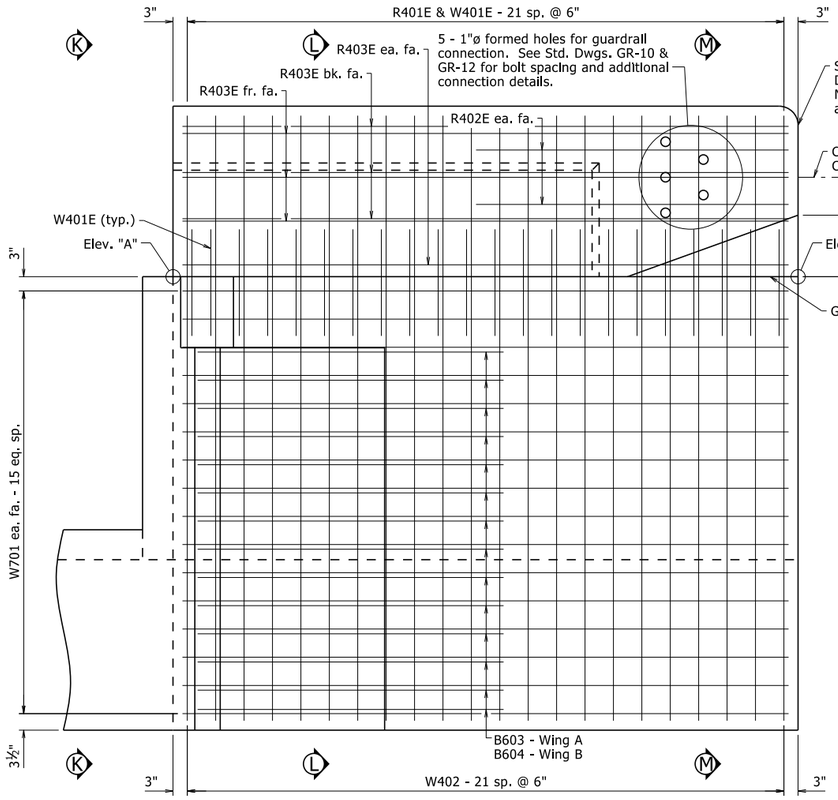


PLAN OF WING B RAIL

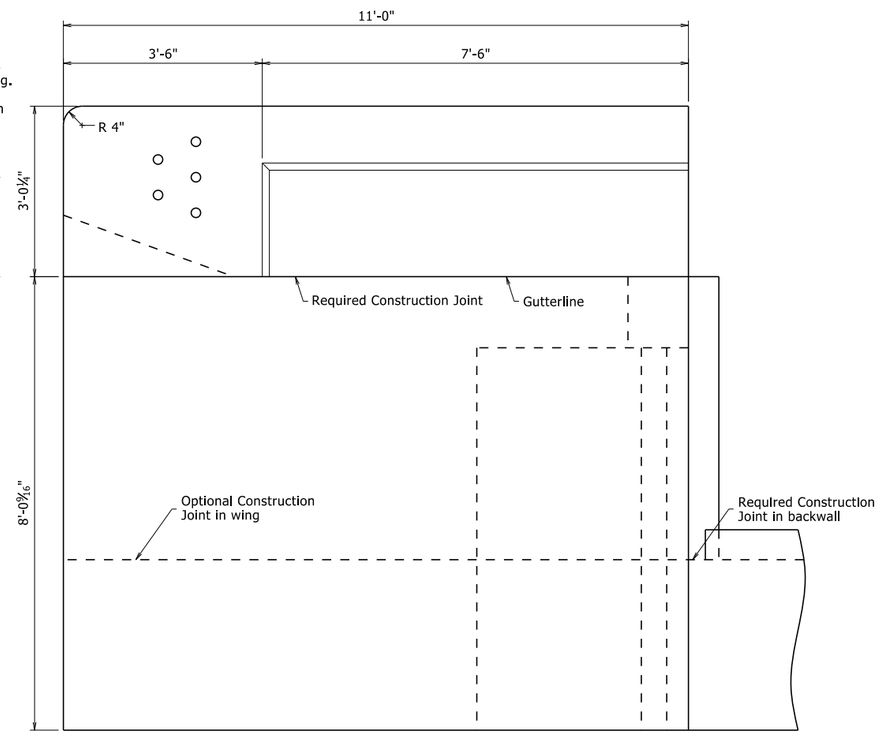
NOTE:

See Dwg. No. 68249 for "VIEW K-K", "SECTION L-L", & "SECTION M-M".

	"Elev. "A"	Elev. "B"
Wing A	1029.00	1029.00
Wing B	1029.00	1029.00



VIEW I-I



VIEW J-J

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
12/16/24
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 3 OF 4
DETAILS OF BENT 5
BARON FORK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

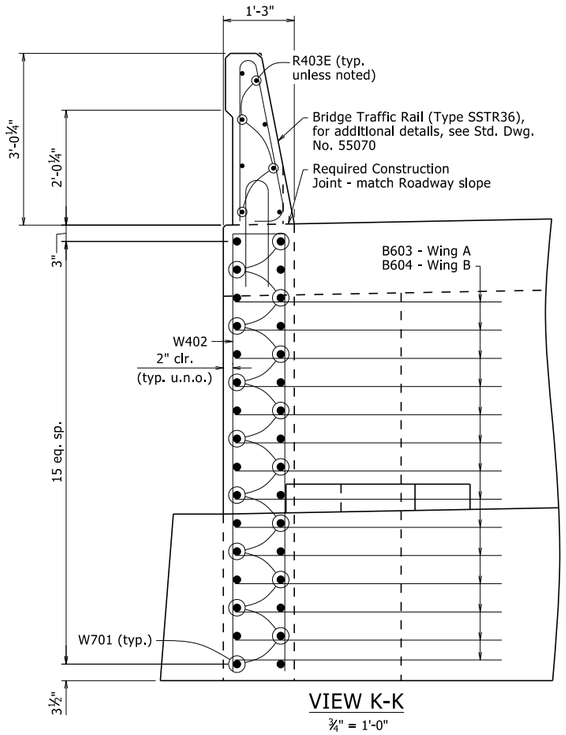
LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 01/11/2024
CHECKED BY: RD DATE: 03/19/2024
DESIGNED BY: RD DATE: 08/2023
FILENAME: b040866x1_b5.dgn
SCALE: ¾" = 1'-0"

BRIDGE NO. 07686 DRAWING NO. 68248

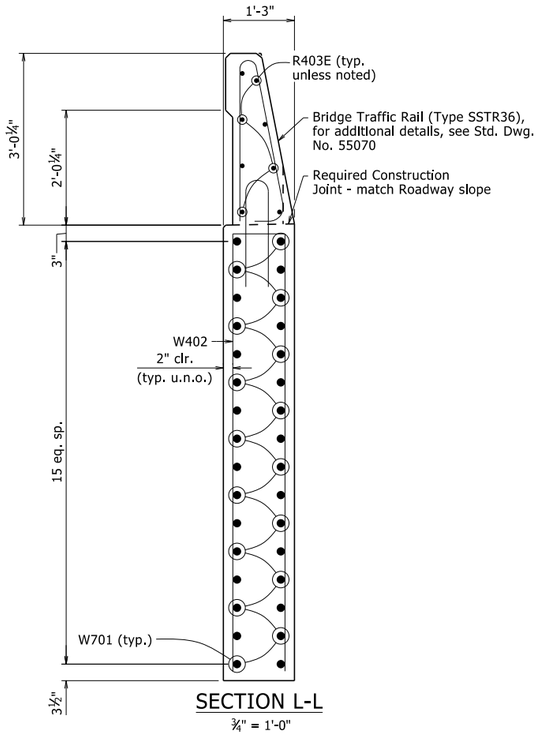
PRINT DATE: 12/2/2024

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	79	136
		07686 - BENT 5 - 68249				



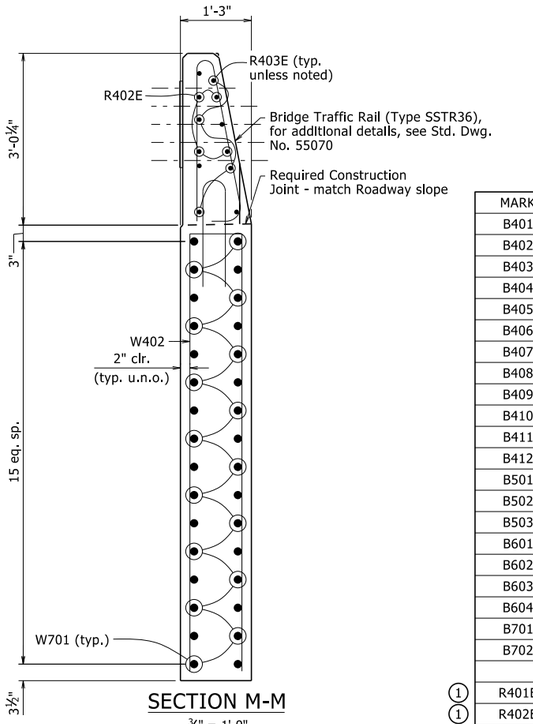
VIEW K-K

¾" = 1'-0"



SECTION L-L

¾" = 1'-0"



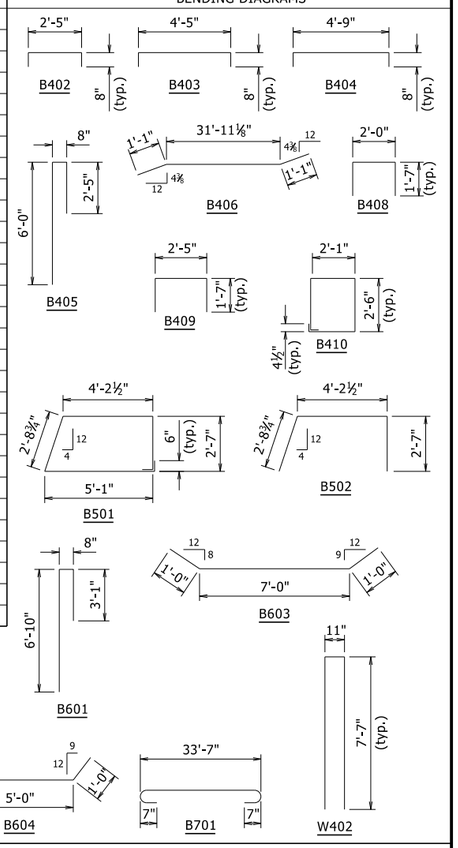
SECTION M-M

¾" = 1'-0"

BAR LIST

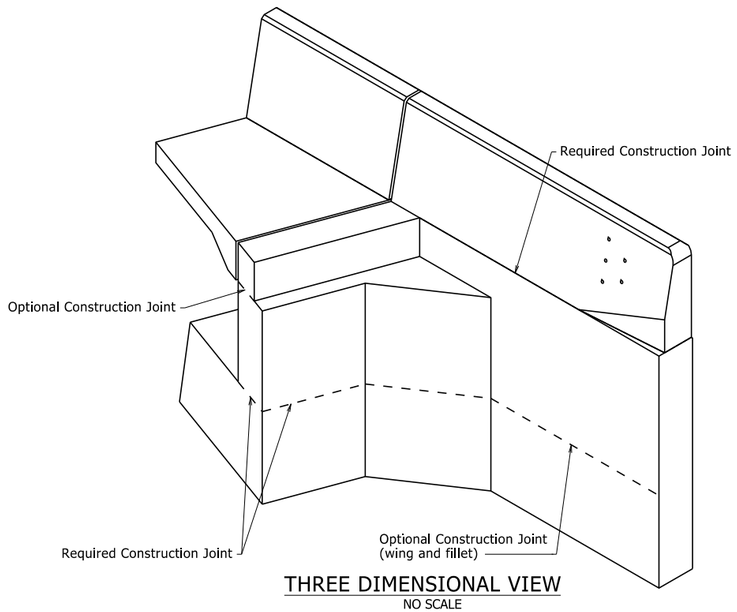
	MARK	NO. REQ'D	LENGTH	P.D.
	B401	3	12'-5"	Str.
	B402	8	3'-7"	2"
	B403	2	5'-7"	2"
	B404	2	5'-11"	2"
	B405	29	8'-11"	2"
	B406	12	34'-1"	2"
	B407	6	6'-4"	Str.
	B408	16	5'-0"	2"
	B409	16	5'-5"	2"
	B410	4	9'-6"	2"
	B411	1	8'-10"	Str.
	B412	1	9'-2"	Str.
	B501	58	15'-1"	2½"
	B502	10	9'-5"	2½"
	B503	29	5'-4"	Str.
	B601	6	10'-2"	4½"
	B602	6	5'-7"	Str.
	B603	14	9'-0"	4½"
	B604	14	7'-0"	4½"
	B701	8	35'-3"	5¼"
	B702	13	33'-7"	Str.
(1)	R401E	44	6'-4"	2½"
(1)	R402E	8	5'-6"	Str.
	R403E	16	10'-8"	Str.
(1)	W401E	44	3'-11"	3¾"
	W402	44	16'-0"	2"
	W701	64	10'-8"	Str.

BENDING DIAGRAMS



Dimensions are out to out of bars.
Bars with the "E" suffix shall be epoxy coated.

(1) See Std. Dwg. No. 55070 for details of rail reinforcing.



THREE DIMENSIONAL VIEW

NO SCALE

STATE OF ARKANSAS
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No. 9235
12/16/24
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 4 OF 4
DETAILS OF BENT 5
BARON FORK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

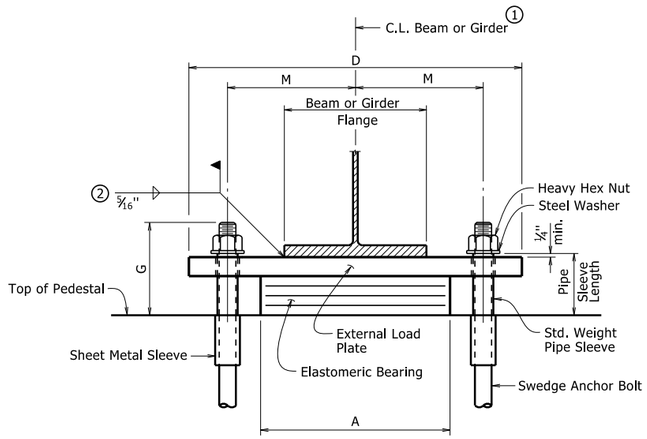
LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 01/11/2024 FILENAME: b040866x1_b5.dgn
CHECKED BY: RD DATE: 03/19/2024 SCALE: AS NOTED
DESIGNED BY: RD DATE: 08/2023

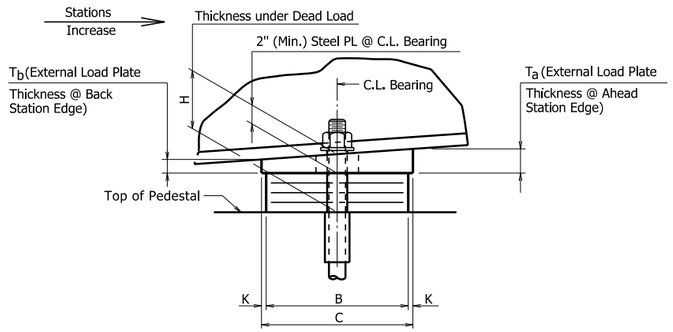
BRIDGE NO. 07686 DRAWING NO. 68249

PRINT DATE: 12/2/2024

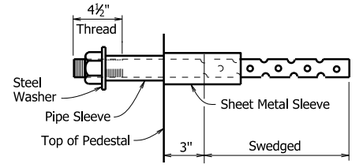
DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	80	136
		07686 & 07687 - ELASTO. BEARINGS - 68250				



FRONT VIEW



SIDE VIEW



ANCHOR BOLT DETAIL

Anchor Bolts may be cast in place or drilled and grouted into place. If Anchor Bolts are to be cast in place, the Galvanized Sheet Metal Sleeves will not be required.

If Anchor Bolts are to be drilled and grouted in place, the Galvanized Sheet Metal Sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of Structural Steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the concrete. Bolts placed in drilled holes shall be accurately set and fixed using a QPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized Sheet Metal Sleeves shall meet the requirements of ASTM 653, CS Type B or approved equivalent, be of minimum 16 gage thickness, and be galvanized according to ASTM B695, Class 50. Sheet Metal Sleeves will not be paid for directly, but will be considered subsidiary to the item "Structural Steel in Beam Spans (A709, Gr. 50W)".

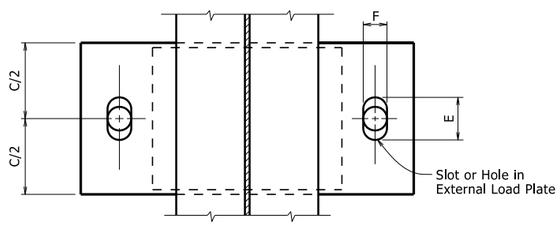
1. C.L. Elastomeric Pad shall be aligned with C.L. Beam or Girder.

2. Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the beam or girder will be allowed only when: 1) the approximate average air temperature during the 24 hour period immediately preceding welding is between 40°F and 80°F; and 2) the slots in the external load plate are positioned to center on the anchor bolts; and 3) no horizontal deformation of the elastomeric pad is evident. If welding at other temperatures is required, the Engineer will provide adjustment data.

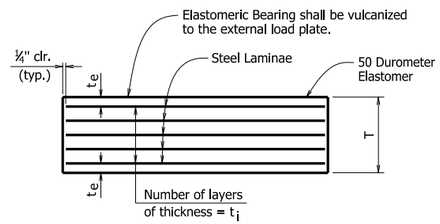
   Care shall be taken to ensure that the external load plate is in full and complete contact with the beam or girder flange before welding begins.

   The direction of bevel of the external load plate may not be accurately depicted with respect to Ta and Tb values shown in the "Table of Fabricator Variables".

Prior to erection of the beams or girders, the Contractor shall verify the orientation of the bearing with respect to Ta and Tb.



PLAN VIEW



t_e = Thickness of elastomer cover on top and bottom of pad

t_i = Thickness of elastomer between steel laminae

N = Number of elastomer layers of thickness t_i

ELASTOMERIC BEARING

GENERAL NOTES

Elastomeric Bearings shall conform to Section 808 and shall be paid for at the unit price bid for "Elastomeric Bearings".

External load plates shall conform to ASTM A709, Grade 50W. Pipe sleeves shall be ASTM A500, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or ASTM B695, Class 50.

External load plates shall be completely fabricated (including bevel, bolt holes and all shop welding) and shall be cleaned before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be cleaned in accordance with Subsection 808.03. Other surfaces shall be blast cleaned in accordance with Subsection 807.84(b) for painted steel and 807.84(e) for unpainted Grade 50W steel.

Anchor Bolts, Washers and Nuts shall conform to Subsection 807.07. The anchor bolt grade of steel shall be as specified in the "Table of Fabricator Variables". Indentations shall be circular with rounded bottoms and staggered as shown in the details.

Pipe Sleeves, Anchor Bolts, Washers and Nuts shall be paid for at the unit price bid for "Structural Steel in Beam Spans (A709, Gr. 50W)", External load plates will not be measured or paid for separately, but will be considered incidental to the unit price bid for "Elastomeric Bearings".

Bearings shall be seated in accordance with Subsection 808.08. This work and materials are considered subsidiary to the item "Elastomeric Bearings" and will not be paid for directly.

TABLE OF FABRICATOR VARIABLES

③ Maximum Design Load = Service 1 Limit State

BRIDGE NO.	LOCATION: BENT NO(S).	LOCATION: BEAM OR GIRDER NO.	BEARING TYPE	NO. of BEARINGS EACH BENT	③MAXIMUM DESIGN LOAD (KIPS)	G	H	ELASTOMERIC PAD: A	B	N	t_i	t_e	NO. & THICKNESS OF STEEL LAMINAE	T	EXTERNAL LOAD PLATE: C	D	E	F	J	K	M	T_a	T_b	ANCHOR BOLT: ANCHOR BOLT (Ø x L)	GRADE	PIPE SLEEVE SIZE (Ø x L)	SHEET METAL SLEEVE SIZE (Ø x L)	STEEL WASHER SIZE (O.D.)
07686	1	All	Exp.	4	101	10¼"	6 13/16"	12"	12"	7	½"	¼"	8 @ 12 ga.	4 13/16"	13"	24"	4¾"	3⅛"	NA	½"	8¾"	2.00"	2.00"	2"ø x 32"	55	2½"ø x 7⅛"	4"ø x 6"	3¾"
	2	All	Fix	4	227	7¾"	3 13/16"	14½"	14½"	2	½"	¼"	3 @ 12 ga.	1 13/16"	15½"	27½"	3¾"	3¾"	NA	½"	10¼"	2.00"	2.00"	2½"ø x 35"	55	3"ø x 4⅛"	4"ø x 6"	4½"
	3	All	Fix	4	241	7¾"	3 13/16"	14½"	14½"	2	½"	¼"	3 @ 12 ga.	1 13/16"	15½"	27½"	3¾"	3¾"	NA	½"	10¼"	2.00"	2.00"	2½"ø x 35"	55	3"ø x 4⅛"	4"ø x 6"	4½"
	4	All	Fix	4	227	7¾"	3 13/16"	14½"	14½"	2	½"	¼"	3 @ 12 ga.	1 13/16"	15½"	27½"	3¾"	3¾"	NA	½"	10¼"	2.00"	2.00"	2½"ø x 35"	55	3"ø x 4⅛"	4"ø x 6"	4½"
	5	All	Exp.	4	101	10¼"	6 13/16"	12"	12"	7	½"	¼"	8 @ 12 ga.	4 13/16"	13"	24"	4¾"	3⅛"	NA	½"	8¾"	2.00"	2.00"	2"ø x 32"	55	2½"ø x 7⅛"	4"ø x 6"	3¾"
07687	2	All	Fix	4	200	7¼"	3 13/16"	13½"	13½"	2	½"	¼"	3 @ 12 ga.	1 13/16"	14½"	25½"	3⅛"	3⅛"	NA	½"	9½"	2.00"	2.00"	2"ø x 29"	55	2½"ø x 4⅛"	4"ø x 6"	3¾"
	3	All	Fix	4	200	7¼"	3 13/16"	13½"	13½"	2	½"	¼"	3 @ 12 ga.	1 13/16"	14½"	25½"	3⅛"	3⅛"	NA	½"	9½"	2.00"	2.00"	2"ø x 29"	55	2½"ø x 4⅛"	4"ø x 6"	3¾"

PRINT DATE: 12/2/2024

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
12/16/24
CHARLES R. ELLIS

BRIDGE ENGINEER

DETAILS OF ELASTOMERIC BEARINGS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

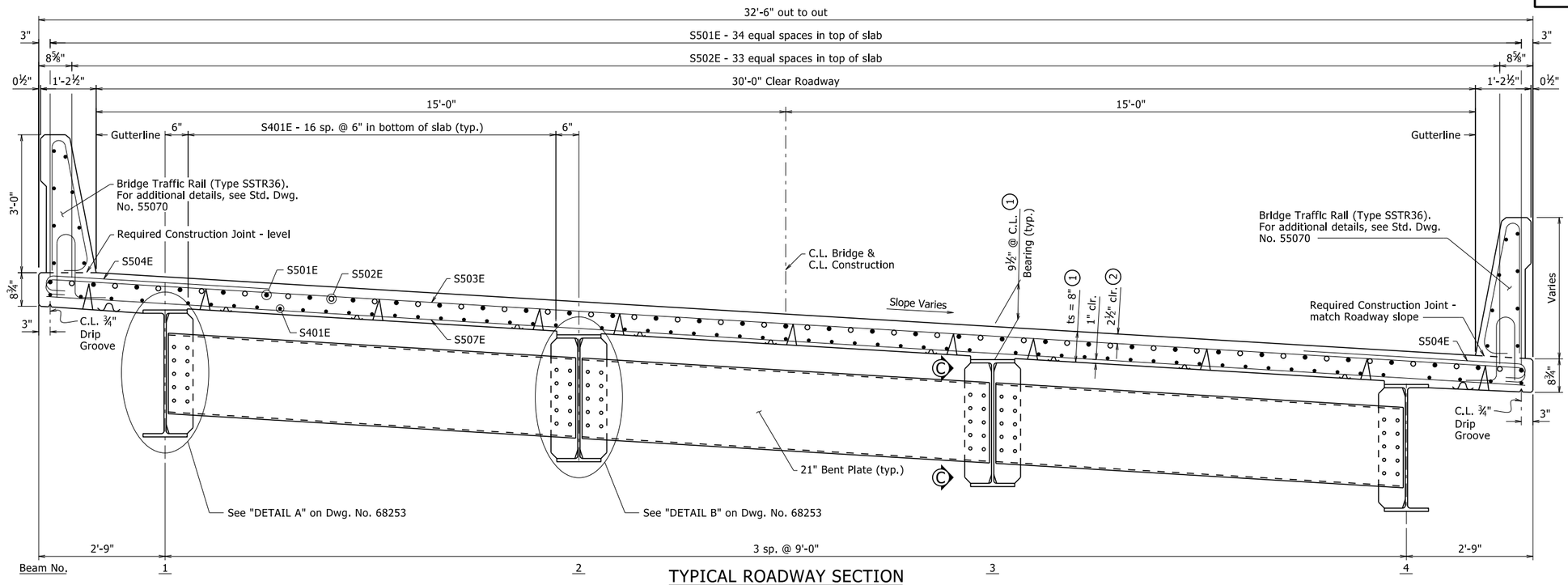
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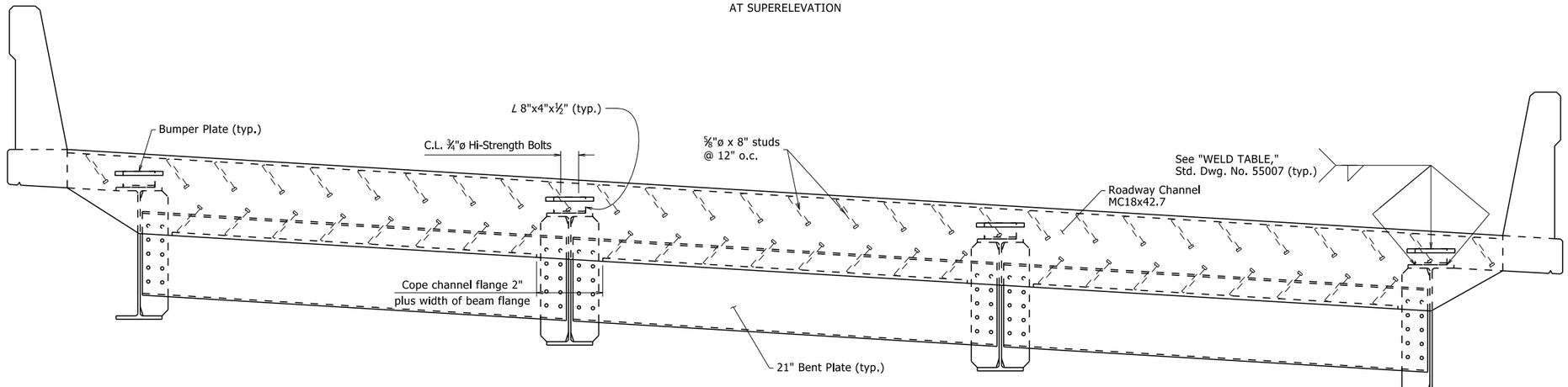
BRIDGE NO. 07686 & 07687 DRAWING NO. 68250

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	81	136
		07686 - SPAN DETAILS - 68251				



TYPICAL ROADWAY SECTION

LOOKING AHEAD
AT SUPERELEVATION



TYPICAL ROADWAY SECTION NEAR JOINT

LOOKING AHEAD BENT 1
AT SUPERELEVATION

Class 2 Protective Surface Treatment shall be applied to the roadway surface and to the roadway face & top of the concrete bridge rails.

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.

Slab Reinforcing

Longitudinal: S501E in top (place as shown)
S401E in bottom (place as shown)
S502E in top over intermediate supports, see "REINFORCING PLAN & DECK POURING SEQUENCE" Dwg. Nos. 68256 & 68257.

Transverse: S503E @ 6" o.c. in top
S507E @ 6" o.c. in bottom
S504E @ 6" in top of overhangs (bundled with S503E) both sides

NOTES:

See "SECTION C-C" on Dwg. No. 68253.

(1) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on Std. Dwg. No. 55007.

(2) Tolerance Minus = ¼":
Plus equal to the amount of slab thickening used to meet slab thickness tolerance. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on Std. Dwg. No. 55007.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
12/16/24
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 1 OF 8
DETAILS OF 260'-0"
CONTINUOUS W-BEAM UNIT
BARON FORK

ROUTE SEC.

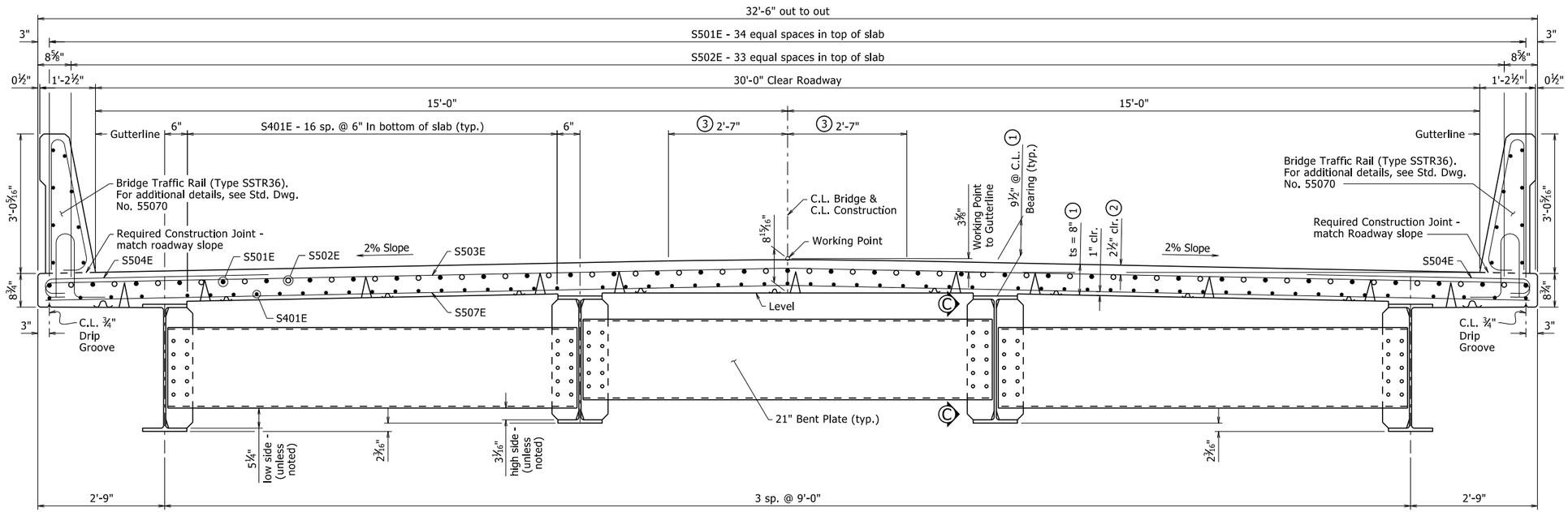
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: RD DATE: 02/16/2024 SCALE: ¾" = 1'-0"
DESIGNED BY: ARK DATE: 11/09/2022

BRIDGE NO. 07686 DRAWING NO. 68251

PRINT DATE: 12/2/2024

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	82	136
		07686 - SPAN DETAILS - 68252				



TYPICAL ROADWAY SECTION

LOOKING AHEAD
AT NORMAL CROWN
¾" = 1'-0"

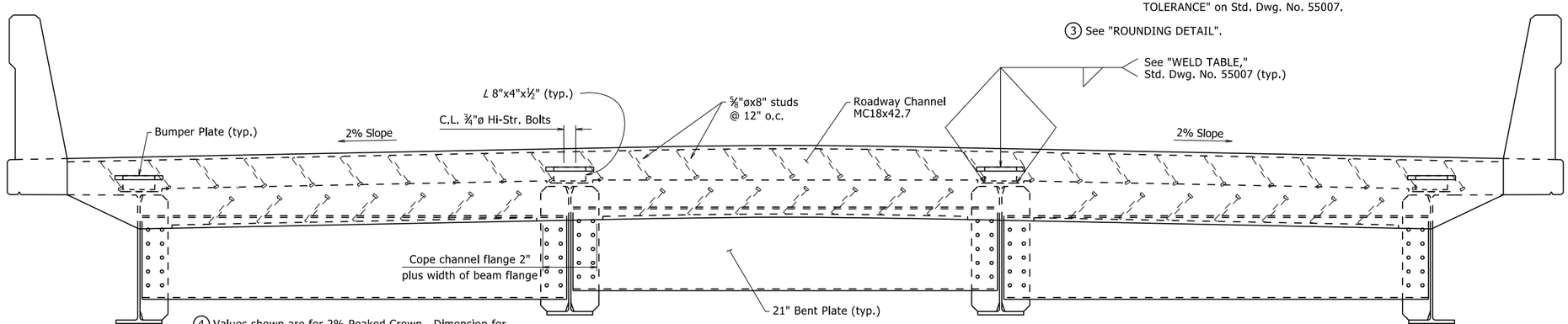
NOTES:

See "SECTION C-C" on Dwg. No. 68253.

(1) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on Std. Dwg. No. 55007.

(2) Tolerance Minus = ¼":
Plus equal to the amount of slab thickening used to meet slab thickness tolerance. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on Std. Dwg. No. 55007.

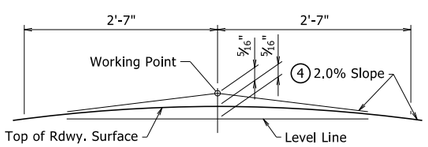
(3) See "ROUNDING DETAIL".



(4) Values shown are for 2% Peaked Crown. Dimension for Working Point to Top of Roadway Surface Varies from 0" at Sta. 111+41.40 to ⅝₁₆" at Sta. 111+96.96

TYPICAL ROADWAY SECTION

LOOKING BACK BENT 5
AT NORMAL CROWN
¾" = 1'-0"



NOTE: Working Point matches Theoretical Roadway Grade.

ROUNDING DETAIL

BRIDGES IN NORMAL CROWN
NO SCALE

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
12/16/24
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 2 OF 8
DETAILS OF 260'-0"
CONTINUOUS W-BEAM UNIT
BARON FORK

ROUTE SEC.

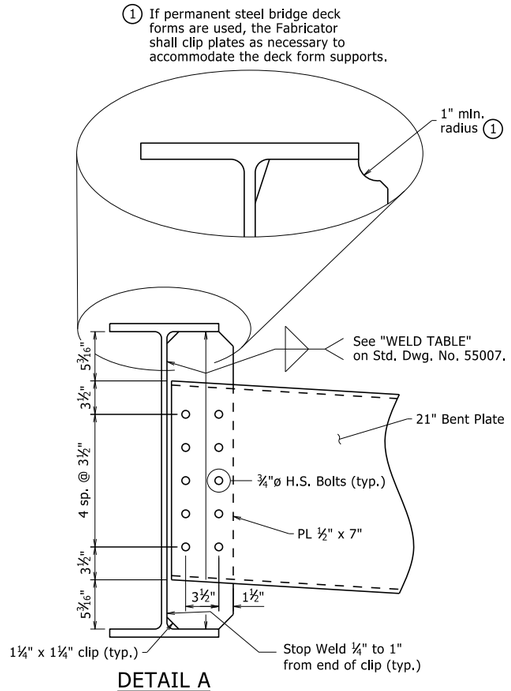
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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DESIGNED BY: ARK DATE: 11/09/2022

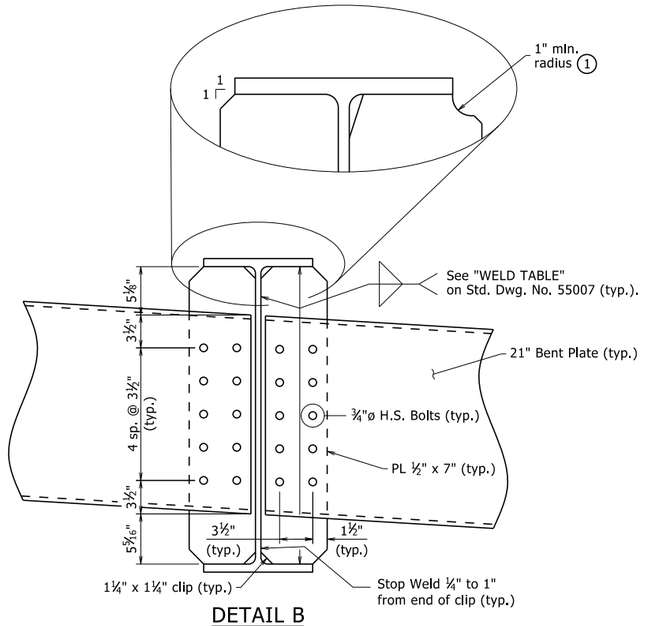
BRIDGE NO. 07686 DRAWING NO. 68252

PRINT DATE: 12/2/2024

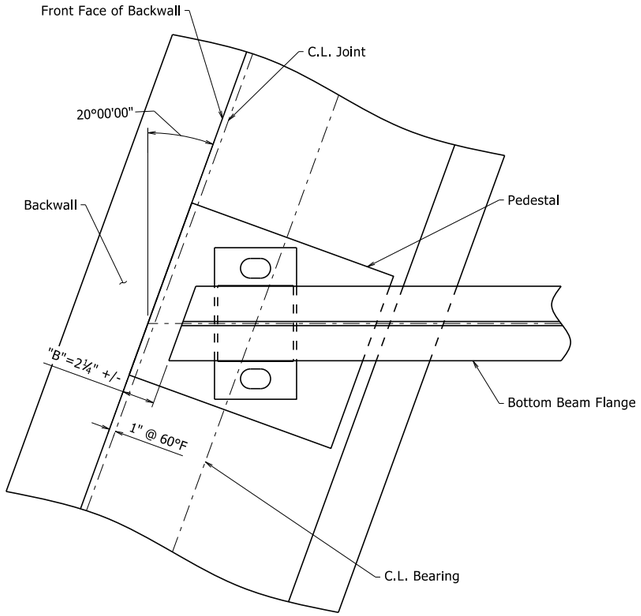
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	83	136
		07686 - SPAN DETAILS - 68253				



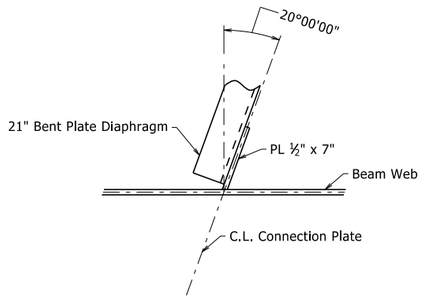
DETAIL A



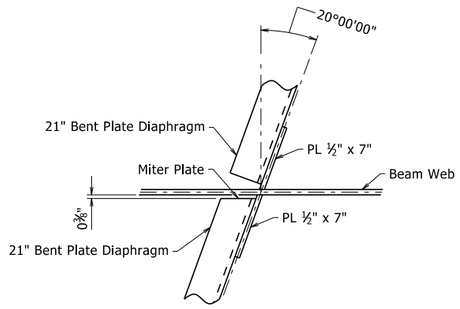
DETAIL B



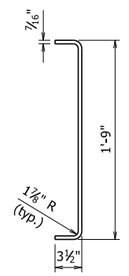
PLAN OF BEARING AT END BENT



EXTERIOR CONNECTION PLATE VIEW

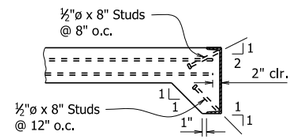


INTERIOR CONNECTION PLATE VIEW



Typical cross-section for all 21" bent plate diaphragms.

SECTION C-C



As an alternate to ⅝"ø studs, ½"ø x 8" studs spaced as shown may be used. Use weight of ⅝"ø stud as basis of measurement of structural steel in anchors.

DETAILS OF ALTERNATE ANCHORS AND PLACEMENT OF LONGITUDINAL REINFORCEMENT

TABLE OF SILICONE JOINT DATA

For details of poured silicone joint, see Std. Dwg. No. 55008.

Bent Number	"A" Width Perpendicular to Joint at 24 Hour Average Temperature (2) of:			"B" Perpendicular to Joint at 60°F	Bumper Plate Size
	40°F	60°F	80°F		
1	2⅛"	2"	1⅞"	2¼" ±	1" x 1" x 12"
4	2⅛"	2"	1⅞"	2¼" ±	1" x 1" x 12"

(2) The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The engineer shall establish the temperature. Interpolation of the table may be necessary.

STATE OF ARKANSAS
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12/16/24
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BRIDGE ENGINEER

SHEET 3 OF 8
DETAILS OF 260'-0"
CONTINUOUS W-BEAM UNIT
BARON FORK

ROUTE SEC.

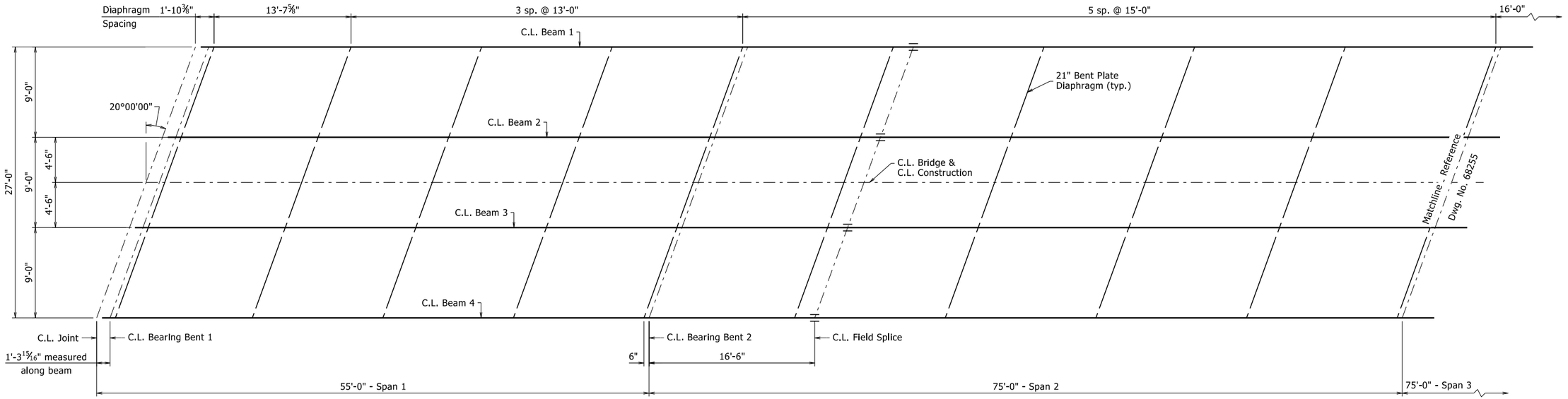
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ARK/CGP DATE: 12/07/2022 FILENAME: b040866x1_s1.dgn
CHECKED BY: RD DATE: 02/16/2024 SCALE: NO SCALE
DESIGNED BY: ARK DATE: 11/09/2022

BRIDGE NO. 07686 DRAWING NO. 68253

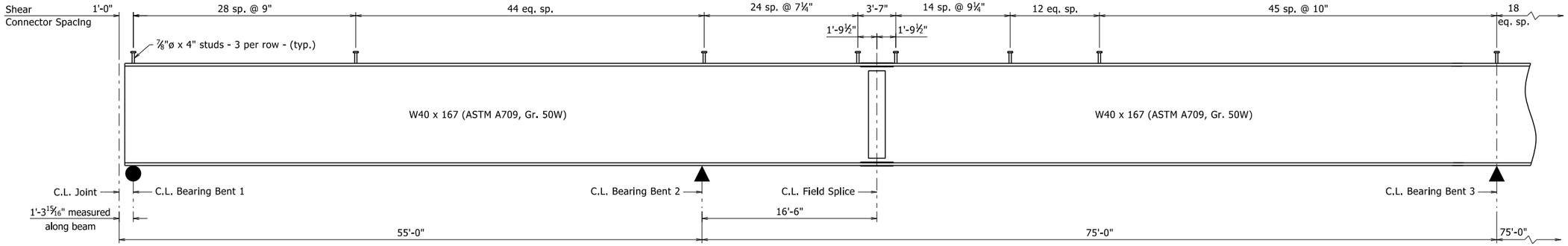
PRINT DATE: 12/2/2024

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	84	136
		07686 - SPAN DETAILS - 68254				



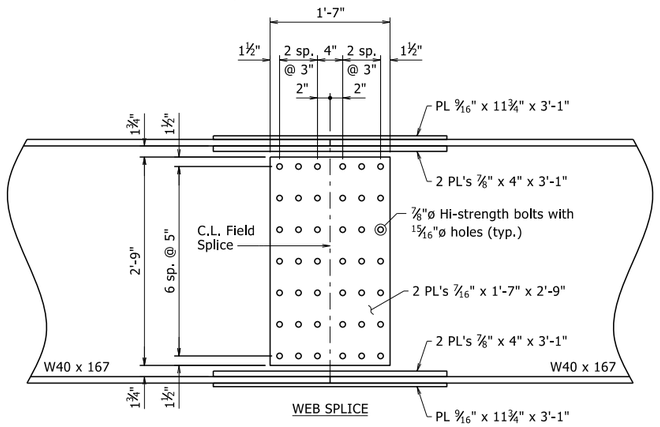
FRAMING PLAN

3/16" = 1'-0"

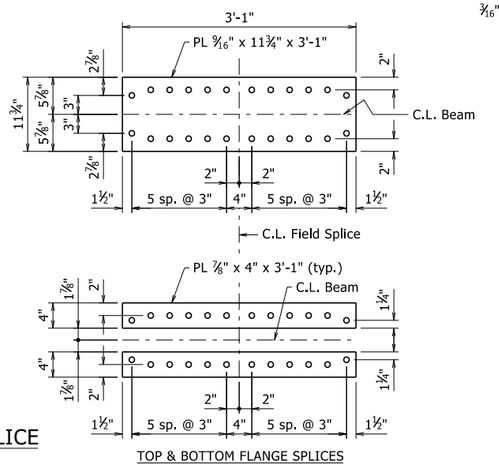


TYPICAL BEAM ELEVATION

3/16" = 1'-0"



WEB SPLICE



TOP & BOTTOM FLANGE SPLICES

DETAILS OF FIELD SPLICE

1" = 1'-0"

NOTES:

All Structural Steel shall be ASTM A709, Gr. 50W unless otherwise noted, and shall be paid for as "Structural Steel in Beam Spans (A709, Gr. 50W)."

For additional information, see Layout.

For General Notes, see Std. Dwg. No. 55006.

For additional details, see Std. Dwg. No. 55007.

Bolted field splices may either be eliminated or shop welded splices may be substituted with the approval of the Engineer. Payment will be made on the basis of plan quantities.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
12/16/24
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 4 OF 8
DETAILS OF 260'-0"
CONTINUOUS W-BEAM UNIT
BARON FORK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ARK/CGP DATE: 12/07/2022
CHECKED BY: RD DATE: 02/16/2024
DESIGNED BY: ARK DATE: 11/09/2022
FILENAME: b040866x1_s1.dgn
SCALE: AS NOTED

BRIDGE NO. 07686 DRAWING NO. 68254

PRINT DATE: 12/2/2024

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	85	136
		07686 - SPAN DETAILS - 68255				

NOTES:

All Structural Steel shall be ASTM A709, Gr. 50W unless otherwise noted, and shall be paid for as "Structural Steel in Beam Spans (A709, Gr. 50W)."

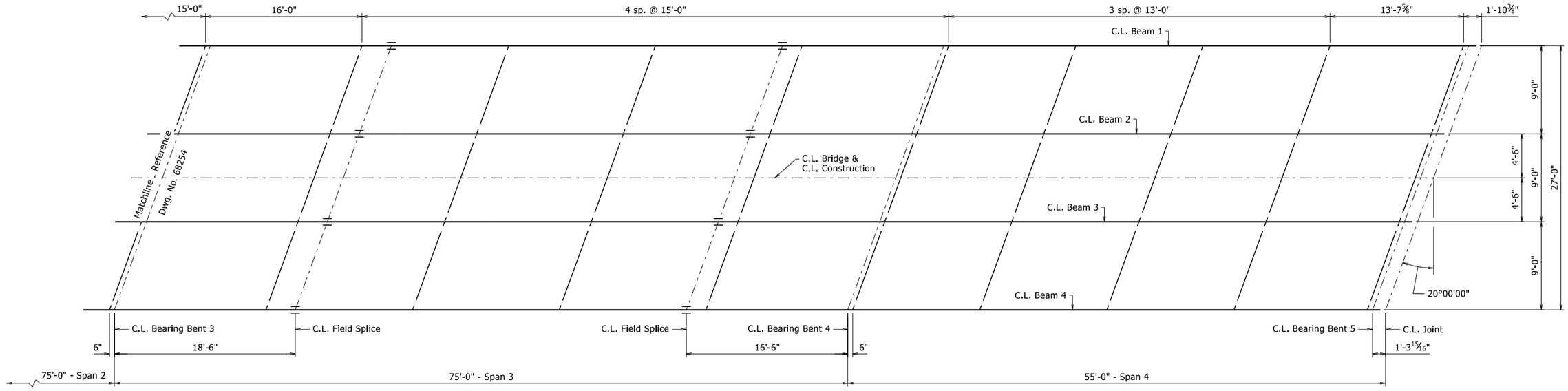
For additional information, see Layout.

For General Notes, see Std. Dwg. No. 55006.

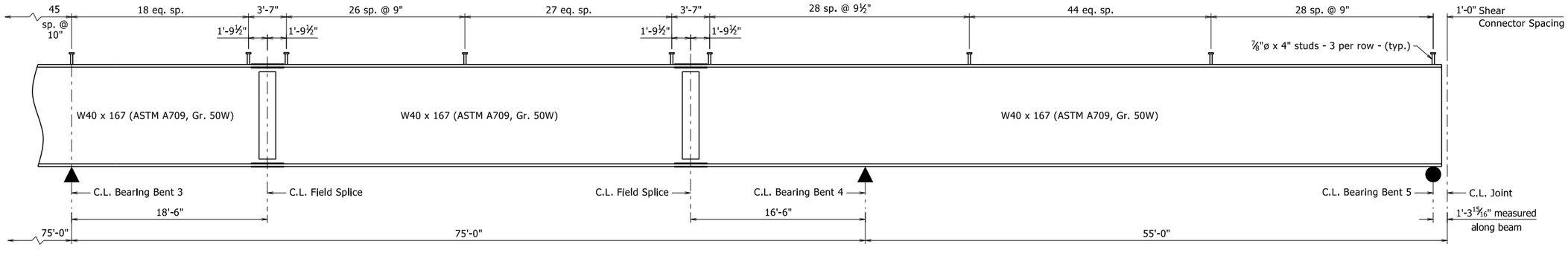
For additional details, see Std. Dwg. No. 55007.

For Details of Field Splice, see Dwg. No. 68254.

Bolted field splices may either be eliminated or shop welded splices may be substituted with the approval of the Engineer. Payment will be made on the basis of plan quantities.



FRAMING PLAN



TYPICAL BEAM ELEVATION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
12/16/24
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 5 OF 8
DETAILS OF 260'-0"
CONTINUOUS W-BEAM UNIT
BARON FORK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ARK/CGP DATE: 12/07/2022
CHECKED BY: RD DATE: 02/16/2024
DESIGNED BY: ARK DATE: 11/09/2022
FILENAME: b040866x1_s1.dgn
SCALE: 3/16" = 1'-0"

BRIDGE NO. 07686 DRAWING NO. 68255

PRINT DATE: 12/2/2024

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	86	136
		07686 - SPAN DETAILS - 68256				

NOTES:

Pours with same number may be placed simultaneously or separately. All Pour(s) 1 must be placed before Pour(s) 2, and all Pour(s) 2 must be placed before Pour(s) 3. A minimum of 48 hours shall elapse between the end of a pour and the start of the next pour. A minimum of 72 hours shall elapse between adjacent pours.

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

A minimum of 72 hours shall elapse between completion of the slab and the pouring of the bridge railing. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer. The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence(s) shown.

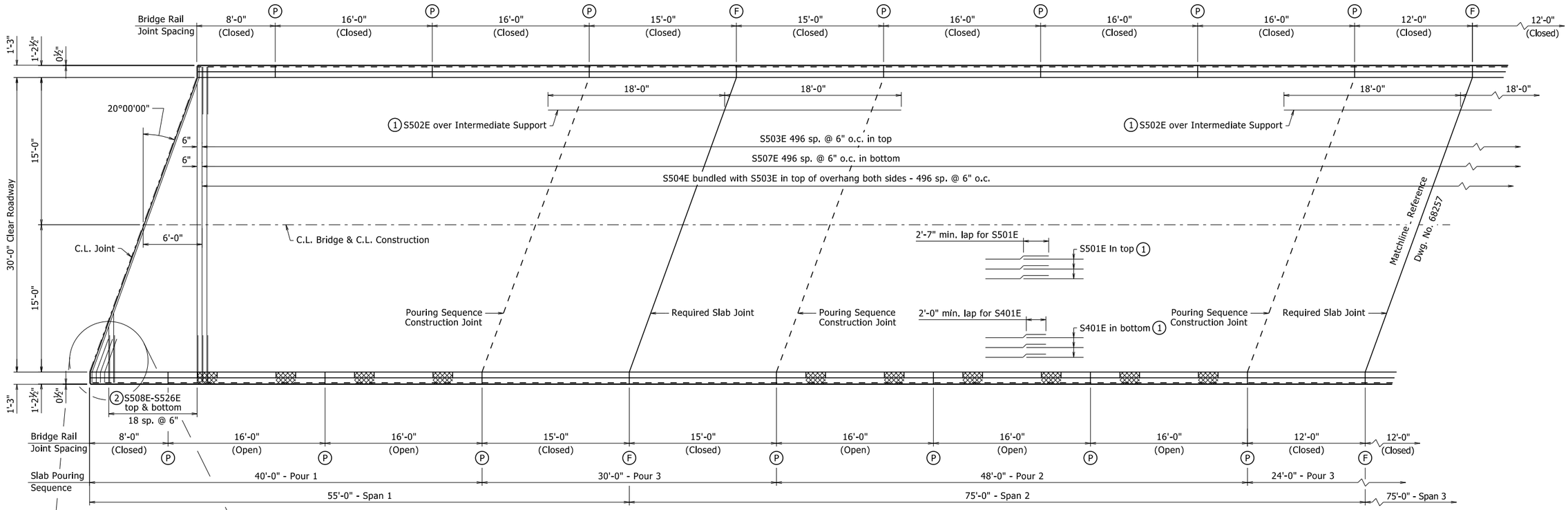
Unless otherwise noted, required slab joints and pouring sequence construction joints shall align with parapet joints at the gutterline.

(F) C.L. Full-Depth Parapet Joint (¼" to 1" max.) Stop 6" from top of slab.

(P) C.L. Partial-Depth Parapet Joint (¼" to 1" max.) Stop 1'-4" from top of slab.

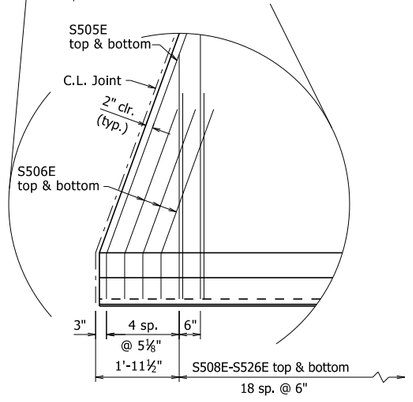
(1) Placed as shown in "TYPICAL ROADWAY SECTION", Dwg. Nos. 68251 & 68252.

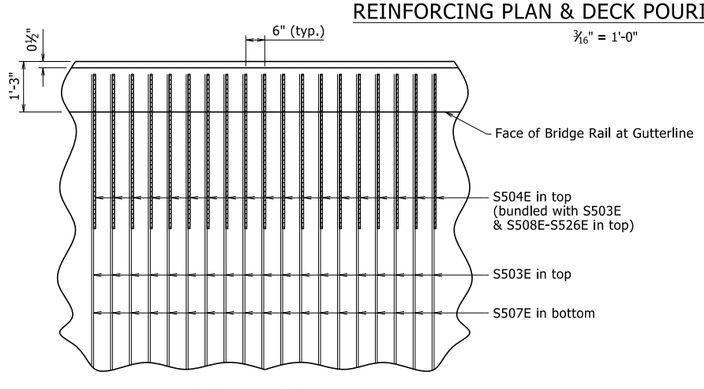
(2) S504E bundled with S508E-S526E in top of overhang.



REINFORCING PLAN & DECK POURING SEQUENCE

3/16" = 1'-0"





REBAR DETAIL

NO SCALE

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
12/16/24
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 6 OF 8
DETAILS OF 260'-0"
CONTINUOUS W-BEAM UNIT
BARON FORK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ARK/CGP DATE: 12/07/2022 FILENAME: b040866x1_s1.dgn
CHECKED BY: RD DATE: 02/16/2024 SCALE: AS NOTED
DESIGNED BY: ARK DATE: 11/09/2022

BRIDGE NO. 07686 DRAWING NO. 68256

PRINT DATE: 12/2/2024

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	87	136
		07686 - SPAN DETAILS - 68257				

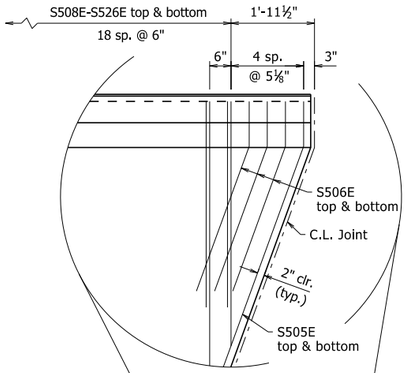
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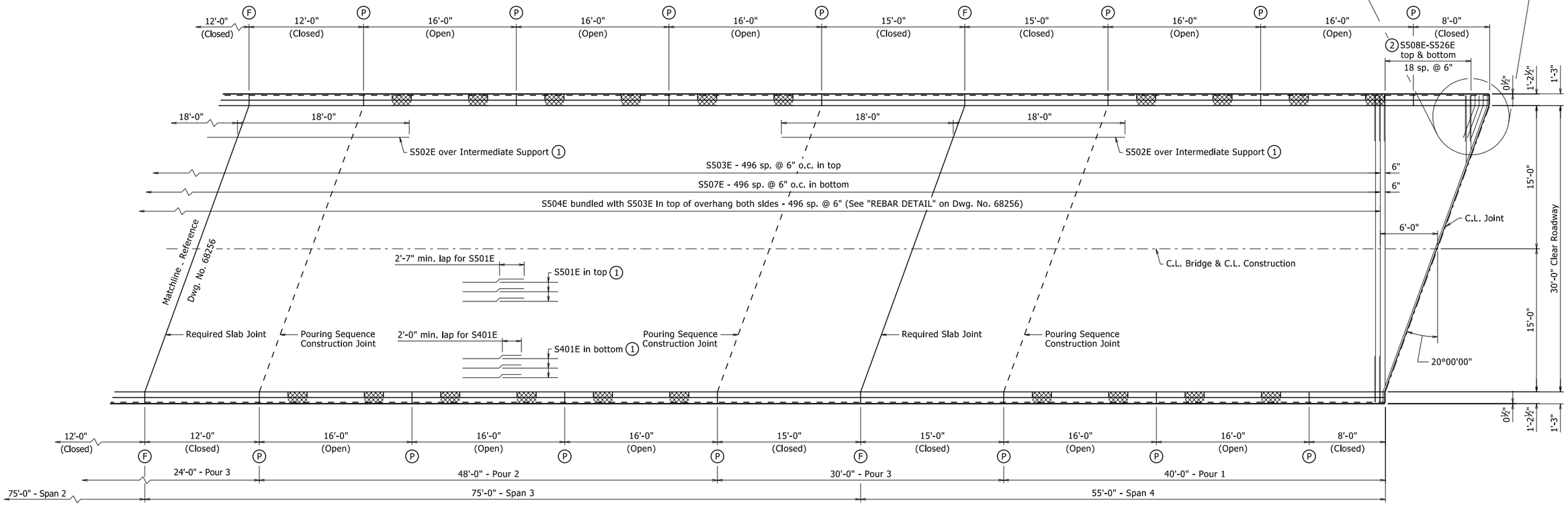
(F) C.L. Full-Depth Parapet Joint (¼" to 1" max.) Stop 6" from top of slab.

(P) C.L. Partial-Depth Parapet Joint (¼" to 1" max.) Stop 1'-4" from top of slab.

(1) Placed as shown in "TYPICAL ROADWAY SECTION", Dwg. Nos. 68251 & 68252.

(2) S504E bundled with S508E-S526E in top of overhang.





REINFORCING PLAN & DECK POURING SEQUENCE

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
12/16/24
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 7 OF 8
DETAILS OF 260'-0"
CONTINUOUS W-BEAM UNIT
BARON FORK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ARK/CGP DATE: 12/07/2022
CHECKED BY: RD DATE: 02/16/2024
DESIGNED BY: ARK DATE: 11/09/2022
FILENAME: b040866x1_s1.dgn
SCALE: 3/16" = 1'-0"

BRIDGE NO. 07686 DRAWING NO. 68257

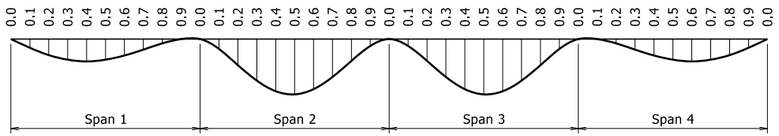
PRINT DATE: 12/2/2024

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	88	136
		07686 - SPAN DETAILS - 68258				

TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

DEFLECTIONS TABLE (in.)							
Span	Point of Deflection	Structural Steel		Structural Steel + Slab		Structural Steel + Slab + Bridge Rail	
		EXTERIOR	INTERIOR	EXTERIOR	INTERIOR	EXTERIOR	INTERIOR
1	0	0	0	0	0	0	0
	0.1	0.015	0.016	0.077	0.089	0.084	0.096
	0.2	0.027	0.030	0.141	0.164	0.155	0.177
	0.3	0.035	0.039	0.181	0.212	0.199	0.229
	0.4	0.038	0.042	0.195	0.228	0.214	0.246
	0.5	0.035	0.039	0.180	0.211	0.198	0.227
	0.6	0.028	0.031	0.142	0.168	0.156	0.181
	0.7	0.017	0.020	0.088	0.108	0.097	0.116
	0.8	0.007	0.008	0.035	0.044	0.039	0.047
	0.9	0.000	0.000	-0.002	0.000	-0.002	0.000
2	0	0	0	0	0	0	0
	0.1	0.018	0.018	0.095	0.101	0.104	0.109
	0.2	0.045	0.048	0.242	0.265	0.264	0.287
	0.3	0.073	0.077	0.387	0.423	0.423	0.457
	0.4	0.091	0.096	0.485	0.531	0.530	0.574
	0.5	0.096	0.102	0.513	0.562	0.560	0.608
	0.6	0.087	0.093	0.464	0.510	0.507	0.551
	0.7	0.066	0.070	0.351	0.386	0.384	0.417
	0.8	0.038	0.040	0.202	0.222	0.221	0.240
	0.9	0.012	0.013	0.063	0.070	0.069	0.076
3	0	0	0	0	0	0	0
	0.1	0.012	0.013	0.064	0.070	0.070	0.076
	0.2	0.038	0.040	0.201	0.222	0.220	0.240
	0.3	0.066	0.070	0.351	0.386	0.384	0.417
	0.4	0.087	0.092	0.464	0.509	0.507	0.550
	0.5	0.096	0.102	0.513	0.562	0.560	0.608
	0.6	0.091	0.096	0.485	0.531	0.530	0.574
	0.7	0.072	0.077	0.386	0.423	0.422	0.457
	0.8	0.045	0.048	0.243	0.265	0.266	0.287
	0.9	0.017	0.018	0.094	0.101	0.103	0.109
4	0	0	0	0	0	0	0
	0.1	0.000	0.000	-0.002	0.000	-0.002	0.000
	0.2	0.007	0.008	0.035	0.044	0.039	0.047
	0.3	0.017	0.020	0.088	0.108	0.097	0.116
	0.4	0.028	0.031	0.142	0.168	0.156	0.181
	0.5	0.035	0.039	0.180	0.211	0.198	0.227
	0.6	0.038	0.042	0.195	0.228	0.214	0.246
	0.7	0.035	0.039	0.181	0.212	0.199	0.228
	0.8	0.027	0.030	0.141	0.164	0.154	0.177
	0.9	0.015	0.016	0.077	0.089	0.084	0.096
	0	0	0	0	0	0	0

Note:
Camber for Dead Load Deflection +/- ¼ inch tolerance. Deflections shown are along centerline of beam from a chord from C.L. Bearing to C.L. Bearing. Negative sign (-) indicates point above chord. Vertical curve corrections not included. Superelevation transition corrections not included.

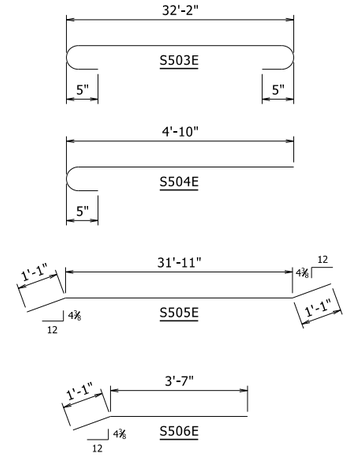


DEAD LOAD DEFLECTION DIAGRAM

BAR LIST

MARK	NO. REQ'D	LENGTH	P.D.
R400E	120	5'-3"	(1)
R401E	1010	6'-4"	(1)
R402E	112	5'-6"	Str.
R403E	1010	3'-6"	(1)
R404E	32	7'-8"	Str.
R405E	32	11'-8"	Str.
R406E	64	14'-8"	Str.
R407E	160	15'-8"	Str.
S401E	354	44'-11"	Str.
S501E	175	54'-0"	Str.
S502E	102	36'-0"	Str.
S503E	497	33'-4"	3¾"
S504E	1032	5'-5"	3¾"
S505E	4	34'-1"	3¾"
S506E	12	4'-8"	3¾"
S507E	497	32'-3"	Str.
S508E - S526E	4 ea.	5'-9"- 30'-6"	Str.

BENDING DIAGRAMS



NOTES:

Dimensions are out to out of bars.

Bars with an "E" suffix are to be epoxy coated.

See "REINFORCING PLAN & DECK POURING SEQUENCE" on Dwg. Nos. 68256 & 68257 for rail panel lengths.

See Std. Dwg. No. 55070 for details of rail reinforcing, and location of bars with an "R" prefix.

(1) See bending diagram on Std. Dwg. No. 55070.

TABLE OF VARIABLES

Closed Rail Panels			Open Rail Panels					
Panel Length	A	R4XXE	Panel Length	B	C	D	E	R4XXE
8'-0"	15	R404E	16'-0"	8	3'-0"	11	6'-0"	R407E
12'-0"	23	R405E						
15'-0"	29	R406E						
16'-0"	31	R407E						

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
12/16/24
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 8 OF 8
DETAILS OF 260'-0"
CONTINUOUS W-BEAM UNIT
BARON FORK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ARK/CGP DATE: 12/07/2022
CHECKED BY: RD DATE: 02/16/2024
DESIGNED BY: ARK DATE: 11/09/2022
FILENAME: b040866x1_s1.dgn
SCALE: NO SCALE

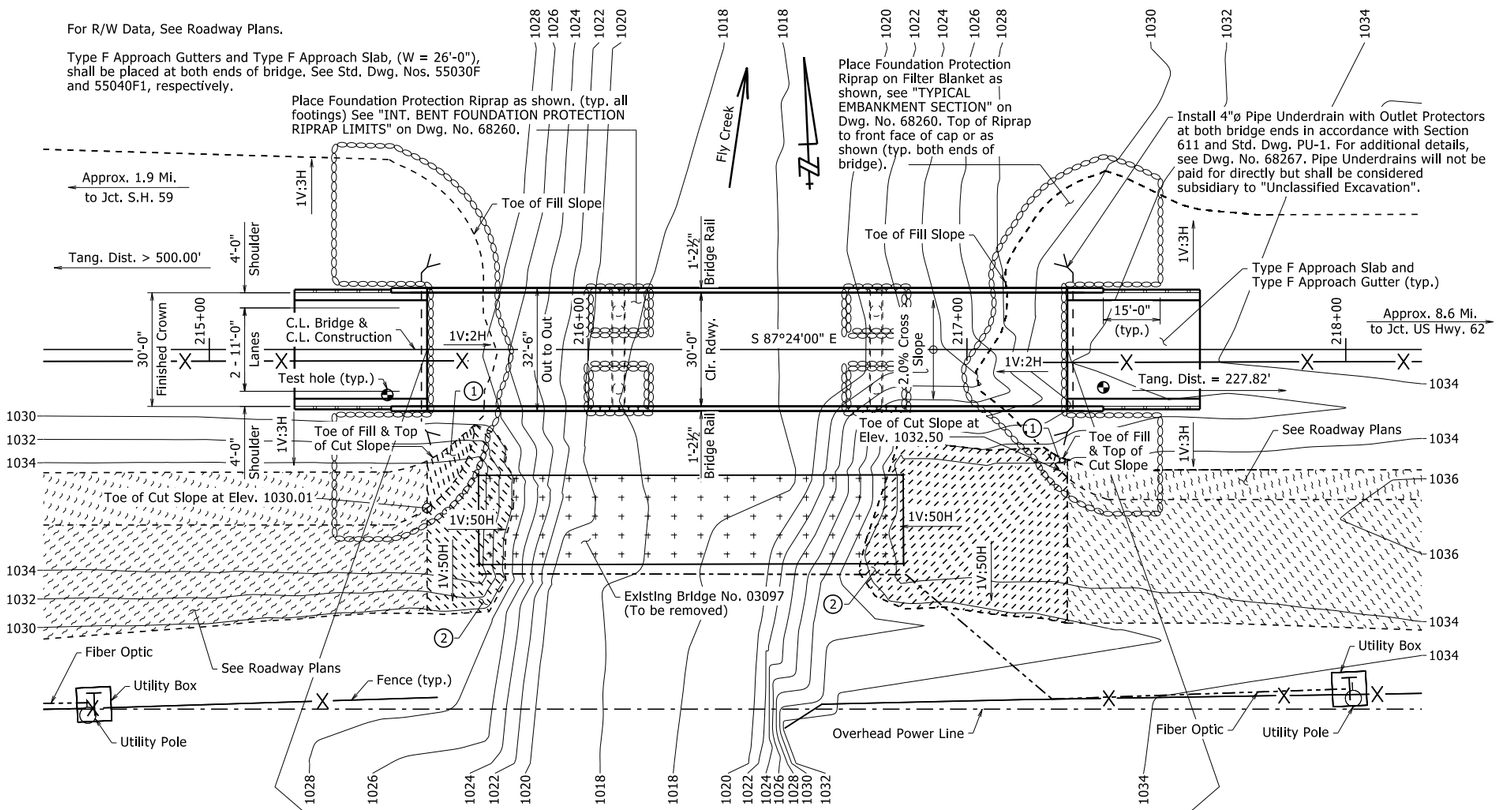
BRIDGE NO. 07686 DRAWING NO. 68258

PRINT DATE: 12/2/2024

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	89	136
		07687 - LAYOUT - 68259				

For R/W Data, See Roadway Plans.

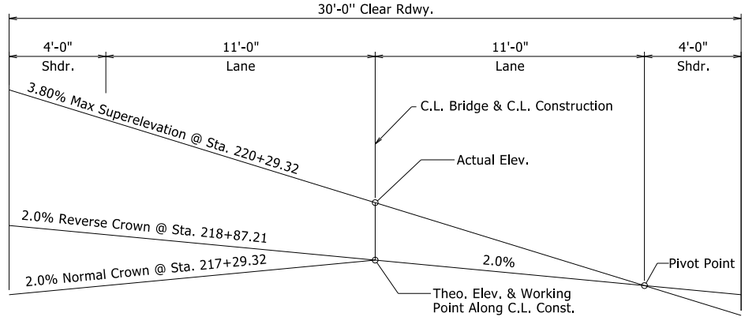
Type F Approach Gutters and Type F Approach Slab, (W = 26'-0"), shall be placed at both ends of bridge. See Std. Dwg. Nos. 55030F and 55040F1, respectively.



PLAN

(1) Transition slope from 1V:3H to 1V:2H.

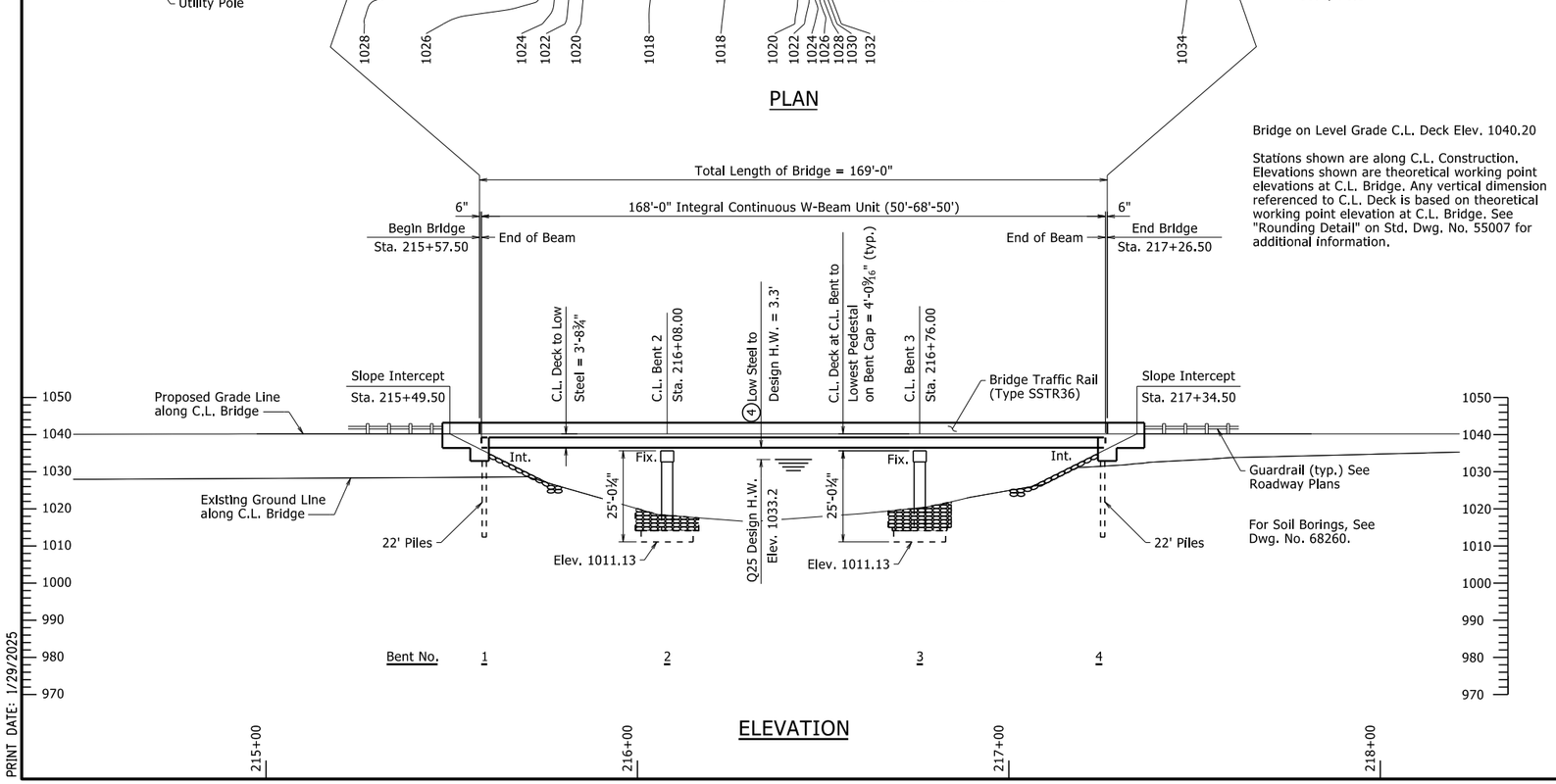
(2) The Contractor shall excavate the bridge ends at Bents 1 and 4 as shown. Approx. 330 cu. yds. of excavation. See Roadway Plans for additional existing embankment excavation details.



Portions of Wing A at Bent 4 are located in superelevation transition.

SUPERELEVATION TRANSITION SKETCH

Looking Ahead
No Scale



ELEVATION

Bridge on Level Grade C.L. Deck Elev. 1040.20

Stations shown are along C.L. Construction. Elevations shown are theoretical working point elevations at C.L. Bridge. Any vertical dimension referenced to C.L. Deck is based on theoretical working point elevation at C.L. Bridge. See "Rounding Detail" on Std. Dwg. No. 55007 for additional information.

HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	DISCHARGE	(3) NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEVATION WITH BACKWATER
	YEARS	CFS	FEET	FEET
Design	25	9442	1031.7	1033.2
Base	100	12319	1033.5	1035.3
Extreme	500	15690	1035.4	1037.6
Overtopping	>500	-	-	-

(3) Unconstricted water surface elevation without structure or roadway approaches.

(4) Q100 backwater elevation for existing structure = 1035.6 feet
Proposed Low Bridge Chord Elev. = 1036.5 feet
Drainage Area = 18.2 square miles
Historical H.W. Elev. = N/A

Charles R. Ellis
Digitally signed by Charles R. Ellis
Date: 2025.01.29 08:56:23-06'00'

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
1/29/25
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 1 OF 2
LAYOUT OF BRIDGE
HIGHWAY 45 OVER FLY CREEK
BARON FORK & FLY CREEK STRS. & APPRS. (S)
WASHINGTON COUNTY

ROUTE 45 SEC. 3

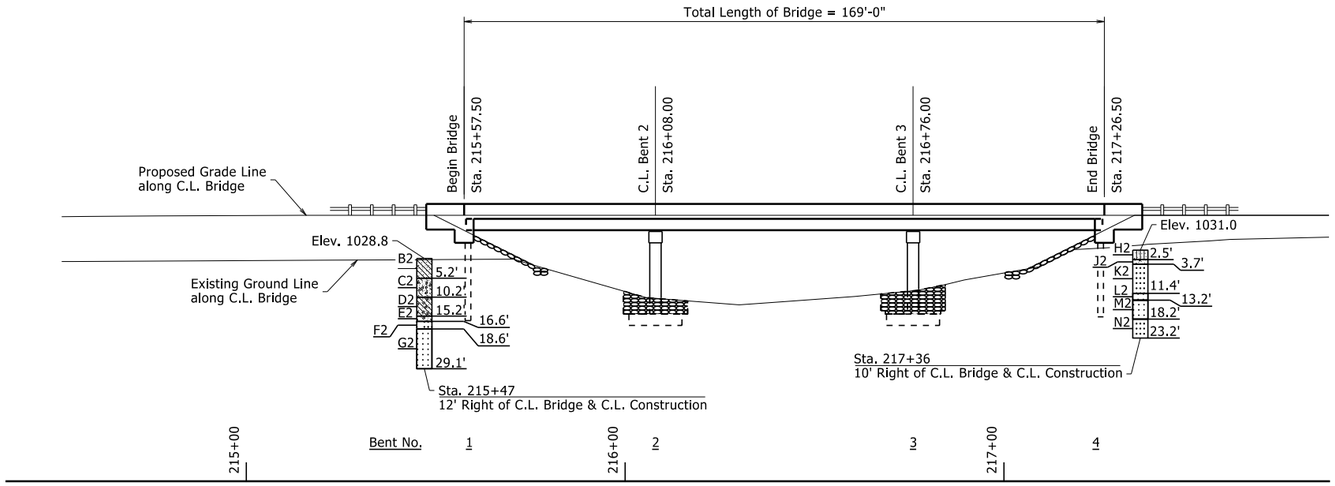
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ARK/RD DATE: 7/01/2022
CHECKED BY: BAB DATE: 4/17/2024
DESIGNED BY: ARK DATE: 5/25/2022
FILENAME: b040866x2_l1.dgn
SCALE: 1"=20'-0"

BRIDGE NO. 07687 DRAWING NO. 68259

PRINT DATE: 1/29/2025

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	90	136
		07687 - LAYOUT - 68260				



ELEVATION OF SOIL BORINGS

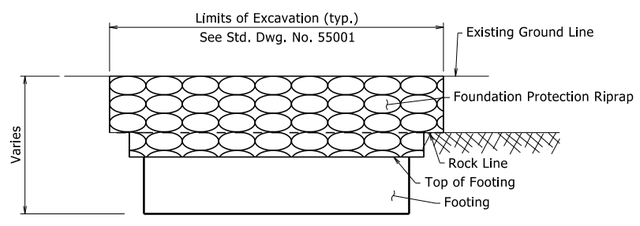
BORING LEGEND

B2-Moist, Medium Stiff, Dark Brown Sandy Clay
C2-Moist, Loose, Dark Brown Clayey Sand with Gravel
D2-Moist, Medium Dense, Brown Well Graded Gravel with Clay and Sand
E2-Wet, Very Dense, Light Gray Chert Fragments
F2-CHERT WITH OCCASIONAL LIMESTONE LAYERS - Slightly Weathered, Moderately Hard to Hard, Gray
G2-CHERT INTERBEDDED WITH LIMESTONE - Slightly Weathered, Moderately Hard to Hard, Gray
H2-Moist, Brown Sandy Silt with Some Gravel
J2-Moist, Very Dense, Gray Chert Fragments with Some Sandy Silt
K2-CHERT - Highly Weathered with Slightly Weathered Layers, Moderately Hard to Hard, Frequent Fractures, Gray
L2-LIMESTONE WITH FREQUENT CHERT LAYERS - Slightly Weathered with Weathered Layers, Moderately Hard, Gray
M2-CHERT WITH FREQUENT LIMESTONE LAYERS - Slightly Weathered, Moderately Hard to Hard, Frequent Fractures, Gray
N2-CHERT WITH OCCASIONAL LIMESTONE LAYERS - Unweathered, Moderately Hard to Hard, Gray

"N" VALUES

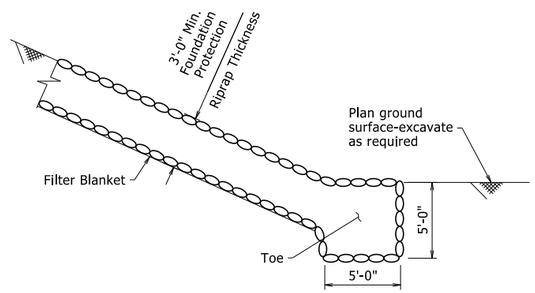
Sta. 215+47 - 12' Right of C.L. Bridge & C.L. Construction
3.0- 4.0,N=5
5.7- 6.7,N=5
8.2- 9.2,N=10
10.7- 11.7,N=18
15.2- 15.6,N=60(5")

Sta. 217+36 - 10' Right of C.L. Bridge & C.L. Construction
3.0- 3.7,N=96(8")



INT. BENT FOUNDATION PROTECTION RIPRAP LIMITS

No Scale



TYPICAL EMBANKMENT SECTION

No Scale

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. Section and Subsection refer to the Standard Construction Specifications unless otherwise noted in the Plans.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Ninth Edition (2020).

LIVE LOADING: HL-93

SEISMIC ZONE: 1 SD1: 0.085 SITE CLASS: C

SEISMIC OPERATIONAL CLASSIFICATION: Other

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (superstructure)	f'c = 4,000 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. 50 or 50W)	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 PILING: All piling shall be HP14x73 (Grade 50) and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 133 tons per pile and into the material designated as slightly weathered to unweathered chert on the boring legend. Minimum penetration shall be 15' below bottom of cap for all piles in Bents 1 and 4. Piling in end bents shall be driven after embankment to bottom of cap is in place. Lengths of piling shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with Section 805. Actual pile lengths are to be determined in the field. The Contractor shall use approved steel H-Pile driving points on all piles.

PREBORING: Preboring is required for all piling at Bents 1 and 4. Preboring shall be to a minimum depth of 5' into material designated as slightly weathered to unweathered chert on the boring legend or to a depth of 15' below the bottom of the cap, whichever is lower. Prebored holes shall have a diameter 9" greater than the diagonal of the pile for a depth of 10' below the bottom of the cap. The size and depth of the remaining preboring shall be determined in the field by the Engineer. After driving is completed, the prebored holes shall be backfilled with Class S Concrete to within 10' of the bottom of the cap, and the remaining 10' shall be backfilled with sand or pea gravel. The Contractor shall be responsible for keeping prebored holes free of debris prior to driving piles and 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".

SPREAD FOOTINGS: Footings shall be fully embedded into material designated as slightly weathered to unweathered chert on the boring legend. The top of the footings at Bent 2 and 3 shall be set a minimum 2' below the channel bottom as determined by the lowest channel elevation within the footprint of the footing. Foundations for footing shall be prepared in accordance with Subsection 801.04. Rock excavation shall be made to neat lines of the concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting. Concrete in footings shall be poured directly against excavated surfaces of rock. Excavations shall be backfilled and compacted as shown in "INT. BENT FOUNDATION PROTECTION RIPRAP LIMITS" and in accordance with Special Provision Job No. 040866 "FOUNDATION PROTECTION RIPRAP".

PAINTING: The following weathering steel surfaces shall be painted as specified in Subsection 807.75:

All steel surfaces within five feet of beam ends, including the section encased in concrete.

All steel surfaces exposed to the outside face of the bridge, including outside faces and bottom of exterior beams or girders, splice plates and bolts, stiffeners, drip plates, and bearings.

Galvanized members and surfaces in contact with concrete shall not be painted. The color of paint shall be Brown equal or close to Federal Std. 595B, Color Chip No. 30070 and as approved by the Engineer. The finish system may be applied in the shop. Any damage to the paint system occurring during transport or installation shall be corrected according to the manufacturer's recommendations at no cost to the Department. ASTM F3125, Grade A325 Type 3 bolts shall be used within these painted zones and shall be painted.

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 bridge rails in accordance with Section 803.

DETAIL DRAWINGS:	DRAWING NO(S).
End Bents	68261
Intermediate Bents	68262-68263
Elastomeric Bearings	68250
168'-0" Integral Continuous W-Beam Unit	68264-68269
General Notes For Steel Bridge Structures	55006
Details For Steel Bridge Structures	55007
Steel H-Piling	55020
Type F Approach Gutters	55030F
Type F Approach Slab	55040F1
Bridge Traffic Rail (Type SSTR36)	55070

EXISTING BRIDGE: Existing Bridge No. 03097 (Log Mile 1.91) is 26.5' wide (24' clear roadway) and 112' long and consists of 28' reinforced concrete slab spans (4 spans total) supported by concrete columns on spread footings. The existing bridge is located approximately 44' downstream from the proposed bridge. Plans of the existing structure, if available, may be obtained upon request to the Construction Contract Development Section of the Program Management Division.

REMOVAL AND SALVAGE: After the new bridge is open to traffic, the Contractor shall remove existing Bridge No. 03097 in accordance with Section 205. Existing riprap shall also be removed; this will not be paid for directly but shall be subsidiary to the item "Foundation Protection Riprap". All material from the existing bridge shall become the property of the Contractor.

MAINTENANCE OF TRAFFIC: See Roadway Plans.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
12/16/24
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 2 OF 2
LAYOUT OF BRIDGE
HIGHWAY 45 OVER FLY CREEK
BARON FORK & FLY CREEK STRS. & APPRS. (S)
WASHINGTON COUNTY

ROUTE 45 SEC. 3

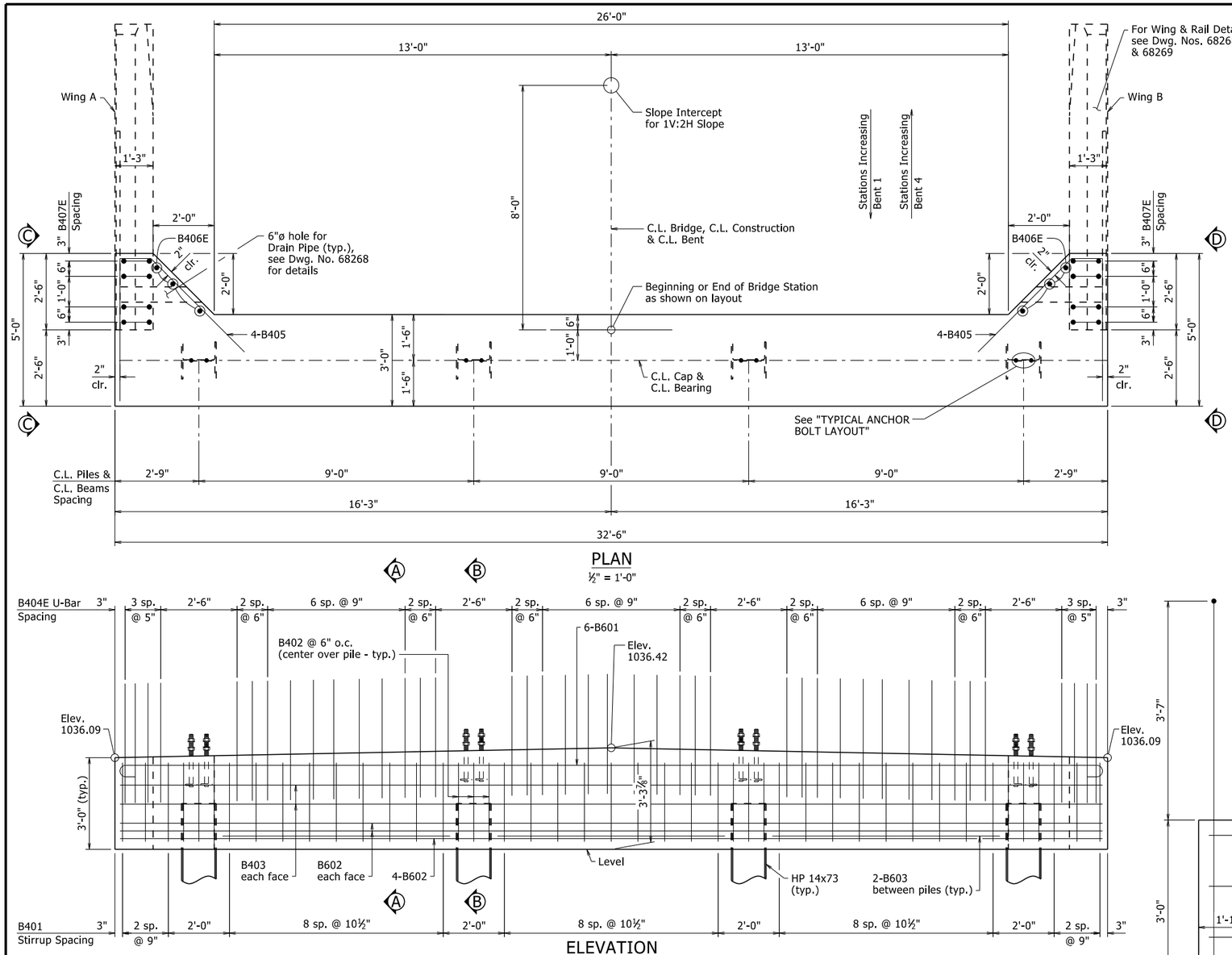
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY:	BAB	DATE:	4/17/2024	SCALE:	1"=20'-0"
DESIGNED BY:	ARK	DATE:	5/25/2022		

BRIDGE NO. 07687 DRAWING NO. 68260

PRINT DATE: 11/7/2024

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	91	136
		07687 - END BENTS - 68261				



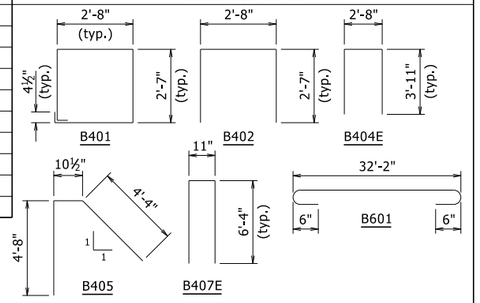
PLAN
½" = 1'-0"

ELEVATION
LOOKING BACK BENT 1
LOOKING AHEAD BENT 4
½" = 1'-0"

BAR LIST-PER BENT

MARK	NO. REQ'D	LENGTH	P.D.
B401	33	10'-10"	2"
B402	12	7'-8"	2"
B403	4	32'-2"	Str.
B404E	41	10'-4"	2"
B405	8	9'-10"	2"
B406E	6	6'-2"	Str.
B407E	8	13'-5"	2"
B601	6	33'-6"	4½"
B602	8	32'-2"	Str.
B603	6	7'-6"	Str.

BENDING DIAGRAMS



Dimensions are out to out of bars.
Bars with an "E" suffix are to be epoxy coated.

NOTES:

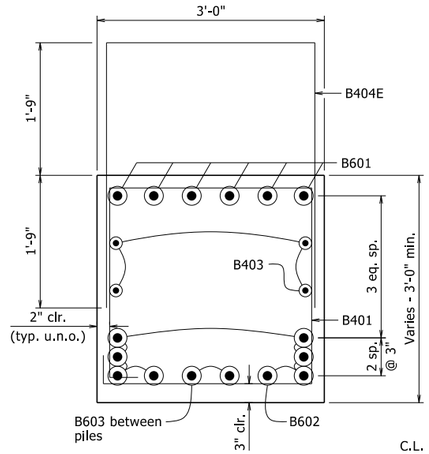
For "GENERAL NOTES", see Std. Dwg. No. 55006.

All piling shall be HP14x73 (ASTM A709, Gr. 50). See Std. Dwg. No. 55020 for details of piling.

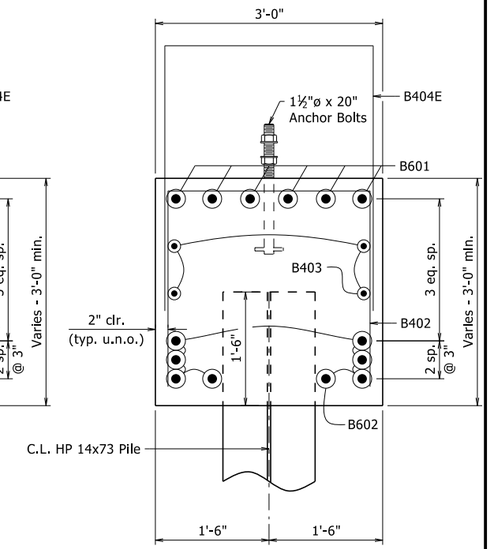
See Anchor Bolt Details on Dwg. No. 68267.

For additional information, see Layout.

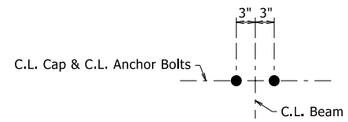
Granular backfill and pipe underdrain required behind cap. See Dwg. No. 68267 for details.



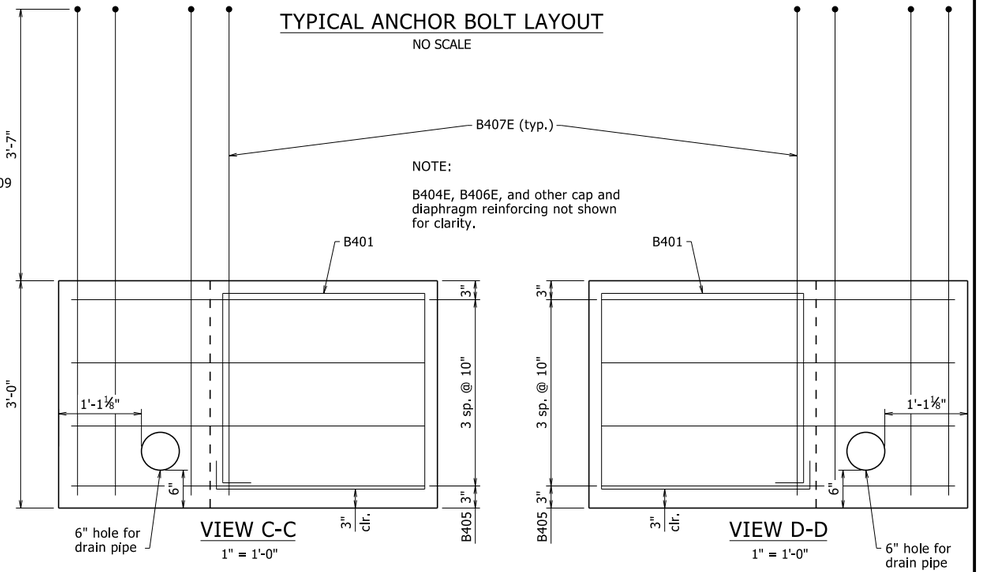
SECTION A-A
1" = 1'-0"



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



TYPICAL ANCHOR BOLT LAYOUT
NO SCALE



VIEW C-C
1" = 1'-0"

VIEW D-D
1" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
12/16/24
CHARLES R. ELLIS
BRIDGE ENGINEER

PRINT DATE: 12/2/2024

DETAILS OF END BENTS
FLY CREEK

ROUTE SEC.

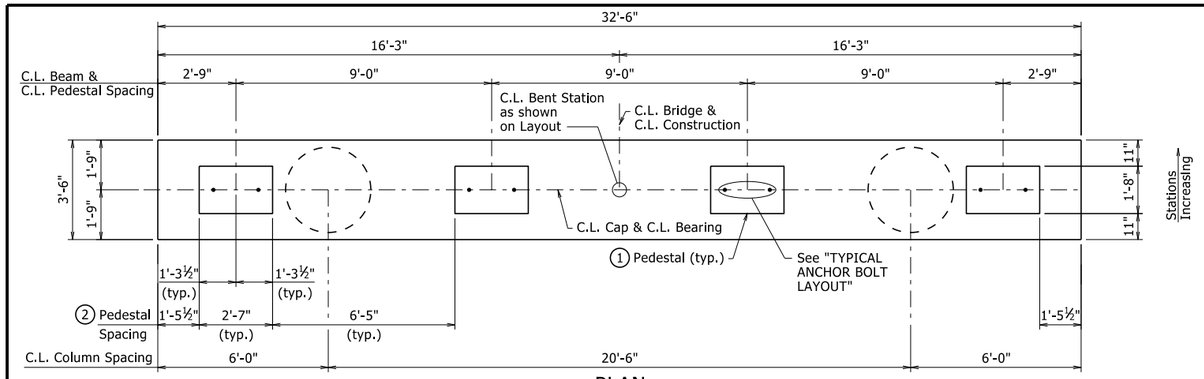
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 04/19/23
CHECKED BY: RD DATE: 03/19/2024
DESIGNED BY: RD DATE: 07/2023
FILENAME: b040866x2_b1.dgn
SCALE: AS NOTED

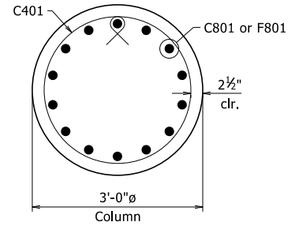
BRIDGE NO. 07687 DRAWING NO. 68261

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	92	136
		07687 - INTERMEDIATE BENTS - 68262				



PLAN

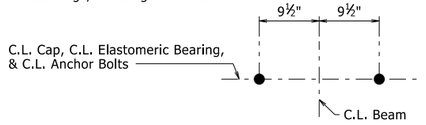
⅜" = 1'-0"



SECTION F-F

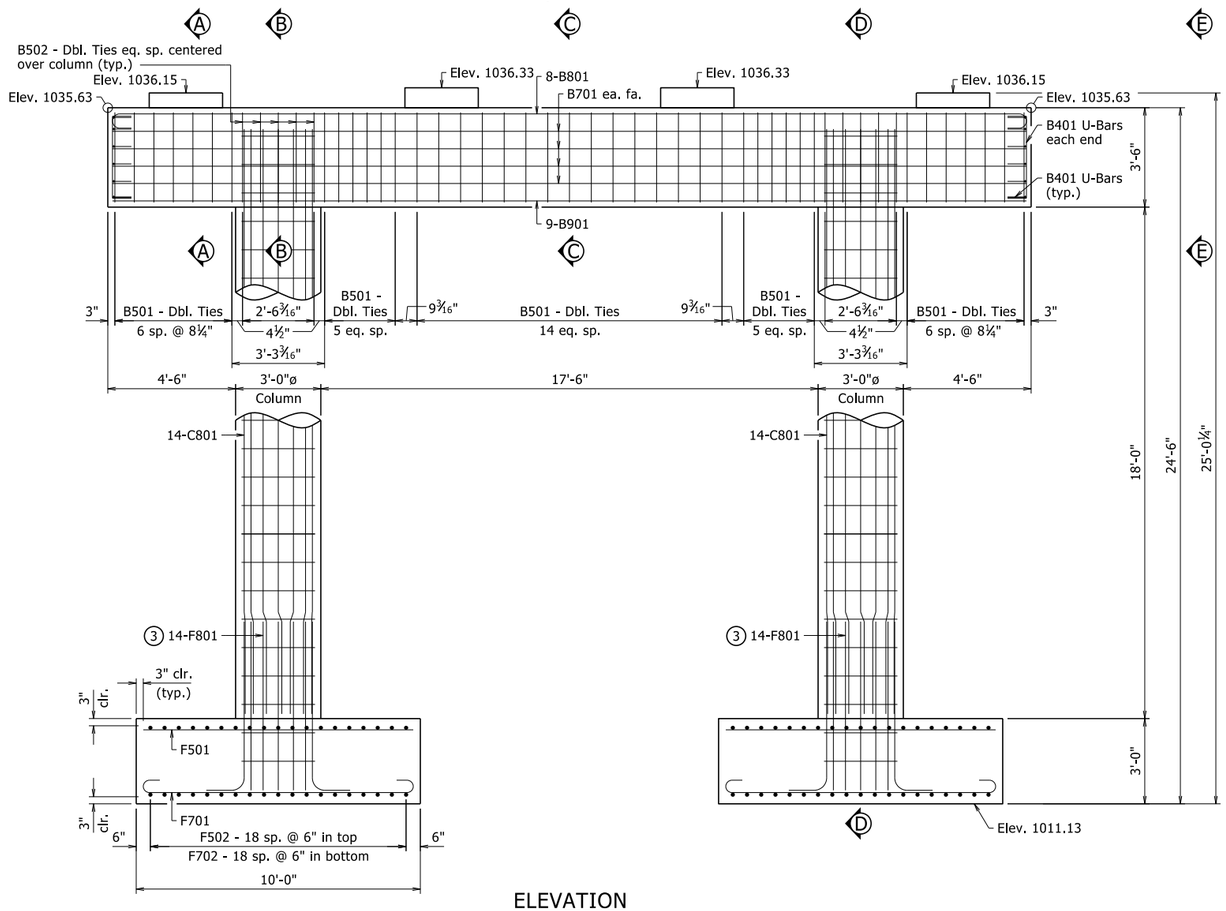
¾" = 1'-0"

For details of Elastomeric Bearings, see Dwg. No. 68250.



TYPICAL ANCHOR BOLT LAYOUT

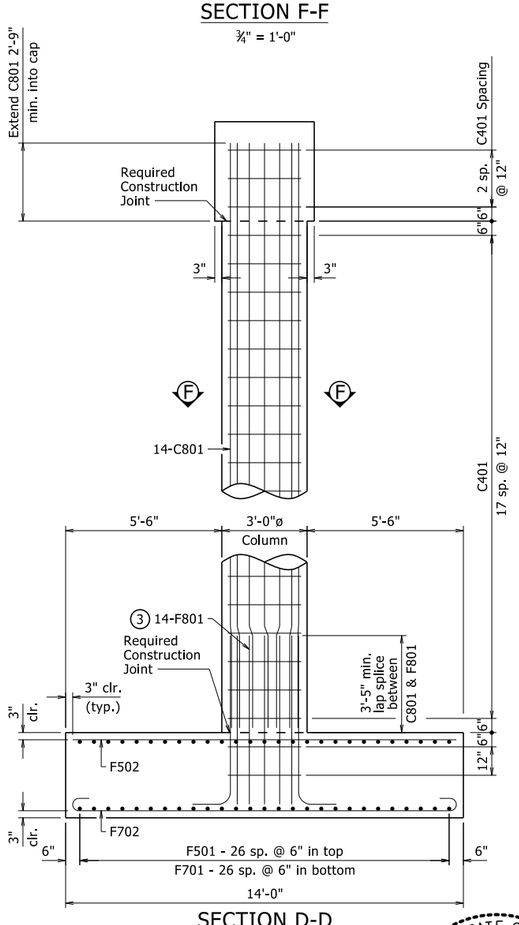
NO SCALE



ELEVATION

LOOKING AHEAD

⅜" = 1'-0"



SECTION D-D

⅜" = 1'-0"

NOTES:

For "GENERAL NOTES", see Std. Dwg. No. 55006.

For additional information, see Layout.

Bars and spacing are typical for each column.

See Dwg. No. 68263 for "SECTION A-A", "SECTION B-B", "SECTION C-C", & "VIEW E-E".

(1) Top of Pedestals shall be cast level at the elevations shown.

(2) See Dwg. No. 68263 for "PEDESTAL PLAN" and "TYPICAL PEDESTAL DETAILS".

(3) F801 bars to rest on footing bottom mat of reinforcing steel as shown.

STATE OF ARKANSAS
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BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS OF INTERMEDIATE BENTS
FLY CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

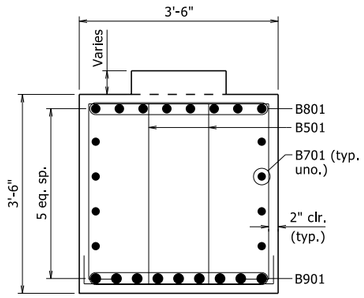
LITTLE ROCK, ARK.

DRAWN BY: CGP	DATE: 04/19/23	FILENAME: b040866x2_b2.dgn	
CHECKED BY: RD	DATE: 03/19/2024	SCALE: AS NOTED	
DESIGNED BY: RD	DATE: 07/2023		

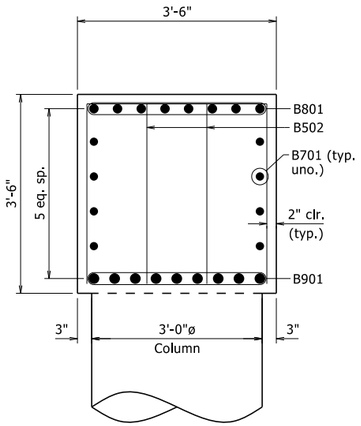
BRIDGE NO. 07687 DRAWING NO. 68262

PRINT DATE: 12/2/2024

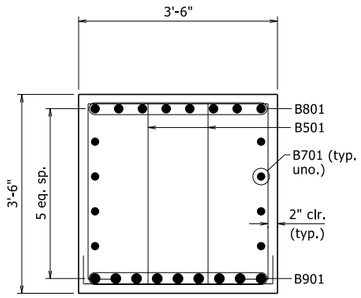
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	93	136
		07687 - INTERMEDIATE BENTS - 68263				



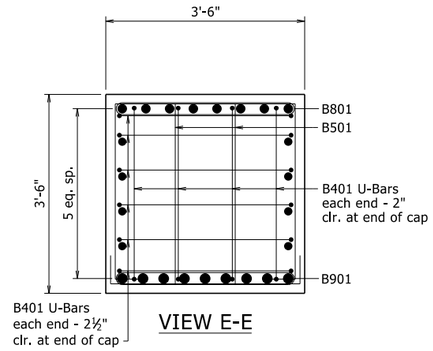
SECTION A-A



SECTION B-B



SECTION C-C

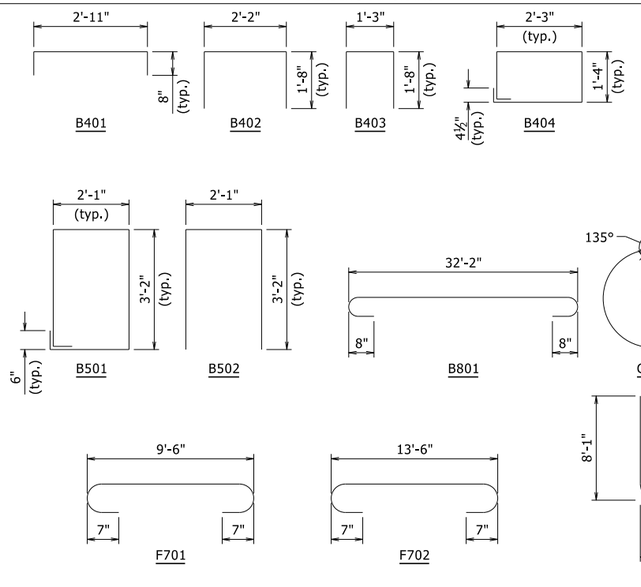


VIEW E-E

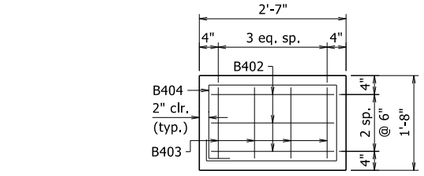
BAR LIST - PER BENT

MARK	NO. REQ'D	LENGTH	P.D.
B401	20	4'-1"	2"
B402	12	5'-4"	2"
B403	16	4'-5"	2"
B404	4	7'-6"	2"
B501	82	11'-0"	2½"
B502	20	8'-3"	2½"
B701	8	32'-2"	Str.
B801	8	34'-0"	6"
B901	9	32'-2"	Str.
C401	46	9'-3"	3"
C801	28	20'-7"	Str.
F501	38	9'-6"	Str.
F502	54	13'-6"	Str.
F701	38	11'-2"	5¼"
F702	54	15'-2"	5¼"
F801	28	9'-2"	6"

BENDING DIAGRAMS



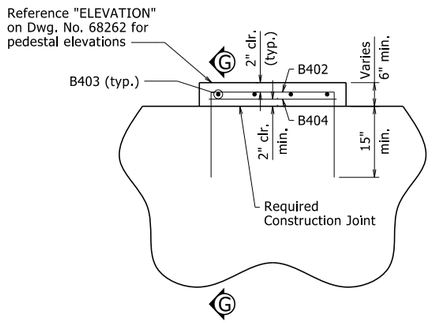
Dimensions are out to out of bars.



PEDESTAL PLAN

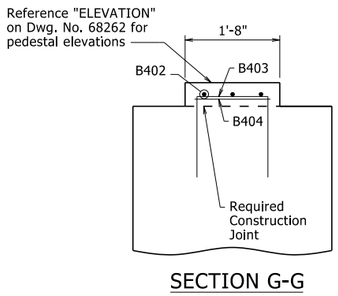
NOTES:

Place one B404 tie on pedestals 9" in height or less.



TYPICAL PEDESTAL DETAILS

LOOKING AHEAD



SECTION G-G

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
12/16/24
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF INTERMEDIATE BENTS
FLY CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

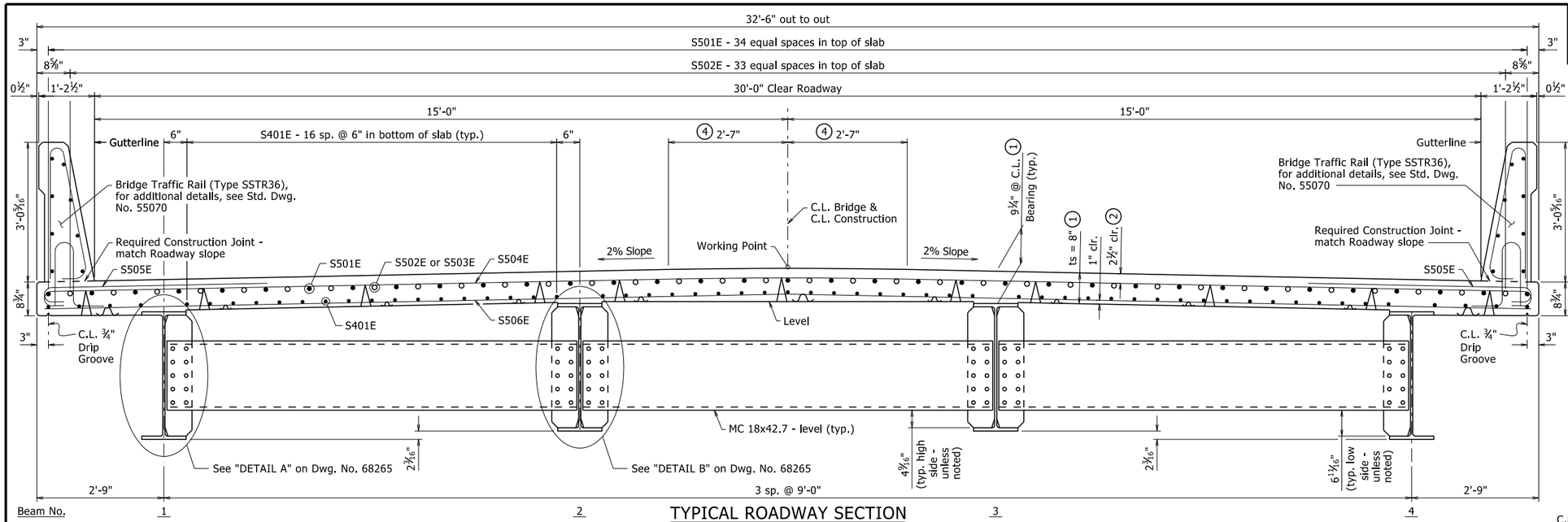
LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 04/19/23
CHECKED BY: RD DATE: 03/19/2024
DESIGNED BY: RD DATE: 07/2023
FILENAME: b040866x2_b2.dgn
SCALE: 3/4" = 1'-0"

BRIDGE NO. 07687 DRAWING NO. 68263

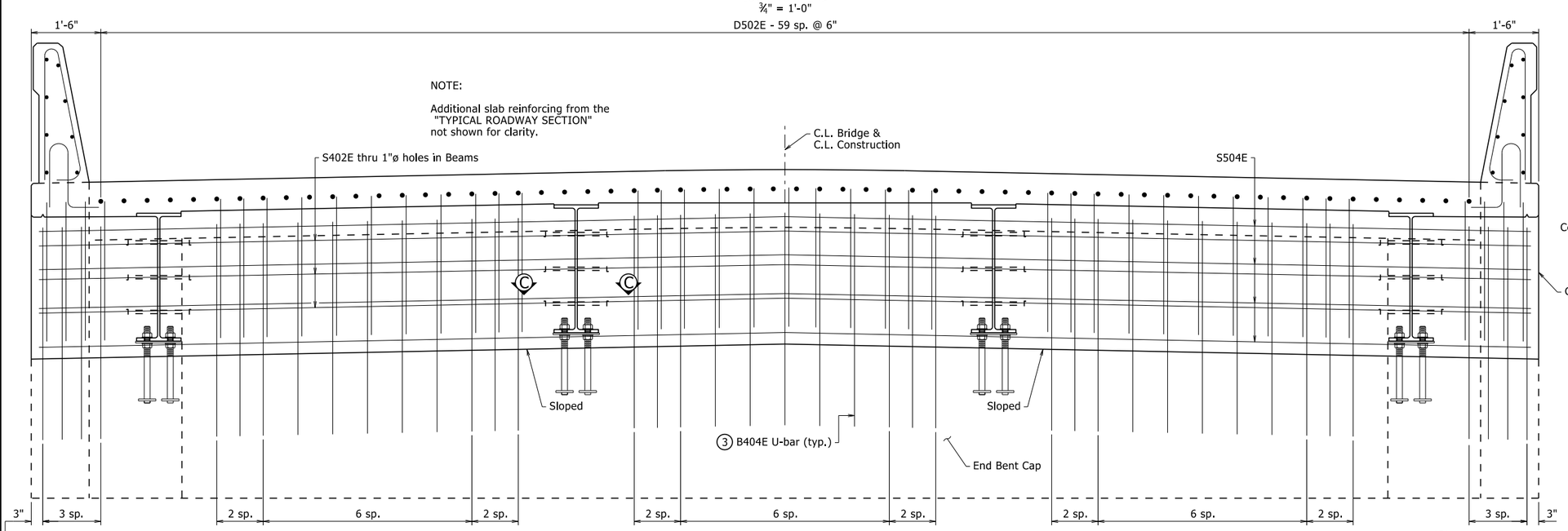
PRINT DATE: 12/2/2024

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	94	136
		07687 - SPAN DETAILS - 68264				



TYPICAL ROADWAY SECTION

LOOKING AHEAD
¾" = 1'-0"



TYPICAL ROADWAY SECTION AT END BENTS

LOOKING BACK BENT 1
LOOKING AHEAD BENT 4
¾" = 1'-0"

NOTE:

S403E is lapped with B404E. See Dwg. No. 68261 for Reinforcing Details and placement.

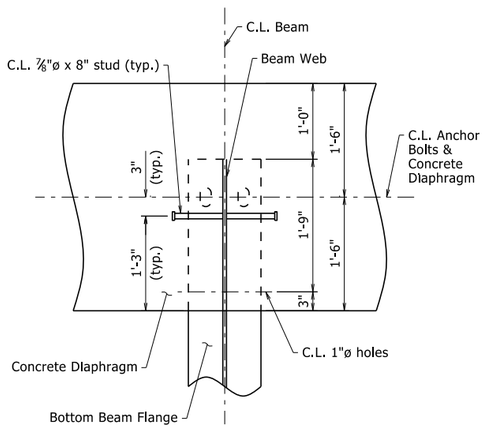
Class 2 Protective Surface Treatment shall be applied to the roadway surface and to the roadway face & top of the concrete bridge rails.

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.

Slab Reinforcing

Longitudinal: S501E in top (place as shown)
S401E in bottom (place as shown)
S502E or S503E in top placed as shown, see "REINFORCING PLAN & DECK POURING SEQUENCE" Dwg. No. 68266.

Transverse: S504E @ 6" o.c. in top
S506E @ 6" o.c. in bottom
S505E @ 6" in top of overhangs (bundled with S504E) both sides



SECTION C-C

1" = 1'-0"

1 See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on Std. Dwg. No. 55007.

2 Tolerance Minus = ¼":
Plus equal to the amount of slab thickness used to meet slab thickness tolerance. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on Std. Dwg. No. 55007.

3 Reference Dwg. No. 68261 for End Bent reinforcing.

4 See "ROUNDING DETAIL" on Std. Dwg. No. 55007.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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12/16/24
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 1 OF 6
DETAILS OF 168'-0"
INTEGRAL W-BEAM UNIT
FLY CREEK

ROUTE SEC.

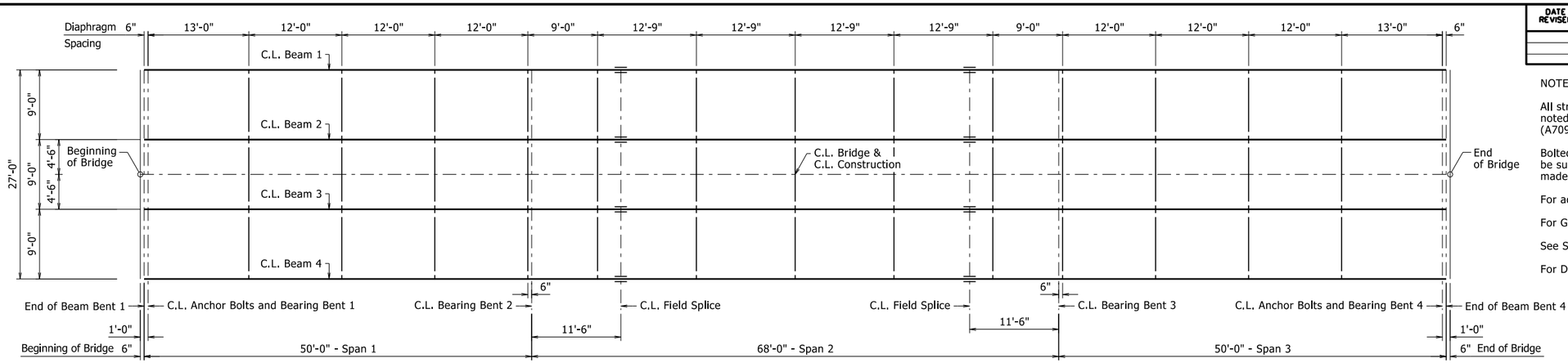
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 04/03/2023
CHECKED BY: RD DATE: 02/16/2024
DESIGNED BY: RD DATE: 02/2023
FILENAME: b040866x2_s1.dgn
SCALE: AS NOTED

BRIDGE NO. 07687 DRAWING NO. 68264

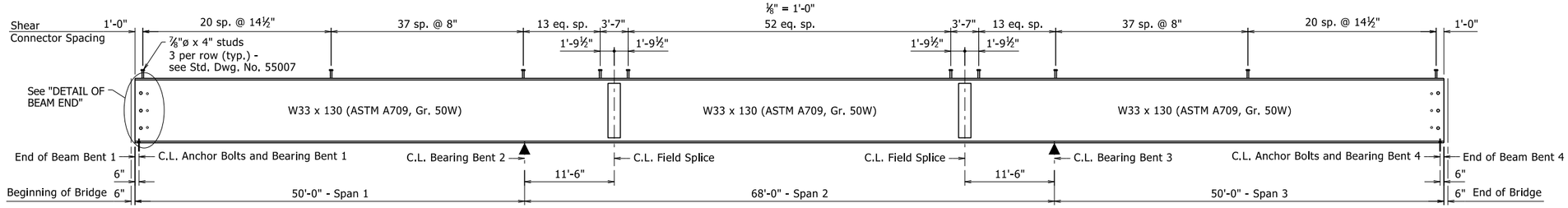
PRINT DATE: 12/2/2024

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	95	136
		07687 - SPAN DETAILS - 68265				



FRAMING PLAN

⅛" = 1'-0"



TYPICAL BEAM ELEVATION

NO SCALE

NOTES:

All structural steel shall be ASTM A709, Gr. 50W unless otherwise noted and shall be paid for as "Structural Steel in Beam Spans (A709, Gr. 50W)".

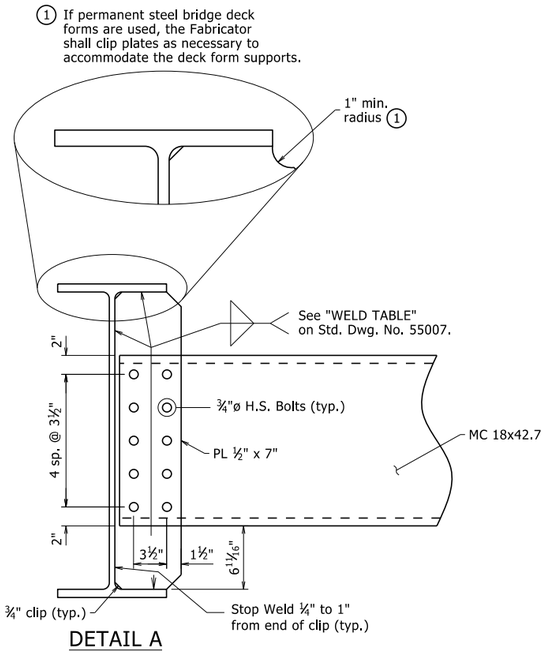
Bolted field splices may be eliminated or shop welded splices may be substituted with the approval of the Engineer. Payment will be made on the basis of plan quantities.

For additional information, see Layout.

For General Notes, see Std. Dwg. No. 55006.

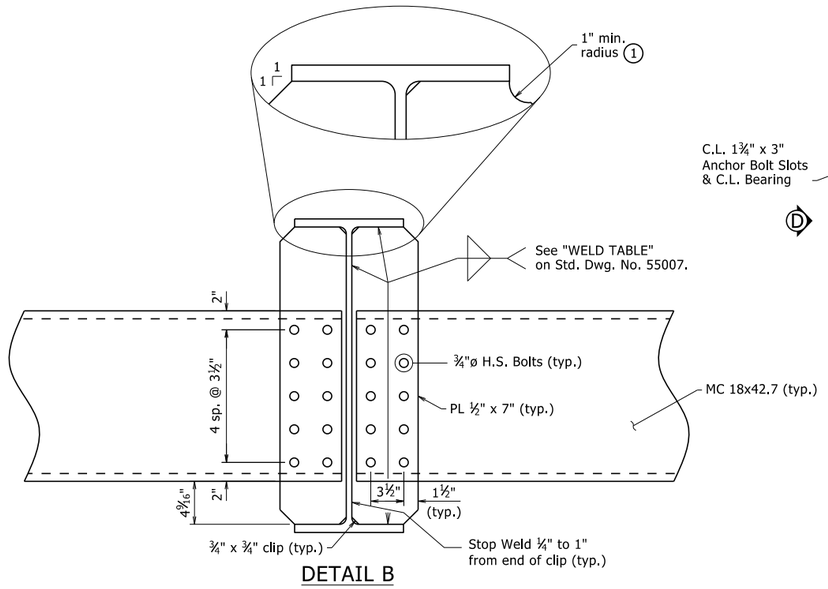
See Std. Dwg. No. 55007 for additional details.

For Details of Field Splice, see Dwg. No. 68267.



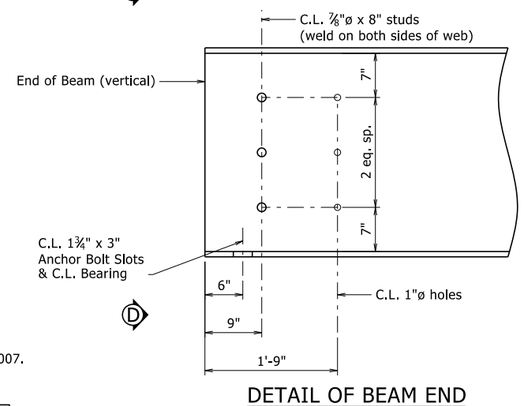
DETAIL A

1½" = 1'-0"



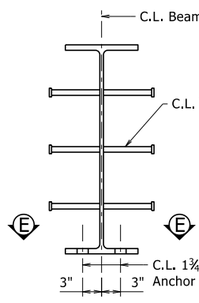
DETAIL B

1½" = 1'-0"



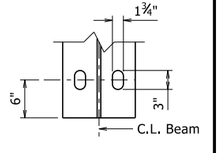
DETAIL OF BEAM END

NO SCALE



VIEW D-D

NO SCALE



VIEW E-E

NO SCALE

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
12/16/24
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 2 OF 6
DETAILS OF 168'-0"
INTEGRAL W-BEAM UNIT
FLY CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 04/03/2023 FILENAME: b040866x2_s1.dgn
CHECKED BY: RD DATE: 02/16/2024 SCALE: AS NOTED
DESIGNED BY: RD DATE: 02/2023

BRIDGE NO. 07687 DRAWING NO. 68265

PRINT DATE: 12/2/2024

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	96	136
		07687 - SPAN DETAILS - 68266				

NOTES:

Pours with same number may be placed simultaneously or separately. All Pour(s) 1 must be placed before Pour 2, Pour 2 must be placed before Pour(s) 3 & all Pour(s) 3 must be placed before Pour(s) 4 can be placed. A minimum of 48 hours shall elapse between the end of a pour and the start of the next pour. A minimum of 72 hours shall elapse between adjacent pours.

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

A minimum of 72 hours shall elapse between completion of the slab and the pouring of the bridge railing. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer. The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence(s) shown.

Unless otherwise noted, required slab joints and pouring sequence construction joints shall align with parapet joints at the gutterline.

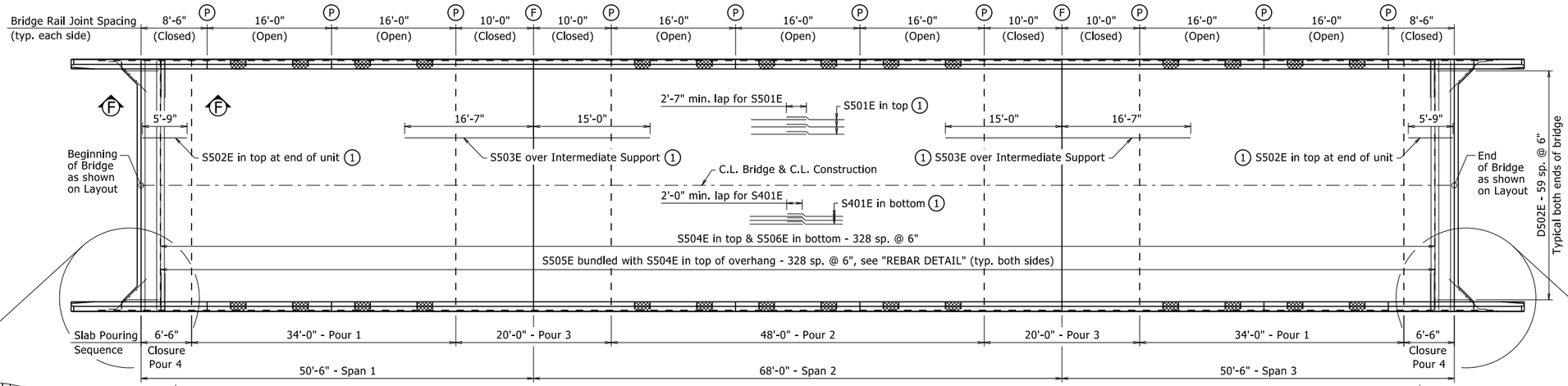
Concrete diaphragms shall be poured monolithically with the slab.

See Dwg. No. 68267 for "SECTION F-F".

(F) C.L. Full-Depth Parapet Joint (¼" to 1" max.) Stop 6" from top of slab.

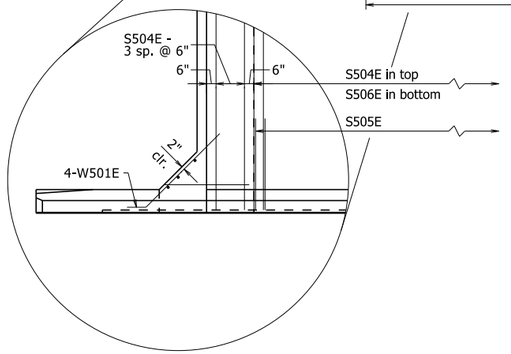
(P) C.L. Partial-Depth Parapet Joint (¼" to 1" max.) Stop 1'-4" from top of slab.

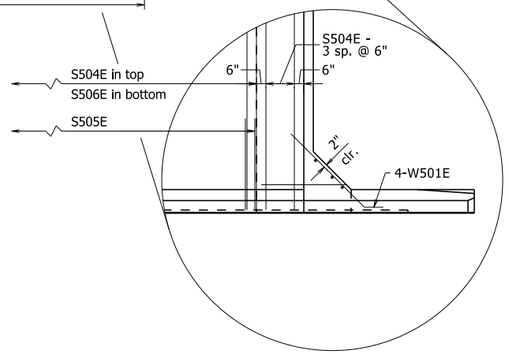
(1) Placed as shown in "TYPICAL ROADWAY SECTION", Dwg. No. 68264.

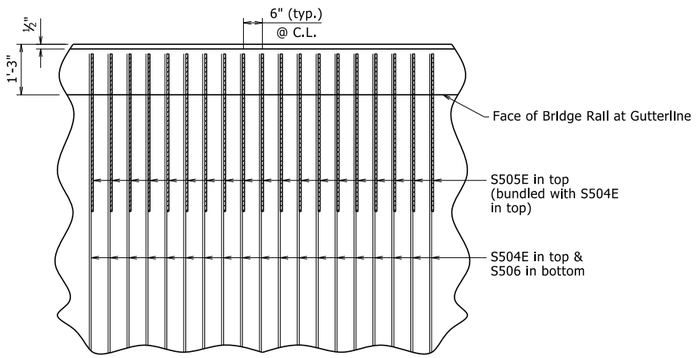


REINFORCING PLAN & DECK POURING SEQUENCE

⅛" = 1'-0"







REBAR DETAIL

NO SCALE

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
12/16/24
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 3 OF 6
DETAILS OF 168'-0"
INTEGRAL W-BEAM UNIT
FLY CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

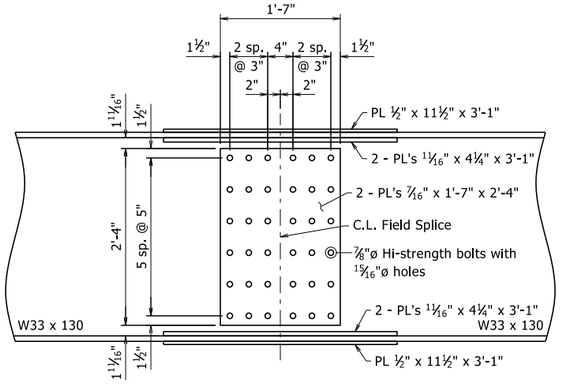
LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 04/03/2023 FILENAME: b040866x2_s1.dgn
CHECKED BY: RD DATE: 02/16/2024 SCALE: AS NOTED
DESIGNED BY: RD DATE: 02/2023

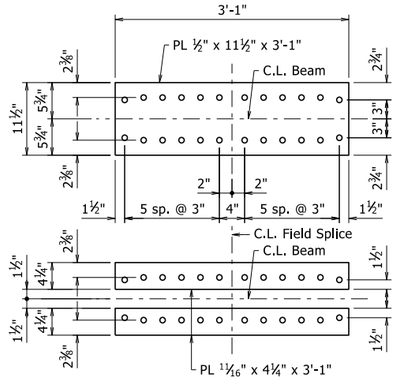
BRIDGE NO. 07687 DRAWING NO. 68266

PRINT DATE: 12/2/2024

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	97	136
		07687 - SPAN DETAILS - 68267				



WEB SPLICE



TOP & BOTTOM FLANGE SPLICES

DETAILS OF FIELD SPLICE

1" = 1'-0"

(1) See End Bent Details on Dwg. No. 68261 for reinforcing and additional details.

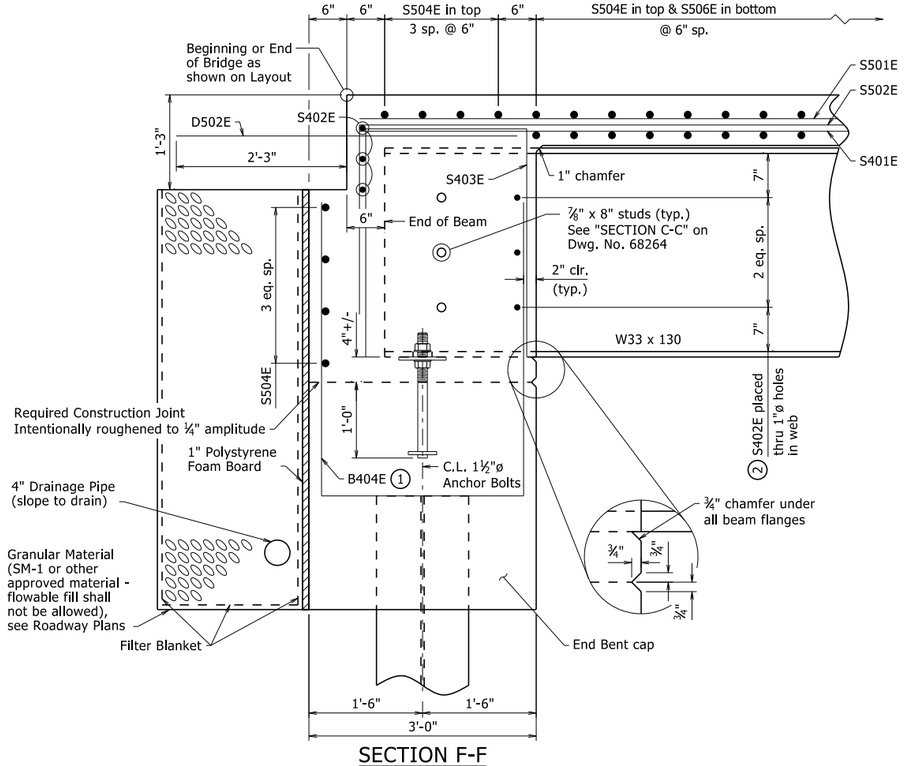
(2) See "SECTION C-C" on Dwg. No. 68264 for location of holes in beams.

(3) See bending diagram on Std. Dwg. No. 55070.

NOTES:

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

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 will be considered subsidiary to the unit price bid for "Unclassified Excavation".



SECTION F-F

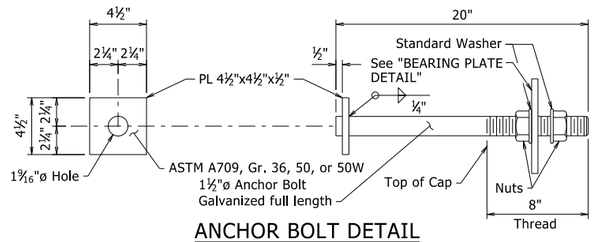
1" = 1'-0"

NOTE:

See "REINFORCING PLAN & DECK POURING SEQUENCE" on Dwg. No. 68266 for rail panel lengths.

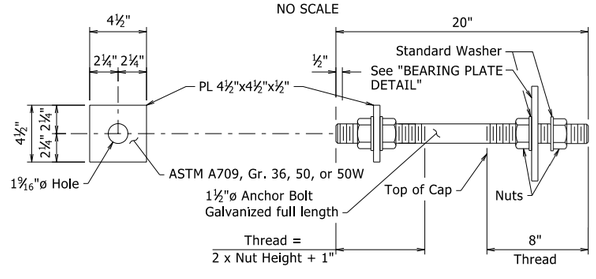
NOTE:

Galvanize all pieces of the anchor bolt assembly.

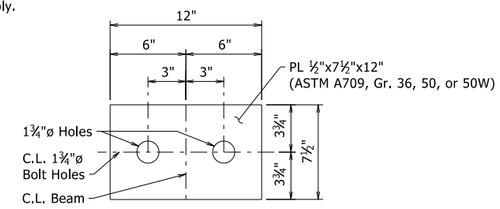


ANCHOR BOLT DETAIL

NO SCALE



ALTERNATE ANCHOR BOLT DETAIL



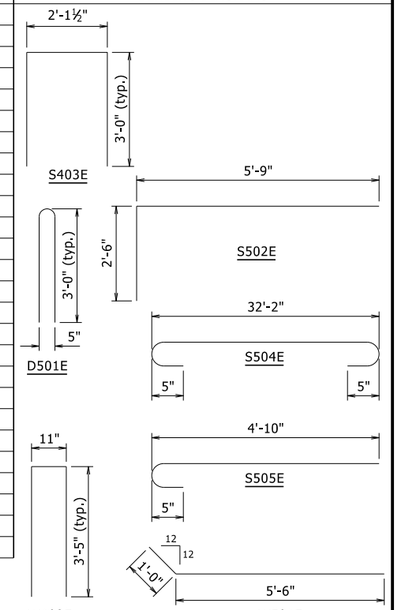
BEARING PLATE DETAIL

NO SCALE

BAR LIST

MARK	NO. REQ'D	LENGTH	P.D.
D501E	32	6'-2"	3¾"
D502E	120	5'-0"	Str.
R400E	112	5'-3"	(3)
R401E	728	6'-4"	(3)
R402E	96	5'-6"	Str.
R403E	648	3'-6"	(3)
R404E	32	8'-2"	Str.
R405E	96	9'-8"	Str.
R406E	112	15'-8"	Str.
S401E	236	43'-8"	Str.
S402E	12	32'-2"	Str.
S403E	41	8'-0"	2"
S501E	105	57'-11"	Str.
S502E	68	8'-2"	3¾"
S503E	68	31'-7"	Str.
S504E	337	33'-4"	3¾"
S505E	658	5'-5"	3¾"
S506E	337	32'-2"	Str.
W401E	80	3'-11"	(3)
W402E	60	7'-7"	2"
W501E	16	6'-6"	3¾"
W701E	48	12'-2"	Str.

BENDING DIAGRAMS



Dimensions are out to out of bars.
Bars with an "E" suffix are to be epoxy coated.

TABLE OF VARIABLES

(for use with Std. Dwg No. 55070)

Closed Rail Panels			Open Rail Panels					
Panel Length	A	R4XXE	Panel Length	B	C	D	E	R4XXE
8'-6"	16	R404E	16'-0"	8	3'-0"	11	6'-0"	R406E
10'-0"	19	R405E						

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
12/16/24
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 4 OF 6
DETAILS OF 168'-0"
INTEGRAL W-BEAM UNIT
FLY CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

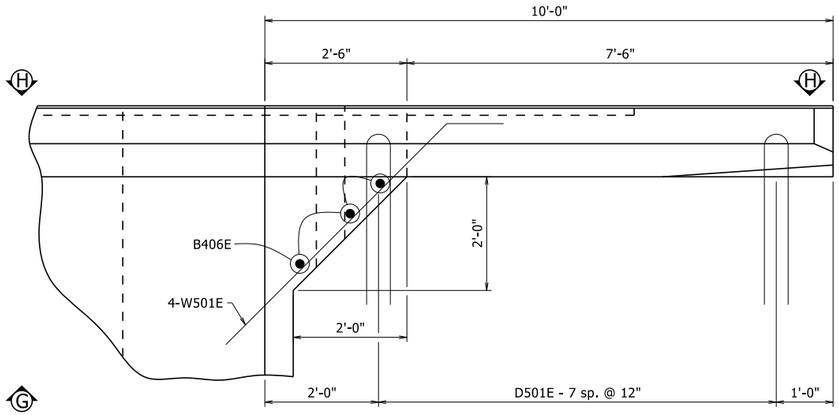
LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 04/03/2023 FILENAME: b040866x2_s1.dgn
CHECKED BY: RD DATE: 02/16/2024 SCALE: AS NOTED
DESIGNED BY: RD DATE: 02/2023

BRIDGE NO. 07687 DRAWING NO. 68267

PRINT DATE: 12/2/2024

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	98	136
		07687 - SPAN DETAILS - 68268				

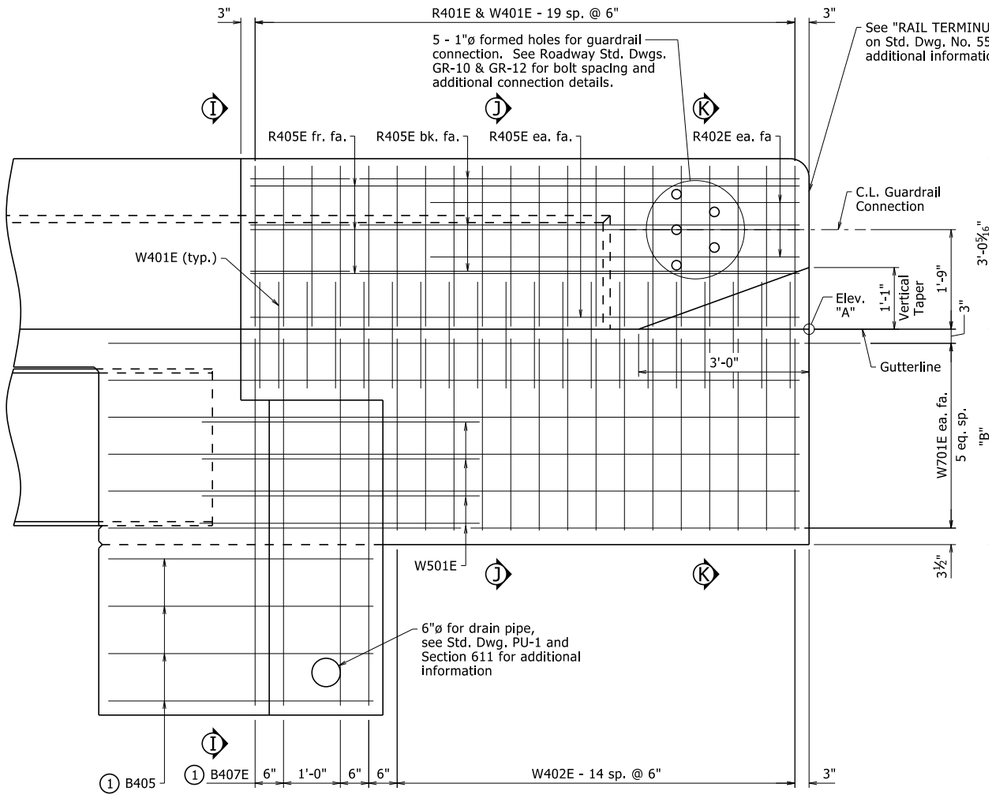


PLAN OF RAIL

	Bent 1 "Elev. A"	Bent 4 "Elev. A"	Bent 1 "B"	Bent 4 "B"
Wing A	1039.90	1039.96	3'-9 7/16"	3'-10 1/8"
Wing B	1039.90	1039.90	3'-9 7/16"	3'-9 7/16"

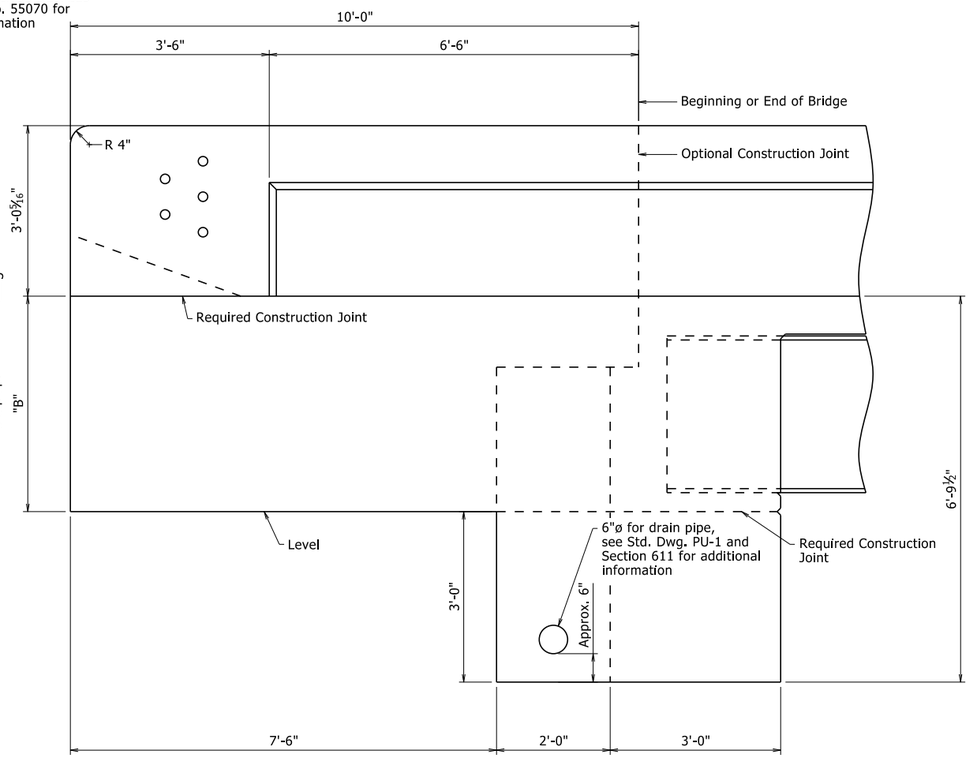
NOTE:

See Dwg. No. 68269 for "VIEW I-I", "SECTION J-J", & "SECTION K-K".



VIEW G-G

1 See End Bent Details on Dwg. No. 68261 for reinforcing and additional details.



VIEW H-H

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
12/16/24
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 5 OF 6
DETAILS OF 168'-0"
INTEGRAL W-BEAM UNIT
FLY CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

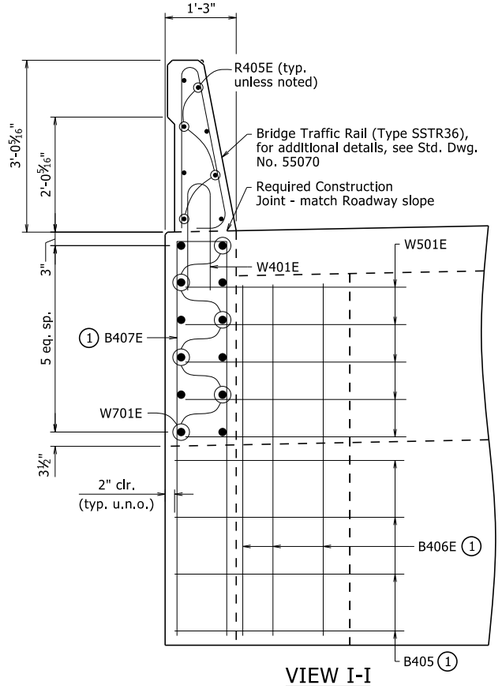
LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 04/03/2023 FILENAME: b040866x2_s1.dgn
CHECKED BY: RD DATE: 02/16/2024 SCALE: 3/4" = 1'-0"
DESIGNED BY: RD DATE: 02/2023

BRIDGE NO. 07687 DRAWING NO. 68268

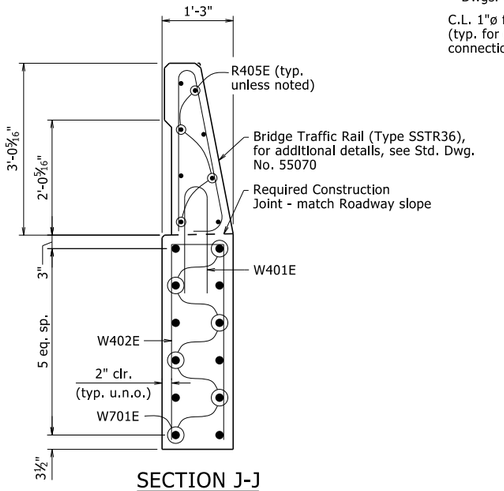
PRINT DATE: 12/2/2024

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	99	136
		07687 - SPAN DETAILS - 68269				



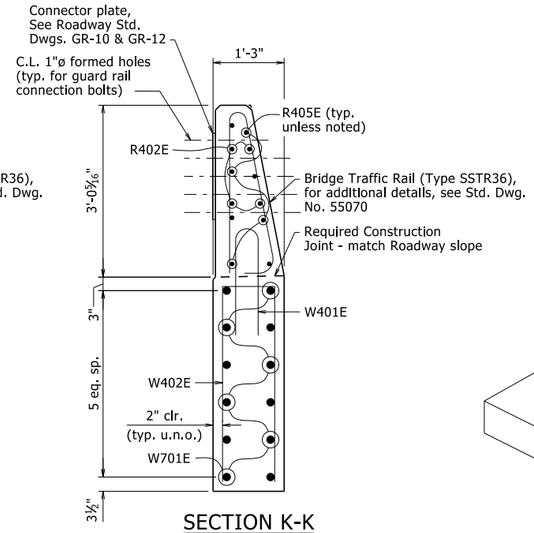
VIEW I-I

¾" = 1'-0"



SECTION J-J

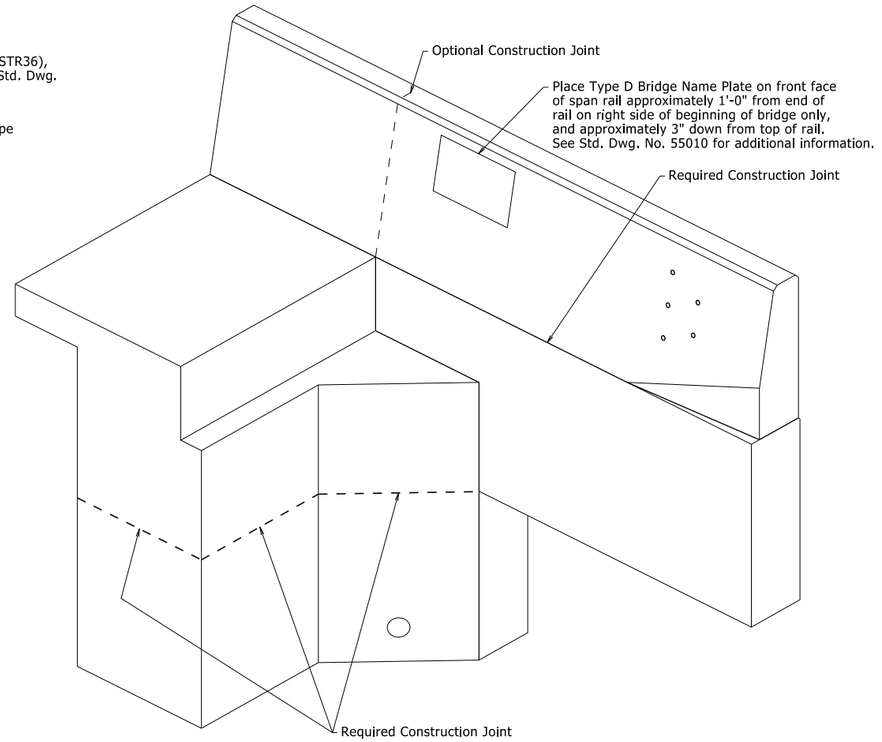
¾" = 1'-0"



SECTION K-K

¾" = 1'-0"

1 See End Bent Details on Dwg. No. 68261 for reinforcing and additional details.



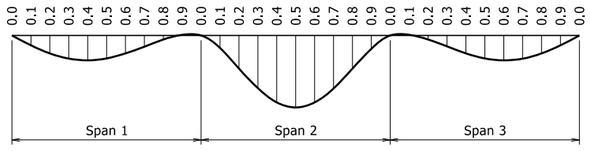
THREE DIMENSIONAL VIEW

NO SCALE

TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

DEFLECTIONS TABLE (in.)							
Span	Point of Deflection	Structural Steel		Structural Steel + Slab		Structural Steel + Slab + Bridge Rail	
		EXTERIOR	INTERIOR	EXTERIOR	INTERIOR	EXTERIOR	INTERIOR
1	0	0	0	0	0	0	0
	0.1	0.015	0.017	0.091	0.107	0.092	0.108
	0.2	0.027	0.030	0.165	0.194	0.168	0.197
	0.3	0.034	0.039	0.212	0.250	0.217	0.254
	0.4	0.037	0.042	0.227	0.268	0.233	0.273
	0.5	0.034	0.039	0.208	0.248	0.213	0.252
	0.6	0.026	0.030	0.161	0.194	0.163	0.196
	0.7	0.016	0.019	0.100	0.124	0.100	0.123
	0.8	0.006	0.007	0.035	0.047	0.032	0.044
	0.9	-0.001	-0.001	-0.007	-0.004	-0.011	-0.008
2	0	0	0	0	0	0	0
	0.1	0.019	0.020	0.116	0.124	0.13	0.137
	0.2	0.049	0.053	0.305	0.332	0.338	0.364
	0.3	0.079	0.084	0.487	0.530	0.537	0.579
	0.4	0.100	0.107	0.619	0.675	0.682	0.736
	0.5	0.108	0.115	0.666	0.726	0.733	0.791
	0.6	0.100	0.107	0.619	0.675	0.682	0.736
	0.7	0.079	0.085	0.490	0.534	0.541	0.583
	0.8	0.049	0.053	0.305	0.332	0.338	0.364
	0.9	0.020	0.021	0.123	0.132	0.137	0.146
3	0	0	0	0	0	0	0
	0.1	-0.001	-0.001	-0.007	-0.004	-0.011	-0.008
	0.2	0.006	0.007	0.035	0.047	0.032	0.044
	0.3	0.016	0.019	0.096	0.120	0.095	0.119
	0.4	0.026	0.030	0.161	0.194	0.163	0.196
	0.5	0.034	0.039	0.208	0.248	0.213	0.252
	0.6	0.037	0.042	0.227	0.268	0.233	0.273
	0.7	0.034	0.039	0.212	0.250	0.217	0.255
	0.8	0.027	0.030	0.165	0.194	0.168	0.197
	0.9	0.015	0.017	0.091	0.107	0.092	0.108
	0	0	0	0	0	0	0

Note:
Camber for Dead Load Deflection +/- ¼ inch tolerance. Deflections shown are along centerline of beam from a chord from C.L. Bearing to C.L. Bearing. Negative sign (-) indicates point above chord. Vertical curve corrections not included. Superelevation transition corrections not included.



DEAD LOAD DEFLECTION DIAGRAM

STATE OF ARKANSAS
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BRIDGE ENGINEER

SHEET 6 OF 6
DETAILS OF 168'-0"
INTEGRAL W-BEAM UNIT
FLY CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

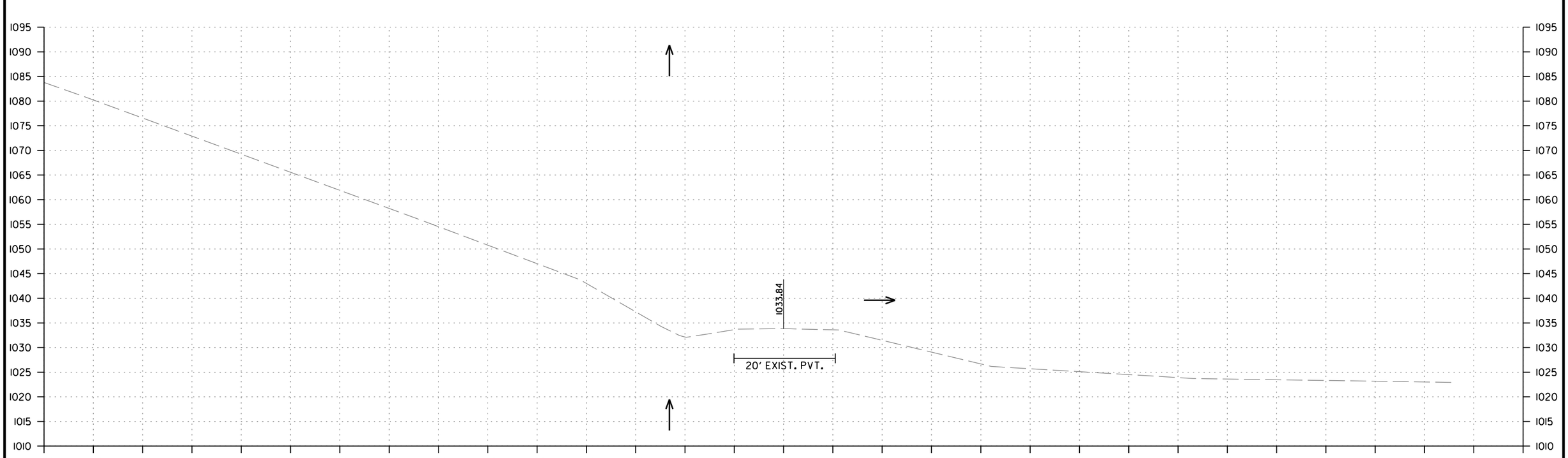
LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 04/03/2023 FILENAME: b040866x2_s1.dgn
CHECKED BY: RD DATE: 02/16/2024 SCALE: AS NOTED
DESIGNED BY: RD DATE: 02/2023

BRIDGE NO. 07687 DRAWING NO. 68269

PRINT DATE: 12/2/2024

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	100	136
		CROSS SECTIONS				



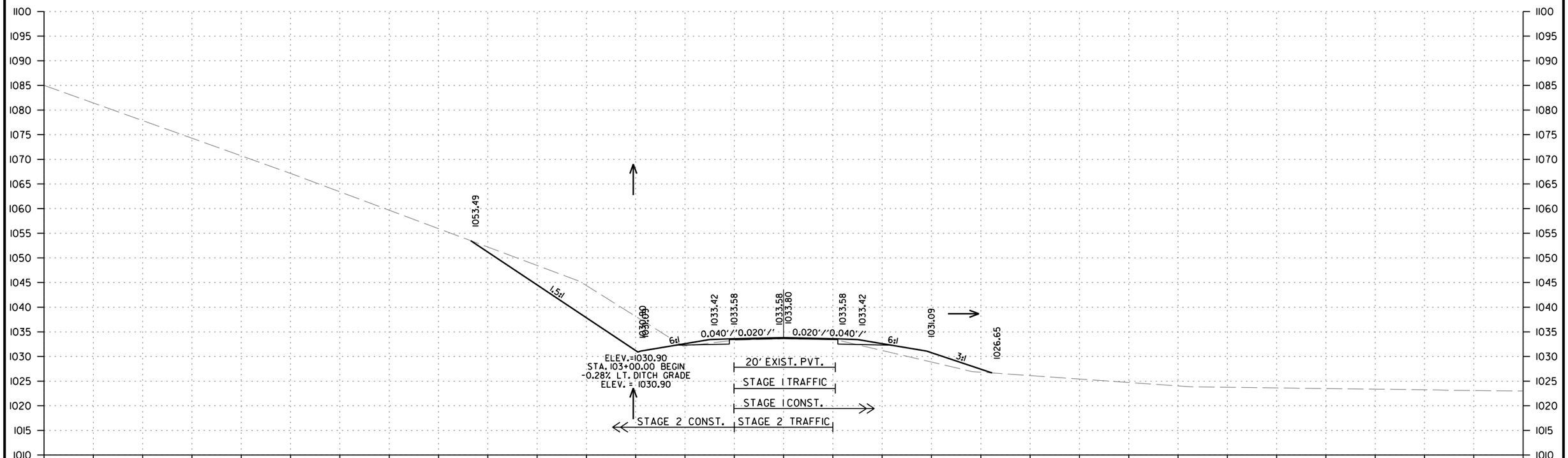
STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	0 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	0 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	0 CU. YD.	CUT VOLUME	0 CU. YD.
FILL VOLUME	0 CU. YD.	FILL VOLUME	0 CU. YD.

SITE 1
STA. 102+00 TO STA. 102+00

JY43338 11/6/2024
R040866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	101	136
		CROSS SECTIONS				



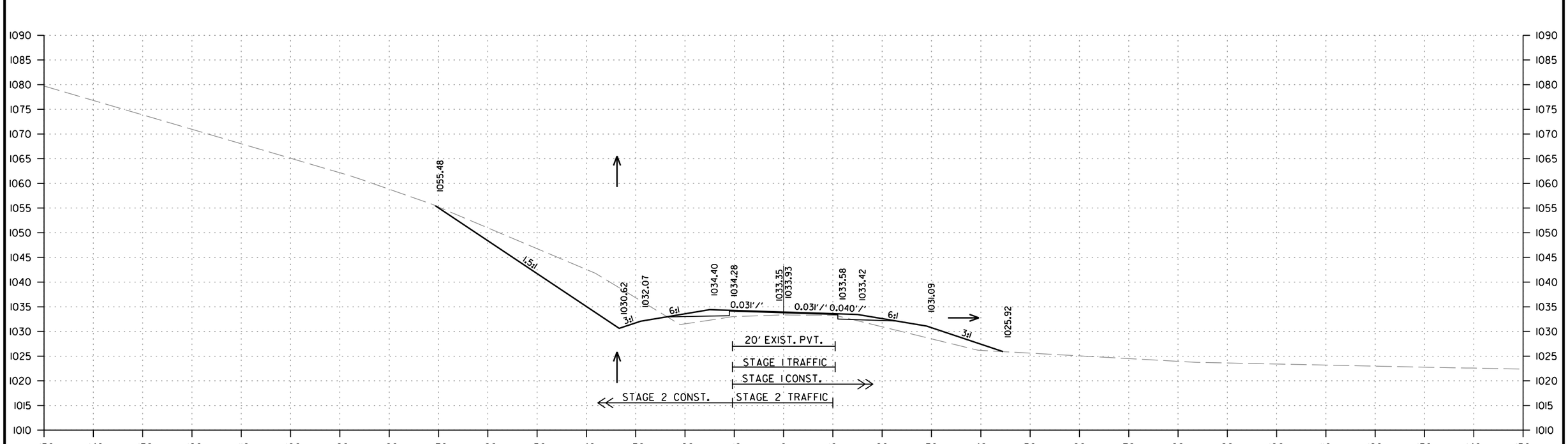
STAGE 1		STAGE 2	
CUT AREA	2 SQ. FT.	CUT AREA	183 SQ. FT.
FILL AREA	34 SQ. FT.	FILL AREA	0 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	4 CU. YD.	CUT VOLUME	339 CU. YD.
FILL VOLUME	63 CU. YD.	FILL VOLUME	0 CU. YD.

SITE 1
STA. 103+00 TO STA. 103+00

JY43338 11/6/2024
R040866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	102	136
		CROSS SECTIONS				



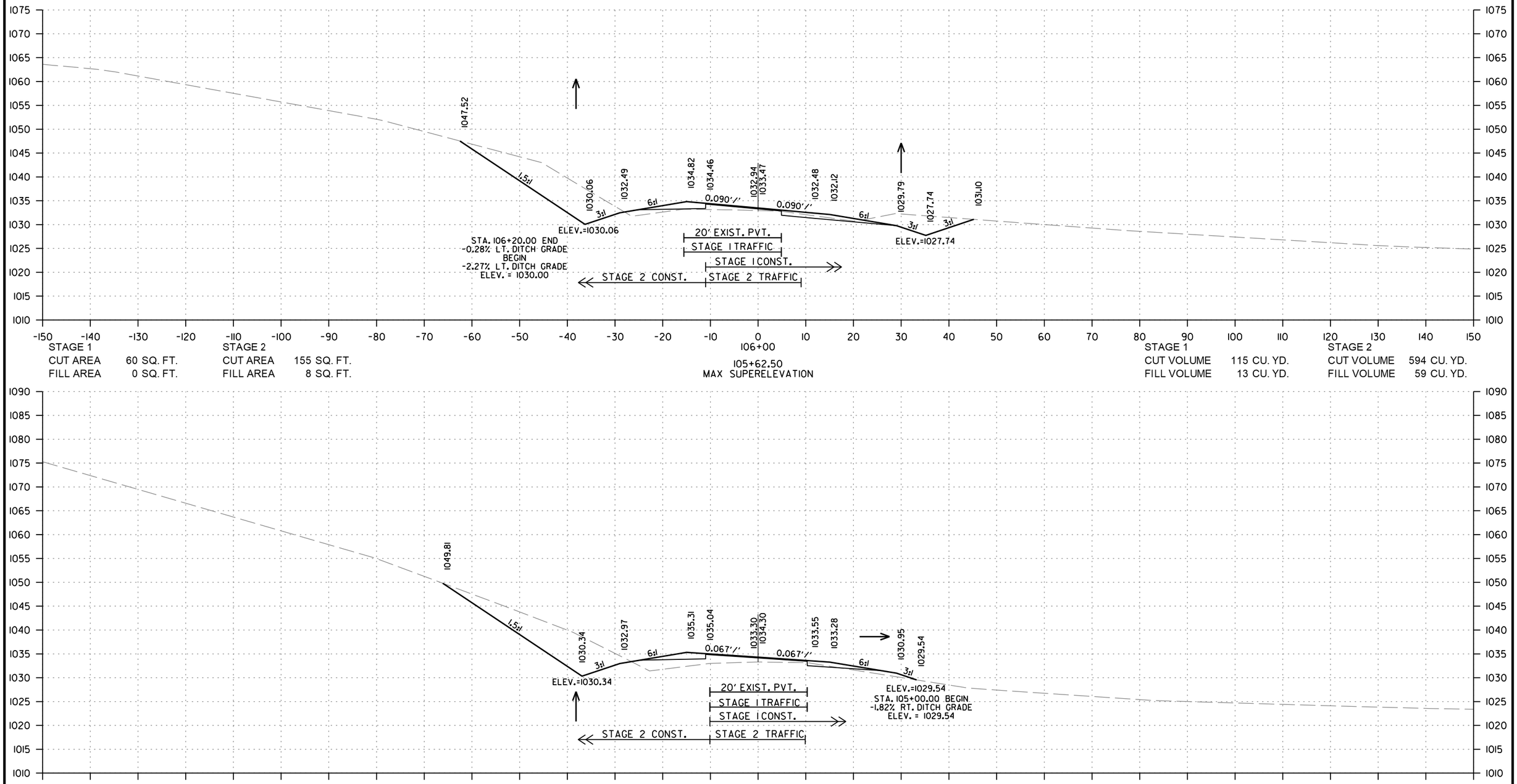
STAGE 1		STAGE 2	
CUT AREA	1 SQ. FT.	CUT AREA	206 SQ. FT.
FILL AREA	44 SQ. FT.	FILL AREA	12 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	6 CU. YD.	CUT VOLUME	720 CU. YD.
FILL VOLUME	144 CU. YD.	FILL VOLUME	22 CU. YD.

SITE 1
STA. 104+00 TO STA. 104+00

JY43338 11/6/2024
R040866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	103	136
		CROSS SECTIONS				



STAGE 1		STAGE 2	
CUT AREA	60 SQ. FT.	CUT AREA	155 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	8 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	115 CU. YD.	CUT VOLUME	594 CU. YD.
FILL VOLUME	13 CU. YD.	FILL VOLUME	59 CU. YD.

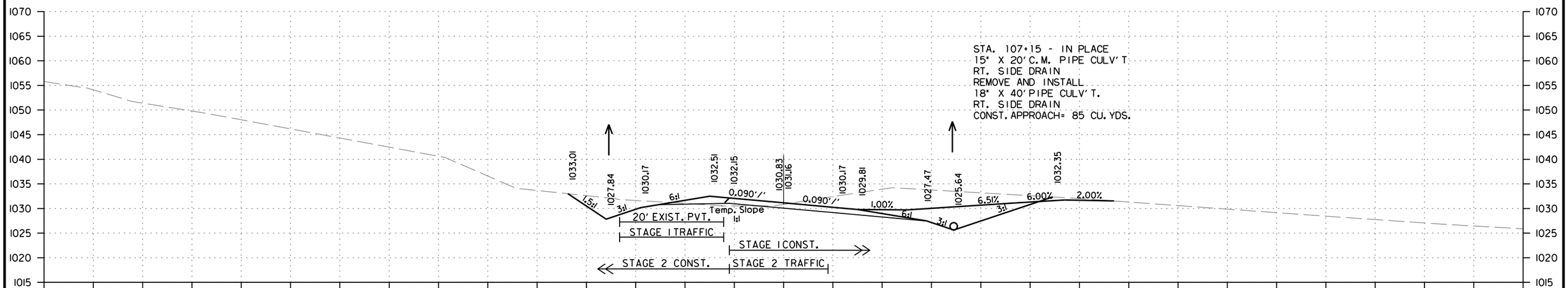
STAGE 1		STAGE 2	
CUT AREA	2 SQ. FT.	CUT AREA	166 SQ. FT.
FILL AREA	7 SQ. FT.	FILL AREA	24 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	6 CU. YD.	CUT VOLUME	689 CU. YD.
FILL VOLUME	94 CU. YD.	FILL VOLUME	67 CU. YD.

SITE 1
STA. 105+00 TO STA. 106+00

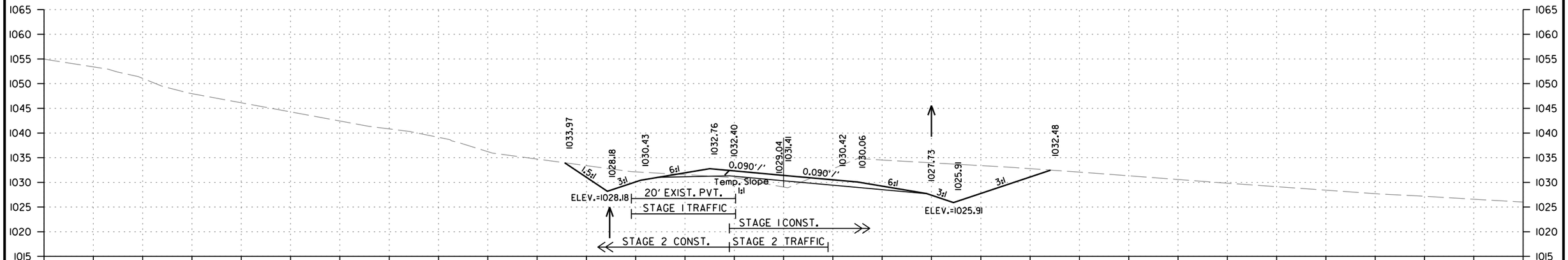
JY43338 11/6/2024
R040866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	104	136
		CROSS SECTIONS				



STAGE 1		STAGE 2	
CUT AREA	245 SQ. FT.	CUT AREA	43 SQ. FT.
FILL AREA	2 SQ. FT.	FILL AREA	2 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	133 CU. YD.	CUT VOLUME	26 CU. YD.
FILL VOLUME	4 CU. YD.	FILL VOLUME	1 CU. YD.



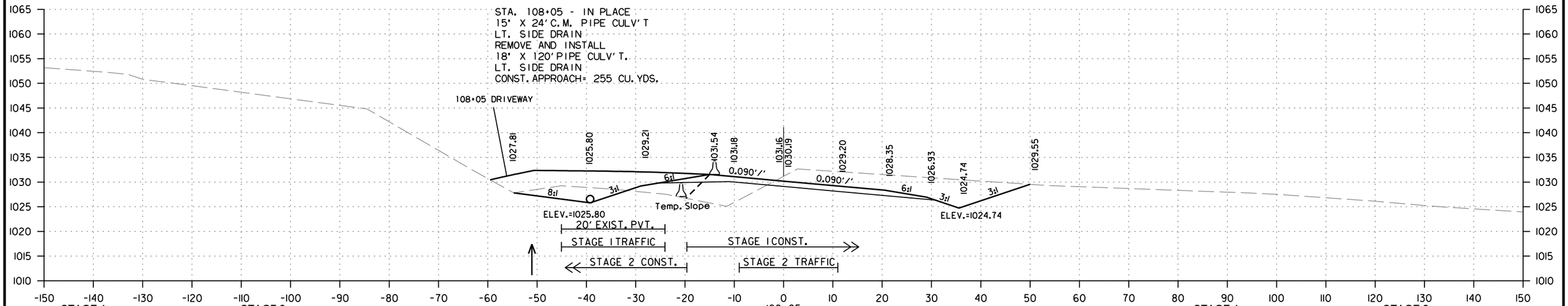
STAGE 1		STAGE 2	
CUT AREA	234 SQ. FT.	CUT AREA	50 SQ. FT.
FILL AREA	11 SQ. FT.	FILL AREA	0 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	544 CU. YD.	CUT VOLUME	380 CU. YD.
FILL VOLUME	20 CU. YD.	FILL VOLUME	15 CU. YD.

SITE 1
STA. 107+00 TO STA. 107+15

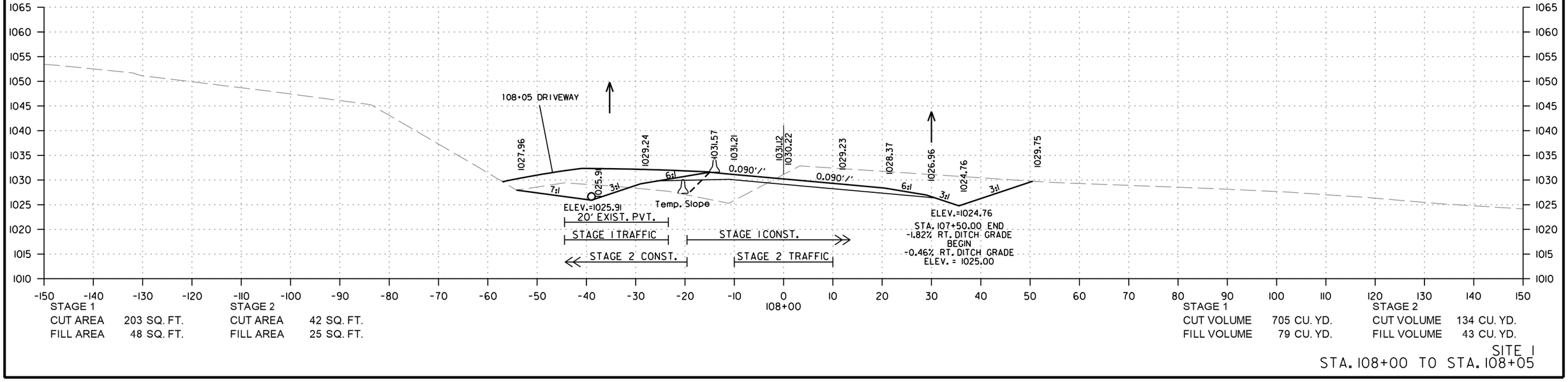
JY43338 11/6/2024
R040866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	105	136
		CROSS SECTIONS				



STAGE 1		STAGE 2	
CUT AREA	161 SQ. FT.	CUT AREA	41 SQ. FT.
FILL AREA	66 SQ. FT.	FILL AREA	10 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	34 CU. YD.	CUT VOLUME	8 CU. YD.
FILL VOLUME	11 CU. YD.	FILL VOLUME	3 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	203 SQ. FT.	CUT AREA	42 SQ. FT.
FILL AREA	48 SQ. FT.	FILL AREA	25 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	705 CU. YD.	CUT VOLUME	134 CU. YD.
FILL VOLUME	79 CU. YD.	FILL VOLUME	43 CU. YD.

SITE 1
STA. 108+00 TO STA. 108+05

JY43338 11/6/2024
R040866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	106	136
		CROSS SECTIONS				

STAGE 1
CUT AREA 0 SQ. FT.
FILL AREA 0 SQ. FT.

STAGE 2
CUT AREA 0 SQ. FT.
FILL AREA 0 SQ. FT.

STAGE 1
CUT AREA 0 SQ. FT.
FILL AREA 0 SQ. FT.

STAGE 2
CUT AREA 0 SQ. FT.
FILL AREA 0 SQ. FT.

112+70.73
TOE OF SLOPE
111+96.96
END SUPERELEVATION

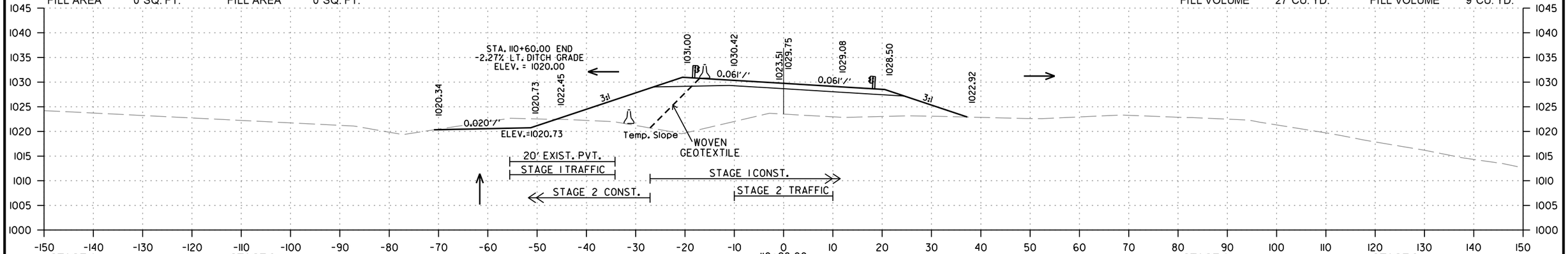
110+32.60
TOE OF SLOPE

STAGE 1
CUT VOLUME 0 CU. YD.
FILL VOLUME 0 CU. YD.

STAGE 2
CUT VOLUME 0 CU. YD.
FILL VOLUME 0 CU. YD.

STAGE 1
CUT VOLUME 0 CU. YD.
FILL VOLUME 27 CU. YD.

STAGE 2
CUT VOLUME 2 CU. YD.
FILL VOLUME 9 CU. YD.



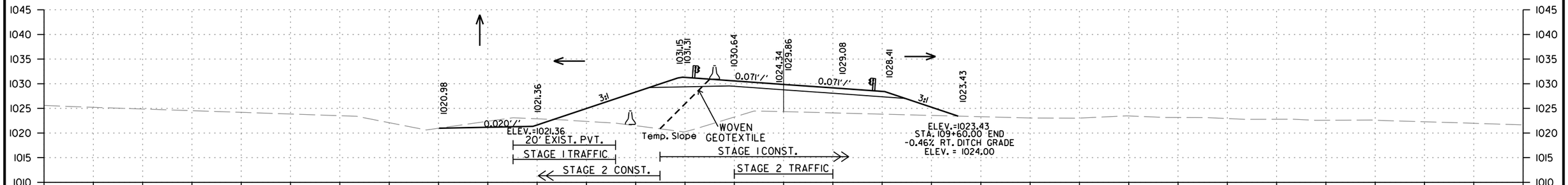
STAGE 1
CUT AREA 0 SQ. FT.
FILL AREA 316 SQ. FT.

STAGE 2
CUT AREA 28 SQ. FT.
FILL AREA 106 SQ. FT.

110+28.00
BRIDGE END

STAGE 1
CUT VOLUME 0 CU. YD.
FILL VOLUME 293 CU. YD.

STAGE 2
CUT VOLUME 27 CU. YD.
FILL VOLUME 122 CU. YD.



STAGE 1
CUT AREA 0 SQ. FT.
FILL AREA 249 SQ. FT.

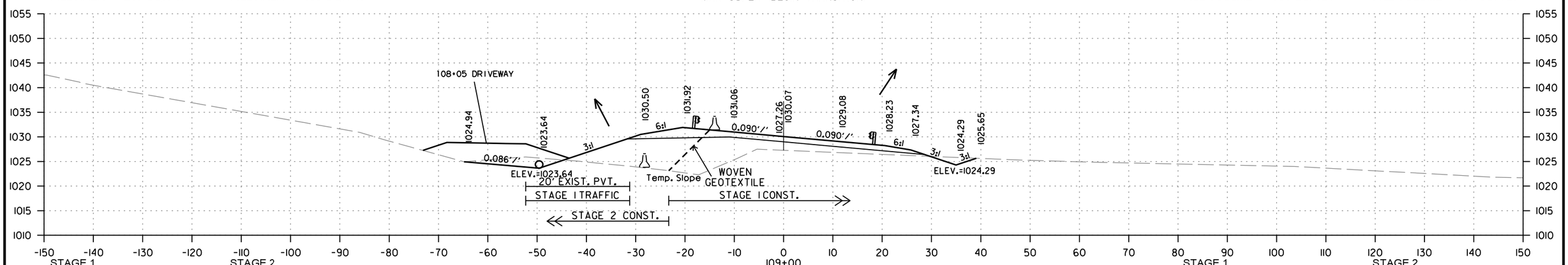
STAGE 2
CUT AREA 24 SQ. FT.
FILL AREA 130 SQ. FT.

110+00

109+46.96
MAX SUPER (BEGIN TRANSITION)

STAGE 1
CUT VOLUME 13 CU. YD.
FILL VOLUME 681 CU. YD.

STAGE 2
CUT VOLUME 89 CU. YD.
FILL VOLUME 441 CU. YD.



STAGE 1
CUT AREA 7 SQ. FT.
FILL AREA 119 SQ. FT.

STAGE 2
CUT AREA 24 SQ. FT.
FILL AREA 108 SQ. FT.

109+00

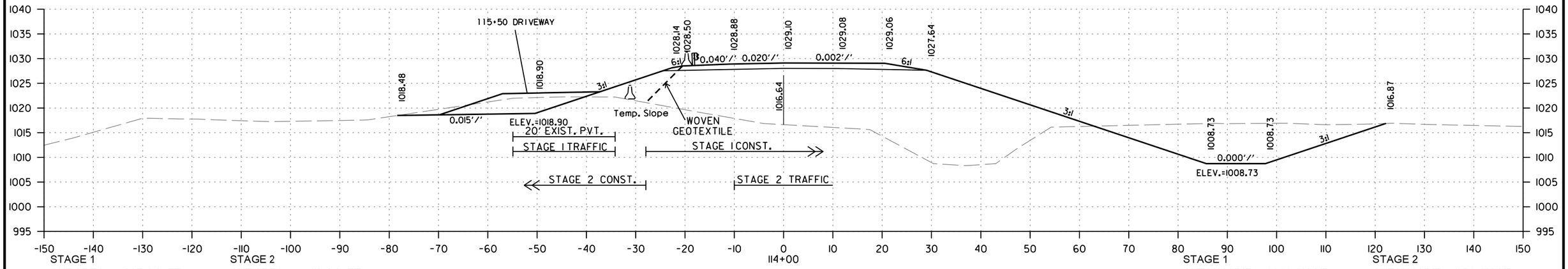
STAGE 1
CUT VOLUME 296 CU. YD.
FILL VOLUME 325 CU. YD.

STAGE 2
CUT VOLUME 114 CU. YD.
FILL VOLUME 208 CU. YD.

SITE 1
STA. 109+00 TO STA. 110+28

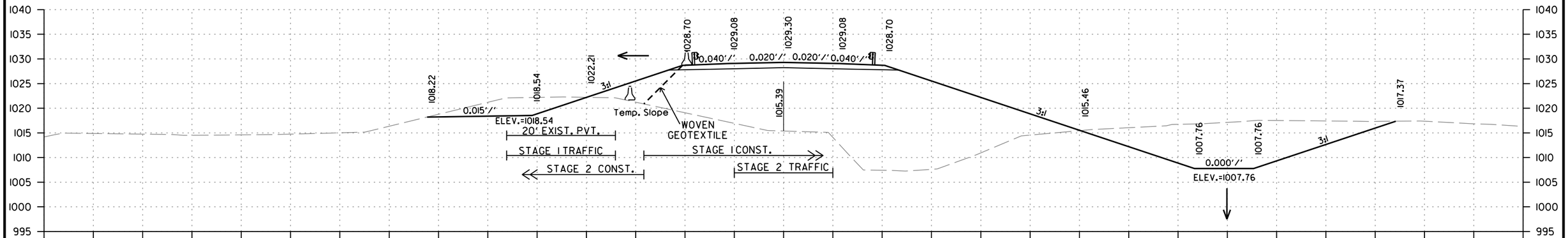
JY43338 11/6/2024
R040866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	107	136
		CROSS SECTIONS				



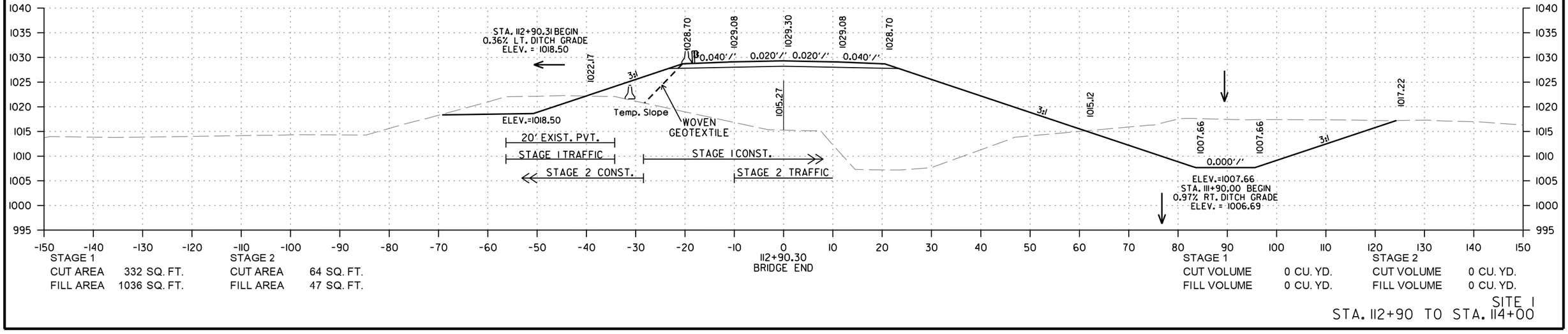
STAGE 1		STAGE 2	
CUT AREA	287 SQ. FT.	CUT AREA	68 SQ. FT.
FILL AREA	959 SQ. FT.	FILL AREA	49 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	1144 CU. YD.	CUT VOLUME	254 CU. YD.
FILL VOLUME	3659 CU. YD.	FILL VOLUME	178 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	331 SQ. FT.	CUT AREA	69 SQ. FT.
FILL AREA	1017 SQ. FT.	FILL AREA	47 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	119 CU. YD.	CUT VOLUME	24 CU. YD.
FILL VOLUME	369 CU. YD.	FILL VOLUME	17 CU. YD.



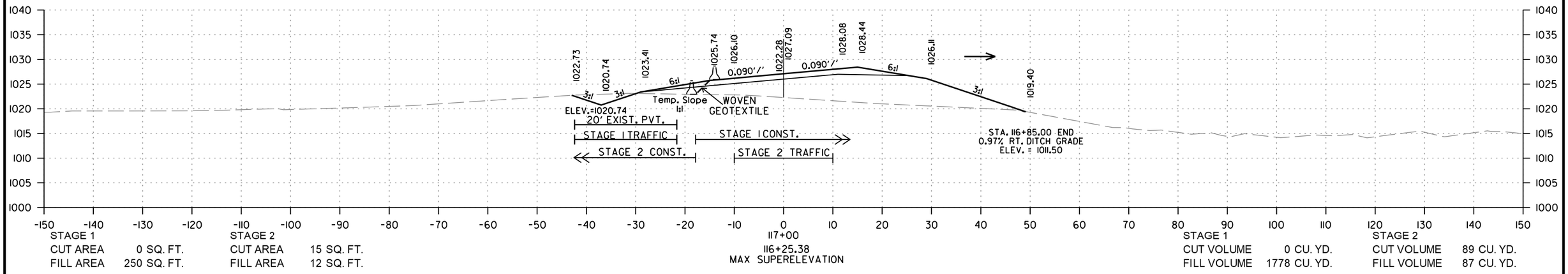
STAGE 1		STAGE 2	
CUT AREA	332 SQ. FT.	CUT AREA	64 SQ. FT.
FILL AREA	1036 SQ. FT.	FILL AREA	47 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	0 CU. YD.	CUT VOLUME	0 CU. YD.
FILL VOLUME	0 CU. YD.	FILL VOLUME	0 CU. YD.

SITE 1
STA. 112+90 TO STA. 114+00

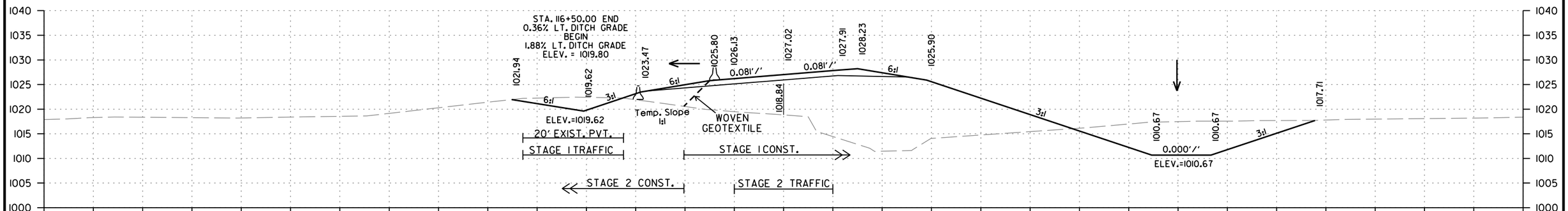
JY43338 11/6/2024
RO40866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	108	136
		CROSS SECTIONS				



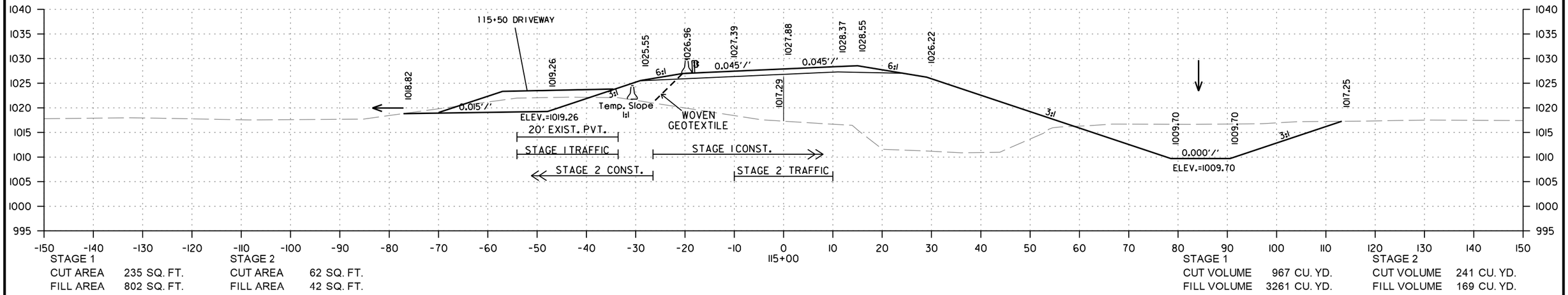
STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	15 SQ. FT.
FILL AREA	250 SQ. FT.	FILL AREA	12 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	0 CU. YD.	CUT VOLUME	89 CU. YD.
FILL VOLUME	1778 CU. YD.	FILL VOLUME	87 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	208 SQ. FT.	CUT AREA	33 SQ. FT.
FILL AREA	643 SQ. FT.	FILL AREA	35 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	820 CU. YD.	CUT VOLUME	176 CU. YD.
FILL VOLUME	2676 CU. YD.	FILL VOLUME	143 CU. YD.



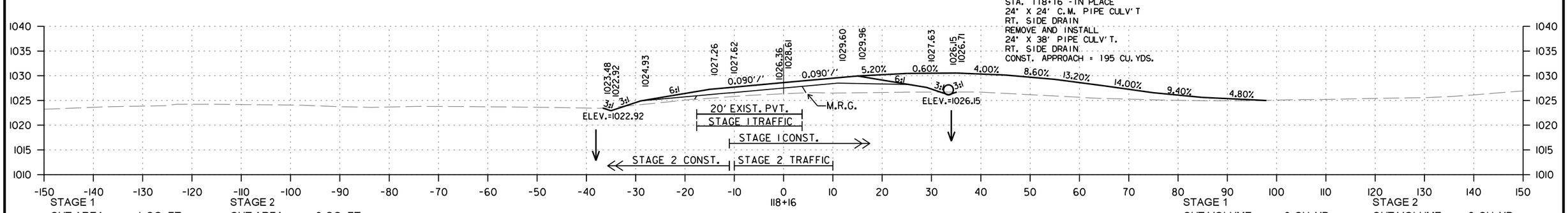
STAGE 1		STAGE 2	
CUT AREA	235 SQ. FT.	CUT AREA	62 SQ. FT.
FILL AREA	802 SQ. FT.	FILL AREA	42 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	967 CU. YD.	CUT VOLUME	241 CU. YD.
FILL VOLUME	3261 CU. YD.	FILL VOLUME	169 CU. YD.

SITE 1
STA. 115+00 TO STA. 117+00

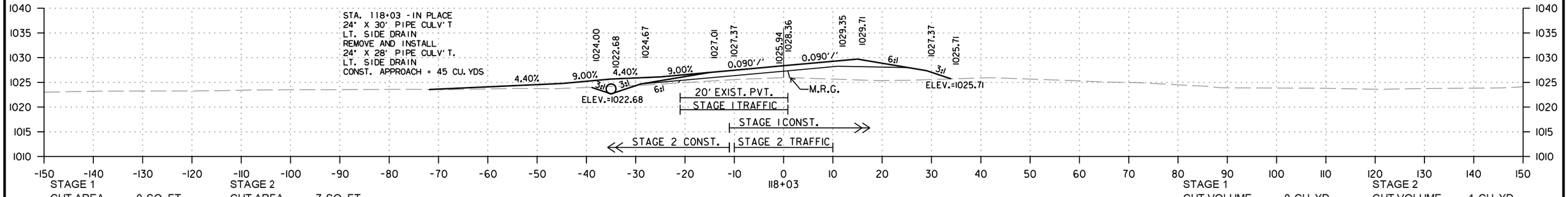
JY43338 11/6/2024
R040866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	109	136
		CROSS SECTIONS				



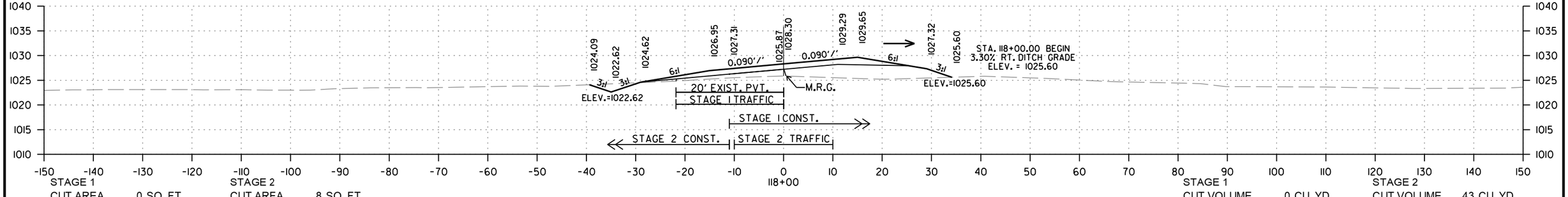
STAGE 1		STAGE 2	
CUT AREA	1 SQ. FT.	CUT AREA	2 SQ. FT.
FILL AREA	43 SQ. FT.	FILL AREA	9 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	0 CU. YD.	CUT VOLUME	2 CU. YD.
FILL VOLUME	29 CU. YD.	FILL VOLUME	3 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	7 SQ. FT.
FILL AREA	77 SQ. FT.	FILL AREA	3 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	0 CU. YD.	CUT VOLUME	1 CU. YD.
FILL VOLUME	8 CU. YD.	FILL VOLUME	0 CU. YD.



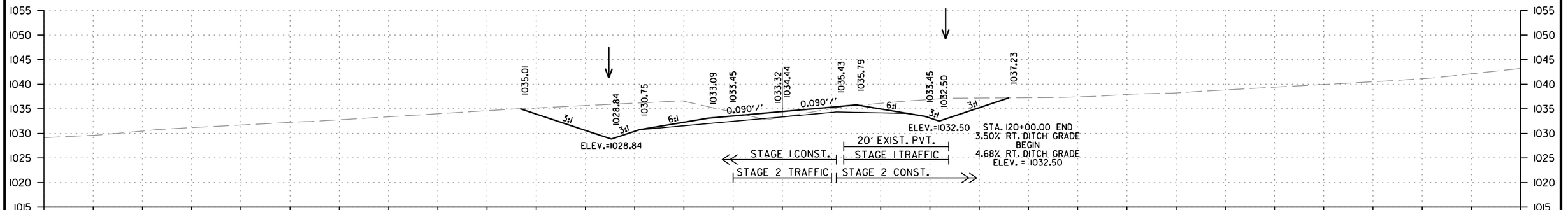
STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	8 SQ. FT.
FILL AREA	75 SQ. FT.	FILL AREA	2 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	0 CU. YD.	CUT VOLUME	43 CU. YD.
FILL VOLUME	602 CU. YD.	FILL VOLUME	26 CU. YD.

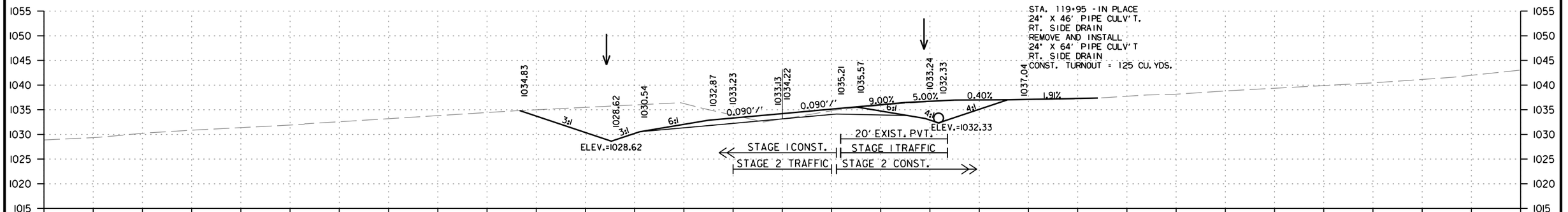
SITE 1
STA. 118+00 TO STA. 118+16

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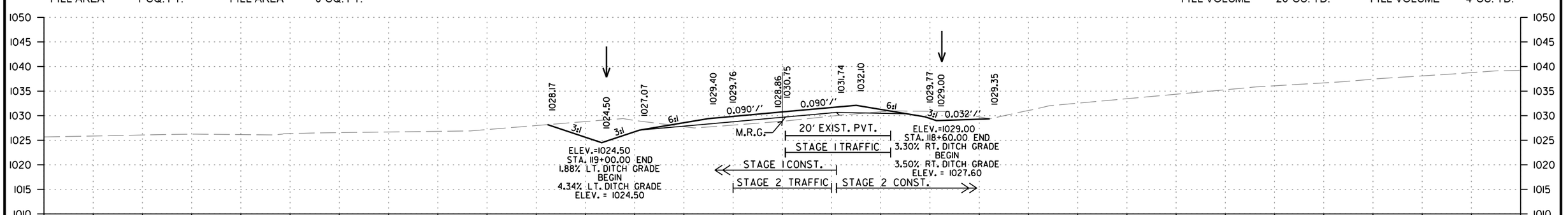
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	110	136
		CROSS SECTIONS				



STAGE 1		STAGE 2		STAGE 1		STAGE 2	
CUT AREA	188 SQ. FT.	CUT AREA	78 SQ. FT.	CUT VOLUME	35 CU. YD.	CUT VOLUME	14 CU. YD.
FILL AREA	1 SQ. FT.	FILL AREA	0 SQ. FT.	FILL VOLUME	0 CU. YD.	FILL VOLUME	0 CU. YD.



STAGE 1		STAGE 2		STAGE 1		STAGE 2	
CUT AREA	192 SQ. FT.	CUT AREA	95 SQ. FT.	CUT VOLUME	442 CU. YD.	CUT VOLUME	190 CU. YD.
FILL AREA	1 SQ. FT.	FILL AREA	0 SQ. FT.	FILL VOLUME	26 CU. YD.	FILL VOLUME	4 CU. YD.

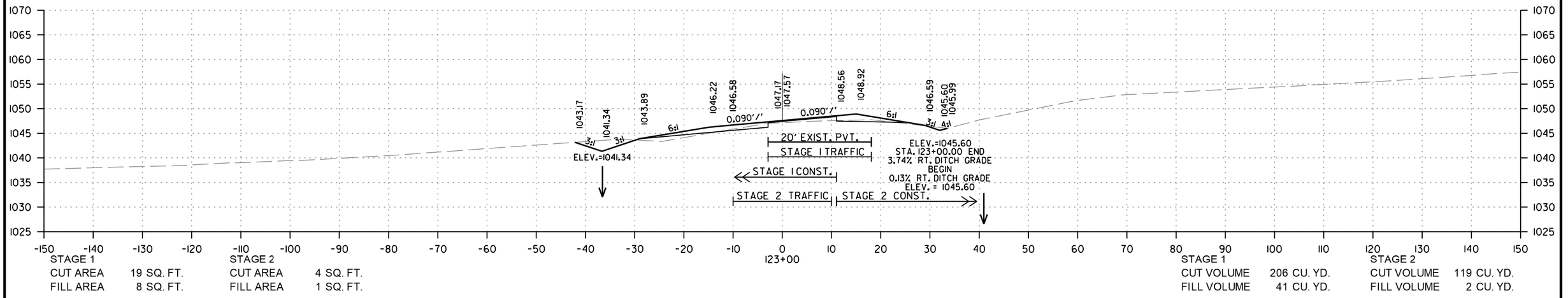


STAGE 1		STAGE 2		STAGE 1		STAGE 2	
CUT AREA	59 SQ. FT.	CUT AREA	13 SQ. FT.	CUT VOLUME	93 CU. YD.	CUT VOLUME	23 CU. YD.
FILL AREA	14 SQ. FT.	FILL AREA	2 SQ. FT.	FILL VOLUME	89 CU. YD.	FILL VOLUME	17 CU. YD.

SITE 1
STA. 119+00 TO STA. 120+00

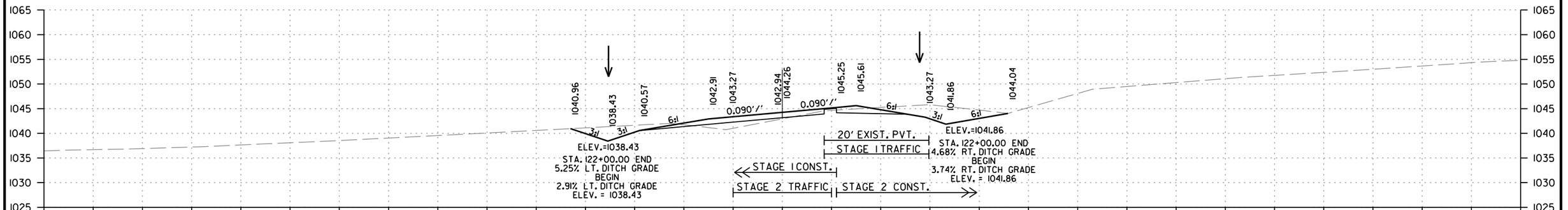
JY43338 11/6/2024
R040866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	111	136
		CROSS SECTIONS				



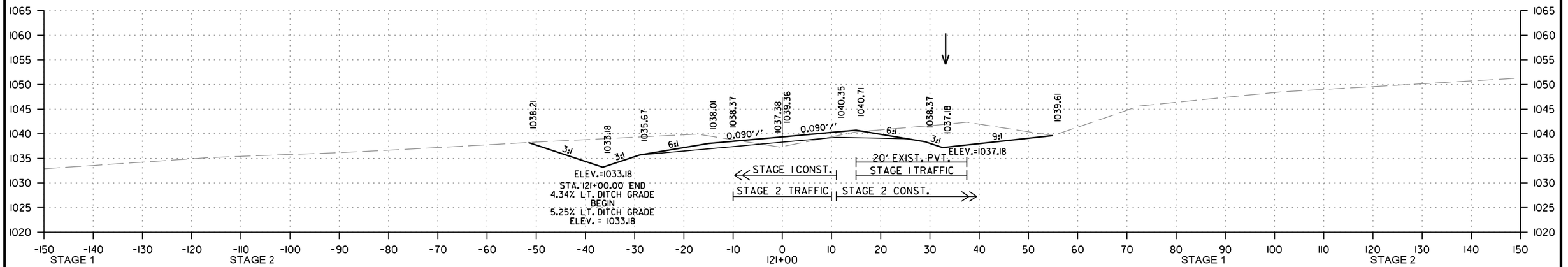
STAGE 1		STAGE 2	
CUT AREA	19 SQ. FT.	CUT AREA	4 SQ. FT.
FILL AREA	8 SQ. FT.	FILL AREA	1 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	206 CU. YD.	CUT VOLUME	119 CU. YD.
FILL VOLUME	41 CU. YD.	FILL VOLUME	2 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	92 SQ. FT.	CUT AREA	60 SQ. FT.
FILL AREA	14 SQ. FT.	FILL AREA	0 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	430 CU. YD.	CUT VOLUME	228 CU. YD.
FILL VOLUME	37 CU. YD.	FILL VOLUME	0 CU. YD.



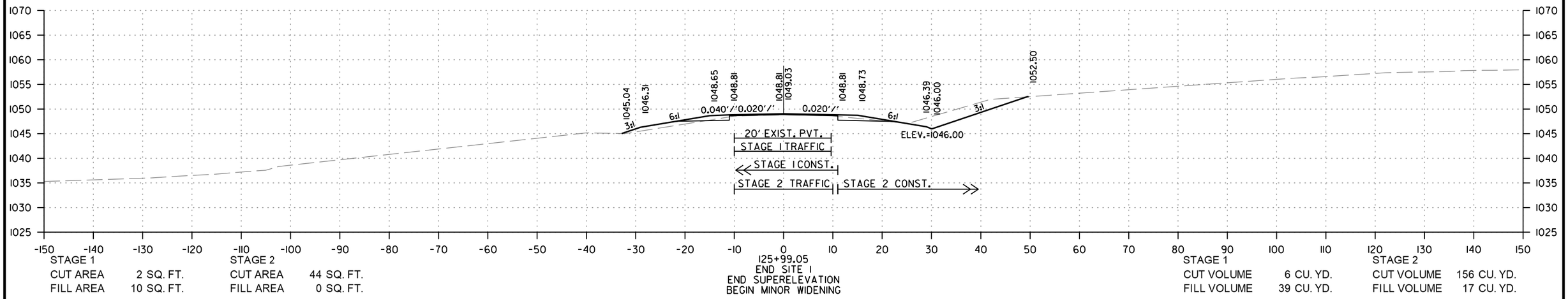
STAGE 1		STAGE 2	
CUT AREA	140 SQ. FT.	CUT AREA	108 SQ. FT.
FILL AREA	6 SQ. FT.	FILL AREA	0 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	607 CU. YD.	CUT VOLUME	344 CU. YD.
FILL VOLUME	13 CU. YD.	FILL VOLUME	0 CU. YD.

SITE 1
STA. 121+00 TO STA. 123+00

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	112	136
		CROSS SECTIONS				



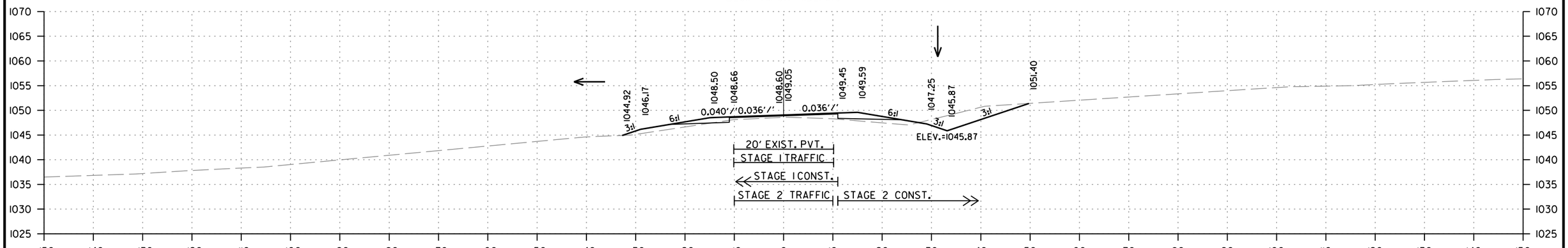
STAGE 1
CUT AREA 2 SQ. FT.
FILL AREA 10 SQ. FT.

STAGE 2
CUT AREA 44 SQ. FT.
FILL AREA 0 SQ. FT.

125+99.05
END SITE 1
END SUPERELEVATION
BEGIN MINOR WIDENING

STAGE 1
CUT VOLUME 6 CU. YD.
FILL VOLUME 39 CU. YD.

STAGE 2
CUT VOLUME 156 CU. YD.
FILL VOLUME 17 CU. YD.



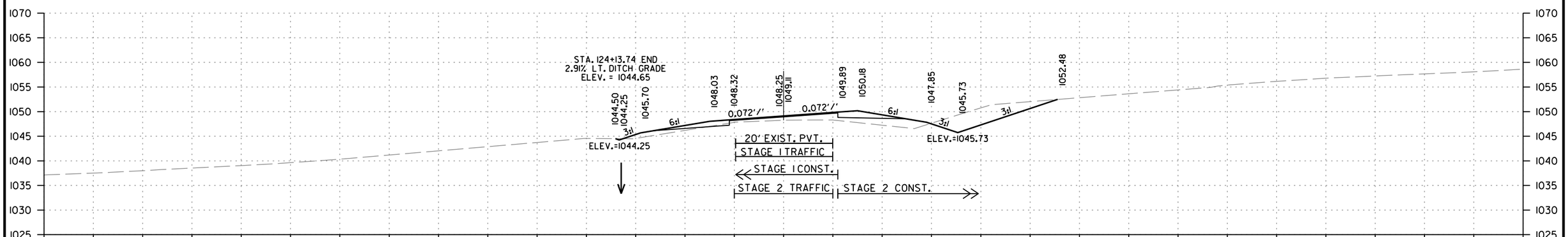
STAGE 1
CUT AREA 1 SQ. FT.
FILL AREA 11 SQ. FT.

STAGE 2
CUT AREA 40 SQ. FT.
FILL AREA 9 SQ. FT.

125+00

STAGE 1
CUT VOLUME 4 CU. YD.
FILL VOLUME 39 CU. YD.

STAGE 2
CUT VOLUME 180 CU. YD.
FILL VOLUME 59 CU. YD.



STAGE 1
CUT AREA 1 SQ. FT.
FILL AREA 10 SQ. FT.

STAGE 2
CUT AREA 57 SQ. FT.
FILL AREA 23 SQ. FT.

124+00

123+49.05
MAX SUPER (BEGIN TRANSITION)

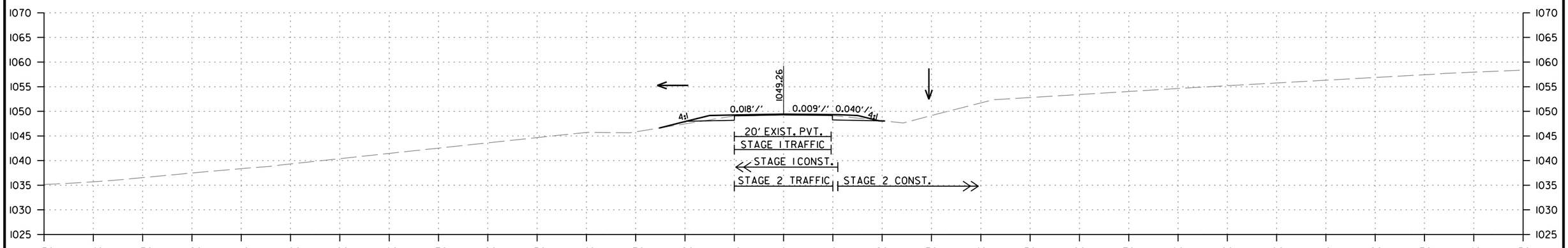
STAGE 1
CUT VOLUME 37 CU. YD.
FILL VOLUME 33 CU. YD.

STAGE 2
CUT VOLUME 113 CU. YD.
FILL VOLUME 44 CU. YD.

SITE 1
STA. 124+00 TO STA. 125+99

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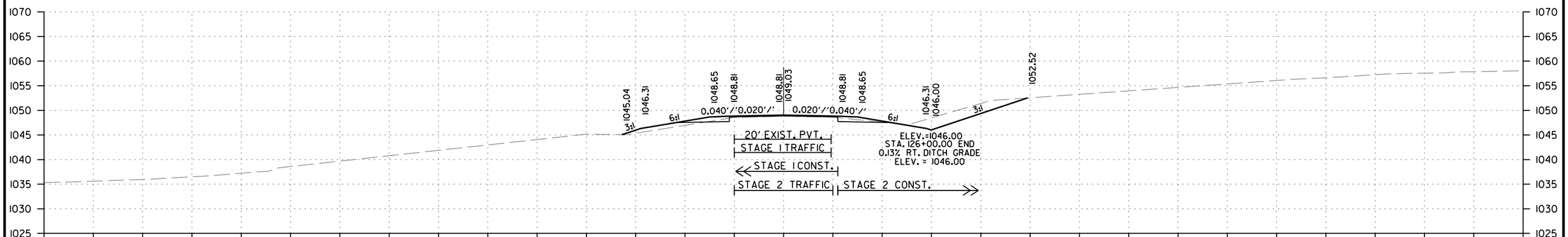
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	113	136
		CROSS SECTIONS				



STAGE 1		STAGE 2	
CUT AREA	3 SQ. FT.	CUT AREA	5 SQ. FT.
FILL AREA	2 SQ. FT.	FILL AREA	0 SQ. FT.

127+00

STAGE 1		STAGE 2	
CUT VOLUME	9 CU. YD.	CUT VOLUME	91 CU. YD.
FILL VOLUME	22 CU. YD.	FILL VOLUME	0 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	2 SQ. FT.	CUT AREA	44 SQ. FT.
FILL AREA	10 SQ. FT.	FILL AREA	0 SQ. FT.

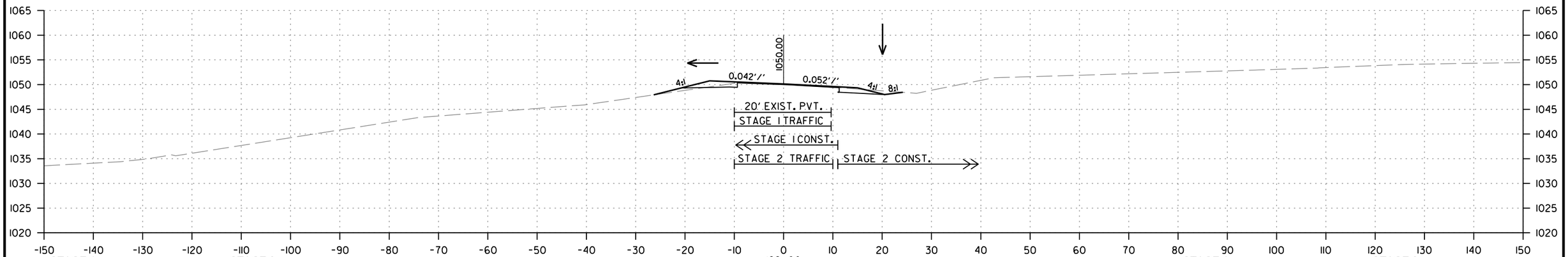
126+00

STAGE 1		STAGE 2	
CUT VOLUME	6 CU. YD.	CUT VOLUME	156 CU. YD.
FILL VOLUME	39 CU. YD.	FILL VOLUME	17 CU. YD.

SITE 1/MINOR WIDENING
STA. 126+00 TO STA. 127+00

JY43338 11/6/2024
R040866.DGN

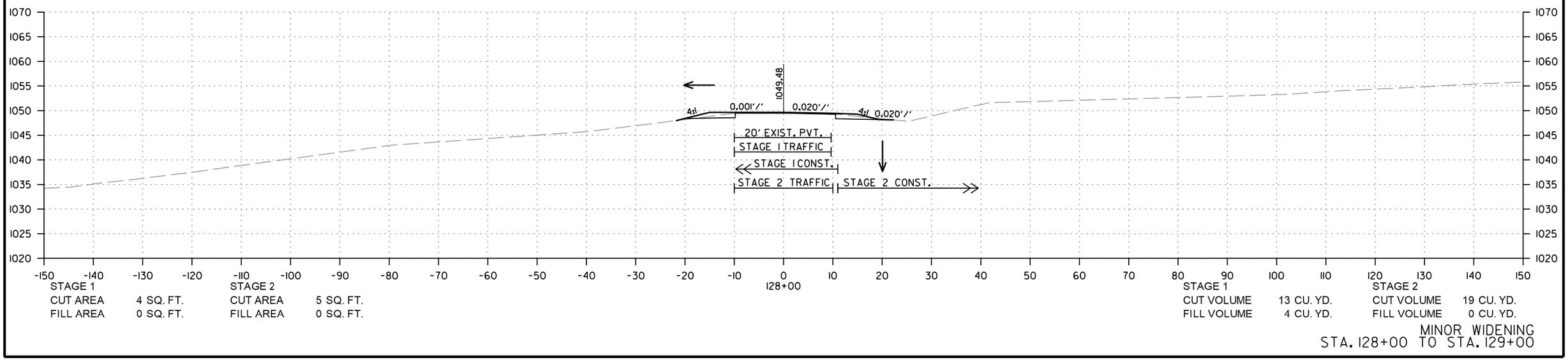
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	114	136
		CROSS SECTIONS				



STAGE 1		STAGE 2	
CUT AREA	3 SQ. FT.	CUT AREA	9 SQ. FT.
FILL AREA	3 SQ. FT.	FILL AREA	0 SQ. FT.

129+00

STAGE 1		STAGE 2	
CUT VOLUME	13 CU. YD.	CUT VOLUME	26 CU. YD.
FILL VOLUME	6 CU. YD.	FILL VOLUME	0 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	4 SQ. FT.	CUT AREA	5 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	0 SQ. FT.

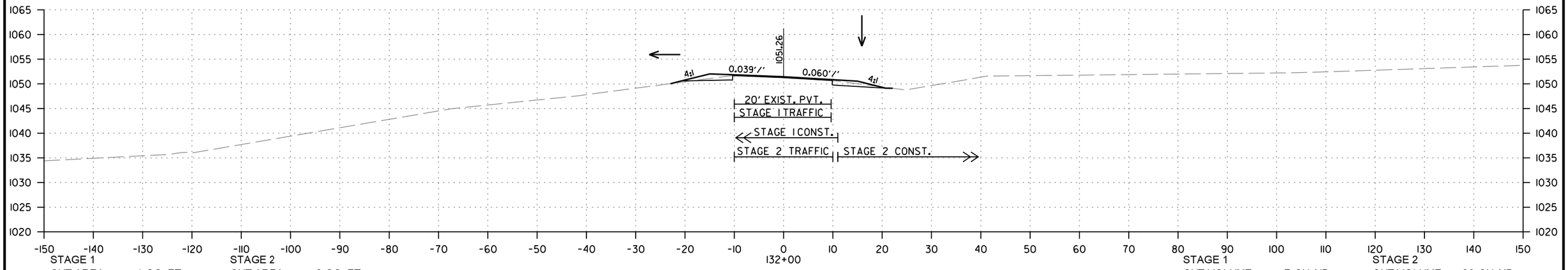
128+00

STAGE 1		STAGE 2	
CUT VOLUME	13 CU. YD.	CUT VOLUME	19 CU. YD.
FILL VOLUME	4 CU. YD.	FILL VOLUME	0 CU. YD.

MINOR WIDENING
STA. 128+00 TO STA. 129+00

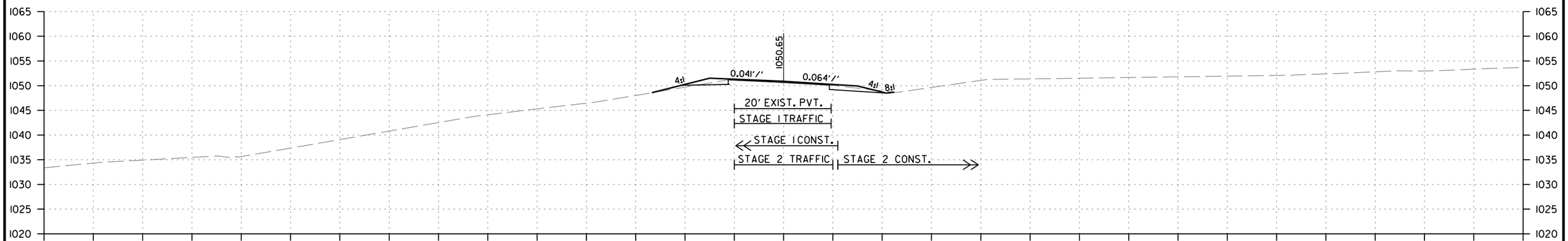
JY43338 11/6/2024
R040866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	115	136
		CROSS SECTIONS				



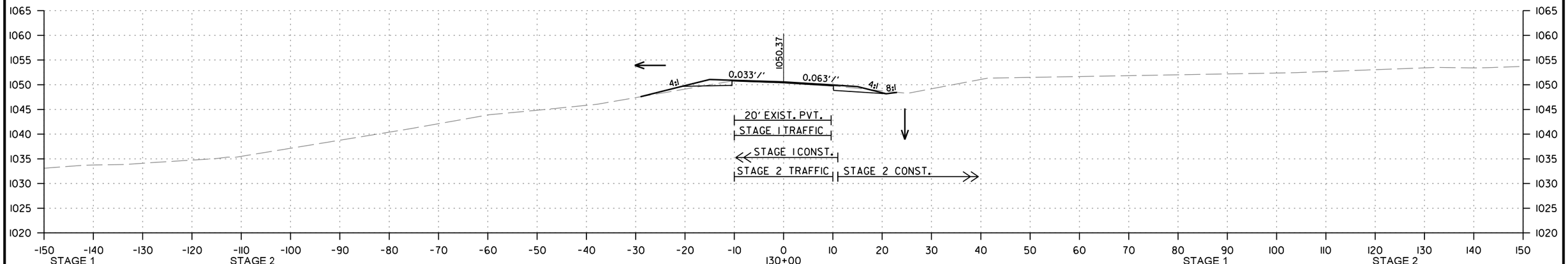
STAGE 1		STAGE 2	
CUT AREA	1 SQ. FT.	CUT AREA	6 SQ. FT.
FILL AREA	4 SQ. FT.	FILL AREA	0 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	7 CU. YD.	CUT VOLUME	26 CU. YD.
FILL VOLUME	11 CU. YD.	FILL VOLUME	0 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	3 SQ. FT.	CUT AREA	8 SQ. FT.
FILL AREA	2 SQ. FT.	FILL AREA	0 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	11 CU. YD.	CUT VOLUME	30 CU. YD.
FILL VOLUME	11 CU. YD.	FILL VOLUME	0 CU. YD.



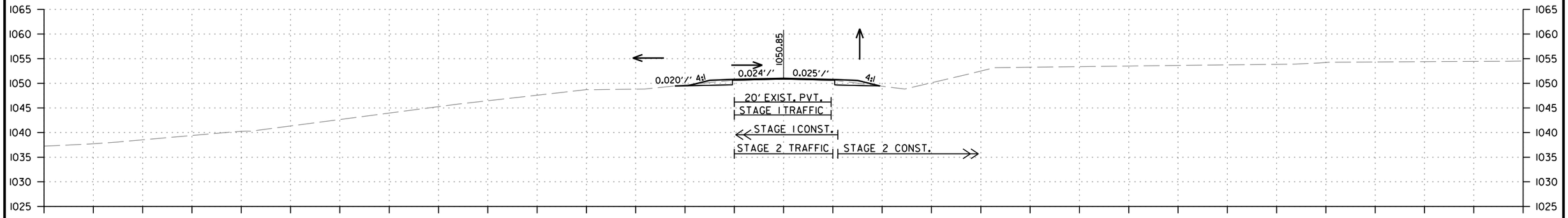
STAGE 1		STAGE 2	
CUT AREA	3 SQ. FT.	CUT AREA	8 SQ. FT.
FILL AREA	4 SQ. FT.	FILL AREA	0 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	11 CU. YD.	CUT VOLUME	31 CU. YD.
FILL VOLUME	13 CU. YD.	FILL VOLUME	0 CU. YD.

MINOR WIDENING
STA. 130+00 TO STA. 132+00

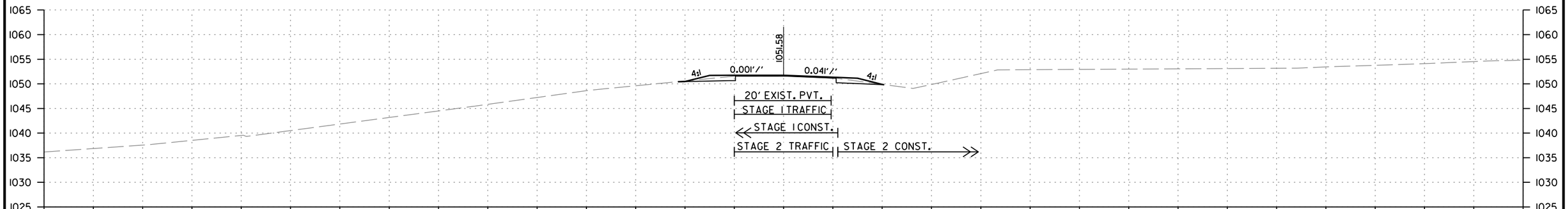
JY43338 11/6/2024
R040866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	116	136
		CROSS SECTIONS				



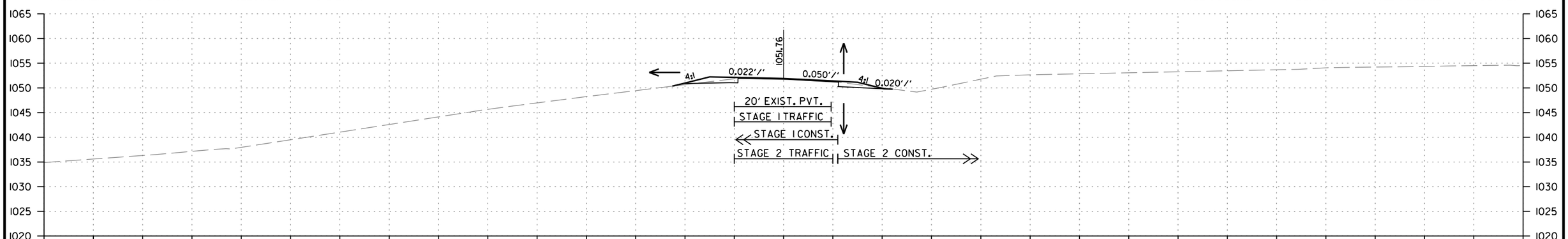
STAGE 1		STAGE 2	
CUT AREA	5 SQ. FT.	CUT AREA	4 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	0 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	14 CU. YD.	CUT VOLUME	12 CU. YD.
FILL VOLUME	0 CU. YD.	FILL VOLUME	0 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	5 SQ. FT.	CUT AREA	4 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	0 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	11 CU. YD.	CUT VOLUME	17 CU. YD.
FILL VOLUME	7 CU. YD.	FILL VOLUME	0 CU. YD.



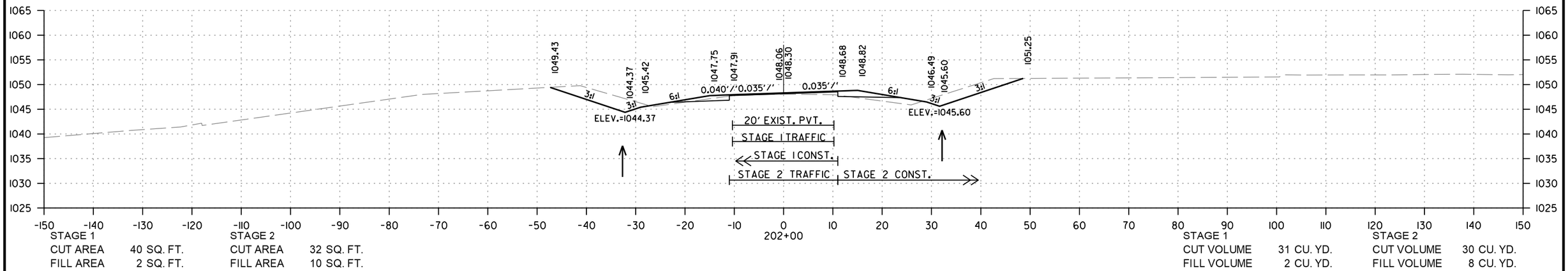
STAGE 1		STAGE 2	
CUT AREA	1 SQ. FT.	CUT AREA	5 SQ. FT.
FILL AREA	4 SQ. FT.	FILL AREA	0 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	4 CU. YD.	CUT VOLUME	20 CU. YD.
FILL VOLUME	15 CU. YD.	FILL VOLUME	0 CU. YD.

MINOR WIDENING
STA. 133+00 TO STA. 134+78

JY43338 11/6/2024
R040866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	117	136
		CROSS SECTIONS				

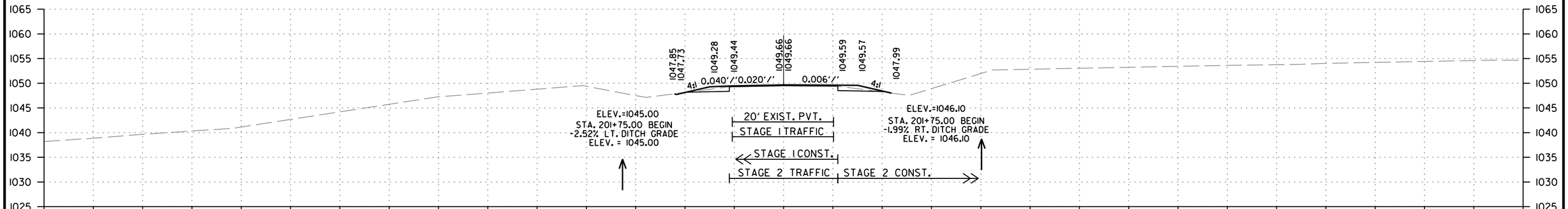


STAGE 1
CUT AREA 40 SQ. FT.
FILL AREA 2 SQ. FT.

STAGE 2
CUT AREA 32 SQ. FT.
FILL AREA 10 SQ. FT.

STAGE 1
CUT VOLUME 31 CU. YD.
FILL VOLUME 2 CU. YD.

STAGE 2
CUT VOLUME 30 CU. YD.
FILL VOLUME 8 CU. YD.

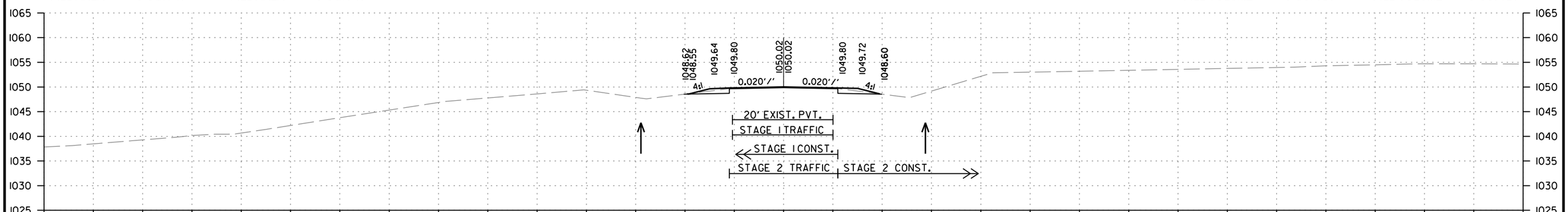


STAGE 1
CUT AREA 5 SQ. FT.
FILL AREA 0 SQ. FT.

STAGE 2
CUT AREA 5 SQ. FT.
FILL AREA 0 SQ. FT.

STAGE 1
CUT VOLUME 5 CU. YD.
FILL VOLUME 0 CU. YD.

STAGE 2
CUT VOLUME 5 CU. YD.
FILL VOLUME 0 CU. YD.



STAGE 1
CUT AREA 6 SQ. FT.
FILL AREA 0 SQ. FT.

STAGE 2
CUT AREA 5 SQ. FT.
FILL AREA 0 SQ. FT.

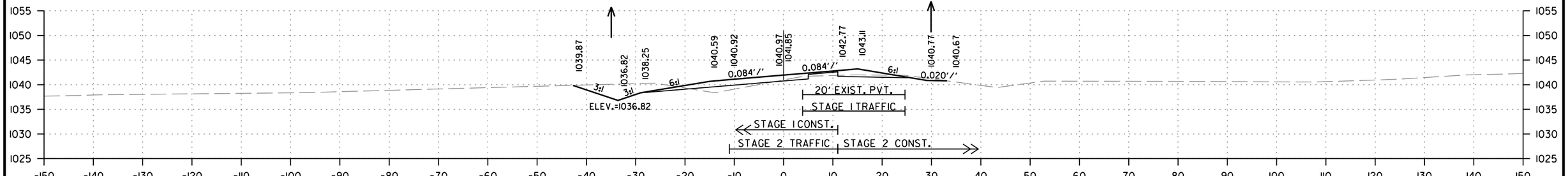
STAGE 1
CUT VOLUME 15 CU. YD.
FILL VOLUME 0 CU. YD.

STAGE 2
CUT VOLUME 13 CU. YD.
FILL VOLUME 0 CU. YD.

MINOR WIDENING/SITE 2
STA. 200+75 TO STA. 202+00

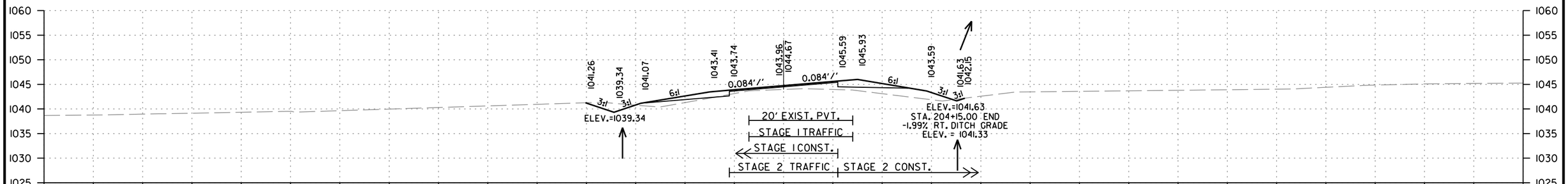
JY43338 11/6/2024
R040866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	118	136
		CROSS SECTIONS				



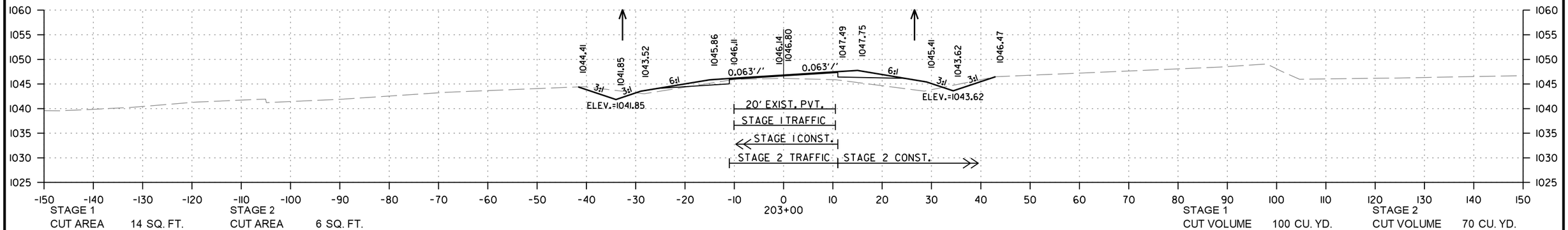
STAGE 1		STAGE 2	
CUT AREA	40 SQ. FT.	CUT AREA	8 SQ. FT.
FILL AREA	10 SQ. FT.	FILL AREA	0 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	93 CU. YD.	CUT VOLUME	15 CU. YD.
FILL VOLUME	37 CU. YD.	FILL VOLUME	46 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	10 SQ. FT.	CUT AREA	0 SQ. FT.
FILL AREA	10 SQ. FT.	FILL AREA	25 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	44 CU. YD.	CUT VOLUME	11 CU. YD.
FILL VOLUME	28 CU. YD.	FILL VOLUME	102 CU. YD.



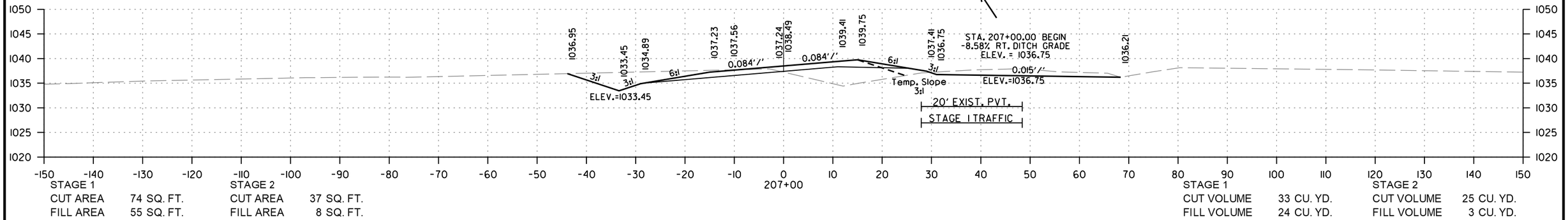
STAGE 1		STAGE 2	
CUT AREA	14 SQ. FT.	CUT AREA	6 SQ. FT.
FILL AREA	5 SQ. FT.	FILL AREA	30 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	100 CU. YD.	CUT VOLUME	70 CU. YD.
FILL VOLUME	13 CU. YD.	FILL VOLUME	74 CU. YD.

SITE 2
STA. 203+00 TO STA. 205+00

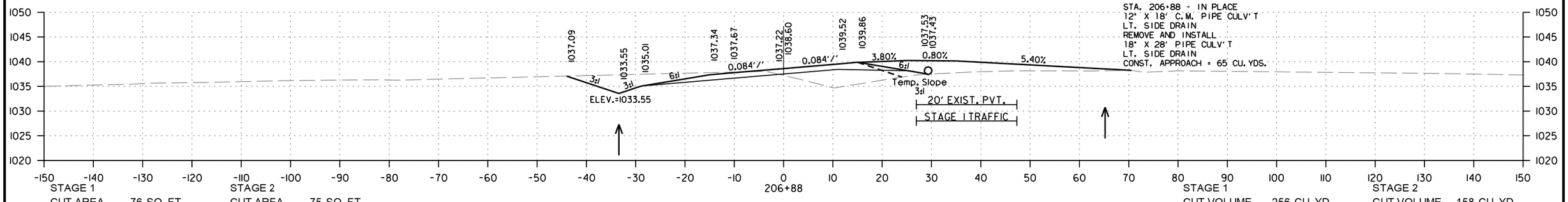
JY43338 11/6/2024
R040866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	119	136
		CROSS SECTIONS				



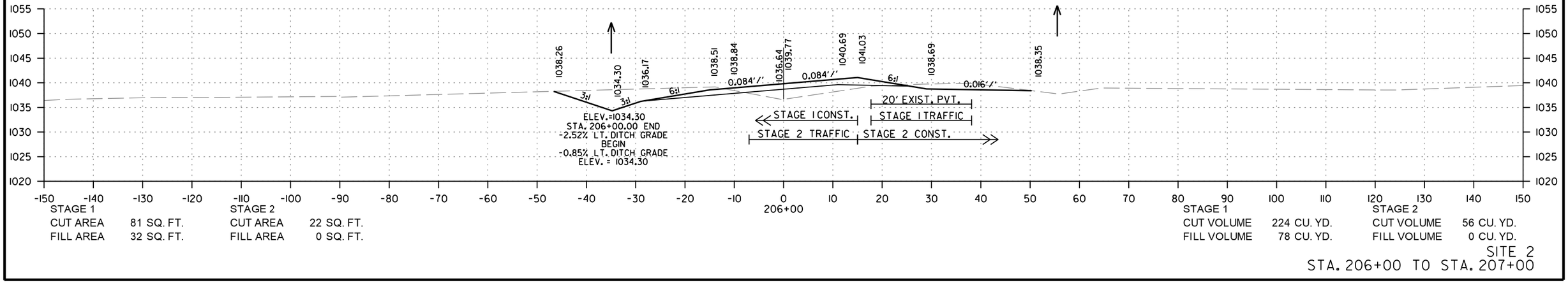
STAGE 1		STAGE 2	
CUT AREA	74 SQ. FT.	CUT AREA	37 SQ. FT.
FILL AREA	55 SQ. FT.	FILL AREA	8 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	33 CU. YD.	CUT VOLUME	25 CU. YD.
FILL VOLUME	24 CU. YD.	FILL VOLUME	3 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	76 SQ. FT.	CUT AREA	75 SQ. FT.
FILL AREA	52 SQ. FT.	FILL AREA	6 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	256 CU. YD.	CUT VOLUME	158 CU. YD.
FILL VOLUME	137 CU. YD.	FILL VOLUME	10 CU. YD.



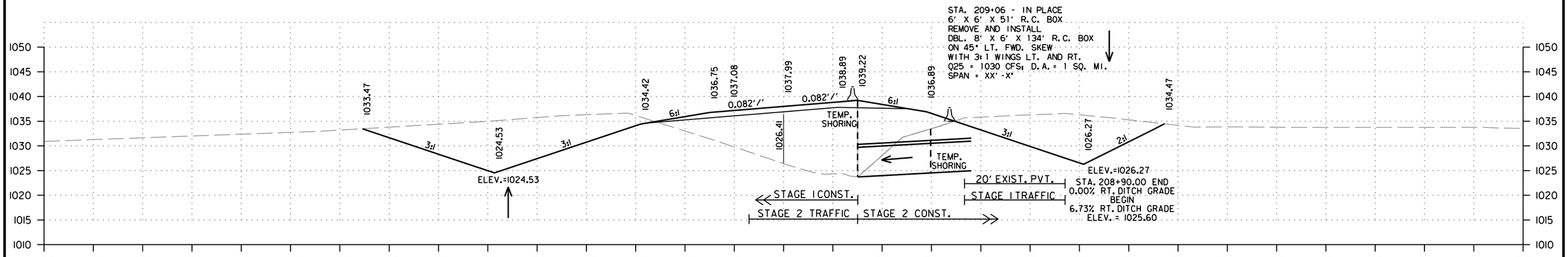
STAGE 1		STAGE 2	
CUT AREA	81 SQ. FT.	CUT AREA	22 SQ. FT.
FILL AREA	32 SQ. FT.	FILL AREA	0 SQ. FT.

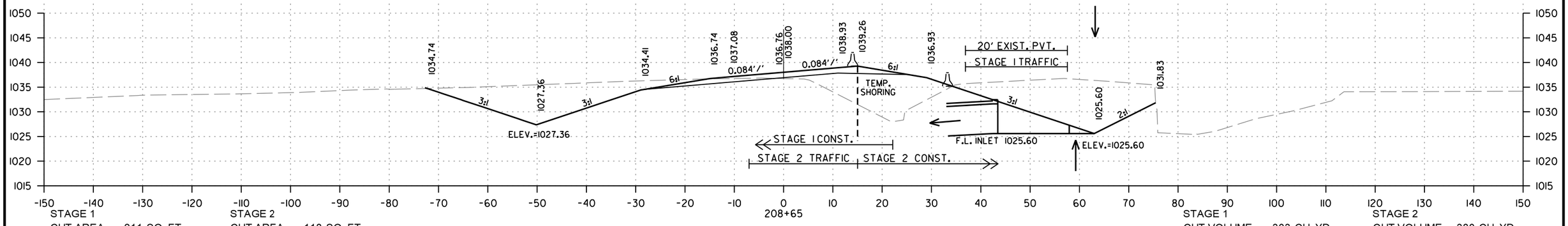
STAGE 1		STAGE 2	
CUT VOLUME	224 CU. YD.	CUT VOLUME	56 CU. YD.
FILL VOLUME	78 CU. YD.	FILL VOLUME	0 CU. YD.

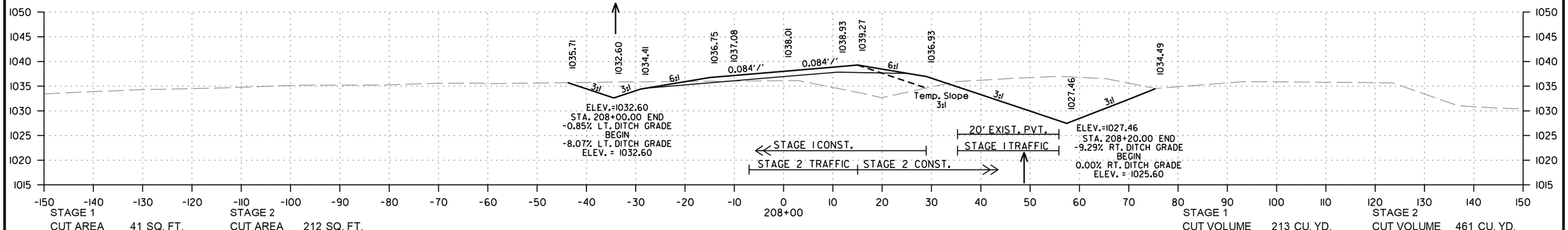
SITE 2
STA. 206+00 TO STA. 207+00

JY43338 11/6/2024
R040866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	120	136
		CROSS SECTIONS				



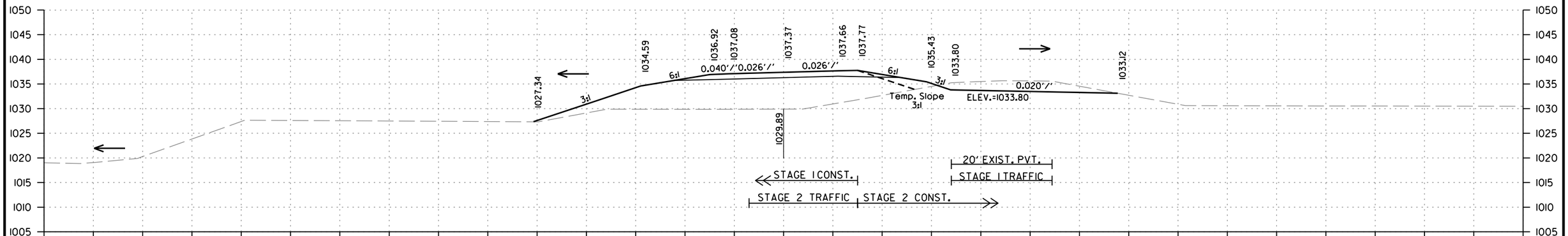




SITE 2
STA. 208+00 TO STA. 209+00

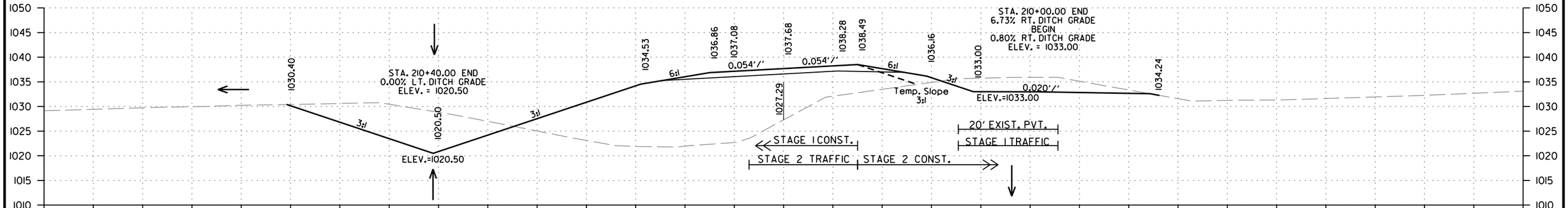
JY43338 11/6/2024
R040866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	121	136
		CROSS SECTIONS				



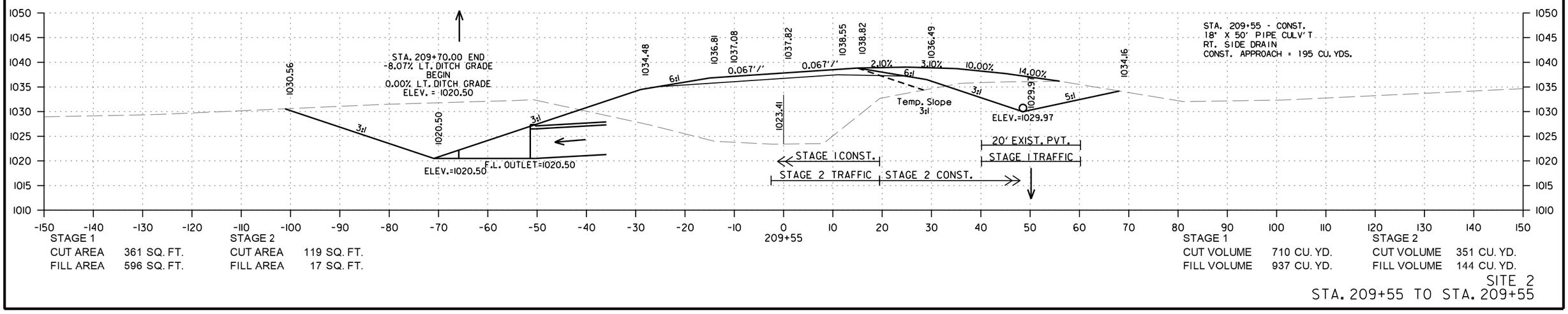
STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	57 SQ. FT.
FILL AREA	336 SQ. FT.	FILL AREA	13 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	400 CU. YD.	CUT VOLUME	281 CU. YD.
FILL VOLUME	1857 CU. YD.	FILL VOLUME	50 CU. YD.



STAGE 1		STAGE 2	
CUT AREA	216 SQ. FT.	CUT AREA	95 SQ. FT.
FILL AREA	667 SQ. FT.	FILL AREA	14 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	431 CU. YD.	CUT VOLUME	159 CU. YD.
FILL VOLUME	1083 CU. YD.	FILL VOLUME	24 CU. YD.



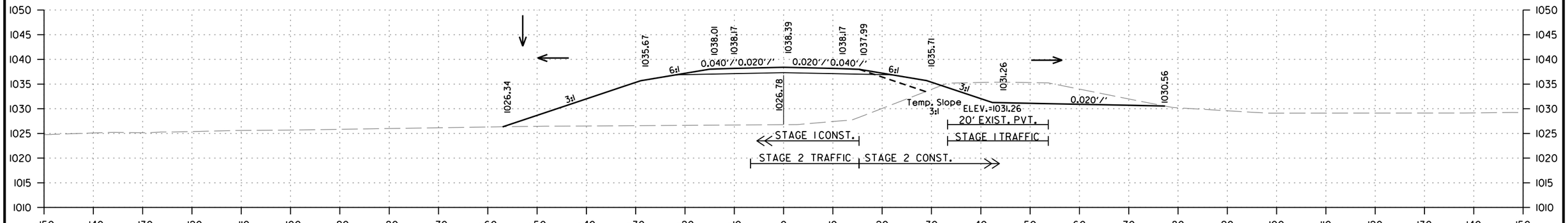
STAGE 1		STAGE 2	
CUT AREA	361 SQ. FT.	CUT AREA	119 SQ. FT.
FILL AREA	596 SQ. FT.	FILL AREA	17 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	710 CU. YD.	CUT VOLUME	351 CU. YD.
FILL VOLUME	937 CU. YD.	FILL VOLUME	144 CU. YD.

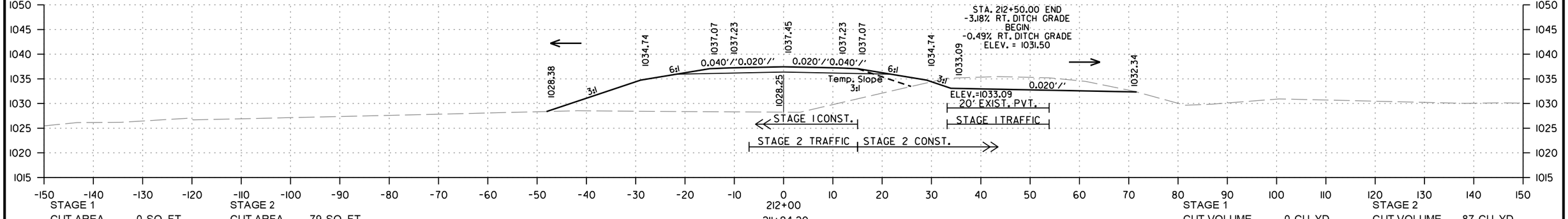
SITE 2
STA. 209+55 TO STA. 209+55

JY43338 11/6/2024
R040866.DGN

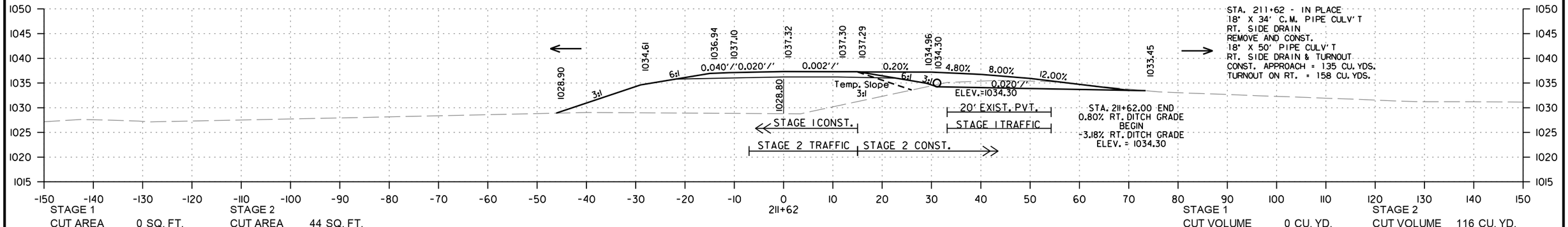
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	122	136
		CROSS SECTIONS				



STAGE 1		STAGE 2		STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	120 SQ. FT.	CUT VOLUME	0 CU. YD.	CUT VOLUME	369 CU. YD.
FILL AREA	639 SQ. FT.	FILL AREA	17 SQ. FT.	FILL VOLUME	1952 CU. YD.	FILL VOLUME	54 CU. YD.



STAGE 1		STAGE 2		STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	79 SQ. FT.	CUT VOLUME	0 CU. YD.	CUT VOLUME	87 CU. YD.
FILL AREA	415 SQ. FT.	FILL AREA	12 SQ. FT.	FILL VOLUME	557 CU. YD.	FILL VOLUME	17 CU. YD.

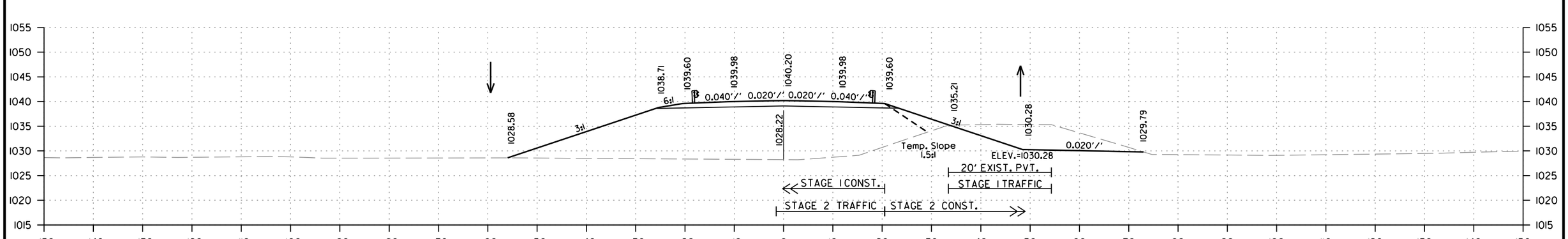


STAGE 1		STAGE 2		STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	44 SQ. FT.	CUT VOLUME	0 CU. YD.	CUT VOLUME	116 CU. YD.
FILL AREA	377 SQ. FT.	FILL AREA	12 SQ. FT.	FILL VOLUME	819 CU. YD.	FILL VOLUME	29 CU. YD.

SITE 2
STA. 211+62 TO STA. 213+00

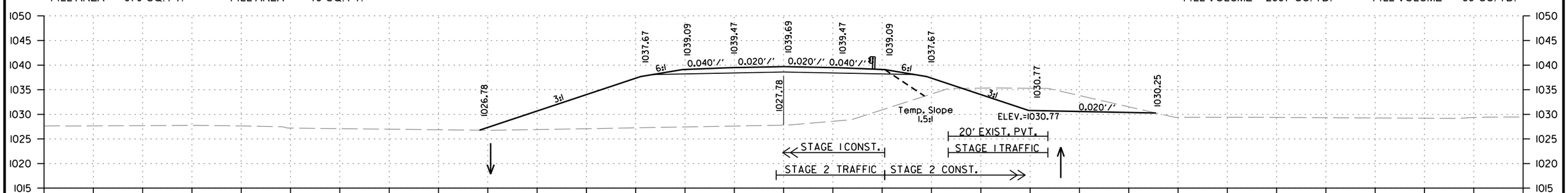
JY43338 11/6/2024
RO40866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	123	136
		CROSS SECTIONS				



STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	117 SQ. FT.
FILL AREA	670 SQ. FT.	FILL AREA	18 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	0 CU. YD.	CUT VOLUME	400 CU. YD.
FILL VOLUME	2557 CU. YD.	FILL VOLUME	85 CU. YD.



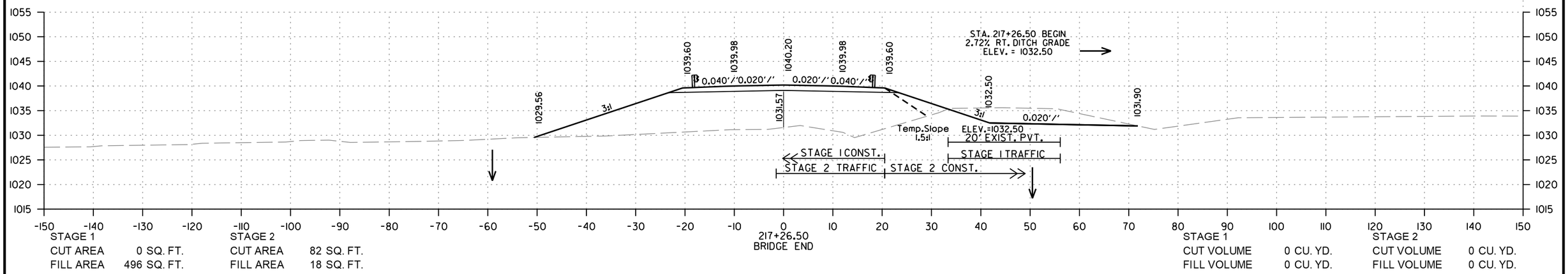
STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	99 SQ. FT.
FILL AREA	711 SQ. FT.	FILL AREA	28 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	0 CU. YD.	CUT VOLUME	406 CU. YD.
FILL VOLUME	2500 CU. YD.	FILL VOLUME	83 CU. YD.

SITE 2
STA. 214+00 TO STA. 215+00

JY43338 11/6/2024
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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	124	136
		CROSS SECTIONS				



217+26.50
BRIDGE END

STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	82 SQ. FT.
FILL AREA	496 SQ. FT.	FILL AREA	18 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	0 CU. YD.	CUT VOLUME	0 CU. YD.
FILL VOLUME	0 CU. YD.	FILL VOLUME	0 CU. YD.

217+07.55
TOE OF SLOPE

STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	0 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	0 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	0 CU. YD.	CUT VOLUME	0 CU. YD.
FILL VOLUME	0 CU. YD.	FILL VOLUME	0 CU. YD.

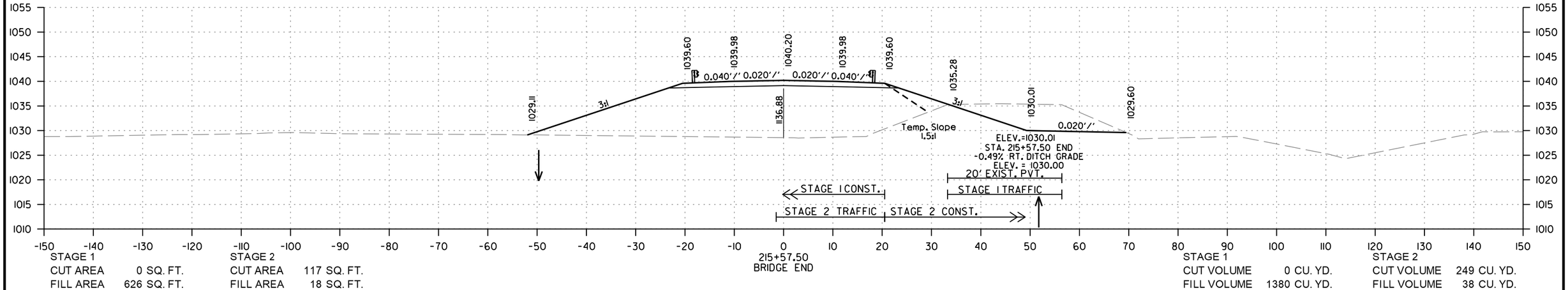
215+76.05
TOE OF SLOPE

STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	0 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	0 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	0 CU. YD.	CUT VOLUME	40 CU. YD.
FILL VOLUME	215 CU. YD.	FILL VOLUME	6 CU. YD.

STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	117 SQ. FT.
FILL AREA	626 SQ. FT.	FILL AREA	18 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	0 CU. YD.	CUT VOLUME	249 CU. YD.
FILL VOLUME	1380 CU. YD.	FILL VOLUME	38 CU. YD.



215+57.50
BRIDGE END

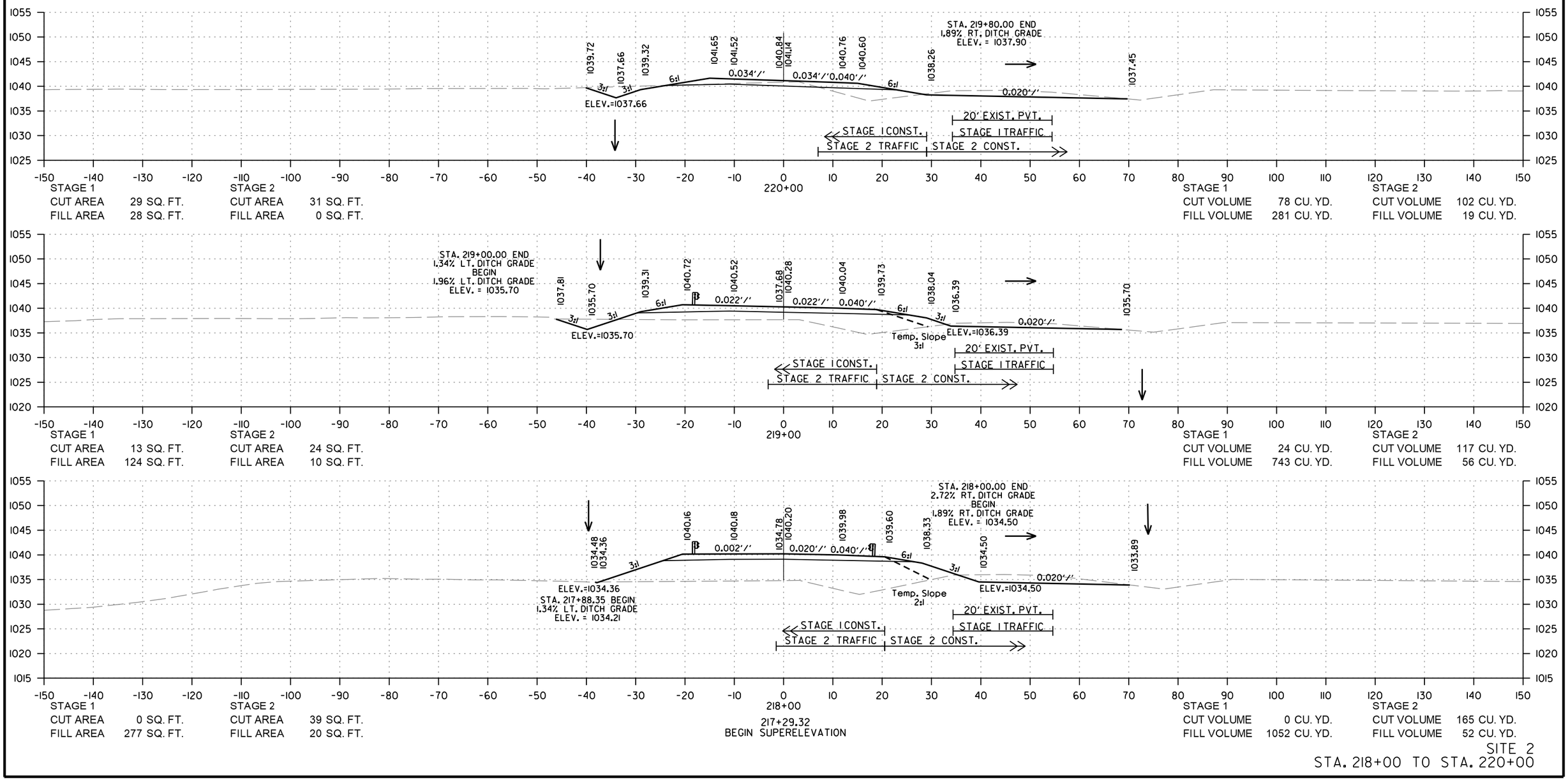
STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	117 SQ. FT.
FILL AREA	626 SQ. FT.	FILL AREA	18 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	0 CU. YD.	CUT VOLUME	249 CU. YD.
FILL VOLUME	1380 CU. YD.	FILL VOLUME	38 CU. YD.

SITE 2
STA. 215+57.50 TO STA. 217+26.50

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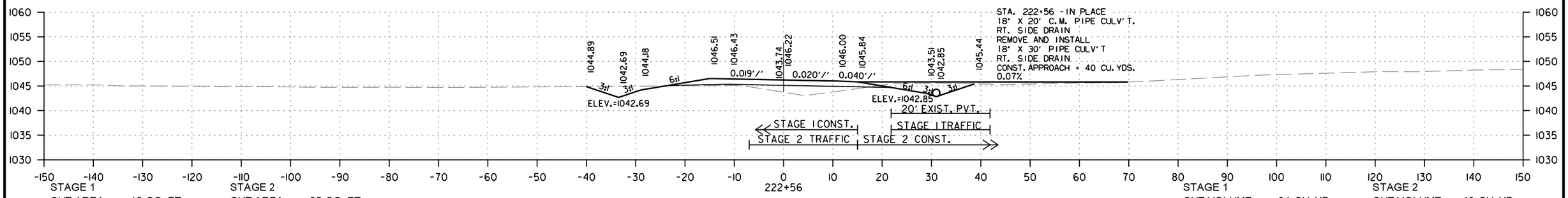
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	125	136
		CROSS SECTIONS				



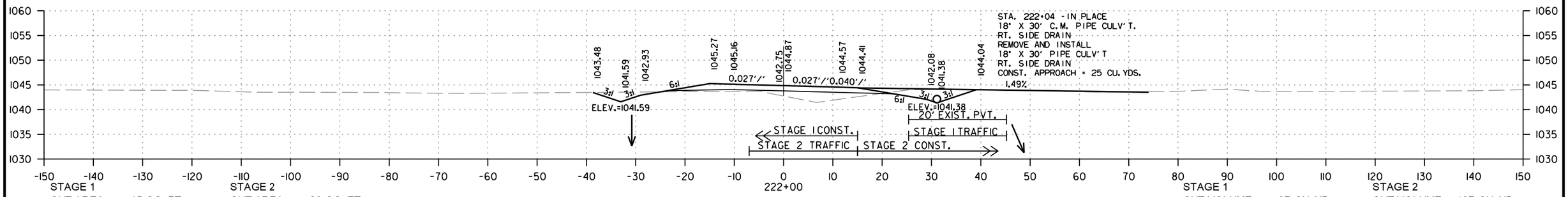
SITE 2
STA. 218+00 TO STA. 220+00

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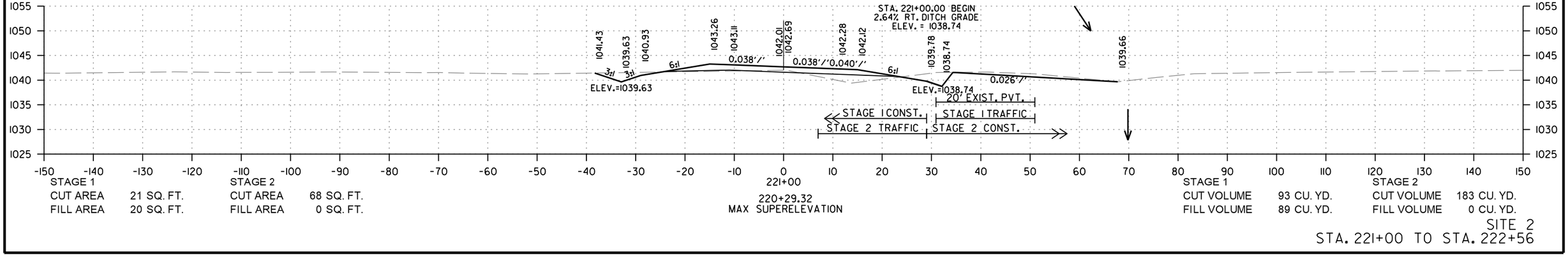
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	126	136
		CROSS SECTIONS				



STAGE 1		STAGE 2		STAGE 1		STAGE 2	
CUT AREA	18 SQ. FT.	CUT AREA	25 SQ. FT.	CUT VOLUME	34 CU. YD.	CUT VOLUME	49 CU. YD.
FILL AREA	30 SQ. FT.	FILL AREA	0 SQ. FT.	FILL VOLUME	65 CU. YD.	FILL VOLUME	0 CU. YD.



STAGE 1		STAGE 2		STAGE 1		STAGE 2	
CUT AREA	15 SQ. FT.	CUT AREA	22 SQ. FT.	CUT VOLUME	67 CU. YD.	CUT VOLUME	167 CU. YD.
FILL AREA	33 SQ. FT.	FILL AREA	0 SQ. FT.	FILL VOLUME	98 CU. YD.	FILL VOLUME	0 CU. YD.

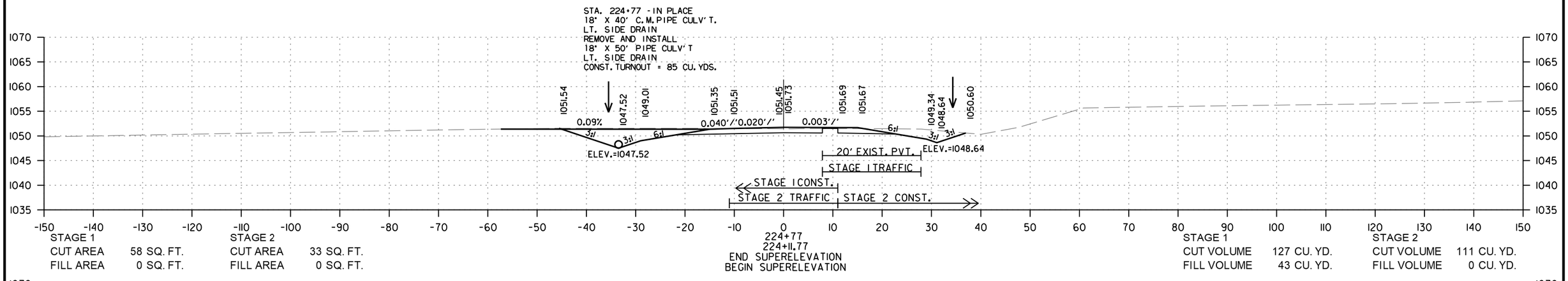


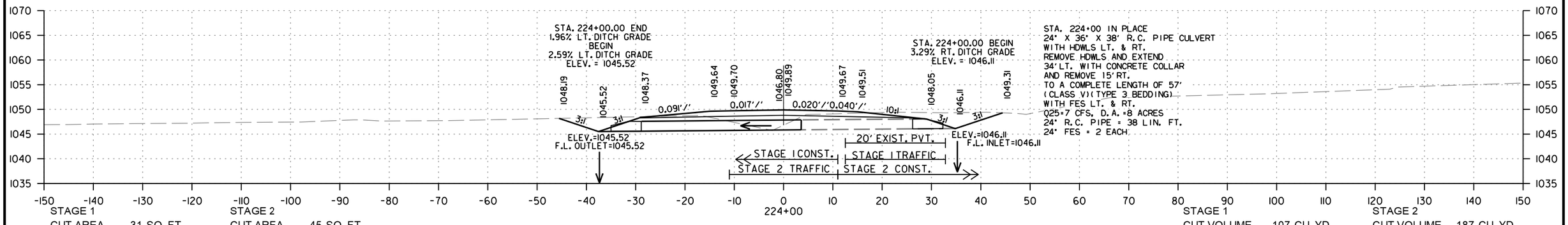
STAGE 1		STAGE 2		STAGE 1		STAGE 2	
CUT AREA	21 SQ. FT.	CUT AREA	68 SQ. FT.	CUT VOLUME	93 CU. YD.	CUT VOLUME	183 CU. YD.
FILL AREA	20 SQ. FT.	FILL AREA	0 SQ. FT.	FILL VOLUME	89 CU. YD.	FILL VOLUME	0 CU. YD.

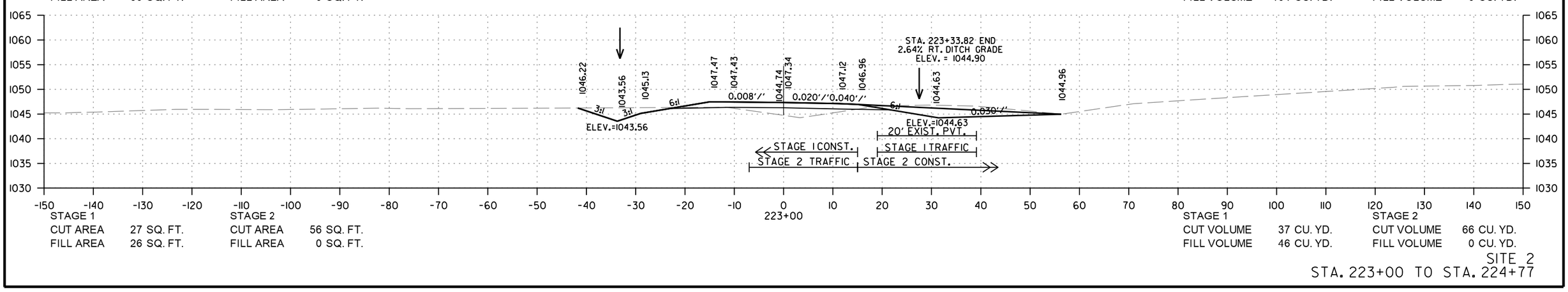
SITE 2
STA. 221+00 TO STA. 222+56

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	127	136
		CROSS SECTIONS				







SITE 2
STA. 223+00 TO STA. 224+77

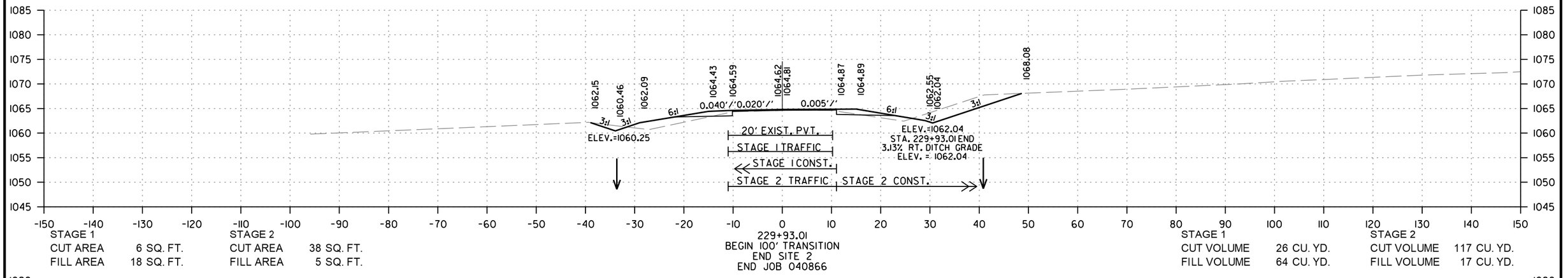
JY43338 11/6/2024
RO40866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	128	136
		CROSS SECTIONS				

SITE 2
STA. 225+00 TO STA. 227+00

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	129	136
		CROSS SECTIONS				



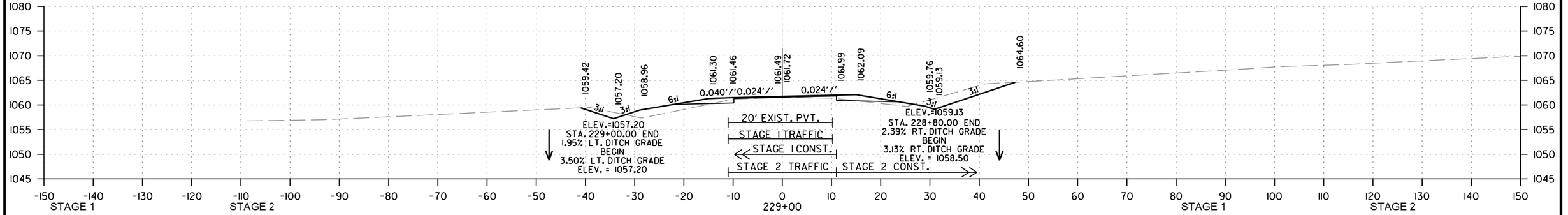
STAGE 1
CUT AREA 6 SQ. FT.
FILL AREA 18 SQ. FT.

STAGE 2
CUT AREA 38 SQ. FT.
FILL AREA 5 SQ. FT.

229+93.01
BEGIN 100' TRANSITION
END SITE 2
END JOB 040866

STAGE 1
CUT VOLUME 26 CU. YD.
FILL VOLUME 64 CU. YD.

STAGE 2
CUT VOLUME 117 CU. YD.
FILL VOLUME 17 CU. YD.



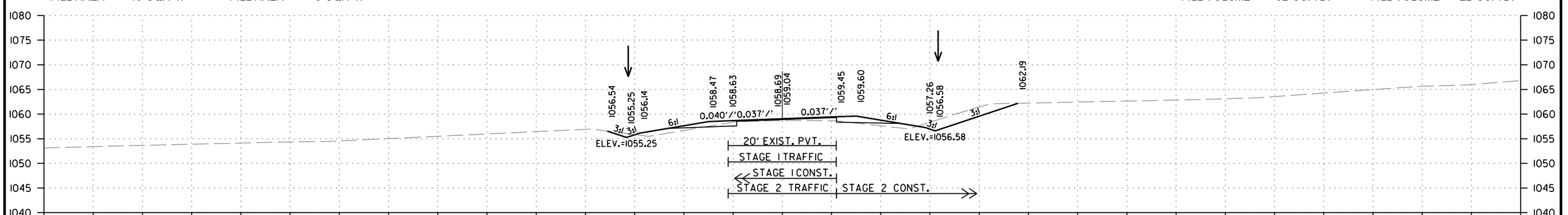
STAGE 1
CUT AREA 9 SQ. FT.
FILL AREA 19 SQ. FT.

STAGE 2
CUT AREA 30 SQ. FT.
FILL AREA 5 SQ. FT.

229+00

STAGE 1
CUT VOLUME 26 CU. YD.
FILL VOLUME 52 CU. YD.

STAGE 2
CUT VOLUME 113 CU. YD.
FILL VOLUME 22 CU. YD.



STAGE 1
CUT AREA 5 SQ. FT.
FILL AREA 9 SQ. FT.

STAGE 2
CUT AREA 31 SQ. FT.
FILL AREA 7 SQ. FT.

228+00

227+93.01
MAX SUPER (BEGIN TRANSITION)

227+11.77
MAX SUPERELEVATION

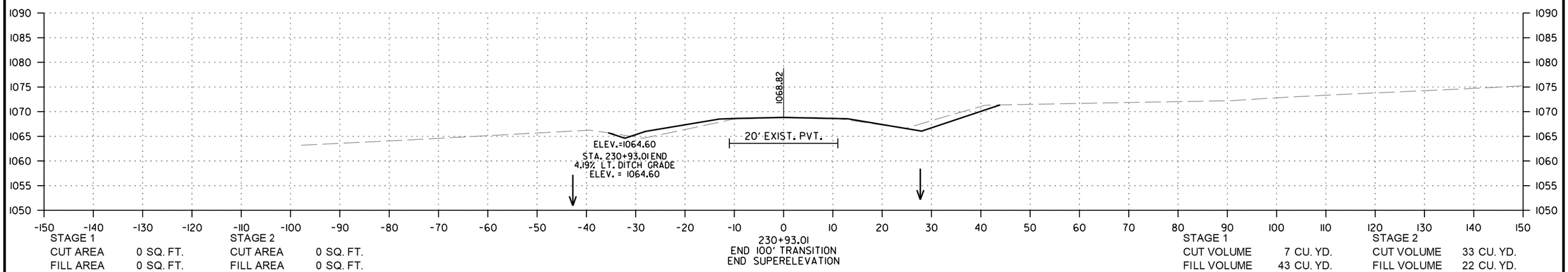
STAGE 1
CUT VOLUME 30 CU. YD.
FILL VOLUME 28 CU. YD.

STAGE 2
CUT VOLUME 115 CU. YD.
FILL VOLUME 20 CU. YD.

SITE 2
STA. 228+00 TO STA. 229+93

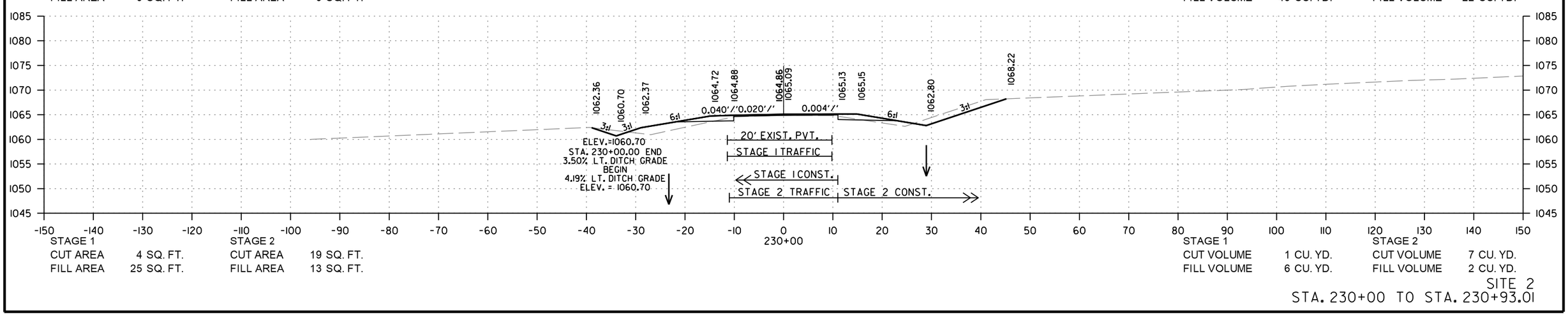
JY43338 11/6/2024
R040866.DGN

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	130	136
		CROSS SECTIONS				



STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	0 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	0 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	7 CU. YD.	CUT VOLUME	33 CU. YD.
FILL VOLUME	43 CU. YD.	FILL VOLUME	22 CU. YD.



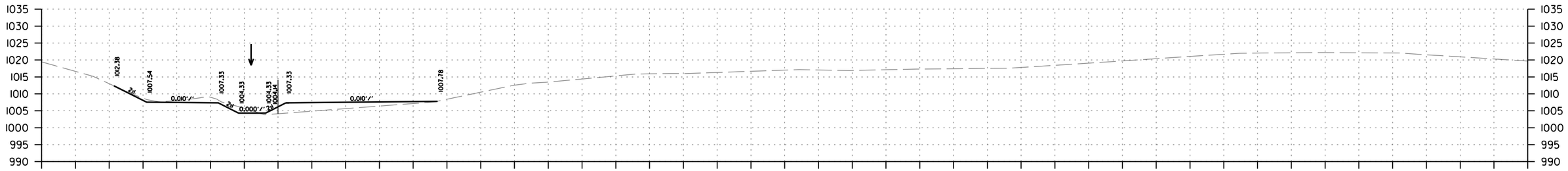
STAGE 1		STAGE 2	
CUT AREA	4 SQ. FT.	CUT AREA	19 SQ. FT.
FILL AREA	25 SQ. FT.	FILL AREA	13 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	1 CU. YD.	CUT VOLUME	7 CU. YD.
FILL VOLUME	6 CU. YD.	FILL VOLUME	2 CU. YD.

SITE 2
STA. 230+00 TO STA. 230+93.01

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DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	131	136
		CROSS SECTIONS				



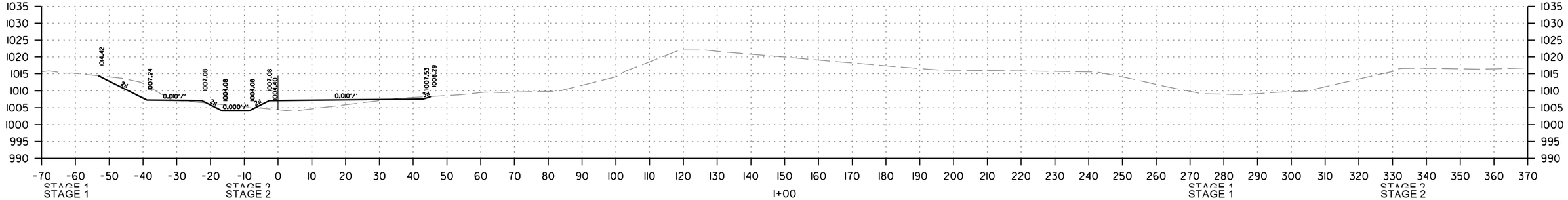
STAGE 1
CUT AREA 0 SQ. FT.
FILL AREA 0 SQ. FT.

STAGE 2
CUT AREA 35 SQ. FT.
FILL AREA 81 SQ. FT.

2+00

STAGE 1
CUT VOLUME 0 CU. YD.
FILL VOLUME 0 CU. YD.

STAGE 2
CUT VOLUME 204 CU. YD.
FILL VOLUME 283 CU. YD.



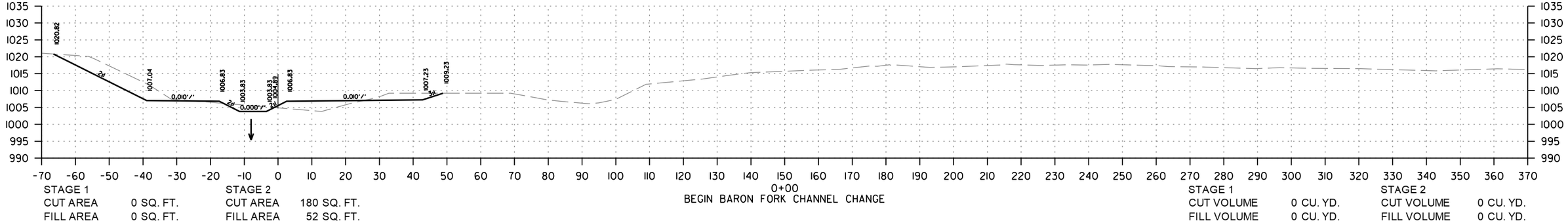
STAGE 1
CUT AREA 0 SQ. FT.
FILL AREA 0 SQ. FT.

STAGE 2
CUT AREA 75 SQ. FT.
FILL AREA 72 SQ. FT.

1+00

STAGE 1
CUT VOLUME 0 CU. YD.
FILL VOLUME 0 CU. YD.

STAGE 2
CUT VOLUME 472 CU. YD.
FILL VOLUME 230 CU. YD.



STAGE 1
CUT AREA 0 SQ. FT.
FILL AREA 0 SQ. FT.

STAGE 2
CUT AREA 180 SQ. FT.
FILL AREA 52 SQ. FT.

0+00
BEGIN BARON FORK CHANNEL CHANGE

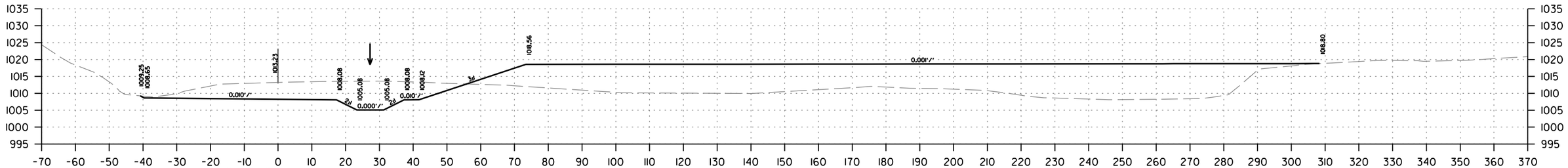
STAGE 1
CUT VOLUME 0 CU. YD.
FILL VOLUME 0 CU. YD.

STAGE 2
CUT VOLUME 0 CU. YD.
FILL VOLUME 0 CU. YD.

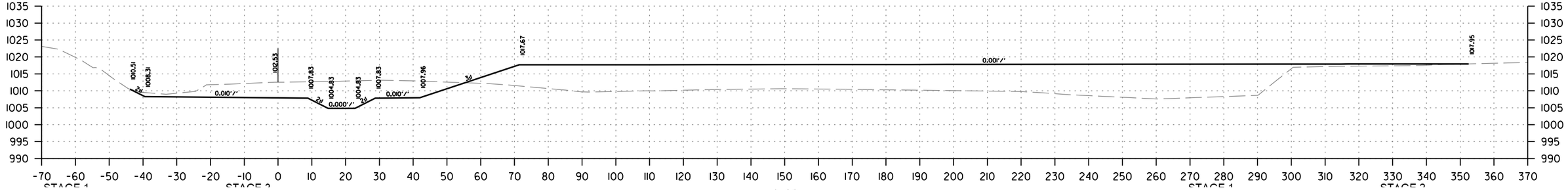
JY43338 11/6/2024
RO40866.DGN

BARON FORK CHANNEL CHANGE
CROSS SECTION STA. 0+00 TO STA. 2+00

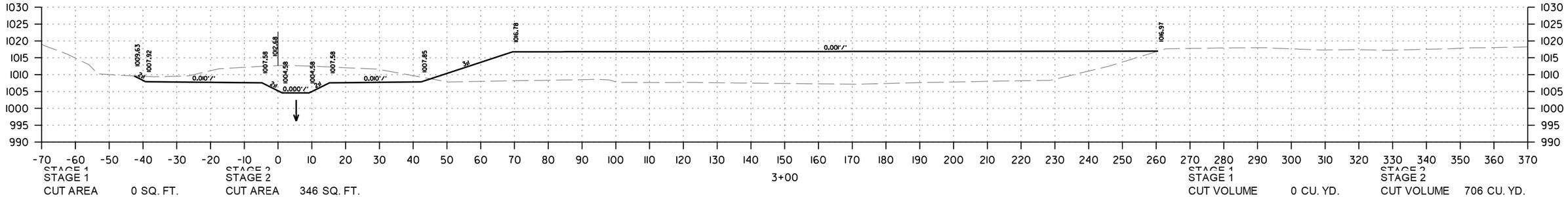
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	132	136
		CROSS SECTIONS				



STAGE 1		STAGE 2			STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	426 SQ. FT.	5+00	CUT VOLUME	0 CU. YD.	CUT VOLUME	1530 CU. YD.
FILL AREA	0 SQ. FT.	FILL AREA	1897 SQ. FT.		FILL VOLUME	0 CU. YD.	FILL VOLUME	7039 CU. YD.



STAGE 1		STAGE 2			STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	400 SQ. FT.	4+00	CUT VOLUME	0 CU. YD.	CUT VOLUME	1381 CU. YD.
FILL AREA	0 SQ. FT.	FILL AREA	1904 SQ. FT.		FILL VOLUME	0 CU. YD.	FILL VOLUME	6683 CU. YD.

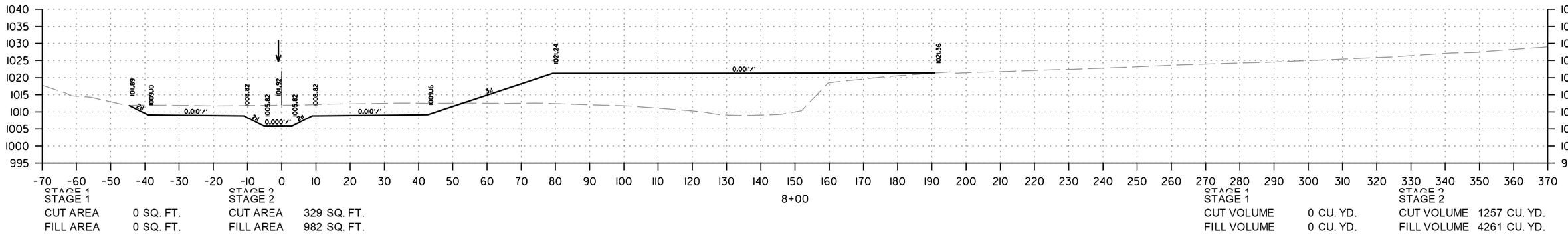


STAGE 1		STAGE 2			STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	346 SQ. FT.	3+00	CUT VOLUME	0 CU. YD.	CUT VOLUME	706 CU. YD.
FILL AREA	0 SQ. FT.	FILL AREA	1705 SQ. FT.		FILL VOLUME	0 CU. YD.	FILL VOLUME	3307 CU. YD.

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BARON FORK CHANNEL CHANGE
CROSS SECTION STA. 3+00 TO STA. 5+00

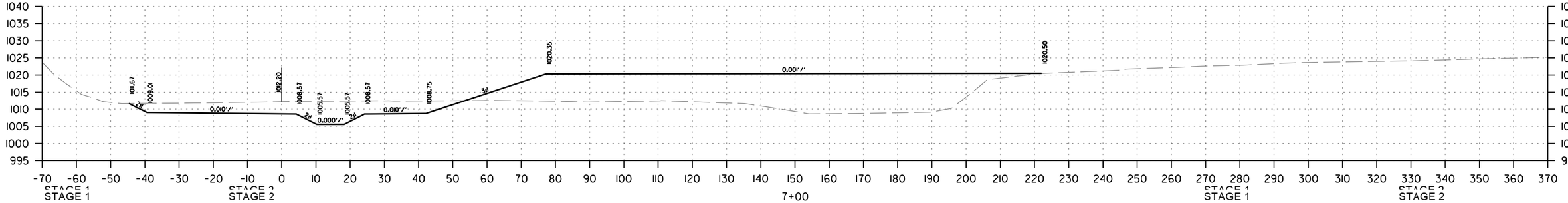
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	133	136
		CROSS SECTIONS				



8+00

STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	329 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	982 SQ. FT.

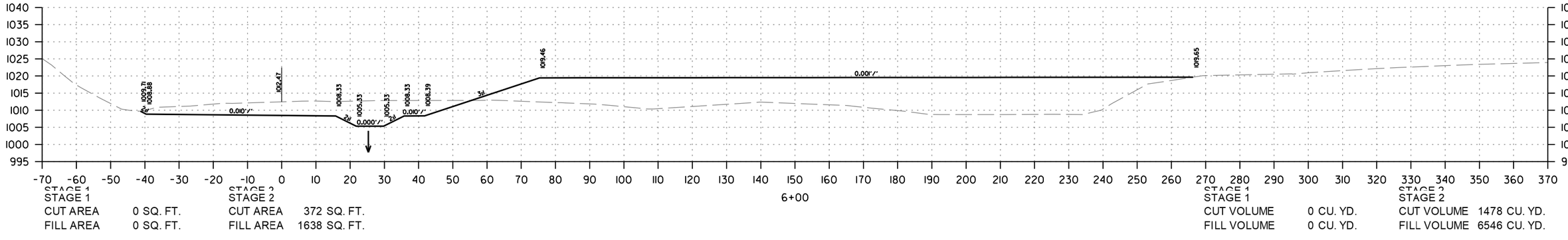
STAGE 1		STAGE 2	
CUT VOLUME	0 CU. YD.	CUT VOLUME	1257 CU. YD.
FILL VOLUME	0 CU. YD.	FILL VOLUME	4261 CU. YD.



7+00

STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	350 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	1319 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	0 CU. YD.	CUT VOLUME	1337 CU. YD.
FILL VOLUME	0 CU. YD.	FILL VOLUME	5476 CU. YD.



6+00

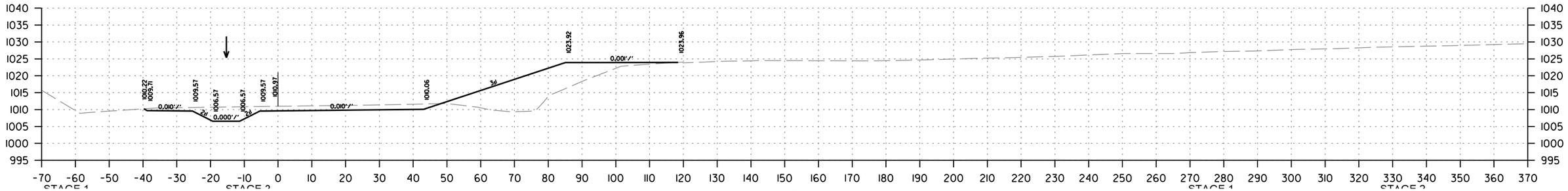
STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	372 SQ. FT.
FILL AREA	0 SQ. FT.	FILL AREA	1638 SQ. FT.

STAGE 1		STAGE 2	
CUT VOLUME	0 CU. YD.	CUT VOLUME	1478 CU. YD.
FILL VOLUME	0 CU. YD.	FILL VOLUME	6546 CU. YD.

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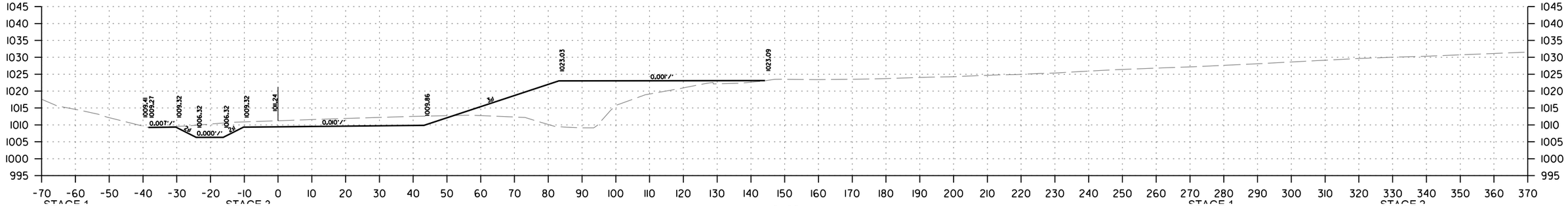
BARON FORK CHANNEL CHANGE
CROSS SECTION STA. 6+00 TO STA. 8+00

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	134	136
		CROSS SECTIONS				



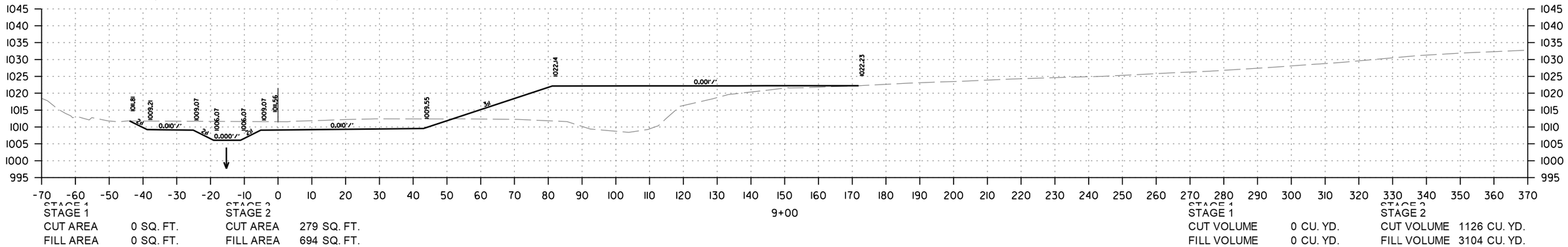
STAGE 1		STAGE 2		STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	151 SQ. FT.	CUT VOLUME	0 CU. YD.	CUT VOLUME	631 CU. YD.
FILL AREA	0 SQ. FT.	FILL AREA	327 SQ. FT.	FILL VOLUME	0 CU. YD.	FILL VOLUME	1535 CU. YD.

11+00



STAGE 1		STAGE 2		STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	190 SQ. FT.	CUT VOLUME	0 CU. YD.	CUT VOLUME	869 CU. YD.
FILL AREA	0 SQ. FT.	FILL AREA	502 SQ. FT.	FILL VOLUME	0 CU. YD.	FILL VOLUME	2215 CU. YD.

10+00



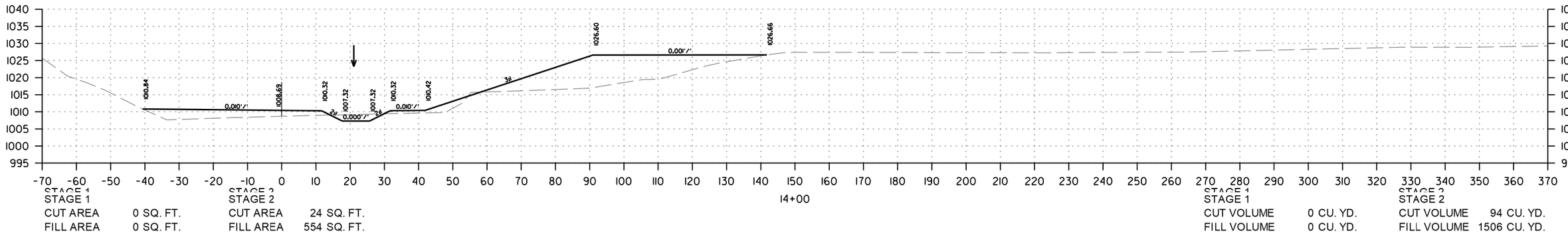
STAGE 1		STAGE 2		STAGE 1		STAGE 2	
CUT AREA	0 SQ. FT.	CUT AREA	279 SQ. FT.	CUT VOLUME	0 CU. YD.	CUT VOLUME	1126 CU. YD.
FILL AREA	0 SQ. FT.	FILL AREA	694 SQ. FT.	FILL VOLUME	0 CU. YD.	FILL VOLUME	3104 CU. YD.

9+00

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BARON FORK CHANNEL CHANGE
CROSS SECTION STA. 9+00 TO STA. 11+00

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	135	136
		CROSS SECTIONS				



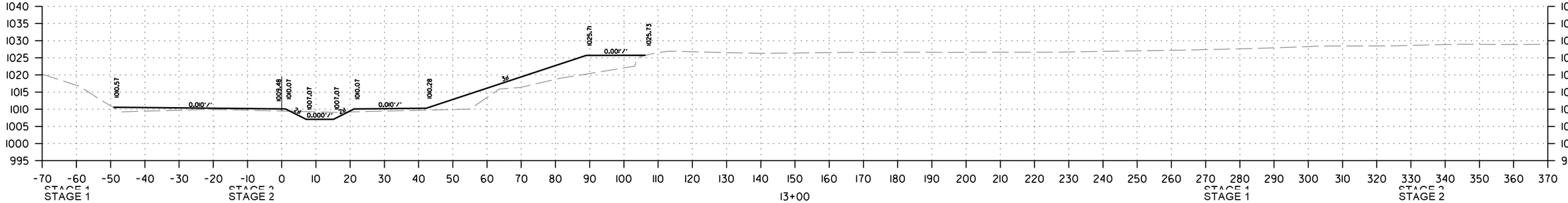
STAGE 1
CUT AREA 0 SQ. FT.
FILL AREA 0 SQ. FT.

STAGE 2
CUT AREA 24 SQ. FT.
FILL AREA 554 SQ. FT.

14+00

STAGE 1
CUT VOLUME 0 CU. YD.
FILL VOLUME 0 CU. YD.

STAGE 2
CUT VOLUME 94 CU. YD.
FILL VOLUME 1506 CU. YD.



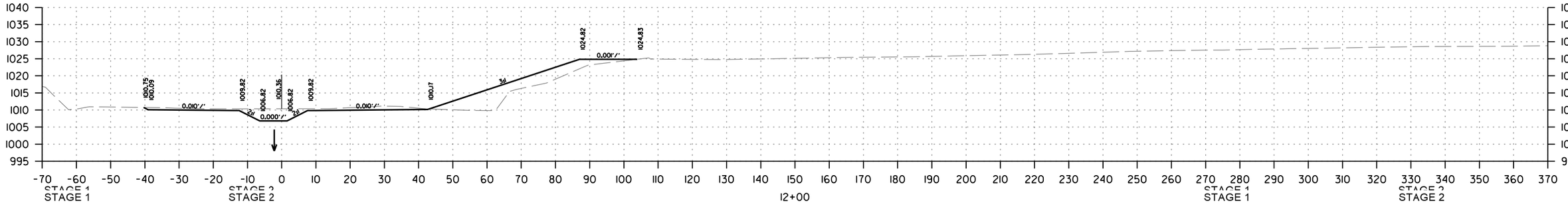
STAGE 1
CUT AREA 0 SQ. FT.
FILL AREA 0 SQ. FT.

STAGE 2
CUT AREA 27 SQ. FT.
FILL AREA 259 SQ. FT.

13+00

STAGE 1
CUT VOLUME 0 CU. YD.
FILL VOLUME 0 CU. YD.

STAGE 2
CUT VOLUME 220 CU. YD.
FILL VOLUME 794 CU. YD.



STAGE 1
CUT AREA 0 SQ. FT.
FILL AREA 0 SQ. FT.

STAGE 2
CUT AREA 92 SQ. FT.
FILL AREA 170 SQ. FT.

12+00

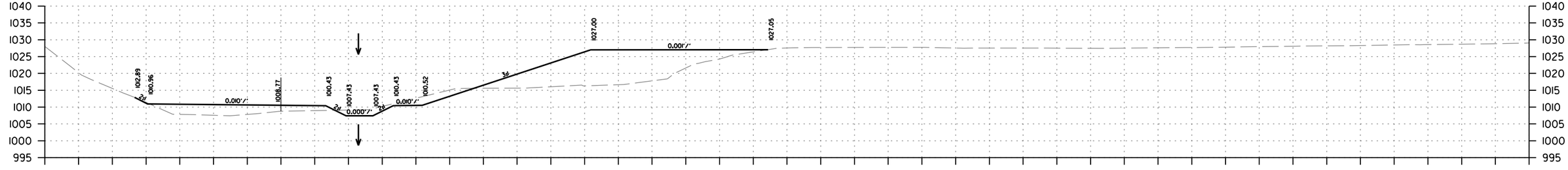
STAGE 1
CUT VOLUME 0 CU. YD.
FILL VOLUME 0 CU. YD.

STAGE 2
CUT VOLUME 450 CU. YD.
FILL VOLUME 920 CU. YD.

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BARON FORK CHANNEL CHANGE
CROSS SECTION STA. 12+00 TO STA. 14+00

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040866	136	136
		CROSS SECTIONS				



STAGE 1
CUT AREA 0 SQ. FT.
FILL AREA 0 SQ. FT.

STAGE 2
CUT AREA 65 SQ. FT.
FILL AREA 629 SQ. FT.

14+44.28
END BARON FORK CHANNEL CHANGE

STAGE 1
CUT VOLUME 0 CU. YD.
FILL VOLUME 0 CU. YD.

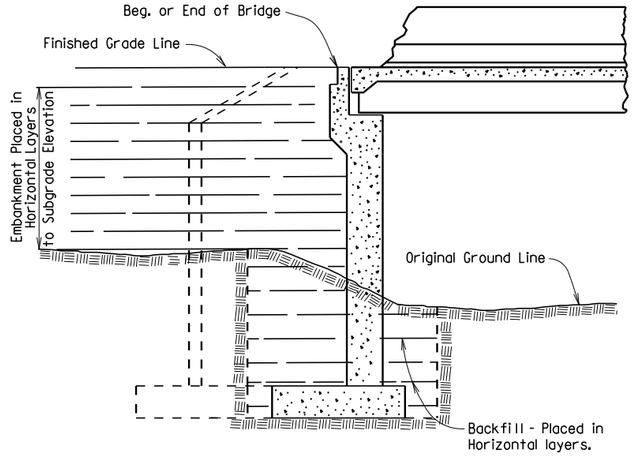
STAGE 2
CUT VOLUME 73 CU. YD.
FILL VOLUME 970 CU. YD.

JY43338 11/6/2024
R040866.DGN

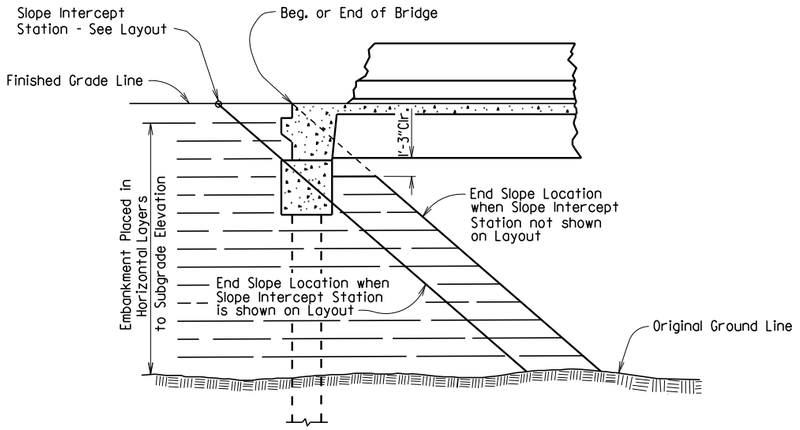
BARON FORK CHANNEL CHANGE
CROSS SECTION STA. 14+44.28

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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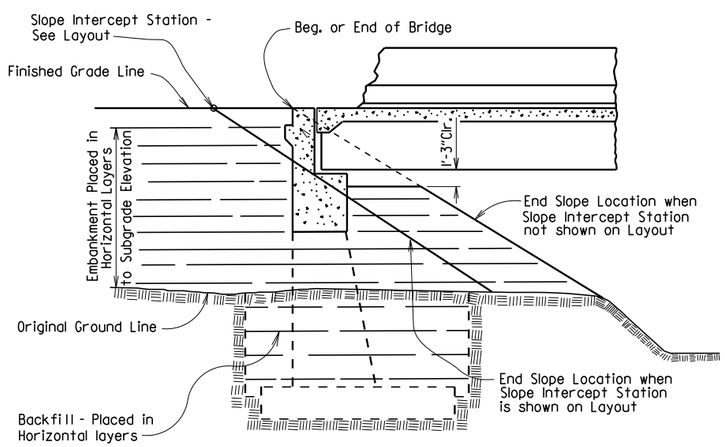
1 EMBANKMENT & BACKFILL 55000



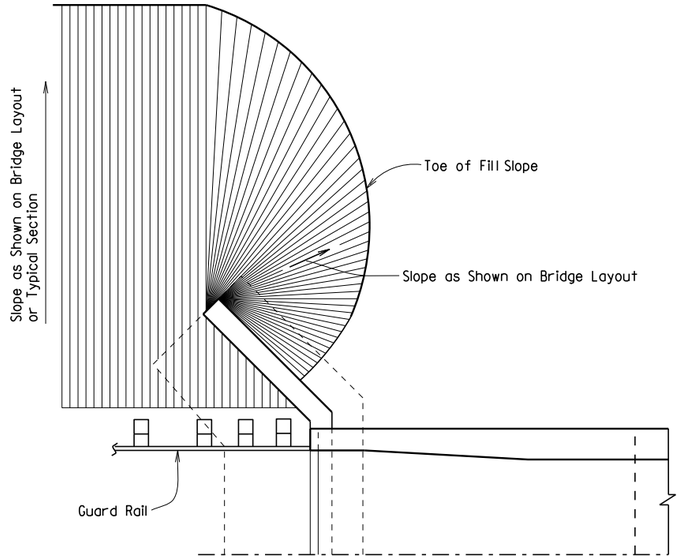
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT VERTICAL WALL ABUTMENTS



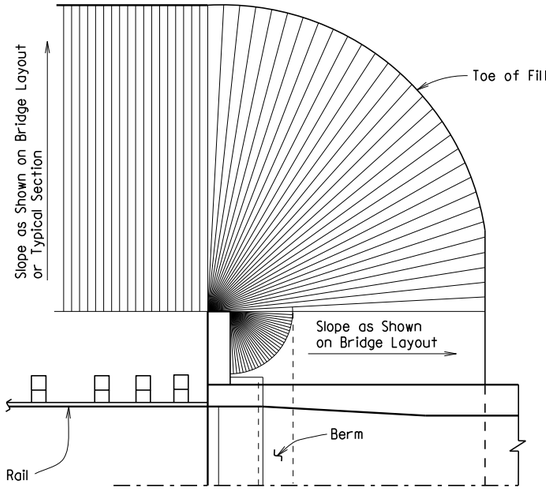
EMBANKMENT CONSTRUCTION AT SPILL-THROUGH PILE END BENTS



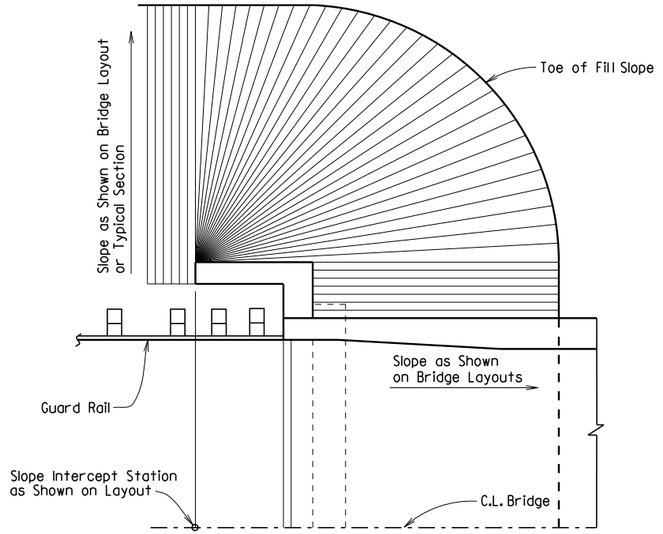
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT SPILL-THROUGH END BENTS



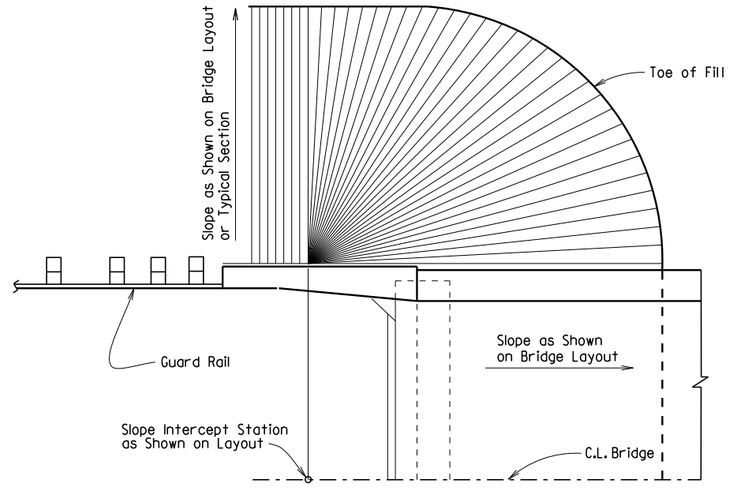
VERTICAL WALL ABUTMENTS



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

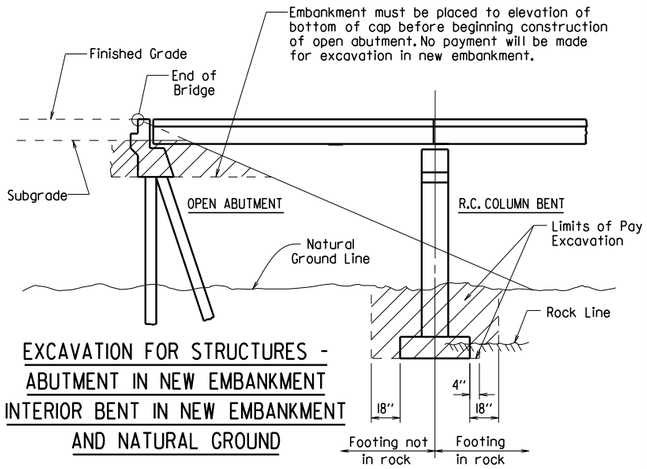
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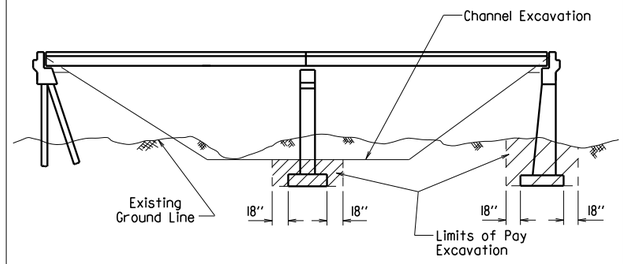
DRAWING NO. 55000

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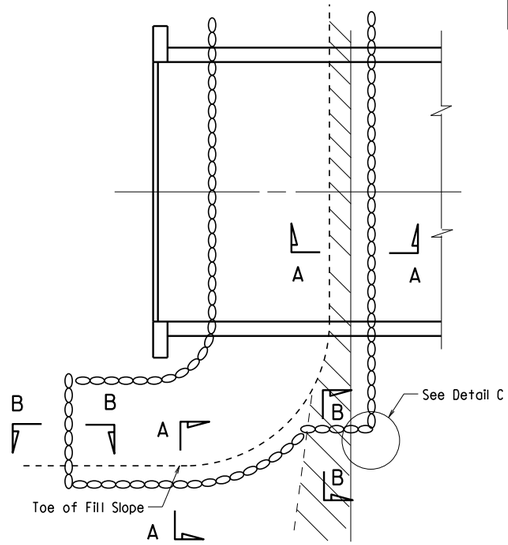
1 RIPRAP & EXCAV. 55001



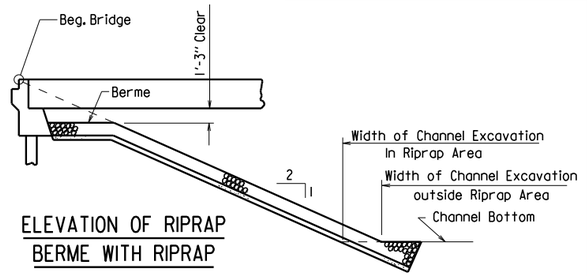
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NEW EMBANKMENT AND NATURAL GROUND



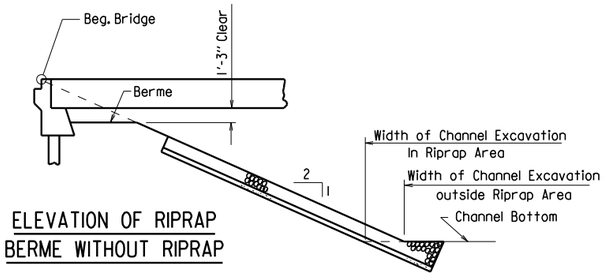
EXCAVATION FOR STRUCTURES - BRIDGE LOCATION WITH DESIGNATED CHANNEL CHANGE



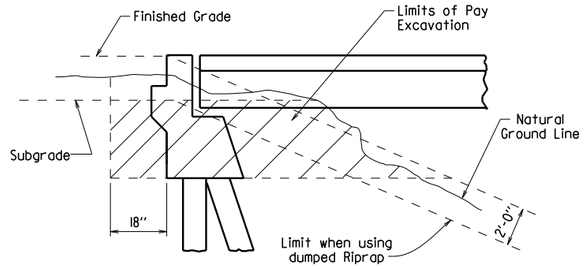
PLAN OF DUMPED RIPRAP



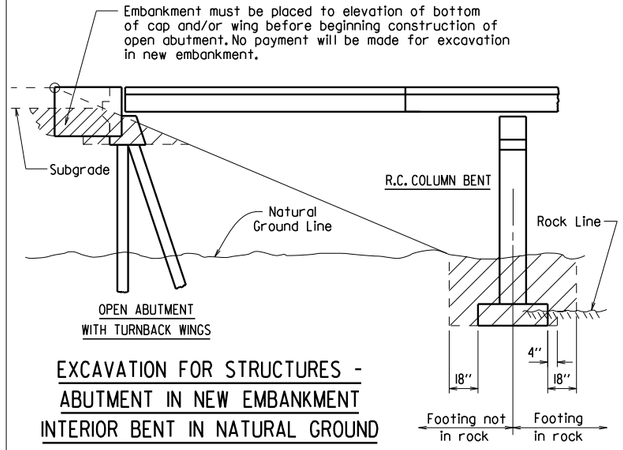
ELEVATION OF RIPRAP BERME WITH RIPRAP



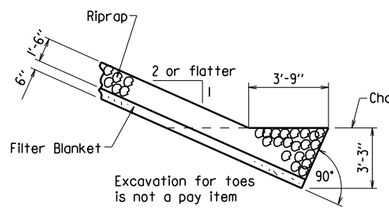
ELEVATION OF RIPRAP BERME WITHOUT RIPRAP



EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND

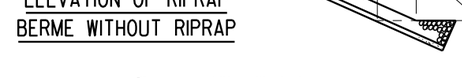


EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NATURAL GROUND

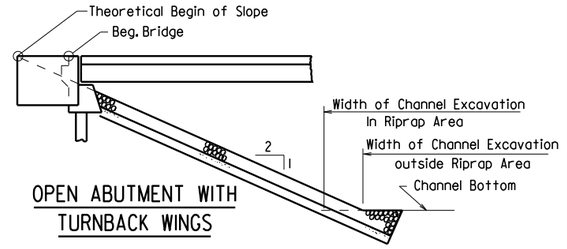


SECTION A-A

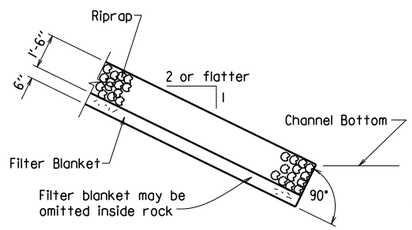
(Toe Excavation in Soil)



SECTION B-B



OPEN ABUTMENT WITH TURNBACK WINGS



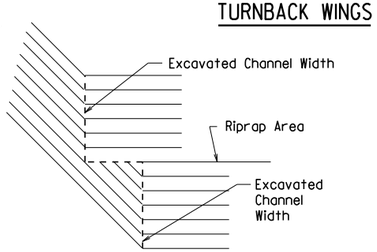
SECTION A-A

(Toe Excavation in Rock)

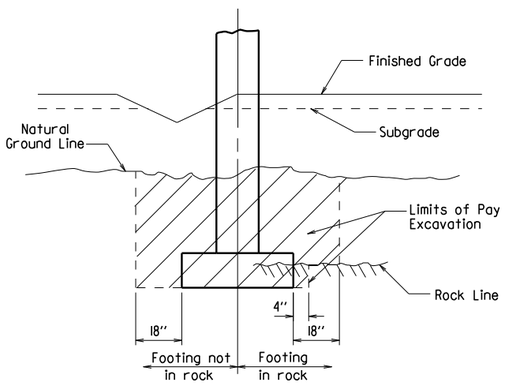
Note : Use this type of toe when rock is encountered which is in a stable condition.

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.

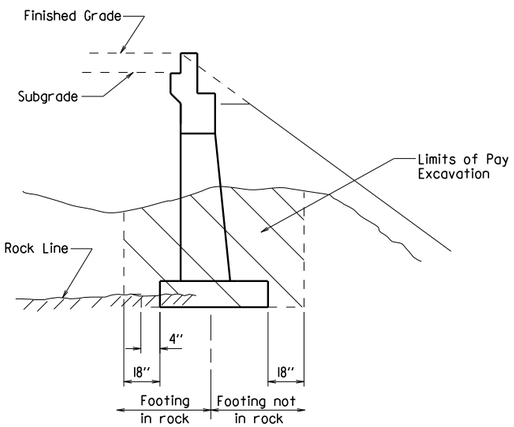
Note : Details for computing excavation for structures are included for information as to how plan quantities were calculated and for use when adjusting quantities when changing footing elevation.



DETAIL C



EXCAVATION FOR STRUCTURES - BENT IN ROADWAY FILL SECTION AND NATURAL GROUND



EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND AND NEW EMBANKMENT

STANDARD DETAILS FOR DUMPED RIPRAP AND FILTER BLANKET AND COMPUTING EXCAVATION FOR STRUCTURES

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

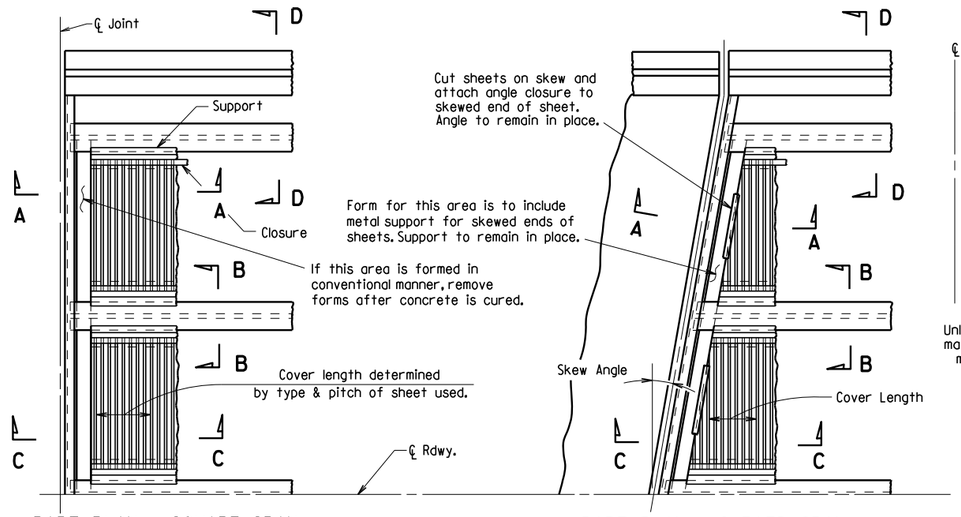
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CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE

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.			
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				①	BRIDGE DECK FORMS		55005	

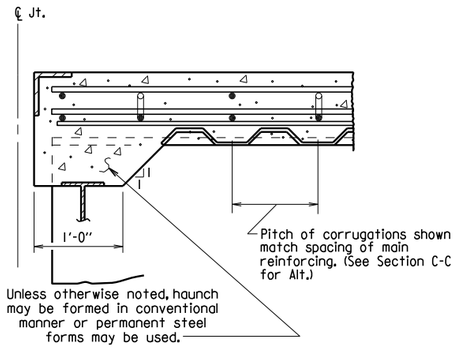


PART PLAN - SQUARE SPAN

3/8" = 1'-0"

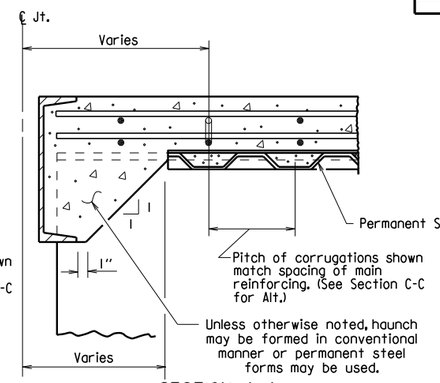
PART PLAN - SKEWED SPAN

3/8" = 1'-0"



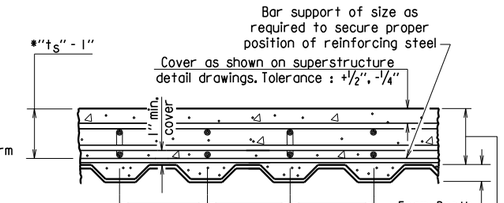
SECTION A-A

N.T.S.
(Angle at end of span)



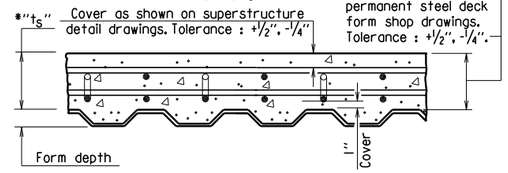
SECTION A-A

N.T.S.
(Channel at end of span)



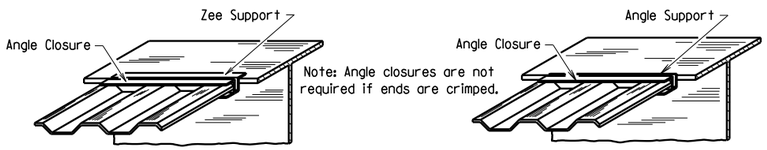
SECTION C-C

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.

*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.

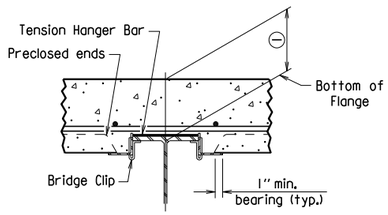
SECTION B-B

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.)

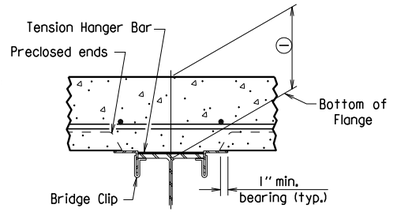
SECTION B-B

1" = 1'-0"
(Showing permissible support for tension flange where shear connectors are used and for all compression flanges)



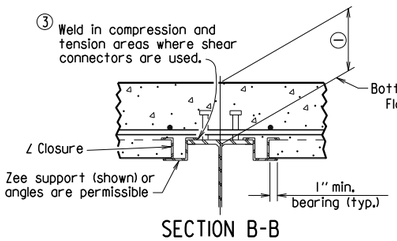
SECTION B-B

1" = 1'-0"
(Showing permissible support for tension flange where shear connectors are not used)



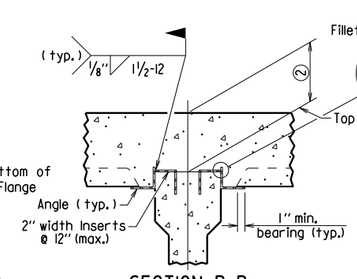
SECTION B-B

1" = 1'-0"
(Showing permissible support for tension flange where shear connectors are not used)



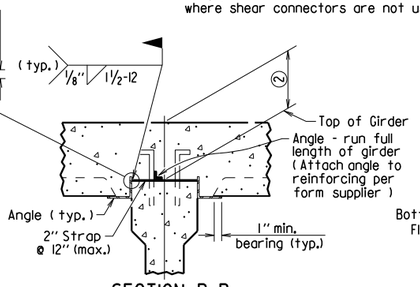
SECTION B-B

1" = 1'-0"
(Showing ∠ Closure)



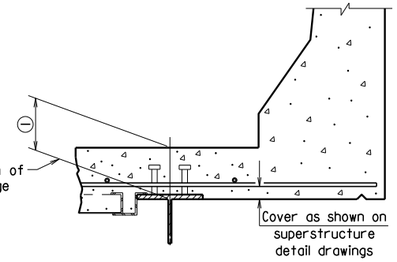
SECTION B-B (FOR CONCRETE GIRDERS)

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.

STANDARD DETAILS FOR PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY:	KDH	DATE:	2-27-2014	FILENAME:	b55005.dgn
CHECKED BY:	BEF	DATE:	2-27-2014	SCALE:	NONE
DESIGNED BY:	STD.	DATE:	—		

DRAWING NO. 55005

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.				
				①		GENERAL NOTES		55006

GENERAL NOTES

These GENERAL NOTES are applicable unless otherwise shown in the Plan Details, Special Provisions, or Supplemental Specifications.

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 Specifications.

DESIGN SPECIFICATIONS: See Bridge Layout(s).

SUPERSTRUCTURE NOTES:

MATERIALS AND STRENGTHS:

Class S(AE) Concrete	f'c =	4,000 psi
Reinforcing Steel (Gr. 60, AASHTO M 31 or M 322, Type A)	fy =	60,000 psi
Structural Steel (AASHTO M 270, Gr. 36)	Fy =	36,000 psi
Structural Steel (AASHTO M 270, Gr. 50)	Fy =	50,000 psi
Structural Steel (AASHTO M 270, Gr. 50W)	Fy =	50,000 psi
Structural Steel (AASHTO M 270, Gr. HPS70W)	Fy =	70,000 psi

See Plan Details for Grade(s) of Structural Steel required.

CONCRETE:

All concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi. Concrete shall be poured in the dry and all exposed corners shall be chamfered ¾" unless otherwise noted.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurement of Class S(AE) Concrete. See Standard Drawing No. 55005 for allowable modifications and for tolerances when Permanent Steel Bridge Deck Forms are used.

Use of a longitudinal screed is not permitted on any span of a bridge deck with horizontal curvature.

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. Sidewalks shall receive a broomed finish as specified for final finishing in Subsection 802.19 for Class 6 Broomed 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 beam or 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, median barrier, and sidewalks.

REINFORCING STEEL:

All reinforcing steel shall be Grade 60 conforming to AASHTO M 31 or M 322, Type A, with mill test reports and shall be epoxy coated. The reinforcing steel is to be accurately located in the forms and firmly held in place by steel wire supports, sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly, but will be considered subsidiary to the item "Epoxy Coated Reinforcing Steel (Grade 60)".

STRUCTURAL STEEL (COMMON TO W-BEAMS AND PLATE GIRDERS):

Structural steel shall be AASHTO M 270 with grade and payment as specified in the plans. Grade 50W steel shall not be painted and all exposed surfaces shall be cleaned in accordance with Subsection 807.84(e). Grade 36 and Grade 50 steel shall be painted unless otherwise noted and all exposed surfaces shall be cleaned in accordance with Subsection 807.84. Structural steel completely embedded in concrete may be AASHTO M 270, Gr. 36, Gr. 50 or Gr. 50W unless otherwise noted.

Drawings show general features of design only. Shop drawings shall be made in accordance with the specifications, submitted and approval secured before fabrication is begun.

Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on the approved shop drawings. Payment will be based on the basis of shapes and materials shown in the plans, and no additional compensation will be made for any adjustments due to substitutions.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, whether permanent or temporary, a formal request with detailed drawings shall be submitted to the Engineer for approval; however, additional welds used for attaching falsework support devices or screed rail supports to the structural steel that do not exceed the limitations of Subsection 802.13 will not require approval prior to construction. All welding shall conform to Subsection 807.26.

Unless otherwise noted, field connections shall be bolted with ¾" ø high-strength bolts using 13/16 " ø open holes. Holes for ¾" ø high-strength bolts may be 15/16 " ø if a washer is supplied for use under both the nut and head of the bolt. The use of oversized holes will not be allowed on main members unless otherwise noted. Bolts shall be placed with heads on the outside face of the exterior beam or girder webs and on the bottom of the beam or girder flanges.

All stud shear connectors shall be granular flux filled, solid fluxed, or equal and shall be automatically end welded in accordance with recommendations of the Manufacturer.

When painting is required, all structural steel except galvanized steel and steel completely encased in concrete shall be painted in accordance with Subsection 807.75. The color of paint shall be as specified in the plans.

STRUCTURAL STEEL (W-BEAMS):

All beams and field splice plates, and all diaphragms and connection plates attached to horizontally curved beams are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in Subsection 807.05. This work and material will not be paid for directly, but shall be considered subsidiary to the item "Structural Steel in Beam Spans (M 270, Gr. ___)".

All beams in continuous units and simple spans with field splices shall be blocked in their true position in the shop in groups as specified in Subsection 807.54(b)(2) with the webs horizontal. The camber, length of sections, distance between bearings, and openings of joints shall be measured and this information shall become part of the permanent records. The component parts shall be match marked in this assembly and these marks shall be shown on the erection diagram.

All beams in simple spans without field splices shall be blocked in their true position with webs horizontal. The camber, distance between bearings, and openings of joints shall be measured and this information shall become part of the permanent records.

Flange field splice plates shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses.

All beam dimensions are based on a temperature of 60 degrees F. A tolerance of ¼" +/- is allowed for camber.

Bent plate diaphragms for horizontally curved beams shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses. Bent plate diaphragms for straight beams may be cut and fabricated in accordance with Subsection 807.35 or as required for horizontally curved beams.

Unless otherwise noted, diaphragms shall be installed as beams are erected. All bolts in diaphragms and field splices shall be installed and tightened in accordance with Subsection 807.71 prior to pouring the concrete deck.

STRUCTURAL STEEL (PLATE GIRDERS):

All references to cross-frames shall include "X" or "K" types.

All girder web and flange plates, all field splice plates, and all diaphragms, cross-frames and connection plates attached to horizontally curved girders are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in Subsection 807.05. This work and material will not be paid for directly, but shall be considered subsidiary to the item "Structural Steel in Plate Girder Spans (M 270, Gr. ___)".

All girders in continuous units and simple spans with field splices shall be assembled in the shop as specified in Subsection 807.54(b)(2) and blocked in their true position with webs horizontal. The camber, length of sections, distance between bearings, and openings of joints shall be measured and this information shall become part of the permanent records. The component parts shall be match marked in this assembly and these marks shall be shown on the erection diagram.

All girders in simple spans without field splices shall be blocked in their true position with webs horizontal. The camber, distance between bearings, and openings of joints shall be measured and this information shall become part of the permanent records.

Web and flange plates for main members and flange splice plates for main members shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses.

Girder webs may be made by shop splicing with minimum lengths of 25 feet for sections. Flange plates longer than 50 feet may be made by shop splicing with minimum lengths of 25 feet for sections. No additional payment will be made for shop welded splices.

All girder dimensions are based on a temperature of 60 degrees F. A tolerance of ¼" +/- is allowed for camber.

Groove welds in web and flange plates shall be Quality Control (Q.C.) tested by nondestructive testing, as required in Subsection 807.23(b). Fillet welds at flange to web plate connections shall be Q.C. tested by the magnetic particle method. All Q.C. testing shall be considered subsidiary to the item "Structural Steel in Plate Girder Spans (M 270, Gr. ___)".

Bent plate diaphragms for horizontally curved girders shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses. Bent plate diaphragms for straight girders may be cut and fabricated in accordance with Subsection 807.35 or as required for horizontally curved girders.

Unless otherwise noted, cross-frames and diaphragms shall be installed as girders are erected. All bolts in cross-frames, diaphragms, and field splices shall be installed and tightened in accordance with Subsection 807.71 prior to pouring the concrete deck.

SUBSTRUCTURE NOTES:

CONCRETE:

Unless otherwise noted, concrete in caps, columns and footings (except seal footings) shall be Class "S" with a minimum 28 day compressive strength f'c = 3,500 psi and shall be poured in the dry. Seal Concrete for footings shall have a minimum 28 day compressive strength f'c = 2,100 psi.

Concrete in drilled shafts shall be Class "S" as modified by Job SP "Drilled Shaft Foundations".

All exposed corners shall be chamfered ¾" unless otherwise noted.

REINFORCING STEEL:

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

Top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

STRUCTURAL STEEL:

Structural steel in end bents shall be AASHTO M 270 with grade and payment as specified in the plans.

FOR ADDITIONAL INFORMATION AND NOTES, SEE LAYOUT(S) AND PLAN DETAILS.

FOR ADDITIONAL INFORMATION AND NOTES, SEE LAYOUT(S) AND PLAN DETAILS.

STANDARD GENERAL NOTES
FOR STEEL BRIDGE STRUCTURES

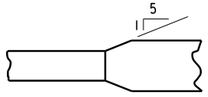
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: A.M.S. DATE: 9-2-2015 FILENAME: b55006.dgn
CHECKED BY: B.E.F. DATE: 9-2-2015 SCALE: NO SCALE
DESIGNED BY: STD. DATE:

DRAWING NO. 55006

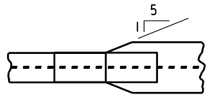
PRINT DATE: 11/7/2019

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	STEEL BRIDGE STRUCTURES 55007			

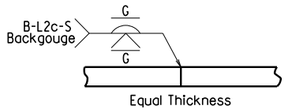


Plan-Unequal Width (Flg.)

FLANGE SPLICE

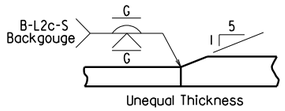


FLANGE SPLICE AT UNEQUAL BOTTOM FLANGE WIDTHS



Equal Thickness

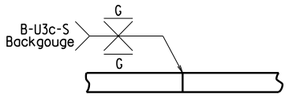
WEB & FLANGE SPLICE



Unequal Thickness

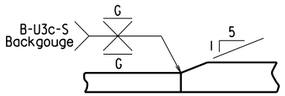
FLANGE SPLICE

(Use when Base Metal Thickness is Equal to or Less than 2")



Equal Thickness

WEB & FLANGE SPLICE

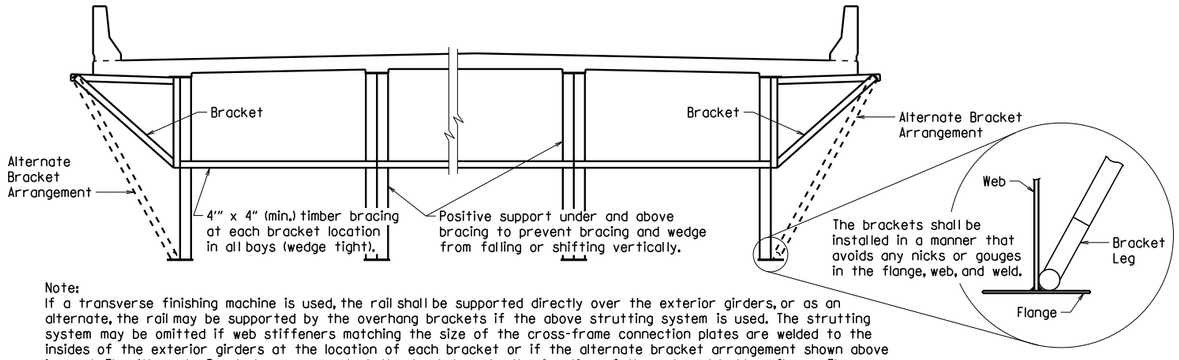


Unequal Thickness

FLANGE SPLICE

(Use when Base Metal Thickness is Greater than 2")

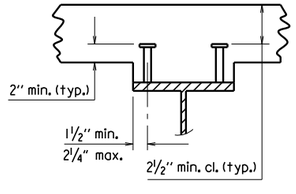
DETAILS OF WELDED SPLICES FOR PLATE GIRDERS



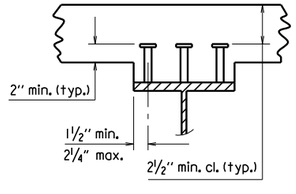
Note:
If a transverse finishing machine is used, the rail shall be supported directly over the exterior girders, or as an alternate, the rail may be supported by the overhang brackets if the above strutting system is used. The strutting system may be omitted if web stiffeners matching the size of the cross-frame connection plates are welded to the insides of the exterior girders at the location of each bracket or if the alternate bracket arrangement shown above is used. The Alternate Bracket arrangement shall extend down to the junction of the web and bottom flange. The stiffener shall conform to the details for cross frame connection plates shown on the plans. No direct payment will be made for brackets, timber bracing, supports, or welded stiffeners. Payment shall be subsidiary to "Structural Steel in Plate Girder Spans (___)".

SCREED RAIL SUPPORT FOR PLATE GIRDERS

(USE WHEN WEB DEPTHS ARE 48" OR GREATER)



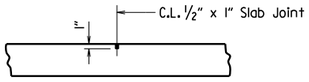
2 STUDS PER ROW



3 STUDS PER ROW

Stud Shear Connectors shall be automatically end welded to the beam or girder flange in accordance with the recommendations of the Manufacturer. See plan details for number and size.

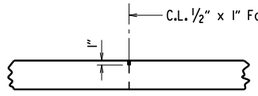
SHEAR CONNECTOR DETAIL



Use Type 3 or 4 Joint Sealer. See Subsections 501.02(h) and 501.05(j). Backer Rod filler will not be required. Joint Sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. Slab Joints shall extend to the outside edge of the deck slab and shall align with open joints at the front face of the parapet. Slab joints shall be installed before the parapet 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.

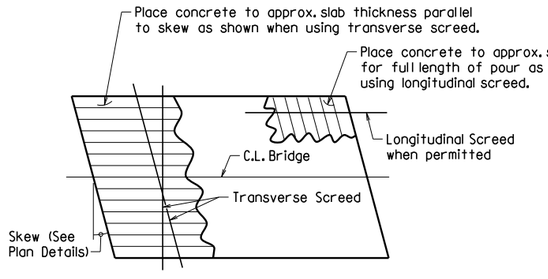
ADDITIONAL NOTES IF SIDEWALKS OR RAISED MEDIANS ARE REQUIRED:
Slab Joints shall be installed before the sidewalk or raised median is poured. After installation of the joint in the sidewalk or raised median and prior to pouring the parapet rail, the joint sealer shall be placed extending across the deck slab from gutterline to gutterline and acrosss the top of the sidwalk or raised median to the edge of the slab. No joint sealer shall be placed on the deck slab under the sidewalk or raised median.

TRANSVERSE SLAB JOINT DETAIL



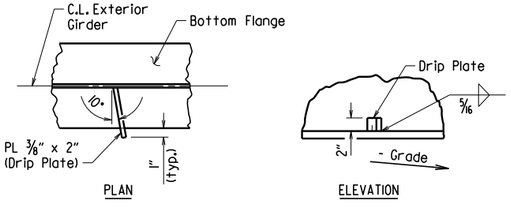
Use ½" x 1" Type 3 or 4 Joint Sealer. See Subsections 501.02(h) and 501.05(j). Backer Rod filler will not be required. Joint sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. This joint shall be formed. Seal color shall be gray or other color similar to concrete.

LONGITUDINAL CONSTRUCTION JOINT



Note: At the Contractor's option, the transverse screed may be placed parallel to the skew or perpendicular to C. L. Bridge.

CONCRETE PLACEMENT PROCEDURE FOR BRIDGES WITH SKEW



PLAN

ELEVATION

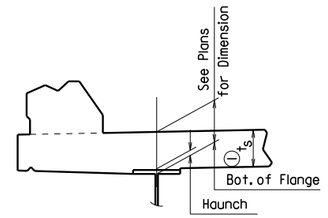
Drip Plate to be welded to the outer side of the bottom flange of the exterior girders.

Locate drip plate 5'-0" from C.L. Bearing on high side of each Bent, unless otherwise noted in the plans.

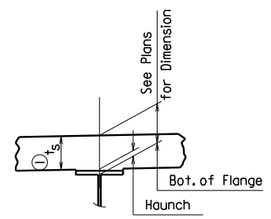
BOTTOM FLANGE DRIP PLATE

(USE WHEN WEB DEPTHS ARE 54" OR GREATER AND UNIT OR SPAN IS NOT IN LEVEL GRADE)

t_s = slab thickness. See "Typical Roadway Section" in the plans.



EXTERIOR BEAM OR GIRDER



INTERIOR BEAM OR GIRDER

① Tolerance when removable deck forming is used is + ½", - ¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

NOTES:
Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance: Minimum occurs when top flange contacts bottom reinforcing steel; Maximum = top flange thickness plus 1¾" unless otherwise noted in the plans. No increase in concrete and structural steel quantities will be made to maintain tolerances.

Tolerances shown are applicable only when removable deck forming is used. See Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

NOTE: Working Point matches Theoretical Roadway Grade.

ROUNDING DETAIL

BRIDGES IN NORMAL CROWN

WELD TABLE

Material Thickness of Thicker Part Joined (Inches)	Minimum Size of Fillet Weld (Inches)	Single Pass Weld Must Be Used
To ¾" Inclusive	¼"	
Over ¾"	⅝"	

NOTE: When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.

SECTION AND SUBSECTION REFER TO THE ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2014 EDITION).

THESE DETAILS ARE APPLICABLE UNLESS OTHERWISE SHOWN IN THE PLAN DETAILS, SPECIAL PROVISIONS, OR SUPPLEMENTAL SPECIFICATIONS.

STANDARD DETAILS FOR STEEL BRIDGE STRUCTURES

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

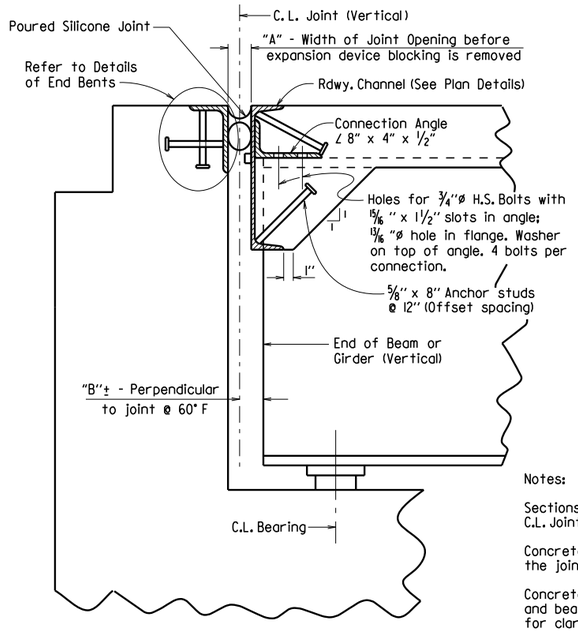
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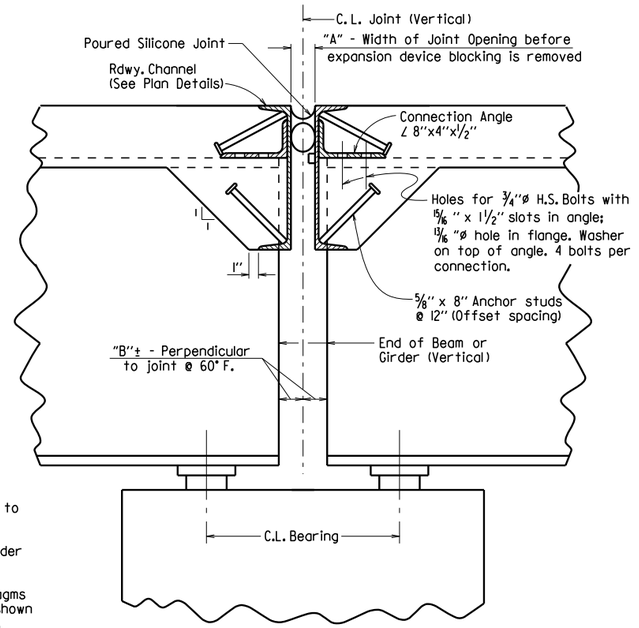
DESIGNED BY: STD. DATE: —

DRAWING NO. 55007

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				6	ARK.			
				JOB NO.				
				①	POURED SILICONE JOINT			55008



SECTION THRU JOINT AT END BENT



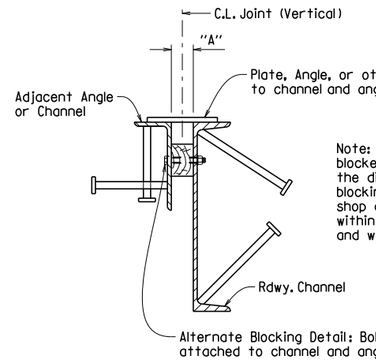
SECTION THRU JOINT AT INTERMEDIATE BENT

Notes:

Sections are taken perpendicular to C.L. Joint.

Concrete shall be hand packed under the joint armor.

Concrete diaphragms, steel diaphragms and bearing stiffeners are not shown for clarity. See plans for details.



Note: Each expansion joint device shall be blocked in the Shop by the Fabricator to the dimension "A" shown for 60° F and the blocking details shall be shown on the shop drawings. Blocking shall be placed within 2 feet of each end of the device and with a maximum spacing of 8 feet.

DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

EXPANSION DEVICE INSTALLATION AT END BENTS:

The Contractor may elect to install the expansion device using one of the following two alternatives:

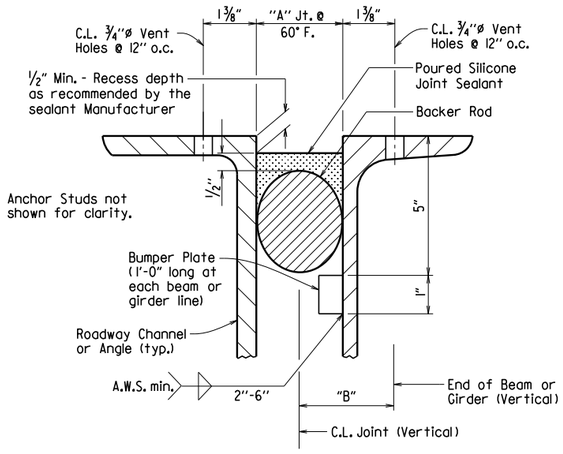
1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the beams or girders erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed, and the opening adjusted for temperature and grade.

2) The backwall shall be poured to the optional construction joint after beams or girders are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature and grade.

EXPANSION DEVICE INSTALLATION AT INTERMEDIATE BENTS:

After all beams or girders on each side of the joint are erected the blocked expansion device shall be installed and adjusted for grade. Deck concrete shall be placed for the entire unit or span on one side of the joint before deck concrete on the other side is placed. Connection bolts for the first side to have deck concrete placed shall be completely bolted. Bolts on the other side shall be loosely installed so that thermal and rotational movements will not be restricted during concrete placement on the first side.

Connection bolts on the second side shall remain loose until the concrete pour adjacent to the joint is to be placed. Immediately prior to pouring the span concrete on the second side, the blocking shall be removed, the joint adjusted for temperature and grade, and the connection bolts tightened.



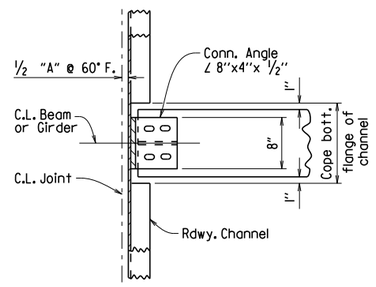
DETAIL OF POURED SILICONE JOINT

Silicone joint material and installation shall conform to Section 809. The temperature limitations recommended by the sealant Manufacturer shall be observed. The sealant shall be installed only when the average 24 hour air temperature is between 40° and 80° F.

Use an appropriately sized backer rod at the depth shown in the Manufacturer's literature based on the joint width at the time of sealing. Unless otherwise noted, do not install more backer rod than can be sealed in the same day.

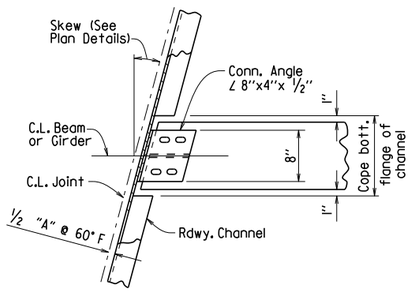
The Contractor shall verify separation of the backer rod from the joint material after the joint material has set.

When bridge deck is constructed in stages, backer rods shall be extended beyond length of poured joint in initial construction stage so that the two pieces can be properly spliced together prior to installing sealant in subsequent stages. Manufacturer's recommendations shall be followed to prevent sealant from "running out of joint" during stage construction.



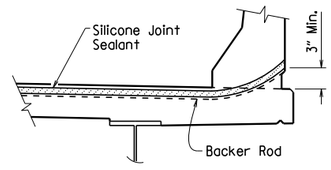
CHANNEL CONNECTION DETAIL

BENTS WITHOUT SKEW

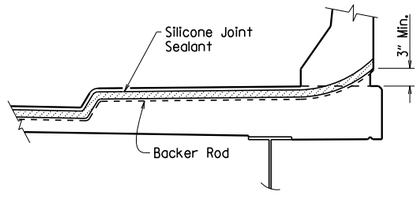


CHANNEL CONNECTION DETAIL

BENTS WITH SKEW



JOINT SEAL PLACEMENT AT RAIL



JOINT SEAL PLACEMENT AT SIDEWALK

SECTION AND SUBSECTION REFER TO THE ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2014 EDITION).

THESE DETAILS ARE APPLICABLE UNLESS OTHERWISE SHOWN IN THE PLAN DETAILS, SPECIAL PROVISIONS, OR SUPPLEMENTAL SPECIFICATIONS. SEE "TABLE OF SILICONE JOINT DATA" IN PLAN DETAILS FOR VARIABLES "A" AND "B", AND BUMPER PLATE SIZE.

STANDARD DETAILS FOR POURED SILICONE JOINTS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: A.C.P. DATE: 2/11/2016 FILENAME: b55008.dgn

CHECKED BY: A.M.S. DATE: 2/11/2016 SCALE: No Scale

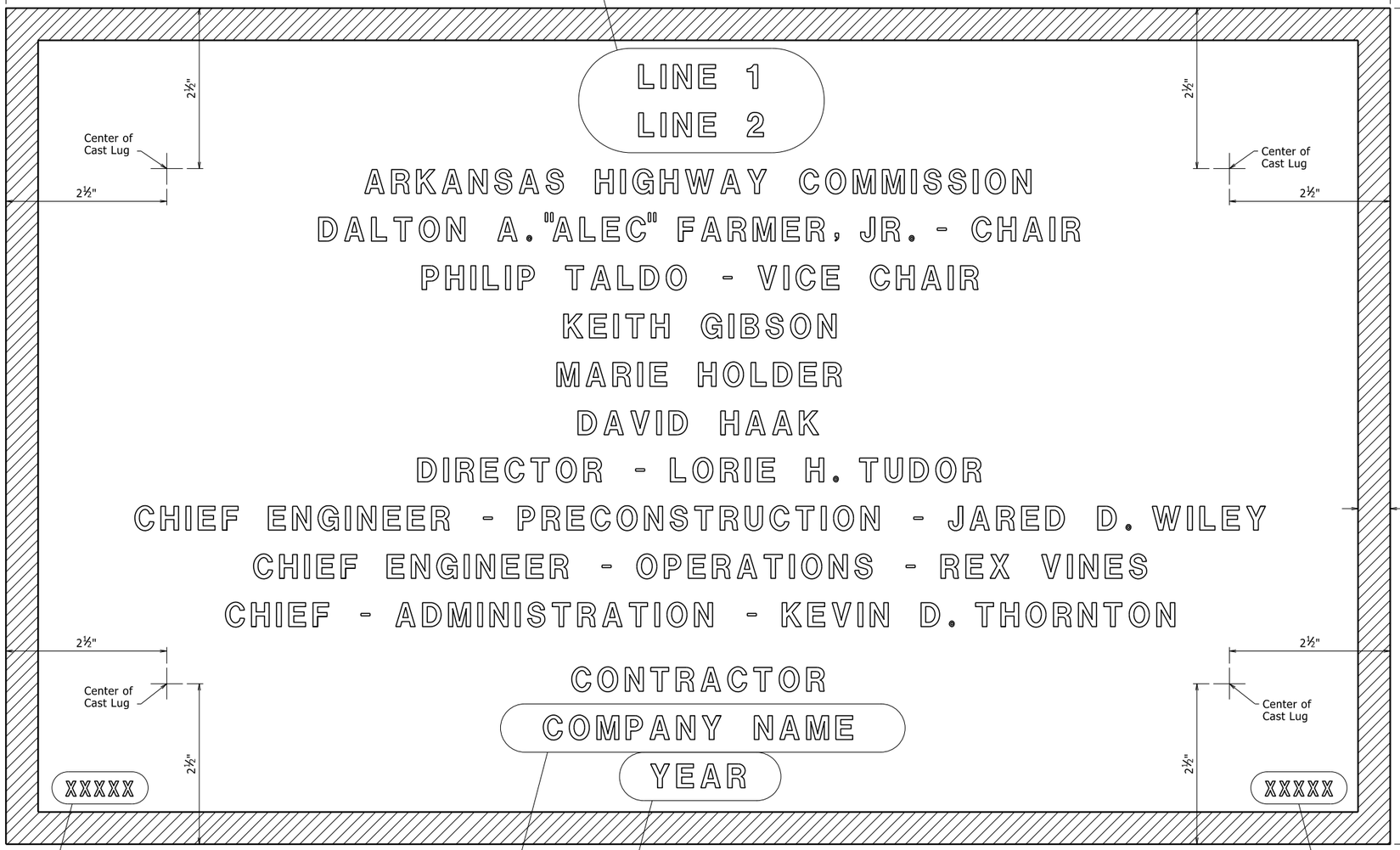
DESIGNED BY: STD. DATE: —

DRAWING NO. 55008

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	



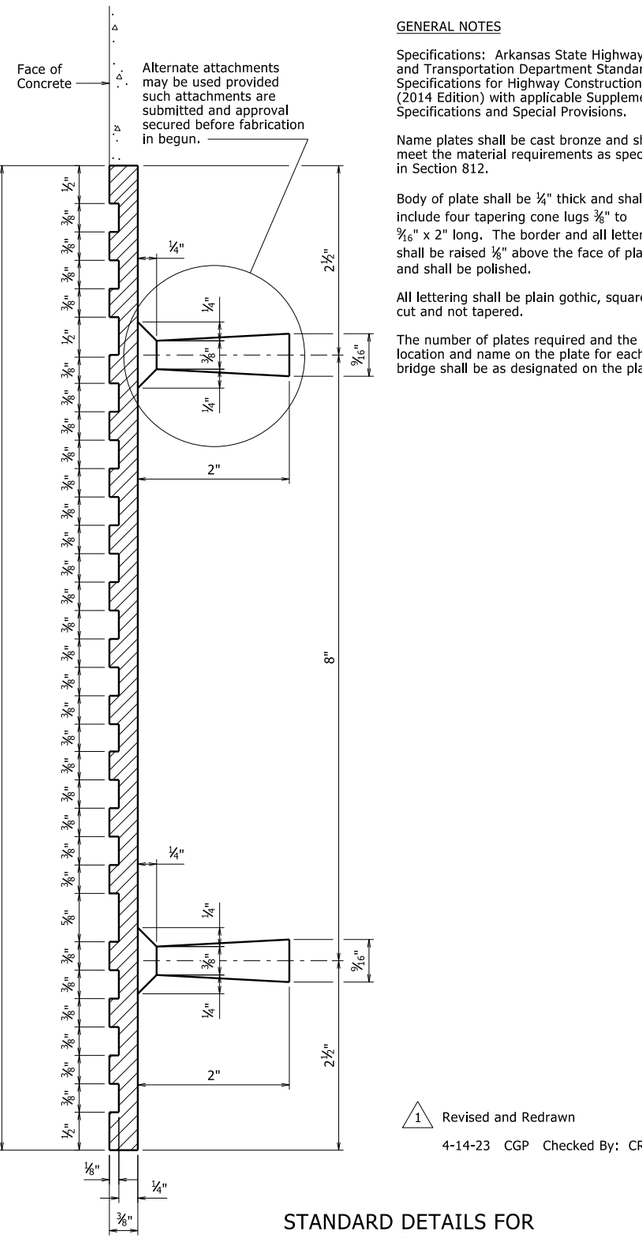
Place the design live loading here using ⅛" raised letters and numerals ¼" high. Examples: HS20, HL-93

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 H-PILES		55020

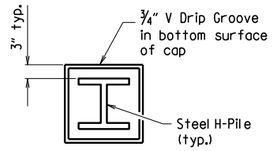
GENERAL NOTES FOR STEEL H-PILES:

Steel H-Piles shall conform to AASHTO M 270, Grade 36 or greater.

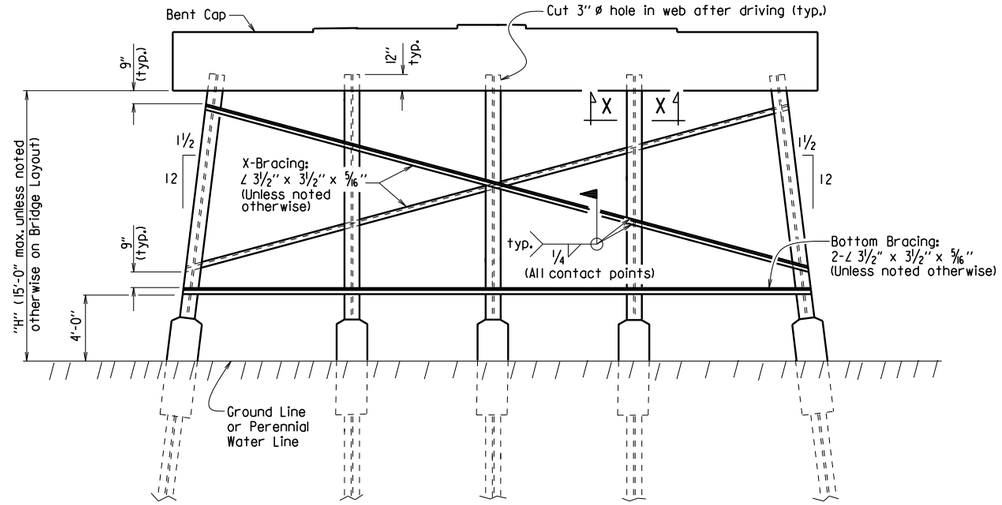
See Bridge Layout and Bent Details for pile size, estimated length, spacing, pile anchorage (if required) and for driving information.

Steel H-Piles that extend above the ground and are not protected by pile encasement shall be painted in accordance with Subsection 805.02.

Brackets, lugs, cap plates, pile tips, driving points, pile painting, splicing and welding shall not be paid for directly, but shall be considered subsidiary to the item "Steel Piling".



VIEW X-X



Notes:
All bracing shall be cut and welded in the field. Each brace shall be furnished in one piece. Payment shall be made under Item 807.

Unless noted otherwise, omit X-Bracing when "H" is less than 8 feet.

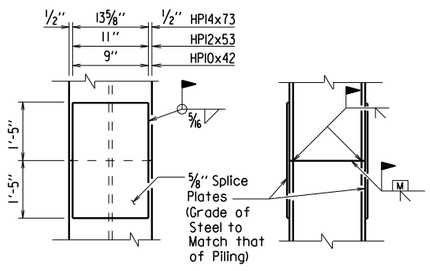
Omit X-Bracing and Bottom Bracing when "H" is 5 feet or less.

When required on the Bridge Layout sheet, pile encasements shall be constructed. See Notes and Details for H-Pile Encasements.

Omit all bracing (and V-groove in cap) when pile encasement is extended to bottom of bent cap.

TYPICAL DETAILS OF H-PILE TRESTLE INTERMEDIATE BENT

(Shown with Partial Height Encasement)



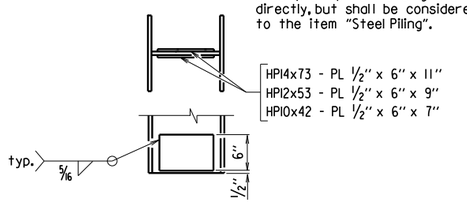
The Contractor may for his own convenience and at his own expense provide as many as three splices per pile. Minimum spacing between splices shall be 5 feet.

TYPICAL SPLICE DETAILS

⚠ H-pile splicers manufactured by Associated Pile and Fitting Corporation, LB Foster Piling, Skyline Steel or equivalent may be used in lieu of the "Typical Splice Details" shown. H-pile splicers shall match the same grade of steel specified for the piling and shall be welded to the pile with a 5/16" fillet weld around the entire perimeter of the splice. Flanges shall be welded with a complete penetration groove weld complying with AASHTO/AWS Joint Designation B-U4a or B-U4b. All welding shall conform to Subsection 807.26 of the AHTD Standard Specifcations for Highway Construction (2014 Edition).

Notes:
Steel pile tip reinforcing not required when approved H-Pile driving points are used.

Steel pile tip reinforcing shall not be paid for directly, but shall be considered subsidiary to the item "Steel Piling".



REINFORCING DETAIL FOR STEEL H-PILE TIP

GENERAL NOTES FOR H-PILE ENCASEMENTS:

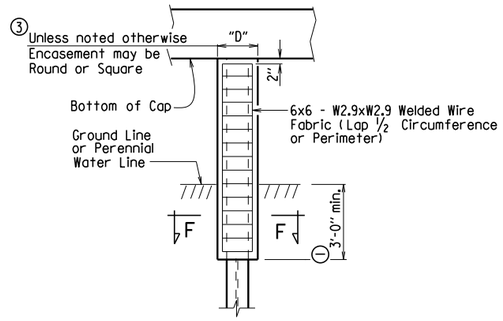
⚠ See Bridge Layout for additional notes, any pile encasement restrictions and required location of pile encasements.

All 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.

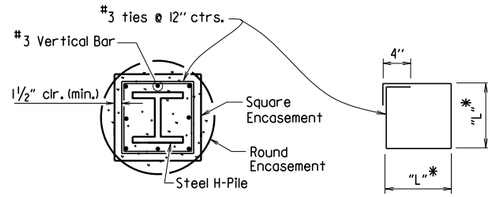
Welded Wire Fabric shall conform to AASHTO M 55 or M 221. Galvanized Corrugated Steel Pipe shall conform to AASHTO M 36 and M 218.

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".



PILE ENCASEMENT DETAIL FOR STEEL H-PILES

④ (Shown with Encasement to Bottom of Cap)

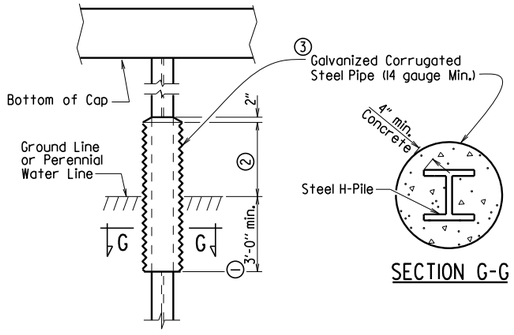


SECTION F-F

*Measured out-to-out of bar.

TABLE OF VARIABLES FOR PILE ENCASEMENT

Pile Size	"D" Square Encsmt.	"D" Round Encsmt.	"L"*
HPI0x42	1'-7"	2'-0"	1'-4"
HPI2x53	1'-8"	2'-2"	1'-5"
HPI4x73	1'-11"	2'-6"	1'-8"



SECTION G-G

① Unless otherwise noted on Bridge Layout.

② 3'-0" minimum or as shown on Bridge Layout.

③ Encasement dimensions shall be sized to maintain a minimum concrete cover of 4" from the H-Pile. Reinforcement shall be sized to provide a minimum concrete cover of 1½" and a minimum clearance of 1¼" from the pile.

④ Alternate pile encasement, when not extended to bottom of cap, shall have 2" concrete taper for water runoff as shown in the Partial Height Encasement detail.

ALTERNATE PILE ENCASEMENT DETAIL FOR STEEL H-PILES

(Shown with Partial Height Encasement)

⚠ Added alternate method of splicing H-piles and revised pile encasement note.
3/24/2016 AMS

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 STEEL H-PILES AND PILE ENCASEMENTS

ARKANSAS STATE HIGHWAY COMMISSION

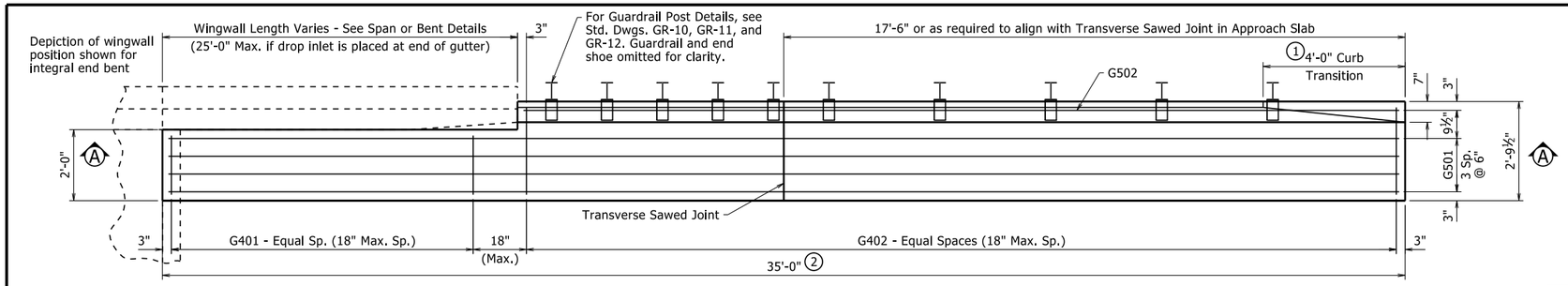
LITTLE ROCK, ARK.

DRAWN BY: A.M.S. DATE: 2/27/2014 FILENAME: b55020.dgn
CHECKED BY: B.E.F. DATE: 2/27/2014 SCALE: NO SCALE
DESIGNED BY: STD. DATE: —

DRAWING NO. 55020

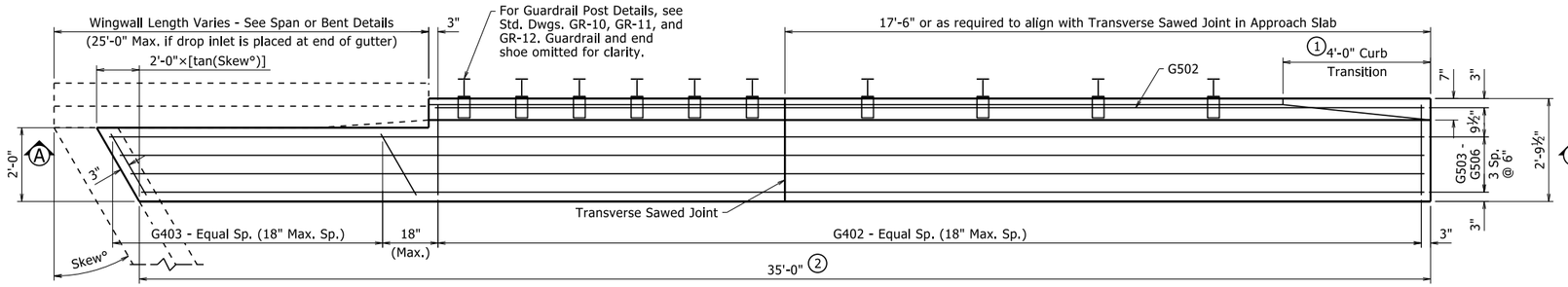
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.				

① Type F Approach Gutters - 55030F

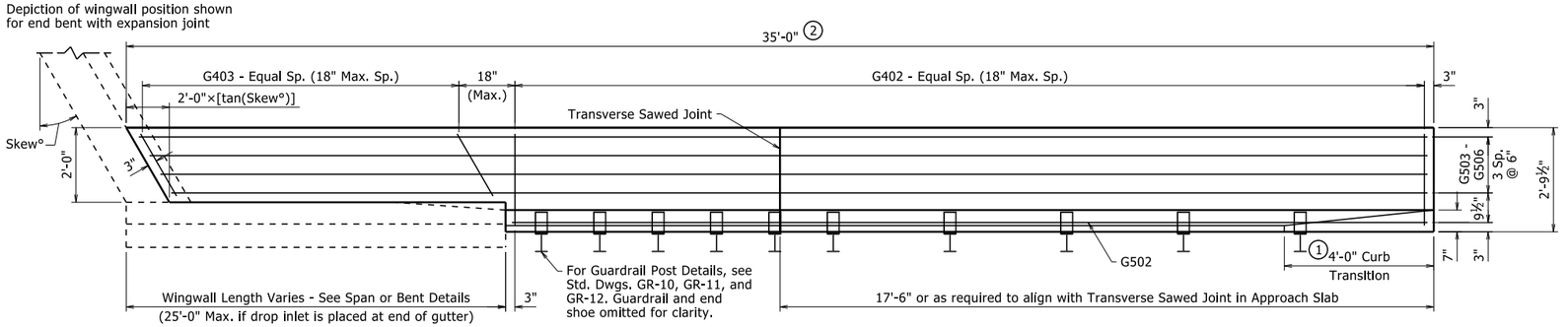


HALF PLAN OF APPROACH GUTTERS FOR SQUARE END BENT

½" = 1'-0"

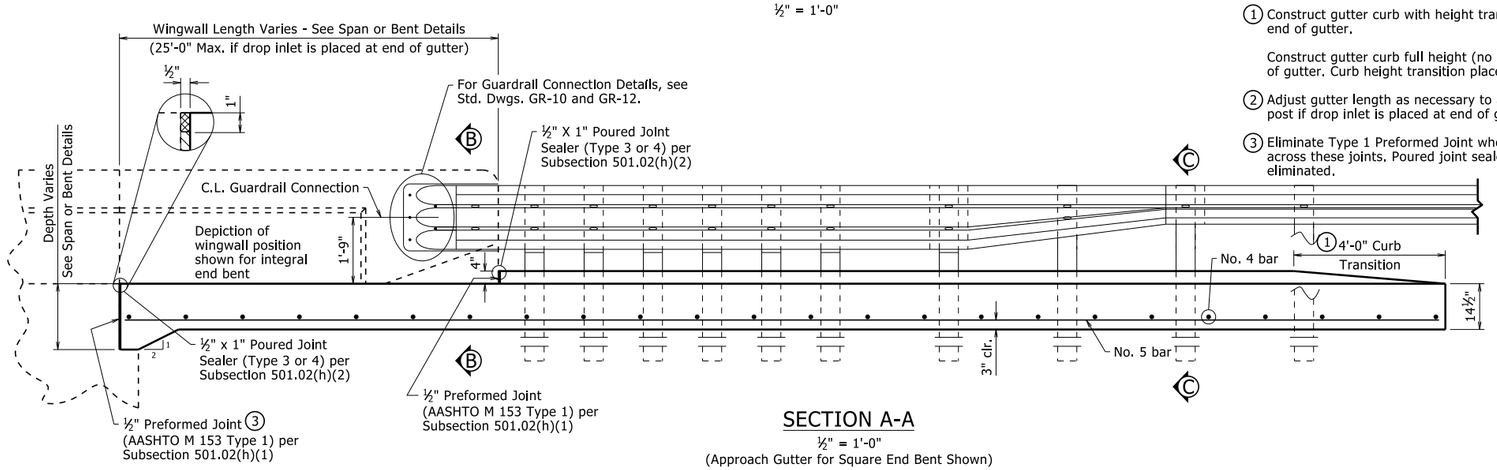


Depiction of wingwall position shown for end bent with expansion joint



PLAN OF SKEWED APPROACH GUTTERS FOR SKEWED END BENT

½" = 1'-0"



SECTION A-A

½" = 1'-0"

(Approach Gutter for Square End Bent Shown)

QUANTITIES FOR ONE APPROACH GUTTER

(For Information Only)

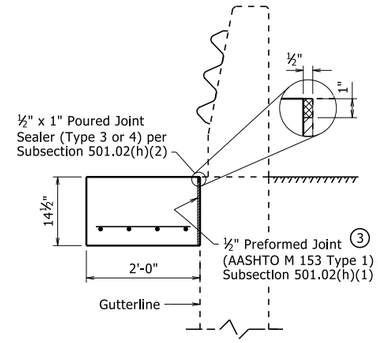
Reinforcing Steel (Lbs.)	Concrete (Cu. Yds.)
210	4.20

Quantities are based on one gutter for a square, integral end bent and a wingwall length of 10'-0"

BAR LIST FOR ONE APPROACH GUTTER

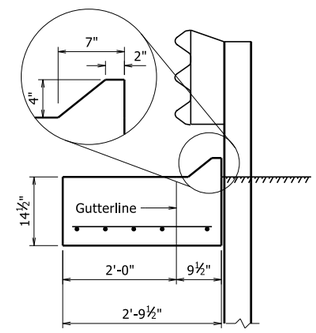
	Mark	No. Req'd.	Length
Square End Bent	G401	④	1'-8"
	G402	④	2'-5½"
	G501	4	34'-8"
	G502	1	④
Skewed End Bent	G402	④	2'-5½"
	G403	④	④
	G502	1	④
	G503 - G506	1 ea.	④

④ Varies with Skew and/or Wingwall Length



SECTION B-B

¾" = 1'-0"



SECTION C-C

¾" = 1'-0"

① Construct gutter curb with height transition as shown if drop inlet is not placed at end of gutter.

Construct gutter curb full height (no height transition) if drop inlet is placed at end of gutter. Curb height transition placed on drop inlet.

② Adjust gutter length as necessary to avoid outlet pipe interference with guardrail post if drop inlet is placed at end of gutter.

③ Eliminate Type 1 Preformed Joint when bridge details show reinforcing dowels across these joints. Poured joint sealer is required, however, backer rod shall be eliminated.

GENERAL NOTES

All concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi and shall be poured in the dry.

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

Approach Gutters will be measured and paid for in accordance with Section 504.

All longitudinal lines within the limits of horizontal curves shall be on curves concentric to C.L. Bridge. Adjustment to longitudinal bar lengths may be required. Transverse reinforcing shall be placed on radial lines to C.L. Bridge.

Scales shown are for 22"x34" drawings. When using 11"x17" drawings, reduce scale by one half.

STANDARD DETAILS FOR TYPE F APPROACH GUTTERS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: NAC DATE: 4-8-2021 FILENAME: b55030f.dgn

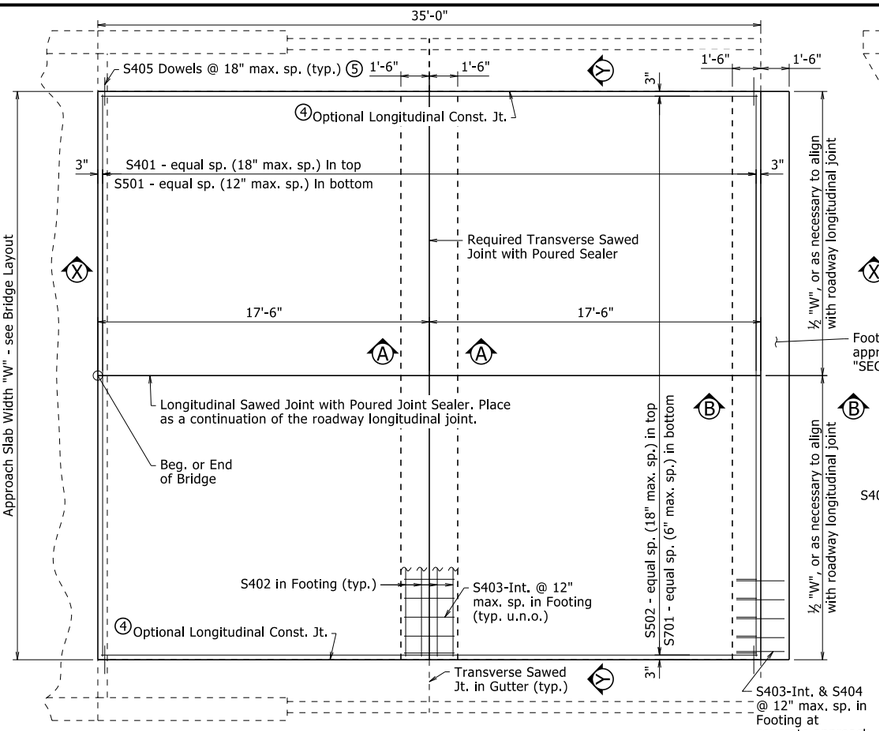
CHECKED BY: LJB DATE: 4-8-2021 SCALE: AS NOTED

DESIGNED BY: STD DATE: -

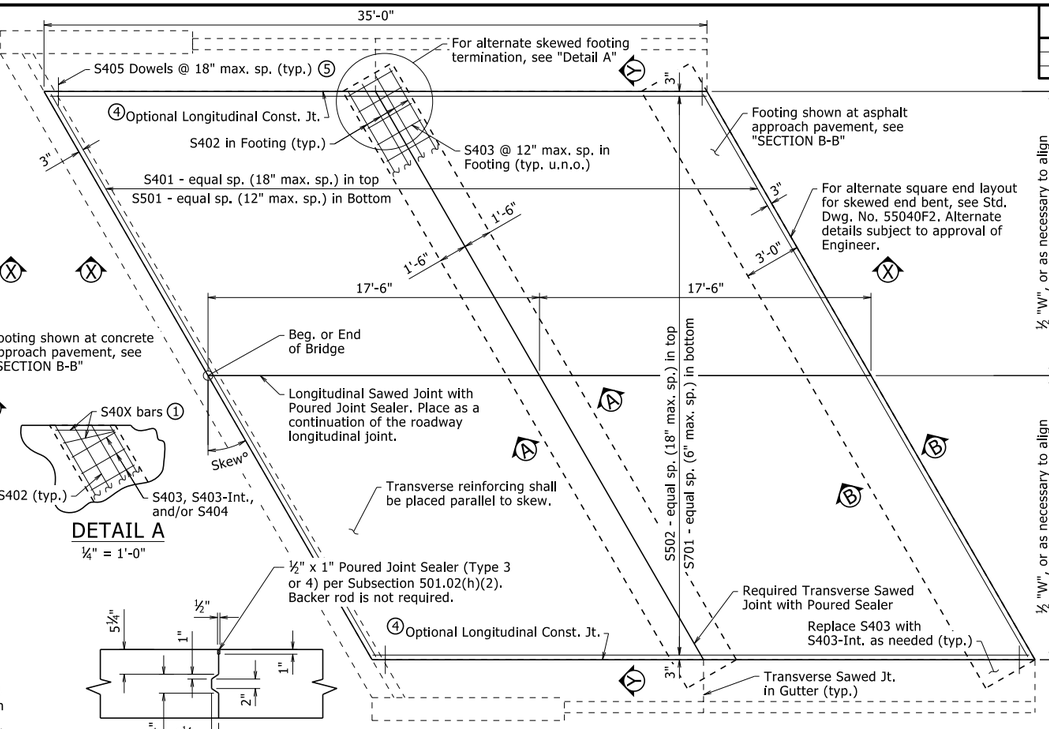
DRAWING NO. 55030F

PRINT DATE: 9/8/2023

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.			
		Type F Approach Slab - 55040F1				

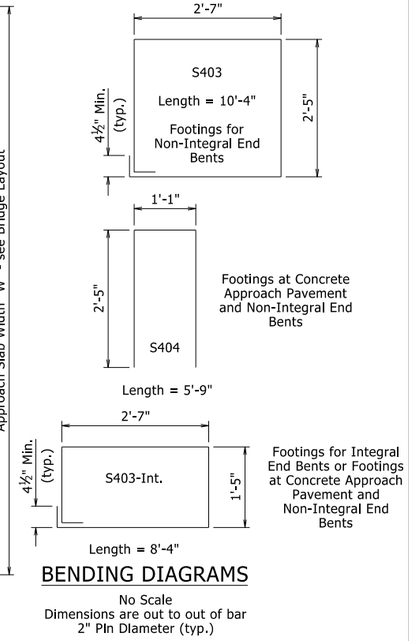


PLAN - APPROACH SLAB AT SQUARE END BENT



LONGITUDINAL CONSTRUCTION JOINT

½" = 1'-0"

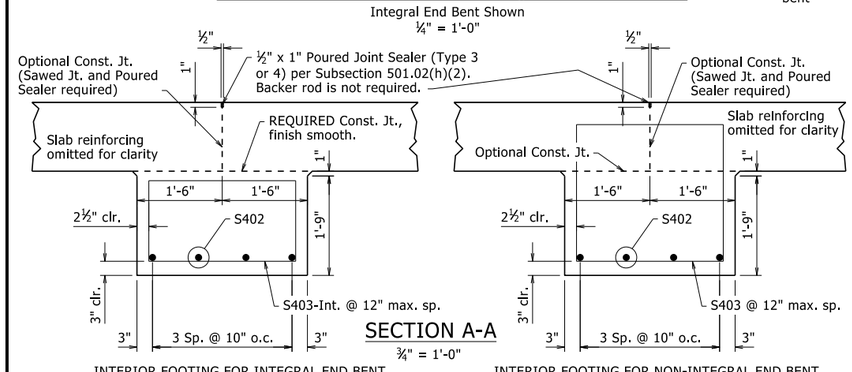


BENDING DIAGRAMS

No Scale
Dimensions are out to out of bar
2" PIn Diameter (typ.)

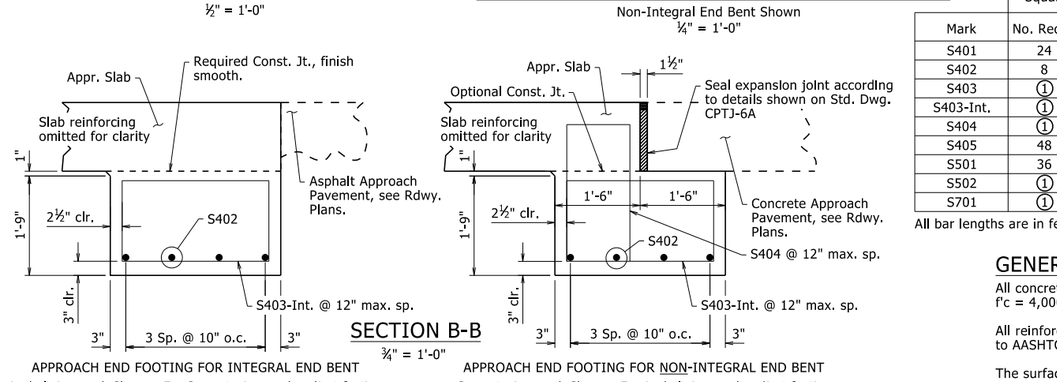
PLAN - APPROACH SLAB AT SKEWED END BENT

Non-Integral End Bent Shown
¼" = 1'-0"



INTERIOR FOOTING FOR INTEGRAL END BENT

INTERIOR FOOTING FOR NON-INTEGRAL END BENT



APPROACH END FOOTING FOR INTEGRAL END BENT

Asphalt Approach Shown. For Concrete Approach, adjust footing location by 1'-6" to add paving notch and include expansion joint.

APPROACH END FOOTING FOR NON-INTEGRAL END BENT

Concrete Approach Shown. For Asphalt Approach, adjust footing location by 1'-6", omit expansion joint, and replace bars S403-Int. & S404 with S403.

BAR LIST - PER APPROACH SLAB

	Square End Bent		Skewed End Bent	
Mark	No. Req'd.	Length	No. Req'd.	Length
S401	24	"W" - 0.33'	24	("W" - 0.33') / cos (Skew°)
S402	8	"W" - 0.33'	8	"W"/cos(Skew°) + 3.0'×tan(Skew°) - 0.33'
S403	①	②	①	②
S403-Int.	①	②	①	②
S404	①	②	①	②
S405	48	1'-6"	48	1'-6"
S501	36	"W" - 0.33'	36	("W" - 0.33') / cos (Skew°)
S502	①	34'-8"	①	34'-8"
S701	①	34'-8"	①	34'-8"

All bar lengths are in feet.

① Varies with Approach Slab Type, Width and/or Skew.
② See "BENDING DIAGRAMS"

GENERAL NOTES

All concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi and shall be poured in the dry.

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

The surface finish for Approach Slabs shall match that used on the bridge deck.

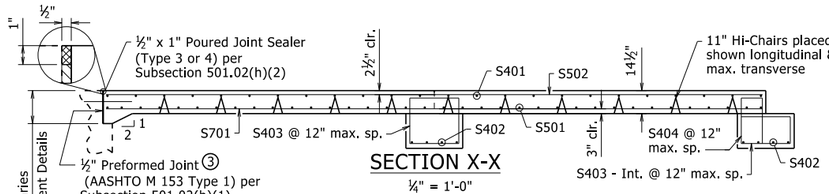
All longitudinal lines within the limits of horizontal curves shall be on curves concentric to C.L. Bridge. Adjustment to longitudinal bar lengths may be required. Transverse reinforcing shall be placed on radial lines to C.L. Bridge.

See Plans for actual Approach Slab Width, "W", end bent or span details, and approach pavement. Units of "W" are in Feet.

Approach Slabs will be measured and paid for in accordance with Section 504.

Scales shown are for full size 22"x34" drawings. When using 11"x17" drawings, reduce scale by one half.

For Table of Quantities, see "SCHEDULE OF BRIDGE QUANTITIES".



Approach Slab for Square Non-Integral End Bent at Concrete Approach Shown

MINIMUM BAR LAP LENGTH

#4	1'-8"
#5	2'-0"
#7	2'-10"

③ Eliminate Type 1 Preformed Joint when bridge details show reinforcing dowels across these joints. Poured joint sealer is required, however, backer rod shall be eliminated.

④ When construction joint is eliminated, place 1" Sawed Joint with ½" x 1" Poured Joint Sealer (Type 3 or 4) per Subsection 501.02(h)(2). Backer rod is not required.

⑤ Eliminate dowels when approach slab is adjacent to curb and gutter, or as directed by the Engineer.

The document was originally issued and sealed by Charles R. Ellis, PE No. 9235, on September 7, 2023. This copy is not a signed and sealed document.

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

BRIDGE ENGINEER

STANDARD DETAILS FOR TYPE F APPROACH SLAB

ARKANSAS STATE HIGHWAY COMMISSION

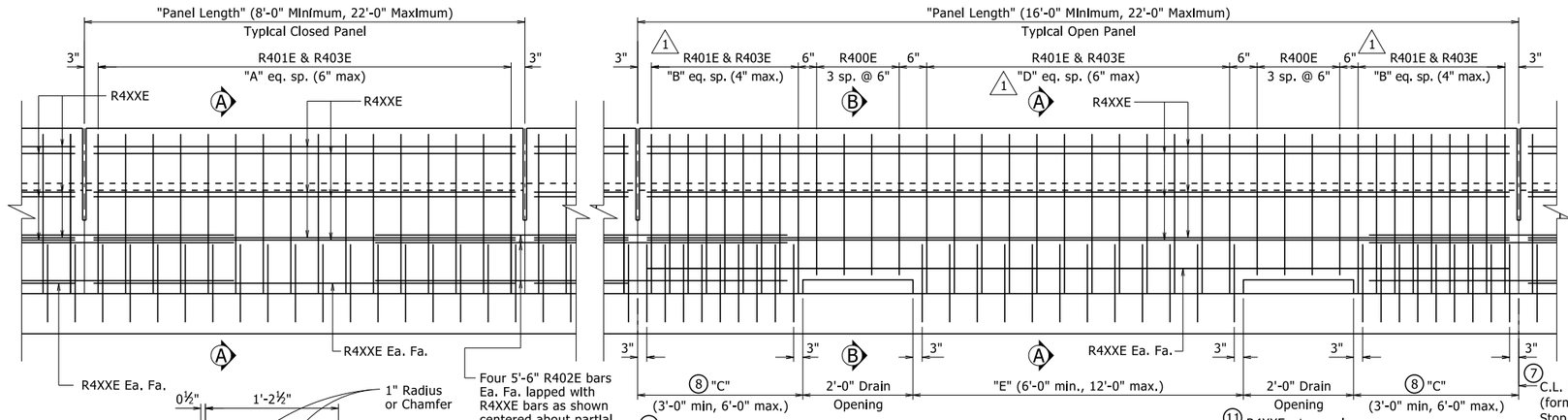
LITTLE ROCK, ARK.

DRAWN BY:	CGP	DATE:	05/12/2023	FILENAME:	b55040f.dgn
CHECKED BY:	JYP	DATE:	05/15/2023	SCALE:	AS NOTED
DESIGNED BY:	STD.	DATE:	-		

DRAWING NO. 55040F1

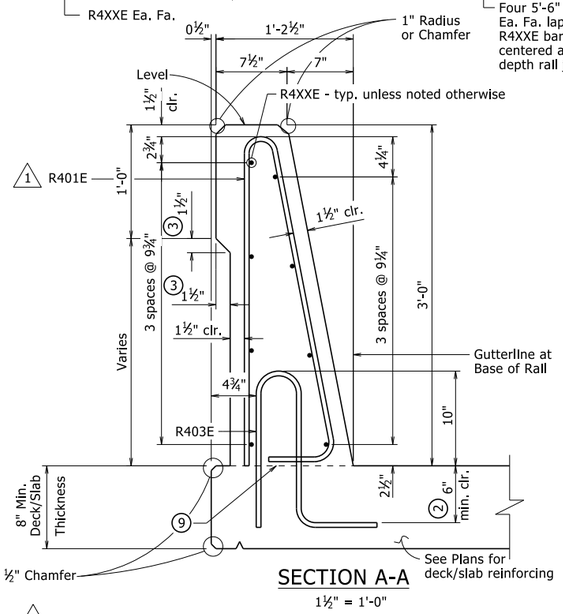
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
09/27/2022				6	ARK.			
				JOB NO.				

TYPE SSTR36 - 55070



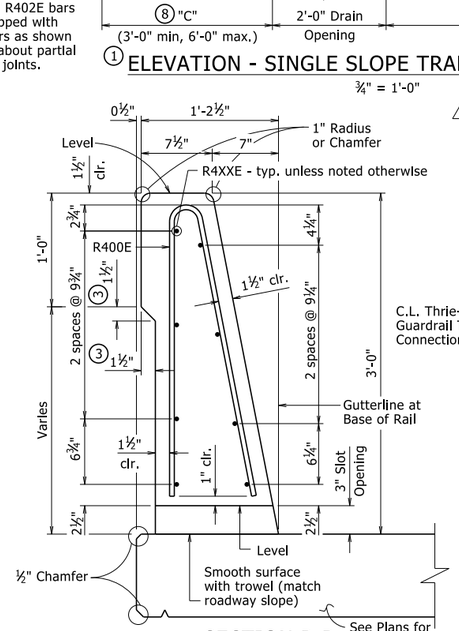
① ELEVATION - SINGLE SLOPE TRAFFIC RAIL

¾" = 1'-0"



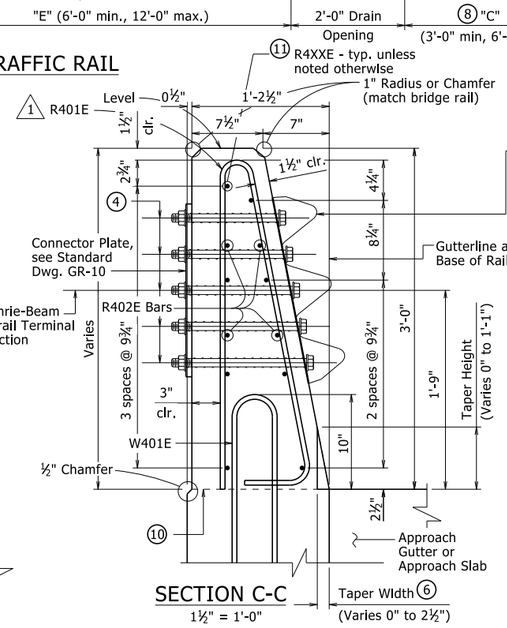
SECTION A-A

1½" = 1'-0"



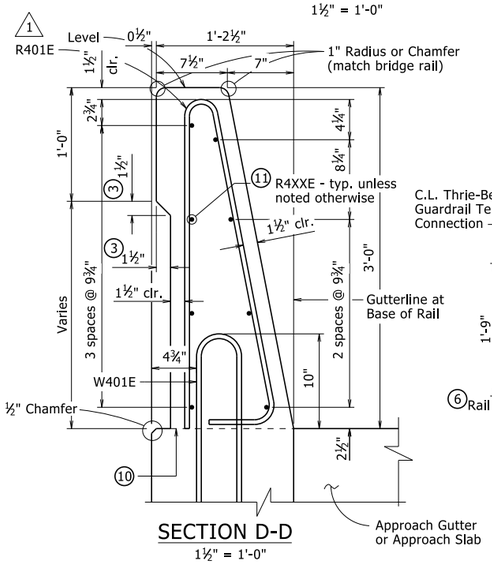
SECTION B-B

1½" = 1'-0"



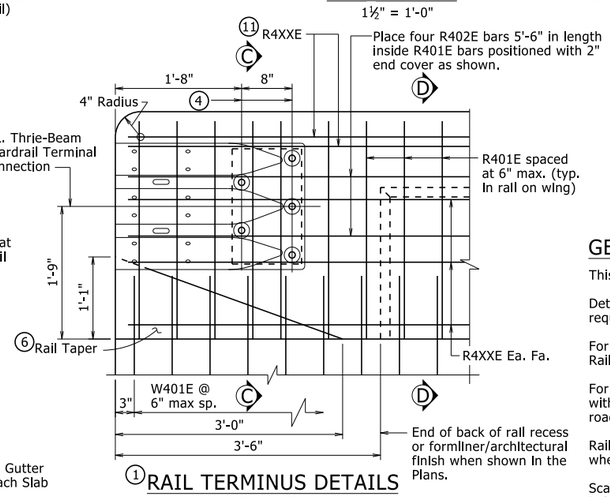
SECTION C-C

1½" = 1'-0"



SECTION D-D

1½" = 1'-0"



① RAIL TERMINUS DETAILS

1" = 1'-0"

⑦ C.L. Full-Depth Rail Joint (formed width ¼" to 1" max). Stop 6" from top of deck/slab or sidewalk. Place at all intermediate bents locations where rail is continuous.

⑦ C.L. Partial-Depth Rail Joint (formed width ¼" to 1" max). Stop 16" from top of deck/slab or sidewalk. Place at all remaining locations other than at intermediate bents.

① All measurements shown are along gutterline at base of rail.

② Minimum embedment into deck/slab.

③ Eliminate recess when formliner with architectural finish is used. See Plans for additional information.

④ C.L. 1" ø formed holes for ⅞" ø bolts. See Standard Drawings GR-10 and GR-12 for additional information.

⑤ Only applicable for bridges with rail cast directly on bridge deck/slab surface. Increase height as necessary for sidewalks, see Plans for additional information.

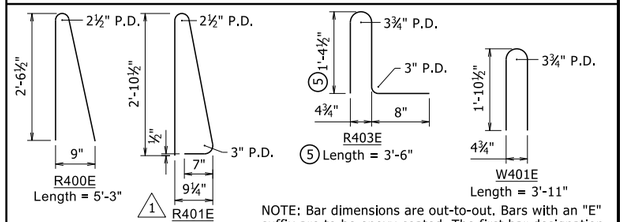
⑥ Field bend front leg of R401E bar as required to maintain minimum 1½" front face clearance within limits of taper.

⑦ When optional slip forming is used: to control cracking, all rail joints must be V-grooved around the perimeter of the rail prior to concrete set and sawing. Depth of V-groove shall be ½". Sawing of the joints shall be done as soon as practical to a width of ¼", and must be controlled so it will follow the V-Groove.

⑧ End posts shall be the same length within a panel.

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.

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.

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.

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.

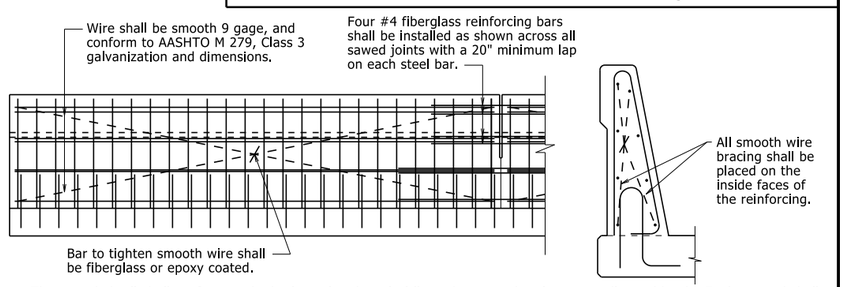
Details shown are general for bridges without sidewalks. See Plans for additional details and requirements specific to bridges with sidewalks.

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.



The extruded rail shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and texture. Unless otherwise noted, exposed surfaces may be given a light brush finish or a Class 3, Textured Coating Finish in place of Class 2, Rubbed Finish.

All panels shall be braced as required to prevent racking.

Slip forming will not be allowed on bridges where formliner with architectural treatment is used unless approval from the Engineer is obtained.

DETAILS OF OPTIONAL SLIP FORMING OF BRIDGE TRAFFIC RAIL

No Scale

△1 Modified bending diagram and spacing for R401E bar.

By: CGP, Checked by: CMW 09/27/2022

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

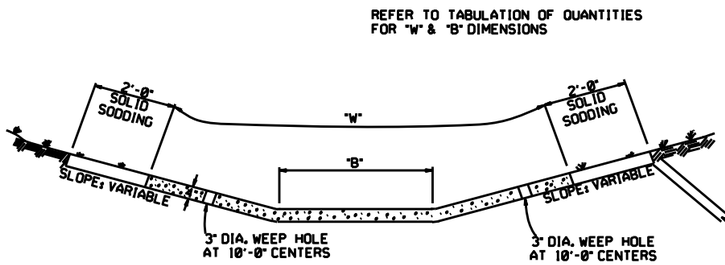
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KWY DATE: 11/5/2020
CHECKED BY: LJB DATE: 11/5/2020
DESIGNED BY: STD. DATE: -----
FILENAME: b55070.dgn
SCALE: As Noted

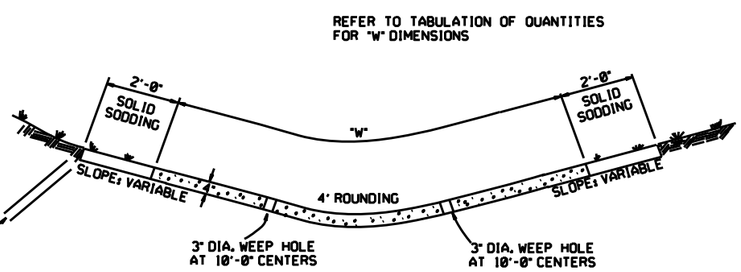
DRAWING NO. 55070

PRINT DATE: 10/6/2022



TYPE A

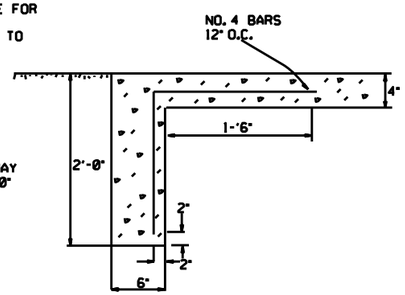
EXCAVATE TO NEAT LINES TO CONSTRUCT DITCH PAVING AND SOLID SODDING.



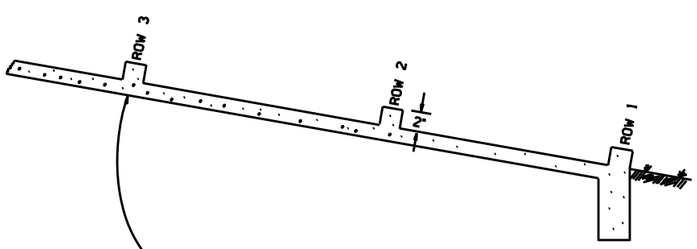
TYPE B

THE STEEL AND ADDITIONAL CONCRETE FOR THE WALLS SHALL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR "CONCRETE DITCH PAVING."

TOE WALL DEPTH MAY BE ALTERED TO 1'-0" WHEN DIRECTED BY THE ENGINEER IN ROCK EXCAVATION

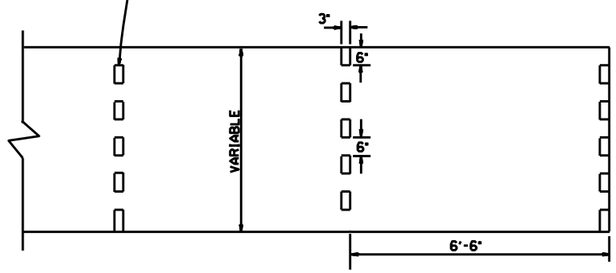


TOE WALL DETAIL FOR CONCRETE DITCH PAVING



NUMBER OF ELEMENTS PER ROW VARIES WITH WIDTH OF PAVING SPECIFIED

ENERGY DISSIPATORS TO BE USED FOR THE ENTIRE LENGTH OF DITCH WHEN SLOPE OF DITCH PAVING EXCEEDS 7%. THE DISSIPATORS WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR CONCRETE DITCH PAVING.



ENERGY DISSIPATORS
(NO SCALE)

GENERAL NOTES:

THE FULL WIDTH OF EACH SECTION SHALL BE POURED MONOLITHICALLY.

TOE WALLS TO BE CONSTRUCTED FULL WIDTH AT EACH END OF DITCH PAVING, AND POURED MONOLITHICALLY.

SOLID SOD ALONG DITCH PAVING TO BE PLACED WITHIN 14 DAYS OF DITCH PAVING CONSTRUCTION.

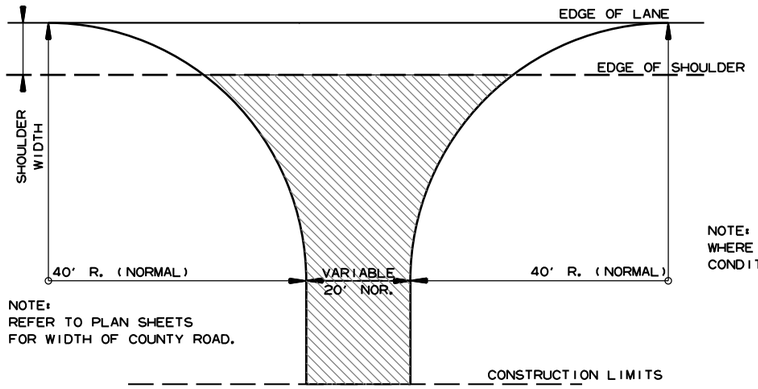
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45° INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

DATE	REVISION	DATE FILM'D
12-8-16	CORRECTED ENERGY DISSIPATOR DRAWING AND NOTE	
11-17-10	ADDED GENERAL NOTE	
6-2-94	ADDED GENERAL NOTE ABOUT SOLID SODDING	
11-30-8	ELIMINATED MIN. ROWS OF ELEMENTS	111-30-89
7-15-88	REVISED DISSIPATOR NOTE	653-7-15-88
4-3-87	REVISED ENERGY DISSIPATOR	671-4-3-87
1-9-87	MODIFIED NOTE ON ENERGY DISS.	532-1-9-87
11-3-86	ADDED NOTE TO ENERGY DISS.	599-12-1-86
11-1-84	ENERGY DISSIPATOR DETAILS ADDED	508-11-1-84
11-1-84	EXCAVATION DETAILS ADDED TYPED A & B	
10-2-72	REVISED AND REDRAWN	508-10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

STANDARD DRAWING CDP-1

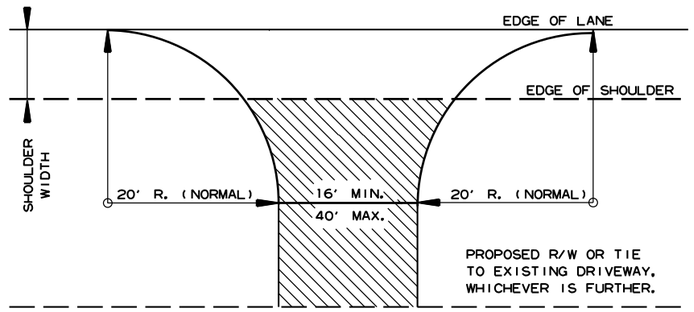


NOTE:
REFER TO PLAN SHEETS
FOR WIDTH OF COUNTY ROAD.

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.

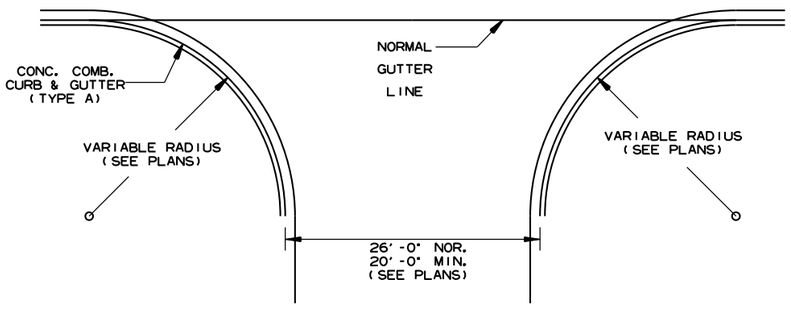
DETAIL FOR COUNTY ROAD TURNOUTS OPEN SHOULDER SECTION



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

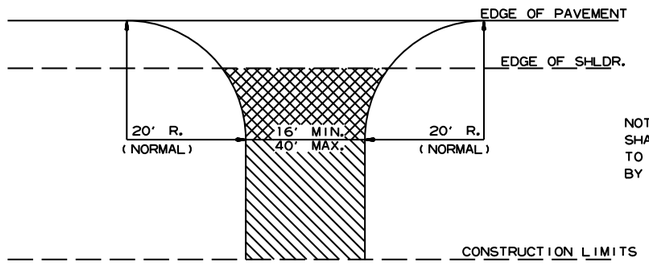
ACHM SURFACE COURSE (1/2")
(220 LBS. PER SQ. YD.) AND
AGGREGATE BASE COURSE (CLASS 7)
7" COMP. DEPTH IF ASPHALT OR
GRAVEL DRIVE EXISTING; OR 6"
CONCRETE IF CONCRETE DRIVE
EXISTING.

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

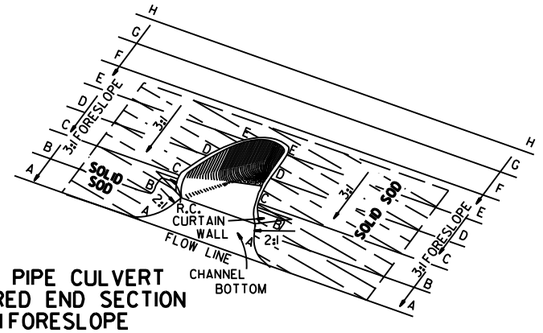
DETAIL FOR DRIVEWAY TURNOUTS (COLLECTORS)

DATE REV	DATE FILMED	DESCRIPTION
5-19-22		ISSUED

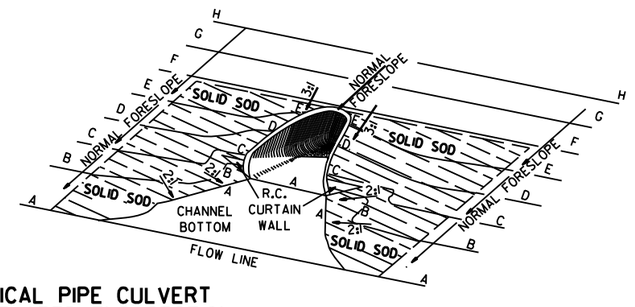
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DRIVEWAYS & STREET TURNOUTS

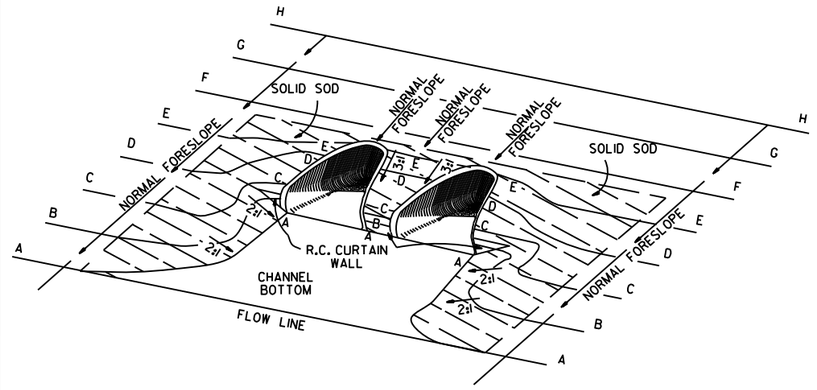
STANDARD DRAWING DR-2



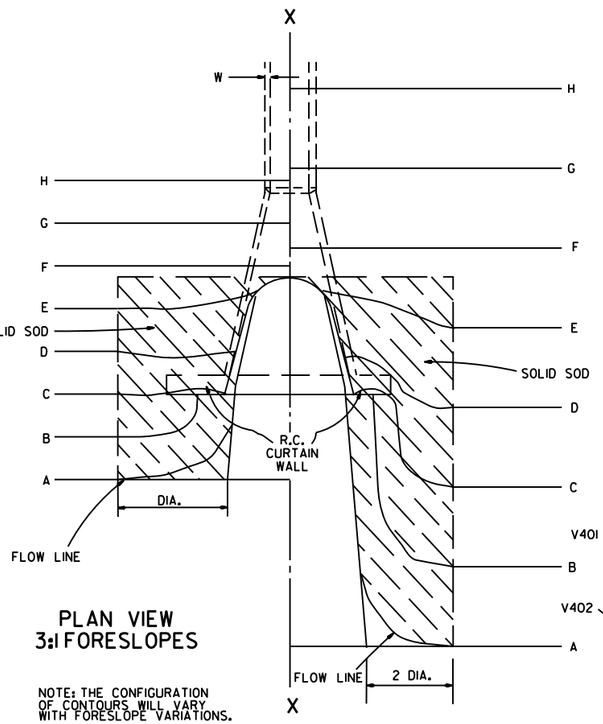
TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& 3:1 FORESLOPE



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

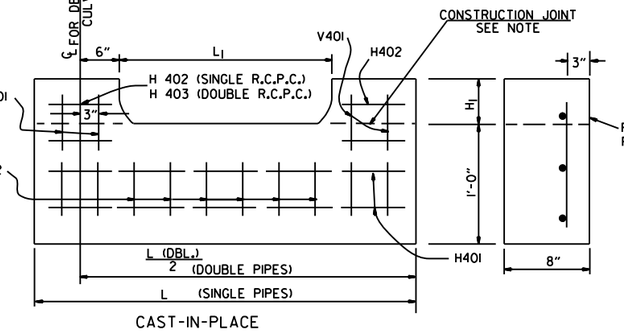
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW
FLATTENED FORESLOPES

R.C. CURTAIN WALL
DIMENSIONS & QUANTITIES

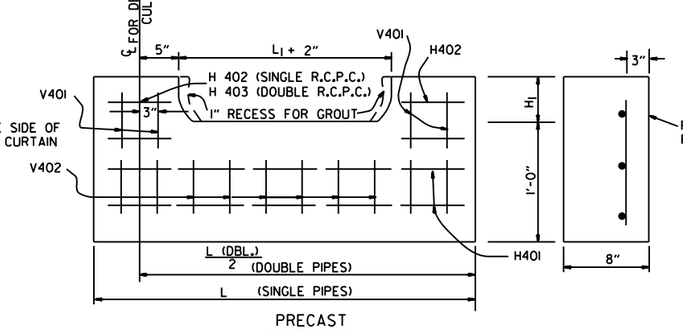
PIPE DIA.	H_1	L_1	L	L (DBL.) / 2	SINGLE R.C.P.C. CONC.	SINGLE R.C.P.C. REINF. STEEL	DOUBLE R.C.P.C. CONC.	DOUBLE R.C.P.C. REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	1'-11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	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

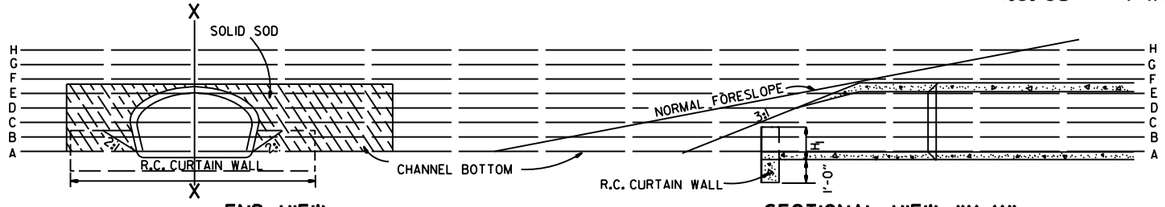
NOTE: THE PORTION OF THE R.C. CURTAIN WALL BENEATH THE FLARED END SECTION (LOWER 1'-0") SHALL BE PLACED MONOLITHICALLY. THE FLARED END SECTION SHALL THEN BE SET IN PLACE & THE REMAINING PORTIONS OF THE R.C. CURTAIN WALL PLACED.



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

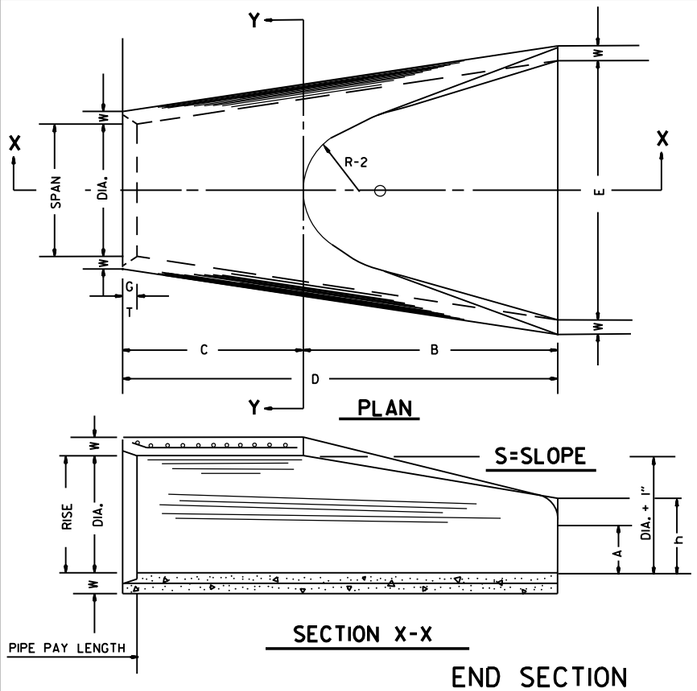
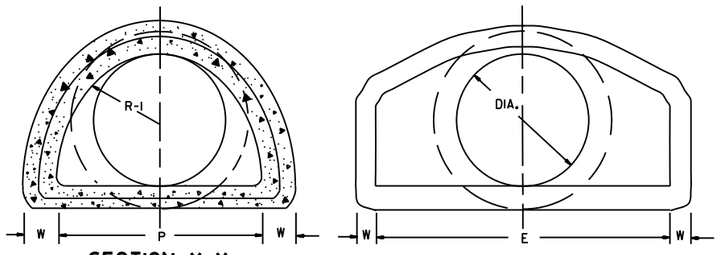


TABLE OF DIMENSIONS

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"

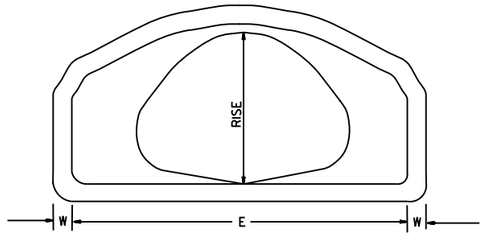


NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

ARCH PIPE

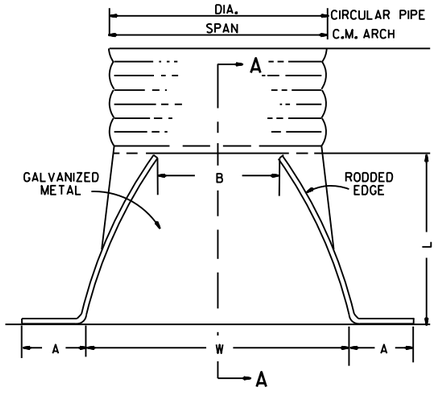
EQUIV. DIA.	• SPAN AASHTO M 206	• SPAN AHD NOMINAL	• RISE AASHTO M 206	• RISE AHD NOMINAL	W	A	B	C	D	E	P	R2	G-T	S
	INCHES													
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1½"	2½:1
18	22	22	13½	14	2½"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32⅛"	13"	2½"	2½:1
21	26	26	15½	16	2¾"	7"	2'-3"	3'-10"	6'-1"	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'-11½"	6'-1½"	6'-6"	54 5/16"	22"	3½"	2½:1
42	51⅛	51	31 5/16	31	4½"	11½"	4'-7"	1-10¼"	6'-5¼"	7'-2"	59½"	23"	3¾"	2½:1
48	58½	59	36	36	5"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	7'-10"	70 5/16"	24"	4¼"	2½:1
54	65	65	40	40	5½"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72 1/16"	24"	4¾"	2¼:1
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77 1/16"	24"	5"	2¼:1

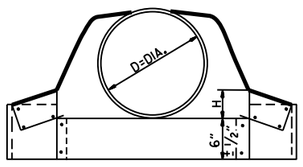
• THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.



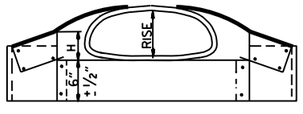
END VIEW
CONCRETE ARCH PIPE

END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS





CIRCULAR PIPE



C.M. ARCH PIPE

CIRCULAR PIPE

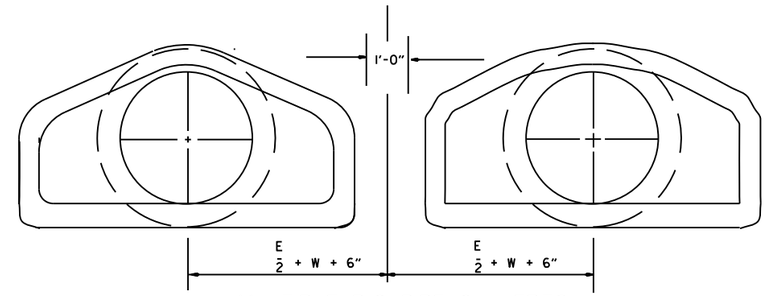
D. DIA.	GAUGE	A 1" ±	B. MAX.	H 1" ±	L 1½" ±	W 2" ±	S
		INCHES					
12	16	6	6	6	21	24	2½:1
15	16	7	8	6	26	30	2½:1
18	16	8	10	6	31	36	2½:1
21	16	9	12	6	36	42	2½:1
24	16	10	13	6	41	48	2½:1
30	14	12	16	8	51	60	2½:1
36	14	14	19	9	60	72	2½:1
42	12	16	22	11	69	84	2½:1
48	12	18	27	12	78	90	2½:1
54	12	18	30	12	84	102	2:1
60	12	18	33	12	87	114	1¾:1
66	12	18	36	12	87	120	1½:1
72	12	18	39	12	87	126	1 1/3:1

C.M. ARCH PIPE

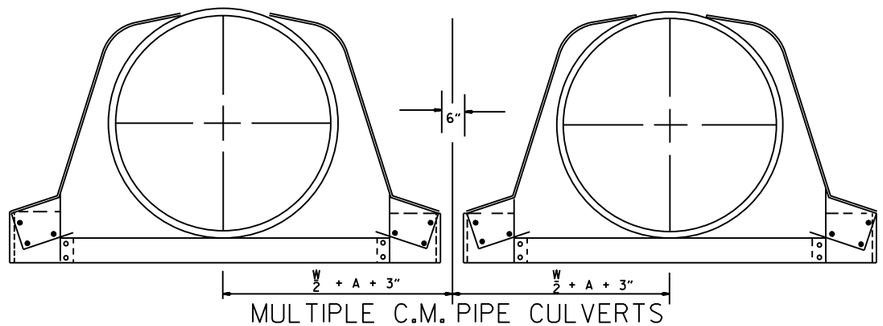
EQUIV. DIA.	SPAN	RISE	A 1" ±	B MAX.	H 1" ±	L 1½" ±	W 2" ±	S	GAUGE
	INCHES								
15"	17	13	7	9	6	19	30	2½:1	16
18"	21	15	7	10	6	23	36	2½:1	16
21"	24	18	8	12	6	28	42	2½:1	16
24"	28	20	9	14	6	32	48	2½:1	16
30"	35	24	10	16	6	39	60	2½:1	14
36"	42	29	12	18	8	46	75	2½:1	14
42"	49	33	13	21	9	53	85	2½:1	12
48"	57	38	18	26	12	63	90	2½:1	12
54"	64	43	18	30	12	70	102	2¼:1	12
60"	71	47	18	33	12	77	114	2¼:1	12

NOTE: ALTERNATE CONNECTIONS TO THE PIPE CULVERTS, IN ACCORDANCE WITH MANUFACTURER'S STANDARD PRACTICES, MAY BE MADE SUBJECT TO THE APPROVAL OF THE ENGINEER.

END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS



MULTIPLE R.C. PIPE CULVERTS



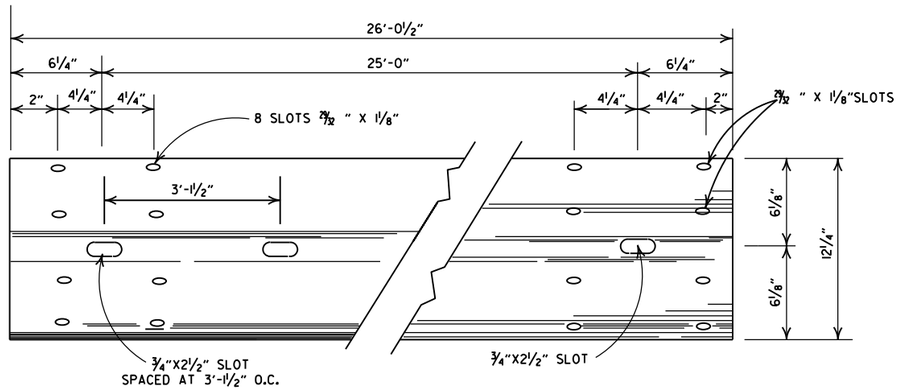
MULTIPLE C.M. PIPE CULVERTS

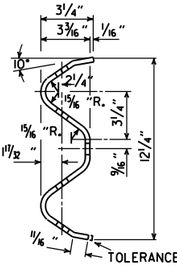
DATE	REVISION	FILMED
10-18-96	REVISED ASTM REF. TO AASHTO	
5-15-80	REVISED DISTANCE BETWEEN MULTIPLE R.C.P. F.E.S.	664-5-15-80
7-14-78	C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES	752-7-14-78
8-22-75	ADDED MULTIPLE PIPE CULVERTS	517-8-22-75
12-5-74	REMOVED NOTE RE REINF. FOR R.C. F.E.S.	500-12-5-74
5-24-73	CMP END SECTION, SHOW PIPE PAY LENGTH	627-5-24-73
10-2-72	REVISED AND REDRAWN	760-10-2-72

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FLARED END SECTION

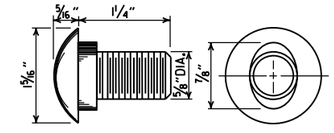
STANDARD DRAWING FES-2



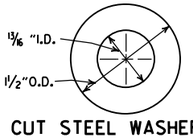


DETAILS OF W-BEAM GUARDRAIL

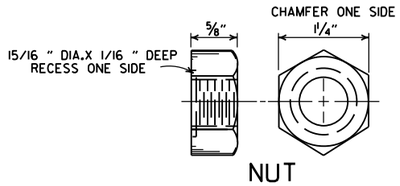
RAIL SECTION OF CLOSELY SIMILAR DIMENSIONS AND COMPARABLE STRENGTH MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.



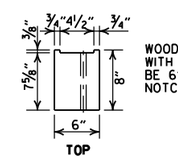
SPLICE BOLT
POST BOLT - SAME EXCEPT LENGTH



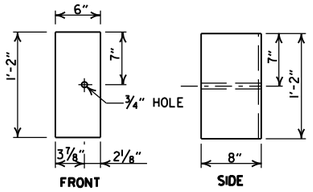
CUT STEEL WASHER



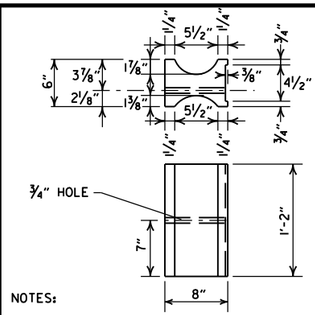
NUT



WOOD BLOCKOUT USED WITH WOOD POSTS SHALL BE 6"x8"xl'-2" WITH NO NOTCH REQUIRED.



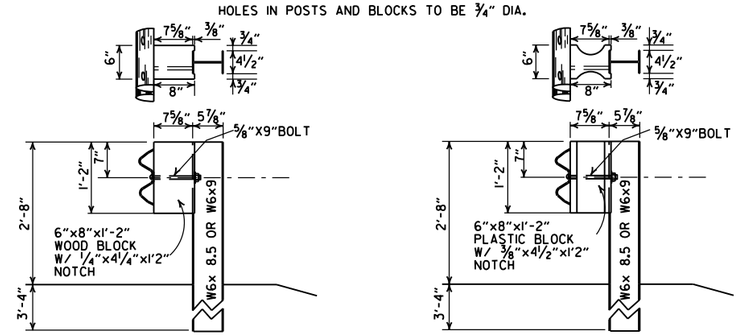
WOOD BLOCKOUT (W-BEAM)



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.

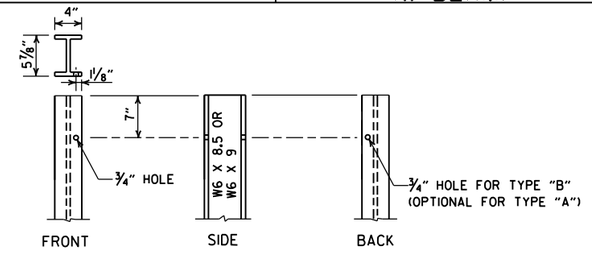
PLASTIC BLOCKOUT (W-BEAM)



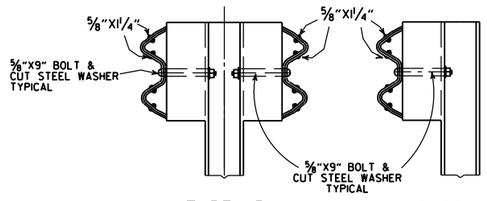
WOOD BLOCKOUT CONNECTIONS

PLASTIC BLOCKOUT CONNECTIONS

DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)



STEEL POST



TYPE "B" TYPE "A"

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 9.7f (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.

WOOD BLOCKOUT CONNECTIONS

PLASTIC BLOCKOUT CONNECTIONS

DETAILS OF WOOD LINE POST CONNECTIONS (W-BEAM)

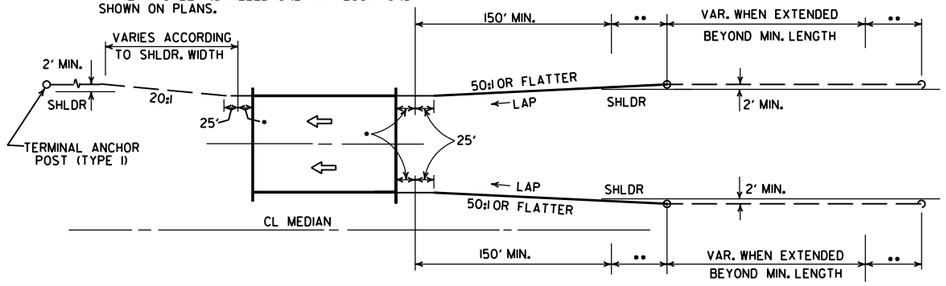
DATE	REVISION	FILMED
11-07-19	RENUMBERED AND RENAMED	
11-16-17	REVISED GENERAL NOTES AND RAISED GUARDRAIL HEIGHT 3"	
07-14-10	RAISED HEIGHT OF GUARDRAIL 1"	
10-15-09	ADDED REFERENCE TO MASH	
04-10-03	REVISED GENERAL NOTES	
08-22-02	REVISED DIMENSION ON WOOD & PLASTIC BLOCKOUT CONNECTIONS & STEEL POST	
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

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GUARDRAIL DETAILS

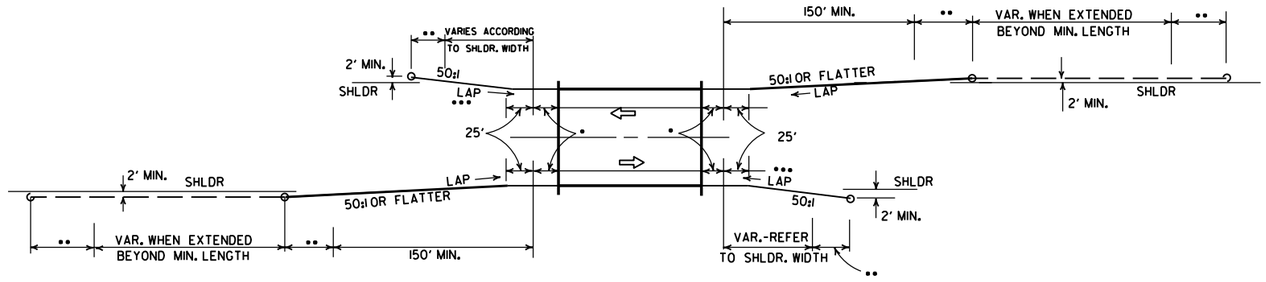
STANDARD DRAWING GR-6

NOTE: GUARDRAIL WITH GUARDRAIL TERMINAL (TYPE 1) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS.



ONE-WAY TRAFFIC

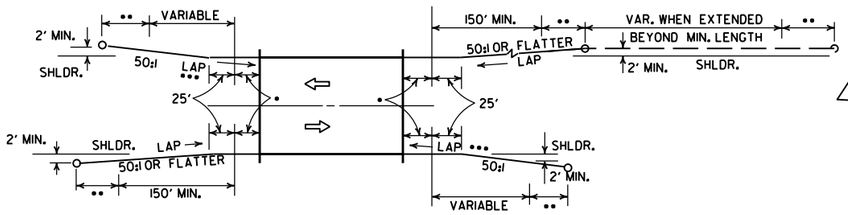
••• LAP OF GUARDRAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200'. CHANGE TO LAP IN DIRECTION OF TRAVEL.



TWO-WAY TRAFFIC

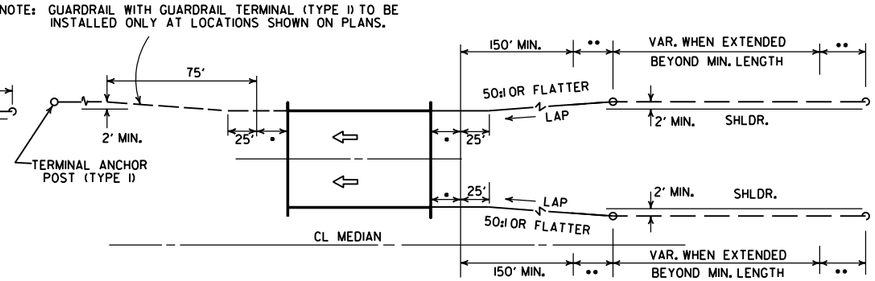
METHODS OF INSTALLATION OF GUARDRAIL AT LESS THAN FULL SHOULDER WIDTH BRIDGES USING GUARDRAIL TERMINAL (TYPE 2)

••• LAP OF GUARDRAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200'. CHANGE TO LAP IN DIRECTION OF TRAVEL.



TWO-WAY TRAFFIC

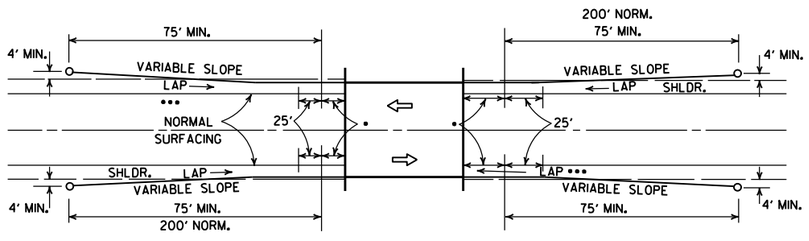
NOTE: GUARDRAIL WITH GUARDRAIL TERMINAL (TYPE 1) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS.



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

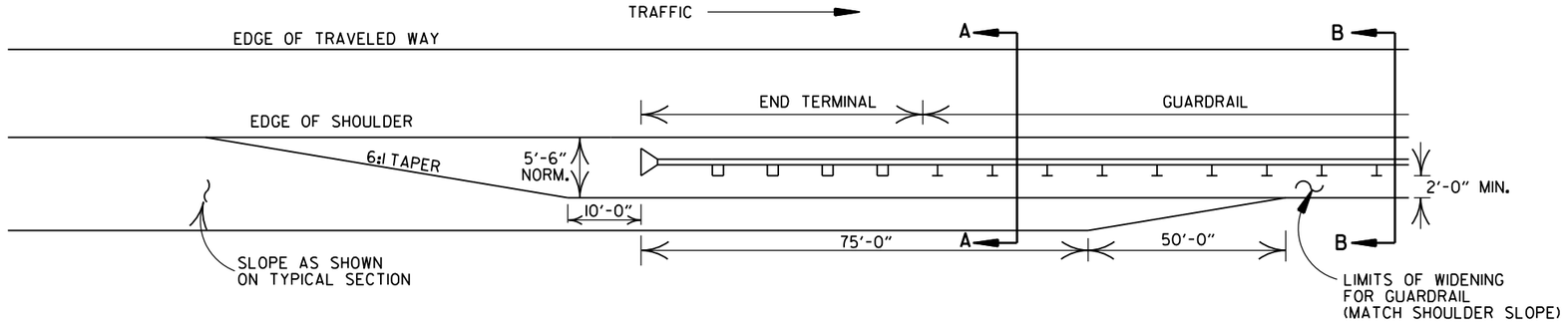
- • THRIE BEAM GUARDRAIL TERMINAL
- •• GUARDRAIL TERMINAL (TYPE 2)

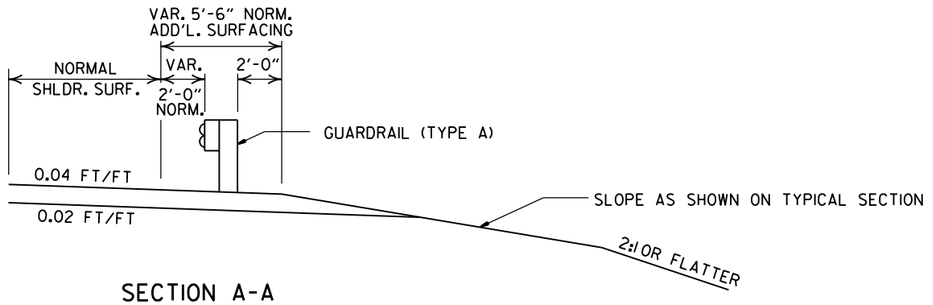
DATE	REVISION	DATE FILM
11-07-19	RENUMBERED AND RENAMED	
4-17-08	REVISED LAYOUTS	
11-10-05	REMOVED GUARDRAIL NOTES AND DETAILS	
11-16-01	DELETED NOTE-METHOD OF INSTALLATION OF GUARDRAIL USING GUARDRAIL TERM. (TY. 1)	
1-12-00	ADDED CONSTRUCTION NOTE	1-12-00
6-26-97	REVISED LAYOUT	
10-1-92	REDRAWN & REVISED	10-1-92
	ADDED NOTE	
10-9-87	REDRAWN & REVISED	

ARKANSAS STATE HIGHWAY COMMISSION

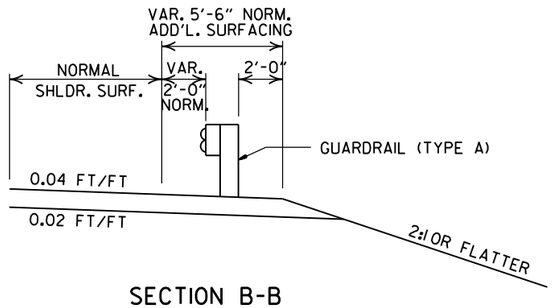
GUARDRAIL DETAILS

STANDARD DRAWING GR-8



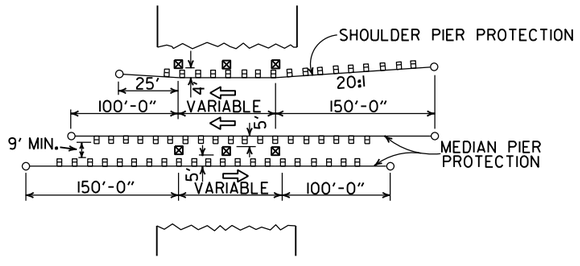


SECTION A-A



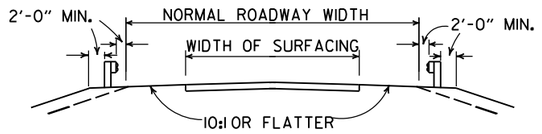
SECTION B-B

DETAILS OF WIDENING FOR GUARDRAIL

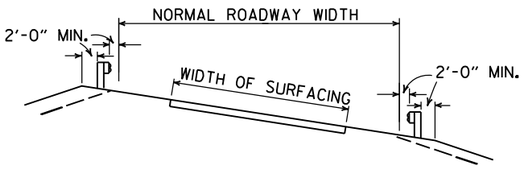


METHOD OF INSTALLATION OF GUARDRAIL AT FIXED OBSTACLE

NOTE: NORMAL SECTION TO BE WIDENED APPROX. 5'-6" EACH SIDE TO SUPPORT GUARDRAIL.



SECTION ON TANGENT



SECTION ON CURVE

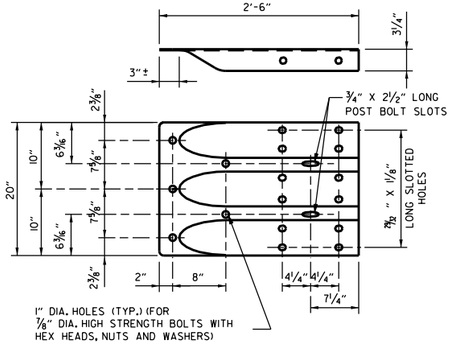
DETAILS SHOWING POSITION OF GUARDRAIL ON HIGHWAY

DATE	REVISION	DATE FILM
11-07-19	RENUMBERED AND RENAMED	
4-17-08	MINOR REVISION	
11-10-05	DRAWN	

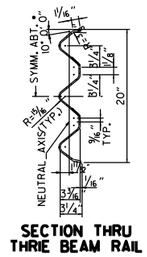
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

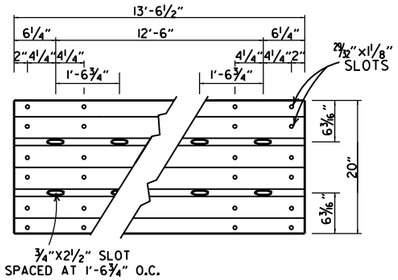
STANDARD DRAWING GR-9



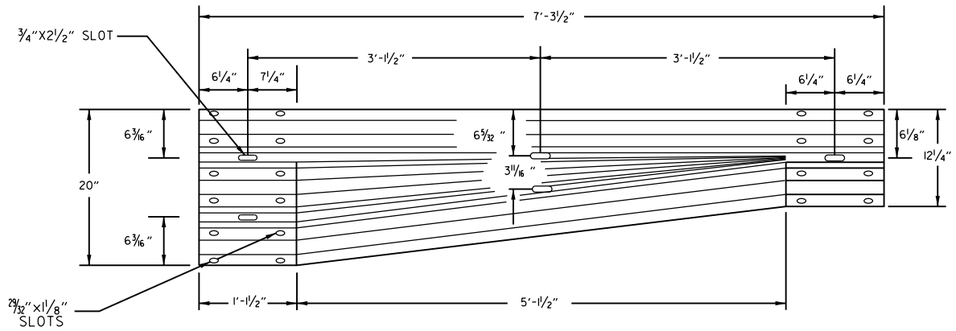
SPECIAL END SHOE



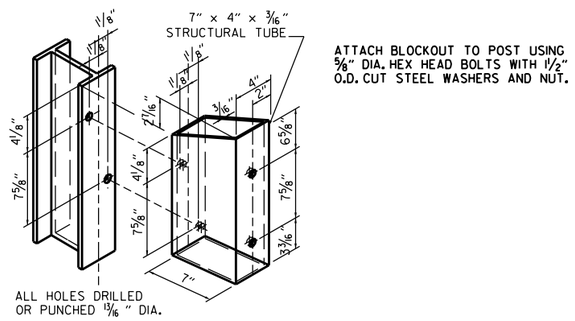
SECTION THRU THRIE BEAM RAIL



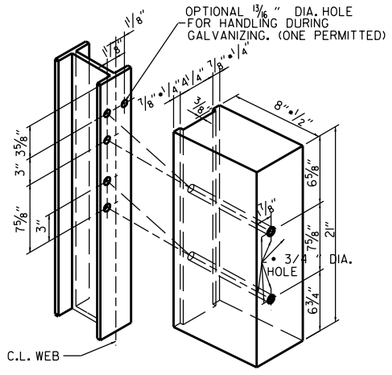
THRIE BEAM RAIL



TRANSITION SECTION



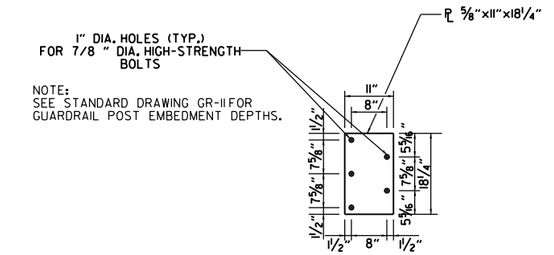
STRUCTURAL STEEL TUBING BLOCKOUT DETAIL



ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED

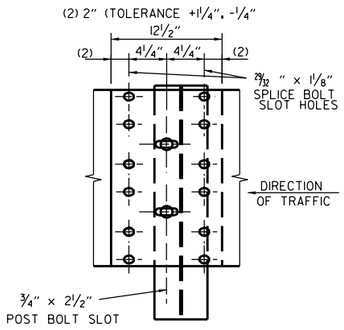
HOLE PUNCHING DETAIL FOR STEEL POST & WOOD OR PLASTIC BLOCKOUTS

NOTE: BLOCKS SHALL BE THE SAME TYPE THROUGHOUT THE PROJECT LIMITS.



CONNECTOR PLATE

CONNECTOR PLATE SHALL BE AASHTO M270, GR. 36 AND SHALL BE GALVANIZED AFTER FABRICATION. GALVANIZING SHALL CONFORM TO SUBSECTION 807.19 OF THE STANDARD SPECIFICATIONS. CONNECTOR PLATE TO BE BOLTED TO SPECIAL END SHOE USING ⅞" DIA. HIGH STRENGTH BOLTS, WITH THE HEADS PLACED ON THE TRAFFIC FACE. WASHERS SHALL BE USED UNDER THE HEAD AND NUT. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AND SHALL CONFORM TO SUBSECTION 807.06.



THRIE BEAM RAIL SPLICE AT POST

GENERAL NOTES:

THE THRIE BEAM RAIL, SPECIAL END SHOE, AND THE TRANSITION SECTION SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE. ZINC COATING SHALL BE TYPE 1.

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN 3"4" BEYOND IT.

ALL LAP SPLICES, INCLUDING SPECIAL END SHOES, SHALL BE MADE IN THE DIRECTION SHOWN ON STANDARD DRAWINGS GR-8 & GR-13.

REFER TO STD. DRWG. GR-11 FOR POST DETAILS.

USE THRIE BEAM GUARDRAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB.

THRIE BEAM POSTS SHALL BE SAME MATERIAL AS W-BEAM POSTS FOR ENTIRE JOB.

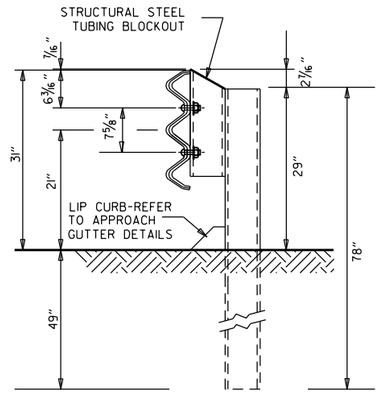
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7 f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	FILMED
11-07-19	RENAMED AND REVISED REFERENCES	
11-16-17	REVISED TRANSITION SECTION, GUARD RAIL HEIGHT, AND GENERAL NOTES; MOVED THRIE BEAM GUARD RAIL CONNECTIONS AT BRIDGES ENDS TO STD. DRWG. GR-12	
07-14-10	RAISED HEIGHT OF W-BEAM 1"	
11-29-07	ADDED PLASTIC BLOCKOUTS	
11-10-05	ADDED NOTE FOR ATTACHING STEEL BLOCKOUT	
11-18-04	REVISED GENERAL NOTES	
10-9-03	REVISED GENERAL NOTES	
04-10-03	REVISED GENERAL NOTES	
08-22-02	REVISED NOTE (2)	
06-29-00	MOVED DIMENSION LINES	
05-18-00	ADDED NOTE	
03-30-00	DRAWN & ISSUED	

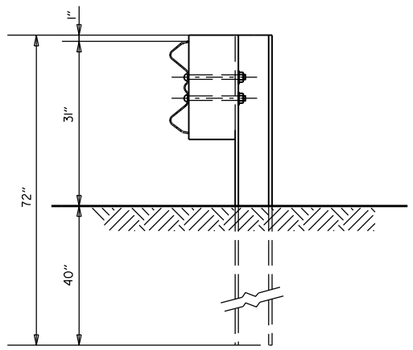
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

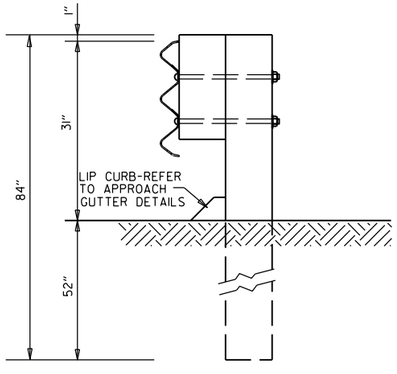
STANDARD DRAWING GR-10



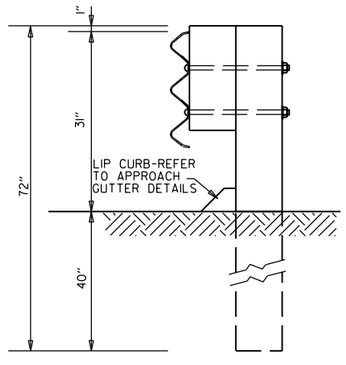
THRIE BEAM RAIL WITH STEEL TUBING BLOCKOUT
AND STEEL POST
POSTS 1-7



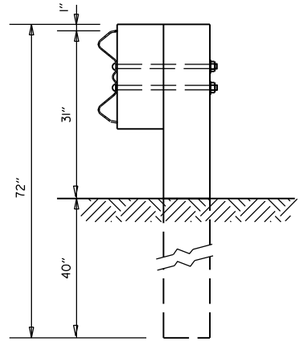
W-BEAM TO THRIE BEAM TRANSITION RAIL
WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST
POST 8



THRIE BEAM RAIL
WITH WOOD OR PLASTIC
BLOCKOUTS & WOOD POSTS
POSTS 1-6



THRIE BEAM RAIL
WITH WOOD OR PLASTIC
BLOCKOUT & WOOD POST
POST 7



W-BEAM TO THRIE BEAM
TRANSITION RAIL WITH WOOD OR
PLASTIC BLOCKOUT & WOOD POST
POST 8

GENERAL NOTES:

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

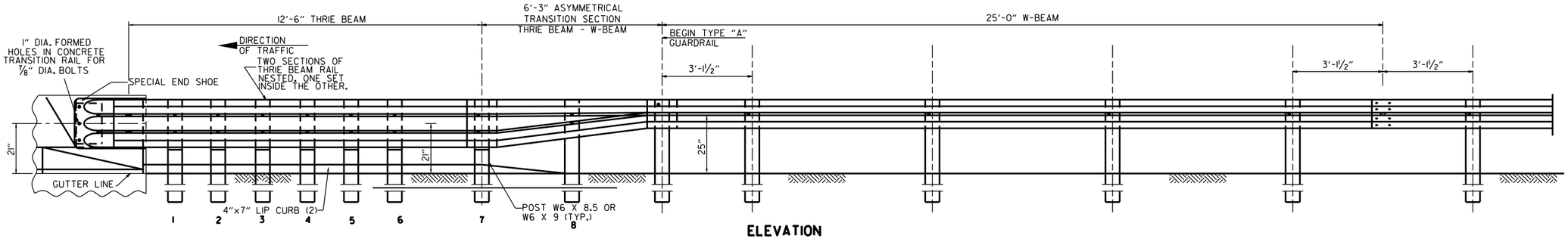
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1STRUCTURAL OR BETTER 9.7f (1400 f) OR NO.1 1350 f SOUTHERN PINE.

DATE	REVISION	FILMED
11-07-19	RENAMED	
11-16-17	REVISED GUARDRAIL HEIGHT, CHANGED STD. DWG. NUMBER FROM GR-10A TO GR-11	
07-14-10	REVISED POST 8 DIMENSIONS	
11-29-07	ADDED PLASTIC BLOCKOUTS	
08-22-02	REVISED LIP CURB NOTE	
03-30-00	DRAWN & ISSUED	

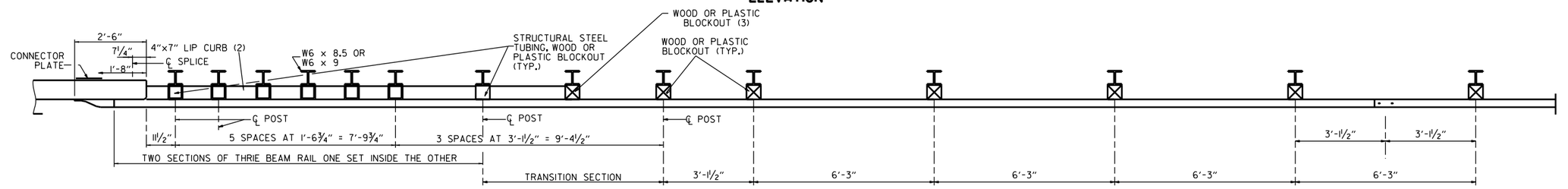
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

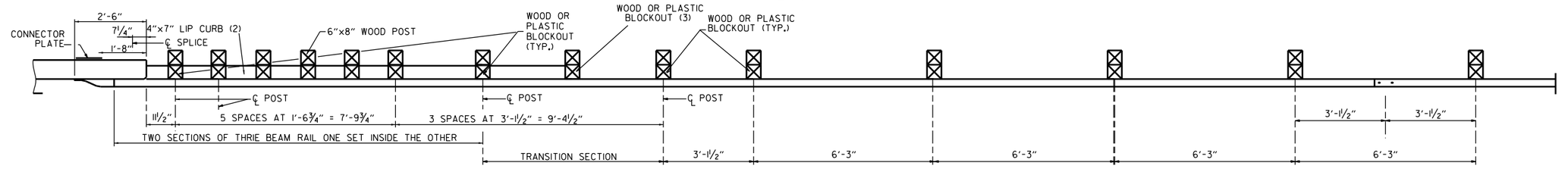
STANDARD DRAWING GR-11



ELEVATION



PLAN



PLAN

(1) VERIFY BOLT SPACING FROM RAIL TRANSITION PRODUCER.
(2) REFER TO APPROACH GUTTER DETAILS.
(3) LENGTH OF BLOCKOUT ON POST 8 TO BE MODIFIED TO FIT RAIL WIDTH.

THRIE BEAM GUARDRAIL CONNECTION AT BRIDGE ENDS

GENERAL NOTES:

THE THRIE BEAM RAIL, SPECIAL END SHOE, AND THE TRANSITION SECTION SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE. ZINC COATING SHALL BE TYPE I.

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN 3/4" BEYOND IT.

ALL LAP SPLICES, INCLUDING SPECIAL END SHOES, SHALL BE MADE IN THE DIRECTION SHOWN ON STANDARD DRAWINGS GR-8 & GR-13.

REFER TO STD. DRWG. GR-11 FOR POST DETAILS.

USE THRIE BEAM GUARDRAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB.

THRIE BEAM POSTS SHALL BE SAME MATERIAL AS W-BEAM POSTS FOR ENTIRE JOB.

POSTS SHALL NOT BE PLACED AT SPLICE LOCATIONS ALONG W-BEAM RAILS.

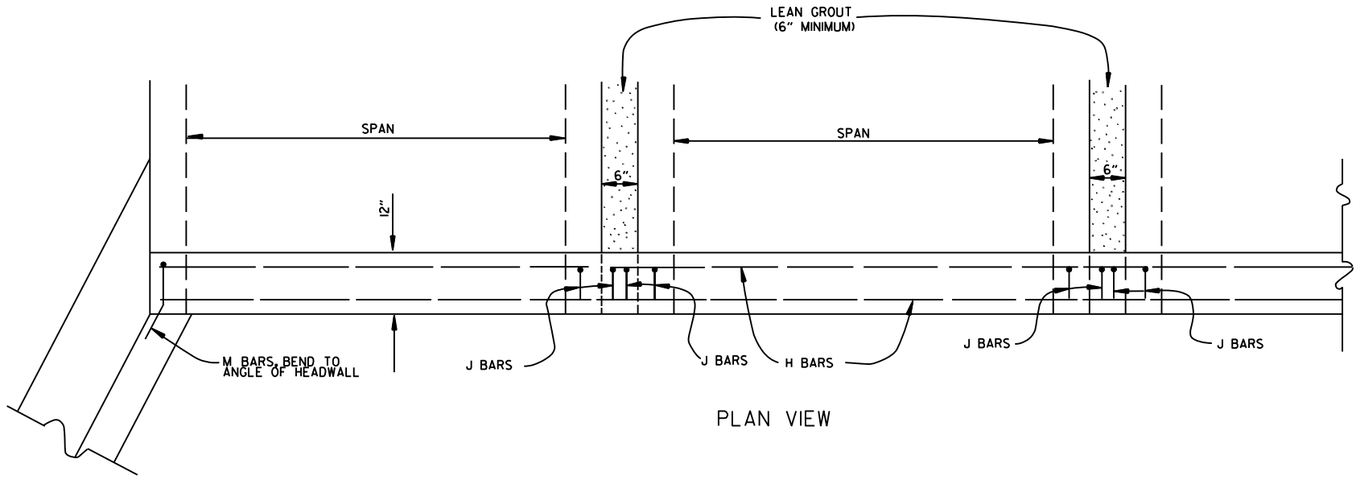
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	FILMED
05-14-20	REVISED NOTES	
11-07-19	RENAMED & REVISED REFERENCES	
11-16-17	RE-DRAWN FROM STD. DWG. GR-10 & ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

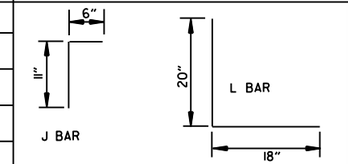
STANDARD DRAWING GR-12



PLAN VIEW

BAR LIST

BAR	NO.	SIZE	LENGTH	BAR BENDING DIAGRAM
H	2	#4	•	
I	•	#4	•	
J	•	#4	1'-5"	
L	•	#4	3'-2"	
M	•	#4	1'-8"	



• NOTE: LENGTH AND NUMBER OF BARS VARIES WITH SIZE OF CULVERT

GENERAL NOTES

WINGS, CURTAIN WALLS AND APRONS SHALL BE TIED TO THE PRECAST CULVERT SECTION BY CASTING BARS IN CULVERT END SECTIONS AS SHOWN OR BY DOWELING AND GROUTING. J BARS AND M BARS SHALL BE EMBEDDED A MINIMUM OF 10" IN PRECAST BOX.

WINGS, FOOTINGS, APRONS AND CURTAIN WALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE WING DRAWING. STEEL AND CONCRETE QUANTITIES WILL BE ADJUSTED TO FIT THE IN-PLACE WIDTH & HEIGHT OF THE PRECAST CONCRETE BOX CULVERTS.

ALL EXPOSED CORNERS TO HAVE ¾" CHAMFERS.

WINGWALLS AND FOOTINGS MAY BE ADJUSTED IN THE FIELD AS DIRECTED BY THE ENGINEER.

ALL CONCRETE, REINFORCING STEEL, LEAN GROUT, MEMBRANE WATERPROOFING, DRAINAGE FILL MATERIAL, GEOTEXTILE FILTER FABRIC, LABOR, MATERIALS AND EQUIPMENT REQUIRED FOR INSTALLING PRECAST BOX CULVERTS WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR THE ITEMS AS SPECIFIED IN SECTION 607 OF THE STANDARD SPECIFICATIONS.

LEAN GROUT SHALL CONSIST OF A SAND CEMENT MIXTURE MEETING THE FOLLOWING REQUIREMENTS:
PORTLAND CEMENT SHALL BE TYPE I AND SHALL MEET THE REQUIREMENTS OF AASHTO M 85.
SAND SHALL MEET THE REQUIREMENTS OF FINE AGGREGATE AS SPECIFIED IN SECTION 802.02 OF THE STANDARD SPECIFICATIONS.
THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE.
THE MIXTURE SHALL CONTAIN SUFFICIENT WATER TO HYDRATE THE CEMENTS. THE SAND CEMENT MIXTURE SHALL BE PLACED IN MAXIMUM 8 INCH THICK LIFTS, LOOSE MEASURE, AND THOROUGHLY RODDED AND TAMPED AROUND BOX TO THOROUGHLY FILL ALL VOIDS.

MEMBRANE WATERPROOFING CONFORMING TO THE REQUIREMENTS OF SECTION 815 OF THE STANDARD SPECIFICATIONS SHALL BE APPLIED TO ALL BOX CULVERT JOINTS.

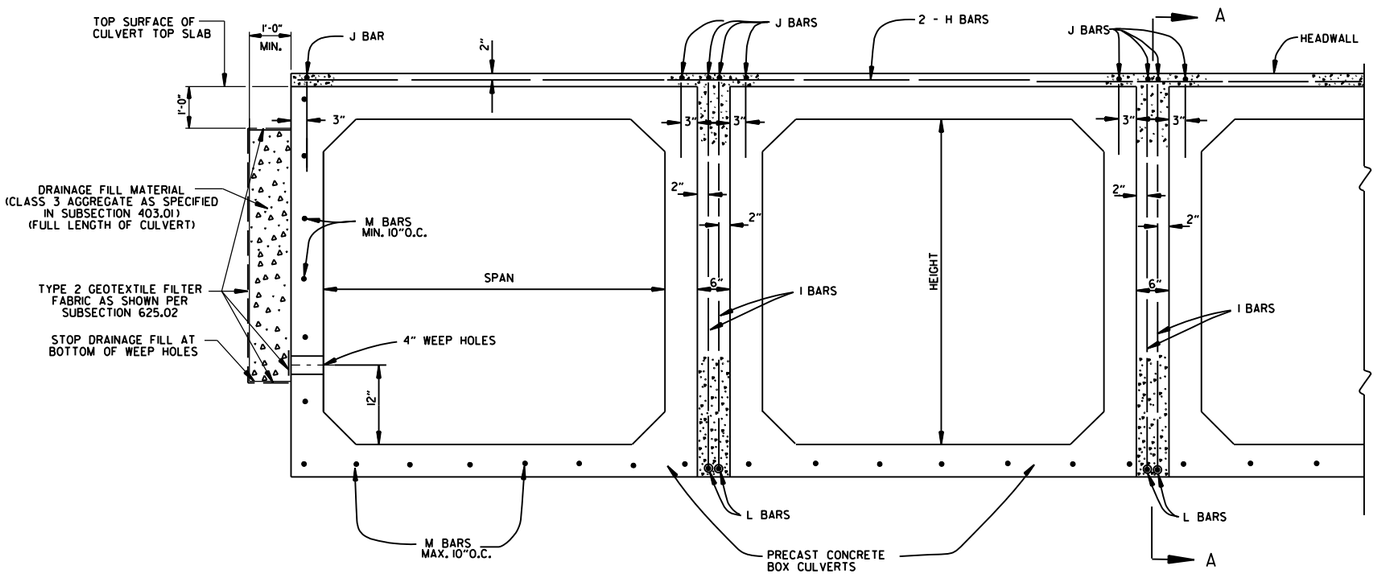
THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

IN OUTER BARRELS, ONE WEEP HOLE IS REQUIRED IN EXTERIOR WALLS OF EACH PRECAST CULVERT SECTION. WEEP HOLES SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" IN THE ASSEMBLED CULVERT AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE BOTTOM SLAB.

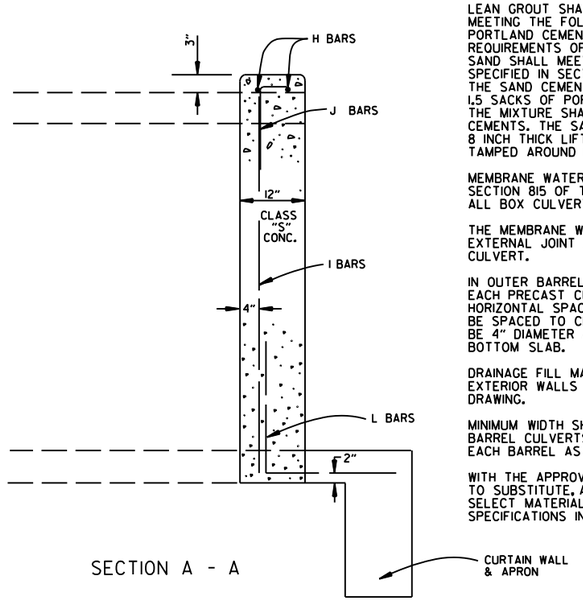
DRAINAGE FILL MATERIAL WITH GEOTEXTILE FABRIC IS REQUIRED AT THE EXTERIOR WALLS OF THE ASSEMBLED CULVERT, SEE DETAILS ON THIS DRAWING.

MINIMUM WIDTH SHALL BE 12" (6" ON EACH SIDE OF JOINT). ON MULTIPLE BARREL CULVERTS, MEMBRANE WATERPROOFING SHALL BE APPLIED TO EACH BARREL AS DESCRIBED ABOVE.

WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, FLOWABLE SELECT MATERIAL CONFORMING TO SECTION 206 OF THE STANDARD SPECIFICATIONS IN LIEU OF LEAN GROUT.



END VIEW



SECTION A - A

DATE	REVISION	DATE FILMED
1-28-15	REVISED GEOTEXTILE FABRIC PLACEMENT	
12-15-11	ADDED NOTE & DTLS FOR WEEP HOLE AND DRAINAGE FILL	
10-15-09	ADDED GENERAL NOTE	
11-10-05	REVISED SPACING OF "M" BARS	
4-10-03	REVISED GENERAL NOTES	
10-18-96	CORRECTED AASHTO REF.	
10-1-92	ADDED NOTE FOR MEMBRANE WATERPROOFING	
8-15-91	ADDED NOTE FOR LEAN GROUT	
11- 8-90	REVISED FOR 1991 SPECS	
11-30-89	ISSUED; JABE	

ARKANSAS STATE HIGHWAY COMMISSION

PRECAST CONCRETE BOX CULVERTS

STANDARD DRAWING PBC-1

REINFORCED CONCRETE ARCH PIPE DIMENSIONS

EQUIV. DIA.	SPAN		RISE	
	AASHTO M 206	ARDOT NOMINAL	AASHTO M 206	ARDOT NOMINAL
INCHES	INCHES			
15	18	18	11	11
18	22	22	13½	14
21	26	26	15½	16
24	28½	29	18	18
30	36¼	36	22½	23
36	43⅜	44	26⅝	27
42	51⅛	51	31⅜	31
48	58½	59	36	36
54	65	65	40	40
60	73	73	45	45
72	88	88	54	54
84	102	102	62	62
90	115	115	72	72
96	122	122	77½	77
108	138	138	87⅛	87
120	154	154	96⅞	97
132	168¾	169	106½	107

THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PERCENT FROM THE VALUES SPECIFIED BY AASHTO M206.

REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE DIMENSIONS

EQUIV. DIA.	AASHTO M 207	
	SPAN	RISE
INCHES	INCHES	
18	23	14
24	30	19
27	34	22
30	38	24
33	42	27
36	45	29
39	49	32
42	53	34
48	60	38
54	68	43
60	76	48
66	83	53
72	91	58
78	98	63
84	106	68

THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PERCENT FROM THE VALUES SPECIFIED BY AASHTO M207.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. PLACE AND COMPACT THE HAUNCH AREA UP TO THE MIDDLE OF THE PIPE.
5. COMPLETE BACKFILL ACCORDING TO SUBSECTION 606.03.(f)(1).

NOTE: HAUNCH AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF CONCRETE PIPE.

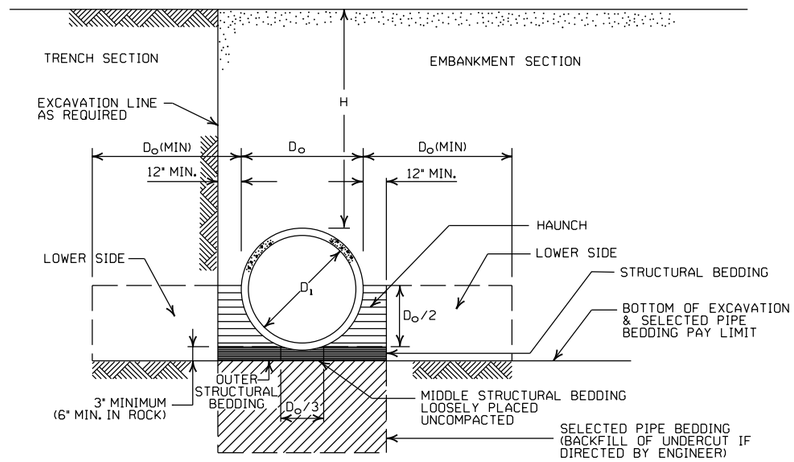
- LEGEND -

D_1 = NORMAL INSIDE DIAMETER OF PIPE
D_O = OUTSIDE DIAMETER OF PIPE
H = FILL COVER HEIGHT OVER PIPE (FEET)
MIN. = MINIMUM
= UNDISTURBED SOIL

INSTALLATION TYPE	MATERIAL REQUIREMENTS FOR HAUNCH AND STRUCTURAL BEDDING
TYPE 1	AGGREGATE BASE COURSE (CLASS 5 OR CLASS 7)
TYPE 2	SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4) OR TYPE 1 INSTALLATION MATERIAL*
TYPE 3**	AASHTO CLASSIFICATION A-1 THRU A-6 SOIL OR TYPE 1 OR 2 INSTALLATION MATERIAL

* SM-3 WILL NOT BE ALLOWED.

** MATERIALS SHALL NOT INCLUDE ORGANIC MATERIALS OR STONES LARGER THAN 3 INCHES.



EMBANKMENT AND TRENCH INSTALLATIONS

1. MATERIAL IN THE HAUNCH AND OUTER STRUCTURAL BEDDING SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. FOR TRENCHES WITH WALLS OF NATURAL SOIL, THE DENSITY OF THE SOIL IN THE LOWER SIDE ZONE SHALL BE AS FIRM AS THE 95% DENSITY REQUIRED FOR THE HAUNCH. IF THE EXISTING SOIL DOES NOT MEET THIS CRITERIA, IT SHALL BE REMOVED AND RECOMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OF MATERIAL USED.
3. FOR EMBANKMENTS, THE MATERIAL IN THE LOWER SIDE ZONE SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

GENERAL NOTES

1. CONCRETE PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION), WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. CONCRETE PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. ALL PIPE SHALL CONFORM TO SECTION 606. CIRCULAR R.C. PIPE CULVERTS SHALL CONFORM TO AASHTO M170, R.C. ARCH PIPE CULVERTS SHALL CONFORM TO AASHTO M206 AND HORIZONTAL ELLIPTICAL PIPE CULVERTS SHALL CONFORM TO AASHTO M207.
4. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT.
5. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS.
6. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
7. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
8. NOT MORE THAN ONE LIFTING HOLE MAY BE PROVIDED IN CONCRETE PIPE TO FACILITATE HANDLING. HOLE MAY BE CAST IN PLACE, CUT INTO THE FRESH CONCRETE AFTER FORMS ARE REMOVED, OR DRILLED. THE HOLE SHALL NOT BE MORE THAN TWO INCHES IN DIAMETER OR TWO INCHES SQUARE. CUTTING OR DISPLACEMENT OF REINFORCEMENT WILL NOT BE PERMITTED. SPALLED AREAS AROUND THE HOLE SHALL BE REPAIRED IN A WORKMANLIKE MANNER. LIFTING HOLE SHALL BE FILLED WITH MORTAR, CONCRETE, OR OTHER METHOD AS APPROVED BY THE ENGINEER.
9. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
10. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS THE HAUNCH), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."

MINIMUM HEIGHT OF FILL "H" OVER CIRCULAR R.C. PIPE CULVERTS

	CLASS OF PIPE			
	CLASS III		CLASS IV	CLASS V
INSTALLATION TYPE	TYPE 1 OR 2	TYPE 3	ALL	ALL
PIPE ID (IN.)	FEET			
12-15	2	2.5	2	1
18-24	2.5	3	2	1
27-33	3	4	2	1
36-42	3.5	5	2	1
48	4.5	5.5	2	1
54-60	5	7	2	1
66-78	6	8	2	1
84-108	7.5	8	2	1

NOTE: FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM OF 12" OF PAVEMENT AND/OR BASE.

MAXIMUM HEIGHT OF FILL "H" OVER CIRCULAR R.C. PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE		
	CLASS III	CLASS IV	CLASS V
	FEET		
TYPE 1	21	32	50
TYPE 2	16	25	39
TYPE 3	12	20	30

NOTE: IF FILL HEIGHT EXCEEDS 50 FEET, A SPECIAL DESIGN CONCRETE PIPE WILL BE REQUIRED USING TYPE 1 INSTALLATION.

MINIMUM HEIGHT OF FILL "H" OVER R.C. ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE	
	CLASS III	CLASS IV
	FEET	
TYPE 2 OR TYPE 3	2.5	1.5

NOTE: TYPE 1 INSTALLATION WILL NOT BE ALLOWED FOR ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS.

NOTE: FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM OF 12" OF PAVEMENT AND/OR BASE.

MAXIMUM HEIGHT OF FILL "H" OVER R.C. ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE	
	CLASS III	CLASS IV
	FEET	
TYPE 2	13	21
TYPE 3	10	16

NOTE: TYPE 1 INSTALLATION WILL NOT BE ALLOWED FOR ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS.

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED FOR LRFD DESIGN SPECIFICATIONS	
5-18-00	REVISED TYPE 3 BEDDING & ADDED NOTE	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1

CORRUGATED STEEL PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS (INCHES)				
		0.064	0.079	0.109	0.138	0.168
2⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM						
12	1	84	91			
15	1	67	73			
18	1	56	61			
24	1	42	46	59		
30	2	34	36	47		
36	2		30	39	41	
42	2		43	67	70	73
48	2		37	58	61	64
② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, BOLTED, OR HELICAL LOCK-SEAM						
36	1	48	60	88	111	118
42	1	41	51	72	90	102
48	1	36	45	64	77	85
54	2	32	40	59	71	79
60	2	29	36	53	64	71
66	2	26	33	47	58	64
72	2	24	30	44	53	59
78	2		28	41	49	54
84	2		26	38	45	51
90	2		24	35	43	45
96	2		22	33	40	44
102	2			31	38	42
108	2			30	35	39
114	2			28	34	37
120	2			27	32	35

CORRUGATED ALUMINUM PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS IN INCHES				
		0.060	0.075	0.105	0.135	0.164
		2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM				
12	1	45	45			
18	2	30	30	52		
24	2	22	22	39	41	
30	2		18	31	32	34
36	2.5		15	26	27	28
42	2			43	43	44
48	2			40	41	43
54	2			35	37	38
60	2				33	34
66	2					31
72	2					29

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. COMPLETE STRUCTURAL BACKFILL OPERATION BY WORKING FROM SIDE TO SIDE OF THE PIPE. THE SIDE TO SIDE STRUCTURAL BACKFILL DIFFERENTIAL SHALL NOT EXCEED 24 INCHES OR 1/3 THE SIZE OF THE PIPE, WHICHEVER IS LESS.

NOTE: STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF METAL PIPE.

INSTALLATION TYPE	MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 1	AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7)
TYPE 2	SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4) OR TYPE 1 INSTALLATION MATERIAL ③

③ SM-3 WILL NOT BE ALLOWED.

EQUIVALENT METAL THICKNESSES AND GAUGES

METAL THICKNESS IN INCHES			GAUGE NUMBER
STEEL			
ZINC COATED	UNCOATED	ALUMINUM	
0.064	0.0598	0.060	16
0.079	0.0747	0.075	14
0.109	0.1046	0.105	12
0.138	0.1345	0.135	10
0.168	0.1644	0.164	8

CORRUGATED METAL PIPE ARCHES

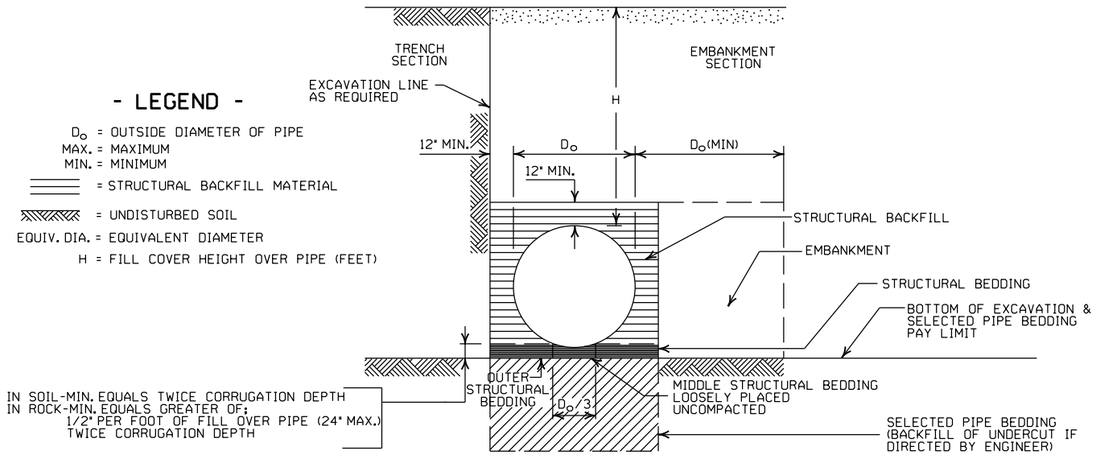
EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINUMUM CORNER RADIUS (INCHES)	STEEL				ALUMINUM			
			MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)	MAX. HEIGHT OF FILL, "H" (FT.)		MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)	MAX. HEIGHT OF FILL, "H" (FT.)	
				INSTALLATION	INSTALLATION			INSTALLATION	INSTALLATION	
				TYPE 1	TYPE 1			TYPE 1	TYPE 1	
			2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM				2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM			
15	17x13	3	0.064	2	15		0.060	2	15	
18	21x15	3	0.064	2	15		0.060	2	15	
21	24x18	3	0.064	2.25	15		0.060	2.25	15	
24	28x20	3	0.064	2.5	15		0.075	2.5	15	
30	35x24	3	0.079	3	12		0.075	3	12	
36	42x29	3½	0.079	3	12		0.105	3	12	
42	49x33	4	0.079	3	12		0.105	3	12	
48	57x38	5	0.109	3	13		0.135	3	13	
54	64x43	6	0.109	3	14		0.135	3	14	
60	71x47	7	0.138	3	15		0.164	3	15	
66	77x52	8	0.168	3	15					
72	83x57	9	0.168	3	15					
			② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM							
				INSTALLATION		INSTALLATION				
				TYPE 2	TYPE 1	TYPE 2	TYPE 1			
36	40x31	5	0.079	3	2	12	15			
42	46x36	6	0.079	3	2	13	15			
48	53x41	7	0.079	3	2	13	15			
54	60x46	8	0.079	3	2	13	15			
60	66x51	9	0.079	3	2	13	15			
66	73x55	12	0.079	3	2	15	15			
72	81x59	14	0.079	3	2	15	15			
78	87x63	14	0.079	3	2	15	15			
84	95x67	16	0.109	3	2	15	15			
90	103x71	16	0.109	3	2	15	15			
96	112x75	18	0.109	3	2	15	15			
102	117x79	18	0.109	3	2	15	15			
108	128x83	18	0.138	3	2	15	15			

① FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

② WHERE THE STANDARD 2 2/3"x ½" CORRUGATION AND GAUGE IS SPECIFIED FOR A GIVEN DIAMETER, A PIPE OF THE SAME DIAMETER WITH A 3" x 1" OR 5" x 1" CORRUGATION MAY BE SUBSTITUTED, PROVIDING IT IS GAUGED FOR A FILL HEIGHT CONDITION EQUAL TO OR GREATER THAN THE MAXIMUM FILL HEIGHT CONDITION FOR THE SPECIFIED GAUGE AND CORRUGATION.

- LEGEND -

D_o = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM
= STRUCTURAL BACKFILL MATERIAL
= UNDISTURBED SOIL
EQUIV. DIA. = EQUIVALENT DIAMETER
H = FILL COVER HEIGHT OVER PIPE (FEET)



EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE (ROUND).
3. INSTALALTION TYPE 1 SHALL BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 2⅔" X ½" CORRUGATION.
4. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 3" X 1" OR 5" X 1" CORRUGATION.

GENERAL NOTES

1. METAL PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION), WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. METAL PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. METAL PIPE CULVERT MATERIALS AND INSTALLATIONS SHALL CONFORM TO SECTION 606 AND JOB SPECIAL PROVISION "METAL PIPE".
4. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT.
5. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS.
6. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
7. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
8. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
9. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED FOR LRFD DESIGN SPECS	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

METAL PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCM-1

INSTALLATION TYPE	•• MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 2	•SELECTED MATERIALS (CLASS SM-1, SM-2 OR SM-4)

• AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL.

SM3 WILL NOT BE ALLOWED.

•• STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF HDPE PIPE.

MULTIPLE INSTALLATION OF HIGH DENSITY POLYETHYLENE PIPES

PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"
42"	3'-6"
48"	4'-0"

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" >OR= 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"
42"	7'-0"	10'-6"
48"	8'-0"	12'-0"

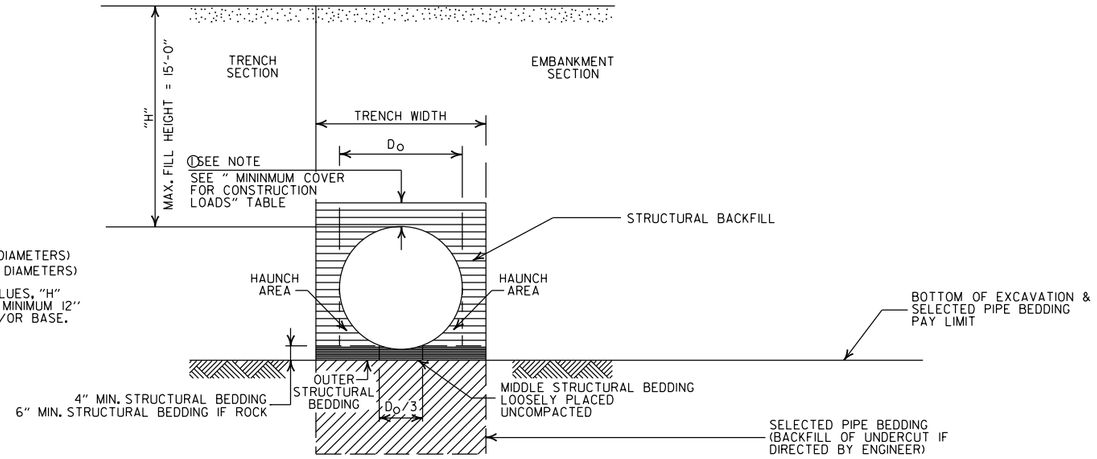
①NOTE:
18" MIN. (18" - 30" DIAMETERS)
24" MIN. (36" - 48" DIAMETERS)

MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

MINIMUM COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS			
	18.0-50.0 (KIPS)	50.0-75.0 (KIPS)	75.0-110.0 (KIPS)	110.0-175.0 (KIPS)
36" OR LESS	2'-0"	2'-6"	3'-0"	3'-0"
42" OR GREATER	3'-0"	3'-0"	3'-6"	4'-0"

②MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

GENERAL NOTES

1. PIPE SHALL CONFORM TO AASHTO M294, TYPE S. INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICIATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
5. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
6. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. HIGH DENSITY POLYETHYLENE PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR HDPE PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

- LEGEND -

H = FILL HEIGHT (FT.)
D = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

= STRUCTURAL BACKFILL MATERIAL

= UNDISTURBED SOIL

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED GENERAL NOTES & MINIMUM COVER NOTE	
11-17-10	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)

STANDARD DRAWING PCP-1

INSTALLATION TYPE	•• MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 2	•SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4)

• AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL.

SM3 WILL NOT BE ALLOWED.

•• STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF PVC PIPE.

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" >OR= 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"

MULTIPLE INSTALLATION OF PVC PIPES

PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"

MAXIMUM FILL HEIGHT BASED ON STRUCTURAL BACKFILL

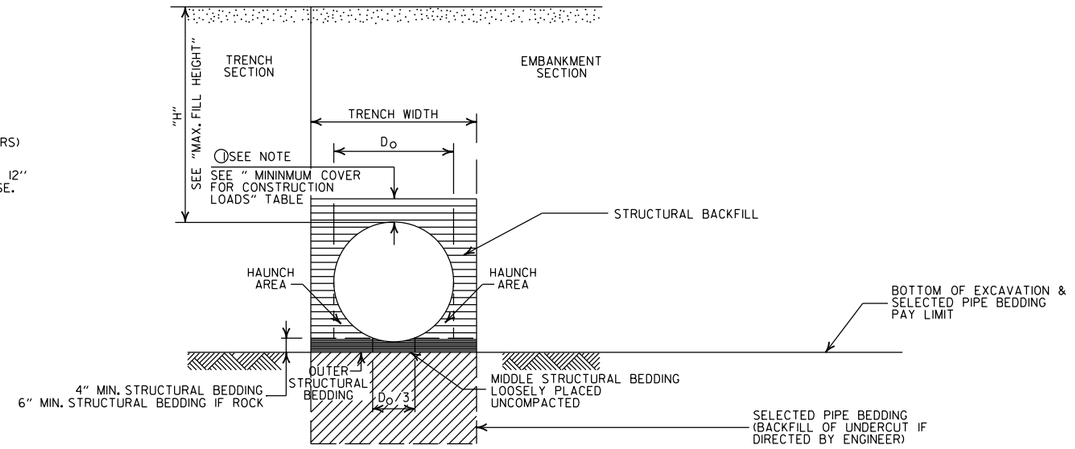
PIPE DIAMETER	"H"
18"	45'-0"
24"	45'-0"
30"	40'-0"
36"	40'-0"

① NOTE:
12" MIN. (18" - 36" DIAMETERS)
MINIMUM COVER VALUE, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

MINIMUM COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS			
	18.0-50.0 (KIPS)	50.0-75.0 (KIPS)	75.0-110.0 (KIPS)	110.0-175.0 (KIPS)
18" THRU 36"	2'-0"	2'-6"	3'-0"	3'-0"

②MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

GENERAL NOTES

1. PIPE SHALL CONFORM TO ASTM F949, CELL CLASS 12454. INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
5. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
6. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. PVC PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR PVC PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

- LEGEND -

H = FILL HEIGHT (FT.)
D_O = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

= STRUCTURAL BACKFILL MATERIAL
= UNDISTURBED SOIL

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REV GENERAL NOTES & MINIMUM COVER NOTE; DELETED SM3 MATERIAL	
11-17-10	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (PVC F949)

STANDARD DRAWING PCP-2

INSTALLATION TYPE	**MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 1	AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7)
TYPE 2	*SELECTED MATERIALS (CLASS SM-1, SM-2 OR SM-4) OR TYPE 1 INSTALLATION MATERIAL

*SM3 WILL NOT BE ALLOWED.

** STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF POLYPROPYLENE PIPE.

MULTIPLE INSTALLATION OF POLYPROPYLENE PIPES

PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"
42"	3'-6"
48"	4'-0"
60"	5'-0"

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

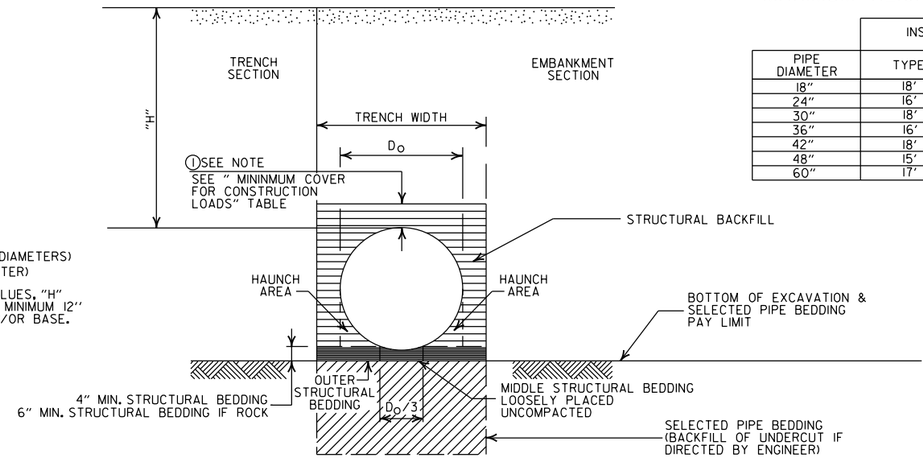
PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" >OR= 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"
42"	7'-0"	10'-6"
48"	8'-0"	12'-0"
60"	10'-0"	15'-0"

①NOTE:
12" MIN. (18" - 42" DIAMETERS)
24" MIN. (60" DIAMETER)

MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

MAXIMUM HEIGHT OF FILL "H"

PIPE DIAMETER	INSTALLATION TYPE	
	TYPE 1	TYPE 2
18"	18'	14'
24"	16'	12'
30"	18'	14'
36"	16'	12'
42"	18'	13'
48"	15'	11'
60"	17'	12'



MINIMUM COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS			
	18.0-50.0 (KIPS)	50.0-75.0 (KIPS)	75.0-110.0 (KIPS)	110.0-150.0 (KIPS)
36" OR LESS	2'-0"	2'-6"	3'-0"	3'-0"
42" OR GREATER	3'-0"	3'-0"	3'-6"	4'-0"

②MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.

EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

GENERAL NOTES

1. PIPE SHALL CONFORM TO AASHTO M330, TYPE S, INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICIATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SIXTH EDITION (2012) WITH 2013 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
5. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
6. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. POLYPROPYLENE PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR POLYPROPYLENE PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN SECTION 26.4.2.4 AND 30.4.2 OF THE AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS 3RD EDITION (2010) WITH 2012 INTERIMS. JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

- LEGEND -

H = FILL HEIGHT (FT.)
D_O = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

= STRUCTURAL BACKFILL MATERIAL

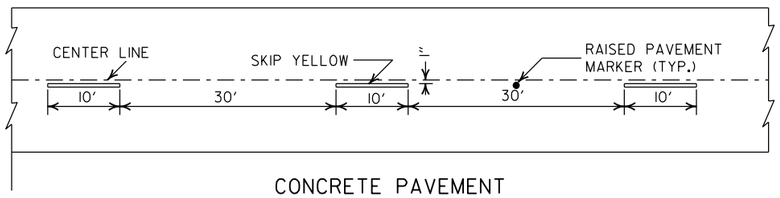
= UNDISTURBED SOIL

DATE	REVISION	DATE FILMED
02-27-20	REVISED	
11-07-19	ISSUED	

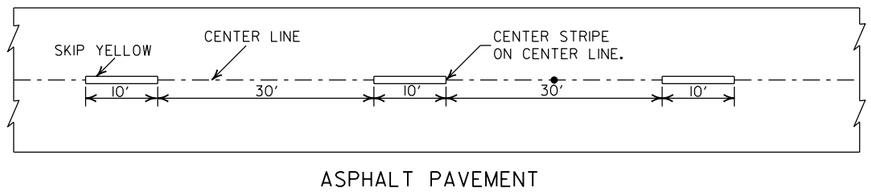
ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (POLYPROPYLENE)

STANDARD DRAWING PCP-3

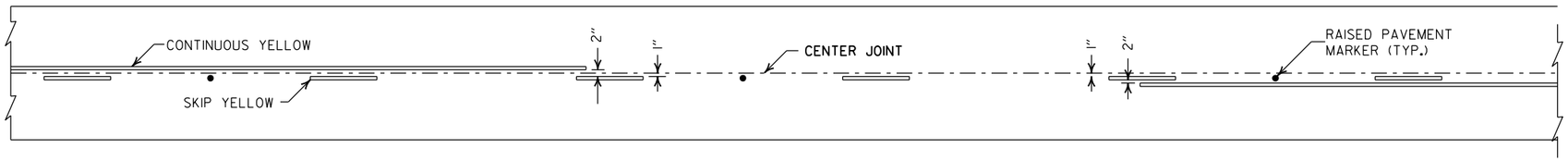


CONCRETE PAVEMENT

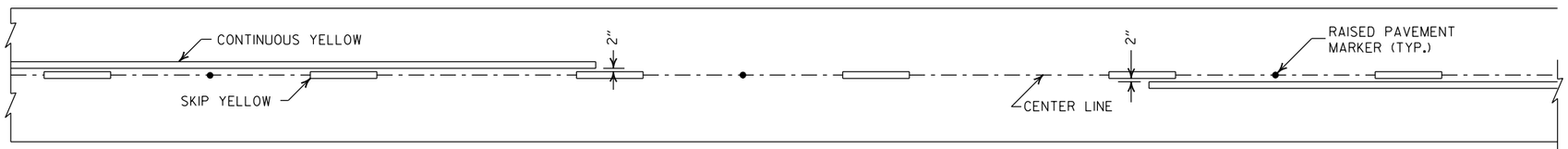


ASPHALT PAVEMENT

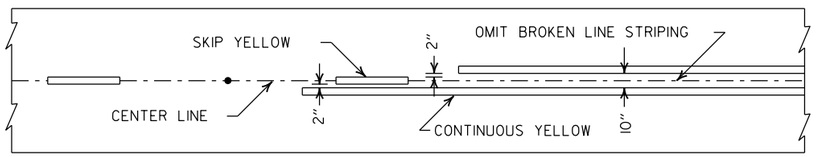
BROKEN LINE STRIPING



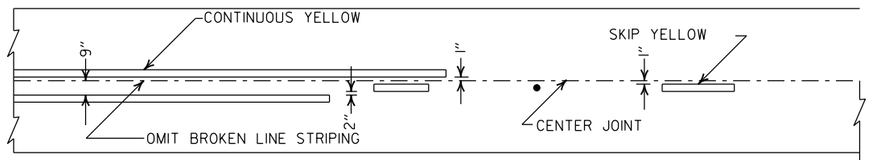
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

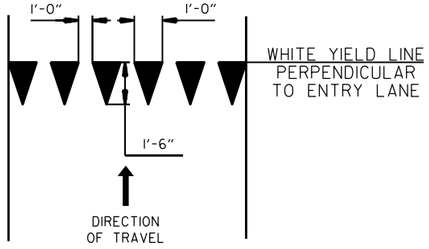


ASPHALT PAVEMENT

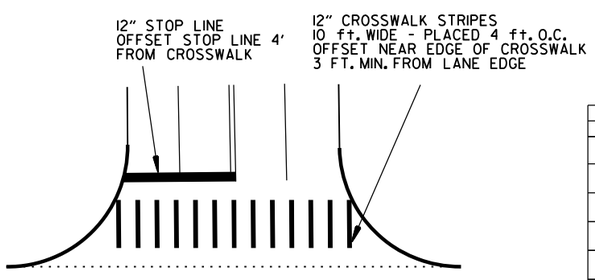


CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

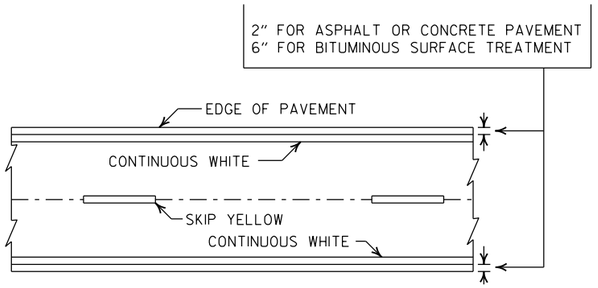


YIELD LINE DETAIL



CROSSWALK AND STOP LINE DETAILS

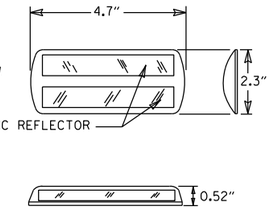
NOTES:
1. REFER TO THE STRIPING DETAILS FOR PAVEMENT MARKING LINE WIDTHS.
2. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
3. RAISED PAVEMENT MARKERS SHALL BE PLACED ON AN 80 FEET SPACING UNLESS OTHERWISE SHOWN IN THE PLANS.



PAVEMENT EDGE LINE MARKING

NOTE:
THE RED LENS OF THE TYPE II R.P.M. SHALL FACE THE INCORRECT TRAFFIC MOVEMENT.

TYPE II
RED/CLEAR OR
YELLOW/YELLOW



NOTE:
DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE ARDOT QUALIFIED PRODUCTS LIST.

DETAIL OF STANDARD RAISED PAVEMENT MARKERS

DATE	REVISION	FILMED
2-27-20	REVISED STOP LINE DETAILS	
6-1-17	ADDED YIELD LINE DETAIL	
5-12-16	REVISED LINE WIDTHS, SPACING, & NOTES	
9-12-13	REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS	
11-17-10	REVISED GENERAL NOTES & REMOVED PLOWABLE PVMT MRKRS	
11-18-04	REVISED NOTE 2 & GENERAL NOTES	
8-22-02	ADDED CROSSWALK & STOPBAR DTLS.	
7-02-98	ADDED DETAILS OF STD. RAISED PAV'T. MARKERS	
4-26-96	REV. NOTES 3&4; ADDED R.P.M.	
9-30-80	DRAWN	1-9-30-80

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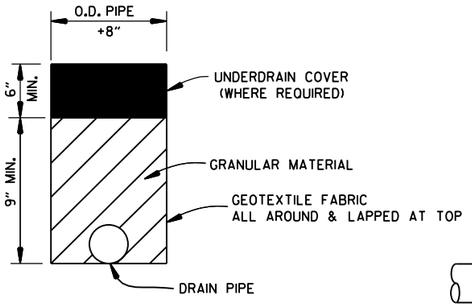
PAVEMENT MARKING DETAILS

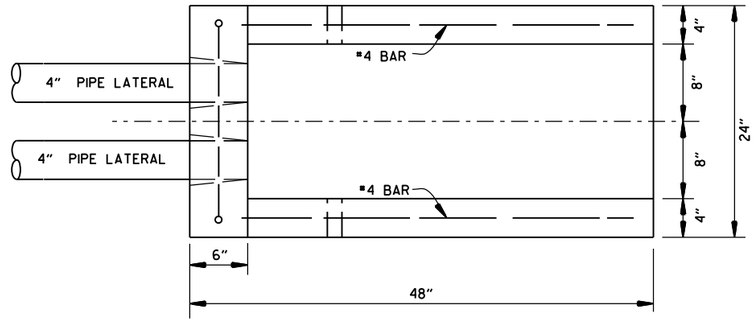
STANDARD DRAWING PM-1

NOTE:

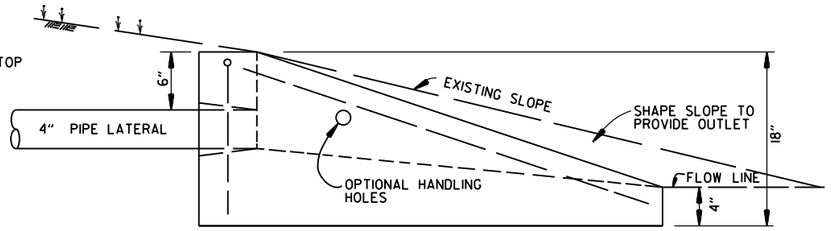
1. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.

2. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC. LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.

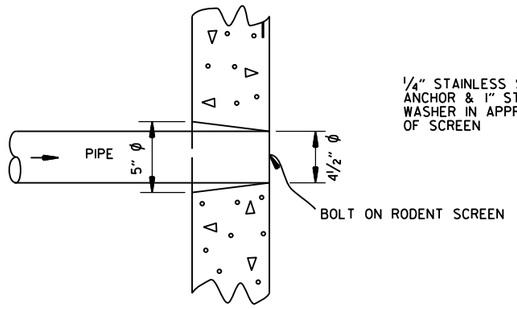




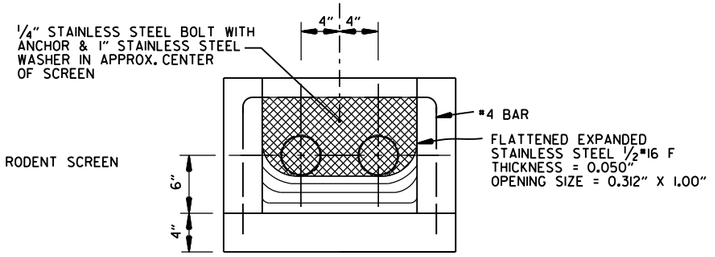
PLAN VIEW



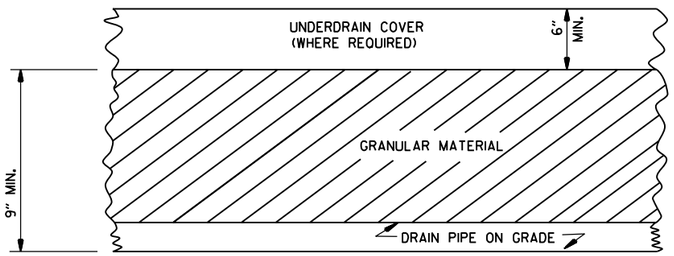
SIDE VIEW



DETAIL OF HOLE
FOR 4" PIPE



FRONT VIEW
(DETAIL OF RODENT SCREEN)



DETAILS OF PIPE UNDERDRAIN

NOTES FOR PIPE UNDERDRAINS

1. GEOTEXTILE FABRIC SHALL MEET THE REQUIREMENTS OF SECTION 625 FOR TYPE 1. PAYMENT FOR GEOTEXTILE FABRIC AND GRANULAR FILTER MATERIAL SHALL BE INCLUDED IN THE PRICE BID PER LIN. FT. FOR "4" PIPE UNDERDRAINS" IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

2. 4" NON-PERFORATED SCHEDULE 40 PVC PIPE LATERALS WITH OUTLET PROTECTORS SHALL BE INSTALLED AS SHOWN HEREON. LATERALS WILL BE MEASURED AND PAID FOR AS "4" PIPE UNDERDRAINS." UNDERDRAIN OUTLET PROTECTORS WILL BE MEASURED AND PAID FOR BY THE UNIT IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

3. EXISTING 4" PIPE UNDERDRAINS MAY BE CONNECTED TO PROPOSED DROP INLETS OR EXTENDED WHERE DIRECTED BY THE ENGINEER. PAYMENT FOR CONNECTING TO DROP INLETS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR "4" PIPE UNDERDRAINS."

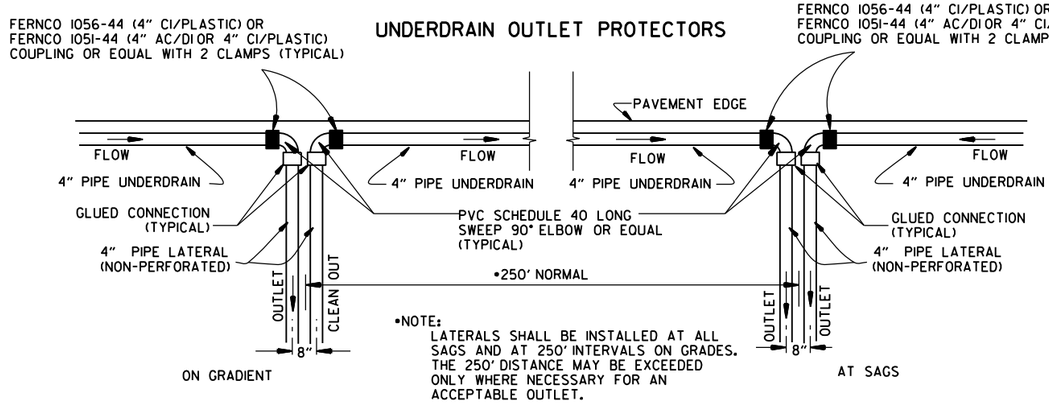
4. THE LOCATION OF ALL LATERALS SHALL BE MARKED WITH 4" X 12" PERMANENT PAVEMENT MARKING TAPE (TYPE III WHITE) AT THE OUTSIDE EDGE OF THE SHOULDER, PLACED TRANSVERSE TO TRAFFIC. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

5. PAYMENT FOR THE RODENT SCREEN SHALL BE INCLUDED IN THE PRICE BID PER EACH FOR "UNDERDRAIN OUTLET PROTECTORS."

6. ANY EXISTING UNDERDRAINS THAT INTERFERE WITH INSTALLATION OF THE NEW UNDERDRAIN SYSTEM SHALL BE REMOVED AND DISPOSED OF AS DIRECTED BY THE ENGINEER. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS. EXISTING UNDERDRAIN OUTLET PROTECTORS SHALL BE REMOVED UNDER THE ITEM "REMOVAL AND DISPOSAL OF UNDERDRAIN OUTLET PROTECTORS."

7. AT LOCATIONS WHERE A SINGLE LATERAL IS USED THE CONTRACTOR SHALL HAVE THE FOLLOWING OPTIONS: 1. INSTALL OUTLET PROTECTOR AS SHOWN ON STANDARD DRAWING PU-1 AND GROUT THE UNUSED HOLE OR 2. INSTALL AN OUTLET PROTECTOR WITH A SINGLE HOLE.

UNDERDRAIN OUTLET PROTECTORS



DETAIL OF PIPE UNDERDRAIN LATERALS
WHEN PLACED ALONG PAVEMENT EDGE

NOTE: PVC PIPE FOR LATERALS SHALL MEET THE REQUIREMENTS OF ASTM D 1785 (LATEST REVISION) FOR SCHEDULE 40 PIPE.

DATE	REVISION	DATE FILMED
12-8-16	ADDED NOTES FOR PIPE UNDERDRAINS, REVISED RODENT SCREEN DETAIL AND NOTES, REMOVED NOTE 1 FOR GRANULAR MATERIAL, ADDED NOTE FOR GEOTEXTILE FABRIC	
4-10-03	REVISED NOTE 3	
1-12-00	REVISED DETAIL OF UNDERDRAIN LATERALS	
11-18-98	REVISED NOTE	
10-18-96	REVISED MIN. DEPTH & GEOTEXTILE FABRIC	
4-26-96	ADDED LATERAL NOTE; 5½" TO 5"	
11-22-95	REVISED LATERALS	
7-20-95	REVISED LATERALS & ADDED NOTE	
11- 3-94	REVISED FOR DUAL LATERALS	11- 3-94
10- 1-92	SUBSTITUTED GEOTEXTILE	10- 1-92
8-15-91	ADDED POLYEDTHYLENE PIPE	8-15-91
11- 8-90	DELETED ALTERNATE NOTE	11- 8-90
1-25-90	ADDED 4" SNAP ADAPTER	1-25-90
11-30-89	DEL. (SUBGRADE); ADDED (WHERE REQUIRED)	11-30-89
7-15-88	ISSUED P.L.M.	647-7-15-88

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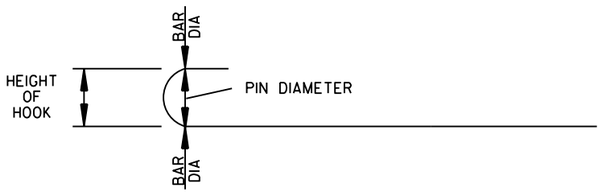
DETAILS OF PIPE UNDERDRAIN

STANDARD DRAWING PU-1

STEEL FABRICATION: REINFORCING STEEL FABRICATION SHALL CONFORM TO THE DIMENSIONS LISTED IN THE TABLE BELOW:

BAR SIZE	PIN DIAMETER	HOOK EXTENSION "K"
3	2¼"	4"
4	3 "	4½"
5	3¾"	5"
6	4½"	6"
7	5¼"	7"
8	6"	8"

IF THE OVERALL HEIGHT OF THE HOOK (SEE DIAGRAM BELOW) FOR A "b", "b1", "b2" or "b3" BENT BAR IS GREATER THAN THE CORRESPONDING TOP OR BOTTOM SLAB THICKNESS, LESS 2¾ INCHES, EACH BENT BAR SHALL BE REPLACED WITH ONE HOOKED BAR AND ONE STRAIGHT BAR, USING LENGTHS AS SHOWN IN THE TABLE BELOW. THE TWO BARS SHALL BE THE SAME DIAMETER AS, AND PLACED AT THE SAME SPACING AS, THE "b", "b1", "b2" OR "b3" BENT BARS THEY REPLACE.



NOTE: DIMENSIONS OF BARS ARE MEASURED OUT TO OUT OF BARS.

OVERALL HEIGHT OF HOOKED BAR DIAGRAM

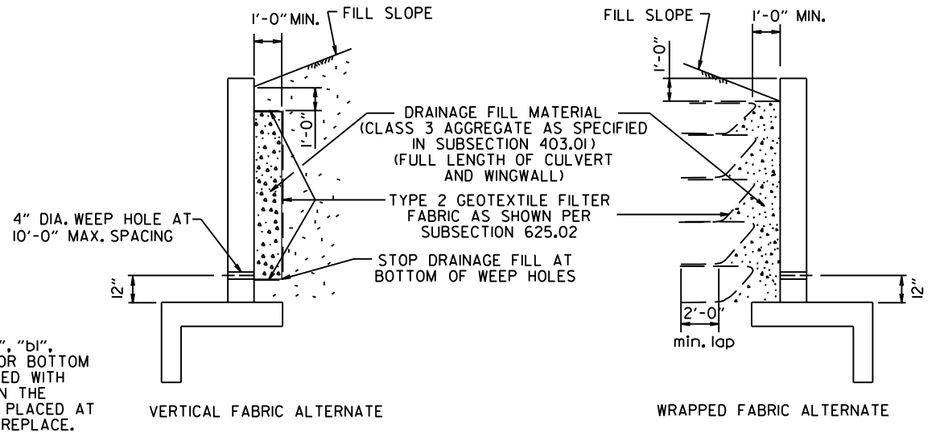
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

FOR SKEWED CULVERTS, THE REPLACEMENT STRAIGHT BAR MAY HAVE TO BE CUT IN FIELD TO FIT.

REPLACEMENT BAR LENGTHS TABLE

BAR SIZE: "b", "b1", "b2" OR "b3"	LENGTH OF HOOKED BAR	LENGTH OF STRAIGHT BAR
#4	L + 1' - 0"	SEE "c" BAR LENGTH
#5	L + 1' - 2"	SEE "c" BAR LENGTH
#6	L + 1' - 4"	SEE "c" BAR LENGTH
#7	L + 1' - 8"	SEE "c" BAR LENGTH
#8	L + 1' - 10"	SEE "c" BAR LENGTH
#9	L + 2' - 6"	SEE "c" BAR LENGTH

L = "OW" - 3 INCHES



WINGWALL & CULVERT DRAINAGE DETAIL

REINFORCED CONCRETE BOX CULVERT GENERAL NOTES

CONCRETE SHALL BE CLASS S WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3500 PSI.

REINFORCING STEEL SHALL BE AASHTO M 31 OR M 53, GRADE 60.

CONSTRUCTION AND MATERIALS FOR WINGWALL & CULVERT DRAINAGE, INCLUDING WEEP HOLES AND GRANULAR MATERIAL, SHALL BE SUBSIDIARY TO THE BID ITEM, "CLASS S CONCRETE".

MEMBRANE WATERPROOFING SHALL CONFORM TO THE REQUIREMENTS OF SECTION 815 OF THE STANDARD SPECIFICATIONS.

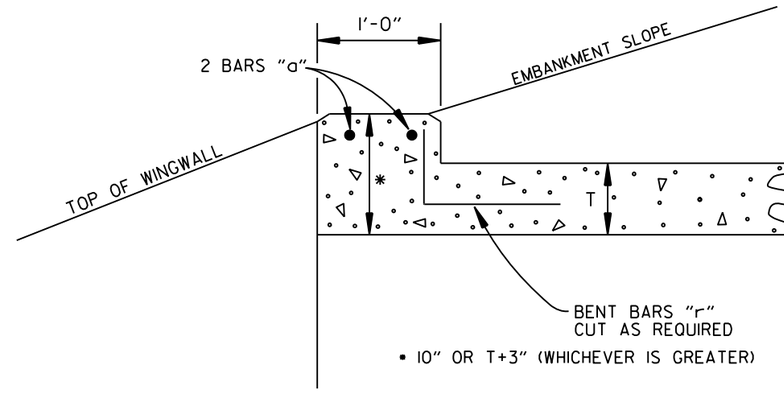
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

REINFORCING STEEL TOLERANCES: THE TOLERANCES FOR REINFORCING STEEL SHALL MEET THOSE LISTED IN "MANUAL OF STANDARD PRACTICE" PUBLISHED BY CONCRETE REINFORCING STEEL INSTITUTE (CRSI) EXCEPT THAT THE TOLERANCE FOR TRUSS BARS SUCH AS FIGURE 3 ON PAGE 7-4 OF THE CRSI MANUAL SHALL BE MINUS ZERO TO PLUS ½ INCH.

WEEP HOLES IN BOX CULVERT WALLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE BOTTOM SLAB.

WEEP HOLES IN WINGWALLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THERE SHALL BE A MINIMUM OF TWO (2) WEEP HOLES IN EACH WINGWALL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE WINGWALL FOOTING.

THE REQUIREMENTS SHOWN ON THIS DRAWING SHALL SUPERCEDE THE CORRESPONDING REQUIREMENTS ON ALL REINFORCED CONCRETE BOX CULVERT STANDARD DRAWINGS.



NOTE: FOR ALL SKEWED R.C. BOX CULVERTS THE LENGTH "K" OF THE MODIFIED HEADWALL SHALL BE EQUAL TO THE ROADWAY LENGTH "RL". THE ENDS OF THE HEADWALL SHALL BE CONSTRUCTED PARALLEL TO THE SKEW ANGLE OF THE BOX CULVERT.

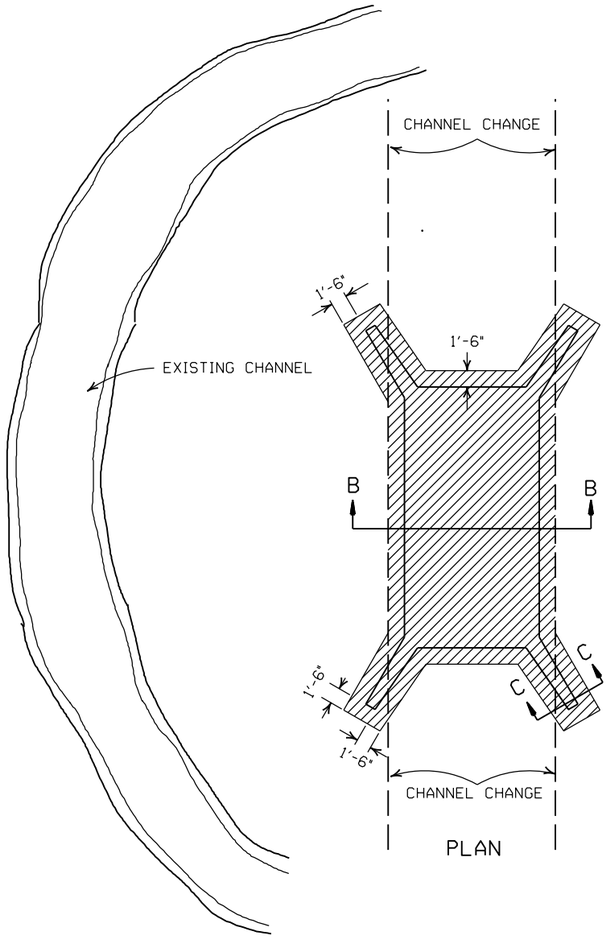
R.C. BOX CULVERT HEADWALL MODIFICATIONS

DATE	REVISION	DATE FILMED
7/26/12	REV. DRAINAGE FILL MATERIAL & DETAIL	
12/15/11	REQUIRE WEEP HOLES IN BOX CULVERT WALLS	
5-25-06	REV. GEN. NOTES AND DETAILS FOR WEEP HOLES; BAR DIAGRAM	
11-16-01	ADDED WINGWALL DRAINAGE DETAIL/EDITED GEN. NOTES	
10-18-96	REV. ASTM REF. TO AASHTO & ADDED BAR DIAGRAM	
10-12-95	MOVED SOLID SODDING DETAIL TO RCB-2	
6-2-94	ADDED SOLID SODDING PLAN DETAIL	
8-5-93	REVISED PIN DIAMETER TO SPECS.	
8-15-91	DRAWN AND ISSUED	

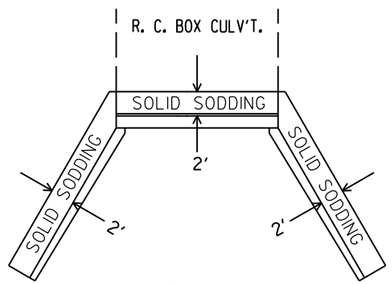
ARKANSAS STATE HIGHWAY COMMISSION

REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1



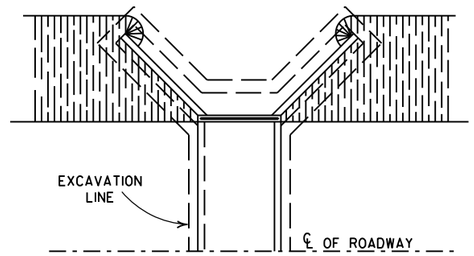
PLAN



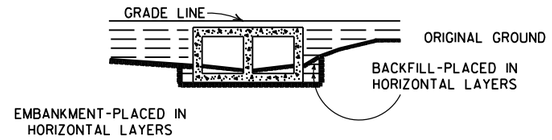
PLAN

PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

NOTE: LENGTH MEASURED ALONG THE CENTER OF 2' STRIP OF SOLID SODDING.

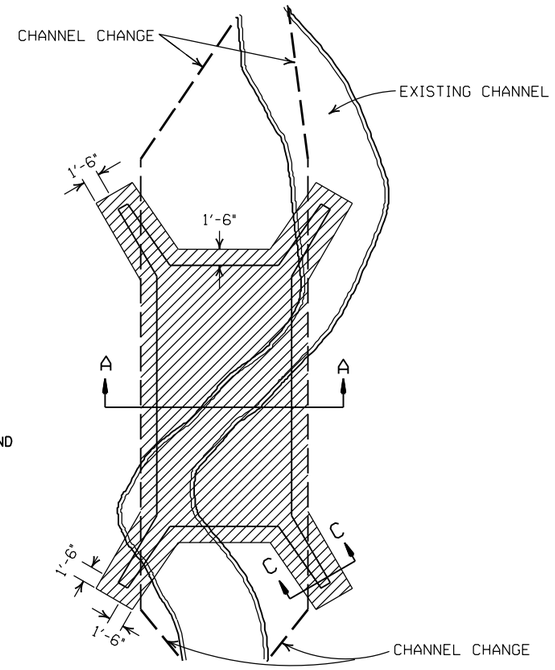


PLAN

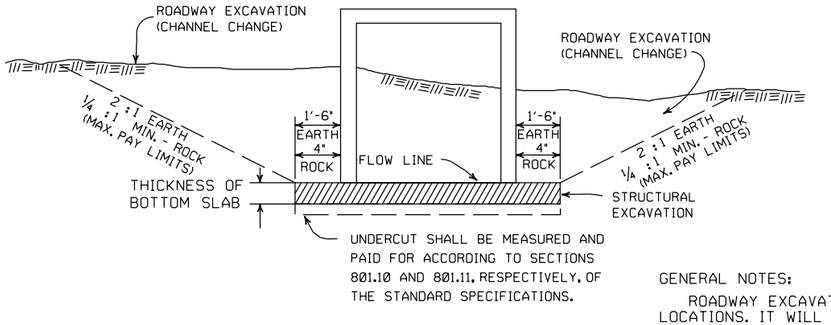


LONGITUDINAL SECTION

BACKFILL DETAILS FOR BOX CULVERT

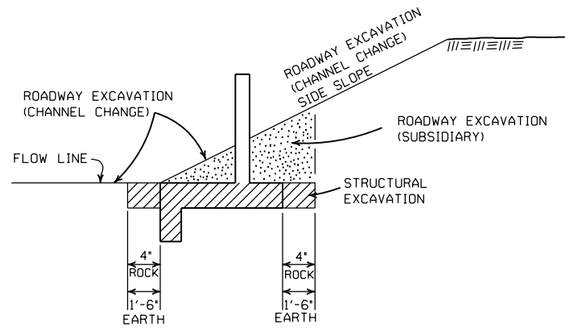


PLAN

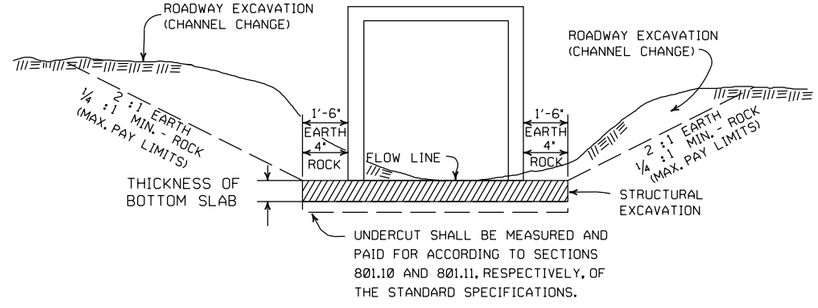


SECTION B-B

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		0.046	129		0.056	160		0.068	198		0.078	235		0.090	264		0.098	283										
4° 45'	0.038	104	200	0.048	133		0.060	168		0.070	203		0.082	245		0.092	269		0.100	288										
5° 00'	0.040	108		0.050	137		0.062	172		0.072	207		0.084	250		0.094	274		D MAX = 5° 15'										
5° 30'	0.044	115		0.054	144		0.066	181		0.078	221	250	0.088	259		0.098	283												
6° 00'	0.046	119		0.058	152		0.070	189		0.082	230		0.092	269		0.100	288												
6° 30'	0.050	126		0.062	160		0.074	198		0.086	239		0.096	278	300	D MAX = 6° 30'													
7° 00'	0.052	130		0.064	164		0.078	206		0.090	248		0.098	283															
7° 30'	0.054	133		0.068	172		0.080	210		0.092	252		0.100	288															
8° 00'	0.058	140		0.070	176		0.084	219		0.094	257	300	D MAX = 8° 25'																
8° 30'	0.060	144		0.072	179		0.086	223	250	0.096	261																		
9° 00'	0.062	148		0.076	187		0.088	227		0.098	266																		
9° 30'	0.064	151		0.078	191		0.092	235		0.100	270																		
10° 00'	0.066	155		0.080	195		0.094	240		D MAX = 10° 30'																			
11° 00'	0.070	162		0.084	203		0.096	244																					
12° 00'	0.074	169		0.088	211	250	0.098	248																					
13° 00'	0.076	173		0.090	215		0.100	252	300	D MAX = 13° 45'																			
14° 00'	0.080	180		0.094	222																								
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'																													

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.)

GENERAL NOTES

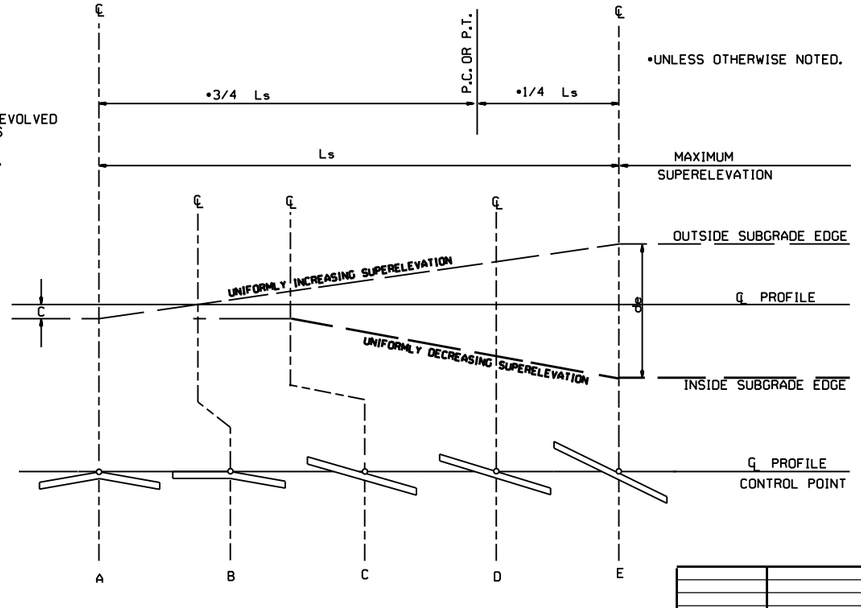
1. ON PAVEMENT WITH TWO-WAY TRAFFIC, THE SUPERELEVATION SHALL BE REVOLVED ON THE INSIDE PAVEMENT EDGE UNLESS OTHERWISE NOTED ON THE PLANS
2. SUPERELEVATION VALUES SHOWN ON THE CROSS SECTIONS ARE VALUES (+) OR (-) TO BE ADDED TO OR SUBTRACTED FROM THE POINT OF CONTROL.
3. LENGTHS FOR L MAY BE ROUNDED 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%

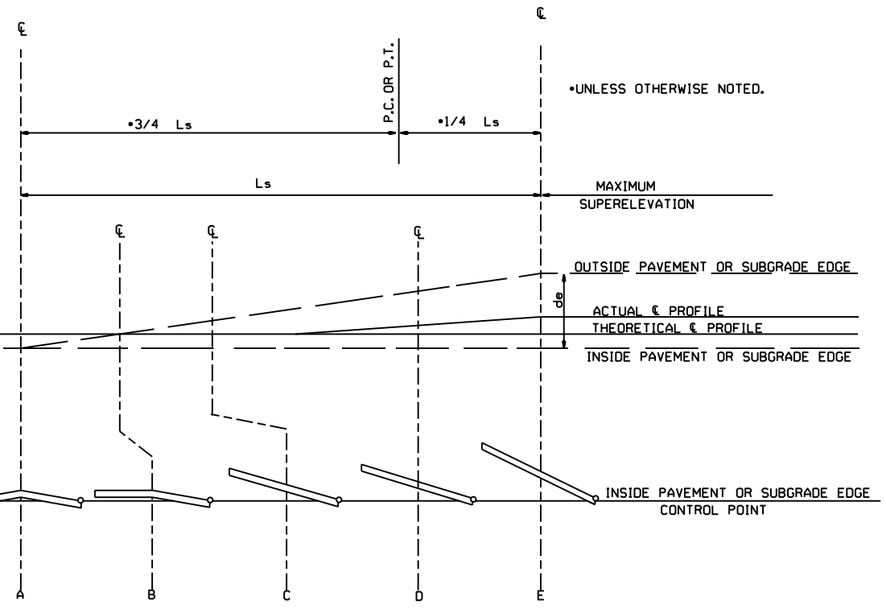
NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

RATE OF SUPERELEVATION SHALL BE COMPUTED ON STRAIGHT LINE METHOD USING APPLICABLE Ls.

SUPERELEVATION FORMULA = $\frac{Lde}{Ls}$



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 FILLMED
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

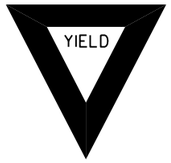
STANDARD DRAWING SE-2

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



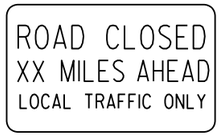
STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

R11-2



48"X30"

R11-3A



60"X30"

R11-4



60"X30"

W21-5a



STD. 36"X36"
FWY. 48"X48"

W1-1



STD. 36"X36"
FWY. 48"X48"

W1-2



STD. 36"X36"
FWY. 48"X48"

W1-3



STD. 48"X48"

W1-4



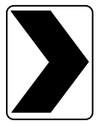
STD. 48"X48"

W1-6



STD. 48"X24"
SPECIAL 60"X30"

W1-8



STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

W3-1



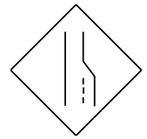
STD. 36"X36"
SPECIAL 48"X48"

W3-2



STD. 36"X36"
SPECIAL 48"X48"

W4-2



STD. 36"X36"
FWY. 48"X48"

W5-1



STD. 36"X36"
SPECIAL 48"X48"

W6-3



EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7



EXPWY. 36"X36"
FWY. 48"X48"

W9-2



STD. 36"X36"
FWY. 48"X48"

W13-1



STD. 24"X24"

W20-1



STD. 48"X48"

W20-2



STD. 48"X48"

W20-3



STD. 48"X48"

W20-4



STD. 48"X48"

W20-5



STD. 48"X48"

W20-7a



STD. 36"X36"
FWY. 48"X48"

W21-2



STD. 30"X30"
SPECIAL 36"X36"

W21-5



STD. 30"X30"
SPECIAL 36"X36"

W24-1



STD. 36"X36"

W1-4b



STD. 48"X48"

R56-1



STD. 18"X18"

W8-11



STD. 36"X36"
FWY. 48"X48"

W8-9



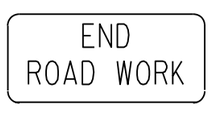
STD. 36"X36"
FWY. 48"X48"

G20-1



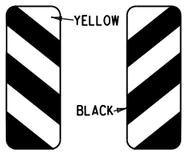
60"X24"

G20-2



48"X24"

OM-3L OM-3R



12"X36"

M4-9



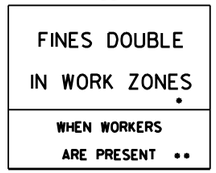
STD. 30"X24"
SPECIAL 48"X36"
SPECIAL 60"X48"

M4-10



48"X18"

R55-1



36"X60"

• USE 6" C LETTERS
•• USE 4" D LETTERS

ADVANCE DISTANCES
(XXXX)

500 FT	½ MILE
1000 FT	¾ MILE
1500 FT	1 MILE AHEAD

GENERAL NOTES:

1. ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.
2. TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND REMOVED THEREAFTER.
3. EXISTING SIGNS AND CONSTRUCTION SIGNS SHALL BE KEPT IN PROPER POSITION, AND BE CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED. SIGNS THAT ARE DAMAGED, DEFACED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED.
- 4. SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SQ. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE.
- 5. SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3.
6. POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE.
7. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE, EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS.
8. FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. MOST OF THE SIGNS SHOWN ARE ORIENTED TO THE RIGHT. HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT.
10. R55-1 SIGNS SHALL BE PLACED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE SIGN SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN.

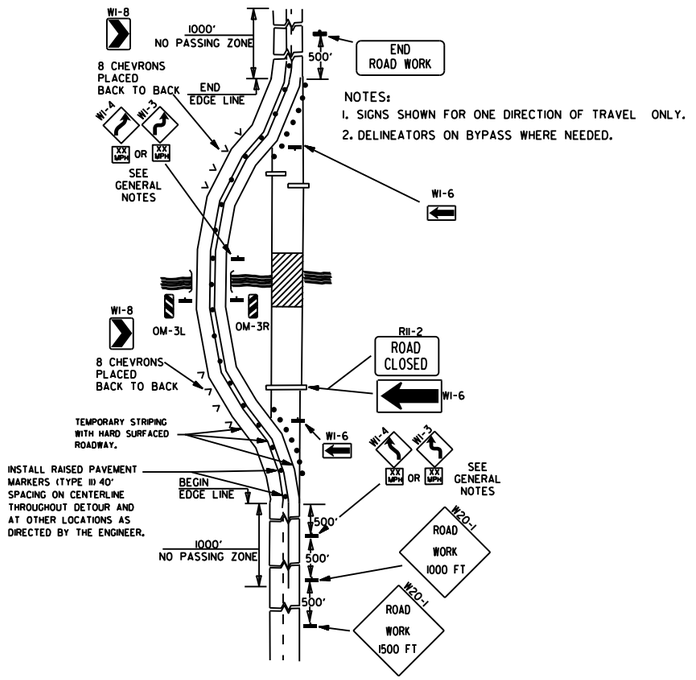
- NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED FOR ALL PROJECTS.

DATE	REVISION	FILMED
11-07-19	REVISED FOR MASH	
4-13-17	DELETED RSP-1 & ADDED W21-5a	
9-2-15	REVISED REDUCED SPEED LIMIT AHEAD SIGNS REVISED ROAD WORK NEXT XX MILES	
12-15-11	REVISED W24-1	
11-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
11-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
11-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
11-18-98	ADDED NOTE	
6-26-97	REVISED NOTE 5	
4-03-97	REVISED NOTE 5	
10-18-96	ADDED CONTROLLED ACCESS HWY. SIGN & TO NOTE 7	
10-12-95	ADDED R55-1	
6-8-95	REVISED TO CORRECT SIGN ILLUSTRATIONS	6-8-95
2-2-95	REVISED PER PART VI, MUTCD SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

ARKANSAS STATE HIGHWAY COMMISSION

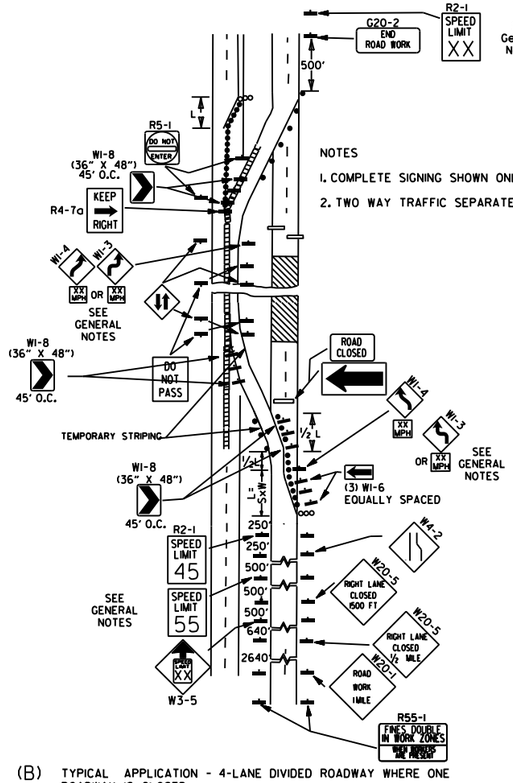
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



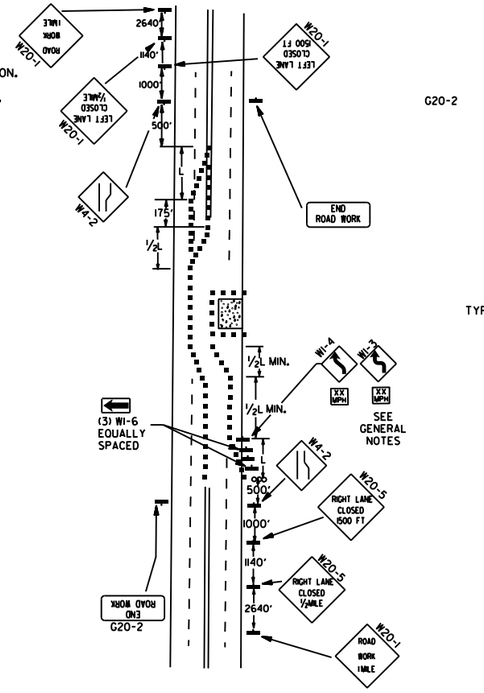
NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.

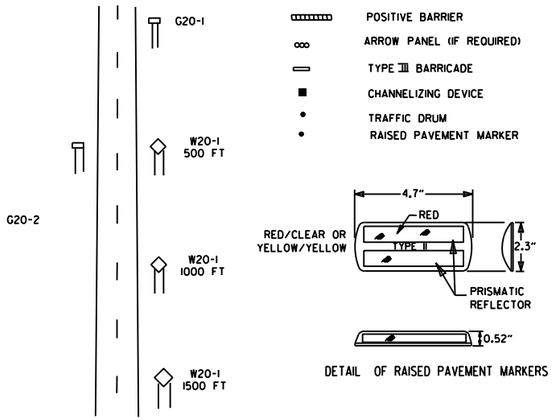


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.



(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



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:

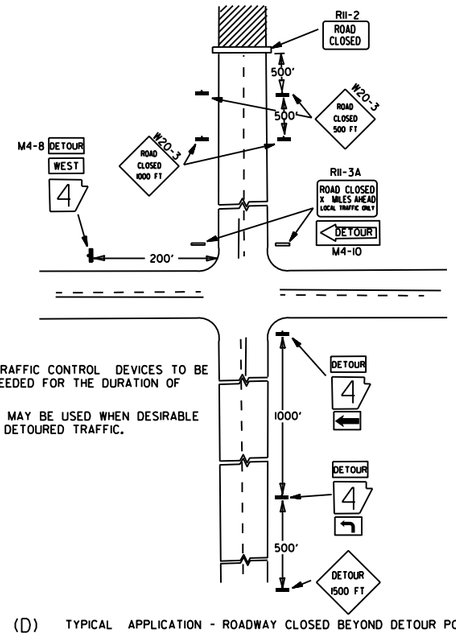
L= MINIMUM LENGTH OF TAPER.

S= NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.

W= WIDTH OF OFFSET.

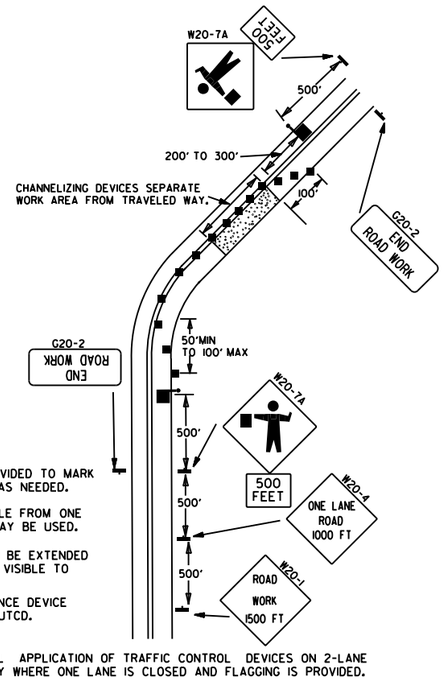
GENERAL NOTES:

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 WI-3 OR WI-4 CURVE WARNING SIGNS. USE WI-4 WHEN SPEED IS GREATER THAN 30MPH AND WI-3 WHEN 30MPH OR LESS
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-145MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-155MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE. 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).



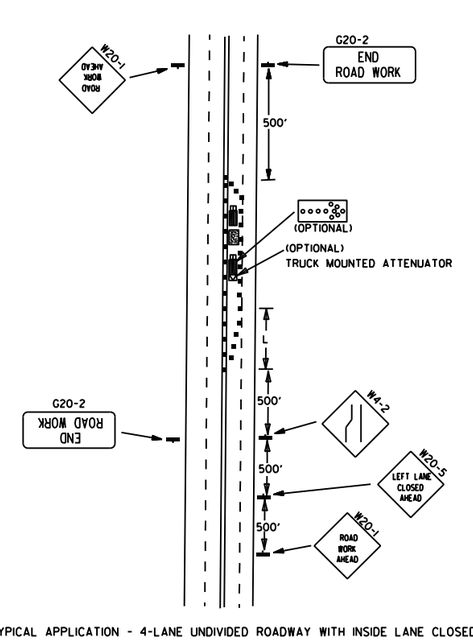
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

(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.



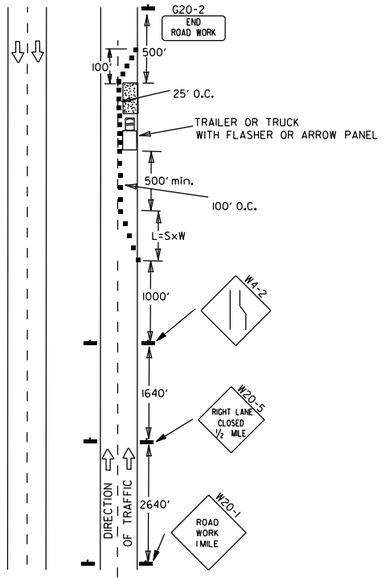
(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

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	

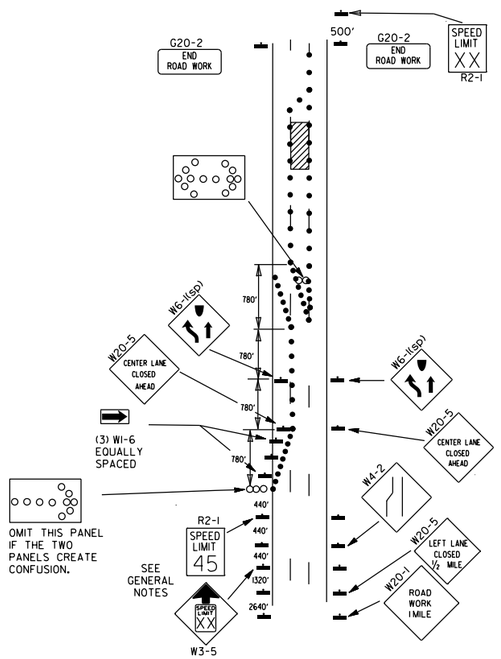
ARKANSAS STATE HIGHWAY COMMISSION

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:

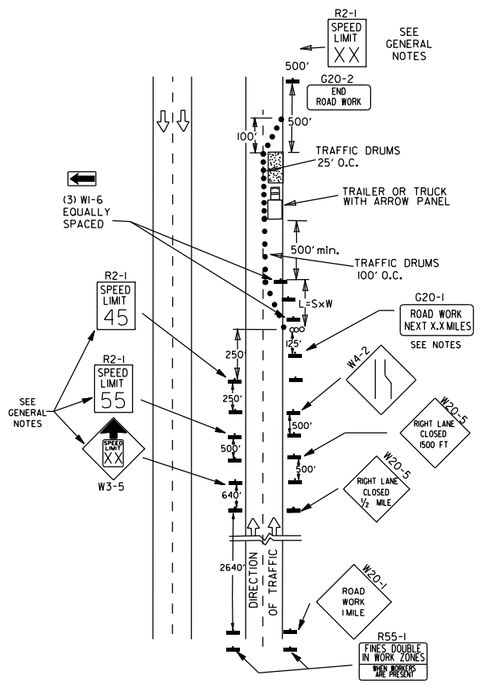
ARROW PANEL (IF REQUIRED)

■ CHANNELIZING DEVICE

● TRAFFIC DRUM

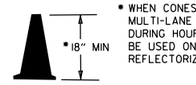
GENERAL NOTES:

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.

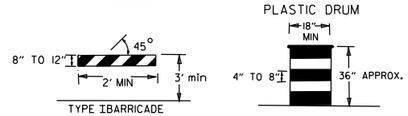
CHANNELIZING DEVICES



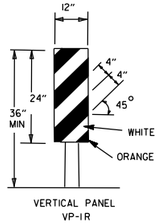
* WHEN CONES ARE USED ON FREEWAYS AND MULTI-LANE HIGHWAYS, THEY SHALL BE 28" MIN. DURING HOURS OF DARKNESS, 28" CONES SHALL BE USED ON ALL ROADWAYS, AND SHALL BE REFLECTORIZED IN ACCORDANCE WITH THE M.U.T.C.D.

CONES

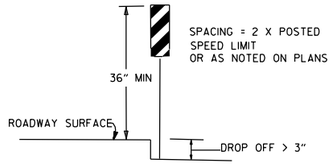
PLASTIC DRUM



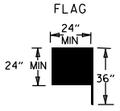
NOTE:
FOR ALL ROAD CLOSURES, THE TYPE III BARRICADES SHALL BE OF SUFFICIENT LENGTH TO EXTEND ACROSS ENTIRE ROADWAY.



VERTICAL PANEL PLACEMENT



FLAG



FLAG SHALL BE OF GOOD GRADE RED MATERIAL

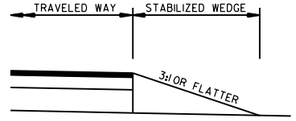
TRAFFIC CONTROL DEVICES			
NON-INTERSTATE			
VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL	
		≤ 45 MPH	> 45 MPH
≤ 1"	CENTERLINE	W8-11	W8-11
> 1" ≤ 3"	CENTERLINE	W8-11 AND CENTERLINE LANE STRIPING	W8-11 AND CENTERLINE LANE STRIPING
> 3"	CENTERLINE	STANDARD LANE CLOSURE[6]	STANDARD LANE CLOSURE[6]
≤ 3"	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:

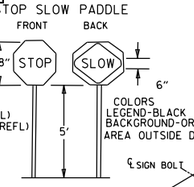
1. WHEN THE SHOULDER AREA IS USED AS PART OF THE TRAVELED LANE AND THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, THEN VERTICAL PANELS SHALL BE USED.
2. WHEN THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, A STABILIZED WEDGE SHALL 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).

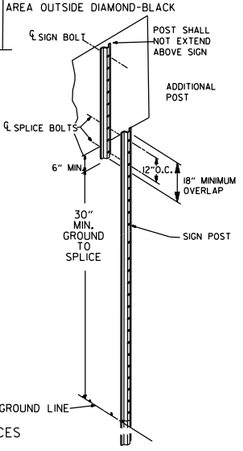


STABILIZED WEDGE

NOTE:
MATERIALS FOR THE STABILIZED WEDGE SHALL MEET THE REQUIREMENTS PROVIDED IN SECTION 603.02 OF THE STANDARD SPECIFICATIONS.

STOP SLOW PADDLE

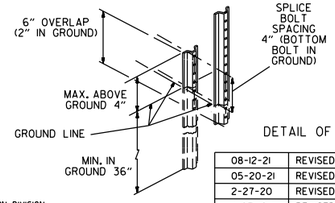




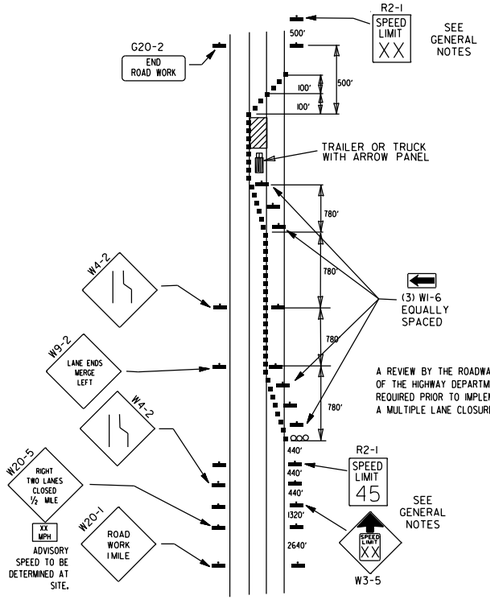
NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-21)

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



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.

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	

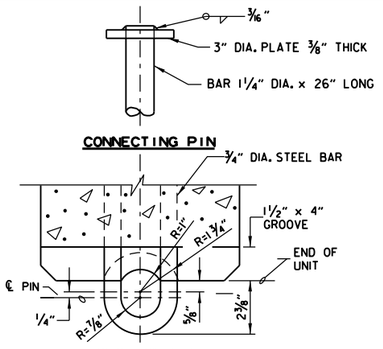
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-3

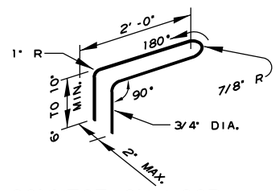
REINFORCING BAR TABLE PER BARRIER UNIT

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"

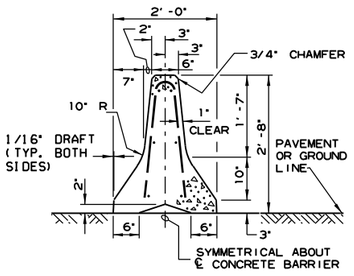


SECTION E-E

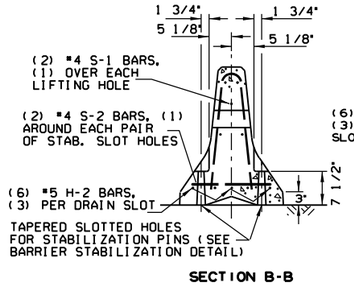
CONNECTION DETAILS



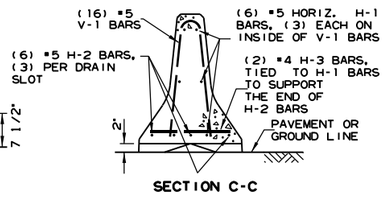
CONNECTION LOOP



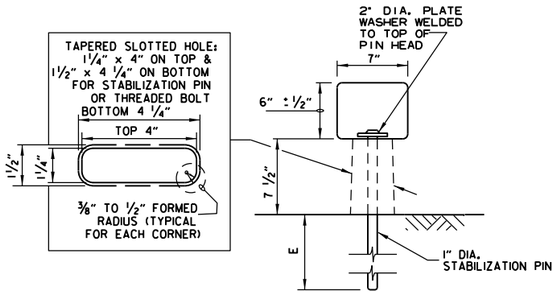
SECTION A-A



SECTION B-B



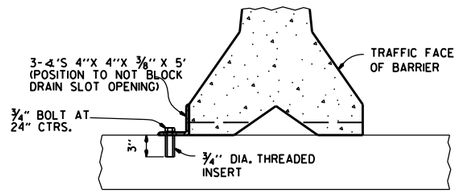
SECTION C-C



BARRIER STABILIZATION DETAIL

ROADWAY SECTION

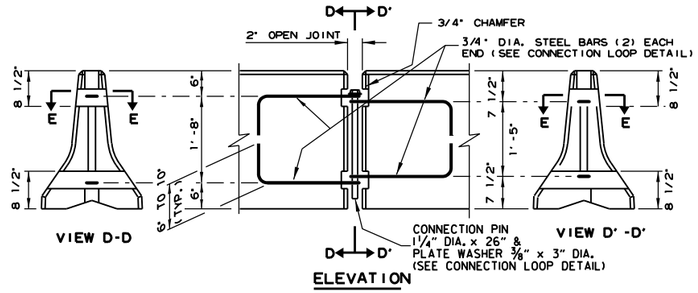
(E) 4" - CONCRETE PAVEMENT
8" - ASPHALT PAVEMENT
12" - SHOULDER AREAS



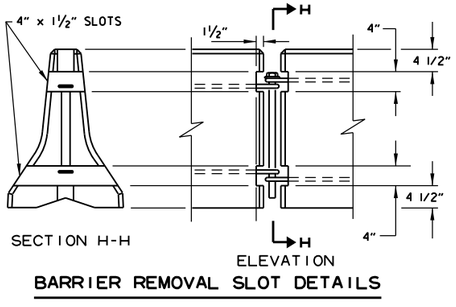
NOTE: " THREADED INSERTS SHALL BE CAST IN PLACE FOR ALL NEW BRIDGE DECKS AND DRILLED AND GROUTED FOR EXISTING BRIDGE DECKS. INSERTS SHALL HAVE A MINIMUM ULTIMATE LOAD CAPACITY OF 8000 LBS. IN TENSION. AFTER REMOVAL OF BARRIER, BOLTS, AND ANGLES, THE INSERTS SHALL BE FILLED WITH APPROVED NON-SHRINK EPOXY.

BARRIER STABILIZATION DETAIL

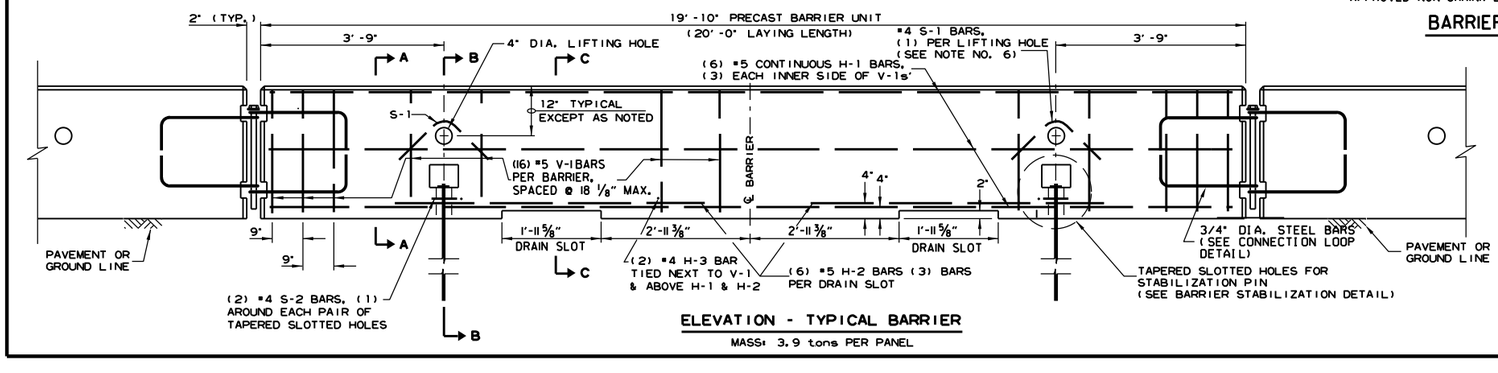
BRIDGE DECKS



ELEVATION



BARRIER REMOVAL SLOT DETAILS



ELEVATION - TYPICAL BARRIER

MASS: 3.9 tons PER PANEL

GENERAL NOTES

(1) THE CONTRACTOR SHALL FURNISH THE PRECAST CONCRETE BARRIER UNITS AND SHALL BE RESPONSIBLE FOR THE MANUFACTURE, SHIPMENT, STORAGE, PLACEMENT AND REMOVAL. AT THE COMPLETION OF THE PROJECT, THE PRECAST UNITS WILL REMAIN THE PROPERTY OF THE CONTRACTOR.

(2) MATERIALS SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS:
CONCRETE: 2500 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
REINFORCING STEEL: AASHTO M 31 OR M 53, GRADE 60
STRUCTURAL STEEL: AASHTO-M270 GRADE 36 SHALL BE USED FOR THE CONNECTION PIN, CONNECTION LOOPS, AND STABILIZATION PINS. A ONE PIECE PIN WITH A 3" ROUNDED TOP MAY BE USED IN PLACE OF THE DETAILED CONNECTION PIN.
DELINEATORS: DELINEATORS SHALL BE MOUNTED AT 10' SPACING ON TOP OF PRECAST BARRIER.

IN APPLICATIONS WHERE BARRIER WALL IS WITHIN 6 FEET OF A TRAFFIC LANE, ADDITIONAL DELINEATORS SHALL BE PLACED ON THE BARRIER AT 10' SPACING APPROXIMATELY ONE (1) FOOT FROM THE TOP OF THE BARRIER. DELINEATORS SHALL BE ON THE ARDOT QUALIFIED PRODUCTS LIST FOR CONSTRUCTION CONCRETE BARRIER MARKERS.
DELINEATOR COLOR SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
PAYMENT FOR DELINEATORS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID PER LIN. FT. FOR "FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER". THE CONTRACTOR SHALL CERTIFY TO THE ENGINEER THAT THE MATERIAL AND THE DESIGN USED IN THE PRECAST BARRIER UNITS MEETS THE REQUIREMENTS AS SHOWN ON THIS STANDARD DRAWING.

(3) OTHER PRECAST CONCRETE BARRIERS THAT HAVE BEEN CRASH TESTED AND APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION TO MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) WILL BE ACCEPTED IN LIEU OF THE BARRIER SHOWN. DRAIN SLOTS SHALL BE PROVIDED AS NEEDED OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL FURNISH A CERTIFICATION OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) COMPLIANCE FOR ANY OTHER TYPES OF PRECAST BARRIER TO BE USED. THE CERTIFICATION SHALL STATE THAT THE PRECAST CONCRETE BARRIER MEETS THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH). MIXING OF SHAPES WILL NOT BE ALLOWED IN A CONTINUOUS LINE OF UNITS.

(4) DOWEL HOLES IN PAVEMENT OR BRIDGE SLABS THAT ARE TO REMAIN IN PLACE SHALL BE FILLED. HOLES IN CONCRETE PAVEMENT AND BRIDGE SLABS SHALL BE FILLED WITH AN APPROVED NON-SHRINK EPOXY GROUT. HOLES IN ASPHALT PAVEMENT SHALL BE FILLED WITH AN APPROVED ASPHALT JOINT FILLER. PAYMENT FOR DRILLING AND FILLING HOLES TO BE INCLUDED IN THE PRICE FOR VARIOUS BARRIER ITEMS.

(5) ATTACH UNITS TO ROADWAY SURFACE WITH STABILIZATION PINS AND TO DECK SLABS USING BOLTS WHEN REQUIRED.

(6) A 4" WHITE PVC SLEEVE MAY BE USED TO FORM THE LIFTING HOLE AND IF USED THE SLEEVE IS TO BE LEFT IN PLACE.

DATE	REVISION	FILMED
11-07-19	REVISED NOTE 3	
2-27-14	REVISED BARRIER STABILIZATION DETAIL	
10-15-09	ADDED REFERENCE TO WASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02	ISSUED NEW DRAWING	

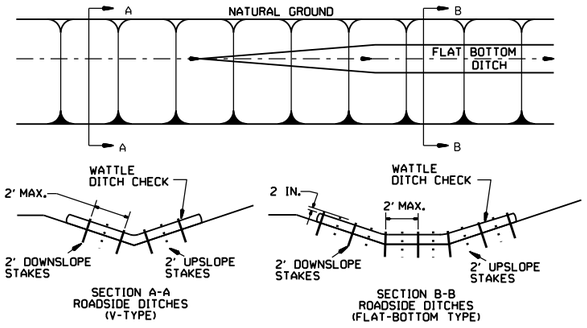
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

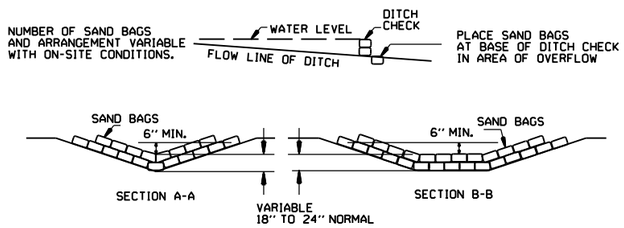
STANDARD DRAWING TC-4

GENERAL NOTES

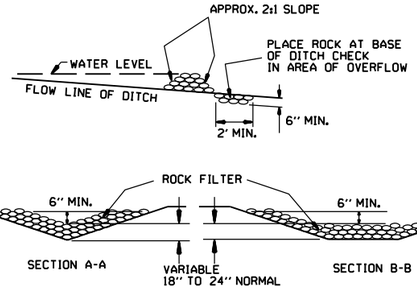
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



SAND BAG DITCH CHECK (E-5)

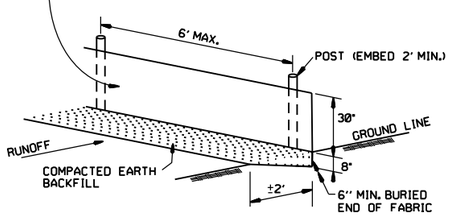


ROCK DITCH CHECK (E-6)

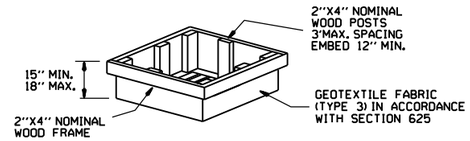
GENERAL NOTES

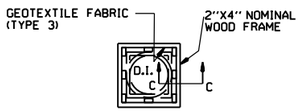
GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625

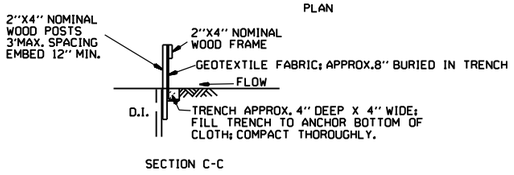
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



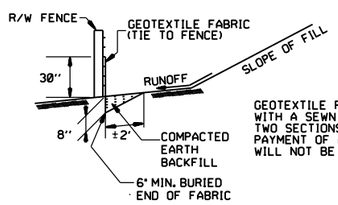
SILT FENCE (E-11)





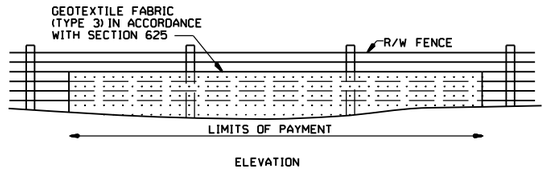


DROP INLET SILT FENCE (E-7)



GENERAL NOTES

GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



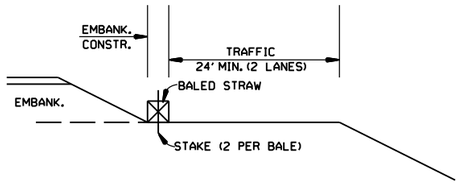
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

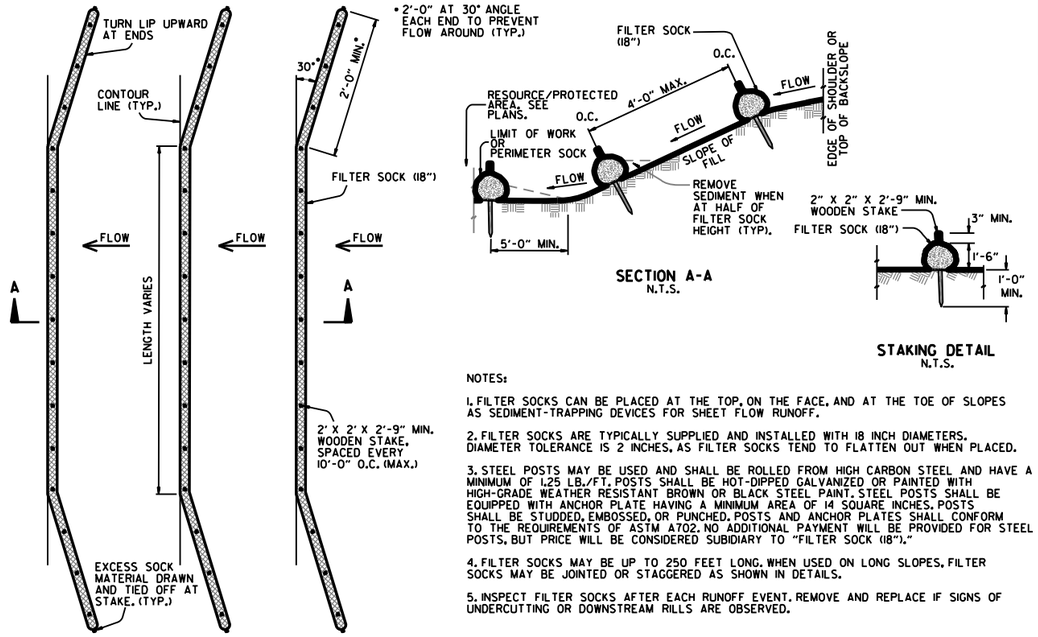
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

2. NO GAPS SHALL BE LEFT BETWEEN BALES.

3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.



BALED STRAW FILTER BARRIER (E-2)



NOTES:

1. FILTER SOCKS CAN BE PLACED AT THE TOP, ON THE FACE, AND AT THE TOE OF SLOPES AS SEDIMENT-TRAPPING DEVICES FOR SHEET FLOW RUNOFF.

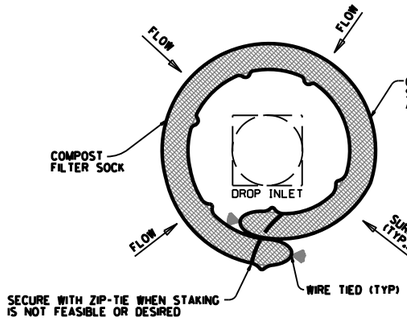
2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES, AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.

3. STEEL POSTS MAY BE USED AND SHALL BE ROLLED FROM HIGH CARBON STEEL AND HAVE A MINIMUM OF 1.25 LB./FT. POSTS SHALL BE HOT-DIPPED GALVANIZED OR PAINTED WITH HIGH-GRADE WEATHER RESISTANT BROWN OR BLACK STEEL PAINT. STEEL POSTS SHALL BE EQUIPPED WITH ANCHOR PLATE HAVING A MINIMUM AREA OF 14 SQUARE INCHES. POSTS SHALL BE STUDDED, EMBOSSED, OR PUNCHED. POSTS AND ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR STEEL POSTS, BUT PRICE WILL BE CONSIDERED SUBIDIARY TO "FILTER SOCK (18")."

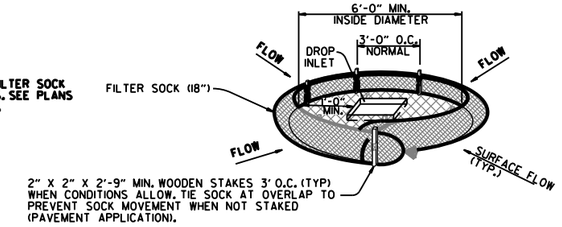
4. FILTER SOCKS MAY BE UP TO 250 FEET LONG. WHEN USED ON LONG SLOPES, FILTER SOCKS MAY BE JOINTED OR STAGGERED AS SHOWN IN DETAILS.

5. INSPECT FILTER SOCKS AFTER EACH RUNOFF EVENT. REMOVE AND REPLACE IF SIGNS OF UNDERCUTTING OR DOWNSTREAM RILLS ARE OBSERVED.

FILTER SOCK ALONG SLOPE (E-3)



DROP INLET PLAN VIEW
N.T.S.



DROP INLET PERSPECTIVE VIEW
N.T.S.

NOTES:

1. OVERLAP ENDS OF SOCK (1' MIN. 3' MAX.).

2. USE 18" DIA. SOCK IN NON-TRAFFIC AREAS OR AREAS WHERE SAFETY IS NOT A CONCERN.

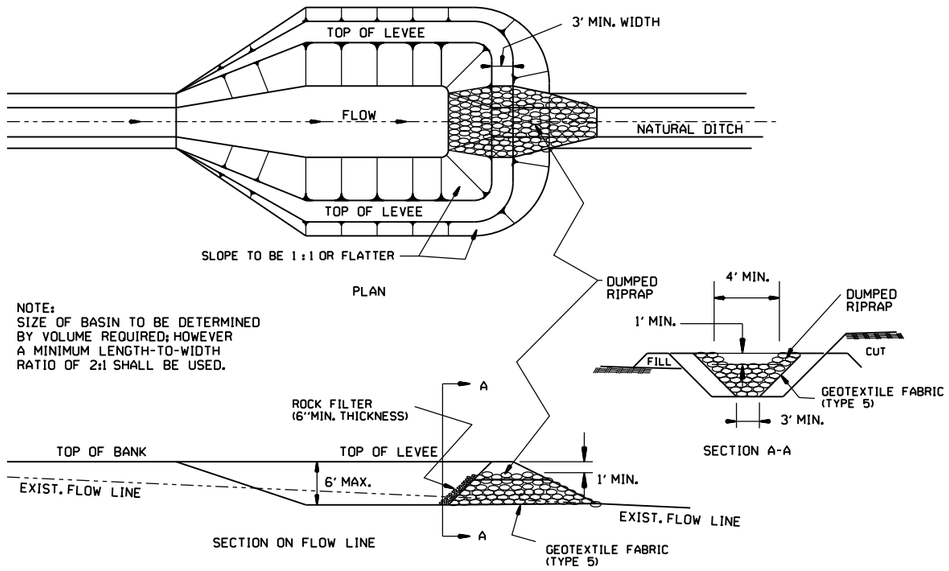
COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)

DATE	REVISION	FILMED
11-16-17	ADDED FILTER SOCK E-3 AND E-13	
12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK	
11-18-98	ADDED NOTES	
07-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)	
07-20-95	REVISED SILT FENCE E-4 AND E-11	7-20-95
07-15-94	REV. E-4 & E-11 MIN. 13" BURIED END OF FABRIC	
06-02-94	REVISED E-1,4,7 & 11; DELETED E-2 & 3	6-2-94
04-01-93	REDRAWN	
10-01-92	REDRAWN	
08-02-76	ISSUED R.D.M.	298-7-28-76

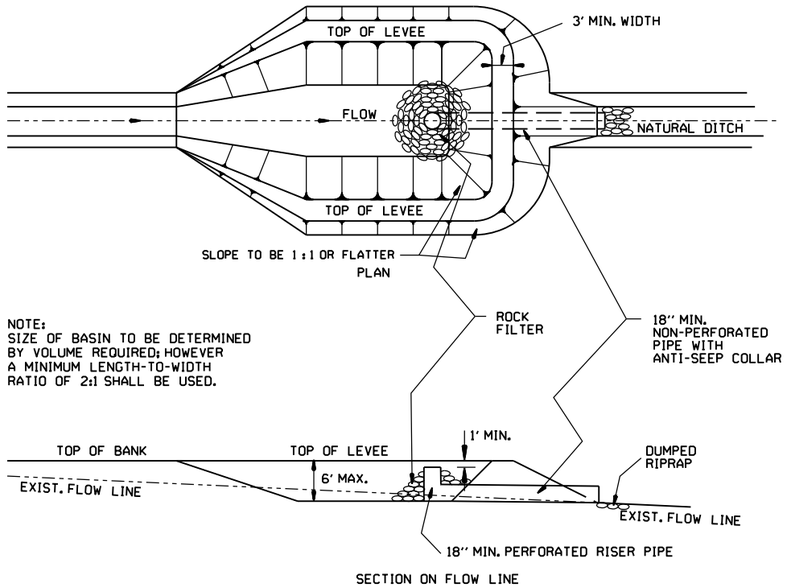
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

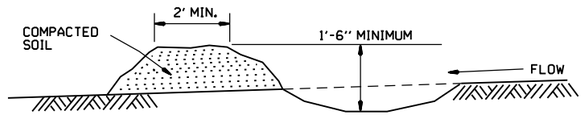
STANDARD DRAWING TEC-1



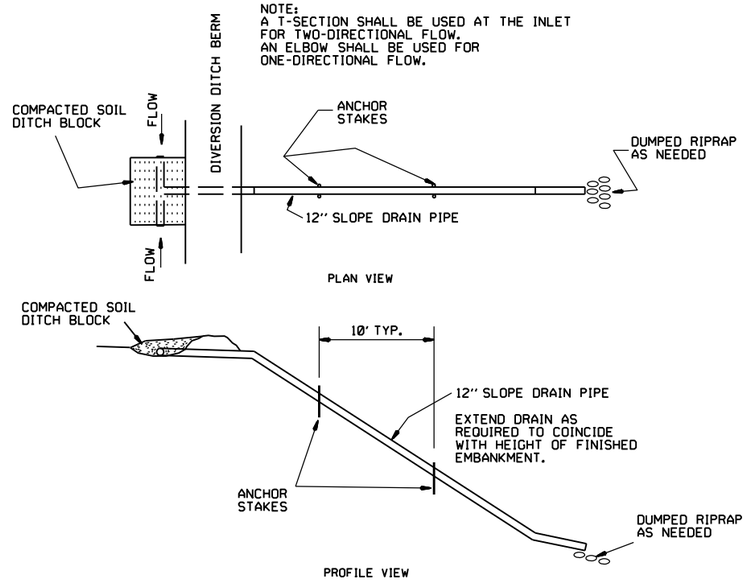
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



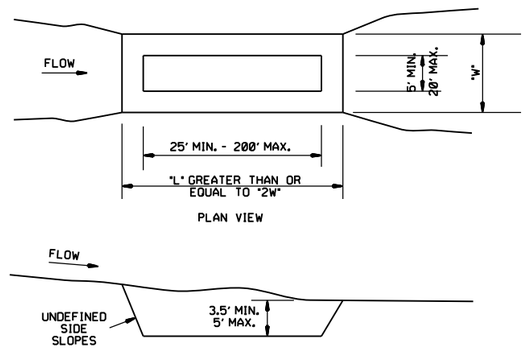
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



SEDIMENT BASIN (E-14)

DATE	REVISION	FILMED
6-2-94	Revised E-8 & E-12; Added E-14 & Deleted E-13	
4-1-93	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

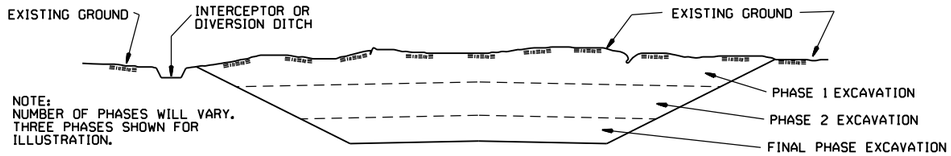
STANDARD DRAWING TEC-2

CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE

1. PLACE PERIMETER CONTROLS (I.E. SILT FENCES , DIVERSION DITCHES, SEDIMENT BASINS, ETC.)
2. PERFORM CLEARING AND GRUBBING OPERATION.

EXCAVATION



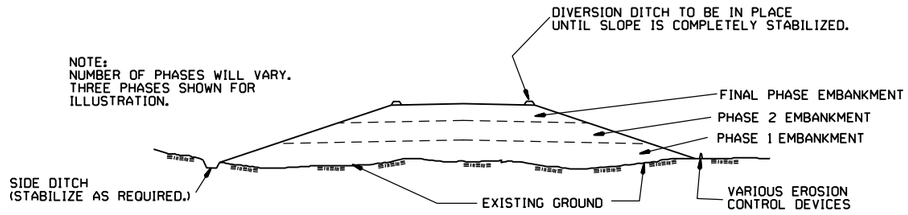
GENERAL NOTE

ALL CUT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE EXCAVATED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE

1. EXCAVATE AND STABILIZE INTERCEPTOR AND/OR DIVERSION DITCHES.
2. PERFORM PHASE 1 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
3. PERFORM PHASE 2 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
4. PERFORM FINAL PHASE OF EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING. STABILIZE DITCHES. CONSTRUCT DITCH CHECKS, DIVERSION DITCHES, SEDIMENT BASINS, OR OTHER EROSION CONTROL DEVICES AS REQUIRED.

EMBANKMENT



GENERAL NOTE

ALL EMBANKMENT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE CONSTRUCTED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE

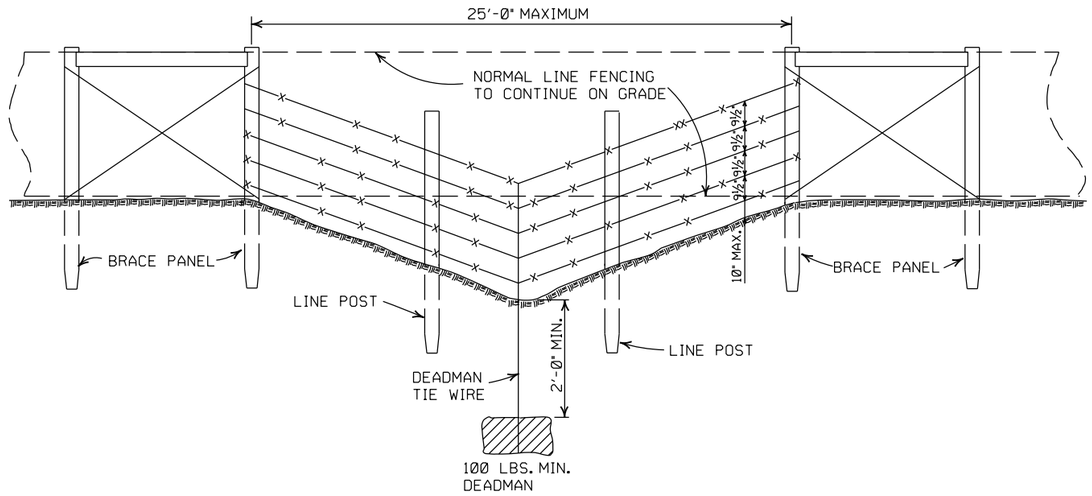
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.
3. PLACE PHASE 2 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.
4. PLACE FINAL PHASE OF EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PLACE DIVERSION DITCHES AND SLOPE DRAINS AND MAINTAIN UNTIL ENTIRE SLOPE IS STABILIZED.

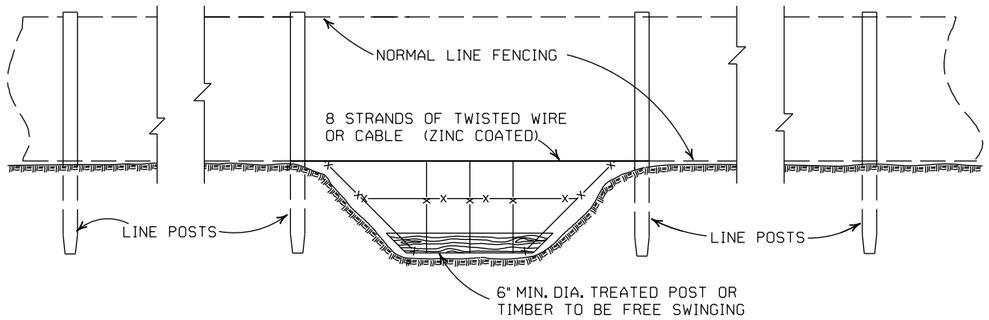
11-03-94	CORRECTED SPELLING	
6-2-94	Drawn & Issued	6-2-94
DATE	REVISION	FILMED

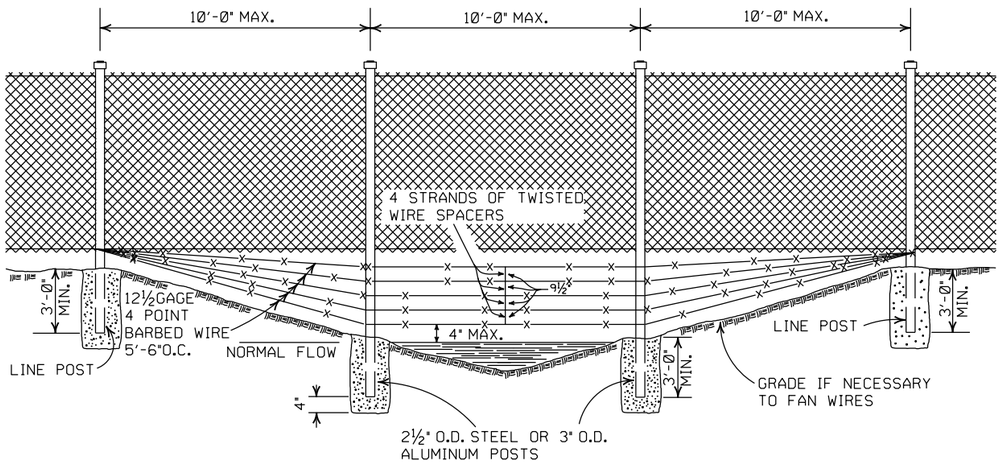
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3







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.

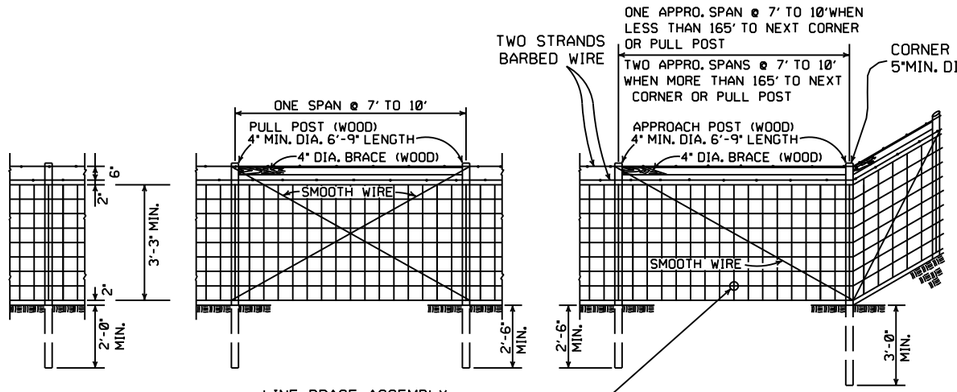
PAYMENT FOR THE TYPE INSTALLATION USED WILL NOT BE MADE DIRECTLY BUT WILL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR WIRE FENCE OR CHAIN LINK FENCE.

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

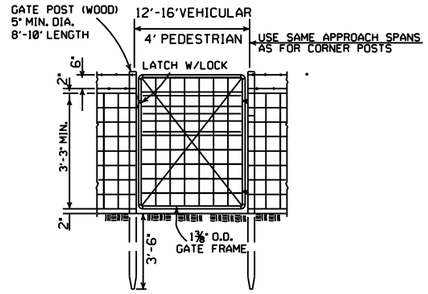
ARKANSAS STATE HIGHWAY COMMISSION

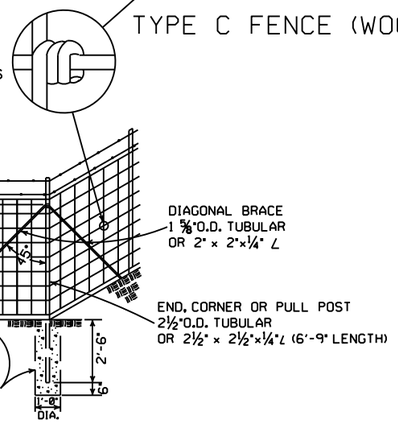
WIRE FENCE WATER GAPS

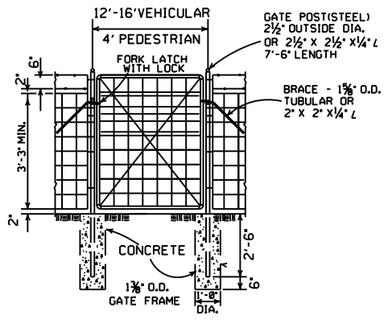
STANDARD DRAWING WF-2



TYPE C FENCE (WOOD POSTS)

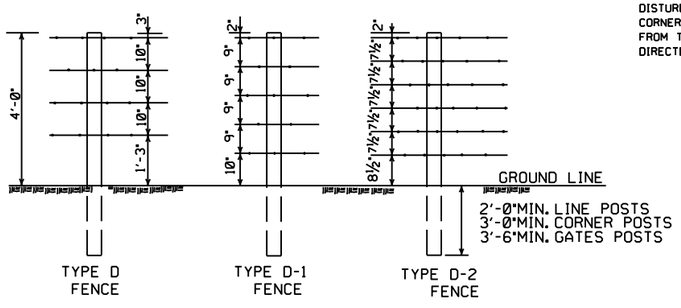




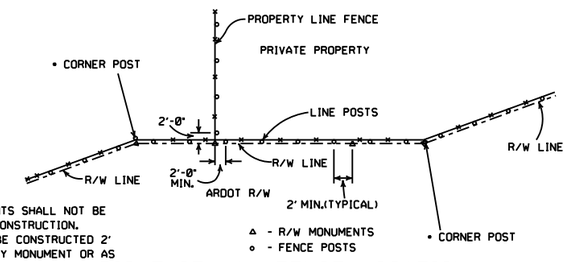


NOTE: STEEL LINE POSTS SHALL BE 6'-6" MINIMUM LENGTH.

TYPE C FENCE (STEEL POSTS)

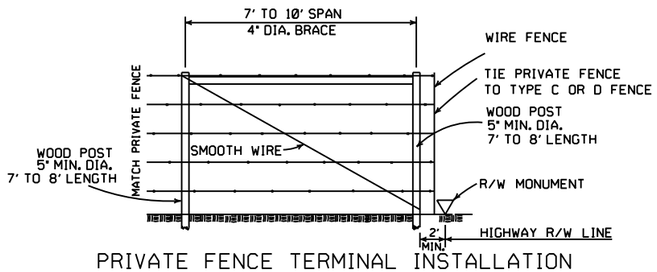


NOTE: SPACING AND SIZE (EXCEPT LENGTH) OF POSTS, APPROACH SPANS, PULL POST ASSEMBLIES, AND CORNER BRACING FOR TYPE D FENCE SHALL CONFORM TO TYPE C FENCE. USE GALVANIZED STAPLES ON WOOD POSTS AND APPROVED FASTENERS ON STEEL POSTS.



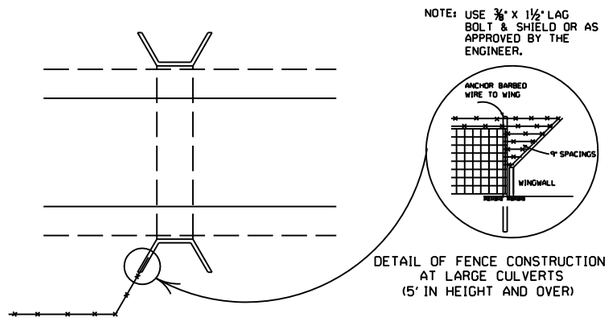
• NOTE: RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY FENCE CONSTRUCTION. CORNER POSTS SHALL BE CONSTRUCTED 2' FROM THE RIGHT-OF-WAY MONUMENT OR AS DIRECTED BY THE ENGINEER.

RIGHT-OF-WAY FENCE LOCATION

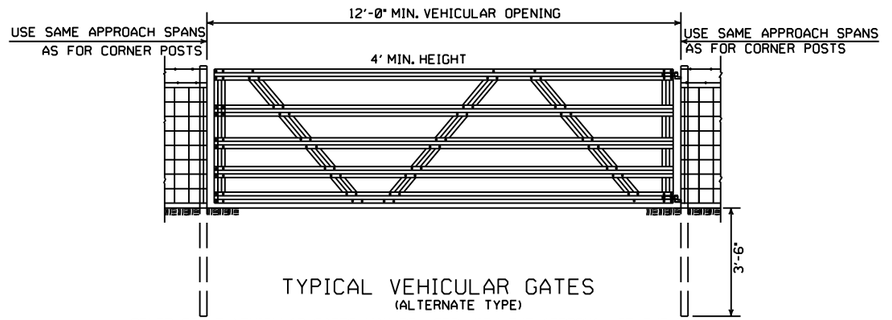


PRIVATE FENCE TERMINAL INSTALLATION

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.



DETAIL OF FENCE CONSTRUCTION AT LARGE CULVERTS (5' IN HEIGHT AND OVER)



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.

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.

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