DESIGN DESIGNATION

A.A.D.T. - 2023 = 1220
A.A.D.T. - 2043 = 1952
T = 11.4%
V = 55 M.P.H.

FUNCTIONAL CLASSIFICATION -
MAJOR COLLECTOR

NO RIGHT-OF-WAY AQUISITIONS

CONVENTIONAL SYMBOLS
(USED IN PLANS)

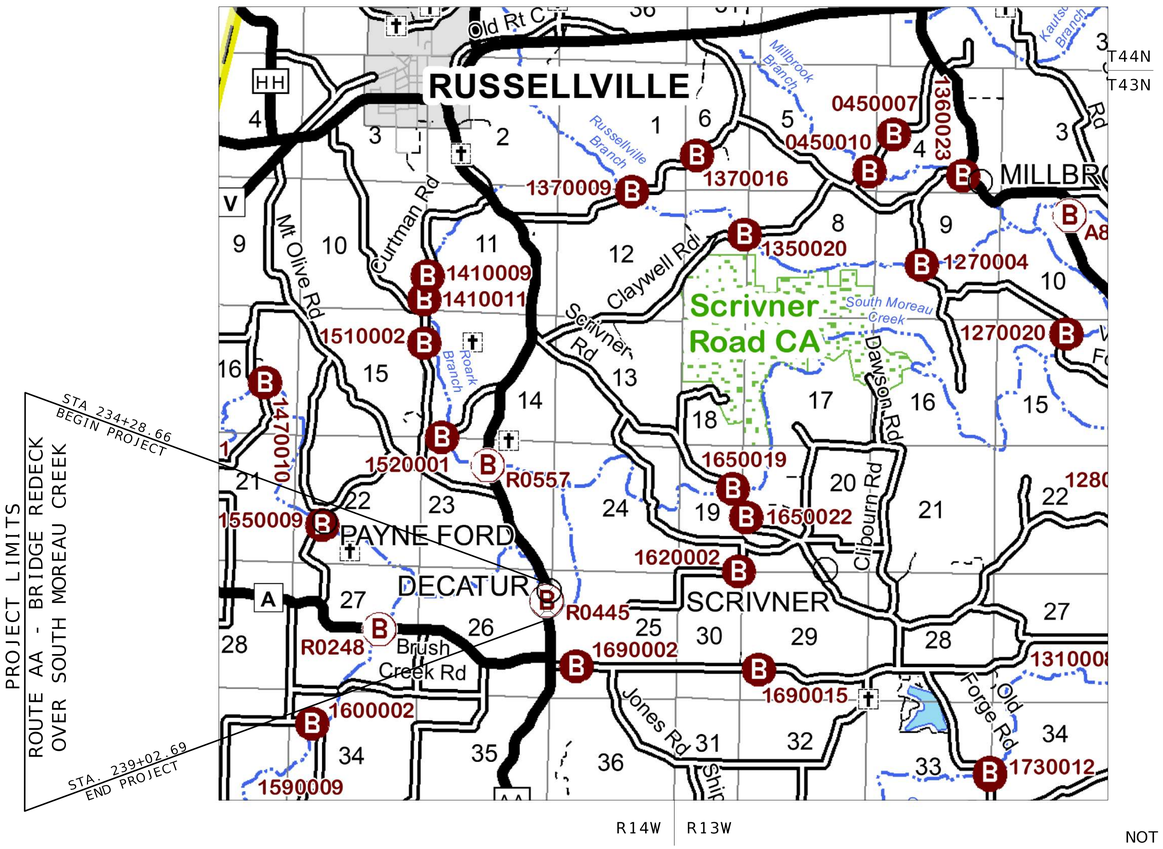
	EXISTING	NEW
BUILDINGS AND STRUCTURES		
GUARD RAIL		
GUARD CABLE		
CONCRETE RIGHT-OF-WAY MARKER		
STEEL RIGHT-OF-WAY MARKER		
LOCATION SURVEY MARKER		
UTILITIES		
FIBER OPTICS	-FO-	FO
OVERHEAD CABLE TV	-OTV-	OTV
UNDERGROUND CABLE TV	-UTV-	UTV
OVERHEAD TELEPHONE	-OT-	OT
UNDERGROUND TELEPHONE	-UT-	UT
OVERHEAD POWER	-OE-	OE
UNDERGROUND POWER	-UE-	UE
SANITARY SEWER	-S-	S
STORM SEWER	-SS-	SS
GAS	-G-	G
WATER	-W-	W
MANHOLE	SAN	
FIRE HYDRANT	HYD	
WATER VALVE	WV	
WATER METER	WM	
DROP INLET	DI	
DITCH BLOCK		
GROUND MOUNTED SIGN	SIGN	
LIGHT POLE		
H-FRAME POWER POLE		
TELEPHONE PEDESTAL	PED	
FENCE		
CHAIN LINK	V	
WOVEN WIRE	X	
GATE POST		
BENCHMARK	BM	

NOTE: DASHED OR OPEN SYMBOLS INDICATE EXISTING FEATURES.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
CONSTRUCTION PLANS FOR PROPOSED
STATE HIGHWAY

COLE COUNTY

KEY MAP
SHOWING LOCATION OF COLE COUNTY



NOT TO SCALE

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THE EXISTENCE AND APPROXIMATE LOCATION OF UTILITY FACILITIES KNOWN TO EXIST, AS SHOWN ON THE PLANS, ARE BASED ON THE BEST INFORMATION AVAILABLE TO THE COMMISSION AT THIS TIME. THIS INFORMATION IS PROVIDED BY THE COMISSION "AS-IS" AND THE COMMISSION EXPRESSLY DISCLAIMS ANY REPRESENTATION OR WARRANTY AS TO THE COMPLETENESS, ACCURACY, OR SUITABILITY OF THE INFORMATION FOR ANY USE. RELIANCE UPON THIS INFORMATION IS DONE AT THE RISK, AND PERIL OF THE USER, AND THE COMMISSION SHALL NOT BE LIABLE FOR ANY DAMAGES THAT MAY ARISE FROM ANY ERROR IN THE INFORMATION. IT IS, THEREFORE, THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE, LOCATION, AND STATUS OF ANY FACILITY. SUCH VERIFICATION INCLUDES DIRECT CONTACT WITH THE LISTED UTILITIES.

INDEX OF SHEETS

LENGTH OF PROJECT

BEGINNING OF PROJECT	STA. 234+28.66
END OF PROJECT	STA. 239+02.69
APPARENT LENGTH	474.03 FEET
EQUATIONS AND EXCEPTIONS:	NONE
TOTAL CORRECTIONS:	NONE
NET LENGTH OF PROJECT	474.03 FEET
STATE LENGTH	0.09 MILES

FOR INFORMATION ONLY
ESTIMATED DISTURBED AREAS 0.33 ACRES

STATE OF MISSOURI
MATTHEW J. ROWE
NUMBER PE-2025005221
PROFESSIONAL ENGINEER

DATE PREPARED: 9/12/2025
ROUTE: AA | STATE: MO
DISTRICT: CD | SHEET NO.: 1
COUNTY: COLE
JOB NO.: J5S3551
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

DESCRIPTION | DATE

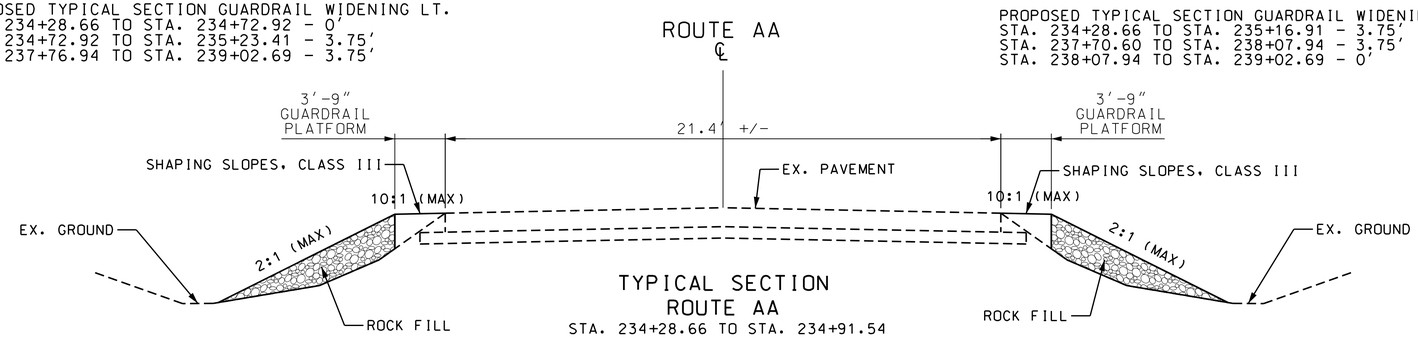
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

HORNER SHIFRIN
401 S. 18TH ST., STE. 400 ST. LOUIS, MO 63103
314.432.5151 FAX: 314.432.0966
WWW.HORNERSHIFRIN.COM
DISCIPLINE: PROFESSIONAL ENGINEERING
CERTIFICATE OF AUTHORITY: 000159
EXPIRATION DATE: DECEMBER 31, 2026

TITLE SHEET
ROUTE AA
OVER SOUTH
MOREAU CREEK

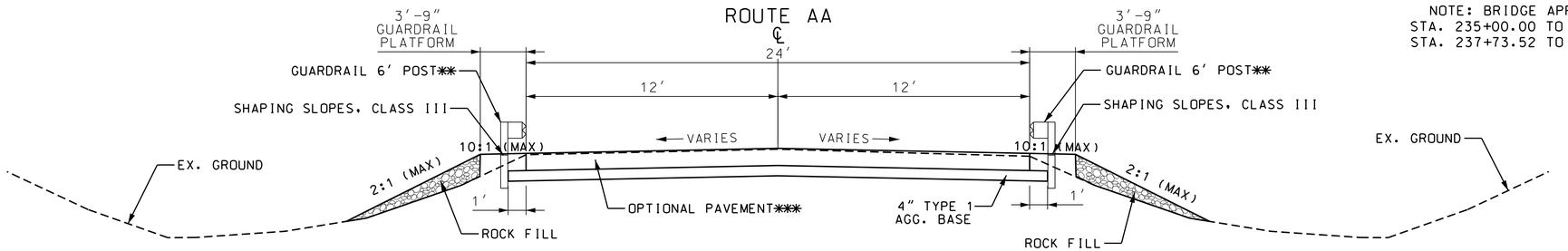
...\01_Final\001_TT_J5S3551_Cover 1:24:09 PM 9/12/2025

PROPOSED TYPICAL SECTION GUARDRAIL WIDENING LT.
STA. 234+28.66 TO STA. 234+72.92 - 0'
STA. 234+72.92 TO STA. 235+23.41 - 3.75'
STA. 237+76.94 TO STA. 239+02.69 - 3.75'



TYPICAL SECTION
ROUTE AA
STA. 234+28.66 TO STA. 234+91.54
STA. 238+01.25 TO STA. 239+02.69

PROPOSED TYPICAL SECTION GUARDRAIL WIDENING RT.
STA. 234+28.66 TO STA. 235+16.91 - 3.75'
STA. 237+70.60 TO STA. 238+07.94 - 3.75'
STA. 238+07.94 TO STA. 239+02.69 - 0'



TYPICAL SECTION
ROUTE AA
STA. 234+91.54 TO STA. 235+00.00*
STA. 237+93.52* TO STA. 238+01.25

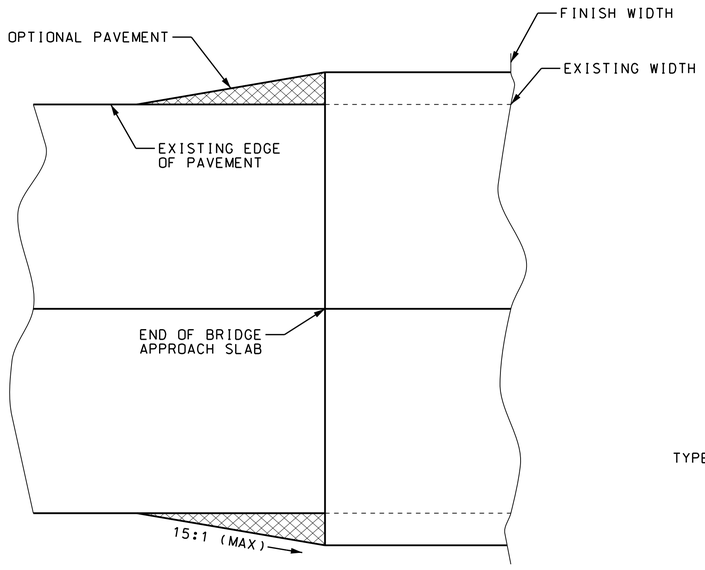
NOTE: BRIDGE APPROACH SLABS:
STA. 235+00.00 TO STA. 235+20.00
STA. 237+73.52 TO STA. 237+93.52

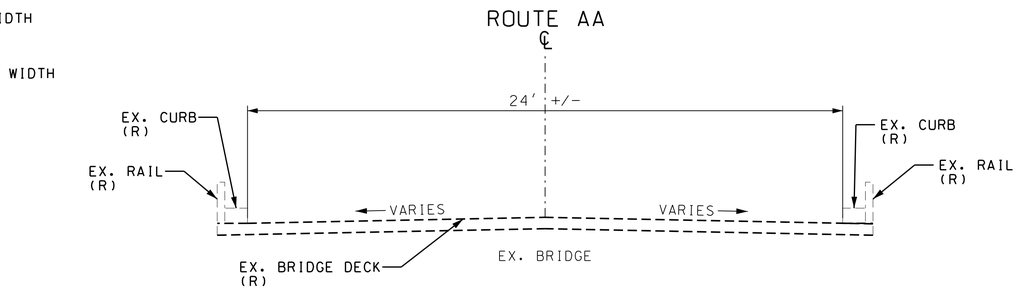
*STATION AT CL OF ROAD, MATCH EXISTING BRIDGE SKEW

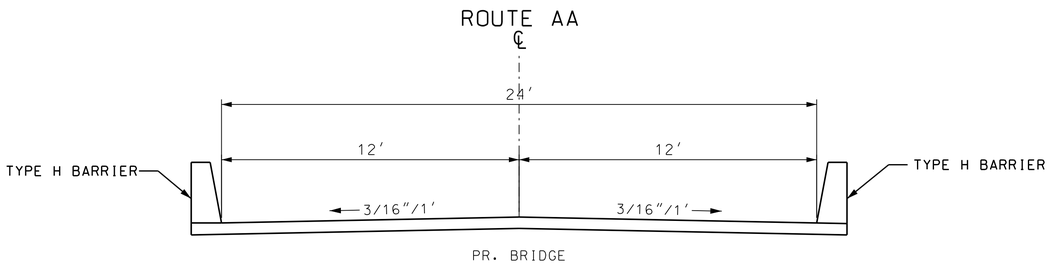
** SEE PLAN SHEET FOR GUARDRAIL STATION RANGES

***NOTE: PAVEMENT AND SHOULDER OPTIONS CONSIST OF:

ASPHALT	2"	BIT. PAVEMENT MIXTURE (BP-1) PG64-22 OVER
	8"	BIT. PAVEMENT MIXTURE (BASE) PG64-22
CONCRETE	8"	PCCP WITH 15 FT. JOINT SPACING AND 1.25" DOWELS







TYPICAL SECTION ON BRIDGE R0445
STA. 235+20.00* TO STA. 237+73.52*

*STATION AT CL OF ROAD, MATCH EXISTING BRIDGE SKEW

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STATE OF MISSOURI
MATTHEW J. ROWE
NUMBER PE-2025005221
PROFESSIONAL ENGINEER

DATE PREPARED: 9/12/2025
ROUTE: AA
STATE: MO
DISTRICT: CD
SHEET NO.: 2
COUNTY: COLE
JOB NO.: J5S3551
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

HORNER SHIFRIN
401 S. 18TH ST., STE. 400 ST. LOUIS, MO 63103
314-241-1020 FAX: 314-241-1966
WWW.HORNERSHIFRIN.COM
DISCIPLINE: PROFESSIONAL ENGINEERING
CERTIFICATE OF AUTHORITY: 000159
EXPIRATION DATE: DECEMBER 31, 2026

TYPICAL SECTIONS
SHEET 1 OF 1

ROUTE AA
OVER SOUTH
MOREAU CREEK

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CLEARING AND GRUBBING

LOCATION	CLEARING AND GRUBBING	REMARKS
	AREA (ACRES)	
ROUTE AA	0.27	FELLED TREES MAY BE PRESENT WITHIN THE PROJECT LIMITS. TO BE INCLUDED IN CLEARING AND GRUBBING.
PAY TOTALS	1.0	

FULL DEPTH SAWCUT

STATION	STATION	LOCATION	SIDE	FULL DEPTH SAWCUT (FOR PERIMETER AND INTERNAL SAW CUTS)	REMARKS
				(LF)	
234+91.57	234+91.57	ROUTE AA	BOTH	24	
238+01.25	238+01.25	ROUTE AA	BOTH	26.28	
			TOTALS	50.3	
			PAY TOTAL	51	

EARTHWORK

STATION	STATION	LOCATION	CLASS A EXCAVATION	COMPACTING EMBANKMENT	REMARKS
			VOLUME (CY)	VOLUME (CY)	
234+28.66	253+20.00	ROUTE AA	74.0	21.0	
237+73.52	239+02.69	ROUTE AA	92.0	5.0	
		TOTALS	166.0	26.0	
		PAY TOTALS	166	26	

OPTIONAL PAVEMENT (10" HMA OR 8" PCCP)

STATION	STATION	LOCATION	OPTIONAL PAVEMENT	TYPE 1 AGGREGATE FOR BASE (4 IN. THICK)	SUBGRADING & SHOULDERING, CLASS 1	REMARKS
			AREA (SY)	AREA (SY)	STA. (100 FT)	
234+91.54	235+00.00	ROUTE AA	22.5	22.5	0.35	
237+93.52	238+01.25	ROUTE AA	21.5	21.5	0.35	
		TOTALS	44.0	44.0	0.7	
		PAY TOTALS	44	44	1	

PAVEMENT MARKING

STATION	STATION	LOCATION	CLASS 1 PAVEMENT MARKING PAINT (18- MIL, TYPE P BEADS)		REMARKS
			4" WHITE	4" YELLOW	
			LENGTH (LF)	LENGTH (LF)	
234+28.66	239+02.69	ROUTE AA	948	593	EDGELINES: SOLID WHITE EACH SIDE DOUBLE YELLOW CENTERLINE: (SB DASHED YELLOW, NB SOLID YELLOW)
		TOTALS	948	593	
		PAY TOTALS	948	593	

REMOVAL OF IMPROVEMENTS

STATION	STATION	LOCATION	SIDE	DESCRIPTION OF REMOVAL
227+25.00	227+25.00	ROUTE AA	RT	LOAD POSTING SIGN
234+91.54	235+20.00	ROUTE AA	BOTH	76 SY EX. PAVEMENT
234+37.43	235+15.91	ROUTE AA	RT	GUARDRAIL
234+95.16	235+22.85	ROUTE AA	LT	GUARDRAIL
235+16.65	235+16.65	ROUTE AA	RT	OBJECT MARKER
235+23.13	235+23.13	ROUTEAA	LT	OBJECT MARKER
237+70.82	237+70.82	ROUTE AA	RT	OBJECT MARKER
237+77.94	237+77.94	ROUTE AA	LT	OBJECT MARKER
237+71.34	237+99.09	ROUTE AA	RT	GUARDRAIL
237+78.62	238+56.31	ROUTE AA	LT	GUARDRAIL
237+73.52	238+01.25	ROUTE AA	RT	75 SY EX. PAVEMENT
237+95.22	237+95.22	ROUTE AA	RT	MAILBOX TO BE RELOCATED
247+75.00	247+75.00	ROUTE AA	LT	LOAD POSTING SIGN
			TOTAL =	1 LUMP SUM

MOBILIZATION

LUMP SUM = 1

CONTRACTOR FURNISHED SURVEYING AND STAKING

LUMP SUM = 1

SEEDING AND MULCHING - COOL SEASON GRASSES

LUMP SUM = 1

STATE OF MISSOURI
MATTHEW J. ROWE
NUMBER PE-2025005221
PROFESSIONAL ENGINEER

DATE PREPARED 9/12/2025
ROUTE AA | STATE MO
DISTRICT CD | SHEET NO. 3
COUNTY COLE
JOB NO. J5S3551
CONTRACT ID.
PROJECT NO.
BRIDGE NO.

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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DISCIPLINE: PROFESSIONAL ENGINEERING
CERTIFICATE OF AUTHORITY: 000159
EXPIRATION DATE: DECEMBER 31, 2026

SCHEDULE OF QUANTITIES
SHEET 1 OF 3

ROUTE AA
OVER SOUTH
MOREAU CREEK

GUARDRAIL

STATION	STATION	LOCATION	SIDE	MGS GUARDRAIL	MGS BRIDGE APPROACH TRANSITION SECTON (REGULAR/NO CURB)	BRIDGE ANCHOR SECTION, 6.5 FT. POSTS (SAFETY BARRIER CURB) (ROADWAY AND REHABILITATION WORK ONLY)	ASYMETRICAL TRANSITION SECTION, 6.5 FT. POSTS	GUARDRAIL, TYPE A	MGS END ANCHOR	TYPE A CRASHWORTHY END TERMINAL (MASH)	END ANCHOR	SHAPING SLOPES CLASS III	REMARKS
				LENGTH (LF)	EA	EA	EA	LF	EA	EA	EA	STATION	
234+28.66	235+16.91	ROUTE AA	RT		1					1		0.9	
234+72.92	235+23.41	ROUTE AA	LT	12.5	1				1			0.5	
237+70.60	238+07.08	ROUTE AA	RT			1	1	12.5			1	0.4	
237+76.94	239+02.69	ROUTE AA	LT	37.5	1					1		1.3	
		TOTALS		50.0	3	1	1	12.5	1	2	1	3	
		PAY TOTALS		50.0	3	1	1	13	1	2	1	3	

PERMANENT EROSION CONTROL

STATION	STATION	LOCATION	SIDE	FURNISHNG TYPE 2 ROCK BLANKET	PLACING TYPE 2 ROCK BLANKET	FURNISHING ROCK FILL	PLACING ROCK FILL	PERMANENT EROSION CONTROL GEOTEXTILE	REMARKS
				VOLUME (CY)	VOLUME (CY)	VOLUME (CY)	VOLUME (CY)	AREA (SY)	
234+28.66	235+20.00	ROUTE AA	RT			63.4	63.4		
234+76.41	235+26.14	ROUTE AA	LT			25.0	25.0		
236+79.58	237+82.85	ROUTE AA	BOTH	562.1	562.1			843	
237+82.85	238+06.20	ROUTE AA	RT			11.8	11.8		
237+87.95	239+02.69	ROUTE AA	LT			55.6	55.6		
			TOTALS	562.1	562.1	155.8	155.8	843.0	
			PAY TOTAL	563	563	156	156	843	

TEMPORARY EROSION CONTROL

STATION	STATION	LOCATION	SIDE	SILT FENCE	ROCK DITCH CHECK	SEDIMENT TRAP EXCAVATION	SEDIMENT TRAP ROCK	SEDIMENT REMOVAL	REMARKS
				LENGTH (LF)	LENGTH (LF)	VOLUME (CY)	VOLUME (CY)	VOLUME (CY)	
234+95.00	234+95.00	ROUTE AA	RT		16			6.0	
235+15.00	235+15.00	ROUTE AA	RT			1.2	1.2		
235+31.01	235+43.84	ROUTE AA	BOTH	91				5.9	
235+64.26	236+04.53	ROUTE AA	BOTH						
236+26.80	236+62.94	ROUTE AA	BOTH						
236+72.76	236+87.75	ROUTE AA	BOTH	96				6.0	
237+30.86	237+30.86	ROUTE AA	LT			1.2	1.2		
237+65.25	238+25.17	ROUTE AA	LT		24			7.0	
			TOTALS	187	40	2	2	25	
			PAY TOTAL	187	40	2.0	2.0	25	

STATE OF MISSOURI
MATTHEW J. ROWE
NUMBER PE-2025005221
PROFESSIONAL ENGINEER

DATE PREPARED 9/12/2025
ROUTE AA | STATE MO
DISTRICT CD | SHEET NO. 3
COUNTY COLE
JOB NO. J5S3551
CONTRACT ID.
PROJECT NO.
BRIDGE NO.

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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401 S. 18TH ST., STE. 400 ST. LOUIS, MO 63103
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WWW.HORNERSHIFRIN.COM
DISCIPLINE: PROFESSIONAL ENGINEERING
CERTIFICATE OF AUTHORITY: 000159
EXPIRATION DATE: DECEMBER 31, 2026

SCHEDULE OF QUANTITIES
SHEET 2 OF 3

ROUTE AA
OVER SOUTH MOREAU CREEK

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL AREA SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NO.	DESCRIPTION
WARNING SIGNS								
WO1-1L	48X48	16.00						TURN (SYMBOL LEFT)
WO1-1R	48X48	16.00						TURN (SYMBOL RIGHT)
WO1-2L	48X48	16.00						CURVE (SYMBOL LEFT)
WO1-2R	48X48	16.00						CURVE (SYMBOL RIGHT)
WO1-3L	48X48	16.00						REVERSE TURN (SYMBOL LEFT)
WO1-3R	48X48	16.00						REVERSE TURN (SYMBOL RIGHT)
WO1-4L	48X48	16.00						REVERSE CURVE (SYMBOL LEFT)
WO1-4R	48X48	16.00						REVERSE CURVE (SYMBOL RIGHT)
WO1-4bL	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL LEFT)
WO1-4bR	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL RIGHT)
WO1-4cL	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL LEFT)
WO1-4cR	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL RIGHT)
WO1-6	60X30	12.50						HORIZONTAL ARROW (SYMBOL)
WO1-6a	72X36	18.00						HORIZ. ARROW (SYMBOL ON PERMANENT BARRICADE)
WO1-7	60X30	12.50						DOUBLE HEAD HORIZONTAL ARROW (SYMBOL)
WO1-7a	72X36	18.00						DOUBLE HEAD HORIZ. ARROW (SYMBOL ON PERM. BARR.)
WO1-8	18X24	3.00						CHEVRON (SYMBOL)
WO1-8a	30X36	7.50						CHEVRON (SYMBOL FOR DIVIDED HIGHWAYS)
WO3-1	48X48	16.00						STOP AHEAD (SYMBOL)
WO3-2	48X48	16.00						YIELD AHEAD (SYMBOL)
WO3-3	48X48	16.00						SIGNAL AHEAD (SYMBOL)
WO3-4	48X48	16.00						BE PREPARED TO STOP
WO3-5	48X48	16.00						SPEED LIMIT AHEAD
WO4-1L	48X48	16.00						MERGE (SYMBOL FROM LEFT)
WO4-1R	48X48	16.00						MERGE (SYMBOL FROM RIGHT)
WO4-1aL	48X48	16.00						MERGE (LEFT)
WO4-1aR	48X48	16.00						MERGE (RIGHT)
WO5-1	48X48	16.00						ROAD/BRIDGE/RAMP NARROWS
WO5-3	48X48	16.00						ONE LANE BRIDGE
WO5-5	48X48	16.00						NARROW LANES
WO6-1	48X48	16.00						DIVIDED HIGHWAY (SYMBOL)
WO6-2	48X48	16.00						DIVIDED HIGHWAY END (SYMBOL)
WO6-3	48X48	16.00						TWO WAY TRAFFIC (SYMBOL)
WO7-3a	30X24	5.00						NEXT XX MILES (PLAQUE)
WO8-1	48X48	16.00						BUMP
WO8-2	48X48	16.00						DIP
WO8-3	48X48	16.00						PAVEMENT ENDS
WO8-4	48X48	16.00						SOFT SHOULDER
WO8-5	48X48	16.00						SLIPPERY WHEN WET (SYMBOL)
WO8-6	48X48	16.00						TRUCK CROSSING
WO8-6c	48X48	16.00						TRUCK ENTRANCE
WO8-7	36X36	9.00						LOOSE GRAVEL
WO8-7a	36X36	9.00						FRESH OIL / LOOSE GRAVEL
WO8-9	48X48	16.00						LOW SHOULDER
WO8-11	48X48	16.00						UNEVEN LANES
WO8-12	48X48	16.00						NO CENTER LINE
WO8-15	48X48	16.00						GROOVED PAVEMENT
WO8-15P	30X24	5.00						MOTORCYCLE (PLAQUE)
WO8-17L	48X48	16.00						SHOULDER DROP-OFF (SYMBOL LEFT)
WO8-17R	48X48	16.00						SHOULDER DROP-OFF (SYMBOL RIGHT)
WO8-17P	30X24	5.00						SHOULDER DROP-OFF (PLAQUE)
W10-1	42RND.	9.62						RAILROAD CROSSING
WO12-1	24X24	4.00						DOUBLE DOWN ARROW (SYMBOL)
WO12-2	48X48	16.00						LOW CLEARANCE (SYMBOL)
WO12-2x	24X18	3.00						LOW CLEARANCE (PLAQUE)
WO12-2a	84X24	14.00						OVERHEAD LOW CLEARANCE (FEET AND INCHES)
WO12-4	120X60	50.00						LOW CLEARANCE XX FT XX IN XX MILES AHEAD
WO12-5	120X60	50.00						WIDTH RESTRICTION XX FT XX IN XX MILES AHEAD
WO13-1	30X30	6.25						ADVISORY SPEED (PLAQUE)
WO16-2	30X24	5.00						XXX FEET (PLAQUE)
WO16-3	30X24	5.00						X MILE (PLAQUE)
WO20-1	48X48	16.00						ROAD/BRIDGE/RAMP WORK AHEAD
WO20-2	48X48	16.00	2	32.0			18	DETOUR AHEAD
WO20-3	48X48	16.00	4	64.0			20/20A	ROAD CLOSED AHEAD / 500 FT
WO20-4	48X48	16.00						ONE LANE ROAD AHEAD
WO20-5	48X48	16.00						RIGHT/CENTER/LEFT LANE CLOSED AHEAD
WO20-5a	48X48	16.00						2 RIGHT/CENTER/LEFT LANES CLOSED AHEAD
WO20-6a	48X48	16.00						RIGHT/CENTER/LEFT LANE CLOSED
WO20-7a	48X48	16.00						FLAGGER (SYMBOL)
WO21-2	36X36	9.00						FRESH OIL
WO21-5	48X48	16.00						SHOULDER WORK / SHOULDER WORK AHEAD
WO22-1	48X48	16.00						BLASTING ZONE AHEAD
WO22-2	42X36	10.50						TURN OFF 2-WAY RADIO AND PHONE
WO22-3	42X36	10.50						END BLASTING ZONE
GO22-1	21X15	2.19						WET PAINT (ARROW PIVOTS)

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NO.	DESCRIPTION
GUIDE SIGNS								
E05-1	36X48	12.00						GORE EXIT
E05-2	48X36	12.00						EXIT OPEN
E05-2a	48X36	12.00						EXIT CLOSED
GO20-1	60X24	10.00						ROAD WORK NEXT XX MILES
GO20-2	48X24	8.00						END ROAD WORK
GO20-4	36X18	4.50						PILOT CAR FOLLOW ME
GO20-4a	42X30	8.75						PILOT CAR IN USE WAIT & FOLLOW
GO20-4a	18X12	1.50						PILOT CAR IN USE WAIT & FOLLOW
GO20-5aP	36X24	6.00						WORK ZONE (PLAQUE)
MO4-8a	24X18	3.00	2	6.0			52	END DETOUR
MO4-9L	48X36	12.00						DETOUR (LEFT)
MO4-9R	48X36	12.00						DETOUR (RIGHT)
MO4-9P	48X12	4.00						STREET NAME (PLAQUE)
MO4-10L	48X18	6.00						DETOUR ARROW (LEFT)
MO4-10R	48X18	6.00						DETOUR ARROW (RIGHT)
REGULATORY SIGNS								
R1-1	48X48	13.25						STOP
R1-2	48TRI.	6.93						YIELD
R1-2a	36X36	9.00						TO ONCOMING TRAFFIC (PLAQUE)
R1-3P	30X12	2.50						ALL WAY (PLAQUE)
R2-1	36X48	12.00						SPEED LIMIT XX
R3-1	48X48	16.00						NO RIGHT TURN (SYMBOL)
R3-2	48X48	16.00						NO LEFT TURN (SYMBOL)
R3-3	36X36	9.00						NO TURNS
R3-4	48X48	16.00						NO U-TURN (SYMBOL)
R3-7L	30X30	6.25						LEFT LANE MUST TURN LEFT
R3-7R	30X30	6.25						RIGHT LANE MUST TURN RIGHT
R4-1	36X48	12.00						DO NOT PASS
R4-2	36X48	12.00						PASS WITH CARE
R4-7a	36X48	12.00						KEEP RIGHT (HORIZONTAL ARROW)
R4-8a	36X48	12.00						KEEP LEFT (HORIZONTAL ARROW)
R5-1	30X30	6.25						DO NOT ENTER
R5-1a	36X24	6.00						WRONG WAY
R6-1L	54X18	6.75						ONE WAY ARROW (LEFT)
R6-1R	54X18	6.75						ONE WAY ARROW (RIGHT)
R6-2L	24X30	5.00						ONE WAY (LEFT)
R6-2R	24X30	5.00						ONE WAY (RIGHT)
R9-9	24X12	2.00						SIDEWALK CLOSED
R9-11L	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW LEFT) CROSS HERE
R9-11R	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW RIGHT) CROSS HERE
R10-6	24X36	6.00						STOP HERE ON RED (45^ ARROW)
R11-2	48X30	10.00	2	20.0			29	ROAD CLOSED
R11-3a	60X30	12.50	1	12.5			55A	ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY
R11-4	60X30	12.50	1	12.5			55B	ROAD CLOSED TO THRU TRAFFIC
CONST-3A	60X48	20.00						FINE SIGN
CONST-3X	56X12	4.67						SPEEDING/PASSING (PLATE)
MISCELLANEOUS SIGNS								
CONST-5	48X36	12.00						POINT OF PRESENCE
CONST-5	96X48	32.00						POINT OF PRESENCE
CONST-8	48X36	12.00						WORK ZONE NO PHONE ZONE
	36X78	19.50	13	253.5			50A	DETOUR MO AA/ STRT ARW
	36X78	19.50	3	58.5			50B	DETOUR MO AA/ LT AHD ARW
	36X78	19.50	3	58.5			50C	DETOUR MO AA/ LT ARW
	36X78	19.50	3	58.5			50D	DETOUR MO AA/ RT AHD ARW
	36X78	19.50	3	58.5			50E	DETOUR MO AA/ RT ARW
	36X78	19.50	1	19.5			50G	DETOUR MO AA/ DIAG LT AHD
	36X78	19.50	1	19.5			50H	DETOUR MO AA/ DIAG LT

616-10.05 CONSTRUCTION SIGNS	TOTAL	674
616-10.10 RELOCATED SIGNS	TOTAL	

EFFECTIVE: 07-01-2025

ITEM NUMBER	TOTAL QTY	DESCRIPTION
6122008		IMPACT ATTENUATOR 40 MPH (SAND BARRELS)
6122009		IMPACT ATTENUATOR 45 MPH (SAND BARRELS)
6122010		IMPACT ATTENUATOR 50 MPH (SAND BARRELS)
6122012		IMPACT ATTENUATOR 55 MPH (SAND BARRELS)
6122014		IMPACT ATTENUATOR 60 MPH (SAND BARRELS)
6122017		IMPACT ATTENUATOR 65 MPH (SAND BARRELS)
6122019		IMPACT ATTENUATOR 70 MPH (SAND BARRELS)
6122020		REPLACEMENT SAND BARREL
6122030		IMPACT ATTENUATOR (RELOCATION)
6122040		WORK ZONE CRASH CUSHION (NARROW)
6122041		WORK ZONE CRASH CUSHION (RELOCATION)
6123001		TRUCK MOUNTED ATTENUATOR (TMA)
6161012		BUOYS (BOATS KEEP OUT)
6161013		BUOYS (NO WAKE)
6161014		SPECIAL SIGN ASSEMBLY (BOATS KEEP OUT)
6161020		CHANNELIZER (DRUM-LIKE)
6161022		CHANNELIZER (CONE)
6161025		CHANNELIZER (TRIM-LINE)
6161026		CHANNELIZER (VERTICAL PANEL)
6161030	10	TYPE 3 MOVEABLE BARRICADE
6161033		DIRECTION INDICATOR BARRICADE
6161040		FLASHING ARROW PANEL
6161047		TYPE 3 OBJECT MARKER
6161055		SEQUENTIAL FLASHING WARNING LIGHT
6161070		TUBULAR MARKER
6161095		RADAR SPEED ADVISORY SYSTEM
6161096		CHANGEABLE MESSAGE SIGN, COMMISSION FURNISHED/RETAINED
6161098A	2	CHANGEABLE MESSAGE SIGN WITHOUT COMM. INTERFACE, CONTRACTOR FURNISHED/RETAINED
6161099		CHANGEABLE MESSAGE SIGN WITH COMM. INTERFACE, CONTRACTOR FURNISHED/RETAINED
6162000A		WORK ZONE TRAFFIC SIGNAL SYSTEM
6162002		TEMPORARY LONG-TERM RUMBLE STRIPS
6173600D		TEMPORARY TRAFFIC BARRIER, CONTRACTOR FURNISHED/RETAINED
6173700B		TEMP. TRAFFIC BARRIER ANCHORED, CONTRACTOR FURNISHED/RETAINED
6173706		TEMP. TRAFFIC BARRIER STIFFNESS TRANSITION CONTRACTOR FURNISHED/RETAINED
6174000A		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION, CONTRACTOR FURNISHED/RETAINED
6175010A		RELOCATING TEMPORARY TRAFFIC BARRIER
6175011B		RELOCATING TEMP. TRAFFIC BARRIER ANCHORED
6175013		RELOCATING TEMP. TRAFFIC BARRIER STIFFNESS
6175020A		RELOCATING TEMP. TRAFFIC BARRIER HEIGHT
6208064A		TEMPORARY RAISED PAVEMENT MARKER
9029400		TEMPORARY TRAFFIC SIGNALS
9029401		TEMPORARY TRAFFIC SIGNALS AND LIGHTING

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

MoDOT

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314.241.4844 FAX 314.241.5986
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CERTIFICATE OF AUTHORITY: 000159
EXPIRATION DATE: DECEMBER 31, 2026

MATTHEW J. ROWE NUMBER PE-2025005221
STATE OF MISSOURI
PROFESSIONAL ENGINEER

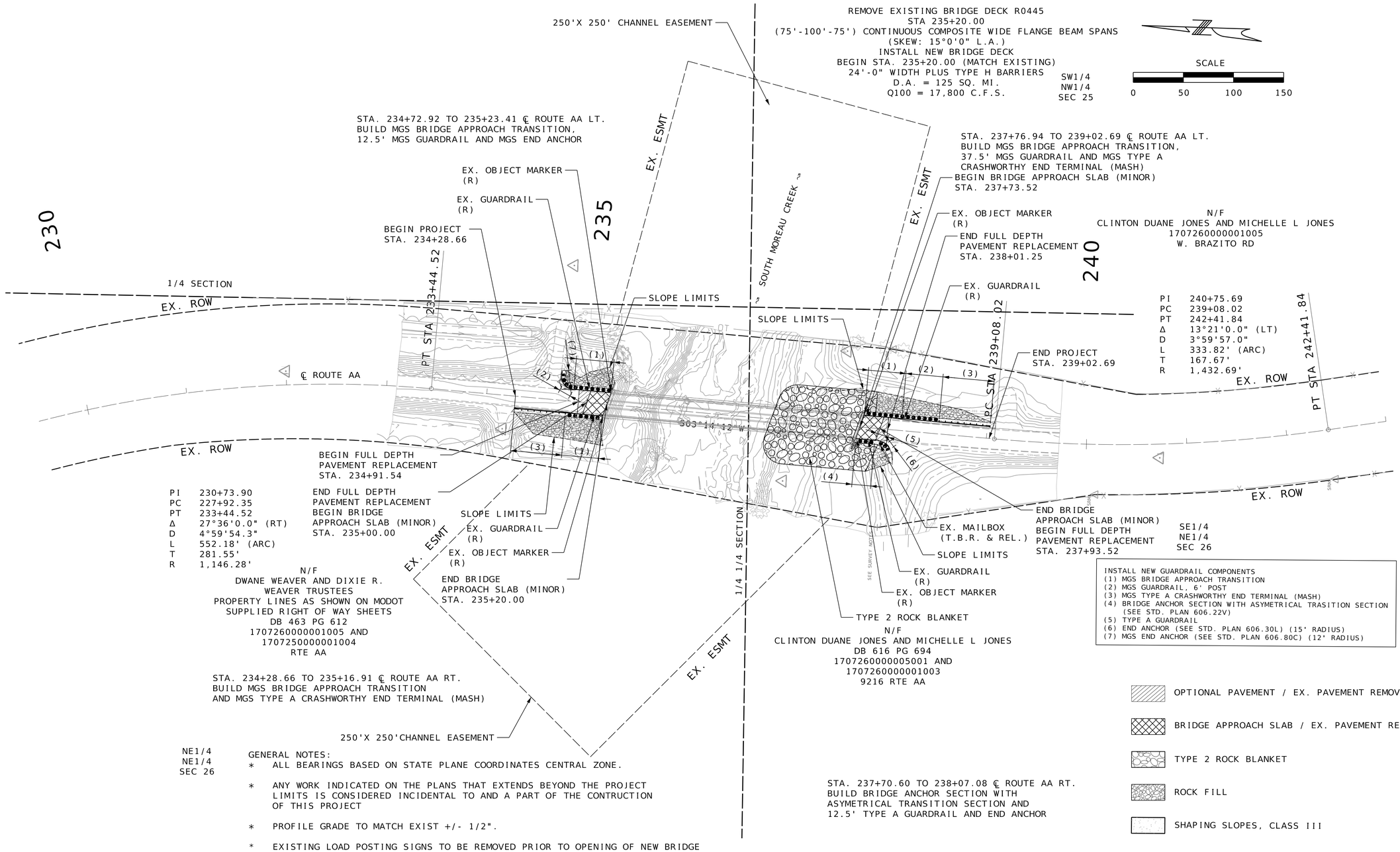
DATE PREPARED: 9/12/2025

ROUTE	STATE
AA	MO
DISTRICT	SHEET NO.
CD	3

COUNTY: COLE
JOB NO.: J5S3551
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

SCHEDULE OF QUANTITIES
SHEET 3 OF 3

ROUTE AA
OVER SOUTH
MOREAU CREEK



STATE OF MISSOURI
MATTHEW J. ROWE
NUMBER PE-2025005221
PROFESSIONAL ENGINEER

DATE PREPARED
9/12/2025

ROUTE	STATE
AA	MO
DISTRICT	SHEET NO.
CD	4

COUNTY
COLE

JOB NO.
J5S3551

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

HORNER SHIFRIN
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CERTIFICATE OF AUTHORITY: 000159
EXPIRATION DATE: DECEMBER 31, 2026

PLAN SHEET
SHEET 1 OF 1

ROUTE AA
OVER SOUTH
MOREAU CREEK

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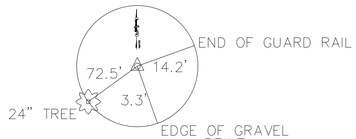
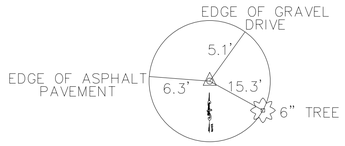
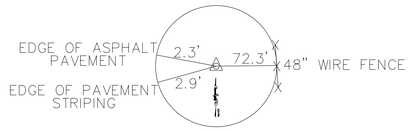
MISSOURI COORDINATE SYSTEM OF 1983 - CENTRAL ZONE
RECIPROCAL AVERAGE GRID FACTOR: 1.0000895



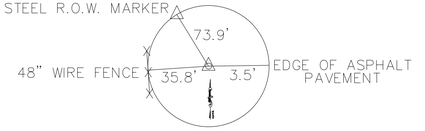
CONTROL #2
SITE BENCHMARK#1
REBAR W/CAP
NORTHING: 953134.505
EASTING: 1663339.112
ELEVATION: 664.66



CONTROL #3
SITE BENCHMARK#2
REBAR W/CAP
NORTHING: 953460.376
EASTING: 1663404.389
ELEVATION: 665.07



CONTROL #4
REBAR W/CAP
NORTHING: 953738.170
EASTING: 1663405.959
ELEVATION: 666.43



CONTROL #5
REBAR W/CAP
NORTHING: 952864.522
EASTING: 1663347.932
ELEVATION: 663.70

COORDINATE POINTS					
SHEET NUMBER	STATION	LOCATION	MODIFIED STATE PLANE COORDINATES		DESCRIPTION
			NORTHING (FEET)	EASTING (FEET)	
4	234+91.54	ROUTE AA	953445.76	1663384.93	BEGIN PROJECT
4	238+01.25	ROUTE AA	953136.54	1663367.44	END PROJECT

GENERAL NOTES:
THE RECIPROCAL AVERAGE GRID FACTOR IS USED AS A MULTIPLIER FROM STATE PLANE DISTANCE TO GRID DISTANCE.

STATE OF MISSOURI
MATTHEW J. ROWE
NUMBER PE-2025005221
PROFESSIONAL ENGINEER

DATE PREPARED: 9/12/2025
ROUTE: AA | STATE: MO
DISTRICT: CD | SHEET NO.: 5
COUNTY: COLE
JOB NO.: J5S3551
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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HORNER & SHIFRIN
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CERTIFICATE OF AUTHORITY: 000159
EXPIRATION DATE: DECEMBER 31, 2026

REFERENCE AND COORDINATE POINTS
SHEET 1 OF 1

ROUTE AA
OVER SOUTH
MOREAU CREEK

STATE OF MISSOURI
MATTHEW J. ROWE
NUMBER PE-2025005221
PROFESSIONAL ENGINEER

DATE PREPARED
9/12/2025

ROUTE	STATE
AA	MO

DISTRICT	SHEET NO.
CD	6

COUNTY
COLE

JOB NO.
J5S3551

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
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CERTIFICATE OF AUTHORITY: 000159
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TRAFFIC CONTROL
SHEET 1 OF 2
DETOUR ROUTE

ROUTE AA
OVER SOUTH
MOREAU CREEK

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WO20-2

(18)

WO20-3

(20)

WO20-3

(20A)

R11-2

(29)

MO4-8a

(52)

R11-3a

(55A)

R11-4
60" X 30"

(55B)

MO4-8

M1-5a

M6-3

(50A)

MO4-8

M1-5a

M5-1L

(50B)

MO4-8

M1-5a

M6-1

(50C)

MO4-8

M1-5a

M5-1R

(50D)

MO4-8

M1-5a

M6-1

(50E)

MO4-8

M1-5a

M5-2L

(50G)

MO4-8

M1-5a

M6-2L

(50H)

MATTHEW J. ROWE
NUMBER PE-2025005221
STATE OF MISSOURI
PROFESSIONAL ENGINEER

DATE PREPARED
9/12/2025

ROUTE AA | STATE MO

DISTRICT CD | SHEET NO. 7

COUNTY
COLE

JOB NO.
J5S3551

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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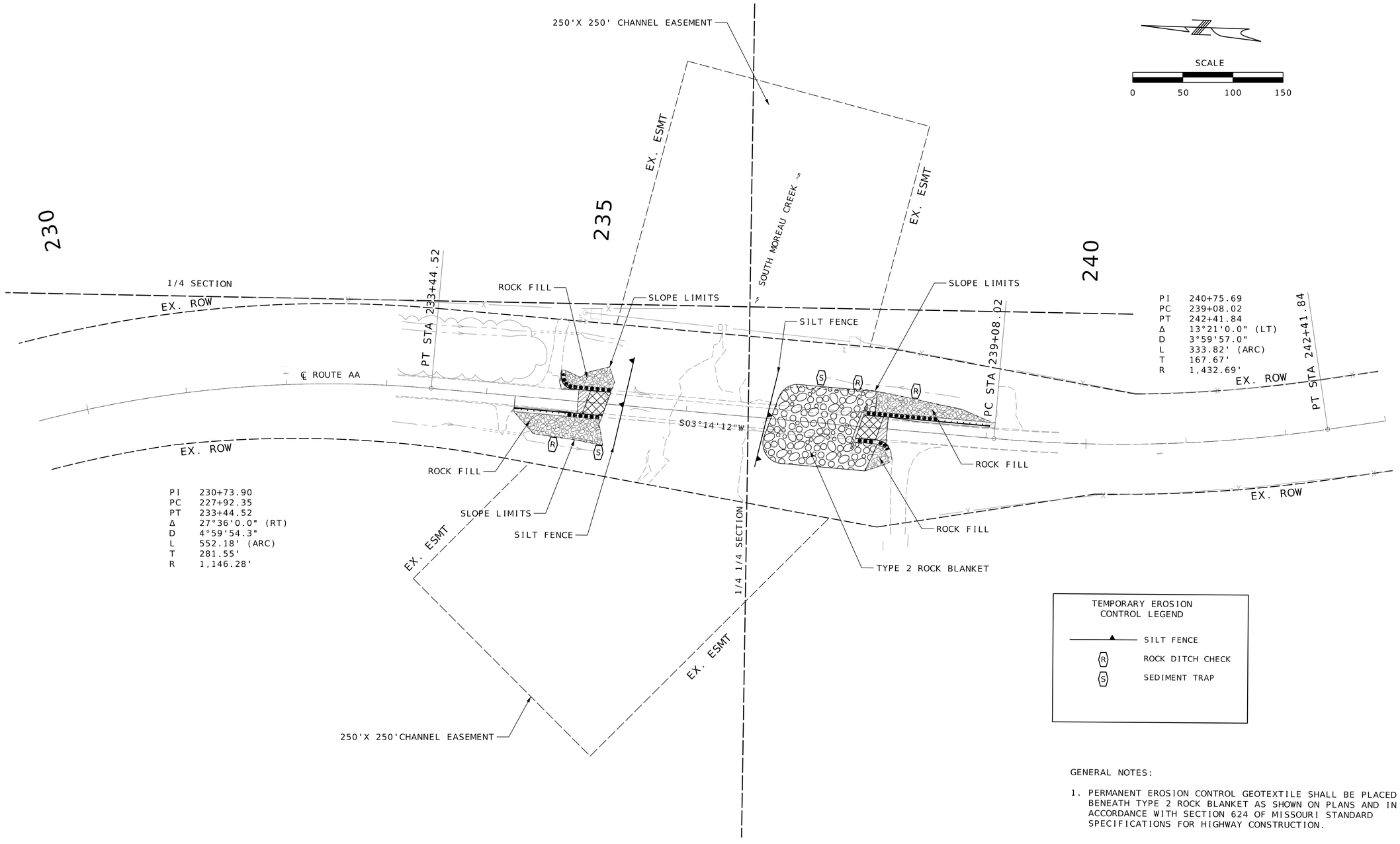
EXPIRATION DATE: DECEMBER 31, 2026

TRAFFIC CONTROL
SHEET 2 OF 2
SIGN LEGEND

ROUTE AA
OVER SOUTH
MOREAU CREEK



PI 240+75.69
PC 239+08.02
PT 242+41.84
Δ 13°21'0.0" (LT)
D 3°59'57.0"
L 333.82' (ARC)
T 167.67'
R 1,432.69'

PI 230+73.90
PC 227+92.35
PT 233+44.52
Δ 27°36'0.0" (RT)
D 4°59'54.3"
L 552.18' (ARC)
T 281.55'
R 1,146.28'

TEMPORARY EROSION CONTROL LEGEND

- SILT FENCE
- (R) ROCK DITCH CHECK
- (S) SEDIMENT TRAP

GENERAL NOTES:

1. PERMANENT EROSION CONTROL GEOTEXTILE SHALL BE PLACED BENEATH TYPE 2 ROCK BLANKET AS SHOWN ON PLANS AND IN ACCORDANCE WITH SECTION 624 OF MISSOURI STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

STATE OF MISSOURI
MATTHEW J. ROWE
NUMBER PE-2025005221
PROFESSIONAL ENGINEER

DATE PREPARED 9/12/2025
ROUTE AA | STATE MO
DISTRICT CD | SHEET NO. 8
COUNTY COLE
JOB NO. J5S3551
CONTRACT ID.
PROJECT NO.
BRIDGE NO.

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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CERTIFICATE OF AUTHORITY: 000159
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EROSION CONTROL SHEET
SHEET 1 OF 1
ROUTE AA
OVER SOUTH
MOREAU CREEK

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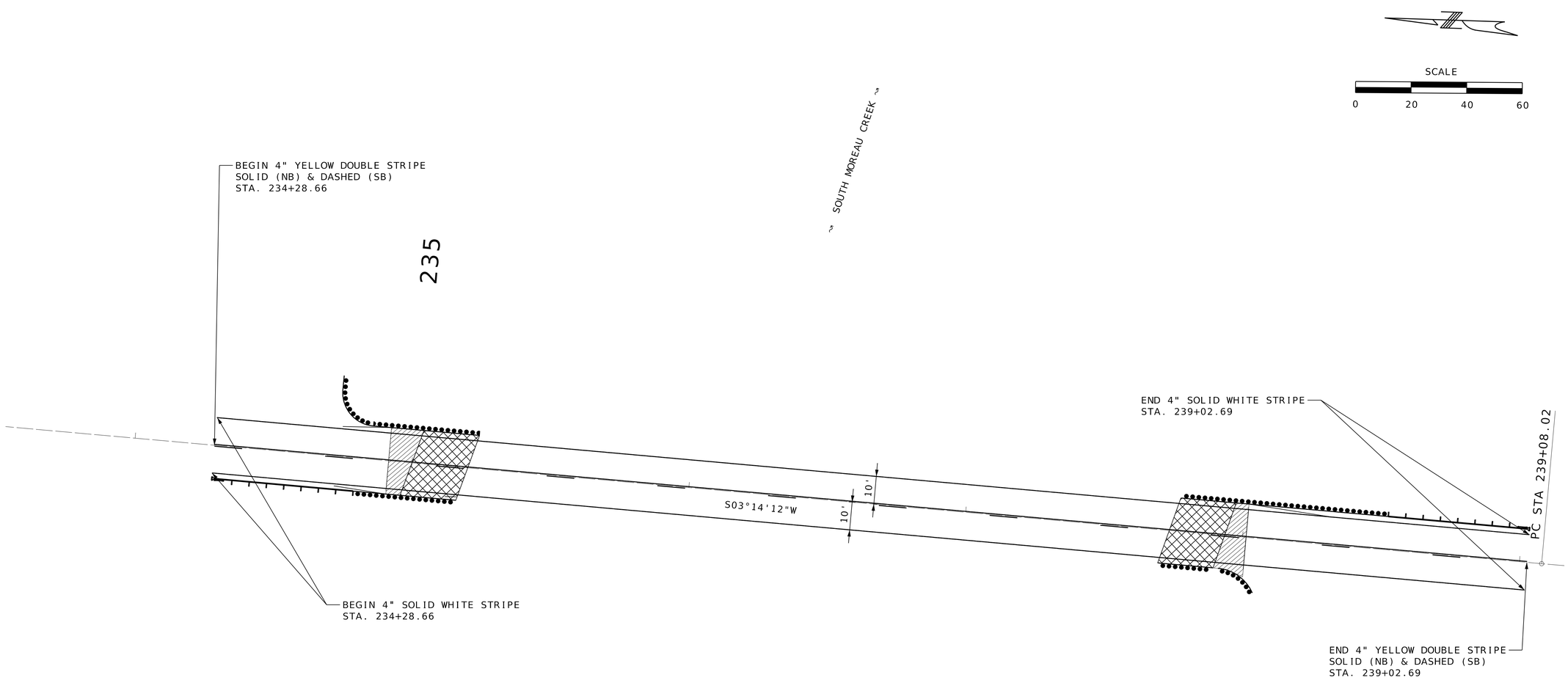

STATE OF MISSOURI
PROFESSIONAL ENGINEER
MATTHEW J. ROWE
NUMBER
PE-2025005221

DATE PREPARED
9/12/2025

ROUTE	STATE
AA	MO
DISTRICT	SHEET NO.
CD	9

COUNTY
COLE

JOB NO.
J5S3551

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
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PAVEMENT MARKING
SHEET 1 OF 1

ROUTE AA
OVER SOUTH
MOREAU CREEK

1:28:33 PM

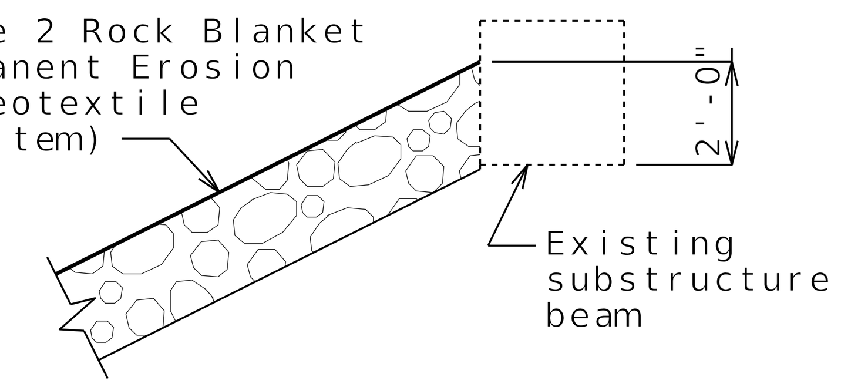
U.I.P. AND REDECK EXISTING (75'- 100'- 75') CONTINUOUS COMPOSITE WIDE FLANGE BEAM SPANS (SKEW: 15°0'0" L.A.)

SEC/SUR 26 TWP 43N RGE 14W

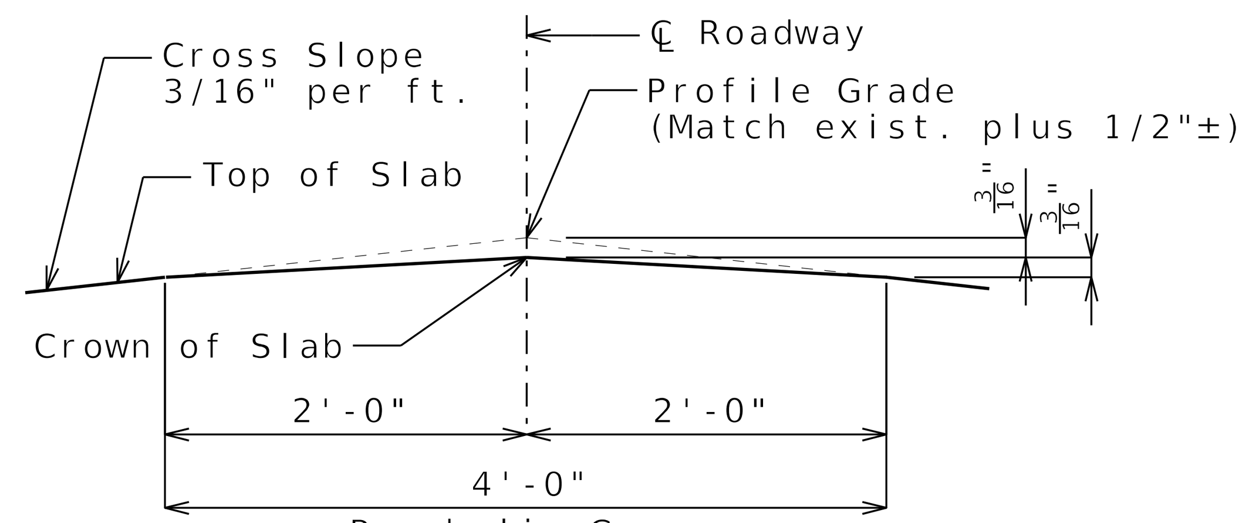
Table Showing S2 Bar Lengths			
Int. Bent No. 2		Int. Bent No. 3	
Span 1	Span 2	Span 2	Span 3
25'-9"	25'-0"	25'-0"	25'-9"

Required Lap Length For Bar Splices ****	
Bar Size	Splice Length
4	2'-7"
5	3'-3"
6	3'-10"
7	4'-11"

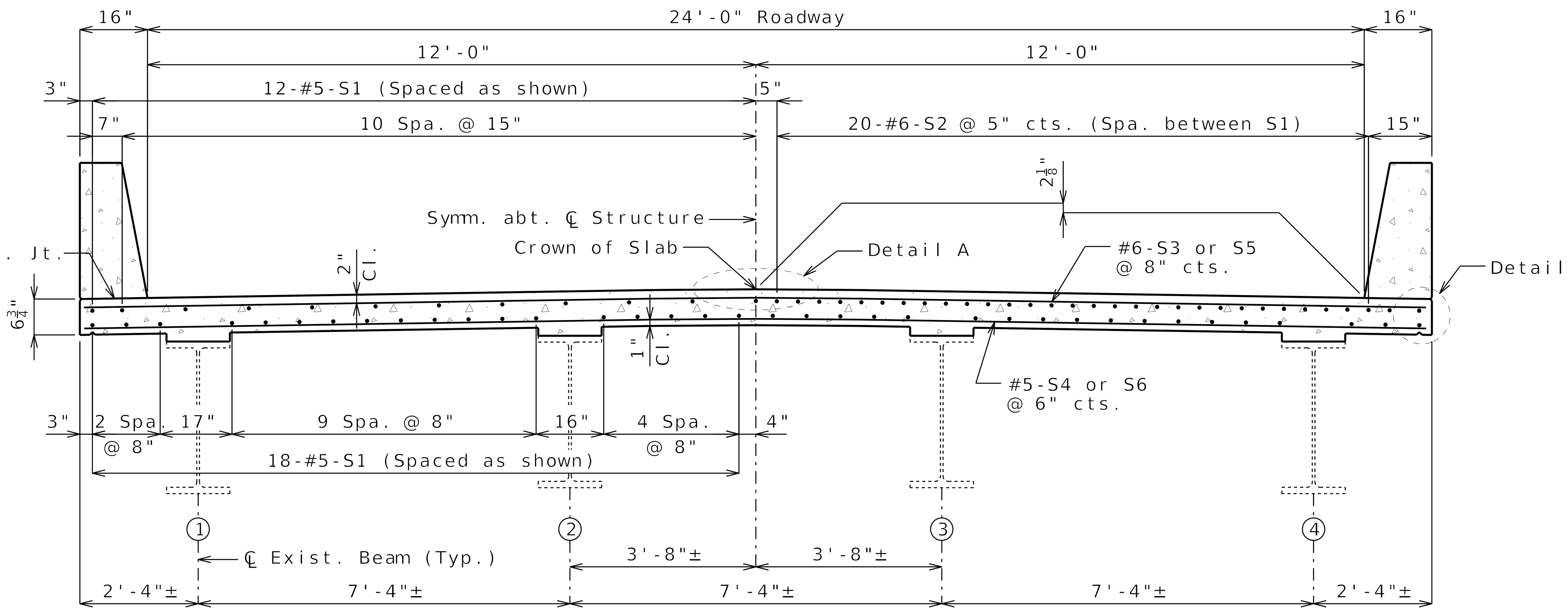
**** Unless otherwise shown.



ROCK BLANKET ON END BENT NO. 4 SPILL SLOPE



DETAIL A



TYPICAL SECTION THRU SLAB

General Notes:

Design Specifications:

2002 AASHTO LFD (17th Ed.) Standard Specifications
Seismic Performance Category A

Design Loading:

H15-44 (1961) (Existing)
HS20-44 (New Construction)
35 lb/sf Future Wearing Surface
Earth - 120 lb/cf, Equivalent Fluid Pressure 45 lb/cf
Fatigue Stress - Case III

Design Unit Stresses:

Class B-1 Concrete (Barrier)	f'c = 4,000 psi
Class B-2 Concrete (End Bents & Superstructure, except Barrier)	f'c = 4,000 psi
Reinforcing Steel (ASTM A615 Grade 60)	fy = 60,000 psi
Structural Steel (ASTM A709 Grade 50)	fy = 50,000 psi

Joint Filler:

All joint filler shall be in accordance with Sec 1057 for preformed sponge rubber expansion and partition joint filler, except as noted.

Reinforcing Steel:

Minimum clearance to reinforcing steel shall be 1 1/2", unless otherwise shown.

Miscellaneous:

Protective coating for concrete bents and piers (Epoxy) shall be applied as shown on the bridge plans and in accordance with Sec 711.

Bars bonded in existing concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, existing bars shall extend into new concrete at least 40 diameters for plain bars and 30 diameters for deformed bars, unless otherwise noted.

Roadway surfacing adjacent to bridge ends shall match new bridge slab surface. (Roadway item)

Outline of existing work is indicated by light dashed lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before finalizing the shop drawings.

The area exposed by the removal of concrete and not covered with new concrete shall be coated with an approved qualified special mortar in accordance with Sec 704.

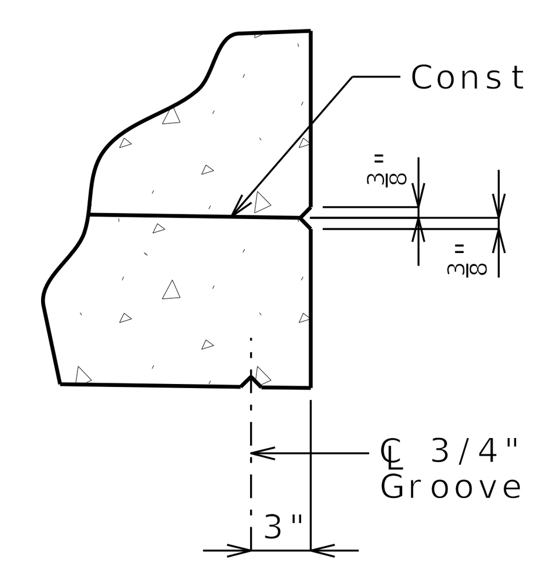
Rubblized concrete from the existing bridge deck that qualifies as clean fill may be placed on spill slopes at end bents above ordinary high water line (Roadway item).

For adjusted beam deflection due to the weight of the new deck and barriers, see Bridge Electronic Deliverables.

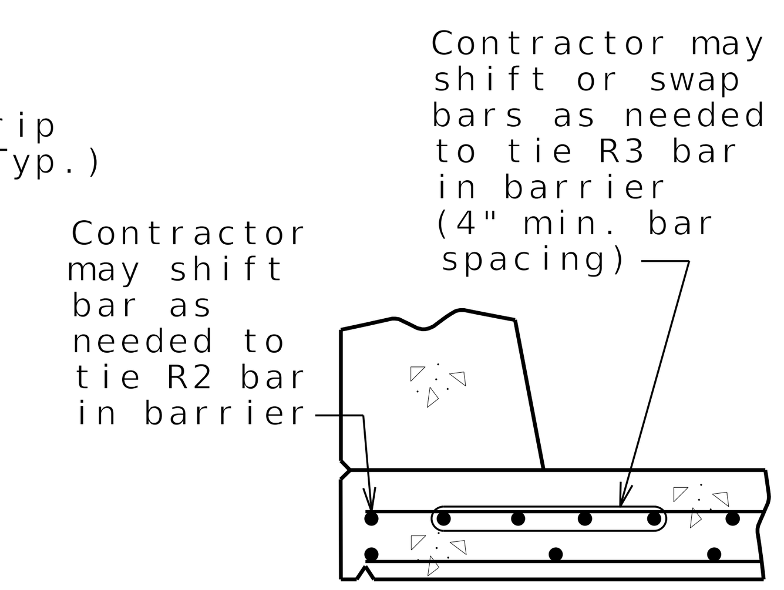
All concrete repairs shall be in accordance with Sec 704, unless otherwise noted.

Traffic Handling:

Structure to be closed during construction. See roadway plans for traffic control.



DETAIL B



OPTIONAL SHIFTING TOP BARS AT BARRIER

	Estimated Quantities		
	Item		Total
***	Temporary Falsework	lump sum	1
*	Removal of Existing Bridge Deck	sq. foot	6,994
	Bridge Approach Slab (Minor)	sq. yard	107
	Slab on Steel	sq. yard	751
	Type H Barrier	linear foot	506
	Substructure Repair (Formed)	sq. foot	20
	Substructure Repair (Unformed)	sq. foot	20
	Protective Coating - Concrete Bents and Piers (Epoxy)	lump sum	1
**	Fabricated Structural Low Alloy Steel (Misc.)	pound	410
	Strengthening Existing Beams	lump sum	1
***	Rehabilitate Bearing	each	8
	Slab Drain	each	46
	Surface Preparation for Applying Epoxy-Mastic Primer	lump sum	1
	Intermediate Field Coat (System G)	sq. foot	1,000
	Finish Field Coat (System G)	sq. foot	1,000
	Gray Epoxy-Mastic Primer	lump sum	1
	Non-Destructive Testing	linear foot	56

Estimated Quantities for Slab on Steel		
Item		Total
Class B-2 Concrete	cu. yard	162
Reinforcing Steel (Epoxy Coated)	pound	53,030

The table of Estimated Quantities for Slab on Steel represents the quantities used by the State in preparing the cost estimate for concrete slabs. The area of the concrete slab will be measured to the nearest square yard longitudinally from end of slab to end of slab and transversely from out to out of bridge slab (or with the horizontal dimensions as shown on the plan of slab). Payment for stay-in-place corrugated steel forms, conventional forms, all concrete and epoxy coated reinforcing steel will be considered completely covered by the contract unit price for the slab. Variations may be encountered in the estimated quantities but the variations cannot be used for an adjustment in the contract unit price.

Method of forming the slab shall be in accordance with Sec 703. All hardware for forming the slab to be left in place as a permanent part of the structure shall be coated in accordance with ASTM A123 or ASTM B633 with a thickness Class SC 4 and a finish Type I, II or III.

Slab shall be cast-in-place with conventional forming or stay-in-place corrugated steel forms. Precast prestressed panels will not be permitted.

For Optional Stay-In-Place Form Details, see Sheet No. 2.

Cost of any required excavation for bridge will be considered completely covered by the contract unit price for other items.

Substructure Repair (Formed) and (Unformed) quantities are included in case delaminated or spalled concrete is found at the time of construction. No specific areas were identified at time of inspection.

* Includes surface preparation and epoxy-mastic primer coating of the top surface of the top flange per Sec 216. Surface preparation and coating of all other surfaces of the top flange will be considered completely covered by the contract lump sum price for Surface Preparation for Applying Epoxy-Mastic Primer and Gray Epoxy-Mastic Primer.

** Includes new bearing plates only

*** See Special Provisions

REPAIRS TO BRIDGE:
ROUTE AA OVER SOUTH MOREAU CREEK

ROUTE AA FROM ROUTE A TO ROUTE C
ABOUT 0.5 MILE NORTH OF ROUTE A
BEGINNING STATION 235+20.00± (MATCH EXISTING)

Designed: JUL 2025
Detailed: JUL 2025
Checked: AUG 2025

Note: This drawing is not to scale. Follow dimensions.

STATE OF MISSOURI CALEIGH RUETHER NUMBER PE-2023031778 9-29-25 PROFESSIONAL ENGINEER

DATE	
DATE PREPARED	9/29/2025
ROUTE AA	STATE MO
DISTRICT BR	SHEET NO. 1
COUNTY	COLE
JOB NO.	J5S3551
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	R04451

DESCRIPTION
DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

HORNER SHIFRIN

ROUTE AA OVER SOUTH MOREAU CREEK
FRONT SHEET

...\B_R04451_01_J5S3551_Front Sheet.dgn 12:00:19 PM 9/29/2025

General Notes:

Stay-In-Place Forms:

Corrugated steel forms, supports, closure elements and accessories shall be in accordance with grade requirement and coating designation G165 of ASTM A653. Complete shop drawings of the permanent steel deck forms shall be required in accordance with Sec 1080.

Corrugations of stay-in-place forms shall be filled with an expanded polystyrene material. The polystyrene material shall be placed in the forms with an adhesive in accordance with the manufacturer's recommendations.

Form sheets shall not rest directly on the top of beam flanges. Sheets shall be securely fastened to form supports with a minimum bearing length of one inch on each end. Form supports shall be placed in direct contact with the flange. Welding on or drilling holes in the beam flanges will not be permitted. All steel fabrication and construction shall be in accordance with Sec 1080 and 712. Certified field welders will not be required for welding of the form supports.

The design of stay-in-place corrugated steel forms is per manufacturer which shall be in accordance with Sec 703 for false work and forms. Maximum actual weight of corrugated steel forms allowed shall be 4 psf assumed for beam loading.

Pouring and Finishing Slab:

The contractor shall provide bracing necessary for lateral and torsional stability of the beams during construction of the concrete slab and remove the bracing after the slab has attained 75% design strength. Contractor shall not weld on or drill holes in the beams. The cost for furnishing, installing, and removing bracing will be considered completely covered by the contract unit price for Slab on Steel.

Slab shall be poured upgrade from end to end at a minimum rate of 25 cubic yards per hour.

Alternate pour sequences may be submitted to the engineer for approval. Keyed construction joints shall be provided between pours.

Haunching:

(1) Slab is to be considered a uniform thickness as shown on the plans. Haunching will vary. See front sheet for slab thickness.

Structural Steel Protective Coating of New Steel:

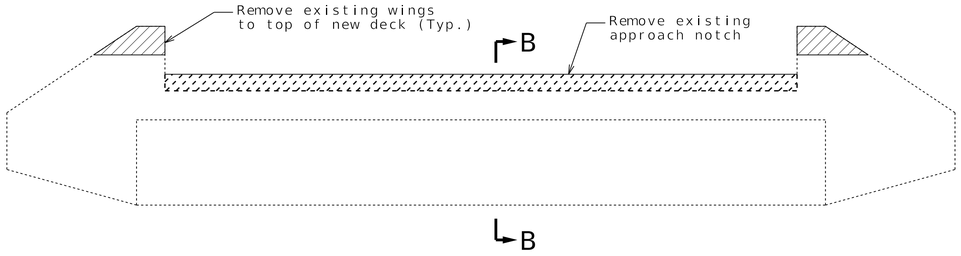
Protective Coating: System G in accordance with Sec 1081.

Prime Coat: The cost of the inorganic zinc prime coat will be considered completely covered by the contract lump sum price for Strengthening Existing Beams.

Field Coat: The color of the field coat shall be Gray (Federal Standard #26373). The cost of the intermediate field coat will be considered completely covered by the contract unit price per sq. foot for Intermediate Field Coat (System G). The cost of the finish field coat will be considered completely covered by the contract price per sq. foot for Finish Field Coat (System G).

At the option of the contractor, the intermediate field coat and finish field coat may be applied in the shop. The contractor shall exercise extreme care during all phases of loading, hauling, handling, erection and pouring of the slab to minimize damage and shall be fully responsible for all repairs and cleaning of the coating systems as required by the engineer.

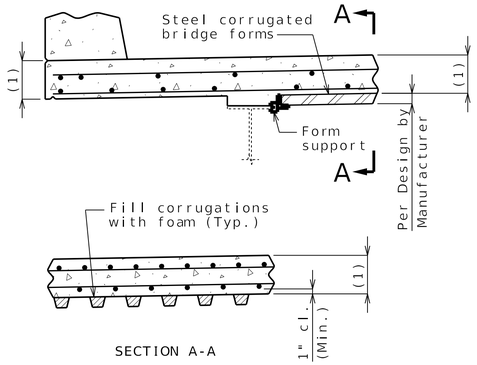
Structural Steel Protective Coating of Existing Steel:
All surfaces of the top flanges of the existing structural steel beams and all areas of existing structural steel beams to receive repair plates shall be recoated with one 6-mil thickness of gray epoxy-mastic primer applied over an SSPC-SP3 surface preparation in accordance with Sec 1081. The cost of surface preparation will be considered completely covered by the contract lump sum price for Surface Preparation for Applying Epoxy-Mastic Primer. The cost of the gray epoxy-mastic primer will be considered completely covered by the contract lump sum price for Gray Epoxy-Mastic Primer.



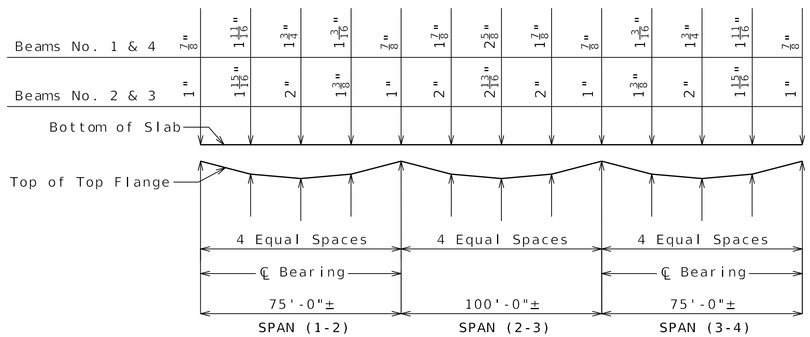
DETAILS OF CONCRETE REMOVAL AT END BENTS

The cost of concrete removal as shown will be considered completely covered by the contract unit price for Removal of Existing Bridge Deck, Vertical backwall and wingwall reinforcement to be cut off one inch below concrete removal surface and the resulting holes shall be filled with a qualified special mortar.

A smooth, level surface shall be provided at removal lines.



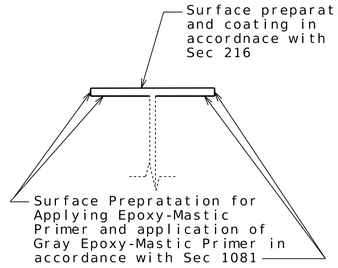
OPTIONAL STAY-IN-PLACE FORM DETAILS



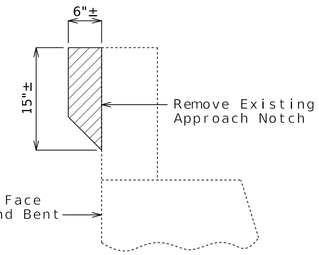
THEORETICAL SLAB HAUNCHING DIAGRAM

Concrete in the slab haunches is included in the Estimated Quantities for Slab on Steel.

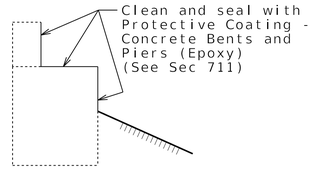
Theoretical haunch values are based on an existing deck thickness of 6 1/4" and a new deck thickness of 6 3/4" (adding 1/2" to the profile grade). If the existing deck thickness is different than the number provided, in order to maintain minimum slab thickness, an adjustment of slab haunches shall be necessary. No payment will be made for additional labor or materials required for variation in haunching. See Job Special Provisions.



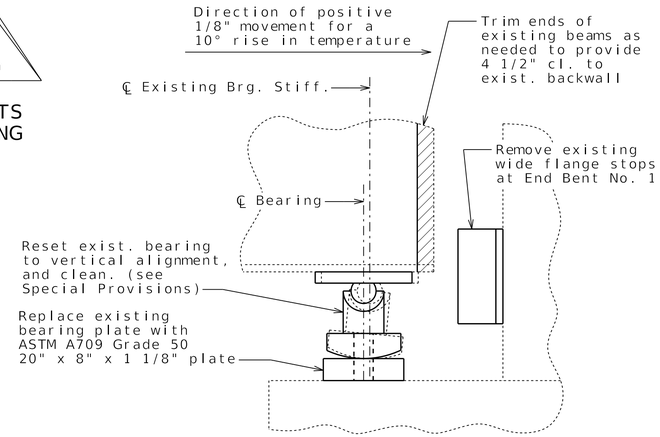
DETAIL SHOWING LIMITS OF TOP FLANGE COATING



SECTION B-B



TYPICAL SECTION THRU END BENTS NO. 1 & 4 SHOWING PROTECTIVE COATING



ELEVATION SHOWING RESETTING OF EXISTING ROCKER BEARINGS AT END BENTS NO. 1 & 4

(8 Total)

Notes:

Reset bearings are indicated by heavy lines.

Plan dimensions are based upon resetting bearings to vertical at 60°F. At all other temperatures, bearings shall be reset to tilt. New bearing tilt shall be determined based upon adjusting 1/8"± from vertical for each 10° rise or fall in temperature just before resetting.

Place 3 layers of 30-lb (min.) roofing felt beneath new bearing plate. See End Bent Details on Sheet No. 5.

Roofing felt shall be placed so that it extends from outside of bearing to under bearing in continuous sheets.

REHAB DETAILS

Designed: JUL 2025
Detailed: JUL 2025
Checked: AUG 2025

Note: This drawing is not to scale. Follow dimensions.

STATE OF MISSOURI
CALEIGH RUETHER
NUMBER PE-2023031778
9.29.25
PROFESSIONAL ENGINEER

DATE

DATE PREPARED 9/29/2025

ROUTE	STATE
AA	MO
DISTRICT	SHEET NO.
BR	2

COUNTY: COLE
JOB NO.: J5S3551
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: R04451

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

HORNER SHIFRIN
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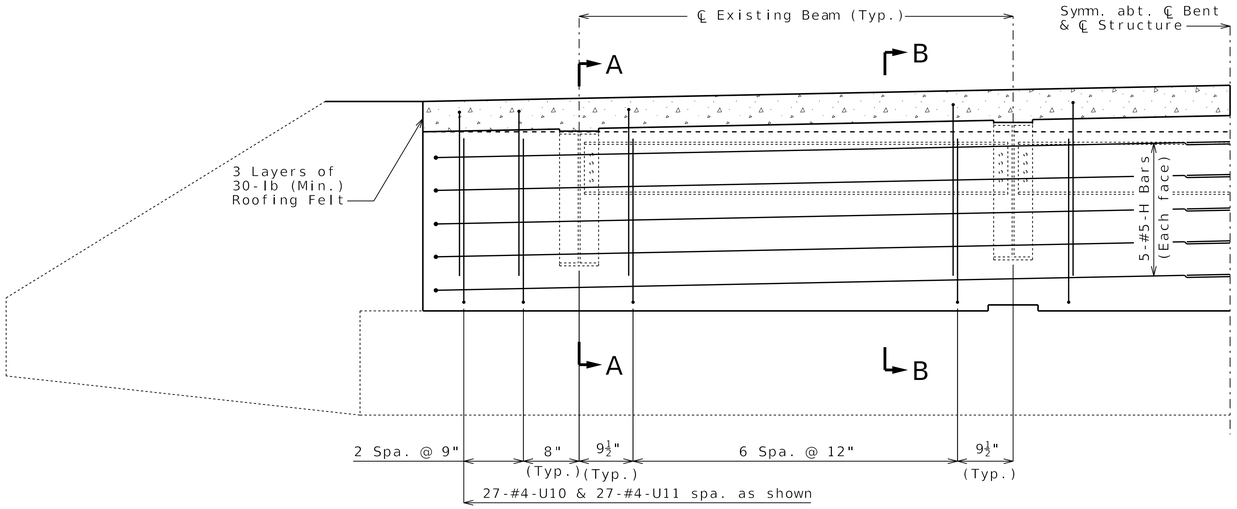
DISCIPLINE: PROFESSIONAL ENGINEERING
CERTIFICATE OF AUTHORITY 000109

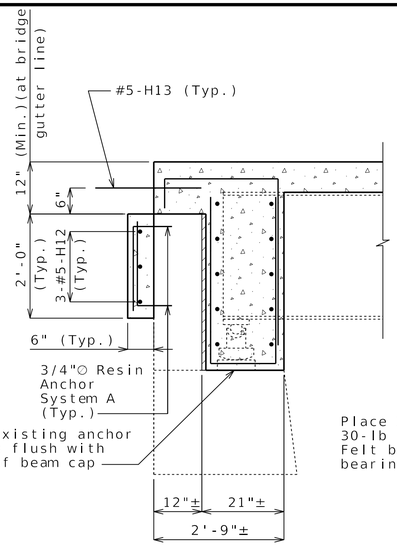
ROUTE AA OVER SOUTH MOREAU CREEK

REHAB DETAILS

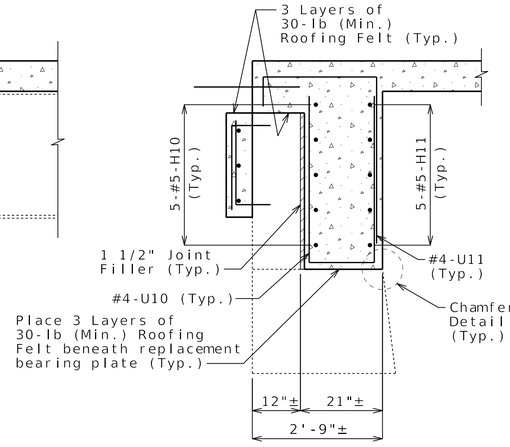


PART SECTION NEAR END BENT

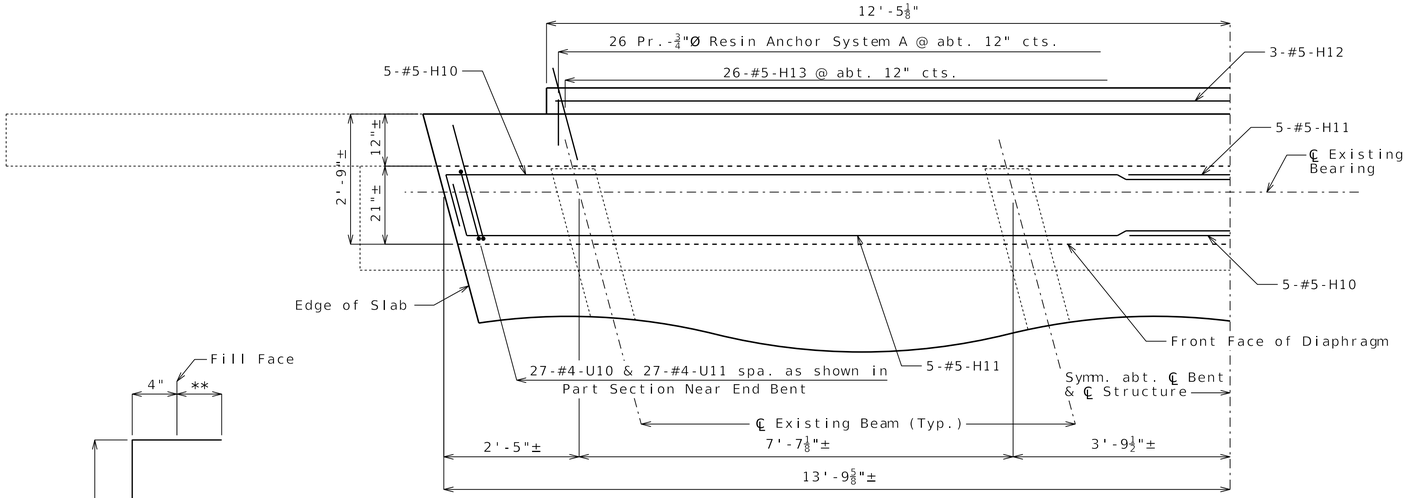
(Slab steel not shown for clarity)
(End Bent No. 1 shown, End Bent No. 4 similar)



SECTION A-A

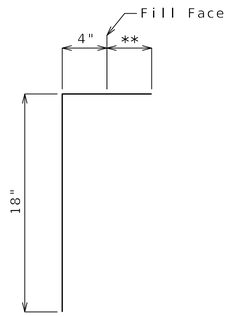


SECTION B-B



PART PLAN NEAR END BENT

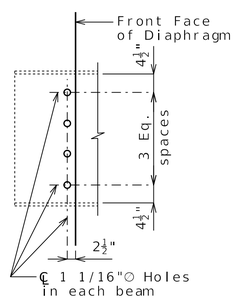
(End Bent No. 1 shown, End Bent No. 4 similar)



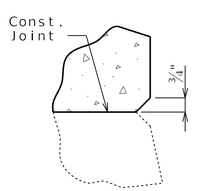
System A
(104 Required)

DETAILS OF RESIN ANCHOR SYSTEM

** Manufacturer's recommended embedment length (5" Min.)



DETAILS OF WEB HOLES AT END BENTS



CHAMFER DETAIL

Notes:

The U-bars shall be placed parallel to centerline of Roadway.

The exposed and accessible surfaces of the existing structural steel and bearings that will be encased in concrete shall be cleaned with a minimum of SSPC-SP-3 surface preparation. These areas shall be coated with a minimum of one coat of gray epoxy-mastic primer (non-aluminum) in accordance with Sec 1081 to produce a dry film thickness of not less than 3 mils before concrete is poured. The surface preparation and coating for beams shall extend a minimum of one foot outside the face of the beam encasement. Payment for cleaning and coating steel to be encased in concrete will be considered completely covered by the contract unit price for Slab on Steel.

Cut existing anchor bolts flush with top of beam cap. Place 3 layers of roofing felt beneath existing bearings.

Cost of field drilling holes in existing wide flange beam webs and lifting bearings to install roofing felt will be considered completely covered by the contract unit price for Slab on Steel.

All concrete and reinforcement in the end bent diaphragms and approach notch, complete in place, will be considered completely covered by the contract unit price for Slab on Steel and is included in the table of Estimated Quantities for Slab on Steel.

For detail and reinforcement of Type H Barrier at End Bents, see Sheet No. 9.

The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.

The minimim embedment depth in concrete with a f'c = 4,000 psi for the resin anchor system shall be that required to meet the minimmum pullout strength in accordance with Sec 1039 but shall not be less than 5".

Cost of furnishing and installing the resin anchor systems, complete in place, will be considered completely covered by the contract unit price for Slab on Steel.

Any excavation required to construct the approach notch will be considered completely covered by the contract unit price for Slab on Steel.

For details of bridge approach slab, see Sheet No. 10.

The #5-H10 & #5-H11 bars are segmented for ease of placement through beam web holes. The total bar length for #5-H10 & #5-H11 bars shown in Bill of Reinforcing Steel allows for one lap splice with a length of 3'-3". Actual bar segment lengths to be determined by contractor for ease of installing bars. The contractor may use a mechanical bar splice in lieu of a lap splice. When a mechanical bar splice is used, the actual bar segment length will be determined by the contractor to accommodate manufacturer's recommendations for installation and ease of construction. The cost of furnishing and installing the bar splices will be considered completely covered by the contract unit price for Slab on Steel. No adjustment of the quantity of reinforcing steel will be allowed for the use of mechanical bar splices.

DETAILS OF CONCRETE DIAPHRAGM AT END BENTS NO. 1 AND 4

Designed: JUL 2025
Detailed: JUL 2025
Checked: AUG 2025

Note: This drawing is not to scale. Follow dimensions.

STATE OF MISSOURI
CALEIGH RUETHER
NUMBER PE-2023031778
9.29.25
PROFESSIONAL ENGINEER

DATE

DATE PREPARED 9/29/2025

ROUTE	STATE
AA	MO
DISTRICT	SHEET NO.
BR	3

COUNTY: COLE
JOB NO.: J5S3551
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: R04451

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
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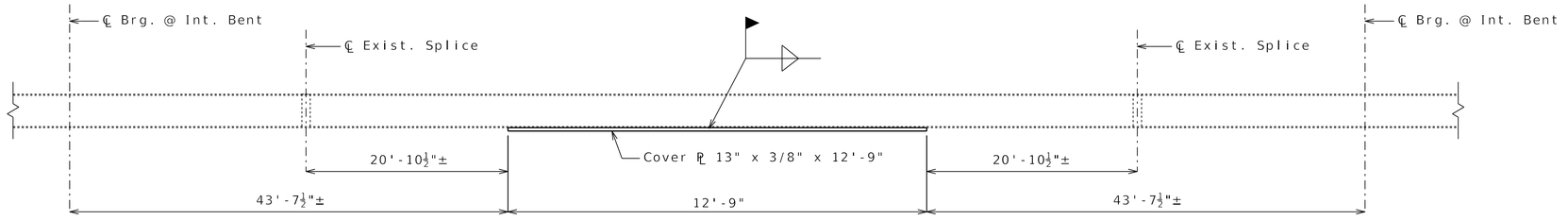
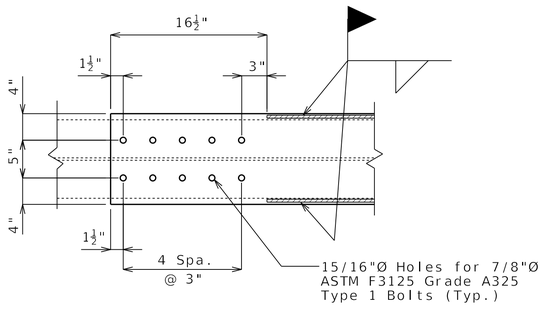
ROUTE AA OVER SOUTH MOREAU CREEK

CONCRETE DIAPHRAGM AT END BENT NO. 1



PART ELEVATION OF INTERIOR AND EXTERIOR BEAM SHOWING COVER PLATE INSTALLATION
SPAN (2-3)



TYPICAL DETAIL OF THE
ENDS OF COVER PLATES
(BOTTOM VIEW)

Notes:

Beam with end-bolted cover plates shall be installed in the following sequence after existing bridge deck is removed:

1. Drill holes in cover plate and flange.
2. Clean faying surfaces. (See Special Provisions)
3. Install and tighten bolts.
4. Weld cover plate to flange.

Fabricated Structural Steel shall be ASTM A709 Grade 50, except as noted.

Payment for 920 pounds of new cover plates, complete in place, will be considered completely covered by the contract lump sum price for Strengthening Existing Beams.

Notch toughness is required for all cover plates.

Contractor shall verify all dimensions in field before finalizing the shop drawings.

STRENGTHENING EXISTING BEAMS

Designed: JUL 2025
Detailed: JUL 2025
Checked: AUG 2025

Note: This drawing is not to scale. Follow dimensions.

STATE OF MISSOURI
CALEIGH RUETHER
NUMBER PE-2023031778
PROFESSIONAL ENGINEER
9.29.25

DATE

DATE PREPARED
9/29/2025

ROUTE	STATE
AA	MO
DISTRICT	SHEET NO.
BR	4

COUNTY
COLE

JOB NO.
J5S3551

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
R04451

DESCRIPTION	DATE

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ROUTE AA OVER
SOUTH MOREAU CREEK

STRENGTHENING
EXISTING BEAMS

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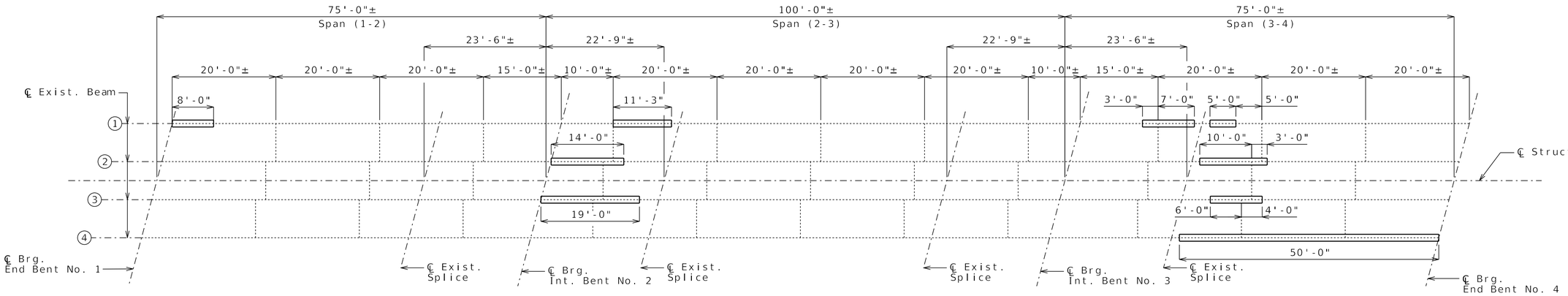
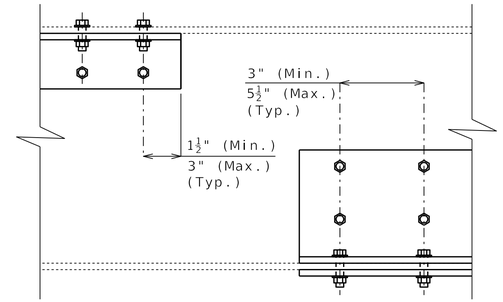
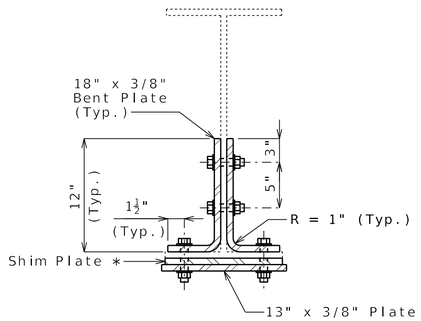


PLAN OF STRUCTURAL STEEL SHOWING BOTTOM FLANGE REPAIR AREAS

Note: No areas of top flange repair are identified in this detail. The top flange repair detail will be required as deemed necessary by the Engineer once the deck is removed. Top flange repair will be completely covered by contract lump sum price for Strengthening Existing Beams.



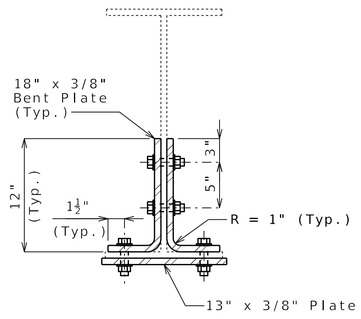
TYPICAL DETAIL SHOWING BOLT SPACING



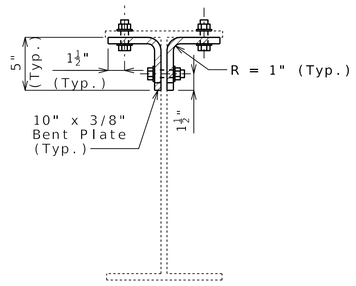
SECTION THRU BEAM SHOWING BOTTOM FLANGE REPAIRS NEAR EXISTING COVER PLATE

* Shim plate thickness to match size of existing bottom cover plates:

13" x 3/4" for exterior beams
13" x 7/8" for interior beams.



SECTION THRU BEAM SHOWING BOTTOM FLANGE REPAIRS



SECTION THRU BEAM SHOWING TOP FLANGE REPAIRS

Notes:

After existing bridge deck is removed, bolt bent plates and bottom flange cover plates to flange.

Payment for 15,090 pounds of new steel, complete in place, will be considered completely covered by the contract lump sum price for Strengthening Existing Beams. (Weight of steel assumes 100 linear feet of top flange repair. Variations may be encountered in the estimated length of repair but the variations cannot be used for adjustment in the contract price.)

Bolts shall be 7/8-inch diameter ASTM F3125 Grade A325 Type 1 in 15/16-inch diameter holes.

Field slot the bent plates and angles as needed to clear existing diaphragms and stiffener plates. At the contractor's option, bent plates can be sectioned in lieu of slotting to clear existing diaphragms and stiffener plates.

Fabricated Structural Steel shall be ASTM A709 Grade 50 except as noted.

WF BEAM REPAIR DETAILS

Designed: JUL 2025
Detailed: JUL 2025
Checked: AUG 2025

Note: This drawing is not to scale. Follow dimensions.

STATE OF MISSOURI
CALEIGH RUETHER
NUMBER PE-2023031778
9.29.25
PROFESSIONAL ENGINEER

DATE

DATE PREPARED
9/29/2025

ROUTE	STATE
AA	MO
DISTRICT	SHEET NO.
BR	5

COUNTY
COLE

JOB NO.
J5S3551

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
R04451

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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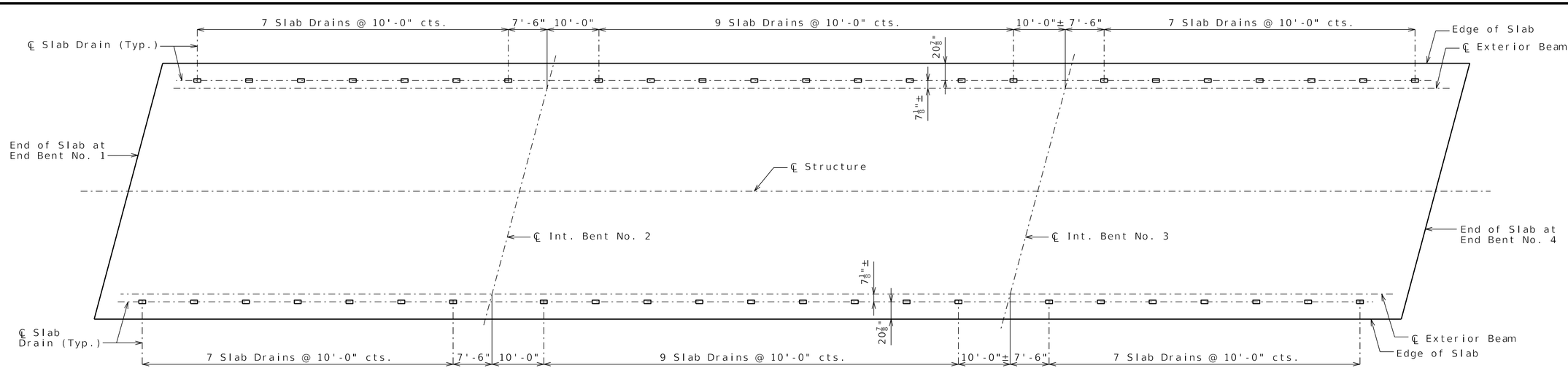
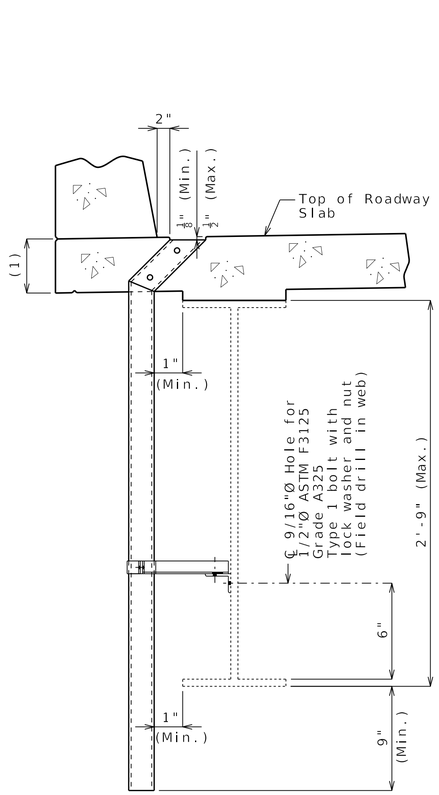
ROUTE AA OVER
SOUTH MOREAU CREEK

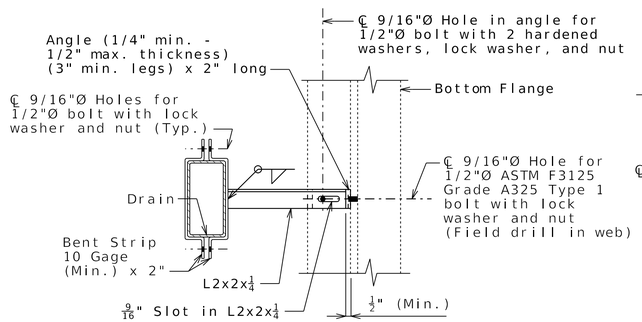
GIRDER REPAIR
DETAILS



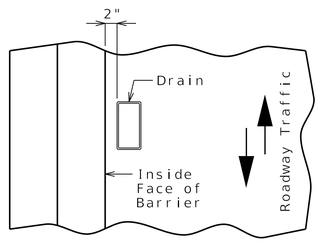
PLAN OF SLAB SHOWING SLAB DRAIN LOCATIONS



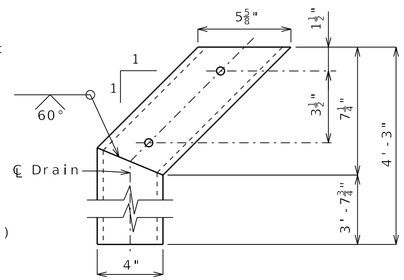
PART SECTION NEAR DRAIN



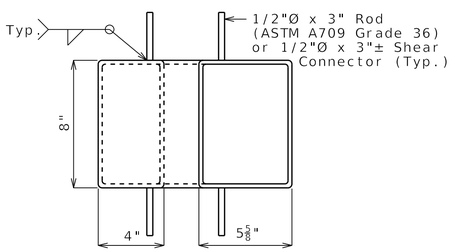
PART SECTION SHOWING BRACKET ASSEMBLY



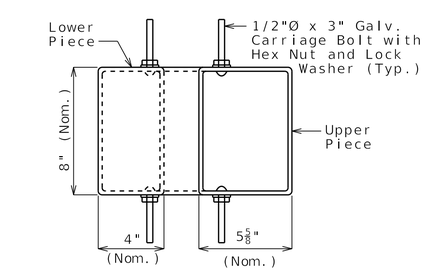
PART PLAN OF SLAB AT DRAIN



ELEVATION OF DRAIN



PLAN OF STEEL DRAIN OPTION



PLAN OF FRP DRAIN OPTION

SLAB DRAINS

General Notes:

Contractor shall have the option to construct either steel or FRP slab drains. All drains shall be of same type.

Slab drain bracket assembly shall be ASTM A709 Grade 36 steel.

Locate drains in slab by dimensions shown in Part Section Near Drain.

Reinforcing steel shall be shifted to clear drains.

The bracket assembly shall be galvanized in accordance with ASTM A123.

All bolts, hardened washers, lock washers and nuts shall be galvanized in accordance with AASHTO M 232 (ASTM A153), Class C.

All 1/2"Ø bolts shall be ASTM A307, except as shown.

Shop drawings will not be required for the slab drains and the bracket assembly.

The bolt hole for the bracket assembly attachment shall be shifted to the minimum extent necessary to field drill in the existing web.

(1) See front sheet for slab thickness.

Notes for Steel Drain:

Slab drains shall be fabricated of either 1/4" welded sheets of ASTM A709 Grade 36 steel or from 1/4" structural steel tubing ASTM A500 or A501.

Outside dimensions of drains are 8" x 4".

The drains shall be galvanized in accordance with ASTM A123.

Notes for FRP Drain:

Drains shall be machine filament-wound thermosetting resin tubing meeting the requirements of ASTM D2996 with the following exceptions:

Shape of drains shall be rectangular with outside nominal dimensions of 8" x 4".

Minimum reinforced wall thickness shall be 1/4 inch.

The resin used shall be ultraviolet (UV) resistant and/or have UV inhibitors mixed throughout. Drains may have an exterior coating for additional UV resistance.

The color of the slab drain shall be gray (Federal Standard #26373). The color shall be uniform throughout the resin and any coating used.

The combination of materials used in the manufacture of the drains shall be tested for UV resistance in accordance with ASTM D4329 Cycle A. The representative material shall withstand at least 500 hours of testing with only minor discoloration and without any physical deterioration. The contractor shall furnish the results of the required ultraviolet testing prior to acceptance of the slab drains.

At the contractor's option, drains may be field cut. The method of cutting FRP slab drain shall be recommended by the manufacturer to ensure a smooth, chip free cut.

Both upper and lower drain pieces shall be rigidly connected to each other. Drain flow shall not be obstructed. Approval of the engineer is required.

Designed: JUL 2025
Detailed: JUL 2025
Checked: AUG 2025

Note: This drawing is not to scale. Follow dimensions.

STATE OF MISSOURI
CALEIGH RUETHER
NUMBER PE-2023031778
9.29.25
PROFESSIONAL ENGINEER

DATE

DATE PREPARED
9/29/2025

ROUTE: AA | STATE: MO
DISTRICT: BR | SHEET NO.: 6
COUNTY: COLE
JOB NO.: J5S3551
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: R04451

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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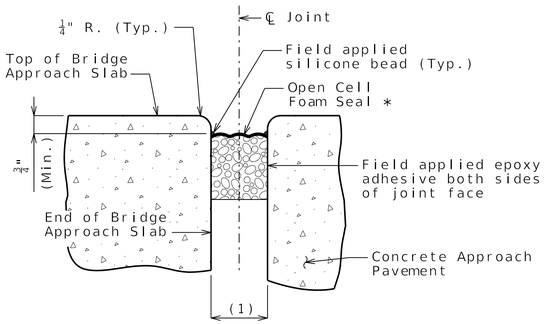
CERTIFICATE OF AUTHORITY: 000159

ROUTE AA OVER SOUTH MOREAU CREEK

SLAB DRAINS



SECTION THRU JOINT AT END OF BRIDGE APPROACH SLAB

SKEW = 15°

* Manufacturer's recommended size

Extend seal full width of approach slab.

General Notes:

Open cell foam joint seal size (width and depth) shall be determined by the manufacturer. Manufacturer recommended seal size shall meet the movement and installation gap requirements and skew effect.

The open cell foam joint seal shall be installed according to the manufacturer's recommendations.

The installation temperature shall be taken as the actual air temperature averaged over the 24-hour period immediately preceding installation.

(1) Allowed installation gap (±) normal to joint at roadway surface (see table)

For location of Open Cell Foam Joints, see Sheet No. 10.

Location	Movement Parallel to Rdwy	Movement Normal to Joint	Min. Jt. Width (Normal to Joint)	Max. Jt. Width (Normal to Joint)	(1) Allowed Installation Gap (±) Normal to Joint at Roadway Surface at Air/Surface Temperature				Manufacturer	Seal Name
					@ 40°F	@ 50°F	@ 60°F	@ 70°F		
End of B.A.S. End Bent No. 1	2.28"	2.20"	1.12"	3.32"	2¼"	2⅛"	2"	1⅞"		
End of B.A.S. End Bent No. 4	1.11"	1.07"	1.57"	2.64"	2⅛"	2⅛"	2"	1⅞"		

MoDOT construction personnel will record the manufacturer and seal name that was used.

OPEN CELL FOAM JOINT SEAL

Designed: JUL 2025
Detailed: JUL 2025
Checked: AUG 2025

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STATE OF MISSOURI
CALEIGH RUETHER
NUMBER PE-2023031778
9.29.25
PROFESSIONAL ENGINEER

DATE

DATE PREPARED 9/29/2025

ROUTE	STATE
AA	MO
DISTRICT	SHEET NO.
BR	7

COUNTY: COLE

JOB NO.: J5S3551

CONTRACT ID.:

PROJECT NO.:

BRIDGE NO.: R04451

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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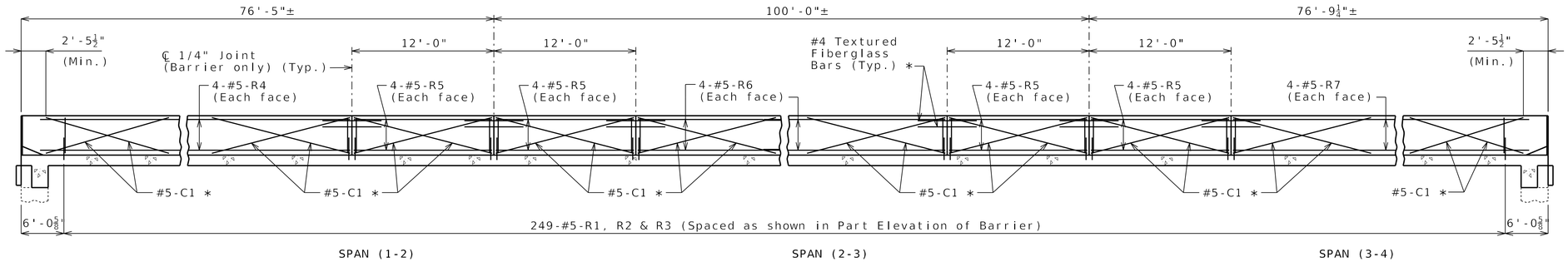
CERTIFICATE OF AUTHORITY #000159

ROUTE AA OVER SOUTH MOREAU CREEK

OPEN CELL FOAM JOINT SEAL

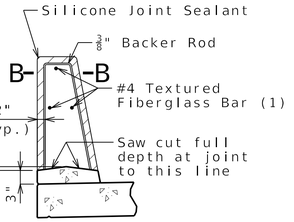
...\B_R04451_07_J5S3551_Joint Seal.dgn 1:46:58 PM 9/29/2025



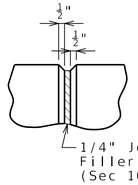
ELEVATION OF BARRIER

(Left barrier shown, right barrier similar)

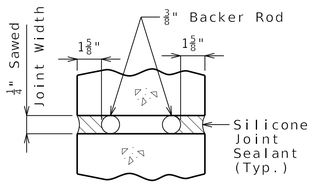
Longitudinal dimensions are horizontal.



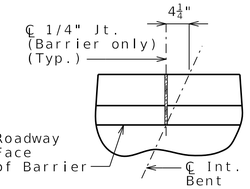
SECTION THRU SAW CUT JOINT



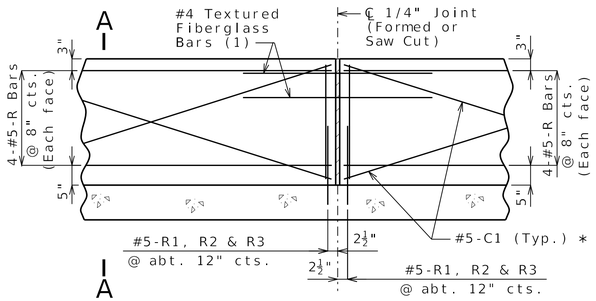
PART ELEVATION AT FORMED JOINT



SECTION B-B

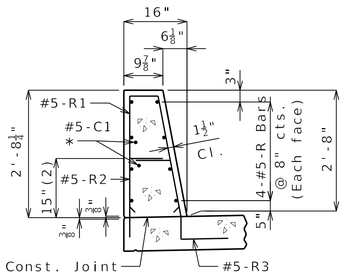


PART PLAN SHOWING JOINT LOCATION



PART ELEVATION OF BARRIER

(1) Four feet long, centered on joint, slip-formed option only

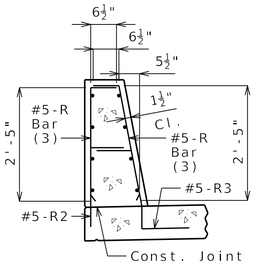


SECTION A-A

Use a minimum lap of 2'-6" for #5 horizontal barrier bars.

The cross-sectional area above the slab is 2.89 square feet.

(2) To top of bar



R-BAR PERMISSIBLE ALTERNATE SHAPE

(3) The R1 bar may be separated into two bars as shown, at the contractor's option, only when slip forming is not used. (All dimensions are out to out.)

General Notes:

* Slip-formed option only.

Conventional forming or slip forming may be used. Saw cut joints may be used with conventional forming.

Top of barrier shall be built parallel to grade and barrier joints normal to grade.

All exposed edges of barrier shall have either a 1/2-inch radius or a 3/8-inch bevel, unless otherwise noted.

Payment for all concrete and reinforcement, complete in place, will be considered completely covered by the contract unit price for Type H Barrier per linear foot.

Concrete in barrier shall be Class B-1.

Measurement of barrier is to the nearest linear foot for each structure, measured along the outside top of slab from end of slab to end of slab.

Concrete traffic barrier delineators shall be placed on top of the barrier as shown on Missouri Standard Plan 617.10 and in accordance with Sec 617. Delineators on bridges with two-lane, two-way traffic shall have retroreflective sheeting on both sides. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for Type H Barrier.

Joint sealant and backer rods shall be in accordance with Sec 717 for silicone joint sealant for saw cut and formed joints.

For slip-formed option, both sides of barrier shall have a vertically broomed finish and the top shall have a transversely broomed finish.

TYPE H BARRIER

Designed: JUL 2025
Detailed: JUL 2025
Checked: AUG 2025

Note: This drawing is not to scale. Follow dimensions.

STATE OF MISSOURI
CALEIGH RUETHER
NUMBER PE-2023031778
9.29.25
PROFESSIONAL ENGINEER

DATE

DATE PREPARED 9/29/2025

ROUTE	STATE
AA	MO
DISTRICT	SHEET NO.
BR	8

COUNTY COLE

JOB NO. J5S3551

CONTRACT ID.

PROJECT NO.

BRIDGE NO. R04451

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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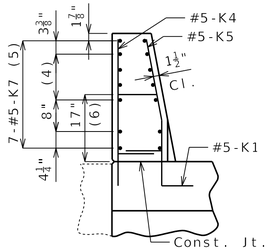
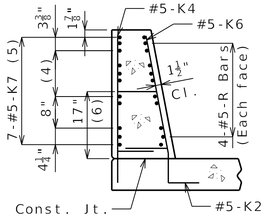
COMPANY CERT. OF AUTHORITY: 000926

ROUTE AA OVER SOUTH MOREAU CREEK

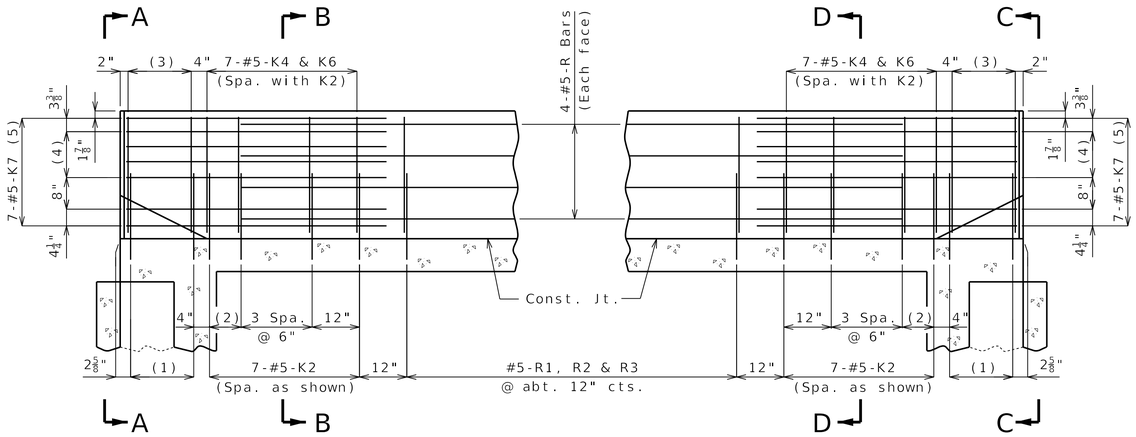
TYPE H BARRIER



ELEVATION A-A



SECTION B-B



PART ELEVATION

(1) 5-#5-K1 @ 4" cts.

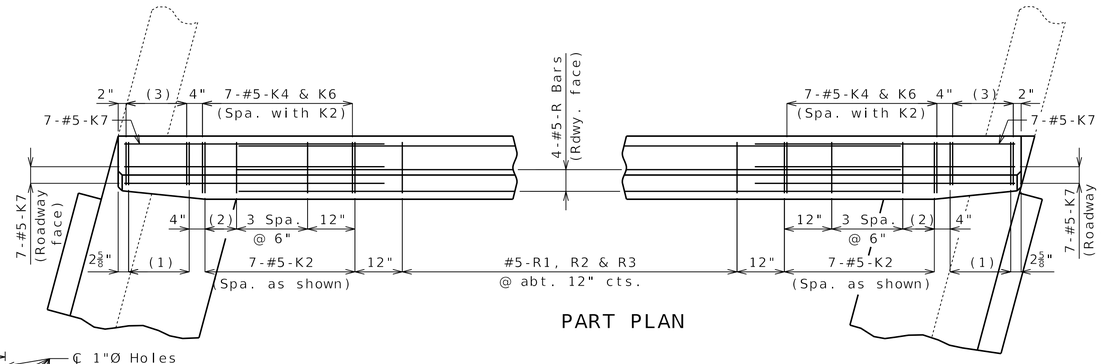
(2) 2 Spaces @ 4"

(3) 5-#5-K4 and 5-#5-K5, spaced with K1

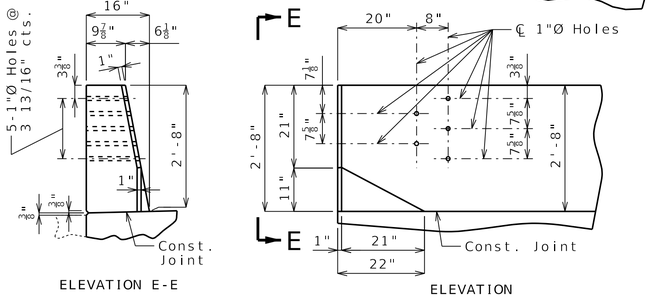
(4) 3 Spaces @ $3\frac{13}{16}$"

(5) Spaced as shown, each face

(6) To top of bar

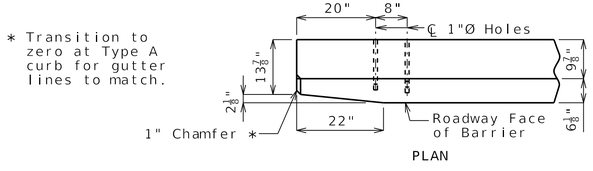


PART PLAN



ELEVATION E-E

ELEVATION



PLAN

DETAILS OF GUARD RAIL ATTACHMENT

General Notes:

Concrete traffic barrier delineators shall be placed on top of the barrier as shown on Missouri Standard Plan 617.10 and in accordance with Sec 617. Delineators on bridges with two-lane, two-way traffic shall have retroreflective sheeting on both sides. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for Type H Barrier.

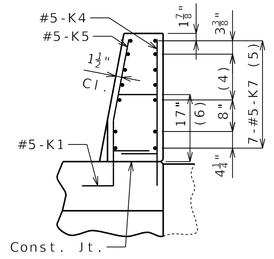
Reinforcing Steel:

Minimum clearance to reinforcing steel shall be 1 1/2".

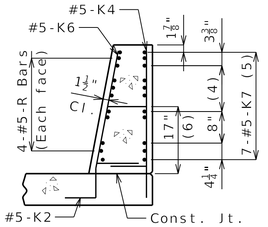
Use a minimum lap of 2'-6" between K7 bars and R bars.

TYPE H BARRIER AT END BENTS

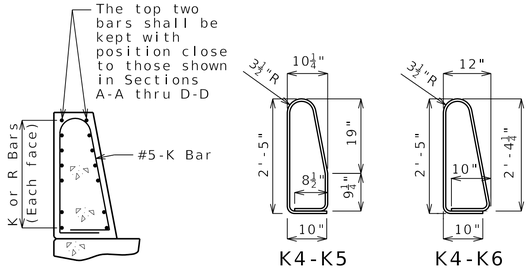
(Left barrier shown, right barrier similar)



ELEVATION C-C



SECTION D-D



PERMISSIBLE ALTERNATE SHAPES

(Other K bars not shown for clarity)

The K4-K5 and K4-K6 bar combination may be furnished as one bar as shown, at the contractor's option.

All dimensions are out to out.

Designed: JUL 2025
Detailed: JUL 2025
Checked: AUG 2025

Note: This drawing is not to scale. Follow dimensions.

STATE OF MISSOURI
CALEIGH RUETHER
NUMBER PE-2023031778
9.29.25
PROFESSIONAL ENGINEER

DATE

DATE PREPARED 9/29/2025

ROUTE	STATE
AA	MO
DISTRICT	SHEET NO.
BR	9

COUNTY: COLE

JOB NO.: J5S3551

CONTRACT ID.:

PROJECT NO.:

BRIDGE NO.: R04451

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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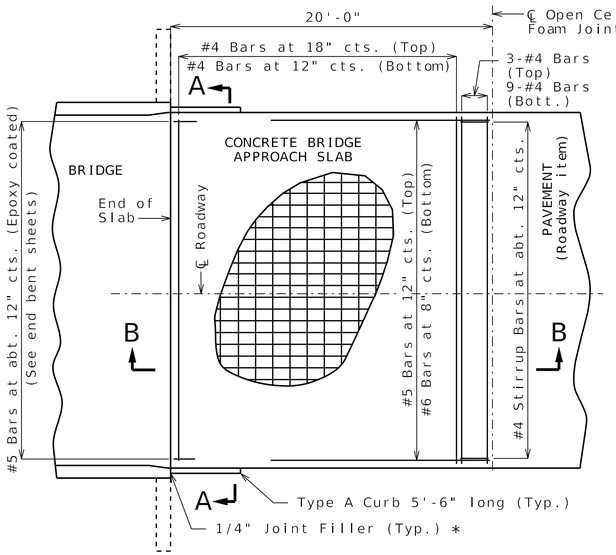
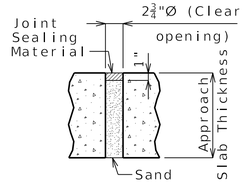
ROUTE AA OVER SOUTH MOREAU CREEK

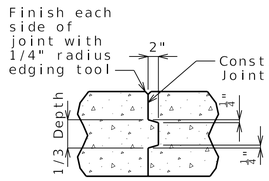
TYPE H BARRIER AT END BENTS



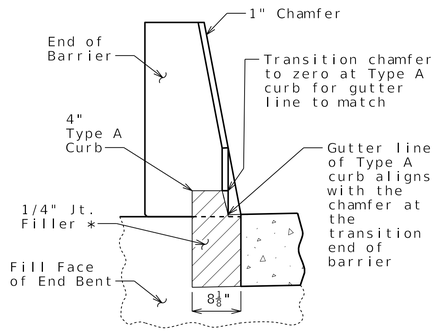
PART PLAN OF SQUARED STRUCTURE
(Skewed structure similar)



UNDERSEAL ACCESS HOLE DETAIL
(If required)



CONSTRUCTION JOINT DETAIL



SECTION BETWEEN CURB AND BARRIER

Notes For Concrete Slab Only:

All concrete for the bridge approach slab shall be in accordance with Sec 503 (f'c = 4,000 psi).

The reinforcing steel in the bridge approach slab shall be epoxy coated Grade 60 with fy = 60,000 psi.

Longitudinal construction joints in bridge approach slab shall be aligned with longitudinal construction joints in bridge slab.

Minimum clearance to reinforcing steel shall be 1 1/2", unless otherwise shown.

The reinforcing steel in the bridge approach slab shall be continuous. The transverse reinforcing steel may be made continuous by providing a minimum lap splice of 26 inches for #4 bars, or by mechanical bar splice.

Mechanical bar splices shall be in accordance with Sec 710.

All joint filler shall be in accordance with Sec 1057 for preformed fiber expansion joint filler except as noted.

Payment for furnishing all materials, labor and excavation necessary to construct the concrete bridge approach slab, including the timber header, underdrain, Type 5 aggregate base, joint filler, open cell foam joint seal, and all other appurtenances and incidental work as shown on this sheet, complete in place, will be considered completely covered by the contract unit price for Bridge Approach Slab (Minor) per square yard.

See Missouri Standard Plan 609.00 for details of Type A curb.

Drain pipe may be either 6" diameter corrugated metallic-coated pipe underdrain, 4" diameter corrugated polyvinyl chloride (PVC) drain pipe, or 4" diameter corrugated polyethylene (PE) drain pipe.

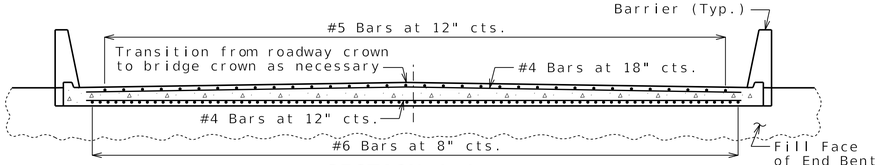
For details of Open Cell Foam Joint, see Sheet No. 7.

* Seal joint between vertical face of approach slab and barrier at end bent with sealant in accordance with Sec 717 for silicone joint sealant for saw cut and formed joints.

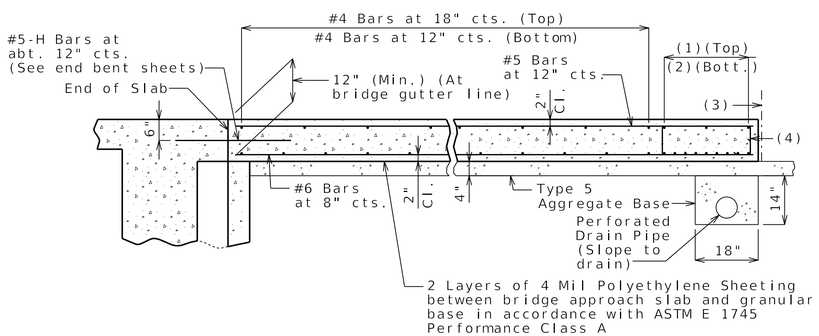
General Notes:

The contractor shall pour and satisfactorily finish the bridge slab before placing the bridge approach slab.

Asphalt bridge approach slabs are not permitted.



SECTION A-A
With the approval of the engineer, the contractor may crown the bottom of the approach slab to match the crown of the roadway surface.



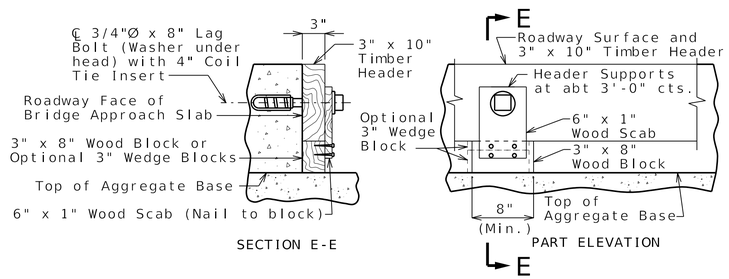
SECTION B-B
(Integral end bent)

(1) 3-#4 Bars

(2) 9-#4 Bars

(3) ℄ Open Cell Foam Joint

(4) #4 Stirrup Bars at abt. 12" cts.; 2'-0"x 8" (Min.) out to out; Actual length = 5'-10" (Min.); 90° stirrup hook at bottom; Stirrup height (8") and actual length vary due to crown.



DETAILS OF TIMBER HEADER
Remove timber header when concrete pavement is placed.

CALEIGH RUETHER
NUMBER PE-2023031778
9.29.25
STATE OF MISSOURI
PROFESSIONAL ENGINEER

DATE

DATE PREPARED
9/29/2025

ROUTE	STATE
AA	MO
DISTRICT	SHEET NO.
BR	10

COUNTY
COLE

JOB NO.
J5S3551

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
R04451

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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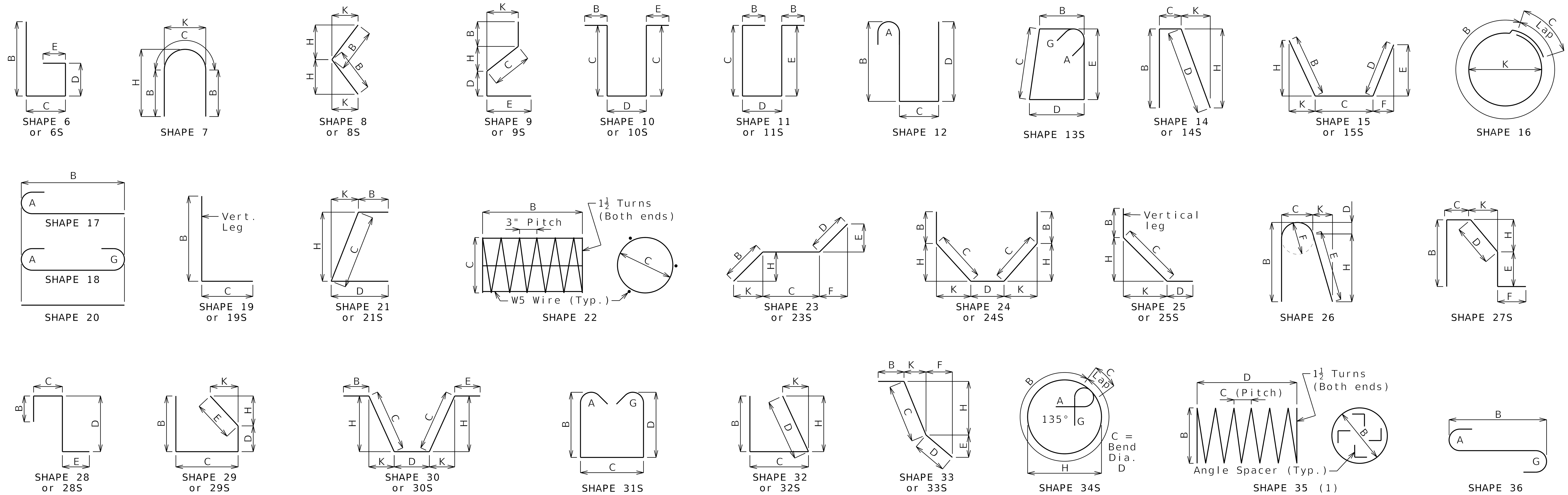
ROUTE AA OVER SOUTH MOREAU CREEK

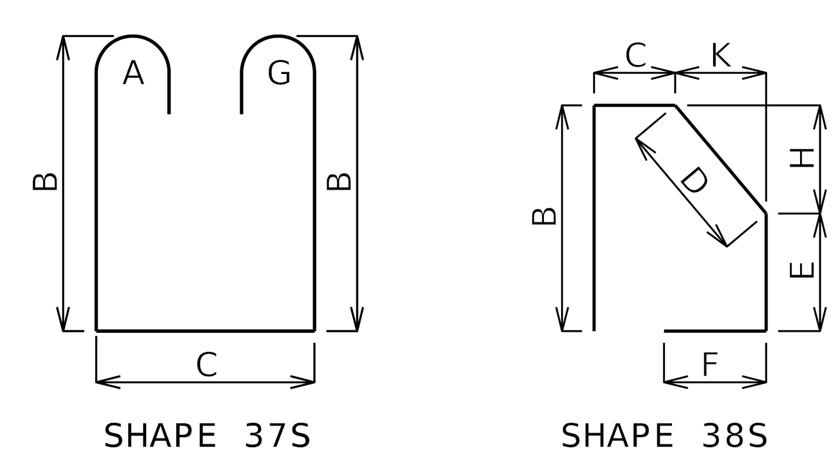
APPROACH SLAB (MINOR ROAD)

Designed: JUL 2025
Detailed: JUL 2025
Checked: AUG 2025

CONCRETE BRIDGE APPROACH SLAB (MINOR)

Note: This drawing is not to scale. Follow dimensions.





BENDING DIAGRAMS

All dimensions are out to out.

Shapes ending with an S shall be bent in accordance with stirrup pin bend shapes.

Unless otherwise noted, finished bending diameter D is the same for all bends of a shape.

(1) Shall be a deformed or plain spiral bar or wire.

Four angle or channel spacers are required for each column spiral. Spacers are to be placed on inside of spirals. Length and weight of column spirals do not include splices or spacers.

Finished Bend Diameters D and Hook Dimensions

Standard Pin Bend Shapes

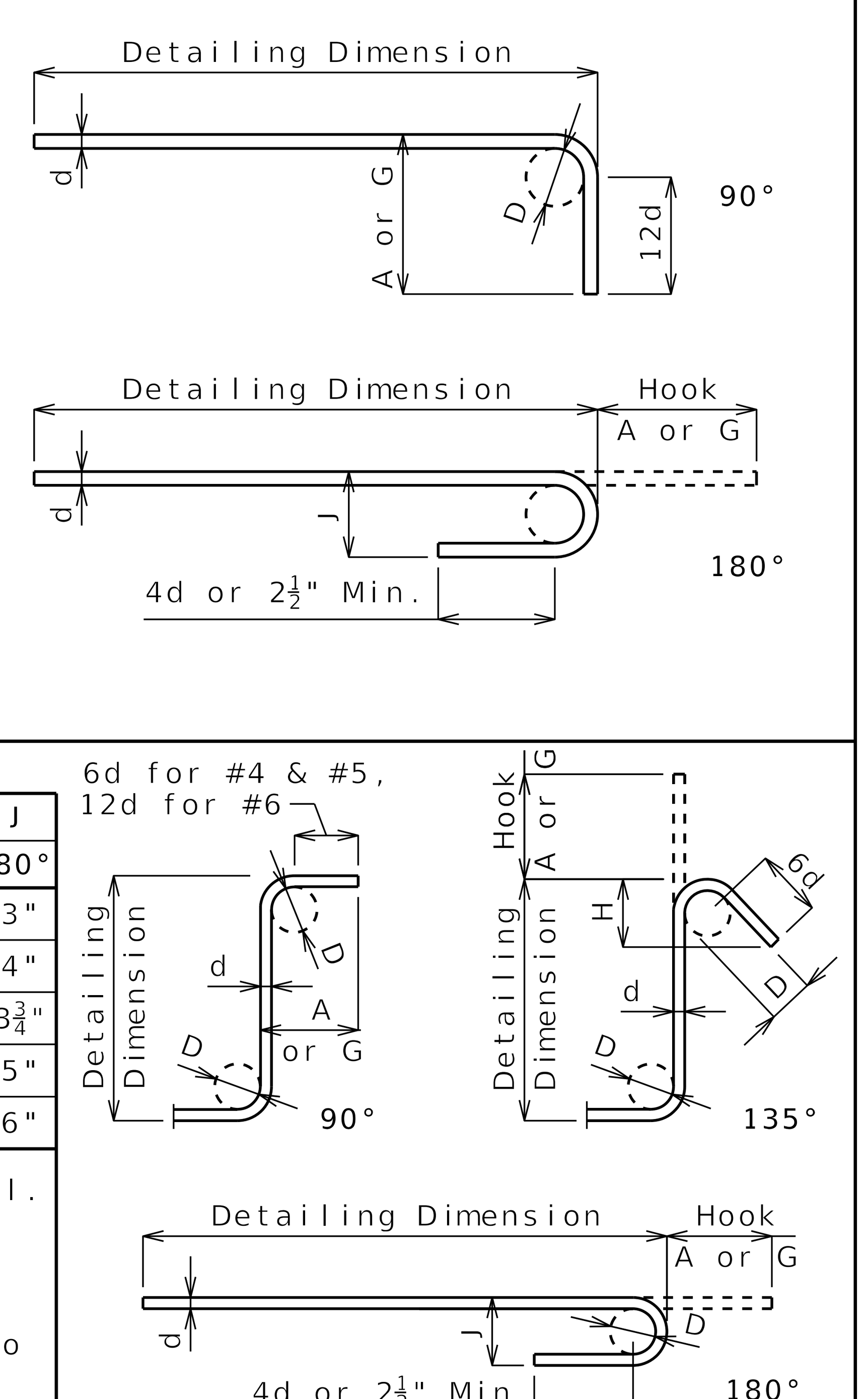
Size	Case	D	A or G 90°	A or G 180°	J 180°
#4	1	3"	8"	6"	4"
#5	1	3¾"	10"	7"	5"
#6	1	4½"	12"	8¼"	6"
#7	2	5¼"	14"	9¾"	7"
	3	7"	15"	11½"	8¾"
#8	2	6"	16"	11"	8"
	3	8"	17"	13¼"	10"
#9	1	9½"	19½"	15½"	11¾"
#10	1	10¾"	22"	17½"	13¼"
#11	1	12"	24½"	19½"	14⅞"
#14	1	18¼"	31¼"	27½"	21⅝"
#18	1	24"	41½"	36¼"	28½"

Stirrup Pin Bend Shapes (S)

Size	Case	D	A or G 90°	A or G 135°	A or G 180°	H 135°	J 180°
#4	2	2"	4½"	4½"	5"	2⅞"	3"
	3	3"	5"	5¼"	6"	3"	4"
#5	2	2½"	5¾"	5¾"	5¾"	3⅝"	3¾"
	3	3¾"	6¼"	6½"	7"	3⅞"	5"
#6	1	4½"	12"	7¾"	8¼"	4⅝"	6"

Applicable for all grades of steel.

Case 1 applies to all reinforcement. Case 2 applies to all reinforcement except for galvanized bars. Case 3 applies to galvanized bars only.



Reinforcing Steel Totals (Pounds)

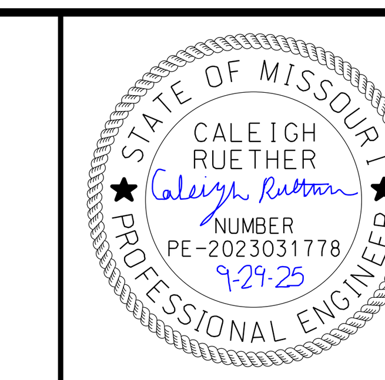
	Size	Substructure Plain	Substructure Epoxy	Superstructure Slab Plain	Superstructure Slab Epoxy	Superstructure Barrier	Superstructure Slip Form	Entire Bridge Plain	Entire Bridge Epoxy
By Size	W5	0	0	0	0	0	0	0	0
	4	0	0	0	499	0	0	0	499
	5	0	0	0	31,366	10,620	501	0	42,487
	6	0	0	0	21,168	0	0	0	21,168
	7	0	0	0	0	0	0	0	0
	8	0	0	0	0	0	0	0	0
	9	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0
	11	0	0	0	0	0	0	0	0
	14	0	0	0	0	0	0	0	0
	18	0	0	0	0	0	0	0	0
By Type		0	0	0	53,033	10,620	501	0	64,154

All superstructure reinforcing steel shall be epoxy coated unless otherwise specified.

Designed: JUL 2025
Detailed: JUL 2025
Checked: AUG 2025

BENDING DIAGRAMS AND REINFORCING STEEL TOTALS

Note: This drawing is not to scale. Follow dimensions.



DATE

DATE PREPARED 9/29/2025

ROUTE	STATE
AA	MO
DISTRICT	SHEET NO.
BR	11

COUNTY: COLE

JOB NO.: J5S3551

CONTRACT ID.

PROJECT NO.

BRIDGE NO.: R04451

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

HORNER SHIFRIN

ROUTE AA OVER SOUTH MOREAU CREEK

BENDING DIAGRAMS AND REINFORCING STEEL TOTALS

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Bill of Reinforcing Steel

No. Req.	Size/ Mark	Location	Codes C	SH	V	Dimensions B ft in.	C ft in.	D ft in.	E ft in.	F ft in.	H ft in.	K ft in.	Nom. Length ft in.	Actual Length ft in.	Weight lb
		SUPERSTRUCTURE													
		END BENTS													
20	5 H10	DIAPHRAGM	E	21			1 2.000	15 6.000			1 1.500	0 3.500	16 8	16 5	342
20	5 H11	DIAPHRAGM	E	23		1 2.000	15 6.000				1 1.500	0 3.500	16 8	16 5	342
6	5 H12	APP NOTCH	E	20		24 7.000							24 7	24 7	154
52	5 H13	APP NOTCH	E	20		3 0.000							3 0	3 0	163
54	4 U10	DIAPHRAGM	E	10S			3 2.000	1 6.500					7 11	7 8	277
54	4 U11	DIAPHRAGM	E	6S		3 2.000	2 7.000	0 7.000					6 4	6 2	222
		SLAB													
295	5 S1	SLAB	E	20		53 4.000							53 4	53 4	16410
80	6 S2	SLAB	E	20		50 9.000							50 9	50 9	6098
369	6 S3	SLAB	E	20		26 5.000							26 5	26 5	14641
493	5 S4	SLAB	E	20		26 5.000							26 5	26 1	13583
20	6 S5	SLAB	E	20	2	3 1.000							3 1	3	
		INCREMENT =				25 6.000							25 6	25 6	429
		2 FT 5.875 IN													
26	5 S6	SLAB	E	20	2	2 6.000							2 6	2 6	
		INCREMENT =				24 11.000							24 11	24 11	372
		1 FT 10.375 IN													
		TYPE H													
		BARRIER													
20	5 K1	BARRIER	E	27S		1 8.750	0 9.250	0 5.375	1 3.000	1 0.000	0 5.250	0 1.000	5 2	4 11	103
28	5 K2	BARRIER	E	27S		1 8.750	0 9.250	1 5.250	0 3.250	1 0.000	1 5.000	0 3.250	5 3	4 11	144
	K3	NOT USED													
48	5 K4	BARRIER	E	19S		2 5.000	0 10.000						3 3	3 2	159
20	5 K5	BARRIER	E	38S				1 7.250	0 9.250	0 8.250	1 6.750	0 4.250	3 1	2 11	61
28	5 K6	BARRIER	E	21S			2 4.875	0 10.000			2 4.250	0 6.000	3 3	3 0	88
56	5 K7	BARRIER	E	20		7 1.000							7 1	7 1	414
498	5 R1	BARRIER	E	14S		2 5.000	0 6.500	2 5.500			2 5.000	0 5.500	5 5	5 3	2727
498	5 R2	BARRIER	E	19S		1 6.750	0 9.500						2 4	2 3	1169
498	5 R3	BARRIER	E	27S			0 9.500	1 3.250	0 3.250	1 0.000	1 3.000	0 3.000	3 4	3 2	1645
16	5 R4	BARRIER	E	20		60 0.000							60 0	60 0	1001
64	5 R5	BARRIER	E	20		11 9.000							11 9	11 9	784
32	5 R6	BARRIER	E	20		39 8.000							39 8	39 8	1324
16	5 R7	BARRIER	E	20		60 0.000							60 0	60 0	1001
		SLIP FORM													
		OPTION													
40	5 C1	SLIP FORM	E	20		12 0.000							12 0	12 0	501

Bill of Reinforcing Steel

No. Req.	Size/ Mark	Location	Codes C	SH	V	Dimensions B ft in.	C ft in.	D ft in.	E ft in.	F ft in.	H ft in.	K ft in.	Nom. Length ft in.	Actual Length ft in.	Weight lb

Nominal lengths are based on out to out dimensions shown in bending diagrams and are listed to the nearest inch for fabricator's use. Actual lengths are measured along centerline bar to the nearest inch. Weights are based on actual lengths.

For bending diagrams and steel reinforcing totals, see Sheet No. 11.
Designed: JUL 2025
Detailed: JUL 2025
Checked: AUG 2025

All bars shall be Grade 60.

BILL OF REINFORCING STEEL

Note: This drawing is not to scale. Follow dimensions.

Sheet No.12 of 12

Codes: C = Required coatings, where E = Epoxy Coated and G = Galvanized.

SH = Required shape, see bending diagrams.

V = Sets of varied bars and number of bars of each length. Bar dimensions vary in equal increments between dimensions shown on this line and the following line and the actual length dimension shown on this line and the following line vary by the specified increment.

STATE OF MISSOURI
CALEIGH RUETHER
NUMBER PE-2023031778
9.29.25
PROFESSIONAL ENGINEER

DATE

DATE PREPARED
9/29/2025

ROUTE: AA
STATE: MO
DISTRICT: BR
SHEET NO.: 12
COUNTY: COLE
JOB NO.: J5S3551
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: R04451

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

HORNER SHIFRIN
400 S. 18TH ST., STE. 400 ST. LOUIS, MO 63103-2296
314-231-4321 • FAX: 314-231-4666 • WWW.HORNERSHIFRIN.COM
DISCIPLINE: PROFESSIONAL ENGINEERING
CERTIFICATE OF AUTHORITY: 000158

ROUTE AA OVER SOUTH MOREAU CREEK

BILL OF REINFORCING STEEL

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