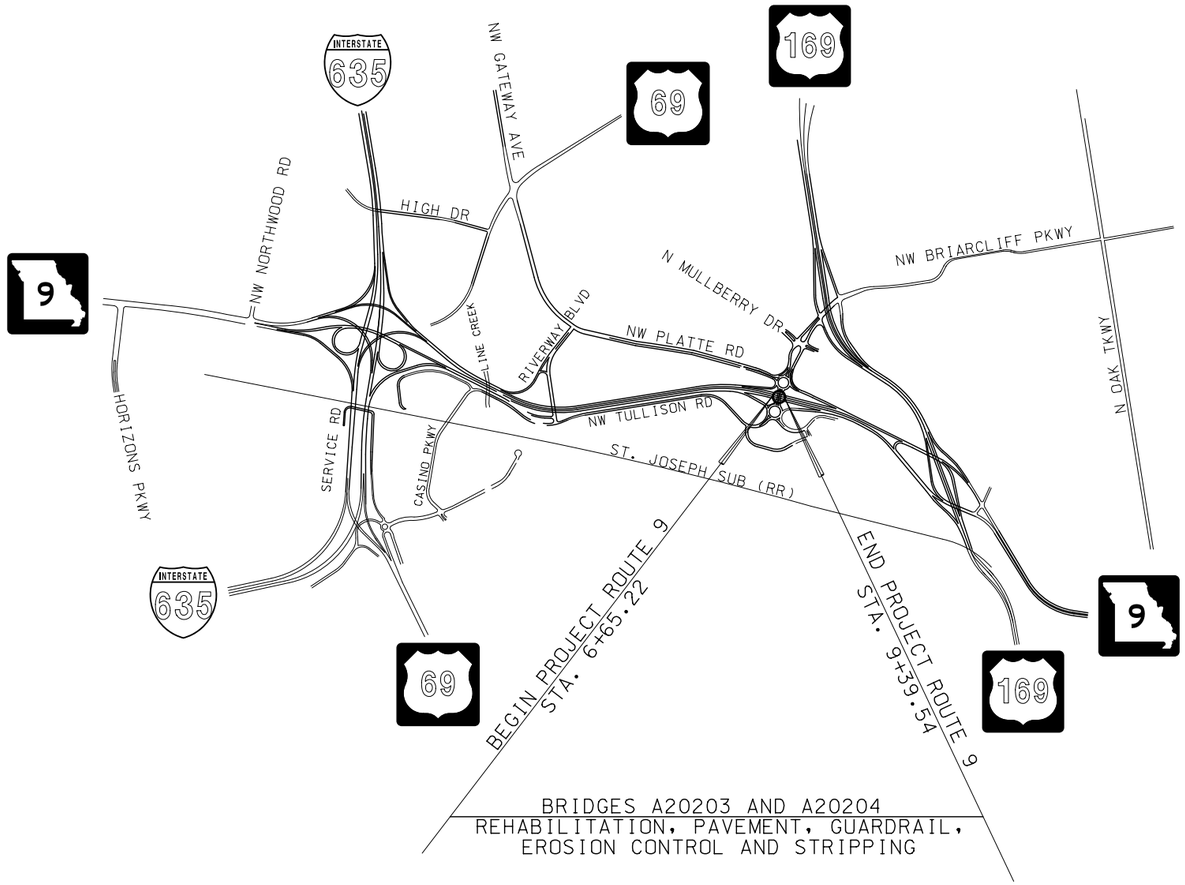
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

PLANS FOR PROPOSED STATE HIGHWAY CLAY COUNTY

SECTION 10, TOWNSHIP 50N, RANGE 33W

NOT TO SCALE

KEY MAP
LOCATION OF CLAY COUNTY



BRIDGES A20203 AND A20204
REHABILITATION, PAVEMENT, GUARDRAIL,
EROSION CONTROL AND STRIPPING

DESIGN DESIGNATION

A.A.D.T. - 2024 = 6610 (NB), 6713 (SB)
A.A.D.T. - 2044 = 8066 (NB), 8192 (SB)
D.H.V. = 12.0%
T = 5.7%
V = 55 M.P.H.
D = 50% (NB), 50% (SB)
FUNCTIONAL CLASSIFICATION- EXPRESSWAY

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

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) (1 SHEET)	2
QUANTITIES (QU) (5 SHEETS)	3
PLAN-PROFILE (PP)	4
REFERENCE POINTS (RP)	5
COORDINATE POINTS (CP)	6
TRAFFIC CONTROL SHEETS (TC)	7-35
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BRIDGE DRAWINGS (B)	
A20203	1-10
A20204	1-10

LENGTH OF PROJECT

ROUTE 9
BEGINNING OF PROJECT STATION 6+65.22
END OF PROJECT STATION 9+39.54

APPARENT LENGTH 275 FEET

EQUATIONS AND EXCEPTIONS:

TOTAL CORRECTIONS 0 FEET
NET LENGTH OF PROJECT 275 FEET
STATE LENGTH 0.057 MILES

FOR INFORMATION ONLY
ESTIMATED DISTURBED ACRES 0.00 ACRES

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
10/28/2024 10:39:12 AM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
10/28/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	1

COUNTY
CLAY

JOB NO.
J4S3496

CONTRACT ID.

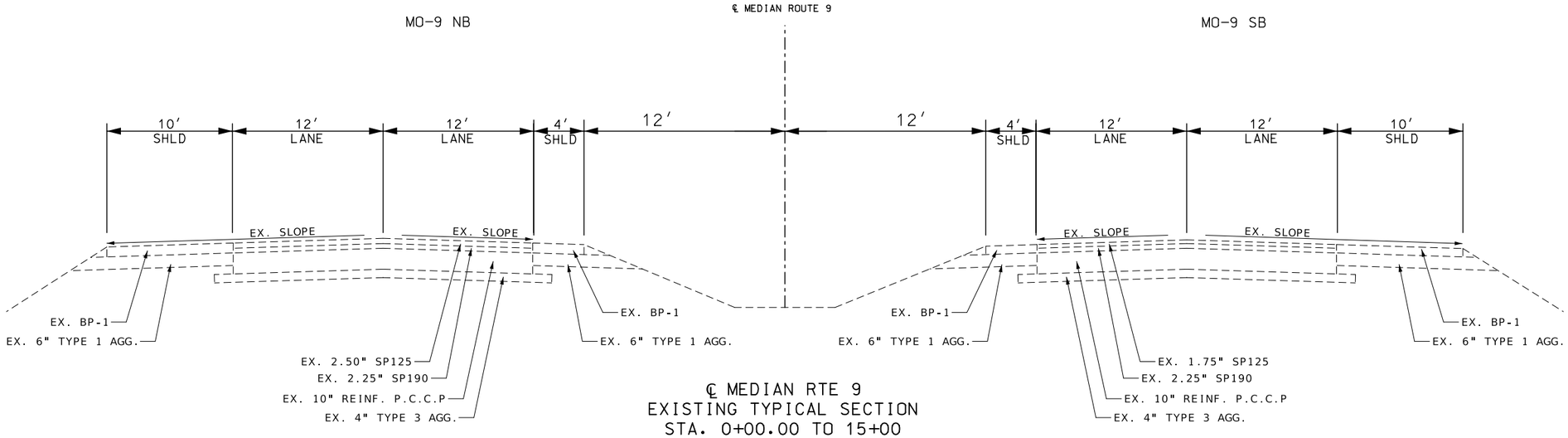
PROJECT NO.

BRIDGE NO.

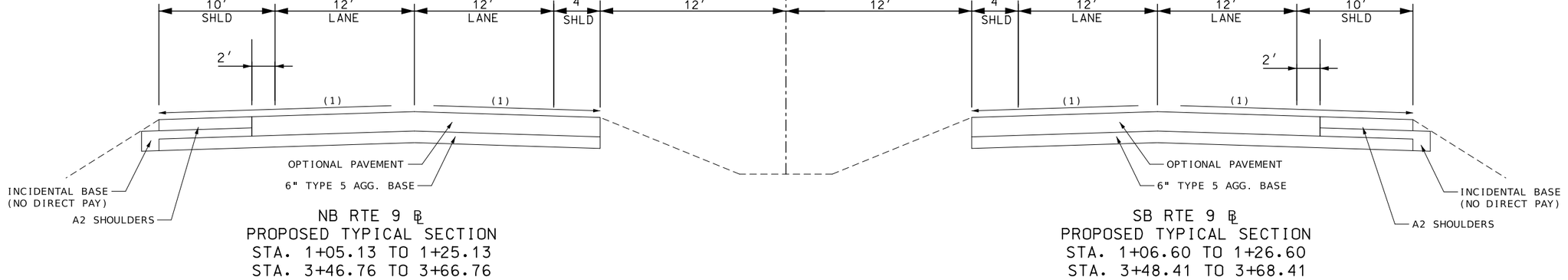
DESCRIPTION	DATE

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

TITLE SHEET



℄ MEDIAN RTE 9
EXISTING TYPICAL SECTION
STA. 0+00.00 TO 15+00



NB RTE 9 ℄
PROPOSED TYPICAL SECTION
STA. 1+05.13 TO 1+25.13
STA. 3+46.76 TO 3+66.76

SB RTE 9 ℄
PROPOSED TYPICAL SECTION
STA. 1+06.60 TO 1+26.60
STA. 3+48.41 TO 3+68.41

ESTIMATE FACTORS

FOR INFORMATION PURPOSES ONLY	
BP-1 W/ PG64-22	1.984 TON/YD^3
BB W/ PG64-22	1.997 TON/YD^3

NOTE: MATCH EXISTING SLOPE

OPTIONAL PAVEMENT (MAINLINE)

10.0" HMA	8.5" JPCP
2" BP-1 W/ PG 64-22 OVER 8" BB W/ PG 64-22	15 FT. JOINTS AND 1¼" DOWELS

SHOULDER PAVEMENT

A2 SHOULDERS
SEE STD PLAN 401.00C

NOT TO SCALE

TYPICAL SECTION SHEET
SHEET 1 OF 1

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
Heather R. Barrows
10/18/2024 1:15:38 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
10/17/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	2

COUNTY
CLAY

JOB NO.
J4S3496

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)

REMOVAL OF IMPROVEMENTS

PLAN SHEET NO.	ALIGNMENT	BEG STA	END STA	LOCATION	DESCRIPTION
4	BL_NB_RTE9_96	0+98.81	1+48.81	LT.	50 L.F. EXIST. GUARDRAIL
4	BL_NB_RTE9_96	3+22.80	3+72.80	RT.	50 L.F. EXIST. GUARDRAIL
4	BL_NB_RTE9_96	3+22.94	3+72.94	LT.	50 L.F. EXIST. GUARDRAIL
4	BL_SB_RTE9_96	1+00.33	1+50.33	LT.	50 L.F. EXIST. GUARDRAIL
4	BL_SB_RTE9_96	1+00.34	1+50.34	RT.	50 L.F. EXIST. GUARDRAIL
4	BL_SB_RTE9_96	3+24.63	3+74.63	RT.	50 L.F. EXIST. GUARDRAIL
4	BL_SB_RTE9_96	1+05.13	-	LT. & RT.	37.7 L.F. SAW CUT
4	BL_NB_RTE9_96	1+05.13	1+40.13	LT. & RT.	146 S.Y. EXIST. CONCRETE PVMT.
4	BL_NB_RTE9_96	1+40.13	1+60.13	LT. & RT.	93 S.Y. EXIST. BRIDGE APPR SLAB
4	BL_NB_RTE9_96	3+11.76	3+31.76	LT. & RT.	96 S.Y. EXIST. BRIDGE APPR SLAB
4	BL_NB_RTE9_96	3+31.76	3+66.76	LT. & RT.	147 S.Y. EXIST. CONCRETE PVMT.
4	BL_NB_RTE9_96	3+66.76	-	LT. & RT.	37.5 L.F. SAW CUT
4	BL_SB_RTE9_96	1+06.60	-	LT. & RT.	37.1 L.F. SAW CUT
4	BL_SB_RTE9_96	1+06.60	1+41.60	LT. & RT.	148 S.Y. EXIST. CONCRETE PVMT.
4	BL_SB_RTE9_96	1+41.60	1+61.60	LT. & RT.	95 S.Y. EXIST. BRIDGE APPR SLAB
4	BL_SB_RTE9_96	3+13.41	3+33.41	LT. & RT.	97 S.Y. EXIST. BRIDGE APPR SLAB
4	BL_SB_RTE9_96	3+33.41	3+68.41	LT. & RT.	147 S.Y. EXIST. CONCRETE PVMT.
4	BL_SB_RTE9_96	3+68.41	-	LT. & RT.	37.6 L.F. SAW CUT
4	BL_NB_RTE9_96	1+29.02	-	LT.	1 EACH EXIST. DRAIN BASIN
4	BL_NB_RTE9_96	1+31.29	-	LT.	22 L.F. EXIST. 10" PIPE
4	BL_NB_RTE9_96	1+28.83	-	RT.	1 EACH EXIST. DRAIN BASIN
4	BL_NB_RTE9_96	1+31.35	-	RT.	8 L.F. EXIST. 10" PIPE
4	BL_NB_RTE9_96	3+22.61	-	LT.	1 EACH EXIST. DRAIN BASIN
4	BL_NB_RTE9_96	3+39.17	-	LT.	18 L.F. EXIST. 10" PIPE
4	BL_NB_RTE9_96	3+22.79	-	RT.	1 EACH EXIST. DRAIN BASIN
4	BL_NB_RTE9_96	3+39.17	-	RT.	8 L.F. EXIST. 10" PIPE
4	BL_SB_RTE9_96	1+30.55	-	LT.	1 EACH EXIST. DRAIN BASIN
4	BL_SB_RTE9_96	1+33.13	-	LT.	8 L.F. EXIST. 10" PIPE
4	BL_SB_RTE9_96	1+30.73	-	RT.	1 EACH EXIST. DRAIN BASIN
4	BL_SB_RTE9_96	1+33.14	-	RT.	18 L.F. EXIST. 10" PIPE
4	BL_SB_RTE9_96	3+24.46	-	LT.	1 EACH EXIST. DRAIN BASIN
4	BL_SB_RTE9_96	3+41.02	-	LT.	8 L.F. EXIST. 10" PIPE
4	BL_SB_RTE9_96	3+24.18	-	RT.	1 EACH EXIST. DRAIN BASIN
4	BL_SB_RTE9_96	3+40.91	-	RT.	39 L.F. EXIST. 10" PIPE
4	BL_SB_RTE9_96	3+48.41	3+68.41	LT.	20 L.F. GUARD CABLE
4	BL_SB_RTE9_96	7+90.51	-	LT.	14 S.F. SIGN
4	BL_SB_RTE9_96	8+25.29	-	RT.	14 S.F. SIGN
				PAY TOTALS	1 LUMP SUM

MOBILIZATION

QUANTITY	1 LUMP SUM

PAVEMENT

PLAN SHEET NO.	BEGIN STATION	END STATION	ALIGNMENT	LOCATION	LENGTH L.F.	WIDTH L.F.	OPTIONAL PAVEMENT S.Y.	A2 SHOULDERS S.Y.	TYPE 5 AGG. FOR BASE (6 IN. THICK) S.Y.	CONCRETE APPROACH PAVEMENT S.Y.	LINEAR GRADING CLASS 1 STA.	SUBGRADE COMPACTION (6 IN. DEPTH) STA.	OPTIONAL SHOULDER RUMBLE STRIP STA	REMARKS
4	1+05.13	1+25.13	BL_NB_RTE9_96	LT. & RT.	20	VARIES	66.3	17.8	84.1		0.20	0.2	0.4	TIE INTO EXISTING PAVEMENT
4	1+25.13	1+40.13	BL_NB_RTE9_96	LT. & RT.	15	38				63.3	0.15	0.2		CONCRETE APPROACH
4	3+31.76	3+46.76	BL_NB_RTE9_96	LT. & RT.	15	38				63.3	0.15	0.2		CONCRETE APPROACH
4	3+46.76	3+66.76	BL_NB_RTE9_96	LT. & RT.	20	VARIES	62.2	21.7	83.9		0.20	0.2	0.4	TIE INTO EXISTING PAVEMENT
4	1+06.60	1+26.60	BL_SB_RTE9_96	LT. & RT.	20	VARIES	66.4	17.0	83.4		0.20	0.2	0.4	TIE INTO EXISTING PAVEMENT
4	1+26.60	1+41.60	BL_SB_RTE9_96	LT. & RT.	15	38				63.3	0.15	0.2		CONCRETE APPROACH
4	3+33.41	3+48.41	BL_SB_RTE9_96	LT. & RT.	15	38				63.3	0.15	0.2		CONCRETE APPROACH
4	3+48.41	3+68.41	BL_SB_RTE9_96	LT. & RT.	20	VARIES	66.2	17.8	84.0		0.20	0.2	0.4	TIE INTO EXISTING PAVEMENT
						SUBTOTALS	261.1	74.3	335.4	253.2	1.40	1.6	1.6	
						PAY TOTALS	261.1	75.0	335.4	253.2	1.40	2.0	1.6	

SUMMARY OF QUANTITIES
SHEET 1 OF 5

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER

11/25/2024 9:03:36 AM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
11/25/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	3

COUNTY
CLAY

JOB NO.
J4S3496

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)

TEMPORARY EROSION CONTROL

PLAN SHEET NO.	ALIGNMENT	STATION	STATION	LOCATION	SILT FENCE L.F.	ROCK DITCH CHECK L.F.	ALT DITCH CHECK L.F.	SEDIMENT REMOVAL C.Y.	CURB INLET CHECK EACH	REMARKS
36	C/L MEDIAN ROUTE 9	5+90.00	6+90.00	RT./LT.		65.2		2.0		
36	C/L MEDIAN ROUTE 9	9+15.00	10+15.00	RT./LT.		64.0		2.0		
36	C/L MEDIAN ROUTE 9	6+64.00	6+94.00	RT.			94.4	3.0		
36	C/L MEDIAN ROUTE 9	7+35.00	7+35.00	LT.			10.4	1.0		
36	C/L MEDIAN ROUTE 9	8+70.00	8+70.00	RT.			10.4	1.0		
36	C/L MEDIAN ROUTE 9	8+85.00	10+35.00	RT.			43.7	2.0		
36	C/L MEDIAN ROUTE 9	8+65.00	10+05.00	LT.			47.5	2.0		
36	C/L MEDIAN ROUTE 9	0+89.02	1+97.39	LT.	154.6			1.5		
36	C/L MEDIAN ROUTE 9	0+90.70	1+98.99	RT.	199.4			2.0		
36	C/L MEDIAN ROUTE 9	2+70.71	3+82.91	LT.	178.5			1.8		
36	C/L MEDIAN ROUTE 9	2+74.62	3+84.62	RT.	173.9			1.7		
36	C/L MEDIAN ROUTE 9	7+77.53	8+37.05	RT./LT.					4.0	UNDER BRIDGES A2020 ON BRIARCLIFF PKWY
				SUBTOTALS	706.4	129.2	206.4	13.0		
				PAYTOTALS	707.0	130.0	207.0	13.0		

PERMANENT SIGNING

PLAN SHEET NO.	ALIGNMENT	STATION	LOCATION	SH-FLAT SHEET SF	REMARKS
4 & 37	BL_SB_RTE9_96	2+60.38	RT.	14.0	① OVERHEAD LOW CLEARANCE (ATTACH TO BRIDGE)
4 & 37	BL_NB_RTE9_96	2+23.91	LT.	14.0	① OVERHEAD LOW CLEARANCE (ATTACH TO BRIDGE)
			SUBTOTALS	28.0	
			PAYTOTALS	28	

NOTE: SEE BRIDGE PLANS FOR SIGN BRACKET DESIGN

PERMANENT PAVEMENT MARKING (STRIPING)

PLAN SHEET NO.	BEG. STA	END STA	ALIGNMENT	HIGH BUILD WATERBORNE PAINT (TYPE L BEAD) 6" SOLID YELLOW L.F.	6" SOLID WHITE L.F.	6" INTERMITTENT WHITE L.F.	12" DOTTED WHITE L.F.	REMARKS
4	1+05.1	3+66.8	BL_NB_RTE9_96	261.7	261.7	65.4		
4	1+06.6	3+68.4	BL_SB_RTE9_96	261.8	261.8	65.5		
17	-	-	NB US 69 ON-RAMP TO NB I-635				105.0	REMOVED FOR RAMP CLOSURE
			SUBTOTALS	523.5	523.5	130.9	105.0	
			PAY TOTALS	524	655		105	

SUMMARY OF QUANTITIES
SHEET 2 OF 5

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
Heather R. Barrows
11/25/2024 9:04:22 AM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED 11/25/2024
ROUTE 9 | STATE MO
DISTRICT KC | SHEET NO. 3
COUNTY CLAY
JOB NO. J4S3496
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)

MGS GUARDRAIL AND GUARDCABLE

PLAN SHEET NO.	BEG STA	END STA	ALIGNMENT	STRUCTURE	LOCATION	LENGTH L.F.	MGS GUARDRAIL L.F.	MGS GUARDRAIL 8' POST 6'-3" SPACING L.F.	MGS BRIDGE APPROACH TRANS. SECT. (REGULAR/NO CURB) EACH	MISC. SHAPING SLOPES CLASS III 100 FT.	GUARDCABLE ANCHOR ASSEMBLY EA	REMARKS
4	0+98.81	1+48.81	BL_NB_RTE9_96	A2020	LT.	50.0	12.5		1	1		
4	3+22.80	3+72.80	BL_NB_RTE9_96	A2020	RT.	50.0	12.5		1	1		
4	3+22.94	3+72.94	BL_NB_RTE9_96	A2020	LT.	50.0	12.5		1	1		
4	1+00.33	1+50.33	BL_SB_RTE9_96	A2020	LT.	50.0	12.5		1	1		
4	1+00.34	1+50.34	BL_SB_RTE9_96	A2020	RT.	50.0	12.5		1	1		
4	3+24.63	3+74.63	BL_SB_RTE9_96	A2020	RT.	50.0		12.5	1	1		
4	3+68.41	3+68.41	BL_SB_RTE9_96	A2020	RT.	-					1	
						SUBTOTALS	62.5	12.5	6.0	6.0	1.0	
						PAY TOTALS	63	13	6	6	1	

PERMANENT EROSION CONTROL

PLAN SHEET NO.	ALIGNMENT	STATION	STATION	LOCATION	FURNISHING TYPE 2 ROCK BLANKET (2 FT THICK) C.Y.	PLACING TYPE 2 ROCK BLANKET (2 FT THICK) C.Y.	EROSION CONTROL GEOTEXTILE S.Y.	REMARKS
4	C/L MEDIAN ROUTE 9	1+41.60	1+97.5	LT./RT.	629.7	629.7	944.60	
4	C/L MEDIAN ROUTE 9	2+76.17	3+33.45	LT./RT.	665.56	665.56	998.34	
				SUBTOTALS	1295.26	1295.3	1942.94	
				PAYTOTALS	1296.0	1296	1943.0	

NOTE: PLACE TYPE 2 ROCK BLANKET FLUSH WITH EXISTING GROUND LINE

TEMPORARY PAVEMENT MARKING (STRIPING)

PLAN SHEET NO.	ROADWAY	TEMPORARY REMOVABLE MARKING TAPE		PAVMENT MARKING REMOVAL L.F.	REMARKS
		4" SOLID WHITE L.F.	4" SOLID YELLOW L.F.		
11-12	SB RTE 9/SB I-635	637.3	2426.2	3063.5	TEMPORARY EDGE LINE FOR TRAFFIC CONTROL
16-17	NB I-635	3357.2		3462.3	INCLUDES REMOVAL OF PERMANENT DOT. WHITE
22-24	NB RTE 9		2173.8	2173.8	TEMPORARY EDGE LINE FOR TRAFFIC CONTROL
23	NB US 169	419.2		419.2	TEMPORARY EDGE LINE FOR TRAFFIC CONTROL
	SUBTOTALS	4413.7	4600	9118.8	
	PAY TOTALS	4414	4600	9119.0	

SUMMARY OF QUANTITIES
SHEET 3 OF 5

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
11/25/2024 9:05:49 AM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED 11/25/2024
ROUTE 9 | STATE MO
DISTRICT KC | SHEET NO. 3
COUNTY CLAY
JOB NO. J4S3496
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)

EFFECTIVE: 07-01-2024

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL AREA SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NUM.	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	4	64			6A	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	2	32			34	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	2	10			44A	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	25	400			2	ROAD/BRIDGE/RAMP WORK AHEAD
WO20-2	48X48	16.00	7	112			18	DETOUR AHEAD
WO20-3	48X48	16.00	5	80			20	ROAD CLOSED AHEAD
WO20-4	48X48	16.00						ONE LANE ROAD AHEAD
WO20-5	48X48	16.00	2	32			5	RIGHT/CENTER/LEFT LANE CLOSED AHEAD
WO20-5a	48X48	16.00	2	32			5A	2 RIGHT/CENTER/LEFT LANES CLOSED AHEAD
WO20-6a	48X48	16.00	4	64			6	RIGHT/CENTER/LEFT LANE CLOSED
WO20-7a	48X48	16.00						FLAGGER (SYMBOL)
WO21-2	36X36	9.00						FRESH OIL
WO21-5	48X48	16.00	4	64			21	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 NUM.	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	4	40			1	ROAD WORK NEXT XX MILES
GO20-2	48X24	8.00	4	32			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	10	60			54	WORK ZONE (PLAQUE)
MO4-8a	24X18	3.00	2	6			52	END DETOUR
MO4-9L	48X36	12.00	1	12			17L	DETOUR (LEFT)
MO4-9R	48X36	12.00	1	12			17R	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	10	120			4	SPEED LIMIT XX
R3-1	48X48	16.00						NO RIGHT TURN (SYMBOL)
R3-2	48X48	16.00	2	32				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	4	8				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	13	130			29	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				POINT OF PRESENCE
CONST-8	48X36	12.00	4	48				WORK ZONE NO PHONE ZONE
SPECIAL	24X18	3.00	4	48				SIDEWALK CLOSED AHEAD

616-10.05 CONSTRUCTION SIGNS	TOTAL
	1502

616-10.10 RELOCATED SIGNS	TOTAL
	0

ITEM NUMBER	TOTAL QTY	DESCRIPTION
6122008		IMPACT ATTENUATOR 40 MPH (SAND BARRELS)
6122009		IMPACT ATTENUATOR 45 MPH (SAND BARRELS)
6122010		IMPACT ATTENUATOR 50 MPH (SAND BARRELS)
6122012		IMPACT ATTENUATOR 55 MPH (SAND BARRELS)
6122014		IMPACT ATTENUATOR 60 MPH (SAND BARRELS)
6122017		IMPACT ATTENUATOR 65 MPH (SAND BARRELS)
6122019		IMPACT ATTENUATOR 70 MPH (SAND BARRELS)
6122020		REPLACEMENT SAND BARREL
6122030		IMPACT ATTENUATOR (RELOCATION)
6123001		TRUCK MOUNTED ATTENUATOR (TMA)
6161008	6	ADVANCED WARNING RAIL SYSTEM
6161012		BUOYS (BOATS KEEP OUT)
6161013		BUOYS (NO WAKE)
6161014		SPECIAL SIGN ASSEMBLY (BOATS KEEP OUT)
6161025	306	CHANNELIZER (TRIM LINE)
6161030	104	TYPE III MOVEABLE BARRICADE
6161033	55	DIRECTION INDICATOR BARRICADE
6161040	5	FLASHING ARROW PANEL
6161047		TYPE III OBJECT MARKER
6161055	55	SEQUENTIAL FLASHING WARNING LIGHT
6161070		TUBULAR MARKER
6161095		RADAR SPEED ADVISORY SYSTEM
6161096		CHANGEABLE MESSAGE SIGN, COMMISSION FURNISHED/RETAINED
	10	CHANGEABLE MESSAGE SIGN W/O COMM.
6161098A		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
6173602B		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/COMMISSION RETAINED
6174000A		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION
6175010A		RELOCATING TEMPORARY TRAFFIC BARRIER
6176000B		TEMPORARY TRAFFIC BARRIER COMMISSION FURNISHED/RETAINED
6177000B		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION COMMISSION FURNISHED/RETAINED
6208064A		TEMPORARY RAISED PAVEMENT MARKER
9029400		TEMPORARY TRAFFIC SIGNALS
9029401		TEMPORARY TRAFFIC SIGNALS AND LIGHTING
6169902	8	ADA COMPLIANT MOVEABLE BARRICADE

SUMMARY OF QUANTITIES

SHEET 4 OF 5

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
11/25/2024 9:06:40 AM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED: 11/25/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	3

COUNTY: CLAY

JOB NO.: J4S3496

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)

	SIZE IN.	AREA SF	QTY.	TOTAL AREA SF	QTY. RELOC. SF	TOTAL RELOC. AREA SF	DESCRIPTION S.Y.
58A	36x78	19.500	4	78			DETOUR, SOUTH, I-635, STRAIGHT
58B	36x78	19.500	2	39			DETOUR, SOUTH, I-635, RIGHT - 45 DEG. AHEAD
58C	36x78	19.500	2	39			DETOUR, SOUTH, I-635, LEFT - 45 DEG. AHEAD
58D	36x78	19.500	2	39			DETOUR, SOUTH, I-635, RIGHT - 45 DEG.
58E	36x78	19.500	2	39			DETOUR, SOUTH, I-635, LEFT - 45 DEG.
60A	36x78	19.500	5	97.5			DETOUR, NORTH, ROUTE 9, STRAIGHT
60B	36x78	19.500	3	58.5			DETOUR, NORTH, ROUTE 9, RIGHT - 45 DEG. AHEAD
60C	36x78	19.500	2	39			DETOUR, NORTH, ROUTE 9, LEFT - 45 DEG. AHEAD
60D	36x78	19.500	3	58.5			DETOUR, NORTH, ROUTE 9, RIGHT - 45 DEG.
60E	36x78	19.500	2	39			DETOUR, NORTH, ROUTE 9, LEFT - 45 DEG.
62	108x96	72.000	2	144			NORTHBOUND ROUTE 9 CLOSED WEST OF US 169, USE DETOUR
63	96x48	32.000	2	64			NORTHBOUND ROUTE 9 CLOSED 1/2 MILE AHEAD
59A	36x78	19.500	3	58.5			DETOUR, SOUTH, US 169, STRAIGHT
59B	36x78	19.500	2	39			DETOUR, SOUTH, US 169, LEFT - 45 DEG. AHEAD
59C	36x78	19.500	3	58.5			DETOUR, SOUTH, US 169, RIGHT - 45 DEG. AHEAD
59D	36x78	19.500	3	58.5			DETOUR, SOUTH, US 169, RIGHT - 45 DEG.
59E	36x78	19.500	3	58.5			DETOUR, SOUTH, US 169, LEFT - 45 DEG.
61A	36x78	19.500	6	117			DETOUR, SOUTH, ROUTE 9, STRAIGHT
61B	36x78	19.500	2	39			DETOUR, SOUTH, ROUTE 9, LEFT - 45 DEG. AHEAD
61C	36x78	19.500	4	78			DETOUR, SOUTH, ROUTE 9, RIGHT - 45 DEG. AHEAD
61D	36x78	19.500	4	78			DETOUR, SOUTH, ROUTE 9, RIGHT - 45 DEG.
61E	36x78	19.500	3	58.5			DETOUR, SOUTH, ROUTE 9, LEFT - 45 DEG.
64	108x96	72.000	2	144			SOUTHBOUND ROUTE 9 CLOSED EAST OF I-635, USE DETOUR
65	96x48	32.000	3	96			SOUTHBOUND ROUTE 9 CLOSED 1/2 MILE AHEAD

616-10.05 (SHEET 2 OF 2) CONSTRUCTION SIGNS SUBTOTAL	1618
616-10.05 (SHEET 1 OF 2) CONSTRUCTION SIGNS SUBTOTAL	1502
616-10.05 CONSTRUCTION SIGNS PAY TOTAL	3120
616-10.05 RELOCATED SIGNS TOTAL	0

SUMMARY OF QUANTITIES
SHEET 5 OF 5

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER

11/25/2024 9:07:21 AM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
11/25/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	3

COUNTY
CLAY

JOB NO.
J4S3496

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)

BUILD MGS GUARDRAIL
BL NB RTE9 96
STA. 0+98.81 TO 1+11.31 - 12.5 L.F. LT.
STA. 3+60.30 TO 3+72.80 - 12.5 L.F. RT.
STA. 3+60.44 TO 3+72.94 - 12.5 L.F. LT.
BUILD MGS BRIDGE APPROACH SECTION
BL NB RTE9 96
STA. 1+11.31 TO 1+48.81 - 1 EACH, LT.
STA. 3+22.80 TO 3+60.30 - 1 EACH, RT.
STA. 3+22.94 TO 3+60.44 - 1 EACH, LT.

BUILD CONCRETE APPROACH PAVEMENT
BL NB RTE9 96
STA. 1+25.13 TO 1+40.13
STA. 3+31.76 TO 3+46.76

BUILD FULL DEPTH OPTIONAL PAVEMENT
BL NB RTE9 96
STA. 1+05.13 TO 1+25.13
STA. 3+46.76 TO 3+66.76

STRIPING LEGEND
- 6" SOLID YELLOW (S.Y.) HIGH BUILD PAINT, TYPE L BEADS
- 6" INTERMITTENT WHITE (I.W.) HIGH BUILD PAINT, TYPE L BEADS
- 6" SOLID WHITE (S.W.) HIGH BUILD PAINT, TYPE L BEADS

NOTE: 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

RUBBLIZE EXISTING SLOPE PROTECTION: NO DIRECT PAY

15 FT 8 IN
W12-2a
84" x 24"
ATTACH TO BARRIER
BRIDGE A2020 (NB RTE 9)
FACING SB BRIARCLIFF PKWY
CENTER OF LANES

START STA. 0+00.00

(R) EX. 10" PIPE
(R) EX. DRAIN BASIN
(R) 50 L.F. OF GUARDRAIL
RUBBLIZE EXISTING SLOPE PROTECTION: NO DIRECT PAY
BL_NB_RTE9_96
NB ROUTE 9
REHAB BR. A20204
NW BRIARCLIFF PKWY
DND
10
END STA. 4+73.08
(R) EX. 50' OF GUARDRAIL
(R) EX. DRAIN BASIN
(R) EX. 10" PIPE
(R) EX. DRAIN BASIN S66°00'32"E
C/L MEDIAN ROUTE 9
(R) 20' OF EX. GUARDCABLE
INSTALL ANCHOR ASSEMBLY
BL_SB_RTE9_96
SB ROUTE 9
REHAB BR. A20203
(R) 50 L.F. OF GUARDRAIL
(R) EX. DRAIN BASIN
(R) EX. 10" PIPE

BUILD CONCRETE APPROACH PAVEMENT
BL SB RTE9 96
STA. 1+26.60 TO 1+41.60
STA. 3+33.41 TO 3+48.41

BUILD FULL DEPTH OPTIONAL PAVEMENT
BL SB RTE9 96
STA. 1+06.60 TO 1+26.60
STA. 3+48.41 TO 3+68.41

BUILD MGS GUARDRAIL
BL SB RTE9 96
STA. 1+00.34 TO 1+12.83 - 12.5 L.F, LT.
STA. 1+00.34 TO 1+12.83 - 12.5 L.F, RT.
BUILD MGS (8' POSTS) GUARDRAIL
STA. 3+62.12 TO 3+74.62 - 12.5 L.F, RT.
BUILD MGS BRIDGE APPROACH SECTION
BL SB RTE9 96
STA. 1+12.83 TO 1+50.33 - 1 EACH, LT.
STA. 1+12.83 TO 1+50.33 - 1 EACH, RT.
STA. 3+24.63 TO 3+62.13 - 1 EACH, RT.

15 FT 8 IN
W12-2a
84" x 24"
ATTACH TO BARRIER
BRIDGE A2020 (SB RTE 9)
FACING NB BRIARCLIFF PKWY
CENTER OF LANES

SCALE
0 20 40 60

OPTIONAL PAVEMENT WITH A2 SHOULDERS
CONCRETE APPRACH PAVEMENT
BRIDGE APPROACH SLAB
TYPE II ROCK BLANKET (2' THICK)

PLAN SHEET
SHEET 1 OF 1

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
Heather R. Barrows
10/18/2024 1:38:13 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
10/17/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	4

COUNTY
CLAY

JOB NO.
J4S3496

CONTRACT ID.

PROJECT NO.

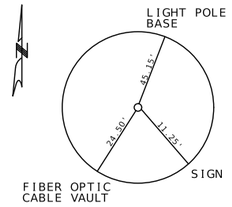
BRIDGE NO.

DESCRIPTION	DATE

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

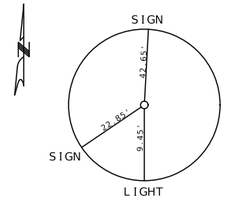
REFERENCE POINTS:

CONTROL POINT #1



CP#1 - SET 5/8" x 24" REBAR
W/ MODOT CONTROL CAP
NORTHING = 1,091,900.093
EASTING = 2,760,683.349
ELEVATION = 752.762

CONTROL POINT #2



CP#2 - SET 5/8" x 24" REBAR
W/ PINK CONTROL CAP
NORTHING = 1,091,897.705
EASTING = 2,760,911.224
ELEVATION = 747.611

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER

10/21/2024 9:18:00 AM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
10/21/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	5

COUNTY
CLAY

JOB NO.
J4S3496

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)

COORDINATE POINT LISTING

SHEET NO	STATION	LOCATION	OFFSET (USFT)	MODIFIED STATE PLANE (GROUND) NORTHING (US SURVEY FT)	EASTING (US SURVEY FT)	ELEVATION (US SURVEY FT)	DESCRIPTION	GPK POINT ID
PROJECT CONTROL POINTS								
-	0+34.73	SB ROUTE 9 BL	185.24' RT.	1,091,900.09	2,760,683.35	752.76	5/8" REBAR w/ MODOT CONTROL CAP SET 6" DEEP	CP#1
-	2+44.03	SB ROUTE 9 BL	94.94' RT.	1,091,897.71	2,760,911.22	747.61	5/8" REBAR w/ PINK CONTROL CAP	CP#2
ALIGNMENTS								
-	4+62.10	C/L MEDIAN ROUTE 9	0	1,092,154.59	2,760,645.85	-	P.O.T. - C/L MEDIAN ROUTE 9	
-	15+00.00	C/L MEDIAN ROUTE 9	0	1,091,732.59	2,761,594.09	-	P.O.T. - C/L MEDIAN ROUTE 9	
4	0+00.00	NB ROUTE 9 BL	0	1,092,141.66	2,760,754.47	-	P.O.T. - BL_NB_RTE9_96 (BEGIN)	
4	4+73.08	NB ROUTE 9 BL	0	1,091,949.00	2,761,186.54	-	P.O.T. - BL_NB_RTE9_96 (END)	
4	0+00.00	SB ROUTE 9 BL	0	1,092,083.50	2,760,726.73	-	P.O.T. - BL_SB_RTE9_96 (BEGIN)	
4	4+73.64	SB ROUTE 9 BL	0	1,091,891.31	2,761,159.61	-	P.O.T. - BL_SB_RTE9_96 (END)	

ALL PROJECT COORDINATES HAVE BEEN PROJECTED FROM THE MISSOURI STATE PLANE COORDINATE (SPC) SYSTEM OF 1983 USING AN AVERAGE PROJECT PROJECTION (GRID TO GROUND) FACTOR. TO GET BACK TO STATE PLANE COORDINATES, MULTIPY THE PROJECT COORDINATES BY THE AVERAGE GRID FACTOR AS SHOWN IN THE "REFERENCE CONTROL INFORMATION" PORTION OF THIS TABLE.

PROJECT COORDINATE INFORMATION

COORDINATE SYSTEM	MODIFIED STATE PLANE(GROUND)
HORIZONTAL DATUM	NAD83
VERTICAL DATUM	NAVD88
GEOID MODEL	GEOID18
ELEVATIONS DETERMINED BY	GPS OBSERVATION
PROJECT PROJECTION FACTOR	1.00009901

REFERENCE CONTROL INFORMATION

COORDINATE SYSTEM	MO COORDINATE SYSTEM OF 1983
CONTROL STATION	MO GEOGRAPHIC REFERENCE SYSTEM
DESIGNATION	PL-19
CORS_ID	XX
PID	165019
LATITUDE	39°11'34.56360"
LONGITUDE	094°36'55.61883
NORTHING (M)	335873.5350
EASTING (M)	840026.8120
ZONE	WEST
PROJECT AVERAGE GRID FACTOR	0.99990100

EXAMPLE OF PROJECT COORDINATE TO S.P.C.

PROJECT NORTHING X AVERAGE GRID FACTOR
= STATE PLANE NORTHING
PROJECT EASTING X AVERAGE GRID FACTOR
= STATE PLANE EASTING

EXAMPLE: CONTROL POINT #1
N 1091900.09 X 0.999901 = N 1091791.992
E 2760683.35 X 0.999901 = E 2760410.042

LINEAR UNIT CONVERSION

1 METER = 3.280833333 US SURVEY FEET (USFT)

COORDINATE POINT SHEET
SHEET 1 OF 1

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER

10/18/2024 1:54:46 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
10/17/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	6

COUNTY
CLAY

JOB NO.
J4S3496

CONTRACT ID.

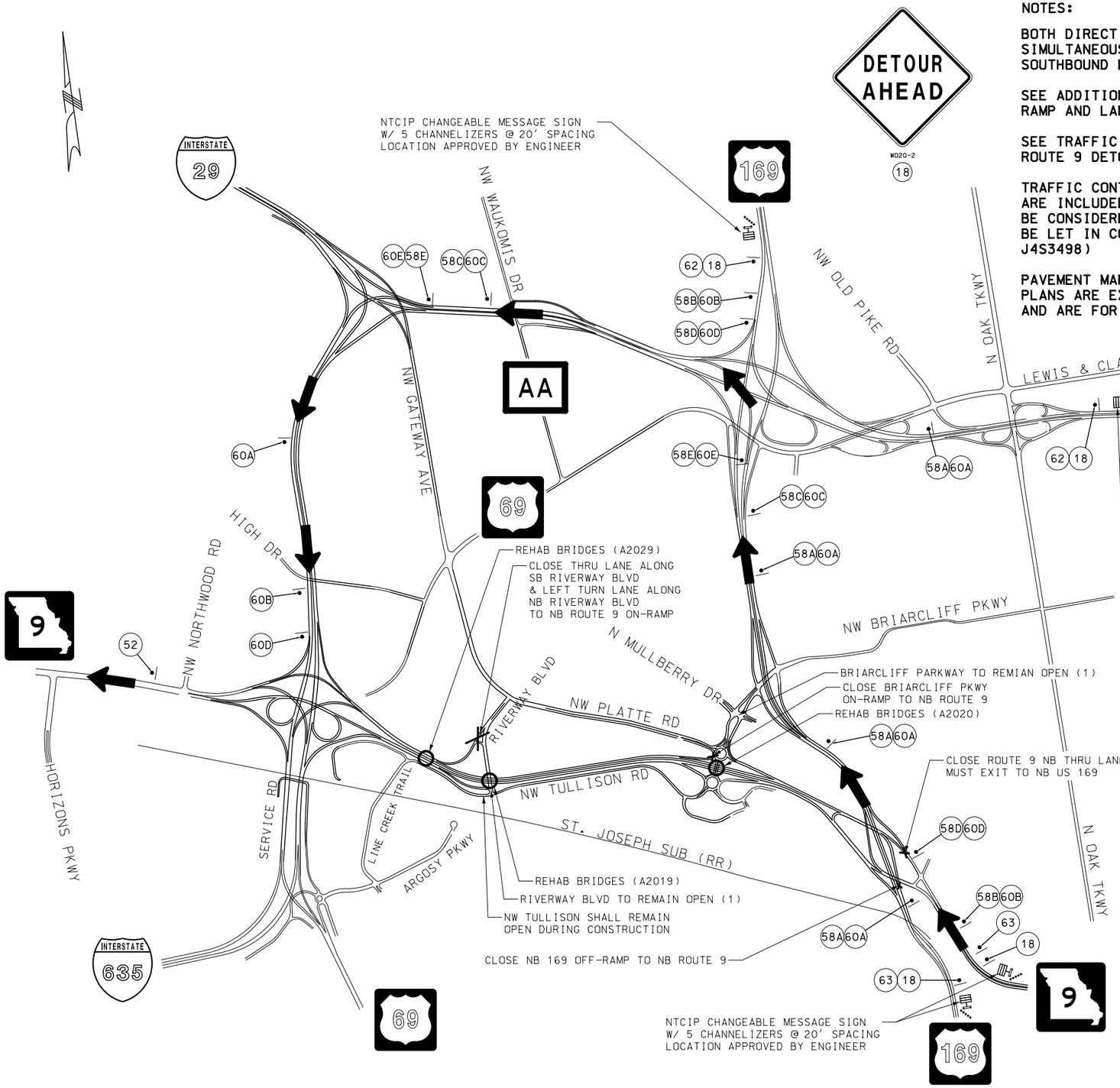
PROJECT NO.

BRIDGE NO.

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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



NOTES:

BOTH DIRECTIONS OF ROUTE 9 SHALL BE CLOSED SIMULTANEOUSLY, USE ROUTE 9 NORTHBOUND AND SOUTHBOUND DETOUR SHEETS IN COMBINATION

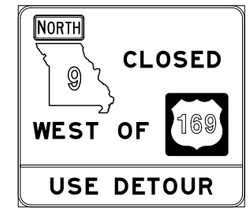
SEE ADDITIONAL TRAFFIC CONTROL SHEETS FOR RAMP AND LANE CLOSURES

SEE TRAFFIC CONTROL SHEET 28 FOR NB ROUTE 9 DETOUR SIGN DETAILS

TRAFFIC CONTROL QUANTITIES AND PLAN SHEETS ARE INCLUDED IN PROJECT J4S3496 AND ARE TO BE CONSIDERED INCLUSIVE FOR ALL PROJECTS TO BE LET IN COMBINATION (J4S3496, J4S3497, & J4S3498)

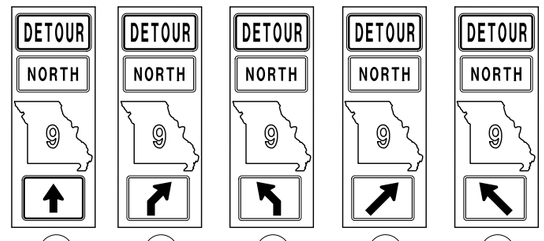
PAVEMENT MARKING SHOWN ON TRAFFIC CONTROL PLANS ARE EXISTING UNLESS OTHERWISE NOTED AND ARE FOR INFORMATION ONLY

MO4-8a
52

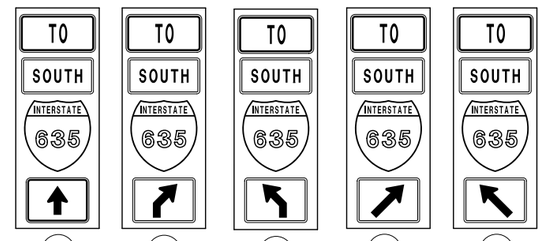


62

63



60A 60B 60C 60D 60E



58A 58B 58C 58D 58E

(1) RIVERWAY BLVD & BRIARCLIFF PKWY SHALL REMAIN OPEN EXCEPT FOR SHORT DURATION DURING BRIDGE DEMOLITION & CONSTRUCTION AS APPROVED BY THE ENGINERR

NOT TO SCALE

NORTHBOUND ROUTE 9
DETOUR SHEET
TRAFFIC CONTROL
SHEET 1 OF 29

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
10/18/2024 1:56:35 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
10/17/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	7

COUNTY
CLAY/PLATTE

JOB NO.
J4S3496

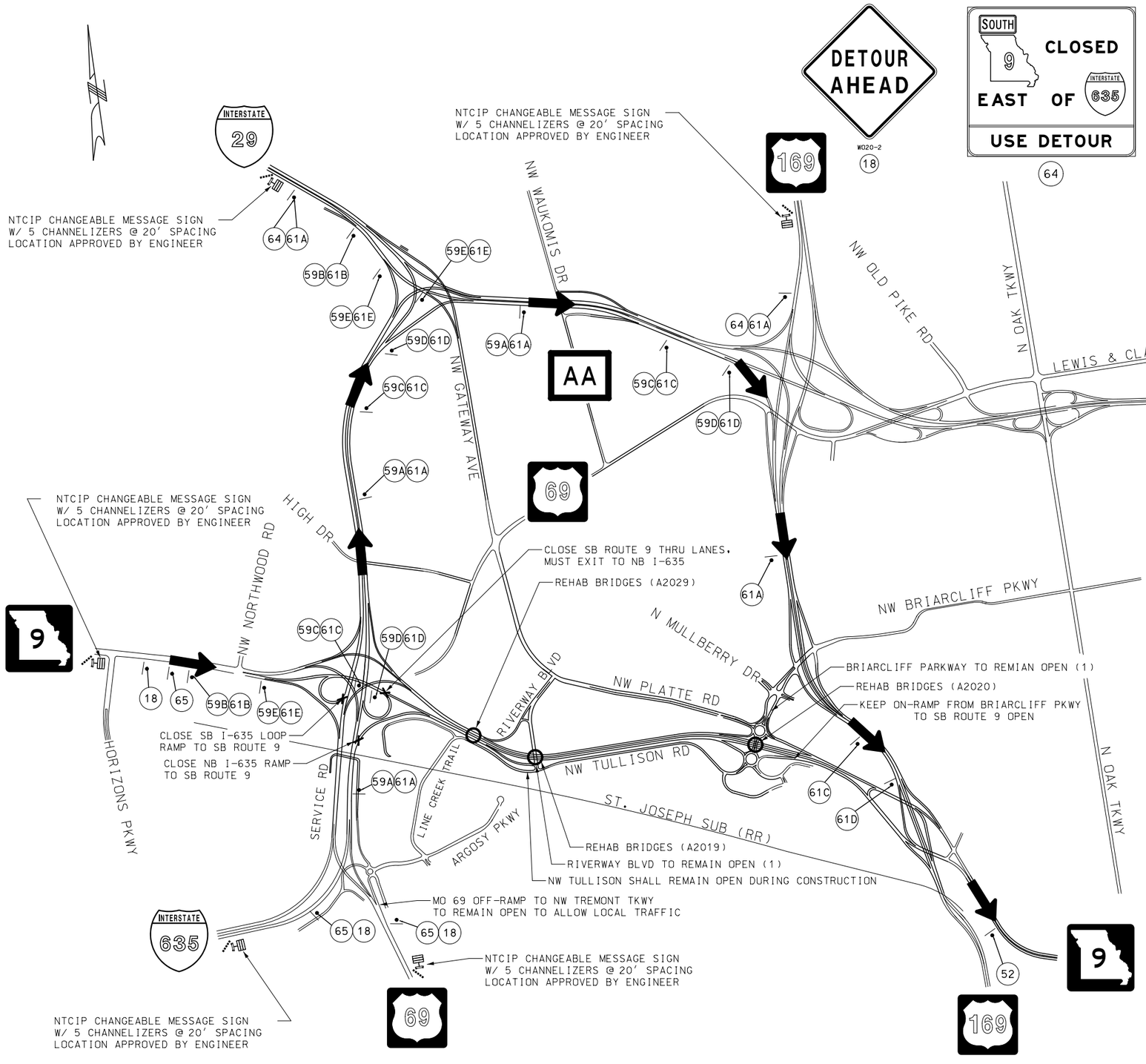
CONTRACT ID.

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)



NOTES:

BOTH DIRECTIONS OF ROUTE 9 SHALL BE CLOSED SIMULTANEOUSLY, USE ROUTE 9 NORTHBOUND AND SOUTHBOUND DETOUR SHEETS IN COMBINATION

SEE ADDITIONAL TRAFFIC CONTROL SHEETS FOR RAMP AND LANE CLOSURES

SEE TRAFFIC CONTROL SHEET 29 FOR SB ROUTE 9 DETOUR SIGN DETAILS

TRAFFIC CONTROL QUANTITIES AND PLAN SHEETS ARE INCLUDED IN PROJECT J4S3496 AND ARE TO BE CONSIDERED INCLUSIVE FOR ALL PROJECTS TO BE LET IN COMBINATION (J4S3496, J4S3497, & J4S3498)

PAVEMENT MARKING SHOWN ON TRAFFIC CONTROL PLANS ARE EXISTING UNLESS OTHERWISE NOTED AND ARE FOR INFORMATION ONLY

(1) RIVERWAY BLVD & BRIARCLIFF PKWY SHALL REMAIN OPEN EXCEPT FOR SHORT DURATION DURING BRIDGE DEMOLITION & CONSTRUCTION AS APPROVED BY THE ENGINERR

SOUTHBOUND ROUTE 9
DETOUR SHEET
TRAFFIC CONTROL
SHEET 2 OF 29

NOT TO SCALE

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
10/18/2024 1:57:27 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED: 10/17/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	8

COUNTY: CLAY/PLATTE
JOB NO.: J4S3496
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

Traffic Control Legend, Sign Spacing, Device Spacing, Channelizing Taper Lengths And Recommended Maximum Speed Reductions

SIGN SPACING FOR ADVANCE SIGN SERIES (1) (2)		
PERMANENT POSTED SPEED MPH	UNDIVIDED HIGHWAYS (S)	DIVIDED HIGHWAYS (S)
0-35	200′	200′
40-45	350′	500′
50-55	500′	1000′
60-70	1000′	SA - 1000′ SB - 1500′ SC - 2640′

TAPER LENGTHS AND END TREATMENTS FOR CONCRETE BARRIER				
PERMANENT POSTED SPEED MPH	MINIMUM LANE TAPER LENGTH (3) 10′	11′	12′	END TREATMENT (4)
<40	160′	168′	176′	BARRIER HEIGHT TRANSITION
>40	160′	168′	176′	APPROVED CRASH CUSHION

TAPER LENGTHS AND SPACING FOR CHANNELIZERS							
PERMANENT POSTED SPEED MPH	MINIMUM LANE TAPER LENGTH (L) (3) 10′	11′	12′	MINIMUM SHOULDER TAPER LENGTH (T1) BASED ON 10′ SHOULDER	BUFFER LENGTH FT	MAXIMUM CHANNELIZER SPACING THROUGH TAPER	THROUGH WORK AREA
0-35	205′	225′	245′	70′	280′	35′	40′
40-45	450′	495′	540′	150′	400′	40′	80′
50-55	550′	605′	660′	185′	560′	50′	80′
60-70	700′	770′	840′	235′	840′	60′	120′

THE SA DIMENSION IS THE DISTANCE FROM THE TRANSITION OR POINT OF RESTRICTION TO THE FIRST SIGN.

THE SB DIMENSION IS THE DISTANCE BETWEEN THE FIRST AND SECOND SIGNS.

THE SC DIMENSION IS THE DISTANCE BETWEEN THE SECOND AND THIRD SIGNS.

(THE "FIRST SIGN" IS THE SIGN IN A THREE-SIGN SERIES THAT IS CLOSEST TO THE TEMPORARY TRAFFIC CONTROL ZONE. THE "THIRD SIGN" IS THE SIGN THAT IS FURTHEST UPSTREAM FROM THE TEMPORARY TRAFFIC CONTROL ZONE)

DETAILS NOTES:

(1) SPACING BETWEEN SIGNS AND SPACING BETWEEN LAST SIGN AND FLAGGER, BEGINNING OF TAPER, OF SIGNED CONDITION.

(2) SPACING MAY BE ADJUSTED AS NECESSARY TO MEET FIELD CONDITIONS.

(3) TAPER LENGTHS SHOWN INCLUDE LENGTH REQUIRED FOR LANE AND 10' SHOULDER

(4) CONCRETE BARRIER MAY BE INSTALLED AT 8:1 FLARE RATE FROM THE SHOULDER POINT OF THE LIMITS OF THE CLEAR ZONE WHERE THE SIDE SLOPE IS 6:1 OR FLATTER

TAPER LENGTH (L)

L = W X P FOR 40 MPH OR MORE

$L = \frac{WP^2}{60}$ FOR 35 MPH OR LESS

L = TAPER LENGTH IN FEET

W = LATERAL SHIFT IN FEET

P = POSTED SPEED PRIOR TO ROAD WORK IN MPH

LEGEND NOTE:

THE PROTECTIVE VEHICLE SIGN SHALL BE MOUNTED AT A RECOMMENDED HEIGHT OF 48 IN. ABOVE THE ROAD SURFACE.

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- FLAGGER
- CHANNELIZER
- PROTECTIVE VEHICLE WITH WORK SIGN, FLASHING ARROW PANEL AND REAR-MOUNTED IMPACT ATTENUATOR UNIT.
- FLASHING ARROW PANEL
- CHANGEABLE MESSAGE BOARD
- BARRICADE

GENERAL NOTES:

1. SEE STANDARD PLAN 616.10 FOR DETAILS AND ITEMS NOT SHOWN.
2. EXISTING SIGNS SHALL BE COVERED DURING WORKING HOURS ONLY IF IN CONFLICT WITH TRAFFIC CONTROL PLANS.
3. NO DIRECT PAYMENT WILL BE MADE FOR RELOCATING, COVERING, UNCOVERING OR REMOVING SIGNS.
4. CONES ALLOWABLE FOR DAYTIME OPERATIONS ON MINOR ROUTES ONLY.
5. LOCATE FLASHING ARROW PANEL AT BEGINNING OF TAPER WHEN FEASIBLE, ARROW PANELS ARE ALWAYS LOCATED BEHIND CHANNELIZERS OR CONES.
6. TRAFFIC CONTROL QUANTITIES AND PLAN SHEETS ARE INCLUDED IN PROJECT J4S3496 AND ARE TO BE CONSIDERED INCLUSIVE FOR ALL PROJECTS TO BE LET IN COMBINATION (J4S3496, J4S3497, & J4S3498).

RECOMMENDED MAXIMUM SPEED REDUCTIONS	
ACTIVITY (I.E. WORKERS, EQUIPMENT OR MATERIAL) LOCATION	RECOMMENDED WORK ZONE SPEED REDUCTION (WHEN APPLICABLE)
10 FT. BEYOND EDGE OF TRAVELWAY TO EDGE OF RIGHT OF WAY	NO SPEED REDUCTION
IN TRAFFIC LANE OR WITHIN 10FT. OF THE TRAFFIC LANE	10 MPH
HEAD-TO-HEAD ON MULTILANE	10 MPH
SPECIAL CIRCUMSTANCES WITHIN A TEMPORARY TRAFFIC CONTROL WORK ZONE MAY WARRANT A LOWER SPEED LIMIT THAN RECOMMENDED ABOVE. ALL SPEED LIMIT REDUCTIONS GREATER THAN 10 MPH SHALL BE DOCUMENTED, SUBMITTED TO AND APPROVED BY THE DISTRICT WORK ZONE COORDINATOR.	

SPACING
TEMPORARY
TRAFFIC CONTROL
SHEET 3 OF 29

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER

10/18/2024 1:58:05 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
10/17/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	9

COUNTY
CLAY/PLATTE

JOB NO.
J4S3496

CONTRACT ID.

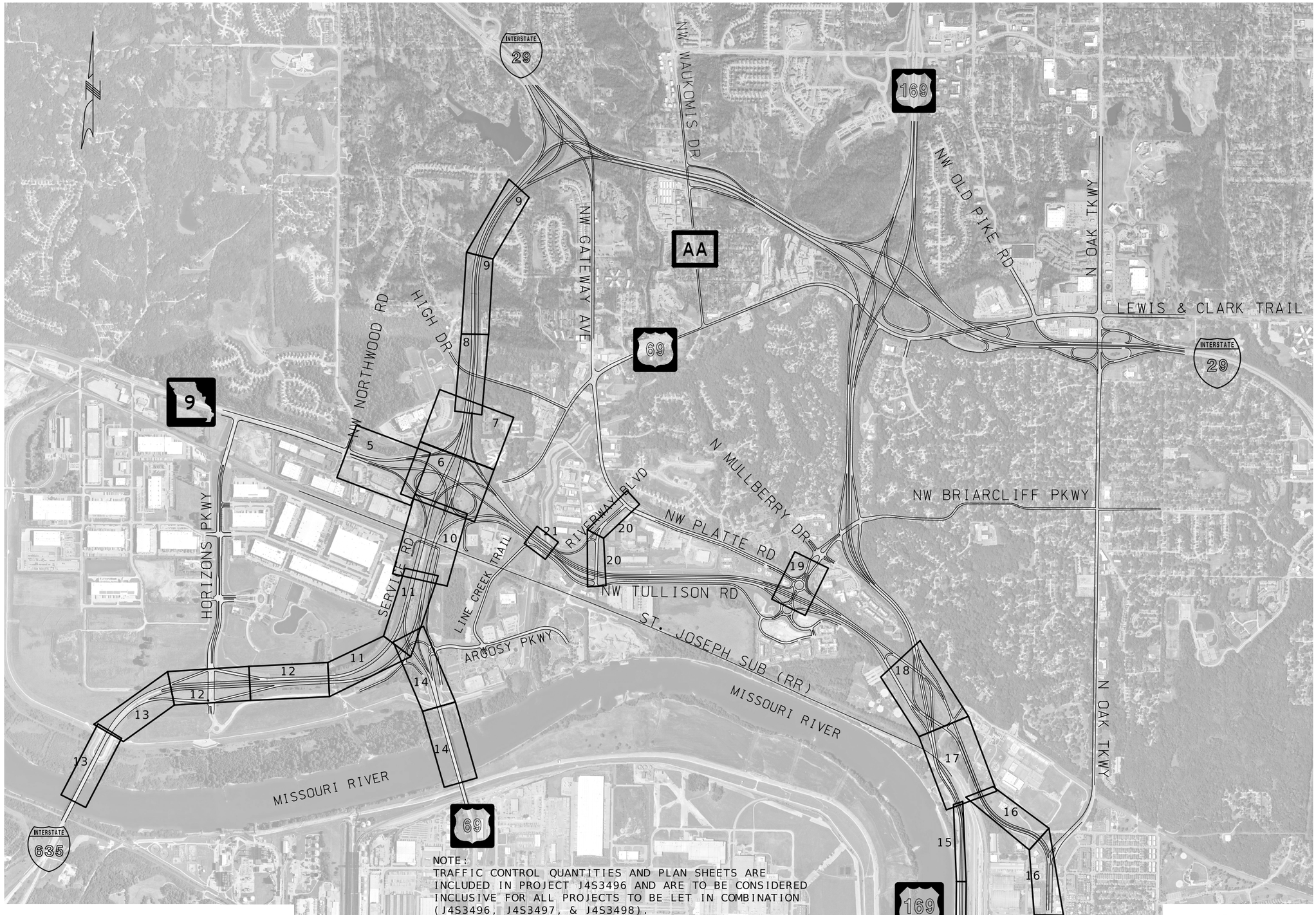
PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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



NOTE:
TRAFFIC CONTROL QUANTITIES AND PLAN SHEETS ARE INCLUDED IN PROJECT J4S3496 AND ARE TO BE CONSIDERED INCLUSIVE FOR ALL PROJECTS TO BE LET IN COMBINATION (J4S3496, J4S3497, & J4S3498).

PAVEMENT MARKING SHOWN ON TRAFFIC CONTROL PLANS ARE EXISTING UNLESS OTHERWISE NOTED AND ARE FOR INFORMATION ONLY

SCALE
0 1000 2000 3000 4000 5000

KEY MAP
TEMPORARY
TRAFFIC CONTROL
SHEET 4 OF 29

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
10/18/2024 1:58:44 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
10/17/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	10

COUNTY
CLAY/PLATTE

JOB NO.
J4S3496

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

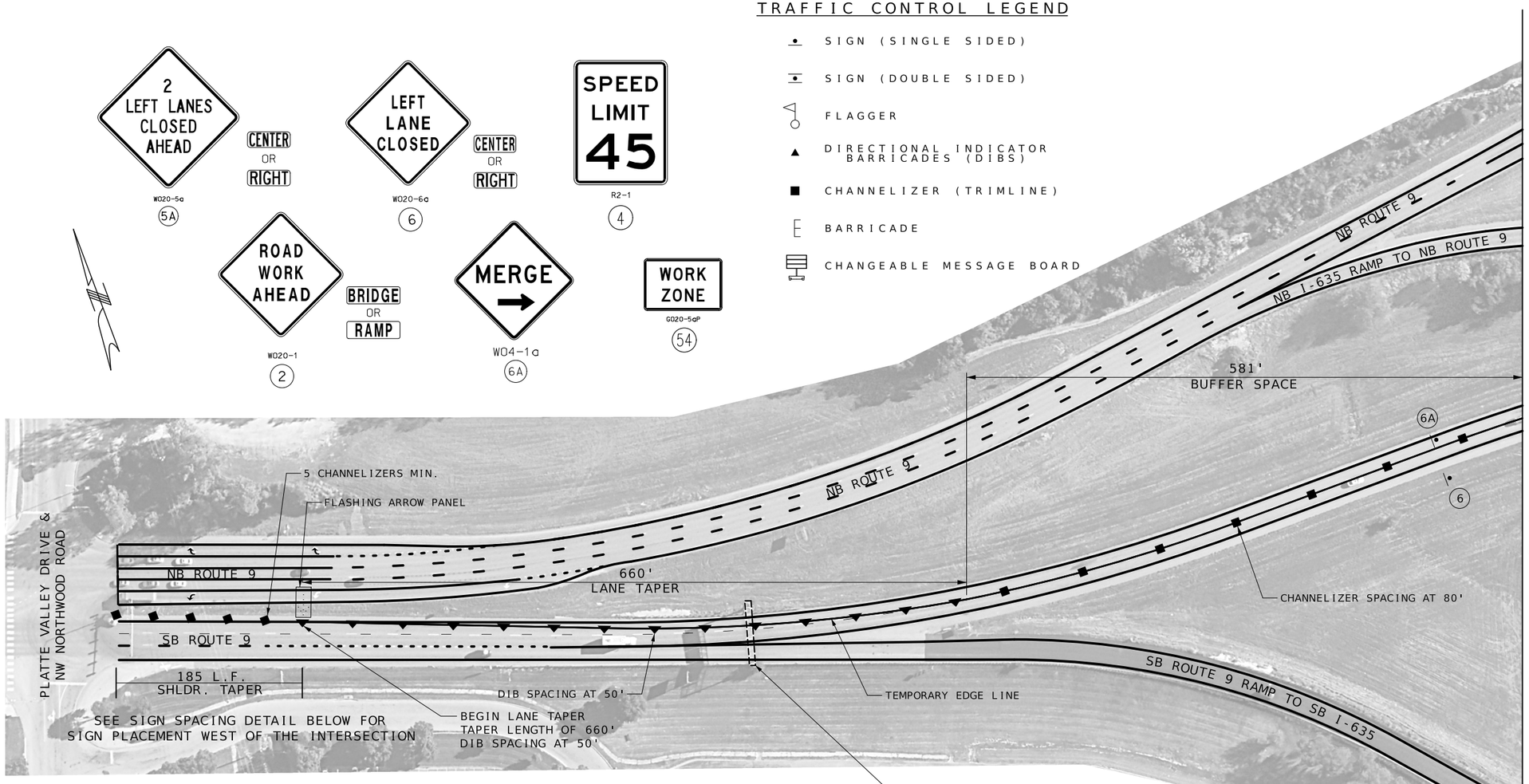
DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

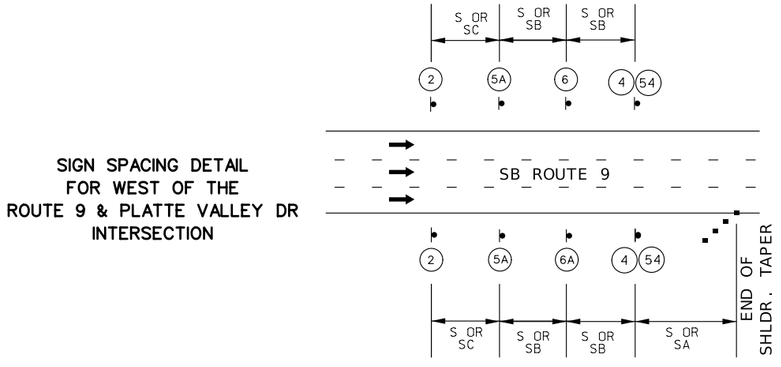
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

TRAFFIC CONTROL LEGEND

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



MATCHLINE TC SHEET 6 OF 29



SIGN SPACING DETAIL FOR WEST OF THE ROUTE 9 & PLATTE VALLEY DR INTERSECTION

SEE TC SHEET 3 OF 29 FOR SIGN SPACING LENGTHS

COVER SIGN
(NO DIRECT PAY)

NOTE:
TRAFFIC CONTROL QUANTITIES AND PLAN SHEETS ARE INCLUDED IN PROJECT J4S3496 AND ARE TO BE CONSIDERED INCLUSIVE FOR ALL PROJECTS TO BE LET IN COMBINATION (J4S3496, J4S3497, & J4S3498).

PAVEMENT MARKING SHOWN ON TRAFFIC CONTROL PLANS ARE EXISTING UNLESS OTHERWISE NOTED AND ARE FOR INFORMATION ONLY

SCALE
0 60 120 180

SB ROUTE 9 SPACING
FOR FULL CLOSURE
TEMPORARY
TRAFFIC CONTROL
SHEET 5 OF 29

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
10/18/2024 1:59:54 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
10/17/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	11

COUNTY
CLAY/PLATTE

JOB NO.
J4S3496

CONTRACT ID.

PROJECT NO.

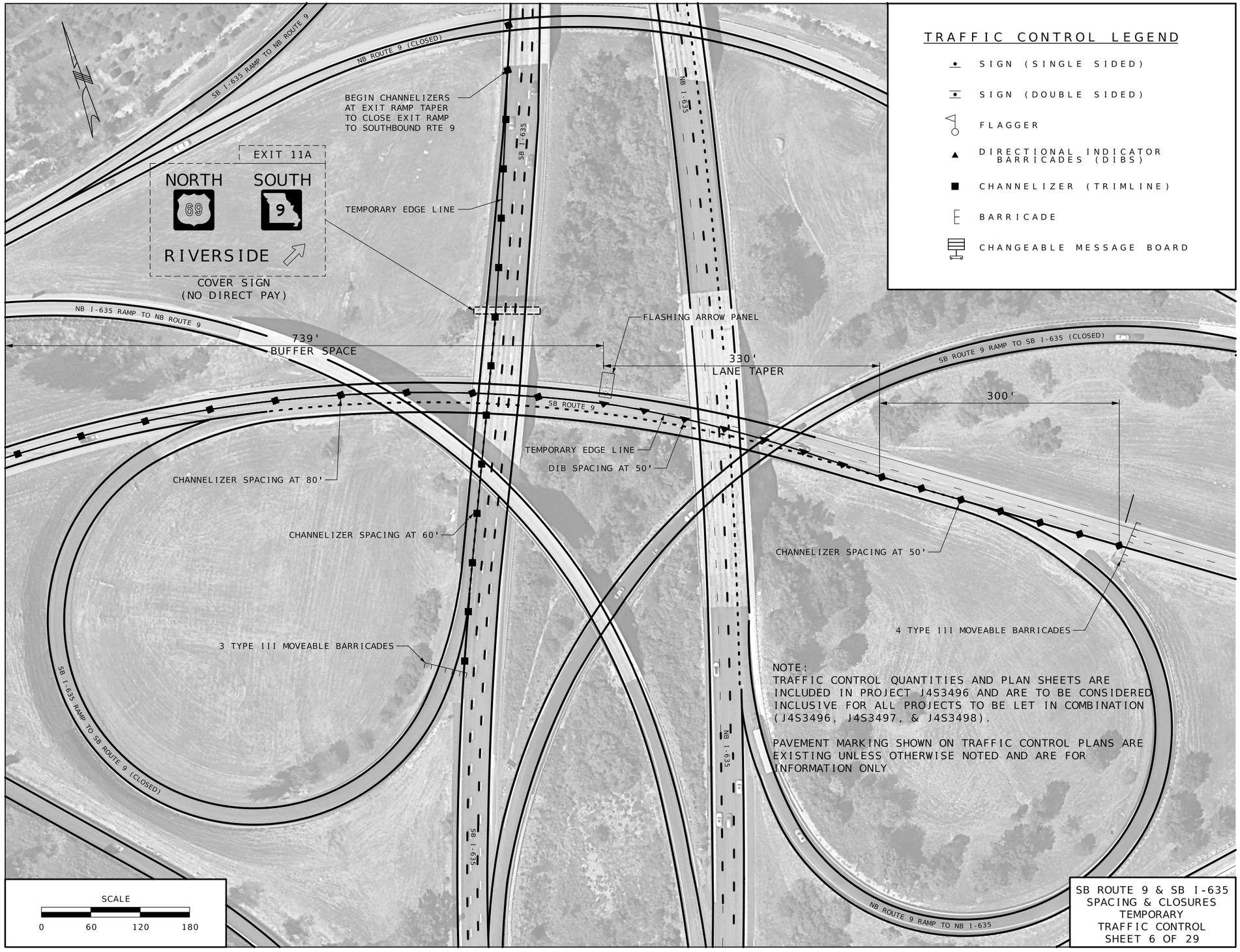
BRIDGE NO.

DATE	DESCRIPTION

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

MATCHLINE TC SHEET 7 OF 29

MATCHLINE TC SHEET 5 OF 29



TRAFFIC CONTROL LEGEND

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

NOTE:
TRAFFIC CONTROL QUANTITIES AND PLAN SHEETS ARE INCLUDED IN PROJECT J4S3496 AND ARE TO BE CONSIDERED INCLUSIVE FOR ALL PROJECTS TO BE LET IN COMBINATION (J4S3496, J4S3497, & J4S3498).

PAVEMENT MARKING SHOWN ON TRAFFIC CONTROL PLANS ARE EXISTING UNLESS OTHERWISE NOTED AND ARE FOR INFORMATION ONLY

SB ROUTE 9 & SB I-635
SPACING & CLOSURES
TEMPORARY
TRAFFIC CONTROL
SHEET 6 OF 29

MATCHLINE TC SHEET 10 OF 29

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
10/18/2024 2:00:26 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
10/17/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	12

COUNTY
CLAY/PLATTE

JOB NO.
J4S3496

CONTRACT ID.

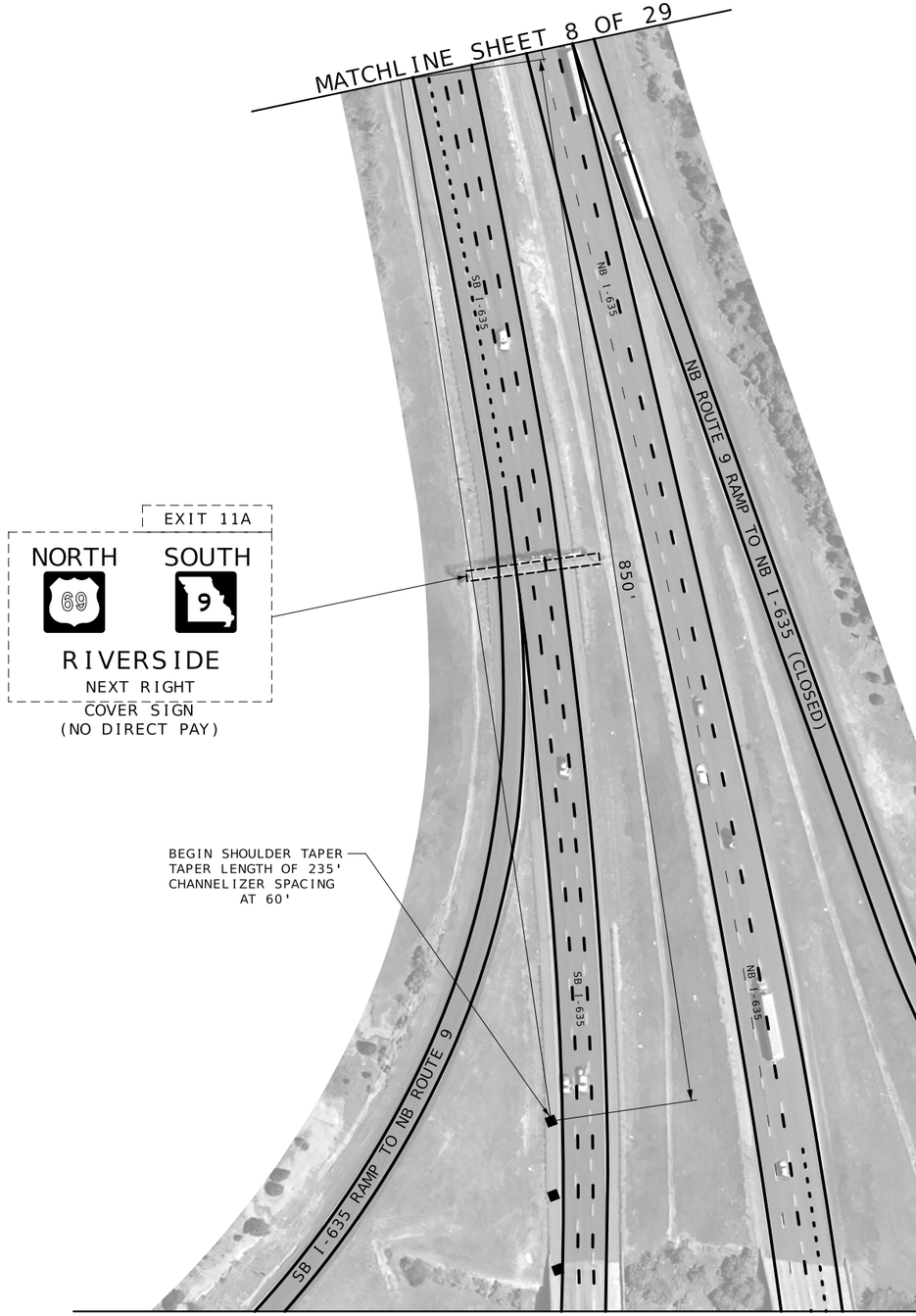
PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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



TRAFFIC CONTROL LEGEND

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

NOTE:
TRAFFIC CONTROL QUANTITIES AND PLAN SHEETS ARE INCLUDED IN PROJECT J4S3496 AND ARE TO BE CONSIDERED INCLUSIVE FOR ALL PROJECTS TO BE LET IN COMBINATION (J4S3496, J4S3497, & J4S3498).

PAVEMENT MARKING SHOWN ON TRAFFIC CONTROL PLANS ARE EXISTING UNLESS OTHERWISE NOTED AND ARE FOR INFORMATION ONLY

SCALE
0 60 120 180

SB I-635 SPACING
FOR RAMP CLOSURE
TEMPORARY
TRAFFIC CONTROL
SHEET 7 OF 29

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
10/18/2024 2:00:58 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
10/17/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	13

COUNTY
CLAY/PLATTE

JOB NO.
J4S3496

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

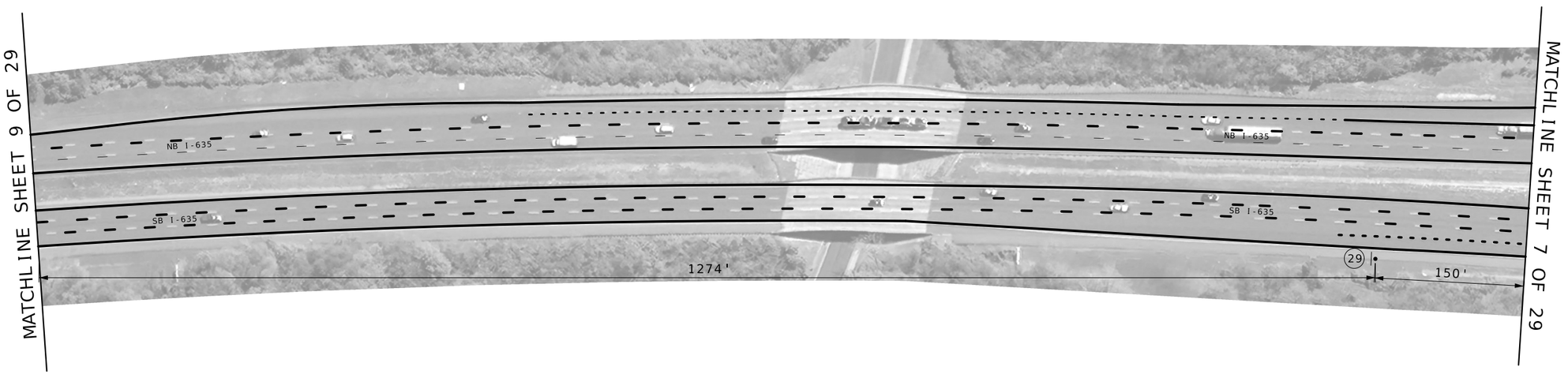
DESCRIPTION	DATE

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

TRAFFIC CONTROL LEGEND

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

R11-2
29



NOTE:
TRAFFIC CONTROL QUANTITIES AND PLAN SHEETS ARE INCLUDED IN PROJECT J4S3496 AND ARE TO BE CONSIDERED INCLUSIVE FOR ALL PROJECTS TO BE LET IN COMBINATION (J4S3496, J4S3497, & J4S3498).

PAVEMENT MARKING SHOWN ON TRAFFIC CONTROL PLANS ARE EXISTING UNLESS OTHERWISE NOTED AND ARE FOR INFORMATION ONLY

SCALE
0 60 120 180

SB I-635 SIGN SPACING
FOR RAMP CLOSURE
TEMPORARY
TRAFFIC CONTROL
SHEET 8 OF 29

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
Heather R. Barrows
10/18/2024 2:01:38 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
10/17/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	14

COUNTY
CLAY/PLATTE

JOB NO.
J4S3496

CONTRACT ID.

PROJECT NO.

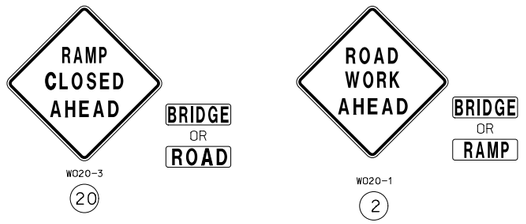
BRIDGE NO.

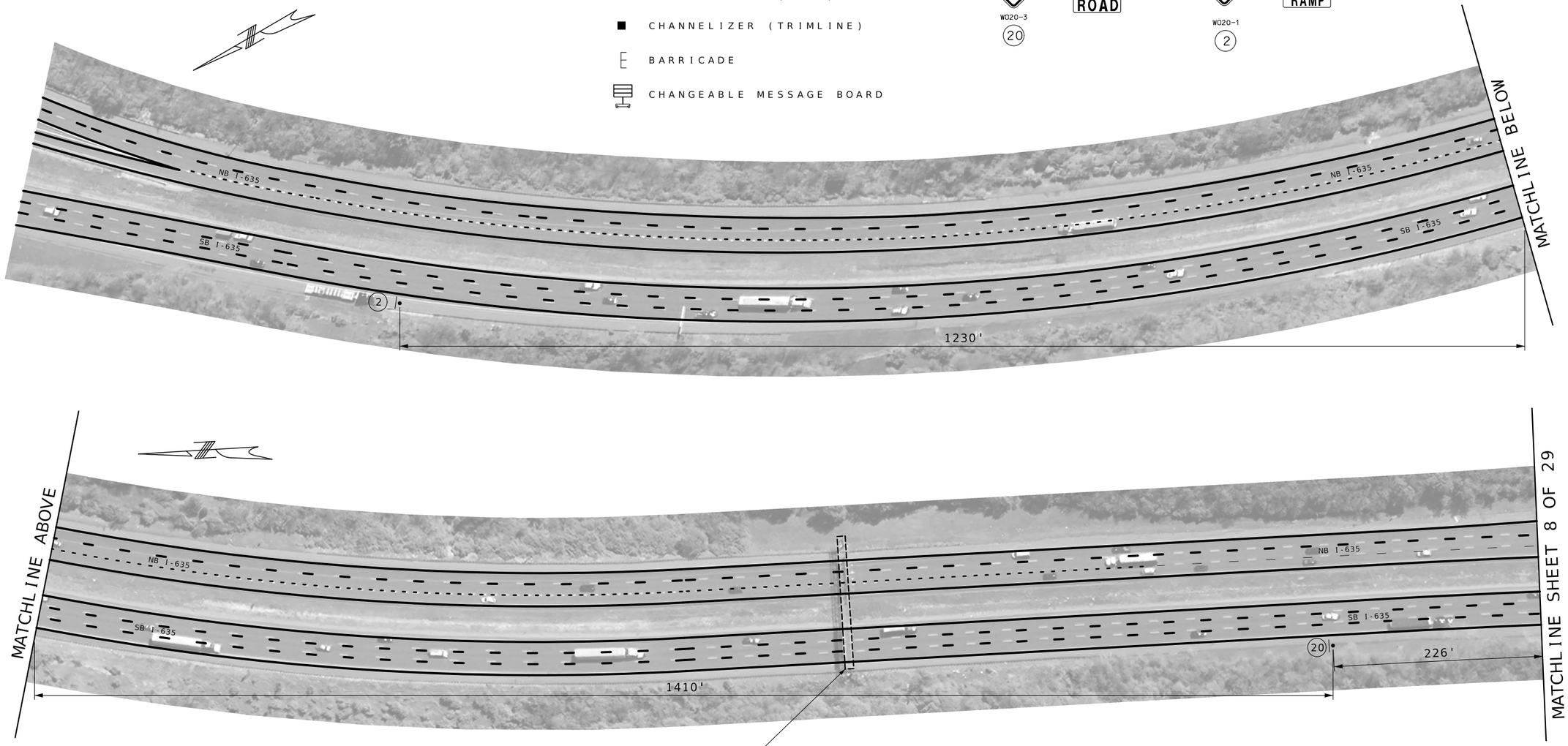
DATE	DESCRIPTION

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

TRAFFIC CONTROL LEGEND

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





SCALE
0 60 120 180

EXIT 11A
NORTH 69
SOUTH 9
RIVERSIDE
SECOND RIGHT
COVER SIGN
(NO DIRECT PAY)

NOTE:
TRAFFIC CONTROL QUANTITIES AND PLAN SHEETS ARE INCLUDED IN PROJECT J4S3496 AND ARE TO BE CONSIDERED INCLUSIVE FOR ALL PROJECTS TO BE LET IN COMBINATION (J4S3496, J4S3497, & J4S3498).

PAVEMENT MARKING SHOWN ON TRAFFIC CONTROL PLANS ARE EXISTING UNLESS OTHERWISE NOTED AND ARE FOR INFORMATION ONLY

SB I-635 SIGN SPACING
FOR RAMP CLOSURE
TEMPORARY
TRAFFIC CONTROL
SHEET 9 OF 29

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
10/18/2024 2:02:12 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
10/17/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	15

COUNTY
CLAY/PLATTE

JOB NO.
J4S3496

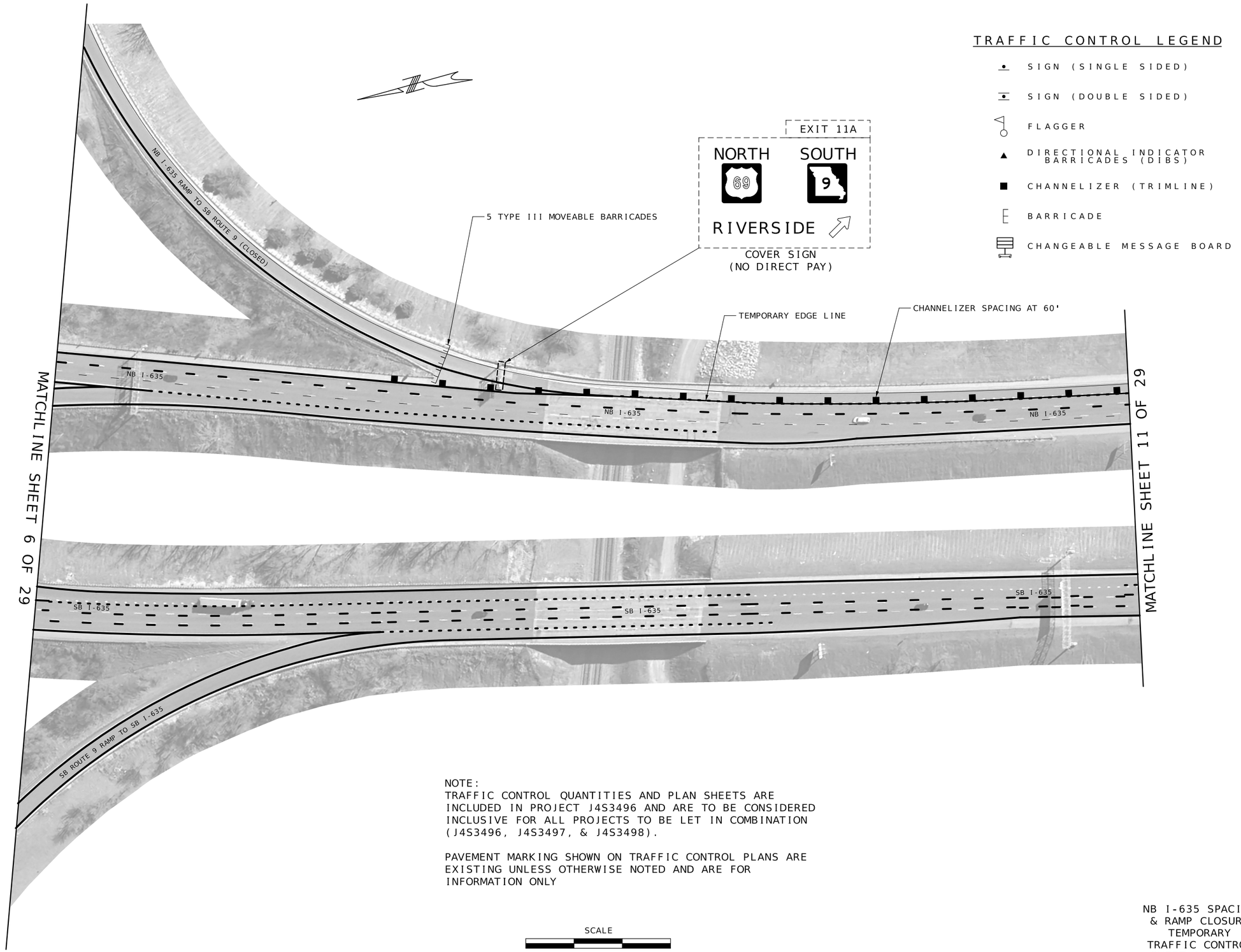
CONTRACT ID.

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)



TRAFFIC CONTROL LEGEND

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

NOTE:
TRAFFIC CONTROL QUANTITIES AND PLAN SHEETS ARE INCLUDED IN PROJECT J4S3496 AND ARE TO BE CONSIDERED INCLUSIVE FOR ALL PROJECTS TO BE LET IN COMBINATION (J4S3496, J4S3497, & J4S3498).

PAVEMENT MARKING SHOWN ON TRAFFIC CONTROL PLANS ARE EXISTING UNLESS OTHERWISE NOTED AND ARE FOR INFORMATION ONLY

SCALE
0 60 120 180

NB I-635 SPACING
& RAMP CLOSURE
TEMPORARY
TRAFFIC CONTROL
SHEET 10 OF 29

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
10/18/2024 2:02:54 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
10/17/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	16

COUNTY
CLAY/PLATTE

JOB NO.
J4S3496

CONTRACT ID.

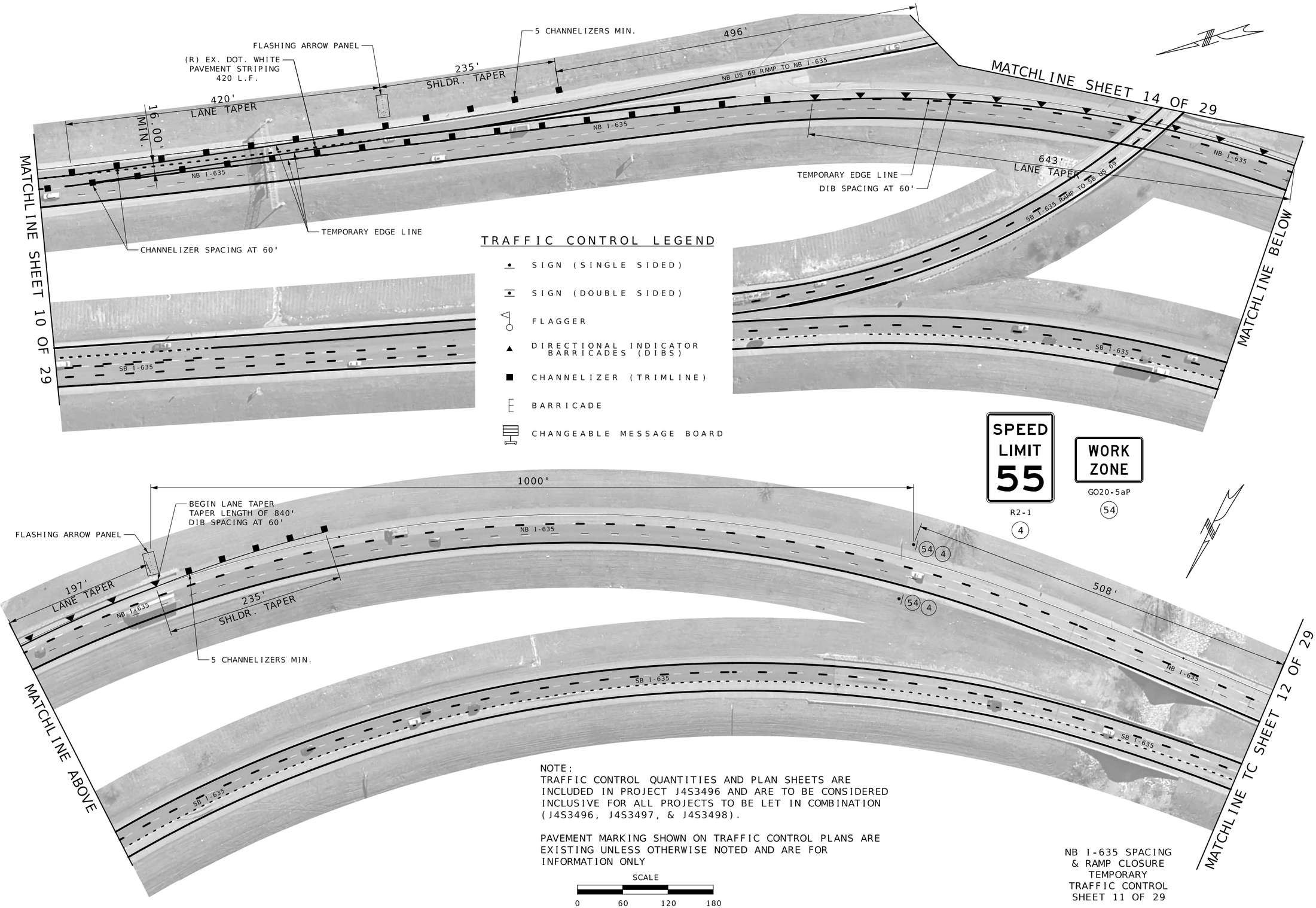
PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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



NOTE:
TRAFFIC CONTROL QUANTITIES AND PLAN SHEETS ARE INCLUDED IN PROJECT J4S3496 AND ARE TO BE CONSIDERED INCLUSIVE FOR ALL PROJECTS TO BE LET IN COMBINATION (J4S3496, J4S3497, & J4S3498).

PAVEMENT MARKING SHOWN ON TRAFFIC CONTROL PLANS ARE EXISTING UNLESS OTHERWISE NOTED AND ARE FOR INFORMATION ONLY

SCALE
0 60 120 180

NB I-635 SPACING & RAMP CLOSURE TEMPORARY TRAFFIC CONTROL SHEET 11 OF 29

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
10/18/2024 2:03:28 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
10/17/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	17

COUNTY
CLAY/PLATTE

JOB NO.
J4S3496

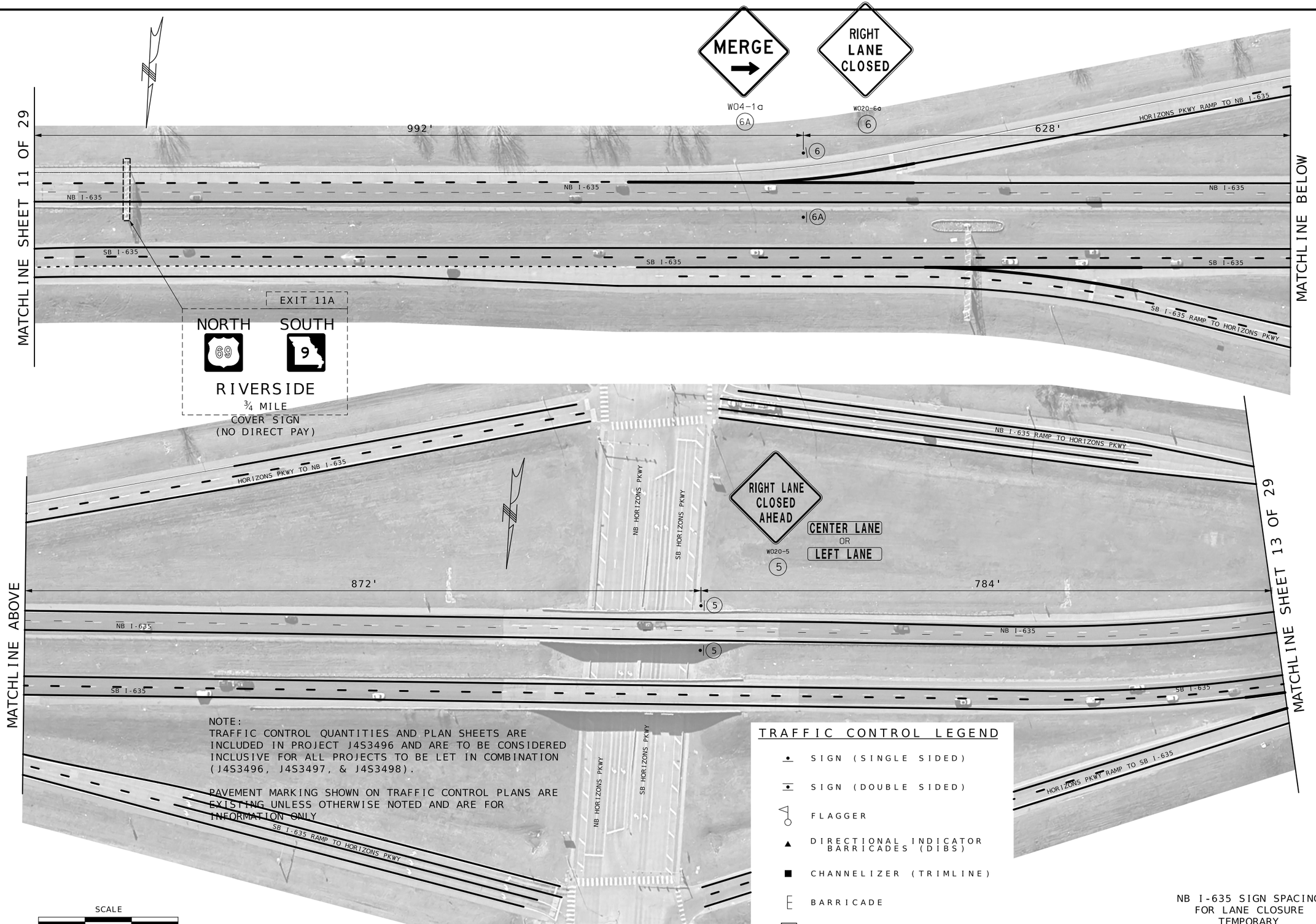
CONTRACT ID.

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)



NOTE:
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PAVEMENT MARKING SHOWN ON TRAFFIC CONTROL PLANS ARE EXISTING UNLESS OTHERWISE NOTED AND ARE FOR INFORMATION ONLY

SCALE
0 60 120 180

TRAFFIC CONTROL LEGEND

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

NB I-635 SIGN SPACING
FOR LANE CLOSURE
TEMPORARY
TRAFFIC CONTROL
SHEET 12 OF 29

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
10/18/2024 2:04:07 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

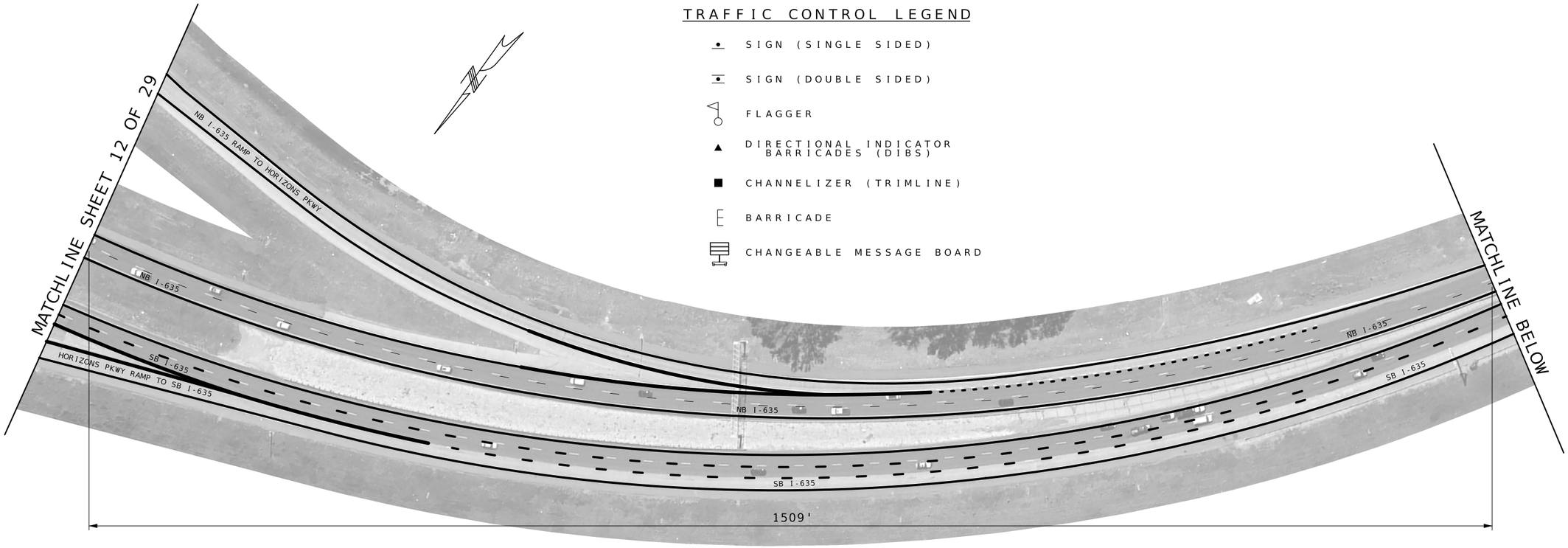
DATE PREPARED	10/17/2024
ROUTE	9
STATE	MO
DISTRICT	KC
SHEET NO.	18
COUNTY	CLAY/PLATTE
JOB NO.	J4S3496
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

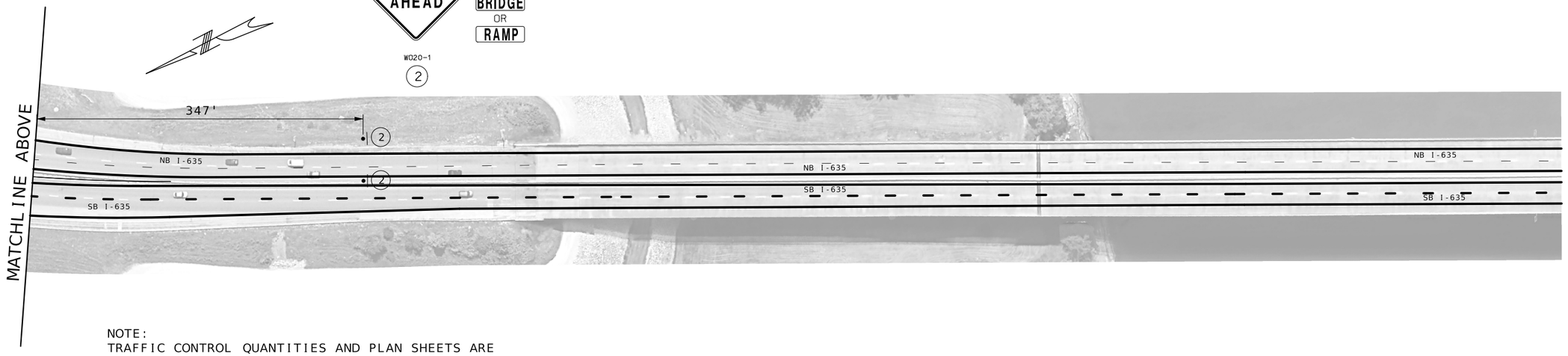
DESCRIPTION | DATE

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

TRAFFIC CONTROL LEGEND

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





NOTE:
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PAVEMENT MARKING SHOWN ON TRAFFIC CONTROL PLANS ARE EXISTING UNLESS OTHERWISE NOTED AND ARE FOR INFORMATION ONLY

SCALE
0 60 120 180

NB I-635 SIGN SPACING
FOR LANE CLOSURE
TEMPORARY
TRAFFIC CONTROL
SHEET 13 OF 29

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
Heather R. Barrows
10/18/2024 2:05:45 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
10/17/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	19

COUNTY
CLAY/PLATTE

JOB NO.
J4S3496

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

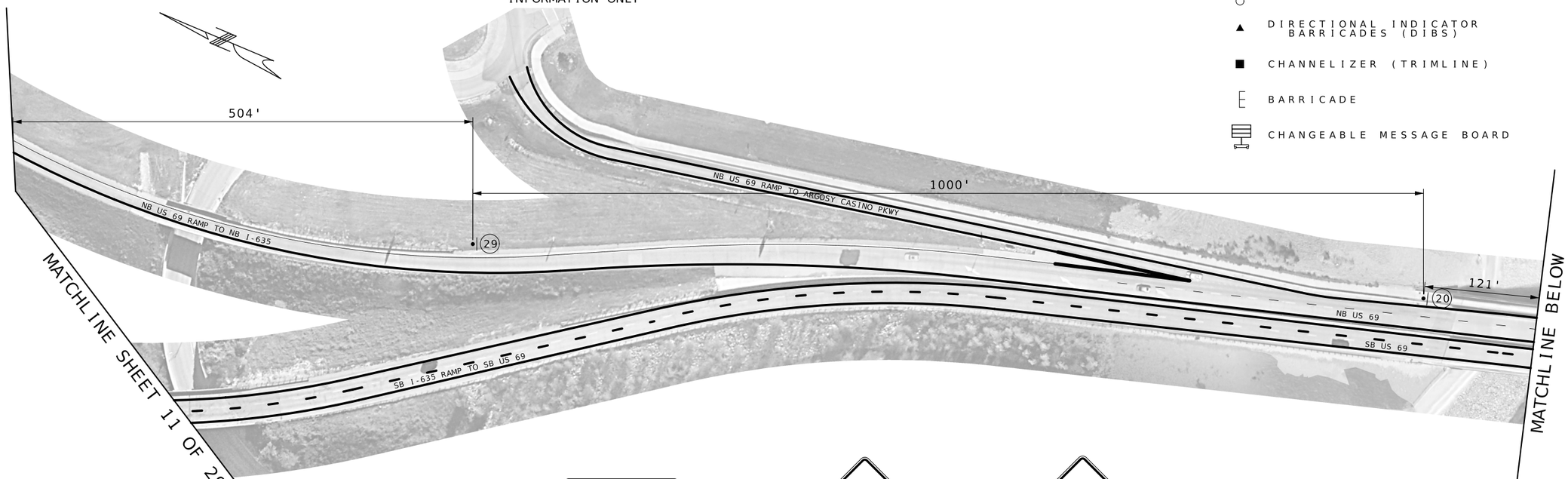
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

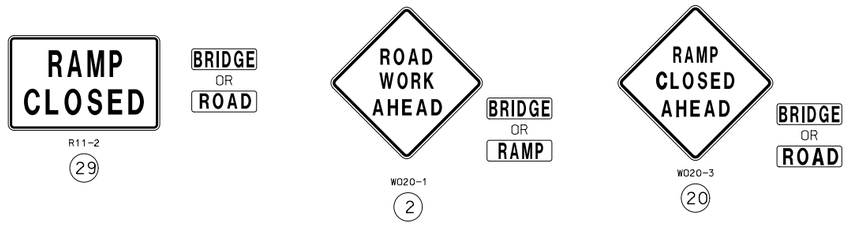
NOTE:
TRAFFIC CONTROL QUANTITIES AND PLAN SHEETS ARE INCLUDED IN PROJECT J4S3496 AND ARE TO BE CONSIDERED INCLUSIVE FOR ALL PROJECTS TO BE LET IN COMBINATION (J4S3496, J4S3497, & J4S3498).

PAVEMENT MARKING SHOWN ON TRAFFIC CONTROL PLANS ARE EXISTING UNLESS OTHERWISE NOTED AND ARE FOR\ INFORMATION ONLY

TRAFFIC CONTROL LEGEND

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





SCALE
0 60 120 180

NB US 69 SIGN SPACING
FOR RAMP CLOSURE
TEMPORARY
TRAFFIC CONTROL
SHEET 14 OF 29

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
10/18/2024 2:06:41 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
10/17/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	20

COUNTY
CLAY/PLATTE

JOB NO.
J4S3496

CONTRACT ID.

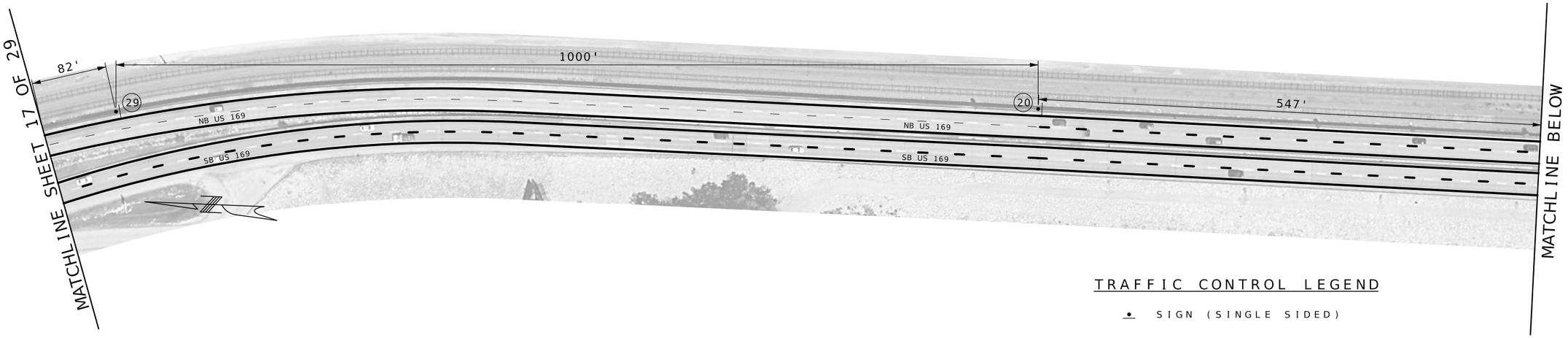
PROJECT NO.

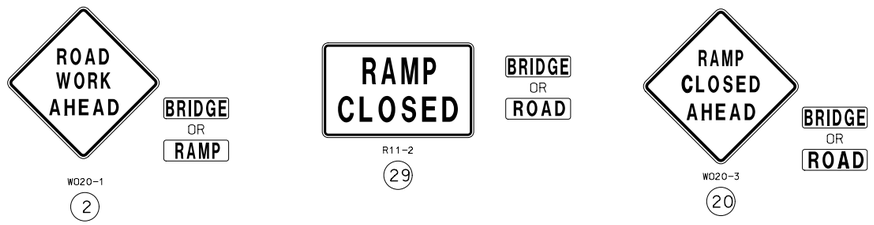
BRIDGE NO.

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

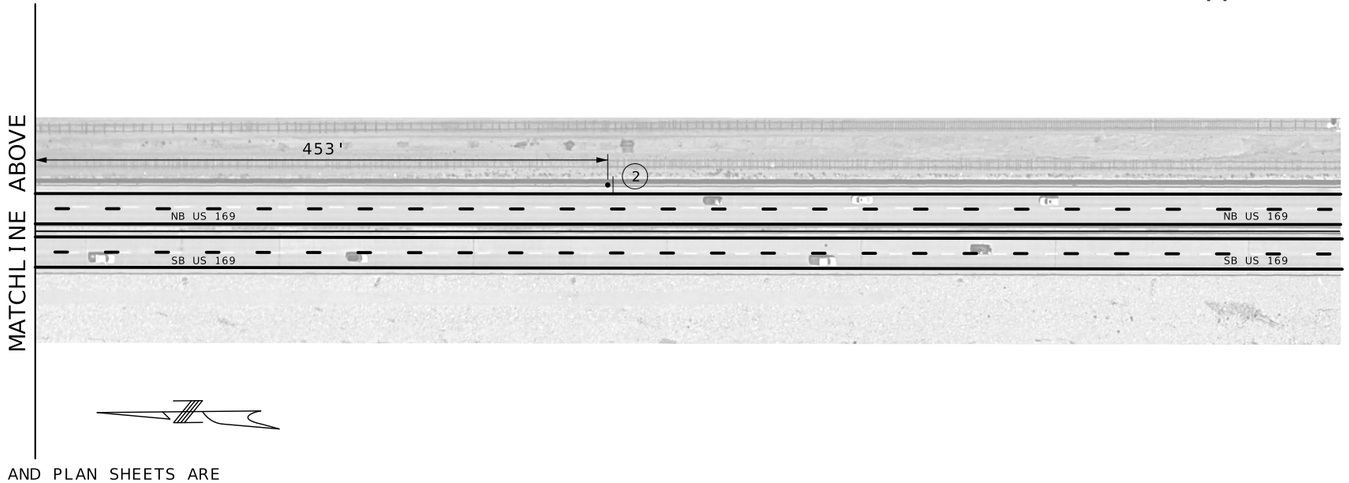
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)





TRAFFIC CONTROL LEGEND

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



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PAVEMENT MARKING SHOWN ON TRAFFIC CONTROL PLANS ARE EXISTING UNLESS OTHERWISE NOTED AND ARE FOR INFORMATION ONLY

SCALE
0 60 120 180

NB US 169 SIGN SPACING
FOR RAMP CLOSURE
TEMPORARY
TRAFFIC CONTROL
SHEET 15 OF 29

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
10/18/2024 2:07:30 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
10/17/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	21

COUNTY
CLAY/PLATTE

JOB NO.
J4S3496

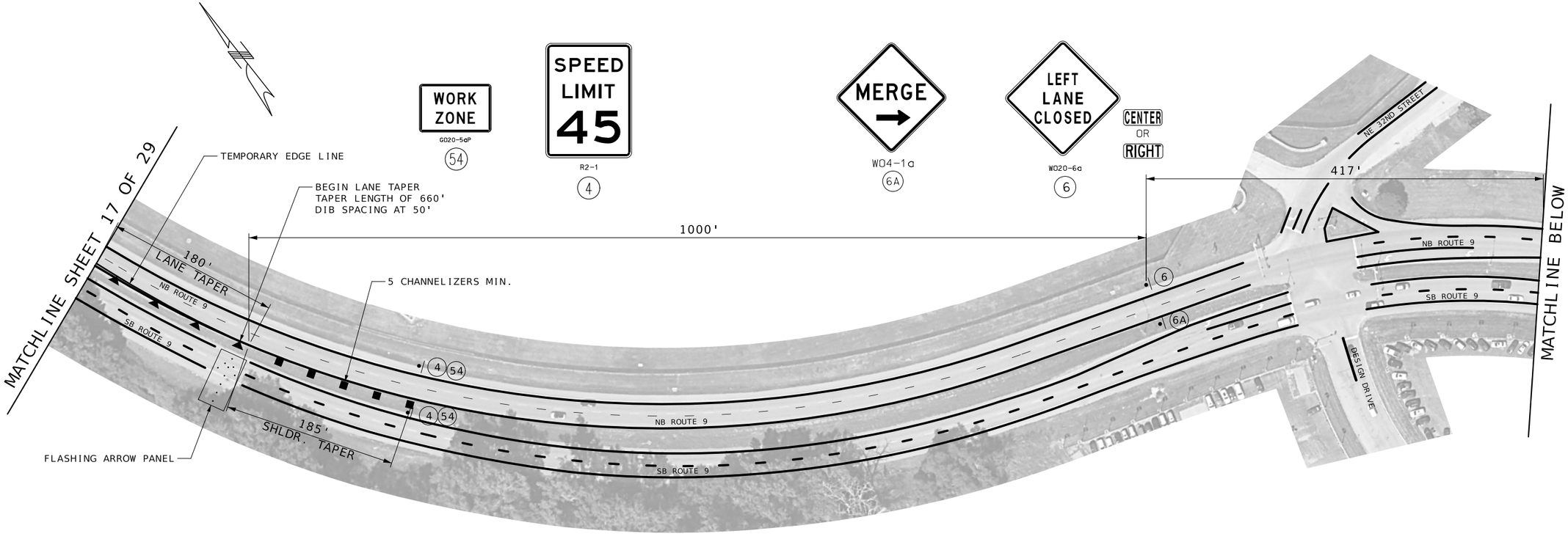
CONTRACT ID.

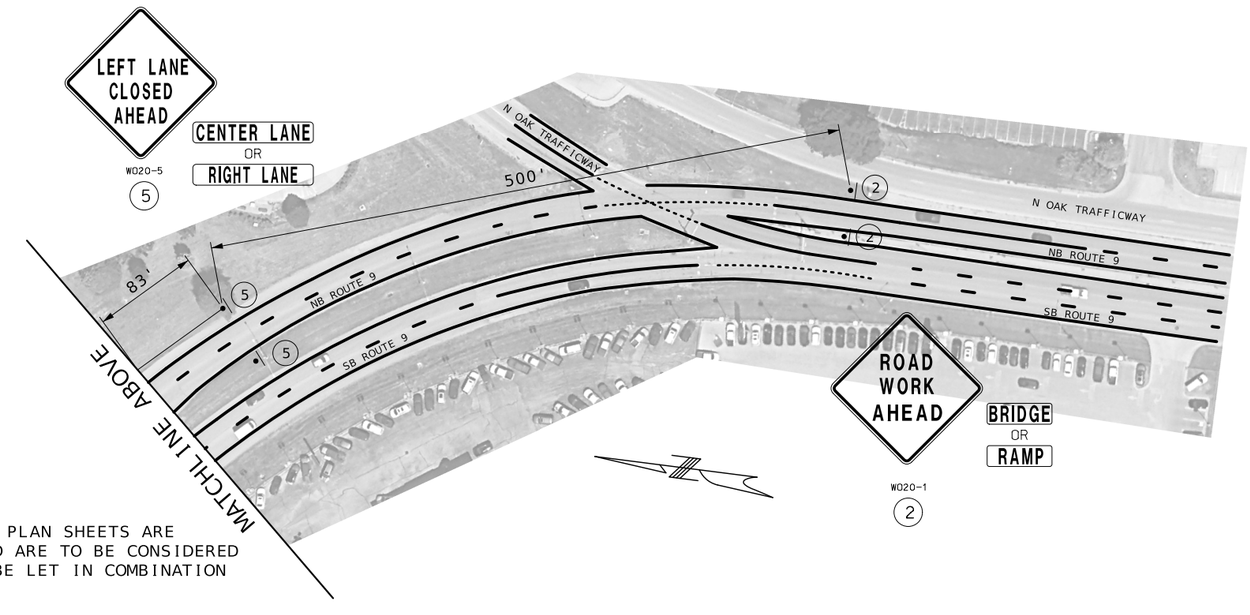
PROJECT NO.

BRIDGE NO.

DATE	DESCRIPTION

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





TRAFFIC CONTROL LEGEND

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

NOTE:
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PAVEMENT MARKING SHOWN ON TRAFFIC CONTROL PLANS ARE EXISTING UNLESS OTHERWISE NOTED AND ARE FOR INFORMATION ONLY

SCALE
0 60 120 180

NB ROUTE 9 SPACING
FOR FULL CLOSURE
TEMPORARY
TRAFFIC CONTROL
SHEET 16 OF 29

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
10/18/2024 2:07:01 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED: 10/17/2024
ROUTE: 9 | STATE: MO
DISTRICT: KC | SHEET NO.: 22
COUNTY: CLAY/PLATTE
JOB NO.: J4S3496
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)

NOTE:
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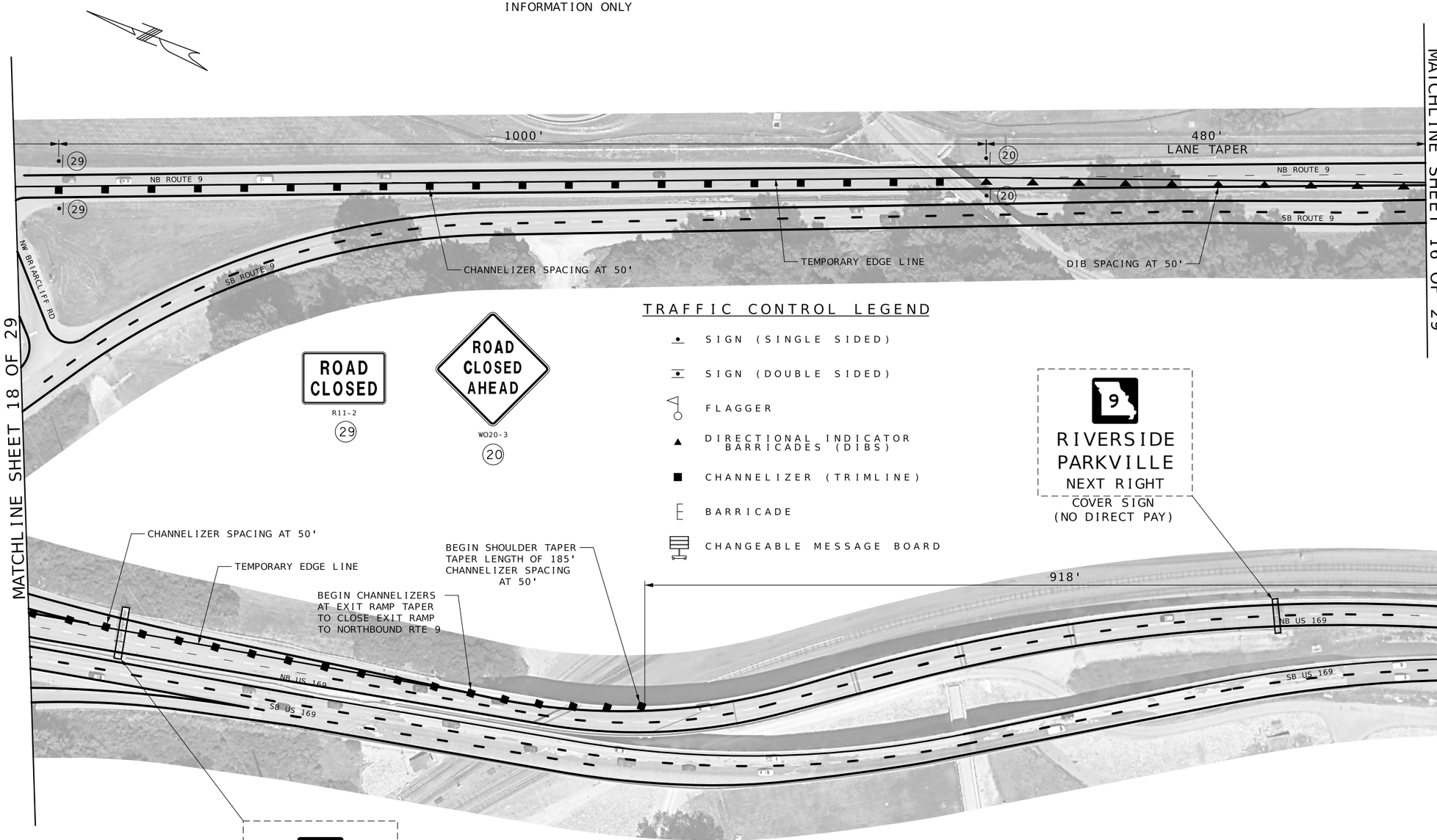

TRAFFIC CONTROL LEGEND

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

SCALE
0 60 120 180

NB ROUTE 9 & NB US 169
SPACING FOR CLOSURES
TEMPORARY
TRAFFIC CONTROL
SHEET 17 OF 29

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
10/18/2024 2:06:11 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
10/17/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	23

COUNTY
CLAY/PLATTE

JOB NO.
J4S3496

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)

NOTE:
TRAFFIC CONTROL QUANTITIES AND PLAN SHEETS ARE INCLUDED IN PROJECT J4S3496 AND ARE TO BE CONSIDERED INCLUSIVE FOR ALL PROJECTS TO BE LET IN COMBINATION (J4S3496, J4S3497, & J4S3498).

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NORTH
9
RIVERSIDE
PARKVILLE

COVER SIGN
(NO DIRECT PAY)

NB ROUTE 9 RAMP TO NB US 169
NB US 169
SB US 169
NB ROUTE 9 (CLOSED)
SB US 169 RAMP TO SB ROUTE 9
NB US 169 RAMP TO NB ROUTE 9 (CLOSED)
SB ROUTE 9
SB ROUTE 9 RAMP TO SB US 169
NW BRIARCLIFF RD
NB ROUTE 9

5 TYPE III MOVEABLE BARRICADES
560'
BUFFER LENGTH
CHANNELIZER SPACING AT 50'
TEMPORARY EDGE LINE
3 TYPE III MOVEABLE BARRICADES
CHANNELIZER SPACING AT 50'

MATCHLINE SHEET 17 OF 29

TRAFFIC CONTROL LEGEND

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

SCALE
0 60 120 180

NB ROUTE 9 & NB US 169
SPACING FOR CLOSURES
TEMPORARY
TRAFFIC CONTROL
SHEET 18 OF 29

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
10/18/2024 2:11:12 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
10/17/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	24

COUNTY
CLAY/PLATTE

JOB NO.
J4S3496

CONTRACT ID.

PROJECT NO.

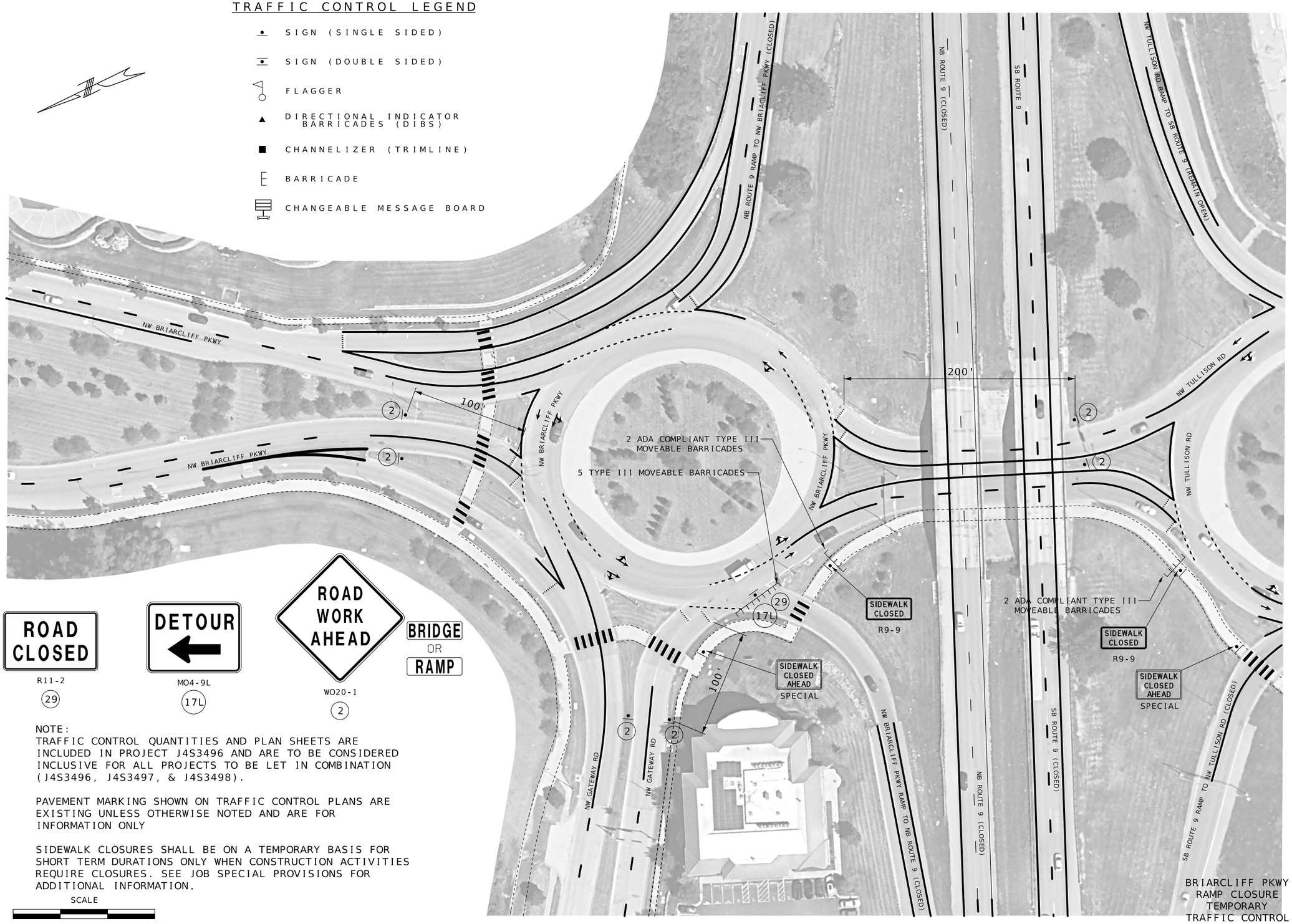
BRIDGE NO.

DESCRIPTION	DATE

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

TRAFFIC CONTROL LEGEND

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



ROAD CLOSED
R11-2
29

DETOUR
MO4-9L
17L

ROAD WORK AHEAD
WO20-1
2

BRIDGE OR RAMP

NOTE:
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PAVEMENT MARKING SHOWN ON TRAFFIC CONTROL PLANS ARE EXISTING UNLESS OTHERWISE NOTED AND ARE FOR INFORMATION ONLY

SIDEWALK CLOSURES SHALL BE ON A TEMPORARY BASIS FOR SHORT TERM DURATIONS ONLY WHEN CONSTRUCTION ACTIVITIES REQUIRE CLOSURES. SEE JOB SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.

SCALE
0 40 80 120

BRIARCLIFF PKWY
RAMP CLOSURE
TEMPORARY
TRAFFIC CONTROL
SHEET 19 OF 29

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
10/21/2024 9:52:57 AM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
10/21/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	25

COUNTY
CLAY/PLATTE

JOB NO.
J4S3496

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)

TRAFFIC CONTROL LEGEND

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

NOTE:
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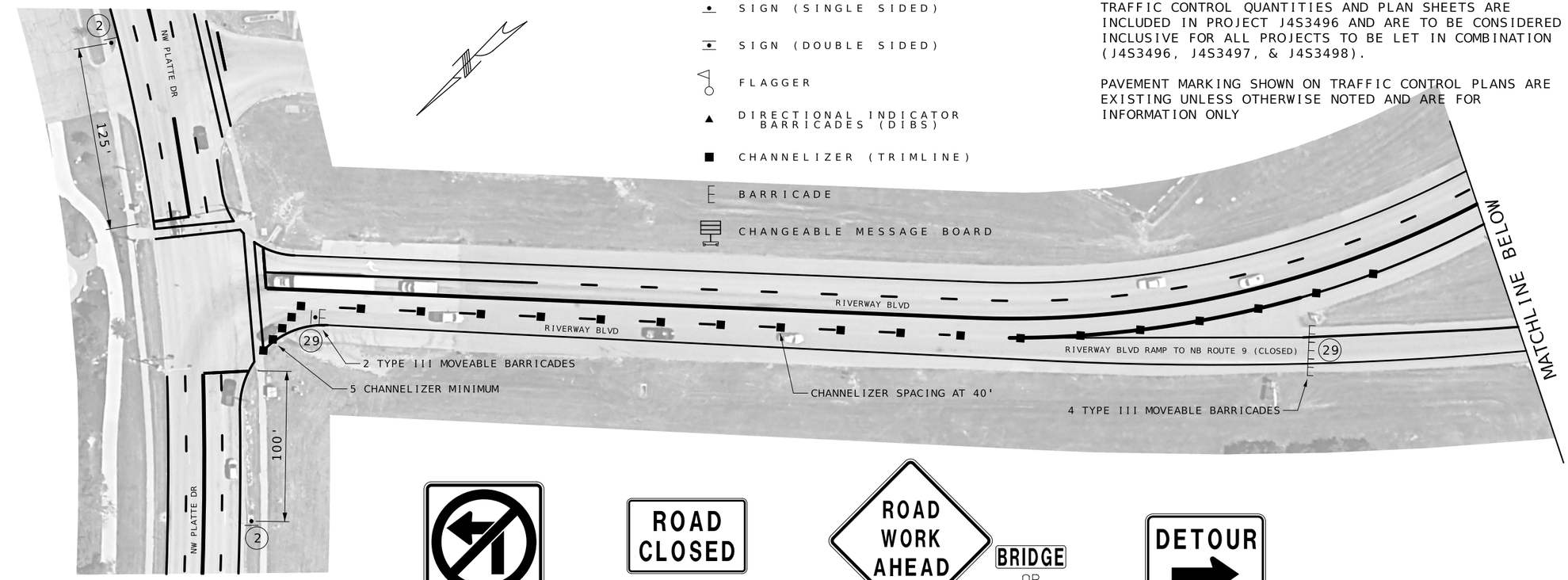
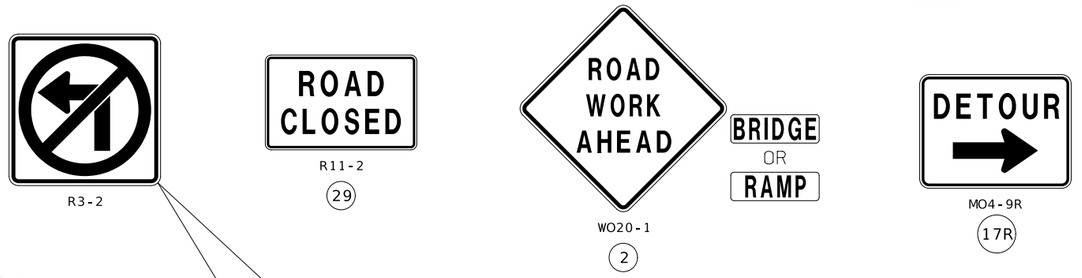
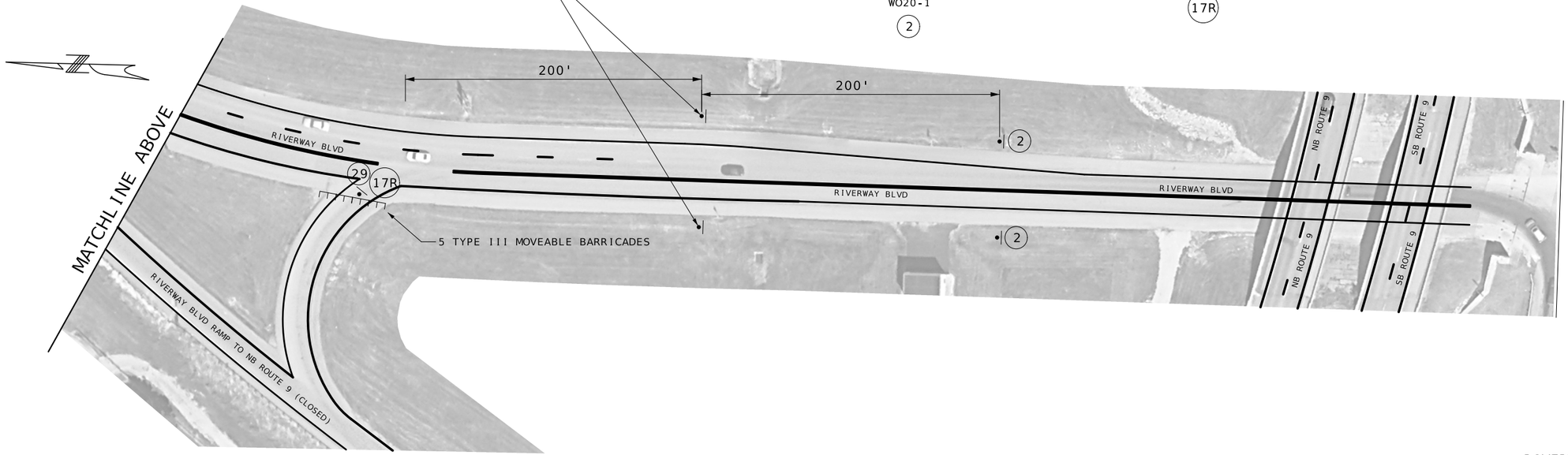






SCALE
0 40 80 120

RIVERWAY BLVD
RAMP CLOSURE
TEMPORARY
TRAFFIC CONTROL
SHEET 20 OF 29

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
10/18/2024 2:11:46 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED: 10/17/2024
ROUTE: 9
STATE: MO
DISTRICT: KC
SHEET NO.: 26
COUNTY: CLAY/PLATTE
JOB NO.: J4S3496
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

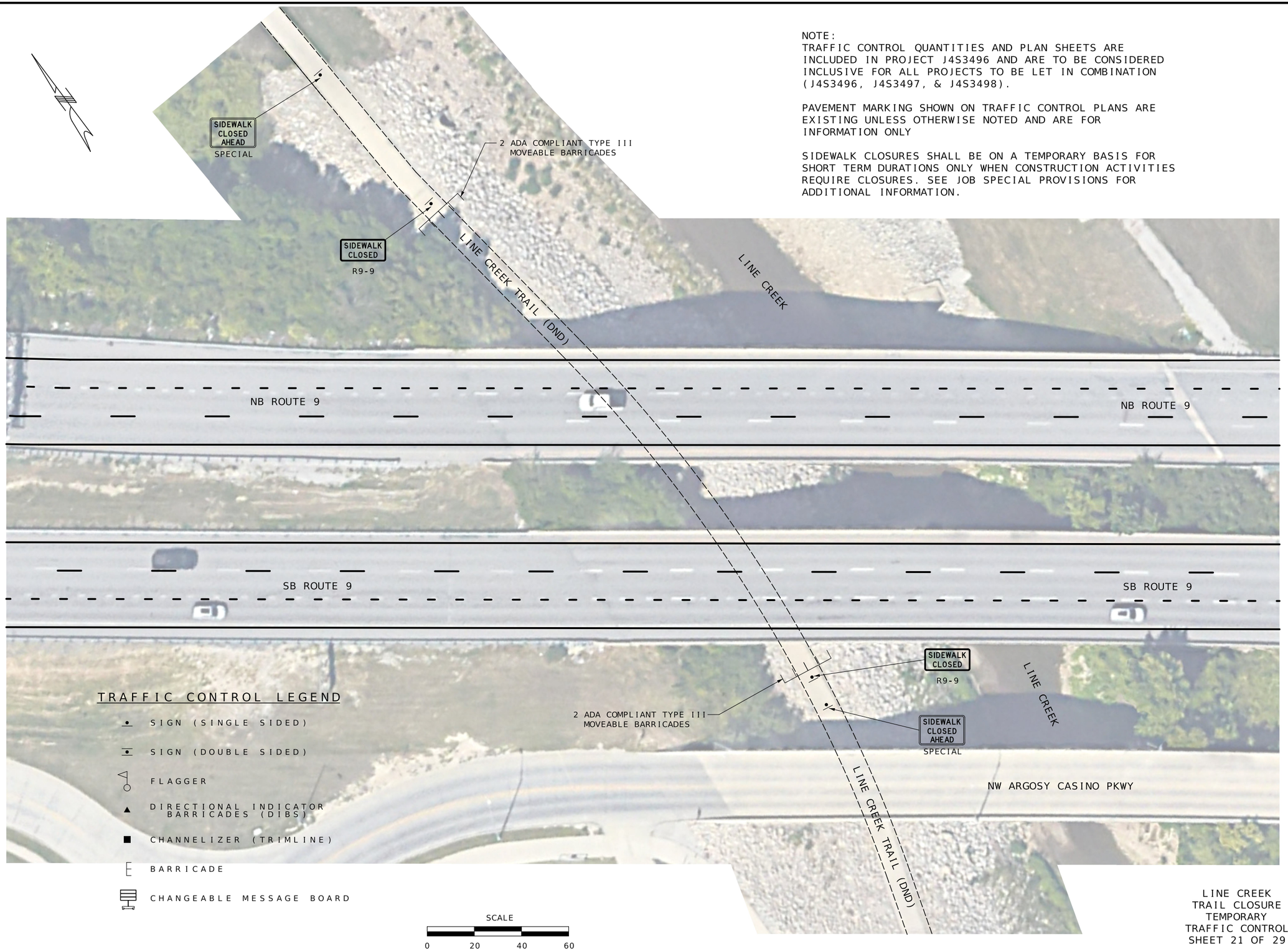
DESCRIPTION | DATE

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

NOTE:
TRAFFIC CONTROL QUANTITIES AND PLAN SHEETS ARE INCLUDED IN PROJECT J4S3496 AND ARE TO BE CONSIDERED INCLUSIVE FOR ALL PROJECTS TO BE LET IN COMBINATION (J4S3496, J4S3497, & J4S3498).

PAVEMENT MARKING SHOWN ON TRAFFIC CONTROL PLANS ARE EXISTING UNLESS OTHERWISE NOTED AND ARE FOR INFORMATION ONLY

SIDEWALK CLOSURES SHALL BE ON A TEMPORARY BASIS FOR SHORT TERM DURATIONS ONLY WHEN CONSTRUCTION ACTIVITIES REQUIRE CLOSURES. SEE JOB SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.



TRAFFIC CONTROL LEGEND

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

SCALE
0 20 40 60

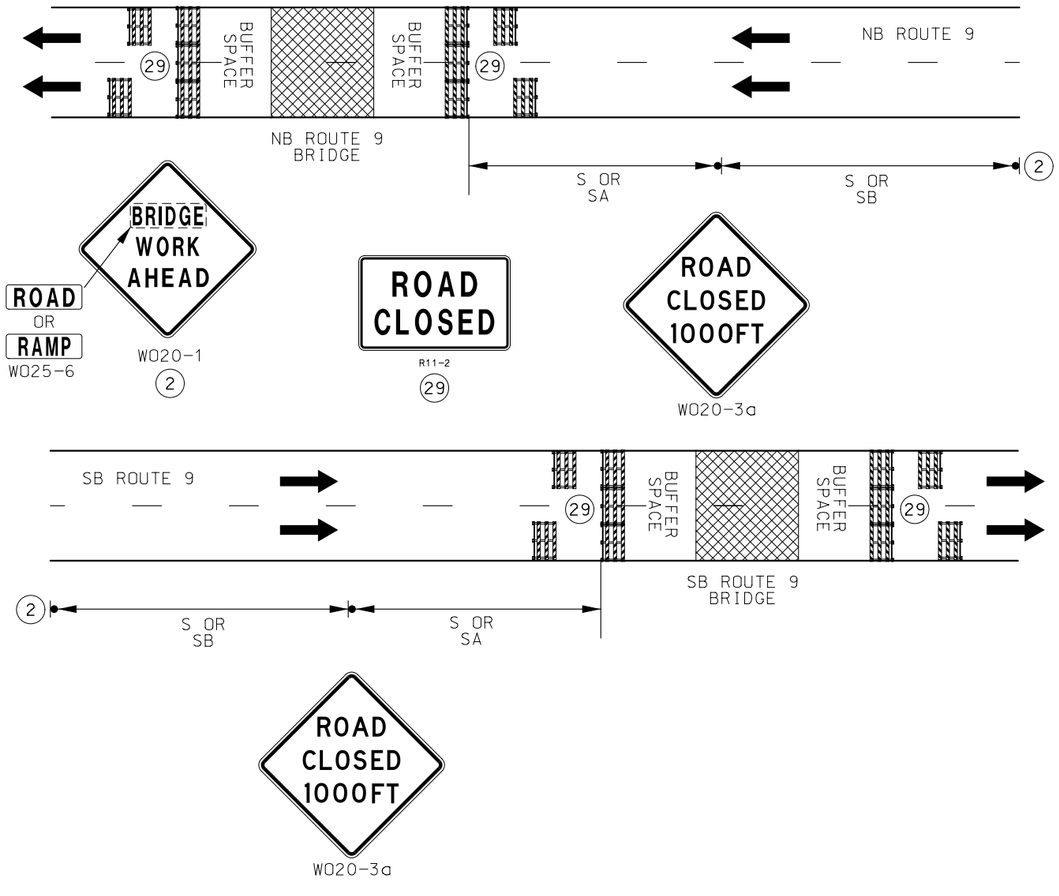
LINE CREEK
TRAIL CLOSURE
TEMPORARY
TRAFFIC CONTROL
SHEET 21 OF 29

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
10/21/2024 9:20:52 AM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED: 10/21/2024
ROUTE: 9 | STATE: MO
DISTRICT: KC | SHEET NO.: 27
COUNTY: CLAY/PLATTE
JOB NO.: J4S3496
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)



NO SCALE

NOTES:
SEE TRAFFIC CONTROL SHEET 3 FOR SIGN SPACING, DEVICE SPACING AND CHANNELIZING TAPER LENGTHS.

WHEN A SIDE ROAD INTERSECTS THE HIGHWAY WITHIN THE TTC ZONE ADDITIONAL TTC DEVICES SHALL BE PLACED AS NEEDED.

"ROAD CLOSED" SIGN MAY BE PLACED 7-10 FEET BEHIND THE BARRICADES AND AT A SIGN HEIGHT APPROPRIATE TO THE TYPE OF ROADWAY. ONE BARRICADE SHOULD BE REQUIRED TO COMPLETELY CLOSE EACH 8-FEET OF PAVEMENT. PAVED SHOULDERS SHALL BE INCLUDED IN THE AREA TO BE CLOSED.

ADJUST TRAFFIC CONTROL DEVICES AS NECESSARY TO MEET FIELD CONDITIONS AS DIRECTED BY ENGINEER.

TRAFFIC CONTROL QUANTITIES AND PLAN SHEETS ARE INCLUDED IN PROJECT J4S3496 AND ARE TO BE CONSIDERED INCLUSIVE FOR ALL PROJECTS TO BE LET IN COMBINATION (J4S3496, J4S3497, & J4S3498).

PAVEMENT MARKING SHOWN ON TRAFFIC CONTROL PLANS ARE EXISTING UNLESS OTHERWISE NOTED AND ARE FOR INFORMATION ONLY

TRAFFIC CONTROL LEGEND

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

FULL BRIDGE CLOSURES TEMPORARY TRAFFIC CONTROL
SHEET 22 OF 29

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
10/18/2024 2:13:18 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
10/17/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	28

COUNTY
CLAY/PLATTE

JOB NO.
J4S3496

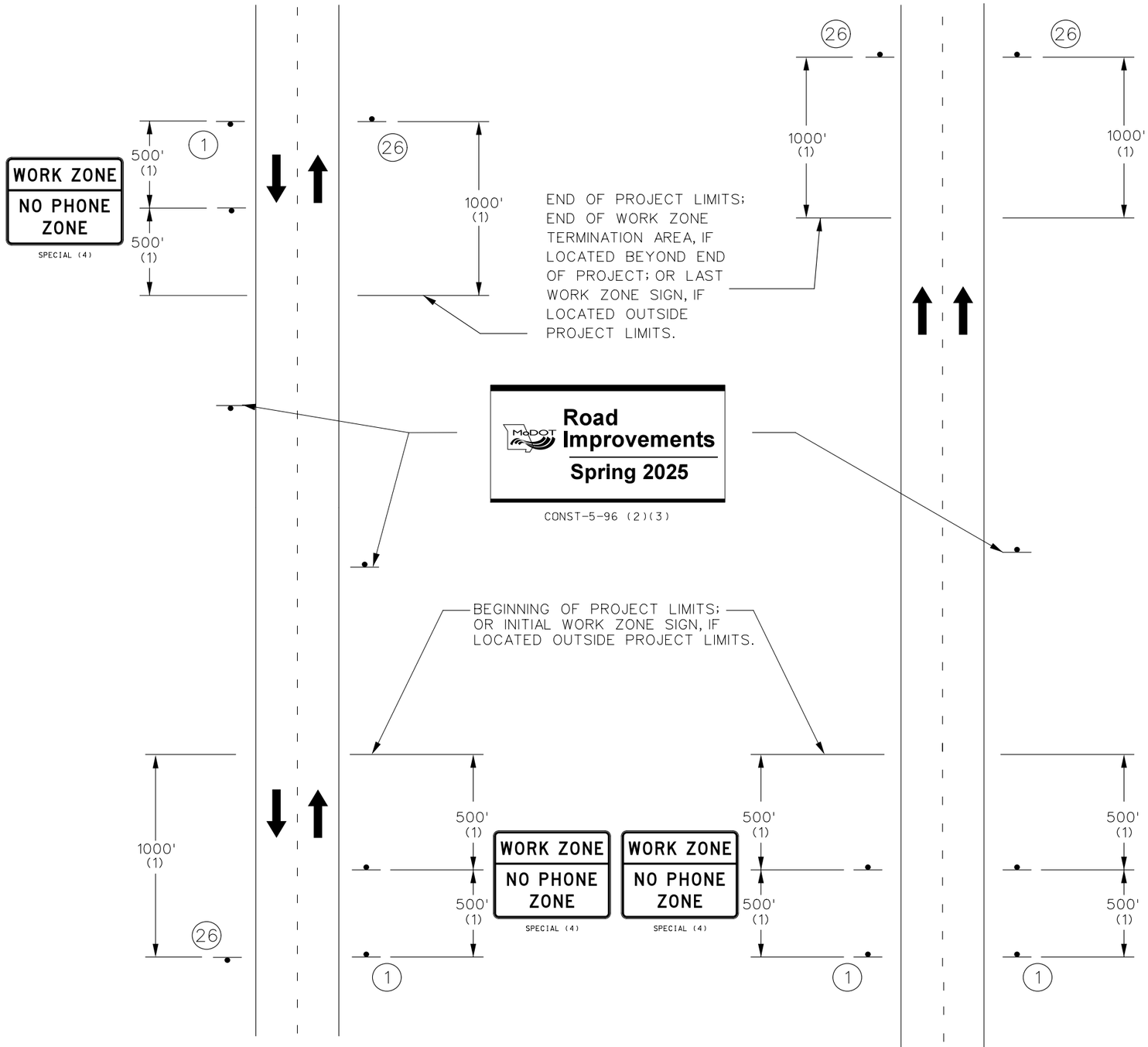
CONTRACT ID.

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)



TWO-LANE UNDIVIDED

BEGIN/END OF PROJECT SIGNING (FOR USE ON ALL PROJECTS)

MULTI-LANE DIVIDED

NO SCALE

NOTES:

SIGN G020-1 IS REQUIRED PER EPG 616.6.56.

SIGN G020-2 IS USED ON ALL PROJECTS WHERE SIGN G020-1 IS USED.

OTHER SIGNS SUCH AS DETOUR OR ALTERNATE ROUTE SIGNING MAY BE USED OUTSIDE THE PROJECT LIMITS.

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 BACKUPS ARE EXPECTED BEYOND THE ADVANCE WARNING AREA, ADDITIONAL SIGNING MAY BE NEEDED.

(2) SIGN CONST-5-96 OR CONST-5-48 IS PLACED IN A VISIBLE AREA WITHIN THE PROJECT LIMITS PROVIDED ITS PLACEMENT DOES NOT DISRUPT A SEQUENCE OF SIGNS. IF A VISIBLE LOCATION WITHIN THE PROJECT IS NOT AVAILABLE, THE SIGN MAY BE PLACED 500 FEET BEFORE SIGN G020-1 ROAD WORK NEXT XX MILES.

(3) THE "POINT OF PRESENCE" SIGN IS AVAILABLE IN TWO SIZES DEPENDING ON ROADWAY CONDITION. THE 48 IN. X 36 IN. SIGN IS USED ON LOW VOLUME ROUTES THAT CARRY 400 AADT OR LESS, ON PROJECTS THAT HAVE A DURATION OF 4 WEEKS OR LESS OR IN URBAN AREAS WHERE THERE IS INSUFFICIENT RIGHT OF WAY FOR AN EIGHT FOOT WIDE SIGN. THE 96IN. X 48 IN. VERSION OF THE SIGN IS USED IN ALL OTHER APPLICATIONS. BUT CAN ALSO BE USED IN PLACE OF THE 48 IN. X 36 IN. SIGN IF ADDED EMPHASIS IS DEEMED NECESSARY.

(4) THE "WORK ZONE NO PHONE ZONE" SIGN IS PLACED A MINIMUM OF 500 FEET BEFORE THE ROAD WORK AHEAD SIGN.

TRAFFIC CONTROL QUANTITIES AND PLAN SHEETS ARE INCLUDED IN PROJECT J4S3496 AND ARE TO BE CONSIDERED INCLUSIVE FOR ALL PROJECTS TO BE LET IN COMBINATION (J4S3496, J4S3497, & J4S3498).

PAVEMENT MARKING SHOWN ON TRAFFIC CONTROL PLANS ARE EXISTING UNLESS OTHERWISE NOTED AND ARE FOR INFORMATION ONLY

BEGIN/END PROJECT SIGNING TEMPORARY TRAFFIC CONTROL
SHEET 23 OF 29

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
10/18/2024 2:13:49 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

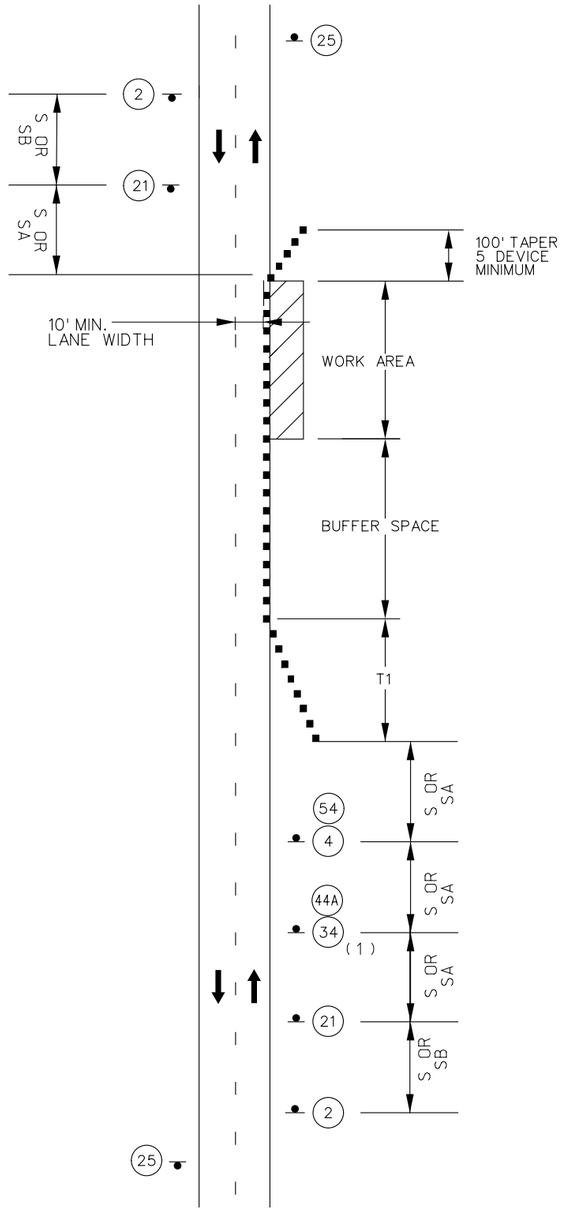
DATE PREPARED: 10/17/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	29

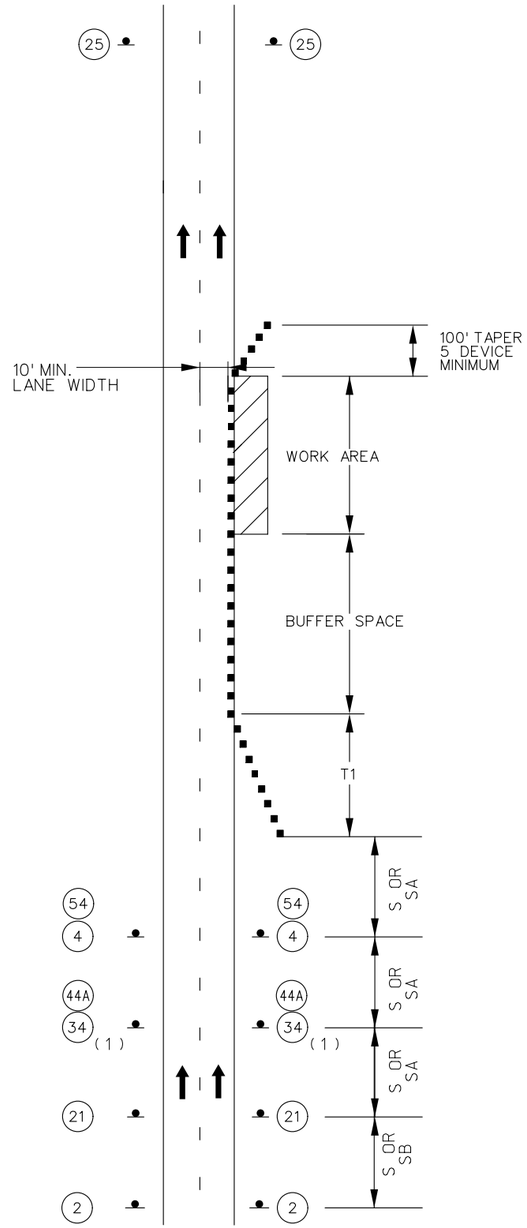
COUNTY: CLAY/PLATTE
JOB NO.: J4S3496
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

DESCRIPTION	DATE

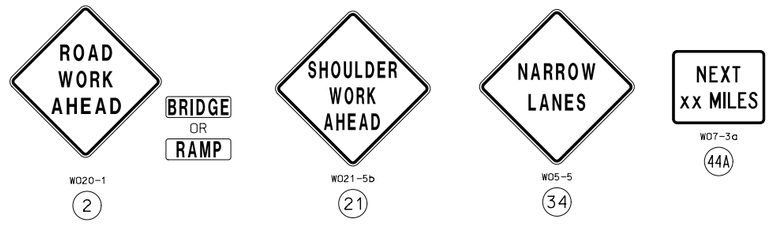
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



TWO LANE UNDIVIDED
SHOULDER WORK
MINOR TRAVELWAY ENCROACHMENT



MULTI-LANE DIVIDED
SHOULDER WORK
MINOR TRAVELWAY ENCROACHMENT



NOTES:
SEE TRAFFIC CONTROL SHEET 3 FOR WORKZONE SPEED LIMIT GUIDELINES.

SEE TRAFFIC CONTROL SHEET 3 FOR SIGN SPACING, DEVICE SPACING AND CHANNELIZING TAPER LENGTHS.

SIGN 2 NOT REQUIRED IF SHOULDER WORK IS LOCATED WITHIN THE LIMITS OF AN ACTIVITY AREA WHERE ANOTHER SIGN 2 IS ALREADY USED.

THE PROTECTIVE VEHICLE MAY BE OMITTED IF A TAPER AND CHANNELIZING DEVICES ARE USED.

VEHICLE- MOUNTED SIGNS SHALL BE MOUNTED IN A MANNER SUCH THAT THEY ARE NOT OBSCURED BY EQUIPMENT OR SUPPLIES. SIGN LEGEND ON VEHICLE-MOUNTED SIGNS SHALL BE COVERED OR TURNED FROM VIEW WHEN WORK IS NOT IN PROGRESS.

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

SHADOW AND WORK VEHICLES SHALL DISPLAY HIGH-DENSITY ROTATING, FLASHING, OSCILLATING, OR STROBE LIGHTS.

(1). SIGN 44A NOT REQUIRED FOR NARROW LANE SECTIONS LESS THAN ONE MILE.

TRAFFIC CONTROL QUANTITIES AND PLAN SHEETS ARE INCLUDED IN PROJECT J4S3496 AND ARE TO BE CONSIDERED INCLUSIVE FOR ALL PROJECTS TO BE LET IN COMBINATION (J4S3496, J4S3497, & J4S3498).

PAVEMENT MARKING SHOWN ON TRAFFIC CONTROL PLANS ARE EXISTING UNLESS OTHERWISE NOTED AND ARE FOR INFORMATION ONLY

NO SCALE

SHOULDER WORK
MINOR ENCROACHMENT
TEMPORARY
TRAFFIC CONTROL
SHEET 24 OF 29

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
10/18/2024 2:14:12 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
10/17/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	30

COUNTY
CLAY/PLATTE

JOB NO.
J4S3496

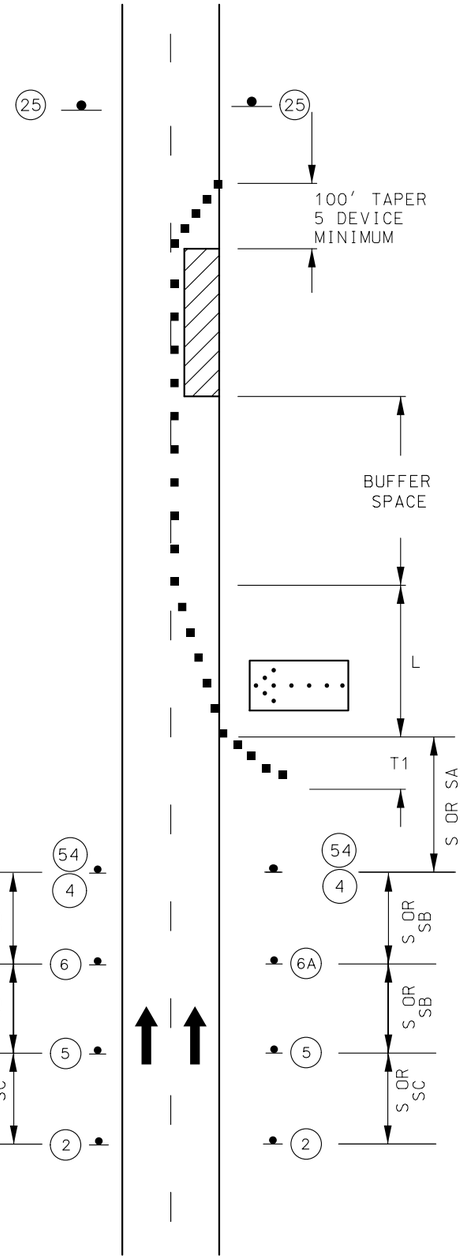
CONTRACT ID.

PROJECT NO.

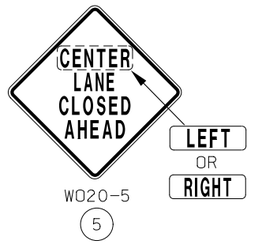
BRIDGE NO.

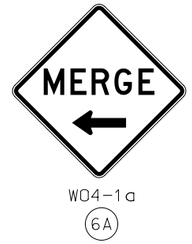
DESCRIPTION	DATE

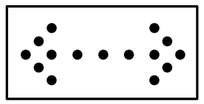
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



TWO-LANE DIVIDED HIGHWAY







NOTES:

SEE TRAFFIC CONTROL SHEET 3 FOR WORK ZONE SPEED LIMIT GUIDELINES.

SEE TRAFFIC CONTROL SHEET 3 FOR SIGN SPACING, DEVICE SPACING AND CHANNELIZING TAPER LENGTHS.

REMOVE AND/OR MODIFY ANY EXISTING PAVEMENT MARKING AS NEEDED.

TEMPORARY PAVEMENT MARKING REQUIRED WITH LONG TERM CLOSURES.

THIS INFORMATION ALSO SHALL BE USED WHEN WORK IS BEING PREFORMED IN THE LANE ADJACENT TO THE MEDIAN ON A DIVIDED HIGHWAY. IN THIS CASE, THE LEFT LANE CLOSED SIGNS AND THE CORRESPONDING MERGE OR LANE ENDS SIGN SHALL BE SUBSTITUTED.

WHEN A SIDE ROAD INTERSECTS THE HIGHWAY WITHIN THE TTC ZONE ADDITIONAL TTC DEVICES SHALL BE PLACED AS NEEDED.

AN ARROW BOARD SHALL BE USED WHEN A FREEWAY LANE IS CLOSED. WHEN MORE THAN ONE FREEWAY LANE IS CLOSED, A SEPARATE ARROW BOARD SHALL BE USED FOR EACH CLOSED LANE.

TRAFFIC CONTROL QUANTITIES AND PLAN SHEETS ARE INCLUDED IN PROJECT J4S3496 AND ARE TO BE CONSIDERED INCLUSIVE FOR ALL PROJECTS TO BE LET IN COMBINATION (J4S3496, J4S3497, & J4S3498).

PAVEMENT MARKING SHOWN ON TRAFFIC CONTROL PLANS ARE EXISTING UNLESS OTHERWISE NOTED AND ARE FOR INFORMATION ONLY

NO SCALE

STATIONARY LANE CLOSURE
ON DIVIDED HIGHWAY
TEMPORARY
TRAFFIC CONTROL
SHEET 25 OF 29

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
10/18/2024 2:14:38 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
10/17/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	31

COUNTY
CLAY/PLATTE

JOB NO.
J4S3496

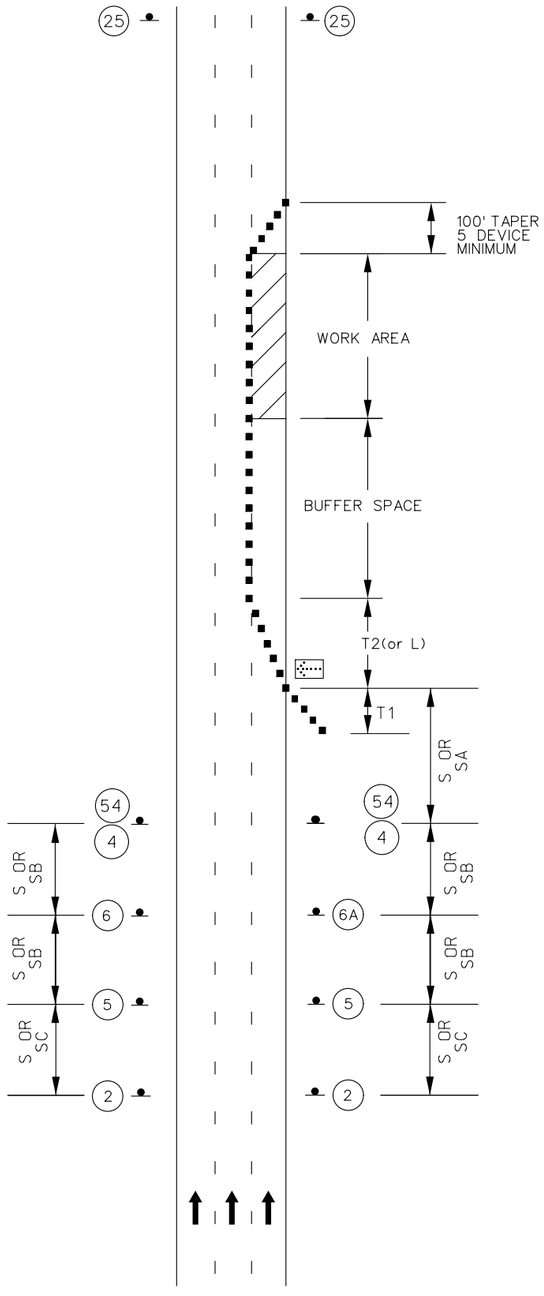
CONTRACT ID.

PROJECT NO.

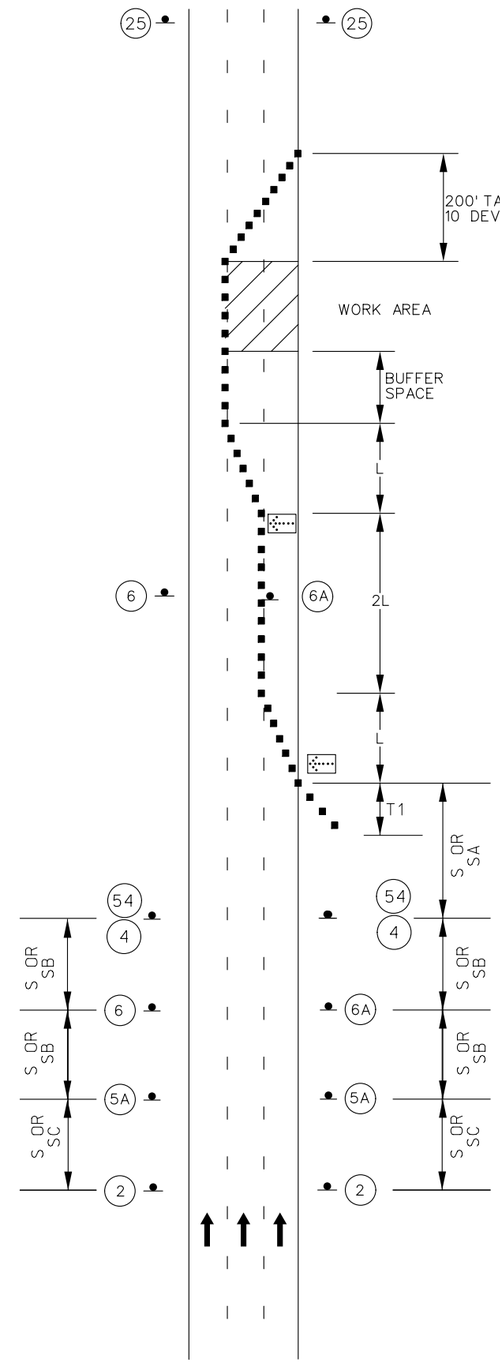
BRIDGE NO.

DESCRIPTION	DATE

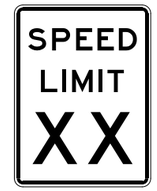
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



TYPICAL LEFT OR RIGHT LANE CLOSURE
MULTI-LANE DIVIDED HIGHWAY



LANE CLOSURE TWO LANES OF
MULTI-LANE DIVIDED HIGHWAY



R2-1
4

W020-1
2

W020-5a
5A

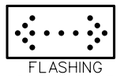
W020-5
5

W04-1a
6A

W020-6a
6

R2-1
NORMAL SPEED
25

G020-5aP
54



FLASHING
ARROW PANEL

CHANNELIZERS

NOTES:

SEE TRAFFIC CONTROL SHEET 3 FOR WORK ZONE SPEED LIMIT GUIDELINES.

SEE TRAFFIC CONTROL SHEET 3 FOR SIGN SPACING, DEVICE SPACING AND CHANNELIZING TAPER LENGTHS.

REMOVE AND/OR MODIFY ANY EXISTING PAVEMENT MARKING AS NEEDED.

TEMPORARY PAVEMENT MARKING REQUIRED WITH LONG TERM CLOSURES.

ALTERNATIVE TEMPORARY TRAFFIC CONTROL SET-UPS SHOULD BE CONSIDERED WHEN REDUCTION IN CAPACITY CANNOT BE TOLERATED.

A FLASHING ARROW BOARD SHALL BE USED WHEN A FREEWAY LANE IS CLOSED. WHEN MORE THAN ONE FREEWAY LANE IS CLOSED, A SEPARATE ARROW BOARD SHALL BE USED FOR EACH CLOSED LANE.

TRAFFIC CONTROL QUANTITIES AND PLAN SHEETS ARE INCLUDED IN PROJECT J4S3496 AND ARE TO BE CONSIDERED INCLUSIVE FOR ALL PROJECTS TO BE LET IN COMBINATION (J4S3496, J4S3497, & J4S3498).

PAVEMENT MARKING SHOWN ON TRAFFIC CONTROL PLANS ARE EXISTING UNLESS OTHERWISE NOTED AND ARE FOR INFORMATION ONLY

NO SCALE

LANE CLOSURES
FREEWAY
TEMPORARY
TRAFFIC CONTROL
SHEET 26 OF 29

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER

10/18/2024 2:16:52 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
10/17/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	32

COUNTY
CLAY/PLATTE

JOB NO.
J4S3496

CONTRACT ID.

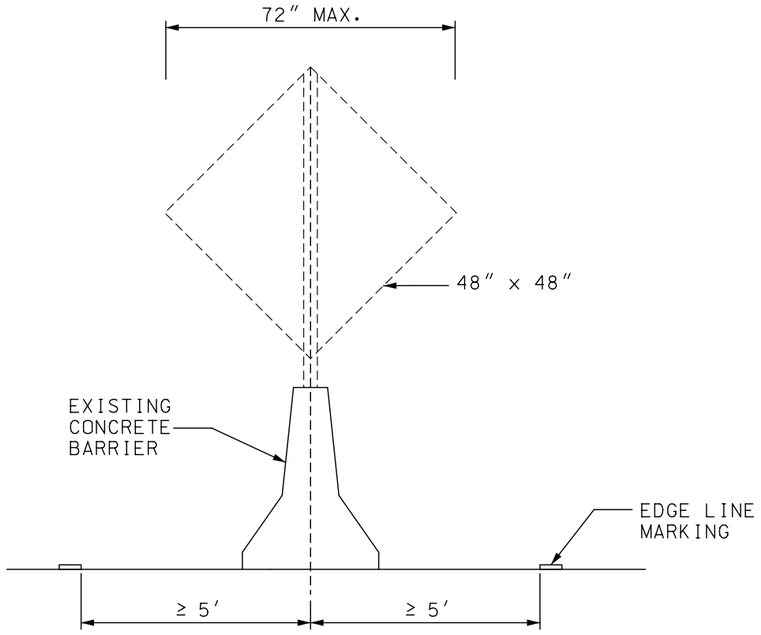
PROJECT NO.

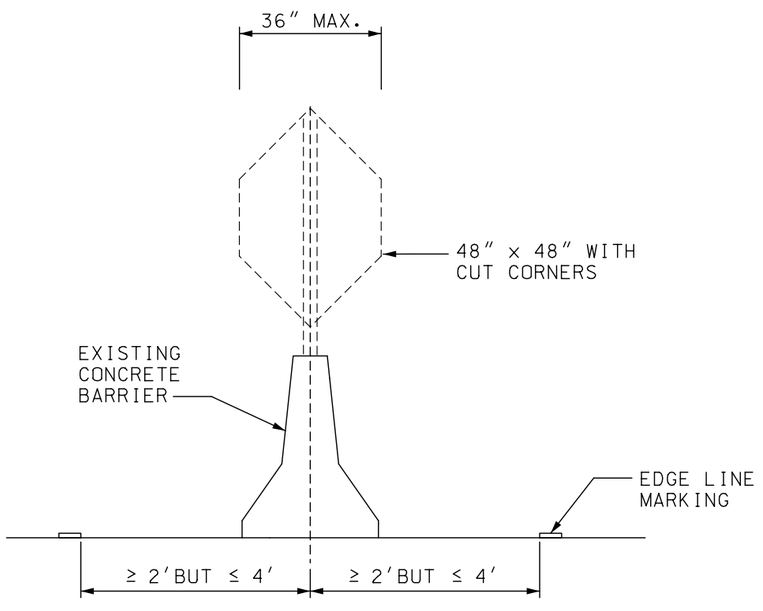
BRIDGE NO.

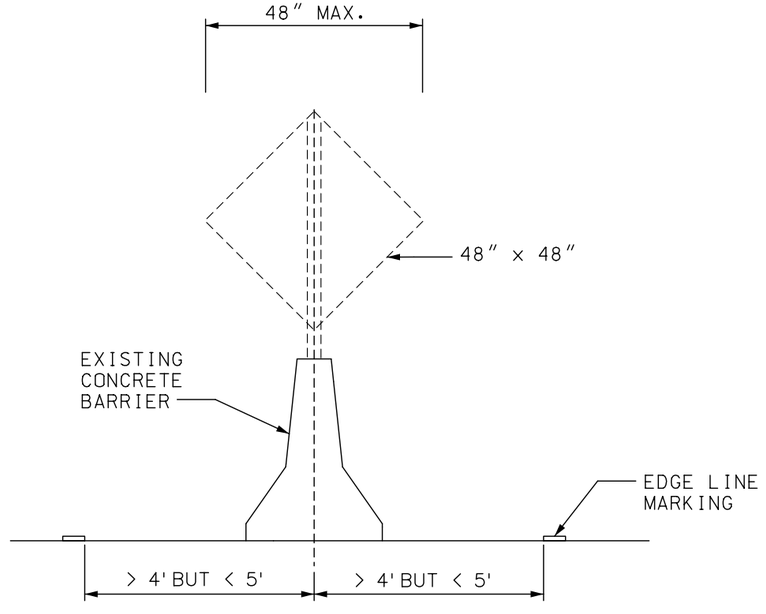
DESCRIPTION	DATE

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

TRAFFIC CONTROL DEVICES
BARRIER MOUNTED SIGNS







NOTES:

ALL SIGNS SHALL HAVE FLUORESCENT ORANGE REFLECTIVE SHEETING.

48" x 48" DIAMOND-SHAPED WARNING SIGNS SHALL BE USED. RECTANGULAR SIGNS SHALL NOT BE USED IN LIEU OF DIAMOND-SHAPED WARNING SIGNS.

WHERE SIGN SIZES SMALLER THAN THOSE SHOWN ON STANDARD PLAN 616.10 ARE USED, THE LAYOUTS OF THE SIGNS NEEDED SHALL BE SHOWN ON THE PLANS.

WARNING SIGNS SHALL BE MOUNTED AT 7 FEET FOR SIGNS LEFT OVERNIGHT OR NIGHTTIME OPERATIONS.

ALL REGULATORY AND GUIDE SIGNS SHALL BE MOUNTED AT 7 FEET.

TRAFFIC CONTROL QUANTITIES AND PLAN SHEETS ARE INCLUDED IN PROJECT J4S3496 AND ARE TO BE CONSIDERED INCLUSIVE FOR ALL PROJECTS TO BE LET IN COMBINATION (J4S3496, J4S3497, & J4S3498).

PAVEMENT MARKING SHOWN ON TRAFFIC CONTROL PLANS ARE EXISTING UNLESS OTHERWISE NOTED AND ARE FOR INFORMATION ONLY

WORK ZONE SIGNS
BARRIER MOUNTING DETAILS
TEMPORARY
TRAFFIC CONTROL
SHEET 27 OF 29

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
10/18/2024 2:17:31 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

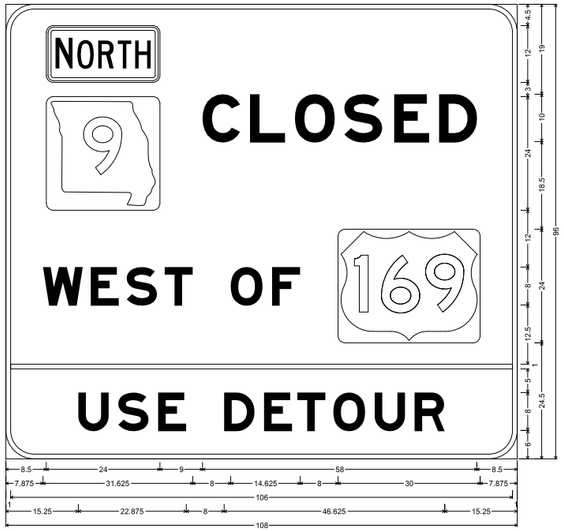
DATE PREPARED: 10/17/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	33

COUNTY: CLAY/PLATTE
JOB NO.: J4S3496
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)



SPECIAL SHF-FLAT SHEET FLUORESCENT:
6.000" Radius, 1.000" Border, Black on, Orange;
"CLOSED", E Mod; "WEST OF", E Mod; "USE DETOUR", E Mod;
Table of letter and object lefts

	C	L	O	S	E	D	
8.500	41.500	51.625	61.000	71.500	82.000	91.500	
W	E	S	T	O	F		
7.875	17.875	25.500	33.500	47.500	56.250	70.125	
1.000							
U	S	E	D	E	T	O	U	R
15.250	23.750	32.125	46.125	54.500	61.625	69.125	77.875	86.375

SPECIAL SHF-FLAT SHEET:
1.500" Radius, 0.375" Border, 0.375" Indent, Black on, White;
"SIDEWALK", D; "CLOSED", D; "AHEAD", D;
Table of letter and object lefts

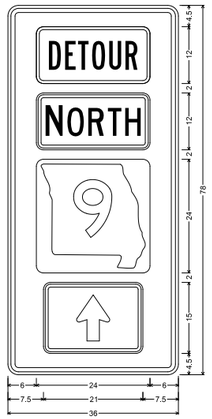
S	I	D	E	W	A	L	K
2.375	5.125	8.375	9.500	11.250	14.000	17.125	19.500
C	L	O	S	E	D		
4.625	7.250	9.625	12.250	15.000	17.375		
A	H	E	A	D			
5.500	8.500	11.250	13.500	16.500			

MO4-13-96 SHF-FLAT SHEET FLUORESCENT:
3.000" Radius, 1.000" Border, Black on, Orange;
"CLOSED", E Mod 85% spacing; "½ MILE", E Mod 85% spacing; "AHEAD", E Mod 85% spacing;
Table of letter and object lefts

	C	L	O	S	E	D
8.000	41.375	49.125	56.500	64.625	72.625	80.000
½	M	I	L	E		
8.000	39.750	62.250	71.375	74.625	82.000	
A	H	E	A	D		
43.750	53.250	61.250	68.125	77.625		

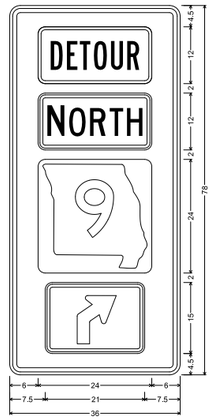
NOTE;
TRAFFIC CONTROL QUANTITIES AND PLAN SHEETS ARE INCLUDED IN PROJECT J4S3496 AND ARE TO BE CONSIDERED INCLUSIVE FOR ALL PROJECTS TO BE LET IN COMBINATION (J4S3496, J4S3497, & J4S3498).

PAVEMENT MARKING SHOWN ON TRAFFIC CONTROL PLANS ARE EXISTING UNLESS OTHERWISE NOTED AND ARE FOR INFORMATION ONLY



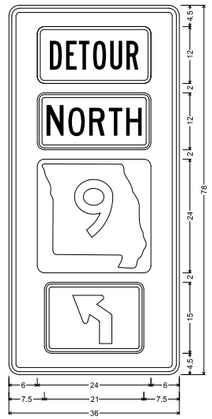
MO4-11 SHF-FLAT SHEET FLUORESCENT:
2.250" Radius, 0.875" Border, 0.625" Indent, Black on, Orange;
Table of letter and object lefts

	6.000
	6.000
	6.000
	7.500



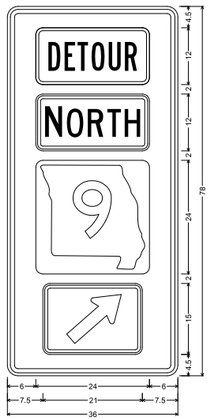
MO4-11 SHF-FLAT SHEET FLUORESCENT:
2.250" Radius, 0.875" Border, 0.625" Indent, Black on, Orange;
Table of letter and object lefts

	6.000
	6.000
	6.000
	7.500



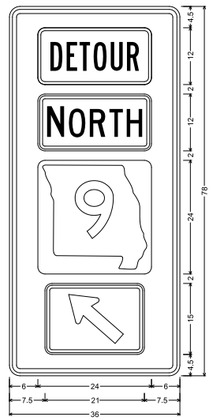
MO4-11 SHF-FLAT SHEET FLUORESCENT:
2.250" Radius, 0.875" Border, 0.625" Indent, Black on, Orange;
Table of letter and object lefts

	6.000
	6.000
	6.000
	7.500



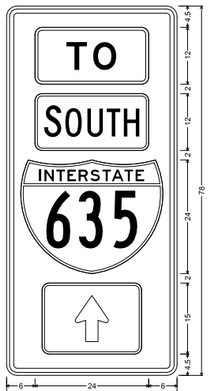
MO4-11 SHF-FLAT SHEET FLUORESCENT:
2.250" Radius, 0.875" Border, 0.625" Indent, Black on, Orange;
Table of letter and object lefts

	6.000
	6.000
	6.000
	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
	6.000
	7.500



MO4-11-36 SHF-FLAT SHEET FLUORESCENT:
2.250" Radius, 0.875" Border, 0.625" Indent, Black on, Orange;
Interstate 635 12.000" B;
Table of letter and object lefts

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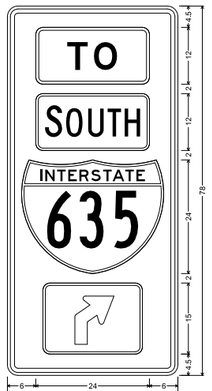
	3.000
	7.500



MO4-11-36 SHF-FLAT SHEET FLUORESCENT:
2.250" Radius, 0.875" Border, 0.625" Indent, Black on, Orange;
Interstate 635 12.000" B;
Table of letter and object lefts

	6.000
	6.000
	3.000
	7.500

MO4-11-36 SHF-FLAT SHEET FLUORESCENT:
2.250" Radius, 0.875" Border, 0.625" Indent, Black on, Orange;
Interstate 635 12.000" B;
Table of letter and object lefts

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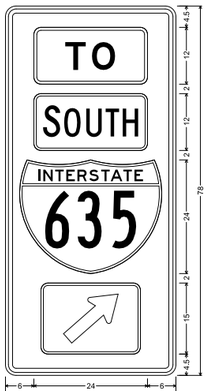
	6.000
	3.000
	7.500



MO4-11-36 SHF-FLAT SHEET FLUORESCENT:
2.250" Radius, 0.875" Border, 0.625" Indent, Black on, Orange;
Interstate 635 12.000" B;
Table of letter and object lefts

	6.000
	6.000
	3.000
	7.500

MO4-11-36 SHF-FLAT SHEET FLUORESCENT:
2.250" Radius, 0.875" Border, 0.625" Indent, Black on, Orange;
Interstate 635 12.000" B;
Table of letter and object lefts

	6.000
	6.000
	3.000
	7.500

NOT TO SCALE

NORTHBOUND ROUTE 9
DETOUR SIGN DETAILS
TEMPORARY
TRAFFIC CONTROL
SHEET 28 OF 29

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
Heather R. Barrows
10/18/2024 2:18:09 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
10/17/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	34

COUNTY
CLAY/PLATTE

JOB NO.
J4S3496

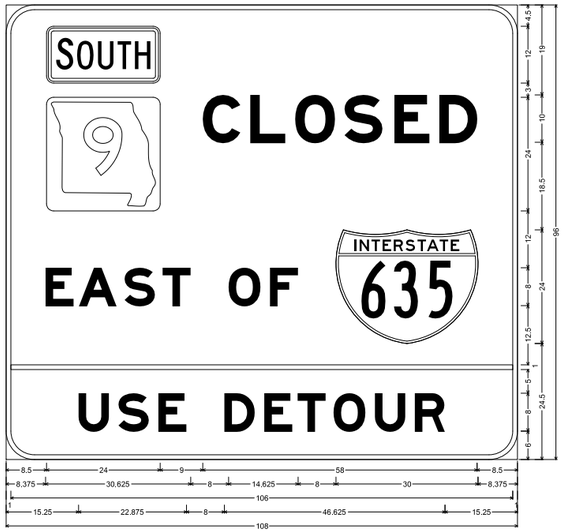
CONTRACT ID.

PROJECT NO.

BRIDGE NO.

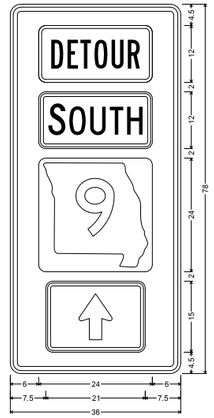
DATE	DESCRIPTION

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



SPECIAL SHF-FLAT SHEET FLUORESCENT;
6.000" Radius, 1.000" Border, Black on, Orange;
"CLOSED", E Mod; "EAST OF", E Mod; Interstate 635 12.000" B; "USE DETOUR", E Mod;
Table of letter and object lefts

8.500	C 41.500	L 51.625	O 61.000	S 71.500	E 82.000	D 91.500
8.500						
E 8.375	A 15.375	S 25.000	T 33.000	O 47.000	F 55.750	69.625
1.000						
U 15.250	S 23.750	E 32.125	D 46.125	E 54.500	T 61.625	O 69.125	U 77.875	R 86.375



MO4-11 SHF-FLAT SHEET FLUORESCENT;
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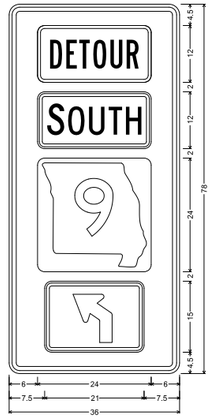
6.000	
6.000	
7.500	



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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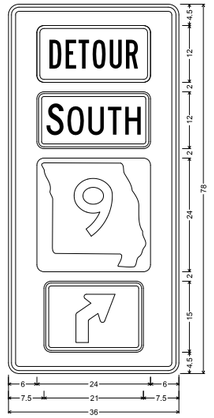
6.000	
6.000	
7.500	



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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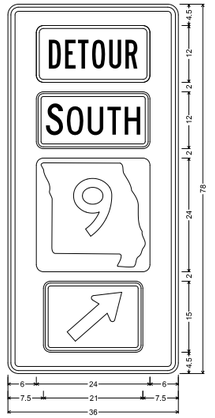
6.000	
7.500	



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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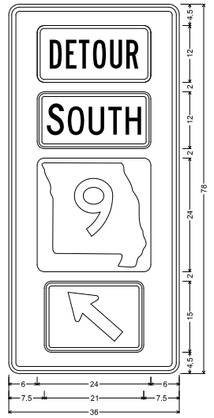
6.000	
6.000	
7.500	



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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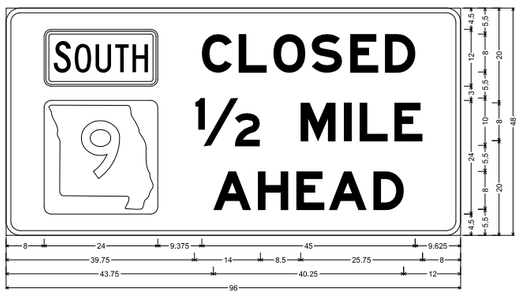
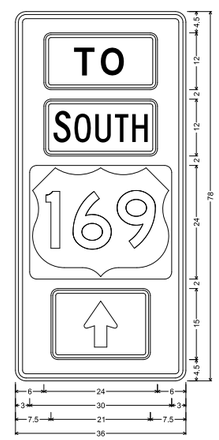
6.000	
6.000	
7.500	



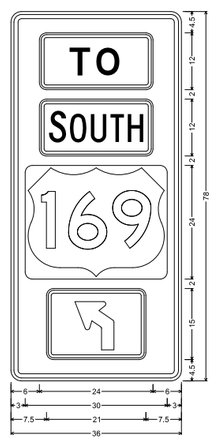
MO4-13-96 SHF-FLAT SHEET FLUORESCENT;
3.000" Radius, 1.000" Border, Black on, Orange;
"CLOSED", E Mod 85% spacing; "½ MILE", E Mod 85% spacing; "AHEAD", E Mod 85% spacing;
Table of letter and object lefts

8.000	C 41.375	L 49.125	O 56.500	S 64.625	E 72.625	D 80.000
8.000	½ 39.750	M 52.250	I 71.375	L 74.625	E 82.000	
A 43.750	H 53.250	E 61.250	A 68.125	D 77.625		



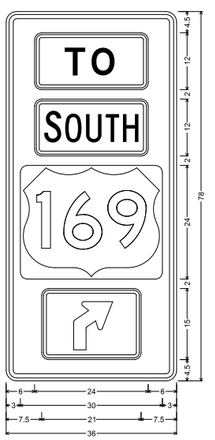
MO4-11 SHF-FLAT SHEET FLUORESCENT;
2.250" Radius, 0.875" Border, 0.625" Indent, Black on, Orange;
Table of letter and object lefts

6.000	
6.000	
3.000	
7.500	



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	



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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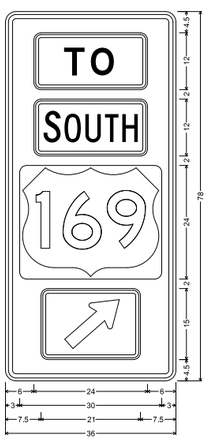
3.000	
7.500	



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	
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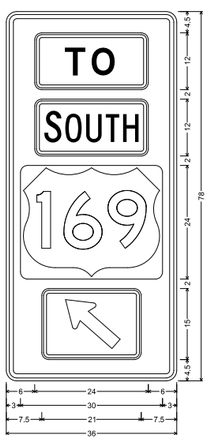
3.000	
7.500	



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	

NOTE:
TRAFFIC CONTROL QUANTITIES AND PLAN SHEETS ARE INCLUDED IN PROJECT J4S3496 AND ARE TO BE CONSIDERED INCLUSIVE FOR ALL PROJECTS TO BE LET IN COMBINATION (J4S3496, J4S3497, & J4S3498).

NOT TO SCALE

SOUTHBOUND ROUTE 9
DETOUR SIGN DETAILS
TEMPORARY
TRAFFIC CONTROL
SHEET 29 OF 29

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
10/18/2024 3:17:53 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
10/17/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	35

COUNTY
CLAY/PLATTE

JOB NO.
J4S3496

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)

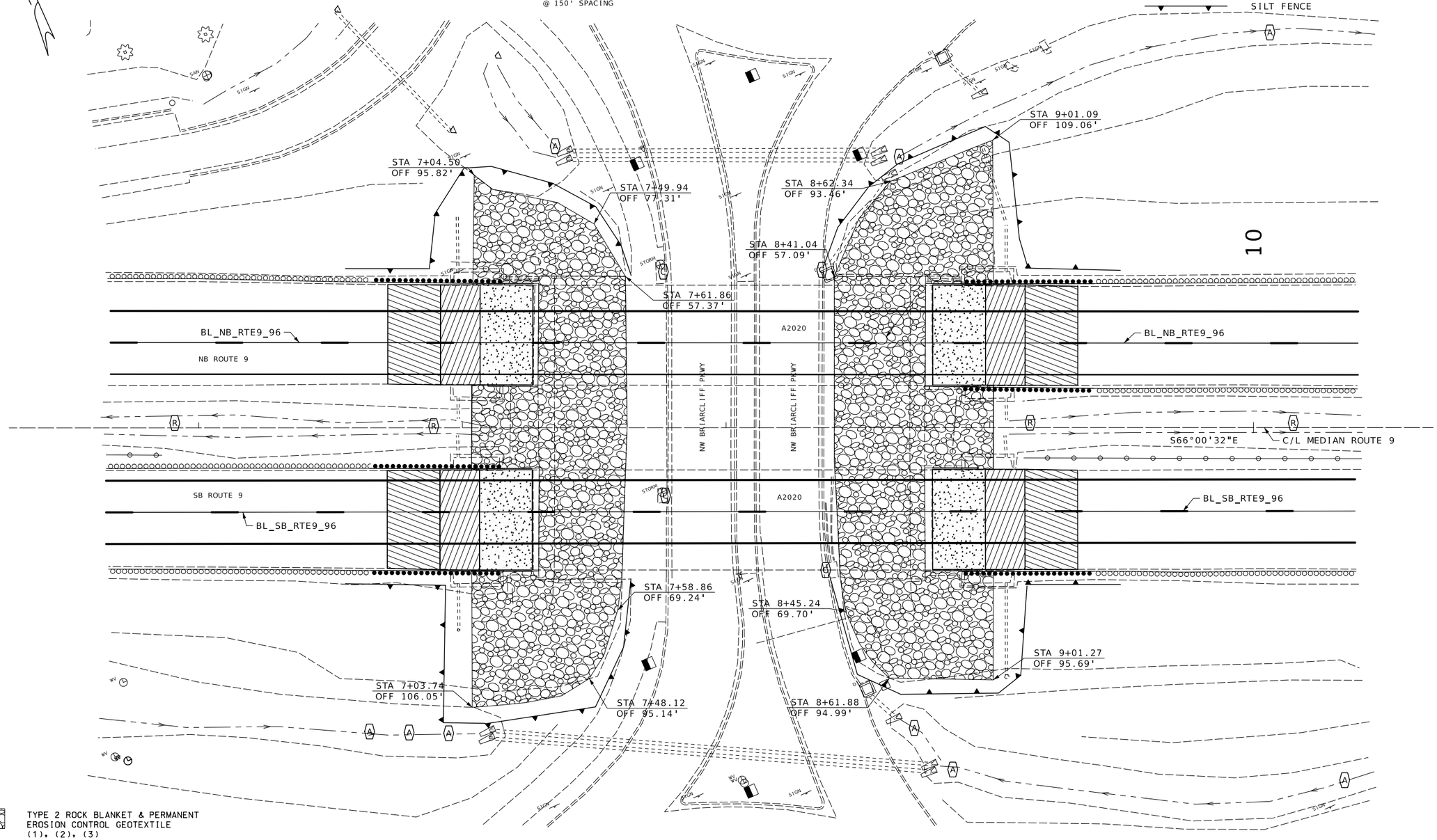
SILT FENCE = 707 LF
BL_NB_RTE9_96
STA. 0+89.02 TO 1+97.39 L.T.
STA. 2+70.71 TO 3+82.91 L.T.
BL_SB_RTE9_96
STA. 0+90.70 TO 1+98.99 R.T.
STA. 2+74.62 TO 3+84.62 R.T.

ALT. DITCH CHECKS - 206.4 L.F. (9 TOTAL)
℄ MEDIAN ROUTE 9
STA. 7+35.00 LT.
STA. 8+70.00 RT.
STA. 6+64.00 TO 6+94.00 RT.
@ 15' SPACING
STA. 8+85.00 TO 10+35.00 RT.
@ 150' SPACING
STA. 8+65.00 TO 10+05.00 LT.
@ 150' SPACING

ROCK DITCH CHECKS - 129.2 L.F. (4 TOTAL)
@ 100' SPACING
℄ MEDIAN ROUTE 9
STA, 5+90.00 TO 6+90.00 LT./RT.
STA, 9+15.00 TO 10+15.00 LT./RT.

TEMPORARY EROSION CONTROL LEGEND

- (A) ALTERNATE DITCH CHECK
- (R) ROCK DITCH CHECK
- (C) CURB INLET CHECK
- SILT FENCE



TYPE 2 ROCK BLANKET & PERMANENT EROSION CONTROL GEOTEXTILE (1), (2), (3)

(1) SEE STD. 609.40S (SHEET NO. 3)

(2) PLACE TYPE 2 ROCK BLANKET FLUSH WITH EXISTING GROUND LINE

(3) SURFACE PREPARATION FOR PLACING TYPE 2 ROCK BLANKET SHALL BE SUBSIDIARY TO PAY ITEM 'PLACING TYPE 2 ROCK BLANKET'

NOTES:
ADJUST TEMPORARY AND PERMANENT EROSION CONTROL MEASURES AS NECESSARY TO MEET FIELD CONDITIONS AS DIRECTED BY ENGINEER

RUBBLIZED EX. BRIDGE DECK AND EX CONCRETE SLOPE PROTECTION MAY BE USED ON SPILL SLOPES AND ALONG WINGWALLS BUT SHALL MEET CLEAN FILL REQUIREMENTS

SCALE
0 20 40 60

EROSION CONTROL
SHEET 1 OF 1

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
10/18/2024 1:55:30 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
10/17/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	36

COUNTY
CLAY

JOB NO.
J4S3496

CONTRACT ID.

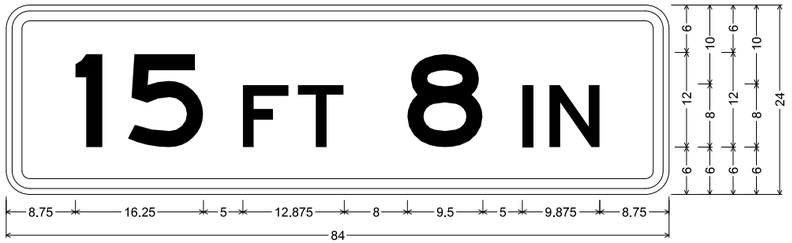
PROJECT NO.

BRIDGE NO.

DESCRIPTION

DATE

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



W12-2a SHF-FLAT SHEET FLUORESCENT;
3.000" Radius, 1.250" Border, 0.750" Indent, Black on, Yellow;
"15 FT 8 IN", E;
Table of letter and object lefts

1	5	F	T	8	I	N
8.750	15.375	30.000	37.000	50.875	65.375	68.875

NOT TO SCALE

SIGNING SHEET
SHEET 1 OF 1

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER

10/18/2024 2:18:32 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
10/17/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	37

COUNTY
CLAY

JOB NO.
J4S3496

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)

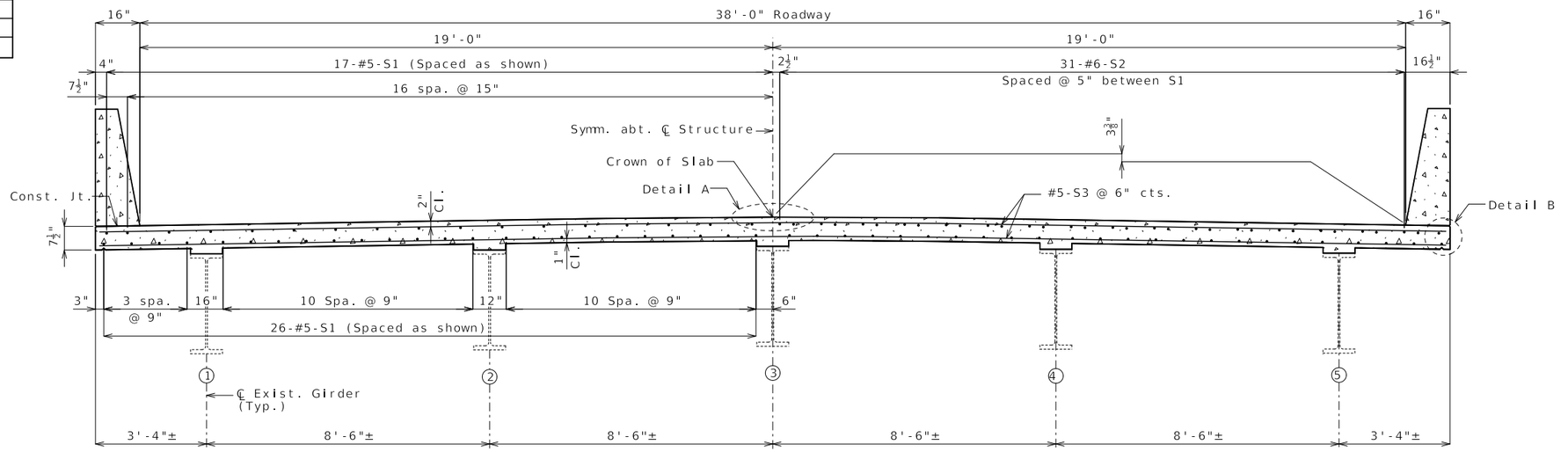
SEC/SUR 10 TWP 50 RGE 33W

U.I.P. & REDECK EXISTING (35'- 80'- 35') CONTINUOUS COMPOSITE PLATE GIRDER SPANS

Table Showing S2 Bar Lengths			
Int. Bent No. 2		Int. Bent No. 3	
Span 1	Span 2	Span 2	Span 3
10'-9"	20'-3"	20'-3"	10'-9"

Required Lap Length For Bar Splices **	
Bar Size	Splice Length
4	3'-0"
5	3'-3"
6	3'-10"
7	4'-11"

** Unless otherwise shown.



HALF SECTION NEAR MIDSPAN

HALF SECTION NEAR INT. BENT

General Notes:

Design Specifications:

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

Design Loading:

HS20-44 (1965) (Existing)
HS20-44 (New Construction)
35 #/sf Future Wearing Surface
Earth - 120 #/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 (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:

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 ordering new material.

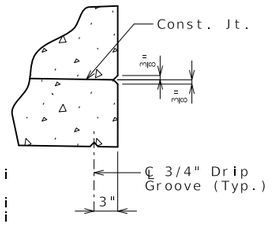
The area exposed by the removal of concrete and not covered with new concrete shall be coated with an approved qualified special mortar in accordance with Sec 704.

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).

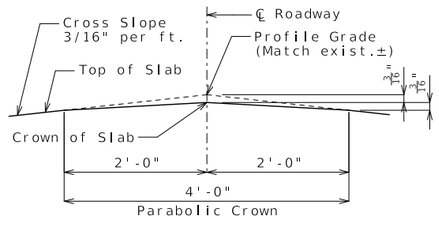
Traffic Handling:

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

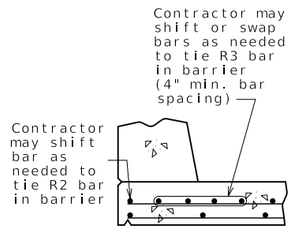
TYPICAL SECTION THRU SLAB



DETAIL B



DETAIL A



OPTIONAL SHIFTING TOP BARS AT BARRIER

Estimated Quantities		
Item		Total
Removal of Miscellaneous ACM (Non-Friable)	sq. foot	16
Class 1 Excavation	cu. yard	110
Temporary Shoring	lump sum	1
Removal of Existing Bridge Deck	sq. foot	6,194
Bridge Approach Slab (Major)	sq. yard	172
Slab on Steel	sq. yard	682
Type D Barrier	linear foot	348
Shear Connectors	each	840
Slab Drain	each	12
Surface Preparation for Appling Epoxy-Mustic Primer	lump sum	1
Gray Epoxy-Mustic Primer	lump sum	1
Vertical Drain at End Bents	each	2

Estimated Quantities for Slab on Steel		
Item		Total
Class B-2 Concrete	cu. yard	141
Reinforcing Steel (Epoxy Coated)	pound	63,190

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.

REPAIRS TO BRIDGE: ROUTE 9 SB OVER NW BRIARCLIFF PRWY

ROUTE 9 FROM ROUTE I-655 TO ROUTE 169
ABOUT 1.4 MILES EAST OF ROUTE I-655
BEGINNING STATION 7+26.5± (MATCH EXISTING)

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
Ted Koester
11/19/2024 2:49:53 PM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED 11/19/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	1

COUNTY CLAY

JOB NO. J4S3496

CONTRACT ID.

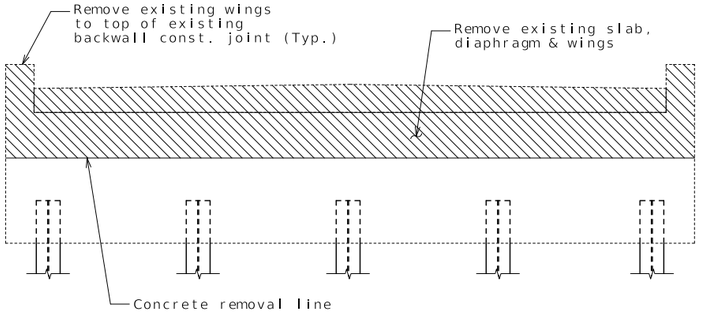
PROJECT NO.

BRIDGE NO. A20203

DESCRIPTION

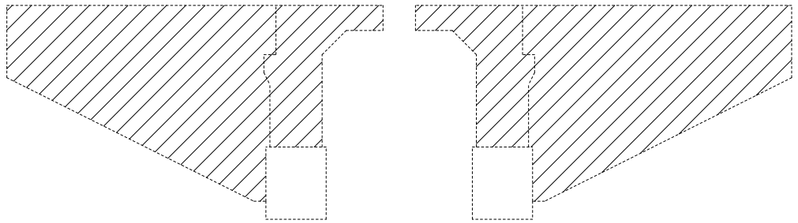
DATE

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

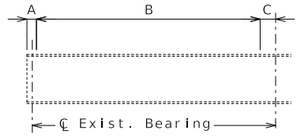


DETAILS OF CONCRETE REMOVAL AT END BENTS

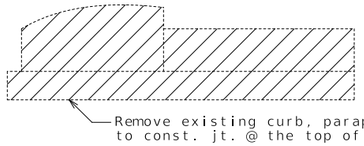
The cost of concrete removal as shown will be considered completely covered by the contract unit price for Removal of Existing Bridge Deck.



DETAILS OF CONCRETE REMOVAL OF WINGS @ BENTS NO. 1 & 4

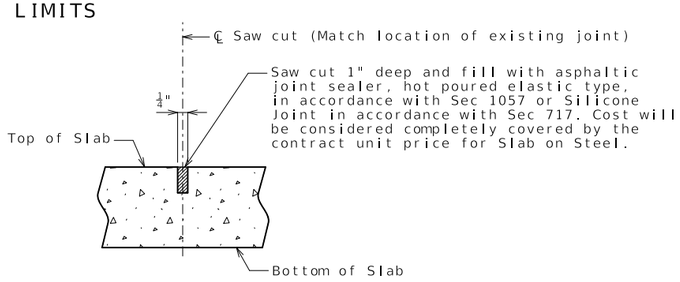


ELEVATION SHOWING SHEAR CONNECTOR SPACING FOR END BEAMS

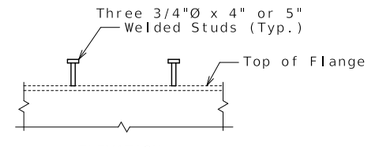


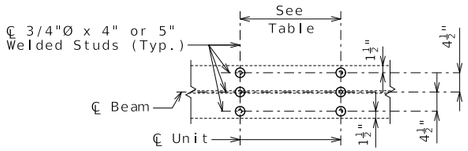
ELEVATION OF END POST SHOWING CONCRETE REMOVAL LIMITS

TABLE SHOWING SHEAR CONNECTOR UNIT SPACING				
Beam	S.C. per unit	A	B	C
Span 1-2	3	6"±	28 Units @ 6" cts.	93"±
Span 3-4	3	93"±	28 Units @ 6" cts.	6"±
	Total shear connectors required			840



TYPICAL SECTION THRU SAW CUT AT INTERMEDIATE BENTS



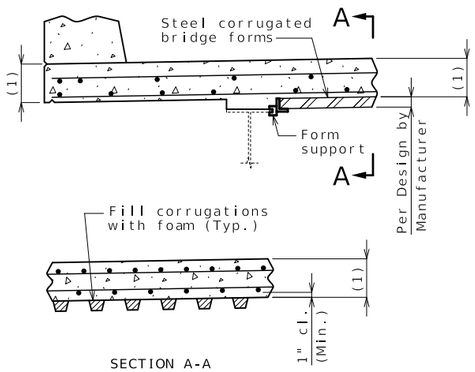


PLAN OF SHEAR CONN. (3 PER UNIT)

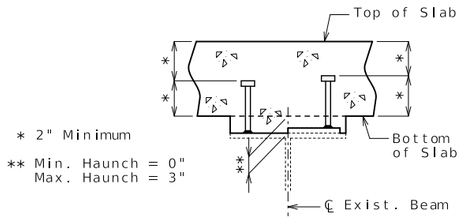
DETAILS OF SHEAR CONNECTORS

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

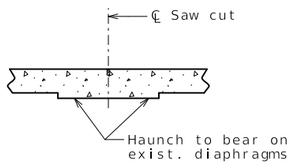
Shear connectors shall be in accordance with Sec 712, 1037 & 1080.



OPTIONAL STAY-IN-PLACE FORM DETAILS



SECTION THRU EXIST. BEAM SHOWING SHEAR CONNECTORS



PART SECTION THRU SLAB AT INT. 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.

Detailed Feb. 2024
Checked Feb. 2024

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

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TED S. KOESTER
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DATE PREPARED 11/19/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	2

COUNTY CLAY

JOB NO. J4S3496

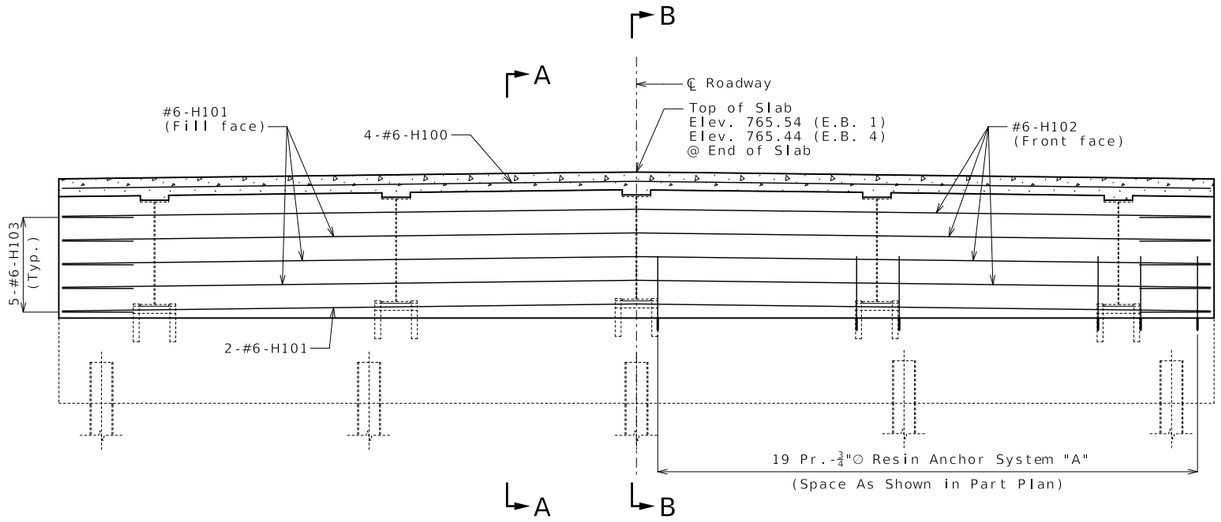
CONTRACT ID.

PROJECT NO.

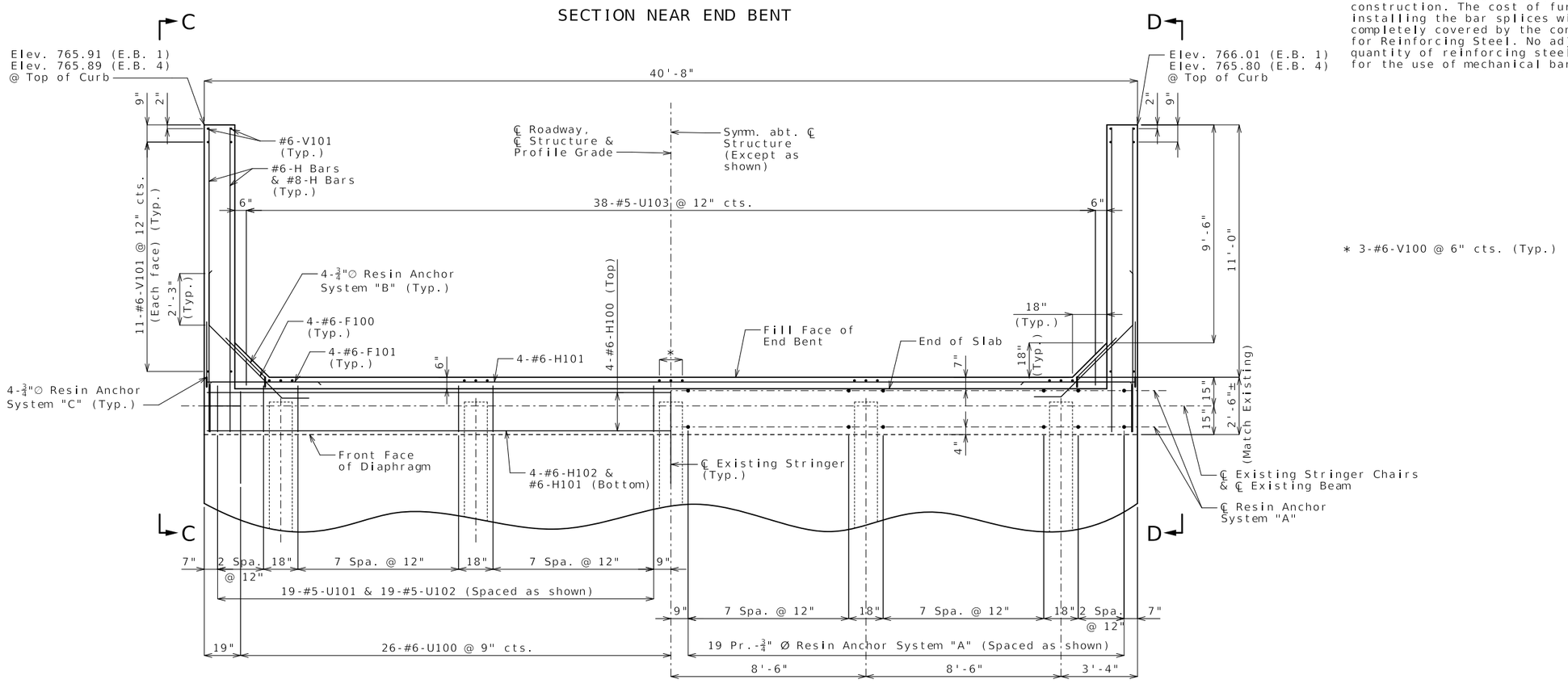
BRIDGE NO. A20203

DESCRIPTION	DATE

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



SECTION NEAR END BENT



PART PLAN

DETAILS OF END BENT NO. 1 & 4

Bent 1 shown, Bent 4 similar.

Notes:

For Sections A-A & B-B, and Elevations C-C & D-D, see Sheet No. 4.

All concrete in the End bent above bottom of wing and below top of slab shall be class B-2.

For reinforcement of the safety barrier curb, see Sheets No. 7 & 8.

The exposed and accessible surfaces of the existing structureal 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 not less than 3 milsbefore concrete is poured. The surface preperationand coating for beams shall extend a minimum of two feet 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.

The H102 bars are segmented for ease of placement through girder web holes. The total bar length for H102 bars shown in Bill of Reinforcing Steel allows for one lap splice with a length of 3'-10". Actual bar segment lengths to be determined by contractor for ease of installing bars. The contractor may use a mechanical bar splice in lieu of a lap splice. When a mechanical bar splice is used, the actual bar segment length will be determined by the contractor to accommodate manufacturer's recommendations for installation and ease of construction. The cost of furnishing and installing the bar splices will be considered completely covered by the contract unit price for Reinforcing Steel. No adjustment of the quantity of reinforcing steel will be allowed for the use of mechanical bar splices.

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TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
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MO-PE-2013000591

DATE PREPARED
11/19/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	3

COUNTY
CLAY

JOB NO.
J4S3496

CONTRACT ID.

PROJECT NO.

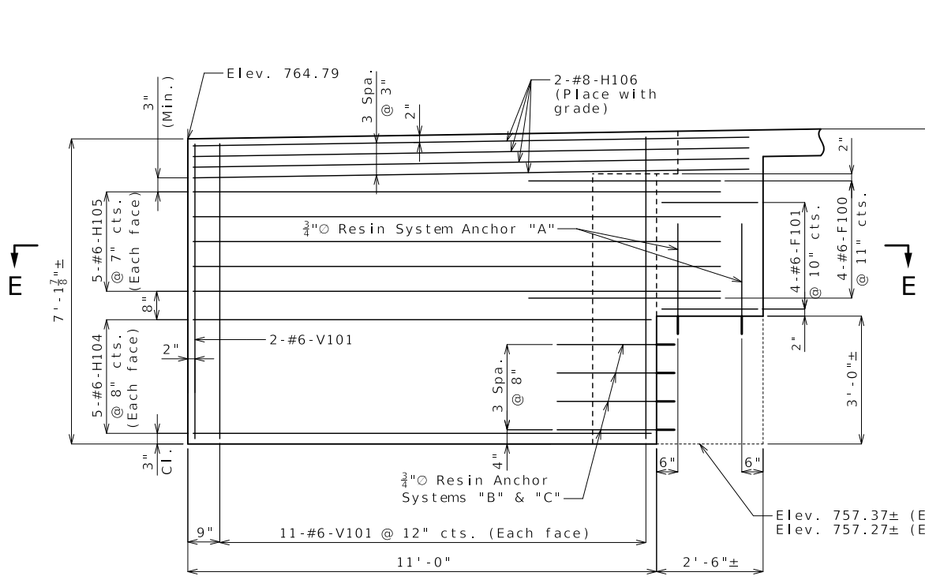
BRIDGE NO.
A20203

DESCRIPTION	DATE

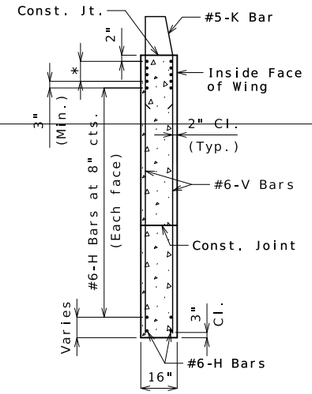
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

Detailed Feb. 2024
Checked Feb. 2024

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

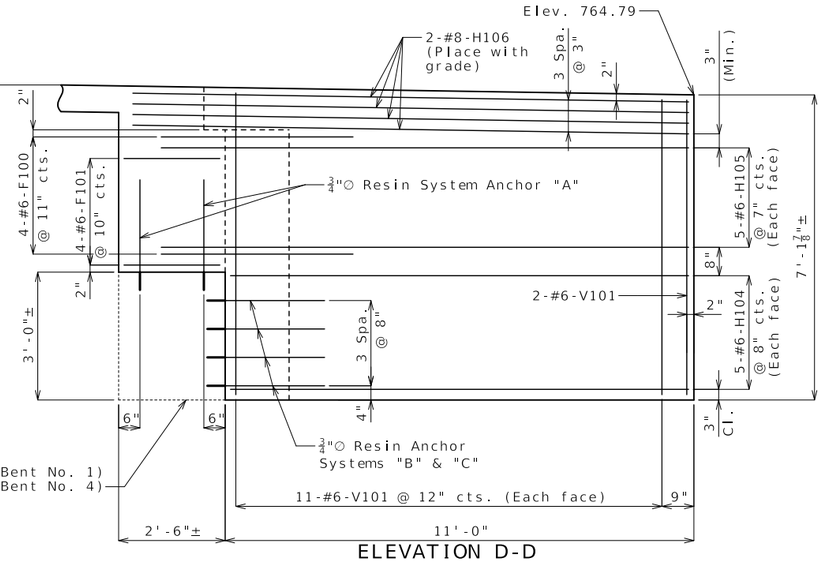


ELEVATION C-C



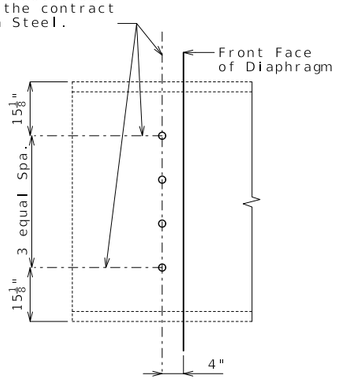
TYPICAL SECTION THRU WING

* #8-H Bars at 3" cts. (Each face)(Place with grade)

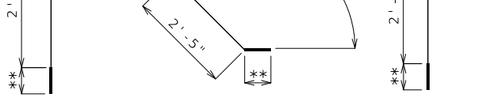


ELEVATION D-D

℄ $1\frac{1}{16}$"∅ holes in each stringer. Cost of field drilling holes in existing webs will be considered completely covered by the contract unit price for Slab on Steel.



DETAIL OF WEB HOLES



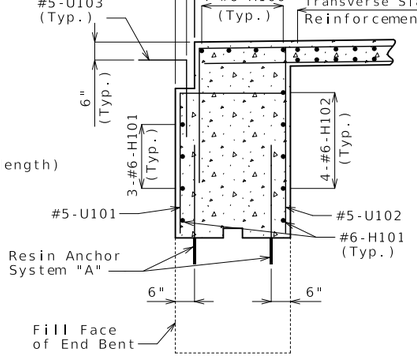
System A (152 required) System B (16 required) System C (16 required)

** Use manufacturer's embedment length. (5" minimum embedment length)

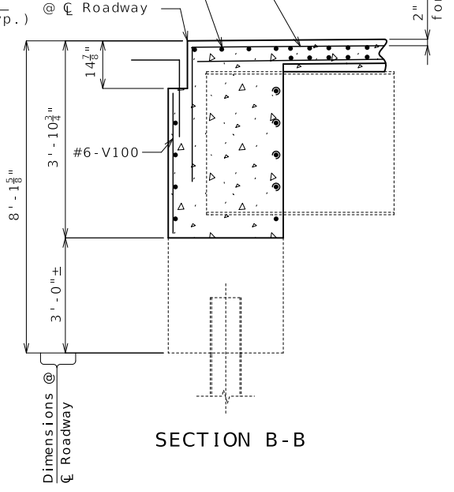
Note:

For location of Resin Anchors, see Sheet No. 3.

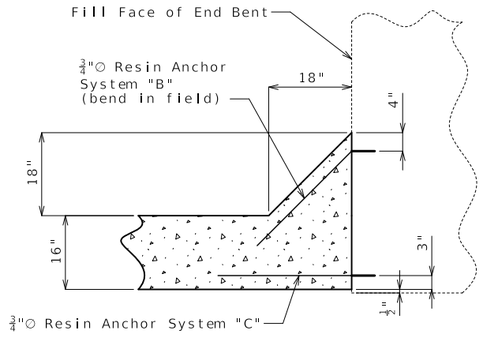
DETAILS OF RESIN ANCHORS



SECTION A-A



SECTION B-B



SECTION E-E

Notes:

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 shown on this sheet complete-in-place will be considered completely covered y 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 ¾"Ø threaded rod.

Notes:

For location of Elevations A-A & B-B, see Sheet No. 3.

For reinforcement fo the safety barrier curb, see Sheets No. 7 & 8.

The #6-F100 bars shall be bent in the field to clear stringers.

All concrete in the end bent above bottom of wing and below top of slab shall be class B-2.

Concrete diaphragms at the integral end bents shall be poured a minimum of 12 hours before the slab is poured.

DETAILS OF END BENT NO. 1 & 4

Bent 1 shown, Bent 4 similar.

Detailed Feb. 2024
Checked Feb. 2024

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

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TED S. KOESTER
NUMBER PE-2013000591
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MO-PE-2013000591

DATE PREPARED 11/19/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	4

COUNTY CLAY

JOB NO. J4S3496

CONTRACT ID.

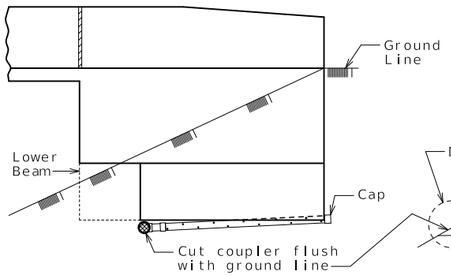
PROJECT NO.

BRIDGE NO. A20203

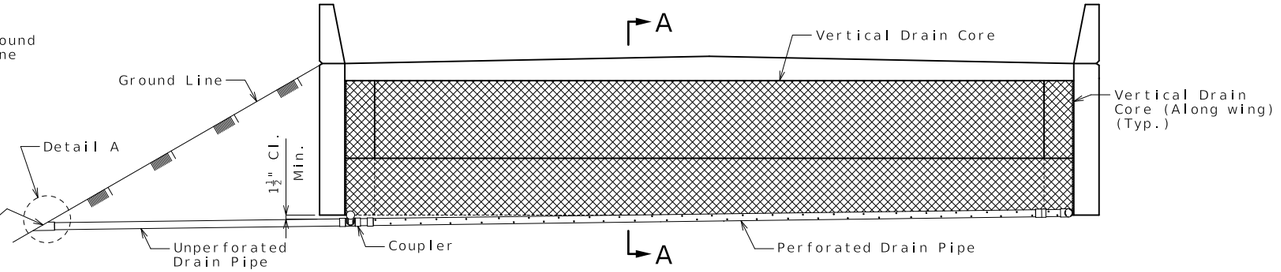
DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

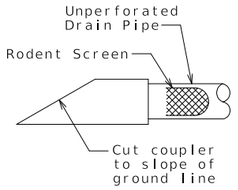
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



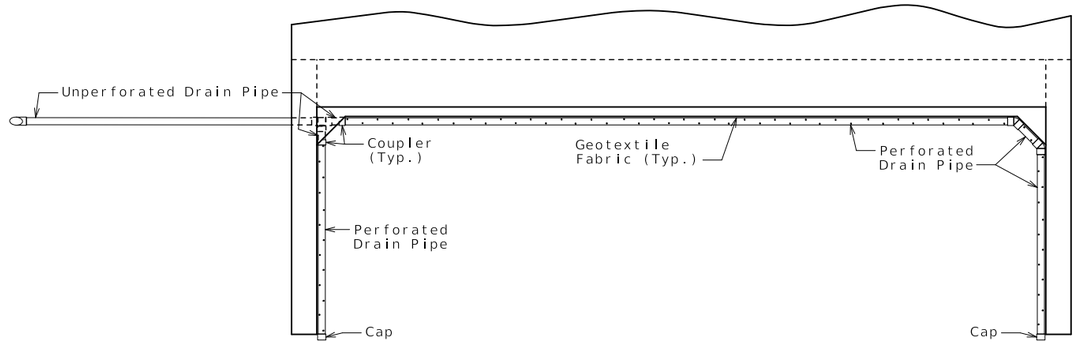
ELEVATION OF WING



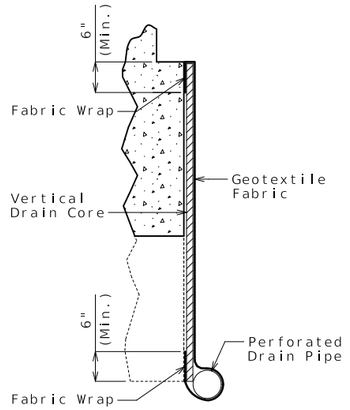
ELEVATION OF END BENT



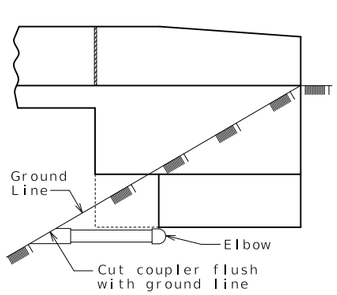
DETAIL A



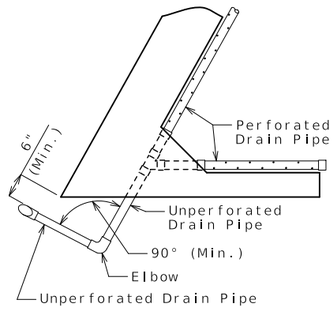
PLAN OF END BENT



PART SECTION A-A
(Section thru wing similar)



ELEVATION OF WING



PART PLAN

OPTIONAL TURNED DRAIN
(Use only when straight drain is not practical.)

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.

Drain pipe shall be placed at fill face of end bent and inside face of wings. The pipe shall slope to lowest grade of ground line, also missing the lower beam of end bent by a minimum of 1 1/2 inches.

Perforated pipe shall be placed at fill face side and inside face of wings 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

(Squared end bent shown, skewed end bent similar)

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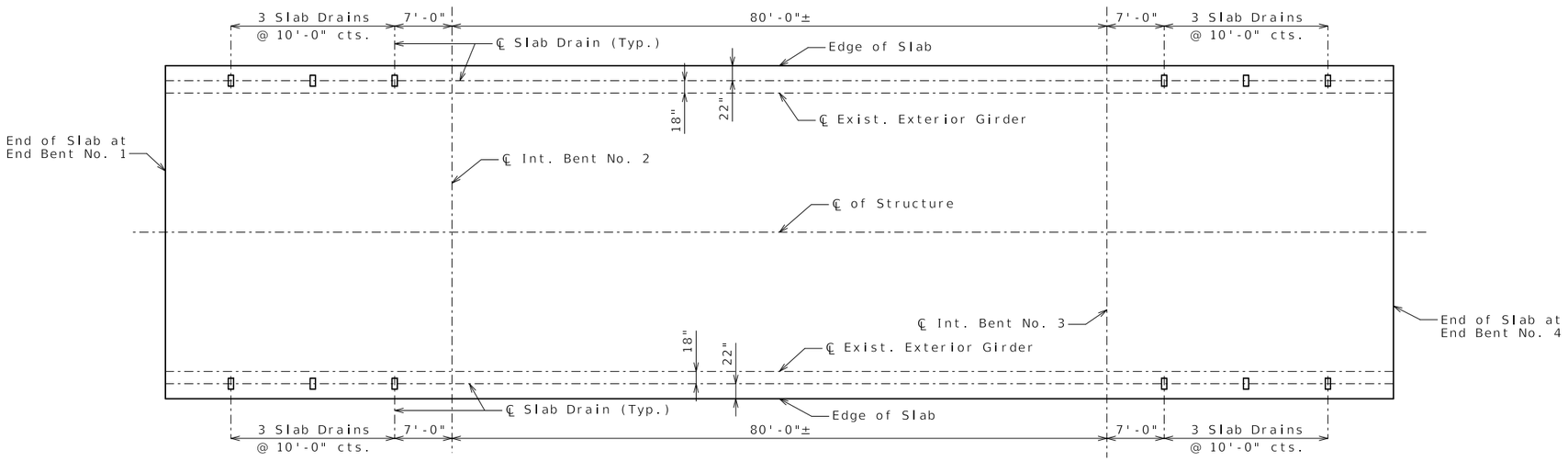
DATE PREPARED: 11/19/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	5

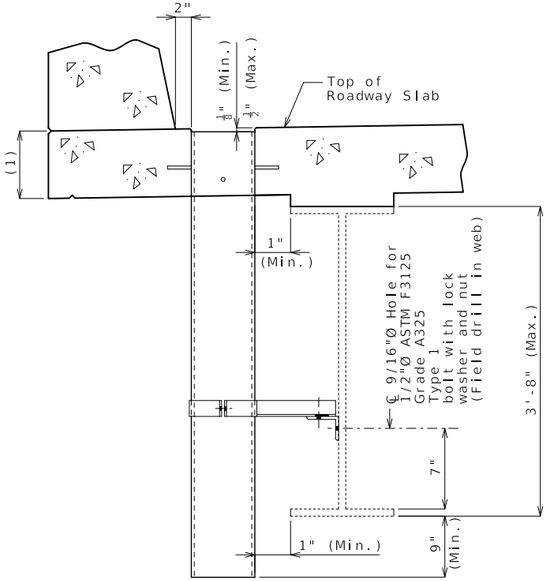
COUNTY: CLAY
JOB NO.: J4S3496
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A20203

DESCRIPTION
DATE

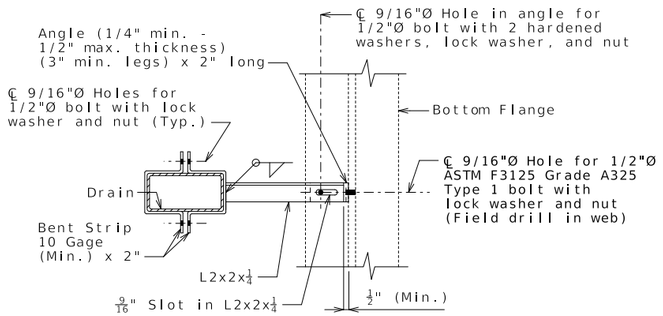
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



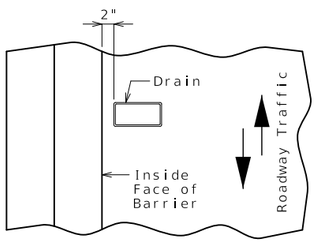
PLAN OF SLAB SHOWING SLAB DRAIN LOCATIONS



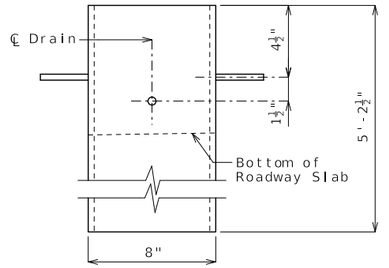
PART SECTION NEAR DRAIN



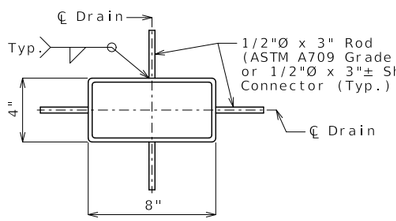
PART SECTION SHOWING BRACKET ASSEMBLY



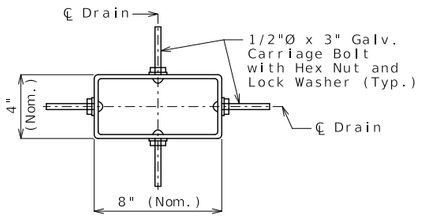
PART PLAN OF SLAB AT DRAIN



ELEVATION OF DRAIN



PLAN OF STEEL DRAIN OPTION



PLAN OF FRP DRAIN OPTION

General Notes:

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

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

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

Reinforcing steel shall be shifted to clear drains.

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

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

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

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

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

(1) See front sheet for slab thickness.

Notes for Steel Drain:

Slab drains 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.

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DATE PREPARED: 11/19/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	6

COUNTY: CLAY
JOB NO.: J4S3496
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A20203

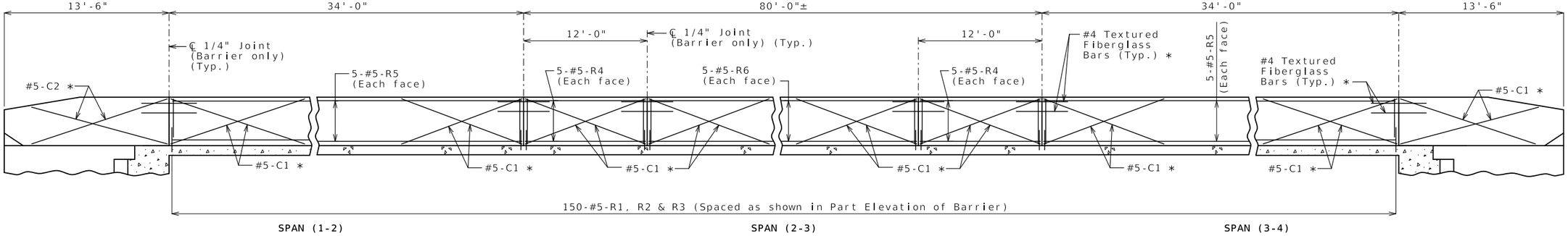
DESCRIPTION	DATE

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

SLAB DRAINS

Detailed Feb. 2024
Checked Feb. 2024

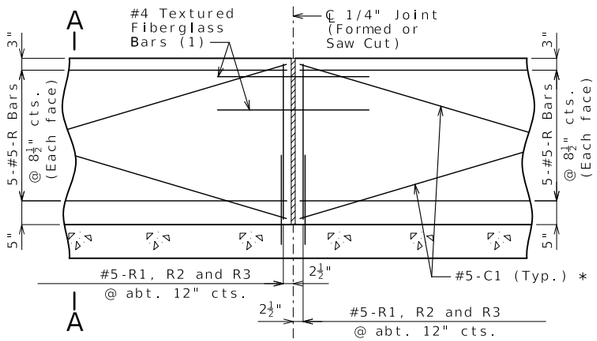
Note: This drawing is not to scale. Follow dimensions.



ELEVATION OF BARRIER

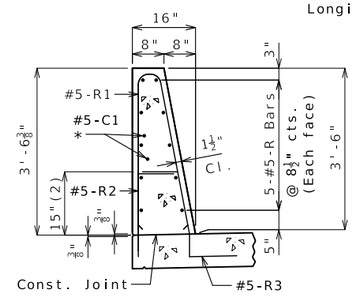
(Left barrier shown, right barrier similar)

Longitudinal dimensions are horizontal.



PART ELEVATION OF BARRIER

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

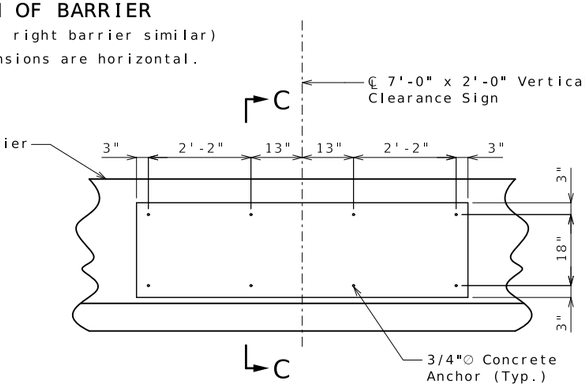


SECTION A-A

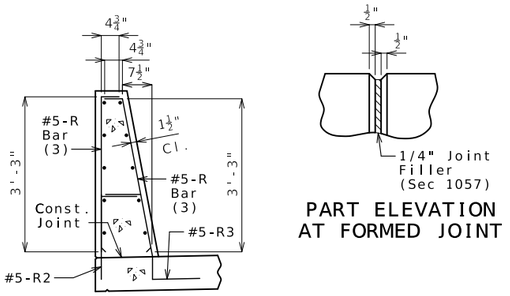
Use a minimum lap of 3'-1" for #5 horizontal barrier bars.

The cross-sectional area above the slab is 3.52 square feet.

(2) To top of bar



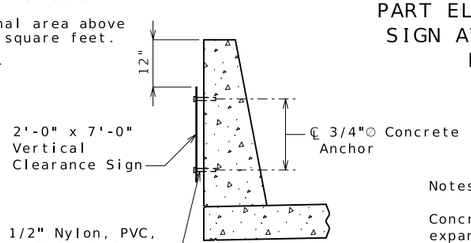
PART ELEVATION SHOWING FABRICATED SIGN AT SOUTH SIDE OF SPAN (2-3) NEAR INT. BENT NO. 3



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.)

PART ELEVATION AT FORMED JOINT



SECTION C-C

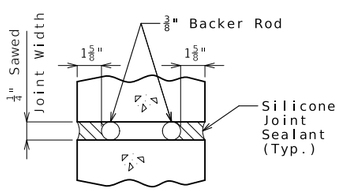
Notes for Vertical Clearance Signs:

Concrete anchors shall be the non-drilling expansion type and shall have a certified concrete pull out strength (Ultimate Load) of 12,100 pounds (min,) in 4,000 psi concrete. The hole shall be pre-drilled with a conventional carbide masonry bit.

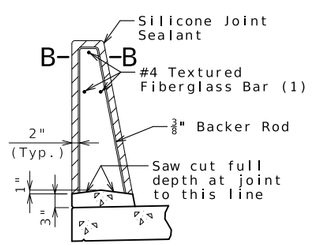
Bolt threads shall be burred after sign has been erected.

Contractor shall verify all dimensions in field before ordering materials.

The cost of all material, labor, and equipment necessary to install the signs shall be considered completely covered by the contract unit price for Type D Barrier.



SECTION B-B



SECTION THRU SAW CUT JOINT

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 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.

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DATE PREPARED 12/3/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	7

COUNTY CLAY

JOB NO. J4S3496

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A20203

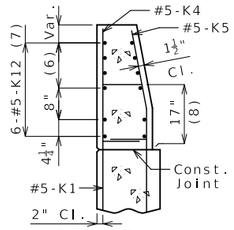
DESCRIPTION | DATE

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

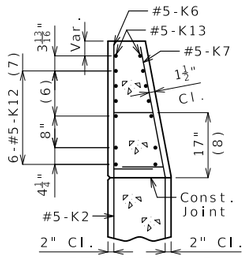
Detailed Feb. 2024
Checked Feb. 2024

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

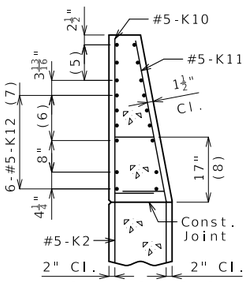
TYPE D BARRIER



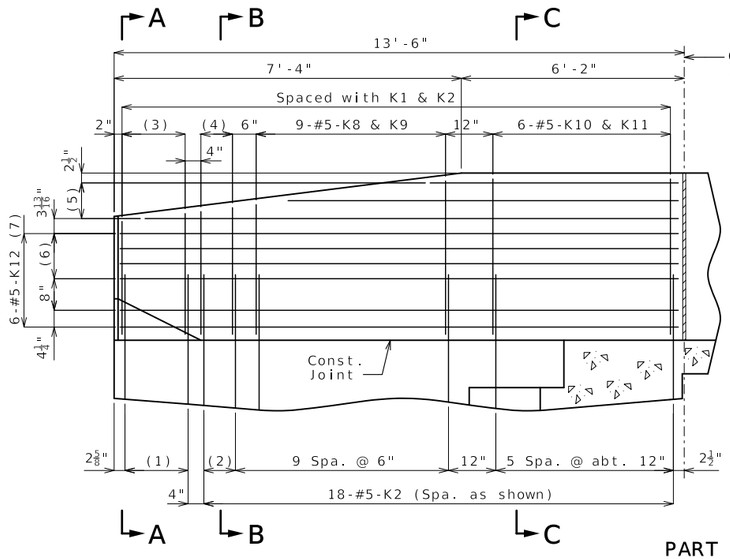
SECTION A-A

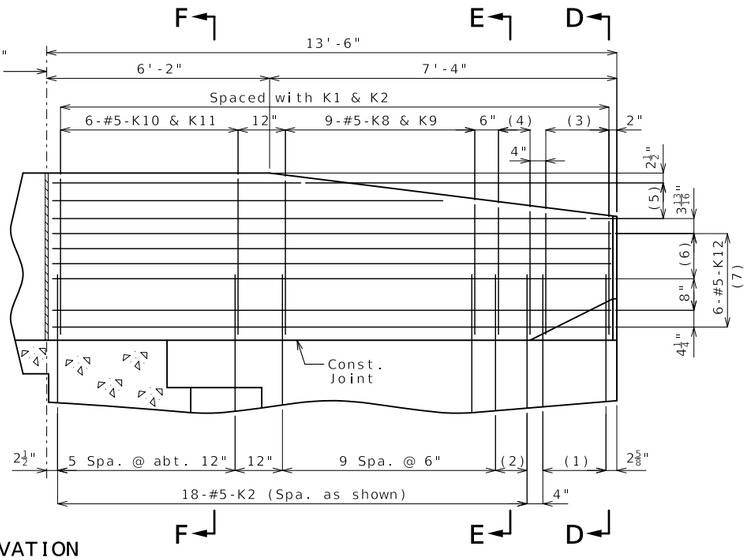


SECTION B-B

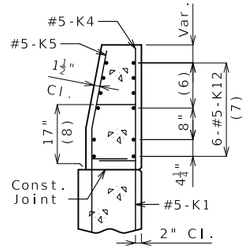


SECTION C-C

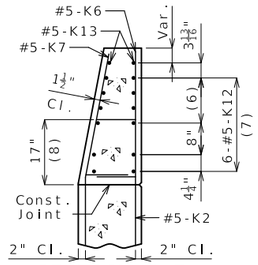




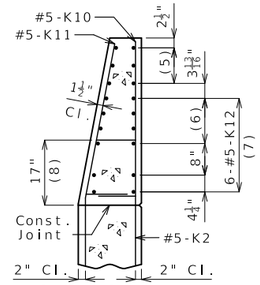
PART ELEVATION



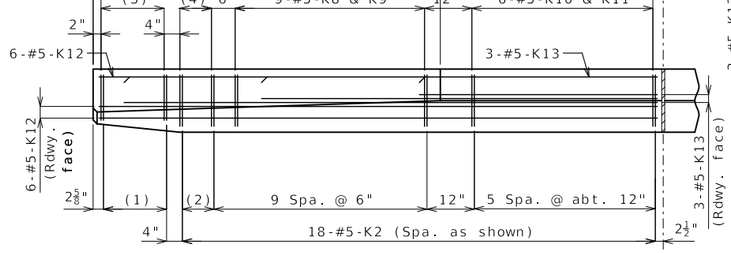
SECTION D-D

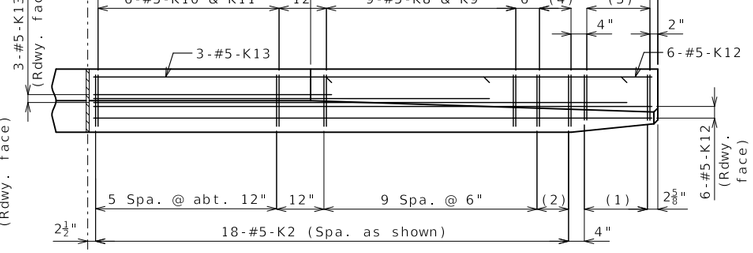


SECTION E-E

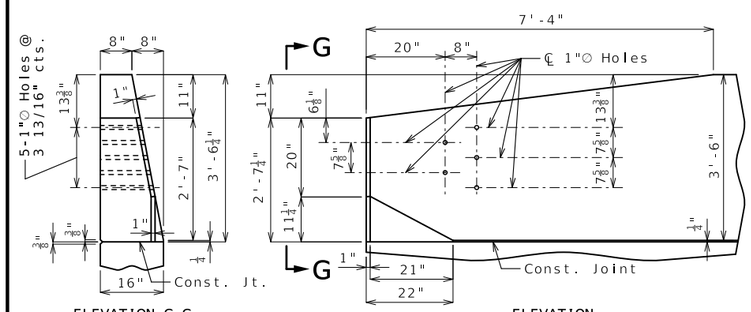


SECTION F-F





PART PLAN



ELEVATION G-G

ELEVATION

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

(2) 2 spaces @ 4"

(3) 5-#5-K4 & K5

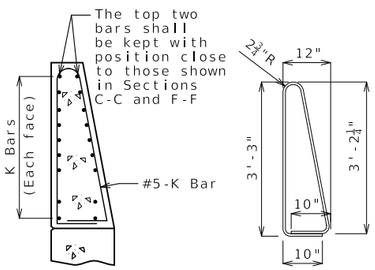
(4) 3-#5-K6 & K7

(5) 3-#5-K13 @ 4½" cts., each face

(6) 3 spaces @ 3 13/16"

(7) Spaced as shown, each face

(8) To top of bar



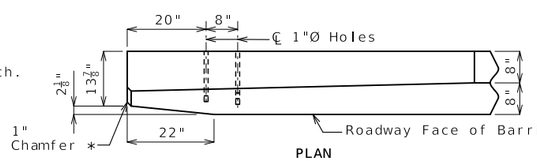
K10-K11 BAR PERMISSIBLE ALTERNATE SHAPE

(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.

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



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 D Barrier.

Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1 1/2" except as shown for bars embedded into end bent.

TYPE D BARRIER AT END BENTS

(Left barrier shown, right barrier similar)

Detailed Feb. 2024
Checked Feb. 2024

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

STATE OF MISSOURI
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DATE PREPARED
11/19/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	8

COUNTY
CLAY

JOB NO.
J4S3496

CONTRACT ID.

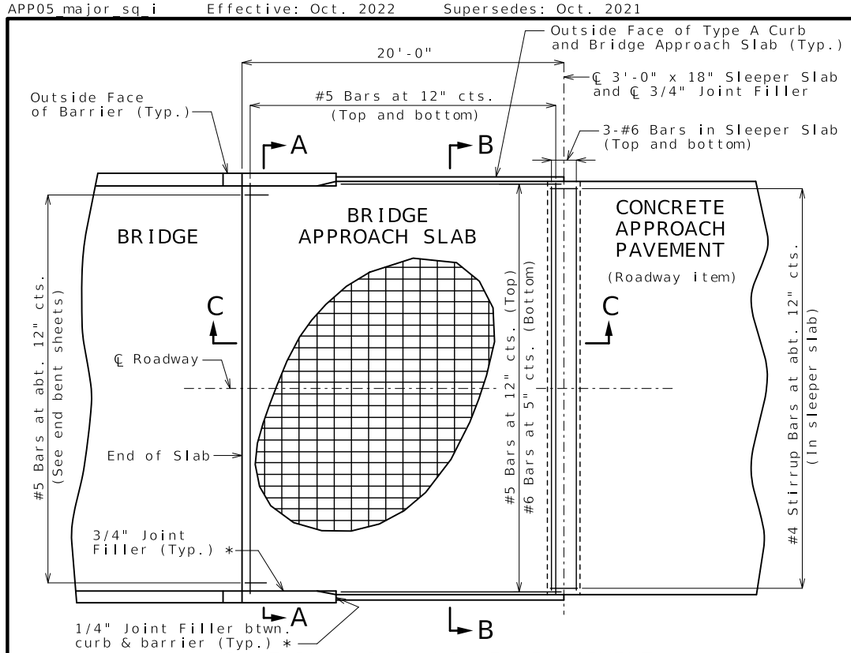
PROJECT NO.

BRIDGE NO.
A20203

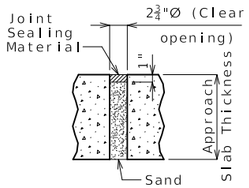
DESCRIPTION

DATE

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

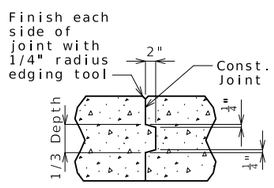


PART PLAN SHOWING REINFORCEMENT

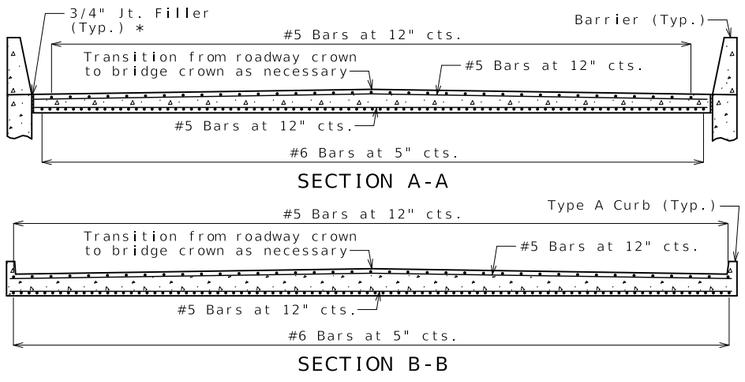


UNDERSEAL ACCESS HOLE DETAIL

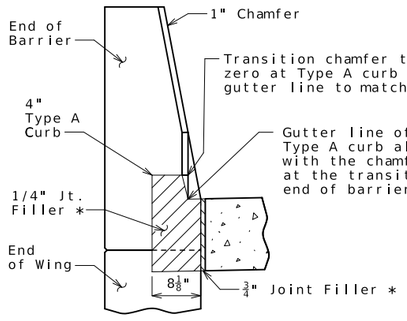
(If required)



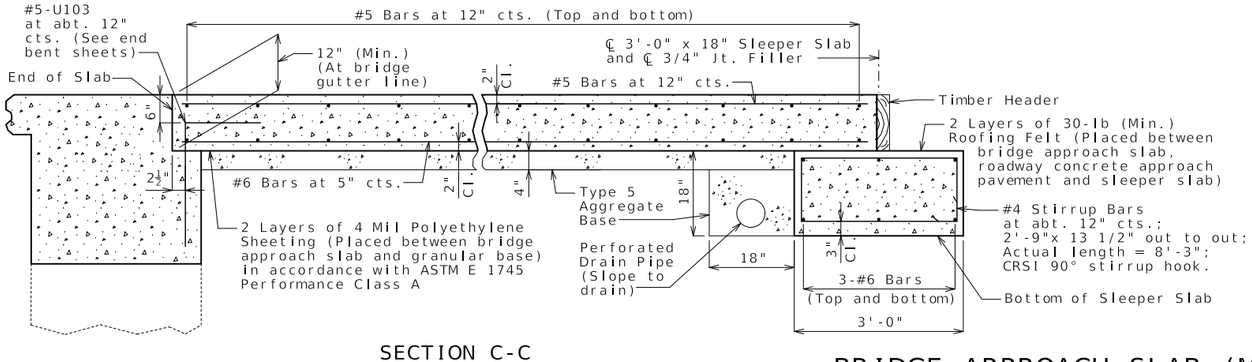
CONSTRUCTION JOINT DETAIL



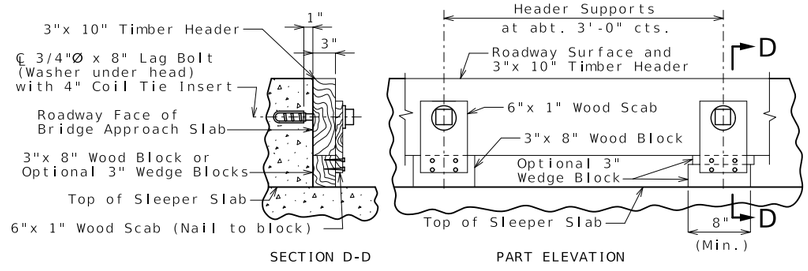
With the approval of the engineer, the contractor may crown the bottom of the approach slab to match the crown of the roadway surface.



SECTION BETWEEN CURB AND BARRIER



SECTION C-C



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 29 inches for #5 bars and 44 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 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.

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DATE PREPARED: 11/19/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	9

COUNTY: CLAY

JOB NO.: J4S3496

CONTRACT ID.:

PROJECT NO.:

BRIDGE NO.: A20203

DESCRIPTION | DATE

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

Detailed Feb. 2024
Checked Feb. 2024

BRIDGE APPROACH SLAB (MAJOR)

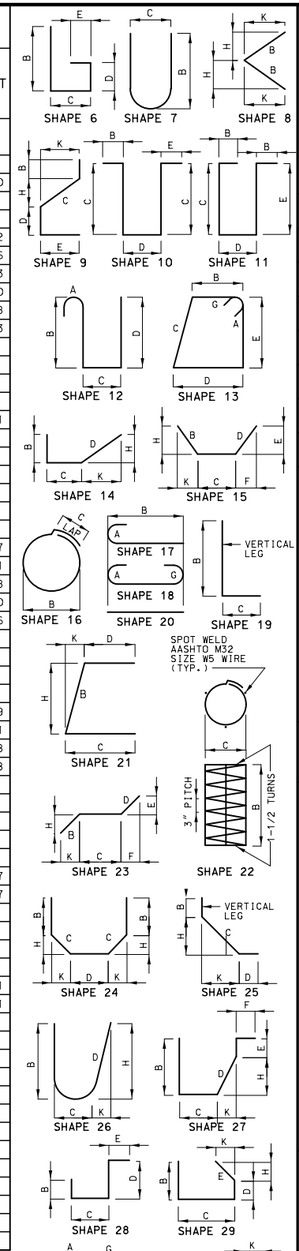
Note: This drawing is not to scale. Follow dimensions.

BILL OF REINFORCING STEEL

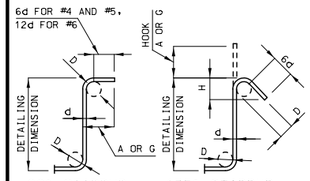
NO. REQ'D.	MARK NO. SIZE	MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
			SUBSTRUCTURE																									
			END BENT 1																									
16	6	F100	WING BRACE	E	23	S			2	3.000	4	6.000		14.000		9.875		9.875		19.125		19.125		7	11	7	10	188
16	6	F101	DIAPHRAGM	E	19	S			4	8.000	2	2.000												6	10	6	8	160
8	6	H100	BEAM	E	20				40	5.000														40	5	40	5	486
10	6	H101	BEAM	E	20				40	5.000														40	5	40	5	607
8	6	H102	DIAPHRAGM	E	20				44	3.000														44	3	44	3	532
20	6	H103	DIAPHRAGM	E	10						2	6.000	2	3.000										7	3	6	11	208
40	6	H104	WING	E	20				10	9.000														10	9	10	9	646
40	6	H105	WING	E	20				12	4.500														12	5	12	5	746
32	8	H106	WING	E	20				13	0.500														13	1	13	1	1118
102	6	U100	DIAPHRAGM	E	19	S			3	8.000	4	0.000												7	8	7	6	1149
76	5	U101	BEAM	E	19	S			3	7.750	2	8.000												6	4	6	3	495
76	5	U102	BEAM	E	31	S			4	10.125	2	3.000	3	6.000										11	6	11	4	898
76	5	U103	DIAPHRAGM	E	19	S				15.000	2	0.000												3	3	3	2	251
30	6	V100	BEAM/DIAPH	E	17				3	3.375														3	11	3	11	176
96	6	V101	DIAPHRAGM	E	20			V	8	6 11.000														6	11	6	11	
			INCREMENT =							7 1.000														7	1	7	1	1009
			0.125 INCH																									
			SLAB																									
258	5	S1	SLAB	E	20				52	0.000														52	0	52	0	13342
124	6	S2	SLAB	E	20				31	0.000														31	0	31	0	5774
600	5	S3	SLAB	E	20				40	5.000														40	5	40	5	25293
			BARRIER																									
20	5	K1	BARRIER CURB	E	27	S			3	8.000	9.250		5.375		3 2.750				5.250		1.000			8	1	7	11	165
72	5	K2	BARRIER CURB	E	27	S			3	8.000	9.250		14.500		2 5.750				14.250		2.750			8	2	7	11	595
20	5	K4	BARRIER CURB	E	19	S		V	4	2 4.250	10.000													3	2	3	1	
			INCREMENT =							2 6.250	10.000													3	4	3	3	66
			0.500 INCH																									
20	5	K5	BARRIER CURB	E	14	S		V	4		8.250		9.500		18.500				4.000		18.000			3	0	2	11	
			INCREMENT =								8.250		9.500		20.500				4.500		20.000			3	2	3	1	63
			0.500 INCH																									
12	5	K6	BARRIER CURB	E	19	S		V	4	2 6.750	10.000													3	5	3	4	
			INCREMENT =							2 7.750	10.000													3	6	3	5	42
			0.500 INCH																									
12	5	K7	BARRIER CURB	E	21	S		V	4	2 6.625	10.000								2 6.000		6.250			3	5	3	3	
			INCREMENT =							2 7.625	10.000								2 7.000		6.500			3	6	3	4	41
			0.500 INCH																									
36	5	K8	BARRIER CURB	E	19	S		V	4	2 8.500	10.000													3	7	3	5	
			INCREMENT =							3 2.500	10.000													4	1	3	11	138
			0.750 INCH																									
36	5	K9	BARRIER CURB	E	21	S		V	4	2 8.500	10.000								2 7.750		6.750			3	7	3	5	
			INCREMENT =							3 2.500	10.000								3 1.750		7.750			4	1	3	11	138
			0.750 INCH																									
24	5	K10	BARRIER CURB	E	19	S			3	3.000	10.000													4	1	4	0	100
24	5	K11	BARRIER CURB	E	21	S			3	3.000	10.000								3 2.250		7.750			4	1	3	11	98
48	5	K12	BARRIER CURB	E	20				15	9.000														15	9	15	9	789

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE	MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	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.
24	5	K13	BARRIER CURB	E	20			V	8	9 0.000														9	0	9	0	
			INCREMENT =							15 0.000														15	0	15	0	300
			36.000 INCH																									
300	5	R1	BARRIER CURB	E	26					3 3.000		5.500		3 3.625						3 3.000		6.750		6	9	6	9	2112
300	5	R2	BARRIER CURB	E	19	S				20.500		9.500												2	6	2	5	756
300	5	R3	BARRIER CURB	E	27	S						9.500		15.250		5.000		12.000		15.000		3.000		3	6	3	4	1043
40	5	R4	BARRIER CURB	E	20					11 9.000														11	9	11	9	490
40	5	R5	BARRIER CURB	E	20					33 9.000														33	9	33	9	1408
20	5	R6	BARRIER CURB	E	20					55 9.000														55	9	55	9	1163
			SLIP FORM																									
48	5	C1	SLIP FORM	E	20					12 0.000														12	0	12	0	601
			TOTALS																									
	5			E																								50387
	6			E																								11681
	8			E																								1118
			TOTAL																									0
			TOTAL	E																								63186
			Slab on																									
			Girder																									
	5			E																								40279
	6			E																								11681
	8			E																								1118
			TOTAL																									53078
			Safety																									
			Barrier																									
			Curb																									
	5			E																								9507
			TOTAL																									9507
			Slip Form																									
			Option																									
	5			E																								601
			TOTAL																									601



BENDING DIAGRAMS

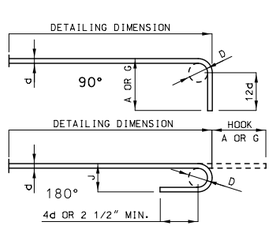


STIRRUP HOOK DIMENSIONS

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 (GRADE 60) FY = 60,000 PSI.

Detailed Feb. 2024
Checked Feb. 2024

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
Ted Koester
11/19/2024 2:54:18 PM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED 11/19/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	10

COUNTY CLAY
JOB NO. J4S3496
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A20203

DESCRIPTION
DATE

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

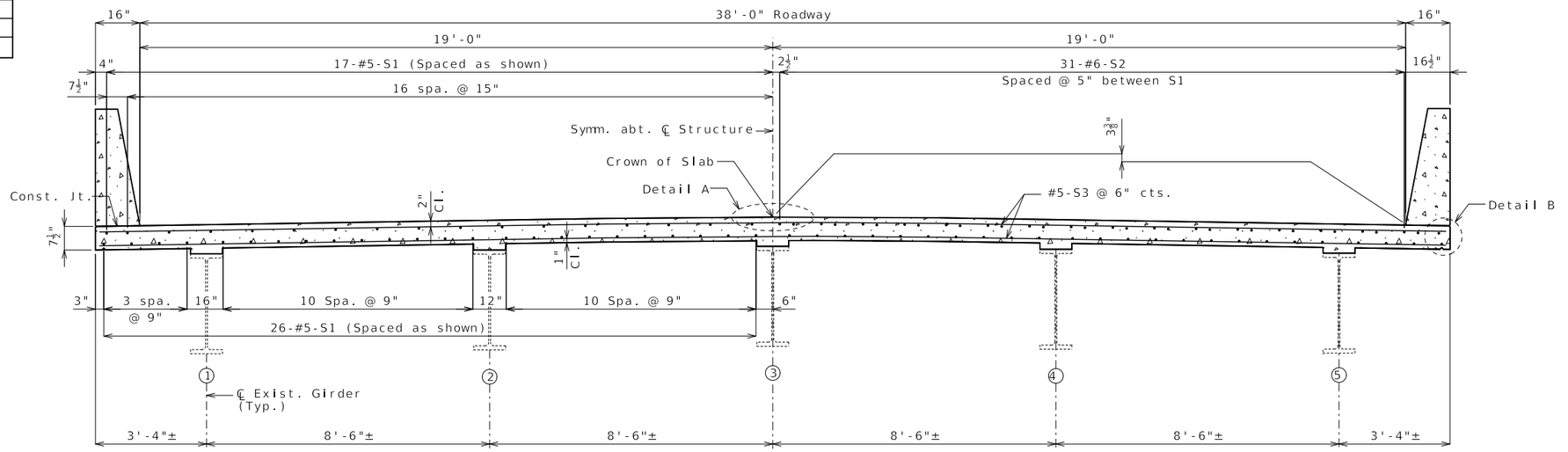
SEC/SUR 10 TWP 50 RGE 33W

U.I.P. & REDECK EXISTING (35'- 80'- 35') CONTINUOUS COMPOSITE PLATE GIRDER SPANS

Table Showing S2 Bar Lengths			
Int. Bent No. 2		Int. Bent No. 3	
Span 1	Span 2	Span 2	Span 3
10'-9"	20'-3"	20'-3"	10'-9"

Required Lap Length For Bar Splices **	
Bar Size	Splice Length
4	3'-0"
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:
HS20-44 (1965) (Existing)
HS20-44 (New Construction)
35 #/sf Future Wearing Surface
Earth - 120 #/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 (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:
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)

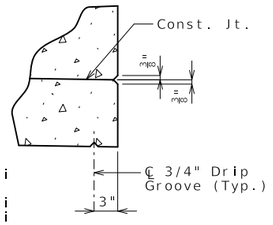
Outline of existing work is indicated by light dashed lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering new material.

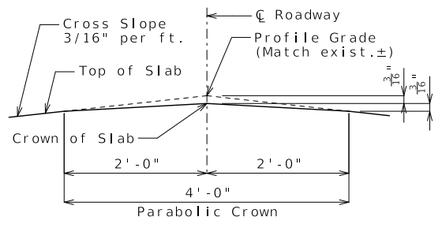
The area exposed by the removal of concrete and not covered with new concrete shall be coated with an approved qualified special mortar in accordance with Sec 704.

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).

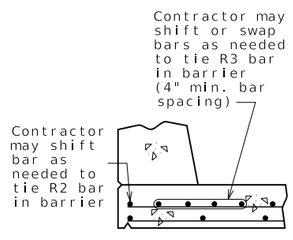
Traffic Handling:
Structure to be closed during construction. Traffic to be maintained on other routes during construction. See roadway plans for traffic control.



DETAIL B



DETAIL A



OPTIONAL SHIFTING TOP BARS AT BARRIER

Estimated Quantities		
Item		Total
Removal of Miscellaneous ACM (Non-Friable)	sq. foot	16
Class 1 Excavation	cu. yard	110
Temporary Shoring	lump sum	1
Removal of Existing Bridge Deck	sq. foot	6,194
Bridge Approach Slab (Major)	sq. yard	172
Slab on Steel	sq. yard	682
Type D Barrier	linear foot	348
Shear Connectors	each	840
Slab Drain	each	12
Surface Preparation for Appling Epoxy-Mustic Primer	lump sum	1
Gray Epoxy-Mustic Primer	lump sum	1
Vertical Drain at End Bents	each	2

Estimated Quantities for Slab on Steel		
Item		Total
Class B-2 Concrete	cu. yard	141
Reinforcing Steel (Epoxy Coated)	pound	63,190

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.

REPAIRS TO BRIDGE: ROUTE 9 NB OVER NW BRIARCLIFF PRWY

ROUTE 9 FROM ROUTE 169 TO ROUTE I-655
ABOUT 0.6 MILES WEST OF ROUTE 169
BEGINNING STATION 7+26.5± (MATCH EXISTING)

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
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11/19/2024 2:55:03 PM
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MO-PE-2013000591

DATE PREPARED 11/19/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	1

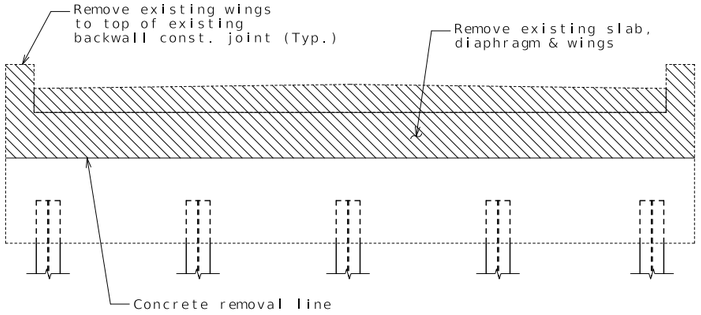
COUNTY CLAY
JOB NO. J4S3496
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A20204

DESCRIPTION | DATE

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

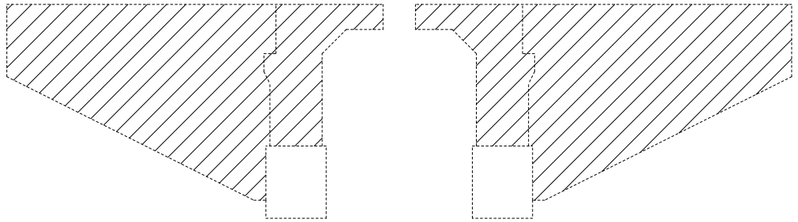
Detailed Feb. 2024
Checked Feb. 2024

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

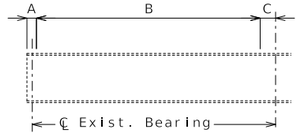


DETAILS OF CONCRETE REMOVAL AT END BENTS

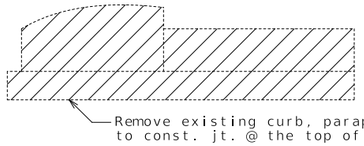
The cost of concrete removal as shown will be considered completely covered by the contract unit price for Removal of Existing Bridge Deck.



DETAILS OF CONCRETE REMOVAL OF WINGS @ BENTS NO. 1 & 4



ELEVATION SHOWING SHEAR CONNECTOR SPACING FOR END BEAMS



ELEVATION OF END POST SHOWING CONCRETE REMOVAL LIMITS

TABLE SHOWING SHEAR CONNECTOR UNIT SPACING				
Beam	S.C. per unit	A	B	C
Span 1-2	3	6"±	28 Units @ 6" cts.	93"±
Span 3-4	3	93"±	28 Units @ 6" cts.	6"±
	Total shear connectors required			840

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:

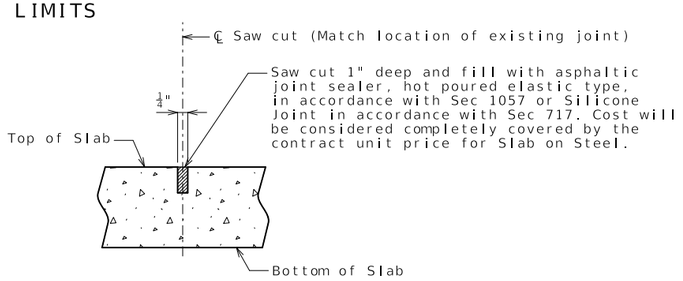
The contractor shall provide bracing necessary for lateral and torsional stability of the beams during construction of the concrete slab and remove the bracing after the slab has attained 75% design strength. Contractor shall not weld on or drill holes in the beams. The cost for furnishing, installing,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

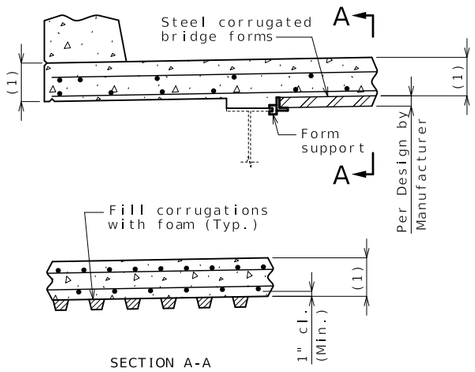
Alternate pour sequences may be submitted to the engineer for approval. Keyed construction joints shall be provided between pours.

Haunching:

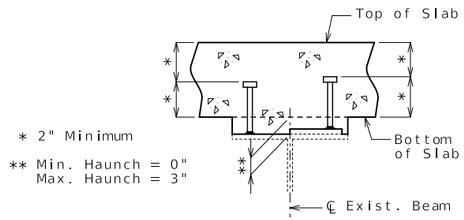
(1) Slab is to be considered a uniform thickness as shown on the plans. Haunching will vary. See front sheet for slab thickness.



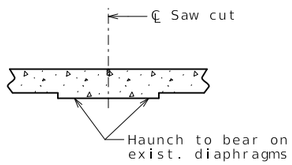
TYPICAL SECTION THRU SAW CUT AT INTERMEDIATE BENTS



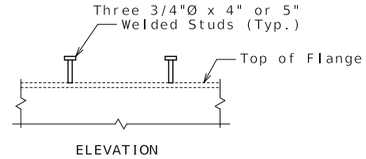
OPTIONAL STAY-IN-PLACE FORM DETAILS

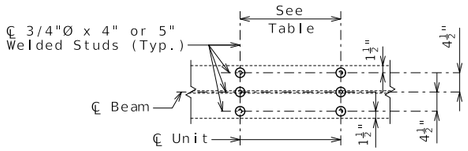


SECTION THRU EXIST. BEAM SHOWING SHEAR CONNECTORS



PART SECTION THRU SLAB AT INT. BENTS





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
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
11/19/2024 2:55:29 PM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED: 11/19/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	2

COUNTY: CLAY

JOB NO.: J4S3496

CONTRACT ID.:

PROJECT NO.:

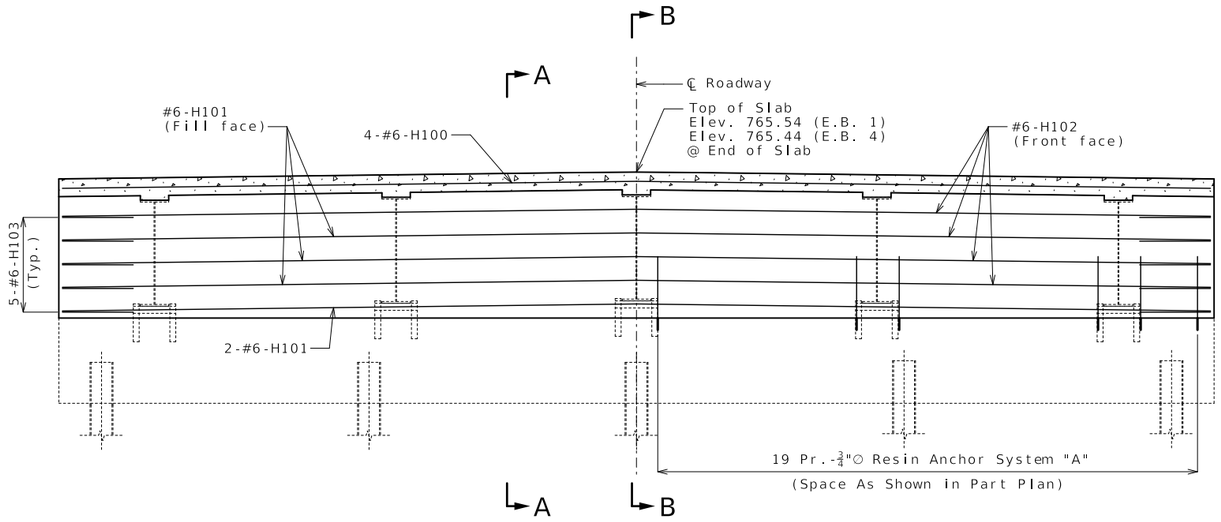
BRIDGE NO.: A20204

DESCRIPTION	DATE

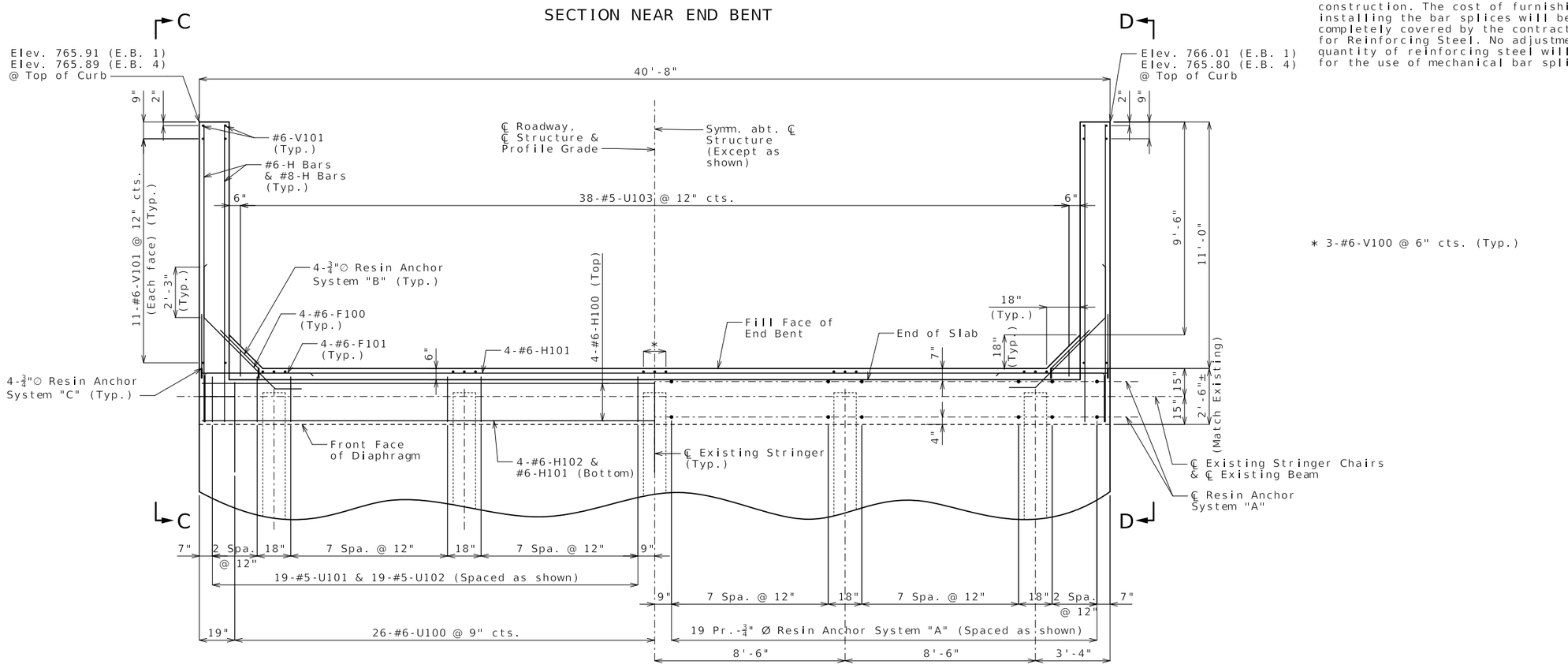
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

Detailed Feb. 2024
Checked Feb. 2024

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



SECTION NEAR END BENT



PART PLAN

DETAILS OF END BENT NO. 1 & 4

Bent 1 shown, Bent 4 similar.

Notes:

For Sections A-A & B-B, and Elevations C-C & D-D, see Sheet No. 4.

All concrete in the End bent above bottom of wing and below top of slab shall be class B-2.

For reinforcement of the safety barrier curb, see Sheets No. 7 & 8.

The exposed and accessible surfaces of the existing structureal 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 not less than 3 milsbefore concrete is poured. The surface preperationand coating for beams shall extend a minimum of two feet 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.

The H102 bars are segmented for ease of placement through girder web holes. The total bar length for H102 bars shown in Bill of Reinforcing Steel allows for one lap splice with a length of 3'-10". Actual bar segment lengths to be determined by contractor for ease of installing bars. The contractor may use a mechanical bar splice in lieu of a lap splice. When a mechanical bar splice is used, the actual bar segment length will be determined by the contractor to accommodate manufacturer's recommendations for installation and ease of construction. The cost of furnishing and installing the bar splices will be considered completely covered by the contract unit price for Reinforcing Steel. No adjustment of the quantity of reinforcing steel will be allowed for the use of mechanical bar splices.

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ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	3

COUNTY
CLAY

JOB NO.
J4S3496

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A20204

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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Checked Feb. 2024

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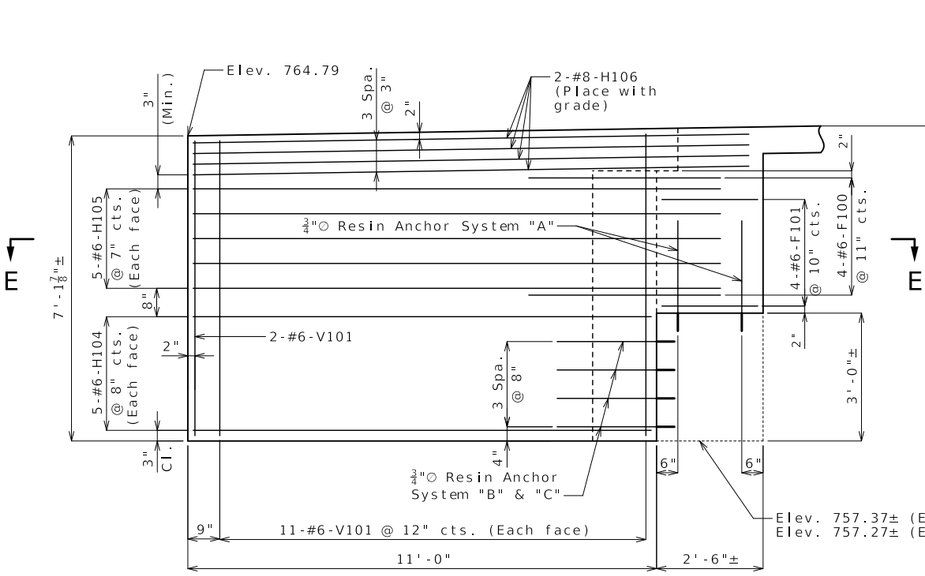
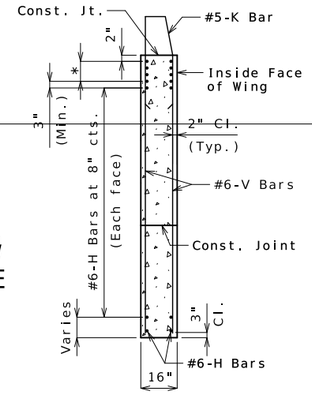
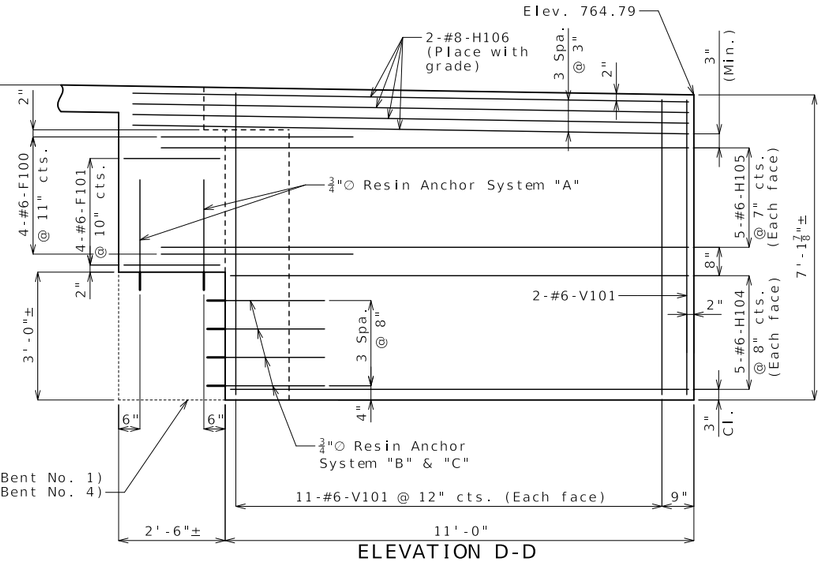


ELEVATION C-C



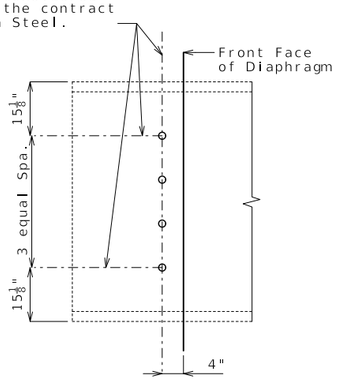
TYPICAL SECTION THRU WING

* #8-H Bars at 3" cts. (Each face)(Place with grade)

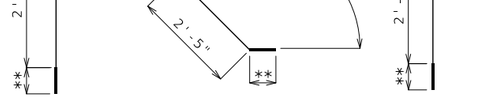


ELEVATION D-D

℄ $1\frac{1}{16}$"∅ holes in each stringer. Cost of field drilling holes in existing webs will be considered completely covered by the contract unit price for Slab on Steel.



DETAIL OF WEB HOLES



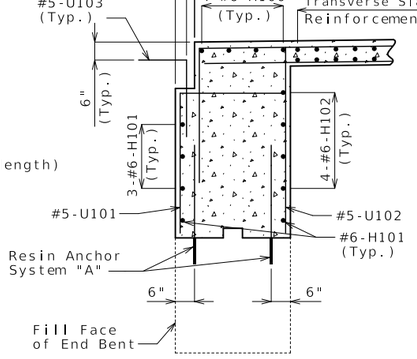
System A (152 required) System B (16 required) System C (16 required)

** Use manufacturer's embedment length. (5" minimum embedment length)

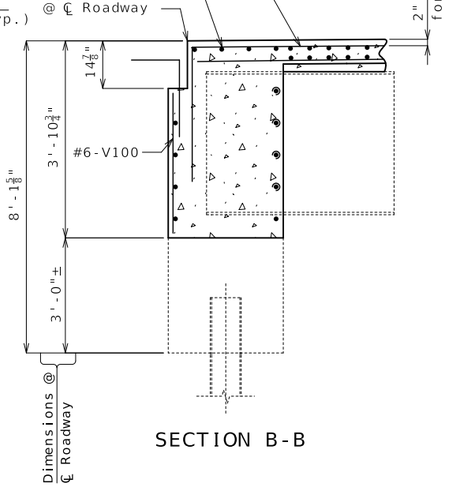
Note:

For location of Resin Anchors, see Sheet No. 3.

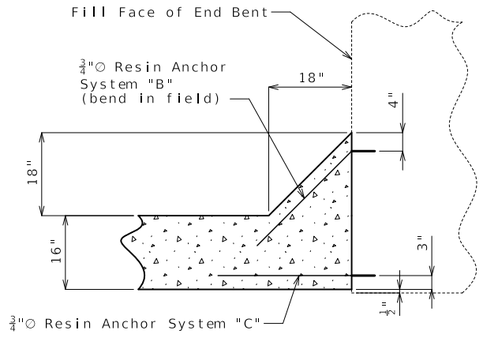
DETAILS OF RESIN ANCHORS



SECTION A-A



SECTION B-B



SECTION E-E

Notes:

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 shown on this sheet complete-in-place will be considered completely covered y 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 $\frac{3}{4}$"Ø threaded rod.

Notes:

For location of Elevations A-A & B-B, see Sheet No. 3.

For reinforcement fo the safety barrier curb, see Sheets No. 7 & 8.

The #6-F100 bars shall be bent in the field to clear stringers.

All concrete in the end bent above bottom of wing and below top of slab shall be class B-2.

Concrete diaphragms at the integral end bents shall be poured a minimum of 12 hours before the slab is poured.

DETAILS OF END BENT NO. 1 & 4

Bent 1 shown, Bent 4 similar.

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ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	4

COUNTY
CLAY

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CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A20204

DESCRIPTION	DATE

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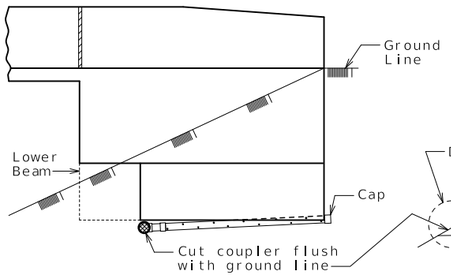
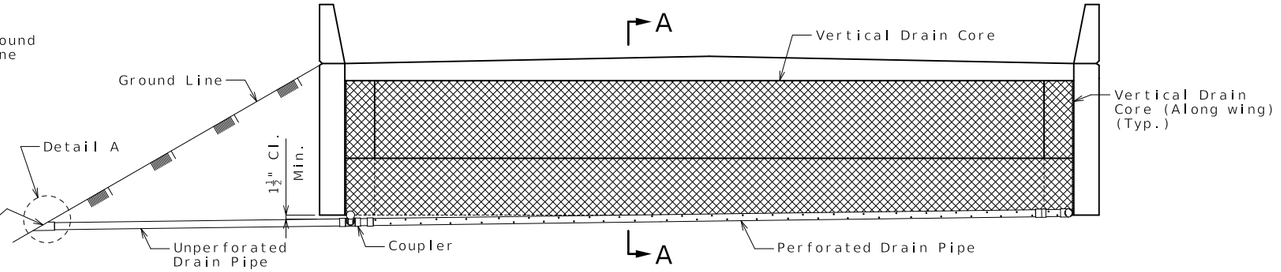
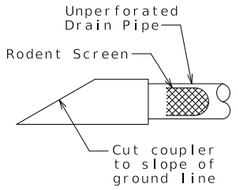


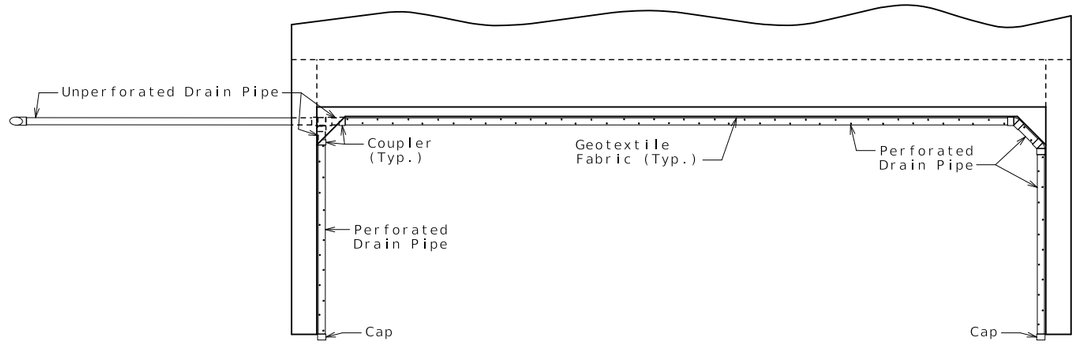
ELEVATION OF WING



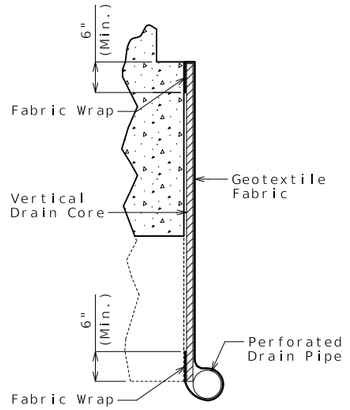
ELEVATION OF END BENT



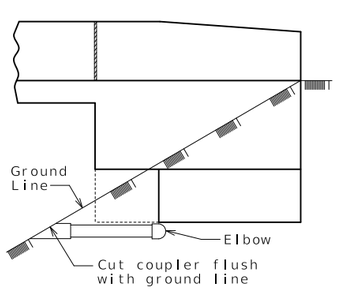
DETAIL A



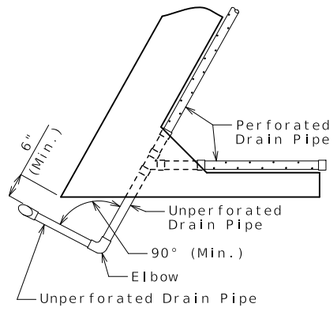
PLAN OF END BENT



PART SECTION A-A
(Section thru wing similar)



ELEVATION OF WING



PART PLAN

OPTIONAL TURNED DRAIN
(Use only when straight drain is not practical.)

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.

Drain pipe shall be placed at fill face of end bent and inside face of wings. The pipe shall slope to lowest grade of ground line, also missing the lower beam of end bent by a minimum of 1 1/2 inches.

Perforated pipe shall be placed at fill face side and inside face of wings 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

(Squared end bent shown, skewed end bent similar)

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DATE PREPARED: 11/19/2024
ROUTE: 9 | STATE: MO
DISTRICT: BR | SHEET NO.: 5
COUNTY: CLAY
JOB NO.: J4S3496
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A20204

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
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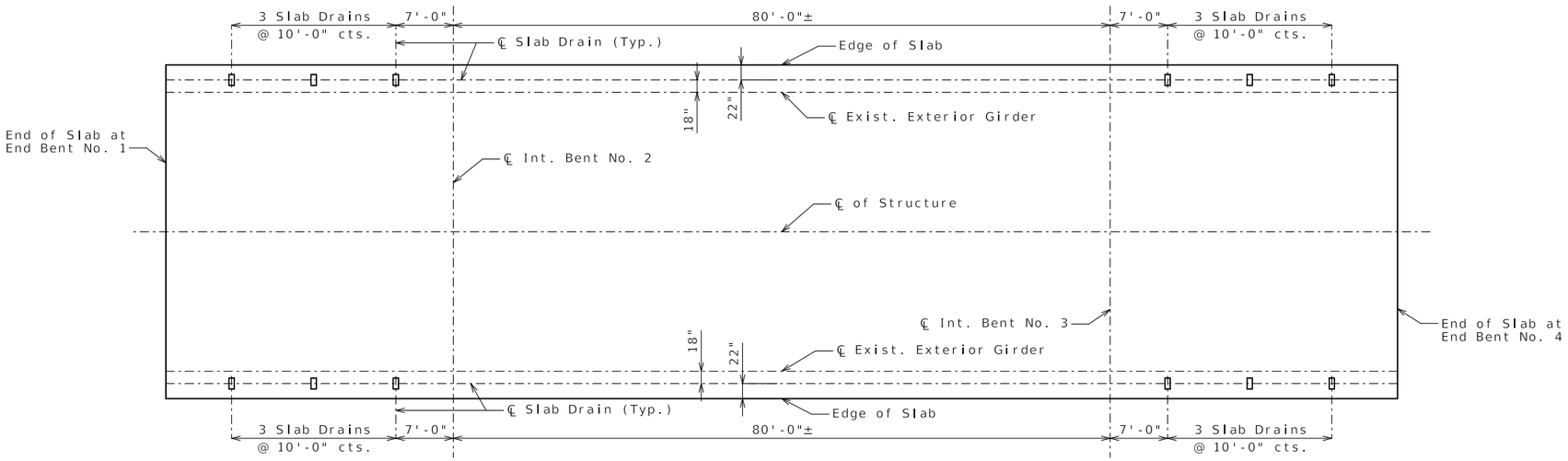
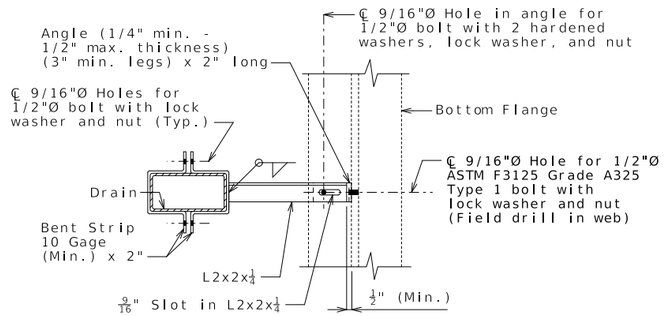
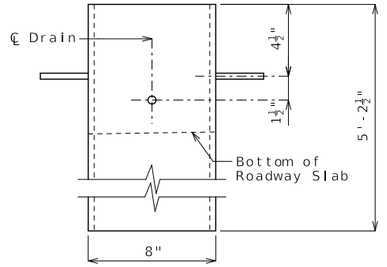


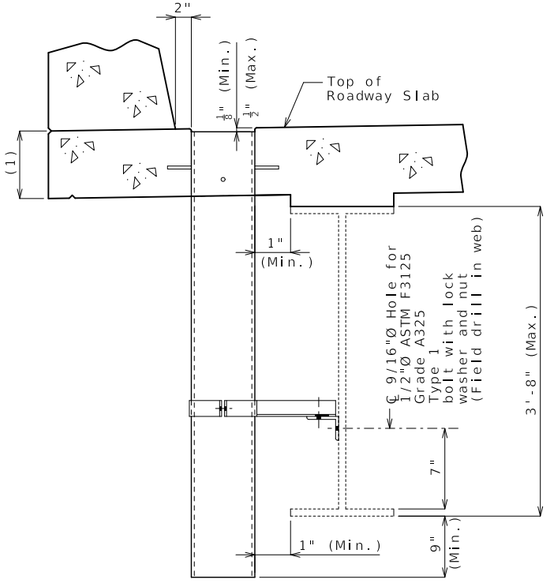
PLAN OF SLAB SHOWING SLAB DRAIN LOCATIONS



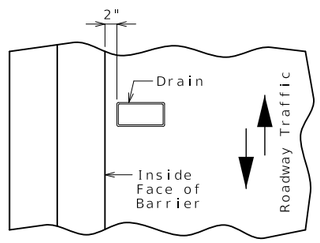
PART SECTION SHOWING BRACKET ASSEMBLY



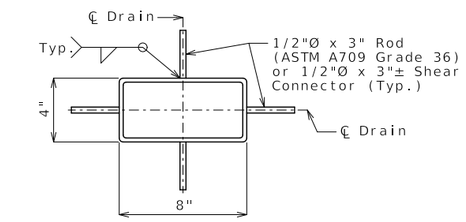
ELEVATION OF DRAIN



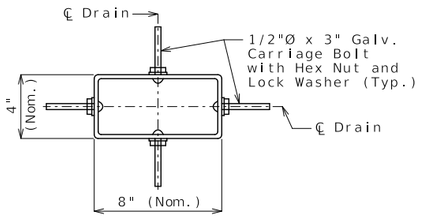
PART SECTION NEAR DRAIN



PART PLAN OF SLAB AT 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.

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

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

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

(1) See front sheet for slab thickness.

Notes for Steel Drain:

Slab drains 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.

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DATE PREPARED	
11/19/2024	
ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	6
COUNTY	
CLAY	
JOB NO.	
J4S3496	
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DATE	DESCRIPTION

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SLAB DRAINS

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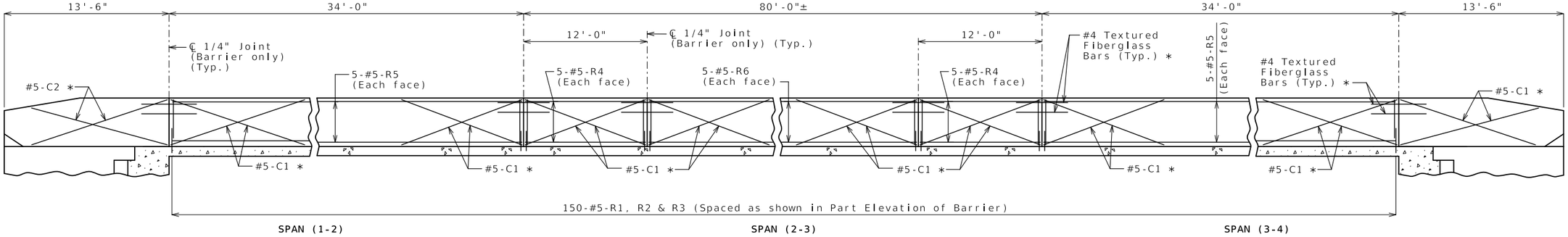
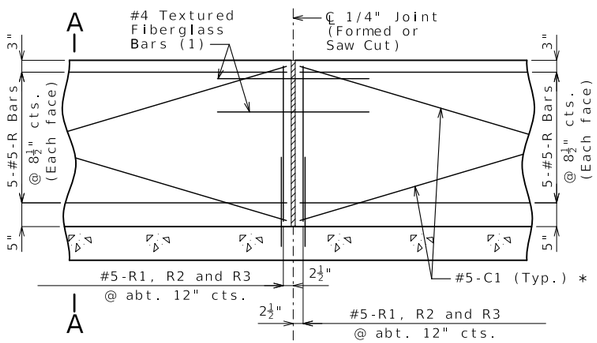


ELEVATION OF BARRIER

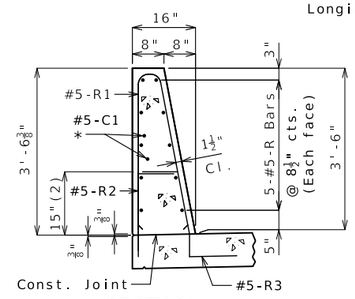
(Left barrier shown, right barrier similar)

Longitudinal dimensions are horizontal.



PART ELEVATION OF BARRIER

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

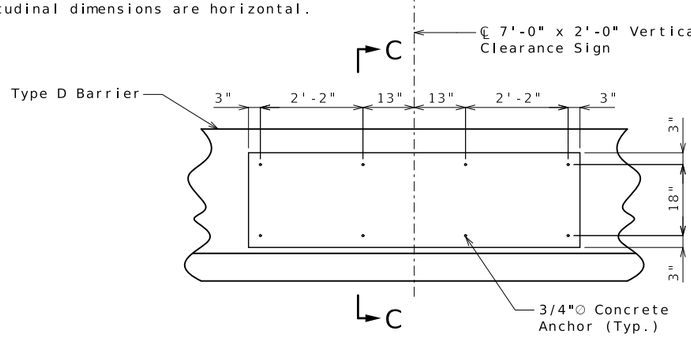


SECTION A-A

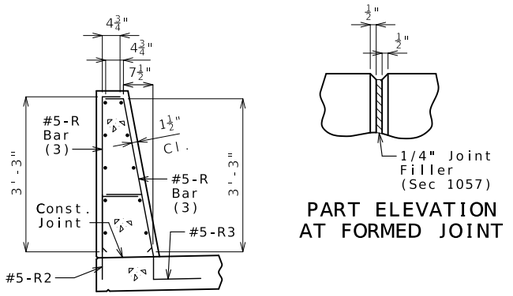
Use a minimum lap of 3'-1" for #5 horizontal barrier bars.

The cross-sectional area above the slab is 3.52 square feet.

(2) To top of bar



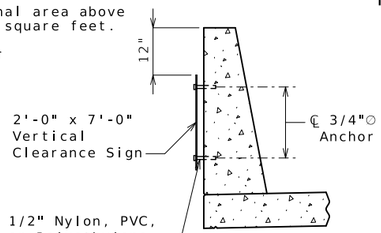
PART ELEVATION SHOWING FABRICATED SIGN AT NORTH SIDE OF SPAN (2-3) NEAR INT. BENT NO. 2



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.)

PART ELEVATION AT FORMED JOINT



SECTION C-C

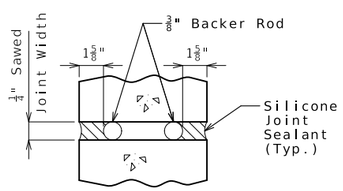
Notes for Vertical Clearance Signs:

Concrete anchors shall be the non-drilling expansion type and shall have a certified concrete pull out strength (Ultimate Load) of 12,100 pounds (min,) in 4,000 psi concrete. The hole shall be pre-drilled with a conventional carbide masonry bit.

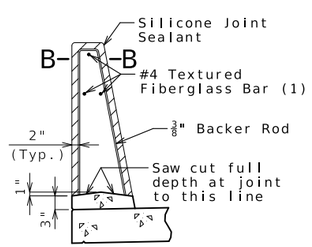
Bolt threads shall be burred after sign has been erected.

Contractor shall verify all dimensions in field before ordering materials.

The cost of all material, labor, and equipment necessary to install the signs shall be considered completely covered by the contract unit price for Type D Barrier.



SECTION B-B



SECTION THRU SAW CUT JOINT

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 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.

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ROUTE 9 | STATE MO

DISTRICT BR | SHEET NO. 7

COUNTY CLAY

JOB NO. J4S3496

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A20204

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105 WEST CAPITOL
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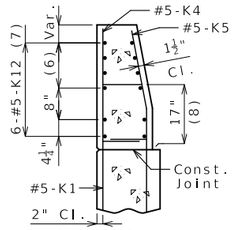
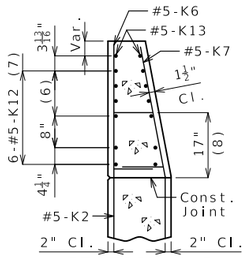
Note: This drawing is not to scale. Follow dimensions.

TYPE D BARRIER



SECTION A-A



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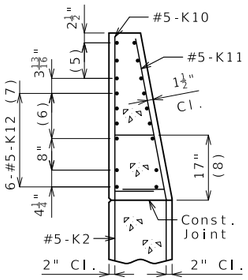
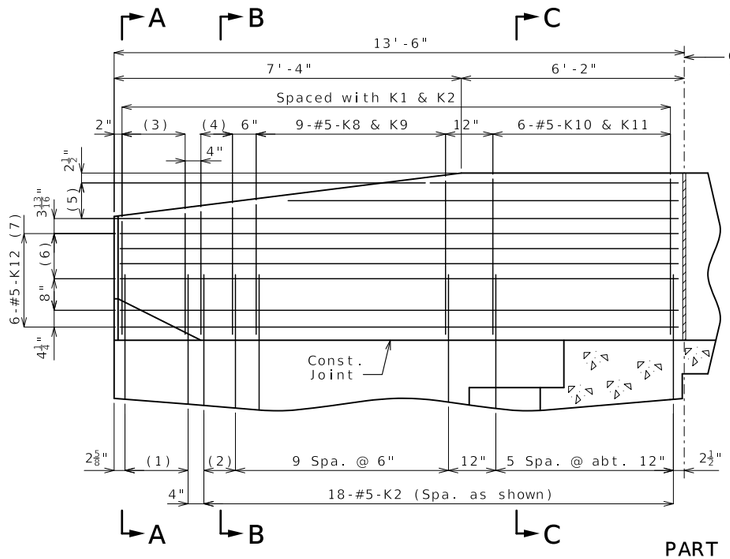
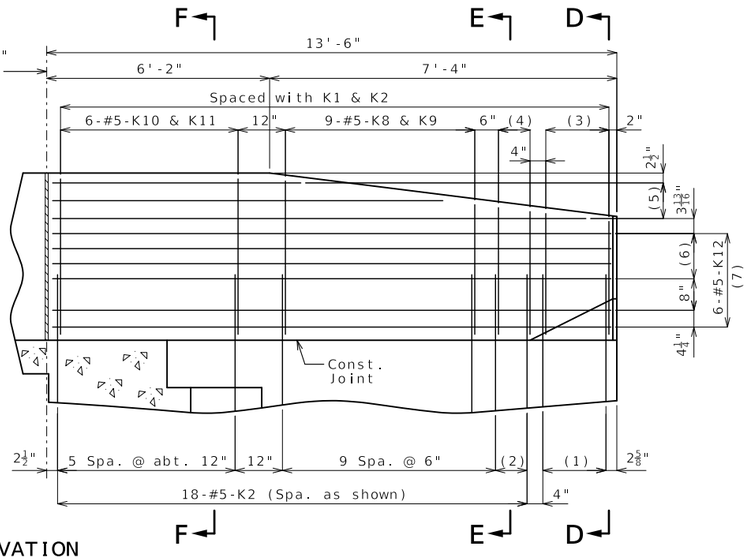
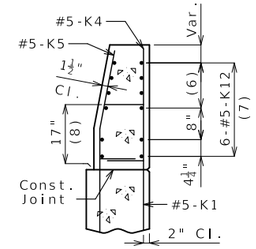


SECTION C-C

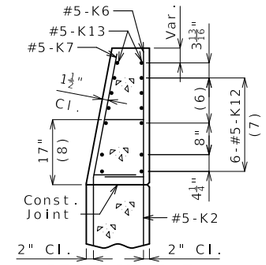




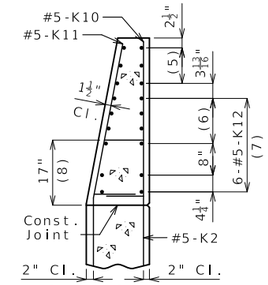
PART ELEVATION



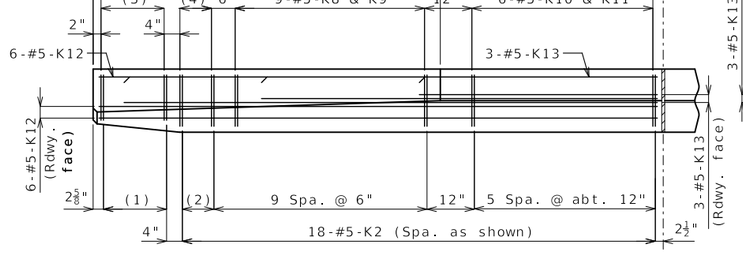
SECTION D-D

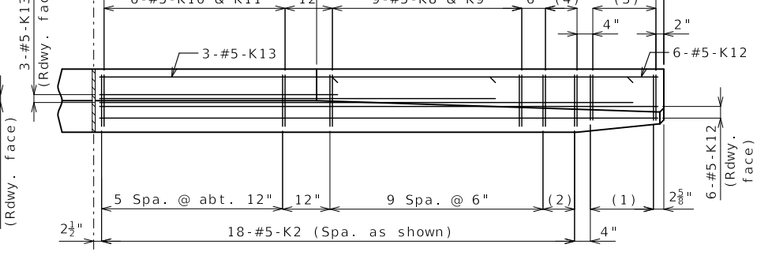


SECTION E-E

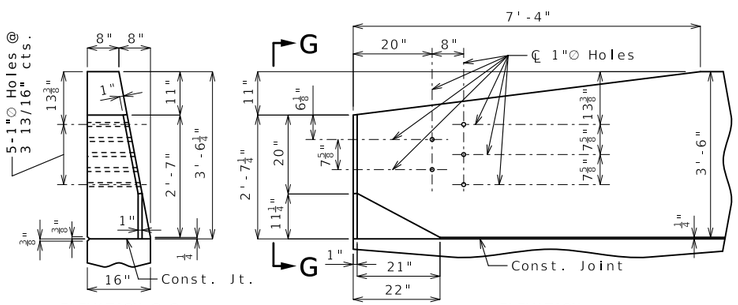


SECTION F-F

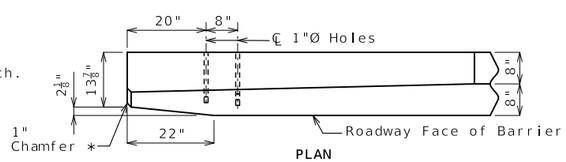




PART PLAN



* 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

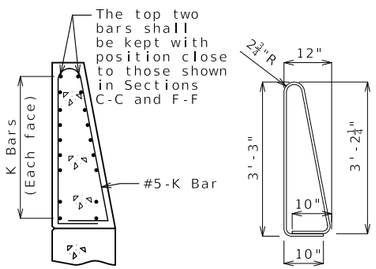
(4) 3-#5-K6 & K7

(5) 3-#5-K13 @ 4½" cts., each face

(6) 3 spaces @ 3 13/16"

(7) Spaced as shown, each face

(8) To top of bar



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.

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" except as shown for bars embedded into end bent.

TYPE D BARRIER AT END BENTS

(Left barrier shown, right barrier similar)

Detailed Feb. 2024
Checked Feb. 2024

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
Ted Koester
11/19/2024 2:58:29 PM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED
11/19/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	8

COUNTY
CLAY

JOB NO.
J4S3496

CONTRACT ID.

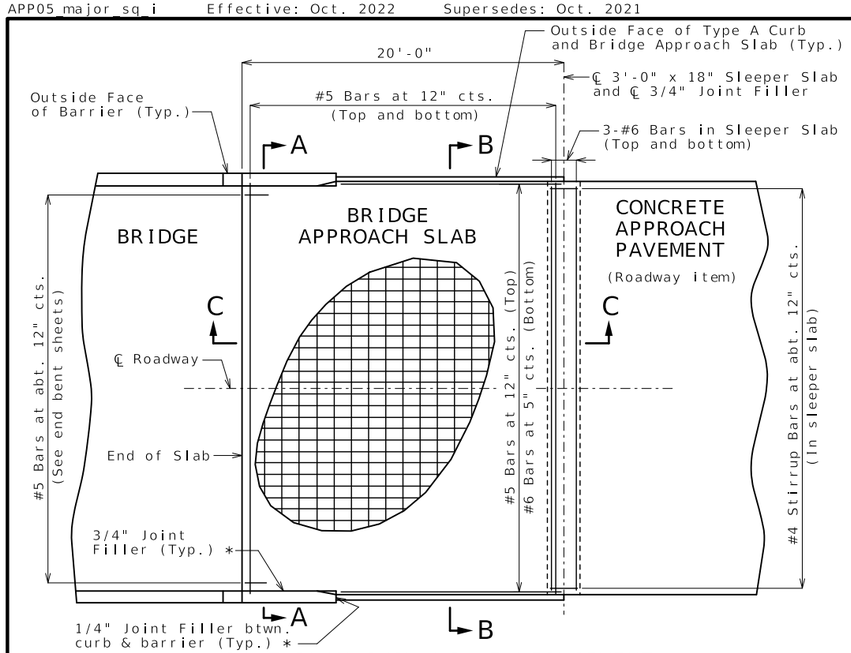
PROJECT NO.

BRIDGE NO.
A20204

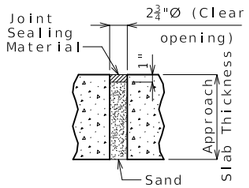
DESCRIPTION

DATE

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

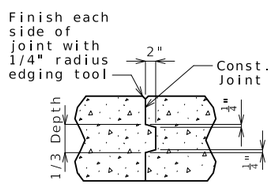


PART PLAN SHOWING REINFORCEMENT

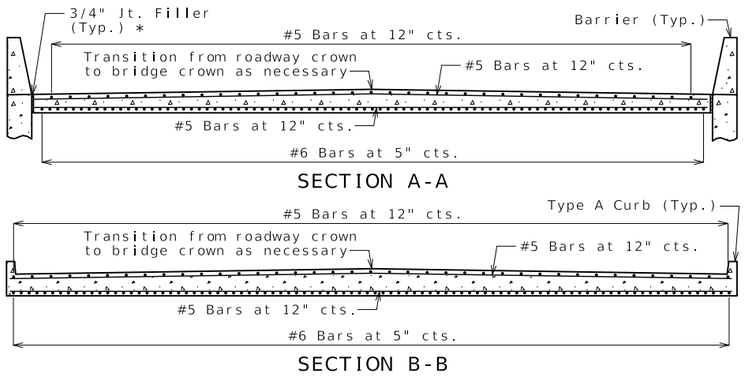


UNDERSEAL ACCESS HOLE DETAIL

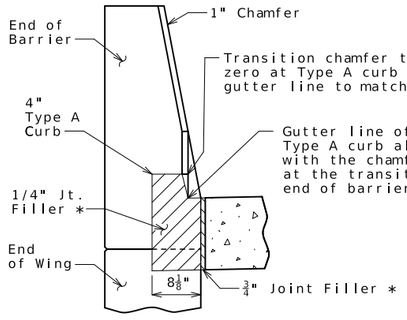
(If required)



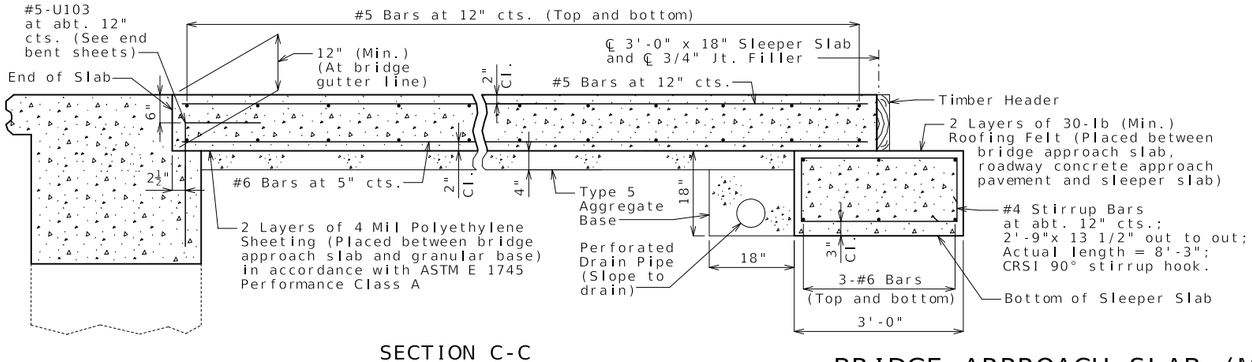
CONSTRUCTION JOINT DETAIL



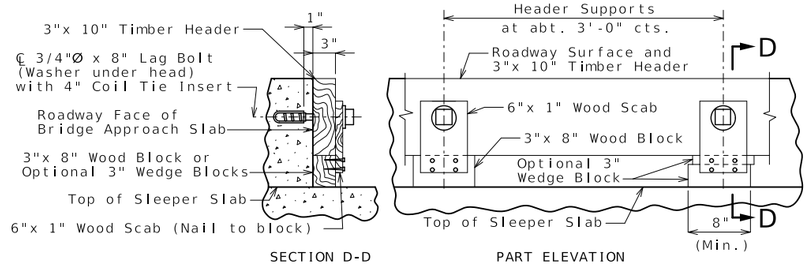
With the approval of the engineer, the contractor may crown the bottom of the approach slab to match the crown of the roadway surface.



SECTION BETWEEN CURB AND BARRIER



SECTION C-C



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 29 inches for #5 bars and 44 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 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.

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
Ted Koester
11/19/2024 2:58:55 PM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED: 11/19/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	9

COUNTY: CLAY

JOB NO.: J4S3496

CONTRACT ID.:

PROJECT NO.:

BRIDGE NO.: A20204

DESCRIPTION	DATE

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

Detailed Feb. 2024
Checked Feb. 2024

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

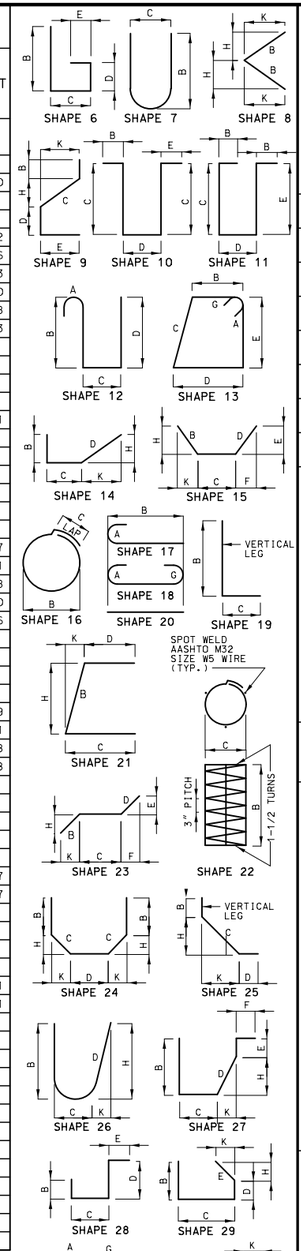
BRIDGE APPROACH SLAB (MAJOR)

BILL OF REINFORCING STEEL

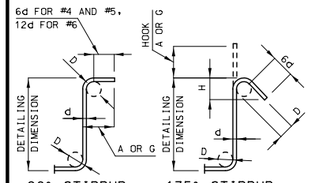
NO. REQ'D.	MARK NO. SIZE	MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
			SUBSTRUCTURE																									
			END BENT 1																									
16	6	F100	WING BRACE	E	23	S			2	3.000	4	6.000	14.000		9.875		9.875		19.125		19.125			7	11	7	10	188
16	6	F101	DIAPHRAGM	E	19	S			4	8.000	2	2.000												6	10	6	8	160
8	6	H100	BEAM	E	20				40	5.000														40	5	40	5	486
10	6	H101	BEAM	E	20				40	5.000														40	5	40	5	607
8	6	H102	DIAPHRAGM	E	20				44	3.000														44	3	44	3	532
20	6	H103	DIAPHRAGM	E	10						2	6.000	2	3.000										7	3	6	11	208
40	6	H104	WING	E	20				10	9.000														10	9	10	9	646
40	6	H105	WING	E	20				12	4.500														12	5	12	5	746
32	8	H106	WING	E	20				13	0.500														13	1	13	1	1118
102	6	U100	DIAPHRAGM	E	19	S			3	8.000	4	0.000												7	8	7	6	1149
76	5	U101	BEAM	E	19	S			3	7.750	2	8.000												6	4	6	3	495
76	5	U102	BEAM	E	31	S			4	10.125	2	3.000	3	6.000										11	6	11	4	898
76	5	U103	DIAPHRAGM	E	19	S				15.000	2	0.000												3	3	3	2	251
30	6	V100	BEAM/DIAPH	E	17				3	3.375														3	11	3	11	176
96	6	V101	DIAPHRAGM	E	20			V	8	6 11.000														6	11	6	11	
			INCREMENT =							7 1.000														7	1	7	1	1009
			0.125 INCH																									
			SLAB																									
258	5	S1	SLAB	E	20				52	0.000														52	0	52	0	13342
124	6	S2	SLAB	E	20				31	0.000														31	0	31	0	5774
600	5	S3	SLAB	E	20				40	5.000														40	5	40	5	25293
			BARRIER																									
20	5	K1	BARRIER CURB	E	27	S			3	8.000	9.250		5.375	3	2.750				5.250		1.000	8	1	7	11	165
72	5	K2	BARRIER CURB	E	27	S			3	8.000	9.250		14.500	2	5.750				14.250		2.750	8	2	7	11	595
20	5	K4	BARRIER CURB	E	19	S		V	4	2 4.250	10.000											3	2	3	1	
			INCREMENT =							2 6.250	10.000											3	4	3	3	66
			0.500 INCH																									
20	5	K5	BARRIER CURB	E	14	S		V	4	8.250	9.500		18.500						4.000		18.000	3	0	2	11	
			INCREMENT =							8.250	9.500		20.500						4.500		20.000	3	2	3	1	63
			0.500 INCH																									
12	5	K6	BARRIER CURB	E	19	S		V	4	2 6.750	10.000											3	5	3	4	
			INCREMENT =							2 7.750	10.000											3	6	3	5	42
			0.500 INCH																									
12	5	K7	BARRIER CURB	E	21	S		V	4	2 6.625	10.000								2 6.000		6.250	3	5	3	3	
			INCREMENT =							2 7.625	10.000								2 7.000		6.500	3	6	3	4	41
			0.500 INCH																									
36	5	K8	BARRIER CURB	E	19	S		V	4	2 8.500	10.000											3	7	3	5	
			INCREMENT =							3 2.500	10.000											4	1	3	11	138
			0.750 INCH																									
36	5	K9	BARRIER CURB	E	21	S		V	4	2 8.500	10.000								2 7.750		6.750	3	7	3	5	
			INCREMENT =							3 2.500	10.000								3 1.750		7.750	4	1	3	11	138
			0.750 INCH																									
24	5	K10	BARRIER CURB	E	19	S				3 3.000	10.000											4	1	4	0	100
24	5	K11	BARRIER CURB	E	21	S				3 3.000	10.000								3 2.250		7.750	4	1	3	11	98
48	5	K12	BARRIER CURB	E	20				15	9.000												15	9	15	9	789

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE	MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	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.
24	5	K13	BARRIER CURB	E	20			V	8	9 0.000														9	0	9	0	
			INCREMENT =							15 0.000														15	0	15	0	300
			36.000 INCH																									
300	5	R1	BARRIER CURB	E	26					3 3.000		5.500	3	3.625						3	3.000	6.750		6	9	6	9	2112
300	5	R2	BARRIER CURB	E	19	S				20.500		9.500												2	6	2	5	756
300	5	R3	BARRIER CURB	E	27	S						9.500	15	250	5	000	12	000	15	000	3	000	3	6	3	4	1043
40	5	R4	BARRIER CURB	E	20					11 9.000														11	9	11	9	490
40	5	R5	BARRIER CURB	E	20					33 9.000														33	9	33	9	1408
20	5	R6	BARRIER CURB	E	20					55 9.000														55	9	55	9	1163
			SLIP FORM																									
48	5	C1	SLIP FORM	E	20					12 0.000														12	0	12	0	601
			TOTALS																									
	5			E																								50387
	6			E																								11681
	8			E																								1118
			TOTAL																									0
			TOTAL	E																								63186
			Slab on																									
			Girder																									
	5			E																								40279
	6			E																								11681
	8			E																								1118
			TOTAL																									53078
			Safety																									
			Barrier																									
			Curb																									
	5			E																								9507
			TOTAL																									9507
			Slip Form																									
			Option																									
	5			E																								601
			TOTAL																									601



BENDING DIAGRAMS

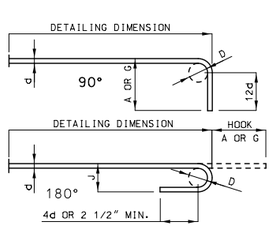


STIRRUP HOOK DIMENSIONS

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 (GRADE 60) FY = 60,000 PSI.

Detailed Feb. 2024
Checked Feb. 2024

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
Ted Koester
11/19/2024 2:59:21 PM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED 11/19/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	10

COUNTY CLAY
JOB NO. J4S3496
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A20204

DESCRIPTION
DATE

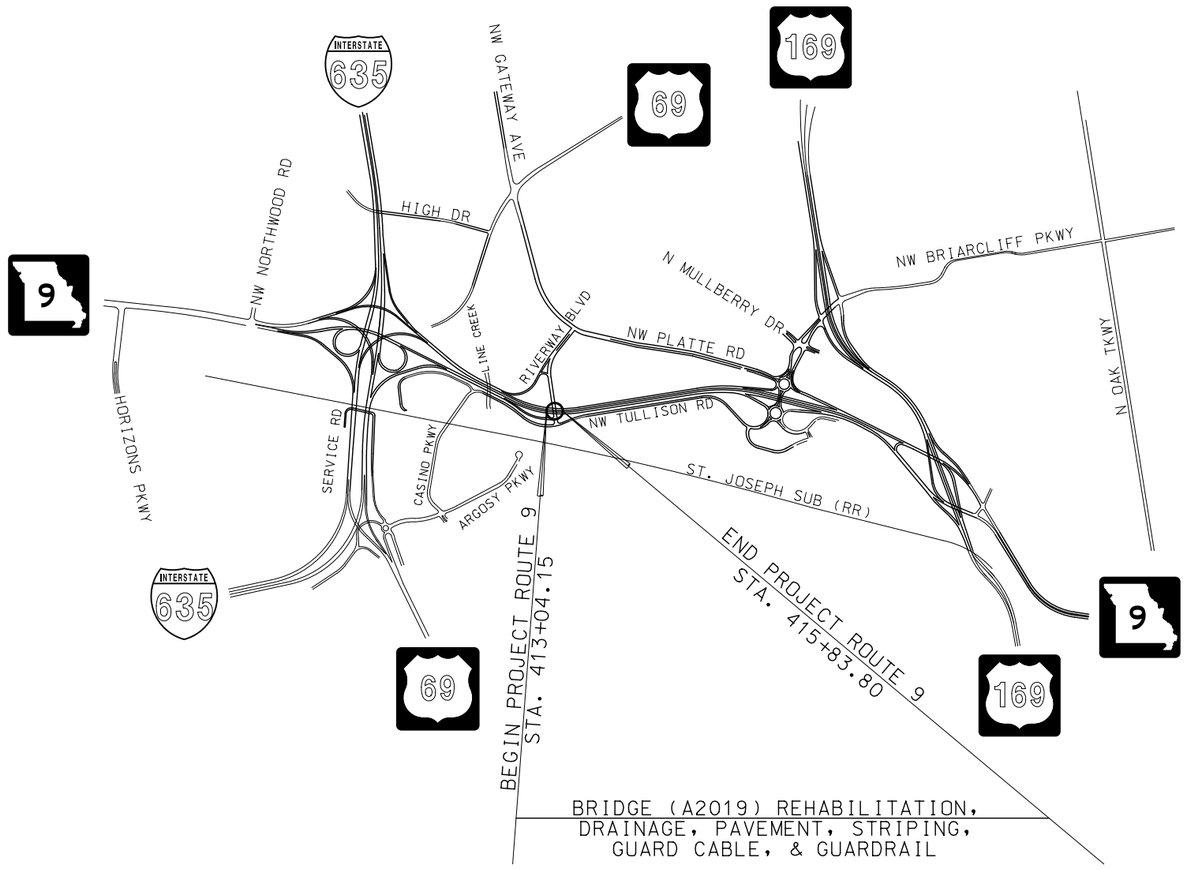
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

PLANS FOR PROPOSED STATE HIGHWAY PLATTE COUNTY

SECTION 9, TOWNSHIP 50N, RANGE 33W

KEY MAP
LOCATION OF CLAY COUNTY



NOT TO SCALE

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.

DESIGN DESIGNATION

A.A.D.T. - 2024 = 6610 (NB), 7678 (SB)
A.A.D.T. - 2044 = 8066 (NB), 9369 (SB)
D.H.V. = 12.0%
T = 5.7%
V = 55 M.P.H.
D = 46% (NB), 54% (SB)
FUNCTIONAL CLASSIFICATION- EXPRESSWAY

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

INDEX OF SHEETS

DESCRIPTION	SHEET NUMBER
TITLE SHEET	1
TYPICAL SECTIONS (TS) (1 SHEET)	2
QUANTITIES (QU) (2 SHEETS)	3
PLAN-PROFILE (PP)	4
REFERENCE POINTS (RP)	5
COORDINATE POINTS (CP)	6
EROSION CONTROL SHEETS (EC)	7
SIGNING (SN)	8
CULVERT SECTIONS (CS)	9
BRIDGE DRAWINGS (B)	
A20192	1-15
A20193	1-15

LENGTH OF PROJECT

ROUTE 9
BEGINNING OF PROJECT STA. 413+04.15
END OF PROJECT STA. 415+83.80

APPARENT LENGTH 279.65 FEET

EQUATIONS AND EXCEPTIONS:

TOTAL CORRECTIONS	0	FEET
NET LENGTH OF PROJECT	279.65	FEET
STATE LENGTH	0.053	MILES
FOR INFORMATION ONLY ESTIMATED DISTURBED ACRES	0.01	ACRES

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
12/02/2024 12:38:16 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED 12/2/2024

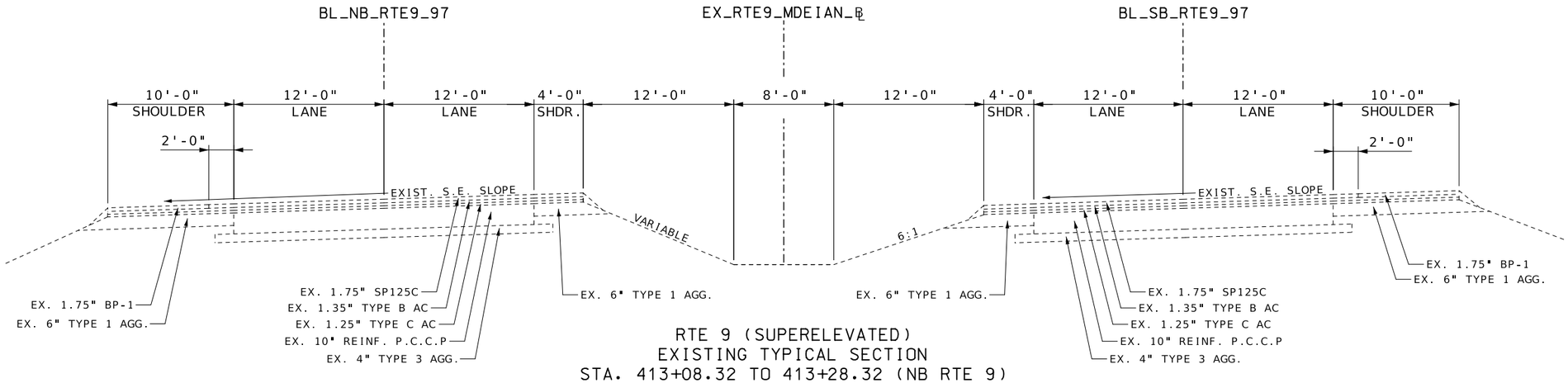
ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	1

COUNTY PLATTE
JOB NO. J4S3497
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)

TITLE SHEET



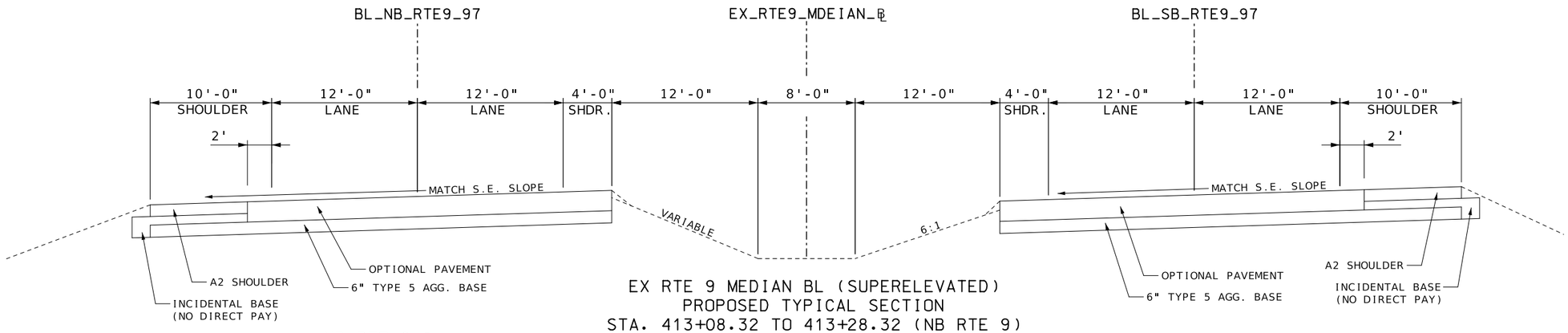
RTE 9 (SUPERELEVATED)
EXISTING TYPICAL SECTION
STA. 413+08.32 TO 413+28.32 (NB RTE 9)
STA. 415+47.72 TO 415+67.72 (NB RTE 9)
STA. 413+30.71 TO 413+50.71 (SB RTE 9)
STA. 415+63.80 TO 415+83.80 (SB RTE 9)

OPTIONAL PAVEMENT (MAINLINE)

10.0" HMA	8.5" PCCP
2" BP-1 W/ PG 64-22 OVER 8" BB W/ PG 64-22	15 FT. JOINTS AND 1¼" DOWELS

SHOULDER PAVEMENT

A2 SHOULDERS
SEE STD PLAN 401.00C



NB RTE 9 ℄
PROPOSED TYPICAL SECTION
STA. 1+04.71 TO 1+24.71
STA. 3+39.73 TO 3+59.73

EX RTE 9 MEDIAN BL (SUPERELEVATED)
PROPOSED TYPICAL SECTION
STA. 413+08.32 TO 413+28.32 (NB RTE 9)
STA. 415+47.72 TO 415+67.72 (NB RTE 9)
STA. 413+30.71 TO 413+50.71 (SB RTE 9)
STA. 415+63.80 TO 415+83.80 (SB RTE 9)

SB RTE 9 ℄
PROPOSED TYPICAL SECTION
STA. 1+06.05 TO 1+26.05
STA. 3+38.38 TO 3+63.38

FOR INFORMATION PURPOSES ONLY	
BP-1 W/ PG64-22	1.984 TON/YD^3
BB W/ PG64-22	1.997 TON/YD^3

NOT TO SCALE

TYPICAL SECTION SHEET
SHEET 1 OF 1

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
11/25/2024 9:09:05 AM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
11/25/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	2

COUNTY
PLATTE

JOB NO.
J4S3497

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)

CONTRACTOR FURNISHED SURVEYING	
QUANTITY	1 LUMP SUM

MOBILIZATION	
QUANTITY	1 LUMP SUM

PERMANENT PAVEMENT MARKING (STRIPING)

PLAN SHEET NO.	BEG. STA.	END STA.	ALIGNMENT	HIGH BUILD WATERBORNE PAINT (TYPE L BEADS)			REMARKS
				6" SOLID WHITE L.F.	6" INTERMITTENT WHITE L.F.	6" SOLID YELLOW L.F.	
4	1+04.71	3+59.73	BL_NB_RTE9_97	255.0	63.8	255.0	
4	1+06.05	3+63.38	BL_SB_RTE9_97	257.3	64.3	257.3	
			SUBTOTALS	512.3	128.1	512.3	
			PAY TOTALS	641		513	

REMOVAL OF IMPROVEMENTS

PLAN SHEET NO.	ALIGNMENT	BEG STA.	END STA.	LOCATION	DESCRIPTION
4	BL_NB_RTE9_97	1+01.24	1+51.24	LT.	50 L.F. EXIST. GUARDRAIL
4	BL_NB_RTE9_97	1+03.53	1+31.03	RT.	27.5 OF EXIST. GUARD CABLE
4	BL_NB_RTE9_97	1+04.71	-	LT. & RT.	38.3 L.F. SAWCUT
4	BL_NB_RTE9_97	1+04.71	1+39.89	LT. & RT.	172.6 SY. OF CONCRETE PAVEMENT
4	BL_NB_RTE9_97	1+39.89	1+70.42	LT. & RT.	84.3 SY. OF EX. BRIDGE APP SLAB
4	BL_NB_RTE9_97	2+94.69	3+24.85	LT. & RT.	85.8 SY. OF EX. BRIDGE APP SLAB
4	BL_NB_RTE9_97	3+24.85	3+59.73	LT. & RT.	163.4 SY. OF CONCRETE PAVEMENT
4	BL_NB_RTE9_97	3+59.73	-	LT. & RT.	37.8 L.F. OF SAWCUTS
4	BL_NB_RTE9_97	3+03.61	3+53.61	LT.	50 L.F. EXIST. GUARDRAIL
4	BL_NB_RTE9_97	3+14.12	3+64.12	RT.	50 L.F. EXIST. GUARDRAIL
4	BL_NB_RTE9_97	3+17.77	-	LT.	EXISTING DRAIN BASIN
4	BL_NB_RTE9_97	2+63.54	3+08.54	LT.	EX. 6" PIPE
4	BL_SB_RTE9_97	1+02.08	1+52.08	LT.	50 L.F. EXIST. GUARDRAIL
4	BL_SB_RTE9_97	1+06.05	-	LT. & RT.	36.9 L.F. OF SAWCUTS
4	BL_SB_RTE9_97	1+06.05	1+41.18	LT. & RT.	167.3 SY. OF CONCRETE PAVEMENT
4	BL_SB_RTE9_97	1+41.18	1+72.02	LT. & RT.	84.0 SY. OF EX. BRIDGE APP SLAB
4	BL_SB_RTE9_97	1+13.34	1+63.34	RT.	50 L.F. EXIST. GUARDRAIL
4	BL_SB_RTE9_97	2+95.92	3+23.56	LT. & RT.	84.2 SY. OF EX. BRIDGE APP SLAB
4	BL_SB_RTE9_97	3+23.56	3+63.38	LT. & RT.	170.1 SY. OF CONCRETE PAVEMENT
4	BL_SB_RTE9_97	-	3+63.38	LT. & RT.	39.2 L.F. OF SAWCUTS
4	BL_SB_RTE9_97	3+12.81	3+62.81	RT.	50 L.F. EXIST. GUARDRAIL
4	BL_SB_RTE9_97	3+16.03	-	LT.	EXISTING DRAIN BASIN
4	BL_SB_RTE9_97	3+30.86	3+63.38	LT.	32.5 L.F. OF EXIST. GUARD CABLE
4	EX_RTE9_MEDIAN_BL	413+66.39	414+30.96	LT. & RT.	447.9 SY. OF CONCRETE SLOPE PROTECTION
4	EX_RTE9_MEDIAN_BL	414+60.95	415+22.75	LT. & RT.	486.5 SY. OF CONCRETE SLOPE PROTECTION
4	BL_NB_RTE9_97	2+22.04	-	LT.	OVERHEAD CLEARANCE SIGN OVER SB RIVERWAY BLVD
4	BL_SB_RTE9_97	2+42.61	-	RT.	OVERHEAD CLEARANCE SIGN OVER NB RIVERWAY BLVD
					1 LUMP SUM

PAVEMENT

PLAN SHEET NO.	BEGIN STA.	END STA.	ALIGNMENT	LOCATION	LENGTH L.F.	WIDTH L.F.	OPTIONAL PAVEMENT S.Y.	A2 SHOULDER S.Y.	TYPE 5 AGG. FOR BASE (6 IN. THICK) S.Y.	CONCRETE APPROACH PAVEMENT S.Y.	LINEAR GRADING CLASS 1 STA.	SUBGRADE COMPACTION (6-INCH DEPTH) 100FT	OPTIONAL RUMBLE STRIP STA.	REMARKS
4	1+04.71	1+24.71	BL_NB_RTE9_97	LT. & RT.	20	VARIES	67.5	17.2	84.7		0.20	0.20	0.40	TIE INTO EX. SHLDRS
4	1+24.71	1+50.61	BL_NB_RTE9_97	LT. & RT.	VARIES	38				86.7	0.26	0.26		CONCRETE APPROACH
4	3+15.65	3+39.73	BL_NB_RTE9_97	LT. & RT.	VARIES	38.5				83.0	0.24	0.24		CONCRETE APPROACH
4	3+39.73	3+59.73	BL_NB_RTE9_97	LT. & RT.	20	VARIES	66.5	17.6	84.1		0.20	0.20	0.40	TIE INTO EX. SHLDRS
4	1+06.05	1+26.05	BL_SB_RTE9_97	LT. & RT.	20	VARIES	66.1	17.3	83.4		0.20	0.20	0.40	TIE INTO EX. SHLDRS
4	1+26.05	1+52.28	BL_SB_RTE9_97	LT. & RT.	VARIES	38				87.7	0.26	0.26		CONCRETE APPROACH
4	3+16.01	3+38.38	BL_SB_RTE9_97	LT. & RT.	VARIES	38.5				79.5	0.22	0.22		CONCRETE APPROACH
4	3+38.38	3+63.38	BL_SB_RTE9_97	LT. & RT.	25	VARIES	84.9	22.3	107.2		0.25	0.25	0.50	TIE INTO EX. SHLDRS
						SUBTOTALS	285.0	74.4	359.4	336.9	1.83	1.83	1.70	
						SUBTOTALS - ROCK LINING					0.51			
						PAY TOTALS	285.0	74.4	360.0	336.9	2.4	2.0	1.7	

ROCK LINING FOR CULVERT OUTLET & DITCH

PLAN SHEET NO.	ALIGNMENT	STATION	STATION	LOCATION	ROCK LINING C.Y.	FURNISHING TYPE 1 ROCK DITCH LINER C.Y.	PLACING TYPE 1 ROCK DITCH LINER C.Y.	EROSION CONTROL GEOTEXTILE S.Y.	LINEAR GRADING CLASS 1 STA.	REMARKS
4/7/9	BL_NB_RTE9_97	3+24.36	3+24.36	LT.	1.8					LINING FOR FES-1 OUTLET
4/7/9	BL_NB_RTE9_97	3+24.36	3+24.36	LT.		15.5	15.5	69.7	0.51	FLAT BOTTOM DITCH
				SUBTOTALS	1.8	15.5	15.5	69.7	0.51	
				PAYTOTALS	2.0	16.0	16.0	**	***	

NOTE: SEE PLAN, EROSION CONTROL, AND CULVERT SECTION SHEETS FOR ADDITIONAL INFORMATION
** SEE ROCK BLANKET QTY TABLE FOR PAY TOTALS
*** SEE PAVEMENT QTY TABLE FOR PAY TOTALS

ROCK BLANKET

PLAN SHEET NO.	ALIGNMENT	STATION	STATION	LOCATION	FURNISHING TYPE 2 ROCK BLANKET C.Y.	PLACING TYPE 2 ROCK BLANKET C.Y.	EROSION CONTROL GEOTEXTILE S.Y.	REMARKS
4/7	EX_RTE9_MEDIAN_BL	413+40.98	414+03.17	LT. & RT.	235.7	235.7	353.6	WEST OF RIVERWAY BLVD
4/7	EX_RTE9_MEDIAN_BL	414+60.95	414+48.30	LT. & RT.	231.1	231.1	346.6	EAST OF RIVERWAY BLVD
				SUBTOTALS	466.8	466.8	700.2	
				SUBTOTALS - ROCK LINING			69.7	
				PAYTOTALS	467.0	467.0	770.0	

NOTE: SEE PLAN AND EROSION CONTROL SHEETS FOR ADDITIONAL INFORMATION

NOTE: TRAFFIC CONTROL QUANTITIES AND PLAN SHEETS ARE INCLUDED IN PROJECT J4S3496 AND ARE CONSIDERED TO BE INCLUSIVE FOR ALL PROJECTS TO BE LET IN COMBINATION (J4S3496, J4S3497, & J4S3498).

SUMMARY OF QUANTITIES
SHEET 1 OF 2

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
11/25/2024 9:09:56 AM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
11/25/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	3

COUNTY
PLATTE

JOB NO.
J4S3497

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)

GUARDRAIL & GUARD CABLE

PLAN SHEET NO.	BEGIN STA.	END STA.	ALIGNMENT	STRUCTURE	LOCATION	LENGTH L.F.	MGS GUARDRAIL L.F.	MGS GUARDRAIL 8' POSTS 6'-3" SPACING L.F.	MGS BRIDGE APPROACH TRANS. SECT. (REGULAR/NO CURB) EACH	MGS BRIDGE APPROACH TRANS. SECT. (EXTENDED CURB) EACH	SHAPING SLOPES CLASS III MOD. MAT. REQUIREMENT 100 FT.	GUARD CABLE ANCHOR ASSEMBLY EACH	REMARKS
4	1+01.24	1+51.24	BL_NB_RTE9_97	A20193	LT.	50.0		12.5	1		1		
4	1+03.53	1+31.03	BL_NB_RTE9_97	-	RT.	-						1	
4	3+03.61	3+53.61	BL_NB_RTE9_97	A20193	LT.	50.0		12.5		1	1		
4	3+14.12	3+64.12	BL_NB_RTE9_97	A20193	RT.	50.0	12.5		1		1		
4	1+02.08	1+52.08	BL_SB_RTE9_97	A20192	LT.	50.0	12.5		1		1		
4	1+13.34	1+63.34	BL_SB_RTE9_97	A20192	RT.	50.0		12.5	1		1		
4	3+12.81	3+62.81	BL_SB_RTE9_97	A20192	RT.	50.0		12.5	1		1		
4	3+35.88	3+63.38	BL_SB_RTE9_97	-	LT.	-						1	
						SUBTOTALS	25.0	50.0	5.0	1.0	6.0	2.0	
						PAY TOTALS	25	50	5	1	6	2	

DRAINAGE - STRUCTURES

PLAN SHEET NO.	ALIGNMENT	STATION	LOCATION	DRAINAGE STRUCTURE ID#	PIPES CONNECTED TO DRAINAGE STRUCTURE	PRECAST CONCRETE DROP INLET 2' x 2' (DEPTH) L.F.	CURVED VANE GRATE & FRAME 2' x 2' EACH	PRECAST CONCRETE DROP INLET 4' x 2' (DEPTH) L.F.	CURVED VANE GRATE & FRAME 4' x 2' EACH	15" GROUP B FLARED END SECTION EACH	CLASS 3 EXCAVATION C.Y.	REMARKS
4/9	BL_SB_RTE9_97	3+25.00	15.0' LT.	DI-1	1 - 15"	3.20	1				5.7	
4/9	BL_SB_RTE9_97	3+33.00	15.0' LT.	DI-2	2 - 15"	3.11	1				6.1	
4/9	BL_NB_RTE9_97	3+24.36	20.0' LT.	DI-3	2 - 15"			3.35	1		8.1	
4/9	BL_NB_RTE9_97	3+24.36	86.4' LT.	FES-1	1 - 15"					1	3.5	
					SUBTOTALS	6.3	2	3.4	1	1	23.4	
					PAY TOTALS	7	2	4	1	1	***	

NOTE: SEE PLAN AND CULVERT SECTION SHEETS FOR ADDITIONAL DETAILS
*** SEE DRAINAGE - PIPES QTY TABLE FOR PAY TOTALS

DRAINAGE - PIPES

PLAN SHEET NO.	ALIGNMENT	PIPE NO.	FROM DRAINAGE STRUCTURE ID#	TO DRAINAGE STRUCTURE ID#	15" GROUP A PIPE L.F.	15" GROUP B PIPE L.F.	CLASS 3 EXCAVATION C.Y.	REMARKS
4/9	EX_RTE9_MEDIAN_BL	P-100	DI-1	DI-2	5.9		1.0	
4/9	EX_RTE9_MEDIAN_BL	P-101	DI-2	DI-3	69.8		42.8	
4/9	EX_RTE9_MEDIAN_BL	P-102	DI-3	FES-1		60.8	43.5	CMP ONLY
				SUBTOTALS	75.7	60.8	87.3	
				SUBTOTALS - DRAINAGE STRUCTURES			23.4	
				PAY TOTALS	76.0	61.0	111.0	

NOTE: SEE PLAN AND CULVERT SECTION SHEETS FOR ADDITIONAL DETAILS

PERMANENT SIGNING

PLAN SHEET NO.	ALIGNMENT	STATION	LOCATION	SH-FLAT SHEET S.F.	REMARKS
4/8	BL_NB_RTE9_97	2+22.04	23.0' LT.	14.0	① OVERHEAD LOW CLEARANCE SIGN (ATTACH TO BRIDGE)
4/8	BL_SB_RTE9_97	2+42.61	20.7' RT.	14.0	② OVERHEAD LOW CLEARANCE SIGN (ATTACH TO BRIDGE)
			SUBTOTALS	28.0	
			PAY TOTALS	28	

NOTE: SEE BRIDGE PLANS FOR SIGN BRACKET DESIGN

TEMPORARY EROSION CONTROL

PLAN SHEET NO.	ALIGNMENT	STATION	STATION	LOCATION	SILT FENCE L.F.	ROCK DITCH CHECK L.F.	ALT DITCH CHECK L.F.	SEDIMENT REMOVAL C.Y.	REMARKS
7	EX_RTE9_MEDIAN_BL	412+73.38	413+48.38	LT. & RT.		57.5		2.0	ROUTE 9 MEDIAN
7	EX_RTE9_MEDIAN_BL	415+56.36	416+31.36	LT. & RT.		63.0		2.0	ROUTE 9 MEDIAN
7	EX_RTE9_MEDIAN_BL	414+05.97	414+34.77	LT. & RT.			18.6	3.0	WESTSIDE DITCH ALONG RIVERWAY BLVD
7	EX_RTE9_MEDIAN_BL	414+57.81	414+85.48	LT. & RT.			17.8	3.0	EASTSIDE DITCH ALONG RIVERWAY BLVD
7	EX_RTE9_MEDIAN_BL	415+01.95	415+31.88	LT.			30.0	3.0	EXISTING FBD DITCH NE OF BRIDGES
7	BL_NB_RTE9_97	0+99.71	1+94.09	LT.	140.0			1.4	
7	BL_NB_RTE9_97	2+48.35	3+12.17	LT.	138.0			1.4	
7	BL_NB_RTE9_97	3+36.75	3+64.73	LT.	154.6			1.5	
7	BL_SB_RTE9_97	1+01.05	2+16.59	RT.	117.5			1.2	
7	BL_SB_RTE9_97	2+61.23	3+68.38	RT.	109.1			1.1	
				SUBTOTALS	659.2	120.5	66.4	19.6	
				PAYTOTALS	660.0	121.0	67.0	20.0	

NOTE: TRAFFIC CONTROL QUANTITIES AND PLAN SHEETS ARE INCLUDED IN PROJECT J4S3496 AND ARE CONSIDERED TO BE INCLUSIVE FOR ALL PROJECTS TO BE LET IN COMBINATION (J4S3496, J4S3497, & J4S3498).

SUMMARY OF QUANTITIES
SHEET 2 OF 2

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
10/31/2024 8:36:53 AM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED: 10/31/2024
ROUTE: 9 | STATE: MO
DISTRICT: KC | SHEET NO.: 3
COUNTY: PLATTE
JOB NO.: J4S3497
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)

BUILD MGS (8' POSTS) GUARDRAIL
BL NB RTE9 97
STA. 1+01.24 TO 1+13.74 LT.
STA. 3+03.61 TO 3+16.11 LT.
BUILD MGS GUARDRAIL
BL NB RTE9 97
STA. 3+14.12 TO 3+26.62 RT.
BUILD MGS BRIDGE APPROACH SECTION
BL NB RTE9 97
STA. 1+13.74 TO 1+51.24 LT.
STA. 3+16.11 TO 3+53.61 LT.
STA. 3+26.62 TO 3+64.12 RT.

BUILD OPTIONAL PAVEMENT
& A2 SHOULDERS
BL NB RTE9 97
STA. 1+04.71 TO 1+24.71 LT. & RT.
STA. 3+39.73 TO 3+59.73 LT. & RT.

BUILD CONCRETE APP. PAVEMENT
BL NB RTE9 97
STA. 1+24.71 TO 1+50.61 LT. & RT.
STA. 3+15.65 TO 3+39.73 LT. & RT.
BUILD 4" TYPE A CURB (INCIDENTAL)
ALONG CONCRETE APP. PAVEMENT
BL NB RTE9 97
STA. 3+15.65 TO 3+39.73 LT.

BL NB RTE9 97
PI 2+30.85
PC 0+00.00
PT 4+59.47
Δ 13°45'32.1" (LT)
D 2°59'40.2"
L 459.47' (ARC)
T 230.85'
R 1,913.36'

15 FT 0 IN
W12-2a
84" x 24"
ATTACH TO BARRIER
BRIDGE A2019 (NB RTE 9)
FACING SB RIVERWAY BLVD
CENTER OF LANE

DO NOT DISTURB
GRAVEL ENTRANCE (DND)
RIVERWAY BLVD
EX. FBD TO BE REMOVED BY OTHERS
END FBD AT EX DITCH F.L. ELEV. ±741.00' LINEAR GRADING CLASS 1 & GRADE TO DRAIN
EXISTING RW
LIMITS OF CONSTRUCTION
1.25' DEEP, 3' FBD W/ TYPE 1 ROCK DITCH LINER AND EROSION CONROL GEOTEXTILE
1' x 4' x 12.0' (DxWxL) ROCK LINING FOR CULVERT OUTLET
P-102
FES-1
(R) EX. CONC. DRAIN BASIN
(R) EX. 6" PIPE
APPROX 5.2' HORIZONTAL CLEARANCE FROM EARTHWORK EXCAVATION LIMITS FOR P-102 TO LEVEE
4" TYPE A CURB
(R) 50 L.F. OF EX. GUARDRAIL
LEVEE (DND)

DRAINAGE ITEMS
BL_SB_RTE9_96
DI-1: STA. 3+25.00 - 15.00' LT. (CTR.)
PC DI 2'x2' TYPE A (D = 3.20')
P-100: 5.9' - 15" GROUP 'A' PIPE
DI-2: STA. 3+33.00 - 15.00' LT. (CTR.)
PC DI 2'x2' TYPE A (D = 3.11')
P-101: 69.8' - 15" GROUP 'A' PIPE
BL_NB_RTE9_97
DI-3: STA. 3+24.36 - 20.00' LT. (CTR.)
PC DI 4'x2' TYPE A (D = 3.35')
P-102: 60.8' - 15" GROUP 'B' PIPE (CMP ONLY)
FES-1: STA. 3+24.36 - 86.4' LT. (F.L.)

BUILD GUARDCABLE ANCHOR ASSEMBLY
BL NB RTE9 97
STA. 1+03.53 TO 1+31.03 RT.

(R) 50 L.F. OF EX. GUARDRAIL
START STA. 0+00.00
END STA. 4+59.47
BL_NB_RTE9_97
NB ROUTE 9
SAWCUT STA. 1+04.71
SAWCUT STA. 3+59.73
6" S.W.
6" I.W.
6" S.Y.
REHAB BR A20193

EX_RTE9_MEDIAN_BL
PI 418+20.50
Ls 300.00'
Ys 15.70'
Xs 299.51'
LT 200.06'
ST 100.06'

BL SB RTE9 97
PI 2+32.18
PC 0+00.00
PT 4+62.08
Δ 13°53'2.8" (LT)
D 3°0'17.0"
L 462.08' (ARC)
T 232.18'
R 1,906.86'

START STA. 0+00.00
END STA. 4+62.08
BL_SB_RTE9_97
SB ROUTE 9
SAWCUT STA. 1+06.05
SAWCUT STA. 3+68.38
REHAB BR A20192
(R) 50 L.F. OF EX. GUARDRAIL
P-101
P-100
DI-1
DT-2
(R) 27.5 L.F. OF EX. GUARCABLE & INSTALL NEW ANCHOR ASSEMBLY
(R) 32.5 L.F. OF EX. GUARCABLE & INSTALL NEW ANCHOR ASSEMBLY

REMOVE EXIST. CONC. SLOPE PROTECTION
REMOVE EXIST. CONC. SLOPE PROTECTION
DO NOT DISTURB
DO NOT DISTURB
DO NOT DISTURB
SIGN
U.I.P.
RIVERWAY BLVD
SB ROUTE 9 OFF-RAMP

BUILD GUARDCABLE ANCHOR ASSEMBLY
BL SB RTE9 97
STA. 3+35.88 TO 3+63.38 LT.

BUILD 4" TYPE A CURB (INCIDENTAL)
ALONG CONCRETE APP. PAVEMENT
BL SB RTE9 97
STA. 3+16.01 TO 3+38.38 LT.

BUILD CONCRETE APP. PAVEMENT
BL SB RTE9 97
STA. 1+26.05 TO 1+52.28 LT. & RT.
STA. 3+16.01 TO 3+38.38 LT. & RT.

BUILD OPTIONAL PAVEMENT
& A2 SHOULDERS
BL SB RTE9 97
STA. 1+06.05 TO 1+26.05 LT. & RT.
STA. 3+38.38 TO 3+63.38 LT. & RT.

BUILD MGS GUARDRAIL
BL SB RTE9 97
STA. 1+02.08 TO 1+14.58 LT.
BUILD MGS (8' POSTS) GUARDRAIL
BL SB RTE9 97
STA. 1+13.34 TO 1+25.84 RT.
STA. 3+12.81 TO 3+25.31 RT.
BUILD MGS BRIDGE APPROACH SECTION
BL SB RTE9 97
STA. 1+14.58 TO 1+52.08 LT.
STA. 1+25.84 TO 1+63.34 RT.
STA. 3+25.31 TO 3+62.81 RT.

STRIPING LEGEND
6" INTERMITTENT WHITE (I.W.) HIGH BUILD PAINT, TYPE L BEADS
6" SOLID WHITE (S.W.) HIGH BUILD PAINT, TYPE L BEADS
6" SOLID YELLOW (S.Y.) HIGH BUILD PAINT, TYPE L BEADS

SCALE
0 20 40 60

15 FT 0 IN
W12-2a
84" x 24"
ATTACH TO BARRIER
BRIDGE A2019 (SB RTE 9)
FACING NB RIVERWAY BLVD
CENTER OF LANE

BRIDGE APP. SLAB
CONCRETE APP. PAVEMENT
OPTIONAL PAVEMENT
TYPE II ROCK BLANKET

PLAN SHEET
SHEET 1 OF 1

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
10/30/2024 1:52:26 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

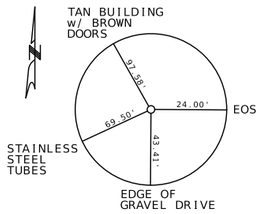
DATE PREPARED 10/29/2024
ROUTE 9 | STATE MO
DISTRICT KC | SHEET NO. 4
COUNTY PLATTE
JOB NO. J4S3497
CONTRACT ID.
PROJECT NO.
BRIDGE NO.

DESCRIPTION
DATE

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

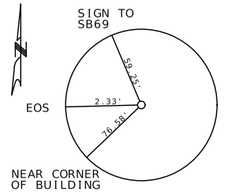
REFERENCE POINTS:

CONTROL POINT #1



CP#1 - SET 5/8" BAR
W/ PINK MODOT CAP
NORTHING = 1,092,664.116
EASTING = 2,756,868.494
ELEVATION = 743.97

CONTROL POINT #2



CP#2 - SET PK NAIL IN
OF SB SHOULDER
NORTHING = 1,092,853.129
EASTING = 2,756,896.518
ELEVATION = 749.26

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER

10/30/2024 1:53:23 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
10/29/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	5

COUNTY
PLATTE

JOB NO.
J4S3497

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)

COORDINATE POINT LISTING

SHEET NO	STATION	LOCATION	OFFSET (USFT)	MODIFIED STATE PLANE (GROUND) NORTHING (US SURVEY FT)	EASTING (US SURVEY FT)	ELEVATION (US SURVEY FT)	DESCRIPTION	GPK POINT ID
PROJECT CONTROL POINTS								
-	1+47.81	NB ROUTE 9 BL	133.50' LT.	1,092,664.12	2,756,868.49	743.97	5/8" BAR W/ PINK MODOT CONTROL CAP	CP#1
-	N/A	RIVERWAY BLVD	N/A	1,092,853.13	2,756,896.52	749.26	PK NAIL SET IN SB RIVERWAY BLVD SHOULDER	CP#2
ALIGNMENTS								
-	395+00.00	EX ROUTE 9 MEDIAN BL	0	1,093,502.79	2,755,274.34	-	P.O.T. - EX_RTE9_MEDIAN_BL	
-	405+21.56	EX ROUTE 9 MEDIAN BL	0	1,092,893.71	2,756,094.46	-	T.S. - EX_RTE9_MEDIAN_BL	
-	408+21.56	EX ROUTE 9 MEDIAN BL	0	1,092,721.26	2,756,339.84	-	S.C. - EX_RTE9_MEDIAN_BL	
-	417+20.45	EX ROUTE 9 MEDIAN BL	0	1,092,436.93	2,757,183.85	-	C.S. - EX_RTE9_MEDIAN_BL	
-	420+13.20	EX ROUTE 9 MEDIAN BL	0	1,092,425.77	2,757,483.56	-	S.T. - EX_RTE9_MEDIAN_BL & STA. EQN.	
-	425+00.06	EX ROUTE 9 MEDIAN BL	0	1,092,420.38	2,757,970.39	-	P.O.T. - EX_RTE9_MEDIAN_BL	
4	0+00.00	NB ROUTE 9 BL	0	1,092,582.31	2,756,691.17	-	P.O.C. - BL_NB_RTE9_97 (BEGIN)	
4	4+59.47	NB ROUTE 9 BL	0	1,092,474.11	2,757,136.58	-	P.O.C. - BL_NB_RTE9_97 (END)	
4	0+00.00	SB ROUTE 9 BL	0	1,092,513.79	2,756,692.02	-	P.O.C. - BL_SB_RTE9_97 (BEGIN)	
4	4+62.08	SB ROUTE 9 BL	0	1,092,409.45	2,757,141.00	-	P.O.C. - BL_SB_RTE9_97 (END)	

ALL PROJECT COORDINATES HAVE BEEN PROJECTED FROM THE MISSOURI STATE PLANE COORDINATE (SPC) SYSTEM OF 1983 USING AN AVERAGE PROJECT PROJECTION (GRID TO GROUND) FACTOR. TO GET BACK TO STATE PLANE COORDINATES MULTIPY THE PROJECT COORDINATES BY THE AVERAGE GRID FACTOR AS SHOWN IN THE "REFERENCE CONTROL INFORMATION" PORTION OF THIS TABLE.

PROJECT COORDINATE INFORMATION

COORDINATE SYSTEM	MODIFIED STATE PLANE(GROUND)
HORIZONTAL DATUM	NAD83
VERTICAL DATUM	NAVD88
GEOID MODEL	GEOID18
ELEVATIONS DETERMINED BY	GPS OBSERVATION
PROJECT PROJECTION FACTOR	1.00009901

REFERENCE CONTROL INFORMATION

COORDINATE SYSTEM	MO COORDINATE SYSTEM OF 1983
CONTROL STATION	MO GEOGRAPHIC REFERENCE SYSTEM
DESIGNATION	PL-19
CORS_ID	XX
PID	165019
LATITUDE	39°11'34.56360"
LONGITUDE	094°36'55.61883"
NORTHING (M)	335873.5350
EASTING (M)	840026.8120
ZONE	WEST
PROJECT AVERAGE GRID FACTOR	0.99990100

EXAMPLE OF PROJECT COORDINATE TO S.P.C.

PROJECT NORTHING X AVERAGE GRID FACTOR
= STATE PLANE NORTHING
PROJECT EASTING X AVERAGE GRID FACTOR
= STATE PLANE EASTING

EXAMPLE: CONTROL POINT #1
N 1092664.116 X 0.99990100 = N 1092555.942
E 2756868.494 X 0.99990100 = E 2756595.564

LINEAR UNIT CONVERSION

1 METER = 3.280833333 US SURVEY FEET (USFT)

COORDINATE POINT SHEET
SHEET 1 OF 1

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER

10/30/2024 1:54:06 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
10/29/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	6

COUNTY
PLATTE

JOB NO.
J4S3497

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

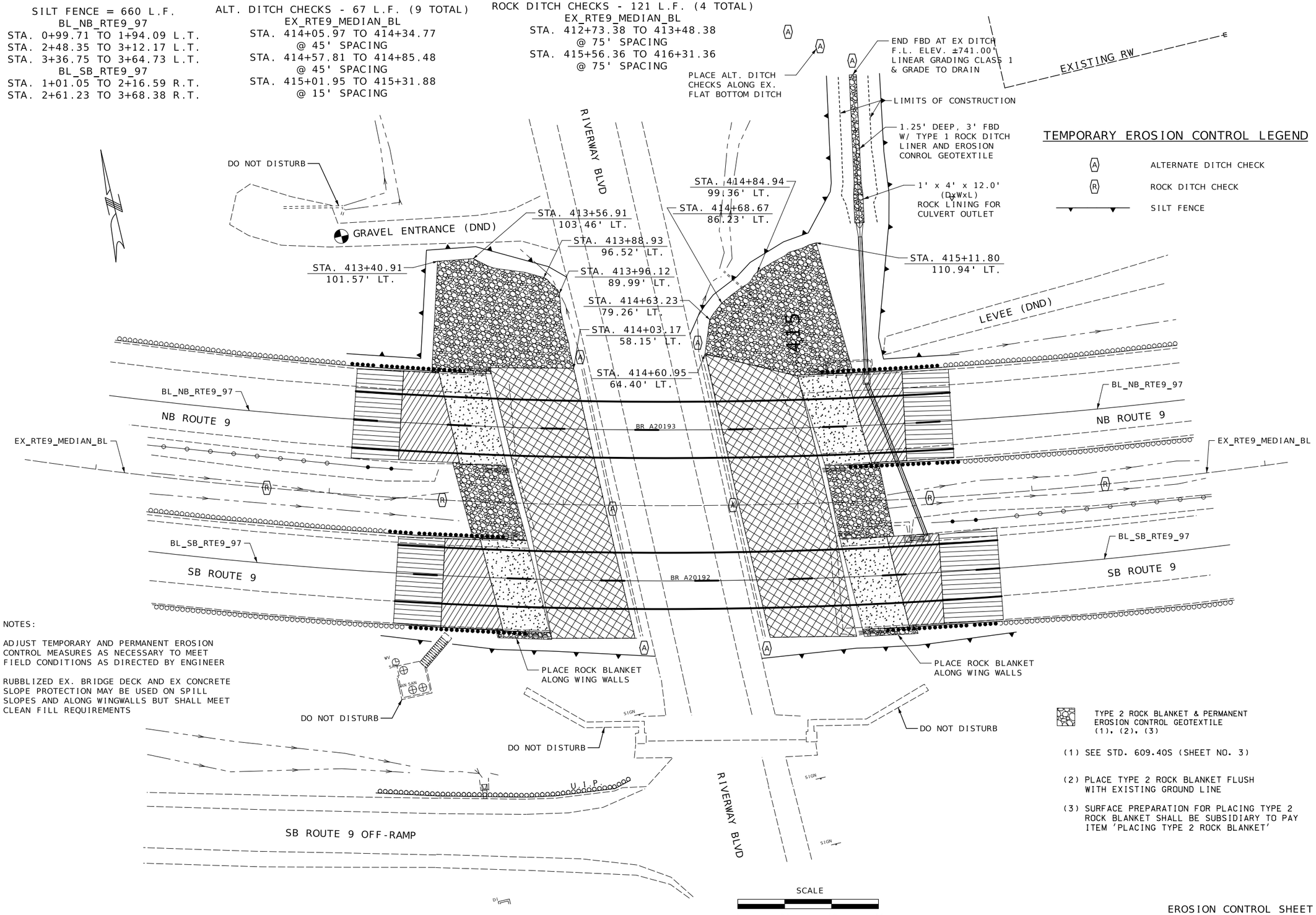
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

SILT FENCE = 660 L.F.
BL_NB_RTE9_97
STA. 0+99.71 TO 1+94.09 L.T.
STA. 2+48.35 TO 3+12.17 L.T.
STA. 3+36.75 TO 3+64.73 L.T.
BL_SB_RTE9_97
STA. 1+01.05 TO 2+16.59 R.T.
STA. 2+61.23 TO 3+68.38 R.T.

ALT. DITCH CHECKS - 67 L.F. (9 TOTAL)
EX_RTE9_MEDIAN_BL
STA. 414+05.97 TO 414+34.77
@ 45' SPACING
STA. 414+57.81 TO 414+85.48
@ 45' SPACING
STA. 415+01.95 TO 415+31.88
@ 15' SPACING

ROCK DITCH CHECKS - 121 L.F. (4 TOTAL)
EX_RTE9_MEDIAN_BL
STA. 412+73.38 TO 413+48.38
@ 75' SPACING
STA. 415+56.36 TO 416+31.36
@ 75' SPACING



TEMPORARY EROSION CONTROL LEGEND

- (A) ALTERNATE DITCH CHECK
- (R) ROCK DITCH CHECK
- SILT FENCE

NOTES:

ADJUST TEMPORARY AND PERMANENT EROSION CONTROL MEASURES AS NECESSARY TO MEET FIELD CONDITIONS AS DIRECTED BY ENGINEER

RUBBLIZED EX. BRIDGE DECK AND EX CONCRETE SLOPE PROTECTION MAY BE USED ON SPILL SLOPES AND ALONG WINGWALLS BUT SHALL MEET CLEAN FILL REQUIREMENTS

TYPE 2 ROCK BLANKET & PERMANENT EROSION CONTROL GEOTEXTILE (1), (2), (3)

(1) SEE STD. 609.40S (SHEET NO. 3)

(2) PLACE TYPE 2 ROCK BLANKET FLUSH WITH EXISTING GROUND LINE

(3) SURFACE PREPARATION FOR PLACING TYPE 2 ROCK BLANKET SHALL BE SUBSIDIARY TO PAY ITEM 'PLACING TYPE 2 ROCK BLANKET'

EROSION CONTROL SHEET
SHEET 1 OF 1

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
10/31/2024 8:37:43 AM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
10/31/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	7

COUNTY
PLATTE

JOB NO.
J4S3497

CONTRACT ID.

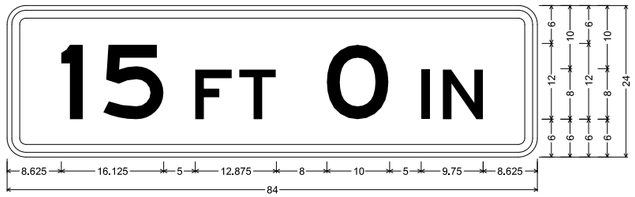
PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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



W12-2a SHF-FLAT SHEET FLUORESCENT:
3.000" Radius, 1.250" Border, 0.750" Indent, Black on, Yellow:
"15 FT 0 IN", E:
Table of letter and object lefts

1	5	F	T	0	I	N
8.625	15.250	29.750	36.750	50.625	65.625	69.000

NOT TO SCALE

SIGNING SHEET
SHEET 1 OF 1

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER

Heather R. Barrows

10/30/2024 1:55:39 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
10/29/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	8

COUNTY
PLATTE

JOB NO.
J4S3497

CONTRACT ID.

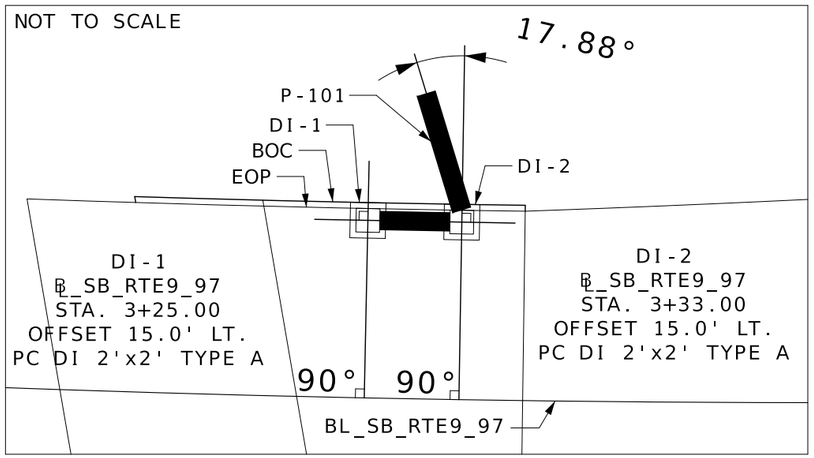
PROJECT NO.

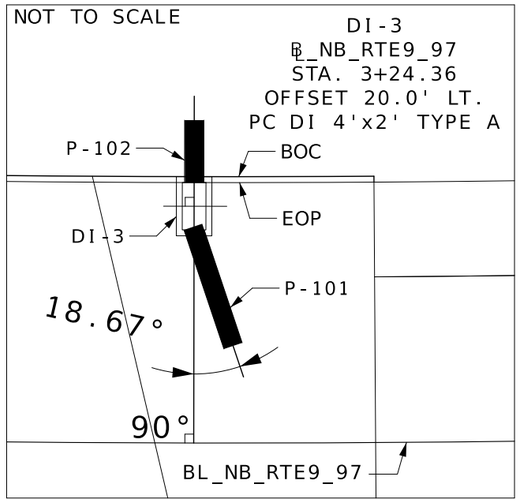
BRIDGE NO.

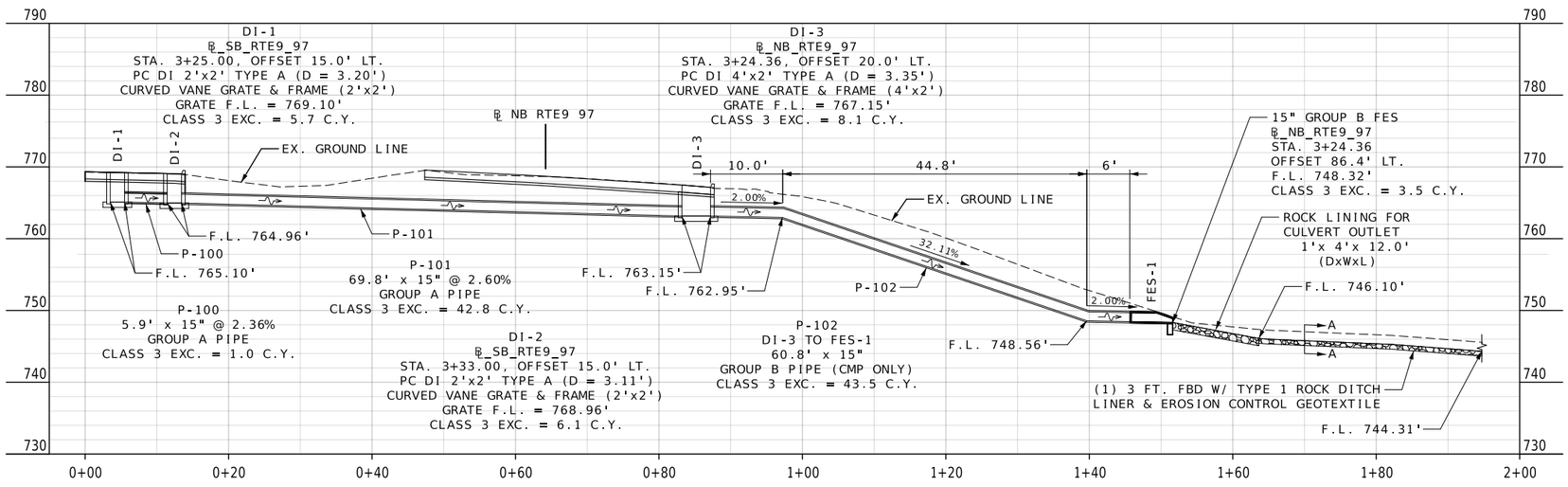
DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

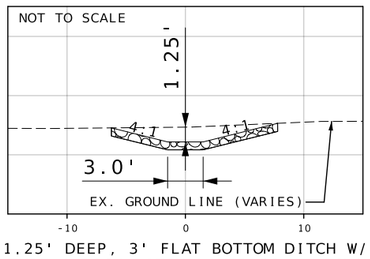
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)







(1) FLAT BOTTOM DITCH W/ TYPE 1 ROCK DITCH LINER & EROSION CONTROL GEOTEXTILE SHALL BE EXTENDED ±20 L.F. FURTHER THAN SHOWN IN CULVERT SECTION TO MEET EXISTING DITCH AT F.L. ELEVATION ±741.00', LINEAR GRADING CLASS 1, GRADE TO DRAIN.



1.25' DEEP, 3' FLAT BOTTOM DITCH W/ TYPE 1 ROCK DITCH LINER (8" THICK) & EROSION CONTROL GEOTEXTILE SECTION A-A

CULVERT SECTION SHEET
SHEET 1 OF 1

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
Heather R. Barrows
10/30/2024 2:01:56 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
10/29/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	9

COUNTY
PLATTE

JOB NO.
J4S3497

CONTRACT ID.

PROJECT NO.

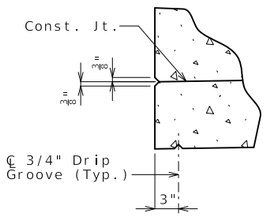
BRIDGE NO.

DESCRIPTION	DATE

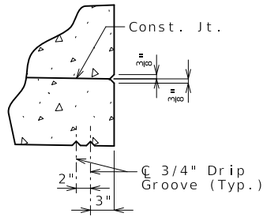
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

SEC/SUR 4 TWP 50N RGE 33W

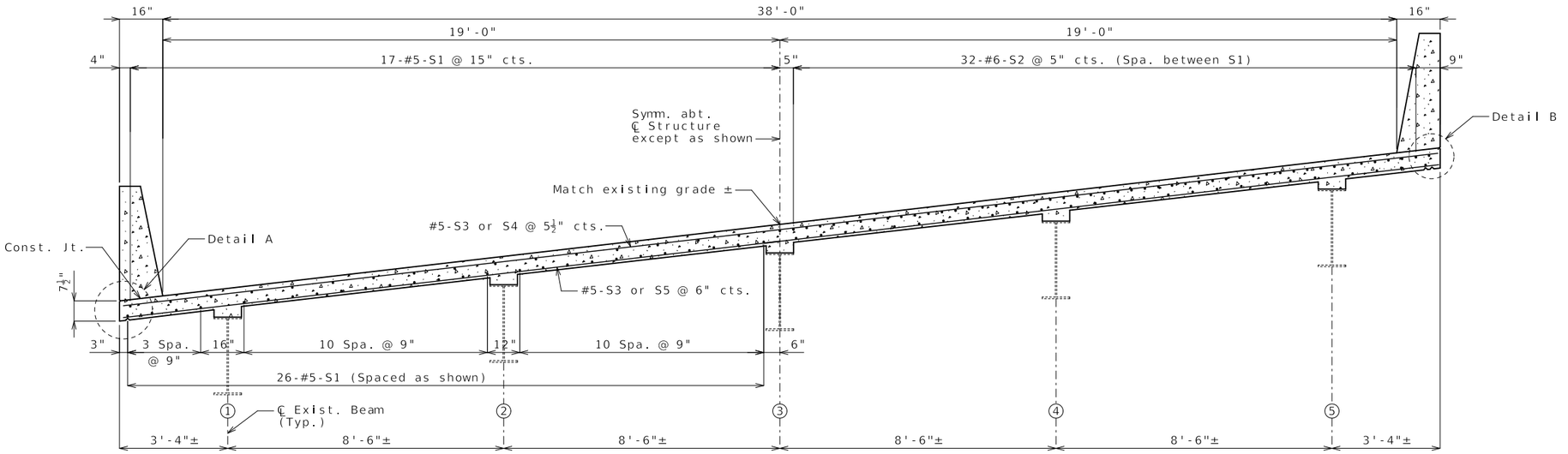
U.I.P. REDECK AND MAKE COMPOSITE EXISTING (39'- 56'- 39') CONTINUOUS WIDE FLANGE BEAM SPANS (SKEW: 12°47'00" R.A.)



DETAIL A



DETAIL B



TYPICAL SECTION THRU SLAB

General Notes:

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

Design Loading:
HS20-44 (1965), HS20-44 (New Construction)
35 lb/sf Future Wearing Surface
Earth - 120 lb/cf, Equivalent Fluid Pressure 45 lb/cf
Fatigue Stress - Case III

Design Unit Stresses:

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

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:
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 ordering new material.

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

Detailed Feb. 2024
Checked Nov. 2024

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

Estimated Quantities for Slab on Steel

Item		Total
Class B-2 Concrete	cu. yard	145
Reinforcing Steel (Epoxy Coated)	pound	49,150

Table Showing S2 Bar Lengths

Int. Bent No. 2		Int. Bent No. 3	
Span 1	Span 2	Span 2	Span 3
15'-3"	15'-3"	15'-3"	15'-3"

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.

Estimated Quantities

Item		Total
Removal of Miscellaneous ACM (Non-Friable)	sq. foot	14
Class 1 Excavation	cu. yard	85
Temporary Shoring	lump sum	1
Removal of Existing Bridge Deck	sq. foot	5544
Bridge Approach Slab (Major)	sq. yard	171
Slab on Steel	sq. yard	610
Type D Barrier	linear foot	306
Slab Drain	each	6
Surface Preparation for Epoxy-Mastic Primer	lump sum	1
Gray Epoxy-Mastic Primer	lump sum	1
Vertical Drains 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.

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.

REPAIRS TO BRIDGE: ROUTE 9 SB OVER US 69

ROUTE 9 FROM ROUTE 169 TO ROUTE 635
ABOUT 1.3 MILES WEST OF ROUTE 169
BEGINNING STATION 413+92.73± (MATCH EXISTING)

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
12/11/2024 11:39:01 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

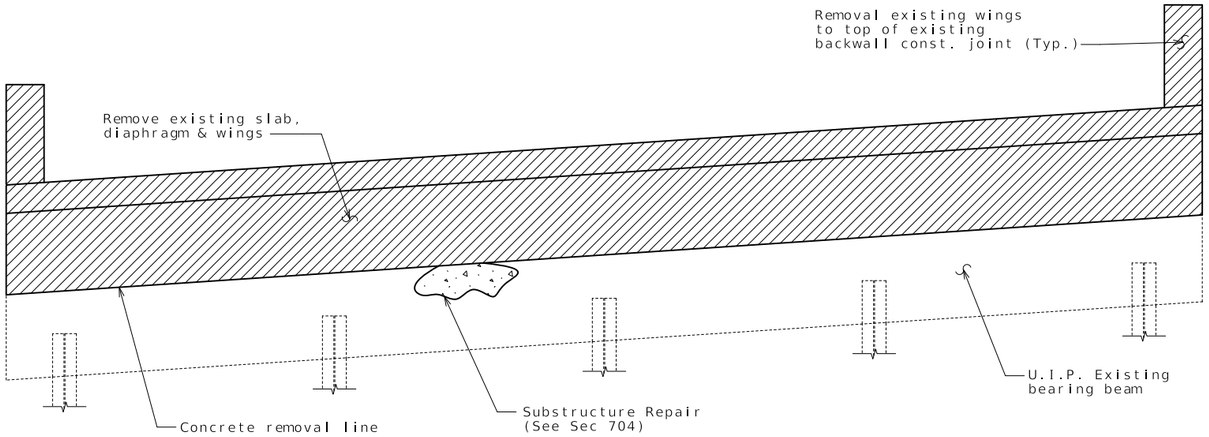
DATE PREPARED 12/11/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	1

COUNTY PLATTE
JOB NO. J4S3497
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A20192

DESCRIPTION	DATE

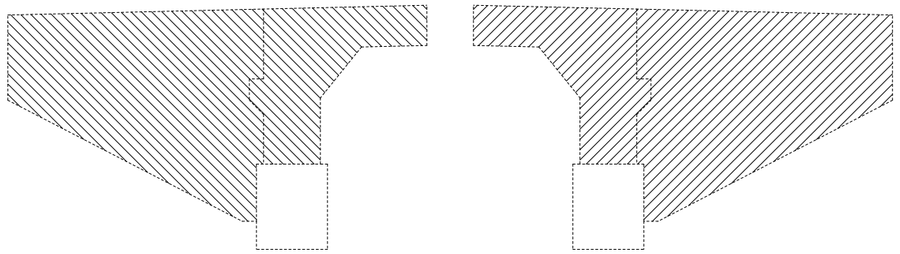
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



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.

Substructure repair shall be made monolithically with making the end bent integral. The cost will be considered completely covered by the contract unit price for Slab on Steel.



DETAILS OF CONCRETE REMOVAL OF WINGS @ BENTS NO. 1 & 4

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:

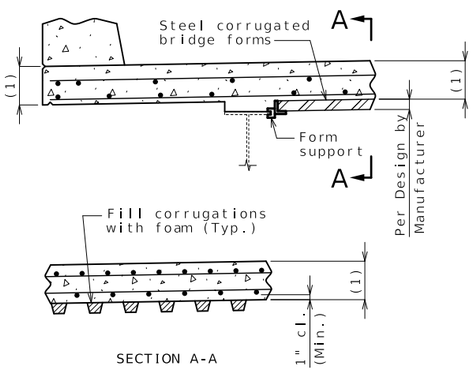
The contractor shall provide bracing necessary for lateral and torsional stability of the beams during construction of the concrete slab and remove the bracing after the slab has attained 75% design strength. Contractor shall not weld on or drill holes in the beams. The cost for furnishing, installing,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

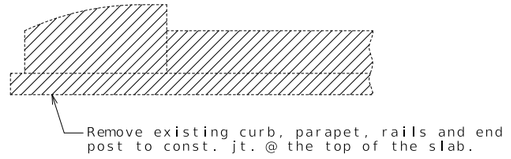
Alternate pour sequences may be submitted to the engineer for approval. Keyed construction joints shall be provided between pours.

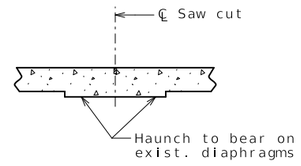
Haunching:

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



OPTIMAL STAY-IN-PLACE FORM DETAILS





PART SECTION THRU SLAB AT INT. BENTS

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
12/11/2024 11:39:47 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED: 12/11/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	2

COUNTY: PLATTE

JOB NO.: J4S3497

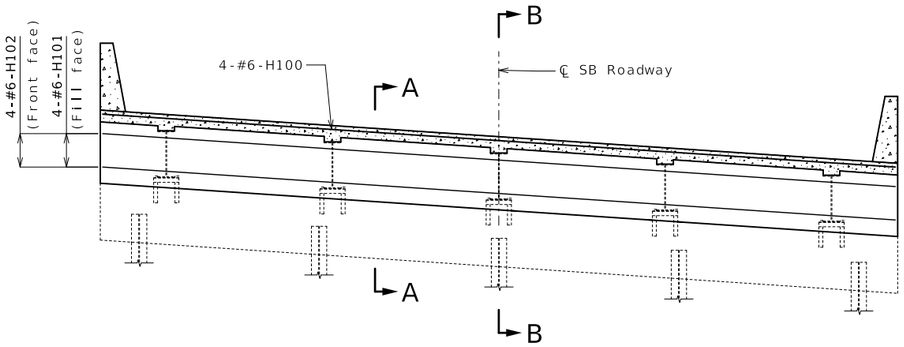
CONTRACT ID.:

PROJECT NO.:

BRIDGE NO.: A20192

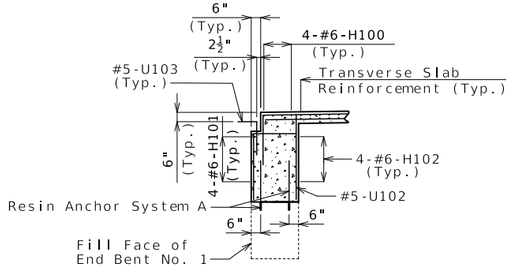
DESCRIPTION	DATE

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

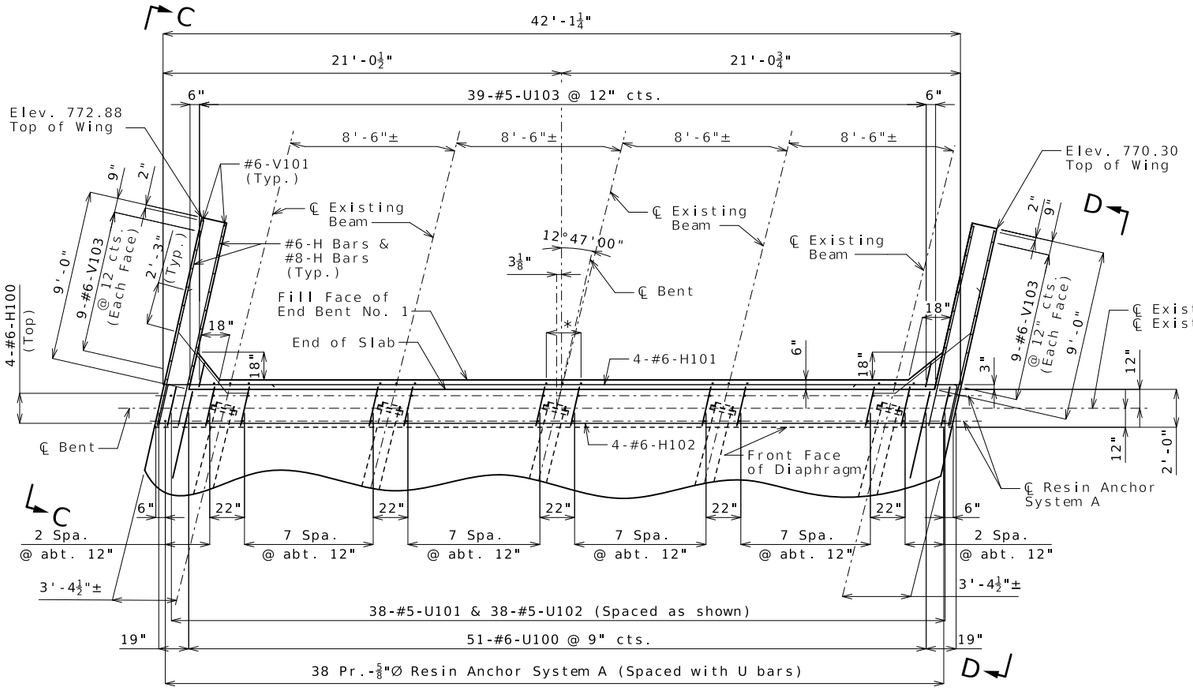


SECTION NEAR END BENT

Note: Resin Anchors not shown for clarity.



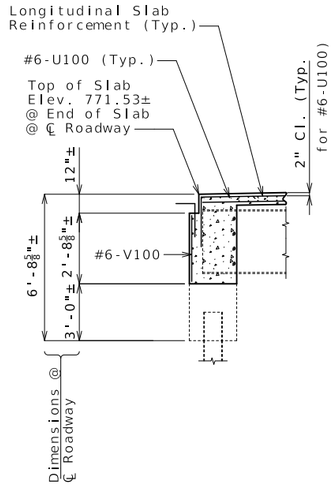
SECTION A-A



PART PLAN

Resin Anchor Systems B & C not shown for clarity.

* 3-#6-V100 @ 6" cts. (Typ.)



SECTION B-B

Notes:

For Elevations C-C & D-D, see Sheet No. 4.

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 girders shall extend a minimum of one foot outside the face of the girder 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.

The H102 bars are segmented for ease of placement through girder web holes. The total bar length for H102 bars shown in Bill of Reinforcing Steel allows for one lap splice with a length of 3'-10". Actual bar segment lengths to be determined by contractor for ease of installing bars. The contractor may use a mechanical bar splice in lieu of a lap splice. When a mechanical bar splice is used, the actual bar segment length will be determined by the contractor to accommodate manufacturer's recommendations for installation and ease of construction. The cost of furnishing and installing the bar splices will be considered completely covered by the contract unit price for Slab on Steel. No adjustment of the quantity of reinforcing steel will be allowed for the use of mechanical bar splices.

Cost of field drilling holes in existing plate girder webs will be considered completely covered by the contract unit price for Slab on Steel.

For reinforcement of the barrier curb, see Sheets No. 9 & 11.

For additional details of End Bent No. 1, see Sheet No. 4.

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
12/11/2024 11:40:19 AM
TED S. KOESTER - CIVIL
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DATE PREPARED
12/11/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	3

COUNTY
PLATTE

JOB NO.
J4S3497

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A20192

DESCRIPTION	DATE

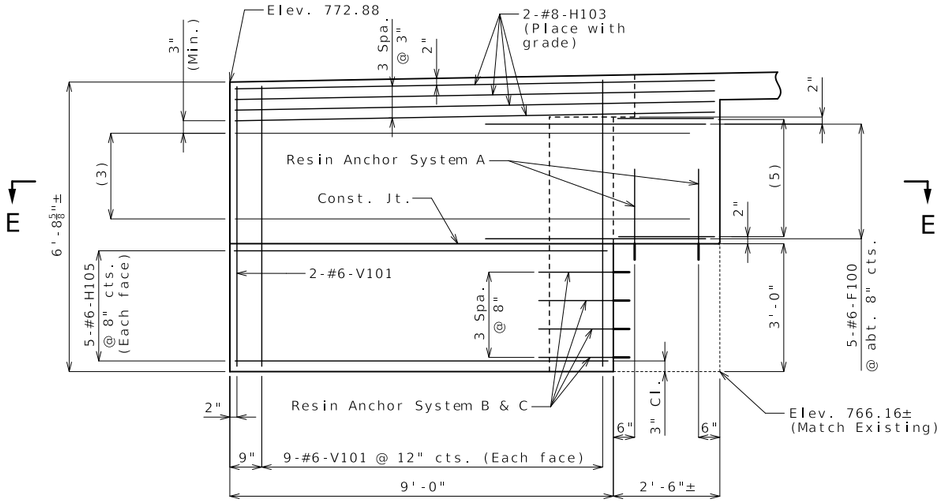
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

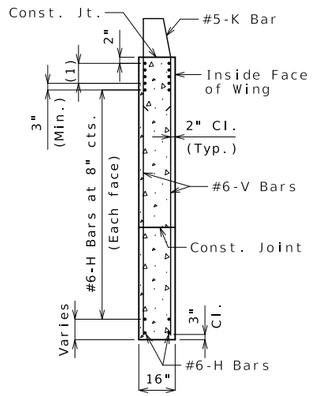
DETAILS OF END BENT NO. 1

Detailed Feb. 2024
Checked Nov. 2024

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

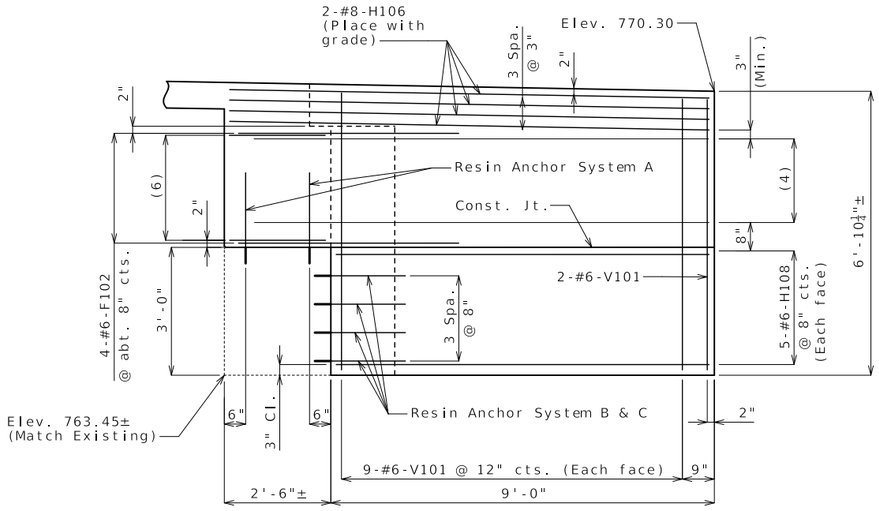


ELEVATION C-C



TYPICAL SECTION THRU WING

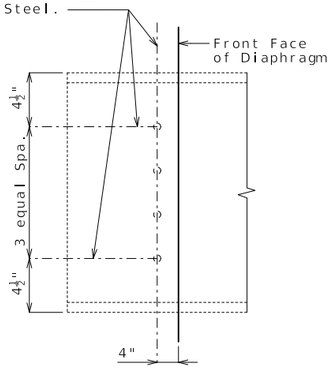
(1) #8-H Bars at 3" cts. (Each face)(Place with grade)



ELEVATION D-D

(3) 4-#6-H104 @ abt. 8" cts. (Each Face)
(4) 4-#6-H107 @ abt. 8" cts. (Each Face)
(5) 4-#6-F101 @ abt. 12" cts. (Each Face)
(6) 4-#6-F103 @ abt. 12" cts. (Each Face)

℄ 1 1/16"Ø holes in each stringer. Cost of field drilling holes in existing webs will be considered completely covered by the contract unit price for Slab on Steel.



DETAIL OF WEB HOLES

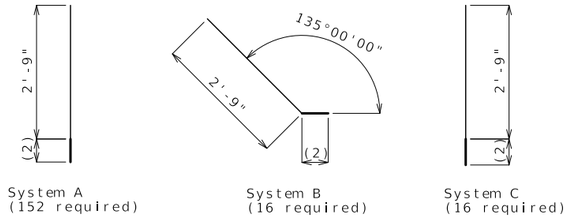
Notes:

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 shown on this sheet complete-in-place will be considered completely covered y 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.

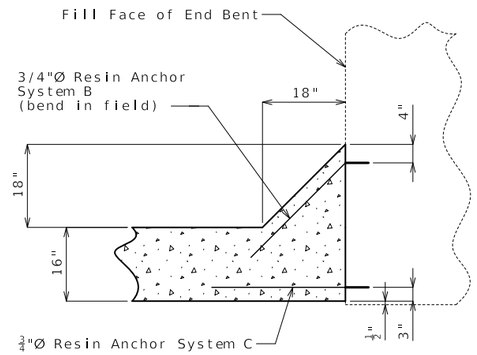


System A (152 required)
System B (16 required)
System C (16 required)

(2) Use manufacturer's embedment length. (5" minimum embedment length)

Note: For location of Resin Anchors, see Sheets No. 3 & 6.

DETAILS OF RESIN ANCHORS



SECTION E-E

Notes:

For location of Sections C-C and D-D, see Sheet No. 3.

The #6-F100 bars shall be bent in the field to clear stringers.

All concrete in the end bent above bottom of wing and below top of slab shall be class B-2.

Concrete diaphragms at the integral end bents shall be poured a minimum of 12 hours before the slab is poured.

For additional details of End Bent No. 1, see Sheet No. 3.

DETAILS OF END BENT NO. 1

Detailed Oct. 2024
Checked Oct. 2024

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
12/11/2024 11:40:48 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED
12/11/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	4

COUNTY
PLATTE

JOB NO.
J4S3497

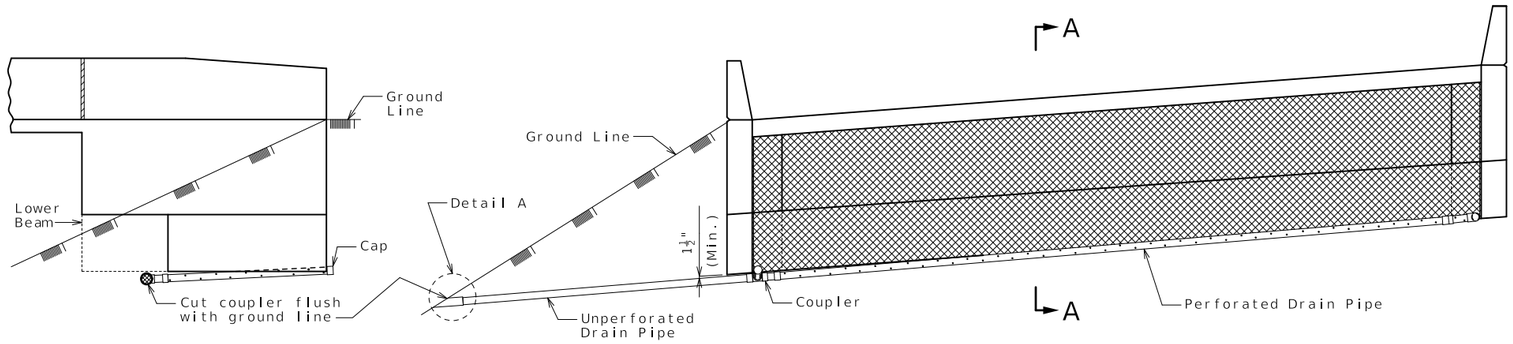
CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A20192

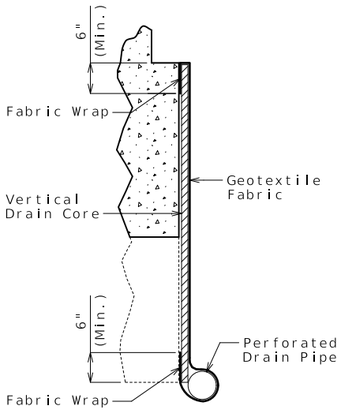
DESCRIPTION	DATE

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

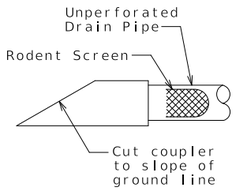


ELEVATION OF WING

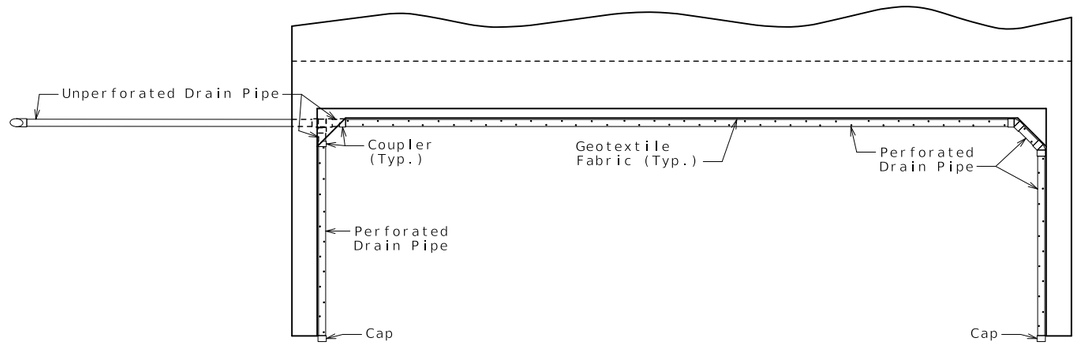
ELEVATION OF END BENT



PART SECTION A-A
(Section thru wing similar)



DETAIL A



PLAN OF END BENT

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.

Drain pipe shall be placed at fill face of end bent and inside face of wings. The pipe shall slope to lowest grade of ground line, also missing the lower beam of end bent by a minimum of 1 1/2 inches.

Perforated pipe shall be placed at fill face side and inside face of wings 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

(Squared end bent shown, skewed end bent similar)

Detailed Feb. 2024
Checked Nov. 2024

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

STATE OF MISSOURI
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TED S. KOESTER - CIVIL
MO-PE-2013000591

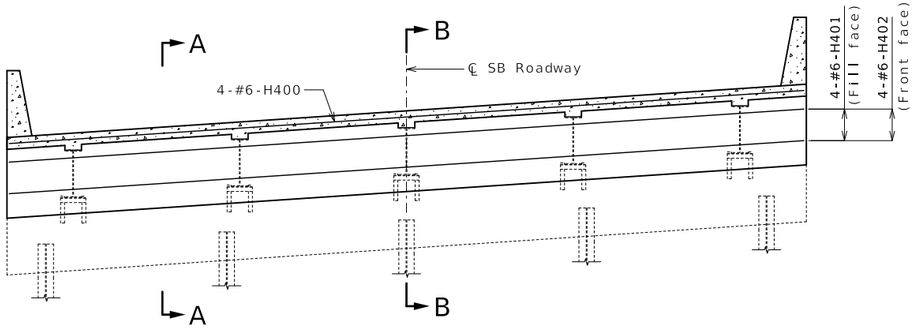
DATE PREPARED: 12/11/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	5

COUNTY: PLATTE
JOB NO.: J4S3497
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A20192

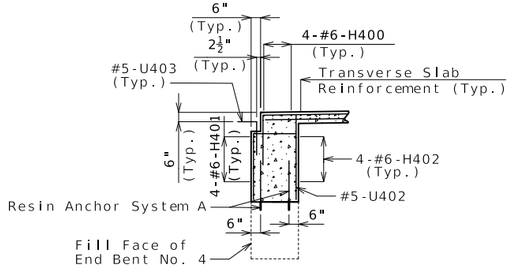
DESCRIPTION	DATE

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

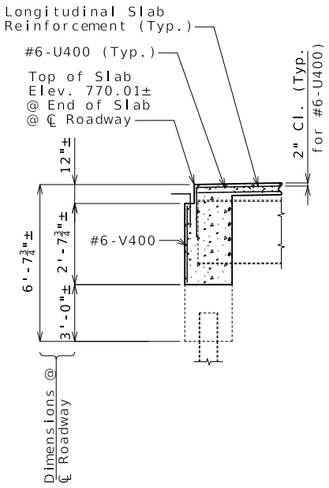


SECTION NEAR END BENT

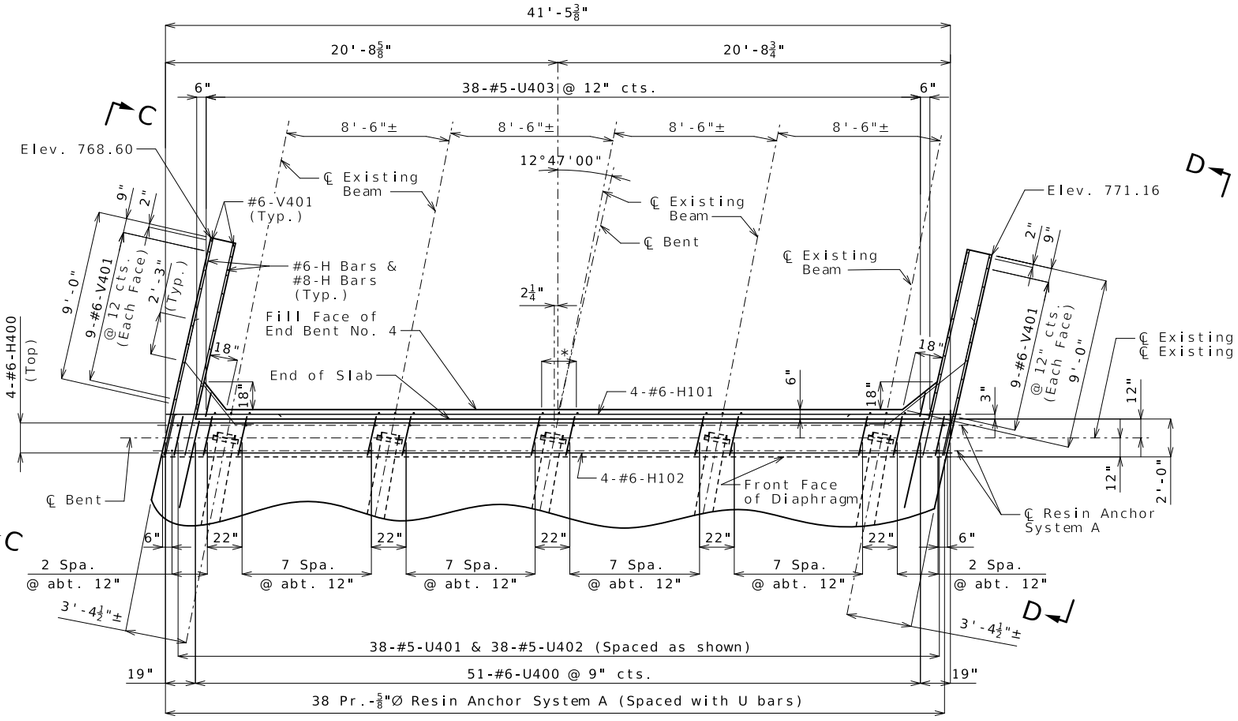
Note: Resin Anchors not shown for clarity.



SECTION A-A



SECTION B-B



PART PLAN

Resin Anchor Systems B & C not shown for clarity.

∗ 3-#6-V400 @ 6" cts. (Typ.)

Notes:

For Elevations C-C & D-D, see Sheet No. 7.

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 girders shall extend a minimum of one foot outside the face of the girder 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.

The H402 bars are segmented for ease of placement through girder web holes. The total bar length for H402 bars shown in Bill of Reinforcing Steel allows for one lap splice with a length of 3'-10". Actual bar segment lengths to be determined by contractor for ease of installing bars. The contractor may use a mechanical bar splice in lieu of a lap splice. When a mechanical bar splice is used, the actual bar segment length will be determined by the contractor to accommodate manufacturer's recommendations for installation and ease of construction. The cost of furnishing and installing the bar splices will be considered completely covered by the contract unit price for Slab on Steel. No adjustment of the quantity of reinforcing steel will be allowed for the use of mechanical bar splices.

Cost of field drilling holes in existing plate girder webs will be considered completely covered by the contract unit price for Slab on Steel.

For reinforcement of the barrier curb, see Sheets No. 9 & 12.

For additional details of End Bent No. 4, see Sheet No. 7.

DETAILS OF END BENT NO. 4

Detailed Oct. 2024
Checked Nov. 2024

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
12/11/2024 11:41:38 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED
12/11/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	6

COUNTY
PLATTE

JOB NO.
J4S3497

CONTRACT ID.

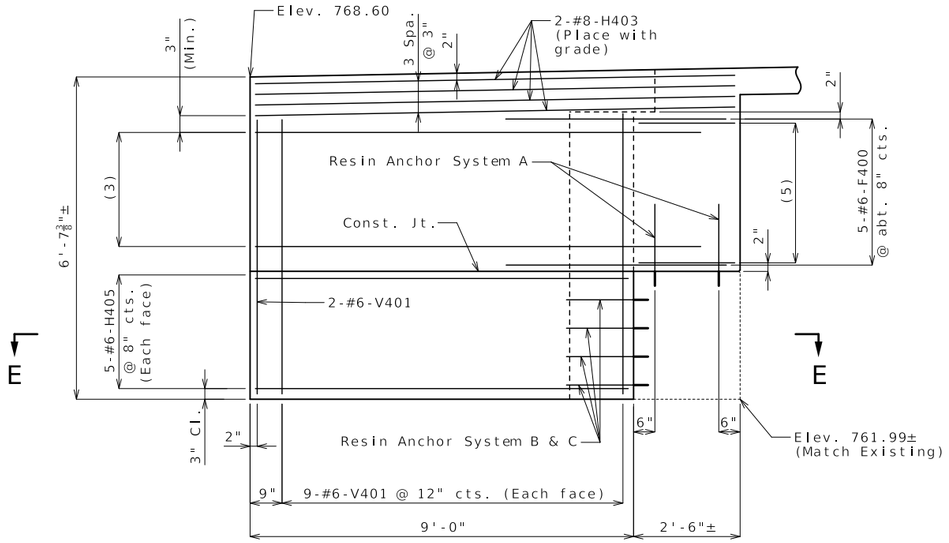
PROJECT NO.

BRIDGE NO.
A20192

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

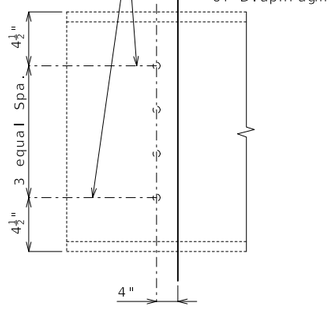
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



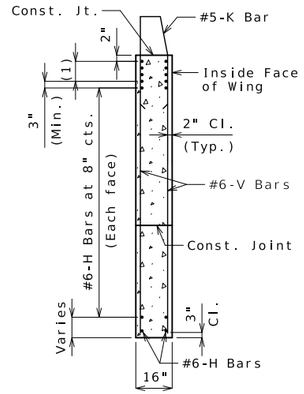
ELEVATION C-C

(3) 5-#6-H404 @ abt. 8" cts. (Each Face)
(4) 5-#6-H407 @ abt. 8" cts. (Each Face)
(5) 4-#6-F401 @ abt. 12" cts. (Each Face)
(6) 4-#6-F403 @ abt. 12" cts. (Each Face)

℄ 1 1/16"Ø holes in each stringer. Cost of field drilling holes in existing webs will be considered completely covered by the contract unit price for Slab on Steel.

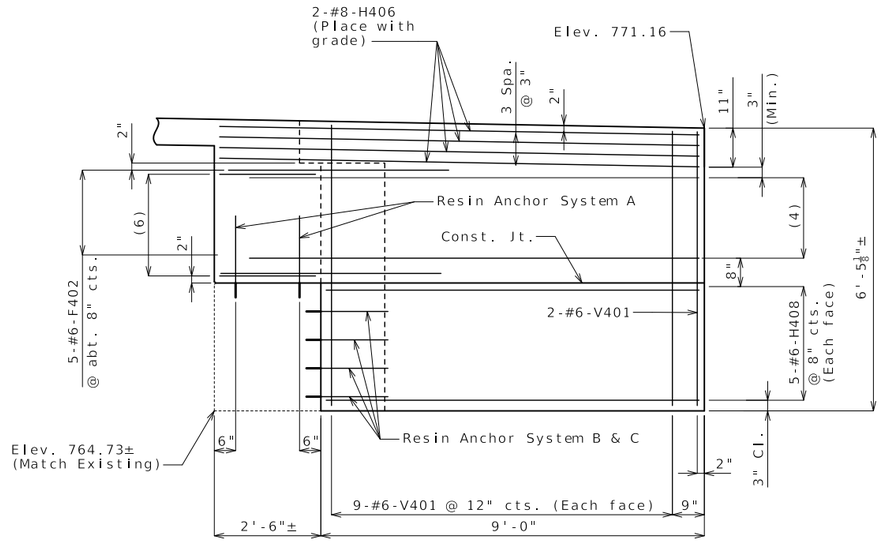


DETAIL OF WEB HOLES

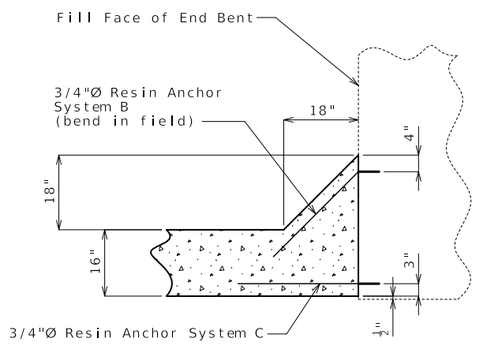


TYPICAL SECTION THRU WING

(1) #8-H Bars at 3" cts. (Each face)(Place with grade)



ELEVATION D-D



SECTION E-E

Notes:

The #6-F400 bars shall be bent in the field to clear stringers.

All concrete in the end bent above bottom of wing and below top of slab shall be class B-2.

Concrete diaphragms at the integral end bents shall be poured a minimum of 12 hours before the slab is poured.

For resin anchor details and notes, see Sheet No. 4.

For additional details of End Bent No. 4, see Sheet No. 6.

DETAILS OF END BENT NO. 4

Detailed Oct. 2024
Checked Oct. 2024

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
12/11/2024 11:42:04 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED
12/11/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	7

COUNTY
PLATTE

JOB NO.
J4S3497

CONTRACT ID.

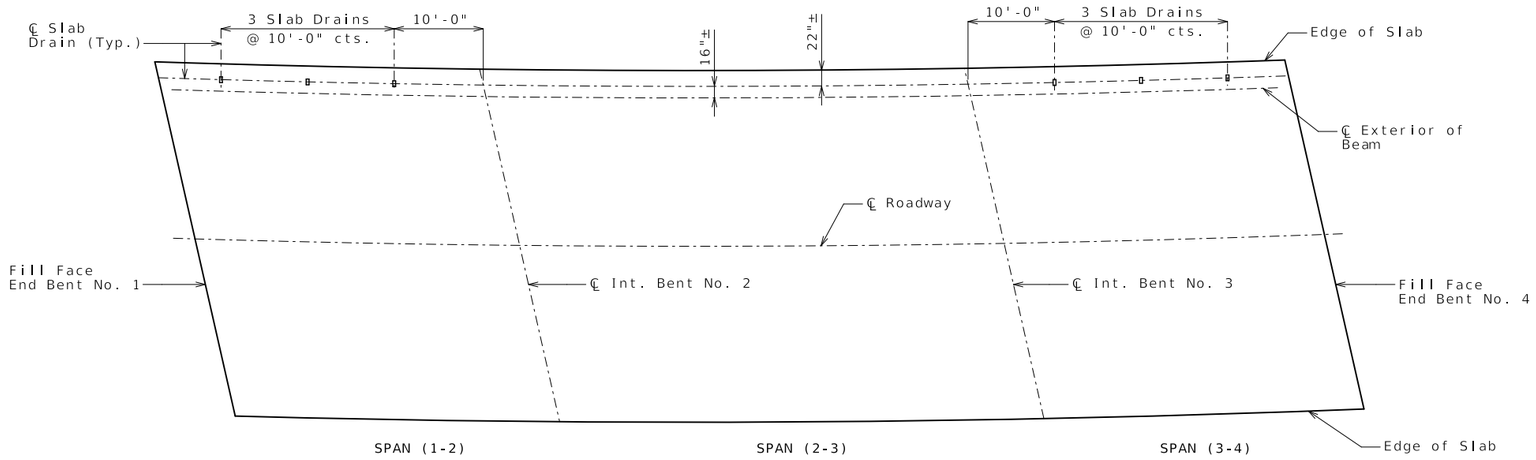
PROJECT NO.

BRIDGE NO.
A20192

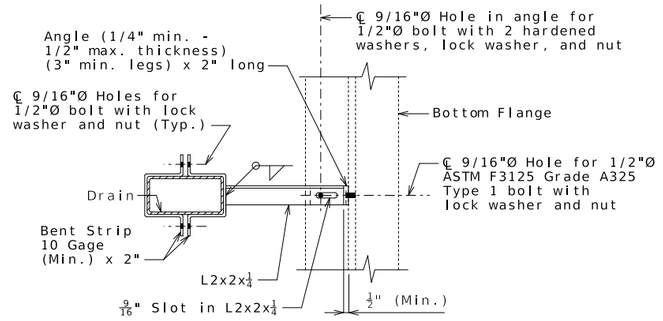
DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

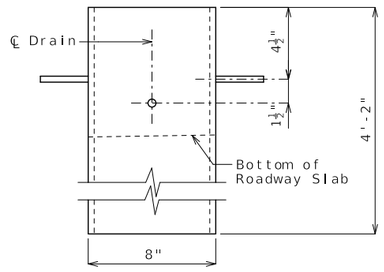
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



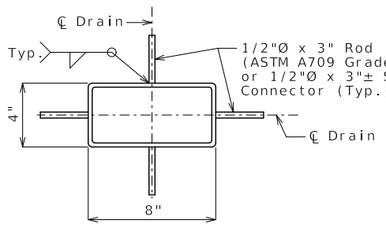
PLAN OF SLAB SHOWING SLAB DRAIN LOCATIONS



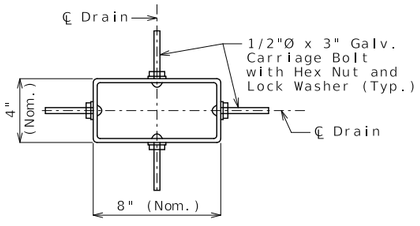
PART SECTION SHOWING BRACKET ASSEMBLY



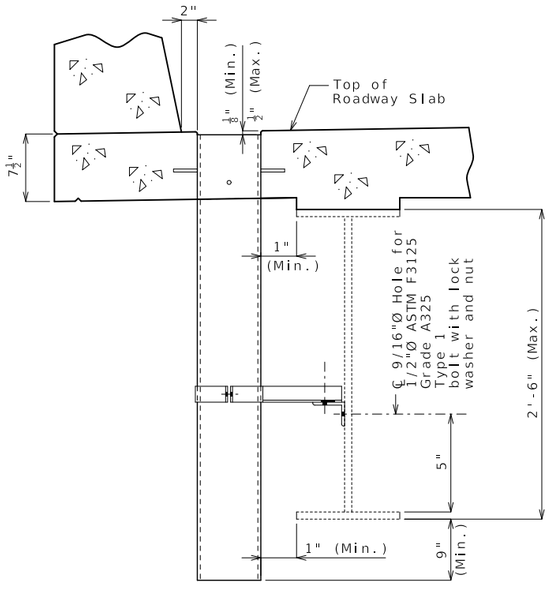
ELEVATION OF DRAIN



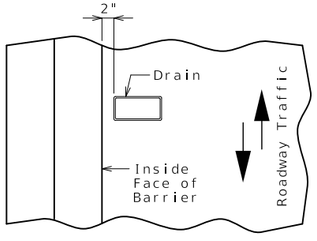
PLAN OF STEEL DRAIN OPTION



PLAN OF FRP DRAIN OPTION



PART SECTION NEAR DRAIN



PART PLAN OF SLAB AT DRAIN

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.

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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TED S. KOESTER
NUMBER PE-2013000591
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MO-PE-2013000591

DATE PREPARED: 12/11/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	8

COUNTY: PLATTE
JOB NO.: J4S3497
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A20192

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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JEFFERSON CITY, MO 65102
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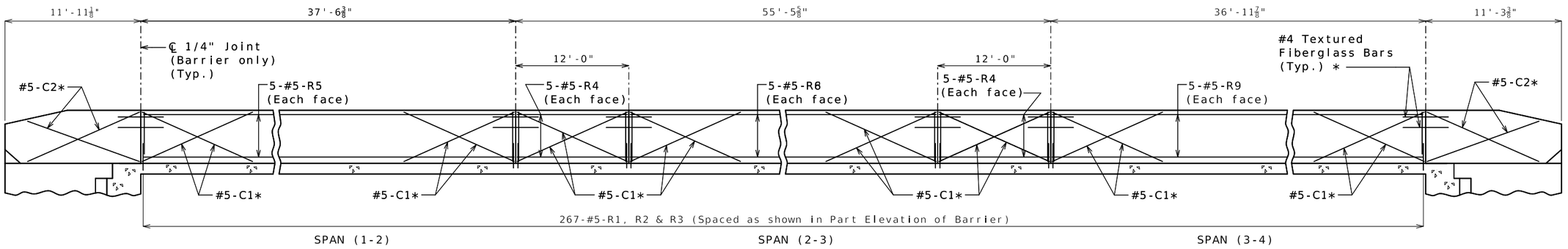
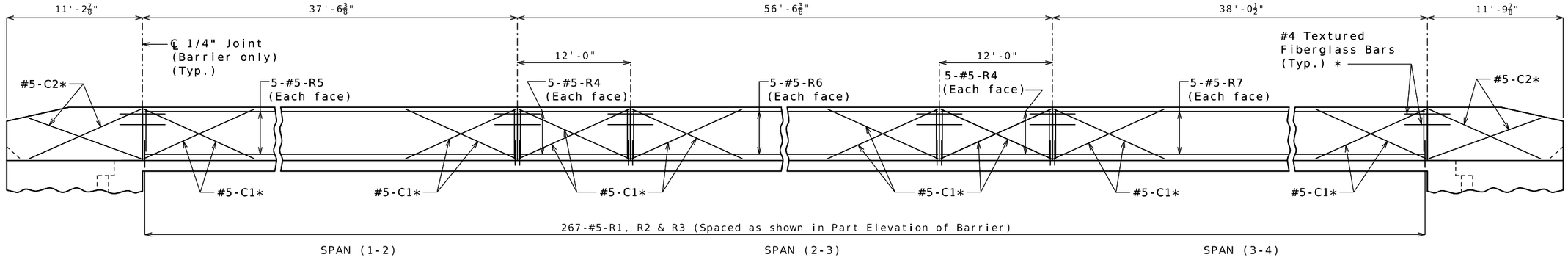
SLAB DRAINS

Detailed Feb. 2024
Checked Nov. 2024

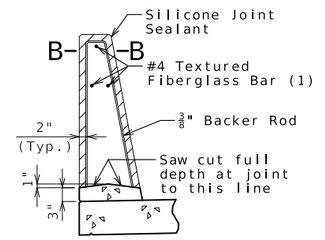
Note: This drawing is not to scale. Follow dimensions.



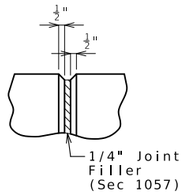
ELEVATION OF LEFT BARRIER



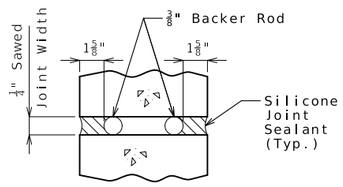
ELEVATION OF RIGHT BARRIER



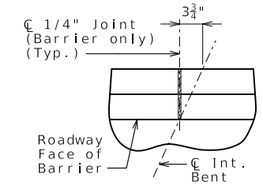
SECTION THRU
SAW CUT JOINT



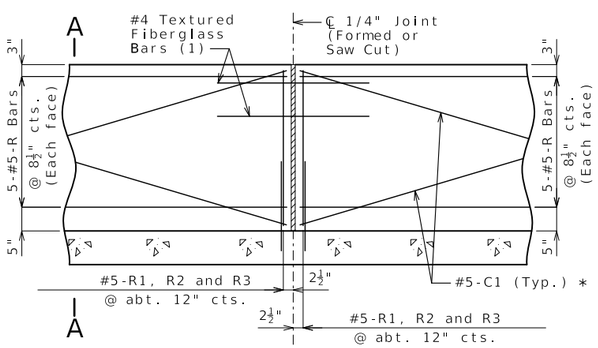
PART ELEVATION
AT FORMED JOINT



SECTION B-B

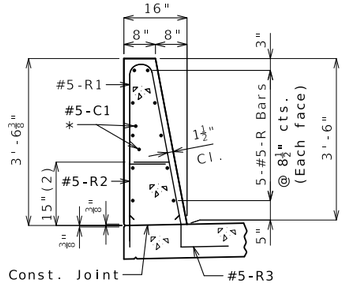


PART PLAN SHOWING
JOINT LOCATION



PART ELEVATION OF BARRIER

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

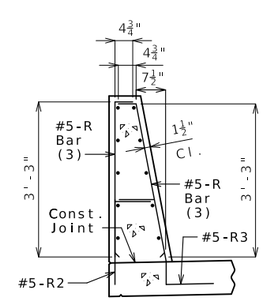


SECTION A-A

Use a minimum lap of 3'-1" 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 Feb. 2024
Checked Nov. 2024

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

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TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
12/11/2024 11:43:03 AM
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MO-PE-2013000591

DATE PREPARED
12/11/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	9

COUNTY
PLATTE

JOB NO.
J4S3497

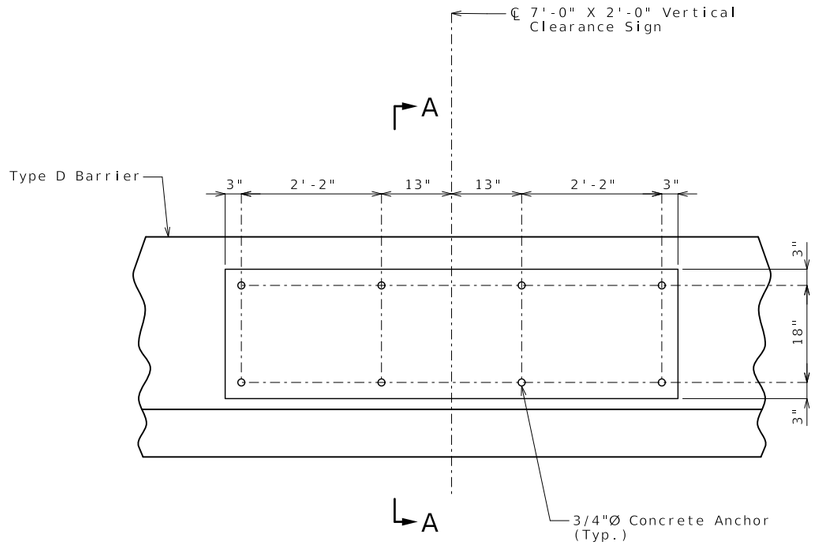
CONTRACT ID.

PROJECT NO.

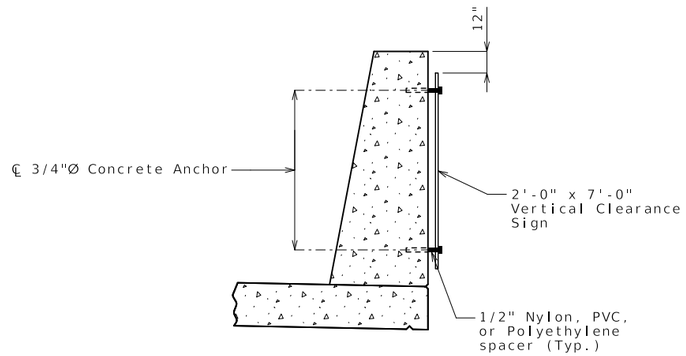
BRIDGE NO.
A20192

DESCRIPTION	DATE

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



PART ELEVATION SHOWING FABRICATED SIGN AT SOUTH SIDE OF SPAN (2-3) NEAR INT. BENT NO. 3



PART SECTION A-A

Notes for Vertical Clearance Signs:

Concrete anchors shall be the non-drilling expansion type and shall have a certified concrete pull out strength (Ultimate Load) of 12, 100 pounds (min.) in 4,000 psi concrete. The hole shall be pre-drilled with a conventional carbide masonry bit.

Bolt threads shall be burrred after sign has been erected.

Contractor shall verify all dimensions in field before ordering materials.

The cost of all material, labor, and equipment necessary to install the signs shall be considered completely by the contract unit price for Type D Barrier.

SIGN ATTACHMENT DETAILS

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
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12/11/2024 11:43:29 AM
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MO-PE-2013000591

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12/11/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	10

COUNTY
PLATTE

JOB NO.
J4S3497

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
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JEFFERSON CITY, MO 65102
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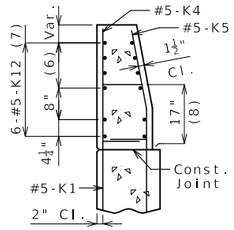
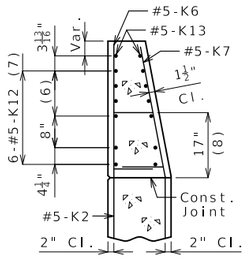
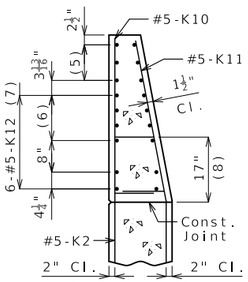


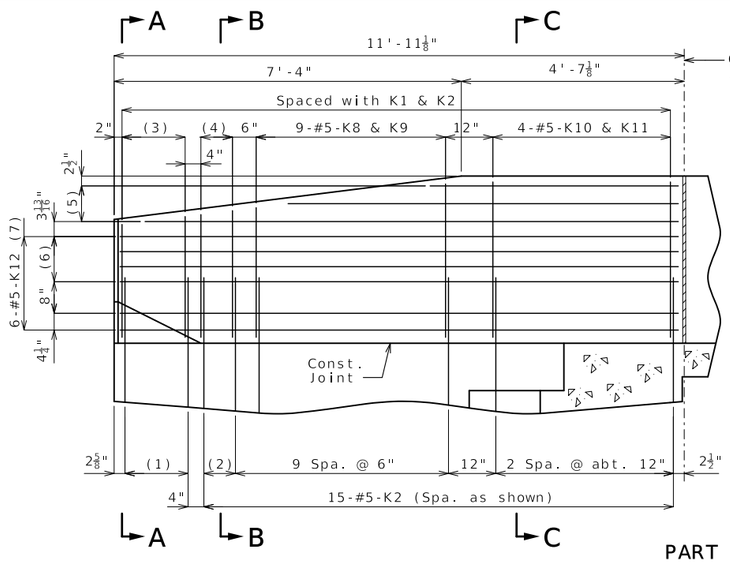
SECTION A-A

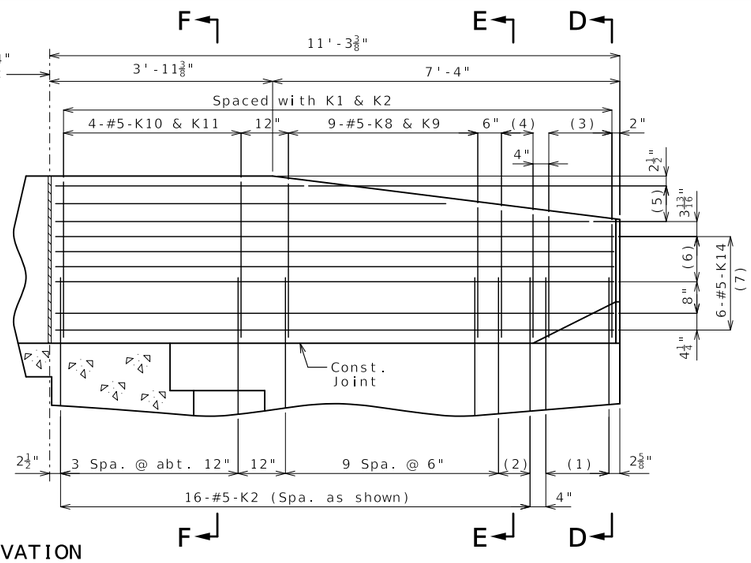


SECTION B-B

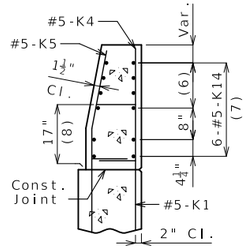


SECTION C-C

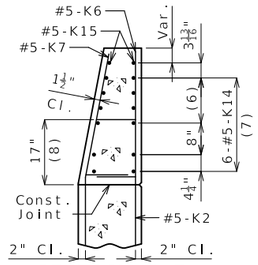




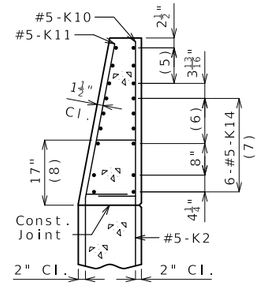
PART ELEVATION



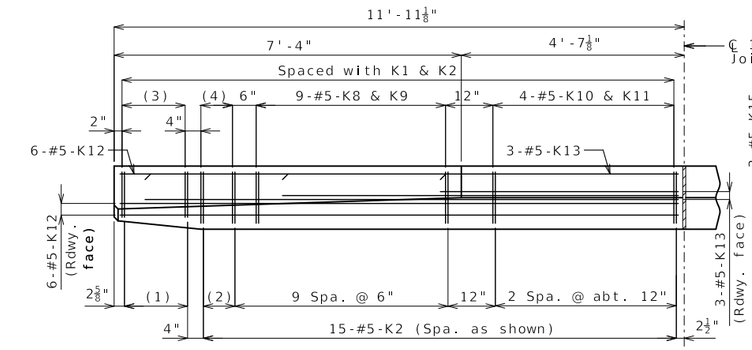
SECTION D-D

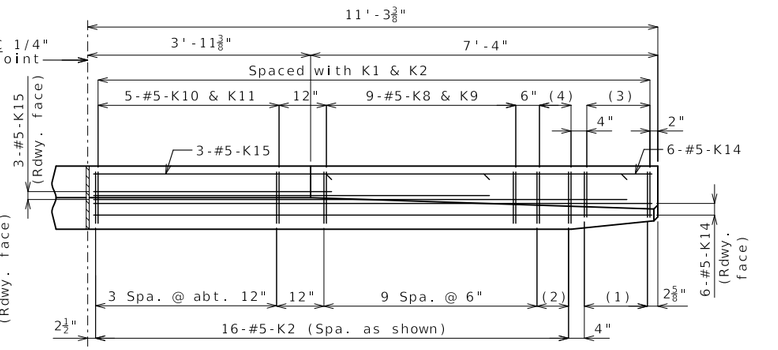


SECTION E-E

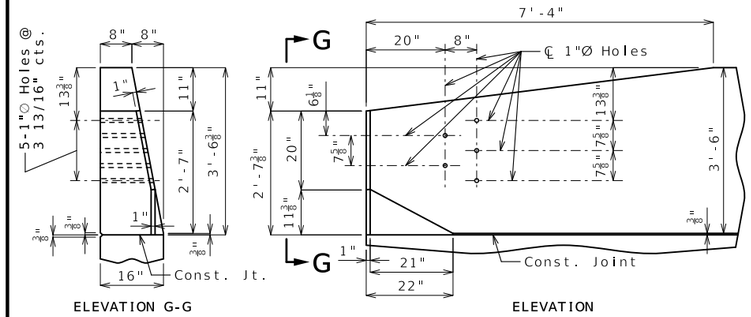


SECTION F-F

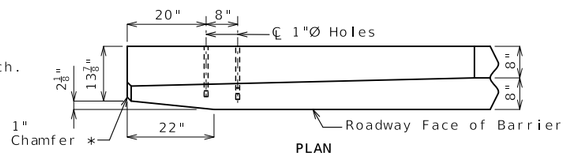




PART PLAN



ELEVATION G-G ELEVATION



PLAN

* 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

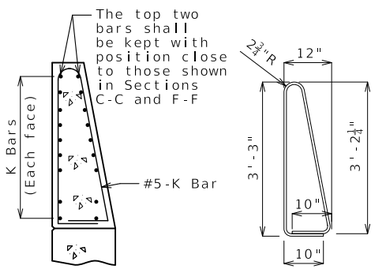
(4) 3-#5-K6 & K7

(5) 3-#5-K13 or K15 @ 4½" cts., each face

(6) 3 spaces @ 3 13/16"

(7) Spaced as shown, each face

(8) To top of bar



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.

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" except as shown for bars embedded into end bent.

TYPE D BARRIER AT END BENT (LEFT BARRIER)

Detailed Oct. 2024
Checked Nov. 2024

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
12/11/2024 11:43:53 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED 12/11/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	11

COUNTY: PLATTE

JOB NO.: J4S3497

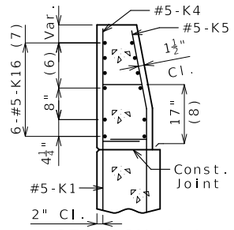
CONTRACT ID.:

PROJECT NO.:

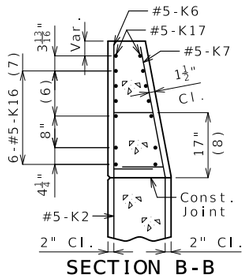
BRIDGE NO.: A20192

DESCRIPTION | DATE

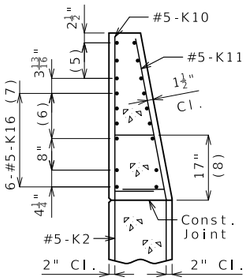
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



SECTION A-A



SECTION B-B



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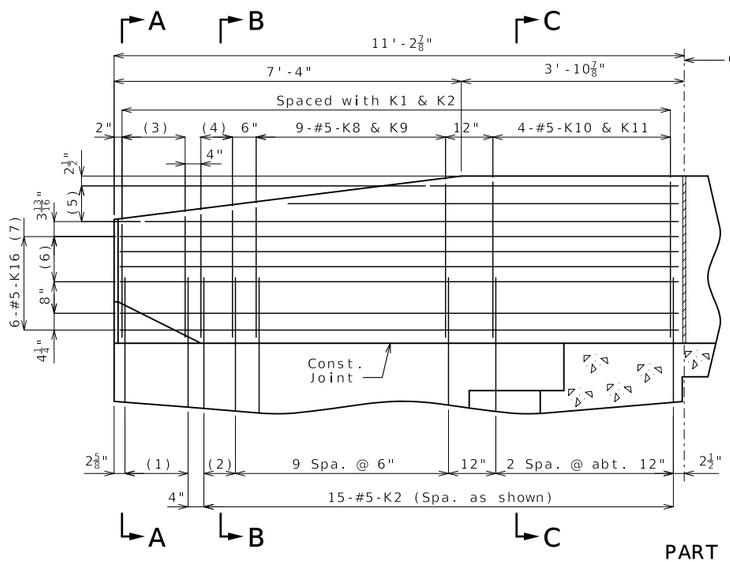
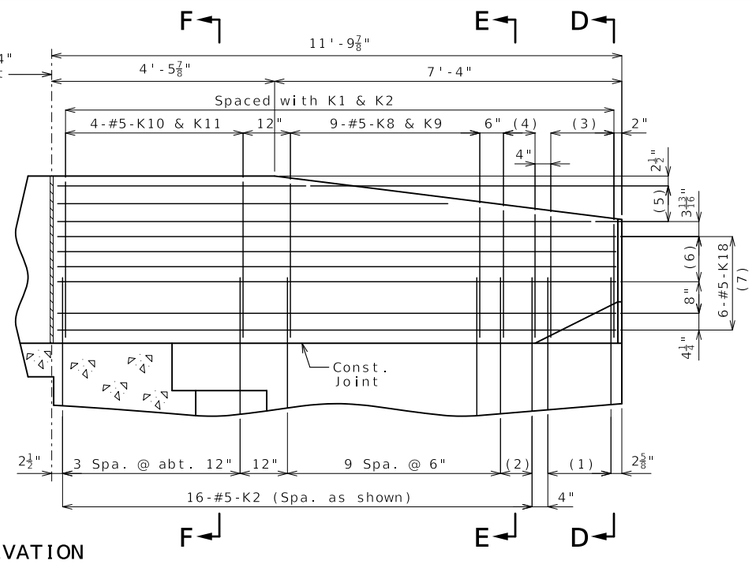
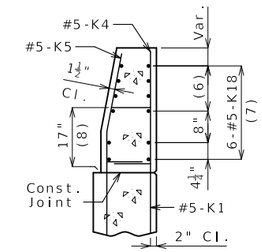




PART ELEVATION



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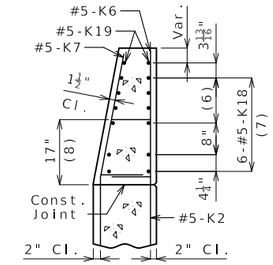

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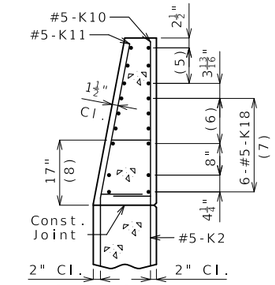

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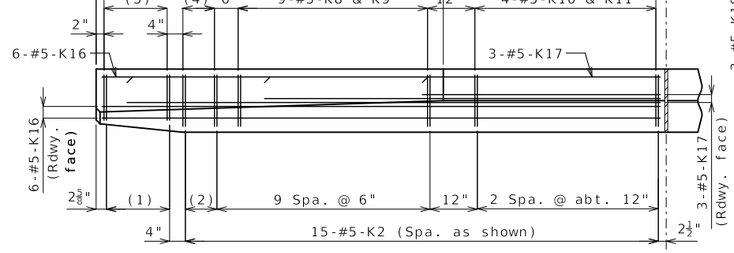
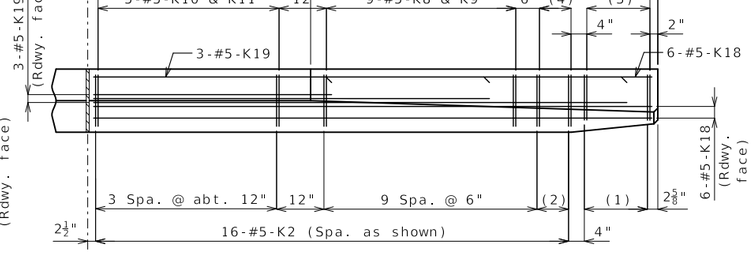
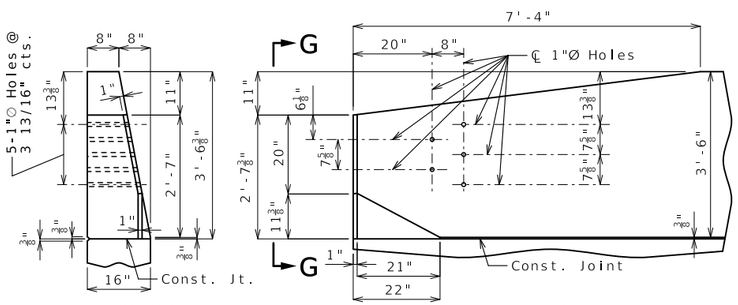


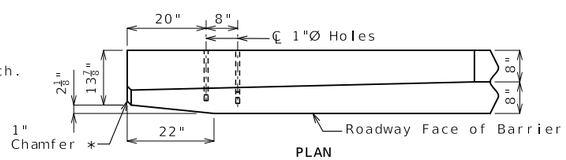


PART PLAN



ELEVATION G-G ELEVATION

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



PLAN

DETAILS OF GUARD RAIL ATTACHMENT

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

(2) 2 spaces @ 4"

(3) 5-#5-K4 & K5

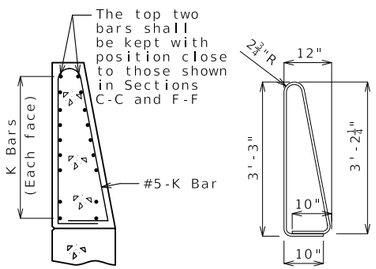
(4) 3-#5-K6 & K7

(5) 3-#5-K17 or K19 @ 4½" cts., each face

(6) 3 spaces @ 3 13/16"

(7) Spaced as shown, each face

(8) To top of bar



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.

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" except as shown for bars embedded into end bent.

TYPE D BARRIER AT END BENT (RIGHT BARRIER)

Detailed Oct. 2024
Checked Nov. 2024

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
12/11/2024 11:44:13 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

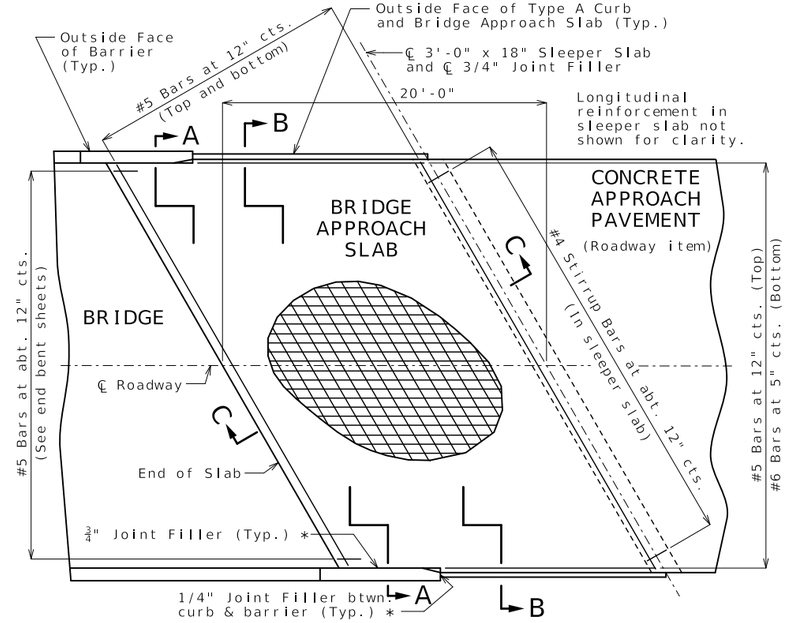
DATE PREPARED 12/11/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	12

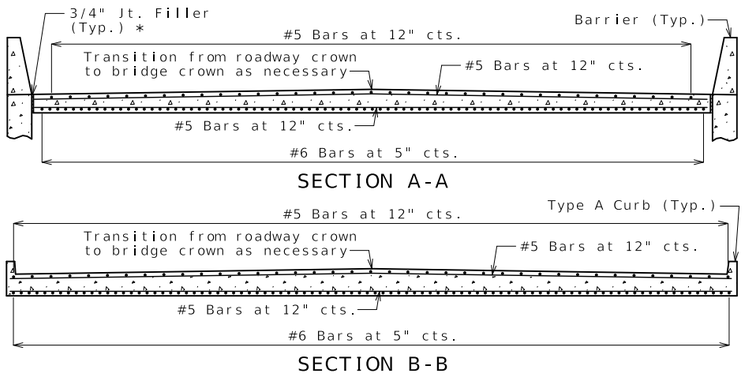
COUNTY: PLATTE
JOB NO.: J4S3497
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A20192

DESCRIPTION | DATE

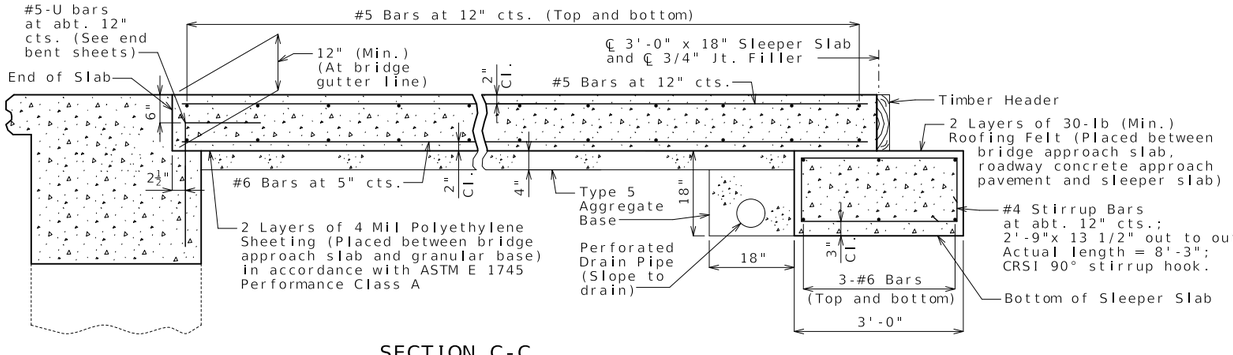
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



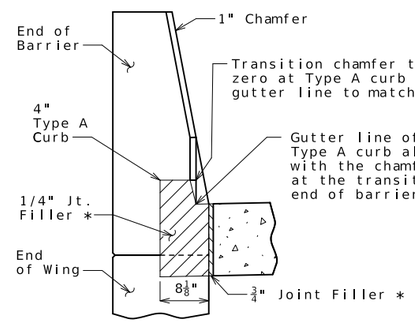
PART PLAN SHOWING REINFORCEMENT



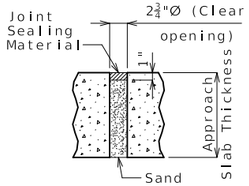
With the approval of the engineer, the contractor may crown the bottom of the approach slab to match the crown of the roadway surface.



SECTION C-C

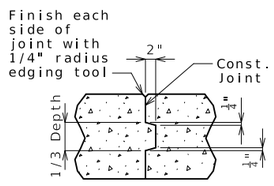


SECTION BETWEEN CURB AND BARRIER

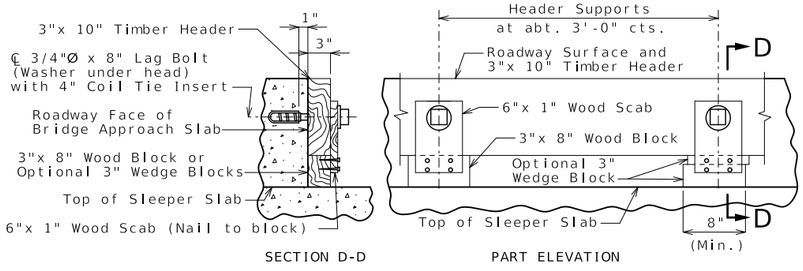


UNDERSEAL ACCESS HOLE DETAIL

(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 29 inches for #5 bars and 44 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 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.

STATE OF MISSOURI
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NUMBER PE-2013000591
PROFESSIONAL ENGINEER
Ted Koester
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TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED
12/11/2024

ROUTE	STATE
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BR	13

COUNTY
PLATTE

JOB NO.
J4S3497

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A20192

DESCRIPTION

DATE

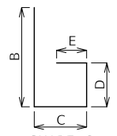
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

Detailed Feb. 2024
Checked Nov. 2024

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

BRIDGE APPROACH SLAB (MAJOR)



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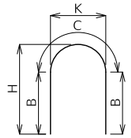
or 6S



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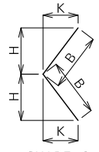

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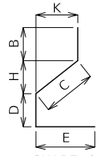

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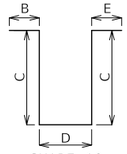

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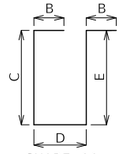

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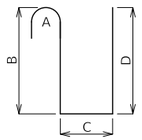

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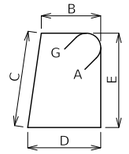

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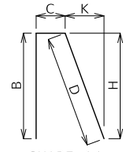

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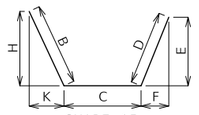

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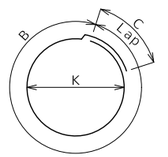

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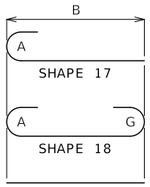
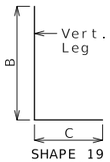


SHAPE 17
SHAPE 18
SHAPE 20



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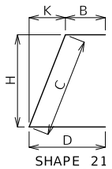

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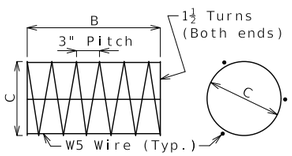

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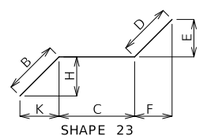

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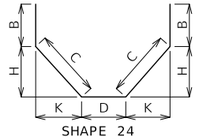

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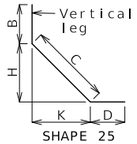

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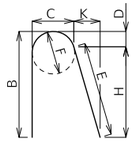

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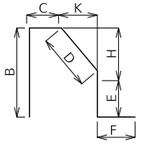

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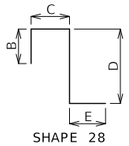

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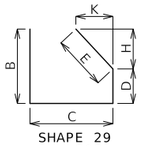

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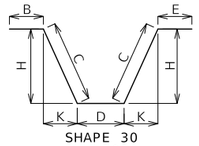

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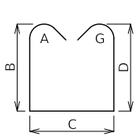

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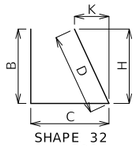

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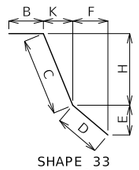
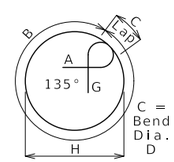
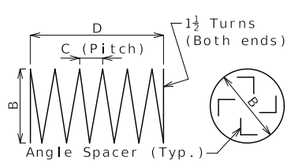


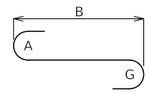
SHAPE 33
or 33S



SHAPE 34S



SHAPE 35 (1)

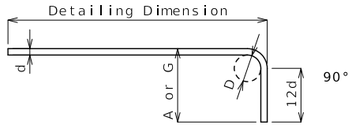


SHAPE 36

Finished Bend Diameters D and Hook Dimensions

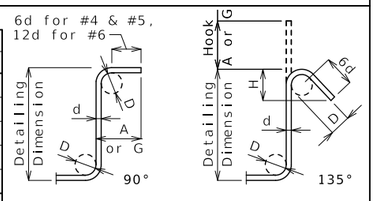
Standard Pin Bend Shapes

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"	9¾"	7"
	3	7"	15"	11½"	8¾"
#8	2	6"	16"	11"	8"
	3	8"	17"	13¼"	10"
#9	1	9½"	19½"	15½"	11¾"
#10	1	10¾"	22"	17½"	13¼"
#11	1	12"	24½"	19½"	14⅞"
#14	1	18¼"	31¼"	27½"	21⅝"
#18	1	24"	41½"	36¾"	28½"



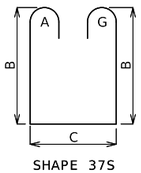
Stirrup Pin Bend Shapes (S)

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"

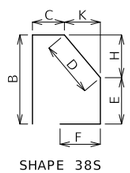


Applicable for all grades of steel.

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	
	Size	Plain	Epoxy	Slab	Barrier	Slip Form	Plain	Epoxy
By Size	W5	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0
	5	0	0	38,494	11,760	148	0	50,402
	6	0	0	9,699	0	0	0	9,699
	7	0	0	0	0	0	0	0
	8	0	0	956	0	0	0	956
	9	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0
	11	0	0	0	0	0	0	0
	14	0	0	0	0	0	0	0
	18	0	0	0	0	0	0	0
By Type		0	0	49,149	11,760	148	0	61,057

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

BENDING DIAGRAMS AND REINFORCING STEEL TOTALS

Detailed Nov. 2024
Checked Nov. 2024

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
12/12/2024 11:45:08 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED
12/11/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	14

COUNTY
PLATTE

JOB NO.
J4S3497

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A20192

DESCRIPTION	DATE

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

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													
5	6 F100	WING BRACE	E	15S		2 2.75	4 1.00	14.00	11.00	8.75	21.00	16.75	7 6	7 5	56
4	6 F101	DIAPHRAGM	E	19S		4 0.88	2 1.00						6 2	6	36
4	6 F102	WING BRACE	E	15S		2 2.75	5 1.00	14.00	8.75	11.00	16.75	21.00	8 6	8 5	51
4	6 F103	DIAPHRAGM	E	19S		4 1.50	2 1.00						6 3	6 1	37
4	6 H100	DIAPHRAGM	E	20		41 11.00							41 11	41 11	252
4	6 H101	DIAPHRAGM	E	20		41 11.00							41 11	41 11	252
4	6 H102	DIAPHRAGM	E	20		45 9.00							45 9	45 9	275
8	8 H103	WING	E	20		11 6.25							11 6	11 6	246
8	6 H104	WING	E	20		11 6.25							11 6	11 6	138
10	6 H105	WING	E	20		8 10.75							8 11	8 11	134
8	8 H106	WING	E	20		10 10.00							10 10	10 10	231
8	6 H107	WING	E	20		10 10.00							10 10	10 10	130
10	6 H108	WING	E	20		8 2.50							8 3	8 3	124
51	5 U100	DIAPHRAGM	E	19		2 0.00	15.00						3 3	3 1	164
32	5 U101	DIAPHRAGM	E	19		2 5.25	2 3.00						4 8	4 7	153
32	5 U102	DIAPHRAGM	E	31S		3 5.25	21.00	3 5.25					9 7	9 4	312
38	5 U103	DIAPHRAGM	E	19S		2 0.00	15.00						3 3	3 2	126
15	6 V100	DIAPHRAGM	E	20		2 5.25							2 5	2 5	54
42	6 V101	DIAPHRAGM	E	20		6 4.75							6 5	6 5	405
		End Bent 4													
4	6 F400	WING BRACE	E	15S		2 2.75	4 1.00	14.00	11.00	8.75	21.00	16.75	7 6	7 5	45
3	6 F401	DIAPHRAGM	E	19S		4 1.00	2 0.63						6 2	6	27
4	6 F402	WING BRACE	E	15S		2 2.75	5 1.00	14.00	8.75	11.00	16.75	21.00	8 6	8 5	51
3	6 F403	DIAPHRAGM	E	19S		3 5.13	2 0.63						5 6	5 4	24
4	6 H400	DIAPHRAGM	E	20		41 0.12							41	41	246
4	6 H401	DIAPHRAGM	E	20		41 0.12							41	41	246
4	6 H402	DIAPHRAGM	E	20		44 10.12							44 10	44 10	269
8	8 H403	WING	E	20		11 5.88							11 6	11 6	246
8	6 H404	WING	E	20		11 5.88							11 6	11 6	138
10	6 H405	WING	E	20		8 11.25							8 11	8 11	134
8	8 H406	WING	E	20		10 11.37							10 11	10 11	233
8	6 H407	WING	E	20		10 11.37							10 11	10 11	131
10	6 H408	WING	E	20		8 4.75							8 5	8 5	126
51	5 U400	DIAPHRAGM	E	19S		3 5.25	4 0.00						7 5	7 4	390
38	5 U401	DIAPHRAGM	E	19S		2 5.25	2 3.00						4 8	4 7	182
38	5 U402	DIAPHRAGM	E	31S		3 5.25	21.00	3 5.25					9 7	9 4	370
36	5 U403	DIAPHRAGM	E	19S		2 0.00	15.00						3 3	3 2	119
15	6 V400	DIAPHRAGM	E	20		2 5.25							2 5	2 5	54
42	6 V401	DIAPHRAGM	E	20		6 4.25							6 4	6 4	400
		Slab													
255	5 S1	SLAB	E	20		47 6.00							47 6	47 6	12,633
128	6 S2	SLAB	E	20		30 6.00							30 6	30 6	5,864
531	5 S3	SLAB	E	20		40 5.00							40 5	40 5	22,384
40	5 S4	SLAB	E	20	2	40 4.00							40 4	40 4	
		Incr. = 24.250"				2 0.00							2	2	883
36	5 S5	SLAB	E	20	2	39 5.00							39 5	39 5	
		Incr. = 26.375"				2 0.00							2	2	778
		Barrier													
		Type D													
20	5 K1	BARRIER	E	27S		3 8.00	9.25	5.25	3 2.75		5.25	1.00	8 1	7 11	165
64	5 K2	BARRIER	E	27S		3 8.00	9.25	14.50	2 5.75		14.25	2.75	8 2	7 11	528
4	5 K3	BARRIER	E	27S		22.50	9.25	14.50	7.75	12.00	14.25	2.75	5 6	5 2	22
20	5 K4	BARRIER	E	19S	4	2 4.25	10.00						3 2	3 1	
		Incr. = 0.500"				2 6.25	10.00						3 4	3 3	66
20	5 K5	BARRIER	E	38S	4			18.50	9.50	8.25	18.00	4.00	3	2 10	
		Incr. = 0.750"						20.50	9.50	8.25	20.00	4.50	3 2	3 1	62
12	5 K6	BARRIER	E	19S		2 6.75	10.00						3 5	3 3	41
12	5 K7	BARRIER	E	21S			10.00	10.00			2 6.00	6.25	3 6	3 4	42
36	5 K8	BARRIER	E	19S	4	2 8.50	10.00						3 7	3 5	
		Incr. = 0.750"				3 2.50	10.00						4 1	3 11	138
36	5 K9	BARRIER	E	21S	4		10.00	10.00			2 7.75	6.75	3 8	3 6	
		Incr. = 0.750"					10.00	10.00			3 1.75	7.75	4 2	4	141
16	5 K10	BARRIER	E	19S		3 3.00	10.00						4 1	4	67
16	5 K11	BARRIER	E	21S			10.00	10.00			3 2.25	7.75	4 2	4	67
12	5 K12	BARRIER	E	20		11 8.00							11 8	11 8	146
6	5 K13	BARRIER	E	20	2	10 11.00							10 11	10 11	
		Incr. = 36.000"				4 11.00							4 11	4 11	50
12	5 K14	BARRIER	E	20		11 0.00							11	11	138
6	5 K15	BARRIER	E	20	2	10 3.00							10 3	10 3	
		Incr. = 36.000"				4 3.00							4 3	4 3	45
12	5 K16	BARRIER	E	20		10 9.00							10 9	10 9	135
6	5 K17	BARRIER	E	20	2	10 0.00							10	10	
		Incr. = 36.000"				4 0.00							4	4	44
12	5 K18	BARRIER	E	20		11 7.00							11 7	11 7	145
6	5 K19	BARRIER	E	20	2	10 11.00							10 11	10 11	
		Incr. = 36.000"				4 11.00							4 11	4 11	50
534	5 R1	BARRIER	E	26		3 3.00	5.50	2.25	3 1.25	5.50	3 0.75	6.75	7	6 9	3,759
534	5 R2	BARRIER	E	19S		20.50	9.50						2 6	2 5	1,346
534	5 R3	BARRIER	E	27S			9.50	15.25	5.00	12.00	15.00	3.00	3 6	3 4	1,857
40	5 R4	BARRIER	E	20		11 9.00							11 9	11 9	490
20	5 R5	BARRIER	E	20		37 3.38							37 3	37 3	777
10	5 R6	BARRIER	E	20		32 3.38							32 3	32 3	336
10	5 R7	BARRIER	E	20		37 9.50							37 10	37 10	395
10	5 R8	BARRIER	E	20		31 2.25							31 2	31 2	325
10	5 R9	BARRIER	E	20		36 8.88							36 9	36 9	383
		Slip-Form													
8	5 C1	SLIP FORM	E	20		12 0.00							12	12	100
8	5 C2	SLIP FORM	E	20		5 0.00							5 9	5 9	48

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. 14.

All bars shall be 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. 2024
Checked Nov. 2024

BILL OF REINFORCING STEEL

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
12/11/2024 11:45:42 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED 12/11/2024

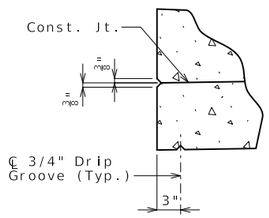
ROUTE 9 | STATE MO
DISTRICT BR | SHEET NO. 15
COUNTY PLATTE
JOB NO. J4S3497
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A20192

DESCRIPTION | DATE

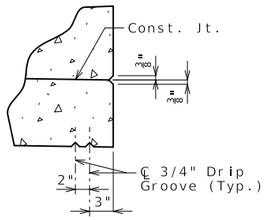
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

SEC/SUR 4 TWP 50N RGE 33W

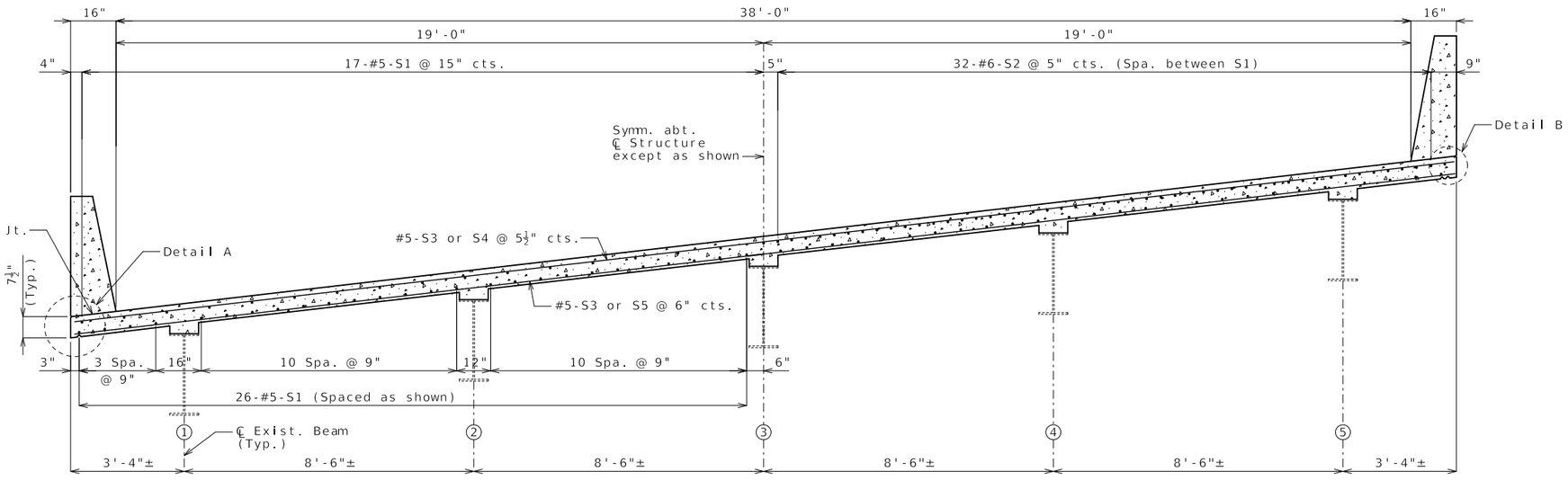
U.I.P. REDECK AND MAKE COMPOSITE EXISTING (39'- 56'- 39') CONTINUOUS WIDE FLANGE BEAM SPANS (SKEW: 12°47'00" R.A.)



DETAIL A



DETAIL B



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:
HS20-44 (1965), HS20-44 (New Construction)
35 lb/sf Future Wearing Surface
Earth - 120 lb/cf, Equivalent Fluid Pressure 45 lb/cf
Fatigue Stress - Case III

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

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:
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 ordering new material.

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

Table Showing S2 Bar Lengths			
Int. Bent No. 2		Int. Bent No. 3	
Span 1	Span 2	Span 2	Span 3
15'-3"	15'-3"	15'-3"	15'-3"

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.

Estimated Quantities for Slab on Steel		
Item		Total
Class B-2 Concrete	cu. yard	145
Reinforcing Steel (Epoxy Coated)	pound	49,150

Estimated Quantities		
Item		Total
Removal of Miscellaneous ACM (Non-Friable)	sq. foot	14
Class 1 Excavation	cu. yard	85
Temporary Shoring	lump sum	1
Removal of Existing Bridge Deck (Composite)	sq. foot	5544
Bridge Approach Slab (Major)	sq. foot	171
Slab on Steel	sq. yard	610
Type D Barrier	linear foot	306
Slab Drain	each	6
Surface Preparation for Epoxy-Mastic Primer	lump sum	1
Gray Epoxy-Mastic Primer	lump sum	1
Vertical Drains 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.

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.

REPAIRS TO BRIDGE: ROUTE 9 NB OVER US 69

ROUTE 9 FROM ROUTE 169 TO ROUTE 635
ABOUT 0.7 MILES EAST OF ROUTE 635
BEGINNING STATION 413+75.92± (MATCH EXISTING)

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
12/12/2024 11:46:39 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED 12/11/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	1

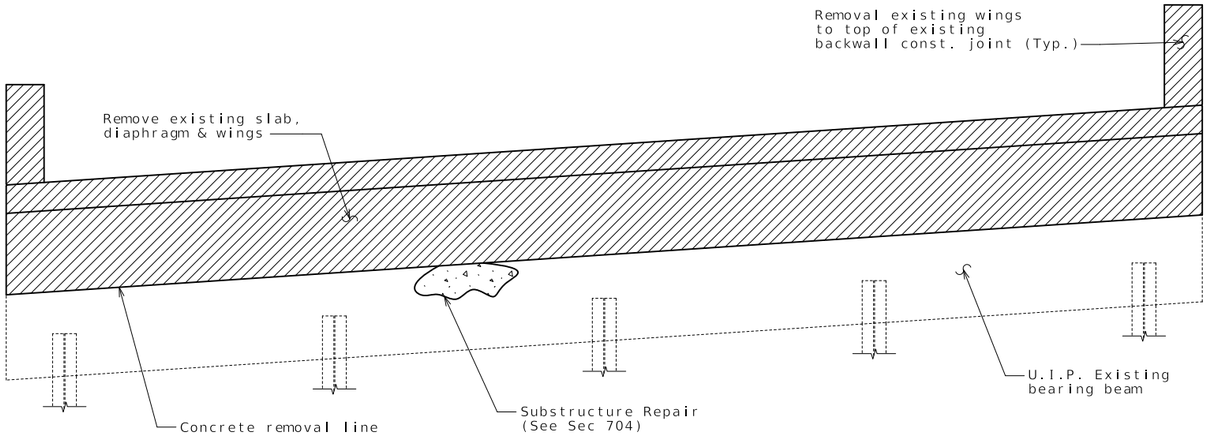
COUNTY PLATTE
JOB NO. J4S3497
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A20193

DESCRIPTION	DATE

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

Detailed Feb. 2024
Checked Nov. 2024

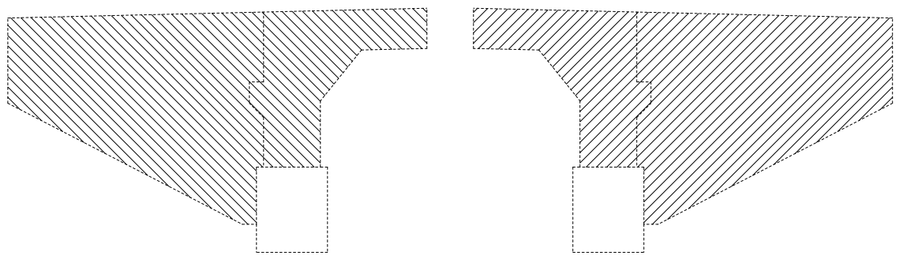
Note: This drawing is not to scale. Follow dimensions.



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.

Substructure repair shall be made monolithically with making the end bent integral. The cost will be considered completely covered by the contract unit price for Slab on Steel.



DETAILS OF CONCRETE REMOVAL OF WINGS @ BENTS NO. 1 & 4

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:

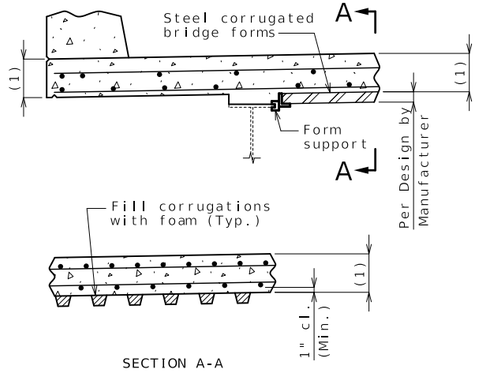
The contractor shall provide bracing necessary for lateral and torsional stability of the beams during construction of the concrete slab and remove the bracing after the slab has attained 75% design strength. Contractor shall not weld on or drill holes in the beams. The cost for furnishing, installing,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

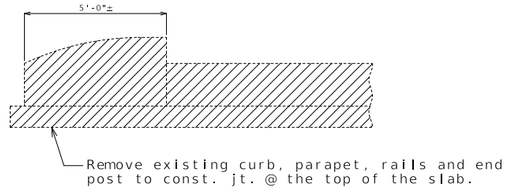
Alternate pour sequences may be submitted to the engineer for approval. Keyed construction joints shall be provided between pours.

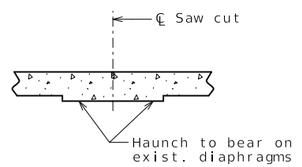
Haunching:

(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





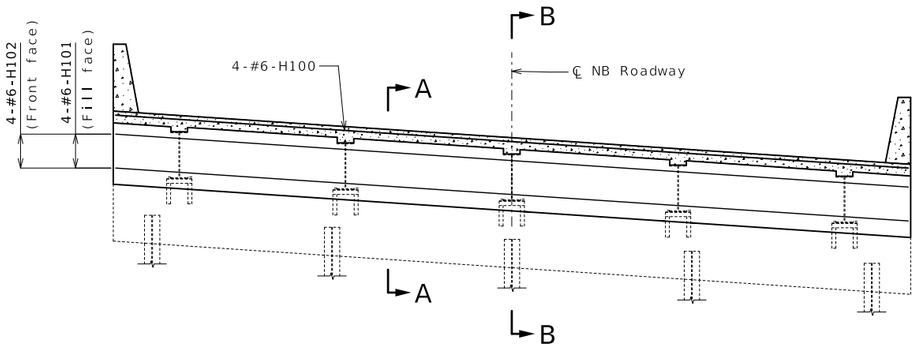
PART SECTION THRU SLAB AT INT. BENTS

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
12/12/2024 11:47:21 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED: 12/11/2024
ROUTE: 9 | STATE: MO
DISTRICT: BR | SHEET NO.: 2
COUNTY: PLATTE
JOB NO.: J4S3497
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A20193

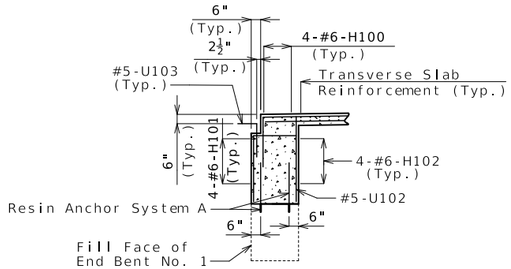
DESCRIPTION | DATE

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

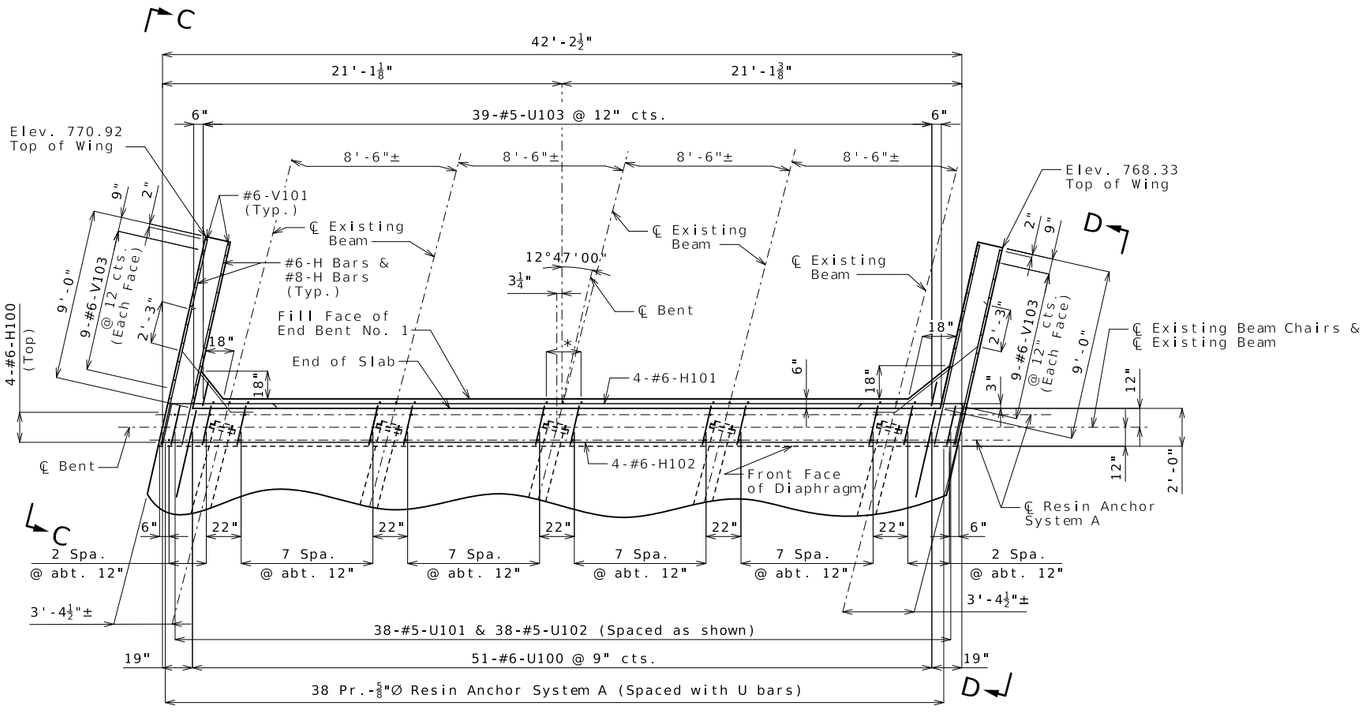


SECTION NEAR END BENT

Note: Resin Anchors not shown for clarity.



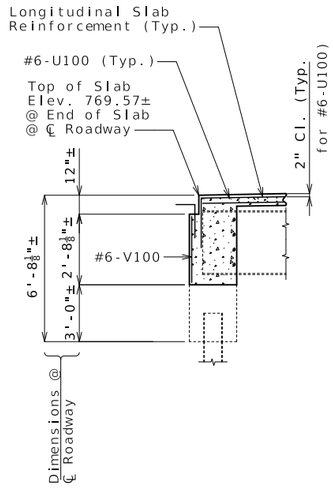
SECTION A-A



PART PLAN

Resin Anchor Systems B & C not shown for clarity.

∗ 3-#6-V100 @ 6" cts. (Typ.)



SECTION B-B

Notes:

For Elevations C-C & D-D, see Sheet No. 4.

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 girders shall extend a minimum of one foot outside the face of the girder 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.

The H102 bars are segmented for ease of placement through girder web holes. The total bar length for H102 bars shown in Bill of Reinforcing Steel allows for one lap splice with a length of 3'-10". Actual bar segment lengths to be determined by contractor for ease of installing bars. The contractor may use a mechanical bar splice in lieu of a lap splice. When a mechanical bar splice is used, the actual bar segment length will be determined by the contractor to accommodate manufacturer's recommendations for installation and ease of construction. The cost of furnishing and installing the bar splices will be considered completely covered by the contract unit price for Slab on Steel. No adjustment of the quantity of reinforcing steel will be allowed for the use of mechanical bar splices.

Cost of field drilling holes in existing plate girder webs will be considered completely covered by the contract unit price for Slab on Steel.

For reinforcement of the barrier curb, see Sheets No. 9 & 11.

For additional details of End Bent No. 1, see Sheet No. 4.

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
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TED S. KOESTER - CIVIL
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DATE PREPARED
12/11/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	3

COUNTY
PLATTE

JOB NO.
J4S3497

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A20193

DESCRIPTION

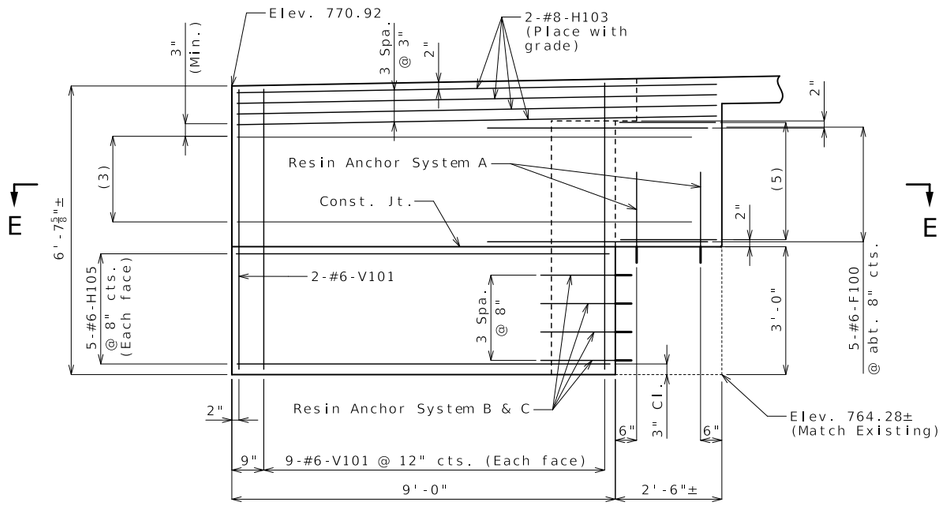
DATE

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

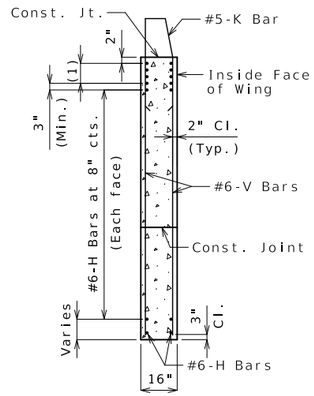
DETAILS OF END BENT NO. 1

Detailed Feb. 2024
Checked Nov. 2024

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

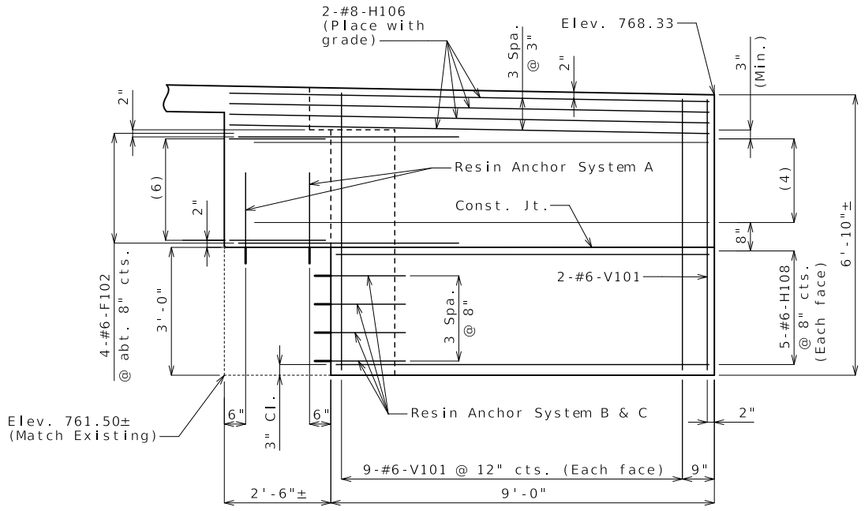


ELEVATION C-C



TYPICAL SECTION THRU WING

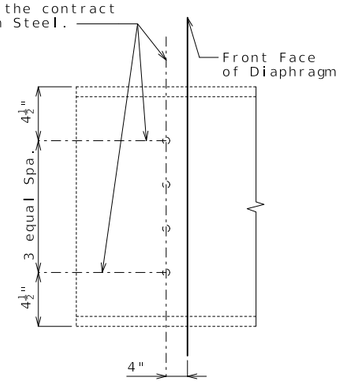
(1) #8-H Bars at 3" cts. (Each face)(Place with grade)



ELEVATION D-D

(3) 4-#6-H104 @ abt. 8" cts. (Each Face)
(4) 4-#6-H107 @ abt. 8" cts. (Each Face)
(5) 4-#6-F101 @ abt. 12" cts. (Each Face)
(6) 4-#6-F103 @ abt. 12" cts. (Each Face)

℄ 1 1/16"Ø holes in each stringer. Cost of field drilling holes in existing webs will be considered completely covered by the contract unit price for Slab on Steel.



DETAIL OF WEB HOLES

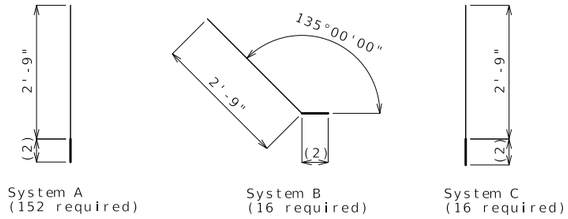
Notes:

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 shown on this sheet complete-in-place will be considered completely covered y 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".

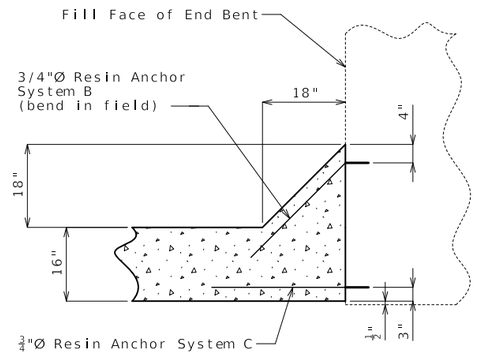
An epoxy coated #6 Grade 60 reinforcing bar shall be substituted for the 3/4"Ø threaded rod.



(2) Use manufacturer's embedment length. (5" minimum embedment length)

Note: For location of Resin Anchors, see Sheets No. 3 & 6.

DETAILS OF RESIN ANCHORS



SECTION E-E

Notes:

The #6-F100 bars shall be bent in the field to clear stringers.

All concrete in the end bent above bottom of wing and below top of slab shall be class B-2.

Concrete diaphragms at the integral end bents shall be poured a minimum of 12 hours before the slab is poured.

For additional details of End Bent No. 1, see Sheet No. 3.

DETAILS OF END BENT NO. 1

Detailed Oct. 2024
Checked Oct. 2024

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
Ted Koester
12/11/2024 11:48:12 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED
12/11/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	4

COUNTY
PLATTE

JOB NO.
J4S3497

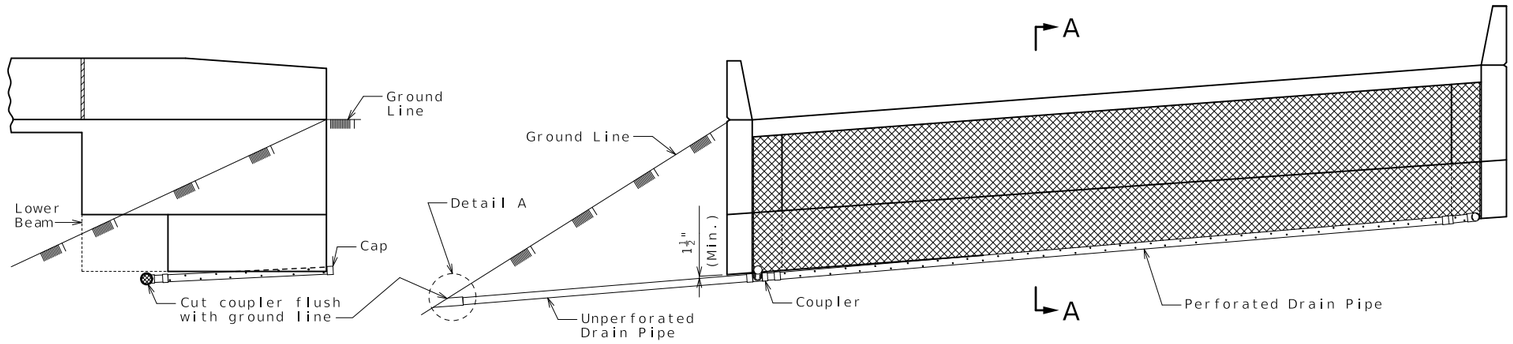
CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A20193

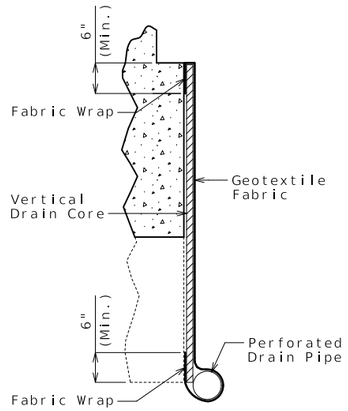
DESCRIPTION	DATE

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

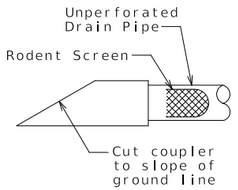


ELEVATION OF WING

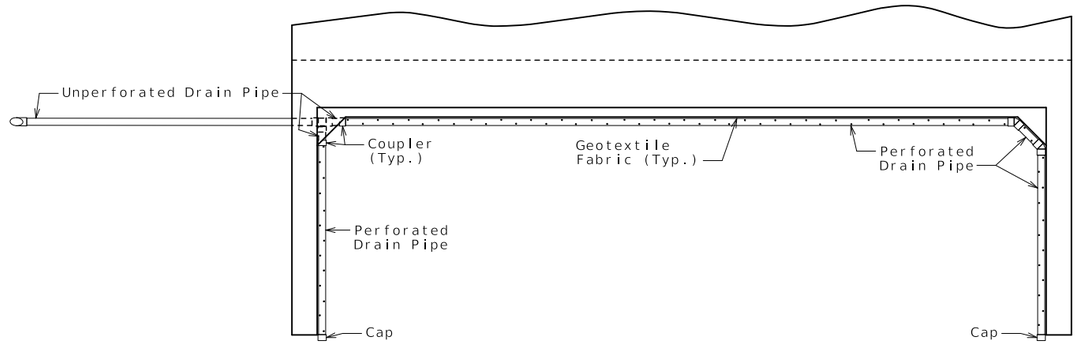
ELEVATION OF END BENT



PART SECTION A-A
(Section thru wing similar)



DETAIL A



PLAN OF END BENT

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.

Drain pipe shall be placed at fill face of end bent and inside face of wings. The pipe shall slope to lowest grade of ground line, also missing the lower beam of end bent by a minimum of 1 1/2 inches.

Perforated pipe shall be placed at fill face side and inside face of wings 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

(Squared end bent shown, skewed end bent similar)

Detailed Feb. 2024
Checked Nov. 2024

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
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TED S. KOESTER - CIVIL
MO-PE-2013000591

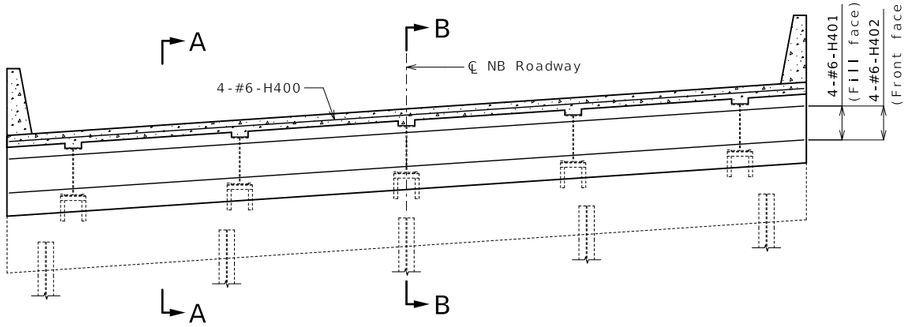
DATE PREPARED: 12/11/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	5

COUNTY: PLATTE
JOB NO.: J4S3497
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A20193

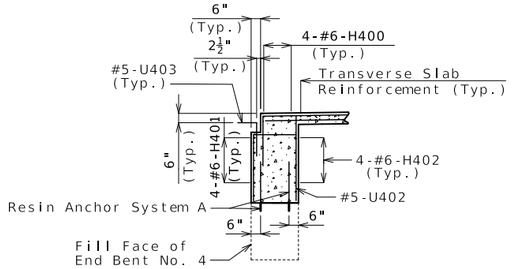
DESCRIPTION | DATE

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

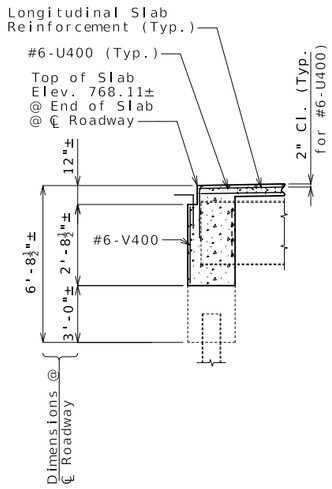


SECTION NEAR END BENT

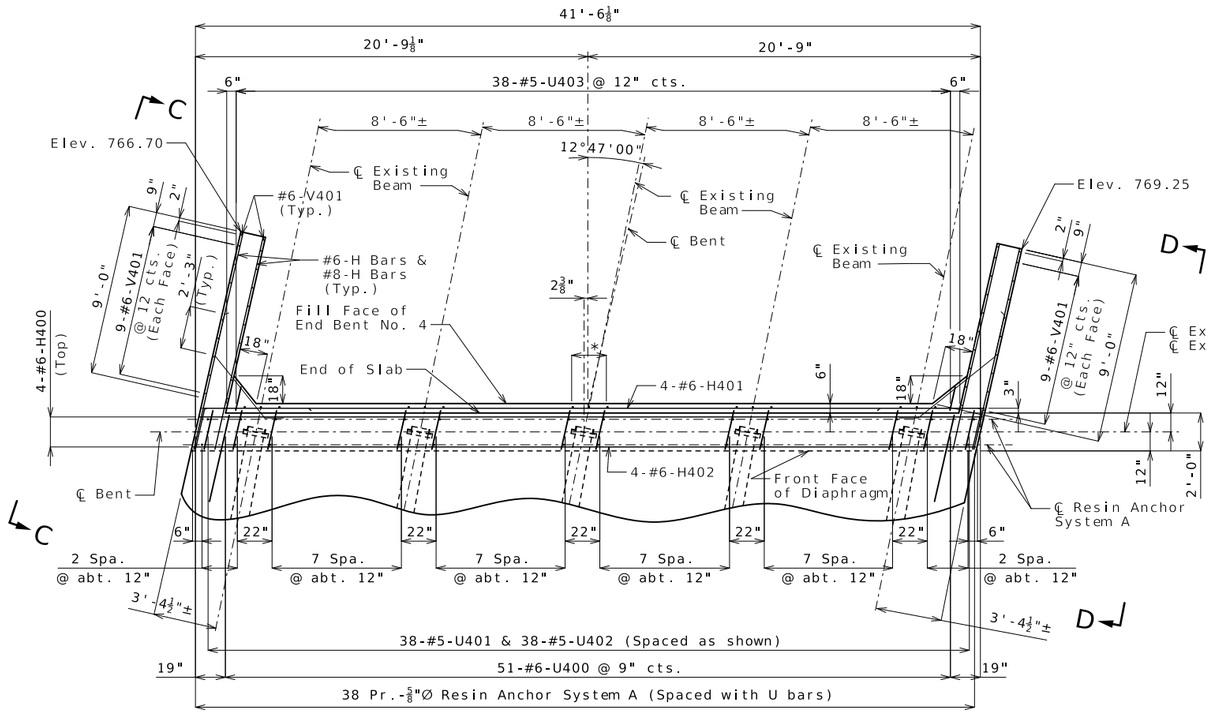
Note: Resin Anchors not shown for clarity.



SECTION A-A



SECTION B-B



PART PLAN

Resin Anchor Systems B & C not shown for clarity.

∗ 3-#6-V400 @ 6" cts. (Typ.)

Notes:

For Elevations C-C & D-D, see Sheet No. 7.

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 girders shall extend a minimum of one foot outside the face of the girder 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.

The H402 bars are segmented for ease of placement through girder web holes. The total bar length for H402 bars shown in Bill of Reinforcing Steel allows for one lap splice with a length of 3'-10". Actual bar segment lengths to be determined by contractor for ease of installing bars. The contractor may use a mechanical bar splice in lieu of a lap splice. When a mechanical bar splice is used, the actual bar segment length will be determined by the contractor to accommodate manufacturer's recommendations for installation and ease of construction. The cost of furnishing and installing the bar splices will be considered completely covered by the contract unit price for Slab on Steel. No adjustment of the quantity of reinforcing steel will be allowed for the use of mechanical bar splices.

Cost of field drilling holes in existing plate girder webs will be considered completely covered by the contract unit price for Slab on Steel.

For reinforcement of the barrier curb, see Sheets No. 9 & 12.

For additional details of End Bent No. 4, see Sheet No. 7.

DETAILS OF END BENT NO. 4

Detailed Oct. 2024
Checked Nov. 2024

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
Ted Koester
12/12/2024 11:48:59 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED
12/11/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	6

COUNTY
PLATTE

JOB NO.
J4S3497

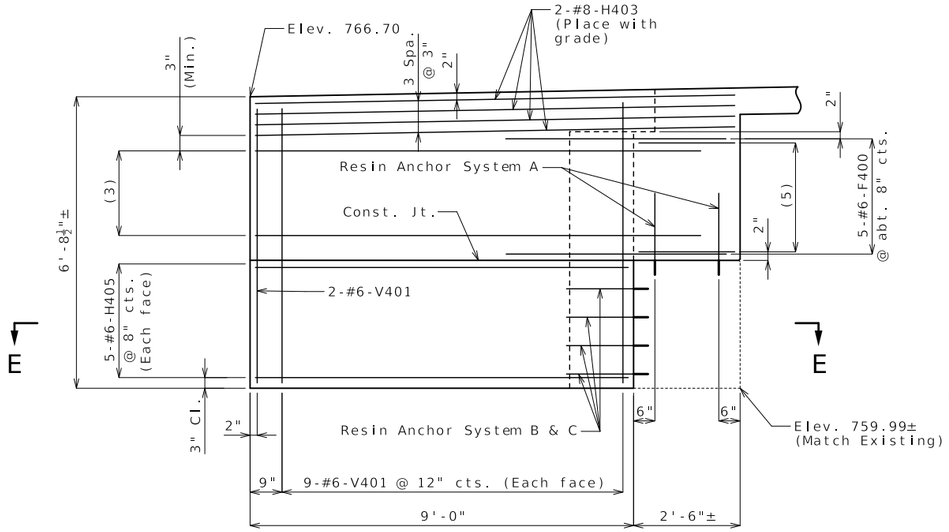
CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A20193

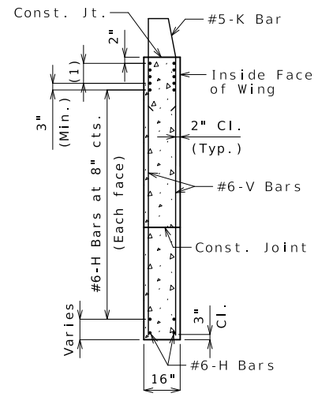
DESCRIPTION	DATE

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



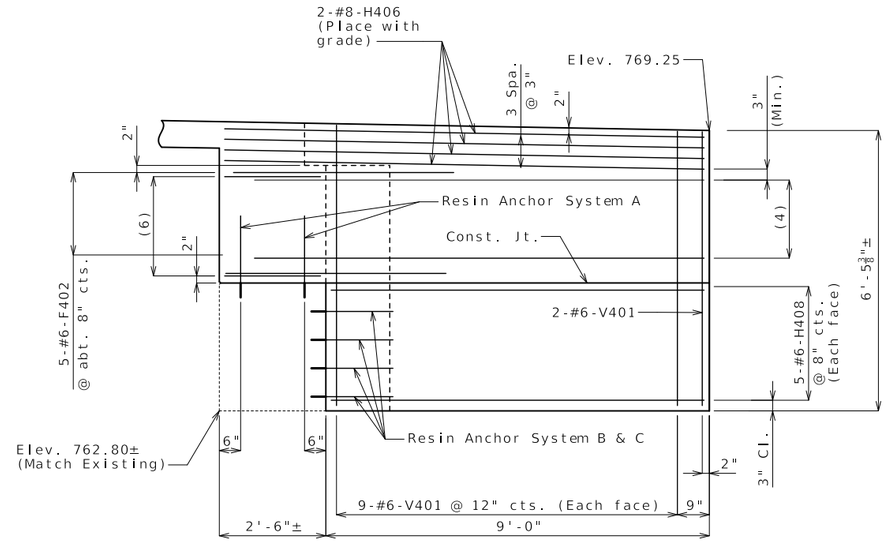
ELEVATION C-C

(3) 4-#6-H404 @ abt. 8" cts. (Each Face)
(4) 4-#6-H407 @ abt. 8" cts. (Each Face)
(5) 4-#6-F401 @ abt. 12" cts. (Each Face)
(6) 4-#6-F403 @ abt. 12" cts. (Each Face)

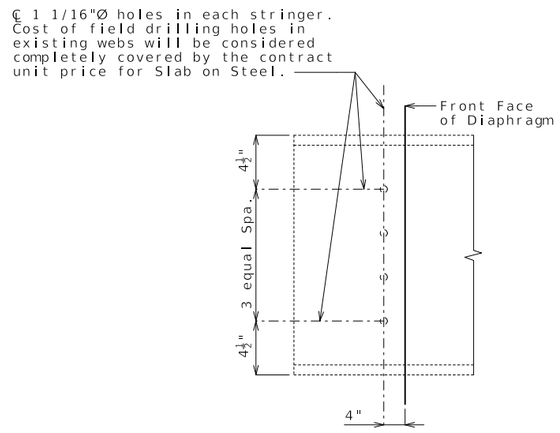


TYPICAL SECTION THRU WING

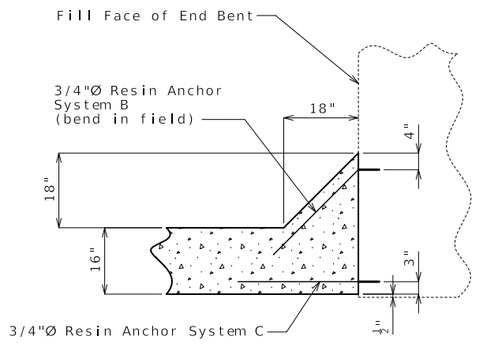
(1) #8-H Bars at 3" cts. (Each face)(Place with grade)



ELEVATION D-D



DETAIL OF WEB HOLES



SECTION E-E

Notes:

The #6-F400 bars shall be bent in the field to clear stringers.

All concrete in the end bent above bottom of wing and below top of slab shall be class B-2.

Concrete diaphragms at the integral end bents shall be poured a minimum of 12 hours before the slab is poured.

For resin anchor details and notes, see Sheet No. 4.

For additional details of End Bent No. 4, see Sheet No. 6.

DETAILS OF END BENT NO. 4

Detailed Oct. 2024
Checked Oct. 2024

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
Ted Koester
12/11/2024 11:49:24 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED
12/11/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	7

COUNTY
PLATTE

JOB NO.
J4S3497

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
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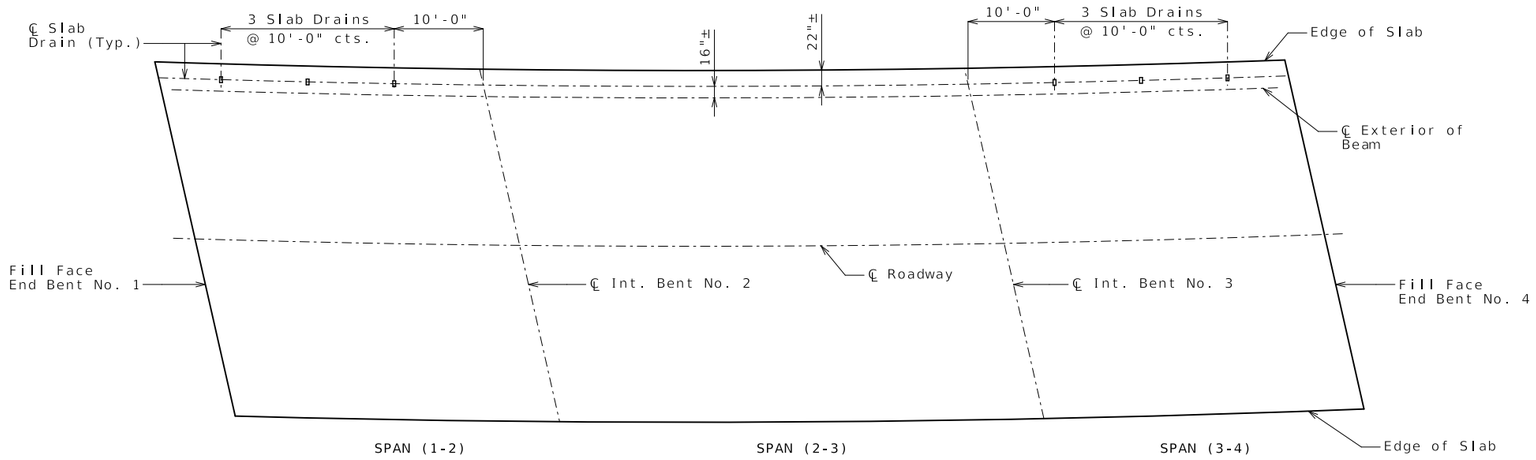
DESCRIPTION

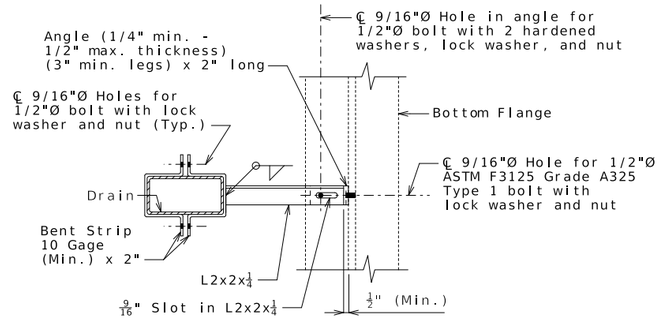
DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

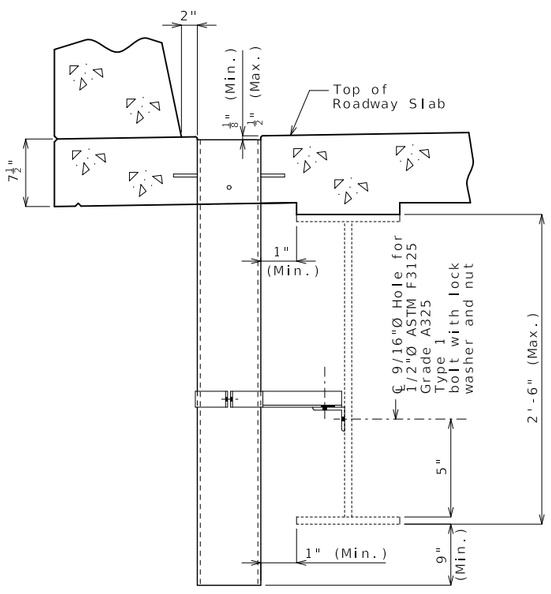
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



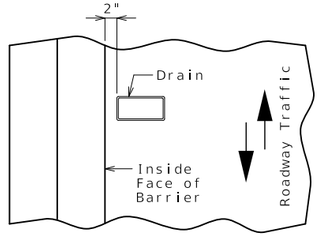
PLAN OF SLAB SHOWING SLAB DRAIN LOCATIONS



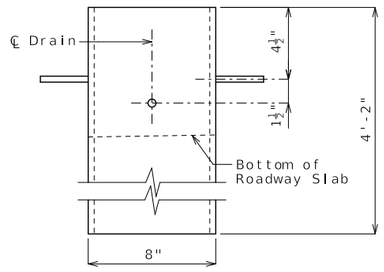
PART SECTION SHOWING BRACKET ASSEMBLY



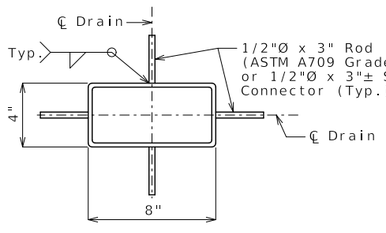
PART SECTION NEAR DRAIN



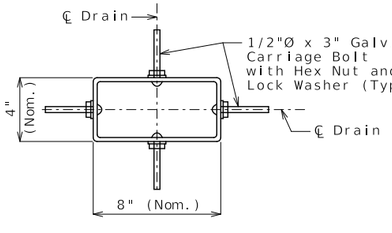
PART PLAN OF SLAB AT DRAIN



ELEVATION OF DRAIN



PLAN OF STEEL DRAIN OPTION



PLAN OF FRP DRAIN OPTION

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.

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
TED S. KOESTER
NUMBER PE-2013000591
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DATE PREPARED
12/11/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	8

COUNTY
PLATTE

JOB NO.
J4S3497

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A20193

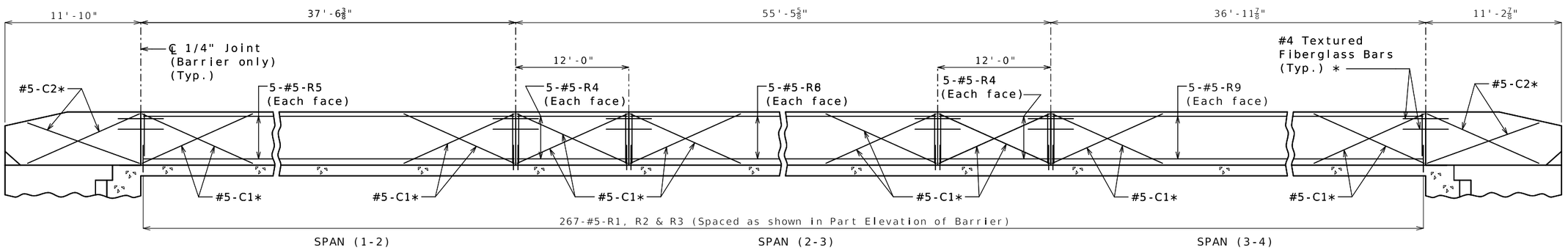
DESCRIPTION	DATE

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

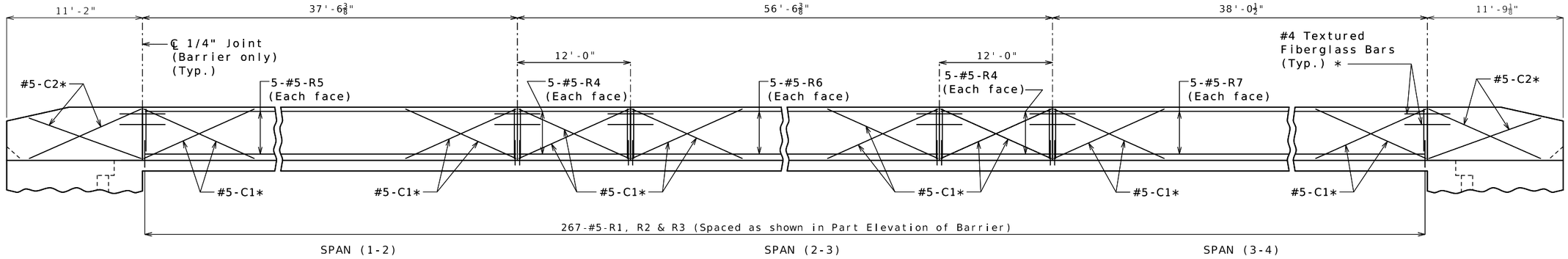
Detailed Feb. 2024
Checked Nov. 2024

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

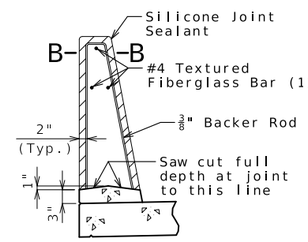
SLAB DRAINS



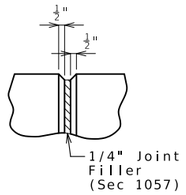
ELEVATION OF LEFT BARRIER



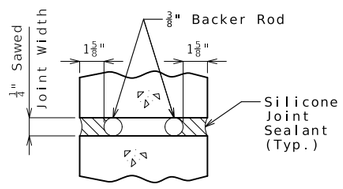
ELEVATION OF RIGHT BARRIER



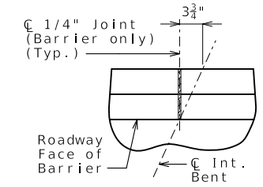
SECTION THRU
SAW CUT JOINT



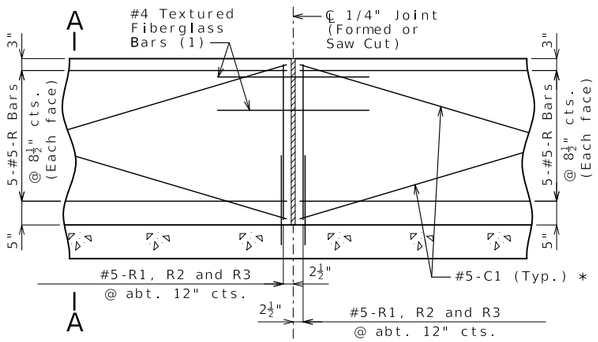
PART ELEVATION
AT FORMED JOINT



SECTION B-B

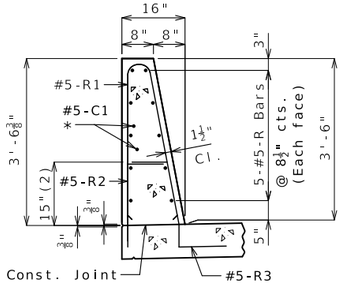


PART PLAN SHOWING
JOINT LOCATION



PART ELEVATION OF BARRIER

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

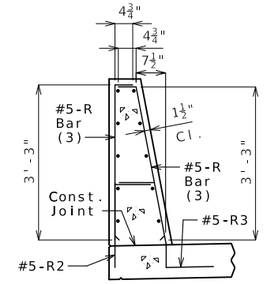


SECTION A-A

Use a minimum lap of 3'-1" 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 Feb. 2024
Checked Nov. 2024

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
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DATE PREPARED
12/11/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	9

COUNTY
PLATTE

JOB NO.
J4S3497

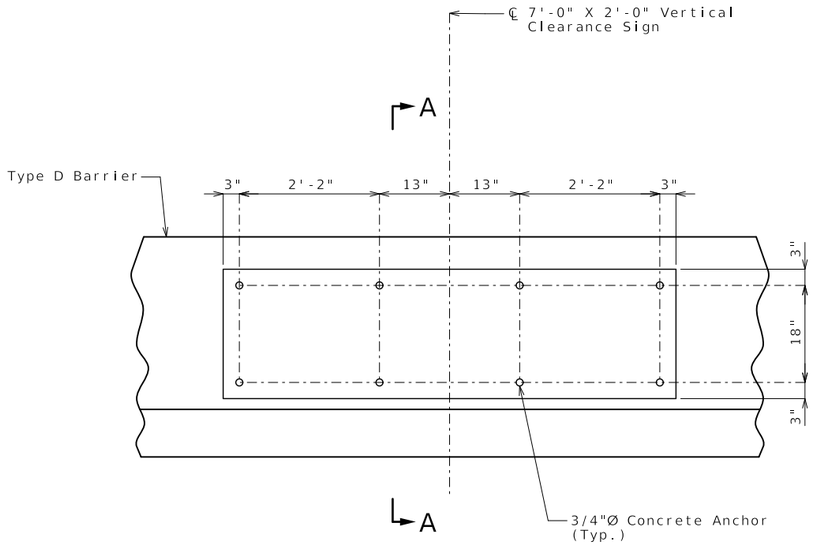
CONTRACT ID.

PROJECT NO.

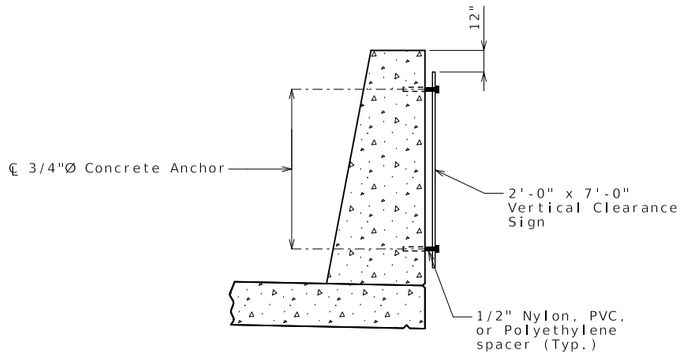
BRIDGE NO.
A20193

DESCRIPTION	DATE

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



PART ELEVATION SHOWING FABRICATED SIGN AT NORTH SIDE OF SPAN (2-3) NEAR INT. BENT NO. 2



PART SECTION A-A

Notes for Vertical Clearance Signs:

Concrete anchors shall be the non-drilling expansion type and shall have a certified concrete pull out strength (Ultimate Load) of 12, 100 pounds (min.) in 4,000 psi concrete. The hole shall be pre-drilled with a conventional carbide masonry bit.

Bolt threads shall be burrred after sign has been erected.

Contractor shall verify all dimensions in field before ordering materials.

The cost of all material, labor, and equipment necessary to install the signs shall be considered completely by the contract unit price for Type D Barrier.

SIGN ATTACHMENT DETAILS

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
12/11/2024 12:22:18 PM
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DATE PREPARED: 12/11/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	10

COUNTY: PLATTE

JOB NO.: J4S3497

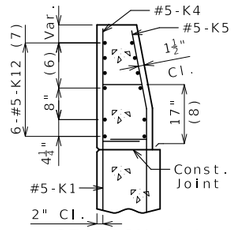
CONTRACT ID.:

PROJECT NO.:

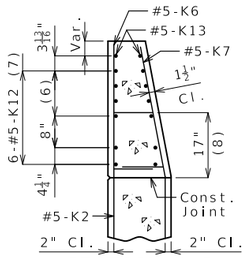
BRIDGE NO.: A20193

DESCRIPTION	DATE

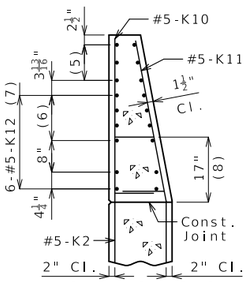
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



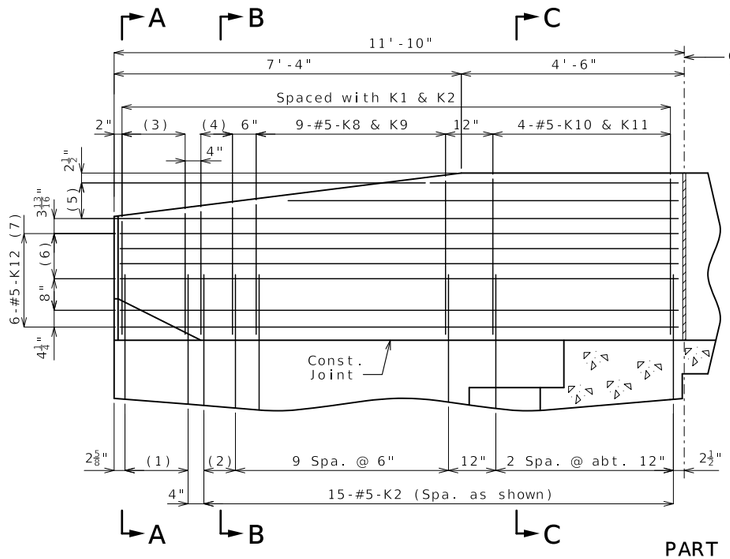
SECTION A-A

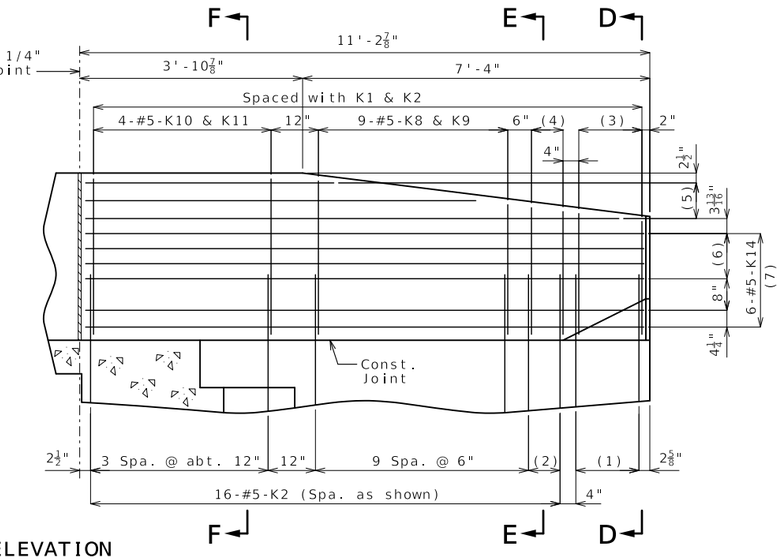


SECTION B-B



SECTION C-C





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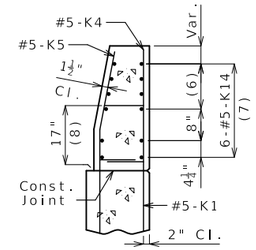
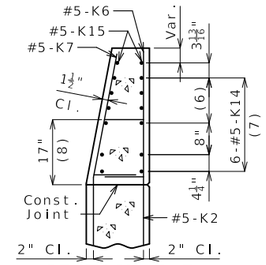
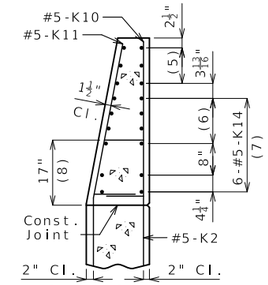


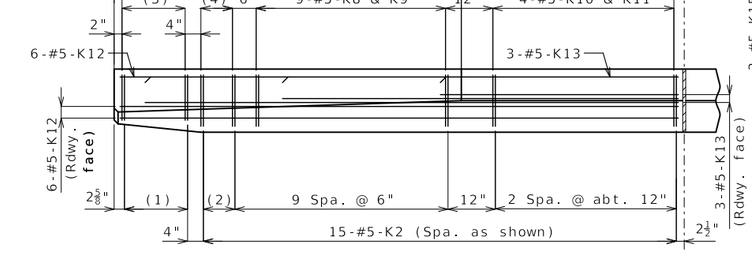
SECTION D-D

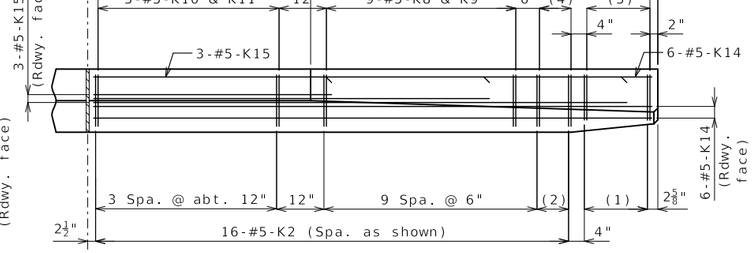


SECTION E-E

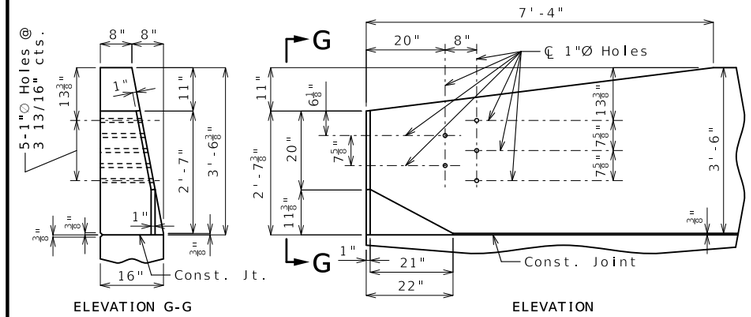


SECTION F-F

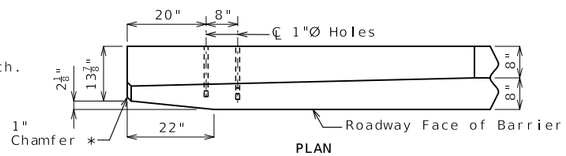




PART PLAN



ELEVATION G-G ELEVATION



PLAN

* 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

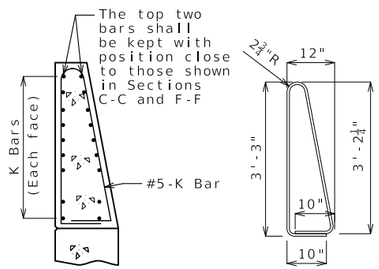
(4) 3-#5-K6 & K7

(5) 3-#5-K13 or K15 @ 4½" cts., each face

(6) 3 spaces @ 3 13/16"

(7) Spaced as shown, each face

(8) To top of bar



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.

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" except as shown for bars embedded into end bent.

TYPE D BARRIER AT END BENT (LEFT BARRIER)

Detailed Oct. 2024
Checked Nov. 2024

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
12/11/2024 11:54:16 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED
12/11/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	11

COUNTY
PLATTE

JOB NO.
J4S3497

CONTRACT ID.

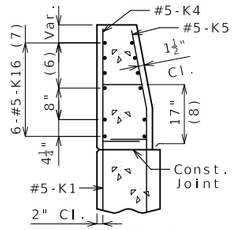
PROJECT NO.

BRIDGE NO.
A20193

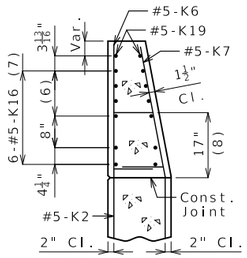
DESCRIPTION

DATE

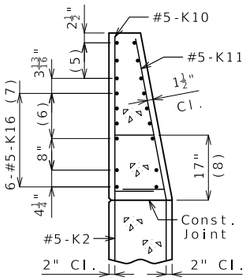
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



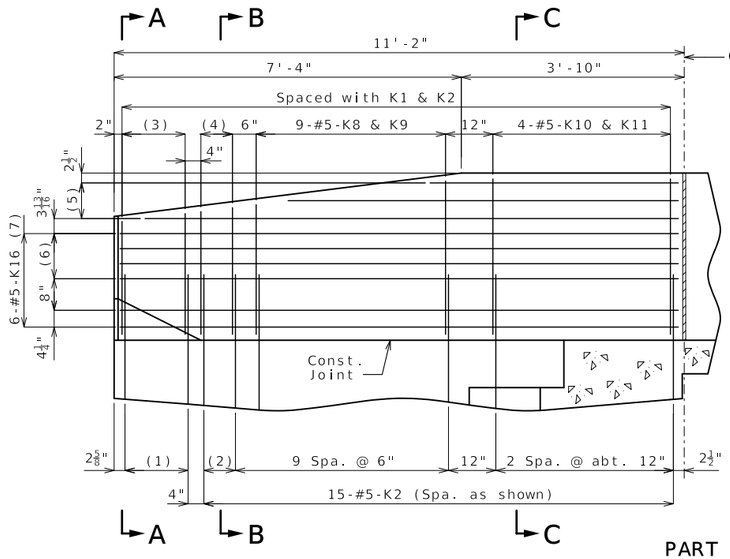
SECTION A-A

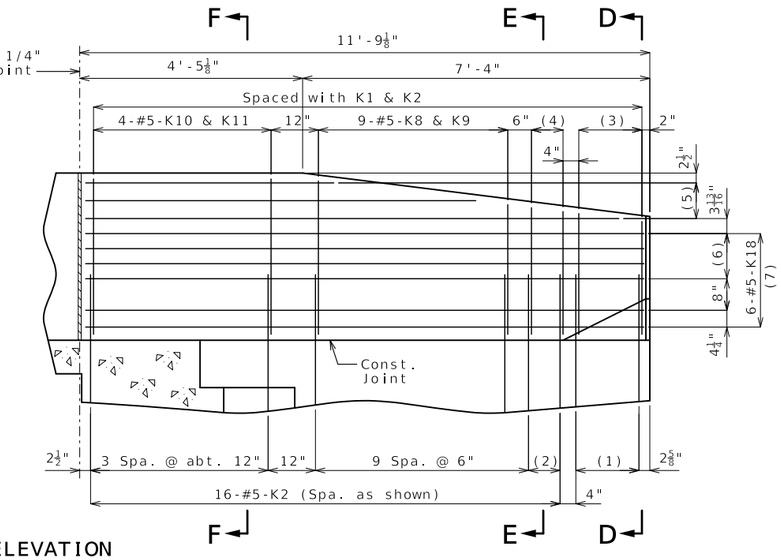


SECTION B-B

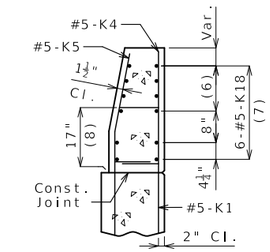


SECTION C-C





PART ELEVATION



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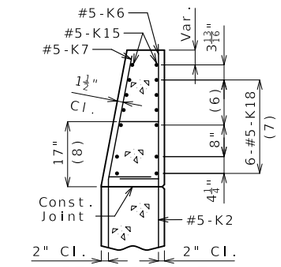

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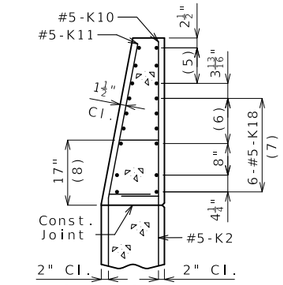
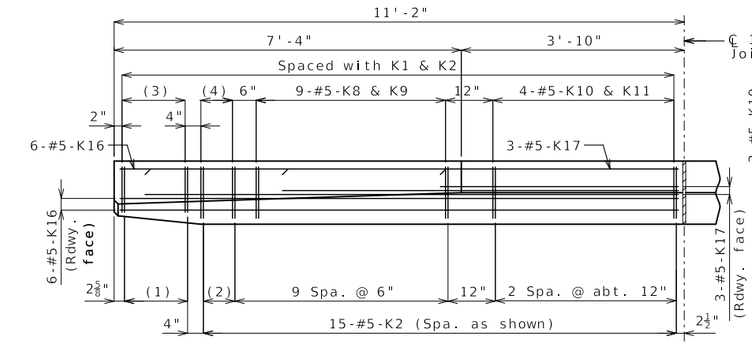
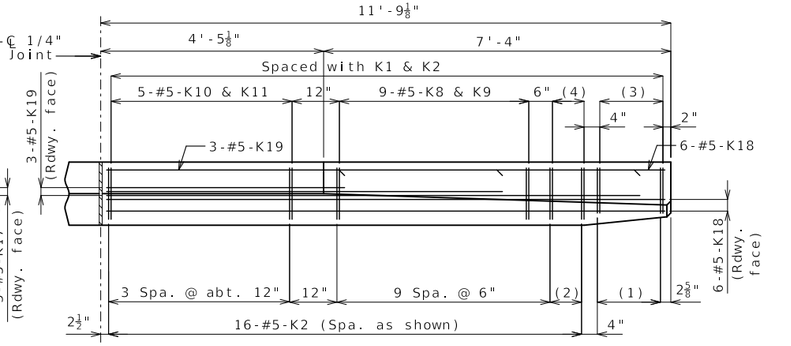
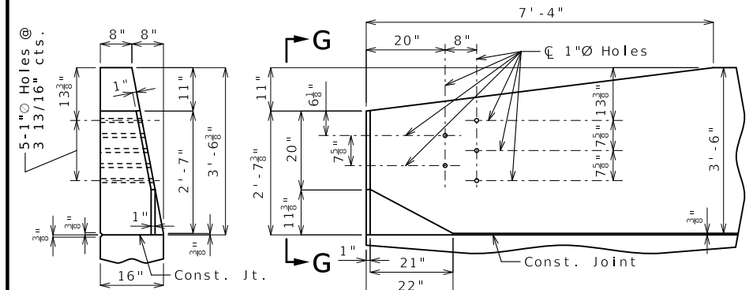


SECTION F-F

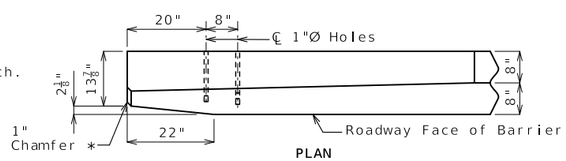




PART PLAN



ELEVATION G-G ELEVATION



PLAN

* 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

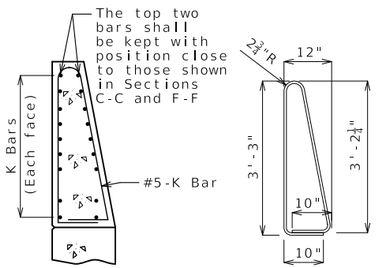
(4) 3-#5-K6 & K7

(5) 3-#5-K17 or K19 @ 4½" cts., each face

(6) 3 spaces @ 3 13/16"

(7) Spaced as shown, each face

(8) To top of bar



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.

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" except as shown for bars embedded into end bent.

TYPE D BARRIER AT END BENT (RIGHT BARRIER)

Detailed Oct. 2024
Checked Nov. 2024

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
12/11/2024 11:54:40 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

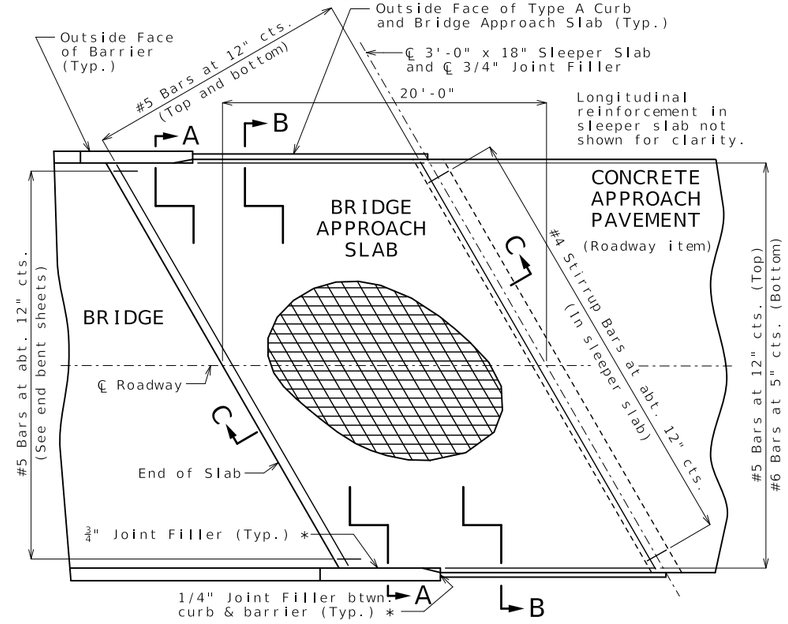
DATE PREPARED 12/11/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	12

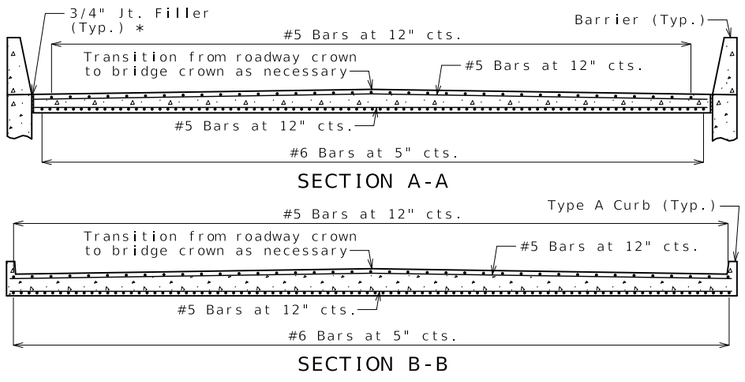
COUNTY: PLATTE
JOB NO.: J4S3497
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A20193

DESCRIPTION | DATE

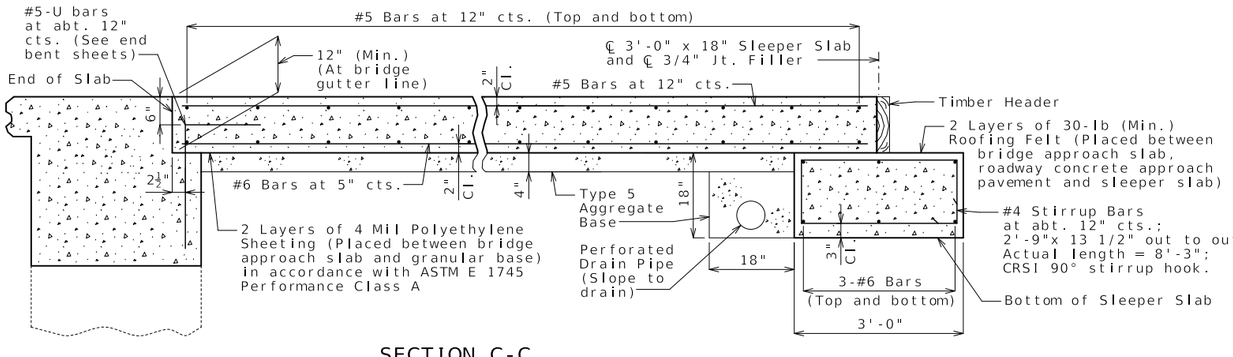
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



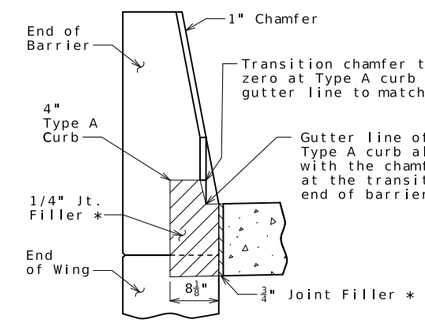
PART PLAN SHOWING REINFORCEMENT



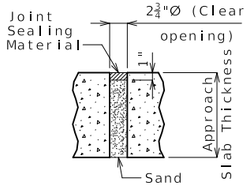
With the approval of the engineer, the contractor may crown the bottom of the approach slab to match the crown of the roadway surface.



SECTION C-C

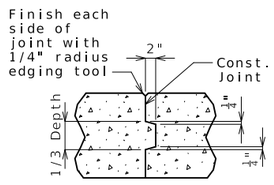


SECTION BETWEEN CURB AND BARRIER



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 29 inches for #5 bars and 44 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.

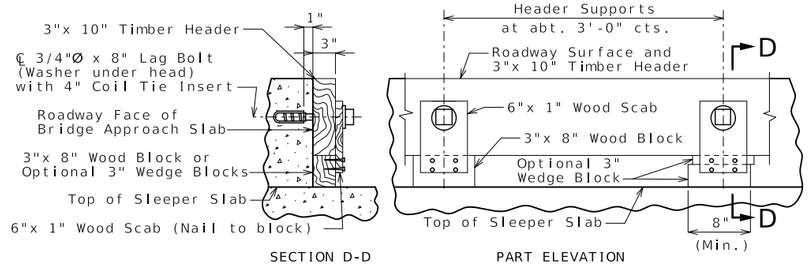
Longitudinal construction joints in approach slab and sleeper slab shall be aligned with longitudinal construction joints in bridge slab.

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 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.



DETAILS OF TIMBER HEADER

Remove timber header when concrete pavement is placed.

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
12/11/2024 11:55:05 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED 12/11/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	13

COUNTY: PLATTE

JOB NO.: J4S3497

CONTRACT ID.:

PROJECT NO.:

BRIDGE NO.: A20193

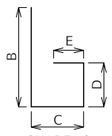
DATE	DESCRIPTION

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

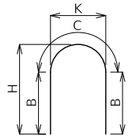
Detailed Feb. 2024
Checked Nov. 2024

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

BRIDGE APPROACH SLAB (MAJOR)



SHAPE 6
or 6S



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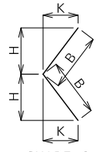

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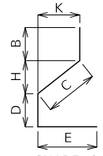

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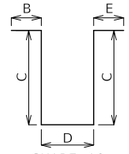

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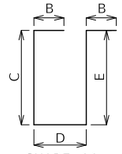

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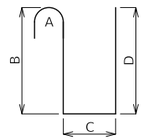

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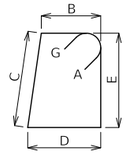

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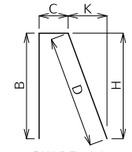

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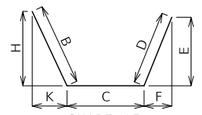

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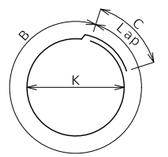

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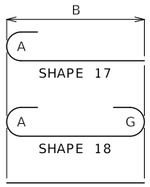
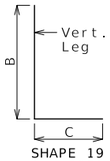


SHAPE 17
SHAPE 18
SHAPE 20



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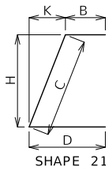

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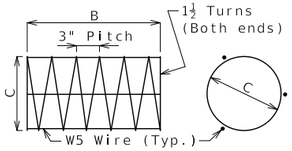

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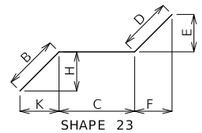

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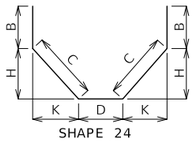

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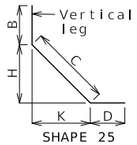

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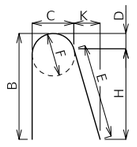

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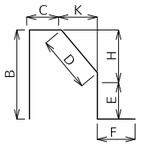

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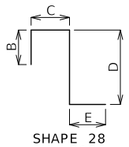

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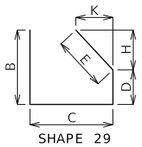

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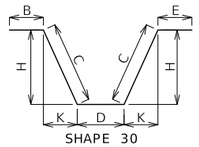

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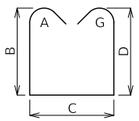

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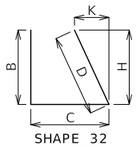

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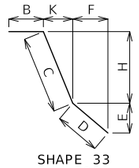

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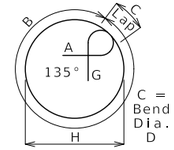

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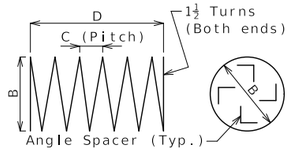

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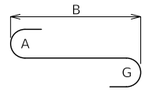
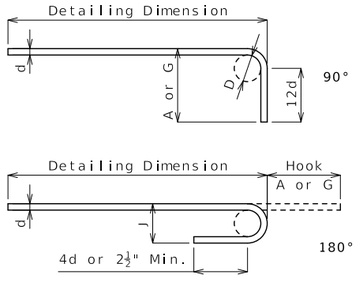


SHAPE 36

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"	9¾"	7"
	3	7"	15"	11½"	8¾"
#8	2	6"	16"	11"	8"
	3	8"	17"	13¼"	10"
#9	1	9½"	19½"	15½"	11¾"
#10	1	10¾"	22"	17½"	13¼"
#11	1	12"	24½"	19½"	14⅞"
#14	1	18¼"	31¼"	27½"	21⅝"
#18	1	24"	41½"	36¾"	28½"

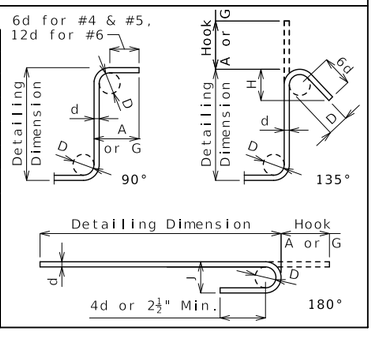


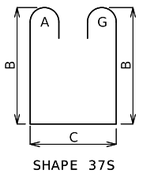
Stirrup Pin Bend Shapes (S)

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"

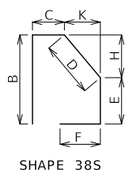
Applicable for all grades of steel.

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	
	Size	Plain	Epoxy	Slab	Barrier	Slip Form	Plain	Epoxy
By Size	W5	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0
	5	0	0	38,494	11,757	148	0	50,399
	6	0	0	9,699	0	0	0	9,699
	7	0	0	0	0	0	0	0
	8	0	0	956	0	0	0	956
	9	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0
	11	0	0	0	0	0	0	0
	14	0	0	0	0	0	0	0
	18	0	0	0	0	0	0	0
By Type		0	0	49,149	11,757	148	0	61,054

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

BENDING DIAGRAMS AND REINFORCING STEEL TOTALS

Detailed Nov. 2024
Checked Dec. 2024

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
12/11/2024 11:55:31 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED: 12/11/2024
ROUTE: 9
STATE: MO
DISTRICT: BR
SHEET NO.: 14
COUNTY: PLATTE
JOB NO.: J4S3497
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A20193

DESCRIPTION	DATE

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

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													
5	6 F100	WING BRACE	E	15S		2 2.75	4 1.00	14.00	11.00	8.75	21.00	16.75	7 6	7 5	56
4	6 F101	DIAPHRAGM	E	19S		4 0.88	2 1.00						6 2	6	36
4	6 F102	WING BRACE	E	15S		2 2.75	5 1.00	14.00	8.75	11.00	16.75	21.00	8 6	8 5	51
4	6 F103	DIAPHRAGM	E	19S		4 1.50	2 1.00						6 3	6 1	37
4	6 H100	DIAPHRAGM	E	20		41 11.00							41 11	41 11	252
4	6 H101	DIAPHRAGM	E	20		41 11.00							41 11	41 11	252
4	6 H102	DIAPHRAGM	E	20		45 9.00							45 9	45 9	275
8	8 H103	WING	E	20		11 6.25							11 6	11 6	246
8	6 H104	WING	E	20		11 6.25							11 6	11 6	138
10	6 H105	WING	E	20		8 10.75							8 11	8 11	134
8	8 H106	WING	E	20		10 10.00							10 10	10 10	231
8	6 H107	WING	E	20		10 10.00							10 10	10 10	130
10	6 H108	WING	E	20		8 2.50							8 3	8 3	124
51	5 U100	DIAPHRAGM	E	19		2 0.00	15.00						3 3	3 1	164
32	5 U101	DIAPHRAGM	E	19		2 5.25	2 3.00						4 8	4 7	153
32	5 U102	DIAPHRAGM	E	31S		3 5.25	21.00	3 5.25					9 7	9 4	312
38	5 U103	DIAPHRAGM	E	19S		2 0.00	15.00						3 3	3 2	126
15	6 V100	DIAPHRAGM	E	20		2 5.25							2 5	2 5	54
42	6 V101	DIAPHRAGM	E	20		6 4.75							6 5	6 5	405
		End Bent 4													
4	6 F400	WING BRACE	E	15S		2 2.75	4 1.00	14.00	11.00	8.75	21.00	16.75	7 6	7 5	45
3	6 F401	DIAPHRAGM	E	19S		4 1.00	2 0.63						6 2	6	27
4	6 F402	WING BRACE	E	15S		2 2.75	5 1.00	14.00	8.75	11.00	16.75	21.00	8 6	8 5	51
3	6 F403	DIAPHRAGM	E	19S		3 5.13	2 0.63						5 6	5 4	24
4	6 H400	DIAPHRAGM	E	20		41 0.12							41	41	246
4	6 H401	DIAPHRAGM	E	20		41 0.12							41	41	246
4	6 H402	DIAPHRAGM	E	20		44 10.12							44 10	44 10	269
8	8 H403	WING	E	20		11 5.88							11 6	11 6	246
8	6 H404	WING	E	20		11 5.88							11 6	11 6	138
10	6 H405	WING	E	20		8 11.25							8 11	8 11	134
8	8 H406	WING	E	20		10 11.37							10 11	10 11	233
8	6 H407	WING	E	20		10 11.37							10 11	10 11	131
10	6 H408	WING	E	20		8 4.75							8 5	8 5	126
51	5 U400	DIAPHRAGM	E	19S		3 5.25	4 0.00						7 5	7 4	390
38	5 U401	DIAPHRAGM	E	19S		2 5.25	2 3.00						4 8	4 7	182
38	5 U402	DIAPHRAGM	E	31S		3 5.25	21.00	3 5.25					9 7	9 4	370
36	5 U403	DIAPHRAGM	E	19S		2 0.00	15.00						3 3	3 2	119
15	6 V400	DIAPHRAGM	E	20		2 5.25							2 5	2 5	54
42	6 V401	DIAPHRAGM	E	20		6 4.25							6 4	6 4	400
		Slab													
255	5 S1	SLAB	E	20		47 6.00							47 6	47 6	12,633
128	6 S2	SLAB	E	20		30 6.00							30 6	30 6	5,864
531	5 S3	SLAB	E	20		40 5.00							40 5	40 5	22,384
40	5 S4	SLAB	E	20	2	40 4.00							40 4	40 4	
		Incr. = 24.250"				2 0.00							2	2	883
36	5 S5	SLAB	E	20	2	39 5.00							39 5	39 5	
		Incr. = 26.375"				2 0.00							2	2	778
		Barrier													
		Type D													
20	5 K1	BARRIER	E	27S		3 8.00	9.25	5.25	3 2.75		5.25	1.00	8 1	7 11	165
64	5 K2	BARRIER	E	27S		3 8.00	9.25	14.50	2 5.75		14.25	2.75	8 2	7 11	528
4	5 K3	BARRIER	E	27S		22.50	9.25	14.50	7.75	12.00	14.25	2.75	5 6	5 2	22
20	5 K4	BARRIER	E	19S	4	2 4.25	10.00						3 2	3 1	
		Incr. = 0.500"				2 6.25	10.00						3 4	3 3	66
20	5 K5	BARRIER	E	38S	4			18.50	9.50	8.25	18.00	4.00	3	2 10	
		Incr. = 0.750"						20.50	9.50	8.25	20.00	4.50	3 2	3 1	62
12	5 K6	BARRIER	E	19S		2 6.75	10.00						3 5	3 3	41
12	5 K7	BARRIER	E	21S			10.00	10.00			2 6.00	6.25	3 6	3 4	42
36	5 K8	BARRIER	E	19S	4	2 8.50	10.00						3 7	3 5	
		Incr. = 0.750"				3 2.50	10.00						4 1	3 11	138
36	5 K9	BARRIER	E	21S	4		10.00	10.00			2 7.75	6.75	3 8	3 6	
		Incr. = 0.750"					10.00	10.00			3 1.75	7.75	4 2	4	141
16	5 K10	BARRIER	E	19S		3 3.00	10.00						4 1	4	67
16	5 K11	BARRIER	E	21S			10.00	10.00			3 2.25	7.75	4 2	4	67
12	5 K12	BARRIER	E	20		11 7.00							11 7	11 7	145
6	5 K13	BARRIER	E	20	2	10 10.00							10 10	10 10	
		Incr. = 36.000"				4 10.00							4 10	4 10	49
12	5 K14	BARRIER	E	20		10 11.00							10 11	10 11	137
6	5 K15	BARRIER	E	20	2	10 2.00							10 2	10 2	
		Incr. = 36.000"				4 2.00							4 2	4 2	45
12	5 K16	BARRIER	E	20		10 11.00							10 11	10 11	137
6	5 K17	BARRIER	E	20	2	10 2.00							10 2	10 2	
		Incr. = 36.000"				4 2.00							4 2	4 2	45
12	5 K18	BARRIER	E	20		11 6.00							11 6	11 6	144
6	5 K19	BARRIER	E	20	2	10 9.00							10 9	10 9	
		Incr. = 36.000"				4 9.00							4 9	4 9	48
534	5 R1	BARRIER	E	26		3 3.00	5.50	2.25	3 1.25	5.50	3 0.75	6.75	7	6 9	3,759
534	5 R2	BARRIER	E	19S		20.50	9.50						2 6	2 5	1,346
534	5 R3	BARRIER	E	27S			9.50	15.25	5.00	12.00	15.00	3.00	3 6	3 4	1,857
40	5 R4	BARRIER	E	20		11 9.00							11 9	11 9	490
20	5 R5	BARRIER	E	20		37 3.38							37 3	37 3	777
10	5 R6	BARRIER	E	20		32 3.38							32 3	32 3	336
10	5 R7	BARRIER	E	20		37 9.50							37 10	37 10	395
10	5 R8	BARRIER	E	20		31 2.25							31 2	31 2	325
10	5 R9	BARRIER	E	20		36 8.88							36 9	36 9	383
		Slip-Form													
8	5 C1	SLIP FORM	E	20		12 0.00							12	12	100
8	5 C2	SLIP FORM	E	20		5 0.00							5 9	5 9	48

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. 14.

All bars shall be 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. 2024
Checked Dec. 2024

BILL OF REINFORCING STEEL

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
Ted Koester
12/11/2024 11:55:54 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED 12/11/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	15

COUNTY: PLATTE
JOB NO.: J4S3497
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A20193

DESCRIPTION | DATE

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

DESIGN DESIGNATION

A.A.D.T. - 2024 = 12764 (NB), 12764 (SB)
A.A.D.T. - 2044 = 15730 (NB), 15730 (SB)
D.H.V. = 12.0%
T = 15.40%
V = 55 M.P.H.
D = 50% (NB), 50% (SB)
FUNCTIONAL CLASSIFICATION- EXPRESSWAY

NO NEW RIGHT OF WAY WILL
BE ACQUIRED FOR THIS PROJECT

CONVENTIONAL SYMBOLS
(USED IN PLANS)

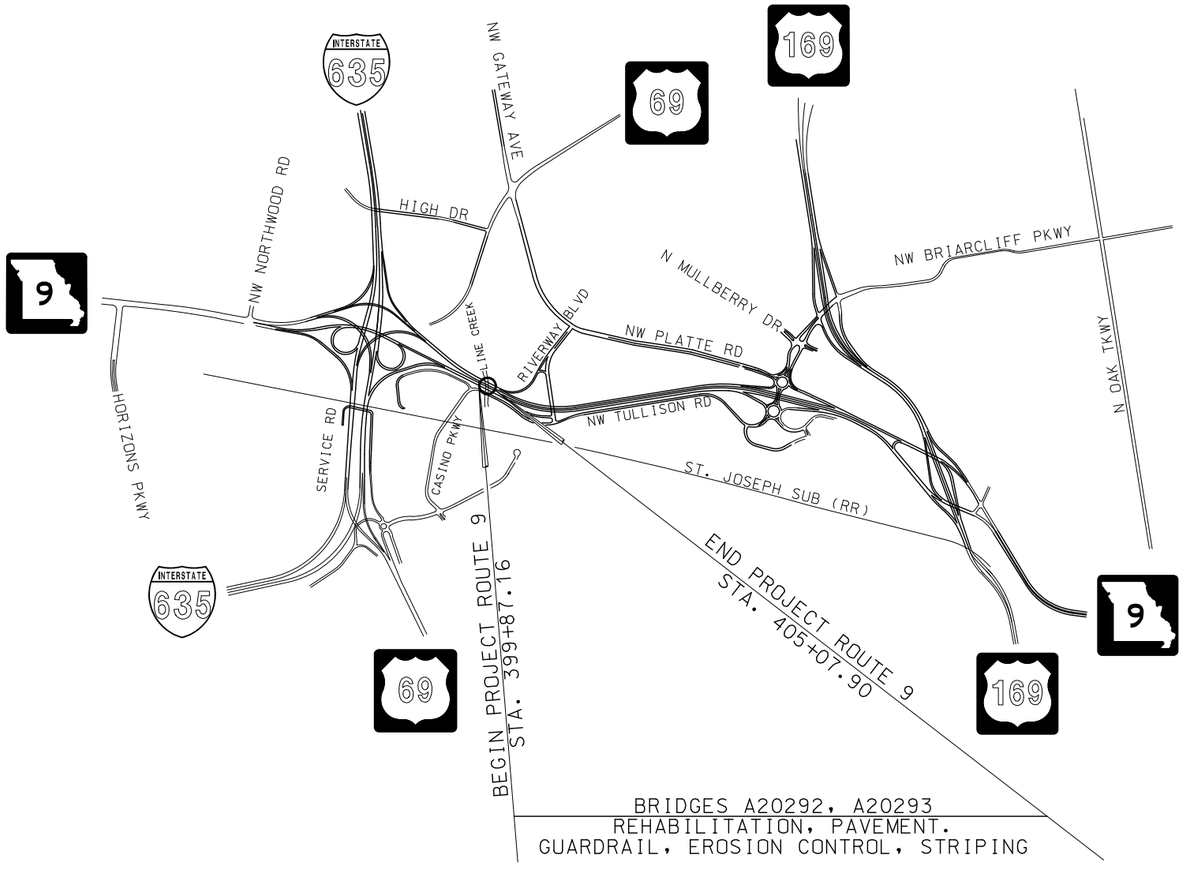
	EXISTING	NEW
BUILDINGS AND STRUCTURES		
GUARD RAIL		
GUARD CABLE		
CONCRETE RIGHT-OF-WAY MARKER		
STEEL RIGHT-OF-WAY MARKER		
LOCATION SURVEY MARKER		
UTILITIES		
FIBER OPTICS	-FO-	FO
OVERHEAD CABLE TV	-OTV-	OTV
UNDERGROUND CABLE TV	-UTV-	UTV
OVERHEAD TELEPHONE	-OT-	OT
UNDERGROUND TELEPHONE	-UT-	UT
OVERHEAD 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		
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 PLATTE COUNTY

SECTION 04, TOWNSHIP 50N, RANGE 33W



NOT TO SCALE

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) (1 SHEET)	2
QUANTITIES (QU) (2 SHEETS)	3
PLAN-PROFILE (PP)	4
REFERENCE POINTS (RP)	5
COORDINATE POINTS (CP)	6
SPECIAL SHEETS (SS)	7-8
EROSION CONTROL SHEETS (EC)	9
SIGNING (SN)	10-15
BRIDGE DRAWINGS (B)	
A20292 (SB)	1-12
A20293 (NB)	1-12

LENGTH OF PROJECT

ROUTE 9
BEGINNING OF PROJECT STA. 399+87.16
END OF PROJECT STA. 405+07.90

APPARENT LENGTH 520.7 FEET

EQUATIONS AND EXCEPTIONS:

TOTAL CORRECTIONS	0	FEET
NET LENGTH OF PROJECT	520.7	FEET
STATE LENGTH	0.098	MILES
FOR INFORMATION ONLY ESTIMATED DISTURBED ACRES	0.00	ACRES

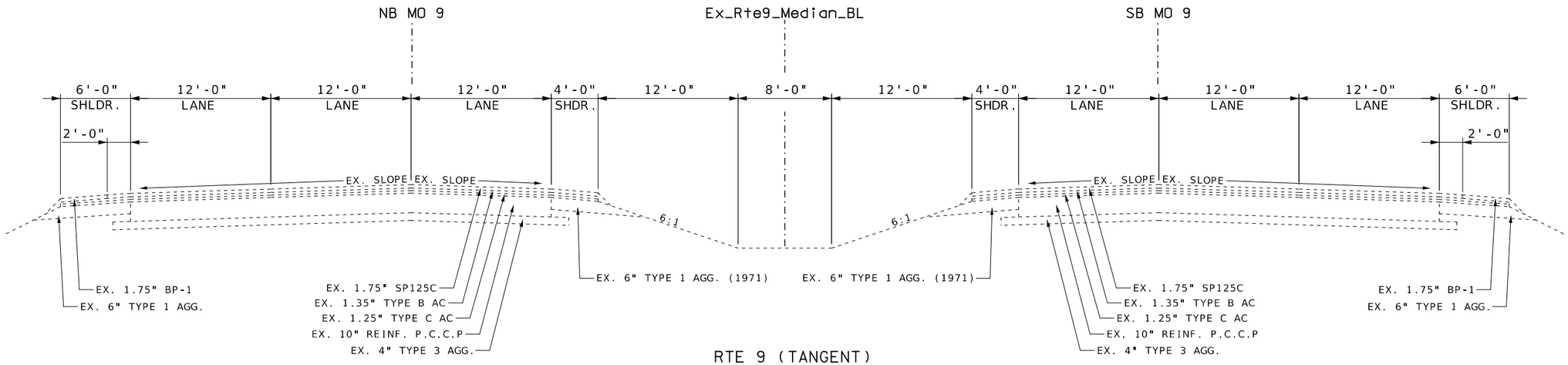
STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
10/28/2024 2:39:29 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED: 10/28/2024
ROUTE: 9 | STATE: MO
DISTRICT: KC | SHEET NO.: 1
COUNTY: PLATTE
JOB NO.: J4S3498
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)

TITLE SHEET



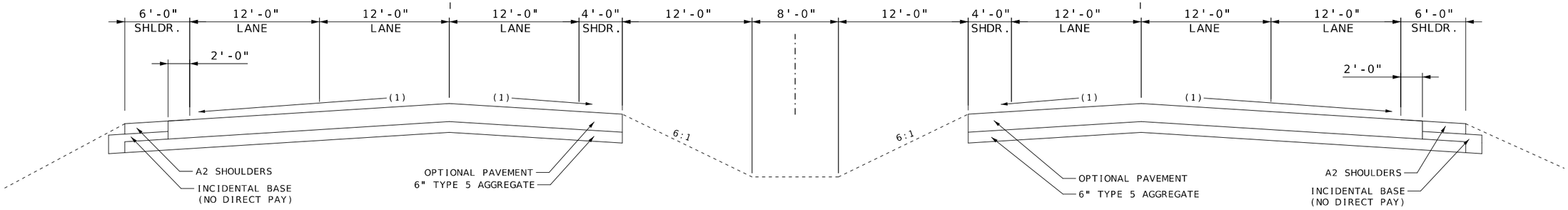
RTE 9 (TANGENT)
EXISTING TYPICAL SECTION
STA. 399+97.19 TO 404+97.67

OPTIONAL PAVEMENT (MAINLINE)

10.0" HMA	8.5" PCCP
2" BP-1 W/ PG 64-22 OVER 8" BB W/ PG 64-22	15 FT. JOINTS AND 1¼" DOWELS

SHOULDER PAVEMENT

A2 SHOULDERS
SEE STD PLAN 401.00C



NB RTE 9 ℄
PROPOSED TYPICAL SECTION
STA. 0+17.95 TO 0+37.95
STA. 4+49.68 TO 4+69.68

SB RTE 9 ℄
PROPOSED TYPICAL SECTION
STA. 0+19.82 TO 0+39.82
STA. 4+52.11 TO 4+72.11

ESTIMATE FACTORS

FOR INFORMATION PURPOSES ONLY	
BP-1 W/ PG64-22	1.984 TON/YD³
BB W/ PG64-22	1.997 TON/YD³

NOTES:
(1). MATCH EXISTING SLOPE.

TYPICAL SECTION SHEET
SHEET 1 OF 1

NOT TO SCALE

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
11/25/2024 9:10:51 AM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED: 11/25/2024
ROUTE: 9 | STATE: MO
DISTRICT: KC | SHEET NO.: 2
COUNTY: PLATTE
JOB NO.: J4S3498
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)

CONTRACTOR FURNISHED SURVEYING	
QUANTITY	1 LUMP SUM

MOBILIZATION	
QUANTITY	1 LUMP SUM

REMOVAL OF IMPROVEMENTS

PLAN SHEET NO.	ALIGNMENT	BEG STA.	END STA.	LOCATION	DESCRIPTION
4	SB_RTE9_BL_98	0+09.69	0+59.69	LT.	50 L.F. EXIST. GUARDRAIL
4	SB_RTE9_BL_98	0+39.74	0+89.74	RT.	50 L.F. EXIST. GUARDRAIL
4	SB_RTE9_BL_98	4+02.77	4+52.77	LT.	50 L.F. EXIST. GUARDRAIL
4	SB_RTE9_BL_98	4+31.96	4+81.96	RT.	50 L.F. EXIST. GUARDRAIL
4	NB_RTE9_BL_98	4+78.91	4+28.91	LT.	50 L.F. EXIST. GUARDRAIL
4	NB_RTE9_BL_98	4+51.00	4+01.00	RT.	50 L.F. EXIST. GUARDRAIL
4	NB_RTE9_BL_98	0+08.40	0+58.40	RT.	50 L.F. EXIST. GUARDRAIL
7	BL ROUTE 9 WB	401+44.67	402+44.65	LT. & RT.	75 L.F. EXIST GUARDRAIL
4	NB_RTE9_BL_98	0+17.95	-	LT. & RT.	45.38 L.F. OF SAWCUTS
4	NB_RTE9_BL_98	4+69.68	-	LT. & RT.	45.40 L.F. OF SAWCUTS
4	SB_RTE9_BL_98	0+19.82	-	LT. & RT.	45.46 L.F. OF SAWCUTS
4	SB_RTE9_BL_98	4+72.11	-	LT. & RT.	45.12 L.F. OF SAWCUTS
4	SB_RTE9_BL_98	0+78.51	-	RT.	1 EACH EXIST. DRAIN BASIN
7	BL ROUTE 9 WB	401+82.01	402+07.31	LT.	31.5 S.Y. CONCRETE PVMT.
7	BL ROUTE 9 WB	401+44.00	402+44.00	LT.	100 L.F. EXIST GUARDRAIL
7	BL ROUTE 9 WB	401+95.00			405 SQ. FT. SIGNS
7	CL ROUTE 9 MEDIAN	405+78.00			310 SQ. FT. SIGNS
4	SB_RTE9_BL_98	0+64.75	0+84.75	LT. & RT.	102.22 S.Y. BRIDGE SLAB
4	SB_RTE9_BL_98	3+98.33	4+18.33	LT. & RT.	102.22 S.Y. BRIDGE SLAB
4	NB_RTE9_BL_98	4+04.84	4+24.84	LT. & RT.	102.22 S.Y. BRIDGE SLAB
4	NB_RTE9_BL_98	0+71.46	0+91.46	LT. & RT.	102.22 S.Y. BRIDGE SLAB
4	SB_RTE9_BL_98	0+19.82	0+64.75	LT. & RT.	251.22 S.Y. CONCRETE PVMT.
4	SB_RTE9_BL_98	4+18.33	4+72.11	LT. & RT.	251.50 S.Y. CONCRETE PVMT.
4	NB_RTE9_BL_98	4+24.84	4+69.68	LT. & RT.	250.55 S.Y. CONCRETE PVMT.
4	NB_RTE9_BL_98	0+17.95	0+71.46	LT. & RT.	250.75 S.Y. CONCRETE PVMT.
					1 LUMP SUM

CRASHWORTHY END TERMINAL REINSTALLATION

PLAN SHEET NO.	BEG STA.	END STA.	ALIGNMENT	LOCATION	MASH CRASHWORTHY END TERMINAL RELOCATION LUMP SUM	REMARKS
4	0+00.00	0+28.76	NB_RTE9_BL_98	LT.	1	SEE JSP
					1	

ROCK BLANKET

PLAN SHEET NO.	STATION	STATION	ALIGNMENT	FURNISHING TYPE 2 ROCK BLANKET C.Y.	PLACING TYPE 2 ROCK BLANKET C.Y.	EROSION CONTROL GEOTEXTILE S.Y.	REMARKS
4	400+15.12	401+81.47	Ex_Rte9_Median_BL	670.9	670.9	992.0	NORTH OF A2029
4	402+43.63	403+52.03	Ex_Rte9_Median_BL	367.5	367.5	454.2	SOUTH OF A2029
			SUBTOTALS	1038.4	1038.4	1446.2	
			PAY TOTALS	1039.0	1039.0	1447.0	

OPTIONAL PAVEMENT AND CONCRETE APPROACH PAVEMENT

PLAN SHEET NO.	BEG. STA.	END STA.	ALIGNMENT	LENGTH L.F.	WIDTH L.F.	OPTIONAL PAVEMENT S.Y.	TYPE A2 SHOULDER S.Y.	TYPE 5 AGG. FOR BASE (6 IN. THICK) S.Y.	CONCRETE APPROACH PAVEMENT S.Y.	LINEAR GRADING CLASS 1 STA.	SUBGRADE COMPACTION 6 INCHES 100 FT.	OPTIONAL RUMBLE STRIPS STA.	CONCRETE PAVEMENT 10.0 IN NON-REINF S.Y.	REMARKS
4	0+17.95	0+37.95	NB_RTE9_BL_98	20	VARIES	93.4	8.2	101.6		0.20	0.20	0.4		TIE INTO EX. SHOULDER
4	0+37.95	0+81.34	NB_RTE9_BL_98	VARIES	46				149.2	0.43	0.43			CONCRETE APPROACH
4	4+06.38	4+49.68	NB_RTE9_BL_98	VARIES	46				149.0	0.43	0.43			CONCRETE APPROACH
4	4+49.68	4+69.68	NB_RTE9_BL_98	20	VARIES	92.7	8.9	101.6		0.20	0.20	0.4		TIE INTO EX. SHOULDER
4	0+19.82	0+39.82	SB_RTE9_BL_98	20	VARIES	93.1	8.5	101.6		0.20	0.20	0.4		TIE INTO EX. SHOULDER
4	0+39.82	0+83.36	SB_RTE9_BL_98	VARIES	46				149.6	0.44	0.44			CONCRETE APPROACH
4	4+08.32	4+52.11	SB_RTE9_BL_98	VARIES	46				150.3	0.44	0.44			CONCRETE APPROACH
4	4+52.11	4+72.11	SB_RTE9_BL_98	20	VARIES	93.1	8.2	101.3		0.20	0.20	0.4		TIE INTO EX. SHOULDER
7	401+82.01	402+07.31	BL ROUTE 9 WB	25.3	VARIES			31.0					31.5	WB SIGN TRUSS
					SUBTOTALS	372.3	33.8	437.1	598.1	2.5	2.5	1.6	31.5	
					PAY TOTALS	372.3	33.8	438	598.1	2.5	3.0	1.6	31.5	

PERMANENT PAVEMENT MARKING (STRIPING)

PLAN SHEET NO.	BEG. STA.	END STA.	ALIGNMENT	HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT, TYPE L BEADS 6" SOLID WHITE L.F.	6" INTERMITTENT WHITE L.F.	12" DOTTED WHITE L.F.	12" SOLID WHITE L.F.	6" SOLID YELLOW L.F.	REMARKS
4	0+17.95	4+69.68	NB_RTE9_BL_98	451.7	112.9	103.9	20.9	451.7	
4	0+19.82	4+72.11	SB_RTE9_BL_98	452.3	113.1	103.6	23.1	452.3	
			SUBTOTALS	904.0	226.0	207.5	44.0	904.0	
			PAY TOTALS	1130.0		252		904	

GENERAL NOTE:

TRAFFIC CONTROL QUANTITIES AND PLAN SHEETS ARE INCLUDED IN PROJECT J4S3498 AND ARE TO BE CONSIDERED INCLUSIVE FOR ALL PROJECTS TO BE LET IN COMBINATION (J4S3496, J4S3497, AND J4S3498).

FOR SIGN TRUSS QUANTITIES, SEE SHEETS 8, 11, AND 12

SUMMARY OF QUANTITIES
SHEET 1 OF 2

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
11/25/2024 9:11:48 AM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED: 11/25/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	3

COUNTY: PLATTE
JOB NO.: J4S3498
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)

GUARDRAIL

PLAN SHEET NO.	BEG STA.	END STA.	ALIGNMENT	STRUCTURE	LOCATION	LENGTH L.F.	MGS GUARDRAIL L.F.	MGS GUARDRAIL 8' POST 6'-3" SPACING L.F.	MGS BRIDGE APPROACH TRANS. SECT. (REGULAR/NO CURB) EACH	SHAPING SLOPES CLASS III (MODIFIED MATERIAL REQUIREMENT) 100 FT.	CONCRETE TRAFFIC BARRIER TYPE D MOMENT SLAB L.F.	REMARKS
4	0+9.69	0+59.69	SB_RTE9_BL_98	A20292	RT.	50.0	12.5		1	1		
4	0+39.74	0+89.74	SB_RTE9_BL_98	A20292	LT.	50.0	12.5		1	1		
4	4+02.77	4+52.77	SB_RTE9_BL_98	A20292	RT.	50.0	12.5		1	1		
4	4+31.96	4+81.96	SB_RTE9_BL_98	A20292	LT.	50.0	12.5		1	1		
4	4+78.91	4+28.91	NB_RTE9_BL_98	A20293	RT.	50.0	12.5		1	1		
4	4+51.00	4+01.00	NB_RTE9_BL_98	A20293	LT.	50.0		12.5	1	1		
4	0+08.40	0+58.40	NB_RTE9_BL_98	A20293	LT.	50.0		12.5	1	1		
7	401+44.67	402+44.65	BL ROUTE 9 WB		RT.	100.0			2			WESTBOUND TRUSS
7	401+82.01	402+07.31	BL ROUTE 9 WB		RT.	25.3					25	WESTBOUND TRUSS
						SUBTOTALS	62.5	25.0	9.0	7.0	25.0	
						PAY TOTALS	63	25	9	7	25	

TEMPORARY EROSION CONTROL

PLAN SHEET NO.	ALIGNMENT	BEGIN STATION	END STATION	LOCATION	SILT FENCE L.F.	ROCK DITCH CHECK L.F.	TYPE C BERM L.F.	SEDIMENT REMOVAL C.Y.	REMARKS
9	NB_RTE9_BL_98	0+06.03	2+07.99	LT & RT	494.9			4.9	
9	SB_RTE9_BL_98	2+33.71	4+91.41	LT & RT	354.8			3.5	
9	Ex_Rte9_Median_BL	398+77.11	-	LT & RT		36.0		3.6	ROCK DITCH CHECK - 150' SPACING
9	Ex_Rte9_Median_BL	400+27.11	-	LT & RT		31.2		3.1	ROCK DITCH CHECK - 150' SPACING
9	Ex_Rte9_Median_BL	404+47.87	-	LT & RT		34.1		3.4	ROCK DITCH CHECK - BY DROP INLET
9	Ex_Rte9_Median_BL	404+62.45	-	LT & RT		34.1		3.4	ROCK DITCH CHECK - 100' SPACING
9	Ex_Rte9_Median_BL	405+62.45	-	LT & RT		34.2		3.4	ROCK DITCH CHECK - 100' SPACING
9	Ex_Rte9_Median_BL	402+38.88	403+43.07	LT & RT			206.0	6.9	
			SUBTOTALS		849.7	169.6	206.0	32.2	
			PAY TOTALS		850	170.0	206.0	33.0	

GENERAL NOTE:

TRAFFIC CONTROL QUANTITIES AND PLAN SHEETS ARE INCLUDED IN PROJECT J4S3498 AND ARE TO BE CONSIDERED INCLUSIVE FOR ALL PROJECTS TO BE LET IN COMBINATION (J4S3496, J4S3497, AND J4S3498).

FOR SIGN TRUSS QUANTITIES, SEE SHEETS 8, 11, AND 12

SUMMARY OF QUANTITIES
SHEET 2 OF 2

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
10/28/2024 4:33:06 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
10/28/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	3

COUNTY
PLATTE

JOB NO.
J4S3498

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)

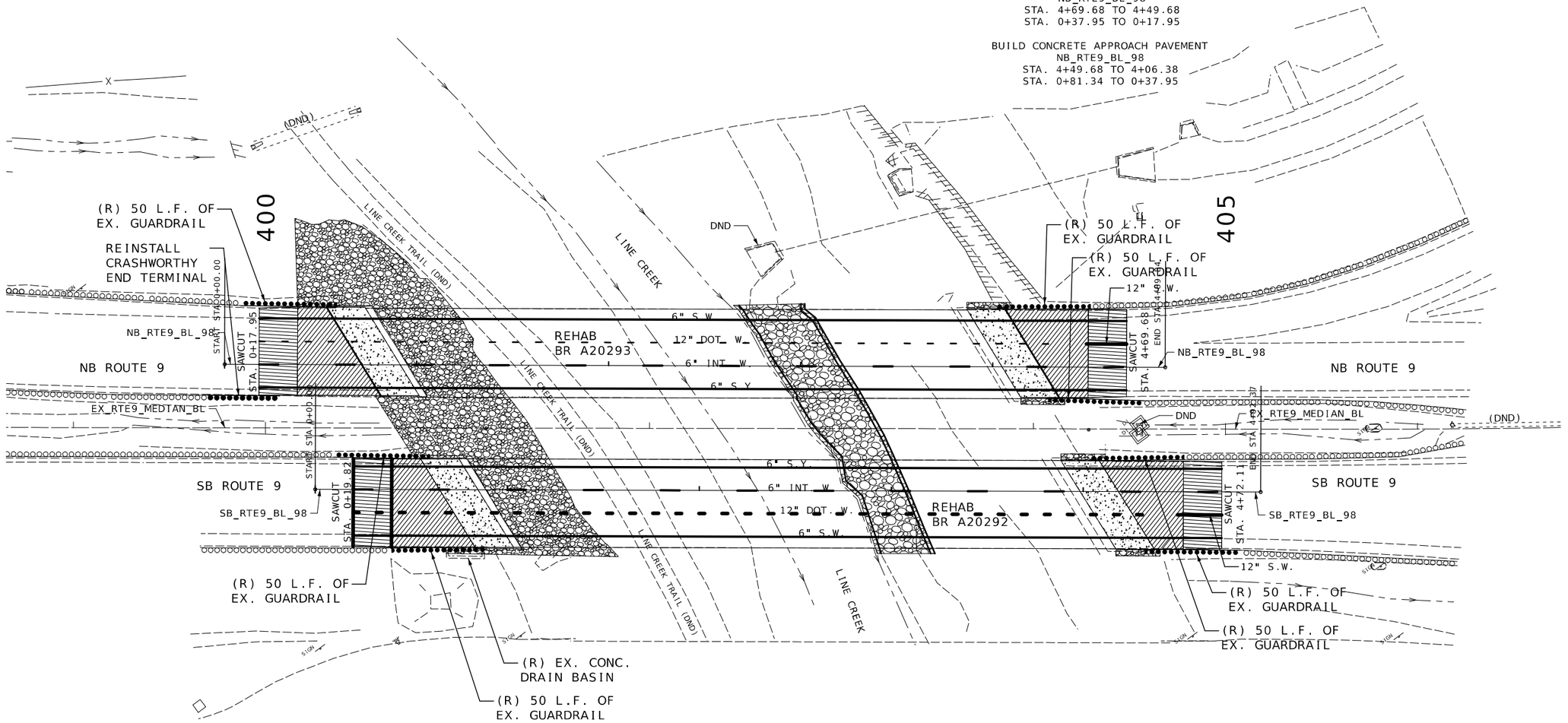
BUILD MGS (8' POSTS) GUARDRAIL
NB_RTE9_BL_98
STA. 0+08.40 TO 0+28.90, OFFSET 30.59 LT, 12.5'
STA. 4+51.00 TO 4+38.50, OFFSET 30.31 LT, 12.5'
BUILD MGS GUARDRAIL
NB_RTE9_BL_98
STA. 4+78.91 TO 4+66.41, OFFSET 17.46 RT, 12.5'
BUILD MGS BRIDGE APPROACH SECTION
STA. 0+28.90 TO 0+58.40, OFFSET 30.59 LT, 1 EACH
STA. 4+38.50 TO 4+01.00, OFFSET 30.31 LT, 1 EACH
STA. 4+66.41 TO 4+28.91, OFFSET 17.46 RT, 1 EACH

STRIPING LEGEND

- 6" INTERMITTENT WHITE (I.W.) HIGH BUILD PAINT, TYPE L BEADS
- 6" DOTTED WHITE (DOT. W.) HIGH BUILD PAINT, TYPE L BEADS
- 6" SOLID WHITE (S.W.) HIGH BUILD PAINT, TYPE L BEADS
- 6" SOLID YELLOW (S.Y.) HIGH BUILD PAINT, TYPE L BEADS
- 12" SOLID WHITE (S.W.) HIGH BUILD PAINT, TYPE L BEADS

BUILD OPTIONAL PAVEMENT & A2 SHOULDER
NB_RTE9_BL_98
STA. 4+69.68 TO 4+49.68
STA. 0+37.95 TO 0+17.95

BUILD CONCRETE APPROACH PAVEMENT
NB_RTE9_BL_98
STA. 4+49.68 TO 4+06.38
STA. 0+81.34 TO 0+37.95



BRIDGE APPROACH SLAB

CONCRETE APPROACH PAVEMENT

OPTIONAL PAVEMENT & A2 SHOULDER

TYPE II ROCK BLANKET (2' THICK)
W/ PERM. EROSION CONTROL GEOTEXTILE

BUILD MGS GUARDRAIL
SB_RTE9_BL_98
STA. 0+09.69 TO 0+22.19, OFFSET 16.74 LT, 12.5'
STA. 0+39.74 TO 0+52.24, OFFSET 30.48 RT, 12.5'
STA. 4+40.27 TO 4+52.77, OFFSET 15.99 LT, 12.5'
STA. 4+69.46 TO 4+81.96, OFFSET 30.00 LT, 12.5'
BUILD MGS BRIDGE APPROACH SECTION
STA. 0+22.19 TO 0+59.69, OFFSET 16.74 LT, 1 EACH
STA. 0+52.24 TO 0+89.74, OFFSET 30.48 LT, 1 EACH
STA. 4+02.77 TO 4+40.27, OFFSET 15.99 LT, 1 EACH
STA. 4+31.96 TO 4+69.46, OFFSET 30.00 LT, 1 EACH

BUILD CONCRETE APPROACH PAVEMENT
SB_RTE9_BL_98
STA. 0+39.82 TO 0+83.36
STA. 4+08.32 TO 4+52.11

BUILD OPTIONAL PAVEMENT & A2 SHOULDER
SB_RTE9_BL_98
STA. 0+19.82 TO 0+39.82
STA. 4+52.11 TO 4+72.11

NOTE: 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

SCALE
0 30 60 90

PLAN SHEET
SHEET 1 OF 1

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
10/28/2024 4:33:47 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
10/28/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	4

COUNTY
PLATTE

JOB NO.
J4S3498

CONTRACT ID.

PROJECT NO.

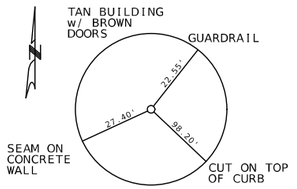
BRIDGE NO.

DESCRIPTION	DATE

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

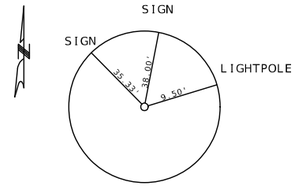
REFERENCE POINTS:

CONTROL POINT #1



CP#1 - SET 5/8" BAR
W/ PINK MODOT CAP
NORTHING = 1,092,845.959
EASTING = 2,756,013.295
ELEVATION = 766.26

CONTROL POINT #2



CP#2 - CUT ON TOP OF
CURB AT NB TULLISON
NORTHING = 1,092,770.027
EASTING = 2,756,075.490
ELEVATION = 766.35

REFERENCE POINT SHEET
SHEET 1 OF 1

10/28/2024 2:02:16 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED	
10/17/2024	
ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	5
COUNTY	
PLATTE	
JOB NO.	
J4S3498	
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)

COORDINATE POINT LISTING

SHEET NO	STATION	LOCATION	OFFSET (USFT)	MODIFIED STATE PLANE (GROUND) NORTHING (US SURVEY FT)	EASTING (US SURVEY FT)	ELEVATION (US SURVEY FT)	DESCRIPTION	GPK POINT ID
PROJECT CONTROL POINTS								
-	4+59.01	SB ROUTE 9 BL	54.02	1,092,845.96	2,756,013.30	766.26	5/8" BAR w/ PINK MODOT CAP, BURIED 5' BELOW GROUND	CP#1
-	405+79.74	EX ROUTE 9 MEDIAN BL	110.66	1,092,770.03	2,756,075.49	766.35	CUT ON TOP OF CURB ALONG NB TULLISION	CP#2
ALIGNMENTS								
-	395+00.00	EX ROUTE 9 MEDIAN BL	0	1,093,502.79	2,755,274.34	-	P.O.T - EX_RTE9_MEDIAN_BL	
-	405+21.56	EX ROUTE 9 MEDIAN BL	0	1,092,893.71	2,756,094.46	-	T.S. - EX_RTE9_MEDIAN_BL	
-	408+21.56	EX ROUTE 9 MEDIAN BL	0	1,092,721.26	2,756,339.84	-	S.C. - EX_RTE9_MEDIAN_BL	
-	417+20.45	EX ROUTE 9 MEDIAN BL	0	1,092,436.93	2,757,183.85	-	C.S. - EX_RTE9_MEDIAN_BL	
-	420+13.20	EX ROUTE 9 MEDIAN BL	0	1,092,425.77	2,757,483.56	-	S.T. - EX_RTE9_MEDIAN_BL & STA. EQN.	
-	425+00.06	EX ROUTE 9 MEDIAN BL	0	1,092,420.38	2,757,971.39	-	P.O.T - EX_RTE9_MEDIAN_BL	
4	0+00.00	NB ROUTE 9 BL	0	1,093,243.93	2,755,678.36	-	P.O.C. - BL_NB_RTE9_98 (BEGIN)	
4	4+89.84	NB ROUTE 9 BL	0	1,092,951.13	2,756,071.06	-	P.O.C. - BL_NB_RTE9_98 (END)	
4	0+00.00	SB ROUTE 9 BL	0	1,093,163.54	2,755,677.51	-	P.O.C. - BL_SB_RTE9_98 (BEGIN)	
4	4+92.37	SB ROUTE 9 BL	0	1,092,869.34	2,756,072.32	-	P.O.C. - BL_SB_RTE9_98 (END)	
7	391+51.50	ROUTE 9 NB	0	1,094,082.88	2,754,867.59	-	P.O.T. - BL ROUTE 9 NB	
7	396+40.97	ROUTE 9 NB	0	1,093,708.54	2,755,182.95	-	P.C. - BL ROUTE 9 NB	
7	399+74.65	ROUTE 9 NB	19.37 RT	1,093,453.34	2,755,397.94	-	P.I. - BL ROUTE 9 NB	
7	403+05.34	ROUTE 9 NB	0	1,093,254.39	2,755,665.82	-	P.T .- BL ROUTE 9 NB	
7	403+42.95	ROUTE 9 NB	0	1,093,231.97	2,755,696.01	-	P.O.T. - BL ROUTE 9 NB	

ALL PROJECT COORDINATES HAVE BEEN PROJECTED FROM THE MISSOURI STATE PLANE COORDINATE (SPC) SYSTEM OF 1983 USING AN AVERAGE PROJECT PROJECTION (GRID TO GROUND) FACTOR. TO GET BACK TO STATE PLANE COORDINATES, MULTIPY THE PROJECT COORDINATES BY THE AVERAGE GRID FACTOR AS SHOWN IN THE "REFERENCE CONTROL INFORMATION" PORTION OF THIS TABLE.

PROJECT COORDINATE INFORMATION

COORDINATE SYSTEM	MODIFIED STATE PLANE(GROUND)
HORIZONTAL DATUM	NAD83
VERTICAL DATUM	NAVD88
GEOID MODEL	GEOID18
ELEVATIONS DETERMINED BY	GPS OBSERVATION
PROJECT PROJECTION FACTOR	1.00009901

REFERENCE CONTROL INFORMATION

COORDINATE SYSTEM	MO COORDINATE SYSTEM OF 1983
CONTROL STATION	MO GEOGRAPHIC REFERENCE SYSTEM
DESIGNATION	PL-19
CORS_ID	XX
PID	165019
LATITUDE	39°11'34.56360"
LONGITUDE	94°36'55.61883
NORTHING (M)	335873.5350
EASTING (M)	840026.8120
ZONE	WEST
PROJECT AVERAGE GRID FACTOR	0.99990100

EXAMPLE OF PROJECT COORDINATE TO S.P.C.

PROJECT NORTHING X AVERAGE GRID FACTOR
= STATE PLANE NORTHING
PROJECT EASTING X AVERAGE GRID FACTOR
= STATE PLANE EASTING

EXAMPLE: CONTROL POINT #1
N 1092845.96 X 0.99990100 = N 1092737.768
E 2756013.30 X 0.99990100 = E 2755740.455

LINEAR UNIT CONVERSION

1 METER = 3.280833333 US SURVEY FEET (USFT)

COORDINATE POINT SHEET
SHEET 1 OF 1

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER

10/28/2024 2:01:36 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
10/17/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	6

COUNTY
PLATTE

JOB NO.
J4S3498

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)

STA. 401+44.67 TO STA. 402+44.65
REMOVE EXISTING GUARDRAIL
CONNECT TO EXIST. GUARDRAIL
BUILD MGS BRIDGE APPROACH TRANSITION SECTION (REGULAR/NO CURB)
BUILD 25' CONCRETE TRAFFIC BARRIER, TYPE D (MOMENT SLAB)
BUILD MGS BRIDGE APPROACH TRANSITION SECTION (REGULAR/NO CURB)

SCALE
0 20 40 60

EQUATION
STA. 403+42.95 ℄ ROUTE 9 NB (BACK)=
STA. 400+00.00 ℄ ROUTE 9 MEDIAN (AHEAD), 34.00' LT

EOP STA 401+82.01 OFF 24.00' LT.
EOS STA 401+82.01 OFF 34.00' LT.
EOS STA 402+07.31 OFF 34.00' LT.
EOP STA 402+07.31 OFF 24.00' LT.

PT STA 403+05.34

400

℄ ROUTE 9 NB

SAW CUT

NB ROUTE 9

S53°23'59"E

LINE CREEK

℄ MEDIAN ROUTE 9

S53°23'59"E

SB ROUTE 9

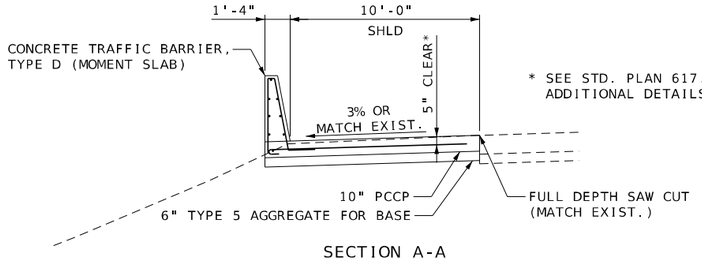
SEE SURVEY NOTES

SIGN

SEE SURVEY NOTES

SEE SURVEY NOTES

PI 399+74.65
PC 396+40.97
PT 403+05.34
Δ 13°17'14.6" (LT)
D 2°0'0.0"
L 664.37' (ARC)
T 333.68'
R 2,864.79'



SECTION A-A

* SEE STD. PLAN 617.10 FOR ADDITIONAL DETAILS

SPECIAL SHEET
GUARDRAIL AND BARRIER

SHEET 1 OF 2

STATE OF MISSOURI
DOUGLAS B. PARKE
NUMBER PE-2011011130
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED
10/18/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	7

COUNTY
PLATTE

JOB NO.
J4S3498

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)

TRANSYSTEMS
2400 PERSHING ROAD, SUITE 400
KANSAS CITY, MO 64108
PHONE: (816)329-8600
FAX: (816)328-8601
MO STATE CERT. OF AUTHORITY # 273, ENGINEERING

Estimated Quantities

Item		Total
Protective Coating - Concrete Bents or Piers (Epoxy)	lump sum	1
Surface Preparation for Recoating Structural Steel	lump sum	1
Field Application of Inorganic Zinc Primer	lump sum	1
Intermediate Field Coat (System G)	lump sum	1
Finish Field Coat (System G)	lump sum	1

GENERAL NOTES:

Structural Steel Protective Coatings (Recoating):

Protective Coating:
System G in accordance with Sec 1081.

Surface Preparation:
Surface preparation of the existing steel shall be in accordance with Sec 1081 for Recoating of Structural Steel (System G) with inorganic zinc primer. The cost of surface preparation will be considered completely covered by the contract lump sum price for Surface Preparation for Recoating Structural Steel.

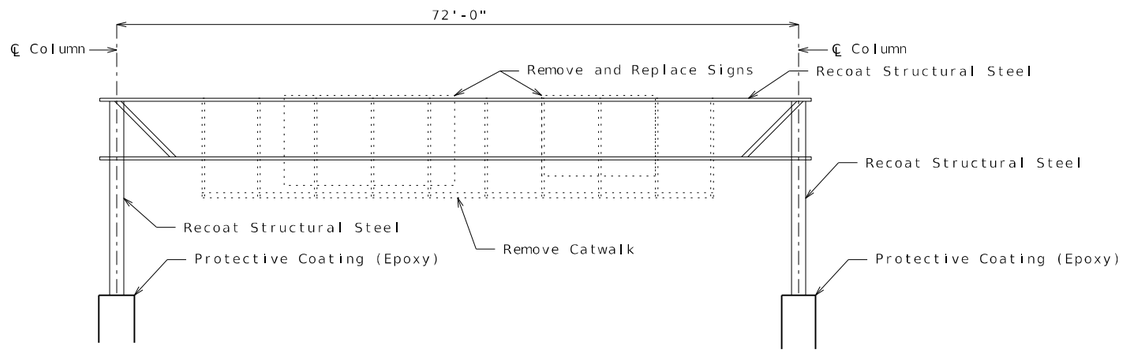
Prime Coat:
The cost of the prime coat will be considered completely covered by the contract lump sum price for Field Application of Inorganic Zinc Primer.

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

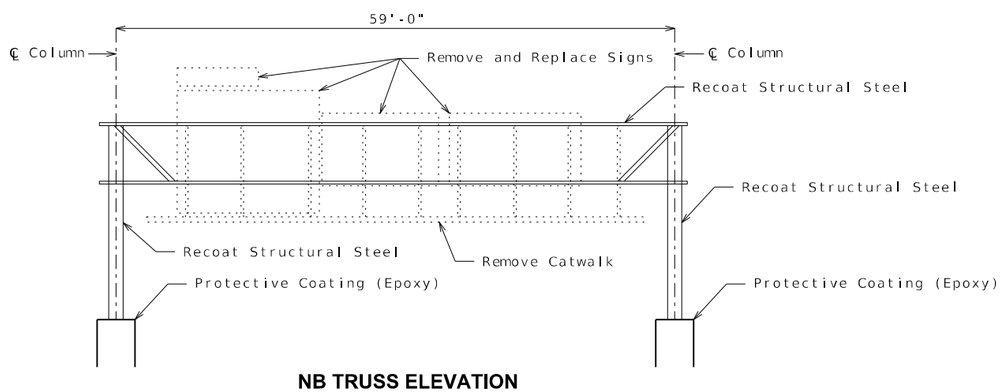
Concrete Protective Coatings:
Protective coating for concrete (Epoxy) shall be applied as shown and in accordance with Sec 711.

Any existing coatings shall be removed prior to installation of new Epoxy.

Catwalk Removal:
Vertical hangers supporting catwalk shall be cut at bottom of sign or bottom of truss prior to recoating structural steel. The cost of catwalk removal will be considered completely covered by lump sum price for Surface Preparation for Recoating Structural Steel.



SB TRUSS ELEVATION
Station 405+78.46



NB TRUSS ELEVATION
Station 401+95.46

SPECIAL SHEET
SIGN TRUSS RECOATING

SHEET 2 OF 2

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

STATE OF MISSOURI
DOUGLAS B. PARKE
NUMBER PE-2011011130
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED: 10/18/2024
ROUTE: 9 | STATE: MO
DISTRICT: KC | SHEET NO.: 8
COUNTY: PLATTE
JOB NO.: J4S3498
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)

TRANSYSTEMS
2400 PERSHING ROAD, SUITE 400
KANSAS CITY, MO 64108
PHONE: (816)329-8600
FAX: (816)328-8601
MO STATE CERT. OF AUTHORITY # 273, ENGINEERING

SILT FENCE = 849.7 LF
NB_RTE9_BL_98
STA. 0+06.03 TO 2+07.99
SB_RTE9_BL_98
STA. 2+33.71 TO 4+91.41

ROCK DITCH CHECKS = 169.6 LF
@ 100' AND 150' SPACING
EX BL MEDIAN RTE 9
STA. 398+77.11
STA. 400+27.11
STA. 404+47.87
STA. 404+62.45
STA. 405+62.45

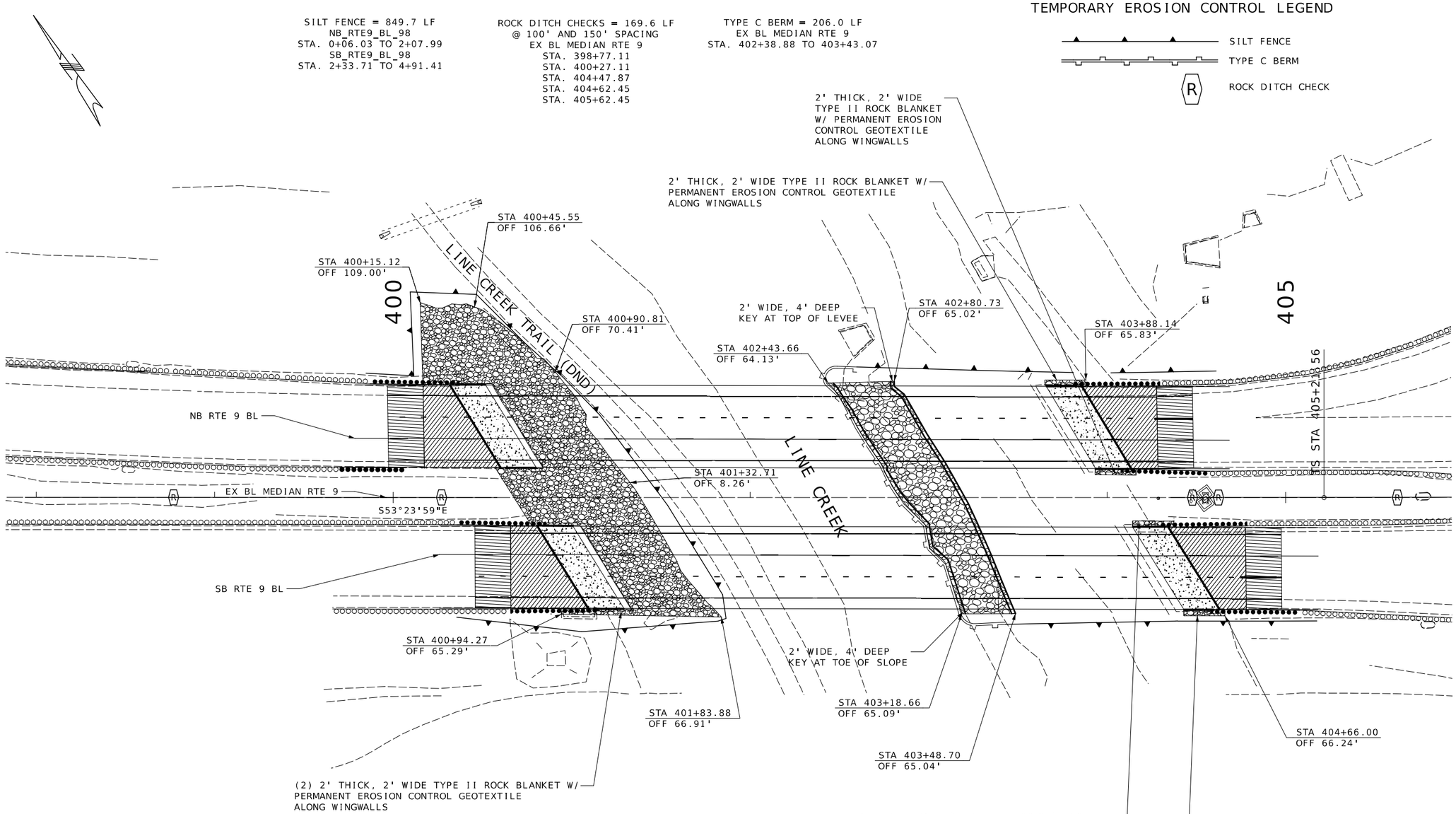
TYPE C BERM = 206.0 LF
EX BL MEDIAN RTE 9
STA. 402+38.88 TO 403+43.07

TEMPORARY EROSION CONTROL LEGEND

SILT FENCE

TYPE C BERM

(R) ROCK DITCH CHECK



GENERAL NOTES:
(1) ALL TYPE II ROCK BLANKET SHALL BE FLUSH W/ EXISTING GROUND LINE
(2) RUBBLIZED EX. BRIDGE DECK MAY BE USED ON SPILL SLOPES AND ALONG WIGNWALLS BUT SHALL MEET CLEAN FILL REQUIREMENTS
(3) ADJUST TEMPORARY AND PERMANENT EROSION CONTROL MEASURES AS NECESSARY TO MEET FIELD CONDITIONS AS DIRECTED BY THE ENGINEER
(4) SURFACE PREPARATION FOR PLACING TYPE 2 ROCK BLANKET SHALL BE SUBSIDIARY TO PAY ITEM 'PLACING TYPE 2 ROCK BLANKET

TYPE II ROCK BLANKET (2' THICK) W/ PERM. EROSION CONTROL GEOTEXTILE

SCALE
0 30 60 90

EROSION CONTROL
SHEET 1 OF 1

STATE OF MISSOURI
HEATHER R. BARROWS
NUMBER PE-2016040670
PROFESSIONAL ENGINEER
10/28/2024 2:38:41 PM
HEATHER R. BARROWS - CIVIL
MO-PE-2016040670

DATE PREPARED
10/28/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	9

COUNTY
PLATTE

JOB NO.
J4S3498

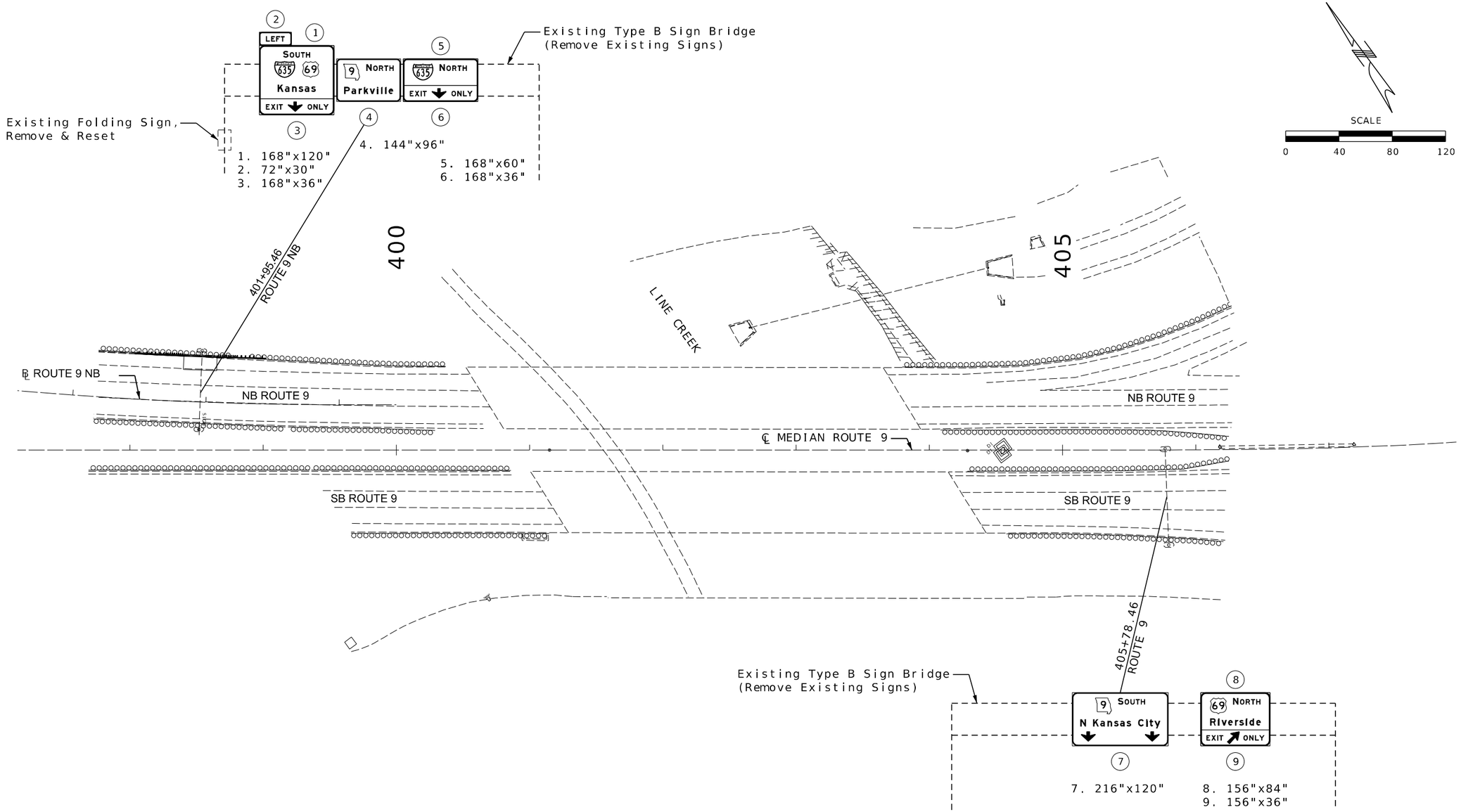
CONTRACT ID.
X

PROJECT NO.
X

BRIDGE NO.
X

DESCRIPTION	DATE

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



SIGNING PLAN

STATE OF MISSOURI
MATTHEW PARKER
NUMBER PE-2011009043
10/21/2024
PROFESSIONAL ENGINEER

DATE PREPARED 10/18/2024
ROUTE 9 | STATE MO
DISTRICT KC | SHEET NO. 10
COUNTY PLATTE
JOB NO. J4S3498
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)

TRANSYSTEMS
2400 PERSHING ROAD, SUITE 400
KANSAS CITY, MO 64108
PHONE: (816)329-8600
FAX: (816)328-8601
MO STATE CERT. OF AUTHORITY # 273, ENGINEERING

EFFECTIVE: 07-01-2024

SIGNS						CONCRETE FOOTINGS EMBEDDED	STRUCTURAL STEEL POSTS *						PIPE POSTS *					BACKING BARS **				U-CHANNEL POST	PERFORATED SQUARE STEEL TUBE												BREAK-AWAY ASSEMBLY	REMARKS AND OTHER REQUIRED ITEMS
902 SIGNAL SIGNS TABULATED ON D-37A SHEET																							2 IN. POST						2.5 IN. POST							
																										ANCHORS					ANCHORS				
SIGN NO.	SIGN SIZE	STATION	HORZ CLEAR IF NOT STD	LOCATION	SIGN DTL. SHT. NO.	ITEM NO. 9031010	POST DES NO.	POST NO.1	POST NO.2	POST NO.3	LBS PER FT	TOTAL ITEM NO. 9031210	PIPE SIZE	POST NO.1	POST NO.2	LBS PER FT	TOTAL ITEM NO. 9031220	2" X 3/8" BARS @ 2.55 LBS PER FT NO. EACH	LGTH	TOTAL	TOTAL	ITEM NO. 9031250A	POST NO.1	POST NO.2	TOTAL ITEM NO. 9031270A	DRIVEN 12-GA. ITEM NO. 9031271A	DRIVEN 7-GA. ITEM NO. 9031273A	CONCRETE 7-GA. ITEM NO. 9031274	POST NO.1	POST NO.2	TOTAL ITEM NO. 9031280	2.25" INSERT (6 FT) ITEM NO. 9031272A	DRIVEN 7-GA. ITEM NO. 9031281A	CONCRETE 7-GA. ITEM NO. 9031285	ITEM NO. 9031241	
						CY		LF	LF	LF		LBS	IN.	LF	LF		LBS		IN.	LF	LBS	LF	LF	LF	LF	EA	EA	EA	LF	LF	LF	EA	EA	EA	EA	
1	168"x120"	401+95		ROUTE 9 NB	13																															EXISTING TYPE B SIGN BRIDGE
2	72"x30"	401+95		ROUTE 9 NB	13																															EXISTING TYPE B SIGN BRIDGE
3	168"x36"	401+95		ROUTE 9 NB	13																															EXISTING TYPE B SIGN BRIDGE
4	144"x96"	401+95		ROUTE 9 NB	13																															EXISTING TYPE B SIGN BRIDGE
5	168"x60"	401+95		ROUTE 9 NB	13																															EXISTING TYPE B SIGN BRIDGE
6	168"x36"	401+95		ROUTE 9 NB	13																															EXISTING TYPE B SIGN BRIDGE
7	216"x120"	405+78		ROUTE 9 SB	13																															EXISTING TYPE B SIGN BRIDGE
8	156"x84"	405+78		ROUTE 9 SB	13																															EXISTING TYPE B SIGN BRIDGE
9	156"x36"	405+78		ROUTE 9 SB	13																															EXISTING TYPE B SIGN BRIDGE
SUBTOTAL																																				
TOTAL																					**															

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

ROUND PIPE POST AND FOOTING DATA TABLE

NOM.SIZE	WEIGHT		STUB LENGTH	FOOTING		CONCRETE
(IN.)	LBS/FT	LBS/IN		DIA.	DEPTH	C.Y.
2½	5.79	0.48	4'- 3½"	12"	4-6"	0.13
4	10.79	0.90	5'- 3½"	18"	5-6"	0.36

STRUCTURAL STEEL POST AND FOOTING DATA TABLE

POST					FOOTING									
POST DES. NO.	NOM. SIZE	WEIGHT LBS/FT	WEIGHT LBS/IN	STUB LENGTH	DIA.	LEVEL GROUND DEPTH	LEVEL GROUND C.Y.	6:1 GRADE DEPTH	6:1 GRADE C.Y.	4:1 GRADE DEPTH	4:1 GRADE C.Y.	3:1 OR 2:1 GRADE DEPTH	3:1 OR 2:1 GRADE C.Y.
1	W6	9.0	0.75	3'-0"	15"	3'-0"	0.14	3'-2"	0.15	3'-3"	0.16	3'-6"	0.17
2	W6	15.0	1.25	4'-0"	24"	4'-0"	0.47	4'-2"	0.50	4'-3"	0.51	4'-6"	0.54
3	W8	18.0	1.50	4'-6"	28"	4'-6"	0.71	4'-8"	0.73	4'-9"	0.74	5'-0"	0.78
4	W10	22.0	1.83	5'-0"	36"	5'-0"	1.31	5'-2"	1.36	5'-3"	1.39	5'-6"	1.45
5	W10	26.0	2.17	5'-0"	36"	5'-0"	1.31	5'-3"	1.37	5'-5"	1.43	5'-9"	1.52
6	W12	35.0	2.92	5'-6"	36"	5'-6"	1.44	5'-9"	1.52	5'-11"	1.56	6'-3"	1.65

MATTHEW PARKER
NUMBER PE-2011009043
10/21/2024
PROFESSIONAL ENGINEER

DATE PREPARED: 10/18/2024
ROUTE: 9 | STATE: MO
DISTRICT: KC | SHEET NO.: 11
COUNTY: PLATTE
JOB NO.: J4S3498
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)

TRANSYSTEMS
2400 PERSHING ROAD, SUITE 400
KANSAS CITY, MO 64108
PHONE: (816)329-8600
FAX: (816)328-8601
MO STATE CERT. OF AUTHORITY # 273, ENGINEERING

EFFECTIVE: 10-01-2016

STANDARD SIGN ASSEMBLIES

SIGN NUMBER	STATION	LOCATION	TYPE SIGN DESCRIPTION, SIZES & NUMBER OF EACH

SIGN SUMMARY

STANDARD SIGN OR SPECIAL SIGN NUMBER	SIGN DETAIL SHEET NO.	NO. EACH	SIZE, TYPE & SQUARE FEET SIZE	FLAT SHEET SH ITEM NO. 9035004A	FLAT SHEET FLUORESCENT SHF * ITEM NO. 9035069A	STRUCTURAL ST ITEM NO. 9035011A	STRUCTURAL FLUORESCENT STF * ITEM NO. 9035071A
1 (E1-1)	13	1	14'x10'			140.0	
2 (E1-5aP)	13	1	6'x2.5'				15.0
3,6 (E11-1)	13	2	14'x3'				84.0
4 (E1-1)	13	1	12'x8'			96.0	
5 (E1-1)	13	1	14'x5'			70.0	
7 (E1-1)	13	1	18'x10'			180.0	
8 (E1-1)	13	1	13'x7'			91.0	
9 (E11-1d)	13	1	13'x3'				39.0

NOTE:
ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED

MO 9
NORTHBOUND

SIGN #1, #2, #3

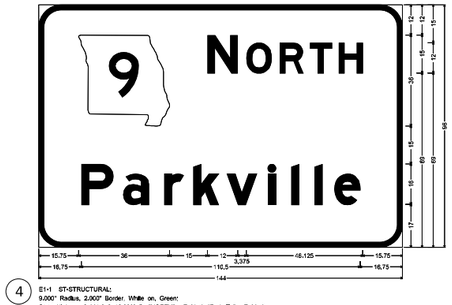
2 E1-5x3P ST+STRUCTURAL FLUORESCENT:
6,000" Radius, 1,500" Border, Black on, Yellow:
"LEFT", E Mod:

1 E1-1 ST+STRUCTURAL:
12,000" Radius, 2,000" Border, White on, Green:
"SOUTH", E Mod: Interstate 635 18,000" R: "Kansas", E Mod:

3 E1-1 ST+STRUCTURAL FLUORESCENT:
12,000" Radius, 2,000" Border, Black on, Yellow:
"EXIT", E Mod: Down Arrow 27,000" 270°: "ONLY", E Mod:
Table of letter and object bbfs

L 14,875	E 26,250	F 37,625	T 46,250
S 53,625	O 68,375	U 81,375	H 93,500	104,875
ⓘ 34,500	ⓢ 97,500		
K 41,250	a 57,500	h 73,750	s 89,375	a 102,000	s 116,625
E 14,500	X 25,875	I 38,750	T 43,625	➧ 54,500	O 108,500	N 121,625	L 134,250	Y 144,000

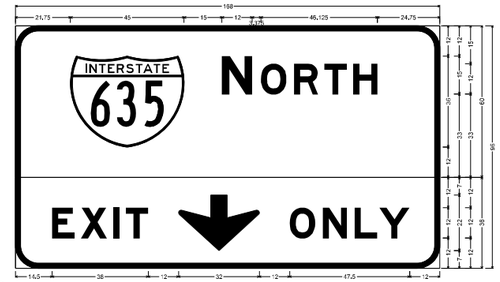
SIGN #4



4 E1-1 ST+STRUCTURAL:
9,000" Radius, 2,000" Border, White on, Green:
State Highway 9 M1-9x3 18,000" D: "NORTH", E Mod: "Parkville", E Mod:
Table of letter and object bbfs

ⓢ 15,750	N 66,750	O 82,125	R 95,250	T 107,250	H 118,750
P 16,750	a 33,375	r 49,625	k 61,125	v 74,375	e 80,875	l 100,000	l 109,125	e 117,000

SIGN #5, #6



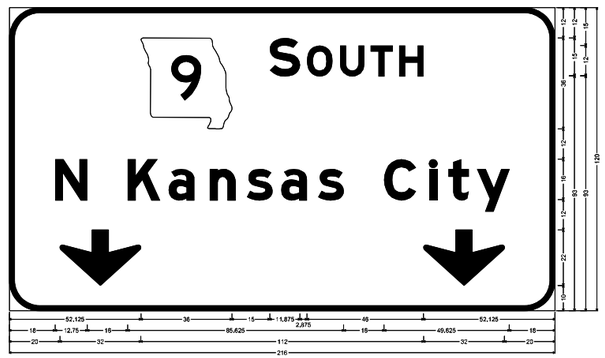
5 E1-1 ST+STRUCTURAL:
9,000" Radius, 2,000" Border, White on, Green:
Interstate 635 18,000" R: "NORTH", E Mod:

6 E1-1 ST+STRUCTURAL FLUORESCENT:
9,000" Radius, 2,000" Border, Black on, Yellow:
"EXIT", E Mod: Down Arrow 27,000" 270°: "ONLY", E Mod:
Table of letter and object bbfs

ⓘ 21,750	N 61,750	O 81,125	R 110,250	T 122,250	H 133,750	
E 14,500	X 25,875	I 38,750	T 43,625	➧ 64,500	O 108,500	N 121,625	L 134,250	Y 144,000

MO 9
SOUTHBOUND

SIGN #7



7 E1-1 ST+STRUCTURAL:
12,000" Radius, 2,000" Border, White on, Green:
State Highway 9 M1-9x3 18,000" D: "SOUTH", E Mod: "N Kansas City", E Mod: Down Arrow 22,000" 270°: Down Arrow 22,000" 270°:
Table of letter and object bbfs

ⓢ 52,125	S 103,125	O 117,875	U 130,875	T 143,000	H 154,375	
N 18,000	K 49,750	a 83,000	n 79,250	s 94,000	a 107,625	s 122,250	C 146,375	I 166,375	T 173,875	Y 185,125
➧ 39,000	➧ 164,000									

SIGN #8, #9

8 E1-1 ST+STRUCTURAL:
12,000" Radius, 2,000" Border, White on, Green:
"NORTH", E Mod: "Riverside", E Mod:

9 E1-1d ST+STRUCTURAL FLUORESCENT:
12,000" Radius, 2,000" Border, Black on, Yellow:
"EXIT", E Mod: Arrow 180 + 35,000° 45°: "ONLY", E Mod:
Table of letter and object bbfs

ⓘ 21,750	N 72,750	O 88,125	R 101,250	T 113,250	H 124,750			
R 21,000	e 36,125	v 45,625	e 61,750	r 76,875	s 86,750	i 101,750	d 109,625	e 124,750
E -2,500	X 25,875	I 36,750	T 41,625	➧ 56,000	O 96,000	N 109,125	L 121,750	Y 131,000

SIGN FACE DETAILS

DATE PREPARED
10/18/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	13

COUNTY
PLATTE

JOB NO.
J4S3498

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

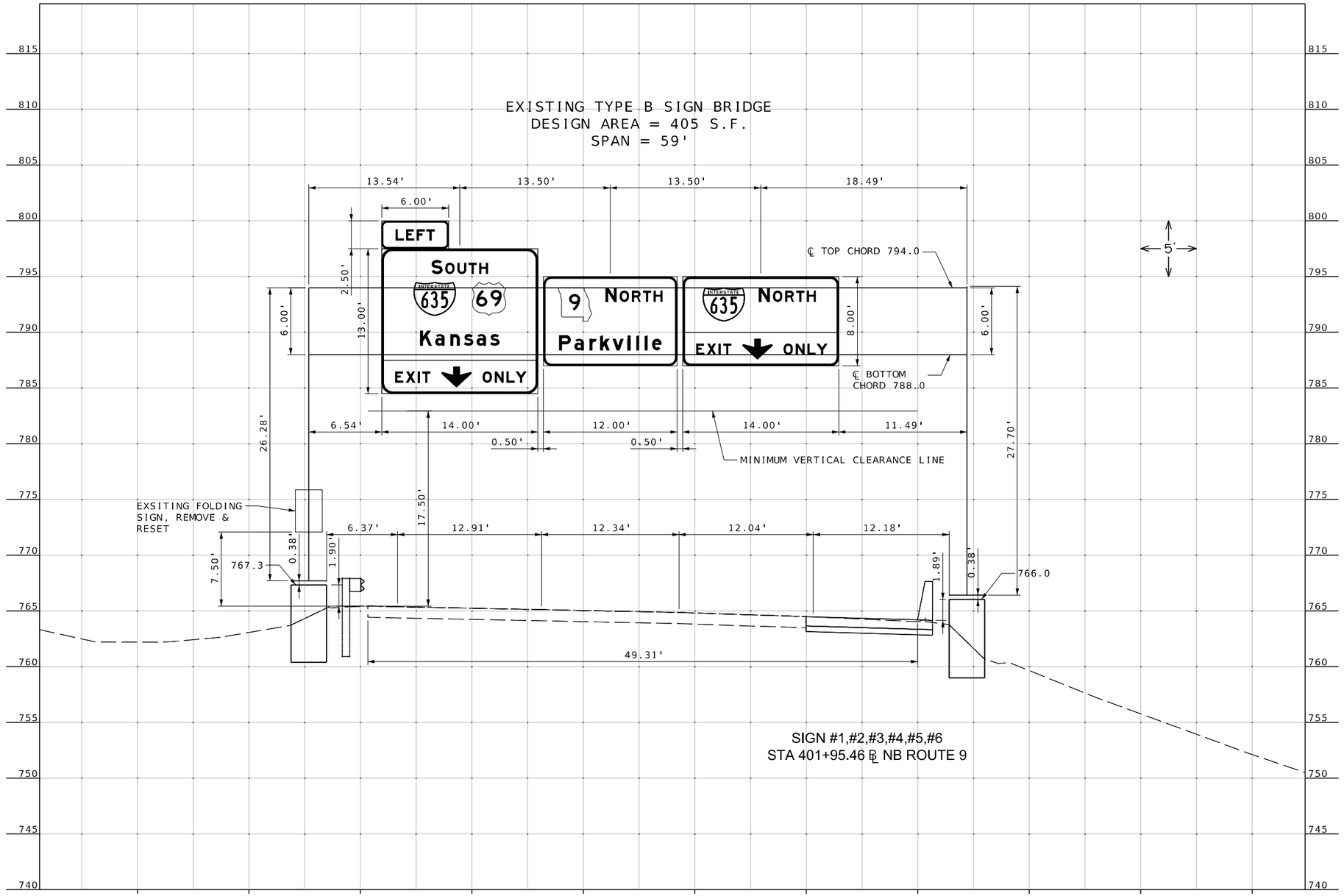
DATE

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

TRANSYSTEMS
2400 PERSHING ROAD, SUITE 400
KANSAS CITY, MO 64108
PHONE: (816)329-8600
FAX: (816)328-8601
MO STATE CERT. OF AUTHORITY # 273. ENGINEERING

STATE OF MISSOURI
MATTHEW PARKER
NUMBER PE-2011009043
10/18/2024
PROFESSIONAL ENGINEER

EXISTING TYPE B SIGN BRIDGE
DESIGN AREA = 405 S.F.
SPAN = 59'



SIGN #1,#2,#3,#4,#5,#6
STA 401+95.46 ℄ NB ROUTE 9

SIGNING SECTION
SHEET 1 OF 2

STATE OF MISSOURI
MATTHEW PARKER
NUMBER PE-2011009043
10/18/2024
PROFESSIONAL ENGINEER

DATE PREPARED
10/18/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	14

COUNTY
PLATTE

JOB NO.
J4S3498

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

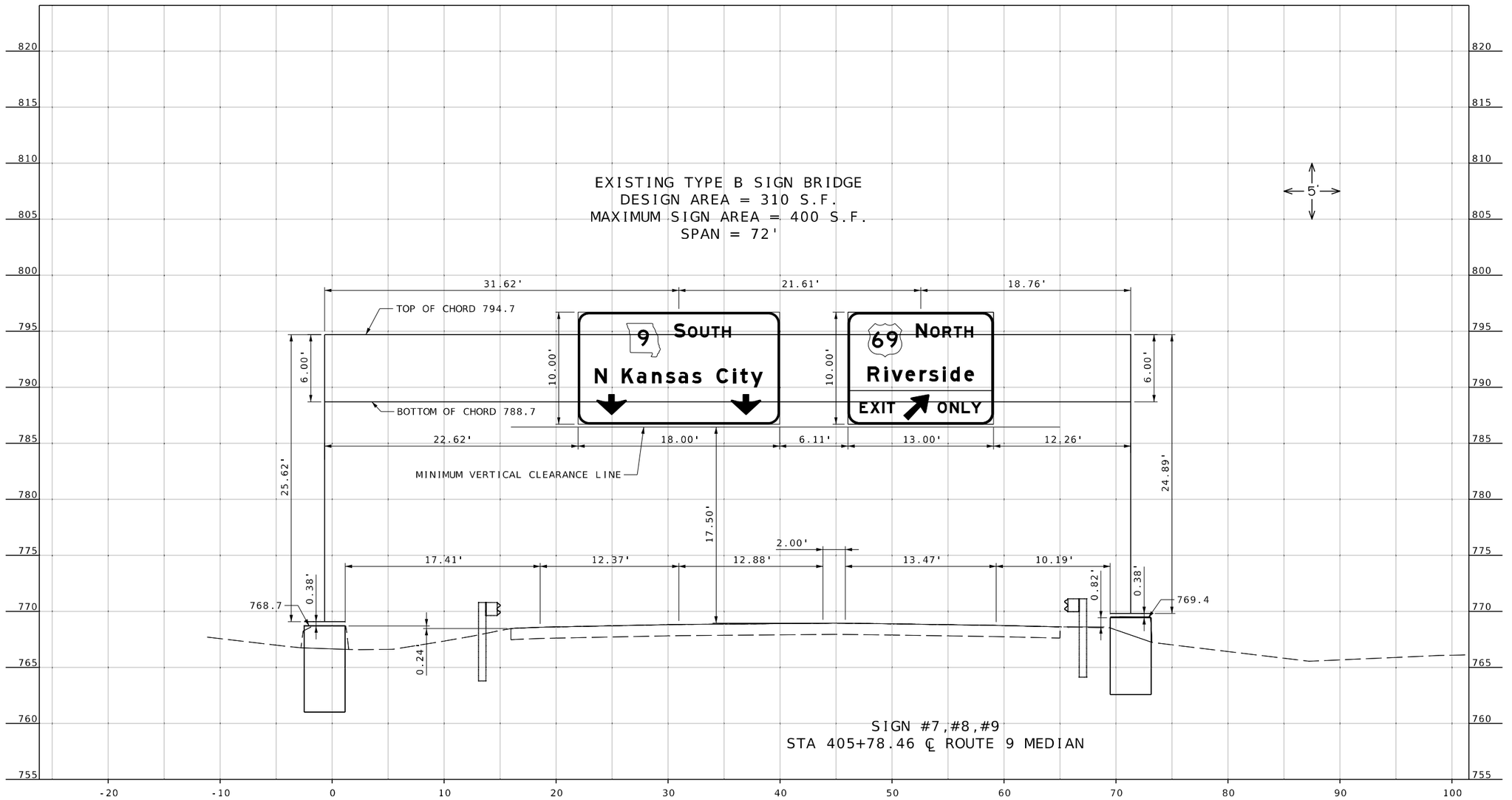
DATE

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

TRANSYSTEMS
2400 PERSHING ROAD, SUITE 400
KANSAS CITY, MO 64108
PHONE: (816)329-8600
FAX: (816)328-8601
MO STATE CERT. OF AUTHORITY # 273, ENGINEERING

pw://transystems-pw.bentley.com:transyscorp-pw1-hosted/Documents/Projects_2024/KC101/101240048/Road/Task1/Plan Sheets/014_SN_J4S3498_RTE9_I5_XS_001.dgn 11:59:08 AM 10/18/2024

EXISTING TYPE B SIGN BRIDGE
DESIGN AREA = 310 S.F.
MAXIMUM SIGN AREA = 400 S.F.
SPAN = 72'



SIGN #7,#8,#9
STA 405+78.46 ℄ ROUTE 9 MEDIAN

SIGNING SECTION
SHEET 2 OF 2

STATE OF MISSOURI
PROFESSIONAL ENGINEER
JEFFREY L. PARKER
NUMBER
PE-2011009043
10/18/2024

DATE PREPARED	10/18/2024
ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
KC	15
COUNTY	PLATTE
JOB NO.	J4S3498
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

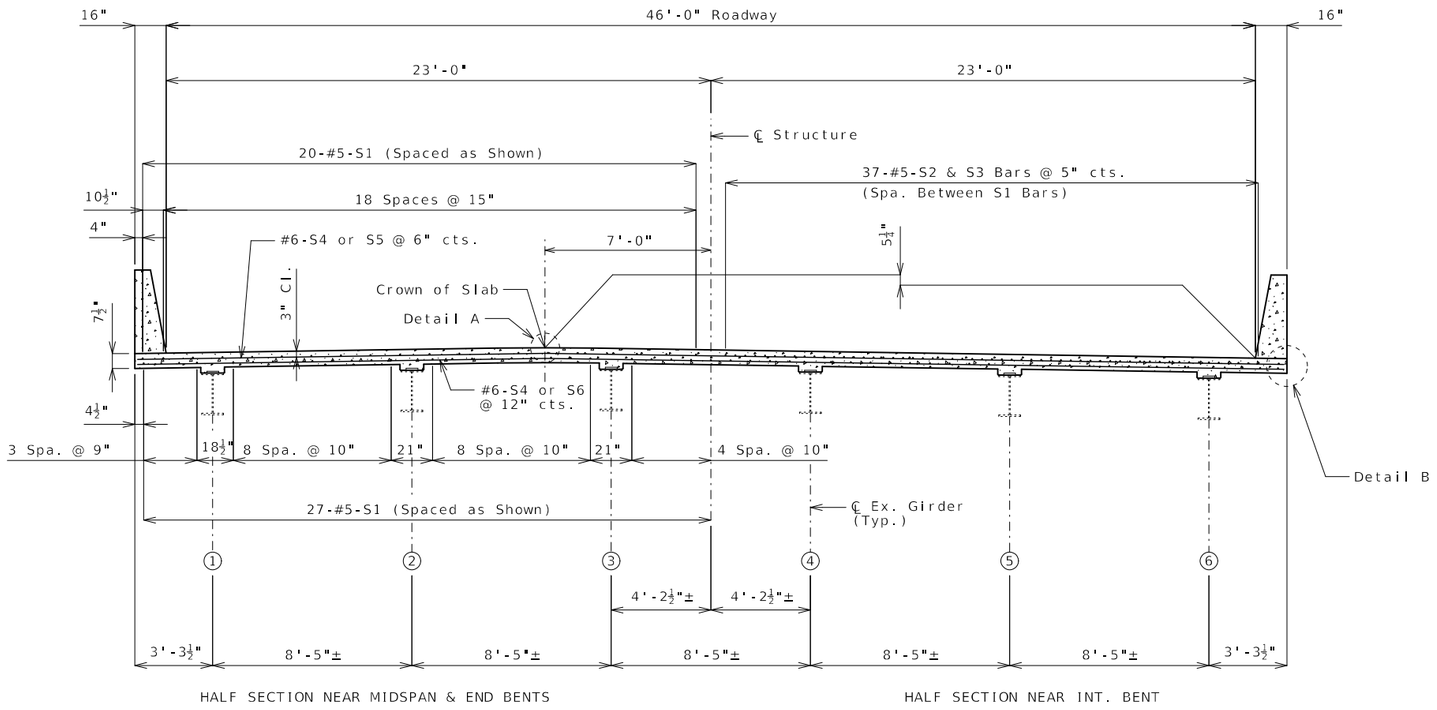
DESCRIPTION | DATE

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

TRANSYSTEMS
2400 PERSHING ROAD, SUITE 400
KANSAS CITY, MO 64108
PHONE: (816)329-8600
FAX: (816)328-8601
MO STATE CERT. OF AUTHORITY # 273, ENGINEERING

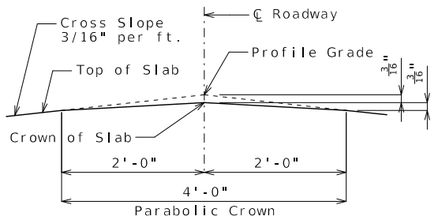
SEC/SUR 4 TWP 50N RGE 33W

U.I.P. & REDECK EXISTING (94')(121')(94') CONTINUOUS COMPOSITE PLATE GIRDER SPAN (SKEW 32° R.A.)



HALF SECTION NEAR MIDSPAN & END BENTS HALF SECTION NEAR INT. BENT

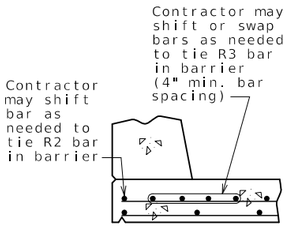
TYPICAL SECTION THRU SLAB



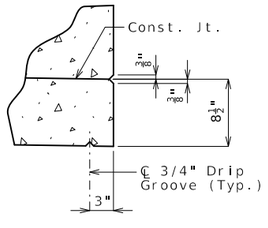
DETAIL A

Table Showing S2 & S3 Total Bar Length *			
Int. Bent No. 2		Int. Bent No. 3	
Span 1	Span 2	Span 2	Span 3
30'-9"	30'-9"	30'-9"	30'-9"

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



OPTIONAL SHIFTING
TOP BARS AT BARRIER



DETAIL B

* S3 Bar shall be placed on Span 2 side of each Int. Bent and be spliced with S2 bars per Required Lap Length Table

** Unless Otherwise Noted

Estimated Quantities		
Item		Total
Removal of Miscellaneous ACM (Non-Friable)	sq. foot	31
Class 1 Excavation	cu. yard	140
Temporary Shoring	lump sum	1
Removal of Existing Bridge Deck	sq. foot	15,294
Bridge Approach Slab (Major)	sq. yard	205
Slab on Steel	sq. yard	1,682
Type D Barrier	linear foot	692
Protective Coating - Concrete Bents & Piers (Epoxy)	lump sum	1
Strengthening Existing Beams	lump sum	1
Slab Drain	each	54
Surface Preparation for Applying Epoxy-Mastic Primer	lump sum	1
Gray Epoxy-Mastic Primer	lump sum	1
Vertical Drain at End Bents	each	2
Open Cell Foam Joint Seal	linear foot	115

Estimated Quantities for Slab on Steel		
Item		Total
Class B-2 Concrete	cu. yard	348
Reinforcing Steel (Epoxy Coated)	pound	119,950

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 prestressed panels, 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 as shown on the plans and 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.

General Notes:

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

Design Loading:
H10-44 (1953) (Existing)
HS20-44 (New Construction, except beam strengthening plate)
2022 Missouri Posting Loads (H20L & 3S2)
35 lb/sf Future Wearing Surface
Earth - 120 lb/cf. Equivalent Fluid Pressure 45 lb/cf
Fatigue Stress - Case III

Design Unit Stresses:

Class B-1 Concrete (Barrier)	f'c = 4,000 psi
Class B-2 Concrete (End Bents & Superstructure, except Barrier)	f'c = 4,000 psi
Reinforcing Steel (ASTM A615 Grade 60)	fy = 60,000 psi
Structural Steel (ASTM A709 Grade 50)	fy = 50,000 psi
Structural Steel (Existing)	fy = 32,000 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 clearnace to reinforcing steel shall be 1 1/2", unless otherwise shown.

Miscellaneous:
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 ordering new material.

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:
Structure to be closed during construction. Traffic to be maintained on other routes during construction. See Roadway plans for Traffic Control.

B.M. (U.S.C. & G.S.) Elev 758.08 -"o" on S.W. Corner of Bridge over Line Creek, Approx. 1310 ft. Lt. Sta. 393+30±

BRIDGE: ROUTE 9 NB OVER LINE CREEK

ROUTE 9 FROM ROUTE 169 TO ROUTE I-635
ABOUT 1.6 MILES WEST OF ROUTE 169
BEG. STATION 400+95.0±

Detailed Aug 2024
Checked Aug 2024

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
Ted Koester
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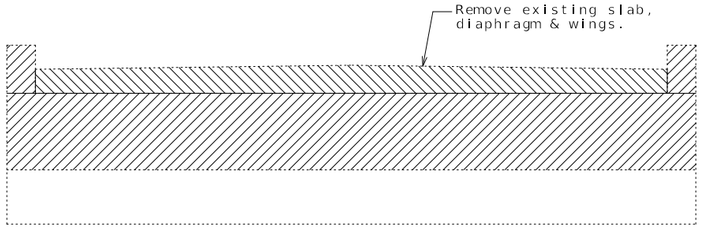
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED 12/3/2024

ROUTE 9 | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY PLATTE
JOB NO. J4S3498
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A20292

DESCRIPTION | DATE

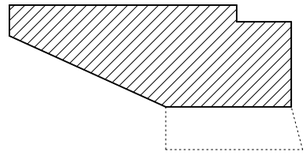
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



DETAILS OF CONCRETE REMOVAL AT END BENTS

Diaphragm and wings removal will be considered completely covered by the contract unit price of 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 Bents No. 1 & 4 removal lines.



DETAILS OF CONCRETE REMOVAL FOR WINGS @ END BENTS NO. 1 & 4

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:

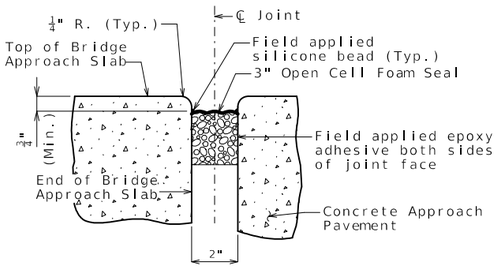
The contractor shall provide bracing necessary for lateral and torsional stability of the beams during construction of the concrete slab and remove the bracing after the slab has attained 75% design strength. Contractor shall not weld on or drill holes in the beams. The cost for furnishing, installing,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

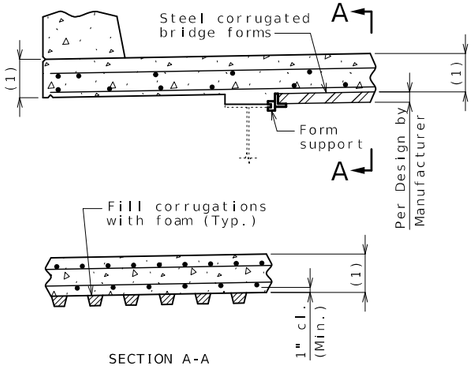
Haunching:

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

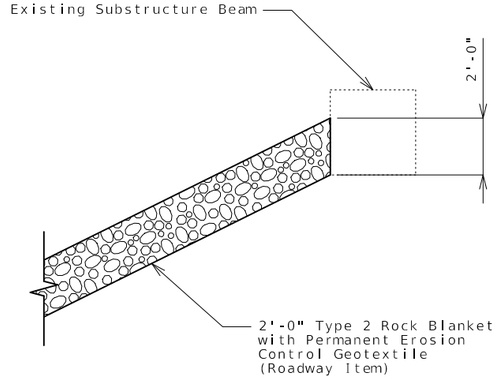


SECTION THRU JOINT AT END OF BRIDGE APPROACH SLAB

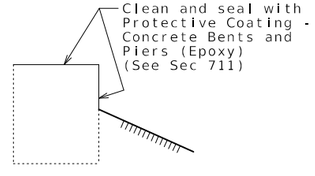
SKEW = 32°
Extend seal full width of approach slab.



OPTIONAL STAY-IN-PLACE FORM DETAILS



ROCK BLANKET ON SPILL SLOPES



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

STATE OF MISSOURI
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NUMBER PE-2013000591
PROFESSIONAL ENGINEER
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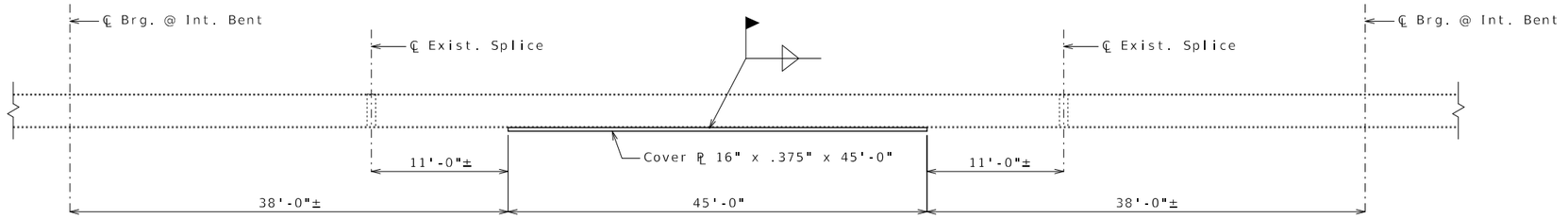
DATE PREPARED 12/3/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	2

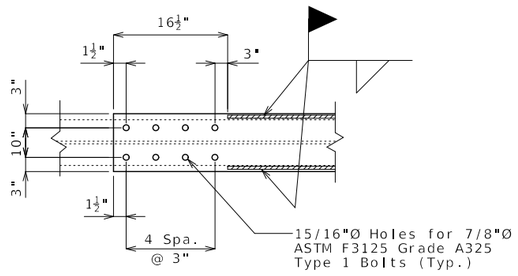
COUNTY: PLATTE
JOB NO.: J4S3498
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A20292

DESCRIPTION | DATE

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



PART ELEVATION OF EXTERIOR GIRDER SHOWING COVER PLATE INSTALLATION
SPAN (2-3)



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

Notes:

Girder 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 5,514 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 GIRDERS

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PROFESSIONAL ENGINEER
Ted Koester
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ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	3

COUNTY
PLATTE

JOB NO.
J4S3498

CONTRACT ID.

PROJECT NO.

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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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Detailed Aug 2024
Checked Aug 2024

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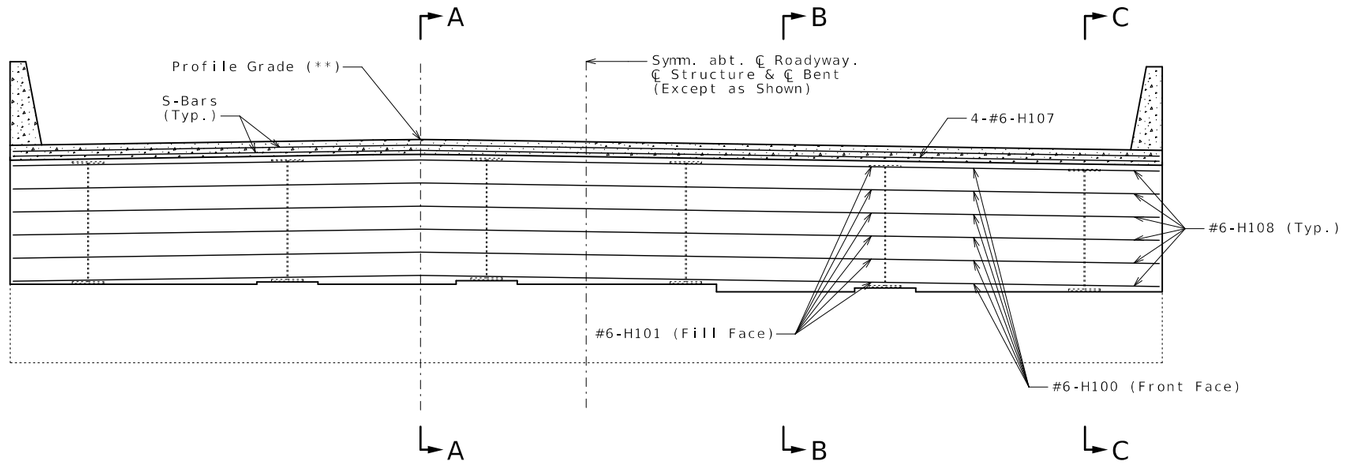


HALF SECTION NEAR FILLFACE

HALF SECTION NEAR CREEK FACE

** Top of slab elevation shall match existing top of concrete slab + 1-1/4"± to assure minimum slab thickness and minimum haunch criteria above top of beam are met with new cross-slope.

Notes:

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 contractunit price for Slab on Steel.

Cost of field drilling holes in existing beam webswill be considered completely covered by the contract unit price for Slab on Steel.

Cost of cutting anchor bolts and placing roofing felt beneath bearing plates (including temporary support of beam ends) will be considered completely covered by the contract unit price for Slab on Steel.

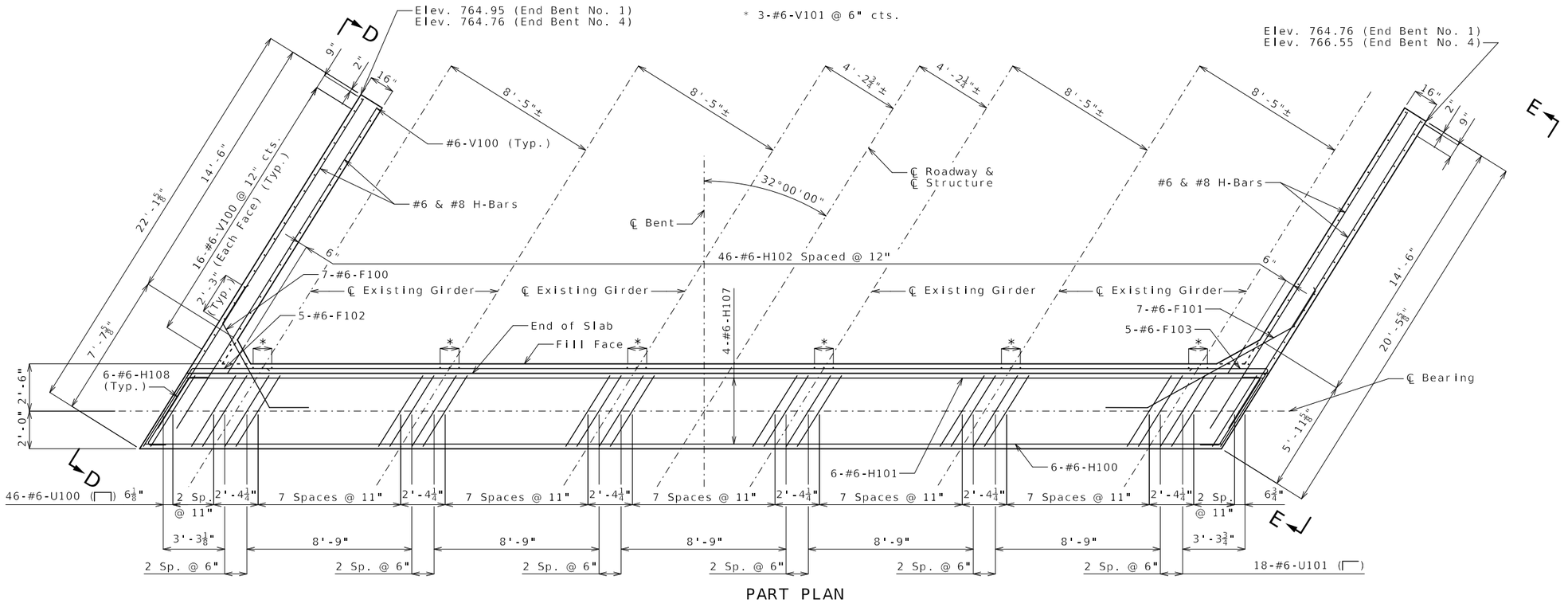
For details and reinforcement of Type D barrier at End Bents, see Sheets No. 8 & 9.

For details of slab reinforcement, see Sheet No. 1.

Estimated jacking force for supporting beams while anchor bolts are cut and roofing felt is placed is 1250 pounds for exterior beams and 1440 pounds for interior beams.

The H100 bars are segmented for ease of placement through girder web holes. The total bar length for H100 bars shown in Bill of Reinforcing Steel allows for one lap splice with a length of 3'-10". Actual bar segment lengths to be determined by contractor for ease of installing bars. The contractor may use a mechanical bar splice in lieu of a lap splice. When a mechanical bar splice is used, the actual bar segment lenth will be determined by the contractor to accommodate manufacturer's recommendations for installation and ease of construction. The cost of furnishing and installing the bar splices will be considered completely covered by the contract unit price for Reinforcing Steel. No adjustment of the quantity of reinforcing steel will be allowed for the use of mechanical bar splices.

Work this sheet with Sheet No. 5.



PART PLAN

DETAILS OF END BENTS NO. 1 & 4

Detailed Aug 2024
Checked Aug 2024

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

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ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	4

COUNTY
PLATTE

JOB NO.
J4S3498

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
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DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
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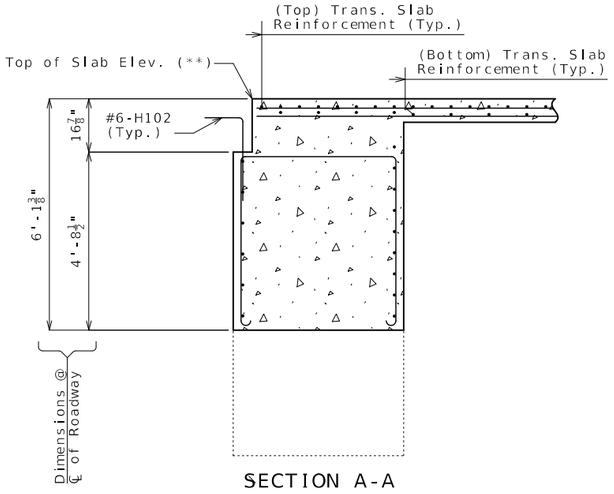
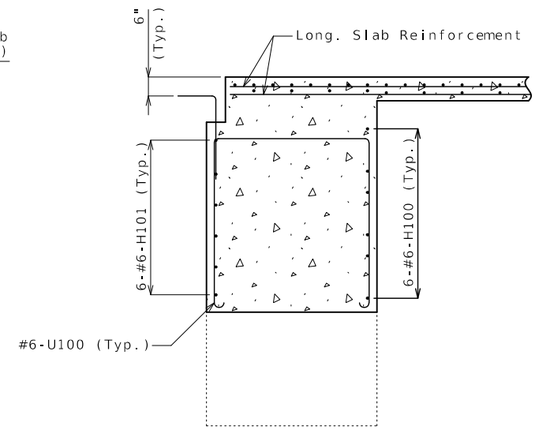
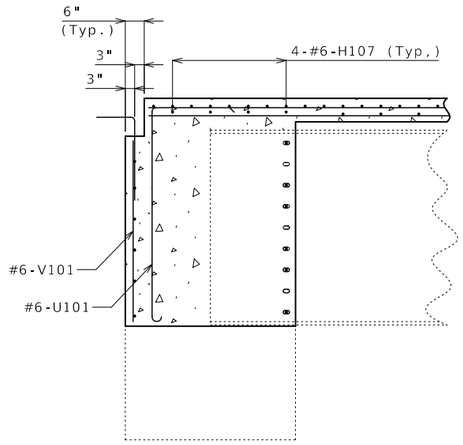


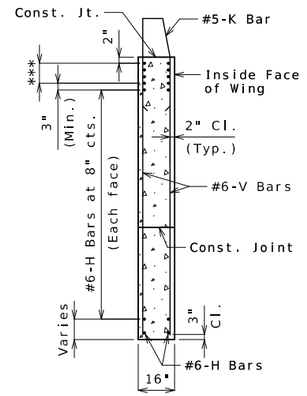
SECTION A-A



SECTION B-B



SECTION C-C



TYPICAL SECTION THRU WING

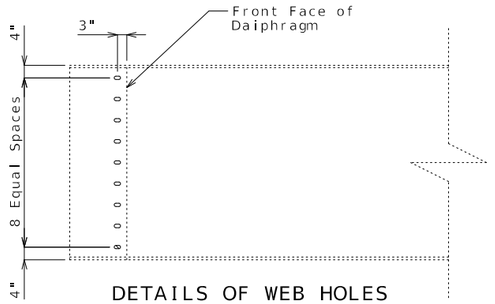
*** #8-H Bars at 3" cts. (Each face)(Place with grade)

** Top of slab elevation shall match existing top of concrete slab + 1-1/4"± to assure minimum slab thickness and minimum haunch criteria above top of beam are met with new cross-slope.

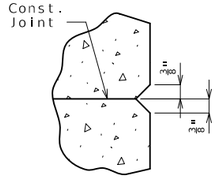
Notes:

Work this sheet with Sheet No. 4.

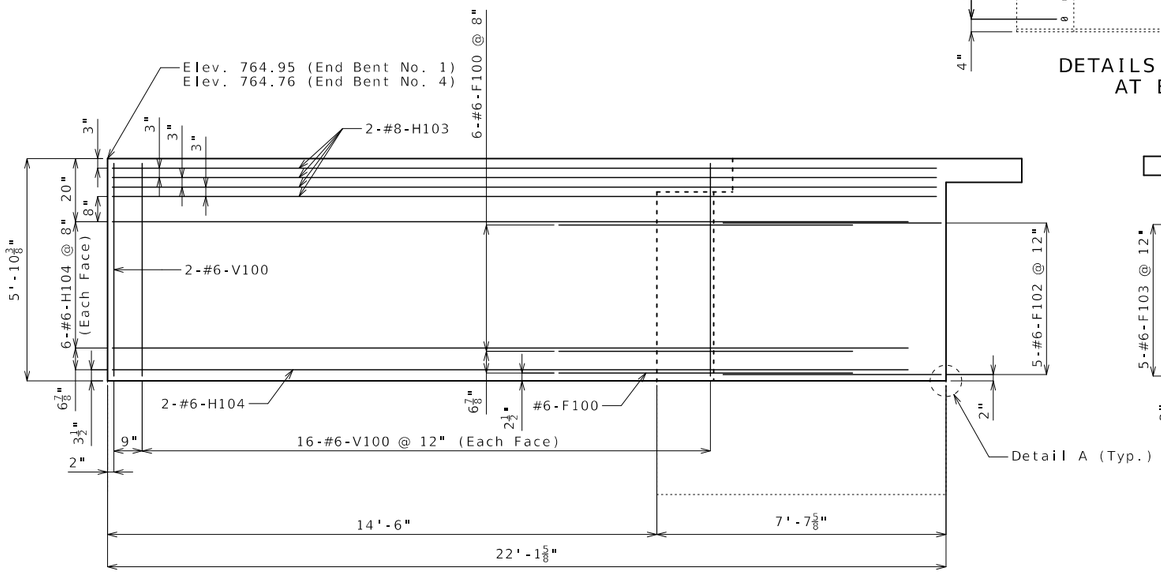
For reinforcement of safety barrier curb, see Sheets No. 8 & 9.



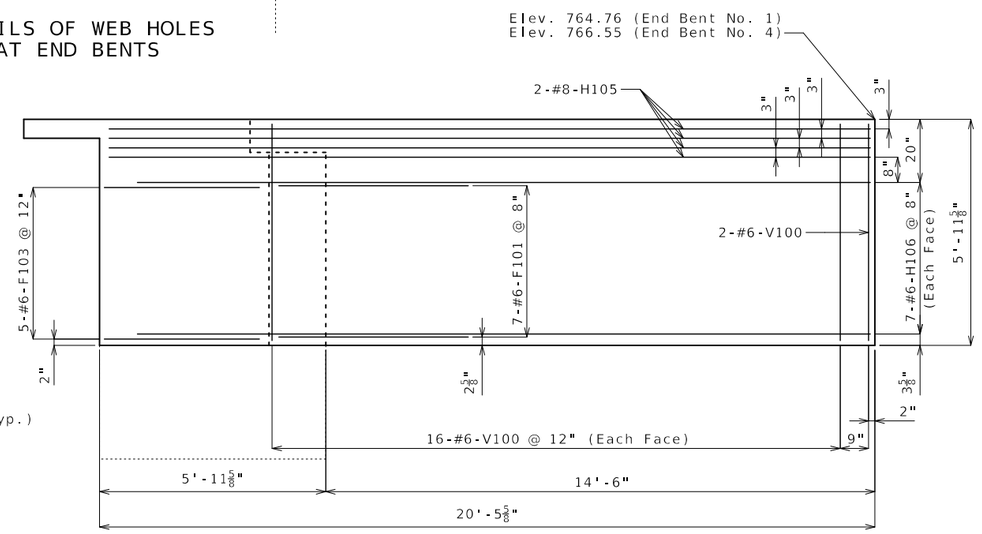
DETAILS OF WEB HOLES AT END BENTS



DETAIL A



ELEVATION D-D



ELEVATION E-E

END BENTS NO. 1 & 4 DETAILS

Detailed Aug 2024
Checked AUg 2024

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

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NUMBER PE-2013000591
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DATE PREPARED
12/3/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	5

COUNTY
PLATTE

JOB NO.
J4S3498

CONTRACT ID.

PROJECT NO.

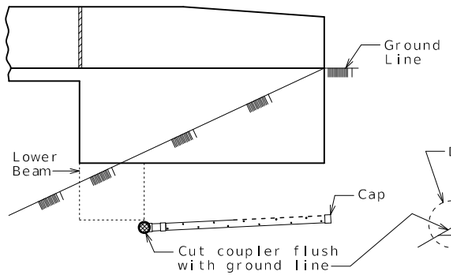
BRIDGE NO.
A20292

DESCRIPTION

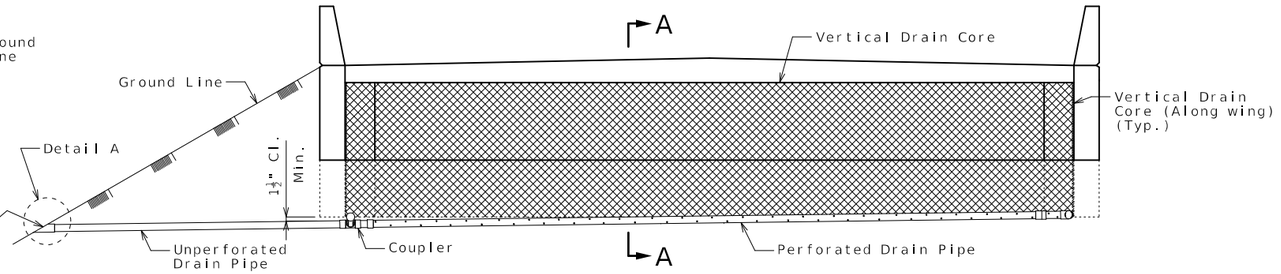
DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

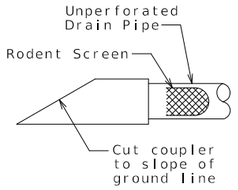
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



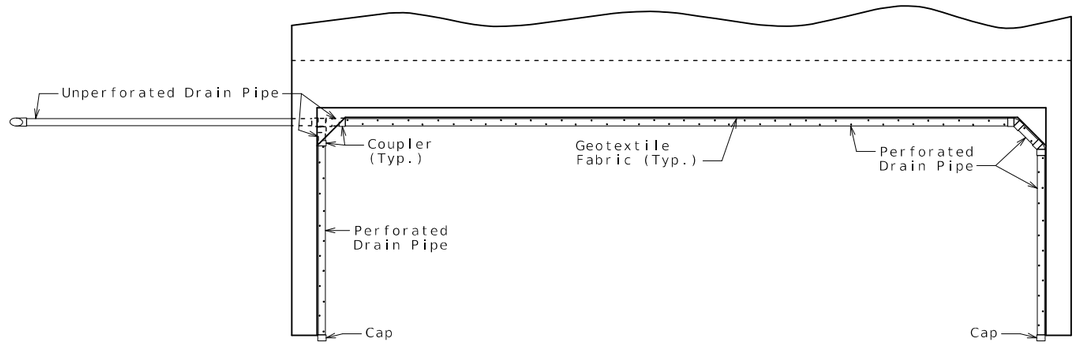
ELEVATION OF WING



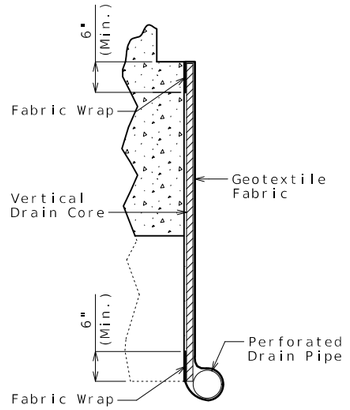
ELEVATION OF END BENT



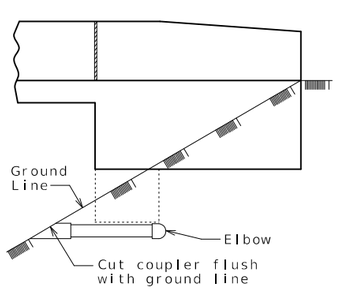
DETAIL A



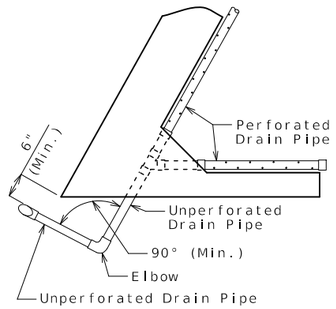
PLAN OF END BENT



PART SECTION A-A
(Section thru wing similar)



ELEVATION OF WING



PART PLAN

OPTIONAL TURNED DRAIN
(Use only when straight drain is not practical.)

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.

Drain pipe shall be placed at fill face of end bent and inside face of wings. The pipe shall slope to lowest grade of ground line, also missing the lower beam of end bent by a minimum of 1 1/2 inches.

Perforated pipe shall be placed at fill face side and inside face of wings 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

(Squared end bent shown, skewed end bent similar)

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NUMBER PE-2013000591
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DATE PREPARED: 12/3/2024
ROUTE: 9 | STATE: MO
DISTRICT: BR | SHEET NO.: 6
COUNTY: PLATTE
JOB NO.: J4S3498
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A20292

DESCRIPTION | DATE

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

Detailed Aug 2024
Checked Aug 2024

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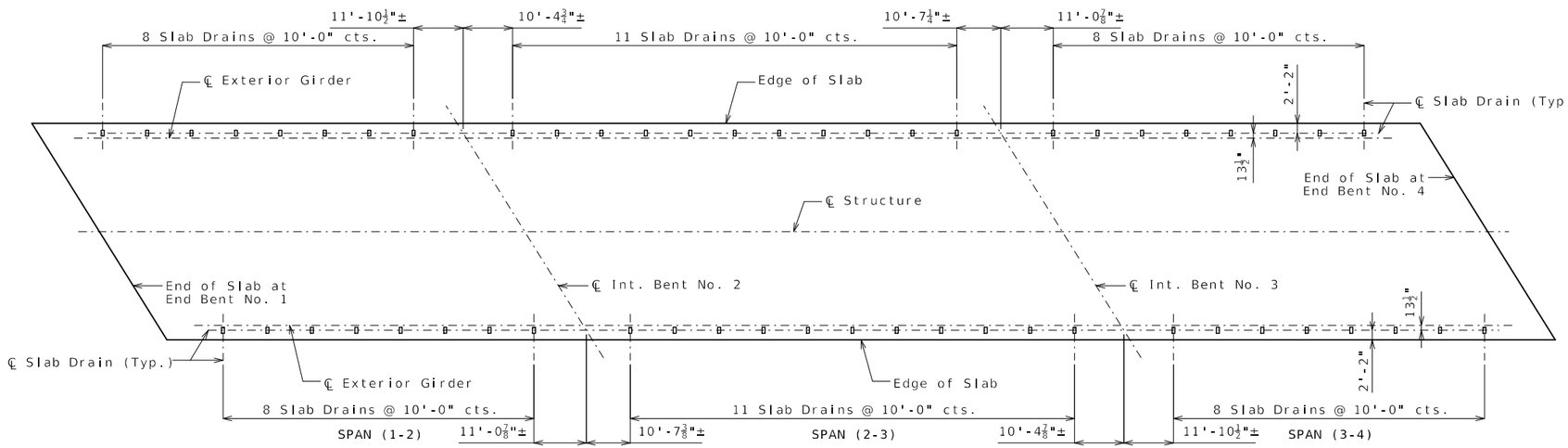
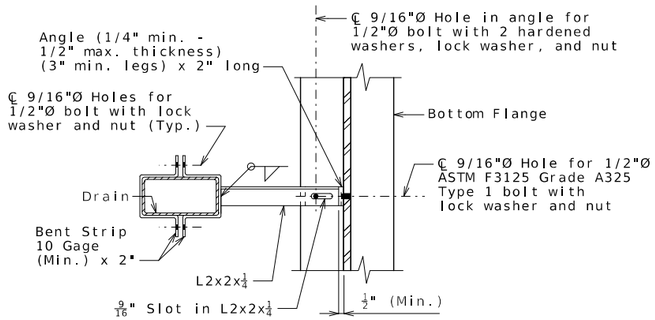
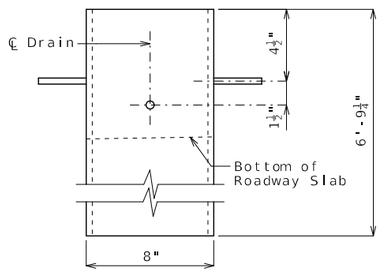


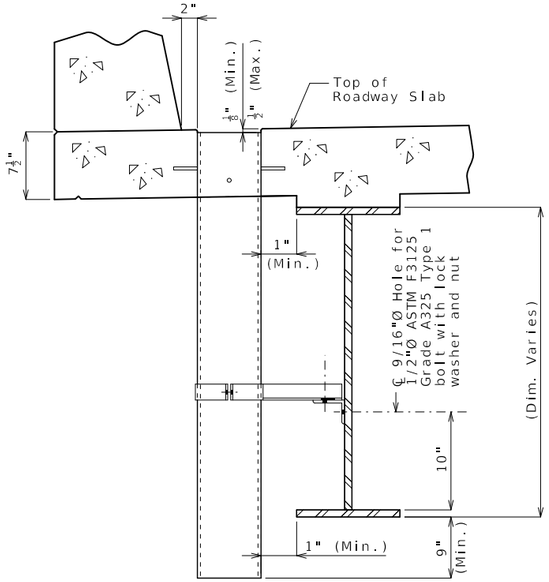
PLAN OF SLAB SHOWING SLAB DRAIN LOCATIONS



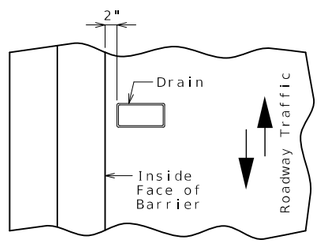
PART SECTION SHOWING BRACKET ASSEMBLY



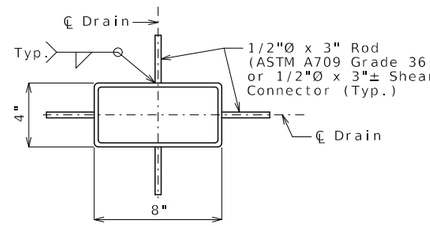
ELEVATION OF DRAIN



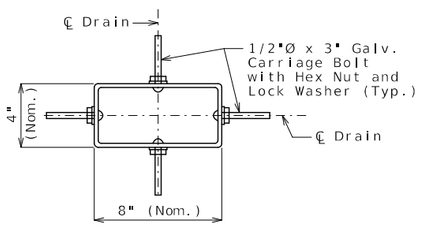
PART SECTION NEAR DRAIN



PART PLAN OF SLAB AT 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.

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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DATE PREPARED
12/3/2024

ROUTE	STATE
9	MO
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BR	7

COUNTY
PLATTE

JOB NO.
J4S3498

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A20292

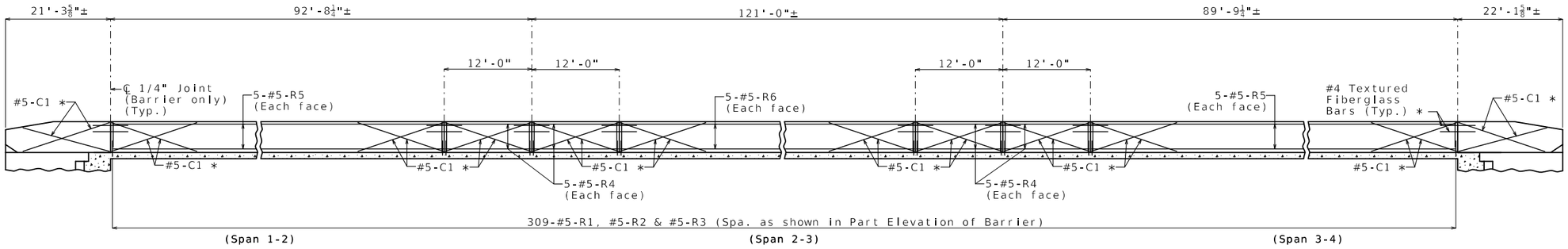
DESCRIPTION

DATE

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

Detailed Aug 2024
Checked Aug 2024

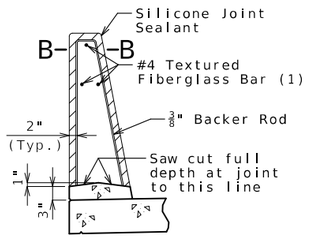
Note: This drawing is not to scale. Follow dimensions.



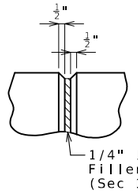
ELEVATION OF BARRIER

(Left barrier shown, right barrier similar)

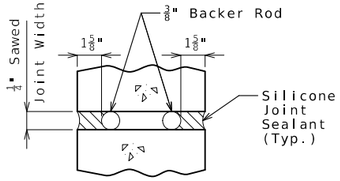
Longitudinal dimensions are horizontal.



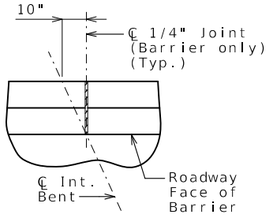
SECTION THRU SAW CUT JOINT



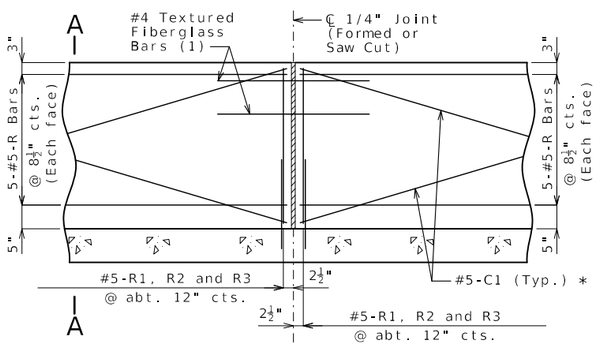
PART ELEVATION AT FORMED JOINT



SECTION B-B

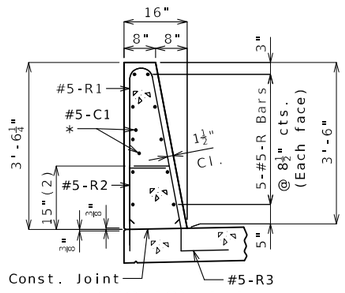


PART PLAN SHOWING JOINT LOCATION



PART ELEVATION OF BARRIER

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

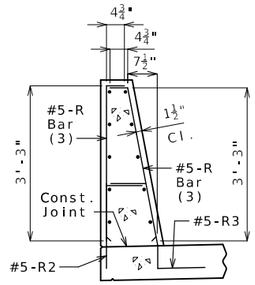


SECTION A-A

Use a minimum lap of 3'-1" 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 (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 Aug 2024
Checked Aug 2024

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

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DATE PREPARED
12/3/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	8

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PLATTE

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JEFFERSON CITY, MO 65102
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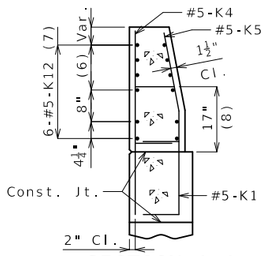
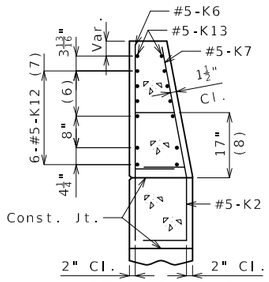
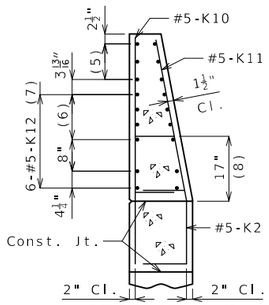


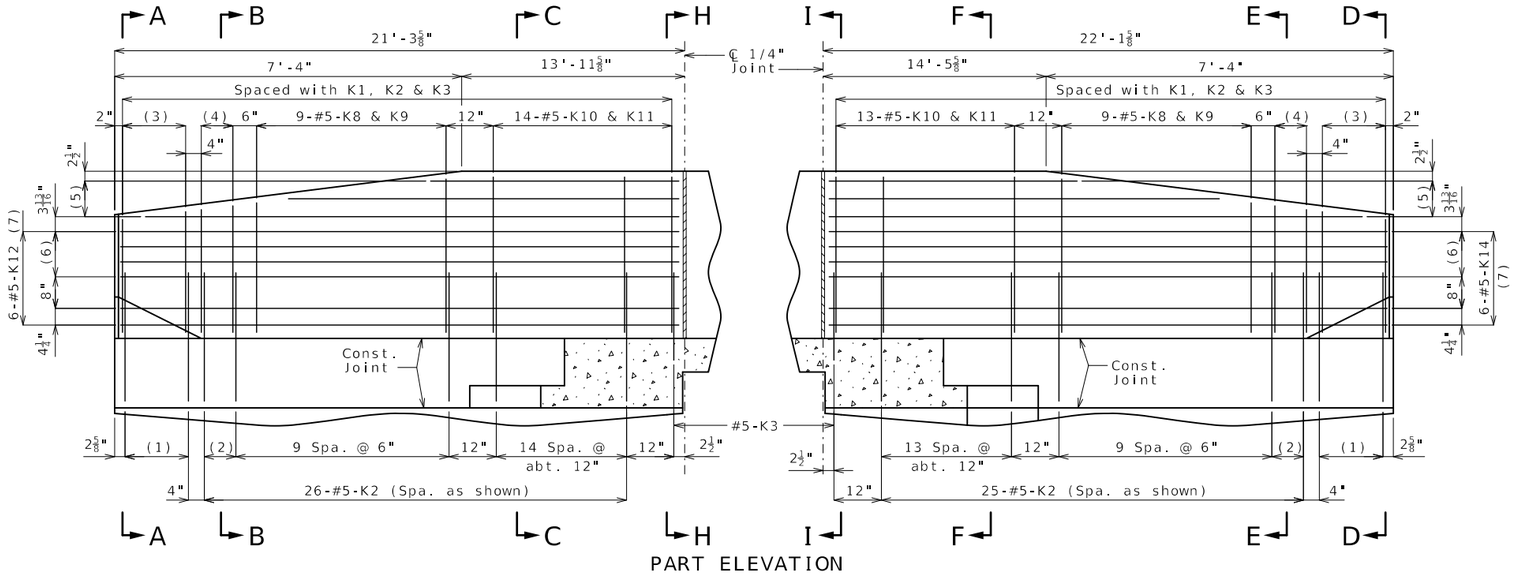
SECTION A-A



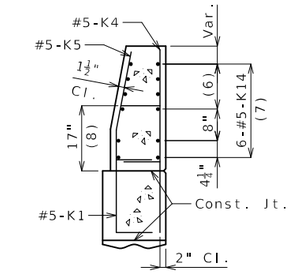
SECTION B-B



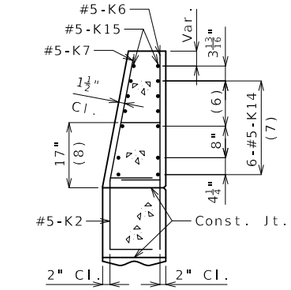
SECTION C-C



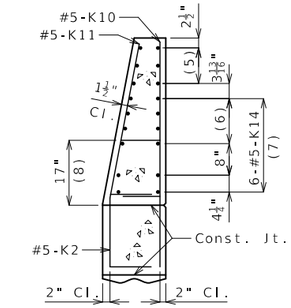
PART ELEVATION



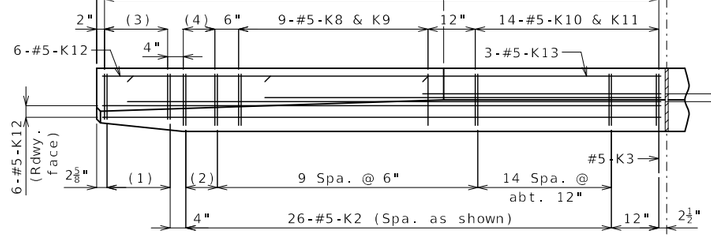
SECTION D-D



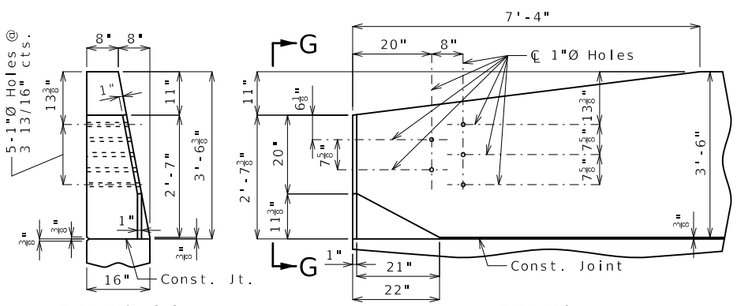
SECTION E-E



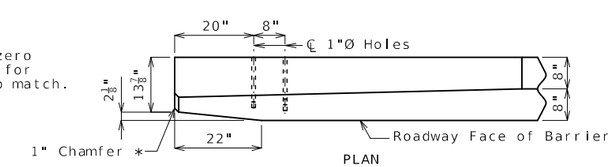
SECTION F-F



PART PLAN



ELEVATION G-G ELEVATION



PLAN

* 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

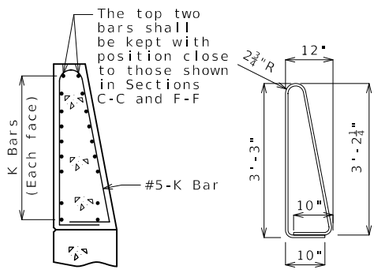
(4) 3-#5-K6 & K7

(5) 3-#5-K13 or K15 @ 4½" cts., each face

(6) 3 spaces @ 3 13/16"

(7) Spaced as shown, each face

(8) To top of bar



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.

General Notes:

Reinforcing Steel:

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.

Minimum clearance to reinforcing steel shall be 1 1/2" except as shown for bars embedded into end bent.

TYPE D BARRIER AT END BENTS

(Left barrier shown, right barrier similar)

Detailed Aug 2024
Checked Aug 2024

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PROFESSIONAL ENGINEER
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DATE PREPARED
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ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
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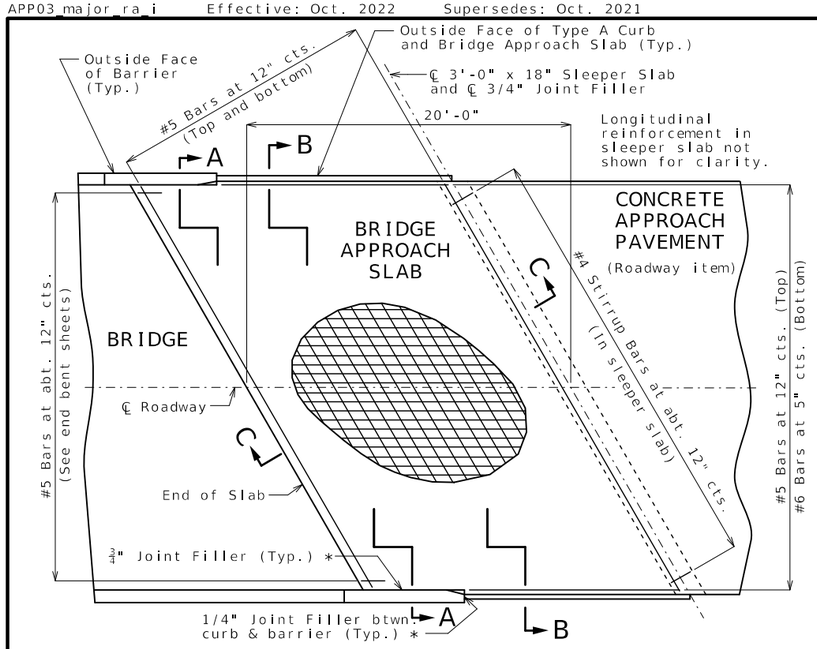
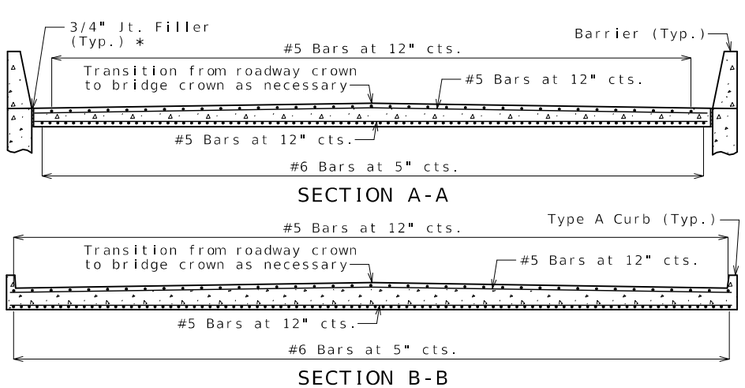
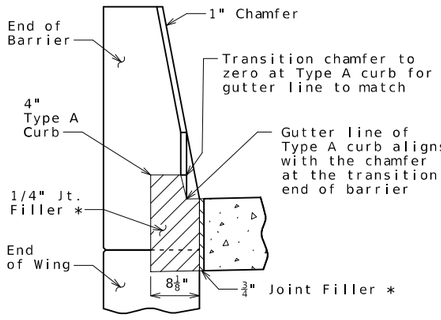
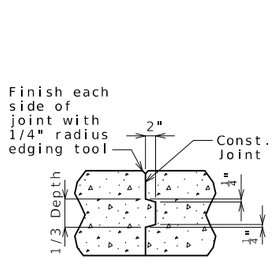


PART PLAN SHOWING REINFORCEMENT



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





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 29 inches for #5 bars and 44 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.

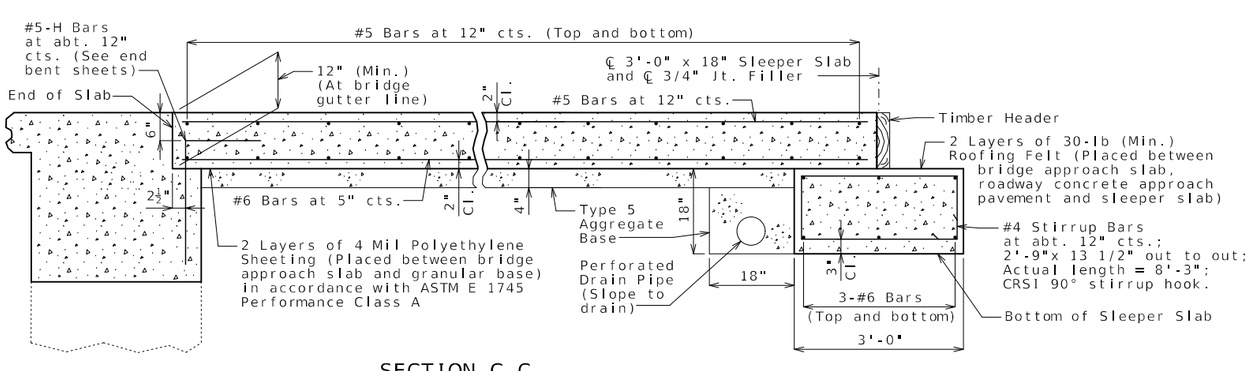
See Missouri Standard Plan 609.00 for details of Type A curb.

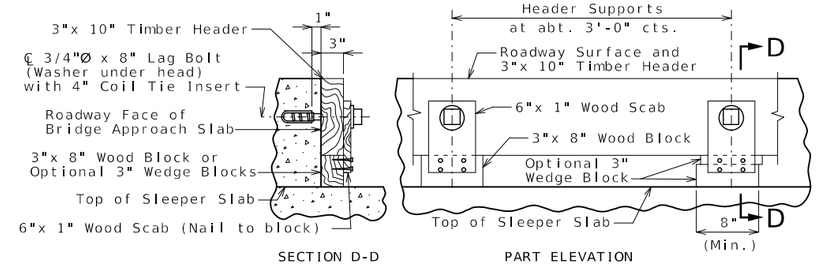
Payment for furnishing all materials, labor and excavation necessary to construct the approach slab, including the timber header, sleeper slab, underdrain, Type 5 aggregate base, joint filler and all other appurtenances and incidental work as shown on this sheet, complete in place, will be considered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

* Seal joint 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.

Open cell foam joint seal width shall be 3" and depth shall be determined by the manufacturer. Manufacturer recommended seal size shall meet the movement and installation gap requirements and skew effect.

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





DETAILS OF TIMBER HEADER

Remove timber header when concrete pavement is placed.

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12/03/2024 7:50:17 AM
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DATE PREPARED	
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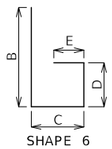
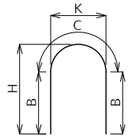
BRIDGE APPROACH SLAB (MAJOR)



SHAPE 6
or 6S



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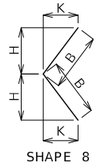
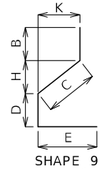
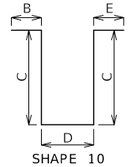


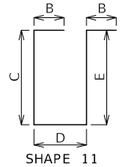
SHAPE 8
or 8S



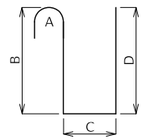
SHAPE 9
or 9S



SHAPE 10
or 10S



SHAPE 11
or 11S



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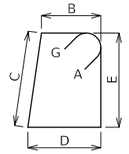
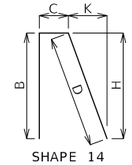


SHAPE 13S



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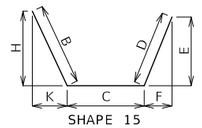
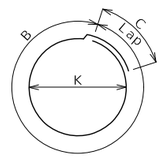
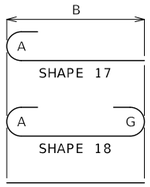
or 14S



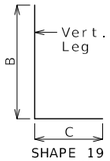
SHAPE 15
or 15S



SHAPE 16



SHAPE 17
SHAPE 18
SHAPE 20



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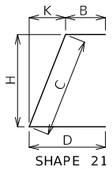
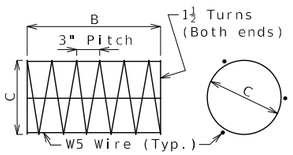
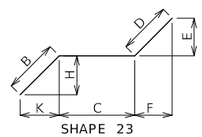
or 19S



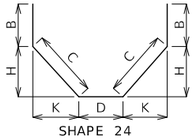
SHAPE 21
or 21S



SHAPE 22



SHAPE 23
or 23S



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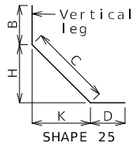
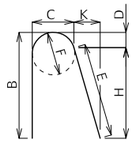
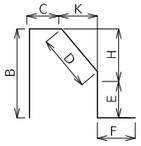
or 24S



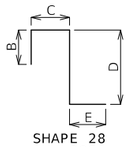
SHAPE 25
or 25S



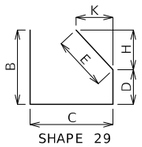
SHAPE 26



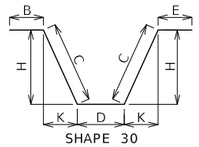
SHAPE 27S



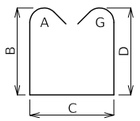
SHAPE 28
or 28S



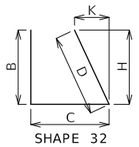
SHAPE 29
or 29S



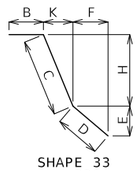
SHAPE 30
or 30S



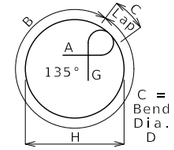
SHAPE 31S



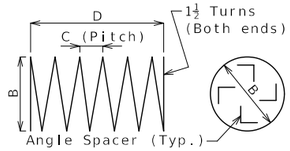
SHAPE 32
or 32S



SHAPE 33
or 33S



SHAPE 34S



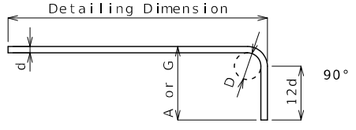
SHAPE 35 (1)

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	4¼"	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"

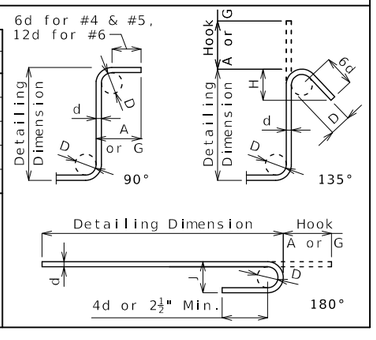


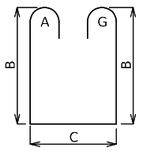
Stirrup Pin Bend Shapes (S)

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"	4⅜"	6"

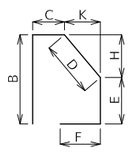
Applicable for all grades of steel.

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	
	Size	Plain	Epoxy	Slab	Barrier	Slip Form	Plain	Epoxy
By Size	W5	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0
	5	0	0	42,082	16,479	600	0	59,161
	6	0	0	76,076	0	0	0	76,076
	7	0	0	0	0	0	0	0
	8	0	0	1,787	0	0	0	1,787
	9	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0
	11	0	0	0	0	0	0	0
	14	0	0	0	0	0	0	0
	18	0	0	0	0	0	0	0
By Type		0	0	119,945	16,479	600	0	137,024

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
12/03/2024 7:59:43 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED
12/3/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	11

COUNTY
PLATTE

JOB NO.
J4S3498

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A20292

DESCRIPTION	DATE

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

BENDING DIAGRAMS AND REINFORCING STEEL TOTALS

Detailed Aug 2024
Checked Aug 2024

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

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													
14	6 F100	WING	E	25S		2 3.00	5 1.25	2 0.87			4 5.63	2 5.75	9 5	9 4	184
14	6 F101	WING	E	25S		2 3.00	8 10.00	2 2.38			4 3.38	7 8.63	13 3	13 3	205
10	6 F102	WING	E	19S		4 10.87	4 0.00						8 11	8 10	124
10	6 F103	WING	E	19S		4 9.25	4 0.00						8 9	8 8	122
12	6 H100	DIAPHRAGM	E	20		52 5.00							52 5	52 5	945
12	6 H101	DIAPHRAGM	E	20		48 5.00							48 5	48 5	873
92	6 H102	DIAPHRAGM	E	19		15.00	12.00						2 3	2 1	288
16	8 H103	WING	E	20		21 9.13							21 9	21 9	929
28	6 H104	WING	E	20		17 7.50							17 8	17 8	744
16	8 H105	WING	E	20		20 1.13							20 1	20 1	858
28	6 H106	WING	E	20		17 7.50							17 8	17 8	743
8	6 H107	DIAPHRAGM	E	20		48 5.00							48 5	48 5	582
24	6 H108	DIAPHRAGM	E	21S			5 0.25	12.37			4 3.00	2 7.88	6 1	6 0	216
92	6 U100	DIAPHRAGM	E	31S		4 8.25	3 7.00	4 8.25					14 4	14	1,935
36	6 U101	DIAPHRAGM	E	19S		5 7.25	2 2.00						7 9	7 7	410
136	6 V100	WING	E	20		5 7.38							5 7	5 7	1,141
36	6 V101	DIAPHRAGM	E	20		4 9.25							4 9	4 9	257
		Slab													
558	5 S1	SLAB	E	20		55 0.00							55	55	32,010
148	5 S2	SLAB	E	20		26 0.00							26	26	4,013
148	5 S3	SLAB	E	20		39 3.00							39 3	39 3	6,059
835	6 S4	SLAB	E	20		48 5.00							48 5	48 5	60,723
116	6 S5	SLAB	E	20	2	47 7.25							47 7	47 7	
		Incr. = 9.625"				2 0.00							2	2	4,320
58	6 S6	SLAB	E	20	2	46 9.63							46 10	46 10	
		Incr. = 19.250"				2 0.00							2	2	2,127
		Barrier													
		Type D													
20	5 K1	BARRIER	E	27S		3 8.00	9.25	5.25	3 2.75		5.25	1.00	8 1	7 11	165
102	5 K2	BARRIER	E	27S		3 8.00	9.25	14.50	2 5.75		14.25	2.75	8 2	7 11	842
4	5 K3	BARRIER	E	27S		21.50	9.25	14.50	6.75	12.00	14.25	2.75	5 4	5	21
20	5 K4	BARRIER	E	19S	4	2 4.25	10.00						3 2	3 1	
		Incr. = 0.500"				2 6.25	10.00						3 4	3 3	66
20	5 K5	BARRIER	E	14S	4	8.25	9.50	18.50	0.00	0.00	4.00	15.00	3	2 11	
		Incr. = 0.500"				8.25	9.50	20.50	0.00	0.00	4.50	20.00	3 2	3 1	63
12	5 K6	BARRIER	E	19S		2 6.75	10.00						3 5	3 3	41
12	5 K7	BARRIER	E	21S		2 6.75	2 6.75	10.00			2 6.00	6.25	6 0	5 9	72
36	5 K8	BARRIER	E	19S	4	2 8.50	10.00						3 7	3 5	
		Incr. = 0.750"				3 2.50	10.00						4 1	3 11	138
36	5 K9	BARRIER	E	21S	4	2 8.50	2 8.50	10.00			2 7.75	6.75	6 3	6 0	
		Incr. = 1.500"				3 2.50	3 2.50	10.00			3 1.75	7.75	7 3	7 0	244
54	5 K10	BARRIER	E	19S		3 3.00	10.00						4 1	4 0	225
54	5 K11	BARRIER	E	21S		3 3.00	3 3.00	10.00			3 2.25	7.75	7 4	7 1	399
24	5 K12	BARRIER	E	20		21 8.50							21 9	21 9	544
12	5 K13	BARRIER	E	20	4	20 11.50							21 0	21 0	
		Incr. = 14.375"				14 11.50							15 0	15 0	225
24	5 K14	BARRIER	E	20		20 0.50							20 1	20 1	503
12	5 K15	BARRIER	E	20	4	19 3.50							19 4	19 4	
		Incr. = 14.375"				13 3.50							13 4	13 4	204
618	5 R1	BARRIER	E	26		3 3.00	5.50	2.25	3 1.25	5.50	3 0.75	6.75	7 0	6 9	4,351
618	5 R2	BARRIER	E	19S		19.50	9.50						2 5	2 4	1,504
618	5 R3	BARRIER	E	27S			9.50	15.25	4.00	12.00	15.00	3.00	3 5	3 3	2,095
80	5 R4	BARRIER	E	20		11 9.00							11 9	11 9	980
40	5 R5	BARRIER	E	20		41 0.00							41 0	41 0	1711
40	5 R6	BARRIER	E	20		50 0.00							50 0	50 0	2,086
		Slip-Form													
48	5 C1	SLIP FORM	E	20		12 0.00							12	12	600

Bill of Reinforcing Steel

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

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

For bending diagrams and steel reinforcing totals, see Sheet No. 11.

All bars shall be 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 Aug 2024
Checked Aug 2024

BILL OF REINFORCING STEEL

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
Ted Koester
12/03/2024 7:53:17 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED
12/3/2024

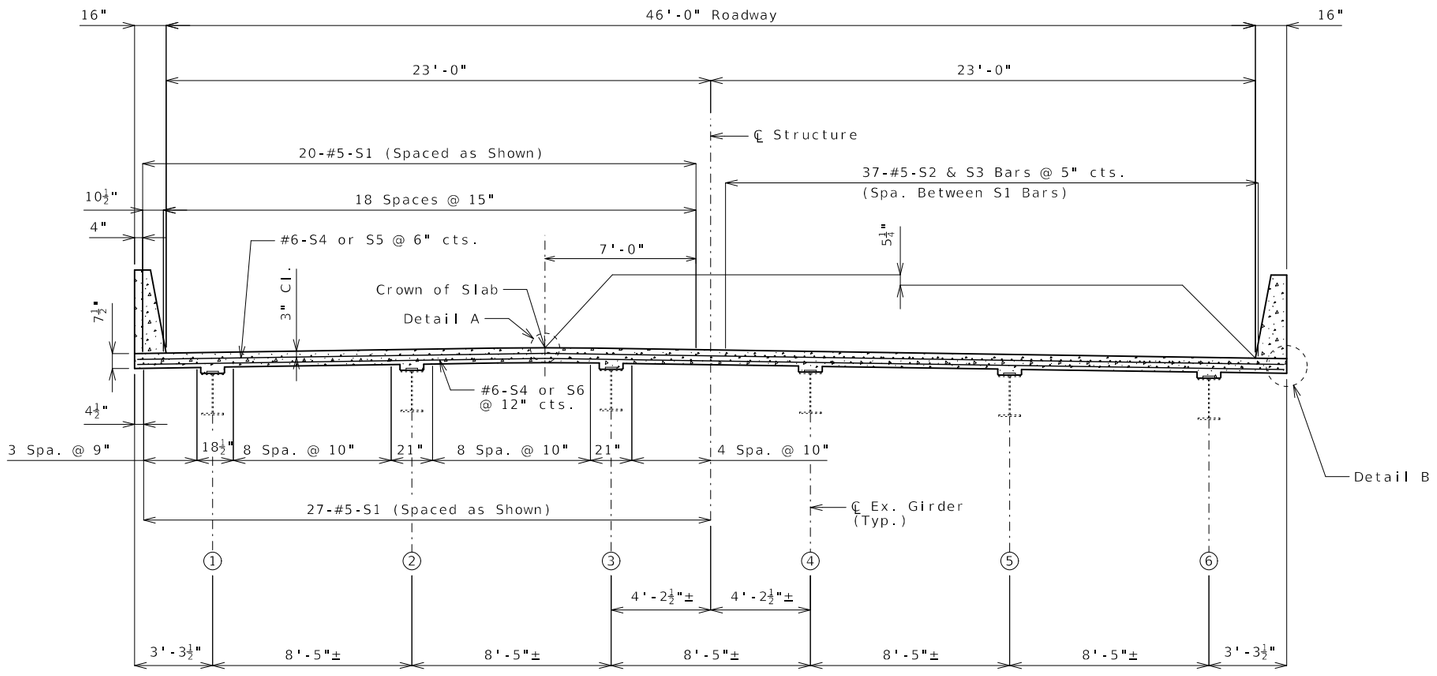
ROUTE 9 | STATE MO
DISTRICT BR | SHEET NO. 12
COUNTY PLATTE
JOB NO. J4S3498
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A20292

DESCRIPTION	DATE

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

SEC/SUR 4 TWP 50N RGE 33W

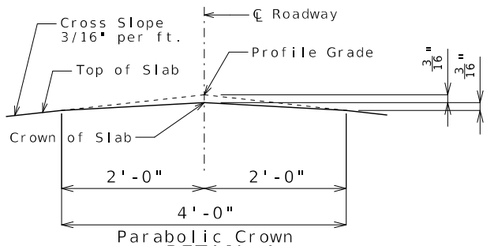
U.I.P. & REDECK EXISTING (94')(121')(94') CONTINUOUS COMPOSITE PLATE GIRDER SPAN (SKEW 32° R.A.)



HALF SECTION NEAR MIDSPAN & END BENTS

HALF SECTION NEAR INT. BENT

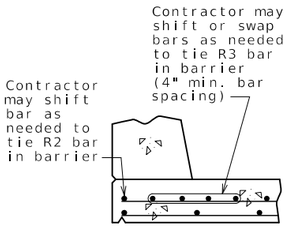
TYPICAL SECTION THRU SLAB



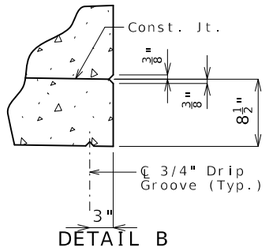
DETAIL A

Table Showing S2 & S3 Total Bar Length *			
Int. Bent No. 2		Int. Bent No. 3	
Span 1	Span 2	Span 2	Span 3
30'-9"	30'-9"	30'-9"	30'-9"

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



OPTIONAL SHIFTING
TOP BARS AT BARRIER



DETAIL B

* S3 Bar shall be placed on Span 2 side of each Int. Bent and be spliced with S2 bars per Required Lap Length Table

** Unless Otherwise Noted

Estimated Quantities		
Item		Total
Removal of Miscellaneous ACM (Non-Friable)	sq. foot	31
Class 1 Excavation	cu. yard	140
Temporary Shoring	lump sum	1
Removal of Existing Bridge Deck	sq. foot	15,294
Bridge Approach Slab (Major)	sq. yard	205
Slab on Steel	sq. yard	1,682
Type D Barrier	linear foot	692
Protective Coating - Concrete Bents & Piers (Epoxy)	lump sum	1
Strengthening Existing Beams	lump sum	1
Slab Drain	each	54
Surface Preparation for Applying Epoxy-Mastic Primer	lump sum	1
Gray Epoxy-Mastic Primer	lump sum	1
Vertical Drain at End Bents	each	2
Open Cell Foam Joint Seal	linear foot	115

Estimated Quantities for Slab on Steel		
Item		Total
Class B-2 Concrete	cu. yard	348
Reinforcing Steel (Epoxy Coated)	pound	119,950

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 prestressed panels, 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 as shown on the plans and 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.

General Notes:

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

Design Loading:
H10-44 (1953) (Existing)
HS20-44 (New Construction, except beam strengthening plate)
2022 Missouri Posting Loads (H20L & 3S2)
35 lb/sf Future Wearing Surface
Earth - 120 lb/cf. Equivalent Fluid Pressure 45 lb/cf
Fatigue Stress - Case III

Design Unit Stresses:

Class B-1 Concrete (Barrier)	f'c = 4,000 psi
Class B-2 Concrete (End Bents & Superstructure, except Barrier)	f'c = 4,000 psi
Reinforcing Steel (ASTM A615 Grade 60)	fy = 60,000 psi
Structural Steel (ASTM A709 Grade 50)	fy = 50,000 psi
Structural Steel (Existing)	fy = 32,000 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 clearnace to reinforcing steel shall be 1 1/2", unless otherwise shown.

Miscellaneous:
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 ordering new material.

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:
Structure to be closed during construction. Traffic to be maintained on other routes during construction. See Roadway plans for Traffic Control.

B.M. (U.S.C. & G.S.) Elev 758.08 -"o" on S.W. Corner of Bridge over Line Creek, Approx. 1310 ft. Lt. Sta. 393+30±

BRIDGE: ROUTE 9 SB OVER LINE CREEK

ROUTE 9 FROM I-635 TO ROUTE 169
ABOUT 0.4 MILES SOUTH OF ROUTE I-635
BEG. STATION 400+95.0±

Detailed Aug 2024
Checked Aug 2024

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
Ted Koester
12/03/2024 7:54:04 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

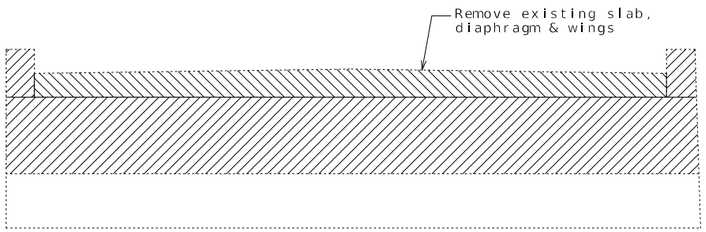
DATE PREPARED 12/3/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	1

COUNTY PLATTE
JOB NO. J4S3498
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A20293

DESCRIPTION | DATE

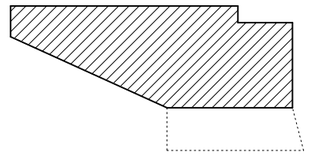
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



DETAILS OF CONCRETE REMOVAL AT END BENTS

Diaphragm and wings removal will be considered completely covered by the contract unit price of 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 Bents No. 1 & 4 removal lines.



DETAILS OF CONCRETE REMOVAL FOR WINGS @ END BENTS NO. 1 & 4

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:

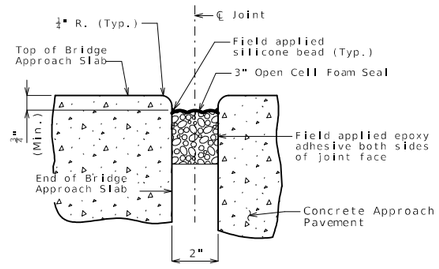
The contractor shall provide bracing necessary for lateral and torsional stability of the beams during construction of the concrete slab and remove the bracing after the slab has attained 75% design strength. Contractor shall not weld on or drill holes in the beams. The cost for furnishing, installing,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

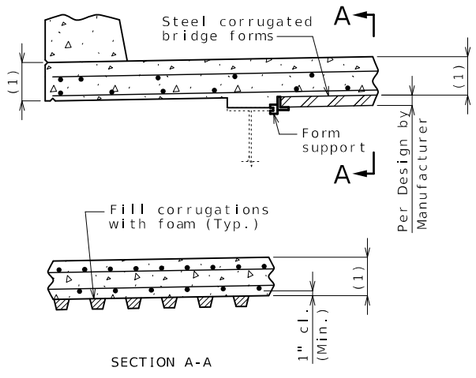
(1) Slab is to be considered a uniform thickness as shown on the plans. Haunching will vary. See front sheet for slab thickness.



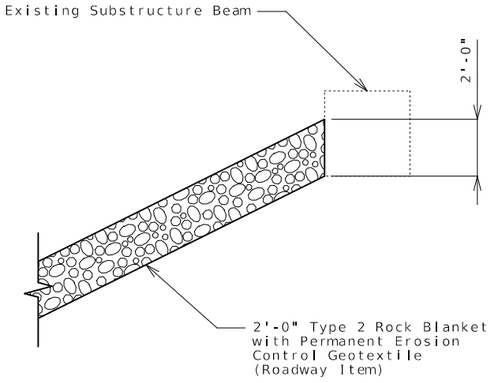
SECTION THRU JOINT AT END OF BRIDGE APPROACH SLAB

SKEW = 32°

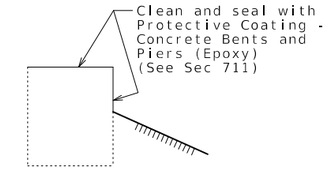
Extend seal full width of approach slab.



OPTIONAL STAY-IN-PLACE FORM DETAILS



ROCK BLANKET ON SPILL SLOPES



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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
12/03/2024 7:54:35 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED: 12/3/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	2

COUNTY: PLATTE

JOB NO.: J4S3498

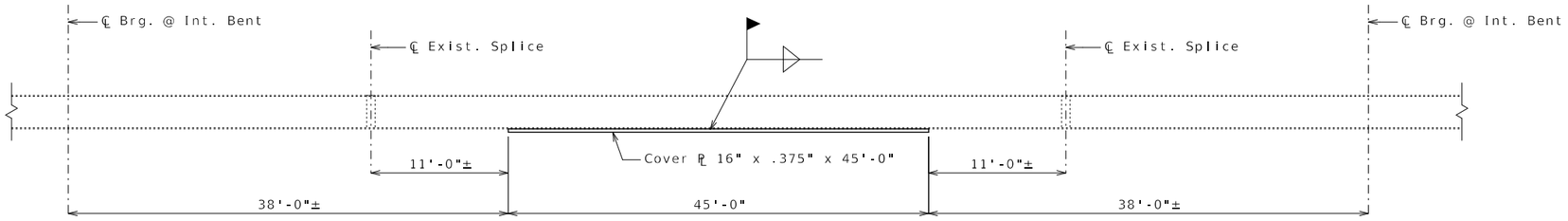
CONTRACT ID.:

PROJECT NO.:

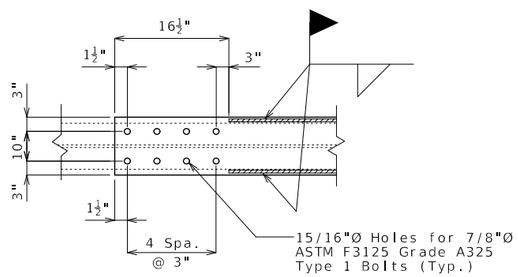
BRIDGE NO.: A20293

DATE	DESCRIPTION

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



PART ELEVATION OF EXTERIOR GIRDER SHOWING COVER PLATE INSTALLATION
SPAN (2-3)



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

Notes:

Girder 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 5,514 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

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TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
Ted Koester
12/03/2024 7:55:01 AM
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MO-PE-2013000591

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12/3/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	3

COUNTY
PLATTE

JOB NO.
J4S3498

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A20293

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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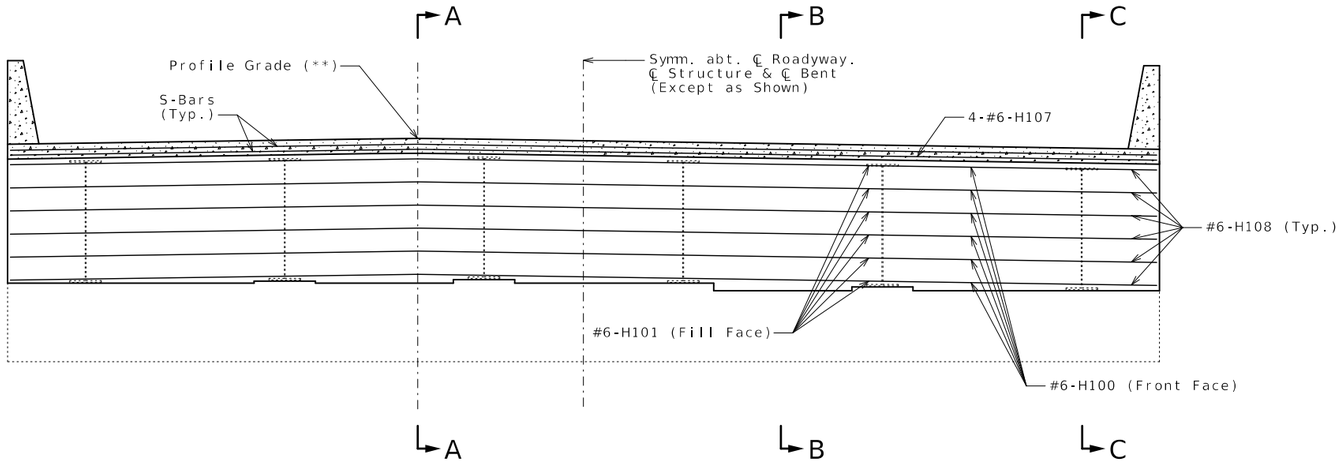


HALF SECTION NEAR FILLFACE

HALF SECTION NEAR CREEK FACE

** Top of slab elevation shall match existing top of concrete slab + 1-1/4"± to assure minimum slab thickness and minimum haunch criteria above top of beam are met with new cross-slope.

Notes:

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 contractunit price for Slab on Steel.

Cost of field drilling holes in existing beam webswill be considered completely covered by the contract unit price for Slab on Steel.

Cost of cutting anchor bolts and placing roofing felt beneath bearing plates (including temporary support of beam ends) will be considered completely covered by the contract unit price for Slab on Steel.

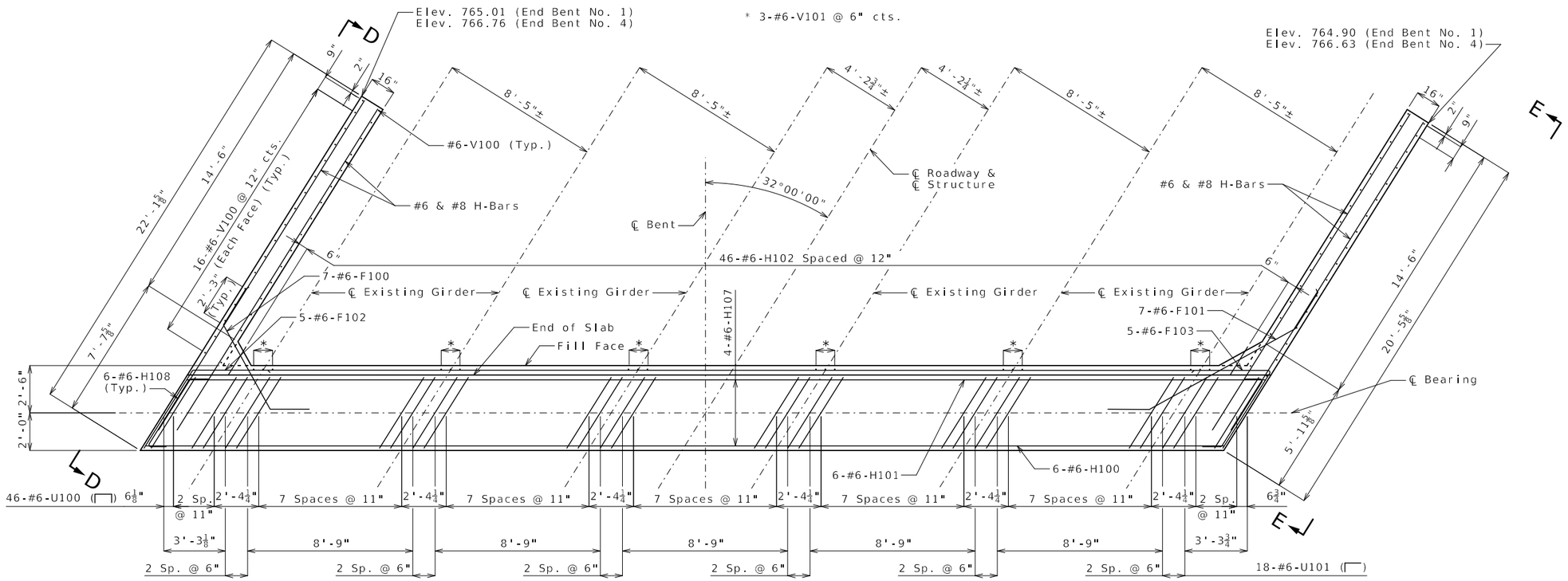
For details and reinforcement of Type D barrier at End Bents, see Sheets No. 8 & 9.

For details of slab reinforcement, see Sheet No. 1.

Estimated jacking force for supporting beams while anchor bolts are cut and roofing felt is placed is 1250 pounds for exterior beams and 1440 pounds for interior beams.

The H100 bars are segmented for ease of placement through girder web holes. The total bar length for H100 bars shown in Bill of Reinforcing Steel allows for one lap splice with a length of 3'-10". Actual bar segment lengths to be determined by contractor for ease of installing bars. The contractor may use a mechanical bar splice in lieu of a lap splice. When a mechanical bar splice is used, the actual bar segment lenth will be determined by the contractor to accommodate manufacturer's recommendations for installation and ease of construction. The cost of furnishing and installing the bar splices will be considered completely covered by the contract unit price for Reinforcing Steel. No adjustment of the quantity of reinforcing steel will be allowed for the use of mechanical bar splices.

Work this sheet with Sheet No. 5.



PART PLAN

DETAILS OF END BENTS NO. 1 & 4

Detailed Aug 2024
Checked Aug 2024

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
12/03/2024 7:55:26 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED: 12/3/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	4

COUNTY: PLATTE

JOB NO.: J4S3498

CONTRACT ID.:

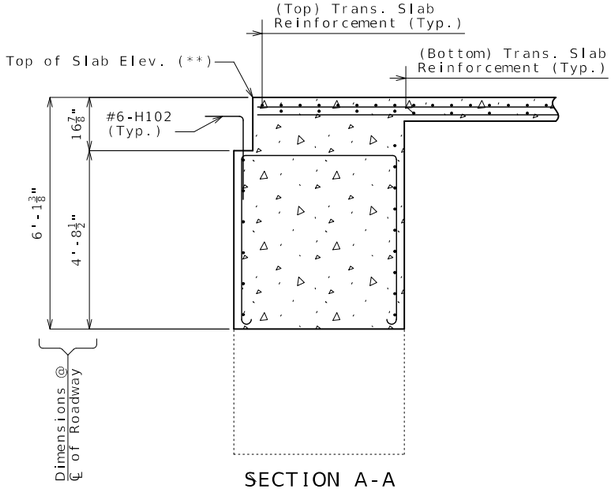
PROJECT NO.:

BRIDGE NO.: A20293

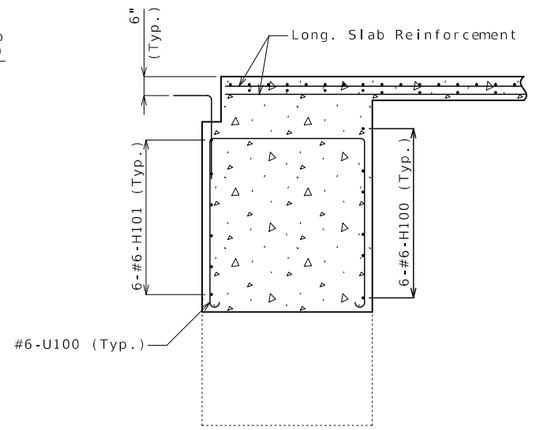
DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

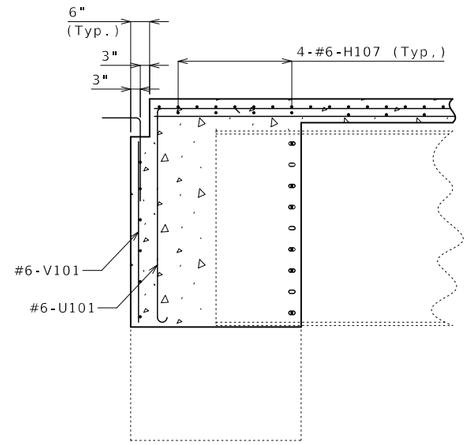
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



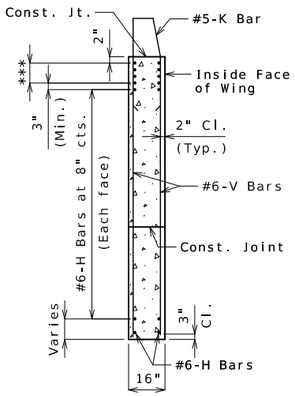
SECTION A-A



SECTION B-B



SECTION C-C



TYPICAL SECTION THRU WING

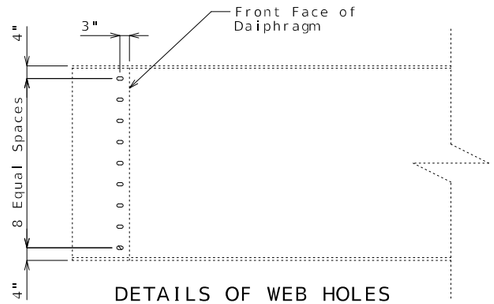
*** #8-H Bars at 3" cts. (Each face)(Place with grade)

** Top of slab elevation shall match existing top of concrete slab + 1-1/4"± to assure minimum slab thickness and minimum haunch criteria above top of beam are met with new cross-slope.

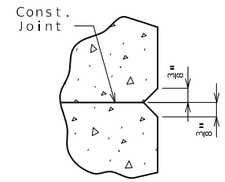
Notes:

Work this sheet with Sheet No. 4.

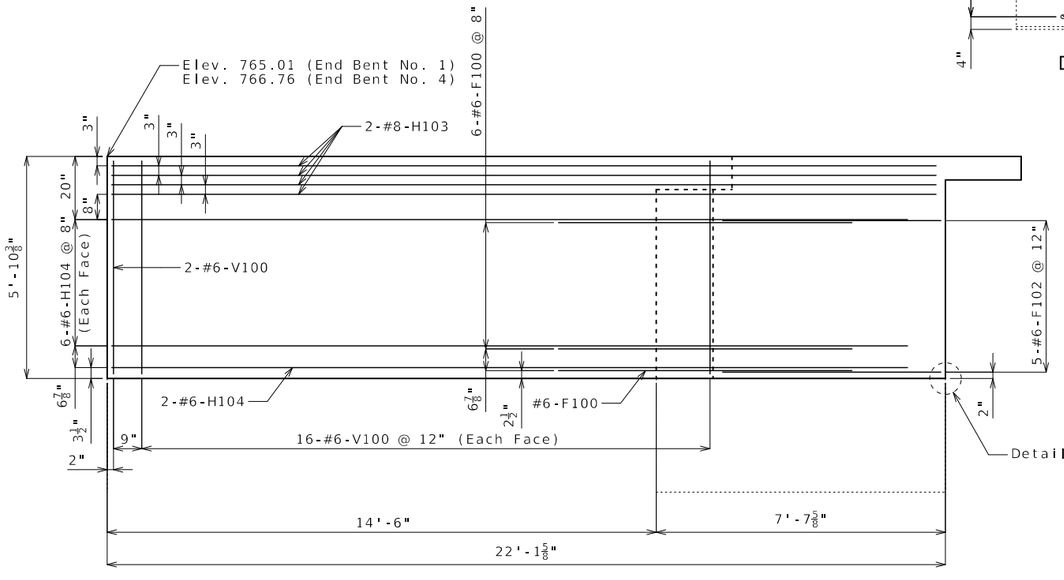
For reinforcement of safety barrier curb, see Sheets No. 8 & 9.



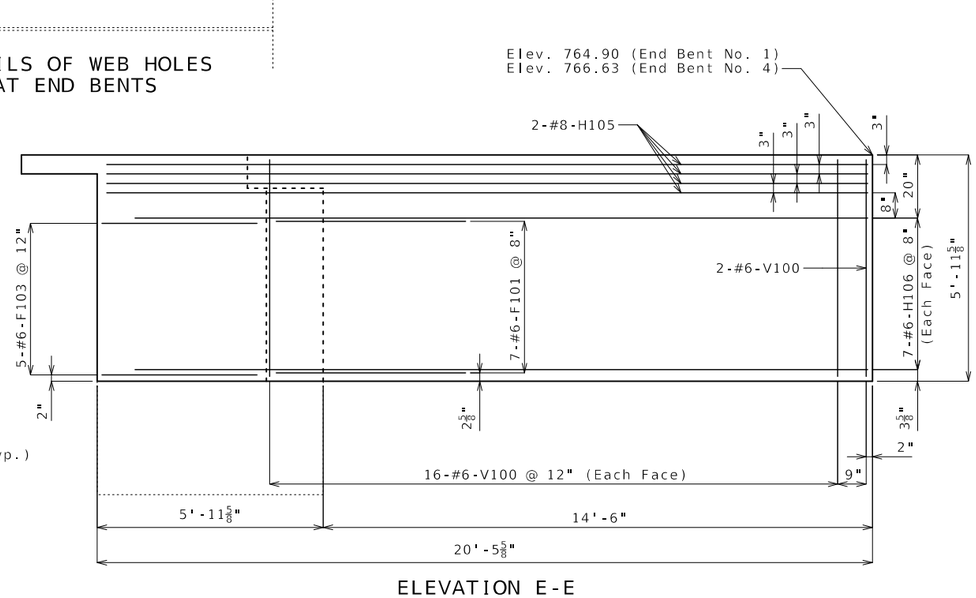
DETAILS OF WEB HOLES AT END BENTS



DETAIL A



ELEVATION D-D



ELEVATION E-E

END BENTS NO. 1 & 4 DETAILS

Detailed Aug 2024
Checked AUg 2024

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
12/3/2024 7:55:53 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED
12/3/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	5

COUNTY
PLATTE

JOB NO.
J4S3498

CONTRACT ID.

PROJECT NO.

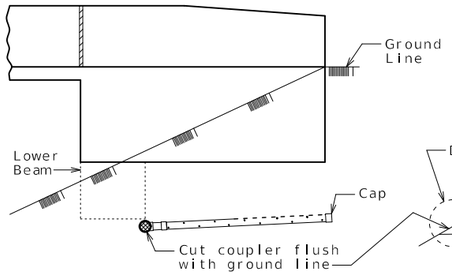
BRIDGE NO.
A20293

DESCRIPTION

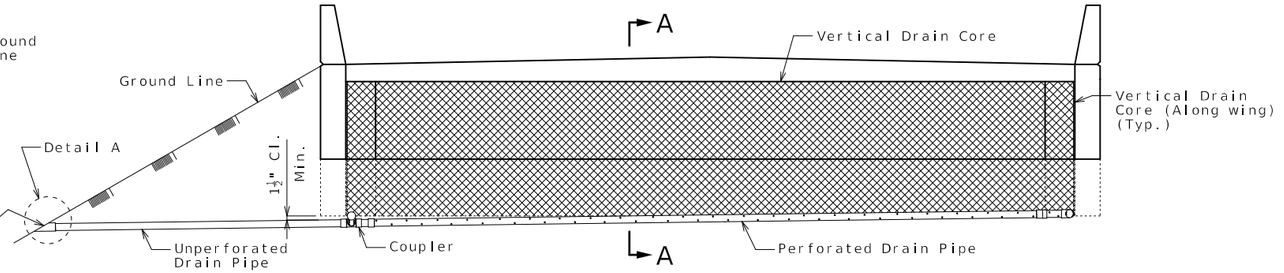
DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

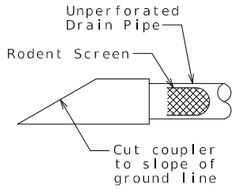
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



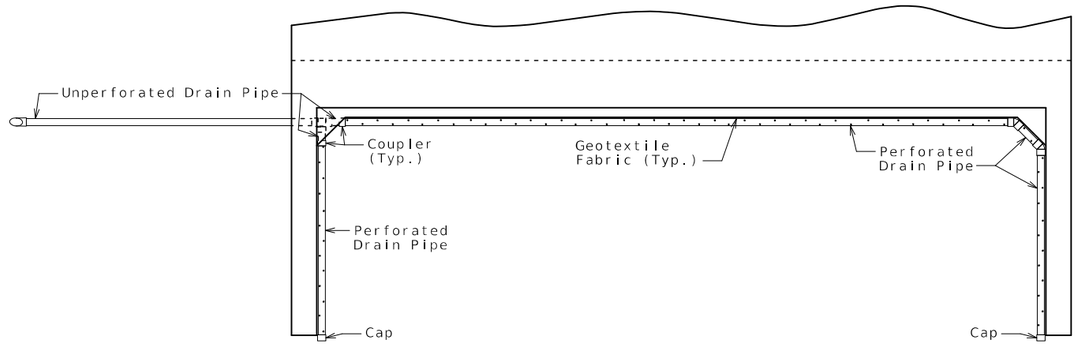
ELEVATION OF WING



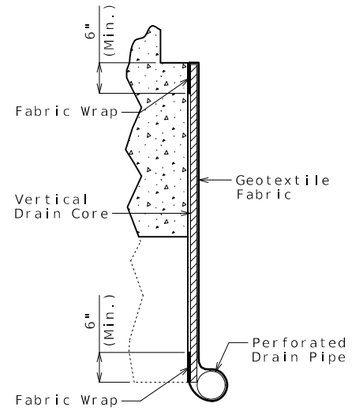
ELEVATION OF END BENT



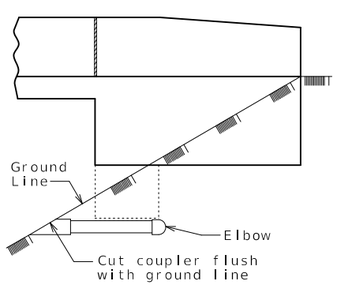
DETAIL A



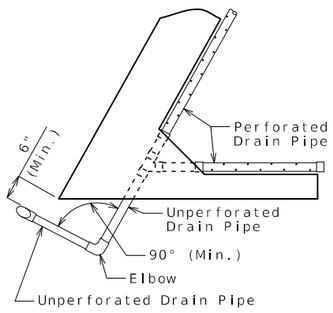
PLAN OF END BENT



PART SECTION A-A
(Section thru wing similar)



ELEVATION OF WING



PART PLAN

OPTIONAL TURNED DRAIN
(Use only when straight drain is not practical.)

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.

Drain pipe shall be placed at fill face of end bent and inside face of wings. The pipe shall slope to lowest grade of ground line, also missing the lower beam of end bent by a minimum of 1 1/2 inches.

Perforated pipe shall be placed at fill face side and inside face of wings 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

(Squared end bent shown, skewed end bent similar)

Detailed Aug 2024
Checked Aug 2024

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

STATE OF MISSOURI
TED S. KOESTER
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DATE PREPARED
12/3/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	6

COUNTY
PLATTE

JOB NO.
J4S3498

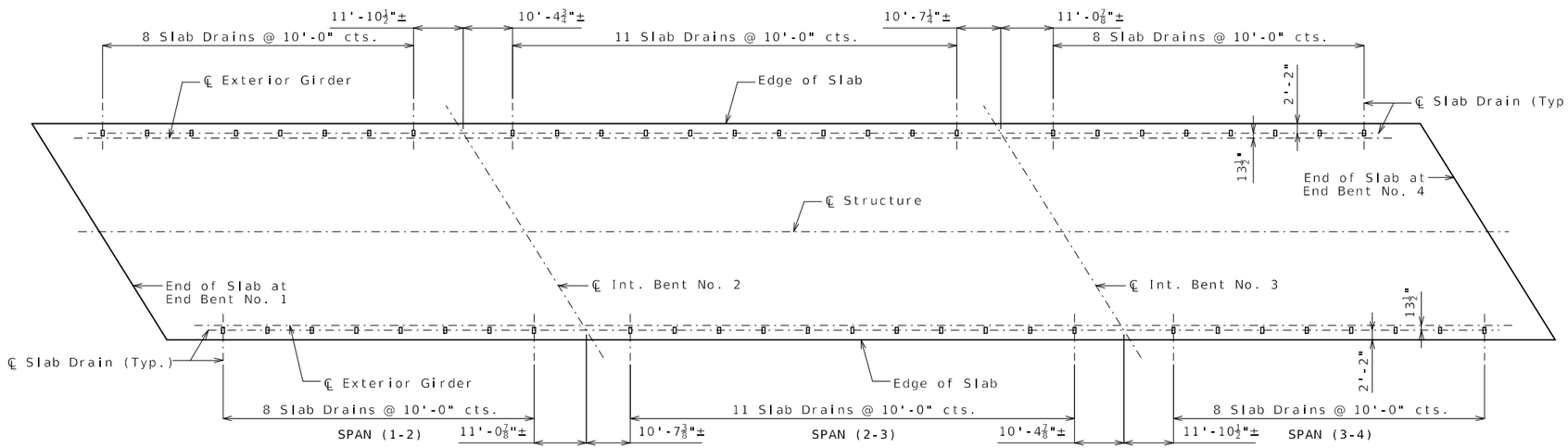
CONTRACT ID.

PROJECT NO.

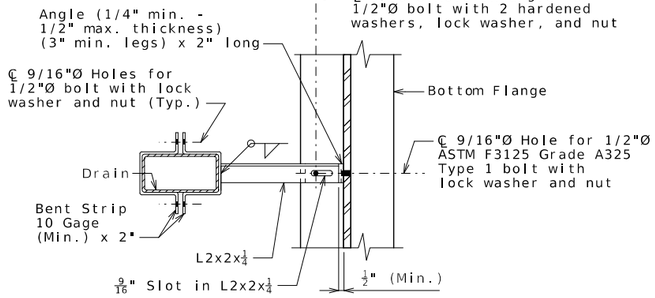
BRIDGE NO.
A20293

DESCRIPTION	DATE

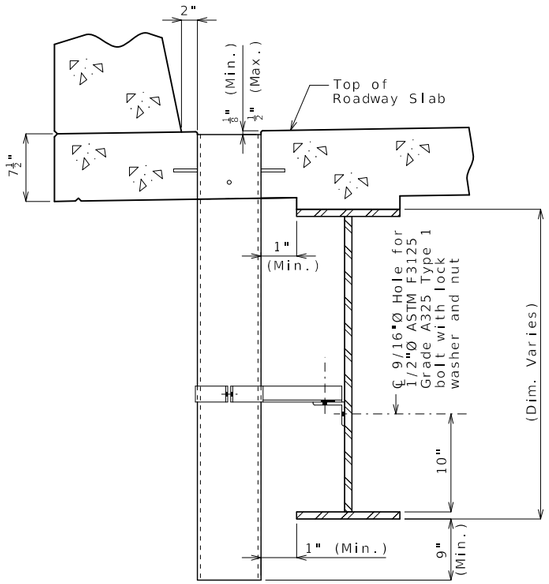
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



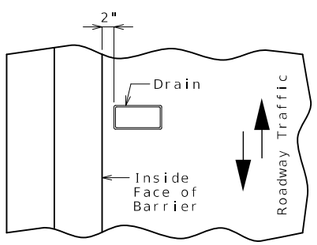
PLAN OF SLAB SHOWING SLAB DRAIN LOCATIONS



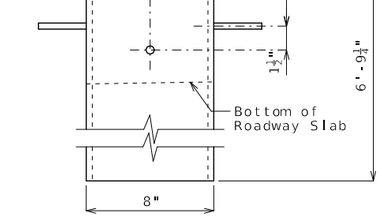
PART SECTION SHOWING BRACKET ASSEMBLY



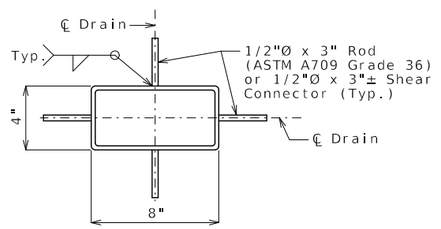
PART SECTION NEAR DRAIN



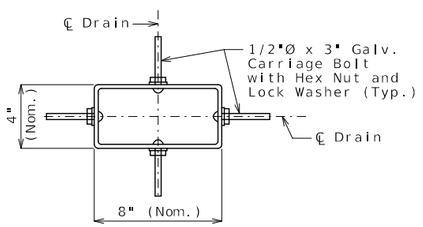
PART PLAN OF SLAB AT DRAIN



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-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.

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 12/3/2024

ROUTE 9 | STATE MO

DISTRICT BR | SHEET NO. 7

COUNTY PLATTE

JOB NO. J4S3498

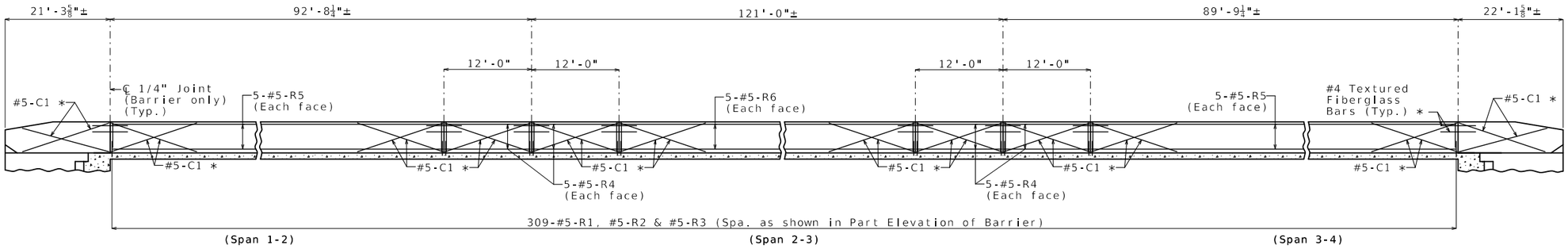
CONTRACT ID.

PROJECT NO.

BRIDGE NO. A20293

DESCRIPTION | DATE

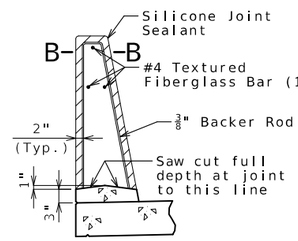
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



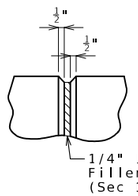
ELEVATION OF BARRIER

(Left barrier shown, right barrier similar)

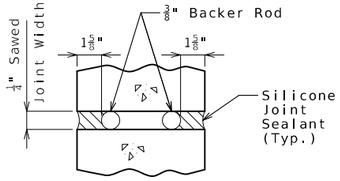
Longitudinal dimensions are horizontal.



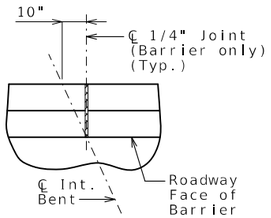
SECTION THRU SAW CUT JOINT



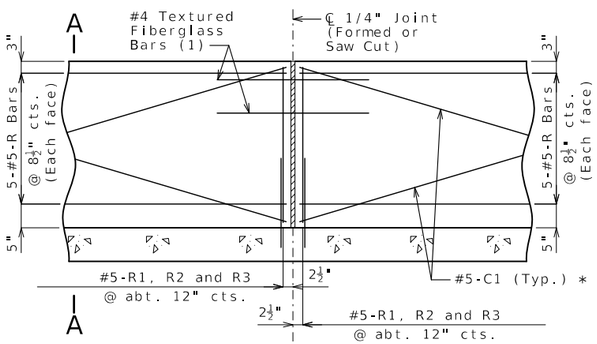
PART ELEVATION AT FORMED JOINT



SECTION B-B

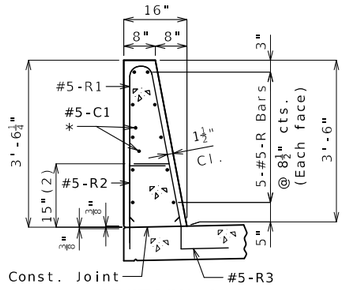


PART PLAN SHOWING JOINT LOCATION



PART ELEVATION OF BARRIER

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

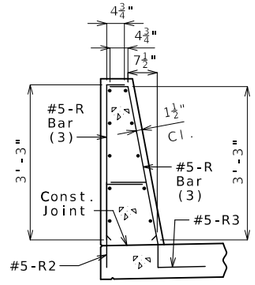


SECTION A-A

Use a minimum lap of 3'-1" 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 (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 Aug 2024
Checked Aug 2024

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
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12/03/2024 7:57:16 AM
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MO-PE-2013000591

DATE PREPARED
12/3/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	8

COUNTY
PLATTE

JOB NO.
J4S3498

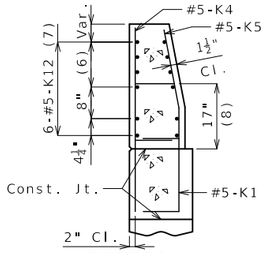
CONTRACT ID.

PROJECT NO.

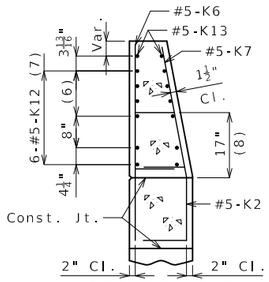
BRIDGE NO.
A20293

DESCRIPTION	DATE

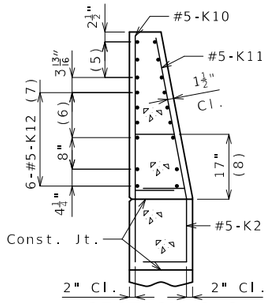
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



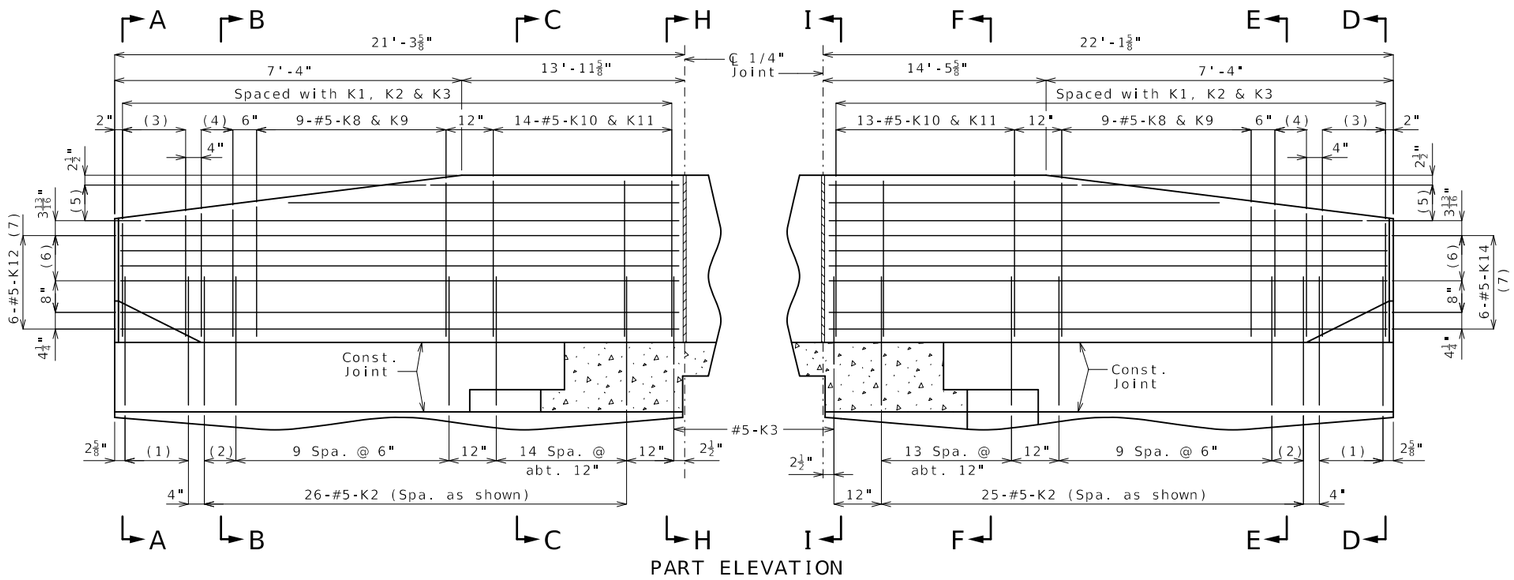
SECTION A-A



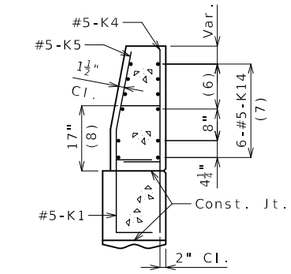
SECTION B-B



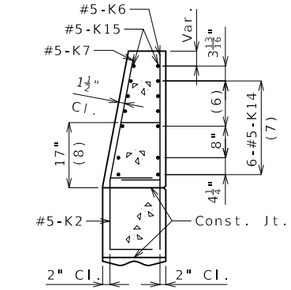
SECTION C-C



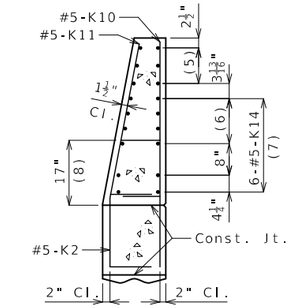
PART ELEVATION



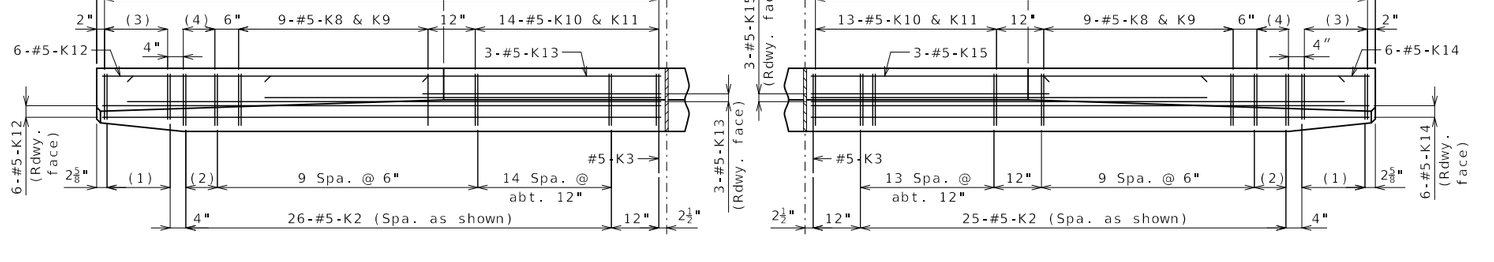
SECTION D-D



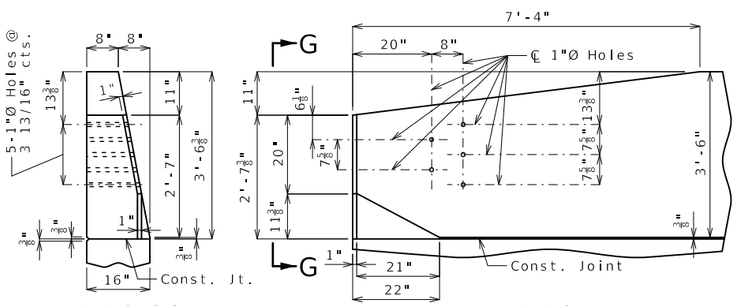
SECTION E-E



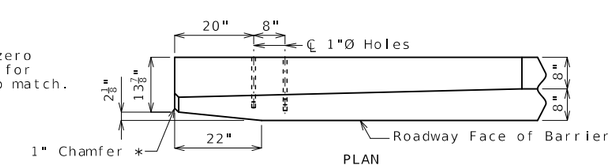
SECTION F-F



PART PLAN



ELEVATION G-G ELEVATION



PLAN

* 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

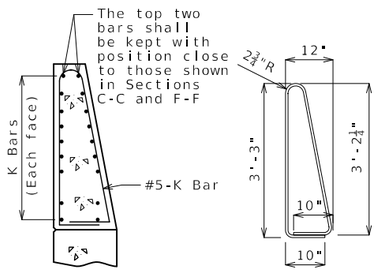
(4) 3-#5-K6 & K7

(5) 3-#5-K13 or K15 @ 4½" cts., each face

(6) 3 spaces @ 3 13/16"

(7) Spaced as shown, each face

(8) To top of bar



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.

General Notes:

Reinforcing Steel:

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.

Minimum clearance to reinforcing steel shall be 1 1/2" except as shown for bars embedded into end bent.

TYPE D BARRIER AT END BENTS

(Left barrier shown, right barrier similar)

Detailed Aug 2024
Checked Aug 2024

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

STATE OF MISSOURI
TED S. KOESTER
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12/03/2024 7:57:40 AM
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DATE PREPARED
12/3/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	9

COUNTY
PLATTE

JOB NO.
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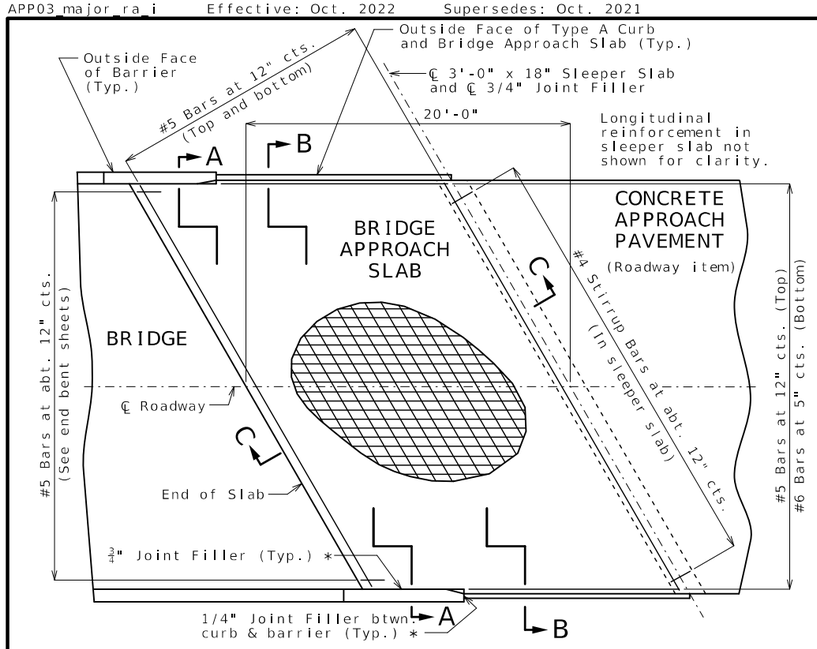
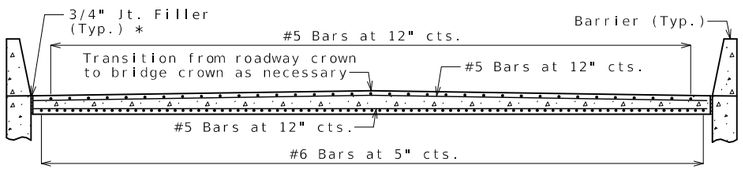
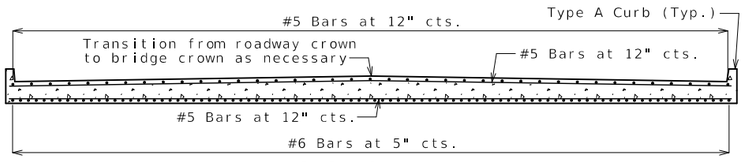


PART PLAN SHOWING REINFORCEMENT

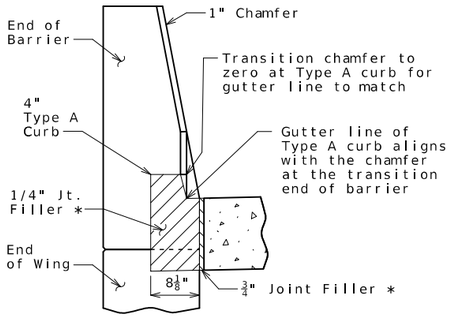


SECTION A-A

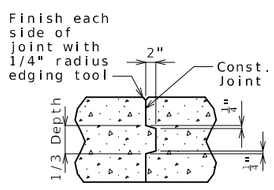


SECTION B-B

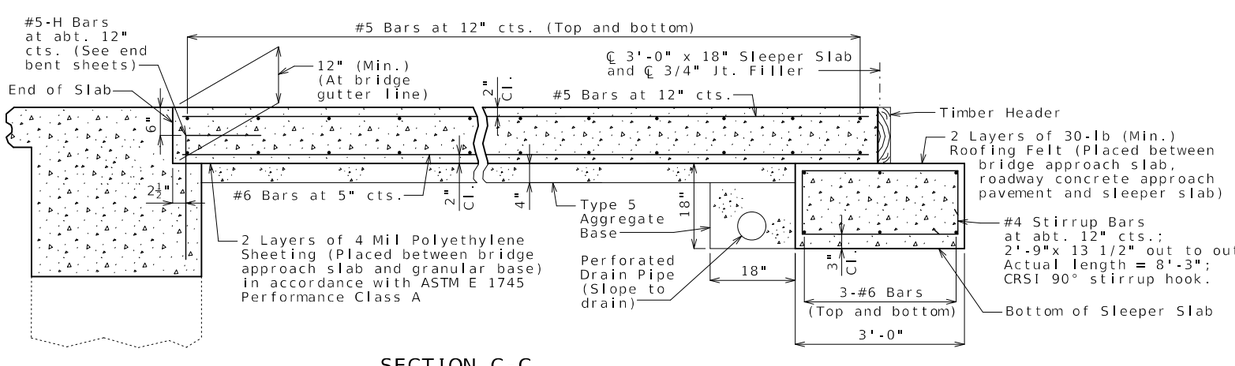
With the approval of the engineer, the contractor may crown the bottom of the approach slab to match the crown of the roadway surface.



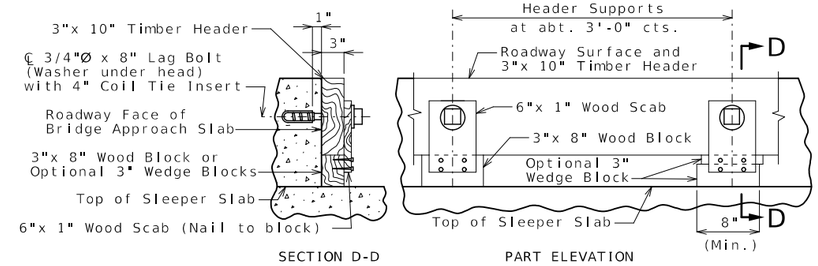
SECTION BETWEEN CURB AND BARRIER



CONSTRUCTION JOINT DETAIL



SECTION C-C



SECTION D-D PART ELEVATION

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 29 inches for #5 bars and 44 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 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.

Open cell foam joint seal width shall be 3" and depth shall be determined by the manufacturer. Manufacturer recommended seal size shall meet the movement and installation gap requirements and skew effect.

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
Ted Koester
12/03/2024 7:58:05 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED 12/3/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	10

COUNTY: PLATTE
JOB NO.: J4S3498
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A20293

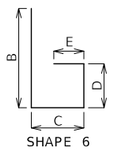
DATE	DESCRIPTION

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

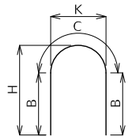
BRIDGE APPROACH SLAB (MAJOR)

Detailed Aug 2024
Checked Aug 2024

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



SHAPE 6
or 6S



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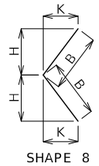

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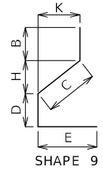

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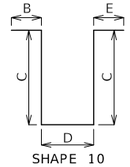

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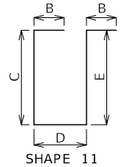

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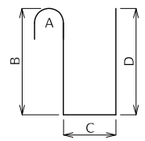
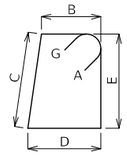


SHAPE 12



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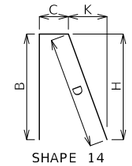

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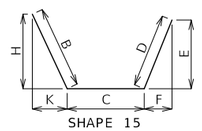

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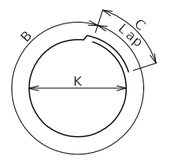

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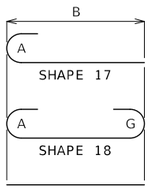
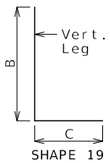


SHAPE 17
SHAPE 18
SHAPE 20



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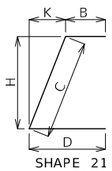

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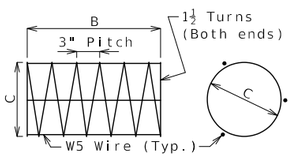

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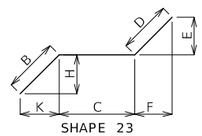

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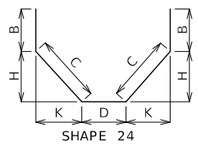

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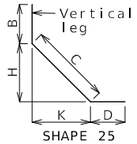

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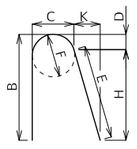
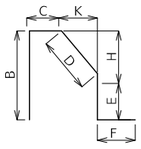
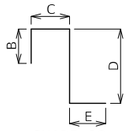


SHAPE 26



SHAPE 27S



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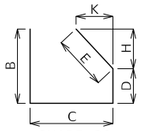

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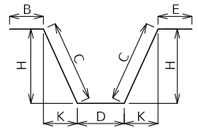

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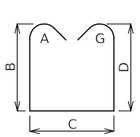

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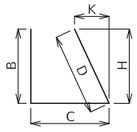

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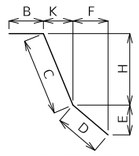

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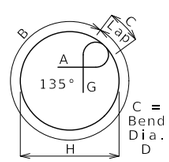
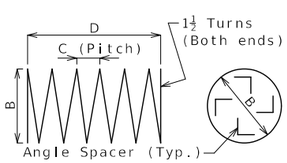
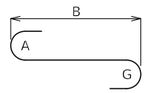


SHAPE 34S



SHAPE 35 (1)

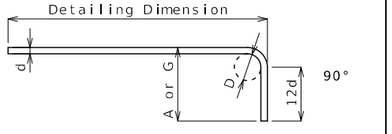


SHAPE 36

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	4¼"	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"

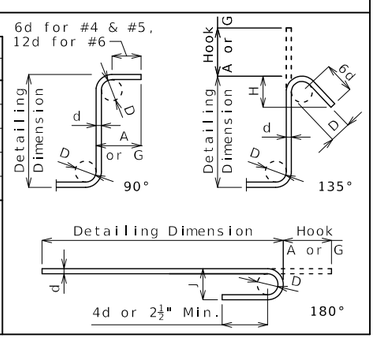


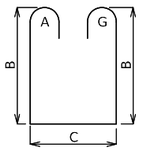
Stirrup Pin Bend Shapes (S)

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"	4⅜"	6"

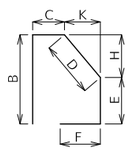
Applicable for all grades of steel.

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	
	Size	Plain	Epoxy	Slab	Barrier	Slip Form	Plain	Epoxy
By Size	W5	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0
	5	0	0	42,082	16,479	600	0	59,161
	6	0	0	76,076	0	0	0	76,076
	7	0	0	0	0	0	0	0
	8	0	0	1,787	0	0	0	1,787
	9	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0
	11	0	0	0	0	0	0	0
	14	0	0	0	0	0	0	0
	18	0	0	0	0	0	0	0
By Type		0	0	119,945	16,479	600	0	137,024

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

BENDING DIAGRAMS AND REINFORCING STEEL TOTALS

Detailed Aug 2024
Checked Aug 2024

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER
PE-2013000591
PROFESSIONAL ENGINEER
12/03/2024 7:58:31 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED
12/3/2024

ROUTE	STATE
9	MO
DISTRICT	SHEET NO.
BR	11

COUNTY
PLATTE

JOB NO.
J4S3498

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A20293

DESCRIPTION	DATE

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

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													
14	6 F100	WING	E	25S		2 3.00	5 1.25	2 0.87			4 5.63	2 5.75	9 5	9 4	184
14	6 F101	WING	E	25S		2 3.00	8 10.00	2 2.38			4 3.38	7 8.63	13 3	13 3	205
10	6 F102	WING	E	19S		4 10.87	4 0.00						8 11	8 10	124
10	6 F103	WING	E	19S		4 9.25	4 0.00						8 9	8 8	122
12	6 H100	DIAPHRAGM	E	20		52 5.00							52 5	52 5	945
12	6 H101	DIAPHRAGM	E	20		48 5.00							48 5	48 5	873
92	6 H102	DIAPHRAGM	E	19		15.00	12.00						2 3	2 1	288
16	8 H103	WING	E	20		21 9.13							21 9	21 9	929
28	6 H104	WING	E	20		17 7.50							17 8	17 8	744
16	8 H105	WING	E	20		20 1.13							20 1	20 1	858
28	6 H106	WING	E	20		17 7.50							17 8	17 8	743
8	6 H107	DIAPHRAGM	E	20		48 5.00							48 5	48 5	582
24	6 H108	DIAPHRAGM	E	21S			5 0.25	12.37			4 3.00	2 7.88	6 1	6 0	216
92	6 U100	DIAPHRAGM	E	31S		4 8.25	3 7.00	4 8.25					14 4	14	1,935
36	6 U101	DIAPHRAGM	E	19S		5 7.25	2 2.00						7 9	7 7	410
136	6 V100	WING	E	20		5 7.38							5 7	5 7	1,141
36	6 V101	DIAPHRAGM	E	20		4 9.25							4 9	4 9	257
		Slab													
558	5 S1	SLAB	E	20		55 0.00							55	55	32,010
148	5 S2	SLAB	E	20		26 0.00							26	26	4,013
148	5 S3	SLAB	E	20		39 3.00							39 3	39 3	6,059
835	6 S4	SLAB	E	20		48 5.00							48 5	48 5	60,723
116	6 S5	SLAB	E	20	2	47 7.25							47 7	47 7	
		Incr. = 9.625"				2 0.00							2	2	4,320
58	6 S6	SLAB	E	20	2	46 9.63							46 10	46 10	
		Incr. = 19.250"				2 0.00							2	2	2,127
		Barrier													
		Type D													
20	5 K1	BARRIER	E	27S		3 8.00	9.25	5.25	3 2.75		5.25	1.00	8 1	7 11	165
102	5 K2	BARRIER	E	27S		3 8.00	9.25	14.50	2 5.75		14.25	2.75	8 2	7 11	842
4	5 K3	BARRIER	E	27S		21.50	9.25	14.50	6.75	12.00	14.25	2.75	5 4	5	21
20	5 K4	BARRIER	E	19S	4	2 4.25	10.00						3 2	3 1	
		Incr. = 0.500"				2 6.25	10.00						3 4	3 3	66
20	5 K5	BARRIER	E	14S	4	8.25	9.50	18.50	0.00	0.00	4.00	15.00	3	2 11	
		Incr. = 0.500"				8.25	9.50	20.50	0.00	0.00	4.50	20.00	3 2	3 1	63
12	5 K6	BARRIER	E	19S		2 6.75	10.00						3 5	3 3	41
12	5 K7	BARRIER	E	21S		2 6.75	2 6.75	10.00			2 6.00	6.25	6 0	5 9	72
36	5 K8	BARRIER	E	19S	4	2 8.50	10.00						3 7	3 5	
		Incr. = 0.750"				3 2.50	10.00						4 1	3 11	138
36	5 K9	BARRIER	E	21S	4	2 8.50	2 8.50	10.00			2 7.75	6.75	6 3	6 0	
		Incr. = 1.500"				3 2.50	3 2.50	10.00			3 1.75	7.75	7 3	7 0	244
54	5 K10	BARRIER	E	19S		3 3.00	10.00						4 1	4 0	225
54	5 K11	BARRIER	E	21S		3 3.00	3 3.00	10.00			3 2.25	7.75	7 4	7 1	399
24	5 K12	BARRIER	E	20		21 8.50							21 9	21 9	544
12	5 K13	BARRIER	E	20	4	20 11.50							21 0	21 0	
		Incr. = 14.375"				14 11.50							15 0	15 0	225
24	5 K14	BARRIER	E	20		20 0.50							20 1	20 1	503
12	5 K15	BARRIER	E	20	4	19 3.50							19 4	19 4	
		Incr. = 14.375"				13 3.50							13 4	13 4	204
618	5 R1	BARRIER	E	26		3 3.00	5.50	2.25	3 1.25	5.50	3 0.75	6.75	7 0	6 9	4,351
618	5 R2	BARRIER	E	19S		19.50	9.50						2 5	2 4	1,504
618	5 R3	BARRIER	E	27S			9.50	15.25	4.00	12.00	15.00	3.00	3 5	3 3	2,095
80	5 R4	BARRIER	E	20		11 9.00							11 9	11 9	980
40	5 R5	BARRIER	E	20		41 0.00							41 0	41 0	1711
40	5 R6	BARRIER	E	20		50 0.00							50 0	50 0	2,086
		Slip-Form													
48	5 C1	SLIP FORM	E	20		12 0.00							12	12	600

Bill of Reinforcing Steel

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

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

For bending diagrams and steel reinforcing totals, see Sheet No. 11.

All bars shall be 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 Aug 2024
Checked Aug 2024

BILL OF REINFORCING STEEL

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
12/03/2024 7:58:57 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED: 12/3/2024
ROUTE: 9 | STATE: MO
DISTRICT: BR | SHEET NO.: 12
COUNTY: PLATTE
JOB NO.: J4S3498
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A20293

DESCRIPTION | DATE

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