DESIGN DESIGNATION

A.A.D.T. - 2024 = 3,815
A.A.D.T. - 2044 = 7,248
D.H.V. = 8.55%
T = 15.3%
V = 55 M.P.H.
DD = 49.9%/50.1%
FUNCTIONAL CLASSIFICATION- PRINCIPAL ARTERIAL

NO RIGHT OF WAY
ACQUISITION REQUIRED

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	D	
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	

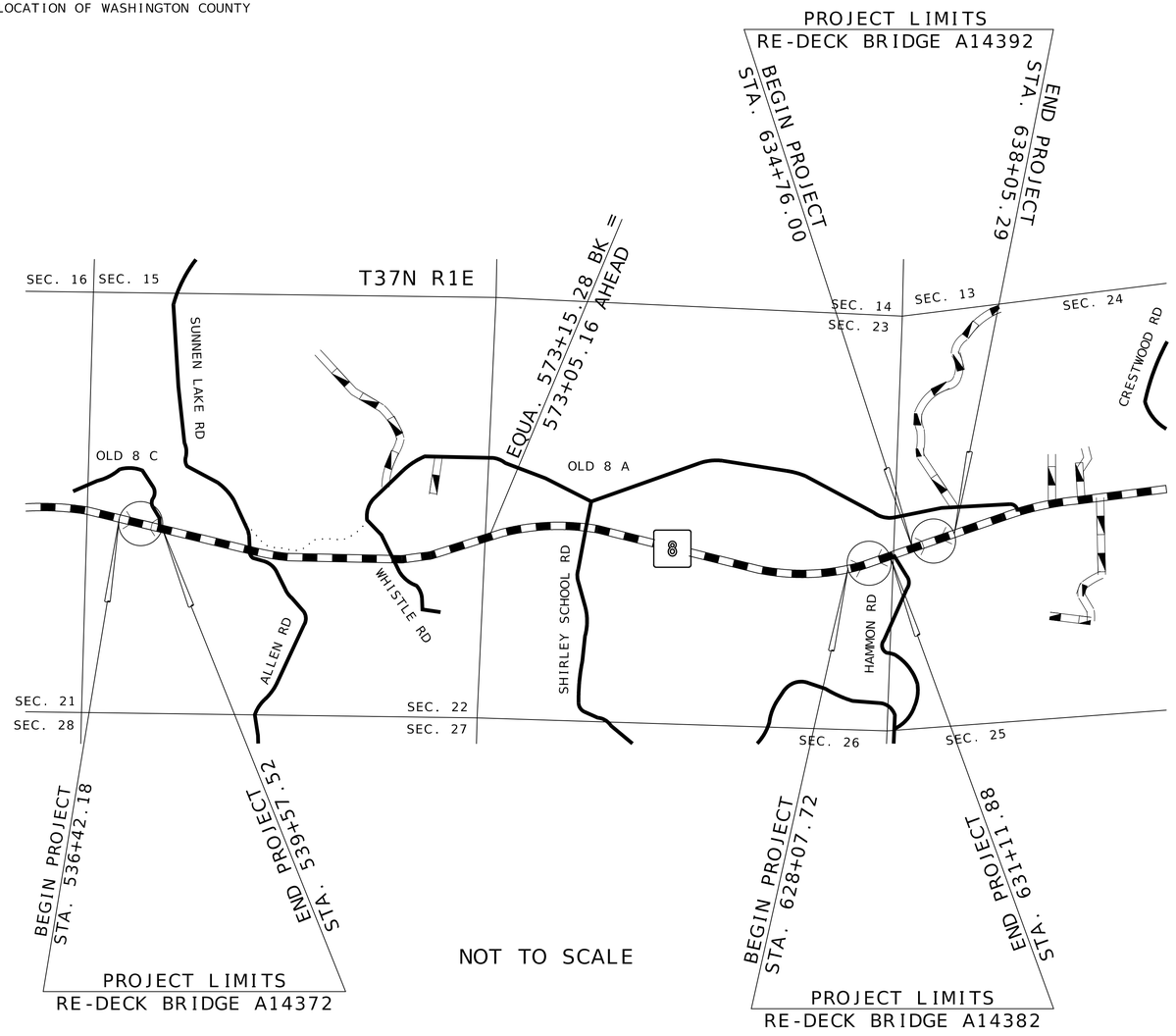
NOTE: DASHED OR OPEN SYMBOLS INDICATE EXISTING FEATURES

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

PLANS FOR PROPOSED STATE HIGHWAY

WASHINGTON COUNTY FINAL PLANS

KEY MAP
LOCATION OF WASHINGTON COUNTY



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 COMMISSION "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

DESCRIPTION	SHEET NUMBER
TITLE SHEET	1
TYPICAL SECTIONS (TS) (3 SHEETS)	2
QUANTITIES (QU) (3 SHEETS)	3
PLAN-PROFILE (PP)	4-6
TRAFFIC CONTROL SHEETS (TC)	7-16
EROSION CONTROL SHEETS (EC)	17-19
PAVEMENT MARKING (PM)	20-22
BRIDGE DRAWINGS (B)	
A14372	1-13
A14382	1-13
A14392	1-14

LENGTH OF PROJECT

BRIDGE NO. A1437:		
BEGINNING OF PROJECT	STA. 536 + 42.18	
END OF PROJECT	STA. 539 + 57.52	
APPARENT LENGTH	315.34	FEET
BRDIGE NO. A1438:		
BEGINNING OF PROJECT	STA. 628 + 07.72	
END OF PROJECT	STA. 631 + 11.88	
APPARENT LENGTH	304.16	FEET
BRIDGE NO. A1439:		
BEGINNING OF PROJECT	STA. 634 + 76.00	
END OF PROJECT	STA. 638 + 05.29	
APPARENT LENGTH	329.29	FEET
NET LENGTH OF PROJECT	948.79	FEET
STATE LENGTH	0.180	MILES
FOR INFORMATION ONLY ESTIMATED DISTURBED ACRES	0.03	ACRES

STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

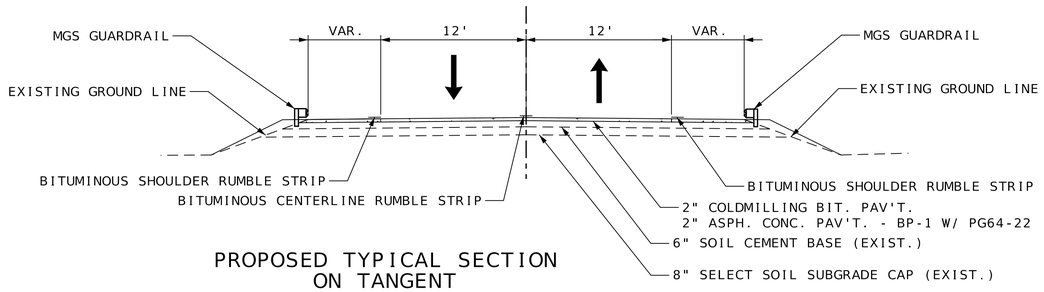
DATE PREPARED: 1/5/2026
ROUTE: 8 | STATE: MO
DISTRICT: CD | SHEET NO.: 1
COUNTY: WASHINGTON
JOB NO.: J5P3558
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

DESCRIPTION	DATE

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

Bartlett & West
601 MONROE ST. SUITE 201 - JEFFERSON CITY, MO 65101
PHONE 573-634-3181
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM

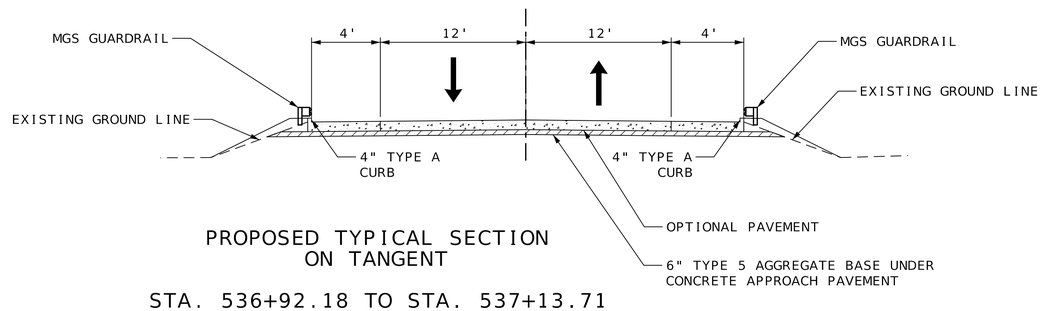
ROUTE 8 ℄



PROPOSED TYPICAL SECTION
ON TANGENT

STA. 536+42.18 TO STA. 536+92.18
STA. 539+07.52 TO STA. 539+57.52
STA. 628+07.72 TO STA. 628+57.72
STA. 630+61.88 TO STA. 631+11.88
STA. 634+76.00 TO STA. 635+26.00
STA. 637+55.29 TO STA. 638+05.29

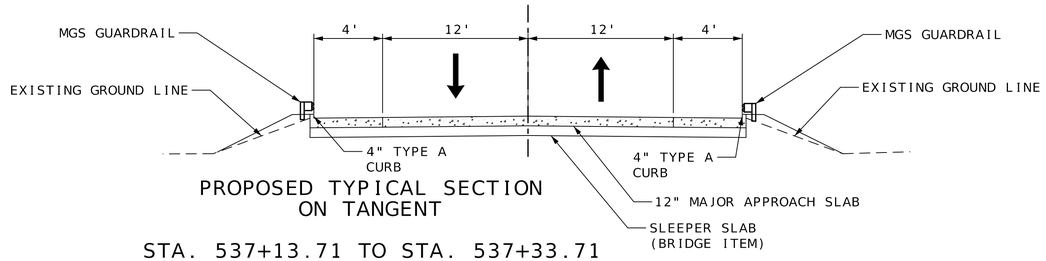
ROUTE 8 ℄



PROPOSED TYPICAL SECTION
ON TANGENT

STA. 536+92.18 TO STA. 537+13.71
STA. 538+86.70 TO STA. 539+57.52
STA. 628+57.72 TO STA. 628+77.01
STA. 630+42.59 TO STA. 631+11.88
STA. 636+26.00 TO STA. 635+57.00
STA. 637+24.44 TO STA. 638+05.29

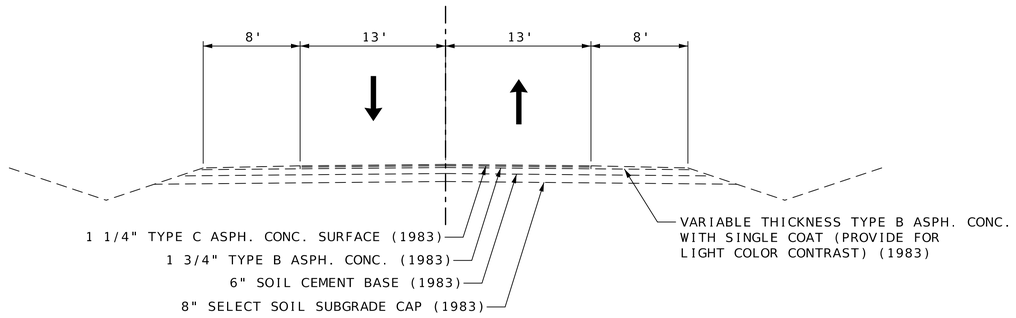
ROUTE 8 ℄



PROPOSED TYPICAL SECTION
ON TANGENT

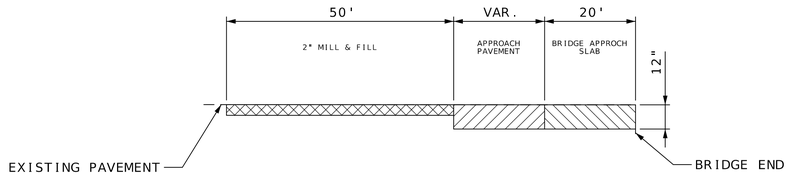
STA. 537+13.71 TO STA. 537+33.71
STA. 538+66.70 TO STA. 538+86.70
STA. 628+77.01 TO STA. 628+97.01
STA. 630+22.59 TO STA. 630+42.59
STA. 635+57.00 TO STA. 635+77.00
STA. 637+44.44 TO STA. 637+24.44

ROUTE 8 ℄



EXISTING TYPICAL SECTION
ON TANGENT

STA. 536+42.18 TO STA. 539+57.52
STA. 628+07.72 TO STA. 631+11.88
STA. 634+76.00 TO STA. 638+05.29



MODIFIED DEPTH TRANSITION
AT BRIDGE ENDS

STA. 536+42.18 TO STA. 537+33.00
STA. 538+66.70 TO STA. 539+57.52
STA. 628+07.72 TO STA. 628+97.00
STA. 630+22.60 TO STA. 631+11.88
STA. 634+76.00 TO STA. 635+77.00
STA. 637+05.32 TO STA. 638+05.29

OPTIONAL PAVEMENT DESIGN			
BASE TYPE	HMA DESIGN	PCCP DESIGN	SHOULDERS
6" TYPE 5 AGGREGATE BASE	11" HMA 2" BP-1 W/PG 65-22 OVER 9" BB W/PG 64-22	8.5" PCCP 13.5 FT WIDE SLABS, 15 FT JOIN SPACING AND 1 1/4" DOWELS	FULL DEPTH OR A3

TYPICAL SECTION
SHEET 1 OF 3

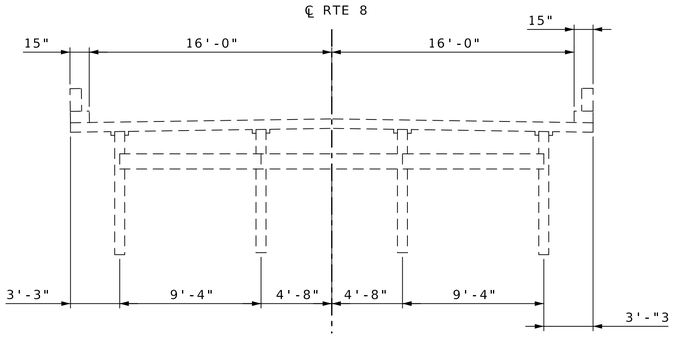
STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 1/4/2026
ROUTE 8 | STATE MO
DISTRICT CD | SHEET NO. 2
COUNTY WASHINGTON
JOB NO. J5P3558
CONTRACT ID. -
PROJECT NO. -
BRIDGE NO.

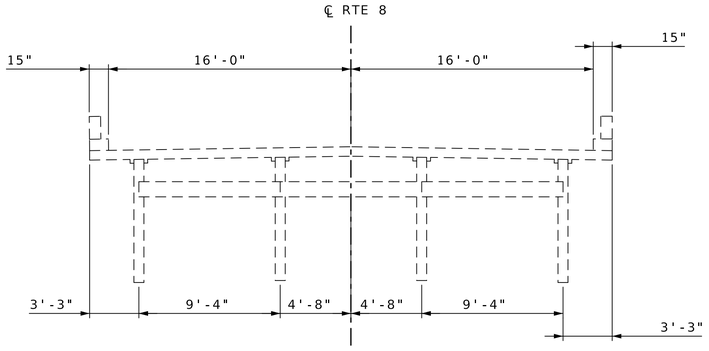
DESCRIPTION | DATE

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

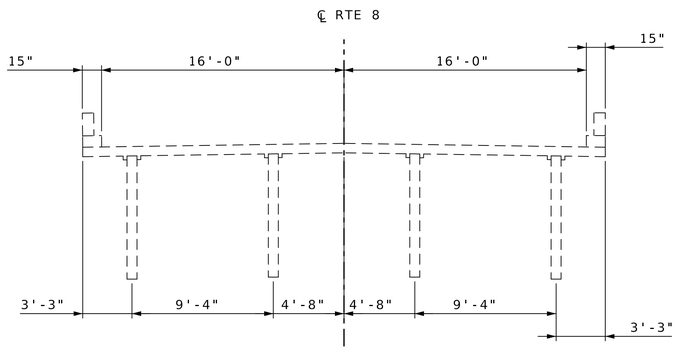
Bartlett & West
601 MONROE ST. SUITE 201 - JEFFERSON CITY, MO 65101
PHONE 573-634-3181
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM



EXISTING TYPICAL SECTION
ON BRIDGE A14372
STA. 537+33.00 TO STA. 538+66.70



EXISTING TYPICAL SECTION
ON BRIDGE A14382
STA. 628+97.00 TO STA. 630+22.60



EXISTING TYPICAL SECTION
ON BRIDGE A14392
STA. 635+77.00 TO STA. 637+04.44

TYPICAL SECTION
SHEET 2 OF 3

STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED
1/5/2026

ROUTE	STATE
8	MO
DISTRICT	SHEET NO.
CD	2

COUNTY
WASHINGTON

JOB NO.
J5P3558

CONTRACT ID.
-

PROJECT NO.
-

BRIDGE NO.

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

MoDOT

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

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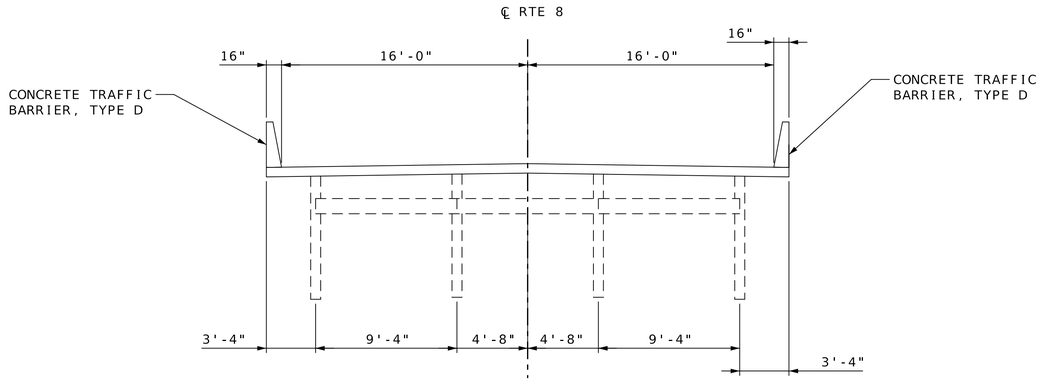
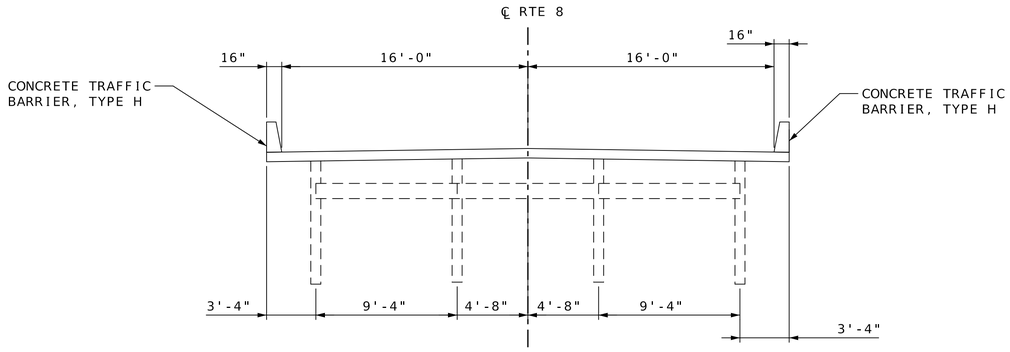
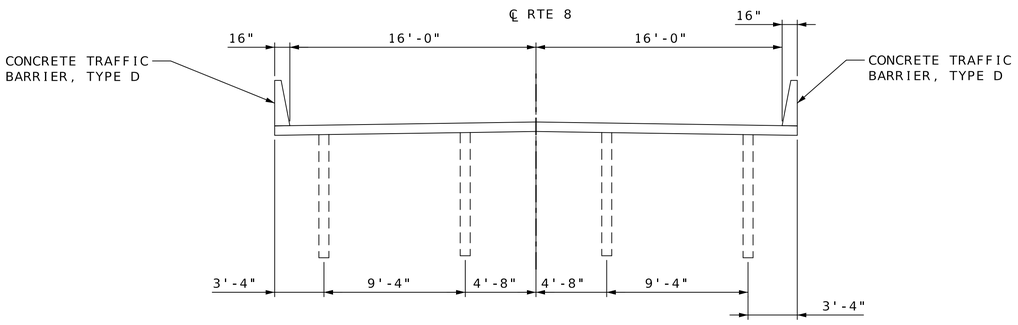


PROPOSED TYPICAL SECTION
ON BRIDGE A14372
STA. 537+33.00 TO STA. 538+66.70



PROPOSED TYPICAL SECTION
ON BRIDGE A14382
STA. 628+97.00 TO STA. 630+22.60



PROPOSED TYPICAL SECTION
ON BRIDGE A14392
STA. 635+74.69 TO STA. 637+04.44

TYPICAL SECTION
SHEET 3 OF 3

STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED
1/5/2026

ROUTE	STATE
8	MO
DISTRICT	SHEET NO.
CD	2

COUNTY
WASHINGTON

JOB NO.
J5P3558

CONTRACT ID.
-

PROJECT NO.
-

BRIDGE NO.

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
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MOBILIZATION
TOTAL = 1 LUMP SUM

CONTRACTOR FURNISHED SURVEYING AND STAKING
TOTAL = 1 LUMP SUM

REMOVAL OF IMPROVEMENTS							
ROUTE	STA.	STA.	LOCATION	BRIDGE #	DESCRIPTION	AMOUNT	REMARKS
8	535+00.00	541+00.00	RT	A14372	PAVEMENT MARKING	600 LF	
8	535+00.00	541+00.00	LT	A14372	PAVEMENT MARKING	601 LF	
8	535+00.00	541+00.00	CL	A14372	PAVEMENT MARKING	602 LF	
8	535+99.15	537+26.35	LT	A14372	GUARDRAIL	127.3 LF	INCLUDES CET & BRIDGE ANCHOR
8	536+14.43	537+39.65	RT	A14372	GUARDRAIL	125.3 LF	INCLUDES CET & BRIDGE ANCHOR
8	538+60.05	539+82.94	LT	A14372	GUARDRAIL	122.9 LF	INCLUDES CET & BRIDGE ANCHOR
8	538+73.35	539+97.26	RT	A14372	GUARDRAIL	123.9 LF	INCLUDES CET & BRIDGE ANCHOR
8		537+26.33	LT	A14372	SIGN	1 EA	
8		537+39.64	RT	A14372	SIGN	1 EA	
8		538+60.03	LT	A14372	SIGN	1 EA	
8		538+63.52	LT	A14372	SIGN	1 EA	
8		538+73.34	RT	A14372	SIGN	1 EA	
8	536+92.18	537+33.00	LT/RT	A14372	PAVEMENT	145.5 SY	INCLUDING APROACH SLAB
8	538+66.70	539+07.52	LT/RT	A14372	PAVEMENT	149.1 SY	INCLUDING APROACH SLAB
8	626+58.00	639+48.00	RT	A14382/A14392	PAVEMENT MARKING	1290 LF	EXISTING PAVEMENT MARKING
8	626+58.00	639+48.00	LT	A14382/A14392	PAVEMENT MARKING	1290 LF	EXISTING PAVEMENT MARKING
8	626+58.00	639+48.00	CL	A14382/A14392	PAVEMENT MARKING	1290 LF	EXISTING PAVEMENT MARKING
8	627+90.52	628+92.38	LT	A14382	GUARDRAIL	101.84 LF	INCLUDES CET & BRIDGE ANCHOR
8	627+76.58	629+01.61	RT	A14382	GUARDRAIL	125.2 LF	INCLUDES CET & BRIDGE ANCHOR
8	630+17.98	631+38.08	LT	A14382	GUARDRAIL	120.2 LF	INCLUDES CET & BRIDGE ANCHOR
8	630+26.89	630+62.37	RT	A14382	GUARDRAIL	46.2 LF	INCLUDES CET & BRIDGE ANCHOR
8		628+92.34	LT	A14382	SIGN	1 EA	
8		629+02.08	RT	A14382	SIGN	1 EA	
8		630+18.11	LT	A14382	SIGN	1 EA	
8		630+18.89	LT	A14382	SIGN	1 EA	
8		630+26.92	RT	A14382	SIGN	1 EA	
8	628+57.72	628+97.00	LT/RT	A14382	PAVEMENT	151.7 SY	INCLUDING APROACH SLAB
8	630+22.60	630+61.88	LT/RT	A14382	PAVEMENT	146.0 SY	INCLUDING APROACH SLAB
8	634+54.00	635+61.00	LT	A14392	GUARDRAIL	107.1 LF	INCLUDES CET & BRIDGE ANCHOR
8	634+65.32	635+93.00	RT	A14392	GUARDRAIL	127.7 LF	INCLUDES CET & BRIDGE ANCHOR
8	536+88.44	638+02.68	LT	A14392	GUARDRAIL	114.3 LF	INCLUDES CET & BRIDGE ANCHOR
8	637+20.44	638+35.20	RT	A14392	GUARDRAIL	114.9 LF	INCLUDES CET & BRIDGE ANCHOR
8		635+61.27	LT	A14392	SIGN	1 EA	
8		635+92.99	RT	A14392	SIGN	1 EA	
8		636+87.86	LT	A14392	SIGN	1 EA	
8		637+20.45	RT	A14392	SIGN	1 EA	
8	635+26.00	635+77.00	LT/RT	A14392	PAVEMENT	184.9 SY	INCLUDING APROACH SLAB
8	637+04.44	637+55.29	LT/RT	A14392	PAVEMENT	187.3 SY	INCLUDING APROACH SLAB
					TOTAL	1	LUMP SUM

SEED AND MULCH	
BRIDGE #	COOL SEASON GRASSES
	ACRES
A14372	0.19
A14382	0.17
A14392	0.16
TOTALS	0.5
USE	LUMP SUM
NOTE: TEMPORARY IS 25% OF PERMANENT (ROUNDED TO NEAREST 0.10 ACRE)	

PAVEMENT						
ROUTE	LOCATION	STA.	STA.	AGGR. BASE TYPE 5 6" THICKNESS	OPTIONAL PAVEMENT	REMARKS
				SY	SY	
8	LT/RT	536+92.18	537+13.00	74.0	74.0	
8	LT/RT	537+13.00	537+33.00			
8	LT/RT	538+86.70	539+07.52	74.0	74.0	
8	LT/RT	538+66.70	538+86.70			
8	LT/RT	628+57.72	628+77.01	68.6	68.6	
8	LT/RT	628+77.01	628+97.00			
8	LT/RT	630+22.60	630+42.59			
8	LT/RT	630+42.59	630+61.88	68.6	68.6	
8	LT/RT	635+26.00	635+57.00	110.2	110.2	
8	LT/RT	635+57.00	635+77.00			
8	LT/RT	637+04.44	637+24.44			
8	LT/RT	637+24.44	637+55.29	109.4	109.4	
			TOTAL	504.8	504.8	
			PAY TOTAL	505	505	

RUMBLE STRIP						
ROUTE	LOCATION	STA.	STA.	BITUMINOUS SHOULDER RUMBLE STRIP	BITUMINOUS CENTERLINE RUMBLE STRIP	REMARKS
				STA	STA	
8	LT/RT	536+42.18	536+92.18	1.0	0.5	
8	LT/RT	539+07.52	539+57.52	1.0	0.5	
8	LT/RT	628+07.72	628+57.72	1.0	0.5	
8	LT/RT	630+61.88	631+11.88	1.0	0.5	
8	LT/RT	634+76.00	635+25.00	1.0	0.5	
8	LT/RT	637+55.29	638+05.29	1.0	0.5	
			TOTAL	6.0	3.0	
			PAY TOTAL	6	3	

SUMMARY OF QUANTITIES
SHEET 1 OF 3

STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED: 1/5/2026
ROUTE: 8 | STATE: MO
DISTRICT: CD | SHEET NO.: 3
COUNTY: WASHINGTON
JOB NO.: J5P3558
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)

Bartlett & West
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MILL AND RESURFACING

ROUTE	LOCATION	STA.	STA.	2" COLDMILL BIT. PAV'T.	2" ASPHALT CONCRETE PAVEMENT BP-1 w/PG 64-22	TACK COAT	REMARKS
				SY	1.948(TON/YD³)	0.1(GAL/YD²)	
8	LT/RT	536+42.18	536+92.18	183.8	19.89	18.4	
8	LT/RT	539+07.52	539+57.52	183.1	19.81	18.3	
8	LT/RT	628+07.72	628+57.72	189.5	20.51	19.0	
8	LT/RT	630+46.88	631+11.88	150.5	16.29	15.1	
8	LT/RT	630+61.88	631+11.88	183.2	19.83	18.3	
8	LT/RT	634+76.00	635+26.00	184.5	19.97	18.5	
8	LT/RT	637+55.29	638+05.29	188.7	20.42	18.9	
			TOTAL	1263.3	136.7	126.5	
			PAY TOTAL	1263	137	127	

SHAPING SLOPES

ROUTE	LOCATION	STA	STA	CLASS 3	REMARKS
				100 FT	
8	LT	536+46.31	537+27.13	1	
8	RT	536+65.49	537+38.82	1	
8	LT	538+60.88	539+31.88	1	
8	RT	538+72.52	539+48.42	1	
8	LT	628+41.87	628+92.71	1	
8	RT	628+27.79	629+01.28	1	
8	LT	630+18.31	630+89.67	1	
8	RT	630+26.89	630+62.54	1	
8	LT	635+05.13	635+61.00	1	
8	RT	635+16.28	635+93.00	1	
8	LT	636+88.44	637+51.56	1	
8	RT	637+20.44	637+84.10	1	
			TOTAL	12	
			USE	12	

GUARDRAIL

ROUTE	STA.	STA.	LOCATION	MGS GUARDRAIL	TYPE A GUARDRAIL	MGS BRIDGE APPROACH TRANSITION SECTION (EXTENDED CURB)	TYPE A CRASHWORTHY END TERMINAL	ASYMMETRICAL TRANSITION SECTION 6.5 FT. POSTS	END ANCHOR	REMARKS
				LF	LF	EA	EA	EA	EA	
8	536+46.31	537+27.13	LT	75.00		1	1			BR A14372
8	536+65.49	537+38.82	RT	62.50		1	1			BR A14372
8	538+60.88	539+31.88	LT	62.50		1	1			BR A14372
8	538+72.52	539+48.42	RT	62.50		1	1			BR A14372
8	628+41.87	628+92.71	LT	37.50		1	1			BR A14382
8	628+27.79	629+01.28	RT	62.50		1	1			BR A14382
8	630+18.31	630+89.67	LT	62.50		1	1			BR A14382
8	630+26.89	630+62.54	RT		37.50	1		1	1	BR A14382
8	635+05.13	635+61.00	LT	50.00		1	1			BR A14392
8	635+16.28	635+93.00	RT	62.50		1	1			BR A14392
8	636+88.44	637+51.56	LT	50.00		1	1			BR A14392
8	637+20.44	637+84.10	RT	50.00		1	1			BR A14392
			TOTAL	637.5	37.5	12.0	11.0	1.0	1.0	
			PAY TOTAL	638	38	12	11	1	1	

TEMP. EROSION CONTROL

ROUTE	LOC.	SILT FENCE	ROCK DITCH CHECKS	SEDIMENT REMOVAL	REMARKS
		LF	LF	CY	
8	LT/RT	890.0	64	13	BR A14372
8	LT/RT	698.0	48	10	BR A14382
8	LT/RT	704.0	64	11	BR A14392
	TOTAL	2292.0	176.0	34.0	
	USE	2292	176	34	

NOTE: SEDIMENT REMOVAL IS BASED ON 1 CY PER DITCH CHECK AND 1 CY PER 100 LF OF SILT FENCE.

DRAIN BASIN

ROUTE	LOCATION	BRIDGE #	DRAIN BASIN	REMARKS
			EA	
8	LT/RT	A14372	4	
8	LT/RT	A14382	3	
8	LT/RT	A14392	4	
TOTAL			11	
USE			11	

PAVEMENT MARKING (TEMPORARY)

ROUTE	LOCATION	STA.	STA.	4 IN. WHITE TEMPORARY REMOVABLE MARKING TYPE	PAVEMENT MARKING REMOVAL	24 IN. WHITE COLD APPLIED TAPE PAVEMENT MARKING	REMARKS
				LF	LF	LF	
8	RT	532+75.00				12.0	BR A14372
8	LT	542+25.00				12.0	BR A14372
8	RT	624+31.90				12.0	BR A14382
8	LT	641+73.12				12.0	BR A14392
8	RT	535+00.00	541+00.00	600.0	600.0		BR A14372 STAGE 1
8	LT	535+00.00	541+00.00	600.0	600.0		BR A14372 STAGE 1
8	LT	535+00.00	541+00.00	600.0	600.0		BR A14372 STAGE 2
8	RT	535+00.00	541+00.00	600.0	600.0		BR A14372 STAGE 2
8	LT	626+58.00	632+50.00	592.0	592.0		BR A14382 STAGE 1
8	RT	626+58.00	630+43.00	385.0	385.0		BR A14382 STAGE 1
8	RT	631+50.00	639+48.00	798.0	798.0		BR A14392 STAGE 1
8	LT	633+26.00	639+48.00	622.0	622.0		BR A14392 STAGE 1
8	LT	626+58.00	639+48.00	1290.0	1290.0		BR A14382/A14392 STAGE 2
8	RT	626+58.00	632+49.00	591.0	591.0		BR A14382 STAGE 2
8	RT	633+25.00	639+48.00	623.0	623.0		BR A14392 STAGE 2
			TOTAL	7301	7301	48	
			USE	7301	7301	48	

PAVEMENT MARKING (PERMANENT)

ROUTE	LOCATION	STA.	STA.	4 IN. WHITE CLASS 1 PAVEMENT MARKING PAINT (18-MIL, TYPE P BEADS)	4 IN. YELLOW CLASS 1 PAVEMENT MARKING PAINT (18-MIL, TYPE P BEADS)	REMARKS
				LF	LF	
8	LT/RT	535+00.00	541+00.00	1200.0	750.0	BR A14372
8	LT/RT	626+58.00	639+48.00	2580.0	1612.5	BR A14382 & BR A14392
			TOTAL	3780	2363	
			USE	3780	2363	

SUMMARY OF QUANTITIES
SHEET 2 OF 3

STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 1/6/2026
ROUTE 8 | STATE MO
DISTRICT CD | SHEET NO. 3
COUNTY WASHINGTON
JOB NO. J5P3558
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)

Bartlett & West
601 MONROE ST. SUITE 201 - JEFFERSON CITY, MO 65101
PHONE 573-634-3181
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM

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	2	32.00			34	SIGNAL AHEAD (SYMBOL)
WO3-4	48X48	16.00	2	32.00			32	BE PREPARED TO STOP
WO3-5	48X48	16.00	2	32.00			3	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	4	64.00			2	ROAD/BRIDGE/RAMP WORK AHEAD
WO20-2	48X48	16.00						DETOUR AHEAD
WO20-3	48X48	16.00						ROAD CLOSED AHEAD
WO20-4	48X48	16.00	2	32.00			31	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	2	32.00			6	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	2	20.00			1	ROAD WORK NEXT XX MILES
GO20-2	48X24	8.00	2	16.00			26	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	2	12.00			54	WORK ZONE (PLAQUE)
MO4-8a	24X18	3.00						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	2	24.00			4	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	2	12.00			33	STOP HERE ON RED (45^ ARROW)
R11-2	48X30	10.00						ROAD CLOSED
R11-3a	60X30	12.50						ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY
R11-4	60X30	12.50						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	2	64.00			56	POINT OF PRESENCE
CONST-8	48X36	12.00	2	24.00			55	WORK ZONE NO PHONE ZONE

616-10.05 CONSTRUCTION SIGNS	TOTAL
	396.0

616-10.10 RELOCATED SIGNS	TOTAL
	256.0

NOTE: SIGN AND DEVICE LOCATIONS WILL BE VERIFIED AND APPROVED BY THE ENGINEER.

ALL TRAFFIC CONTROL IS INCLUDED IN PAY ITEM 616-99.01. LUMP SUM TEMPORARY TRAFFIC CONTROL UNLESS NOTED OTHERWISE IN THE PLANS. THESE QUANTITIES ARE ONLY AN ESTIMATE AND ARE SUBJECT TO CHANGE BASED UPON FIELD CONDITIONS.

** NOT INCLUDED IN LUMP SUM TRAFFIC CONTROL QUANTITY

EFFECTIVE: 07-01-2025

ITEM NUMBER	TOTAL QTY	DESCRIPTION
6122008		IMPACT ATTENUATOR 40 MPH (SAND BARRELS)
6122009	6**	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	6**	REPLACEMENT SAND BARREL
6122030	6**	IMPACT ATTENUATOR (RELOCATION)
6122040		WORK ZONE CRASH CUSHION (NARROW)
6122041		WORK ZONE CRASH CUSHION (RELOCATION)
6123001	1**	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	50	CHANNELIZER (TRIM-LINE)
6161026		CHANNELIZER (VERTICAL PANEL)
6161030		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		CHANGEABLE MESSAGE SIGN WITHOUT COMM. INTERFACE, CONTRACTOR FURNISHED/RETAINED
6161099	2**	CHANGEABLE MESSAGE SIGN WITH COMM. INTERFACE, CONTRACTOR FURNISHED/RETAINED
6162000A	2**	WORK ZONE TRAFFIC SIGNAL SYSTEM
6162002	8**	TEMPORARY LONG-TERM RUMBLE STRIPS
6173600D		TEMPORARY TRAFFIC BARRIER, CONTRACTOR FURNISHED/RETAINED
6173700B	1037.5**	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	2100**	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
6169902	1**	DRIVEWAY ASSISTANCE DEVICE

6169901	1	LUMP SUM TEMPORARY TRAFFIC CONTROL

SUMMARY OF QUANTITIES
SHEET 3 OF 3

STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED: 1/7/2026

ROUTE	STATE
8	MO

DISTRICT	SHEET NO.
CD	3

COUNTY: WASHINGTON

JOB NO.: J5P3558

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)

Bartlett & West
601 MONROE ST. SUITE 201 - JEFFERSON CITY, MO 65101
PHONE 573-634-3181
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM

¼ NW ¼ SW SECTION 22
T37N R1E

¼ ¼ SECTION LINE

+80.00
230.00'

+40.00
255.00'

¼ NE ¼ SW SECTION 22
T37N R1E

PERM DRAINAGE ESM'T (EXIST.)

BERGER, KELLY & BRENDA & NILA
NO R/W ACQUISITIONS

FOURCHE VALLEY CHARITABLE TR
NO R/W ACQUISITIONS

535

EXIST. R/W

+39.61
78.20'

+09.61
78.55'

STA. 537+33.00 TO STA. 538+66.70
U.I.P. & REDECK EXIST. BRIDGE NO. A1437
30' ROADWAY,
42" TYPE D BARRIER CURB

540

+00.00

EXIST. R/W

BEGIN GUARDRAIL
+36.86

DRAIN BASIN

+07.18

TYPE A CURB

(R)

+92.18

BEGIN PAVEMENT
536+42.18

℄ RTE 8
S76°08'00"E

MILL & FILL

(R)

DRAIN BASIN

+26.65

TYPE A CURB

(R)

BRIDGE APPROACH
SLAB (MAJOR)

BEGIN GUARDRAIL
+56.52

EXIST. R/W

OPTIONAL APPROACH
PAVEMENT

+75.00
100.00'

DRAIN BASIN

+80.88

TYPE A CURB

+07.52

(R)

END GUARDRAIL
+41.97

END PAVEMENT
539+57.52

MILL & FILL

(R)

BRIDGE APPROACH
SLAB (MAJOR)

+11.65

TYPE A CURB

END GUARDRAIL
+58.40

(R)

OPTIONAL APPROACH
PAVEMENT

DRAIN BASIN

+70.00
88.31'

EXIST. R/W

+00.00
60.00'

WOODS, BRUCE A & KATHLEEN S
NO R/W ACQUISITIONS

PERM DRAINAGE ESM'T (EXIST.)

+90.00
250.00'

+40.00
220.00'

¼ ¼ SECTION LINE

NOTES:
1. ANY WORK INDICATED ON THE PLANS THAT EXTENDS BEYOND THE PROJECT LIMITS IS CONSIDERED INCIDENTAL TO AND A PART OF THE CONSTRUCTION OF THIS PROJECT.
2. RIGHT OF WAY FOR THIS PROJECT EXTENDS FROM STA. 535+00.00 TO STA. 541+00.00 A DISTANCE OF 0.114 MILES.
3. ALL BEARING SHOWN ARE MODIFIED STATE PLAN BEARING. NAD83 CENTRAL ZONE.
4. THE APPROXIMATE LOCATION OF PROPERTY LINES AS SHOWN ON THE PLANS ARE BASED ON THE BEST INFORMATION AVAILABLE TO COMMISSION AT THIS TIME. THIS INFORMATION IS PROVIDED BY COMMISSION "AS-IS" AND THE COMMISSION EXPRESSLY DISCLAIMS ANY REPRESENTATION OR WARRANTY AS TO THE COMPLETENESS. ACCURACY, OR SUITABILITY OF THE INFORMATION FOR ANY USE. PROPERTY LINE LOCATIONS HAVE NOT BEEN SURVEYED AND ARE SHOWN ON THE PLANS FOR INFORMATIONAL PURPOSES ONLY.
5. FOR STORMWATER DISCHARGES AND TEMPORARY EROSION CONTROL. THE PROJECT OUTLETS INTO ALLEN BRANCH.

SCALE
0 30 60 90

PLAN SHEET
SHEET 1 OF 3

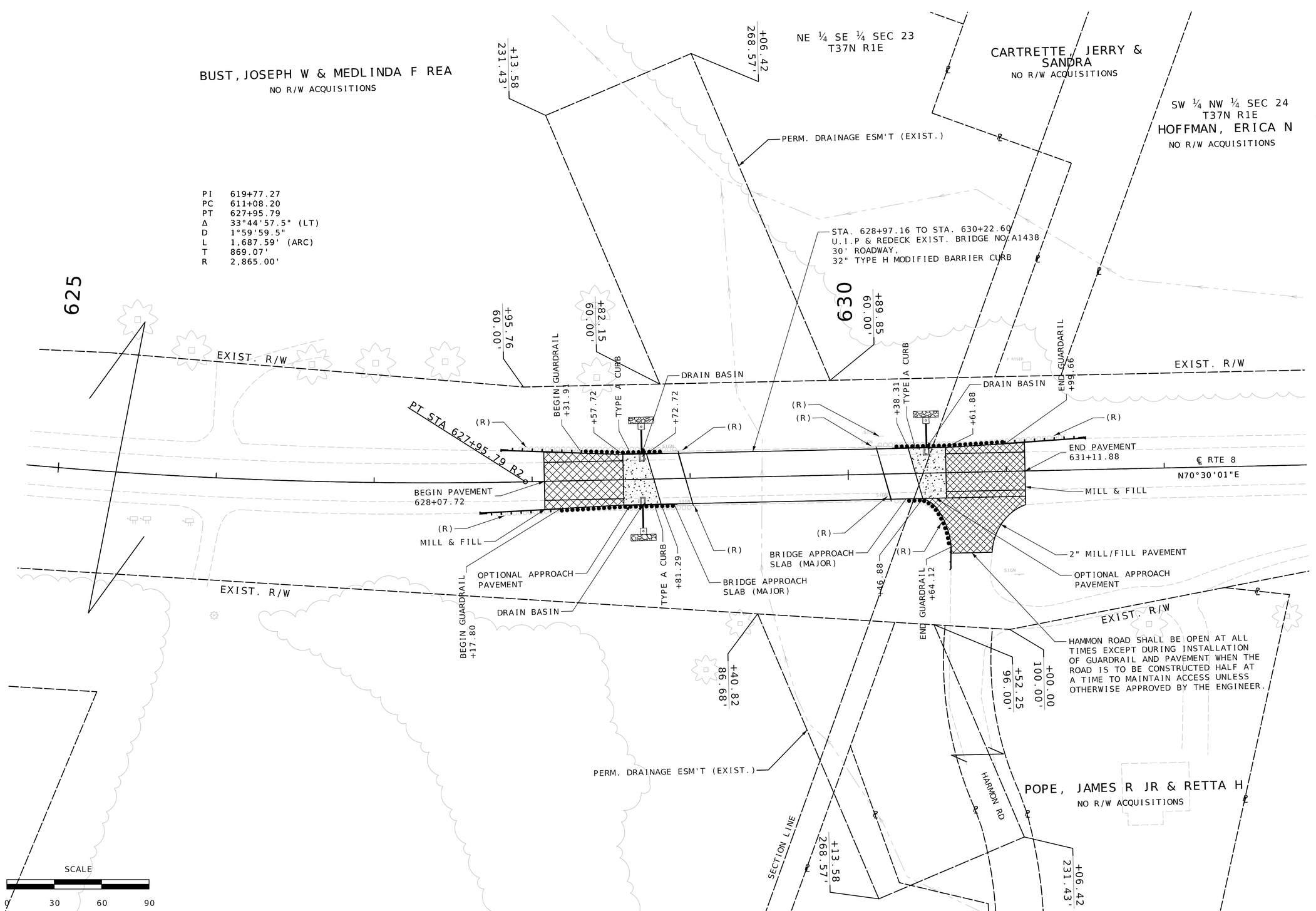
STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 1/4/2026
ROUTE 8 | STATE MO
DISTRICT CD | SHEET NO. 4
COUNTY WASHINGTON
JOB NO. J5P3558
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)

Bartlett & West
601 MONROE ST. SUITE 201 - JEFFERSON CITY, MO 65101
PHONE 573-634-3181
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM



PLAN SHEET
SHEET 2 OF 3

STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED	1/5/2026
ROUTE	STATE
8	MO
DISTRICT	SHEET NO.
CD	5
COUNTY	WASHINGTON
JOB NO.	J5P3558
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)

Bartlett & West
601 MONROE ST. SUITE 201 - JEFFERSON CITY, MO 65101
PHONE 573-634-3181
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM

SW ¼ NW ¼ SEC 24
T37N R1E

HOFFMAN, ERICA N
NO R/W ACQUISITIONS

¼ SECTION LINE

PINGEL, ANNE
NO R/W ACQUISITIONS

VOISE, TIMOTHY
NO R/W ACQUISITIONS

PERM. DRAINAGE ESM'T (EXIST.)

℄ +60.00
135.00'

℄ +50.00
135.00'

℄ +40.00
75.00'

635

640

STA. 635+77.00 TO STA. 636+04.44
U.I.P. & REDECK EXIST. BRIDGE NO.A1439
30' ROADWAY,
42" TYPE D BARRIER CURB

℄ +00.00
75.00'

EXIST. R/W

BEGIN GUARDRAIL +94.99

℄ +60.00
60.00'

DRAIN BASIN

TYPE A CURB

BRIDGE APPROACH SLAB (MAJOR)

+41.00

+26.00

(R)

BEGIN PAVEMENT
634+76.00

MILL & FILL

BRIDGE APPROACH SLAB (MAJOR)

DRAIN BASIN

TYPE A CURB

END GUARDRAIL +61.59

+08.44

(R)

END PAVEMENT
638+05.29

℄ RTE 8
N70°30'01"E

MILL & FILL

(R)

DRAIN BASIN

BEGIN GUARDRAIL +06.24

+73.00

TYPE A CURB

OPTIONAL APPROACH PAVEMENT

+40.29

TYPE A CURB

+55.29

OPTIONAL APPROACH PAVEMENT

DRAIN BASIN

+00.00
63.18'

END GUARDRAIL +94.00

EXIST. R/W

EXIST. R/W

℄ +02.71
65.00'

℄ +60.00
70.00'

℄ +00.00
129.49'

PERM. DRAINAGE ESM'T (EXIST.)

℄ +70.00
170.00'

CHAZELLE, TAMMY A & FINLEY, MEGANN D & MINER, BLAKE
NO R/W ACQUISITIONS

CHAZELLE, TAMMY & KIMBERLY, DOUGLAS
NO R/W ACQUISITIONS

BROOMBAUGH, SUSAN R & JAMES M
NO R/W ACQUISITIONS

NW ¼ SW ¼ SEC 24
T37N R1E

SCALE
0 30 60 90

PLAN SHEET
SHEET 3 OF 3

STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED
1/4/2026

ROUTE	STATE
8	MO

DISTRICT	SHEET NO.
CD	6

COUNTY
WASHINGTON

JOB NO.
J5P3558

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

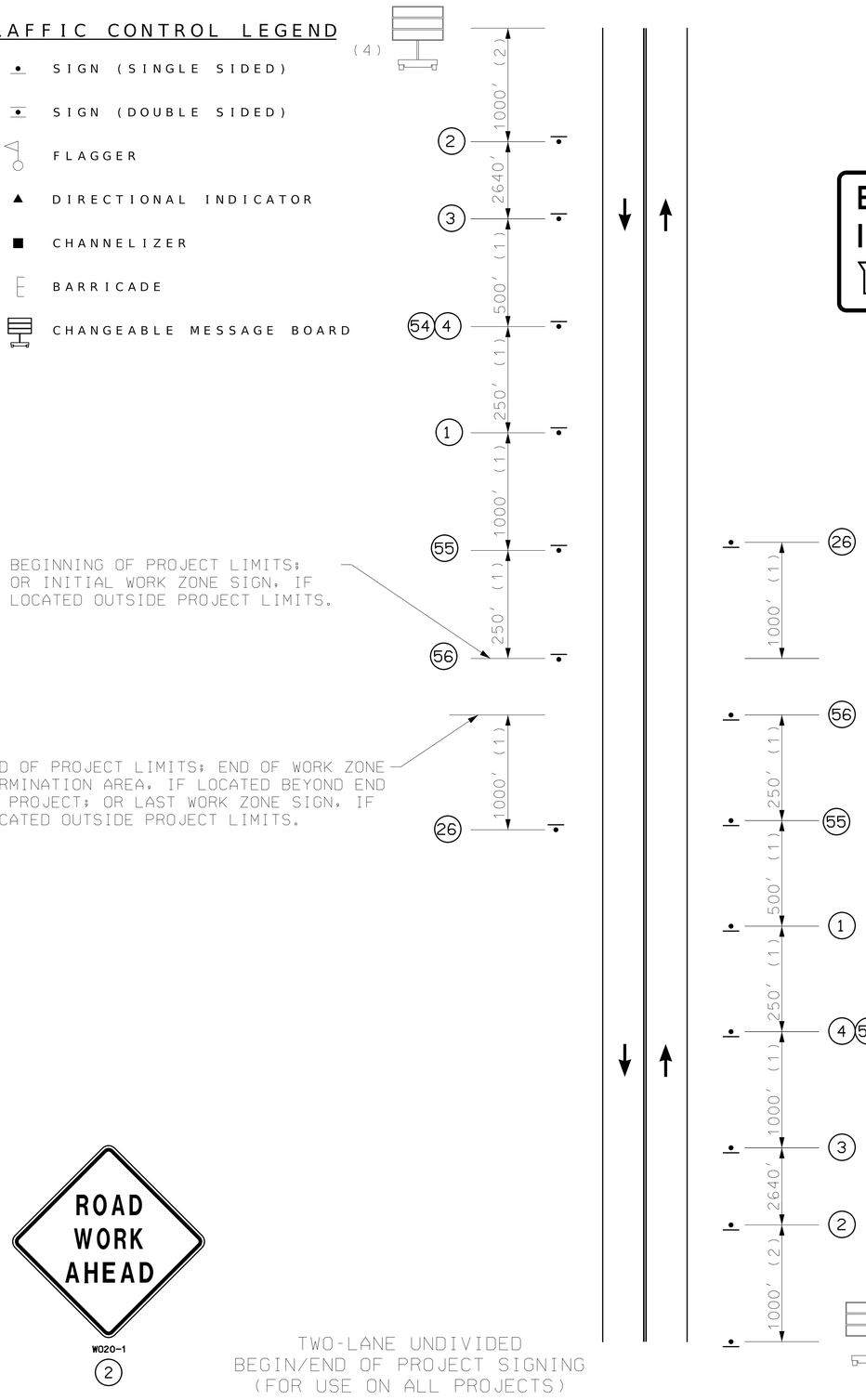
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

Bartlett & West
601 MONROE ST. SUITE 201 - JEFFERSON CITY, MO 65101
PHONE 573-634-3181
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- DIRECTIONAL INDICATOR
- CHANNELIZER
- BARRICADE
- CHANGEABLE MESSAGE BOARD



Bridge Improvements
MoDOT **WINTER 2026**

CONST-5
(56)

NOTES:

A MINIMUM OF ONE LANE OF ROUTE 8 ARE TO BE OPEN DURING NON-WORKING HOURS UNLESS APPROVED BY THE ENGINEER.

MINIMUM WIDTH FOR ROUTE 8 TRAFFIC LANE IS 11 FEET.

ADDITONAL SIGNAGE FOR ADVANCED WARNING OF 10 FOOT LANES ON ROUTE 8 IS LEFT TO THE DISCRETION OF THE ENGINEER

SIGN (1) IS REQUIRED PER EPG 616.6.56.

SIGN (26) IS USED ON ALL PROJECTS WHERE SIGN (1) IS USED.

ANY EXISTING SIGNING THAT CONFLICTS WITH THE TRAFFIC CONTROL SIGNING SHALL BE COMPLETELY COVERED OR REMOVED.

(1) DISTANCE MAY BE ADJUSTED ACCORDING TO FIELD CONDITIONS, WHERE TRAFFIC BREAKUPS ARE EXPECTED BEYOND THE ADVANCE WARNING AREA, ADDITIONAL SIGNING MAY BE NEEDED.

(2) SIGN (5) IS PLACED 500 FEET BEFORE THE BEGINNING OF PROJECT LIMITS OR THE ROAD WORK AHEAD SIGN OR ROAD WORK NEXT 2 MILES SIGN WHEN THESE SIGNS ARE LOCATED OUTSIDE THE PROJECT LIMITS.

(3) SIGN (54) IS PLACED IN A VISIBLE AREA WITHIN THE PROJECT LIMITS PROVIDED ITS PLACEMENT DOES NOT DISRUPT A SEQUENCE OF SIGNS.

ALL TEMPORARY TRAFFIC CONTROL SIGNS ARE PORTABLE UNLESS OTHERWISE NOTED. ALL SIGNS ON THIS SHEET ARE PERMANENT MOUNTING.

W020-1
(2)

TWO-LANE UNDIVIDED
BEGIN/END OF PROJECT SIGNING
(FOR USE ON ALL PROJECTS)

CONST-8
(55)

G020-1
(1)

G020-2
(26)

W03-5
(3)

R2-1
(4)

G020-5aP
(54)

TEMPORARY
TRAFFIC CONTROL
BEGIN/END ROUTE 8
SHEET 1 OF 10

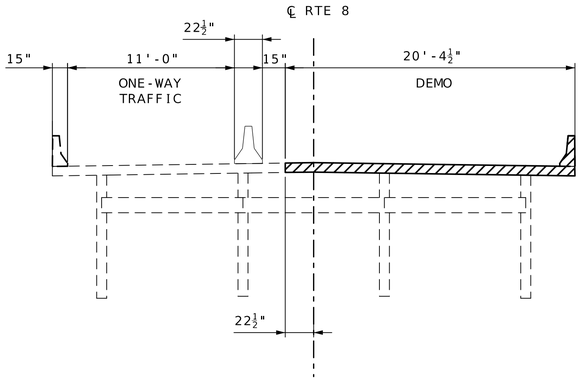
STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED	
1/5/2026	
ROUTE	STATE
8	MO
DISTRICT	SHEET NO.
CD	7
COUNTY	
WASHINGTON	
JOB NO.	
J5P3558	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

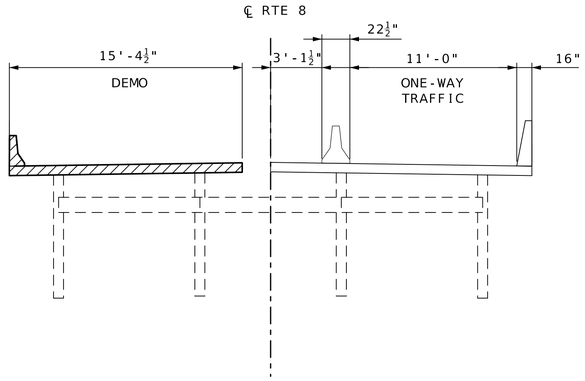
DESCRIPTION	DATE

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

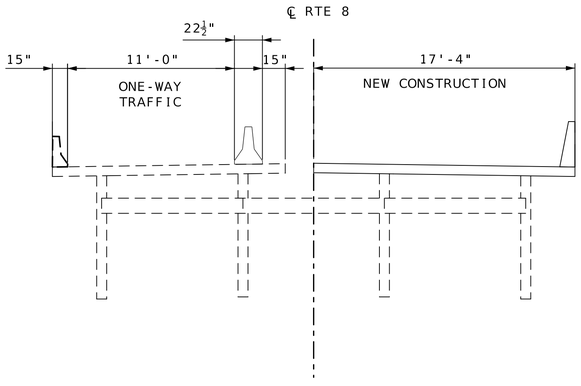
Bartlett & West
601 MONROE ST. SUITE 201 - JEFFERSON CITY, MO 65101
PHONE 573-634-3181
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM



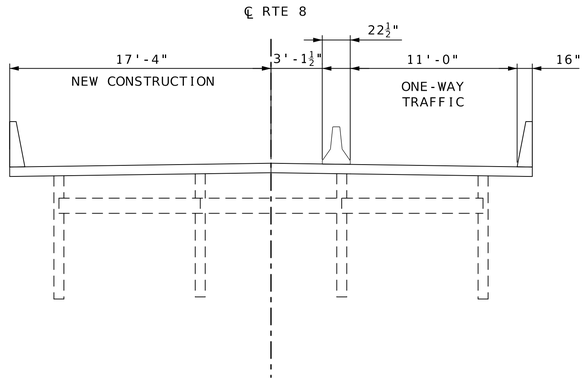
PROPOSED TYPICAL SECTION
STAGE 1 DEMO
ON BRIDGE A1437, A1438, A1439



PROPOSED TYPICAL SECTION
STAGE 2 DEMO
ON BRIDGE A1437, A1438, A1439



PROPOSED TYPICAL SECTION
STAGE 1 CONSTRUCTION
ON BRIDGE A1437, A1438, A1439



PROPOSED TYPICAL SECTION
STAGE 2 CONSTRUCTION
ON BRIDGE A1437, A1438, A1439

TEMPORARY
TRAFFIC CONTROL
TYPICAL SECTION
SHEET 2 OF 10

STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED
1/4/2026

ROUTE	STATE
8	MO
DISTRICT	SHEET NO.
CD	8

COUNTY
WASHINGTON

JOB NO.
J5P3558

CONTRACT ID.
-

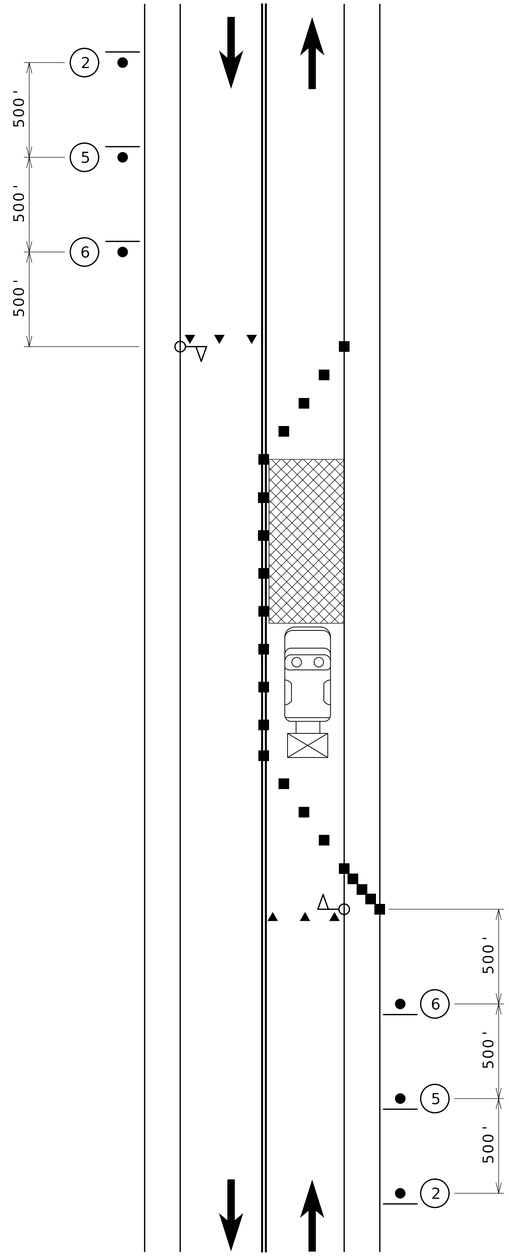
PROJECT NO.
-

BRIDGE NO.

DESCRIPTION	DATE

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

Bartlett & West
601 MONROE ST. SUITE 201 - JEFFERSON CITY, MO 65101
PHONE 573-634-3181
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM



TWO-LANE UNDIVIDED HIGHWAY

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- CONE
- CHANNELIZER
- BARRICADE
- CHANGEABLE MESSAGE BOARD
- WORK SPACE

WO20-7a
6

WO20-4
5

WO20-1
2

TRAFFIC CONTROL FOR LANE CLOSURE ON TWO LANE UNDIVIDED HIGHWAY

TEMPORARY
TRAFFIC CONTROL
LANE CLOSURE
SHEET 3 OF 10

STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 1/4/2026

ROUTE	STATE
8	MO
DISTRICT	SHEET NO.
CD	9

COUNTY: WASHINGTON
JOB NO.: J5P3558
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)
Bartlett & West
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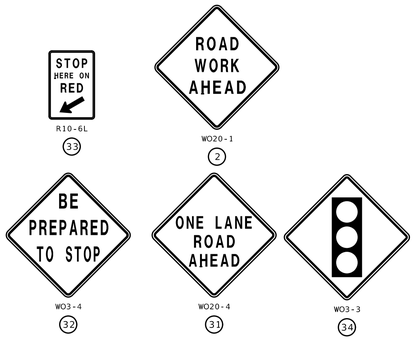
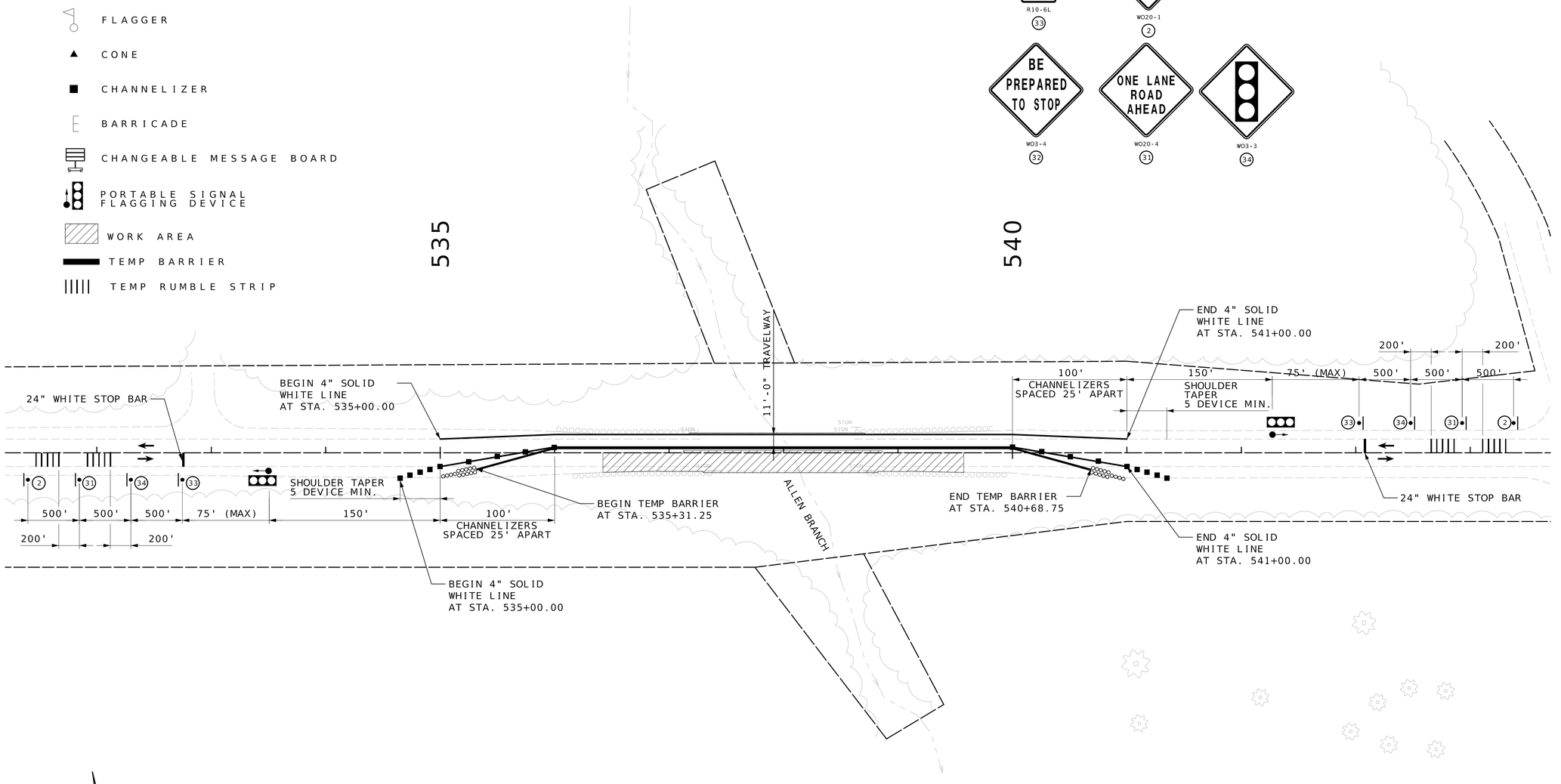
PHONE 573-634-3181
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- CONE
- CHANNELIZER
- BARRICADE
- CHANGEABLE MESSAGE BOARD
- PORTABLE SIGNAL FLAGGING DEVICE
- WORK AREA
- TEMP BARRIER
- TEMP RUMBLE STRIP





NOT TO SCALE
FOLLOW DIMENSIONS

TEMPORARY
TRAFFIC CONTROL
A1437 STAGE 1
SHEET 4 OF 10

STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED	1/4/2026
ROUTE	STATE
8	MO
DISTRICT	SHEET NO.
CD	10
COUNTY	WASHINGTON
JOB NO.	J5P3558
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DESCRIPTION

DATE

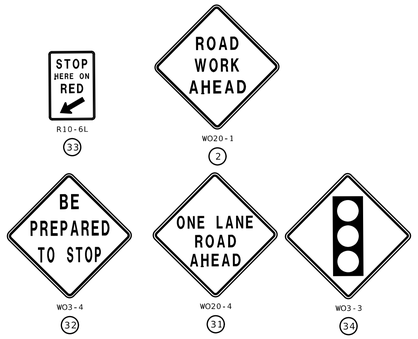
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

Bartlett & West
601 MONROE ST. SUITE 201 - JEFFERSON CITY, MO 65101
PHONE 573-634-3181
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- CONE
- CHANNELIZER
- BARRICADE
- CHANGEABLE MESSAGE BOARD
- PORTABLE SIGNAL FLAGGING DEVICE
- DRIVEWAY ASSISTANCE DEVICE (PORTABLE SIGNAL)
- WORK AREA
- TEMP BARRIER
- TEMP RUMBLE STRIP



PI 619+77.27
PC 611+08.20
PT 627+95.79
Δ 33°44'57.5" (LT)
D 1°59'59.5"
L 1,687.59' (ARC)
T 869.07'
R 2,865.00'

625

630

MIDDLE FORK FOURCHE A RENAULT

11'-0" TRAVELWAY

MATCHLINE STA. 633+50.00

END 4" SOLID WHITE LINE AT STA. 632+50.00

BEGIN 4" SOLID WHITE LINE AT STA. 631+50.00

BEGIN 4" SOLID WHITE LINE AT STA. 633+26.00

24" WHITE STOP BAR

BEGIN 4" SOLID WHITE LINE AT STA. 626+58.00

SHOULDER TAPER 5 DEVICE MIN.

500' 500' 500' 75' (MAX) 150' 100'

200' 200'

CHANNELIZERS SPACED 25' APART

BEGIN TEMP BARRIER AT STA. 627+03.09

BEGIN 4" SOLID WHITE LINE AT STA. 626+58.00

END 4" SOLID WHITE LINE AT STA. 630+43.00

END TEMP BARRIER AT STA. 630+58.63

100' CHANNELIZERS SPACED 25' APART

75' CHANNELIZERS SPACED 25' APART

100' CHANNELIZERS SPACED 25' APART

NOT TO SCALE
FOLLOW DIMENSIONS

TEMPORARY
TRAFFIC CONTROL
A1438 STAGE 1
SHEET 5 OF 10

STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 1/4/2026

ROUTE	STATE
8	MO
DISTRICT	SHEET NO.
CD	11

COUNTY: WASHINGTON
JOB NO.: J5P3558
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

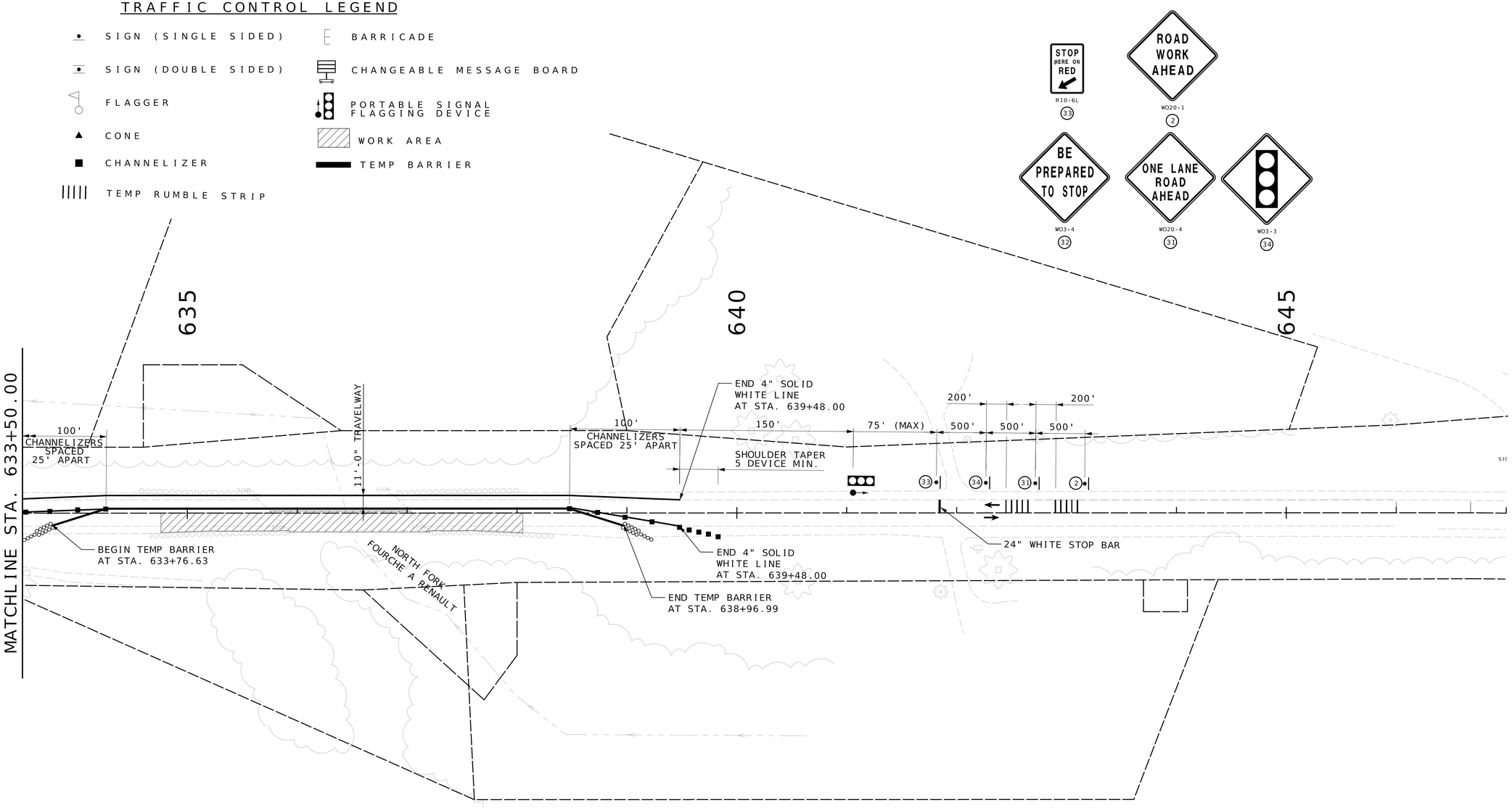
DATE	DESCRIPTION

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

Bartlett & West
601 MONROE ST. SUITE 201 - JEFFERSON CITY, MO 65101
PHONE 573-634-3181
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- CONE
- CHANNELIZER
- TEMP RUMBLE STRIP
- BARRICADE
- CHANGEABLE MESSAGE BOARD
- PORTABLE SIGNAL FLAGGING DEVICE
- WORK AREA
- TEMP BARRIER



NOT TO SCALE
FOLLOW DIMENSIONS

TEMPORARY
TRAFFIC CONTROL
A1439 STAGE 1
SHEET 6 OF 10

STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED	1/4/2026
ROUTE	8
STATE	MO
DISTRICT	CD
SHEET NO.	12
COUNTY	WASHINGTON
JOB NO.	J5P3558
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

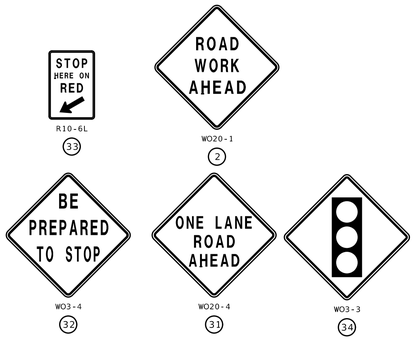
DESCRIPTION | DATE

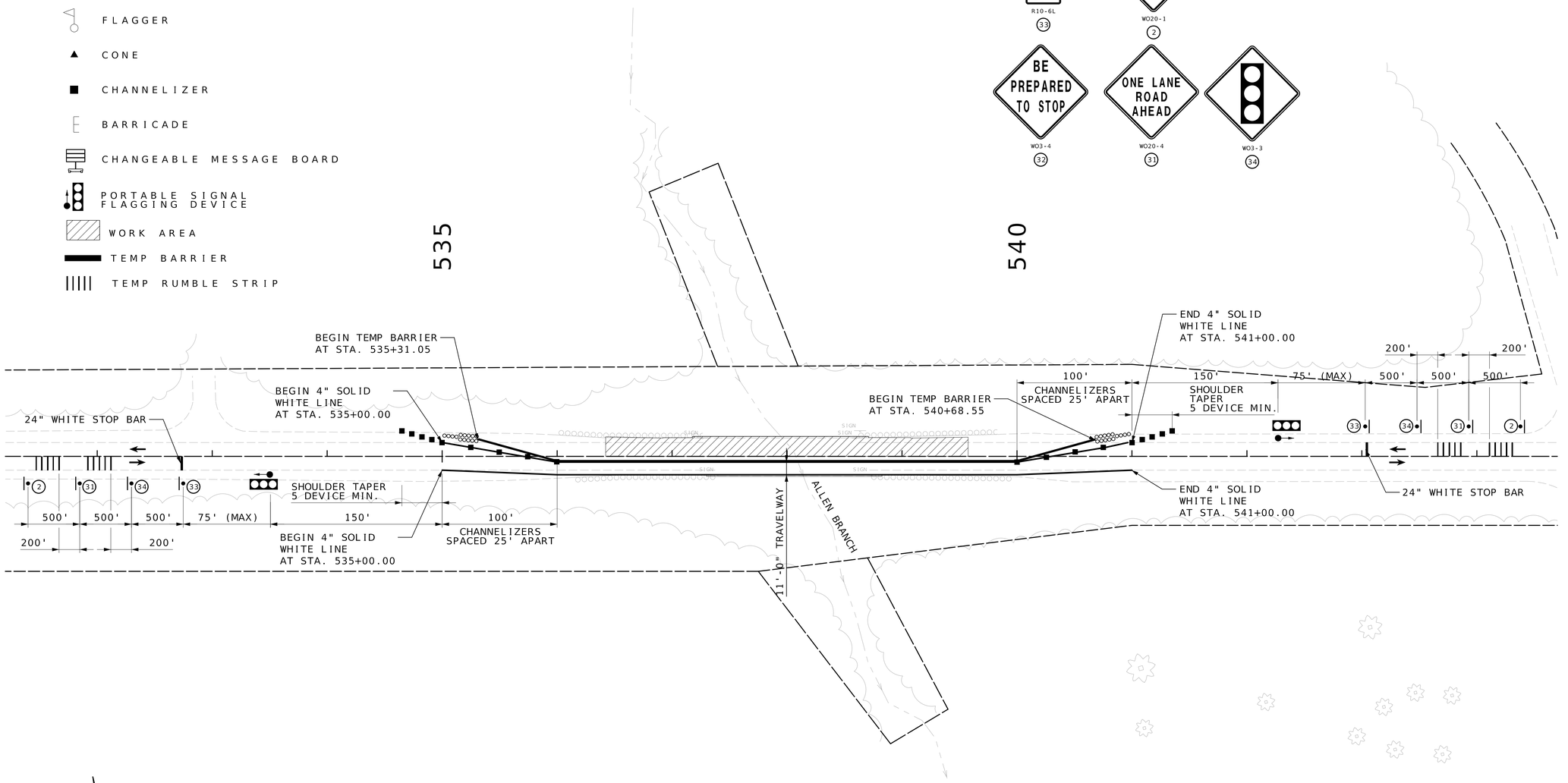
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

Bartlett & West
601 MONROE ST. SUITE 201 - JEFFERSON CITY, MO 65101
PHONE 573-634-3181
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- CONE
- CHANNELIZER
- BARRICADE
- CHANGEABLE MESSAGE BOARD
- PORTABLE SIGNAL FLAGGING DEVICE
- WORK AREA
- TEMP BARRIER
- TEMP RUMBLE STRIP





NOT TO SCALE
FOLLOW DIMENSIONS

TEMPORARY
TRAFFIC CONTROL
A1437 STAGE 2
SHEET 7 OF 10

STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED: 1/4/2026
ROUTE: 8 | STATE: MO
DISTRICT: CD | SHEET NO.: 13
COUNTY: WASHINGTON
JOB NO.: J5P3558
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

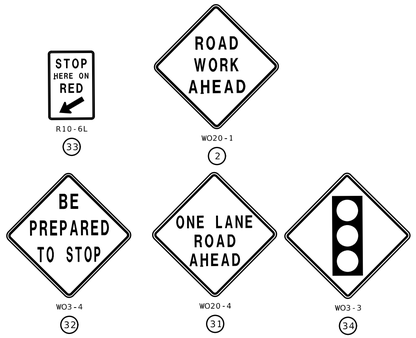
DESCRIPTION	DATE

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

Bartlett & West
601 MONROE ST. SUITE 201 - JEFFERSON CITY, MO 65101
PHONE 573-634-3181
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- CONE
- CHANNELIZER
- BARRICADE
- CHANGEABLE MESSAGE BOARD
- PORTABLE SIGNAL FLAGGING DEVICE
- DRIVEWAY ASSISTANCE DEVICE (PORTABLE SIGNAL)
- WORK AREA
- TEMP BARRIER
- TEMP RUMBLE STRIP



625

630

PI 619+77.27
PC 611+08.20
PT 627+95.79
Δ 33°44'57.5" (LT)
D 1°59'59.5"
L 1,687.59' (ARC)
T 869.07'
R 2,865.00'

MIDDLE FORK FOURCHE A RENAULT

MATCHLINE STA. 633+50.00

BEGIN TEMP BARRIER AT STA. 627+02.33

24" WHITE STOP BAR

BEGIN 4" SOLID WHITE LINE AT STA. 626+58.00

SHOULDER TAPER 5 DEVICE MIN.

500' 500' 500' 75' (MAX)

150'

100'

CHANNELIZERS SPACED 25' APART

200' 200'

BEGIN 4" SOLID WHITE LINE AT STA. 626+58.00

11'-0" TRAVELWAY

END TEMP BARRIER AT STA. 631+93.84

END 4" SOLID WHITE LINE AT STA. 632+49.00

BEGIN 4" SOLID WHITE LINE AT STA. 633+25.00

100' CHANNELIZERS SPACED 25' APART

75' CHANNELIZERS SPACED 25' APART

100' CHANNELIZERS SPACED 25' APART

NOT TO SCALE
FOLLOW DIMENSIONS

TEMPORARY
TRAFFIC CONTROL
A1438 STAGE 2
SHEET 8 OF 10

STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 1/4/2026

ROUTE	STATE
8	MO
DISTRICT	SHEET NO.
CD	14

COUNTY WASHINGTON

JOB NO. J5P3558

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

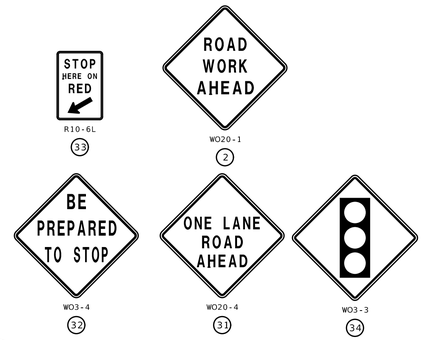
MoDOT

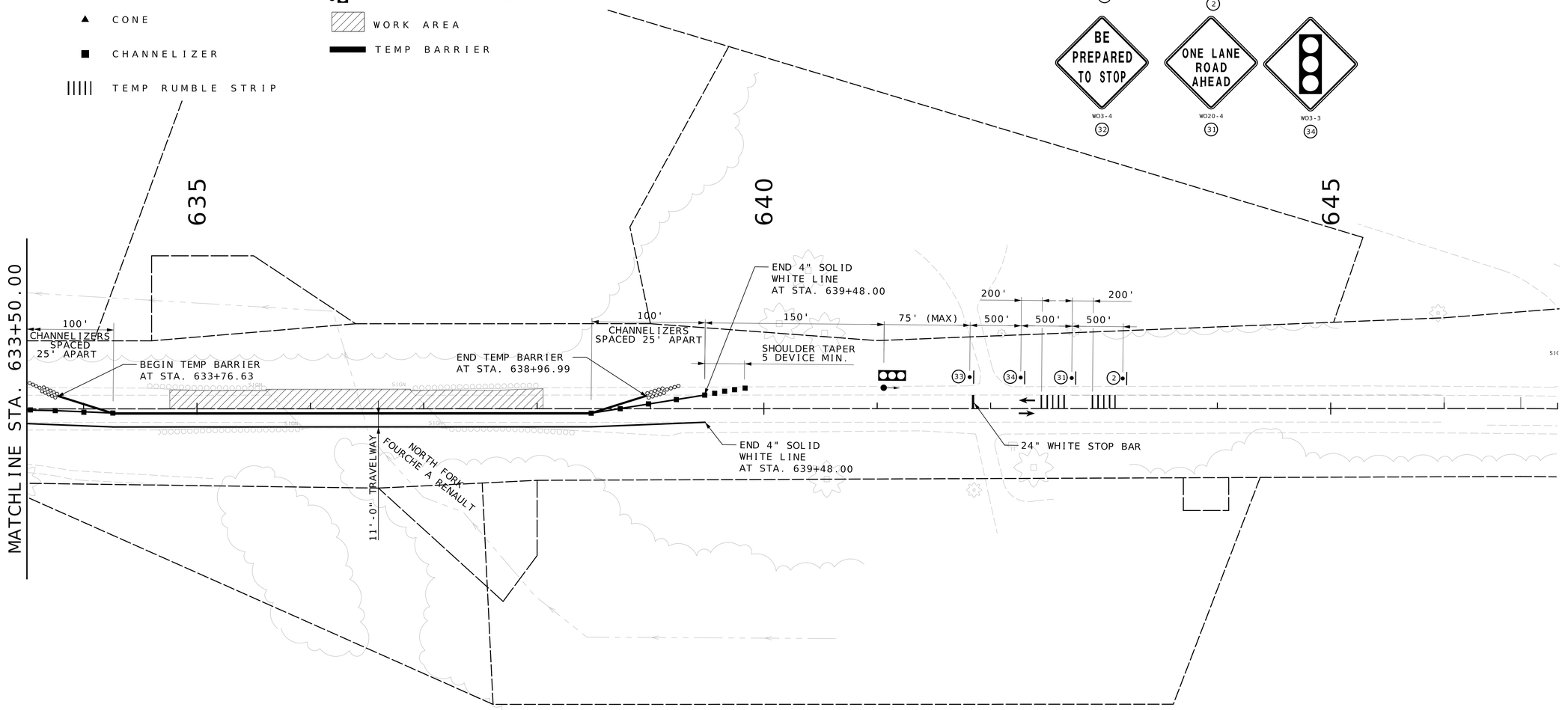
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

Bartlett & West
601 MONROE ST. SUITE 201 - JEFFERSON CITY, MO 65101
PHONE 573-634-3181
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- CONE
- CHANNELIZER
- TEMP RUMBLE STRIP
- BARRICADE
- CHANGEABLE MESSAGE BOARD
- PORTABLE SIGNAL FLAGGING DEVICE
- WORK AREA
- TEMP BARRIER





NOT TO SCALE
FOLLOW DIMENSIONS

TEMPORARY
TRAFFIC CONTROL
A1439 STAGE 2
SHEET 9 OF 10

STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED	1/4/2026
ROUTE	8
STATE	MO
DISTRICT	CD
SHEET NO.	15
COUNTY	WASHINGTON
JOB NO.	J5P3558
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DESCRIPTION | DATE

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

Bartlett & West
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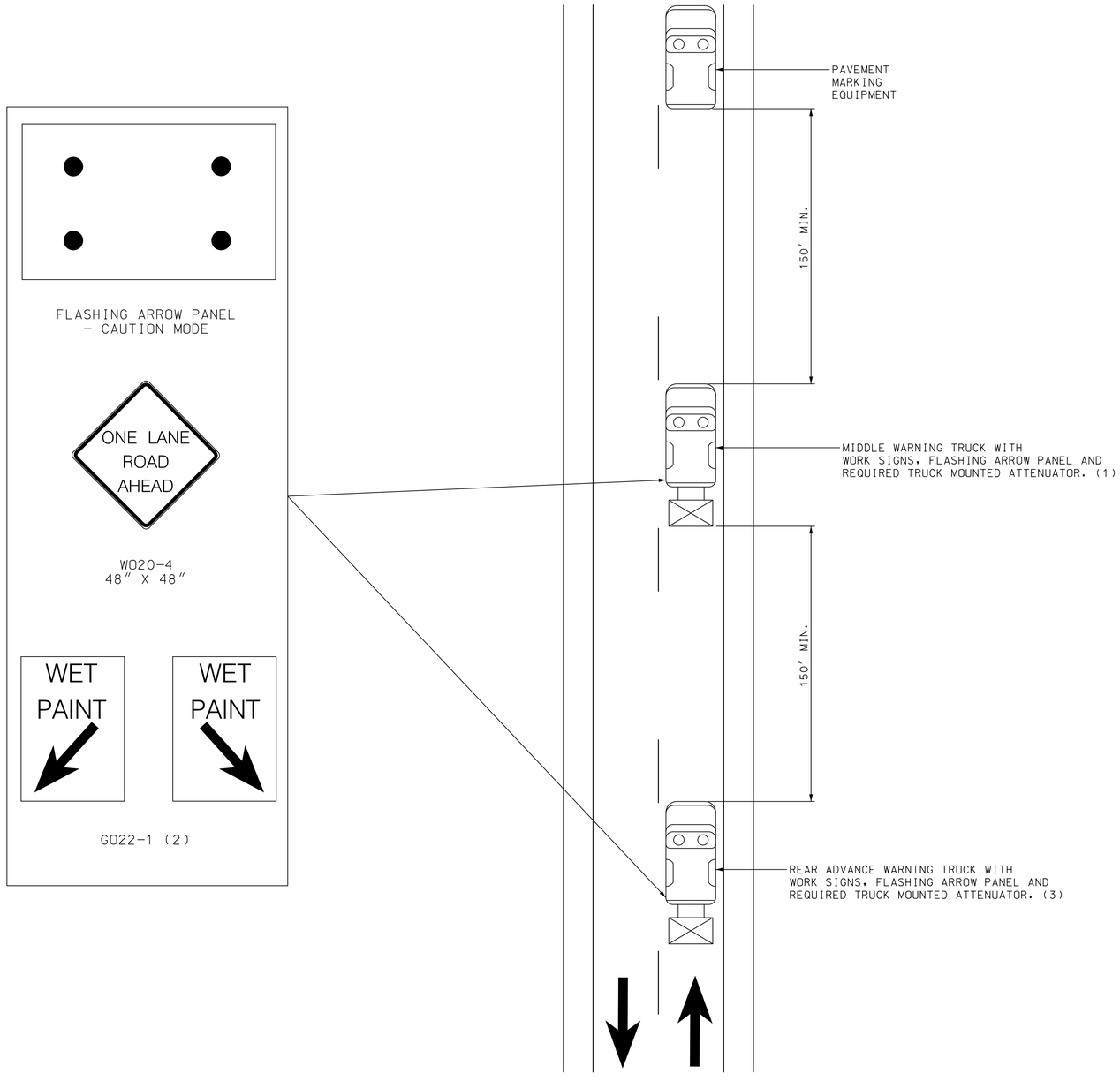
NOT TO SCALE



CENTERLINE/EDGELINE STRIPING ON TWO-LANE HIGHWAYS

NOTES:

UPON APPROVAL OF THE ENGINEER, THE CONTRACTOR MAY PROVIDE ADDITIONAL PROTECTIVE TRUCK EQUIPPED WITH PROPER WARNING DEVICES.

PROTECTIVE TRUCK AND WORK VEHICLES SHALL DISPLAY HIGH-INTENSITY ROTATING, FLASHING, OSCILLATING, OR STROBE LIGHTS.

VEHICLE HAZARD WARNING SIGNALS SHALL NOT BE USED INSTEAD OF THE VEHICLE'S HIGH-INTENSITY ROTATING, FLASHING, OSCILLATING, OR STROBE LIGHTS.

FLASHING ARROW PANELS SHALL BE INCIDENTAL TO TRUCK MOUNTED ATTENUATORS, WHEREVER USED. NO ADDITIONAL PAYMENT WILL BE MADE.

(1) TRUCK IS OPTIONAL ON TWO-LANE UNDIVIDED HIGHWAYS IF SIGNING AND ARROW BOARD IS MOUNTED ON THE PAVEMENT MARKING EQUIPMENT.

(2) WET PAINT SIGNS ARE INSTALLED TO INDICATE THE SIDE IN WHICH THE PAVEMENT MARKING MATERIAL IS BEING APPLIED. AT THE CONTRACTOR'S OPTION, A FRONT FACING WET PAINT SIGN MAY BE INSTALLED ON THE LEFT SIDE OF THE PAVEMENT MARKING EQUIPMENT.

(3) REAR ADVANCE WARNING TRUCK IS POSITIONED AT THE NO TRACK POINT OF THE PAVEMENT MARKING MATERIAL, OR VERTICAL OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE, OR SPACING SHOWN.

TEMPORARY
TRAFFIC CONTROL
PAVEMENT MARKING
SHEET 10 OF 10

STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 1/5/2026
ROUTE 8 | STATE MO
DISTRICT CD | SHEET NO. 16
COUNTY WASHINGTON
JOB NO. J5P3558
CONTRACT ID.
PROJECT NO.
BRIDGE NO.

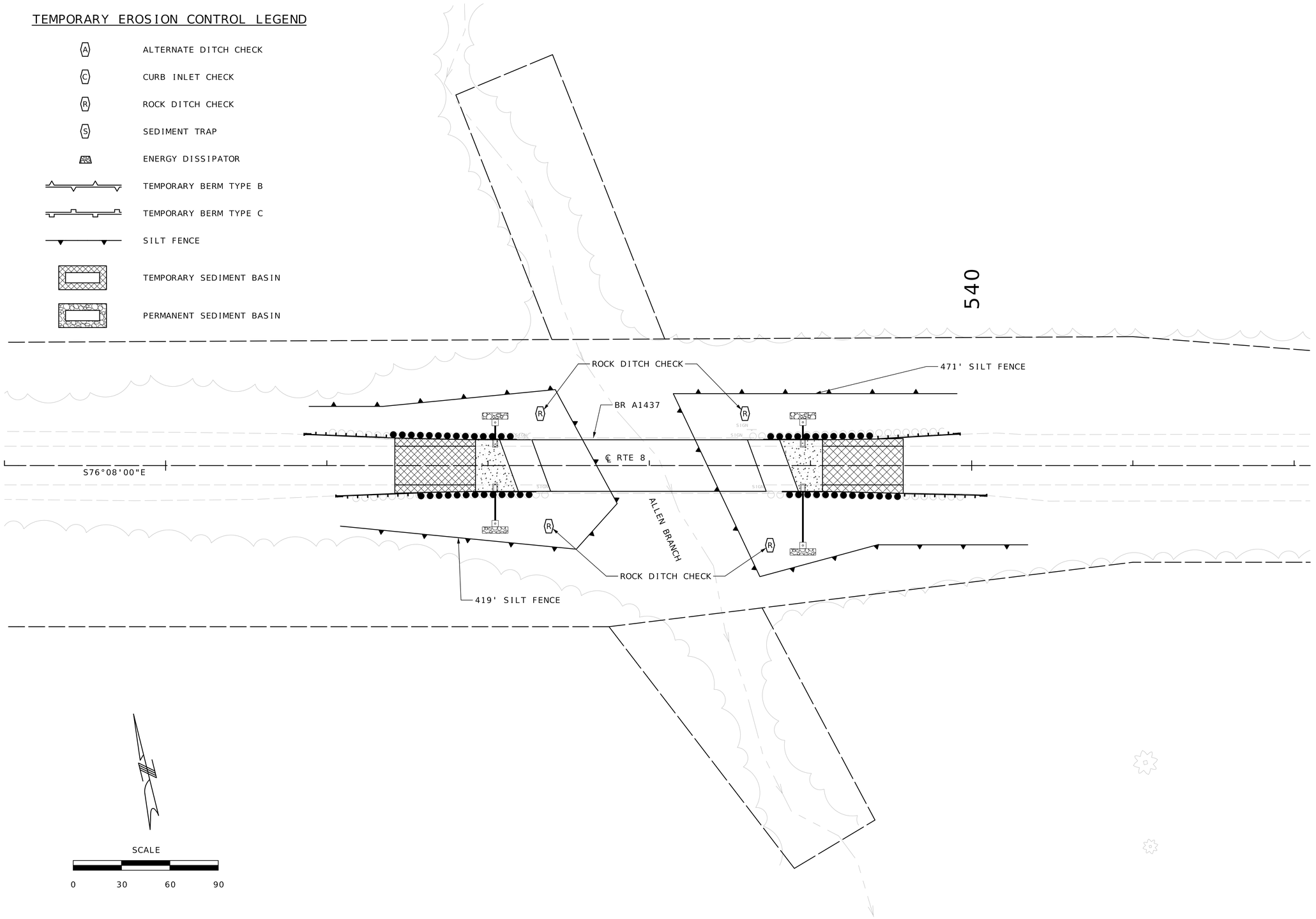
DESCRIPTION	DATE

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

Bartlett & West
601 MONROE ST. SUITE 201 - JEFFERSON CITY, MO 65101
PHONE 573-634-3181
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM

TEMPORARY EROSION CONTROL LEGEND

- (A) ALTERNATE DITCH CHECK
- (C) CURB INLET CHECK
- (R) ROCK DITCH CHECK
- (S) SEDIMENT TRAP
- ENERGY DISSIPATOR
- TEMPORARY BERM TYPE B
- TEMPORARY BERM TYPE C
- SILT FENCE
- TEMPORARY SEDIMENT BASIN
- PERMANENT SEDIMENT BASIN



EROSION CONTROL
SHEET 1 OF 3

STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 1/4/2026

ROUTE	STATE
8	MO
DISTRICT	SHEET NO.
CD	17

COUNTY: WASHINGTON
JOB NO.: J5P3558
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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JEFFERSON CITY, MO 65102
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- TEMPORARY BERM TYPE C
- SILT FENCE
- TEMPORARY SEDIMENT BASIN
- PERMANENT SEDIMENT BASIN

PI	619+77.27
PC	611+08.20
PT	627+95.79
Δ	33°44'57" (RT)
D	1°59'59.5"
L	1,687.59' (ARC)
T	869.07'
R	2,865.00'

625

630

PT STA 627+95.79 R2

PT STA 627+95.79 R2

ROCK DITCH CHECK

BR A1438

237' SILT FENCE

℄ RTE 8

N70°30'01"E

116' SILT FENCE

ROCK DITCH CHECK

345' SILT FENCE

MIDDLE FORK
FOURCHE A RENAULT

SCALE

0 30 60 90

EROSION CONTROL
SHEET 2 OF 3

STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED
1/4/2026

ROUTE	STATE
8	MO
DISTRICT	SHEET NO.
CD	18

COUNTY
WASHINGTON

JOB NO.
J5P3558

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION | DATE

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TEMPORARY EROSION CONTROL LEGEND

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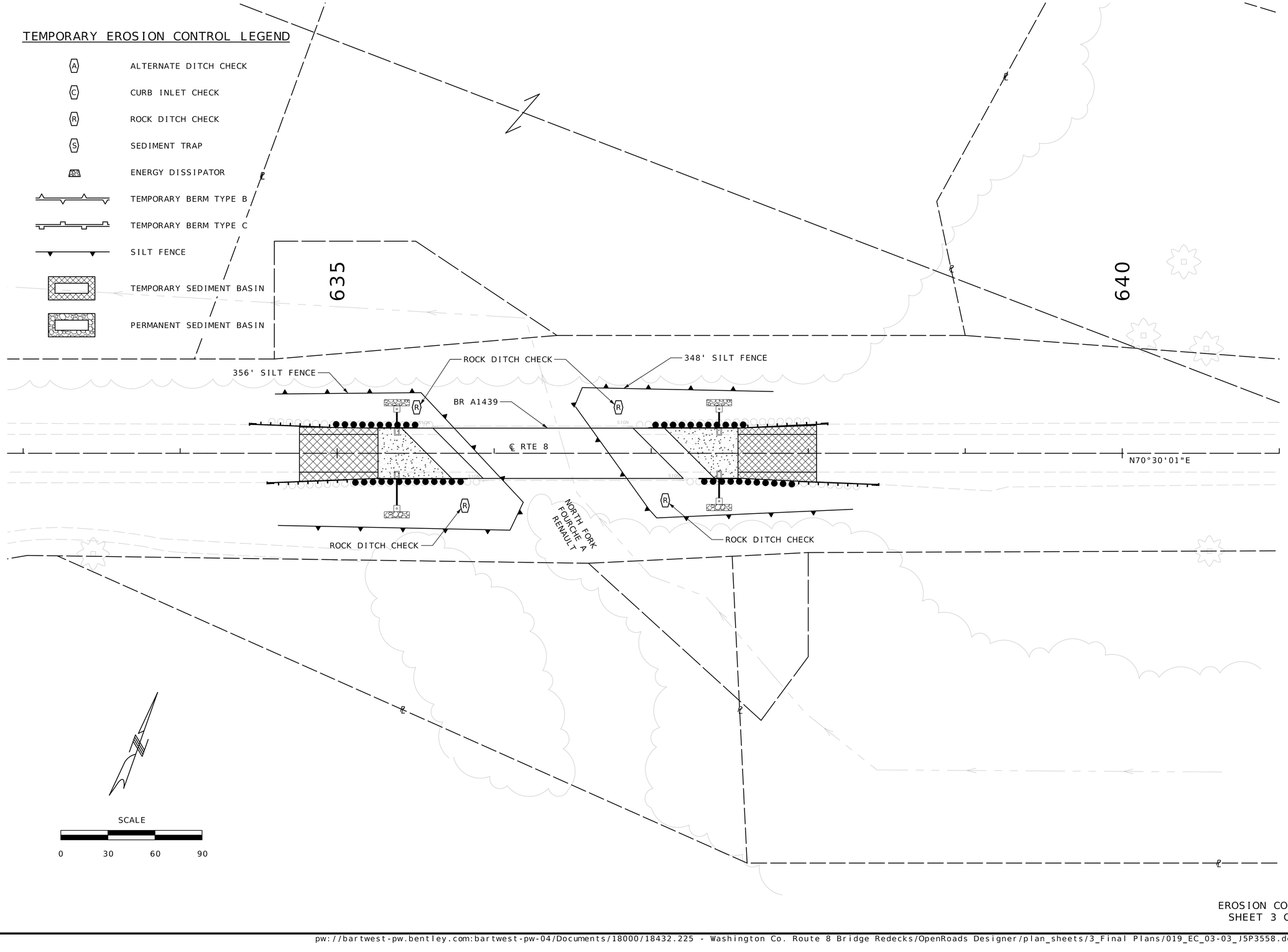

EROSION CONTROL
SHEET 3 OF 3

STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER
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DATE PREPARED: 1/4/2026

ROUTE	STATE
8	MO
DISTRICT	SHEET NO.
CD	19

COUNTY: WASHINGTON
JOB NO.: J5P3558
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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535

540

4" YELLOW CENTERLINE LT SOLID, RT INTERMITTENT

+00.00

+92.18

4" YELLOW CENTERLINE INTERMITTENT

+00.00

4" SOLID WHITE EDGELINE

℄ RTE 8

S76°08'00"E

S76°08'00"E

4" SOLID WHITE EDGELINE

BR A1437

ALLEN BRANCH

SCALE

0 20 40 60

PAVEMENT MARKING
SHEET 1 OF 3

STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER

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DATE PREPARED
1/5/2026

ROUTE	STATE
8	MO
DISTRICT	SHEET NO.
CD	20

COUNTY
WASHINGTON

JOB NO.
J5P3558

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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625

630

+58.00

4" YELLOW CENTERLINE
SOLID LT, INTERMITTENT RT

4" SOLID WHITE EDGELINE

℄ RTE 8
N70°30'01"E

N70°30'01"E

BR A1438

4" SOLID WHITE EDGELINE

MIDDLE FORK
FOURCHE A RENAULT

STA. 633+00.00
MATCHLINE

SCALE
0 20 40 60

PAVEMENT MARKING
SHEET 2 OF 3

STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER
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DATE PREPARED
1/5/2026

ROUTE	STATE
8	MO
DISTRICT	SHEET NO.
CD	21

COUNTY
WASHINGTON

JOB NO.
J5P3558

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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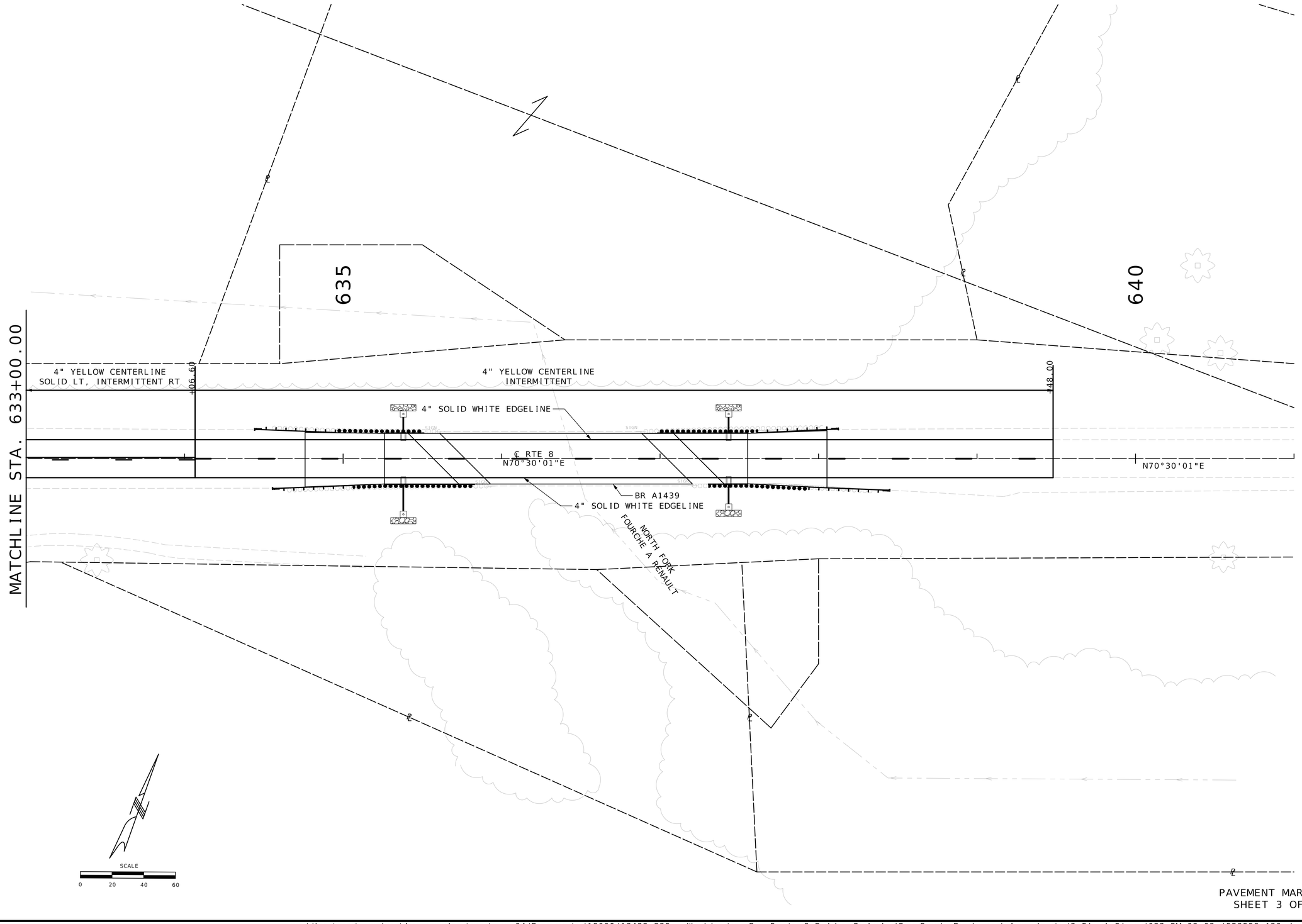

PAVEMENT MARKING
SHEET 3 OF 3

STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED
1/5/2026

ROUTE	STATE
8	MO
DISTRICT	SHEET NO.
CD	22

COUNTY
WASHINGTON

JOB NO.
J5P3558

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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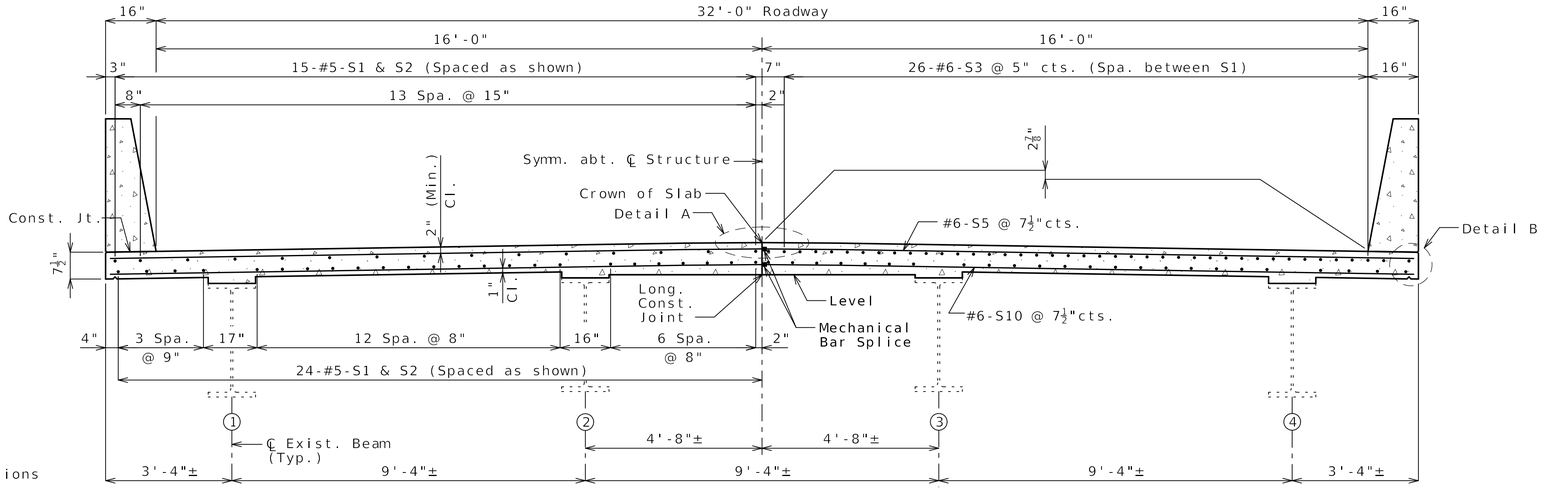
SEC/SUR 22 TWP 37N RGE 1E

U.I.P. AND REDECK EXISTING (40'- 50'- 40') CONTINUOUS COMPOSITE WIDE FLANGE BEAM SPANS SKEW 20°00'00" R.A.

Table Showing S3 Bar Lengths			
Int. Bent No. 2		Int. Bent No. 3	
Span 1	Span 2	Span 2	Span 3
17'-0"	27'-0"	27'-0"	17'-0"

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.



TYPICAL SECTION THRU SLAB

General Notes:

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

Design Loading:
H20-44 (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 II

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

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.

Mechanical Bar Splice:
All mechanical bar splices shall be in accordance with Sec. 710.

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)

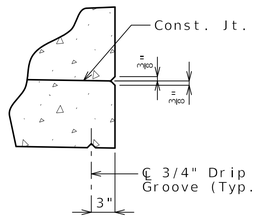
Outline of existing work is indicated by light dashed lines. Heavy lines indicate new work.

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

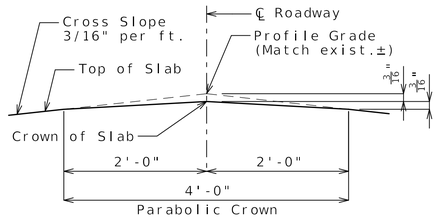
The area exposed by the removal of concrete and not covered with new concrete shall be coated with an approved qualified special mortar in accordance with Sec 704.

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).

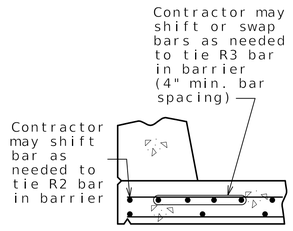
Traffic Handling:
Traffic to be maintained on structure during construction. See roadway plans for traffic control and Sheet No. 2 for staged construction details.



DETAIL B



DETAIL A



OPTIONAL SHIFTING TOP BARS AT BARRIER

Estimated Quantities		
Item		Total
Removal of MIscellaneous ACM (Non-Friable)	sq. foot	12
Removal of Existing Bridge Deck	sq. foot	4,611
Bridge Approach Slab (Major)	sq. yard	154
Slab on Steel	sq. yard	515
Type D Barrier	linear foot	307
Mechanical Bar Splice	each	421
Protective Coating - Concrete Bents and Piers (Epoxy)	lump sum	1
Slab Drain	each	20
Non-Destructive Testing	linear foot	41
Vertical Drain at End Bents	each	2

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

Estimated Quantities for Slab on Steel		
Item		Total
Class B-2 Concrete	cu. yard	124
Reinforcing Steel (Epoxy Coated)	pound	41,520

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. 3.

REPAIRS TO BRIDGE:
ROUTE 8 OVER ALLEN BRANCH
ROUTE 8 FROM ROUTE 185 TO ROUTE AA
ABOUT 1.6 MILES EAST OF ROUTE AA
BEGINNING STATION 537+33.00±

STATE OF MISSOURI
ANOUSONE AROUNPRADITH
NUMBER PE-29317
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 12/19/2025
ROUTE 8 | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY WASHINGTON
JOB NO. J5P3558
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A14372

DESCRIPTION | DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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Bartlett & West
601 MONROE ST. SUITE 201 - JEFFERSON CITY, MO 65101
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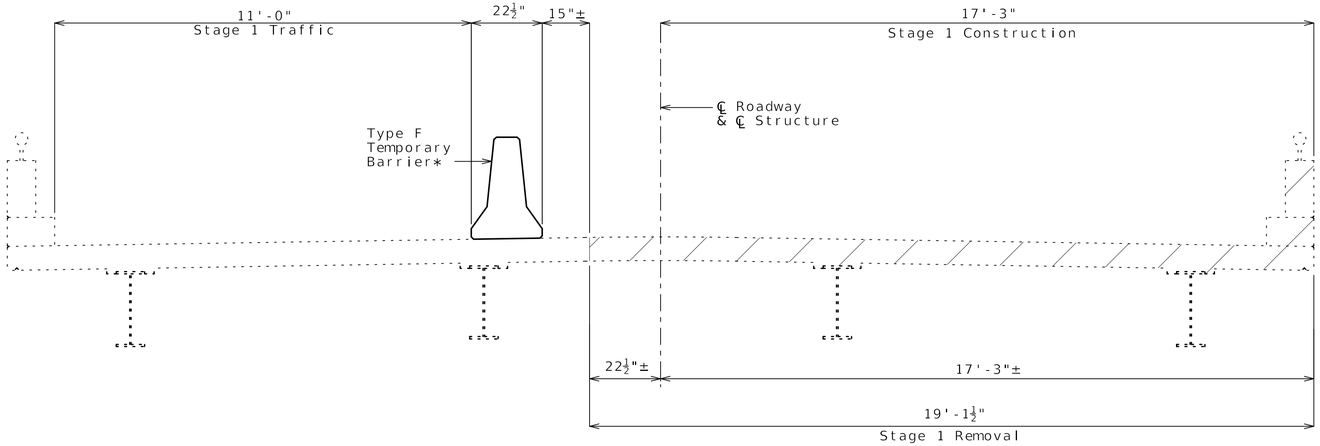
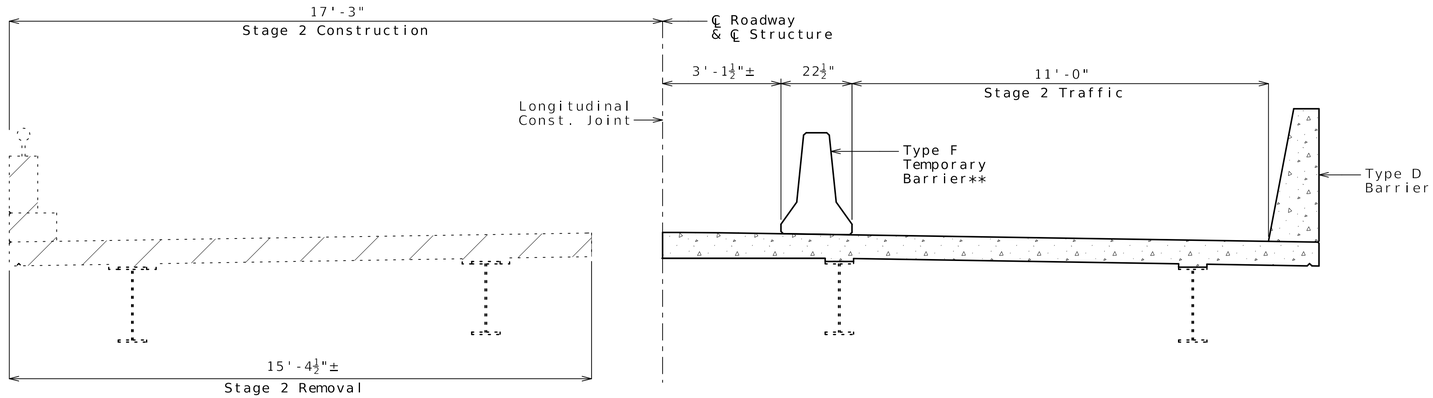
Detailed Dec. 2025
Checked Dec. 2025

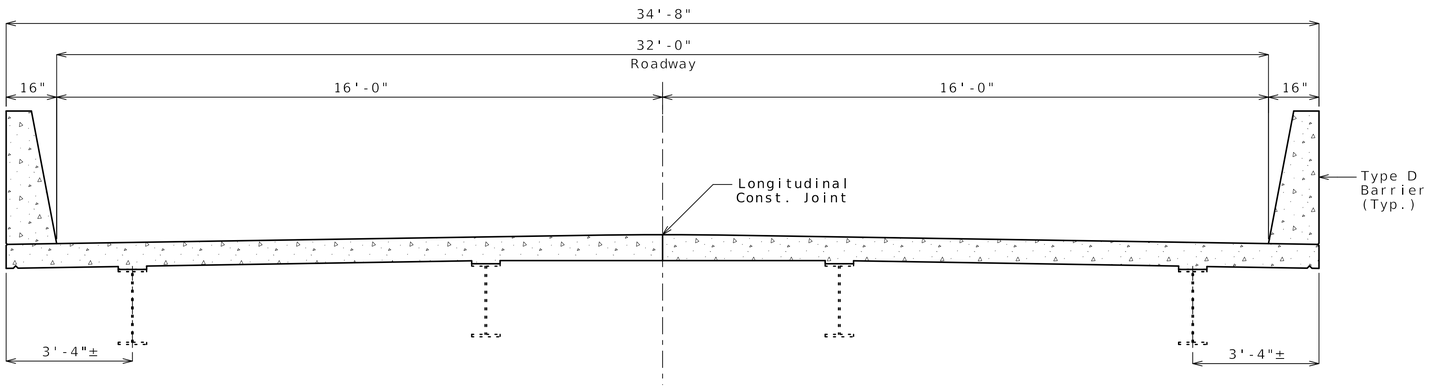
Note: This drawing is not to scale. Follow dimensions.



PHASE 1 STAGED CONSTRUCTION
* Temporary barrier shall be anchored to existing deck.



PHASE 2 STAGED CONSTRUCTION
** Temporary barrier shall be a freestanding.



FINAL

STAGE CONSTRUCTION DETAILS

Notes:

See Missouri Standard Plans 617.20 for details of temporary Type F Barrier not shown.

STATE OF MISSOURI
ANOUSONE AROUNPRADITH
NUMBER PE-29317
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED: 12/19/2025
ROUTE: 8 | STATE: MO
DISTRICT: BR | SHEET NO.: 2
COUNTY: WASHINGTON
JOB NO.: J5P3558
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A14372

DESCRIPTION | DATE

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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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Detailed Dec. 2025
Checked Dec. 2025

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

pw://bartwest-pw.bentley.com:bartwest-pw-04/Documents/18000/18432.225 - Washington Co. Route 8 Bridge Redecks/OpenRoads Designer/plan_sheets/Bridge Plans/A14372/B_A14372_002_J5P3558_const_stag.dgn 8:23:13 AM 12/19/2025

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.

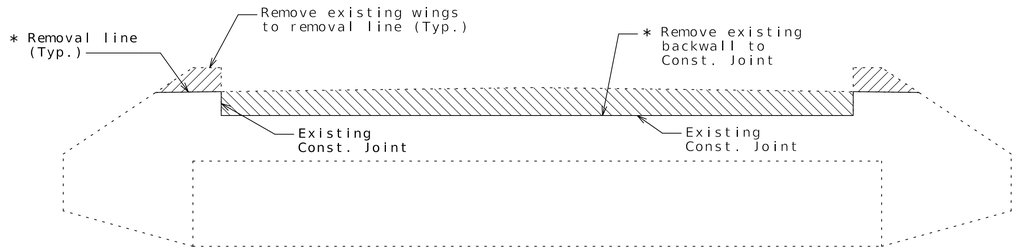
The design of stay-in-place corrugated steel forms is per manufacturer which shall be in accordance with Sec 703 for false work and forms. Maximum actual weight of corrugated steel forms allowed shall be 4 psf assumed for beam loading.

The contractor shall provide a method of preventing the direct contact of the stay-in-place forms and connection components with uncoated weathering steel members that is approved by the engineer.

Deflection and Haunching:

(1) Slab is to be considered a uniform thickness except between beams 2 and 3 as shown on the plans. Haunching will vary. See front sheet for slab thickness.

The contractor shall determine dead load deflections and haunching based on field measurements and/or existing bridge plans and these may be adjusted based on the difference between the new and existing dead load weights. In order to properly form the haunches for the new deck, the contractor shall survey top of deck elevations above each girder including centerline of roadway and along each girder (top or bottom flange) prior to deck removal followed by surveying elevations of the girders (top or bottom flange) after deck removal.



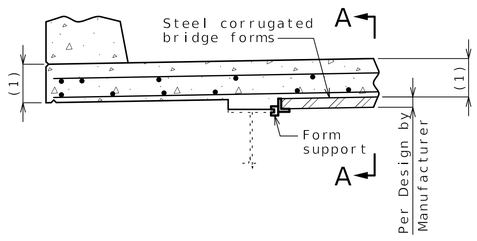
DETAILS OF CONCRETE REMOVAL AT END BENTS

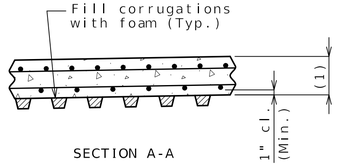
Notes:

The cost of concrete removal as shown will be considered completely covered by the contract unit price for Removal of Existing Bridge Deck.

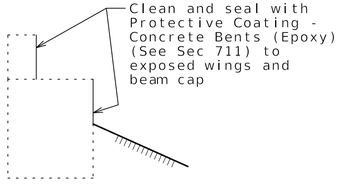
U.I.P. vertical backwall reinforcement.

* Vertical wingwall reinforcement shall be cut off one inch below concrete removal surface and the resulting holes shall be filled with a qualified special mortar.

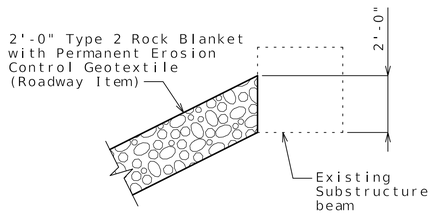




OPTIONAL STAY-IN-PLACE FORM DETAILS



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



ROCK BLANKET ON SPILL SLOPES

STATE OF MISSOURI
ANOUSONE AROUNPRADITH
NUMBER PE-29317
PROFESSIONAL ENGINEER
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DATE PREPARED 12/19/2025

ROUTE	STATE
8	MO
DISTRICT	SHEET NO.
BR	3

COUNTY WASHINGTON

JOB NO. J5P3558

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A14372

DESCRIPTION	DATE

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

Bartlett & West
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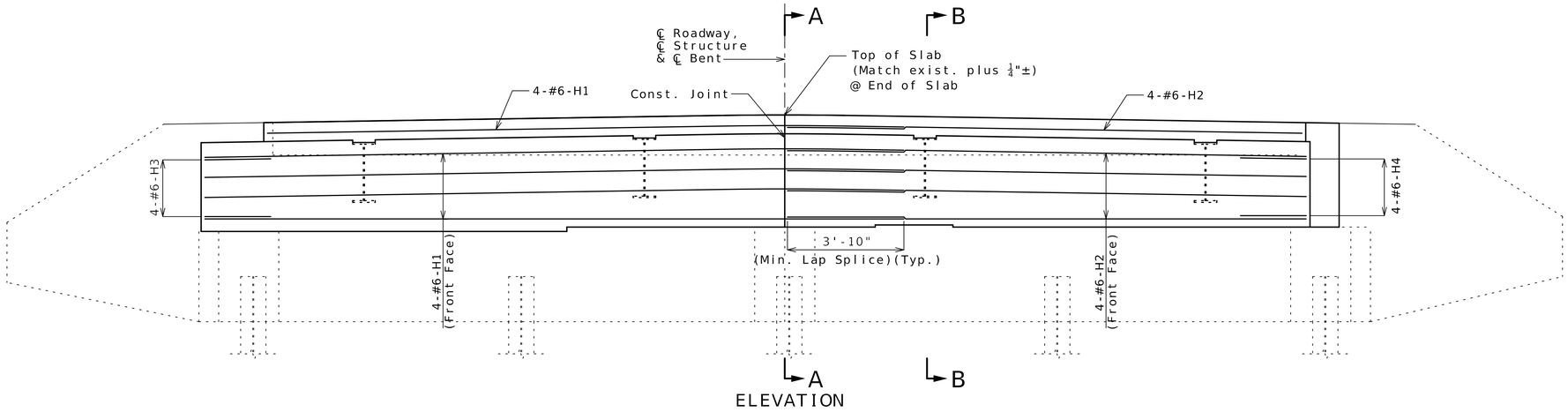
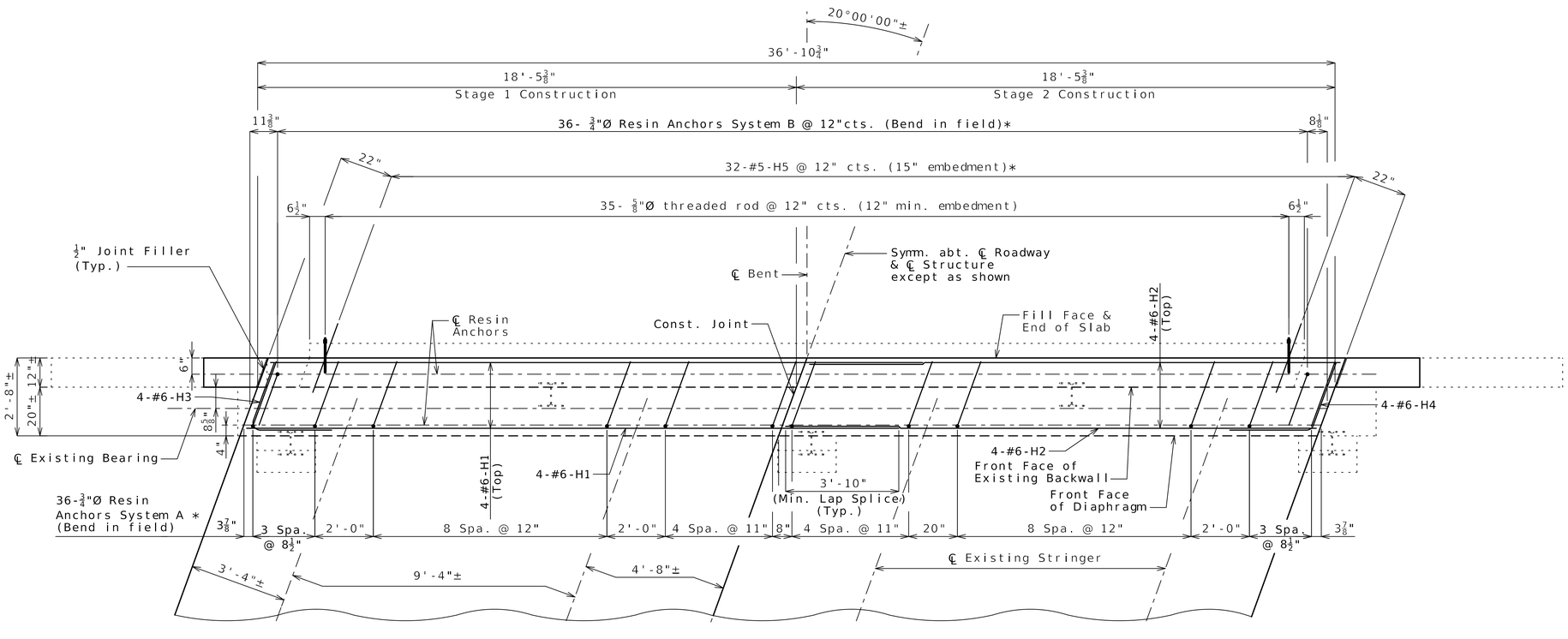


ELEVATION

Existing steel and diaphrams and bearing stiffeners not shown for clarity (leave in place).

Resin anchors and Type D barrier not shown for clarity. For details and reinforcement of Type D Barrier, see Sheets No. 10 & 11.



* Place bars parallel to centerline of roadway.

PLAN

Notes:

Work this sheet with Sheet No. 5.

STATE OF MISSOURI
ANOUSONE AROUNPRADITH
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ROUTE	STATE
8	MO
DISTRICT	SHEET NO.
BR	4

COUNTY WASHINGTON

JOB NO. J5P3558

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A14372

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
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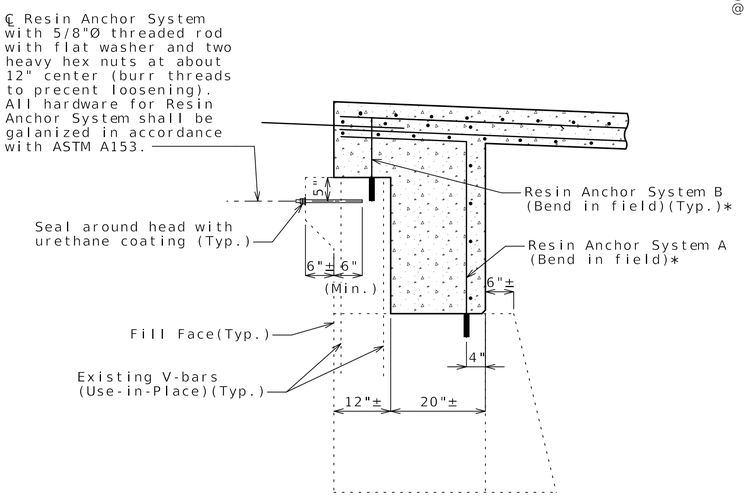
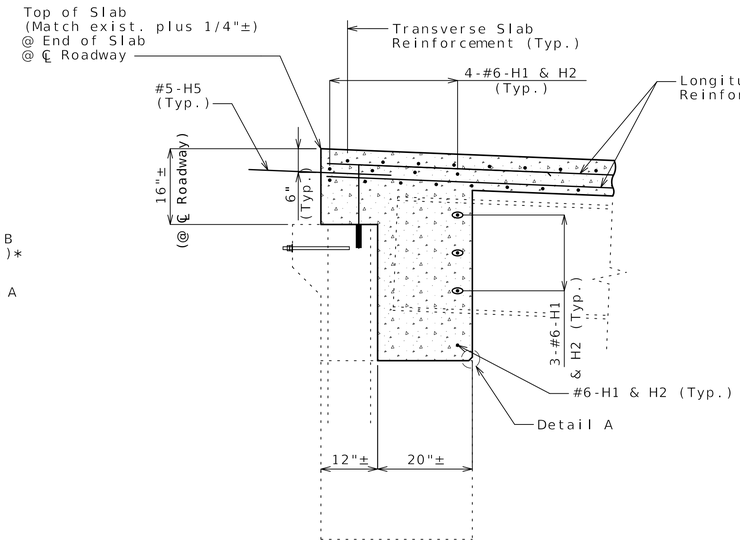


SECTION A-A

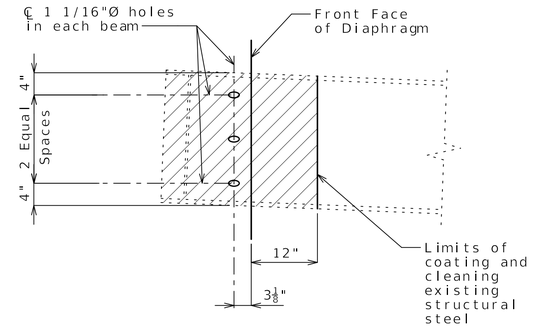
End Bent No. 1 shown
End Bent No. 4 similar except for grade.

* Place bars parallel to centerline of roadway.

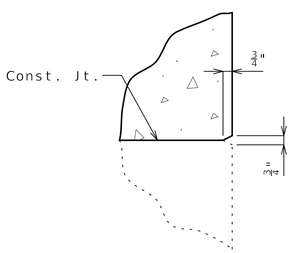


SECTION B-B

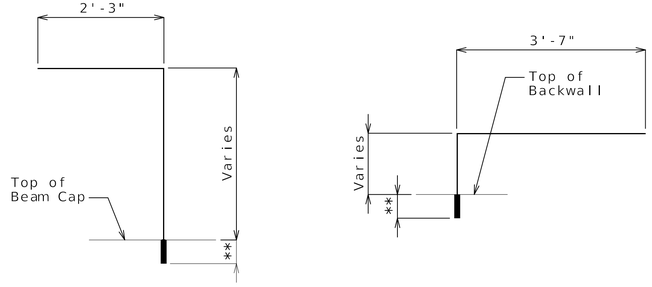
End Bent No. 1 shown
End Bent No. 4 similar except for grade.



DETAILS OF WEB HOLES AT END BENTS



DETAIL A



System A (36 Req'd.)

System B (36 Req'd.)

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

DETAILS OF RESIN ANCHOR SYSTEMS

Notes:

Work this sheet with Sheet No. 4.

Concrete in slab and diaphragm shall be Class B-2

All concrete and reinforcement is included in the Table of Estimated Quantities for Slab on Steel and will be considered completely covered by the contract unit price for Slab on Steel.

For details of slab reinforcement, see Sheets No. 1, 8 and 9.

For details and reinforcement of Type D Barrier at End Bents, see Sheet No. 10 and 11.

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 and 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 of 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.

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

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.

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

An epoxy coated #6 Grade 60 reinforcing bar shall be substituted for the 3/4"Ø threaded rod.

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ROUTE 8 | STATE MO
DISTRICT BR | SHEET NO. 5
COUNTY WASHINGTON
JOB NO. J5P3558
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A14372

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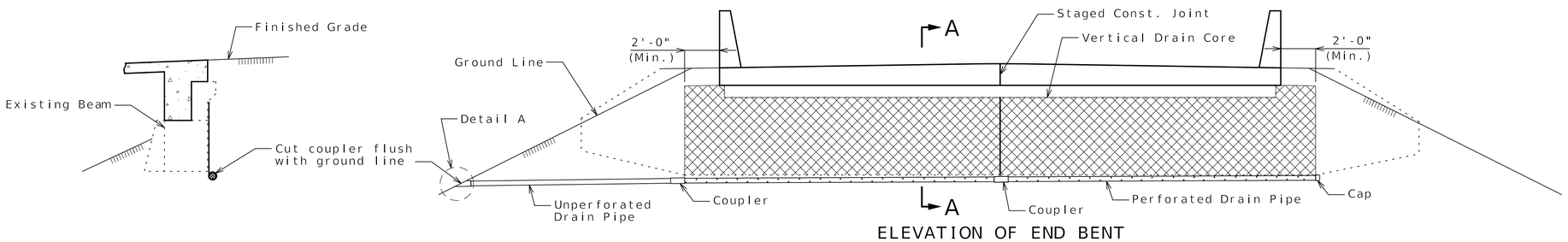
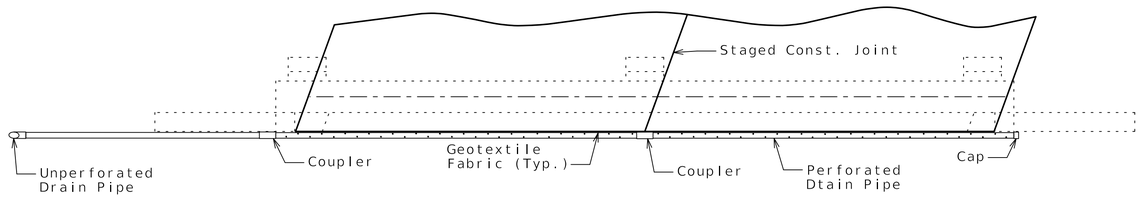
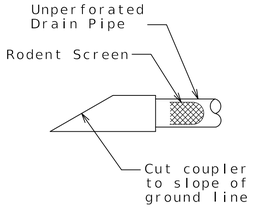


ELEVATION OF END BENT

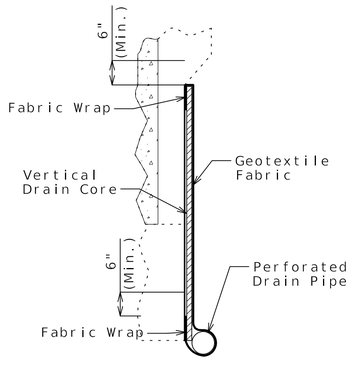


PLAN OF END BENT

(Approach notch and barrier curb not shown for clarity)



DETAIL A



PART SECTION A-A

General Notes:

All drain pipe shall be sloped 1 to 2 percent.

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

Drain pipe shall be placed at fill face of end bent. The pipe shall slope to lowest grade of ground line.

Perforated pipe shall be placed at fill face side at the bottom of end bent and plain pipe shall be used where the vertical drain ends to the exit at ground line.

VERTICAL DRAIN AT END BENTS

Detailed Dec. 2025
Checked Dec. 2025

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

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ROUTE 8 | STATE MO
DISTRICT BR | SHEET NO. 6
COUNTY WASHINGTON
JOB NO. J5P3558
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PROJECT NO.
BRIDGE NO. A14372

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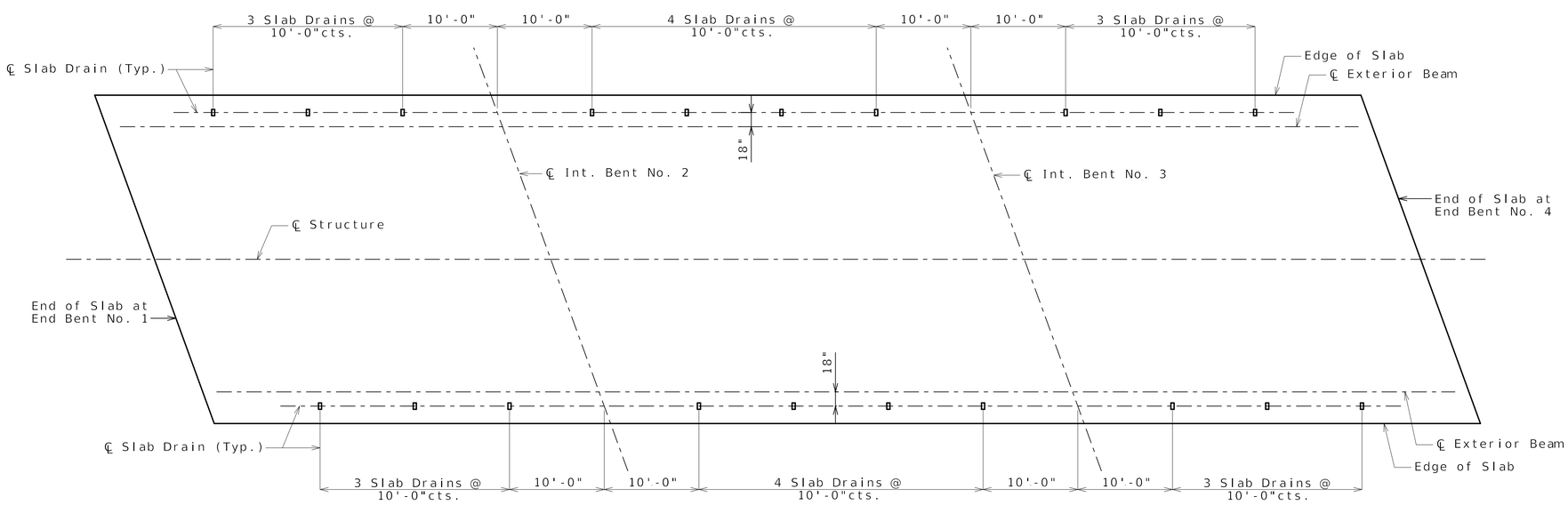
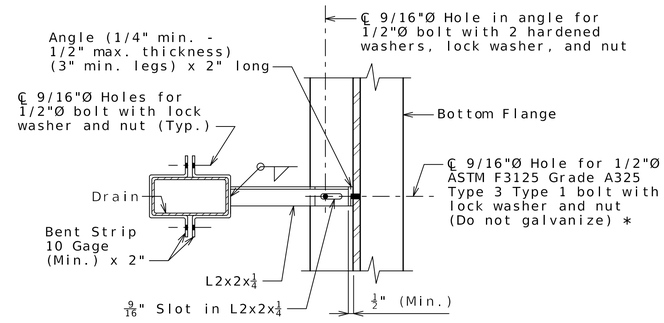
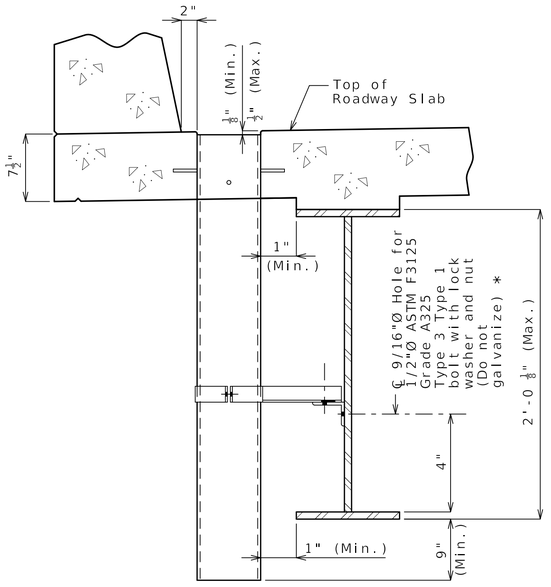


PLAN OF SLAB SHOWING SLAB DRAIN LOCATIONS

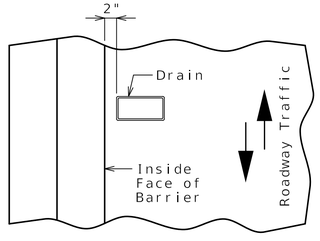


PART SECTION SHOWING BRACKET ASSEMBLY

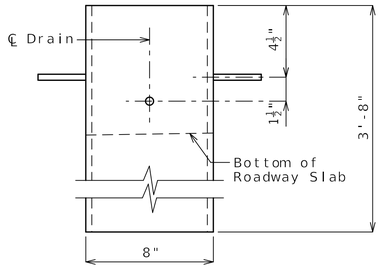
* See Sec 1080.4



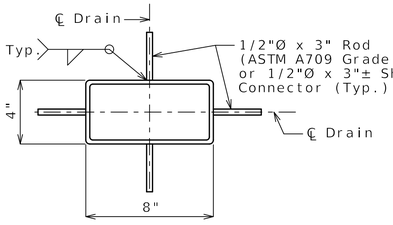
PART SECTION NEAR DRAIN



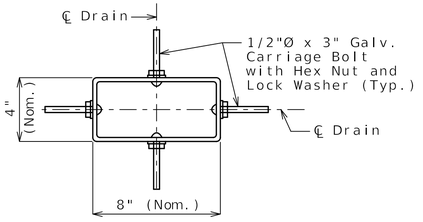
PART PLAN OF SLAB AT DRAIN



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, except as shown.

All 1/2-inch diameter 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 located on the plate girder shop drawings.

The galvanized surfaces of drain support brackets shall be prepared according to the coating manufacturer's recommendation and field coated with a gray epoxy-mastic primer (non-aluminum) within a distance of 6 inches from the point of connection to the weathering steel structure.

Notes for Steel Drain:

Slab drains may be fabricated of either 1/4-inch welded sheets of ASTM A709 Grade 36 steel or from 1/4-inch 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 as recommended by the manufacturer to ensure a smooth, chip free cut.

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ROUTE 8 | STATE MO
DISTRICT BR | SHEET NO. 7
COUNTY WASHINGTON
JOB NO. J5P3558
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A14372

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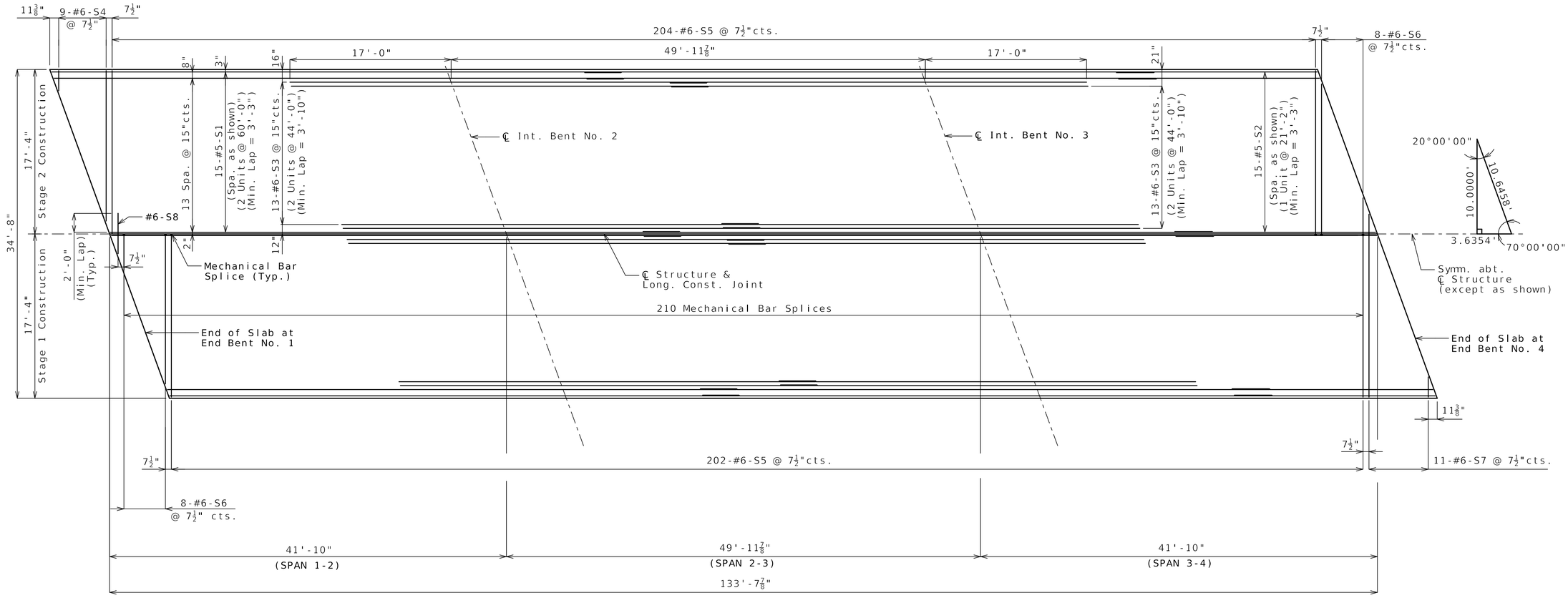
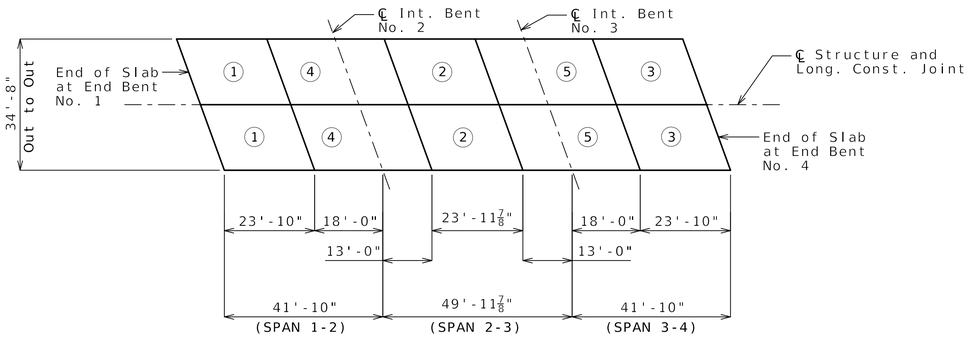


PLAN OF SLAB SHOWING TOP REINFORCEMENT



SLAB POURING SEQUENCE

The contractor shall pour and satisfactorily finish the slab poours at the rate given. Retarder, if used, shall be an approved type and retard the set of concrete to 2.5 hours.

The concrete diaphragm at the integral end bents shall be poured a minimum of 30 minutes and a maximum of 2 hours before the slab is poured.

	Sequence of Pours					Min. Rate of Pour Cu. Yds./Hr.	
	Direction					With Retarder	No Retarder
Basic Sequence	1	2	3	4	5	N/A	25
	Either Direction						
Alternate pours to the basic skip sequence are subject to the approval of the engineer in accordance with Sec 703.							
Alternate A Pours	1	5 + 2		4 + 3		25	25
	End to 5	1 to 4		2 to End			
Alternate B Pours	1 + 5 + 2			4 + 3		25	25
	End to 4			2 to End			
Alternate C Pours	1 + 5 + 2 + 4 + 3					25	25
	End to End						

Notes:

Work this sheet with Sheet No. 9.

Longitudinal slab dimensions are measured horizontally.

For Typical Section Thru Slab, see Sheet No. 1.

For details and reinforcement of Type D Barrier not shown, see Sheets No. 10 and 11.

Detailed Dec. 2025
Checked Dec. 2025

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

Sheet No. 8 of 13

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8	MO
DISTRICT	SHEET NO.
BR	8

COUNTY WASHINGTON

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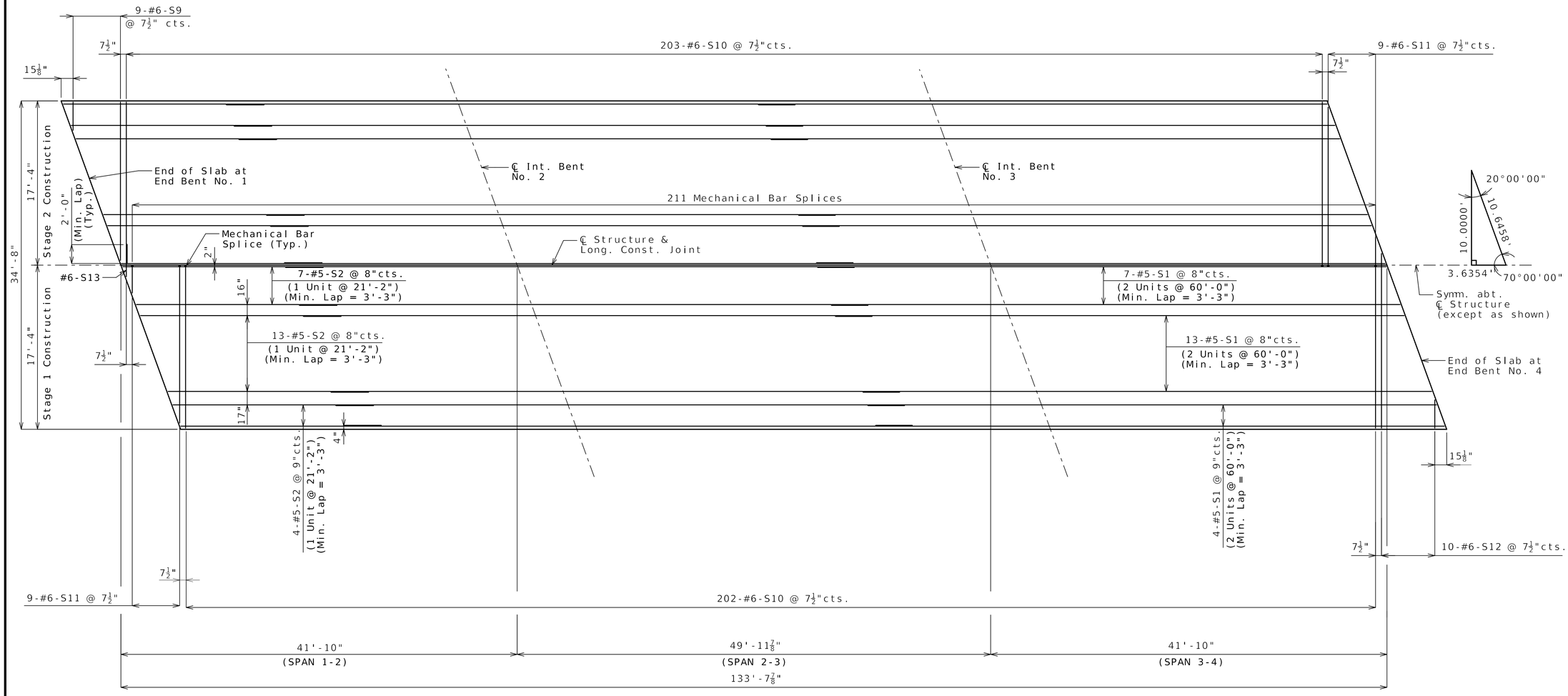

PLAN OF SLAB SHOWING BOTTOM REINFORCEMENT

Notes:

Work this sheet with Sheet No. 8.

Longitudinal slab dimensions are measured horizontally.

For Typical Section Thru Slab, see Sheet No. 1.

For details and reinforcement of Type D Barrier not shown, see Sheets No. 10 and 11.

Detailed Dec. 2025
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Note: This drawing is not to scale. Follow dimensions.

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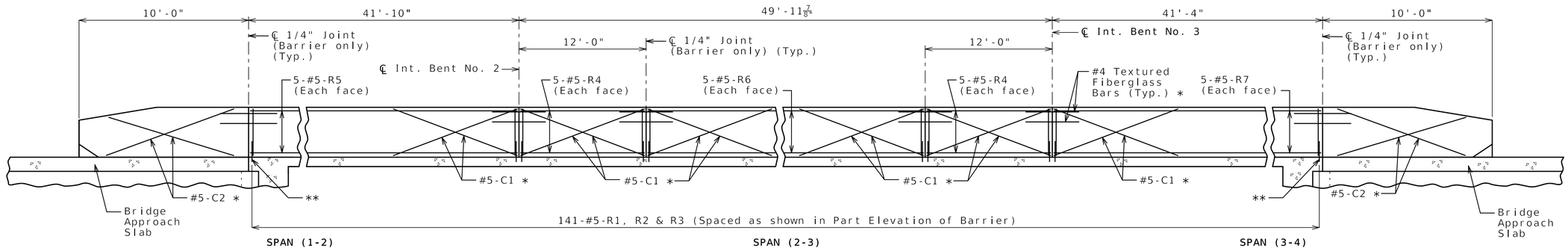
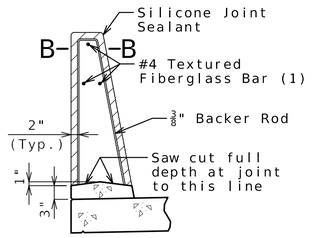


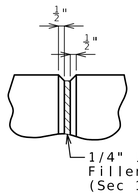
ELEVATION OF BARRIER

(Left barrier shown, right barrier similar)

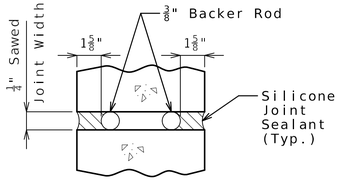
Longitudinal dimensions are horizontal.



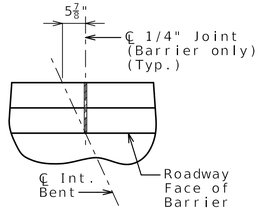
SECTION THRU SAW CUT JOINT



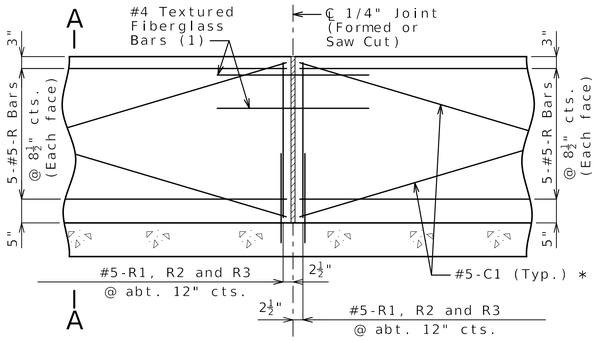
PART ELEVATION AT FORMED JOINT



SECTION B-B

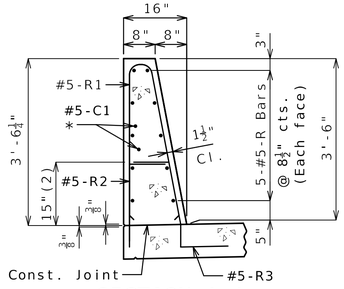


PART PLAN SHOWING JOINT LOCATION



PART ELEVATION OF BARRIER

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

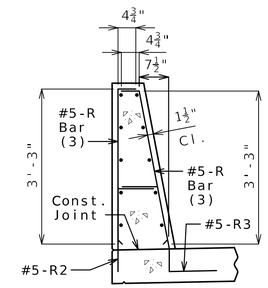


SECTION A-A

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

The cross-sectional area above the slab is 3.52 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.

** Place the last R3 bar parallel to end of slab to meet minimun clearance.

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 (except at end bents) 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 D 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 wing to end of wing.

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 D 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.

Plastic waterstop shall not be used with saw cut joints.

TYPE D BARRIER

Detailed Dec. 2025
Checked Dec. 2025

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

STATE OF MISSOURI
ANOUSONE AROUNPRADITH
NUMBER PE-29317
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 12/19/2025

ROUTE	STATE
8	MO
DISTRICT	SHEET NO.
BR	10

COUNTY WASHINGTON

JOB NO. J5P3558

CONTRACT ID.

PROJECT NO.

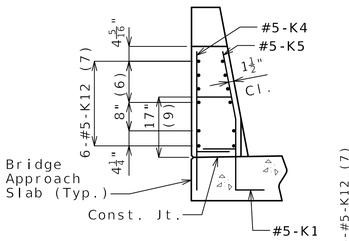
BRIDGE NO. A14372

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

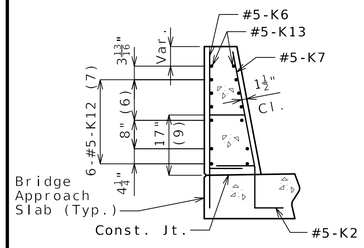
DATE	DESCRIPTION

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

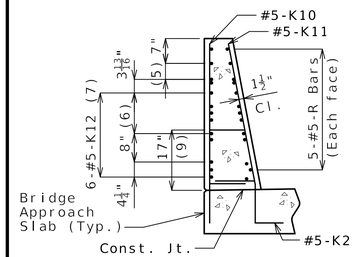
Bartlett & West
601 MONROE ST. SUITE 201 - JEFFERSON CITY, MO 65101
PHONE 573-634-3181
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM



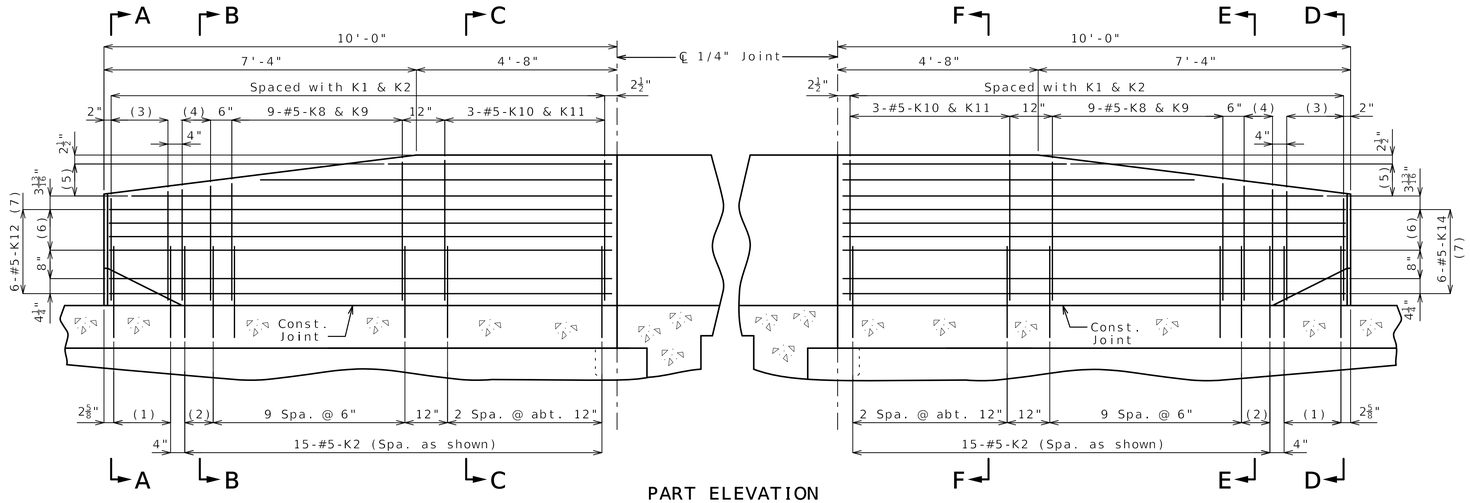
ELEVATION A-A



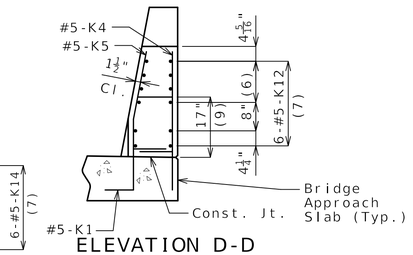
SECTION B-B



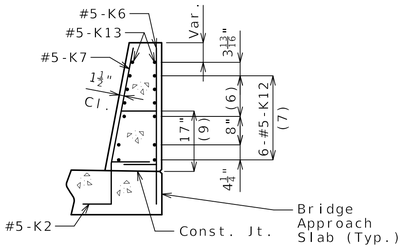
SECTION C-C



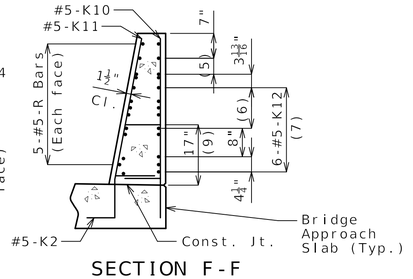
PART ELEVATION



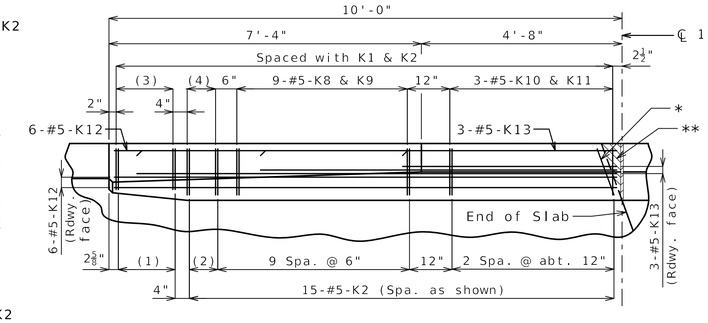
ELEVATION D-D



SECTION E-E

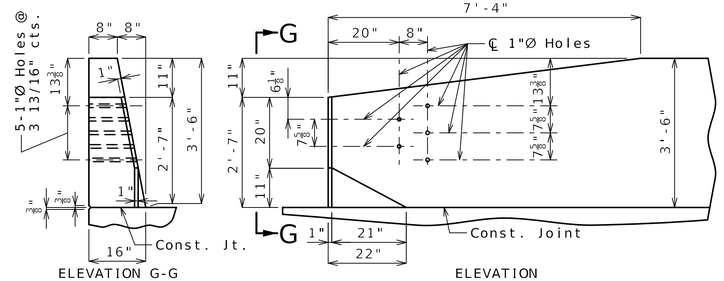


SECTION F-F



PART PLAN

(Top of barrier not shown for clarity.)



DETAILS OF GUARD RAIL ATTACHMENT

*** Transition to zero at Type A curb for gutter lines to match.

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

(2) 2 spaces @ 4"

(3) 5-#5-K4 & K5

(4) 3-#5-K6 & K7

(5) 2-#5-K13 @ 4½" cts., each face

(6) 3 spaces @ 3 13/16"

(7) Spaced as shown, each face

(8) 2-#5-K13 (Roadway face)

(9) To top of bar

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 D Barrier.

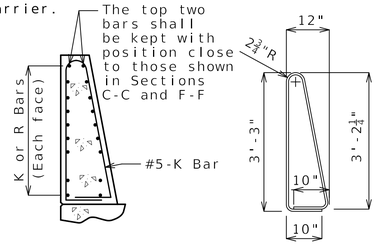
Reinforcing Steel:

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

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

* Place the last K2 bar parallel to end of slab to meet minimum clearance.

** One Layer of 30# Roofing Felt



K10-K11 BAR PERMISSIBLE ALTERNATE SHAPE

(Other K bars not shown for clarity)

The K10-K11 bar combination may be furnished as one bar as shown, at the contractor's option.

All dimensions are out to out.

TYPE D BARRIER AT END BENTS

(Left barrier shown, right barrier similar)

Detailed Dec. 2025
Checked Dec. 2025

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

STATE OF MISSOURI
ANOUSONE AROUNPRADITH
NUMBER PE-29317
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

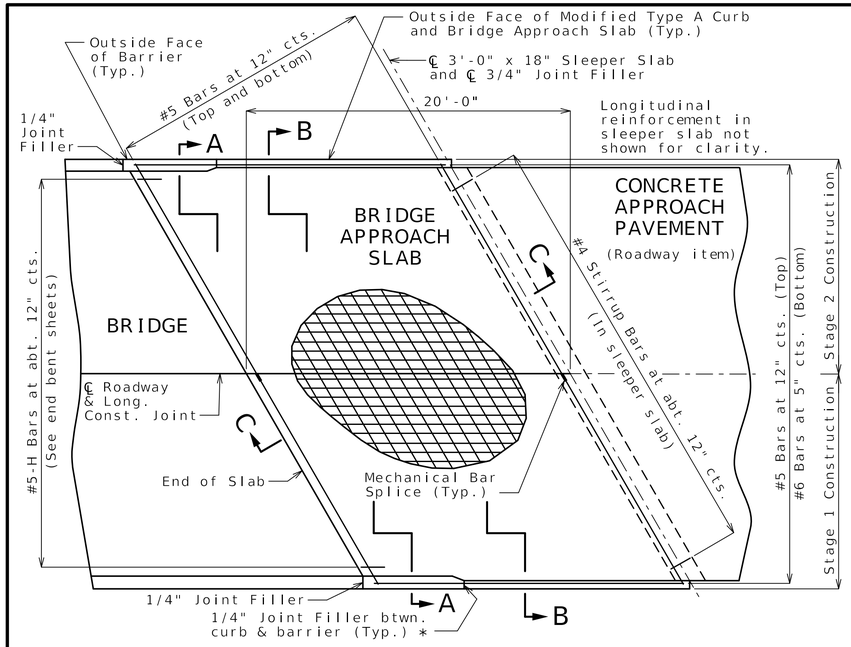
DATE PREPARED 12/19/2025
ROUTE 8 | STATE MO
DISTRICT BR | SHEET NO. 11
COUNTY WASHINGTON
JOB NO. J5P3558
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A14372

DESCRIPTION | DATE

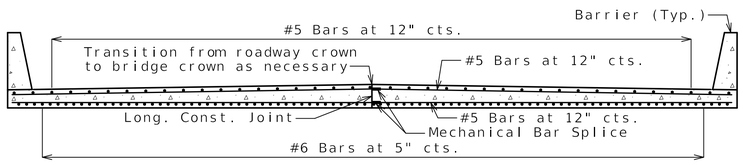
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

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

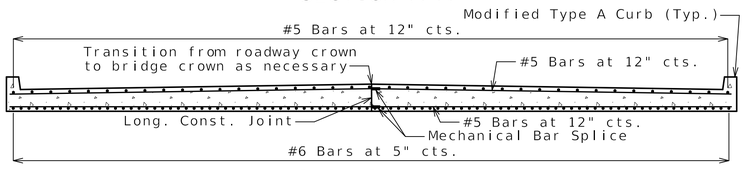
Bartlett & West
601 MONROE ST. SUITE 201 - JEFFERSON CITY, MO 65101
PHONE 573-634-3181
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM



PART PLAN SHOWING REINFORCEMENT

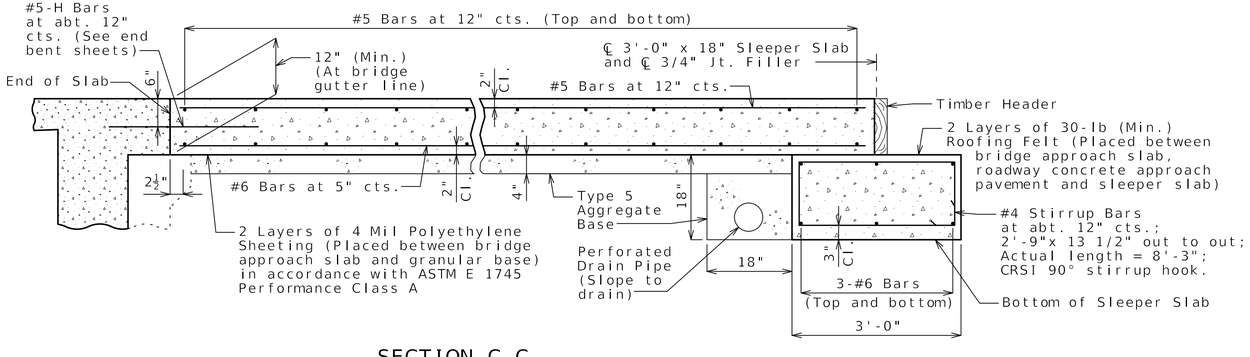


SECTION A-A

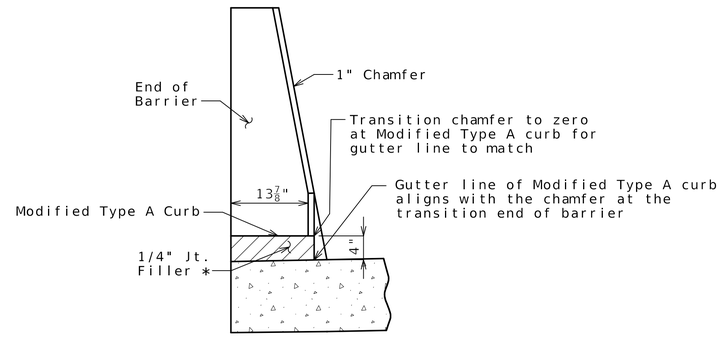


SECTION A-A

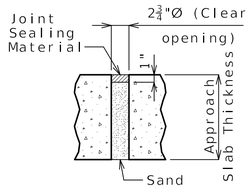
With the approval of the engineer, the contractor may crown the bottom of the approach slab to match the crown of the roadway surface.



SECTION C-C

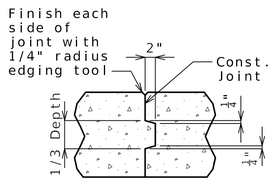


SECTION BETWEEN CURB AND BARRIER

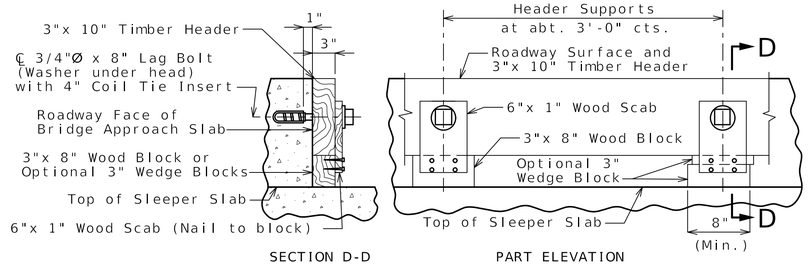


UNDERSEAL ACCESS HOLE DETAIL

(If required)



CONSTRUCTION JOINT DETAIL



DETAILS OF TIMBER HEADER

Remove timber header when concrete pavement is placed.

General Notes:

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

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

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.

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

The reinforcing steel in the bridge approach slab and the sleeper slab shall be continuous. The transverse reinforcing steel may be made continuous by providing a minimum lap splice of 24 inches for #5 bars and 40 inches for #6 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.

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

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

For concrete approach pavement details, see roadway plans.

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

Payment for furnishing all materials, labor and excavation necessary to construct the approach slab, including the timber header, sleeper slab, underdrain, Type 5 aggregate base, joint filler 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 (Major) per square yard.

* Seal joint in accordance with Sec 717 for silicone joint sealant for saw cut and formed joints.

BRIDGE APPROACH SLAB (MAJOR)

Detailed Dec. 2025
Checked Dec. 2025

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

STATE OF MISSOURI
ANOUSONE AROUNPRADITH
NUMBER PE-29317
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED: 12/23/2025
ROUTE: 8 | STATE: MO
DISTRICT: BR | SHEET NO.: 12
COUNTY: WASHINGTON
JOB NO.: J5P3558
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A14372

DESCRIPTION | DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

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

Bartlett & West
601 MONROE ST. SUITE 201 - JEFFERSON CITY, MO 65101
PHONE 573-634-3181
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE	MARK NO. MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
			END BENTS																									
16	6	H1	DIAPHRAGM	E	20					22	4.000													22	4	22	4	537
16	6	H2	DIAPHRAGM	E	20					18	2.000													18	2	18	2	437
8	6	H3	DIAPHRAGM	E	15	S				2	6.000	2	6.000							2	4.250	10.250		5	0	4	11	59
8	6	H4	DIAPHRAGM	E	21	S				2	6.000	2	6.000							2	4.250	10.250		5	0	4	9	57
64	5	H5	APPR NOTCH	E	20					2	6.000													2	6	2	6	167
			SLAB																									
156	5	S1	SLAB	E	20					60	0.000													60	0	60	0	9762
78	5	S2	SLAB	E	20					21	2.000													21	2	21	2	1722
104	6	S3	SLAB	E	20					44	0.000													44	0	44	0	6873
9	6	S4	SLAB	E	20			V	1	15	10.000													15	10	15	10	121
			INCREMENT =							2	1.000													2	1	2	1	
			20.625 INCH																									
406	6	S5	SLAB	E	20					17	1.000													17	1	17	1	10418
16	6	S6	SLAB	E	20			V	2	15	9.000													15	9	15	9	235
			INCREMENT =							3	9.000													3	9	3	9	
			20.625 INCH																									
11	6	S7	SLAB	E	20			V	1	19	3.000													19	3	19	3	176
			INCREMENT =							2	1.000													2	1	2	1	
			20.625 INCH																									
1	6	S8	SLAB	E	20					4	3.000													4	3	4	3	6
9	6	S9	SLAB	E	20			V	1	16	8.000													16	8	16	8	132
			INCREMENT =							2	11.000													2	11	2	11	
			20.625 INCH																									
405	6	S10	SLAB	E	20					17	1.000													17	1	17	1	10392
18	6	S11	SLAB	E	20			V	2	16	6.000													16	6	16	6	260
			INCREMENT =							2	9.000													2	9	2	9	
			20.625 INCH																									
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			INCREMENT =							2	11.000													2	11	2	11	
			20.750 INCH																									
1	6	S13	SLAB	E	20					3	5.000													3	5	3	5	5
			TYPE D																									
			BARRIER																									
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60	5	K2	BARRIER	E	27	S				2	2.000	9.250		17.250		8.500		12.000		17.000	3.250	6	1	5	9	360
20	5	K4	BARRIER	E	19	S		V	4	2	6.250	10.000										3	4	3	3	66
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			0.500 INCH																									
20	5	K5	BARRIER	E	14	S		V	4		8.250	9.500		18.500						4.500	20.000	3	2	3	1	63
			INCREMENT =								8.250	9.500		20.500						4.000	18.000	3	0	2	11	
			0.500 INCH																									
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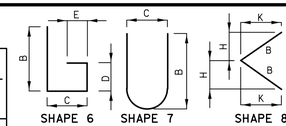
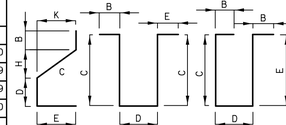
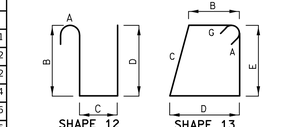
12	5	K7	BARRIER	E	21	S				2	6.625	10.000								2	6.000	6.250		3	5	3	3	41
36	5	K8	BARRIER	E	19	S		V	4	3	2.500	10.000										4	1	3	11	138
			INCREMENT =							2	8.500	10.000										3	7	3	5	
			0.750 INCH																									
36	5	K9	BARRIER	E	21	S		V	4	3	2.500	10.000								3	1.750	7.750	4	1	3	11	138
			INCREMENT =							2	8.500	10.000								2	7.750	6.750	3	6	3	5	
			0.750 INCH																									

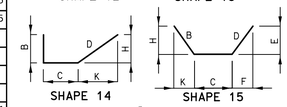
BILL OF REINFORCING STEEL

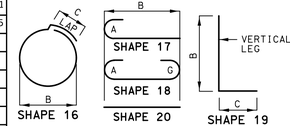
NO. REQ'D.	MARK NO. SIZE	MARK NO. MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
12	5	K10	BARRIER	E	19	S				3	3.000	10.000												4	1	3	12	50
12	5	K11	BARRIER	E	21	S				3	3.000	10.000								3	2.250	7.500		4	1	3	11	49
48	5	K12	BARRIER	E	20					9	9.000													9	9	9	9	489
24	5	K13	BARRIER	E	20			V	8	9	0.000													9	0	9	0	150
			INCREMENT =							3	0.000													3	0	3	0	
			36.000 INCH																									
282	5	R1	BARRIER	E	26					3	3.000	5.500	3	1.375						3	3.000	6.750	6	9	6	8	1961
282	5	R2	BARRIER	E	19	S					19.500	9.500												2	5	2	3	662
282	5	R3	BARRIER	E	27	S						9.500		15.250		4.000		12.000		15.000		3.000		3	5	3	2	932
80	5	R4	BARRIER	E	20					11	8.000													11	8	11	8	974
20	5	R5	BARRIER	E	20					29	6.000													29	6	29	6	616
20	5	R6	BARRIER	E	20					25	8.000													25	8	25	8	536
20	5	R7	BARRIER	E	20					29	0.000													29	0	29	0	605
			SLIP FORM																									
32	5	C1	SLIP FORM	E	20					12	0.000													12	0	12	0	401
8	5	C2	SLIP FORM	E	20					7	9.000													7	9	7	9	65
			TOTALS																									
	5			E																								20108
	6			E																								29868
			TOTAL																									0
			TOTAL	E																								49976
			TYPE D																									
			BARRIER																									
	5			E																								7991
			TOTAL																									7991
			SLAB ON																									
			BEAM																									
	5			E																								11651
	6			E																								29868
			TOTAL																									41519
			TYPE D																									
			BARRIER																									
	5			E																								7991
			TOTAL																									7991
			SLIP FORM																									
			OPTION																									
	5			E																								466
			TOTAL																									466

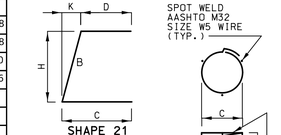


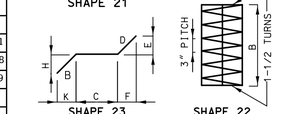


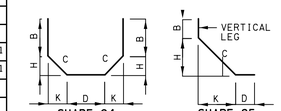


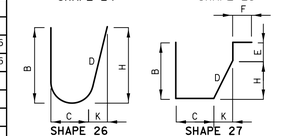


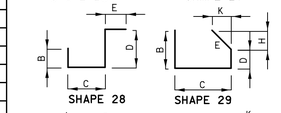


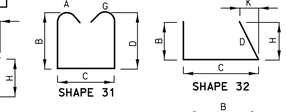


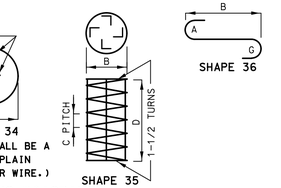




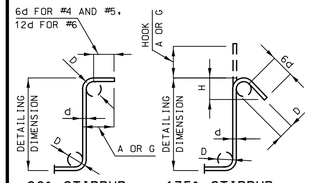








BENDING DIAGRAMS

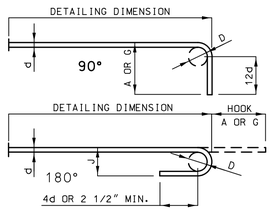


STIRRUP HOOK DIMENSIONS

GRADES 40 – 50 – 60 KSI

BAR SIZE	D (IN.)	90° HOOK HOOK A OR G	135° HOOK HOOK A OR G	135° HOOK APPROX. H
#4	2"	4 1/2"	4 1/2"	3"
#5	2 1/2"	6"	5 1/2"	3 3/4"
#6	4 1/2"	12"	8"	4 1/2"

NOTE: UNLESS OTHERWISE NOTED, DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.



END HOOK DIMENSIONS

BAR SIZE	D (IN.)	ALL GRADES 180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2 1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3 3/4"	7"	5"	10"
#6	4 1/2"	8"	6"	12"
#7	5 1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9 1/2"	15"	11 3/4"	19"
#10	10 3/4"	17"	13 1/4"	22"
#11	12"	19"	14 3/4"	2'-0"
#14	18 1/4"	2'-3"	21 3/4"	2'-7"

NOTE:

ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEGREE ARE TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEGREE STANDARD HOOKS.

HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

E = EPOXY COATED REINFORCEMENT.
S = STIRRUP.
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.

NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)

ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.

PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.

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.

REINFORCING STEEL (ASTM A615 GRADE 60) FY = 60,000 PSI.

Detailed Dec. 2025
Checked Dec. 2025

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

STATE OF MISSOURI
ANOUSONE AROUNPRADITH
NUMBER PE-29317
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 12/19/2025
ROUTE 8 | STATE MO
DISTRICT BR | SHEET NO. 13
COUNTY WASHINGTON
JOB NO. J5P3558
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A14372

DESCRIPTION | DATE

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105 WEST CAPITOL
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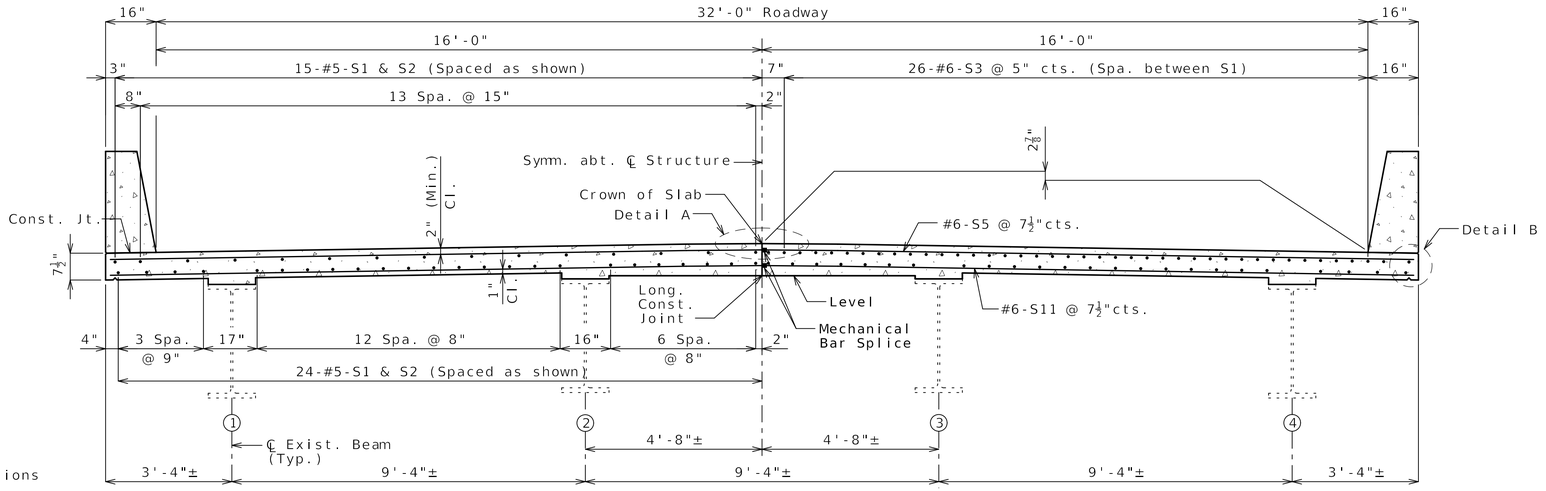
SEC/SUR 23 TWP 37N RGE 1E

U.I.P. AND REDECK EXISTING (37'- 48'- 37') CONTINUOUS COMPOSITE WIDE FLANGE BEAM SPANS SKEW 15°00'00" R.A.

Table Showing S3 Bar Lengths			
Int. Bent No. 2		Int. Bent No. 3	
Span 1	Span 2	Span 2	Span 3
11'-0"	26'-0"	26'-0"	11'-0"

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.



HALF SECTION NEAR MIDSPAN HALF SECTION NEAR INT. BENT

TYPICAL SECTION THRU SLAB

General Notes:

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

Design Loading:
H20-44 (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 II

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

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.

Mechanical Bar Splice:
All mechanical bar splices shall be in accordance with Sec. 710.

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)

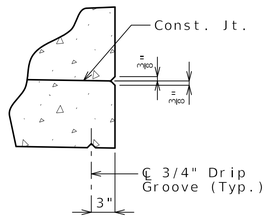
Outline of existing work is indicated by light dashed lines. Heavy lines indicate new work.

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

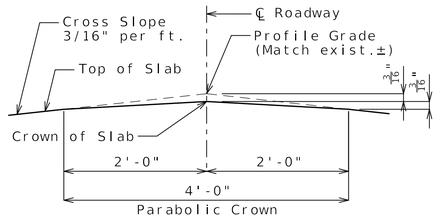
The area exposed by the removal of concrete and not covered with new concrete shall be coated with an approved qualified special mortar in accordance with Sec 704.

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).

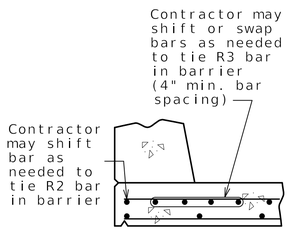
Traffic Handling:
Traffic to be maintained on structure during construction. See roadway plans for traffic control and Sheet No. 2 for staged construction details.



DETAIL B



DETAIL A



OPTIONAL SHIFTING TOP BARS AT BARRIER

Estimated Quantities

Item		Total
Removal of MIscellaneous ACM (Non-Friable)	sq. foot	11
Removal of Existing Bridge Deck	sq. foot	4,333
Bridge Approach Slab (Major)	sq. yard	154
Slab on Steel	sq. yard	484
Type H Barrier	linear foot	291
Mechanical Bar Splice	each	396
Protective Coating - Concrete Bents and Piers (Epoxy)	lump sum	1
Slab Drain	each	20
Non-Destructive Testing	linear foot	41
Vertical Drain at End Bents	each	2

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

Estimated Quantities for Slab on Steel

Item		Total
Class B-2 Concrete	cu. yard	104
Reinforcing Steel (Epoxy Coated)	pound	38,910

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. 3.

REPAIRS TO BRIDGE: ROUTE 8 OVER MIDDLE FORK FOURCHE A RENAULT

ROUTE 8 FROM ROUTE AA TO ROUTE 185
ABOUT 3.3 MILES EAST OF ROUTE AA
BEGINNING STATION 628+97.00±

STATE OF MISSOURI
ANOUSONE AROUNPRADITH
NUMBER PE-29317
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 12/19/2025
ROUTE 8 | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY WASHINGTON
JOB NO. J5P3558
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A14382

DESCRIPTION | DATE

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Checked Dec. 2025

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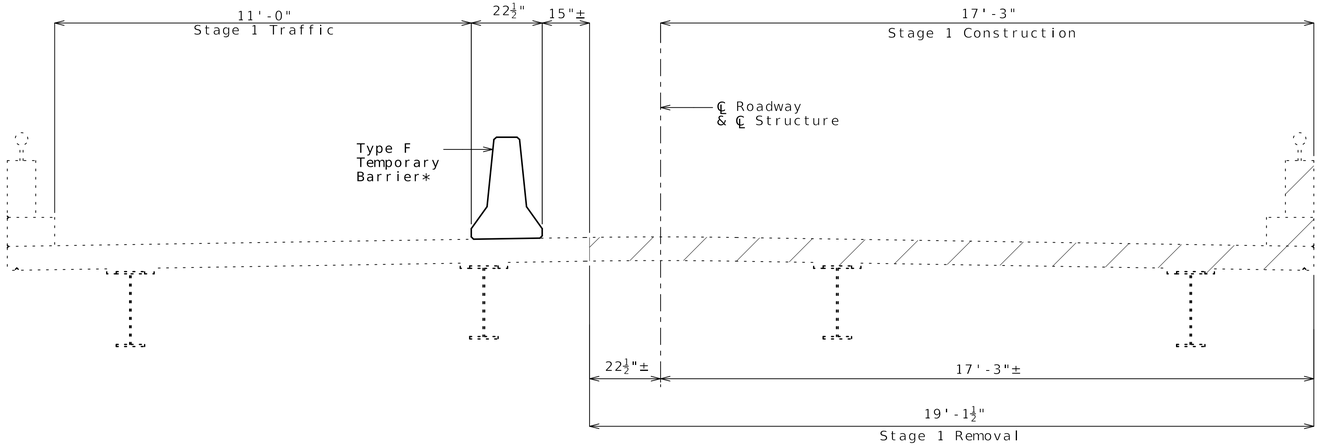
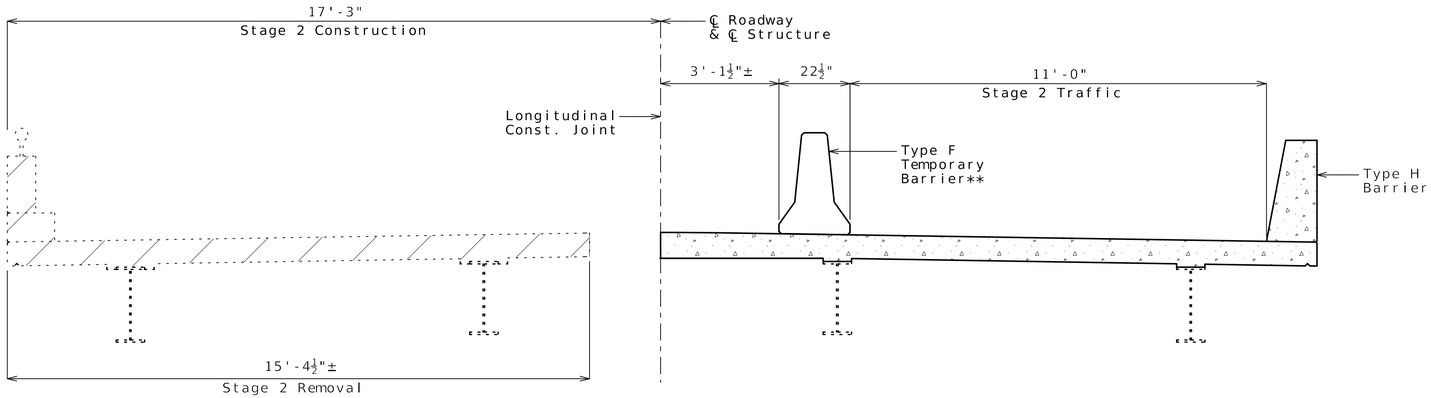
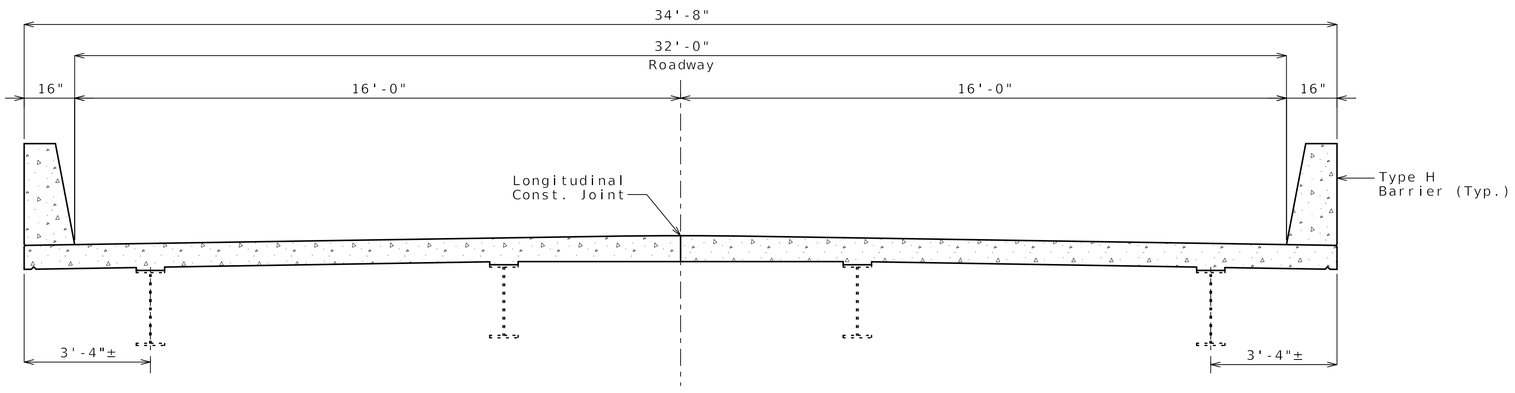


PHASE 1 STAGED CONSTRUCITON
* Temporary barrier shall be anchored to existing deck.



PHASE 2 STAGED CONSTRUCITON
** Temporary barrier shall be a freestanding.



FINAL

STAGE CONSTRUCTION DETAILS

Notes:

See Missouri Standard Plans 617.20 for details of temporary Type F Barrier not shown.

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ANOUSONE AROUNPRADITH
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DATE PREPARED: 12/19/2025
ROUTE: 8 | STATE: MO
DISTRICT: BR | SHEET NO.: 2
COUNTY: WASHINGTON
JOB NO.: J5P3558
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A14382

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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pw://bartwest-pw.bentley.com:bartwest-pw-04/Documents/18000/18432.225 - Washington Co. Route 8 Bridge Redecks/OpenRoads Designer/plan_sheets/Bridge Plans/A14382/B_A14382_002_J5P3558_const_stag.dgn 9:00:13 AM 12/19/2025

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.

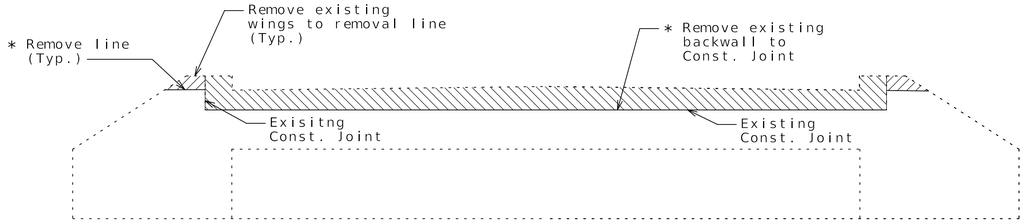
The design of stay-in-place corrugated steel forms is per manufacturer which shall be in accordance with Sec 703 for false work and forms. Maximum actual weight of corrugated steel forms allowed shall be 4 psf assumed for beam loading.

The contractor shall provide a method of preventing the direct contact of the stay-in-place forms and connection components with uncoated weathering steel members that is approved by the engineer.

Deflection and Haunching:

(1) Slab is to be considered a uniform thickness except between beams 2 and 3 as shown on the plans. Haunching will vary. See front sheet for slab thickness.

The contractor shall determine dead load deflections and haunching based on field measurements and/or existing bridge plans and these may be adjusted based on the difference between the new and existing dead load weights. In order to properly form the haunches for the new deck, the contractor shall survey top of deck elevations above each girder including centerline of roadway and along each girder (top or bottom flange) prior to deck removal followed by surveying elevations of the girders (top or bottom flange) after deck removal.



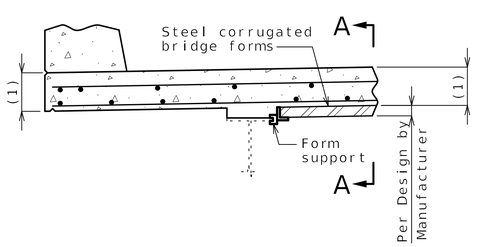
DETAILS OF CONCRETE REMOVAL AT END BENTS

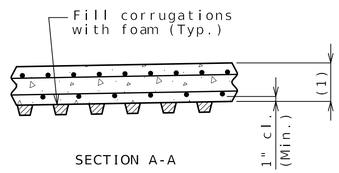
Notes:

The cost of concrete removal as shown will be considered completely covered by the contract unit price for Removal of Existing Bridge Deck.

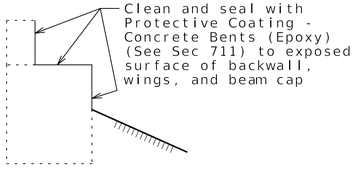
U.I.P. vertical backwall reinforcement.

* Vertical wingwall and backwall reinforcement shall be cut off one inch below concrete removal surface and the resulting holes shall be filled with a qualified special mortar. A smooth and level surface shall be provided at End Bent No. 4

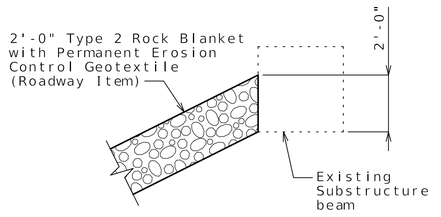




OPTIONAL STAY-IN-PLACE FORM DETAILS



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



ROCK BLANKET ON SPILL SLOPES

STATE OF MISSOURI
ANOUSONE AROUNPRADITH
NUMBER PE-29317
PROFESSIONAL ENGINEER
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DATE PREPARED 12/19/2025

ROUTE 8 | STATE MO

DISTRICT BR | SHEET NO. 3

COUNTY WASHINGTON

JOB NO. J5P3558

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A14382

DATE	DESCRIPTION

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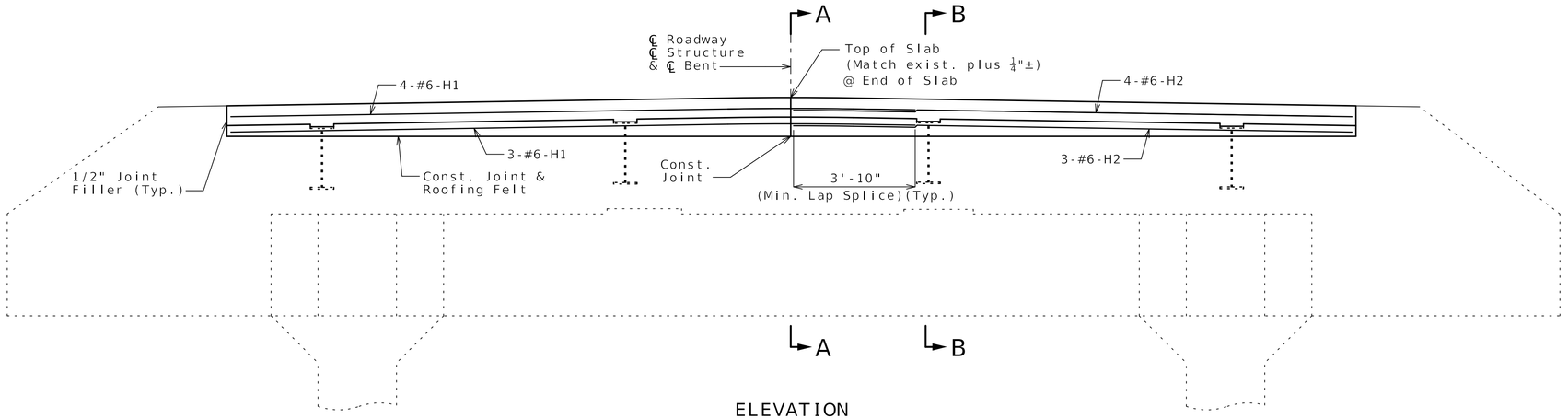
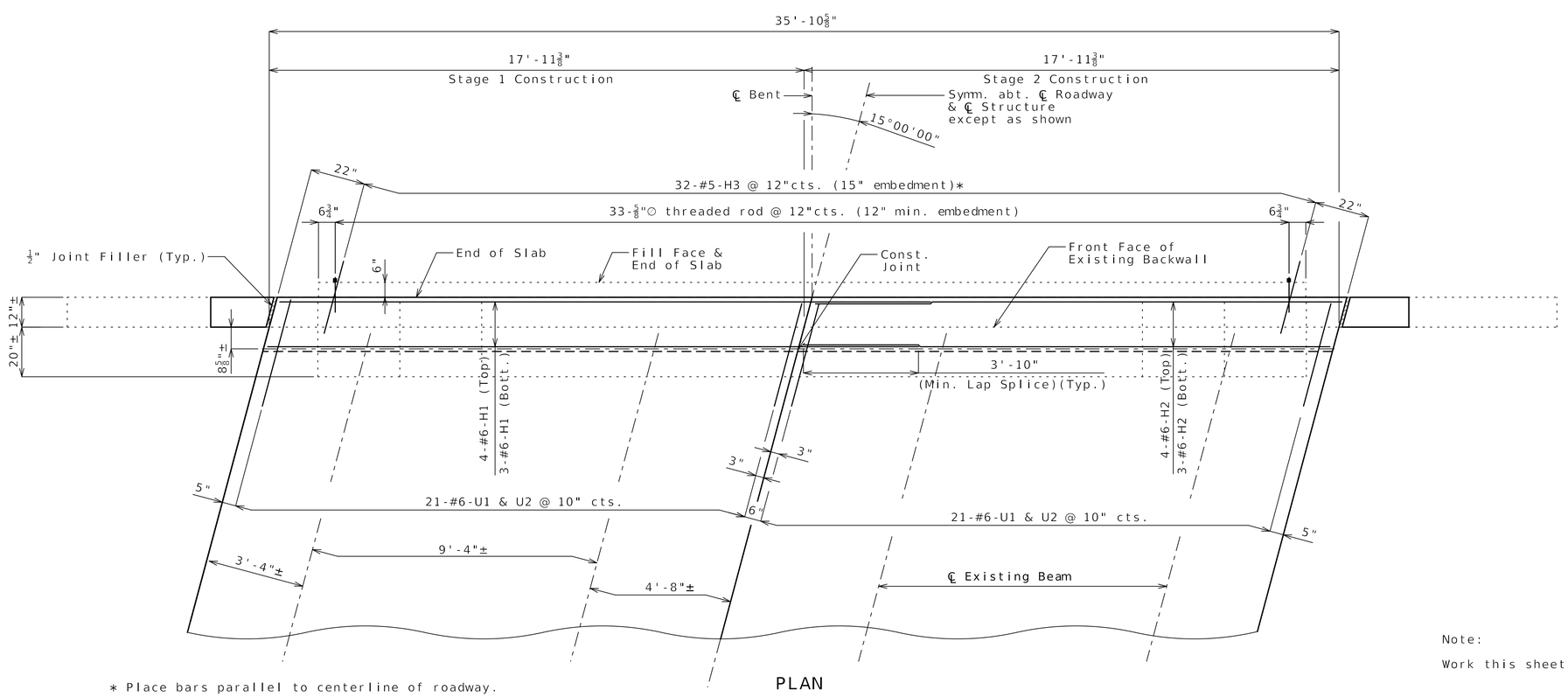


ELEVATION

Existing steel and diaphrams and bearing stiffeners not shown for clarity (leave in place).

Type H barrier not shown for clarity. For details and reinforcement of Type H Barrier, see Sheets No. 10 & 11.



∗ Place bars parallel to centerline of roadway.

PLAN

Note:

Work this sheet with Sheet No. 5.

STATE OF MISSOURI
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DATE PREPARED 12/19/2025

ROUTE	STATE
8	MO
DISTRICT	SHEET NO.
BR	4

COUNTY: WASHINGTON

JOB NO.: J5P3558

CONTRACT ID.:

PROJECT NO.:

BRIDGE NO.: A14382

DESCRIPTION	DATE

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

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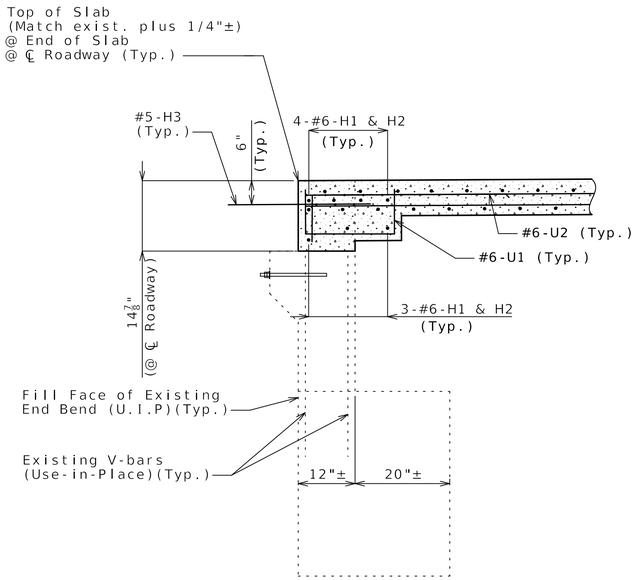
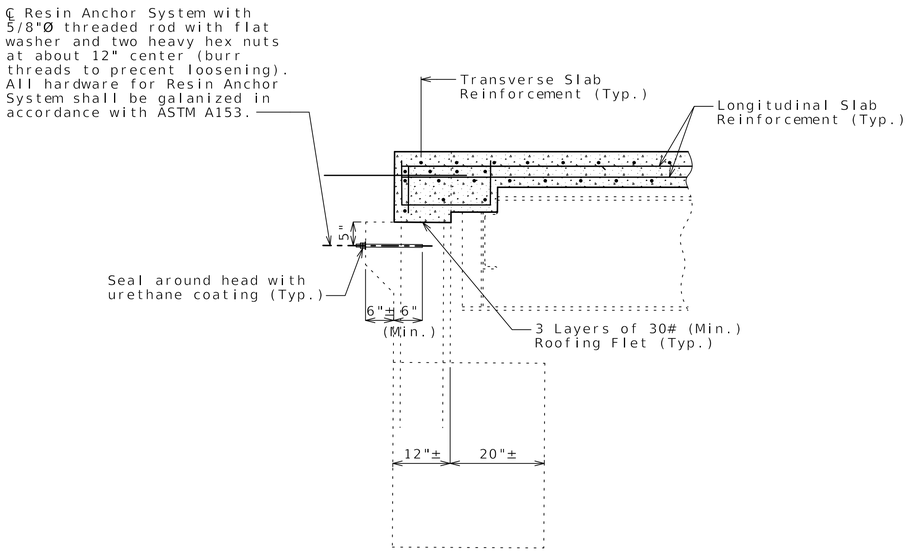


SECTION A-A

End Bent No. 1 shown
End Bent No. 4 similar except for grade.



SECTION B-B

End Bent No. 1 shown
End Bent No. 4 similar except for grade.

Notes:

Work this sheet with Sheet No. 4.

Concrete in slab and diaphragm shall be Class B-2.

All concrete and reinforcement is included in the Table of Estimated Quantities for Slab on Steel and will be considered completely covered by the contract unit price for Slab on Steel.

For details and reinforcement of Type H Barrier at End Bents, see Sheet No. 10 and 11.

For details of slab reinforcement, see Sheets No. 1, 8 and 9.

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

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

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

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DATE PREPARED 12/19/2025
ROUTE 8 | STATE MO
DISTRICT BR | SHEET NO. 5
COUNTY WASHINGTON
JOB NO. J5P3558
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A14382

DESCRIPTION | DATE

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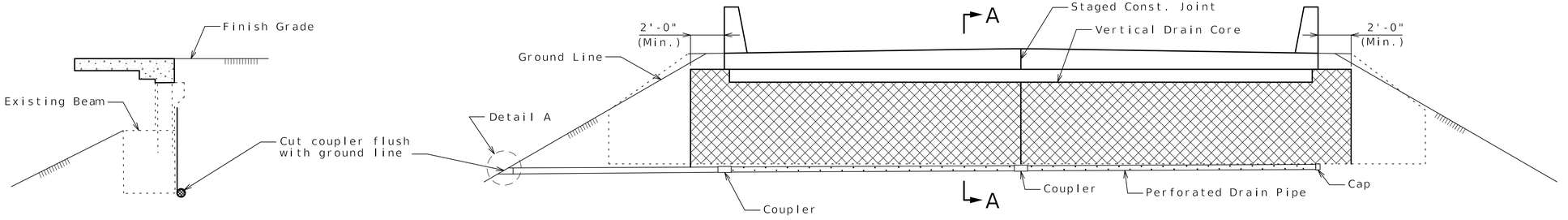
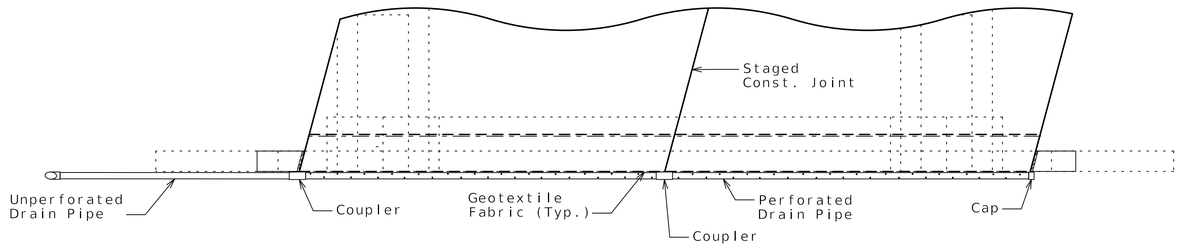
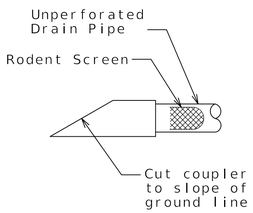


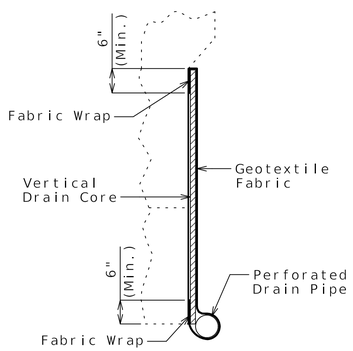
ELEVATION OF END BENT



PLAN OF END BENT
(Approach notch and barrier curb not shown for clarity)



DETAIL A



PART SECTION A-A

General Notes:

All drain pipe shall be sloped 1 to 2 percent.

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

Drain pipe shall be placed at fill face of end bent. The pipe shall slope to lowest grade of ground line.

Perforated pipe shall be placed at fill face side at the bottom of end bent and plain pipe shall be used where the vertical drain ends to the exit at ground line.

VERTICAL DRAIN AT END BENTS

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DATE PREPARED 12/19/2025
ROUTE 8 | STATE MO
DISTRICT BR | SHEET NO. 6
COUNTY WASHINGTON
JOB NO. J5P3558
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A14382

DESCRIPTION | DATE

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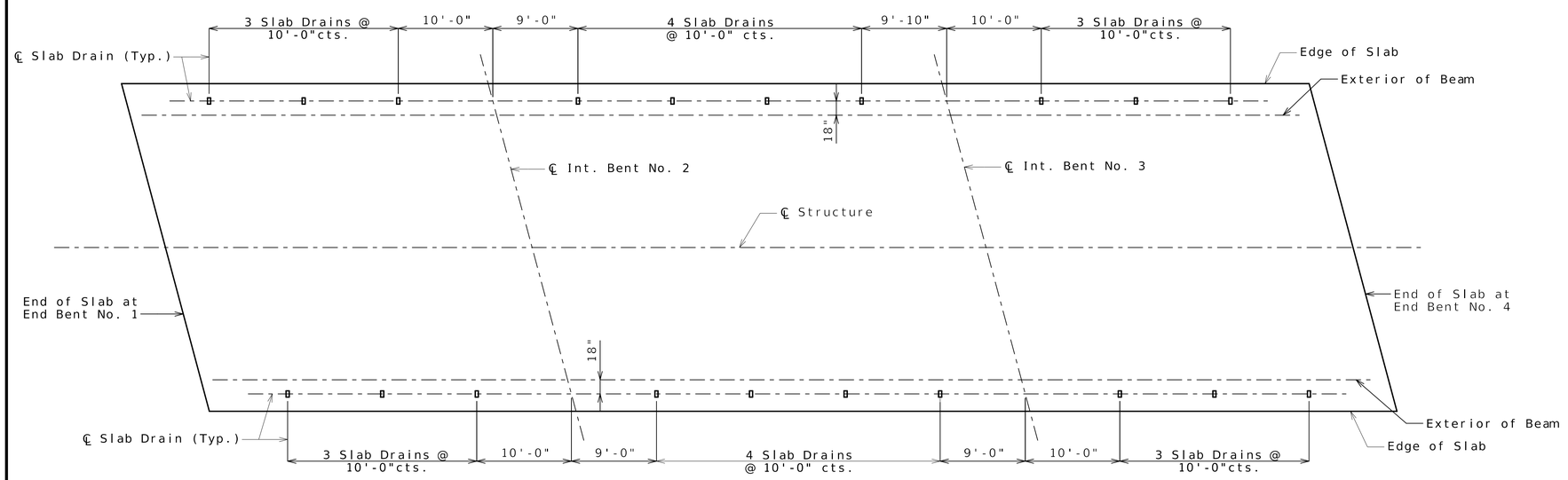
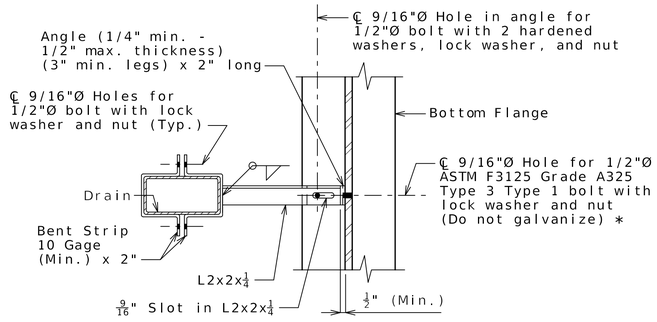
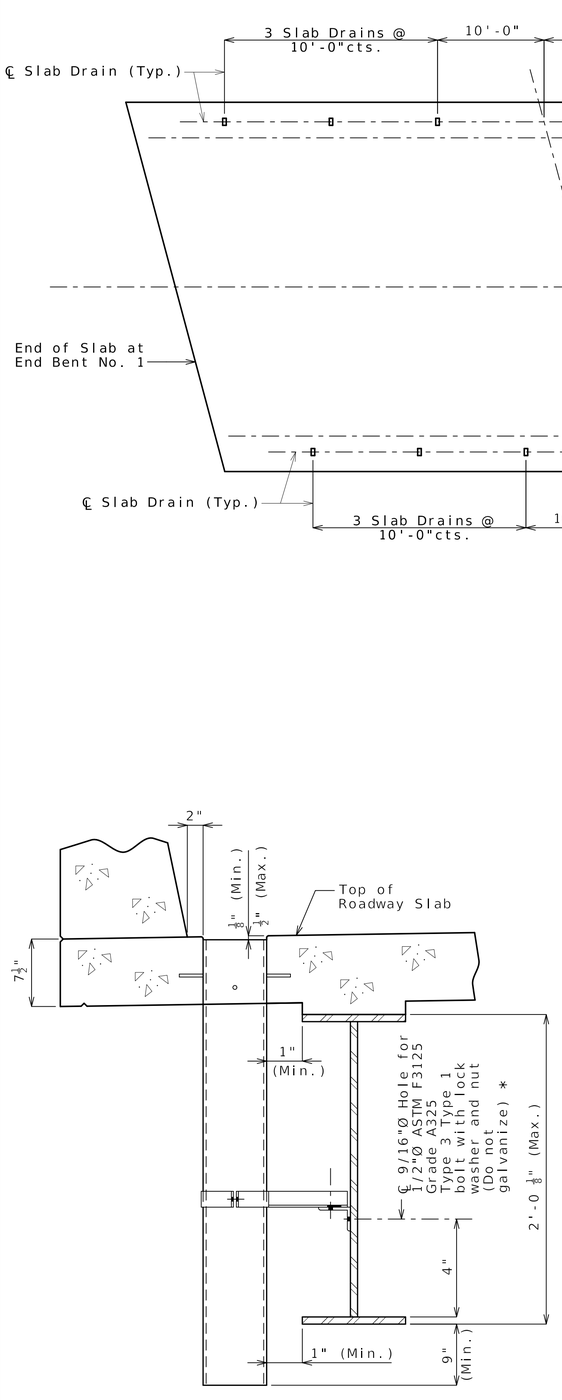


PLAN OF SLAB SHOWING SLAB DRAIN LOCATIONS

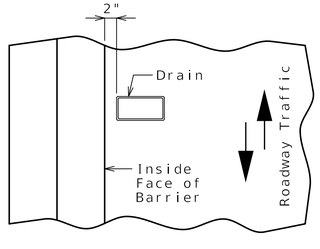


PART SECTION SHOWING BRACKET ASSEMBLY

* See Sec 1080.4

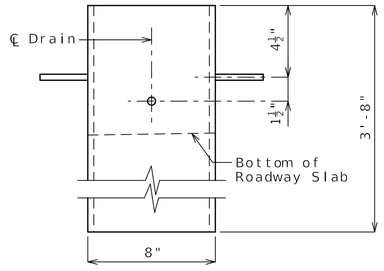


PART SECTION NEAR DRAIN

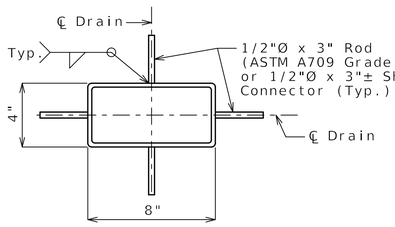


PART PLAN OF SLAB AT DRAIN

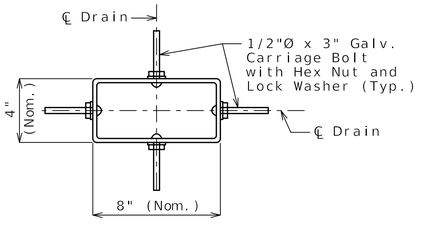
SLAB DRAINS



ELEVATION OF DRAIN



PLAN OF STEEL DRAIN OPTION



PLAN OF FRP DRAIN OPTION

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, except as shown.

All 1/2-inch diameter 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 located on the plate girder shop drawings.

The galvanized surfaces of drain support brackets shall be prepared according to the coating manufacturer's recommendation and field coated with a gray epoxy-mastic primer (non-aluminum) within a distance of 6 inches from the point of connection to the weathering steel structure.

Notes for Steel Drain:

Slab drains may be fabricated of either 1/4-inch welded sheets of ASTM A709 Grade 36 steel or from 1/4-inch 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 as recommended by the manufacturer to ensure a smooth, chip free cut.

STATE OF MISSOURI
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DATE PREPARED 12/22/2025
ROUTE 8 | STATE MO
DISTRICT BR | SHEET NO. 7
COUNTY WASHINGTON
JOB NO. J5P3558
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A14382

DESCRIPTION	DATE

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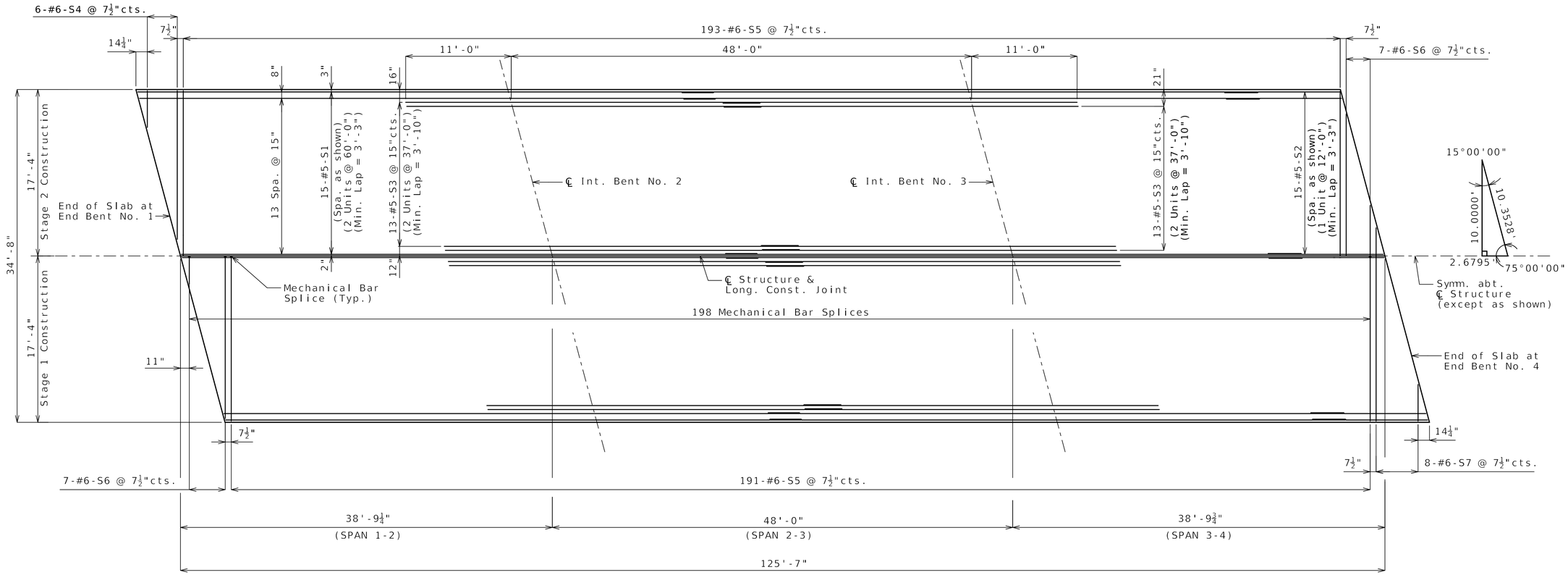
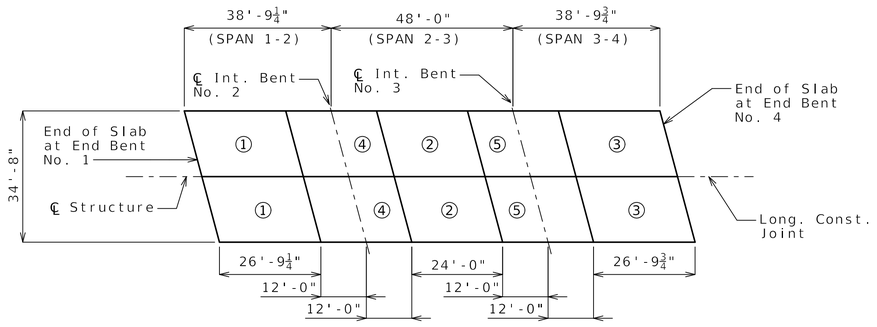


PLAN OF SLAB SHOWING TOP REINFORCEMENT



SLAB POURING SEQUENCE

The contractor shall pour and satisfactorily finish the slab poours at the rate given. Retarder, if used, shall be an approved type and retard the set of concrete to 2.5 hours.

The concrete diaphragm at the integral end bents shall be poured a minimum of 30 minutes and a maximum of 2 hours before the slab is poured.

	Sequence of Pours					Min. Rate of Pour Cu. Yds./Hr.	
	Direction					With Retarder	No Retarder
Basic Sequence	1	2	3	4	5	N/A	25
	Either Direction						
Alternate pours to the basic skip sequence are subject to the approval of the engineer in accordance with Sec 703.							
Alternate A Pours	1	5 + 2		4 + 3		25	25
	End to 5	1 to 4		2 to End			
Alternate B Pours	1 + 5 + 2			4 + 3		25	25
	End to 4			2 to End			
Alternate C Pours	1 + 5 + 2 + 4 + 3					25	25
	End to End						

Notes:

Work this sheet with Sheet No. 9.

Longitudinal slab dimensions are measured horizontally.

For Typical Section Thru Slab, see Sheet No. 1.

For details and reinforcement of Type H Barrier not shown, see Sheets No. 10 and 11.

STATE OF MISSOURI
ANOUSONE AROUNPRADITH
NUMBER PE-29317
PROFESSIONAL ENGINEER

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DATE PREPARED 12/19/2025

ROUTE 8 | STATE MO

DISTRICT BR | SHEET NO. 8

COUNTY WASHINGTON

JOB NO. J5P3558

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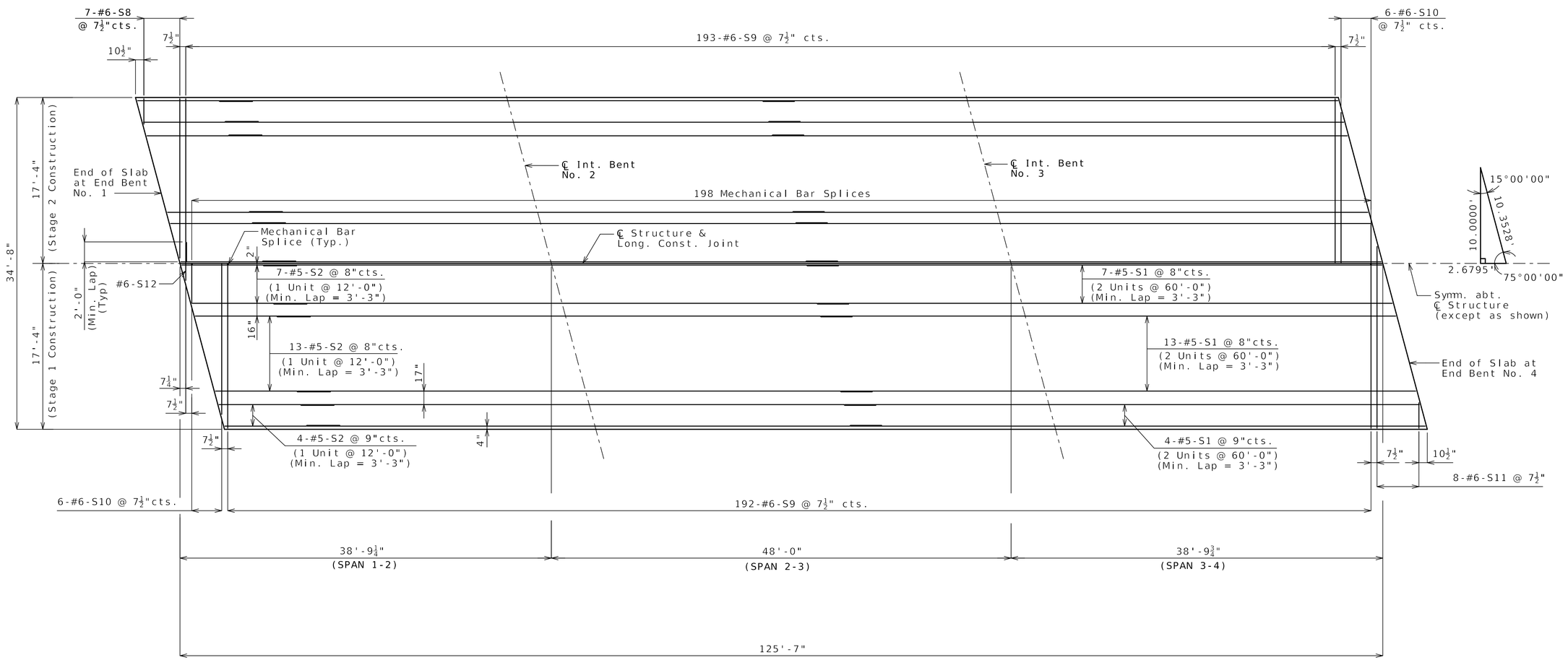

PLAN OF SLAB SHOWING BOTTOM REINFORCEMENT

Notes:

Working this sheet with Sheet No. 8.

Longitudinal slab dimensions are measured horizontally.

For Typical Section Thru Slab, see Sheet No. 1.

For details and reinforcement of Type H Barrier not shown, see Sheets No. 10 and 11.

STATE OF MISSOURI
ANOUSONE AROUNPRADITH
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DATE PREPARED
12/22/2025

ROUTE	STATE
8	MO
DISTRICT	SHEET NO.
BR	9

COUNTY
WASHINGTON

JOB NO.
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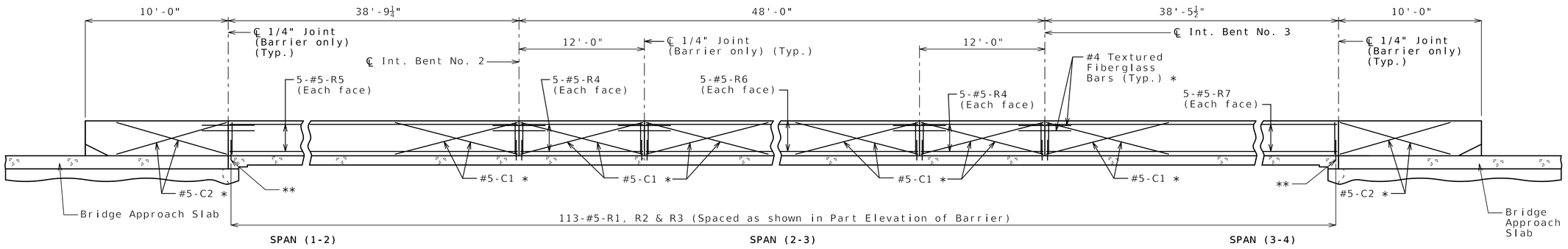
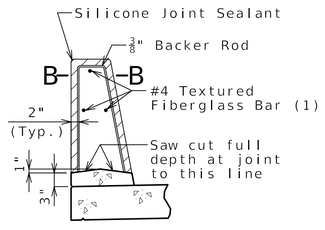


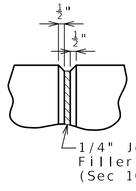
ELEVATION OF BARRIER

(Left barrier shown, right barrier similar)

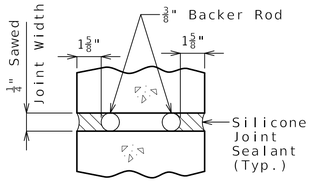
Longitudinal dimensions are horizontal.



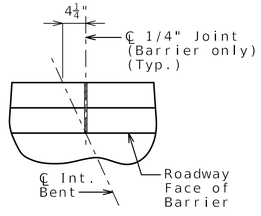
SECTION THRU SAW CUT JOINT



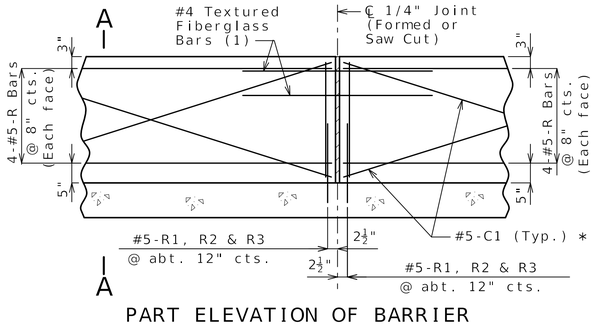
PART ELEVATION AT FORMED JOINT



SECTION B-B

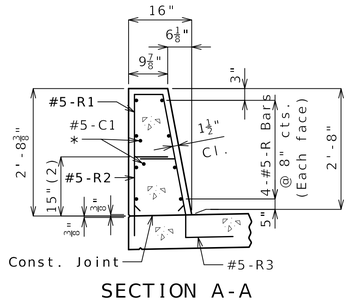


PART PLAN SHOWING JOINT LOCATION



PART ELEVATION OF BARRIER

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

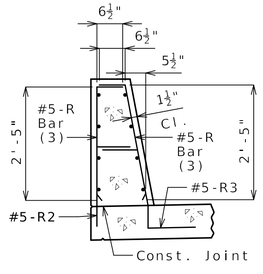


SECTION A-A

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.

** Place the last R3 bar parallel to end of slab to meet minimum clearence.

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 (except at end bents) 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 wing to end of wing.

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.

Plastic waterstop shall not be used with saw cut joints.

TYPE H BARRIER

STATE OF MISSOURI
ANOUSONE AROUNPRADITH
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PROFESSIONAL ENGINEER
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ROUTE 8 | STATE MO

DISTRICT BR | SHEET NO. 10

COUNTY WASHINGTON

JOB NO. J5P3558

CONTRACT ID.

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BRIDGE NO. A14382

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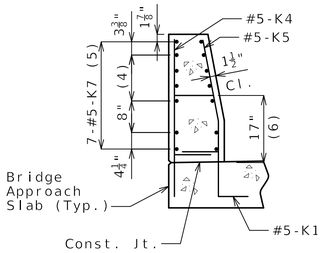
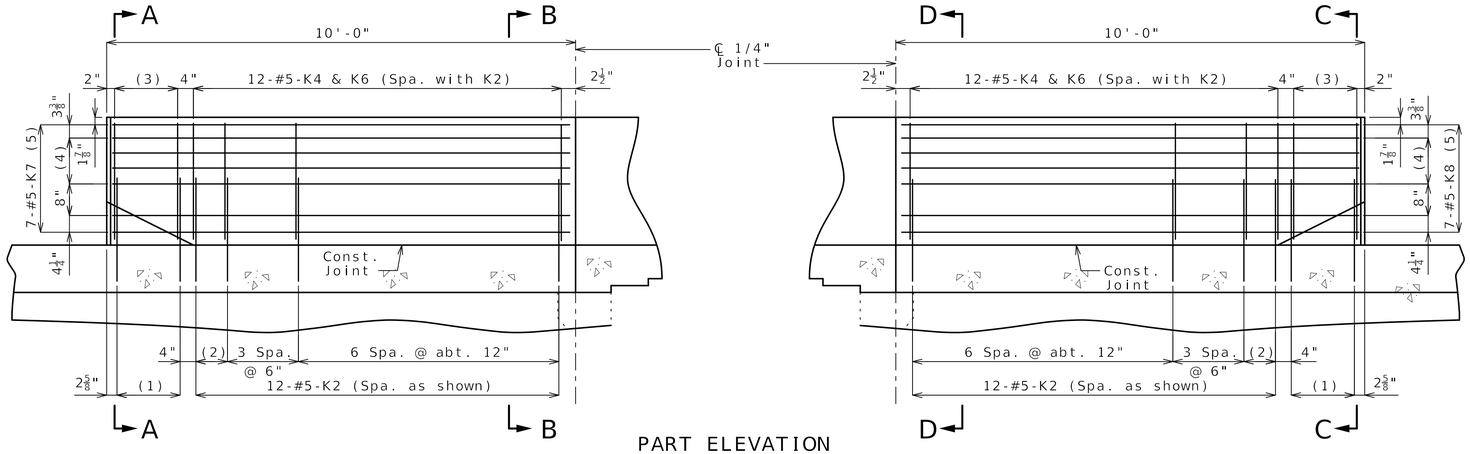
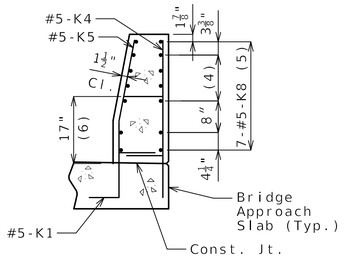


SECTION A-A



PART ELEVATION



SECTION C-C

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

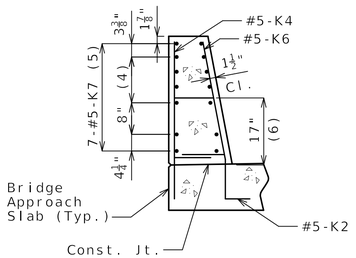
(2) 2 Spaces @ 4"

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

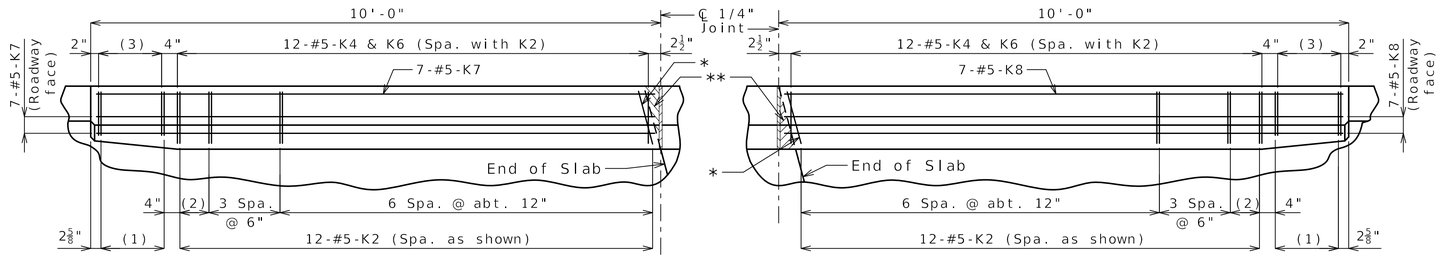
(4) 3 Spaces @ $3\frac{13}{16}$"

(5) Spaced as shown, each face

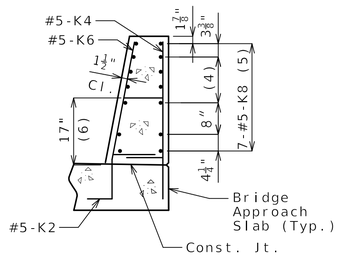
(6) To top of bar



SECTION B-B



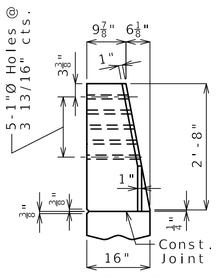
PART PLAN



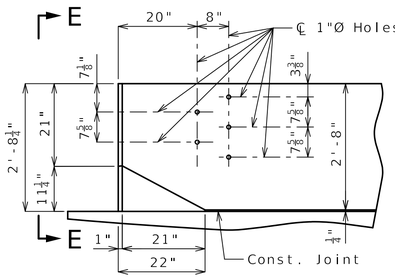
SECTION D-D

* Place the last K2 bar parallel to end of slab to meet minimum clearance.

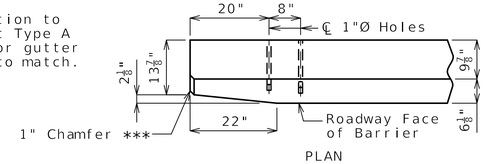
** One Layer of 30# Roofing Felt



ELEVATION E-E



ELEVATION



PLAN

*** Transition to zero at Type A curb for gutter lines to match.

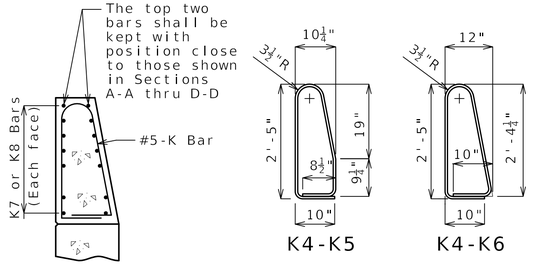
DETAILS OF GUARD RAIL ATTACHMENT

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" except as shown for bars embedded into end bent.



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.

TYPE H BARRIER AT END BENTS

(Left barrier shown, right barrier similar)

Detailed Dec. 2025
Checked Dec. 2025

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

STATE OF MISSOURI
ANOUSONE AROUNPRADITH
NUMBER PE-29317
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

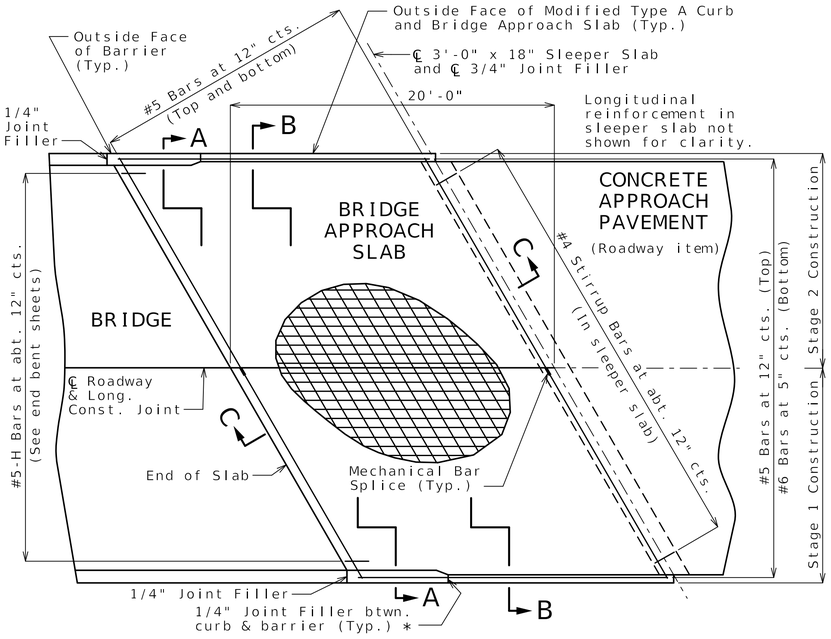
DATE PREPARED 12/19/2025
ROUTE 8 | STATE MO
DISTRICT BR | SHEET NO. 11
COUNTY WASHINGTON
JOB NO. J5P3558
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A14382

DATE | DESCRIPTION

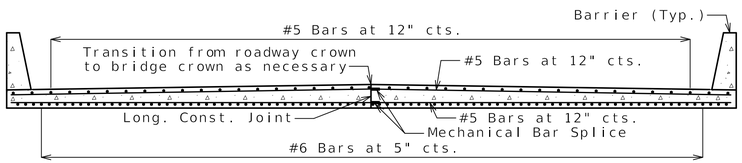
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

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

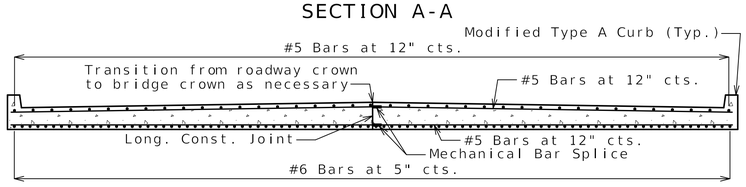
Bartlett & West
601 MONROE ST. SUITE 201 - JEFFERSON CITY, MO 65101
PHONE 573-634-3181
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM



PART PLAN SHOWING REINFORCEMENT

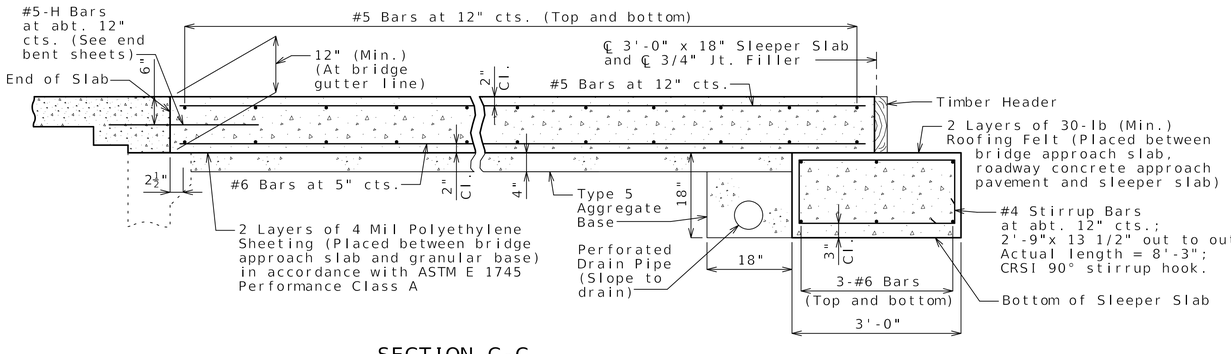


SECTION A-A

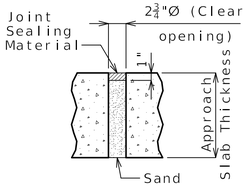


SECTION A-A

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

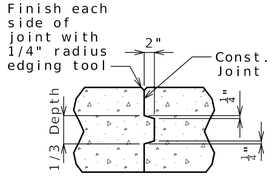


SECTION C-C

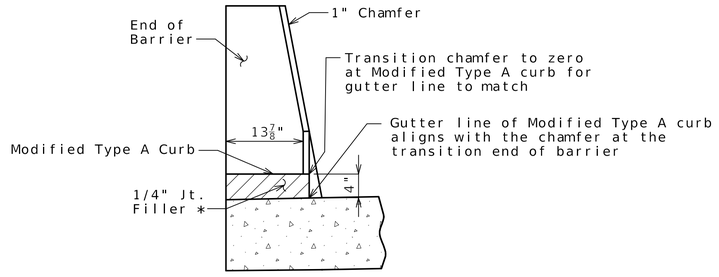


UNDERSEAL ACCESS HOLE DETAIL

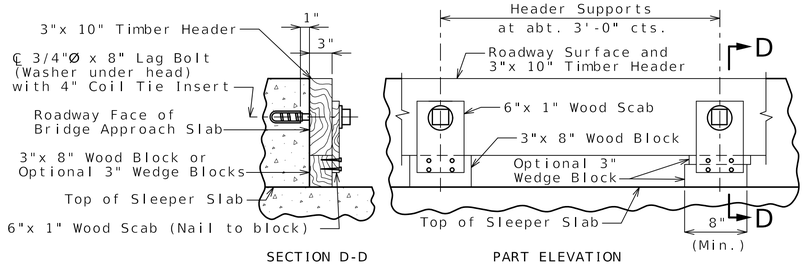
(If required)



CONSTRUCTION JOINT DETAIL



SECTION BETWEEN CURB AND BARRIER



DETAILS OF TIMBER HEADER

Remove timber header when concrete pavement is placed.

General Notes:

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

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

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.

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

The reinforcing steel in the bridge approach slab and the sleeper slab shall be continuous. The transverse reinforcing steel may be made continuous by providing a minimum lap splice of 24 inches for #5 bars and 40 inches for #6 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.

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

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

For concrete approach pavement details, see roadway plans.

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

Payment for furnishing all materials, labor and excavation necessary to construct the approach slab, including the timber header, sleeper slab, underdrain, Type 5 aggregate base, joint filler 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 (Major) per square yard.

* Seal joint in accordance with Sec 717 for silicone joint sealant for saw cut and formed joints.

BRIDGE APPROACH SLAB (MAJOR)

Detailed Dec. 2025
Checked Dec. 2025

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

Sheet No. 12 of 13

STATE OF MISSOURI
ANOUSONE AROUNPRADITH
NUMBER PE-29317
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED: 12/23/2025
ROUTE: 8 | STATE: MO
DISTRICT: BR | SHEET NO.: 12
COUNTY: WASHINGTON
JOB NO.: J5P3558
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A14382

DESCRIPTION | DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
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WWW.BARTLETTWEST.COM

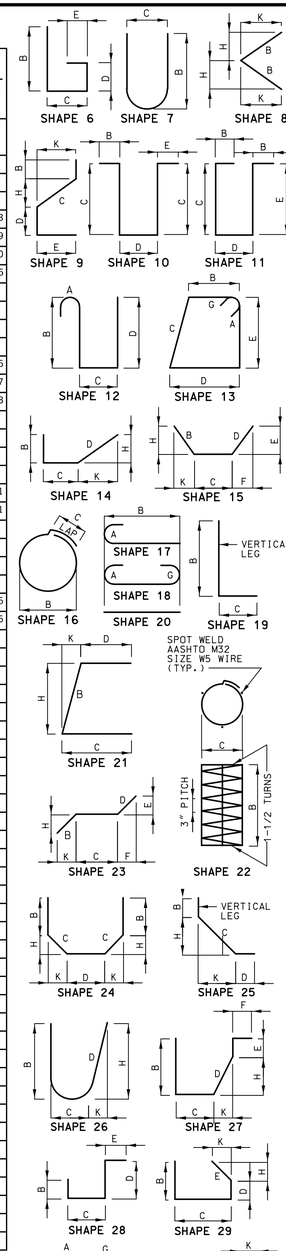
pw://bartwest-pw.bentley.com:bartwest-pw-04/Documents/18000/18432.225 - Washington Co. Route 8 Bridge Redecks/OpenRoads Designer/plan_sheets/Bridge Plans/A14382/B_A14382_012_J5P3558_major rail.dgn 4:55:58 AM 12/23/2025

BILL OF REINFORCING STEEL

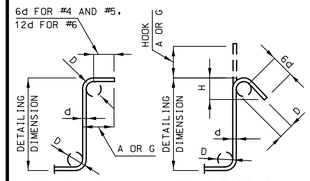
NO. REQ'D.	MARK NO. SIZE	MARK NO. MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
			SLAB																									
14	6	H1	SLAB	E	20					21	10.000													21	10	21	10	460
14	6	H2	SLAB	E	20					17	8.000													17	8	17	8	372
64	5	H3	APPR NOTCH	E	20					2	6.000													2	6	2	6	167
156	5	S1	SLAB	E	20					60	0.000													60	0	60	0	9762
78	5	S2	SLAB	E	20					12	0.000													12	0	12	0	977
104	6	S3	SLAB	E	20					37	0.000													37	0	37	0	5780
6	6	S4	SLAB	E	20			V	1	15	5.000													15	5	15	5	86
			INCREMENT =							3	9.000													3	9	3	9	
			28.000 INCH																									
384	6	S5	SLAB	E	20					17	1.000													17	1	17	1	9853
14	6	S6	SLAB	E	20			V	2	16	9.000													16	9	16	9	230
			INCREMENT =							5	1.000													5	1	5	1	
			23.375 INCH																									
8	6	S7	SLAB	E	20			V	1	20	1.000													20	1	20	1	143
			INCREMENT =							3	9.000													3	9	3	9	
			28.000 INCH																									
7	6	S8	SLAB	E	20			V	1	15	6.000													15	6	15	6	95
			INCREMENT =							2	7.000													2	7	2	7	
			25.875 INCH																									
385	6	S9	SLAB	E	20					17	1.000													17	1	17	1	9879
12	6	S10	SLAB	E	20			V	2	15	7.000													15	7	15	7	175
			INCREMENT =							3	10.000													3	10	3	10	
			28.250 INCH																									
8	6	S11	SLAB	E	20			V	1	18	11.000													18	11	18	11	129
			INCREMENT =							2	7.000													2	7	2	7	
			28.000 INCH																									
1	6	S12	SLAB	E	20					3	11.000													3	11	3	11	6
84	6	U1	SLAB	E	10	S						6.000		19.000										2	7	2	2	273
84	6	U2	SLAB	E	19					3	7.000		8.000											4	3	4	1	516
			TYPE H																									
			BARRIER																									
20	5	K1	BARRIER	E	27	S				2	2.000	9.250		5.375		20.250		12.000		5.250		1.000		6	1	5	9	120
48	5	K2	BARRIER	E	27	S				2	2.000	9.250		17.250		8.500		12.000		17.000		3.250		6	1	5	9	288
68	5	K4	BARRIER	E	19	S				2	5.000	10.000												3	3	3	2	225
20	5	K5	BARRIER	E	14	S					8.250	9.500		19.250						4.250		18.750		3	1	2	10	59
48	5	K6	BARRIER	E	21	S				2	4.750	10.000								2 4.250		6.000		3	3	3	1	155
56	5	K7	BARRIER	E	20					9	9.000													9	9	9	9	570
262	5	R1	BARRIER	E	14	S				2	5.000	6.500	2	5.500						2 5.000		5.500		5	5	5	3	1435
262	5	R2	BARRIER	E	19	S					19.500	9.500												2	5	2	3	615
262	5	R3	BARRIER	E	27	S						9.500				4.000		12.000		15.000		3.000		3	5	3	2	866
64	5	R4	BARRIER	E	20					11	8.000													11	8	11	8	779
16	5	R5	BARRIER	E	20					38	6.000													38	6	38	6	643
16	5	R6	BARRIER	E	20					23	8.000													23	8	23	8	395
16	5	R7	BARRIER	E	20					38	2.000													38	2	38	2	637
			SLIP FORM																									
32	5	C1	BARRIER	E	20					12	0.000													12	0	12	0	401
8	5	C2	BARRIER	E	20					7	9.000													7	9	7	9	65

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE	MARK NO. MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
			TOTALS																									
	5			E																								18163
	6			E																								27979
			TOTAL																									0
			TOTAL	E																								49976
			SLAB ON																									
			BEAM																									
	5			E																								10906
	6			E																								27997
			TOTAL																									38903
			TYPE H																									
			BARRIER																									
	5			E																								6791
			TOTAL																									6791
			SLIP FORM																									
			OPTION																									
	5			E																								466
			TOTAL																									466

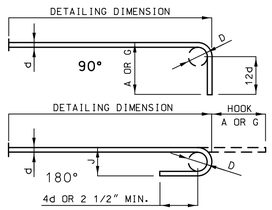


BENDING DIAGRAMS



STIRRUP HOOK DIMENSIONS					
GRADES 40 – 50 – 60 KSI					
BAR SIZE	D (IN.)	90° HOOK HOOK A OR G	135° HOOK HOOK A OR G	135° HOOK APPROX. H	
#4	2"	4 1/2"	4 1/2"	3"	
#5	2 1/2"	6"	5 1/2"	3 3/4"	
#6	4 1/2"	12"	8"	4 1/2"	

NOTE: UNLESS OTHERWISE NOTED, DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.



END HOOK DIMENSIONS				
		ALL GRADES		
BAR SIZE	D (IN.)	180° HOOKS		90° HOOKS
		A OR G	J	A OR G
#3	2 1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3 3/4"	7"	5"	10"
#6	4 1/2"	8"	6"	12"
#7	5 1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9 1/2"	15"	11 3/4"	19"
#10	10 3/4"	17"	13 1/4"	22"
#11	12"	19"	14 3/4"	2'-0"
#14	18 1/4"	2'-3"	21 3/4"	2'-7"

NOTE:

ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEGREE ARE TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEGREE STANDARD HOOKS.

HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

E = EPOXY COATED REINFORCEMENT.
S = STIRRUP.
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.

NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)

ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.

PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.

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.

REINFORCING STEEL (ASTM A615 GRADE 60) FY = 60,000 PSI.

Detailed Dec. 2025
Checked Dec. 2025

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

STATE OF MISSOURI
ANOUSONE AROUNPRADITH
NUMBER PE-29317
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 12/19/2025
ROUTE 8 | STATE MO
DISTRICT BR | SHEET NO. 13
COUNTY WASHINGTON
JOB NO. J5P3558
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A14382

DESCRIPTION | DATE

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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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JEFFERSON CITY, MO 65102
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601 MONROE ST. SUITE 201 - JEFFERSON CITY, MO 65101
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CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM

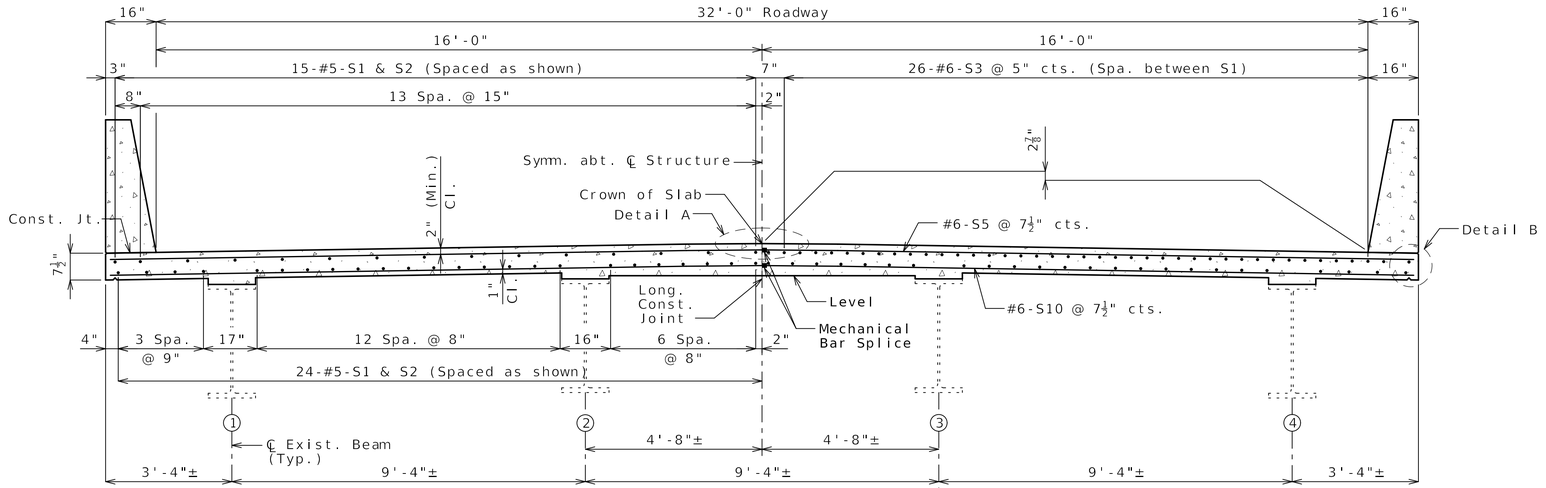
SEC/SUR 24 TWP 37N RGE 1E

U.I.P. AND REDECK EXISTING (37'- 48'- 37') CONTINUOUS COMPOSITE WIDE FLANGE BEAM SPANS
SKEW 45°00'00" R.A.

Table Showing S3 Bar Lengths			
Int. Bent No. 2		Int. Bent No. 3	
Span 1	Span 2	Span 2	Span 3
11'-0"	26'-0"	26'-0"	11'-0"

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.



HALF SECTION NEAR MIDSPAN HALF SECTION NEAR INT. BENT

TYPICAL SECTION THRU SLAB

General Notes:

Design Specifications:

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

Design Loading:

H20-44 (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 II

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 Carbon Steel (ASTM A709 Grade 36)	fy = 36,000 psi

Fabricated Steel Connections:

Field connections shall be made with 7/8" diameter ASTM F3125 Grade A325 Type 1 bolts and 15/16" diameter holes, except as noted.

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.

Mechanical Bar Splice:

All mechanical bar splices shall be in accordance with Sec 701.

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.

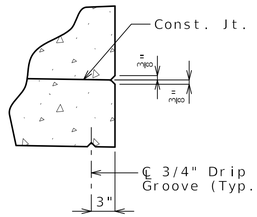
Contractor shall verify all dimensions in field before finalizing the shop drawings.

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.

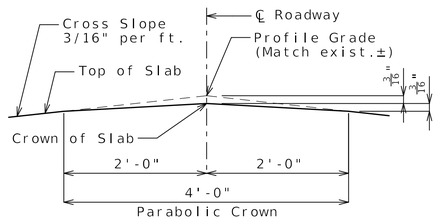
Rubblized concrete from the existing bridge deck that qualifies as clean fill may be placed on spill slopes at end bents above ordinary high water line (Roadway item).

Traffic Handling:

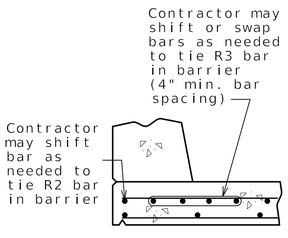
Traffic to be maintained on structure during construction. See roadway plans for traffic control and Sheet No. 2 for staged construction details.



DETAIL B



DETAIL A



OPTIONAL SHIFTING TOP BARS AT BARRIER

Estimated Quantities

Item		Total
Removal of Miscellaneous ACM (Non-Friable)	sq. foot	11
Removal of Existing Bridge Deck	sq. foot	4,394
Bridge Approach Slab (Major)	sq. yard	154
Slab on Steel	sq. yard	491
Type D Barrier	linear foot	295
Mechanical Bar Splice	each	391
Protective Coating - Concrete Bents and Piers (Epoxy)	lump sum	1
Strengthening Existing Beams	lump sum	1
Slab Drain	each	20
Non-Destructive Testing	linear foot	41
Vertical Drain at End Bents	each	2

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

Estimated Quantities for Slab on Steel

Item		Total
Class B-2 Concrete	cu. yard	106
Reinforcing Steel (Epoxy Coated)	pound	39,820

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. 3.

REPAIRS TO BRIDGE:
ROUTE 8 OVER NORTH FORK FOURCHE A RENAULT

ROUTE 8 FROM ROUTE AA TO ROUTE 185
ABOUT 3.4 MILES EAST OF ROUTE AA
BEGINNING STATION 635+77.00±

Detailed Dec. 2025
Checked Dec. 2025

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

STATE OF MISSOURI
ANOUSONE AROUNPRADITH
NUMBER PE-29317
PROFESSIONAL ENGINEER
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DATE PREPARED 12/19/2025
ROUTE 8 | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY WASHINGTON
JOB NO. J5P3558
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A14392

DESCRIPTION | DATE

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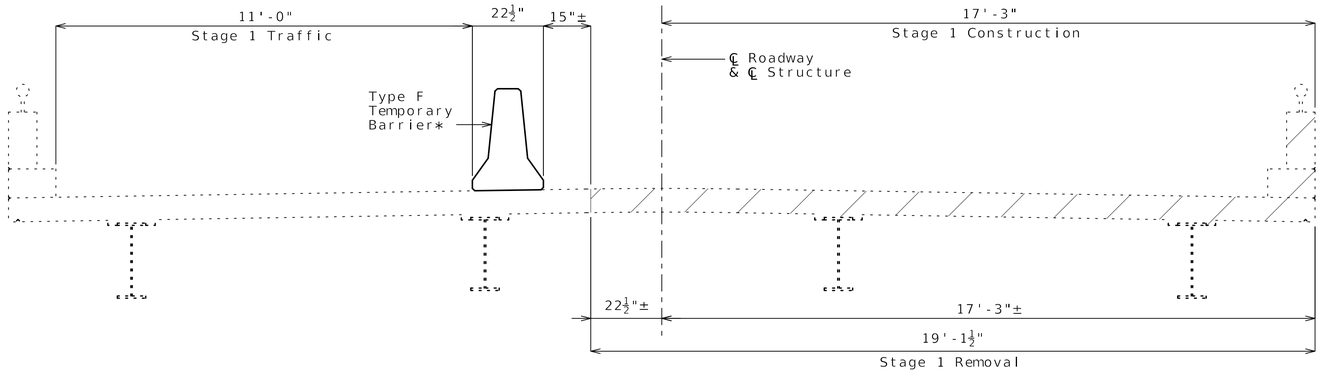
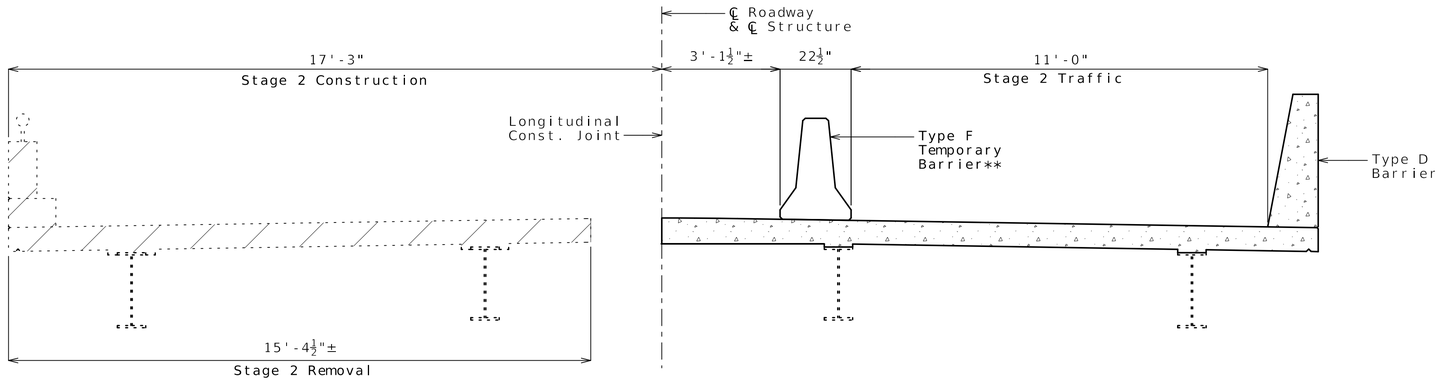


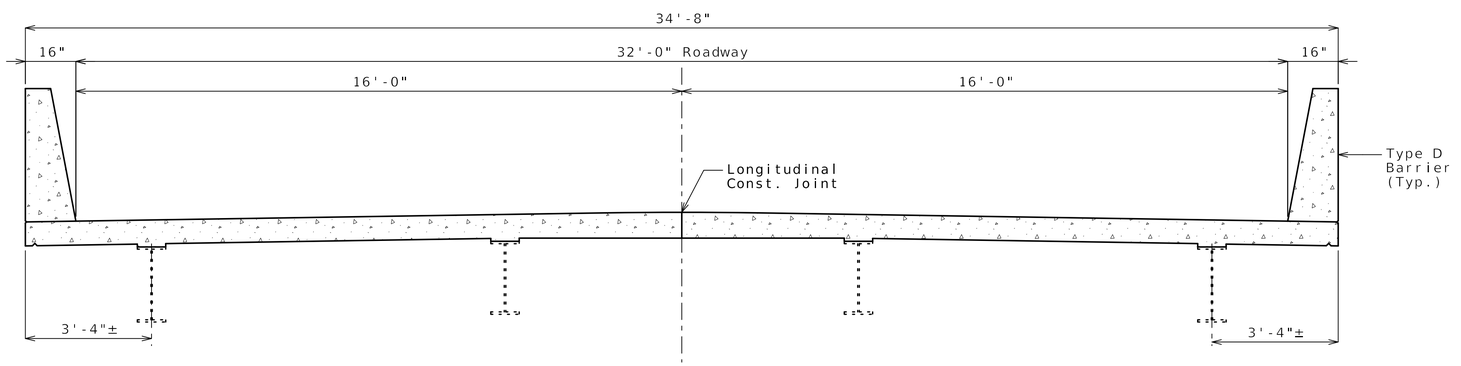
PHASE 1 STAGED CONSTRUCTION

* Temporary barrier shall be anchored to existing deck.



PHASE 2 STAGED CONSTRUCTION

** Temporary barrier shall be a freestanding.



FINAL

STAGE CONSTRUCTION DETAILS

Notes:

See Missouri Standard Plans 617.20 for details of temporary Type F Barrier not shown.

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ROUTE	STATE
8	MO
DISTRICT	SHEET NO.
BR	2

COUNTY: WASHINGTON

JOB NO.: J5P3558

CONTRACT ID.:

PROJECT NO.:

BRIDGE NO.: A14392

DESCRIPTION	DATE

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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.

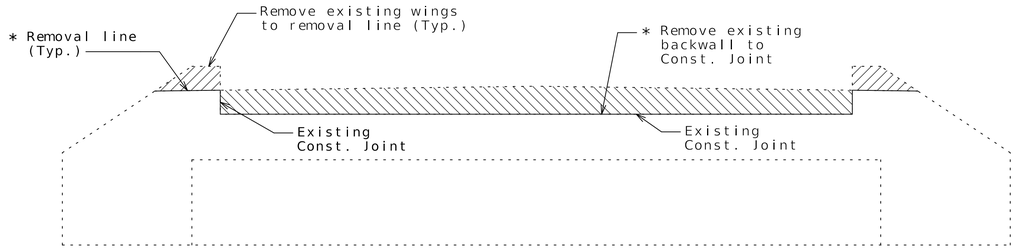
The design of stay-in-place corrugated steel forms is per manufacturer which shall be in accordance with Sec 703 for false work and forms. Maximum actual weight of corrugated steel forms allowed shall be 4 psf assumed for beam loading.

The contractor shall provide a method of preventing the direct contact of the stay-in-place forms and connection components with uncoated weathering steel members that is approved by the engineer.

Deflection and Haunching:

(1) Slab is to be considered a uniform thickness except between beams 2 and 3 as shown on the plans. Haunching will vary. See front sheet for slab thickness.

The contractor shall determine dead load deflections and haunching based on field measurements and/or existing bridge plans and these may be adjusted based on the difference between the new and existing dead load weights. In order to properly form the haunches for the new deck, the contractor shall survey top of deck elevations above each girder including centerline of roadway and along each girder (top or bottom flange) prior to deck removal followed by surveying elevations of the girders (top or bottom flange) after deck removal.



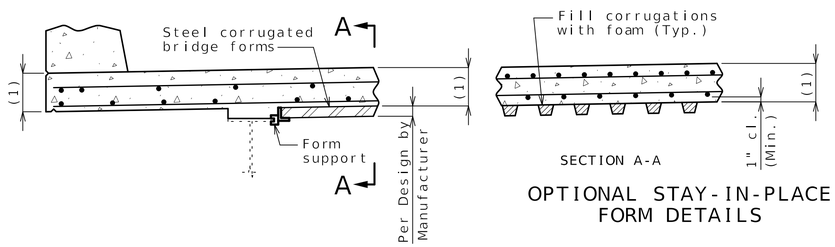
DETAILS OF CONCRETE REMOVAL AT END BENTS

Notes:

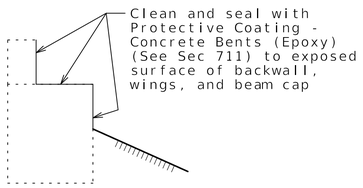
The cost of concrete removal as shown will be considered completely covered by the contract unit price for Removal of Existing Bridge Deck.

U.I.P. vertical backwall reinforcement.

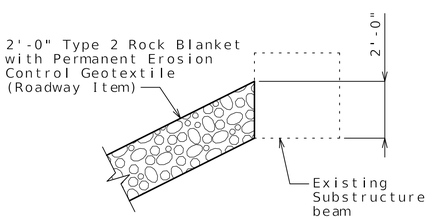
* Vertical wingwall and backwall reinforcement shall be cut off one inch below concrete removal surface and the resulting holes shall be filled with a qualified special mortar. A smooth and level surface shall be provided at End Bent No. 4.



OPTIONAL STAY-IN-PLACE FORM DETAILS



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



ROCK BLANKET ON SPILL SLOPES

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ANOUSONE AROUNPRADITH
NUMBER PE-29317
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DATE PREPARED 12/19/2025
ROUTE 8 | STATE MO
DISTRICT BR | SHEET NO. 3
COUNTY WASHINGTON
JOB NO. J5P3558
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A14392

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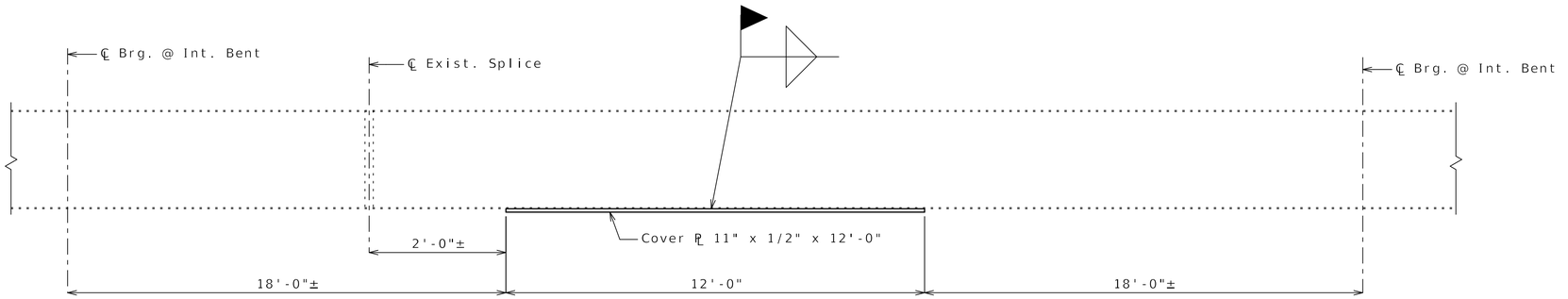
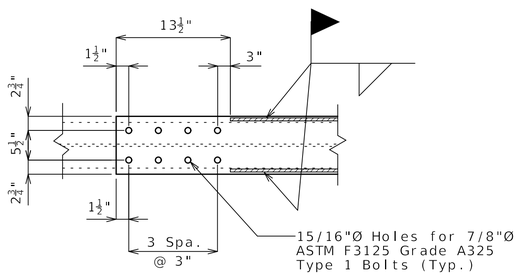
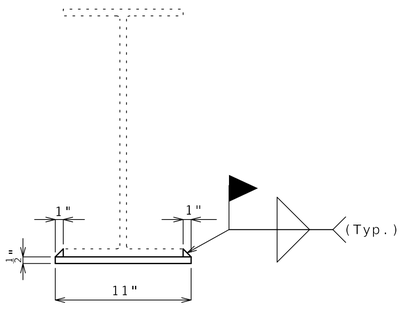


PART ELEVATION OF EXTERIOR AND INTERIOR BEAMS SHOWING COVER PLATE INSTALLATION
SPAN (2-3)



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



SECTION THRU BEAM
AND COVER PLATE

Notes:

Beam with end-bolted plates shall be installed in the following sequence after existing bride 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.

Payment for 961 pounds of new cover plates, complete in place, will be considered completely covered by the contract unit 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

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DATE PREPARED 12/19/2025
ROUTE 8 | STATE MO
DISTRICT BR | SHEET NO. 4
COUNTY WASHINGTON
JOB NO. J5P3558
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A14392

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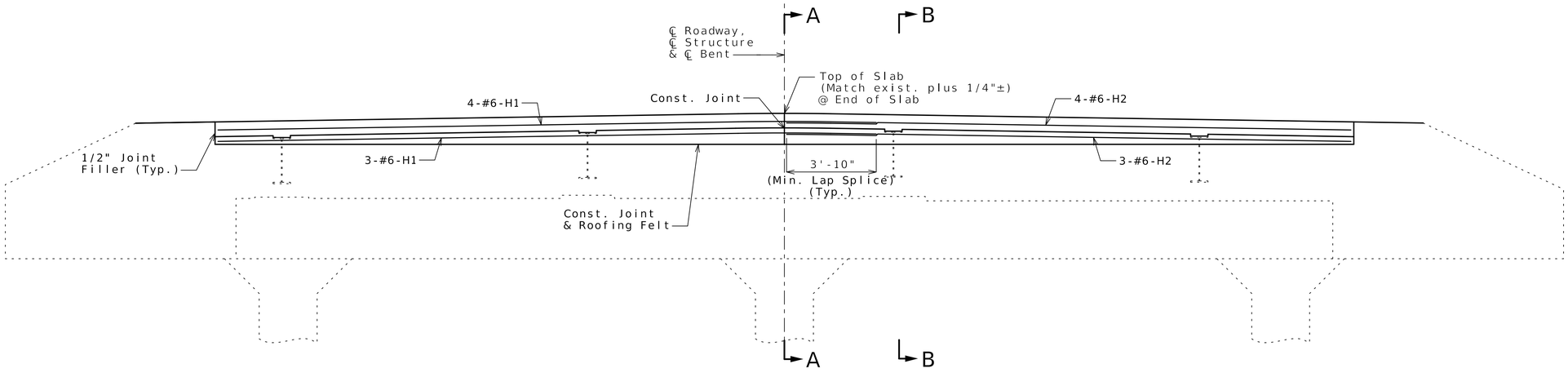
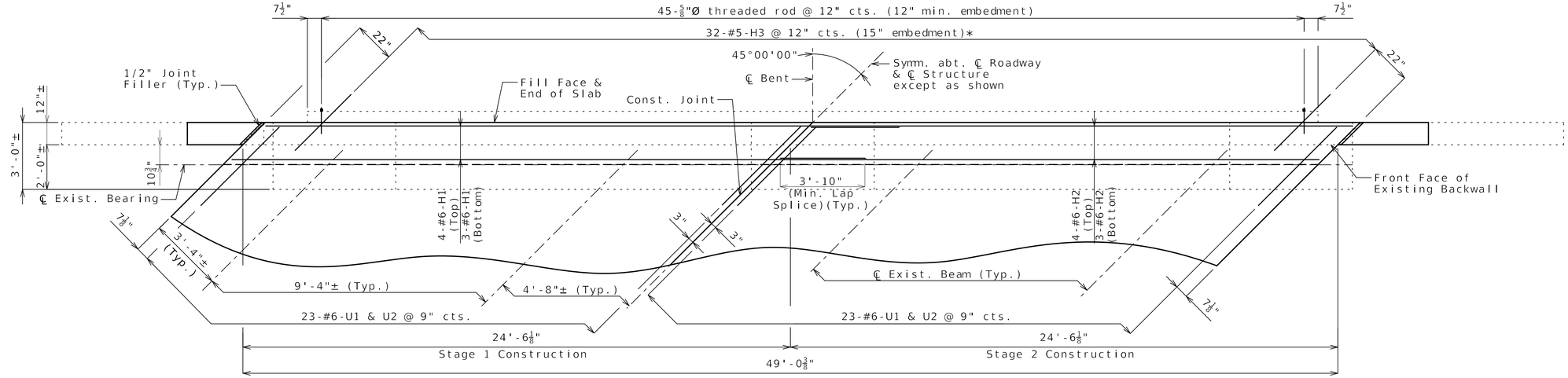


ELEVATION

Existing steel and diaphrams and bearing stiffeners not shown for clarity (leave in place).

Type D barrier not shown for clarity. For details and reinforcement of Type D Barrier, see Sheets No. 12 and 13.



PLAN

* Place bars parallel to centerline of roadway.

Notes:

Work this sheet with Sheet No. 6.

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ROUTE	STATE
8	MO
DISTRICT	SHEET NO.
BR	5

COUNTY: WASHINGTON

JOB NO.: J5P3558

CONTRACT ID.:

PROJECT NO.:

BRIDGE NO.: A14392

DESCRIPTION	DATE

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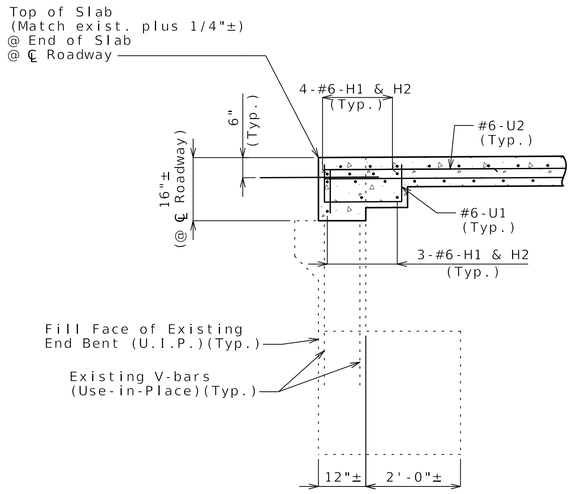
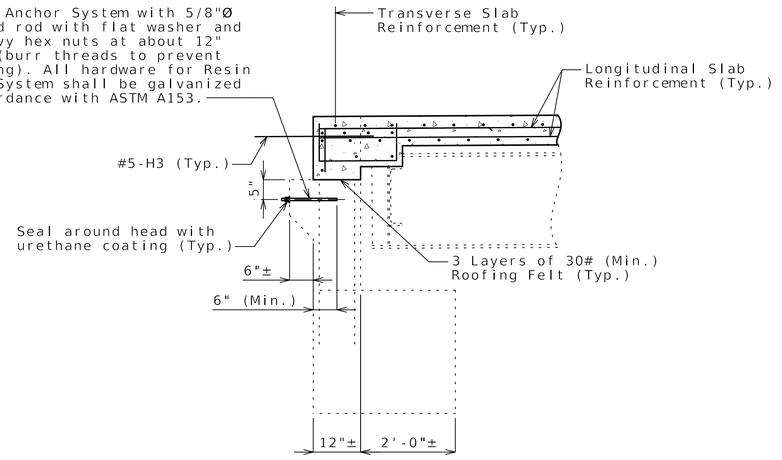


SECTION A-A

End Bent No. 1 shown
End Bent No. 4 similar except for grade.



SECTION B-B

End Bent No. 1 shown
End Bent No. 4 similar except for grade.

Notes:

Work this sheet with Sheet No. 5.

Concrete in slab shall be Class B-2.

All concrete and reinforcement is included in the Table of Estimated Quantities for Slab on Steel and will be considered completely covered by the contract unit price for Slab on Steel.

For details and reinforcement of Type D Barrier at End Bents, see Sheets No. 12 and 13.

For details of slab reinforcement, see Sheets No. 1, 9 and 10.

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

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

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

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12/19/2025

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8	MO
DISTRICT	SHEET NO.
BR	6

COUNTY
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JOB NO.
J5P3558

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A14392

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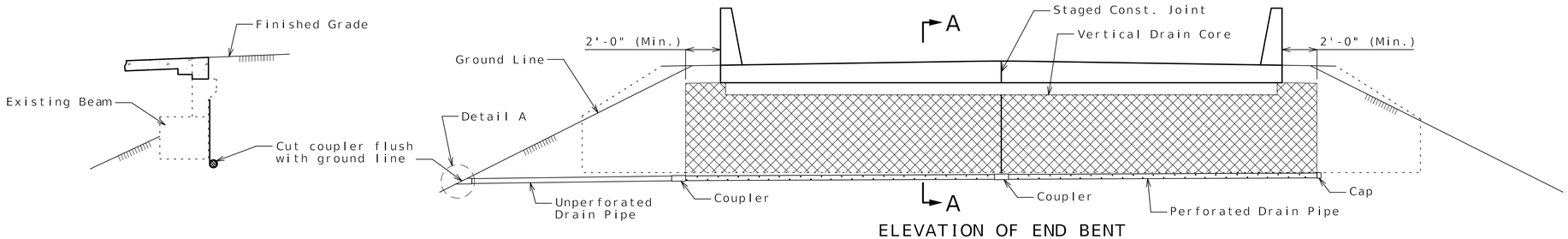
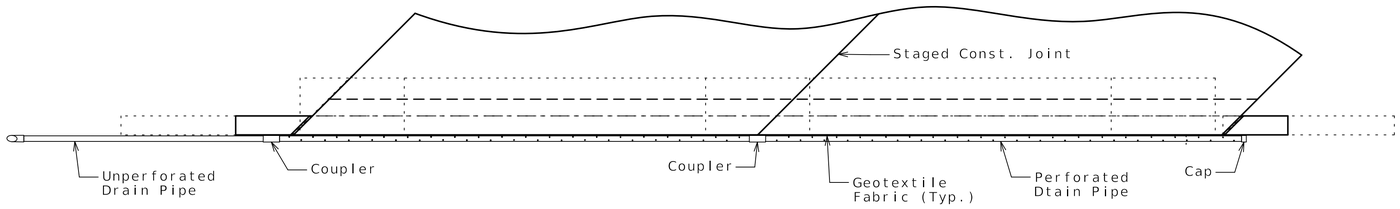
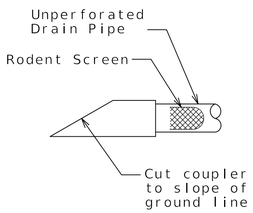


ELEVATION OF END BENT

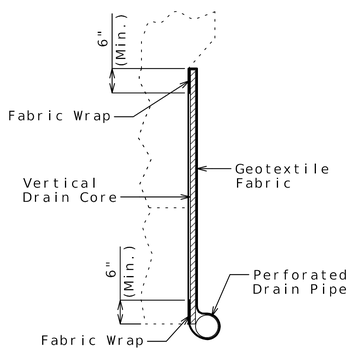


PLAN OF END BENT

(Approach notch and barrier curb not shown for clarity)



DETAIL A



PART SECTION A-A

General Notes:

All drain pipe shall be sloped 1 to 2 percent.

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

Drain pipe shall be placed at fill face of end bent. The pipe shall slope to lowest grade of ground line.

Perforated pipe shall be placed at fill face side at the bottom of end bent and plain pipe shall be used where the vertical drain ends to the exit at ground line.

VERTICAL DRAIN AT END BENTS

Detailed Dec. 2025
Checked Dec. 2025

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

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ROUTE 8 | STATE MO

DISTRICT BR | SHEET NO. 7

COUNTY WASHINGTON

JOB NO. J5P3558

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A14392

DATE	DESCRIPTION

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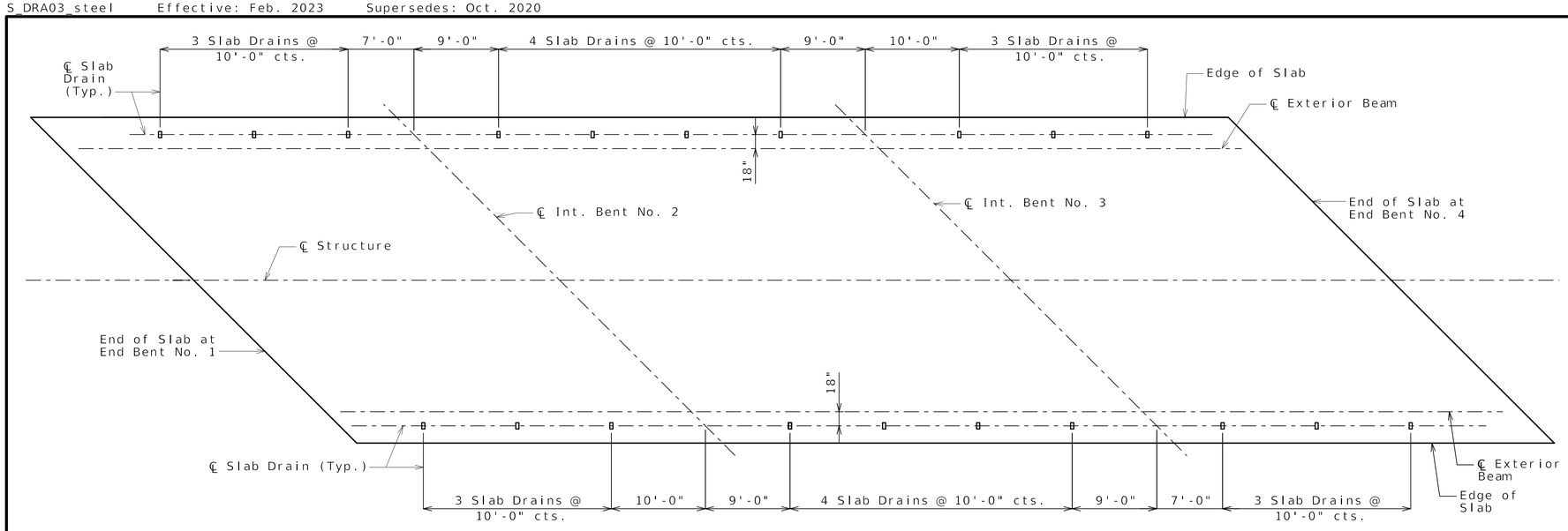
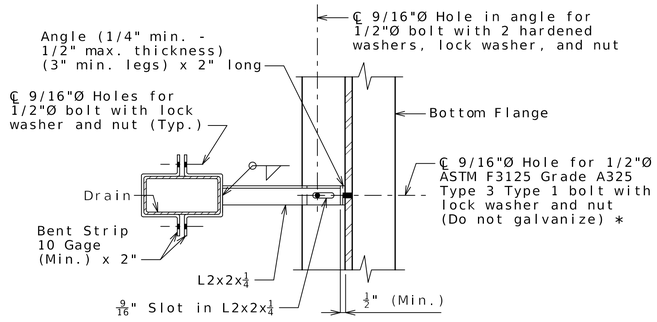
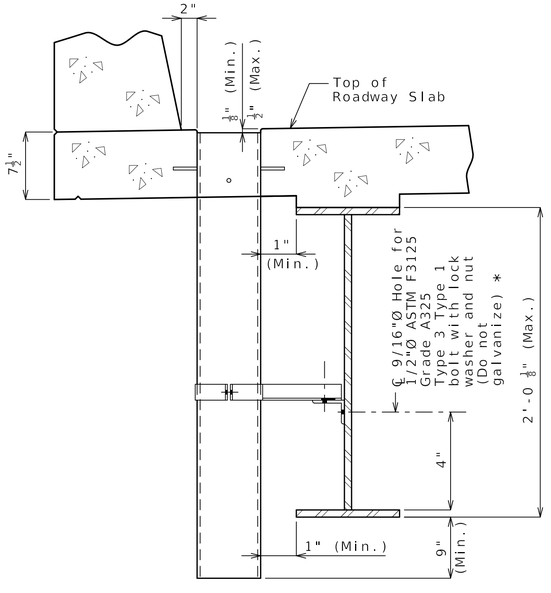


PLAN OF SLAB SHOWING SLAB DRAIN LOCATIONS

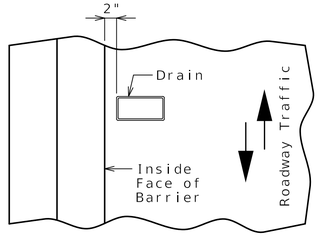


PART SECTION SHOWING BRACKET ASSEMBLY

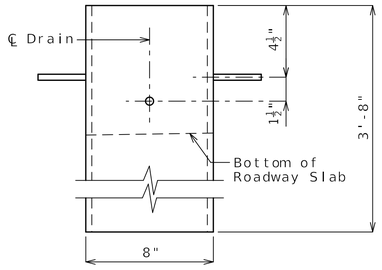
* See Sec 1080.4



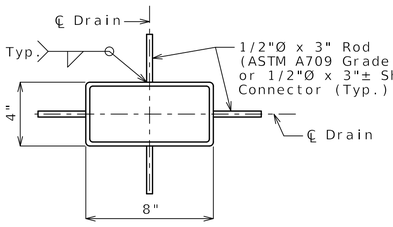
PART SECTION NEAR DRAIN



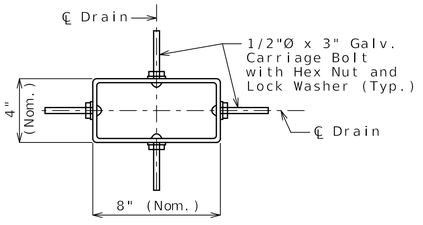
PART PLAN OF SLAB AT DRAIN



ELEVATION OF DRAIN



PLAN OF STEEL DRAIN OPTION



PLAN OF FRP DRAIN OPTION

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, except as shown.

All 1/2-inch diameter 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 located on the plate girder shop drawings.

The galvanized surfaces of drain support brackets shall be prepared according to the coating manufacturer's recommendation and field coated with a gray epoxy-mastic primer (non-aluminum) within a distance of 6 inches from the point of connection to the weathering steel structure.

Notes for Steel Drain:

Slab drains may be fabricated of either 1/4-inch welded sheets of ASTM A709 Grade 36 steel or from 1/4-inch 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 as recommended by the manufacturer to ensure a smooth, chip free cut.

STATE OF MISSOURI
ANOUSONE AROUNPRADITH
NUMBER PE-29317
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 12/19/2025
ROUTE 8 | STATE MO
DISTRICT BR | SHEET NO. 8
COUNTY WASHINGTON
JOB NO. J5P3558
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A14392

DESCRIPTION	DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

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

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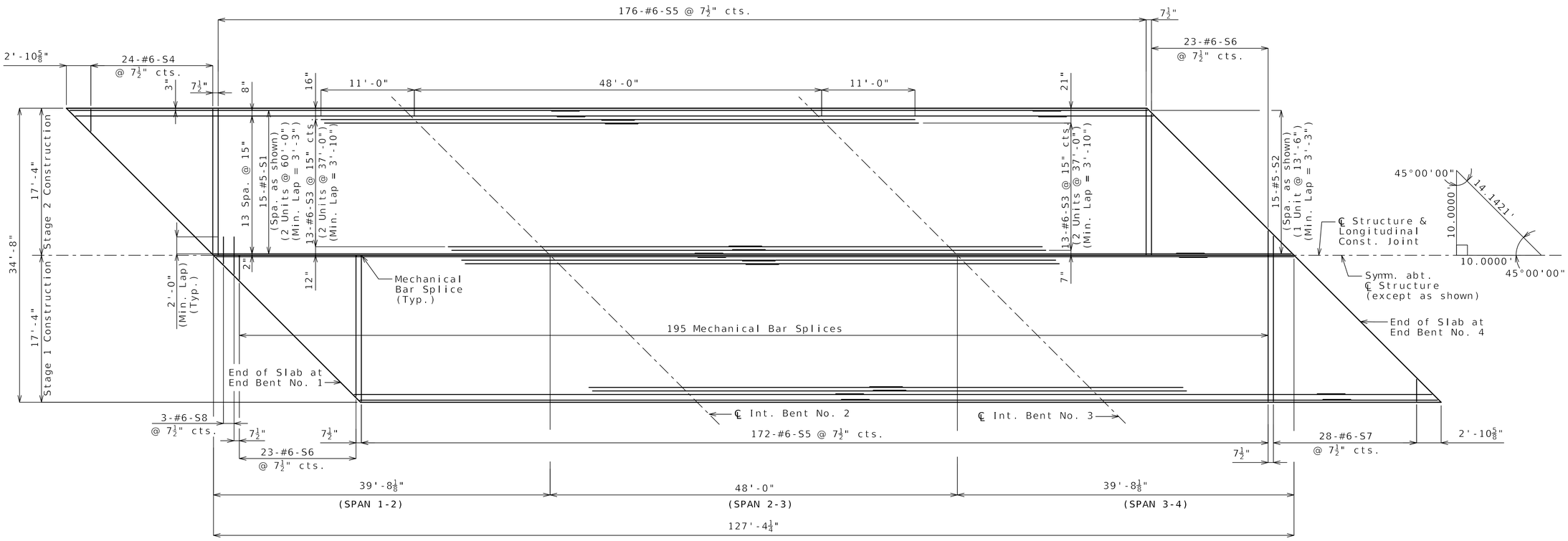
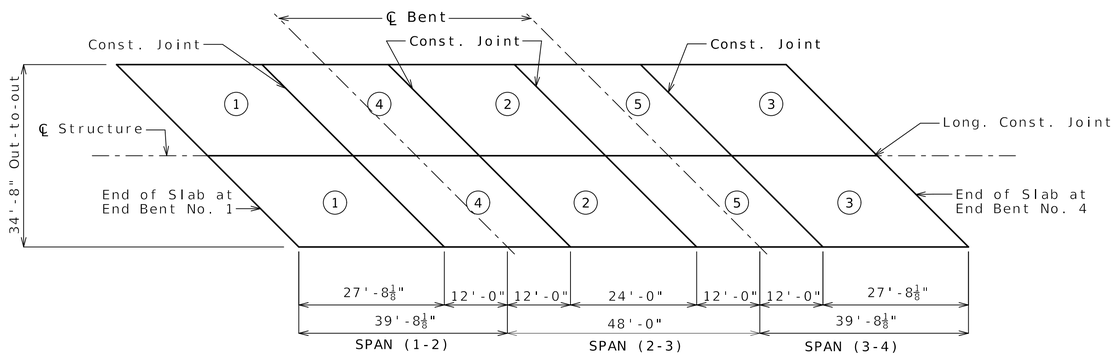
SLAB DRAINS

Detailed Dec. 2025
Checked Dec. 2025

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



PLAN OF SLAB SHOWING TOP REINFORCMENT



SLAB POURING SEQUENCE

The contractor shall pour and satisfactorily finish the slab poours at the rate given. Retarder, if used, shall be an approved type and retard the set of concrete to 2.5 hours.

The concrete diaphragm at the integral end bents shall be poured a minimum of 30 minutes and a maximum of 2 hours before the slab is poured.

	Sequence of Pours					Min. Rate of Pour Cu. Yds./Hr.	
	Direction					With Retarder	No Retarder
Basic Sequence	1	2	3	4	5	N/A	25
	Either Direction						
Alternate pours to the basic sequence are subject to the approval of the engineer in accordance with Sec 703.							
Alternate A Pours	1		5 + 2		4 + 3	25	25
	End to 5		1 to 4		2 to End		
Alternate B Pours	1 + 5 + 2				4 + 3	25	25
	End to 4				2 to End		
Alternate C Pours	1 + 5 + 2 + 4 + 3					25	25
	End to End						

Notes:

Work this sheet with Sheet No. 10.

Longitudinal slab dimensions are measured horizontally.

For Typical Section Thru Slab, see Sheet No. 1.

For details and reinforcement of Type D Barrier not shown, see Sheets No. 11 and 12.

STATE OF MISSOURI
ANOUSONE AROUNPRADITH
NUMBER PE-29317
PROFESSIONAL ENGINEER
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DATE PREPARED 12/19/2025
ROUTE 8 | STATE MO
DISTRICT BR | SHEET NO. 9
COUNTY WASHINGTON
JOB NO. J5P3558
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A14392

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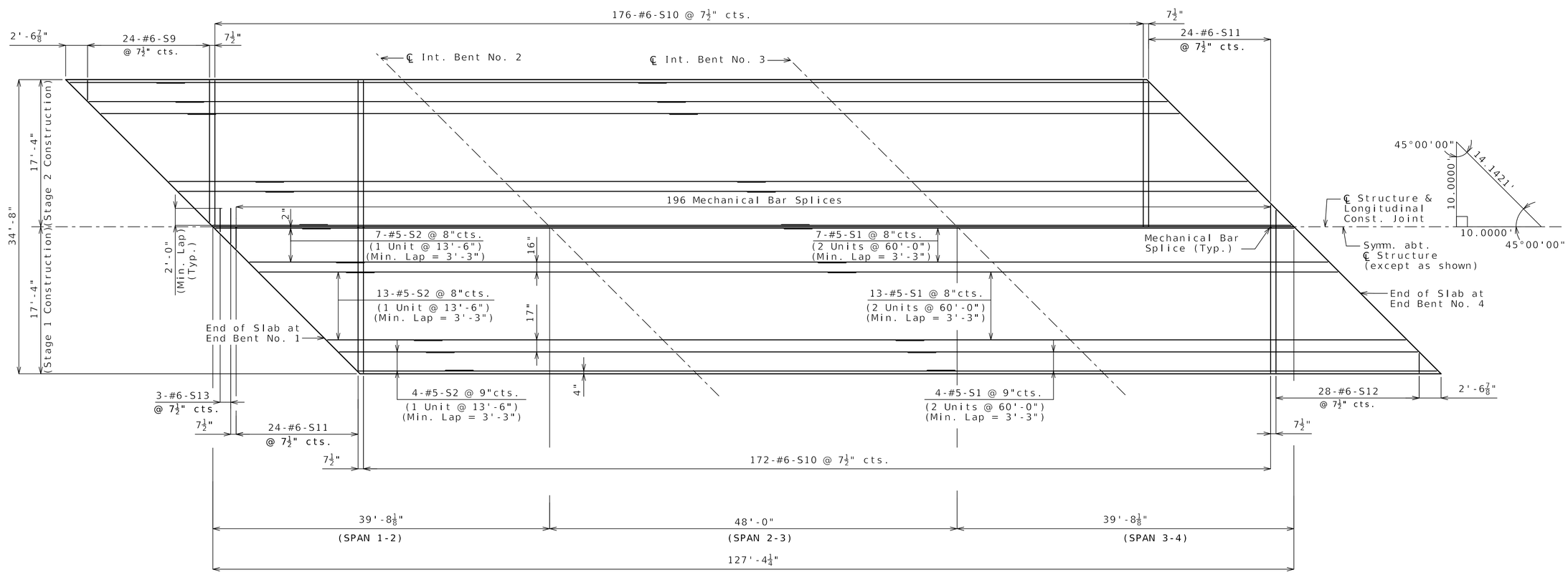

PLAN OF SLAB SHOWING BOTTOM REINFORCMENT

Notes:

Work this sheet with Sheet No. 9.

Longitudinal slab dimensions are measured horizontally.

For Typical Section Thru Slab, see Sheet No. 1.

For details and reinforcement of Type D Barrier not shown, see Sheets No. 11 and 12.

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ROUTE	STATE
8	MO
DISTRICT	SHEET NO.
BR	10

COUNTY: WASHINGTON

JOB NO.: J5P3558

CONTRACT ID.:

PROJECT NO.:

BRIDGE NO.: A14392

DESCRIPTION	DATE

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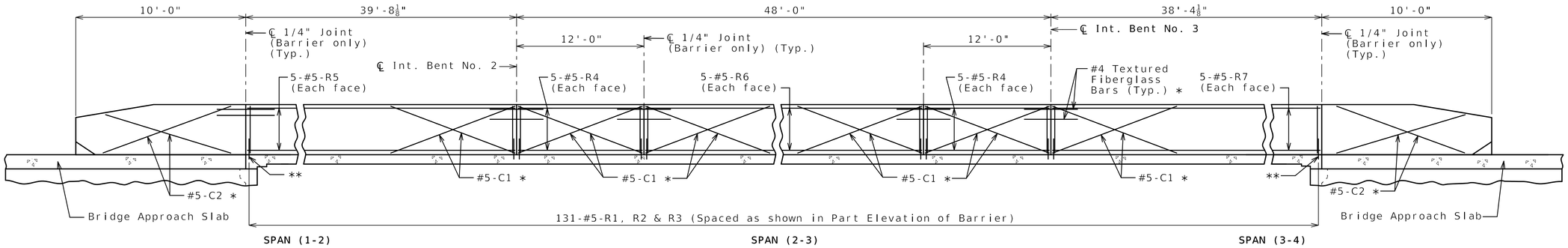
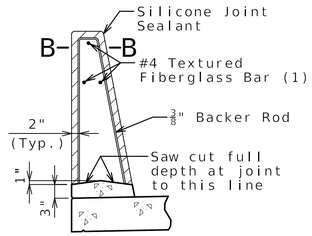


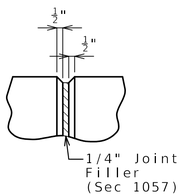
ELEVATION OF BARRIER

(Left barrier shown, right barrier similar)

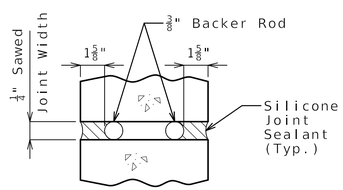
Longitudinal dimensions are horizontal.



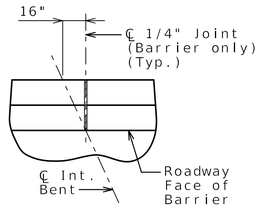
SECTION THRU SAW CUT JOINT



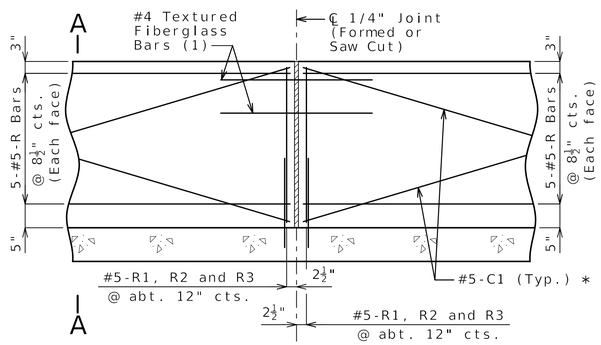
PART ELEVATION AT FORMED JOINT



SECTION B-B

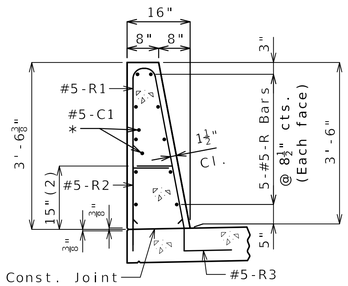


PART PLAN SHOWING JOINT LOCATION



PART ELEVATION OF BARRIER

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

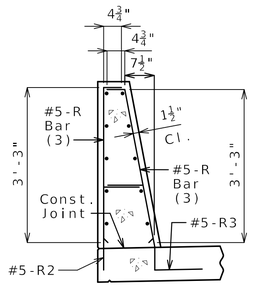


SECTION A-A

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

The cross-sectional area above the slab is 3.52 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.

** Place the last R3 bar parallel to end of slab to meet minimum clearance.

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 (except at end bents) 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 D 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 wing to end of wing.

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 D 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.

Plastic waterstop shall not be used with saw cut joints.

TYPE D BARRIER

STATE OF MISSOURI
ANOUSONE AROUNPRADITH
NUMBER PE-29317
PROFESSIONAL ENGINEER
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DATE PREPARED 12/19/2025

ROUTE 8 | STATE MO

DISTRICT BR | SHEET NO. 11

COUNTY WASHINGTON

JOB NO. J5P3558

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A14392

DESCRIPTION | DATE

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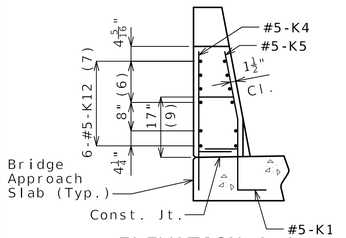
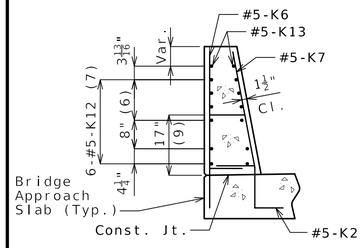
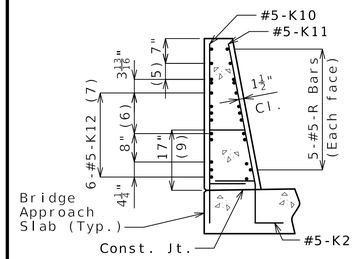


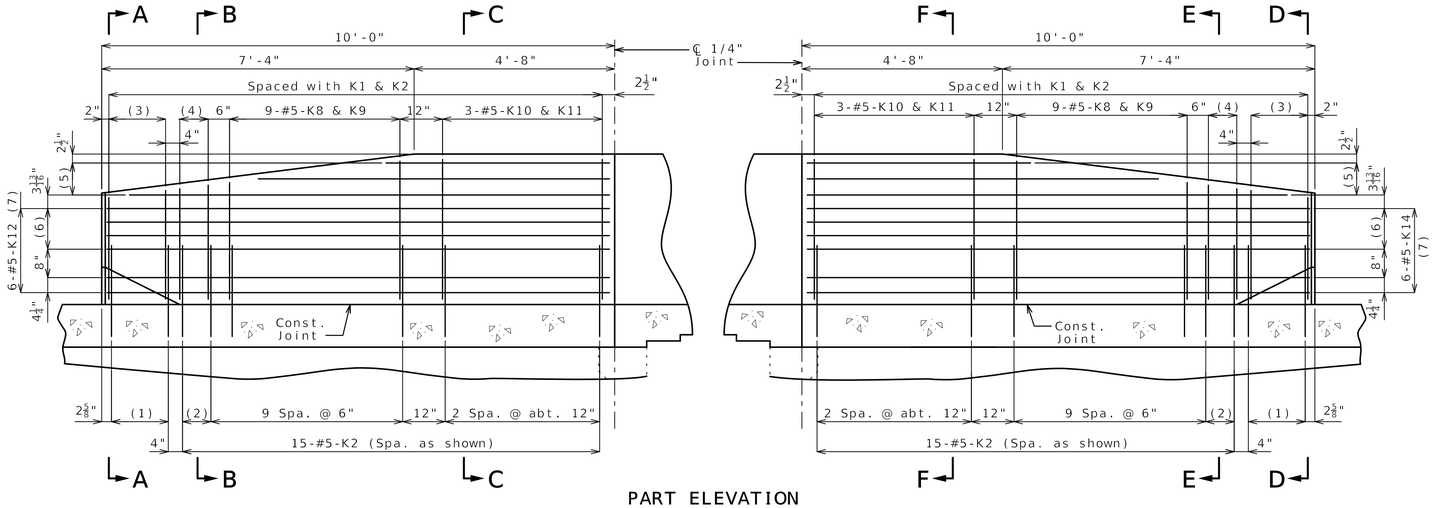
ELEVATION A-A



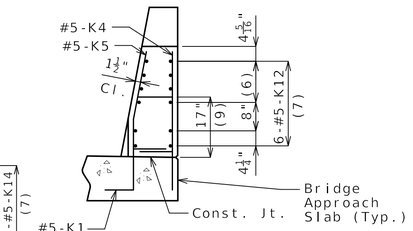
SECTION B-B



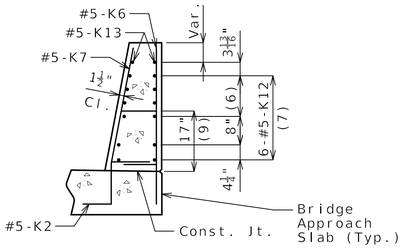
SECTION C-C



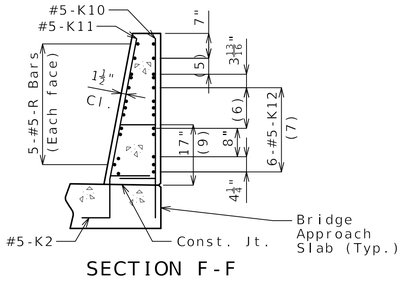
PART ELEVATION



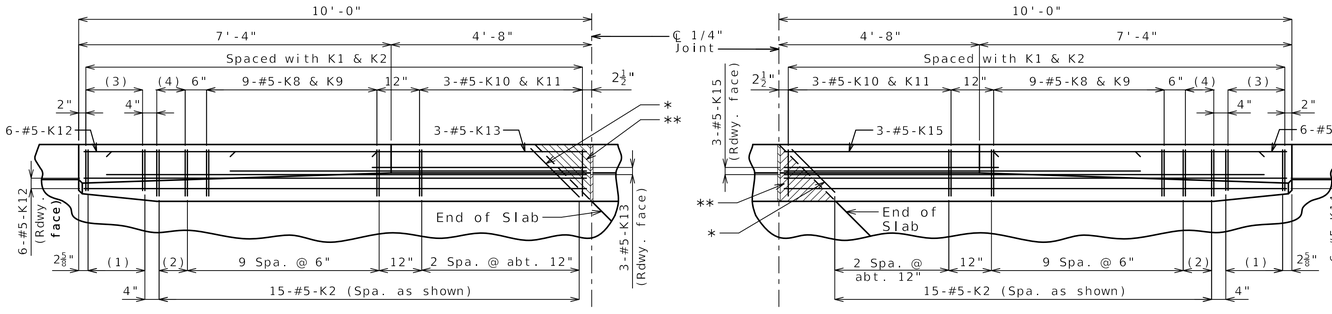
ELEVATION D-D



SECTION E-E

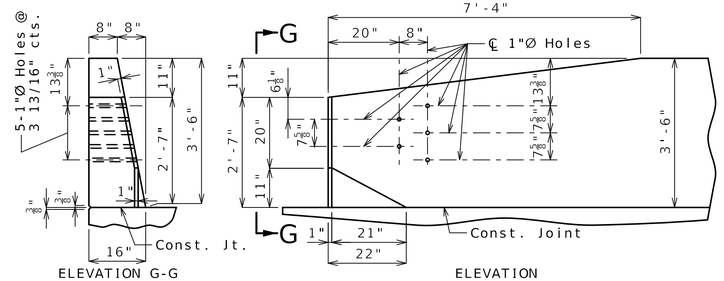


SECTION F-F

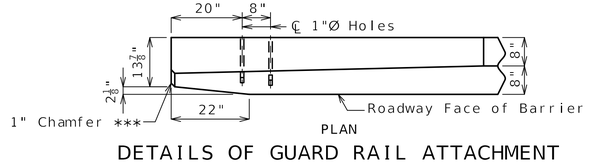


PART PLAN

(Top of barrier not shown for clarity.)



*** Transition to zero at Type A curb for gutter lines to match.



DETAILS OF GUARD RAIL ATTACHMENT

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

(2) 2 spaces @ 4"

(3) 5-#5-K4 & K5

(4) 3-#5-K6 & K7

(5) 2-#5-K13 @ 4½" cts., each face

(6) 3 spaces @ 3 13/16"

(7) Spaced as shown, each face

(8) 2-#5-K13 (Roadway face)

(9) To top of bar

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 D Barrier.

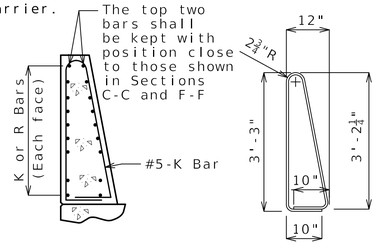
Reinforcing Steel:

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

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

* Place the last K2 bar parallel to end of slab to meet minimum clearance.

** One Layer of 30# Roofing Felt



K10-K11 BAR PERMISSIBLE ALTERNATE SHAPE

(Other K bars not shown for clarity)

The K10-K11 bar combination may be furnished as one bar as shown, at the contractor's option.

All dimensions are out to out.

TYPE D BARRIER AT END BENTS

(Left barrier shown, right barrier similar)

Detailed Dec. 2025
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Note: This drawing is not to scale. Follow dimensions.

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STATE OF MISSOURI
ANOUSONE AROUNPRADITH
NUMBER PE-29317
PROFESSIONAL ENGINEER
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DATE PREPARED 12/19/2025
ROUTE 8 | STATE MO
DISTRICT BR | SHEET NO. 12
COUNTY WASHINGTON
JOB NO. J5P3558
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A14392

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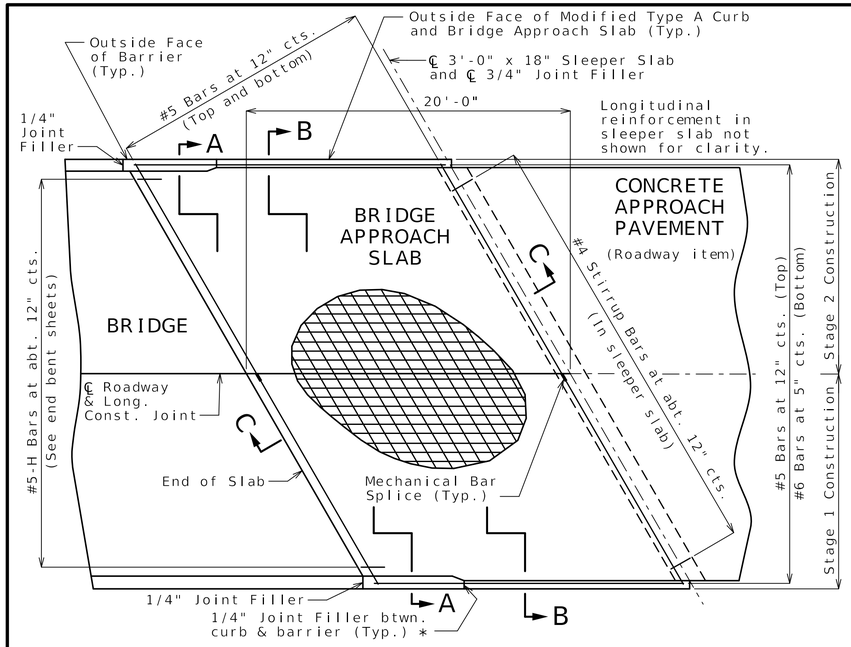
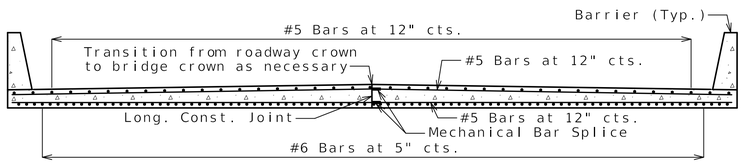
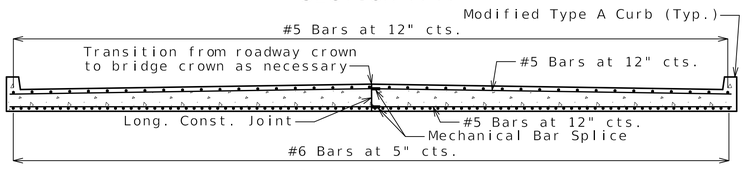


PART PLAN SHOWING REINFORCEMENT

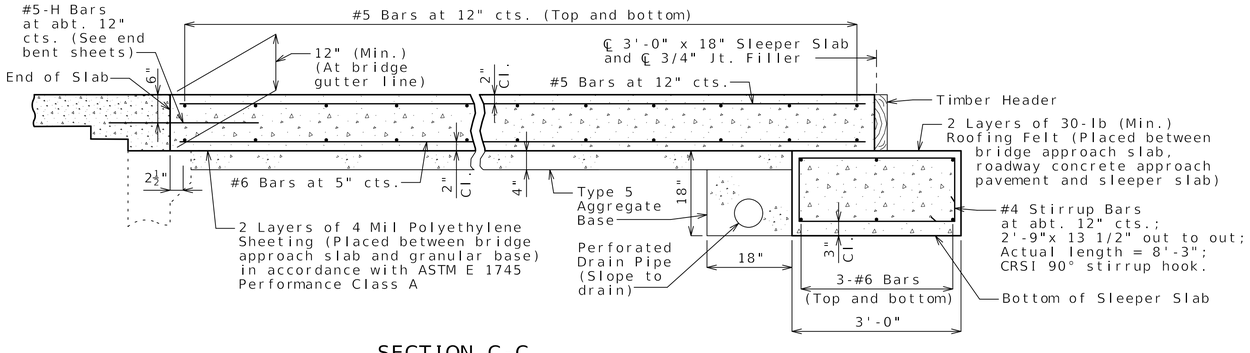


SECTION A-A

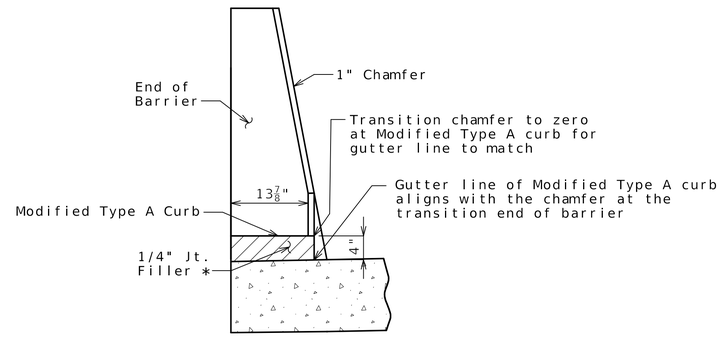


SECTION A-A

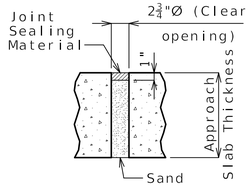
With the approval of the engineer, the contractor may crown the bottom of the approach slab to match the crown of the roadway surface.



SECTION C-C

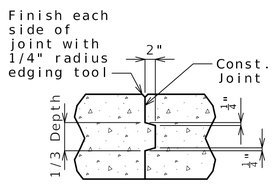


SECTION BETWEEN CURB AND BARRIER



UNDERSEAL ACCESS HOLE DETAIL

(If required)



CONSTRUCTION JOINT DETAIL

General Notes:

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

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

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.

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

The reinforcing steel in the bridge approach slab and the sleeper slab shall be continuous. The transverse reinforcing steel may be made continuous by providing a minimum lap splice of 24 inches for #5 bars and 40 inches for #6 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.

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

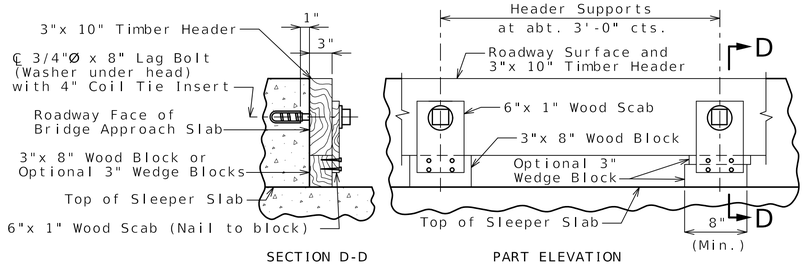
Longitudinal construction joints in approach slab and sleeper slab shall be aligned with longitudinal construction joints in bridge slab.

For concrete approach pavement details, see roadway plans.

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

Payment for furnishing all materials, labor and excavation necessary to construct the approach slab, including the timber header, sleeper slab, underdrain, Type 5 aggregate base, joint filler 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 (Major) per square yard.

* Seal joint in accordance with Sec 717 for silicone joint sealant for saw cut and formed joints.



DETAILS OF TIMBER HEADER

Remove timber header when concrete pavement is placed.

Detailed Dec. 2025
Checked Dec. 2025

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

BRIDGE APPROACH SLAB (MAJOR)

STATE OF MISSOURI
ANOUSONE AROUNPRADITH
NUMBER PE-29317
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 12/23/2025
ROUTE 8 | STATE MO
DISTRICT BR | SHEET NO. 13
COUNTY WASHINGTON
JOB NO. J5P3558
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A14392

DESCRIPTION | DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

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

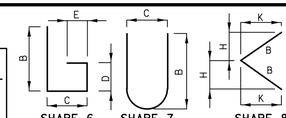
Bartlett & West
601 MONROE ST. SUITE 201 - JEFFERSON CITY, MO 65101
PHONE 573-634-3181
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM

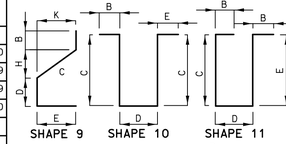
BILL OF REINFORCING STEEL

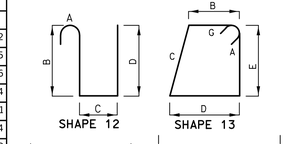
NO. REQ'D.	MARK NO. SIZE	MARK NO. MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
			SLAB																									
14	6	H1	SLAB	E	20					28	4.000													28	4	28	4	596
14	6	H2	SLAB	E	20					24	2.000													24	2	24	2	509
64	5	H3	APPR NOTCH	E	20					2	6.000													2	6	2	6	167
156	5	S1	SLAB	E	20					60	0.000													60	0	60	0	9762
78	5	S2	SLAB	E	20					13	6.000													13	6	13	6	1099
104	6	S3	SLAB	E	20					37	0.000													37	0	37	0	5780
24	6	S4	SLAB	E	20			V	1	16	11.000													16	11	16	11	352
			INCREMENT =							2	7.000													2	7	2	7	
			7.500 INCH																									
348	6	S5	SLAB	E	20					17	1.000													17	1	17	1	8929
46	6	S6	SLAB	E	20			V	2	16	6.000													16	6	16	6	666
			INCREMENT =							2	9.000													2	9	2	9	
			7.500 INCH																									
28	6	S7	SLAB	E	20			V	1	18	10.000													18	10	18	10	451
			INCREMENT =							2	7.000													2	7	2	7	
			7.250 INCH																									
3	6	S8	SLAB	E	20			V	1	4	5.000													4	5	4	5	17
			INCREMENT =							3	2.000													3	2	3	2	
			7.500 INCH																									
24	6	S9	SLAB	E	20			V	1	16	7.000													16	7	16	7	339
			INCREMENT =							2	3.000													2	3	2	3	
			7.500 INCH																									
348	6	S10	SLAB	E	20					17	1.000													17	1	17	1	8929
48	6	S11	SLAB	E	20			V	2	16	9.000													16	9	16	9	691
			INCREMENT =							2	5.000													2	5	2	5	
			7.500 INCH																									
28	6	S12	SLAB	E	20			V	1	19	1.000													19	1	19	1	449
			INCREMENT =							2	3.000													2	3	2	3	
			7.500 INCH																									
3	6	S13	SLAB	E	20			V	1	4	2.000													4	2	4	2	16
			INCREMENT =							2	11.000													2	11	2	11	
			7.500 INCH																									
84	6	U1	SLAB	E	10	S						6.000	2	3.000										3	3	2	10	357
84	6	U2	SLAB	E	19					5	0.000	9.000												5	9	5	7	705
			TYPE D																									
			BARRIER																									
20	5	K1	BARRIER	E	27	S				2	2.000	9.250	5.375	20.250	12.000	5.250	1.000	6	1	5	9	120						
60	5	K2	BARRIER	E	27	S				2	2.000	9.250	17.250	8.500	12.000	17.000	3.250	6	1	5	9	360						
20	5	K4	BARRIER	E	19	S		V	4	2	6.250	10.000												3	4	3	3	66
			INCREMENT =							2	4.250	10.000												3	2	3	1	
			0.500 INCH																									
20	5	K5	BARRIER	E	14	S		V	4		8.250	9.500	18.500			4.500	20.000	3	2	3	1	63						
			INCREMENT =								8.250	9.500	20.500			4.000	18.000	3	0	2	11							
			0.500 INCH																									
12	5	K6	BARRIER	E	19	S				2	6.750	10.000												3	5	3	3	41
12	5	K7	BARRIER	E	21	S				2	6.625	10.000				2	6.000	6.250						3	5	3	3	41
36	5	K8	BARRIER	E	19	S		V	4	3	2.500	10.000												4	1	3	11	138
			INCREMENT =							2	8.500	10.000												3	7	3	5	
			0.750 INCH																									
36	5	K9	BARRIER	E	21	S		V	4	3	2.500	10.000				3	1.750	7.750	4	1	3	11	138						
			INCREMENT =							2	8.500	10.000				2	7.750	6.750	3	6	3	5							
			0.750 INCH																									

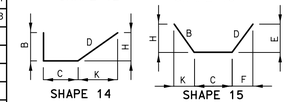
BILL OF REINFORCING STEEL

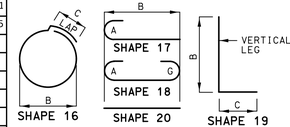
NO. REQ'D.	MARK NO. SIZE	MARK NO. MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
12	5	K10	BARRIER	E	19	S				3	3.000	10.000												4	1	3	12	50
12	5	K11	BARRIER	E	21	S				3	3.000	10.000								3	2.250	7.500		4	1	3	11	49
48	5	K12	BARRIER	E	20					9	9.000													9	9	9	9	489
24	5	K13	BARRIER	E	20			V	8	9	0.000													9	0	9	0	150
			INCREMENT =							3	0.000													3	0	3	0	
			36.000 INCH																									
262	5	R1	BARRIER	E	26					3	3.000	5.500	3	1.375						3	3.000	6.750	6	9	6	8	1822
262	5	R2	BARRIER	E	19	S					19.500	9.500												2	5	2	3	615
262	5	R3	BARRIER	E	27	S						9.500	15.250	4.000	12.000	15.000	3.000	3	5	3	2	866						
80	5	R4	BARRIER	E	20					11	8.000													11	8	11	8	974
20	5	R5	BARRIER	E	20					39	4.000													39	4	39	4	821
20	5	R6	BARRIER	E	20					23	8.000													23	8	23	8	494
20	5	R7	BARRIER	E	20					38	0.000													38	0	38	0	793
			SLIP FORM																									
32	5	C1	SLIP FORM	E	20					12	0.000													12	0	12	0	401
8	5	C2	SLIP FORM	E	20					7	9.000													7	9	7	9	65
			TOTALS																									
	5			E																								19584
	6			E																								28786
			TOTAL																									0
			TOTAL	E																								48370
			SLAB ON																									
			BEAM																									
	5			E																								11028
	6			E																								28786
			TOTAL																									39814
			TYPE D																									
			BARRIER																									
	5			E																								8090
			TOTAL																									8090
			SLIP FORM																									
			OPTION																									
	5			E																								466
			TOTAL																									466

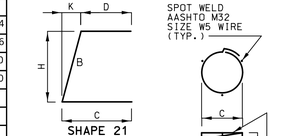


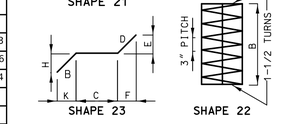


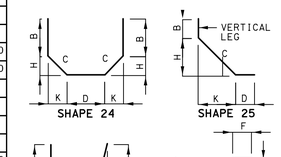


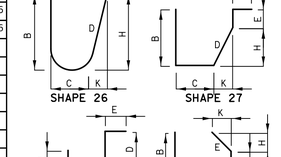


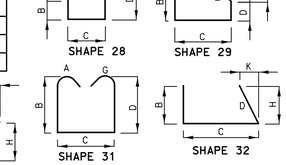


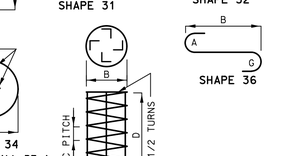




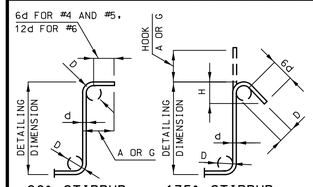








BENDING DIAGRAMS

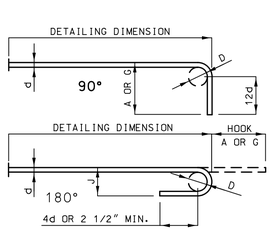


STIRRUP HOOK DIMENSIONS

GRADES 40 – 50 – 60 KSI

BAR SIZE	D (IN.)	90° HOOK A OR G	135° HOOK A OR G	135° HOOK APPROX. H
#4	2"	4 1/2"	4 1/2"	3"
#5	2 1/2"	6"	5 1/2"	3 3/4"
#6	4 1/2"	12"	8"	4 1/2"

NOTE: UNLESS OTHERWISE NOTED, DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.



END HOOK DIMENSIONS

BAR SIZE	D (IN.)	ALL GRADES 180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2 1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3 3/4"	7"	5"	10"
#6	4 1/2"	8"	6"	12"
#7	5 1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9 1/2"	15"	11 3/4"	19"
#10	10 3/4"	17"	13 1/4"	22"
#11	12"	19"	14 3/4"	2'-0"
#14	18 1/4"	2'-3"	21 3/4"	2'-7"

NOTE:

ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEGREE ARE TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEGREE STANDARD HOOKS.

HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

E = EPOXY COATED REINFORCEMENT.
S = STIRRUP.
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.

NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)

ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.

PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.

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.

REINFORCING STEEL (ASTM A615 GRADE 60) FY = 60,000 PSI.

Detailed Dec. 2025
Checked Dec. 2025

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

STATE OF MISSOURI
ANOUSONE AROUNPRADITH
NUMBER PE-29317
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 12/22/2025
ROUTE 8 | STATE MO
DISTRICT BR | SHEET NO. 14
COUNTY WASHINGTON
JOB NO. J5P3558
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A14392

DESCRIPTION | DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

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

Bartlett & West
601 MONROE ST. SUITE 201 - JEFFERSON CITY, MO 65101
PHONE 573-634-3181
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

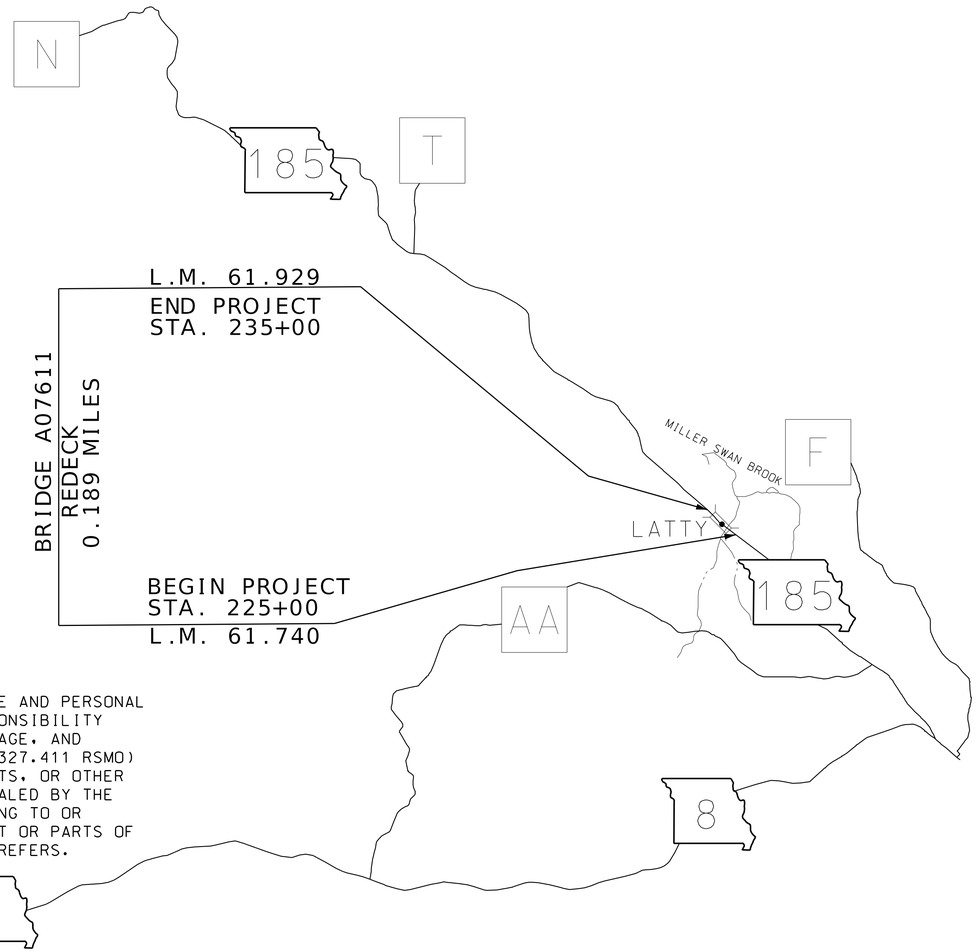
PLANS FOR PROPOSED STATE HIGHWAY

WASHINGTON COUNTY

T38N R2E SEC 29
U.S. SURVEY 3008

KEY MAP

NOT TO SCALE



DESIGN DESIGNATION

A.A.D.T. - 2023 = 615

V = 55 M.P.H.

FUNCTIONAL CLASSIFICATION- MAJOR COLLECTOR

NO NEW R/W REQUIRED

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

DISCLAIMER

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UTILITY INFORMATION NOTE:

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 COMMISSION "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.

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A07611	1-10

LENGTH OF PROJECT

BEGINNING OF PROJECT	STA. 225+00.00	
END OF PROJECT	STA. 235+00.00	
APPARENT LENGTH	1000.00	FEET
EXCEPTIONS:	0.000	FEET
TOTAL CORRECTIONS	0.000	FEET
NET LENGTH OF PROJECT	1000.00	FEET
STATE LENGTH	0.189	MILES
FOR INFORMATION ONLY ESTIMATED DISTURBED ACRES	0.16	ACRES

STATE OF MISSOURI
PAUL JOSEPH KRONLAGE
NUMBER EN 023328
REGISTERED PROFESSIONAL ENGINEER

Paul J. Kronlage

12/30/2025 9:48:25 AM
Paul J. Kronlage - Civil
MO PE - 023328

DATE PREPARED
12/29/2025

ROUTE	STATE
185	MO
DISTRICT	SHEET NO.
CD	1

COUNTY
WASHINGTON

JOB NO.
J5S3557

CONTRACT ID.

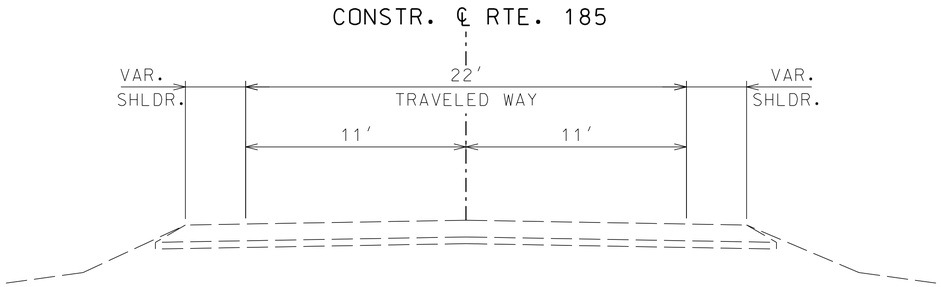
PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

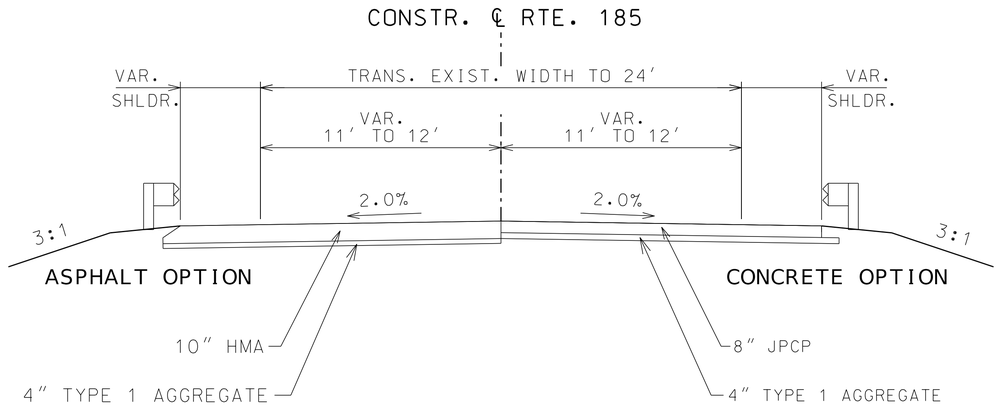
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

EFK•Moen
Civil Engineering Design
13523 Barrett Parkway Dr
Suite 250
St. Louis, MO 63021
Phone 314-394-3100
Fax 314-394-3199
Missouri Certificate of Authority: 001578



TYPICAL SECTION
EXISTING ROADWAY

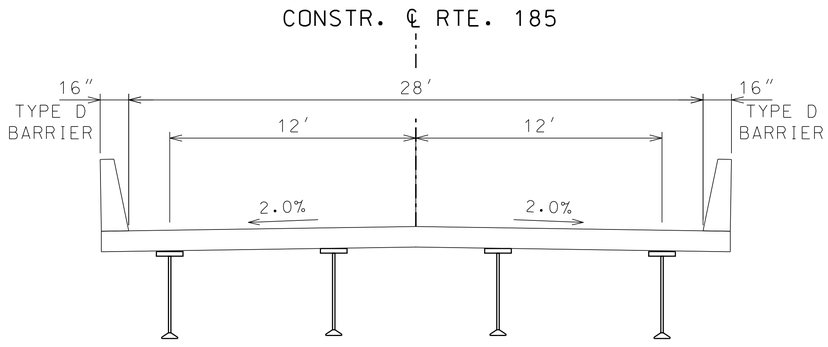
STA. 225+00.00 TO STA. 229+02.80
STA. 231+65.20 TO STA. 235+00.00



TYPICAL SECTION
PROPOSED ROADWAY

STA. 229+02.80 TO STA. 229+47.80
STA. 231+20.20 TO STA. 231+65.20

*NOTE: PAVEMENT AND SHOULDER OPTIONS CONSIST OF:
ASPHALT: 2″ BIT. PAVEMENT MIX (BP-1) PG64-22 OVER
8″ BIT. PAVEMENT MIX (BASE) PG64-22
CONCRETE: 8″ JPCP



TYPICAL SECTION
BRIDGE A07611

STA. 229+47.80 TO STA. 231+20.20

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NOT TO SCALE

TYPICAL SECTION
SHEET 1 OF 1

STATE OF MISSOURI
PAUL JOSEPH KRONLAGE
NUMBER EN 023328
REGISTERED PROFESSIONAL ENGINEER

12/30/2025 9:48:38 AM
Paul J. Kronlage - Civil
MO PE - 023328

DATE PREPARED
12/23/2025

ROUTE	STATE
185	MO
DISTRICT	SHEET NO.
CD	2

COUNTY
WASHINGTON

JOB NO.
J5S3557

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)

EFK•Moen
Civil Engineering Design
13523 Barrett Parkway Dr
Suite 250
St. Louis, MO 63021
Phone 314-394-3100
Fax 314-394-3199
Missouri Certificate of Authority: 001578

REMOVAL OF IMPROVEMENTS

SHEET NO	STA	STA	LOC	ROADWAY	L.F.	EACH	DESCRIPTIONS
4	229+47		LT	ROUTE 185		1	SIGNS POSTS & FOOTINGS: OBJECT MARKER
4	229+47		RT	ROUTE 185		1	SIGNS POSTS & FOOTINGS: OBJECT MARKER
4	231+20		LT	ROUTE 185		1	SIGNS POSTS & FOOTINGS: OBJECT MARKER
4	231+20		RT	ROUTE 185		1	SIGNS POSTS & FOOTINGS: OBJECT MARKER
4	229+02		LT/RT	ROUTE 185	22		SAWCUT
4	232+65		LT/RT	ROUTE 185	22		SAWCUT
				PAY TOTAL	1 LUMP SUM		

MOBILIZATION	1 LUMP SUM
ADDITIONAL MOBILIZATION FOR SEEDING	2 EACH
CONTRACTOR FURNISHED SURVEYING AND STAKING	1 LUMP SUM
SEEDING AND MULCHING - COOL SEASON GRASSES	1 LUMP SUM

PAVEMENT & BASE

SHEET NO	ROADWAY	STA	STA	LOC	AREA	OPTIONAL PAVEMENT	TYPE 1 AGGREGATE FOR BASE 4 - IN.	REMARKS
					S.F.	S.Y.	S.Y.	
4	ROUTE 185	229+02.80	229+27.80	LT/RT	785.0	87.2	87.2	
4	ROUTE 185	231+39.93	231+64.93	LT/RT	785.0	87.2	87.2	
			SUBTOTAL			174.4	174.4	
			PAY TOTAL			174.4	174	

EROSION CONTROL

SHEET NO	ROADWAY	STA	STA	LOC	SILT FENCE	ALTERNATE DITCH CHECK	SEDIMENT REMOVAL	REMARKS
					L.F.	L.F.	C.Y.	
9	ROUTE 185	231+45	232+30	RT		85	5.0	
9	ROUTE 185	231+45	232+90	LT		136	8.0	
9	ROUTE 185	227+50	229+70	LT & RT	470		4.7	INCLUDES UNDER BRIDGE
9	ROUTE 185	231+00	231+45	LT & RT	145		1.5	INCLUDES UNDER BRIDGE
			SUBTOTAL		615	221	19	
			PAY TOTAL		615	221	19	

PAVEMENT MARKING

SHEET NO	ROADWAY	STA	STA	LOC	CLASS 1 PAVEMENT MARKING PAINT 18-MIL, TYPE P BEADS		REMARKS
					4 IN. SOLID YELLOW	4 IN. SOLID WHITE	
					L.F.	L.F.	
4	ROUTE 185	228+47	232+20	LT/RT	750	750	
			SUBTOTAL		750	750	
			PAY TOTAL		750	750	

LINEAR GRADING

SHEET NO	ROADWAY	LOC	STA	STA	LINEAR GRADING CLASS 2	REMARKS
					STA.	
4	ROUTE 185	LT/RT	229+02	229+47	0.5	NORTH OF BRIDGE - INCLUDES REMOVAL OF ASPHALT PAVT.
4	ROUTE 185	LT/RT	231+20	231+65	0.5	SOUTH OF BRIDGE - INCLUDES REMOVAL OF ASPHALT PAVT.
				SUBTOTAL	1.0	
				PAY TOTAL	1.0	

GUARDRAIL

SHEET NO	ROADWAY	STA	STA	LOC	MGS GUARDRAIL 6 FT. POSTS	BRIDGE APPROACH TRANSITION SECTION (REGULAR / NO CURB)	TYPE A CRASHWORTHY END TERMINAL (MASH)	SHAPING SLOPES CLASS III	REMARKS
					L.F.	EA.	EA.	100 FT.	
4	ROUTE 185	228+09	229+47	LT	187.5	1	1	2.4	
4	ROUTE 185	227+59	229+47	RT	237.5	1	1	2.9	
4	ROUTE 185	231+19	233+08	LT	237.5	1	1	2.9	
4	ROUTE 185	231+19	232+58	RT	187.5	1	1	2.4	
			SUBTOTAL		850	4	4	10.6	
			PAY TOTAL		850	4	4	11	

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SUMMARY OF QUANTITIES
SHEET 1 OF 2

STATE OF MISSOURI
PAUL JOSEPH KRONLAGE
NUMBER EN 023328
REGISTERED PROFESSIONAL ENGINEER

Paul J. Kronlage

01/05/2026 11:29:52 AM
Paul J. Kronlage - Civil
MO PE - 023328

DATE PREPARED
1/5/2026

ROUTE 185 | STATE MO
DISTRICT CD | SHEET NO. 3
COUNTY WASHINGTON
JOB NO. J5S3557
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)

EFK•Moen
Civil Engineering Design
13523 Barrett Parkway Dr
Suite 250
St. Louis, MO 63021
Phone 314-394-3100
Fax 314-394-3199
Missouri Certificate of Authority: 001578

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	2	32.00			2	ROAD/BRIDGE/RAMP WORK AHEAD
WO20-2	48X48	16.00	7	112.00			18	DETOUR AHEAD
WO20-3	48X48	16.00	2	32.00			2	ROAD CLOSED AHEAD
WO20-4	48X48	16.00	2	32.00			7	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	2	32.00			8	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	6.00			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
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	20.00			29	ROAD CLOSED
							66	ROAD CLOSED XX MILES AHEAD
R11-3a	60X30	12.50	5	62.50			ABCD	LOCAL TRAFFIC ONLY
R11-4	60X30	12.50						ROAD CLOSED TO THRU TRAFFIC
CONST-3A	60X48	20.00						FINE SIGN
CONST-3X	56X12	4.67						SPEEDING/PASSING (PLATE)
MISCELLANEOUS SIGNS								
CONST-8	48X36	12.00						WORK ZONE NO PHONE ZONE
WO20-3	48X48	16.00					20A	ROAD CLOSED 350 FT
SPECIAL	36X78	19.50	20	390.00			60A	DETOUR - STR. ARROW (N)
SPECIAL	36X78	19.50	4	78.00			60B	DETOUR - ADV. RIGHT ARROW (N)
SPECIAL	36X78	19.50	3	58.50			60C	DETOUR - ADV. LEFT ARROW (N)
SPECIAL	36X78	19.50	4	78.00			60D	DETOUR - RIGHT ARROW (N)
SPECIAL	36X78	19.50	3	58.50			60E	DETOUR - LEFT ARROW (N)
SPECIAL	36X78	19.50	17	331.50			80A	DETOUR - STR. ARROW (S)
SPECIAL	36X78	19.50	3	58.50			80B	DETOUR - ADV. RIGHT ARROW (S)
SPECIAL	36X78	19.50	1	19.50			80C	DETOUR - ADV. LEFT ARROW (S)
SPECIAL	36X78	19.50	3	58.50			80D	DETOUR - RIGHT ARROW (S)
SPECIAL	36X78	19.50	1	19.50			80E	DETOUR - LEFT ARROW (S)
SPECIAL	84X72	42.00	3	126.00			71	185 CLOSED 6 MI SOUTH OF T
SPECIAL	84X72	42.00	4	168.00			72	185 CLOSED 4 MI NORTH OF 8

	TOTAL
616-10.05 CONSTRUCTION SIGNS	1773
616-10.10 RELOCATED SIGNS	*

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ITEM NUMBER	TOTAL QTY	EFFECTIVE: 07-01-2025 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	45	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	5**	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

LUMP SUM TEMPORARY TRAFFIC CONTROL	1 LUMP SUM

* NO DIRECT PAY WILL BE MADE FOR RELOCATION OF CONSTRUCTION SIGNING OR DEVICES.

** NOT INCLUDED IN LUMP SUM TEMPORARY TRAFFIC CONTROL.

NOTES:
ALL TRAFFIC CONTROL ITEMS INCLUDED IN PAY ITEM 616-99.01 TEMPORARY TRAFFIC CONTROL LUMP SUM, UNLESS NOTED OTHERWISE IN THE PLANS. THESE QUANTITIES ARE ONLY AN ESTIMATE AND ARE SUBJECT TO CHANGE BASED ON FIELD CONDITIONS.

SIGN QUANTITIES HAVE BEEN ESTIMATED. TEMPORARY TRAFFIC CONTROL SHALL FOLLOW AT A MINIMUM MUTCD STANDARDS. LATEST EDITION.

ALL WARNING SIGNS SHALL HAVE FLORESCENT SHEETING.

SUMMARY OF QUANTITIES
SHEET 2 OF 2

STATE OF MISSOURI
PAUL JOSEPH KRONLAGE
NUMBER EN 023328
REGISTERED PROFESSIONAL ENGINEER

01/05/2026 11:28:49 AM
Paul J. Kronlage - Civil
MO PE - 023328

DATE PREPARED
1/5/2026

ROUTE	STATE
185	MO

DISTRICT	SHEET NO.
CD	3

COUNTY
WASHINGTON

JOB NO.
J5S3557

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)

EFK•Moen
Civil Engineering Design
13523 Barrett Parkway Dr
Suite 250
St. Louis, MO 63021
Phone 314-394-3100
Fax 314-394-3199
Missouri Certificate of Authority: 001578

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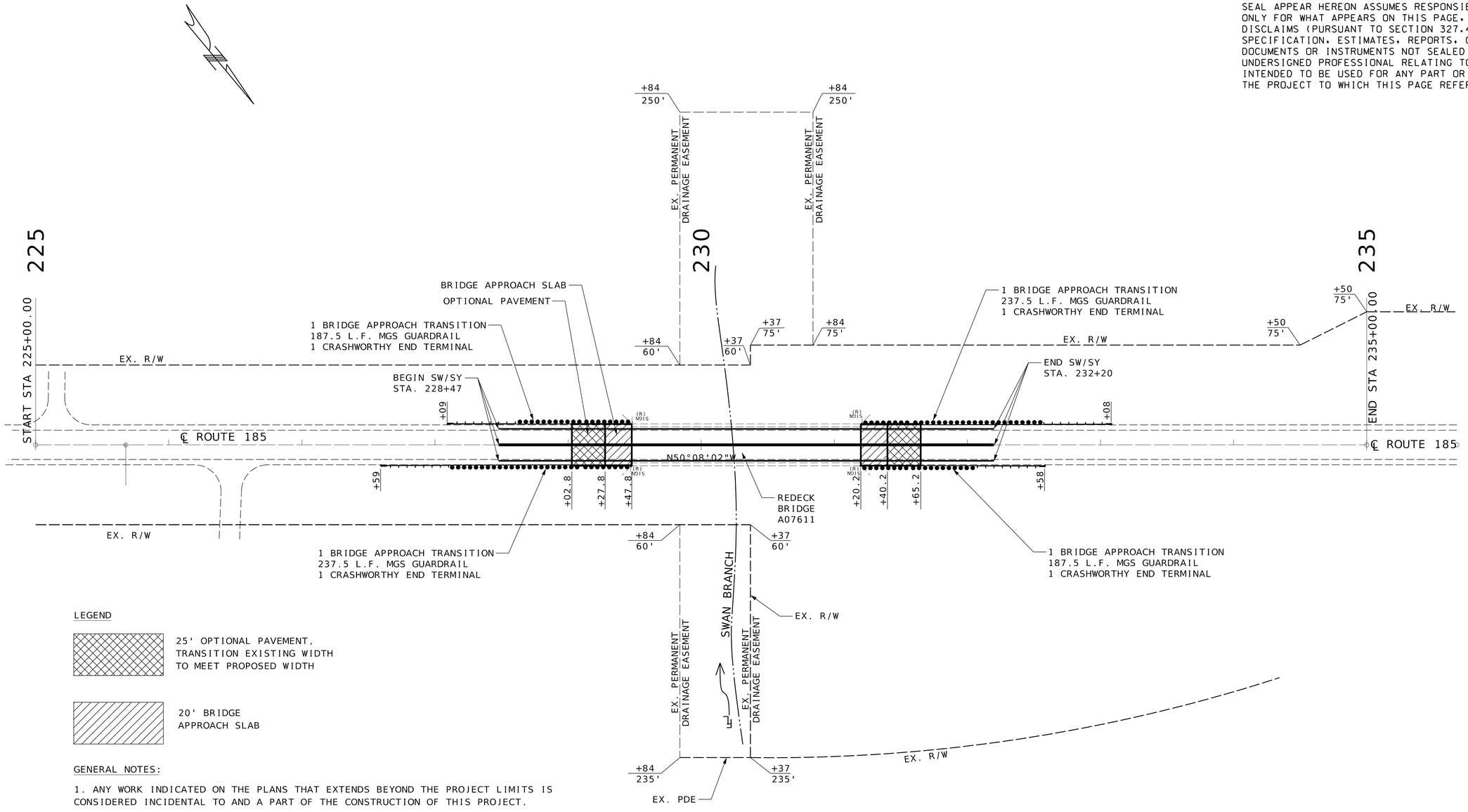


LEGEND

25' OPTIONAL PAVEMENT, TRANSITION EXISTING WIDTH TO MEET PROPOSED WIDTH

20' BRIDGE APPROACH SLAB

GENERAL NOTES:

1. ANY WORK INDICATED ON THE PLANS THAT EXTENDS BEYOND THE PROJECT LIMITS IS CONSIDERED INCIDENTAL TO AND A PART OF THE CONSTRUCTION OF THIS PROJECT.

2. PLANS DRAWN FROM AS-BUILTS AND AERIAL MAPS. CONTRACTOR SHALL VERIFY DIMENSIONS IN THE FIELD.

3. EXISTING R/W AND EASEMENT LINES SHOWN ARE APPROXIMATES FROM AS-BUILTS, ARE FOR INFORMATION ONLY AND HAVE NOT BEEN FIELD-VERIFIED BY A PROFESSIONAL LAND SURVEYOR.

4. IF CONCRETE OPTION IS USED, CONTRAST MARKING IS REQUIRED AT NO DIRECT PAY.

UTILITY INFORMATION NOTE:
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 COMMISSION "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.

SCALE
0 40 80 120

PLAN SHEET
1 OF 1

STATE OF MISSOURI
PAUL JOSEPH KRONLAGE NUMBER EN 023328
REGISTERED PROFESSIONAL ENGINEER
01/05/2026 11:28:09 AM
Paul J. Kronlage - Civil
MO PE - 023328

DATE PREPARED 1/5/2026
ROUTE 185 | STATE MO
DISTRICT CD | SHEET NO. 4
COUNTY WASHINGTON
JOB NO. J5S3557
CONTRACT ID.
PROJECT NO.
BRIDGE NO.

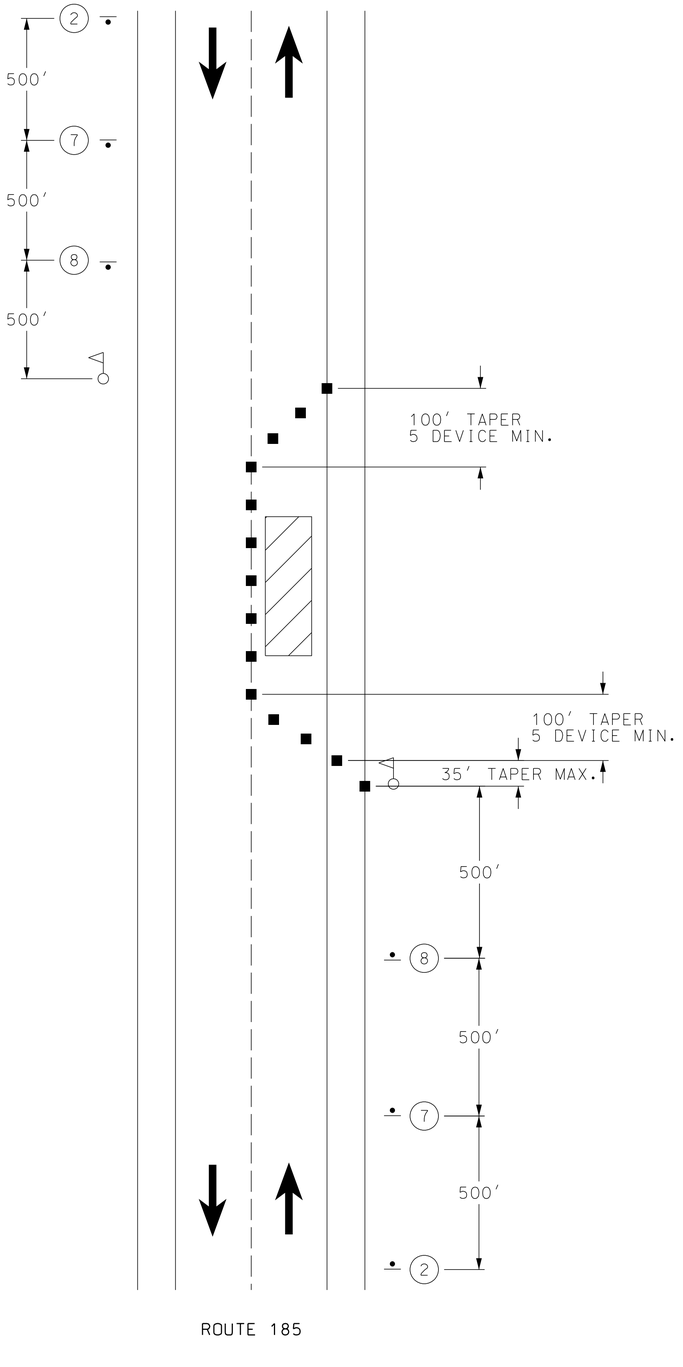
DESCRIPTION | DATE

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

EFK•Moen
Civil Engineering Design
13523 Barrett Parkway Dr
Suite 250
St. Louis, MO 63021
Phone 314-394-3100
Fax 314-394-3199
Missouri Certificate of Authority: 001578

GENERAL NOTES:

LANE CLOSURE ON TWO-LANE ROAD USING FLAGGERS



NOT TO SCALE

W020-1

(2)

W020-4

(7)

W020-7a

(8)

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TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- CHANNELIZER
- FLAGGER
- WORK SPACE

NOTES:

THE CONTRACTOR SHALL COVER OR REMOVE ANY EXISTING SIGNING OR PAVEMENT MARKING THAT CONFLICTS WITH THE TEMPORARY TRAFFIC CONTROL SIGNING AND DEVICES.

AUTOMATED FLAGGER ASSISTANCE DEVICES (AFAD) AND PORTABLE SIGNAL FLAGGING DEVICES (PSFD) MAY BE USED AS AN ALTERNATIVE FLAGGING OPERATION.

AFAD AND PSFD TYPICAL APPLICATIONS AND CRITERIA ARE LOCATED AT THE FOLLOWING: EPG 616.8.10A (TA-10A) LANE CLOSURE ON TWO-LANE HIGHWAYS USING AUTOMATED FLAGGER ASSISTANCE DEVICE WITH RED AND AMBER SIGNAL SYSTEM & EPG 616.8.10C (TA-10C) LANE CLOSURE ON TWO-LANE HIGHWAYS USING PORTABLE SIGNAL FLAGGING DEVICE.

IF USED AT NIGHT, THE FLAGGER STATIONS SHALL BE ILLUMINATED WITH AN AVERAGE MAINTAINED INTENSITY OF 0.6 FOOTCANDLES (6.5 LUX).

NOT TO SCALE

TRAFFIC CONTROL
SHEET 1 OF 5

PAUL JOSEPH KRONLAGE NUMBER EN 023328
STATE OF MISSOURI
REGISTERED PROFESSIONAL ENGINEER
12/30/2025 9:49:29 AM
Paul J. Kronlage - Civil
MO PE - 023328

DATE PREPARED 12/23/2025

ROUTE	STATE
185	MO
DISTRICT	SHEET NO.
CD	5

COUNTY: WASHINGTON

JOB NO.: J5S3557

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)

EFK•Moen
Civil Engineering Design
13523 Barrett Parkway Dr
Suite 250
St. Louis, MO 63021
Phone 314-394-3100
Fax 314-394-3199
Missouri Certificate of Authority: 001578

GENERAL NOTES:

1. PLACEMENT OF TRAFFIC CONTROL SIGNS IS APPROXIMATE AND MAY BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
2. SIGN SPACING 350' OR AS DIRECTED BY THE ENGINEER.
3. ANY EXISTING SIGN THAT CONFLICTS WITH THE TRAFFIC CONTROL SIGNING SHALL BE COMPLETELY COVERED OR REMOVED, NO DIRECT PAY.
4. SIGNS ASSOCIATED WITH TYPE III BARRICADE SHALL BE MOUNTED ON POST BEHIND BARRICADE.
5. CMS MESSAGES AND LOCATIONS AS APPROVED BY ENGINEER.
6. ALL SIGNS SHOWN ON THIS SHEET ARE NON-PORTABLE AND SHALL REMAIN IN PLACE FOR THE DURATION OF THE PROJECT.

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- CHANNELIZER
- BARRICADE
- CHANGEABLE MESSAGE BOARD

DISCLAIMER
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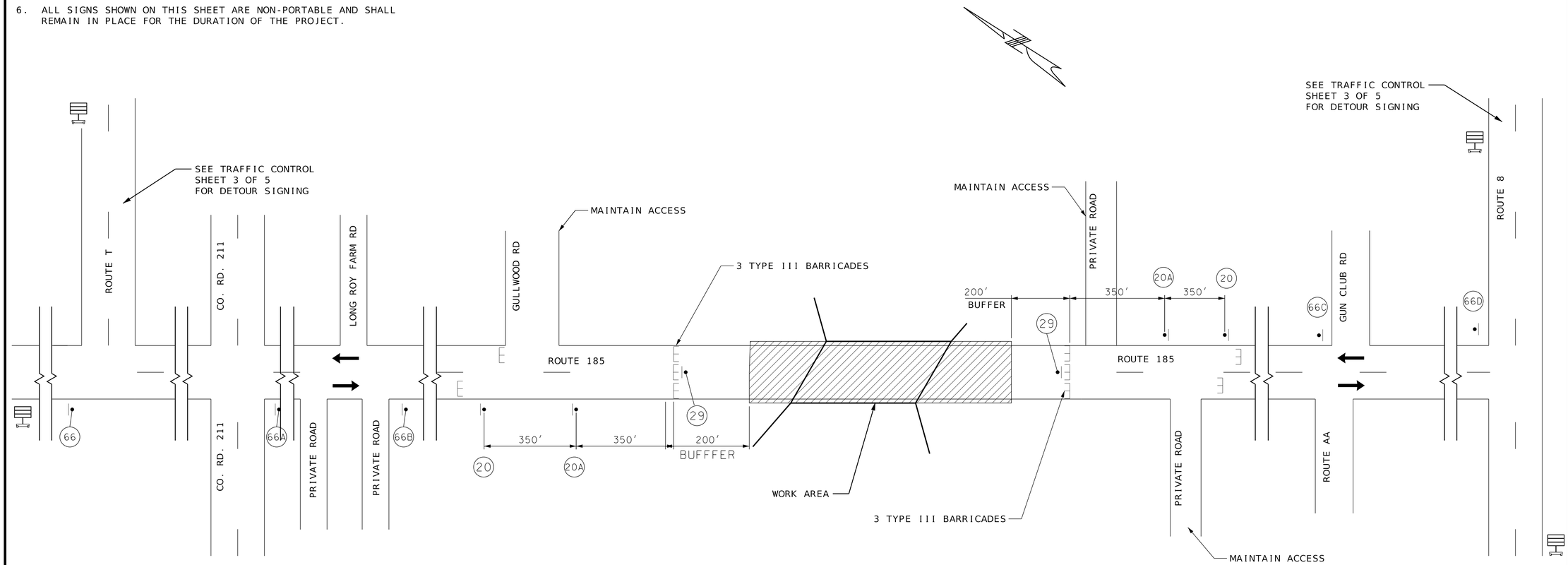

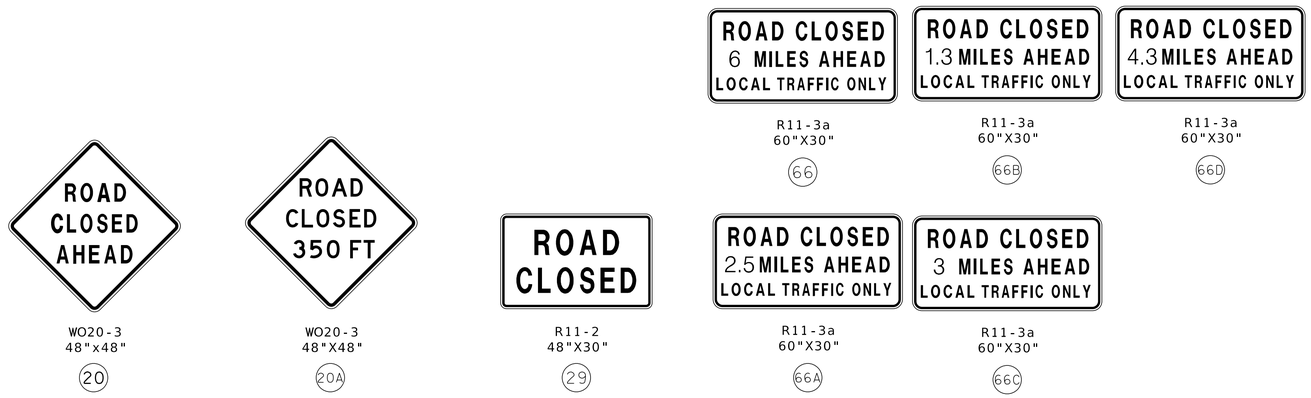

NOT TO SCALE

TRAFFIC CONTROL SHEET 2 OF 5

STATE OF MISSOURI
PAUL JOSEPH KRONLAGE NUMBER EN 023328
REGISTERED PROFESSIONAL ENGINEER

12/30/2025 9:49:39 AM
Paul J. Kronlage - Civil
MO PE - 023328

DATE PREPARED: 12/29/2025
ROUTE: 185 | STATE: MO
DISTRICT: CD | SHEET NO.: 6
COUNTY: WASHINGTON
JOB NO.: J5S3557
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)

EFK•Moen
Civil Engineering Design
13523 Barrett Parkway Dr
Suite 250
St. Louis, MO 63021
Phone 314-394-3100
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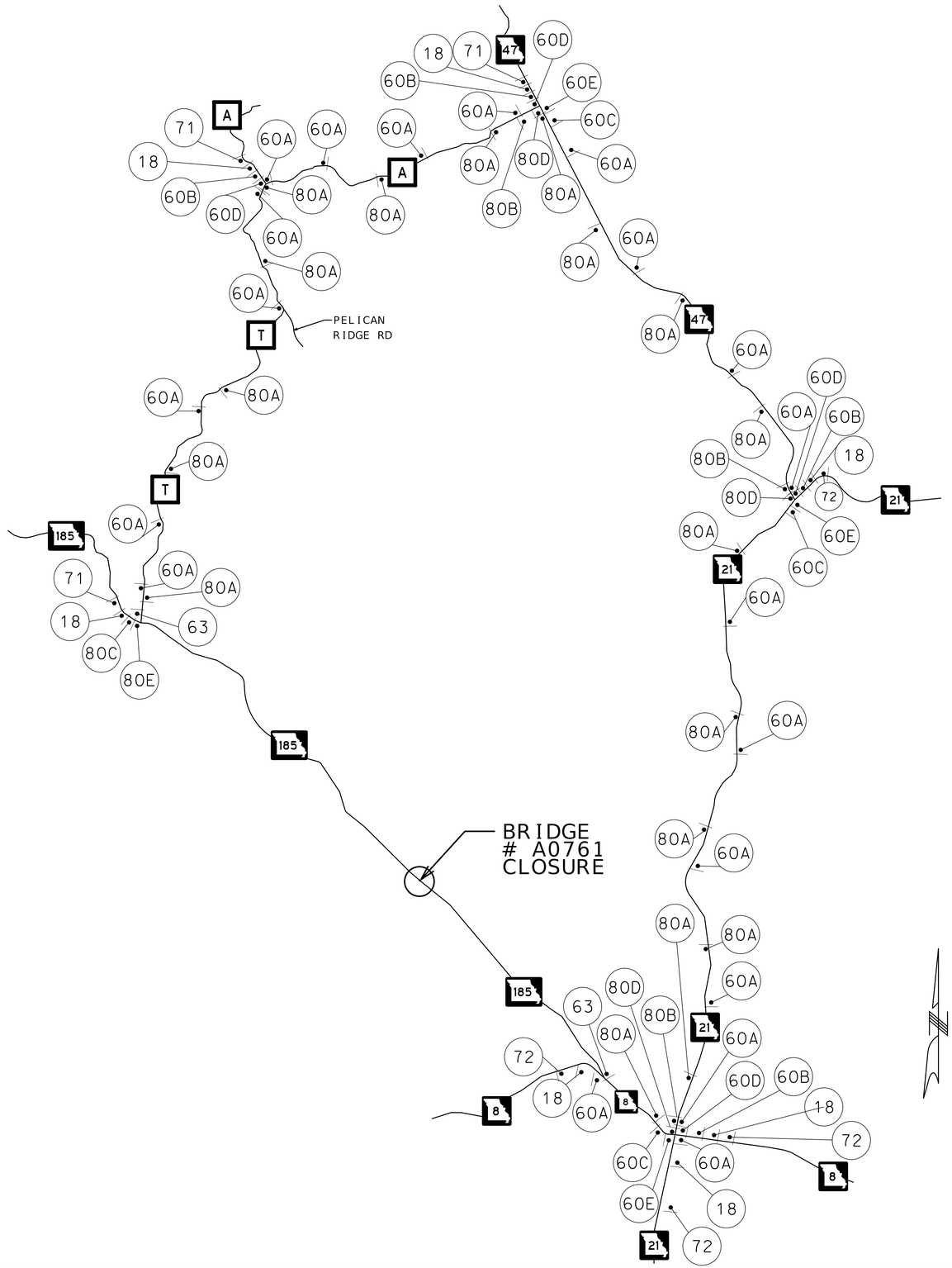
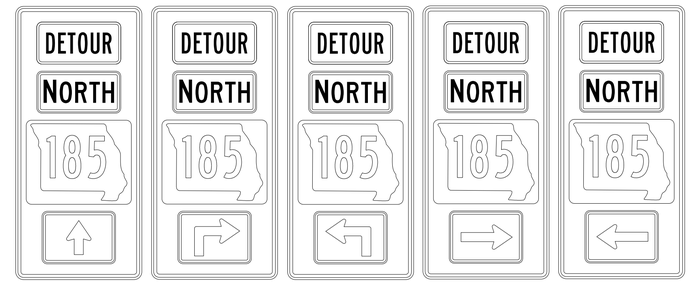




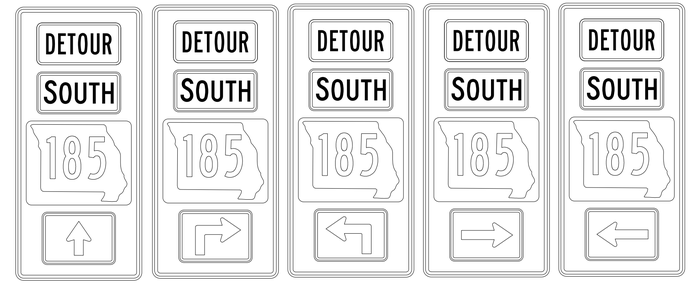
SPECIAL
36"X78"
60A

SPECIAL
36"X78"
60B

SPECIAL
36"X78"
60C

SPECIAL
36"X78"
60D

SPECIAL
36"X78"
60E



SPECIAL
36"X78"
80A

SPECIAL
36"X78"
80B

SPECIAL
36"X78"
80C

SPECIAL
36"X78"
80D

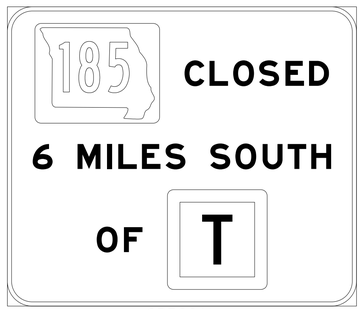
SPECIAL
36"X78"
80E

WO20-2

18

MO4-8a

52



SPECIAL
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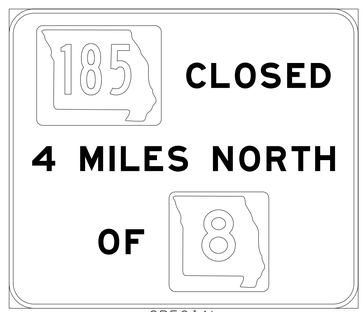
71



SPECIAL
84"X72"
72

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½ 0 1 2
SCALE IN MILES

TRAFFIC CONTROL
SHEET 3 OF 5

12/30/2025 9:49:49 AM
Paul J. Kronlage - Civil
MO PE - 023328

DATE PREPARED
12/23/2025

ROUTE	STATE
185	MO
DISTRICT	SHEET NO.
CD	7

COUNTY
WASHINGTON

JOB NO.
J5S3557

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)

EFK•Moen
Civil Engineering Design
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St. Louis, MO 63021
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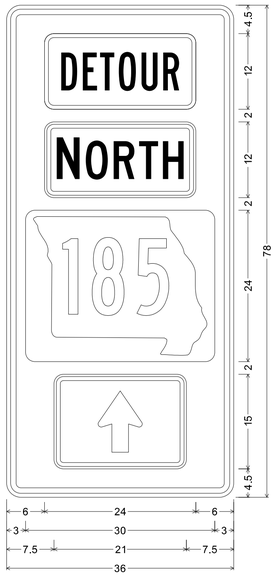
Missouri Certificate of Authority: 001578



MO4-11 SHF-FLAT SHEET FLUORESCENT;
2.250" Radius, 0.875" Border, 0.625" Indent, Black on Orange;
Table of letter and object lefts

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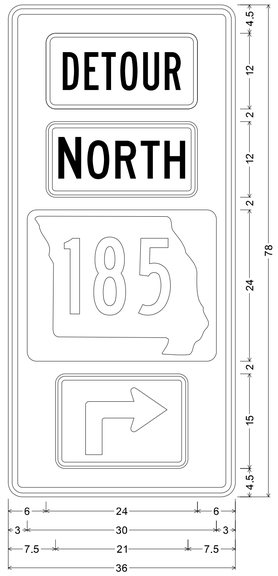
	6.000
	3.000
	7.500



MO4-11 SHF-FLAT SHEET FLUORESCENT;
2.250" Radius, 0.875" Border, 0.625" Indent, Black on Orange;
Table of letter and object lefts

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	3.000
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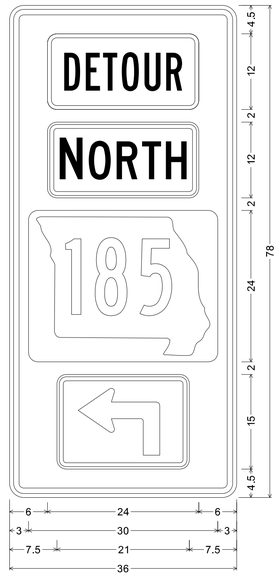

MO4-11 SHF-FLAT SHEET FLUORESCENT;
2.250" Radius, 0.875" Border, 0.625" Indent, Black on Orange;
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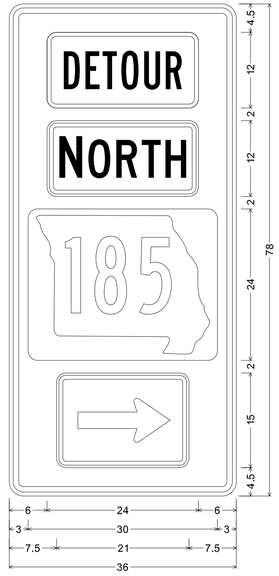

MO4-11 SHF-FLAT SHEET FLUORESCENT;
2.250" Radius, 0.875" Border, 0.625" Indent, Black on Orange;
Table of letter and object lefts

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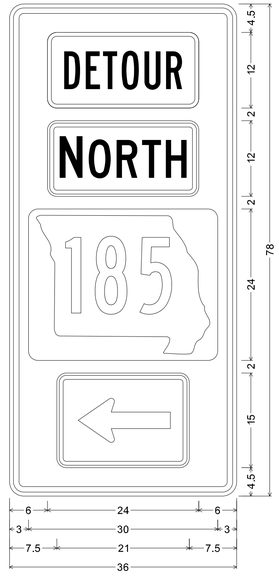
	7.500



MO4-11 SHF-FLAT SHEET FLUORESCENT;
2.250" Radius, 0.875" Border, 0.625" Indent, Black on Orange;
Table of letter and object lefts

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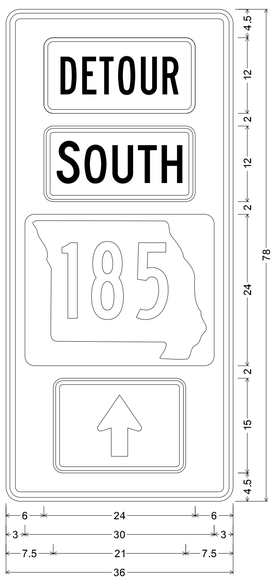
	3.000
	7.500



MO4-11 SHF-FLAT SHEET FLUORESCENT;
2.250" Radius, 0.875" Border, 0.625" Indent, Black on Orange;
Table of letter and object lefts

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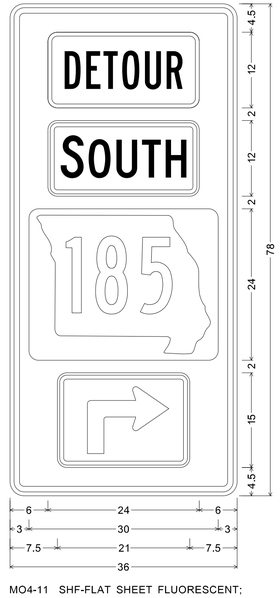

MO4-11 SHF-FLAT SHEET FLUORESCENT;
2.250" Radius, 0.875" Border, 0.625" Indent, Black on Orange;
Table of letter and object lefts

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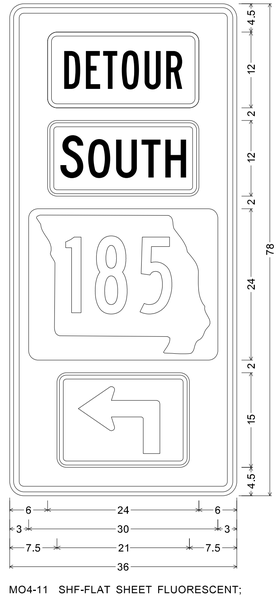

MO4-11 SHF-FLAT SHEET FLUORESCENT;
2.250" Radius, 0.875" Border, 0.625" Indent, Black on Orange;
Table of letter and object lefts

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	6.000
	3.000
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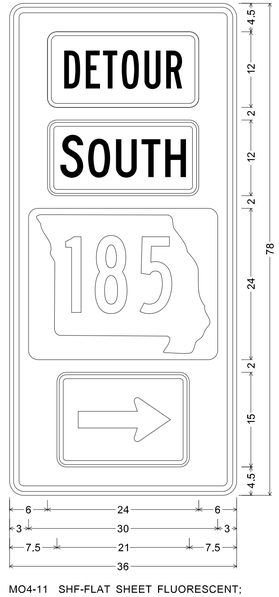

MO4-11 SHF-FLAT SHEET FLUORESCENT;
2.250" Radius, 0.875" Border, 0.625" Indent, Black on Orange;
Table of letter and object lefts

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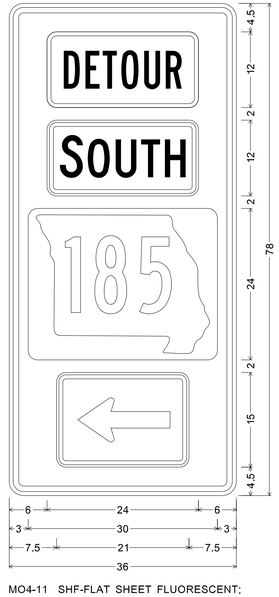
	3.000
	7.500



MO4-11 SHF-FLAT SHEET FLUORESCENT;
2.250" Radius, 0.875" Border, 0.625" Indent, Black on Orange;
Table of letter and object lefts

	6.000
	6.000
	3.000
	7.500

DISCLAIMER

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STATE OF MISSOURI
PAUL JOSEPH KRONLAGE
NUMBER EN 023328
REGISTERED PROFESSIONAL ENGINEER

12/30/2025 9:50:00 AM
Paul J. Kronlage - Civil
MO PE - 023328

DATE PREPARED
12/23/2025

ROUTE	STATE
185	MO

DISTRICT	SHEET NO.
CD	8

COUNTY
WASHINGTON

JOB NO.
J5S3557

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)

EFK·Moen
Civil Engineering Design
13523 Barrett Parkway Dr
Suite 250
St Louis, MO 63021
Phone 314-394-3100
Fax 314-394-3199
Missouri Certificate of Authority: 001578

TRAFFIC CONTROL
SHEET 4 OF 5

DISCLAIMER
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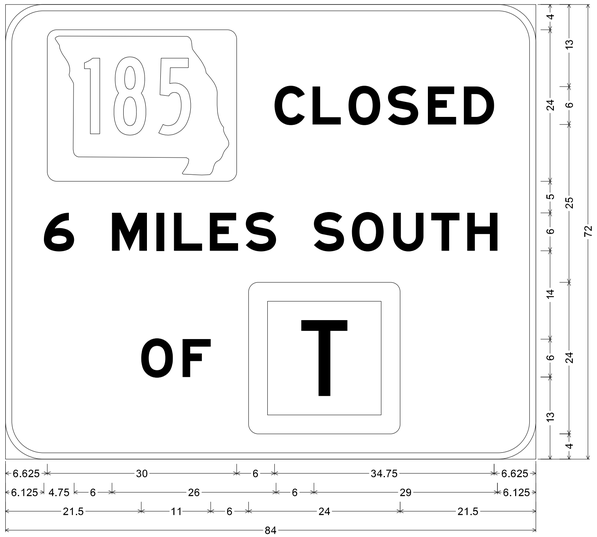
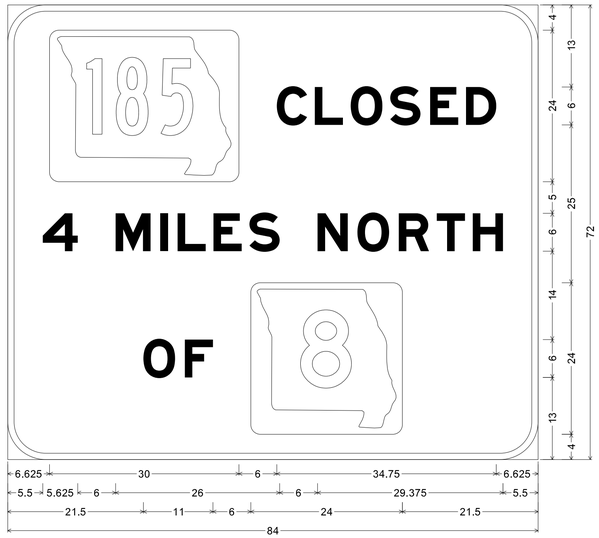


SPECIAL SHF-FLAT SHEET FLUORESCENT;
6.000" Radius, 1.000" Border, Black on Orange;
"CLOSED", E Mod; "6 MILES SOUTH", E Mod; "OF", E Mod;
Table of letter and object lefts

185	C	L	O	S	E	D
6.625	42.625	48.625	54.375	60.625	66.875	72.625

6	M	I	L	E	S	S	O	U	T	H
6.125	16.875	24.000	26.625	32.375	38.125	48.875	54.875	61.375	67.500	73.125

O	F	T
21.500	28.000	38.500



SPECIAL SHF-FLAT SHEET FLUORESCENT;
6.000" Radius, 1.000" Border, Black on Orange;
"CLOSED", E Mod; "4 MILES NORTH", E Mod; "OF", E Mod;
Table of letter and object lefts

185	C	L	O	S	E	D
6.625	42.625	48.625	54.375	60.625	66.875	72.625

4	M	I	L	E	S	N	O	R	T	H
5.500	17.125	24.125	26.875	32.625	38.250	49.125	55.375	62.000	68.000	73.625

O	F	8
21.500	28.000	38.500

STATE OF MISSOURI
PAUL JOSEPH KRONLAGE NUMBER EN 023328
REGISTERED PROFESSIONAL ENGINEER
12/30/2025 9:50:11 AM
Paul J. Kronlage - Civil
MO PE - 023328

DATE PREPARED
12/23/2025

ROUTE	STATE
185	MO

DISTRICT	SHEET NO.
CD	9

COUNTY
WASHINGTON

JOB NO.
J5S3557

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)

EFK•Moen
Civil Engineering Design
13523 Barrett Parkway Dr
Suite 250
St. Louis, MO 63021
Phone 314-394-3100
Fax 314-394-3199
Missouri Certificate of Authority: 001578

TRAFFIC CONTROL
SHEET 5 OF 5

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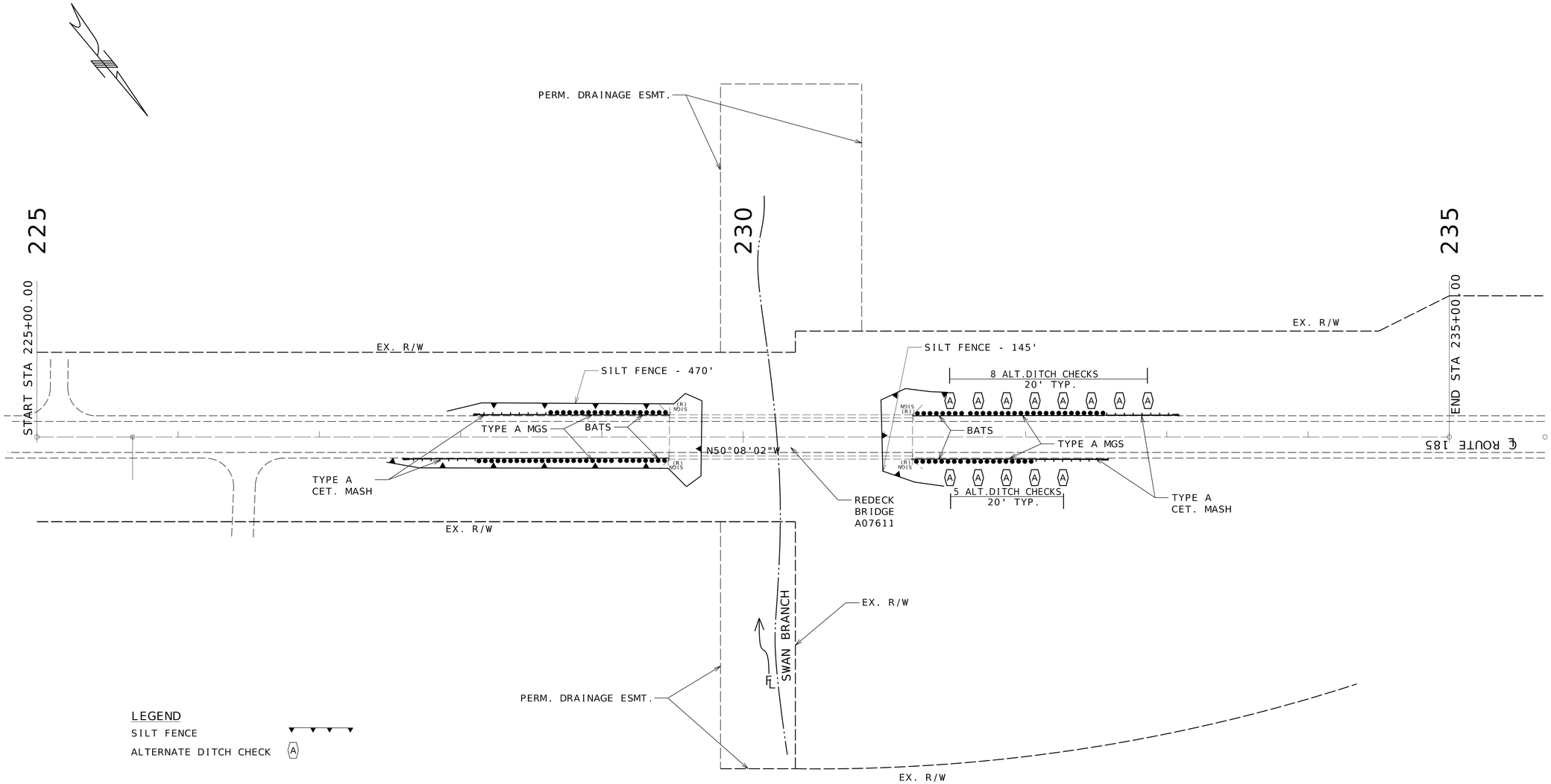

EROSION CONTROL
SHEET 1 OF 1

STATE OF MISSOURI
PAUL JOSEPH KRONLAGE NUMBER EN 023328
REGISTERED PROFESSIONAL ENGINEER

12/30/2025 10:02:46 AM
Paul J. Kronlage - Civil
MO PE - 023328

DATE PREPARED
12/23/2025

ROUTE	STATE
185	MO
DISTRICT	SHEET NO.
CD	10

COUNTY
WASHINGTON

JOB NO.
J5S3557

CONTRACT ID.

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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
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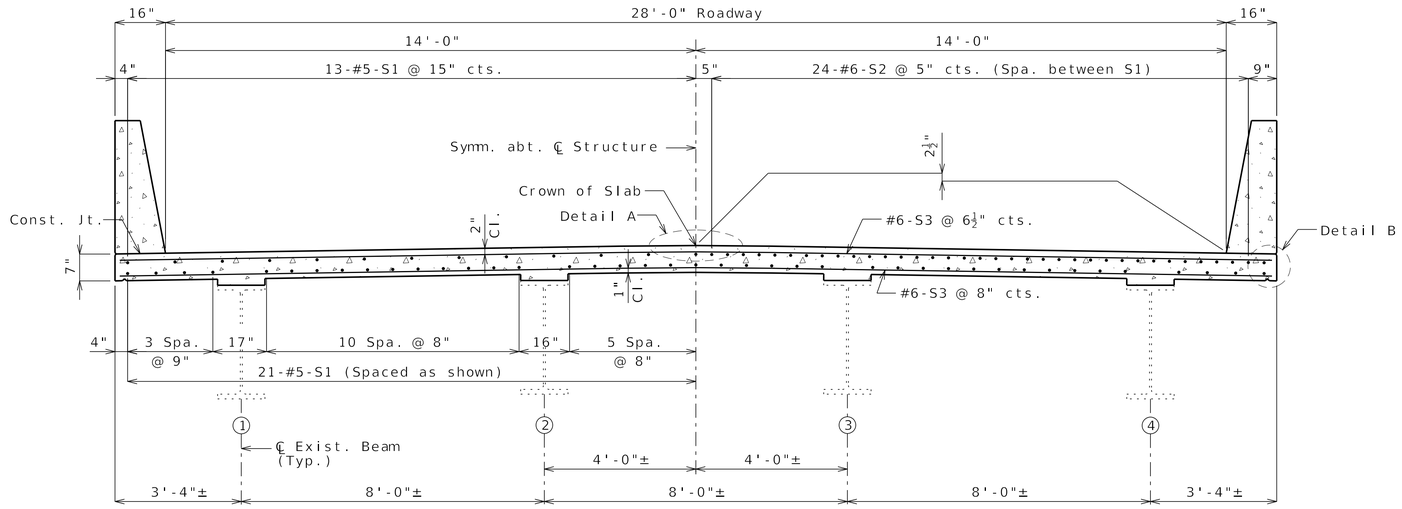
SEC/SUR 29 TWP 38N RGE 2E

U.I.P., REDECK AND MAKE COMPOSITE EXISTING (52'-65'-52') CONTINUOUS WIDE FLANGE BEAM SPANS (SKEW:SQUARE)

Table Showing S2 Bar Lengths			
Int. Bent No. 2		Int. Bent No. 3	
Span 1	Span 2	Span 2	Span 3
17'-0"	21'-0"	21'-0"	17'-0"

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.



HALF SECTION NEAR MIDSPAN HALF SECTION NEAR INT. BENT

TYPICAL SECTION THRU SLAB

General Notes:

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

Design Loading:
HS20-40 (1957) (Existing)
HS20-44 (New Construction)
15 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

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.

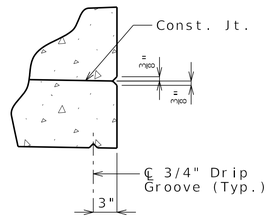
Rubblized concrete from the existing bridge deck that qualifies as clean fill may be placed on spill slopes at end bents above ordinary high water line (Roadway item).

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

Traffic Handling:
Structure to be closed during construction. Traffic to be maintained on other routes during construction. See roadway plans for traffic control.

Estimated Quantities		
Item		Total
Removal of Miscellaneous ACM (Non-Friable)	sq. foot	6
Removal of Existing Bridge Deck	sq. foot	5059
Bridge Approach Slab (Minor)	sq. yard	128
Slab on Steel	sq. yard	587
Type D Barrier	linear foot	345
Substructure Repair (Formed)	sq. foot	30
Substructure Repair (Unformed)	sq. foot	20
Protective Coating - Concrete Bents and Piers (Epoxy)	lump sum	1
Shear Connectors	each	2520
Strengthening Existing Beams	lump sum	1
Slab Drain	each	28
Non-Destructive Testing	linear foot	80

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



DETAIL B

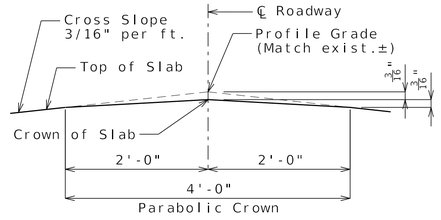
Estimated Quantities for Slab on Steel		
Item		Total
Class B-2 Concrete	cu. yard	120
Reinforcing Steel (Epoxy Coated)	pound	44,640

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.



DETAIL A

REPAIRS TO BRIDGE: ROUTE 185 OVER SWAN BRANCH

ROUTE 185 FROM ROUTE T TO ROUTE 8
ABOUT 4.3 MILES WEST OF ROUTE 8
BEGINNING STATION 229+47.80± (MATCH EXISTING)

Detailed Nov. 2025
Checked Nov. 2025

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

STATE OF MISSOURI
CHRIS LINNEMAN
NUMBER PE-2002016690
PROFESSIONAL ENGINEER
12/22/2025 9:54:18 AM
Chris Linneman - Civil
MO PE-2002016690

DATE PREPARED 12/22/2025
ROUTE 185 | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY WASHINGTON
JOB NO. J5S3557
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A07611

DESCRIPTION | REV.

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

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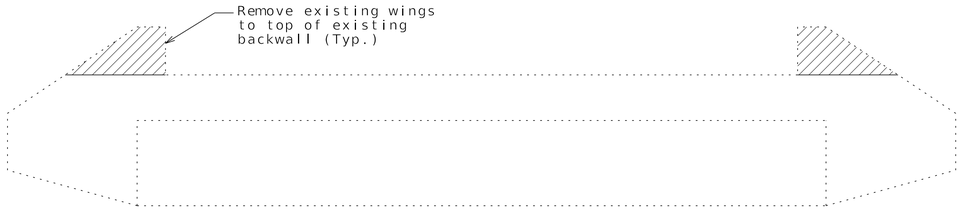


DETAILS OF CONCRETE REMOVAL AT END BENTS

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 Bent No. 1 and 4 removal lines.

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.

The contractor shall provide a method of preventing the direct contact of the stay-in-place forms and connection components with uncoated weathering steel members that is approved by the engineer.

Pouring and Finishing Slab:

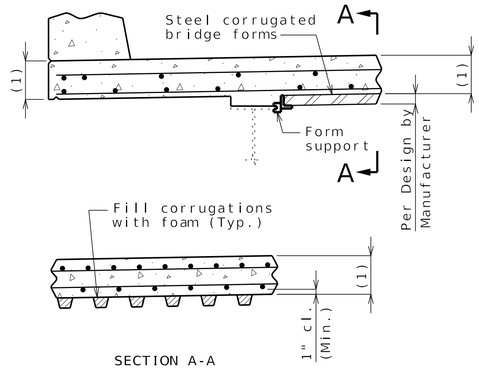
The contractor shall provide bracing necessary for lateral and torsional stability of the beams during construction of the concrete slab and remove the bracing after the slab has attained 75% design strength. Contractor shall not weld on or drill holes in the beams. The cost for furnishing, installing, 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.

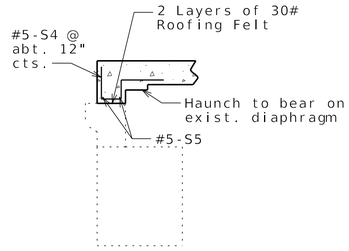
Alternate pour sequences may be submitted to the engineer for approval. Keyed construction joints shall be provided between pours.

Haunching:

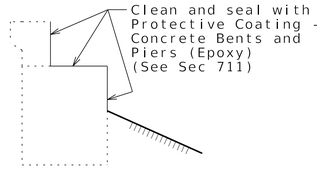
(1) Slab is to be considered a uniform thickness as shown on the plans. Haunching will vary. See front sheet for slab thickness.



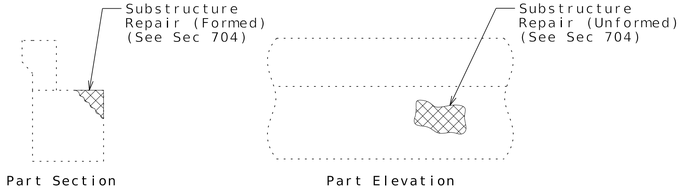
OPTIONAL STAY-IN-PLACE FORM DETAILS



PART SECTION THRU SLAB AT END BENTS NO. 1 AND 4



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



DETAIL SHOWING SUBSTRUCTURE REPAIR AT END BENTS NO. 1 & 4

STATE OF MISSOURI
CHRIS LINNEMAN
NUMBER PE-2002016690
PROFESSIONAL ENGINEER
12/22/2025 10:03:57 AM
Chris Linneman - Civil
MO PE-2002016690

DATE PREPARED 12/22/2025
ROUTE 185 | STATE MO
DISTRICT BR | SHEET NO. 2
COUNTY WASHINGTON
JOB NO. J5S3557
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A07611

DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
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1-888-ASK-MODOT (1-888-275-6636)

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Civil Engineering Design
13523 Barrett Parkway Dr
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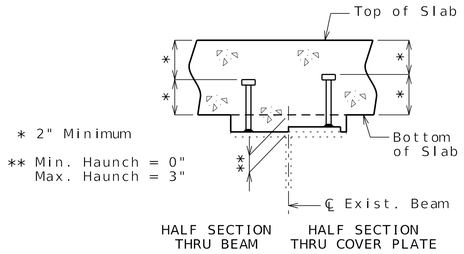
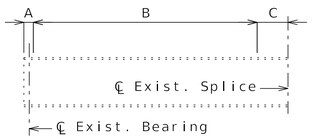
Missouri Certificate of Authority: 001578

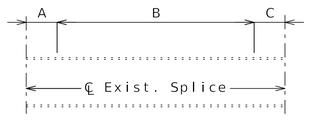
REV.



SECTION THRU EXIST. BEAM SHOWING SHEAR CONNECTORS

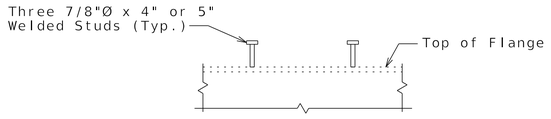


ELEVATION SHOWING SHEAR CONNECTOR SPACING FOR END BEAMS

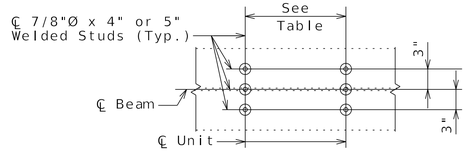


ELEVATION SHOWING SHEAR CONNECTOR SPACING FOR MID SPAN & BEARING BEAMS

TABLE SHOWING SHEAR CONNECTOR UNIT SPACING				
Beam	S.C. per unit	A	B	C
End Beam (Spans 1-2 & 3-4)	3	10"±	56 Units @ 8" cts.	22½"±
Brg. Beam (Bents 2 & 3)	3	2'-2"±	27 Units @ 11½" cts.	2'-2"±
Mid Span (Span 2-3)	3	23"±	44 Units @ 8" cts.	23"±
	Total shear connectors required			2520



ELEVATION



PLAN OF SHEAR CONN. (3 PER UNIT)

DETAILS OF SHEAR CONNECTORS

The cost of supplying and installing shear connectors will be considered completely covered by the contract unit price for Shear Connectors.

Shear connectors shall be in accordance with Sec 712, 1037 & 1080.

STATE OF MISSOURI
CHRIS LINNEMAN
NUMBER PE-2002016690
PROFESSIONAL ENGINEER

12/22/2025 9:54:25 AM
Chris Linneman - Civil
MO PE-2002016690

DATE PREPARED
12/22/2025

ROUTE	STATE
185	MO
DISTRICT	SHEET NO.
BR	3

COUNTY
WASHINGTON

JOB NO.
J5S3557

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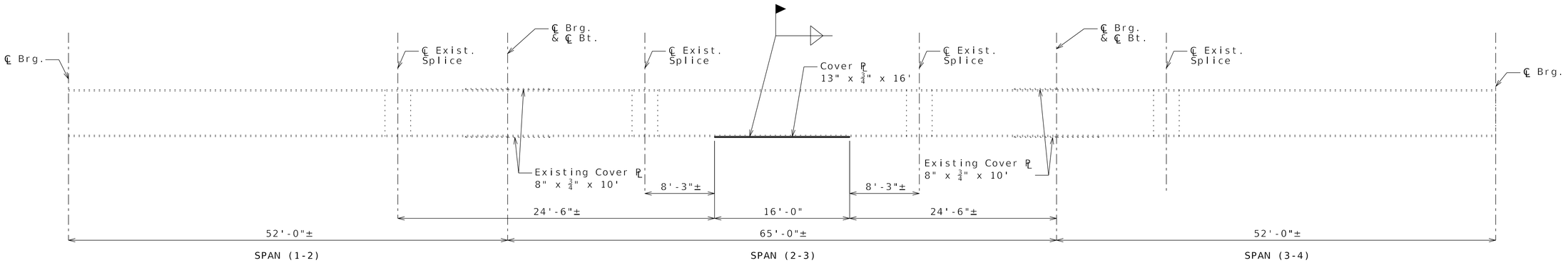
REV.

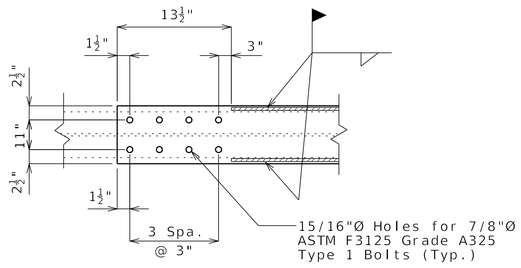
Detailed Nov. 2025
Checked Nov. 2025

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

O:\2022R3\MoDOT_ORD_v10.12.02.04\25059 MoDOT J5S3557 Rte 185 Bridge\DGN\Bridge\Final\Plotsheets\B_A07611_003_J5S3557_Repairs.dgn 8:02:52 AM 12/22/2025



PART ELEVATION OF EXTERIOR BEAM SHOWING COVER PLATE INSTALLATION



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 36, except as noted.

Payment for 2130 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

Detailed Nov. 2025
Checked Nov. 2025

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

STATE OF MISSOURI
CHRIS LINNEMAN
NUMBER PE-2002016690
PROFESSIONAL ENGINEER

12/22/2025 9:54:31 AM
Chris Linneman - Civil
MO PE-2002016690

DATE PREPARED
12/22/2025

ROUTE	STATE
185	MO
DISTRICT	SHEET NO.
BR	4

COUNTY
WASHINGTON

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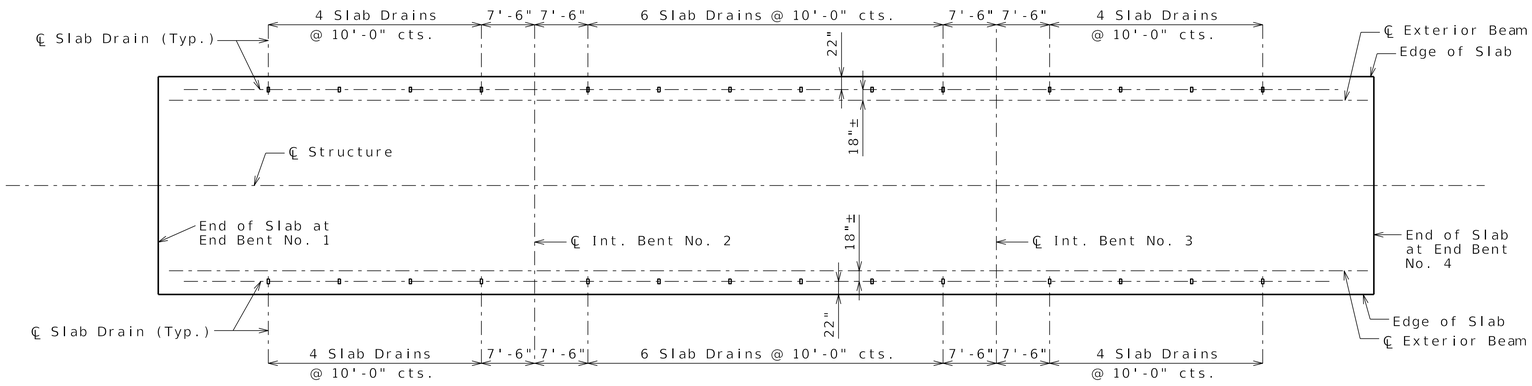
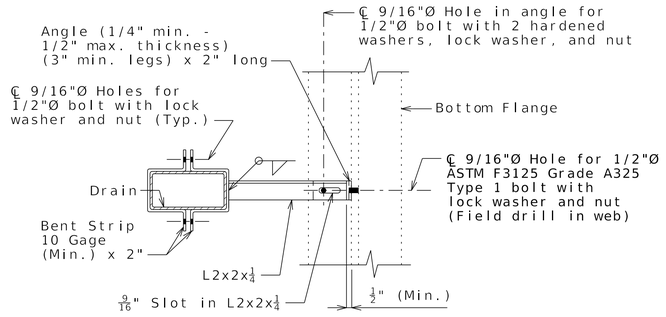
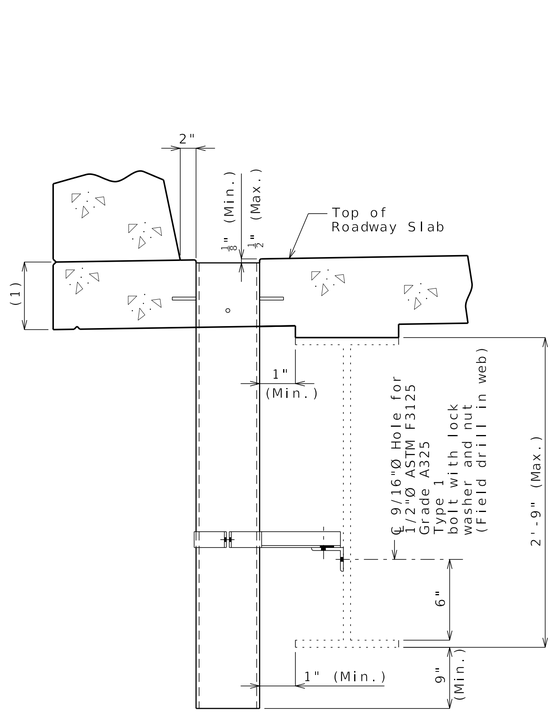


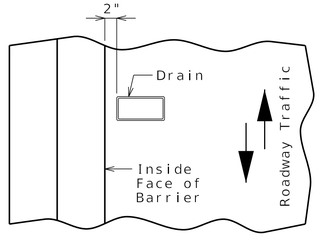
PLAN OF SLAB SHOWING SLAB DRAIN LOCATIONS



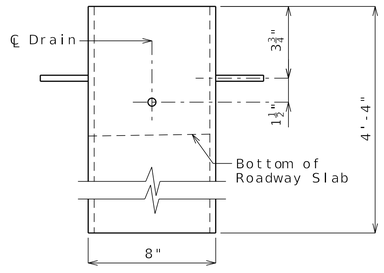
PART SECTION SHOWING BRACKET ASSEMBLY



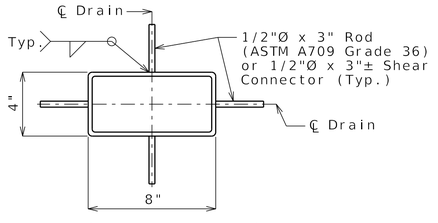
PART SECTION NEAR DRAIN



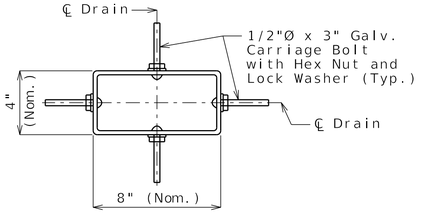
PART PLAN OF SLAB AT DRAIN



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, except as shown.

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.

The galvanized surfaces of drain support brackets shall be prepared according to the coating manufacturer's recommendation and field coated with a gray epoxy-mastic primer (non-aluminum) within a distance of 6 inches from the point of connection to the weathering steel structure.

Notes for Steel Drain:

Slab drains may 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.

STATE OF MISSOURI
CHRIS LINNEMAN
NUMBER PE-2002016690
PROFESSIONAL ENGINEER
12/22/2025 9:54:38 AM
Chris Linneman - Civil
MO PE-2002016690

DATE PREPARED: 12/22/2025

ROUTE	STATE
185	MO
DISTRICT	SHEET NO.
BR	5

COUNTY: WASHINGTON
JOB NO.: J5S3557
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A07611

DESCRIPTION

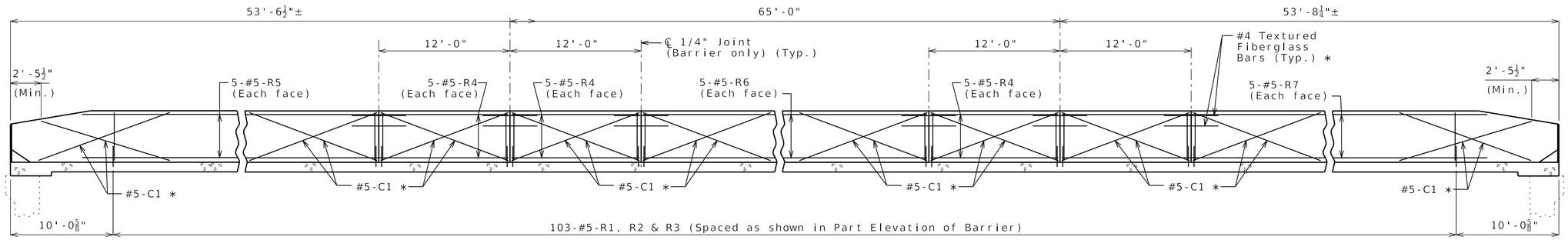
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

EFK•Moen
Civil Engineering Design
13523 Barrett Parkway Dr
Suite 250
St. Louis, MO 63021
Phone 314-394-3100
Fax 314-394-3199
Missouri Certificate of Authority: 001578

REV.

Detailed Nov. 2025
Checked Nov. 2025

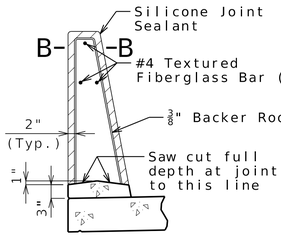
Note: This drawing is not to scale. Follow dimensions.



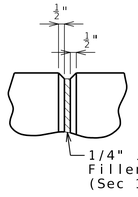
ELEVATION OF BARRIER

(Left barrier shown, right barrier similar)

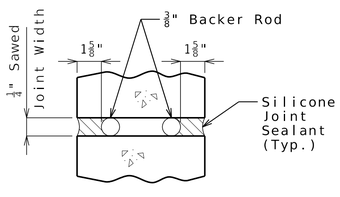
Longitudinal dimensions are horizontal.



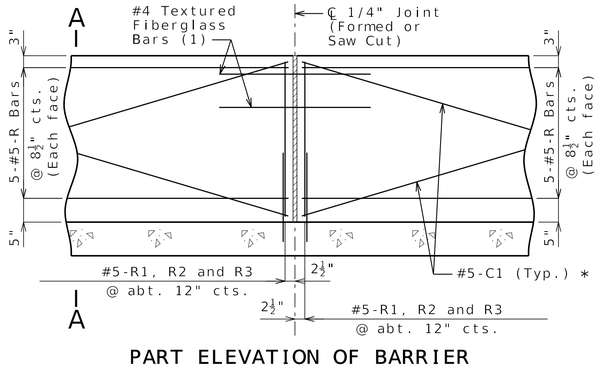
SECTION THRU SAW CUT JOINT



PART ELEVATION AT FORMED JOINT

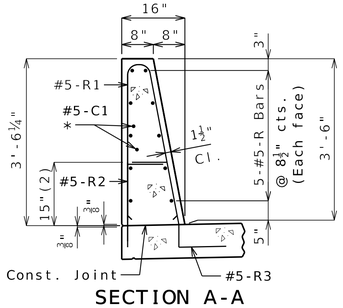


SECTION B-B



PART ELEVATION OF BARRIER

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

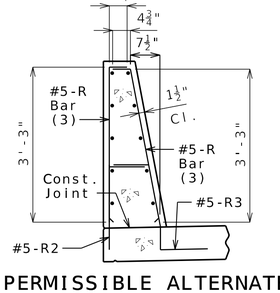


SECTION A-A

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

The cross-sectional area above the slab is 3.52 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 D 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 D 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 D BARRIER

Detailed Nov. 2025
Checked Nov. 2025

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

STATE OF MISSOURI
CHRIS LINNEMAN
NUMBER PE-2002016690
PROFESSIONAL ENGINEER
12/22/2025 9:54:44 AM
Chris Linneman - Civil
MO PE-2002016690

DATE PREPARED 12/22/2025
ROUTE 185 | STATE MO
DISTRICT BR | SHEET NO. 6
COUNTY WASHINGTON
JOB NO. J5S3557
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A07611

DESCRIPTION
REV.

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

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13523 Barrett Parkway Dr
Suite 250
St. Louis, MO 63021
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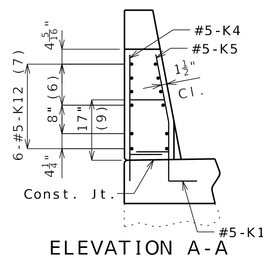
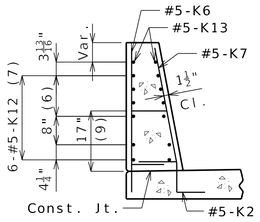
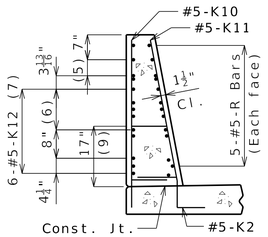
Missouri Certificate of Authority: 001578



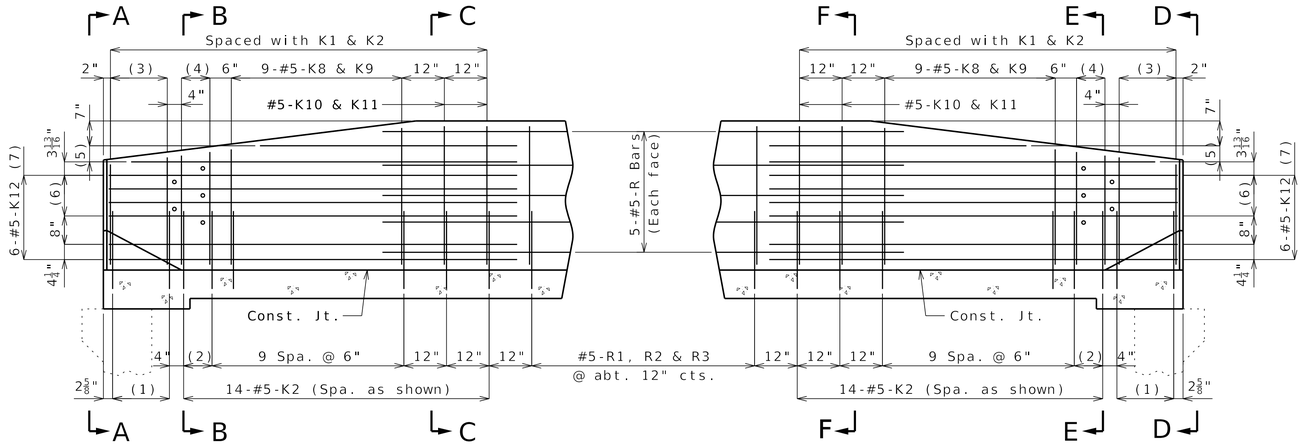
ELEVATION A-A



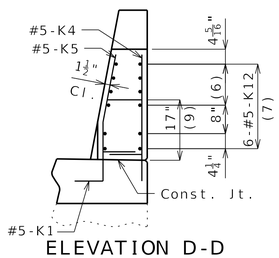
SECTION B-B



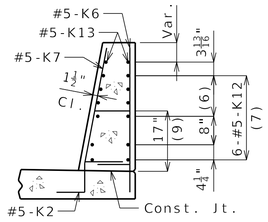
SECTION C-C



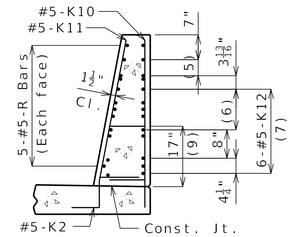
PART ELEVATION



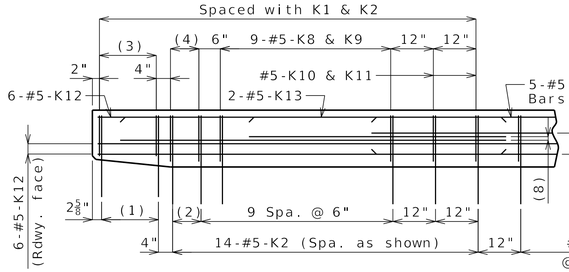
ELEVATION D-D



SECTION E-E

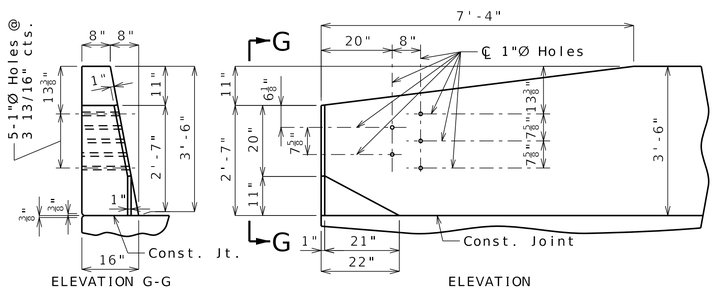


SECTION F-F



PART PLAN

(Top of barrier not shown for clarity.)



* Transition to zero at Type A curb for gutter lines to match.

DETAILS OF GUARD RAIL ATTACHMENT

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

(2) 2 spaces @ 4"

(3) 5-#5-K4 & K5

(4) 3-#5-K6 & K7

(5) 2-#5-K13 @ 4½" cts., each face

(6) 3 spaces @ 3 13/16"

(7) Spaced as shown, each face

(8) 2-#5-K13 (Roadway face)

(9) To top of bar

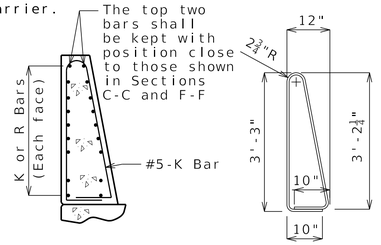
General Notes:

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 D Barrier.

Reinforcing Steel:

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

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



K10-K11 BAR PERMISSIBLE ALTERNATE SHAPE

(Other K bars not shown for clarity)

The K10-K11 bar combination may be furnished as one bar as shown, at the contractor's option.

All dimensions are out to out.

TYPE D BARRIER AT END BENTS

(Left barrier shown, right barrier similar)

Detailed Nov. 2025
Checked Nov. 2025

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

STATE OF MISSOURI
CHRIS LINNEMAN
NUMBER PE-2002016690
PROFESSIONAL ENGINEER
12/22/2025 9:54:50 AM
Chris Linneman - Civil
MO PE-2002016690

DATE PREPARED	
12/22/2025	
ROUTE	STATE
185	MO
DISTRICT	SHEET NO.
BR	7

COUNTY: WASHINGTON
JOB NO.: J5S3557
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A07611

DESCRIPTION | REV.

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

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Civil Engineering Design
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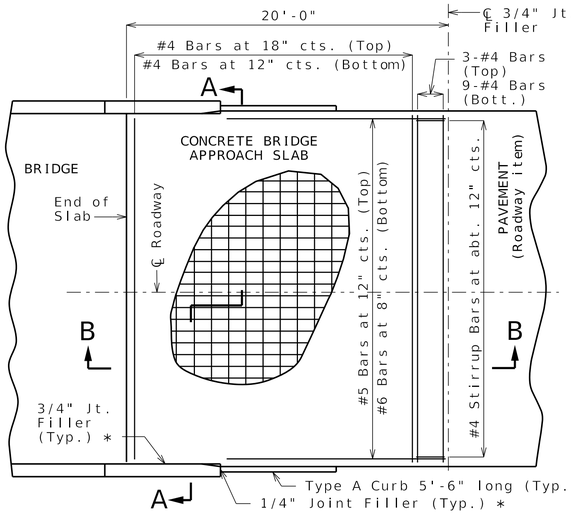
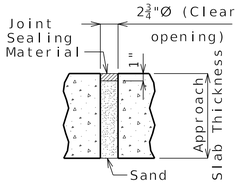
St. Louis, MO 63021
Phone 314-394-3100
Fax 314-394-3199
Missouri Certificate of Authority: 001578



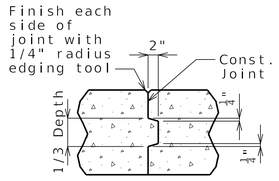
PART PLAN OF SQUARED STRUCTURE

(Skewed structure similar)

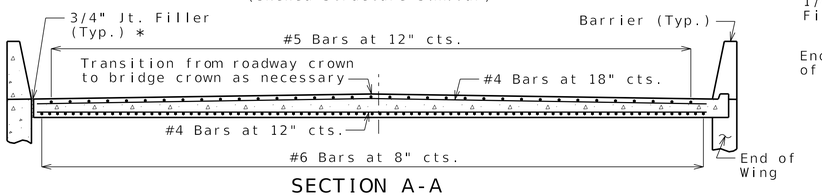


UNDERSEAL ACCESS HOLE DETAIL

(If required)

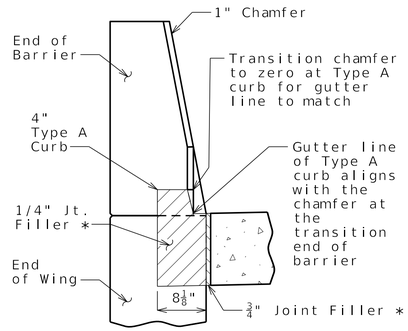


CONSTRUCTION JOINT DETAIL

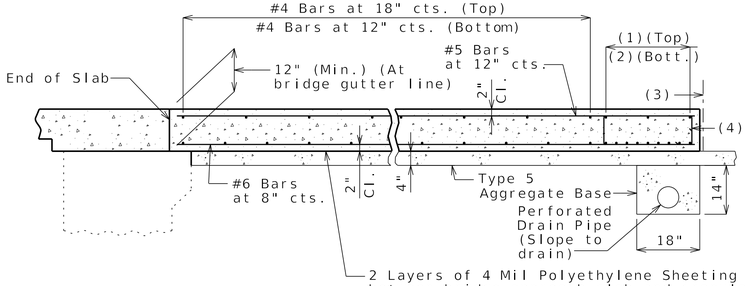


SECTION A-A

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 BETWEEN CURB AND BARRIER



(1) 3-#4 Bars

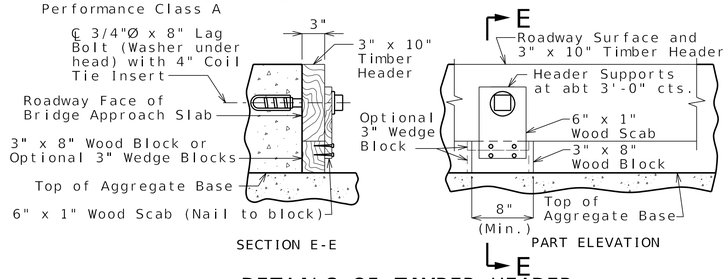
(2) 9-#4 Bars

(3) ℄ 3/4" Jt. Filler

(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.

SECTION B-B

(Integral end bent)



SECTION E-E

PART ELEVATION

DETAILS OF TIMBER HEADER

Remove timber header when concrete pavement is placed.

OPTIONAL CONCRETE SLAB

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, 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.

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

General Notes:

Contractor shall have the option to construct either slab except as noted.

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

MoDOT Construction personnel will indicate the bridge approach slab used for this structure:

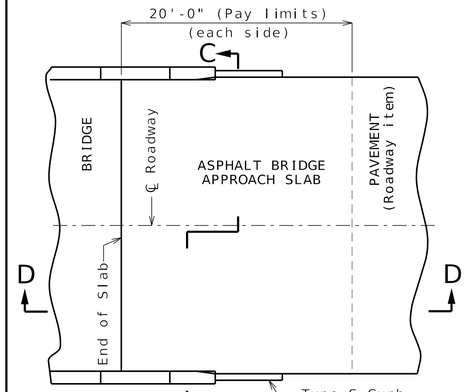
☐ Concrete Bridge Approach Slab

☐ Asphalt Bridge Approach Slab

Notes For Asphalt Slab Only:

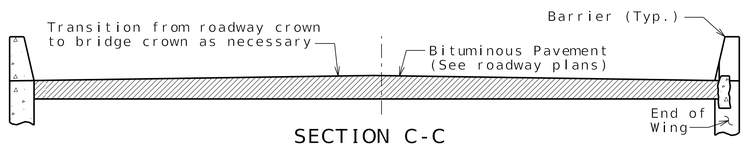
Payment for furnishing all materials, labor and excavation necessary to construct the asphalt bridge approach slab, including tack, curb, and Type 5 aggregate base within the pay limits shown, complete in place, will be considered completely covered by the contract unit price for Bridge Approach Slab (Minor) per square yard.

Application of tack is required between lifts per Sec 403.



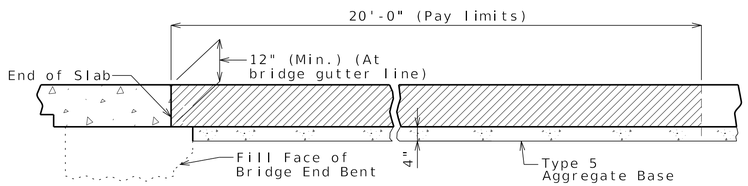
PART PLAN

(Squared structure shown, skewed structure similar)

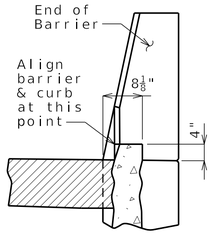


SECTION C-C

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 D-D



4" TYPE S CURB

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

OPTIONAL ASPHALT SLAB (NOT ALLOWED WITH CONCRETE PAVEMENT)

BRIDGE APPROACH SLAB (MINOR)

Integral end bents shown, non-integral end bent similar.

Detailed Nov. 2025
Checked Nov. 2025

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

STATE OF MISSOURI
CHRIS LINNEMAN
NUMBER PE-2002016690
PROFESSIONAL ENGINEER

12/22/2025 9:54:56 AM
Chris Linneman - Civil
MO PE-2002016690

DATE PREPARED: 12/22/2025
ROUTE: 185 | STATE: MO
DISTRICT: BR | SHEET NO.: 8
COUNTY: WASHINGTON
JOB NO.: J5S3557
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A07611

DESCRIPTION

REV.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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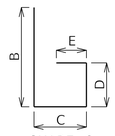
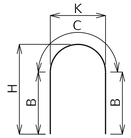
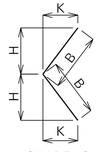


SHAPE 6
or 6S



SHAPE 7



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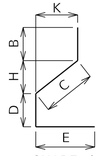
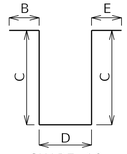
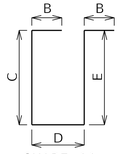


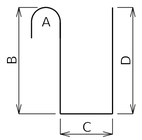
SHAPE 9
or 9S



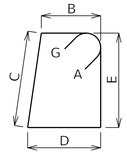
SHAPE 10
or 10S



SHAPE 11
or 11S



SHAPE 12



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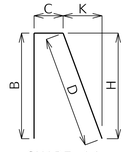

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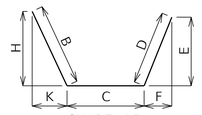

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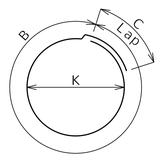

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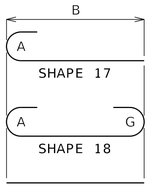
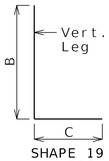


SHAPE 17
SHAPE 18
SHAPE 20



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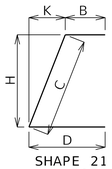

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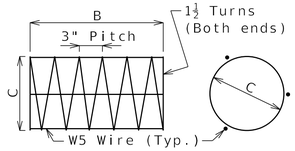

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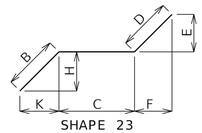

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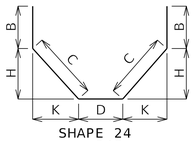

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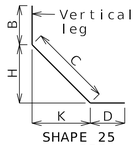

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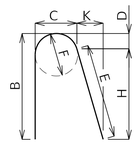

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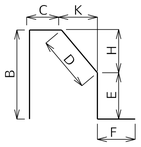

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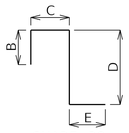

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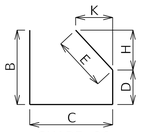
or 28S



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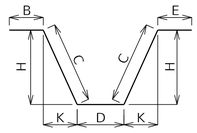
or 29S



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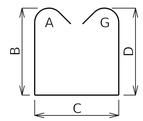

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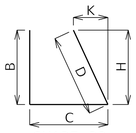

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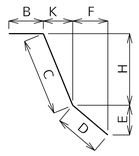

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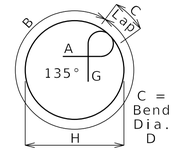

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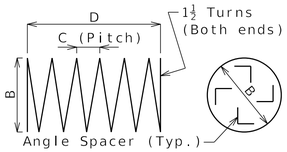
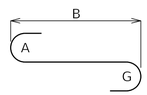


SHAPE 35 (1)

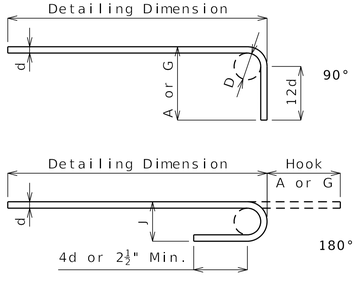


SHAPE 36

Finished Bend Diameters D and Hook Dimensions

Standard Pin Bend Shapes

Size	Case	D	A or G		J
			90°	180°	180°
#4	1	3"	8"	6"	4"
#5	1	3¾"	10"	7"	5"
#6	1	4½"	12"	8¼"	6"
#7	2	5¼"	14"	9⅜"	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"	36¾"	28½"

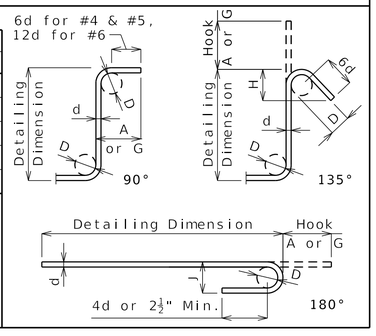


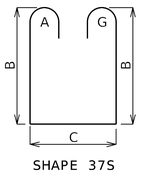
Stirrup Pin Bend Shapes (S)

Size	Case	D	A or G			H	J
			90°	135°	180°	135°	180°
#4	2	2"	4½"	4½"	5"	2⅝"	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"

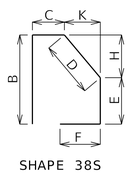
Applicable for all grades of steel.

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





SHAPE 37S



SHAPE 38S

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.

Reinforcing Steel Totals (Pounds)

		Substructure		Superstructure				Entire Bridge	
				Slab			Slip		
	Size	Plain	Epoxy	Plain	Epoxy	Barrier	Form	Plain	Epoxy
By Size	W5	0	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0	0
	5	0	0	0	12897	7329	501	0	20727
	6	0	0	0	31741	0	0	0	31741
	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	44638	7329	501	0	52468

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

BENDING DIAGRAMS AND REINFORCING STEEL TOTALS

Detailed Nov. 2025
Checked Nov. 2025

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

STATE OF MISSOURI
CHRIS LINNEMAN
NUMBER PE-2002016690
PROFESSIONAL ENGINEER

12/22/2025 9:55:04 AM
Chris Linneman - Civil
MO PE-2002016690

DATE PREPARED
12/22/2025

ROUTE	STATE
185	MO
DISTRICT	SHEET NO.
BR	9

COUNTY
WASHINGTON

JOB NO.
J5S3557

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A07611

DESCRIPTION

REV.

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

EFK•Moen
Civil Engineering Design
13523 Barrett Parkway Dr
Suite 250
St. Louis, MO 63021
Phone 314-394-3100
Fax 314-394-3199
Missouri Certificate of Authority: 001578

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
		SLAB													
264	5 S1	SLAB	E	20		45 6.000							45 6	45 6	12529
96	6 S2	SLAB	E	20		38 0.000							38 0	38 0	5479
578	6 S3	SLAB	E	20		30 3.000							30 3	30 3	26262
62	5 S4	SLAB	E	28 S		9.000	8.000	7.500	2 0.000				4 1	3 9	242
4	5 S5	SLAB	E	20		30 3.000							30 3	30 3	126
		BARRIER													
20	5 K1	BARRIER	E	27 S		21.000	9.250	5.375	15.250	12.000	5.250	1.000	5 3	4 11	103
56	5 K2	BARRIER	E	27 S		21.000	9.250	17.250	3.500	12.000	17.000	3.250	5 3	4 11	287
20	5 K4	BARRIER	E	19 S	4	2 4.250	10.000						3 2	3 1	66
		INCR=0 1/2 IN				2 6.250	10.000						3 4	3 3	
20	5 K5	BARRIER	E	38 S	4			18.500	9.500	8.250	18.000	4.000	3 0	2 10	65
		INCR=0 1/2 IN						20.500	9.500	8.250	20.000	4.500	3 2	3 0	
12	5 K6	BARRIER	E	19 S		2 6.750	10.000						3 5	3 3	41
12	5 K7	BARRIER	E	21 S			2 6.250	10.000			2 6.000	6.250	3 4	3 3	41
36	5 K8	BARRIER	E	19 S	4	2 8.500	10.000						3 6	3 5	133
		INCR=0 3/4 IN				3 2.500	10.000						4 0	3 11	
36	5 K9	BARRIER	E	21 S	4		2 8.500	10.000			2 7.750	6.750	3 6	3 6	142
		INCR=0 3/4 IN					3 2.500	10.000			3 1.750	7.750	4 0	3 11	
8	5 K10	BARRIER	E	19 S		3 3.000	10.000						4 1	4 0	33
8	5 K11	BARRIER	E	21 S			3 3.000	10.000			3 2.250	7.750	4 1	4 0	33
48	5 K12	BARRIER	E	20		9 7.000							9 7	9 7	480
8	5 K13	BARRIER	E	20	4	8 10.000							8 10	8 10	61
		INCR=36IN				5 10.000							5 10	5 10	
206	5 R1	BARRIER	E	26		3 3.000	5.500	2.250	3 1.375	5.500	3 0.750	6.750	6 11	6 7	1414
206	5 R2	BARRIER	E	19 S		19.000	9.500						2 5	2 3	483
206	5 R3	BARRIER	E	27 S			9.500	15.250	3.500	12.000	15.000	3.000	3 4	3 2	680
80	5 R4	BARRIER	E	20		11 8.000							11 8	11 8	973
20	5 R5	BARRIER	E	20		34 7.000							34 7	34 7	721
20	5 R6	BARRIER	E	20		40 8.000							40 8	40 8	848
20	5 R7	BARRIER	E	20		34 9.000							34 9	34 9	725
		SLIP FORM													
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. 9.

All bars shall be ASTM A615 Grade 60.

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.

Detailed Nov. 2025
Checked Nov. 2025

BILL OF REINFORCING STEEL

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

Sheet No. 10 of 10

STATE OF MISSOURI
CHRIS LINNEMAN
NUMBER PE-2002016690
PROFESSIONAL ENGINEER

12/22/2025 9:55:12 AM
Chris Linneman - Civil
MO PE-2002016690

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

EFK•Moen
Civil Engineering Design
13523 Barrett Parkway Dr
Suite 250
St. Louis, MO 63021
Phone 314-394-3100
Fax 314-394-3199
Missouri Certificate of Authority: 001578

REV.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

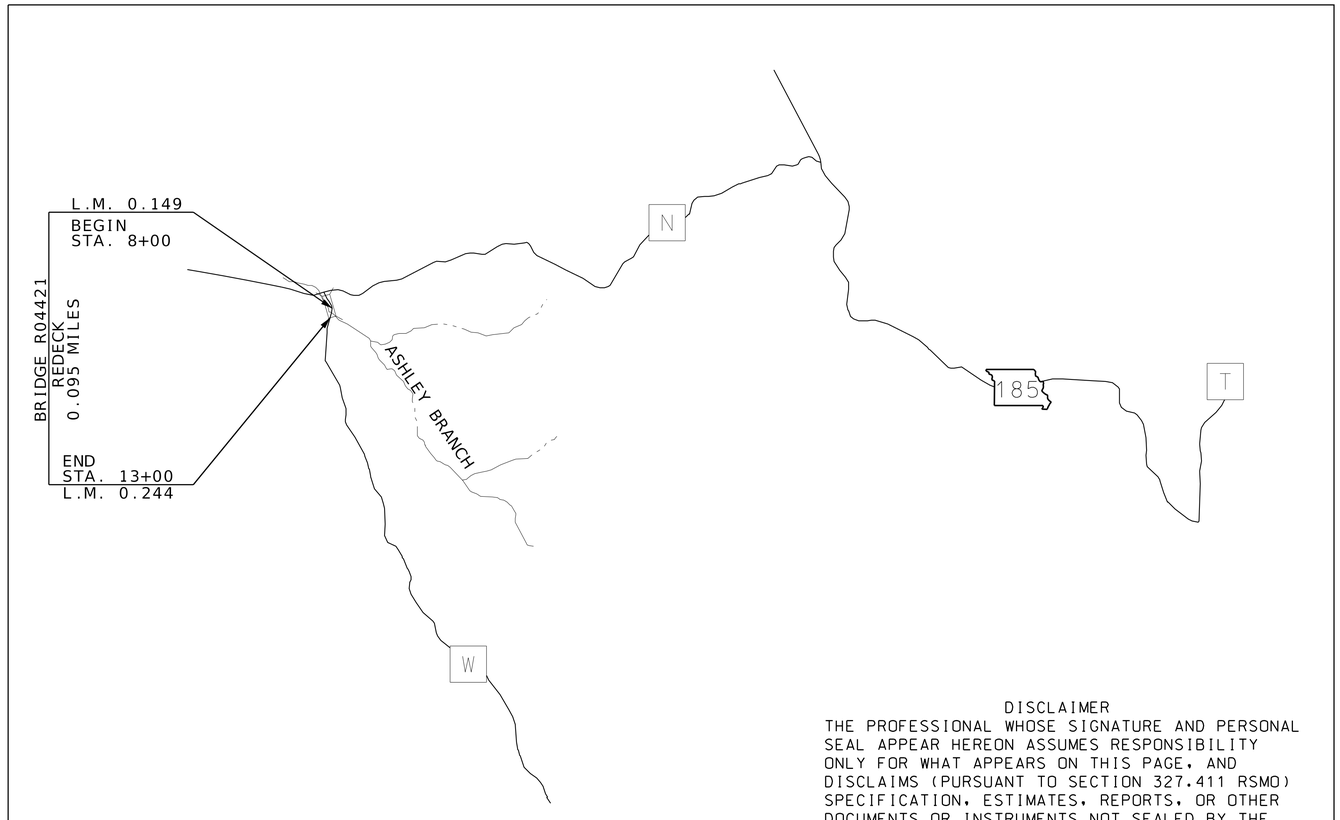
PLANS FOR PROPOSED STATE HIGHWAY

WASHINGTON COUNTY

T39N R1W SEC 19
T39N R2W SEC 24

KEY MAP

NOT TO SCALE



DESIGN DESIGNATION

A.A.D.T. - 2023 = 90

V = 55 M.P.H.

FUNCTIONAL CLASSIFICATION- MINOR COLLECTOR

NO NEW R/W REQUIRED

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	D	
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

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INDEX OF SHEETS

DESCRIPTION	SHEET NUMBER
TITLE SHEET	1
TYPICAL SECTIONS (TS) (1 SHEET)	2
QUANTITIES (QU) (2 SHEETS)	3
PLAN SHEETS (PL)	4
TRAFFIC CONTROL SHEETS (TC)	5-6
EROSION CONTROL SHEETS (EC)	7
SIGNING SHEETS (SN)	8
BRIDGE DRAWINGS (B)	
R04421	1-10

LENGTH OF PROJECT

BEGINNING OF PROJECT	STA. 8+00.00	
END OF PROJECT	STA. 13+00.00	
APPARENT LENGTH	500.00	FEET
EXCEPTIONS:	0.000	FEET
TOTAL CORRECTIONS	0.000	FEET
NET LENGTH OF PROJECT	500.00	FEET
STATE LENGTH	0.095	MILES
FOR INFORMATION ONLY ESTIMATED DISTURBED ACRES	0.17	ACRES

PAUL JOSEPH KRONLAGE NUMBER EN 023328 REGISTERED PROFESSIONAL ENGINEER
STATE OF MISSOURI

12/30/2025 9:59:21 AM
Paul J. Kronlage - Civil
MO PE - 023328

DATE PREPARED 12/23/2025

ROUTE	STATE
W	MO
DISTRICT	SHEET NO.
CD	1

COUNTY: WASHINGTON

JOB NO.: JCD0032

CONTRACT ID.:

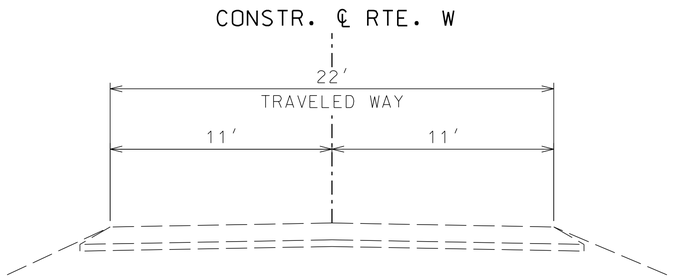
PROJECT NO.:

BRIDGE NO.:

DESCRIPTION	DATE

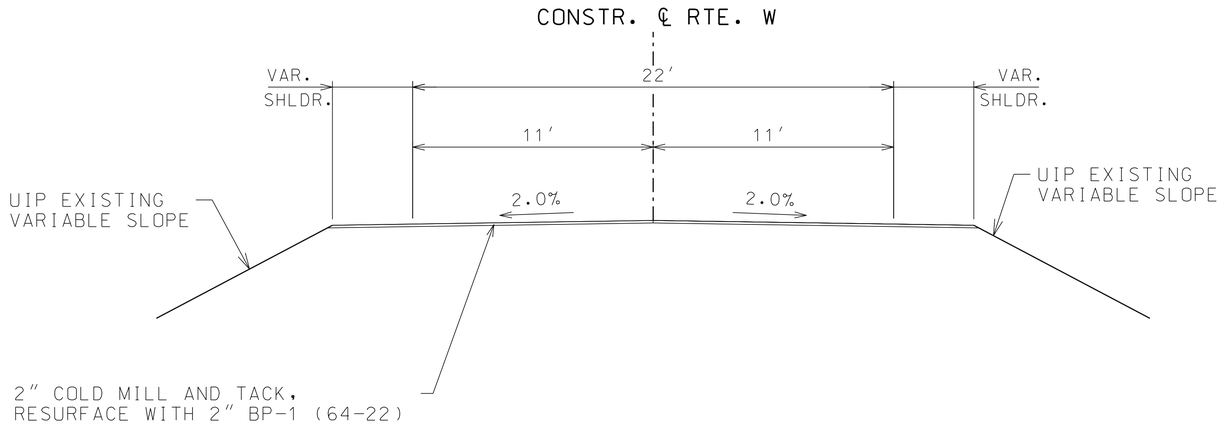
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

EFK•Moen
Civil Engineering Design
13523 Barrett Parkway Dr
Suite 250
St. Louis, MO 63021
Phone 314-394-3100
Fax 314-394-3199
Missouri Certificate of Authority: 001578



TYPICAL SECTION
EXISTING ROADWAY

STA. 8+00.00 TO STA. 9+30.31
STA. 11+56.88 TO STA. 13+00.00



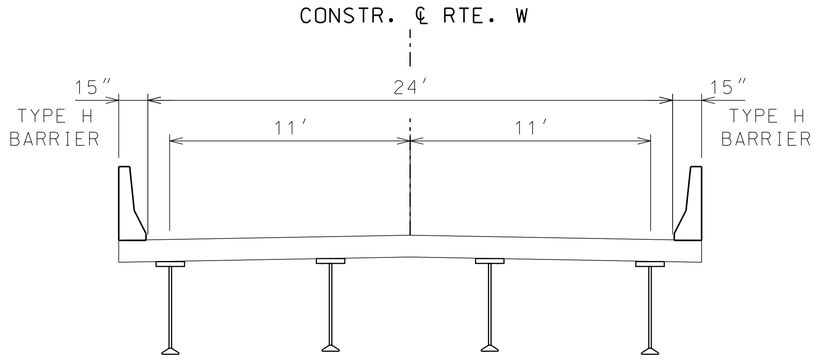
TYPICAL SECTION
PROPOSED ROADWAY

STA. 9+30.31 TO STA. 9+82.70
STA. 11+04.49 TO STA. 11+56.88

APPLICATION RATES:

BITUMINOUS PAVEMENT MIXTURE, PG 64-22, (BP-1)
1.96 TONS/CY COMPACTED

TACK COAT (MILLED)
0.1 GAL/SY



TYPICAL SECTION
BRIDGE R04421

STA. 9+82.70 TO STA. 11+04.50

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NOT TO SCALE

TYPICAL SECTION
SHEET 1 OF 1

STATE OF MISSOURI
PAUL JOSEPH KRONLAGE
NUMBER EN 023328
REGISTERED PROFESSIONAL ENGINEER

12/30/2025 9:59:33 AM
Paul J. Kronlage - Civil
MO PE - 023328

DATE PREPARED
12/29/2025

ROUTE	STATE
W	MO
DISTRICT	SHEET NO.
CD	2

COUNTY
WASHINGTON

JOB NO.
JCD0032

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)

EFK•Moen
Civil Engineering Design
13523 Barrett Parkway Dr
Suite 250
St. Louis, MO 63021
Phone 314-394-3100
Fax 314-394-3199
Missouri Certificate of Authority: 001578

REMOVAL OF IMPROVEMENTS

SHEET NO	STA	STA	LOC	ROADWAY	L.F.	EACH	DESCRIPTIONS
4	-		LT	ROUTE W		1	SIGNS POSTS & FOOTINGS: TRUCK WEIGHT
4	-		RT	ROUTE W		1	SIGNS POSTS & FOOTINGS: TRUCK WEIGHT
4	9+75		RT	ROUTE W		1	SIGNS POSTS & FOOTINGS: OBJECT MARKER
4	9+90		LT	ROUTE W		1	SIGNS POSTS & FOOTINGS: OBJECT MARKER
4	10+97		RT	ROUTE W		1	SIGNS POSTS & FOOTINGS: OBJECT MARKER
4	11+12		LT	ROUTE W		1	SIGNS POSTS & FOOTINGS: OBJECT MARKER
4	9+63		LT/RT	ROUTE W	27		SAWCUT
4	11+25		LT/RT	ROUTE W	27		SAWCUT
				PAY TOTAL	1 LUMP SUM		

MOBILIZATION	1 LUMP SUM
ADDITIONAL MOBILIZATION FOR SEEDING	2 EACH
CONTRACTOR FURNISHED SURVEYING AND STAKING	1 LUMP SUM
SEEDING AND MULCHING - COOL SEASON GRASSES	1 LUMP SUM

PAVEMENT MARKING

SHEET NO	ROADWAY	STA	STA	LOC	CLASS 1 PAVEMENT MARKING PAINT 18-MIL TYPE P BEADS 4 IN. SOLID YELLOW L.F.	REMARKS
4	ROUTE W	8+30	12+30	CL	800	
				SUBTOTAL	800	
				PAY TOTAL	800	

ROCK

SHEET NO	ROADWAY	STA	STA	LOC	FURNISHING TYPE 1 ROCK DITCH LINER (2') C.Y.	PLACING TYPE 1 ROCK DITCH LINER (2') C.Y.	PERMANENT EROSION CONTROL GEOTEXTILE S.Y.	REMARKS
4	ROUTE W	10+95	10+98	RT	4.5	4.5	6.8	
4	ROUTE W	11+10	11+13	LT	4.5	4.5	6.8	
				SUBTOTAL	9	9	14	
				PAY TOTAL	9	9	14	

EROSION CONTROL

SHEET NO	ROADWAY	STA	STA	LOC	SILT FENCE L.F.	ALTERNATE DITCH CHECK L.F.	SEDIMENT REMOVAL C.Y.	REMARKS
9	ROUTE W	9+15	10+03	LT/RT	220		2.2	
9	ROUTE W	10+85	11+56	LT/RT	195		2.0	
9	ROUTE W	10+97		RT		17	1.0	
9	ROUTE W	11+11		LT		17	1.0	
				SUBTOTAL	415	34	6.2	
				PAY TOTAL	415	34	6	

PAVEMENT & BASE

SHEET NO	ROADWAY	STA	STA	LOC	AREA	COLDMILLING BITUMINOUS PAVEMENT FOR REMOVAL OF SURFACING (3 IN. THICK OR LESS)	BITUMINOUS PAVEMENT MIXTURE PG64-22 (BP-1)	TACK COAT
					S.F.	S.Y.	TON	GAL.
4	ROUTE W	9+30	9+62	LT/RT	712.5	79.2	8.6	7.9
4	ROUTE W	11+24	11+56	LT/RT	712.5	79.2	8.6	7.9
				SUBTOTAL		158.4	17.2	15.8
				PAY TOTAL		158	17.2	16

LINEAR GRADING

SHEET NO	ROADWAY	LOC	STA	STA	LINEAR GRADING CLASS 2 STA.	REMARKS
4	ROUTE W	LT/RT	9+30	9+90	0.3	NORTH OF BRIDGE - INCLUDES REMOVAL OF ASPHALT PAVT.
4	ROUTE W	LT/RT	10+97	11+56	0.3	SOUTH OF BRIDGE - INCLUDES REMOVAL OF ASPHALT PAVT.
				SUBTOTAL	0.6	
				PAY TOTAL	0.6	

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SUMMARY OF QUANTITIES
SHEET 1 OF 2

STATE OF MISSOURI
PAUL JOSEPH KRONLAGE NUMBER EN 023328
REGISTERED PROFESSIONAL ENGINEER

01/05/2026 11:44:05 AM
Paul J. Kronlage - Civil
MO PE - 023328

DATE PREPARED 1/5/2026

ROUTE	STATE
W	MO
DISTRICT	SHEET NO.
CD	3

COUNTY WASHINGTON

JOB NO. JCD0032

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)

EFK•Moen
Civil Engineering Design
13523 Barrett Parkway Dr
Suite 250
St. Louis, MO 63021
Phone 314-394-3100
Fax 314-394-3199
Missouri Certificate of Authority: 001578

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	2	32.00			2	ROAD/BRIDGE/RAMP WORK AHEAD
WO20-2	48X48	16.00						DETOUR AHEAD
WO20-3	48X48	16.00	1	16.00			2	ROAD CLOSED AHEAD
WO20-4	48X48	16.00	2	32.00			7	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	2	32.00			8	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						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
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	20.00			29	ROAD CLOSED
							66	ROAD CLOSED XX MILES AHEAD
R11-3a	60X30	12.50	2	25.00			66A	LOCAL TRAFFIC ONLY
R11-4	60X30	12.50						ROAD CLOSED TO THRU TRAFFIC
CONST-3A	60X48	20.00						FINE SIGN
CONST-3X	56X12	4.67						SPEEDING/PASSING (PLATE)
MISCELLANEOUS SIGNS								
CONST-8	48X36	12.00						WORK ZONE NO PHONE ZONE
WO20-3	48X48	16.00	1	16.00			20A	ROAD CLOSED 350 FT
SPECIAL	96X72	48.00	2	96.00			70	W CLOSED AT N

	TOTAL
616-10.05 CONSTRUCTION SIGNS	269
616-10.10 RELOCATED SIGNS	*

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ITEM NUMBER	TOTAL QTY	EFFECTIVE: 07-01-2025 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	40	CHANNELIZER (TRIM-LINE)
6161026		CHANNELIZER (VERTICAL PANEL)
6161030	8	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		CHANGEABLE MESSAGE SIGN WITHOUT COMM. INTERFACE, CONTRACTOR FURNISHED/RETAINED
6161099	3**	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

LUMP SUM TEMPORARY TRAFFIC CONTROL	1 LUMP SUM

* NO DIRECT PAY WILL BE MADE FOR RELOCATION OF CONSTRUCTION SIGNING OR DEVICES.

** NOT INCLUDED IN LUMP SUM TEMPORARY TRAFFIC CONTROL.

NOTES:
ALL TRAFFIC CONTROL ITEMS INCLUDED IN PAY ITEM 616-99.01 TEMPORARY TRAFFIC CONTROL LUMP SUM, UNLESS NOTED OTHERWISE IN THE PLANS. THESE QUANTITIES ARE ONLY AN ESTIMATE AND ARE SUBJECT TO CHANGE BASED ON FIELD CONDITIONS.

SIGN QUANTITIES HAVE BEEN ESTIMATED. TEMPORARY TRAFFIC CONTROL SHALL FOLLOW AT A MINIMUM MUTCD STANDARDS. LATEST EDITION.

ALL WARNING SIGNS SHALL HAVE FLORESCENT SHEETING.

SUMMARY OF QUANTITIES
SHEET 2 OF 2

STATE OF MISSOURI
PAUL JOSEPH KRONLAGE NUMBER EN 023328
REGISTERED PROFESSIONAL ENGINEER

Paul J. Kronlage

01/05/2026 11:37:13 AM
Paul J. Kronlage - Civil
MO PE - 023328

DATE PREPARED
1/5/2026

ROUTE	STATE
W	MO

DISTRICT	SHEET NO.
CD	3

COUNTY
WASHINGTON

JOB NO.
JCD0032

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)

MoDOT

EFK•Moen
Civil Engineering Design
13523 Barrett Parkway Dr
Suite 250
St. Louis, MO 63021
Phone 314-394-3100
Fax 314-394-3199
Missouri Certificate of Authority: 001578

LEGEND

2" COLD MILL AND TACK
RESURFACE WITH BP-1 (64-22)

20' BRIDGE
APPROACH SLAB

TYPE 1
ROCK DITCH LINER
(DRAIN FLUME)

GENERAL NOTES:

1. ANY WORK INDICATED ON THE PLANS THAT EXTENDS BEYOND THE PROJECT LIMITS IS CONSIDERED INCIDENTAL TO AND A PART OF THE CONSTRUCTION OF THIS PROJECT.

2. PLANS DRAWN FROM AS-BUILTS AND AERIAL MAPS. CONTRACTOR SHALL VERIFY DIMENSIONS IN THE FIELD.

3. EXISTING R/W AND EASEMENT LINES SHOWN ARE APPROXIMATES FROM AS-BUILTS, ARE FOR INFORMATION ONLY AND HAVE NOT BEEN FIELD-VERIFIED BY A PROFESSIONAL SURVEYOR.

*SEE SIGNING SHEET FOR DETAILS

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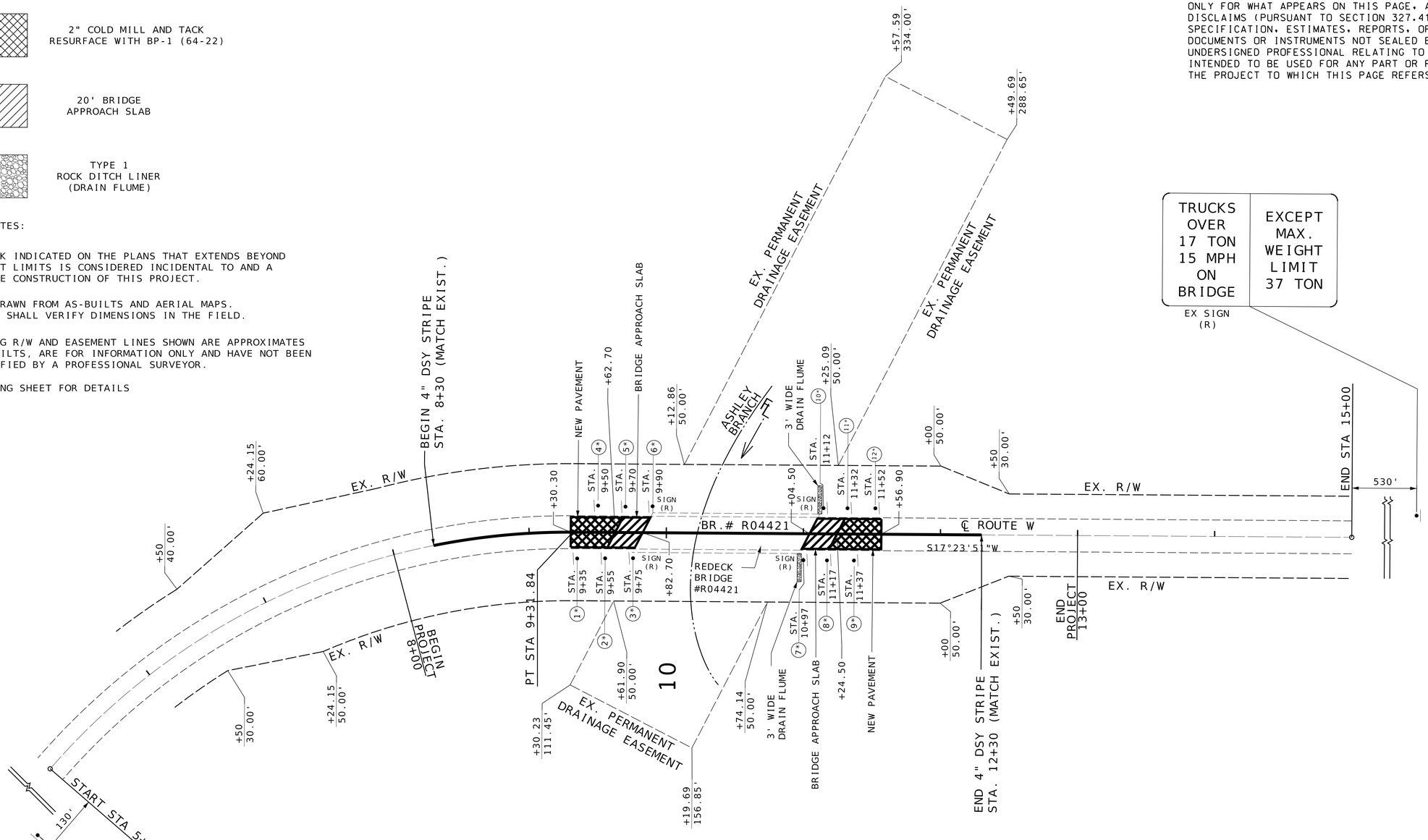


PI 7+30.43
PC 5+00.00
PT 9+31.84
Δ 49°29'6.8" (RT)
D 11°27'33.0"
L 431.84' (ARC)
T 230.43'
R 500.00'

SCALE
0 40 80 120

UTILITY INFORMATION NOTE:
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 COMMISSION "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.

PLAN SHEET
1 OF 1

STATE OF MISSOURI
PAUL JOSEPH KRONLAGE NUMBER EN 023328
REGISTERED PROFESSIONAL ENGINEER
12/30/2025 10:00:10 AM
Paul J. Kronlage - Civil
MO PE - 023328

DATE PREPARED
12/23/2025

ROUTE	STATE
W	MO
DISTRICT	SHEET NO.
CD	4

COUNTY
WASHINGTON

JOB NO.
JCD0032

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

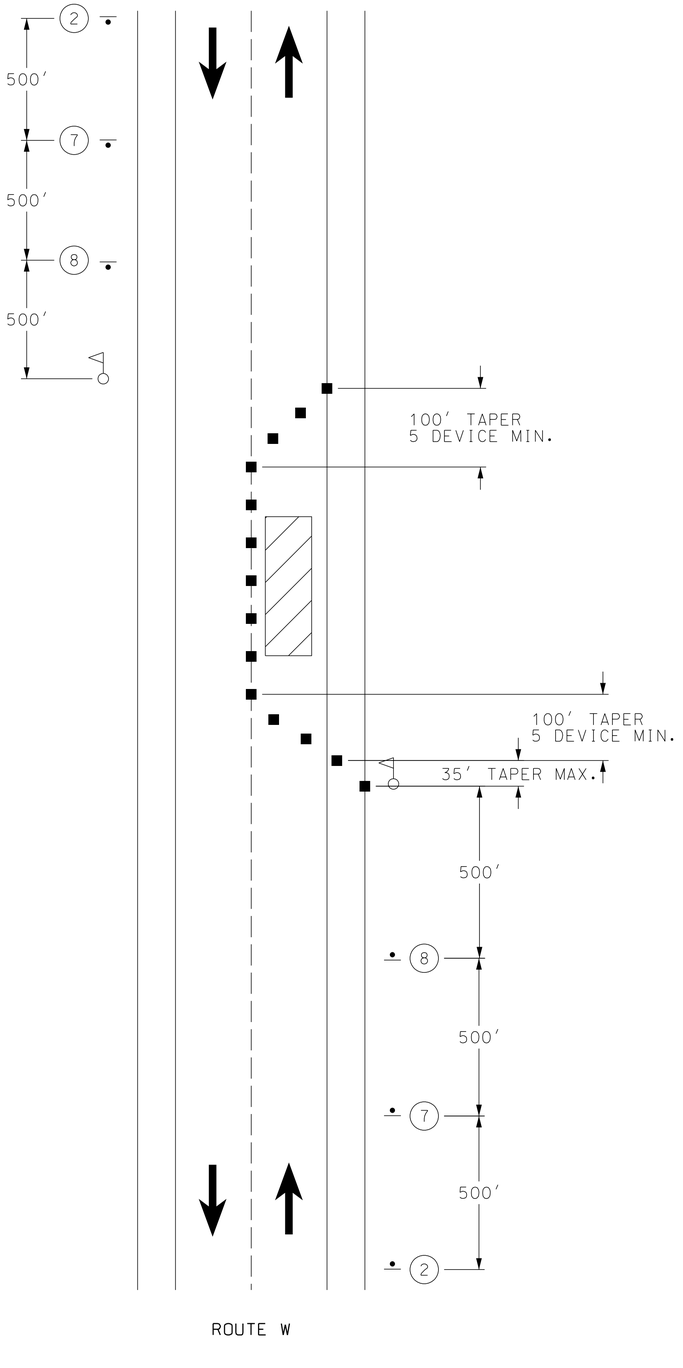
DESCRIPTION	DATE

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

EFK•Moen
Civil Engineering Design
13523 Barrett Parkway Dr
Suite 250
St. Louis, MO 63021
Phone 314-394-3100
Fax 314-394-3199
Missouri Certificate of Authority: 001578

GENERAL NOTES:

LANE CLOSURE ON TWO-LANE ROAD USING FLAGGERS



NOT TO SCALE

W020-1

2

W020-4

7

W020-7a

8

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TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- CHANNELIZER
- FLAGGER
- WORK AREA

NOTES:

THE CONTRACTOR SHALL COVER OR REMOVE ANY EXISTING SIGNING OR PAVEMENT MARKING THAT CONFLICTS WITH THE TEMPORARY TRAFFIC CONTROL SIGNING AND DEVICES.

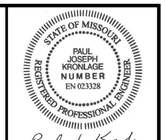
AUTOMATED FLAGGER ASSISTANCE DEVICES (AFAD) AND PORTABLE SIGNAL FLAGGING DEVICES (PSFD) MAY BE USED AS AN ALTERNATIVE FLAGGING OPERATION.

AFAD AND PSFD TYPICAL APPLICATIONS AND CRITERIA ARE LOCATED AT THE FOLLOWING: EPG 616.8.10A (TA-10A) LANE CLOSURE ON TWO-LANE HIGHWAYS USING AUTOMATED FLAGGER ASSISTANCE DEVICE WITH RED AND AMBER SIGNAL SYSTEM & EPG 616.8.10C (TA-10C) LANE CLOSURE ON TWO-LANE HIGHWAYS USING PORTABLE SIGNAL FLAGGING DEVICE.

IF USED AT NIGHT, THE FLAGGER STATIONS SHALL BE ILLUMINATED WITH AN AVERAGE MAINTAINED INTENSITY OF 0.6 FOOTCANDLES (6.5 LUX).

NOT TO SCALE

TRAFFIC CONTROL
SHEET 1 OF 2



12/30/2025 10:00:21 AM
Paul J. Kronlage - Civil
MO PE - 023328

DATE PREPARED
12/23/2025

ROUTE	STATE
W	MO
DISTRICT	SHEET NO.
CD	5

COUNTY
WASHINGTON

JOB NO.
JCD0032

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)

EFK•Moen
Civil Engineering Design
13523 Barrett Parkway Dr
Suite 250
St. Louis, MO 63021
Phone 314-394-3100
Fax 314-394-3199
Missouri Certificate of Authority: 001578

GENERAL NOTES:

1. PLACEMENT OF TRAFFIC CONTROL SIGNS IS APPROXIMATE AND MAY BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
2. SIGN SPACING 350' OR AS DIRECTED BY THE ENGINEER.
3. ANY EXISTING SIGN THAT CONFLICTS WITH THE TRAFFIC CONTROL SIGNING SHALL BE COMPLETELY COVERED OR REMOVED, NO DIRECT PAY.
4. SIGNS ASSOCIATED WITH TYPE III BARRICADE SHALL BE MOUNTED ON POST BEHIND BARRICADE.
5. CMS MESSAGES AND LOCATIONS AS APPROVED BY ENGINEER.

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- BARRICADE
- CHANGEABLE MESSAGE BOARD

DISCLAIMER

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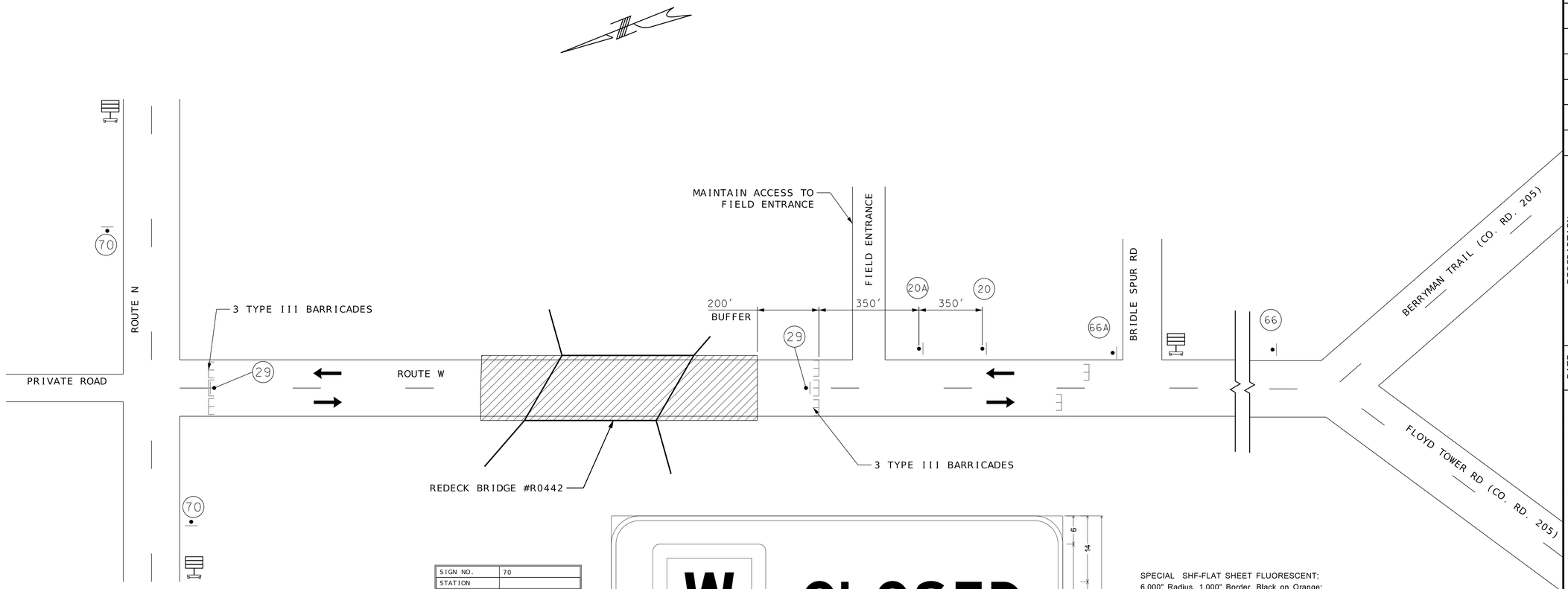
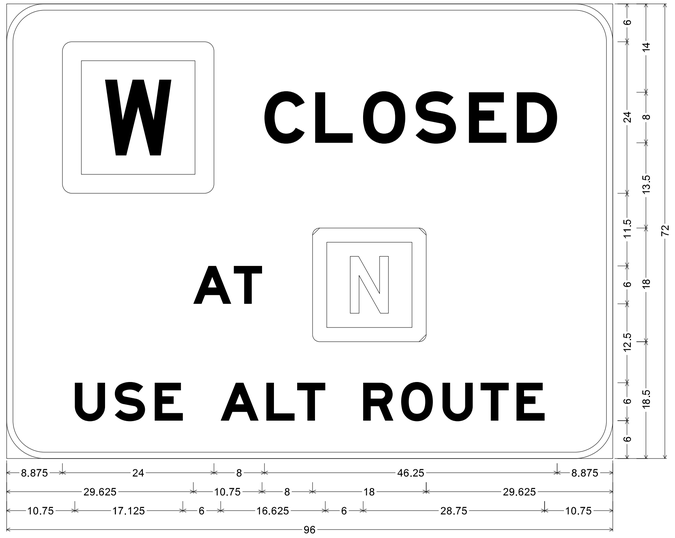


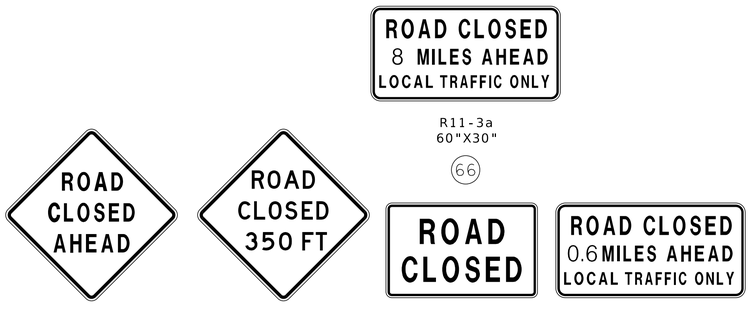
SIGN NO.	70
STATION	
ROADWAY	ROUTE N



SPECIAL
70

SPECIAL SHF-FLAT SHEET FLUORESCENT;
6.000" Radius, 1.000" Border, Black on Orange;
"CLOSED", E Mod; "AT", E Mod; "USE ALT ROUTE", E Mod;
Table of letter and object lefts

M 8.875	C 40.875	L 48.875	O 56.500	S 64.750	E 73.250	D 80.750	
A 29.625	T 36.000	M 48.375					
U 10.750	S 17.125	E 23.500	A 33.875	L 41.125	T 46.000	R 56.500	O 62.500	U 69.000	T 75.000	E 80.750



NOT TO SCALE

TRAFFIC CONTROL
SHEET 2 OF 2

12/30/2025 10:00:33 AM
Paul J. Kronlage - Civil
MO PE - 023328

DATE PREPARED
12/23/2025

ROUTE	STATE
W	MO
DISTRICT	SHEET NO.
CD	6

COUNTY
WASHINGTON

JOB NO.
JCD0032

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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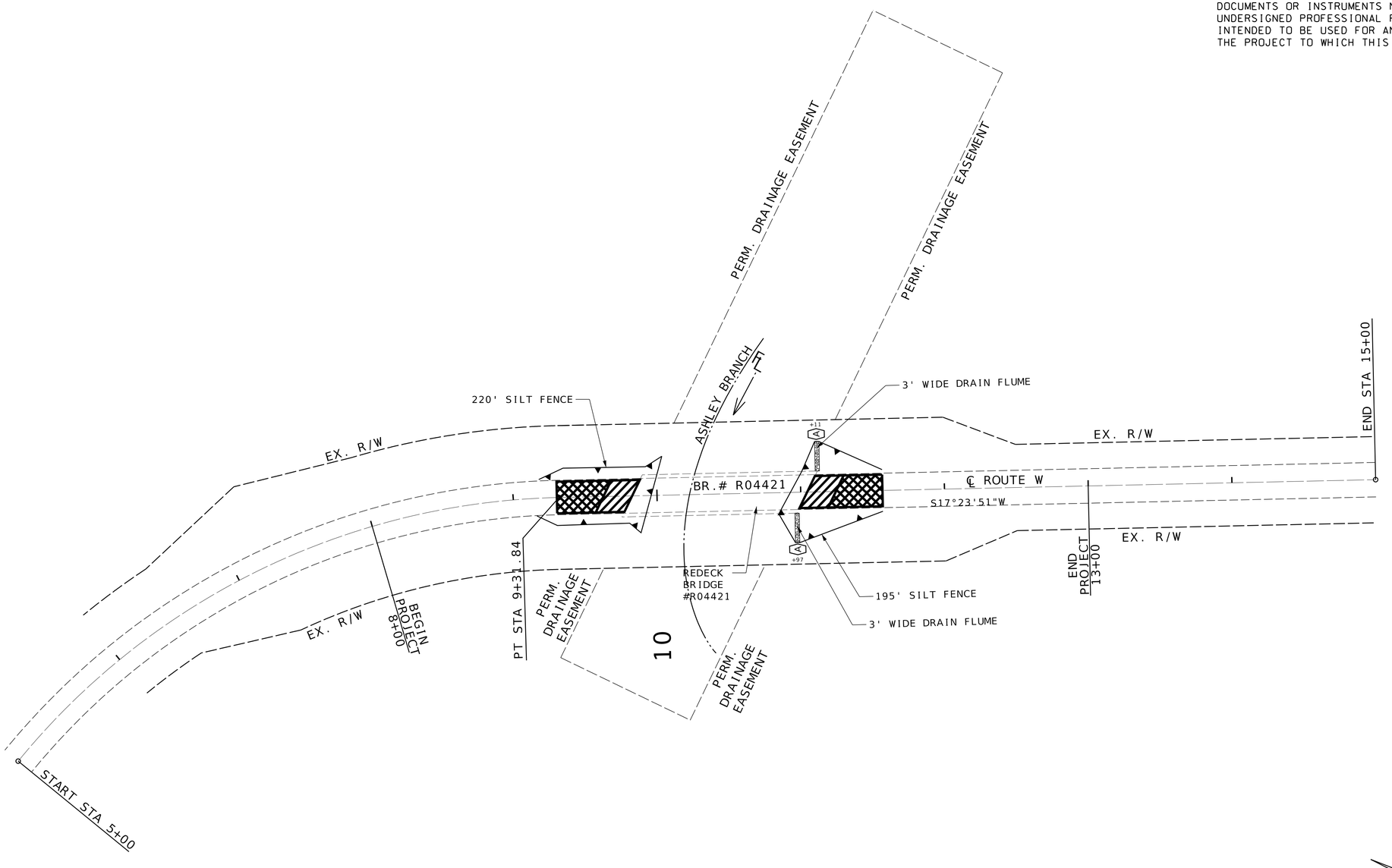

LEGEND
SILT FENCE
ALTERNATE DITCH CHECK Ⓐ

PRIMARY RECEIVING WATERS: ASHLEY BRANCH

SCALE
0 40 80 120

EROSION CONTROL
SHEET 1 OF 1

STATE OF MISSOURI
PAUL JOSEPH KRONLAGE
NUMBER EN 023328
REGISTERED PROFESSIONAL ENGINEER

12/30/2025 10:00:43 AM
Paul J. Kronlage - Civil
MO PE - 023328

DATE PREPARED
12/23/2025

ROUTE	STATE
W	MO
DISTRICT	SHEET NO.
CD	7

COUNTY
WASHINGTON

JOB NO.
JCD0032

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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Missouri Certificate of Authority: 001578

SIGNS

902 SIGNAL SIGNS TABULATED ON D-37A SHEET

CONCRETE FOOTINGS EMBEDDED

STRUCTURAL STEEL POSTS*

PIPE POSTS*

BACKING BARS**

U-CHANNEL POST

PERFORATED SQUARE STEEL TUBE

EFFECTIVE: 07-01-2024

SIGN NO.	SIGN SIZE	STATION OR LOG MILE	HORIZ CLEAR IF NOT STD	LOCATION	SIGN DTL SHT NO.	CONCRETE FOOTINGS EMBEDDED ITEM NO. 9031010 CY	STRUCTURAL STEEL POSTS* POST DES NO.	POST NO.1 LF	POST NO.2 LF	POST NO.3 LF	LBS PER FT	TOTAL ITEM NO. 9031210 LBS	PIPE POSTS* PIPE SIZE IN	POST NO.1 LF	POST NO.2 LF	LBS PER FT	TOTAL ITEM NO. 9031220 LBS	BACKING BARS** 2" X 3/8" BARS AT 2.55 LBS/FT NO. EACH	LGTH IN.	TOTAL LF	TOTAL LBS	U-CHANNEL POST ITEM NO. 9031250A LF	PERFORATED SQUARE STEEL TUBE 2-INCH POST POST NO.1 LF	POST NO.2 LF	TOTAL ITEM NO. 9031270A LF	ANCHORS DRIVEN 12 GA. ITEM NO. 9031271A EACH	DRIVEN 7 GA. ITEM NO. 9031273A EACH	CONCRETE 7 GA. ITEM NO. 9031274 EACH	2.5-INCH POST POST NO.1 LF	POST NO.2 LF	TOTAL ITEM NO. 9031280 LF	ANCHORS 2.25" INSERT (6 FT) ITEM NO. 9031272A EACH	DRIVEN 7 GA. ITEM NO. 9031281A EACH	CONCRETE 7 GA. ITEM NO. 9031285 EACH	BREAK-AWAY ASSEMBLY ITEM NO. 9031241 EACH	BARRIER ANCHOR ITEM NO. 9039902 EACH	REMARKS AND OTHER REQUIRED ITEMS
1	12" X 36"	9+35		ROUTE W RT																			14		14		1										
2	12" X 36"	9+55		ROUTE W RT																			14		14		1										
3	12" X 36"	9+75		ROUTE W RT																			14		14		1										
4	12" X 36"	9+50		ROUTE W LT																			14		14		1										
5	12" X 36"	9+70		ROUTE W LT																			14		14		1										
6	12" X 36"	9+90		ROUTE W LT																			14		14		1										
7	12" X 36"	10+97		ROUTE W RT																			14		14		1										
8	12" X 36"	11+17		ROUTE W RT																			14		14		1										
9	12" X 36"	11+37		ROUTE W RT																			14		14		1										
10	12" X 36"	11+12		ROUTE W LT																			14		14		1										
11	12" X 36"	11+32		ROUTE W LT																			14		14		1										
12	12" X 36"	11+52		ROUTE W LT																			14		14		1										
				SUBTOTAL																					168		12										
				PAY TOTAL																		**			168		12										

*BREAKAWAY ASSEMBLY IS INCIDENTAL FOR STRUCTURAL STEEL AND PIPE POSTS.
**BACKING BARS ARE TOTALED WITH STRUCTURAL STEEL OR PIPE POSTS.

MODIFIED
D-29

STANDARD SIGN ASSEMBLIES

SIGN, TYPE, DESIGNATION, SIZE & NUMBER OF EACH

SIGN NO.	STATION OR LOG MILE	LOCATION	SHF OM3-L 12 X 36	SH OM3-R 12 X 36
1	9+35	ROUTE W RT		1
2	9+55	ROUTE W RT		1
3	9+75	ROUTE W RT		1
4	9+50	ROUTE W LT	1	
5	9+70	ROUTE W LT	1	
6	9+90	ROUTE W LT	1	
7	10+97	ROUTE W RT	1	
8	11+17	ROUTE W RT	1	
9	11+37	ROUTE W RT	1	
10	11+12	ROUTE W LT		1
11	11+32	ROUTE W LT		1
12	11+52	ROUTE W LT		1
		TOTALS	6	6

SIGN SUMMARY

EFFECTIVE: 10-01-2016

STANDARD OR SPECIAL SIGN DESIGNATION	SIGN DTL. SHT. NO.	NO. EACH	SIGN SIZE	TYPE & SQUARE FEET SH-FLAT SHEET ITEM NO. 9035004A	FLAT SHEET FLUORESCENT SHF* ITEM NO. 9035069A	STRUCTURAL ST ITEM NO. 9035011A	STRUCTURAL FLUORESCENT STF* ITEM NO. 9035071A
OM3-L		6	12 X 36		18.00		
OM3-R		6	12 X 36		18.00		
			PAY TOTAL		36		

*ORANGE, YELLOW AND YELLOW-GREEN

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MODIFIED
D-30

SIGNING SHEET
1 OF 1

STATE OF MISSOURI
PAUL JOSEPH KRONLAGE NUMBER EN 023328
REGISTERED PROFESSIONAL ENGINEER
12/30/2025 10:00:56 AM
Paul J. Kronlage - Civil
MO PE - 023328

DATE PREPARED 12/23/2025
ROUTE W | STATE MO
DISTRICT CD | SHEET NO. 8
COUNTY WASHINGTON
JOB NO. JCD0032
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)

EFK·Moen
Civil Engineering Design
13523 Barrett Parkway Dr
Suite 250
St. Louis, MO 63021
Phone 314-394-3100
Fax 314-394-3199
Missouri Certificate of Authority: 001578

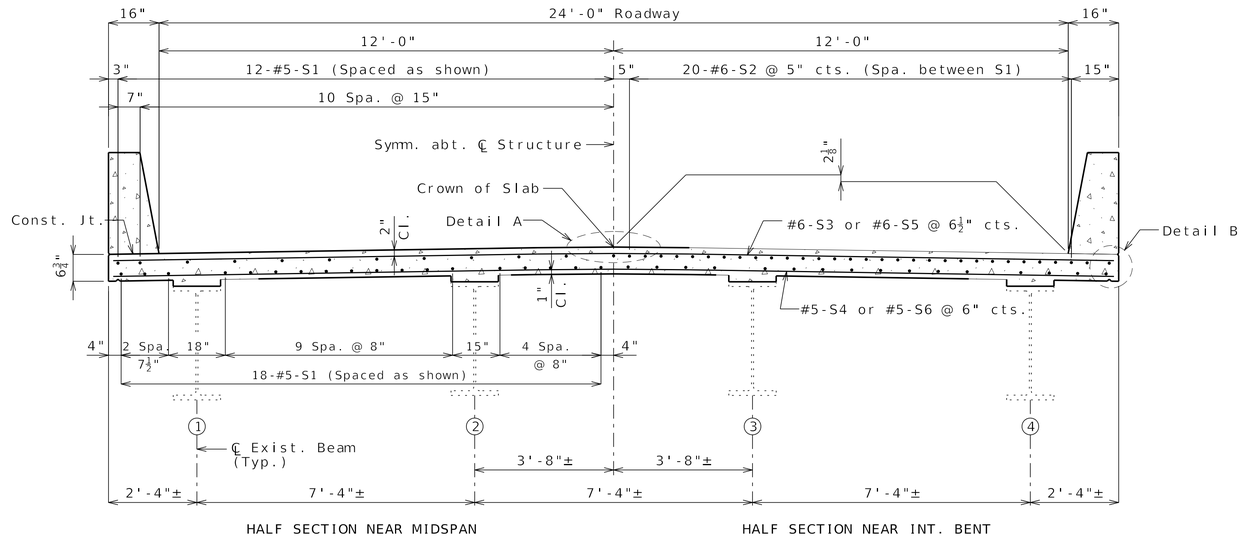
SEC/SUR 19 TWP 39N RGE 1W

U.I.P., REDECK AND MAKE COMPOSITE EXISTING (36'- 46'- 36') CONTINUOUS WIDE FLANGE BEAM SPANS (SKEW: 28 L.A.)

Table Showing S2 Bar Lengths			
Int. Bent No. 2		Int. Bent No. 3	
Span 1	Span 2	Span 2	Span 3
13'-0"	16'-0"	16'-0"	13'-0"

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.



HALF SECTION NEAR MIDSPAN HALF SECTION NEAR INT. BENT

TYPICAL SECTION THRU SLAB

General Notes:

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

Design Loading:
HS15-44 (1961) (Existing)
HS20-44 (New Construction)
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

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

Traffic Handling:
Structure to be closed during construction. Traffic to be maintained on other routes during construction. See roadway plans for traffic control.

Estimated Quantities		
Item		Total
Removal of Existing Bridge Deck	sq. foot	3359
Bridge Approach Slab (Minor)	sq. yard	110
Slab on Steel	sq. yard	361
Type H Barrier	linear foot	242
Protective Coating - Concrete Bents and Piers (Epoxy)	lump sum	1
Shear Connectors	each	2976
Strengthening Existing Beams	lump sum	1
Non-Destructive Testing	linear foot	80
Reset Existing Bearings	each	8

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

Estimated Quantities for Slab on Steel		
Item		Total
Class B-2 Concrete	cu. yard	83
Reinforcing Steel (Epoxy Coated)	pound	30,560

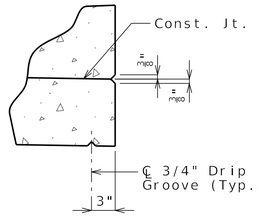
The table of Estimated Quantities for Slab on Steel represents the quantities used by the State in preparing the cost estimate for concrete slabs. The area of the concrete slab will be measured to the nearest square yard longitudinally from end of slab to end of slab and transversely from out to out 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.

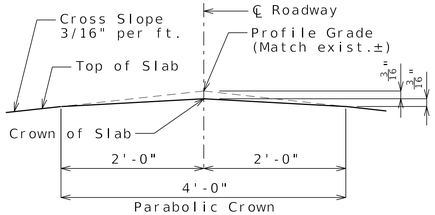
Slab shall be cast-in-place with conventional forming or stay-in-place corrugated steel forms. Precast prestressed panels will not be permitted.

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

Bridge deck surface may be finished with a vibratory screed.



DETAIL B



DETAIL A

REPAIRS TO BRIDGE: ROUTE W OVER ASHLEY BRANCH

ROUTE W FROM ROUTE N TO BRIDLE SPUR ROAD
ABOUT 0.2 MILES SOUTH OF ROUTE N
BEGINNING STATION 9+82.70± (MATCH EXISTING)

STATE OF MISSOURI
CHRIS LINNEMAN
NUMBER PE-2002016690
PROFESSIONAL ENGINEER
12/23/2025 8:56:29 AM
Chris Linneman - Civil
MO PE-2002016690

DATE PREPARED 12/23/2025
ROUTE W | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY WASHINGTON
JOB NO. JCD0032
CONTRACT ID.
PROJECT NO.
BRIDGE NO. R04421

DESCRIPTION

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

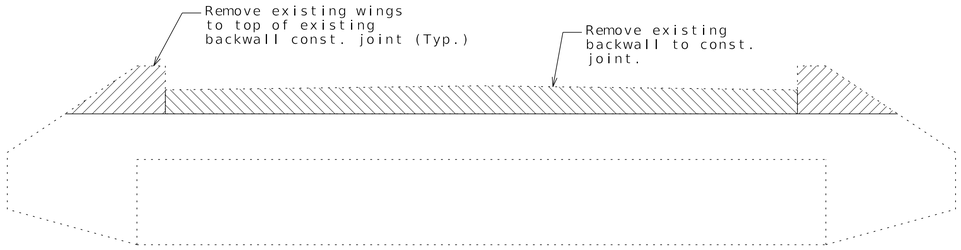
EFK•Moen
Civil Engineering Design
13523 Barrett Parkway Dr
Suite 250
St. Louis, MO 63021
Phone 314-394-3100
Fax 314-394-3199
Missouri Certificate of Authority: 001578

REV.

Detailed Nov. 2025
Checked Nov. 2025

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

O:\2022R3\MoDOT_ORD_v10.12.02.04\25060 MoDOT JCD0032 Rte W Bridge\DGN\Bridge\Final\Plotsheets\B_R04421_001_JCD0032_Front-Sheet.dgn 8:18:04 AM 12/23/2025



DETAILS OF CONCRETE REMOVAL AT END BENTS

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.

The contractor shall provide a method of preventing the direct contact of the stay-in-place forms and connection components with uncoated weathering steel members that is approved by the engineer.

Pouring and Finishing Slab:

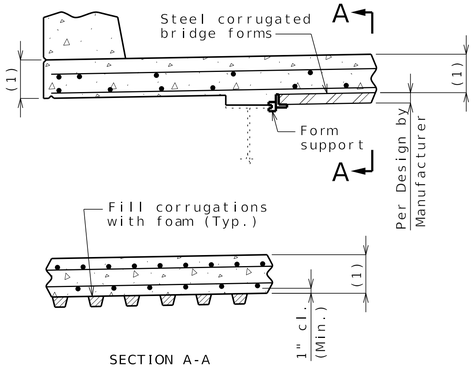
The contractor shall provide bracing necessary for lateral and torsional stability of the beams during construction of the concrete slab and remove the bracing after the slab has attained 75% design strength. Contractor shall not weld on or drill holes in the beams. The cost for furnishing, installing, 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.

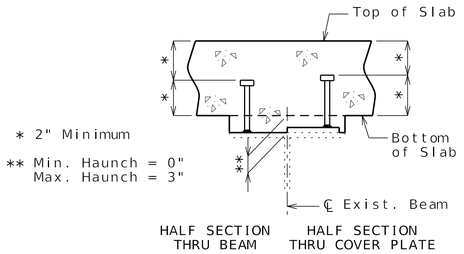
Alternate pour sequences may be submitted to the engineer for approval. Keyed construction joints shall be provided between pours.

Haunching:

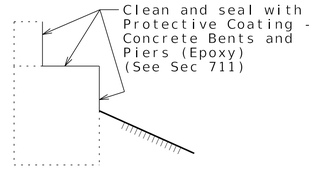
(1) Slab is to be considered a uniform thickness as shown on the plans. Haunching will vary. See front sheet for slab thickness.



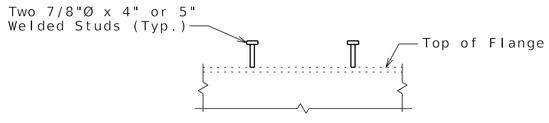
OPTIONAL STAY-IN-PLACE FORM DETAILS



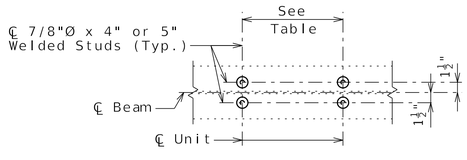
SECTION THRU EXIST. BEAM SHOWING SHEAR CONNECTORS



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



ELEVATION

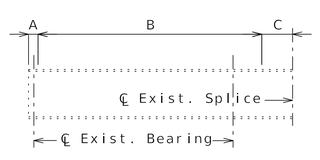


PLAN OF SHEAR CONN. (2 PER UNIT)

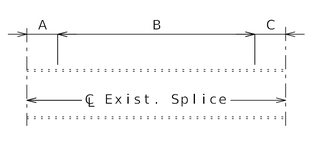
DETAILS OF SHEAR CONNECTORS

The cost of supplying and installing shear connectors will be considered completely covered by the contract unit price for Shear Connectors.

Shear connectors shall be in accordance with Sec 712, 1037 & 1080.



ELEVATION SHOWING SHEAR CONNECTOR SPACING FOR END BEAMS



ELEVATION SHOWING SHEAR CONNECTOR SPACING FOR MID SPAN & BEARING BEAMS

TABLE SHOWING SHEAR CONNECTOR UNIT SPACING				
Beam	S.C. per unit	A	B	C
End Beam (Spans 1-2 & 3-4)	2	10"±	101 Units @ 5½" cts.	15"±
Mid Span (Span 2-3)	2	14 ¼"±	46 Units @ 5½" cts.	14¼"±
	Total shear connectors required			2976

CHRIS LINNEMAN
STATE OF MISSOURI
NUMBER PE-2002016690
PROFESSIONAL ENGINEER
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Chris Linneman - Civil
MO PE-2002016690

DATE PREPARED 12/23/2025

ROUTE	STATE
W	MO
DISTRICT	SHEET NO.
BR	2

COUNTY WASHINGTON

JOB NO. JCD0032

CONTRACT ID.

PROJECT NO.

BRIDGE NO. R04421

DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
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Civil Engineering Design
13523 Barrett Parkway Dr
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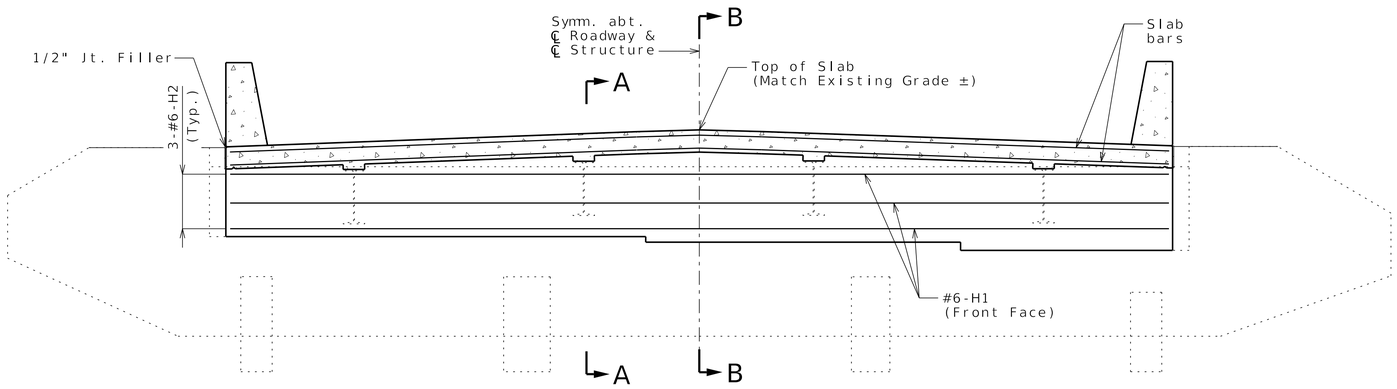
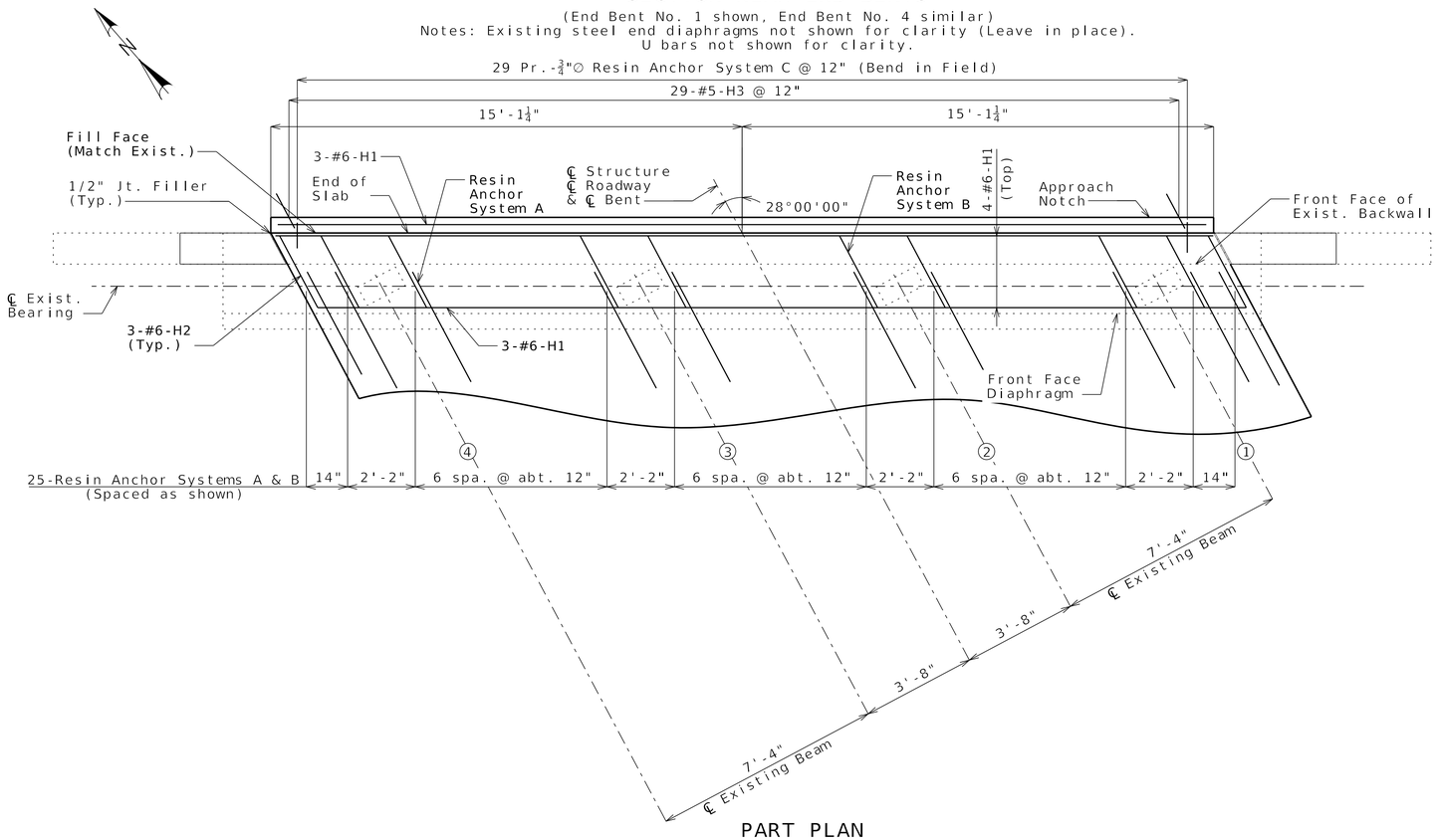
Missouri Certificate of Authority: 001578

REV.



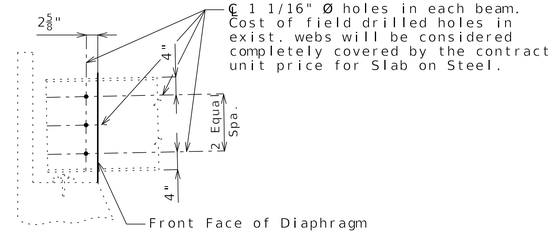
SECTION NEAR END BENTS

(End Bent No. 1 shown, End Bent No. 4 similar)
Notes: Existing steel end diaphragms not shown for clarity (Leave in place).
U bars not shown for clarity.



PART PLAN

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



DETAIL OF WEB HOLES AT END BENT

Notes:

Required temporary support load of 10 kips at each bearing is a service load without a factor of safety. It includes the dead load (without the slab) and a construction load of 50 psf applied to the deck area. Live load is not included in the support load (See Special Provisions).

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 and 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.

All concrete and reinforcement is included in the table of Estimated Quantities for Slab on Steel and will be considered completely covered by the contract unit price for Slab on Steel.

DETAILS OF END BENTS NO. 1 & 4

Detailed Nov. 2025
Checked Nov. 2025

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

STATE OF MISSOURI
CHRIS LINNEMAN
NUMBER PE-2002016690
PROFESSIONAL ENGINEER

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Chris Linneman - Civil
MO PE-2002016690

DATE PREPARED
12/30/2025

ROUTE	STATE
W	MO
DISTRICT	SHEET NO.
BR	3

COUNTY
WASHINGTON

JOB NO.
JCD0032

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
R04421

DESCRIPTION

REV.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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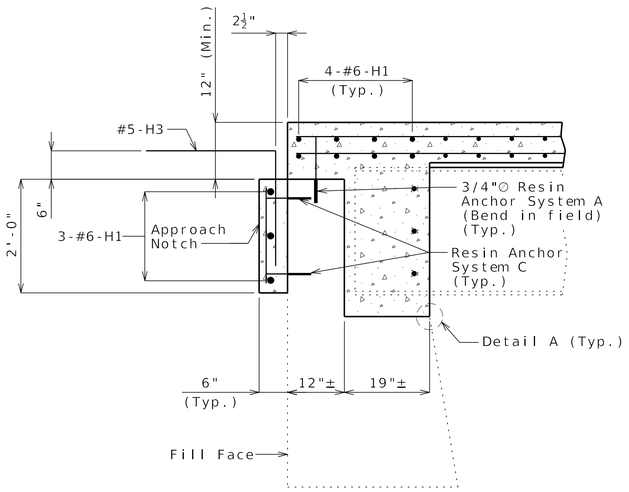
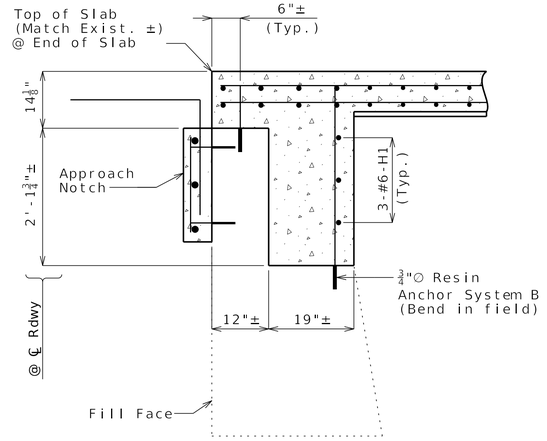
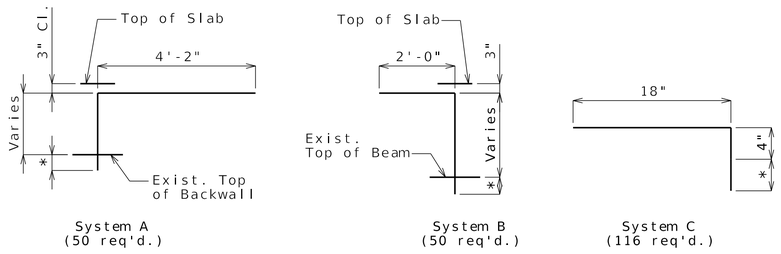


SECTION A-A

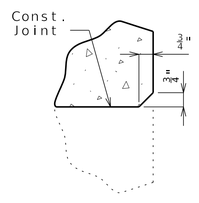


SECTION B-B



Details of Resin Anchor Systems

∗ Manufacturer's recommended
embedment length (5" min.)



DETAIL A

Notes:

Cost of temporary supports, cutting anchor bolts, and placing roofing felt and joint filler will be considered completely covered by the contract unit price for Slab on Steel.

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

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.

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

An epoxy coated #6 Grade 60 reinforcing bar shall be substituted for the 3/4" ○ threaded rod.

Approach notch concrete shall be Class B-2 Concrete.

For details of End Bent not shown, see Sheet No. 3.

DETAILS OF END BENTS NO. 1 & 4

Detailed Nov. 2025
Checked Nov. 2025

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

STATE OF MISSOURI
CHRIS LINNEMAN
NUMBER PE-2002016690
PROFESSIONAL ENGINEER

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Chris Linneman - Civil
MO PE-2002016690

DATE PREPARED
12/30/2025

ROUTE	STATE
W	MO
DISTRICT	SHEET NO.
BR	4

COUNTY
WASHINGTON

JOB NO.
JCD0032

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
R04421

DESCRIPTION

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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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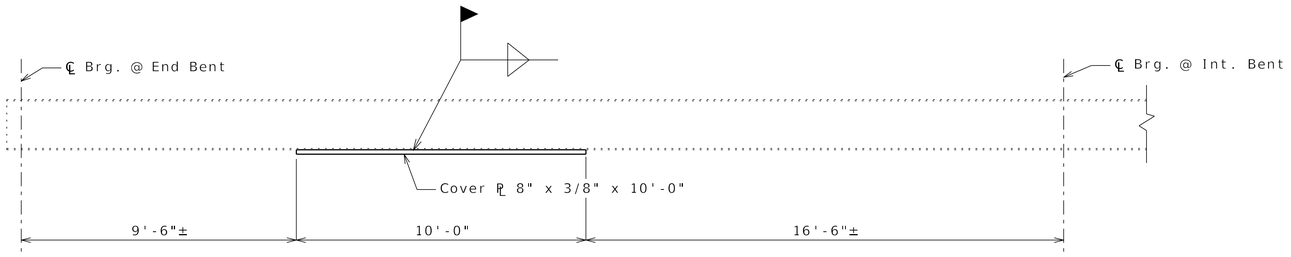
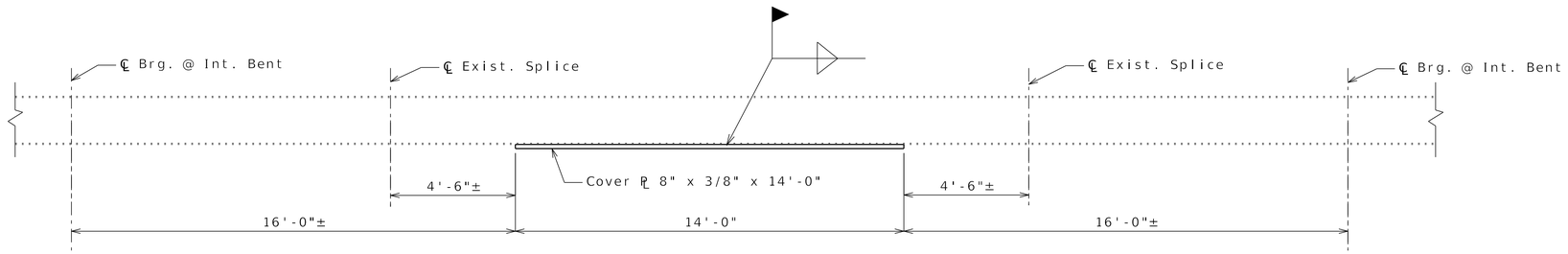


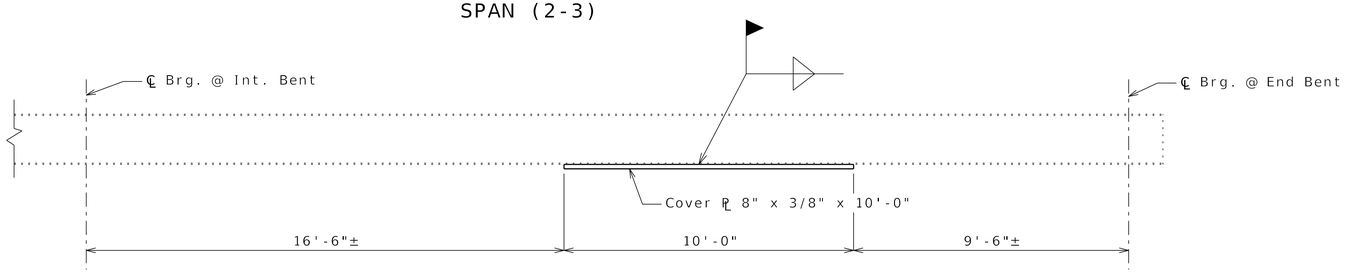
PART ELEVATION OF BEAM SHOWING COVER PLATE INSTALLATION

SPAN (1-2)



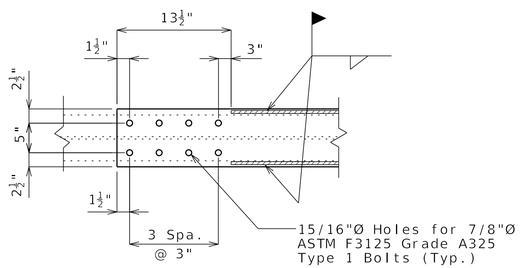
PART ELEVATION OF BEAM SHOWING COVER PLATE INSTALLATION

SPAN (2-3)



PART ELEVATION OF BEAM SHOWING COVER PLATE INSTALLATION

SPAN (3-4)



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 36, except as noted.

Payment for 1390 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

Detailed Nov. 2025
Checked Nov. 2025

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

STATE OF MISSOURI
CHRIS LINNEMAN
NUMBER PE-2002016690
PROFESSIONAL ENGINEER

12/23/2025 8:57:22 AM
Chris Linneman - Civil
MO PE-2002016690

DATE PREPARED
12/23/2025

ROUTE	STATE
W	MO
DISTRICT	SHEET NO.
BR	5

COUNTY
WASHINGTON

JOB NO.
JCD0032

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
R04421

DESCRIPTION

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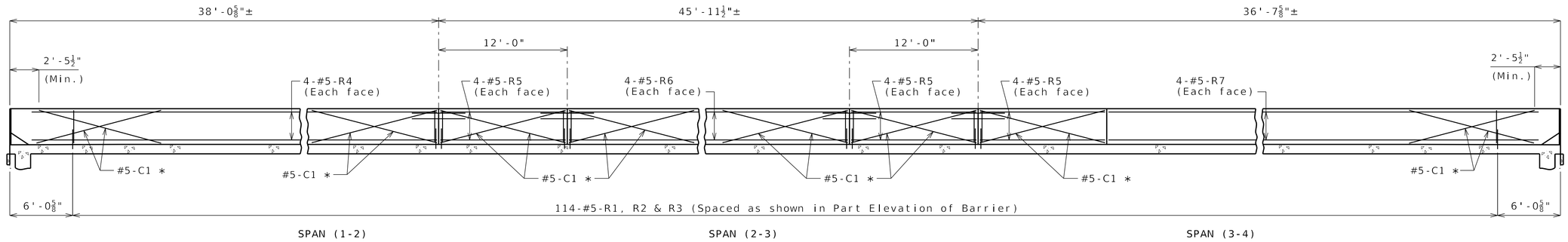
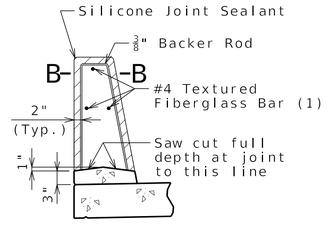


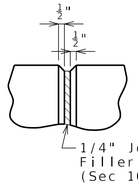
ELEVATION OF BARRIER

(Left barrier shown, right barrier similar)

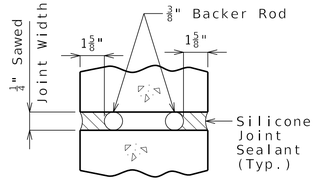
Longitudinal dimensions are horizontal.



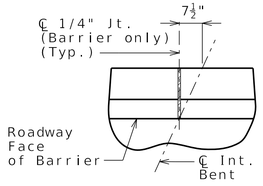
SECTION THRU SAW CUT JOINT



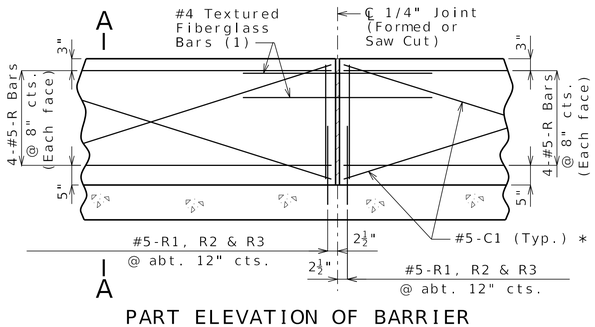
PART ELEVATION AT FORMED JOINT



SECTION B-B

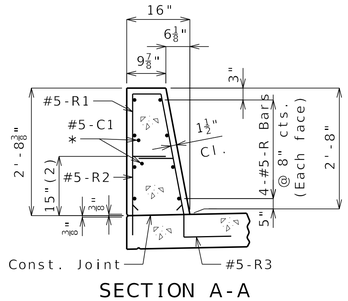


PART PLAN SHOWING JOINT LOCATION



PART ELEVATION OF BARRIER

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

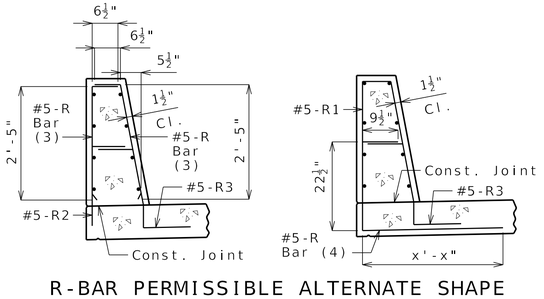


SECTION A-A

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.)

(4) The R2 bar and #5 bottom transverse slab bar in cantilever (prestressed panels only) combination may be furnished as one bar as shown, at the contractor's option.

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 (except at end bents) 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 wing to end of wing.

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.

Plastic waterstop shall not be used with saw cut joints.

TYPE H BARRIER

Detailed Nov. 2025
Checked Nov. 2025

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

Sheet No. 6 of 10

STATE OF MISSOURI
CHRIS LINNEMAN
NUMBER PE-2002016690
PROFESSIONAL ENGINEER
12/30/2025 8:13:34 AM
Chris Linneman - Civil
MO PE-2002016690

DATE PREPARED 12/29/2025

ROUTE	STATE
W	MO
DISTRICT	SHEET NO.
BR	6

COUNTY WASHINGTON

JOB NO. JCD0032

CONTRACT ID.

PROJECT NO.

BRIDGE NO. R04421

DESCRIPTION

REV.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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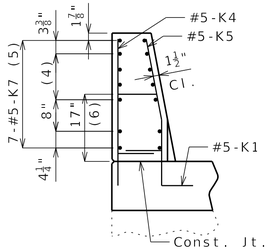
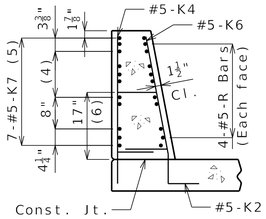
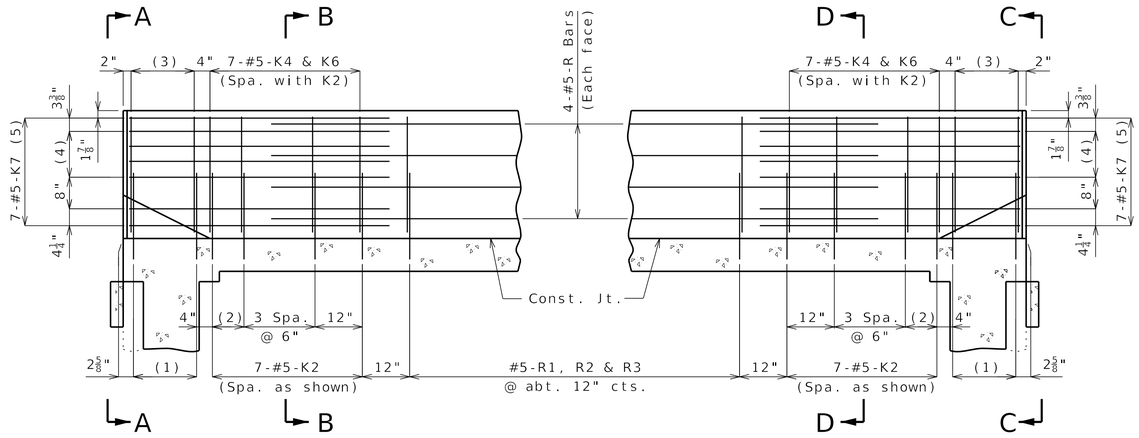


ELEVATION A-A



SECTION B-B



PART ELEVATION

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

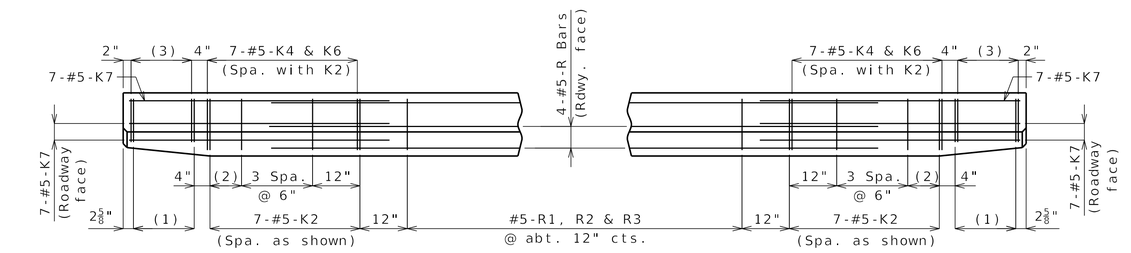
(2) 2 Spaces @ 4"

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

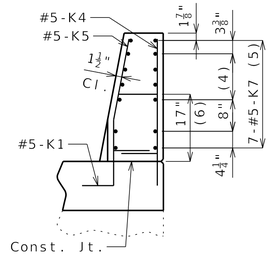
(4) 3 Spaces @ $3\frac{13}{16}$"

(5) Spaced as shown, each face

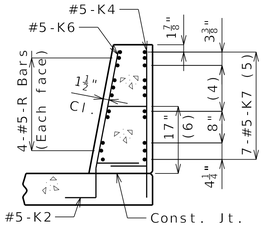
(6) To top of bar



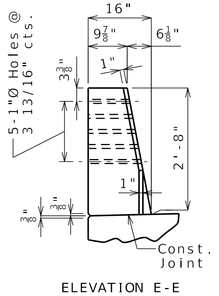
PART PLAN



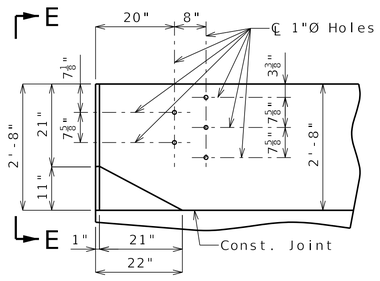
ELEVATION C-C



SECTION D-D



ELEVATION E-E



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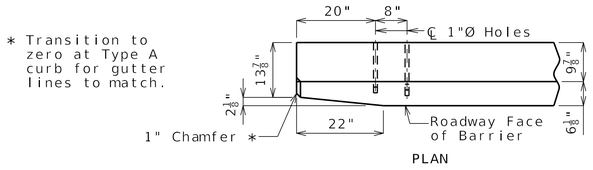


PLAN

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.

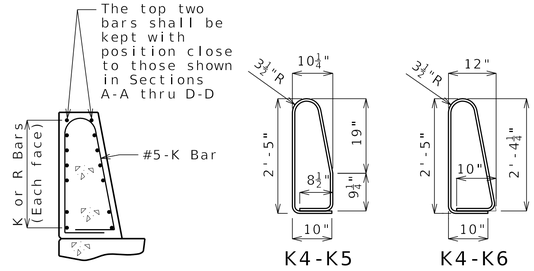
Reinforcing Steel:

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)



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.

STATE OF MISSOURI
CHRIS LINNEMAN
NUMBER PE-2002016690
PROFESSIONAL ENGINEER
12/30/2025 8:13:27 AM
Chris Linneman - Civil
MO PE-2002016690

DATE PREPARED 12/29/2025

ROUTE W | STATE MO

DISTRICT BR | SHEET NO. 7

COUNTY WASHINGTON

JOB NO. JCD0032

CONTRACT ID.

PROJECT NO.

BRIDGE NO. R04421

DESCRIPTION

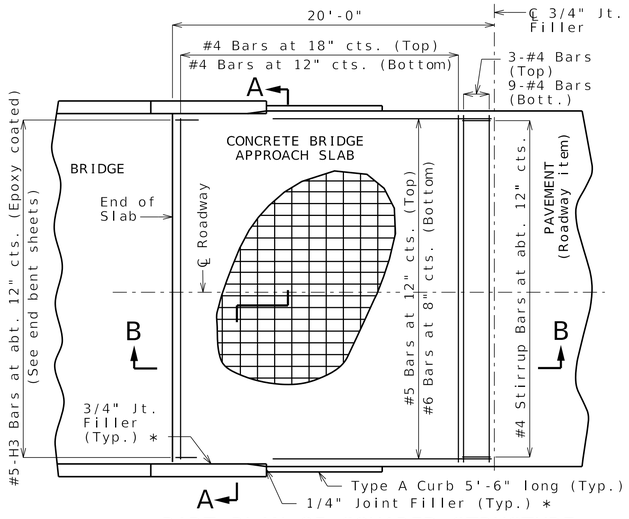
REV.

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

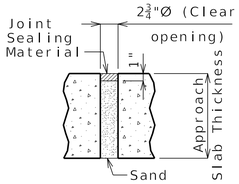
EFK•Moen
Civil Engineering Design
13523 Barrett Parkway Dr
Suite 250
St. Louis, MO 63021
Phone 314-394-3100
Fax 314-394-3199
Missouri Certificate of Authority: 001578

Detailed Nov. 2025
Checked Nov. 2025

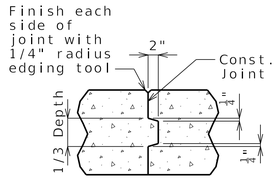
Note: This drawing is not to scale. Follow dimensions.



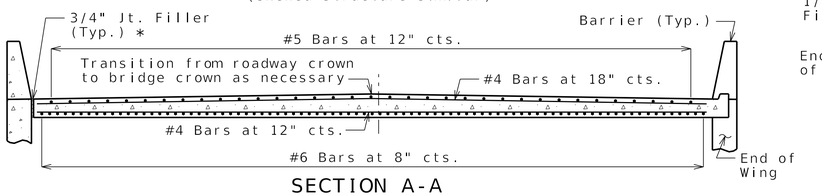
PART PLAN OF SQUARED STRUCTURE
(Skewed structure similar)



UNDERSEAL ACCESS HOLE DETAIL
(If required)

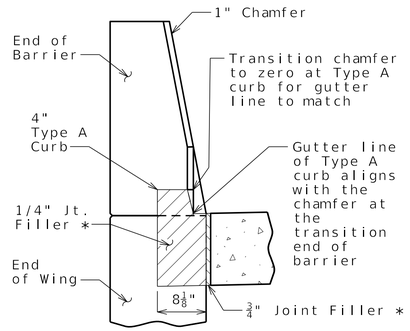


CONSTRUCTION JOINT DETAIL

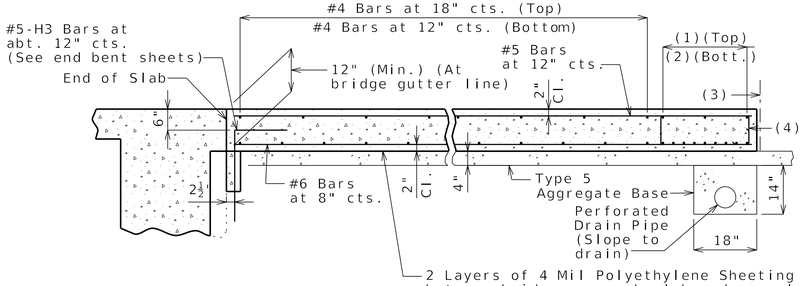


SECTION A-A

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

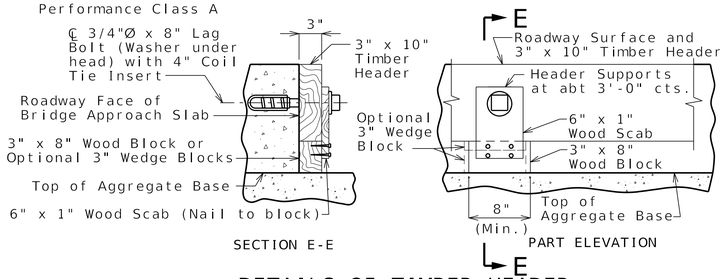


SECTION BETWEEN CURB AND BARRIER



SECTION B-B

(1) 3-#4 Bars
(2) 9-#4 Bars
(3) ℄ 3/4" Jt. Filler
(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.



SECTION E-E

PART ELEVATION

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

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, 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.

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

General Notes:

Contractor shall have the option to construct either slab except as noted.

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

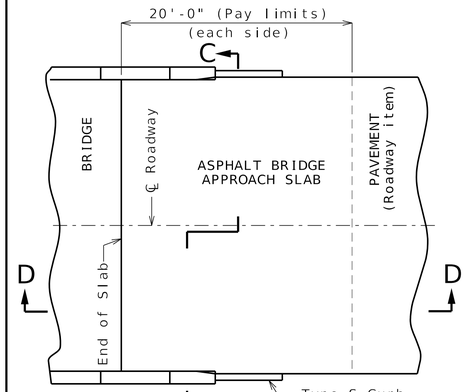
MoDOT Construction personnel will indicate the bridge approach slab used for this structure:

☐ Concrete Bridge Approach Slab
☐ Asphalt Bridge Approach Slab

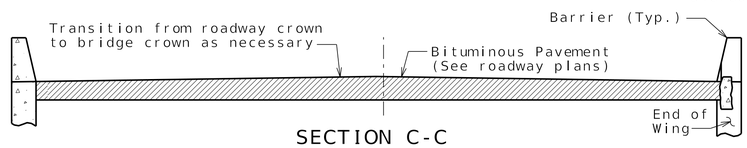
Notes For Asphalt Slab Only:

Payment for furnishing all materials, labor and excavation necessary to construct the asphalt bridge approach slab, including tack, curb, and Type 5 aggregate base within the pay limits shown, complete in place, will be considered completely covered by the contract unit price for Bridge Approach Slab (Minor) per square yard.

Application of tack is required between lifts per Sec 403.

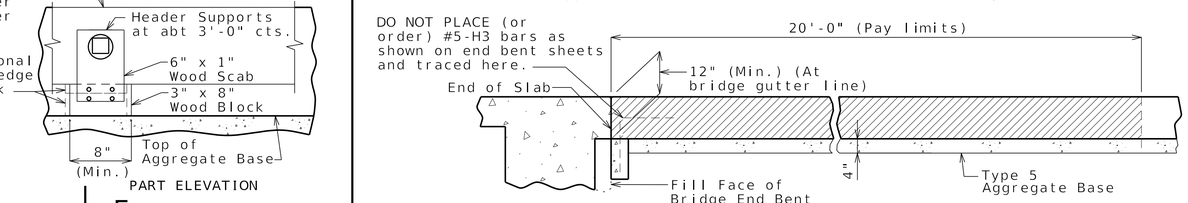


PART PLAN
(Squared structure shown, skewed structure similar)

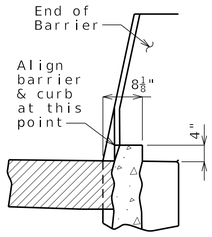


SECTION C-C

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 D-D



4" TYPE S CURB
See Missouri Standard Plan 609.00 for details of Type S curb.

OPTIONAL ASPHALT SLAB (NOT ALLOWED WITH CONCRETE PAVEMENT)

BRIDGE APPROACH SLAB (MINOR)

Integral end bents shown, non-integral end bent similar.

Detailed Nov. 2025
Checked Nov. 2025

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

STATE OF MISSOURI
CHRIS LINNEMAN
NUMBER PE-2002016690
PROFESSIONAL ENGINEER
01/02/2026 9:23:52 AM
Chris Linneman - Civil
MO PE-2002016690

DATE PREPARED 12/30/2025
ROUTE W | STATE MO
DISTRICT BR | SHEET NO. 8
COUNTY WASHINGTON
JOB NO. JCD0032
CONTRACT ID.
PROJECT NO.
BRIDGE NO. R04421

DESCRIPTION
REV.

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

EFK•Moen
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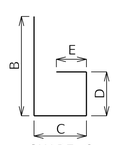

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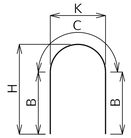

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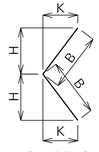

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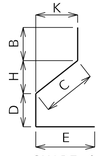

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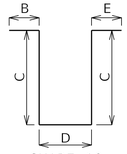

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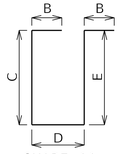

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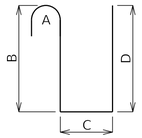

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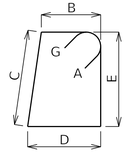

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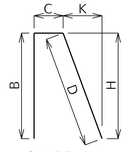

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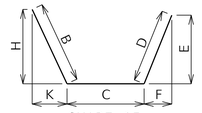

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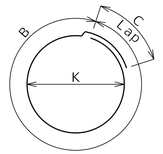

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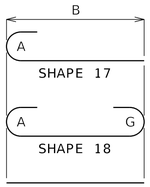
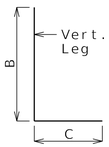


SHAPE 17
SHAPE 18
SHAPE 20



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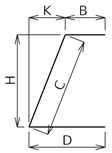

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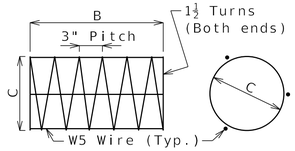

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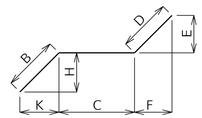

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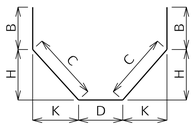

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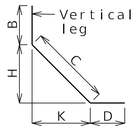

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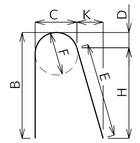

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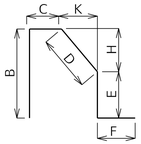

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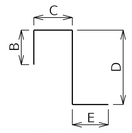

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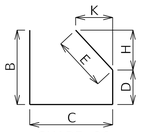

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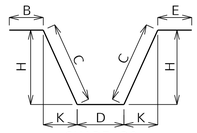

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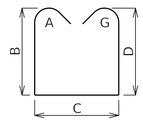

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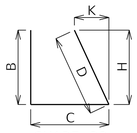

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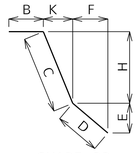

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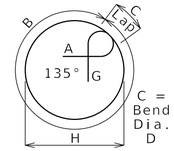

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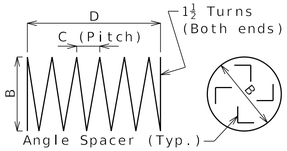


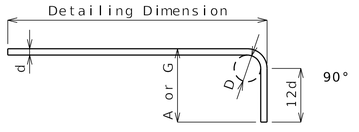
SHAPE 35 (1)

SHAPE 36

Finished Bend Diameters D and Hook Dimensions

Standard Pin Bend Shapes

Size	Case	D	A or G		J
			90°	180°	180°
#4	1	3"	8"	6"	4"
#5	1	3¾"	10"	7"	5"
#6	1	4½"	12"	8¼"	6"
#7	2	5¼"	14"	9⅜"	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"	36¾"	28½"

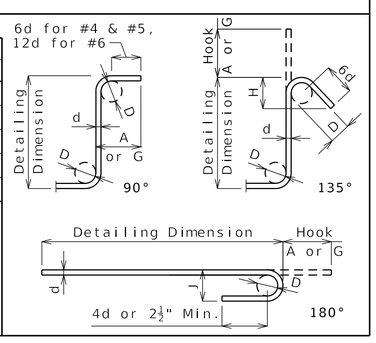


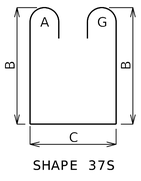
Stirrup Pin Bend Shapes (S)

Size	Case	D	A or G			H	J
			90°	135°	180°	135°	180°
#4	2	2"	4½"	4½"	5"	2⅝"	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"

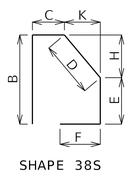
Applicable for all grades of steel.

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





SHAPE 37S



SHAPE 38S

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.

Reinforcing Steel Totals (Pounds)

	Size	Substructure		Superstructure				Entire Bridge	
				Slab			Slip		
		Plain	Epoxy	Plain	Epoxy	Barrier	Form	Plain	Epoxy
By Size	W5	0	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0	0
	5	0	0	0	15530	5470	401	0	21401
	6	0	0	0	15033	0	0	0	15033
	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	30563	5470	401	0	36434

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

BENDING DIAGRAMS AND REINFORCING STEEL TOTALS

Detailed Nov. 2025
Checked Nov. 2025

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

STATE OF MISSOURI
CHRIS LINNEMAN
NUMBER PE-2002016690
PROFESSIONAL ENGINEER
12/23/2025 8:58:02 AM
Chris Linneman - Civil
MO PE-2002016690

DATE PREPARED 12/23/2025
ROUTE W | STATE MO
DISTRICT BR | SHEET NO. 9
COUNTY WASHINGTON
JOB NO. JCD0032
CONTRACT ID.
PROJECT NO.
BRIDGE NO. R04421

DESCRIPTION

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

EFK•Moen
Civil Engineering Design
13523 Barrett Parkway Dr
Suite 250
St. Louis, MO 63021
Phone 314-394-3100
Fax 314-394-3199
Missouri Certificate of Authority: 001578

REV.

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 BENT 1 & 4													
20	6 H1	DIAPHRAGM	E	20		30 0.000							30 0	30 0	901
12	6 H2	DIAPHRAGM	E	10 S			2 0.000	13.000					5 1	4 9	86
58	5 H3	APPROACH NOTCH	E	19		2 0.000	15.000						3 3	3 1	187
		SLAB													
180	5 S1	SLAB	E	20		42 8.000							42 8	42 8	8010
80	6 S2	SLAB	E	20		29 0.000							29 0	29 0	3485
213	6 S3	SLAB	E	20		26 4.000							26 4	26 4	8425
213	5 S4	SLAB	E	20		26 4.000							26 4	26 4	5850
54	6 S5	SLAB	E	20	2	26 4.000							26 4	26 4	2136
		INCR=11 1/8 IN				2 2.000									
54	5 S6	SLAB	E	20	2	26 4.000							26 4	26 4	1483
		INCR=11 1/8 IN				2 2.000									
		BARRIER													
20	5 K1	BARRIER	E	27	S	20.750	9.250	5.375	15.000	12.000	5.250	1.000	5 2	4 11	103
28	5 K2	BARRIER	E	27	S	20.750	9.250	17.375	3.250		17.000	3.250	4 3	4 0	117
48	5 K3	BARRIER	E	19	S	2 5.000	10.000						3 3	3 2	159
20	5 K4	BARRIER	E	38	S			19.250	9.500	8.250	18.750	4.250	3 1	2 11	61
28	5 K5	BARRIER	E	21	S		2 4.875	10.000			2 4.250	6.000	3 3	3 2	92
56	5 K6	BARRIER	E	20		5 6.000							5 6	5 6	321
228	5 R1	BARRIER	E	14		2 5.000	6.500	2 5.500			2 5.000	5.500	5 5	5 2	1229
228	5 R2	BARRIER	E	19	S	18.750	9.500						2 4	2 3	535
228	5 R3	BARRIER	E	27	S		9.500	15.250	3.250	12.000	15.000	3.000	3 4	3 2	753
16	5 R4	BARRIER	E	20		11 8.000							11 8	11 8	195
32	5 R5	BARRIER	E	20		31 4.000							31 4	31 4	1046
16	5 R6	BARRIER	E	20		21 7.000							21 7	21 7	360
16	5 R7	BARRIER	E	20		29 11.000							29 11	29 11	499
		SLIP FORM													
32	5 C1	SLIP FORM	E	20		12 0.000							12 0	12 0	401

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. 8.

All bars shall be ASTM A615 Grade 60.

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.

BILL OF REINFORCING STEEL

Detailed Nov. 2025
Checked Nov. 2025

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

Sheet No. 10 of 10

STATE OF MISSOURI
CHRIS LINNEMAN
NUMBER PE-2002016690
PROFESSIONAL ENGINEER

12/30/2025 8:18:48 AM
Chris Linneman - Civil
MO PE-2002016690

DATE PREPARED
12/30/2025

ROUTE	STATE
W	MO

DISTRICT	SHEET NO.
BR	10

COUNTY
WASHINGTON

JOB NO.
JCD0032

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REV.