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.		BR6210	1	78
				④	HURRICANE CREEK STRS. & APPRS. NO.2 (S)			

ARKANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS FOR PROPOSED COUNTY ROAD

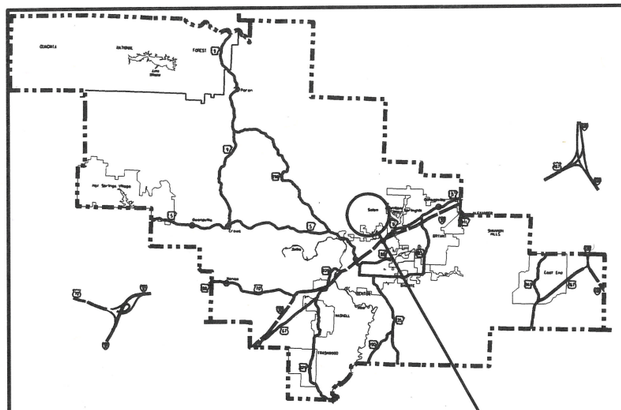
HURRICANE CREEK STRS. & APPRS. NO. 2 (S)

CO. RD. 65 (SAMPLES RD.)

SALINE COUNTY

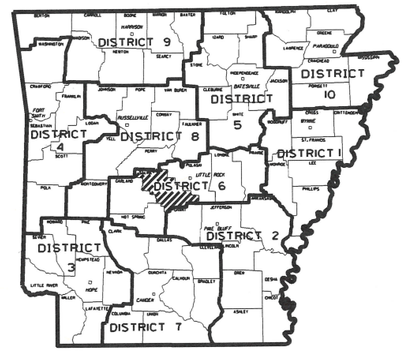
JOB BR6210

FED. AID PROJECT STPB-0062(52)



VICINITY MAP

0 1 2
SCALE IN MILES



ARKANSAS HIGHWAY DISTRICT 6

STRUCTURES OVER 20'-0" SPAN

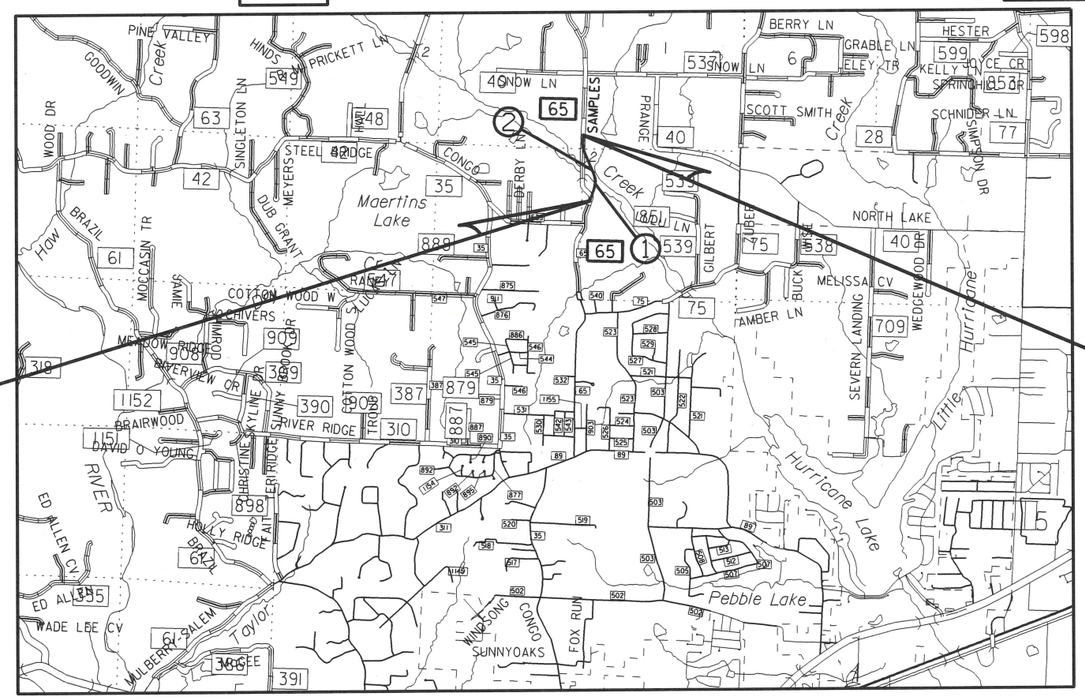
① STA. 108+33.47 BRIDGE END
BRIDGE NO. 04949
PRESTRESSED CONCRETE GIRDER
34' - 0" CLEAR ROADWAY
(45° LT. FWD. SKEW)
BRIDGE LENGTH = 283' - 0 3/4"
STA. 111+16.53 BRIDGE END

② STA. 114+03.75 BRIDGE END
BRIDGE NO. 04950
PRESTRESSED CONCRETE GIRDER
34' - 0" CLEAR ROADWAY
(30° LT. FWD. SKEW)
BRIDGE LENGTH = 212' - 6"
STA. 116+16.25 BRIDGE END

N

R15W

R14W



T I S

T I S

STA. 100+00.00
BEGIN JOB BR6210

STA. 125+20.48
END JOB BR6210

DESIGN TRAFFIC DATA

DESIGN YEAR	2043
2023 ADT	3400
2043 ADT	4400
2043 DHV	660
DIRECTIONAL DISTRIBUTON	0.60
TRUCKS	3%
DESIGN SPEED	50 MPH

APPROVED

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14276
JARED D. WILEY

CHIEF ENGINEER - PRECONSTRUCTION
SEP 20 2023

PROJECT COORDINATES:

	BEGIN	MID-POINT	END
LAT.	N 34° 39' 9"	N 34° 39' 21"	N 34° 39' 33"
LONG.	W 92° 33' 56"	W 92° 33' 55"	W 92° 33' 58"

GROSS	LENGTH OF	PROJECT	2520.48	FEET	OR	0.477	MILES
NET	"	ROADWAY	2024.92	"	"	0.383	"
NET	"	BRIDGE	495.56	"	"	0.094	"
NET	"	PROJECT	2520.48	"	"	0.477	"

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				JOB NO.		BR6210	2	78

4 INDEX OF SHEETS AND STANDARD DRAWINGS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING

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2	INDEX OF SHEETS AND STANDARD DRAWINGS		
3	GOVERNING SPECIFICATIONS AND GENERAL NOTES		
4 - 6	TYPICAL SECTIONS OF IMPROVEMENT		
7 - 10	SPECIAL DETAILS		
11 - 12	TEMPORARY EROSION CONTROL DETAILS		
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57 - 78	CROSS SECTIONS		

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BRIDGE STANDARD DRAWINGS

DRWG. NO.	TITLE	DATE
55000	STANDARD DETAILS FOR EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS	02-27-14
55001	STANDARD DETAILS FOR DUMPED RIPRAP AND FILTER BLANKET AND COMPUTING EXCAVATION FOR STRUCTURES	02-27-14
55005	STANDARD DETAILS FOR PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS	03-24-16
55011	STANDARD DETAILS FOR TYPE C BRIDGE NAME PLATES	02-27-20
55020	STANDARD DETAILS FOR STEEL H-PILES AND PILE ENCASEMENTS	03-24-16
55030F	STANDARD DETAILS FOR TYPE F APPROACH GUTTERS	04-08-21
55070	STANDARD DETAILS FOR BRIDGE TRAFFIC RAIL TYPE SSTR36	09-27-22

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DRWG. NO.	TITLE	DATE
FES-1	FLARED END SECTION	10-18-96
FES-2	FLARED END SECTION	10-18-96
GR-10	GUARD RAIL DETAILS	11-07-19
GR-11	GUARD RAIL DETAILS	11-07-19
GR-12	GUARD RAIL DETAILS	05-14-20
GRT-1	GUARD RAIL DETAILS	11-07-19
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
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
SHS-1	STANDARD HIGHWAY SIGNS AND SUPPORT ASSEMBLIES	09-12-13
SHS-2	U-CHANNEL POST ASSEMBLIES	07-25-19
TC-1	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	11-07-19
TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	05-20-21
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	08-12-21
TEC-1	TEMPORARY EROSION CONTROL DEVICES	11-16-17
TEC-2	TEMPORARY EROSION CONTROL DEVICES	06-02-94
TEC-3	TEMPORARY EROSION CONTROL DEVICES	11-03-94
WF-4	WIRE FENCE TYPE C AND D	08-22-02

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				JOB NO.		BR6210	3	78

4 GOVERNING SPECIFICATIONS & 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
105-4	MAINTENANCE DURING CONSTRUCTION
107-2	RESTRAINING CONDITIONS
108-1	LIQUIDATED DAMAGES
108-2	WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER
110-1	PROTECTION OF WATER QUALITY AND WETLANDS
210-1	UNCLASSIFIED EXCAVATION
303-1	AGGREGATE BASE COURSE
306-1	QUALITY CONTROL AND ACCEPTANCE
307-1	CEMENT
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
600-2	INCIDENTAL CONSTRUCTION
604-1	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
604-3	TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES (MASH)
606-1	PIPE CULVERTS FOR SIDE DRAINS
620-1	MULCH COVER
621-1	FILTER SOCKS
723-1	GENERAL REQUIREMENTS FOR SIGNS
729-1	CHANNEL POST SIGN SUPPORT
800-1	STRUCTURES
802-3	CONCRETE FOR STRUCTURES
802-4	CEMENT
804-2	REINFORCING STEEL FOR STRUCTURES
807-2	STEEL STRUCTURES
808-1	INSTALLATION OF ELASTOMERIC BEARINGS
808-2	ELASTOMERIC BEARINGS
JOB BR6210	BIDDING REQUIREMENTS AND CONDITIONS
JOB BR6210	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB BR6210	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB BR6210	BUY AMERICA - CONSTRUCTION MATERIALS
JOB BR6210	CARGO PREFERENCE ACT REQUIREMENTS
JOB BR6210	CLASS C FLY ASH IN PORTLAND CEMENT CONCRETE PAVEMENT AND CLASS S(AE) CONCRETE
JOB BR6210	CONCRETE BRIDGE DECK CURING AND SURFACE TREATMENT RESTRICTIONS
JOB BR6210	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB BR6210	CONTACT INFORMATION FOR MOTORIST DAMAGE CLAIMS
JOB BR6210	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
JOB BR6210	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB BR6210	ESTABLISHING CONTRACT TIME - WORKING DAY CONTRACT
JOB BR6210	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB BR6210	LIQUIDATED DAMAGES PROCEDURE FOR BID LETTINGS
JOB BR6210	MANDATORY ELECTRONIC CONTRACT
JOB BR6210	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB BR6210	NESTING SITES OF MIGRATORY BIRDS
JOB BR6210	OFF-SITE RESTRAINING CONDITIONS FOR INDIANA AND NORTHERN LONG-EARED BATS
JOB BR6210	PARTNERING REQUIREMENTS
JOB BR6210	PLASTIC PIPE
JOB BR6210	PRICE ADJUSTMENT FOR ASPHALT BINDER
JOB BR6210	PRICE ADJUSTMENT FOR FUEL
JOB BR6210	PROHIBITION OF CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT
JOB BR6210	RECYCLED ASPHALT SHINGLES
JOB BR6210	SECTION 404 NATIONWIDE 14 PERMIT REQUIREMENTS
JOB BR6210	SHORING FOR CULVERTS
JOB BR6210	STORM WATER POLLUTION PREVENTION PLAN
JOB BR6210	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB BR6210	TOTAL SOLAR ECLIPSE
JOB BR6210	UTILITY ADJUSTMENTS
JOB BR6210	VALUE ENGINEERING
JOB BR6210	WARM MIX ASPHALT
JOB BR6210	WATER POLLUTION CONTROL

GENERAL NOTES

1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN IN PLANS
2. UTILITIES INTERFERING WITH CONSTRUCTION SHALL BE MOVED BY THE OWNERS.
3. THE CONTRACTOR SHALL MAINTAIN MAILBOXES WITHIN THE PROJECT LIMITS SUCH THAT THE PUBLIC MAY RECEIVE CONTINUED MAIL SERVICE. THE CONTRACTOR SHALL REMOVE AND RESTORE TO THE PROPER HEIGHT THE EXISTING MAILBOX POSTS AND MAILBOXES AS DIRECTED BY THE ENGINEER. ITEMS DAMAGED BY THE CONTRACTOR SHALL BE REPLACED AT NO COST TO THE DEPARTMENT. THIS WORK WILL NOT BE PAID FOR SEPARATELY, BUT WILL BE CONSIDERED INCLUDED IN THE CONTRACT PRICES BID FOR OTHER ITEMS OF THE CONTRACT.
4. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
5. THE CONTRACTOR SHALL PROVIDE 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.
6. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
7. PAVEMENT TO BE REMOVED SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. PAVEMENT SHALL BE REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT RETAINED. ANY DAMAGE TO RETAINED PAVEMENT SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
8. TEMPORARY EASEMENTS ARE PROVIDED FOR CONTRACTOR ACCESS. AREAS OUTSIDE THE CONSTRUCTION LIMITS SHALL NOT BE CLEARED OR GRUBBED UNLESS DIRECTED BY THE ENGINEER.
9. SUPERELEVATION SHALL BE COMPUTED IN ACCORDANCE WITH STD. DRWG. SE-2 USING 50 M.P.H. DESIGN VALUES AND REVOLVE ABOUT THE INNER EDGE OF TRAVEL LANE UNLESS OTHERWISE SHOWN.
10. AGGREGATE BASE TO BE PLACED AND SPREAD TO CONFORM TO TYPICAL SECTION. THE MATERIAL IN THE BASE COURSE SHALL BE UNIFORMLY COMPACTED, STABLE, AND FREE OF SEGREGATED AREAS. DENSITY REQUIREMENTS ARE NOT A PART OF THIS CONTRACT.
11. THE ROAD SHALL BE MAINTAINED AND REMAIN OPEN TO TRAFFIC THROUGHOUT THE PROJECT.
12. EXISTING BRIDGE NO. 16672 SHALL BE REMOVED IN ACCORDANCE WITH SECTION 205 OF THE STANDARD SPECIFICATIONS, EDITION OF 2014. ALL MATERIAL FROM THE EXISTING BRIDGE SHALL BECOME THE PROPERTY OF THE CONTRACTOR.
13. THE CONTRACTOR WILL BE REQUIRED TO PROTECT THE BRIDGE DECK DURING PRIME AND PAVING OPERATIONS.
14. THE CONTRACTOR SHALL CLIP GRASS AND DEBRIS FROM THE EDGE OF THE EXISTING ROADWAY. THESE "CLIPPINGS" SHALL BE PULLED UP TO THE EDGE OF THE NEW PAVEMENT IN SECTIONS WHERE THE SHOULDERS ARE NOT BEING REBUILT WITH AGGREGATE OR BORROW. NO DIRECT PAYMENT WILL BE MADE FOR THIS WORK.
15. EDGE LINES SHALL NOT BE PLACED UNTIL AFTER ALL MATERIAL HAS BEEN PLACED OR PULLED UP AGAINST THE EDGE OF PAVEMENT.
16. 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.
17. SUPPLYING UTILITY RISERS AND INSTALLATION OF PERMANENT TRAFFIC SAFETY SIGNS NOT SHOWN IN THE PLANS ARE THE RESPONSIBILITIES OF SALINE COUNTY.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING

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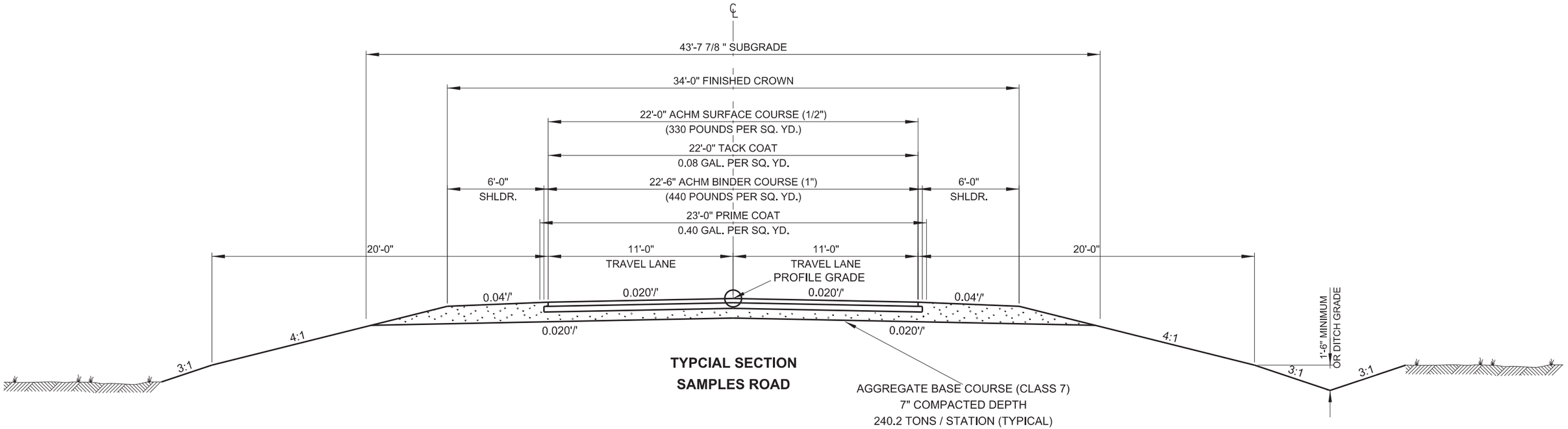
GOVERNING SPECIFICATIONS AND GENERAL NOTES

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4 TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING

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TYPCIAL SECTION
SAMPLES ROAD

AGGREGATE BASE COURSE (CLASS 7)
7" COMPACTED DEPTH
240.2 TONS / STATION (TYPICAL)

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

NOTE: THE THICKNESS OF BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF 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.

NOTE: DETAILS MAY BE MODIFIED TO MEET LOCAL CONDITIONS AS DIRECTED BY THE ENGINEER.

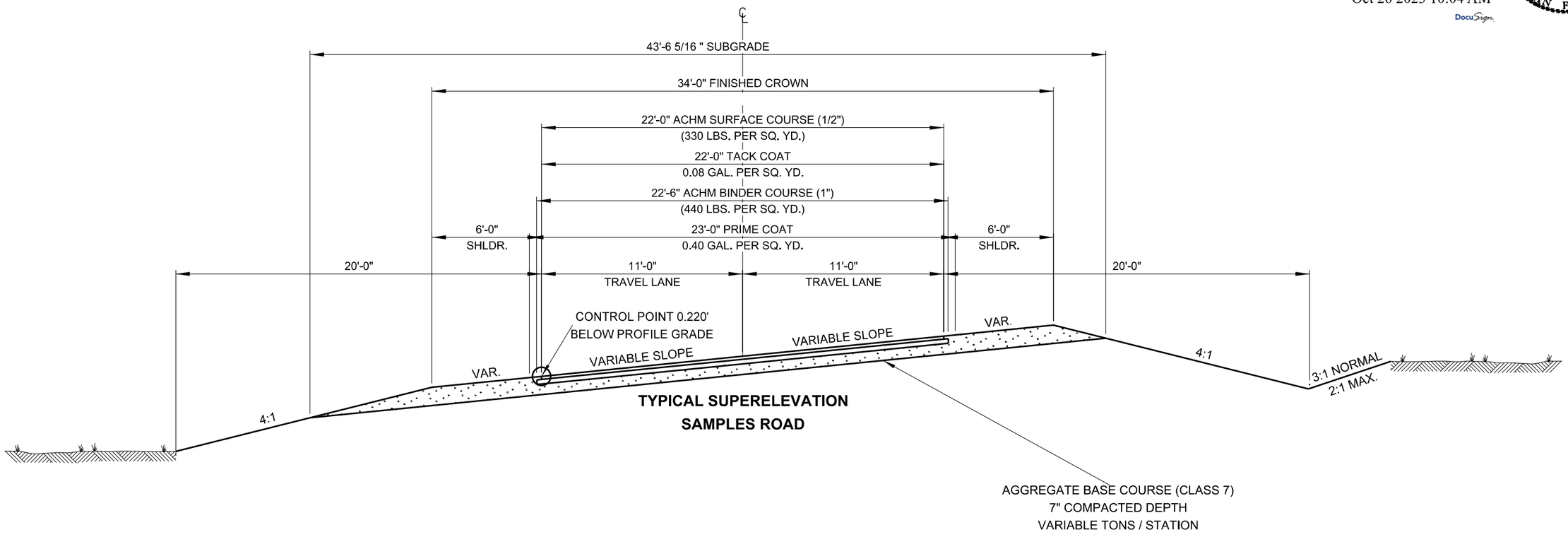
TYPICAL SECTIONS OF IMPROVEMENT

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4 TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
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TYPICAL SUPERELEVATION SAMPLES ROAD

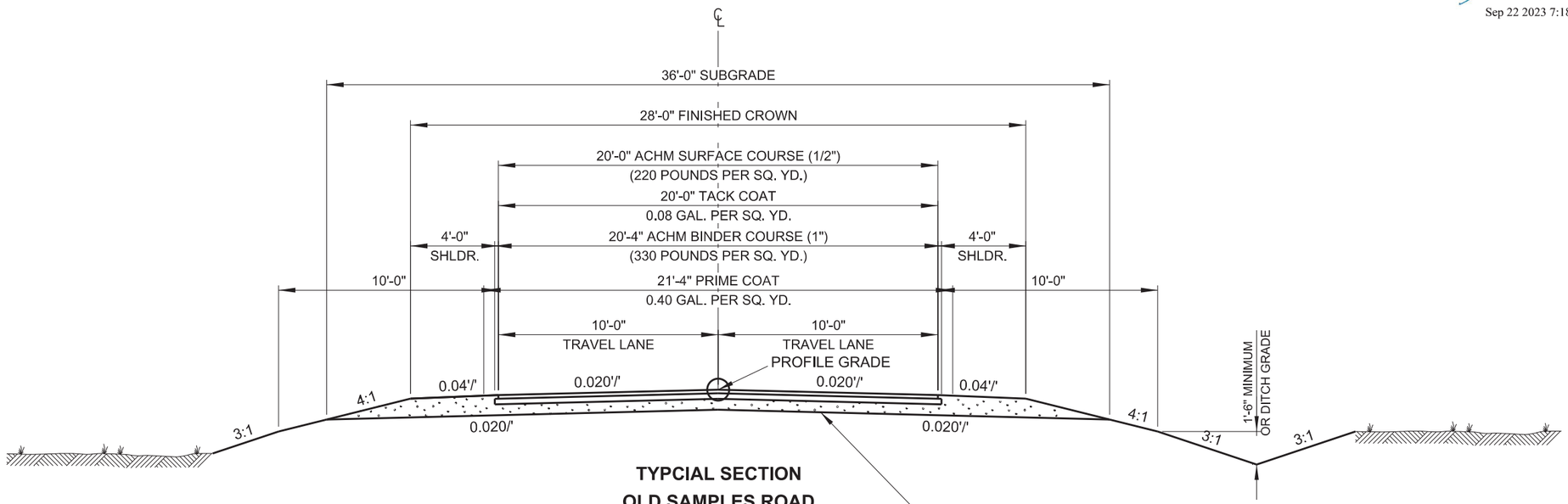
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4 TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING

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TYPCIAL SECTION
OLD SAMPLES ROAD

AGGREGATE BASE COURSE (CLASS 7)
7" COMPACTED DEPTH
179.2 TONS / STATION (TYPICAL)

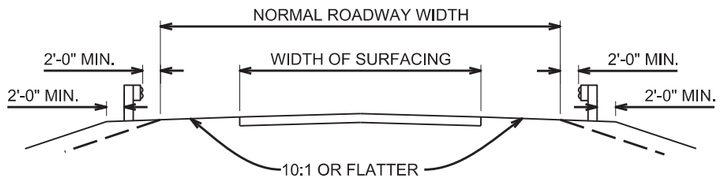
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NOTE: THE THICKNESS OF BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET THE TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS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

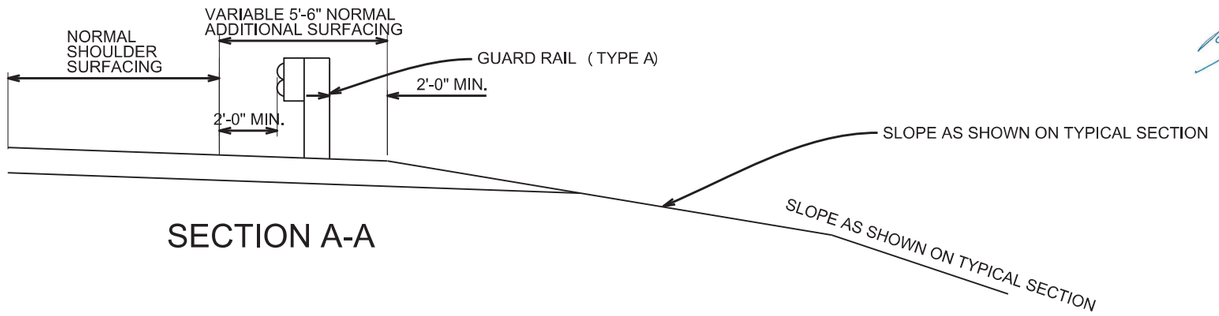
NOTE: DETAILS MAY BE MODIFIED TO MEET LOCAL CONDITIONS AS DIRECTED BY THE ENGINEER.

TYPICAL SECTIONS OF IMPROVEMENT

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				JOB NO.		BR6210	7	78
				4	SPECIAL DETAILS			



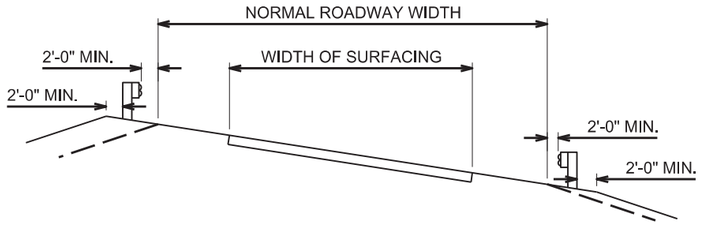
SECTION ON TANGENT



SECTION A-A

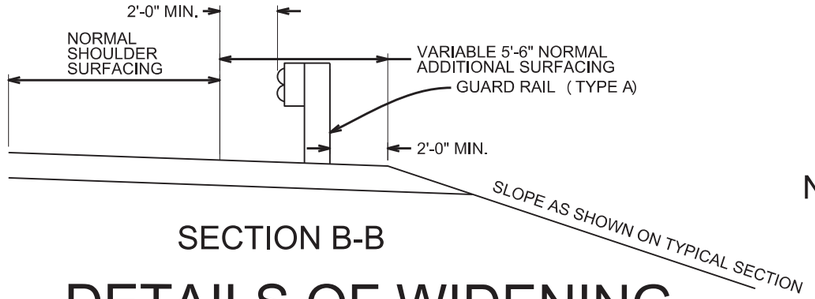
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No. 11240
BRYAN FREELING



SECTION ON CURVE

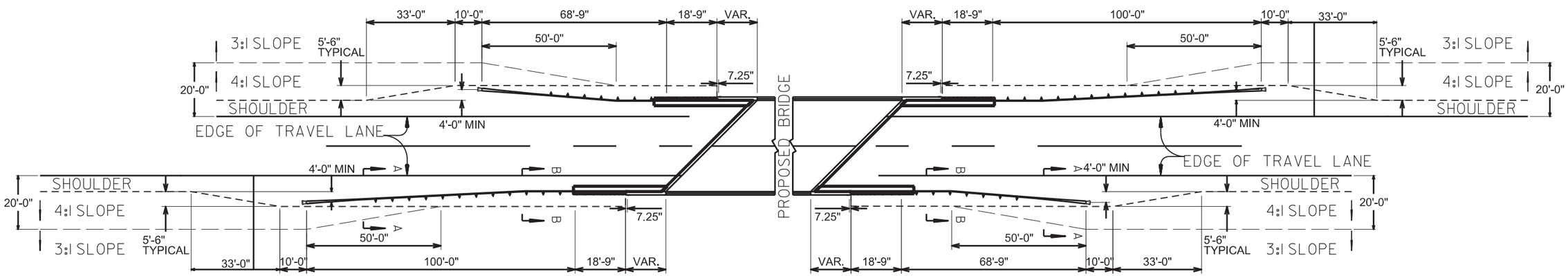
DETAILS SHOWING POSITION OF GUARD RAIL



SECTION B-B

NORMAL SECTION TO BE WIDENED APPROXIMATELY 5'-6" EACH SIDE TO SUPPORT GUARDRAIL.

DETAILS OF WIDENING FOR GUARD RAIL



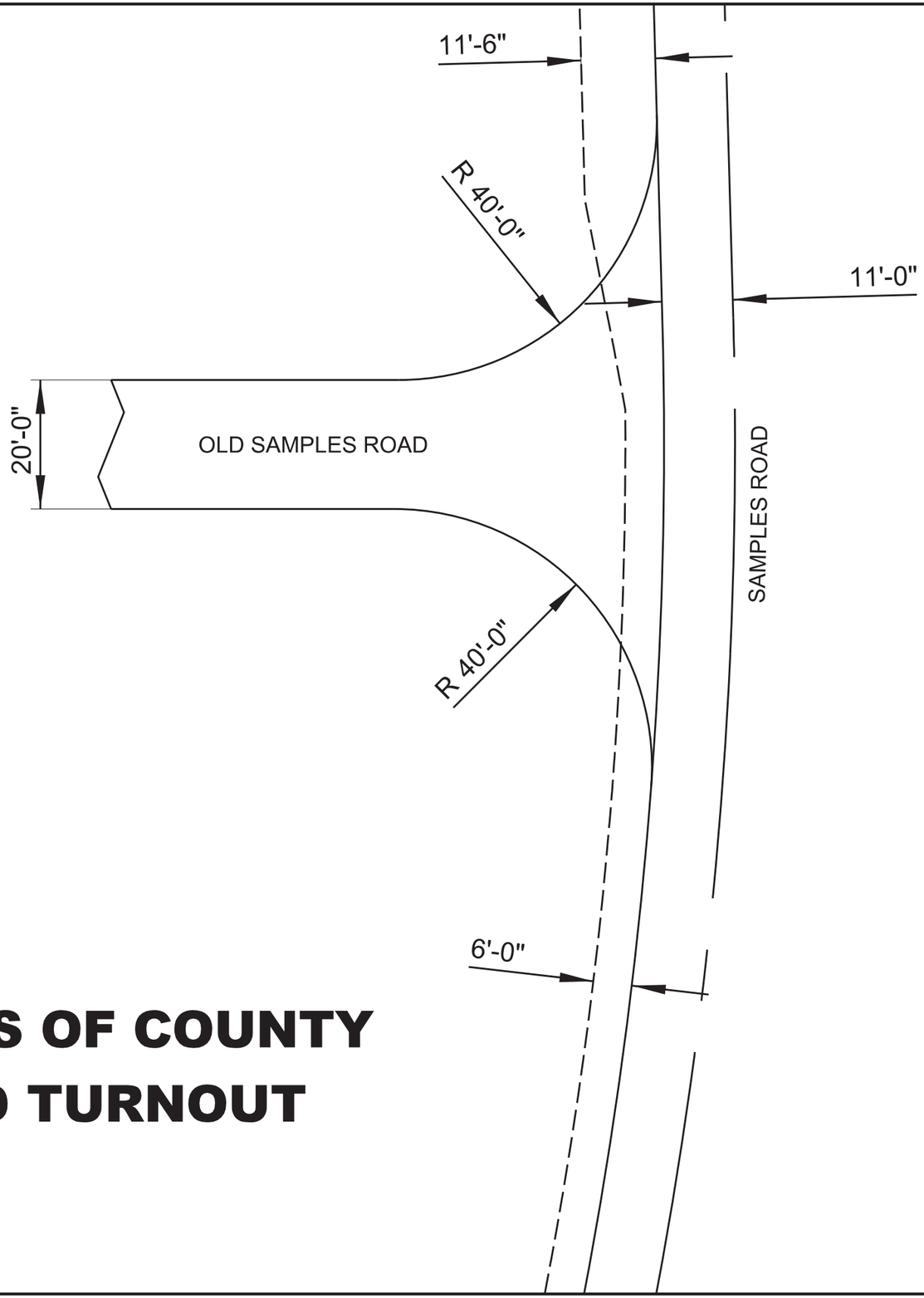
SPECIAL DETAILS

NOTE: DETAILS MAY BE MODIFIED TO MEET LOCAL CONDITIONS AS DIRECTED BY THE ENGINEER.

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.		BR6210	8	78
				4	SPECIAL DETAILS			

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REGISTERED PROFESSIONAL ENGINEER
No. 11240
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DETAILS OF COUNTY ROAD TURNOUT

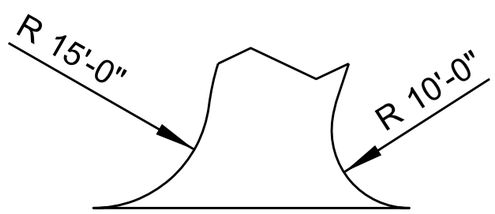
SPECIAL DETAILS

NOTE: DETAILS MAY BE MODIFIED TO MEET LOCAL CONDITIONS AS DIRECTED BY THE ENGINEER.

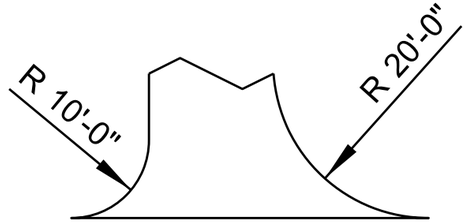
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-24-2023				6	ARK.			
				JOB NO.		BR6210	9	78
				4	SPECIAL DETAILS			

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING

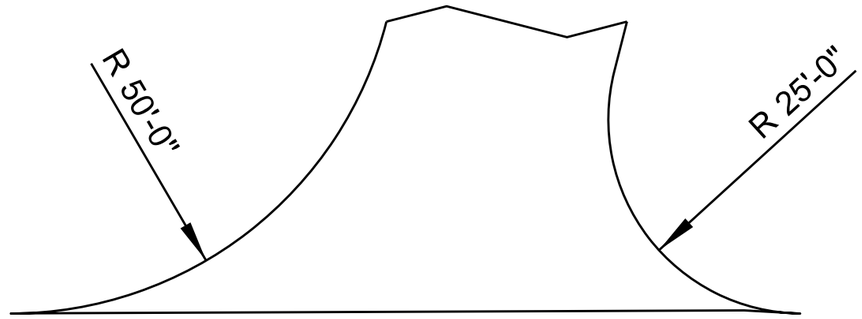
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DRIVEWAY AT STA. 100+25
ADD'L SURFACING = 70.0 SQ. YD.

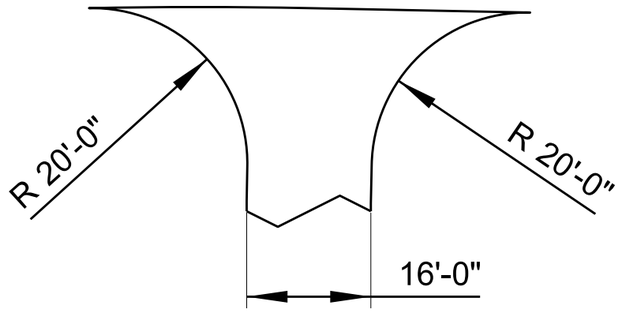


DRIVEWAY AT STA. 100+61
ADD'L SURFACING = 75.3 SQ. YD.

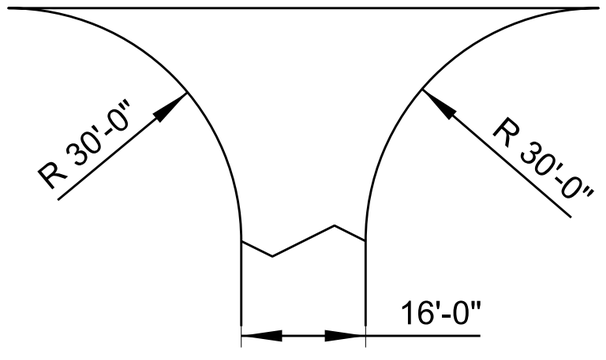


DRIVEWAY AT STA. 100+34
ADD'L SURFACING = 349.8 SQ. YD.

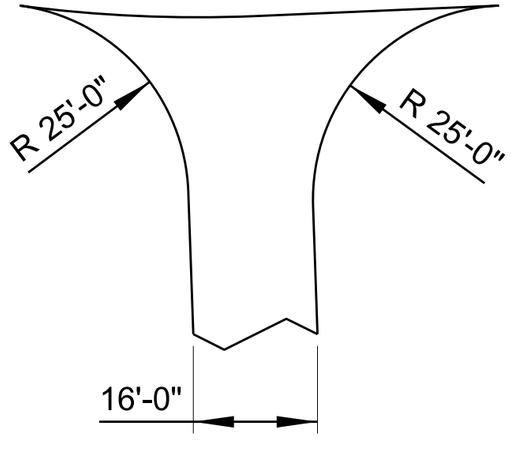
DRIVEWAY AT STA. 102+95
ADD'L SURFACING = 101.0 SQ. YD.



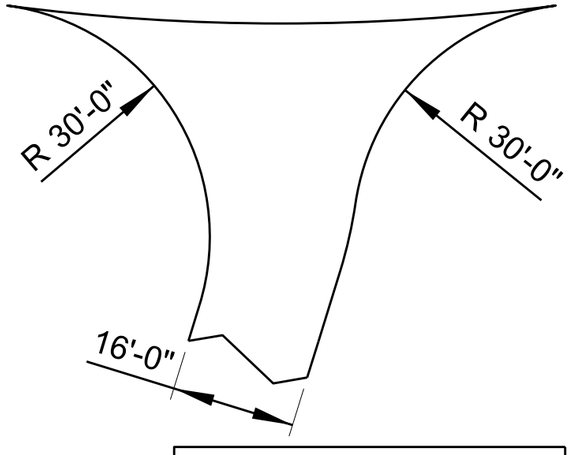
DRIVEWAY AT STA. 112+89
ADD'L SURFACING = 273.7 SQ. YD.



DRIVEWAY AT STA. 200+87
ADD'L SURFACING = 212.8 SQ. YD.

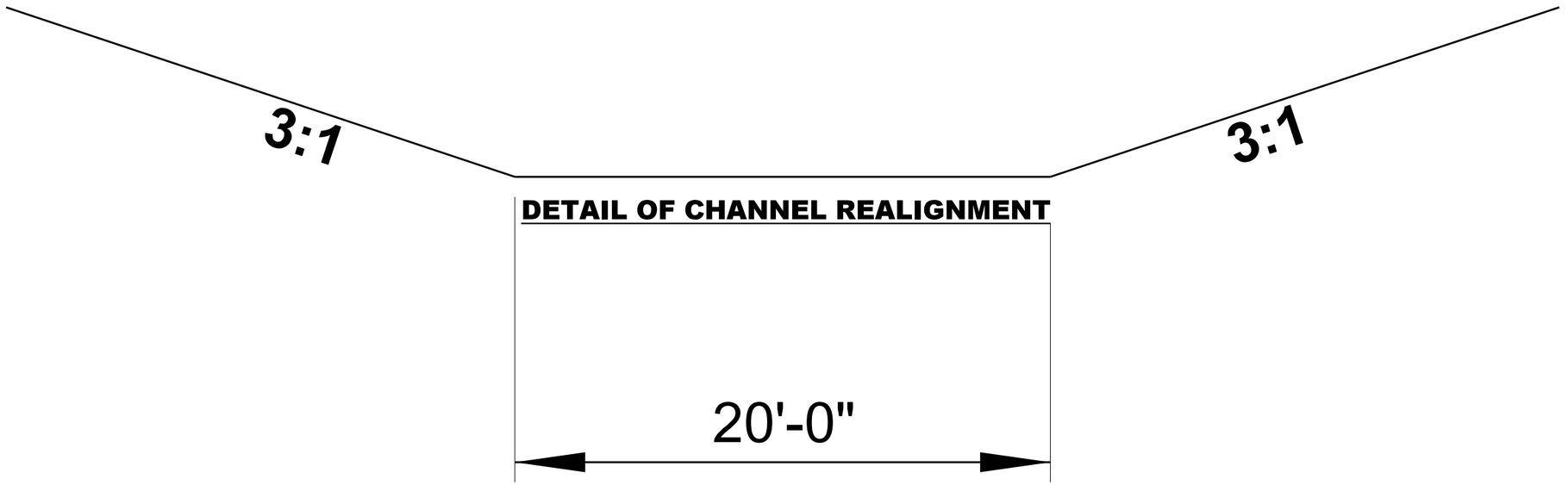


DRIVEWAY AT STA. 203+83
ADD'L SURFACING = 159.3 SQ. YD.



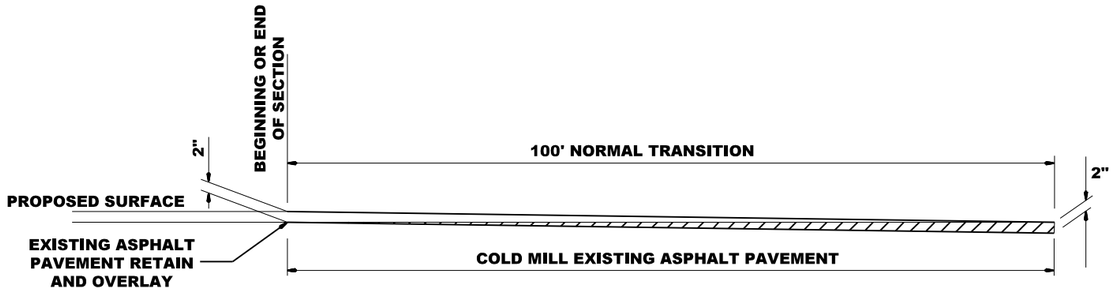
SPECIAL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-24-2023				6	ARK.			
				JOB NO.		BR6210	10	78
				(4)	SPECIAL DETAILS			



STATE OF ARKANSAS
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DETAIL FOR TRANSITIONS

SPECIAL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-24-2023				6	ARK.			
				JOB NO.		BR6210	11	78

4 TEMPORARY EROSION CONTROL DETAILS

REVISIONS

DATE	DESCRIPTION

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING

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TEMPORARY EROSION CONTROL

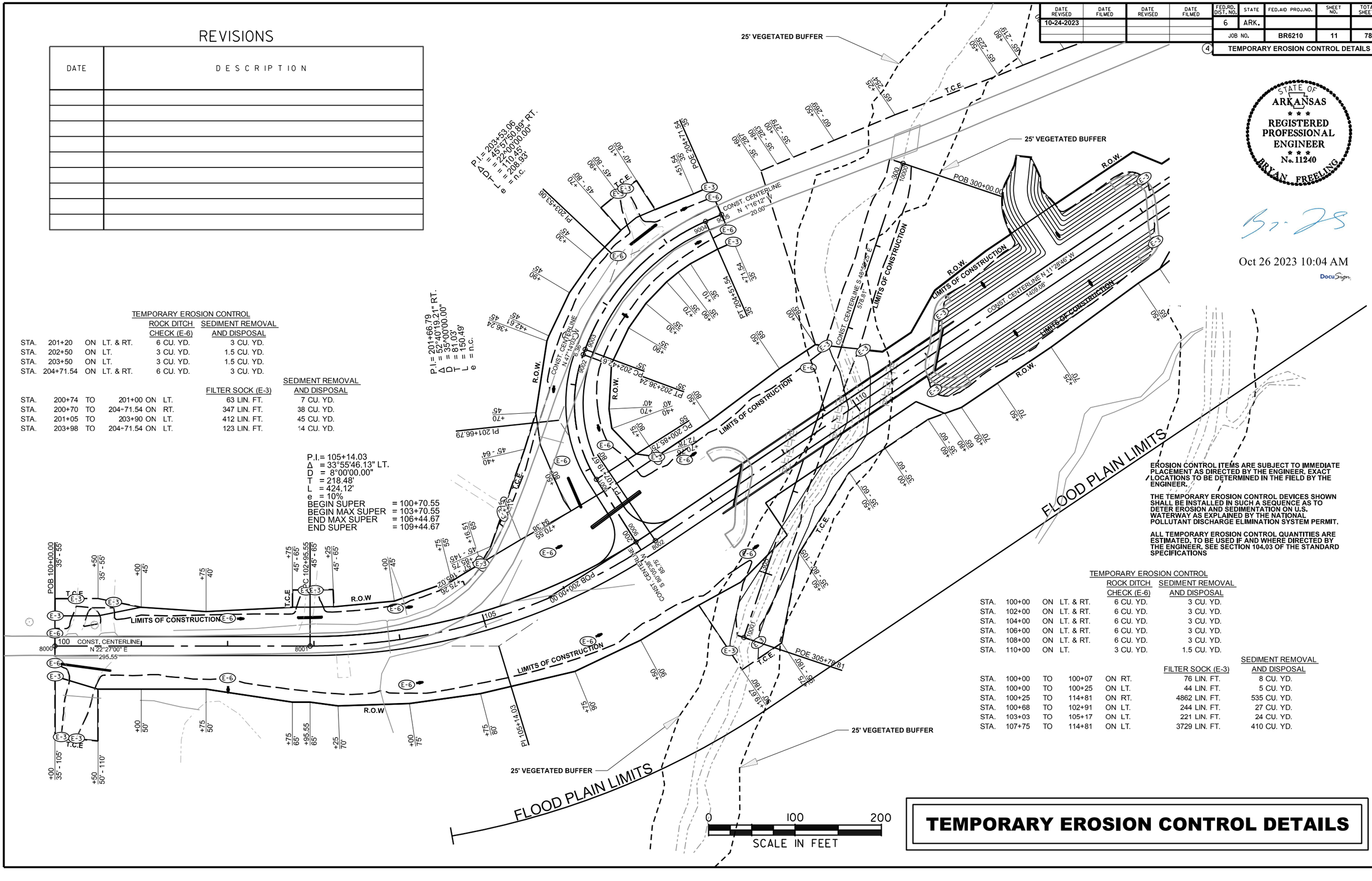
					ROCK DITCH CHECK (E-6)	SEDIMENT REMOVAL AND DISPOSAL
STA.	201+20	ON	LT. & RT.		6 CU. YD.	3 CU. YD.
STA.	202+50	ON	LT.		3 CU. YD.	1.5 CU. YD.
STA.	203+50	ON	LT.		3 CU. YD.	1.5 CU. YD.
STA.	204+71.54	ON	LT. & RT.		6 CU. YD.	3 CU. YD.

						FILTER SOCK (E-3)	SEDIMENT REMOVAL AND DISPOSAL
STA.	200+74	TO	201+00	ON	LT.	63 LIN. FT.	7 CU. YD.
STA.	200+70	TO	204+71.54	ON	RT.	347 LIN. FT.	38 CU. YD.
STA.	201+05	TO	203+90	ON	LT.	412 LIN. FT.	45 CU. YD.
STA.	203+98	TO	204+71.54	ON	LT.	123 LIN. FT.	14 CU. YD.

P.I.= 105+14.03
Δ = 33°55'46.13" LT.
D = 8°00'00.00"
T = 218.48'
L = 424.12'
e = 10%
BEGIN SUPER = 100+70.55
BEGIN MAX SUPER = 103+70.55
END MAX SUPER = 106+44.67
END SUPER = 109+44.67

P.I.= 201+66.79
Δ = 52°40'19.21" RT.
D = 35°00'00.00"
T = 81.03'
L = 150.49'
e = n.c.

P.I.= 203+53.06
Δ = 45°51'50.89" RT.
D = 22°00'00.00"
T = 110.45'
L = 208.93'
e = n.c.



EROSION CONTROL ITEMS ARE SUBJECT TO IMMEDIATE PLACEMENT AS DIRECTED BY THE ENGINEER. EXACT LOCATIONS TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

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

ALL TEMPORARY EROSION CONTROL QUANTITIES ARE ESTIMATED. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS

TEMPORARY EROSION CONTROL

					ROCK DITCH CHECK (E-6)	SEDIMENT REMOVAL AND DISPOSAL
STA.	100+00	ON	LT. & RT.		6 CU. YD.	3 CU. YD.
STA.	102+00	ON	LT. & RT.		6 CU. YD.	3 CU. YD.
STA.	104+00	ON	LT. & RT.		6 CU. YD.	3 CU. YD.
STA.	106+00	ON	LT. & RT.		6 CU. YD.	3 CU. YD.
STA.	108+00	ON	LT. & RT.		6 CU. YD.	3 CU. YD.
STA.	110+00	ON	LT.		3 CU. YD.	1.5 CU. YD.

						FILTER SOCK (E-3)	SEDIMENT REMOVAL AND DISPOSAL
STA.	100+00	TO	100+07	ON	RT.	76 LIN. FT.	8 CU. YD.
STA.	100+00	TO	100+25	ON	LT.	44 LIN. FT.	5 CU. YD.
STA.	100+25	TO	114+81	ON	RT.	4862 LIN. FT.	535 CU. YD.
STA.	100+68	TO	102+91	ON	LT.	244 LIN. FT.	27 CU. YD.
STA.	103+03	TO	105+17	ON	LT.	221 LIN. FT.	24 CU. YD.
STA.	107+75	TO	114+81	ON	LT.	3729 LIN. FT.	410 CU. YD.

TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-24-2023				6	ARK.			
				JOB NO.		BR6210	12	78

4 TEMPORARY EROSION CONTROL DETAILS

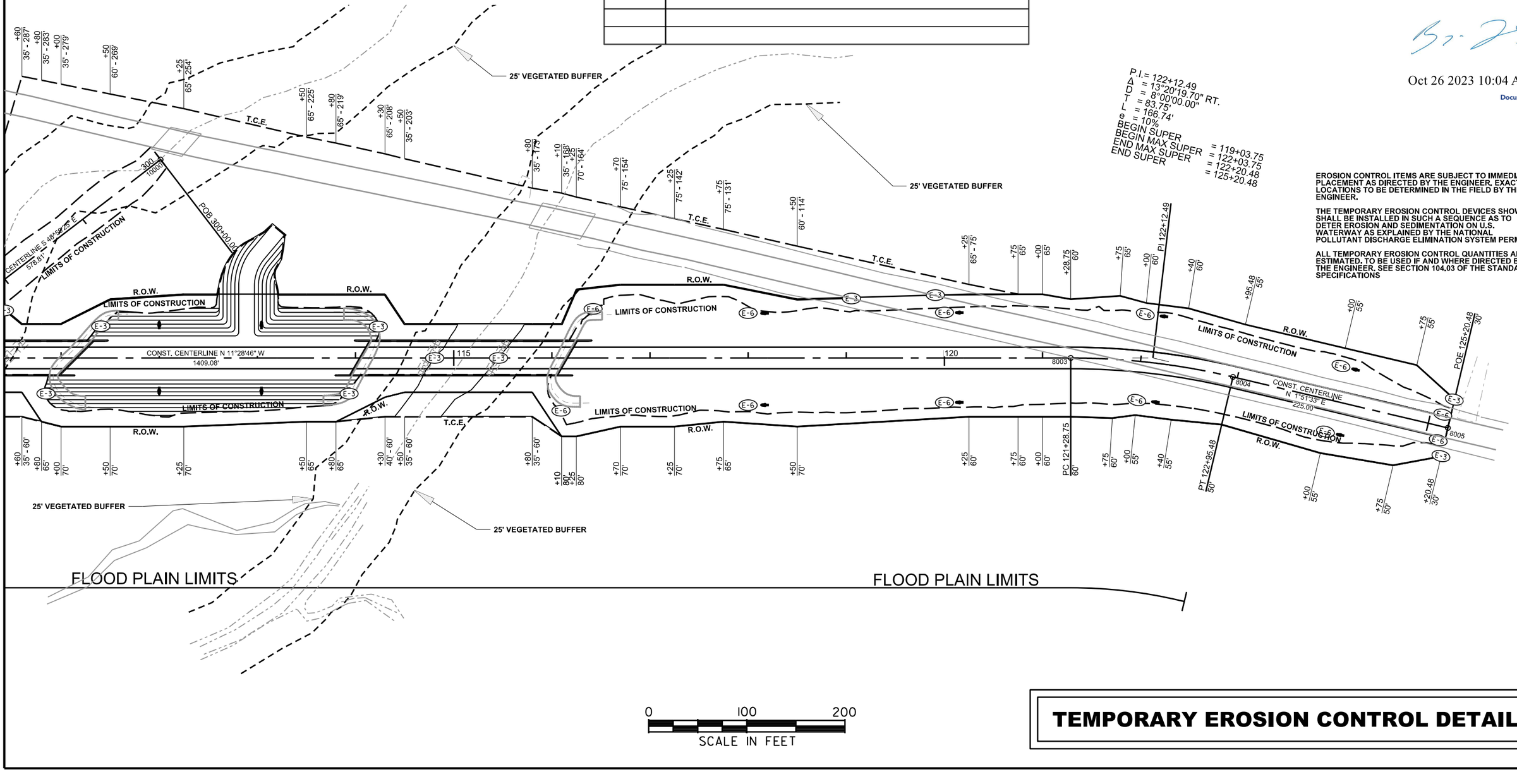
TEMPORARY EROSION CONTROL

					ROCK DITCH CHECK (E-6)	SEDIMENT REMOVAL AND DISPOSAL
STA.	116+09	ON	RT.		3 CU. YD.	1.5 CU. YD.
STA.	116+42	ON	LT.		3 CU. YD.	1.5 CU. YD.
STA.	118+00	ON	LT. & RT.		6 CU. YD.	3 CU. YD.
STA.	120+00	ON	LT. & RT.		6 CU. YD.	3 CU. YD.
STA.	122+00	ON	LT. & RT.		6 CU. YD.	3 CU. YD.
STA.	124+00	ON	LT. & RT.		6 CU. YD.	3 CU. YD.
STA.	125+20.48	ON	LT. & RT.		6 CU. YD.	3 CU. YD.

					FILTER SOCK (E-3)	SEDIMENT REMOVAL AND DISPOSAL
STA.	115+46	TO	119+05	ON LT.	401 LIN. FT.	44 CU. YD.
STA.	115+46	TO	125+20.48	ON RT.	1118 LIN. FT.	123 CU. YD.
STA.	119+91	TO	125+20.48	ON LT.	551 LIN. FT.	61 CU. YD.

REVISIONS

DATE	DESCRIPTION



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SCALE IN FEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING

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EROSION CONTROL ITEMS ARE SUBJECT TO IMMEDIATE PLACEMENT AS DIRECTED BY THE ENGINEER. EXACT LOCATIONS TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

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

ALL TEMPORARY EROSION CONTROL QUANTITIES ARE ESTIMATED. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS

TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-24-2023				6	ARK.			
				JOB NO.		BR6210	13	78

4 QUANTITIES

TRAFFIC CONTROL DEVICES

STATION	W20-1								G20-2 (END ROAD WORK)		W21-5* (SHOULDER WORK)		BARRICADES (TYPE III)*	TRAFFIC DRUMS*	STANDARD DRAWING NUMBER
	1500 FT.		1000 FT.		500 FT.		AHEAD								
	NO.	SQ. FT.	NO.	SQ. FT.	NO.	SQ. FT.	NO.	SQ. FT.	NO.	SQ. FT.	NO.	SQ. FT.	LIN. FT.	EACH	
85+00	1	16.00													TC-1, TC-2, TC-3
90+00			1	16.00											TC-1, TC-2, TC-3
95+00					1	16.00									TC-1, TC-2, TC-3
100+00							1	16.00	1	8.00	1	6.25			TC-1, TC-2, TC-3
125+20							1	16.00	1	8.00	1	6.25			TC-1, TC-2, TC-3
130+20					1	16.00									TC-1, TC-2, TC-3
135+20			1	16.00											TC-1, TC-2, TC-3
140+20	1	16.00													TC-1, TC-2, TC-3
ENTIRE PROJECT													48*	50*	TC-1, TC-2, TC-3
TOTALS:	2	32.00	2	32.00	2	32.00	2	32.00	2	16.00	2	12.50	48*	50*	

NOTE: LOCATION OF THE TRAFFIC CONTROL DEVICES TO BE AS DIRECTED BY THE ENGINEER.
SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.
*NOTE: ESTIMATED QUANTITY. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.
SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

REMOVAL AND DISPOSAL OF PIPE CULVERTS

STATION	DESCRIPTION	PIPE CULVERT
		EACH
102+95	18" X 20' C.M.P. SIDE DRAIN ON LT.	1
103+87	24" X 35' R.C.P. CROSSDRAIN	1
116+00	QUADRUPLE 72" X 40' CROSS DRAIN	4*
200+87	12" X 20' C.M.P. SIDE DRAIN ON LT.	1
201+43	12" X 43' CROSS DRAIN	1
203+83	15" X 40' R.C.P. SIDE DRAIN ON LT.	1
TOTAL:		9

NOTE: ALL SALVAGEABLE PIPE CULVERTS SHALL BECOME THE PROPERTY OF SALINE COUNTY.

*NOTE: CONTRACTOR TO COORDINATE WITH COUNTY FOR THE REMOVAL OF CROSS DRAIN AT STA. 116+00.

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FENCING

STATION	STATION	SIDE	REMOVAL AND DISPOSAL OF FENCE	WIRE FENCE (TYPE D-1)	GATE ALTERNATES	
					18' STEEL GATES	18' ALUMINUM GATES
			LIN. FT.	LIN. FT.	EACH	EACH
100+47	107+83	RT.	782	788		
100+91	102+80	LT.	204			
103+07	105+07	LT.	199			
107+75	110+09	LT.	210	237		
107+83	108+69	RT.	86			
109+21	114+59	RT.		562		
110+09	110+39	LT.	58			
110+39	115+05	LT.	452	633		
113+21		LT.			1	1
115+05	125+20.48	RT.		1030		
115+05	115+62.00	LT.	58			
115+72	125+20.48	LT.	909	990		
120+78	125+20.48	RT.	438			
200+71	204+71.54	RT.		417		
201+69	203+54	LT.	219			
204+71.54		MAIN LANES			1	1
ENTIRE PROJECT			50*	200*		
TOTAL:			3665	4857	2	2

*NOTE: TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.
SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

GUARDRAIL

STATION	STATION	SIDE	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	TERMINAL ANCHOR POST (TYPE 1)
			LIN. FT.	EACH	EACH
106+84	108+03	RT.	100	1	1
107+48	108+36	LT.	69	1	1
111+14	112+02	RT.	69	1	1
111+48	112+67	LT.	100	1	1
112+60	113+79	RT.	100	1	1
113+11	113+99	LT.	69	1	1
116+21	117+09	RT.	69	1	1
116+41	117+60	LT.	100	1	1
TOTALS:			676	8	8

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION			COMPACTED EMBANKMENT		
			NORMAL	ADD'L	TOTAL	NORMAL	ADD'L	TOTAL
			CUBIC YARDS					
100+00	114+31	MAIN LANES	1914		1914	17209		17209
100+25		DRIVEWAY ON LT.		16	16			
100+34		DRIVEWAY ON RT.		67	67		24	24
100+61		DRIVEWAY ON LT.		14	14		2	2
102+95		DRIVEWAY ON LT.		10	10		21	21
110+48	120+37	OBLITERATION OF EXISTING ROADWAY		3183	3183			
112+89		DRIVEWAY ON LT.		9	9		557	557
115+88	125+20.48	MAIN LANES	774		774	10181		10181
200+00	204+71.54	MAIN LANES	843		843	780		780
200+87		DRIVEWAY ON LT.		48	48		128	128
203+83		DRIVEWAY ON LT.		43	43		28	28
300+00	305+78.81	CHANNEL REALIGNMENT	1408		1408	995		995
TOTALS:			4939	3390	8329	29165	760	29925

NOTE: EARTHWORK QUANTITIES SHOWN ABOVE SHALL BE PAID AS PLAN QUANTITY.

NOTE: CHANNEL CHANGE EXCAVATION, IF DEEMED SUITABLE BY THE ENGINEER, TO BE USED AS ROADWAY EMBANKMENT. EXCAVATION DEEMED UNSUITABLE SHALL BE DISPOSED OF AS APPROVED BY THE ENGINEER.

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	WIDTH	SQ. YDS.
100+00.00	101+00.00	22	244.4
124+20.48	125+20.48	22	244.4
204+21.54	204+71.54	20	111.1
TOTAL:			**488.8**
USE:			**489**

QUANTITIES ARE ESTIMATED. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.
SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

MATERIAL PRODUCED FROM COLD MILLING ASPHALT PAVEMENT SHALL REMAIN THE PROPERTY OF THE CONTRACTOR.

PAVEMENT MARKING

STATION		REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (4") CONTINUOUS	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (4") CONTINUOUS
FROM	TO	LIN. FT.	LIN. FT.
100+00	125+20.48	5041	5041
200+00	204+71.54	943	990
TOTAL:		5984	6031

NOTE: THIS IS A HIGH VOLUME ROAD AS DEFINED IN SECTION 604.03 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2014.

CLEARING AND GRUBBING

STATION	STATION	CLEARING	GRUBBING
		STATION	STATION
100+00	125+20.48	26	26
200+00	204+71.54	5	5
TOTAL:		31	31

4" PIPE UNDERDRAIN

LOCATION	4" PIPE UNDERDRAIN	UNDERDRAIN OUTLET PROTECTORS
	LIN. FT.	EACH
ENTIRE PROJECT	200	10
TOTAL:	200	10

NOTE: ESTIMATED QUANTITY. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

QUANTITIES

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10-24-2023				6	ARK.			
				JOB NO.		BR6210	14	78

④ QUANTITIES

SURFACING QUANTITIES

STATION	STATION	LOCATION	LENGTH	TACK COAT				PRIME COAT				AGGREGATE BASE COURSE (CLASS 7)		ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")			
				WIDTH	SQ. YD.	GALLONS PER SQ. YD.	GALLONS	WIDTH	SQ. YD.	GALLONS PER SQ. YD.	GALLONS	TONS/STA.	TONS	WIDTH	LBS./SQ. YD.	SQ. YD.	TON	WIDTH	LBS./SQ. YD.	SQ. YD.	TON
				FEET				FEET						FEET				FEET			
100+00.00	100+50.00	MAIN LANES	50.00	VARIES	245.3	0.08	19.6	23.00	127.8	0.40	51.1	VARIES	101.2	VARIES	440	VARIES	27.7	VARIES	330	VARIES	20.3
100+25.00		DRIVEWAY ON LT.	35.30						74.7	0.40	29.9	VARIES	28.7					VARIES	220	70.0	7.7
100+34.00		DRIVEWAY ON RT.	94.19						365.2	0.40	146.1	VARIES	143.8					VARIES	220	349.8	38.5
100+50.00	100+70.55	MAIN LANES	20.55	22.00	50.2	0.08	4.0	23.00	52.5	0.40	21.0	240.0	49.3	22.50	440	51.4	11.3	22.00	330	50.2	8.3
100+61.00		DRIVEWAY ON LT.	33.27						80.3	0.40	32.1	VARIES	31.0					VARIES	220	75.3	8.3
100+70.55	103+70.55	MAIN LANES	300.00	22.00	733.3	0.08	58.7	23.00	766.7	0.40	306.7	254.0	762.0	22.50	440	750.0	165.0	22.00	330	733.3	121.0
102+95.00		DRIVEWAY ON LT.	50.00						103.6	0.40	41.4	VARIES	46.9					VARIES	220	101.0	11.1
103+70.55	106+41.20	MAIN LANES	270.65	22.00	661.6	0.08	52.9	23.00	691.7	0.40	276.7	264.0	714.5	22.50	440	676.6	148.9	22.00	330	661.6	109.2
106+41.20	106+44.67	MAIN LANES	3.47	22.00	8.5	0.08	0.7	23.00	8.9	0.40	3.6	265.0	9.2	22.50	440	8.7	1.9	22.00	330	8.5	1.4
106+44.67	106+74.20	MAIN LANES	29.53	22.00	72.2	0.08	5.8	23.00	75.5	0.40	30.2	276.0	81.5	22.50	440	73.8	16.2	22.00	330	72.2	11.9
106+74.20	107+05.53	MAIN LANES	31.33	22.00	76.6	0.08	6.1	23.00	80.1	0.40	32.0	285.0	89.3	22.50	440	78.3	17.2	22.00	330	76.6	12.6
107+05.53	107+38.53	MAIN LANES	33.00	22.00	80.7	0.08	6.5	23.00	84.3	0.40	33.7	320.0	105.6	22.50	440	82.5	18.2	22.00	330	80.7	13.3
107+38.53	107+81.97	MAIN LANES	43.44	22.00	106.2	0.08	8.5	23.00	111.0	0.40	44.4	356.0	154.6	22.50	440	108.6	23.9	22.00	330	106.2	17.5
107+81.97	108+35.88	MAIN LANES	53.91									VARIES	39.8								
111+14.12	111+68.03	MAIN LANES	53.91									VARIES	39.5								
111+48.12	111+68.03	MAIN LANES	19.91									VARIES	17.0								
111+68.03	111+93.00	MAIN LANES	24.97	22.00	61.0	0.08	4.9	23.00	63.8	0.40	25.5	335.0	83.6	22.50	440	62.4	13.7	22.00	330	61.0	10.1
111+93.00	113+33.59	MAIN LANES	140.59	22.00	343.7	0.08	27.5	23.00	359.3	0.40	143.7	318.0	447.1	22.50	440	351.5	77.3	22.00	330	343.7	56.7
112+89.00		DRIVEWAY ON LT.	130+39	16.00					294.2	0.40	117.7	VARIES	115.6					VARIES	220	273.7	30.1
113+33.59	113+58.59	MAIN LANES	25.00	22.00	61.1	0.08	4.9	23.00	63.9	0.40	25.6	335.0	83.8	22.50	440	62.5	13.8	22.00	330	61.1	10.1
113+58.59	113+98.72	MAIN LANES	40.13									VARIES	30.4								
116+21.28	116+61.41	MAIN LANES	40.13									VARIES	30.4								
116+61.41	116+86.41	MAIN LANES	25.00	22.00	61.1	0.08	4.9	23.00	63.9	0.40	25.6	335.0	83.8	22.50	440	62.5	13.8	22.00	330	61.1	10.1
116+86.41	117+20.00	MAIN LANES	33.59	22.00	82.1	0.08	6.6	23.00	85.8	0.40	34.3	318.0	106.8	22.50	440	84.0	18.5	22.00	330	82.1	13.5
117+20.00	117+51.64	MAIN LANES	31.64	22.00	77.3	0.08	6.2	23.00	80.9	0.40	32.4	306.0	96.8	22.50	440	79.1	17.4	22.00	330	77.3	12.8
117+51.64	117+69.57	MAIN LANES	17.93	22.00	43.8	0.08	3.5	23.00	45.8	0.40	18.3	295.0	52.9	22.50	440	44.8	9.9	22.00	330	43.8	7.2
117+69.57	118+02.57	MAIN LANES	33.00	22.00	80.7	0.08	6.5	23.00	84.3	0.40	33.7	268.0	88.4	22.50	440	82.5	18.2	22.00	330	80.7	13.3
118+02.57	119+03.75	MAIN LANES	101.18	22.00	247.3	0.08	19.8	23.00	258.6	0.40	103.4	240.0	242.8	22.50	440	253.0	55.7	22.00	330	247.3	40.8
119+03.75	122+03.75	MAIN LANES	300.00	22.00	733.3	0.08	58.7	23.00	766.7	0.40	306.7	250.0	750.0	22.50	440	750.0	165.0	22.00	330	733.3	121.0
122+03.75	122+20.48	MAIN LANES	16.73	22.00	40.9	0.08	3.3	23.00	42.8	0.40	17.1	254.0	42.5	22.50	440	41.8	9.2	22.00	330	40.9	6.7
122+20.48	124+20.48	MAIN LANES	200.00	22.00	488.9	0.08	39.1	23.00	511.1	0.40	204.4	251.0	502.0	22.50	440	500.0	110.0	22.00	330	488.9	80.7
124+20.48	125+20.48	MAIN LANES	100.00	VARIES	238.7	0.08	19.1	VARIES	255.4	0.40	102.2	VARIES	221.4	VARIES	440	244.3	53.7	VARIES	330	238.7	39.4
200+00.00	200+50.00	INTERSECTION CO. RD.	50.00	VARIES	194.9	0.08	15.6	VARIES	205.7	0.40	82.3	VARIES	130.0	VARIES	330	197.7	32.6	VARIES	220	194.9	21.4
200+50.00	204+21.00	INTERSECTION CO. RD.	371.00	20.00	824.4	0.08	66.0	21.33	879.3	0.40	351.7	179.2	664.8	20.33	330	838.0	138.3	20.00	220	824.4	90.7
204+21.00	204+71.54	INTERSECTION CO. RD.	50.54	VARIES	120.5	0.08	9.6	VARIES	128.0	0.40	51.2	VARIES	87.4	VARIES	330	122.4	20.2	VARIES	220	120.5	13.3
200+87.00		DRIVEWAY ON LT.	112.73					VARIES	226.4	0.40	90.6	VARIES	104.5					VARIES	220	212.8	23.4
203+83.00		DRIVEWAY ON LT.	70.00					VARIES	168.9	0.40	67.6	VARIES	71.5					VARIES	220	159.3	17.5
MAINTENANCE OF TRAFFIC													1500.0*								
TOTAL:							**459.0**				**2882.9**		**7950.4**				**1197.6**			6730.9	**999.9**
USE:							**459**				**2883**		**7950**				**1198**				**1000**

BASIS OF ESTIMATE:

TACK COAT 0.08 GAL. PER SQ. YD. (TYPICAL)
TACK COAT 0.40 GAL. PER SQ. YD. (TYPICAL)
AGGREGATE BASE COURSE (CLASS 7) 187 TON PER STATION
AGGREGATE BASE COURSE (CLASS 7) FOR SHOULDERS 53.2 TON PER STATION

VOLUME CONTROL:

***Nmax=115**

ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2") 5.1%
MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2") 94.9%
ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1") 4.2%
MINERAL AGGREGATE IN ACHM BINDER COURSE (1") 95.8%

*NOTE: ESTIMATED QUANTITY. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.
SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

STRUCTURES

STATION	DESCRIPTION	CROSS DRAIN ALTERNATES		SIDE DRAINS	F.E.S ALTERNATES		SOLID SODDING	WATER	STANDARD DRAWING NUMBERS
		42" R.C.P. (CLASS III)	42" C.M.P., P.V.C., & H.D.P.E.	24"	42" F.E.S. R.C.P.	42" F.E.S. C.M.P.			
		LIN. FT.			EACH		SQ. YD.	M. GAL.	
100+34	INSTALL SIDE DRAIN ON RT.			58					PCM-1, PCC-1, PCP-1, PCP-2
102+95	INSTALL SIDE DRAIN ON LT.			28					PCM-1, PCC-1, PCP-1, PCP-2
200+44	INSTALL CROSS DRAIN	70	76		2	2	46	0.2	FES-1, FES-2, PCM-1, PCC-1, PCP-1, PCP-2
200+87	INSTALL SIDE DRAIN ON LT.			38					PCM-1, PCC-1, PCP-1, PCP-2
203+83	INSTALL SIDE DRAIN ON LT.			38					PCM-1, PCC-1, PCP-1, PCP-2
TOTALS:		70	76	162	2	2	46	0.2	

APPROACH GUTTERS AND APPROACH SLABS

STATION	STATION	LOCATION	APPROACH GUTTERS (TYPE F)	APPORACH SLABS (TYPE SPECIAL)	REINFORCING STEEL - ROADWAY (GRADE 60)
			CU. YD.	CU. YD.	POUND
107+82	108+48	MAIN LANES		87.50	10364
107+83	108+18	RT.	3.81		211
108+13	108+50	LT.	4.15		227
111+00	111+37	RT.	4.15		228
111+02	111+68	MAIN LANES		87.50	10364
111+32	111+67	LT.	3.81		211
113+59	114+12	MAIN LANES		79.00	9218
113+60	113+95	RT.	3.95		213
113+77	114+14	LT.	4.00		223
116+06	116+43	RT.	4.15		223
116+08	116+61	MAIN LANES		79.00	9218
116+25	116+60	LT.	3.95		213
TOTALS:			31.97	333.00	40913

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING

Oct 26 2023 10:05 AM
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QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-24-2023				6	ARK.			
				JOB NO.		BR6210	15	78

4 QUANTITIES

STANDARD HIGHWAY SIGNS AND SUPPORT ASSEMBLIES

STATION	SIDE	STANDARD SIGN NUMBER												SUPPORT ASSEMBLIES		STANDARD DRAWING NUMBER
		R1-1 (STOP)		W1-2R (RIGHT CURVE)		W1-2L (LEFT CURVE)		W8-13 (BRIDGE ICES BEFORE ROAD)		OM-3L (OBJECT MARKER)		OM-3R (OBJECT MARKER)		TYPE A	TYPE C	
		NO.	SQ. FT.	NO.	SQ. FT.	NO.	SQ. FT.	NO.	SQ. FT.	NO.	SQ. FT.	NO.	SQ. FT.	EACH		
101+20	RT.					1	6.25							1		SHS 1&2
106+43	RT.							1.00	9.00					1		SHS 1&2
111+85	LT.			1	6.25									1		SHS 1&2
112+20	RT.							1.00	9.00					1		SHS 1&2
113+27	LT.							1.00	9.00					1		SHS 1&2
117+99	LT.							1.00	9.00					1		SHS 1&2
119+53	RT.			1	6.25									1		SHS 1&2
124+70	LT.					1	6.25							1		SHS 1&2
200+13	LT.	1	6.25											1		SHS 1&2
200+43	LT. & RT.									2	6.00*	2	6.00*		2	SHS 1&2
TOTALS:		1	6.25	2	12.50	2	12.50	4	36.00	2	6.00*	2	6.00*	9	2	

ALL STANDARD SIGN BLANKS TO BE 0.08" THICK. REFER TO STANDARD DRAWING SHS - 2 FOR CHANNEL POST SPLICING DETAILS.

*TWO OM-3'S PLACED BACK TO BACK ON EACH SIDE OF A SINGLE TYPE C SUPPORT ASSEMBLY.

EROSION CONTROL

STATION	STATION	LOCATION	TEMPORARY EROSION CONTROL									PERMANENT EROSION CONTROL			
			SEDIMENT BASINS	SILT FENCE	ROCK DITCH CHECKS	SAND BAG DITCH CHECKS	FILTER SOCKS (18")	TEMPORARY SEEDING	OBLITERATION OF SEDIMENT BASIN	SEDIMENT REMOVAL AND DISPOSAL	WATER	LIME	SEEDING	MULCH COVER	WATER
			CU. YD.	LIN. FT.	CU. YD.	EACH	LIN. FT.	ACRE	CU. YD.	CU. YD.	M. GALS.	TONS	ACRES	ACRES	M. GALS.
100+00	125+20	ENTIRE PROJECT			69		11246	3.73		1272	76.1	7	3.73	3.73	380.5
200+00	201+72	ENTIRE PROJECT			18		945	0.40		113	8.2	1	0.40	0.40	40.8
AS DIRECTED			444	1000		638			444	598					
TOTALS:			444	1000	87	638	12191	4.13	444	1983	84.3	8	4.13	4.13	421.3

BASIS OF ESTIMATE:

LIME..... 2 TONS / ACRE OF SEEDING

WATER..... 102.0 M.G. / ACRE OF SEEDING, PERMANENT SEEDING

WATER..... 20.4 M.G. / ACRE OF SEEDING, TEMPORARY SEEDING

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING

Oct 26 2023 10:05 AM

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QUANTITIES

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	BR6210	16	78
		04949 & 04950 - QUANTITIES - 65630				

SCHEDULE OF BRIDGE QUANTITIES - JOB NO. BR6210

BRIDGE NO.	NAME PLATE TITLE	UNIT OF STRUCTURE / ITEM NO. / ITEM / UNIT	205 REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO.) LUMP SUM	801 UNCLASSIFIED EXCAVATION FOR STRUCTURES - BRIDGE CU. YD.	SP, SS, & 802 CLASS S CONCRETE-BRIDGE CU. YD.	SP, SS, & 802 CLASS S(AE) CONCRETE-BRIDGE CU. YD.	SS & 802 PRESTRESSED CONCRETE GIRDERS (TYPE III) LIN. FT.	SP & 803 CLASS 2 PROTECTIVE SURFACE TREATMENT SQ. YD.	SS & 804 REINFORCING STEEL-BRIDGE (GRADE 60) POUND	SS & 804 EPOXY COATED REINFORCING STEEL (GRADE 60) POUND	SS & 805 (2) STEEL PILING (HP 14x73) LIN. FT.	SS & 805 (3) PREBORING LIN. FT.	SS & 807 STRUCTURAL STEEL IN BEAM SPANS (A709, GR. 50W) POUND	SS & 808 ELASTOMERIC BEARINGS CU.IN.	SS & 809 SILICONE JOINT SEALANT LIN. FT.	812 BRIDGE NAME PLATE (TYPE C) EACH	SS & 816 FILTER BLANKET SQ. YD.	SS & 816 DUMPED RIPRAP CU. YD.
04949	HURRICANE CREEK	BENT 1			56.10			17.7	7,805	600	149	135	1,495	3,190	49	1	225	130
		BENT 2		190	80.90				12,320				964	6,380				
		BENT 3		235	82.80				12,600				731	6,380				
		BENT 4		170	80.45				12,270				964	6,380				
		BENT 5			56.00			17.7	7,805	600	140	126	1,495	3,190	49		170	102
		280'-0" PRESTRESSED CONCRETE GIRDER UNIT				365.00	1,380.0	1,287.0		93,290			3,758					
		SITE NO. 1 (EXISTING BR. NO. 16672)	1															
		TOTALS FOR BRIDGE NO. 04949		595	356.25	365.00	1,380.0	1,322.4	52,800	94,490	289	261	9,407	25,520	98	1	395	232
04950	HURRICANE CREEK	BENT 1			50.00			14.7	7,260	600	131	118	1,157	2,640	40	1	158	95
		BENT 2		180	69.80				12,170				707	5,280				
		BENT 3		175	70.50				12,280				707	5,280				
		BENT 4			50.00			14.7	7,260	600	95	82	1,157	2,640	40		151	91
		210'-0" PRESTRESSED CONCRETE GIRDER UNIT				275.00	1,035.0	965.3		68,850			3,136					
		TOTALS FOR BRIDGE NO. 04950		355	240.30	275.00	1,035.0	994.7	38,970	70,050	226	200	6,864	15,840	80	1	309	186
		TOTALS FOR JOB NO. BR6210		(1) 950	596.55	640.00	2,415.0	2,317.1	91,770	164,540	515	461	16,271	41,360	178	2	704	418

(1) Includes approximately 210 cubic yards of rock excavation.

(2) All steel piling shall be Grade 50 and are required to have approved driving points which will not be paid for directly, but will be considered subsidiary to the item "Steel Piling (HP14x73)".

(3) Quantity of Preboring shown is for estimating and bidding purposes only. Actual quantity will be determined in the field.

CHRIS WILLIAMS
DESIGN SECTION SUPERVISOR

STATE OF ARKANSAS
7 Jun 5 2023 4:48 PM
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
BRIDGE ENGINEER

SCHEDULE OF BRIDGE QUANTITIES
HURRICANE CREEK STR. & APPRS. NO. 2 (S)
SALINE COUNTY

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

DRAWN BY: NAC DATE: 8/2/2022 FILENAME: bbr6210_q1.dgn
CHECKED BY: DBS DATE: 8/22/2022 SCALE: No Scale
DESIGNED BY: - DATE: -
BRIDGE NO. 04949 & 04950 DRAWING NO. 65630

PRINT DATE: 6/5/2023

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-24-2023				6	ARK.			
				JOB NO.		BR6210	17	78

4 SUMMARY OF QUANTITIES AND REVISIONS

SUMMARY OF QUANTITIES

ITEM NO.	ITEM		QUANTITY	UNIT
201	CLEARING		31	STATION
201	GRUBBING		31	STATION
202	REMOVAL AND DISPOSAL OF FENCE		3665	LIN. FT.
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS		9	EACH
SP, SS, & 210	UNCLASSIFIED EXCAVATION		8329	CU. YD.
SP & 210	COMPACTED EMBANKMENT		29925	CU. YD.
SP, SS, & 303	AGGREGATE BASE COURSE (CLASS 7)		7950	TON
SS & 401	PRIME COAT		2883	GAL.
SS & 401	TACK COAT		459	GAL.
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")		1148	TON
SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")		50	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")		949	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")		51	TON
412	COLD MILLING ASPHALT PAVEMENT		489	SQ. YD.
SP, SS, & 504	APPROACH SLABS		333.00	CU. YD.
SP, SS, & 504	APPROACH GUTTERS		31.97	CU. YD.
601	MOBILIZATION		1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE		1	EACH
603	MAINTENANCE OF TRAFFIC		1.00	LUMP SUM
SS & 604	SIGNS		157	SQ. FT.
SS & 604	BARRICADES		48	LIN. FT.
SS & 604	TRAFFIC DRUMS		50	EACH
* SS & 606	42" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	(ALTERNATE NO. 1)	70	LIN. FT.
* SS & 606	42" ASPHALT COATED CORRUGATED STEEL PIPE CULVERTS (14 GAUGE)	(ALTERNATE NO. 2)	76	LIN. FT.
* SS & 606	42" ALUMINUM COATED CORRUGATED STEEL PIPE CULVERTS (14 GAUGE)	(ALTERNATE NO. 3)	76	LIN. FT.
* SP, SS, & 606	42" HIGH DENSITY POLYETHYLENE PIPE	(ALTERNATE NO. 4)	76	LIN. FT.
* SP, SS, & 606	42" PVC PIPE	(ALTERNATE NO. 5)	76	LIN. FT.
* SS & 606	42" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	(ALTERNATE NO. 1)	2	EACH
* SS & 606	42" FLARED END SECTIONS FOR CORRUGATED STEEL PIPE CULVERTS	(ALTERNATE NO. 2)	2	EACH
SP, SS, & 606	24" SIDE DRAIN		162	LIN. FT.
SS & 611	4" PIPE UNDERDRAINS		200	LIN. FT.
SS & 611	UNDERDRAIN OUTLET PROTECTORS		10	EACH
SS & 617	GUARDRAIL (TYPE A)		676	LIN. FT.
SS & 617	TERMINAL ANCHOR POSTS (TYPE 1)		8	EACH
SS & 617	THRIE BEAM GUARDRAIL TERMINAL		8	EACH
SS & 619	WIRE FENCE (TYPE D-1)		4857	LIN. FT.
* SS & 619	18' STEEL GATES	(ALTERNATE NO. 1)	2	EACH
* SS & 619	18' ALUMINUM GATES	(ALTERNATE NO. 2)	2	EACH
620	LIME		8	TON
620	SEEDING		4.13	ACRE
SS & 620	MULCH COVER		4.13	ACRE
620	WATER		505.8	M. GAL.
621	TEMPORARY SEEDING		4.13	ACRE
621	SILT FENCE		1000	LIN. FT.
621	SAND BAG DITCH CHECKS		638	BAG
621	SEDIMENT BASIN		444	CU. YD.
621	OBLITERATION OF SEDIMENT BASIN		444	CU. YD.
621	SEDIMENT REMOVAL AND DISPOSAL		1983	CU. YD.
621	ROCK DITCH CHECKS		87	CU. YD.
SS & 621	FILTER SOCK (18")		12191	LIN. FT.
624	SOLID SODDING		46	SQ. YD.
635	ROADWAY CONSTRUCTION CONTROL		1.00	LUMP SUM
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (4")		6031	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (4")		5984	LIN. FT.
SS & 726	STANDARD SIGN		79.25	SQ. FT.
SS & 729	CHANNEL POST SIGN SUPPORT (TYPE A)		9	EACH
SS & 729	CHANNEL POST SIGN SUPPORT (TYPE C)		2	EACH
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)		40913	POUND
	STRUCTURES OVER 20'-0" SPAN			
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)		1.00	LUMP SUM
636	BRIDGE CONSTRUCTION CONTROL		1.00	LUMP SUM
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE		950	CU. YD.
SP, SS, & 802	CLASS S CONCRETE-BRIDGE		596.55	CU. YD.
SP, SS, & 802	CLASS S(AE) CONCRETE-BRIDGE		640.00	CU. YD.
SS & 802	PRESTRESSED CONCRETE GIRDERS (TYPE III)		2415.0	LIN. FT.
SP & 803	CLASS 2 PROTECTIVE SURFACE TREATMENT		2317.1	SQ. YD.
SS & 804	REINFORCING STEEL-BRIDGE (GRADE 60)		91770	POUND
SS & 804	EPOXY COATED REINFORCING STEEL (GRADE 60)		164540	POUND
SS & 805	STEEL PILING (HP 14X73)		515	LIN. FT.
SS & 805	PREBORING		461	LIN. FT.
SS & 807	STRUCTURAL STEEL IN BEAM SPANS (A709, GR. 50W)		16271	POUND
SS & 808	ELASTOMERIC BEARINGS		41360.0	CU. IN.
SS & 809	SILICONE JOINT SEALANT		178	LIN. FT.
812	BRIDGE NAME PLATE (TYPE C)		2	EACH
SS & 816	FILTER BLANKET		704	SQ. YD.
SS & 816	DUMPED RIPRAP		418	CU. YD.

* DENOTES ALTERNATE BID ITEMS

REVISIONS

DATE	REVISION	SHEET NO.
10/24/2023	ADDED SS 416-1. ADDED COLD MILLING. ADDED UTILITY LEGEND AND CONTROL NOTE TO PLAN AND PROFILE. REVISED NOTE 12 IN GENERAL NOTES. REVISED SPECIAL DETAILS. REVISED SURVEY CONTROL DETAIL SHEETS. REVISED STREAM NOTE ON PLAN AND PROFILE. REVISED SURFACING, PAVEMENT MARKING, AND 4" PIPE UNDERDRAIN QUANTITY BOX NOTES. REVISED STANDARD DRAWING TEC-3 DATE ON INDEX. REVISED PRIME COAT DIMENSION ON TYPICAL SECTION. REVISED REMOVAL AND DISPOSAL OF FENCE, WIRE FENCE (TYPE D-1), WATER, SAND BAG DITCH CHECKS, ROCK DITCH CHECKS, AND SOLID SODDING QUANTITIES.	2-3, 5, 9-15, 17, & 21-30

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING

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SUMMARY OF QUANTITIES AND REVISIONS

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.		BR6210	18	78

4 SURVEY CONTROL DETAILS

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STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING

SURVEY CONTROL COORDINATES

Project Name: sbr6210
Date: 11/4/2019
Coordinate System: ARKANSAS STATE PLANE -SOUTH ZONE BASED ON GPS CONTROL, PROJECTED TO GROUND.
Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
1	2035388.4815	1142254.8305	437.405	CTL	*STD. ARDOT CAP STAMPED PN 1
2	2035911.7330	1142430.6614	436.322	CTL	*STD. ARDOT CAP STAMPED PN 2
3	2036332.9134	1142091.2901	434.394	CTL	*STD. ARDOT CAP STAMPED PN 3
4	2036942.5592	1142092.6262	433.714	CTL	*STD. ARDOT CAP STAMPED PN 4
5	2037615.0335	1142140.5720	435.319	CTL	*STD. ARDOT CAP STAMPED PN 5
6	2038308.3315	1142136.4369	445.919	CTL	*STD. ARDOT CAP STAMPED PN 6

*Note - Rebar and Cap - Standard - 5/8" Rebar with 2" Aluminum Cap stamped
*(standard markings common to all caps), or as indicated
(other markings indicated in the point description of the individual point).
USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT
A PROJECT CAF OF 0.999960961 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 sbr6210gi.ctl
HORIZONTAL DATUM: NAD 83 (2011)
VERTICAL DATUM: NAVD 88 POSITIONAL ACCURACY THIRD ORDER, UNLESS SPECIFIED OTHERWISE AT A SPECIFIC POINT.

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

BASIS OF BEARING:
ARKANSAS STATE PLANE GRID BEARINGS -0302-SOUTH ZONE
DETERMINED FROM STATIC GPS OBSERVATIONS ON POINTS 1 & 6
CONVERGENCE ANGLE: 00-19-01 RIGHT AT LAT 34-39-23N LON 92-33-58W
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

CONSTRUCTION CENTERLINE COORDINATES FOR: SAMPLES ROAD

POINT NAME	NORTHING	EASTING	DESCRIPTION	STATION
8000	2035473.1745	1142271.9625	POB	100+00.00
8001	2035746.3239	1142384.8253	PC	102+95.55
	2035948.2475	1142468.2584	PI	105+14.03
	2036143.0342	1142428.4256	OLD SAMPLES STA. 199+89.00	107+00.00
8002	2036162.3586	1142424.7767	PT	107+19.67
8003	2037543.2500	1142144.3455	PC	121+28.75
	2037625.3208	1142127.6786	PI	122+12.49
8004	2037709.0229	1142130.3957	PT	122+95.48
8005	2037933.9044	1142137.6959	POE	125+20.48

CONSTRUCTION CENTERLINE COORDINATES FOR: OLD SAMPLES ROAD

POINT NAME	NORTHING	EASTING	DESCRIPTION	STATION
	2036143.0342	1142428.4256	SAMPLES STA. 107+00.00	199+89.00
9000	2036141.1418	1142417.5896	POB	200+00.00
9001	2036126.3893	1142333.1157	PC	200+85.75
	2036112.4485	1142253.2892	PI	201+66.79
9002	2036167.4713	1142193.7987	PT	202+36.24
9003	2036171.7930	1142189.1262	PC	202+42.61
	2036246.7904	1142108.0394	PI	203+53.06
9004	2036357.2153	1142105.5913	PT	204+51.54
9005	2036377.2118	1142105.1480	POE	204+71.54

CONSTRUCTION CENTERLINE COORDINATES FOR: CHANNEL CHANGE

POINT NAME	NORTHING	EASTING	DESCRIPTION	STATION
10000	2036594.1535	1142130.7812	POB	300+00.00
10001	2036214.3428	1142567.5524	POE	305+78.81

SURVEY CONTROL DETAILS

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.		BR6210	19	78

4 SURVEY CONTROL DETAILS

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STA. 199+89.00 (OLD SAMPLES ROAD) = 107+00.00 (SAMPLES ROAD)

P.I.= 105+14.03
Δ = 33°55'46.13" LT.
D = 8°00'00.00"
T = 218.48'
L = 424.12'
e = 10%
BEGIN SUPER = 100+70.55
BEGIN MAX SUPER = 103+70.55
END MAX SUPER = 106+44.67
END SUPER = 109+44.67

P.I.= 203+53.06
Δ = 45°57'50.89" RT.
D = 22°00'00.00"
T = 110.45'
L = 208.93'
e = n.c.

P.I.= 201+66.79
Δ = 52°40'19.21" RT.
D = 35°00'00.00"
T = 81.03'
L = 150.49'
e = n.c.

SCALE IN FEET
0 100 200

SURVEY CONTROL DETAILS

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.		BR6210	20	78

4 SURVEY CONTROL DETAILS

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STATE OF ARKANSAS
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P.I.= 203+53.06
Δ = 45°57'50.89" RT.
D = 22°00'00.00"
T = 110.45'
L = 208.93'
e = n.c.

P.I.= 305+06.79
Δ = 35°00'00.00" RT.
D = 35°40'19.21"
T = 81.03'
L = 150.49'
e = n.c.

N

CONST. CENTERLINE N 47°14'03" W 6.46'

SURVEY BASELINE N 39°51'38" W 540.49'

CONST. CENTERLINE S 48°59'25" E 578.81'

CONST. CENTERLINE S 80°05'38" W 85.75'

CONST. CENTERLINE N 11°28'46" W 1409.08'

SURVEY BASELINE N 00°07'32" E 609.65'

SURVEY BASELINE N 04°04'41" E 674.18'

CONST. CENTERLINE N 1°16'12" W 20.00'

PI 203+53.06
PC 202+36.24
PT 202+44.78
PT 204+51.54
POE 204+71.54
PT 107+19.67
PC 200+85.75
POB 300+00.00
PI 122+12.49
PC 121+28.75
POE 305+78.81

T.C.E.
R.O.W.
SET MAG NAIL
SET ARDOT CAP STAMPED PN 4
SET ARDOT CAP STAMPED PN 5
END MAX SU
END SUPER

0 100 200
SCALE IN FEET

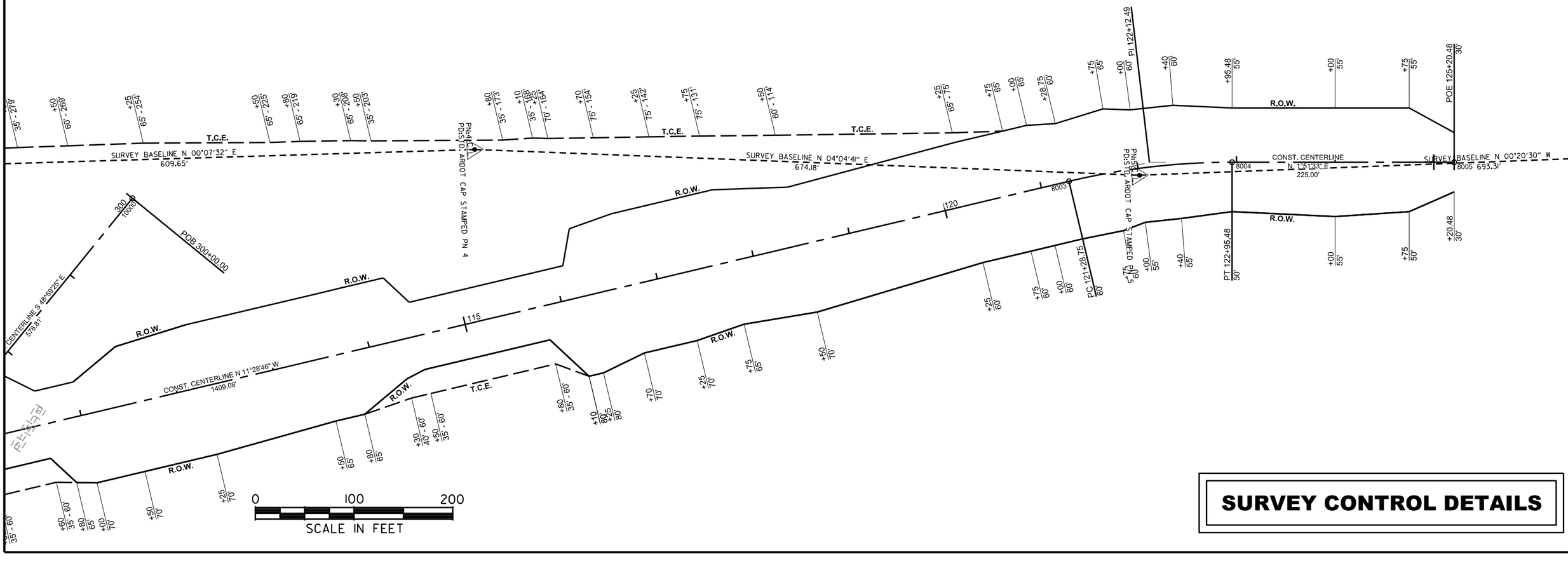
SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-24-2023				6	ARK.			
				JOB NO.		BR6210	21	78
				4	SURVEY CONTROL DETAILS			

STATE OF ARKANSAS
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P.I.= 122+12.49
Δ = 13°20'19.70" RT.
D = 8°00'00.00"
T = 83.75'
L = 166.74'
e = 10%
BEGIN SUPER = 119+03.75
BEGIN MAX SUPER = 122+03.75
END MAX SUPER = 122+20.48
END SUPER = 125+20.48



SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-24-2023				6	ARK.			
				JOB NO.		BR6210	22	78

4 SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING

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P.I.= 203+53.06
Δ = 45°57'50.89" RT.
D = 22°00'00.00"
R = 110.45'
L = 208.93'
e = n.c.

P.I.= 201+66.79
Δ = 22°49'19.21" RT.
D = 35°00'00.00"
R = 80.03'
L = 159.49'
e = n.c.

P.I.= 105+14.03
Δ = 33°55'46.13" LT.
D = 90°00'00.00"
R = 219.48'
T = 424.12'
BEGIN SUPER = 100+70.55
BEGIN MAX SUPER = 103+70.55
END MAX SUPER = 106+44.67
END SUPER = 109+44.67

CONST. CENTERLINE N 1°16'12" W 20.00'

CONST. CENTERLINE N 47°14'05" W 6.36'

SURVEY BASELINE N 18°34'27" E 552.00'

SURVEY BASELINE N 39°51'38" W 540.65'

SURVEY BASELINE N 00°07'32" E 609.65'

CONST. CENTERLINE S 48°59'25" E 576.61'

CONST. CENTERLINE N 11°28'46" W 1409.08'

CONST. CENTERLINE S 80°05'38" W 85.75'

PC 202+36.24

PT 202+51.54

PT 201+66.79

PC 200+85.75

PT 107+19.67

PC 102+35.56

PI 203+53.06

PDE 204+71.54

POB 200+00.00

POB 300+00.00

POE 305+78.81

PK NAIL & DISTD. ARDOT CAP STAMPED PN 4

PK NAIL & DISTD. ARDOT CAP STAMPED PN 2

T.C.E.

R.O.W.

STA. 199+89.00 (OLD SAMPLES ROAD) = 107+00.00 (SAMPLES ROAD)

0 100 200
SCALE IN FEET

SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-24-2023				6	ARK.			
				JOB NO.		BR6210	23	78
				4	PLAN AND PROFILE SHEETS			

OBLITERATION OF ABANDONED ROADWAY

TRAFFIC CONTROL DEVICES

G20-2
STA. 100+00 RT. 1 SIGN = 8.00 SQ. FT.
STA. 125+20 LT. 1 SIGN = 8.00 SQ. FT.

W21-5
STA. 100+00 RT. 1 SIGN = 6.25 SQ. FT.
STA. 125+20 LT. 1 SIGN = 6.25 SQ. FT.

W20-1
STA. 85+00 (1500) RT. 1 SIGN = 16.00 SQ. FT.
STA. 90+00 (1000) RT. 1 SIGN = 16.00 SQ. FT.
STA. 95+00 (500) RT. 1 SIGN = 16.00 SQ. FT.
STA. 100+00 (AHEAD) RT. 1 SIGN = 16.00 SQ. FT.
STA. 125+20 (AHEAD) LT. 1 SIGN = 16.00 SQ. FT.
STA. 130+20 (500) LT. 1 SIGN = 16.00 SQ. FT.
STA. 135+20 (1000) LT. 1 SIGN = 16.00 SQ. FT.
STA. 140+20 (1500) LT. 1 SIGN = 16.00 SQ. FT.

TRAFFIC DRUMS
ENTIRE JOB = 50 EACH

BARRICADES (TYPE III)
ENTIRE JOB = 48 LIN. FT.

STA. 100+25
CONSTRUCT APPROACH ON LT.
UNCLASSIFIED EXCAVATION = 16 CU. YD.
AGGREGATE BASE COURSE = 28.7 TONS

STA.100+61
CONSTRUCT APPROACH ON LT.
UNCLASSIFIED EXCAVATION = 14 CU. YD.
COMPACTED EMBANKMENT = 2 CU. YD.
AGGREGATE BASE COURSE = 31 TONS

STA. 102+95
INSTALL SIDE DRAIN ON LT.
24" X 28' PIPE CULVERT
CONSTRUCT APPROACH ON LT.
UNCLASSIFIED EXCAVATION = 10 CU. YD.
COMPACTED EMBANKMENT = 21 CU. YD.
AGGREGATE BASE COURSE = 46.9 TONS

CLEARING AND GRUBBING
STA. 100+00 TO 125+20.48 = 26 STA.

LEGEND
- POWER POLE
- COMBINATION POLE
- POLE W/GUY
- TELEPHONE RISER
- TELEPHONE POLE
- UNDERGROUND CABLE MKR.
- WATER METER
- WATER VALVE

Wesley L.& Karen A.Garrett

STA. 102+95
18" X 20' C.M.P. SIDE DRAIN ON LT.
REMOVE

STA. 101+20
W1-2L ON RT.

P.I.= 105+14.03
Δ = 33°55'46.13" LT.
D = 8°00'00.00"
T = 218.48'
L = 424.12'
e = 10%
BEGIN SUPER = 100+70.55
BEGIN MAX SUPER = 103+70.55
END MAX SUPER = 106+44.67
END SUPER = 109+44.67

Baldridge Investment Group,LLC

STA. 100+00.00
BEGIN JOB BR6210

STA. 100+34
INSTALL SIDE DRAIN ON RT.
24" X 58' PIPE CULVERT
CONSTRUCT APPROACH
UNCLASSIFIED EXCAVATION = 67 CU. YD.
COMPACTED EMBANKMENT = 24 CU. YD.
AGGREGATE BASE COURSE = 143.8 TONS

STA. 103+87
24" X 35' R.C.P. CROSSDRAIN
REMOVE

STA. 106+43
W8-13 ON RT.

Finley Family Limited Partership

Finley Family Limited Partership

PROPOSED CHANNEL CHANGE

FLOOD PLAIN LIMITS

FLOOD PLAIN LIMITS

REMOVAL AND DISPOSAL OF FENCE
STA. 100+47 TO 107+83 ON RT. = 782 LIN. FT.
STA. 100+91 TO 102+80 ON LT. = 204 LIN. FT.
STA. 103+07 TO 105+07 ON LT. = 199 LIN. FT.
STA. 107+75 TO 110+09 ON LT. = 210 LIN. FT.
STA. 107+83 TO 108+69 ON RT. = 86 LIN. FT.

WIRE FENCE (TYPE D-1)
STA. 100+47 TO 107+83 ON RT. = 788 LIN. FT.
STA. 107+75 TO 110+09 ON LT. = 237 LIN. FT.

EARTHWORK
STA. 100+00 TO STA. 114+31
UNCLASSIFIED EXCAVATION (NORMAL) = 1914 CU. YD.
UNCLASSIFIED EXCAVATION (ADDITIONAL) = 116 CU. YD.
COMPACTED EMBANKMENT (NORMAL) = 17209 CU. YD.
COMPACTED EMBANKMENT (ADDITIONAL) = 604 CU. YD.
NOTE: EARTHWORK SHALL BE PAID AS PLAN QUANTITY.

NOTE:
FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS, HURRICANE CREEK IS CLASSIFIED AS A PERENNIAL STREAM. THE STREAM BANK ELEVATIONS ARE 433 FEET MSL FOR STRUCTURE NUMBER 16672. REFER TO SECTION 110.06(c) OF THE 2014 STANDARD SPECIFICATIONS.

0 100 200
SCALE IN FEET

PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
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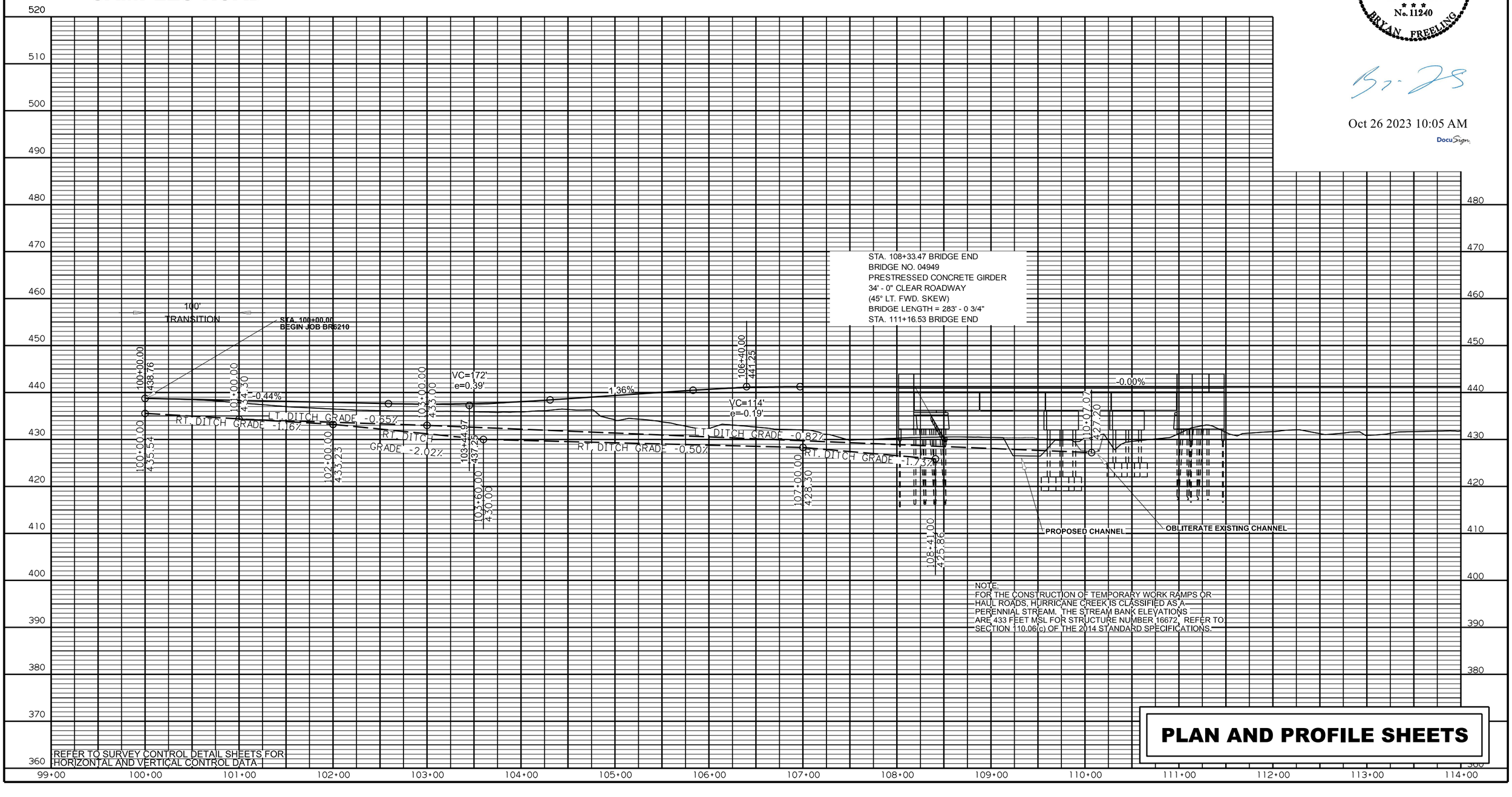
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-24-2023				6	ARK.			
				JOB NO.		BR6210	24	78
				(4) PLAN AND PROFILE SHEETS				

STATE OF ARKANSAS
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No. 11240
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SAMPLES ROAD



STA. 108+33.47 BRIDGE END
BRIDGE NO. 04949
PRESTRESSED CONCRETE GIRDER
34' - 0" CLEAR ROADWAY
(45° LT. FWD. SKEW)
BRIDGE LENGTH = 283' - 0 3/4"
STA. 111+16.53 BRIDGE END

NOTE:
FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS, HURRICANE CREEK IS CLASSIFIED AS A PERENNIAL STREAM. THE STREAM BANK ELEVATIONS ARE 433 FEET MSL FOR STRUCTURE NUMBER 16672. REFER TO SECTION 110.06(c) OF THE 2014 STANDARD SPECIFICATIONS.

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

PLAN AND PROFILE SHEETS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-24-2023				6	ARK.			
				JOB NO.		BR6210	25	78
				4	PLAN AND PROFILE SHEETS			

EARTHWORK

STA. 300+00 TO STA. 305+78.81

UNCLASSIFIED EXCAVATION (NORMAL)	=	1408 CU. YD.
UNCLASSIFIED EXCAVATION (ADDITIONAL)	=	0 CU. YD.
COMPACTED EMBANKMENT (NORMAL)	=	995 CU. YD.
COMPACTED EMBANKMENT (ADDITIONAL)	=	0 CU. YD.

NOTE: EARTHWORK SHALL BE PAID AS PLAN QUANTITY.

0 100 200
SCALE IN FEET

N

STA. 111+85
W1-2R ON LT.

STA. 112+89
CONSTRUCT APPROACH ON LT.

UNCLASSIFIED EXCAVATION	= 9	CU. YD.
COMPACTED EMBANKMENT	= 557	CU. YD.
AGGREGATE BASE COURSE	= 115.6	TONS

STA. 113+27
W8-13 ON LT.

WIRE FENCE (TYPE D-1)

STA.	109+21	TO	114+59	ON	RT.	=	562 LIN. FT.
STA.	110+39	TO	115+05	ON	LT.	=	633 LIN. FT.

REMOVAL AND DISPOSAL OF FENCE

STA.	110+09	TO	11C+39	ON	LT.	=	58 LIN. FT.
STA.	110+39	TO	115+05	ON	LT.	=	452 LIN. FT.
STA.	115+05	TO	115+62	ON	LT.	=	58 LIN. FT.

GUARDRAIL (TYPE A)								THRIE BEAM GUARDRAIL TERMINAL	TERMINAL ANCHOR POST (TYPE 1)
STA.	106+84	TO	108+03	ON	RT.	=	100 LIN. FT.	1 EACH	1 EACH
STA.	107+48	TO	108+36	ON	LT.	=	69 LIN. FT.	1 EACH	1 EACH
STA.	111+14	TO	112+02	ON	RT.	=	69 LIN. FT.	1 EACH	1 EACH
STA.	111+48	TO	112+67	ON	LT.	=	100 LIN. FT.	1 EACH	1 EACH
STA.	112+60	TO	113+79	ON	RT.	=	100 LIN. FT.	1 EACH	1 EACH
STA.	113+11	TO	113+99	ON	LT.	=	69 LIN. FT.	1 EACH	1 EACH
STA.	116+21	TO	117+09	ON	RT.	=	69 LIN. FT.	1 EACH	1 EACH
STA.	116+41	TO	117+60	ON	LT.	=	100 LIN. FT.	1 EACH	1 EACH

STA. 116+00
QUADRUPLE 72" X 40' CROSS DRAIN
REMOVE

STA. 117+99
W8-13 ON LT.

STA. 119+53
W1-2R ON RT.

STA. 112+20
W8-13 ON RT.

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Finley Family Limited Partership

P.I.= 203+53.06
Δ = 45°57'50.89" RT.
D = 22°00'00.00"
T = 110.45'
L = 208.93'
e = n.c.

P.I.= 201+86.79
Δ = 52°40'19.21" RT.
D = 35°00'00.00"
T = 81.03'
L = 150.49'
e = n.c.

P.I.= 105+14.03
Δ = 33°55'46.73" LT.
D = 8°00'00.00"
T = 218.49'
L = 424.12'

SUPER = 100+70.55
SUPER = 103+70.55
SUPER = 106+44.67
SUPER = 109+44.67

CONST. CENTERLINE S 48°59'25" E 578.81'

CONST. CENTERLINE N 11°28'46" W 1409.08'

CONST. CENTERLINE N 1°16'12" W 20.00'

CONST. CENTERLINE S 80°00'00" W 200.00'

POB 300+00.00

POE 305+78.81

PT 107+19.67

PC 200+85.75

PT 202+36.24

PI 201+66.79

PT 204+51.54

POE 204+71.54

PI 203+53.06

T.C.E.

R.O.W.

LIMITS OF CONSTRUCTION

FLOOD PLAIN LIMITS

PROPOSED CHANNEL CHANGE

NOTE:
FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS, HURRICANE CREEK IS CLASSIFIED AS A PERENNIAL STREAM. THE STREAM BANK ELEVATIONS ARE 433 FEET MSL FOR STRUCTURE NUMBER 16672. REFER TO SECTION 110.06(c) OF THE 2014 STANDARD SPECIFICATIONS.

OBLITERATION OF ABANDONED ROADWAY

OBLITERATION OF EXISTING ROADWAY
STA. 110+48 TO STA. 120+37

UNCLASSIFIED EXCAVATION
3183 CU. YD.

LEGEND

- POWER POLE
- COMBINATION POLE
- POLE W/GUY
- TELEPHONE RISER
- TELEPHONE POLE
- UNDERGROUND CABLE MKR.
- WATER METER
- WATER VALVE

NOTE:
FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS, HURRICANE CREEK RELIEF IS CLASSIFIED AS AN INTERMITTENT STREAM. THE STREAM BANK ELEVATIONS ARE 431 FEET MSL AT STATION 116+00.00. REFER TO SECTION 110.06(c) OF THE 2014 STANDARD SPECIFICATIONS.

APPROACH GUTTERS AND APPROACH SLABS

					APPROACH GUTTERS (TYPE F)	APPROACH SLABS (TYPE SPECIAL)	REINFORCING STEEL
STA.	107+82	TO	108+48	MAIN LANES		87.5 CU. YD.	10364 POUND
STA.	107+83	TO	108+18	RT.	3.81 CU. YD.		211 POUND
STA.	108+13	TO	108+50	LT.	4.15 CU. YD.		227 POUND
STA.	111+00	TO	111+37	RT.	4.15 CU. YD.		228 POUND
STA.	111+02	TO	111+68	MAIN LANES		87.5 CU. YD.	10364 POUND
STA.	111+32	TO	111+67	LT.	3.81 CU. YD.		211 POUND
STA.	113+59	TO	114+12	MAIN LANES		79.0 CU. YD.	9218 POUND
STA.	113+60	TO	113+95	RT.	3.95 CU. YD.		213 POUND
STA.	113+77	TO	114+14	LT.	4.00 CU. YD.		223 POUND
STA.	116+06	TO	116+43	RT.	4.15 CU. YD.		223 POUND
STA.	116+08	TO	116+61	MAIN LANES		79.0 CU. YD.	9218 POUND
STA.	116+25	TO	116+60	LT.	3.95 CU. YD.		213 POUND

PLAN AND PROFILE SHEETS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-24-2023				6	ARK.			
				JOB NO.		BR6210	26	78
				(4)	PLAN AND PROFILE SHEETS			

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BRYAN FREELING

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SAMPLES ROAD

STA. 108+33.47 BRIDGE END
BRIDGE NO. 04949
PRESTRESSED CONCRETE GIRDER
34' - 0" CLEAR ROADWAY
(45° LT. FWD. SKEW)
BRIDGE LENGTH = 283' - 0 3/4"
STA. 111+16.53 BRIDGE END

STA. 114+03.75 BRIDGE END
BRIDGE NO. 04950
PRESTRESSED CONCRETE GIRDER
34' - 0" CLEAR ROADWAY
(30° LT. FWD. SKEW)
BRIDGE LENGTH = 212' - 6"
STA. 116+16.25 BRIDGE END

108+41.00
425.86

LT. DITCH GRADE -0.82%
RT. DITCH GRADE -1.73%

110+07.07
427.20

PROPOSED CHANNEL

OBLITERATE EXISTING CHANNEL

-0.00%

116+09.36
430.75

116+40.00
432.00

LT. DITCH GRADE 0.29%
RT. DITCH GRADE 0.44%

118+30.90
432.55

LT. DITCH GRADE 0.34%

120+60.00
432.75

VC=125'
e=-0.23'

121+52.86
441.25

-1.49%
VC=215'
e=0.60'

LT. DITCH GRADE 0.22%
RT. DITCH GRADE 0.44%

121+44.88
433.63

NOTE:
FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS, HURRICANE CREEK IS CLASSIFIED AS A PERENNIAL STREAM. THE STREAM BANK ELEVATIONS ARE 433 FEET MSL FOR STRUCTURE NUMBER 16672. REFER TO SECTION 110.06(c) OF THE 2014 STANDARD SPECIFICATIONS.

NOTE:
FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS, HURRICANE CREEK RELIEF IS CLASSIFIED AS AN INTERMITTENT STREAM. THE STREAM BANK ELEVATIONS ARE 431 FEET MSL AT STATION 116+00.00. REFER TO SECTION 110.06(c) OF THE 2014 STANDARD SPECIFICATIONS.

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

520 510 500 490 480 470 460 450 440 430 420 410 400 390 380 370 360

108+00 109+00 110+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

PLAN AND PROFILE SHEETS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-24-2023				6	ARK.			
				JOB NO.		BR6210	27	78
				4	PLAN AND PROFILE SHEETS			

OBLITERATION OF ABANDONED ROADWAY

0 100 200
SCALE IN FEET

LEGEND

- POWER POLE
- COMBINATION POLE
- POLE W/GUY
- TELEPHONE RISER
- TELEPHONE POLE
- UNDERGROUND CABLE MKR.
- WATER METER
- WATER VALVE

EARTHWORK
STA. 115+88 TO STA. 125+20.48
UNCLASSIFIED EXCAVATION (NORMAL) = 774 CU. YD.
UNCLASSIFIED EXCAVATION (ADDITIONAL) = 0 CU. YD.
COMPACTED EMBANKMENT (NORMAL) = 10181 CU. YD.
COMPACTED EMBANKMENT (ADDITIONAL) = 0 CU. YD.
NOTE: EARTHWORK SHALL BE PAID AS PLAN QUANTITY.

REMOVAL AND DISPOSAL OF FENCE
STA. 115+72 TO 125+20.48 ON LT. = 909 LIN. FT.
STA. 120+78 TO 125+20.48 ON RT. = 438 LIN. FT.

WIRE FENCE (TYPE D-1)
STA. 115+05 TO 125+20.48 ON RT. = 1030 LIN. FT.
STA. 115+72 TO 125+20.48 ON LT. = 990 LIN. FT.

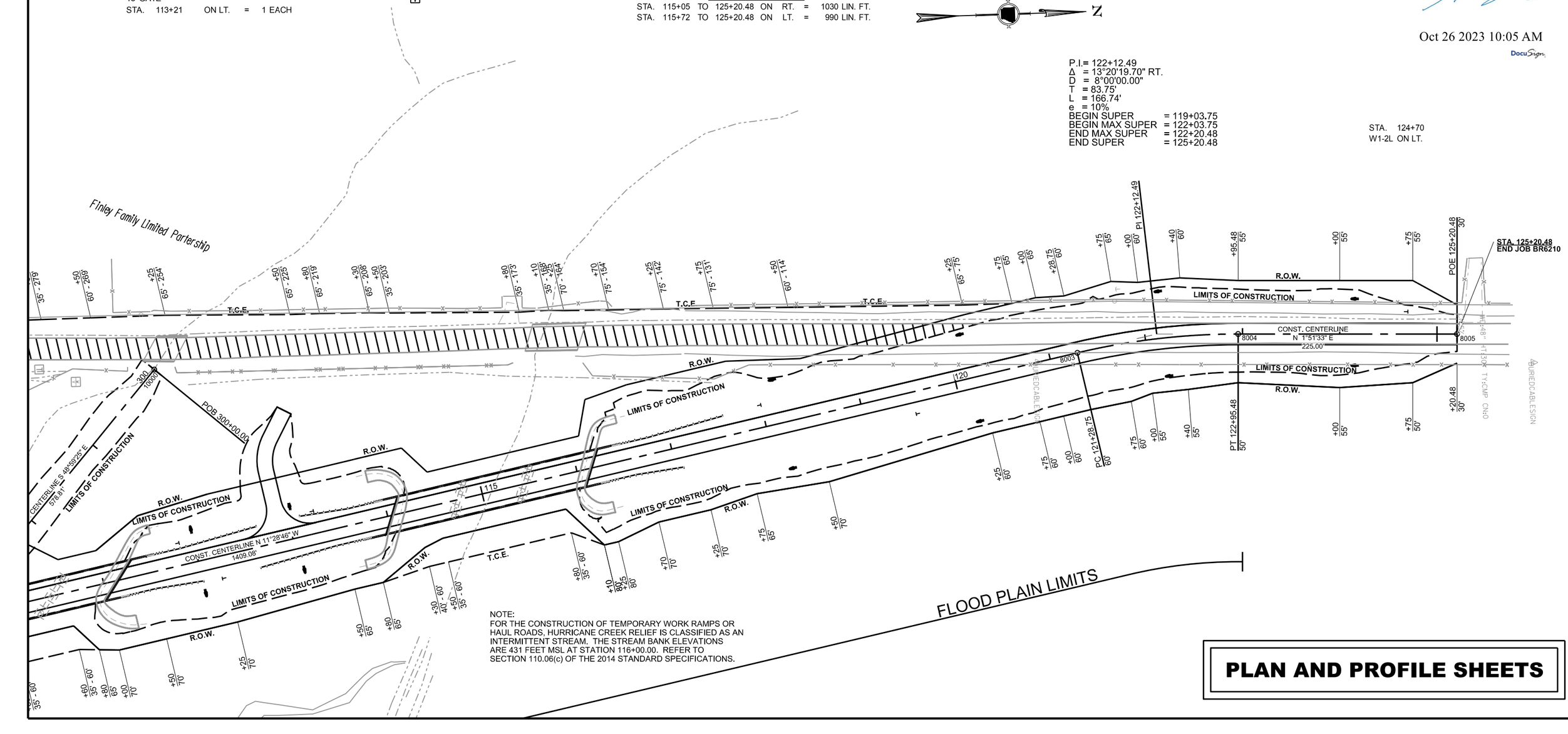
18' GATE
STA. 113+21 ON LT. = 1 EACH

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P.I.= 122+12.49
Δ = 13°20'19.70" RT.
D = 8°00'00.00"
T = 83.75'
L = 166.74'
e = 10%
BEGIN SUPER = 119+03.75
BEGIN MAX SUPER = 122+03.75
END MAX SUPER = 122+20.48
END SUPER = 125+20.48

STA. 124+70
W1-2L ON LT.



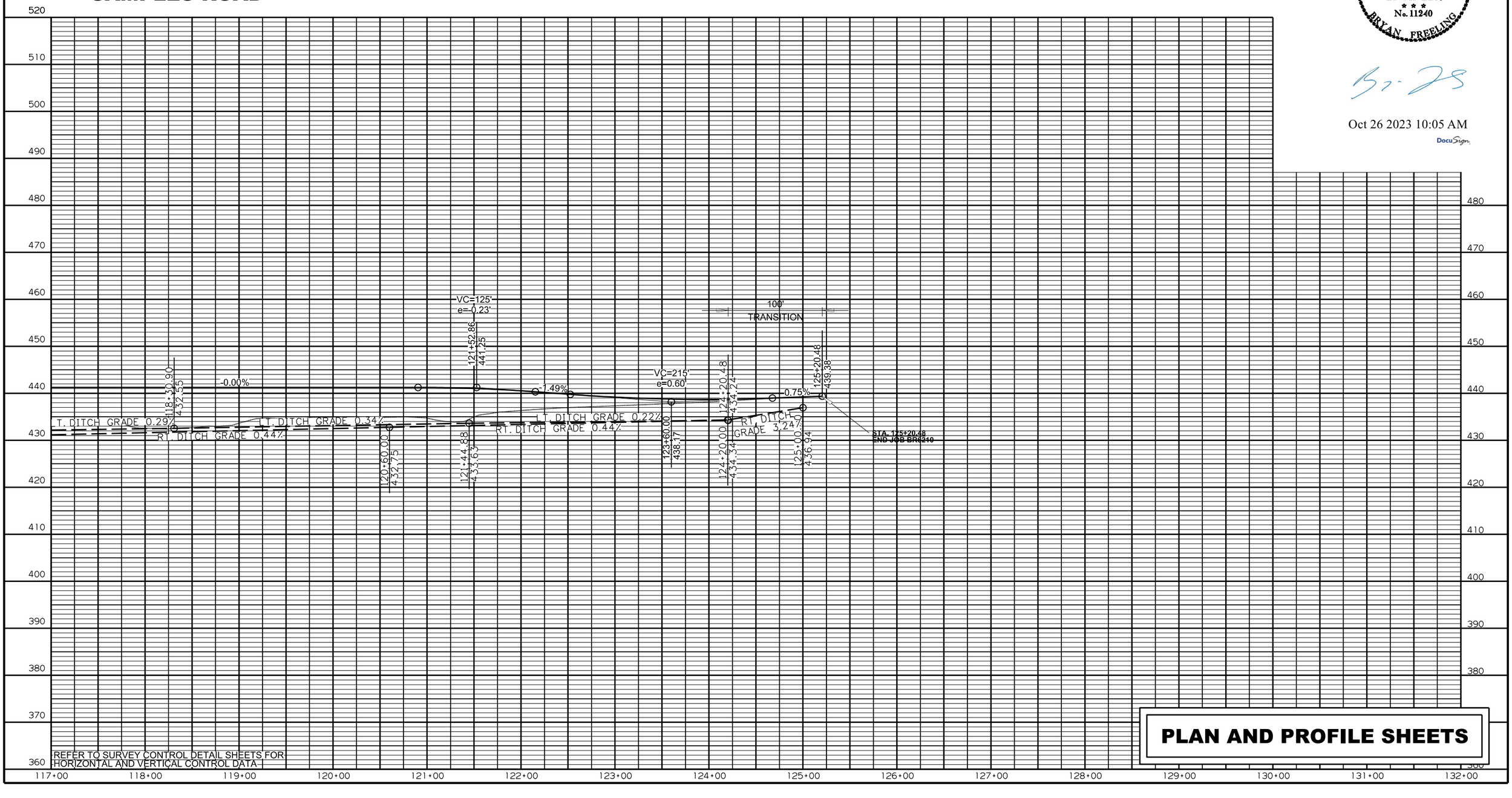
PLAN AND PROFILE SHEETS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-24-2023				6	ARK.			
				JOB NO.		BR6210	28	78
				(4) PLAN AND PROFILE SHEETS				

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SAMPLES ROAD



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-24-2023				6	ARK.			
				JOB NO.		BR6210	29	78
				(4)	PLAN AND PROFILE SHEETS			

OBLITERATION OF ABANDONED ROADWAY

0 100 200
SCALE IN FEET

CLEARING AND GRUBBING
STA. 200+00 TO 204+71.54 = 5 STA.

STA. 203+83
15" X 40' R.C.P. SIDE DRAIN ON LT.
REMOVE

STA. 203+83
INSTALL SIDE DRAIN ON LT.
24" X 38' PIPE CULVERT
UNCLASSIFIED EXCAVATION = 43 CU. YD.
COMPACTED EMBANKMENT = 28 CU. YD.
AGGREGATE BASE COURSE = 71.5 TONS

STA. 201+43
12" X 43' CROSS DRAIN
REMOVE

18' GATE
STA. 204+71.54 MAIN LANES = 1 EACH

EARTHWORK
STA. 200+00 TO STA. 204+71.54
UNCLASSIFIED EXCAVATION (NORMAL) = 843 CU. YD.
UNCLASSIFIED EXCAVATION (ADDITIONAL) = 91 CU. YD.
COMPACTED EMBANKMENT (NORMAL) = 780 CU. YD.
COMPACTED EMBANKMENT (ADDITIONAL) = 156 CU. YD.
NOTE: EARTHWORK SHALL BE PAID AS PLAN QUANTITY.

REMOVAL AND DISPOSAL OF FENCE
STA. 201+69 TO 203+54 ON LT. = 219 LIN. FT.

WIRE FENCE (TYPE D-1)
STA. 200+71 TO 204+71.54 ON RT. = 417 LIN. FT.

STA. 200+87
12" X 20' C.M.P. SIDE DRAIN ON LT.
REMOVE

STA. 200+87
INSTALL SIDE DRAIN ON LT.
24" X 38' PIPE CULVERT
UNCLASSIFIED EXCAVATION = 48 CU. YD.
COMPACTED EMBANKMENT = 128 CU. YD.
AGGREGATE BASE COURSE = 104.5 TONS

STA. 200+44 CONSTRUCT
42" PIPE CULVERT
D.A.= 42.3 ACRES Q25 = 49.9 C.F.S.
42" R.C.P. (CLASS III) (TYPE 2 BEDDING) = 70 LIN. FT.
42" C.M.P. OR PLASTIC (TYPE 2 BEDDING) = 76 LIN. FT.
42" F.E.S. ON LT. AND RT. = 2 EACH

STA. 200+13
R1-1 ON LT.

STA. 200+43
OM-3 ON LT. & RT.

LIMITS OF CONSTRUCTION

Finley Family Limited Partership

Wesley L.& Karen A.Garrett

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10-25

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LEGEND
- POWER POLE
- COMBINATION POLE
- POLE W/GUY
- TELEPHONE RISER
- TELEPHONE POLE
- UNDERGROUND CABLE MKR.
- WATER METER
- WATER VALVE

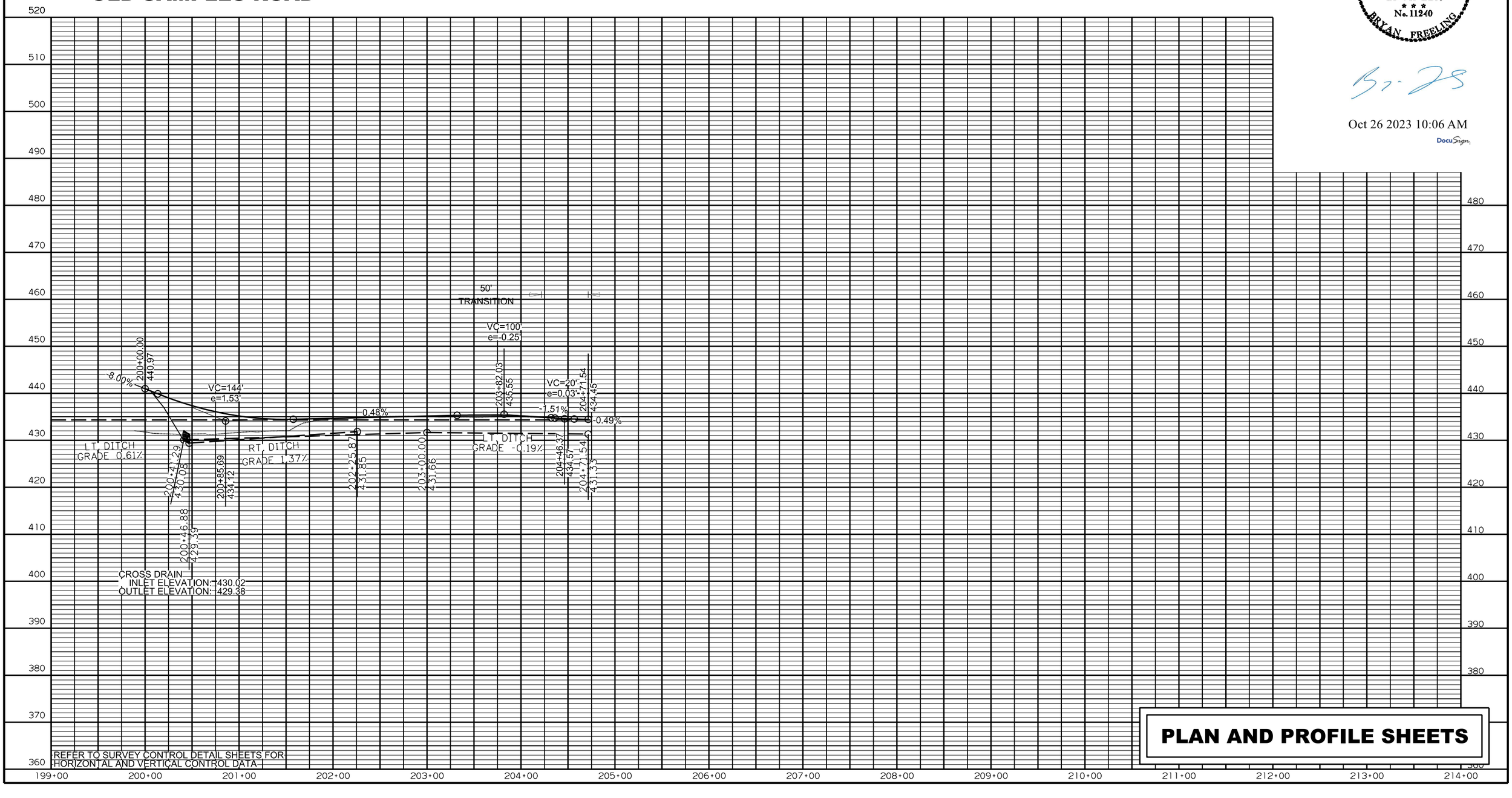
PLAN AND PROFILE SHEETS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-24-2023				6	ARK.			
				JOB NO.		BR6210	30	78
				(4) PLAN AND PROFILE SHEETS				

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OLD SAMPLES ROAD



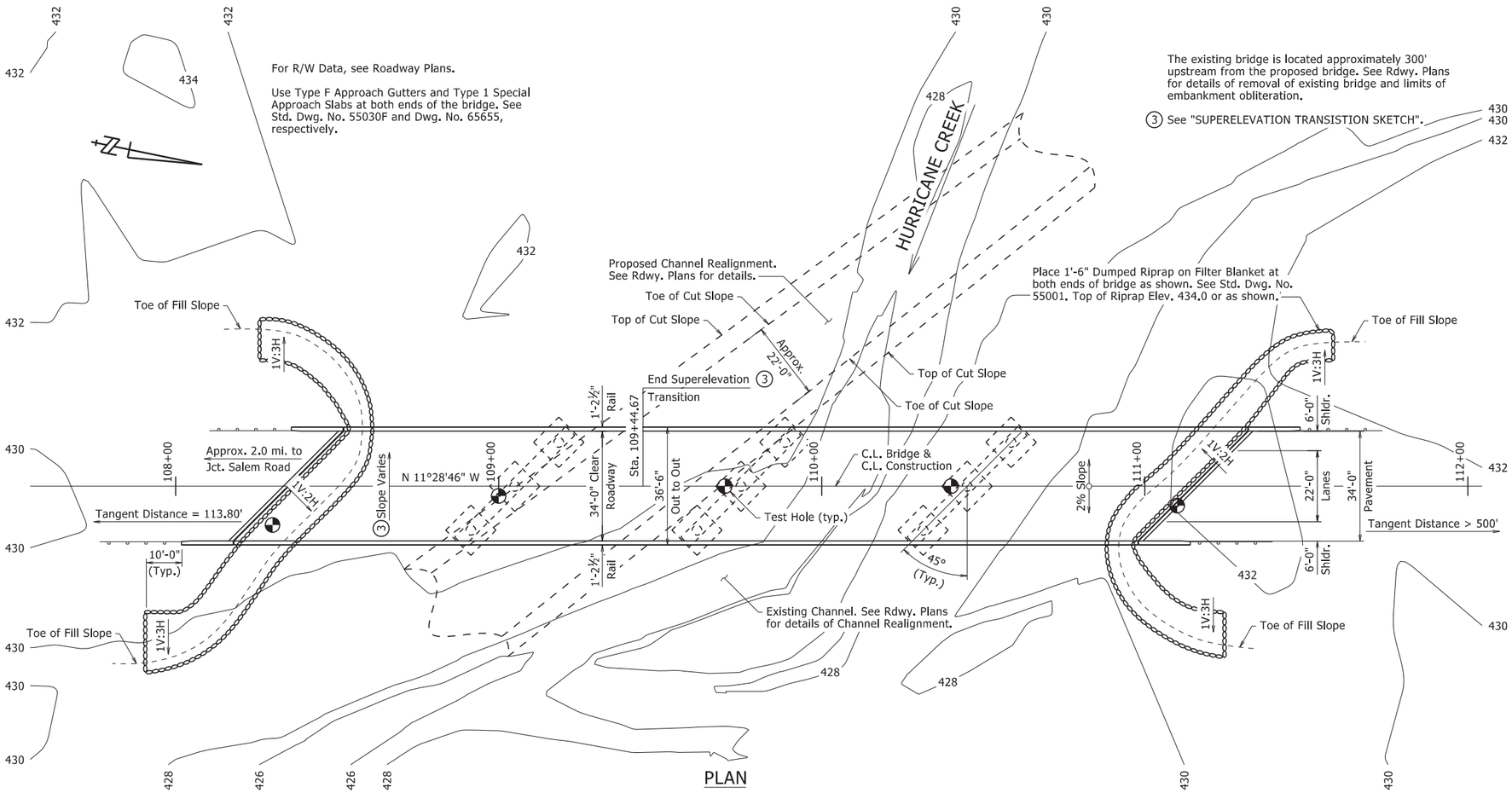
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	BR6210	31	78
				04949 - LAYOUT - 65631		

For R/W Data, see Roadway Plans.

Use Type F Approach Gutters and Type 1 Special Approach Slabs at both ends of the bridge. See Std. Dwg. No. 55030F and Dwg. No. 65655, respectively.

The existing bridge is located approximately 300' upstream from the proposed bridge. See Rdwy. Plans for details of removal of existing bridge and limits of embankment obliteration.

(3) See "SUPERELEVATION TRANSISTION SKETCH".



PLAN

HYDRAULIC DATA

Flood Description	Frequency	(2) Total Discharge	Discharge This Site	(1) Natural Water Surface Elevation	Water Surface Elevation With Backwater
	Years	CFS	CFS	FEET	FEET
Design	25	5,220	1,955	434.1	433.6
Base	100	7,590	3,057	434.7	434.4
Extreme	500	10,720	4,434	435.4	435.4
Overtopping	>500	-	-	-	-

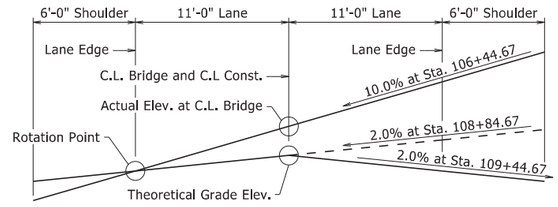
(1) Unconstricted water surface elevation without structure or roadway approaches.

(2) The total discharge includes flow at this site and Hurricane Creek Site 2.

Q100 backwater elevation for existing structure= 435.9 ft.

Proposed Low Bridge Chord Elev. = 436.35 ft.

Drainage Area = 10.80 square miles

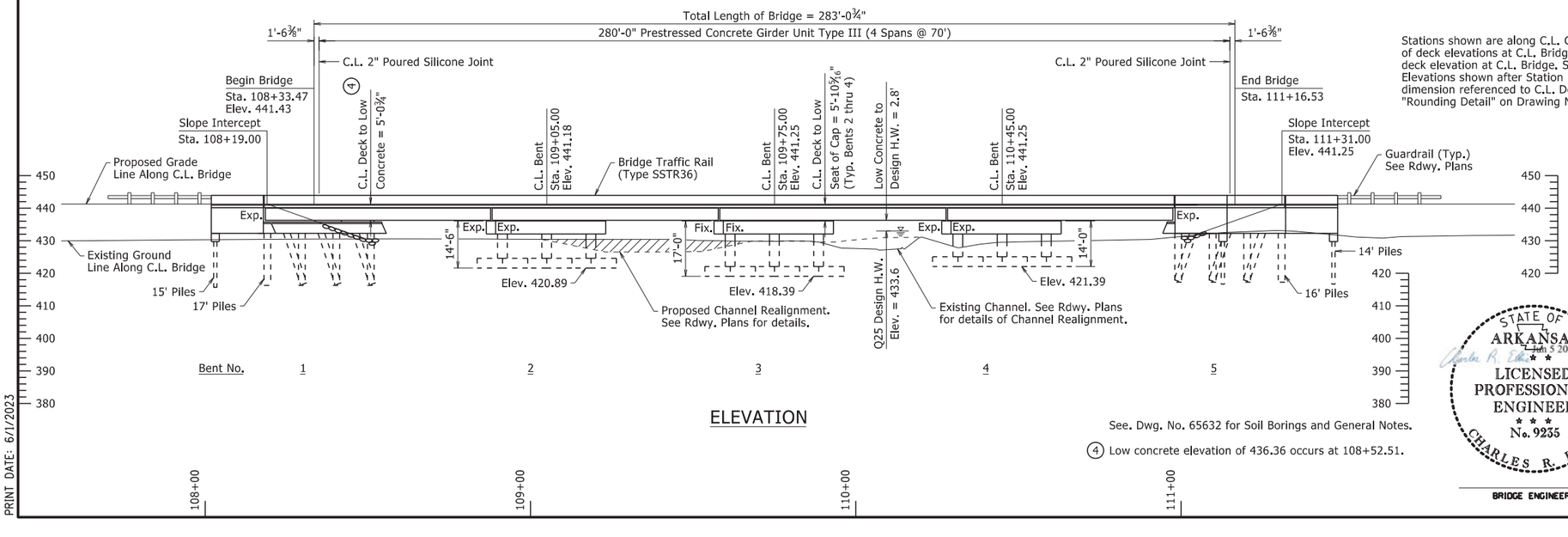


STA. 106+44.67 TO STA. 109+44.67

SUPERELEVATION TRANSITION SKETCH

Looking Ahead
No Scale
See Roadway Plans for superelevation beyond limits shown.

Stations shown are along C.L. Construction. Elevations shown at and before Station 108+84.67 are actual top of deck elevations at C.L. Bridge. Any vertical dimension referenced to C.L. Deck is based on actual top of deck elevation at C.L. Bridge. See "SUPERELEVATION TRANSITION SKETCH" for additional information. Elevations shown after Station 108+84.67 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 Drawing Number 65639 for additional information.



ELEVATION

See. Dwg. No. 65632 for Soil Borings and General Notes.

(4) Low concrete elevation of 436.36 occurs at 108+52.51.

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BRIDGE ENGINEER

SHEET 1 OF 2
LAYOUT OF BRIDGE
SAMPLES ROAD OVER HURRICANE CREEK
HURRICANE CREEK STR. & APPRS. NO. 2 (S)
SALINE COUNTY

ROUTE SEC.

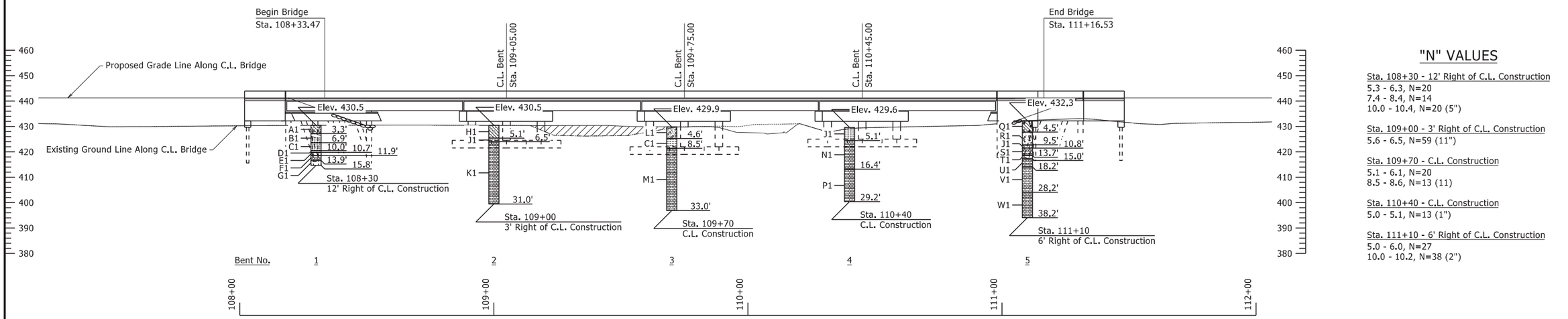
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	NAC	DATE:	6/2/2021	FILENAME:	bbr6210_l1.dgn
CHECKED BY:	CMW	DATE:	4/6/2022	SCALE:	1"=20'
DESIGNED BY:	LJB	DATE:	6/2021		

BRIDGE NO. 04949 DRAWING NO. 65631

PRINT DATE: 6/1/2023

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	BR6210	32	78
			04949 -	LAYOUT	- 65632	



BORING ELEVATION

BORING LEGEND

A1 - Sandy Clay with Gravel
B1 - SHALE - Highly Weathered, Very Soft, Gray
C1 - SHALE - Highly Weathered, Very Soft, Gray
D1 - SHALE - Slightly Weathered, Medium Hard, Gray
E1 - Quartz
F1 - LIMESTONE WITH INTERBEDDED SHALE - Unweathered, Moderately Hard, Slickensided, Gray
G1 - Fractured Quartz
H1 - Light Brown Sandy Clay
K1 - LIMESTONE WITH INTERBEDDED SHALE - Unweathered, Hard, Slickensided, Frequent Mineral Veins, Trace Pyrite, Gray
J1 - SHALE - Weathered, Medium Hard, Gray
L1 - Moist, Brown, Clayey Sand with Gravel
M1 - LIMESTONE WITH INTERBEDDED SHALE - Unweathered, Moderately Hard, Occasional Mineral Partings, Seams, and Layers, Frequent to Occasional Fractures, Slickensided, Trace Pyrite, Gray
N1 - SHALE WITH INTERBEDDED LIMESTONE - Unweathered, Medium Hard, Frequent Mineral Veins, Occasional Fractures, Slickensided, Trace Pyrite, Gray
P1 - LIMESTONE WITH INTERBEDDED SHALE - Unweathered, Moderately Hard, Frequent Mineral Partings, Layers, and Seams, Occasional Fractures, Slickensided, Trace Pyrite, Gray
Q1 - Clay with Organic Matter
R1 - Moist, Medium Dense, Brown and White Sand with Gravel
S1 - LIMESTONE WITH INTERBEDDED SHALE - Unweathered, Moderately Hard, Frequent Fractures and Mineral Partings, Layers, and Seams, Moderately Dipping, Gray
T1 - SANDSTONE - Unweathered, Cemented, Occasional Fractures, Slightly Calcareous, Gray
U1 - LIMESTONE WITH INTERBEDDED SHALE - Unweathered, Moderately Hard, Frequent Fractures and Mineral Partings, Layers, and Seams, Slickensided, Moderately Dipping, Gray
V1 - SANDSTONE WITH INTERBEDDED LIMESTONE AND SHALE - Unweathered, Well Cemented, Frequent to Occasional Fractures, Slightly Dipping, Brecciated in Part, Gray
W1 - LIMESTONE WITH INTERBEDDED SHALE - Unweathered, Medium Hard, Occasional Mineral Veins, Slickensided, Gray

"N" VALUES

Sta. 108+30 - 12' Right of C.L. Construction
5.3 - 6.3, N=20
7.4 - 8.4, N=14
10.0 - 10.4, N=20 (5")

Sta. 109+00 - 3' Right of C.L. Construction
5.6 - 6.5, N=59 (11")

Sta. 109+70 - C.L. Construction
5.1 - 6.1, N=20
8.5 - 8.6, N=13 (11)

Sta. 110+40 - C.L. Construction
5.0 - 5.1, N=13 (1")

Sta. 111+10 - 6' Right of C.L. Construction
5.0 - 6.0, N=27
10.0 - 10.2, N=38 (2")

GENERAL NOTES

BENCH MARK: Vertical Control Data are shown on the Survey Control Data Sheets.

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

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Eighth Edition (2017).

LIVE LOADING: HL-93

SEISMIC ZONE: 1 SITE CLASS: B S_{D1}: 0.081

SEISMIC OPERATIONAL CLASSIFICATION: Other

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (superstructure)	f'c = 4,000 psi
Class S Concrete (substructure)	f'c = 3,500 psi
Class S Concrete (prestressed concrete girders)	f'c = 8,000 psi
Reinforcing Steel (Grade 60, AASHTO M 31 or M 322, Type A)	fy = 60,000 psi
Structural Steel (ASTM A709, Gr. 50 or 50W)	Fy = 50,000 psi
Structural Steel (ASTM A709, Gr. 36)	Fy = 36,000 psi
Prestressing Strands (AASHTO M 203, Gr. 270)	f_{pu} = 270,000 psi

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

STEEL PILING: All piling shall be HP 14 x 73 (Grade 50) and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 133.5 tons per pile and into the material designated as Unweathered Shale or Limestone on the boring legend. Minimum penetration shall be 10' below natural ground for all piles in Bent 1 and Bent 5. Piling in end bents shall be driven after embankment to bottom of cap is in place. Lengths of piling shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with Section 805. The Contractor shall use approved steel H-Pile driving points on all piles.

PREBORING: Preboring is required for all piling. Preboring shall be to a minimum depth of 3' into material designated as Unweathered Shale or Limestone on the boring legend, or to a depth sufficient to provide the specified minimum pile penetration, whichever is greater. The actual size and depth of preboring are to be determined in the field by the Engineer. The Contractor shall be responsible for keeping prebored holes free from debris prior to backfilling which may require casings or other methods. After driving is completed, the prebored holes shall be backfilled with Class S Concrete to the top of rock and the remaining length backfilled in accordance with Subsection 805.08(a). Any cost associated with achieving the minimum pile penetration, including any backfill and casings, shall not be paid for directly but shall be considered subsidiary to the item "PREBORING".

SPREAD FOOTING: Footings shall be set a minimum of 2' into material designated as Unweathered Shale or Limestone on the boring legend. The top of the footings at Bents 2 thru 4 shall be set a minimum 2' below the channel bottom as determined by the lowest channel elevation within the footprint of the footing. Foundations for footings shall be prepared in accordance with Subsection 801.04. Rock excavations shall be made to neat lines of the concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting. Concrete in footings shall be poured directly against excavated surfaces of rock. Excavations shall be backfilled and compacted to the level of existing ground or the finalized channel realignment, in accordance with Subsection 801.08.

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

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

DETAIL DRAWINGS:	DRAWING NO(S).
End Bents	65633-65635
Intermediate Bents	65636-65637
Elastomeric Bearings	65654
280'-0" Prestressed Concrete Girder Unit Type III	65638-65644
Steel H-Piling	65642
Type F Approach Gutters	55030F
Type 1 Special Approach Slabs	65655
Bridge Traffic Rail	55070

EXISTING BRIDGE: Existing Bridge No. 16672 (Log Mile 1.94) is 26.3' wide (25.1' clear roadway) and 31.8' long and consists of a reinforced concrete slab spans supported by reinforced concrete pier walls. The existing bridge is located approximately 300' 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. 16672, including the concrete channel lining, in accordance with Section 205. Removal of the concrete channel lining will not be paid for directly but shall be considered subsidiary to the item "Removal of Existing Bridge Structure (Site No.)". All material from the existing bridge shall become the property of the Contractor.

MAINTENANCE OF TRAFFIC: See Roadway Plans.

STATE OF ARKANSAS
Jun 5 2023 4:49 PM
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No. 9235
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 2 OF 2
LAYOUT OF BRIDGE
SAMPLES ROAD OVER HURRICANE CREEK
HURRICANE CREEK STR. & APPRS. NO. 2 (S)
SALINE COUNTY

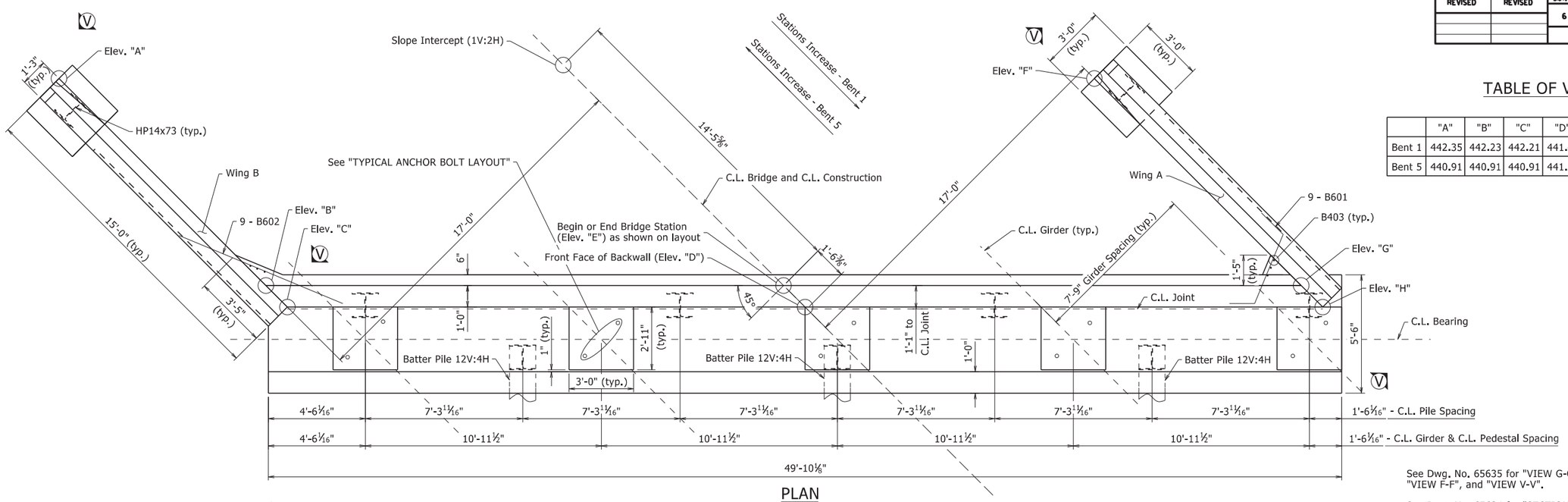
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: NAC DATE: 6/2/2021 FILENAME: bbr6210_l1.dgn
CHECKED BY: CMW DATE: 4/6/2022 SCALE: 1"=20'
DESIGNED BY: LJB DATE: 6/2021

BRIDGE NO. 04949 DRAWING NO. 65632

PRINT DATE: 6/1/2023

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	BR6210	33	78
		04949 - END BENTS - 65633				

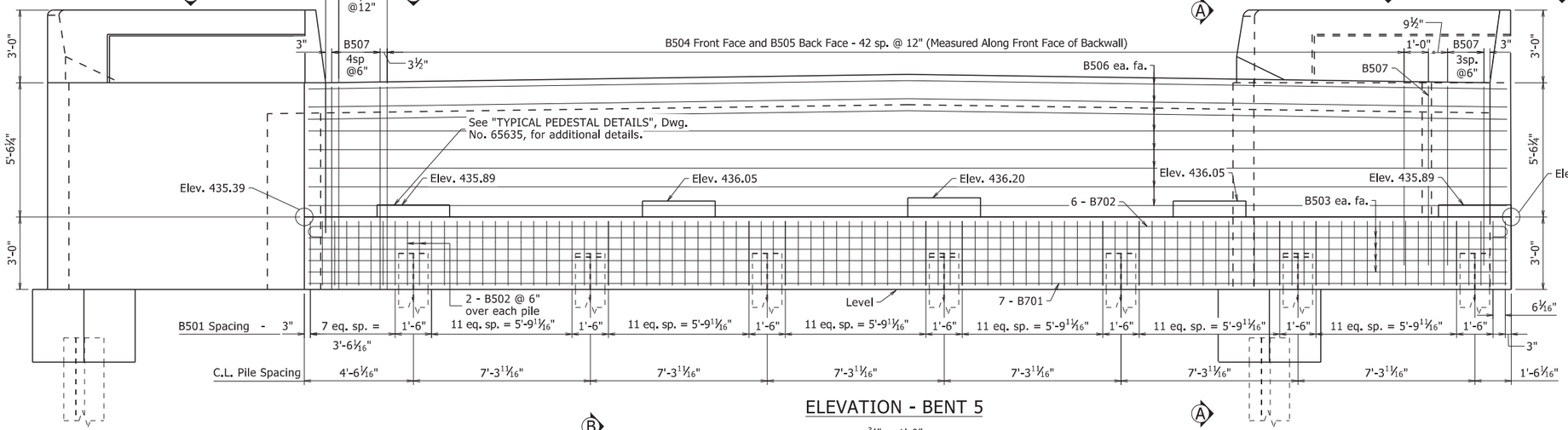


PLAN

⅜" = 1'-0"

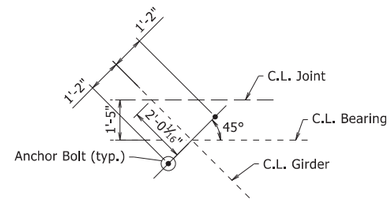
See Dwg. No. 65635 for "VIEW G-G", "VIEW F-F", and "VIEW V-V".

See Dwg. No. 65634 for "SECTION A-A" and "SECTION B-B".



ELEVATION - BENT 5

⅜" = 1'-0"
Looking Ahead



See Dwg. No. 65654 for addtional Details of Anchor Bolts and Elastomeric Bearings.

TYPICAL ANCHOR BOLT LAYOUT

No Scale

No portion of the backwall shall be poured before the girders are in place. The portion of the backwall above the optional construction joint at the paving bracket shall not be placed until the adjacent deck pour has been made. Refer to the "EXPANSION DEVICE INSTALLATION AT END BENTS" note on Dwg. No. 65642. No heavy construction equipment shall be allowed within 10' of the backwall before the deck concrete placement for the adjacent span has been completed.

TABLE OF VARIABLES

	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"
Bent 1	442.35	442.23	442.21	441.43	441.44	440.81	440.84	440.84
Bent 5	440.91	440.91	440.91	441.25	441.25	440.91	440.91	440.91

GENERAL NOTES

Structural Steel in Bent 1 and Bent 5 shall be ASTM A709, Gr. 50W and shall be paid for as "Structural Steel in Beam Spans (A709, Gr. 50W)".

All pilling shall be Grade 50. For details of steel piling, see Std. Dwg. No. 55020.

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

For Details of Wings, see Dwg. No. 65635.

Pedestals shall be cast level at the elevations shown. For Details of Pedestals, see Dwg. No. 65635.

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

For Bar List and additional Sections, see Dwg. No. 65634.

All concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 3,500 psi and shall be poured in the dry. All exposed corners shall be chamfered ¾" unless noted otherwise.

Top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see Layout.

STATE OF ARKANSAS
Jun 5 2023 4:49 PM
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 1 OF 3
DETAILS OF END BENTS

ROUTE SEC.

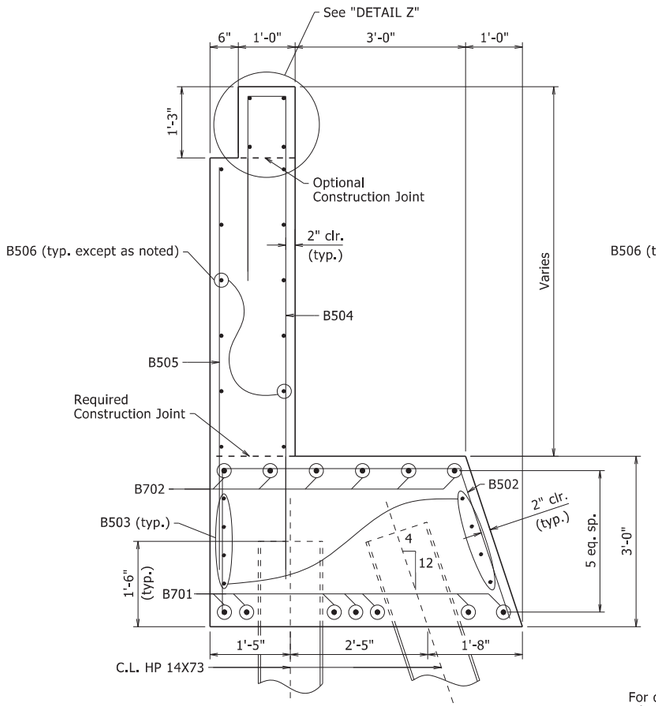
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JWP DATE: 7/28/2022
CHECKED BY: WAC DATE: 08/09/2022
DESIGNED BY: NAC DATE: 06/2022
FILENAME: bbr6210_b1x1.dgn
SCALE: AS SHOWN

BRIDGE NO. 04949 DRAWING NO. 65633

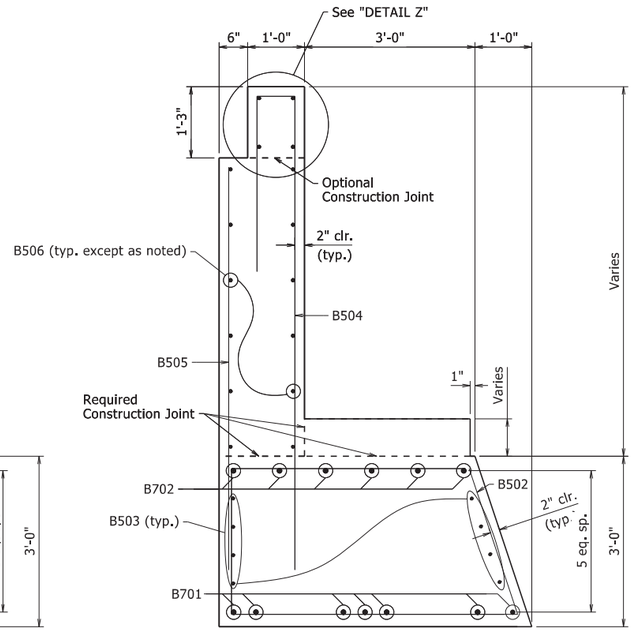
PRINT DATE: 6/5/2023

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	BR6210	34	78
		04949 - END BENTS - 65634				



SECTION B-B

¾" = 1'-0"



SECTION A-A

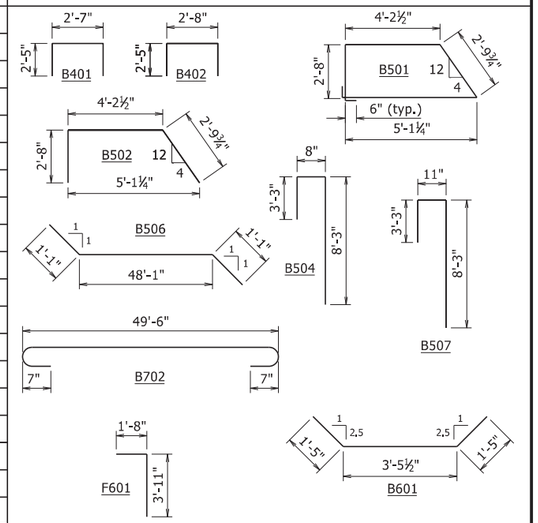
¾" = 1'-0"

For details of piles and pile anchorage, see Std. Dwg. No. 55020.

BAR LIST - PER BENT

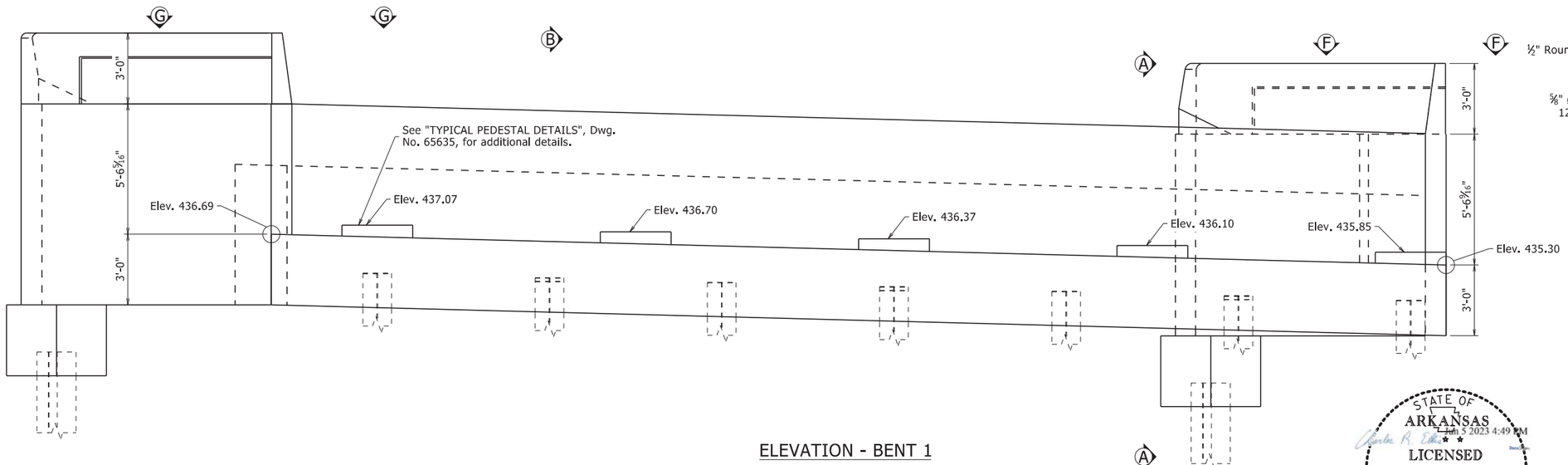
	MARK	NO. REQ'D.	LENGTH	PIN DIA.
	B401	20	7'-3"	2"
	B402	20	7'-4"	2"
	B403	6	6'-11"	Str.
	B501	82	15'-4"	2½"
	B502	14	9'-5"	2½"
	B503	8	49'-6"	Str.
	B504	43	11'-11"	3¾"
	B505	45	7'-1"	Str.
	B506	16	50'-1"	3¾"
	B507	10	12'-2"	3¾"
	B601	9	6'-4"	4½"
	B602	9	8'-2"	Str.
	B701	7	49'-6"	Str.
	B702	6	51'-2"	5¼"
(1)	W401E	60	3'-11"	3¾"
	W601	64	8'-2"	Str.
	W701	44	14'-8"	Str.
	F601	24	5'-5"	4½"
	F602	20	2'-8"	Str.
(1)	R401E	60	6'-4"	(1)
(1)	R402E	8	5'-6"	Str.
(1)	R404E	16	14'-8"	Str.

BENDING DIAGRAMS



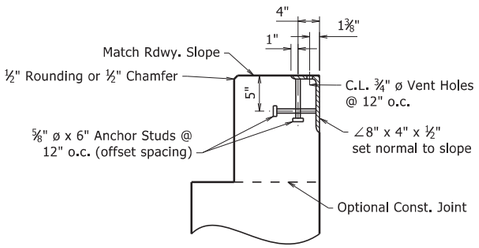
Dimensions are out to out of bars.
Bars with "E" suffix are to be epoxy coated.

(1) See Std. Dwg. No. 55070 for details of Rail bars.



ELEVATION - BENT 1

⅜" = 1'-0"
Bent 1 - Looking Back
See "ELEVATION - BENT 5" on Dwg. No. 65633 for reinforcing and dimensions not shown



DETAIL Z

No Scale

For additional joint details, see Dwg. No. 65642.

Concrete shall be hand packed under the joint armor in the backwall.

Transverse spacing between top anchor studs and vent holes shall be 6".

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SHEET 2 OF 3
DETAILS OF END BENTS

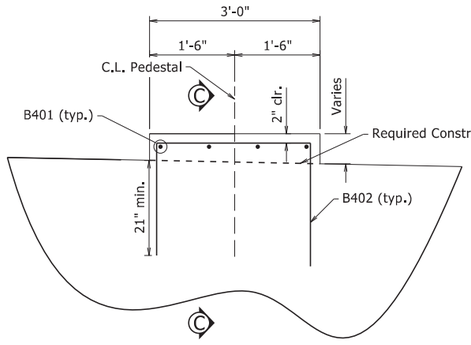
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JWP DATE: 7/28/2022 FILENAME: bbr6210_b1x1.dgn
CHECKED BY: WAC DATE: 08/09/2022 SCALE: AS SHOWN
DESIGNED BY: NAC DATE: 06/2022

BRIDGE NO. 04949 DRAWING NO. 65634

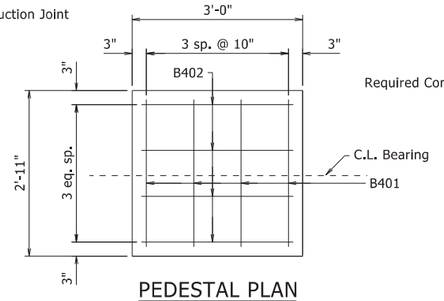
PRINT DATE: 4/25/2023

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
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		04949 - END BENTS - 65635				



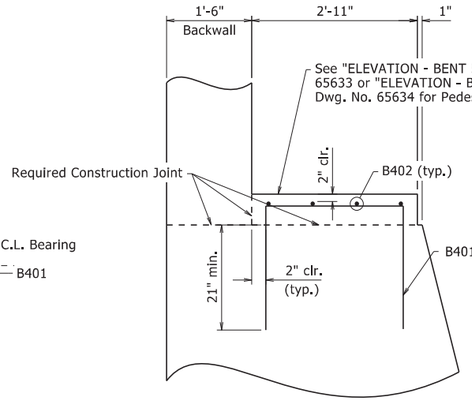
TYPICAL PEDESTAL DETAILS

¾" = 1'-0"



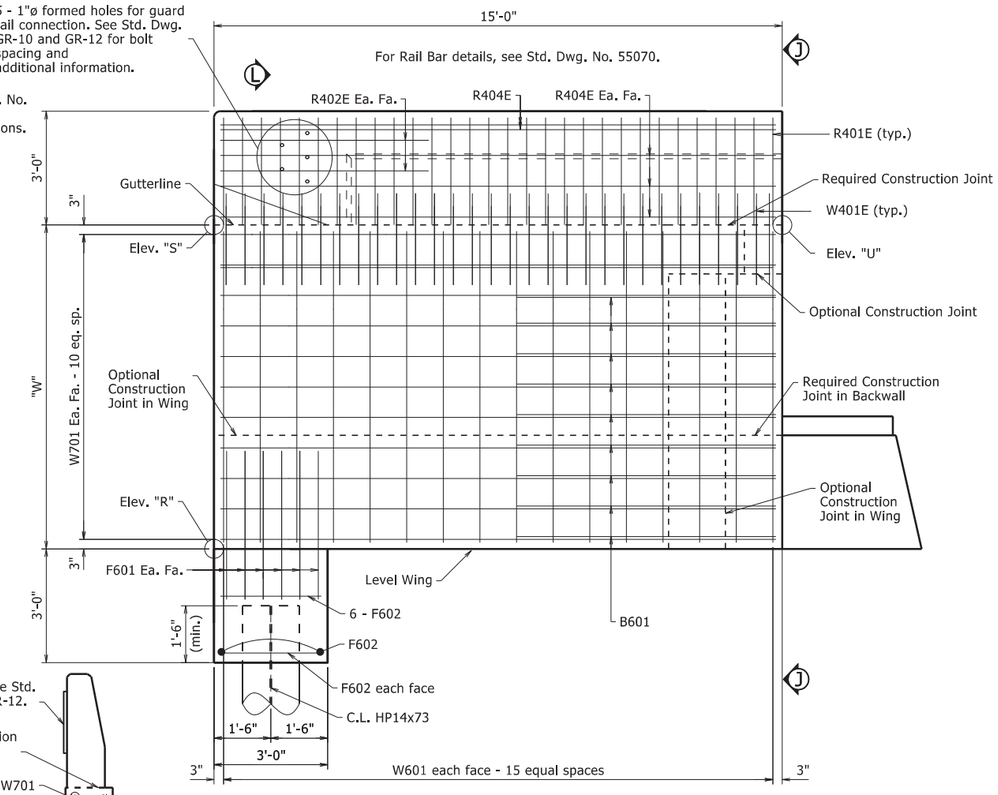
PEDESTAL PLAN

¾" = 1'-0"



SECTION C-C

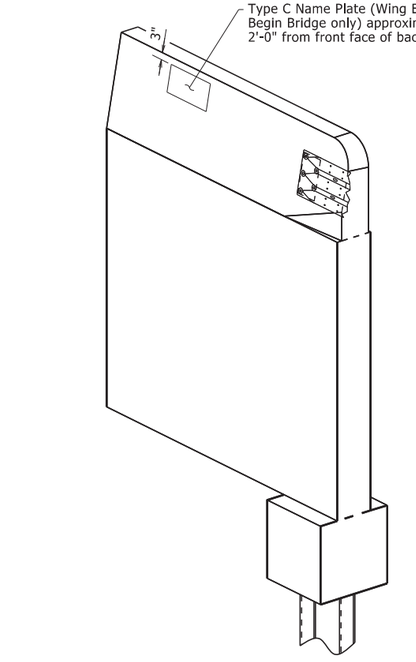
¾" = 1'-0"



VIEW V-V

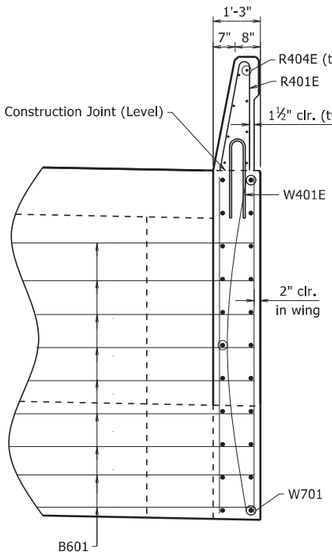
Wing A Shown. Wing B Similar.

½" = 1'-0"



THREE DIMENSIONAL VIEW AT WING & RAIL

No Scale

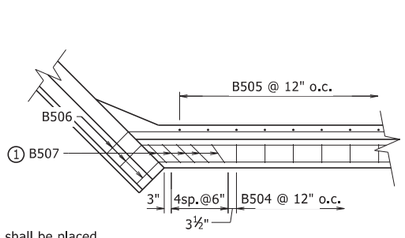


VIEW J-J

½" = 1'-0"

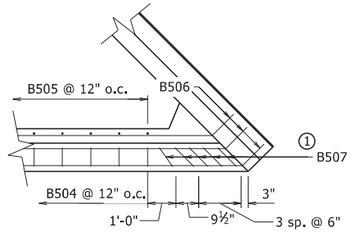
TABLE OF VARIABLES

BENT NO.	WING	"W"	"R"	"S"	"U"
1	A	8'-6⁹⁄₁₆"	432.26	440.81	440.84
	B	8'-6⁹⁄₁₆"	433.82	442.35	442.21
5	A	8'-6¼"	432.39	440.91	440.91
	B	8'-6¼"	432.39	440.91	440.91



VIEW G-G

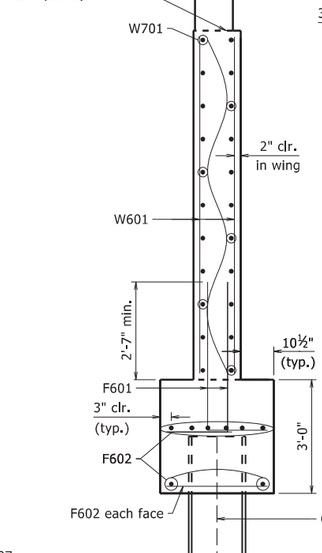
⅜" = 1'-0"



VIEW F-F

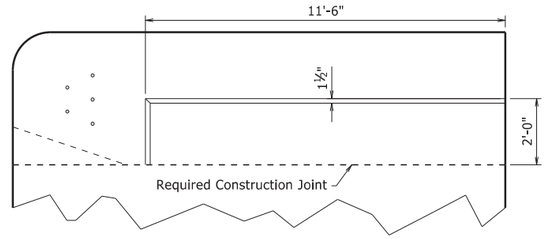
⅜" = 1'-0"

1 B507 shall be placed parallel with C.L. Bridge (unless shown otherwise)



SECTION L-L

½" = 1'-0"



LIMITS OF ENHANCEMENT

No Scale

STATE OF ARKANSAS
Jan 5 2023 4:49 PM
LICENSED PROFESSIONAL ENGINEER
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CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 3 OF 3
DETAILS OF END BENTS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

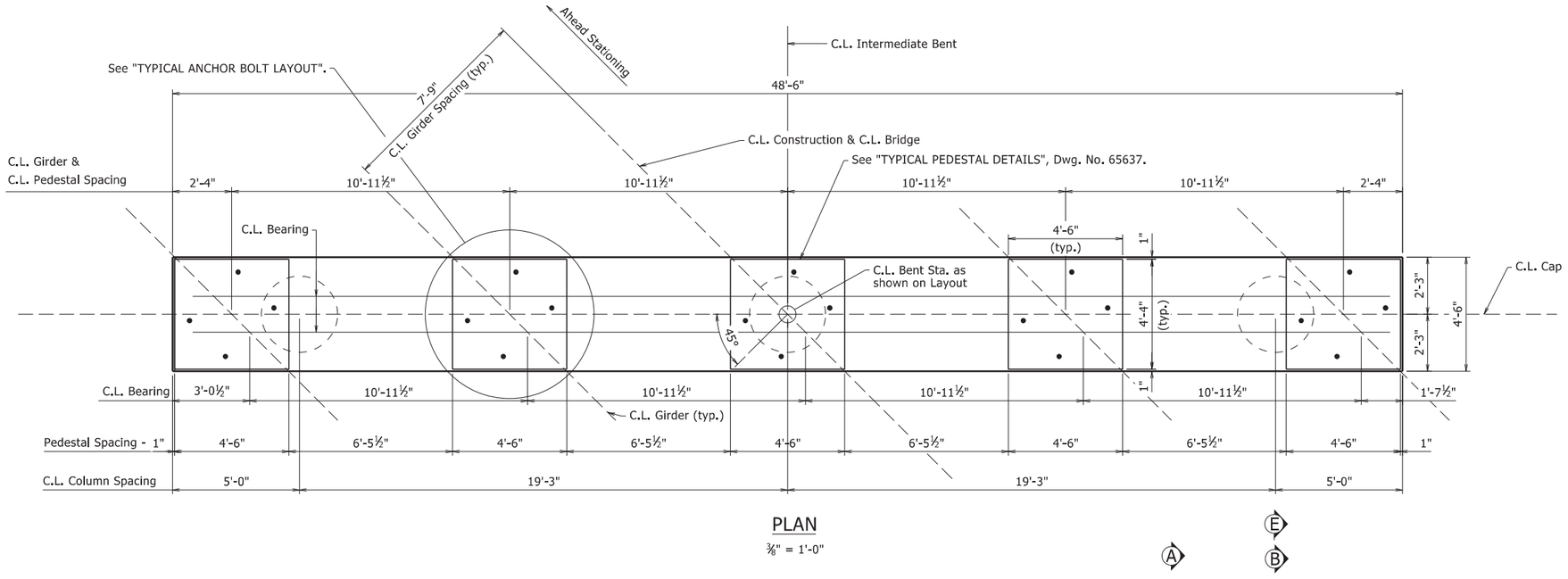
LITTLE ROCK, ARK.

DRAWN BY: JWP DATE: 7/28/2022 FILENAME: bbr6210_b1x1.dgn
CHECKED BY: WAC DATE: 08/09/2022 SCALE: AS SHOWN
DESIGNED BY: NAC DATE: 06/2022

BRIDGE NO. 04949 DRAWING NO. 65635

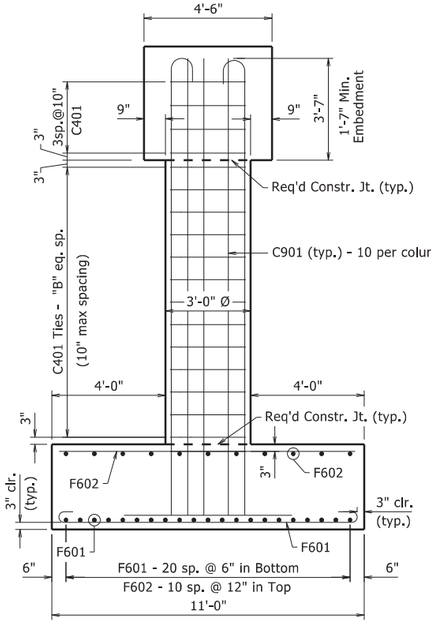
PRINT DATE: 4/25/2023

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
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		04949 - INT. BENTS - 65636				

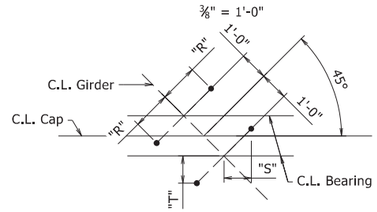


PLAN

⅜" = 1'-0"

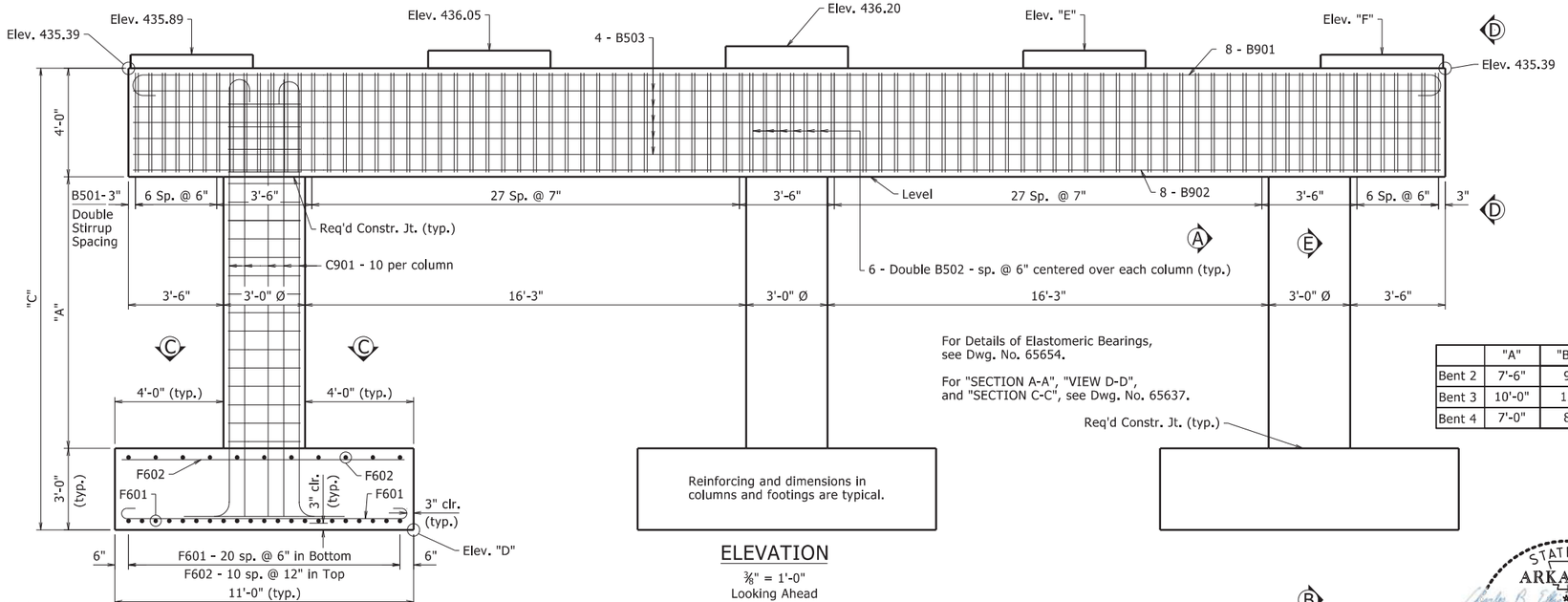


SECTION B-B



TYPICAL ANCHOR BOLT LAYOUT

No Scale



For Details of Elastomeric Bearings, see Dwg. No. 65654.

For "SECTION A-A", "VIEW D-D", and "SECTION C-C", see Dwg. No. 65637.

Req'd Constr. Jt. (typ.)

Reinforcing and dimensions in columns and footings are typical.

ELEVATION

⅜" = 1'-0"
Looking Ahead

TABLE OF VARIABLES

	"A"	"B"	"C"	"D"	"E"	"F"	"R"	"S"	"T"	"W"	"Y"	"Z"
Bent 2	7'-6"	9	14'-6"	420.89	436.21	436.14	1'-2"	9⅞"	9⅞"	42	16'-2"	13'-9"
Bent 3	10'-0"	12	17'-0"	418.39	436.05	435.89	1'-4⅛"	11½"	11½"	51	18'-8"	16'-3"
Bent 4	7'-0"	8	14'-0"	421.39	436.05	435.89	1'-2"	9⅞"	9⅞"	39	15'-8"	13'-3"

GENERAL NOTES

All concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 3,500 psi and shall be poured in the dry. All exposed corners shall be chamfered ¾" unless noted otherwise.

Pedestals shall be cast level at the elevations shown. For Details of Pedestals, see Dwg. No. 65637. Top reinforcing bars in cap and pedestals shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

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

For Bar List and additional Sections, see Dwg. No. 65637.

For additional information, see Layout.

STATE OF ARKANSAS
Jun 5 2023 4:49 PM
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS OF INTERMEDIATE BENTS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

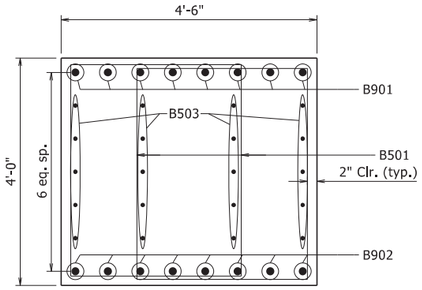
DRAWN BY: JWP DATE: 8/04/2022
CHECKED BY: WAC DATE: 8/11/2022
DESIGNED BY: NAC DATE: 06/2022

FILENAME: bbr6210x1_b2.dgn
SCALE: AS SHOWN

BRIDGE NO. 04949 DRAWING NO. 65636

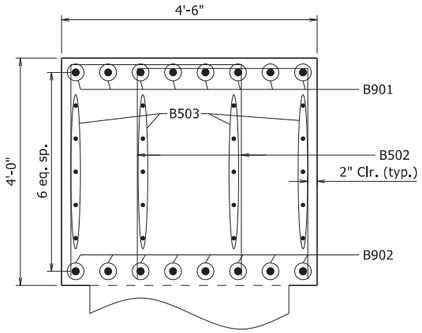
PRINT DATE: 4/25/2023

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	BR6210	37	78
		04949 - INT. BENTS - 65637				



SECTION A-A

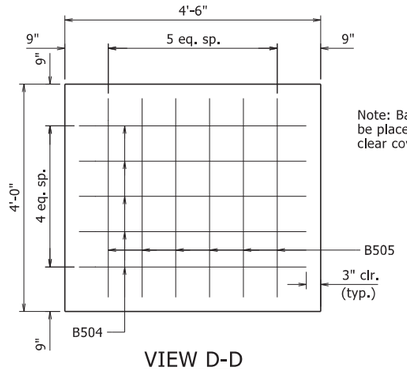
¾" = 1'-0"



SECTION E-E

¾" = 1'-0"

(Column reinforcement not shown for clarity)



VIEW D-D

¾" = 1'-0"

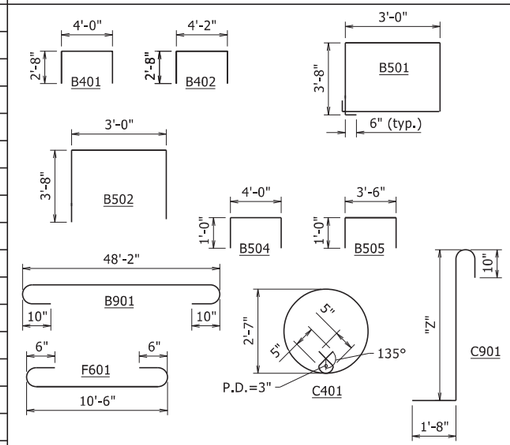
Cap and reinforcing not shown for clarity.

Note: Bars B504 and B505 shall be placed to maintain a 2" clear cover to end of cap.

BAR LIST - PER BENT

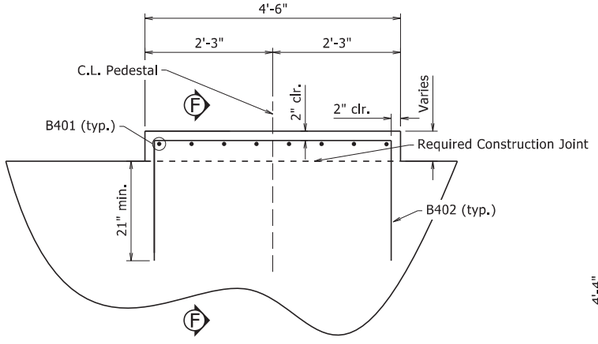
MARK	NO. REQ'D.	LENGTH	PIN DIA.
B401	40	9'-2"	2"
B402	35	9'-4"	2"
B501	140	13'-10"	2½"
B502	36	10'-2"	2½"
B503	20	48'-2"	Str.
B504	10	5'-10"	2½"
B505	12	5'-4"	2½"
B901	8	50'-8"	9"
B902	8	48'-2"	Str.
C401	"W"	9'-3"	3"
C901	30	"Y"	9"
F601	126	11'-10"	4½"
F602	66	10'-6"	Str.

BENDING DIAGRAMS



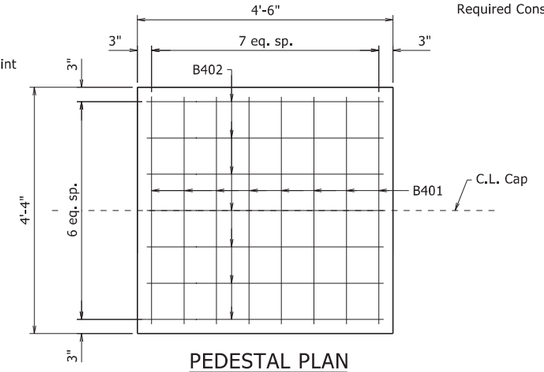
Dimensions are out to out of bars.

See Dwg. No. 65636 for variables "W", "Y", and "Z".



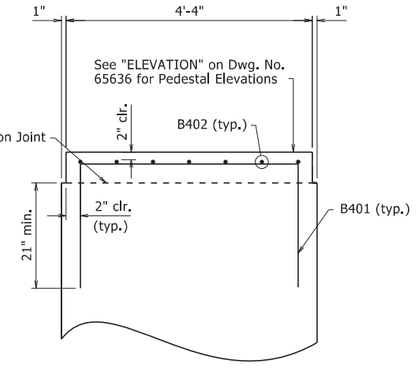
TYPICAL PEDESTAL DETAILS

¾" = 1'-0"



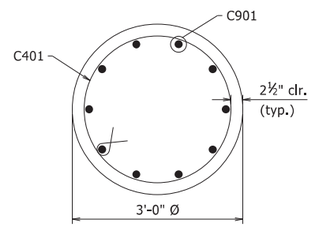
PEDESTAL PLAN

¾" = 1'-0"



SECTION F-F

¾" = 1'-0"



SECTION C-C

¾" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
Jun 5 2023 4:49 PM

BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF INTERMEDIATE BENTS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JWP DATE: 8/04/2022
CHECKED BY: WAC DATE: 8/11/2022
DESIGNED BY: NAC DATE: 06/2022

FILENAME: bbr6210x1_b2.dgn
SCALE: AS SHOWN

BRIDGE NO. 04949

DRAWING NO. 65637

PRINT DATE: 4/25/2023

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	BR6210	38	78
		04949,04950 - COMMON DETAILS - 65638				

Slab Reinforcing:

Longitudinal: S401E in top and bottom placed as shown
S701E placed as shown over Intermediate Bents
See "HALF REINFORCING PLAN AND SLAB POURING SEQUENCE" on Dwg. Nos. 65643 and 65652 for Bridge Nos. 04949 and 04950, respectively.

Transverse: S501E in top and S402E in bottom @ 12" o.c. — Alternate
S501E in top and S502E in bottom @ 12" o.c.
S503E @ 6" in top of overhang (bundled with No. 5 bars)
R403E in bridge rail. See Std. Dwg. No. 55070.

Bar positions or clearances from the forms shall be maintained by means of stays, ties, hangers, or other approved devices per Subsection 804.06. Placement of slab bolsters or high-chairs with full-length lower runners directly on removable deck forms will not be allowed.

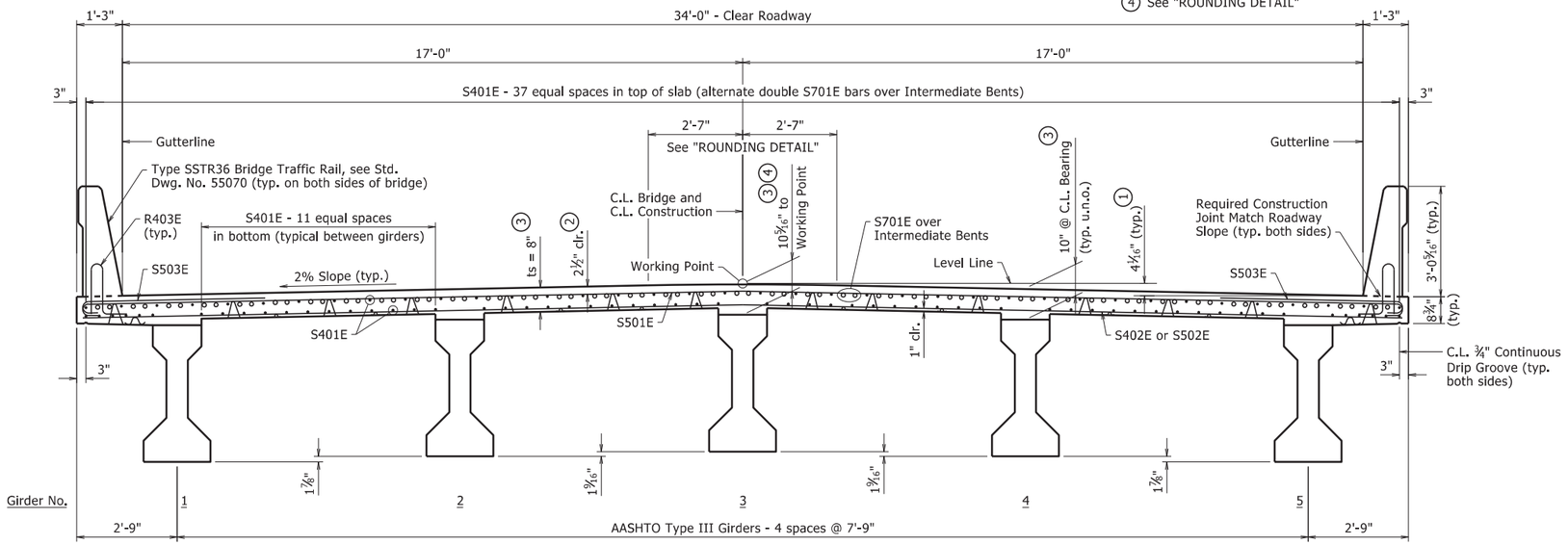
Class 2 Protective Surface Treatment shall be applied to the Roadway Surface and the Roadway Face and Top of Bridge Traffic Rail.

(1) Working Point to Gutterline

(2) Tolerance: Minus = ¼";
Plus equal to the amount of slab thickening used to meet slab thickness tolerance. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE".

(3) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE"

(4) See "ROUNDING DETAIL"



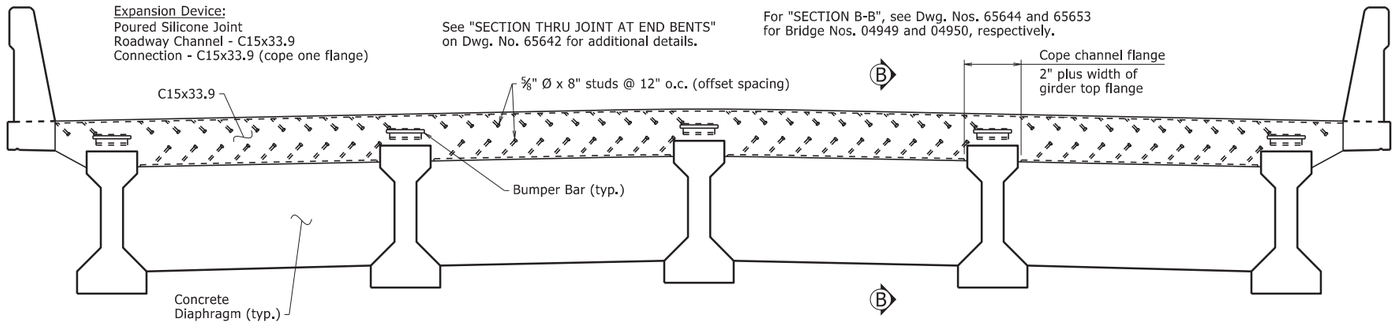
TYPICAL ROADWAY SECTION

Looking Ahead
½" = 1'-0"

Expansion Device:
Poured Silicone Joint
Roadway Channel - C15x33.9
Connection - C15x33.9 (cope one flange)

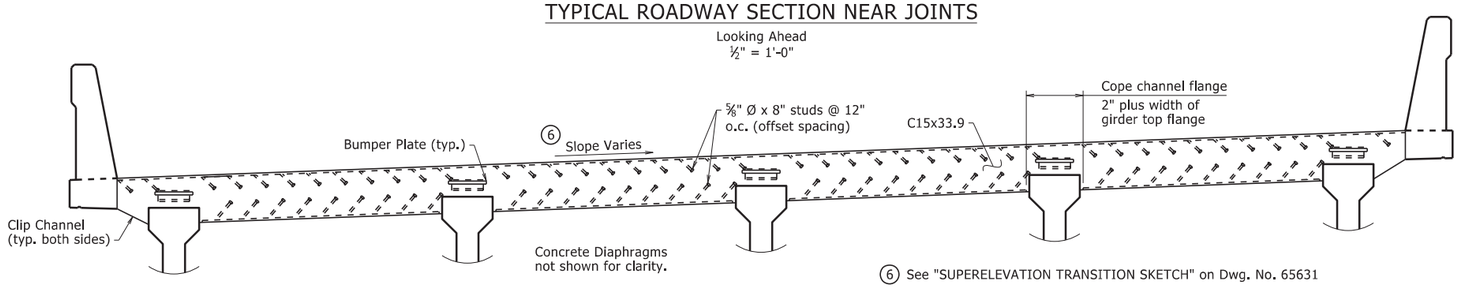
See "SECTION THRU JOINT AT END BENTS" on Dwg. No. 65642 for additional details.

For "SECTION B-B", see Dwg. Nos. 65644 and 65653 for Bridge Nos. 04949 and 04950, respectively.



TYPICAL ROADWAY SECTION NEAR JOINTS

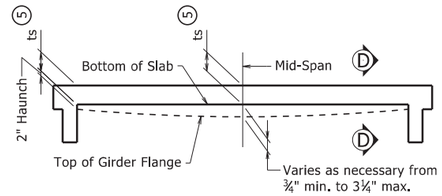
Looking Ahead
½" = 1'-0"



(6) See "SUPERELEVATION TRANSITION SKETCH" on Dwg. No. 65631

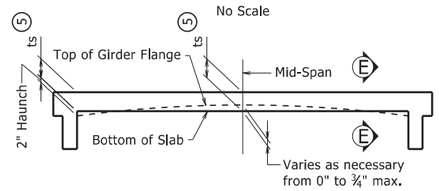
ROADWAY SECTION NEAR JOINT AT BENT 1 - BRIDGE NO. 04949

Looking Ahead
½" = 1'-0"



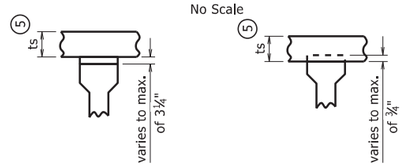
GIRDER ELEVATION

No Scale



GIRDER ELEVATION

No Scale



SECTION D-D

No Scale

SECTION E-E

No Scale

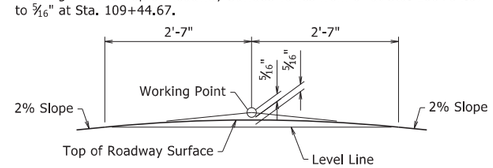
ts = slab thickness as shown on superstructure details - See "TYPICAL ROADWAY SECTION".

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

Girder Elevation sketches show the range of acceptability of the top of the Girder relative to bottom of slab after the placement of the slab. When the top of the Girder projects more than ¾" into the slab, a raise in grade will be necessary. Girders shall be set in a sufficient number of spans over suitable increments so the revised grade line will produce a smooth riding surface. Variation of haunch height will be at the Contractor's expense.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

Values shown are for 2% Peaked Crown. Bridge No. 04949: Dimension for Working Point to Top of Roadway Surface varies from 0" at Sta. 108+84.67 to 5/16" at Sta. 109+44.67.



Working Point Matches Theoretical Roadway Grade.

ROUNDING DETAIL

No Scale

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SHEET 1 OF 5
COMMON DETAILS OF
PRESTRESSED CONCRETE GIRDERS

ROUTE SEC.

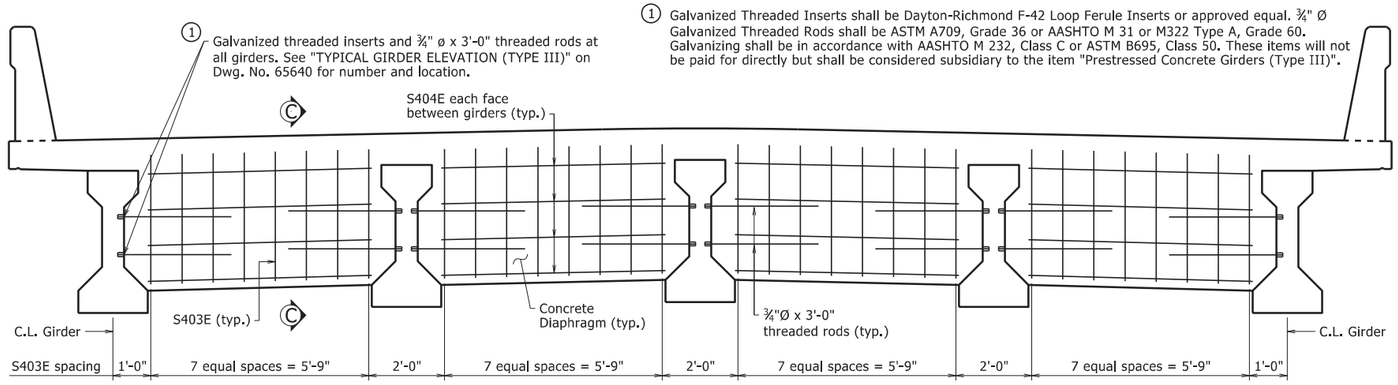
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BRIDGE NO. 04949,04950 DRAWING NO. 65638

PRINT DATE: 5/22/2023

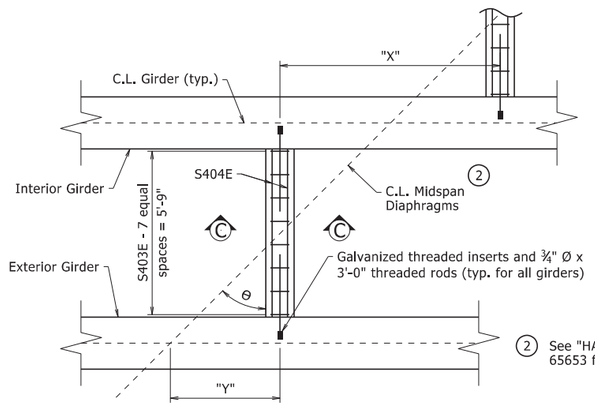
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
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		04949,04950 - COMMON DETAILS - 65639				



1 Galvanized Threaded Inserts shall be Dayton-Richmond F-42 Loop Ferule Inserts or approved equal. ¾" Ø Galvanized Threaded Rods shall be ASTM A709, Grade 36 or AASHTO M 31 or M322 Type A, Grade 60. Galvanizing shall be in accordance with AASHTO M 232, Class C or ASTM B695, Class 50. These items will not be paid for directly but shall be considered subsidiary to the item "Prestressed Concrete Girders (Type III)".

TYPICAL ROADWAY SECTION THRU MIDSPAN DIAPHRAGMS

Looking Ahead, Normal to C.L. Bridge and C.L. Construction
½" = 1'-0"

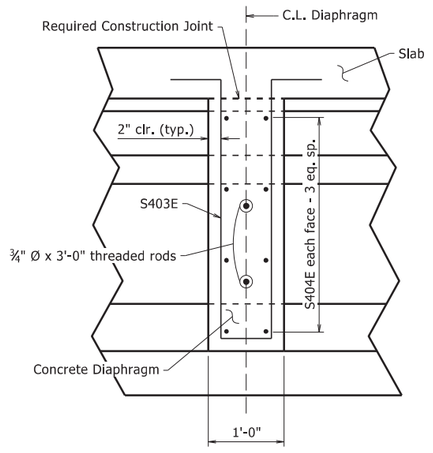


Bridge No.	"X"	"Y"	Θ
04949	7'-9"	3'-10½"	45°
04950	4'-5¾"	2'-2⅞"	30°

2 See "HALF FRAMING PLAN" on Dwg. Nos. 65644 and 65653 for Bridge Nos. 04949 and 04950, respectively.

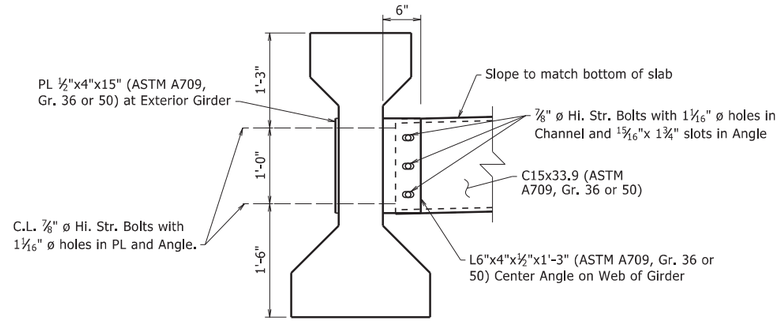
PLAN VIEW OF MIDSPAN DIAPHRAGM

Bridge No. 04949 shown, Bridge No. 04950 similar
⅜" = 1'-0"



SECTION C-C

Midspan Diaphragm, Along C.L. Bridge
1" = 1'-0"



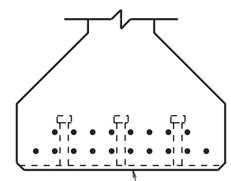
DETAILS OF ALTERNATE STEEL DIAPHRAGM

1" = 1'-0"

Steel Diaphragms may be used in lieu of concrete at midspan diaphragms only. Payment will be based on concrete diaphragms.

All components of steel diaphragms shall be galvanized in accordance with Section 807.

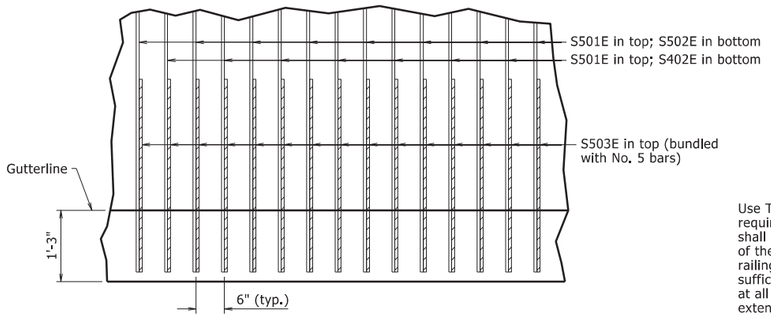
A standard washer shall be supplied under both the nut and the head of the ⅞" ø Hi. Str. Bolts. An additional plate washer shall cover the angle slots.



END OF GIRDER VIEW

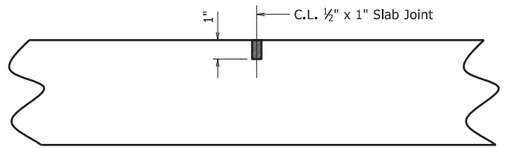
1½" = 1'-0"

At girder ends, saw cut or grind all strands flush with the end of the girder. The ends of the girders and the cut-off strands shall be coated with a 1/16" min. thick coating of a QPL-approved epoxy resin.



DETAIL B

¾" = 1'-0"



TRANSVERSE SLAB JOINT DETAIL

No Scale

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

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SHEET 2 OF 5
COMMON DETAILS OF
PRESTRESSED CONCRETE GIRDERS

ROUTE SEC.

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BRIDGE NO. 04949,04950 DRAWING NO. 65639

PRINT DATE: 5/22/2023

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		04949,04950 - COMMON DETAILS - 65640				

(1) Connection for Partial Depth Diaphragm: ¾" ø Threaded Inserts at interior faces of girders. See Dwg. No. 65639 for additional details.

(2) End of Girders to receive an epoxy resin coating. See "END OF GIRDER VIEW" on Dwg. No. 65639.

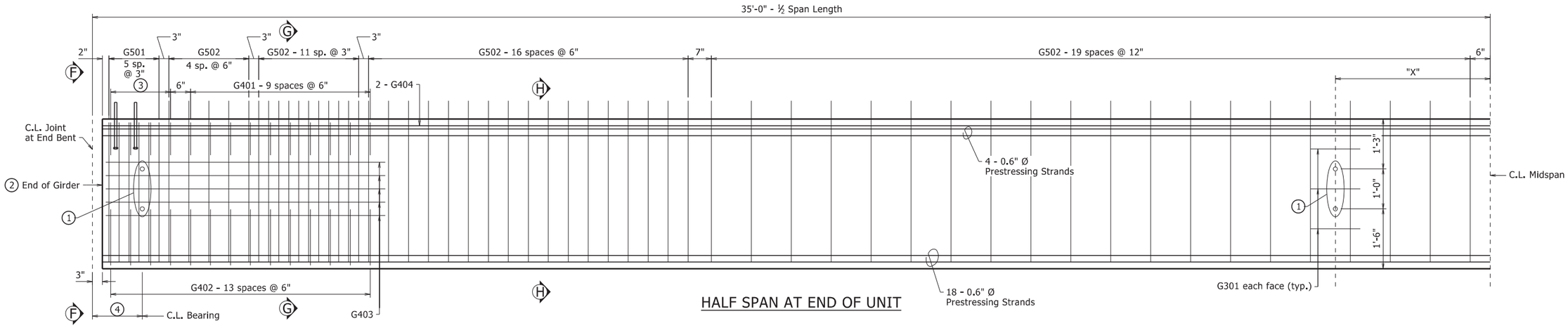
(3) G405 thru G408, see "DETAIL V" and "DETAIL W" on Dwg. Nos. 65643 and 65652 for Bridge Nos. 04949 and 04950, respectively.

(4) 2'-0 1/16" - Bridge No. 04949
1'-3" - Bridge No. 04950

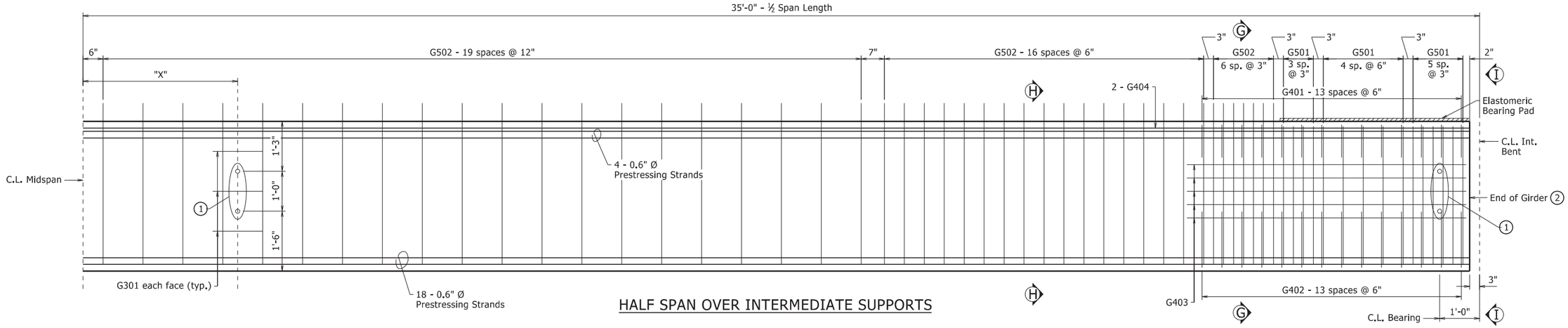
Dimensions are measured along girders.

Prestressing strands will not be paid for directly, but will be considered subsidiary to the item "Prestressed Concrete Girders (Type III)".

Prestressing strands shall be bonded along the entire length of the girder.



HALF SPAN AT END OF UNIT



HALF SPAN OVER INTERMEDIATE SUPPORTS

TABLE OF VARIABLES

Bridge No.	"X"
04949	3'-10½"
04950	2'-2⅞"

TYPICAL GIRDER ELEVATION (TYPE III)

¾" = 1'-0"

See Dwg. No. 65641 for "SECTION F-F", "SECTION G-G", "SECTION H-H", and "SECTION I-I".

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SHEET 3 OF 5
COMMON DETAILS OF
PRESTRESSED CONCRETE GIRDERS

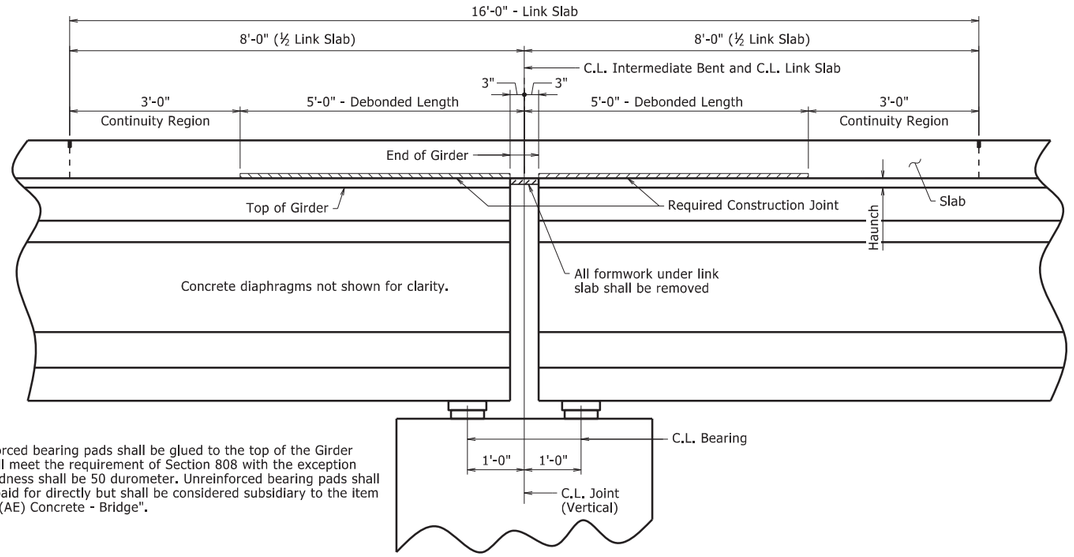
ROUTE SEC.
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BRIDGE NO. 04949,04950 DRAWING NO. 65640

PRINT DATE: 5/22/2023

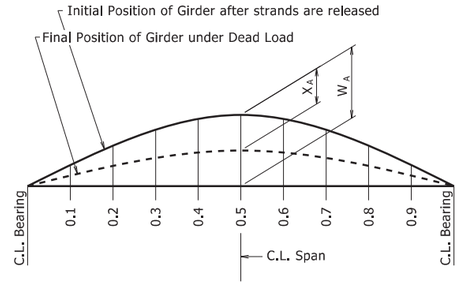
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	BR6210	41	78
		04949,04950 - COMMON DETAILS - 65641				



Unreinforced bearing pads shall be glued to the top of the Girder and shall meet the requirement of Section 808 with the exception that hardness shall be 50 durometer. Unreinforced bearing pads shall not be paid for directly but shall be considered subsidiary to the item "Class S(AE) Concrete - Bridge".

VIEW AT INTERMEDIATE BENT

¾" = 1'-0"
Along C.L. Girder



"W_A" is camber of Girder (Prestress + Dead Load of girder @ 60 days after release)

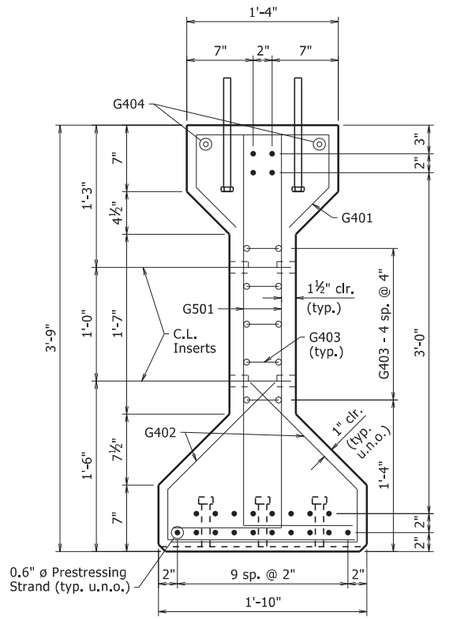
"X_A" is Dead Load Deflection of Slab + Diaphragms + Composite Dead Load

CAMBER AND DEFLECTION (INCHES)

No Scale

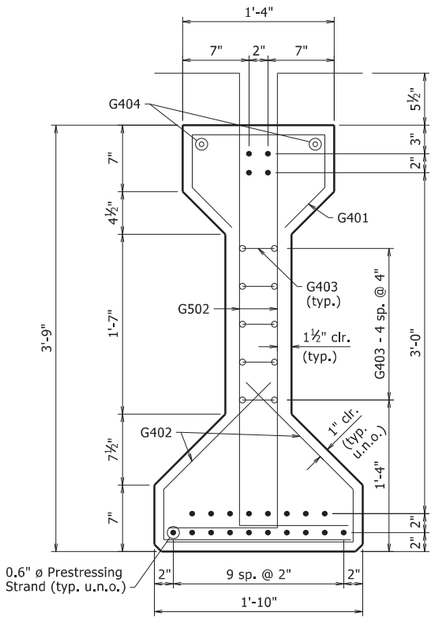
"W_A" and "X_A" are based on the required minimum concrete strength and may vary from the dimension shown. "W_A" and "X_A" shall be measured along bottom of girders unless otherwise approved by the Engineer. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on Dwg. No. 65638 for limitations of the girder final position under dead load. The Contractor is responsible for any adjustment necessary to meet slab thickness tolerance and to achieve an acceptable finished grade. No payment shall be made for any additional concrete in the haunches when camber is less than shown.

Span Pt.	Inches	
	W_A	X_A
0.0	0	0
0.1	0.573	0.212
0.2	0.992	0.426
0.3	1.274	0.594
0.4	1.437	0.702
0.5	1.490	0.738
0.6	1.437	0.702
0.7	1.274	0.594
0.8	0.992	0.426
0.9	0.573	0.212
1.0	0	0



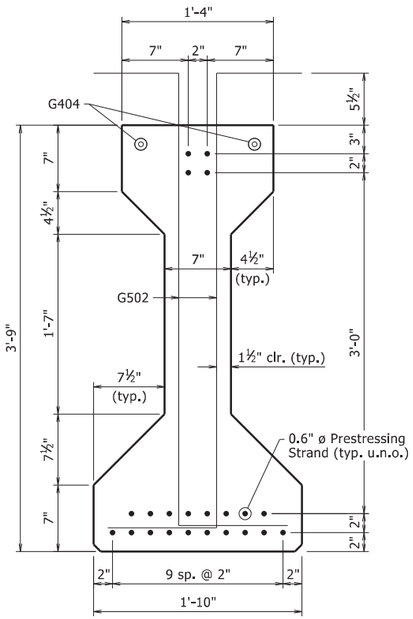
VIEW F-F

1½" = 1'-0"



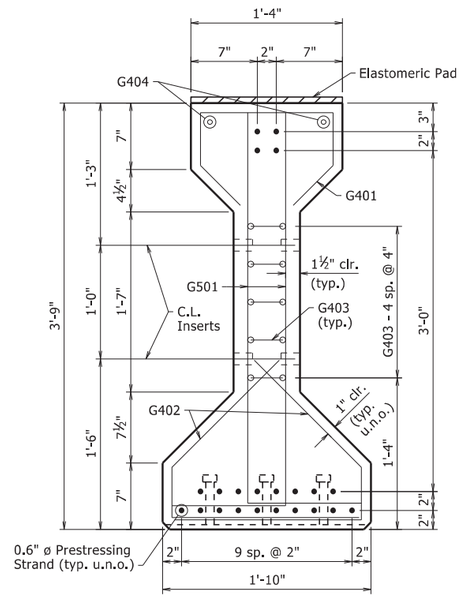
SECTION G-G

1½" = 1'-0"



SECTION H-H

1½" = 1'-0"



VIEW I-I

1½" = 1'-0"

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SHEET 4 OF 5
COMMON DETAILS OF
PRESTRESSED CONCRETE GIRDERS

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		6	ARK.	BR6210	42	78
		04949,04950 - COMMON DETAILS - 65642				

GENERAL NOTES:

PRESTRESSED CONCRETE GIRDERS:

Pretensioning steel shall be 0.6" ø Low Relaxation strands with a minimum ultimate strength of 270 ksi, and shall conform to AASHTO M 203.

Distances from the forms and spacing of the Prestressing Steel shall be maintained by stays, ties, hangers, spacers, or other approved supports which shall be shown on the Shop Drawings.

All girders shall be Type III as noted on the details and shall be the standard prestressed sections adopted by the Joint Committee of AASHTO and the Prestressed Concrete Institute. All girders shall be cast in concrete floored pallets and in metal forms. All work and materials shall be as specified in Subsection 802.22.

Concrete shall be Class S and shall have a minimum 28 day compressive strength, f'c = 8,000 psi. The initial tensile force applied to each 0.6" ø strand shall be 43,950 lbs. Transfer of this tensioning load to the girder shall not be done until the compressive strength of the concrete is 6,000 psi.

Dimensions shown are to the center of the strands.

The Contractor shall submit the method and sequence for release of strands to the Engineer for approval prior to casting of the girders.

Holes and Inserts shall be cast in into the girder. Field drilling of holes shall not be permitted.

The first 16" along the tops of the Girders at the beginning and the end of the units shall have a smooth surface. The tops of the remaining length of the girders shall be roughened to an amplitude of ¼" and shall be scrubbed transversely with a coarse wire brush to remove all laitance to produce an adequate surface for bonding the slab.

After detensioning, saw cut, grind, or bend up strands as designated by the plans. Heat-cutting or bending methods shall not be used within 6" of the girder.

Extreme care shall be exercised in handling and moving precast prestressed concrete girders. Girders must be maintained in an upright position at all times and must be picked up from points near the girder ends. Disregard of this requirement may lead to collapse of the girder. The Contractor's proposed lifting details shall be submitted on shop drawings to the Engineer for approval. The use of holes for lifting purposes will not be permitted.

The points of support and directions of the reactions with respect to the member shall be approximately the same during transportation and storage as when the member is in its final position.

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

The Contractor may submit alternate strand patterns with design calculations for review and approval.

Drawings show general features of design only. Shop drawings shall be made in accordance with the specifications, submitted, and approval secured before fabrication is begun.

CONCRETE:

All concrete in slab, rail, and diaphragms shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi. Concrete shall be poured in the dry and all exposed corners shall be chamfered ¾" unless otherwise noted.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurement of Class S(AE) Concrete. See Standard Drawing No. 55005 for allowable modifications and for tolerances when Permanent Steel Bridge Deck Forms are used.

The concrete deck (roadway surface) shall be given a tine finish in accordance with Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the girder. When permitted, the use of a longitudinal strike-off will require that a vertical camber adjustment be made in the strike-off to account for the future dead load deflection due to any railings.

REINFORCING STEEL:

All reinforcing steel in slab, rail, and diaphragms shall be Grade 60 (fy = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports and shall be epoxy coated. The reinforcing steel is to be accurately located in the forms and firmly held in place by steel wire supports, sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly, but will be considered subsidiary to the item "Epoxy Coated Reinforcing Steel (Grade 60)".

STRUCTURAL STEEL:

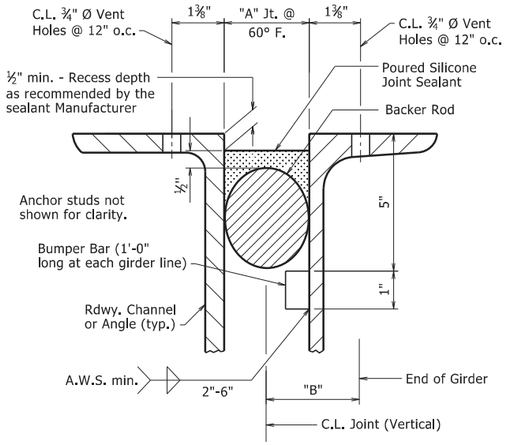
Structural steel shall be ASTM A709 with grade and payment as specified in the plans. Grade 50W steel shall not be painted and all exposed surfaces shall be cleaned in accordance with Subsection 807.84(e). Grade 36 and Grade 50 steel shall be painted unless otherwise noted and all exposed surfaces shall be cleaned in accordance with Subsection 807.84. Structural steel completely embedded in concrete may be ASTM A709, Gr. 36, Gr. 50 or Gr. 50W unless otherwise noted.

Drawings show general features of design only. Shop drawings shall be made in accordance with the specifications, submitted and approval secured before fabrication is begun.

Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on the approved shop drawings. Payment, where applicable, will be based on the basis of shapes and materials shown in the plans, and no additional compensation will be made for any adjustments due to substitutions.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, whether permanent or temporary, a formal request with detailed drawings shall be submitted to the Engineer for approval. All welding shall conform to Subsection 807.26.

FOR ADDITIONAL INFORMATION AND NOTES, SEE LAYOUT AND PLAN DETAILS.

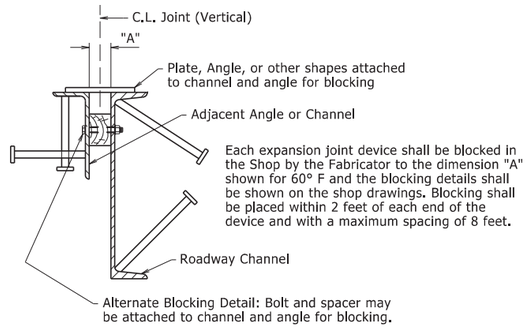


DETAIL OF POURED SILICONE JOINT

Silicone joint material and installation shall conform to Section 809. The temperature limitations recommended by the sealant Manufacturer shall be observed. The sealant shall be installed only when the average 24 hour air temperature is between 40° and 80° F.

Use an appropriately sized backer rod at the depth shown in the Manufacturer's literature based on the joint width at the time of sealing. Unless otherwise noted, do not install more backer rod than can be sealed in the same day.

The Contractor shall verify separation of the backer rod from the joint material after the joint material has set.



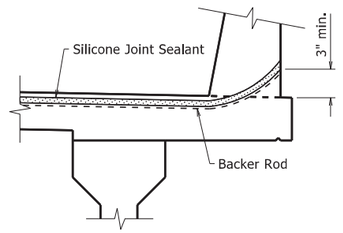
DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

EXPANSION DEVICE INSTALLATION AT END BENTS:

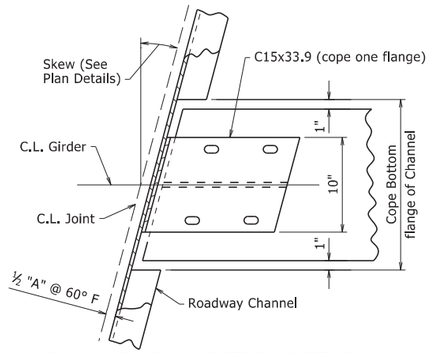
The Contractor may elect to install the expansion device using one of the following two alternatives:

1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the girders erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed, and the opening adjusted for temperature and grade.

2) The backwall shall be poured to the optional construction joint after girders are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature and grade.

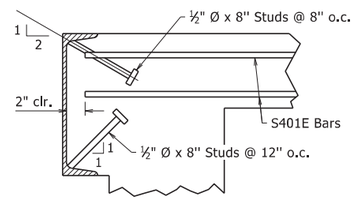


JOINT SEAL PLACEMENT AT RAIL



CHANNEL CONNECTION DETAIL

No Scale



DETAILS OF ALTERNATE ANCHORS AND PLACEMENT OF LONGITUDINAL REINFORCEMENT

As an alternate to ⅝" Ø studs, ½" Ø x 8" studs spaced as shown may be used. Use weight of ⅝" stud as basis of measurement of Structural Steel in Anchors.

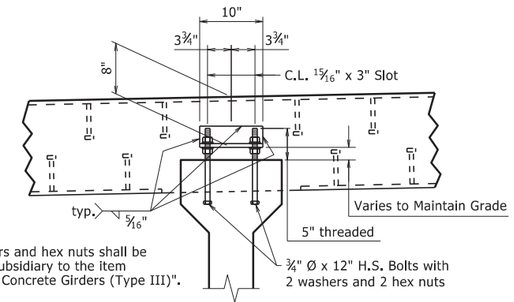
TABLE OF SILICONE JOINT DATA

	"A" Width Perpendicular to Joint at 24 Hour Average Temperature of:			"B" Perpendicular to Joint at 60°F	Bumper Plate Size
	40°F	60°F	80°F		
Bridge No.					
04949	2 3/16"	2"	1 13/16"	2⅛"	1" x 1" x 12"
04950	2 3/16"	2"	1 13/16"	2⅝"	1" x 1" x 12"

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



BRIDGE ENGINEER

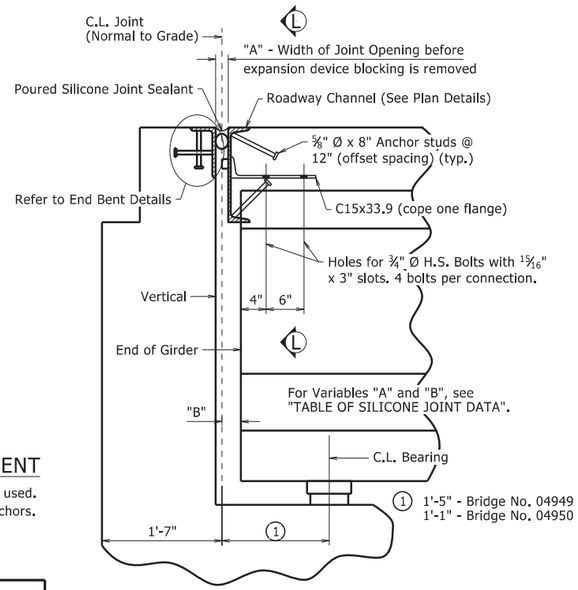


Bolts, washers and hex nuts shall be considered subsidiary to the item "Prestressed Concrete Girders (Type III)".

Bumper bars not shown for clarity.

VIEW L-L

1" = 1'-0"



Section taken is perpendicular to C.L. Joint.

Concrete shall be hand packed under joint armor.

Concrete diaphragm not shown for clarity.

SECTION THRU JOINT AT END BENTS

1" = 1'-0"

SHEET 5 OF 5
COMMON DETAILS OF
PRESTRESSED CONCRETE GIRDERS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

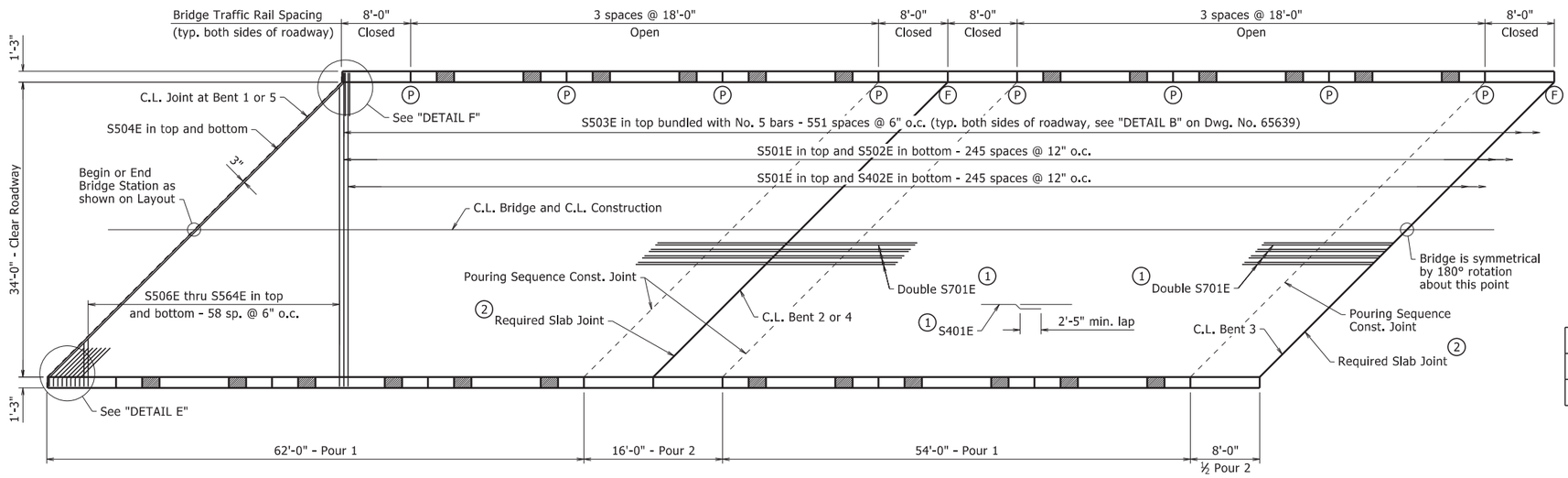
LITTLE ROCK, ARK.

DRAWN BY:	WAC	DATE:	5/2022	FILENAME:	bbr6210x1_s1.dgn
CHECKED BY:	DBS	DATE:	8/10/2022	SCALE:	As Shown
DESIGNED BY:	NAC	DATE:	3/2020		

BRIDGE NO. 04949,04950 DRAWING NO. 65642

PRINT DATE: 5/22/2023

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	BR6210	43	78
		04949 - 280'-0" UNIT - 65643				



(1) Placed as shown on "TYPICAL ROADWAY SECTION" on Dwg. No. 65638.

(2) See "TRANSVERSE SLAB JOINT DETAIL" on Dwg. No. 65639.

HALF REINFORCING PLAN AND SLAB POURING SEQUENCE

⅛" = 1'-0"

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

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

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

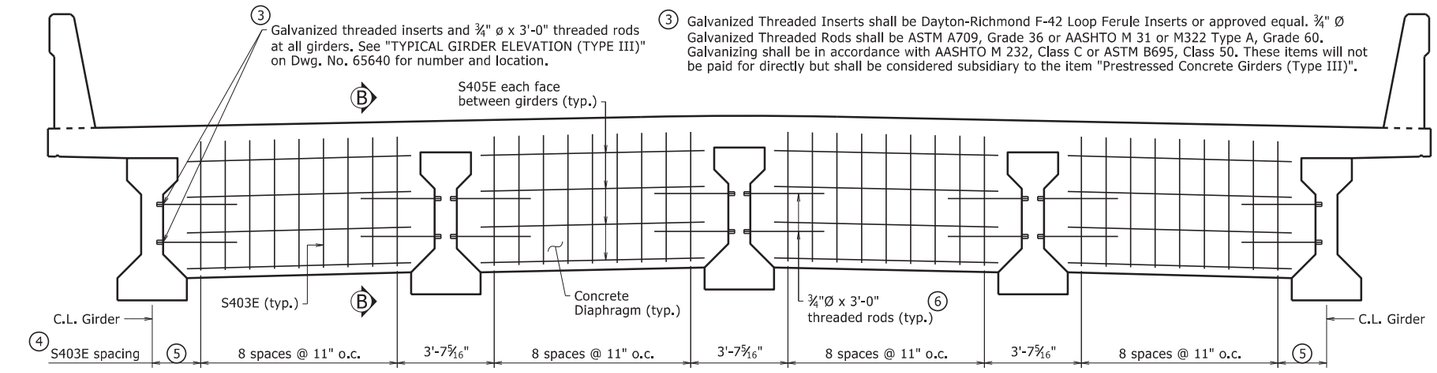
(P) Partial Depth Parapet Joint at this location (typ. for both sides of bridge)

(F) Full Depth Parapet Joint at this location (typ. for both sides of bridge)

TABLE OF VARIABLES

Closed Rail Panel			Open Rail Panel					
Panel Length	A	R40XE	Panel Length	B	C	D	E	R40XE
8'-0"	15	R404E	18'-0"	8	3'-0"	15	8'-0"	R405E

Reference Std. Dwg. No. 55070 for additional details of Bridge Traffic Rail and Wing.



See Dwg. No. 65644 for "SECTION B-B".

TYPICAL ROADWAY SECTION THRU END DIAPHRAGMS

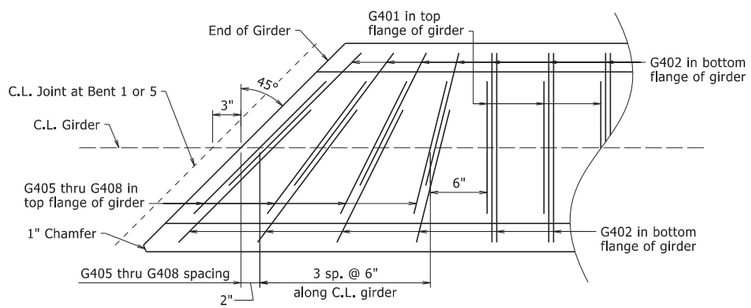
Looking Ahead
½" = 1'-0"

(3) Galvanized Threaded Inserts shall be Dayton-Richmond F-42 Loop Ferule Inserts or approved equal. ¾" Ø Galvanized Threaded Rods shall be ASTM A709, Grade 36 or AASHTO M 31 or M322 Type A, Grade 60. Galvanizing shall be in accordance with AASHTO M 232, Class C or ASTM B695, Class 50. These items will not be paid for directly but shall be considered subsidiary to the item "Prestressed Concrete Girders (Type III)".

(4) Measured along C.L. Bearing.

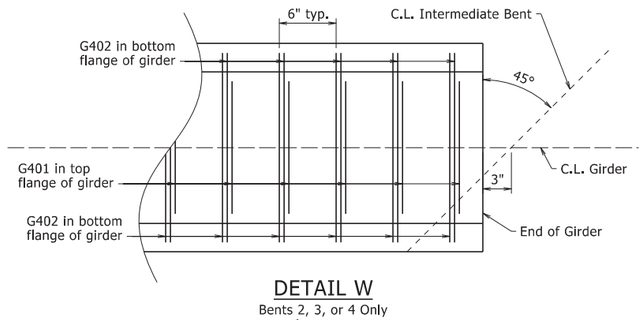
(5) 1'-9¾"; measured along C.L. Bearing.

(6) Rods shall be bent in field as necessary to accomodate for the skew in end span diaphragms only.



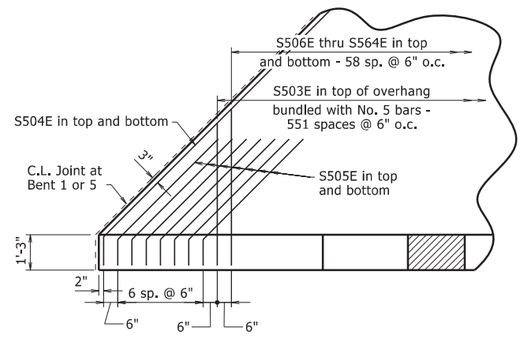
DETAIL V

Bent 1 or 5 Only
1½" = 1'-0"



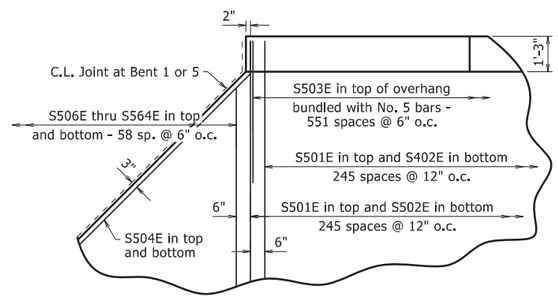
DETAIL W

Bents 2, 3, or 4 Only
1½" = 1'-0"



DETAIL E

⅜" = 1'-0"



DETAIL F

⅜" = 1'-0"

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BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS OF 280'-0" PRESTRESSED CONCRETE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: WAC DATE: 5/2022
CHECKED BY: DBS DATE: 8/10/2022
DESIGNED BY: NAC DATE: 3/2020
FILENAME: bbr6210x1_s1.dgn
SCALE: As Shown

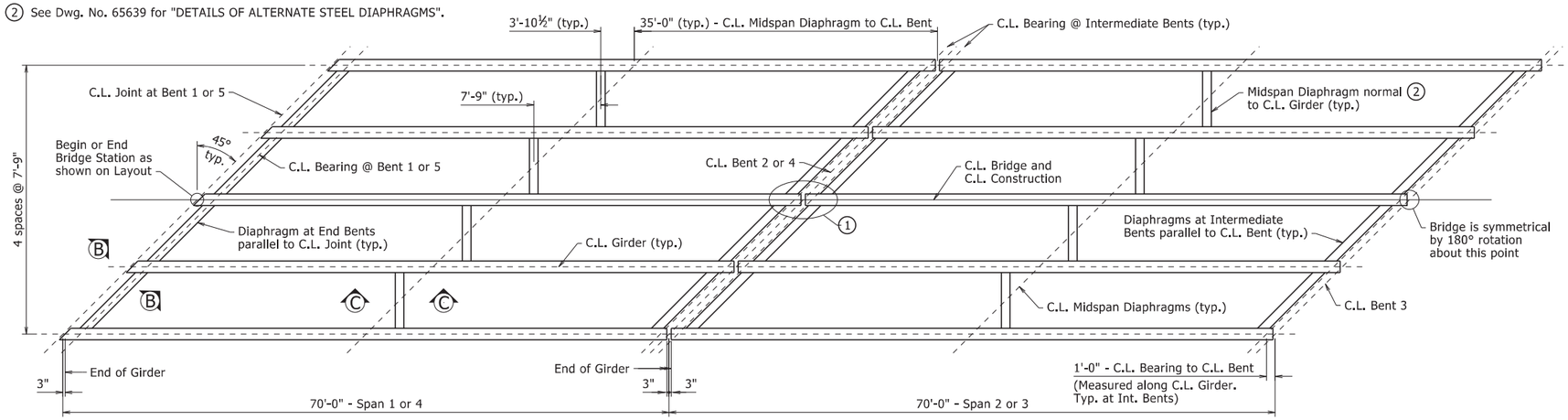
BRIDGE NO. 04949 DRAWING NO. 65643

PRINT DATE: 5/22/2023

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	BR6210	44	78
		04949 - 280'-0" UNIT - 65644				

(1) After erection, the ends of girders at all bents shall be blocked using temporary blocking to maintain proper location on bent caps until 72 hours after the diaphragms are poured.

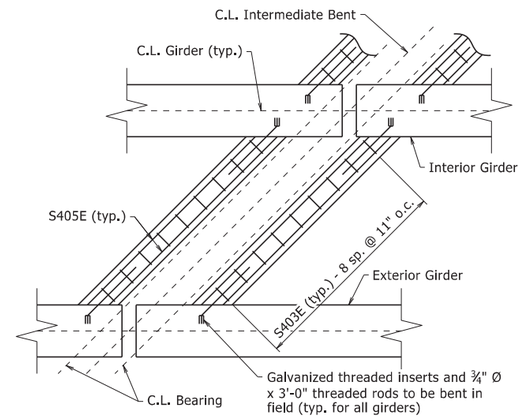
(2) See Dwg. No. 65639 for "DETAILS OF ALTERNATE STEEL DIAPHRAGMS".



For "SECTION C-C" see Dwg. No. 65639.

HALF FRAMING PLAN

⅛" = 1'-0"

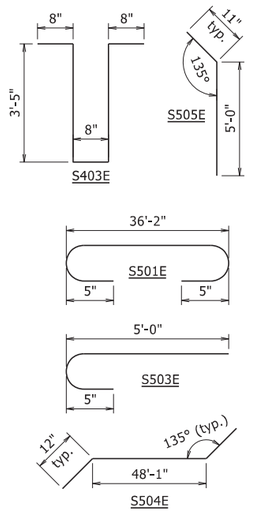


PLAN VIEW OF DIAPHRAGMS AT INTERMEDIATE BENTS

⅜" = 1'-0"

BAR LIST

MARK	NO. REQ'D	LENGTH	P.D.	BENDING DIAGRAMS
S401E	686	42'-0"	Str.	
S402E	246	36'-2"	Str.	
S403E	416	8'-6"	2"	
S404E	128	5'-11"	Str.	
S405E	256	8'-5"	Str.	
S501E	492	37'-4"	3¾"	
S502E	246	36'-2"	Str.	
S503E	1,104	5'-7"	3¾"	
S504E	4	50'-1"	3¾"	
S505E	28	5'-11"	3¾"	
S506E thru S564E	4 ea.	5'-6" to 34'-6"	Str.	
S701E	222	30'-0"	Str.	
(3) R400E	192	5'-3"	2½"	
(3) R401E	1,072	6'-4"	(3)	
(3) R402E	128	5'-6"	Str.	
(3) R403E	1,072	3'-6"	(3)	
(3) R404E	128	7'-8"	Str.	
(3) R405E	192	17'-8"	Str.	



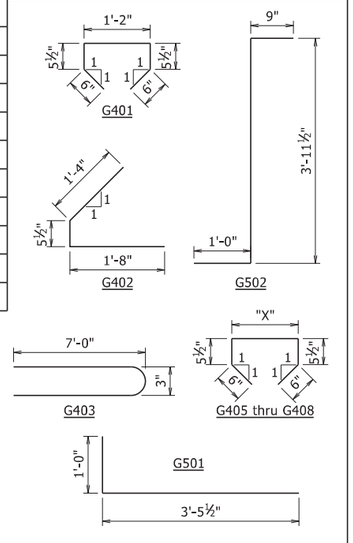
Dimensions are out to out of bars.

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

(3) For additional details and bending diagram of reinforcing bars in Bridge Traffic Rail and Wings, see Std. Dwg. No. 55070.

BAR LIST - PER GIRDER

MARK	NO. REQ'D	LENGTH	P.D.	"X"	BENDING DIAGRAMS
G301	"V"	1'-3"	Str.	-	
G401	"W"	2'-11"	2"	-	
G402	56	3'-4½"	2"	-	
G403	10	14'-1"	2½"	-	
G404	2	69'-6"	Str.	-	
G405	"X"	3'-5"	2"	1'-8"	
G406	"X"	3'-2½"	2"	1'-5½"	
G407	"X"	3'-0½"	2"	1'-3½"	
G408	"X"	2'-11½"	2"	1'-2½"	
G501	"Y"	4'-4"	3¾"	-	
G502	"Z"	5'-5½"	3¾"	-	



All bars in the Bar List will not be paid for directly, but will be considered subsidiary to the item "Prestressed Concrete Girders (Type III)".

At the Contractor's option, bars G405 thru G408 and the G402 bars may be furnished as one bar.

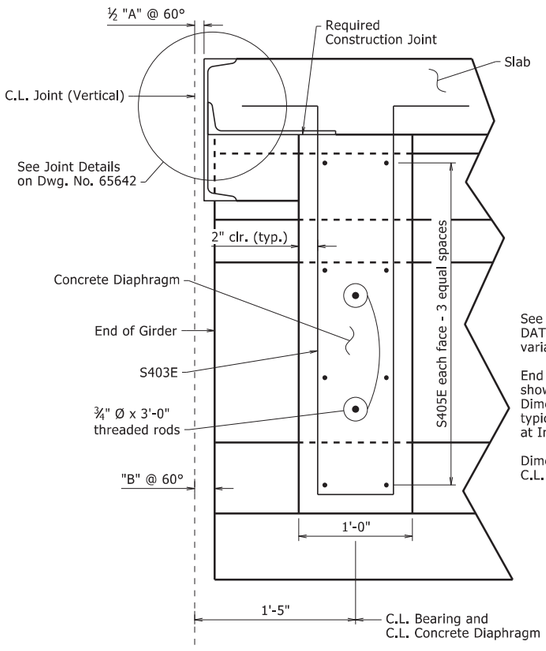
At the Contractor's option, ½" ø strands pulled to 2,000 lbs. may be substituted for bars G404.

Dimensions are out to out of bars.

GIRDER BAR LIST VARIABLES

	"V"
Ext. Girders	6
Int. Girders	12

	"W"	"X"	"Y"	"Z"
End Spans	24	1	42	194
Int. Spans	28	-	60	176



See "TABLE OF SILICONE JOINT DATA" on Dwg. No. 65642 for variables "A" and "B".

End of Bridge Diaphragm near Joint shown, Normal to C.L. Joint. Dimensions and reinforcing is typical for End of Span Diaphragms at Intermediate Bents.

Dimensions shown are normal to C.L. Joint.

SECTION B-B

1½" = 1'-0"

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BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF 280'-0" PRESTRESSED CONCRETE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

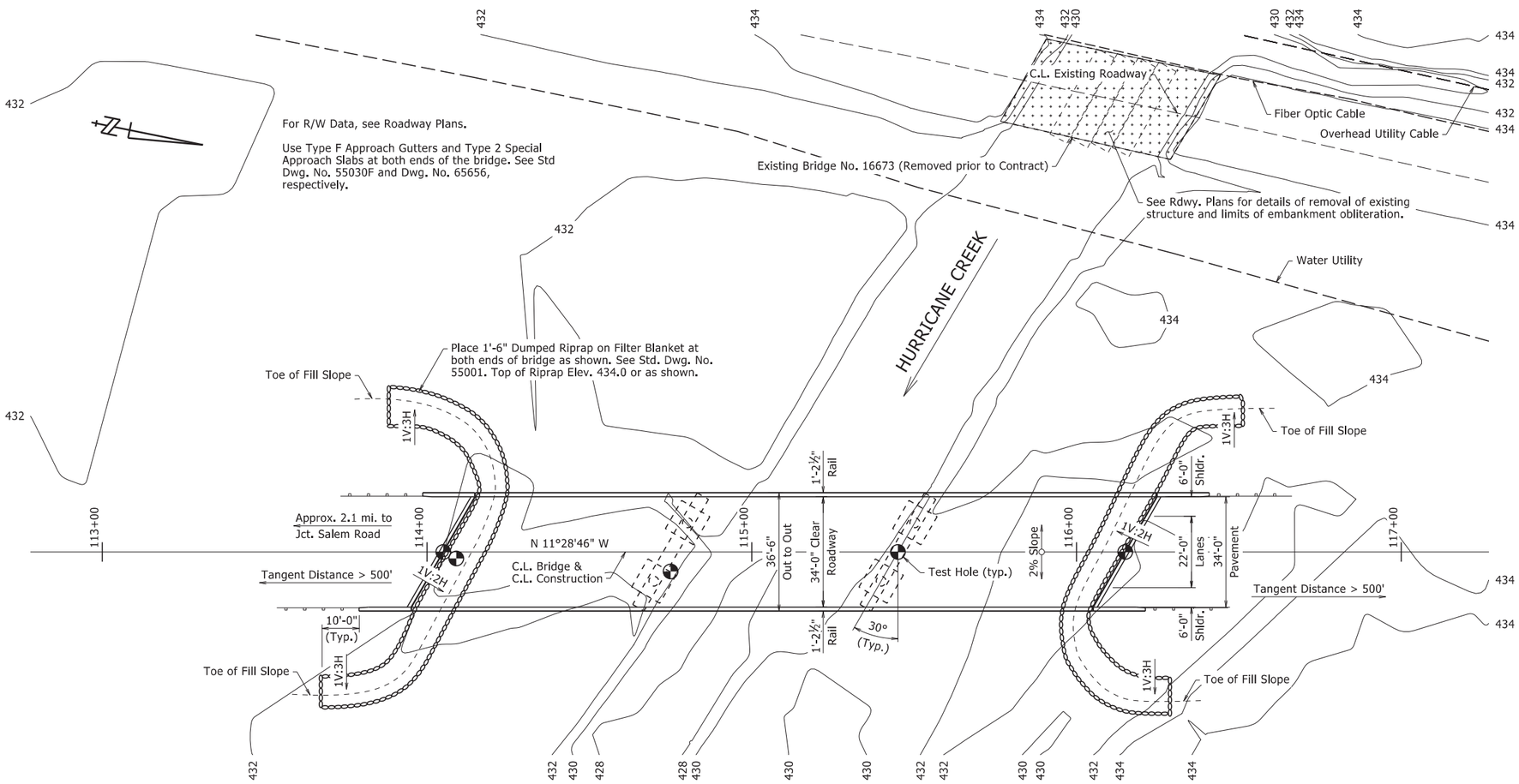
LITTLE ROCK, ARK.

DRAWN BY: WAC DATE: 5/2022 FILENAME: bbr6210x1_s1.dgn
CHECKED BY: DBS DATE: 8/11/2022 SCALE: As Shown
DESIGNED BY: NAC DATE: 3/2020

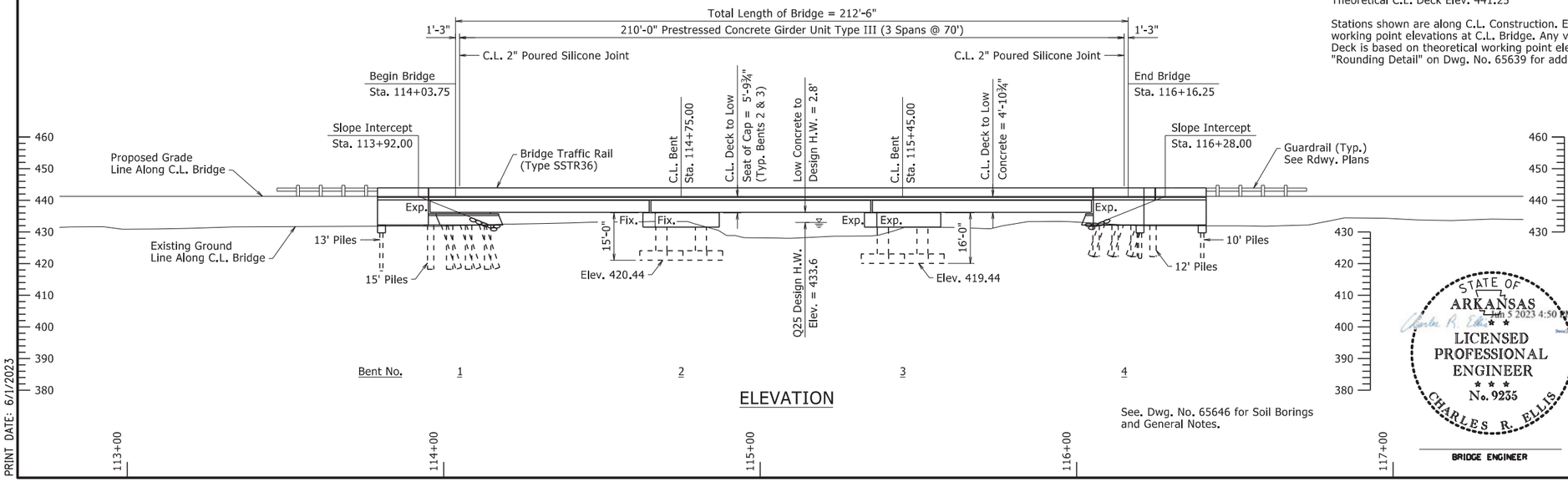
BRIDGE NO. 04949 DRAWING NO. 65644

PRINT DATE: 5/22/2023

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	BR6210	45	78
		04950 -		LAYOUT	- 65645	



PLAN



ELEVATION

Bridge is in Level Grade
Theoretical C.L. Deck Elev. 441.25

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 Dwg. No. 65639 for additional information.

HYDRAULIC DATA

Flood Description	Frequency	(2) Total Discharge	Discharge This Site	(1) Natural Water Surface Elevation	Water Surface Elevation With Backwater
	Years	CFS	CFS	FEET	FEET
Design	25	5,220	3,265	434.1	433.6
Base	100	7,590	4,533	434.7	434.4
Extreme	500	10,720	6,286	435.4	435.4
Overtopping	>500	-	-	-	-

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

(2) The total discharge includes flow at this site and Hurricane Creek Site 1.

Q100 backwater elevation for existing structure= 435.9 ft.

Proposed Low Bridge Chord Elev. = 436.35 ft.

Drainage Area = 10.80 square miles

See. Dwg. No. 65646 for Soil Borings and General Notes.

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CHARLES R. ELLIS
BRIDGE ENGINEER

PRINT DATE: 6/1/2023

SHEET 1 OF 2
LAYOUT OF BRIDGE
SAMPLES ROAD OVER HURRICANE CREEK
HURRICANE CREEK STR. & APPRS. NO. 2 (S)
SALINE COUNTY

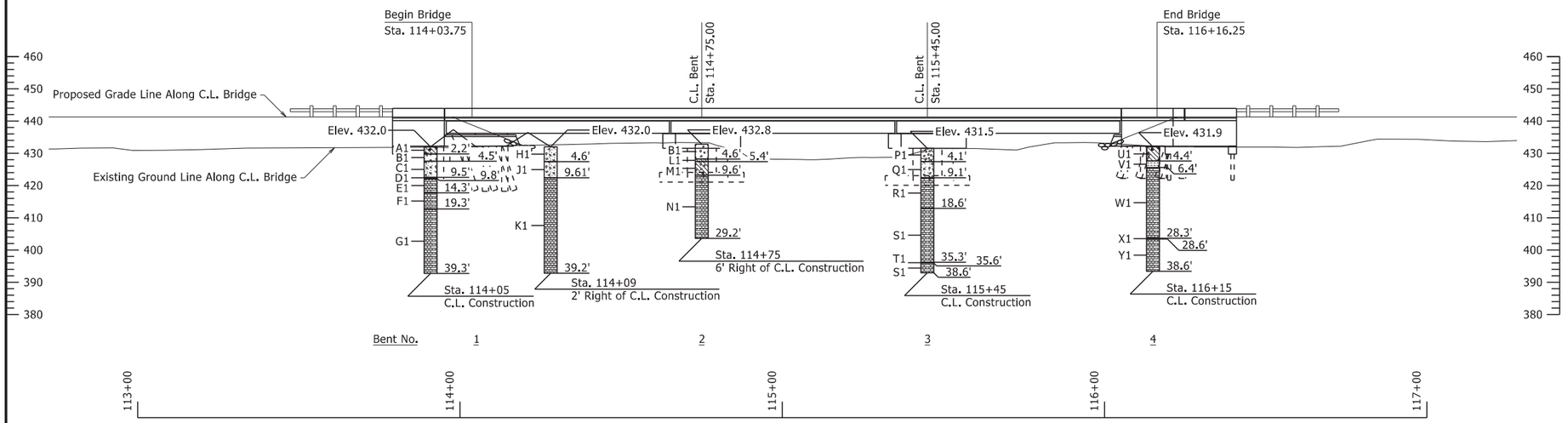
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: NAC DATE: 6/2/2021
CHECKED BY: CMW DATE: 4/6/2022
DESIGNED BY: LJB DATE: 6/2021
FILENAME: bbr6210_l1.dgn
SCALE: 1"=20'

BRIDGE NO. 04950 DRAWING NO. 65645

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	BR6210	46	78
			04950 -	LAYOUT	- 65646	



BORING ELEVATION

BORING LEGEND

A1 - Sandy Clay with Organic Matter
B1 - Gravel
C1 - Moist, Medium Dense, Brown Sand with Gravel
D1 - SHALE - Weathered, Medium Hard, Brown
E1 - LIMESTONE WITH INTERBEDDED SHALE - Weathered, Moderately Hard, Slickensided, Frequent Fractures and Mineral Veins, Slightly Dipping, Brown and Gray
F1 - LIMESTONE WITH INTERBEDDED SHALE - Slightly Weathered, Moderately Hard, Slickensided, Frequent Fractures and Mineral Veins, Slightly Dipping, Brown and Gray
G1 - LIMESTONE WITH INTERBEDDED SHALE - Unweathered, Hard, Slickensided, Frequent Fractures and Mineral Veins, Slightly Dipping, Brown and Gray
H1 - Wet, Brown, Sand with Gravel
J1 - Wet, Dense, Brown Gravel with Sand
K1 - LIMESTONE WITH INTERBEDDED SANDSTONE AND SHALE - Unweathered, Hard, Frequent Fractures, Occasional Mineral Veins, Slightly Dipping, Gray
L1 - Moist, Very Hard, Brown and White Sandy Clay
M1 - Moist, Very Hard, White and Gray Clay with Gravel (Quartz Fragments)
N1 - LIMESTONE WITH INTERBEDDED SHALE - Unweathered, Hard, Frequent to Occasional Fractures and Mineral Veins, Trace Pyrite, Slickensided, Gray
P1 - Gravel and Cobbles
Q1 - Wet, Medium Dense, Brown Gravel with Sand
R1 - LIMESTONE WITH INTERBEDDED SHALE - Unweathered, Hard, Frequent Fractures, Trace Pyrite, Gray
S1 - LIMESTONE WITH INTERBEDDED SHALE - Unweathered, Hard, Occasional Fractures, Frequent to Occasional Mineral Veins, Trace Pyrite, Gray
T1 - Quartz Layer
U1 - Clay with Organic Matter
V1 - SHALE - Weathered, Medium Hard, Gray
W1 - LIMESTONE WITH INTERBEDDED SHALE - Unweathered, Hard, Occasional Fractures, Slickensided, Slightly Dipping, Trace Pyrite, Light and Dark Gray
X1 - Quartz and Calcite Layer
Y1 - LIMESTONE WITH INTERBEDDED SHALE - Unweathered, Hard, Occasional Fractures, Slickensided, Slightly Dipping, Trace Pyrite, Light and Dark Gray

"N" VALUES

Sta. 114+05 - C.L. Construction
5.0 - 6.0, N=29
9.5 - 9.8, N=10 (4")

Sta. 114+09 - 2' Right of C.L. Construction
5.1 - 6.1, N=37
9.6 - 9.6, N=10 (0")

Sta. 114+75 - 6' Right of C.L. Construction
5.1 - 6.1, N=63
9.6 - 9.6, N=11 (0")

Sta. 115+45 - C.L. Construction
4.6 - 5.6, N=23
9.1 - 9.1, N=11 (0")

Sta. 116+15 - C.L. Construction
4.9 - 5.8, N=66 (11")

GENERAL NOTES

BENCH MARK: Vertical Control Data are shown on the Survey Control Data Sheets.

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

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Eighth Edition (2017).

LIVE LOADING: HL-93

SEISMIC ZONE: 1 SITE CLASS: B S_{D1}: 0.081

SEISMIC OPERATIONAL CLASSIFICATION: Other

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (superstructure)	f'c = 4,000 psi
Class S Concrete (substructure)	f'c = 3,500 psi
Class S Concrete (prestressed concrete girders)	f'c = 8,000 psi
Reinforcing Steel (Grade 60, AASHTO M 31 or M 322, Type A)	fy = 60,000 psi
Structural Steel (ASTM A709, Gr. 50 or 50W)	Fy = 50,000 psi
Structural Steel (ASTM A709, Gr. 36)	Fy = 36,000 psi
Prestressing Strands (AASHTO M 203, Gr. 270)	f_{pu} = 270,000 psi

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

STEEL PILING: All piling shall be HP 14 x 73 (Grade 50) and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 133.5 tons per pile and into the material designated as Shale or Limestone on the boring legend. Minimum penetration shall be 10' below bottom of cap for all piles in Bent 1 and Bent 4. Piling in end bents shall be driven after embankment to bottom of cap is in place. Lengths of piling shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with Section 805. The Contractor shall use approved steel H-Pile driving points on all piles.

PREBORING: Preboring is required for all piling. Preboring shall be to a minimum depth of 3' into material designated as Unweathered Shale or Limestone on the boring legend, or to a depth sufficient to proved the specified minimum pile penetration, whichever is greater. The actual size and depth of preboring are to be determined in the field by the Engineer. The Contractor shall be responsible for keeping prebored holes free from debris prior to backfilling which may require casings or other methods. After driving is completed, the prebored holes shall be backfilled with Class S Concrete to the top of rock and the remaining length backfilled in accordance with Subsection 805.08(a). Any cost associated with achieving the minimum pile penetration, including any backfill and casings, shall not be paid for directly but shall be considered subsidiary to the item "PREBORING".

SPREAD FOOTING: Footings shall be set a minimum of 2' into material designated as Unweathered Limestone with Interbedded Shale on the boring legend. The top of the footings at Bents 2 and 3 shall be set a minimum 2' below the channel bottom as determined by the lowest channel elevation within the footprint of the footing. Foundations for footings shall be prepared in accordance with Subsection 801.04. Rock excavations shall be made to neat lines of the concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting. Concrete in footings shall be poured directly against excavated surfaces of rock. Excavations shall be backfilled and compacted to the level of the existing ground, in accordance with Subsection 801.08.

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

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

DETAIL DRAWINGS:	DRAWING NO(S).
End Bents	65647-65649
Intermediate Bents	65650-65651
Elastomeric Bearings	65654
210'-0" Prestressed Concrete Girder Unit Type III	65638-65642 & 65652-65653
Steel H-Piling	65642
Type F Approach Gutters	55030F
Type 2 Special Approach Slab	65656
Bridge Traffic Rail	55070

EXISTING BRIDGE: Existing Bridge No. 16673 (Log Mile 1.86) is 19.5' wide (18.4' clear roadway) and 57.0' long and consists of a reinforced concrete slab spans supported by reinforced concrete pier walls. The existing bridge is located approximately 175' upstream from the proposed new bridge. The existing bridge has been removed and replaced with temporary pipe culverts.

REMOVAL AND SALVAGE: After the new bridge is open to traffic, the Contractor shall remove the existing pipe culverts in accordance with Section 202. Any other remnant material or foundation elements from existing Bridge No. 16673 shall be removed in accordance with Section 205. All material from the existing crossing and existing bridge shall become the property of the Contractor except the Pipe Culverts which shall remain the property of the County. The Contractor shall provide temporary storage and on-site loading onto County equipment for removal of salvage items from the site. This work shall be considered incidental to the item "Removal and Disposal of Pipe Culverts".

MAINTENANCE OF TRAFFIC: See Roadway Plans.

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Jun 5 2023 4:51 PM
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 2 OF 2
LAYOUT OF BRIDGE
SAMPLES ROAD OVER HURRICANE CREEK
HURRICANE CREEK STR. & APPRS. NO. 2 (S)
SALINE COUNTY

ROUTE SEC.

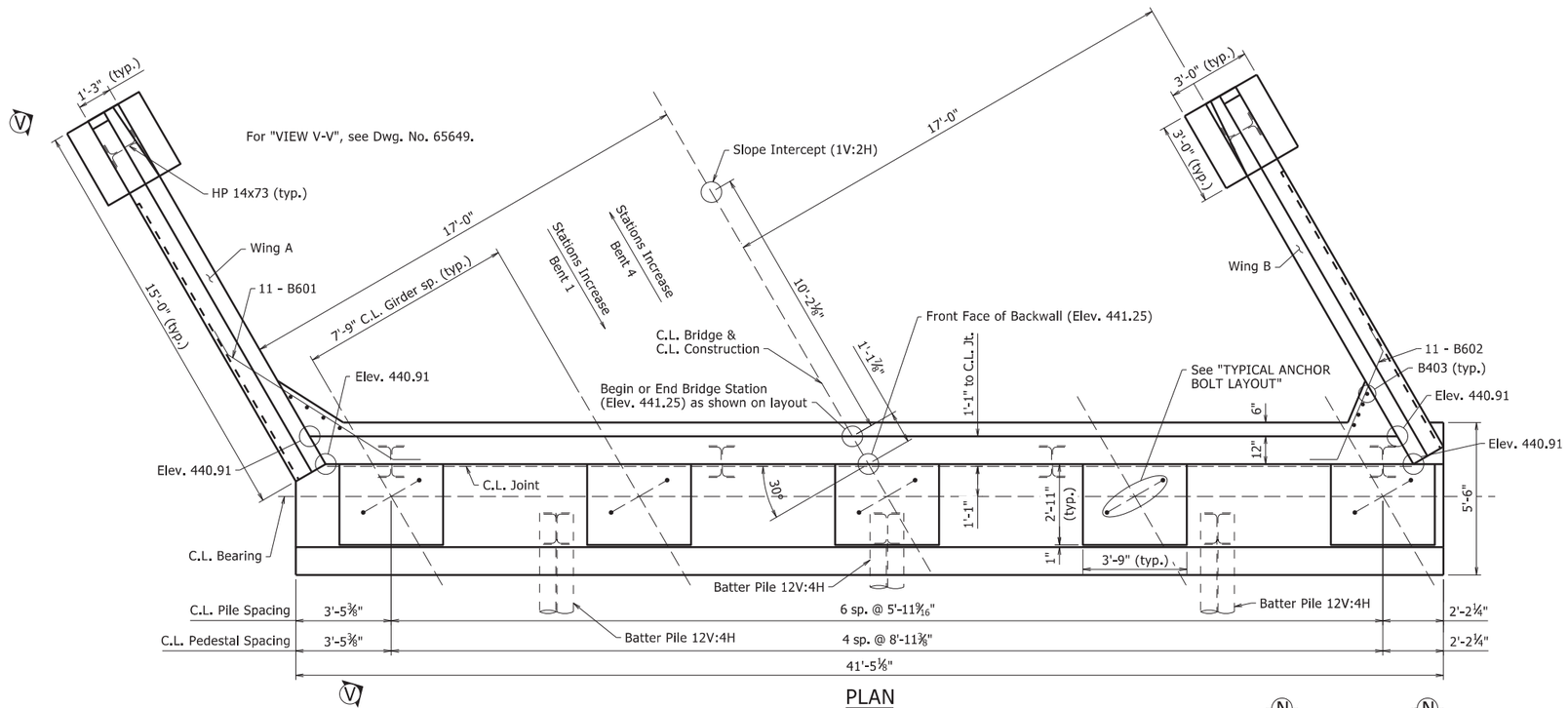
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: NAC DATE: 6/2/2021 FILENAME: bbr6210_l1.dgn
CHECKED BY: CMW DATE: 4/6/2022 SCALE: 1"=20'
DESIGNED BY: LJB DATE: 6/2021

BRIDGE NO. 04950 DRAWING NO. 65646

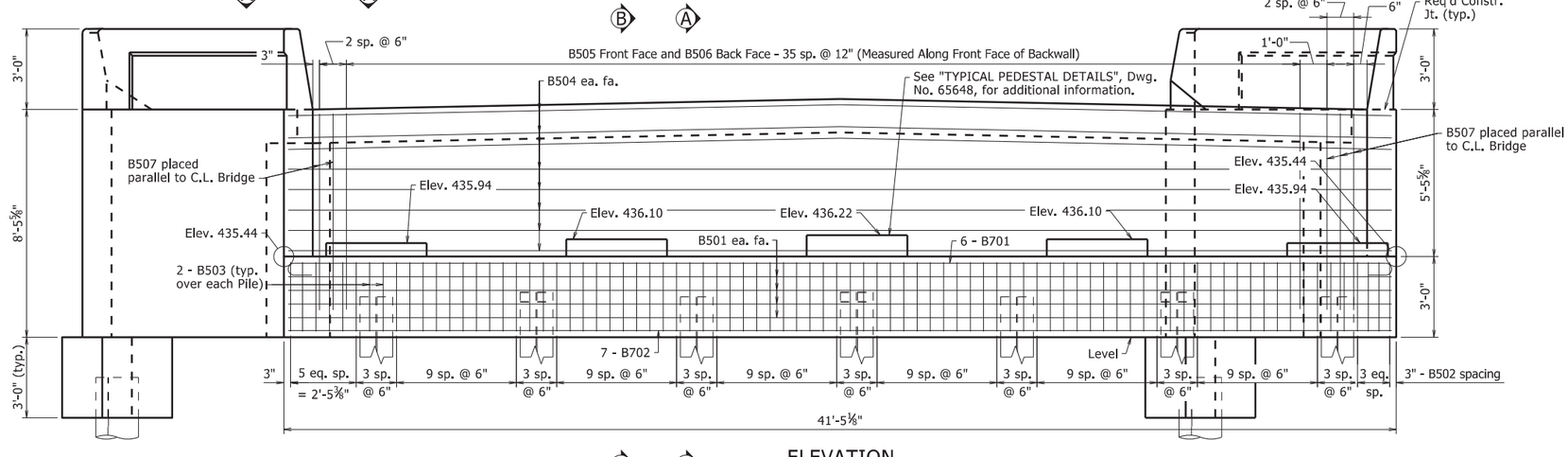
PRINT DATE: 6/1/2023

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	BR6210	47	78
		04950 - END BENT DETAILS - 65647				



PLAN

⅜" = 1'-0"



ELEVATION

⅜" = 1'-0"

BENT 1 - Looking Back

BENT 4 - Looking Ahead

For "SECTION A-A", "SECTION B-B", "VIEW M-M", and "VIEW N-N", see Dwg. No. 65648.

No portion of the backwall shall be poured before the girders are in place. The portion of the backwall above the optional construction joint at the paving bracket shall not be placed until the adjacent deck pour has been made. Refer to the "EXPANSION DEVICE INSTALLATION AT END BENTS" note on Dwg. No. 65642. No heavy construction equipment shall be allowed within 10' of the backwall before the deck concrete placement for the adjacent span has been completed.

GENERAL NOTES

Structural Steel in Bent 1 and Bent 4 shall be ASTM A709, Gr. 50W and shall be paid for as "Structural Steel in Beam Spans (A709, Gr. 50W)".

All piling shall be Grade 50. For Details of steel piling, see Std. Dwg. No. 55020.

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

For Details of Wings, see Dwg. No. 65649.

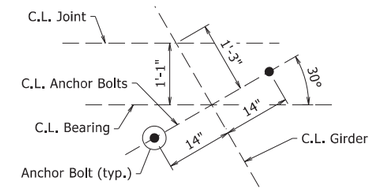
Pedestals shall be cast level at the elevations shown. For Details of Pedestals, see Dwg. No. 65648.

For Bar List, see Dwg. No. 65648.

All concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 3,500 psi and shall be poured in the dry. All exposed corners shall be chamfered ¾" unless noted otherwise.

Top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see Layout.



See Dwg. No. 65654 for Details of Elastomeric Bearings.

TYPICAL ANCHOR BOLT LAYOUT

¾" = 1'-0"

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LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 1 OF 3
DETAILS OF END BENTS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

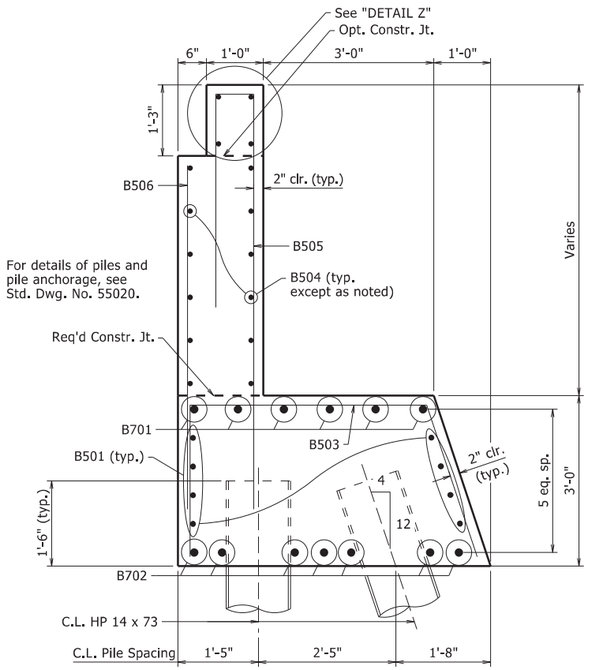
LITTLE ROCK, ARK.

DRAWN BY: LHC DATE: 8/09/2022 FILENAME: bbr6210_b1x2.dgn
CHECKED BY: WAC DATE: 8/22/2022 SCALE: AS SHOWN
DESIGNED BY: NAC DATE: 03/2020

BRIDGE NO. 04950 DRAWING NO. 65647

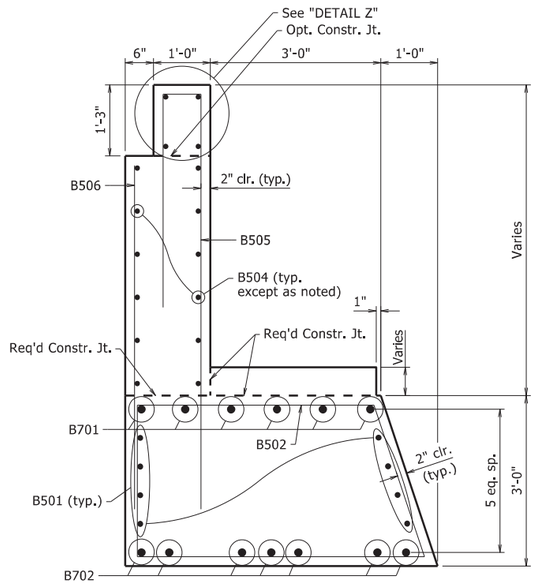
PRINT DATE: 6/5/2023

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		04950 - END BENT DETAILS - 65648				



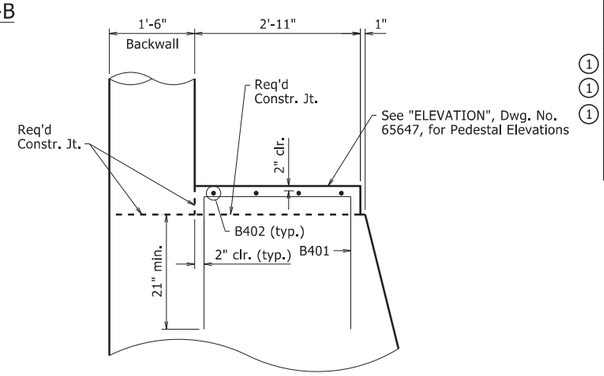
SECTION A-A

¾" = 1'-0"



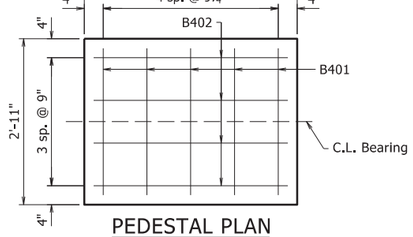
SECTION B-B

¾" = 1'-0"



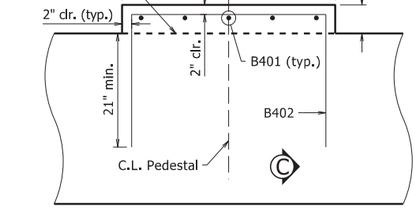
SECTION C-C

¾" = 1'-0"



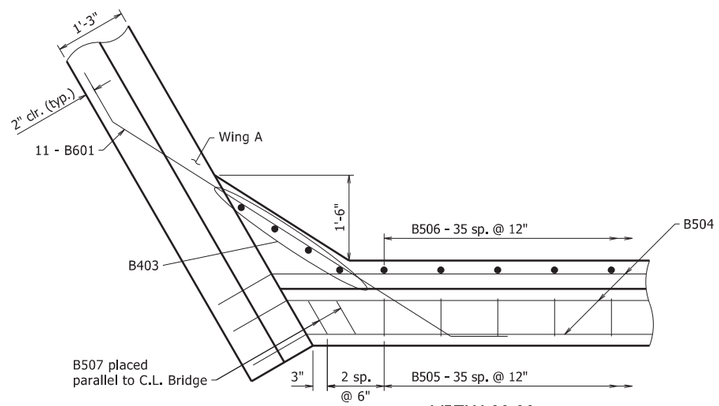
PEDESTAL PLAN

¾" = 1'-0"



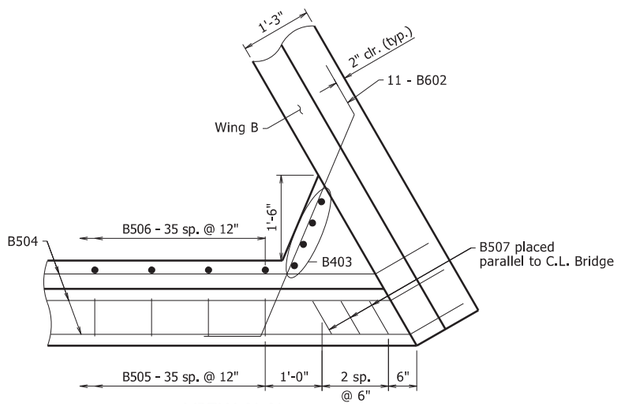
TYPICAL PEDESTAL DETAILS

¾" = 1'-0"



VIEW M-M

¾" = 1'-0"



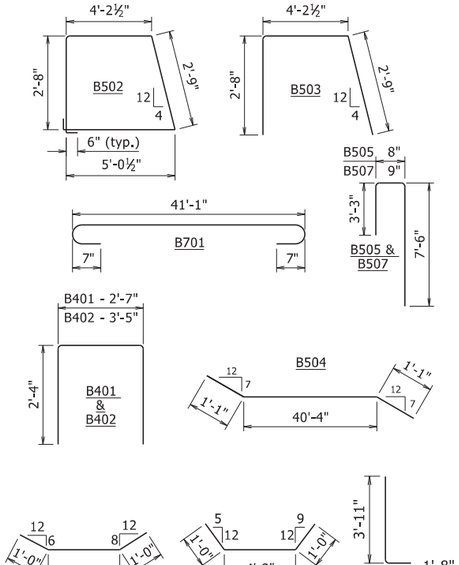
VIEW N-N

¾" = 1'-0"

BAR LIST - PER BENT

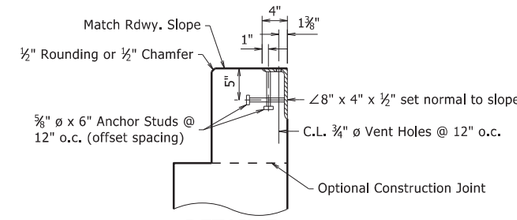
	MARK	NO. REQ'D.	LENGTH	PIN DIA.
	B401	25	7'-1"	2"
	B402	20	7'-11"	2"
	B403	8	6'-10"	Str.
	B501	8	41'-1"	Str.
	B502	70	15'-2"	2½"
	B503	14	9'-5"	2½"
	B504	16	42'-6"	3¾"
	B505	36	11'-3"	3¾"
	B506	36	6'-3"	Str.
	B507	5	11'-4"	3¾"
	B601	11	9'-0"	4½"
	B602	11	6'-3"	4½"
	B701	6	42'-9"	5¼"
	B702	7	41'-1"	Str.
(1)	W401E	60	3'-11"	3¾"
	W601	64	8'-1"	Str.
	W701	52	14'-8"	Str.
	F601	28	5'-6"	4½"
	F602	20	2'-8"	Str.
(1)	R401E	60	6'-4"	2½"
(1)	R402E	8	5'-6"	Str.
(1)	R404E	16	14'-8"	Str.

BENDING DIAGRAMS



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

(1) See Std. Dwg. No. 55070 for details of Rail bars.



DETAIL Z

No Scale

For additional joint details, see Std. Dwg. No. 65642.

Concrete shall be hand packed under the joint armor in the backwall.

Transverse spacing between top anchor studs and vent holes shall be 6".

STATE OF ARKANSAS
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SHEET 2 OF 3
DETAILS OF END BENTS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

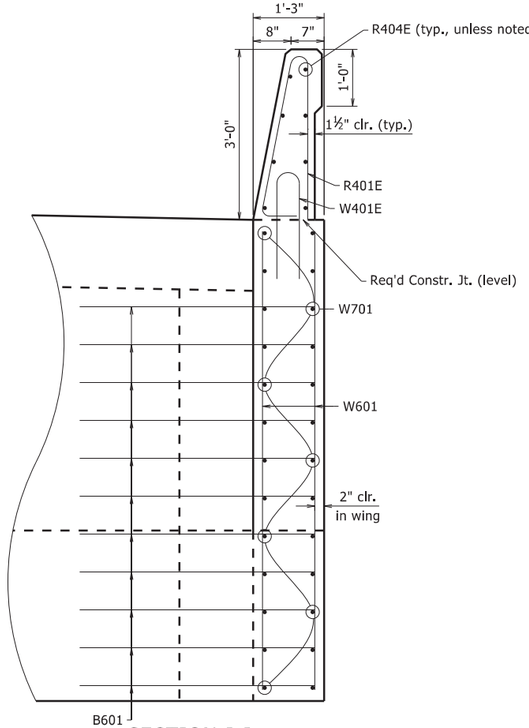
LITTLE ROCK, ARK.

DRAWN BY: LHC DATE: 8/09/2022
CHECKED BY: WAC DATE: 8/22/2022
DESIGNED BY: NAC DATE: 3/2020
FILENAME: bbr6210_b1x2.dgn
SCALE: AS SHOWN

BRIDGE NO. 04950 DRAWING NO. 65648

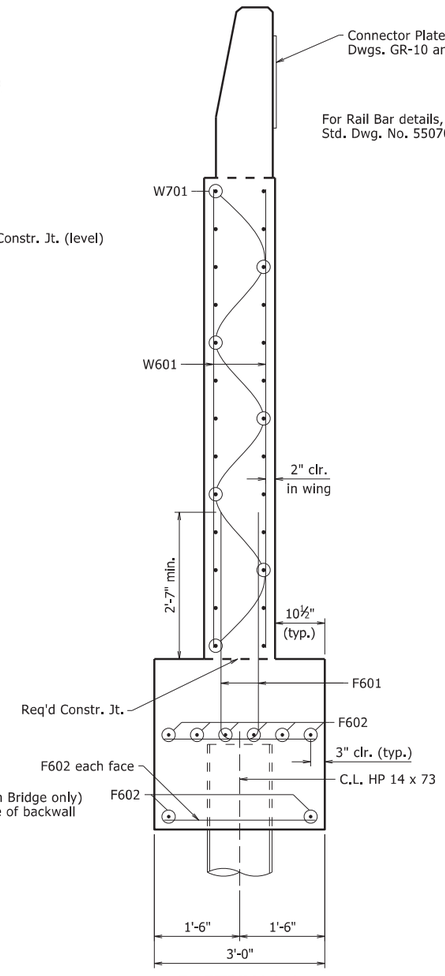
PRINT DATE: 4/25/2023

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
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		04950 - END BENT DETAILS - 65649				



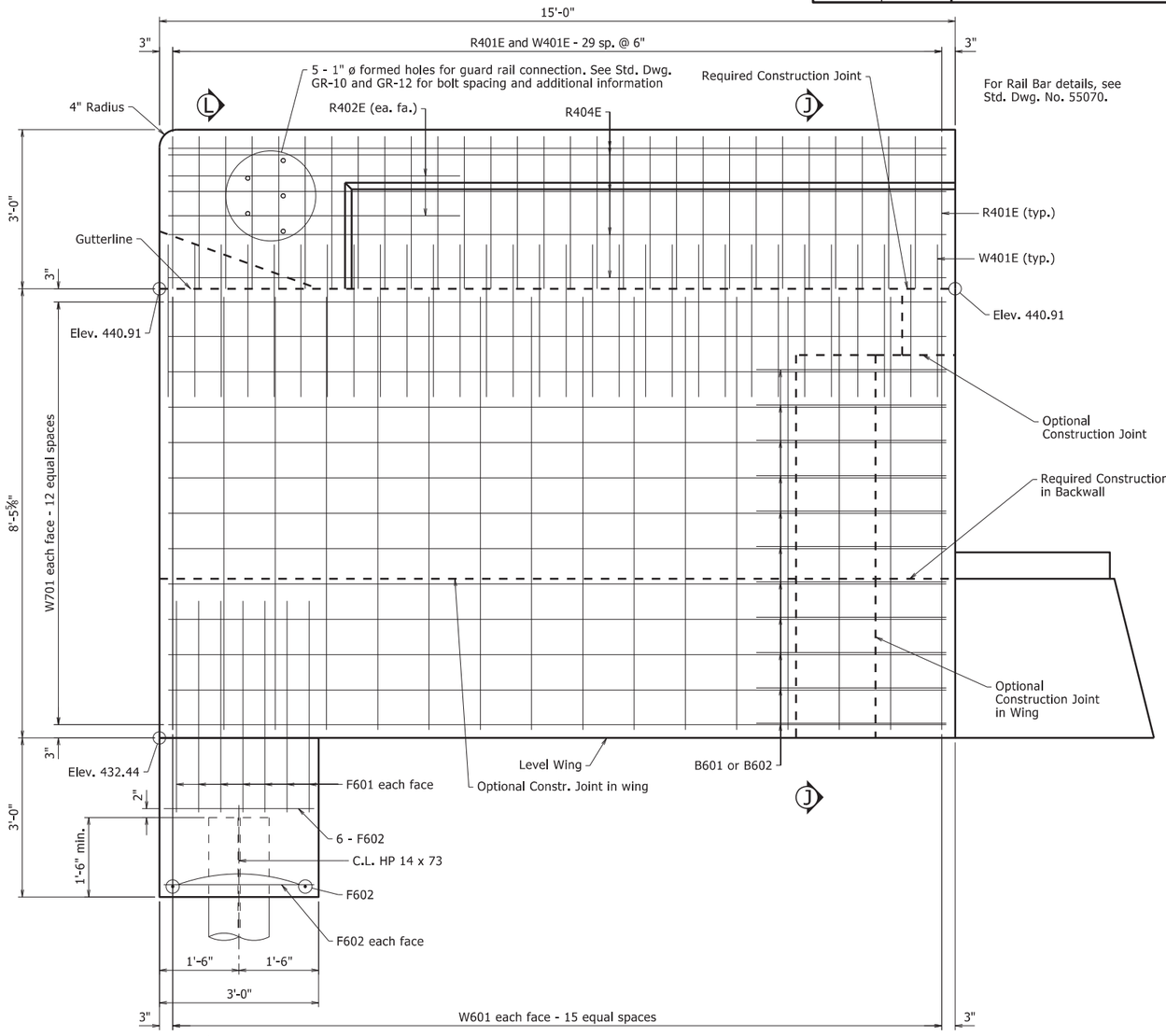
SECTION J-J

¾" = 1'-0"



SECTION L-L

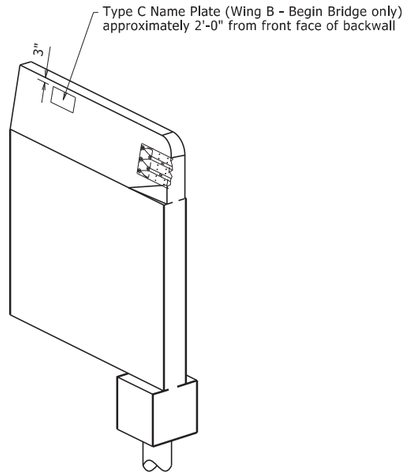
¾" = 1'-0"



VIEW V-V

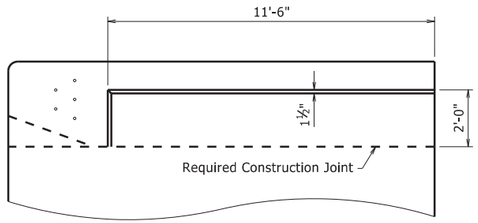
Wing A shown. Wing B similar

¾" = 1'-0"



THREE DIMENSIONAL VIEW AT WING & RAIL

No Scale



LIMITS OF ENHANCEMENT

⅜" = 1'-0"

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CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 3 OF 3
DETAILS OF END BENTS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

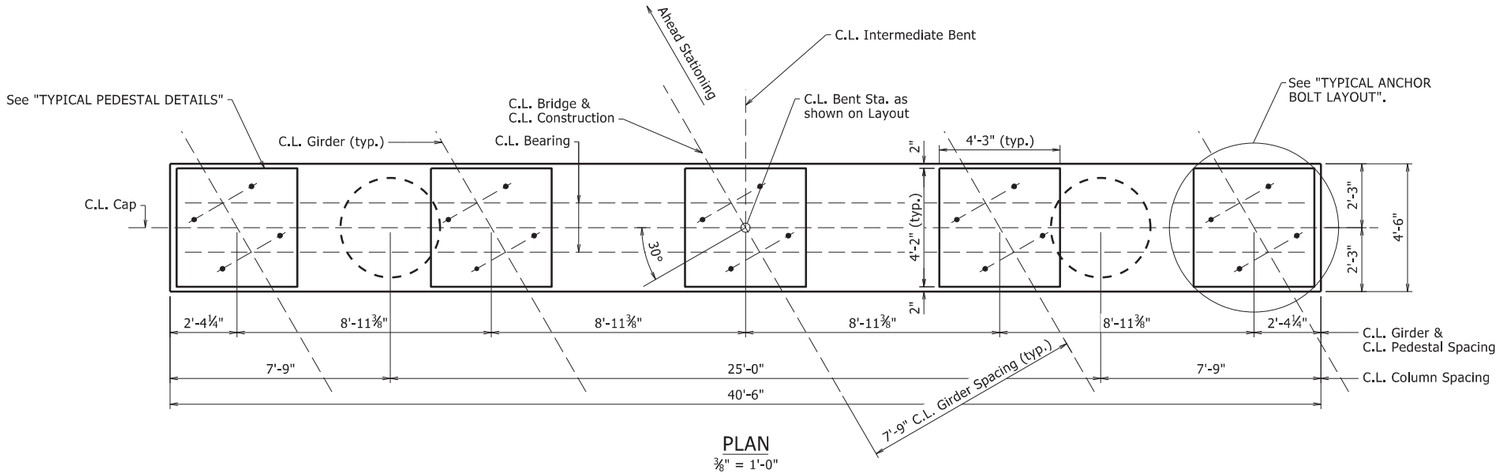
LITTLE ROCK, ARK.

DRAWN BY: LHC DATE: 8/10/2022 FILENAME: bbr6210_b1x2.dgn
CHECKED BY: WAC DATE: 8/22/2022 SCALE: AS SHOWN
DESIGNED BY: NAC DATE: 3/2020

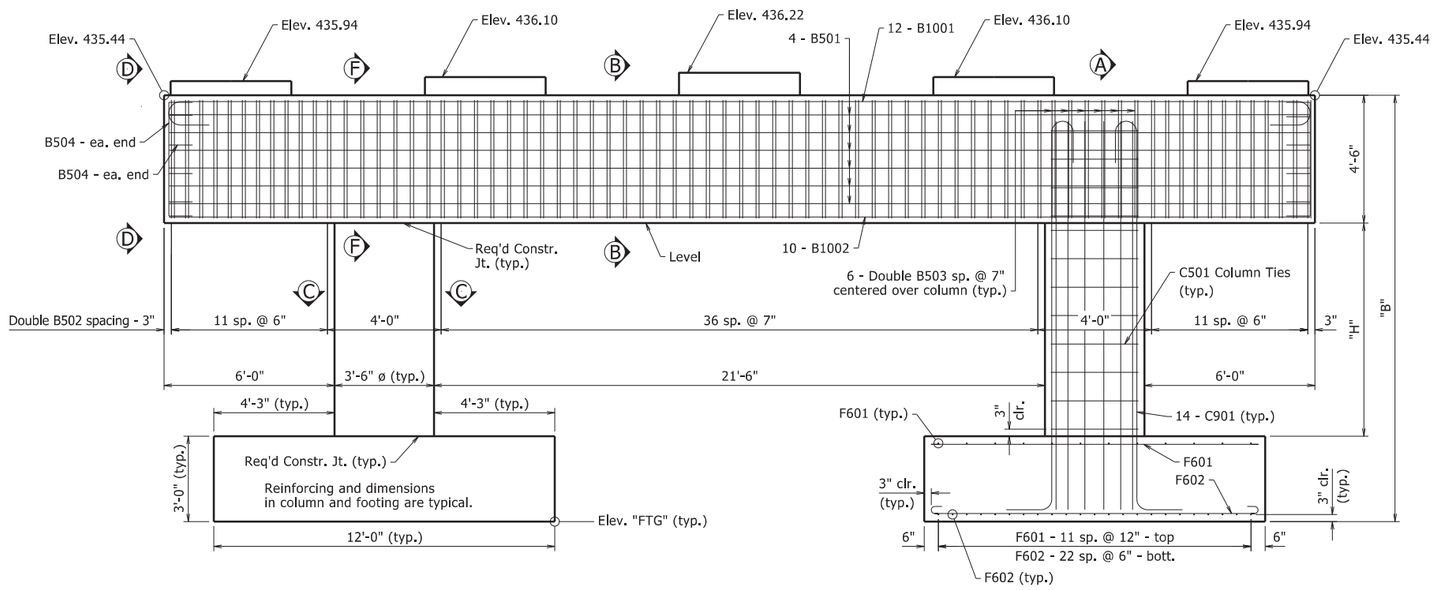
BRIDGE NO. 04950 DRAWING NO. 65649

PRINT DATE: 6/5/2023

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	BR6210	50	78
		04950 - INT. BENT DETAILS - 65650				



PLAN
⅜" = 1'-0"

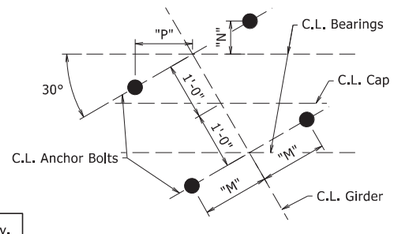


ELEVATION
⅜" = 1'-0"
Looking Ahead

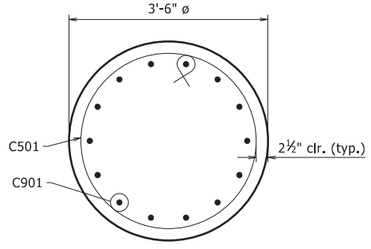
For "SECTION A-A", "SECTION B-B", and "SECTION E-E", see Dwg. No. 65651.

TABLE OF VARIABLES

Bent No.	"B"	"H"	"E"	"F"	"M"	"N"	"P"	"T"	"L"	Elev. "FTG"
2	15'-0"	7'-6"	7	24	16¼"	8⅛"	14 1/16"	13'-9"	16'-4"	420.44
3	16'-0"	8'-6"	8	26	14"	7"	12⅛"	14'-9"	17'-4"	419.44



TYPICAL ANCHOR BOLT LAYOUT
¾" = 1'-0"



SECTION C-C
¾" = 1'-0"

GENERAL NOTES

Structural Steel in Bent 1 and Bent 4 shall be ASTM A709 Gr. 50W and shall be paid for as "Structural Steel in Beam Spans (A709, Gr. 50W)".

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

Pedestals shall be cast level at the elevation shown.

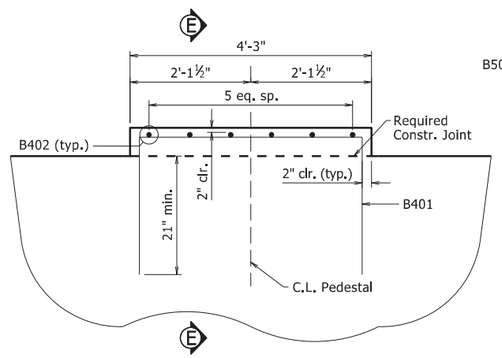
All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

For Bar List and additional Sections, see Dwg. No. 65651.

All concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 3,500 psi and shall be poured in the dry. All exposed corners shall be chamfered ¾" unless noted otherwise.

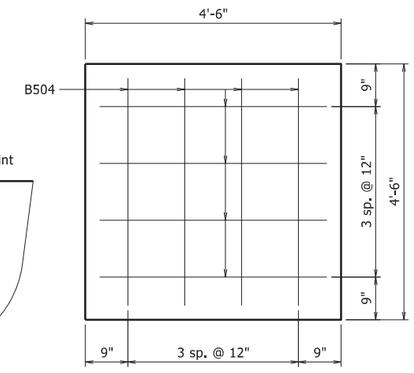
Top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see Layout.



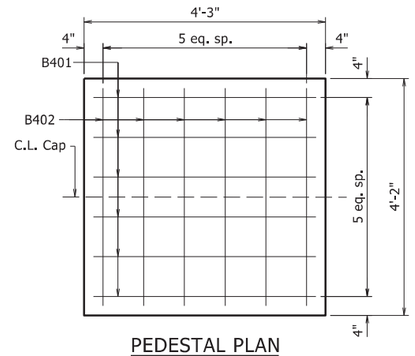
TYPICAL PEDESTAL DETAILS
¾" = 1'-0"

Note:
Bar B504 shall be placed to maintain a 2" clear cover to the end of the cap.

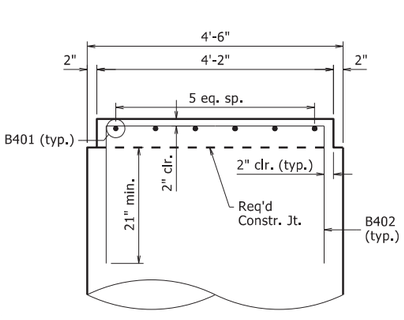


Cap Reinforcing not shown for clarity.

VIEW D-D
¾" = 1'-0"



PEDESTAL PLAN
¾" = 1'-0"



SECTION E-E
¾" = 1'-0"

STATE OF ARKANSAS
Jun 5 2023 4:51 PM
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS OF INTERMEDIATE BENTS

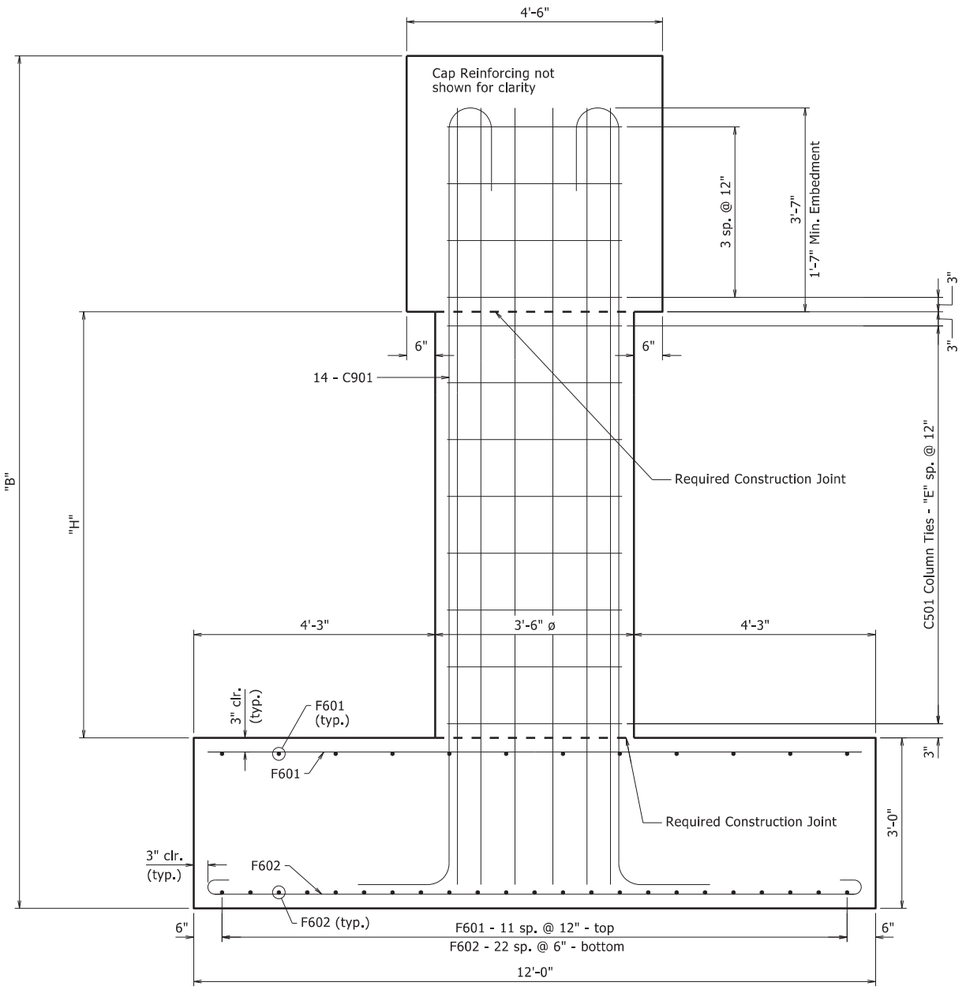
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: LHC DATE: 8/09/2022
CHECKED BY: WAC DATE: 8/22/2022
DESIGNED BY: NAC DATE: 3/2020
FILENAME: bbr6210_b2x2.dgn
SCALE: AS SHOWN

BRIDGE NO. 04950 DRAWING NO. 65650

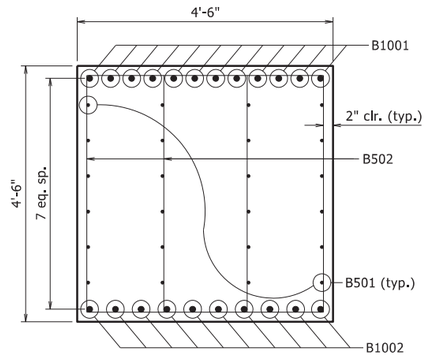
PRINT DATE: 6/1/2023

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
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		04950 - INT. BENT DETAILS - 65651				

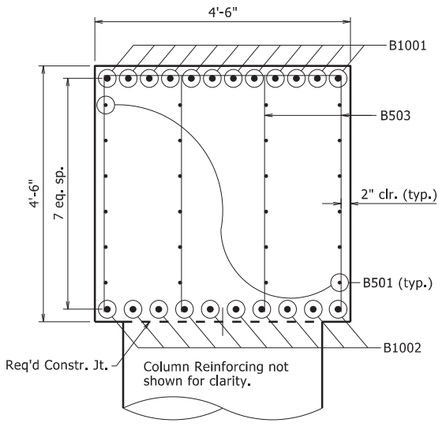


SECTION A-A

See "TABLE OF VARIABLES" on Dwg. No. 65650 for variables "B", "H", and "E".



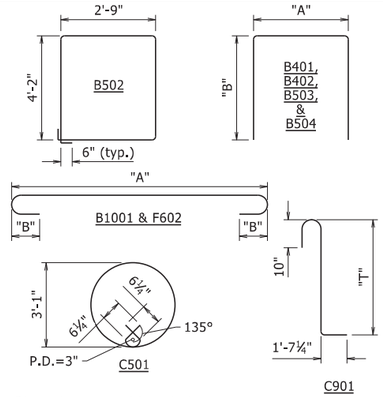
SECTION B-B



SECTION F-F

BAR LIST - PER BENT

MARK	NO. REQ'D.	LENGTH	"A"	"B"	PIN DIA.	BENDING DIAGRAMS
B401	30	8'-7"	3'-11"	2'-5"	2"	
B402	30	8'-6"	3'-10"	2'-5"	2"	
B501	24	40'-2"	-	-	Str.	
B502	122	14'-4"	-	-	2½"	
B503	24	10-10½"	2'-9"	4'-2"	2½"	
B504	16	5'-5½"	4'-0"	10"	2½"	
B1001	12	43'-0"	40'-2"	11½"	10"	
B1002	10	40'-2"	-	-	Str.	
C501	"F"	11'-0"	-	-	3¾"	
C901	28	"L"	-	-	9"	
F601	48	11'-6"	-	-	Str.	
F602	92	12'-10"	11'-6"	6"	4½"	



See "TABLE OF VARIABLES" on Dwg. No. 65650 for variables "F", "L", and "T".

Dimensions are out to out of bars.

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No. 9235
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BRIDGE ENGINEER
Jan 5 2023 4:51 PM

SHEET 2 OF 2
DETAILS OF INTERMEDIATE BENTS

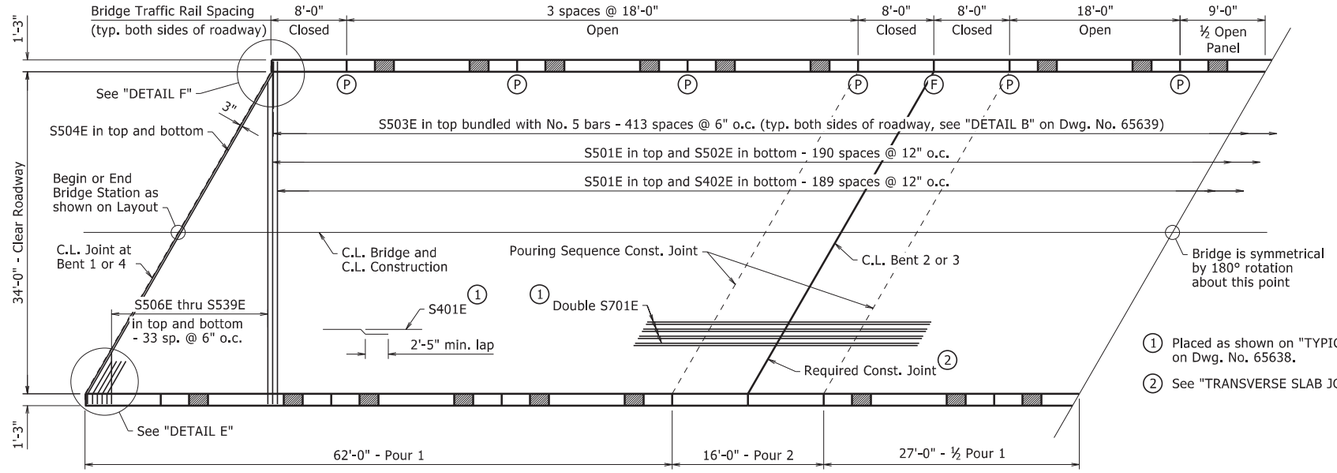
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: LHC DATE: 8/09/2022
CHECKED BY: WAC DATE: 8/22/2022
DESIGNED BY: NAC DATE: 3/2020
FILENAME: bbr6210_b2x2.dgn
SCALE: ¾" = 1'-0"

BRIDGE NO. 04950 DRAWING NO. 65651

PRINT DATE: 4/25/2023

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	BR6210	52	78
		04950 - 210'-0" UNIT - 65652				



HALF REINFORCING PLAN AND SLAB POURING SEQUENCE

⅛" = 1'-0"

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

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

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

(P) Partial Depth Parapet Joint at this location (typ. for both sides of bridge)

(F) Full Depth Parapet Joint at this location (typ. for both sides of bridge)

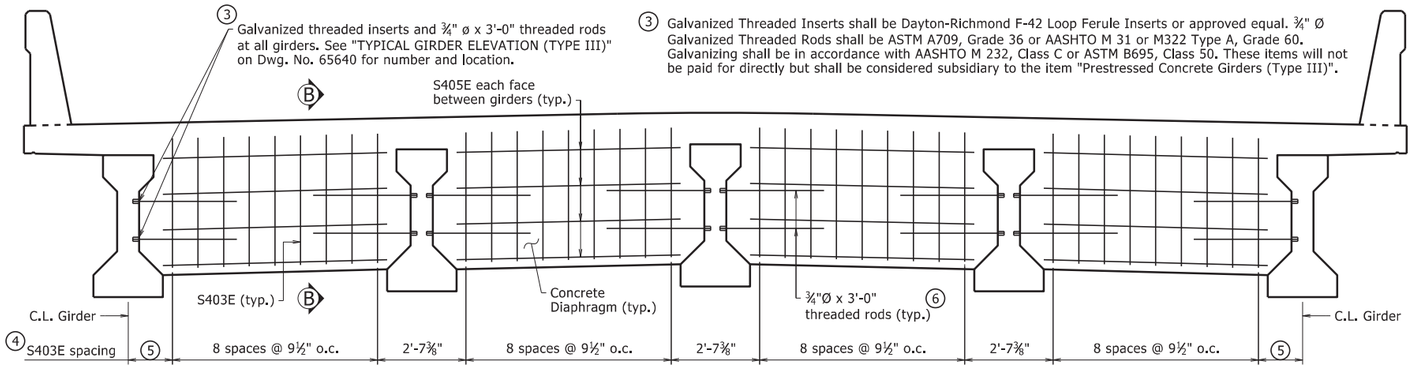
(1) Placed as shown on "TYPICAL ROADWAY SECTION" on Dwg. No. 65638.

(2) See "TRANSVERSE SLAB JOINT DETAIL" on Dwg. No. 65639.

TABLE OF VARIABLES

Closed Rail Panel			Open Rail Panel					
Panel Length	A	R40XE	Panel Length	B	C	D	E	R40XE
8'-0"	15	R404E	18'-0"	8	3'-0"	15	8'-0"	R405E

Reference Std. Dwg. No. 55070 for additional details of Bridge Traffic Rail and Wing.



(3) Galvanized Threaded Inserts shall be Dayton-Richmond F-42 Loop Ferule Inserts or approved equal. ¾" Ø Galvanized Threaded Rods shall be ASTM A709, Grade 36 or AASHTO M 31 or M322 Type A, Grade 60. Galvanizing shall be in accordance with AASHTO M 232, Class C or ASTM B695, Class 50. These items will not be paid for directly but shall be considered subsidiary to the item "Prestressed Concrete Girders (Type III)".

See Dwg. No. 65653 for "SECTION B-B".

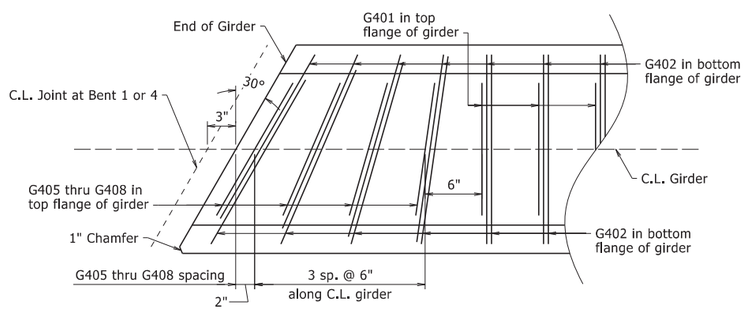
TYPICAL ROADWAY SECTION THRU END DIAPHRAGMS

Looking Ahead
½" = 1'-0"

(4) Measured along C.L. Bearing.

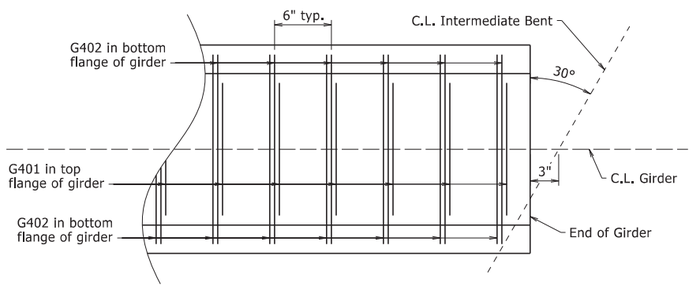
(5) 1'-3 1/16"; measured along C.L. Bearing.

(6) Rods shall be bent in field as necessary to accomodate for the skew in end span diaphragms only.



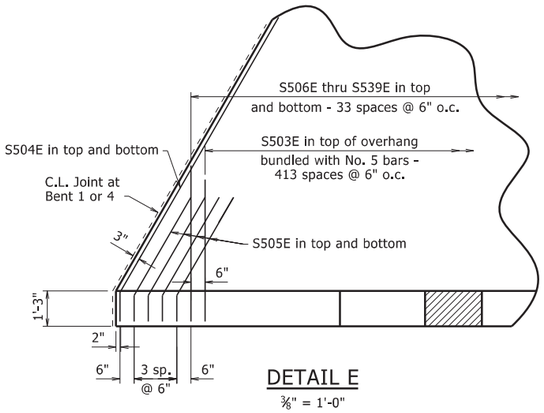
DETAIL V

Bent 1 or 4 Only
1½" = 1'-0"



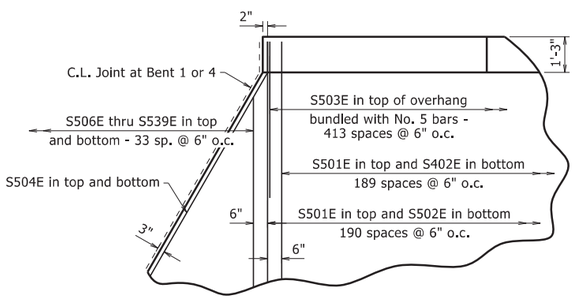
DETAIL W

Bent 2 or 3 Only
1½" = 1'-0"



DETAIL E

⅜" = 1'-0"



DETAIL F

⅜" = 1'-0"

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SHEET 1 OF 2
DETAILS OF 210'-0" PRESTRESSED CONCRETE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

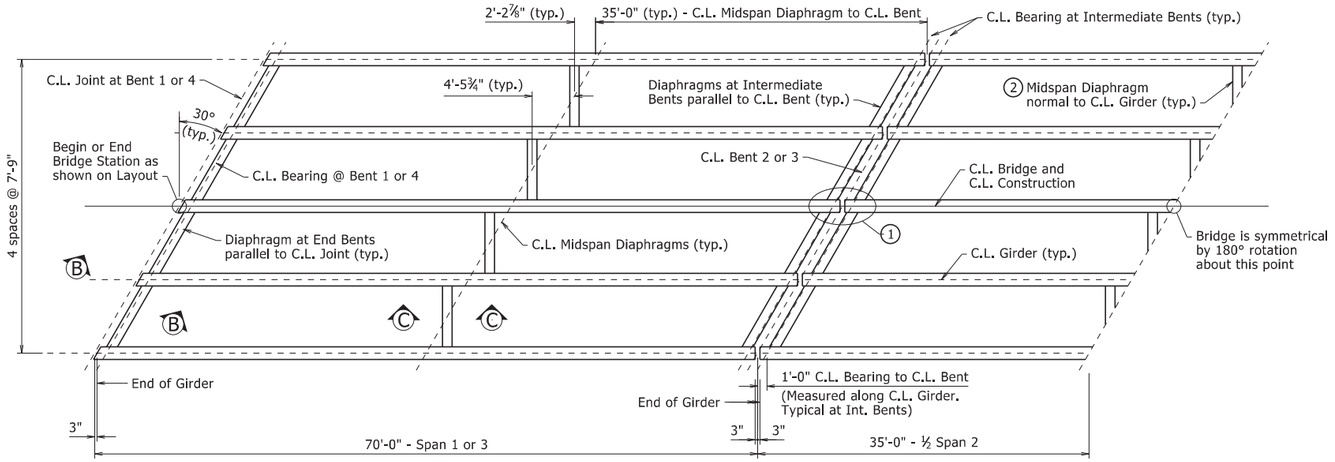
LITTLE ROCK, ARK.

DRAWN BY:	WAC	DATE:	5/2022	FILENAME:	bbr6210x1_s1.dgn
CHECKED BY:	DBS	DATE:	8/11/2022	SCALE:	As Shown
DESIGNED BY:	NAC	DATE:	3/2020		

BRIDGE NO. 04950 DRAWING NO. 65652

PRINT DATE: 5/22/2023

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	BR6210	53	78
		04950 - 210'-0" UNIT - 65653				



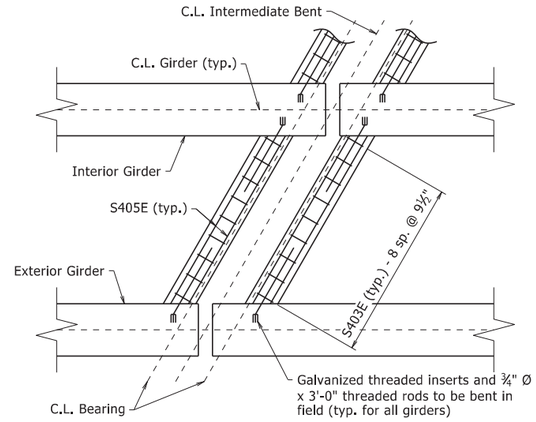
① After erection, the ends of girders at all bents shall be blocked using temporary blocking to maintain proper location on bent caps until 72 hours after the diaphragms are poured.

② See Dwg. No. 65639 for "DETAILS OF ALTERNATE STEEL DIAPHRAGMS".

HALF FRAMING PLAN

⅛" = 1'-0"

For "SECTION C-C" see Dwg. No. 65639.

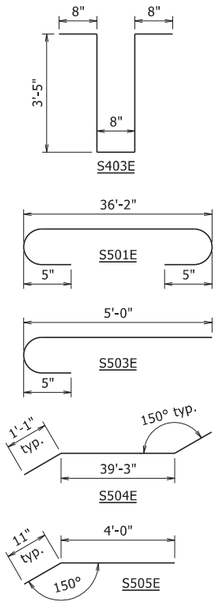


PLAN VIEW OF DIAPHRAGMS AT INTERMEDIATE BENTS

⅜" = 1'-0"

BAR LIST

MARK	NO. REQ'D	LENGTH	P.D.	BENDING DIAGRAMS
S401E	490	43'-10"	Str.	
S402E	190	36'-2"	Str.	
S403E	312	8'-6"	2"	
S404E	96	5'-11"	Str.	
S405E	192	6'-10"	Str.	
S501E	381	37'-4"	3¾"	
S502E	191	36'-2"	Str.	
S503E	828	5'-7"	3¾"	
S504E	4	41'-5"	3¾"	
S505E	16	4'-11"	3¾"	
S506E thru S539E	4 ea.	5'-6" to 34'-1"	Str.	
S701E	148	30'-0"	Str.	
③ R400E	144	5'-3"	2½"	
③ R401E	804	6'-4"	③	
③ R402E	96	5'-6"	Str.	
③ R403E	804	3'-6"	③	
③ R404E	96	7'-8"	Str.	
③ R405E	144	17'-8"	Str.	



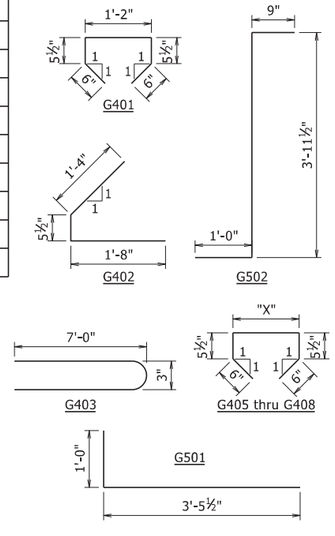
Dimensions are out to out of bars.

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

③ For additional details and bending diagram of reinforcing bars in Bridge Traffic Rail and Wings, see Std. Dwg. No. 55070.

BAR LIST - PER GIRDER

MARK	NO. REQ'D	LENGTH	P.D.	"X"	BENDING DIAGRAMS
G301	"V"	1'-3"	Str.	-	
G401	"W"	2'-11"	2"	-	
G402	56	3'-4½"	2"	-	
G403	10	14'-1"	2½"	-	
G404	2	69'-0"	Str.	-	
G405	"X"	3'-1"	2"	1'-4"	
G406	"X"	3'-0"	2"	1'-3"	
G407	"X"	2'-11½"	2"	1'-2½"	
G408	"X"	2'-11"	2"	1'-2"	
G501	"Y"	4'-4'	3¾"	-	
G502	"Z"	5'-5½"	3¾"	-	



All bars in the Bar List will not be paid for directly, but will be considered subsidiary to the item "Prestressed Concrete Girders (Type III)".

At the Contractor's option, bars G405 thru G408 and the G402 bars may be furnished as one bar.

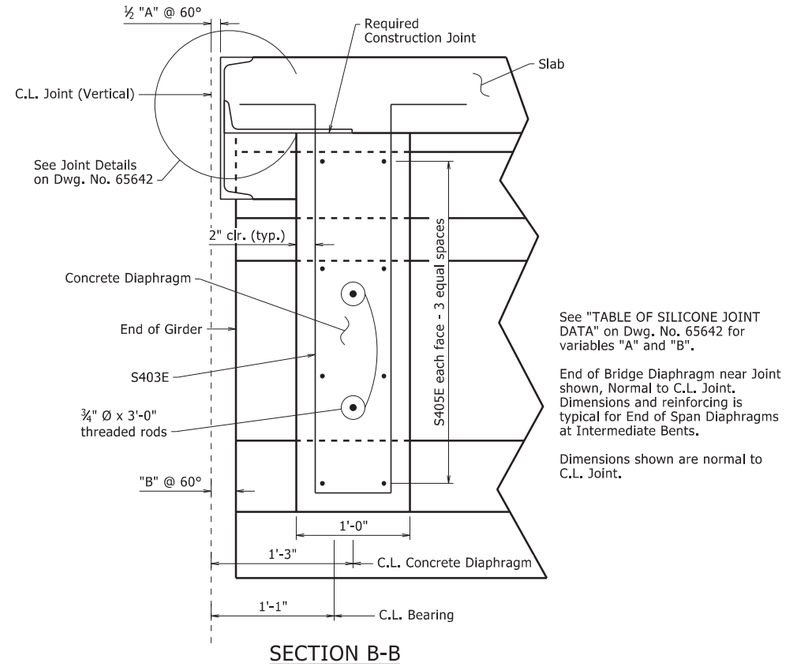
At the Contractor's option, ½" ø strands pulled to 2,000 lbs. may be substituted for bars G404.

Dimensions are out to out of bars.

GIRDER BAR LIST VARIABLES

	"V"
Ext. Girders	6
Int. Girders	12

	"W"	"X"	"Y"	"Z"
End Spans	24	1	42	194
Int. Spans	28	-	60	176



See "TABLE OF SILICONE JOINT DATA" on Dwg. No. 65642 for variables "A" and "B".

End of Bridge Diaphragm near Joint shown, Normal to C.L. Joint. Dimensions and reinforcing is typical for End of Span Diaphragms at Intermediate Bents.

Dimensions shown are normal to C.L. Joint.

SECTION B-B

1½" = 1'-0"

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SHEET 2 OF 2
DETAILS OF 210'-0" PRESTRESSED CONCRETE GIRDER UNIT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

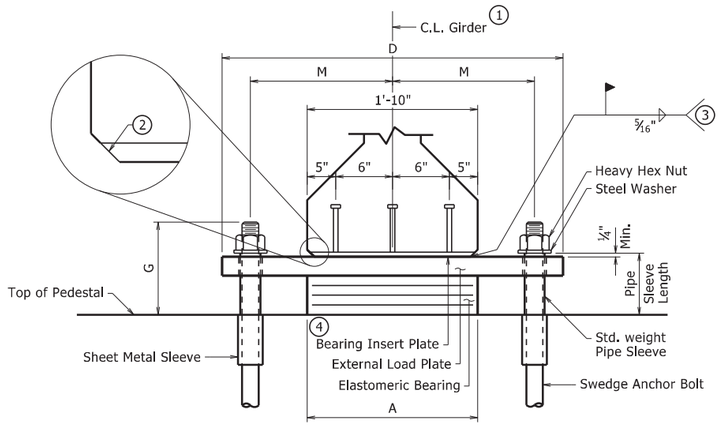
LITTLE ROCK, ARK.

DRAWN BY: WAC DATE: 5/2022 FILENAME: bbr6210x1_s1.dgn
CHECKED BY: DBS DATE: 8/11/2022 SCALE: As Shown
DESIGNED BY: NAC DATE: 3/2020

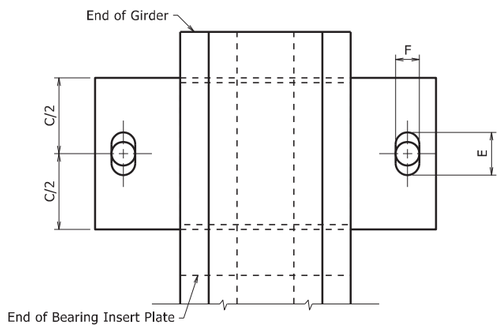
BRIDGE NO. 04950 DRAWING NO. 65653

PRINT DATE: 5/22/2023

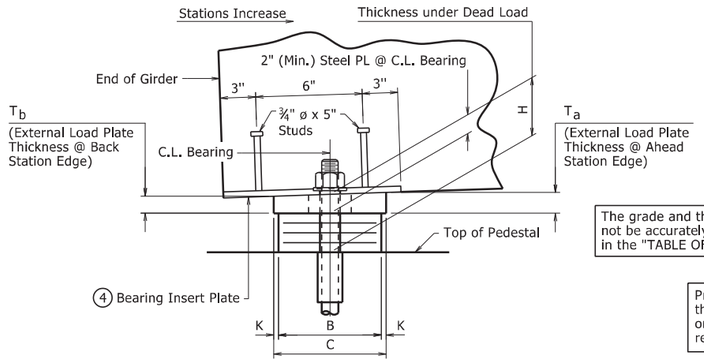
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	BR6210	54	78
		04949 & 04950 - ELASTO. BRGS. - 65654				



FRONT VIEW - AT BENTS W/O SHEAR BLOCKS



PLAN VIEW - AT BENTS W/O SHEAR BLOCKS



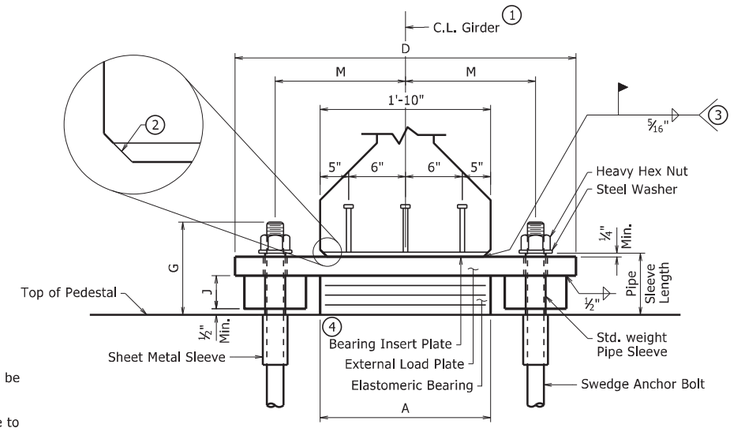
SIDE VIEW - AT BENTS W/O SHEAR BLOCKS

1. C.L. Elastomeric Pad shall be aligned with C.L. Girder.
2. Bevel Bearing Insert Plate to conform to Girder Chamfer.
3. Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the bearing insert plate will be allowed only when: 1) The approximate average air temperature during the 24 hour period immediately preceding welding is between 40° F and 80° F; and 2) The slots in the external load plate are positioned to center on the anchor bolts; and 3) No horizontal deformation of the elastomeric pad is evident. If welding at other temperatures is required, the Engineer will provide adjustment data.

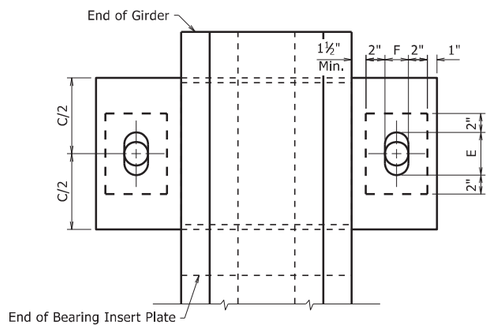
   Care shall be taken to ensure that the external load plate is in full and complete contact with the bearing insert plate before welding begins.
4. Bearing Insert Plate (A709, Gr. 50W) & Studs shall be considered subsidiary to the item "Prestressed Concrete Girders (Type III)".
5. Maximum Design Load = Service I Limit State
6. See "TABLE OF VARIALBES" for values of T_a and T_b.

The grade and the direction of bevel of the external load plate may not be accurately depicted with respect to T_a and T_b values shown in the "TABLE OF FABRICATOR VARIABLES".

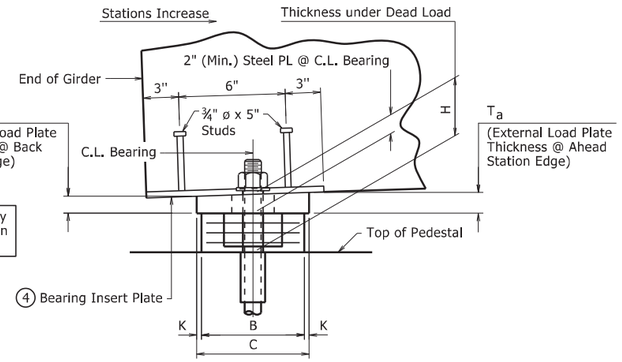
Prior to erection of the girders, the Contractor shall verify the orientation of the bearings with respect to T_a and T_b.



FRONT VIEW - AT BENTS WITH SHEAR BLOCKS



PLAN VIEW - AT BENTS WITH SHEAR BLOCKS



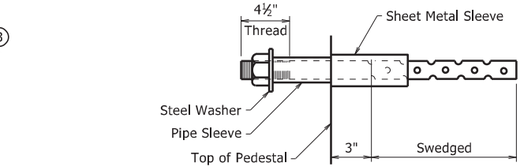
SIDE VIEW - AT BENTS WITH SHEAR BLOCKS

TABLE OF FABRICATOR VARIABLES

BRIDGE NO.	LOCATION: BENT NO(S).	LOCATION: GIRDER NO.	SHEAR BLOCK	BEARING TYPE	NO. OF BEARINGS EACH BENT	(5) MAXIMUM DESIGN LOAD (KIPS)	G	H	ELASTOMERIC PAD: A	B	N	ti	te	NO. & THICKNESS OF STEEL LAMINAE	T	EXTERNAL LOAD PLATE: C	D	E	F	J	K	M	T_a	T_b
04949	1 & 5	All	NO	Exp.	5	154	9⅛"	5⁹⁄₁₆"	22"	8"	5	½"	¼"	6 @ 12 Ga.	3⅜"	9"	34½"	5½"	3⅛"	-	½"	14"	(6)	(6)
	2 & 4	All	NO	Exp.	10	154	9⅛"	5⁹⁄₁₆"	22"	8"	5	½"	¼"	6 @ 12 Ga.	3⅜"	9"	34½"	4½"	3⅛"	-	½"	14"	(6)	(6)
	3	All	YES	Fix.	10	154	8⅞"	5⁹⁄₁₆"	22"	8"	5	½"	¼"	6 @ 12 Ga.	3⅜"	9"	42"	3⅛"	3⅛"	3¹⁄₁₆"	½"	16¼"	(6)	(6)
04950	1	All	NO	Exp.	5	146	8¼"	5"	22"	8"	4	½"	¼"	5 @ 12 Ga.	3"	9"	34½"	4"	3⅛"	-	½"	14"	2"	2"
	2	All	YES	Fix.	10	146	8¼"	5"	22"	8"	4	½"	¼"	5 @ 12 Ga.	3"	9"	42"	3⅛"	3⅛"	2½"	½"	16¼"	2"	2"
	3	All	NO	Exp.	10	146	8¼"	5"	22"	8"	4	½"	¼"	5 @ 12 Ga.	3"	9"	34½"	4"	3⅛"	-	½"	14"	2"	2"
	4	All	NO	Exp.	5	146	8¼"	5"	22"	8"	4	½"	¼"	5 @ 12 Ga.	3"	9"	34½"	5"	3⅛"	-	½"	14"	2"	2"

BRIDGE NO.	ANCHOR BOLT: (ø X L)	ANCHOR BOLT: GRADE	PIPE SLEEVE SIZE (ø X L)	SHEET METAL SLEEVE SIZE (ø X L)	STEEL WASHER SIZE (O.D.)
04949	2¼" x 37"	55	2½" x 5⅞"	4" x 13"	4"
	2¼" x 36"	55	2½" x 5⅞"	4" x 14"	4"
	2" x 34"	55	2½" x 5⅞"	4" x 14"	3¾"
04950	2" x 32"	55	2½" x 5¼"	4" x 13"	3¾"
	2" x 33"	55	2½" x 5¼"	4" x 14"	3¾"
	2" x 33"	55	2½" x 5¼"	4" x 14"	3¾"
	2" x 32"	55	2½" x 5¼"	4" x 13"	3¾"

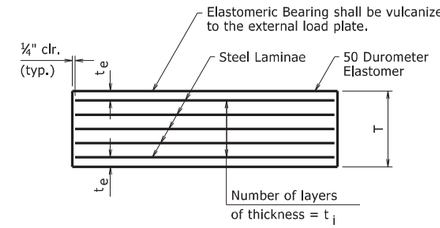
PRINT DATE: 6/5/2023



ANCHOR BOLT DETAIL

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

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



t_e = Thickness of elastomer cover on top and bottom of pad.
t_i = Thickness of elastomer between steel laminae.
N = Number of elastomer layers of thickness ti.

ELASTOMERIC BEARING GENERAL NOTES

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

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

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

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

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

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

(6) TABLE OF VARIABLES

BENT NO(S).	Girder 1 T_a	Girder 1 T_b	Girder 2 T_a	Girder 2 T_b	Girder 3 T_a	Girder 3 T_b	Girder 4 T_a	Girder 4 T_b	Girder 5 T_a	Girder 5 T_b
1	2"	2"	2.02"	1.98"	1.99"	2.01"	1.97"	2.03"	1.94"	2.06"
2	2"	2"	2"	2"	2"	2"	1.99"	2.01"	1.98"	2.02"
3	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"
4	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"
5	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"

DETAILS OF ELASTOMERIC BEARINGS

STATE OF ARKANSAS
7-Jun-2023 4:52 PM
LICENSED PROFESSIONAL ENGINEER
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BRIDGE ENGINEER

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

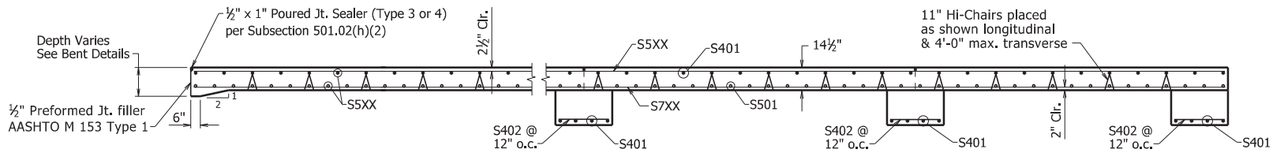
LITTLE ROCK, ARK.

DRAWN BY: NAC DATE: 8/1/2022
CHECKED BY: WAC DATE: 8/18/2022
DESIGNED BY: NAC DATE: 4/12/2022

FILENAME: bbr6210_e1.dgn
SCALE:

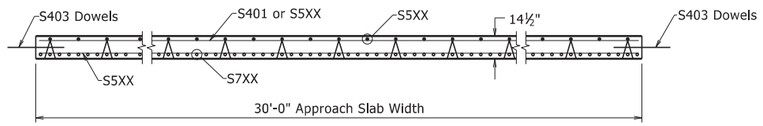
BRIDGE NO. 04949 & 04950 DRAWING NO. 65654

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.			
		JOB NO.		BR6210	55	78
		1	04949 - APPROACH SLAB - 65655			



SECTION X-X

No Scale



SECTION Y-Y

No Scale

GENERAL NOTES

All concrete shall be Class S (AE) with a minimum 28 day compressive strength f'c = 4,000 psi and shall be poured in the dry.

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M322, Type A, with mill test reports.

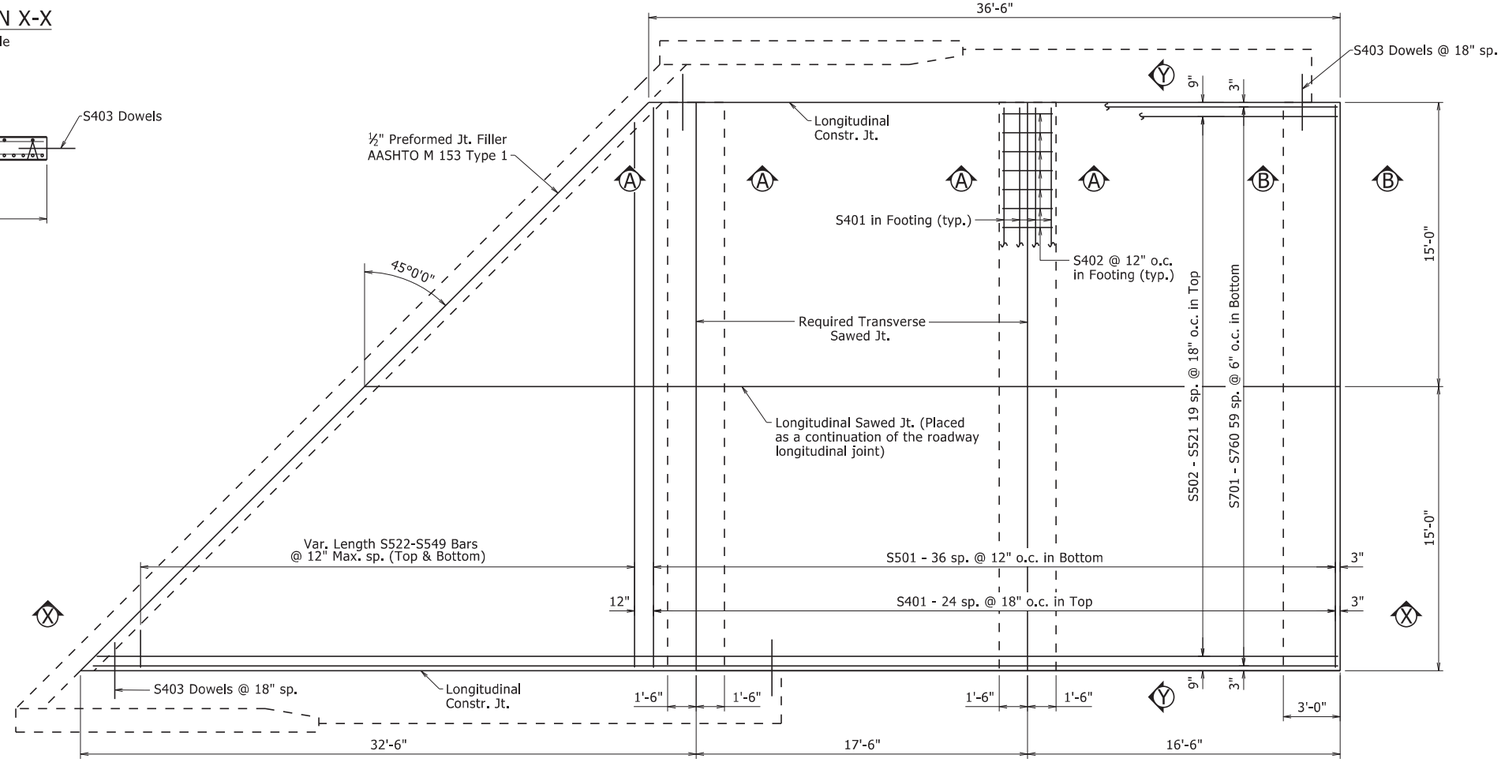
Approach Slabs will be measured and paid for in accordance with Section 504.

The surface finish for Approach Slabs shall match that used on the bridge deck.

TABLE OF QUANTITIES FOR TYPE 1 SPECIAL APPROACH SLAB

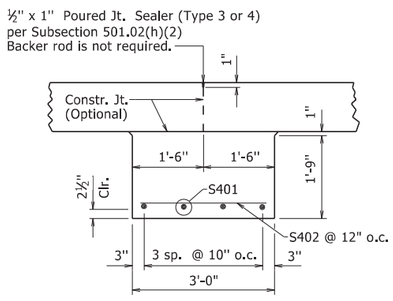
(For Information Only)

Slab Width	Reinforcing Steel	Concrete
	(Lbs.)	(Cu. Yds.)
30'-0"	10364	87.5



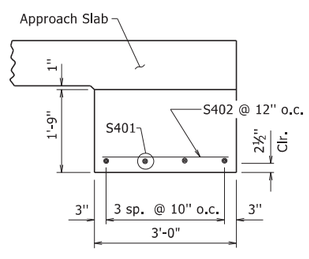
PLAN VIEW OF APPROACH SLAB

¼" = 1'-0"



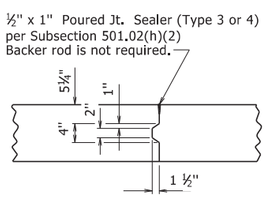
SECTION A-A

No Scale



SECTION B-B

No Scale



DETAILS OF LONGITUDINAL CONSTRUCTION JOINT

No Scale

BAR LIST FOR ONE TYPE 1 SPECIAL APPROACH SLAB

Mark	No. Req'd	Length
S401	37	29'-8"
S402	90	2'-8"
S403	47	3'-0"
S501	37	29'-8"
S502 - S521	1 ea.	36'-10" to 65'-4"
S522 - S549	2 ea.	28'-11" to 2'-0"
S701 - S760	1 ea.	36'-4" to 65'-10"

STATE OF ARKANSAS
Jun 5 2023 4:52 PM
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
BRIDGE ENGINEER

DETAILS OF TYPE 1 SPECIAL APPROACH SLAB

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

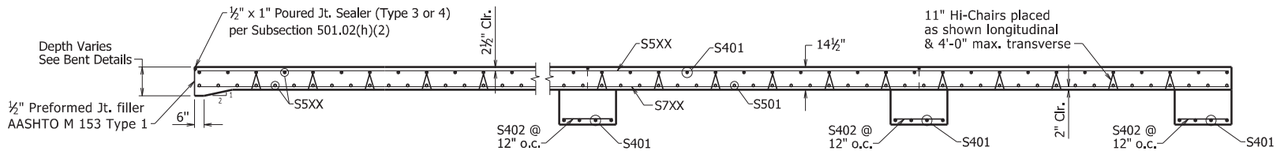
LITTLE ROCK, ARK.

DRAWN BY:	JCB	DATE:	8/4/22	FILENAME:	bbr6210x1_as1.dgn
CHECKED BY:	WAC	DATE:	1/10/23	SCALE:	AS SHOWN
DESIGNED BY:	STD	DATE:	-----		

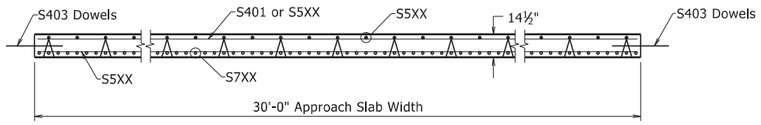
BRIDGE NO. 04949 DRAWING NO. 65655

PRINT DATE: 5/22/2023

DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.			
		JOB NO.		BR6210	56	78
		1	04950 - APPROACH SLAB - 65656			



SECTION X-X
No Scale



SECTION Y-Y
No Scale

GENERAL NOTES

All concrete shall be Class S (AE) with a minimum 28 day compressive strength f'c = 4,000 psi and shall be poured in the dry.

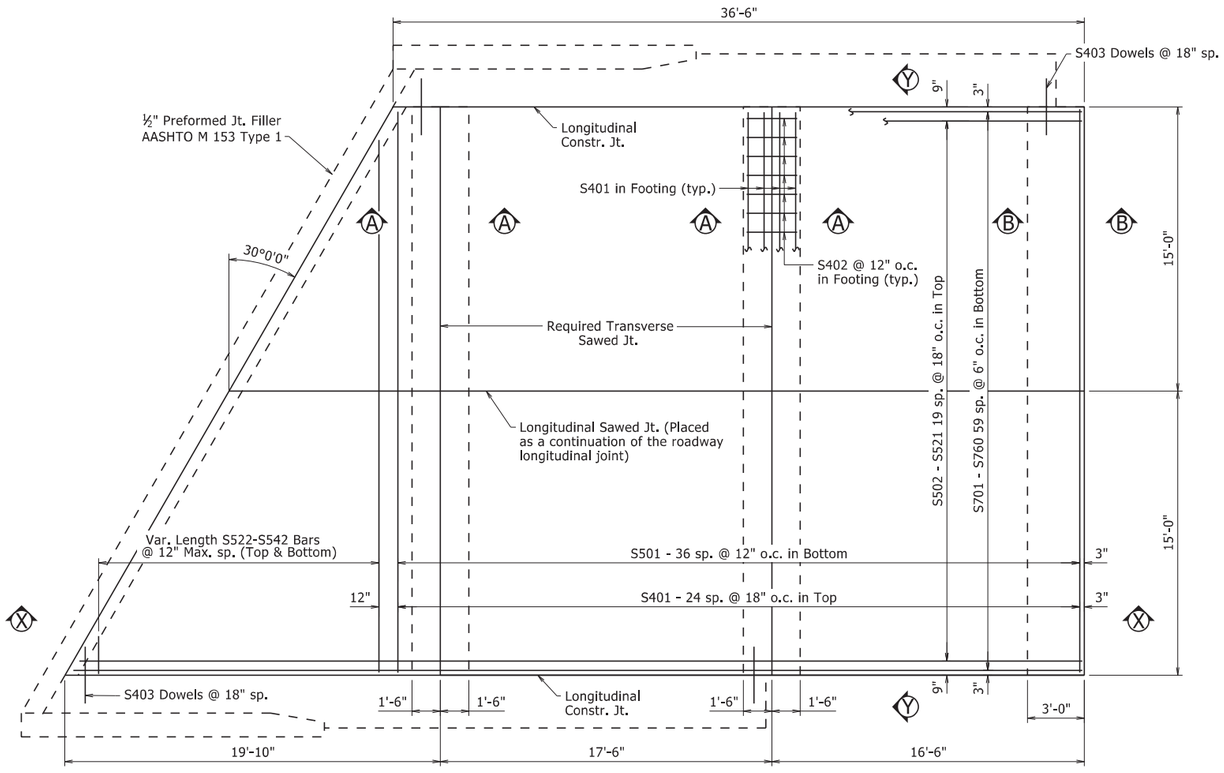
All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M322, Type A, with mill test reports.

Approach Slabs will be measured and paid for in accordance with Section 504.

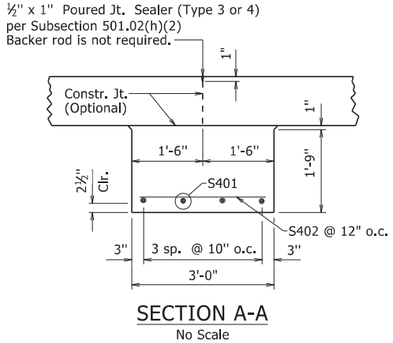
The surface finish for Approach Slabs shall match that used on the bridge deck.

TABLE OF QUANTITIES FOR TYPE 2 SPECIAL APPROACH SLAB
(For Information Only)

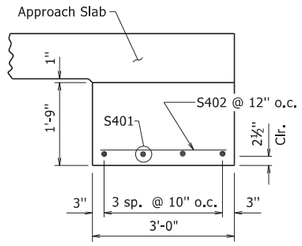
Slab Width	Reinforcing Steel	Concrete
	(Lbs.)	(Cu. Yds.)
30'-0"	9218	79



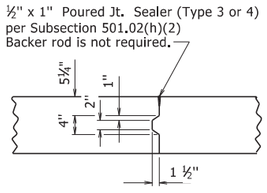
PLAN VIEW OF APPROACH SLAB
¼" = 1'-0"



SECTION A-A
No Scale



SECTION B-B
No Scale



DETAILS OF LONGITUDINAL CONSTRUCTION JOINT
No Scale

BAR LIST FOR ONE TYPE 2 SPECIAL APPROACH SLAB

Mark	No. Req'd	Length
S401	37	29'-8"
S402	90	2'-8"
S403	46	3'-0"
S501	37	29'-8"
S502 - S521	1 ea.	36'-6" to 52'-11"
S522 - S542	2 ea.	28'-4" to 2'-0"
S701 - S760	1 ea.	36'-2" to 53'-3"

STATE OF ARKANSAS
CHARLES R. ELLIS
LICENSED PROFESSIONAL ENGINEER
No. 9235
Charles R. Ellis
June 5 2023 4:52 PM
BRIDGE ENGINEER

DETAILS OF TYPE 2 SPECIAL APPROACH SLAB

ROUTE SEC.

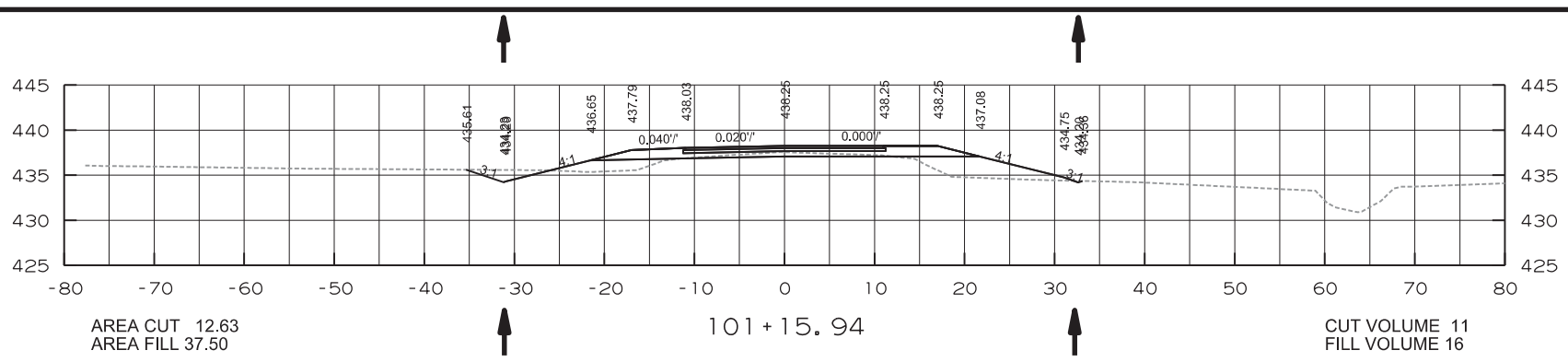
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JCB DATE: 8/4/22 FILENAME: bbr6210x2_as2.dgn
CHECKED BY: WAC DATE: 1/10/23 SCALE: AS SHOWN
DESIGNED BY: STD DATE: -----

BRIDGE NO. 04950 DRAWING NO. 65656

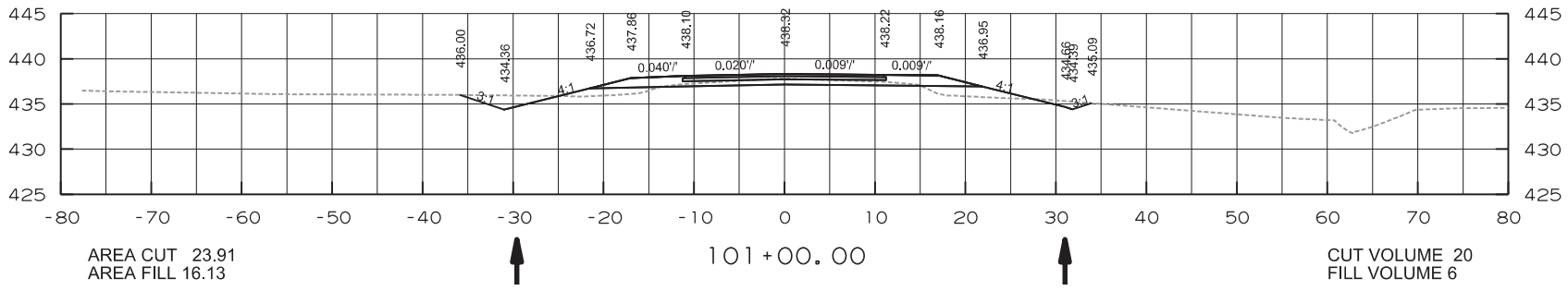
PRINT DATE: 5/22/2023



AREA CUT 12.63
AREA FILL 37.50

101+15.94

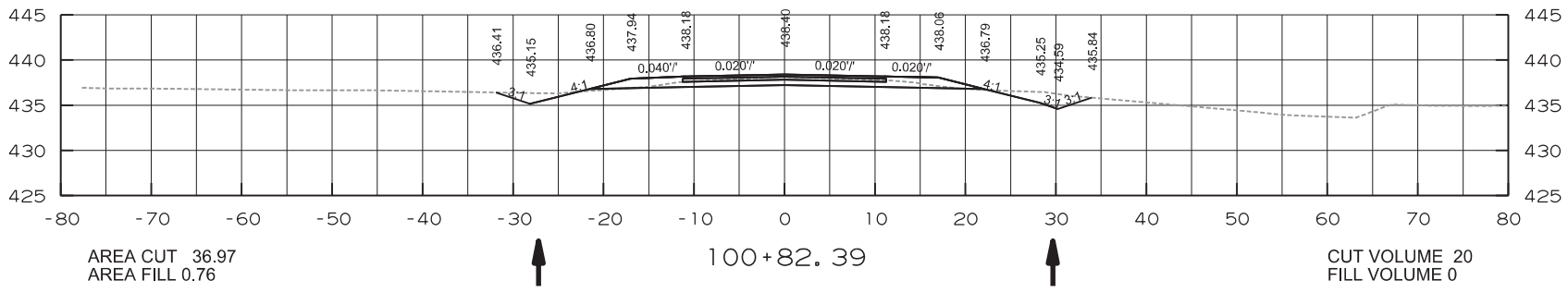
CUT VOLUME 11
FILL VOLUME 16



AREA CUT 23.91
AREA FILL 16.13

101+00.00

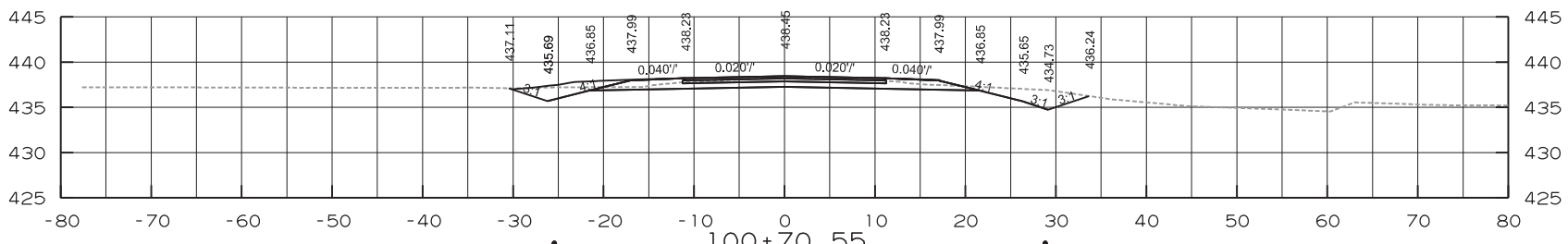
CUT VOLUME 20
FILL VOLUME 6



AREA CUT 36.97
AREA FILL 0.76

100+82.39

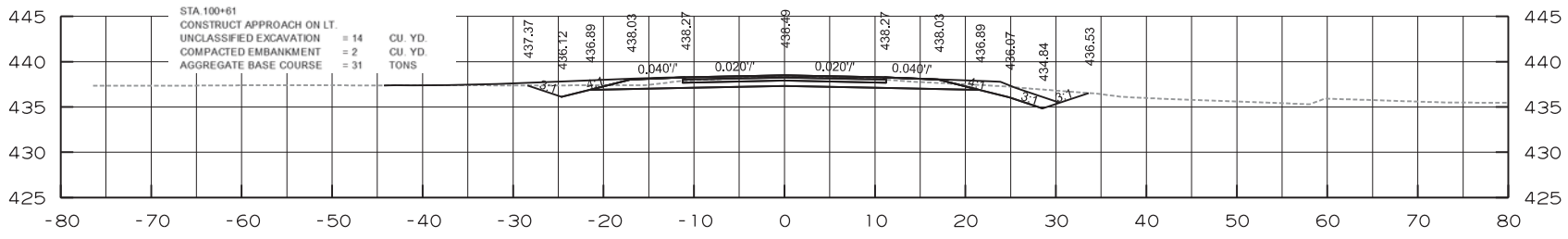
CUT VOLUME 20
FILL VOLUME 0



AREA CUT 52.48
AREA FILL 0.00

100+70.55
BEGIN SUPERELEVATION

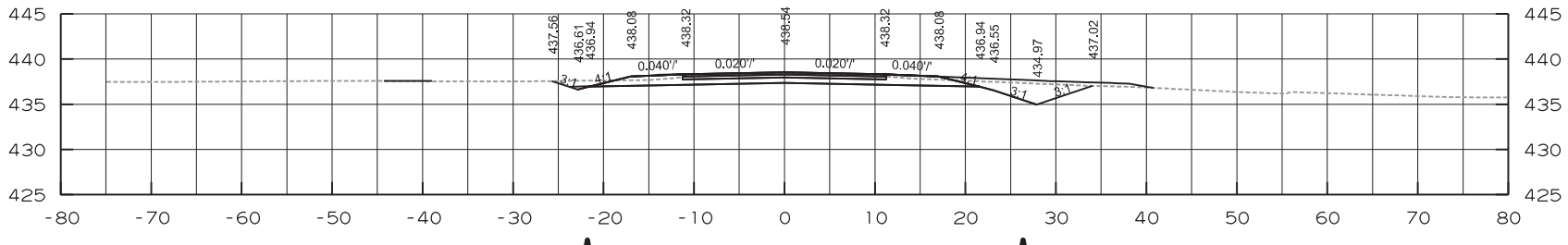
CUT VOLUME 19
FILL VOLUME 0



AREA CUT 53.32
AREA FILL 0.00

100+61.00

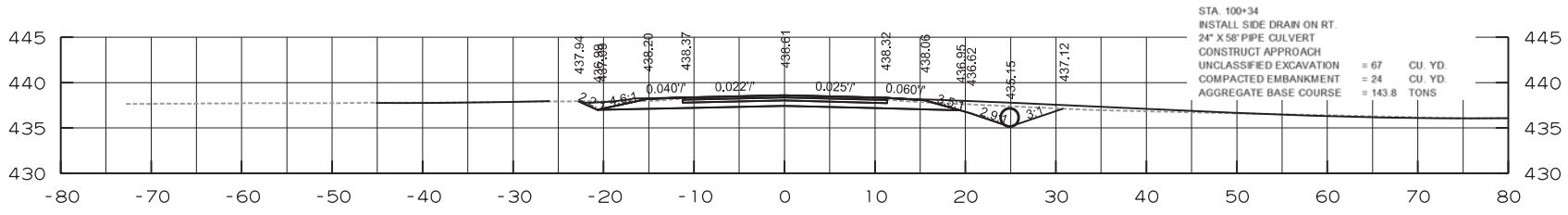
CUT VOLUME 22
FILL VOLUME 0



AREA CUT 55.50
AREA FILL 0.00

100+50.00

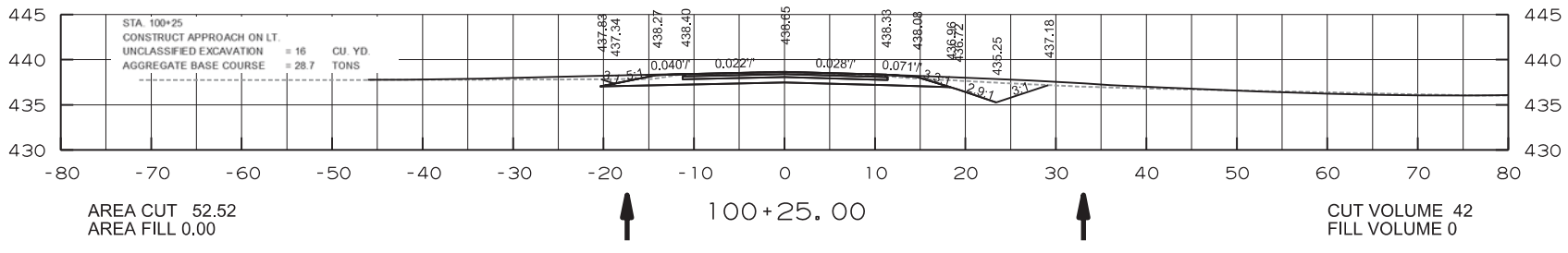
CUT VOLUME 33
FILL VOLUME 0



AREA CUT 55.74
AREA FILL 0.00

100+34.00

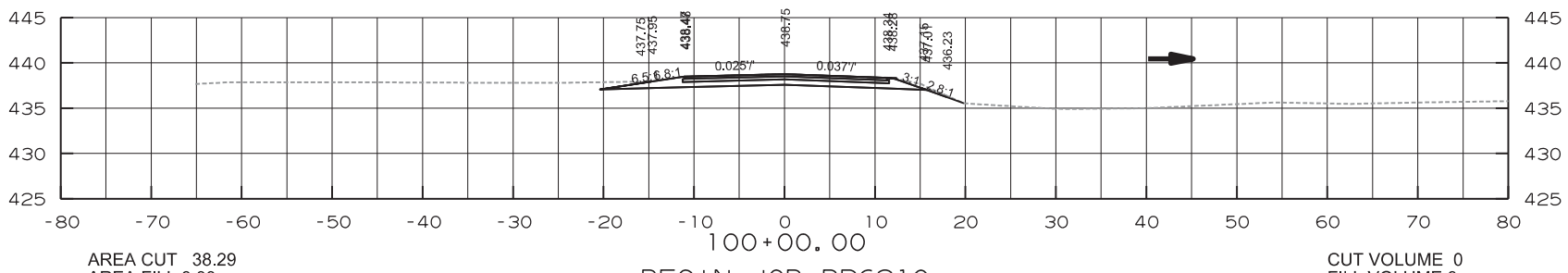
CUT VOLUME 18
FILL VOLUME 0



AREA CUT 52.52
AREA FILL 0.00

100+25.00

CUT VOLUME 42
FILL VOLUME 0



AREA CUT 38.29
AREA FILL 0.00

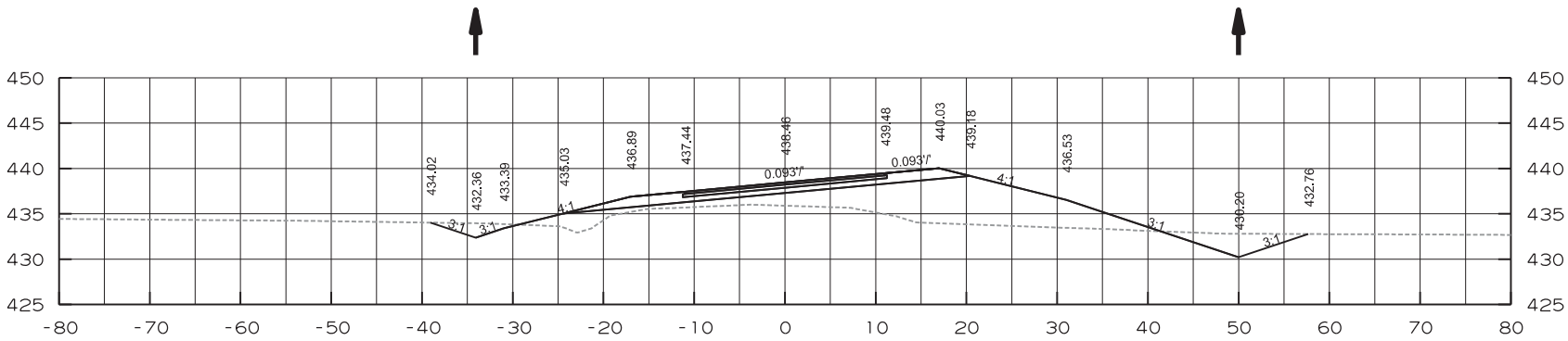
100+00.00
BEGIN JOB BR6210

CUT VOLUME 0
FILL VOLUME 0

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

4 CROSS SECTIONS STA. 100+00.00 TO 101+15.94

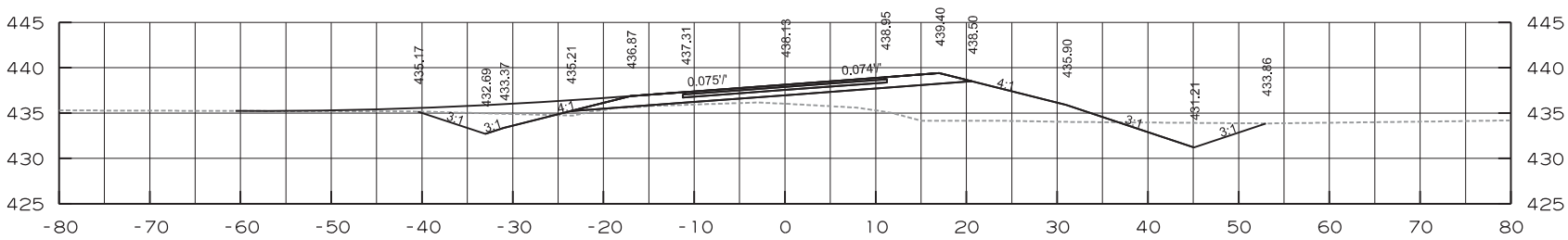
JOB NO.	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
BR6210	6	ARK.		57	78



AREA CUT 28.49
AREA FILL 154.37

103+50.00

CUT VOLUME 62
FILL VOLUME 236



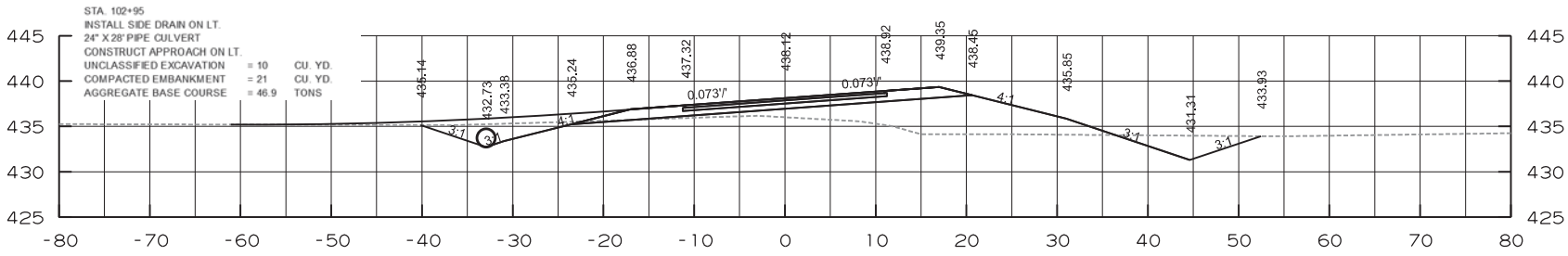
AREA CUT 38.71
AREA FILL 100.42

103+00.00

CUT VOLUME 8
FILL VOLUME 18

STA. 102+95
INSTALL SIDE DRAIN ON LT.
24" X 28" PIPE CULVERT
CONSTRUCT APPROACH ON LT.

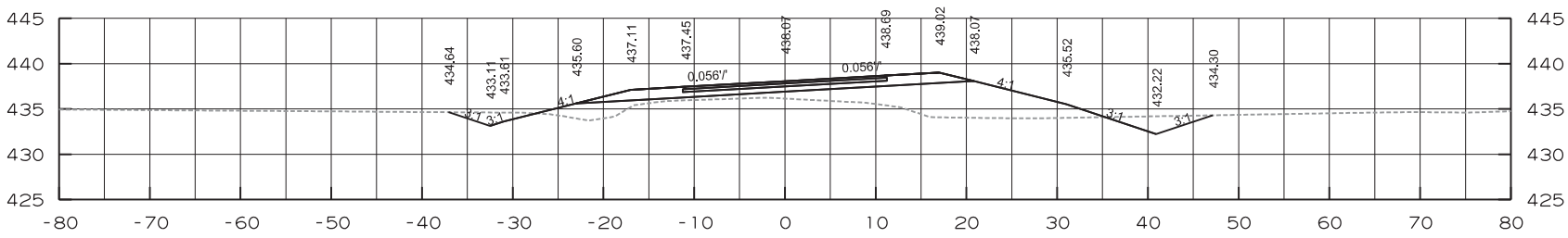
UNCLASSIFIED EXCAVATION	= 10	CU. YD.
COMPACTED EMBANKMENT	= 21	CU. YD.
AGGREGATE BASE COURSE	= 46.9	TONS



AREA CUT 43.65
AREA FILL 96.50

102+95.00

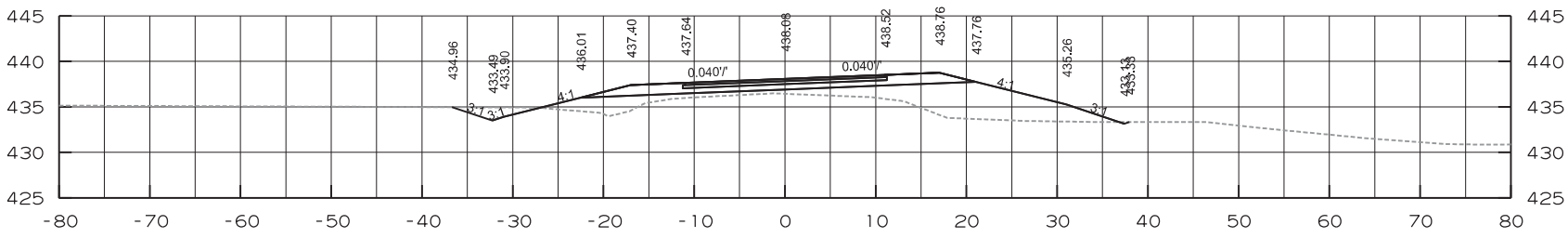
CUT VOLUME 52
FILL VOLUME 164



AREA CUT 18.79
AREA FILL 100.40

102+50.00

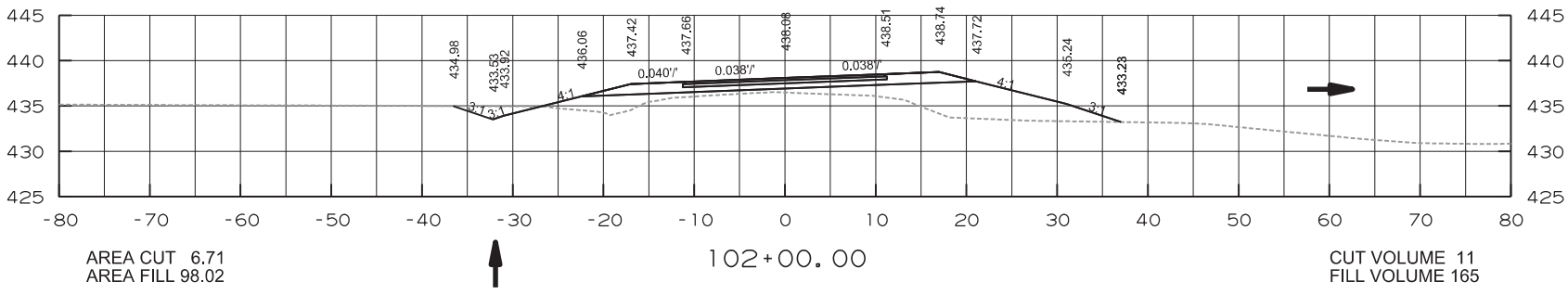
CUT VOLUME 22
FILL VOLUME 166



AREA CUT 6.99
AREA FILL 98.31

102+04.76

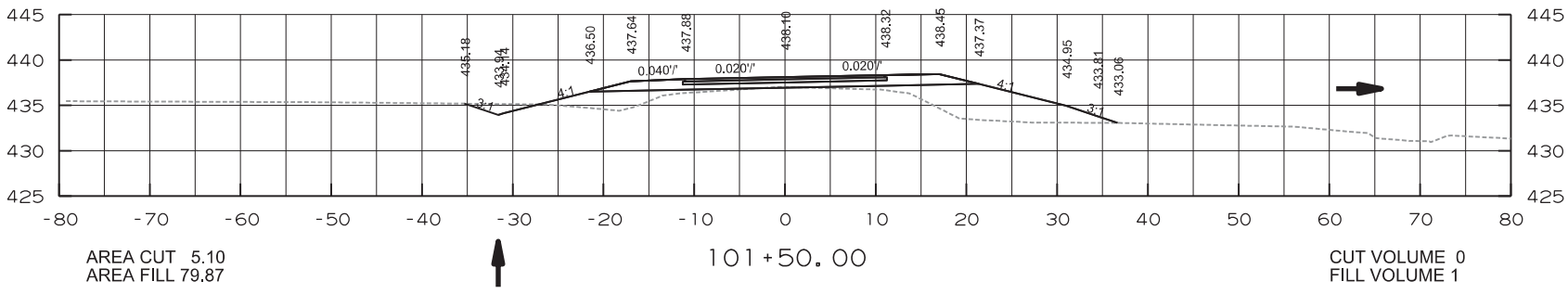
CUT VOLUME 1
FILL VOLUME 17



AREA CUT 6.71
AREA FILL 98.02

102+00.00

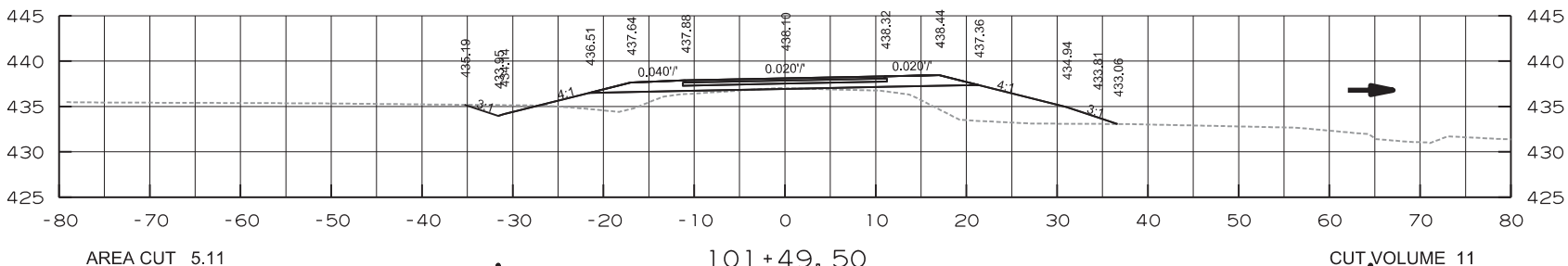
CUT VOLUME 11
FILL VOLUME 165



AREA CUT 5.10
AREA FILL 79.87

101+50.00

CUT VOLUME 0
FILL VOLUME 1



AREA CUT 5.11
AREA FILL 79.52

101+49.50

CUT VOLUME 11
FILL VOLUME 73

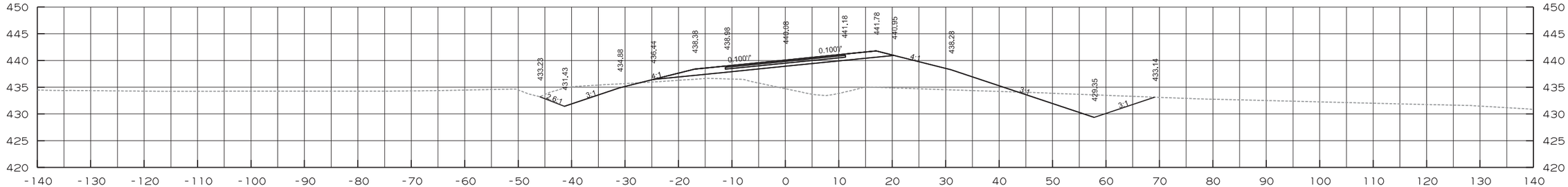
4 CROSS SECTIONS STA. 101+49.50 TO 103+50.00

JOB NO.	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
BR6210	6	ARK.		58	78

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

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.		BR6210	59	78

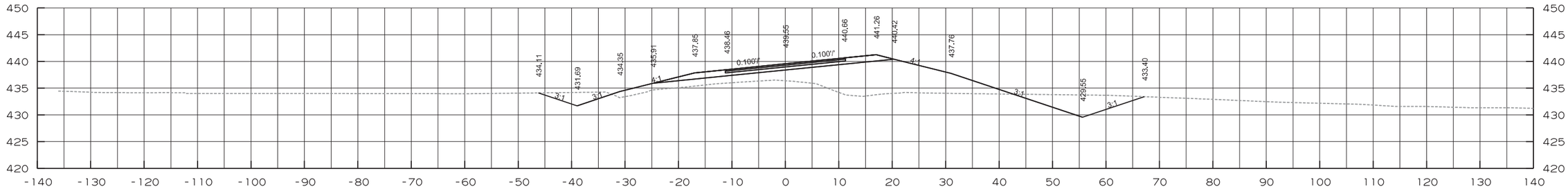
4 CROSS SECTIONS STA. 103+70.55 TO 104+89.00



AREA CUT 85.87
AREA FILL 229.45

104+89.00

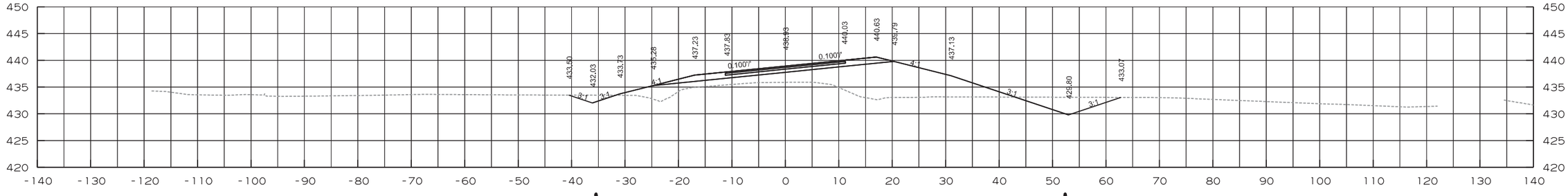
CUT VOLUME 113
FILL VOLUME 321



AREA CUT 70.00
AREA FILL 214.62

104+50.00

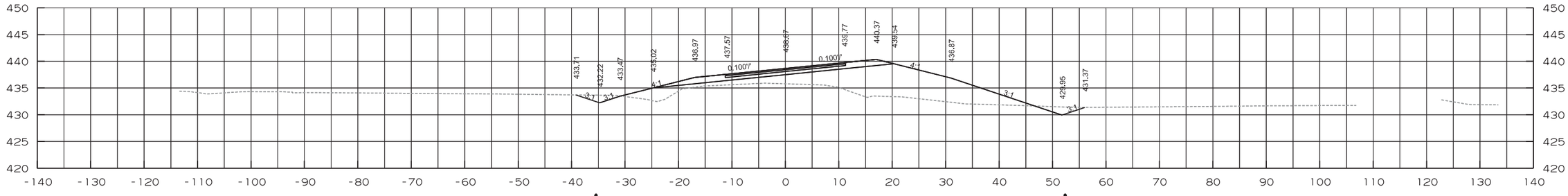
CUT VOLUME 101
FILL VOLUME 397



AREA CUT 38.98
AREA FILL 214.40

104+00.00

CUT VOLUME 28
FILL VOLUME 230



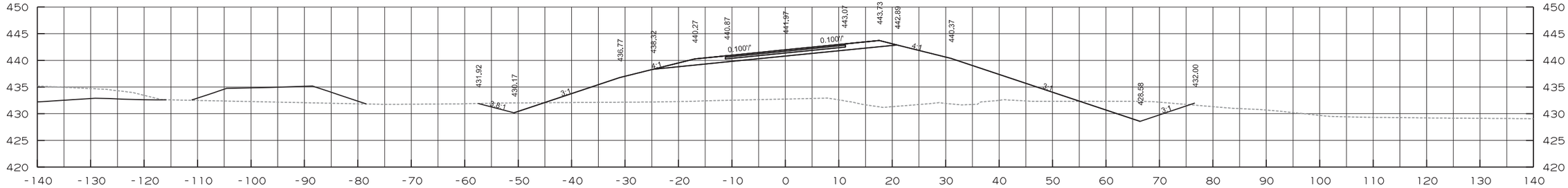
AREA CUT 13.20
AREA FILL 207.41

103+70.55
BEGIN MAX SUPER

CUT VOLUME 16
FILL VOLUME 138

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.		BR6210	60	78

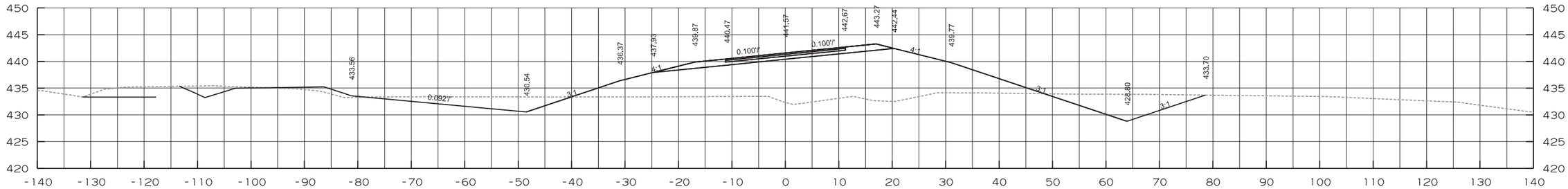
(4) CROSS SECTIONS STA. 105+00.00 TO 106+44.67



AREA CUT 50.51
AREA FILL 641.52

106+44.67
END MAX SUPER

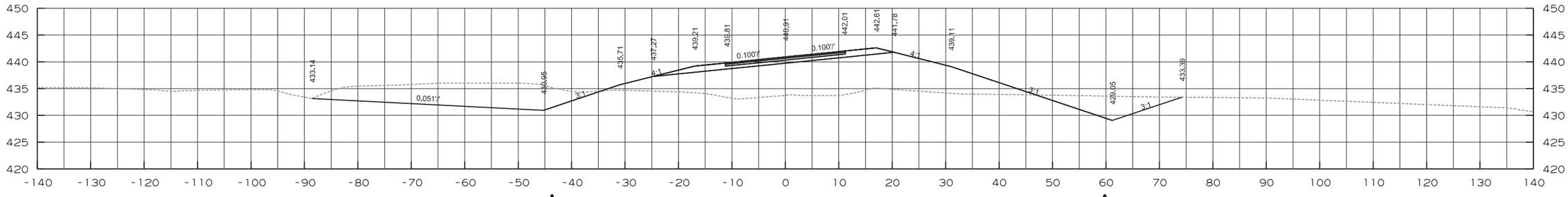
CUT VOLUME 150
FILL VOLUME 935



AREA CUT 131.26
AREA FILL 489.05

106+00.00

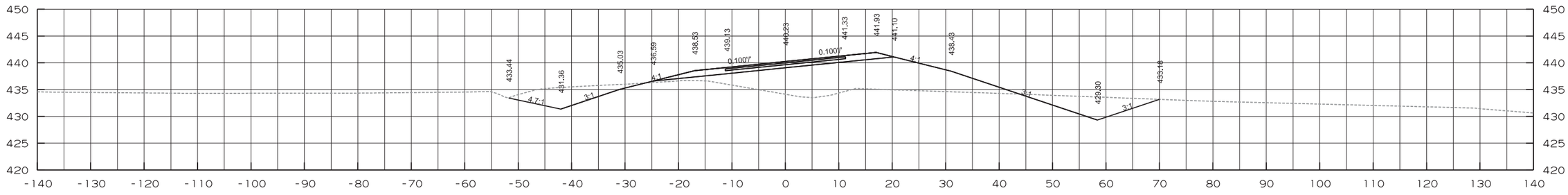
CUT VOLUME 341
FILL VOLUME 793



AREA CUT 237.20
AREA FILL 367.79

105+50.00

CUT VOLUME 320
FILL VOLUME 565



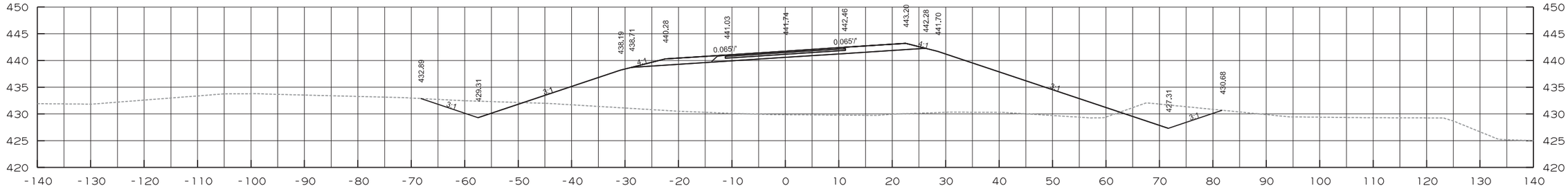
AREA CUT 108.82
AREA FILL 242.09

105+00.00

CUT VOLUME 40
FILL VOLUME 96

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.		BR6210	61	78

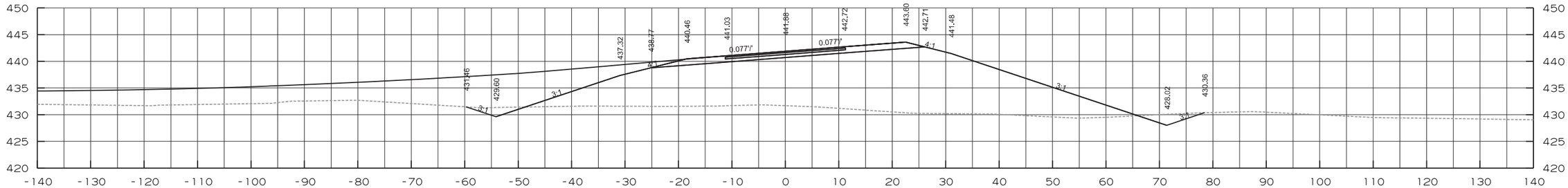
(4) CROSS SECTIONS STA. 106+50.00 TO 107+50.00



AREA CUT 75.81
AREA FILL 883.91

107+50.00

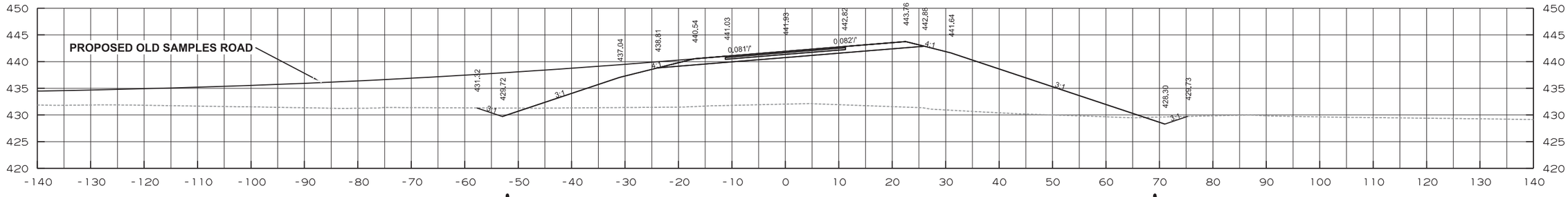
CUT VOLUME 65
FILL VOLUME 1137



AREA CUT 22.15
AREA FILL 835.25

107+14.30

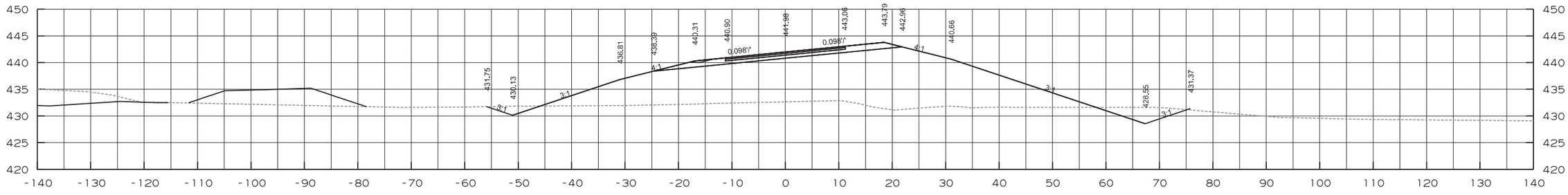
CUT VOLUME 9
FILL VOLUME 434



AREA CUT 12.86
AREA FILL 804.98

107+00.00

CUT VOLUME 44
FILL VOLUME 1372



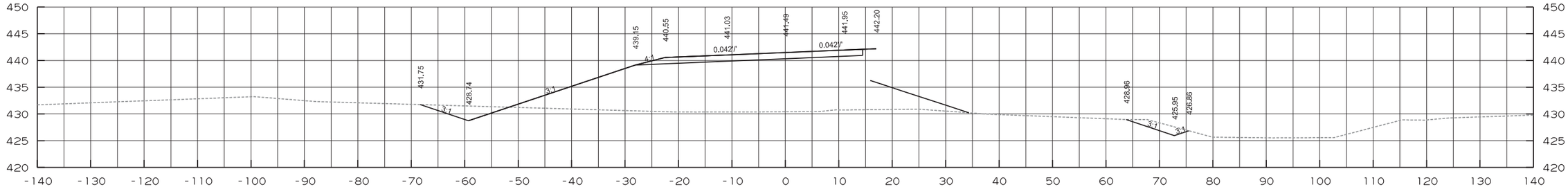
AREA CUT 35.07
AREA FILL 676.51

106+50.00

CUT VOLUME 8
FILL VOLUME 130

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.		BR6210	62	78

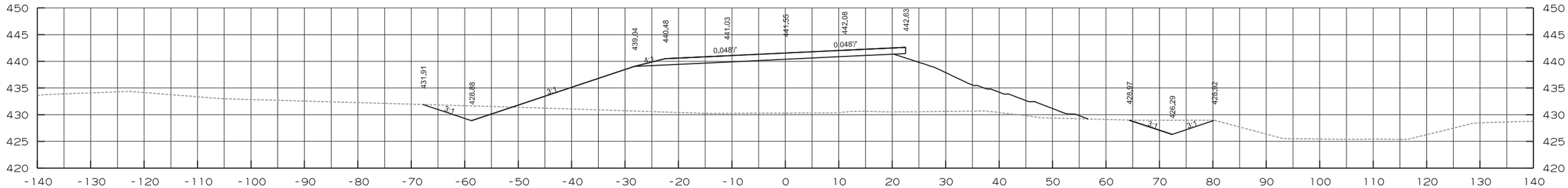
(4) CROSS SECTIONS STA. 107+91.92 TO 108+19.00



AREA CUT 34.92
AREA FILL 556.05

108+19.00

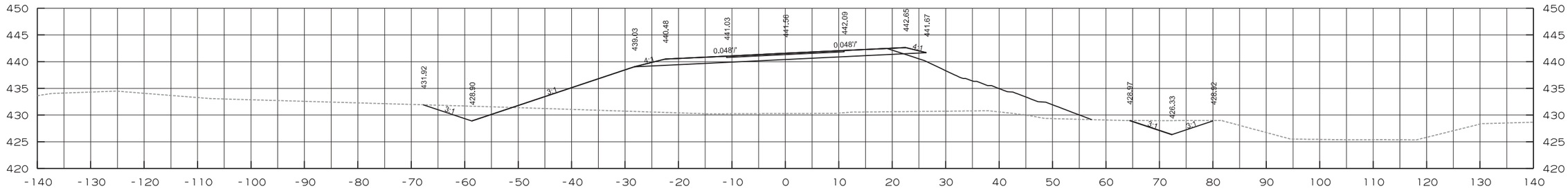
CUT VOLUME 29
FILL VOLUME 413



AREA CUT 55.09
AREA FILL 747.75

108+01.88

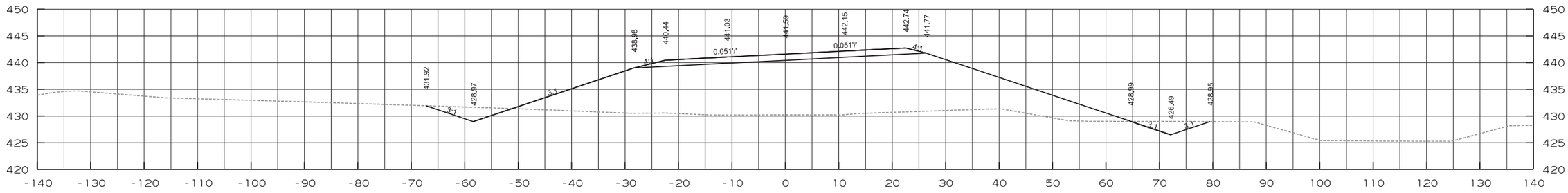
CUT VOLUME 4
FILL VOLUME 53



AREA CUT 54.21
AREA FILL 767.08

108+00.00

CUT VOLUME 16
FILL VOLUME 241



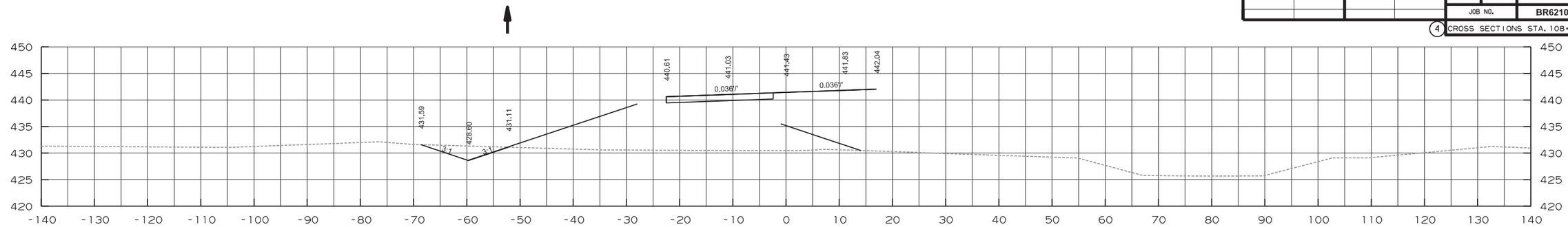
AREA CUT 49.65
AREA FILL 841.67

107+91.92

CUT VOLUME 97
FILL VOLUME 1340

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.		BR6210	63	78

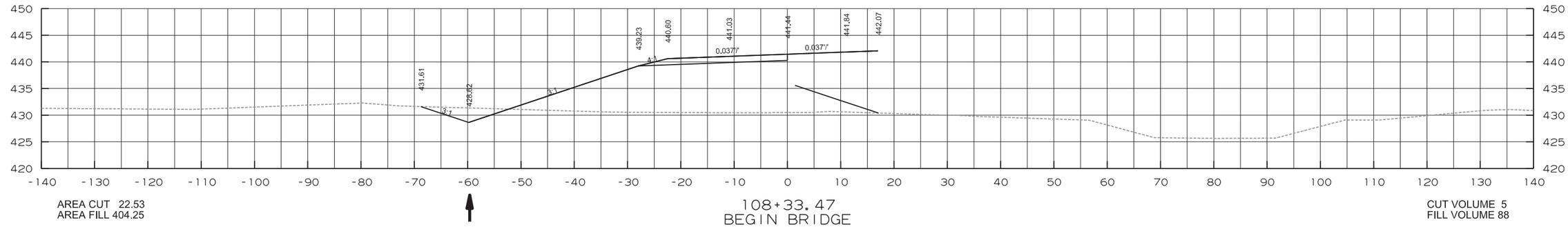
(4) CROSS SECTIONS STA. 108+24.67 TO 108+35.88



AREA CUT 23.31
AREA FILL 331.16

108+35.88

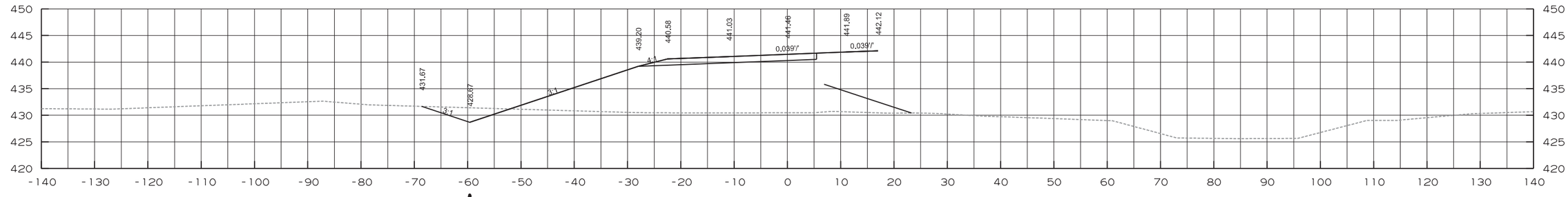
CUT VOLUME 2
FILL VOLUME 33



AREA CUT 22.53
AREA FILL 404.25

108+33.47
BEGIN BRIDGE

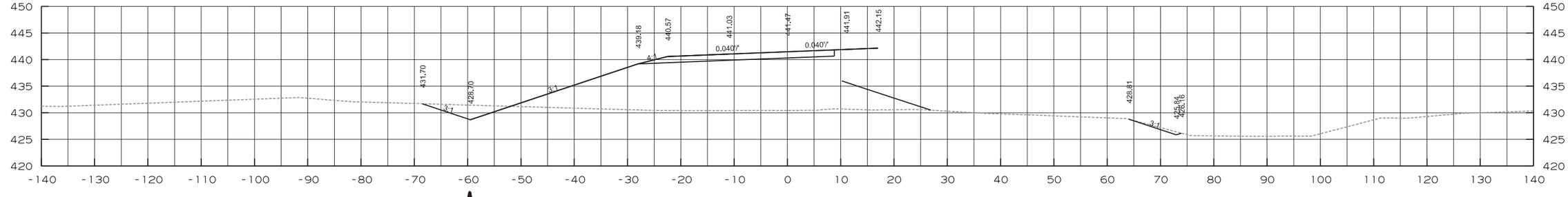
CUT VOLUME 5
FILL VOLUME 88



AREA CUT 22.61
AREA FILL 461.95

108+28.00

CUT VOLUME 3
FILL VOLUME 59



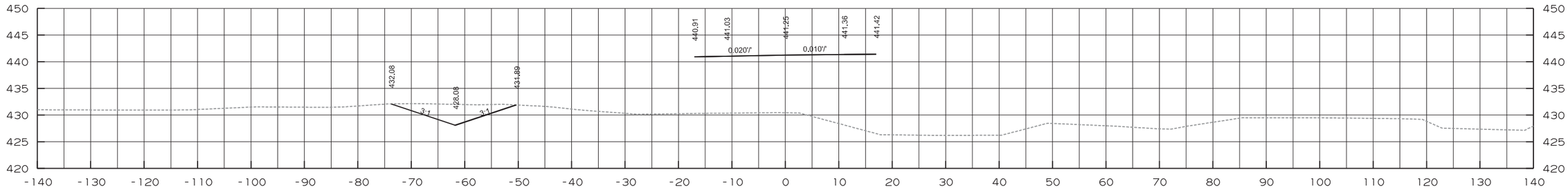
AREA CUT 25.51
AREA FILL 496.92

108+24.67

CUT VOLUME 6
FILL VOLUME 111

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.		BR6210	64	78

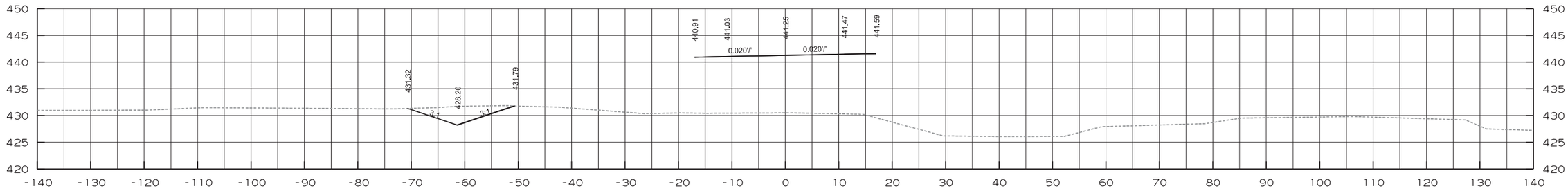
(4) CROSS SECTIONS STA. 108+49.47 TO 109+00.00



AREA CUT 46.13
AREA FILL 0.00

109+00.00

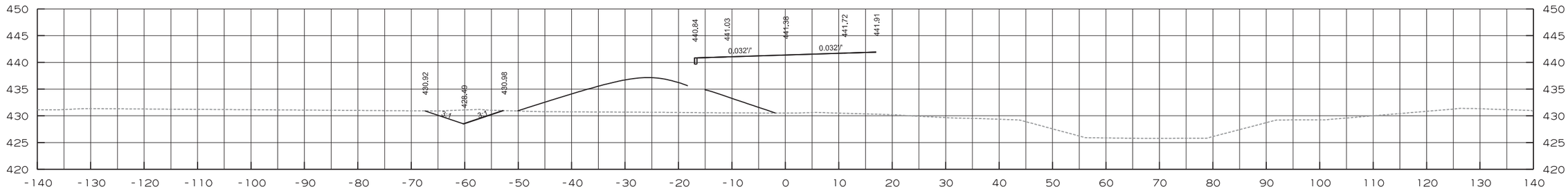
CUT VOLUME 23
FILL VOLUME 0



AREA CUT 34.77
AREA FILL 369.86

108+84.67

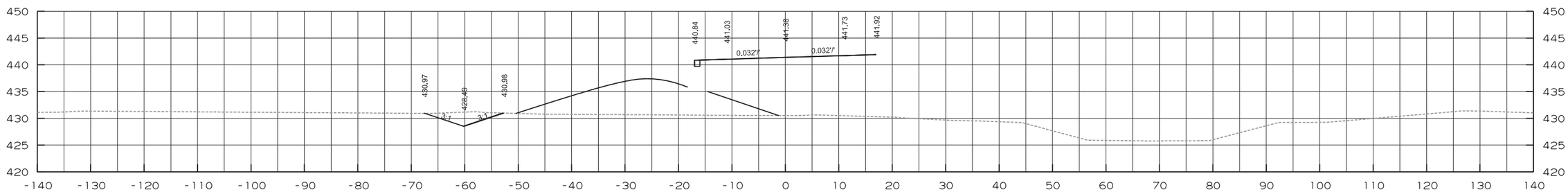
CUT VOLUME 35
FILL VOLUME 344



AREA CUT 19.39
AREA FILL 535.28

108+50.00

CUT VOLUME 1
FILL VOLUME 11



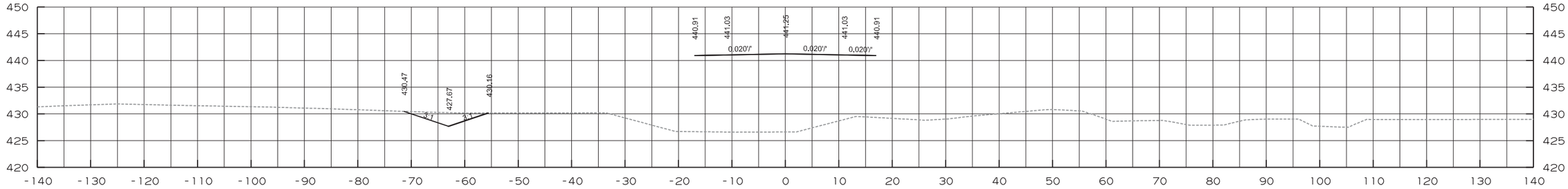
AREA CUT 19.80
AREA FILL 180.97

108+49.47
TOE OF SLOPE

CUT VOLUME 11
FILL VOLUME 129

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.		BR6210	65	78

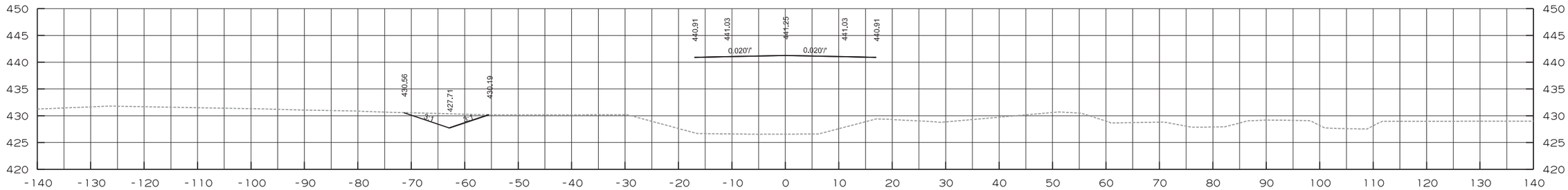
4 CROSS SECTIONS STA. 109+05.00 TO 109+50.00



AREA CUT 19.68
AREA FILL 0.00

109+50.00

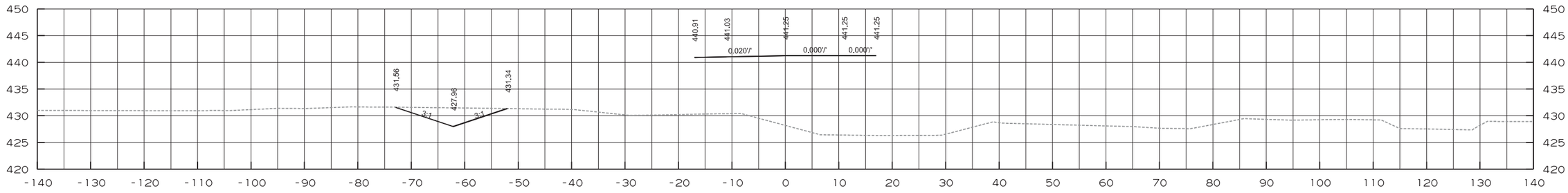
CUT VOLUME 4
FILL VOLUME 0



AREA CUT 20.88
AREA FILL 0.00

109+44.67
END SUPER

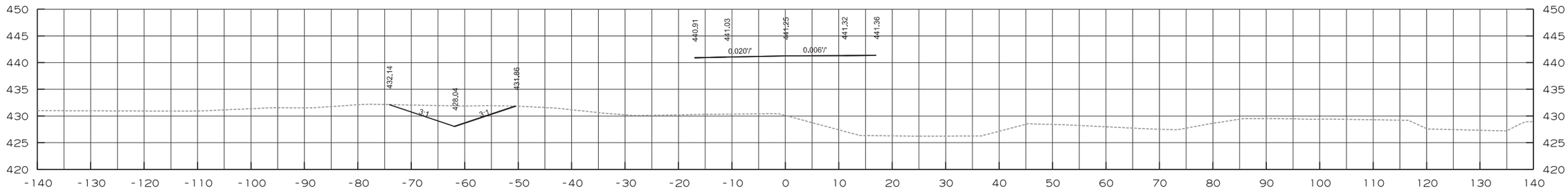
CUT VOLUME 32
FILL VOLUME 0



AREA CUT 36.49
AREA FILL 0.00

109+14.67

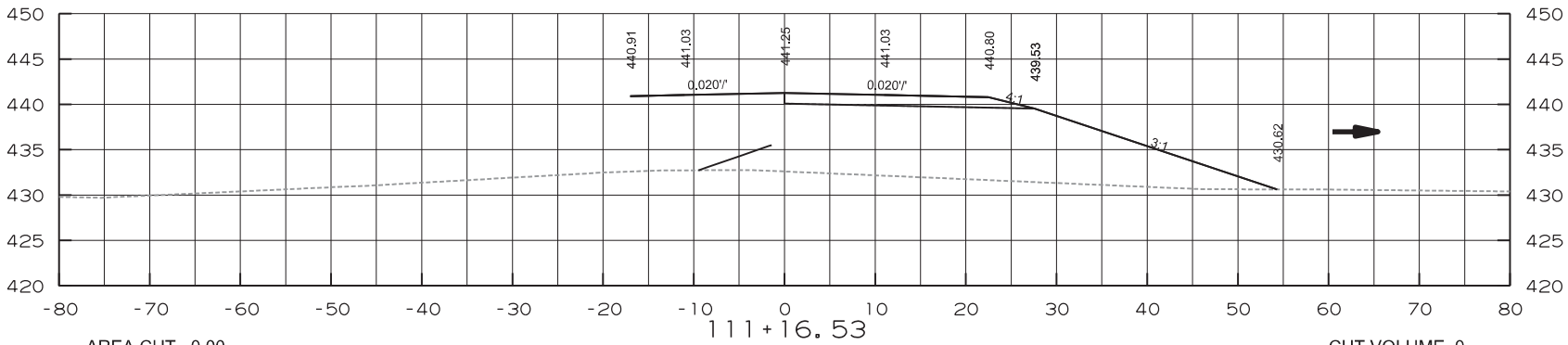
CUT VOLUME 15
FILL VOLUME 0



AREA CUT 45.47
AREA FILL 0.00

109+05.00

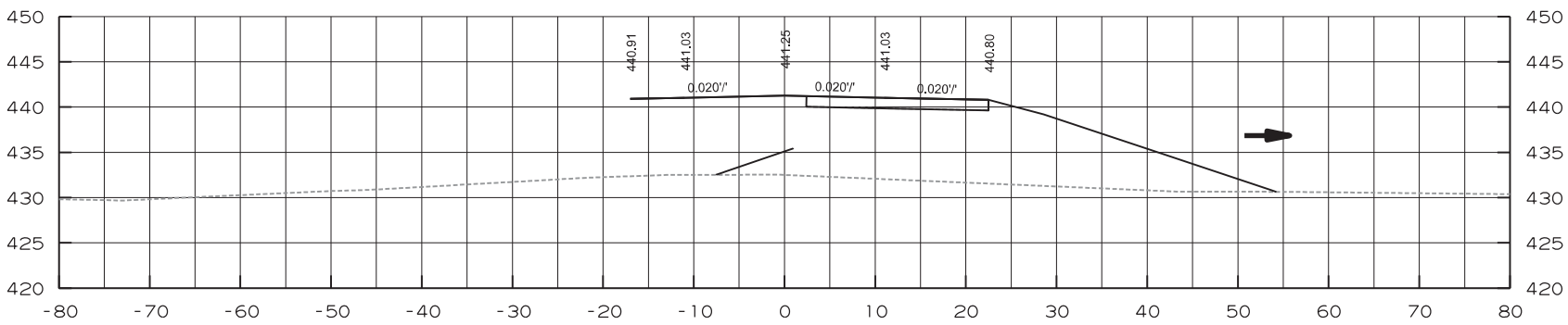
CUT VOLUME 8
FILL VOLUME 0



AREA CUT 0.00
AREA FILL 337.52

111+16.53
END BRIDGE

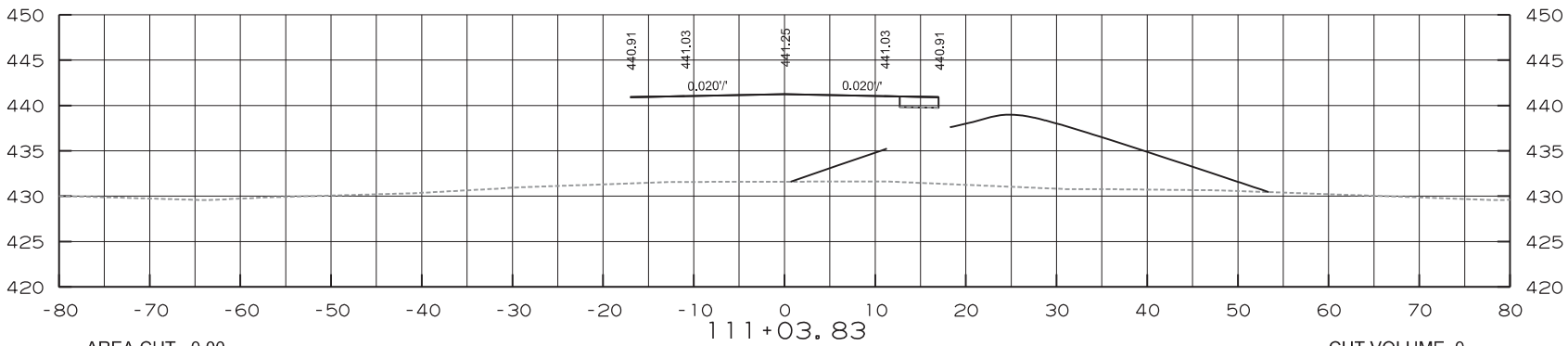
CUT VOLUME 0
FILL VOLUME 30



AREA CUT 0.00
AREA FILL 327.26

111+14.12

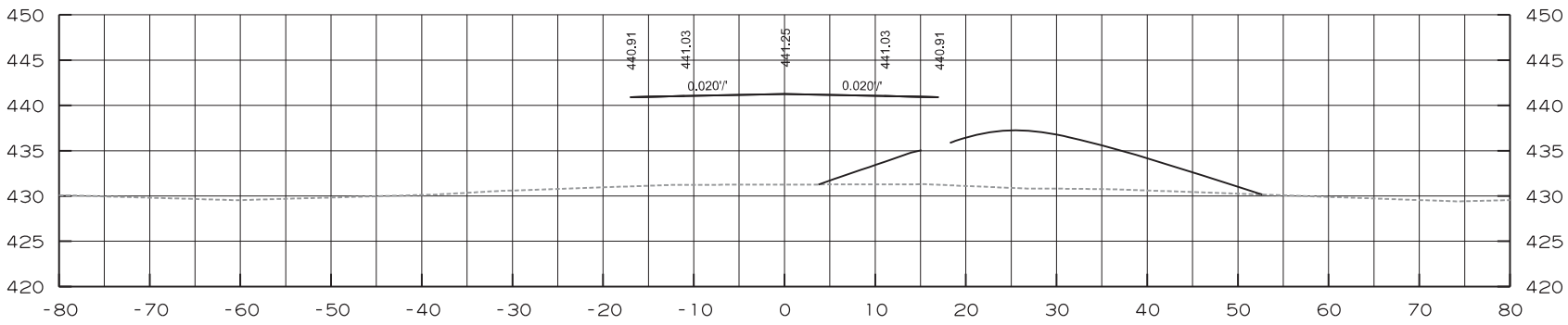
CUT VOLUME 0
FILL VOLUME 106



AREA CUT 0.00
AREA FILL 226.50

111+03.83
TOE OF SLOPE

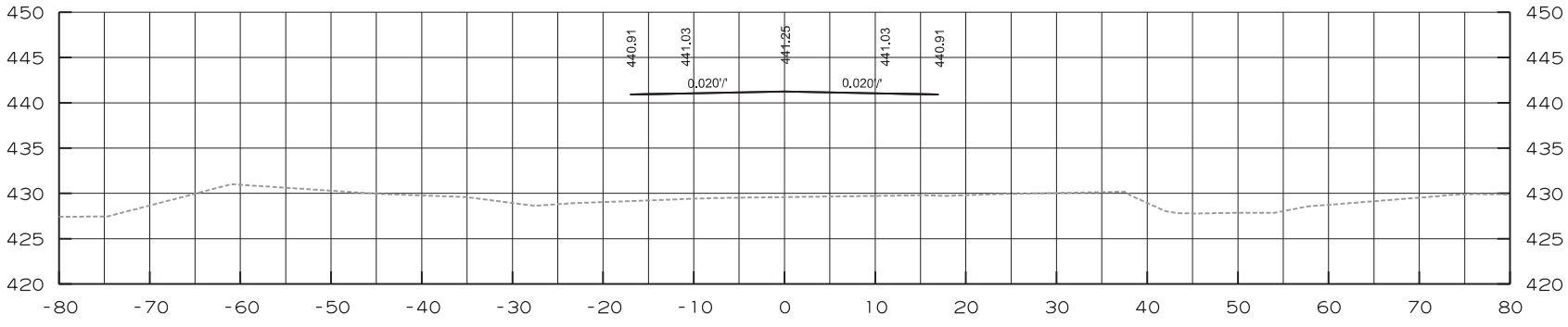
CUT VOLUME 0
FILL VOLUME 28



AREA CUT 0.00
AREA FILL 162.82

111+00.00

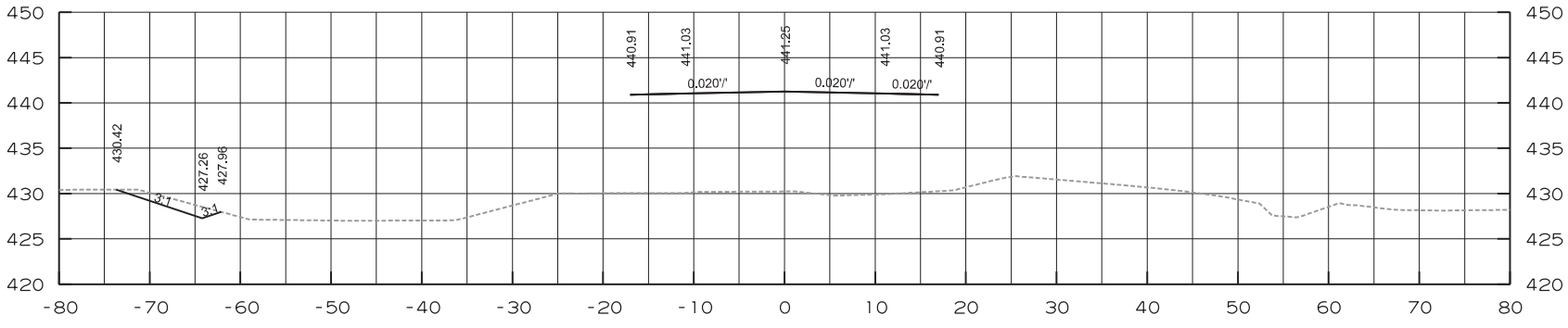
CUT VOLUME 0
FILL VOLUME 151



AREA CUT 0.00
AREA FILL 0.00

110+50.00

CUT VOLUME 9
FILL VOLUME 0



AREA CUT 9.72
AREA FILL 0.00

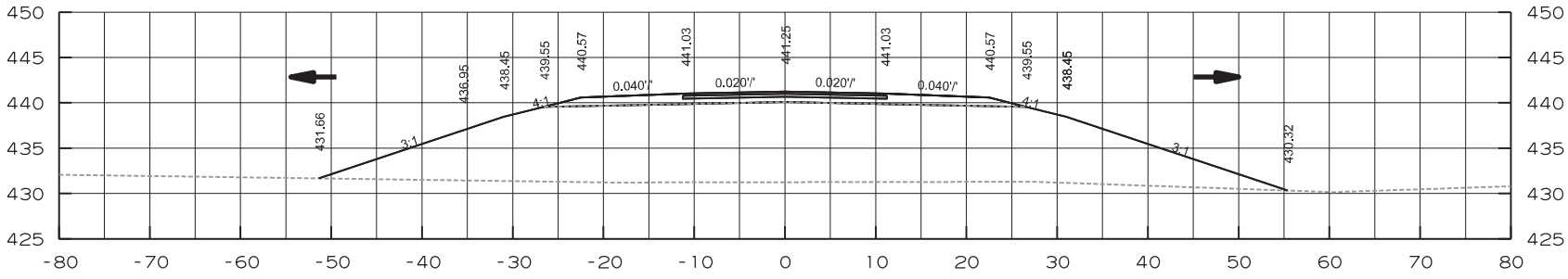
110+00.00

CUT VOLUME 27
FILL VOLUME 0

DATE REVISED
DATE FILMED
DATE REVISED
DATE FILMED

4 CROSS SECTIONS STA. 110+00.00 TO 111+16.53

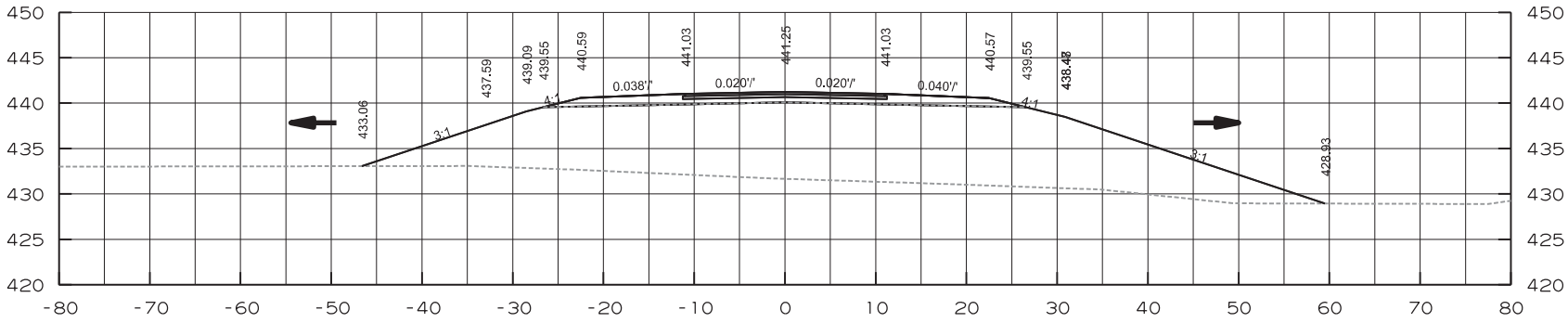
JOB NO.	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
BR6210	6	ARK.		66	78



AREA CUT 0.00
AREA FILL 684.34

112+50.00

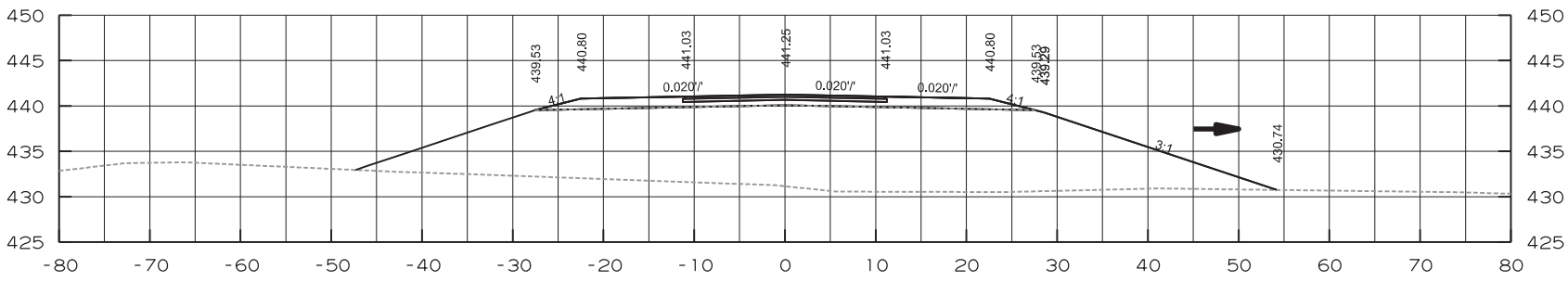
CUT VOLUME 0
FILL VOLUME 1237



AREA CUT 0.00
AREA FILL 651.90

112+00.00

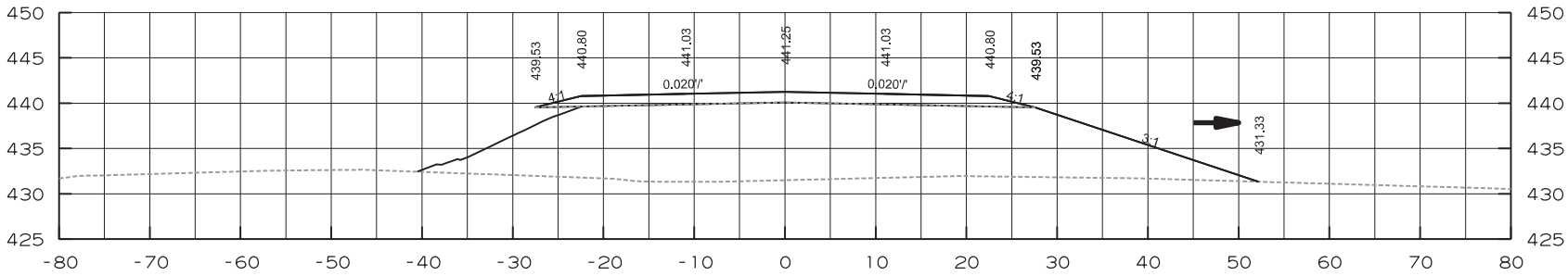
CUT VOLUME 0
FILL VOLUME 818



AREA CUT 0.00
AREA FILL 666.20

111+66.48

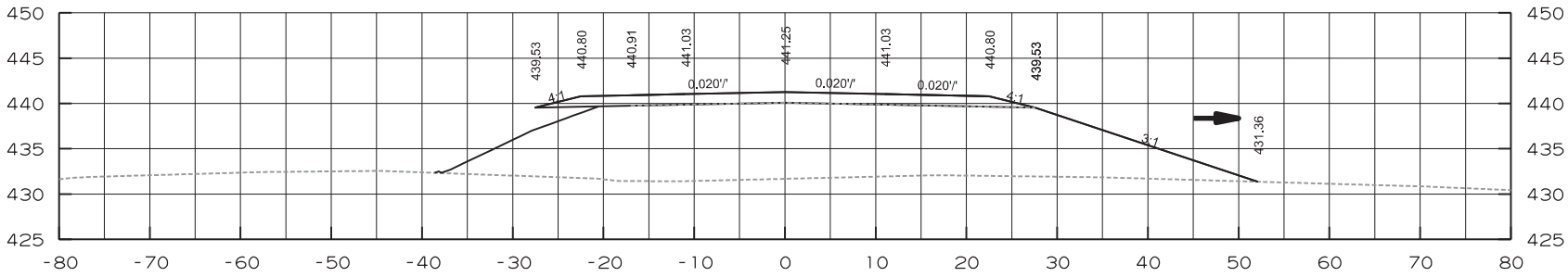
CUT VOLUME 0
FILL VOLUME 379



AREA CUT 0.00
AREA FILL 575.66

111+50.00

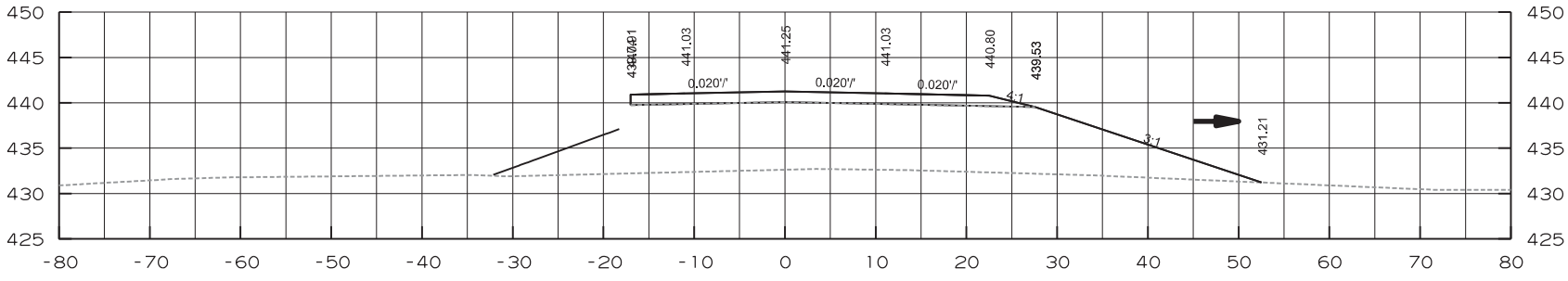
CUT VOLUME 0
FILL VOLUME 40



AREA CUT 0.00
AREA FILL 562.45

111+48.12

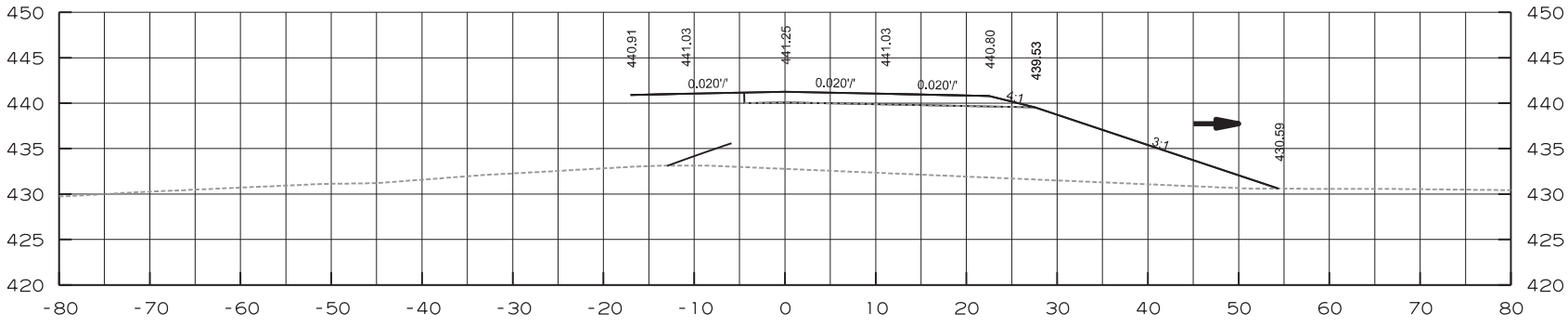
CUT VOLUME 0
FILL VOLUME 186



AREA CUT 0.00
AREA FILL 454.83

111+38.24

CUT VOLUME 0
FILL VOLUME 292



AREA CUT 0.00
AREA FILL 359.68

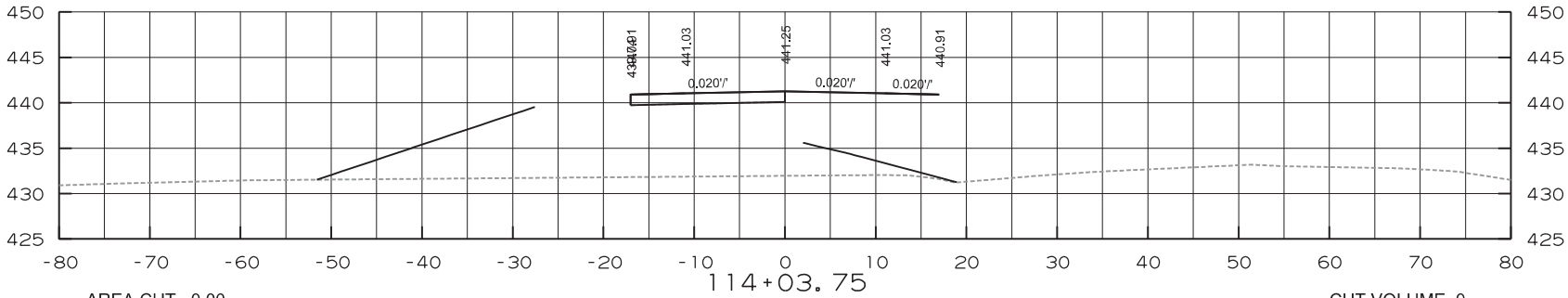
111+21.00

CUT VOLUME 0
FILL VOLUME 58

DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED

4 CROSS SECTIONS STA. 111+21.00 TO 112+50.00

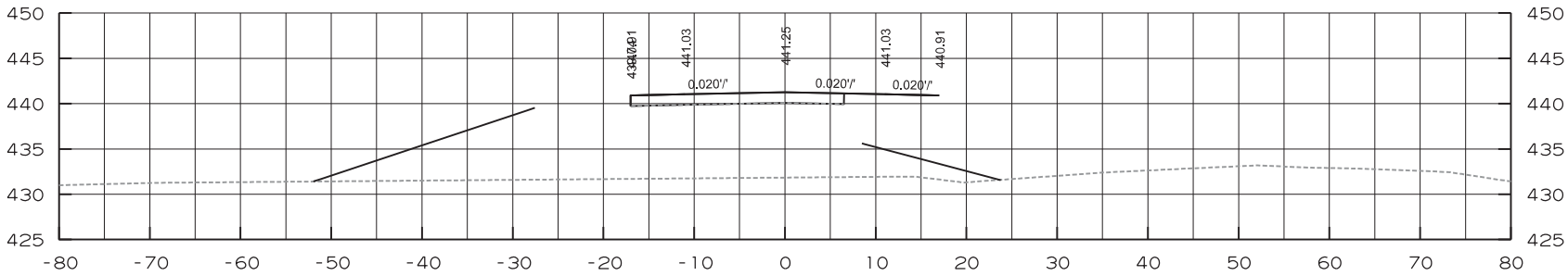
JOB NO.	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
BR6210	6	ARK.		67	78



AREA CUT 0.00
AREA FILL 275.41

114+03.75
BEGIN BRIDGE

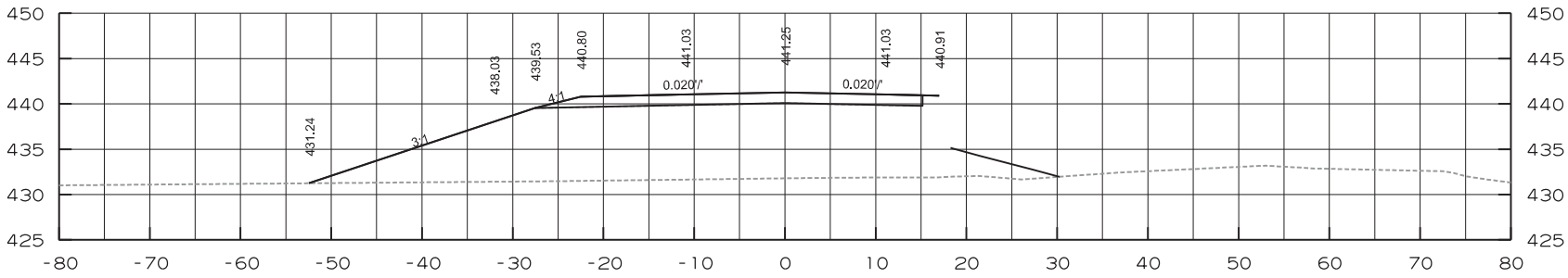
CUT VOLUME 0
FILL VOLUME 41



AREA CUT 0.00
AREA FILL 317.01

114+00.00

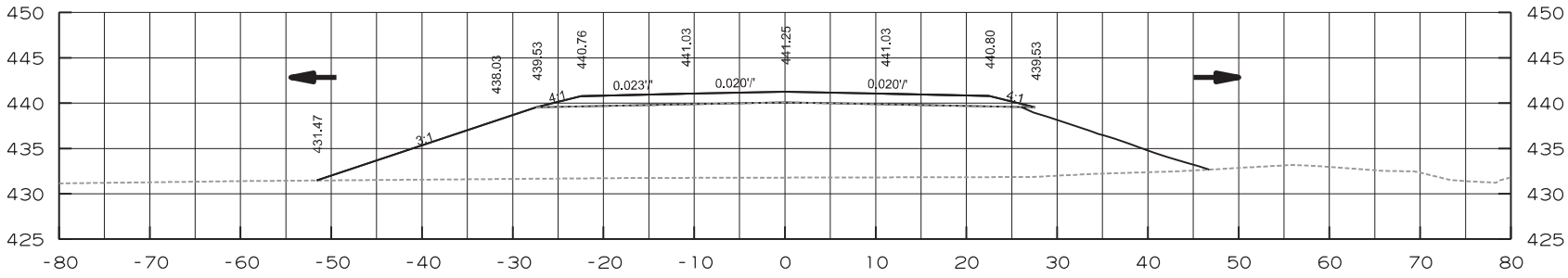
CUT VOLUME 0
FILL VOLUME 73



AREA CUT 0.00
AREA FILL 468.92

113+95.00

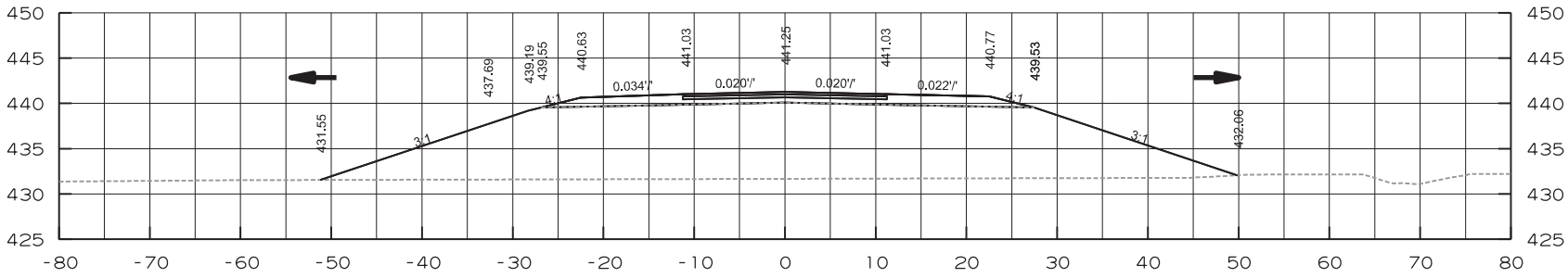
CUT VOLUME 0
FILL VOLUME 337



AREA CUT 0.00
AREA FILL 603.14

113+78.05

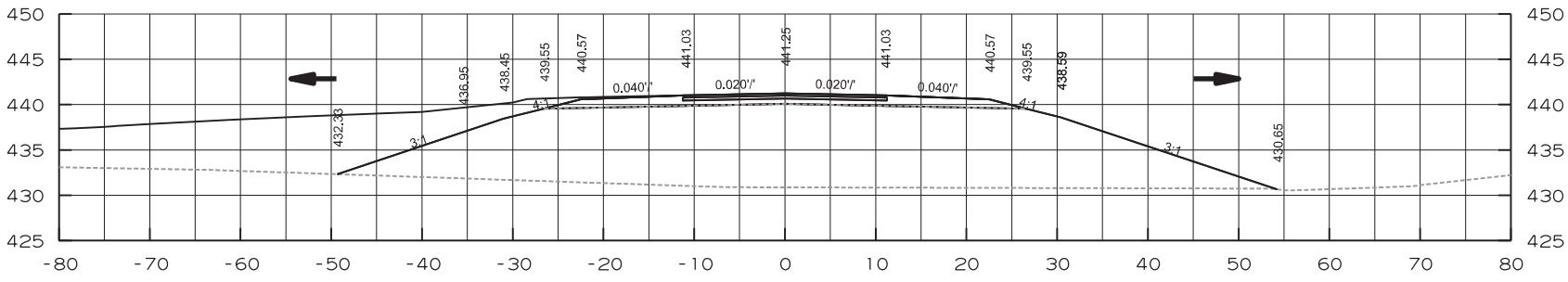
CUT VOLUME 0
FILL VOLUME 640



AREA CUT 0.00
AREA FILL 629.67

113+50.00

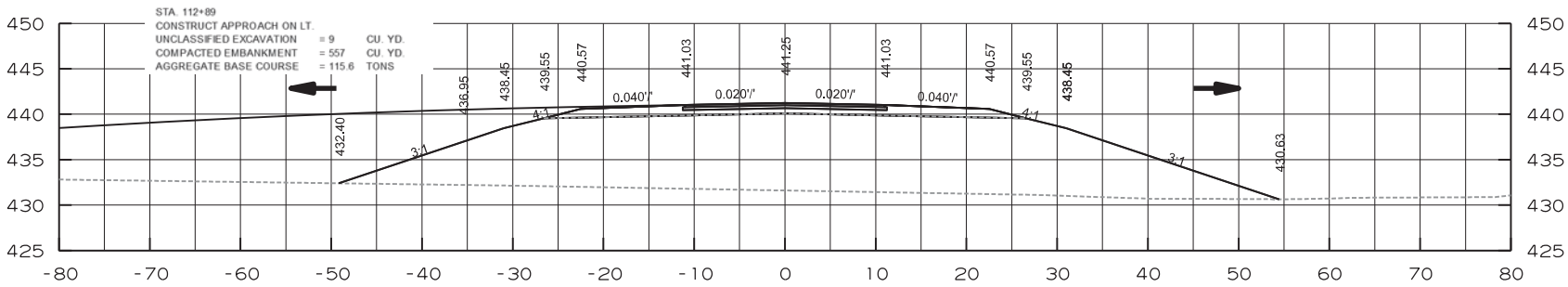
CUT VOLUME 0
FILL VOLUME 1219



AREA CUT 0.00
AREA FILL 686.88

113+00.00

CUT VOLUME 0
FILL VOLUME 272



AREA CUT 0.00
AREA FILL 648.09

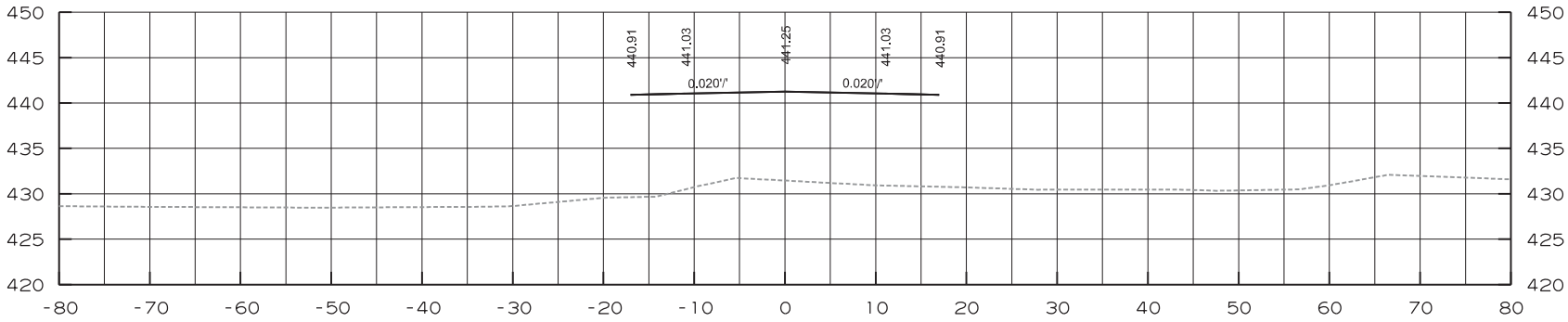
112+89.00

CUT VOLUME 0
FILL VOLUME 962

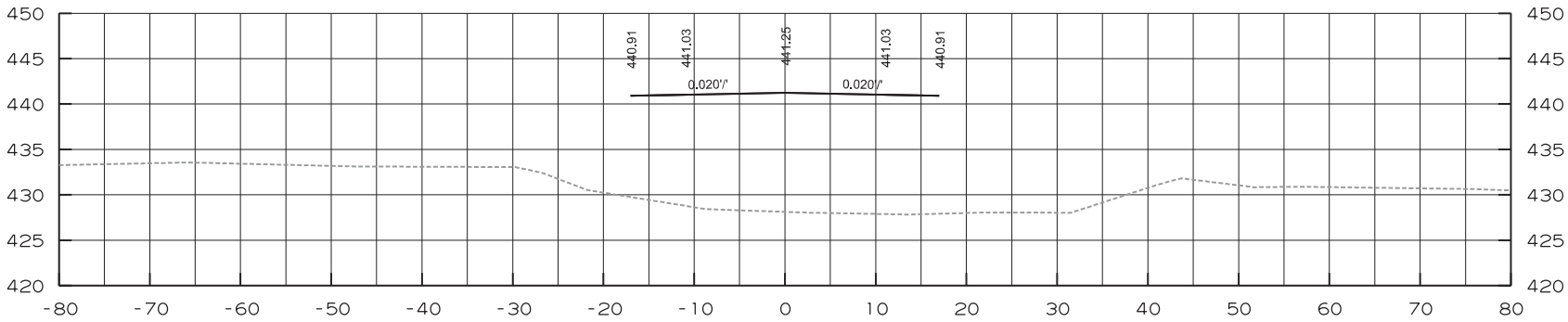
4 CROSS SECTIONS STA. 112+89.00 TO 114+03.75

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	BR6210	68	78

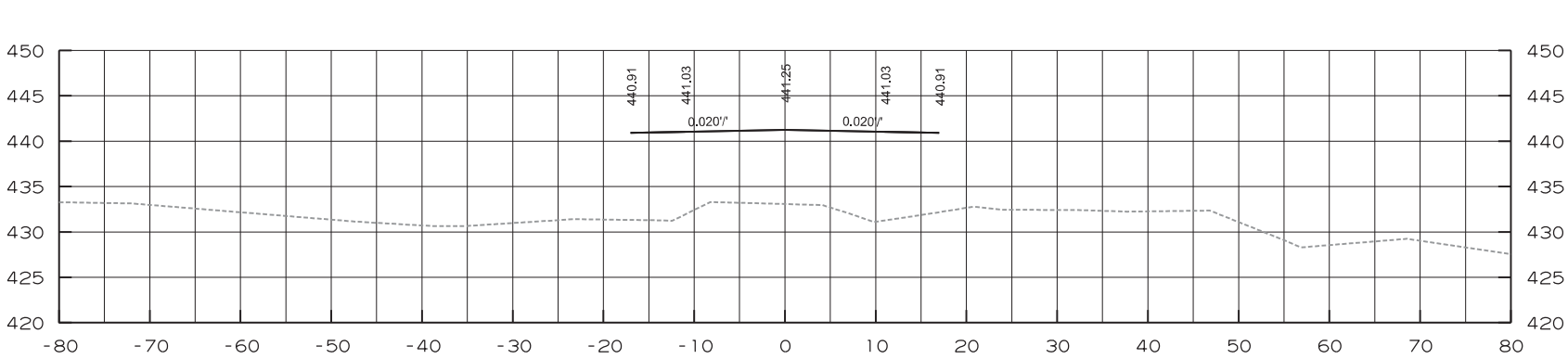
JOB NO.



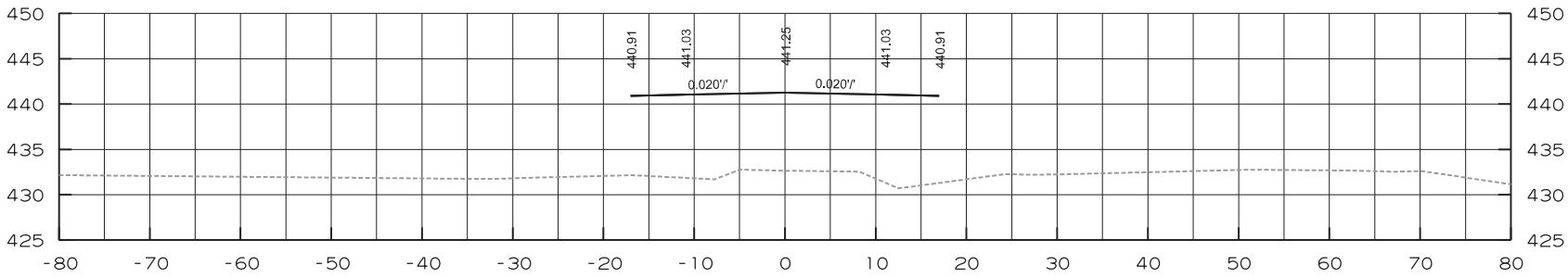
115+50.00



115+00.00



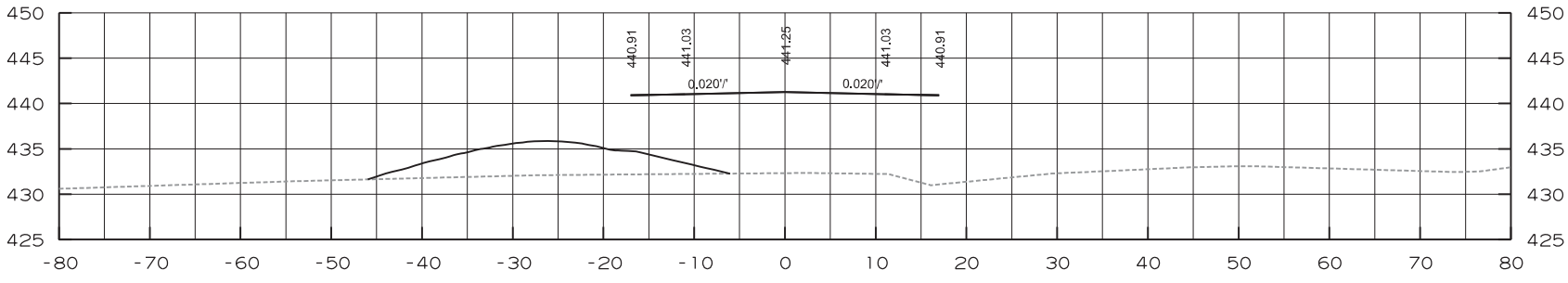
114+50.00



AREA CUT 0.00
AREA FILL 0.00

114+31.21

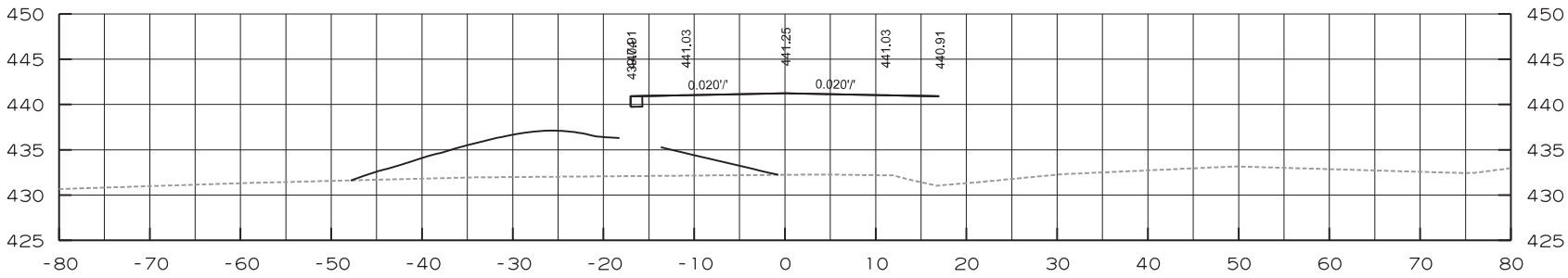
CUT VOLUME 0
FILL VOLUME 26



AREA CUT 0.00
AREA FILL 89.95

114+15.54

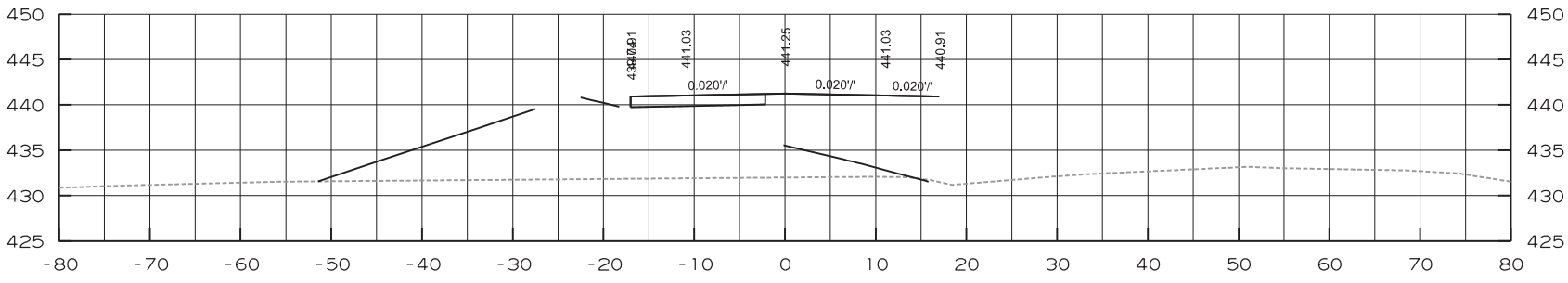
CUT VOLUME 0
FILL VOLUME 11



AREA CUT 0.00
AREA FILL 130.91

114+12.81
TOE OF SLOPE

CUT VOLUME 0
FILL VOLUME 58



AREA CUT 0.14
AREA FILL 273.09

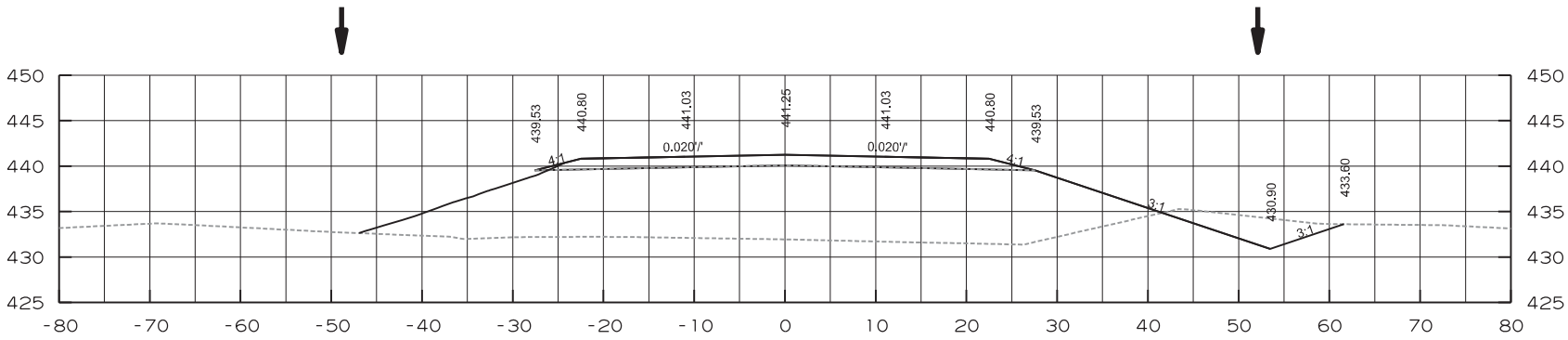
114+05.00

CUT VOLUME 0
FILL VOLUME 13

4 CROSS SECTIONS STA. 114+05.00 TO 115+50.00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	BR6210	69	78

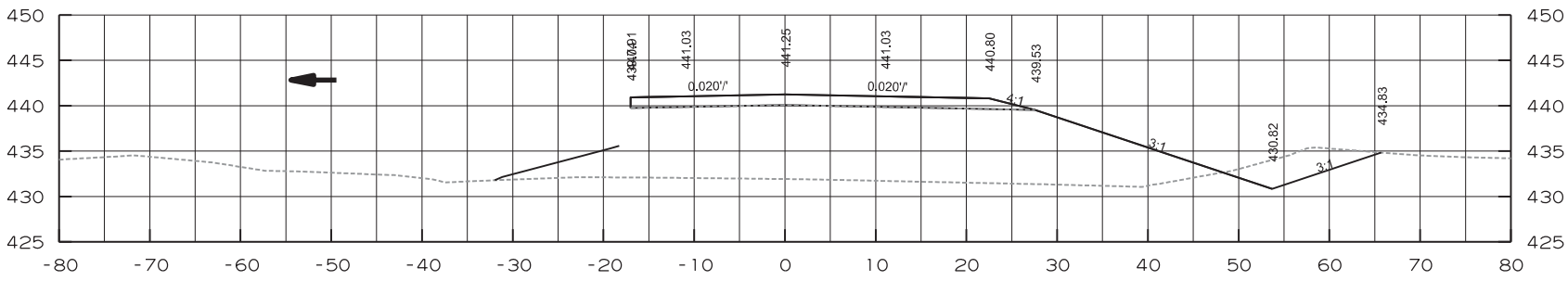
JOB NO.



AREA CUT 35.95
AREA FILL 559.52

116+41.99

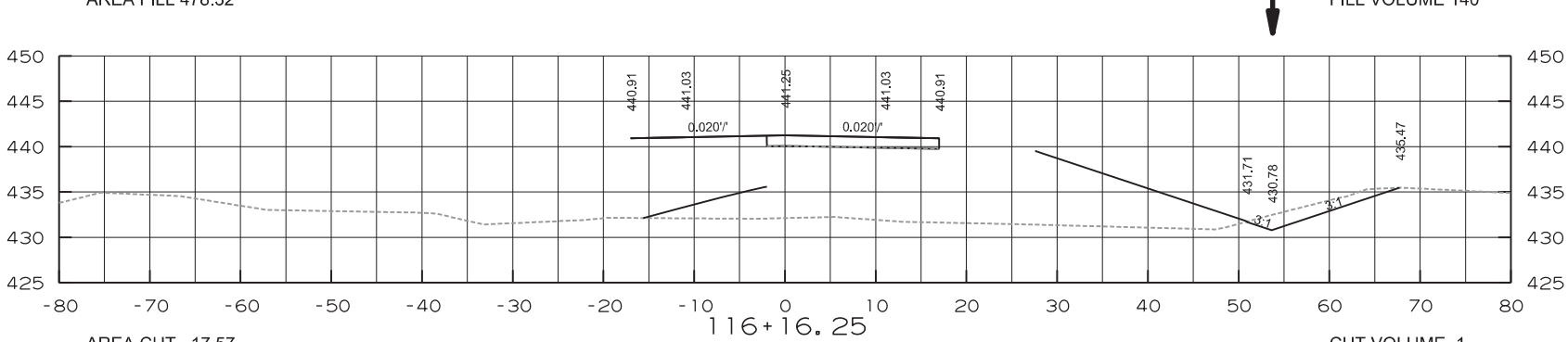
CUT VOLUME 21
FILL VOLUME 307



AREA CUT 34.31
AREA FILL 478.32

116+26.00

CUT VOLUME 10
FILL VOLUME 140

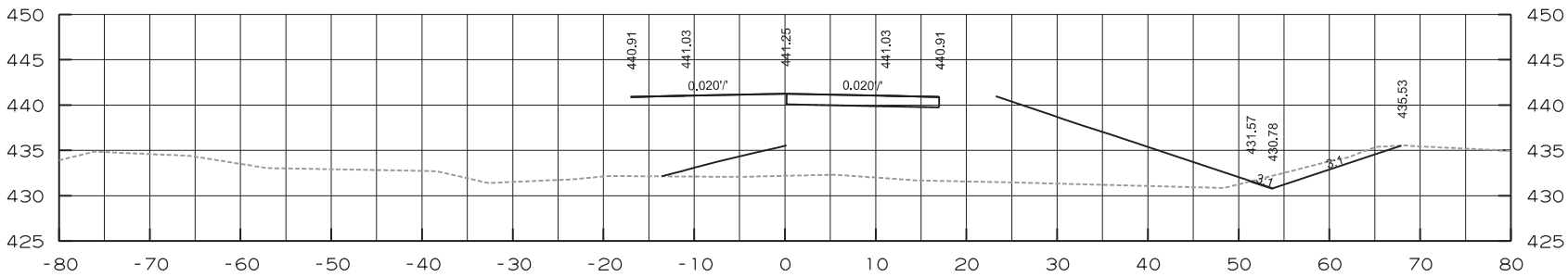


AREA CUT 17.57
AREA FILL 299.62

116+16.25

END BRIDGE

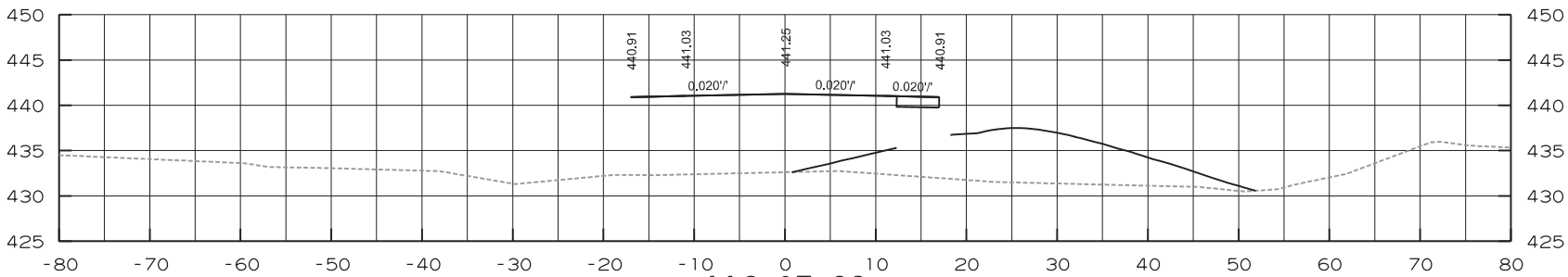
CUT VOLUME 1
FILL VOLUME 14



AREA CUT 13.96
AREA FILL 300.02

116+15.00

CUT VOLUME 2
FILL VOLUME 62

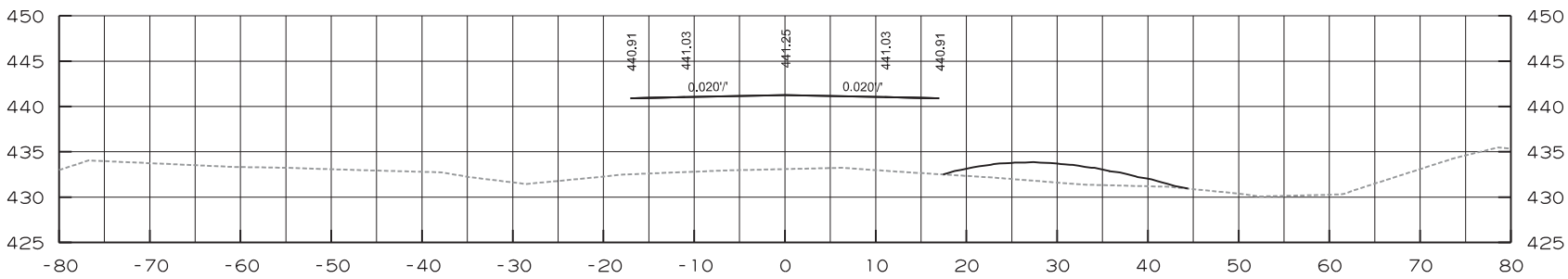


AREA CUT 0.00
AREA FILL 180.25

116+07.99

TOE OF SLOPE

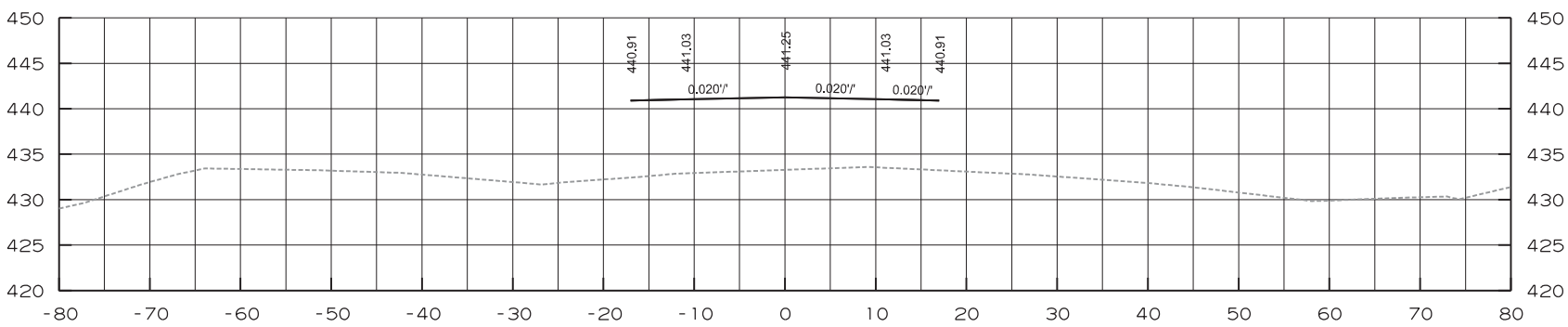
CUT VOLUME 0
FILL VOLUME 32



AREA CUT 0.00
AREA FILL 35.67

116+00.00

CUT VOLUME 0
FILL VOLUME 7



AREA CUT 0.00
AREA FILL 0.00

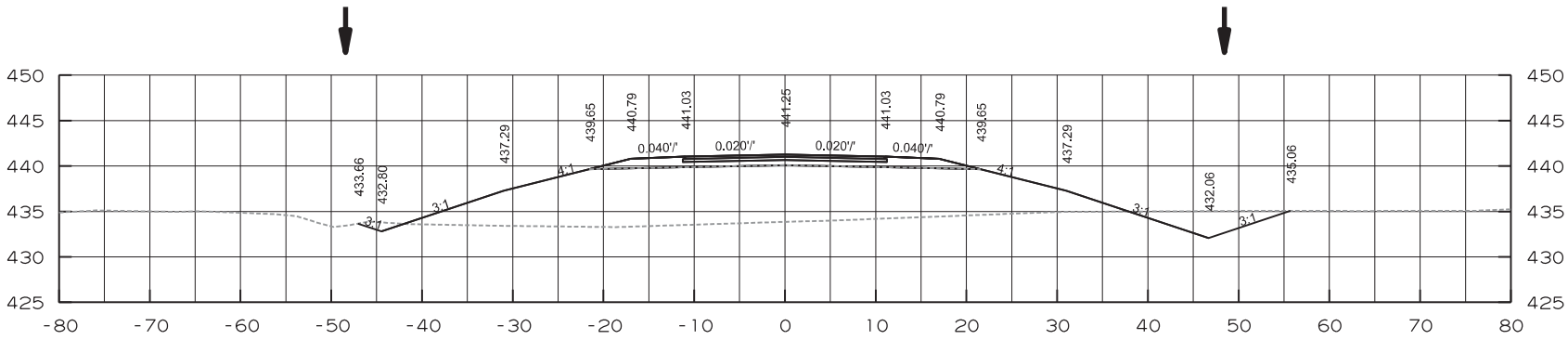
115+88.77

CUT VOLUME 0
FILL VOLUME 0

DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED

4 CROSS SECTIONS STA. 115+88.77 TO 116+41.99

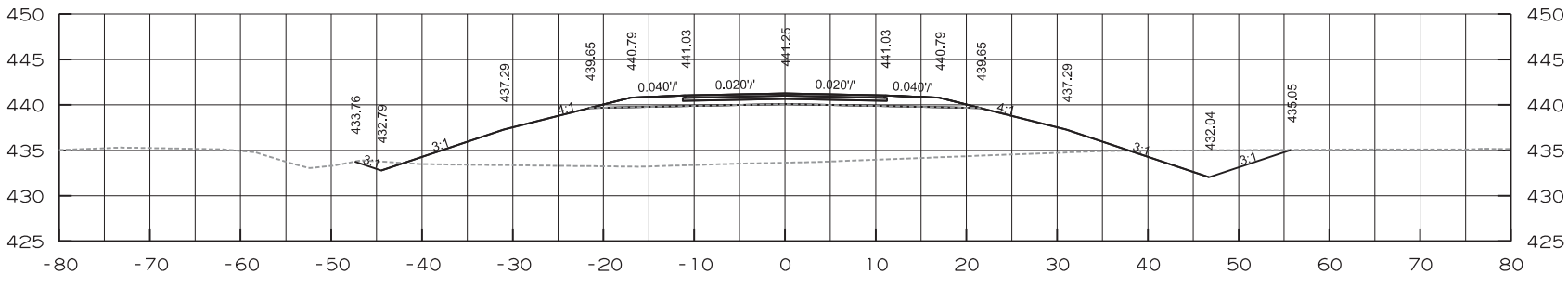
JOB NO.	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
BR6210	6	ARK.		70	78



AREA CUT 29.27
AREA FILL 371.04

119+03.75
BEGIN SUPER

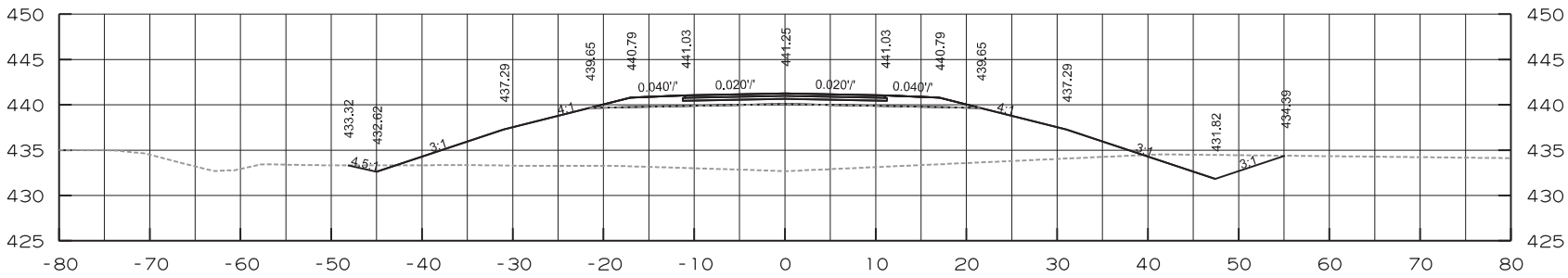
CUT VOLUME 4
FILL VOLUME 52



AREA CUT 29.10
AREA FILL 382.22

119+00.00

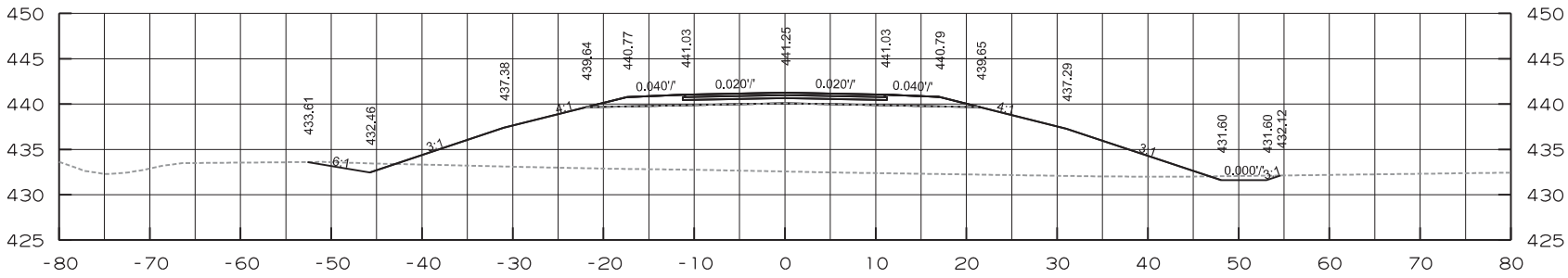
CUT VOLUME 48
FILL VOLUME 744



AREA CUT 22.85
AREA FILL 421.81

118+50.00

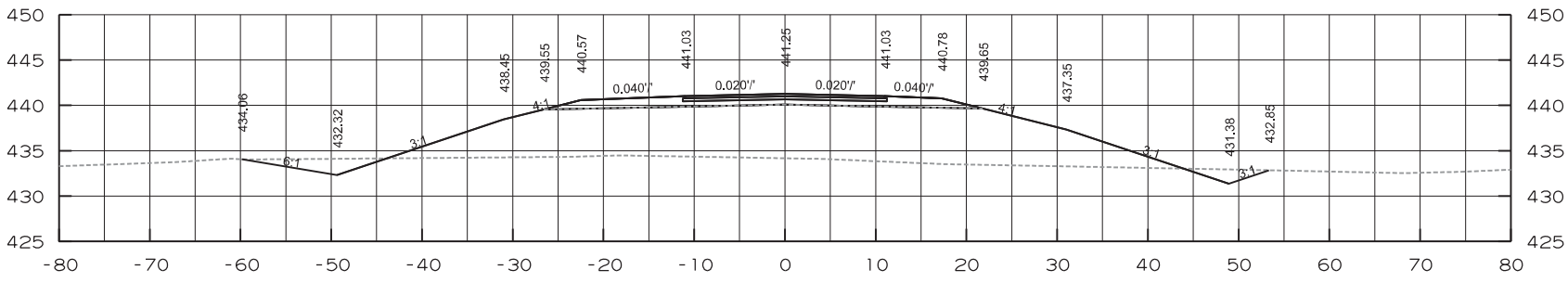
CUT VOLUME 29
FILL VOLUME 848



AREA CUT 7.99
AREA FILL 494.21

118+00.00

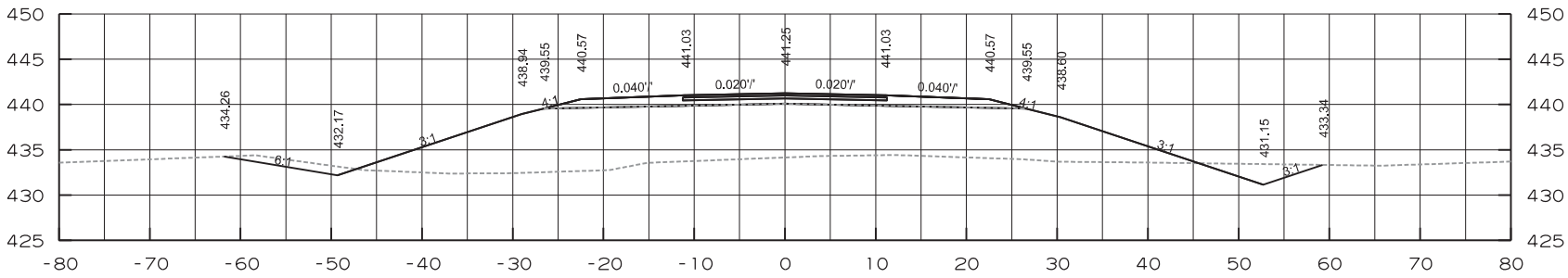
CUT VOLUME 27
FILL VOLUME 827



AREA CUT 21.49
AREA FILL 398.89

117+50.00

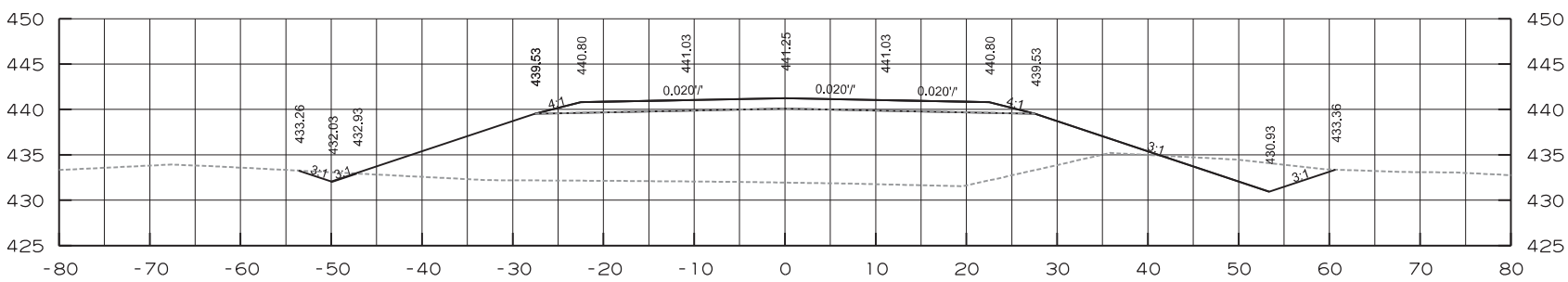
CUT VOLUME 43
FILL VOLUME 790



AREA CUT 25.39
AREA FILL 453.88

117+00.00

CUT VOLUME 57
FILL VOLUME 921



AREA CUT 34.25
AREA FILL 540.89

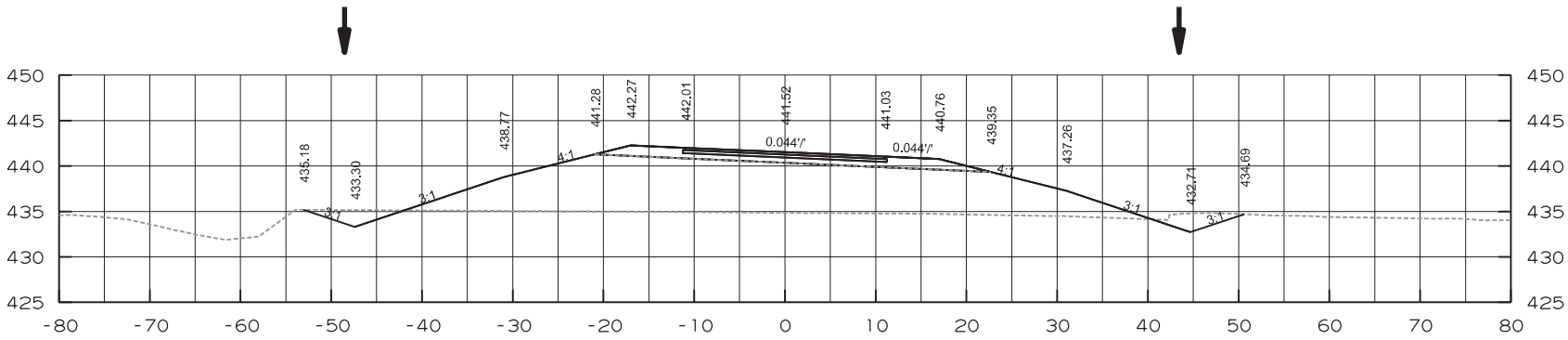
116+50.00

CUT VOLUME 10
FILL VOLUME 163

4 CROSS SECTIONS STA. 116+50.00 TO 119+03.75

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	BR6210	71	78

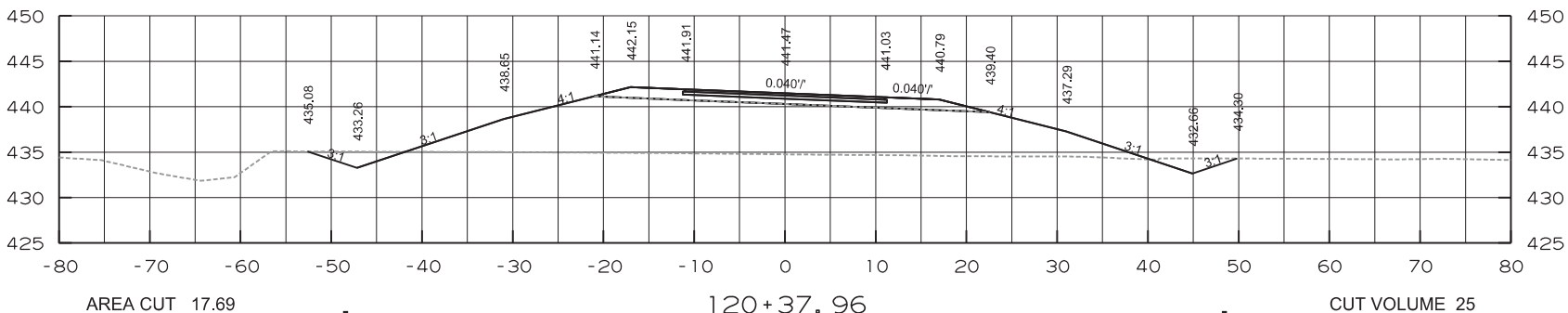
JOB NO.



AREA CUT 20.99
AREA FILL 353.87

120+50.00

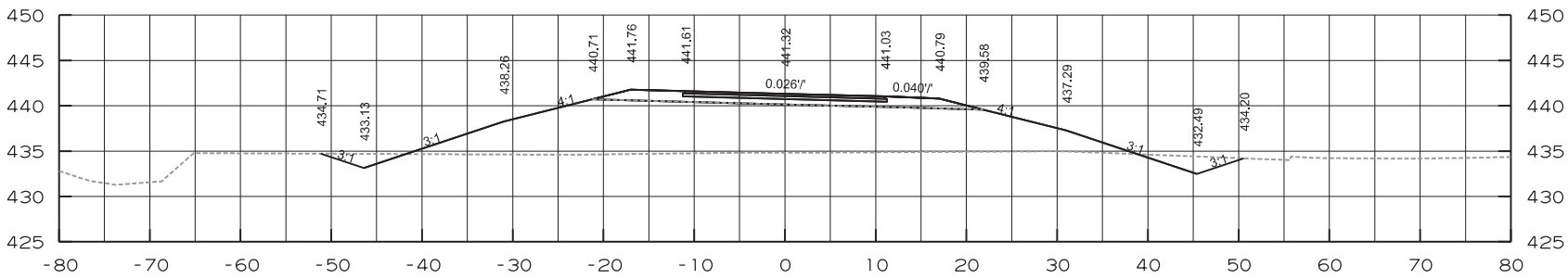
CUT VOLUME 9
FILL VOLUME 158



AREA CUT 17.69
AREA FILL 354.36

120+37.96

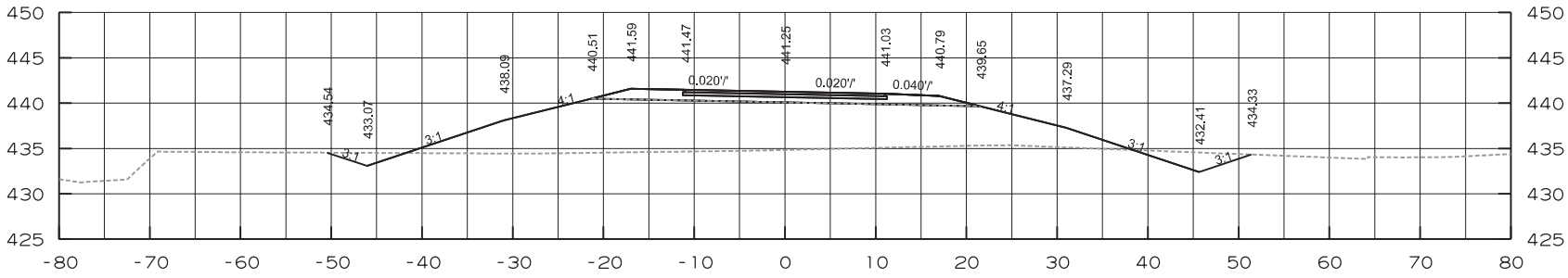
CUT VOLUME 25
FILL VOLUME 487



AREA CUT 18.49
AREA FILL 337.93

120+00.00

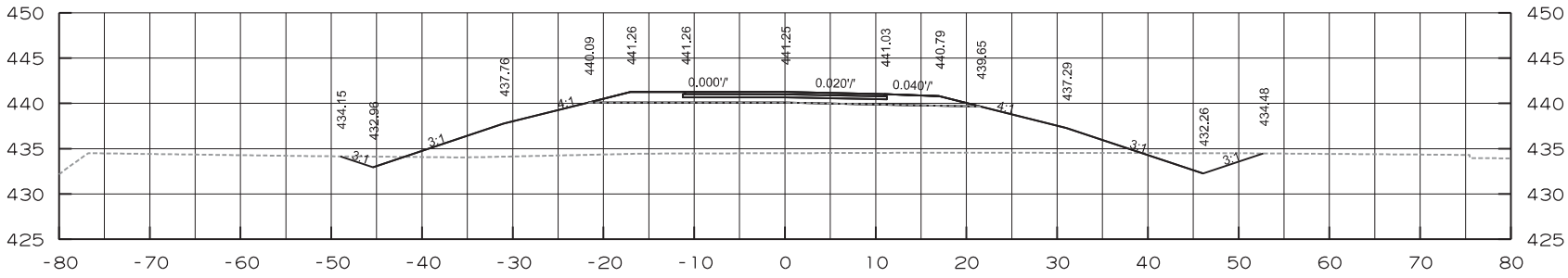
CUT VOLUME 12
FILL VOLUME 213



AREA CUT 20.26
AREA FILL 327.75

119+82.69

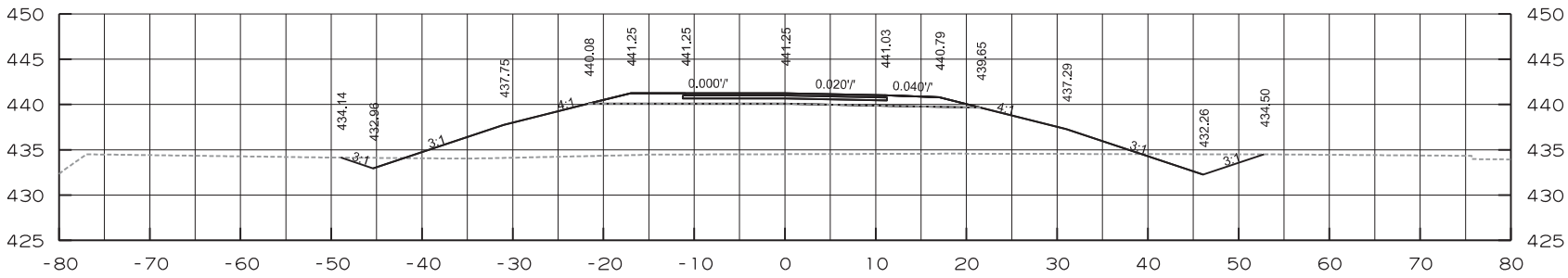
CUT VOLUME 24
FILL VOLUME 410



AREA CUT 19.08
AREA FILL 349.84

119+50.00

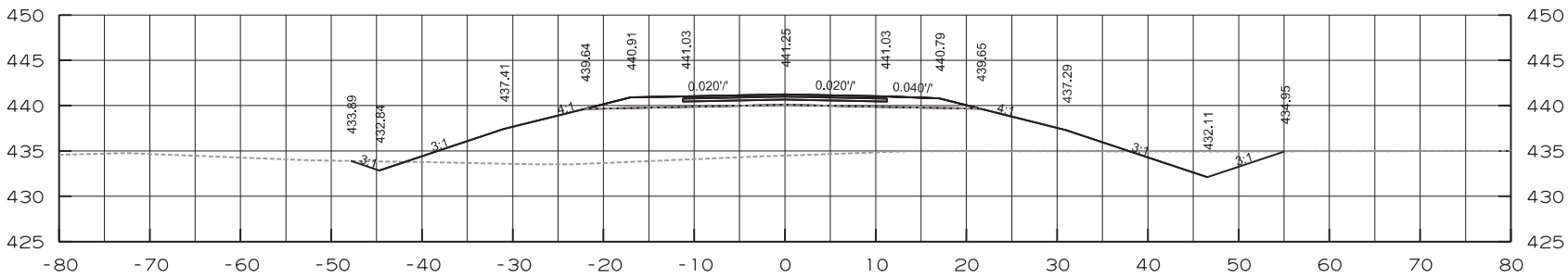
CUT VOLUME 1
FILL VOLUME 11



AREA CUT 19.21
AREA FILL 349.26

119+49.14

CUT VOLUME 29
FILL VOLUME 431



AREA CUT 27.02
AREA FILL 343.85

119+15.59

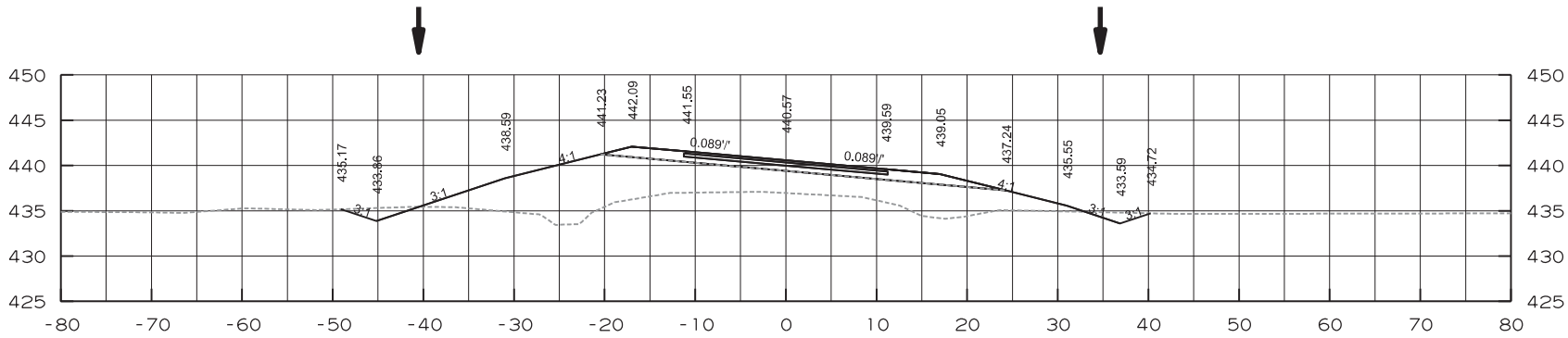
CUT VOLUME 12
FILL VOLUME 157

DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED

4 CROSS SECTIONS STA. 119+15.59 TO 120+50.00

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		72	78

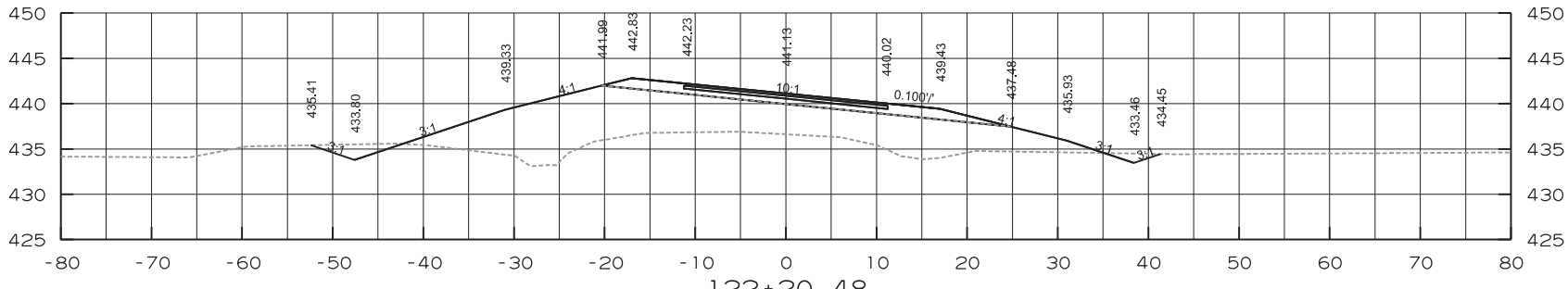
JOB NO. BR6210



AREA CUT 10.60
AREA FILL 225.38

122+50.00

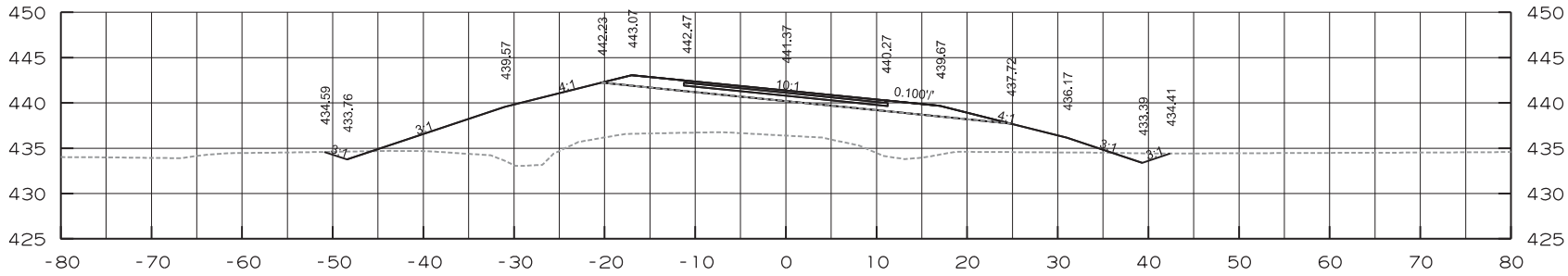
CUT VOLUME 12
FILL VOLUME 280



AREA CUT 12.00
AREA FILL 286.40

122+20.48
END MAX SUPER

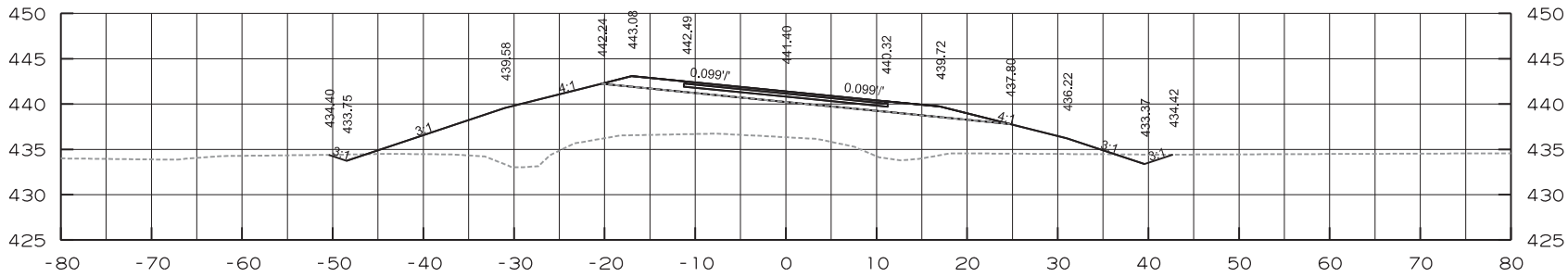
CUT VOLUME 5
FILL VOLUME 188



AREA CUT 5.59
AREA FILL 321.59

122+03.75
BEGIN MAX SUPER

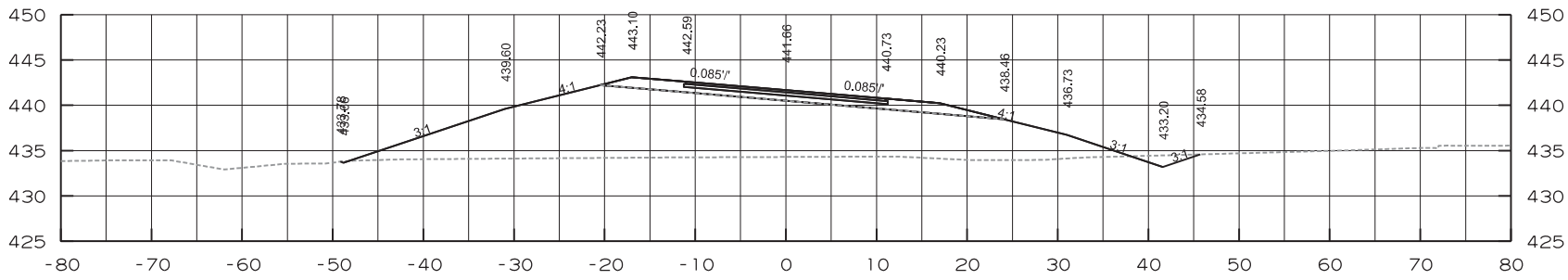
CUT VOLUME 1
FILL VOLUME 45



AREA CUT 4.77
AREA FILL 328.34

122+00.00

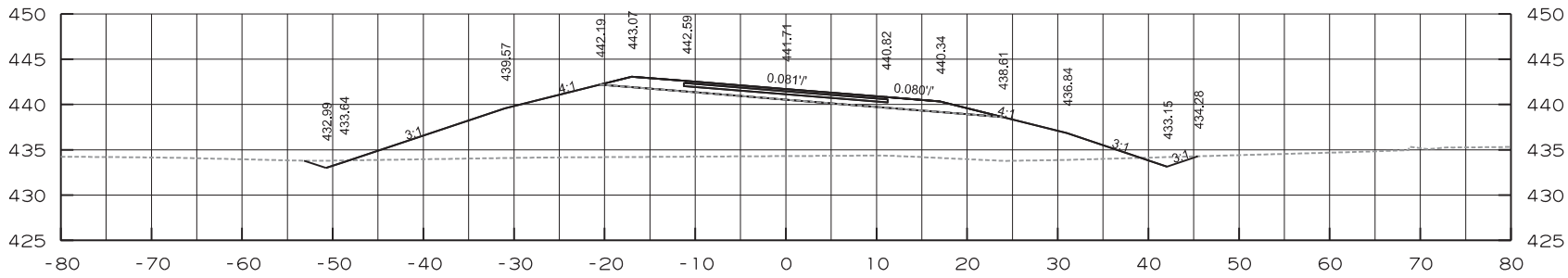
CUT VOLUME 7
FILL VOLUME 543



AREA CUT 4.96
AREA FILL 423.92

121+61.02

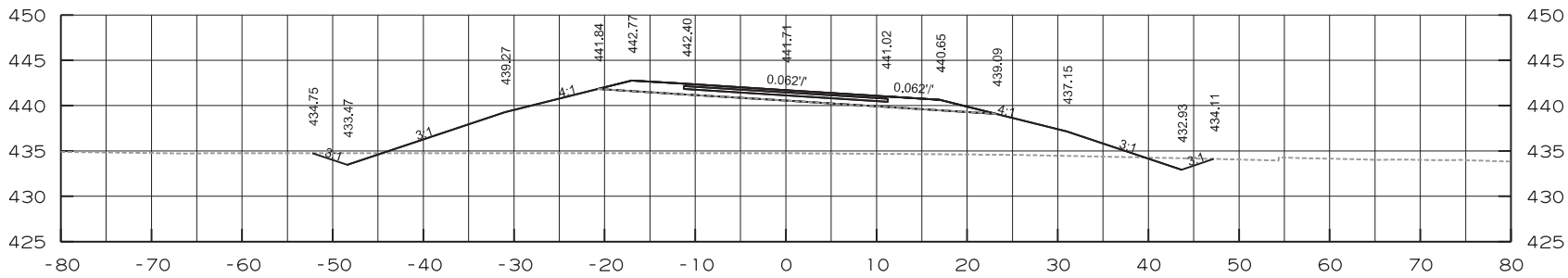
CUT VOLUME 2
FILL VOLUME 175



AREA CUT 4.28
AREA FILL 432.11

121+50.00

CUT VOLUME 13
FILL VOLUME 755



AREA CUT 9.68
AREA FILL 383.24

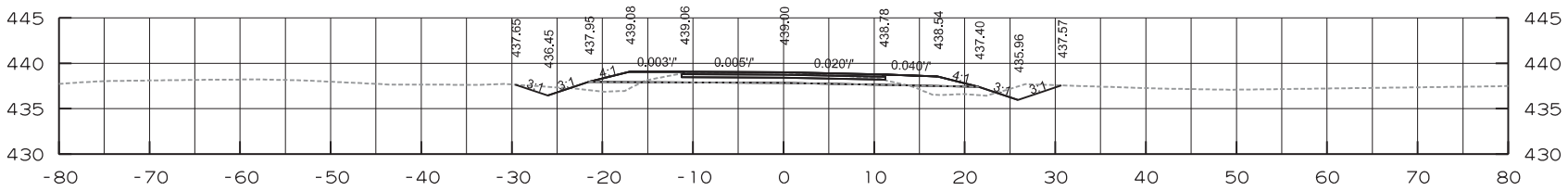
121+00.00

CUT VOLUME 28
FILL VOLUME 683

4 CROSS SECTIONS STA. 121+00.00 TO 122+50.00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	BR6210	73	78

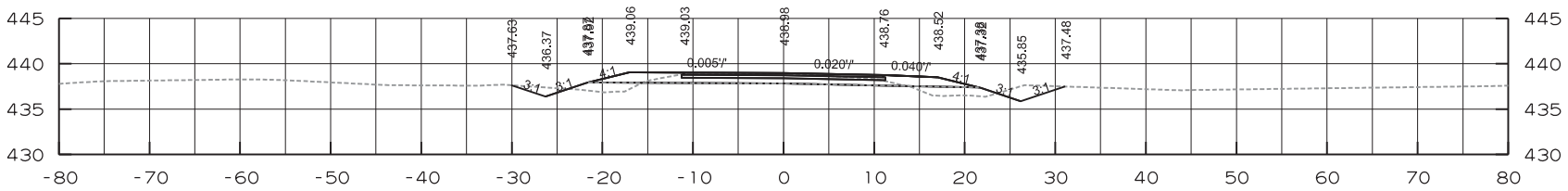
JOB NO.



AREA CUT 34.80
AREA FILL 12.78

124+70.00

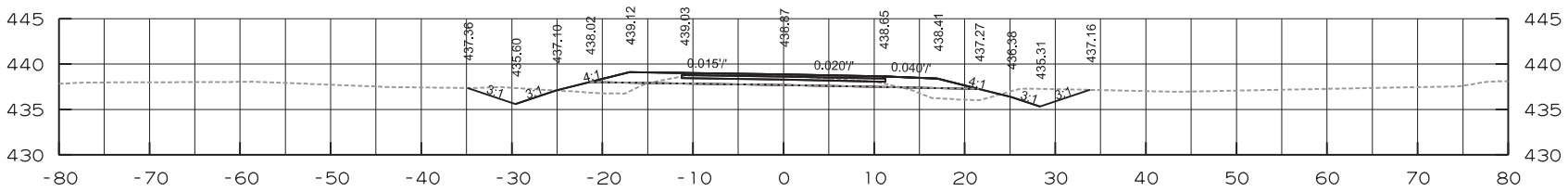
CUT VOLUME 4
FILL VOLUME 2



AREA CUT 35.17
AREA FILL 13.30

124+66.56

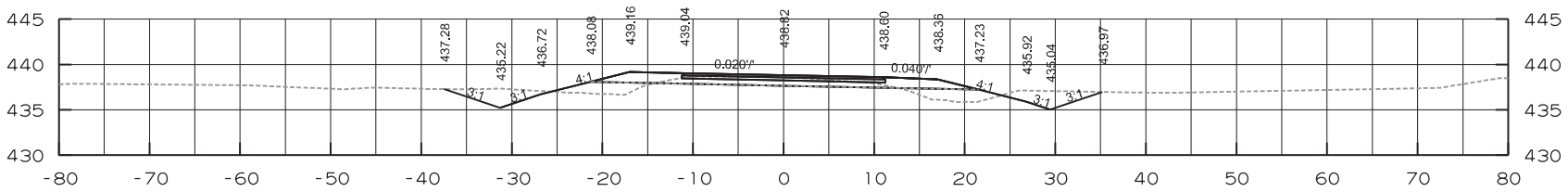
CUT VOLUME 23
FILL VOLUME 10



AREA CUT 40.17
AREA FILL 17.78

124+50.00

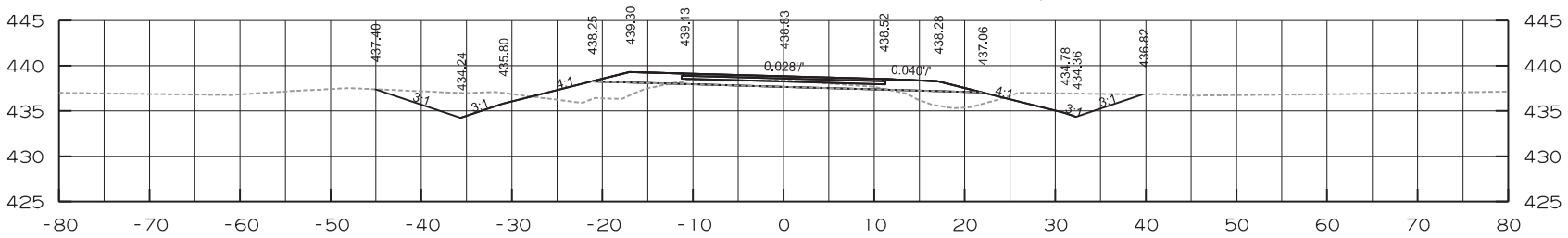
CUT VOLUME 13
FILL VOLUME 6



AREA CUT 43.01
AREA FILL 20.24

124+41.53

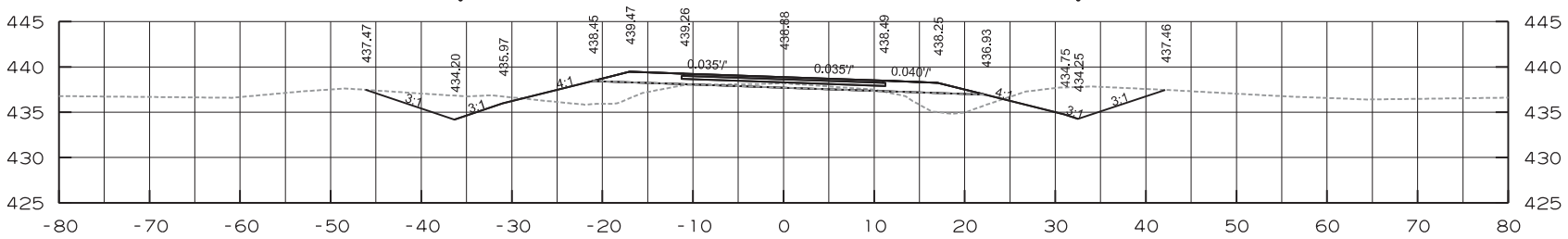
CUT VOLUME 39
FILL VOLUME 20



AREA CUT 56.84
AREA FILL 32.03

124+20.48

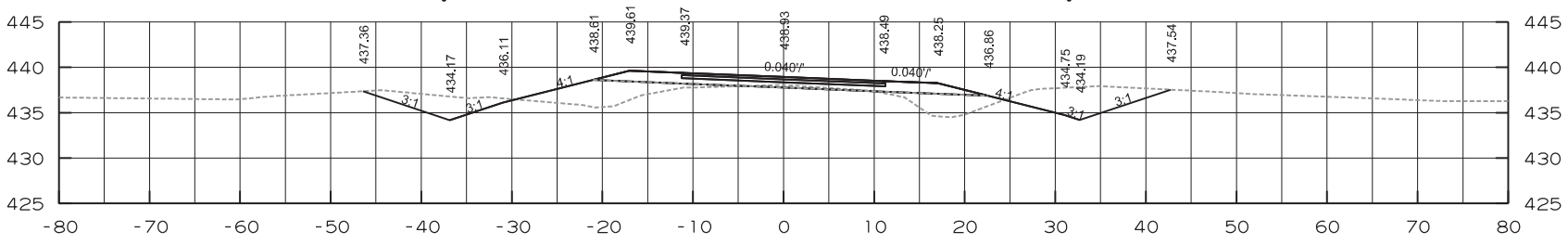
CUT VOLUME 45
FILL VOLUME 28



AREA CUT 61.93
AREA FILL 41.88

124+00.00

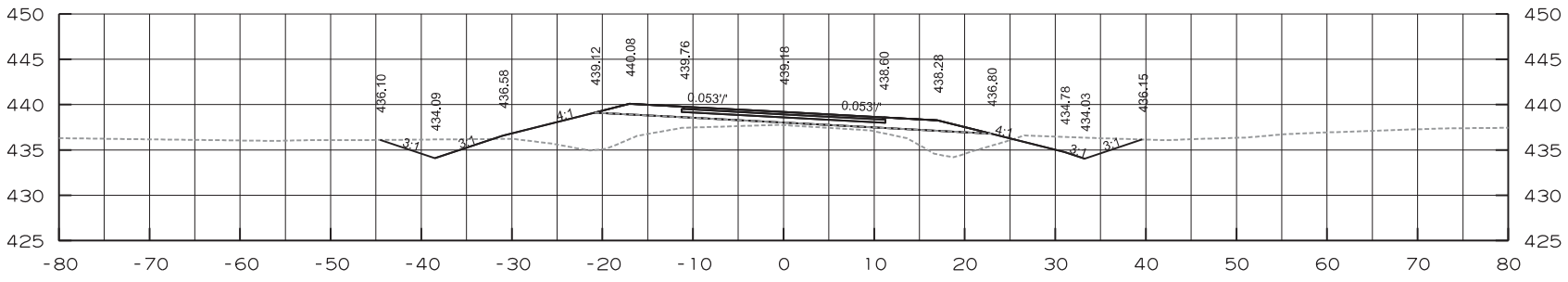
CUT VOLUME 31
FILL VOLUME 24



AREA CUT 61.44
AREA FILL 51.11

123+86.27

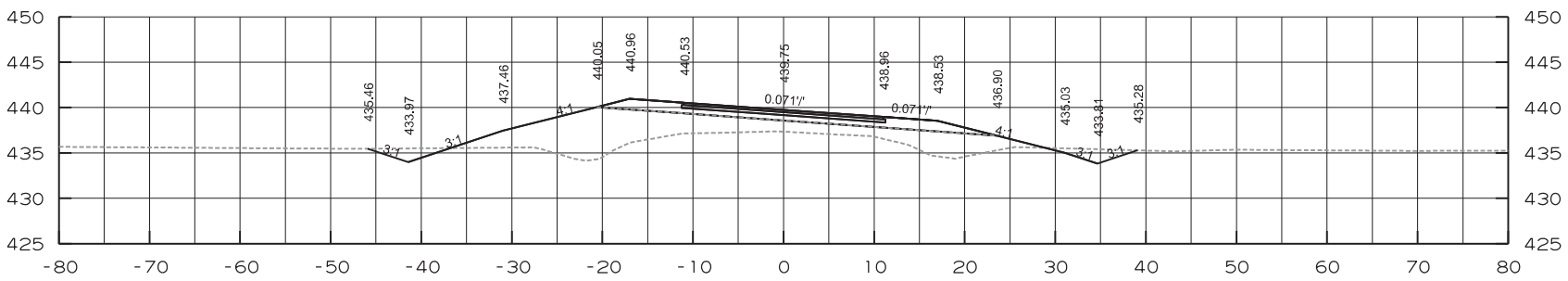
CUT VOLUME 62
FILL VOLUME 89



AREA CUT 30.36
AREA FILL 81.68

123+50.00

CUT VOLUME 42
FILL VOLUME 206



AREA CUT 14.75
AREA FILL 141.22

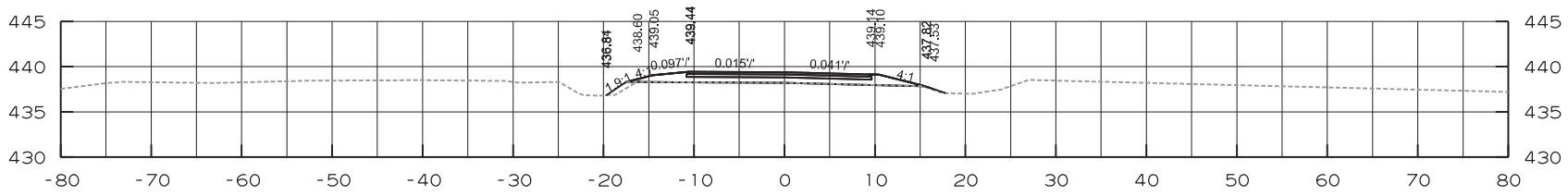
123+00.00

CUT VOLUME 23
FILL VOLUME 339

4 CROSS SECTIONS STA. 123+00.00 TO 124+70.00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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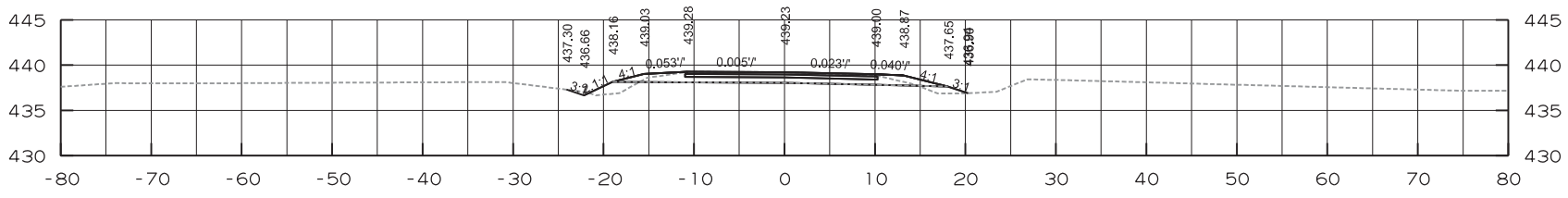
JOB NO. BR6210



AREA CUT 32.25
AREA FILL 1.76

125+20.48
END JOB BR6210

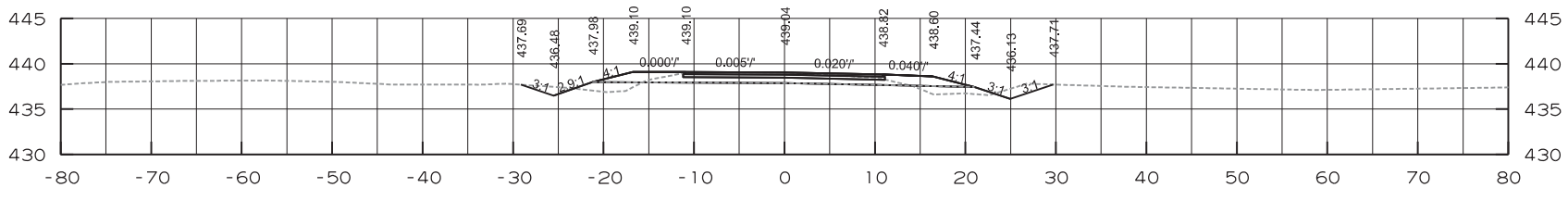
CUT VOLUME 24
FILL VOLUME 3



AREA CUT 30.17
AREA FILL 6.97

125+00.00

CUT VOLUME 30
FILL VOLUME 9



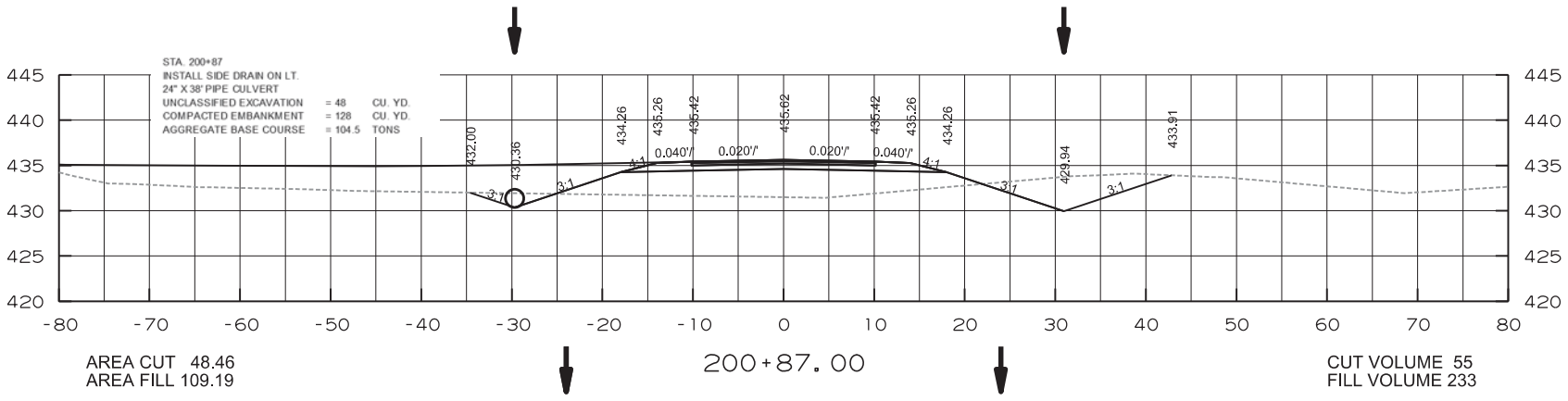
AREA CUT 34.19
AREA FILL 11.49

124+75.09

CUT VOLUME 6
FILL VOLUME 2

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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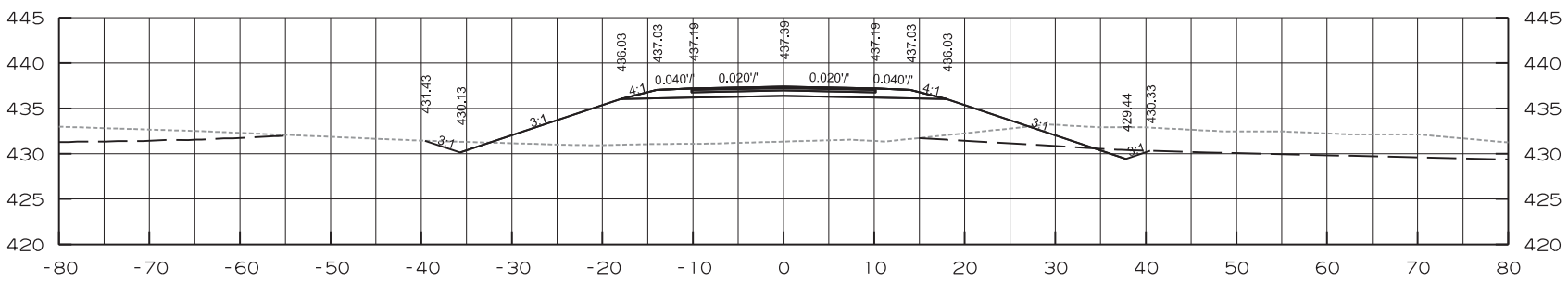
4 CROSS SECTIONS STA. 124+75.09 TO 125+20.48



AREA CUT 48.46
AREA FILL 109.19

200+87.00

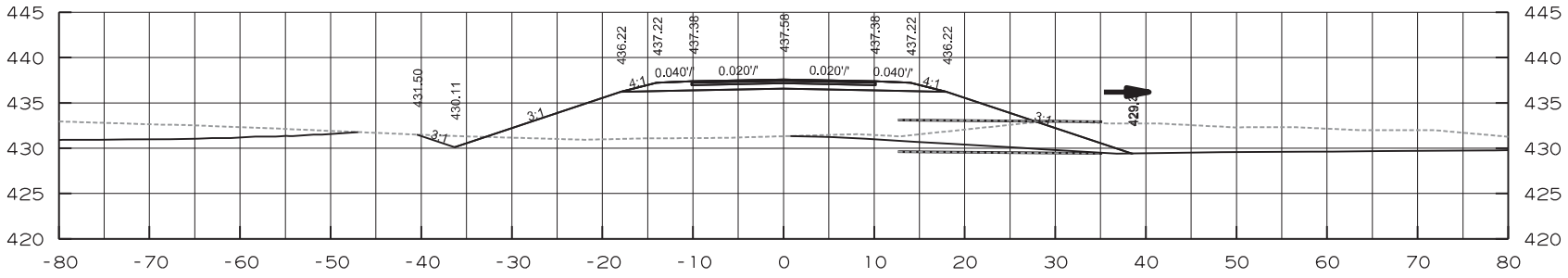
CUT VOLUME 55
FILL VOLUME 233



AREA CUT 31.69
AREA FILL 231.21

200+50.00

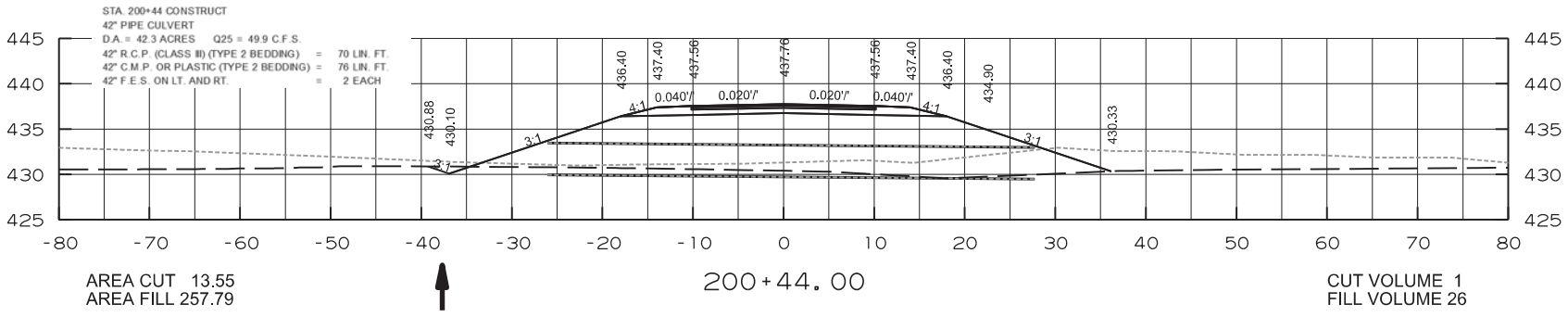
CUT VOLUME 3
FILL VOLUME 28



AREA CUT 23.11
AREA FILL 244.95

200+46.88

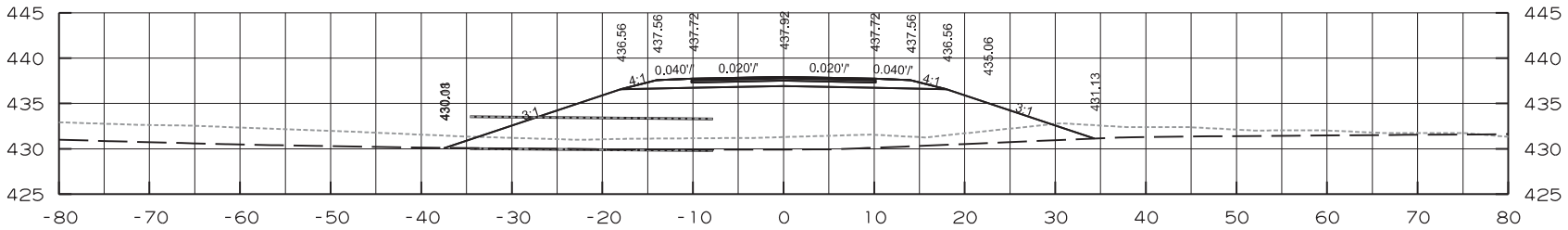
CUT VOLUME 2
FILL VOLUME 27



AREA CUT 13.55
AREA FILL 257.79

200+44.00

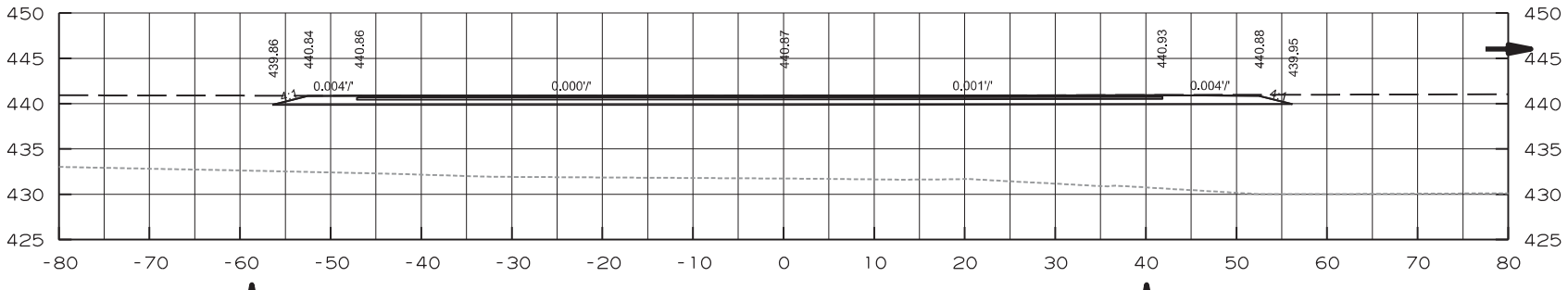
CUT VOLUME 1
FILL VOLUME 26



AREA CUT 6.44
AREA FILL 269.88

200+41.36

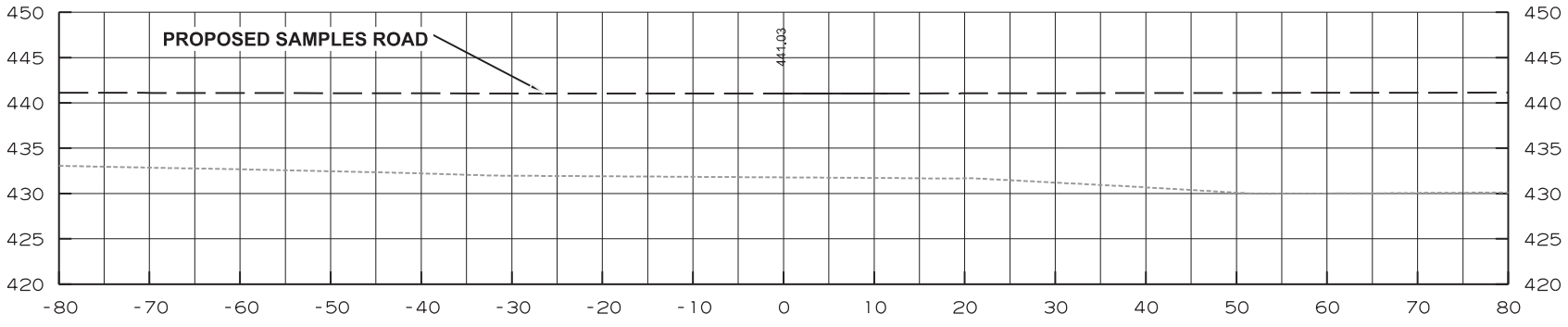
CUT VOLUME 5
FILL VOLUME 197



AREA CUT 0.00
AREA FILL 0.00

200+02.00

CUT VOLUME 0
FILL VOLUME 0



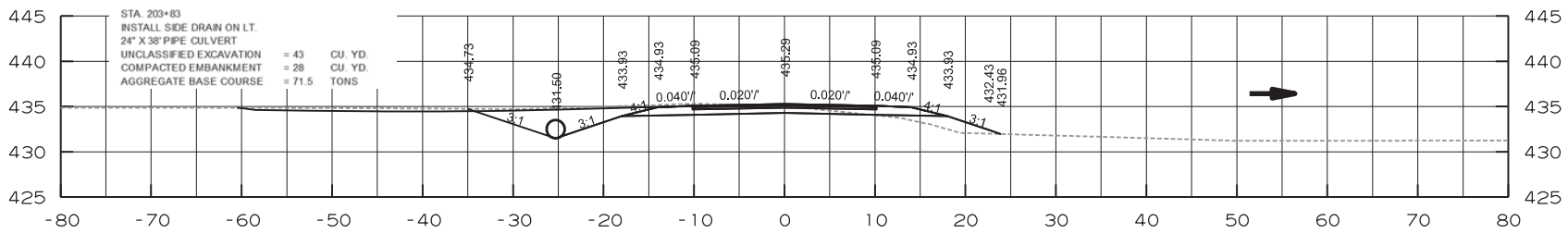
200+00.00

CROSS SECTIONS STA. 200+00.00 TO 200+87.00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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JOB NO. BR6210

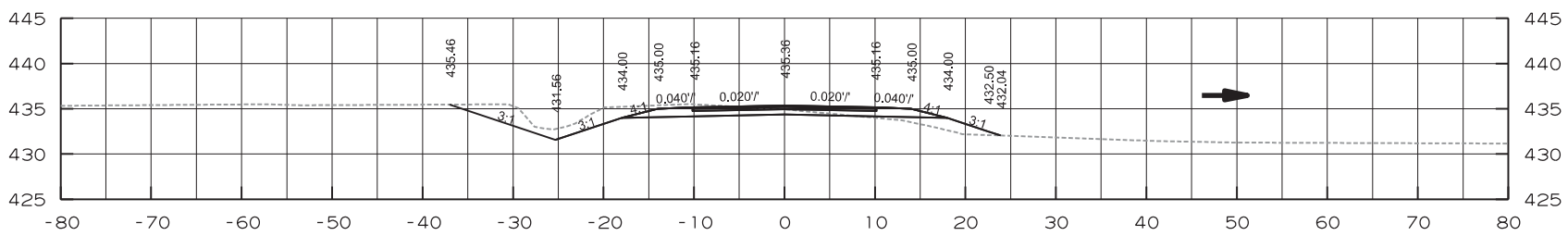
4



AREA CUT 54.46
AREA FILL 9.88

203+83.00

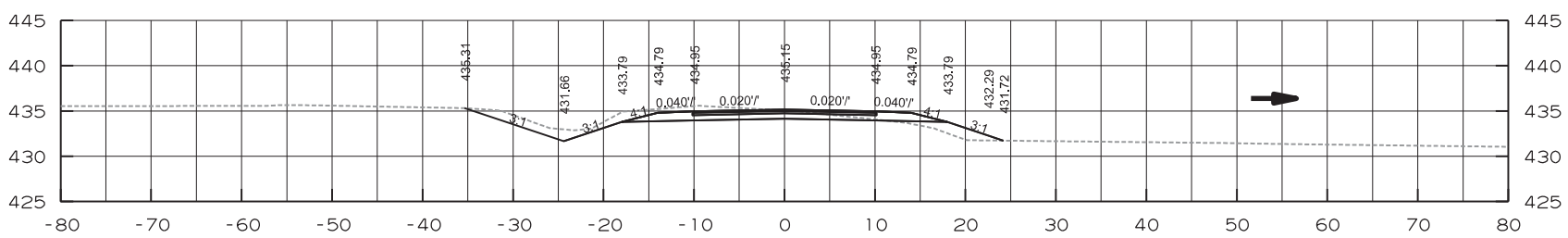
CUT VOLUME 61
FILL VOLUME 12



AREA CUT 46.17
AREA FILL 10.14

203+50.00

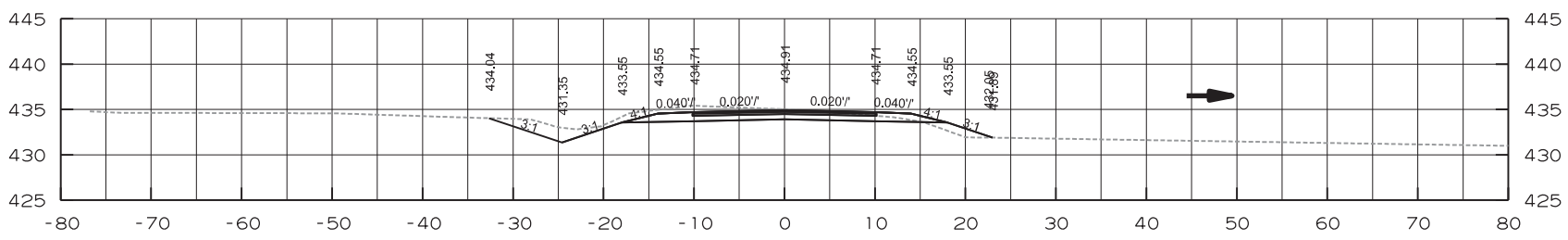
CUT VOLUME 83
FILL VOLUME 17



AREA CUT 42.96
AREA FILL 8.50

203+00.00

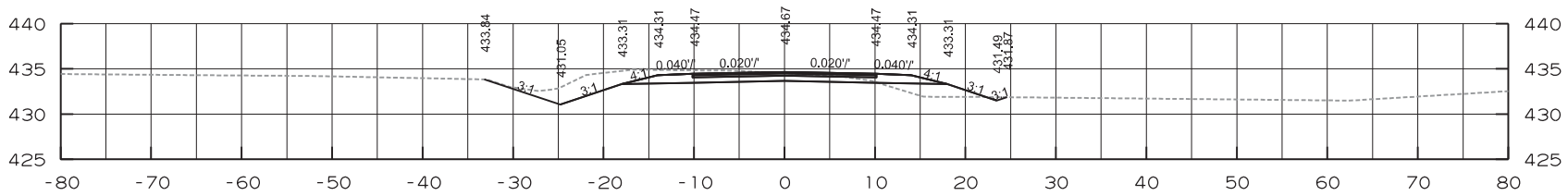
CUT VOLUME 85
FILL VOLUME 12



AREA CUT 48.41
AREA FILL 4.49

202+50.00

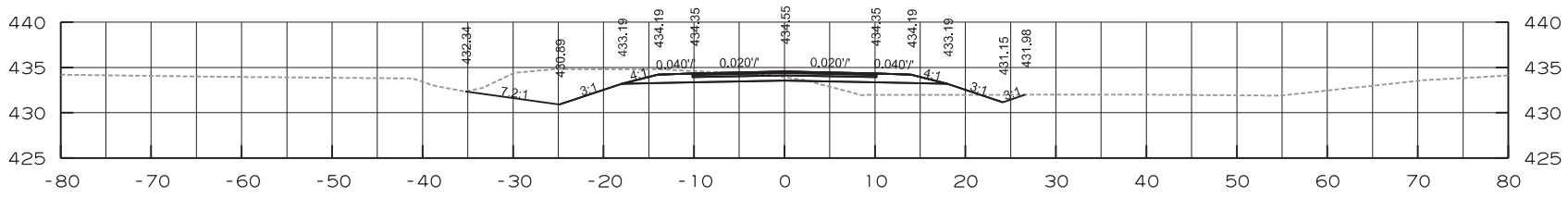
CUT VOLUME 89
FILL VOLUME 14



AREA CUT 48.08
AREA FILL 10.38

202+00.00

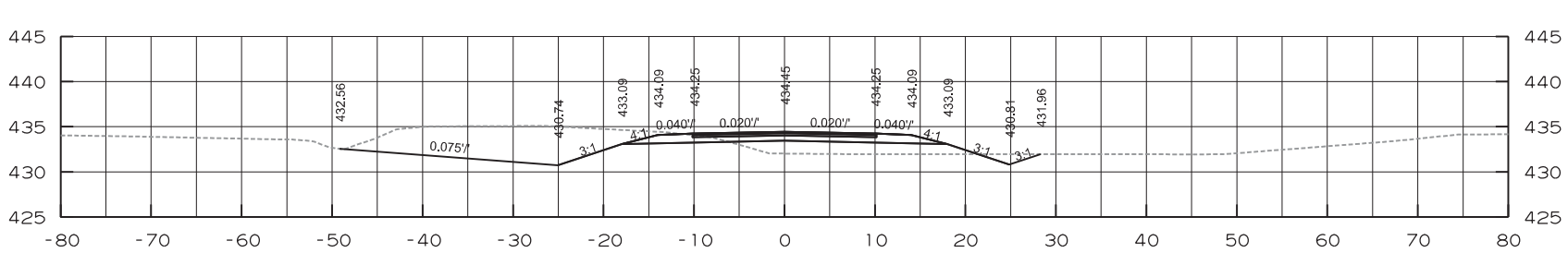
CUT VOLUME 53
FILL VOLUME 14



AREA CUT 66.00
AREA FILL 19.05

201+75.00

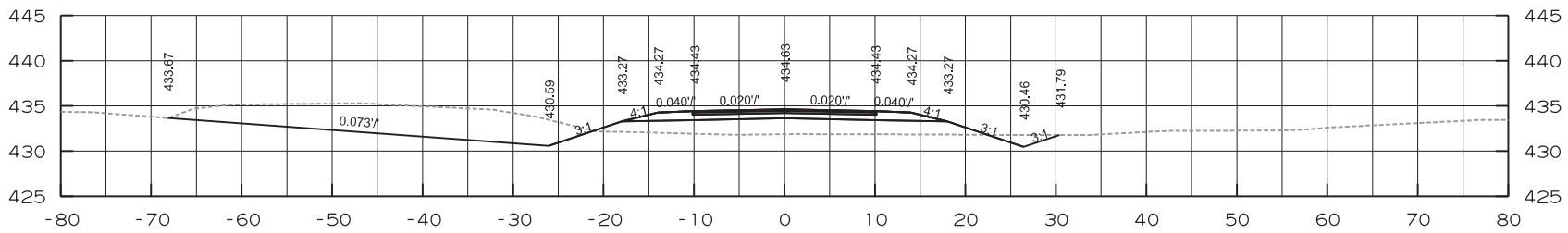
CUT VOLUME 81
FILL VOLUME 23



AREA CUT 107.90
AREA FILL 30.62

201+50.00

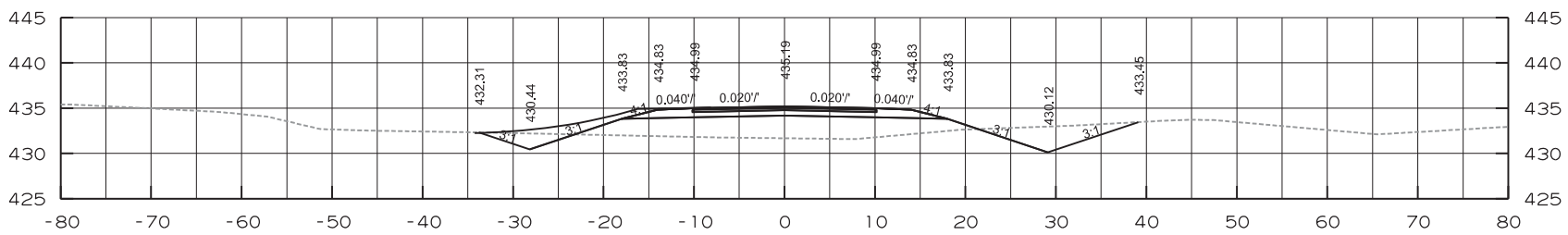
CUT VOLUME 109
FILL VOLUME 42



AREA CUT 127.12
AREA FILL 61.04

201+25.00

CUT VOLUME 75
FILL VOLUME 68



AREA CUT 34.29
AREA FILL 85.34

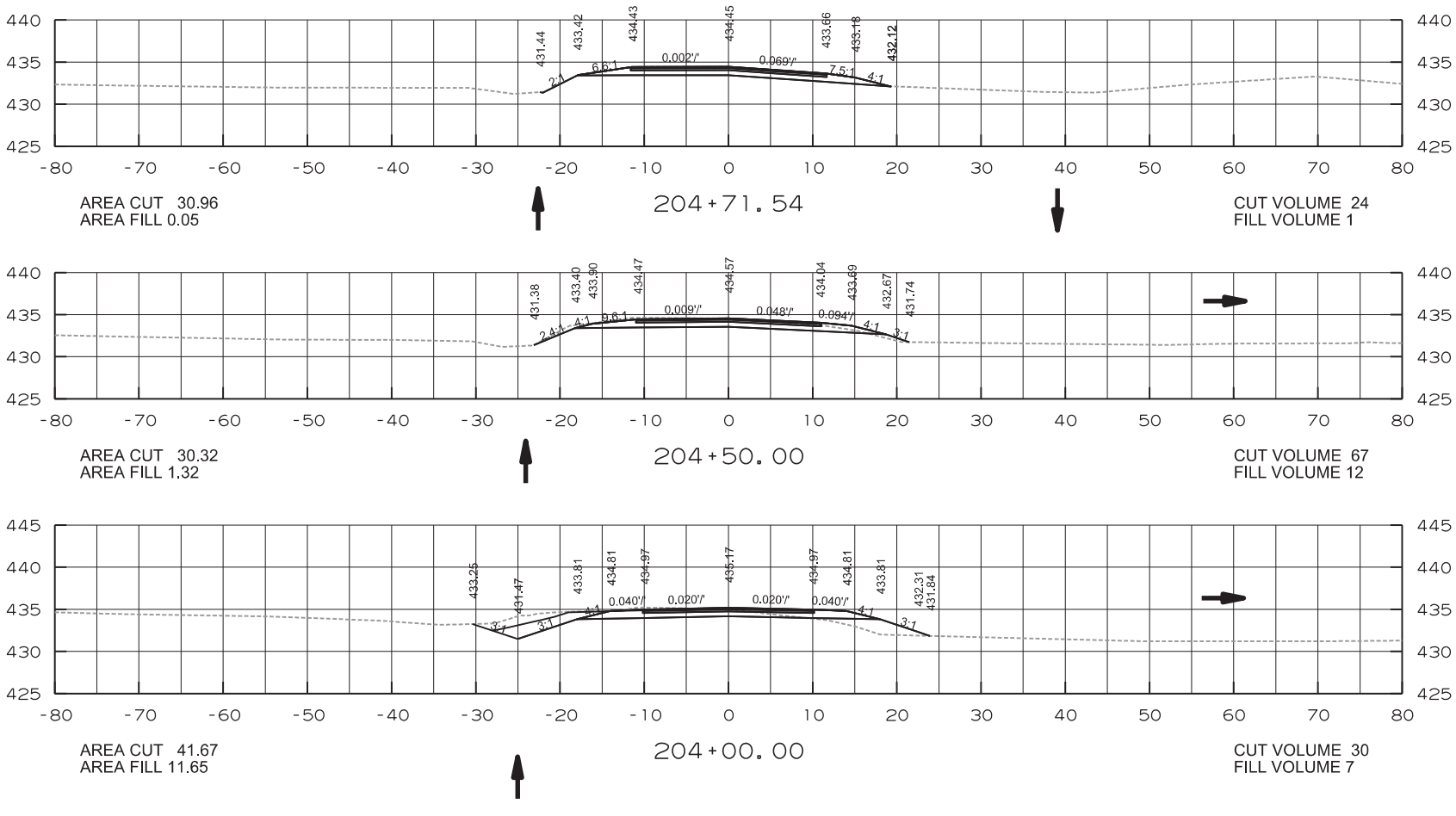
201+00.00

CUT VOLUME 20
FILL VOLUME 47

4 CROSS SECTIONS STA. 201+00.00 TO 203+83.00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		77	78

JOB NO. BR6210



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

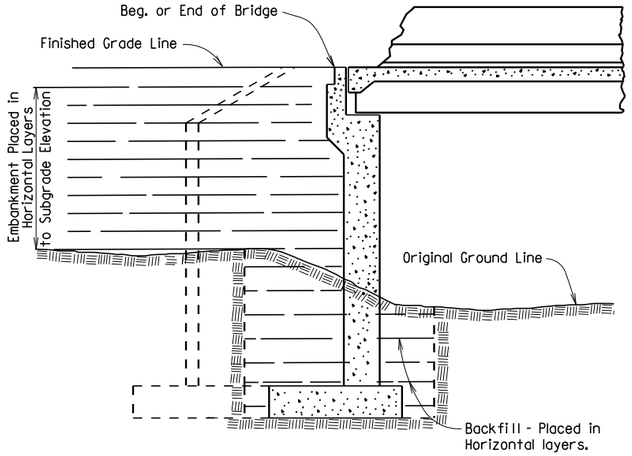
4 CROSS SECTIONS STA. 204+00.00 TO 204+71.54

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.	BR6210	78	78

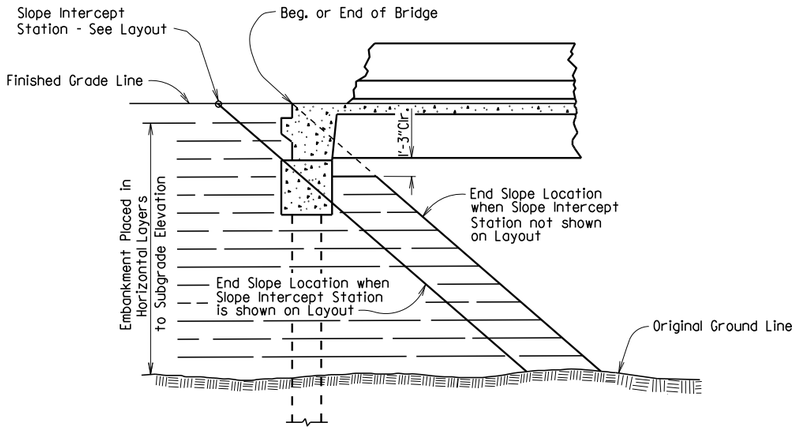
JOB NO.

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

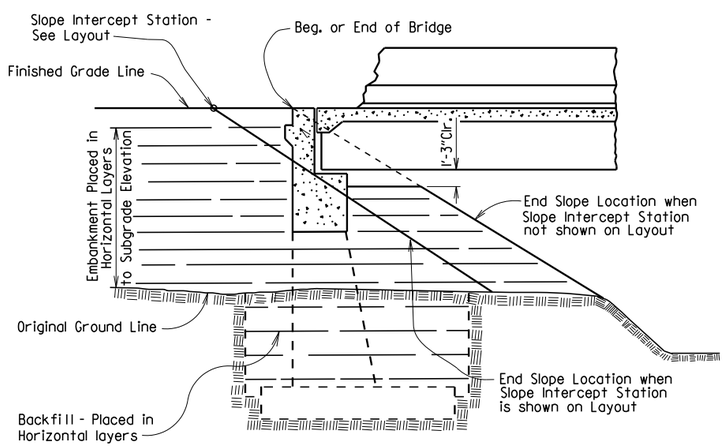
1 EMBANKMENT & BACKFILL 55000



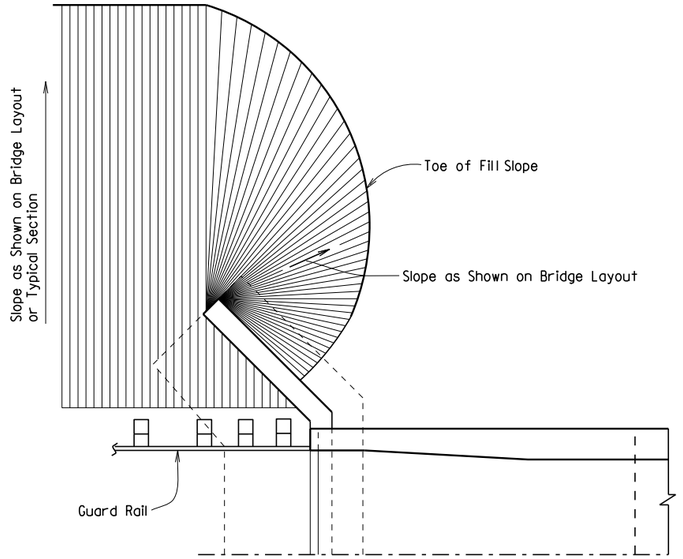
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT VERTICAL WALL ABUTMENTS



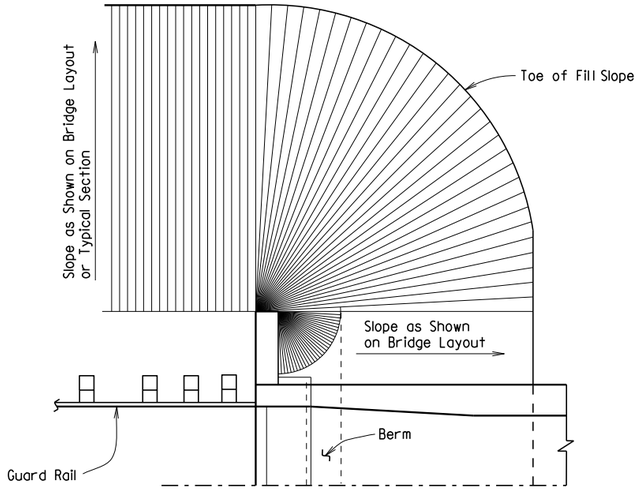
EMBANKMENT CONSTRUCTION AT SPILL-THROUGH PILE END BENTS



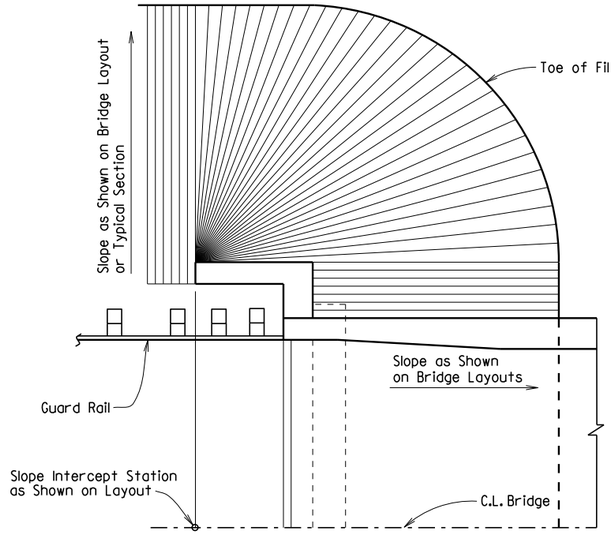
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT SPILL-THROUGH END BENTS



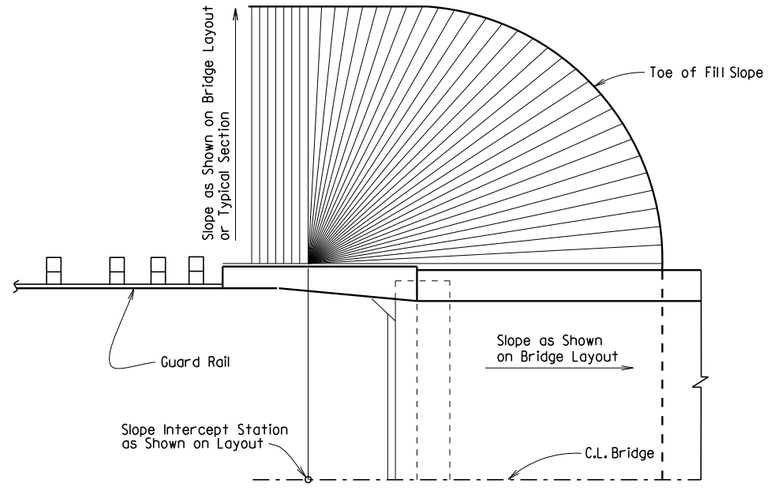
VERTICAL WALL ABUTMENTS



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

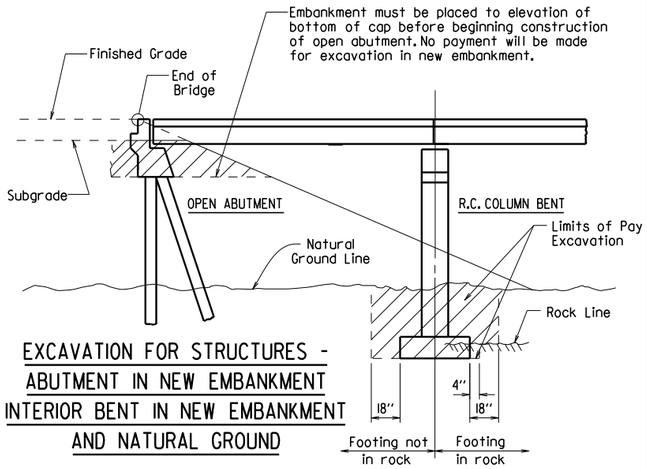
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DESIGNED BY: STD. DATE: -

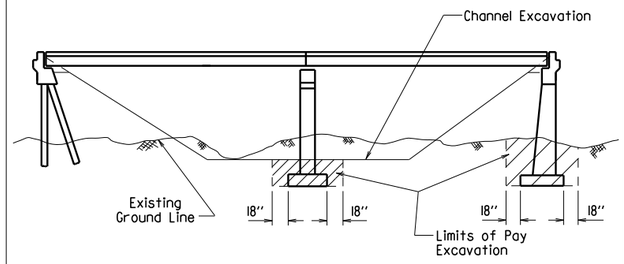
DRAWING NO. 55000

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.				

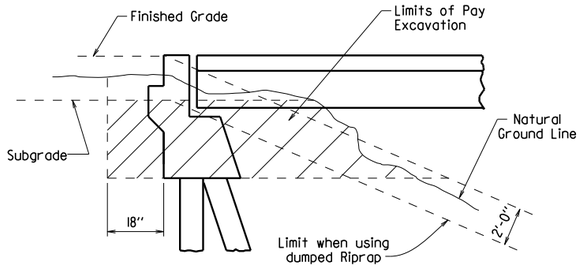
1 RIPRAP & EXCAV. 55001



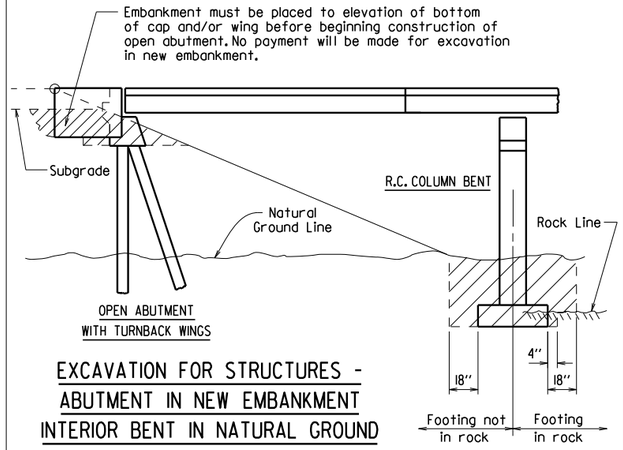
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NEW EMBANKMENT AND NATURAL GROUND



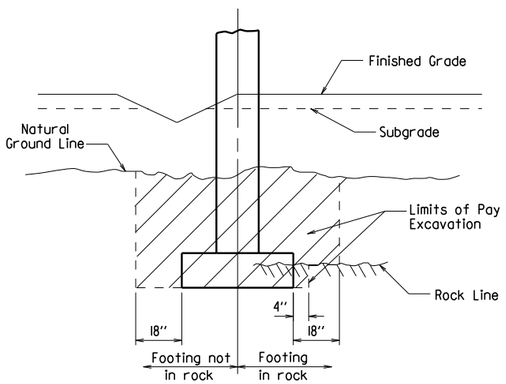
EXCAVATION FOR STRUCTURES - BRIDGE LOCATION WITH DESIGNATED CHANNEL CHANGE



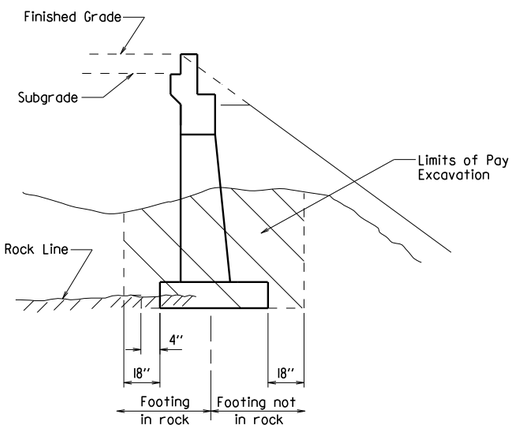
EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND



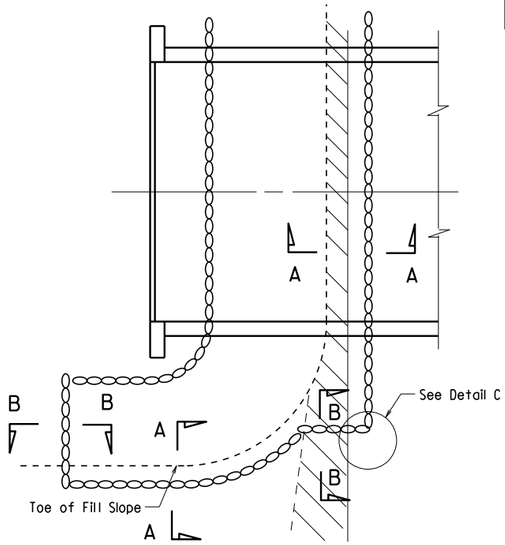
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NATURAL GROUND



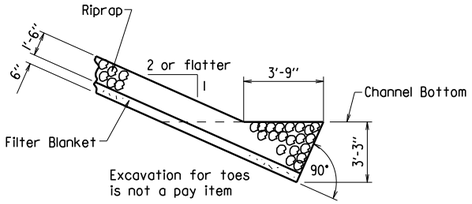
EXCAVATION FOR STRUCTURES - BENT IN ROADWAY FILL SECTION AND NATURAL GROUND



EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND AND NEW EMBANKMENT

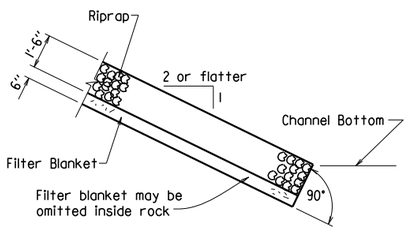


PLAN OF DUMPED RIPRAP



SECTION A-A

(Toe Excavation in Soil)



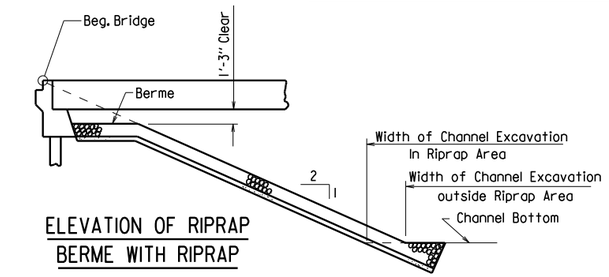
SECTION A-A

(Toe Excavation in Rock)

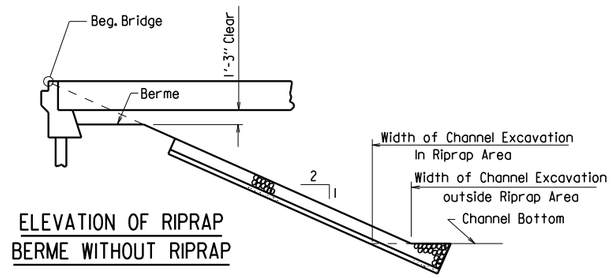
Note : Use this type of toe when rock is encountered which is in a stable condition.

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.

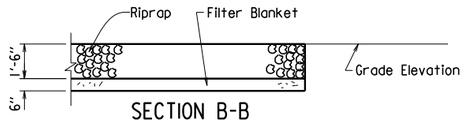
Note : Details for computing excavation for structures are included for information as to how plan quantities were calculated and for use when adjusting quantities when changing footing elevation.



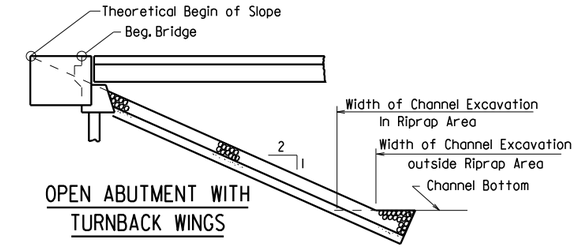
ELEVATION OF RIPRAP BERME WITH RIPRAP



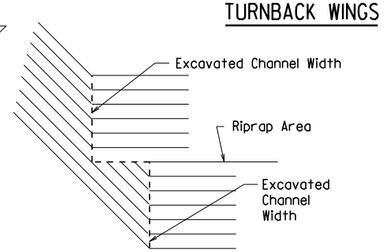
ELEVATION OF RIPRAP BERME WITHOUT RIPRAP



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

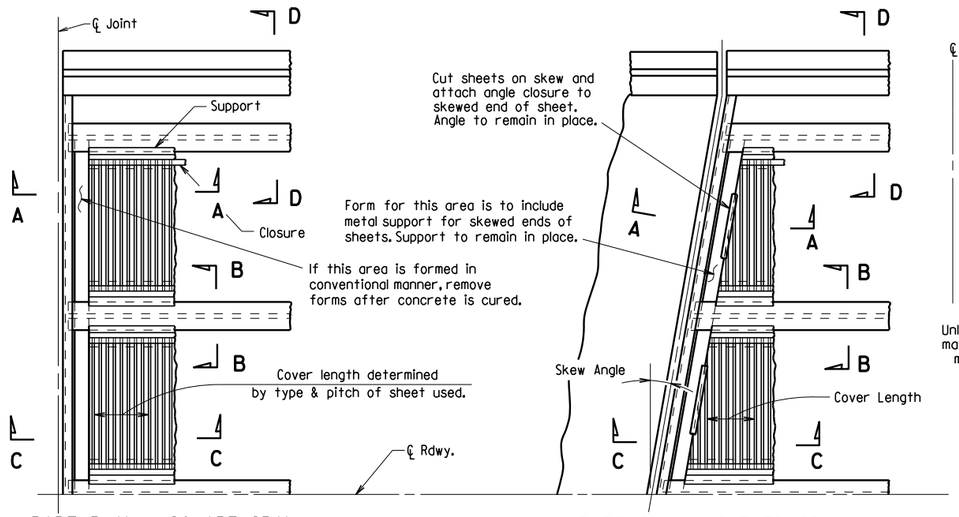
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE

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

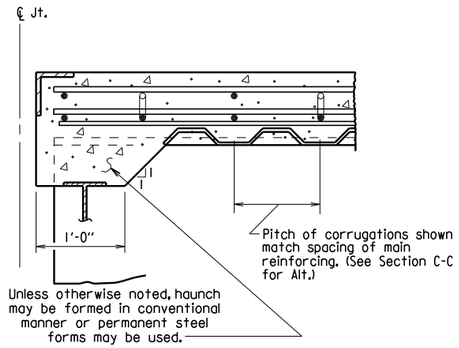


PART PLAN - SQUARE SPAN

3/8" = 1'-0"

PART PLAN - SKEWED SPAN

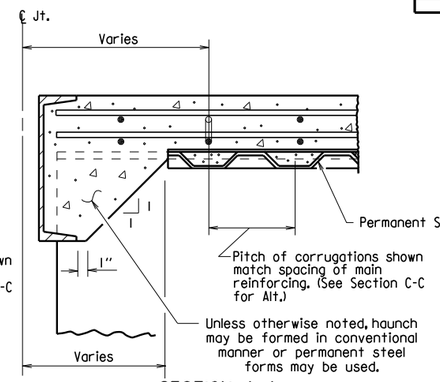
3/8" = 1'-0"



SECTION A-A

N.T.S.

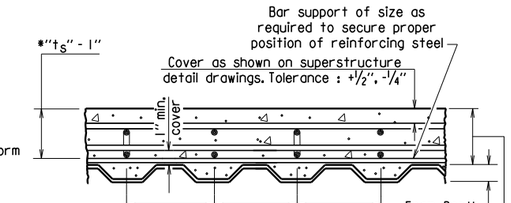
(Angle at end of span)



SECTION A-A

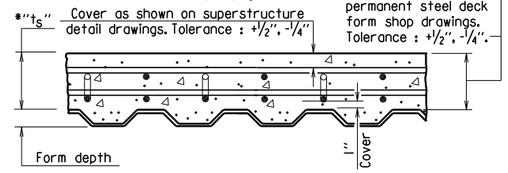
N.T.S.

(Channel at end of span)



SECTION C-C

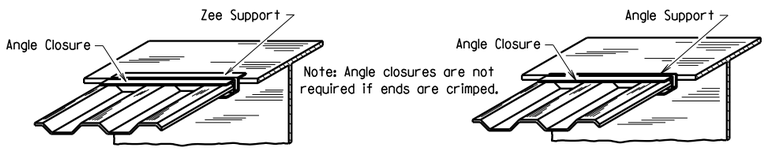
1" = 1'-0"



SECTION C-C - ALTERNATE

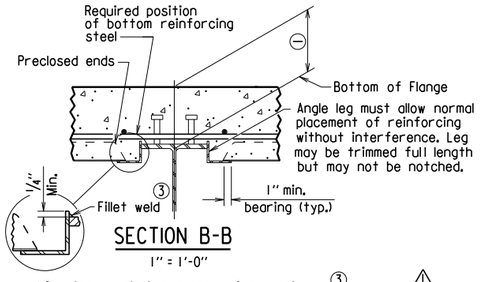
1" = 1'-0"

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



SKETCH OF PERMISSIBLE SUPPORTS

N.T.S.

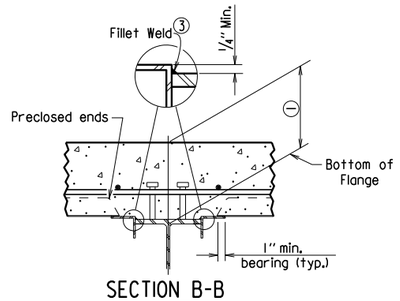


SECTION B-B

1" = 1'-0"

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

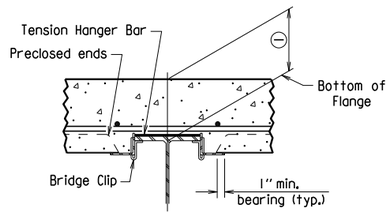
③ ⚠ Minimum weld: 1/8" x 1" @ 18". More weld may be required; maximum length per weld = 1 1/2" (typ.)



SECTION B-B

1" = 1'-0"

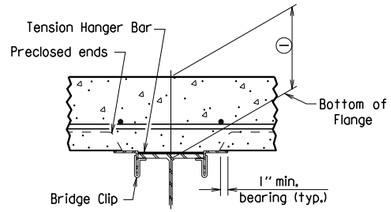
(Showing permissible support for tension flange where shear connectors are used and for all compression flanges)



SECTION B-B

1" = 1'-0"

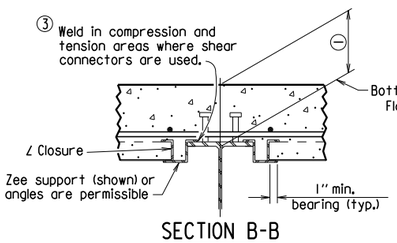
(Showing permissible support for tension flange where shear connectors are not used)



SECTION B-B

1" = 1'-0"

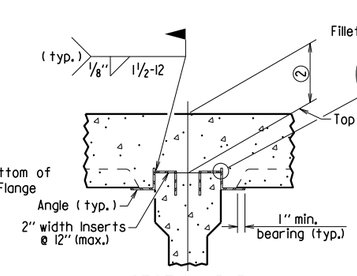
(Showing permissible support for tension flange where shear connectors are not used)



SECTION B-B

1" = 1'-0"

(Showing ∠ Closure)

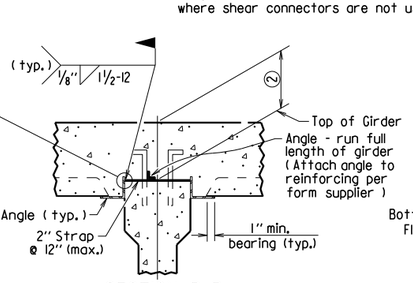


SECTION B-B

(FOR CONCRETE GIRDERS)

1" = 1'-0"

(Showing support by Insert cast in girder)

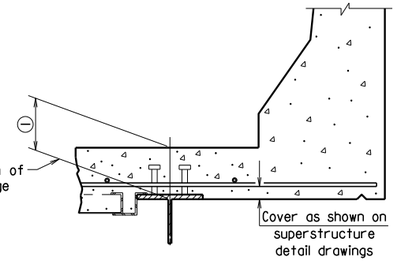


SECTION B-B

(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.

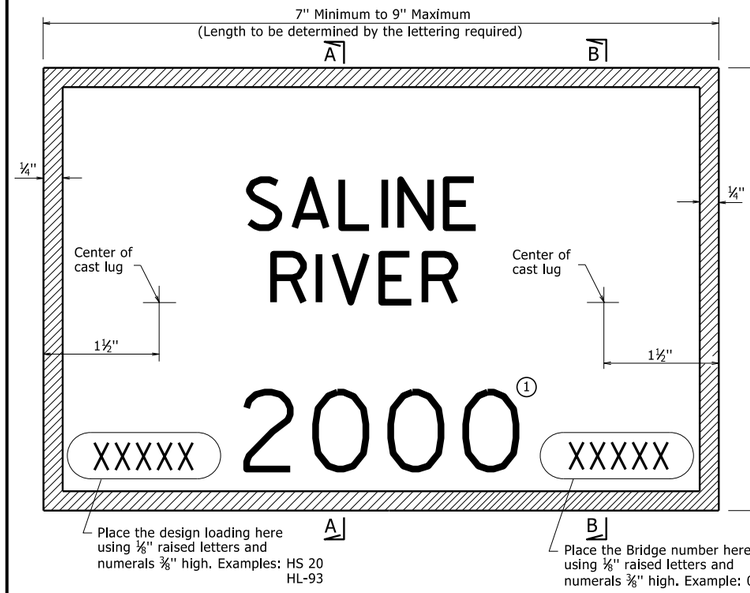
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CHECKED BY: BEF DATE: 2-27-2014 SCALE: NONE

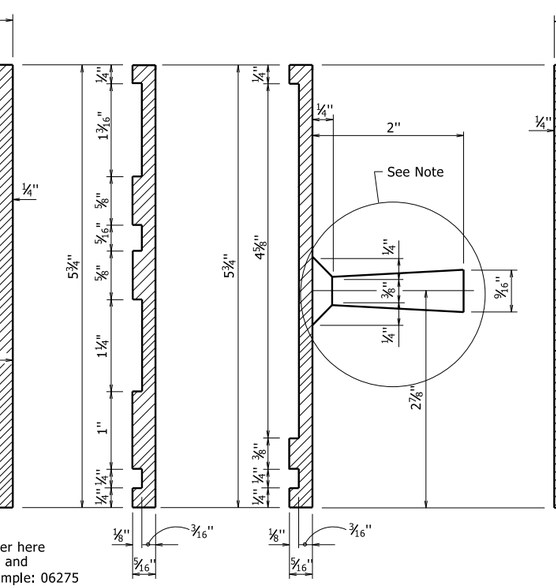
DESIGNED BY: STD. DATE: —

DRAWING NO. 55005

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2/27/2020				6	ARK.			
				JOB NO.				
				①	TYPE C NAME PLATE	55011		

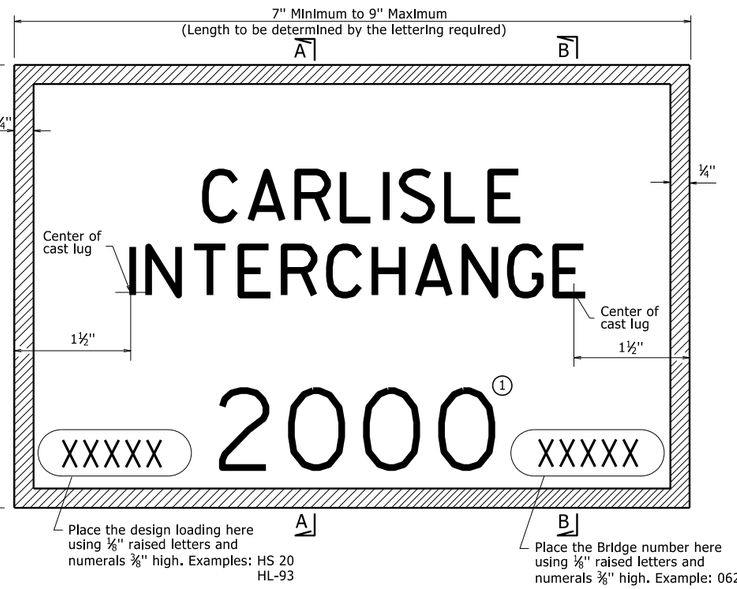


TYPICAL BRIDGE NAME PLATE-STYLE 1 - FULL SIZE
STREAM CROSSINGS



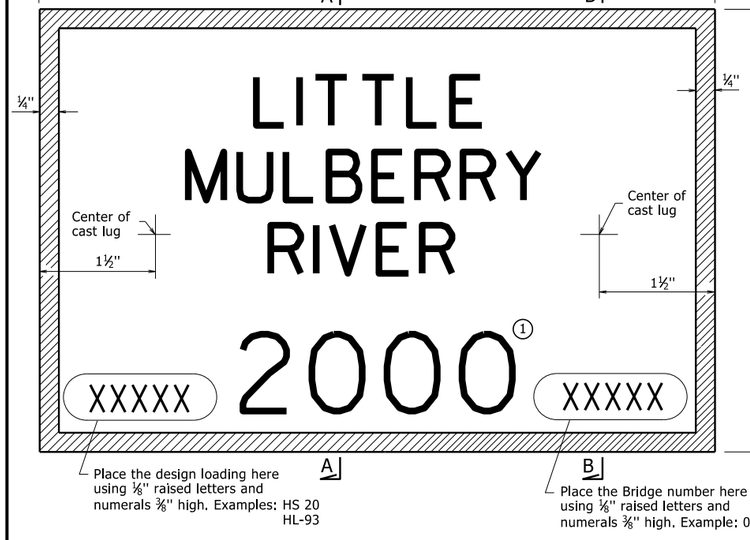
⚠1 SECTION A-A

SECTION B-B

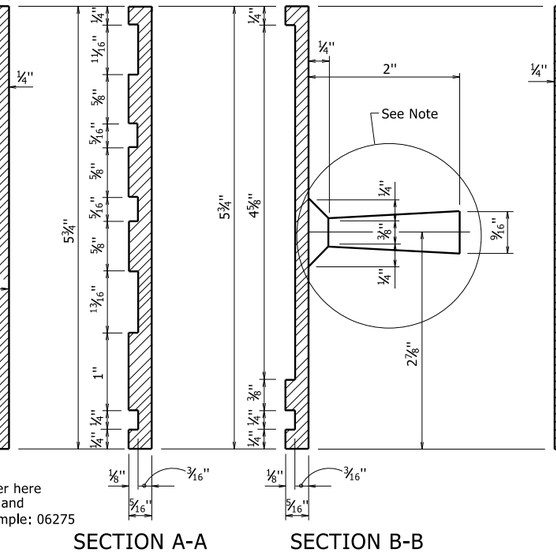


TYPICAL BRIDGE NAME PLATE-STYLE 3 - FULL SIZE
GRADE SEPARATION STRUCTURES

Note: Alternate attachments may be used provided such attachments are submitted and approval secured before fabrication is begun.

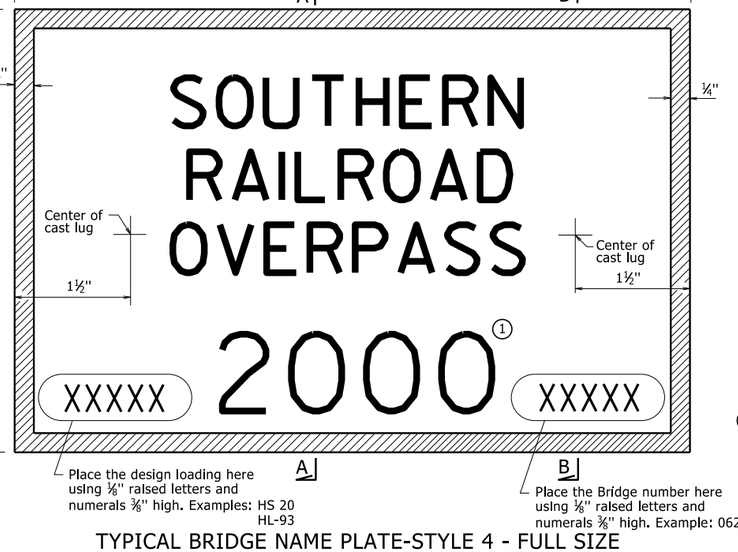


TYPICAL BRIDGE NAME PLATE-STYLE 2 - FULL SIZE
STREAM CROSSINGS



SECTION A-A

SECTION B-B



TYPICAL BRIDGE NAME PLATE-STYLE 4 - FULL SIZE
GRADE SEPARATION STRUCTURES

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 3⁄16" thick and shall include two tapering cone lugs ⅜" to 9⁄16"x 2" long. The border and all lettering shall be raised ⅛" above the face of plate and shall be polished.

All lettering shall be plain gothic, square cut and not tapered.

The number of plates required and the location and name on the plate for each bridge shall be as designated on the plans.

① Year in which contract is awarded.

⚠1 Corrected error in detail showing three lines of text for feature intersected instead of two.
By: KWY, Checked by: WAC; 2/27/2020.

STANDARD DETAILS FOR
TYPE C BRIDGE NAME PLATES

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	KDH	DATE:	2-27-2014	FILENAME:	b55011.dgn
CHECKED BY:	BEF	DATE:	2-27-2014	SCALE:	NO SCALE
DESIGNED BY:	STD.	DATE:	-------		

DRAWING NO. 55011

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3/24/16				6	ARK.			
				JOB NO.				
				①		STEEL H-PILES		55020

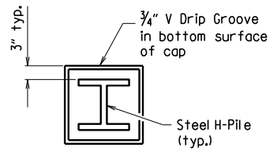
GENERAL NOTES FOR STEEL H-PILES:

Steel H-Piles shall conform to AASHTO M 270, Grade 36 or greater.

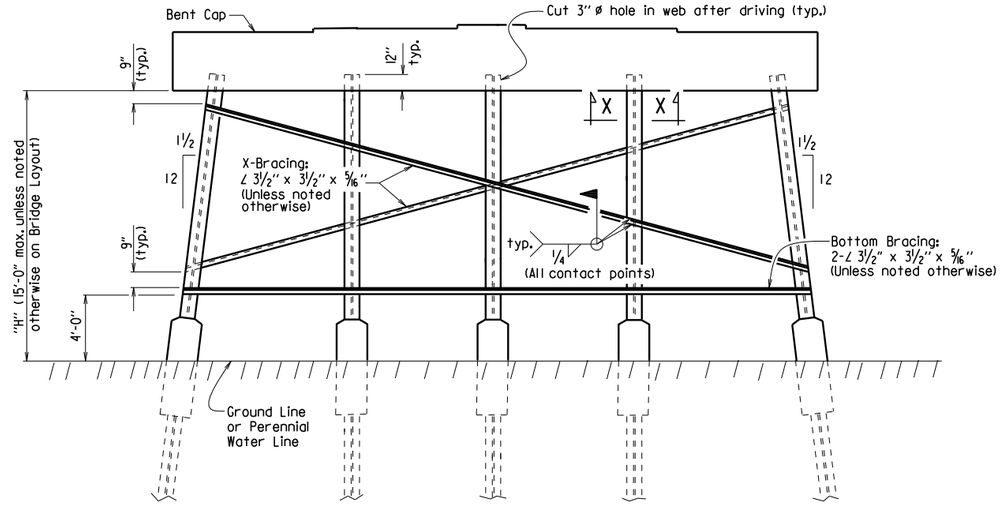
See Bridge Layout and Bent Details for pile size, estimated length, spacing, pile anchorage (if required) and for driving information.

Steel H-Piles that extend above the ground and are not protected by pile encasement shall be painted in accordance with Subsection 805.02.

Brackets, lugs, cap plates, pile tips, driving points, pile painting, splicing and welding shall not be paid for directly, but shall be considered subsidiary to the item "Steel Piling".



VIEW X-X



Notes:
All bracing shall be cut and welded in the field. Each brace shall be furnished in one piece. Payment shall be made under Item 807.

Unless noted otherwise, omit X-Bracing when "H" is less than 8 feet.

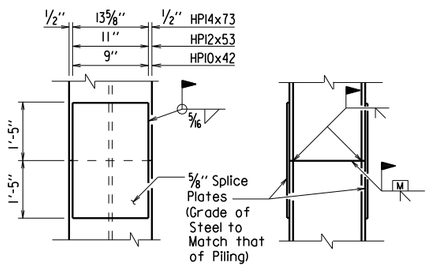
Omit X-Bracing and Bottom Bracing when "H" is 5 feet or less.

When required on the Bridge Layout sheet, pile encasements shall be constructed. See Notes and Details for H-Pile Encasements.

Omit all bracing (and V-groove in cap) when pile encasement is extended to bottom of bent cap.

TYPICAL DETAILS OF H-PILE TRESTLE INTERMEDIATE BENT

(Shown with Partial Height Encasement)



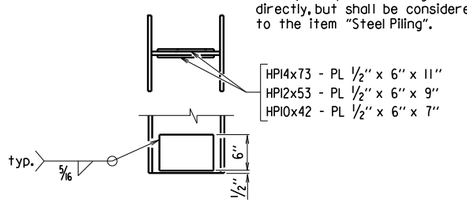
The Contractor may for his own convenience and at his own expense provide as many as three splices per pile. Minimum spacing between splices shall be 5 feet.

TYPICAL SPLICE DETAILS

⚠ H-pile splicers manufactured by Associated Pile and Fitting Corporation, LB Foster Piling, Skyline Steel or equivalent may be used in lieu of the "Typical Splice Details" shown. H-pile splicers shall match the same grade of steel specified for the piling and shall be welded to the pile with a 5/16" fillet weld around the entire perimeter of the splice. Flanges shall be welded with a complete penetration groove weld complying with AASHTO/AWS Joint Designation B-U4a or B-U4b. All welding shall conform to Subsection 807.26 of the AHTD Standard Specifcations for Highway Construction (2014 Edition).

Notes:
Steel pile tip reinforcing not required when approved H-Pile driving points are used.

Steel pile tip reinforcing shall not be paid for directly, but shall be considered subsidiary to the item "Steel Piling".



REINFORCING DETAIL FOR STEEL H-PILE TIP

GENERAL NOTES FOR H-PILE ENCASEMENTS:

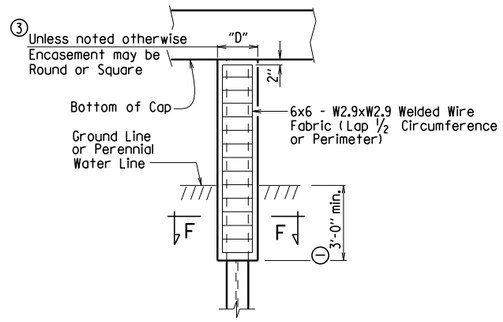
⚠ See Bridge Layout for additional notes, any pile encasement restrictions and required location of pile encasements.

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

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

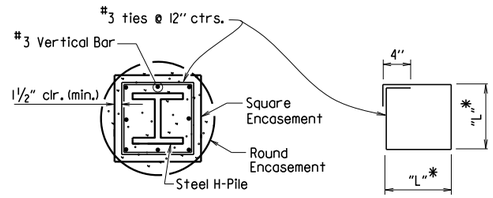
Welded Wire Fabric shall conform to AASHTO M 55 or M 221. Galvanized Corrugated Steel Pipe shall conform to AASHTO M 36 and M 218.

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



PILE ENCASEMENT DETAIL FOR STEEL H-PILES

④ (Shown with Encasement to Bottom of Cap)

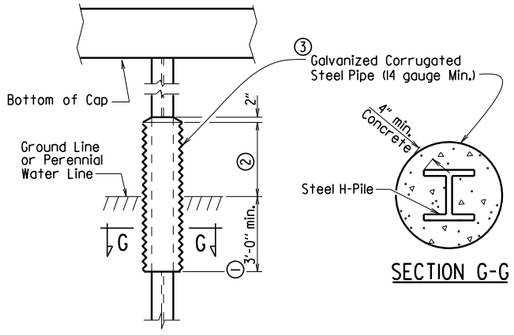


SECTION F-F

*Measured out-to-out of bar.

TABLE OF VARIABLES FOR PILE ENCASEMENT

Pile Size	"D" Square Encsmt.	"D" Round Encsmt.	"L"*
HPI0x42	1'-7"	2'-0"	1'-4"
HPI2x53	1'-8"	2'-2"	1'-5"
HPI4x73	1'-11"	2'-6"	1'-8"



SECTION G-G

① Unless otherwise noted on Bridge Layout.

② 3'-0" minimum or as shown on Bridge Layout.

③ Encasement dimensions shall be sized to maintain a minimum concrete cover of 4" from the H-Pile. Reinforcement shall be sized to provide a minimum concrete cover of 1½" and a minimum clearance of 1¼" from the pile.

④ Alternate pile encasement, when not extended to bottom of cap, shall have 2" concrete taper for water runoff as shown in the Partial Height Encasement detail.

ALTERNATE PILE ENCASEMENT DETAIL FOR STEEL H-PILES

(Shown with Partial Height Encasement)

⚠ Added alternate method of splicing H-piles and revised pile encasement note.
3/24/2016 AMS

This document was originally issued and sealed by Charles R. Ellis, PE No. 9235, on March 24, 2016. This copy is not a signed and sealed document.

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

BRIDGE ENGINEER

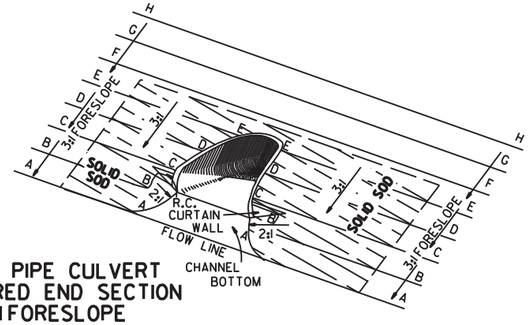
STANDARD DETAILS FOR STEEL H-PILES AND PILE ENCASEMENTS

ARKANSAS STATE HIGHWAY COMMISSION

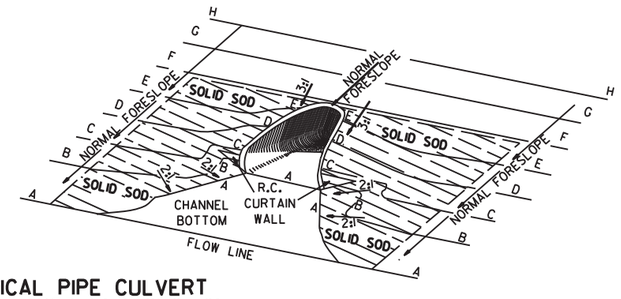
LITTLE ROCK, ARK.

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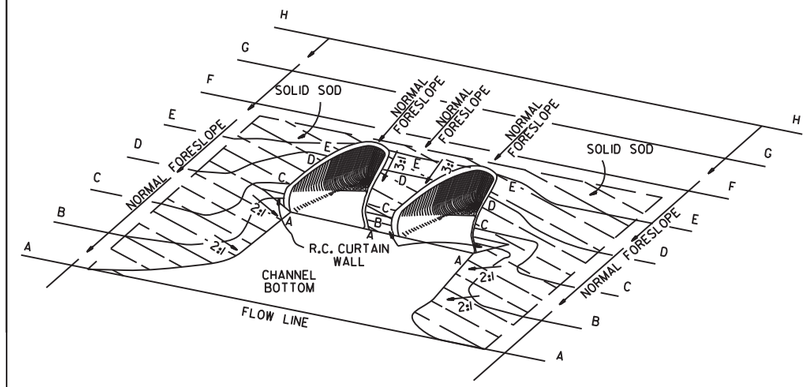
DRAWING NO. 55020



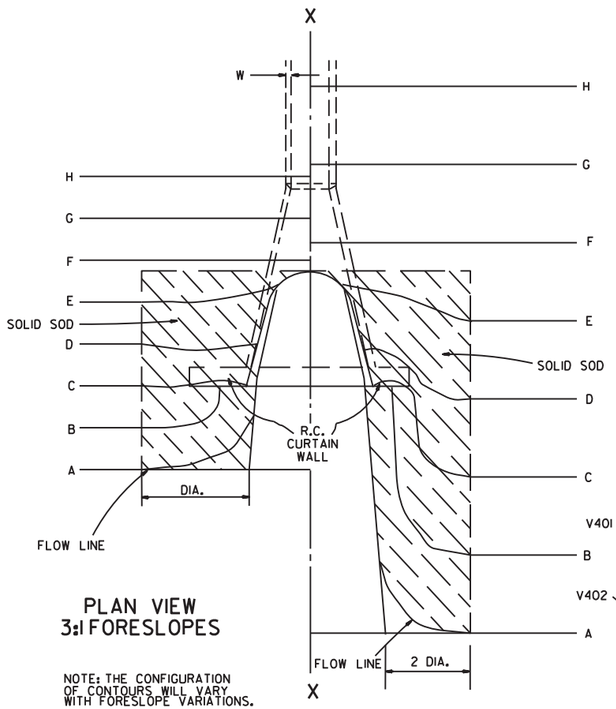
TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& 3:1 FORESLOPE



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

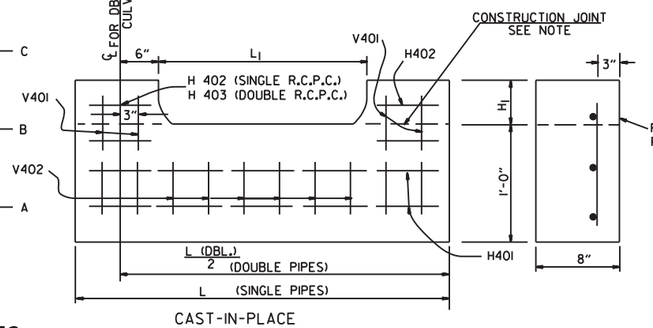
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW
FLATTENED FORESLOPES

R.C. CURTAIN WALL
DIMENSIONS & QUANTITIES

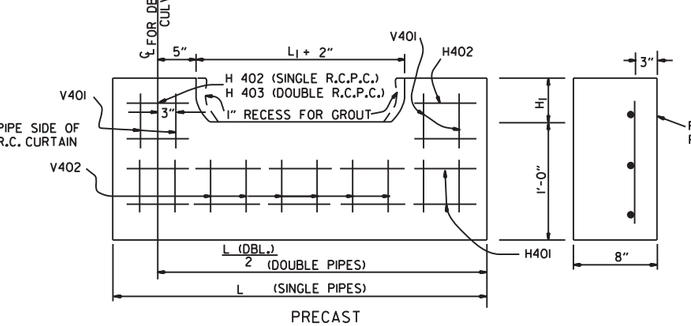
PIPE DIA.	H_1	L_1	L	L (DBL.)/2	SINGLE R.C.P.C.		DOUBLE R.C.P.C.	
					CONC.	REINF. STEEL	CONC.	REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	39.0	0.67	59.0
36"	1'-7"	6'-8"	13'-0"	10'-6"	0.58	52.6	0.83	73.9
42"	2'-1½"	7'-3"	15'-6"	12'-0"	0.82	77.1	1.10	100.7
48"	2'-5"	7'-10"	17'-0"	13'-0"	0.98	94.9	1.27	120.4
54"	2'-9½"	8'-5"	18'-6"	14'-0"	1.16	115.8	1.47	143.7
60"	3'-4"	9'-0"	20'-6"	15'-6"	1.47	149.7	1.84	180.3
72"	4'-5"	10'-2"	25'-6"	18'-6"	2.31	232.6	2.73	271.0

NOTE: QUANTITIES SHOWN ARE FOR ONE (1) CURTAIN WALL.



CAST-IN-PLACE

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



PRECAST

NOTE: THE PRECAST CURTAIN WALL WILL BE SET AND BACKFILLED WITH COMPACTED MATERIAL. THE FLARED END SECTION SHALL THEN BE SET IN PLACE AND THE 1" RECESS FILLED WITH GROUT. WHERE "L" EXCEEDS 11' THE CURTAIN WALL MAY BE CAST IN TWO (2) OR MORE SECTIONS. THE METHOD OF JOINING THE SECTIONS FOR INSTALLATION SHALL BE APPROVED BY THE ENGINEER.

R.C. CURTAIN WALL DETAILS

REINFORCING STEEL SCHEDULE

PIPE DIA.	SINGLE R.C. PIPE CULVERT								DOUBLE R.C. PIPE CULVERT											
	H401		H402		V401		V402		H401		H402		H403		V401		V402	
	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.
18"	7'-8"	2	1'-11½"	4	1'-7½"	8	8"	8	12'-2"	2	1'-11½"	4	8"	2	1'-7½"	10	8"	14
24"	9'-2"	2	2'-2"	4	1'-8½"	10	8"	9	14'-8"	2	2'-2"	4	8"	2	1'-8½"	12	8"	18
30"	10'-8"	2	2'-4½"	4	1'-11½"	10	8"	12	17'-8"	2	2'-4½"	4	8"	2	1'-11½"	14	8"	22
36"	12'-8"	2	2'-10"	6	2'-3"	12	8"	14	20'-8"	2	2'-10"	6	8"	3	2'-3"	14	8"	28
42"	15'-2"	2	3'-9½"	8	2'-9½"	16	8"	15	23'-8"	2	3'-9½"	8	8"	4	2'-9½"	18	8"	30
48"	16'-8"	2	4'-3"	10	3'-1"	18	8"	16	25'-8"	2	4'-3"	10	8"	5	3'-1"	20	8"	32
54"	18'-2"	2	4'-8½"	12	3'-5½"	20	8"	17	27'-8"	2	4'-9"	12	8"	6	3'-5½"	22	8"	34
60"	20'-2"	2	5'-5"	14	4'-0"	24	8"	18	30'-8"	2	5'-5"	14	8"	7	4'-0"	26	8"	36
72"	25'-2"	2	7'-4"	18	5'-1"	30	8"	20	36'-8"	2	7'-4"	18	8"	9	5'-1"	33	8"	40

ALL REINFORCING STEEL #4 BARS @ 6" O.C.

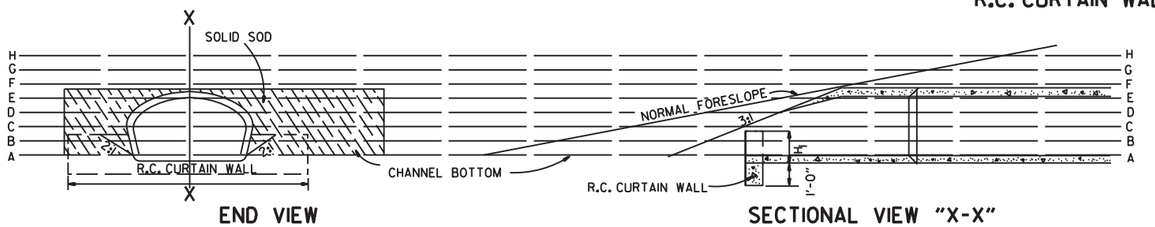
SOLID SODDING

PIPE DIA.	SINGLE R.C.P.C.			DOUBLE R.C.P.C.		
	3:1	4:1	6:1	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"	36	57	85	37	59	87
60"	45	62	104	48	65	107
72"	64	92	156	67	95	159

NOTE: QUANTITIES SHOWN ABOVE ARE FOR ONE (1) END OF F.E.S.

GENERAL NOTES

1. A CAST-IN-PLACE OR PRECAST CURTAIN WALL MAY BE USED. PAYMENT FOR THE CURTAIN WALL SHALL BE CONSIDERED TO BE INCLUDED IN THE UNIT PRICE BID EACH FOR FLARED END SECTIONS OF THE SEVERAL SIZES, WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS INCLUDING REINFORCING STEEL AND CONCRETE: FOR FORMS, MIXING AND PLACING; FOR EXCAVATION AND BACKFILL, AND FOR ALL LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED ¾".
3. CONCRETE FOR CURTAIN WALL SHALL MEET THE REQUIREMENTS FOR CLASS A OR S CONCRETE AS PROVIDED IN SECTION 802 OF THE STANDARD SPECIFICATIONS OR FOR PAVING CONCRETE AS PROVIDED IN SECTION 501 OF THE STANDARD SPECIFICATIONS.
4. WELDED WIRE MESH 3 x 3 W10 x W10 MAY BE USED IN LIEU OF REINFORCING BARS.



END VIEW

SECTIONAL VIEW "X-X"

DATE	REVISION	FILMED
10-18-96	ADDED NOTE TO SOLID SODDING	
10-12-95	CORRECTED SPELLING	
11-3-94	ADDED GENERAL NOTE NO. 4	
8-15-91	REV. CURTAIN WALL QUANT. STEEL SCH. & SOLID SOD QUANT.	
3-2-81	ALLOW PRECAST IN 2 OR MORE PIECES CHAMFER EDGES	
5-15-80	ADDED PRECAST WALL & GENERAL NOTES	
10-2-72	REVISED AND REDRAWN	

ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

STANDARD DRAWING FES-1

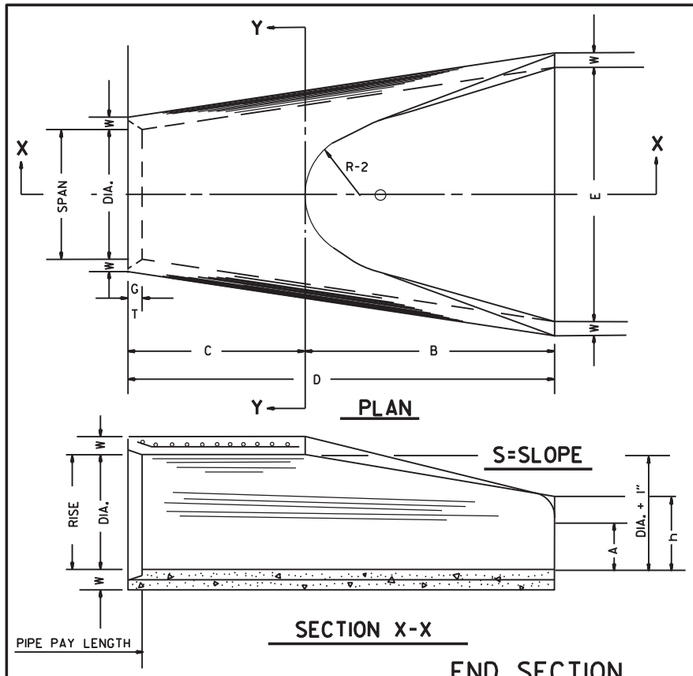
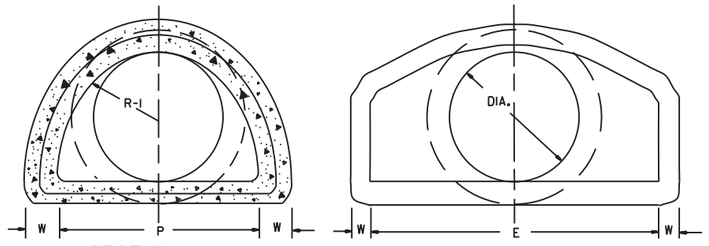


TABLE OF DIMENSIONS

DIA.	WALL	A	B	C	D	E	S	DIA. + I"	P	R-I	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 11/16"	14"	2½"	1600	1'-1½"
30"	3½"	1'-0"	4'-6"	1'-7¾"	6'-1¾"	5'-0"	3:1	31"	37"	18½"	15"	3¼"	1940	1'-4⅝"
36"	4"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	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"	53⅜"	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 5/16"	24"	5"	13250	4'-6"



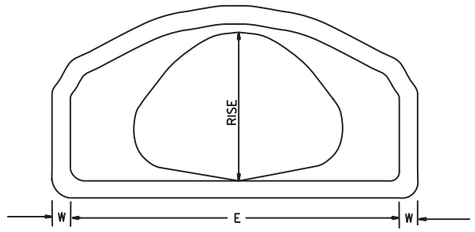
NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

END SECTION
FOR REINFORCED CONCRETE PIPE CULVERTS

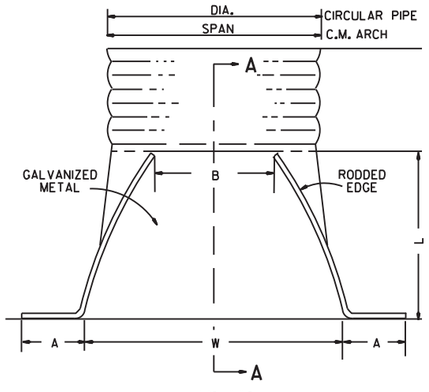
ARCH PIPE

EQUIV. DIA.	• SPAN		• RISE		W	A	B	C	D	E	P	R2	G-T	S
	AASHTO M 206	AHD NOMINAL	AASHTO M 206	AHD NOMINAL										
	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 13/16"	20"	3"	2½:1
36	43¾	44	26⅝	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 13/16"	24"	5"	2¼:1

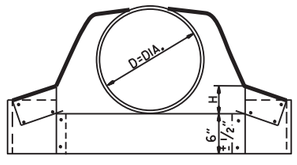
• THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.



END VIEW
CONCRETE ARCH PIPE



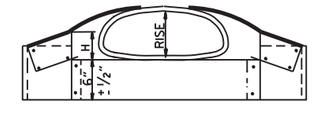
NOTE: ALTERNATE CONNECTIONS TO THE PIPE CULVERTS, IN ACCORDANCE WITH MANUFACTURER'S STANDARD PRACTICES, MAY BE MADE SUBJECT TO THE APPROVAL OF THE ENGINEER.



CIRCULAR PIPE

CIRCULAR PIPE

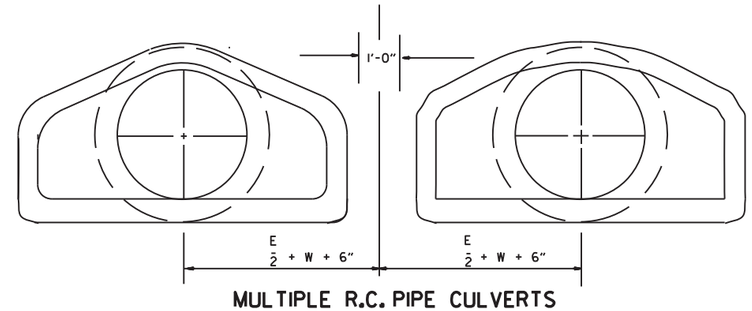
D. DIA.	GAUGE	A I" ±	B. MAX.	H I" ±	L 1½" ±	W 2" ±	S
		INCHES					
12	16	6	6	6	21	24	2½:1
15	16	7	8	6	26	30	2½:1
18	16	8	10	6	31	36	2½:1
21	16	9	12	6	36	42	2½:1
24	16	10	13	6	41	48	2½:1
30	14	12	16	8	51	60	2½:1
36	14	14	19	9	60	72	2½:1
42	12	16	22	11	69	84	2½:1
48	12	18	27	12	78	90	2½:1
54	12	18	30	12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



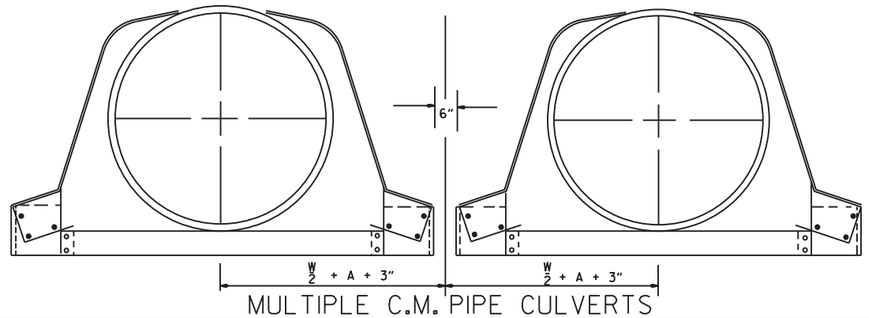
C.M. ARCH PIPE

C.M. ARCH PIPE

EQUIV. DIA.	SPAN	RISE	A I" ±	B MAX.	H I" ±	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



MULTIPLE R.C. PIPE CULVERTS



MULTIPLE C.M. PIPE CULVERTS

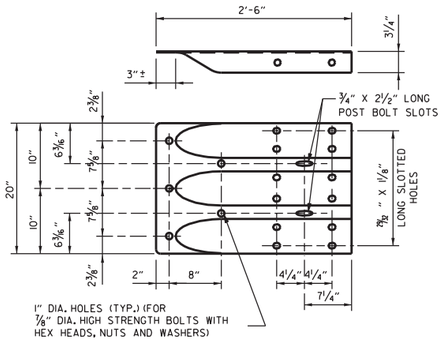
DATE	REVISION	FILMED
10-18-96	REVISED ASTM REF. TO AASHTO	
5-15-80	REVISED DISTANCE BETWEEN MULTIPLE R.C.P. F.E.S.	664-5-15-80
7-14-78	C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES	752-7-14-78
8-22-75	ADDED MULTIPLE PIPE CULVERTS	517-8-22-75
12-5-74	REMOVED NOTE RE REINF. FOR R.C. F.E.S.	500-12-5-74
5-24-73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

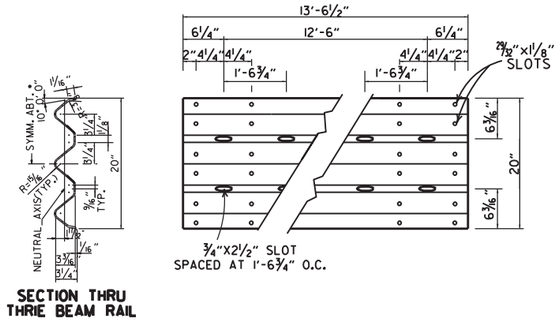
FLARED END SECTION

STANDARD DRAWING FES-2

END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS

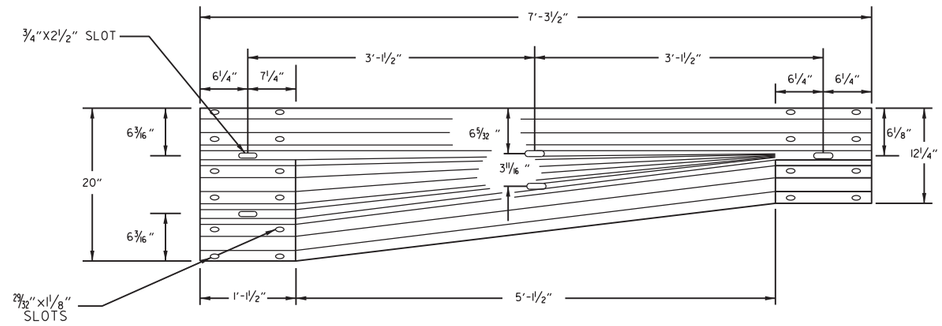


SPECIAL END SHOE

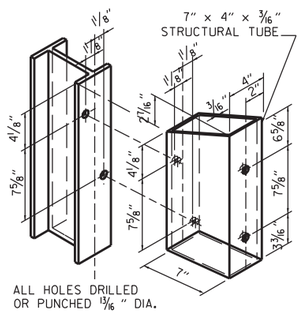


SECTION THRU THRIE BEAM RAIL

THRIE BEAM RAIL

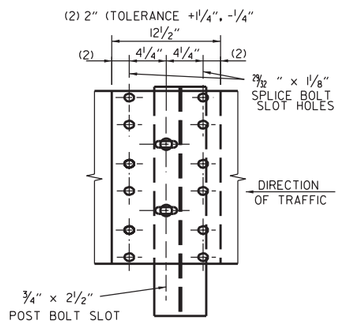


TRANSITION SECTION

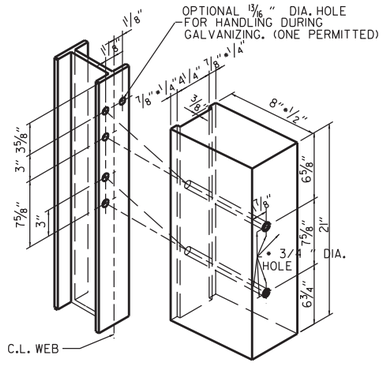


ATTACH BLOCKOUT TO POST USING 5/8" DIA. HEX HEAD BOLTS WITH 1 1/2" O.D. CUT STEEL WASHERS AND NUT.

STRUCTURAL STEEL TUBING BLOCKOUT DETAIL



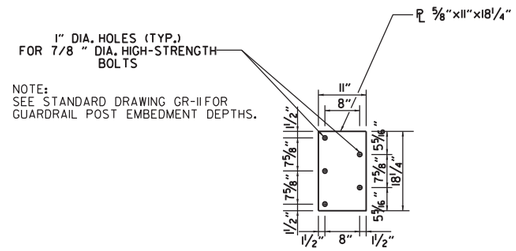
THRIE BEAM RAIL SPLICE AT POST



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 7/8" 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.

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-11FOR 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.

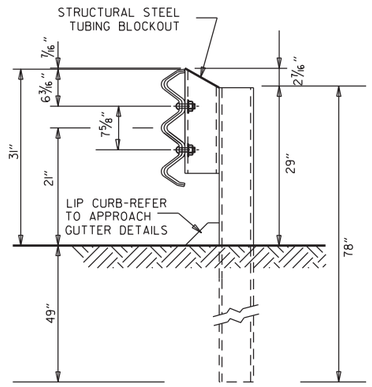
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1STRUCTURAL OR BETTER 9.7f (1400 f) OR NO.1 1350 f SOUTHERN PINE.

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	

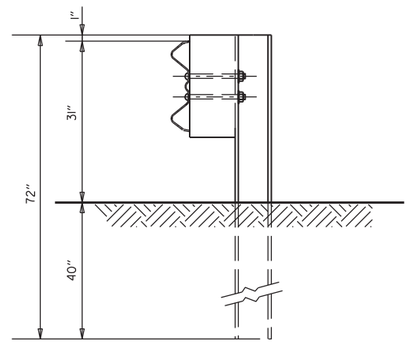
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

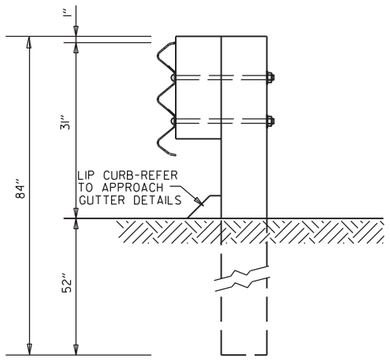
STANDARD DRAWING GR-10



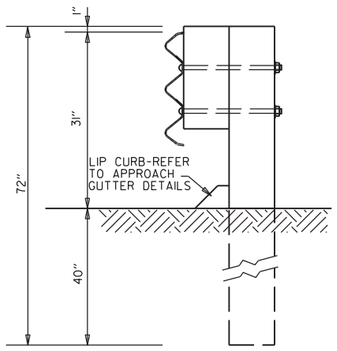
THRIE BEAM RAIL WITH STEEL TUBING BLOCKOUT
AND STEEL POST
POSTS 1-7



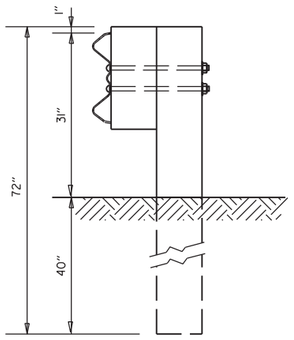
W-BEAM TO THRIE BEAM TRANSITION RAIL
WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST
POST 8



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.

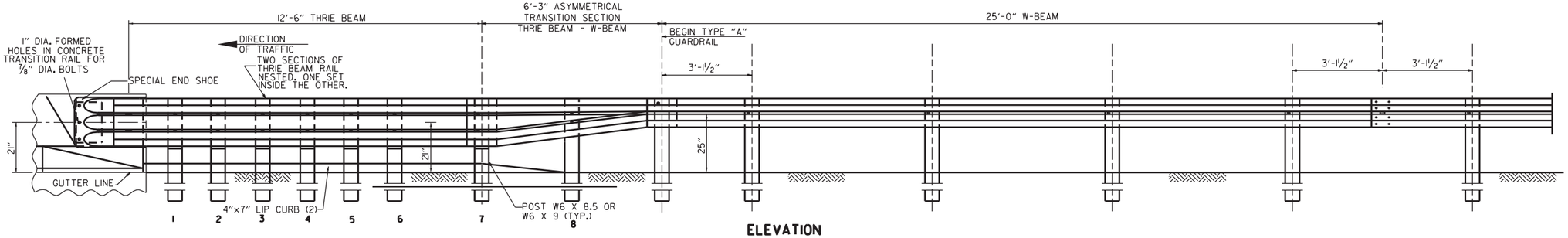
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	FILMED
11-07-19	RENAMED	
11-16-17	REVISED GUARDRAIL HEIGHT, CHANGED STD. DWG. NUMBER FROM GR-10A TO GR-11	
07-14-10	REVISED POST 8 DIMENSIONS	
11-29-07	ADDED PLASTIC BLOCKOUTS	
08-22-02	REVISED LIP CURB NOTE	
03-30-00	DRAWN & ISSUED	

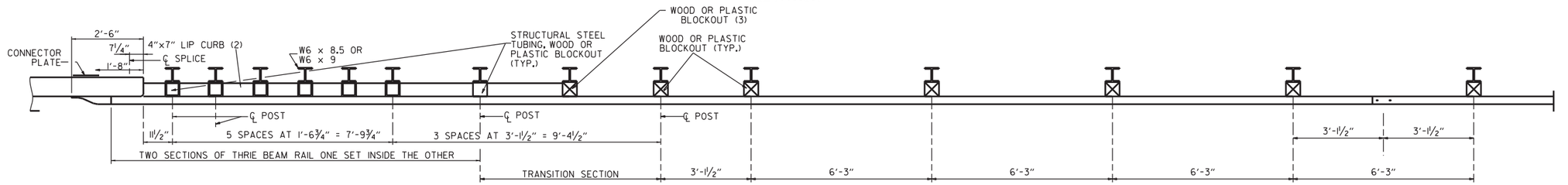
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

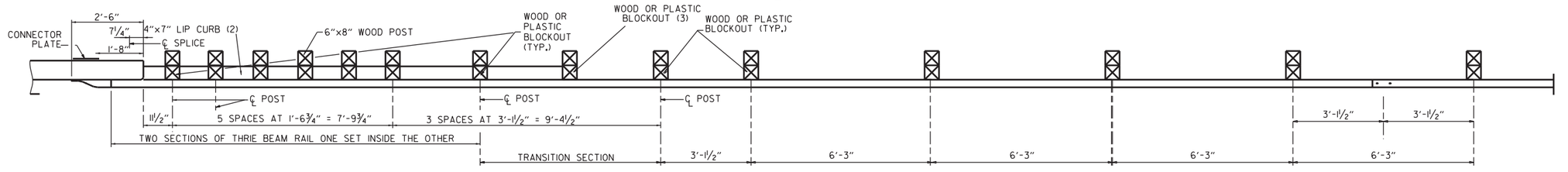
STANDARD DRAWING GR-11



ELEVATION



PLAN



PLAN

(1) VERIFY BOLT SPACING FROM RAIL TRANSITION PRODUCER.
(2) REFER TO APPROACH GUTTER DETAILS.
(3) LENGTH OF BLOCKOUT ON POST 8 TO BE MODIFIED TO FIT RAIL WIDTH.

THRIE BEAM GUARDRAIL CONNECTION AT BRIDGE ENDS

GENERAL NOTES:

THE THRIE BEAM RAIL, SPECIAL END SHOE, AND THE TRANSITION SECTION SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE. ZINC COATING SHALL BE TYPE I.

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN 3/4" BEYOND IT.

ALL LAP SPLICES, INCLUDING SPECIAL END SHOES, SHALL BE MADE IN THE DIRECTION SHOWN ON STANDARD DRAWINGS GR-8 & GR-13.

REFER TO STD. DRWG. GR-11 FOR POST DETAILS.

USE THRIE BEAM GUARDRAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB.

THRIE BEAM POSTS SHALL BE SAME MATERIAL AS W-BEAM POSTS FOR ENTIRE JOB.

POSTS SHALL NOT BE PLACED AT SPLICE LOCATIONS ALONG W-BEAM RAILS.

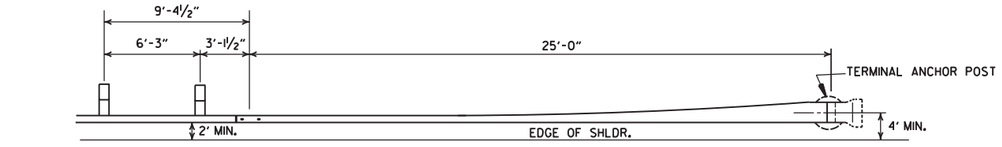
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	FILMED
05-14-20	REVISED NOTES	
11-07-19	RENAMED & REVISED REFERENCES	
11-16-17	RE-DRAWN FROM STD. DWG. GR-10 & ISSUED	

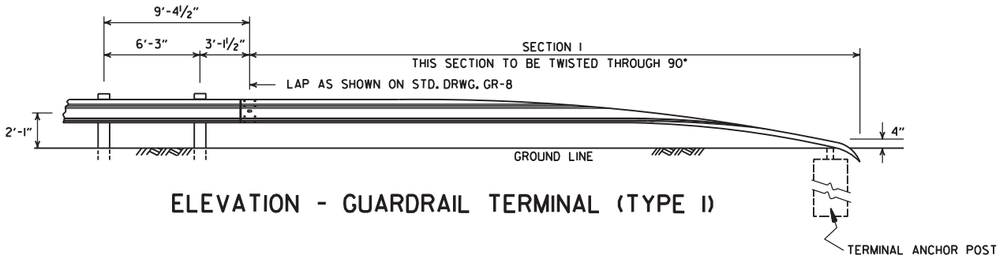
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

STANDARD DRAWING GR-12

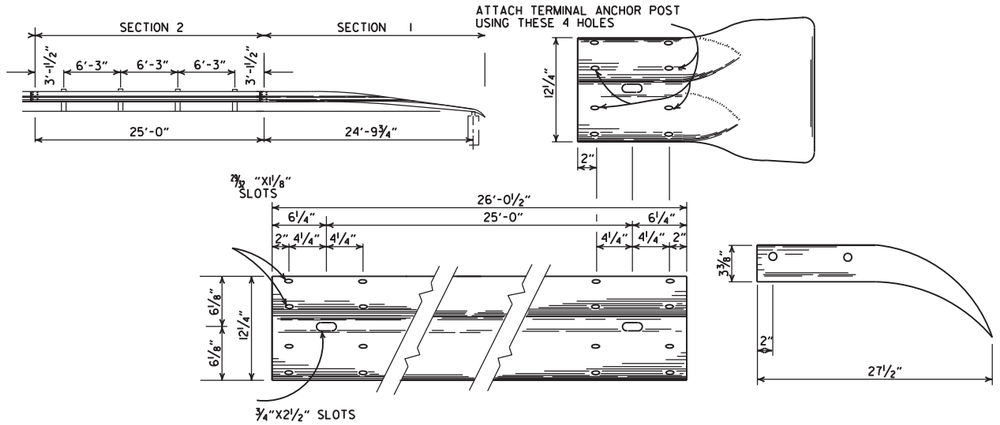


PLAN - GUARDRAIL TERMINAL (TYPE I)



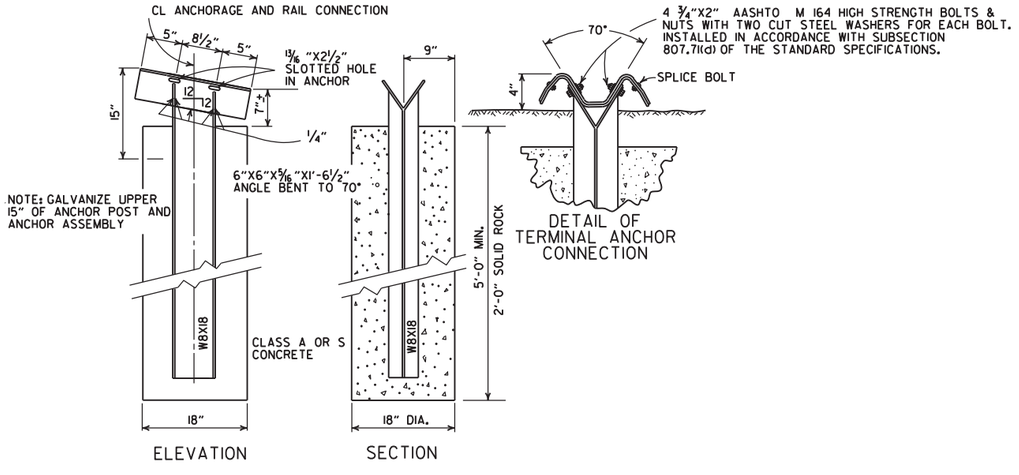
ELEVATION - GUARDRAIL TERMINAL (TYPE I)

NOTE:
SECTIONS I AND 2 OF GUARDRAIL TERMINAL SHALL BE PAID FOR AT THE PRICE BID PER LINEAR FOOT OF THE TYPE OF GUARDRAIL SPECIFIED.



SECTION I

TERMINAL SECTION



NOTE: RAIL MEMBERS MAY BE BOLTED TO ANGLE AT TERMINAL ANCHOR AND THE TWO ASSEMBLIES POSITIONED TO PROPER ALIGNMENT PRIOR TO PLACING CONCRETE AROUND 8 WF 17 POST IF CONTRACTOR SO DESIRES.

DETAIL OF TERMINAL ANCHOR POST (TYPE I)

DATE	REVISION	FILMED
11-07-19	RENAMED & REVISED REFERENCE.	
11-16-17	REVISED GUARDRAIL HEIGHT AND LOCATION OF POSTS	
07-14-10	RAISED HEIGHT OF GUARDRAIL 1"	
06-26-97	REVISED LAP NOTE	
10-18-96	REVISED ASTM REF. TO AASHTO	
11-03-94	DIMENSION TERMINAL DETAIL	
11-11-92	ADDED NOTE FOR PAYMENT	11-11-92
10-01-92	DRAWN & ISSUED	10-1-92

ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

STANDARD DRAWING GRT-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	31⅝	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.

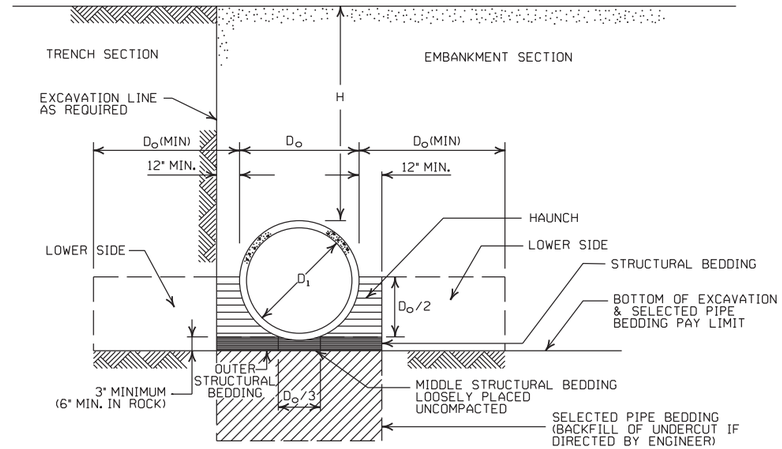
- LEGEND -

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

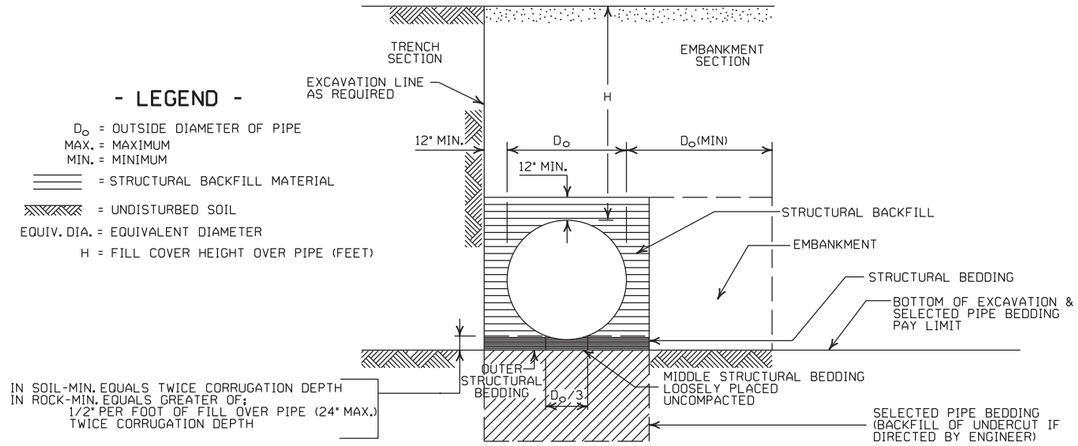
EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINUMUM CORNER RADIUS (INCHES)	STEEL			ALUMINUM		
			MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MAX. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MAX. HEIGHT OF FILL, "H" (FT.) 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	0.135	3	15
66	77x52	8	0.168	3	15	0.164	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

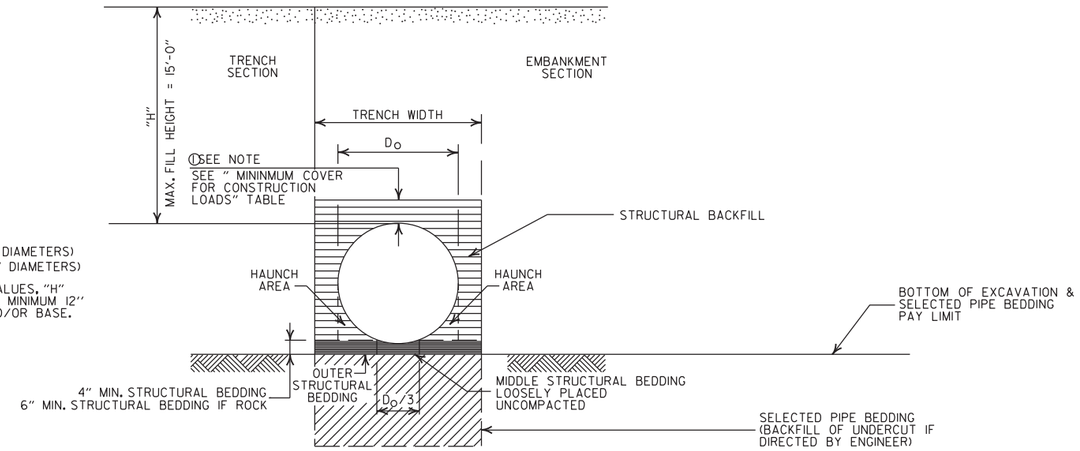
PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"
42"	3'-6"
48"	4'-0"

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.



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.

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.

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.)
Ø = 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

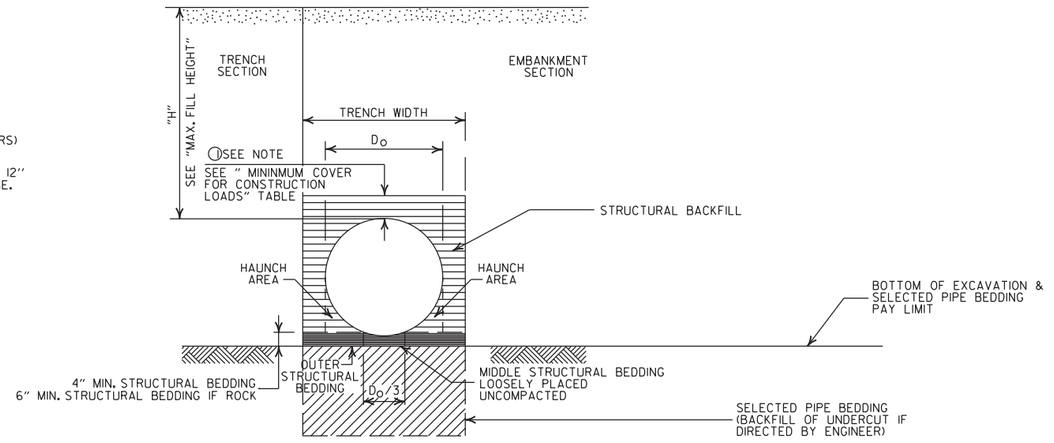
PIPE DIAMETER	"H"
18"	45'-0"
24"	45'-0"
30"	40'-0"
36"	40'-0"

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

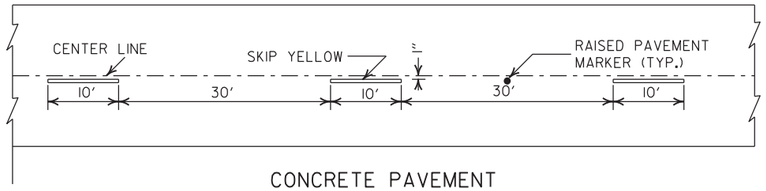
DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REV GENERAL NOTES & MINIMUM COVER NOTE; DELETED SM3 MATERIAL	
11-17-10	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

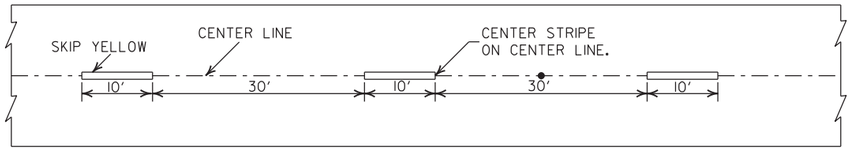
PLASTIC PIPE CULVERT (PVC F949)

STANDARD DRAWING PCP-2

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.

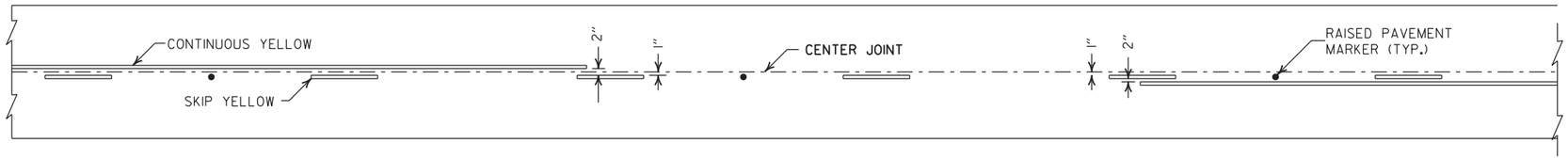


CONCRETE PAVEMENT

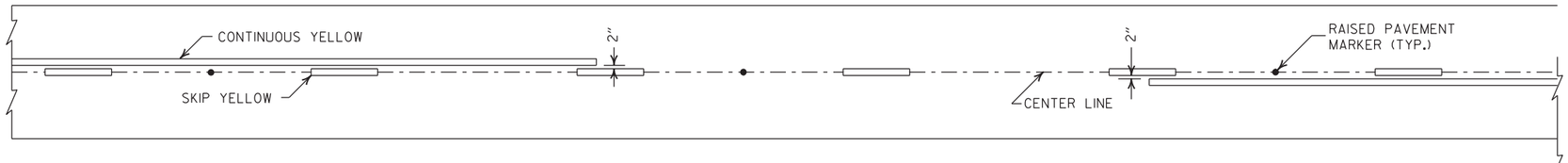


ASPHALT PAVEMENT

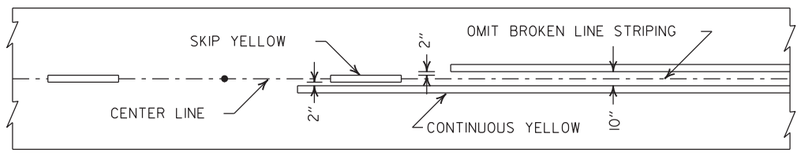
BROKEN LINE STRIPING



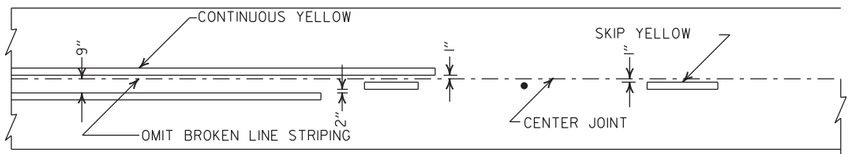
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

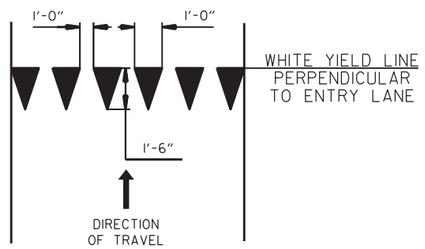


ASPHALT PAVEMENT

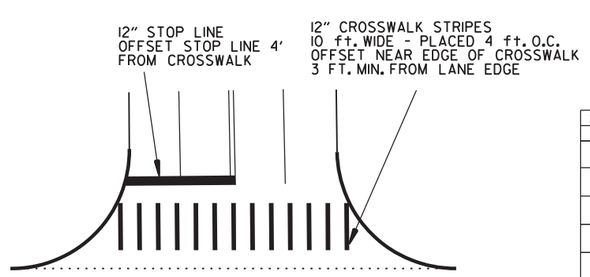


CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

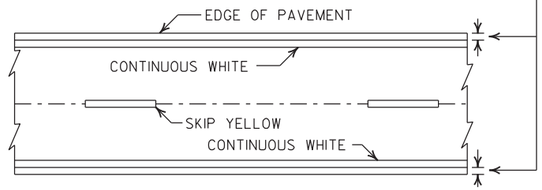


YIELD LINE DETAIL



CROSSWALK AND STOP LINE DETAILS

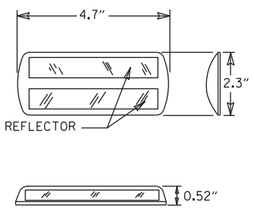
2" FOR ASPHALT OR CONCRETE PAVEMENT
6" FOR BITUMINOUS SURFACE TREATMENT



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

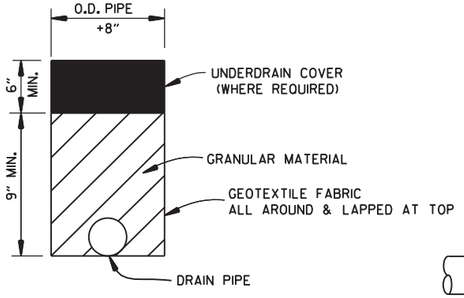
PAVEMENT MARKING DETAILS

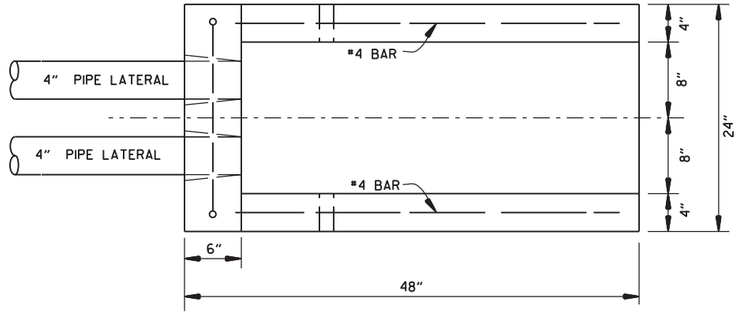
STANDARD DRAWING PM-1

NOTE:

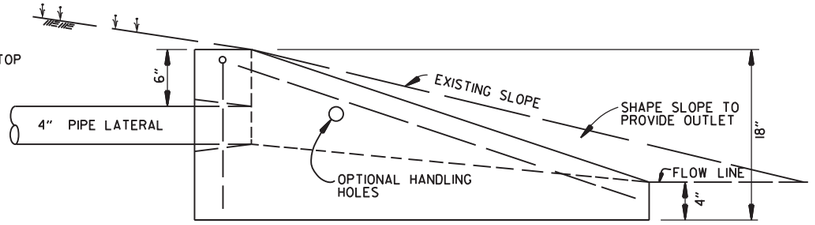
1. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.

2. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC. LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.

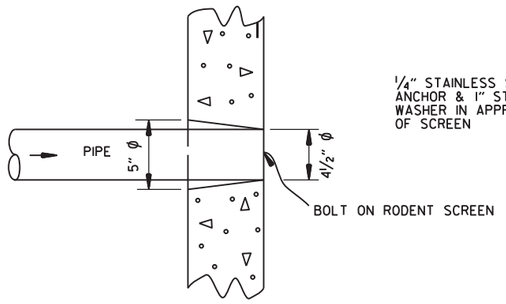




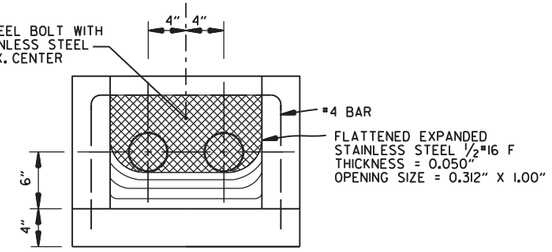
PLAN VIEW



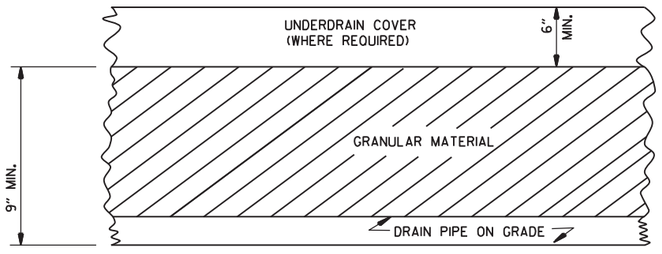
SIDE VIEW



DETAIL OF HOLE FOR 4" PIPE

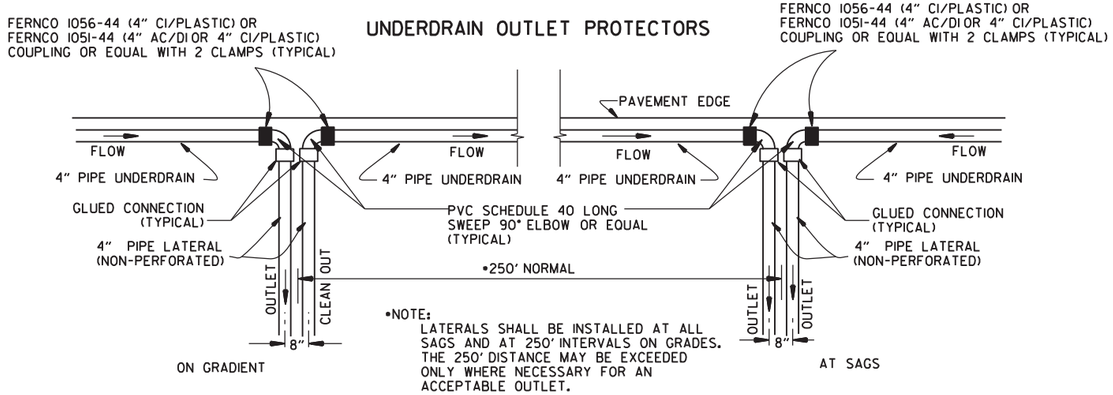


FRONT VIEW
(DETAIL OF RODENT SCREEN)



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			RC	96		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		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	300	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	350
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	
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	250	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		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	200	0.052	162		0.062	197		0.072	221		0.082	245		0.092	269		0.100	288		D MAX = 3° 30'		
3° 30'	0.030	90		0.038	113		0.046	139		0.056	171		0.066	206		0.076	230		0.086	254		0.096	278	350						
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		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	250	0.084	250		0.094	274	350	D MAX = 5° 15'											
5° 30'	0.044	115		0.054	144		0.066	181		0.078	221		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		D MAX = 6° 30'											
6° 30'	0.050	126		0.062	160		0.074	198	250	0.086	239		0.096	278																
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'																														

ABBREVIATIONS

NC - NORMAL CROWN
RC - REVERSE CROWN, SUPERELEVATION AT NORMAL CROWN SLOPE
e - RATE OF SUPERELEVATION (FT. PER FT.)
Ls - LENGTH OF SUPERELEVATION TRANSITION (FT.)
L - DISTANCE FROM BEGINNING OF SUPERELEVATION TRANSITION TO ANY POINT (FT.)
d - WIDTH OF PAVEMENT (FT.) OR WIDTH OF SUBGRADE (FT.)
C - NORMAL CROWN (FT.)

GENERAL NOTES

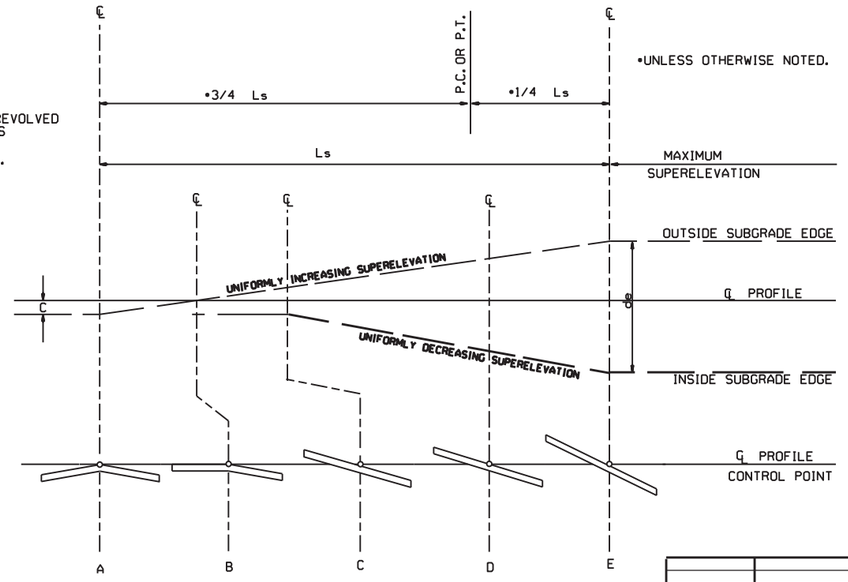
1. ON PAVEMENT WITH TWO-WAY TRAFFIC, THE SUPERELEVATION SHALL BE REVOLVED ON THE INSIDE PAVEMENT EDGE UNLESS OTHERWISE NOTED ON THE PLANS
2. SUPERELEVATION VALUES SHOWN ON THE CROSS SECTIONS ARE VALUES (+) OR (-) TO BE ADDED TO OR SUBTRACTED FROM THE POINT OF CONTROL.
3. LENGTHS FOR L MAY BE ROUNDED IN MULTIPLES OF 25 FT. OR 50 FT. TO PERMIT SIMPLER CALCULATIONS.
4. PAVEMENTS WIDER THAN 2 LANES SHALL HAVE ADDITIONAL TRANSITION LENGTHS AS FOLLOWS:

3 LANE UNDIVIDED - - - - - +20%
4 LANE UNDIVIDED - - - - - +50%
5 LANE UNDIVIDED - - - - - +80%
6 LANE UNDIVIDED - - - - - +100%

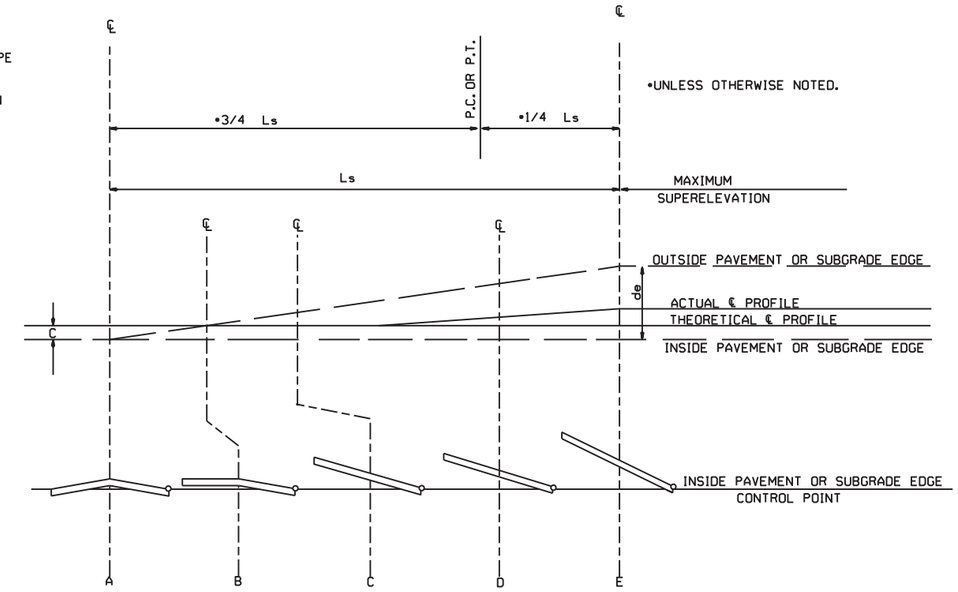
NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

RATE OF SUPERELEVATION SHALL BE COMPUTED ON STRAIGHT LINE METHOD USING APPLICABLE Ls.

SUPERELEVATION FORMULA = $\frac{Lde}{Ls}$



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND INNER SUBGRADE POINT OR INNER PAVEMENT EDGE

NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

DATE	REVISION	DATE 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
30"X30"



W1-3
30"X30"
(LT. OR RT.)



W1-8
18"X24"



W2-5
30"X30"



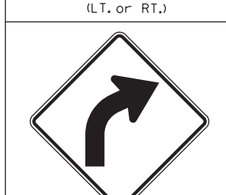
W3-1
36"X36"



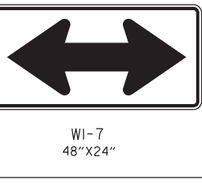
W5-1
36"X36"



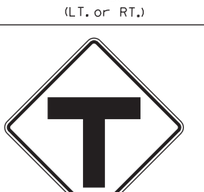
M6-3
21"X15"



R1-2
36"X36"X36"



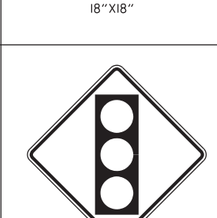
W1-4
30"X30"
(LT. or RT.)



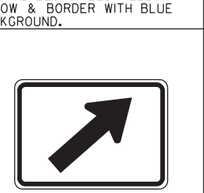
W2-1
30"X30"



S1-1
36"X36"



W3-2
36"X36"



County
Route Marker
M1-6
24"X24"

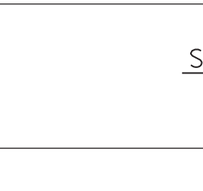
NOTE: REFLECTORIZED YELLOW LEGEND (COUNTY NAME, ROUTE LETTER & NUMBER) & BORDER ON A BLUE BACKGROUND.



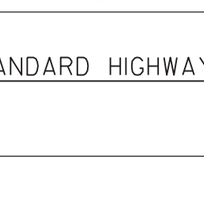
M6-4
21"X15"



R2-1
24"X30"



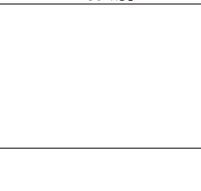
W1-5
30"X30"
(LT. or RT.)



W2-2
30"X30"

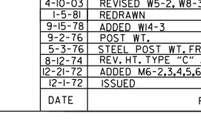


W5-2
36"X36"



W8-3
36"X36"

R1-3P
18"X6"



M6-5
21"X15"

W1-1
30"X30"
(LT. or RT.)

W1-6
48"X24"

W1-7
48"X24"

W2-3
30"X30"
(LT. or RT.)

W5-3
36"X36"

W13-1P
18"X18"

M6-1
21"X15"

NOTE: ALL M6 SIGNS TO BE MADE WITH REFLECTORIZED YELLOW ARROW & BORDER WITH BLUE BACKGROUND.

M6-6
21"X15"

W1-2
30"X30"
(LT. or RT.)

W2-4
30"X30"

W10-1
36" DIAMETER

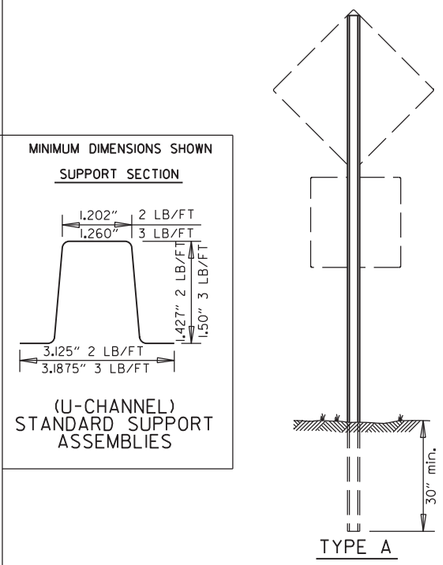
W3-3
36"X36"

M6-2
21"X15"

S4-3P
24"X8"

S4-2P
24"X10"

OM-3
12"X36"
(LT. or RT.)



NOTE: LENGTH OF SIGN POSTS SHALL BE DETERMINED SO AS TO PROVIDE FOR MINIMUM VERTICAL CLEARANCES AS CALLED FOR IN THE SPECIFICATIONS PLUS A MINIMUM VERTICAL PENETRATION OF 30" IN THE SOIL.

TYPE B

TYPE C

MINIMUM WEIGHT

TYPE A & B = 3 LBS./FT.
TYPE C = 2 LBS./FT.

STANDARD HIGHWAY SIGNS

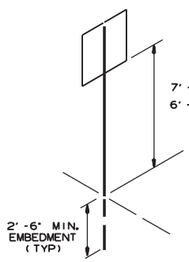
SUPPORT ASSEMBLIES

DATE	REVISION	DATE FILMED
9-12-13	DELETED JOB NO. BLOCK; REVISED RI-3 TO RI-3P	
4-17-08	REVISED SIGN DESIGNATION - W3-1 & W3-2	
4-10-03	REVISED W5-2, W8-3, OM-3; ADDED WI-8	
1-5-81	REDRAWN	960-1-15-81
9-15-78	ADDED W14-3	877-9-15-78
9-2-76	POST WT.	623-9-3-76
5-3-76	STEEL POST WT. FROM 2#-3#; ADDED S4-2 & S4-3	504-5-3-76
8-12-74	REV. HT. TYPE "C" ASSEMBLY	500-8-21-74
12-21-72	ADDED M6-2,3,4,5,6	500-12-21-72
12-1-72	ISSUED	562-12-1-72

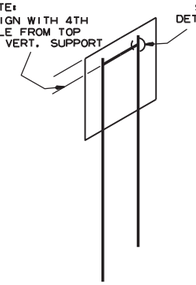
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD HIGHWAY SIGNS AND SUPPORT ASSEMBLIES

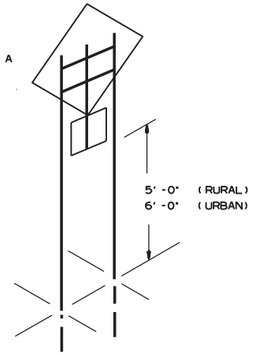
STANDARD DRAWING SHS-1



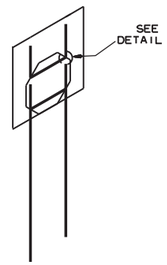
U-1



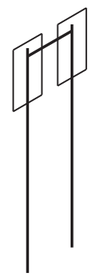
U-2



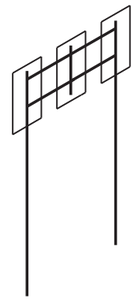
U-2 (A)



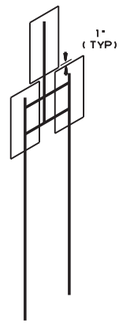
U-2 (B)



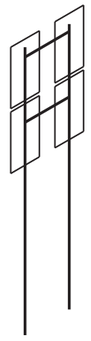
U-2 (1)



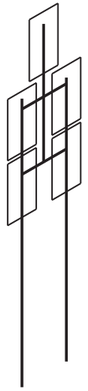
U-2 (2)



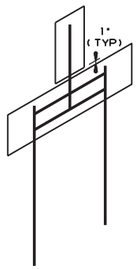
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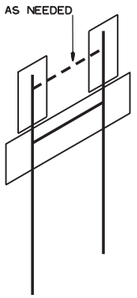
U-2 (4)



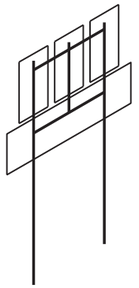
U-2 (5)



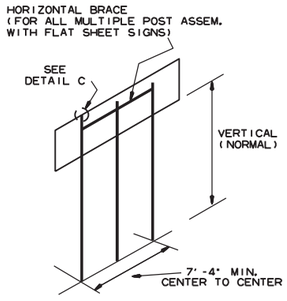
U-2 (6)



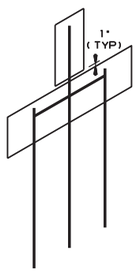
U-2 (7)



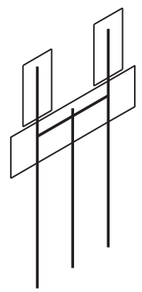
U-2 (8)



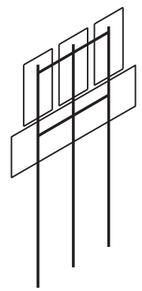
U-3



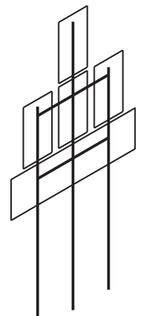
U-3 (1)



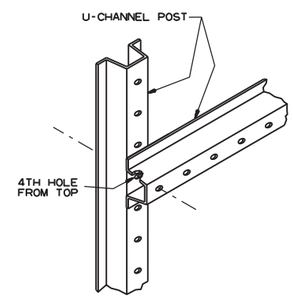
U-3 (2)



U-3 (3)

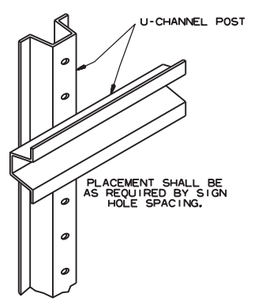


U-3 (4)



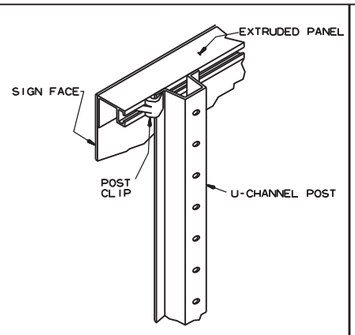
DETAIL A

SHOWING HORIZONTAL BRACE



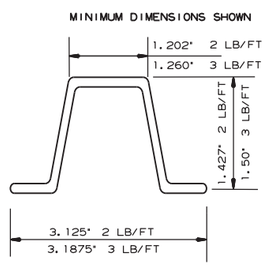
DETAIL B

SHOWING BACK-TO-BACK INSTALLATION



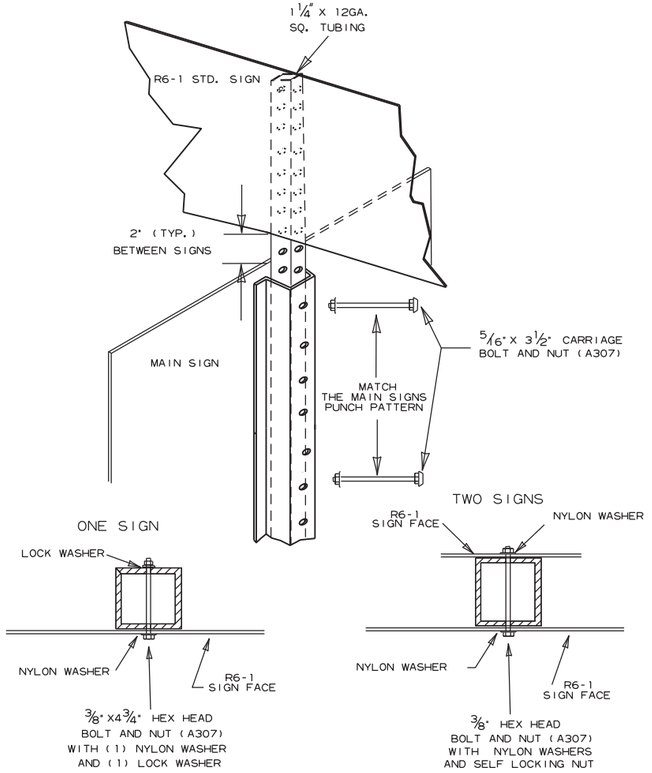
DETAIL C

SHOWING GUIDE SIGN MOUNTING WITH EXTRUDED PANELS



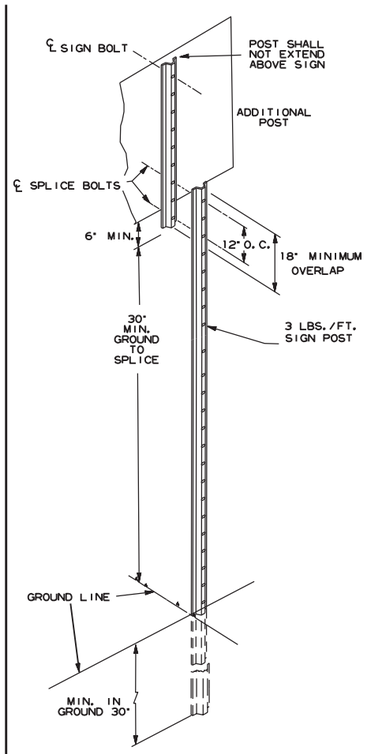
DETAIL C

U-CHANNEL POST



DETAIL E

R6-1 EXTENSION FOR U-CHANNEL POST



DETAIL F

DETAIL OF SPLICES

NOTES:

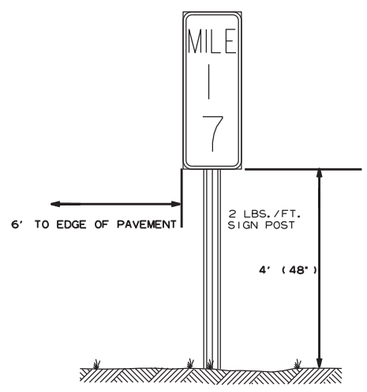
SIGNS AT LEAST 8' IN LENGTH MAY BE INSTALLED ON THREE 3 LB. POST. IN NO CASE SHALL THERE BE MORE THAN TWO 3 LB. POSTS WITHIN A 7' PATH.

SPLICES NECESSARY TO ATTAIN PROPER MOUNTING HEIGHT SHALL BE AS SHOWN IN DETAIL (F).

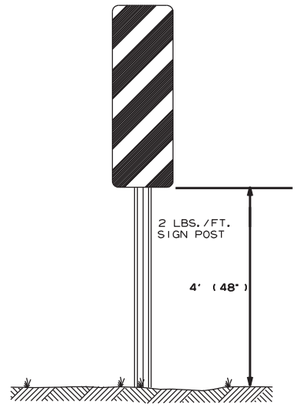
NORMAL INSTALLATIONS WILL REQUIRE 5/16" DIA. CARRIAGE BOLTS TO MOUNT SIGNS TO POST AND TO ASSEMBLE THE VARIOUS POST SUPPORTS.

ALL SIGN POSTS SHALL BE PLUMB.

THE POST FOR "TYPE U" SUPPORTS SHALL BE HOT DIP GALVANIZED.



TYPICAL MILE MARKER INSTALLATION



TYPICAL OM-3 INSTALLATION AT EDGE OF OBSTRUCTION

DATE	REVISION	FILMED
7-25-19	REVISED CARRIAGE BOLT WITH MATERIAL REQUIREMENT	
2-27-14	REVISED NOTES.	
9-12-13	REVISED U-2(3), U-2(6), U-3(1), DETAIL D; ADDED DETAILS E & F; ADDED TYPICAL MARKERS	
10-9-03	REMOVED ROUND POST & REVISED SPACING	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL	6-8-95
2-2-95	REDRAWN	2-2-95

ARKANSAS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

STANDARD DRAWING SHS-2

R1-1



STANDARD 30"X30"
EXPRESSWAY 36"X36"
SPECIAL 48"X48"

R1-2



STD. 36"X36"X36"
EXPWY. 48"X48"X48"
FWY. 60"X60"X60"

R2-1



STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

W3-5



STD. 36"X36"
EXPWY. 48"X48"
FWY. 48"X48"

W3-5a



STD. 36"X36"
EXPWY. 48"X48"
FWY. 48"X48"

R4-1



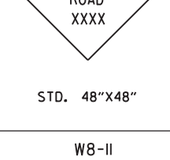
STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R4-2



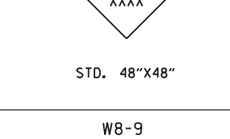
STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R5-1



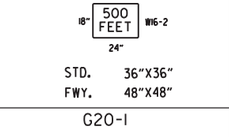
STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

RII-2



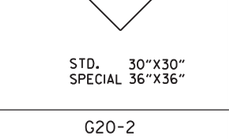
48"X30"

RII-3A



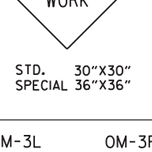
60"X30"

RII-4



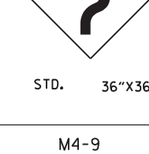
60"X30"

W21-5a



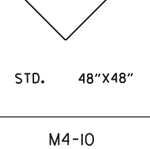
STD. 36"X36"
FWY. 48"X48"

WI-1



STD. 36"X36"
FWY. 48"X48"

WI-2



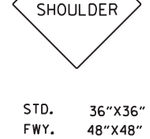
STD. 36"X36"
FWY. 48"X48"

WI-3



STD. 48"X48"

WI-4



STD. 48"X48"

WI-6



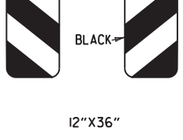
STD. 48"X24"
SPECIAL 60"X30"

WI-8



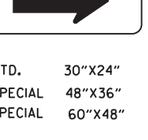
STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

W3-1



STD. 36"X36"
SPECIAL 48"X48"

W3-2



STD. 36"X36"
SPECIAL 48"X48"

W4-2



STD. 36"X36"
FWY. 48"X48"

W5-1



STD. 36"X36"
SPECIAL 48"X48"

W6-3



EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7



EXPWY. 36"X36"
FWY. 48"X48"

W9-2



STD. 36"X36"
FWY. 48"X48"

WI3-1



STD. 24"X24"

W20-1



STD. 48"X48"

W20-2



STD. 48"X48"

W20-3



STD. 48"X48"

W20-4



STD. 48"X48"

W20-5



STD. 48"X48"

W20-7a



STD. 36"X36"
FWY. 48"X48"

W21-2



STD. 30"X30"
SPECIAL 36"X36"

W21-5



STD. 30"X30"
SPECIAL 36"X36"

W24-1



STD. 36"X36"

WI-4b



STD. 48"X48"

R56-1



STD. 18"X18"

W8-11

STD. 36"X36"
FWY. 48"X48"

W8-9

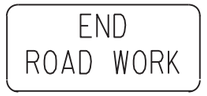
STD. 36"X36"
FWY. 48"X48"

G20-1



60"X24"

G20-2



48"X24"

OM-3L OM-3R

12"X36"

M4-9



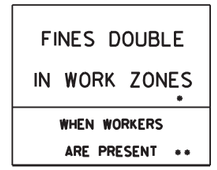
STD. 30"X24"
SPECIAL 48"X36"
SPECIAL 60"X48"

M4-10



48"X18"

R55-1



36"X60"

• USE 6" C LETTERS
•• USE 4" D LETTERS

ADVANCE DISTANCES
(XXXX)

500 FT	½ MILE
1000 FT	¾ MILE
1500 FT	1 MILE AHEAD

GENERAL NOTES:

1. ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.
2. TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND REMOVED THEREAFTER.
3. EXISTING SIGNS AND CONSTRUCTION SIGNS SHALL BE KEPT IN PROPER POSITION, AND BE CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED. SIGNS THAT ARE DAMAGED, DEFACED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED.
- 4. SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SQ. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE.
- 5. SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3.
6. POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE.
7. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE, EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS.
8. FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. MOST OF THE SIGNS SHOWN ARE ORIENTED TO THE RIGHT. HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT.
10. R55-1 SIGNS SHALL BE PLACED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE SIGN SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN.

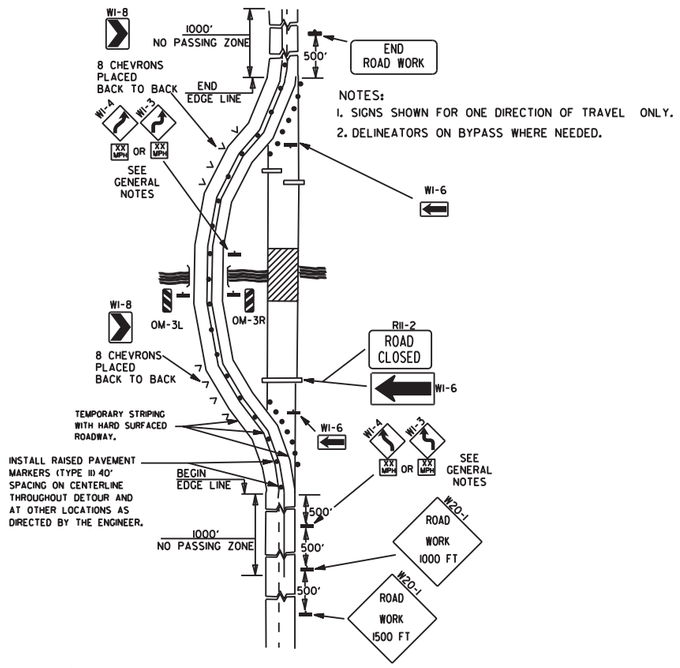
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED FOR ALL PROJECTS.

DATE	REVISION	FILMED
11-07-19	REVISED FOR MASH	
4-13-17	DELETED RSP-1 & ADDED W21-5a	
9-2-15	REVISED REDUCED SPEED LIMIT AHEAD SIGNS REVISED ROAD WORK NEXT XX MILES	
12-15-11	REVISED W24-1	
11-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
11-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
11-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
11-18-98	ADDED NOTE	
6-26-97	REVISED NOTE 5	
4-03-97	REVISED NOTE 5	
10-18-96	ADDED CONTROLLED ACCESS HWY. SIGN & TO NOTE 7	
10-12-95	ADDED R55-1	
6-8-95	REVISED TO CORRECT SIGN ILLUSTRATIONS	6-8-95
2-2-95	REVISED PER PART VI, MUTCD SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

ARKANSAS STATE HIGHWAY COMMISSION

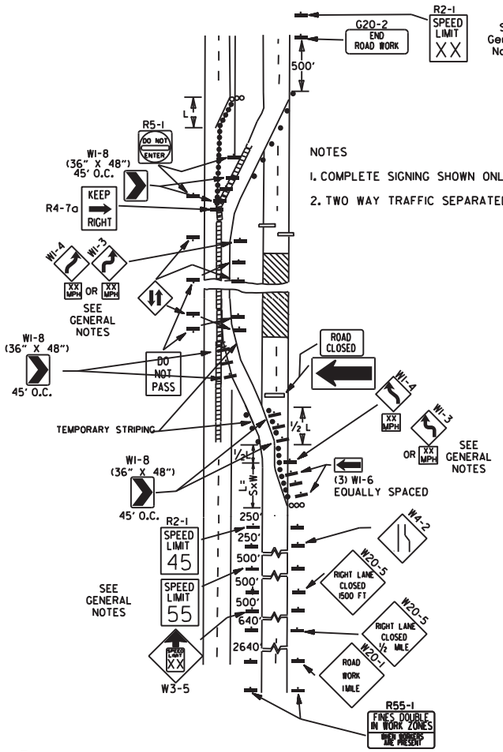
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



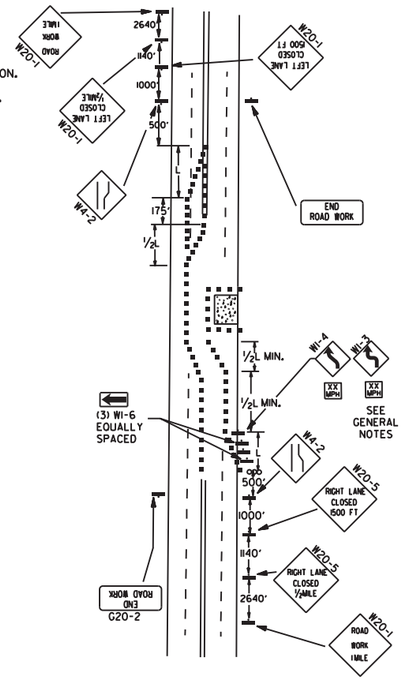
NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.

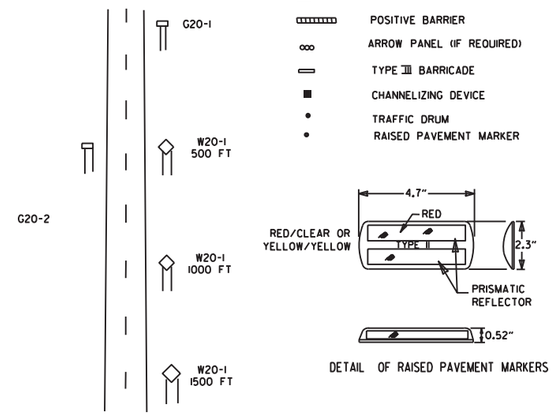


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.



(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



DETAIL OF RAISED PAVEMENT MARKERS

TYPICAL ADVANCE WARNING SIGN PLACEMENT

TAPER FORMULAE:

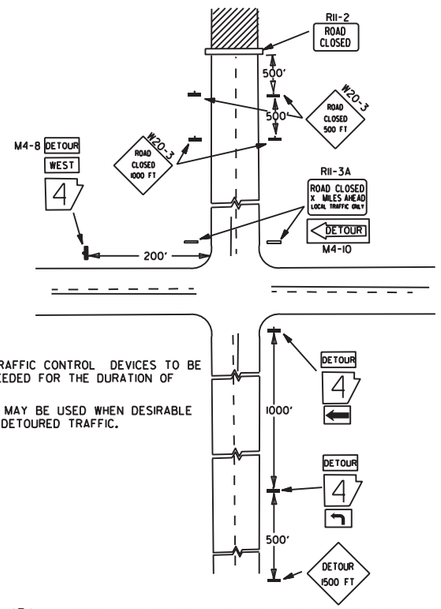
L=SXW FOR SPEEDS OF 45MPH OR MORE.

$L = \frac{WS^2}{60}$ FOR SPEEDS OF 40MPH OR LESS.

WHERE:
L= MINIMUM LENGTH OF TAPER.
S= NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.
W= WIDTH OF OFFSET.

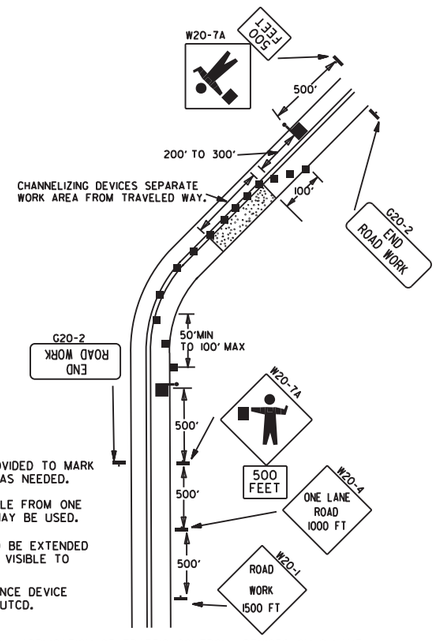
GENERAL NOTES:

1. THE MAINTENANCE DIVISION SHALL CONDUCT A BALL BANK STUDY TO DETERMINE THE ADVISORY SPEED LIMIT PRIOR TO OPENING TO TRAFFIC. THE ADVISORY SPEED WILL BE POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-1 55MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE. PAYMENT FOR TRAFFIC DRUMS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR VARIOUS TRAILER MOUNTED DEVICES.
8. DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE ARDOT QUALIFIED PRODUCTS LIST.
9. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).



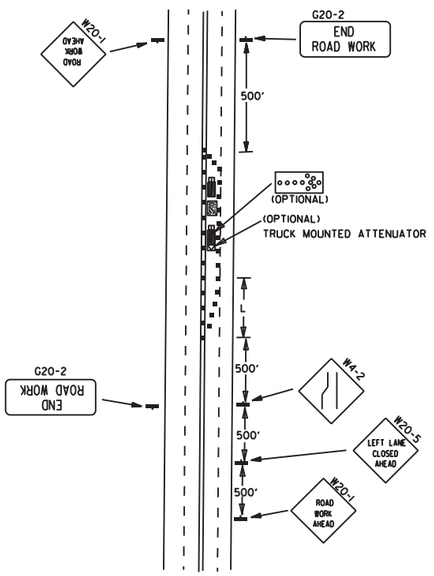
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

(D) TYPICAL APPLICATION - ROADWAY CLOSED BEYOND DETOUR POINT.



NOTES:
1. FLOOD LIGHTS SHOULD BE PROVIDED TO MARK FLAGGER STATIONS AT NIGHT AS NEEDED.
2. IF ENTIRE WORK AREA IS VISIBLE FROM ONE STATION, A SINGLE FLAGGER MAY BE USED.
3. CHANNELIZING DEVICES ARE TO BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
4. AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD) OPTIONAL. REFER TO MUTCD.

(E) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON 2-LANE HIGHWAY WHERE ONE LANE IS CLOSED AND FLAGGING IS PROVIDED.



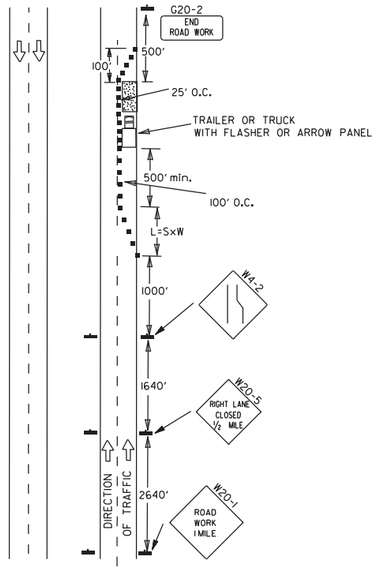
(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

DATE	REVISION	FILMED
05-20-21	REVISED NOTE 7	
11-07-19	REVISED NOTE 1, ADDED NOTE 9	
9-2-15	REVISED NOTE 2, ADDED NOTE 8, REVISED DRAWING (A) & REPLACED R2-5A WITH W3-5	
9-12-13	REVISED DETAIL OF RAISED PAVEMENT MARKERS	
3-11-10	ADDED (AFAD)	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (a) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON W1-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

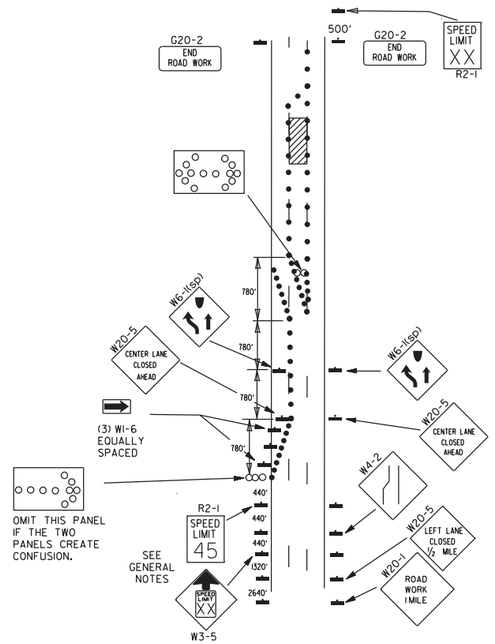
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-2



(A) TYPICAL APPLICATION - DAYTIME MAINTENANCE OPERATIONS OF SHORT DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



(B) TYPICAL APPLICATION - 3-LANE ONEWAY ROADWAY WHERE CENTER LANE IS CLOSED.

KEY:

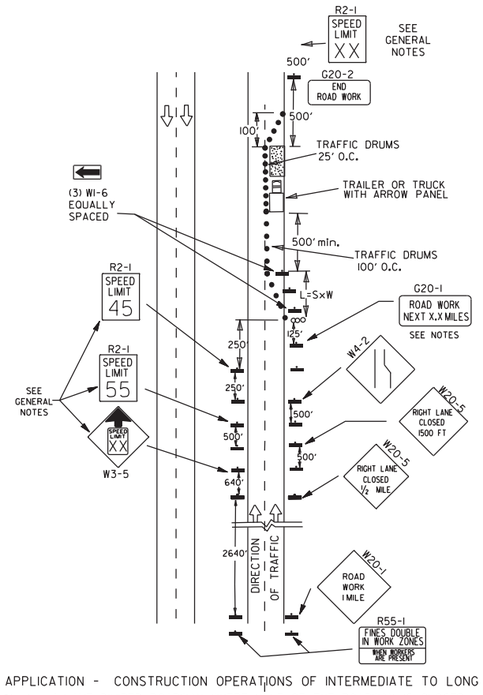
○○○ ARROW PANEL (IF REQUIRED)

■ CHANNELIZING DEVICE

● TRAFFIC DRUM

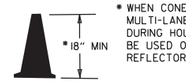
GENERAL NOTES:

1. A SPEED LIMIT REDUCTION MAY BE IMPLEMENTED ONLY WHEN DESIGNATED IN THE PLAN OR WHEN RECOMMENDED BY THE ROADWAY DESIGN DIVISION.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1 MILE 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 1 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. THE G20-1 SIGN WILL BE REQUIRED ON JOBS OF OVER TWO MILES IN LENGTH. WHEN THE LANE CLOSURE IS NOT AT THE BEGINNING OF THE PROJECT, THE G20-1 SIGN SHALL BE ERECTED 125' IN ADVANCE OF THE JOB LIMIT. ADDITIONAL W20-1 (1 MILE) SIGNS ARE NOT REQUIRED IN ADVANCE OF LANE CLOSURES THAT BEGIN INSIDE THE PROJECT LIMITS.
8. FLAGGERS SHALL USE STOP/SLOW PADDLES FOR CONTROLLING TRAFFIC THROUGH WORK ZONES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. ALL PLASTIC DRUMS AND CONES SHALL MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
10. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE. PAYMENT FOR TRAFFIC DRUMS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR VARIOUS TRAILER MOUNTED DEVICES.
11. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).



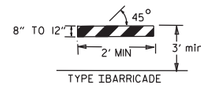
(C) TYPICAL APPLICATION - CONSTRUCTION OPERATIONS OF INTERMEDIATE TO LONG TERM DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.

CHANNELIZING DEVICES

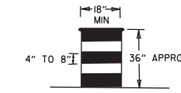


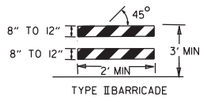
* WHEN CONES ARE USED ON FREEWAYS AND MULTI-LANE HIGHWAYS, THEY SHALL BE 28" MIN. DURING HOURS OF DARKNESS, 28" CONES SHALL BE USED ON ALL ROADWAYS, AND SHALL BE REFLECTORIZED IN ACCORDANCE WITH THE M.U.T.C.D.

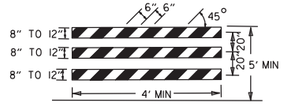
CONES



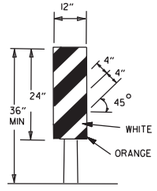
PLASTIC DRUM



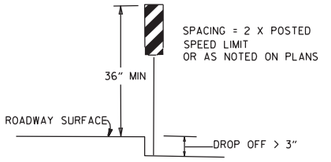




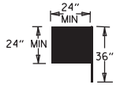
NOTE:
FOR ALL ROAD CLOSURES, THE TYPE III BARRICADES SHALL BE OF SUFFICIENT LENGTH TO EXTEND ACROSS ENTIRE ROADWAY.



VERTICAL PANEL PLACEMENT



FLAG



FLAG SHALL BE OF GOOD GRADE RED MATERIAL

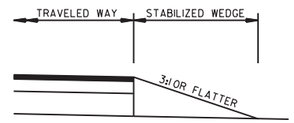
TRAFFIC CONTROL DEVICES			
NON-INTERSTATE			
VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL	
		≤ 45 MPH	> 45 MPH
≤ 1"	CENTERLINE	W8-11	W8-11
> 1" ≤ 3"	CENTERLINE	W8-11 AND CENTERLINE LANE STRIPING	W8-11 AND CENTERLINE LANE STRIPING
> 3"	CENTERLINE	STANDARD LANE CLOSURE[6]	STANDARD LANE CLOSURE[6]
≤ 3"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9 AND TRAFFIC DRUMS[1]	W8-9 AND TRAFFIC DRUMS[1]
> 3" ≤ 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[1]	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[1]
> 6" ≤ 18"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[1]	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[2]
> 18" ≤ 24"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[1]	A STABILIZED WEDGE, W8-17, EDGE LINE STRIPING AND TRAFFIC DRUMS[3]
> 24"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	PRECAST CONCRETE BARRIER[4] & EDGE LINES	PRECAST CONCRETE BARRIER[4] & EDGE LINES

INTERSTATE		
VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL
≤ 3"	CENTERLINE	W8-11 AND LANE STRIPING
≤ 3"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9, EDGE LINE STRIPING, AND TRAFFIC DRUMS[2]
> 3" ≤ 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[2]
> 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	PRECAST CONCRETE BARRIER & EDGE LINES

INTERSTATE AND NON-INTERSTATE		
FORESLOPE	HEIGHT	TRAFFIC CONTROL
1:1	> 2 FT	PRECAST CONCRETE BARRIER
2:1	≤ 5 FT	TRAFFIC DRUMS
2:1	> 5 FT	PRECAST CONCRETE BARRIER
Flatter than 2:1	N/A	TRAFFIC DRUMS

GENERAL NOTES:

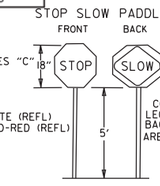
1. WHEN THE SHOULDER AREA IS USED AS PART OF THE TRAVELED LANE AND THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, THEN VERTICAL PANELS SHALL BE USED.
2. WHEN THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, A STABILIZED WEDGE SHALL BE USED.
3. PRECAST CONCRETE BARRIER WALL CAN BE USED IN LIEU OF A STABILIZED WEDGE, W8-17 SIGN, EDGE LINE STRIPING, AND TRAFFIC DRUMS, IF AND WHERE DIRECTED BY THE ENGINEER.
4. A STABILIZED WEDGE, W8-17 SIGN, EDGE LINE STRIPING, AND TRAFFIC DRUMS CAN BE USED IN LIEU OF PRECAST CONCRETE BARRIER WALL, IF AND WHERE DIRECTED BY THE ENGINEER.
5. W21-5, W21-5a, AND/OR W21-5b SIGNS SHALL BE USED WHERE THE ROADWAY IS UNOBSTRUCTED IF AND WHERE DIRECTED BY THE ENGINEER.
6. TIME LIMITATIONS MUST CONFORM TO SECTION 603 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).

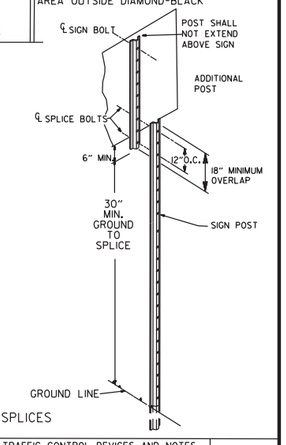


STABILIZED WEDGE

NOTE:
MATERIALS FOR THE STABILIZED WEDGE SHALL MEET THE REQUIREMENTS PROVIDED IN SECTION 603.02 OF THE STANDARD SPECIFICATIONS.

STOP SLOW PADDLE

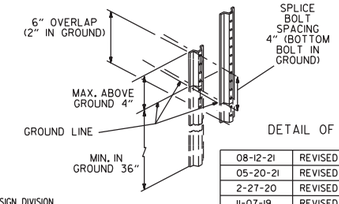




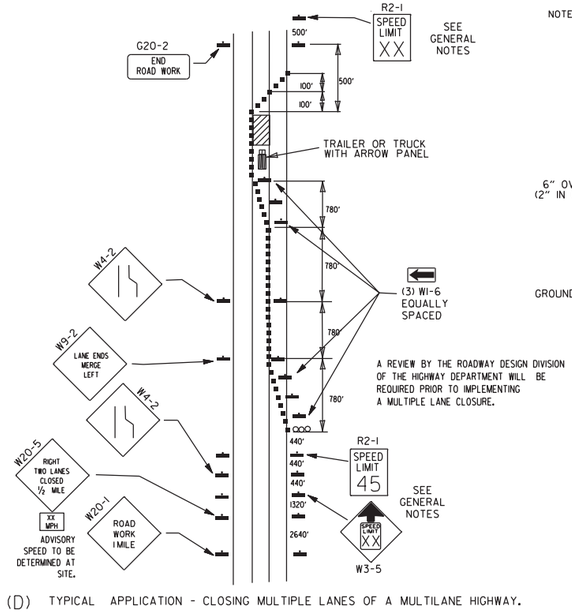
NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-2)

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.



DETAIL OF SPLICES



A REVIEW BY THE ROADWAY DESIGN DIVISION OF THE HIGHWAY DEPARTMENT WILL BE REQUIRED PRIOR TO IMPLEMENTING A MULTIPLE LANE CLOSURE.

(D) TYPICAL APPLICATION - CLOSING MULTIPLE LANES OF A MULTILANE HIGHWAY.

08-12-21	REVISED TRAFFIC CONTROL DEVICES AND NOTES	
05-20-21	REVISED NOTE 10	
2-27-20	REVISED TRAFFIC CONTROL DEVICES DETAILS	
11-07-19	REVISED NOTE 9, ADDED NOTE 11	
7-25-19	REVISED TRAFFIC CONTROL DEVICES DETAILS	
9-2-15	REVISED NOTE 2 & REPLACED R2-5A WITH W3-5	
10-15-09	ADDED REFERENCE TO MASH	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED NOTE	
10-1-98	ADDED NOTE	
4-03-97	ADDED (SP) TO W6-1& REVISED TRAFFIC CONTROL DEVICES NOTE	
10-18-96	ADDED R55-1	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL, TEXT	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	
DATE	REVISION	FILMED

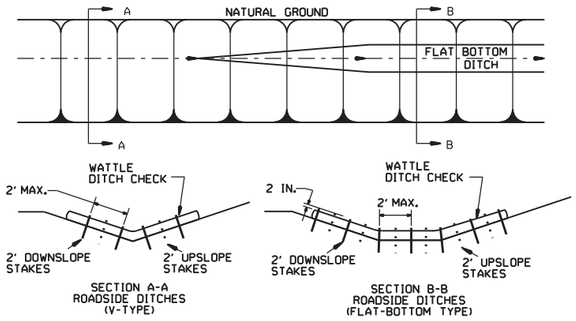
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

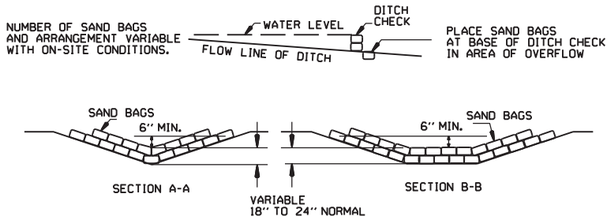
STANDARD DRAWING TC-3

GENERAL NOTES

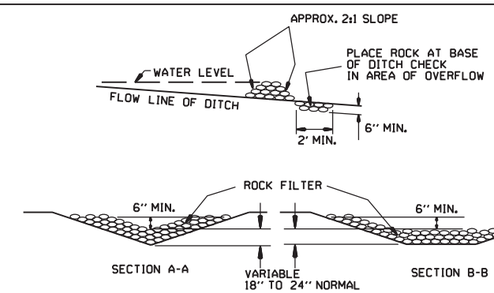
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



SAND BAG DITCH CHECK (E-5)

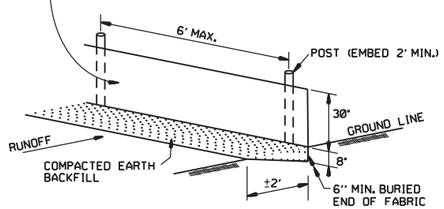


ROCK DITCH CHECK (E-6)

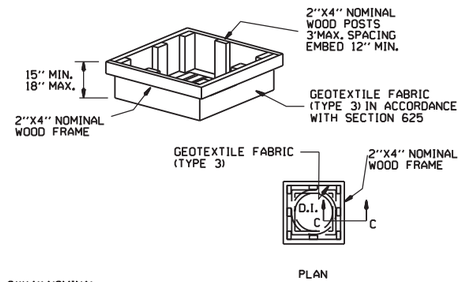
GENERAL NOTES

GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625

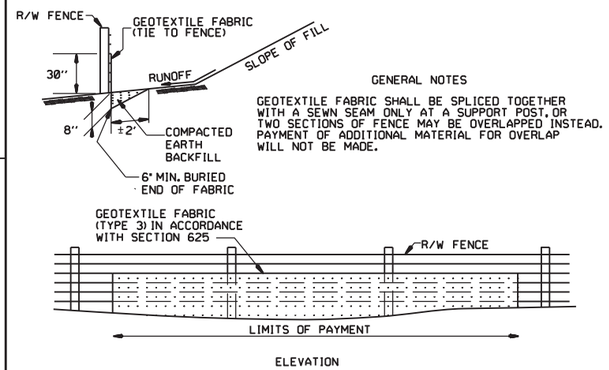
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



SILT FENCE (E-11)



DROP INLET SILT FENCE (E-7)



GENERAL NOTES

GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

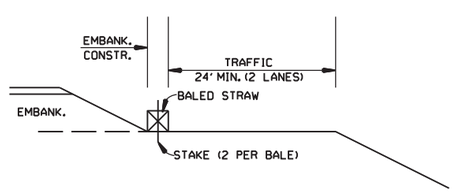
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

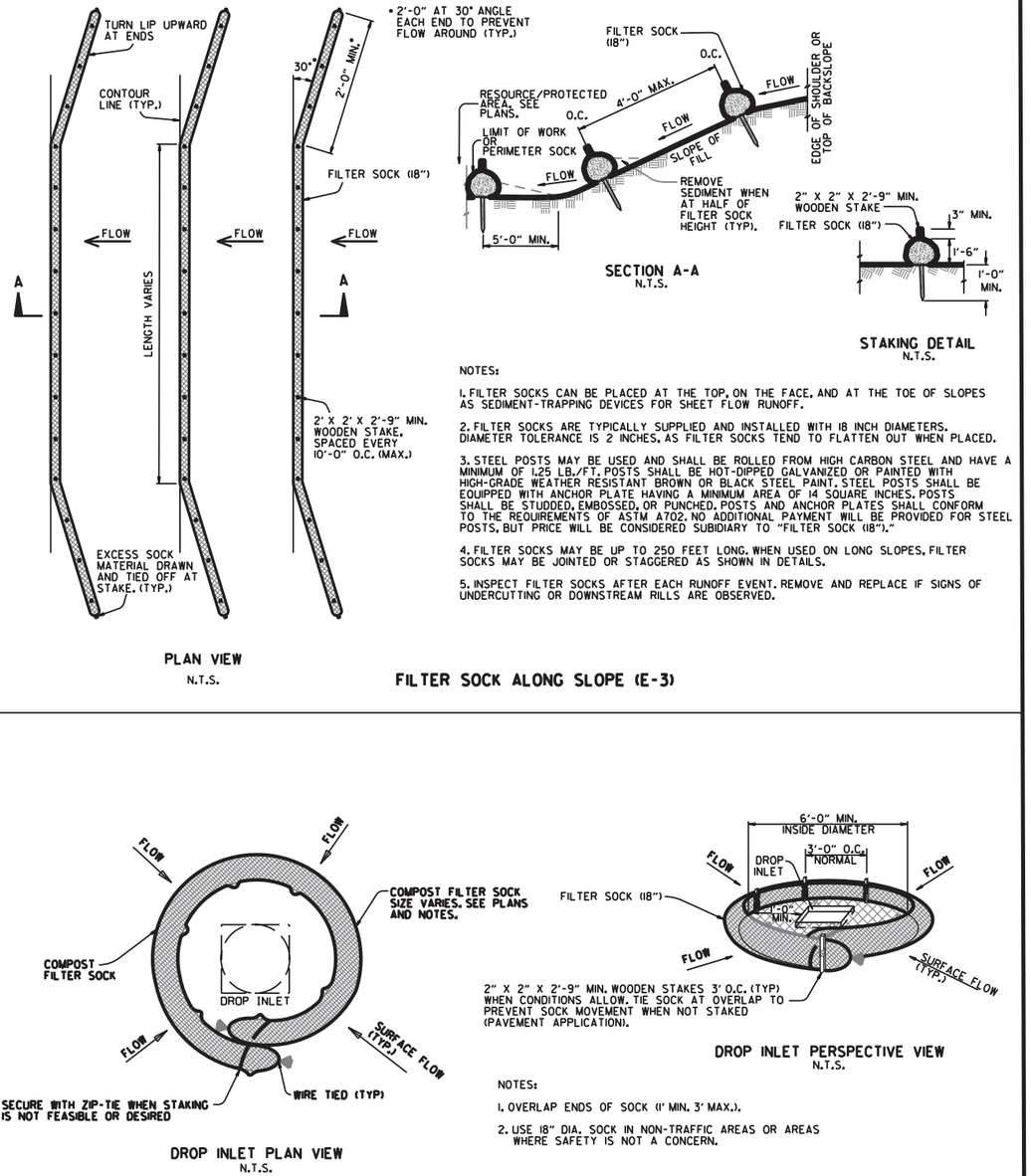
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

2. NO GAPS SHALL BE LEFT BETWEEN BALES.

3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.



BALED STRAW FILTER BARRIER (E-2)



NOTES:

1. FILTER SOCKS CAN BE PLACED AT THE TOP, ON THE FACE, AND AT THE TOE OF SLOPES AS SEDIMENT-TRAPPING DEVICES FOR SHEET FLOW RUNOFF.

2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES. AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.

3. STEEL POSTS MAY BE USED AND SHALL BE ROLLED FROM HIGH CARBON STEEL AND HAVE A MINIMUM OF 1.25 LB./FT. POSTS SHALL BE HOT-DIPPED GALVANIZED OR PAINTED WITH HIGH-GRADE WEATHER RESISTANT BROWN OR BLACK STEEL PAINT. STEEL POSTS SHALL BE EQUIPPED WITH ANCHOR PLATE HAVING A MINIMUM AREA OF 14 SQUARE INCHES. POSTS SHALL BE STUDDED, EMBOSSED, OR PUNCHED. POSTS AND ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR STEEL POSTS, BUT PRICE WILL BE CONSIDERED SUBIDIARY TO "FILTER SOCK (18")."

4. FILTER SOCKS MAY BE UP TO 250 FEET LONG. WHEN USED ON LONG SLOPES, FILTER SOCKS MAY BE JOINTED OR STAGGERED AS SHOWN IN DETAILS.

5. INSPECT FILTER SOCKS AFTER EACH RUNOFF EVENT. REMOVE AND REPLACE IF SIGNS OF UNDERCUTTING OR DOWNSTREAM RILLS ARE OBSERVED.

FILTER SOCK ALONG SLOPE (E-3)

NOTES:

1. OVERLAP ENDS OF SOCK (1' MIN. 3' MAX.).

2. USE 18" DIA. SOCK IN NON-TRAFFIC AREAS OR AREAS WHERE SAFETY IS NOT A CONCERN.

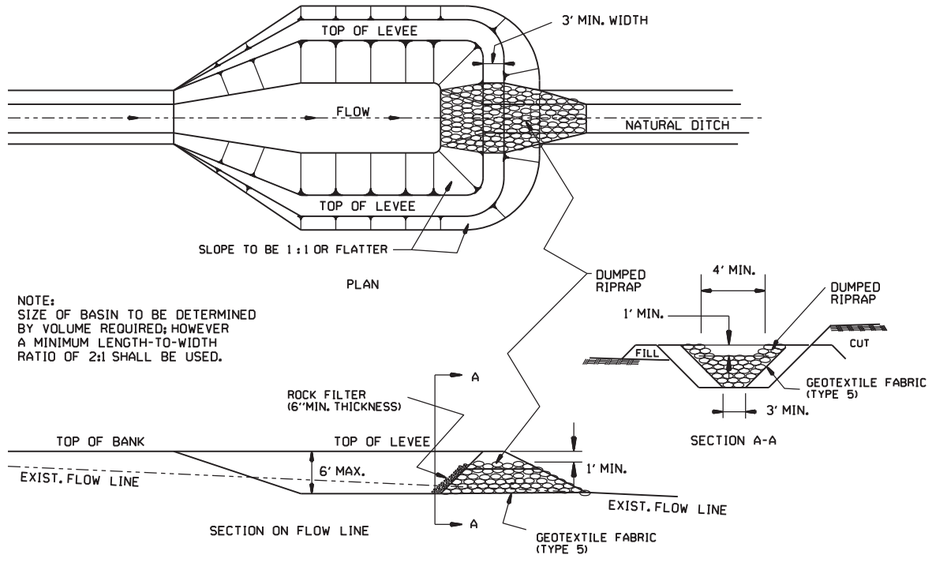
COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)

DATE	REVISION	FILMED
11-16-17	ADDED FILTER SOCK E-3 AND E-13	
12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK	
11-18-98	ADDED NOTES	
07-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)	
07-20-95	REVISED SILT FENCE E-4 AND E-11	7-20-95
07-15-94	REV. E-4 & E-11 MIN. 13" BURIED END OF FABRIC	
06-02-94	REVISED E-1,4,7 & 11; DELETED E-2 & 3	6-2-94
04-01-93	REDRAWN	
10-01-92	REDRAWN	
08-02-76	ISSUED R.D.M.	298-7-28-76

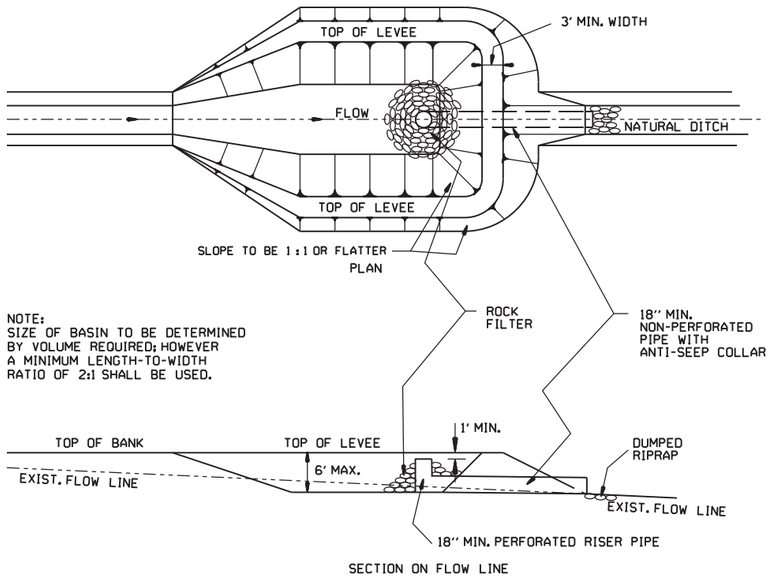
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

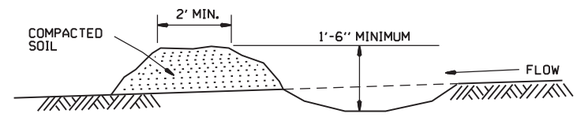
STANDARD DRAWING TEC-1



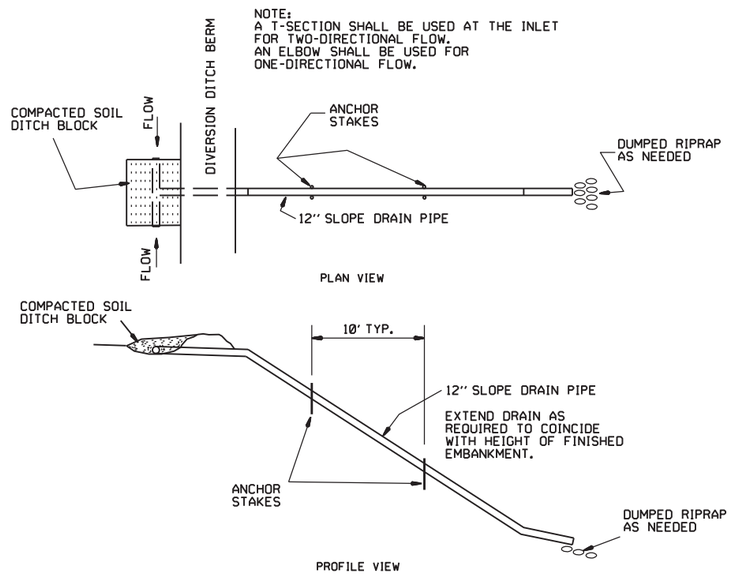
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



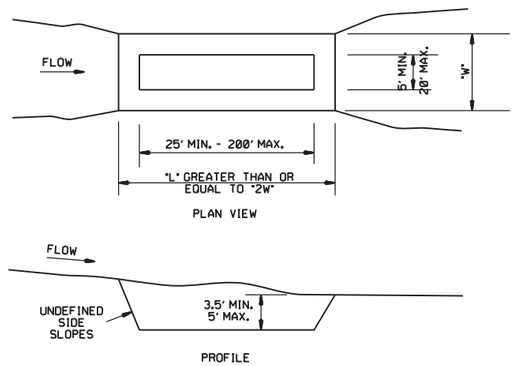
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



SEDIMENT BASIN (E-14)

DATE	REVISION	FILMED
6-2-94	Revised E-8 & E-12; Added E-14 & Deleted E-13	
4-1-93	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

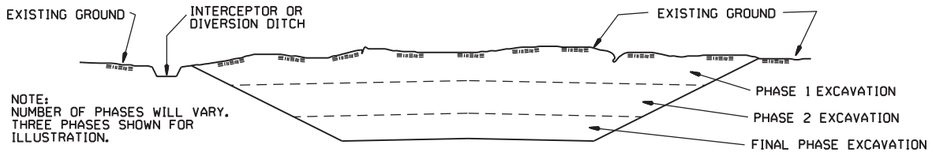
STANDARD DRAWING TEC-2

CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE

1. PLACE PERIMETER CONTROLS (I.E. SILT FENCES , DIVERSION DITCHES, SEDIMENT BASINS, ETC.)
2. PERFORM CLEARING AND GRUBBING OPERATION.

EXCAVATION



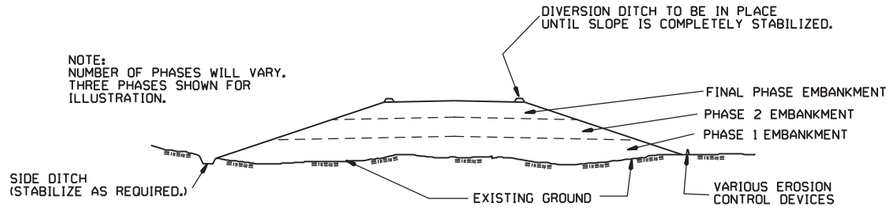
GENERAL NOTE

ALL CUT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE EXCAVATED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE

1. EXCAVATE AND STABILIZE INTERCEPTOR AND/OR DIVERSION DITCHES.
2. PERFORM PHASE 1 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
3. PERFORM PHASE 2 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
4. PERFORM FINAL PHASE OF EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING. STABILIZE DITCHES. CONSTRUCT DITCH CHECKS, DIVERSION DITCHES, SEDIMENT BASINS, OR OTHER EROSION CONTROL DEVICES AS REQUIRED.

EMBANKMENT



GENERAL NOTE

ALL EMBANKMENT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE CONSTRUCTED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE

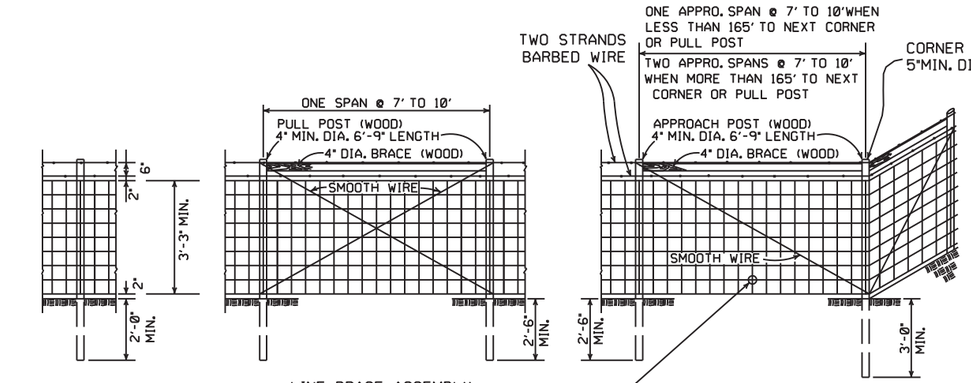
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.
3. PLACE PHASE 2 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.
4. PLACE FINAL PHASE OF EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PLACE DIVERSION DITCHES AND SLOPE DRAINS AND MAINTAIN UNTIL ENTIRE SLOPE IS STABILIZED.

DATE	REVISION	FILMED
11-03-94	CORRECTED SPELLING	
6-2-94	Drawn & Issued	6-2-94

ARKANSAS STATE HIGHWAY COMMISSION

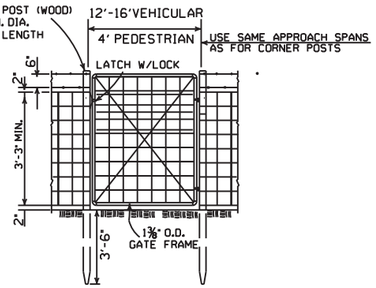
TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3



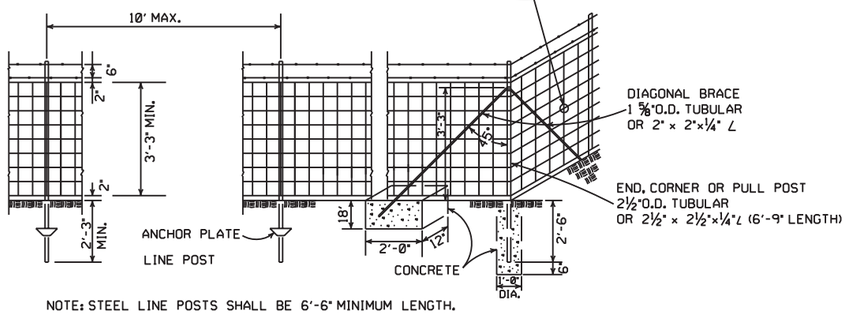
LINE BRACE ASSEMBLY
MAX. SPACING TO BE 330'

LINE POST
3" MIN. DIA. 6'-3" LENGTH
MAX. SPACING TO BE 10'-0"

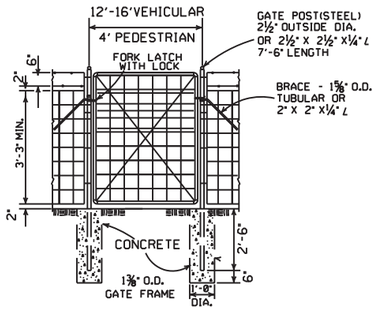


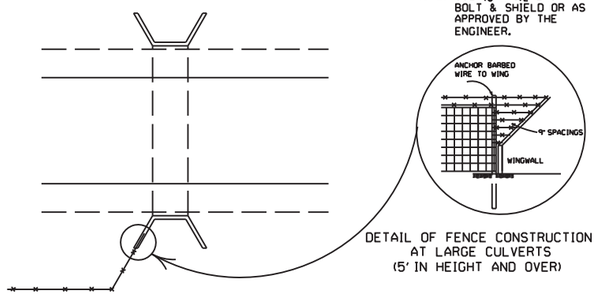
TYPE C FENCE (WOOD POSTS)

OTHER APPROVED TIES WILL BE PERMITTED



NOTE: STEEL LINE POSTS SHALL BE 6'-6" MINIMUM LENGTH.

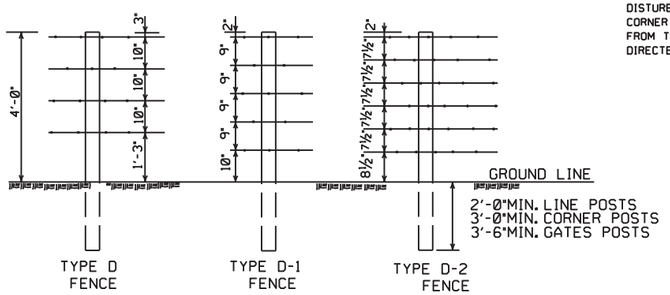




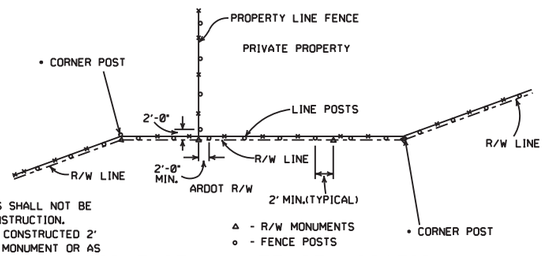
DETAIL OF FENCE CONSTRUCTION AT LARGE CULVERTS (5' IN HEIGHT AND OVER)

TYPE C FENCE (STEEL POSTS)

4 STRANDS BARBED WIRE (D)
5 STRANDS BARBED WIRE (D-1)
6 STRANDS BARBED WIRE (D-2)

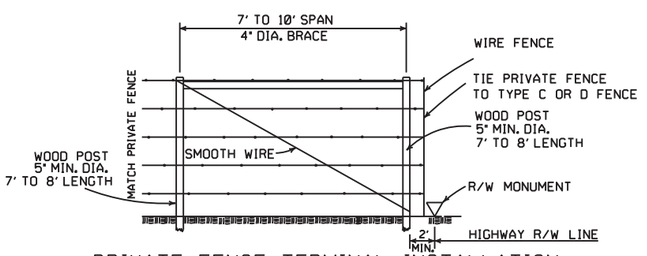


NOTE: SPACING AND SIZE (EXCEPT LENGTH) OF POSTS, APPROACH SPANS, PULL POST ASSEMBLIES, AND CORNER BRACING FOR TYPE D FENCE SHALL CONFORM TO TYPE C FENCE. USE GALVANIZED STAPLES ON WOOD POSTS AND APPROVED FASTENERS ON STEEL POSTS.



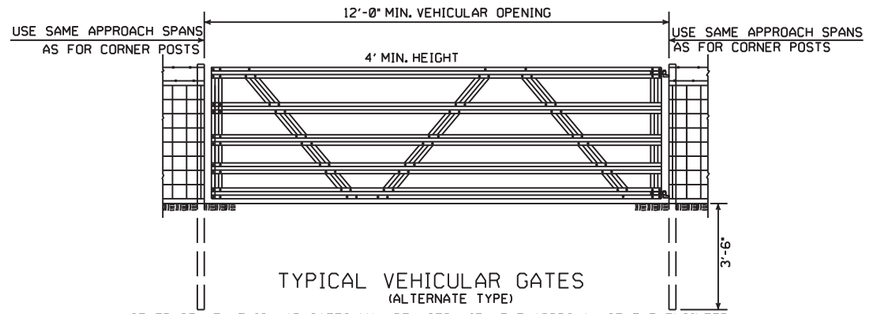
• NOTE: RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY FENCE CONSTRUCTION. CORNER POSTS SHALL BE CONSTRUCTED 2' FROM THE RIGHT-OF-WAY MONUMENT OR AS DIRECTED BY THE ENGINEER.

RIGHT-OF-WAY FENCE LOCATION



PRIVATE FENCE TERMINAL INSTALLATION

WHERE EXISTING FENCE CONSISTS OF STEEL POSTS, USE END POST ASSEMBLY AS SHOWN IN TYPE C FENCE OR OTHER END POST ASSEMBLY AS APPROVED BY THE ENGINEER.



TYPICAL VEHICULAR GATES
(ALTERNATE TYPE)

OTHER STYLE VEHICULAR GATES MAY BE USED WITH THE APPROVAL OF THE ENGINEER. THE METHOD OF SECURING GATE (LATCH AND/OR LOCK) SHALL MEET THE APPROVAL OF THE ENGINEER.

GENERAL NOTES:

STEEL LINE POSTS SHALL BE PAINTED OR GALVANIZED.
TUBULAR END, CORNER, PULL, OR DIAGONAL BRACES MUST CONFORM TO THE DIMENSIONS AND WEIGHTS SPECIFIED ON STANDARD DRAWING WF-3 (CHAIN LINK). APPROVED ALTERNATES ARE ACCEPTABLE.
AN ACCEPTABLE TOLERANCE IN LENGTH OF TUBULAR OR WOODEN POSTS SHALL BE - 1" TO +2".
TUBULAR POSTS MUST BE PAINTED OR GALVANIZED.

THE CONTRACTOR SHALL FURNISH AT LEAST 25% OF TIMBER LINE POSTS OF 7 FOOT LENGTHS IN ORDER TO PROVIDE SUFFICIENT SET IN SOFT GROUND OR SMALL DEPRESSIONS.

DRIVEWAY GATES, EITHER SINGLE 12' TO 16' OR DOUBLE 6' TO 8' OPENING OF THE SAME TYPE AS THE PEDESTRIAN GATE, SHALL BE INSTALLED ON THE RIGHT SIDE OF EACH THROUGH LANE ROAD AT LARGE CULVERTS OR BRIDGE CROSS FENCE. FOR USE OF MAINTENANCE EQUIPMENT. LOCATION OF GATES TO BE SHOWN ON PLANS OR AS DESIGNATED BY THE ENGINEER.

AT STREAM CROSSINGS, THE FENCE SHALL NOT BE CONSTRUCTED ACROSS LARGE STREAMS. WHERE CLEARANCE IS SUFFICIENT FROM THE TOP OF THE BANK TO THE BRIDGE STRUCTURE A CROSS CONNECTION SHALL BE CONSTRUCTED BETWEEN THE FENCE ON EACH SIDE OF THE ROAD. WHERE THE CLEARANCE IS NOT SUFFICIENT, THE FENCE SHALL BE TERMINATED WITH CROSS CONNECTIONS AND END POSTS ADJACENT TO BRIDGE ABUTMENTS OR CULVERT WINGWALLS.

SPLICE FOR BARBED WIRE BETWEEN PULL POST ASSEMBLY SHALL BE BY THE "EYE METHOD" AS DESCRIBED AS FOLLOWS: THE ENDS OF THE BARBED WIRE SHALL BE BENT TO FORM A LOOP. THE LOOPS SHALL BE CONNECTED. AFTER THE LOOPS ARE CONNECTED THE ENDS OF THE WIRE SHALL BE WRAPPED AROUND THE PROJECTING WIRES A MINIMUM OF 4 TIMES FOR EACH WIRE LOOP.

SPLICE FOR WOVEN WIRE BETWEEN PULL POST SHALL BE BY THE "WESTERN UNION METHOD" AS DESCRIBED AS FOLLOWS: THE VERTICAL WIRES FOR EACH END OF THE FENCE FABRIC SHALL BE PLACED SIDE BY SIDE AND THE PROJECTING HORIZONTAL WIRES SHALL BE WRAPPED A MINIMUM OF 4 TIMES AROUND THE HORIZONTAL WIRES OF THE FIRST WEB.

STAPLE AT LEAST TOP, BOTTOM AND ALTERNATE WIRES OF WOVEN FABRIC FOR WOOD LINE POSTS.

DATE	REVISION	FILMED
8-22-02	REVISED GENERAL NOTES	
10-18-96	REVISED AASHTO	
11-22-95	REVISED R-O-W LOCATION DETAIL	
6-2-94	REVISED BARB WIRE AND ADDED CORNER POST NOTES	6-2-94
8-5-93	REVISED R/W INSTALLATION FENCE	8-5-93
10-1-92	ADDED STAPLE NOTE	10-1-92
8-15-91	ADDED TYPE D-2 FENCE	8-15-91
11-30-89	DELETED CLASS CONCRETE	11-30-89
7-15-88	ADDED SPLICE NOTE	700-7-15-88
10-30-87	GENERAL REVISIONS	549-10-30-87
11-1-84	MAX. POST SPACING MIN. WIRE GAUGE	507-11-1-84
1-4-83	MIN. DIA. LINE POST	648-1-4-83
3-2-81	TOLERANCE FOR POST LENGTH	722-3-2-81
12-1-72	ADDED D-1 & FENCE INSTALLATION	564-12-1-72
10-2-72	REVISED AND REDRAWN	540-10-2-72

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WIRE FENCE TYPE C AND D

STANDARD DRAWING WF-4