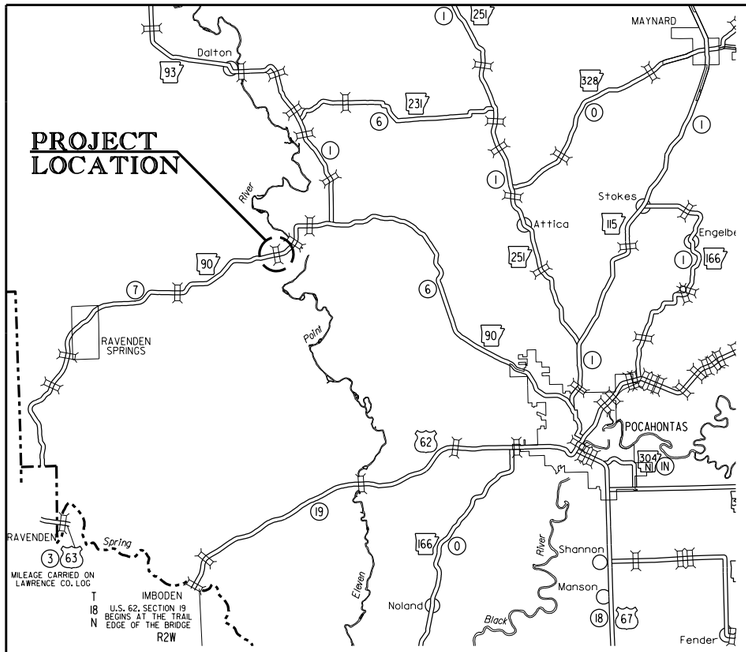
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101003	1	60
				(2)	EASSIS CREEK STR. & APPRS. (S)			

ARKANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS

EASSIS CREEK STR. & APPRS. (S)
RANDOLPH COUNTY
ROUTE 90 SECTION 7
JOB 101003
FED. AID PROJ. NHPP-0061(20)



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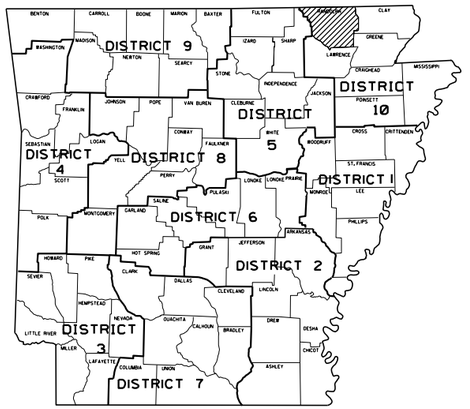
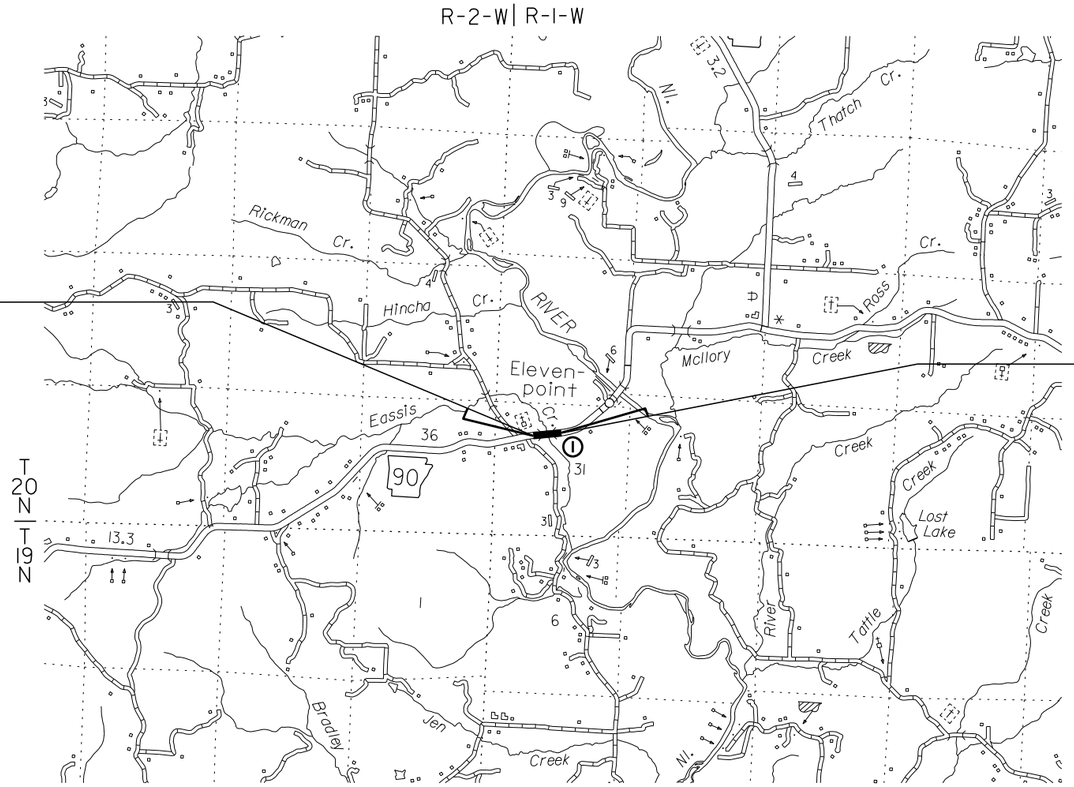


ARKANSAS HIGHWAY DISTRICT 10

NOT TO SCALE



BRIDGE CONSTRUCTION DATA

(1) STA. 102+14.50 BRIDGE END
BRIDGE NO. 07531 OVER EASSIS CREEK
130'-0" CONTINUOUS INTEGRAL W-BEAM UNIT
(40'-50'-40')
30'-0" CLEAR ROADWAY
131'-0" BRIDGE LENGTH
STA. 103+45.50 BRIDGE END

DESIGN TRAFFIC DATA

DESIGN YEAR----------2046
2026 ADT----------700
2046 ADT----------800
2046 DHV----------88
DIRECTIONAL DISTRIBUTION------0.60
TRUCKS----------5%
DESIGN SPEED----------55 MPH

BEGIN POINT OF PROJECT	MID POINT OF PROJECT	END POINT OF PROJECT
LAT.: N 36° 20' 28.56"	LAT.: N 36° 20' 30.67"	LAT.: N 36° 20' 32.78"
LONG.: W 91° 07' 40.47"	LONG.: W 91° 07' 25.65"	LONG.: W 91° 07' 10.83"

LENGTH COMPUTED ALONG CL OF HWY. 90			
GROSS LENGTH OF PROJECT	2512.00	FEET	0.476 MILES
NET LENGTH OF ROADWAY	2381.00	FEET	0.451 MILES
NET LENGTH OF BRIDGES	131.00	FEET	0.025 MILES
NET LENGTH OF PROJECT	2512.00	FEET	0.476 MILES

CERTIFICATE OF AUTHORIZATION
MICHAEL BAKER INTERNATIONAL INC
No. 1126
ARKANSAS ENGINEER

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 10887
SCOTT P. THORNSBERRY
11-19-2025

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
2-3-2026				6	ARK.			
				JOB NO.		101003	2	60

(2) INDEX OF SHEETS AND STANDARD DRAWINGS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
2-3-2026

INDEX OF SHEETS

SHEET NO.	TITLE	BRIDGE NO.	DRWG.NO.
1	TITLE SHEET		
2	INDEX OF SHEETS AND STANDARD DRAWINGS		
3	GOVERNING SPECIFICATIONS AND GENERAL NOTES		
4 - 5	TYPICAL SECTIONS OF IMPROVEMENT		
6 - 7	SPECIAL DETAILS		
8 - 14	TEMPORARY EROSION CONTROL DETAILS		
15 - 25	MAINTENANCE OF TRAFFIC DETAILS		
26 - 27	PERMANENT PAVEMENT MARKING DETAILS		
28 - 30	QUANTITIES		
31	SCHEDULE OF BRIDGE QUANTITIES	07531	63888
32	SUMMARY OF QUANTITIES AND REVISIONS		
33 - 34	SURVEY CONTROL DETAILS		
35 - 37	PLAN AND PROFILE SHEETS		
38	LAYOUT OF BRIDGE - HIGHWAY 90 OVER EASSIS CREEK (SHEET 1 OF 2)	07531	63889
39	LAYOUT OF BRIDGE - HIGHWAY 90 OVER EASSIS CREEK (SHEET 2 OF 2)	07531	63890
40	DETAILS OF END BENTS	07531	63891
41	DETAILS OF INTERMEDIATE BENTS	07531	63892
42	DETAILS FOR CONCRETE FILLED STEEL SHELL PILES AND PILE ENCASEMENTS	07531	63893
43	DETAILS OF 130'-0" CONTINUOUS INTEGRAL W-BEAM UNIT (SHEET 1 OF 5)	07531	63894
44	DETAILS OF 130'-0" CONTINUOUS INTEGRAL W-BEAM UNIT (SHEET 2 OF 5)	07531	63895
45	DETAILS OF 130'-0" CONTINUOUS INTEGRAL W-BEAM UNIT (SHEET 3 OF 5)	07531	63896
46	DETAILS OF 130'-0" CONTINUOUS INTEGRAL W-BEAM UNIT (SHEET 4 OF 5)	07531	63897
47	DETAILS OF 130'-0" CONTINUOUS INTEGRAL W-BEAM UNIT (SHEET 5 OF 5)	07531	63898
48	DETAILS OF TYPE SPECIAL APPROACH SLAB	07531	63899
49	DETAILS OF TYPE SPECIAL APPROACH GUTTERS	07531	63900
50 - 60	CROSS SECTIONS		

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

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
55010	STANDARD DETAILS FOR TYPE D BRIDGE NAME PLATE	01-28-25
55070	STANDARD DETAILS FOR BRIDGE TRAFFIC RAIL TYPE SSTR36	09-27-22

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-7	GUARDRAIL DETAILS	11-07-19
GR-8	GUARDRAIL DETAILS	11-07-19
GR-9	GUARDRAIL DETAILS	11-07-19
GR-10	GUARDRAIL DETAILS	11-07-19
GR-11	GUARDRAIL DETAILS	11-07-19
GR-12	GUARDRAIL DETAILS	05-14-20
MB-1	MAILBOX DETAILS	11-18-04
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
SE-2	TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC	11-07-19
TC-1	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	08-14-25
TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	08-14-25
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	08-14-25
TC-4	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	11-07-19
TC-5	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	11-07-19
TC-6	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	01-22-26
TEC-1	TEMPORARY EROSION CONTROL DEVICES	11-16-17
TEC-2	TEMPORARY EROSION CONTROL DEVICES	06-02-94
TEC-3	TEMPORARY EROSION CONTROL DEVICES	11-03-94
TEC-4	TEMPORARY EROSION CONTROL DEVICES	07-26-12
WF-4	WIRE FENCE TYPE C AND D	08-22-02

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2-23-2026				6	ARK.			
				JOB NO.		101003	3	60
				(2)	GOVERNING SPECIFICATIONS AND GENERAL NOTES			

GOVERNING SPECIFICATIONS

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

NUMBER **TITLE**

ERRATA____ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273__REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273__SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273__SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273__SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA-1273__SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHWA-1273__SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273__SUPPLEMENT - WAGE RATE DETERMINATION
100-3_____CONTRACTOR'S LICENSE
100-4_____DEPARTMENT NAME CHANGE
102-2_____ISSUANCE OF PROPOSALS
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
637-1_____MAILBOXES
800-1_____STRUCTURES
802-3_____CONCRETE FOR STRUCTURES
802-5_____CONCRETE FOR STRUCTURES
804-2_____REINFORCING STEEL FOR STRUCTURES
807-2_____STEEL STRUCTURES
JOB 101003__BIDDING REQUIREMENTS AND CONDITIONS
JOB 101003__BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 101003__BUY AMERICA - CONSTRUCTION MATERIALS
JOB 101003__CARGO PREFERENCE ACT REQUIREMENTS
JOB 101003__CAVE DISCOVERY
JOB 101003__CLASS C FLY ASH IN PORTLAND CEMENT CONCRETE PAVEMENT AND CLASS S(AE) CONCRETE
JOB 101003__COLD MILLING - COUNTY PROPERTY
JOB 101003__CONCRETE BRIDGE DECK CURING AND SURFACE TREATMENT RESTRICTIONS
JOB 101003__CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 101003__DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
JOB 101003__DIRECT TENSION INDICATORS FOR HIGH STRENGTH BOLT ASSEMBLIES
JOB 101003__DOCUMENTATION OF PAYMENTS MADE TO DISADVANTAGED BUSINESS ENTERPRISES
JOB 101003__DOCUMENTATION OF PAYMENTS MADE TO SUBCONTRACTORS
JOB 101003__FLEXIBLE BEGINNING OF WORK - CALENDAR DAY CONTRACT
JOB 101003__LIQUIDATED DAMAGES PROCEDURE FOR BID LETTINGS
JOB 101003__MANDATORY ELECTRONIC CONTRACT
JOB 101003__MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB 101003__NESTING SITES OF MIGRATORY BIRDS
JOB 101003__OFF-SITE RESTRAINING CONDITIONS FOR INDIANA AND NORTHERN LONG-EARED BATS
JOB 101003__PARTNERING REQUIREMENTS
JOB 101003__PLASTIC PIPE
JOB 101003__PRICE ADJUSTMENT FOR ASPHALT BINDER
JOB 101003__PRICE ADJUSTMENT FOR FUEL
JOB 101003__PROHIBITION OF CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT
JOB 101003__SHORING
JOB 101003__SHORING FOR CULVERTS
JOB 101003__SOIL STABILIZATION
JOB 101003__SPECIAL CLEARING PUP SEASON REQUIREMENTS
JOB 101003__STORM WATER POLLUTION PREVENTION PLAN
JOB 101003__SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 101003__USE OF FOREIGN MADE UNMANNED AIRCRAFT SYSTEMS
JOB 101003__UTILITY ADJUSTMENTS
JOB 101003__VALUE ENGINEERING
JOB 101003__WARM MIX ASPHALT
JOB 101003__WATER POLLUTION CONTROL & RESTRAINING CONDITION

STATE OF ARKANSAS
Stephane W. Bossio
LICENSED PROFESSIONAL ENGINEER
No.22896
STEPHANE W. BOSSIO
2-24-2026

GENERAL NOTES

1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
2. ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
3. ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING U. S. MAILBOXES WITHIN THE PROJECT LIMITS IN SUCH A MANNER THAT THE PUBLIC MAY RECEIVE CONTINUED MAIL SERVICE. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS BID ITEMS.
5. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
6. ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED IF AND WHERE DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO ENSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FENCE TO CONTROL LIVESTOCK IN AREAS WHERE PASTURES ARE SEVERED. WIRE FENCE MAY BE CONSTRUCTED INITIALLY, OR IN LIEU THEREOF, THE CONTRACTOR AT HIS OWN EXPENSE, MAY ELECT TO PROVIDE TEMPORARY FENCING SUITABLE TO CONTAIN LIVESTOCK.
8. THE SEQUENCE AS SHOWN ON THE MAINTENANCE OF TRAFFIC PLANS IS A GENERAL OUTLINE FOR THE CONSTRUCTION OF THIS PROJECT, AND IN NO WAY IS IT INTENDED TO COVER EVERY ITEM IN THE PROJECT. ITEMS NOT CRITICAL TO THE CONSTRUCTION SEQUENCE MAY BE CONSTRUCTED IN ANY STAGE AS APPROVED BY THE RESIDENT ENGINEER.
9. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
10. THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. AFTER SAWING, THE PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN. ANY DAMAGE OF THE ASPHALT PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
11. THIS PROJECT IS COVERED UNDER A SECTION 404 NATIONWIDE 14 PERMIT FOR LINEAR PROJECTS. REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS, EDITION OF 2014, FOR PERMIT REQUIREMENTS.

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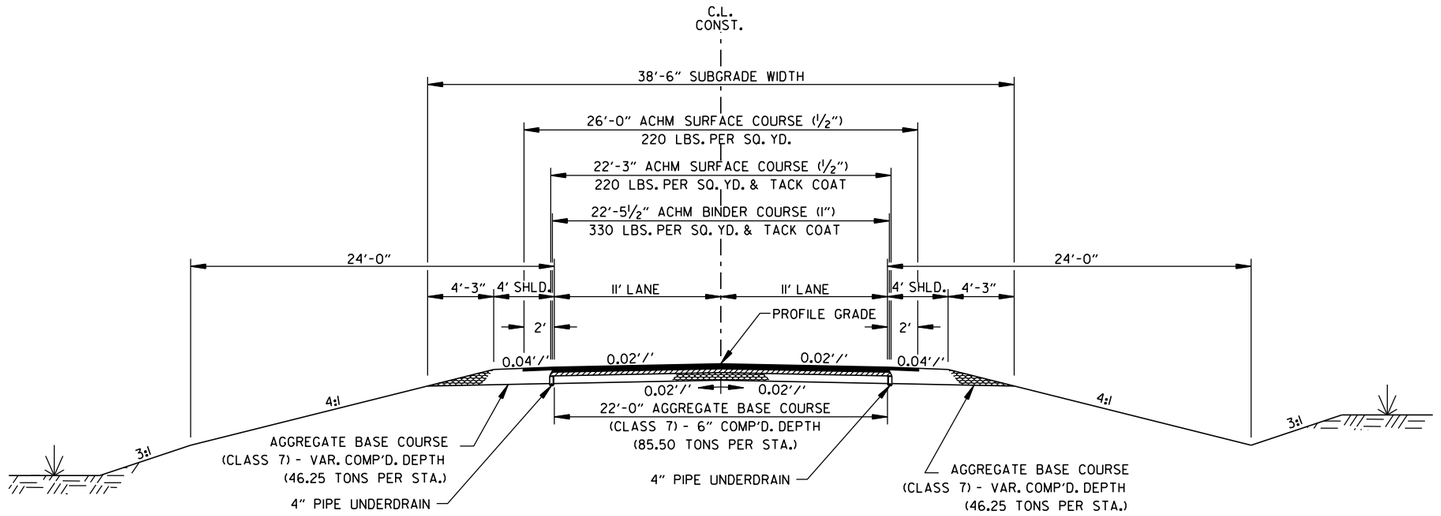
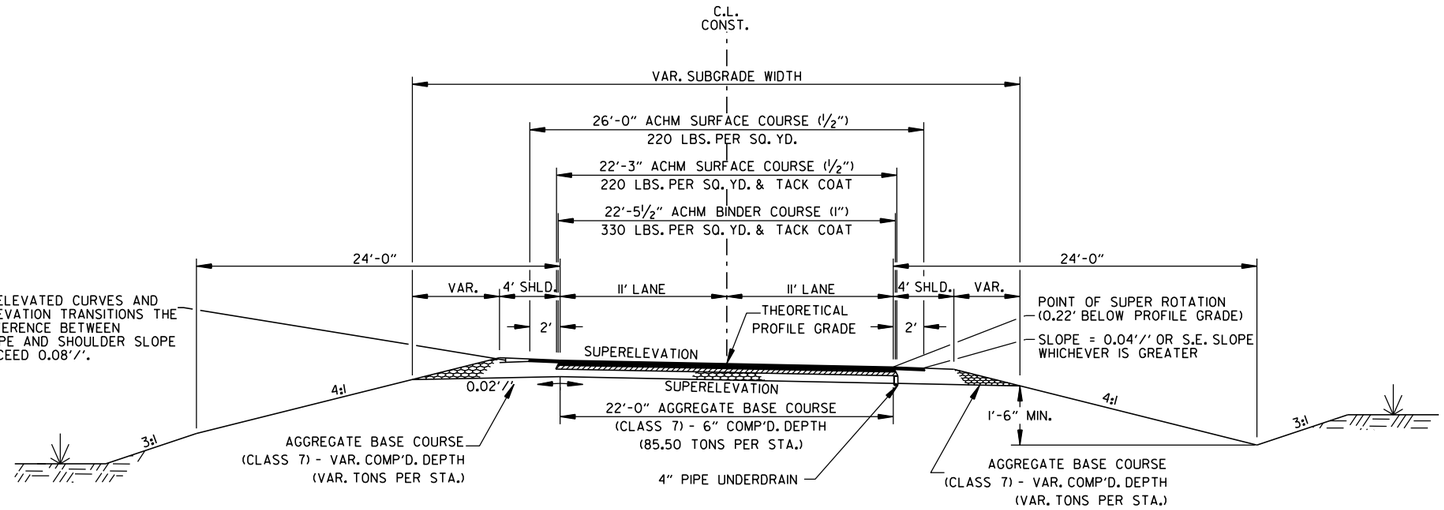
				JOB NO.		101003	4	60
				(2)	TYPICAL SECTIONS OF IMPROVEMENT			



FULL DEPTH
TANGENT SECTION

STA. 93+75.00 TO STA. 101+84.50
STA. 103+75.50 TO STA. 113+50.00



FULL DEPTH
SUPERELEVATION SECTION

NOTES:

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

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

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
10-20-2025

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				6	ARK.			
				JOB NO.		101003	5	60
				(2)	TYPICAL SECTIONS OF IMPROVEMENT			

STATE OF ARKANSAS
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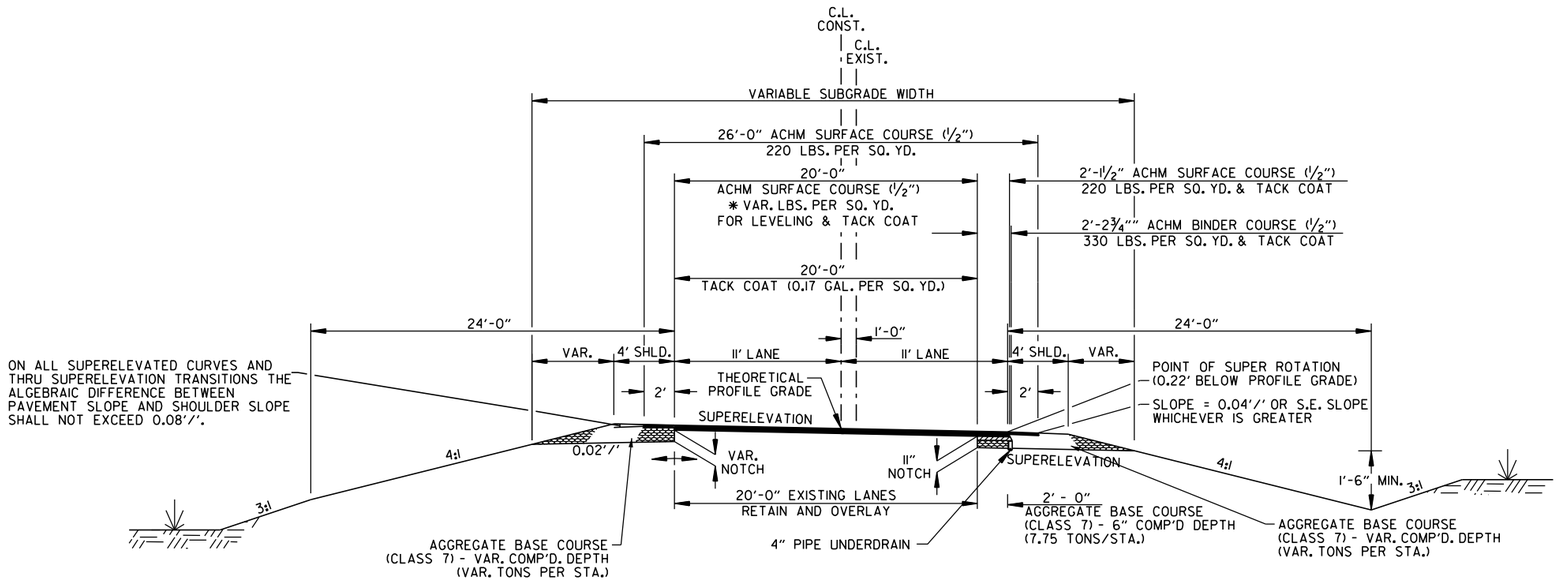

STA. 88+88.21 TO STA. 94+20.25
TRANSITION FROM
SUPERELEVATION SECTION NOTCH
AND WIDENING TO FULL DEPTH.

STA. 113+22.95 TO STA. 116+00.00
TRANSITION FROM FULL DEPTH TO
SUPERELEVATION
SECTION NOTCH AND WIDENING.

NOTCH AND WIDENING SUPERELEVATION SECTION

STA. 88+88.00 TO STA. 93+75.00
STA. 113+50.00 TO STA. 114+00.00

*TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

NOTES:

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

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

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

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

5. 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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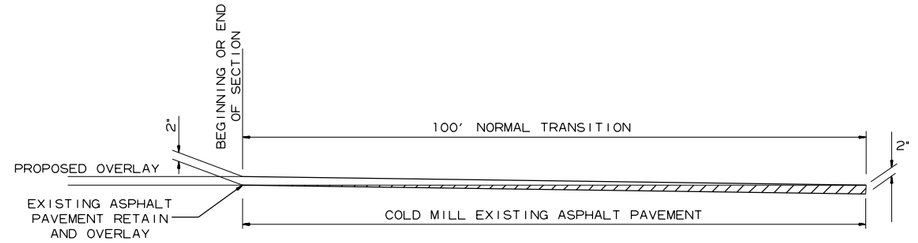
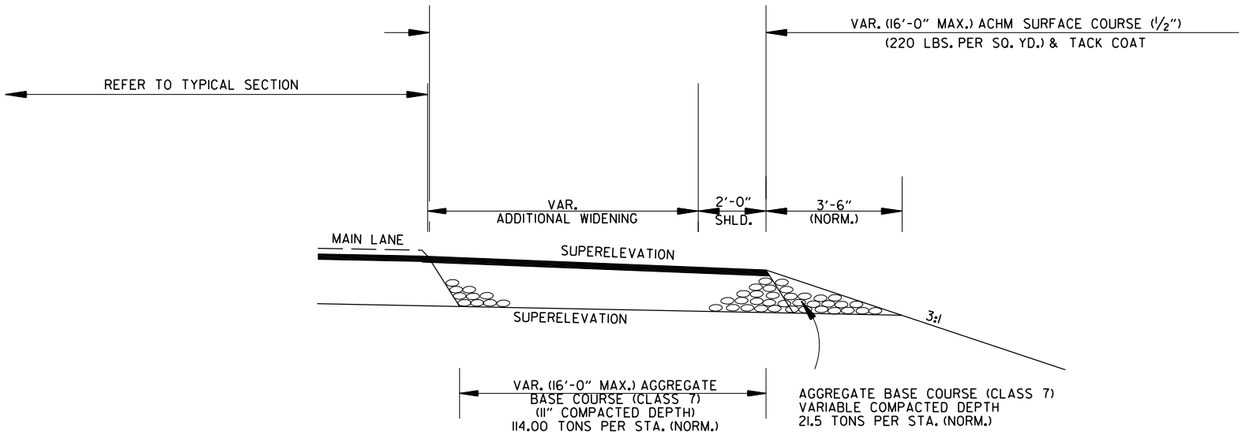
TYPICAL SECTIONS OF IMPROVEMENT

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101003	6	60
				(2)	SPECIAL DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
10-10-2025

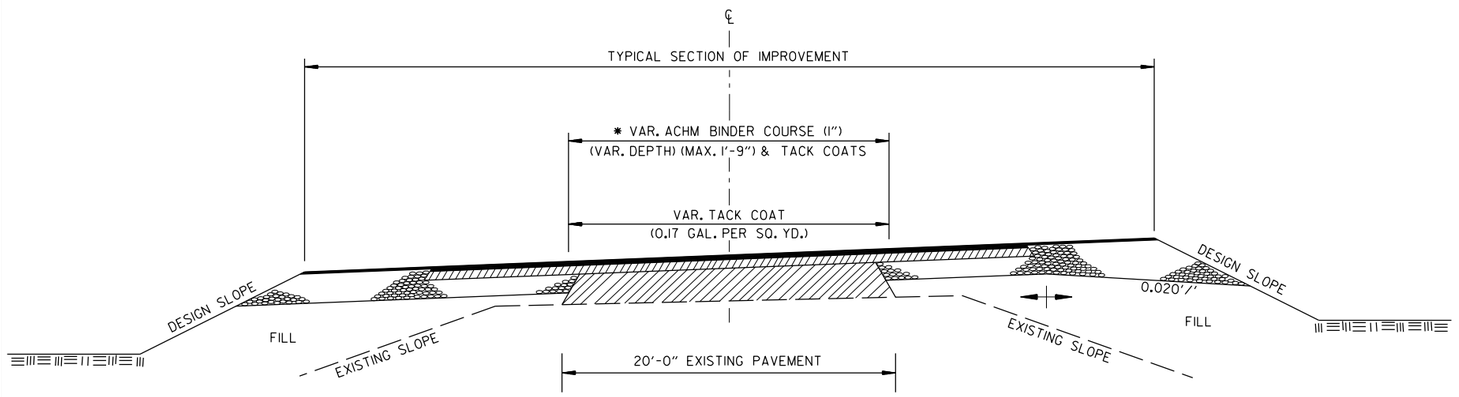


DETAIL FOR TRANSITIONS



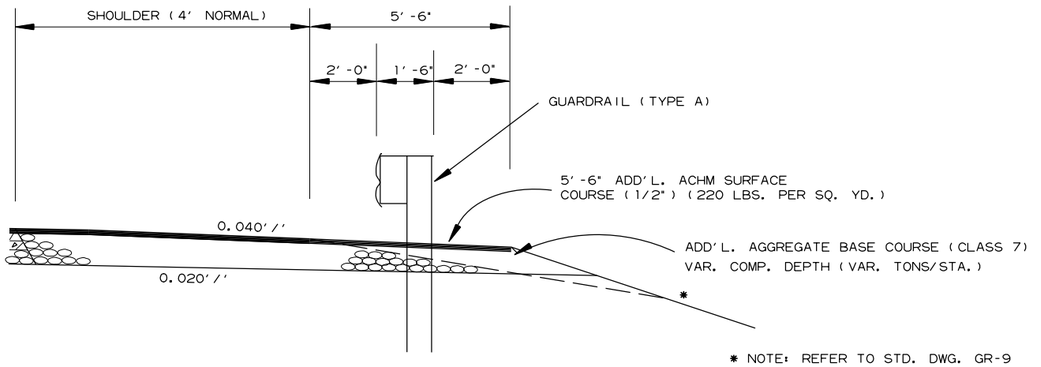
ADDITIONAL WIDENING
FOR MAINTENANCE OF TRAFFIC

HWY. 90 (PROPOSED)
STA. 90+23.00 TO STA. 97+18.00



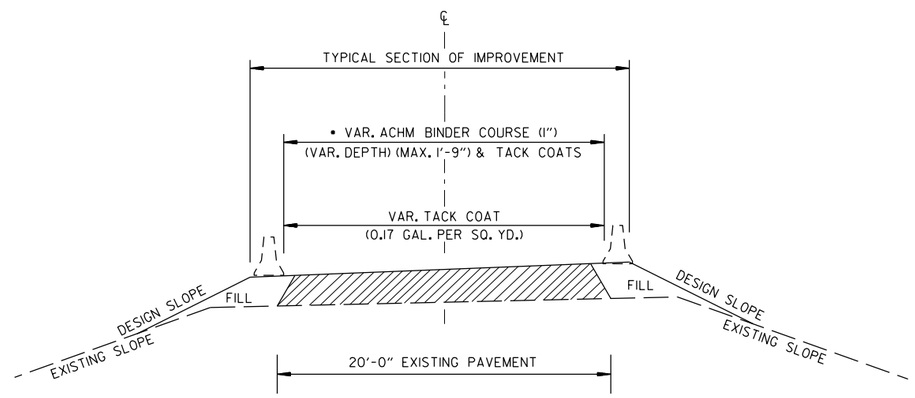
* 6" AGGREGATE BASE COURSE (CLASS 7) TO BE REPLACED WITH A.C.H.M. BINDER COURSE (1")

METHOD OF RAISING GRADE
STA. 89+05.59 TO STA. 93+75.00



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

WIDENING FOR GUARDRAIL



METHOD OF RAISING GRADE FOR MOT STAGE I

NOTES:

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

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

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

SPECIAL DETAILS

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REVISED DATE: $$REVDATE$$

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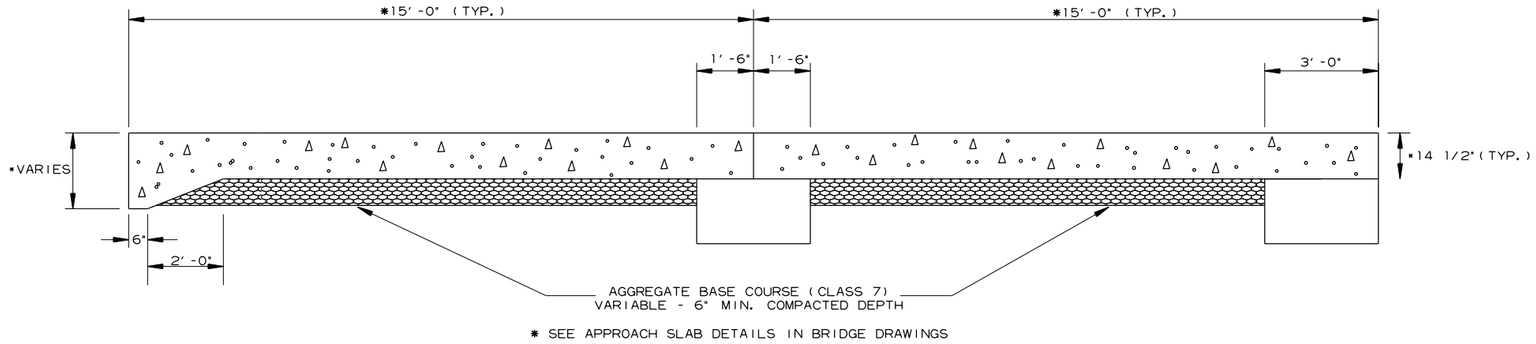
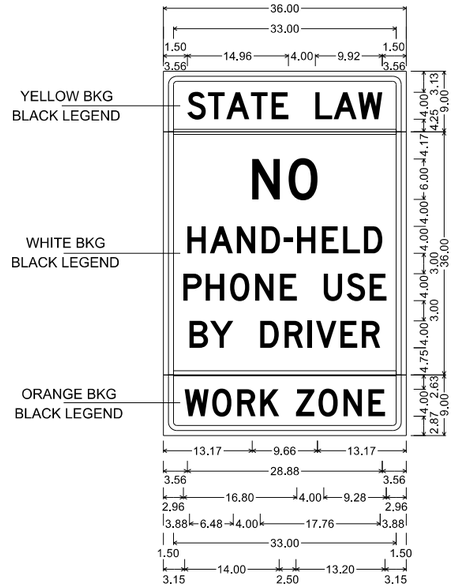
2-3-2026				6	ARK.			
				JOB NO.		101003	7	60
				(2)	SPECIAL DETAILS			



* SEE APPROACH SLAB DETAILS IN BRIDGE DRAWINGS

SECTION OF APPROACH SLAB (FOR ASPHALT PAVEMENT)



2.00" Radius, 0.75" Border, 0.75" Indent, Black on Yellow;
"STATE LAW", D 2K;

3.00" Radius, 0.75" Border, 0.75" Indent, Black on White;
"NO", D 2K; "HAND-HELD", D 2K;
"PHONE USE", D 2K;
"BY DRIVER", D 2K;

2.00" Radius, 0.75" Border, 0.75" Indent, Black on Orange;
"WORK", D 2K; "ZONE", D 2K;

WZ-4 (NON-INTERSTATE) SIGN

Scott.Thornsberry 2/3/2026 14:16 PM
WORKSPACE: scott.thornsberry
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REVISED DATE: $$REVDATE$$

C.L. HWY. 90

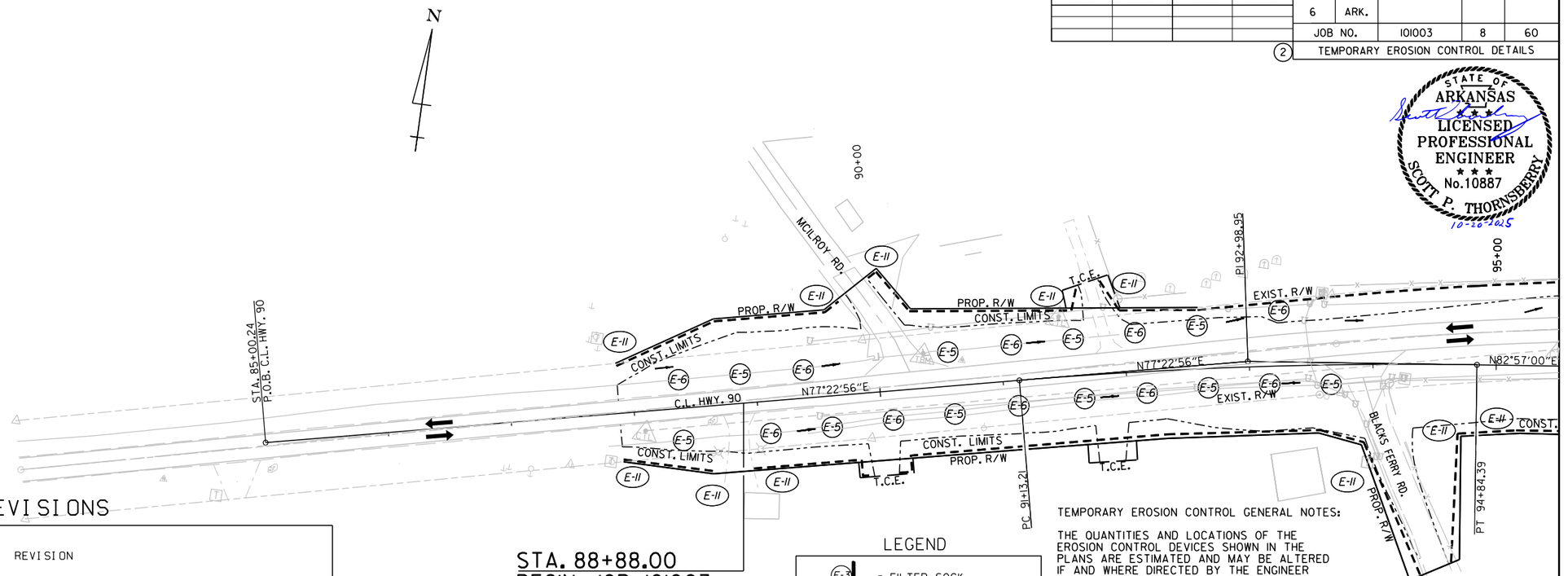
SILT FENCE (E-11)		LIN FT.
STA. 87+88 TO STA. 88+73	RT.	90
STA. 87+88 TO STA. 89+78	LT.	191
STA. 89+98 TO STA. 91+65	LT.	202
STA. 88+93 TO STA. 94+15	RT.	604
STA. 91+82 TO STA. 95+00	LT.	335
STA. 94+45 TO STA. 95+00	RT.	178

SAND BAG DITCH CHECKS (E-5)		INSTALLATION
STA. 88+38 TO STA. 93+66	RT.	6
STA. 88+88 TO STA. 92+59	RT.	4

ROCK DITCH CHECKS (E-6)		INSTALLATION
STA. 88+38 TO STA. 93+25	LT.	5
STA. 89+09 TO STA. 93+16	RT.	5

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101003	8	60
				(2)	TEMPORARY EROSION CONTROL DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
SCOTT P. THORNSBERRY
No.10887
10-20-2025



REVISIONS

DATE OF REVISION	REVISION

LEGEND

- E-3 = FILTER SOCK
- E-5 = SAND BAG DITCH CHECK
- E-6 = ROCK DITCH CHECK
- E-11 = SILT FENCE
- = TRIANGULAR SILT DIKE
- E-14 = SEDIMENT BASIN

TEMPORARY EROSION CONTROL GENERAL NOTES:

THE QUANTITIES AND LOCATIONS OF THE EROSION CONTROL DEVICES SHOWN IN THE PLANS ARE ESTIMATED AND MAY BE ALTERED IF AND WHERE DIRECTED BY THE ENGINEER TO MAXIMIZE THEIR EFFECTIVENESS. THE DEVICES ARE TO BE INSTALLED IN AN AREA ONLY WHEN THE SOIL DISTURBING ACTIVITY IN THAT AREA BEGINS.

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

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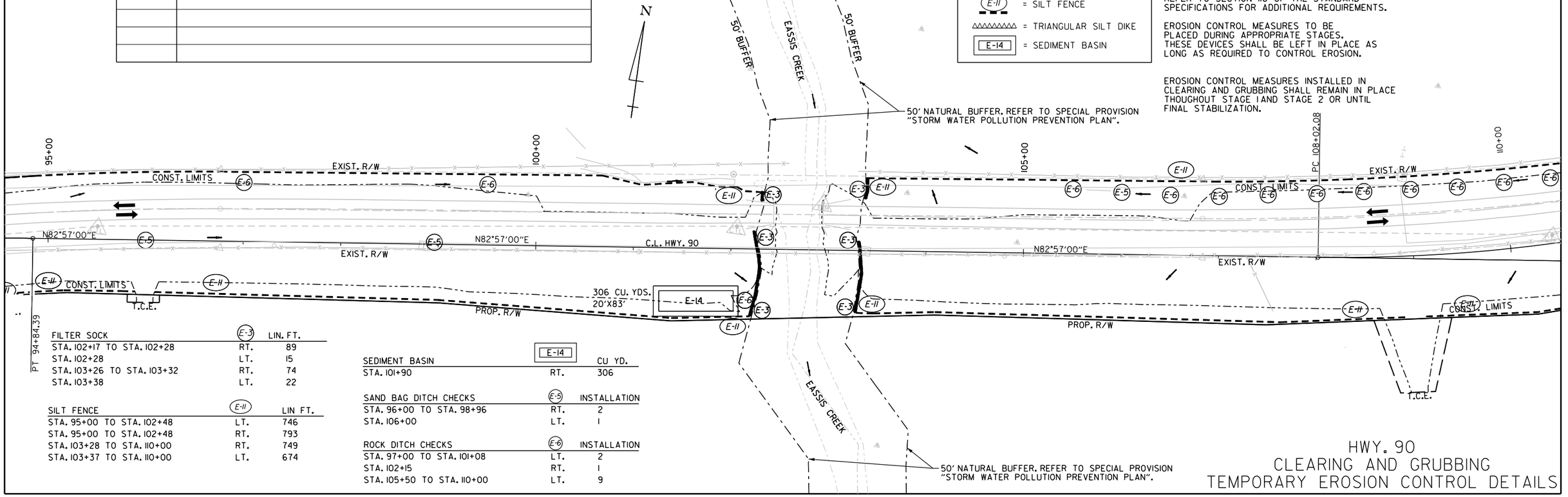

FILTER SOCK (E-3)		LIN. FT.
STA. 102+17 TO STA. 102+28	RT.	89
STA. 102+28	LT.	15
STA. 103+26 TO STA. 103+32	RT.	74
STA. 103+38	LT.	22

SILT FENCE (E-11)		LIN FT.
STA. 95+00 TO STA. 102+48	LT.	746
STA. 95+00 TO STA. 102+48	RT.	793
STA. 103+28 TO STA. 110+00	RT.	749
STA. 103+37 TO STA. 110+00	LT.	674

SEDIMENT BASIN (E-14)		CU YD.
STA. 101+90	RT.	306

SAND BAG DITCH CHECKS (E-5)		INSTALLATION
STA. 96+00 TO STA. 98+96	RT.	2
STA. 106+00	LT.	1

ROCK DITCH CHECKS (E-6)		INSTALLATION
STA. 97+00 TO STA. 101+08	LT.	2
STA. 102+15	RT.	1
STA. 105+50 TO STA. 110+00	LT.	9

HWY. 90
CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

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WORKSPACE: Stephane.Bossio
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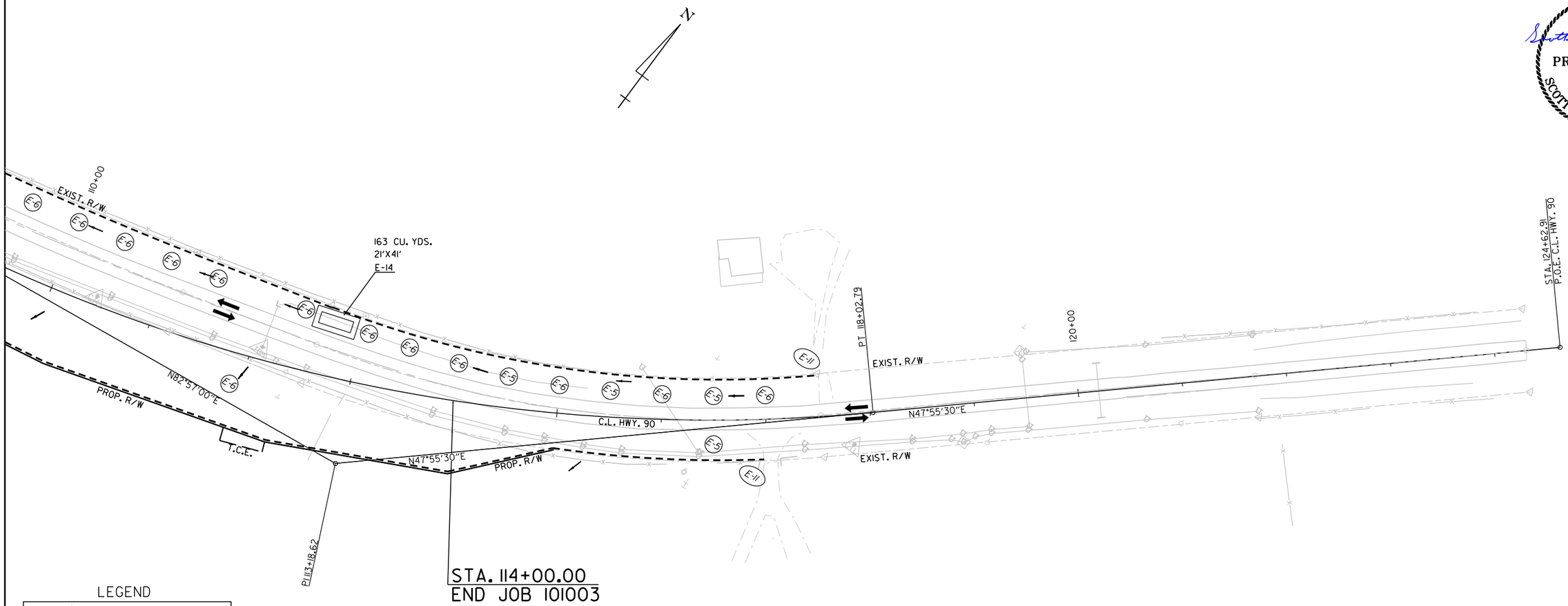
REVISED DATE: $$REVDATE$$

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		101003	9	60
(2) TEMPORARY EROSION CONTROL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
10-20-2025



LEGEND

E-3	= FILTER SOCK
E-5	= SAND BAG DITCH CHECK
E-6	= ROCK DITCH CHECK
E-11	= SILT FENCE
△△△△△△△△	= TRIANGULAR SILT DIKE
E-14	= SEDIMENT BASIN

TEMPORARY EROSION CONTROL GENERAL NOTES:

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REVISIONS

DATE OF REVISION	REVISION

C.L. HWY. 90

SILT FENCE	(E-11)	LIN FT.
STA. 110+00 TO STA. 116+95	RT.	729
STA. 110+00 TO STA. 117+51	LT.	729

ROCK DITCH CHECKS	(E-6)	INSTALLATION
STA. 110+50 TO STA. 117+00	LT.	10
STA. 111+90	RT.	1

SAND BAG DITCH CHECKS	(E-5)	INSTALLATION
STA. 114+50 TO STA. 116+50	LT.	3
STA. 116+50	RT.	1

SEDIMENT BASIN	E-14	CU YD.
STA. 112+78	LT.	163

HWY. 90
CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

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REVISED DATE: $$REVDATE$$

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				6	ARK.			
				JOB NO.		101003	10	60
				(2)	TEMPORARY EROSION CONTROL DETAILS			

C.L. HWY. 90

SAND BAG DITCH CHECKS	(E-5)	INSTALLATION
STA. 90+05 TO STA. 90+55	RT.	2
STA. 94+60	RT.	1

ROCK DITCH CHECKS	(E-6)	INSTALLATION
STA. 91+09 TO STA. 93+59	RT.	6
STA. 92+27 TO STA. 93+93	LT.	3

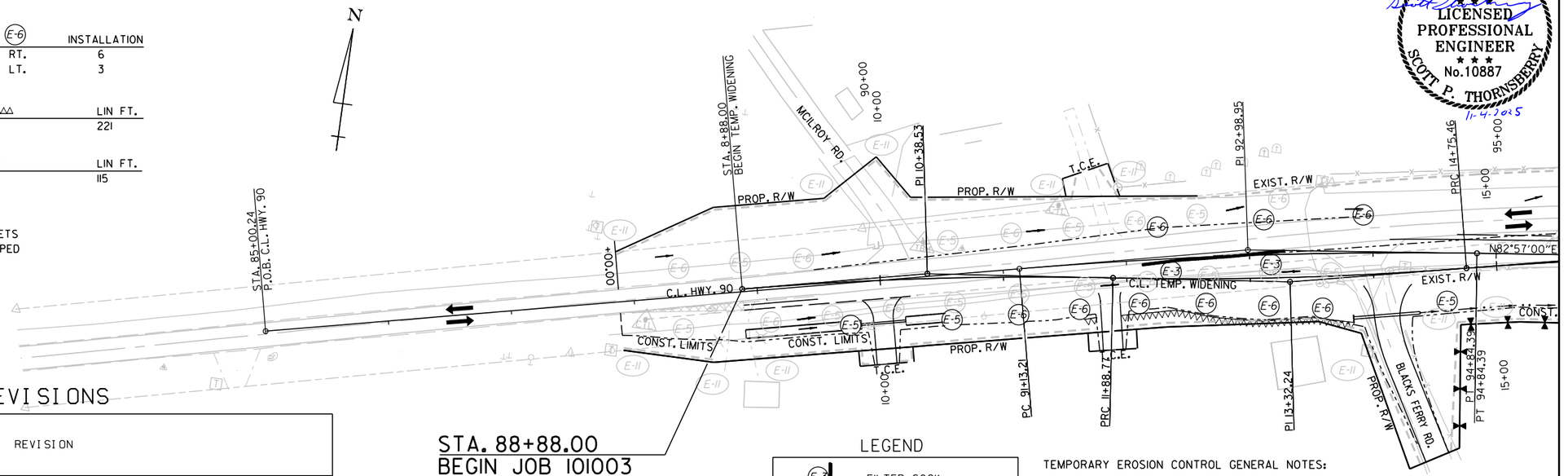
C.L. TEMP. WIDENING

TRIANGULAR SILT DIKE	ΔΔΔΔΔΔΔΔ	LIN FT.
STA. 11+70 TO STA. 13+90	LT.	221

FILTER SOCK	(E-3)	LIN FT.
STA. 92+15 TO STA. 93+30	LT.	115

NOTE: REFER TO PLAN AND PROFILE SHEETS FOR LOCATIONS AND QUANTITIES OF DUMPED RIPRAP AND CONCRETE DITCH PAVING.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
SCOTT P. THORNSBERRY
No.10887
11-4-2025



STA. 88+88.00
BEGIN JOB 101003
L.M. 2.40

REVISIONS

DATE OF REVISION	REVISION

LEGEND

- (E-3) = FILTER SOCK
- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-11) = SILT FENCE
- ΔΔΔΔΔΔΔΔ = TRIANGULAR SILT DIKE
- E-14 = SEDIMENT BASIN

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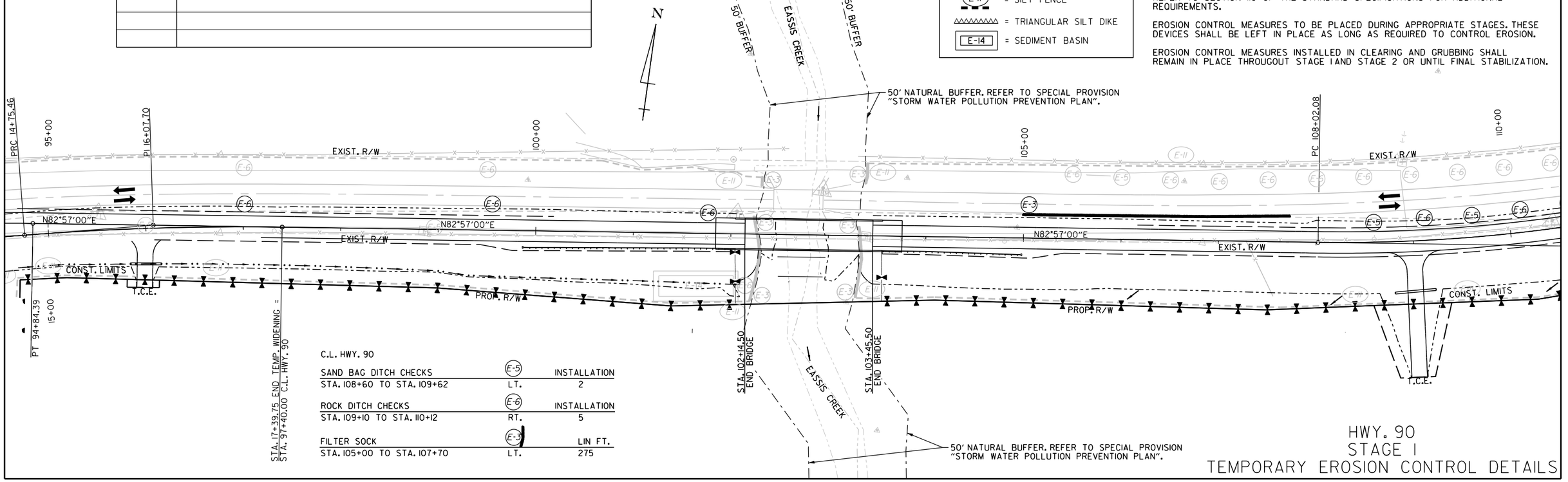

C.L. HWY. 90

SAND BAG DITCH CHECKS	(E-5)	INSTALLATION
STA. 108+60 TO STA. 109+62	LT.	2

ROCK DITCH CHECKS	(E-6)	INSTALLATION
STA. 109+10 TO STA. 110+12	RT.	5

FILTER SOCK	(E-3)	LIN FT.
STA. 105+00 TO STA. 107+70	LT.	275

HWY. 90
STAGE 1
TEMPORARY EROSION CONTROL DETAILS

Sheila.Oirjoal 11/4/2025 11:34:39 PM
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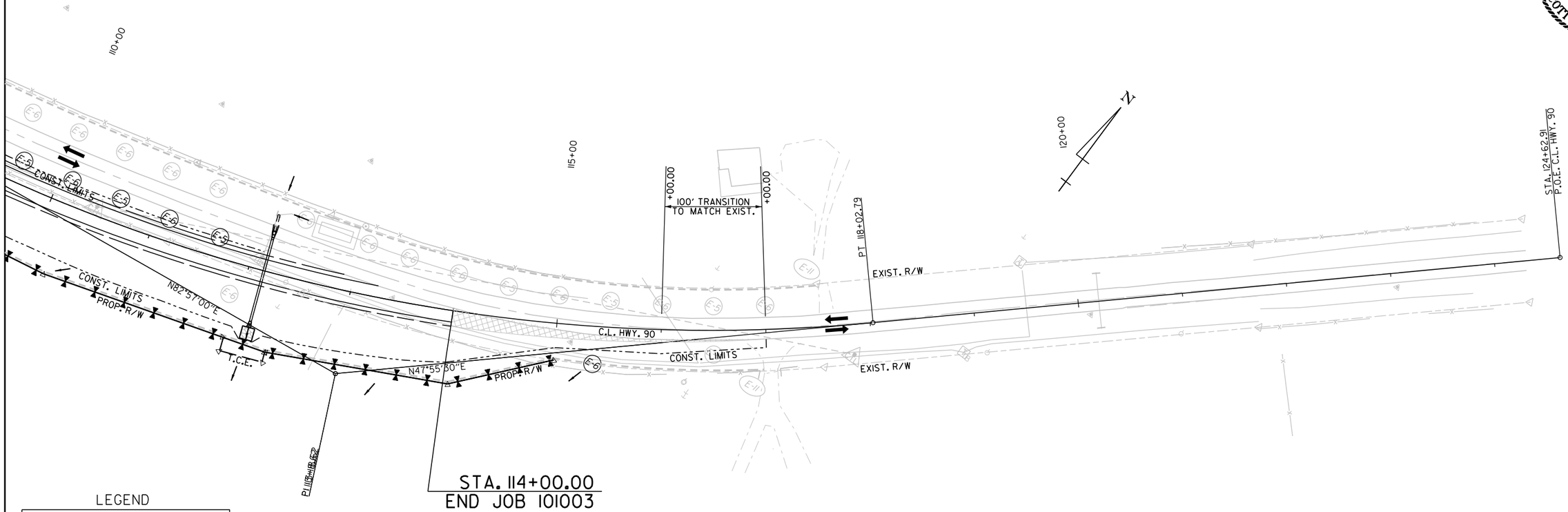
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		101003	11	60
(2) TEMPORARY EROSION CONTROL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
10-10-2025



LEGEND

- E-3 = FILTER SOCK
- E-5 = SAND BAG DITCH CHECK
- E-6 = ROCK DITCH CHECK
- E-11 = SILT FENCE
- = TRIANGULAR SILT DIKE
- E-14 = SEDIMENT BASIN

NOTE: REFER TO PLAN AND PROFILE SHEETS FOR LOCATIONS AND QUANTITIES OF DUMPED RIPRAP AND CONCRETE DITCH PAVING.

TEMPORARY EROSION CONTROL GENERAL NOTES:

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REVISIONS

DATE OF REVISION	REVISION

C.L. HWY. 90

SAND BAG DITCH CHECKS	(E-5)	INSTALLATION
STA. 110+64 TO STA. 111+64	RT.	2

ROCK DITCH CHECKS	(E-6)	INSTALLATION
STA. 111+13	LT.	1
STA. 115+37	RT.	1

HWY. 90
STAGE 1
TEMPORARY EROSION CONTROL DETAILS

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				6	ARK.			
				JOB NO.		101003	12	60
				(2)	TEMPORARY EROSION CONTROL DETAILS			

C.L. HWY. 90

SAND BAG DITCH CHECKS	(E-5)	INSTALLATION
STA. 90+59 TO STA. 91+09	LT.	2
STA. 92+09 TO STA. 92+57	LT.	2
ROCK DITCH CHECKS	**(E-6)**	**INSTALLATION**
STA. 89+61	LT.	1

LEGEND

DUMPED RIPRAP

NOTE: REFER TO PLAN AND PROFILE SHEETS FOR LOCATIONS AND QUANTITIES OF DUMPED RIPRAP AND CONCRETE DITCH PAVING.

STATE OF ARKANSAS
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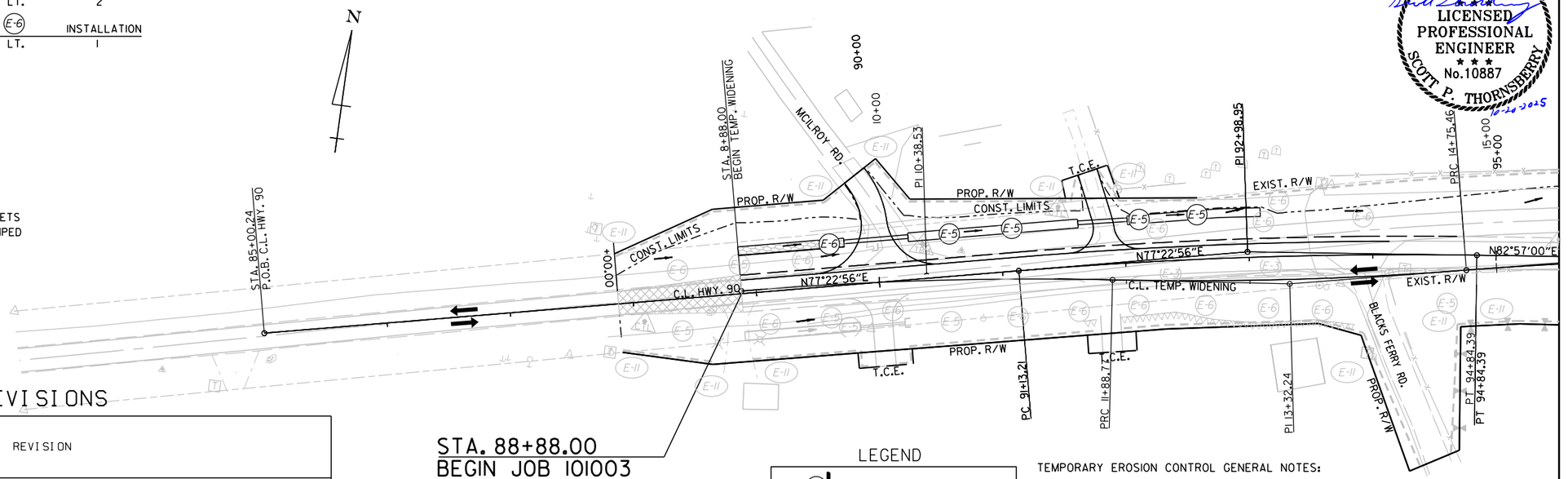
SCOTT P. THORNSBERRY
No.10887
10-28-2025



REVISIONS

DATE OF REVISION	REVISION

STA. 88+88.00
BEGIN JOB 101003
L.M. 2.40

LEGEND

- (E-3) = FILTER SOCK
- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-11) = SILT FENCE
- = TRIANGULAR SILT DIKE
- (E-14) = SEDIMENT BASIN

TEMPORARY EROSION CONTROL GENERAL NOTES:

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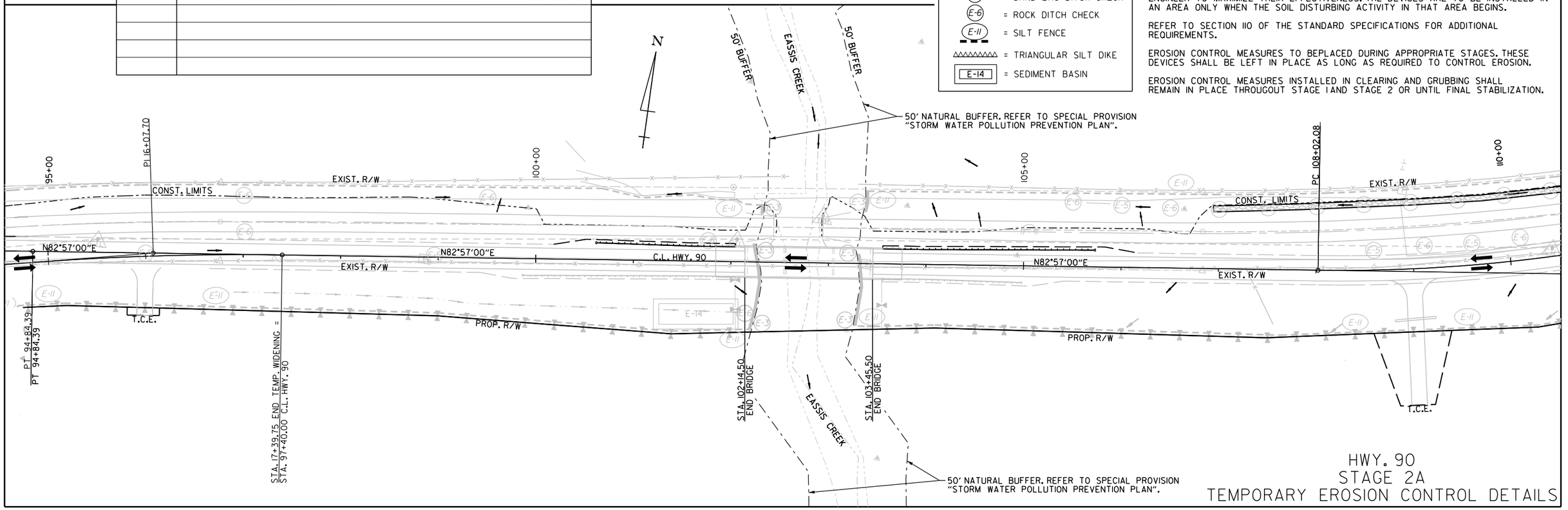

HWY. 90
STAGE 2A
TEMPORARY EROSION CONTROL DETAILS

Stephanie.Bossio 10/15/2025 5:03:33 PM
WORKSPACE: Stephanie.Bossio
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REVISED DATE: $$REVDATE$$

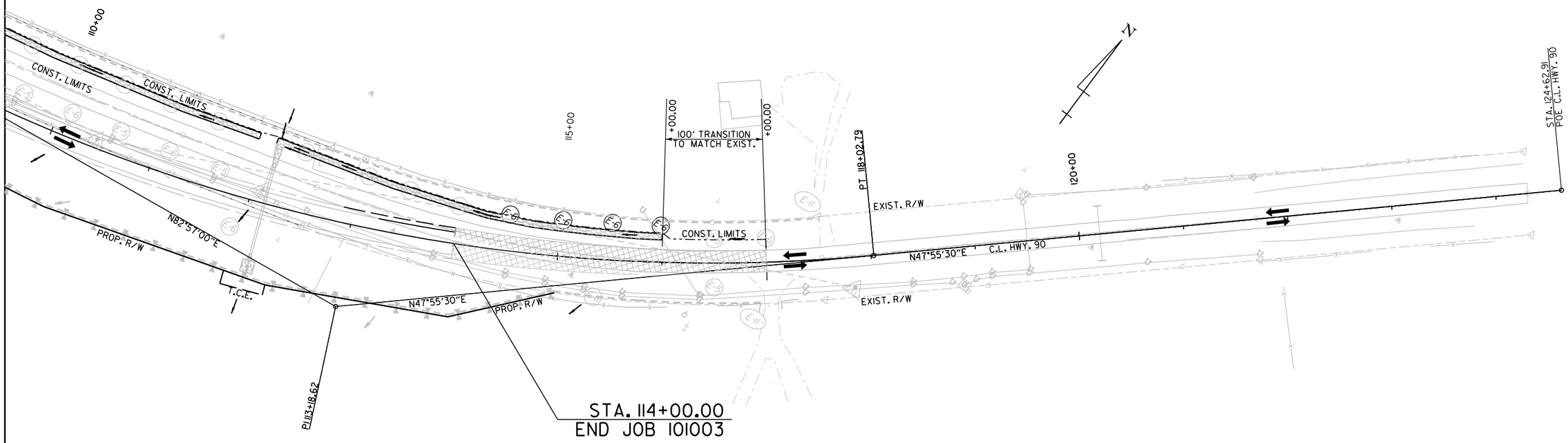
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101003	13	60
				(2)	TEMPORARY EROSION CONTROL DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
10-20-2025

LEGEND

DUMPED RIPRAP

NOTE: REFER TO PLAN AND PROFILE SHEETS FOR LOCATIONS AND QUANTITIES OF DUMPED RIPRAP AND CONCRETE DITCH PAVING.



LEGEND

- E-3 = FILTER SOCK
- E-5 = SAND BAG DITCH CHECK
- E-6 = ROCK DITCH CHECK
- E-11 = SILT FENCE
- = TRIANGULAR SILT DIKE
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REVISIONS

DATE OF REVISION	REVISION

C.L. HWY. 90

ROCK DITCH CHECKS	(E-6)	INSTALLATION
STA. 114+50 TO 116+00	RT.	4

HWY. 90
STAGE 2A
TEMPORARY EROSION CONTROL DETAILS

Stephane.Bossio 10/15/2025 5:03:37 PM
WORKSPACE: Stephane.Bossio
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				6	ARK.			
				JOB NO.		101003	14	60
				(2)	TEMPORARY EROSION CONTROL DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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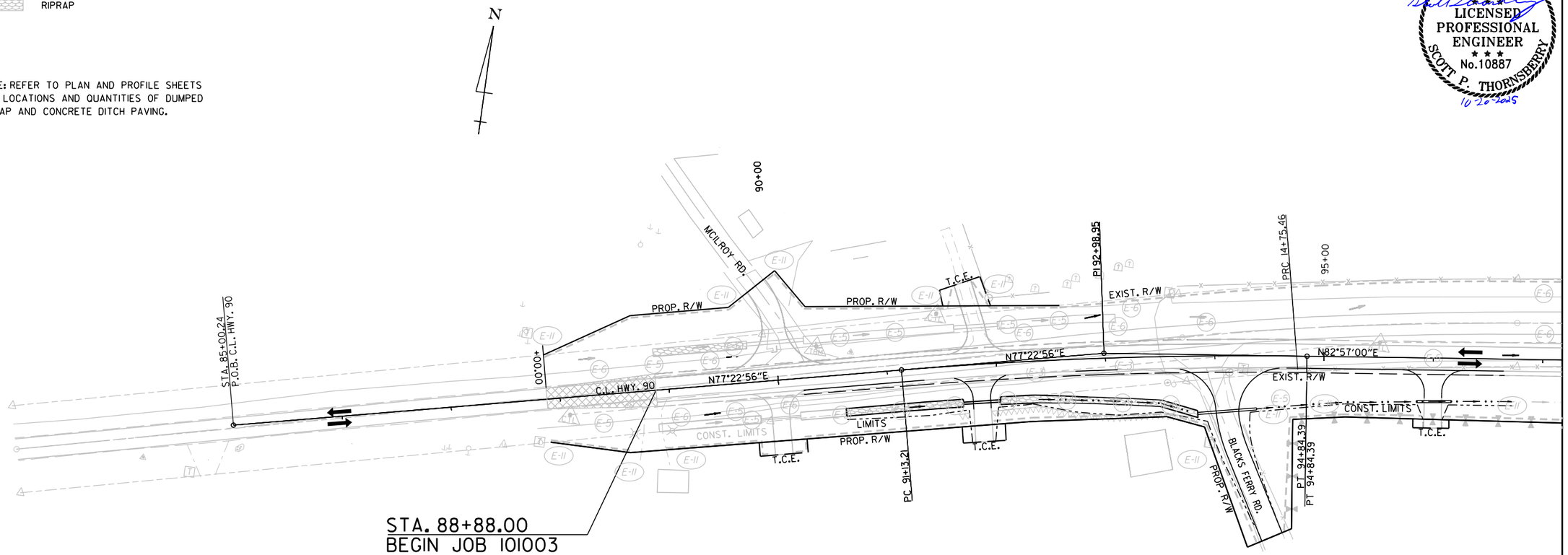
10-20-2025

LEGEND

DUMPED RIPRAP

NOTE: REFER TO PLAN AND PROFILE SHEETS FOR LOCATIONS AND QUANTITIES OF DUMPED RIPRAP AND CONCRETE DITCH PAVING.



LEGEND

E-3	= FILTER SOCK
E-5	= SAND BAG DITCH CHECK
E-6	= ROCK DITCH CHECK
E-11	= SILT FENCE
	= TRIANGULAR SILT DIKE
E-14	= SEDIMENT BASIN

REVISIONS

DATE OF REVISION	REVISION

TEMPORARY EROSION CONTROL GENERAL NOTES:

THE QUANTITIES AND LOCATIONS OF THE EROSION CONTROL DEVICES SHOWN IN THE PLANS ARE ESTIMATED AND MAY BE ALTERED IF AND WHERE DIRECTED BY THE ENGINEER TO MAXIMIZE THEIR EFFECTIVENESS. THE DEVICES ARE TO BE INSTALLED IN AN AREA ONLY WHEN THE SOIL DISTURBING ACTIVITY IN THAT AREA BEGINS.

REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

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

EROSION CONTROL MEASURES INSTALLED IN CLEARING AND GRUBBING SHALL REMAIN IN PLACE THROUGOUT STAGE 1 AND STAGE 2 OR UNTIL FINAL STABILIZATION.

HWY. 90
STAGE 2B
TEMPORARY EROSION CONTROL DETAILS

Stephane.Bossio 10/15/2025 5:03:43 PM
WORKSPACE: Stephane.Bossio
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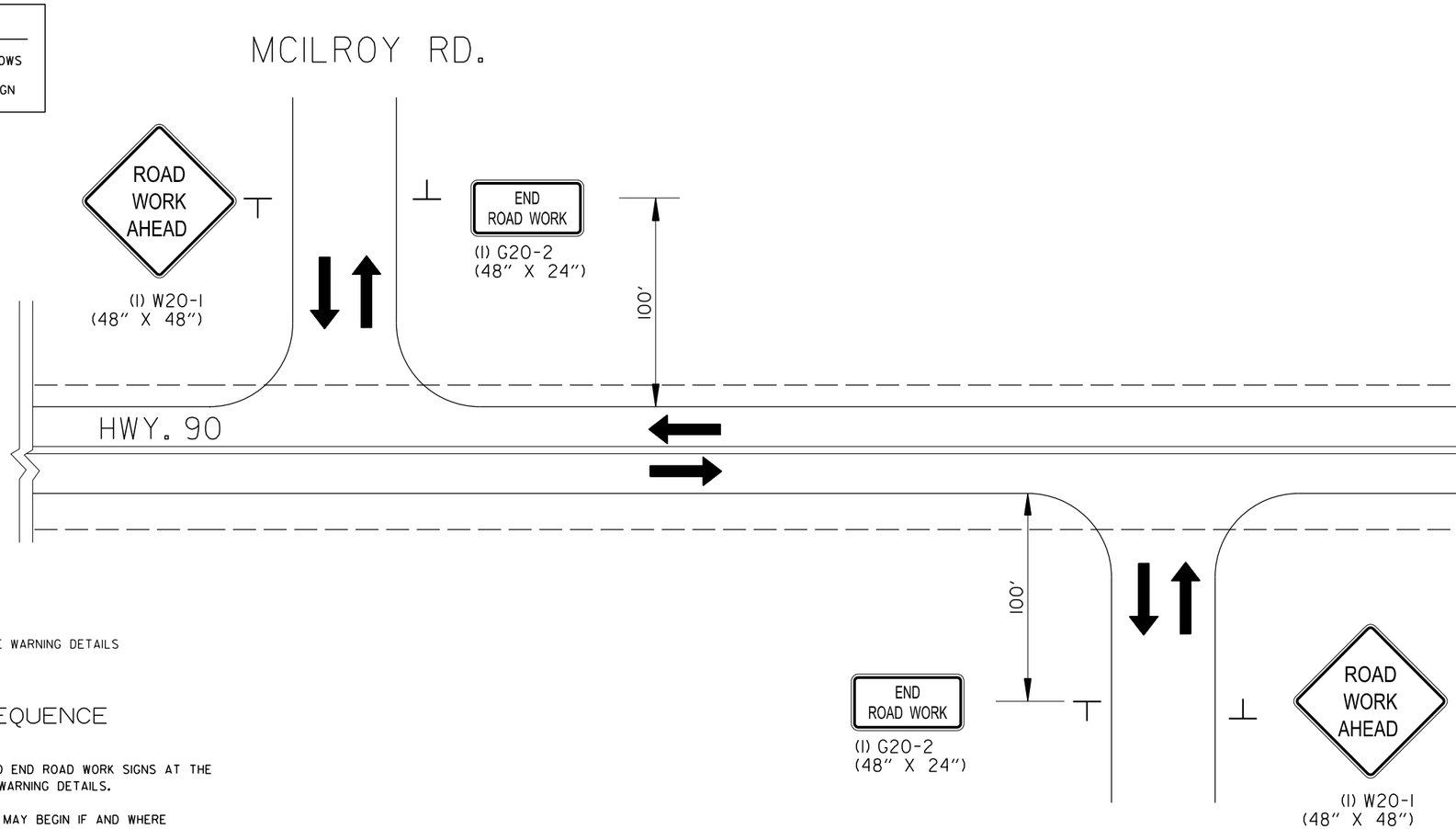
REVISED DATE: $$REVDATE$$

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101003	15	60
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.22896
STEPHANE W. BOSSIO
10-22-2025

LEGEND

- TRAFFIC FLOW ARROWS
- TEMPORARY MOT SIGN



NOTE: REFER TO TC-6 FOR ADVANCE WARNING DETAILS

CONSTRUCTION SEQUENCE

STAGE 1:

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS SHOWN ON THE ADVANCE WARNING DETAILS.

CLEARING AND GRUBBING OPERATIONS MAY BEGIN IF AND WHERE DIRECTED BY THE ENGINEER.

INSTALL MAINTENANCE OF TRAFFIC DEVICES AND CONSTRUCT EMBANKMENT, ROADWAY, TEMPORARY WIDENING, BRIDGE, AND DRAINAGE FOR PROJECT AS SHOWN IN STAGE 1 MAINTENANCE OF TRAFFIC DETAILS. CONSTRUCT GRADE RAISE FROM STA. 91+75 TO STA. 93+75 (REFER TO CROSS SECTIONS).

NOTE: EXISTING ROADWAY TO BE NOTCH AND WIDENED WILL BE LEVELED UNDER TRAFFIC TO ACCOMODATE STAGE 2 TRAFFIC SHIFT.

STAGE 2A:

INSTALL STAGE 2A MAINTENANCE OF TRAFFIC DEVICES AND CONSTRUCTION PAVEMENT MARKINGS. SHIFT TRAFFIC ONTO NEWLY CONSTRUCTED ROADWAY AND BRIDGE.

REMOVE EXISTING BRIDGE AND ROADWAY AS SHOWN IN CROSS SECTIONS.

CONSTRUCT ROADWAY TIES, DRAINAGE, FINAL GRADING AND EMBANKMENT UNDER TRAFFIC AS SHOWN ON THE STAGE 2A MAINTENANCE OF TRAFFIC DETAILS.

STAGE 2B:

REMOVE TEMPORARY WIDENING PAVEMENT.

CONSTRUCT REMAINING ROADWAY TIES, DRAINAGE, FINAL GRADING AND EMBANKMENT UNDER TRAFFIC AS SHOWN ON THE STAGE 2B MAINTENANCE OF TRAFFIC DETAILS.

SIDE ROADS
ADVANCE WARNING DETAILS
ALL STAGES

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WORKSPACE: Stephane.Bossio
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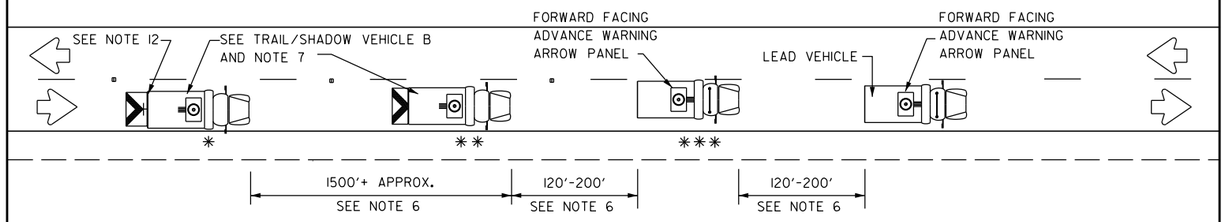
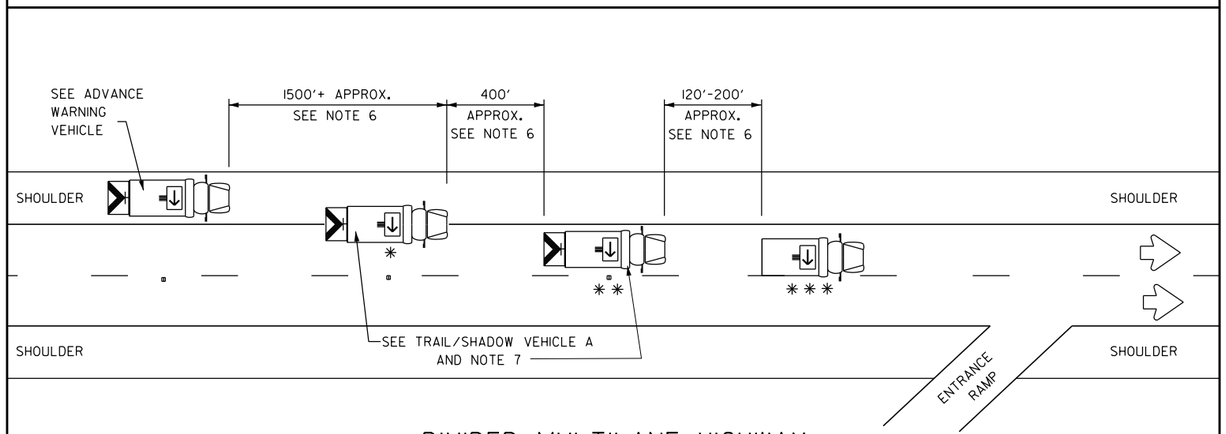
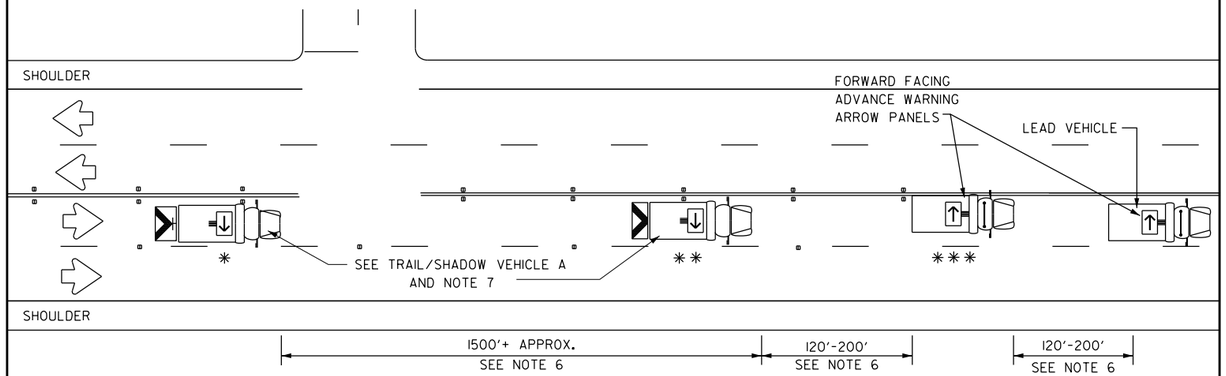
REVISED DATE: $$REVDATE$$



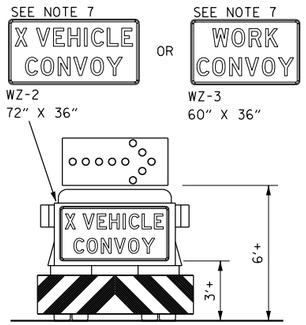
TWO LANE HIGHWAY (WORK ON TRAVEL LANE)



DIVIDED MULTILANE HIGHWAY

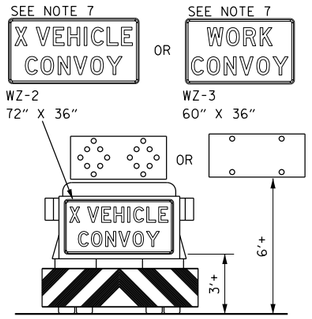


UNDIVIDED MULTILANE HIGHWAY



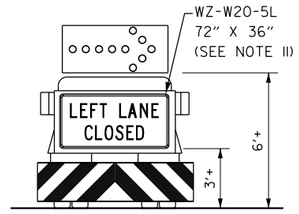
TRAIL/SHADOW VEHICLE A

WITH RIGHT DIRECTIONAL ADVANCE WARNING ARROW PANEL



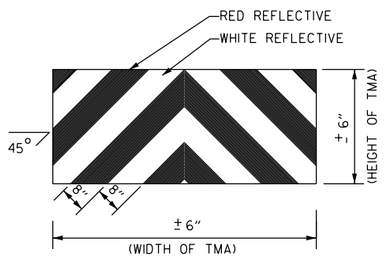
TRAIL/SHADOW VEHICLE B

WITH ADVANCE WARNING ARROW PANEL IN CAUTION MODE



ADVANCE WARNING VEHICLE

WITH RIGHT DIRECTIONAL ADVANCE WARNING ARROW PANEL



STRIPING FOR TMA

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101003	15A	60
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
1-7-2026

LEGEND			
*	TRAIL VEHICLE	ADVANCE WARNING ARROW PANEL DISPLAY	
**	SHADOW VEHICLE		
***	WORK VEHICLE		RIGHT DIRECTIONAL
	HEAVY WORK VEHICLE		LEFT DIRECTIONAL
	TRUCK MOUNTED ATTENUATOR (TMA)		DOUBLE ARROW
	TRAFFIC FLOW		CAUTION (ALTERNATING DIAMOND OR 4 CORNER FLASH)

TYPICAL APPLICATION - MOBILE WORK ZONE

GENERAL NOTES:

1. TRAIL, SHADOW, AND LEAD VEHICLES SHALL BE EQUIPPED WITH ADVANCE WARNING ARROW PANELS AS ILLUSTRATED.
2. THE USE OF AMBER OR GREEN HIGH-INTENSITY ROTATING, FLASHING, OSCILLATING, OR STROBE LIGHTS ON ALL VEHICLES ARE REQUIRED. VEHICLE HAZARD WARNING SIGNALS SHALL NOT BE USED INSTEAD OF THE VEHICLE'S HIGH-INTENSITY ROTATING, FLASHING, OSCILLATING, OR STROBE LIGHTS.
3. THE USE OF TRUCK MOUNTED ATTENUATORS (TMA) ON THE SHADOW VEHICLE, ADVANCE WARNING AND TRAIL VEHICLE ARE REQUIRED.
4. EACH VEHICLE SHALL HAVE TWO-WAY RADIO COMMUNICATION CAPABILITY.
5. WHEN WORK CONVOYS MUST CHANGE LANES, THE TRAIL VEHICLE SHOULD CHANGE LANES FIRST TO SHADOW THE OTHER CONVOY VEHICLES. WHEN WORK CONVOY EXITS THE ROADWAY, THE TRAIL VEHICLE SHOULD EXIT LAST.
6. VEHICLE SPACING BETWEEN THE TRAIL VEHICLE AND THE SHADOW VEHICLE WILL VARY DEPENDING ON SIGHT DISTANCE RESTRICTIONS AND QUEUE LENGTHS. MOTORISTS APPROACHING THE CONVOY SHOULD BE ABLE TO SEE THE TRAIL VEHICLE IN TIME TO SLOW DOWN AND/OR CHANGE LANES AS THEY APPROACH THE TRAIL VEHICLE. VEHICLE SPACING BETWEEN THE WORK VEHICLE AND SHADOW VEHICLE AND VEHICLE SPACING BETWEEN THE WORK VEHICLE AND LEAD VEHICLE MAY VARY ACCORDING TO TERRAIN, WORK ACTIVITY AND OTHER FACTORS.
7. X VEHICLE CONVOY (WZ-2) OR WORK CONVOY (WZ-3) SIGNS SHALL BE USED ON TRAIL VEHICLES AND SHADOW VEHICLES AS SHOWN. AS AN OPTION 48" X 48" DIAMOND SHAPED WORK CONVOY (WZ-2A) OR X VEHICLE CONVOY (WZ-3A) SIGNS MAY BE USED WHERE ADEQUATE MOUNTING SPACE EXISTS. WHEN USED, THE X VEHICLE CONVOY SIGN SHALL HAVE THE NUMBER OF THE CONVOY VEHICLES DISPLAYED ON THE SIGN IN THE NUMBER DESIGNATION "X" LOCATION. THE X VEHICLE CONVOY SIGN SHALL NOT BE USED ON THE SHADOW VEHICLE.
8. FOR DIVIDED HIGHWAYS WITH TWO OR THREE LANES IN ONE DIRECTION, THE APPROPRIATE LEFT LANE CLOSED (WZ-W20-5L), RIGHT LANE CLOSED (WZ-W20-5R), OR CENTER LANE CLOSED (WZ-W20-5C) SIGN SHOULD BE USED ON THE ADVANCE WARNING VEHICLE. AS AN OPTION, A PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) OR TRUCK MOUNTED CHANGEABLE MESSAGE SIGN (TMCMS) WITH A MINIMUM CHARACTER HEIGHT OF 12", AND DISPLAYING THE SAME LEGEND MAY BE SUBSTITUTED FOR THESE SIGNS. AN APPROPRIATE DIRECTIONAL ARROW DISPLAY, SIMULATING THE SIZE AND LEGIBILITY OF THE ADVANCE WARNING ARROW PANEL MAY BE USED IN THE SECOND PHASE OF THE PCMS/TMCMS MESSAGE. WHEN THIS IS DONE, THE ARROW BOARD WILL NOT BE REQUIRED ON THE ADVANCE WARNING VEHICLE.
9. A DOUBLE ARROW SHALL NOT BE DISPLAYED ON THE ADVANCE WARNING ARROW PANEL ON THE ADVANCE WARNING VEHICLE.
10. STANDARD DIAMOND SHAPE VERSIONS OF THE WZ SERIES SIGNS MAY BE USED AS AN OPTION IF THE RECTANGULAR SIGNS SHOWN ARE NOT AVAILABLE.
11. THE ADVANCE WARNING VEHICLE MAY STRADDLE THE EDGELINE WHEN SHOULDER WIDTH MAKES IT NECESSARY.
12. ON TWO-LANE TWO-WAY ROADWAYS, THE WORK AND PROTECTION VEHICLES SHOULD PULL OVER PERIODICALLY TO ALLOW MOTOR VEHICLE TRAFFIC TO PASS. A DO NOT PASS (R4-1) SIGN SHALL BE PLACED ON THE BACK OF THE REARMOST PROTECTION VEHICLE.
13. MOBILE WORK ZONE METHODS AS DEPICTED IN THIS STANDARD DRAWING SHALL BE UTILIZED ON ALL PROJECTS THAT INCLUDE INSTALLATION OR REMOVAL OF RAISED PAVEMENT MARKERS OR PAVEMENT MARKINGS UNLESS APPROVED BY THE ENGINEER ON PROJECTS LESS THAN 0.5 MILE IN LENGTH.
14. NO DIRECT PAYMENT WILL BE MADE FOR COMPLIANCE WITH THE METHODS DEPICTED IN THIS STANDARD DRAWING (WHICH INCLUDES ALL SIGNS, DEVICES, MATERIALS, LABOR, TOOLS, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLY) BUT SHALL BE CONSIDERED SUBSIDIARY TO THE MAINTENANCE OF TRAFFIC PAY ITEM.

MAINTENANCE OF TRAFFIC DETAILS

Scott.Thornsberry 1/7/2026 12:47:04 PM
WORKSPACE: scott.thornsberry
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REVISED DATE: $$REVDATE$$

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101003	16	60
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

CONSTRUCTION SEQUENCE

STAGE 1:

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS SHOWN ON THE ADVANCE WARNING DETAILS.

CLEARING AND GRUBBING OPERATIONS MAY BEGIN IF AND WHERE DIRECTED BY THE ENGINEER.

INSTALL MAINTENANCE OF TRAFFIC DEVICES AND CONSTRUCT EMBANKMENT, ROADWAY, TEMPORARY WIDENING, BRIDGE, AND DRAINAGE FOR PROJECT AS SHOWN IN STAGE 1 MAINTENANCE OF TRAFFIC DETAILS. CONSTRUCT GRADE RAISE FROM STA. 91+75 TO STA. 93+75 (REFER TO CROSS SECTIONS).

NOTE: EXISTING ROADWAY TO BE NOTCH AND WIDENED WILL BE LEVELED UNDER TRAFFIC TO ACCOMODATE STAGE 2 TRAFFIC SHIFT.

STAGE 2A:

INSTALL STAGE 2A MAINTENANCE OF TRAFFIC DEVICES AND CONSTRUCTION PAVEMENT MARKINGS. SHIFT TRAFFIC ONTO NEWLY CONSTRUCTED ROADWAY AND BRIDGE.

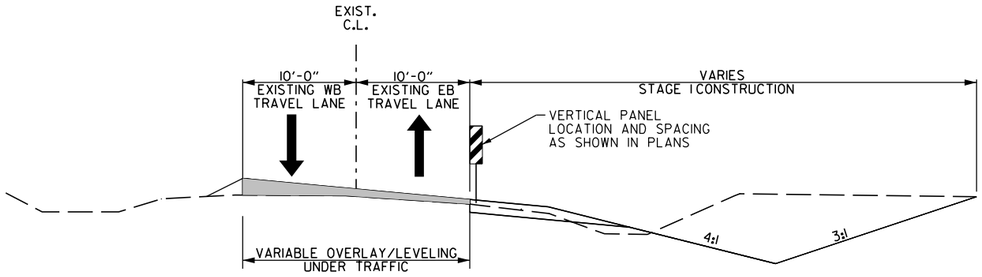
REMOVE EXISTING BRIDGE AND ROADWAY AS SHOWN IN CROSS SECTIONS.

CONSTRUCT ROADWAY TIES, DRAINAGE, FINAL GRADING AND EMBANKMENT UNDER TRAFFIC AS SHOWN ON THE STAGE 2A MAINTENANCE OF TRAFFIC DETAILS.

STAGE 2B:

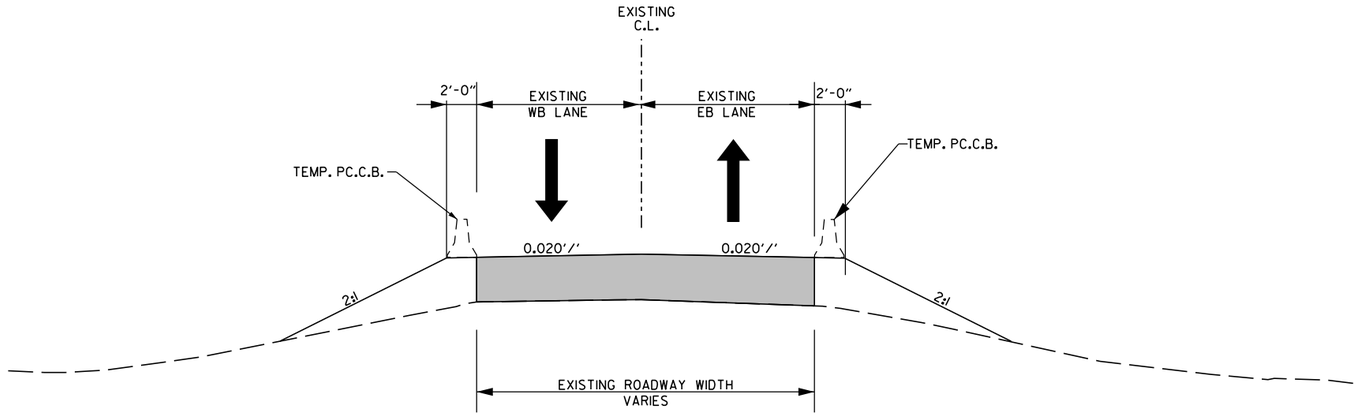
REMOVE TEMPORARY WIDENING PAVEMENT.

CONSTRUCT REMAINING ROADWAY TIES, DRAINAGE, FINAL GRADING AND EMBANKMENT UNDER TRAFFIC AS SHOWN ON THE STAGE 2B MAINTENANCE OF TRAFFIC DETAILS.



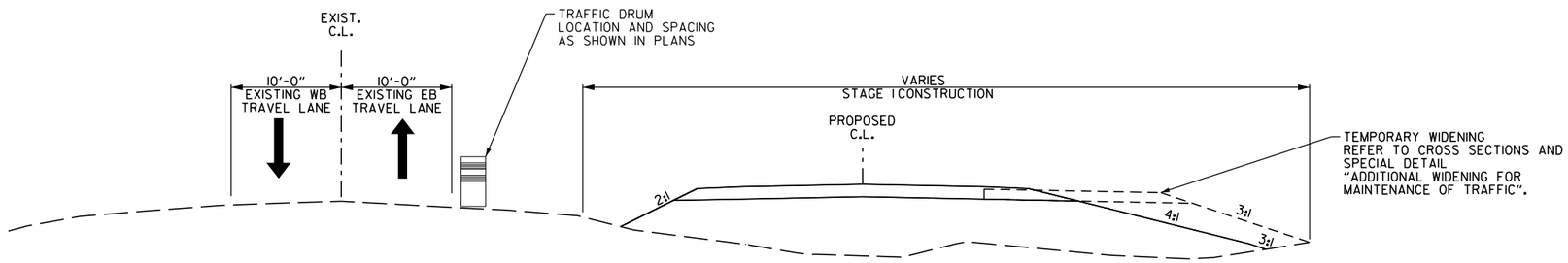
STAGE 1 - TYPICAL SECTION

STA. 88+88.00 TO 93+00.00
STA. 113+00.00 TO STA. 116+00.00



STAGE 1 - HWY. 90
METHOD OF RAISING GRADE FOR MOT
MAINTENANCE OF TRAFFIC DETAILS
TYPICAL SECTION

STA. 91+75.00 TO STA. 93+75.00



STAGE 1 - TYPICAL SECTION

STA. 93+00.00 TO STA. 113+00.00

HWY. 90 - STAGE 1 - QUANTITIES		
VERTICAL PANELS	19	EACH
TRAFFIC DRUMS	72	EACH
FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	506	LIN. FT.
TEMPORARY IMPACT ATTENUATION BARRIER	2	EACH
CONSTRUCTION PAVEMENT MARKINGS	11060	LIN. FT. *

STAGE 1
TYPICAL SECTIONS
MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.22896
STEPHANE W. BOSSIO
10-22-2025

Stephane.Bossio 10/15/2025 5:03:52 PM
WORKSPACE: Stephane.Bossio
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REVISED DATE: $$REVDATE$$

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101003	17	60
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

CONSTRUCTION SEQUENCE

STAGE I:

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS SHOWN ON THE ADVANCE WARNING DETAILS.

CLEARING AND GRUBBING OPERATIONS MAY BEGIN IF AND WHERE DIRECTED BY THE ENGINEER.

INSTALL MAINTENANCE OF TRAFFIC DEVICES AND CONSTRUCT EMBANKMENT, ROADWAY, TEMPORARY WIDENING, BRIDGE, AND DRAINAGE FOR PROJECT AS SHOWN IN STAGE I MAINTENANCE OF TRAFFIC DETAILS. CONSTRUCT GRADE RAISE FROM STA. 91+75 TO STA. 93+75 (REFER TO CROSS SECTIONS).

NOTE: EXISTING ROADWAY TO BE NOTCH AND WIDENED WILL BE LEVELED UNDER TRAFFIC TO ACCOMODATE STAGE 2 TRAFFIC SHIFT.

STAGE 2A:

INSTALL STAGE 2A MAINTENANCE OF TRAFFIC DEVICES AND CONSTRUCTION PAVEMENT MARKINGS. SHIFT TRAFFIC ONTO NEWLY CONSTRUCTED ROADWAY AND BRIDGE.

REMOVE EXISTING BRIDGE AND ROADWAY AS SHOWN IN CROSS SECTIONS.

CONSTRUCT ROADWAY TIES, DRAINAGE, FINAL GRADING AND EMBANKMENT UNDER TRAFFIC AS SHOWN ON THE STAGE 2A MAINTENANCE OF TRAFFIC DETAILS.

STAGE 2B:

REMOVE TEMPORARY WIDENING PAVEMENT.

CONSTRUCT REMAINING ROADWAY TIES, DRAINAGE, FINAL GRADING AND EMBANKMENT UNDER TRAFFIC AS SHOWN ON THE STAGE 2B MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCTION PAVEMENT MARKING
WHITE SOLID EDGE LINE RT. - HWY. 90 (EXIST.)

*	STA. 87+88	TO	95+00	- 715	LIN. FT.

CONSTRUCTION PAVEMENT MARKING
WHITE SOLID EDGE LINE LT. - HWY. 90 (EXIST.)

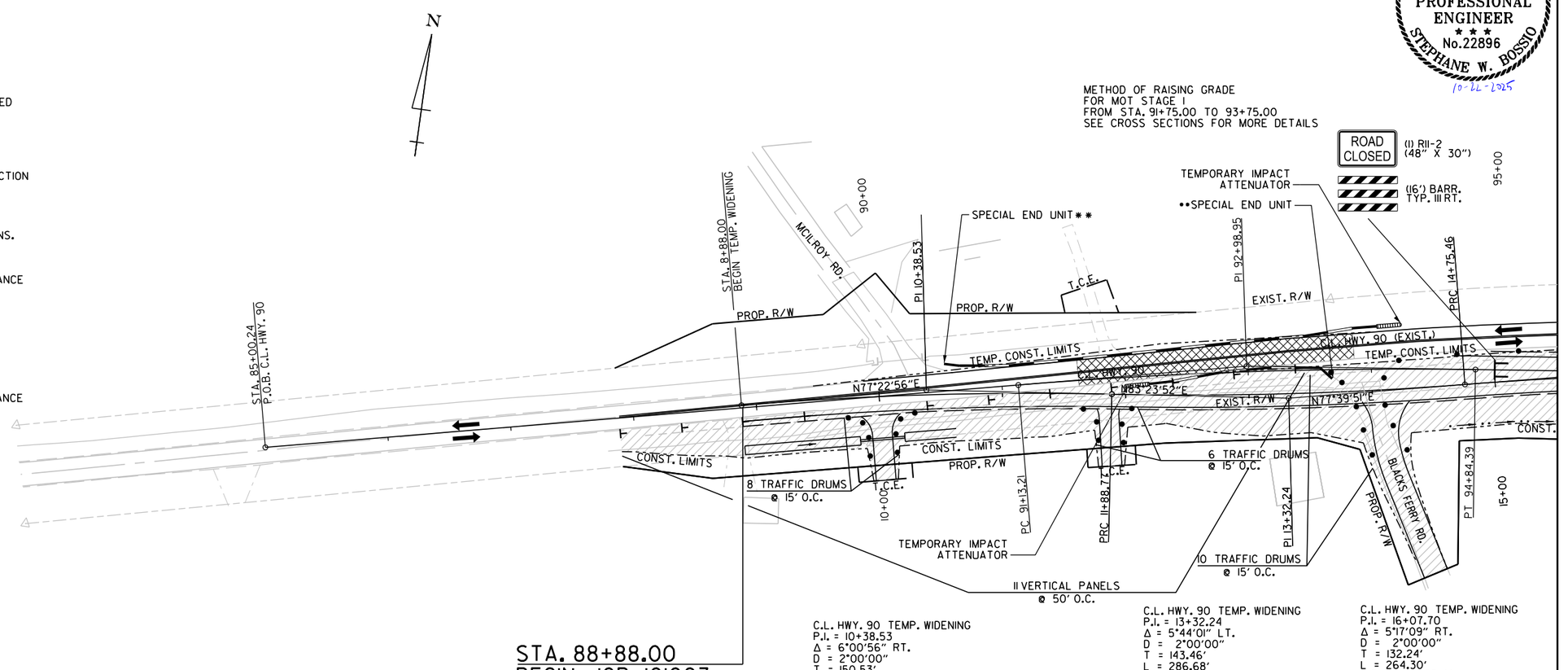
*	STA. 87+88	TO	95+00	- 715	LIN. FT.

CONSTRUCTION PAVEMENT MARKING
CONTINUOUS DOUBLE YELLOW. - HWY. 90 (EXIST.)

*	STA. 87+88	TO	95+00	- 1430	LIN. FT.

FURNISH AND INSTALL
PRECAST CONCRETE BARRIER WALL. - HWY. 90 (EXIST.)

	STA. 87+88	TO	95+00	- 506	LIN. FT.



METHOD OF RAISING GRADE
FOR MOT STAGE I
FROM STA. 91+75.00 TO 93+75.00
SEE CROSS SECTIONS FOR MORE DETAILS

STA. 88+88.00
BEGIN JOB 101003
L.M. 2.40

C.L. HWY. 90 TEMP. WIDENING
P.I. = 10+38.53
Δ = 6°00'56" RT.
D = 2°00'00"
T = 150.53'
L = 300.77'
P.C. = 8+88.00
P.R.C. = 11+88.77
MATCH C.L. CONST. SUPER

C.L. HWY. 90 TEMP. WIDENING
P.I. = 13+32.24
Δ = 5°44'01" LT.
D = 2°00'00"
T = 143.46'
L = 286.68'
P.R.C. = 11+88.77
P.R.C. = 14+75.46
MATCH C.L. CONST. SUPER

C.L. HWY. 90 TEMP. WIDENING
P.I. = 16+07.70
Δ = 5°17'09" RT.
D = 2°00'00"
T = 132.24'
L = 264.30'
P.R.C. = 14+75.46
P.T. = 17+39.75
MATCH C.L. CONST. SUPER

STAGE I - QUANTITIES (STA. 87+88.00 TO STA. 95+00.00)

TRAFFIC DRUMS	24 EACH
VERTICAL PANELS	11 EACH
CONSTRUCTION PAVEMENT MARKINGS (BASED ON DBL. YELLOW C.L. & WHITE EDGE LINES LT. & RT.)	2860 LIN. FT.
FURNISH AND INSTALL PRECAST CONCRETE BARRIER WALL	519 LIN. FT.
TEMPORARY IMPACT ATTENUATION BARRIER	2 EACH

LEGEND

- VERTICAL PANELS
- TYPE 3 BARRICADE
- STAGE I CONSTRUCTION
- TRAFFIC FLOW ARROWS
- TRAFFIC DRUMS
- PRECAST CONCRETE BARRIER WALL
- STAGE I METHOD OF RAISING GRADE

HWY. 90 - STAGE I - QUANTITIES

VERTICAL PANELS	19	EACH
TRAFFIC DRUMS	72	EACH
FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	506	LIN. FT.
TEMPORARY IMPACT ATTENUATION BARRIER	2	EACH
CONSTRUCTION PAVEMENT MARKINGS	11060	LIN. FT. *

NOTE:
**SPECIAL END UNIT IS SUBSIDIARY TO PAY ITEM PRECAST CONCRETE BARRIER.

*QUANTITY ESTIMATED, TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.22896
STEPHANE W. BOSSIO
10-LL-2025

STAGE I
MAINTENANCE OF TRAFFIC DETAILS

Stephane.Bossio 10/15/2025 5:04:27 PM
WORKSPACE: Stephane.Bossio
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REVISED DATE: $$REVDATE$$

HWY. 90 - STAGE I - QUANTITIES		
VERTICAL PANELS	19	EACH
TRAFFIC DRUMS	72	EACH
FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	506	LIN. FT.
TEMPORARY IMPACT ATTENUATION BARRIER	2	EACH
CONSTRUCTION PAVEMENT MARKINGS	11060	LIN. FT. •

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101003	18	60
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

CONSTRUCTION PAVEMENT MARKING
WHITE SOLID EDGE LINE RT. - HWY. 90 (EXIST.)

• STA. 95+00 TO 110+00 - 1500 LIN. FT.

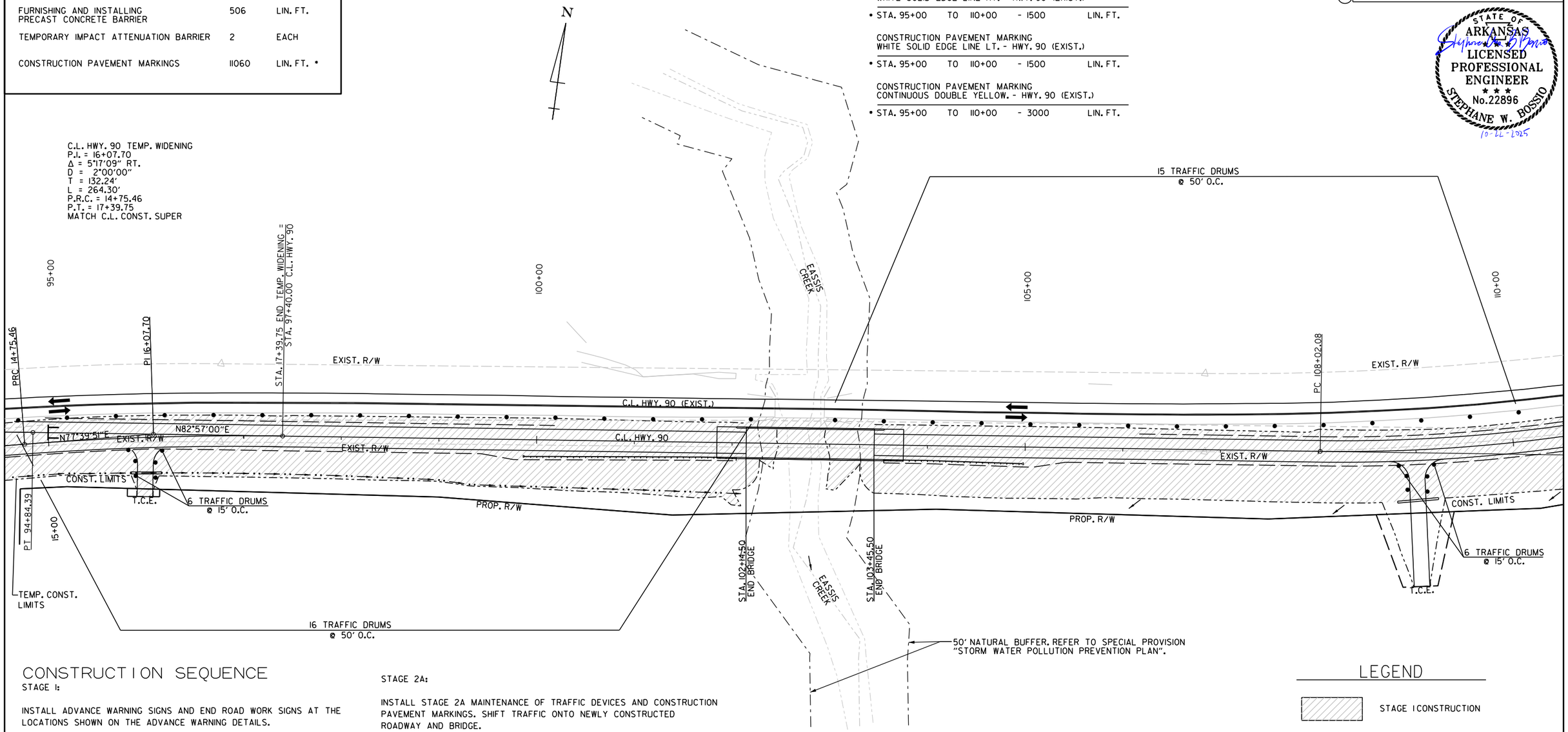
CONSTRUCTION PAVEMENT MARKING
WHITE SOLID EDGE LINE LT. - HWY. 90 (EXIST.)

• STA. 95+00 TO 110+00 - 1500 LIN. FT.

CONSTRUCTION PAVEMENT MARKING
CONTINUOUS DOUBLE YELLOW. - HWY. 90 (EXIST.)

• STA. 95+00 TO 110+00 - 3000 LIN. FT.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.22896
STEPHANE W. BOSSIO
10-22-2025



CONSTRUCTION SEQUENCE

STAGE 1:

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS SHOWN ON THE ADVANCE WARNING DETAILS.

CLEARING AND GRUBBING OPERATIONS MAY BEGIN IF AND WHERE DIRECTED BY THE ENGINEER.

INSTALL MAINTENANCE OF TRAFFIC DEVICES AND CONSTRUCT EMBANKMENT, ROADWAY, TEMPORARY WIDENING, BRIDGE, AND DRAINAGE FOR PROJECT AS SHOWN IN STAGE 1 MAINTENANCE OF TRAFFIC DETAILS. CONSTRUCT GRADE RAISE FROM STA. 91+75 TO STA. 93+75 (REFER TO CROSS SECTIONS).

NOTE: EXISTING ROADWAY TO BE NOTCH AND WIDENED WILL BE LEVELED UNDER TRAFFIC TO ACCOMODATE STAGE 2 TRAFFIC SHIFT.

STAGE 2A:

INSTALL STAGE 2A MAINTENANCE OF TRAFFIC DEVICES AND CONSTRUCTION PAVEMENT MARKINGS. SHIFT TRAFFIC ONTO NEWLY CONSTRUCTED ROADWAY AND BRIDGE.

REMOVE EXISTING BRIDGE AND ROADWAY AS SHOWN IN CROSS SECTIONS.

CONSTRUCT ROADWAY TIES, DRAINAGE, FINAL GRADING AND EMBANKMENT UNDER TRAFFIC AS SHOWN ON THE STAGE 2A MAINTENANCE OF TRAFFIC DETAILS.

STAGE 2B:

REMOVE TEMPORARY WIDENING PAVEMENT.

CONSTRUCT REMAINING ROADWAY TIES, DRAINAGE, FINAL GRADING AND EMBANKMENT UNDER TRAFFIC AS SHOWN ON THE STAGE 2B MAINTENANCE OF TRAFFIC DETAILS.

LEGEND

- STAGE I CONSTRUCTION
- TRAFFIC FLOW ARROWS
- TRAFFIC DRUMS

STAGE 1 - QUANTITIES (STA. 95+00.00 TO STA. 110+00.00)

TRAFFIC DRUMS	43 EACH
CONSTRUCTION PAVEMENT MARKINGS (BASED ON DBL. YELLOW C.L. & WHITE EDGE LINES LT. & RT.)	6000 LIN. FT.

STAGE I
MAINTENANCE OF TRAFFIC DETAILS

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HWY. 90 - STAGE I - QUANTITIES		
VERTICAL PANELS	19	EACH
TRAFFIC DRUMS	72	EACH
FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	506	LIN. FT.
TEMPORARY IMPACT ATTENUATION BARRIER	2	EACH
CONSTRUCTION PAVEMENT MARKINGS	11060	LIN. FT. •

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101003	19	60
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

CONSTRUCTION PAVEMENT MARKING
WHITE SOLID EDGE LINE RT. - HWY. 90 (EXIST.)

• STA. 110+00	TO	110+00	- 550	LIN. FT.

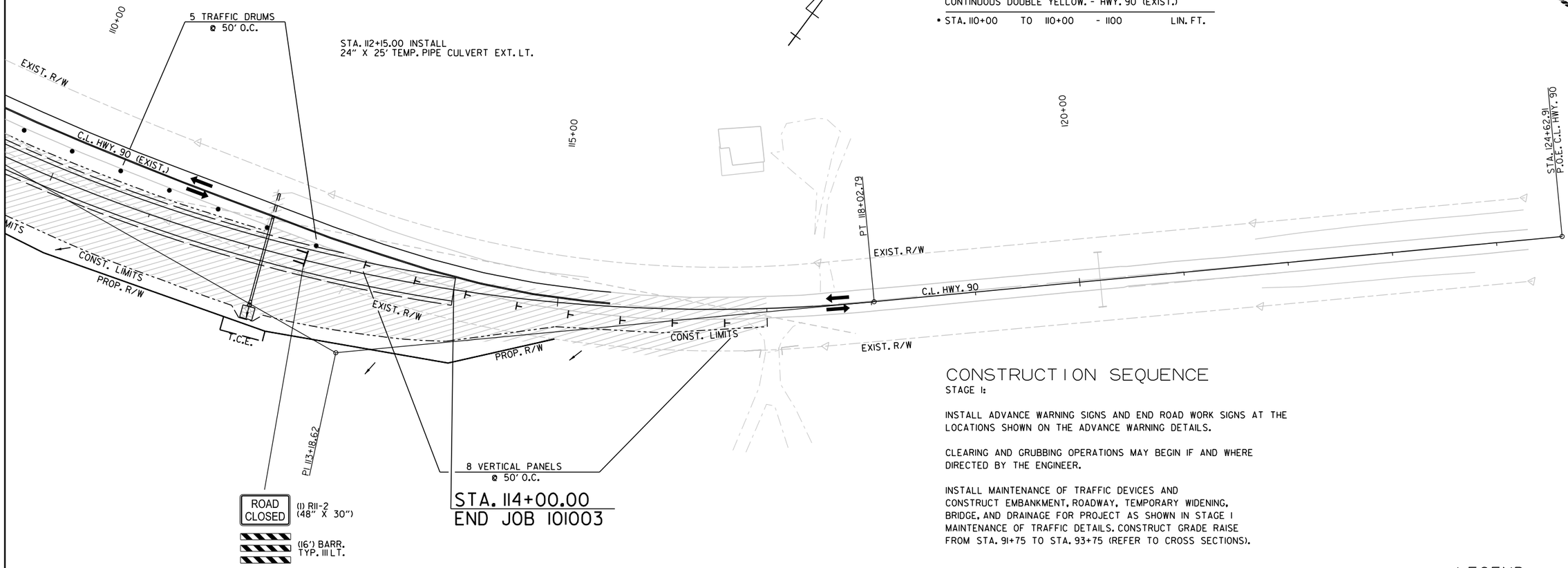
CONSTRUCTION PAVEMENT MARKING
WHITE SOLID EDGE LINE LT. - HWY. 90 (EXIST.)

• STA. 110+00	TO	110+00	- 550	LIN. FT.

CONSTRUCTION PAVEMENT MARKING
CONTINUOUS DOUBLE YELLOW. - HWY. 90 (EXIST.)

• STA. 110+00	TO	110+00	- 1100	LIN. FT.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.22896
STEPHANE W. BOSSIO
10-6L-2025



STAGE I - QUANTITIES (STA. 110+00.00 TO STA. 117+00.00)

TRAFFIC DRUMS	5 EACH
VERTICAL PANELS	8 EACH
CONSTRUCTION PAVEMENT MARKINGS (BASED ON DBL. YELLOW C.L. & WHITE EDGE LINES LT. & RT.)	2200 LIN. FT.

CONSTRUCTION SEQUENCE

STAGE I:

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS SHOWN ON THE ADVANCE WARNING DETAILS.

CLEARING AND GRUBBING OPERATIONS MAY BEGIN IF AND WHERE DIRECTED BY THE ENGINEER.

INSTALL MAINTENANCE OF TRAFFIC DEVICES AND CONSTRUCT EMBANKMENT, ROADWAY, TEMPORARY WIDENING, BRIDGE, AND DRAINAGE FOR PROJECT AS SHOWN IN STAGE I MAINTENANCE OF TRAFFIC DETAILS. CONSTRUCT GRADE RAISE FROM STA. 91+75 TO STA. 93+75 (REFER TO CROSS SECTIONS).

NOTE: EXISTING ROADWAY TO BE NOTCH AND WIDENED WILL BE LEVELED UNDER TRAFFIC TO ACCOMODATE STAGE 2 TRAFFIC SHIFT.

STAGE 2A:

INSTALL STAGE 2A MAINTENANCE OF TRAFFIC DEVICES AND CONSTRUCTION PAVEMENT MARKINGS. SHIFT TRAFFIC ONTO NEWLY CONSTRUCTED ROADWAY AND BRIDGE.

REMOVE EXISTING BRIDGE AND ROADWAY AS SHOWN IN CROSS SECTIONS.

CONSTRUCT ROADWAY TIES, DRAINAGE, FINAL GRADING AND EMBANKMENT UNDER TRAFFIC AS SHOWN ON THE STAGE 2A MAINTENANCE OF TRAFFIC DETAILS.

STAGE 2B:

REMOVE TEMPORARY WIDENING PAVEMENT.

CONSTRUCT REMAINING ROADWAY TIES, DRAINAGE, FINAL GRADING AND EMBANKMENT UNDER TRAFFIC AS SHOWN ON THE STAGE 2B MAINTENANCE OF TRAFFIC DETAILS.

LEGEND

- VERTICAL PANELS
- STAGE I CONSTRUCTION
- TRAFFIC FLOW ARROWS
- TRAFFIC DRUMS

STAGE I
MAINTENANCE OF TRAFFIC DETAILS

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				6	ARK.			
				JOB NO.		101003	20	60
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

CONSTRUCTION SEQUENCE

STAGE 1:

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS SHOWN ON THE ADVANCE WARNING DETAILS.

CLEARING AND GRUBBING OPERATIONS MAY BEGIN IF AND WHERE DIRECTED BY THE ENGINEER.

INSTALL MAINTENANCE OF TRAFFIC DEVICES AND CONSTRUCT EMBANKMENT, ROADWAY, TEMPORARY WIDENING, BRIDGE, AND DRAINAGE FOR PROJECT AS SHOWN IN STAGE 1 MAINTENANCE OF TRAFFIC DETAILS. CONSTRUCT GRADE RAISE FROM STA. 91+75 TO STA. 93+75 (REFER TO CROSS SECTIONS).

NOTE: EXISTING ROADWAY TO BE NOTCH AND WIDENED WILL BE LEVELED UNDER TRAFFIC TO ACCOMODATE STAGE 2 TRAFFIC SHIFT.

STAGE 2A:

INSTALL STAGE 2A MAINTENANCE OF TRAFFIC DEVICES AND CONSTRUCTION PAVEMENT MARKINGS. SHIFT TRAFFIC ONTO NEWLY CONSTRUCTED ROADWAY AND BRIDGE.

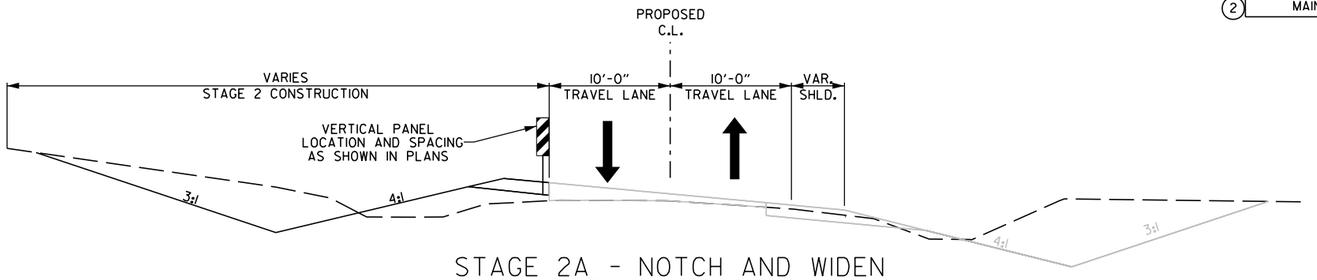
REMOVE EXISTING BRIDGE AND ROADWAY AS SHOWN IN CROSS SECTIONS.

CONSTRUCT ROADWAY TIES, DRAINAGE, FINAL GRADING AND EMBANKMENT UNDER TRAFFIC AS SHOWN ON THE STAGE 2A MAINTENANCE OF TRAFFIC DETAILS.

STAGE 2B:

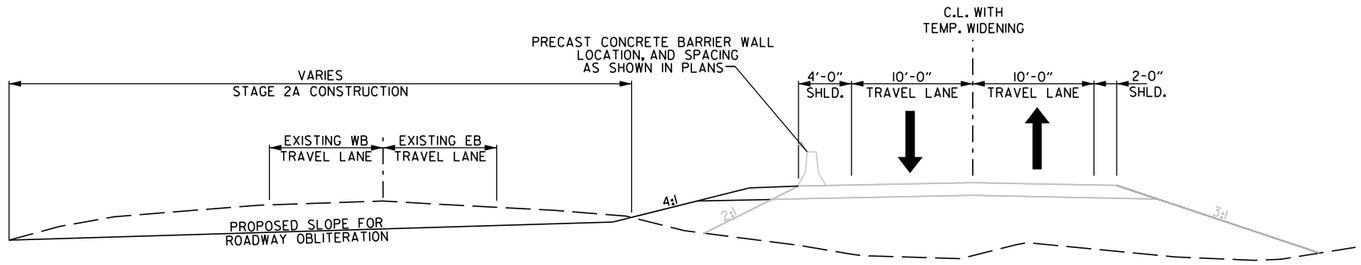
REMOVE TEMPORARY WIDENING PAVEMENT.

CONSTRUCT REMAINING ROADWAY TIES, DRAINAGE, FINAL GRADING AND EMBANKMENT UNDER TRAFFIC AS SHOWN ON THE STAGE 2B MAINTENANCE OF TRAFFIC DETAILS.



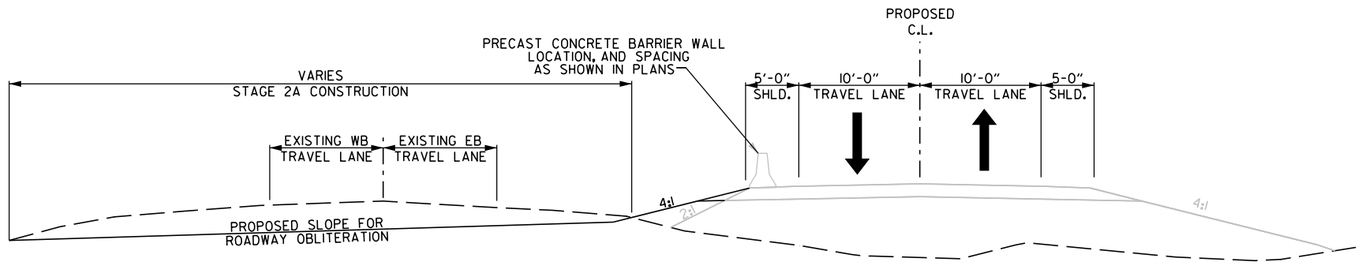
STAGE 2A - NOTCH AND WIDEN TYPICAL SECTION

STA. 88+88.00 TO STA. 93+00.00
STA. 113+00.00 TO STA. 116+00.00



STAGE 2A - WITH TEMP. WIDENING TYPICAL SECTION

STA. 93+00.00 TO STA. 97+40.00



STAGE 2A - TYPICAL SECTION

STA. 97+40.00 TO STA. 113+00.00

HWY. 90 - STAGE 2A - QUANTITIES		
VERTICAL PANELS	12	EACH
TRAFFIC DRUMS	16	EACH
FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	1500	LIN. FT.
RELOCATING PRECAST CONCRETE BARRIER	480	LIN. FT.
TEMP. IMPACT ATTEN. BARRIER (RELOCATION.)	2	EACH
CONSTRUCTION PAVEMENT MARKINGS	10084	LIN. FT. *
REMOVAL OF CONS. PAV. MARKINGS	1648	LIN. FT. *
REMOVABLE CONST. PAVEMENT MARKINGS	764	LIN. FT. *
RAISED PAVEMENT MARKERS	24	EACH *

*QUANTITY ESTIMATED, TO BE USED IF AND WHERE DIRECTED BY ENGINEER

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.22896
STEPHANE W. BOSSIO
10-LL-2025

STAGE 2A TYPICAL SECTION MAINTENANCE OF TRAFFIC DETAILS

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				6	ARK.			
				JOB NO.		101003	21	60
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

CONSTRUCTION SEQUENCE

STAGE 1:

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS SHOWN ON THE ADVANCE WARNING DETAILS.

CLEARING AND GRUBBING OPERATIONS MAY BEGIN IF AND WHERE DIRECTED BY THE ENGINEER.

INSTALL MAINTENANCE OF TRAFFIC DEVICES AND CONSTRUCT EMBANKMENT, ROADWAY, TEMPORARY WIDENING, BRIDGE, AND DRAINAGE FOR PROJECT AS SHOWN IN STAGE 1 MAINTENANCE OF TRAFFIC DETAILS. CONSTRUCT GRADE RAISE FROM STA. 91+75 TO STA. 93+75 (REFER TO CROSS SECTIONS).

NOTE: EXISTING ROADWAY TO BE NOTCH AND WIDENED WILL BE LEVELED UNDER TRAFFIC TO ACCOMODATE STAGE 2 TRAFFIC SHIFT.

STAGE 2A:

INSTALL STAGE 2A MAINTENANCE OF TRAFFIC DEVICES AND CONSTRUCTION PAVEMENT MARKINGS. SHIFT TRAFFIC ONTO NEWLY CONSTRUCTED ROADWAY AND BRIDGE.

REMOVE EXISTING BRIDGE AND ROADWAY AS SHOWN IN CROSS SECTIONS.

CONSTRUCT ROADWAY TIES, DRAINAGE, FINAL GRADING AND EMBANKMENT UNDER TRAFFIC AS SHOWN ON THE STAGE 2A MAINTENANCE OF TRAFFIC DETAILS.

STAGE 2B:

REMOVE TEMPORARY WIDENING PAVEMENT.

CONSTRUCT REMAINING ROADWAY TIES, DRAINAGE, FINAL GRADING AND EMBANKMENT UNDER TRAFFIC AS SHOWN ON THE STAGE 2B MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCTION PAVEMENT MARKING
WHITE SOLID EDGE LINE RT. - HWY. 90 - TEMP. WIDENING

* STA. 8+88 TO 15+00 - 612 LIN. FT.

CONSTRUCTION PAVEMENT MARKING
WHITE SOLID EDGE LINE LT. - HWY. 90 - TEMP. WIDENING

* STA. 8+88 TO 15+00 - 612 LIN. FT.

CONSTRUCTION PAVEMENT MARKING
CONTINUOUS DOUBLE YELLOW. - HWY. 90 - TEMP. WIDENING

* STA. 8+88 TO 15+00 - 1224 LIN. FT.

RELOCATING PRECAST CONCRETE BARRIER WALL. - HWY. 90

STA. 8+88 TO 15+07 - 193 LIN. FT.

*QUANTITY ESTIMATED, TO BE USED IF AND WHERE DIRECTED BY ENGINEER

* REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS

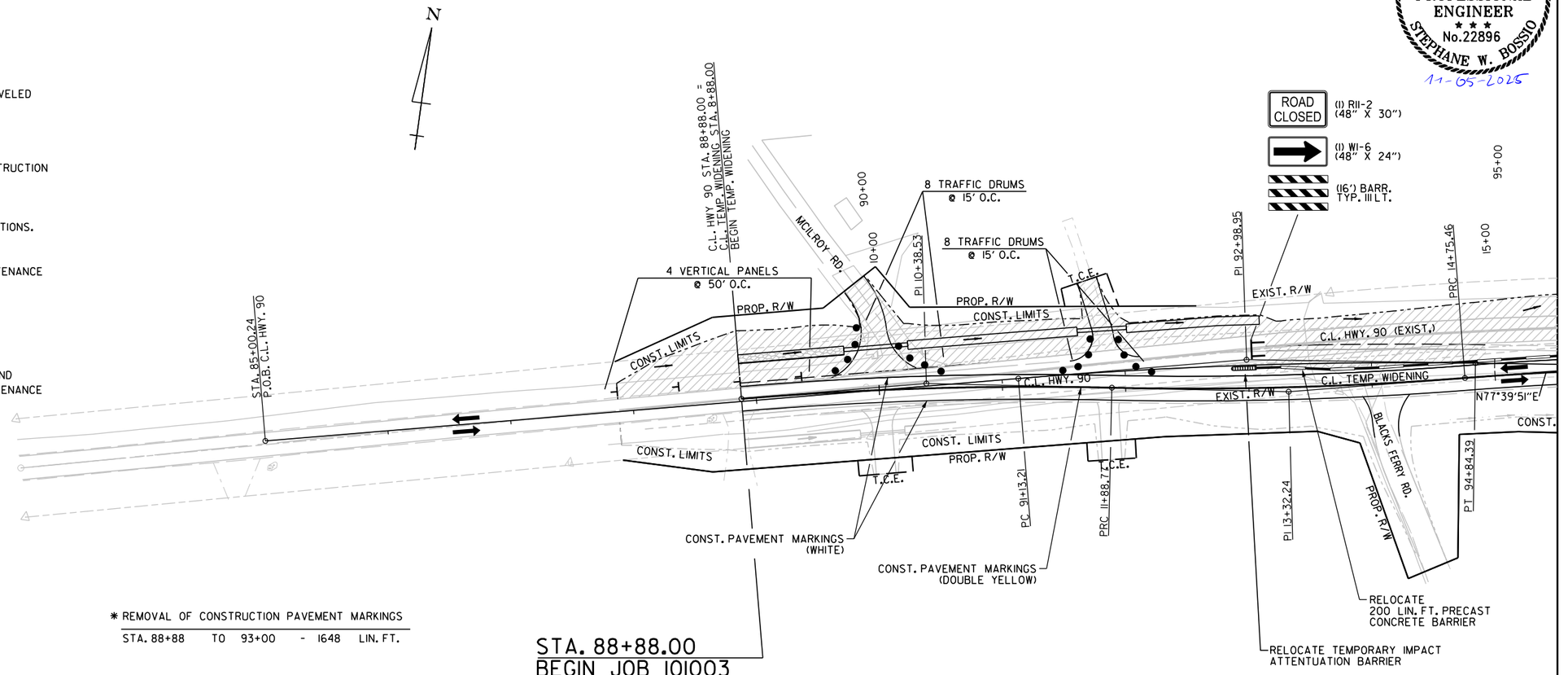
STA. 88+88 TO 93+00 - 1648 LIN. FT.

STAGE 2 - QUANTITIES (STA. 88+88.00 TO STA. 95+00.00)

TRAFFIC DRUMS	16 EACH
VERTICAL PANELS	4 EACH
CONSTRUCTION PAVEMENT MARKINGS	2448 L.F.
REMOVAL OF CONS. PAV. MARKINGS	1648 L.F.
RELOCAT. PRECAST CONCRETE BARRIER WALL	200 L.F.
(BASED ON DBL. YELLOW C.L. & WHITE EDGE LINES LT. & RT.)	

HWY. 90 - STAGE 2A - QUANTITIES

VERTICAL PANELS	12	EACH
TRAFFIC DRUMS	16	EACH
FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	1500	LIN. FT.
RELOCATING PRECAST CONCRETE BARRIER	480	LIN. FT.
TEMP. IMPACT ATTEN. BARRIER (RELOCATION.)	2	EACH
CONSTRUCTION PAVEMENT MARKINGS	10084	LIN. FT. *
REMOVAL OF CONS. PAV. MARKINGS	1648	LIN. FT. *
REMOVABLE CONST. PAVEMENT MARKINGS	764	LIN. FT. *



STA. 88+88.00
BEGIN JOB 101003
L.M. 2.40

C.L. HWY. 90 TEMP. WIDENING
P.I. = 10+38.53
Δ = 6°00'56" RT.
D = 2°00'00"
T = 150.53'
L = 300.77'
P.C. = 8+88.00
P.R.C. = 11+88.77
MATCH C.L. CONST. SUPER

C.L. HWY. 90 TEMP. WIDENING
P.I. = 13+32.24
Δ = 5°44'01" LT.
D = 2°00'00"
T = 143.46'
L = 286.68'
P.R.C. = 11+88.77
P.R.C. = 14+75.46
MATCH C.L. CONST. SUPER

C.L. HWY. 90 TEMP. WIDENING
P.I. = 16+07.70
Δ = 5°17'09" RT.
D = 2°00'00"
T = 132.24'
L = 264.30'
P.R.C. = 14+75.46
P.T. = 17+39.75
MATCH C.L. CONST. SUPER

LEGEND

- TRAFFIC DRUM
- VERTICAL PANEL
- STAGE 2 CONSTRUCTION
- TRAFFIC FLOW ARROWS
- TYPE III BARRICADE
- PRECAST CONCRETE BARRIER WALL

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.22896
STEPHANE W. BOSSIO
11-05-2025

STAGE 2A
MAINTENANCE OF TRAFFIC DETAILS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		101003	22	60

(2) MAINTENANCE OF TRAFFIC DETAILS

CONSTRUCTION PAVEMENT MARKING
WHITE SOLID EDGE LINE RT. - HWY. 90

STA. 95+00.00 TO 101+84.50 - 684.50 LIN. FT.
STA. 103+75.50 TO 110+00.00 - 624.50 LIN. FT.

CONSTRUCTION PAVEMENT MARKING
WHITE SOLID EDGE LINE LT. - HWY. 90

STA. 95+00.00 TO 101+84.50 - 684.50 LIN. FT.
STA. 103+75.50 TO 110+00.00 - 624.50 LIN. FT.

CONSTRUCTION PAVEMENT MARKING
CONTINUOUS DOUBLE YELLOW. - HWY. 90

STA. 95+00.00 TO 101+84.50 - 1369 LIN. FT.
STA. 103+75.50 TO 110+00.00 - 1249 LIN. FT.

REMOVABLE CONSTRUCTION PAVEMENT MARKING
WHITE SOLID EDGE LINE RT. - HWY. 90

STA. 101+84.50 TO 103+75.50 - 191 LIN. FT.

REMOVABLE CONSTRUCTION PAVEMENT MARKING
WHITE SOLID EDGE LINE LT. - HWY. 90

STA. 101+84.50 TO 103+75.50 - 191 LIN. FT.

REMOVABLE CONSTRUCTION PAVEMENT MARKING
CONTINUOUS DOUBLE YELLOW. - HWY. 90

STA. 101+84.50 TO 103+75.50 - 382 LIN. FT.

RELOCATING PRECAST CONCRETE BARRIER WALL. - HWY. 90

STA. 95+00.00 TO 110+00.00 - 280 LIN. FT.

FURNISH AND INSTALL PRECAST CONCRETE BARRIER WALL. - HWY. 90

STA. 95+00.00 TO 110+00.00 - 1220 LIN. FT.

STAGE 2 - QUANTITIES (STA. 95+00.00 TO STA. 110+00.00)

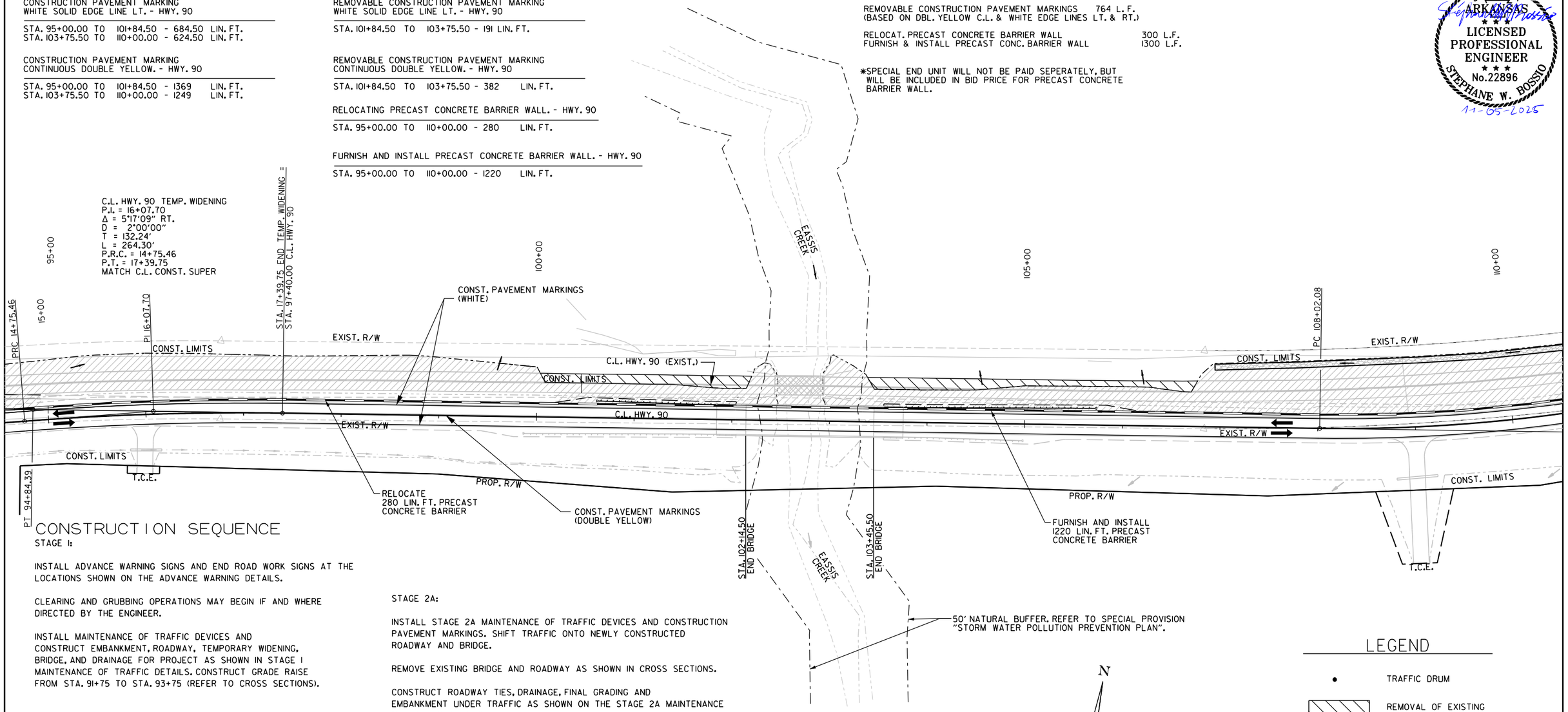
CONSTRUCTION PAVEMENT MARKINGS 5236 L.F.
(BASED ON DBL. YELLOW C.L. & WHITE EDGE LINES LT. & RT.)

REMOVABLE CONSTRUCTION PAVEMENT MARKINGS 764 L.F.
(BASED ON DBL. YELLOW C.L. & WHITE EDGE LINES LT. & RT.)

RELOCAT. PRECAST CONCRETE BARRIER WALL 300 L.F.
FURNISH & INSTALL PRECAST CONC. BARRIER WALL 1300 L.F.

*SPECIAL END UNIT WILL NOT BE PAID SEPERATELY, BUT WILL BE INCLUDED IN BID PRICE FOR PRECAST CONCRETE BARRIER WALL.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.22896
STEPHANE W. BOSSIO
11-05-2025



CONSTRUCTION SEQUENCE

STAGE 1:

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS SHOWN ON THE ADVANCE WARNING DETAILS.

CLEARING AND GRUBBING OPERATIONS MAY BEGIN IF AND WHERE DIRECTED BY THE ENGINEER.

INSTALL MAINTENANCE OF TRAFFIC DEVICES AND CONSTRUCT EMBANKMENT, ROADWAY, TEMPORARY WIDENING, BRIDGE, AND DRAINAGE FOR PROJECT AS SHOWN IN STAGE 1 MAINTENANCE OF TRAFFIC DETAILS. CONSTRUCT GRADE RAISE FROM STA. 91+75 TO STA. 93+75 (REFER TO CROSS SECTIONS).

NOTE: EXISTING ROADWAY TO BE NOTCH AND WIDENED WILL BE LEVELED UNDER TRAFFIC TO ACCOMODATE STAGE 2 TRAFFIC SHIFT.

STAGE 2A:

INSTALL STAGE 2A MAINTENANCE OF TRAFFIC DEVICES AND CONSTRUCTION PAVEMENT MARKINGS. SHIFT TRAFFIC ONTO NEWLY CONSTRUCTED ROADWAY AND BRIDGE.

REMOVE EXISTING BRIDGE AND ROADWAY AS SHOWN IN CROSS SECTIONS.

CONSTRUCT ROADWAY TIES, DRAINAGE, FINAL GRADING AND EMBANKMENT UNDER TRAFFIC AS SHOWN ON THE STAGE 2A MAINTENANCE OF TRAFFIC DETAILS.

STAGE 2B:

REMOVE TEMPORARY WIDENING PAVEMENT.

CONSTRUCT REMAINING ROADWAY TIES, DRAINAGE, FINAL GRADING AND EMBANKMENT UNDER TRAFFIC AS SHOWN ON THE STAGE 2B MAINTENANCE OF TRAFFIC DETAILS.

HWY. 90 - STAGE 2A - QUANTITIES

VERTICAL PANELS	12	EACH
TRAFFIC DRUMS	16	EACH
FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	1500	LIN. FT.
RELOCATING PRECAST CONCRETE BARRIER	480	LIN. FT.
TEMP. IMPACT ATTEN. BARRIER (RELOCATION.)	2	EACH
CONSTRUCTION PAVEMENT MARKINGS	10084	LIN. FT. *
REMOVAL OF CONS. PAV. MARKINGS	1648	LIN. FT. *
REMOVABLE CONST. PAVEMENT MARKINGS	764	LIN. FT. *

LEGEND

- TRAFFIC DRUM
- REMOVAL OF EXISTING ACHM PAVEMENT
- STAGE 2 CONSTRUCTION
- REMOVAL OF EXISTING BRIDGE
- TRAFFIC FLOW ARROWS
- TYPE III BARRICADE
- PRECAST CONCRETE BARRIER WALL

STAGE 2A
MAINTENANCE OF TRAFFIC DETAILS

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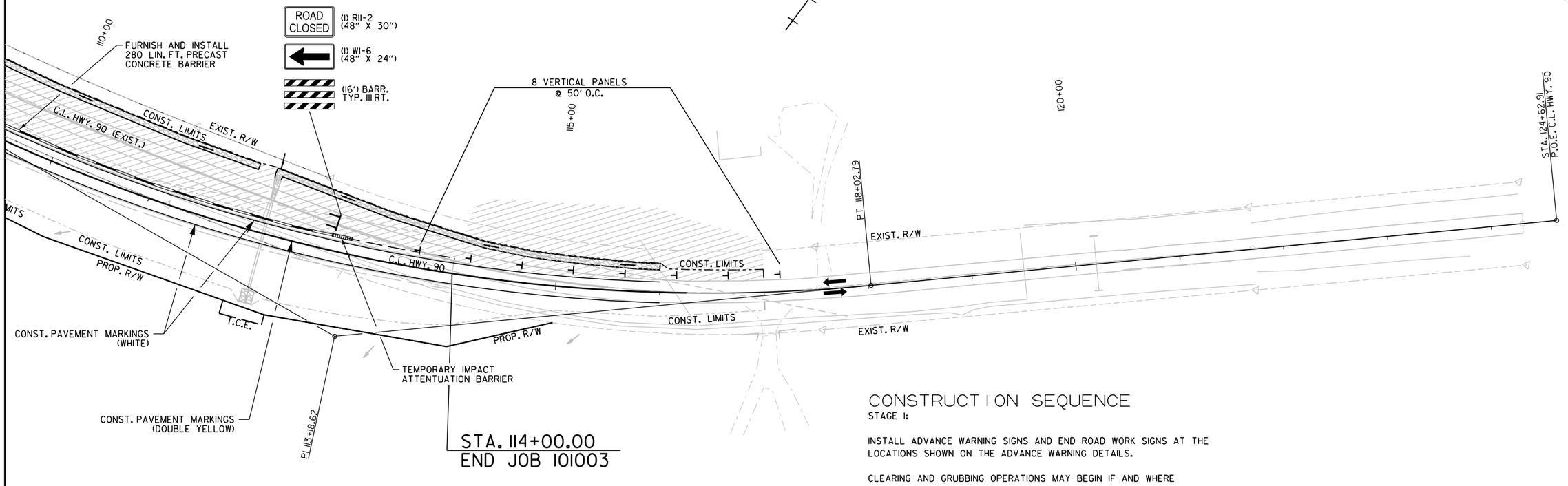
REVISED DATE: $$REVDATE$$

HWY. 90 - STAGE 2A - QUANTITIES		
VERTICAL PANELS	12	EACH
TRAFFIC DRUMS	16	EACH
FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	1500	LIN. FT.
RELOCATING PRECAST CONCRETE BARRIER	480	LIN. FT.
TEMP. IMPACT ATTEN. BARRIER (RELOCATION.)	2	EACH
CONSTRUCTION PAVEMENT MARKINGS	10084	LIN. FT. *
REMOVAL OF CONS. PAV. MARKINGS	1648	LIN. FT. *
REMOVABLE CONST. PAVEMENT MARKINGS	764	LIN. FT. *

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101003	23	60
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.22896
STEPHANE W. BOSSIO
11/4/2025



CONSTRUCTION PAVEMENT MARKING
WHITE SOLID EDGE LINE RT. - HWY. 90 - TEMP. WIDENING

STA. 110+00	TO	116+00	- 600	LIN. FT.

CONSTRUCTION PAVEMENT MARKING
WHITE SOLID EDGE LINE LT. - HWY. 90 - TEMP. WIDENING

STA. 110+00	TO	116+00	- 600	LIN. FT.

CONSTRUCTION PAVEMENT MARKING
CONTINUOUS DOUBLE YELLOW. - HWY. 90 - TEMP. WIDENING

STA. 110+00	TO	116+00	- 1200	LIN. FT.

FURNISH AND INSTALL PRECAST CONCRETE BARRIER WALL. - HWY. 90 - TEMP. WIDENING

STA. 110+00	TO	116+00	- 280	LIN. FT.

STAGE 2 - QUANTITIES (STA. 110+00.00 TO STA. 116+00.00)

VERTICAL PANELS	8 EACH
FURNISH & INSTALL PRECAST CONCRETE BARRIER WALL	280 L. F.
CONSTRUCTION PAVEMENT MARKINGS 2400 L. F. (BASED ON DBL. YELLOW C.L. & WHITE EDGE LINES LT. & RT.)	

CONSTRUCTION SEQUENCE

STAGE I:

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS SHOWN ON THE ADVANCE WARNING DETAILS.

CLEARING AND GRUBBING OPERATIONS MAY BEGIN IF AND WHERE DIRECTED BY THE ENGINEER.

INSTALL MAINTENANCE OF TRAFFIC DEVICES AND CONSTRUCT EMBANKMENT, ROADWAY, TEMPORARY WIDENING, BRIDGE, AND DRAINAGE FOR PROJECT AS SHOWN IN STAGE I MAINTENANCE OF TRAFFIC DETAILS. CONSTRUCT GRADE RAISE FROM STA. 91+75 TO STA. 93+75 (REFER TO CROSS SECTIONS).

NOTE: EXISTING ROADWAY TO BE NOTCH AND WIDENED WILL BE LEVELED UNDER TRAFFIC TO ACCOMODATE STAGE 2 TRAFFIC SHIFT.

STAGE 2A:

INSTALL STAGE 2A MAINTENANCE OF TRAFFIC DEVICES AND CONSTRUCTION PAVEMENT MARKINGS. SHIFT TRAFFIC ONTO NEWLY CONSTRUCTED ROADWAY AND BRIDGE.

REMOVE EXISTING BRIDGE AND ROADWAY AS SHOWN IN CROSS SECTIONS.

CONSTRUCT ROADWAY TIES, DRAINAGE, FINAL GRADING AND EMBANKMENT UNDER TRAFFIC AS SHOWN ON THE STAGE 2A MAINTENANCE OF TRAFFIC DETAILS.

STAGE 2B:

REMOVE TEMPORARY WIDENING PAVEMENT.

CONSTRUCT REMAINING ROADWAY TIES, DRAINAGE, FINAL GRADING AND EMBANKMENT UNDER TRAFFIC AS SHOWN ON THE STAGE 2B MAINTENANCE OF TRAFFIC DETAILS.

LEGEND

- TRAFFIC DRUM
- VERTICAL PANEL
- STAGE 2 CONSTRUCTION
- TRAFFIC FLOW ARROWS
- TYPE III BARRICADE
- TEMPORARY TRAFFIC SIGN
- PRECAST CONCRETE BARRIER WALL

STAGE 2A
MAINTENANCE OF TRAFFIC DETAILS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101003	24	60
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.22896
STEPHANE W. BOSSIO
10-22-2025

CONSTRUCTION SEQUENCE

STAGE 1:

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS SHOWN ON THE ADVANCE WARNING DETAILS.

CLEARING AND GRUBBING OPERATIONS MAY BEGIN IF AND WHERE DIRECTED BY THE ENGINEER.

INSTALL MAINTENANCE OF TRAFFIC DEVICES AND CONSTRUCT EMBANKMENT, ROADWAY, TEMPORARY WIDENING, BRIDGE, AND DRAINAGE FOR PROJECT AS SHOWN IN STAGE 1 MAINTENANCE OF TRAFFIC DETAILS. CONSTRUCT GRADE RAISE FROM STA. 91+75 TO STA. 93+75 (REFER TO CROSS SECTIONS).

NOTE: EXISTING ROADWAY TO BE NOTCH AND WIDENED WILL BE LEVELED UNDER TRAFFIC TO ACCOMODATE STAGE 2 TRAFFIC SHIFT.

STAGE 2A:

INSTALL STAGE 2A MAINTENANCE OF TRAFFIC DEVICES AND CONSTRUCTION PAVEMENT MARKINGS. SHIFT TRAFFIC ONTO NEWLY CONSTRUCTED ROADWAY AND BRIDGE.

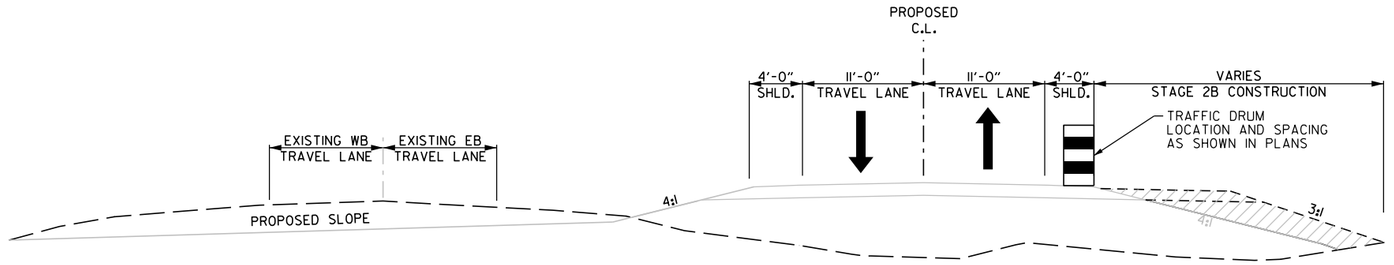
REMOVE EXISTING BRIDGE AND ROADWAY AS SHOWN IN CROSS SECTIONS.

CONSTRUCT ROADWAY TIES, DRAINAGE, FINAL GRADING AND EMBANKMENT UNDER TRAFFIC AS SHOWN ON THE STAGE 2A MAINTENANCE OF TRAFFIC DETAILS.

STAGE 2B:

REMOVE TEMPORARY WIDENING PAVEMENT.

CONSTRUCT REMAINING ROADWAY TIES, DRAINAGE, FINAL GRADING AND EMBANKMENT UNDER TRAFFIC AS SHOWN ON THE STAGE 2B MAINTENANCE OF TRAFFIC DETAILS.



STAGE 2B - TEMP. WIDENING REMOVAL
TYPICAL SECTION
STA. 93+00.00 TO STA. 97+40.00

HWY. 90 - STAGE 2B - QUANTITIES		
TRAFFIC DRUMS	16	EACH

STAGE 2B
TYPICAL SECTION
MAINTENANCE OF TRAFFIC DETAILS

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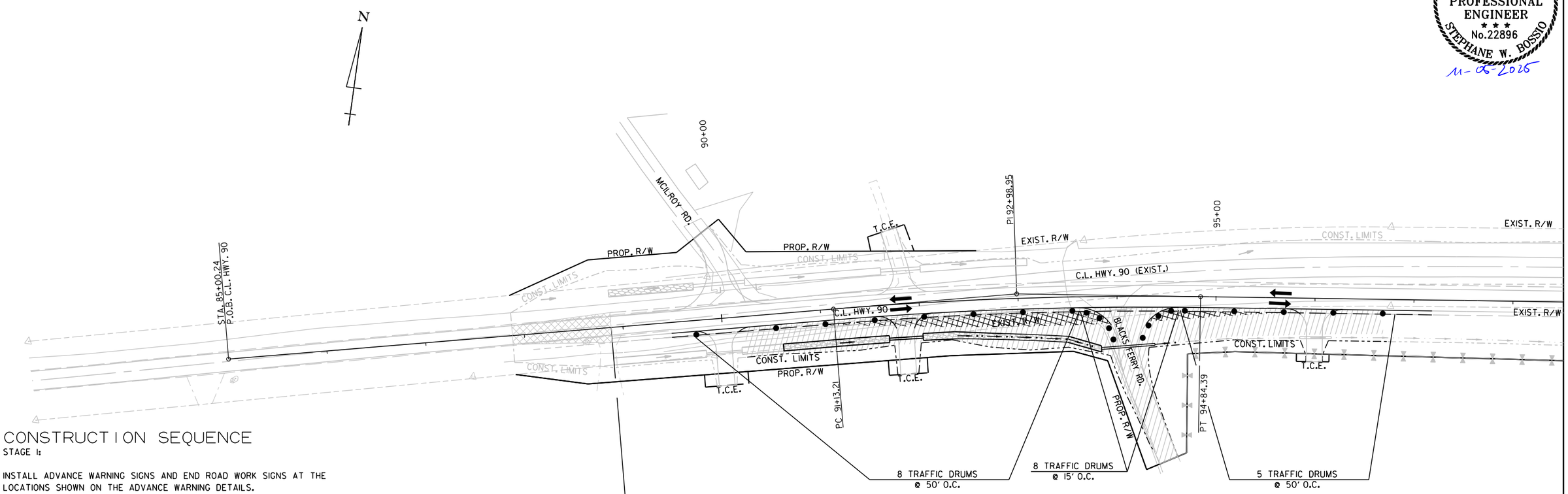
HWY. 90 - STAGE 2B - QUANTITIES

TRAFFIC DRUMS	21	EACH

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		101003	25	60
(2) MAINTENANCE OF TRAFFIC DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.22896
STEPHANE W. BOSSIO
11-05-2025



CONSTRUCTION SEQUENCE

STAGE I:

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS SHOWN ON THE ADVANCE WARNING DETAILS.

CLEARING AND GRUBBING OPERATIONS MAY BEGIN IF AND WHERE DIRECTED BY THE ENGINEER.

INSTALL MAINTENANCE OF TRAFFIC DEVICES AND CONSTRUCT EMBANKMENT, ROADWAY, TEMPORARY WIDENING, BRIDGE, AND DRAINAGE FOR PROJECT AS SHOWN IN STAGE I MAINTENANCE OF TRAFFIC DETAILS. CONSTRUCT GRADE RAISE FROM STA. 91+75 TO STA. 93+75 (REFER TO CROSS SECTIONS).

NOTE: EXISTING ROADWAY TO BE NOTCH AND WIDENED WILL BE LEVELED UNDER TRAFFIC TO ACCOMODATE STAGE 2 TRAFFIC SHIFT.

STAGE 2A:

INSTALL STAGE 2A MAINTENANCE OF TRAFFIC DEVICES AND CONSTRUCTION PAVEMENT MARKINGS. SHIFT TRAFFIC ONTO NEWLY CONSTRUCTED ROADWAY AND BRIDGE.

REMOVE EXISTING BRIDGE AND ROADWAY AS SHOWN IN CROSS SECTIONS.

CONSTRUCT ROADWAY TIES, DRAINAGE, FINAL GRADING AND EMBANKMENT UNDER TRAFFIC AS SHOWN ON THE STAGE 2A MAINTENANCE OF TRAFFIC DETAILS.

STAGE 2B:

REMOVE TEMPORARY WIDENING PAVEMENT.

CONSTRUCT REMAINING ROADWAY TIES, DRAINAGE, FINAL GRADING AND EMBANKMENT UNDER TRAFFIC AS SHOWN ON THE STAGE 2B MAINTENANCE OF TRAFFIC DETAILS.

STA. 88+88.00
BEGIN JOB 101003
L.M. 2.40

STAGE 2 - QUANTITIES (STA. 88+88.00 TO STA. 96+80.00)

TRAFFIC DRUMS	21 EACH

LEGEND

- TRAFFIC DRUM
- TEMP. WIDENING REMOVAL
- STAGE 2 CONSTRUCTION
- TRAFFIC FLOW ARROWS

STAGE 2B
MAINTENANCE OF TRAFFIC DETAILS

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NOTE:

THE 6" YELLOW STRIPPING QUANTY 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 PROJECT.

REFLECTORIZED PAINT PAVEMENT MARKING
6" CONTINUOUS DOUBLE YELLOW
LINE W/ YELLOW/YELLOW RAISED PAVEMENT MARKERS
80' O.C. (TYP.) - HWY. 90

STA. 87+88 TO 110+00 - 4424 LIN. FT. - 28 R.P.M.

REFLECTORIZED PAINT PAVEMENT MARKING
6" WHITE SOLID EDGE LINE RT. - HWY. 90

STA. 87+88 TO 110+00 - 2212 LIN. FT.

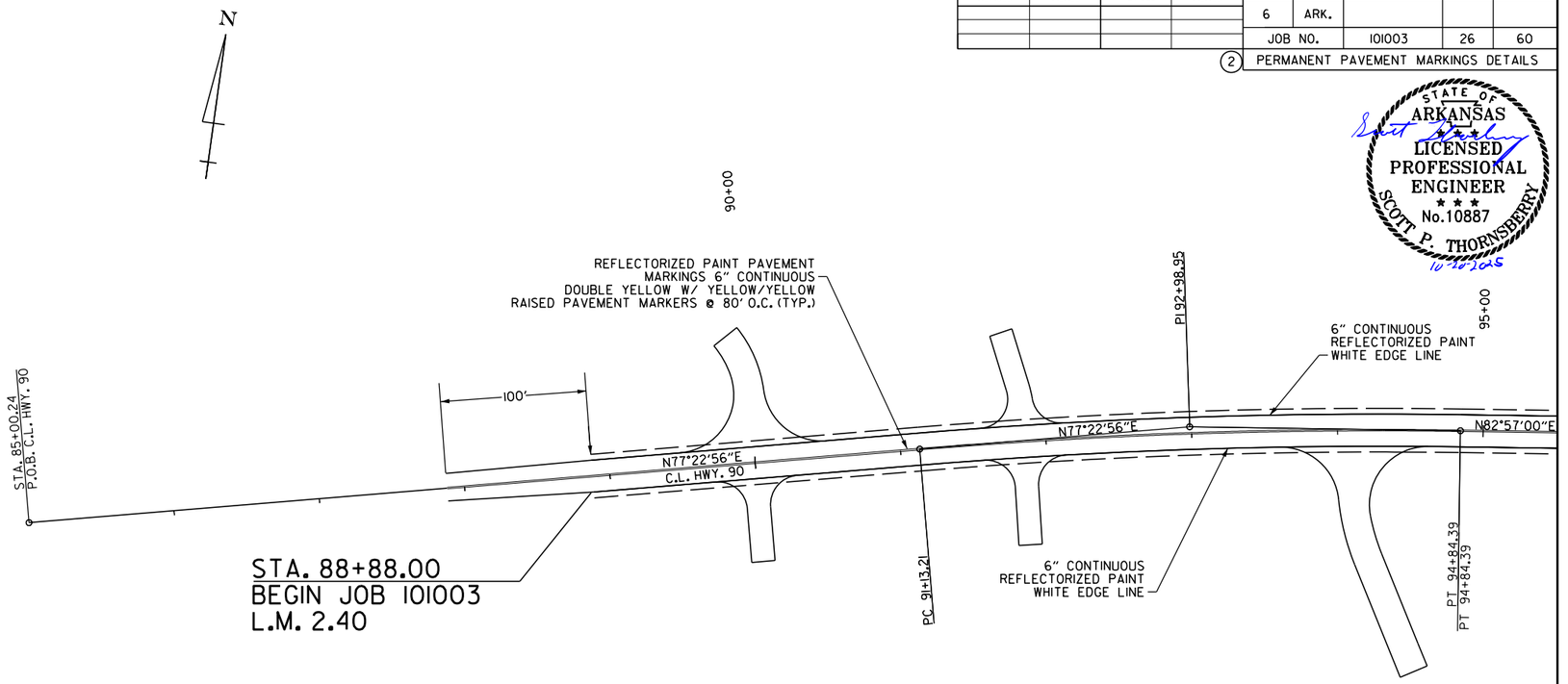
REFLECTORIZED PAINT PAVEMENT MARKING
6" WHITE SOLID EDGE LINE LT. - HWY. 90

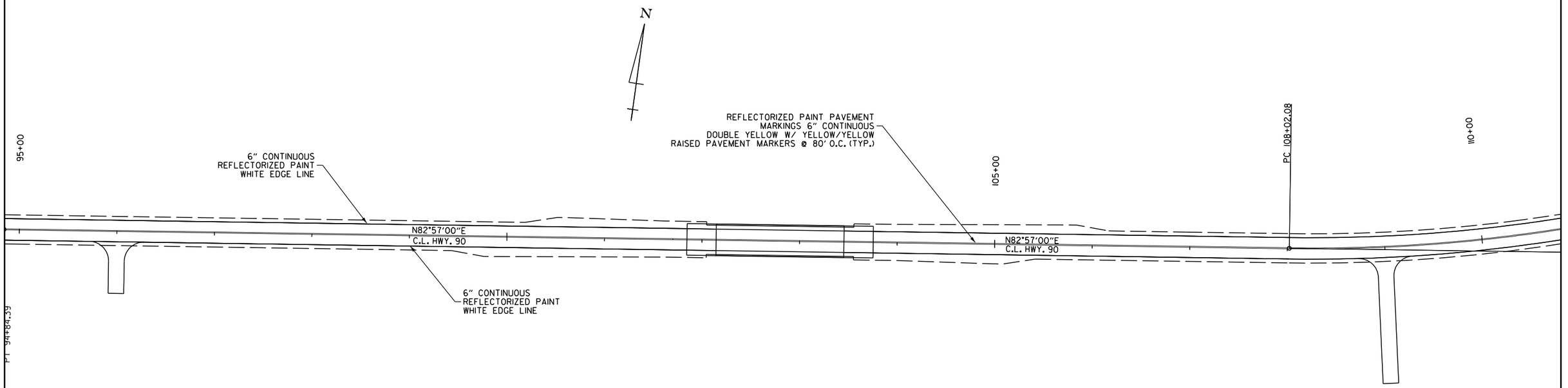
STA. 87+88 TO 110+00 - 2212 LIN. FT.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101003	26	60

(2) PERMANENT PAVEMENT MARKINGS DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
10-10-2025





HWY. 90 PROJECT QUANTITY TOTALS:

REFLECTORIZED PAINT PAVEMENT MARKINGS
6" WHITE EDGE = 5824 LIN. FT.
6" YELLOW = 5824 LIN. FT.
YELLOW/YELLOW RAISED PAVEMENT MARKERS = 37

PERMANENT PAVEMENT MARKINGS DETAILS

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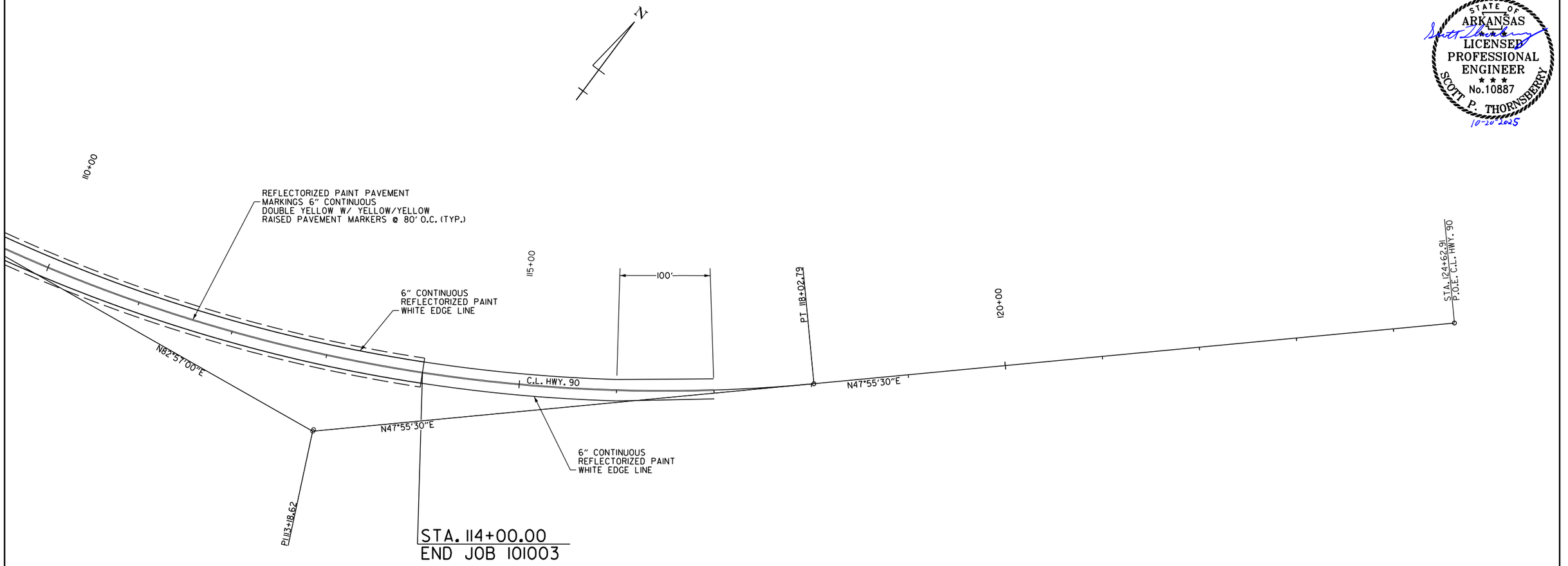
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		101003	27	60
(2) PERMANENT PAVEMENT MARKINGS DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
10-20-2025



NOTE:

THE 6" YELLOW STRIPPING QUANTY 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 PROJECT.

REFLECTORIZED PAINT PAVEMENT MARKING
6" CONTINUOUS DOUBLE YELLOW
LINE W/ YELLOW/YELLOW RAISED PAVEMENT MARKERS
80' O.C. (TYP.) - HWY. 90

STA. 110+00 TO 117+00 - 1400 LIN. FT. - 9 R.P.M.

REFLECTORIZED PAINT PAVEMENT MARKING
6" WHITE SOLID EDGE LINE RT. - HWY. 90

STA. 110+00 TO 117+00 - 700 LIN. FT.

REFLECTORIZED PAINT PAVEMENT MARKING
6" WHITE SOLID EDGE LINE LT. - HWY. 90

STA. 110+00 TO 117+00 - 700 LIN. FT.

HWY. 90 PROJECT QUANTITY TOTALS:

REFLECTORIZED PAINT PAVEMENT MARKINGS
6" WHITE EDGE = 5824 LIN. FT.
6" YELLOW = 5824 LIN. FT.
YELLOW/YELLOW RAISED PAVEMENT MARKERS = 37

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
2-3-2026				6	ARK.			
				JOB NO.		101003	28	60

(2) QUANTITIES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
2-3-2026

ADVANCE WARNING SIGNS AND DEVICES

	SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2A	STAGE 2B	END OF JOB	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		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	2	32.0									
	W20-1	ROAD WORK 1000 FT.	48"x48"	2	2	2		2	2	32.0									
	W20-1	ROAD WORK 500 FT.	48"x48"	2	2	2		2	2	32.0									
	W20-1	ROAD WORK AHEAD	48"x48"	2	2	2		2	2	32.0									
	G20-2	END ROAD WORK	48"x24"	4	4	4		4	4	32.0									
	R11-2	ROAD CLOSED	48"x30"	4	4	2		4	4	40.0									
	W1-6	LARGE ARROW	48"x24"		2			2	2	16.0									
*	R4-1	DO NOT PASS	24"x30"	2	2	2		2	2	10.0									
*	W21-5a	RIGHT SHOULDER CLOSED	36"x36"	2	2	2		2	2	18.0									
*	W24-1R	DOUBLE REVERSE CURVE RT.	36"x36"		1	1		1	1	9.0									
*	W24-1L	DOUBLE REVERSE CURVE LT.	36"x36"		1	1		1	1	9.0									
	R2-11	END HIGHER FINES ZONE	36"X48"	2	2	2		2	2	24.0									
	WZ-4	NO HANDHELD PHONE USE BY DRIVER	36"X54"	2	2	2		2	2	27.0									
	R2-6aP	FINES DOUBLE WHEN WORKERS ARE PRESENT	48"x36"	2	2	2		2	2	24.0									
		VERTICAL PANELS		19	12			19			19								
		TRAFFIC DRUMS		72	16	21		72				72							
		TYPE III BARRICADE-RT. (16')		1	1			1					16						
		TYPE III BARRICADE-LT. (16')		1	1			1						16					
		FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER		506	1500			2006							2006				
		RELOCATING PRECAST CONCRETE BARRIER			480			480								480			
		TEMPORARY IMPACT ATTENUATION BARRIER		2				2									2		
		TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)		2	2			2										2	
		TEMPORARY IMPACT ATTENUATION BARRIER (RELOCATION)			2			2											2
	TOTALS:									337.0	19	72	16	16	2006	480	2	2	2

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

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

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

	DESCRIPTION	STAGE 1	STAGE 2A	STAGE 2B	END OF JOB	CONSTRUCTION PAVEMENT MARKINGS	REMOVAL OF 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.	LIN. FT.	EACH	LIN. FT.	
	CONSTRUCTION PAVEMENT MARKINGS	11060	10084			21144					
	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS		1648				1648				
	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS		764					764			
	RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW)				37				37		
	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")				5824					5824	
	REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")				5824						5824
*	TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER					11248					
	TOTALS:					32392	1648	764	37	5824	5824

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.

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.
88+88.00	89+82.00	HWY. 90 - RT.	94.00	6.67	69.66	41.78	0.53
90+18.00	90+60.00	HWY. 90 - RT.	42.00	6.67	31.13	18.67	0.24
90+26.00	91+63.43	HWY. 90 - LT.	138.00	6.67	102.27	61.33	0.77
92+03.07	93+10.00	HWY. 90 - LT.	108.00	6.67	80.04	48.00	0.60
TOTALS:					213.44	128.00	1.61

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

REMOVAL AND DISPOSAL OF FENCE

STATION	STATION	LOCATION	FENCE
			LIN. FT.
94+44	102+42	HWY. 90 - RT.	1018
102+97	116+91	HWY. 90 - RT.	1448
TOTAL:			2466

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
87+88	117+00	HWY. 90	30	30
TOTALS:			30	30

FENCING

STATION	STATION	LOCATION	WIRE FENCE (TYPE C)	* 16'-0" GATES
			LIN. FT.	EACH
94+44.00	102+42.00	RT. Of C.L. HWY 90	877	1
102+97.00	110+00.00	RT. Of C.L. HWY 90	668	1
TOTALS:			1545	2

DUMPED RIPRAP AND FILTER BLANKET

STATION	STATION	LOCATION	DUMPED RIPRAP	FILTER BLANKET
			CU. YD.	SQ. YD.
88+88	89+74	DITCH LINING - LT.	34	67
90+60	91+68	DITCH LINING - RT.	42	83
92+02	92+35	DITCH LINING - RT.	13	26
92+35	92+83	DITCH LINING - RT.	17	34
92+83	93+84	DITCH LINING - RT.	34	68
106+94	111+94	DITCH LINING - LT.	162	323
112+12	116+00	DITCH LINING - LT.	126	252
112+09	112+21	OUTLET OF PIPE CULVERT - RT.	8	16
TOTALS:			436	869

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

REMOVAL AND DISPOSAL OF GUARDRAIL

STATION	STATION	LOCATION	GUARDRAIL
			LIN. FT.
102+15.60	102+41.26	C.L. HWY. 90 - RT.	26
102+15.00	102+40.91	C.L. HWY. 90 - LT.	26
102+96.21	103+21.77	C.L. HWY. 90 - RT.	26
102+96.56	103+22.06	C.L. HWY. 90 - LT.	26
TOTAL:			104

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

REMOVAL AND DISPOSAL OF CULVERTS

STATION	DESCRIPTION	PIPE CULVERTS
		EACH
88+83	16" X 26' C.M. PIPE CULVERT - RT. OF C.L.	1
90+00	24" X 37' R.C. PIPE CULVERT - LT. OF C.L.	1
91+85	18" X 29" X 24' C.M. PIPE CULVERT - LT. OF C.L.	1
94+10	18" X 29" X 40' C.M. PIPE CULVERT - RT. OF C.L.	1
105+76	18" X 24' C.M. PIPE CULVERT - LT. OF C.L.	1
112+15	18" X 43' R.C. PIPE CULVERT	1
TOTAL:		6

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

Scott.Thornsberry 9:25:47 AM
WORKSPACE: scott.thornsberry
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REVISED DATE: $$REVDATE$$

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101003	29	60
				(2)	QUANTITIES			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
10-20-2025

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL					TEMPORARY EROSION CONTROL										
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	TEMPORARY SEEDING	MULCH COVER	WATER	FILTER SOCK (12") (E-3)	TRIANGULAR SILT DIKE	SAND BAG DITCH CHECKS (E-5)	ROCK DITCH CHECKS (E-6)	SILT FENCE (E-11)	SEDIMENT BASIN (E-14)	OBLITERATION OF SEDIMENT BASIN	*SEDIMENT REMOVAL & DISPOSAL
			ACRE	TON	ACRE	M.GAL.	ACRE	ACRE	ACRE	M.GAL.	LIN. FT.	LIN. FT.	BAG	CU.YD.	LIN. FT.	CU.YD.	CU.YD.	CU. YD.
ENTIRE	PROJECT	CLEARING AND GRUBBING						14.54	14.54	296.6			374	99	6020	469	469	742
ENTIRE	PROJECT	STAGE 1						6.61	6.61	134.8	390	221	154	48				23
ENTIRE	PROJECT	STAGE 2A						7.93	7.93	161.8			88	15				9
ENTIRE	PROJECT	STAGE 2B	7.27	14.54	7.27	741.5	7.27											
*ENTIRE PROJECT TO BE USED IF & WHERE DIRECTED BY THE ENGINEER.			1.82	3.64	1.82	185.6	1.82	3.64	3.64	74.3	250	22	62	16	591	117	41	147
TOTALS:			**9.09**	**18.18**	**9.09**	**927.1**	**9.09**	**32.72**	**32.72**	**667.5**	**640**	**243**	**678**	**178**	**6611**	**586**	**510**	**921**

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

SELECTED PIPE BEDDING

LOCATION	SELECTED PIPE BEDDING
	CU.YD.
ENTIRE PROJECT TO BE USED IF	
AND WHERE DIRECTED BY THE	50
ENGINEER	
TOTAL:	**50**

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

APPROACH GUTTERS AND SLABS

STATION	STATION	LOCATION	APPROACH GUTTER (TYPE SPECIAL)	APPROACH SLABS	REINFORCING STEEL-RDWY. (GR. 60)	AGGREGATE BASE CRS. (CLASS 7)
			CU.YD.	CU.YD.	POUND	TON
101+84.50	102+14.50	LT. SIDE	4.25		327	4.02
101+84.50	102+14.50	RT. SIDE	4.25		327	4.02
103+45.50	103+75.50	LT. SIDE	4.25		327	4.02
103+45.50	103+75.50	RT. SIDE	4.25		327	4.02
101+84.50	102+14.50	END BRIDGE APPROACH SLAB		27.30	1944	17.11
103+45.50	103+75.50	END BRIDGE APPROACH SLAB		27.30	1944	17.11
TOTALS:			**17.00**	**54.60**	**5196**	**50.30**

NOTE: USE T =8" FOR 4' SHOULDER.

PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

STATION	LOCATION	WIDTH	LENGTH	TON
		FEET		
112+15	C.L. HWY. 90 - LT.	8.50	20	9
TOTAL:				**9**

AVG. DEPTH = 9"

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
87+88.00	88+88.00	MAIN LANES	29.00	322.22
116+00.00	117+00.00	MAIN LANES	29.00	322.22
TOTAL:				**644.44**

NOTES: AVERAGE MILLING DEPTH 1".
COORDINATE COLD MILLING STOCKPILE LOCATIONS WITH DISTRICT ENGINEER.
STOCKPILE LOACTIONS SHALL BE NO FURTHER THAN FIVE MILES FROM EACH SITE.

MAILBOXES

LOCATION	MAILBOXES	MAILBOX SUPPORTS (SINGLE)
	EACH	
ENTIRE PROJECT	1	1
TOTALS:	**1**	**1**

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	TON	TACK COAT
		GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE	13	26
DIRECTED BY THE ENGINEER		
TOTALS:	**13**	**26**

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

ACHM PATCHING OF EXISTING ROADWAY

DESCRIPTION	TON
ENTIRE PROJECT - TO BE USED IF AND WHERE	10
DIRECTED BY THE ENGINEER	
TOTAL:	**10**

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

BENCH MARKS

STATION	LOCATION	BENCH MARKS
		EACH
102+15	C.L. HWY. 90 - BRIDGE OVER EASSIS CREEK	1

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
95+00	100+00	HWY 90	500	3
*ENTIRE PROJECT TO BE USED IF AND			1500	6
WHERE DIRECTED BY THE ENGINEER				
TOTALS:			**2000**	**9**

* 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	
99+86.35	102+05.10	RT. OF C.L. HWY. 90	150	1	1
100+61.35	102+05.10	LT. OF C.L. HWY. 90	75	1	1
103+54.90	105+73.65	LT. OF C.L. HWY. 90	150	1	1
103+54.90	104+98.65	RT. OF C.L. HWY. 90	75	1	1
TOTALS:			**450**	**4**	**4**

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REVISED DATE: $$REVDATE$$

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101003	30	60
				(2)	QUANTITIES			

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"	36"	
			FEET	SQ. YD.	TON	TON	LIN. FT.			
90+00	RT.	C.L. HWY. 90	16	37.01	4.07	48.76	36			PCC-1, PCM-1, PCP-1, PCP-2, PCP-3, DR-2
90+00	LT.	C.L. HWY. 90 - MCILROY RD.	20	210.59	23.16	85.99			52	PCC-1, PCM-1, PCP-1, PCP-2, PCP-3, DR-2
91+85	LT.	C.L. HWY. 90	16	37.01	4.07	56.71			40	PCC-1, PCM-1, PCP-1, PCP-2, PCP-3, DR-2
91+85	RT.	C.L. HWY. 90	16	37.01	4.07	52.42		34		PCC-1, PCM-1, PCP-1, PCP-2, PCP-3, DR-2
94+10	RT.	C.L. HWY. 90 - BLACKS FERRY RD.	20	397.52	43.73	162.32		54		PCC-1, PCM-1, PCP-1, PCP-2, PCP-3, DR-2
96+00	RT.	C.L. HWY. 90	16	37.01	4.07	45.91		32		PCC-1, PCM-1, PCP-1, PCP-2, PCP-3, DR-2
109+00	RT.	C.L. HWY. 90	16	37.01	4.07	116.89		42		PCC-1, PCM-1, PCP-1, PCP-2, PCP-3, DR-2
* ENTIRE PROJECT TEMPORARY DRIVES						70.00				
TOTALS:				**793.16**	**87.24**	**639.00**	**36**	**162**	**92**	

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.4% MIN. AGGR.....5.6% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

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

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

SOIL LOG

STATION	LATITUDE			LONGITUDE			LOCATION	DEPTH	LIQUID LIMIT	PLASTICITY INDEX	AASHTO CLASSIFICATION	COLOR
	DEG	MIN	SEC	DEG	MIN	SEC		FEET				
101+91	36	20	30.86	91	7	24.63	B-1	2.5 to 4.5	32	13	A-6	
101+91	36	20	30.86	91	7	24.63	B-1	8.5 to 10.5	32	12	A-6	
103+29	36	20	31.20	91	7	23.00	B-2	0.5 to 2	--	--	A-6	
103+29	36	20	31.20	91	7	23.00	B-2	6 to 8	NP	NP	A-2-4	
103+29	36	20	31.20	91	7	23.00	B-2	13.5 to 15.5	NP	NP	A-2-4	
102+31.50	36	20	30.54	91	7	24.09	B-A	2 to 3.5	38	17	A-6	
102+31.50	36	20	30.54	91	7	24.09	B-A	8.5 to 10.5	NP	NP	A-2-4	
103+77	36	20	30.74	91	7	22.33	B-B	2 to 3.5	30	15	A-6	
103+77	36	20	30.74	91	7	22.33	B-B	8.5 to 10.5	NP	NP	A-4	

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
10-20-2025

STRUCTURES

STATION	DESCRIPTION	PIPE CULVERT ALTERNATES		FLARED END SECTION ALTERNATES FOR PIPE CULVERT ALTERNATES	TEMPORARY CULVERTS	SOLID SODDING	WATER	STD. DWG. NOS.
		ALT. 1 (CLASS III)	ALT. 2, 3, 4, 5, 6, AND 7					
		24"	24"	24"	24"			
		LIN. FT.		EACH		SQ.YD.	M.GAL.	
112+15	HWY. 90 - CROSS DRAIN	83	89	2	25	16	0.20	PCC-1, PCM-1, PCP-1, PCP-2, PCP-3, FES-1, FES-2
TOTALS:		**83**	**89**	**2**	**25**	**16**	**0.20**	

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

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

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

EARTHWORK

	STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	* SOIL STABILIZATION
				CU. YD.		TON
	ENTIRE	PROJECT	STAGE 1 - MAIN LANES	532	23072	
	ENTIRE	PROJECT	STAGE 1 - TEMP. WIDENING	42	431	
	ENTIRE	PROJECT	STAGE 2A - MAIN LANES	3949	2214	
	ENTIRE	PROJECT	STAGE 2A - REMOVAL OF EXISTING ACHM PAVEMENT	32		
	ENTIRE	PROJECT	STAGE 2B - TEMP. WIDENING	651		
	ENTIRE	PROJECT	APPROACHES		1470	
	ENTIRE	PROJECT	REMOVAL TEMPORARY APPROACHES	35		
			BRIDGE EARTHWORK	660		
*	ENTIRE	PROJECT	TO BE USED IF AND WHERE			50
			DIRECTED BY THE ENGINEER			
TOTALS:				**5901**	**27187**	**50**

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

BASE AND SURFACING

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT						TOTAL GALLONS	ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")								TOTAL PG 64-22
				TON / STATION	TON	(0.05 GAL. PER SQ. YD.)			(0.17 GAL. PER SQ. YD.)				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	
			FEET			TOTAL WID. FEET	SQ.YD.	GALLON	TOTAL WID. FEET	SQ.YD.	GALLON		FEET			TON	FEET			TON	FEET			TON	TON
MAIN LANES																									
87+88.00	88+88.00	C.L. HWY. 90 - TRANSITION	100.00	50.25	50.25	2.17	24.11	1.21	20.00	222.22	37.78	38.99	1.11	12.33	330.00	2.03	1.06	11.78	220.00	1.30	23.00	255.56	220.00	28.11	29.41
88+88.00	89+54.00	C.L. HWY. 90 - NOTCH & WIDENING - RT.	66.00	100.25	66.17	4.36	31.97	1.60				1.60	2.23	16.35	330.00	2.70	2.13	15.62	220.00	1.72	26.00	190.67	220.00	20.97	22.69
89+54.00	90+00.00	C.L. HWY. 90 - NOTCH & WIDENING - RT.	46.00	97.00	44.62	7.86	40.17	2.01				2.01	3.98	20.34	330.00	3.36	3.88	19.83	220.00	2.18	26.00	132.89	220.00	14.62	16.80
90+00.00	91+00.00	C.L. HWY. 90 - NOTCH & WIDENING - RT.	100.00	89.75	89.75	8.96	99.56	4.98				4.98	4.53	50.33	330.00	8.30	4.43	49.22	220.00	5.41	26.00	288.89	220.00	31.78	37.19
91+00.00	93+75.00	C.L. HWY. 90 - NOTCH & WIDENING - RT.	275.00	107.00	294.25	21.32	651.44	32.57				32.57	10.71	327.25	330.00	54.00	10.61	324.19	220.00	35.66	26.00	794.44	220.00	87.39	123.05
93+75.00	101+84.50	C.L. HWY. 90 - FULL DEPTH	809.50	178.00	1440.91	48.25	4339.82	216.99				216.99	22.46	2020.15	330.00	333.32	22.25	2001.26	220.00	220.14	26.00	2338.56	220.00	257.24	477.38
103+75.50	113+50.00	C.L. HWY. 90 - FULL DEPTH	974.50	178.00	1734.61	48.25	5224.40	261.22				261.22	22.46	2431.92	330.00	401.27	22.25	2409.18	220.00	265.01	26.00	2815.22	220.00	309.67	574.68
113+50.00	114+00.00	C.L. HWY. 90 - NOTCH & WIDENING - RT.	50.00	129.00	64.50	32.60	181.11	9.06				9.06	16.35	90.83	330.00	14.99	16.25	90.28	220.00	9.93	26.00	144.44	220.00	15.89	25.82
114+00.00	115+00.00	C.L. HWY. 90 - NOTCH & WIDENING - RT. & TRANSITION RT.	100.00	100.00	100.00	17.70	196.67	9.83				9.83	8.90	98.89	330.00	16.32	8.80	97.78	220.00	10.76	26.00	288.89	220.00	31.78	42.54
115+00.00	116+00.00	C.L. HWY. 90 - NOTCH & WIDENING - RT. & TRANSITION RT.	100.00	84.75	84.75	5.68	63.11	3.16				3.16	2.89	32.11	330.00	5.30	2.79	31.00	220.00	3.41	26.00	288.89	220.00	31.78	35.19
116+00.00	117+00.00	C.L. HWY. 90 - TRANSITION	100.00	44.50	44.50	2.17	24.11	1.21	20.00	222.22	37.78	38.99	1.11	12.33	330.00	2.03	1.06	11.78	220.00	1.30	23.00	255.56	220.00	28.11	29.41
ADDITIONAL FOR LEVELING & RAISING GRADE																									
88+88.00	89+05.59	C.L. HWY. 90 - NOTCH & WIDENING - RT.	17.59			20.00	39.09	1.95	20.00	39.09	6.65	8.60					20.00	39.09	220.00	4.30					4.30
89+05.59	89+54.00	C.L. HWY. 90 - NOTCH & WIDENING - RT.	48.41			40.00	215.16	10.76	20.00	107.58	18.29	29.05	20.00	107.58	140.00	7.53	20.00	107.58	220.00	11.83					11.83
89+54.00	90+00.00	C.L. HWY. 90 - NOTCH & WIDENING - RT.	46.00			41.02	209.66	10.48	20.00	102.22	17.38	27.86	20.56	105.08	489.55	25.72	20.46	104.57	220.00	11.50					11.50
90+00.00	91+00.00	C.L. HWY. 90 - NOTCH & WIDENING - RT.	100.00			40.10	445.56	22.28	20.00	222.22	37.78	60.06	20.10	223.33	118.17	13.20	20.00	222.22	220.00	24.44					24.44
91+00.00	91+85.00	C.L. HWY. 90 - NOTCH & WIDENING - RT.	85.00			37.70	356.06	17.80	20.00	188.89	32.11	49.91	18.90	178.50	72.31	6.45	18.80	177.56	220.00	19.53					19.53
91+85.00	92+00.00	C.L. HWY. 90 - NOTCH & WIDENING - RT.	15.00			34.70	57.83	2.89				2.89	17.40	29.00	10.40	0.15	17.30	28.83	220.00	3.17					3.17
92+00.00	93+00.00	C.L. HWY. 90 - NOTCH & WIDENING - RT.	100.00			29.00	322.22	16.11				16.11	14.55	161.67	59.44	4.80	14.45	160.56	220.00	17.66					17.66
93+00.00	93+75.00	C.L. HWY. 90 - NOTCH & WIDENING - RT.	75.00			18.52	154.33	7.72				7.72	9.31	77.58	233.20	9.05	9.21	76.75	220.00	8.44					8.44
113+50.00	116+00.00	C.L. HWY. 90 - NOTCH & WIDENING - RT.	250.00			17.61	489.17	24.46	17.61	489.17	83.16	107.62					17.61	489.17	220.00	53.81					53.81
ADDITIONAL FOR MOT STAGE 1 M.O.R.G																									
91+75.00	91+85.00	C.L. HWY. 90 - NOTCH & WIDENING - RT.	10.00	21.50	2.15	20.00	22.22	1.11	20.00	22.22	3.78	4.89	20.00	22.22	170.45	1.89									
91+85.00	92+00.00	C.L. HWY. 90 - NOTCH & WIDENING - RT.	15.00	21.50	3.23	20.00	33.33	1.67	20.00	33.33	5.67	7.34	20.00	33.33	179.36	2.99									
92+00.00	93+00.00	C.L. HWY. 90 - NOTCH & WIDENING - RT.	100.00	43.00	43.00	20.00	222.22	11.11	20.00	222.22	37.78	48.89	20.00	222.22	171.55	19.06									
93+00.00	93+75.00	C.L. HWY. 90 - NOTCH & WIDENING - RT.	75.00	43.00	32.25	20.00	166.67	8.33	20.00	166.67	28.33	36.66	20.00	166.67	80.14	6.68									
ADDITIONAL FOR TEMPORARY WIDENING & MOT																									
90+23.00	97+18.00	C.L. HWY. 90 - TEMPORARY WIDENING - RT.	695.00	71.75	498.66																8.00	617.78	220.00	67.96	67.96
ADDITIONAL FOR SUPERELEVATION																									
88+88.21	91+88.21	C.L. HWY. 90 - SUPER TRANSITION	300.00	11.75	35.25																				
91+88.21	94+09.39	C.L. HWY. 90 - FULL SUPER	221.18	23.50	51.98																				
94+09.39	97+09.39	C.L. HWY. 90 - SUPER TRANSITION	300.00	11.75	35.25																				
105+77.08	108+77.08	C.L. HWY. 90 - SUPER TRANSITION	300.00	13.25	39.75																				
108+77.08	114+00.00	C.L. HWY. 90 - FULL SUPER	522.92	26.50	138.57																				
114+00.00	115+00.00	C.L. HWY. 90 - FULL SUPER - RT. FORESLOPE TRANSITION	100.00	21.75	21.75																				
115+00.00	116+00.00	C.L. HWY. 90 - FULL SUPER - 3:1 RT FORESLOPE	100.00	17.00	17.00																				
116+00.00	117+00.00	C.L. HWY. 90 - SUPER TRANSITION TO EXISTING	100.00	14.75	14.75																				
TOTALS:					**4947.90**		**13609.99**	**680.51**		**2038.05**	**346.49**	**1027.00**		**6440.01**		**941.14**		**6468.25**		**711.50**		**8411.79**		**925.30**	**1636.80**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.4% MIN. AGGR.....5.6% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.3% MIN. AGGR.....4.7% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

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WORKSPACE: Stephone.Bossio
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REVISED DATE: $$REVDATE$$

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		101003	31	60
①	07531- QUANTITIES- 63888			

SCHEDULE OF BRIDGE QUANTITIES - JOB 101003

BRIDGE NUMBER	NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NUMBER	205	SP, SS & 802	SP, SS & 802	SP & 803	SS & 804	SS & 804	SS & 805	SS & 805	SS & 805	SS & 805	SP, SS & 807	SS & 807	812	SS & 816	SS & 816
			ITEM	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)	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)	STEEL SHELL PILING (18" DIAMETER)	STEEL SHELL PILING (24" DIAMETER)	PILE ENCASEMENT	PREBORING	STRUCTURAL STEEL IN BEAM SPANS (A709, GR. 50W)	① PAINTING STRUCTURAL STEEL	BRIDGE NAME PLATE (TYPE D)	DUMPED RIPRAP	FILTER BLANKET
			UNIT	LUMP SUM	CU. YD.	CU. YD.	SQ. YD.	POUND	POUND	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	POUND	TON	EACH	CU. YD.	SQ. YD.
07531	HIGHWAY 90 OVER EASSIS CREEK	END BENT NO. 1			12.40			1,440	296	175			140	233			134	240
		INTERMEDIATE BENT NO. 2			15.45			1,610	195		132	40	80	233				
		INTERMEDIATE BENT NO. 3			15.45			1,610	195		140	32	96	233				
		END BENT NO. 4			12.40			1,440	296	195			160	233			158	285
		130'-0" CONT. INTEGRAL W-BEAM UNIT				174.00	560.2		40,628					66,718	10.6	1		
		EXIST. BRIDGE NO. M1647 (SITE NO. 1)		1														
TOTALS FOR JOB NO. 101003					55.70	174.00	560.2	6,100	41,610	370	272	72	476	67,650	10.6	1	292	525

① PAINTING: The following weathering steel surfaces shall be painted as specified in Subsection 807.75:

- All steel surfaces 3 feet each side of concrete diaphragms or integral intermediate bents, including the section encased in concrete.
- All steel surfaces exposed to the outside face of the bridge, including outside faces and bottom of the exterior beams, splice plates and bolts.
- All steel surfaces within the end 5 feet of integral abutments, including the section encased in concrete.

ASTM F3125, Grade A325 Type 3 bolts shall be used within these painted zones and shall be painted. Except as noted above, galvanized members and surfaces in contact with concrete shall not be painted. The color of paint shall be Brown equal or close to Fed. Std. 595 B, 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.

Stephane.Bossko 11/24/2025 1:18:29 PM
WORKSPACE: Stephane.Bossko
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REVISED DATE:

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14501
STEPHEN F. HAPPER

11/25/2025

BRIDGE ENGINEER
PRINT DATE:11/24/2025

SCHEDULE OF BRIDGE QUANTITIES
HIGHWAY 90 OVER EASSIS CREEK
EASSIS CREEK STR. & APPRS. (S)
RANDOLPH COUNTY
ROUTE 90 SECTION 7
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: AAS DATE: 11/8/2020 FILENAME: B101003X1_QX1.dgn
CHECKED BY: HSS DATE: 01/26/2021
DESIGNED BY: --- DATE: --- SCALE: No Scale
BRIDGE NO. 07531 DRAWING NO. 63888

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
2-3-2026				6	ARK.			
2-23-2026				JOB NO.		101003	32	60
				(2)	SUMMARY OF QUANTITIES AND REVISIONS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
2-23-2026

SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM		QUANTITY	UNIT
201	CLEARING		30	STATION
201	GRUBBING		30	STATION
202	REMOVAL AND DISPOSAL OF FENCE		2466	LIN. FT.
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS		6	EACH
202	REMOVAL AND DISPOSAL OF GUARDRAIL		104	LIN. FT.
SP, SS, & 210	UNCLASSIFIED EXCAVATION		5901	CU. YD.
SP & 210	COMPACTED EMBANKMENT		27187	CU. YD.
SP & 210	SOIL STABILIZATION		50	TON
SP, SS, & 303	AGGREGATE BASE COURSE (CLASS 7)		5637	TON
SS & 401	TACK COAT		1053	GAL.
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")		897	TON
SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")		44	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")		1627	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")		97	TON
SP & 412	COLD MILLING ASPHALT PAVEMENT		644	SQ. YD.
SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC		13	TON
SP, SS, & 415	ACHM PATCHING OF EXISTING ROADWAY		10	TON
SP, SS, & 504	APPROACH SLABS		54.60	CU. YD.
SP, SS, & 504	APPROACH GUTTERS		17.00	CU. YD.
601	MOBILIZATION		1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE		1	EACH
SS & 603	MAINTENANCE OF TRAFFIC		1.00	LUMP SUM
603	24" TEMPORARY CULVERT		25	LIN. FT.
SS & 604	SIGNS		337	SQ. FT.
SS & 604	BARRICADES		32	LIN. FT.
SS & 604	TRAFFIC DRUMS		72	EACH
SS & 604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER		2006	LIN. FT.
SS & 604	RELOCATING PRECAST CONCRETE BARRIER		480	LIN. FT.
604	CONSTRUCTION PAVEMENT MARKINGS		32392	LIN. FT.
604	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS		764	LIN. FT.
604	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS		1648	LIN. FT.
SS & 604	VERTICAL PANELS		19	EACH
SP, SS, & 605	CONCRETE DITCH PAVING (TYPE B)		213	SQ. YD.
* SS & 606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	(ALTERNATE NO. 1)	83	LIN. FT.
* SS & 606	24" ASPHALT COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE)	(ALTERNATE NO. 2)	89	LIN. FT.
* SS & 606	24" ALUMINUM COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE)	(ALTERNATE NO. 3)	89	LIN. FT.
* SS & 606	24" POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE)	(ALTERNATE NO. 4)	89	LIN. FT.
* SP, SS, & 606	24" POLYPROPYLENE PIPE	(ALTERNATE NO. 5)	89	LIN. FT.
* SP, SS, & 606	24" HIGH DENSITY POLYETHYLENE PIPE	(ALTERNATE NO. 6)	89	LIN. FT.
* SP, SS, & 606	24" PVC PIPE	(ALTERNATE NO. 7)	89	LIN. FT.
SP, SS, & 606	18" SIDE DRAIN		36	LIN. FT.
SP, SS, & 606	24" SIDE DRAIN		162	LIN. FT.
SP, SS, & 606	36" SIDE DRAIN		92	LIN. FT.
* SS & 606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	(ALTERNATE NO. 1)	2	EACH
* SS & 606	24" FLARED END SECTIONS FOR CORRUGATED STEEL PIPE CULVERTS	(ALTERNATE NO. 2)	2	EACH
SS & 606	SELECTED PIPE BEDDING		50	CU. YD.
SS & 611	4" PIPE UNDERDRAINS		2000	LIN. FT.
SS & 611	UNDERDRAIN OUTLET PROTECTORS		9	EACH
SS & 615	PAVEMENT REPAIR OVER CULVERTS (ASPHALT)		9	TON
SS & 617	GUARDRAIL (TYPE A)		450	LIN. FT.
SS & 617	GUARDRAIL TERMINAL (TYPE 2)		4	EACH
SS & 617	THRIE BEAM GUARDRAIL TERMINAL		4	EACH
SS & 619	WIRE FENCE (TYPE C)		1545	LIN. FT.
* SS & 619	16' STEEL GATES	(ALTERNATE NO. 1)	2	EACH
* SS & 619	16' ALUMINUM GATES	(ALTERNATE NO. 2)	2	EACH
620	LIME		18	TON
620	SEEDING		9.09	ACRE
SS & 620	MULCH COVER		41.81	ACRE
620	WATER		1596.4	M. GAL.
621	TEMPORARY SEEDING		32.72	ACRE
621	SILT FENCE		6611	LIN. FT.
621	SAND BAG DITCH CHECKS		678	BAG
621	SEDIMENT BASIN		586	CU. YD.
621	OBLITERATION OF SEDIMENT BASIN		510	CU. YD.
621	SEDIMENT REMOVAL AND DISPOSAL		921	CU. YD.
621	ROCK DITCH CHECKS		178	CU. YD.
SS & 621	FILTER SOCK (12")		640	LIN. FT.
621	TRIANGULAR SILT DIKE		243	LIN. FT.
623	SECOND SEEDING APPLICATION		9.09	ACRE
624	SOLID SODDING		144	SQ. YD.
635	ROADWAY CONSTRUCTION CONTROL		1.00	LUMP SUM
637	MAILBOXES		1	EACH
SS & 637	MAILBOX SUPPORTS (SINGLE)		1	EACH
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")		5824	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")		5824	LIN. FT.
721	RAISED PAVEMENT MARKERS (TYPE II)		37	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER		2	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)		2	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER (RELOCATION)		2	EACH
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)		5196	POUND
SS & 816	FILTER BLANKET		869	SQ. YD.
SS & 816	DUMPED RIPRAP		436	CU. YD.
	STRUCTURES OVER 20' SPAN			
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)		1.00	LUMP SUM
636	BRIDGE CONSTRUCTION CONTROL		1.00	LUMP SUM
SP, SS, & 802	CLASS S CONCRETE-BRIDGE		55.7	CU. YD.
SP, SS, & 802	CLASS S(AE) CONCRETE-BRIDGE		174	CU. YD.
SP & 803	CLASS 2 PROTECTIVE SURFACE TREATMENT		560.2	SQ. YD.
SS & 804	REINFORCING STEEL-BRIDGE (GRADE 60)		6100	POUND
SS & 804	EPOXY COATED REINFORCING STEEL (GRADE 60)		41610	POUND
SS & 805	STEEL SHELL PILING (18" DIAMETER)		370	LIN. FT.
SS & 805	STEEL SHELL PILING (24" DIAMETER)		272	LIN. FT.
SS & 805	PREBORING		476	LIN. FT.
SS & 805	PILE ENCASEMENT		72	LIN. FT.
SP, SS, & 807	STRUCTURAL STEEL IN BEAM SPANS (A709, GR. 50W)		67650	POUND
SS & 807	PAINTING STRUCTURAL STEEL		10.6	TON
812	BRIDGE NAME PLATE (TYPE D)		1	EACH
SS & 816	FILTER BLANKET		525	SQ. YD.
SS & 816	DUMPED RIPRAP		292	CU. YD.

* DENOTES ALTERNATE BID ITEMS.

REVISIONS

DATE	REVISION	SHEET NUMBER
2/3/2026	REVISED THE DATE FOR BRIDGE STANDARD DRAWING 5510 AS SHOWN ON THE LIST OF STANDARD DRAWINGS. REVISED THE ATTACHED BRIDGE STANDARD DRAWING 55070 TO LATEST VERSION. REVISED STANDARD DRAWING TC-6 AND INCLUDED NEW SPECIAL DETAIL AS PART OF THE CHANGES. REVISED QUANTITY FOR SIGNS. REVISED SHEET 13 OF THE STORM WATER POLLUTION PREVENTION PLAN TO CORRECT A TYPO.	2, 7, 28, 32
2/23/2026	ADDED SP "USE OF FOREIGN MADE UNMANNED AIRCRAFT SYSTEMS".	3, 32

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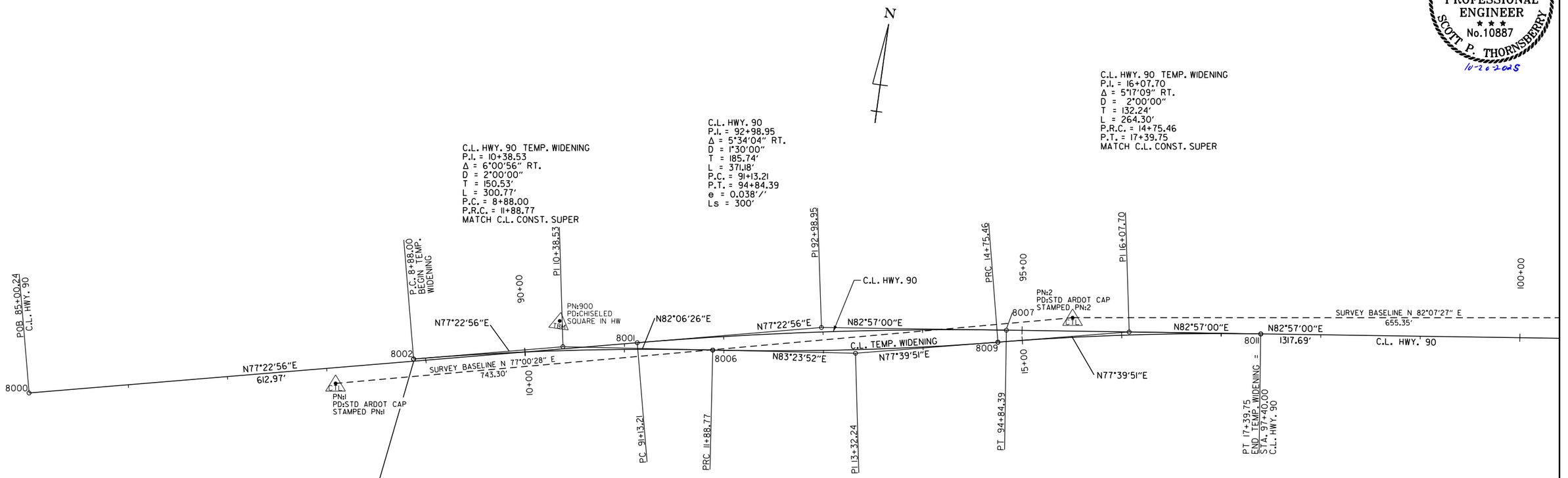
REVISED DATE: $$REVDATE$$

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101003	33	60
				(2)	SURVEY CONTROL DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
10-28-2025



STA. 88+88.00
BEGIN JOB 101003
L.M. 2.40

C.L. HWY. 90 TEMP. WIDENING
P.I. = 13+32.24
Δ = 5°44'01" LT.
D = 2°00'00"
T = 143.46'
L = 286.68'
P.R.C. = 11+88.77
P.R.C. = 14+75.46
MATCH C.L. CONST. SUPER

ALIGNMENT NAME: HWY. 90

POINT	STATION	TYPE	NORTHING	EASTING
8000	85+00.24	POB	731921.7359	1568810.9354
8001	91+13.21	PC	732055.6370	1569409.1043
8007	94+84.39	PT	732119.0072	1569774.6900
8017	108+02.08	PC	732280.7338	1571082.4113
8019	118+02.79	PT	732690.2684	1571978.4628
8020	124+62.91	POE	733132.6137	1572468.4468

ALIGNMENT NAME: TEMP. WIDENING

POINT	STATION	TYPE	NORTHING	EASTING
8002	8+88.00	PC	732008.5634	1569188.8569
8006	11+88.77	PRC	732058.7518	1569485.2742
8009	14+75.46	PRC	732105.8959	1569767.9325
8011	17+39.75	PT	732150.3791	1570028.3629

SURVEY CONTROL COORDINATES

Project Name: s101003
Date: 12/23/2019
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	731973.5401	1569114.6295	338.595	CTL	*STD ARDOT CAP STAMPED PN: 1
2	732140.6478	1569838.8970	310.841	CTL	*STD ARDOT CAP STAMPED PN: 2
3	732230.4500	1570488.0663	310.646	CTL	*STD ARDOT CAP STAMPED PN: 3
4	732336.4930	1571317.0655	331.741	CTL	*STD ARDOT CAP STAMPED PN: 4
5	732655.3945	1571982.5296	369.729	CTL	*STD ARDOT CAP STAMPED PN: 5
900	732066.5794	1569328.9600	330.106	TBM	*CHISELED SQUARE IN HW
901	732266.2321	1570572.1853	310.876	TBM	*RBR W/ALUM CAP CHISELED SQUARE
902	732391.9013	1571472.6126	341.045	TBM	*CHISELED SQUARE IN HW
999	693948.8166	1532084.8551	326.548	BM	*NGS BM N 316

*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 1.000011842 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 s101003gi.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 STATIC OBSERVATIONS
CONVERGENCE ANGLE: 00-30-36 RIGHT AT LAT N 36-20-30 LON W091-07-24
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

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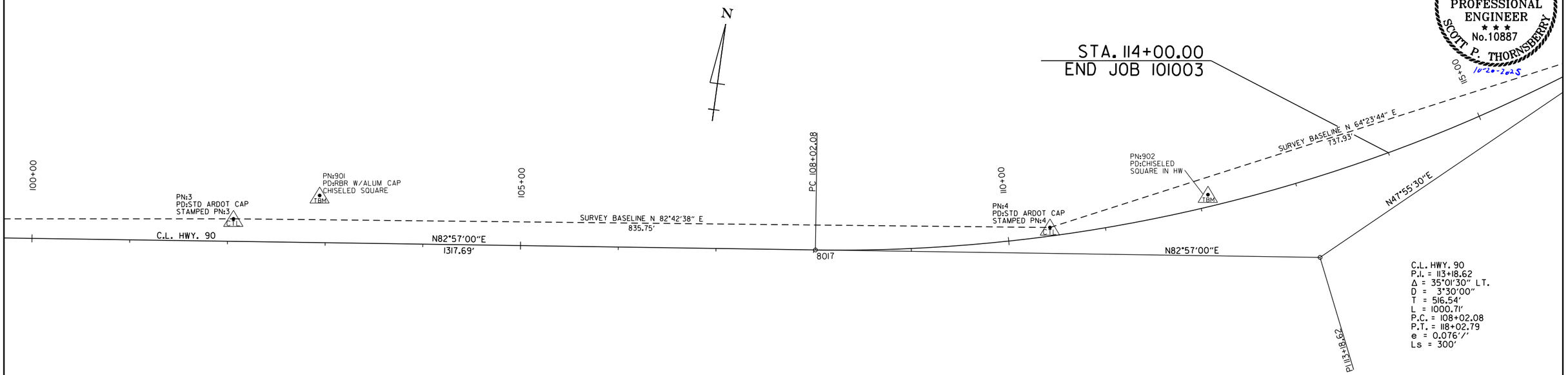
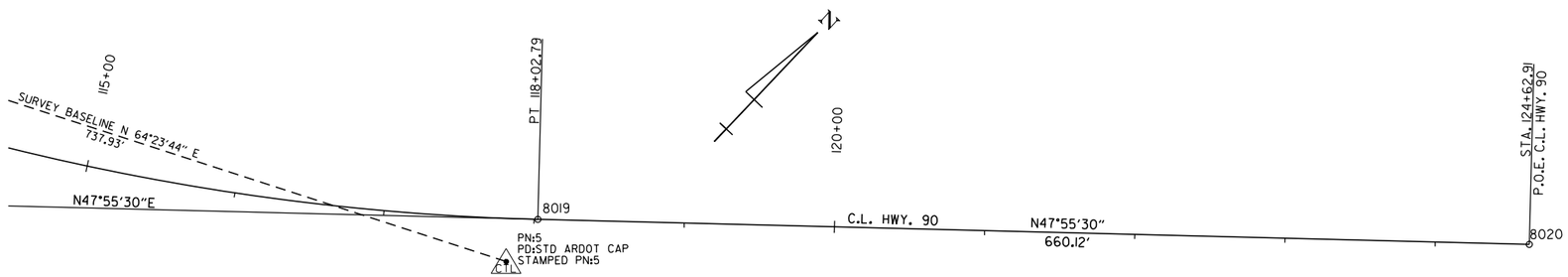
REVISED DATE: $$REVDATE$$

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		101003	34	60
(2)	SURVEY CONTROL DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
10-20-2025





SURVEY CONTROL DETAILS

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REVISED DATE: $$REVDATE$$

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101003	35	60
				(2)	PLAN AND PROFILE SHEETS			

LEGEND

PAVEMENT TRANSITION

DUMPED RIPRAP

NOTE: REFER TO MOT PLANS AND SURVEY CONTROL DETAIL SHEETS FOR TEMPORARY WIDENING.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
SCOTT P. THORNSBERRY
No.10887
10-20-2025

REMOVAL AND DISPOSAL OF FENCE

STA. 94+44.00 TO STA. 95+00.00 RT. OF C.L. = 240 LIN. FT.

STA.	STA.	LOCATION	FENCE (TYPE C)
94+44.00	95+00.00	RT. OF C.L. HWY. 90 =	132 LIN. FT.

DUMPED RIPRAP

STA.	STA.	SIDE	LENGTH	"W"	CU.YDS.
88+88.00	89+74.00	LT.	86 LIN. FT.	7' - 0"	33.44
90+60.00	91+68.00	RT.	107 LIN. FT.	7' - 0"	41.61
92+02.00	92+35.00	RT.	33 LIN. FT.	7' - 0"	12.83
92+35.00	92+83.00	RT.	47 LIN. FT.	6' - 6"	16.97
92+83.00	93+84.00	RT.	102 LIN. FT.	6' - 0"	34.00

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	LENGTH	"W"	SQ.YDS.
88+88.00	89+82.00	RT.	94 LIN. FT.	7' - 0"	73.11
90+18.00	90+60.00	RT.	42 LIN. FT.	7' - 0"	32.67
90+26.00	91+63.43	LT.	138 LIN. FT.	7' - 0"	107.33
92+03.07	93+10.00	LT.	108 LIN. FT.	7' - 0"	84.00

N

STA. 90+00.00 IN PLACE
24" X 37' R.C. PIPE CULVERT
WITH HDWLS. LT. & RT.
LT. SIDE DRAIN
REMOVE AND INSTALL
36" X 52' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT TURNOUT = 165 CU. YDS.

STA. 91+85.00 IN PLACE
18" X 29" X 24' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
36" X 40' LT. SIDE DRAIN
CONSTRUCT APPROACH = 145 CU. YDS.

C.L. HWY. 90
P.I. = 92+98.95
Δ = 5°34'04" RT.
D = 1°30'00"
T = 185.74'
L = 371.18'
P.C. = 91+13.21
P.T. = 94+84.39
e = 0.038'/'
Ls = 300'

STA. 85+00.24
P.O.B. C.L. HWY. 90

McILROY RD.

100' TRANSITION TO MATCH EXIST.

PROP. R/W

CONST. LIMITS

C.L. HWY. 90

EXIST. R/W

T.C.E.

N77°22'56"E

N82°57'00"E

BLACKS FERRY RD.

PI 92+98.95

PC 91+13.21

PT 94+84.39

STA. 88+88.00
BEGIN JOB 101003
L.M. 2.40

STA. 88+83.00 IN PLACE
16" X 26' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE

STA. 90+00.00 INSTALL
18" X 36' RT. SIDE DRAIN
CONSTRUCT APPROACH = 70 CU. YDS.

APPROXIMATE 100 YEAR FLOOD PLAIN LIMITS

STA. 91+85.00 INSTALL
24" X 34' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 85 CU. YDS.

STA. 94+10.00 IN PLACE
18" X 29" X 40' C.M. PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
24" X 54' RT. SIDE DRAIN
CONSTRUCT TURNOUT = 460 CU. YDS.

HWY. 90

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL

STA. 88+88.21 BEGIN SUPERELEVATION
STA. 91+88.21 MAX SUPERELEVATION (0.038'/')
STA. 94+09.39 MAX SUPERELEVATION (0.038'/')
STA. 97+09.39 END SUPERELEVATION

100' TRANSITION

PVI 88+88.00
ELEV. 336.66

VC=650.00'
K=148
e=3.56'

PVC 91+85.00
ELEV. 325.19

-3.86%

-5.33% RT. DT. GR.

-1.34% RT. DT. GR.

EXISTING GROUND

PROFILE GRADE

ELEV. 316.4

+32.00 RT. 318.07

+75.00 RT. 310.45

HWY. 90

370 360 350 340 330 320 310 300 290 280

80+00 81+00 82+00 83+00 84+00 85+00 86+00 87+00 88+00 89+00 90+00 91+00 92+00 93+00 94+00 95+00

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REVISED DATE: $$REVDATE$$

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101003	36	60
				(2)	PLAN AND PROFILE SHEETS			

STA. 102+44 TO STA. 102+95
EXISTING BRIDGE NO. M1647
51.00' X 23.10' STEEL I-BEAM SUPERSTRUCTURE (17.0',17.5',15.0')
WITH SUBSTRUCTURE COMPOSED REINFORCED CONCRETE MULTI-COLUMN BENTS
REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1) = 1.00 LUMP SUM

LEGEND

DUMPED RIPRAP

FENCE

REMOVAL OF EXISTING ACHM PAVEMENT

N

REMOVAL AND DISPOSAL OF FENCE

STA. 95+00.00 TO STA. 102+42.00 RT. OF C.L. HWY. 90 = 778 LIN. FT.
STA. 102+97.00 TO STA. 110+00.00 RT. OF C.L. HWY. 90 = 743 LIN. FT.

STA.	STA.	LOCATION	FENCE (TYPE C)	16'-0" GATES
95+00.00	102+42.00	RT. OF C.L. HWY. 90 =	745 LIN. FT.	1 EACH
102+97.00	110+00.00	RT. OF C.L. HWY. 90 =	668 LIN. FT.	1 EACH

APPROACH SLAB AND GUTTERS

STA.	101+84.50	TO STA.	102+14.50
STA.	103+45.50	TO STA.	103+75.50

DUMPED RIPRAP

STA.	STA.	SIDE	LENGTH	"W"	CU.YDS.
106+94.00	110+00.00	LT.	298 LIN. FT.	6' - 0"	99.33

EASSIS CREEK

50' NATURAL BUFFER. REFER TO SPECIAL PROVISION "STORM WATER POLLUTION PREVENTION PLAN".

APPROXIMATE 100 YEAR FLOOD PLAIN LIMITS

STA. 105+76.00 IN PLACE
18" X 24' C.M. PIPE CULVERT
LT. SIDE DRAIN
REMOVE

C.L. HWY. 90
P.I. = 113+18.62
Δ = 35°01'30" LT.
D = 3°30'00"
T = 516.54'
L = 1000.71'
P.C. = 108+02.08
P.T. = 118+02.79
e = 0.076'/'
Ls = 300'

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
SCOTT P. THORNSBERRY
No.10887
11-4-2025

95+00 | CONST. LIMITS | EXIST. R/W | N82°57'00"E | 22' | +00 C.L. HWY. 90 | 4' | 9.5' | 7.5' | R =20' | T.C.E. | PROP. R/W | PT 94+84.39 | +20 55' | +72 58' | +82 64'-55.82' | +15 64'-56.25' | +00 60' | +40 75' | +72 158'

STA. 96+00.00 INSTALL
24" X 32' RT. SIDE DRAIN
CONSTRUCT APPROACH = 75 CU. YDS.

REMOVAL AND DISPOSAL OF GUARDRAIL

STA. 102+15.60 TO STA. 102+41.26 RT. OF C.L. HWY. 90 = 26 LIN. FT.
STA. 102+15.00 TO STA. 102+40.91 LT. OF C.L. HWY. 90 = 26 LIN. FT.
STA. 102+96.21 TO STA. 103+21.77 RT. OF C.L. HWY. 90 = 26 LIN. FT.
STA. 102+96.56 TO STA. 103+22.06 LT. OF C.L. HWY. 90 = 26 LIN. FT.

STA. 101+84.50 | STA. 102+14.50 END BRIDGE

STA. 102+14.50 BRIDGE END
BRIDGE NO. 07531 OVER EASSIS CREEK
130'-0" CONTINUOUS INTEGRAL
W-BEAM UNIT (40'-50'-40')
30'-0" CLEAR ROADWAY
131'-0" BRIDGE LENGTH
STA. 103+45.50 BRIDGE END

STA. 103+45.50 END BRIDGE | STA. 103+75.50 | +10 65' | +50 70' | +20 70' | +58 65.02' | +35 65.30' | +82 140' | +15 140'

STA. 109+00.00 INSTALL
24" X 42' RT. SIDE DRAIN
CONSTRUCT APPROACH = 595 CU. YDS.

			GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)
STA.	99+86.35	TO STA. 102+05.10 RT. OF C.L. HWY. 90 =	150 LIN. FT.	1 EACH	1 EACH
STA.	100+61.35	TO STA. 102+05.10 LT. OF C.L. HWY. 90 =	75 LIN. FT.	1 EACH	1 EACH
STA.	103+54.90	TO STA. 105+73.65 LT. OF C.L. HWY. 90 =	150 LIN. FT.	1 EACH	1 EACH
STA.	103+54.90	TO STA. 104+98.65 RT. OF C.L. HWY. 90 =	75 LIN. FT.	1 EACH	1 EACH

HWY. 90

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL

STA. 88+88.21 BEGIN SUPERELEVATION
STA. 91+88.21 MAX SUPERELEVATION (0.038'/')
STA. 94+09.9 MAX SUPERELEVATION (0.038'/')
STA. 97+09.39 END SUPERELEVATION

STA. 105+77.08 BEGIN SUPERELEVATION
STA. 108+77.08 MAX SUPERELEVATION (0.076'/')
STA. 116+21.05 MAX SUPERELEVATION (0.076'/')
STA. 117+00.00 MATCH EXIST. SUPERELEVATION (0.056'/')

VC=650.00'
K=148
e=3.56'

VC=650.00'
K=143
e=3.68'

ELEV. 316.4

PVI 95+10.00
ELEV. 312.65

PVT 98+35.00
ELEV. 314.34

+40.00 RT. 308.24

+60.00 RT. 306.58

+10.00 RT. 305.96

STA. 102+14.50 END BRIDGE

STA. 103+45.50 END BRIDGE

PVC 103+75.00
ELEV. 317.15

025 DESIGN (H.W.)
ELEV. 310.6

PVI 107+00.00
ELEV. 318.84

ELEV. 334.0

PROFILE GRADE

EXISTING GROUND

0.52%
-1.34% RT. DT. GR.
-0.39% RT. DT. GR.
-0.25% RT. DT. GR.
0.52%
5.05%
0.52%

FOR THE CONSTRUCTION OF TEMPORARY RAMPS, HAUL ROADS AND TEMPORARY FILL, THIS STREAM IS CLASSIFIED AS A PERENNIAL STREAM. THIS STREAM BANK ELEVATION IS BELOW OHW ELEVATION 306 FT. MSL. NORTH SIDE OF HWY. 90 AND 308 FT. MSL. SOUTH SIDE OF HWY. 90 BETWEEN STATIONS 102+14.50 - 103+45.50.
REFER TO SECTION 110.5 (c) OF 2014 STANDARD SPECIFICATIONS.

HWY. 90

370 | 360 | 350 | 340 | 330 | 320 | 310 | 300 | 290 | 280

95+00 | 96+00 | 97+00 | 98+00 | 99+00 | 100+00 | 101+00 | 102+00 | 103+00 | 104+00 | 105+00 | 106+00 | 107+00 | 108+00 | 109+00 | 110+00

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101003	37	60
				(2)	PLAN AND PROFILE SHEETS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
11-4-2025

C.L. HWY. 90
P.I. = 113+18.62
Δ = 35°01'30" LT.
D = 3°30'00"
T = 516.54'
L = 1000.71'
P.C. = 108+02.08
P.T. = 118+02.79
e = 0.076'/'
Ls = 300'

LEGEND
- PAVEMENT TRANSITION
- DUMPED RIPRAP
- FENCE

N

110+00
CONST. LIMITS
+00.00
300' TRANSITION TO MATCH EXIST.
+00.00
PT 118+02.79
120+00
EXIST. R/W
+20
110
CONST. LIMITS
PROP. R/W
N82°57'00"E
C.L. HWY. 90
22'
4'
14'
CONST. LIMITS
4'
20'
4'
N47°55'30"E
CONST. LIMITS
EXIST. R/W
STA. 124+62.91
P.O.E. C.L. HWY. 90

STA. 112+15.00 IN PLACE
18" X 43' R.C. PIPE CULVERT
WITH HDWLS. LT. & RT.
REMOVE AND INSTALL
24" X 83' PIPE CULVERT
WITH FES LT. & RT.
Q25 = 17.11 CFS D.A. = 7.55 ACRES
24" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 83 LIN. FT.
24" ASPHALT CSP (TYPE 2 BEDDING) = 89 LIN. FT.
24" ALUM. CSP (TYPE 2 BEDDING) = 89 LIN. FT.
24" POLYMER CSP (TYPE 2 BEDDING) = 89 LIN. FT.
24" HDPE PIPE (TYPE 2 BEDDING) = 89 LIN. FT.
24" PPL PIPE (TYPE 2 BEDDING) = 89 LIN. FT.
24" PVC (TYPE 2 BEDDING) = 89 LIN. FT.
24" FES = 2 EACH

+95 85'-71.83'
+35 85'-75'
T.C.E.
N47°55'30"E
PROP. R/W
+00 35.18'
+05 70'
PI 113+18.62

STA. 114+00.00
END JOB 101003

DUMPED RIPRAP

STA.	STA.	SIDE	LENGTH	"W"	CU.YDS.
110+00.00	111+93.87	LT.	187 LIN. FT.	6' - 0"	62.33
112+11.50	116+00.00	LT.	378 LIN. FT.	6' - 0"	126.00
112+09.20	112+20.80	RT.	12 LIN. FT.	12' - 0"	8.00

REMOVAL AND DISPOSAL OF FENCE
STA. 110+00.00 TO STA. 114+51.00 RT. OF C.L. HWY. 90 = 456 LIN. FT.

STA.	STA.	LOCATION	FENCE (TYPE C)
110+00.00	115+00.00	RT. OF C.L. HWY. 90 =	518 LIN. FT.

HWY. 90

REFER TO SURVEY CONTROL DETAIL SHEETS
FOR HORIZONTAL AND VERTICAL CONTROL

STA. 105+77.08 BEGIN SUPERELEVATION
STA. 108+77.08 MAX SUPERELEVATION (0.076'/')
STA. 116+21.05 MAX SUPERELEVATION (0.076'/')
STA. 117+00.00 MATCH EXIST. SUPERELEVATION (0.056'/')

+00.00
300' TRANSITION
+00.00
PVI 116+00.00
ELEV. 364.29

VC=650.00'
K=143
e=3.68'

PROFILE GRADE
5.05%
EXISTING GROUND
3.32% LT. DT. GR.
1.39% LT. DT. GR.

ELEV. 334.0
PVT 110+25.00
ELEV. 335.25

+00.00
LT. 335.18

+15.00
LT. 339.00

FL IN
LT. = 339.00
FL OUT
RT. = 333.21

+00.00
LT. 345.28

410 400 390 380 370 360 350 340 330 320

110+00 111+00 112+00 113+00 114+00 115+00 116+00 117+00 118+00 119+00 120+00 121+00 122+00 123+00 124+00 125+00

HWY. 90

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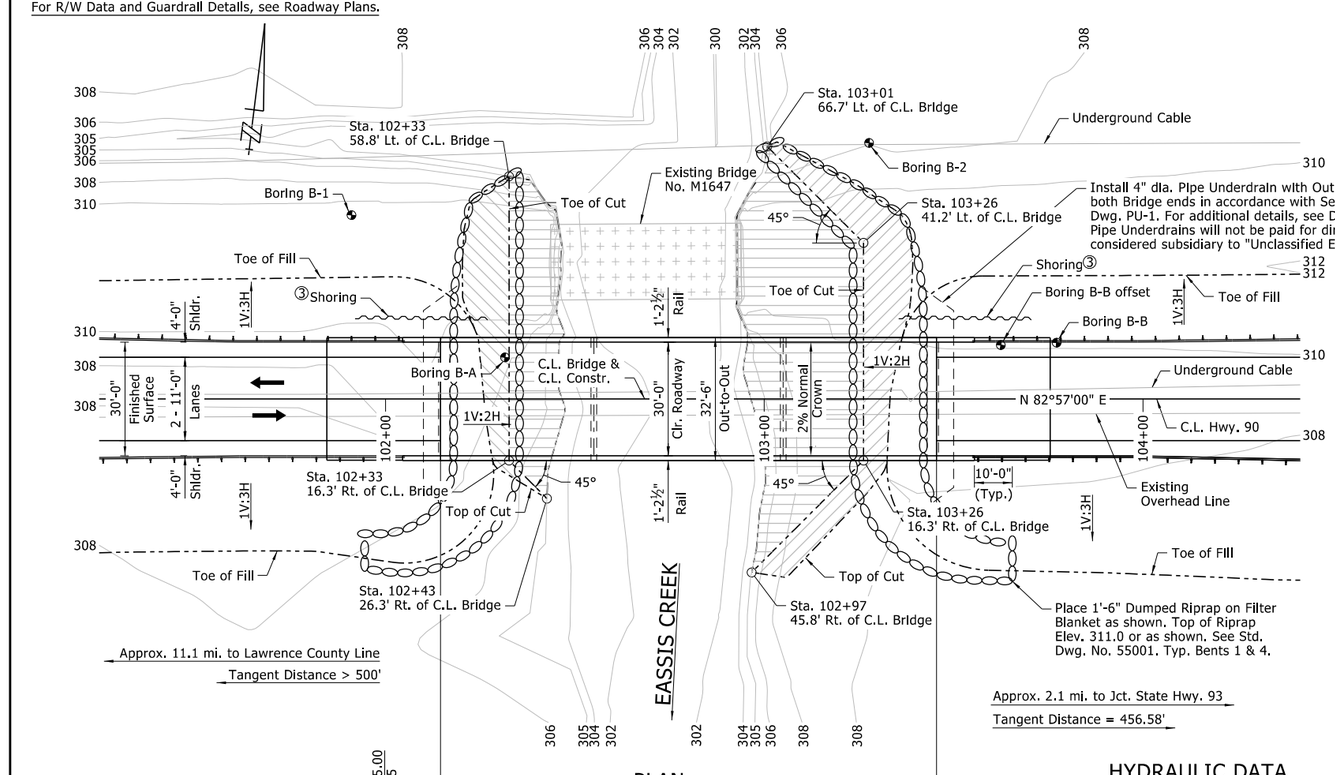
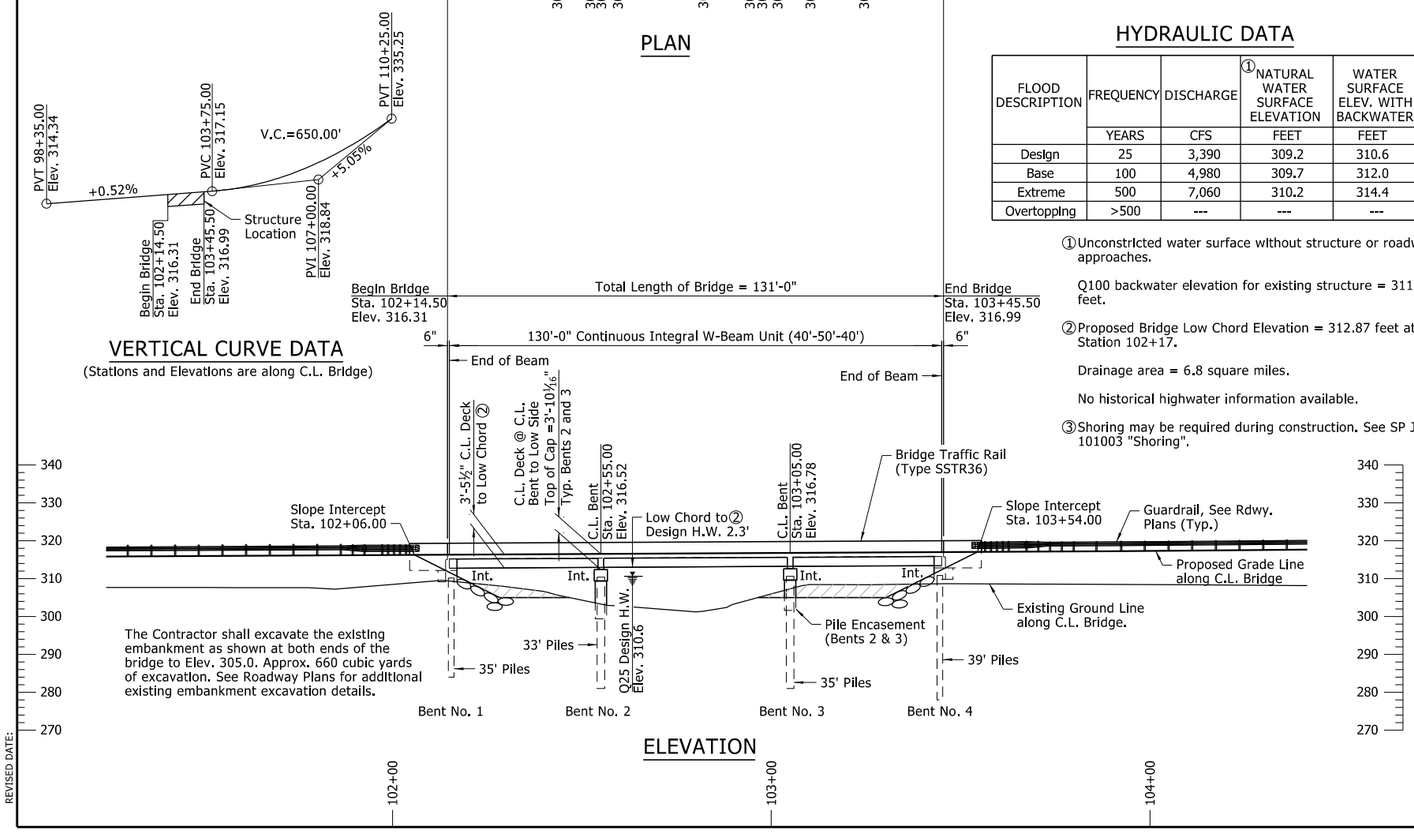
For R/W Data and Guardrail Details, see Roadway Plans.



PLAN



The Contractor shall excavate the existing embankment as shown at both ends of the bridge to Elev. 305.0. Approx. 660 cubic yards of excavation. See Roadway Plans for additional existing embankment excavation details.

VERTICAL CURVE DATA

(Stations and Elevations are along C.L. Bridge)

ELEVATION

HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	DISCHARGE	①NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEV. WITH BACKWATER
	YEARS	CFS	FEET	FEET
Design	25	3,390	309.2	310.6
Base	100	4,980	309.7	312.0
Extreme	500	7,060	310.2	314.4
Overtopping	>500	---	---	---

①Unconstricted water surface without structure or roadway approaches.

Q100 backwater elevation for existing structure = 311.1 feet.

②Proposed Bridge Low Chord Elevation = 312.87 feet at Station 102+17.

Drainage area = 6.8 square miles.

No historical highwater information available.

③Shoring may be required during construction. See SP Job 101003 "Shoring".

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101003	38	60
				①	07531- LAYOUT- 63889			

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, Eighth Edition.

LIVE LOADING: HL-93

SEISMIC ZONE: 2 S_{D1}: 0.299 SITE CLASS: D

SEISMIC OPERATIONAL CLASSIFICATION: Essential

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (superstructure)	f'c=4,000 psi
Class S Concrete (substructure)	f'c=3,500 psi
Reinforcing Steel (AASHTO M 31 or M 322, Type A)	fy=60,000 psi
Structural Steel (ASTM A709, Gr. 36)	Fy=36,000 psi
Structural Steel (ASTM A709, Gr. 50W)	Fy=50,000 psi
Structural Steel (ASTM A709, Gr. 50)	Fy=50,000 psi
Steel Shell Piling (ASTM A252, Grade 3)	Fy=45,000 psi

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

STEEL SHELL PILING: Piling in Bents 1 and 4 shall be 18" diameter concrete filled steel shell piles and shall be driven to a minimum safe bearing capacity of 155 tons per pile and to a minimum of 5' into material designated as limestone on boring legend. Piling in end bents shall be driven after embankment to bottom of cap is in place. Piling in Bents 2 and 3 shall be 24" diameter concrete filled steel shell piles and shall be driven to a minimum safe bearing capacity of 210 tons per pile and to a minimum of 5' into material designated as limestone on the boring legend. All piling shall be driven with an approved air, steam, or diesel hammer. Length of piling shown are assumed for estimating quantities only. Actual lengths are to be determined in the field. No additional payment will be made for cut off or build up.

PILE ENCASEMENT: Pile encasement for Bents 2 and 3 shall extend from bottom of cap to 3' below natural or finished ground. See Dwg. No. 63893 for additional information.

PREBORING: Preboring is required for all piling at Bents 1 thru 4. Preboring at Bents 1 & 4 shall be to a minimum depth of 5' into material designated as limestone on the boring legend or to a minimum depth of 15' below the bottom of the cap, whichever is lower. Preboring at Bents 2 & 3 shall be to a minimum depth of 5' into material designated as limestone on the boring legend or to a minimum depth of 20' below final ground surface, whichever is lower.

At Bents 1 and 4, prebored holes shall have a diameter 9" greater than the diameter of the pile. The void space around the pile after completion of driving 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.

At Bents 2 and 3, prebored holes shall have a diameter 9" greater than the diameter of the pile. The void space around the pile after completion of driving shall be backfilled with Class S Concrete to the top of rock and the remaining length backfilled in accordance with Subsection 805.08(a).

All piling shall be fitted with special rock points as shown on Dwg. No. 63893. In addition, the Contractor shall construct a pile template located at ground level for all bents, sufficient to secure the piling laterally during driving and prior to backfilling with Class S concrete. The Contractor shall be responsible for keeping prebored holes free of debris prior to backfilling which may require the use of temporary casings or other approved methods. Any related cost for backfilling, temporary casing, and the pile templates will not be paid for directly, but shall be considered subsidiary to the item "Preboring". Rock points shall be considered subsidiary to the item "Steel Shell Piling".

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

- All steel surfaces 3 feet each side of concrete diaphragms or integral intermediate bents, including the section encased in concrete.
- All steel surfaces exposed to the outside face of the bridge, including outside faces and bottom of the exterior beams, splice plates and bolts.
- All steel surfaces within the end 5 feet of integral abutments, including the section encased in concrete.

ASTM F3125, Grade A325 Type 3 bolts shall be used within these painted zones and shall be painted. Except as noted above, galvanized members and surfaces in contact with concrete shall not be painted. The color of paint shall be Brown equal or close to Fed. Std. 595 B, 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.

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 bridge traffic rails in accordance with Section 803.

DETAIL DRAWINGS:	DRAWING NO(S):
End Bents	63891
Intermediate Bents	63892
Concrete Filled Steel Shell Piling and Pile Encasements	63893
130'-0" Continuous Integral W-Beam Unit	63894-63898
Type Special Approach Slab	63899
Type Special Approach Gutters	63900
General Notes For Steel Bridge Structures	55006
Details For Steel Bridge Structures	55007
Bridge Traffic Rail (Type SSTR36)	55070

Notes:
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.

Use Type Special Approach Slab and Type Special Approach Gutters at both ends of bridge. See Dwg. Nos. 63899 & 63900 respectively.

For Soil Borings see Dwg. No. 63890.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14501
STEPHEN F. HARPER
10/22/2025

BRIDGE ENGINEER
PRINT DATE: 10/15/2025

SHEET 1 OF 2
LAYOUT OF BRIDGE
HIGHWAY 90 OVER EASSIS CREEK
EASSIS CREEK STR. & APPRS. (S)
RANDOLPH COUNTY
ROUTE 90 SECTION 7

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

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CHECKED BY:	JPC	DATE:	02/2020		
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BRIDGE NO.	07531			DRAWING NO.	63889

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FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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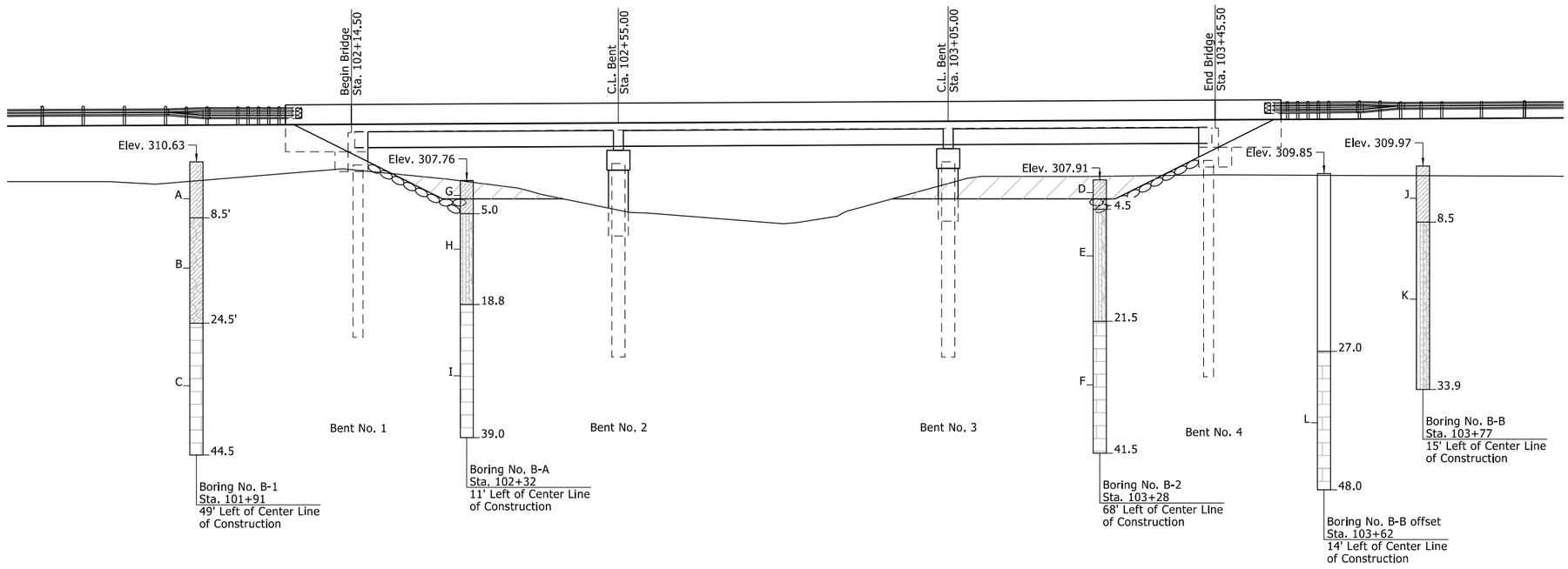
JOB NO.		101003	39	60
(I)	07531- LAYOUT - 63890			



ELEVATION OF SOIL BORINGS

"N" VALUES

Boring No. B-1
Sta. 101+91
49' Left of Center Line of Construction

1.0-2.0	N=9
3.0-4.0	N=5
5.0-6.0	N=4
7.0-8.0	N=0
9.0-10.0	N=43
14.0-15.0	N=57
18.5-18.6	N=50/1"

Boring No. B-2
Sta. 103+28
68' Left of Center Line of Construction

1.0-2.0	N=6
2.5-3.5	N=12
4.5-5.5	N=8
6.5-7.5	N=21
9.0-10.0	N=24
14.0-15.0	N=36
19.0-20.0	N=11

Boring No. B-A
Sta. 102+32
11' Left of Center Line of Construction

1.0-2.0	N=5
2.5-3.5	N=4
5.5-6.5	N=13
9.0-10.0	N=34
14.0-15.0	N=10
18.5-18.8	N=50/3"

Boring No. B-B
Sta. 103+77
15' Left of Center Line of Construction

1.0-2.0	N=11
2.5-3.5	N=7
4.0-5.0	N=6
5.5-6.5	N=18
9.0-10.0	N=8
14.0-15.0	N=25
19.0-20.0	N=7
24.0-25.0	N=3
29.0-30.0	N=78
33.5-33.9	N=50/5"

Boring No. B-B offset
Sta. 103+62
14' Left of Center Line of Construction
No SPT performed - rock coring only.

BORING LEGEND

A- LEAN CLAY WITH SAND (CL), trace limestone gravel, brown and gray, stiff to very soft
B- GRAVELLY LEAN CLAY (CL), limestone gravel, brown and reddish-brown, hard
C- LIMESTONE, with dolmite veins, light gray, white and brown, well cemented rock, moderately fractured, close fracture spacing.

D- LEAN CLAY WITH SAND (CL), trace limestone gravel, brown, medium stiff to stiff
E- SILTY SAND WITH GRAVEL (SM), limestone gravel, brown, loose to dense
F- LIMESTONE, white, light gray and brown, well cemented rock

G- SANDY LEAN CLAY (CL), with limestone fragments, brown and reddish brown, soft to medium stiff
H- SILTY SAND WITH GRAVEL (SM), with limestone fragments, brown, medium dense to dense
I- LIMESTONE, with dolomite and calcite veins, light gray, light brown and white, well cemented rock, moderately fractured, slightly weathered

J- LEAN CLAY WITH SAND (CL), brown and reddish brown, medium stiff to stiff
K- SILTY SAND WITH GRAVEL (SM), with limestone fragments, brown, gray and reddish brown, loose to very dense, gravelly lean clay with limestone boulders and gravels

L- LIMESTONE, with dolomite and calcite veins, light gray, white and light brown, well cemented rock, slightly to moderately fractured, slightly weathered, with weathered zones

GENERAL NOTES CONT.

EXISTING BRIDGE: Existing Bridge No. M1647 (Log Mile 2.16) is 23.1' wide (19.7' clear roadway) and 51.0' long and consists of steel I-beams spans (3 spans total) supported by multi-column concrete intermediate bents and vertical wall concrete end bents. The existing bridge is located approximately 36' upstream from the proposed new 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. M1647 in accordance with Section 205. 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.14501
STEPHEN F. HARPER
9/5/2025

BRIDGE ENGINEER
PRINT DATE: 9/3/2025

SHEET 2 OF 2
LAYOUT OF BRIDGE
HIGHWAY 90 OVER EASSIS CREEK
EASSIS CREEK STR. & APPRS. (S)
RANDOLPH COUNTY
ROUTE 90 SECTION 7
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

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DESIGNED BY: MKL DATE: 02/2020 SCALE: 1" = 10'
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REVISED DATE:

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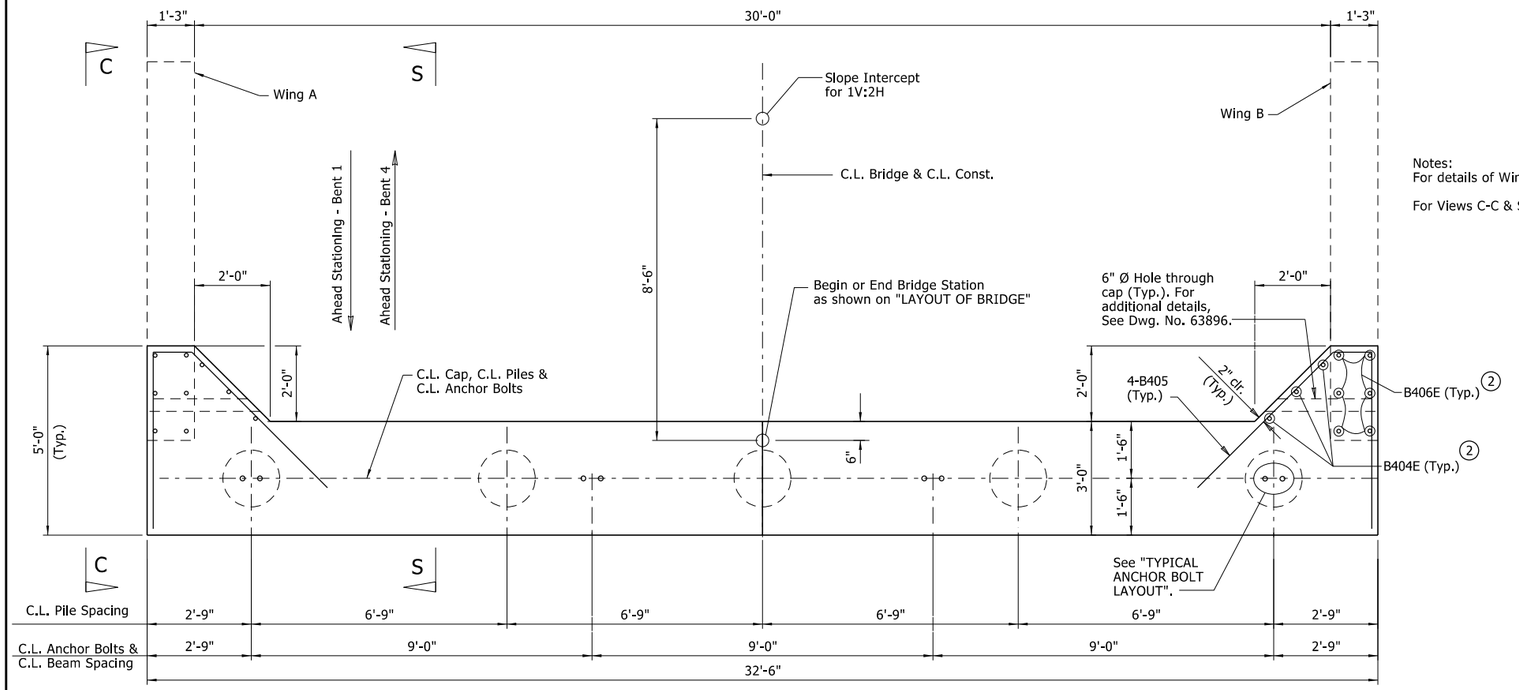


PLAN

½" = 1'-0"

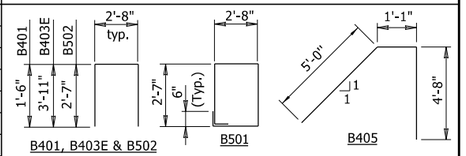
Notes:
For details of Wing and Rail, see Dwg. No. 63898.

For Views C-C & S-S, see Dwg. No. 63898.

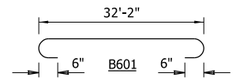
BAR LIST-PER BENT

MARK	NO. REQ'D.	LENGTH	PIN DIA.
B401	25	5'-6"	2"
B402	4	23'-6"	Str.
B403E	33	10'-4"	2"
B404E	6	4'-10"	Str.
B405	8	10'-8"	2"
B406E	12	6'-1"	Str.
B407	4	32'-2"	Str.
B408	16	4'-11"	Str.
B409	8	1'-8"	Str.
B501	32	11'-0"	2½"
B502	15	7'-7½"	2½"
B601	6	33'-6"	4½"
B602	6	32'-2"	Str.

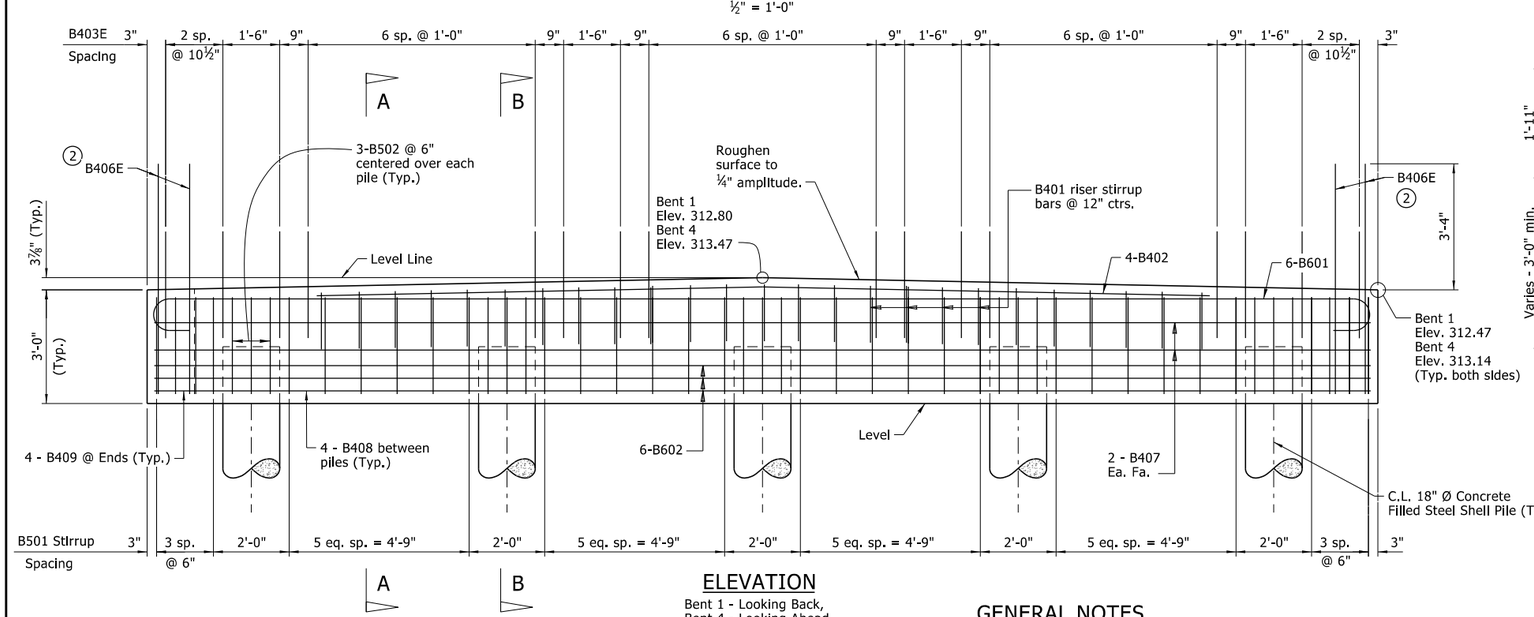
BENDING DIAGRAMS
Dimensions are out to out of bars.



B401, B403E & B502 — B501 — B405

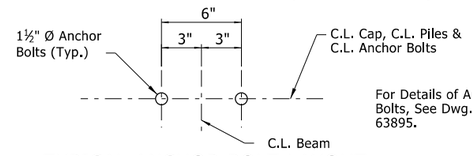


All bars designated with an "E" suffix are to be epoxy coated. The first bar designation number indicates the reinforcing bar size.



ELEVATION

Bent 1 - Looking Back,
Bent 4 - Looking Ahead
½" = 1'-0"

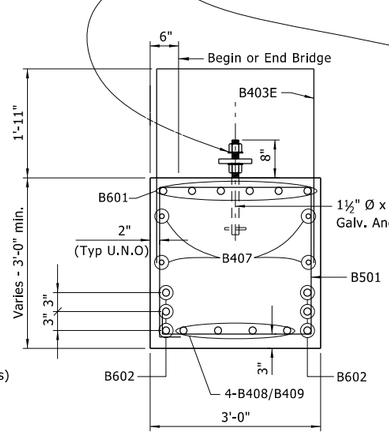


For Details of Anchor Bolts, See Dwg. No. 63895.

TYPICAL ANCHOR BOLT LAYOUT

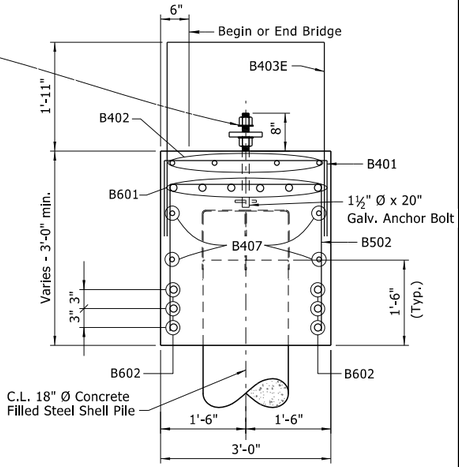
No Scale

For Details of 1½" Ø x 20" Anchor Bolt & 1" Bearing plate, See Dwg. No. 63895.



SECTION A-A

¾" = 1'-0"



SECTION B-B

¾" = 1'-0"

GENERAL NOTES

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

Granular backfill & pipe underdrain required behind end bent cap. See Dwg. No. 63896.

For additional information, see "LAYOUT OF BRIDGE".

For details of Concrete Filled Steel Shell Piles, See Dwg. No. 63893.

(2) B404E & B406E shall have a 2'-9" embedment into the cap.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14501
STEPHEN F. HARPER
8/24/2025

BRIDGE ENGINEER
PRINT DATE: 8/25/2025

DETAILS OF END BENTS
EASSIS CREEK
ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY:	AAS	DATE:	12/2020	FILENAME:	B101003x1_B11.dgn
CHECKED BY:	HSS	DATE:	12/2020		
DESIGNED BY:	AAS	DATE:	12/2020	SCALE:	As Shown
BRIDGE NO.	07531			DRAWING NO.	63891

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REVISED DATE:

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				JOB NO.		101003	41	60
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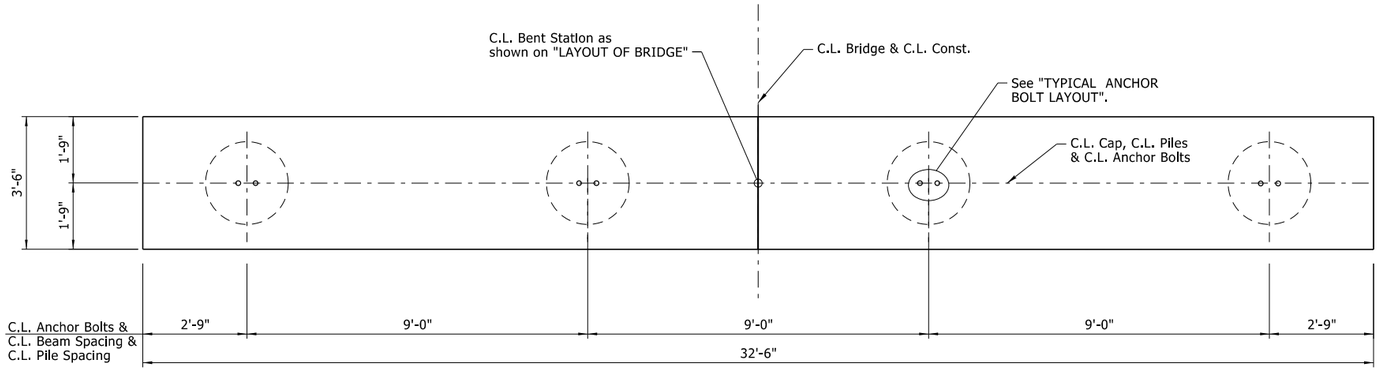
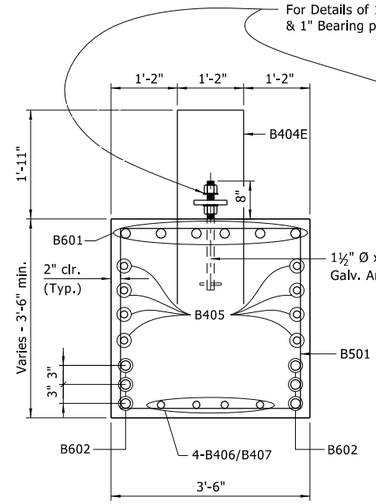


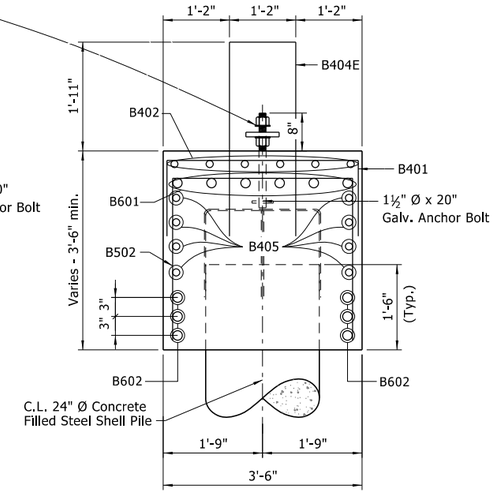
PLAN

½" = 1'-0"



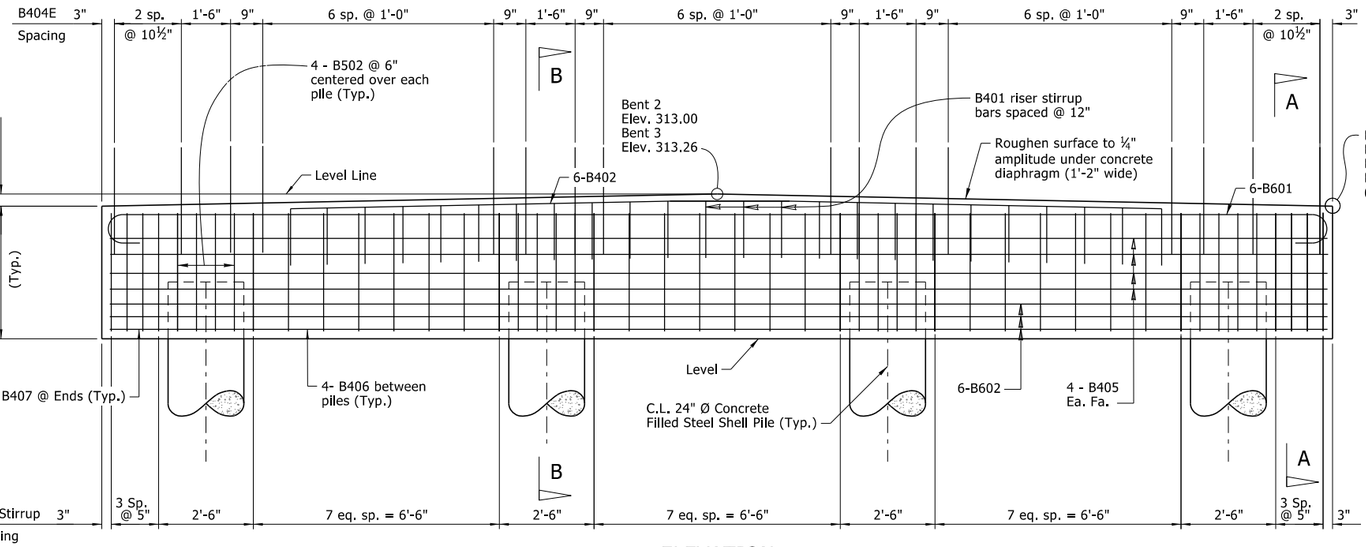
SECTION A-A

¾" = 1'-0"



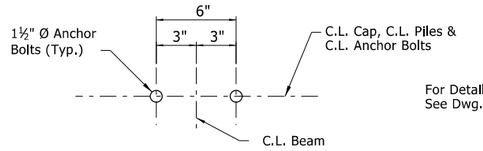
SECTION B-B

¾" = 1'-0"



ELEVATION

½" = 1'-0"



TYPICAL ANCHOR BOLT LAYOUT

No Scale

For Details of Anchor Bolts, See Dwg. No. 63895.

GENERAL NOTES

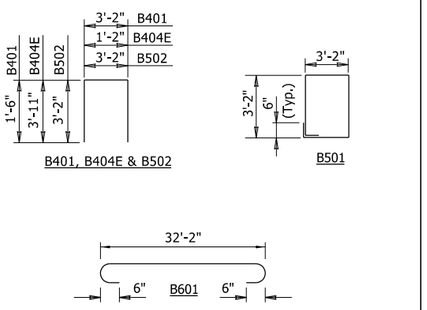
For General Notes, see Std. Dwg. No. 55006.

For additional information, see "LAYOUT OF BRIDGE".

For details of Concrete Filled Steel Shell Piles, See Dwg. No. 63893.

BAR LIST-PER BENT

MARK	NO. REQ'D.	LENGTH	PIN DIA.	BENDING DIAGRAMS Dimensions are out to out of bars.
B401	24	6'-0"	2"	
B402	6	23'-0"	Str.	
B404E	33	8'-10"	2"	
B405	8	32'-2"	Str.	
B406	12	6'-8"	Str.	
B407	8	1'-5"	Str.	
B501	32	13'-2"	2½"	
B502	16	9'- 3½"	2½"	
B601	6	33'-6"	4½"	
B602	6	32'-2"	Str.	



All bars designated with an "E" suffix are to be epoxy coated. The first bar designation number indicates the reinforcing bar size.

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No.14501 STEPHEN F. HARPER

8/26/2025

BRIDGE ENGINEER

PRINT DATE: 8/25/2025

DETAILS OF INTERMEDIATE BENTS EASSIS CREEK

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARKANSAS

DRAWN BY: AAS DATE: 12/2020 FILENAME: B101003x1_B21.dgn

CHECKED BY: HSS DATE: 12/2020

DESIGNED BY: AAS DATE: 12/2020 SCALE: As Shown

BRIDGE NO. 07531 DRAWING NO. 63892

Scott.Thornsberry 8/25/2025 11:29:16 AM
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REVISED DATE:

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				JOB NO.		101003	42	60
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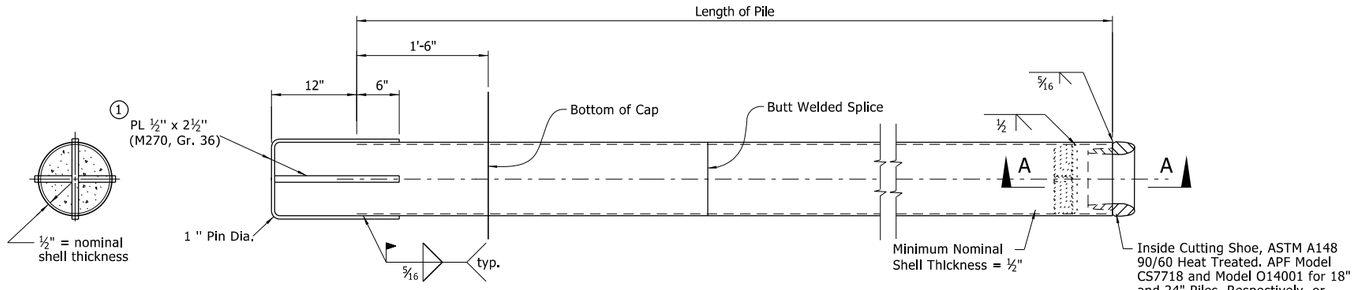
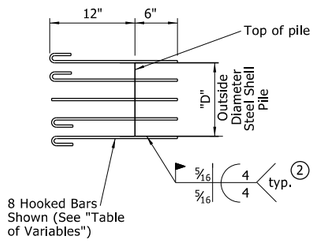


CONCRETE FILLED STEEL SHELL PILE

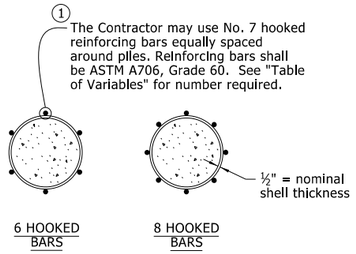
(1) Pile anchorage shall be placed to minimize interference with anchor bolts and reinforcing in cap or footing

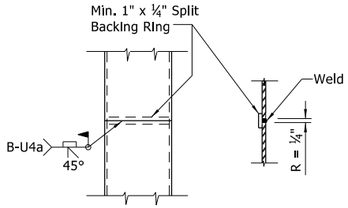
(2) Welding Shall comply with ANSI/AWS D1.4 Structural Welding code-Reinforcing Steel and applicable portions of ANSI/AWS D1.5 Bridge Welding Code.



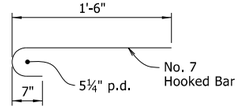
ALTERNATE PILE ANCHORAGE DETAIL

Note: Hooked bars shall be oriented to provide the required concrete clearances shown in the plans.

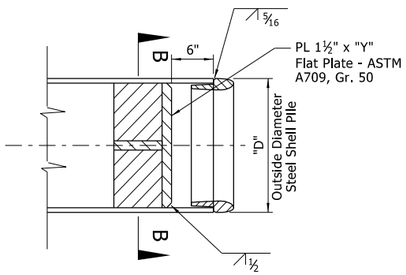




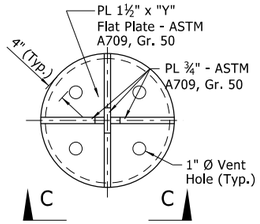
TYPICAL SPLICE DETAILS



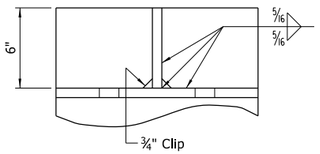
HOOKED BAR DETAIL



SECTION A-A



SECTION B-B



VIEW C-C

INSIDE CUTTING SHOE DETAIL

TABLE OF VARIABLES

OUTSIDE DIAMETER STEEL SHELL PILE "D"	PLATE DIAMETER "Y"	NO. OF HOOKED BARS FOR ALTERNATE PILE ANCHORAGE
18"	16⅞"	6
24"	22⅞"	8

GENERAL NOTES FOR CONCRETE FILLED STEEL SHELL PILES

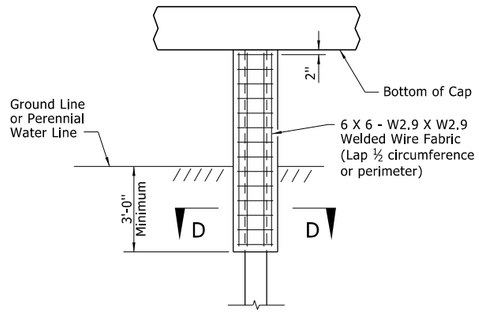
Steel shells shall conform ASTM A252, Grade 3 (Fy = 45,000 psi.)

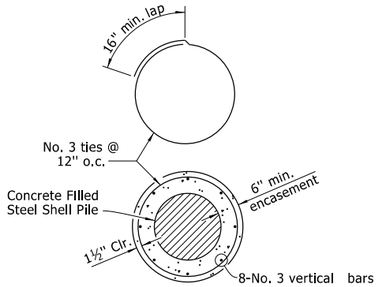
Concrete used for filling of steel shell shall be Class S with a minimum 28-day compressive strength, f'c = 3,500 psi. and shall be poured in the dry.

See Bridge Layout for size and estimated length of steel shell piles and for driving information.

Concrete, structural steel, reinforcing steel (including welding), and painting shall not be paid for directly, but shall be considered subsidiary to the Item "Steel Shell Piling (18" Dia.)" or "Steel Shell Piling (24" Dia.)".

Inside Cutting Shoe Will not be paid for directly, but shall be subsidiary to the item "Steel Shell Piling (18" Dia.)" or "Steel Shell Piling (24" Dia.)".





SECTION D-D

PILE ENCASEMENT DETAIL FOR STEEL SHELL PILES

GENERAL NOTES FOR PILE ENCASEMENTS

See Bridge Layout for additional notes, any pile encasement restrictions and required location of pile encasements.

Concrete shall be Class S with a minimum 28-day compressive strength, f'c = 3,500 psi. If concrete cannot be placed in the dry, Seal Concrete may be used from top to bottom of encasement.

Reinforcing steel shall be Grade 60 conforming to AASHTO M 31 or M 322, Type A.

Welded wire fabric shall conform to AASHTO M 55 or M 221.

Concrete, welded wire fabric or reinforcing steel, and galvanized pipe shall not be paid for directly, but shall be considered subsidiary to the item "Pile Encasement".

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14501
STEPHEN F. HARPER
8/24/2025

BRIDGE ENGINEER
PRINT DATE: 8/25/2025

DETAILS FOR CONCRETE FILLED STEEL SHELL PILES AND PILE ENCASEMENTS EASSIS CREEK

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARKANSAS

DRAWN BY:	HSS	DATE:	12/2020	FILENAME:	B101003x1_B22.dgn
CHECKED BY:	SFH	DATE:	12/2020		
DESIGNED BY:	HSS	DATE:	12/2020	SCALE:	None
BRIDGE NO.	07531			DRAWING NO.	63893

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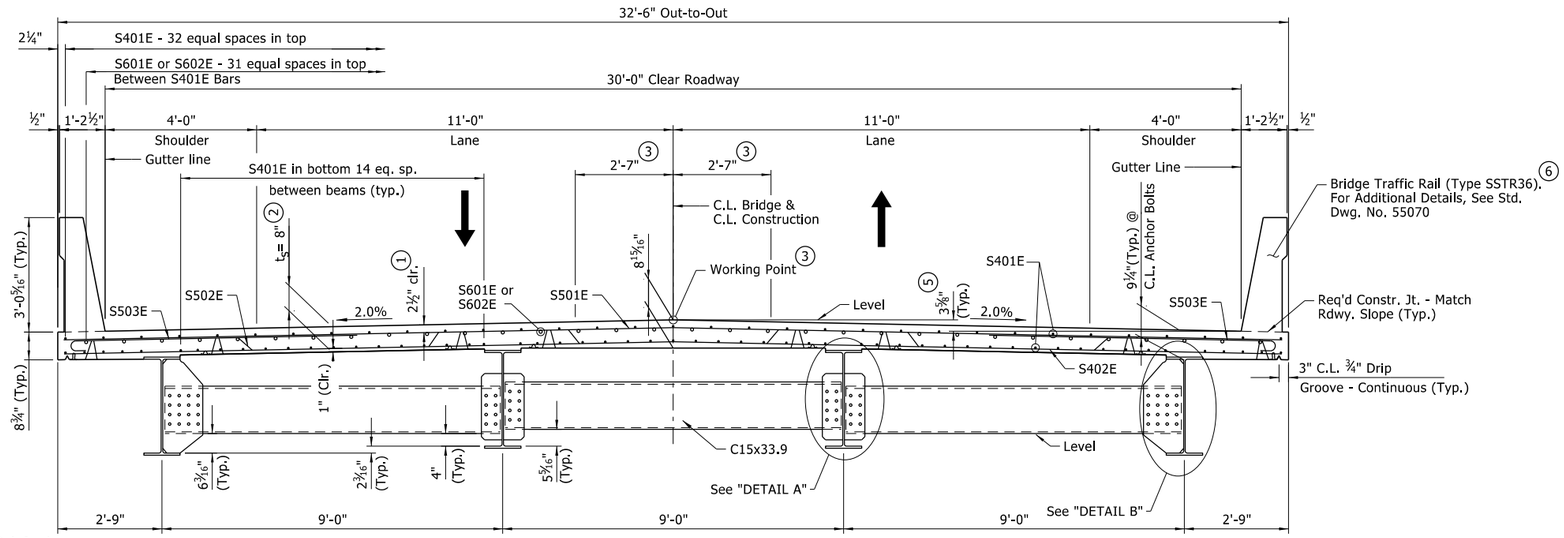


TYPICAL SECTION

(Looking Forward)

½" = 1'-0"

Slab Reinforcing:

Transverse: S502E @ 12" o.c. bent up over beams
S402E @ 12" o.c. In bottom
S501E @ 12" o.c. in top
Alternate
S503E @ 6" o.c. under each rail bundled w/ #5 In top @ both gutterlines

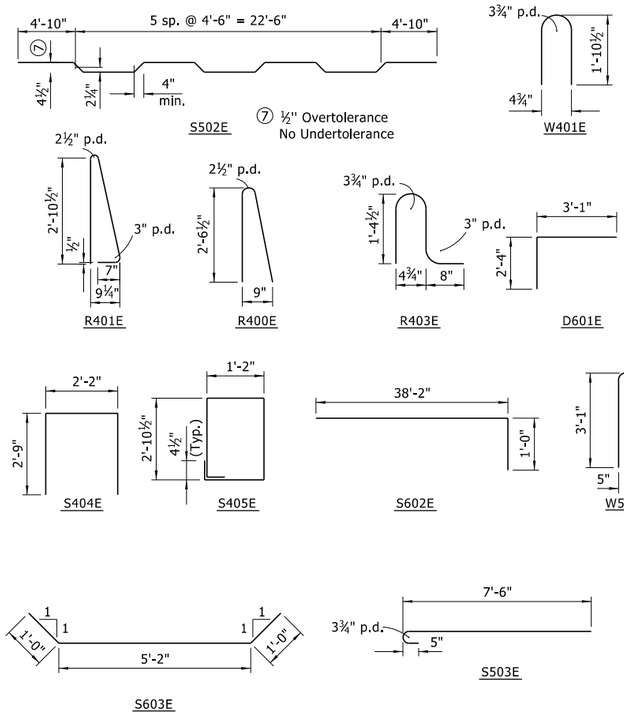
Longitudinal: S401E placed as shown in top and bottom
S601E placed as shown over int. supports
S602E placed as shown at end bents

BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.
D601E	66	5'-4"	4½"
S401E	352	34'-2"	Str.
S402E	131	32'-2"	Str.
S403E	28	32'-2"	Str.
S404E	66	7'-6"	2"
S405E	66	8'-5"	2"
S501E	131	32'-2"	Str.
S502E	130	32'-10"	3"
S503E	522	8'-1"	3¾"
S601E	32	60'-0"	Str.
S602E	64	39'-1"	4½"
S603E	12	7'-2"	4½"
R400E	48	5'-3"	2½"
R401E	612	6'-4"	2½"
R402E	112	5'-6"	Str.
R403E	532	3'-6"	3¾"
R404E	64	8'-2"	Str.
R405E	64	9'-8"	Str.
R406E	16	15'-8"	Str.
R407E	32	20'-2"	Str.
R408E	32	9'-8"	Str.
W401E	80	3'-11"	3¾"
W402E	136	3'-4"	Str.
W501E	36	6'-4"	3¾"
W701E	48	12'-2"	Str.

Note: All bars designated with an "E" suffix are to be epoxy coated.

Dimensions are out to out of bars. The first bar designation number indicates the reinforcing bar size



(1) 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.

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

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

(4) If permanent steel bridge deck forms are used, the fabricator shall clip plates as necessary to accommodate the deck form supports.

(5) Working Point to Gutterline.

(6) For Table of Rail Variables, See Dwg. No. 63896. For Additional Details, See Std. Dwg. No. 55070.

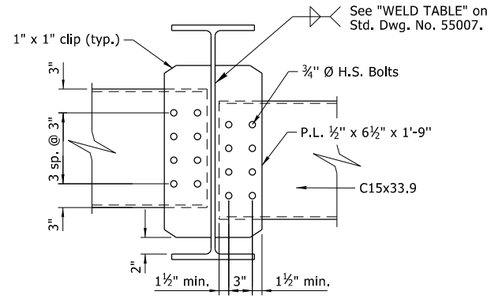
Notes:

Class 2 Protective Surface Treatment shall be applied to the Roadway Surface, and the Face and Top of Bridge Traffic Rail.

Bar positions and clearances from the forms shall be maintained by means of stays, tie hangers, or other approved devices 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.

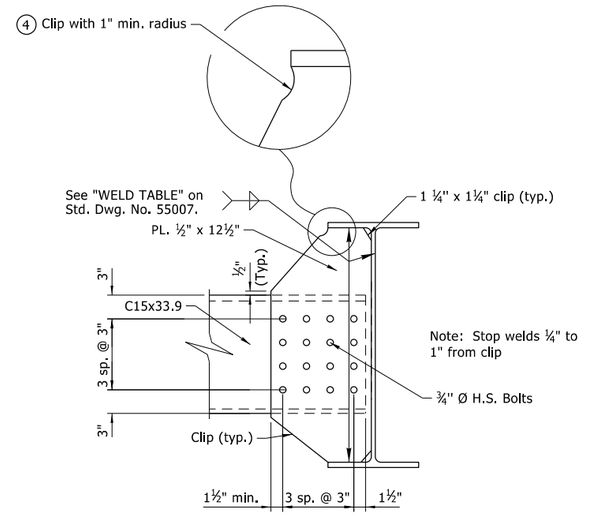
At the Contractor's option, two straight epoxy coated #5 bars may be substituted for Bar S502E. Payment for reinforcing will be based on the weight of Bar S502E.

All structural steel shall be ASTM A709, Grade 50W unless otherwise noted and shall be paid for as "Structural Steel in Beam Spans (A709, Gr. 50W)". See Std. Dwg. Nos. 55006 and 55007 for additional notes and details.



DETAIL A

NO SCALE



DETAIL B

NO SCALE

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14501
STEPHEN F. HARPER

8/26/2025

BRIDGE ENGINEER
PRINT DATE: 8/26/2025

SHEET 1 OF 5
DETAILS OF 130'-0" CONTINUOUS INTEGRAL W-BEAM UNIT EASSIS CREEK

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARKANSAS

DRAWN BY:	AAS	DATE:	12/2020	FILENAME:	B101003x1_Sx1.dgn
CHECKED BY:	HSS	DATE:	12/2020		
DESIGNED BY:	AAS	DATE:	12/2020	SCALE:	As Shown
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REVISED DATE:

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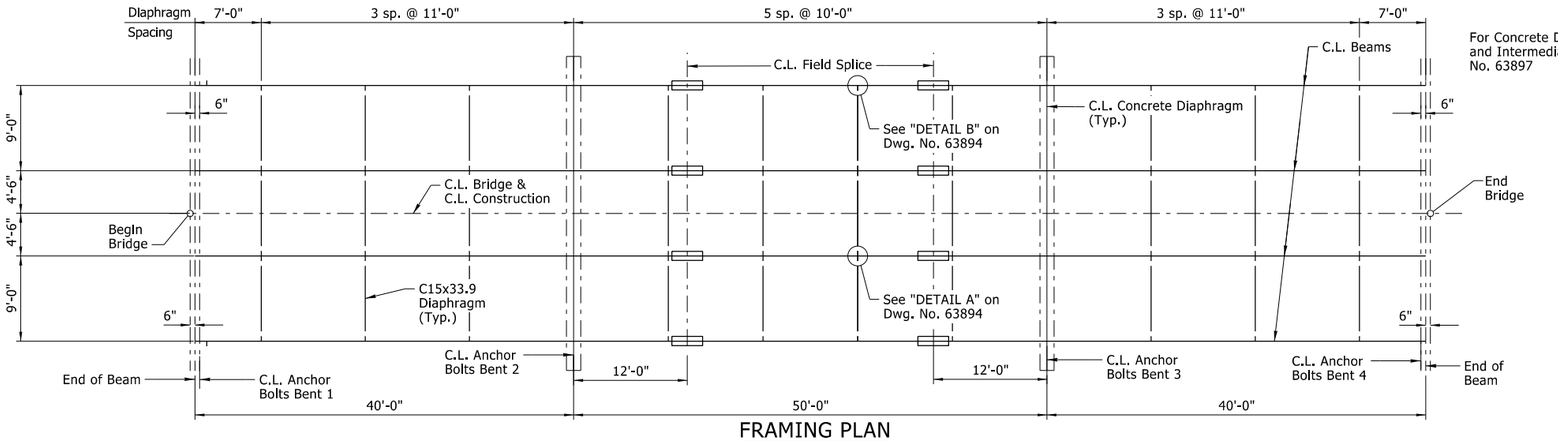
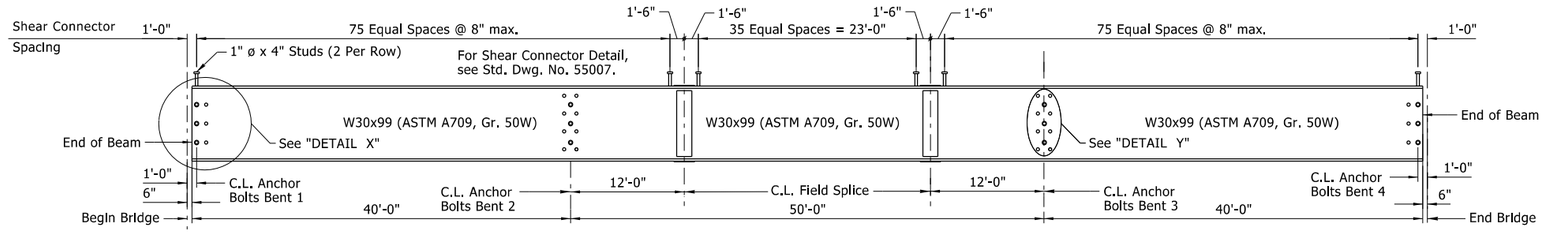


FRAMING PLAN
⅛" = 1'-0"

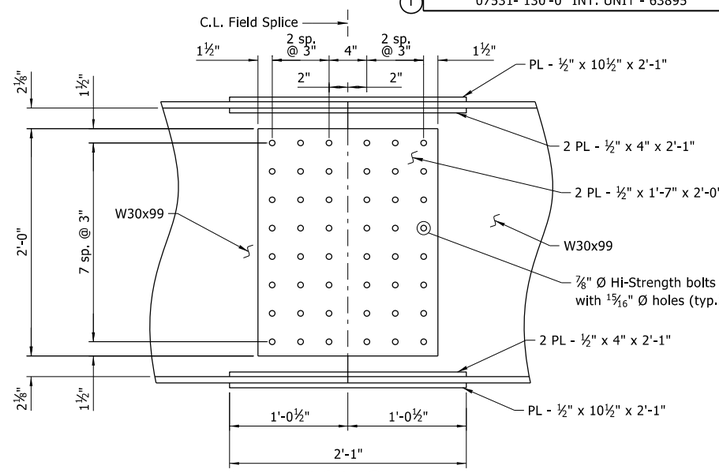
For Concrete Diaphragms of End and Intermediate Bents, See Dwg. No. 63897



BEAM ELEVATION
No Scale

All structural steel shall be ASTM A709, Gr. 50W unless noted otherwise and shall be paid for as "Structural Steel in Beam Spans (A709, Gr. 50W)". See Std. Dwg. Nos. 55006 and 55007 for additional notes and details.

Anchor bolts shall comply with AASHTO M314, Grade 55, with Supplementary Requirement S1, and galvanized according to subsection 807.07. Nuts for bolts shall be as specified in subsection 807.07. Plates, anchor bolts, nuts and washers shall be paid for at the unit price bid for "Structural Steel In Beam Spans (ASTM A709, Gr.50W)"



TYP. WEB SPLICE DETAIL
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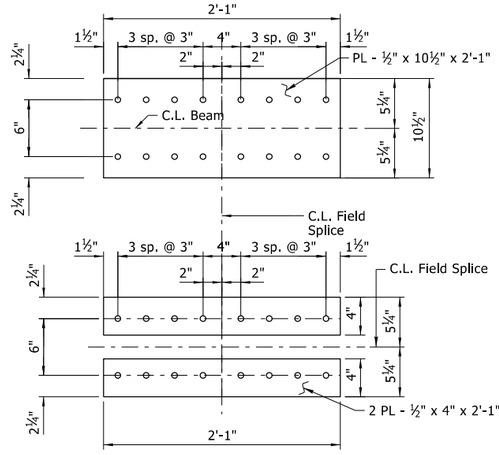
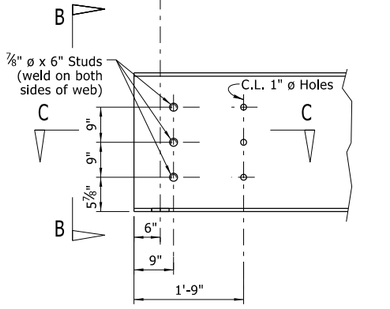
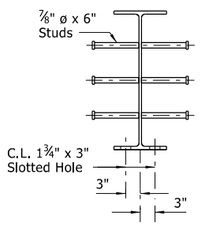


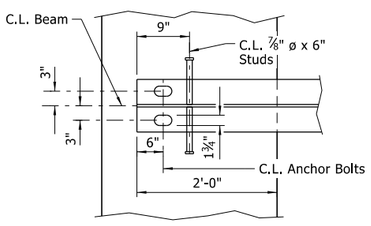
TYP. FLANGE SPLICE DETAIL
1½" = 1'-0"



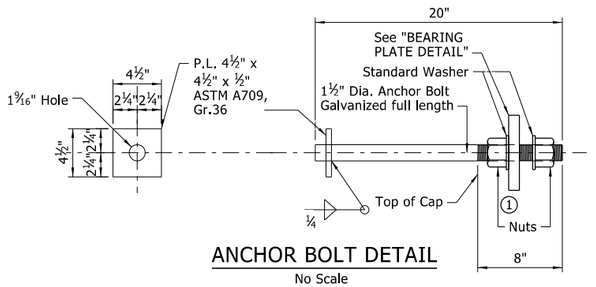
DETAIL X
No Scale



VIEW B-B
No Scale

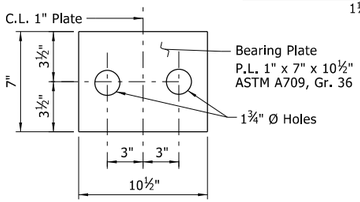


SECTION C-C
No Scale



ANCHOR BOLT DETAIL
No Scale

(1) Use lower nut and washer to adjust to grade. Snug tight top nut and washer after grade is adjusted.



BEARING PLATE DETAIL
No Scale

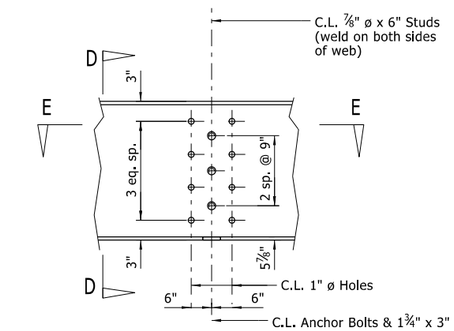
Notes:
Bolted field splices shown may be eliminated or shop welded splices may be substituted with approval of the Engineer.

Payment will be made on the basis of the plan quantities.

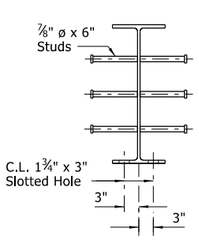
All field splice bolts shall be ⅞" ø Hi-strength bolts.

All holes for splice bolts shall be 15/16" ø.

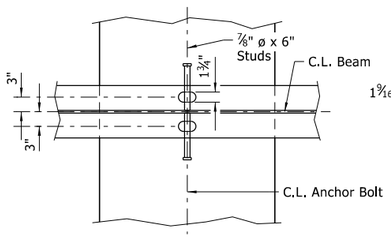
All field splice plates shall be ASTM A709 Gr. 50W steel.



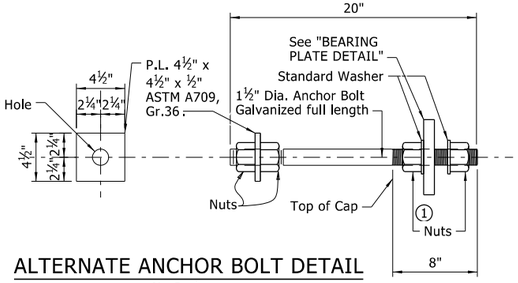
DETAIL Y
No Scale



VIEW D-D
No Scale



SECTION E-E
No Scale



ALTERNATE ANCHOR BOLT DETAIL
No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14501
STEPHEN F. HARPER
9/5/2025

BRIDGE ENGINEER
PRINT DATE: 9/5/2025

SHEET 2 OF 5
DETAILS OF 130'-0" CONTINUOUS INTEGRAL W-BEAM UNIT
EASSIS CREEK
ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY:	AAS	DATE:	12/2020	FILENAME:	B101003x1_Sx2.dgn
CHECKED BY:	HSS	DATE:	12/2020		
DESIGNED BY:	AAS	DATE:	12/2020	SCALE:	As Shown
BRIDGE NO.	07531			DRAWING NO.	63895

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REVISED DATE:

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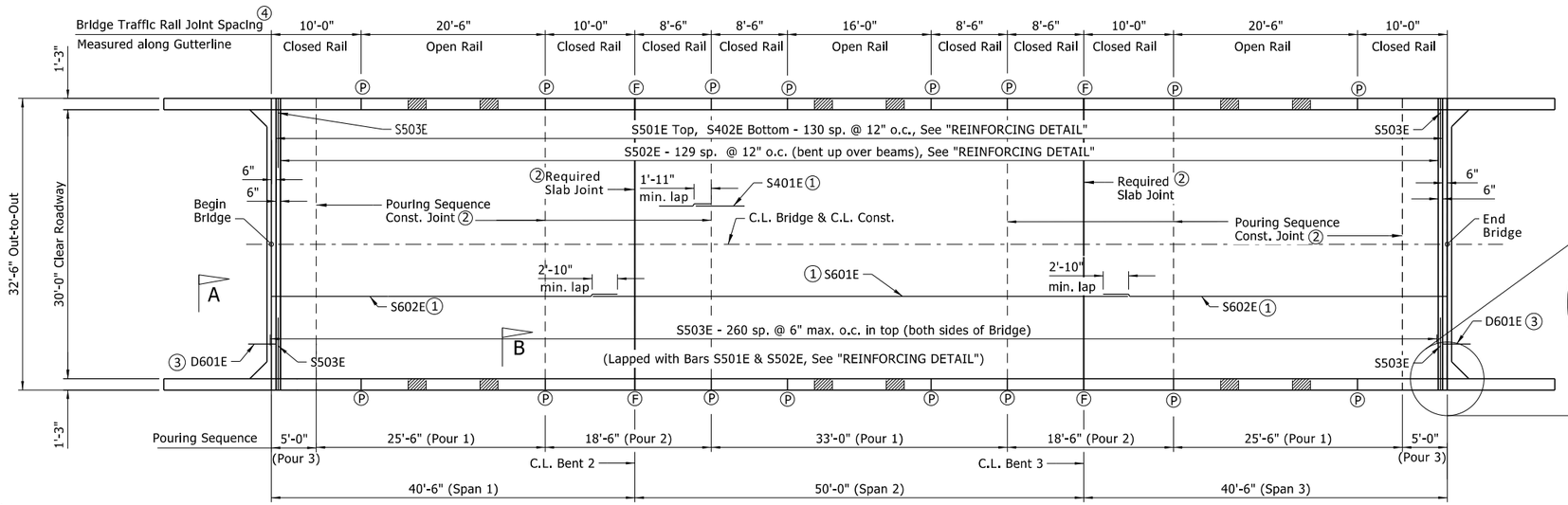
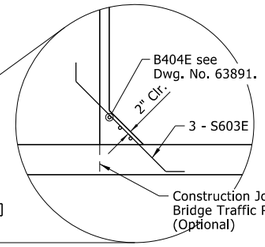
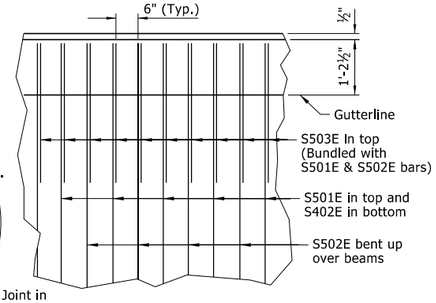
				JOB NO.		101003	45	60
				(1)	07531 - 130'-0" INT. UNIT - 63896			







REINFORCING DETAIL

No Scale

Note:
Rails and wings are included in span construction and are included in span quantities.

Note:
For Views A-A & B-B, See Dwg. No. 63897.

REINFORCING PLAN AND POURING SEQUENCE

⅛" = 1'-0"

Ⓟ Partial depth rail joint at this location. (Stop 1'-4" above top of slab)

Ⓕ Full depth rail joint at this location. (Stop 6" above top of slab)

① Placed as shown in "TYPICAL SECTION", See Dwg. No. 63894.

② Align with rail open joint unless noted otherwise. See "TRANSVERSE SLAB JOINT DETAIL" on Std. Dwg. No. 55007.

③ Place as shown in "VIEW A-A" on Dwg. No. 63897.

④ See "TABLE OF RAIL VARIABLES". For Additional Details, See Std. Dwg. No. 55070.

Note:
Pours with the same number may be placed simultaneously or separately. All pours (1) must be placed before pours (2) can be placed. All pours (2) must be placed before pours (3) can be placed. 48 hours shall elapse before the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of an adjacent pour. 72 hours shall elapse between the completion of the entire deck and the pouring of the bridge traffic rail. 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 shown.

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

Concrete diaphragms at end bents shall be poured monolithically with the deck. A minimum of 48 hours shall elapse between the intermediate bent diaphragm pour and the deck slab pour.

TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

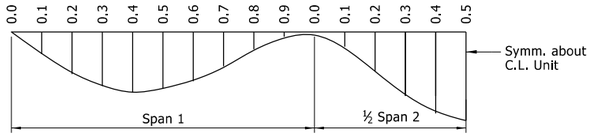
Span	Point of Deflection	Interior Beams: Structural Steel	Interior Beams: Structural Steel + Slab	Interior Beams: Structural Steel + Slab+ Rail	Exterior Beams: Structural Steel	Exterior Beams: Structural Steel + Slab	Exterior Beams: Structural Steel + Slab+ Rail
1	0	0.000	0.000	0.000	0.000	0.000	0.000
	0.1	0.010	0.087	0.093	0.009	0.068	0.075
	0.2	0.019	0.160	0.171	0.016	0.125	0.137
	0.3	0.024	0.210	0.224	0.021	0.164	0.179
	0.4	0.027	0.230	0.246	0.023	0.180	0.196
	0.5	0.025	0.220	0.235	0.022	0.172	0.188
	0.6	0.021	0.184	0.197	0.019	0.144	0.157
	0.7	0.015	0.130	0.139	0.013	0.102	0.111
	0.8	0.008	0.069	0.074	0.007	0.054	0.059
	0.9	0.002	0.019	0.020	0.002	0.015	0.016
½ 2	0	0.000	0.000	0.000	0.000	0.000	0.000
	0.1	0.007	0.053	0.057	0.006	0.041	0.045
	0.2	0.018	0.147	0.157	0.015	0.114	0.125
	0.3	0.030	0.242	0.258	0.025	0.188	0.206
	0.4	0.038	0.310	0.331	0.032	0.242	0.264
	0.5	0.041	0.335	0.357	0.035	0.261	0.285

Table is symm. about the C.L. Unit.

TABLE OF RAIL VARIABLES

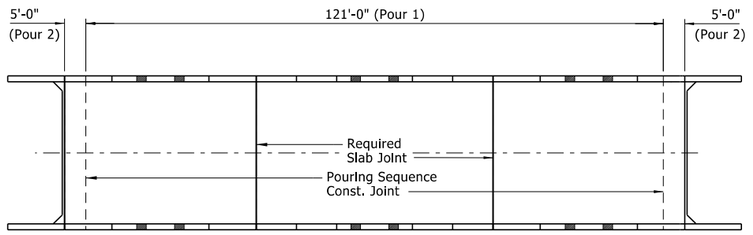
For Additional Details, See Std. Dwg. No. 55070.

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	20'-6"	15	5'-3"	11	6'-0"	R407E



DEAD LOAD DEFLECTION DIAGRAM

Note:
Camber for Dead Load Deflection plus Vertical curve +/- ¼" tolerances. Deflections shown are along C.L. Beam from the plane perpendicular to the web extending from C.L. Anchor Bolts to C.L. Anchor Bolts. Vertical curve corrections not included. Negative sign (-) indicates upward deflection.



ALTERNATE POURING SEQUENCE

1/16" = 1'-0"

Note:
Pours with the same number may be placed simultaneously or separately. Pour (1) must be placed before pours (2) can be placed. 48 hours shall elapse before the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of an adjacent pour. 72 hours shall elapse between the completion of the entire deck and the pouring of the bridge traffic rail. 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 shown.

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

Concrete diaphragms at end bents shall be poured monolithically with the deck. A minimum of 48 hours shall elapse between the intermediate bent diaphragm pour and the deck slab pour.

SECTION AT END BENT

No Scale

Limits of concrete end diaphragm shall match plan dimension of end bent cap.

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 "Class S Concrete-Bridge".

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14501
STEPHEN F. HARPER
8/24/2025

BRIDGE ENGINEER
PRINT DATE: 8/25/2025

SHEET 3 OF 5
DETAILS OF 130'-0" CONTINUOUS INTEGRAL W-BEAM UNIT
EASSIS CREEK

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: AAS DATE: 12/2020 FILENAME: B101003x1_Sx3.dgn
CHECKED BY: HSS DATE: 12/2020
DESIGNED BY: AAS DATE: 12/2020 SCALE: As Shown
BRIDGE NO. 07531 DRAWING NO. 63896

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REVISED DATE:

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				JOB NO.		101003	46	60
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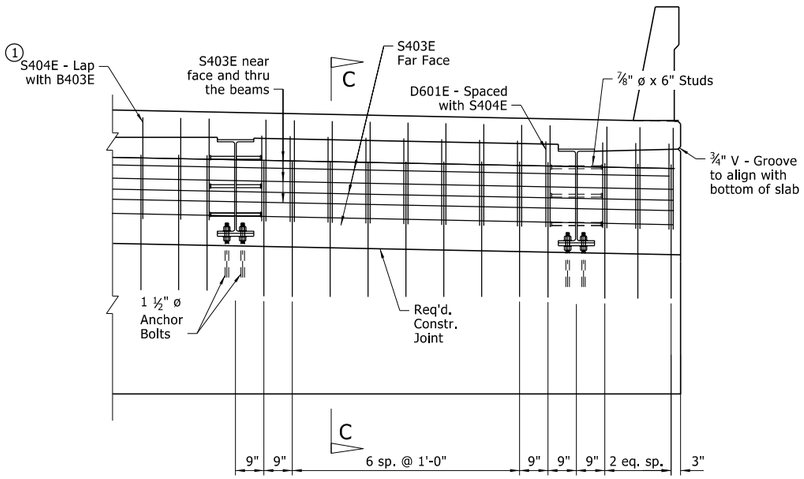
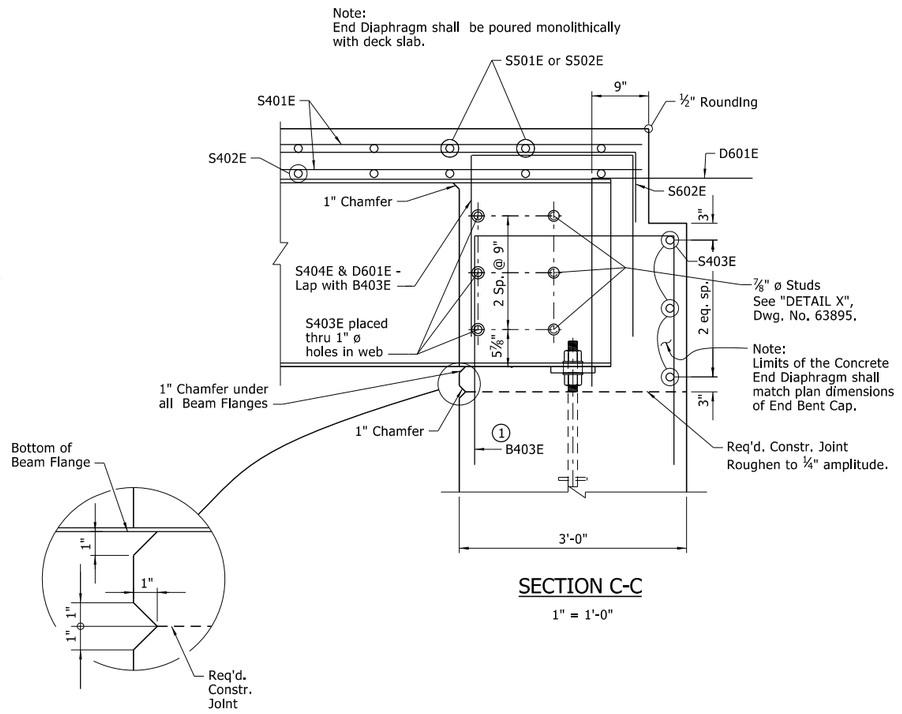
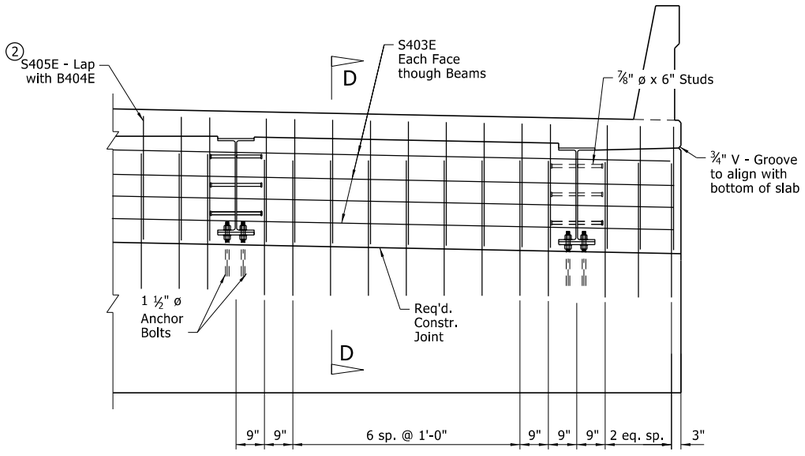


VIEW A-A
End Bents
½" = 1'-0"

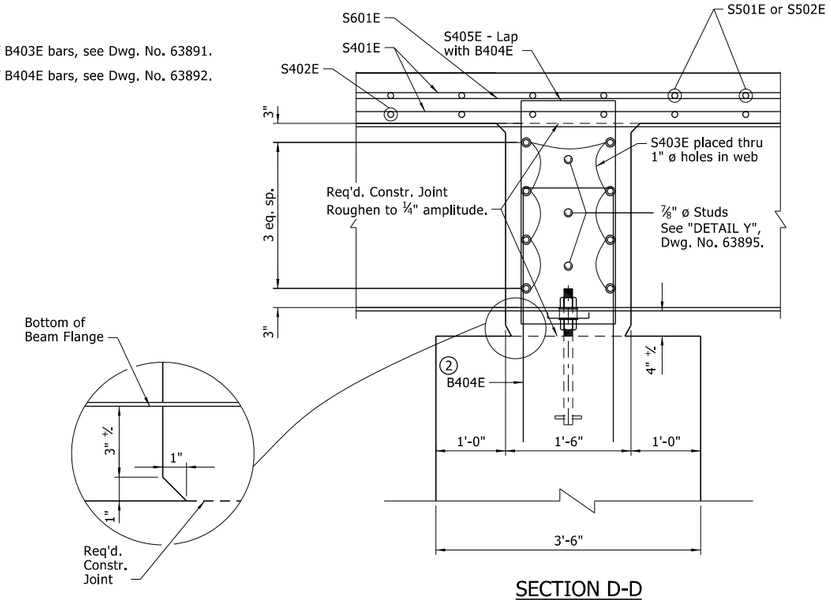


SECTION C-C
1" = 1'-0"

(1) For location of B403E bars, see Dwg. No. 63891.
(2) For location of B404E bars, see Dwg. No. 63892.



VIEW B-B
Int. Bents
½" = 1'-0"



SECTION D-D
1" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14501
STEPHEN F. HARPER
8/26/2025

BRIDGE ENGINEER
PRINT DATE: 8/25/2025

SHEET 4 OF 5
DETAILS OF 130'-0" CONTINUOUS INTEGRAL W-BEAM UNIT EASSIS CREEK

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

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CHECKED BY: HSS DATE: 12/2020
DESIGNED BY: AAS DATE: 12/2020 SCALE: As Shown
BRIDGE NO. 07531 DRAWING NO. 63897

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REVISED DATE:

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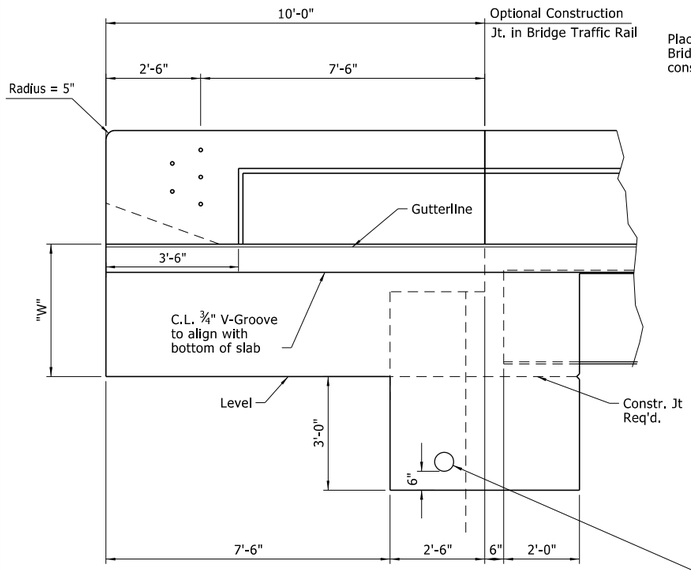
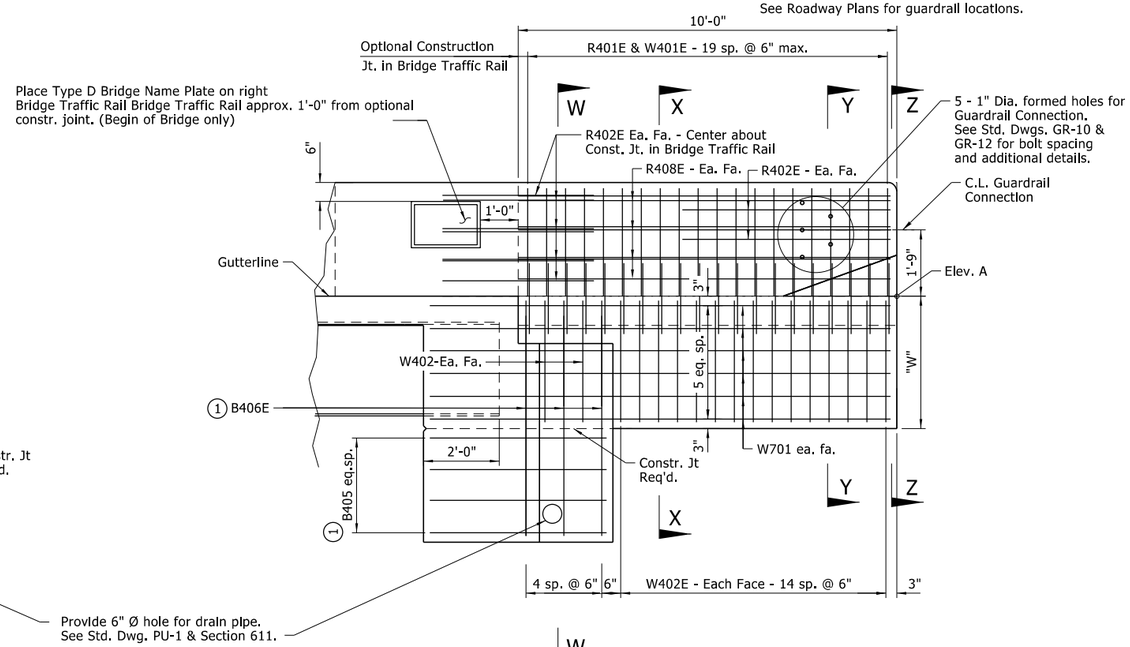


VIEW C-C

½" = 1'-0"

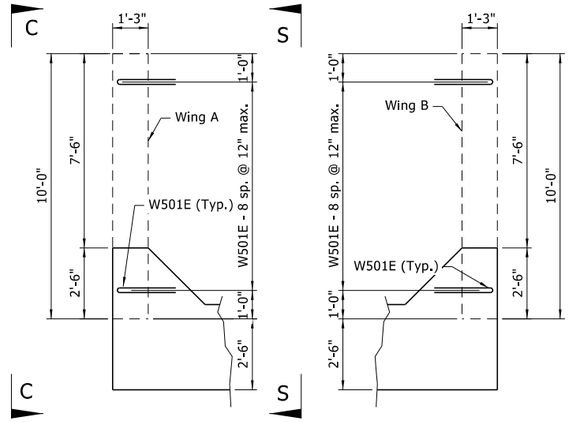
Note:
See Roadway Plans for guardrail locations.



VIEW S-S

½" = 1'-0"

(1) See End Bent Details on Dwg. No. 63891 for reinforcing and additional details.

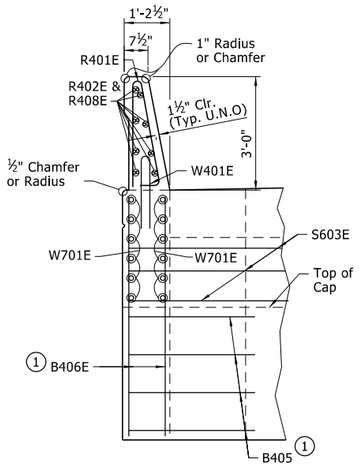


PLAN OF BRIDGE TRAFFIC RAIL

⅜" = 1'-0"

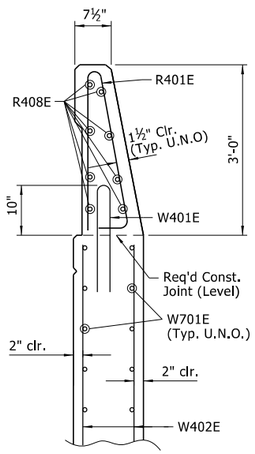
TABLE OF VARIABLES

Bent	Elev. A	Dim. "W"
1	315.96	3'-5⅞"
4	316.75	3'-7⅝"



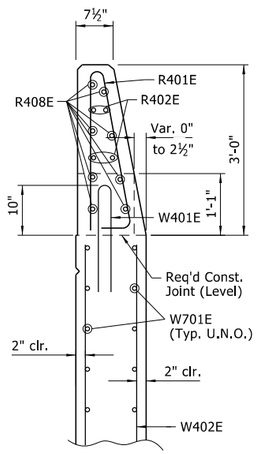
SECTION W-W

½" = 1'-0"



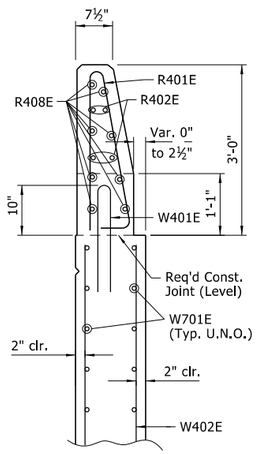
SECTION X-X

¾" = 1'-0"



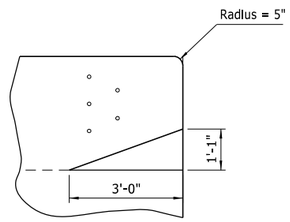
SECTION Y-Y

¾" = 1'-0"



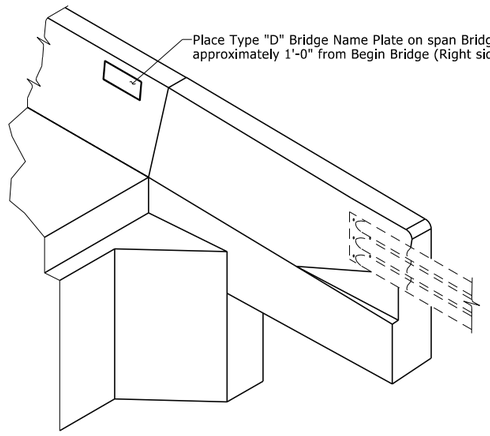
SECTION Z-Z

¾" = 1'-0"



VERTICAL TAPER

½" = 1'-0"



THREE DIMENSIONAL VIEW OF BRIDGE TRAFFIC RAIL & END BENT

Scott.Thornsberry 8/25/2025 11:29:19 AM
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REVISED DATE:

SHEET 5 OF 5
DETAILS OF 130'-0" CONTINUOUS
INTEGRAL W-BEAM UNIT
EASSIS CREEK
ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14501
STEPHEN F. HARPER
8/26/2025

BRIDGE ENGINEER

DRAWN BY:	AAS	DATE:	12/2020	FILENAME:	B101003x1_Sx5.dgn
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BRIDGE NO.	07531			DRAWING NO.	63898

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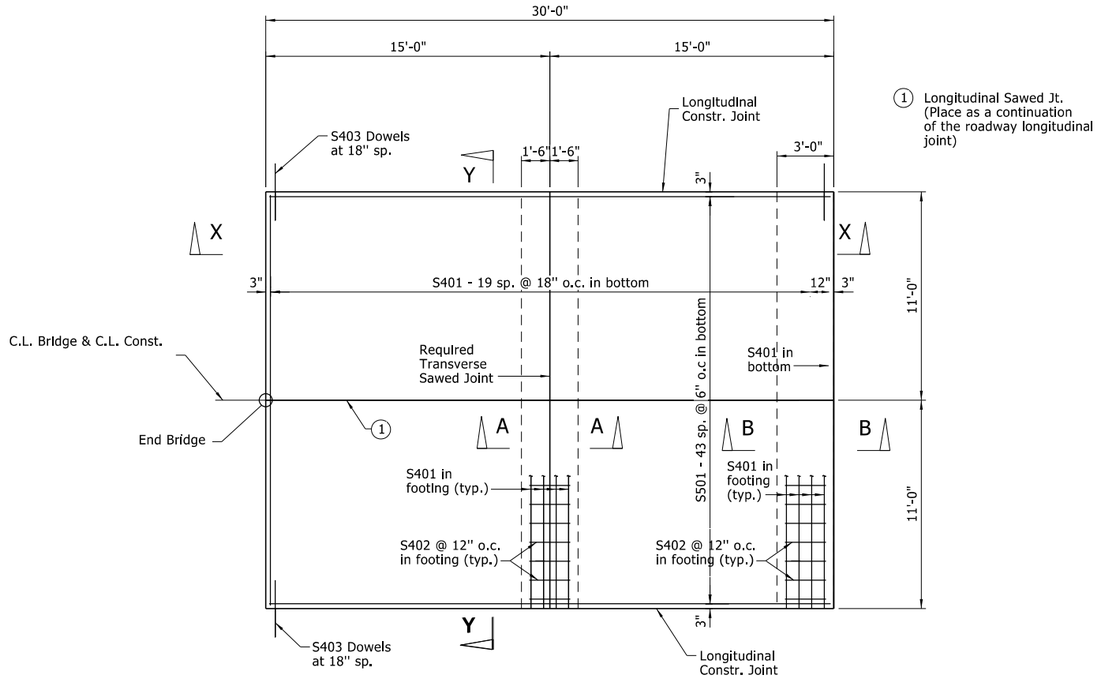


(1) Longitudinal Sawed Jt. (Place as a continuation of the roadway longitudinal joint)

BAR LIST FOR ONE TYPE SPECIAL APPROACH SLAB

MARK	NO. REQ'D.	LENGTH	PIN DIA.
S401	29	21'-8"	Str.
S402	44	2'-8"	Str.
S403	42	3'-0"	Str.
S501	44	29'-8"	Str.

QUANTITIES FOR ONE TYPE SPECIAL APPROACH SLAB

Slab Width	Reinforcing Steel	Concrete
	(lbs.)	(cu. yds.)
22'-0"	1,944	27.30

GENERAL NOTES

Concrete shall be Class S(AE) (f'c = 4,000 psi).

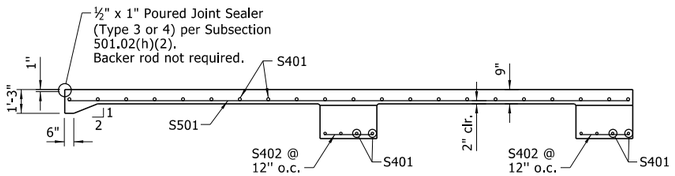
Reinforcing Steel shall conform to AASHTO M31 or M322, Type A with Mill Test Reports, Gr. 60 (fy = 60,000 psi).

Approach Slabs will be measured and paid for in accordance with Section 504 of the Standard Specifications.

Surface finish for Approach Slabs to match that used on the bridge deck.

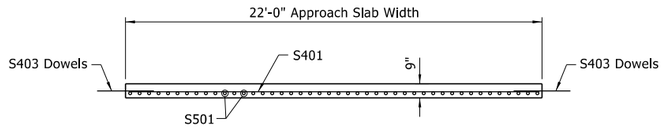
PLAN

(Shown at End Bridge, Begin Bridge similar)
¼" = 1'-0"



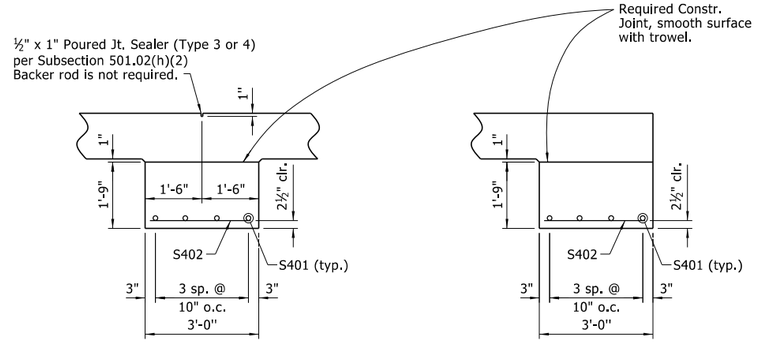
SECTION X-X

¼" = 1'-0"



SECTION Y-Y

¼" = 1'-0"

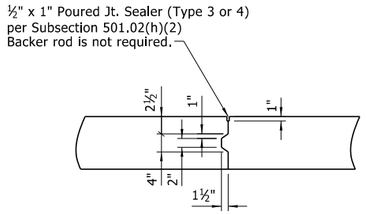


SECTION A-A

½" = 1'-0"

SECTION B-B

½" = 1'-0"



DETAIL OF LONGITUDINAL CONSTRUCTION JOINT

No Scale

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No.14501 STEPHEN F. HARPER

8/26/2025

BRIDGE ENGINEER
PRINT DATE: 8/25/2025

DETAILS OF TYPE SPECIAL APPROACH SLAB EASSIS CREEK

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: AAS DATE: 12/2020 FILENAME: B101003x1_AS.dgn
CHECKED BY: HSS DATE: 12/2020
DESIGNED BY: AAS DATE: 12/2020 SCALE: As Shown
BRIDGE NO. 07531 DRAWING NO. 63899

Scott.Thornsberry 8/25/2025 11:29:20 AM
WORKSPACE: scott.thornsberry
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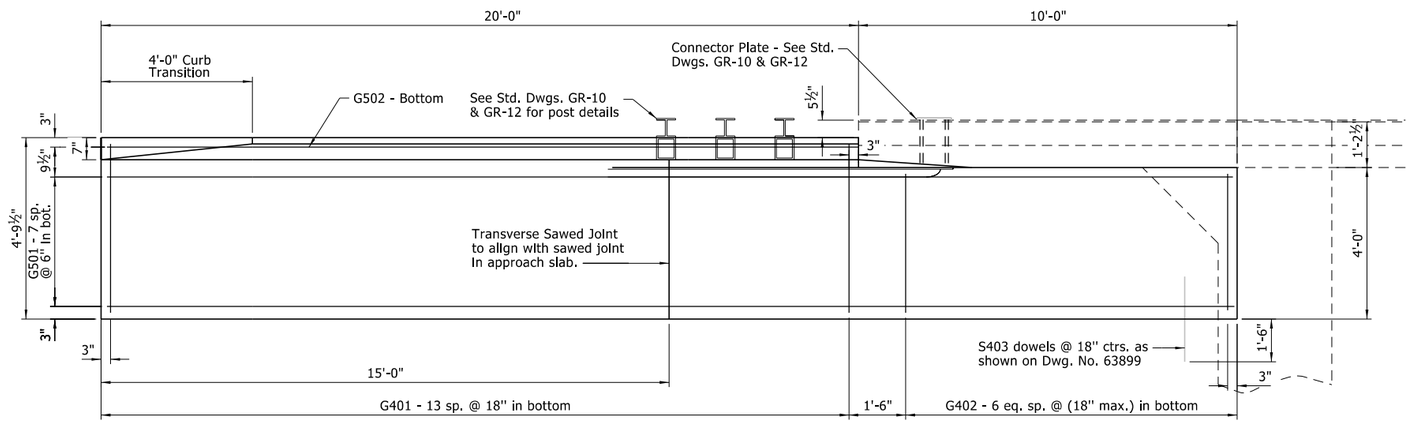
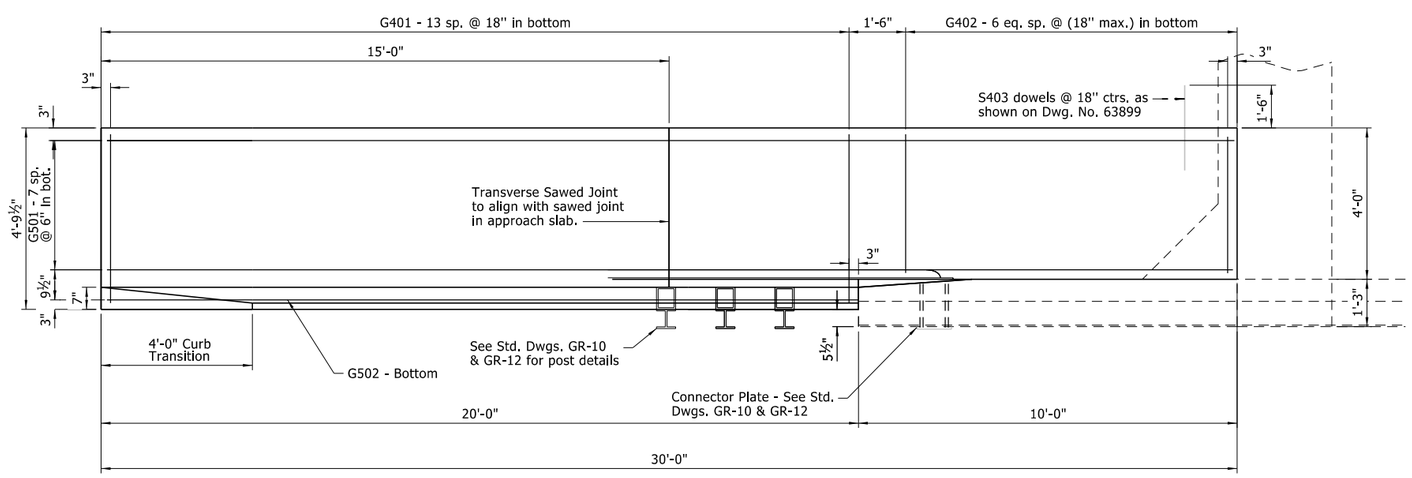
REVISED DATE:

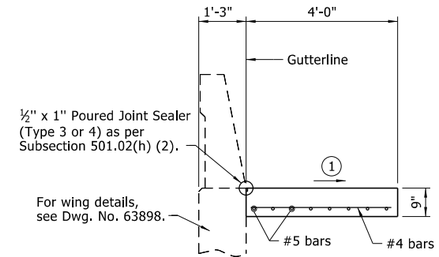
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101003	49	60
				(1)	07531 - APPROACH GUTTER - 63900			





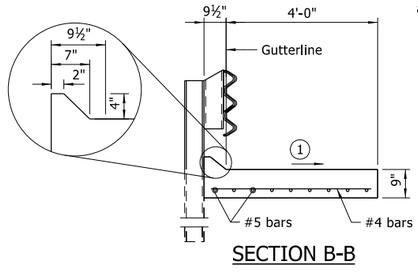
PLAN

(Shown for Begin Bridge - End of Bridge similar)



SECTION A-A

(1) Match Roadway cross-slope as required at a given approach gutter location.



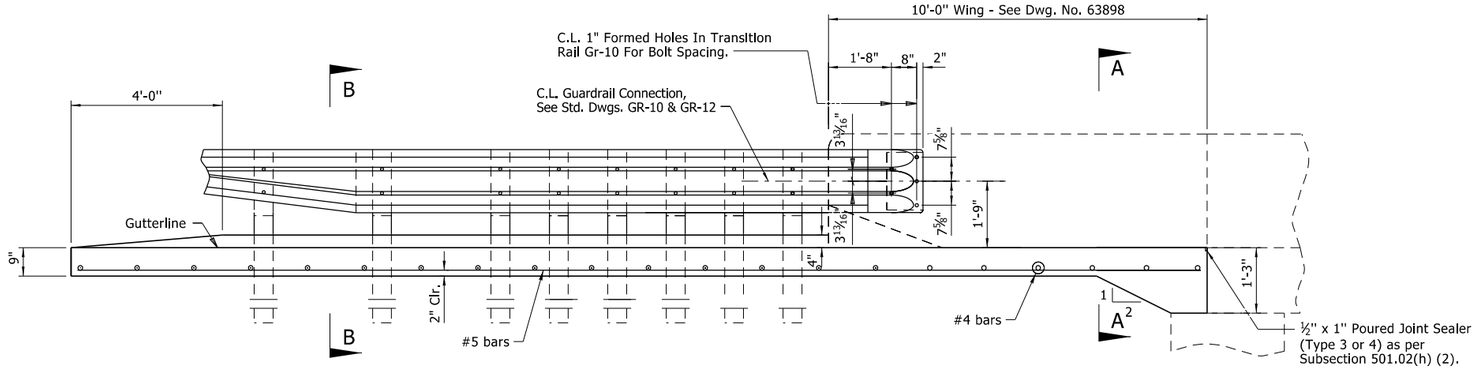
SECTION B-B

BAR LIST FOR ONE TYPE SPECIAL APPROACH GUTTER

MARK	NO. REQ'D.	LENGTH	PIN DIA.
G401	14	4'-5"	Str.
G402	7	3'-8"	Str.
G501	8	29'-8"	Str.
G502	1	19'-8"	Str.

QUANTITIES FOR ONE TYPE SPECIAL APPROACH GUTTER (FOR INFORMATION ONLY)

Reinforcing Steel (lbs.)	Concrete (cubic yds)
327	4.25



LONGITUDINAL SECTION THRU GUTTER

GENERAL NOTES

Concrete shall be Class S(AE) (f'c = 4,000 psi).

Reinforcing Steel shall conform to AASHTO M31 or M322, Type A with Mill Test Reports, Gr. 60 (fy = 60,000 psi).

Approach Gutters will be measured and paid for in accordance with Section 504 of the Standard Specifications.

Surface finish for Approach Gutters to match that used on the bridge deck.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14501
STEPHEN F. HARPER
8/26/2025

BRIDGE ENGINEER
PRINT DATE: 8/25/2025

DETAILS OF TYPE SPECIAL APPROACH GUTTERS EASSIS CREEK

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARKANSAS

DRAWN BY: AAS DATE: 12/2020 FILENAME: B101003x1_AG.dgn
CHECKED BY: HSS DATE: 12/2020
DESIGNED BY: AAS DATE: 12/2020 SCALE: ½" = 1'-0"
BRIDGE NO. 07531 DRAWING NO. 63900

Scott.Thornsberry 8/25/2025 11:29:20 AM
WORKSPACE: scott.thornsberry
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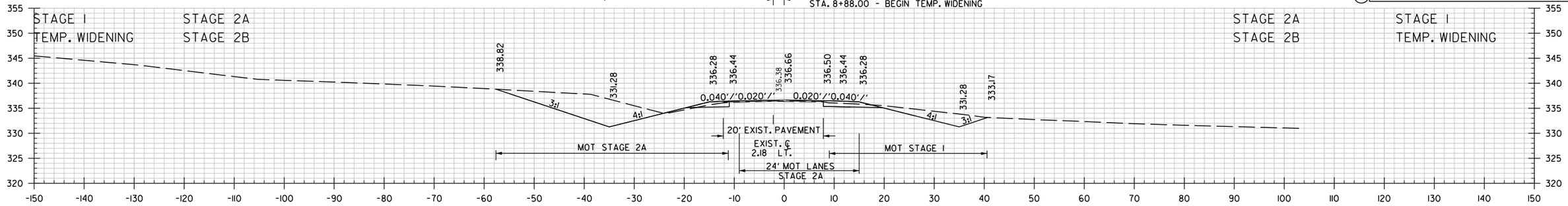
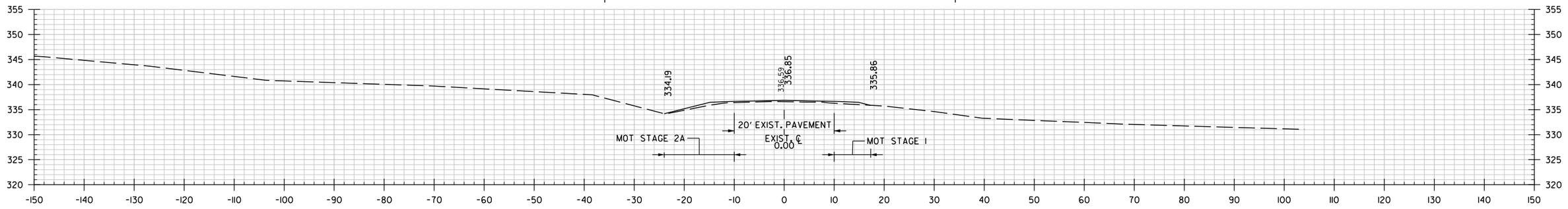
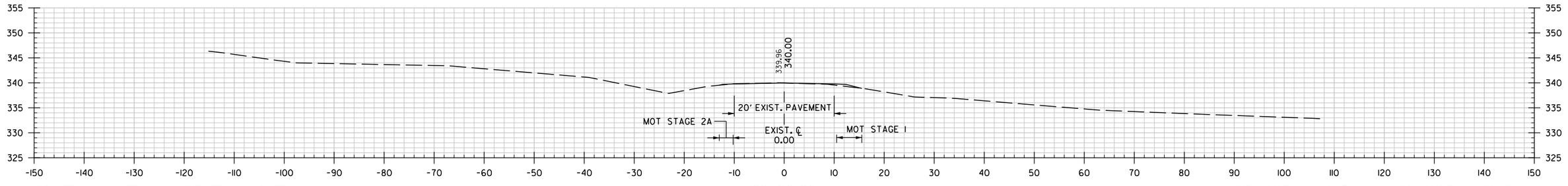
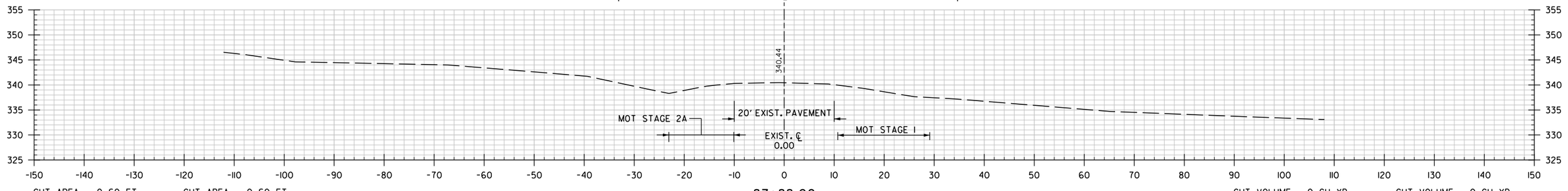
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101003	50	60
				(2)	CROSS SECTIONS			









STA. 87+88 TO STA. 88+88

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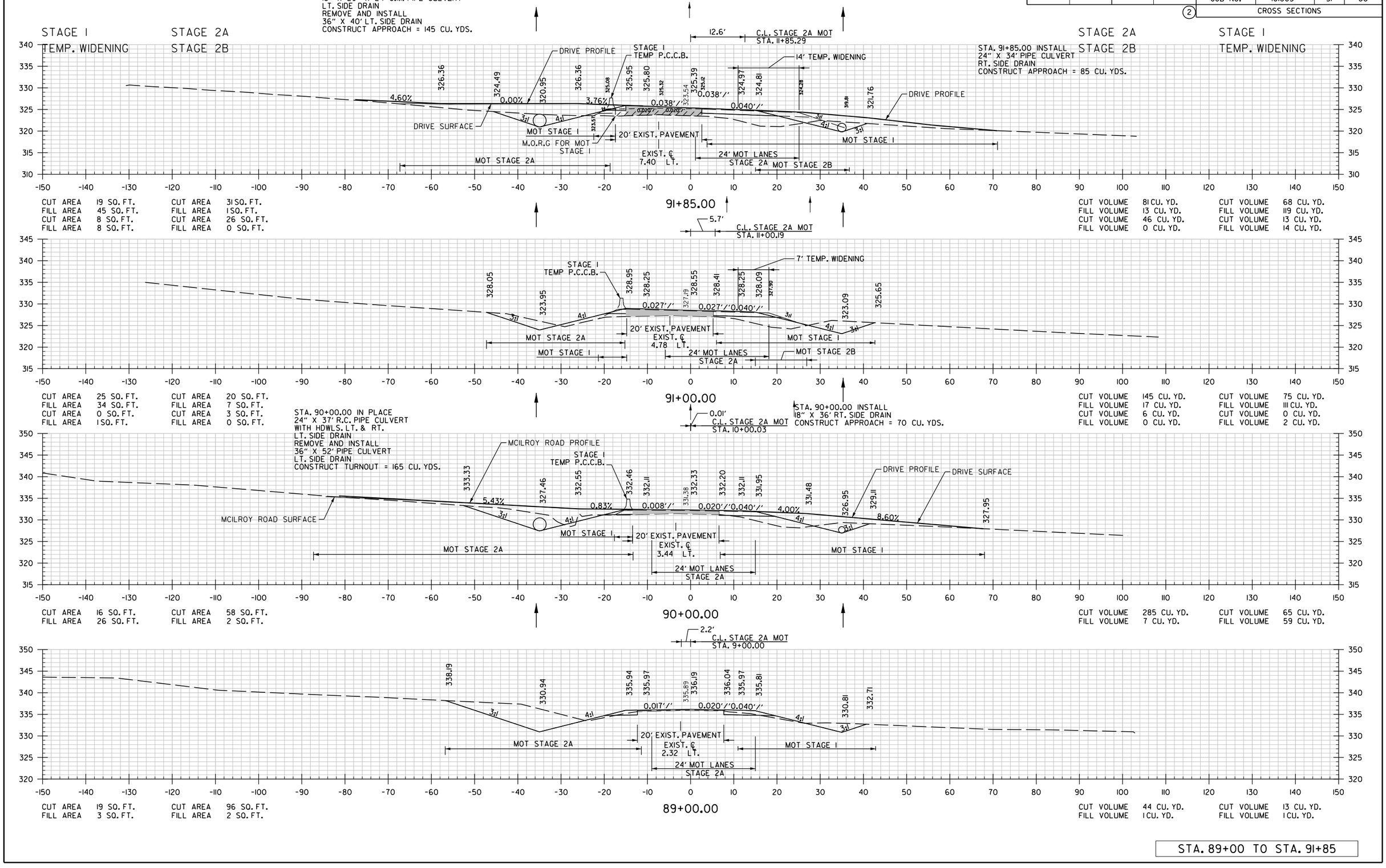
6	ARK.			
JOB NO.		101003	51	60

(2) CROSS SECTIONS



STA. 89+00 TO STA. 91+85

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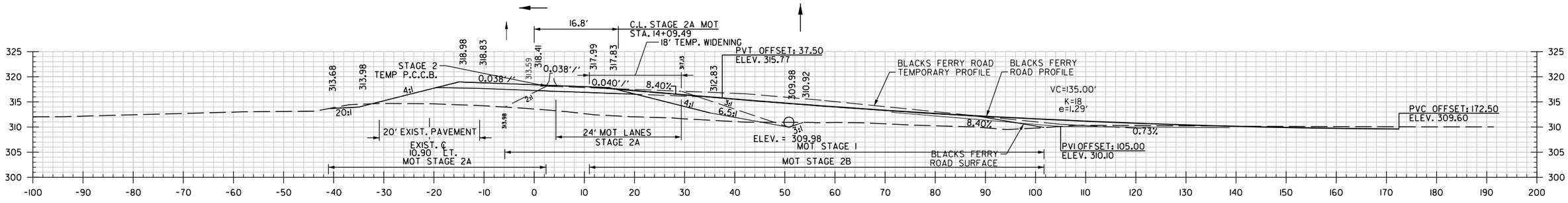
				6	ARK.			
				JOB NO.		101003	52	60
				(2)	CROSS SECTIONS			

STAGE 1 TEMP. WIDENING
STAGE 2A
STAGE 2B

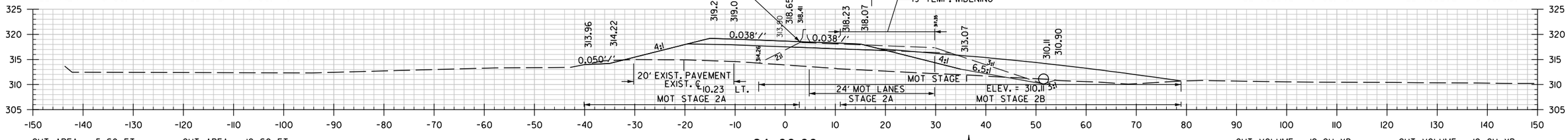
STAGE 2A
STAGE 2B
STAGE 1 TEMP. WIDENING



94+10.00

CUT AREA	4 SQ. FT.	CUT AREA	3 SQ. FT.
FILL AREA	147 SQ. FT.	FILL AREA	77 SQ. FT.
CUT AREA	3 SQ. FT.	CUT AREA	54 SQ. FT.
FILL AREA	40 SQ. FT.	FILL AREA	0 SQ. FT.

CUT VOLUME	1 CU. YD.	CUT VOLUME	2 CU. YD.
FILL VOLUME	28 CU. YD.	FILL VOLUME	79 CU. YD.
CUT VOLUME	20 CU. YD.	FILL VOLUME	1 CU. YD.
FILL VOLUME	0 CU. YD.	FILL VOLUME	15 CU. YD.

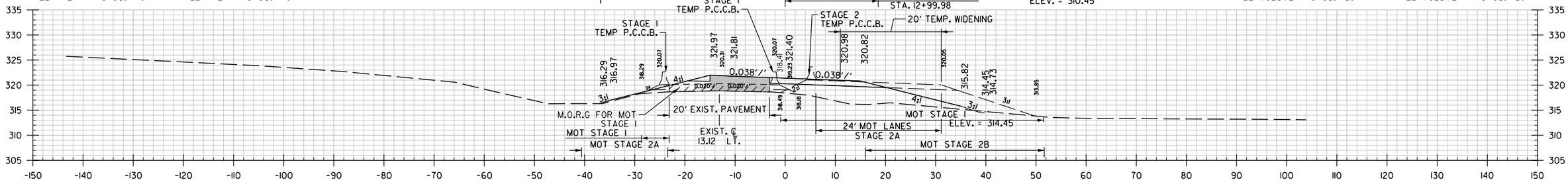


94+00.00

CUT AREA	5 SQ. FT.	CUT AREA	10 SQ. FT.
FILL AREA	132 SQ. FT.	FILL AREA	76 SQ. FT.
CUT AREA	5 SQ. FT.	CUT AREA	56 SQ. FT.
FILL AREA	43 SQ. FT.	FILL AREA	0 SQ. FT.

STA. 93+75.00
END SP. DITCH RT. -5.33%
BEGIN SP. DITCH RT. -1.34%
ELEV. = 310.45

CUT VOLUME	19 CU. YD.	CUT VOLUME	10 CU. YD.
FILL VOLUME	229 CU. YD.	FILL VOLUME	418 CU. YD.
CUT VOLUME	224 CU. YD.	FILL VOLUME	6 CU. YD.
FILL VOLUME	0 CU. YD.	FILL VOLUME	170 CU. YD.

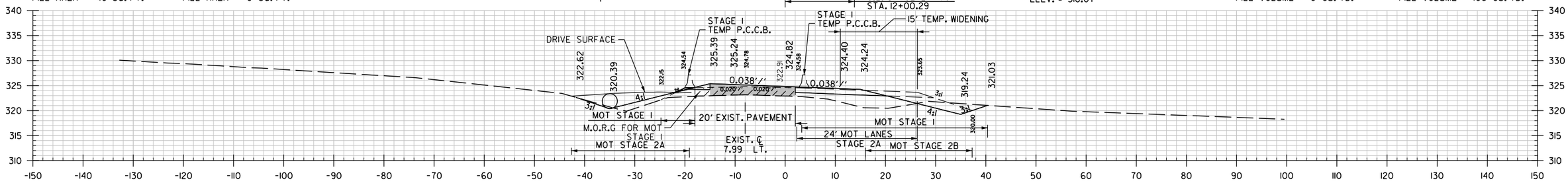


93+00.00

CUT AREA	0 SQ. FT.	CUT AREA	2 SQ. FT.
FILL AREA	88 SQ. FT.	FILL AREA	6 SQ. FT.
CUT AREA	0 SQ. FT.	CUT AREA	65 SQ. FT.
FILL AREA	49 SQ. FT.	FILL AREA	0 SQ. FT.

STA. 92+32.00
BEGIN SP. DITCH RT. -5.33%
ELEV. = 318.07

CUT VOLUME	7 CU. YD.	CUT VOLUME	33 CU. YD.
FILL VOLUME	30 CU. YD.	FILL VOLUME	257 CU. YD.
CUT VOLUME	176 CU. YD.	FILL VOLUME	9 CU. YD.
FILL VOLUME	0 CU. YD.	FILL VOLUME	106 CU. YD.



92+00.00

CUT AREA	17 SQ. FT.	CUT AREA	2 SQ. FT.
FILL AREA	45 SQ. FT.	FILL AREA	11 SQ. FT.
CUT AREA	5 SQ. FT.	CUT AREA	30 SQ. FT.
FILL AREA	8 SQ. FT.	FILL AREA	0 SQ. FT.

CUT VOLUME	9 CU. YD.	CUT VOLUME	10 CU. YD.
FILL VOLUME	3 CU. YD.	FILL VOLUME	24 CU. YD.
CUT VOLUME	16 CU. YD.	FILL VOLUME	4 CU. YD.
FILL VOLUME	0 CU. YD.	FILL VOLUME	4 CU. YD.

STA. 92+00 TO STA. 94+10

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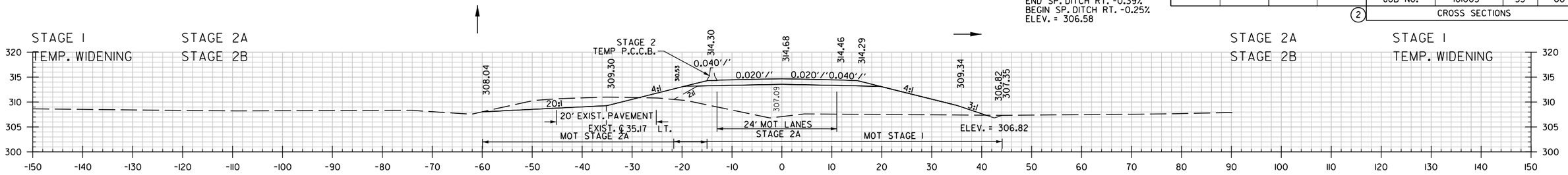
				6	ARK.			
				JOB NO.		101003	53	60
				(2)	CROSS SECTIONS			

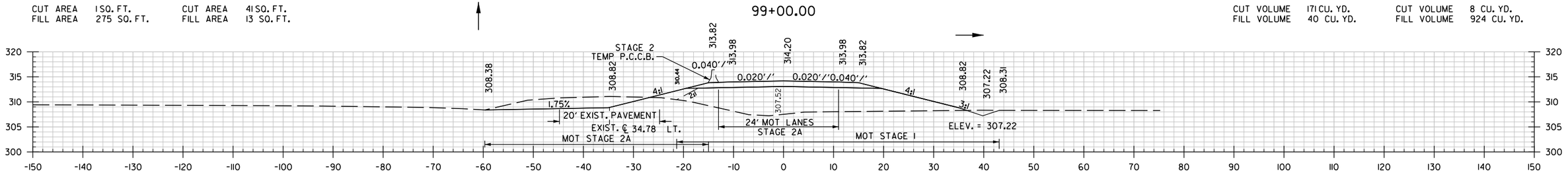
STA. 99+61.00
END SP. DITCH RT. -0.39%
BEGIN SP. DITCH RT. -0.25%
ELEV. = 306.58



CUT AREA 1 SQ. FT. CUT AREA 41 SQ. FT.
FILL AREA 275 SQ. FT. FILL AREA 13 SQ. FT.

99+00.00

CUT VOLUME 171 CU. YD. CUT VOLUME 8 CU. YD.
FILL VOLUME 40 CU. YD. FILL VOLUME 924 CU. YD.

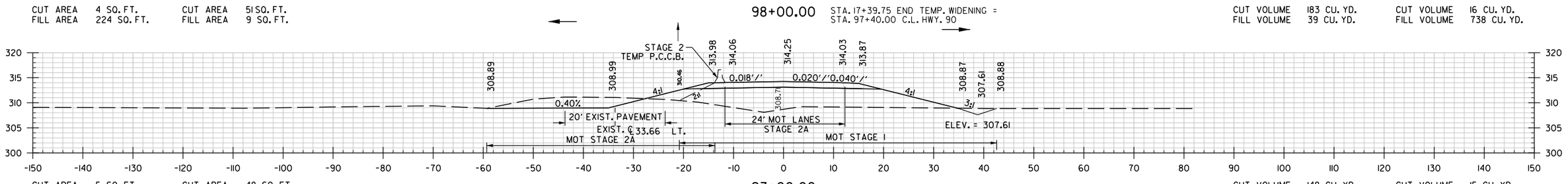


CUT AREA 4 SQ. FT. CUT AREA 51 SQ. FT.
FILL AREA 224 SQ. FT. FILL AREA 9 SQ. FT.

98+00.00

STA. 17+39.75 END TEMP. WIDENING =
STA. 97+40.00 C.L. HWY. 90

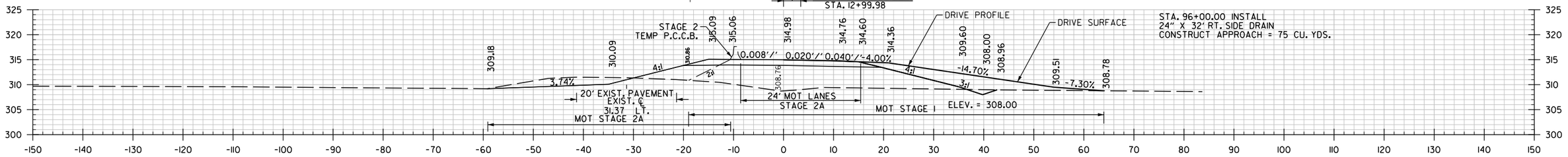
CUT VOLUME 183 CU. YD. CUT VOLUME 16 CU. YD.
FILL VOLUME 39 CU. YD. FILL VOLUME 738 CU. YD.



CUT AREA 5 SQ. FT. CUT AREA 48 SQ. FT.
FILL AREA 174 SQ. FT. FILL AREA 12 SQ. FT.

97+00.00

CUT VOLUME 148 CU. YD. CUT VOLUME 15 CU. YD.
FILL VOLUME 73 CU. YD. FILL VOLUME 672 CU. YD.

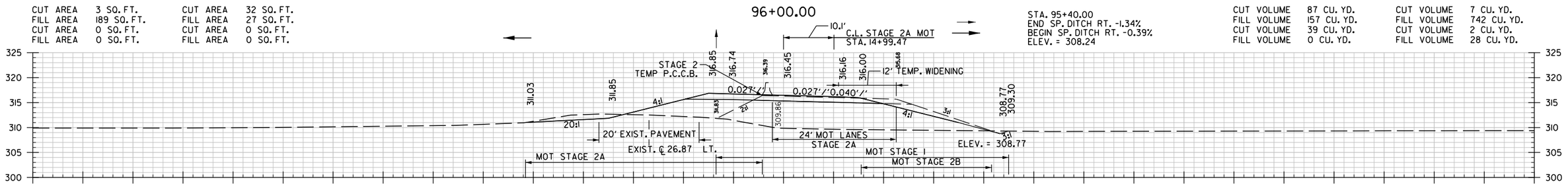


CUT AREA 3 SQ. FT. CUT AREA 32 SQ. FT.
FILL AREA 189 SQ. FT. FILL AREA 27 SQ. FT.
CUT AREA 0 SQ. FT. CUT AREA 0 SQ. FT.
FILL AREA 0 SQ. FT. FILL AREA 0 SQ. FT.

96+00.00

STA. 95+40.00
END SP. DITCH RT. -1.34%
BEGIN SP. DITCH RT. -0.39%
ELEV. = 308.24

CUT VOLUME 87 CU. YD. CUT VOLUME 7 CU. YD.
FILL VOLUME 157 CU. YD. FILL VOLUME 742 CU. YD.
CUT VOLUME 39 CU. YD. CUT VOLUME 2 CU. YD.
FILL VOLUME 0 CU. YD. FILL VOLUME 28 CU. YD.



CUT AREA 1 SQ. FT. CUT AREA 13 SQ. FT.
FILL AREA 212 SQ. FT. FILL AREA 58 SQ. FT.
CUT AREA 1 SQ. FT. CUT AREA 21 SQ. FT.
FILL AREA 15 SQ. FT. FILL AREA 0 SQ. FT.

95+00.00

CUT VOLUME 27 CU. YD. CUT VOLUME 8 CU. YD.
FILL VOLUME 224 CU. YD. FILL VOLUME 598 CU. YD.
CUT VOLUME 124 CU. YD. CUT VOLUME 7 CU. YD.
FILL VOLUME 0 CU. YD. FILL VOLUME 92 CU. YD.

STA. 95+00 TO STA. 99+00

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WORKSPACE: Stephane.Bossio
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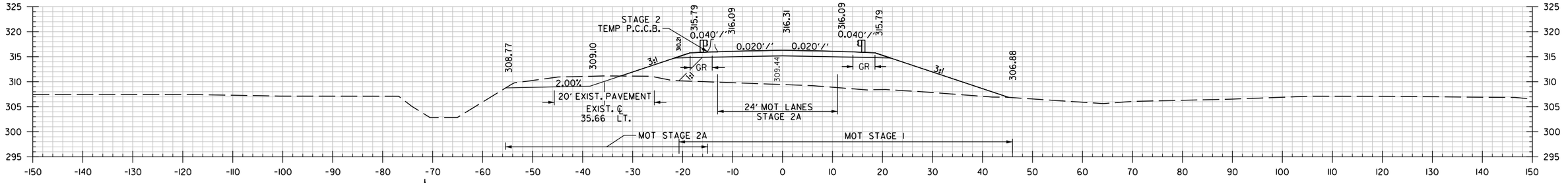
				6	ARK.			
				JOB NO.		101003	54	60
				(2)	CROSS SECTIONS			

STAGE 1
TEMP. WIDENING

STAGE 2A
STAGE 2B

STAGE 2A
STAGE 2B

STAGE 1
TEMP. WIDENING



CUT AREA 0 SQ. FT.
FILL AREA 304 SQ. FT.

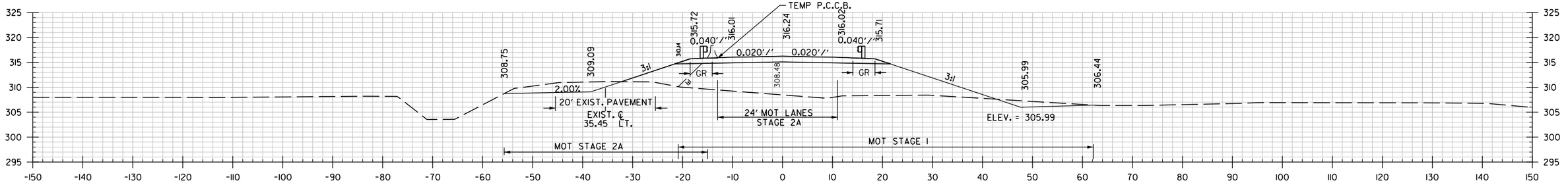
CUT AREA 32 SQ. FT.
FILL AREA 36 SQ. FT.

102+14.50
BEGIN BRIDGE

STA. 102+10.00
END SP. DITCH RT. -0.25%
ELEV. = 305.96

CUT VOLUME 120 CU. YD.
FILL VOLUME 19 CU. YD.

CUT VOLUME 1 CU. YD.
FILL VOLUME 166 CU. YD.



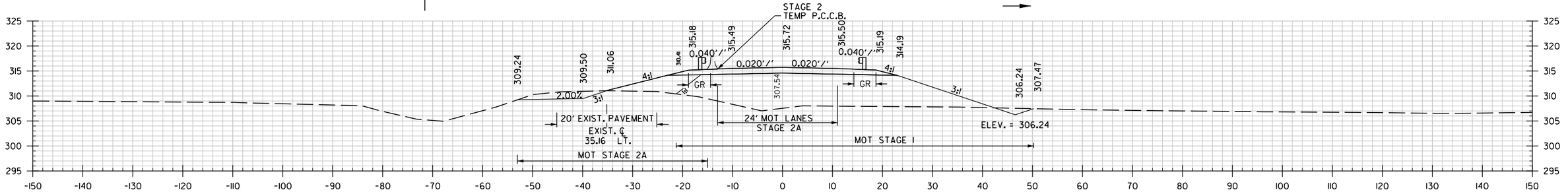
CUT AREA 5 SQ. FT.
FILL AREA 314 SQ. FT.

CUT AREA 33 SQ. FT.
FILL AREA 35 SQ. FT.

102+00.00

CUT VOLUME 94 CU. YD.
FILL VOLUME 132 CU. YD.

CUT VOLUME 20 CU. YD.
FILL VOLUME 1180 CU. YD.



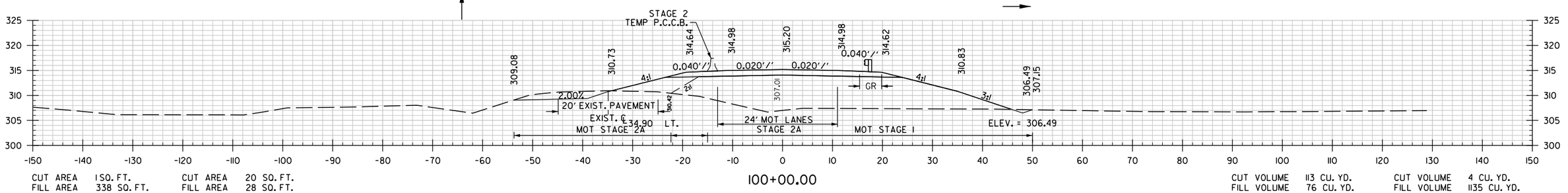
CUT AREA 5 SQ. FT.
FILL AREA 323 SQ. FT.

CUT AREA 18 SQ. FT.
FILL AREA 36 SQ. FT.

101+00.00

CUT VOLUME 70 CU. YD.
FILL VOLUME 119 CU. YD.

CUT VOLUME 12 CU. YD.
FILL VOLUME 1224 CU. YD.



CUT AREA 150 SQ. FT.
FILL AREA 338 SQ. FT.

CUT AREA 20 SQ. FT.
FILL AREA 28 SQ. FT.

100+00.00

CUT VOLUME 113 CU. YD.
FILL VOLUME 76 CU. YD.

CUT VOLUME 4 CU. YD.
FILL VOLUME 1135 CU. YD.

STA. 100+00 TO STA. 102+15

Stephane.Bossio 11/5/2025 12:27 PM
WORKSPACE: Stephane.Bossio
Y:\Projects\ARDOT_175337_101003_Eossis Creek Str & Apprs\Design\CIVIL\Drawings\R101003.21_CX_001.dgn
REVISED DATE: $$REVDATE$$

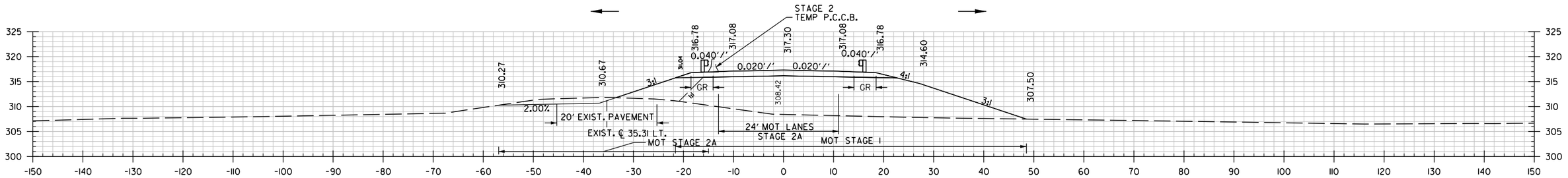
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101003	55	60
				(2)	CROSS SECTIONS			

STAGE 1
TEMP. WIDENING

STAGE 2A
STAGE 2B

STAGE 2A
STAGE 2B

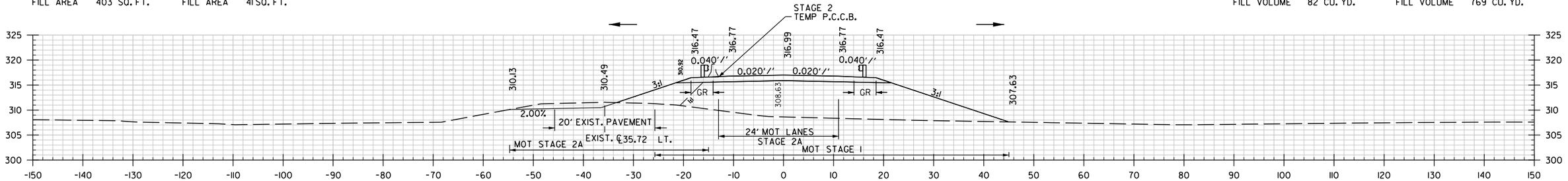
STAGE 1
TEMP. WIDENING



CUT AREA 0 SQ. FT. CUT AREA 19 SQ. FT.
FILL AREA 403 SQ. FT. FILL AREA 415 SQ. FT.

104+00.00

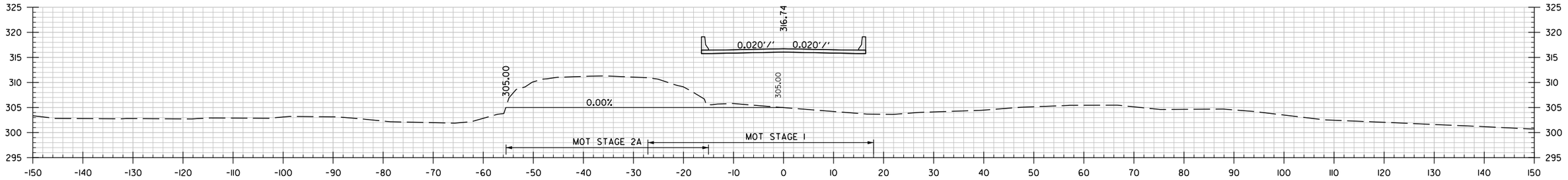
CUT VOLUME 67 CU. YD. CUT VOLUME 0 CU. YD.
FILL VOLUME 82 CU. YD. FILL VOLUME 769 CU. YD.



CUT AREA 0 SQ. FT. CUT AREA 17 SQ. FT.
FILL AREA 359 SQ. FT. FILL AREA 40 SQ. FT.

103+45.50
END BRIDGE

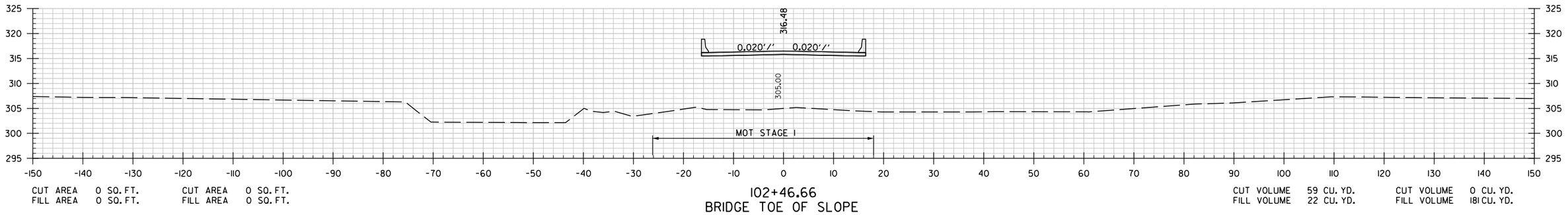
CUT VOLUME 428 CU. YD. CUT VOLUME 0 CU. YD.
FILL VOLUME 37 CU. YD. FILL VOLUME 325 CU. YD.



CUT AREA 0 SQ. FT. CUT AREA 0 SQ. FT.
FILL AREA 0 SQ. FT. FILL AREA 0 SQ. FT.

102+96.50
BRIDGE TOE OF SLOPE

CUT VOLUME 0 CU. YD. CUT VOLUME 0 CU. YD.
FILL VOLUME 0 CU. YD. FILL VOLUME 0 CU. YD.



CUT AREA 0 SQ. FT. CUT AREA 0 SQ. FT.
FILL AREA 0 SQ. FT. FILL AREA 0 SQ. FT.

102+46.66
BRIDGE TOE OF SLOPE

CUT VOLUME 59 CU. YD. CUT VOLUME 0 CU. YD.
FILL VOLUME 22 CU. YD. FILL VOLUME 181 CU. YD.

STA. 102+47 TO STA. 104+00

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REVISED DATE: $$REVDATE$$

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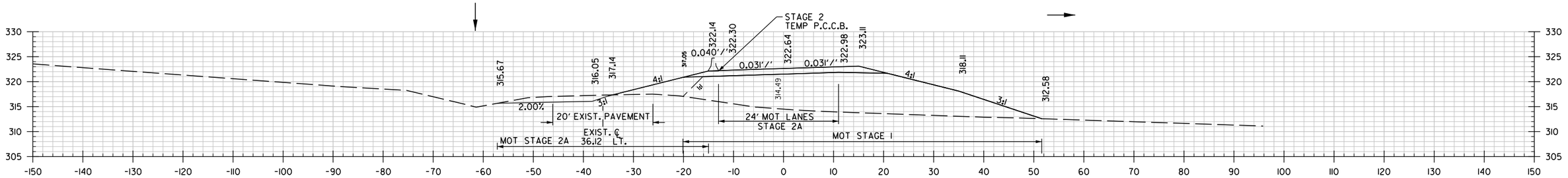
				6	ARK.			
				JOB NO.		101003	56	60
				(2)	CROSS SECTIONS			

STAGE 1
TEMP. WIDENING

STAGE 2A
STAGE 2B

STAGE 2A
STAGE 2B

STAGE 1
TEMP. WIDENING



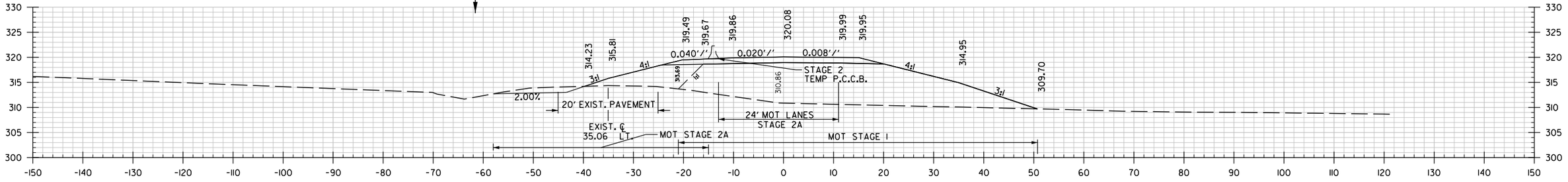
CUT AREA 0 SQ. FT.
FILL AREA 400 SQ. FT.

CUT AREA 20 SQ. FT.
FILL AREA 32 SQ. FT.

107+00.00

CUT VOLUME 63 CU. YD.
FILL VOLUME 25 CU. YD.

CUT VOLUME 0 CU. YD.
FILL VOLUME 297 CU. YD.



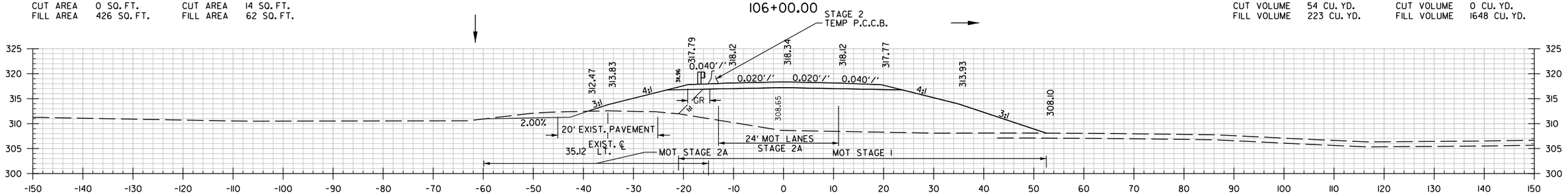
CUT AREA 0 SQ. FT.
FILL AREA 426 SQ. FT.

CUT AREA 14 SQ. FT.
FILL AREA 62 SQ. FT.

106+00.00

CUT VOLUME 54 CU. YD.
FILL VOLUME 223 CU. YD.

CUT VOLUME 0 CU. YD.
FILL VOLUME 1648 CU. YD.



CUT AREA 0 SQ. FT.
FILL AREA 464 SQ. FT.

CUT AREA 15 SQ. FT.
FILL AREA 59 SQ. FT.

105+00.00

CUT VOLUME 63 CU. YD.
FILL VOLUME 185 CU. YD.

CUT VOLUME 0 CU. YD.
FILL VOLUME 1606 CU. YD.

STA. 105+00 TO STA. 107+00

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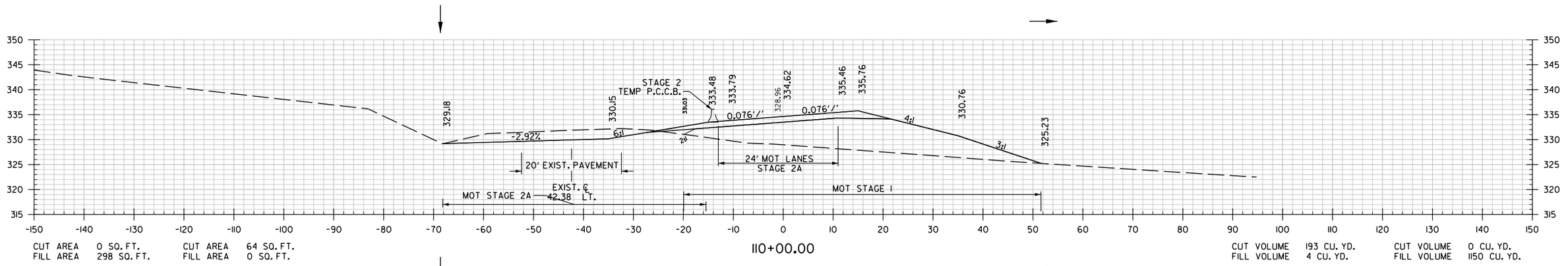
				6	ARK.			
				JOB NO.		101003	57	60
				(2)	CROSS SECTIONS			

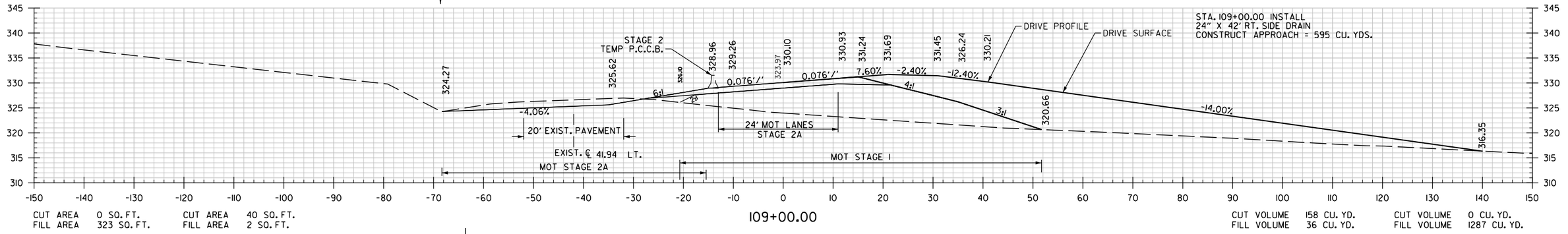
STAGE 1
TEMP. WIDENING

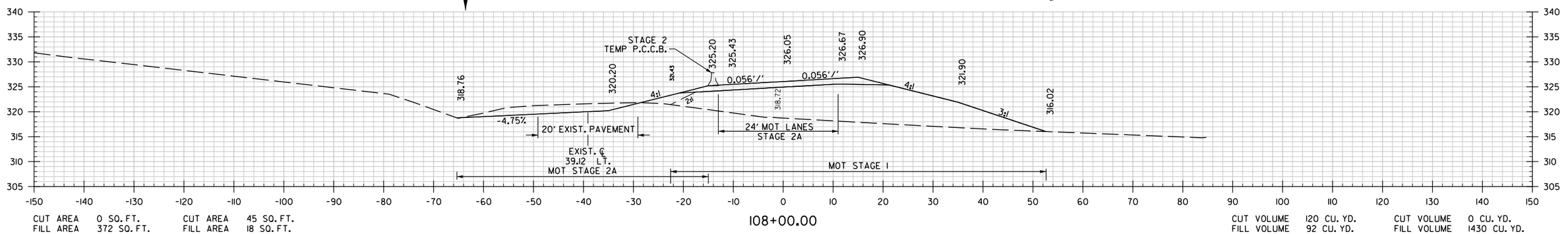
STAGE 2A
STAGE 2B

STAGE 2A
STAGE 2B

STAGE 1
TEMP. WIDENING







STA. 108+00 TO STA. 110+00

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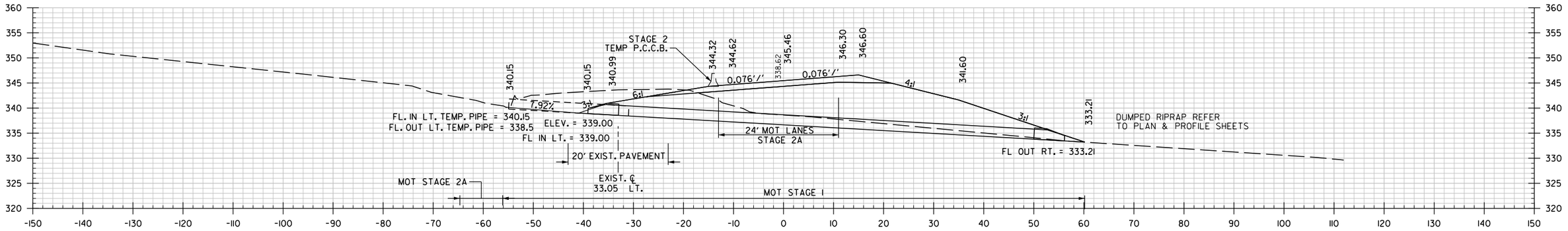
				6	ARK.			
				JOB NO.		101003	58	60
				(2)	CROSS SECTIONS			

STAGE 1 TEMP. WIDENING
STAGE 2A
STAGE 2B

STA. 112+15.00 IN PLACE
18" X 43' R.C. PIPE CULVERT
WITH HDWLS. LT. & RT.
REMOVE AND INSTALL
24" X 83' PIPE CULVERT
WITH FES LT. & RT.
Q25 = 17.1 CFS D.A. = 7.55 ACRES
24" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 83 LIN. FT.
24" ASPHALT CSP (TYPE 2 BEDDING) = 89 LIN. FT.
24" ALUM. CSP (TYPE 2 BEDDING) = 89 LIN. FT.
24" POLYMER CSP (TYPE 2 BEDDING) = 89 LIN. FT.
24" HDPE PIPE (TYPE 2 BEDDING) = 89 LIN. FT.
24" PPL PIPE (TYPE 2 BEDDING) = 89 LIN. FT.
24" PVC (TYPE 2 BEDDING) = 89 LIN. FT.
24" FES = 2 EACH

STAGE 2A
STAGE 2B
STAGE 1 TEMP. WIDENING

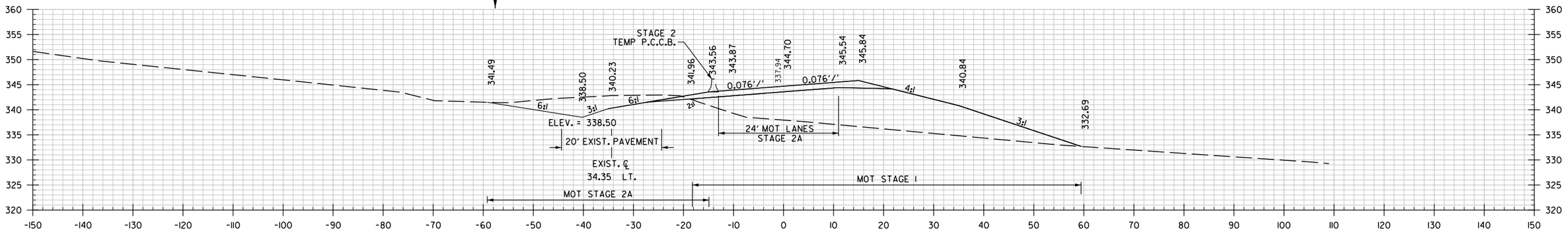
STA. 112+15.00
END SP. DITCH LT. 3.32%
BEGIN SP. DITCH LT. 7.39%
ELEV. = 339.00



CUT AREA 3 SQ. FT. FILL AREA 387 SQ. FT.
CUT AREA 85 SQ. FT. FILL AREA 0 SQ. FT.

112+15.00

CUT VOLUME 45 CU. YD. FILL VOLUME 0 CU. YD.
CUT VOLUME 1 CU. YD. FILL VOLUME 215 CU. YD.

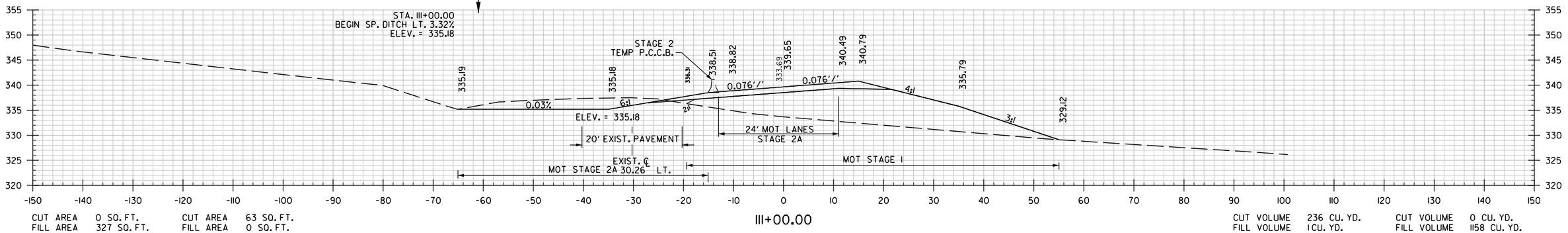


CUT AREA 1 SQ. FT. FILL AREA 387 SQ. FT.
CUT AREA 76 SQ. FT. FILL AREA 0 SQ. FT.

112+00.00

CUT VOLUME 257 CU. YD. FILL VOLUME 0 CU. YD.
CUT VOLUME 3 CU. YD. FILL VOLUME 1323 CU. YD.

STA. 111+00.00
BEGIN SP. DITCH LT. 3.32%
ELEV. = 335.18



CUT AREA 0 SQ. FT. FILL AREA 327 SQ. FT.
CUT AREA 63 SQ. FT. FILL AREA 0 SQ. FT.

111+00.00

CUT VOLUME 236 CU. YD. FILL VOLUME 1 CU. YD.
CUT VOLUME 0 CU. YD. FILL VOLUME 1158 CU. YD.

STA. 111+00 TO STA. 112+15

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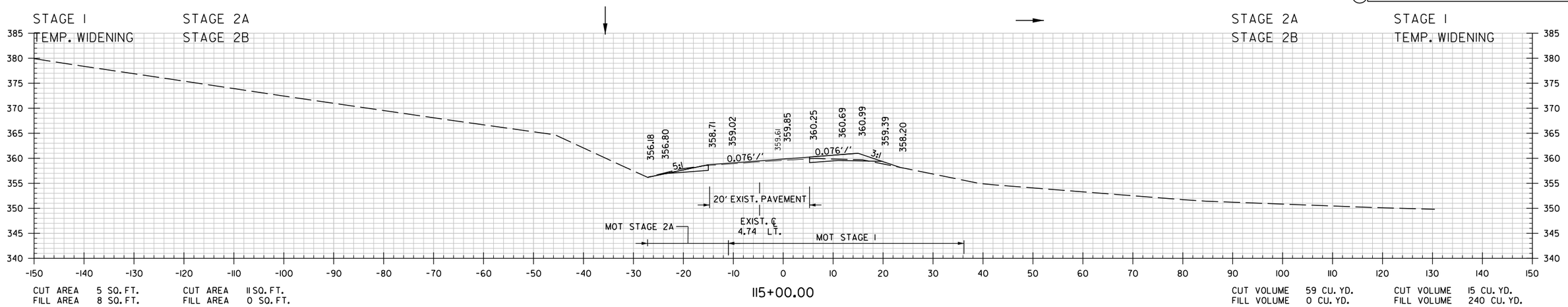
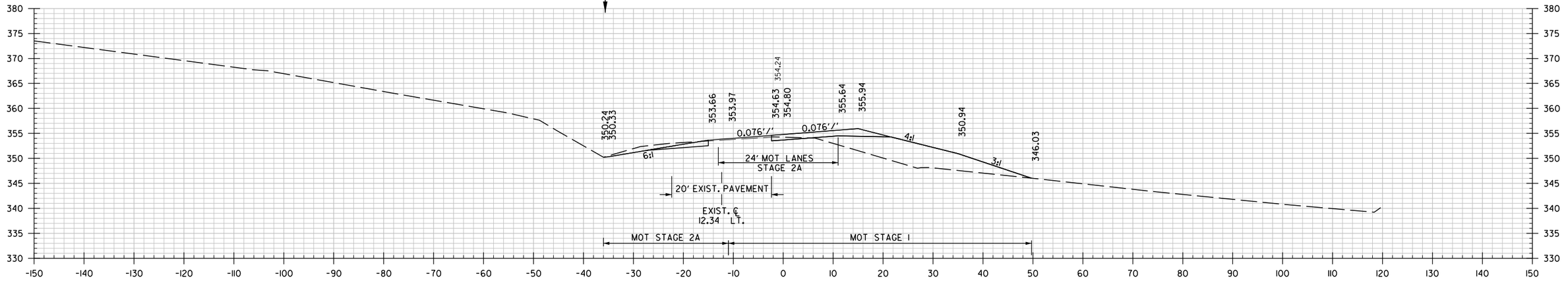
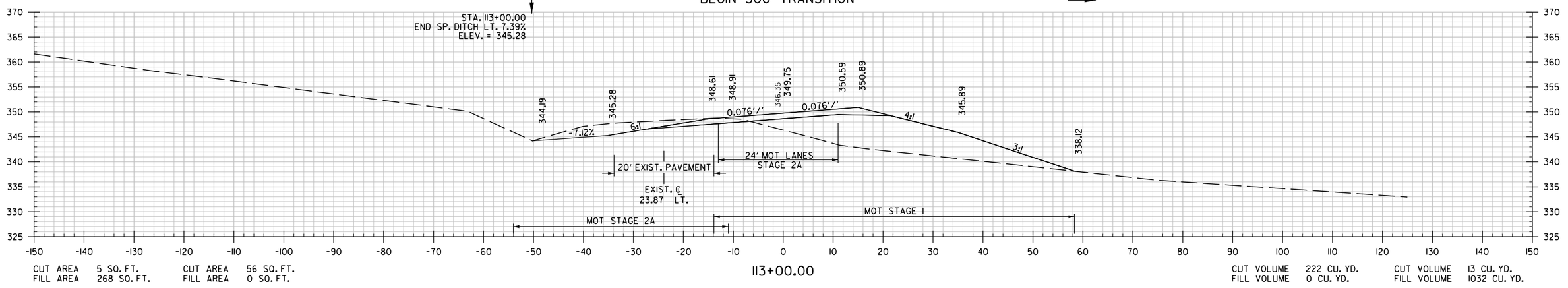
				JOB NO.		101003	59	60
				(2)	CROSS SECTIONS			







STA. 113+00 TO STA. 115+00

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				6	ARK.			
				JOB NO.		101003	60	60
				(2)	CROSS SECTIONS			

STAGE 1
TEMP. WIDENING

STAGE 2A
STAGE 2B

STAGE 2A
STAGE 2B

STAGE 1
TEMP. WIDENING

STA. 116+00 TO STA. 117+00

Stephanie.Bossio 11/5/2025 12:28 PM
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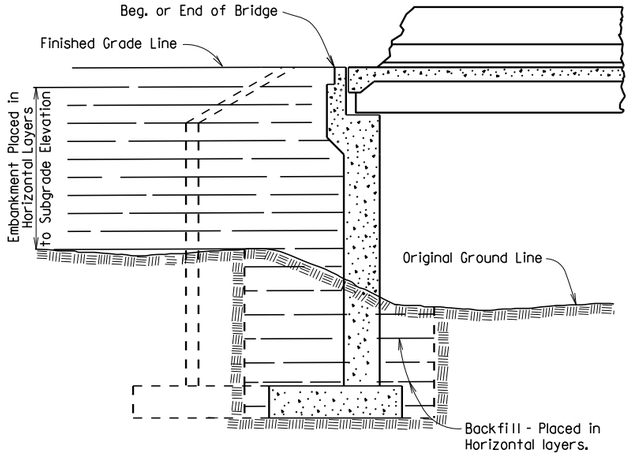
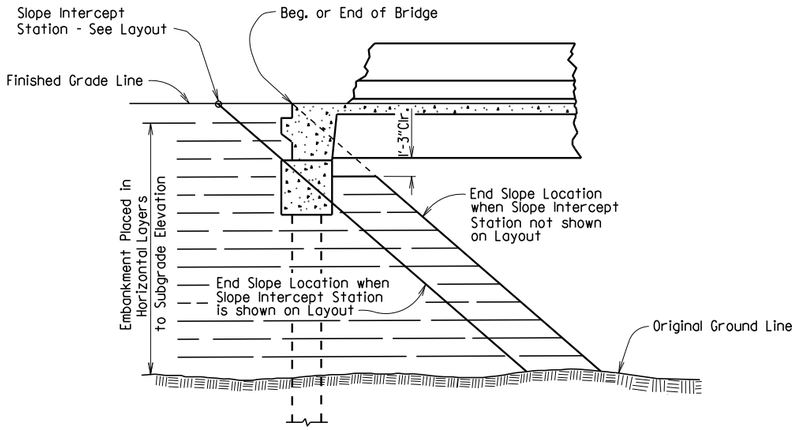
				6	ARK.			
				JOB NO.				

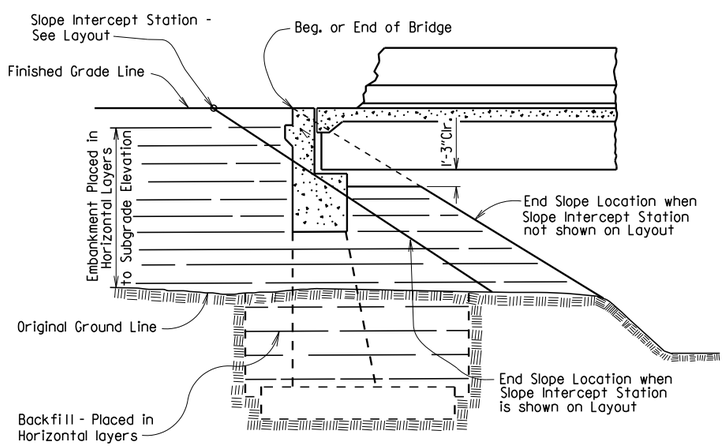
1 EMBANKMENT & BACKFILL 55000



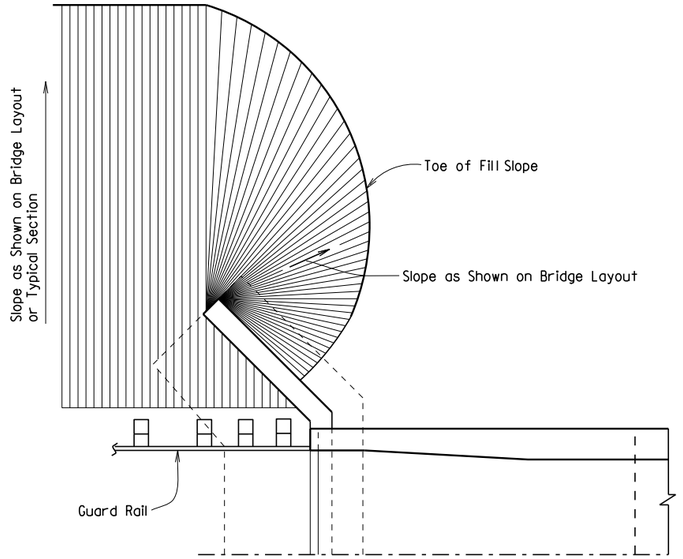
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT VERTICAL WALL ABUTMENTS



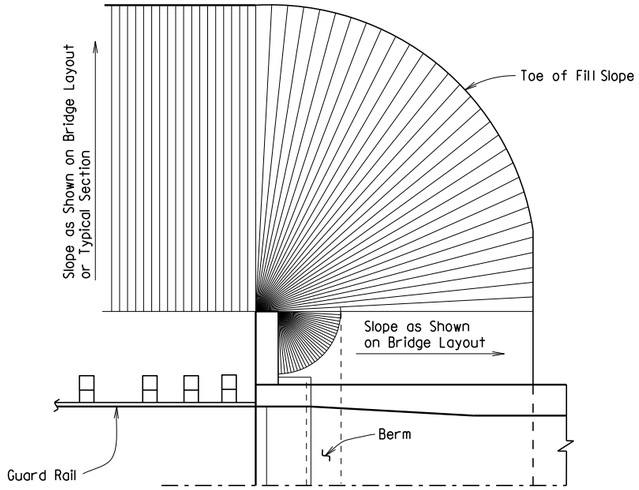
EMBANKMENT CONSTRUCTION AT SPILL-THROUGH PILE END BENTS



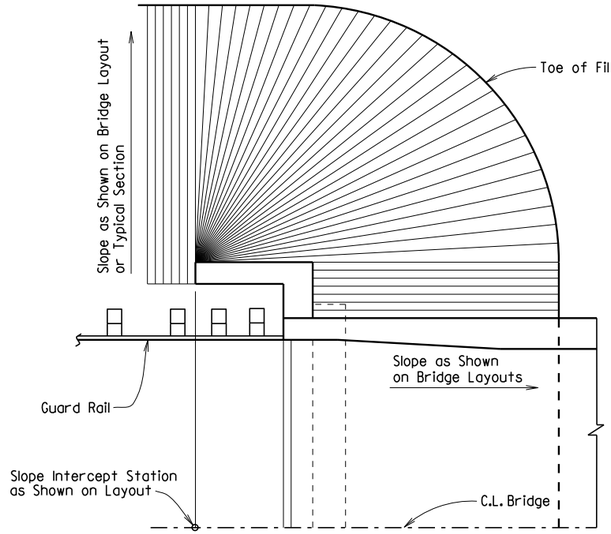
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT SPILL-THROUGH END BENTS



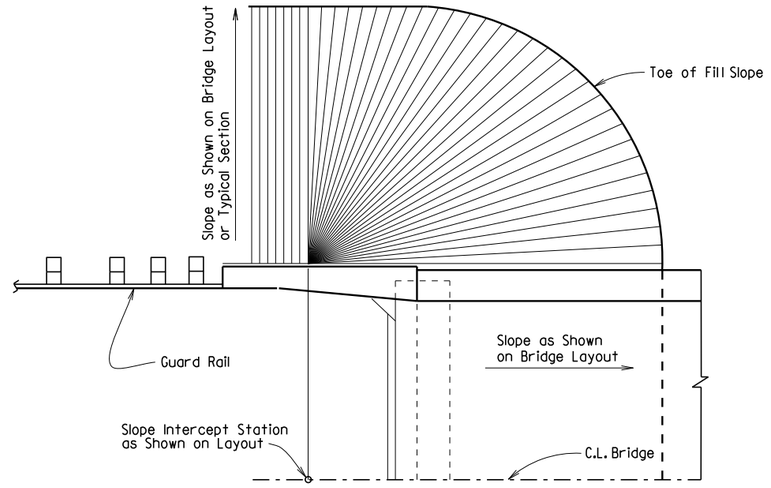
VERTICAL WALL ABUTMENTS



SPILL-THROUGH END BENTS WITH STUB WING



SPILL-THROUGH END BENTS WITH TURNBACK WING



SPILL-THROUGH END BENTS WITH TRANSITION WING

METHOD OF DETERMINING FILL SLOPE LOCATION AT BRIDGE ENDS

GENERAL NOTES

The Bridge End Embankment shall be defined as a section of embankment, not less than 20 feet long adjacent to the bridge end, together with the side slopes and slopes under the bridge end including around the end of wingwalls. Embankment adjacent to structures shall be constructed in 6 inch horizontal layers (loose measure) and compacted by the use of mechanical equipment to the satisfaction of the Engineer. Refer to Subsections 210.09, 210.10 and 801.08 for construction requirements.

STANDARD DETAILS FOR EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55000.dgn

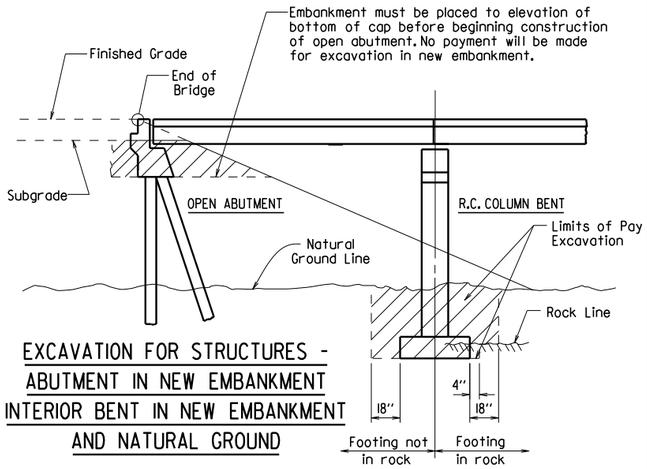
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE

DESIGNED BY: STD. DATE: -

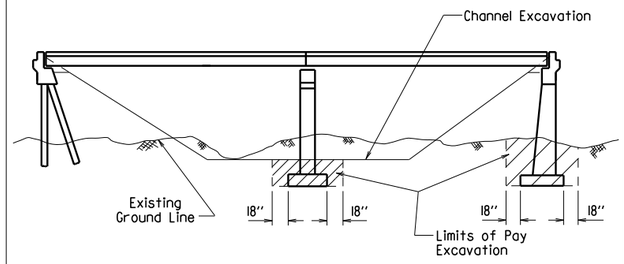
DRAWING NO. 55000

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

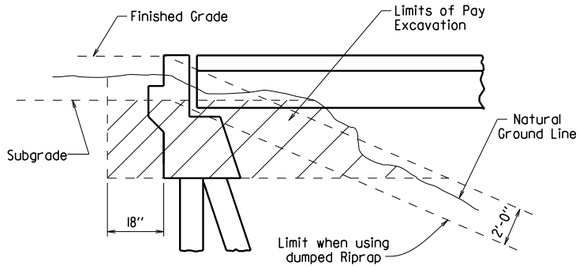
1 RIPRAP & EXCAV. 55001



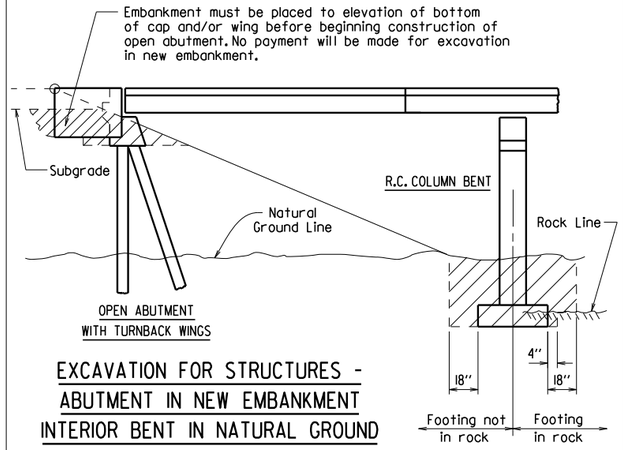
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NEW EMBANKMENT AND NATURAL GROUND



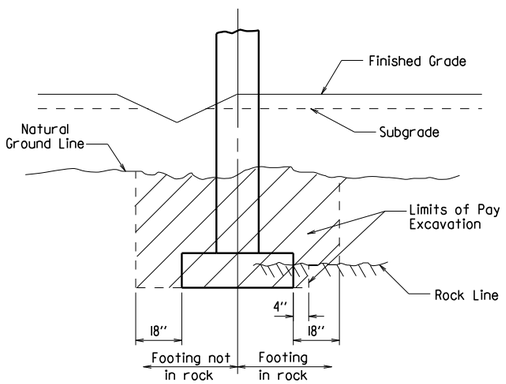
EXCAVATION FOR STRUCTURES - BRIDGE LOCATION WITH DESIGNATED CHANNEL CHANGE



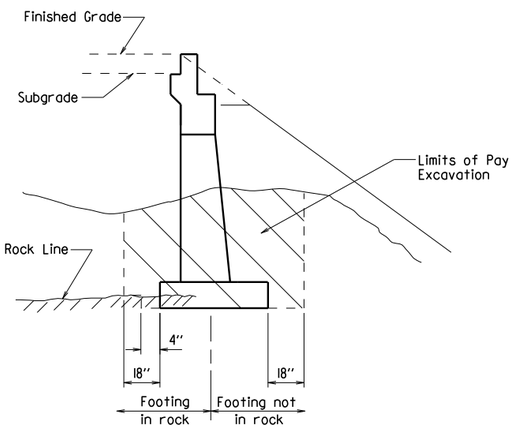
EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND



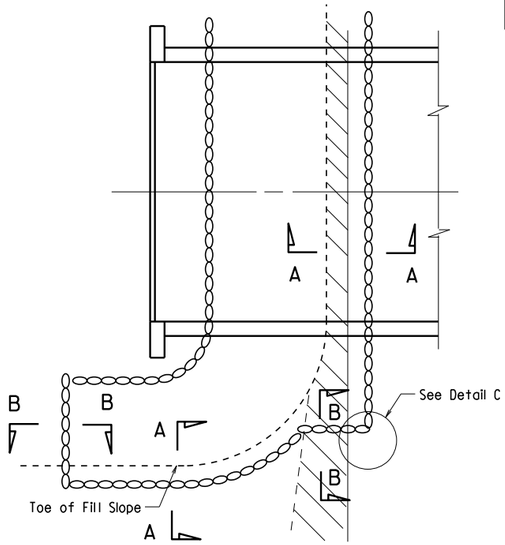
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NATURAL GROUND



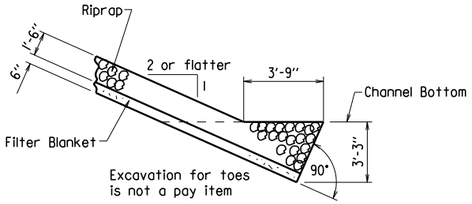
EXCAVATION FOR STRUCTURES - BENT IN ROADWAY FILL SECTION AND NATURAL GROUND



EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND AND NEW EMBANKMENT

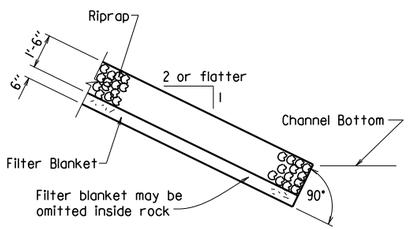


PLAN OF DUMPED RIPRAP



SECTION A-A

(Toe Excavation in Soil)



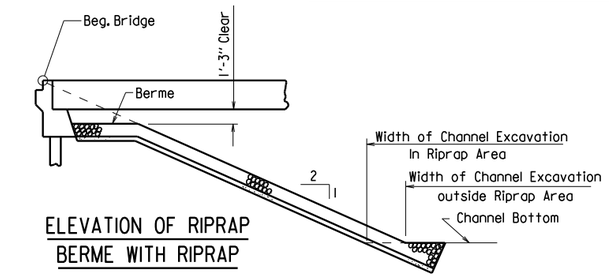
SECTION A-A

(Toe Excavation in Rock)

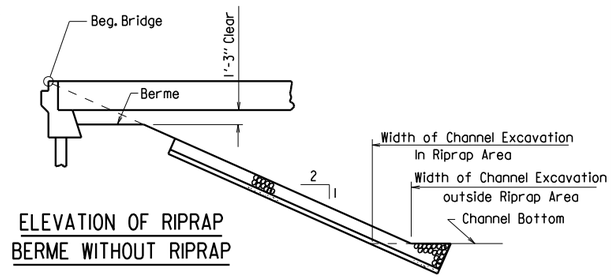
Note : Use this type of toe when rock is encountered which is in a stable condition.

Note : In lieu of an aggregate filter blanket, a synthetic fiber geotextile fabric complying with the requirements of Subsection 816.02(e) may be used.

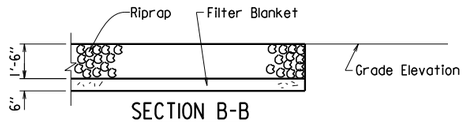
Note : Details for computing excavation for structures are included for information as to how plan quantities were calculated and for use when adjusting quantities when changing footing elevation.



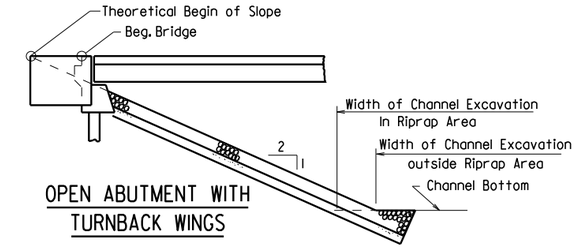
ELEVATION OF RIPRAP BERME WITH RIPRAP



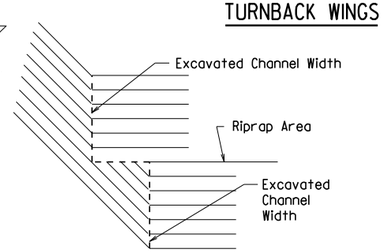
ELEVATION OF RIPRAP BERME WITHOUT RIPRAP



SECTION B-B



OPEN ABUTMENT WITH TURNBACK WINGS



DETAIL C

STANDARD DETAILS FOR DUMPED RIPRAP AND FILTER BLANKET AND COMPUTING EXCAVATION FOR STRUCTURES

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55001.dgn

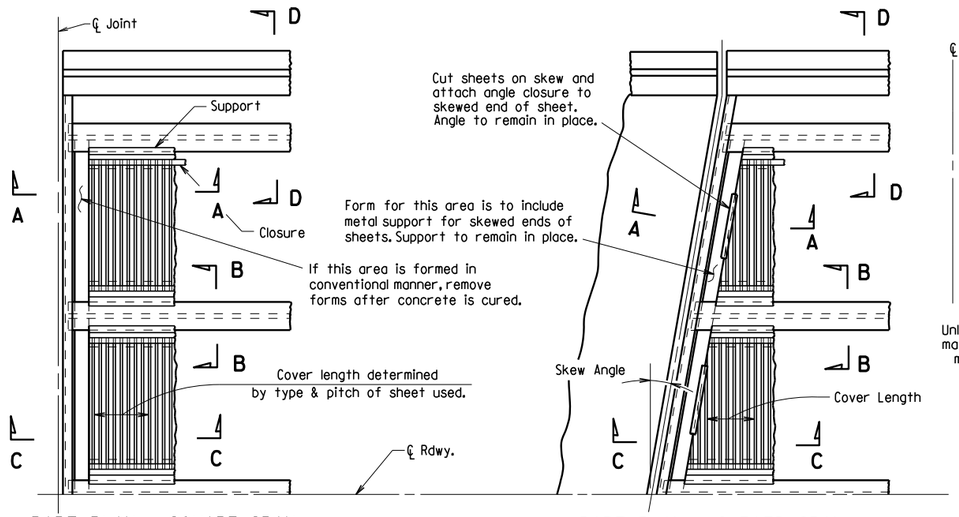
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE

DESIGNED BY: STD. DATE:

DRAWING NO. 55001

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3/24/16				6	ARK.			
				JOB NO.				

① BRIDGE DECK FORMS 55005

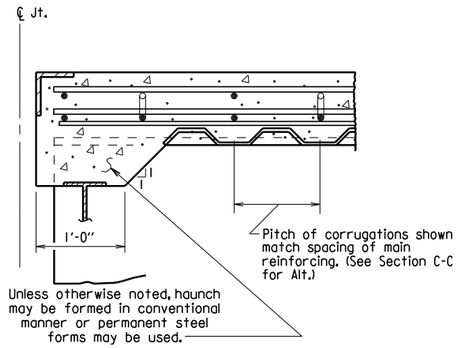


PART PLAN - SQUARE SPAN

3/8" = 1'-0"

PART PLAN - SKEWED SPAN

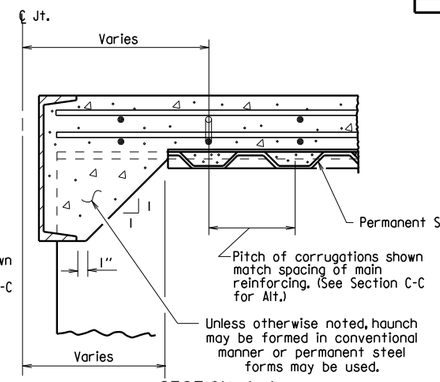
3/8" = 1'-0"



SECTION A-A

N.T.S.

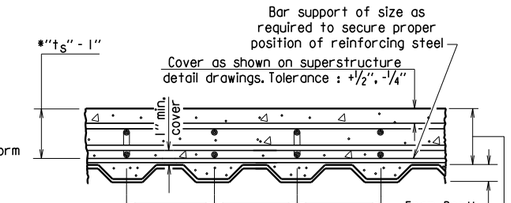
(Angle at end of span)



SECTION A-A

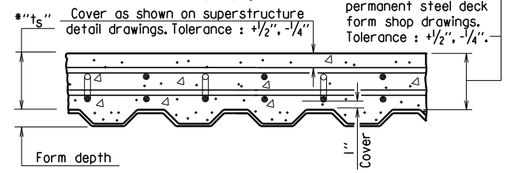
N.T.S.

(Channel at end of span)



SECTION C-C

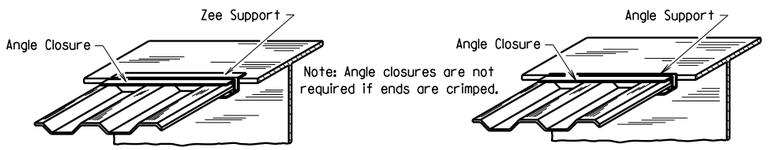
1" = 1'-0"



SECTION C-C - ALTERNATE

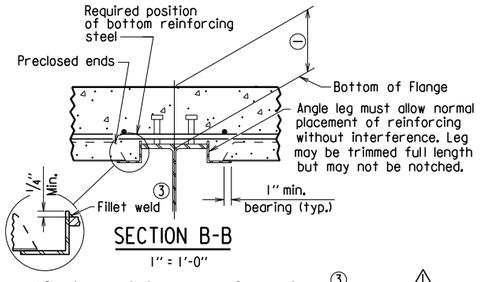
1" = 1'-0"

(Applicable when corrugations do not match spacing of main reinforcement)



SKETCH OF PERMISSIBLE SUPPORTS

N.T.S.

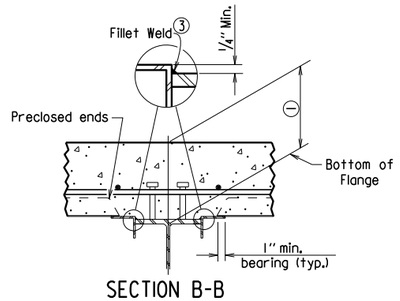


SECTION B-B

1" = 1'-0"

(Showing permissible support for tension flange where shear connectors are used, and for all compression flanges)

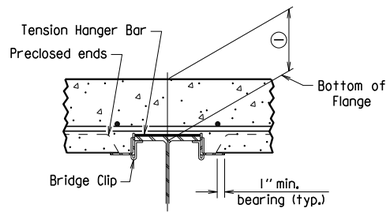
③ ⚠ Minimum weld: 1/8" x 1" @ 18". More weld may be required; maximum length per weld = 1 1/2" (typ.)



SECTION B-B

1" = 1'-0"

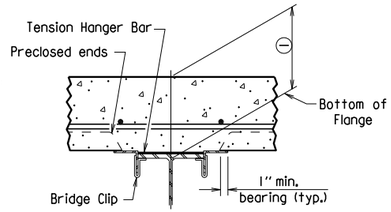
(Showing permissible support for tension flange where shear connectors are used and for all compression flanges)



SECTION B-B

1" = 1'-0"

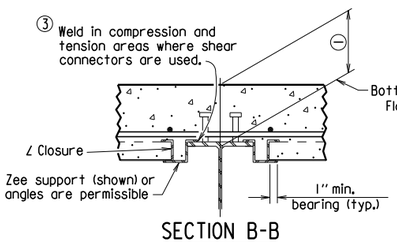
(Showing permissible support for tension flange where shear connectors are not used)



SECTION B-B

1" = 1'-0"

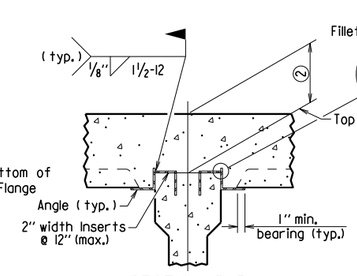
(Showing permissible support for tension flange where shear connectors are not used)



SECTION B-B

1" = 1'-0"

(Showing ∠ Closure)

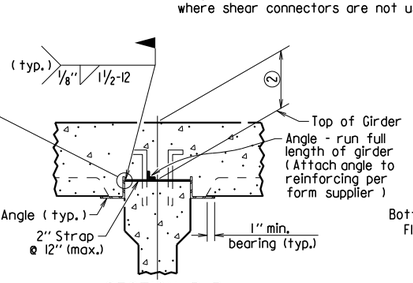


SECTION B-B

(FOR CONCRETE GIRDERS)

1" = 1'-0"

(Showing support by Insert cast in girder)

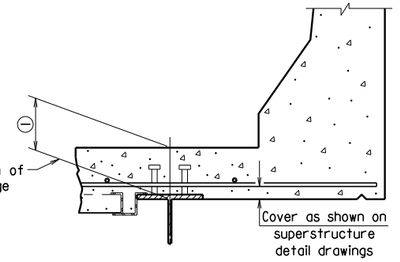


SECTION B-B

(FOR CONCRETE GIRDERS)

1" = 1'-0"

(Showing support by Strap)



SECTION D-D

1" = 1'-0"

Note: Only Bottom Reinforcing is shown.

① Distance from top of slab to bottom of top flange as measured at centerline girder and as shown on superstructure detail drawings. This dimension may vary within the following limits to maintain the grade and slab thickness tolerances : Minimum - occurs when either the top flange or the support angle leg contacts the bottom reinforcing steel; Maximum = t_S + 1 3/4" + flange thickness. See Section C-C for slab thickness tolerance between adjacent girder flanges.

② Distance from top of slab to top of girder as measured at centerline girder and as shown on superstructure detail drawings. This dimension may vary within the following limits to maintain the grade and slab thickness tolerances : Minimum - occurs when either the top of girder or the support angle leg contacts the bottom reinforcing steel; Maximum - value shown on the superstructure detail drawings when removable forms are used. See Section C-C for slab thickness tolerance between adjacent girder flanges.

⚠ Revised weld dimension by KWY, Ck'd. by BEF, 3/24/16.

*t_S = slab thickness as shown on superstructure detail drawings.

GENERAL NOTES

Permanent steel deck forms may be used at the Contractor's option and shall be at no additional cost to the Department. Such use may result in changes to the dead load deflection of the girder. Any cost for adjustments due to a change in the dead load deflection will be borne by the Contractor. Payment for deck concrete and structural steel will not be increased due to use of permanent steel deck forms.

Permanent steel deck forms shall conform to Subsection 802.14(b). Detailed plans, including detailed calculations and manufacturer's technical brochure, shall be submitted to and approved by the Engineer before work of forming the bridge deck is started.

Welding of form supports to the tension flange of steel girders will be permitted only in areas where shear connectors are used. When welding is not allowed, the method of fastening Z or ∠ supports to the flange must be approved by the Engineer.

Form sheets shall be fastened to supporting members and to each other with galvanized metal screws sufficient in size and number to provide a secure attachment. Alternate methods of attachment must be approved by the Engineer.

When the pitch of form corrugations match the reinforcing spacing, transversely align form sheets across the bridge to maintain the correct orientation of continuous reinforcing bars in the corrugations.

Bar support rods, when used, shall be sized and spaced to adequately support the bottom reinforcing mat at the required position.

High chairs shall be sized to support the top mat of reinforcing at the proper position. High chairs shall be placed at locations shown on the detail drawings.

Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition), with applicable Supplemental Specifications and Special Provisions.

STANDARD DETAILS FOR PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55005.dgn

CHECKED BY: BEF DATE: 2-27-2014 SCALE: NONE

DESIGNED BY: STD. DATE: —

DRAWING NO. 55005

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

STANDARD GENERAL NOTES
FOR STEEL BRIDGE STRUCTURES

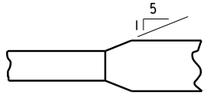
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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

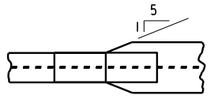
PRINT DATE: 11/7/2019

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			

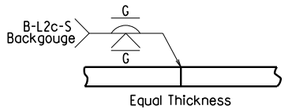


Plan-Unequal Width (Flg.)

FLANGE SPLICE

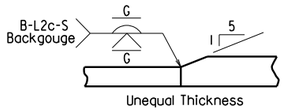


FLANGE SPLICE AT UNEQUAL BOTTOM FLANGE WIDTHS



Equal Thickness

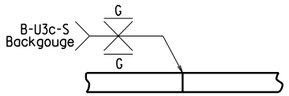
WEB & FLANGE SPLICE



Unequal Thickness

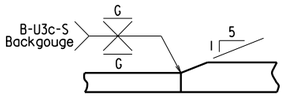
FLANGE SPLICE

(Use when Base Metal Thickness is Equal to or Less than 2")



Equal Thickness

WEB & FLANGE SPLICE

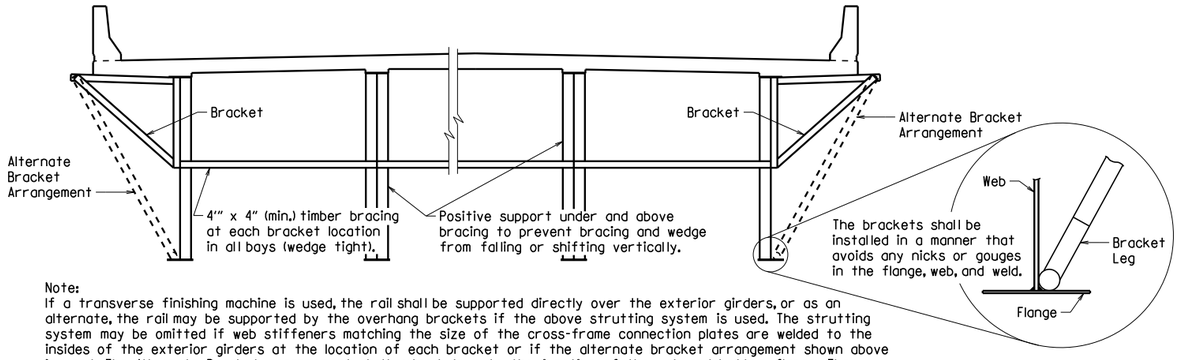


Unequal Thickness

FLANGE SPLICE

(Use when Base Metal Thickness is Greater than 2")

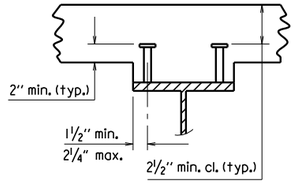
DETAILS OF WELDED SPLICES FOR PLATE GIRDERS



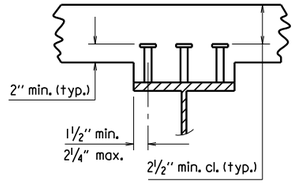
Note:
If a transverse finishing machine is used, the rail shall be supported directly over the exterior girders, or as an alternate, the rail may be supported by the overhang brackets if the above strutting system is used. The strutting system may be omitted if web stiffeners matching the size of the 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)



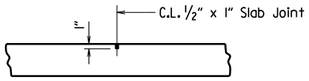
2 STUDS PER ROW



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.

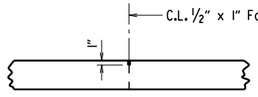
SHEAR CONNECTOR DETAIL



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.

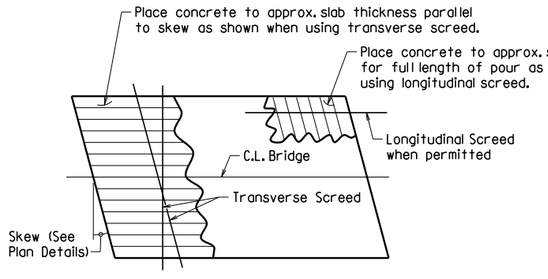
ADDITIONAL NOTES IF SIDEWALKS OR RAISED MEDIANS ARE REQUIRED:
Slab Joints shall be installed before the sidewalk or raised median is poured. After installation of the joint in the sidewalk or raised median and prior to pouring the parapet rail, the joint sealer shall be placed extending across the deck 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



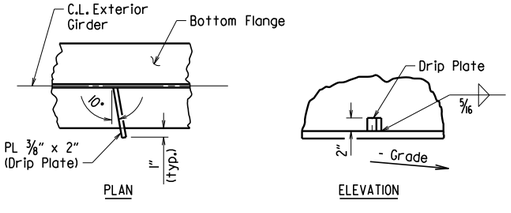
Use ½" x 1" Type 3 or 4 Joint Sealer. See Subsections 501.02(h) and 501.05(j). Backer Rod filler will not be required. Joint sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. This joint shall be formed. Seal color shall be gray or other color similar to concrete.

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

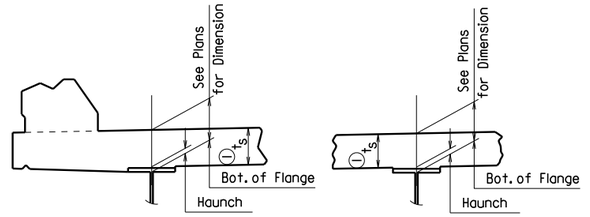
Drip Plate to be welded to the outer side of the bottom flange of the exterior girders.

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

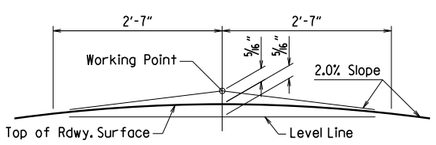
INTERIOR BEAM OR GIRDER

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.

DRAWN BY: JYP DATE: 2/11/2016 FILENAME: b55007.dgn

CHECKED BY: AMS DATE: 2/11/2016 SCALE: No Scale

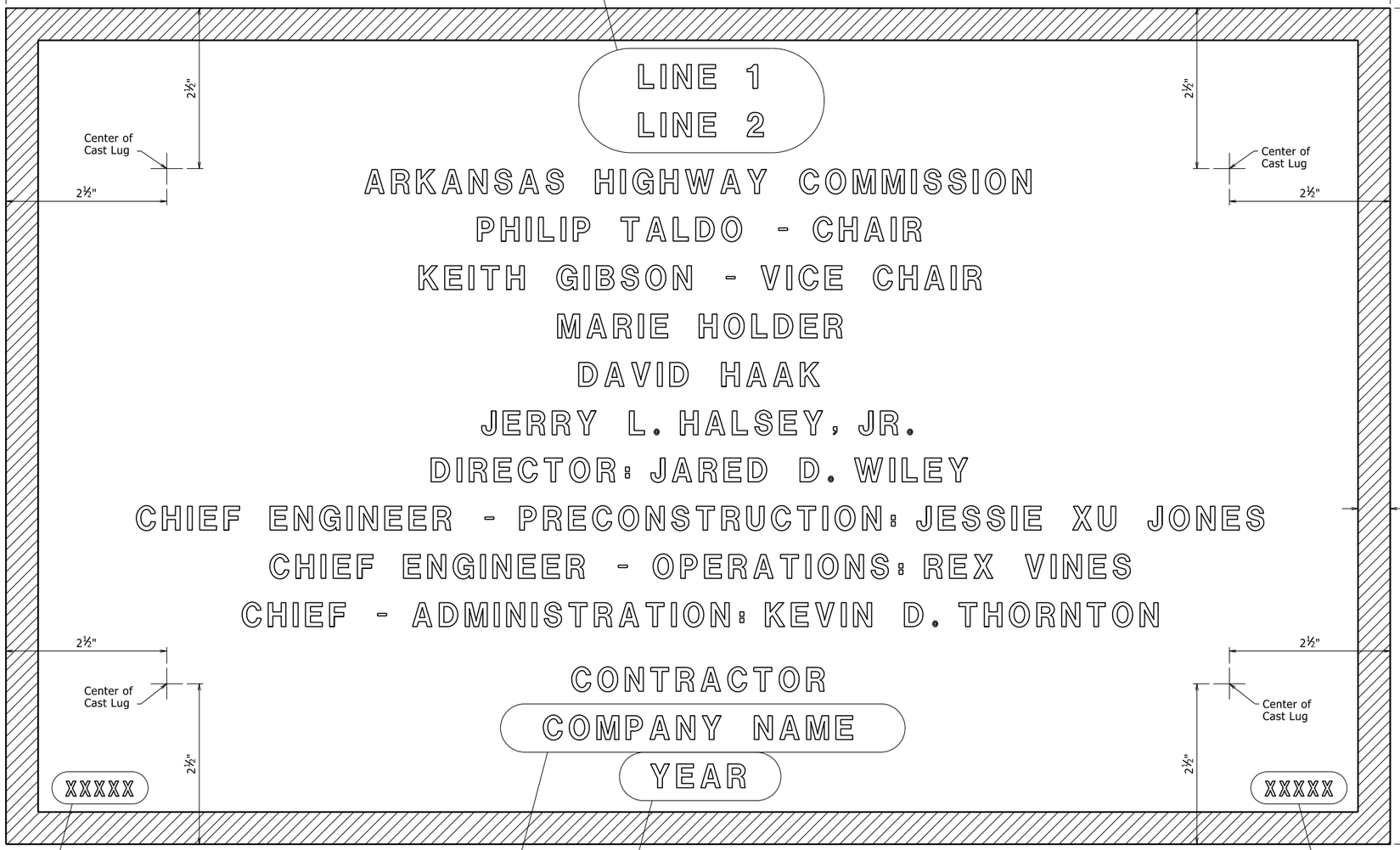
DESIGNED BY: STD. DATE: —

DRAWING NO. 55007

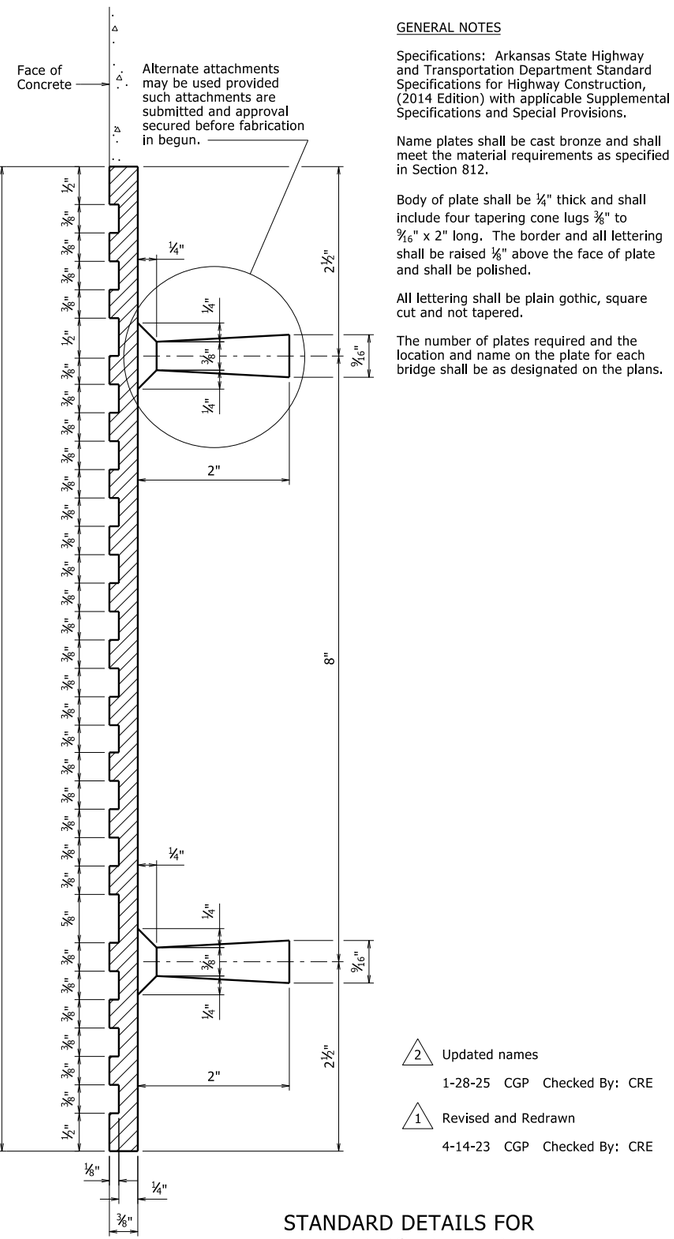
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
4-14-23		6	ARK.			
1-28-25		TYPE D NAME PLATE - 55010				

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		



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.

2 Updated names
1-28-25 CGP Checked By: CRE

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.

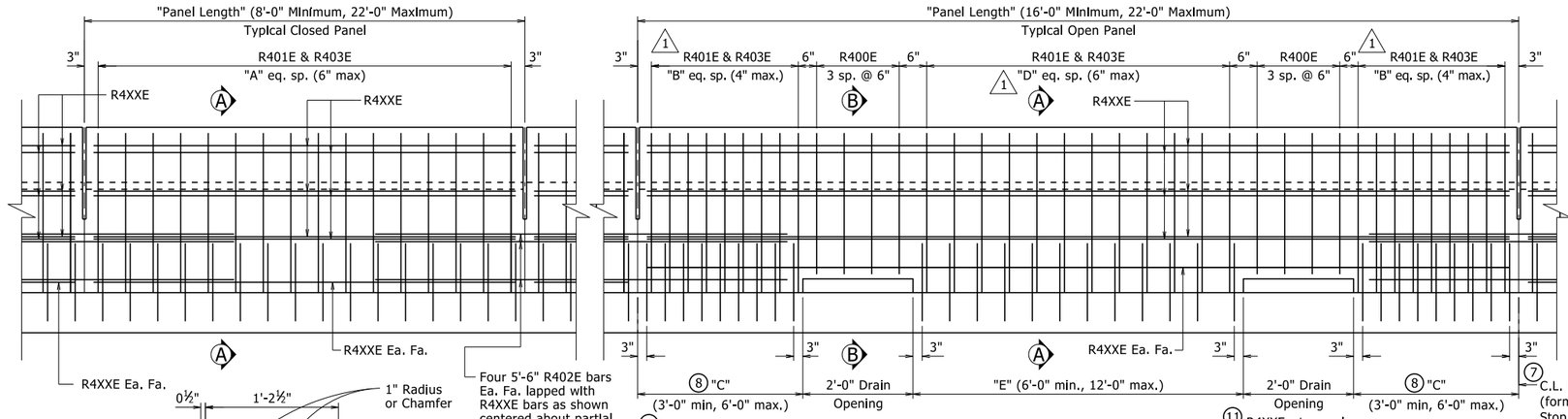
DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55010.dgn
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE
DESIGNED BY: STD. DATE:

DRAWING NO. 55010

PRINT DATE: 1/28/2025

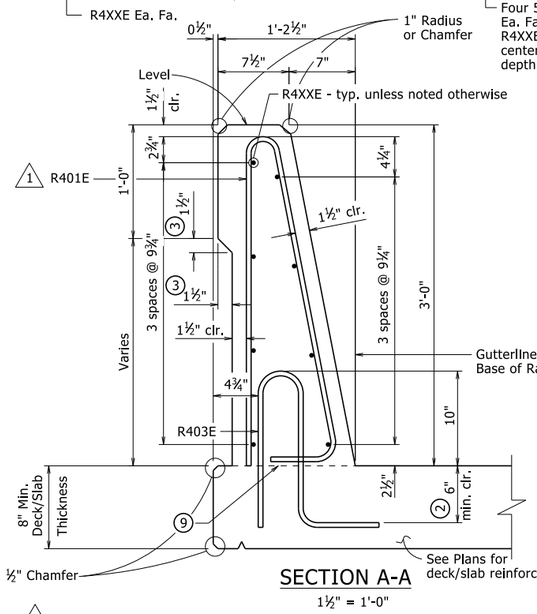
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
09/27/2022				6	ARK.			
				JOB NO.				

TYPE SSTR36 - 55070



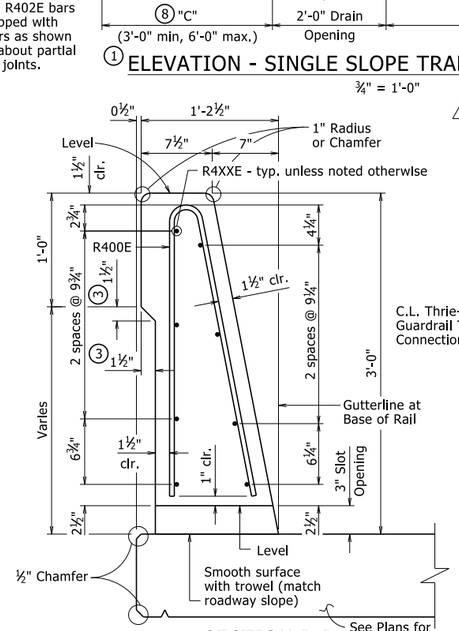
(1) ELEVATION - SINGLE SLOPE TRAFFIC RAIL

¾" = 1'-0"



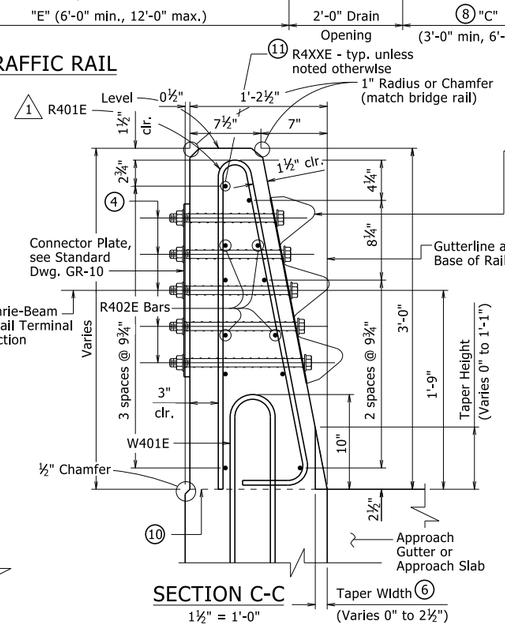
SECTION A-A

1½" = 1'-0"



SECTION B-B

1½" = 1'-0"



SECTION C-C

1½" = 1'-0"

(9) Required Construction Joint. Level where water flows away from rail, match roadway slope where water flows toward rail.

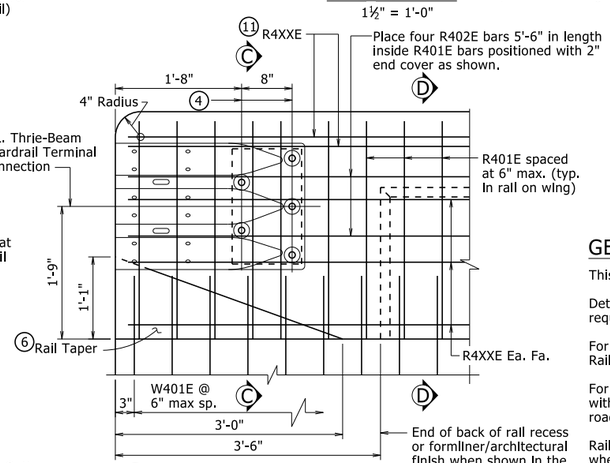
(10) Top of Abutment Wing & Required Construction Joint (match bridge deck/slab construction joint slope). See Plans for Wing reinforcing.

(11) These bars will not be included in the "Table of Variables". See Plans for details.

Bolt Special End Shoe to face of rail as shown. Tapered washers are not required between the head of the bolts and the sloped face of the rail. Tighten the five terminal connection bolts in a well distributed pattern to prevent damage or distortion of the thrie-beam connection. Cut bolts off after installation so as to extend no more than ¾" beyond nut. Paint ends of cut-off bolts with zinc-rich paint. This work and material will not be paid for directly but shall be considered subsidiary to associated contract items.

SECTION D-D

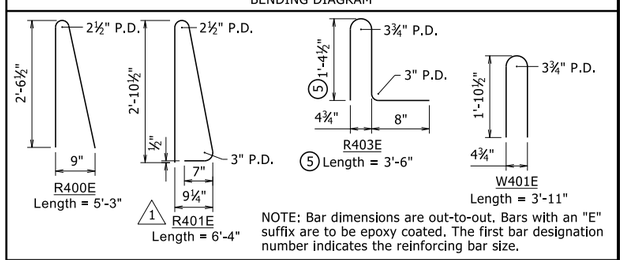
1½" = 1'-0"



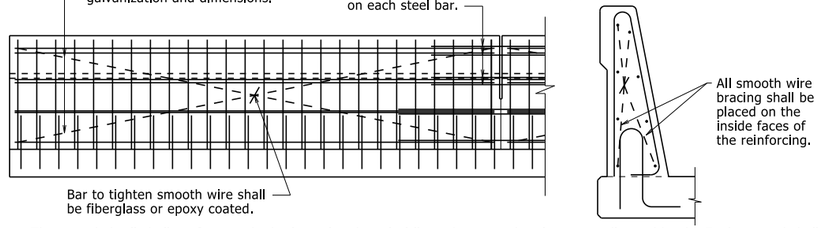
(1) RAIL TERMINUS DETAILS

1" = 1'-0"

BENDING DIAGRAM



NOTE: Bar dimensions are out-to-out. Bars with an "E" suffix are to be epoxy coated. The first bar designation number indicates the reinforcing bar size.



The extruded rail shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and texture. Unless otherwise noted, exposed surfaces may be given a light brush finish or a Class 3, Textured Coating Finish in place of Class 2, Rubbed Finish.

All panels shall be braced as required to prevent racking.

Slip forming will not be allowed on bridges where formliner with architectural treatment is used unless approval from the Engineer is obtained.

TABLE OF VARIABLES

Closed Rail Panels			Open Rail Panels					
Panel Length	A	R4XXE	Panel Length	B	C	D	E	R4XXE

See Plans for table with values.

GENERAL NOTES

This rail has been successfully evaluated by full-scale crash test to meet MASH TL-4 criteria.

Details shown are general for bridges without sidewalks. See Plans for additional details and requirements specific to bridges with sidewalks.

For Table of Variables, Rail Bar List, locations of Full and Partial Depth Rail Joints, and Wing & Rail Bar Lists, see Plans.

For location of drain openings, see Plans. Drain openings shown are not applicable for bridges with sidewalks. Drain openings will not be allowed over Railroad Right of Way, travelled roadways, and protected waterways.

Rail Terminus details, including Rail Taper, are not applicable for bridges with sidewalks or when bridge railing is continuous with roadway railing.

Scales shown are for 22"x34" drawings. When using 11"x17" drawings, reduce scale by one half.

(1) Modified bending diagram and spacing for R401E bar.

By: CGP, Checked by: CMW 09/27/2022

No Scale

This document was originally issued and sealed by Charles R. Ellis, PE No. 9235, on November 5, 2020. This copy is not a signed and sealed document.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

BRIDGE ENGINEER

THESE DETAILS ARE APPLICABLE UNLESS OTHERWISE SHOWN IN THE PLAN DETAILS, SPECIAL PROVISIONS, OR SUPPLEMENTAL SPECIFICATIONS.

STANDARD DETAILS FOR BRIDGE TRAFFIC RAIL TYPE SSTR36

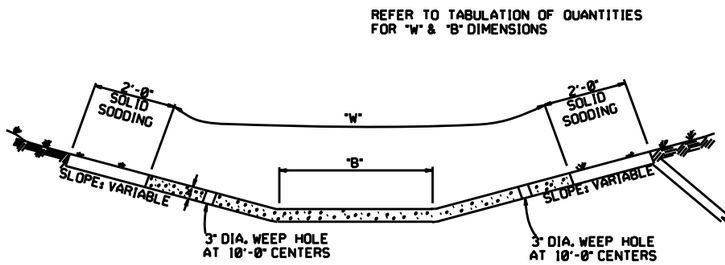
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KWY DATE: 11/5/2020 FILENAME: b55070.dgn
CHECKED BY: LJB DATE: 11/5/2020 SCALE: As Noted
DESIGNED BY: STD. DATE: -----

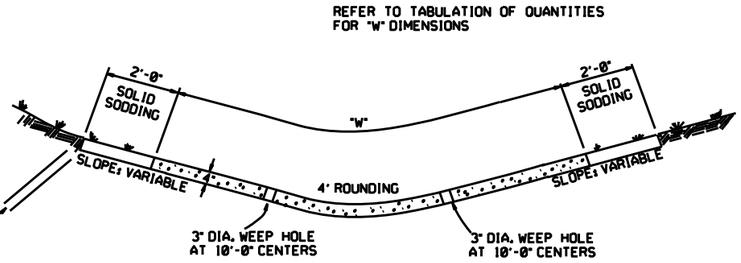
DRAWING NO. 55070

PRINT DATE: 10/6/2022



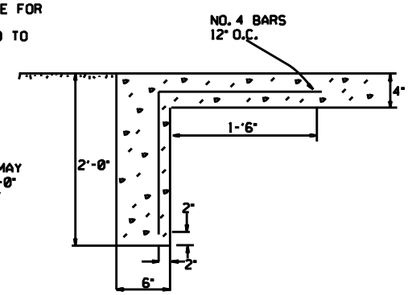
TYPE A

EXCAVATE TO NEAT LINES TO CONSTRUCT DITCH PAVING AND SOLID SODDING.



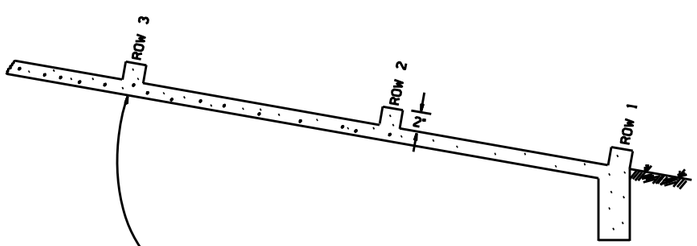
TYPE B

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."



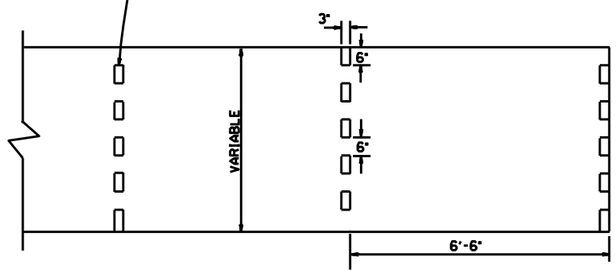
TOE WALL DEPTH MAY BE ALTERED TO 1'-0" WHEN DIRECTED BY THE ENGINEER IN ROCK EXCAVATION

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.

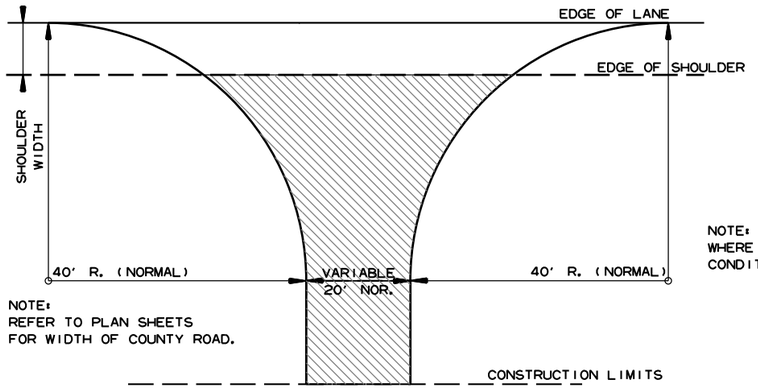
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45° INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

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

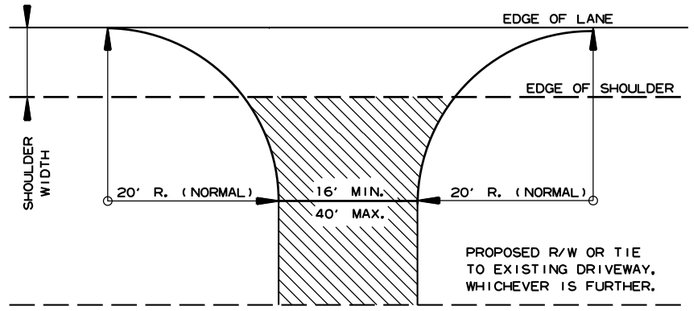


NOTE:
REFER TO PLAN SHEETS
FOR WIDTH OF COUNTY ROAD.

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.

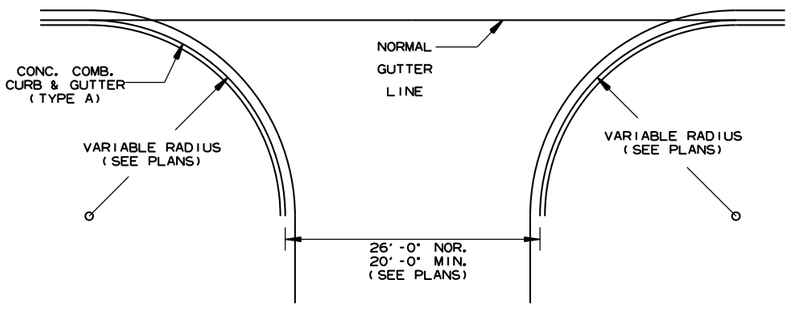
DETAIL FOR COUNTY ROAD TURNOUTS OPEN SHOULDER SECTION



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

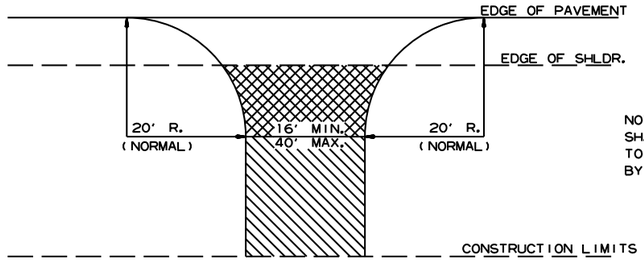
ACHM SURFACE COURSE (1/2")
(220 LBS. PER SQ. YD.) AND
AGGREGATE BASE COURSE (CLASS 7)
7" COMP. DEPTH IF ASPHALT OR
GRAVEL DRIVE EXISTING; OR 6"
CONCRETE IF CONCRETE DRIVE
EXISTING.

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

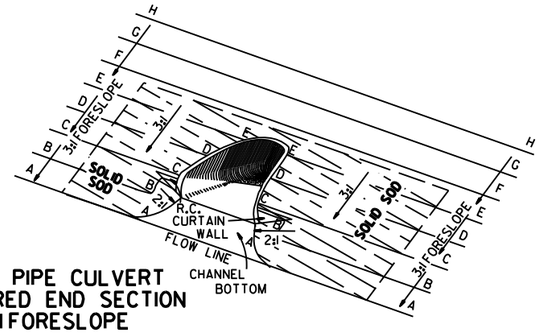
DETAIL FOR DRIVEWAY TURNOUTS (COLLECTORS)

DATE REV	DATE FILMED	DESCRIPTION
5-19-22		ISSUED

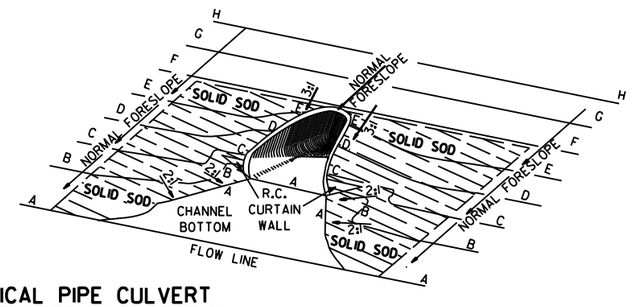
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DRIVEWAYS & STREET TURNOUTS

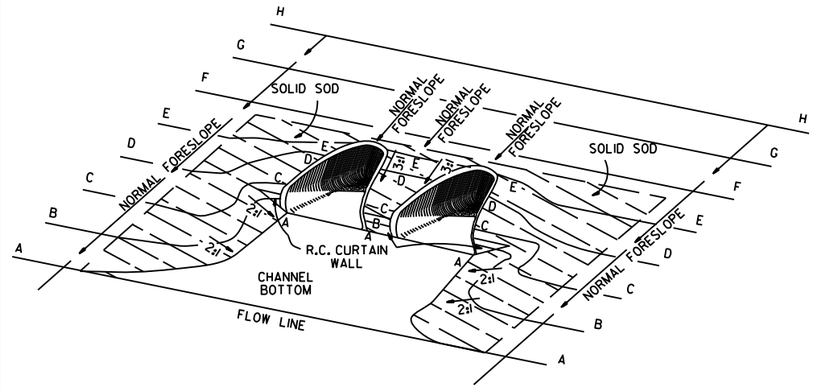
STANDARD DRAWING DR-2



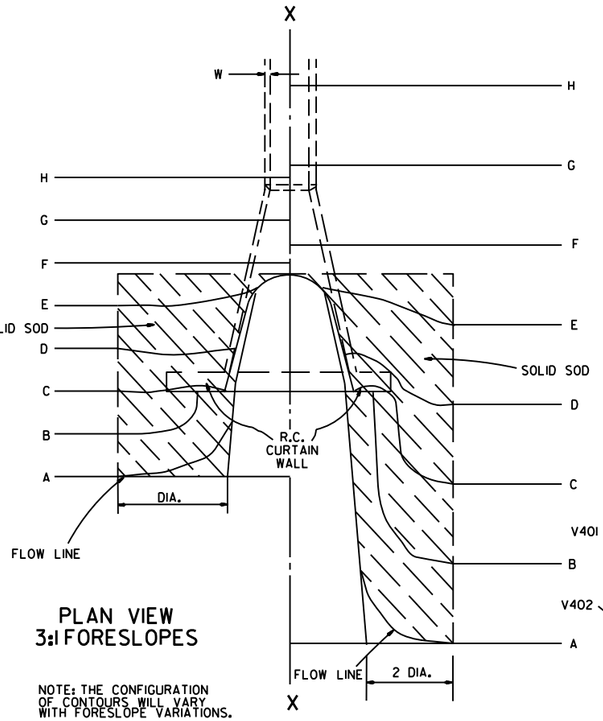
TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& 3:1 FORESLOPE



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

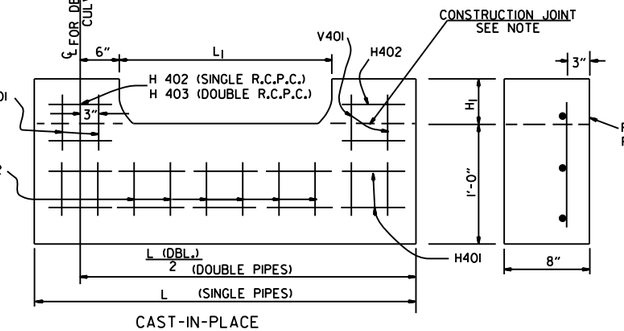
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW
FLATTENED FORESLOPES

R.C. CURTAIN WALL
DIMENSIONS & QUANTITIES

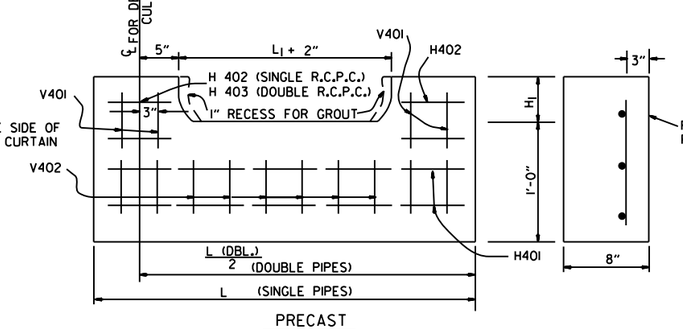
PIPE DIA.	H_1	L_1	L	L (DBL.)/2	SINGLE R.C.P.C. CONC.	SINGLE R.C.P.C. REINF. STEEL	DOUBLE R.C.P.C. CONC.	DOUBLE R.C.P.C. REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	1'-11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	39.0	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

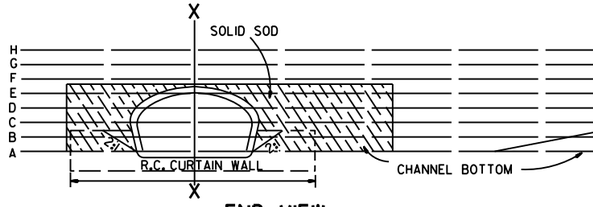
NOTE: THE PORTION OF THE R.C. CURTAIN WALL BENEATH THE FLARED END SECTION (LOWER 1'-0") SHALL BE PLACED MONOLITHICALLY. THE FLARED END SECTION SHALL THEN BE SET IN PLACE & THE REMAINING PORTIONS OF THE R.C. CURTAIN WALL PLACED.



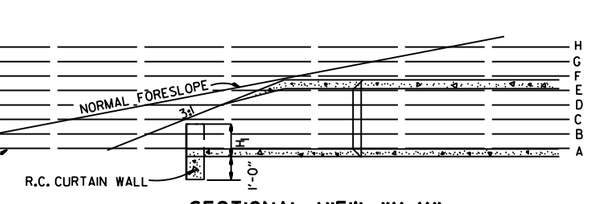
PRECAST

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

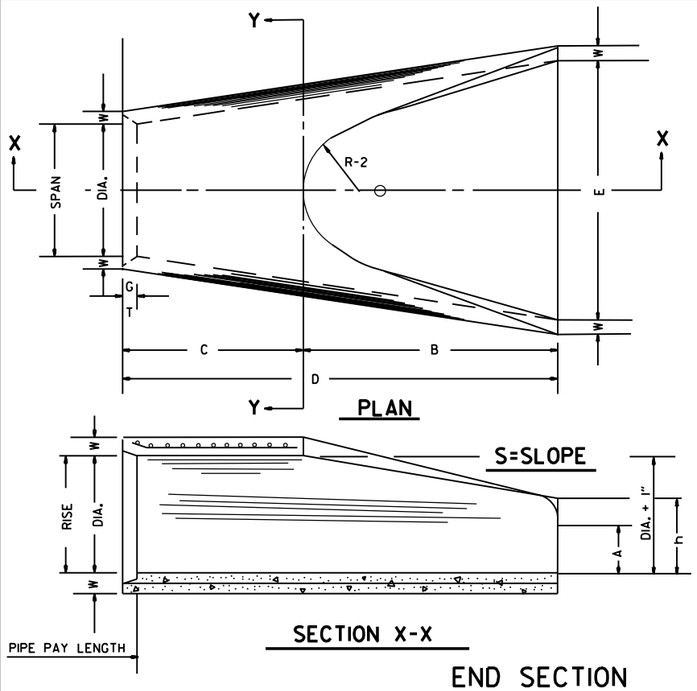
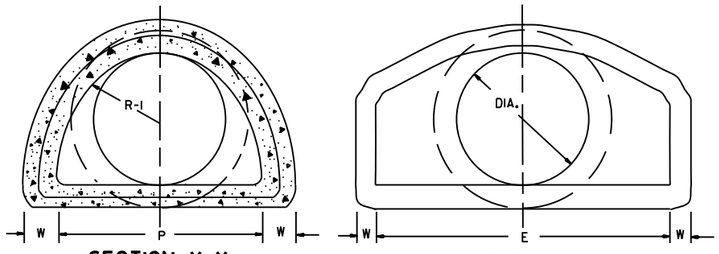


TABLE OF DIMENSIONS

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"

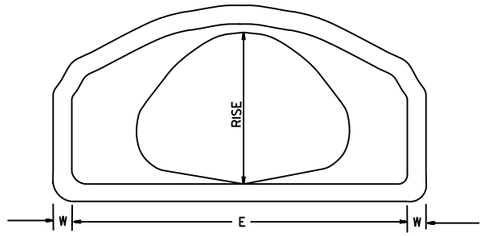


NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

ARCH PIPE

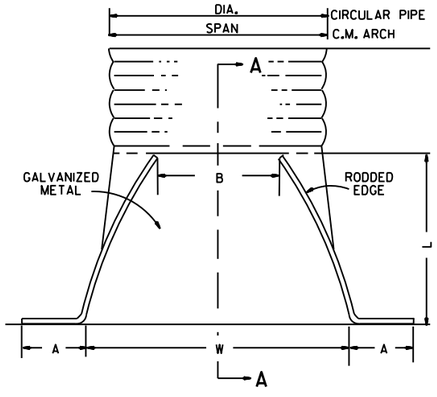
EQUIV. DIA.	• SPAN AASHTO M 206	• SPAN AHD NOMINAL	• RISE AASHTO M 206	• RISE AHD NOMINAL	W	A	B	C	D	E	P	R2	G-T	S
	INCHES													
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1½"	2½:1
18	22	22	13½	14	2½"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32⅛"	13"	2½"	2½:1
21	26	26	15½	16	2¾"	7"	2'-3"	3'-10"	6'-1"	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'-1½"	6'-1½"	6'-6"	54 5/16"	22"	3½"	2½:1
42	51⅛	51	31 5/16	31	4½"	11½"	4'-7"	1-10¼"	6'-5¼"	7'-2"	59½"	23"	3¾"	2½:1
48	58½	59	36	36	5"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	7'-10"	70 5/16"	24"	4¼"	2½:1
54	65	65	40	40	5½"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72 1/16"	24"	4¾"	2¼:1
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77 1/16"	24"	5"	2¼:1

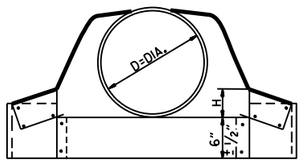
• THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.

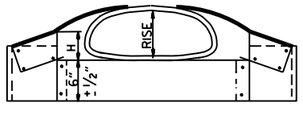


END VIEW
CONCRETE ARCH PIPE

END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS







CIRCULAR PIPE

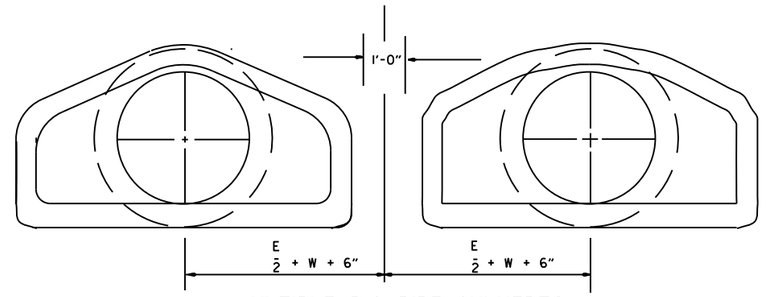
D. DIA.	GAUGE	A 1" ±	B. MAX.	H 1" ±	L 1½" ±	W 2" ±	S
		INCHES					
12	16	6	6	6	21	24	2½:1
15	16	7	8	6	26	30	2½:1
18	16	8	10	6	31	36	2½:1
21	16	9	12	6	36	42	2½:1
24	16	10	13	6	41	48	2½:1
30	14	12	16	8	51	60	2½:1
36	14	14	19	9	60	72	2½:1
42	12	16	22	11	69	84	2½:1
48	12	18	27	12	78	90	2½:1
54	12	18	30	12	84	102	2:1
60	12	18	33	12	87	114	1¾:1
66	12	18	36	12	87	120	1½:1
72	12	18	39	12	87	126	1 1/3:1

C.M. ARCH PIPE

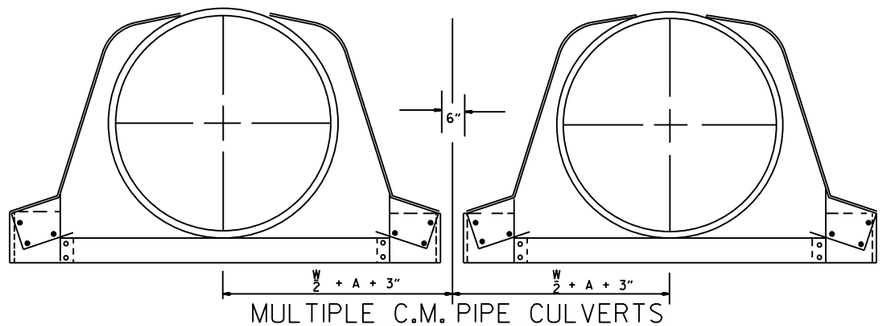
EQUIV. DIA.	SPAN	RISE	A 1" ±	B. MAX.	H 1" ±	L 1½" ±	W 2" ±	S	GAUGE
	INCHES								
15"	17	13	7	9	6	19	30	2½:1	16
18"	21	15	7	10	6	23	36	2½:1	16
21"	24	18	8	12	6	28	42	2½:1	16
24"	28	20	9	14	6	32	48	2½:1	16
30"	35	24	10	16	6	39	60	2½:1	14
36"	42	29	12	18	8	46	75	2½:1	14
42"	49	33	13	21	9	53	85	2½:1	12
48"	57	38	18	26	12	63	90	2½:1	12
54"	64	43	18	30	12	70	102	2¼:1	12
60"	71	47	18	33	12	77	114	2¼:1	12

NOTE: ALTERNATE CONNECTIONS TO THE PIPE CULVERTS, IN ACCORDANCE WITH MANUFACTURER'S STANDARD PRACTICES, MAY BE MADE SUBJECT TO THE APPROVAL OF THE ENGINEER.

END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS



MULTIPLE R.C. PIPE CULVERTS



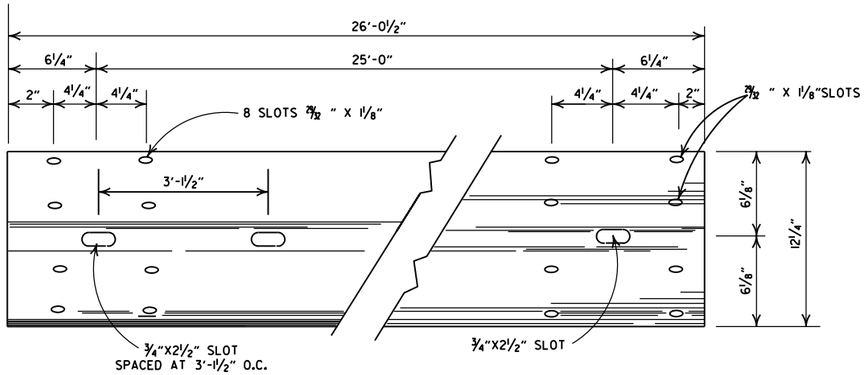
MULTIPLE C.M. PIPE CULVERTS

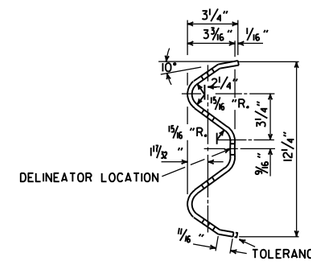
DATE	REVISION	FILMED
10-18-96	REVISED ASTM REF. TO AASHTO	
5-15-80	REVISED DISTANCE BETWEEN MULTIPLE R.C.P. F.E.S.	664-5-15-80
7-14-78	C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES	752-7-14-78
8-22-75	ADDED MULTIPLE PIPE CULVERTS	517-8-22-75
12-5-74	REMOVED NOTE RE REINF. FOR R.C. F.E.S.	500-12-5-74
5-24-73	CMP END SECTION, SHOW PIPE PAY LENGTH	627-5-24-73
10-2-72	REVISED AND REDRAWN	760-10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

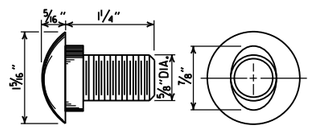
STANDARD DRAWING FES-2



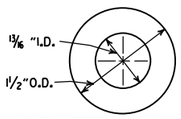


DETAILS OF W-BEAM GUARDRAIL

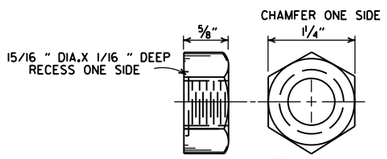
RAIL SECTION OF CLOSELY SIMILAR DIMENSIONS AND COMPARABLE STRENGTH MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.



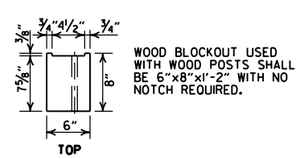
SPLICE BOLT
POST BOLT - SAME EXCEPT LENGTH



CUT STEEL WASHER

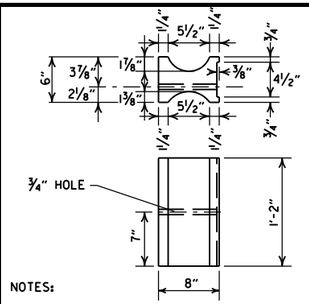


NUT



WOOD BLOCKOUT USED WITH WOOD POSTS SHALL BE 6"x8"x1'-2" WITH NO NOTCH REQUIRED.

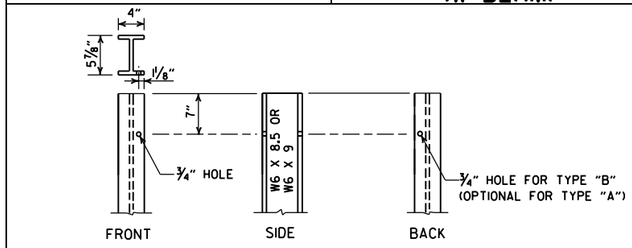
WOOD BLOCKOUT (W-BEAM)



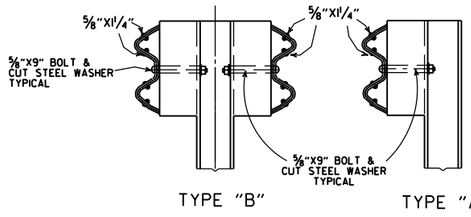
NOTES:

1. SIMILAR SHAPED PLASTIC BLOCKOUTS MAY BE USED AS LONG AS THEY MEET REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
2. DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCES.

PLASTIC BLOCKOUT (W-BEAM)



STEEL POST



DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)

-GENERAL NOTES-

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN ¾" BEYOND IT.

WHERE W-BEAM GUARDRAIL CONTINUES, THE INTERMEDIATE SECTIONS SHALL HAVE A POST SPACING OF 6'-3" UNLESS OTHERWISE NOTED.

W-BEAM GUARDRAIL REPRESENTING INTERMEDIATE SECTIONS WILL BE MEASURED ALONG THE ROADWAY FACE FROM CENTERLINE OF POST TO CENTERLINE OF POST.

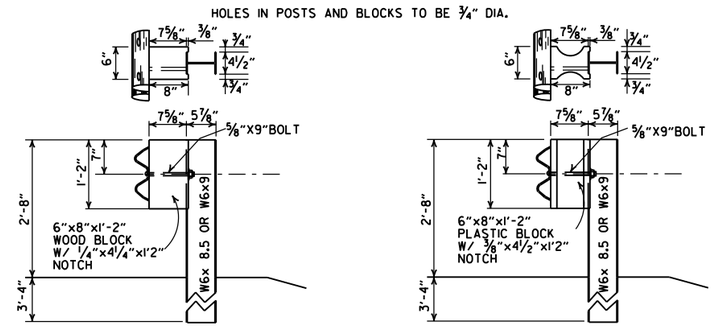
USE W-BEAM GUARDRAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB. FOR EXTENSIONS OR MODIFICATION OF EXISTING GUARDRAIL, W-BEAM GUARDRAIL COMPONENTS OF THE SAME TYPE AS THOSE EXISTING SHALL BE USED.

ANY BACKFILLING UNDER OR AROUND POST SHALL BE DAMP SAND THOROUGHLY TAMPED IN PLACE.

WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7 f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

CONTRACTOR SHALL HAVE THE OPTION OF USING WOOD BLOCKOUTS FOR W-BEAM GUARDRAIL OR PLASTIC BLOCKOUTS, AS LONG AS BLOCKOUT USED MEETS REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) FOR W-BEAM GUARDRAIL.

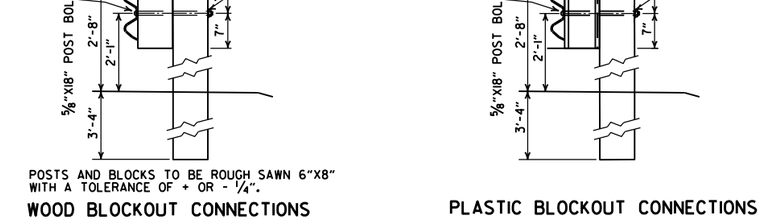
DELINEATORS SHALL BE MOUNTED AT 37.5' SPACING ON THE FRONT FACE OF THE GUARDRAIL. SPACING MAY BE REDUCED IN CURVES, AS DIRECTED BY THE ENGINEER. COLOR SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR DELINEATORS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID PER LIN. FT. FOR GUARDRAIL.



WOOD BLOCKOUT CONNECTIONS

PLASTIC BLOCKOUT CONNECTIONS

DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)



POSTS AND BLOCKS TO BE ROUGH SAWN 6"X8" WITH A TOLERANCE OF + OR - ¼".

WOOD BLOCKOUT CONNECTIONS

PLASTIC BLOCKOUT CONNECTIONS

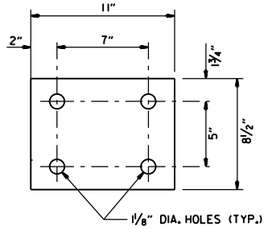
DETAILS OF WOOD LINE POST CONNECTIONS (W-BEAM)

DATE	REVISION	FILMED
05-19-22	REVISED GENERAL NOTES, ADDED DELINEATOR LOCATION.	
11-07-19	RENUMBERED AND RENAMED	
11-16-17	REVISED GENERAL NOTES AND RAISED GUARDRAIL HEIGHT 3"	
07-14-10	RAISED HEIGHT OF GUARDRAIL 1"	
10-15-09	ADDED REFERENCE TO MASH	
04-10-03	REVISED GENERAL NOTES	
08-22-02	REVISED DIMENSION ON WOOD & PLASTIC BLOCKOUT CONNECTIONS & STEEL POST	
11-16-01	REVISED WOOD BLOCKOUT & DETAILS OF WOOD LINE POST CONNECTIONS	
03-30-00	REMOVED GUARDRAIL AT BRIDGE ENDS	
01-12-00	ADDED PLASTIC BLOCKOUT	
08-12-98	REV. BLOCKOUTS TO WOOD, DELETED CONC. POST & REV. GENERAL NOTE, DELETED DET. OF GUARDRAIL REPLACE. BEHIND CURB & DET. OF POST PLACE. IN SOLID ROCK, & ADDED DETAILS OF STEEL LINE POST CONN. REMOVED BACK-UP PLATE, REVISED HOLES IN STEEL POLES	
04-03-97	REMOVED "LAP IN DIRECTION OF TRAFFIC" NOTE & PLACED ARROWS ON WASHERS	
10-18-96	REVISED WOOD POST NOTE	
06-02-94	ADDED ALT. STEEL POST SIZE	
08-05-93	REVISED STEEL POST SIZE	8-5-93
10-01-92	REDRAWN & REVISED	10-1-92
08-15-91	REVISED WASHER NOTE	8-15-91
08-02-90	REV. GEN. NOTE & DEPTH OF ANC. POST IN ROCK	8-2-90
07-15-88	REVISED SECTION 3 & GENERAL NOTES	
03-04-88	REV. ANCHOR POST, ELEV. NOTES & POST IN ROCK	780-3-4-88
10-30-87	REVISED WOOD LINE POST DETAIL	546-10-30-87
10-09-87	REDRAWN & REVISED	802-10-9-87

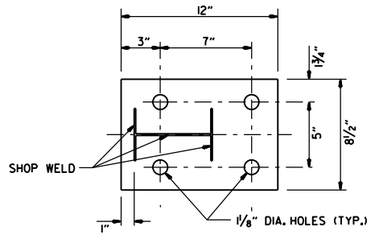
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

STANDARD DRAWING GR-6

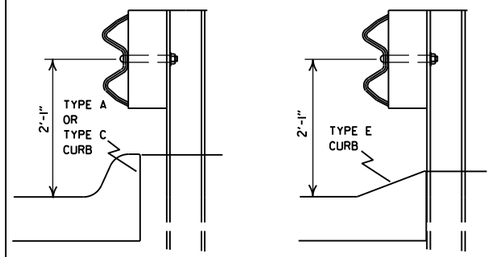


WASHER PLATE



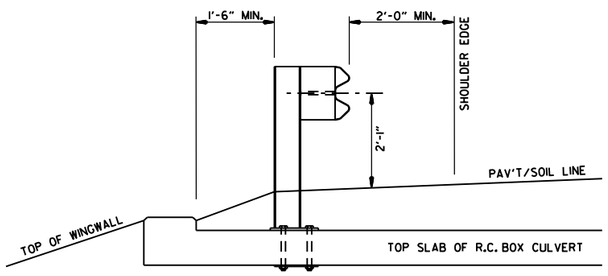
BASE PLATE

Note: Bolts, nuts, washers and plates shall be galvanized in accordance with Section 807 of the Standard Specifications.

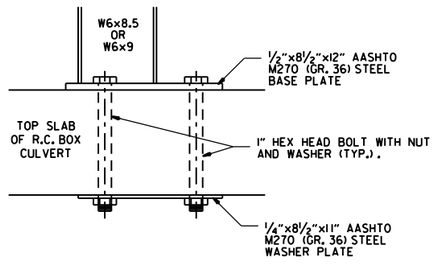


DETAIL OF GUARDRAIL PLACEMENT BEHIND CURB (W-BEAM)

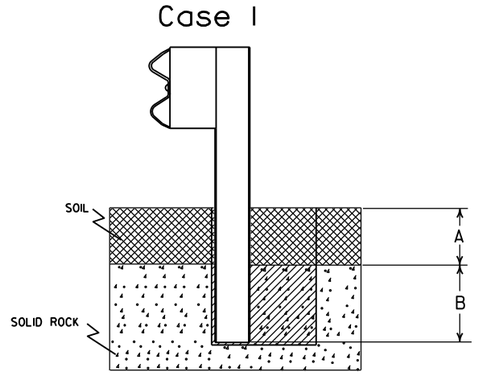
FOR DESIGN SPEEDS OF 50 MPH OR LESS ALL CURB FACES, AS SHOWN ON STD. DRWG. CG-1, MAY BE USED. FOR DESIGN SPEEDS OF 55 MPH OR MORE TYPE "E" CURB FACE SHALL BE USED.

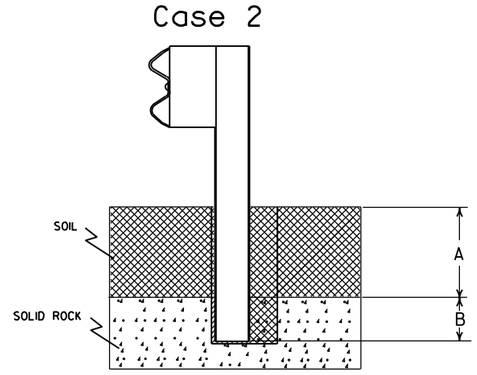


SECTION A-A



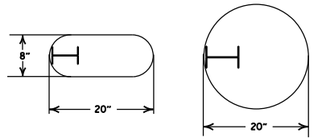
DETAIL OF CONNECTION

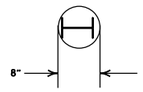




Plan View Steel Posts

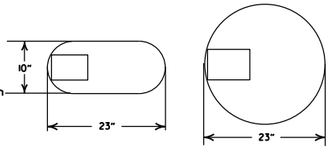
Either hole configuration acceptable

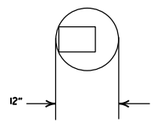




Plan View Wood Posts

Either hole configuration acceptable





Notes: For overlying soil depths (A) ranging from 0 to 18", the depth of required drilling (B) is equal to 24".

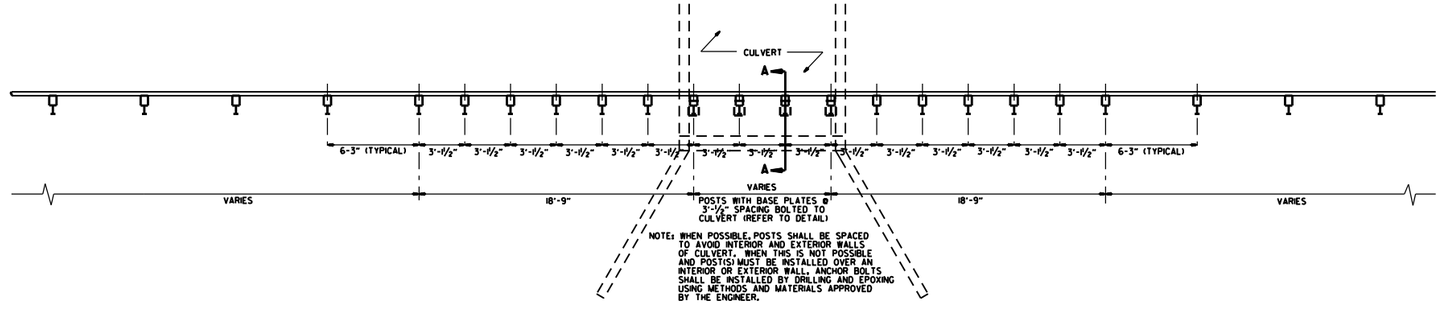
Zone A:
Backfill according to Section 617.03(a).

Zone B:
Backfill hole in 6" lifts with material meeting the requirements of Section 802.02(c) - Alternate gradation. Compact to 95% maximum dry density per ASTM D-698.

Notes: For overlying soil depths (A) ranging from 18" to 44", the depth of required drilling (B) is equal to either 12" or 44" minus the depth of soil whichever is less.

Zone A & B:
Backfill according to Section 617.03(a).

DETAIL OF POST PLACEMENT IN SOLID ROCK (W-BEAM)



PLAN LAYOUT OF TYPE A GUARDRAIL AT LOW-FILL CULVERTS

NOTE: THIS DETAIL IS TO BE USED ONLY WHEN THE COVER OVER THE CULVERT DOES NOT PERMIT FULL EMBEDMENT OF GUARDRAIL POSTS AS SHOWN ON STD. DWG. GR-6.

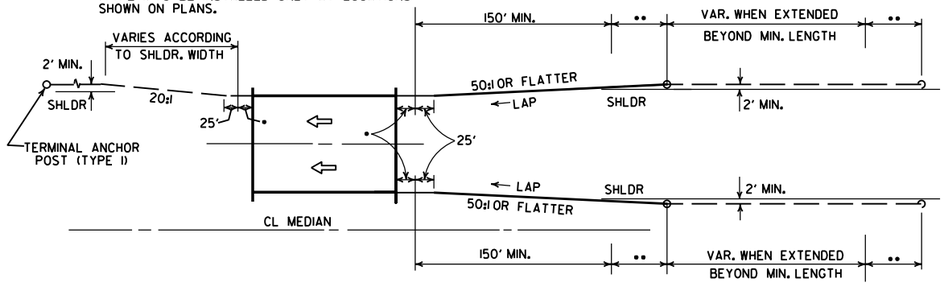
DATE	REVISION	FILMED
11-07-19	RENUMBERED, RENAMED, REVISED REFERENCE	
11-16-17	REVISED GUARDRAIL HEIGHT	
07-14-10	RAISED HEIGHT OF GUARDRAIL 1"	
04-12-07	REVISED DETAIL OF GUARDRAIL PLACEMENT BEHIND CURB	
11-10-05	ADDED GUARDRAIL PLACEMENT BEHIND CURB; REVISED DETAIL OF CONNECTION	
11-18-04	REVISED POST PLACEMENT IN ROCK & CULVERT CONNECTION DETAILS. ADDED DETAIL FOR GUARDRAIL PLACEMENT AT LOW-FILL CULVERTS	
03-30-00	REMOVED CONCRETE INSERT ANCHOR	
08-12-98	CHANGED STEEL SPACER BLOCK TO WOOD BLOCKOUT, ADDED DET. OF GUARDRAIL CONNECTION TO R.C. BOX CULV'T., DELETED DET. OF STEEL LINE POST CONN. & ADDED DET. OF GUARDRAIL PLACE. BEHIND CURB & DET. OF POSTPLACE. IN SOLID ROCK	
04-03-96	PLACED ARROWS AT CUT STEEL WASHERS	4-3-96
10-18-96	REV. ASTM REF. TO AASHTO	
11-22-95	ADDED OPTIONAL HOLES	
06-02-94	REVISED ALTERNATE POST SIZE	
08-05-93	REVISED STEEL POST SIZE	
10-01-92	REDRAWN & REVISED	10-1-92
08-02-90	DEL. WASHER ON ANCHOR ASSEMBLY	8-2-90
07-15-88	CONFORMED TO 1988 SPECS	
03-04-88	REVISED ANCHOR NOTE	
10-30-87	REVISED ANCHOR ASSEMBLY	712-10-30-87
10-30-87	REVISED PLACEMENT BEHIND CURB	547-10-30-87
10-09-87	REDRAWN & REVISED	803-10-9-87

ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

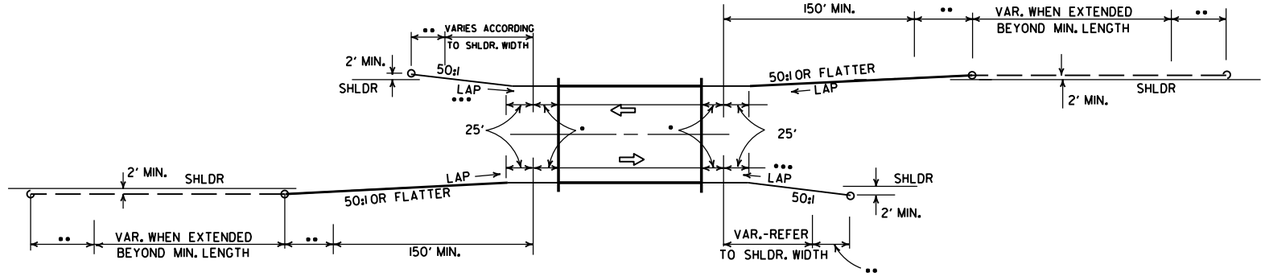
STANDARD DRAWING GR-7

NOTE: GUARDRAIL WITH GUARDRAIL TERMINAL (TYPE 1) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS.



ONE-WAY TRAFFIC

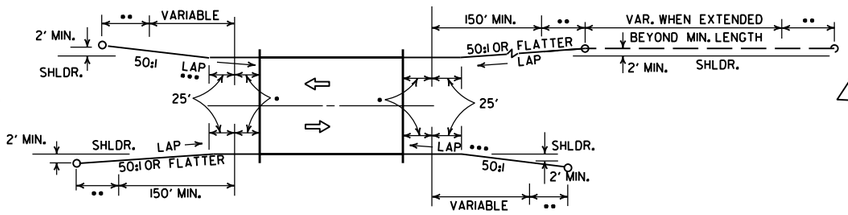
••• LAP OF GUARDRAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200'. CHANGE TO LAP IN DIRECTION OF TRAVEL.



TWO-WAY TRAFFIC

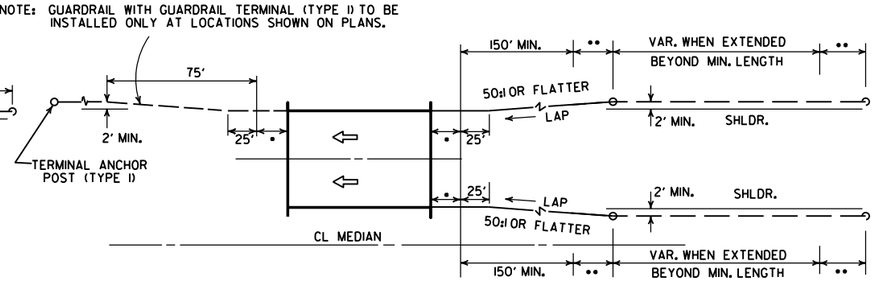
METHODS OF INSTALLATION OF GUARDRAIL AT LESS THAN FULL SHOULDER WIDTH BRIDGES USING GUARDRAIL TERMINAL (TYPE 2)

••• LAP OF GUARDRAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200'. CHANGE TO LAP IN DIRECTION OF TRAVEL.



TWO-WAY TRAFFIC

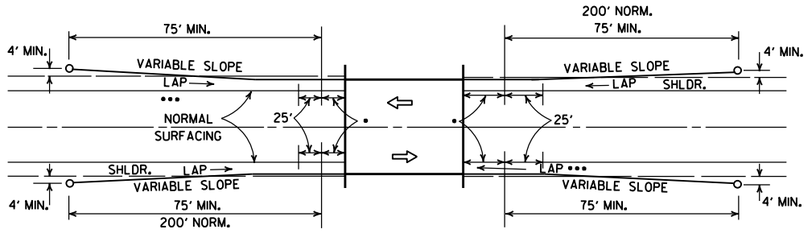
NOTE: GUARDRAIL WITH GUARDRAIL TERMINAL (TYPE 1) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS.



ONE-WAY TRAFFIC

METHOD OF INSTALLATION OF GUARDRAIL AT FULL SHOULDER WIDTH BRIDGES USING GUARDRAIL TERMINAL (TYPE 2)

••• LAP OF GUARDRAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200'. CHANGE TO LAP IN DIRECTION OF TRAVEL.



METHOD OF INSTALLATION OF GUARDRAIL USING GUARDRAIL TERMINAL (TYPE 1) (FULL SHOULDER WIDTH OR LESS BRIDGES)

LEGEND

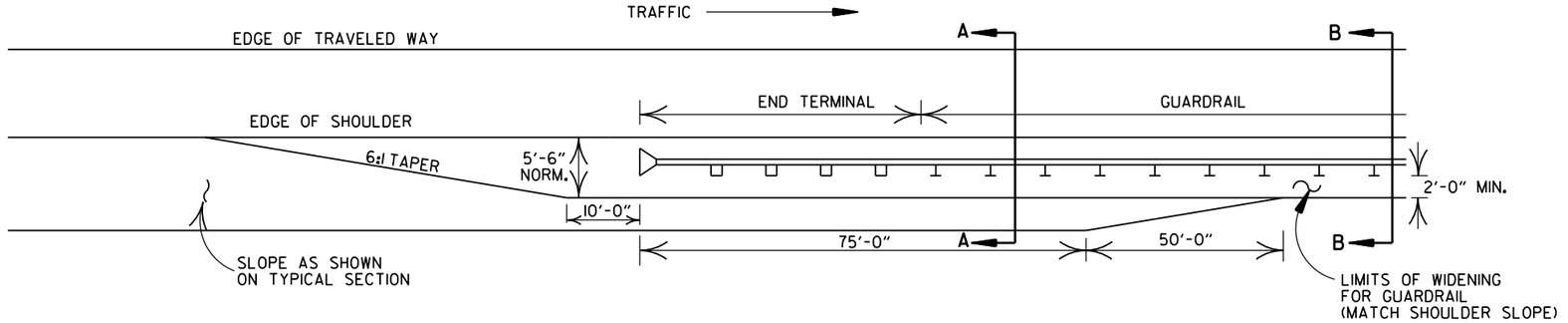
- • THRIE BEAM GUARDRAIL TERMINAL
- •• GUARDRAIL TERMINAL (TYPE 2)

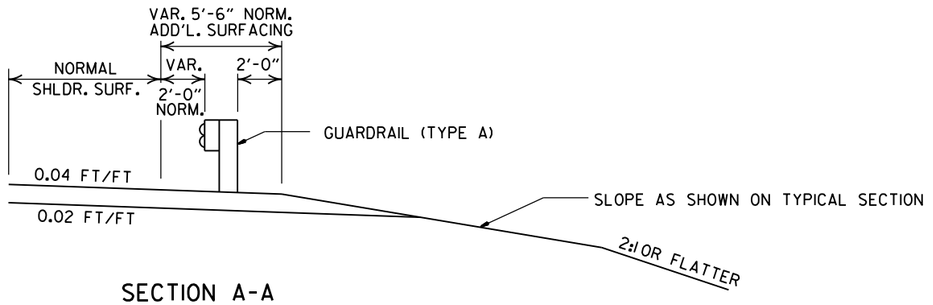
DATE	REVISION	DATE FILM
11-07-19	RENUMBERED AND RENAMED	
4-17-08	REVISED LAYOUTS	
11-10-05	REMOVED GUARDRAIL NOTES AND DETAILS	
11-16-01	DELETED NOTE-METHOD OF INSTALLATION OF GUARDRAIL USING GUARDRAIL TERM. (TY. 1)	
1-12-00	ADDED CONSTRUCTION NOTE	1-12-00
6-26-97	REVISED LAYOUT	
10-1-92	REDRAWN & REVISED	10-1-92
	ADDED NOTE	
10-9-87	REDRAWN & REVISED	

ARKANSAS STATE HIGHWAY COMMISSION

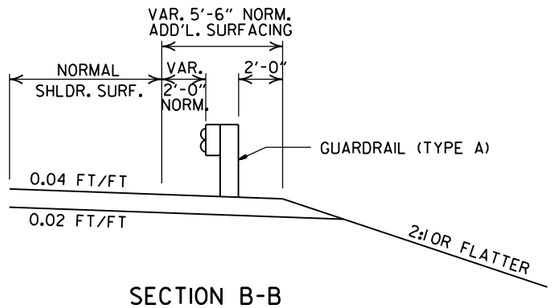
GUARDRAIL DETAILS

STANDARD DRAWING GR-8



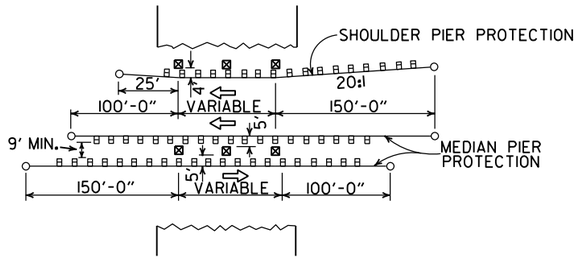


SECTION A-A



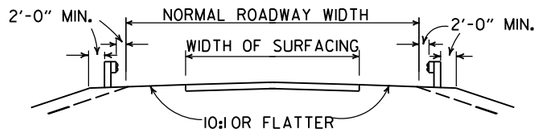
SECTION B-B

DETAILS OF WIDENING FOR GUARDRAIL

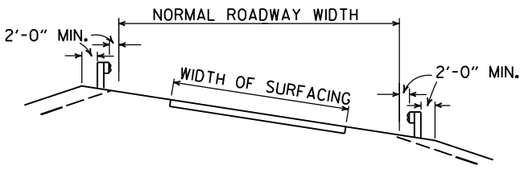


METHOD OF INSTALLATION OF GUARDRAIL AT FIXED OBSTACLE

NOTE: NORMAL SECTION TO BE WIDENED APPROX. 5'-6" EACH SIDE TO SUPPORT GUARDRAIL.



SECTION ON TANGENT



SECTION ON CURVE

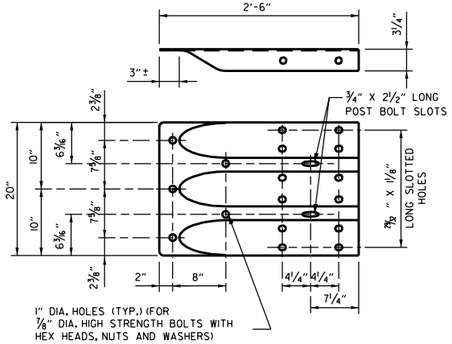
DETAILS SHOWING POSITION OF GUARDRAIL ON HIGHWAY

DATE	REVISION	DATE FILM
11-07-19	RENUMBERED AND RENAMED	
4-17-08	MINOR REVISION	
11-10-05	DRAWN	

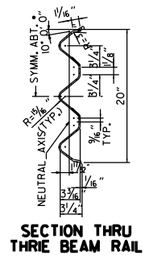
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

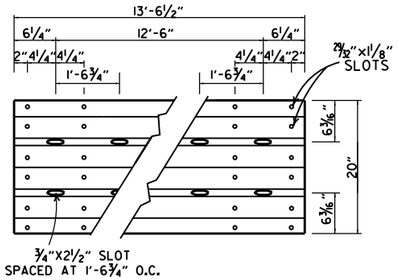
STANDARD DRAWING GR-9



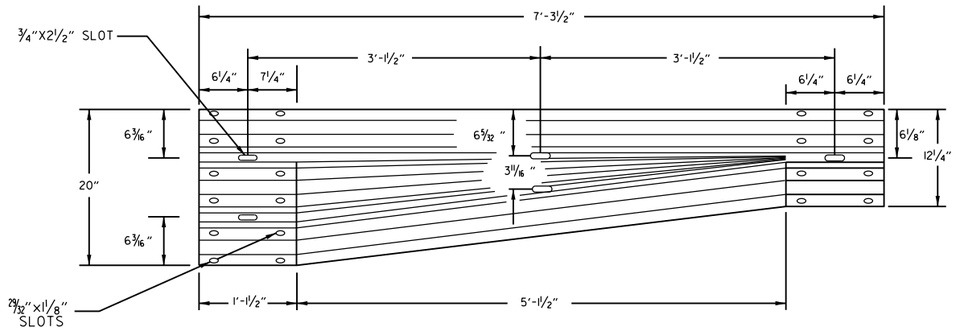
SPECIAL END SHOE



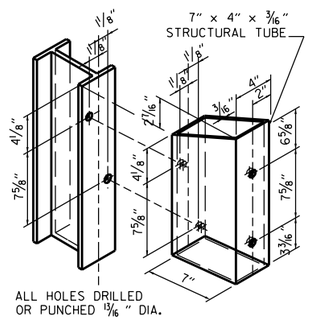
SECTION THRU THRIE BEAM RAIL



THRIE BEAM RAIL

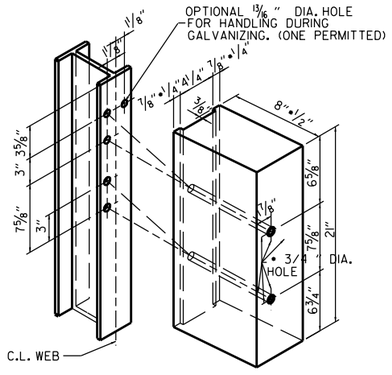


TRANSITION SECTION



ATTACH BLOCKOUT TO POST USING ⅝" DIA. HEX HEAD BOLTS WITH 1½" O.D. CUT STEEL WASHERS AND NUT.

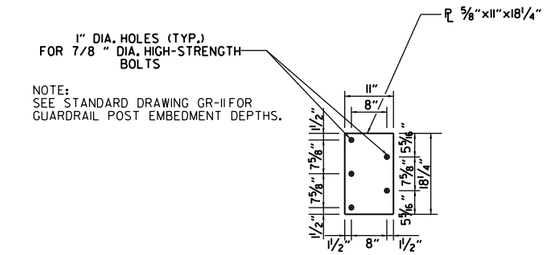
STRUCTURAL STEEL TUBING BLOCKOUT DETAIL



ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED

HOLE PUNCHING DETAIL FOR STEEL POST & WOOD OR PLASTIC BLOCKOUTS

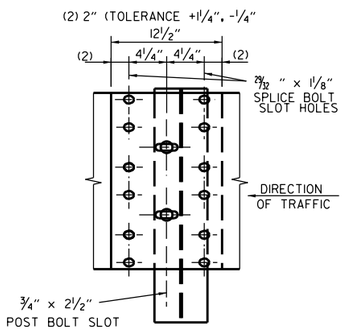
NOTE: BLOCKS SHALL BE THE SAME TYPE THROUGHOUT THE PROJECT LIMITS.



NOTE:
SEE STANDARD DRAWING GR-11 FOR GUARDRAIL POST EMBEDMENT DEPTHS.

CONNECTOR PLATE

CONNECTOR PLATE SHALL BE AASHTO M270, GR. 36 AND SHALL BE GALVANIZED AFTER FABRICATION. GALVANIZING SHALL CONFORM TO SUBSECTION 807.19 OF THE STANDARD SPECIFICATIONS. CONNECTOR PLATE TO BE BOLTED TO SPECIAL END SHOE USING ⅞" DIA. HIGH STRENGTH BOLTS, WITH THE HEADS PLACED ON THE TRAFFIC FACE. WASHERS SHALL BE USED UNDER THE HEAD AND NUT. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AND SHALL CONFORM TO SUBSECTION 807.06.



THRIE BEAM RAIL SPLICE AT POST

GENERAL NOTES:

THE THRIE BEAM RAIL, SPECIAL END SHOE, AND THE TRANSITION SECTION SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE. ZINC COATING SHALL BE TYPE 1.

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN 3"4" BEYOND IT.

ALL LAP SPLICES, INCLUDING SPECIAL END SHOES, SHALL BE MADE IN THE DIRECTION SHOWN ON STANDARD DRAWINGS GR-8 & GR-13.

REFER TO STD. DRWG. GR-11 FOR POST DETAILS.

USE THRIE BEAM GUARDRAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB.

THRIE BEAM POSTS SHALL BE SAME MATERIAL AS W-BEAM POSTS FOR ENTIRE JOB.

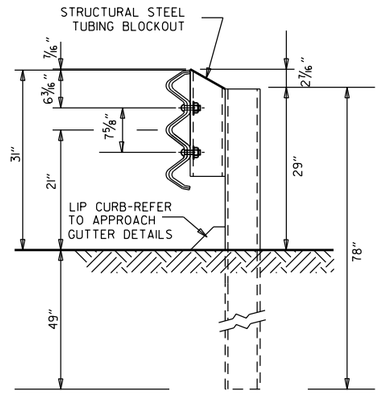
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7 f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	FILMED
11-07-19	RENAMED AND REVISED REFERENCES	
11-16-17	REVISED TRANSITION SECTION, GUARD RAIL HEIGHT, AND GENERAL NOTES; MOVED THRIE BEAM GUARD RAIL CONNECTIONS AT BRIDGES ENDS TO STD. DRWG. GR-12	
07-14-10	RAISED HEIGHT OF W-BEAM 1"	
11-29-07	ADDED PLASTIC BLOCKOUTS	
11-10-05	ADDED NOTE FOR ATTACHING STEEL BLOCKOUT	
11-18-04	REVISED GENERAL NOTES	
10-9-03	REVISED GENERAL NOTES	
04-10-03	REVISED GENERAL NOTES	
08-22-02	REVISED NOTE (2)	
06-29-00	MOVED DIMENSION LINES	
05-18-00	ADDED NOTE	
03-30-00	DRAWN & ISSUED	

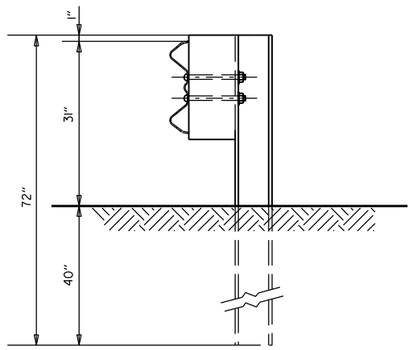
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

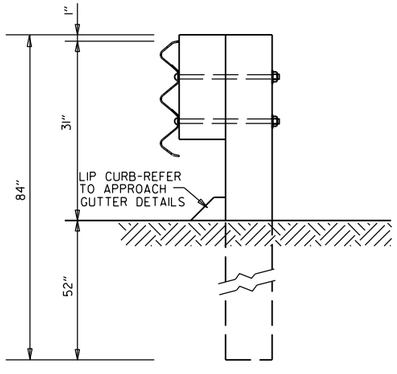
STANDARD DRAWING GR-10



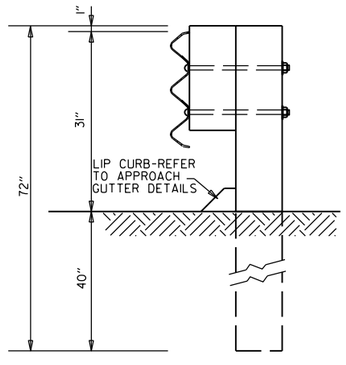
THRIE BEAM RAIL WITH STEEL TUBING BLOCKOUT
AND STEEL POST
POSTS 1-7



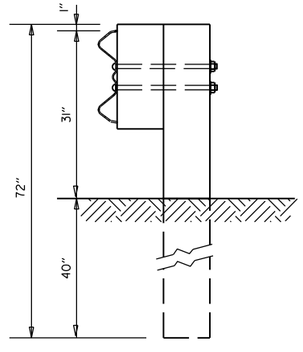
W-BEAM TO THRIE BEAM TRANSITION RAIL
WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST
POST 8



THRIE BEAM RAIL
WITH WOOD OR PLASTIC
BLOCKOUTS & WOOD POSTS
POSTS 1-6



THRIE BEAM RAIL
WITH WOOD OR PLASTIC
BLOCKOUT & WOOD POST
POST 7



W-BEAM TO THRIE BEAM
TRANSITION RAIL WITH WOOD OR
PLASTIC BLOCKOUT & WOOD POST
POST 8

GENERAL NOTES:

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

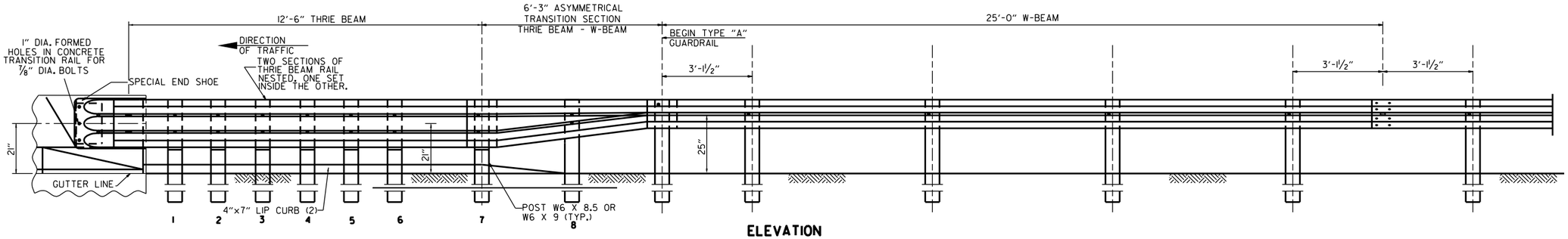
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	FILMED
11-07-19	RENAMED	
11-16-17	REVISED GUARDRAIL HEIGHT, CHANGED STD. DWG. NUMBER FROM GR-10A TO GR-11	
07-14-10	REVISED POST 8 DIMENSIONS	
11-29-07	ADDED PLASTIC BLOCKOUTS	
08-22-02	REVISED LIP CURB NOTE	
03-30-00	DRAWN & ISSUED	

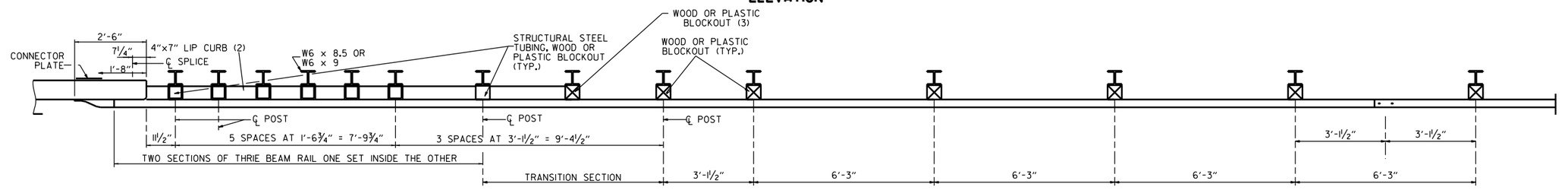
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

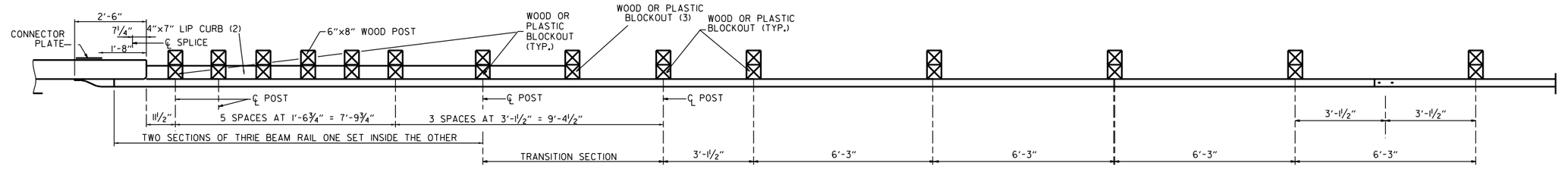
STANDARD DRAWING GR-11



ELEVATION



PLAN



PLAN

(1) VERIFY BOLT SPACING FROM RAIL TRANSITION PRODUCER.
(2) REFER TO APPROACH GUTTER DETAILS.
(3) LENGTH OF BLOCKOUT ON POST 8 TO BE MODIFIED TO FIT RAIL WIDTH.

THRIE BEAM GUARDRAIL CONNECTION AT BRIDGE ENDS

GENERAL NOTES:

THE THRIE BEAM RAIL, SPECIAL END SHOE, AND THE TRANSITION SECTION SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE. ZINC COATING SHALL BE TYPE I.

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN 3/4" BEYOND IT.

ALL LAP SPLICES, INCLUDING SPECIAL END SHOES, SHALL BE MADE IN THE DIRECTION SHOWN ON STANDARD DRAWINGS GR-8 & GR-13.

REFER TO STD. DRWG. GR-11 FOR POST DETAILS.

USE THRIE BEAM GUARDRAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB.

THRIE BEAM POSTS SHALL BE SAME MATERIAL AS W-BEAM POSTS FOR ENTIRE JOB.

POSTS SHALL NOT BE PLACED AT SPLICE LOCATIONS ALONG W-BEAM RAILS.

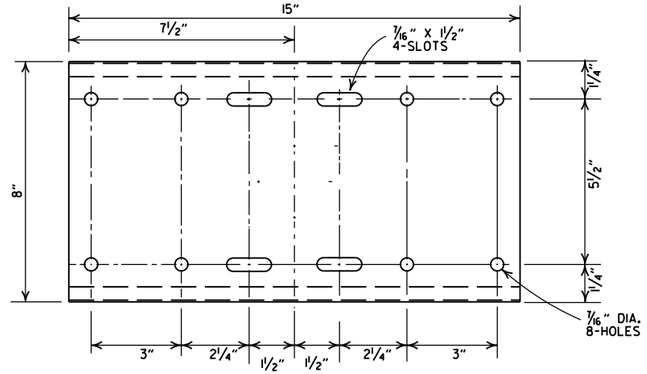
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	FILMED
05-14-20	REVISED NOTES	
11-07-19	RENAMED & REVISED REFERENCES	
11-16-17	RE-DRAWN FROM STD. DWG. GR-10 & ISSUED	

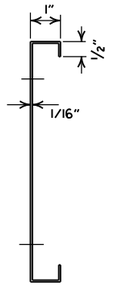
ARKANSAS STATE HIGHWAY COMMISSION

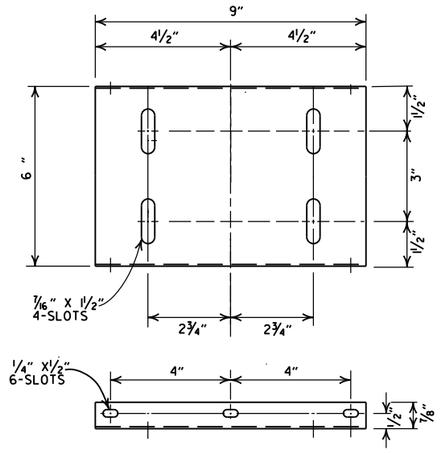
GUARDRAIL DETAILS

STANDARD DRAWING GR-12

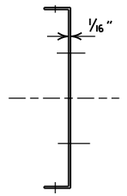


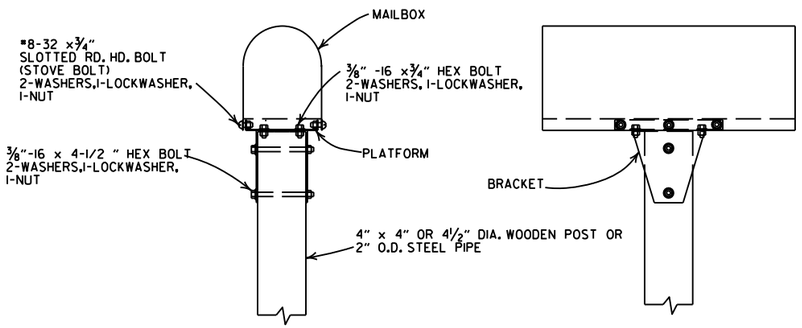
SHELF



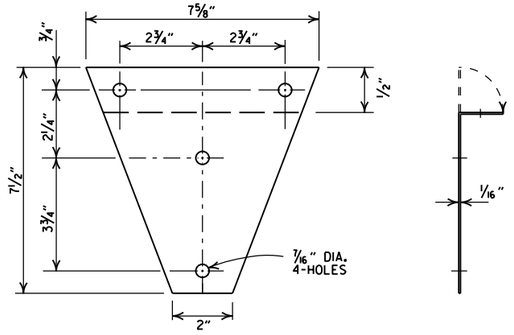


PLATFORM





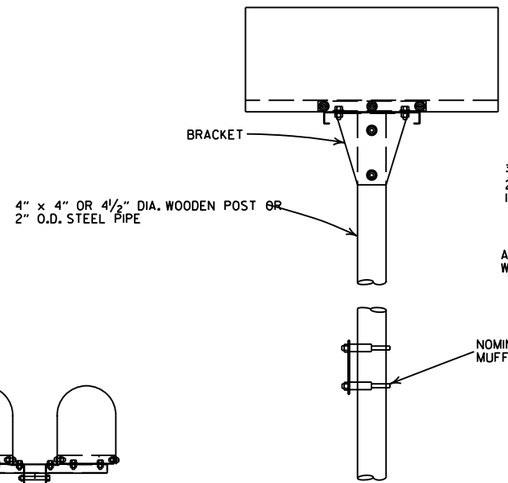
SINGLE INSTALLATION



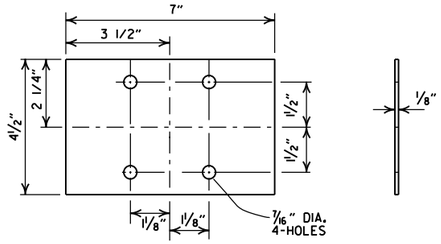
BRACKET

GENERAL NOTES

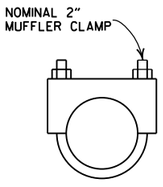
1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
2. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
3. MAILBOX SHELF, BRACKET & PLATFORM SHALL BE GALVANIZED OR PAINTED STEEL, HOWEVER TREATED WOOD MAY BE USED WITH WOODEN POSTS. THE WOODEN SHELF, BRACKET & PLATFORM SHALL BE A MINIMUM OF ¾" THICK AND SHALL BE ASSEMBLED WITH BOLTS OF THE APPROPRIATE LENGTH WITH SIX 8 X¾" FLATHEAD WOOD SCREWS USED TO ATTACH THE MAILBOX TO THE PLATFORM.
4. THE MAILBOX SHELF AND PLATFORM THAT IS SHOWN IS FOR STANDARD SIZE MAILBOXES. THE SHELF AND PLATFORM SIZE SHALL BE MODIFIED TO FIT MAILBOXES OF A DIFFERENT SIZE.
5. METAL PIPE FOR MAILBOX SUPPORT SHALL BE 2" OUTSIDE DIAMETER STEEL WITH A WALL THICKNESS OF 0.145" AND A WEIGHT OF 2.72 LBS PER FT. OUTSIDE DIAMETER AND WEIGHT SHALL HAVE A TOLERANCE OF +/- 5% ACCORDING TO AASHTO M 181.
6. MAILBOX SUPPORT SYSTEM DIFFERING FROM THOSE SHOWN MAY BE USED, PROVIDED THEY ARE ON THE ARDOT QUALIFIED PRODUCTS LIST FOR MAILBOX SUPPORTS.



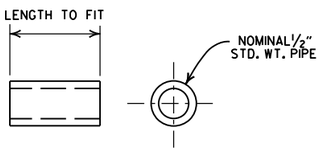
DOUBLE INSTALLATION



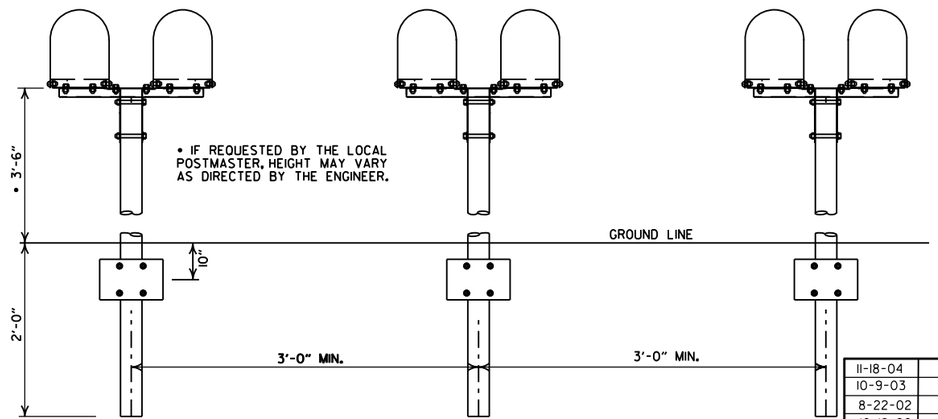
ANTI-TWIST PLATE



CLAMP



SPACER



SPACING FOR MULTIPLE POST INSTALLATION

DATE	FILMED	REVISION
11-18-04		REVISED NOTES
10-9-03		REVISED NOTE 6
8-22-02		REVISED NOTE 6
10-18-96		CORRECTED AASHTO
10-1-92		CORRECTED SPELLING
9-26-91		NEW PHONE NUMBER
8-15-91		ADDED NOTE
11-30-89		ADJUSTED HEIGHT & ADDED NOTE
2-16-89		DELETED SLOTS FROM SHELF & PLTF
11-17-88	10-1-92	ADJUSTED DIMENSIONS OF STEEL POSTS
7-15-88	20-7-15-88	ISSUED

ARKANSAS STATE HIGHWAY COMMISSION

MAILBOX DETAILS

STANDARD DRAWING MB-1

REINFORCED CONCRETE ARCH PIPE DIMENSIONS

EQUIV. DIA.	SPAN		RISE	
	AASHTO M 206	ARDOT NOMINAL	AASHTO M 206	ARDOT NOMINAL
INCHES	INCHES			
15	18	18	11	11
18	22	22	13½	14
21	26	26	15½	16
24	28½	29	18	18
30	36¼	36	22½	23
36	43⅜	44	26⅝	27
42	51⅛	51	31⅜	31
48	58½	59	36	36
54	65	65	40	40
60	73	73	45	45
72	88	88	54	54
84	102	102	62	62
90	115	115	72	72
96	122	122	77½	77
108	138	138	87⅛	87
120	154	154	96⅞	97
132	168¾	169	106½	107

THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PERCENT FROM THE VALUES SPECIFIED BY AASHTO M206.

REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE DIMENSIONS

EQUIV. DIA.	AASHTO M 207	
	SPAN	RISE
INCHES	INCHES	
18	23	14
24	30	19
27	34	22
30	38	24
33	42	27
36	45	29
39	49	32
42	53	34
48	60	38
54	68	43
60	76	48
66	83	53
72	91	58
78	98	63
84	106	68

THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PERCENT FROM THE VALUES SPECIFIED BY AASHTO M207.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. PLACE AND COMPACT THE HAUNCH AREA UP TO THE MIDDLE OF THE PIPE.
5. COMPLETE BACKFILL ACCORDING TO SUBSECTION 606.03.(f)(1).

NOTE: HAUNCH AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF CONCRETE PIPE.

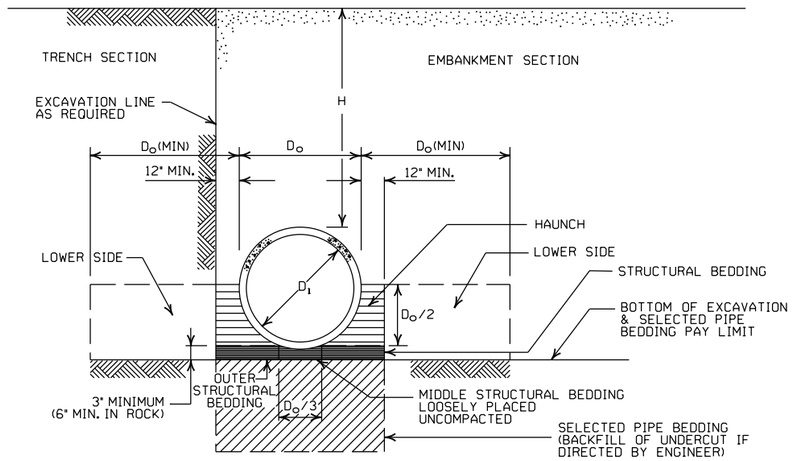
- LEGEND -

D_1 = NORMAL INSIDE DIAMETER OF PIPE
D_O = OUTSIDE DIAMETER OF PIPE
H = FILL COVER HEIGHT OVER PIPE (FEET)
MIN. = MINIMUM
▨ = UNDISTURBED SOIL

INSTALLATION TYPE	MATERIAL REQUIREMENTS FOR HAUNCH AND STRUCTURAL BEDDING
TYPE 1	AGGREGATE BASE COURSE (CLASS 5 OR CLASS 7)
TYPE 2	SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4) OR TYPE 1 INSTALLATION MATERIAL*
TYPE 3**	AASHTO CLASSIFICATION A-1 THRU A-6 SOIL OR TYPE 1 OR 2 INSTALLATION MATERIAL

* SM-3 WILL NOT BE ALLOWED.

** MATERIALS SHALL NOT INCLUDE ORGANIC MATERIALS OR STONES LARGER THAN 3 INCHES.



EMBANKMENT AND TRENCH INSTALLATIONS

1. MATERIAL IN THE HAUNCH AND OUTER STRUCTURAL BEDDING SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. FOR TRENCHES WITH WALLS OF NATURAL SOIL, THE DENSITY OF THE SOIL IN THE LOWER SIDE ZONE SHALL BE AS FIRM AS THE 95% DENSITY REQUIRED FOR THE HAUNCH. IF THE EXISTING SOIL DOES NOT MEET THIS CRITERIA, IT SHALL BE REMOVED AND RECOMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OF MATERIAL USED.
3. FOR EMBANKMENTS, THE MATERIAL IN THE LOWER SIDE ZONE SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

GENERAL NOTES

1. CONCRETE PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION), WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. CONCRETE PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. ALL PIPE SHALL CONFORM TO SECTION 606. CIRCULAR R.C. PIPE CULVERTS SHALL CONFORM TO AASHTO M170, R.C. ARCH PIPE CULVERTS SHALL CONFORM TO AASHTO M206 AND HORIZONTAL ELLIPTICAL PIPE CULVERTS SHALL CONFORM TO AASHTO M207.
4. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT.
5. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS.
6. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
7. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
8. NOT MORE THAN ONE LIFTING HOLE MAY BE PROVIDED IN CONCRETE PIPE TO FACILITATE HANDLING. HOLE MAY BE CAST IN PLACE, CUT INTO THE FRESH CONCRETE AFTER FORMS ARE REMOVED, OR DRILLED. THE HOLE SHALL NOT BE MORE THAN TWO INCHES IN DIAMETER OR TWO INCHES SQUARE. CUTTING OR DISPLACEMENT OF REINFORCEMENT WILL NOT BE PERMITTED. SPALLED AREAS AROUND THE HOLE SHALL BE REPAIRED IN A WORKMANLIKE MANNER. LIFTING HOLE SHALL BE FILLED WITH MORTAR, CONCRETE, OR OTHER METHOD AS APPROVED BY THE ENGINEER.
9. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
10. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS THE HAUNCH), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."

MINIMUM HEIGHT OF FILL "H" OVER CIRCULAR R.C. PIPE CULVERTS

	CLASS OF PIPE			
	CLASS III		CLASS IV	CLASS V
INSTALLATION TYPE	TYPE 1 OR 2	TYPE 3	ALL	ALL
PIPE ID (IN.)	FEET			
12-15	2	2.5	2	1
18-24	2.5	3	2	1
27-33	3	4	2	1
36-42	3.5	5	2	1
48	4.5	5.5	2	1
54-60	5	7	2	1
66-78	6	8	2	1
84-108	7.5	8	2	1

NOTE: FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM OF 12" OF PAVEMENT AND/OR BASE.

MAXIMUM HEIGHT OF FILL "H" OVER CIRCULAR R.C. PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE		
	CLASS III	CLASS IV	CLASS V
	FEET		
TYPE 1	21	32	50
TYPE 2	16	25	39
TYPE 3	12	20	30

NOTE: IF FILL HEIGHT EXCEEDS 50 FEET, A SPECIAL DESIGN CONCRETE PIPE WILL BE REQUIRED USING TYPE 1 INSTALLATION.

MINIMUM HEIGHT OF FILL "H" OVER R.C. ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE	
	CLASS III	CLASS IV
	FEET	
TYPE 2 OR TYPE 3	2.5	1.5

NOTE: TYPE 1 INSTALLATION WILL NOT BE ALLOWED FOR ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS.

NOTE: FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM OF 12" OF PAVEMENT AND/OR BASE.

MAXIMUM HEIGHT OF FILL "H" OVER R.C. ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE	
	CLASS III	CLASS IV
	FEET	
TYPE 2	13	21
TYPE 3	10	16

NOTE: TYPE 1 INSTALLATION WILL NOT BE ALLOWED FOR ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS.

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED FOR LRFD DESIGN SPECIFICATIONS	
5-18-00	REVISED TYPE 3 BEDDING & ADDED NOTE	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1

CORRUGATED STEEL PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS (INCHES)				
		0.064	0.079	0.109	0.138	0.168
2⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM						
12	1	84	91			
15	1	67	73			
18	1	56	61			
24	1	42	46	59		
30	2	34	36	47		
36	2		30	39	41	
42	2		43	67	70	73
48	2		37	58	61	64
② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, BOLTED, OR HELICAL LOCK-SEAM						
36	1	48	60	88	111	118
42	1	41	51	72	90	102
48	1	36	45	64	77	85
54	2	32	40	59	71	79
60	2	29	36	53	64	71
66	2	26	33	47	58	64
72	2	24	30	44	53	59
78	2		28	41	49	54
84	2		26	38	45	51
90	2		24	35	43	45
96	2		22	33	40	44
102	2			31	38	42
108	2			30	35	39
114	2			28	34	37
120	2			27	32	35

CORRUGATED ALUMINUM PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS IN INCHES				
		0.060	0.075	0.105	0.135	0.164
		2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM				
12	1	45	45			
18	2	30	30	52		
24	2	22	22	39	41	
30	2		18	31	32	34
36	2.5		15	26	27	28
42	2			43	43	44
48	2			40	41	43
54	2			35	37	38
60	2				33	34
66	2					31
72	2					29

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. COMPLETE STRUCTURAL BACKFILL OPERATION BY WORKING FROM SIDE TO SIDE OF THE PIPE. THE SIDE TO SIDE STRUCTURAL BACKFILL DIFFERENTIAL SHALL NOT EXCEED 24 INCHES OR 1/3 THE SIZE OF THE PIPE, WHICHEVER IS LESS.

NOTE: STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF METAL PIPE.

INSTALLATION TYPE	MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 1	AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7)
TYPE 2	SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4) OR TYPE 1 INSTALLATION MATERIAL ③

③ SM-3 WILL NOT BE ALLOWED.

EQUIVALENT METAL THICKNESSES AND GAUGES

METAL THICKNESS IN INCHES			GAUGE NUMBER
STEEL			
ZINC COATED	UNCOATED	ALUMINUM	
0.064	0.0598	0.060	16
0.079	0.0747	0.075	14
0.109	0.1046	0.105	12
0.138	0.1345	0.135	10
0.168	0.1644	0.164	8

CORRUGATED METAL PIPE ARCHES

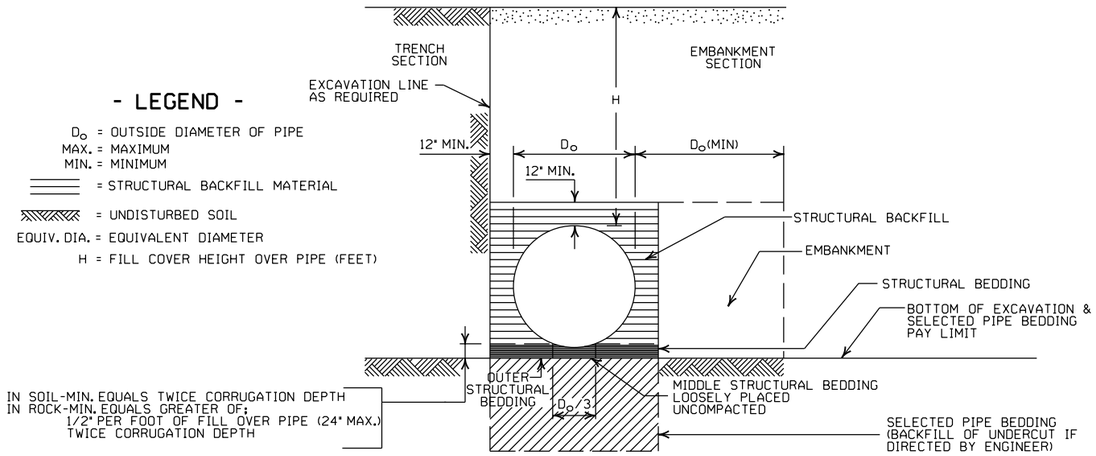
EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINUMUM CORNER RADIUS (INCHES)	STEEL			ALUMINUM		
			MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)	MAX. HEIGHT OF FILL, "H" (FT.)	MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)	MAX. HEIGHT OF FILL, "H" (FT.)
				INSTALLATION TYPE 1	INSTALLATION TYPE 1		INSTALLATION TYPE 1	INSTALLATION TYPE 1
			2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM			2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM		
15	17x13	3	0.064	2	15	0.060	2	15
18	21x15	3	0.064	2	15	0.060	2	15
21	24x18	3	0.064	2.25	15	0.060	2.25	15
24	28x20	3	0.064	2.5	15	0.075	2.5	15
30	35x24	3	0.079	3	12	0.075	3	12
36	42x29	3½	0.079	3	12	0.105	3	12
42	49x33	4	0.079	3	12	0.105	3	12
48	57x38	5	0.109	3	13	0.135	3	13
54	64x43	6	0.109	3	14	0.135	3	14
60	71x47	7	0.138	3	15	0.164	3	15
66	77x52	8	0.168	3	15			
72	83x57	9	0.168	3	15			
			② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM					
				INSTALLATION TYPE 2	INSTALLATION TYPE 1		INSTALLATION TYPE 2	INSTALLATION TYPE 1
36	40x31	5	0.079	3	2		12	15
42	46x36	6	0.079	3	2		13	15
48	53x41	7	0.079	3	2		13	15
54	60x46	8	0.079	3	2		13	15
60	66x51	9	0.079	3	2		13	15
66	73x55	12	0.079	3	2		15	15
72	81x59	14	0.079	3	2		15	15
78	87x63	14	0.079	3	2		15	15
84	95x67	16	0.109	3	2		15	15
90	103x71	16	0.109	3	2		15	15
96	112x75	18	0.109	3	2		15	15
102	117x79	18	0.109	3	2		15	15
108	128x83	18	0.138	3	2		15	15

① FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

② WHERE THE STANDARD 2 2/3"x ½" CORRUGATION AND GAUGE IS SPECIFIED FOR A GIVEN DIAMETER, A PIPE OF THE SAME DIAMETER WITH A 3" x 1" OR 5" x 1" CORRUGATION MAY BE SUBSTITUTED, PROVIDING IT IS GAUGED FOR A FILL HEIGHT CONDITION EQUAL TO OR GREATER THAN THE MAXIMUM FILL HEIGHT CONDITION FOR THE SPECIFIED GAUGE AND CORRUGATION.

- LEGEND -

D_o = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM
= STRUCTURAL BACKFILL MATERIAL
= UNDISTURBED SOIL
EQUIV. DIA. = EQUIVALENT DIAMETER
H = FILL COVER HEIGHT OVER PIPE (FEET)



EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE (ROUND).
3. INSTALALTION TYPE 1 SHALL BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 2⅔" X ½" CORRUGATION.
4. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 3" X 1" OR 5" X 1" CORRUGATION.

GENERAL NOTES

1. METAL PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION), WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. METAL PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. METAL PIPE CULVERT MATERIALS AND INSTALLATIONS SHALL CONFORM TO SECTION 606 AND JOB SPECIAL PROVISION "METAL PIPE".
4. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT.
5. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS.
6. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
7. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
8. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
9. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED FOR LRFD DESIGN SPECS	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

METAL PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCM-1

INSTALLATION TYPE	•• MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 2	•SELECTED MATERIALS (CLASS SM-1, SM-2 OR SM-4)

• AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL.

SM3 WILL NOT BE ALLOWED.

•• STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF HDPE PIPE.

MULTIPLE INSTALLATION OF HIGH DENSITY POLYETHYLENE PIPES

PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"
42"	3'-6"
48"	4'-0"

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

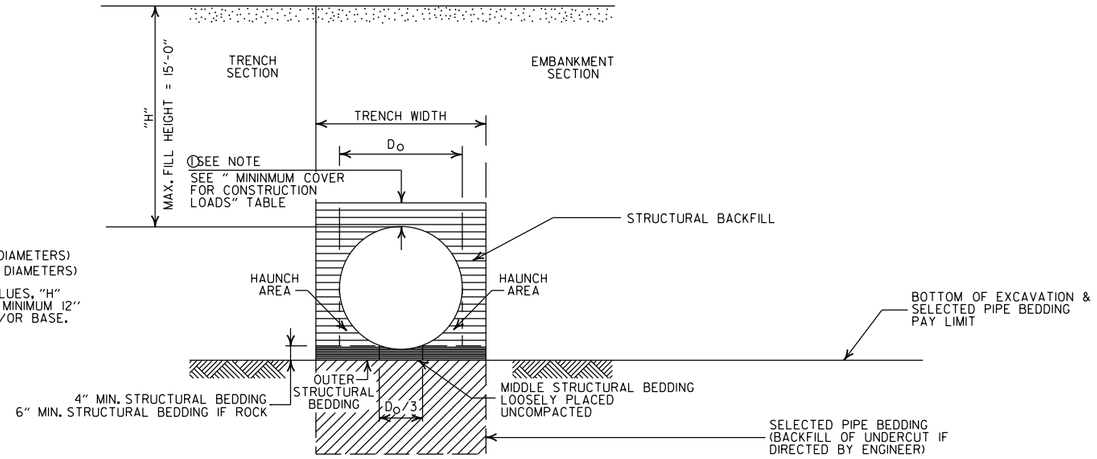
PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" >OR= 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"
42"	7'-0"	10'-6"
48"	8'-0"	12'-0"

①NOTE:
18" MIN. (18" - 30" DIAMETERS)
24" MIN. (36" - 48" DIAMETERS)
MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

MINIMUM COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS			
	18.0-50.0 (KIPS)	50.0-75.0 (KIPS)	75.0-110.0 (KIPS)	110.0-175.0 (KIPS)
36" OR LESS	2'-0"	2'-6"	3'-0"	3'-0"
42" OR GREATER	3'-0"	3'-0"	3'-6"	4'-0"

②MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

GENERAL NOTES

1. PIPE SHALL CONFORM TO AASHTO M294, TYPE S. INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICIATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
5. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
6. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. HIGH DENSITY POLYETHYLENE PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR HDPE PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

- LEGEND -

H = FILL HEIGHT (FT.)
D_O = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

= STRUCTURAL BACKFILL MATERIAL

= UNDISTURBED SOIL

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED GENERAL NOTES & MINIMUM COVER NOTE	
11-17-10	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)

STANDARD DRAWING PCP-1

INSTALLATION TYPE	•• MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 2	•SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4)

• AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL.

SM3 WILL NOT BE ALLOWED.

•• STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF PVC PIPE.

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" >OR= 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"

MULTIPLE INSTALLATION OF PVC PIPES

PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"

MAXIMUM FILL HEIGHT BASED ON STRUCTURAL BACKFILL

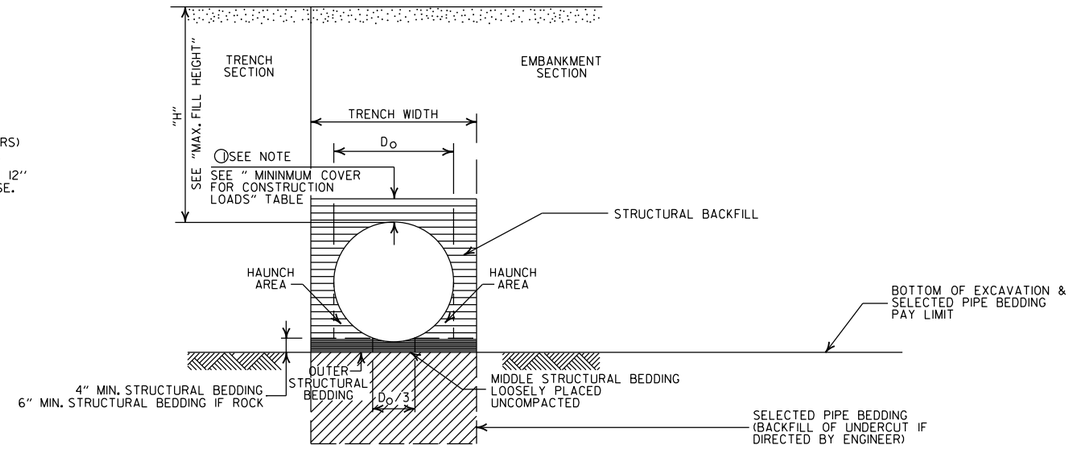
PIPE DIAMETER	"H"
18"	45'-0"
24"	45'-0"
30"	40'-0"
36"	40'-0"

① NOTE:
12" MIN. (18" - 36" DIAMETERS)
MINIMUM COVER VALUE, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

MINIMUM COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS			
	18.0-50.0 (KIPS)	50.0-75.0 (KIPS)	75.0-110.0 (KIPS)	110.0-175.0 (KIPS)
18" THRU 36"	2'-0"	2'-6"	3'-0"	3'-0"

②MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

GENERAL NOTES

1. PIPE SHALL CONFORM TO ASTM F949, CELL CLASS 12454. INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
5. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
6. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. PVC PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR PVC PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

- LEGEND -

H = FILL HEIGHT (FT.)
D_O = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

= STRUCTURAL BACKFILL MATERIAL

= UNDISTURBED SOIL

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REV GENERAL NOTES & MINIMUM COVER NOTE; DELETED SM3 MATERIAL	
11-17-10	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (PVC F949)

STANDARD DRAWING PCP-2

INSTALLATION TYPE	**MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 1	AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7)
TYPE 2	*SELECTED MATERIALS (CLASS SM-1, SM-2 OR SM-4) OR TYPE 1 INSTALLATION MATERIAL

*SM3 WILL NOT BE ALLOWED.

** STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF POLYPROPYLENE PIPE.

MULTIPLE INSTALLATION OF POLYPROPYLENE PIPES

PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"
42"	3'-6"
48"	4'-0"
60"	5'-0"

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" >OR= 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"
42"	7'-0"	10'-6"
48"	8'-0"	12'-0"
60"	10'-0"	15'-0"

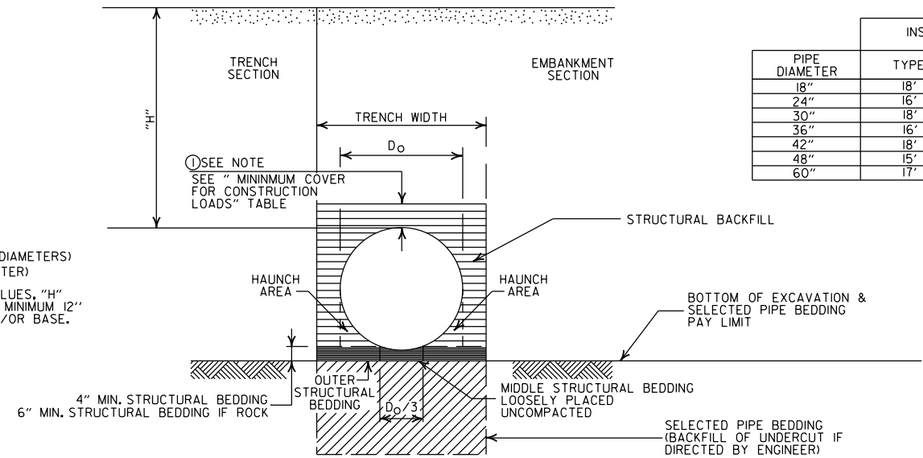
MINIMUM COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS			
	18.0-50.0 (KIPS)	50.0-75.0 (KIPS)	75.0-110.0 (KIPS)	110.0-150.0 (KIPS)
36" OR LESS	2'-0"	2'-6"	3'-0"	3'-0"
42" OR GREATER	3'-0"	3'-0"	3'-6"	4'-0"

②MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.

①NOTE:
12" MIN. (18" - 42" DIAMETERS)
24" MIN. (60" DIAMETER)

MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.



MAXIMUM HEIGHT OF FILL "H"

PIPE DIAMETER	INSTALLATION TYPE	
	TYPE 1	TYPE 2
18"	18'	14'
24"	16'	12'
30"	18'	14'
36"	16'	12'
42"	18'	13'
48"	15'	11'
60"	17'	12'

EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

GENERAL NOTES

1. PIPE SHALL CONFORM TO AASHTO M330, TYPE S, INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICIATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SIXTH EDITION (2012) WITH 2013 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
5. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
6. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. POLYPROPYLENE PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR POLYPROPYLENE PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN SECTION 26.4.2.4 AND 30.4.2 OF THE AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS 3RD EDITION (2010) WITH 2012 INTERIMS. JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

- LEGEND -

H = FILL HEIGHT (FT.)
D_O = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

= STRUCTURAL BACKFILL MATERIAL

= UNDISTURBED SOIL

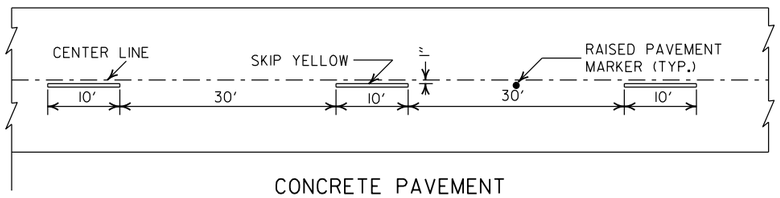
DATE	REVISION	DATE FILMED
02-27-20	REVISED	
11-07-19	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

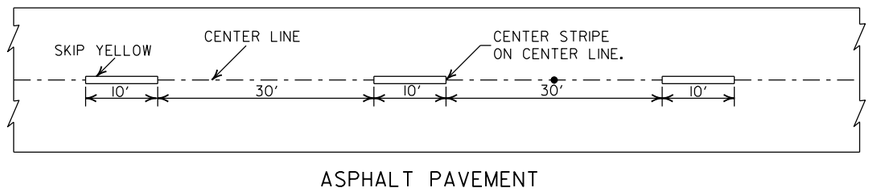
PLASTIC PIPE CULVERT (POLYPROPYLENE)

STANDARD DRAWING PCP-3

NOTES:
1. REFER TO THE STRIPING DETAILS FOR PAVEMENT MARKING LINE WIDTHS.
2. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
3. RAISED PAVEMENT MARKERS SHALL BE PLACED ON AN 80 FEET SPACING UNLESS OTHERWISE SHOWN IN THE PLANS.

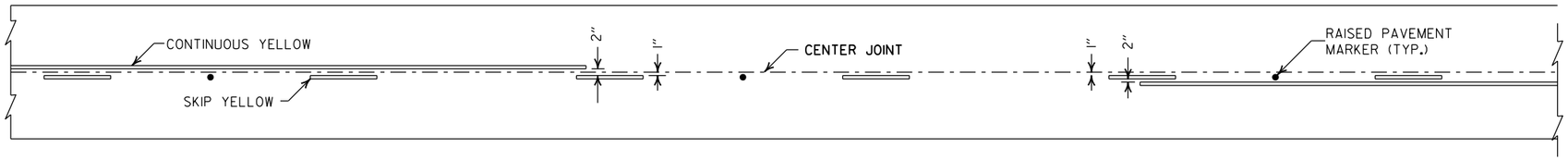


CONCRETE PAVEMENT

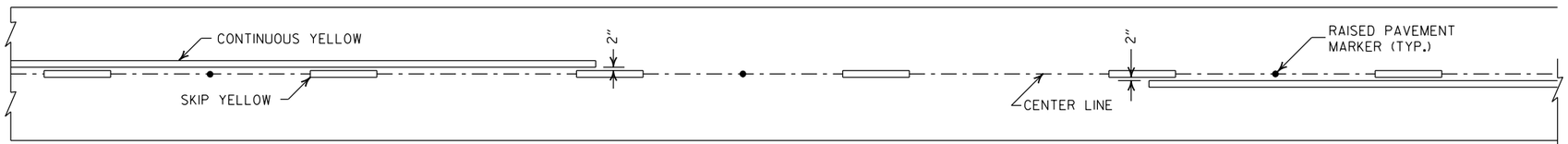


ASPHALT PAVEMENT

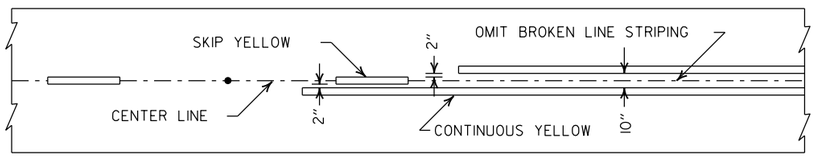
BROKEN LINE STRIPING



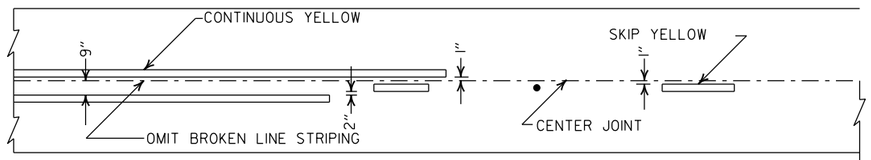
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

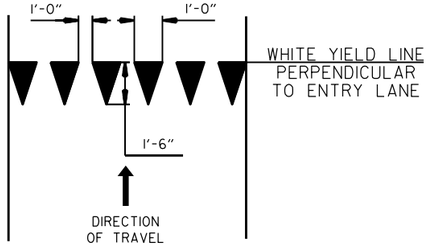


ASPHALT PAVEMENT

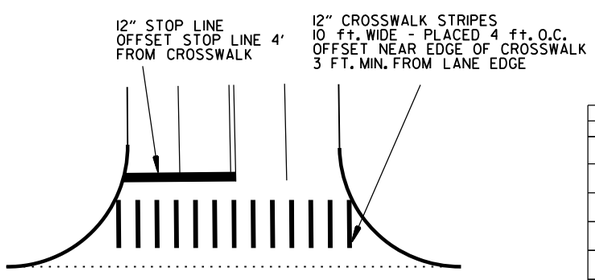


CONCRETE PAVEMENT

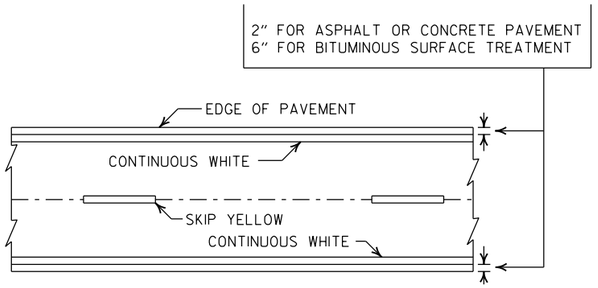
STRIPING AT ADJACENT NO PASSING LANES



YIELD LINE DETAIL



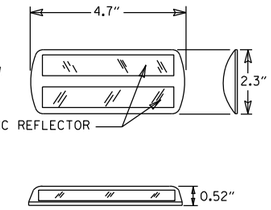
CROSSWALK AND STOP LINE DETAILS



PAVEMENT EDGE LINE MARKING

NOTE:
THE RED LENS OF THE TYPE II R.P.M. SHALL FACE THE INCORRECT TRAFFIC MOVEMENT.

TYPE II
RED/CLEAR OR YELLOW/YELLOW



NOTE:
DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE ARDOT QUALIFIED PRODUCTS LIST.

DETAIL OF STANDARD RAISED PAVEMENT MARKERS

DATE	REVISION	FILMED
2-27-20	REVISED STOP LINE DETAILS	
6-1-17	ADDED YIELD LINE DETAIL	
5-12-16	REVISED LINE WIDTHS, SPACING, & NOTES	
9-12-13	REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS	
11-17-10	REVISED GENERAL NOTES & REMOVED PLOWABLE PVMT MRKRS	
11-18-04	REVISED NOTE 2 & GENERAL NOTES	
8-22-02	ADDED CROSSWALK & STOPBAR DTLS.	
7-02-98	ADDED DETAILS OF STD. RAISED PAV'T. MARKERS	
4-26-96	REV. NOTES 3&4; ADDED R.P.M.	
9-30-80	DRAWN	1-9-30-80

ARKANSAS STATE HIGHWAY COMMISSION

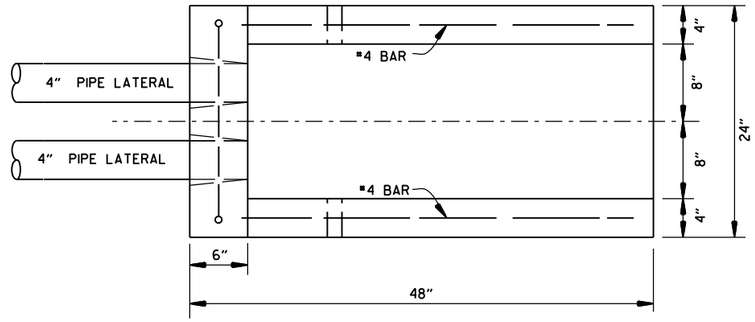
PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

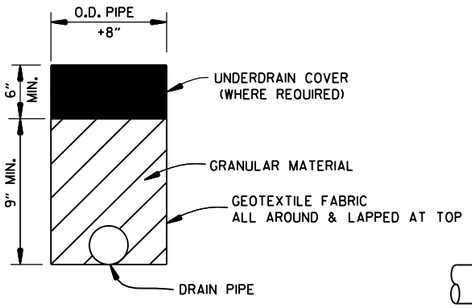
NOTE:

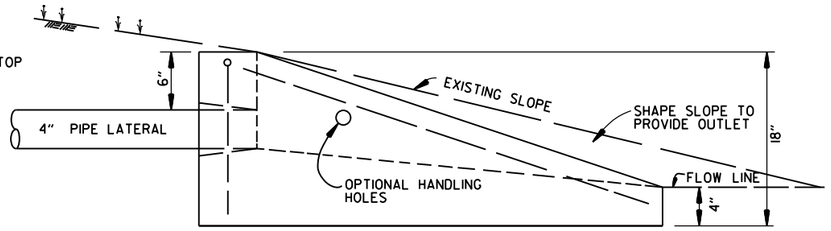
1. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.

2. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC. LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.

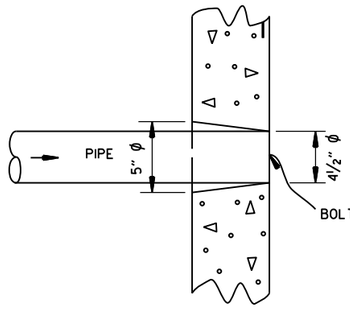


PLAN VIEW

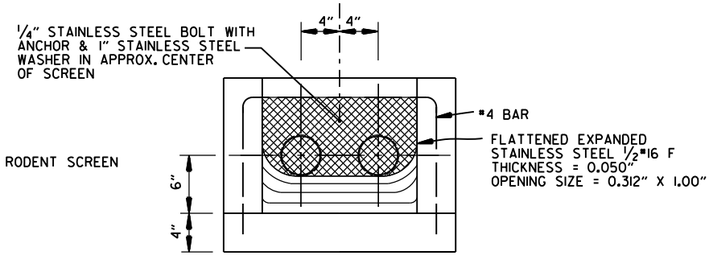




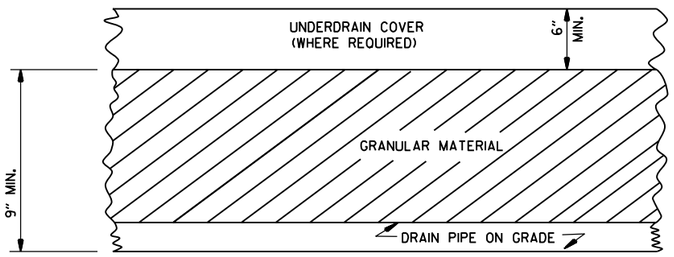
SIDE VIEW



DETAIL OF HOLE FOR 4" PIPE

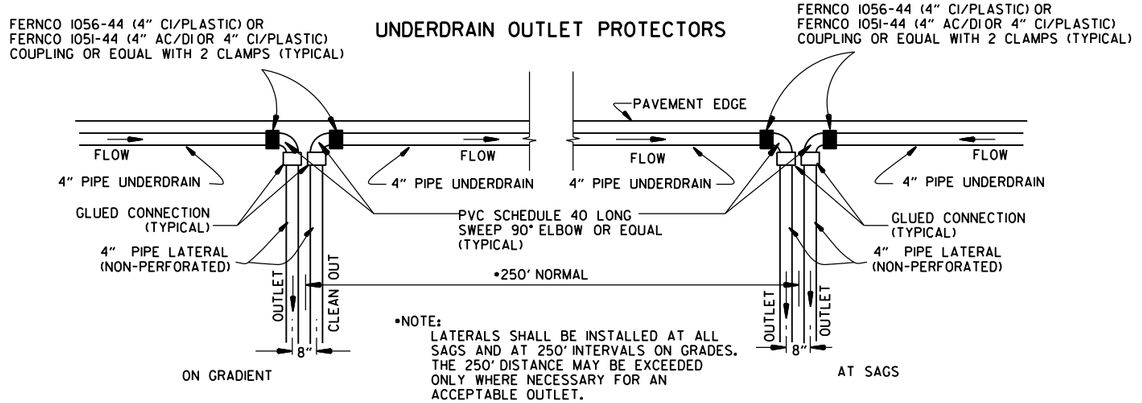


FRONT VIEW
(DETAIL OF RODENT SCREEN)



DETAILS OF PIPE UNDERDRAIN

UNDERDRAIN OUTLET PROTECTORS



DETAIL OF PIPE UNDERDRAIN LATERALS WHEN PLACED ALONG PAVEMENT EDGE

NOTE: PVC PIPE FOR LATERALS SHALL MEET THE REQUIREMENTS OF ASTM D 1785 (LATEST REVISION) FOR SCHEDULE 40 PIPE.

NOTES FOR PIPE UNDERDRAINS

1. GEOTEXTILE FABRIC SHALL MEET THE REQUIREMENTS OF SECTION 625 FOR TYPE I. PAYMENT FOR GEOTEXTILE FABRIC AND GRANULAR FILTER MATERIAL SHALL BE INCLUDED IN THE PRICE BID PER LIN. FT. FOR "4" PIPE UNDERDRAINS" IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

2. 4" NON-PERFORATED SCHEDULE 40 PVC PIPE LATERALS WITH OUTLET PROTECTORS SHALL BE INSTALLED AS SHOWN HEREON. LATERALS WILL BE MEASURED AND PAID FOR AS "4" PIPE UNDERDRAINS." UNDERDRAIN OUTLET PROTECTORS WILL BE MEASURED AND PAID FOR BY THE UNIT IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

3. EXISTING 4" PIPE UNDERDRAINS MAY BE CONNECTED TO PROPOSED DROP INLETS OR EXTENDED WHERE DIRECTED BY THE ENGINEER. PAYMENT FOR CONNECTING TO DROP INLETS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR "4" PIPE UNDERDRAINS."

4. THE LOCATION OF ALL LATERALS SHALL BE MARKED WITH 4" X 12" PERMANENT PAVEMENT MARKING TAPE (TYPE III WHITE) AT THE OUTSIDE EDGE OF THE SHOULDER, PLACED TRANSVERSE TO TRAFFIC. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

5. PAYMENT FOR THE RODENT SCREEN SHALL BE INCLUDED IN THE PRICE BID PER EACH FOR "UNDERDRAIN OUTLET PROTECTORS."

6. ANY EXISTING UNDERDRAINS THAT INTERFERE WITH INSTALLATION OF THE NEW UNDERDRAIN SYSTEM SHALL BE REMOVED AND DISPOSED OF AS DIRECTED BY THE ENGINEER. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS. EXISTING UNDERDRAIN OUTLET PROTECTORS SHALL BE REMOVED UNDER THE ITEM "REMOVAL AND DISPOSAL OF UNDERDRAIN OUTLET PROTECTORS."

7. AT LOCATIONS WHERE A SINGLE LATERAL IS USED THE CONTRACTOR SHALL HAVE THE FOLLOWING OPTIONS: 1. INSTALL OUTLET PROTECTOR AS SHOWN ON STANDARD DRAWING PU-1 AND GROUT THE UNUSED HOLE OR 2. INSTALL AN OUTLET PROTECTOR WITH A SINGLE HOLE.

DATE	REVISION	DATE FILMED
12-8-16	ADDED NOTES FOR PIPE UNDERDRAINS, REVISED RODENT SCREEN DETAIL AND NOTES, REMOVED NOTE 1 FOR GRANULAR MATERIAL, ADDED NOTE FOR GEOTEXTILE FABRIC	
4-10-03	REVISED NOTE 3	
1-12-00	REVISED DETAIL OF UNDERDRAIN LATERALS	
11-18-98	REVISED NOTE	
10-18-96	REVISED MIN. DEPTH & GEOTEXTILE FABRIC	
4-26-96	ADDED LATERAL NOTE; 5½" TO 5"	
11-22-95	REVISED LATERALS	
7-20-95	REVISED LATERALS & ADDED NOTE	
11- 3-94	REVISED FOR DUAL LATERALS	11- 3-94
10- 1-92	SUBSTITUTED GEOTEXTILE	10- 1-92
8-15-91	ADDED POLYEDTHYLENE PIPE	8-15-91
11- 8-90	DELETED ALTERNATE NOTE	11- 8-90
1-25-90	ADDED 4" SNAP ADAPTER	1-25-90
11-30-89	DEL. (SUBGRADE); ADDED (WHERE REQUIRED)	11-30-89
7-15-88	ISSUED P.L.M.	647-7-15-88

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF PIPE UNDERDRAIN

STANDARD DRAWING PU-1

SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

DEGREE OF CURVE	30 MPH			35 MPH			40 MPH			45 MPH			50 MPH			55 MPH			60 MPH			65 MPH			70 MPH			75 MPH		
	e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)	
		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE
0° 15'	NC			NC			NC			NC			NC			NC			NC			NC			NC			NC		
0° 30'	NC			NC			NC			NC			NC			NC			RC	96		RC	96		RC	96		0.022	101	
0° 45'	NC			NC			NC			NC			RC	96		RC	96		0.024	106		0.026	110		0.030	120		0.032	125	
1° 00'	NC			NC			NC			RC	90		0.022	101		0.026	110		0.030	120		0.034	130		0.038	139	300	0.042	149	300
1° 15'	NC			NC			RC	84		0.022	95		0.028	115		0.032	125		0.038	139		0.042	149		0.046	158		0.052	173	
1° 30'	NC			RC	78		0.022	88		0.028	108		0.032	125		0.038	139		0.044	154		0.050	168	300	0.056	182		0.062	197	
1° 45'	RC	72		RC	78		0.026	97		0.030	113		0.036	134		0.044	154		0.050	168	300	0.056	182		0.064	202		0.070	216	
2° 00'	RC	72		0.024	86		0.028	101		0.034	122		0.042	149		0.048	163		0.056	182		0.064	202		0.070	216		0.080	240	
2° 15'	RC	72		0.026	90		0.032	109		0.038	131		0.046	158		0.054	178	300	0.062	197		0.070	216		0.078	235	350	0.088	259	350
2° 30'	0.022	75		0.028	94		0.034	113		0.042	140		0.050	168		0.058	187		0.068	211		0.076	230		0.086	254		0.096	278	
2° 45'	0.024	79		0.030	98		0.038	122		0.046	149	200	0.054	178		0.064	202		0.072	221		0.082	245		0.092	269		0.100	288	400
3° 00'	0.026	83		0.034	105		0.040	126		0.050	158		0.058	187	250	0.068	211		0.078	235		0.088	259		0.098	283	400	D MAX = 2° 45'		
3° 15'	0.028	86		0.036	109		0.044	134		0.052	162		0.062	197		0.072	221		0.082	245		0.092	269		0.100	288				
3° 30'	0.030	90		0.038	113		0.046	139	200	0.056	171		0.066	206		0.076	230		0.086	254		0.096	278	350	D MAX = 3° 30'					
3° 45'	0.032	93		0.040	117		0.050	147		0.058	176		0.070	216		0.080	240		0.090	264		0.098	283							
4° 00'	0.034	97		0.042	121	200	0.052	151		0.062	185		0.072	221		0.084	250		0.094	274	350	0.100	288							
4° 15'	0.036	100		0.044	125		0.054	155		0.064	189		0.076	230		0.086	254	350	0.096	278		D MAX = 4° 15'								
4° 30'	0.036	100	200	0.046	129		0.056	160		0.068	198		0.078	235		0.090	264		0.098	283										
4° 45'	0.038	104		0.048	133		0.060	168		0.070	203		0.082	245		0.092	269		0.100	288										
5° 00'	0.040	108		0.050	137		0.062	172		0.072	207		0.084	250		0.094	274		D MAX = 5° 15'										
5° 30'	0.044	115		0.054	144		0.066	181		0.078	221	250	0.088	259	300	0.098	283												
6° 00'	0.046	119		0.058	152		0.070	189		0.082	230		0.092	269		0.100	288												
6° 30'	0.050	126		0.062	160		0.074	198	250	0.086	239		0.096	278		D MAX = 6° 30'														
7° 00'	0.052	130		0.064	164		0.078	206		0.090	248		0.098	283																
7° 30'	0.054	133		0.068	172		0.080	210		0.092	252	300	0.100	288																
8° 00'	0.058	140		0.070	176		0.084	219		0.094	257		D MAX = 8° 25'																	
8° 30'	0.060	144		0.072	179		0.086	223	250	0.096	261																			
9° 00'	0.062	148		0.076	187		0.088	227		0.098	266																			
9° 30'	0.064	151		0.078	191		0.092	235		0.100	270																			
10° 00'	0.066	155		0.080	195		0.094	240		D MAX = 10° 30'																				
11° 00'	0.070	162		0.084	203		0.096	244																						
12° 00'	0.074	169		0.088	211	250	0.098	248																						
13° 00'	0.076	173		0.090	215		0.100	252	300																					
14° 00'	0.080	180		0.094	222		D MAX = 13° 45'																							
15° 00'	0.082	184		0.096	226																									
16° 00'	0.086	191		0.098	230																									
17° 00'	0.088	194		0.100	234																									
18° 00'	0.090	198	250	D MAX = 19° 30'																										
19° 00'	0.092	202																												
20° 00'	0.094	205																												
21° 00'	0.096	209																												
22° 00'	0.096	209																												
23° 00'	0.098	212																												
24° 00'	0.098	212																												
25° 00'	0.100	216																												

D MAX = 28° 30'

GENERAL NOTES

1. ON PAVEMENT WITH TWO-WAY TRAFFIC, THE SUPERELEVATION SHALL BE REVOLVED ON THE INSIDE PAVEMENT EDGE UNLESS OTHERWISE NOTED ON THE PLANS
2. SUPERELEVATION VALUES SHOWN ON THE CROSS SECTIONS ARE VALUES (+) OR (-) TO BE ADDED TO OR SUBTRACTED FROM THE POINT OF CONTROL.
3. LENGTHS FOR L MAY BE ROUNDED IN MULTIPLES OF 25 FT. OR 50 FT. TO PERMIT SIMPLER CALCULATIONS.
4. PAVEMENTS WIDER THAN 2 LANES SHALL HAVE ADDITIONAL TRANSITION LENGTHS AS FOLLOWS:

3 LANE UNDIVIDED - - - - - +20%
4 LANE UNDIVIDED - - - - - +50%
5 LANE UNDIVIDED - - - - - +80%
6 LANE UNDIVIDED - - - - - +100%

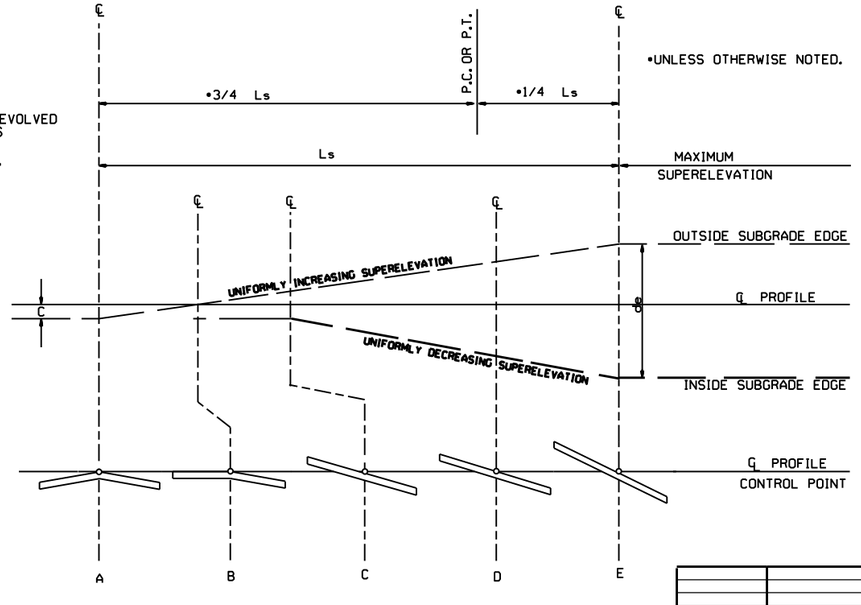
NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

RATE OF SUPERELEVATION SHALL BE COMPUTED ON STRAIGHT LINE METHOD USING APPLICABLE Ls.

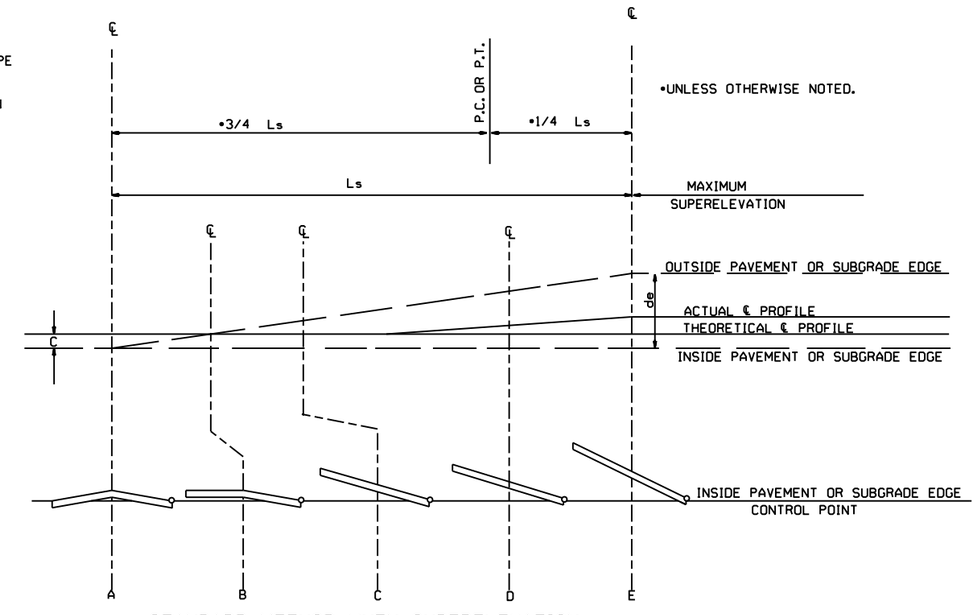
SUPERELEVATION FORMULA = $\frac{Lde}{Ls}$

ABBREVIATIONS

NC - NORMAL CROWN
RC - REVERSE CROWN, SUPERELEVATION AT NORMAL CROWN SLOPE
e - RATE OF SUPERELEVATION (FT. PER FT.)
Ls - LENGTH OF SUPERELEVATION TRANSITION (FT.)
L - DISTANCE FROM BEGINNING OF SUPERELEVATION TRANSITION TO ANY POINT (FT.)
d - WIDTH OF PAVEMENT (FT.) OR WIDTH OF SUBGRADE (FT.)
C - NORMAL CROWN (FT.)



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND INNER SUBGRADE POINT OR INNER PAVEMENT EDGE

NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

DATE	REVISION	DATE FILMED
11-07-19	REVISED SUPERELEVATION TABLE	
10-18-96	ADDED FORMULA	
01-09-87	ISSUED	534-1-9-87

ARKANSAS STATE HIGHWAY COMMISSION

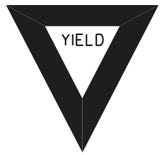
TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

STANDARD DRAWING SE-2

R1-1

STANDARD 30"X30"
EXPRESSWAY 36"X36"
SPECIAL 48"X48"

R1-2



STD. 36"X36"X36"
EXPWY. 48"X48"X48"
FWY. 60"X60"X60"

R2-1

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

W3-5

STD. 36"X36"
EXPWY. 48"X48"
FWY. 48"X48"

W3-5a

STD. 36"X36"
EXPWY. 48"X48"
FWY. 48"X48"

R4-1

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R4-2

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R2-6aP

48"X36"

*USE 6" C LETTERS
**USE 4" D LETTERS

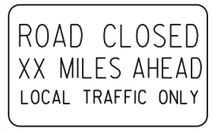
R5-1

STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

RII-2

48"X30"

RII-3A



60"X30"

RII-4

60"X30"

W21-5a

STD. 36"X36"
FWY. 48"X48"

WI-1

STD. 36"X36"
FWY. 48"X48"

WI-2

STD. 36"X36"
FWY. 48"X48"

R2-11

36"X48"

WI-3

STD. 48"X48"

WI-4

STD. 48"X48"

WI-6

STD. 48"X24"
SPECIAL 60"X30"

WI-8

STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

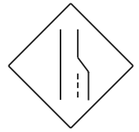
W3-1

STD. 36"X36"
SPECIAL 48"X48"

W3-2

STD. 36"X36"
SPECIAL 48"X48"

W4-2



STD. 36"X36"
FWY. 48"X48"

R56-1

STD. 18"X18"

W5-1

STD. 36"X36"
SPECIAL 48"X48"

W6-3

EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7

EXPWY. 36"X36"
FWY. 48"X48"

W9-2

STD. 36"X36"
FWY. 48"X48"

WI3-1

STD. 24"X24"

W20-1

STD. 48"X48"

W20-2

STD. 48"X48"

W20-3

STD. 48"X48"

W20-4

STD. 48"X48"

W20-5

STD. 48"X48"

W20-7a

STD. 36"X36"
FWY. 48"X48"

W21-2

STD. 30"X30"
SPECIAL 36"X36"

W21-5

STD. 30"X30"
SPECIAL 36"X36"

W24-1

STD. 36"X36"

WI-4b

STD. 48"X48"

W8-11

STD. 36"X36"
FWY. 48"X48"

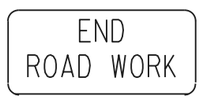
W8-9

STD. 36"X36"
FWY. 48"X48"

G20-1

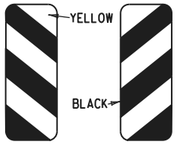
60"X24"

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"

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. R2-6aP PLAQUES SHALL BE MOUNTED BELOW AN APPLICABLE ADVANCE WARNING SIGN THAT IS LOCATED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE PLAQUE SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE W3-5 "REDUCED SPEED AHEAD" SIGN. R2-11 SIGNS SHALL BE INSTALLED AT OR NEAR THE DOWNSTREAM END OF THE WORK ZONE. SEE STANDARD DRAWINGS TC-2, TC-3, AND TC-6 FOR TYPICAL PLACEMENT LOCATIONS.

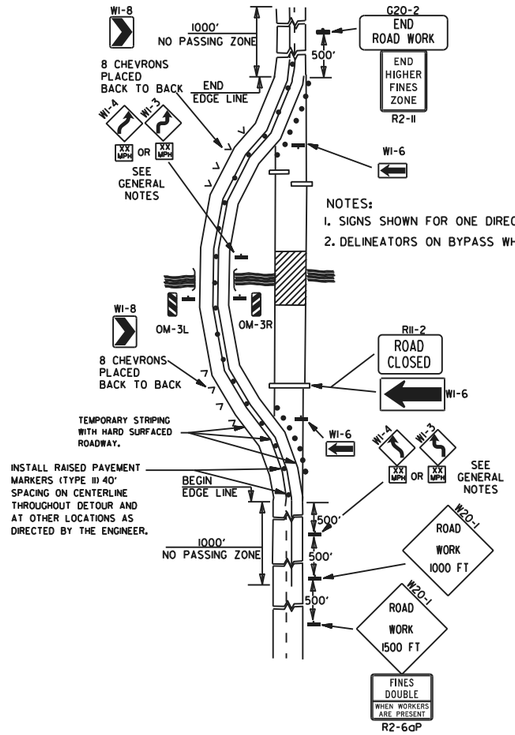
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED FOR ALL PROJECTS.

DATE REV	DESCRIPTION
08-14-25	REPLACED R55-1 WITH R2-6aP, ADDED R2-11 & REVISED NOTE 10
11-07-19	REVISED FOR MASH
04-13-17	DELETED RSP-1 & ADDED W21-5a
09-02-15	REVISED REDUCED SPEED LIMIT AHEAD SIGNS REVISED ROAD WORK NEXT XX MILES
12-15-11	REVISED W24-1

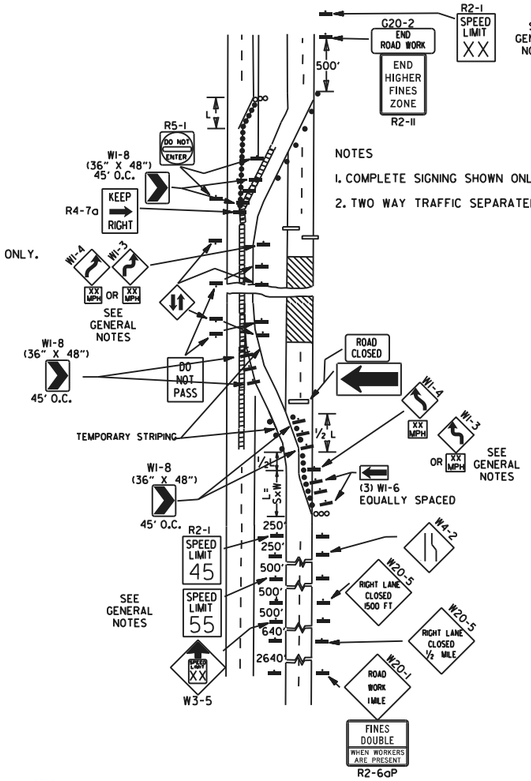
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

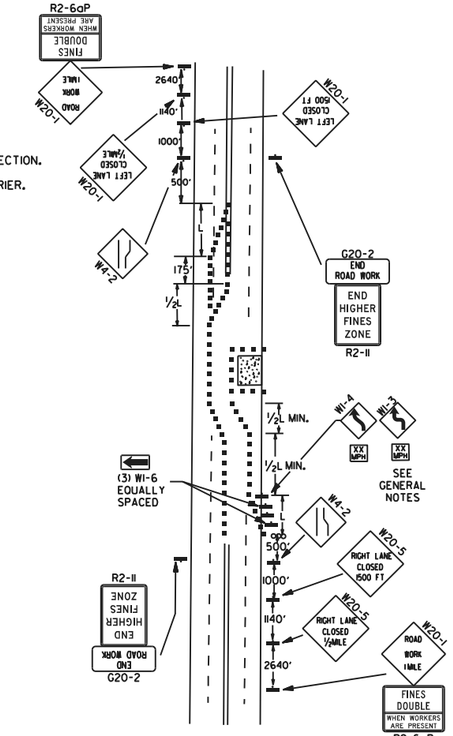
DATE EFFECTIVE 08-14-2025 | STANDARD DRAWING | TC-1



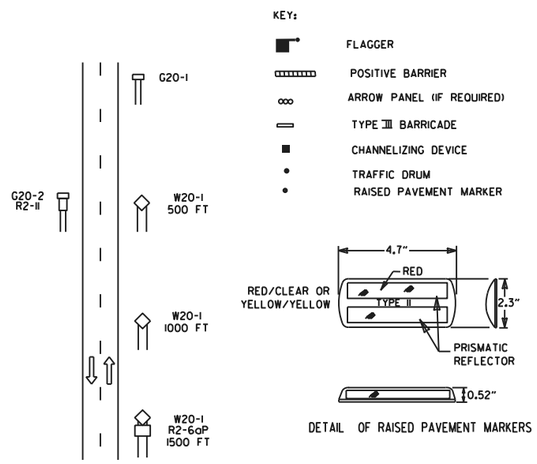
(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.



(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.



(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



DETAIL OF RAISED PAVEMENT MARKERS

TYPICAL ADVANCE WARNING SIGN PLACEMENT

TAPER FORMULAE:

L=SXW FOR SPEEDS OF 45MPH OR MORE.

$L = \frac{WS^2}{60}$ FOR SPEEDS OF 40MPH OR LESS.

WHERE:

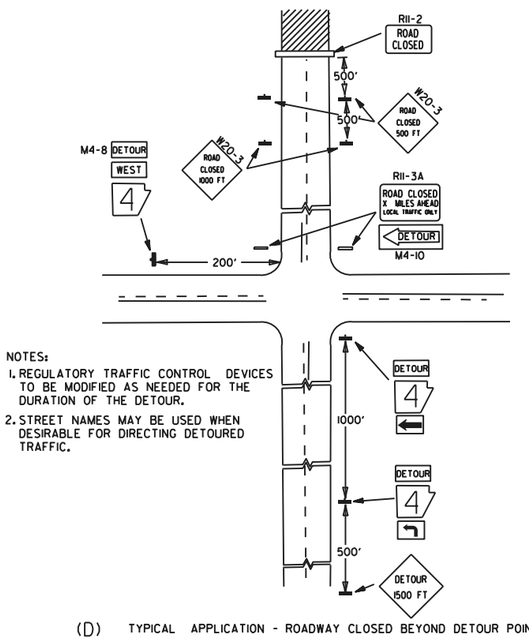
L= MINIMUM LENGTH OF TAPER.

S= NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.

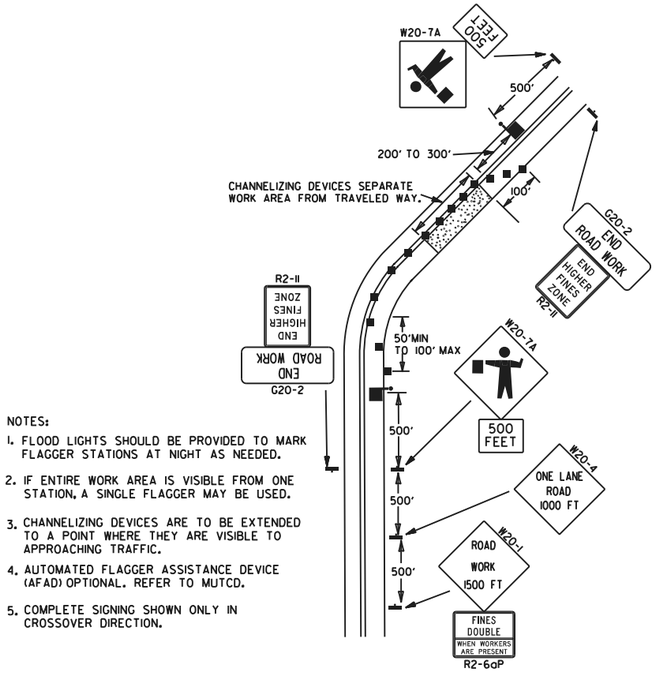
W= WIDTH OF OFFSET.

GENERAL NOTES:

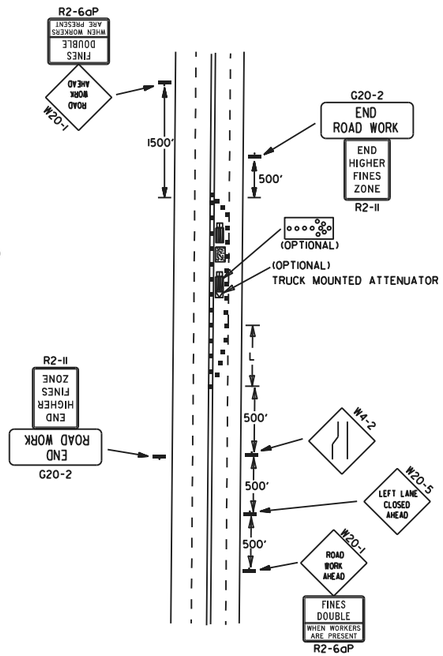
1. THE MAINTENANCE DIVISION SHALL CONDUCT A BALL BANK STUDY TO DETERMINE THE ADVISORY SPEED LIMIT PRIOR TO OPENING TO TRAFFIC. THE ADVISORY SPEED WILL BE POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-1 55MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE. PAYMENT FOR TRAFFIC DRUMS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR VARIOUS TRAILER MOUNTED DEVICES.
8. DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE ARDOT QUALIFIED PRODUCTS LIST.
9. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).



(D) TYPICAL APPLICATION - ROADWAY CLOSED BEYOND DETOUR POINT.



(E) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON 2-LANE HIGHWAY WHERE ONE LANE IS CLOSED AND FLAGGING IS PROVIDED.



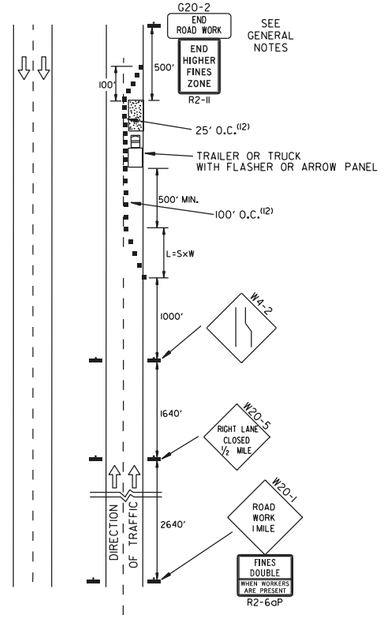
(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

DATE REV	DESCRIPTION
08-14-25	ADDED R2-6aP AND R2-11
05-20-21	REVISED NOTE 7
11-07-19	REVISED NOTE 1. ADDED NOTE 9
09-02-15	REVISED NOTE 2, ADDED NOTE 8, REVISED DRAWING (AT & REPLACED R2-5A WITH W3-5
09-12-13	REVISED DETAIL OF RAISED PAVEMENT MARKINGS

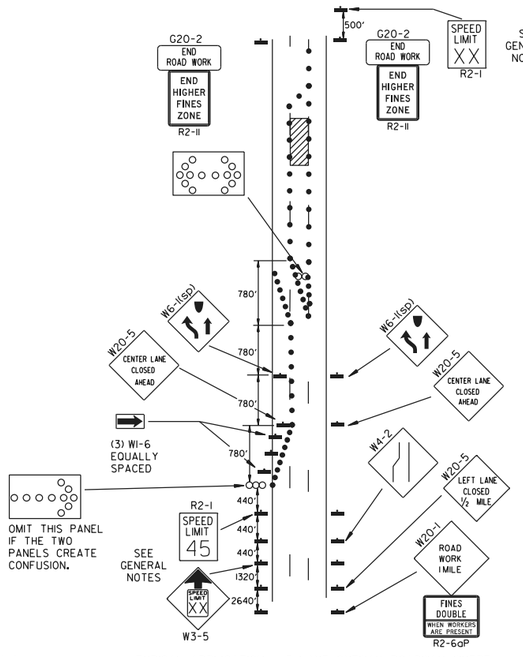
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

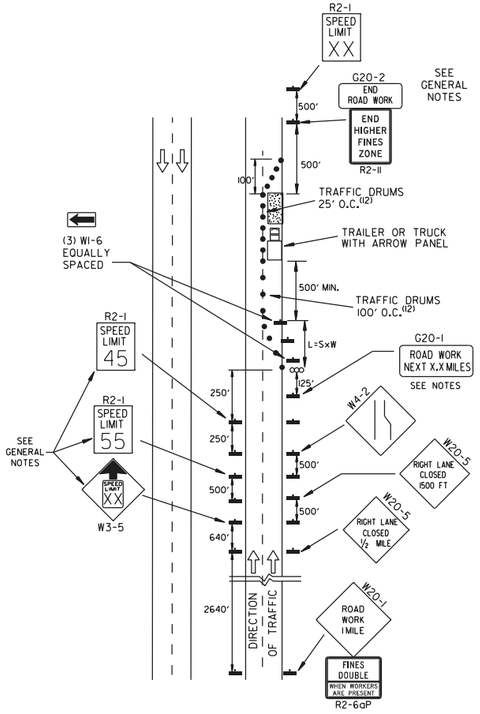
DATE EFFECTIVE	STANDARD DRAWING	TC-2
08-14-2025		



(A) TYPICAL APPLICATION - DAYTIME MAINTENANCE OPERATIONS OF SHORT DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



(B) TYPICAL APPLICATION - 3-LANE ONEWAY ROADWAY WHERE CENTER LANE IS CLOSED.



(C) TYPICAL APPLICATION - CONSTRUCTION OPERATIONS OF INTERMEDIATE TO LONG TERM DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.

KEY:

○○○ ARROW PANEL (IF REQUIRED)

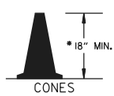
■ CHANNELIZING DEVICE

● TRAFFIC DRUM

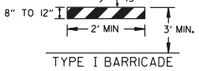
GENERAL NOTES:

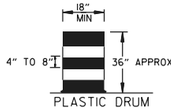
1. A SPEED LIMIT REDUCTION MAY BE IMPLEMENTED ONLY WHEN DESIGNATED IN THE PLAN OR WHEN RECOMMENDED BY THE ROADWAY DESIGN DIVISION.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-I(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-I 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-I(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-I(45) SHALL BE OMITTED. ADDITIONAL R2-I 55MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-I(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 SHOULD BE INSTALLED 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. THE DISTANCE DISPLAYED ON THE G20-1 SIGN SHALL BE STATED TO THE NEAREST WHOLE MILE.
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).
12. ONLY WHERE SPACE RESTRICTIONS DO NOT ALLOW FOR TRAFFIC DRUMS, TUBULAR MARKERS MAY BE USED AT 50' O.C. IN STABILIZATION ZONES AND AT 10' O.C. DIRECTLY ADJACENT TO CONSTRUCTION OPERATIONS AND AT EXIT TAPERS. TUBULAR MARKERS SHALL BE STABILIZED WITH WEIGHTED BASES IN ACCORDANCE WITH THE M.U.T.C.D.

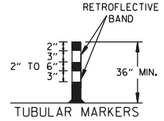
CHANNELIZING DEVICES

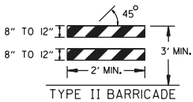


* WHEN CONES ARE USED ON FREEWAYS AND MULTI-LANE HIGHWAYS, THEY SHALL BE 28" MIN. DURING HOURS OF DARKNESS, 28" CONES SHALL BE USED ON ALL ROADWAYS, AND SHALL BE REFLECTORIZED IN ACCORDANCE WITH THE M.U.T.C.D.

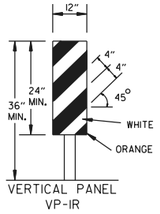


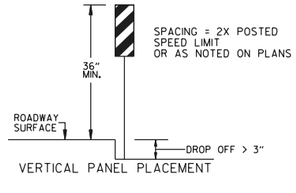


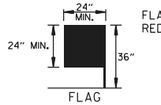




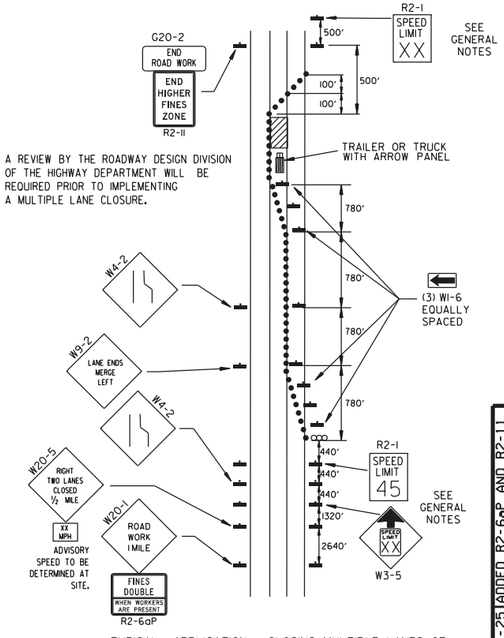
NOTE:
FOR ALL ROAD CLOSURES, THE TYPE III BARRICADES SHALL BE OF SUFFICIENT LENGTH TO EXTEND ACROSS ENTIRE ROADWAY.







FLAG SHALL BE OF GOOD GRADE RED MATERIAL



A REVIEW BY THE ROADWAY DESIGN DIVISION OF THE HIGHWAY DEPARTMENT WILL BE REQUIRED PRIOR TO IMPLEMENTING A MULTIPLE LANE CLOSURE.

(D) TYPICAL APPLICATION - CLOSING MULTIPLE LANES OF A MULTILANE HIGHWAY.

TRAFFIC CONTROL DEVICES

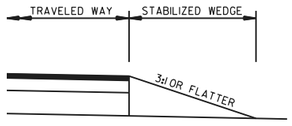
NON-INTERSTATE			
VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL	
		≤ 45 MPH	> 45 MPH
≤ 1"	CENTERLINE	W8-11	W8-11
> 1" ≤ 3"	CENTERLINE	W8-11 AND CENTERLINE LANE STRIPING	W8-11 AND CENTERLINE LANE STRIPING
> 3"	CENTERLINE	STANDARD LANE CLOSURE[6]	STANDARD LANE CLOSURE[6]
≤ 3"	EDGE OF TRAVELED LANE OR 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

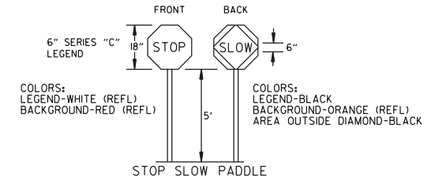
INTERSTATE AND NON-INTERSTATE		
FORESLOPE	HEIGHT	TRAFFIC CONTROL
1:1	> 2 FT	PRECAST CONCRETE BARRIER
2:1	≤ 5 FT	TRAFFIC DRUMS
2:1	> 5 FT	PRECAST CONCRETE BARRIER
Flatter than 2:1	N/A	TRAFFIC DRUMS

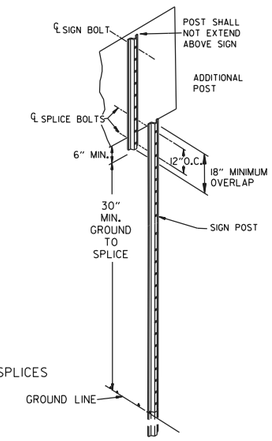
GENERAL NOTES:

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).



NOTE:
MATERIALS FOR THE STABILIZED WEDGE SHALL MEET THE REQUIREMENTS PROVIDED IN SECTION 603.02 OF THE STANDARD SPECIFICATIONS.

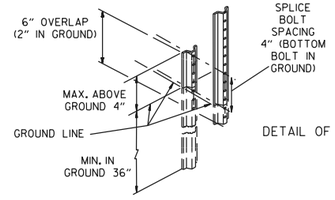




NOTES:
USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-2)

NORMAL INSTALLATIONS WILL REQUIRE 1/4" DIA. BOLTS TO MOUNT SIGNS TO POST AND 5/16" DIA. BOLTS TO ASSEMBLE THE VARIOUS POST SUPPORTS. EACH OF THESE BOLTS SHALL BE CARRIAGE BOLTS.

SIGN POSTS SHALL BE PAINTED GREEN; SIGNS SHALL NOT BE PAINTED, AND ALL SIGN POSTS SHALL BE PLUMB.



DATE REV	DESCRIPTION
08-14-25	ADDED R2-6aP AND R2-11
05-22-25	REVISED TRAFFIC CONTROL DEVICES AND NOTES. ADDED NOTE 12.
08-12-21	REVISED TRAFFIC CONTROL DEVICES AND NOTES
05-20-21	REVISED NOTE 10
02-27-20	REVISED TRAFFIC CONTROL DEVICES DETAILS

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

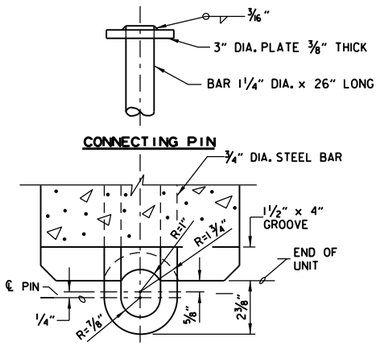
DATE EFFECTIVE 08-14-2025

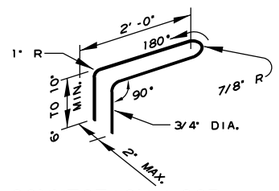
STANDARD DRAWING

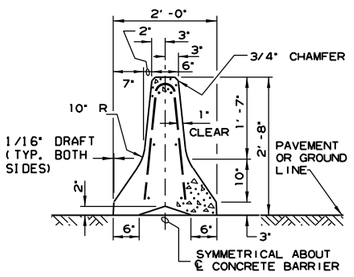
TC-3

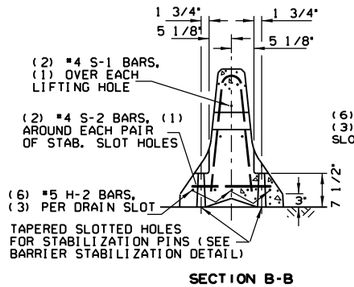
REINFORCING BAR TABLE PER BARRIER UNIT

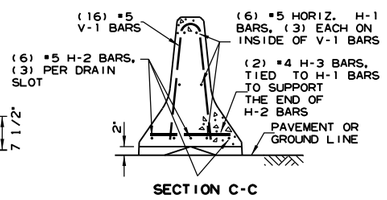
MARK	LOCATION	BAR SIZE	(NO. BARS)	SKETCH
H-1	HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS	#5	(6)	19'-3"
H-2	CENTERED ABOVE DRAIN SLOTS LONG. & TRANSVERSELY	#5	(6)	6'-6"
H-3	TIED ABOVE H-1 BARS TO SUPPORT H-2, TIED TO V-1	#4	(2)	1'-6"
S-1	OVER LIFT HOLES	#4	(2)	2'-5", LIFTING HOLE, 90°, 3 3/8" R
S-2	HORIZ. AROUND SLOTS BETWEEN V-1'S @ DRAIN SLOTS	#4	(2)	1 1/2" R, SLOTS, 7", 1'-6", 1" MIN. CLEAR TO BAR; 5'-1" BAR W/(4) 1 1/2" R BENDS & MIN. 1'-0" OVERLAP
V-1	VERTICAL IN BARRIER(3) EACH END & (2) AT EACH DRAIN SLOTS	#5	(16)	TOTAL LENGTH 4'-9"; 2 3/16" R; 12°; 1 1/2"; 9"; 2'-1 3/8"; 4 3/8"

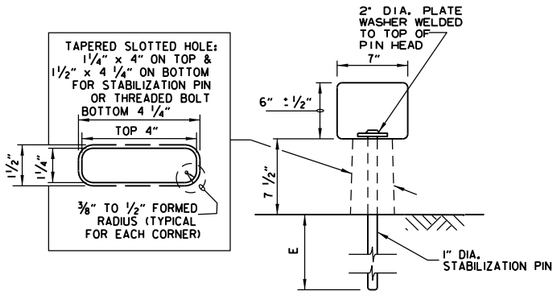




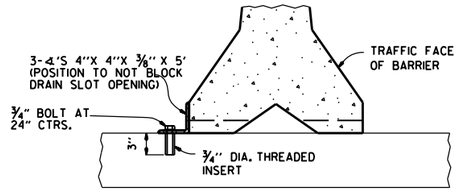






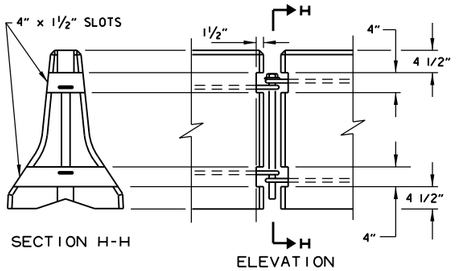


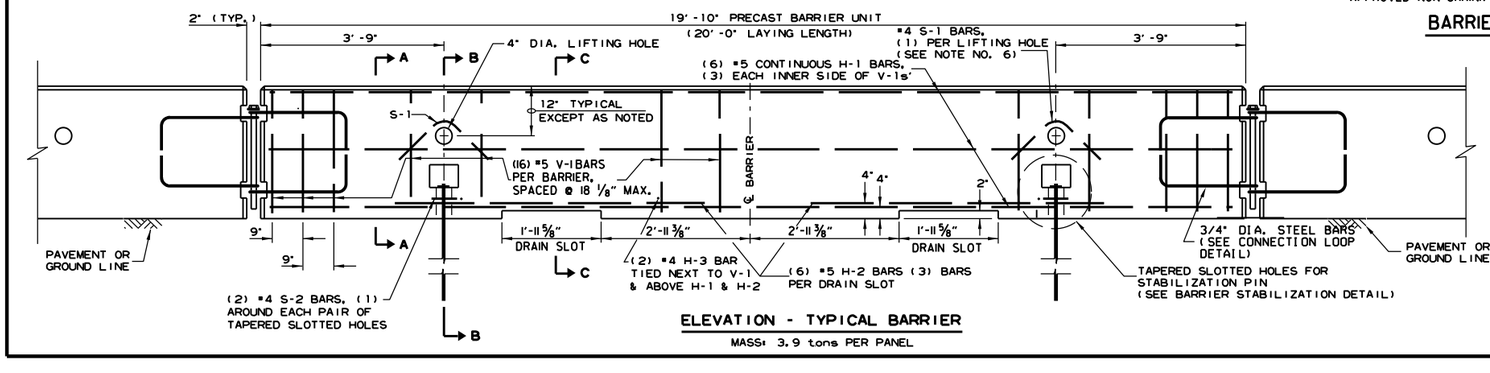
Ⓔ 4" - CONCRETE PAVEMENT
8" - ASPHALT PAVEMENT
12" - SHOULDER AREAS



NOTE: " THREADED INSERTS SHALL BE CAST IN PLACE FOR ALL NEW BRIDGE DECKS AND DRILLED AND GROUTED FOR EXISTING BRIDGE DECKS. INSERTS SHALL HAVE A MINIMUM ULTIMATE LOAD CAPACITY OF 8000 LBS. IN TENSION. AFTER REMOVAL OF BARRIER, BOLTS, AND ANGLES, THE INSERTS SHALL BE FILLED WITH APPROVED NON-SHRINK EPOXY.

BARRIER STABILIZATION DETAIL
BRIDGE DECKS





MASS: 3.9 tons PER PANEL

GENERAL NOTES

1. THE CONTRACTOR SHALL FURNISH THE PRECAST CONCRETE BARRIER UNITS AND SHALL BE RESPONSIBLE FOR THE MANUFACTURE, SHIPMENT, STORAGE, PLACEMENT AND REMOVAL. AT THE COMPLETION OF THE PROJECT, THE PRECAST UNITS WILL REMAIN THE PROPERTY OF THE CONTRACTOR.

2. MATERIALS SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS:
   CONCRETE: 2500 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
   REINFORCING STEEL: AASHTO M 31 OR M 53, GRADE 60
   STRUCTURAL STEEL: AASHTO-M270 GRADE 36 SHALL BE USED FOR THE CONNECTION PIN, CONNECTION LOOPS, AND STABILIZATION PINS. A ONE PIECE PIN WITH A 3" ROUNDED TOP MAY BE USED IN PLACE OF THE DETAILED CONNECTION PIN.
   DELINEATORS: DELINEATORS SHALL BE MOUNTED AT 10' SPACING ON TOP OF PRECAST BARRIER.

   IN APPLICATIONS WHERE BARRIER WALL IS WITHIN 6 FEET OF A TRAFFIC LANE, ADDITIONAL DELINEATORS SHALL BE PLACED ON THE BARRIER AT 10' SPACING APPROXIMATELY ONE (1) FOOT FROM THE TOP OF THE BARRIER. DELINEATORS SHALL BE ON THE ARDOT QUALIFIED PRODUCTS LIST FOR CONSTRUCTION CONCRETE BARRIER MARKERS.
   DELINEATOR COLOR SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
   PAYMENT FOR DELINEATORS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID PER LIN. FT. FOR "FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER". THE CONTRACTOR SHALL CERTIFY TO THE ENGINEER THAT THE MATERIAL AND THE DESIGN USED IN THE PRECAST BARRIER UNITS MEETS THE REQUIREMENTS AS SHOWN ON THIS STANDARD DRAWING.

3. OTHER PRECAST CONCRETE BARRIERS THAT HAVE BEEN CRASH TESTED AND APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION TO MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) WILL BE ACCEPTED IN LIEU OF THE BARRIER SHOWN. DRAIN SLOTS SHALL BE PROVIDED AS NEEDED OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL FURNISH A CERTIFICATION OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) COMPLIANCE FOR ANY OTHER TYPES OF PRECAST BARRIER TO BE USED. THE CERTIFICATION SHALL STATE THAT THE PRECAST CONCRETE BARRIER MEETS THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH). MIXING OF SHAPES WILL NOT BE ALLOWED IN A CONTINUOUS LINE OF UNITS.

4. DOWEL HOLES IN PAVEMENT OR BRIDGE SLABS THAT ARE TO REMAIN IN PLACE SHALL BE FILLED. HOLES IN CONCRETE PAVEMENT AND BRIDGE SLABS SHALL BE FILLED WITH AN APPROVED NON-SHRINK EPOXY GROUT. HOLES IN ASPHALT PAVEMENT SHALL BE FILLED WITH AN APPROVED ASPHALT JOINT FILLER. PAYMENT FOR DRILLING AND FILLING HOLES TO BE INCLUDED IN THE PRICE FOR VARIOUS BARRIER ITEMS.

5. ATTACH UNITS TO ROADWAY SURFACE WITH STABILIZATION PINS AND TO DECK SLABS USING BOLTS WHEN REQUIRED.

6. A 4" WHITE PVC SLEEVE MAY BE USED TO FORM THE LIFTING HOLE AND IF USED THE SLEEVE IS TO BE LEFT IN PLACE.

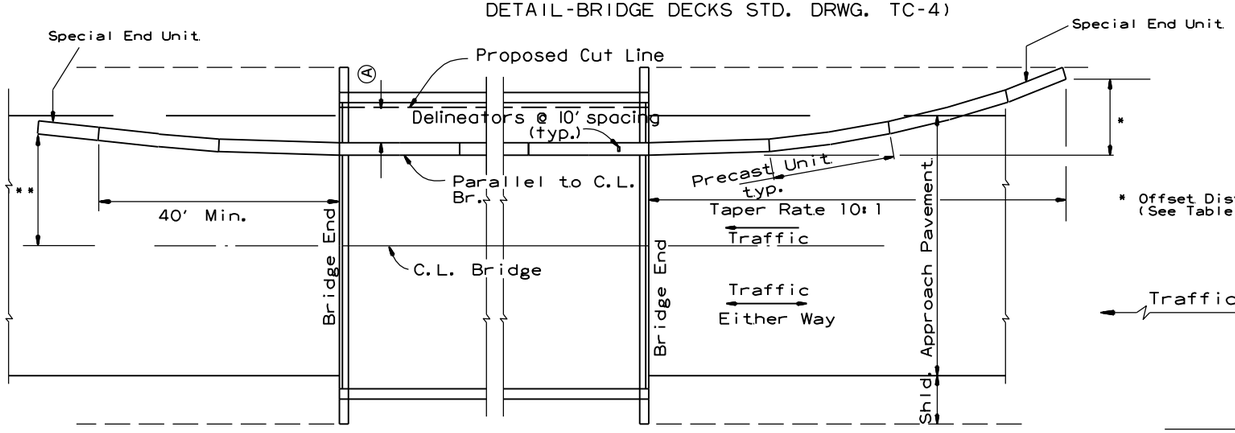
DATE	REVISION	FILMED
11-07-19	REVISED NOTE 3	
2-27-14	REVISED BARRIER STABILIZATION DETAIL	
10-15-09	ADDED REFERENCE TO WASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02	ISSUED NEW DRAWING	

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

STANDARD DRAWING TC-4

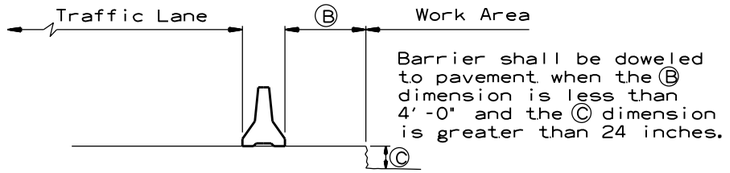
Ⓐ 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)



BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

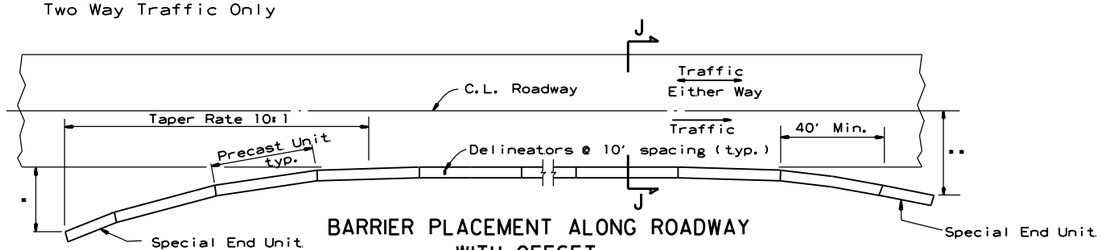
** Offset Distance for Two Way Traffic Only



Barrier shall be doweled to pavement when the Ⓑ dimension is less than 4'-0" and the Ⓒ dimension is greater than 24 inches.

SECTION J-J

No Scale



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

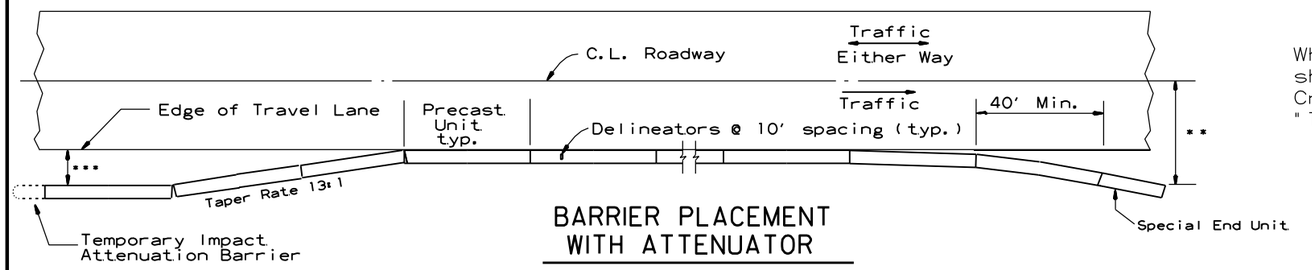
** Offset Distance For Two Way Traffic Only

* Offset Distance (See Table)

Offset Distance Table

Speed (MPH)	Offset Distance (FT.)
≤ 45	12
> 45	18

If offset distance is not attainable, then see "Barrier Placement With Attenuator" Detail shown below.

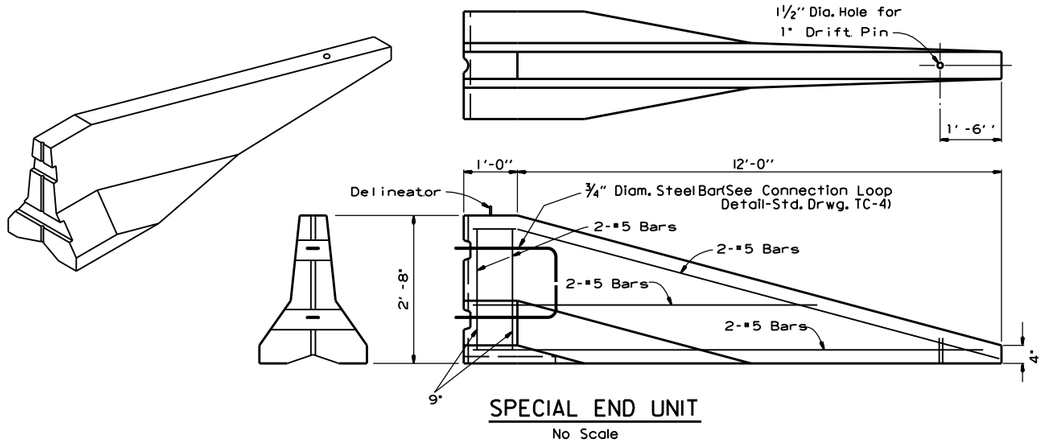


BARRIER PLACEMENT WITH ATTENUATOR

No Scale

*** Min. 3'-0" From Edge of Travel Lane to Nearest Edge of Attenuator

** Offset Distance For Two Way Traffic Only



SPECIAL END UNIT

No Scale

General Notes

When shown on the Plans, the ends of the Temporary Precast Concrete Barrier shall be protected with a Manual For Assessing Safety Hardware (MASH) approved Crash Cushion. Payment for Crash Cushions shall be made under the item of "Temporary Impact Attenuation Barrier."

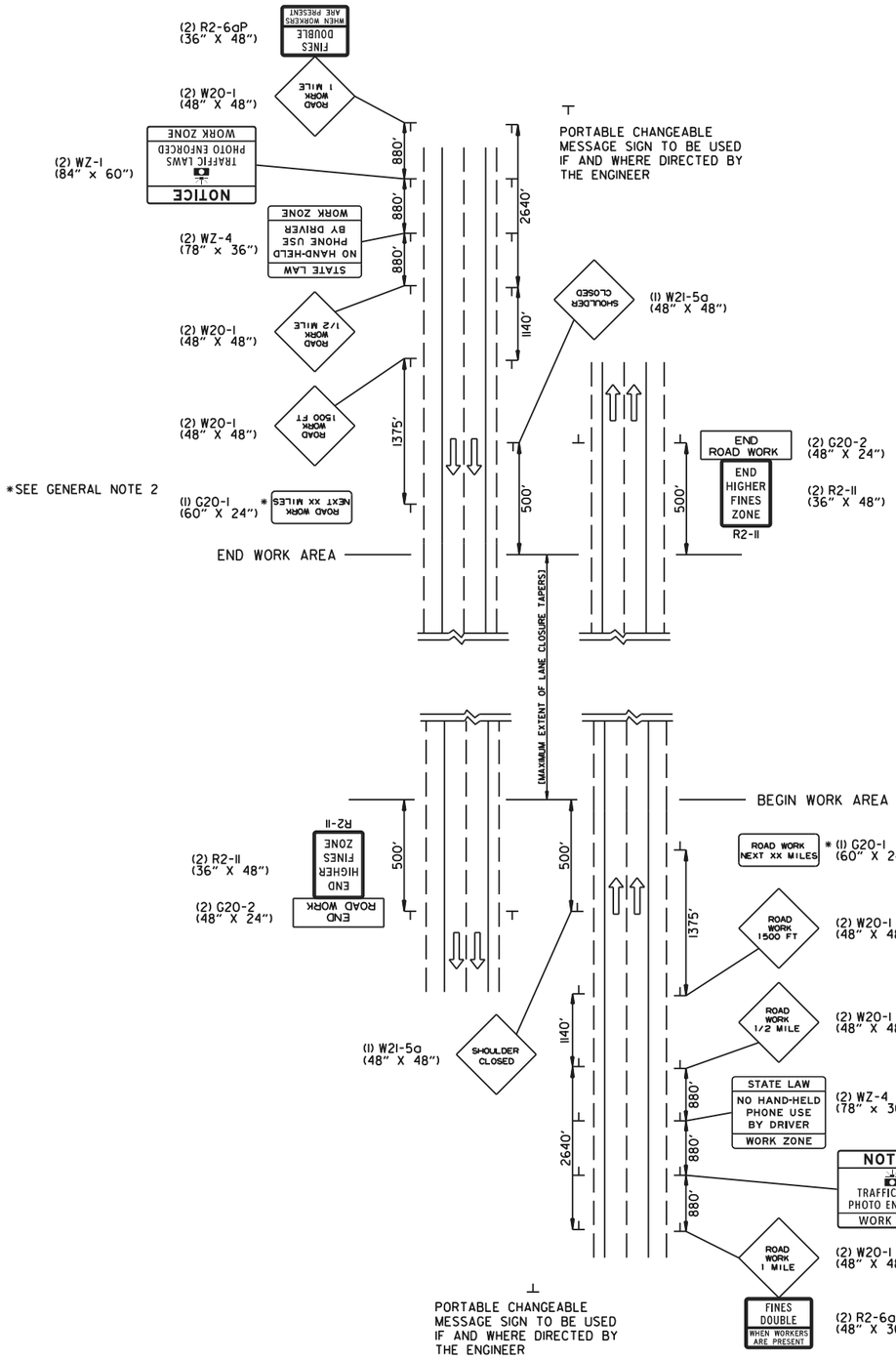
DATE	REVISION	FILMED
11-07-19	REVISED NOTE	
10-15-09	ADDED REFERENCE TO MASH	
5-25-06	REVISED BARRIER PLACEMENT	
8-22-02	ISSUED NEW DRAWING	

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

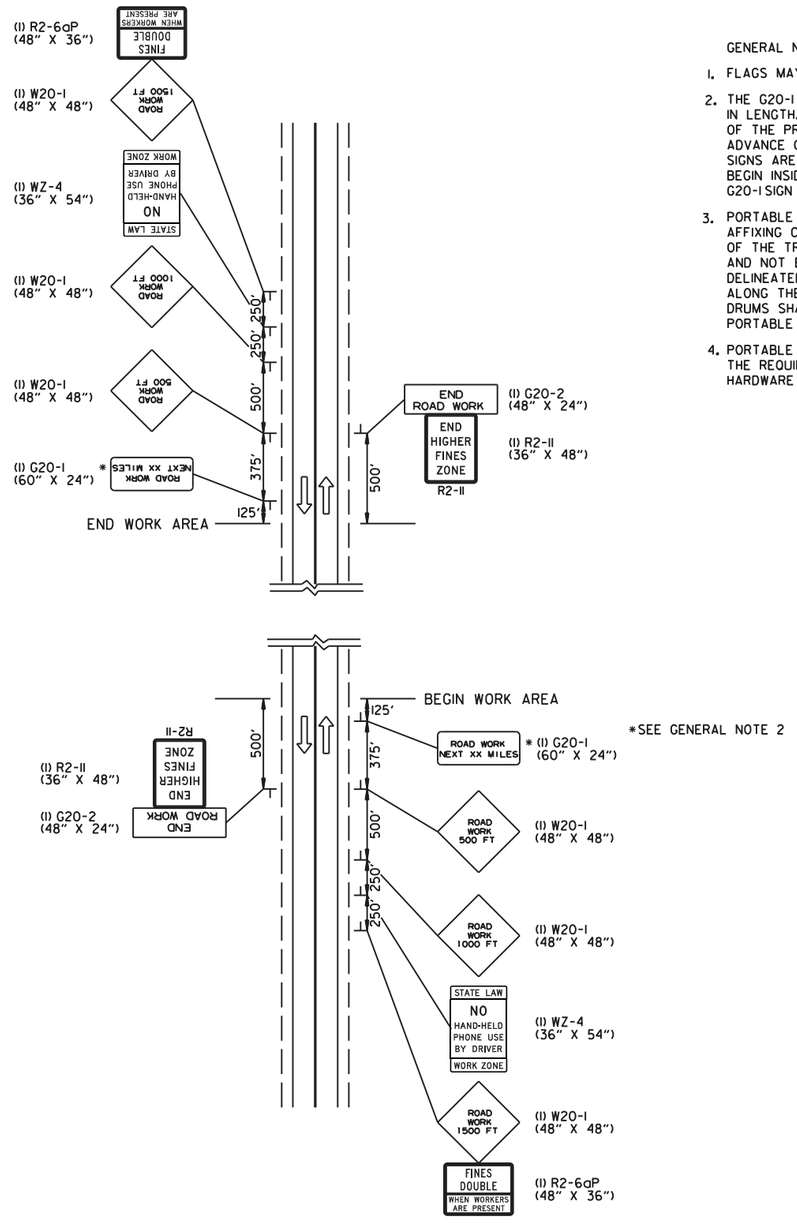
STANDARD DRAWING TC-5

NOTE : W20-1(VARIOUS DISTANCE) ADVANCE SIGNS TO BE REPLACED AS NEEDED BY EQUIVALENT W20-5 SIGNS AS WORKING AREA SHIFTS.



NOTE : W20-1(VARIOUS DISTANCE) ADVANCE SIGNS TO BE REPLACED AS NEEDED BY EQUIVALENT W20-5 SIGNS AS WORKING AREA SHIFTS.

(A) TYPICAL APPLICATION - ADVANCE WARNING SIGNS AT BEGINNING AND END OF JOB (FULLY CONTROLLED ACCESS FACILITIES) (ALL STAGES)



(B) TYPICAL APPLICATION - ADVANCE WARNING SIGNS AT BEGINNING AND END OF JOB (NON-FULLY CONTROLLED ACCESS FACILITIES) (ALL STAGES)

GENERAL NOTES:

1. FLAGS MAY BE MOUNTED TO SIGNS AT NIGHT AS NEEDED.
2. THE G20-1 SIGN SHOULD BE INSTALLED 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 OR 1500 FT) SIGNS ARE NOT REQUIRED IN ADVANCE OF LANE CLOSURES THAT BEGIN INSIDE THE PROJECT LIMITS. THE DISTANCE DISPLAYED ON THE G20-1 SIGN SHALL BE STATED TO THE NEAREST WHOLE MILE.
3. 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, THIS DEVICE 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 PORTABLE CHANGEABLE MESSAGE SIGNS.
4. PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).

DATE REV	DESCRIPTION
01-22-26	ADDED WZ-4 AND REVISED GENERAL NOTE 1
11-06-25	REPLACED "SPEED" WITH "TRAFFIC LAWS" ON WZ-1
08-14-25	ISSUED

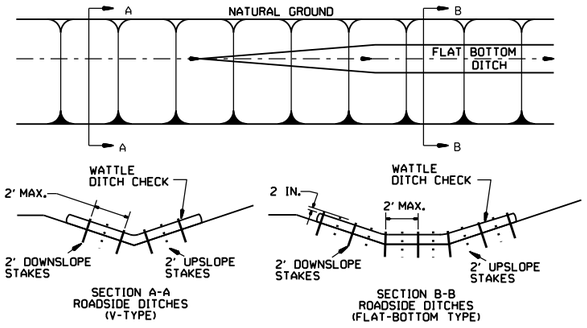
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

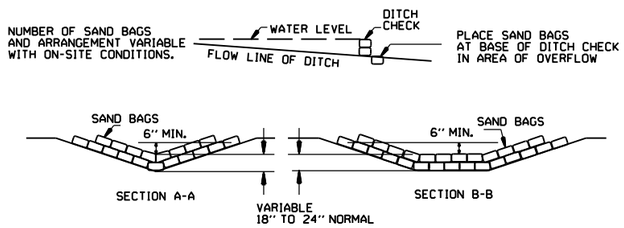
DATE EFFECTIVE	STANDARD DRAWING	TC-6
01-22-2026		

GENERAL NOTES

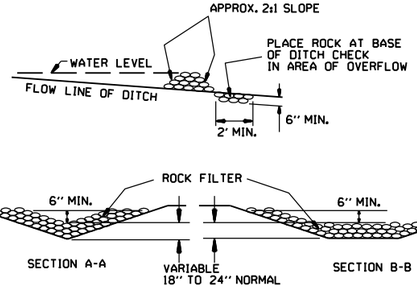
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



SAND BAG DITCH CHECK (E-5)

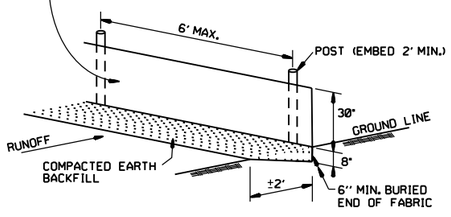


ROCK DITCH CHECK (E-6)

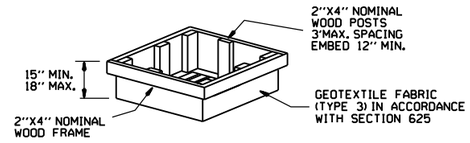
GENERAL NOTES

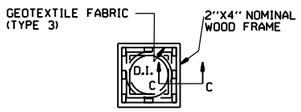
GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625

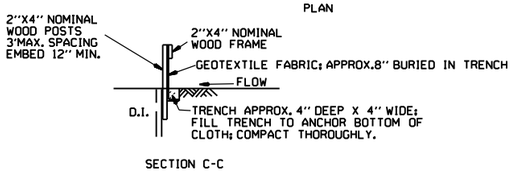
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



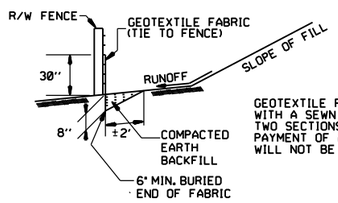
SILT FENCE (E-11)





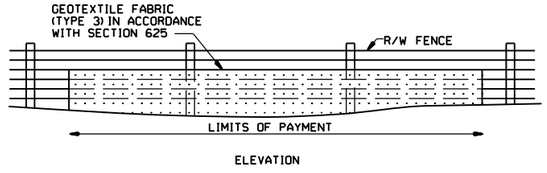


DROP INLET SILT FENCE (E-7)



GENERAL NOTES

GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



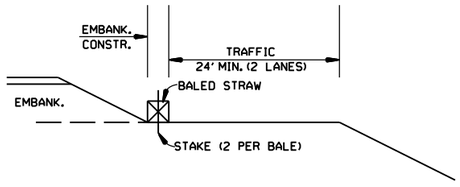
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

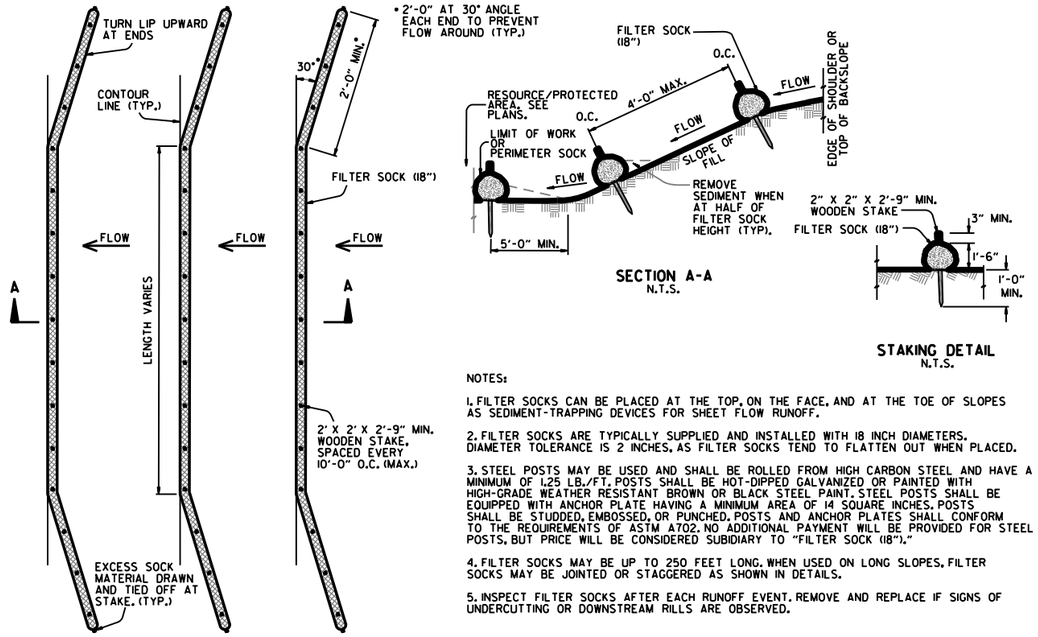
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

2. NO GAPS SHALL BE LEFT BETWEEN BALES.

3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.



BALED STRAW FILTER BARRIER (E-2)



NOTES:

1. FILTER SOCKS CAN BE PLACED AT THE TOP, ON THE FACE, AND AT THE TOE OF SLOPES AS SEDIMENT-TRAPPING DEVICES FOR SHEET FLOW RUNOFF.

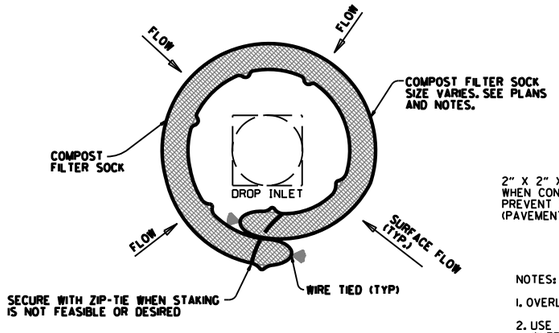
2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES, AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.

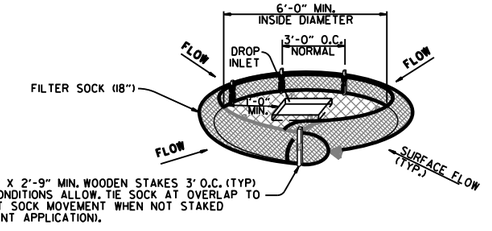
3. STEEL POSTS MAY BE USED AND SHALL BE ROLLED FROM HIGH CARBON STEEL AND HAVE A MINIMUM OF 1.25 LB./FT. POSTS SHALL BE HOT-DIPPED GALVANIZED OR PAINTED WITH HIGH-GRADE WEATHER RESISTANT BROWN OR BLACK STEEL PAINT. STEEL POSTS SHALL BE EQUIPPED WITH ANCHOR PLATE HAVING A MINIMUM AREA OF 14 SQUARE INCHES. POSTS SHALL BE STUDDED, EMBOSSED, OR PUNCHED. POSTS AND ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR STEEL POSTS, BUT PRICE WILL BE CONSIDERED SUBIDIARY TO "FILTER SOCK (18")."

4. FILTER SOCKS MAY BE UP TO 250 FEET LONG. WHEN USED ON LONG SLOPES, FILTER SOCKS MAY BE JOINTED OR STAGGERED AS SHOWN IN DETAILS.

5. INSPECT FILTER SOCKS AFTER EACH RUNOFF EVENT. REMOVE AND REPLACE IF SIGNS OF UNDERCUTTING OR DOWNSTREAM RILLS ARE OBSERVED.

FILTER SOCK ALONG SLOPE (E-3)





NOTES:

1. OVERLAP ENDS OF SOCK (1' MIN. 3' MAX.).

2. USE 18" DIA. SOCK IN NON-TRAFFIC AREAS OR AREAS WHERE SAFETY IS NOT A CONCERN.

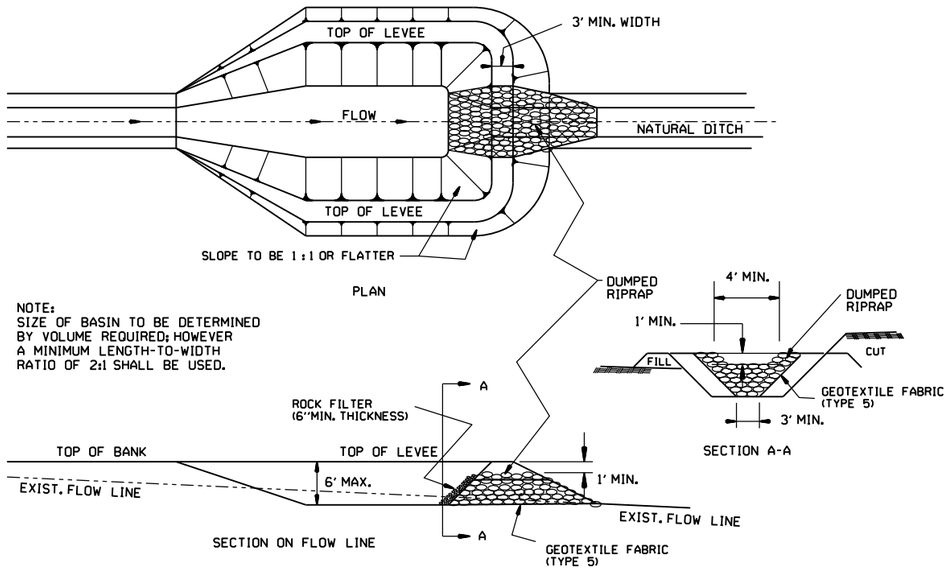
COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)

DATE	REVISION	FILMED
11-16-17	ADDED FILTER SOCK E-3 AND E-13	
12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK	
11-18-98	ADDED NOTES	
07-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)	
07-20-95	REVISED SILT FENCE E-4 AND E-11	7-20-95
07-15-94	REV. E-4 & E-11 MIN. 13" BURIED END OF FABRIC	
06-02-94	REVISED E-1,4,7 & 11; DELETED E-2 & 3	6-2-94
04-01-93	REDRAWN	
10-01-92	REDRAWN	
08-02-76	ISSUED R.D.M.	298-7-28-76

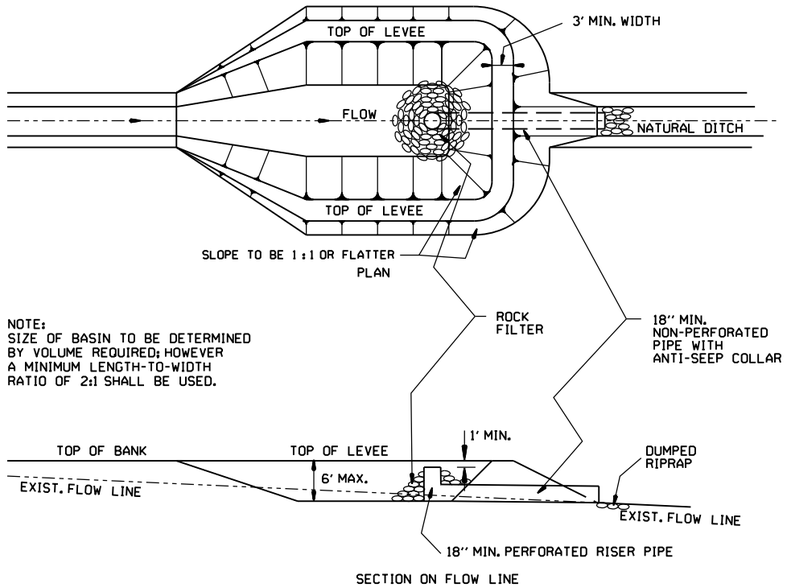
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

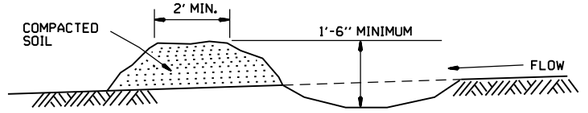
STANDARD DRAWING TEC-1



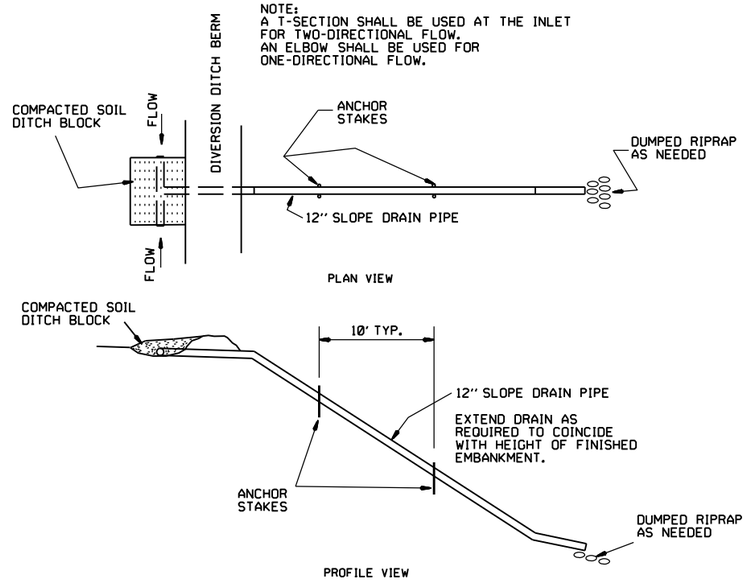
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



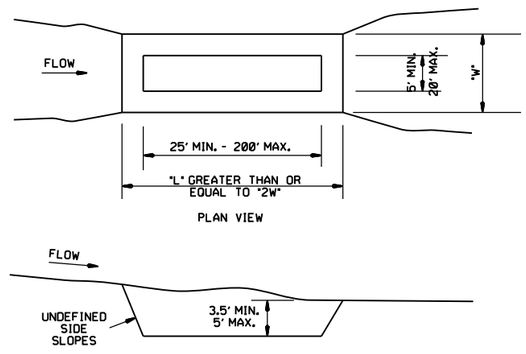
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



SEDIMENT BASIN (E-14)

DATE	REVISION	FILMED
6-2-94	Revised E-8 & E-12; Added E-14 & Deleted E-13	
4-1-93	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

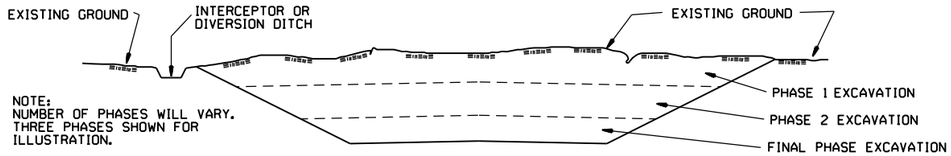
STANDARD DRAWING TEC-2

CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE

1. PLACE PERIMETER CONTROLS (I.E. SILT FENCES , DIVERSION DITCHES, SEDIMENT BASINS, ETC.)
2. PERFORM CLEARING AND GRUBBING OPERATION.

EXCAVATION



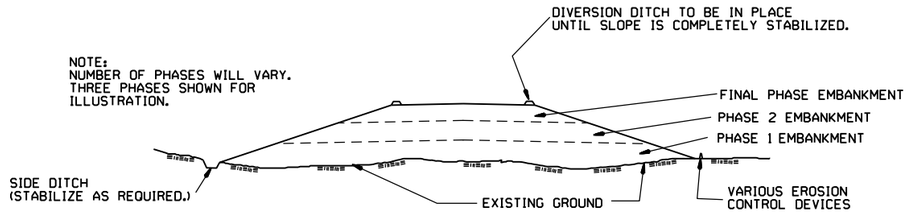
GENERAL NOTE

ALL CUT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE EXCAVATED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE

1. EXCAVATE AND STABILIZE INTERCEPTOR AND/OR DIVERSION DITCHES.
2. PERFORM PHASE 1 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
3. PERFORM PHASE 2 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
4. PERFORM FINAL PHASE OF EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING. STABILIZE DITCHES. CONSTRUCT DITCH CHECKS, DIVERSION DITCHES, SEDIMENT BASINS, OR OTHER EROSION CONTROL DEVICES AS REQUIRED.

EMBANKMENT



GENERAL NOTE

ALL EMBANKMENT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE CONSTRUCTED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE

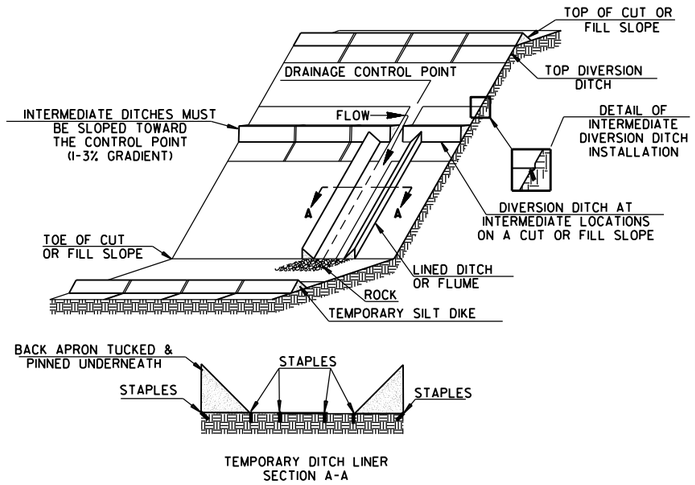
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.
3. PLACE PHASE 2 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.
4. PLACE FINAL PHASE OF EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PLACE DIVERSION DITCHES AND SLOPE DRAINS AND MAINTAIN UNTIL ENTIRE SLOPE IS STABILIZED.

11-03-94	CORRECTED SPELLING	
6-2-94	Drawn & Issued	6-2-94
DATE	REVISION	FILMED

ARKANSAS STATE HIGHWAY COMMISSION

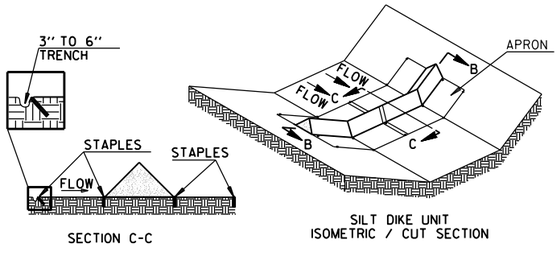
TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3



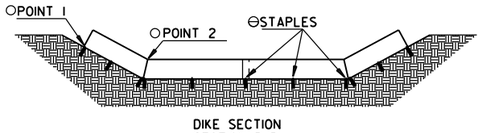
TEMPORARY DITCH LINER
SECTION A-A

TRIANGULAR SILT DIKE INSTALLATION FOR DIVERSION DITCH AND/OR DITCH LINER



SECTION C-C

SILT DIKE UNIT
ISOMETRIC / CUT SECTION

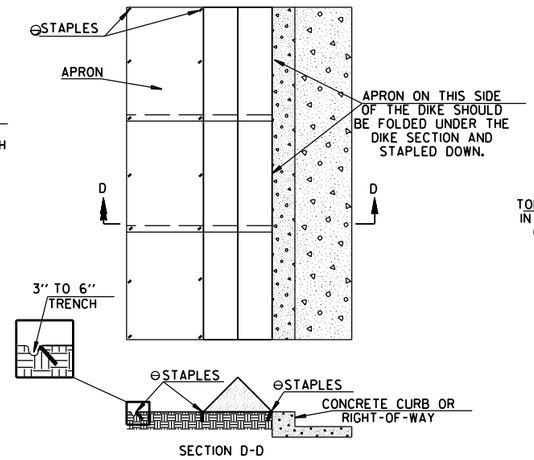


DIKE SECTION
SECTION B-B

TRIANGULAR SILT DIKE INSTALLATION FOR ROADWAY DITCH OR DRAINAGE DITCH

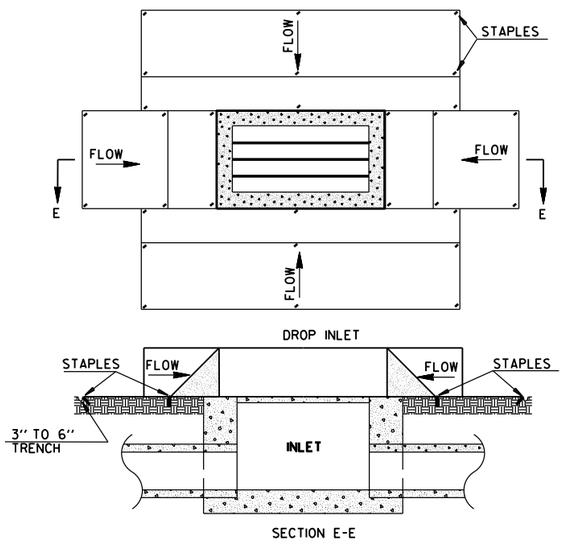
○ POINT "1" MUST BE HIGHER THAN POINT "2" TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.

⊖ STAPLES SHALL BE PLACED WHERE THE UNITS OVERLAP AND IN THE CENTER OF THE UNIT AS SHOWN ON THE DIAGRAM.



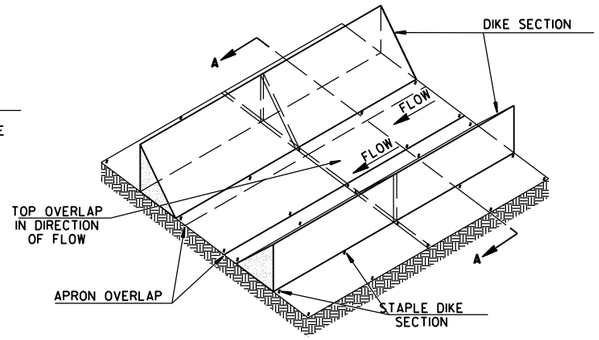
SECTION D-D

TRIANGULAR SILT DIKE INSTALLATION FOR CONTINUOUS BARRIER



SECTION E-E

TRIANGULAR SILT DIKE INSTALLATION FOR DROP INLETS



TRIANGULAR SILT DIKE INSTALLATION FOR TEMPORARY DITCH LINER

GENERAL NOTES

1. THIS WORK SHALL CONSIST OF FURNISHING, INSTALLING, AND MAINTAINING THE TRIANGULAR SILT DIKE. THE DIKES SHALL BE USED AS A CONTINUOUS LINE BARRIER AT THE TOE OF SLOPE OR ACROSS THE ROADWAY DITCH TO CONTAIN SEDIMENT AND MINIMIZE EROSION, OR AS DIRECTED BY THE ENGINEER. THESE DIKES SHALL BE INSTALLED AND LOCATED AS SOON AS CONSTRUCTION WILL ALLOW OR AS DIRECTED BY THE ENGINEER.

2. TRIANGULAR SILT DIKE SHALL BE TRIANGULAR SHAPED HAVING A HEIGHT OF AT LEAST 8" TO 10" IN THE CENTER WITH EQUAL SIDES AND A 16" TO 20" BASE. THE TRIANGULAR SHAPED INNER MATERIAL SHALL BE URETHANE FOAM. THE OUTER COVER SHALL BE A WOVEN GEOTEXTILE FABRIC PLACED AROUND THE INNER MATERIAL & ALLOWED TO EXTEND BEYOND BOTH SIDES OF THE TRIANGLE 24" TO 36". THIS FABRIC SHOULD BE MILDEW RESISTANT, ROT-PROOF AND RESISTANT TO HEAT AND ULTRAVIOLET RADIATION MEETING REQUIREMENTS FOR SEDIMENT CONTROL IN AASHTO M288. THE DIKES SHALL BE ATTACHED TO THE GROUND WITH WIRE STAPLES. THE STAPLES SHALL BE NO. 11 GAUGE WIRE AND BE AT LEAST 6" TO 8" LONG. STAPLES SHALL BE PLACED AS SHOWN ON THESE DETAILS.

   THE CONTRACTOR SHALL INSPECT ALL DIKES AFTER EACH RAINFALL EVENT OF AT LEAST 0.5" OR GREATER. ANY DEFICIENCIES OR DAMAGE SHALL BE REPAIRED BY THE CONTRACTOR. ACCUMULATED SILT OR DEBRIS SHALL BE REMOVED AND RELOCATED AS DIRECTED BY THE ENGINEER. IF THE DIKES ARE DAMAGED OR INADVERTENTLY MOVED DURING THE SILT REMOVAL PROCESS, THE CONTRACTOR SHALL IMMEDIATELY REPLACE AFTER DAMAGE OCCURS.

3. ACCEPTED TRIANGULAR SILT DIKE, MEASURED AS PROVIDED ABOVE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR TRIANGULAR SILT DIKE. PRICE BID WILL INCLUDE THE COST OF FURNISHING THE DIKES, INSTALLING, MAINTAINING AND REMOVAL WHEN DIRECTED BY THE ENGINEER.

SYMBOLOGY
SYMBOL TO BE USED TO DENOTE DEVICE ON PLANS

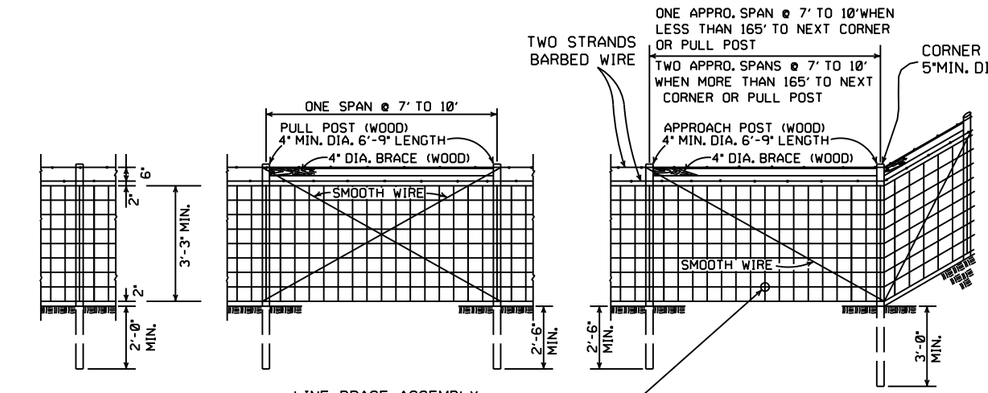
NOTE: SILT DIKE SHOULD ONLY BE USED FOR DROP INLETS IN SUMP LOCATIONS.

DATE	REVISION	FILMED
7-26-12	REVISED GENERAL NOTE 2.	
12-15-11	ISSUED	

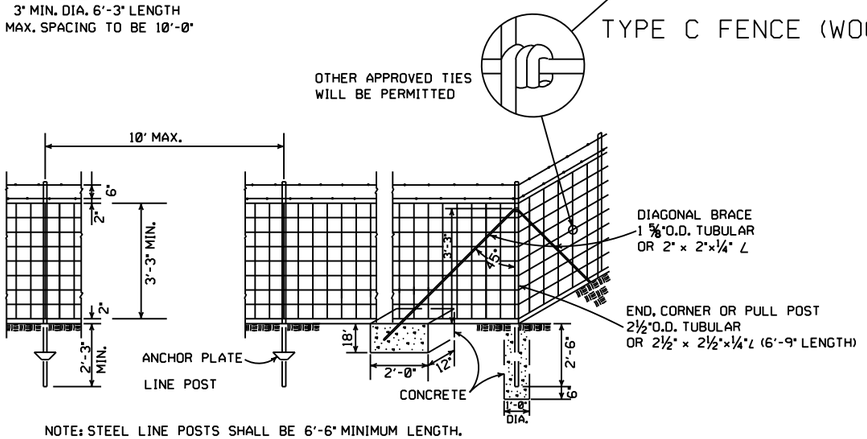
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-4

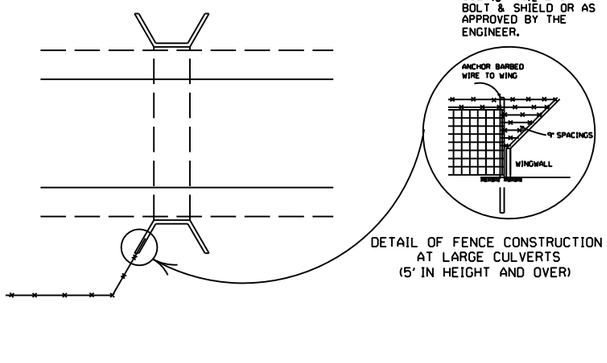


TYPE C FENCE (WOOD POSTS)



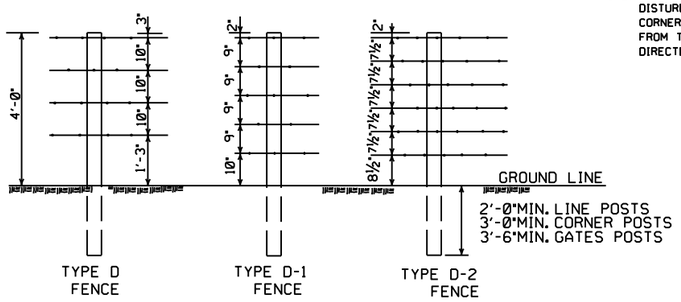
NOTE: STEEL LINE POSTS SHALL BE 6'-6" MINIMUM LENGTH.

TYPE C FENCE (STEEL POSTS)

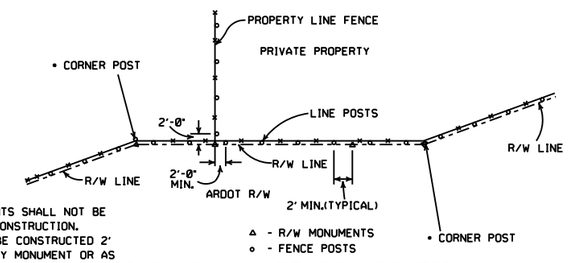


DETAIL OF FENCE CONSTRUCTION AT LARGE CULVERTS (5' IN HEIGHT AND OVER)

4 STRANDS BARBED WIRE (D)
5 STRANDS BARBED WIRE (D-1)
6 STRANDS BARBED WIRE (D-2)

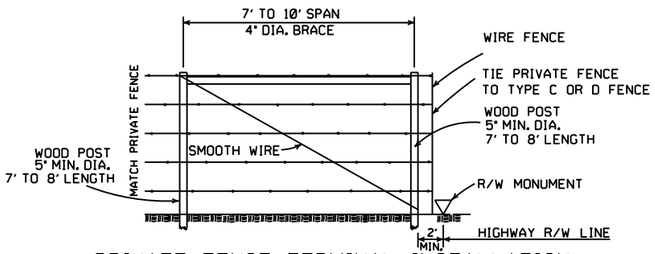


NOTE: SPACING AND SIZE (EXCEPT LENGTH) OF POSTS, APPROACH SPANS, PULL POST ASSEMBLIES, AND CORNER BRACING FOR TYPE D FENCE SHALL CONFORM TO TYPE C FENCE. USE GALVANIZED STAPLES ON WOOD POSTS AND APPROVED FASTENERS ON STEEL POSTS.



• NOTE: RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY FENCE CONSTRUCTION. CORNER POSTS SHALL BE CONSTRUCTED 2' FROM THE RIGHT-OF-WAY MONUMENT OR AS DIRECTED BY THE ENGINEER.

RIGHT-OF-WAY FENCE LOCATION



PRIVATE FENCE TERMINAL INSTALLATION

WHERE EXISTING FENCE CONSISTS OF STEEL POSTS, USE END POST ASSEMBLY AS SHOWN IN TYPE C FENCE OR OTHER END POST ASSEMBLY AS APPROVED BY THE ENGINEER.

GENERAL NOTES:

STEEL LINE POSTS SHALL BE PAINTED OR GALVANIZED.
TUBULAR END, CORNER, PULL, OR DIAGONAL BRACES MUST CONFORM TO THE DIMENSIONS AND WEIGHTS SPECIFIED ON STANDARD DRAWING WF-3 (CHAIN LINK). APPROVED ALTERNATES ARE ACCEPTABLE.
AN ACCEPTABLE TOLERANCE IN LENGTH OF TUBULAR OR WOODEN POSTS SHALL BE - 1" TO +2".
TUBULAR POSTS MUST BE PAINTED OR GALVANIZED.

THE CONTRACTOR SHALL FURNISH AT LEAST 25% OF TIMBER LINE POSTS OF 7 FOOT LENGTHS IN ORDER TO PROVIDE SUFFICIENT SET IN SOFT GROUND OR SMALL DEPRESSIONS.

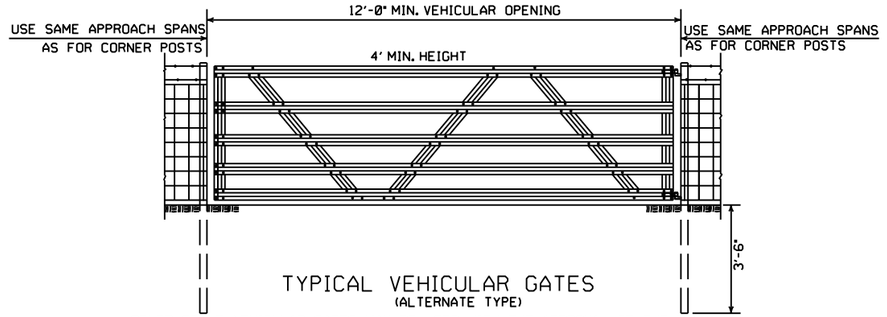
DRIVEWAY GATES, EITHER SINGLE 12' TO 16' OR DOUBLE 6' TO 8' OPENING OF THE SAME TYPE AS THE PEDESTRIAN GATE, SHALL BE INSTALLED ON THE RIGHT SIDE OF EACH THROUGH LANE ROAD AT LARGE CULVERTS OR BRIDGE CROSS FENCE, FOR USE OF MAINTENANCE EQUIPMENT. LOCATION OF GATES TO BE SHOWN ON PLANS OR AS DESIGNATED BY THE ENGINEER.

AT STREAM CROSSINGS, THE FENCE SHALL NOT BE CONSTRUCTED ACROSS LARGE STREAMS. WHERE CLEARANCE IS SUFFICIENT FROM THE TOP OF THE BANK TO THE BRIDGE STRUCTURE A CROSS CONNECTION SHALL BE CONSTRUCTED BETWEEN THE FENCE ON EACH SIDE OF THE ROAD. WHERE THE CLEARANCE IS NOT SUFFICIENT, THE FENCE SHALL BE TERMINATED WITH CROSS CONNECTIONS AND END POSTS ADJACENT TO BRIDGE ABUTMENTS OR CULVERT WINGWALLS.

SPLICE FOR BARBED WIRE BETWEEN PULL POST ASSEMBLY SHALL BE BY THE "EYE METHOD" AS DESCRIBED AS FOLLOWS: THE ENDS OF THE BARBED WIRE SHALL BE BENT TO FORM A LOOP. THE LOOPS SHALL BE CONNECTED. AFTER THE LOOPS ARE CONNECTED THE ENDS OF THE WIRE SHALL BE WRAPPED AROUND THE PROJECTING WIRES A MINIMUM OF 4 TIMES FOR EACH WIRE LOOP.

SPLICE FOR WOVEN WIRE BETWEEN PULL POST SHALL BE BY THE "WESTERN UNION METHOD" AS DESCRIBED AS FOLLOWS: THE VERTICAL WIRES FOR EACH END OF THE FENCE FABRIC SHALL BE PLACED SIDE BY SIDE AND THE PROJECTING HORIZONTAL WIRES SHALL BE WRAPPED A MINIMUM OF 4 TIMES AROUND THE HORIZONTAL WIRES OF THE FIRST WEB.

STAPLE AT LEAST TOP, BOTTOM AND ALTERNATE WIRES OF WOVEN FABRIC FOR WOOD LINE POSTS.



TYPICAL VEHICULAR GATES

(ALTERNATE TYPE)

OTHER STYLE VEHICULAR GATES MAY BE USED WITH THE APPROVAL OF THE ENGINEER.
THE METHOD OF SECURING GATE (LATCH AND/OR LOCK) SHALL MEET THE APPROVAL OF THE ENGINEER.

DATE	REVISION	FILMED
8-22-02	REVISED GENERAL NOTES	
10-18-96	REVISED AASHTO	
11-22-95	REVISED R-O-W LOCATION DETAIL	
6-2-94	REVISED BARB WIRE AND ADDED CORNER POST NOTES	6-2-94
8-5-93	REVISED R/W INSTALLATION FENCE	8-5-93
10-1-92	ADDED STAPLE NOTE	10-1-92
8-15-91	ADDED TYPE D-2 FENCE	8-15-91
11-30-89	DELETED CLASS CONCRETE	11-30-89
7-15-88	ADDED SPLICE NOTE	700-7-15-88
10-30-87	GENERAL REVISIONS	549-10-30-87
11-1-84	MAX. POST SPACING MIN. WIRE GAUGE	507-11-1-84
1-4-83	MIN. DIA. LINE POST	648-1-4-83
3-2-81	TOLERANCE FOR POST LENGTH	722-3-2-81
12-1-72	ADDED D-1 & FENCE INSTALLATION	564-12-1-72
10-2-72	REVISED AND REDRAWN	540-10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE TYPE C AND D

STANDARD DRAWING WF-4