DESIGN DESIGNATION

A.A.D.T. - 2025 = 3162
A.A.D.T. - 2045 = 3829
D.H.V. = 10.62%
T = 8.42%
V = 65 M.P.H.
D = 51.0%/49% (N/S)
FUNCTIONAL CLASSIFICATION - MAJOR COLLECTOR

EXISTING NORMAL RIGHT OF WAY

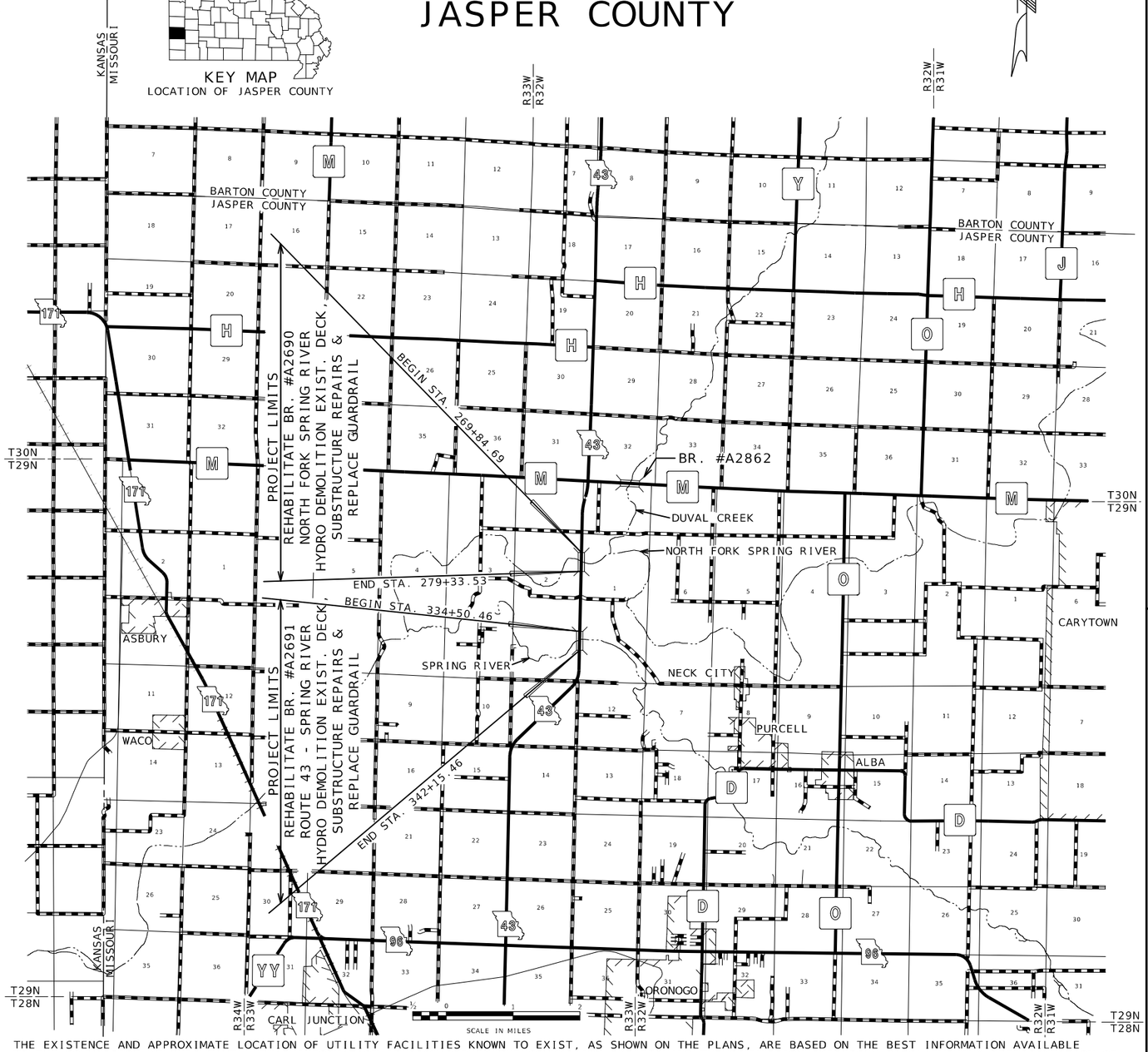
CONVENTIONAL SYMBOLS
(USED IN PLANS)

	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 JASPER COUNTY



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

INDEX OF SHEETS

LENGTH OF PROJECT

BRIDGE A2690 - NORTH FORK SPRING RIVER
BEGINNING OF PROJECT STA. 269 + 84.69
END OF PROJECT STA. 279 + 33.53

APPARENT LENGTH 948.84 FEET

BRIDGE A2691 - SPRING RIVER
BEGINNING OF PROJECT STA. 334 + 50.46
END OF PROJECT STA. 342 + 15.46

APPARENT LENGTH 765.00 FEET

EQUATIONS AND EXCEPTIONS: NONE

TOTAL CORRECTIONS 0.00 FEET
NET LENGTH OF PROJECT 1713.84 FEET
STATE LENGTH 0.325 MILES

FOR INFORMATION ONLY
ESTIMATED DISTURBED ACRES 0 ACRES

STATE OF MISSOURI
CRAIG ALAN SWITZER
NUMBER PE-2003015045
PROFESSIONAL ENGINEER
03/04/2025 7:48:38 AM
CRAIG ALAN SWITZER - CIVIL
MO-PE-2003015045

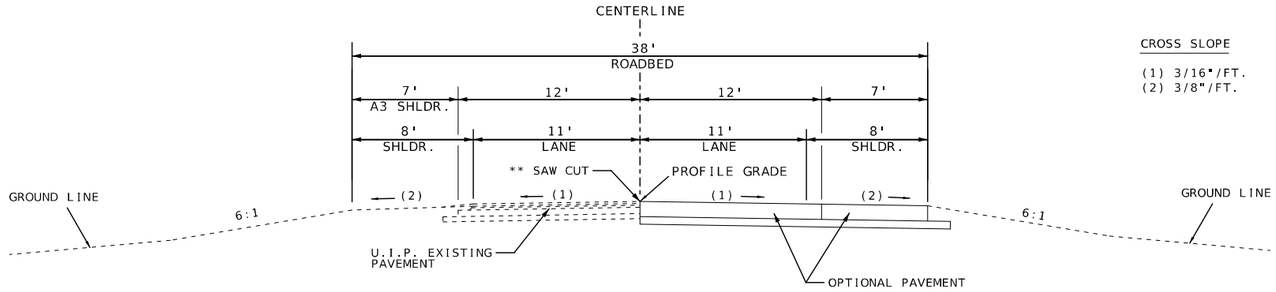
DATE PREPARED 3/4/2025

ROUTE	STATE
43	MO
DISTRICT	SHEET NO.
SW	1

COUNTY JASPER
JOB NO. JSR0073
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)



CROSS SLOPE

(1) 3/16"/FT.
(2) 3/8"/FT.

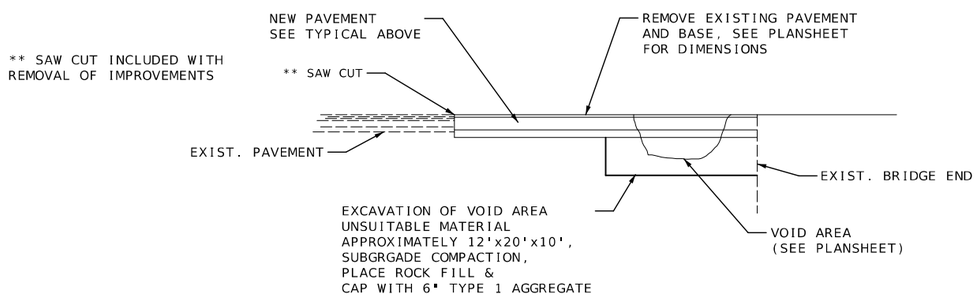
** SAW CUT INCLUDED WITH REMOVAL OF IMPROVEMENTS

SECTION ON TANGENT

TYPICAL SECTION RTE. 43
(VOID AREA LOCATION ONLY)
STA. 277+55.11 TO STA. 277+82.03

MATCH EXISTING TYPICAL SECTION
STA. 269+84.69 - STA. 277+55.11
STA. 277+82.03 - STA. 279+33.53
STA. 334+50.46 - STA. 342+15.46

OPTIONAL PAVEMENT		
12" HMA 2" BP-1 w/PG64-22 10" BIT. BASE w/PG64-22 6" TYPE 1 AGGR. BASE	12" PCCP 12" REINF. PCCP 15' JOINTS w/1.25" DOWELS 6" TYPE 1 AGGR. BASE	SHOULDER FULL DEPTH



VOID AREA REPAIR

LOOKING WEST
N.T.S.

TYPICAL SECTION

SHEET 1 OF 1

STATE OF MISSOURI
CRAIG ALAN SWITZER
NUMBER PE-2003015045
PROFESSIONAL ENGINEER
02/18/2025 11:04:59 AM
CRAIG ALAN SWITZER - CIVIL
MO-PE-2003015045

DATE PREPARED
2/13/2025

ROUTE	STATE
43	MO
DISTRICT	SHEET NO.
SW	2

COUNTY
JASPER

JOB NO.
JSR0073

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

STATION	TO	STATION	LOCATION	DESCRIPTION	UNITS	TOTAL	REMARKS
270+24.09	-	271+47.19	ROUTE 43 - RT.	EX. GUARDRAIL	L.F.	125	
270+42.90	-	271+61.03	ROUTE 43 - LT.	EX. GUARDRAIL	L.F.	112.5	
277+55.11	-	277+82.03	ROUTE 43 - LT.	EX. PAVEMENT	S.Y.	57	S.E. CORNER BR. A2690
277+57.19	-	278+83.73	ROUTE 43 - RT.	EX. GUARDRAIL	L.F.	125	
277+71.03	-	279+03.39	ROUTE 43 - LT.	EX. GUARDRAIL	L.F.	137.5	
334+87.96	-	336+12.96	ROUTE 43 - RT.	EX. GUARDRAIL	L.F.	125	
334+87.96	-	336+12.96	ROUTE 43 - LT.	EX. GUARDRAIL	L.F.	125	
340+52.96	-	341+77.96	ROUTE 43 - RT.	EX. GUARDRAIL	L.F.	125	
340+52.96	-	341+77.96	ROUTE 43 - LT.	EX. GUARDRAIL	L.F.	125	
					LUMP SUM	1	

CONTRACTOR FURNISHED SURVEYING AND STAKING
LUMP SUM = 1

MOBILIZATION
LUMP SUM = 1

EARTHWORK SUMMARY

STATION	TO	STATION	LOCATION	UNCLASSIFIED EXCAVATION (C.Y.)	REMARKS
277+57.66	-	277+77.22	ROUTE 43 - S.E. CORNER BR. #A2690	89	VOID AREA - SEE PLANSHEET
			TOTAL	89	
			USE	89	

SUBGRADE COMPACTION

STATION	TO	STATION	LOCATION	(100FT.)	REMARKS
277+57.66	-	277+77.22	ROUTE 43 - S.E. CORNER BR. #A2690	1.0	VOID AREA - SEE PLANSHEET
			TOTAL	1.0	
			USE	1.0	

ROCK FILL

STATION	TO	STATION	LOCATION	AREA	FURNISHING (C.Y.)	PLACING (C.Y.)	REMARKS
277+57.66	-	277+77.22	ROUTE 43 - S.E. CORNER BR. #A2690	12'x20'x10'	89	89	VOID AREA - SEE PLANSHEET
				TOTAL	89	89	
				USE	89	89	

FLOWABLE BACKFILL

STATION	TO	STATION	LOCATION	AREA	(C.Y.)	REMARKS
336+21.00			ROUTE 43 - Br. #A2691	1'x1'x40'	2	VOID AREA UNDER BENT 1
				TOTAL	2	
				USE	2	

6" TYPE 1 AGGREGATE

STATION	TO	STATION	LOCATION	AREA	BASE (S.Y.)	REMARKS
277+57.66	-	277+77.22	ROUTE 43 - S.E. CORNER BR. #A2690	12'x20'x10'	27	CAP FOR ROCK FILL IN VOID AREA - SEE TYPICALS
				TOTAL	27	
				USE	27	

SUMMARY OF QUANTITIES
SHEET 1 OF 3

STATE OF MISSOURI
CRAIG ALAN SWITZER
NUMBER PE-2003015045
PROFESSIONAL ENGINEER
02/18/2025 11:05:10 AM
CRAIG ALAN SWITZER - CIVIL
MO-PE-2003015045

DATE PREPARED: 2/13/2025
ROUTE: 43 | STATE: MO
DISTRICT: SW | SHEET NO.: 3
COUNTY: JASPER
JOB NO.: JSR0073
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)

MODIFIED COLDMILLING - DEPTH TRANSITIONS

STATION	TO	STATION	LOCATION	LENGTH (FT.)	WIDTH (FT.)	AREA (S.Y.)	REMARKS
270+81.19	-	271+63.11	ROUTE 43 - BR. #A2690, NORTH END	81.92	38	345.88	TIE EXISTING PAVEMENT TO NEW BRIDGE DECK
277+55.11	-	278+37.03	ROUTE 43 - BR. #A2690, SOUTH END	81.92	38	345.88	TIE EXISTING PAVEMENT TO NEW BRIDGE DECK
335+45.96	-	336+20.96	ROUTE 43 - BR. #A2691, NORTH END	75.00	38	316.67	TIE EXISTING PAVEMENT TO NEW BRIDGE DECK
340+44.96	-	341+19.96	ROUTE 43 - BR. #A2691, SOUTH END	75.00	38	316.67	TIE EXISTING PAVEMENT TO NEW BRIDGE DECK
					TOTAL	1325.1	
					USE	1325	

OPTIONAL PAVEMENT

STATION	TO	STATION	LOCATION	LENGTH (FT.)	WIDTH (FT.)	PAVEMENT (S.Y.)	6" TYPE 1 AGGR. BASE (S.Y.)	REMARKS
277+55.11	-	277+82.03	ROUTE 43 - SOUTH END BR. #A2690	26.92	19	56.83		VOID AREA - SEE PLANSHEET
277+55.11	-	277+82.03	ROUTE 43 - SOUTH END BR. #A2690	26.92	19		56.83	VOID AREA - SEE PLANSHEET
					TOTAL	56.83	56.83	
					USE	56.8	57	

GUARDRAIL

STATION	TO	STATION	LOCATION	MGS GUARDRAIL (L.F.)	MGS BRIDGE APPROACH TRANSITION, REGULAR (EA.)	MASH TYPE A CRASHWORTHY END TERMINAL (EA.)	SHAPING SLOPES CLASS III (100FT.)	REMARKS
269+84.69	-	271+47.19	ROUTE 43, RT. SIDE - BR. #A2690	75.0	1	1	1	
270+48.53	-	271+61.03	ROUTE 43, LT. SIDE - BR. #A2690	25.0	1	1	1	
277+57.19	-	278+69.69	ROUTE 43, RT. SIDE - BR. #A2690	25.0	1	1	1	
277+71.03	-	279+33.53	ROUTE 43, LT. SIDE - BR. #A2690	75.0	1	1	1	
334+50.46	-	336+12.96	ROUTE 43, RT. SIDE - BR. #A2691	75.0	1	1	1	
335+00.46	-	336+12.96	ROUTE 43, LT. SIDE - BR. #A2691	25.0	1	1	1	
340+52.96	-	341+65.46	ROUTE 43, RT. SIDE - BR. #A2691	25.0	1	1	1	
340+52.96	-	342+15.46	ROUTE 43, LT. SIDE - BR. #A2691	75.0	1	1	1	
			TOTAL	400.0	8	8	8	
			USE	400	8	8	8	

PAVEMENT MARKING

STATION	TO	STATION	LOCATION	STANDARD WATERBORNE PAVEMENT MARKING PAINT, TYPE P BEADS		REMARKS
				4" WHITE (L.F.)	4" YELLOW (L.F.)	
270+81.19	-	278+37.03	ROUTE 43, LT. EDGE - BR.#A2690	755.84		
270+81.19	-	278+37.03	ROUTE 43, RT. EDGE - BR. #A2690	755.84		
270+81.19	-	278+37.03	ROUTE 43, C/L - BR. #A2690		188.96	INTERMITTENT C/L
335+45.96	-	341+19.96	ROUTE 43, LT. EDGE - BR.#A2691	574.00		
335+45.96	-	341+19.96	ROUTE 43, RT. EDGE - BR. #A2691	574.00		
335+45.96	-	341+19.96	ROUTE 43, C/L - BR. #A2691		143.50	INTERMITTENT C/L
			TOTAL	2659.68	332.46	
			USE	2660	332	

SUMMARY OF QUANTITIES
SHEET 2 OF 3

STATE OF MISSOURI
CRAIG ALAN SWITZER
NUMBER PE-2003015045
PROFESSIONAL ENGINEER
02/18/2025 11:05:52 AM
CRAIG ALAN SWITZER - CIVIL
MO-PE-2003015045

DATE PREPARED: 2/13/2025
ROUTE: 43 | STATE: MO
DISTRICT: SW | SHEET NO.: 3
COUNTY: JASPER
JOB NO.: JSR0073
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						MERGE (SYMBOL FROM RIGHT)
WO4-1aL	48X48	16.00						MERGE (LEFT)
WO4-1aR	48X48	16.00						MERGE (RIGHT)
WO5-1	48X48	16.00						ROAD/BRIDGE/RAMP NARROWS
WO5-3	48X48	16.00						ONE LANE BRIDGE
WO5-5	48X48	16.00						NARROW LANES
WO6-1	48X48	16.00						DIVIDED HIGHWAY (SYMBOL)
WO6-2	48X48	16.00						DIVIDED HIGHWAY END (SYMBOL)
WO6-3	48X48	16.00						TWO WAY TRAFFIC (SYMBOL)
WO7-3a	30X24	5.00						NEXT XX MILES (PLAQUE)
WO8-1	48X48	16.00						BUMP
WO8-2	48X48	16.00						DIP
WO8-3	48X48	16.00						PAVEMENT ENDS
WO8-4	48X48	16.00						SOFT SHOULDER
WO8-5	48X48	16.00						SLIPPERY WHEN WET (SYMBOL)
WO8-6	48X48	16.00						TRUCK CROSSING
WO8-6c	48X48	16.00						TRUCK ENTRANCE
WO8-7	36X36	9.00						LOOSE GRAVEL
WO8-7a	36X36	9.00						FRESH OIL / LOOSE GRAVEL
WO8-9	48X48	16.00						LOW SHOULDER
WO8-11	48X48	16.00						UNEVEN LANES
WO8-12	48X48	16.00						NO CENTER LINE
WO8-15	48X48	16.00						GROOVED PAVEMENT
WO8-15P	30X24	5.00						MOTORCYCLE (PLAQUE)
WO8-17L	48X48	16.00						SHOULDER DROP-OFF (SYMBOL LEFT)
WO8-17R	48X48	16.00						SHOULDER DROP-OFF (SYMBOL RIGHT)
WO8-17P	30X24	5.00						SHOULDER DROP-OFF (PLAQUE)
W10-1	42RND.	9.62						RAILROAD CROSSING
WO12-1	24X24	4.00						DOUBLE DOWN ARROW (SYMBOL)
WO12-2	48X48	16.00						LOW CLEARANCE (SYMBOL)
WO12-2x	24X18	3.00						LOW CLEARANCE (PLAQUE)
WO12-2a	84X24	14.00						OVERHEAD LOW CLEARANCE (FEET AND INCHES)
WO12-4	120X60	50.00						LOW CLEARANCE XX FT XX IN XX MILES AHEAD
WO12-5	120X60	50.00						WIDTH RESTRICTION XX FT XX IN XX MILES AHEAD
WO13-1	30X30	6.25						ADVISORY SPEED (PLAQUE)
WO16-2	30X24	5.00						XXX FEET (PLAQUE)
WO16-3	30X24	5.00						X MILE (PLAQUE)
WO20-1	48X48	16.00						ROAD/BRIDGE/RAMP WORK AHEAD
WO20-2	48X48	16.00	2	32				DETOUR AHEAD
WO20-3	48X48	16.00	4	64				ROAD CLOSED AHEAD
WO20-4	48X48	16.00						ONE LANE ROAD AHEAD
WO20-5	48X48	16.00						RIGHT/CENTER/LEFT LANE CLOSED AHEAD
WO20-5a	48X48	16.00						2 RIGHT/CENTER/LEFT LANES CLOSED AHEAD
WO20-6a	48X48	16.00						RIGHT/CENTER/LEFT LANE CLOSED
WO20-7a	48X48	16.00						FLAGGER (SYMBOL)
WO21-2	36X36	9.00						FRESH OIL
WO21-5	48X48	16.00						SHOULDER WORK / SHOULDER WORK AHEAD
WO22-1	48X48	16.00						BLASTING ZONE AHEAD
WO22-2	42X36	10.50						TURN OFF 2-WAY RADIO AND PHONE
WO22-3	42X36	10.50						END BLASTING ZONE
GO22-1	21X15	2.19						WET PAINT (ARROW PIVOTS)

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN 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						ROAD WORK NEXT XX MILES
GO20-2	48X24	8.00						END ROAD WORK
GO20-4	36X18	4.50						PILOT CAR FOLLOW ME
GO20-4a	42X30	8.75						PILOT CAR IN USE WAIT & FOLLOW
GO20-4a	18X12	1.50						PILOT CAR IN USE WAIT & FOLLOW
GO20-5aP	36X24	6.00						WORK ZONE (PLAQUE)
MO4-8a	24X18	3.00	2	6				END DETOUR
MO4-9L	48X36	12.00						DETOUR (LEFT)
MO4-9R	48X36	12.00						DETOUR (RIGHT)
MO4-9P	48X12	4.00						STREET NAME (PLAQUE)
MO4-10L	48X18	6.00						DETOUR ARROW (LEFT)
MO4-10R	48X18	6.00						DETOUR ARROW (RIGHT)
REGULATORY SIGNS								
R1-1	48X48	13.25						STOP
R1-2	48TRI.	6.93						YIELD
R1-2a	36X36	9.00						TO ONCOMING TRAFFIC (PLAQUE)
R1-3P	30X12	2.50						ALL WAY (PLAQUE)
R2-1	36X48	12.00						SPEED LIMIT XX
R3-1	48X48	16.00						NO RIGHT TURN (SYMBOL)
R3-2	48X48	16.00						NO LEFT TURN (SYMBOL)
R3-3	36X36	9.00						NO TURNS
R3-4	48X48	16.00						NO U-TURN (SYMBOL)
R3-7L	30X30	6.25						LEFT LANE MUST TURN LEFT
R3-7R	30X30	6.25						RIGHT LANE MUST TURN RIGHT
R4-1	36X48	12.00						DO NOT PASS
R4-2	36X48	12.00						PASS WITH CARE
R4-7a	36X48	12.00						KEEP RIGHT (HORIZONTAL ARROW)
R4-8a	36X48	12.00						KEEP LEFT (HORIZONTAL ARROW)
R5-1	30X30	6.25						DO NOT ENTER
R5-1a	36X24	6.00						WRONG WAY
R6-1L	54X18	6.75						ONE WAY ARROW (LEFT)
R6-1R	54X18	6.75						ONE WAY ARROW (RIGHT)
R6-2L	24X30	5.00						ONE WAY (LEFT)
R6-2R	24X30	5.00						ONE WAY (RIGHT)
R9-9	24X12	2.00						SIDEWALK CLOSED
R9-11L	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW LEFT) CROSS HERE
R9-11R	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW RIGHT) CROSS HERE
R10-6	24X36	6.00						STOP HERE ON RED (45^ ARROW)
R11-2	48X30	10.00	2	20				ROAD CLOSED
R11-3a	60X30	12.50	2	25				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						POINT OF PRESENCE
CONST-8	48X36	12.00						WORK ZONE NO PHONE ZONE
SPECIAL	36X78	19.50	32	624				DETOUR ROUTE ASSEMBLY
SPECIAL	48X96	32.00	2	64				ROAD CLOSED XX MILES AHEAD

616-10.05 CONSTRUCTION SIGNS	TOTAL
	835

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		ADVANCED WARNING RAIL SYSTEM
6161012		BUOYS (BOATS KEEP OUT)
6161013		BUOYS (NO WAKE)
6161014		SPECIAL SIGN ASSEMBLY (BOATS KEEP OUT)
6161025		CHANNELIZER (TRIM LINE)
6161030	14	TYPE III MOVEABLE BARRICADE
6161033		DIRECTION INDICATOR BARRICADE
6161040		FLASHING ARROW PANEL
6161047		TYPE III OBJECT MARKER
6161055		SEQUENTIAL FLASHING WARNING LIGHT
6161070		TUBULAR MARKER
6161095		RADAR SPEED ADVISORY SYSTEM
6161096		CHANGEABLE MESSAGE SIGN, COMMISSION FURNISHED/RETAINED
6161098A		CHANGEABLE MESSAGE SIGN W/O COMM. INTERFACE - CONTRACTOR FURNISHED/RETAINED
6161099	2	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

SUMMARY OF QUANTITIES
SHEET 3 OF 3

STATE OF MISSOURI
CRAIG ALAN SWITZER
NUMBER PE-2003015045
PROFESSIONAL ENGINEER
02/18/2025 11:06:22 AM
CRAIG ALAN SWITZER - CIVIL
MO-PE-2003015045

DATE PREPARED: 2/13/2025

ROUTE	STATE
43	MO

DISTRICT	SHEET NO.
SW	3

COUNTY: JASPER

JOB NO.: JSR0073

CONTRACT ID.:

PROJECT NO.:

BRIDGE NO.:

DESCRIPTION	DATE

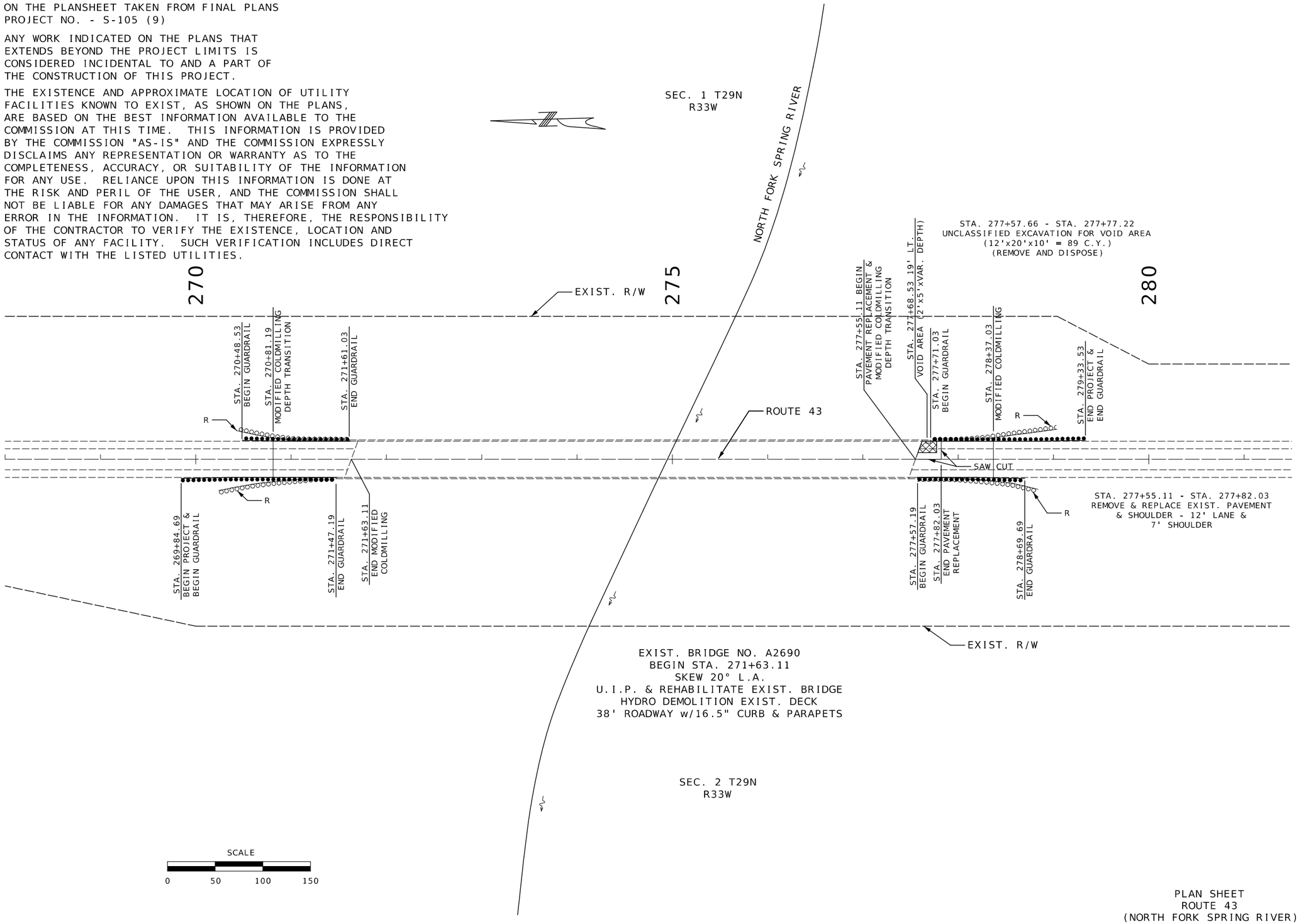
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

EXISTING INFORMATION AND STATIONING SHOWN ON THE PLANSHEET TAKEN FROM FINAL PLANS PROJECT NO. - S-105 (9)

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.

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



PLAN SHEET
ROUTE 43
(NORTH FORK SPRING RIVER)
SHEET 1 OF 2

STATE OF MISSOURI
CRAIG ALAN SWITZER
NUMBER PE-2003015045
PROFESSIONAL ENGINEER
02/18/2025 11:06:47 AM
CRAIG ALAN SWITZER - CIVIL
MO-PE-2003015045

DATE PREPARED
2/13/2025

ROUTE	STATE
43	MO
DISTRICT	SHEET NO.
SW	4

COUNTY
JASPER

JOB NO.
JSR0073

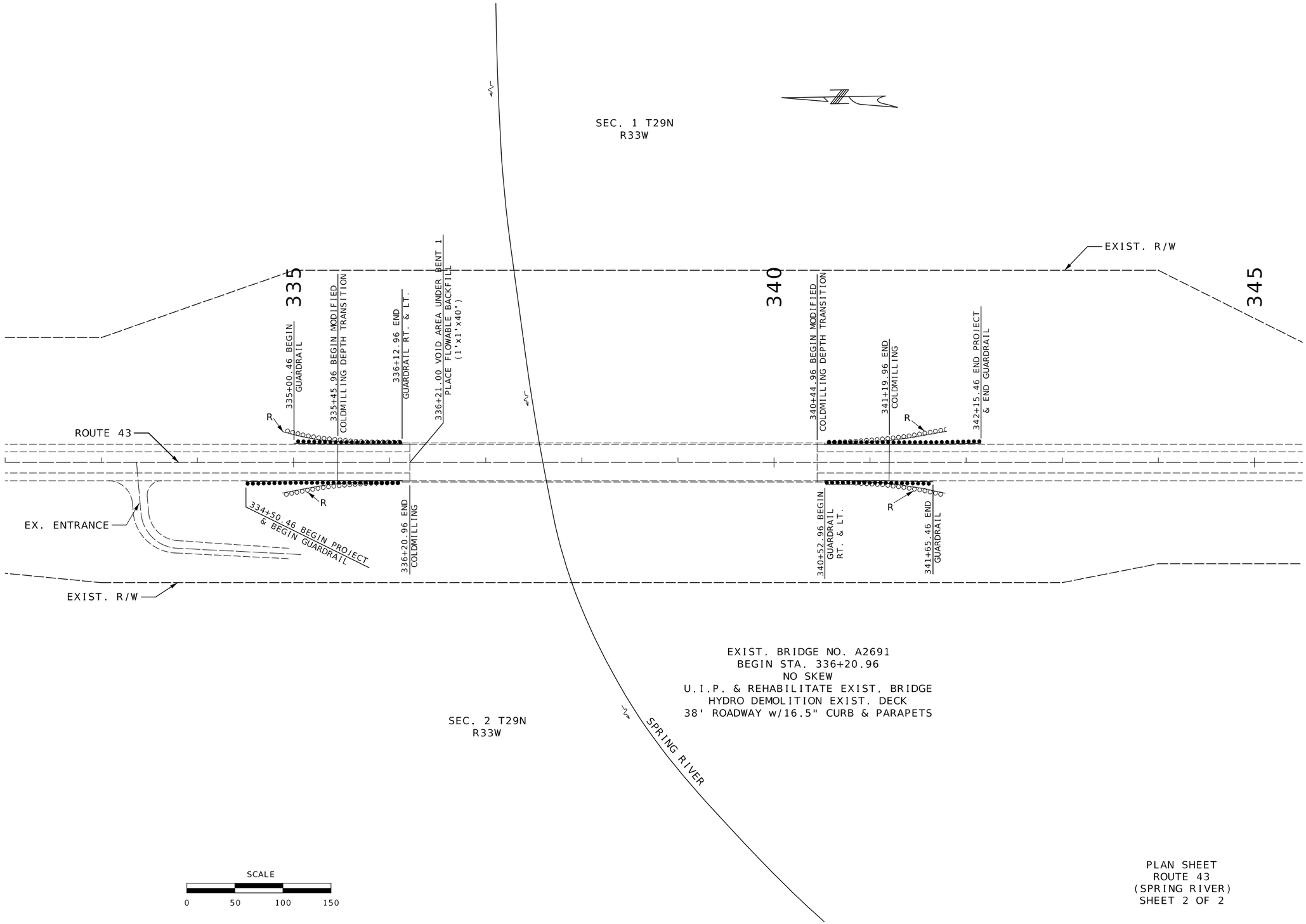
CONTRACT ID.

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)



PLAN SHEET
ROUTE 43
(SPRING RIVER)
SHEET 2 OF 2

STATE OF MISSOURI
CRAIG ALAN SWITZER
NUMBER PE-2003015045
PROFESSIONAL ENGINEER

02/18/2025 11:06:58 AM
CRAIG ALAN SWITZER - CIVIL
MO-PE-2003015045

DATE PREPARED
2/13/2025

ROUTE	STATE
43	MO
DISTRICT	SHEET NO.
SW	5

COUNTY
JASPER

JOB NO.
JSR0073

CONTRACT ID.

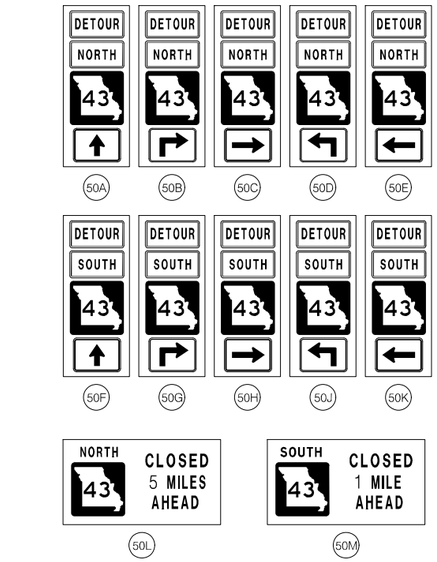
PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

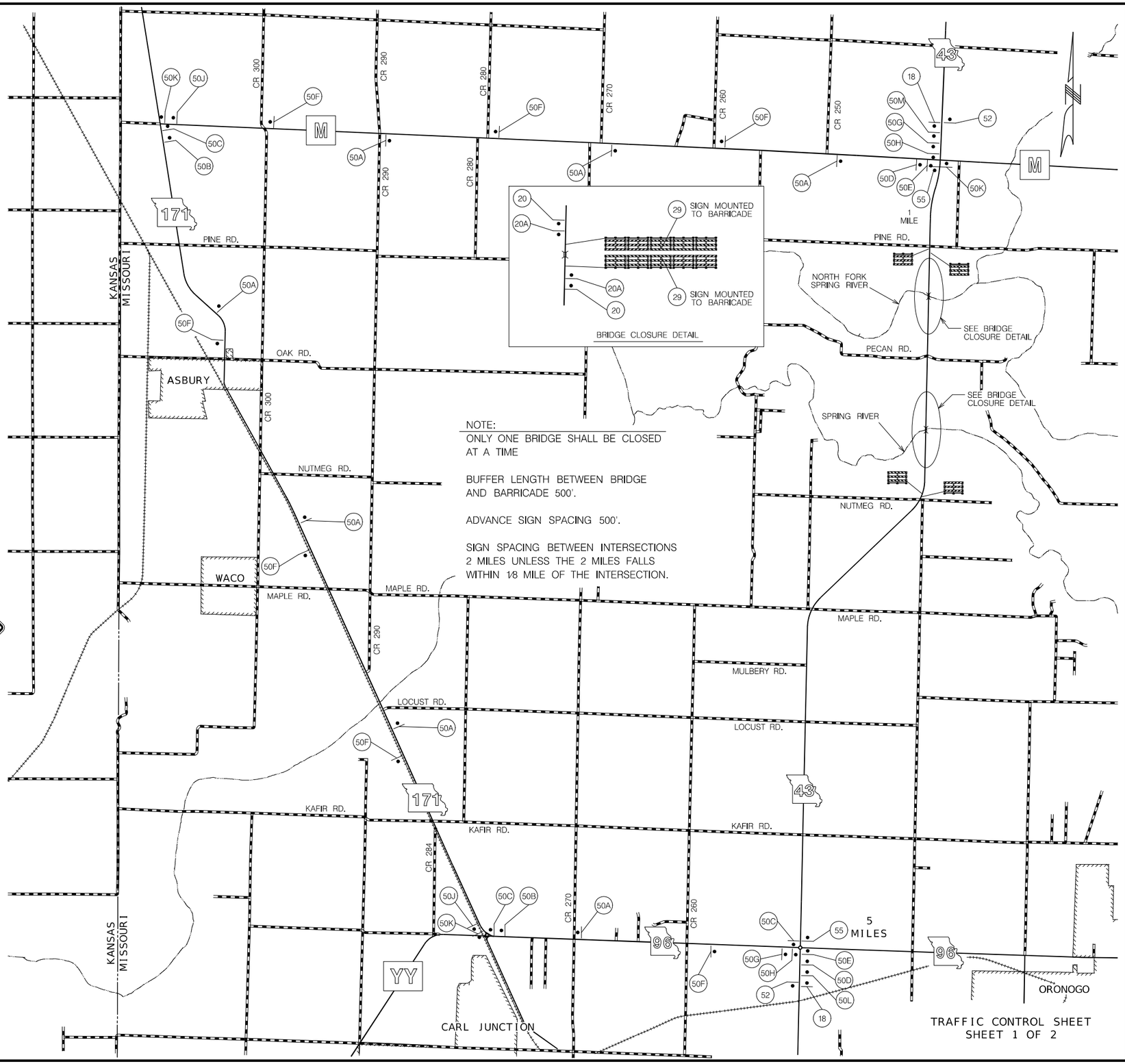
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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



SCALE

NOT TO SCALE



NOTE:
ONLY ONE BRIDGE SHALL BE CLOSED AT A TIME

BUFFER LENGTH BETWEEN BRIDGE AND BARRICADE 500'.

ADVANCE SIGN SPACING 500'.

SIGN SPACING BETWEEN INTERSECTIONS 2 MILES UNLESS THE 2 MILES FALLS WITHIN 1/8 MILE OF THE INTERSECTION.

TRAFFIC CONTROL SHEET
SHEET 1 OF 2

STATE OF MISSOURI
CRAIG ALAN SWITZER
NUMBER PE-2003015045
PROFESSIONAL ENGINEER
02/18/2025 11:07:10 AM
CRAIG ALAN SWITZER - CIVIL
MO-PE-2003015045

DATE PREPARED
2/13/2025

ROUTE	STATE
43	MO
DISTRICT	SHEET NO.
SW	6

COUNTY
JASPER

JOB NO.
JSR0073

CONTRACT ID.

PROJECT NO.

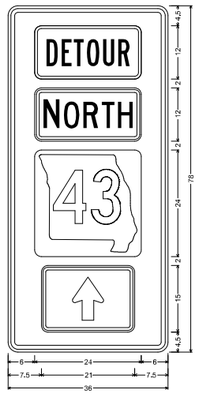
BRIDGE NO.

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

50A



MO4-11 SHF-FLAT SHEET FLUORESCENT:
2,250" Radius, 0.875" Border, 0.625" Indent, Black on, Orange;
Table of letter and object lefts

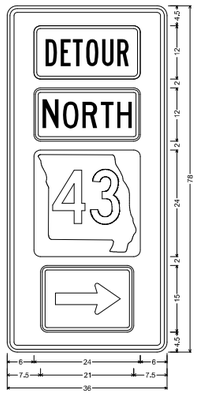
	6.000
	6.000
	6.000
	7.500

50B

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

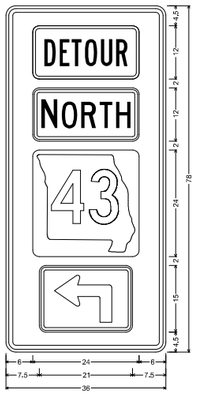
50C



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

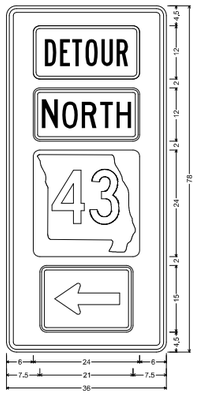
50D



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

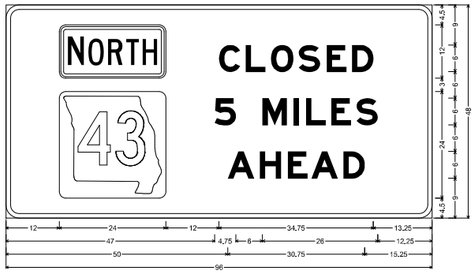
50E



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

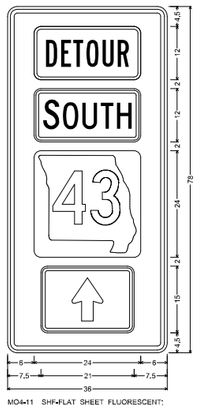
50L



MO4-13 SHF-FLAT SHEET FLUORESCENT:
3,000" Radius, 1,000" Border, Black on, Orange;
"CLOSED", E Mod: "5 MILES", E Mod: "AHEAD", E Mod:
Table of letter and object lefts

	C 48,000	L 54,000	D 59,750	S 66,000	E 72,250	D 78,000
	S 47,000	H 57,750	I 64,875	L 67,625	S 73,250	E 79,000
A 50,000	H 57,125	E 63,500	A 68,750	D 76,000		

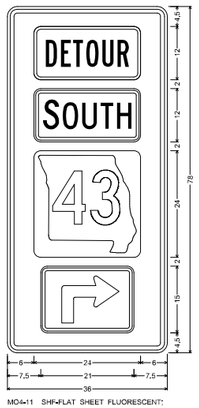
50F



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

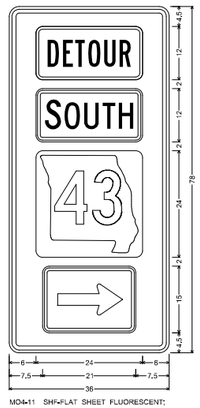
50G



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

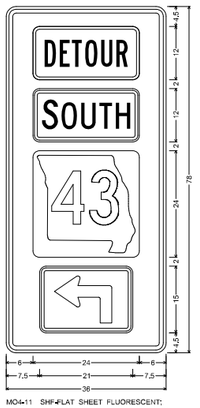
50H



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

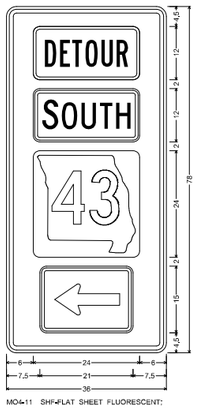
50 J



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

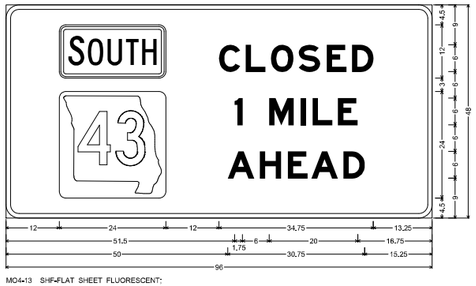
50K



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

50M



MO4-13 SHF-FLAT SHEET FLUORESCENT:
3,000" Radius, 1,000" Border, Black on, Orange;
"CLOSED", E Mod: "1 MILE", E Mod: "AHEAD", E Mod:
Table of letter and object lefts

	C 48,000	L 54,000	D 59,750	S 66,000	E 72,250	D 78,000
	I 51,500	M 59,250	I 66,375	L 69,125	E 74,750	
A 50,000	H 57,125	E 63,500	A 68,750	D 76,000		

TRAFFIC CONTROL SHEET
SHEET 2 OF 2

STATE OF MISSOURI
CRAIG ALAN SWITZER
NUMBER PE-2003015045
PROFESSIONAL ENGINEER
02/18/2025 11:07:28 AM
CRAIG ALAN SWITZER - CIVIL
MO-PE-2003015045

DATE PREPARED
2/13/2025

ROUTE	STATE
43	MO
DISTRICT	SHEET NO.
SW	7

COUNTY
JASPER

JOB NO.
JSR0073

CONTRACT ID.

PROJECT NO.

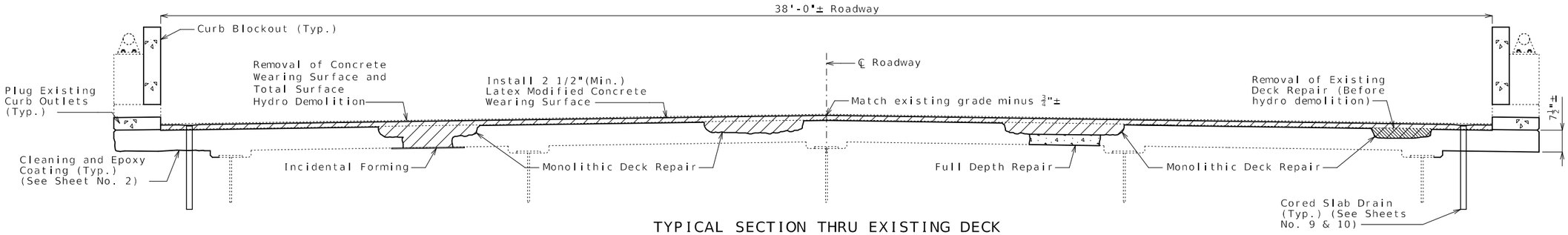
BRIDGE NO.

DESCRIPTION	DATE

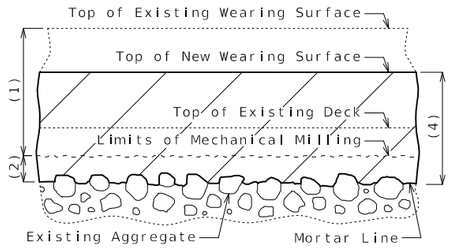
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

U.I.P. AND REHABILITATE EXISTING (4 @ 57') PRESTRESSED CONCRETE I-GIRDER SPANS, (75'-100'-75') CONTINUOUS COMPOSITE PLATE GIRDER SPANS, (2 @ 57') PRESTRESSED CONCRETE I-GIRDER SPANS (SKEW: 20°00'00" L.A.)

SEC/SUR 1 TWP 29N RGE 33W



TYPICAL SECTION THRU EXISTING DECK



MILLING AND HYDRO DEMOLITION LIMITS

DETAIL A

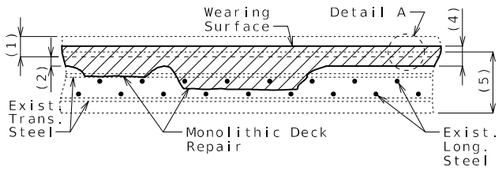
(1) Removal of existing 2 1/4"± low slump concrete wearing surface plus 1/2" of existing deck

(2) 1/2" minimum total surface hydro demolition of sound concrete, measured to mortar line

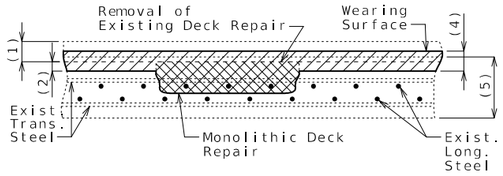
(3) 1" vertical side shall be established outside the deteriorated area.

(4) 2 1/2" minimum latex modified concrete wearing surface

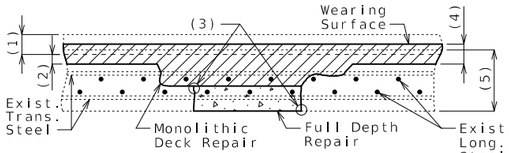
(5) Original depth of deck minus previous scarification



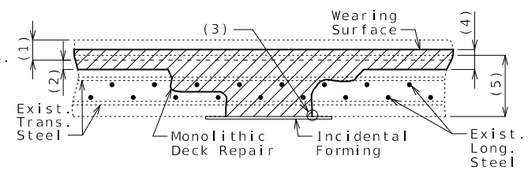
MONOLITHIC DECK REPAIR



REMOVAL OF EXISTING DECK REPAIR BEFORE HYDRO DEMOLITION



MONOLITHIC DECK REPAIR REQUIRING FULL DEPTH REPAIR



MONOLITHIC DECK REPAIR REQUIRING INCIDENTAL FORMING

Estimated Quantities

	Item		Total
	Removal of Miscellaneous ACM (Non-Friable)	sq. foot	3
	Dewatering	lump sum	1
	Class 2 Excavation	lump sum	1
	Total Surface Hydro Demolition	sq. yard	2515
	Removal of Concrete Wearing Surface	sq. foot	22,631
	Removal of Existing Deck Repair	sq. foot	500
	Removal of Existing Expansion Joint & Adjacent Concrete	linear foot	81
	Temporary Falsework	lump sum	1
	Removal of Existing Bearings	each	10
	Remove and Replace Curb and Parapet	linear foot	16
*	Supplementary Wearing Surface Material	cu. yard	20
	Latex Modified Concrete Wearing Surface	sq. yard	2515
	Diamond Grinding	sq. yard	2515
	Class B-2 Concrete	cu. yard	21.0
	Curb Blockout	linear foot	1210
	Substructure Repair (Formed)	sq. foot	120
	Full Depth Repair	sq. foot	200
	Cleaning and Epoxy Coating	sq. foot	5400
	Plugging Existing Curb Outlets	each	172
	Pile Encasement	each	6
	Reinforcing Steel (Epoxy Coated)	pound	650
	Protective Coating - Concrete Bents and Piers (Epoxy)	lump sum	1
	Surface Preparation for Applying Epoxy-Mastic Primer	lump sum	1
	Surface Preparation for Recoating Structural Steel	sq. foot	600
	Field Application of Organic Zinc Primer	sq. foot	600
	Intermediate Field Coat (System G)	sq. foot	600
	Finish Field Coat (System G)	sq. foot	600
	Gray Epoxy-Mastic Primer	lump sum	1
	Cored Slab Drains	each	106
	Steel Pile Repair	linear foot	20
	Laminated Neoprene Bearing Pad Assembly	each	10
	Strip Seal Expansion Joint System	linear foot	81

* Supplementary wearing surface material will be paid for at the fixed unit price in accordance with Sec 109.

General Notes:

Design Specifications:

2002 AASHTO LFD (17th Ed.) Standard Specifications
Bridge Deck Rating = 6

Design Loading:

H20-44 (1969) (Existing), HS20-44 (New Construction)

Design Unit Stresses:

Class B Concrete (Pile Encasement)	f'c = 3,000 psi
Class B-1 Concrete (Curb Blockout)	f'c = 4,000 psi
Class B-2 Concrete (Superstructure except Curb Blockout)	f'c = 4,000 psi
Class B-2 Concrete (Substructure)	f'c = 4,000 psi
Reinforcing Steel (ASTM A615 Grade 60)	fy = 60,000 psi

Neoprene Pads:

Neoprene bearing pads shall be 60 durometer and shall be in accordance with Sec 716.

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 noted.

Miscellaneous:

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

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

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

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

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.

In order to maintain grade and a minimum thickness of wearing surface as shown on plans it may be necessary to use additional quantities of wearing surface at various locations throughout the structure. The cost of furnishing and installing the wearing surface will be considered completely covered in the contract unit price, including all additional labor, materials or equipment for variations in thickness of wearing surface.

Traffic Handling:

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

REPAIRS TO BRIDGE: ROUTE 43 OVER NORTH FORK SPRING RIVER

ROUTE 43 FROM ROUTE M TO ROUTE KK
ABOUT 1.2 MILES SOUTH OF ROUTE M
BEGINNING STATION 271+63.11 ± (Match Existing)

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
03/03/2025 3:14:16 PM
TYLER R. LINDSAY - CIVIL
MO-PE-2019000128

DATE PREPARED 3/3/2025

ROUTE 43 | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY JASPER
JOB NO. JSR0073
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A26902

DESCRIPTION | DATE

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

Detailed Oct. 2024
Checked Jan. 2025

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

Concrete Protective Coating:

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

Structural Steel Protective Coating:

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 organic zinc primer. The cost of surface preparation will be considered completely covered by the contract unit price per sq. foot for Surface Preparation for Recoating Structural Steel.

Prime Coat: The cost of the prime coat will be considered completely covered by the contract unit price per sq. foot for Field Application of Organic 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 unit price per sq. foot for Intermediate Field Coat (System G). The cost of the finish field coat will be considered completely covered by the contract unit price per sq. foot for Finish Field Coat (System G).

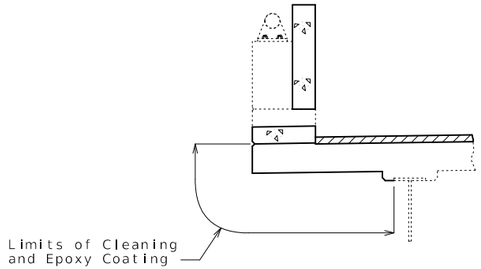
* The recoating area shall be as indicated below:

All structural steel 5 feet from end of girder at expansion joints near Int. Bents No. 5 & 8.

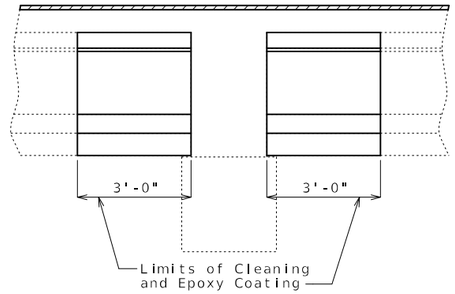
Structural Steel Pile Protective Coating:

All exposed surfaces of the existing structural steel piles and sway bracing at Int. Bent No. 9 shall be recoated with one 6-mil thickness of gray epoxy-mastic primer applied over an SSPC-SP3 surface preparation in accordance with Sec 1081. The cost of surface preparation will be considered completely covered by the contract lump sum price for Surface Preparation for Applying Epoxy-Mastic Primer. The cost of the gray epoxy-mastic primer will be considered completely covered by the contract lump sum price for Gray Epoxy-Mastic Primer.

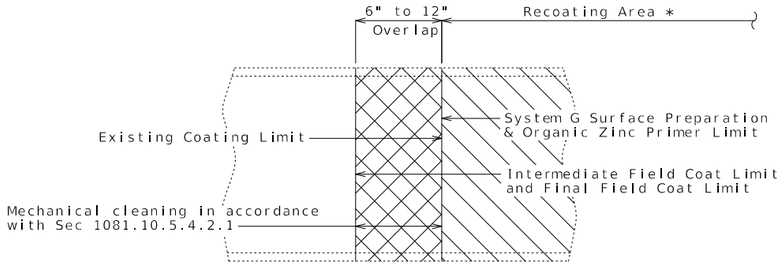
For additional coating requirements for the pile encasements at Int. Bent No. 9, see Sheets No. 4 thru 6.



PART SECTION SHOWING LIMITS OF CLEANING AND EPOXY COATING SLAB EDGE & CANTILEVER



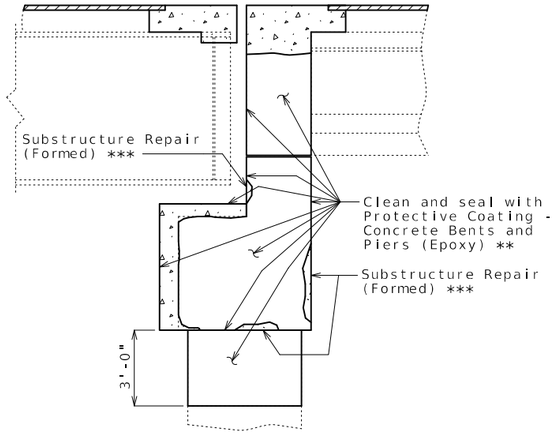
PART ELEVATION SHOWING LIMITS OF CLEANING AND EPOXY COATING GIRDER ENDS AT INT. BENTS NO. 2, 3, 4 & 9



PART ELEVATION SHOWING LIMITS OF PAINT OVERLAP

(Vertical or horizontal paint limit. Horizontal limit shown)

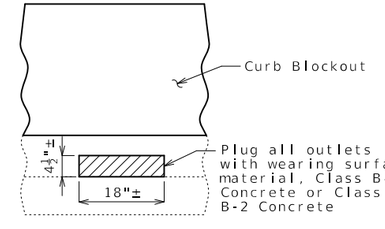
Limits of Paint Overlap: System G shall overlap the existing coating between 6 inches and 12 inches in order to achieve maximum coverage at the paint limit of each complete system near the expansion and contraction areas. The final field coating shall be masked to provide crisp, straight lines and to prevent overspray beyond the overlap required.



PART ELEVATION SHOWING PROTECTIVE COATING AND SUBSTRUCTURE REPAIR AT INT. BENTS NO. 5 & 8

** Protective coating shall be applied after all substructure repairs are completed and fully cured. See Sheet No. 7 for additional details of substructure repairs.

*** Repairs shall be completed to provide 1 1/2" mininmum clearance to existing reinforcing steel.



PART ELEVATION SHOWING PLUGGING OF CURB OUTLETS

Notes:

New concrete wearing surface not shown for clarity.

Cost of labor and materials required to plug existing curb outlets will be considered completely covered by the contract unit price for Plugging Existing Curb Outlets.

Estimated material required to fill all curb outlets is 4.9 cubic yards (for information only).

REHAB DETAILS

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
03/03/2025 3:14:06 PM
TYLER R. LINDSAY - CIVIL
MO-PE-2019000128

DATE PREPARED: 3/3/2025

ROUTE	STATE
43	MO
DISTRICT	SHEET NO.
BR	2

COUNTY: JASPER

JOB NO.: JSR0073

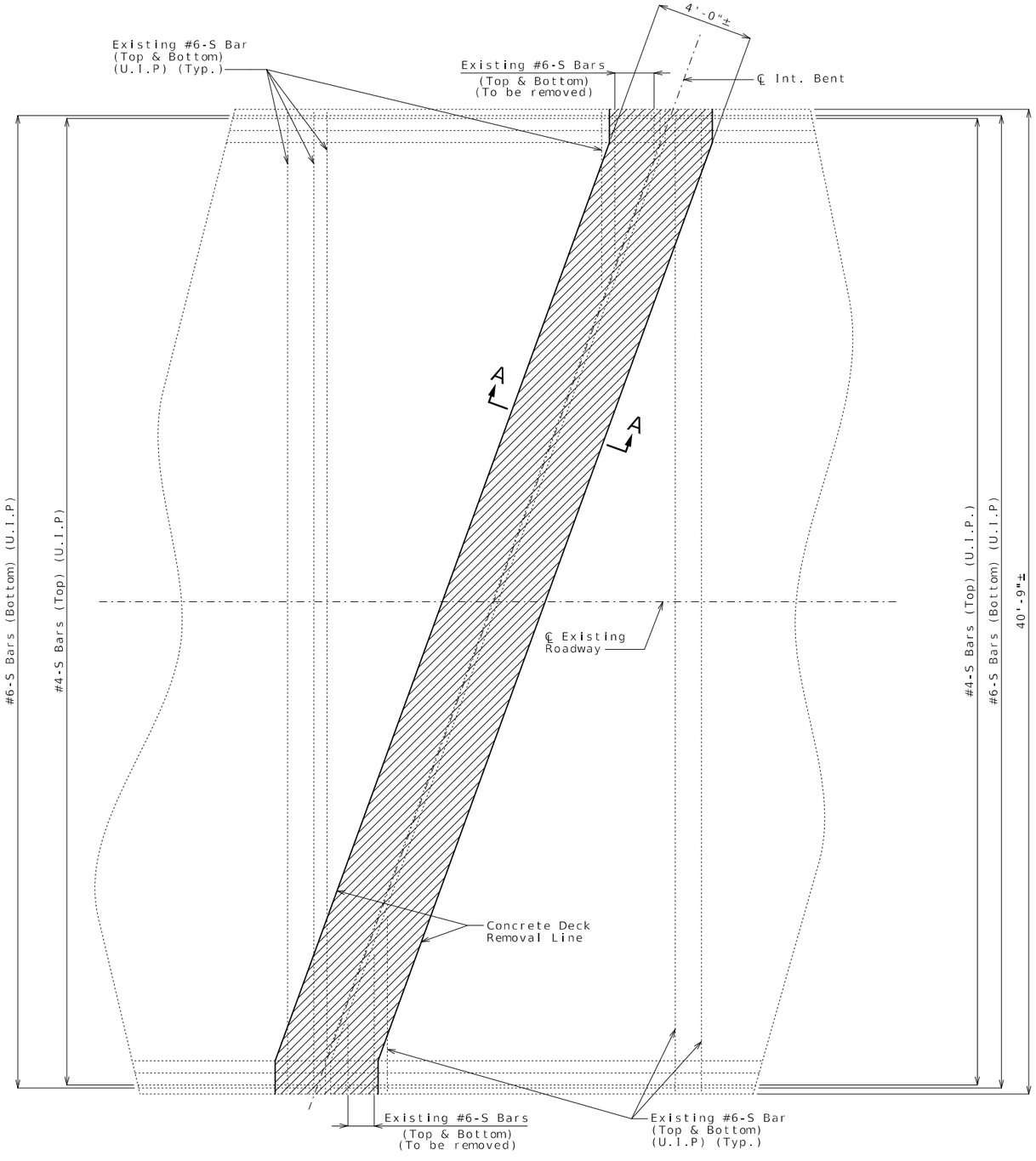
CONTRACT ID.:

PROJECT NO.:

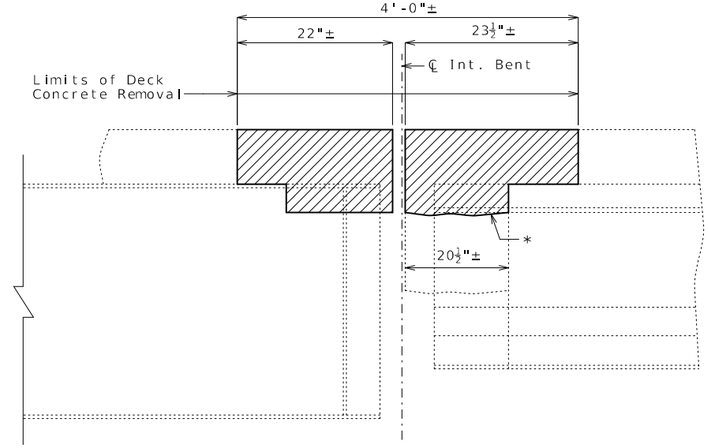
BRIDGE NO.: A26902

DATE	DESCRIPTION

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



PART PLAN OF SLAB AT INT. BENTS NO. 5 & 8
SHOWING LIMITS OF CONCRETE REMOVAL



SECTION A-A

(Bent No. 8 shown. Bent No. 5 similar)

* Remove concrete diaphragm minimum extent necessary to install new expansion device (4" min. below top of girder).

Notes:

The cost of concrete removal as shown, including existing expansion device, will be considered completely covered by the contract unit price for Removal of Existing Expansion Joint & Adjacent Concrete.

For details of strip seal expansion joint system at Int. Bents No. 5 & 8, see Sheet No. 11

For details of slab replacement at Int. Bents No. 5 & 8, see Sheet No. 12.

For details of removal and replacement of curb & parapet not shown, see Sheet No. 13.

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
03/03/2025 3:14:45 PM
TYLER R. LINDSAY - CIVIL
MO-PE-2019000128

DATE PREPARED
3/3/2025

ROUTE	STATE
43	MO
DISTRICT	SHEET NO.
BR	3

COUNTY
JASPER

JOB NO.
JSR0073

CONTRACT ID.

PROJECT NO.

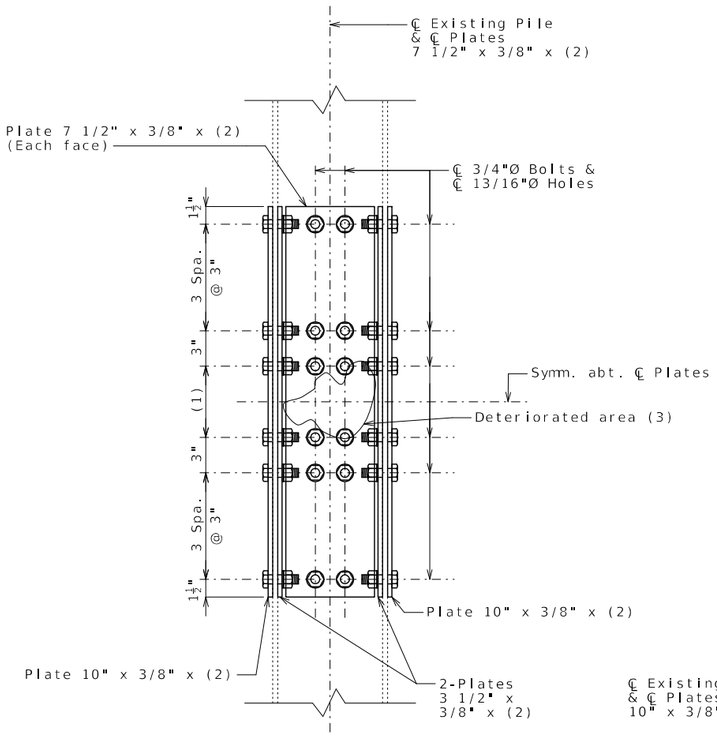
BRIDGE NO.
A26902

DESCRIPTION	DATE

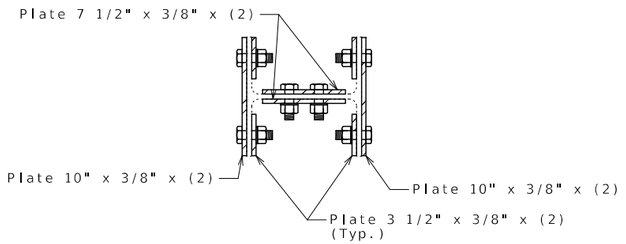
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

Detailed Jan. 2025
Checked Jan. 2025

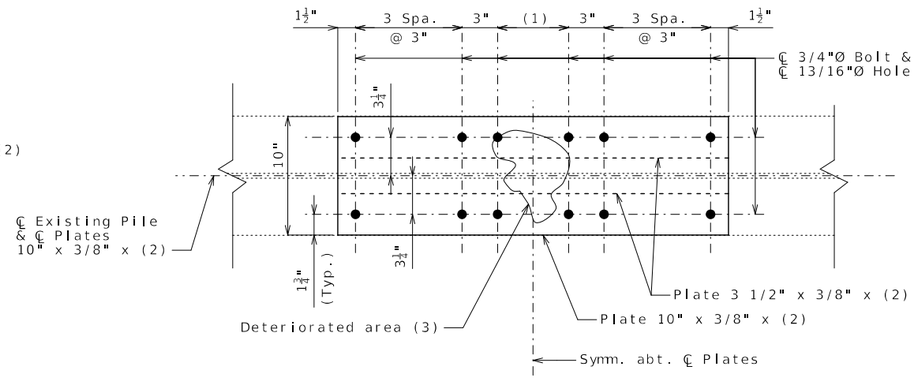
Note: This drawing is not to scale. Follow dimensions.



PART ELEVATION SHOWING PILE PLATING

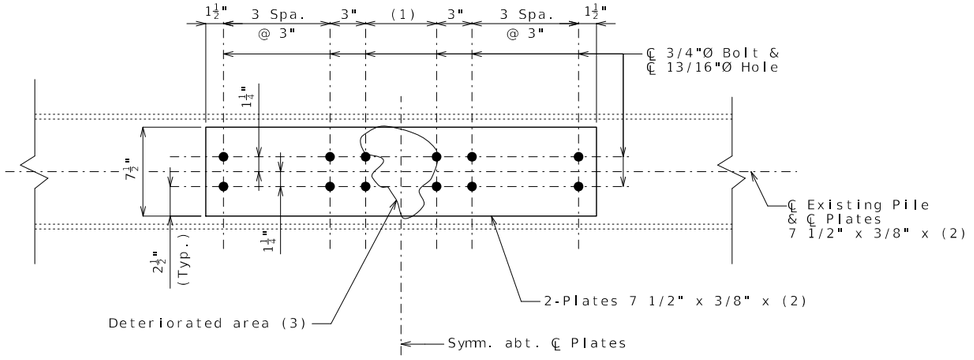


SECTION SHOWING PILE PLATING



PART PLAN OF FLANGE SHOWING PILE PLATING

(Web plates not shown for clarity.)



PART PLAN OF WEB SHOWING PILE PLATING

(Flange plates not shown for clarity.)

General Notes:

Fabricated structural steel shall be ASTM A709 Grade 36 or 50.

Field connections shall be made with 3/4-inch diameter ASTM F3125 Grade A325 Type 1 bolts and 13/16-inch diameter holes.

Only one pile shall be repaired at a time.

Instructions for Pile Plating:

(1) Number of 3" spaces shall be determined in the field to extend past the extents of the deteriorated area.

(2) Plate length shall be determined in the field.

(3) Extents of deteriorated area will be determined by the engineer.

(4) Use plates as templates for field drilling holes in existing pile. Place bolts snug tight as drilled per each. High-strength tightening shall begin after all bolts are installed per flange or web.

Contact surfaces shall be in accordance with Sec 1081 for surface preparation.

All new structural steel shall be coated with a minimum of two coats of inorganic zinc primer (5 mils minimum).

Cost of furnishing and installing structural steel, all steel coatings and any other incidental material or labor to complete pile repair, complete in place, will be considered completely covered by the contract unit price for Steel Pile Repair. Variations may be encountered in the estimated quantities but the variations can not be used for an adjustment in the contract unit price.

Cost of all excavation will be considered completely covered by the contract lump sum price for Class 2 Excavation.

Cost of dewatering will be considered completely covered by the contract lump sum price for Dewatering. See special provisions.

For details of pile encasement, see Sheet No. 5.

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
03/03/2025 3:14:56 PM
TYLER R. LINDSAY - CIVIL
MO-PE-2019000128

DATE PREPARED
3/3/2025

ROUTE	STATE
43	MO
DISTRICT	SHEET NO.
BR	4

COUNTY
JASPER

JOB NO.
JSR0073

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A26902

DESCRIPTION

DATE

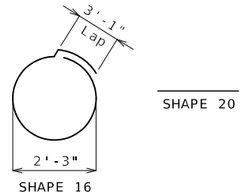
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

PILE REPAIR AT INTERMEDIATE BENT NO.9 FOR PILES NO. 2, 3, 4 & 5

Detailed Jan. 2025
Checked Jan. 2025

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

BILL OF REINFORCING STEEL - EACH PILE				
NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAM
Varies	4 P1	10'-0"	16	
8	5 V1	Varies	20	



SHAPE 16

SHAPE 20

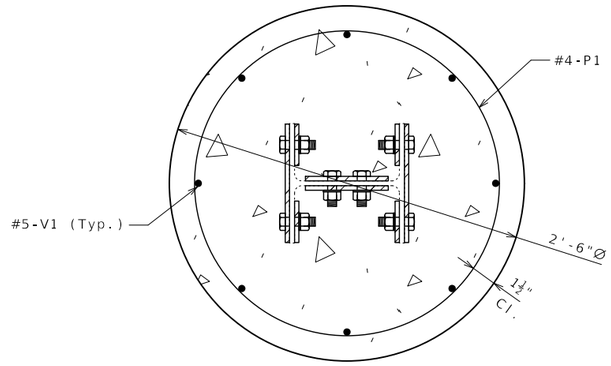
Notes:

All dimensions are out to out.

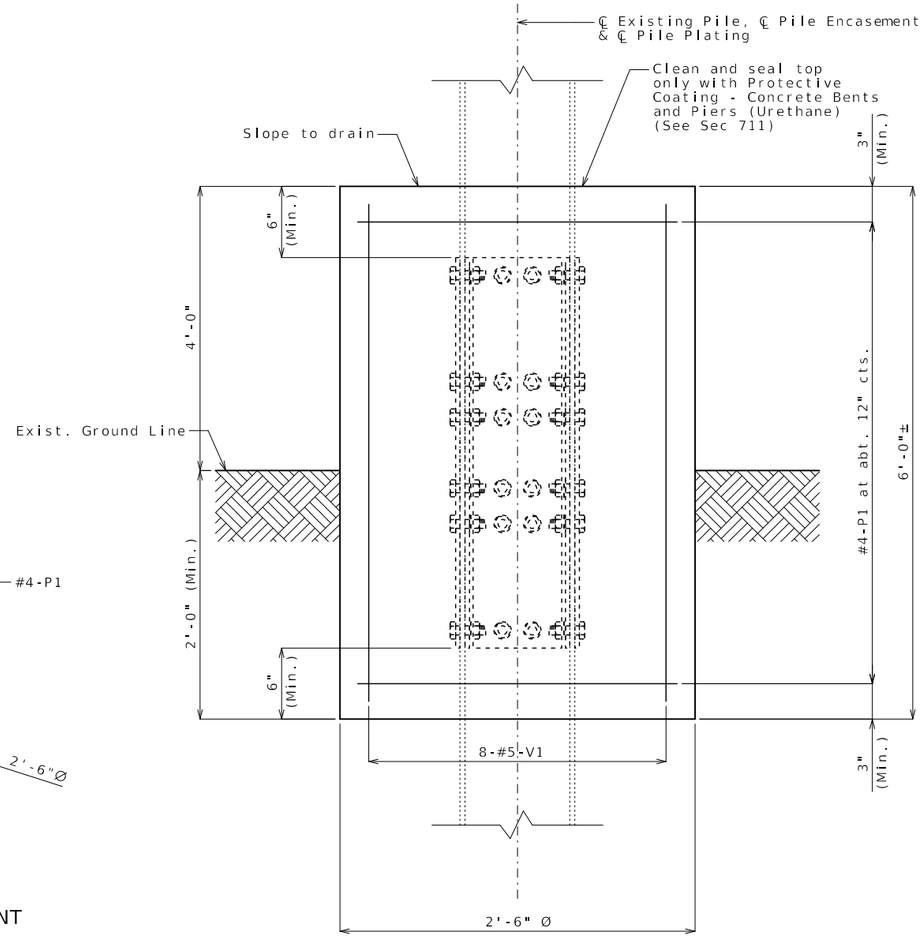
Hooks and bends shall be in accordance with the CRSI Manual of Standard Practice for Detailing Reinforced Concrete Structures, Stirrup and Tie Dimensions.

Actual lengths are measured along centerline of bar to the nearest inch.

All bars shall be epoxy coated.



SECTION SHOWING PILE ENCASEMENT WITH PILE PLATING



PART ELEVATION SHOWING PILE ENCASEMENT

Notes:

Existing sway bracing not shown for clarity. Shift reinforcing steel in the field to clear existing sway bracing.

Existing sway bracing may need to be removed, moved and reattached. Any new connections shall be made with new high strength bolts.

General Notes:

All concrete for pile encasement shall be Class B (f'c = 3000 psi).

The reinforcing steel shall be epoxy coated Grade 60 with fy = 60,000 psi

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

The exposed and accessible surfaces of the existing structural steel 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 piles shall extend a minimum of one foot outside the face of the pile encasement.

Cost of all concrete, reinforcement, surface preparation, coatings and any other incidental material or labor to complete pile encasement, complete in place, will be considered completely covered by the contract unit price for Pile Encasement.

Cost of all excavation will be considered completely covered by the contract lump sum price for Class 2 Excavation.

Cost of dewatering will be considered completely covered by the contract lump sum price for Dewatering. See special provisions.

A FRP pile jacketing system may be used in lieu of pile encasement at the contractor's option. No additional payment will be made for this substitution. See special provisions.

For details of pile plating, see Sheet No. 4.

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
03/03/2025 3:15:15 PM
TYLER R LINDSAY - CIVIL
MO-PE-2019000128

DATE PREPARED 3/3/2025

ROUTE 43 | STATE MO

DISTRICT BR | SHEET NO. 5

COUNTY JASPER

JOB NO. JSR0073

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A26902

DESCRIPTION | DATE

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

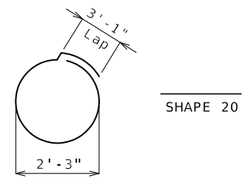
PILE ENCASEMENT WITH PILE REPAIR FOR INTERMEDIATE BENT NO. 9 FOR PILES NO. 2, 3, 4 & 5

Detailed Jan. 2025
Checked Jan. 2025

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

BILL OF REINFORCING STEEL - EACH PILE

NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAM
Varies	4 P1	10'-0"	16	
8	5 V1	Varies	20	



SHAPE 16

SHAPE 20

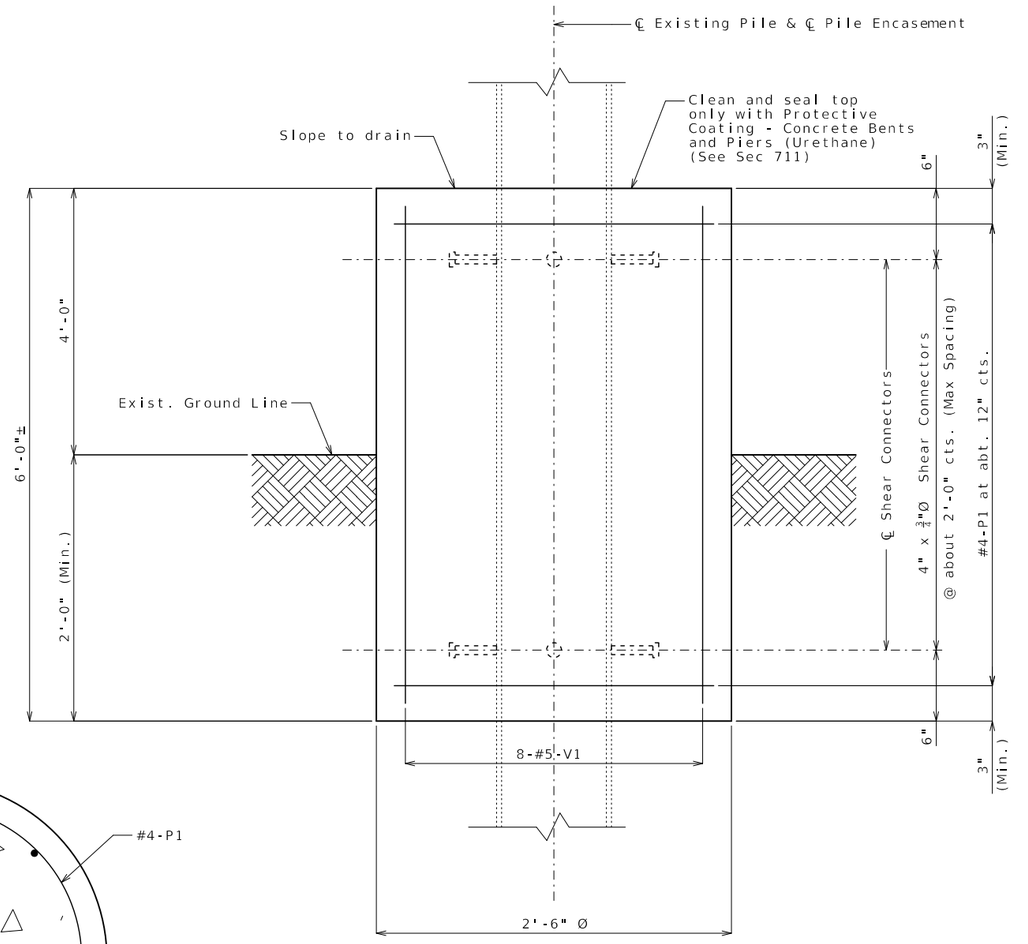
Notes:

All dimensions are out to out.

Hooks and bends shall be in accordance with the CRSI Manual of Standard Practice for Detailing Reinforced Concrete Structures, Stirrup and Tie Dimensions.

Actual lengths are measured along centerline of bar to the nearest inch.

All bars shall be epoxy coated.

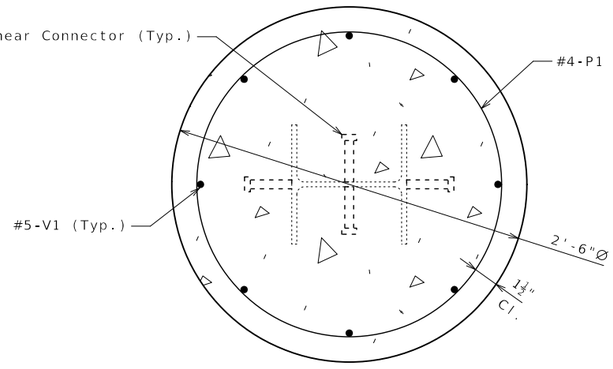


PART ELEVATION SHOWING PILE ENCASEMENT

Notes:

Existing sway bracing not shown for clarity. Shift reinforcing steel in the field to clear existing sway bracing.

Existing sway bracing may need to be removed, moved and reattached. Any new connections shall be made with new high strength bolts.



SECTION SHOWING PILE ENCASEMENT

General Notes:

All concrete for pile encasement shall be Class B (f'c = 3000 psi).

The reinforcing steel shall be epoxy coated Grade 60 with fy = 60,000 psi

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

The exposed and accessible surfaces of the existing structural steel 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 piles shall extend a minimum of one foot outside the face of the pile encasement.

Cost of all concrete, reinforcement, shear connectors, surface preparation, coatings, and any other incidental material or labor to complete pile encasement, complete in place, will be considered completely covered by the contract unit price for Pile Encasement.

Cost of all excavation will be considered completely covered by the contract lump sum price for Class 2 Excavation.

Cost of dewatering will be considered completely covered by the contract lump sum price for Dewatering. See special provisions.

A FRP pile jacketing system may be used in lieu of pile encasement at the contractor's option. No additional payment will be made for this substitution. See special provisions.

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

PILE ENCASEMENT AT INTERMEDIATE BENT NO.9 FOR PILES NO. 1 & 6

Detailed Jan. 2025
Checked Jan. 2025

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

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
03/03/2025 3:15:26 PM
TYLER R LINDSAY - CIVIL
MO-PE-2019000128

DATE PREPARED
3/3/2025

ROUTE	STATE
43	MO
DISTRICT	SHEET NO.
BR	6

COUNTY
JASPER

JOB NO.
JSR0073

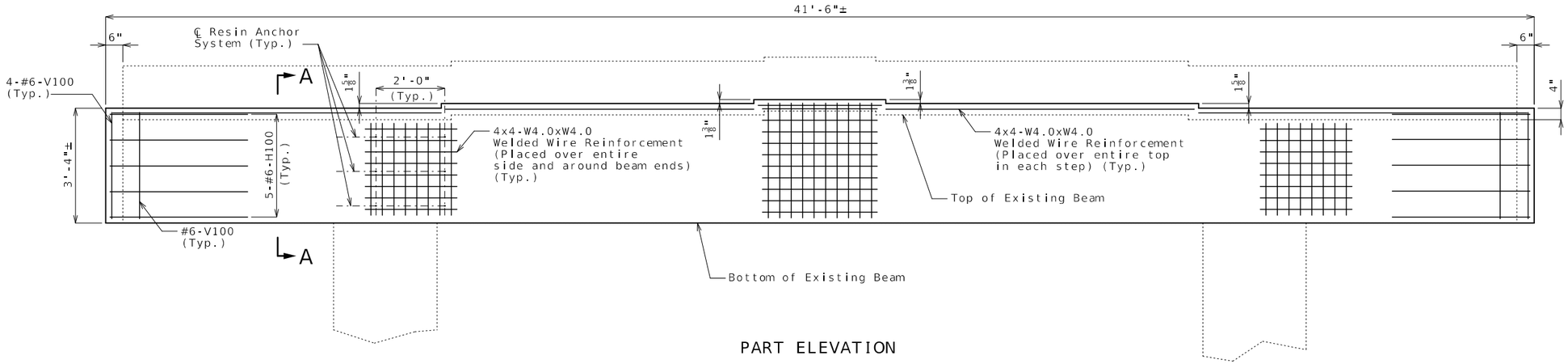
CONTRACT ID.

PROJECT NO.

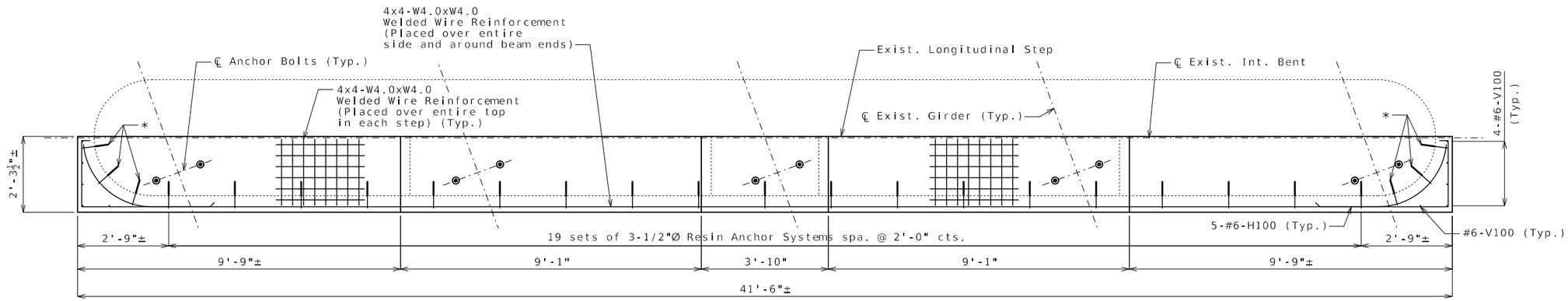
BRIDGE NO.
A26902

DESCRIPTION	DATE

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



PART ELEVATION



PLAN

* 3 sets of 3-1/2"Ø Resin Anchor Systems equally spaced around beam ends.

Notes:

All concrete shall be Class B-2.

All bar reinforcement shall be epoxy coated. WWR shall not be epoxy coated.

All deteriorated concrete shall be removed prior to installing new concrete. All reinforcing steel exposed shall have a minimum of one inch beyond the inside edge removed.

Sandblasting shall be required on existing concrete surface that will be in contact with new concrete.

The cost of removing deteriorated concrete and installing new concrete, complete in place, will be considered completely covered by the contract unit price for Class B-2 Concrete.

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

An epoxy coated #4 Grade 60 reinforcing bar shall be substituted for the 1/2" Ø threaded rod.

The cost of furnishing and installing the resin anchor systems, complete in place, will be considered completely covered by the contract unit price for Class B-2 Concrete.

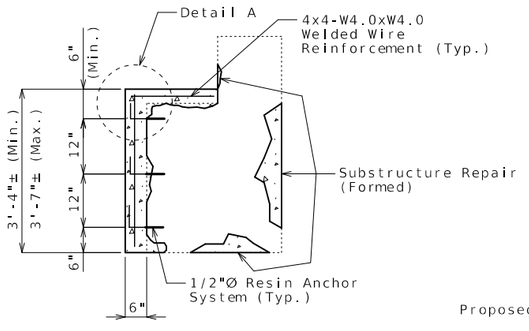
The minimun embedment depth in concrete with f'c = 4,000 psi for the resin anchor system shall be the required to meet the minimum ultimate pullout strength in accordance with Sec 1039 but shall not be less than 5".

The cost of furnishing and installing all bar reinforcing steel as shown, complete in place, will be considered completely covered by the contract unit price for Reinforcing Steel (Epoxy Coated).

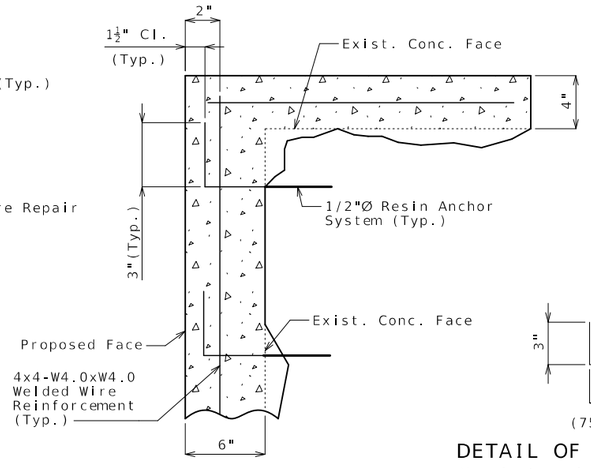
The cost of furnishing and installing approximately 210 pounds of Welded Wire Reinforcement as shown, complete in place, will be considered completely covered by the contract unit price for Class B-2 Concrete.

Concrete encasement shall meet the requirements of Sec 704 for Substructure Repair (Formed). All other applicable sections from Sec 704 shall be required.

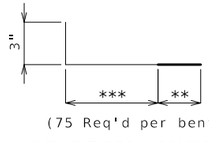
For details of new bearing assembly, location of new anchor bolts, and temporary support loads, see Sheet No. 8.



SECTION A-A



DETAIL A



(75 Req'd per bent)

DETAIL OF RESIN ANCHOR SYSTEM

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

*** 4 1/2" plus repair depth (Field bend)

INTERMEDIATE BENTS NO. 5 & 8 REPAIR

(Bent No. 8 shown, Bent 5 No. similiar)

Detailed Dec. 2024
Checked Jan. 2025

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

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
03/03/2025 3:15:36 PM
TYLER R. LINDSAY - CIVIL
MO-PE-2019000128

DATE PREPARED 3/3/2025

ROUTE	STATE
43	MO
DISTRICT	SHEET NO.
BR	7

COUNTY JASPER

JOB NO. JSR0073

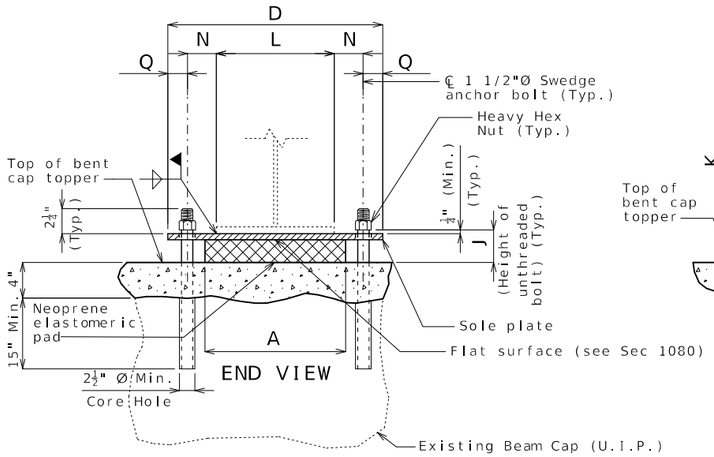
CONTRACT ID.

PROJECT NO.

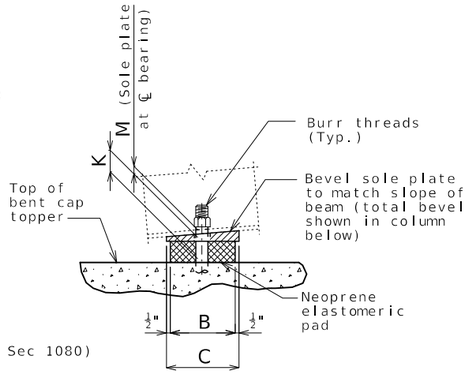
BRIDGE NO. A26902

DESCRIPTION	DATE

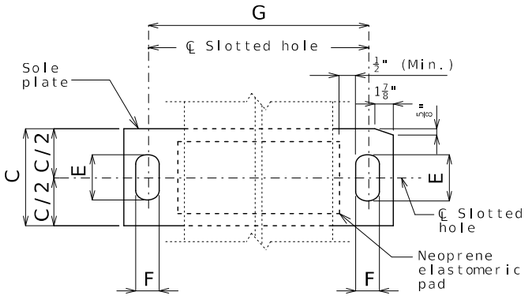
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



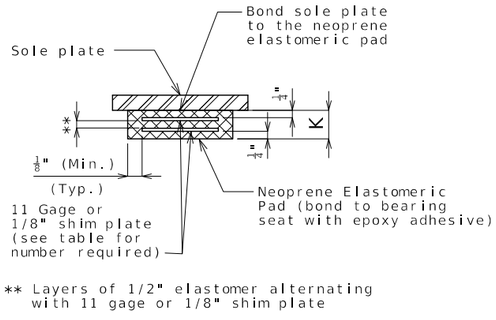
END VIEW



SIDE VIEW

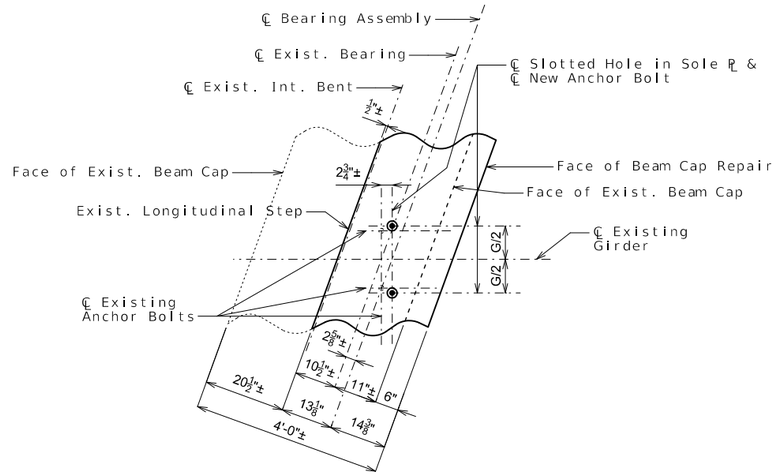


PART PLAN



** Layers of 1/2" elastomer alternating with 11 gage or 1/8" shim plate

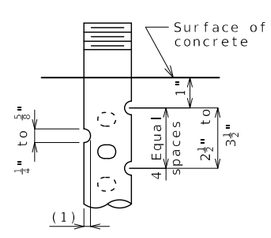
NEOPRENE ELASTOMERIC PAD



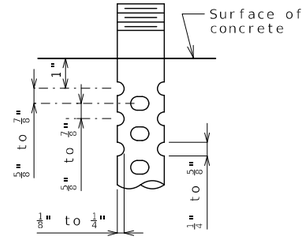
PART PLAN OF EXISTING INT. BENTS NO. 5 & 8
SHOWING ANCHOR BOLT LOCATION
(Bent No. 5 shown, Bent No. 8 similar)

EXPANSION BEARINGS																	
BENT NO.	A	B	C	D	E	F	G	J	K	L	M	N	P	Q	R	NUMBER OF SHIM PLATES *	NUMBER REQUIRED
5 RT	14"	14"	15"	21½"	7¾"	1⅞"	17"	6⅝"	4⅜"	10"	1½"	3½"	0"	2¼"	1/16"	7	5
8 LT	14"	14"	15"	21½"	7¾"	1⅞"	17"	6⅝"	4⅜"	10"	1½"	3½"	0"	2¼"	3/16"	7	5
																TOTAL BEARINGS	10

* The required shim plate shall be placed between layers of elastomer and molded together to form an integral unit.



DETAIL OF 3/4"Ø THRU
2 1/2"Ø ANCHOR BOLTS



OPTIONAL DETAIL OF 1 3/8"Ø
THRU 2 1/2"Ø ANCHOR BOLTS

SWEDGE ANCHOR BOLT DETAILS

(1) ⅜" for ¾"Ø thru 1¼"Ø anchor bolts

⅝" to ¼" for 1⅜"Ø thru 2½"Ø anchor bolts

GENERAL NOTES:

Anchor bolts shall be 1 1/2"Ø ASTM F1554 Grade 55 swedged bolts and shall extend at total of 19" (4" into new concrete and 15" into existing concrete beam cap) with ASTM A563 Grade A Heavy Hex nuts. Actual manufacturer's certified mill test reports (chemical and mechanical) shall be provided. Swedging shall be 1" less than extension into the concrete.

Anchor bolt shall be at the centerline of slotted hole at 60°F. Bearing position shall be adjusted R for each 10° fall or rise in temperature at installation.

Anchor bolts and heavy hex nuts shall be coated with a minimum of two coats of inorganic zinc primer to provide a total dry film thickness of 4 mils minimum, 6 mils maximum, or galvanized in accordance with AASHTO M 232 (ASTM A153), Class C.

Neoprene Elastomeric Pads shall be 60 Durometer.

Structural steel for sole plate shall be ASTM A709 Grade 50 and shall be coated with a minimum of two coats of inorganic zinc primer to provide a total dry film thickness of 4 mils minimum, 6 mils maximum.

Laminated Neoprene Bearing Pad Assembly shall be in accordance with Sec 716.

Payment for removing existing steel rocker bearings and anchor bolts will be considered completely covered by the contract unit price for Removal of Existing Bearings.

Payment for drilling and grouting new anchor bolts, complete in place, will be considered completely covered by the contract unit price for Laminated Neoprene Bearing Pad Assembly.

Existing anchor bolts shall be removed to 1" below the existing concrete surface or removed completely if required.

Required temporary support load of 45 kips at each bearing is a service load without a factor of saftey. It includes the dead load of the superstructure and a construction load of 50 psf constant load applied to the deck area. Live load is not included in the support load (See Special Provisions).

For details of concrete beam cap repairs required before setting new bearings, see Sheet No. 7.

LAMINATED NEOPRENE BEARING PAD ASSEMBLY

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
03/03/2025 3:15:55 PM
TYLER R. LINDSAY - CIVIL
MO-PE-2019000128

DATE PREPARED 3/3/2025

ROUTE 43 | STATE MO

DISTRICT BR | SHEET NO. 8

COUNTY JASPER

JOB NO. JSR0073

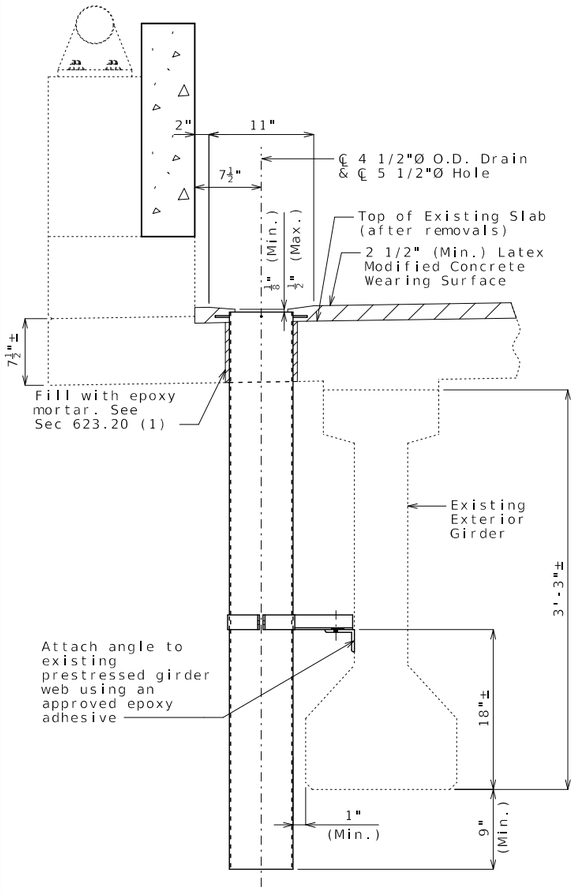
CONTRACT ID.

PROJECT NO.

BRIDGE NO. A26902

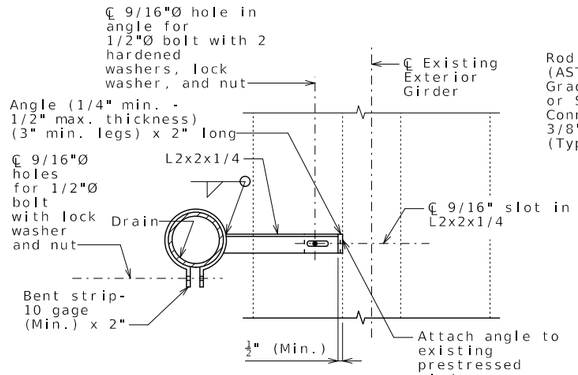
DESCRIPTION | DATE

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

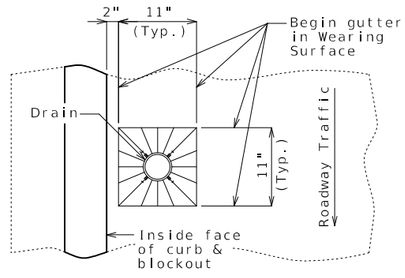


(1) Use backer rod around drain @ bottom of slab and epoxy inject from the top.

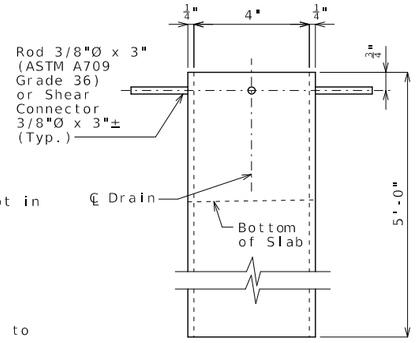
PART SECTION NEAR DRAIN



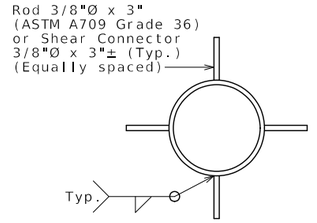
PART SECTION SHOWING BRACKET ASSEMBLY



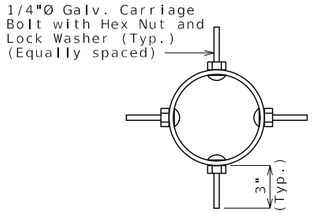
PART PLAN OF SLAB AT DRAIN



ELEVATION OF DRAIN



PLAN OF DRAIN



PLAN OF OPTIONAL FRP 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.

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 M232 (ASTM A153), Class C.

All 1/2-inch diameter bolts shall be ASTM A307, except as noted.

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

Cost of cored slab drains, complete in place, will be considered completely covered by the contract unit price for Cored Slab Drains per each.

Holes for slab drains shall be cored. Percussion drilling will not be permitted.

Slab drain locations may be shifted the minimum extent necessary to avoid slab reinforcement.

Cored slab drains shall be placed vertically.

For details of plugging existing curb outlets, see Sheet No. 2.

Notes for Steel Drain:

Slab drains shall be fabricated from 1/4-inch structural steel tubing ASTM A500 or A501.

The drains shall be galvanized in accordance with ASTM A123.

Drains shall be inserted through slab such that damage to galvanized coating is minimized.

Notes for FRP Drain:

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

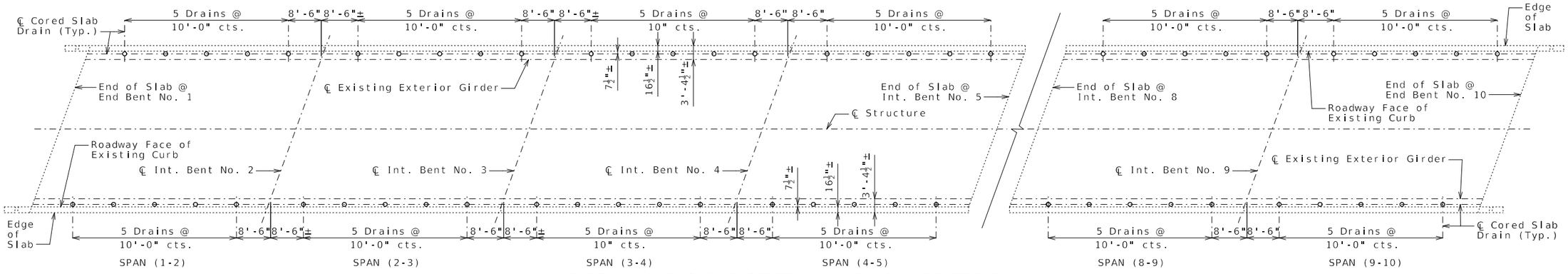
Minimum reinforced wall thickness shall be 1/4 inch.

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. Care shall be taken to avoid damage to exterior coating during installation.

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 drains shall be as recommended by the manufacturer to ensure a smooth, chip-free cut.



PART PLAN SHOWING CORED SLAB DRAIN LOCATIONS

CORED SLAB DRAINS FOR SPANS NO. 1, 2, 3, 4, 8 & 9

Detailed Oct. 2024
Checked Jan. 2025

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

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
03/03/2025 3:16:04 PM
TYLER R. LINDSAY - CIVIL
MO-PE-2019000128

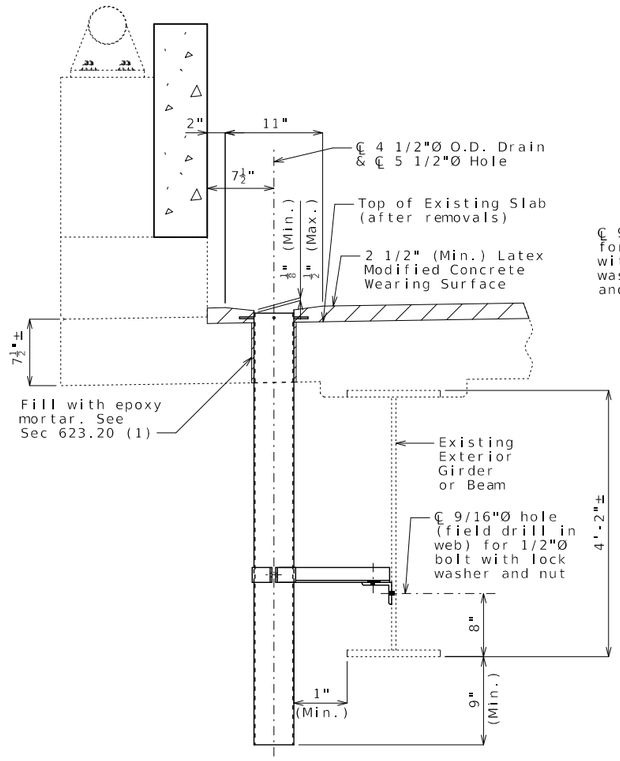
DATE PREPARED 3/3/2025

ROUTE	STATE
43	MO
DISTRICT	SHEET NO.
BR	9

COUNTY JASPER
JOB NO. JSR0073
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A26902

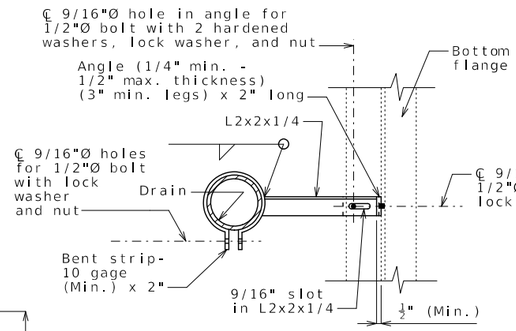
DESCRIPTION | DATE

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

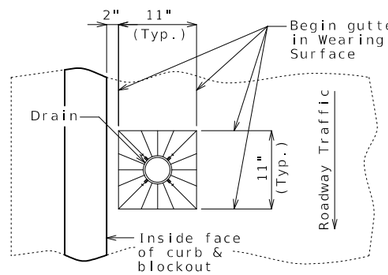


(1) Use backer rod around drain @ bottom of slab and epoxy inject from the top.

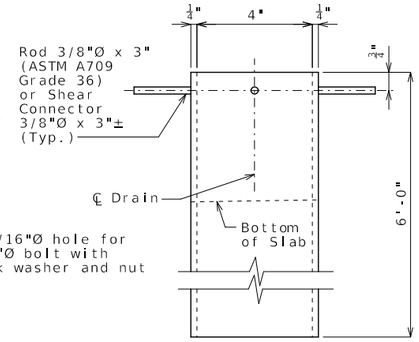
PART SECTION NEAR DRAIN



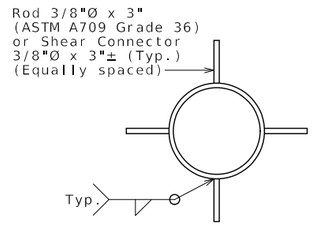
PART SECTION SHOWING BRACKET ASSEMBLY



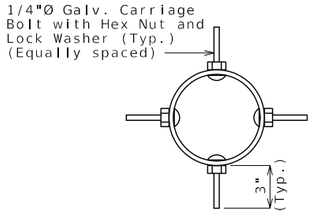
PART PLAN OF SLAB AT DRAIN



ELEVATION OF DRAIN



PLAN OF DRAIN



PLAN OF OPTIONAL FRP 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.

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 M232 (ASTM A153), Class C.

All 1/2-inch diameter bolts shall be ASTM A307, except as noted.

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

Cost of cored slab drains, complete in place, will be considered completely covered by the contract unit price for Cored Slab Drains per each.

Holes for slab drains shall be cored. Percussion drilling will not be permitted.

Slab drain locations may be shifted the minimum extent necessary to avoid slab reinforcement and to allow for field drilling bolt hole in web of existing girder for bracket assembly attachment.

Cored slab drains shall be placed vertically.

For details of plugging existing curb outlets, see Sheet No. 2.

Notes for Steel Drain:

Slab drains shall be fabricated from 1/4-inch structural steel tubing ASTM A500 or A501.

The drains shall be galvanized in accordance with ASTM A123.

Drains shall be inserted through slab such that damage to galvanized coating is minimized.

Notes for FRP Drain:

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

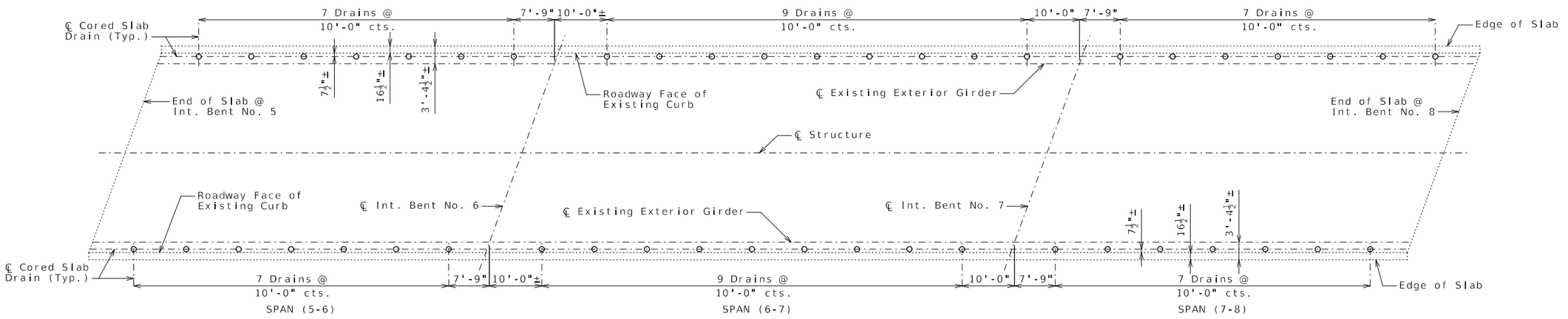
Minimum reinforced wall thickness shall be 1/4 inch.

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. Care shall be taken to avoid damage to exterior coating during installation.

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 drains shall be as recommended by the manufacturer to ensure a smooth, chip-free cut.



PART PLAN SHOWING CORED SLAB DRAIN LOCATIONS

CORED SLAB DRAINS FOR SPANS NO. 5, 6 & 7

Detailed Oct. 2024
Checked Jan. 2025

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

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
03/03/2025 3:16:16 PM
TYLER R. LINDSAY - CIVIL
MO-PE-2019000128

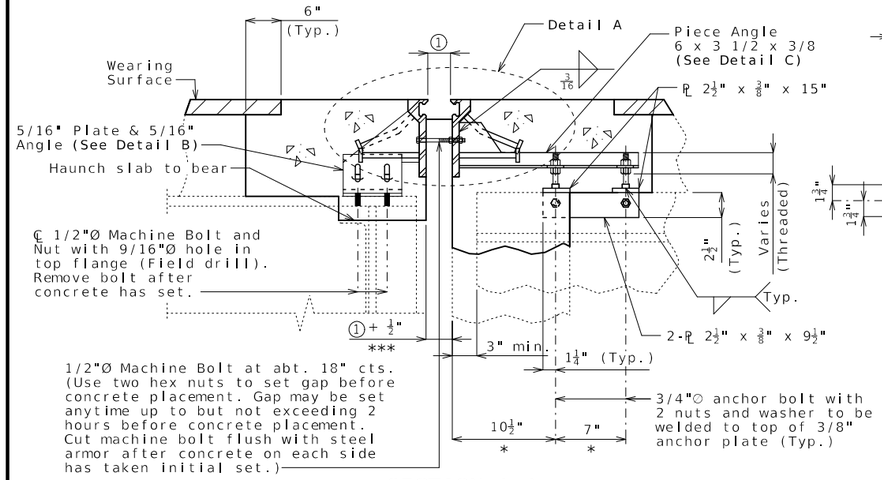
DATE PREPARED 3/3/2025

ROUTE	STATE
- 43	MO
DISTRICT	SHEET NO.
BR	10

COUNTY JASPER
JOB NO. JSR0073
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A26902

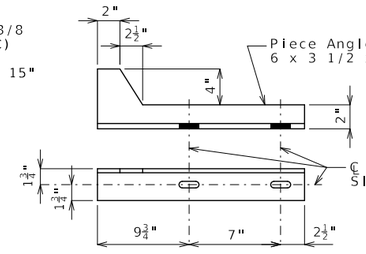
DESCRIPTION	DATE

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

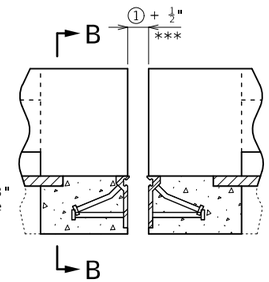


SECTION A-A

Strip seal gland and slab reinforcement not shown for clarity.
* Dimension along ℄ Girder

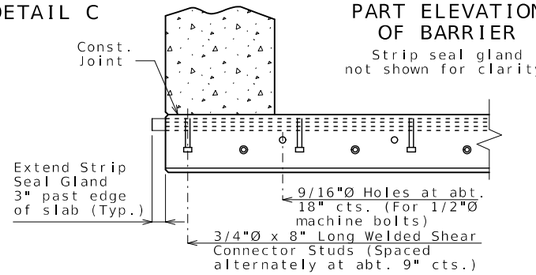


DETAIL C

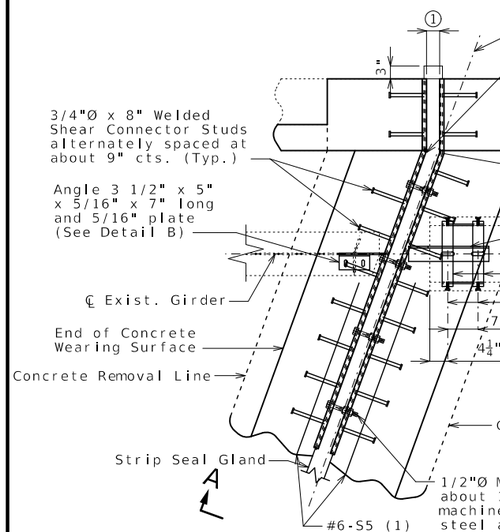


PART ELEVATION OF BARRIER

Strip seal gland not shown for clarity.

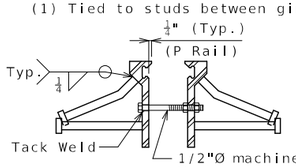


PART SECTION B-B



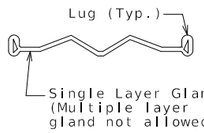
PART PLAN

(Bent No. 8 Shown, Bent No. 5 similar)
(1) Tied to studs between girders

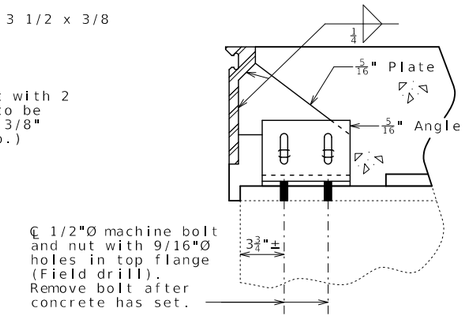


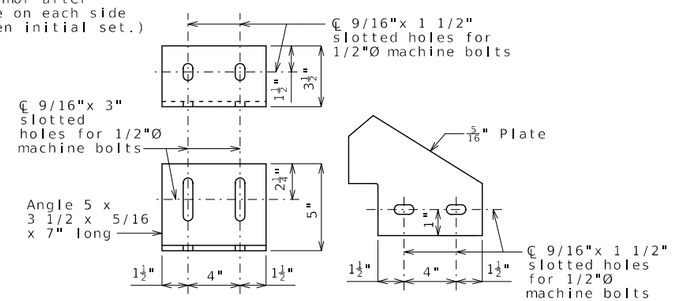
DETAIL A

(P Rail shown, R Rail similar)

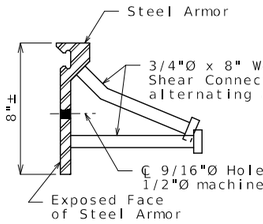


DETAIL OF GLAND



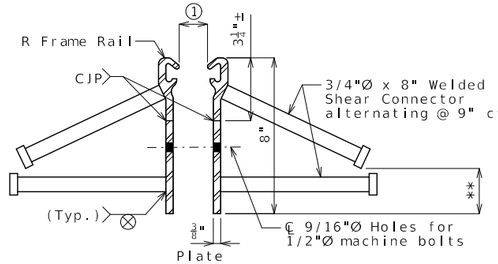


DETAIL B



DETAIL OF JOINT ARMOR

(P Rail)



** Bend stud in shop if necessary to maintain 1" min. from bottom of vertical plate.

OPTIONAL R RAIL DETAIL

GENERAL NOTES:

Expansion joint system shall be fabricated in one section, except for staged construction and when the length is over 50 feet. A complete joint penetration groove welded splice shall be required. Welds shall be ground flush to provide a smooth surface. The expansion joint system shall be fabricated and installed to the crown and grade of the roadway.

The strip seal gland shall be installed in joints in one continuous piece without field splices. Factory splicing will be permitted for joints in excess of 53 feet.

Structural steel for the expansion joint system shall be ASTM A709 Grade 36 except the steel armor may be ASTM A709 Grade 50W. Anchors for the expansion joint system shall be in accordance with Sec 1037. Strip seal expansion joint system shall be in accordance with Sec 717.

Structural steel for the expansion joint system shall be coated with a minimum of two coats of inorganic zinc primer to provide a total dry film thickness of 4 mils minimum, 6 mils maximum, or galvanized in accordance with ASTM A123. Anchors need not be protected from overspray.

Existing reinforcing steel shall be field bent or cut 1" from the vertical leg of the steel armor at the expansion joint system.

Concrete shall be forced under and around steel armor and anchors. Proper consolidation of the concrete shall be achieved by localized internal vibration.

Expansion joint system shall not be set until after new bearings are set.

② The installation temperature shall be taken as the actual air temperature averaged over the 24-hour period immediately preceding installation.

③ MoDOT Construction personnel will indicate the strip seal expansion joint system installed.

Steel armor may also be referred to as extrusion or rail.

The terms P and R rail are used for identification only, and are not endorsements for any particular manufacturer.

*** Because of variation in armor dimensions, the concrete opening will vary if the optional R rail is used. Dimensions shown are based on the P rail option.

Table of Allowed Transverse Strip Seal Expansion Joint System

Manufacturer	Strip Seal System (Designated Name)	Bent No.	Movement Parallel to RDWY	① Normal to Joint at RDWY Surface @ Air/Surface Temperature ②						③
				@ 40°F	@ 50°F	@ 60°F	@ 70°F	@ 80°F	@ 90°F	
D S Brown	Strip seal L2-400	5	1⅞"	2¾"	2⅝"	2½"	2⅜"	2¼"	2⅛"	□
		8	-	-	-	-	-	-	-	□
D S Brown	Strip seal L2-500	5	1⅞"	2¾"	2⅝"	2½"	2⅜"	2¼"	2⅛"	□
		8	2 9/16"	2 13/16"	2⅝"	2½"	2 5/16"	2⅛"	2"	□
Watson Bowman Acme (Wabo)	Strip seal SE-400	5	1⅞"	2¾"	2⅝"	2½"	2⅜"	2¼"	2⅛"	□
		8	2 9/16"	2 13/16"	2⅝"	2½"	2 5/16"	2⅛"	2"	□
Watson Bowman Acme (Wabo)	Strip seal SE-500	5	1⅞"	2¾"	2⅝"	2½"	2⅜"	2¼"	2⅛"	□
		8	-	-	-	-	-	-	-	□

STRIP SEAL EXPANSION JOINT SYSTEM AT INTERMEDIATE BENTS NO. 5 & 8

Detailed Jan. 2025
Checked Jan. 2025

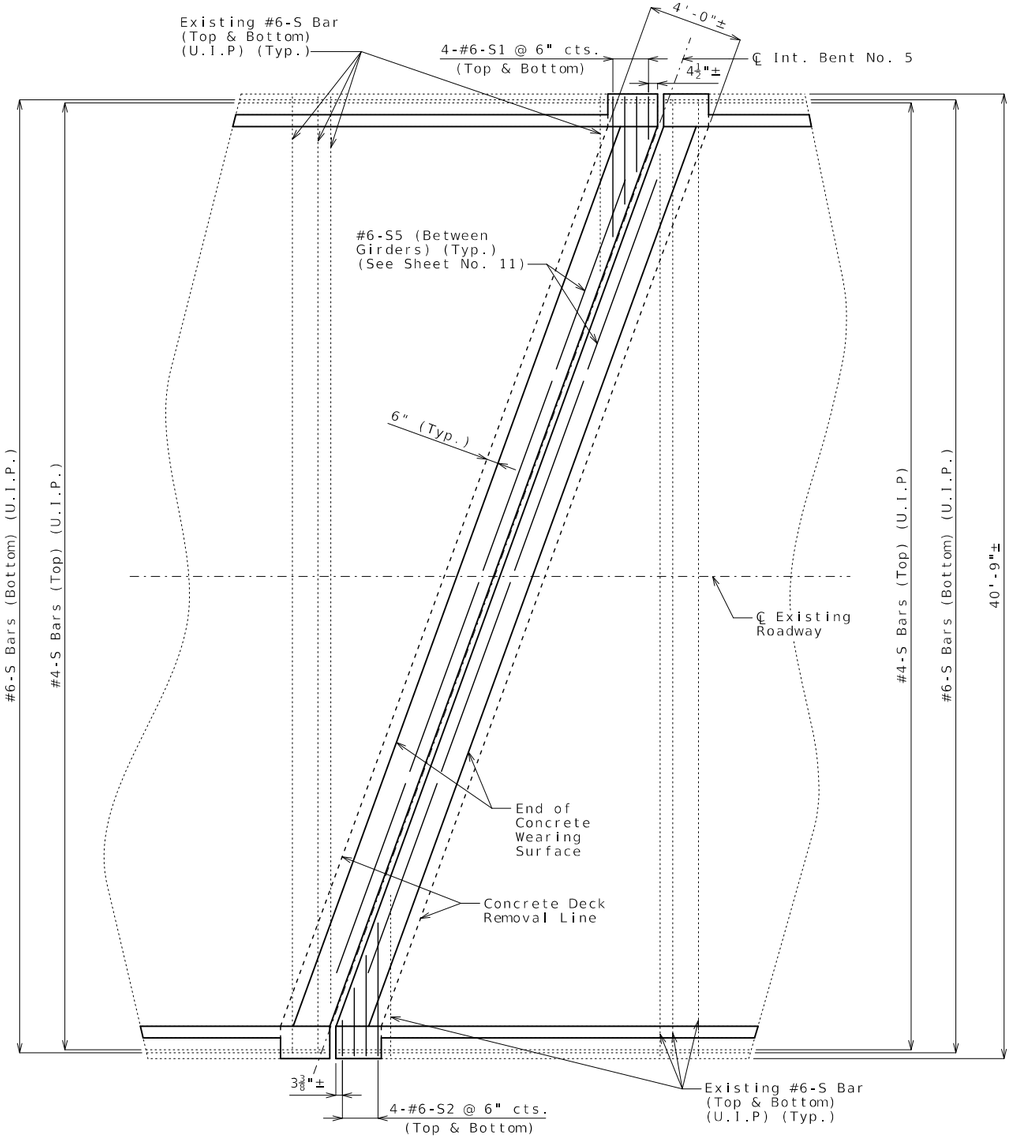
Note: This drawing is not to scale. Follow dimensions.

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
03/03/2025 3:16:36 PM
TYLER R. LINDSAY - CIVIL
MO-PE-2019000128

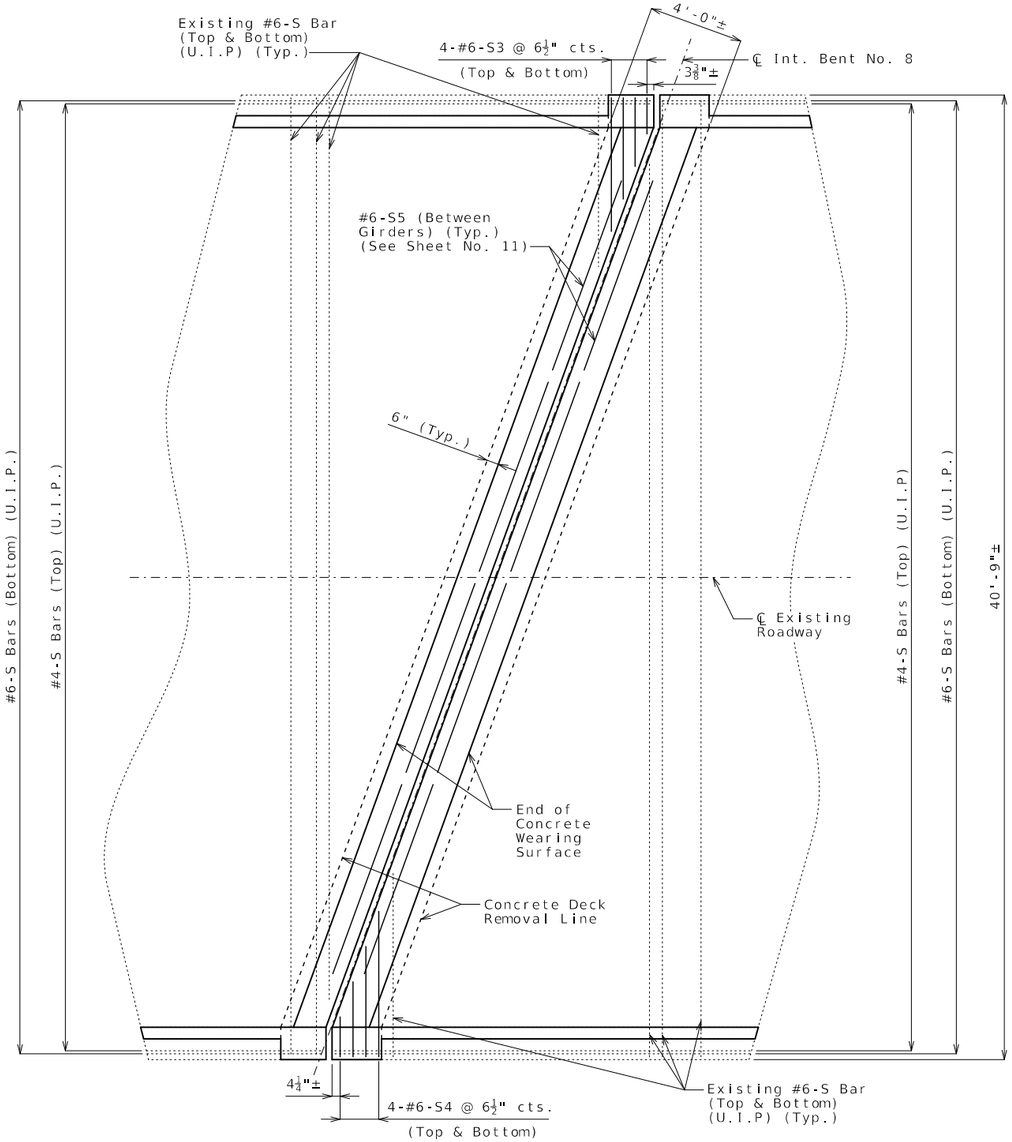
DATE PREPARED 3/3/2025
ROUTE 43 | STATE MO
DISTRICT BR | SHEET NO. 11
COUNTY JASPER
JOB NO. JSR0073
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A26902

DESCRIPTION | DATE

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



PART PLAN OF SLAB AT
INTERMEDIATE BENT NO. 5



PART PLAN OF SLAB AT
INTERMEDIATE BENT NO. 8

Notes:

Concrete wearing surface not shown for clarity.

Strip seal gland and expansion device not shown for clarity. See Sheet No. 11 for details.

Payment for slab concrete, complete in place, for expansion joint replacement will be considered completely covered by the contract unit price for Class B-2 Concrete.

Payment for furnishing and installing reinforcing steel for expansion joint replacement will be considered completely covered by the contract unit price for Reinforcing Steel (Epoxy Coated).

Existing reinforcing steel used in place shall be field bent or cut to clear new expansion joint armor by 1" min.

DETAILS OF CONCRETE & EXPANSION JOINT REPLACEMENT AT INTERMEDIATE BENTS NO. 5 & 8

Detailed Jan. 2025
Checked Jan. 2025

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

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
03/03/2025 3:16:45 PM
TYLER R_LINDSAY~CIVIL
MO-PE-2019000128

DATE PREPARED
3/3/2025

ROUTE	STATE
43	MO
DISTRICT	SHEET NO.
BR	12

COUNTY
JASPER

JOB NO.
JSR0073

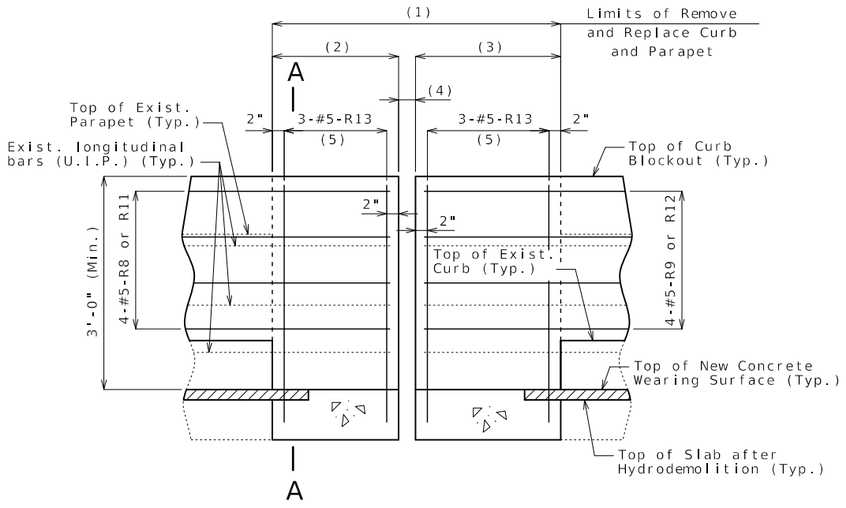
CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A26902

DESCRIPTION	DATE

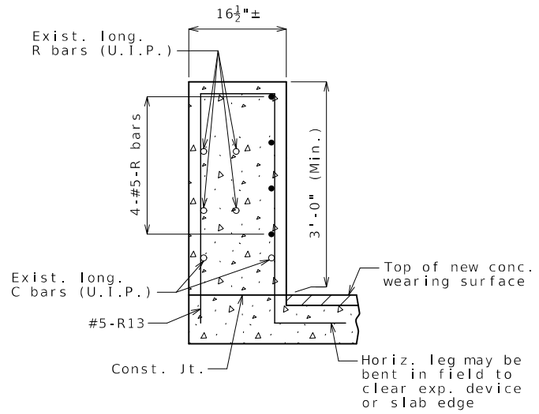
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



PART ELEVATION OF LEFT BARRIER CURB AT INTERMEDIATE BENTS NO. 5 & 8

Expansion device armor not shown for clarity.

(Right curb and parapet similar by mirroring at ℄ Structure)



SECTION A-A

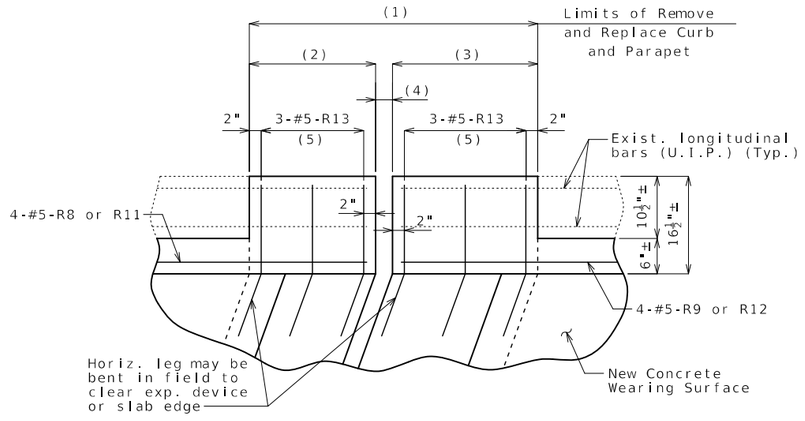
(1) 4'-3 1/8"±

(2) 2'-1"± (Int. Bent No. 5)
22 7/8"± (Int. Bent No. 8)

(3) 23 1/8"± (Int. Bent No. 5)
2'-1 1/4"± (Int. Bent No. 8)

(4) 3" Exp. Gap @ 60°F

(5) 2 Equal spaces



PART PLAN OF LEFT BARRIER CURB AT INTERMEDIATE BENTS NO. 5 & 8

Expansion device armor not shown for clarity.

(Right curb and parapet similar by mirroring at ℄ Structure)

Notes:

Payment for all concrete and reinforcement for curb and parapet replacement adjacent to expansion joint work, complete in place, will be considered completely covered by the contract unit price for Remove and Replace Curb and Parapet.

Rail and rail post near joint work shall be removed to 3" from the edge of the next rail post away from the joint work. Rails shall be capped at new open ends similarly to that shown on existing plans. At the contractor's option, the entire rail may be removed. No additional payment will be made for this option.

Ends of existing longitudinal reinforcement in curb and parapet may be trimmed as necessary to maintain 1 1/2" clearance to end of curb and parapet replacement.

For details of strip seal expansion joint system at Intermediate Bents No. 5 & 8, see Sheet No. 11.

CURB AND PARAPET REPLACEMENT

Detailed Oct. 2024
Checked Jan. 2025

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

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
03/03/2025 3:16:59 PM
TYLER R. LINDSAY - CIVIL
MO-PE-2019000128

DATE PREPARED
3/3/2025

ROUTE	STATE
43	MO
DISTRICT	SHEET NO.
BR	13

COUNTY
JASPER

JOB NO.
JSR0073

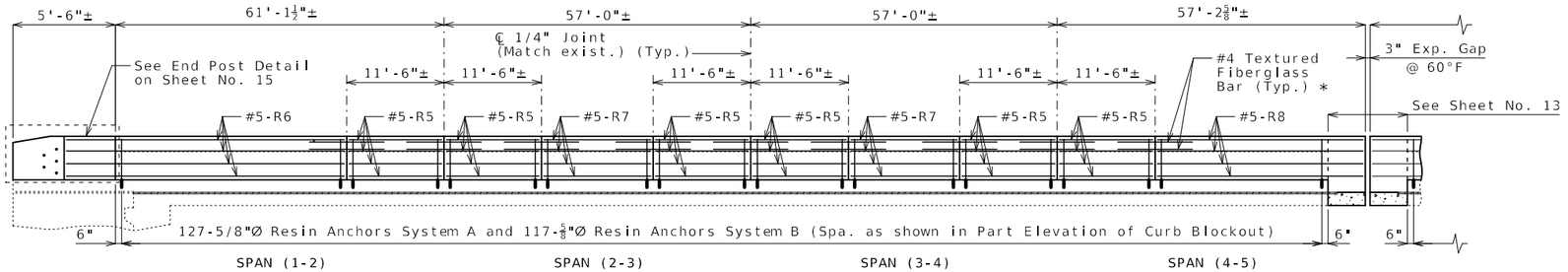
CONTRACT ID.

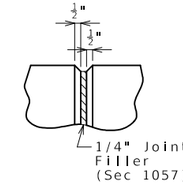
PROJECT NO.

BRIDGE NO.
A26902

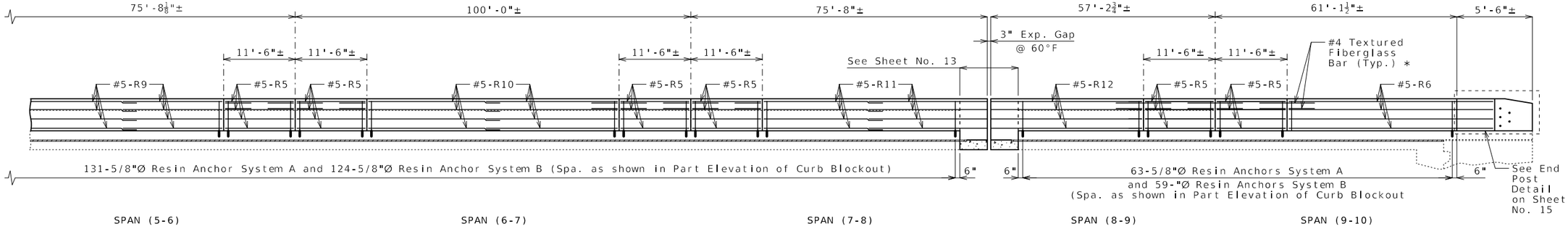
DESCRIPTION	DATE

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





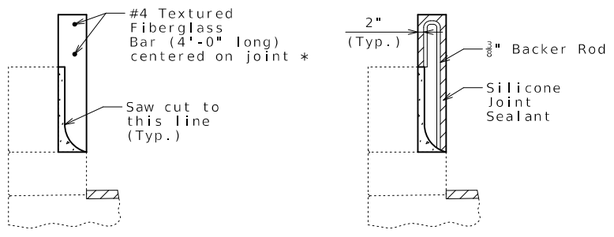
PART ELEVATION
AT FORMED JOINT



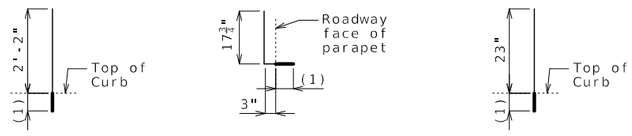
ELEVATION OF LEFT CURB BLOCKOUT

(Right curb blockout similar)

Longitudinal dimensions are along grade and are taken at top outside edge of parapet.



SECTION THRU SAW CUT JOINT



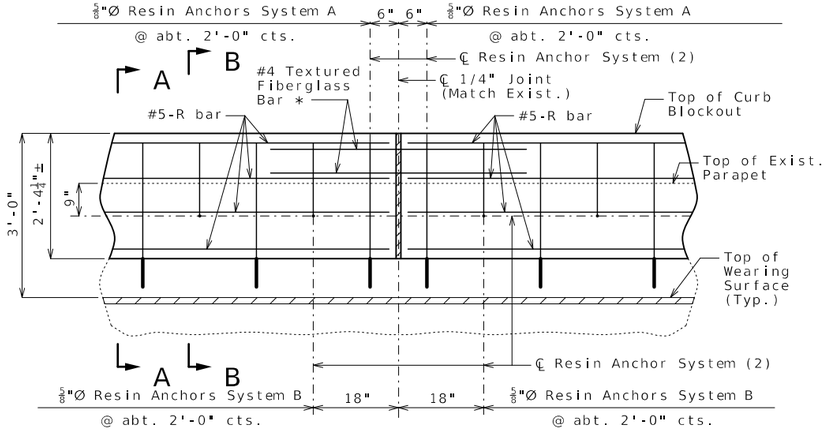
RESIN ANCHOR SYSTEM A
(642 req'd)
(Install in curb)

RESIN ANCHOR SYSTEM B
(600 req'd)
(Install in parapet)

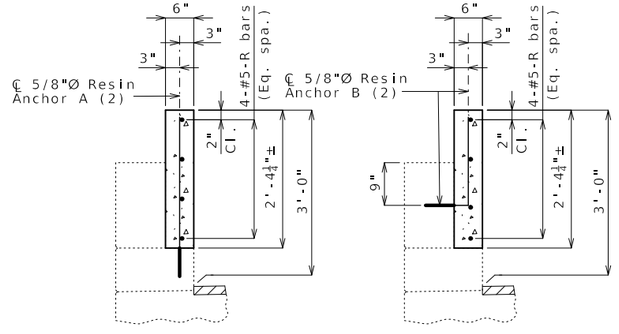
RESIN ANCHOR SYSTEM C
(64 req'd)
(Install in curb at end post)

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

DETAILS OF RESIN ANCHORS



PART ELEVATION OF CURB BLOCKOUT



SECTION A-A

SECTION B-B

CURB BLOCKOUT

Notes:

* Slip-formed option only.

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

Bridge rail not shown for clarity.

Concrete in curb blockout shall be Class B-1.

Measurement of curb blockout is to the nearest linear foot, measured at the top outside edge of parapet. (Match existing curb and parapet)

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

Payment for concrete, reinforcement, resin anchor systems and any other work incidental to the curb blockout, complete in place, will be considered completely covered by the contract unit price for Curb Blockout per linear foot.

Cost of any concrete curb or parapet repair will be considered completely covered by the contract unit price for Curb Blockout.

All curb blockout reinforcement shall be epoxy coated.

(2) Shift resin anchors where necessary to clear existing anchor bolts for bridge rail, miss curb outlets (if present) and clear existing reinforcement.

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

Concrete traffic barrier delineators shall be placed on top of the curb blockout similarly as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators on bridges with two-lane, two-way traffic shall have retroflective sheeting on both sides. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for Curb Blockout.

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

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 inches.

An epoxy coated #5 Grade 60 reinforcing bar shall be substituted for the 5/8"Ø threaded rod.

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

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
03/03/2025 3:17:07 PM
TYLER R. LINDSAY - CIVIL
MO-PE-2019000128

DATE PREPARED
3/3/2025

ROUTE	STATE
43	MO
DISTRICT	SHEET NO.
BR	14

COUNTY
JASPER

JOB NO.
JSR0073

CONTRACT ID.

PROJECT NO.

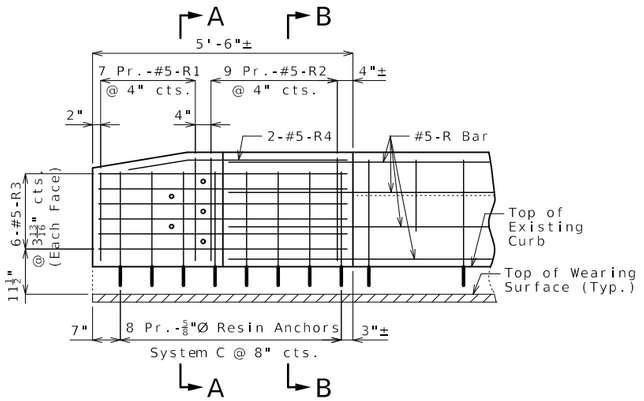
BRIDGE NO.
A26902

DESCRIPTION	DATE

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

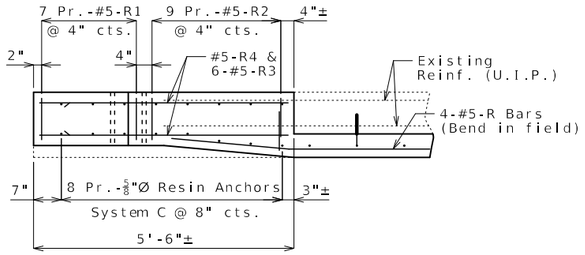
Detailed Oct. 2024
Checked Jan. 2025

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



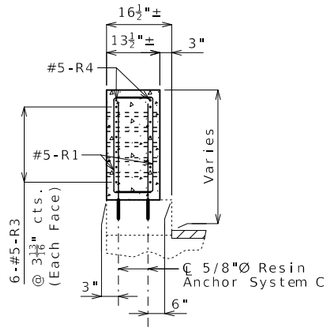
ELEVATION SHOWING REINFORCEMENT

(Right End Post at End Bent No. 10 similar)

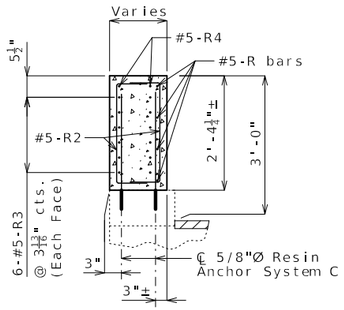


PLAN SHOWING REINFORCEMENT

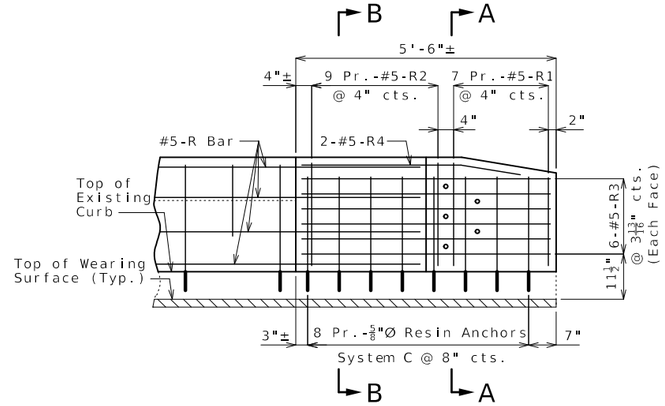
LEFT END POST AT END BENT NO. 1



SECTION A-A

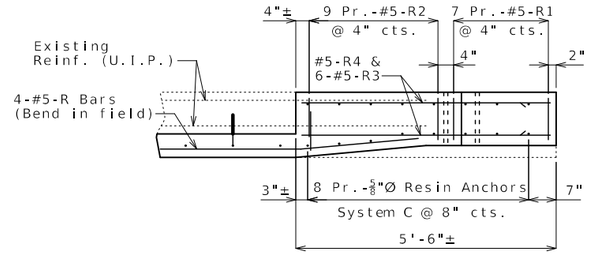


SECTION B-B



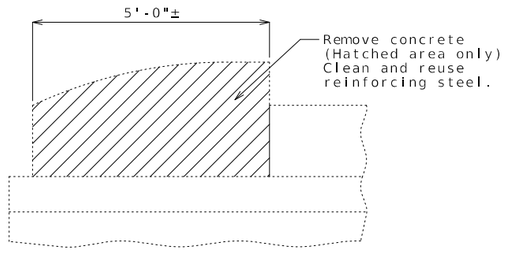
ELEVATION SHOWING REINFORCEMENT

(Right End Post at End Bent No. 1 similar)



PLAN SHOWING REINFORCEMENT

LEFT END POST AT END BENT NO. 10



PART ELEVATION SHOWING END POST CONCRETE REMOVAL

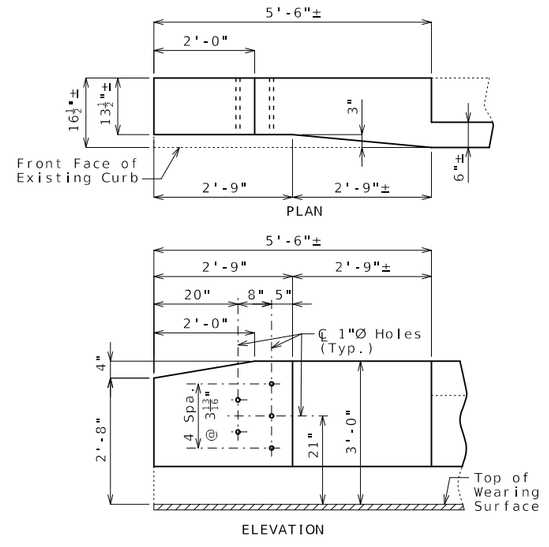
Cost of removing existing end posts will be considered completely covered by the contract unit price for Curb Blockout.

Notes:

Work this sheet with Sheet No. 14.

For details of resin anchors, see Sheet No. 14.

Resin anchors shall be shifted or bent in field to clear one-inch diameter holes by at least 1/2 inch.



DETAILS OF END POST AND GUARD RAIL ATTACHMENT

CURB BLOCKOUT AT END BENTS

Detailed Oct. 2024
Checked Jan. 2025

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

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
03/03/2025 3:17:16 PM
TYLER R. LINDSAY - CIVIL
MO-PE-2019000128

DATE PREPARED
3/3/2025

ROUTE	STATE
43	MO
DISTRICT	SHEET NO.
BR	15

COUNTY
JASPER

JOB NO.
JSR0073

CONTRACT ID.

PROJECT NO.

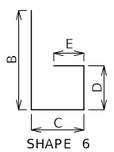
BRIDGE NO.
A26902

DESCRIPTION

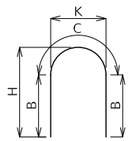
DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

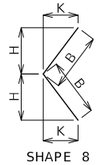
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



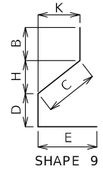
SHAPE 6
or 6S



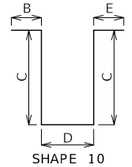
SHAPE 7



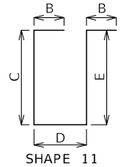
SHAPE 8
or 8S



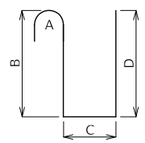
SHAPE 9
or 9S



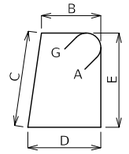
SHAPE 10
or 10S



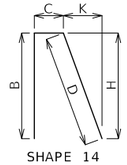
SHAPE 11
or 11S



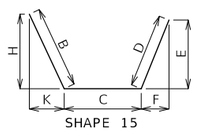
SHAPE 12



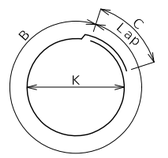
SHAPE 13S



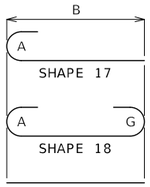
SHAPE 14
or 14S



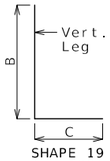
SHAPE 15
or 15S



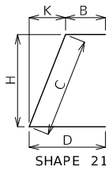
SHAPE 16



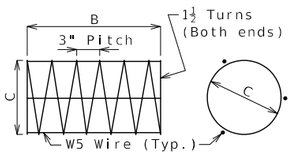
SHAPE 17
SHAPE 18
SHAPE 20



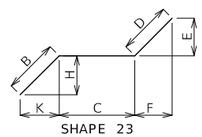
SHAPE 19
or 19S



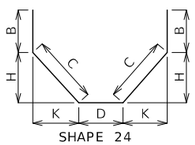
SHAPE 21
or 21S



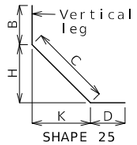
SHAPE 22



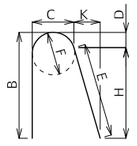
SHAPE 23
or 23S



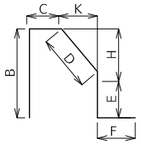
SHAPE 24
or 24S



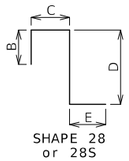
SHAPE 25
or 25S



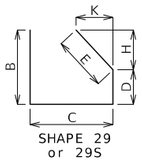
SHAPE 26



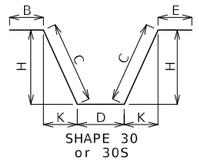
SHAPE 27S



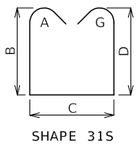
SHAPE 28
or 28S



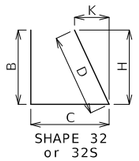
SHAPE 29
or 29S



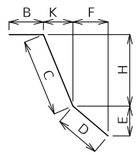
SHAPE 30
or 30S



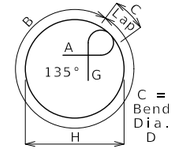
SHAPE 31S



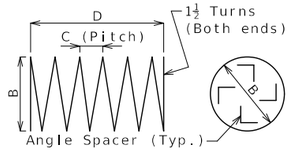
SHAPE 32
or 32S



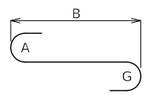
SHAPE 33
or 33S



SHAPE 34S



SHAPE 35 (1)

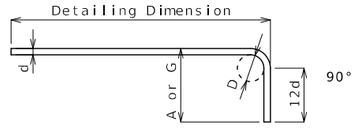


SHAPE 36

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	4½"	12"	8¼"	6"
#7	2	5¼"	14"	9⅜"	7"
	3	7"	15"	11½"	8¾"
#8	2	6"	16"	11"	8"
	3	8"	17"	13¼"	10"
#9	1	9½"	19½"	15½"	11¾"
#10	1	10¾"	22"	17½"	13¼"
#11	1	12"	24½"	19½"	14⅞"
#14	1	18¼"	31¼"	27½"	21⅝"
#18	1	24"	41½"	36¾"	28½"

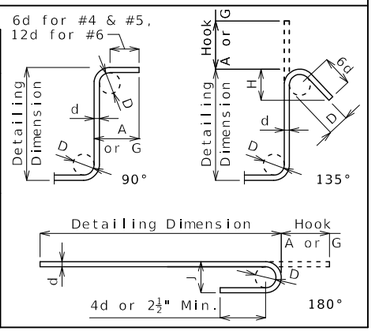


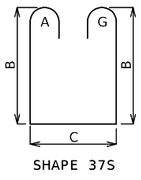
Stirrup Pin Bend Shapes (S)

Size	Case	D	A or G			H	J
			90°	135°	180°	135°	180°
#4	2	2"	4½"	4½"	5"	2⅝"	3"
	3	3"	5"	5¼"	6"	3"	4"
#5	2	2½"	5¾"	5¾"	5¾"	3⅝"	3¾"
	3	3¾"	6¼"	6½"	7"	3⅞"	5"
#6	1	4½"	12"	7¾"	8¼"	4⅝"	6"

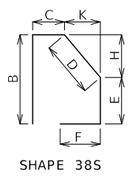
Applicable for all grades of steel.

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





SHAPE 37S



SHAPE 38S

BENDING DIAGRAMS

All dimensions are out to out.

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

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

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

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

Reinforcing Steel Totals (Pounds)

		Substructure		Superstructure			Entire Bridge	
	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	0	6,084	0	0	6,084
	6	0	271	382	0	0	0	653
	7	0	0	0	0	0	0	0
	8	0	0	0	0	0	0	0
	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	271	382	6,084	0	0	6,737

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

BENDING DIAGRAMS AND REINFORCING STEEL TOTALS

Detailed Nov. 2024
Checked Jan. 2025

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

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
03/03/2025 3:17:26 PM
TYLER R LINDSAY - CIVIL
MO-PE-2019000128

DATE PREPARED: 3/3/2025
ROUTE: 43
STATE: MO
DISTRICT: BR
SHEET NO.: 16
COUNTY: JASPER
JOB NO.: JSR0073
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A26902

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
		Substructure													
		Int. Bent 5 & 8													
20	6 H100	BEAM	E	11S			3.00	2 0.00	4 0.00				6 3	5 11	178
20	6 V100	BEAM	E	20		3 1.00							3 1	3 1	93
		Superstructure													
		Slab													
8	6 S1	SLAB	E	20	2	21.00							1 9	1 9	
		Incr. = 16.375"				5 10.00							5 10	5 10	46
8	6 S2	SLAB	E	20	2	17.00							1 5	1 5	
		Incr. = 16.625"				5 7.00							5 7	5 7	42
8	6 S3	SLAB	E	20	2	18.00							1 6	1 6	
		Incr. = 16.375"				5 7.00							5 7	5 7	43
8	6 S4	SLAB	E	20	2	20.00							1 8	1 8	
		Incr. = 17.625"				6 1.00							6 1	6 1	47
16	6 S5	SLAB	E	20		8 6.00							8 6	8 6	204
		Blockout													
		Blockout													
56	5 R1	BLOCKOUT	E	10S	8		10.50	21.00					3 6	3 3	
		Incr. = 0.625"					10.50	2 1.00					3 10	3 7	200
72	5 R2	BLOCKOUT	E	10S			10.50	2 1.00					3 10	3 7	269
48	5 R3	BLOCKOUT	E	20		5 3.00							5 3	5 3	263
8	5 R4	BLOCKOUT	E	23S		16.25	3 4.00				2.75	16.00	4 8	4 7	38
96	5 R5	BLOCKOUT	E	20		11 3.00							11 3	11 3	1,126
16	5 R6	BLOCKOUT	E	20		52 1.00							52 1	52 1	869
16	5 R7	BLOCKOUT	E	20		33 9.00							33 9	33 9	563
8	5 R8	BLOCKOUT	E	20		45 5.00							45 5	45 5	379
16	5 R9	BLOCKOUT	E	20		33 7.00							33 7	33 7	560
16	5 R10	BLOCKOUT	E	20		39 11.00							39 11	39 11	666
16	5 R11	BLOCKOUT	E	20		33 6.00							33 6	33 6	559
8	5 R12	BLOCKOUT	E	20		45 5.00							45 5	45 5	379
24	5 R13	BLOCKOUT	E	28S		3 4.25	13.50	3 4.25	12.00				8 10	8 6	213

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. 16.

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 Jan. 2025

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

BILL OF REINFORCING STEEL

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
03/3/2025 3:17:46 PM
TYLER R. LINDSAY - CIVIL
MO-PE-2019000128

DATE PREPARED
3/3/2025

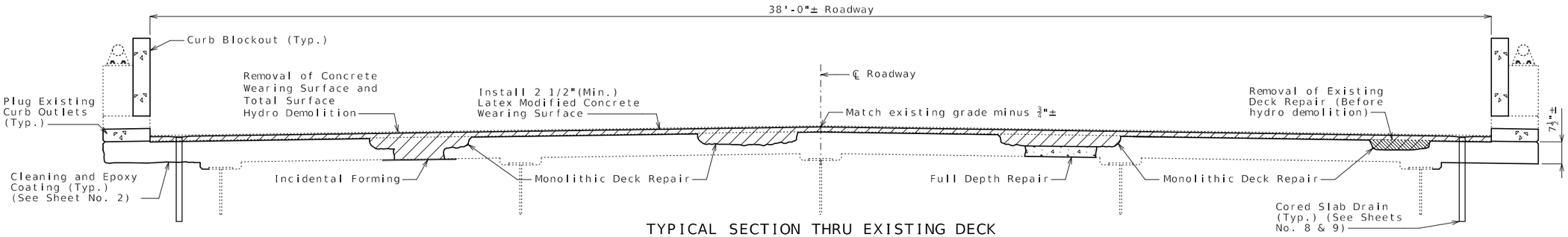
ROUTE 43 | STATE MO
DISTRICT BR | SHEET NO. 17
COUNTY JASPER
JOB NO. JSR0073
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A26902

DESCRIPTION | DATE

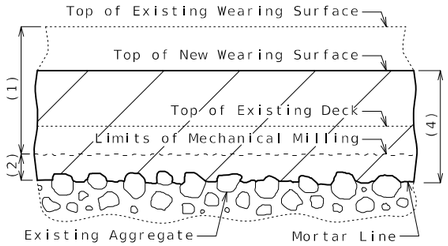
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

SEC/SUR 1 TWP 29N RGE 33W

U.I.P. AND REHABILITATE EXISTING (75'-100'-75') CONTINUOUS COMPOSITE PLATE GIRDER SPANS,(3 @ 58') PRESTRESSED CONCRETE I-GIRDER SPANS



TYPICAL SECTION THRU EXISTING DECK



MILLING AND HYDRO DEMOLITION LIMITS

DETAIL A

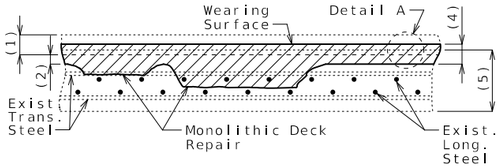
(1) Removal of existing 2 1/4"± low slump concrete wearing surface plus 1/2" of existing deck

(2) 1/2" minimum total surface hydro demolition of sound concrete, measured to mortar line

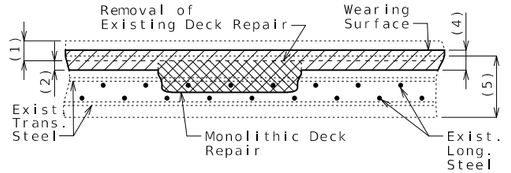
(3) 1" vertical side shall be established outside the deteriorated area.

(4) 2 1/2" minimum latex modified concrete wearing surface

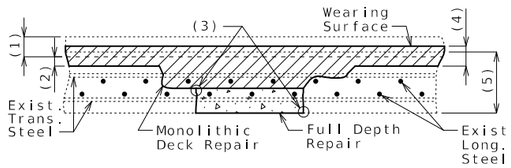
(5) Original depth of deck minus previous scarification



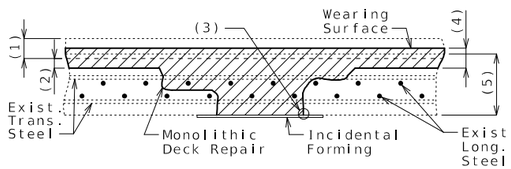
MONOLITHIC DECK REPAIR



REMOVAL OF EXISTING DECK REPAIR BEFORE HYDRO DEMOLITION



MONOLITHIC DECK REPAIR REQUIRING FULL DEPTH REPAIR



MONOLITHIC DECK REPAIR REQUIRING INCIDENTAL FORMING

Estimated Quantities

Item		Total
Removal of Miscellaneous ACM (Non-Friable)	sq. foot	3
Total Surface Hydro Demolition	sq. yard	1802
Removal of Concrete Wearing Surface	sq. foot	16,218
Removal of Existing Deck Repair	sq. foot	350
Partial Removal of Existing Bridge Deck	sq. foot	130
Removal of Existing Expansion Joint & Adjacent Concrete	linear foot	38
Temporary Falsework	lump sum	1
Removal of Existing Bearings	each	5
Remove and Replace Curb and Parapet	linear foot	12
* Supplementary Wearing Surface Material	cu. yard	15
Latex Modified Concrete Wearing Surface	sq. yard	1802
Diamond Grinding	sq. yard	1802
Class B-2 Concrete	cu. yard	28.8
Curb Blockout	linear foot	873
Substructure Repair (Formed)	sq. foot	50
Full Depth Repair	sq. foot	175
Cleaning and Epoxy Coating	sq. foot	3200
Plugging Existing Curb Outlets	each	114
Reinforcing Steel (Epoxy Coated)	pound	3460
Protective Coating - Concrete Bents and Piers (Epoxy)	lump sum	1
Surface Preparation for Recoating Structural Steel	sq. foot	300
Field Application of Organic Zinc Primer	sq. foot	300
Intermediate Field Coat (System G)	sq. foot	300
Finish Field Coat (System G)	sq. foot	300
Cored Slab Drains	each	76
Laminated Neoprene Bearing Pad Assembly	each	5
Strip Seal Expansion Joint System	linear foot	38

* Supplementary wearing surface material will be paid for at the fixed unit price in accordance with Sec 109.

General Notes:

Design Specifications:

2002 AASHTO LFD (17th Ed.) Standard Specifications
Bridge Deck Rating = 6

Design Loading:

H20-44 (1969) (Existing), HS20-44 (New Construction)

Design Unit Stresses:

Class B-1 Concrete (Curb Blockout)	f'c = 4,000 psi
Class B-2 Concrete (Superstructure except Curb Blockout)	f'c = 4,000 psi
Class B-2 Concrete (Substructure)	f'c = 4,000 psi
Reinforcing Steel (ASTM A615 Grade 60)	fy = 60,000 psi

Neoprene Pads:

Neoprene bearing pads shall be 60 durometer and shall be in accordance with Sec 716.

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 noted.

Miscellaneous:

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

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

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

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

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.

In order to maintain grade and a minimum thickness of wearing surface as shown on plans it may be necessary to use additional quantities of wearing surface at various locations throughout the structure. The cost of furnishing and installing the wearing surface will be considered completely covered in the contract unit price, including all additional labor, materials or equipment for variations in thickness of wearing surface.

Traffic Handling:

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

REPAIRS TO BRIDGE: ROUTE 43 OVER SPRING RIVER

ROUTE 43 FROM ROUTE M TO ROUTE KK
ABOUT 2.0 MILES NORTH OF ROUTE KK
BEGINNING STATION 336+20.96 ± (Match Existing)

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
03/03/2025 3:01:57 PM
TYLER.R.LINDSAY--CIVIL
MO-PE-2019000128

DATE PREPARED 3/3/2025

ROUTE	STATE
43	MO
DISTRICT	SHEET NO.
BR	1

COUNTY JASPER
JOB NO. JSR0073
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A26912

DESCRIPTION | DATE

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

Detailed Nov. 2024
Checked Jan. 2025

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

Concrete Protective Coating:

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

Structural Steel Protective Coating:

Protective Coating: System G in accordance with Sec 1081.

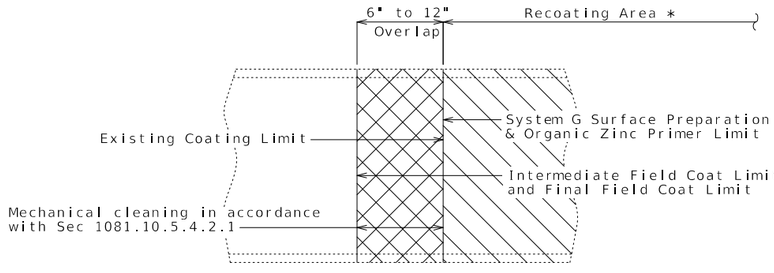
Surface Preparation: Surface preparation of the existing steel shall be in accordance with Sec 1081 for Recoating of Structural Steel (System G) with organic zinc primer. The cost of surface preparation will be considered completely covered by the contract unit price per sq. foot for Surface Preparation for Recoating Structural Steel.

Prime Coat: The cost of the prime coat will be considered completely covered by the contract unit price per sq. foot for Field Application of Organic 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 unit price per sq. foot for Intermediate Field Coat (System G). The cost of the finish field coat will be considered completely covered by the contract unit price per sq. foot for Finish Field Coat (System G).

* The recoating area shall be as indicated below:

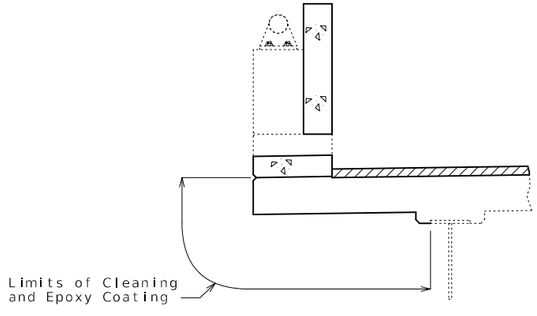
All structural steel 5 feet from end of girder at expansion joints near Int. Bent No. 4.



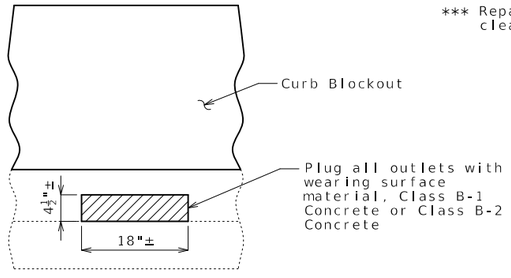
PART ELEVATION SHOWING LIMITS OF PAINT OVERLAP

(Vertical or horizontal paint limit. Horizontal limit shown)

Limits of Paint Overlap: System G shall overlap the existing coating between 6 inches and 12 inches in order to achieve maximum coverage at the paint limit of each complete system near the expansion and contraction areas. The final field coating shall be masked to provide crisp, straight lines and to prevent overspray beyond the overlap required.



PART SECTION SHOWING LIMITS
OF CLEANING AND EPOXY COATING
SLAB EDGE & CANTILEVER



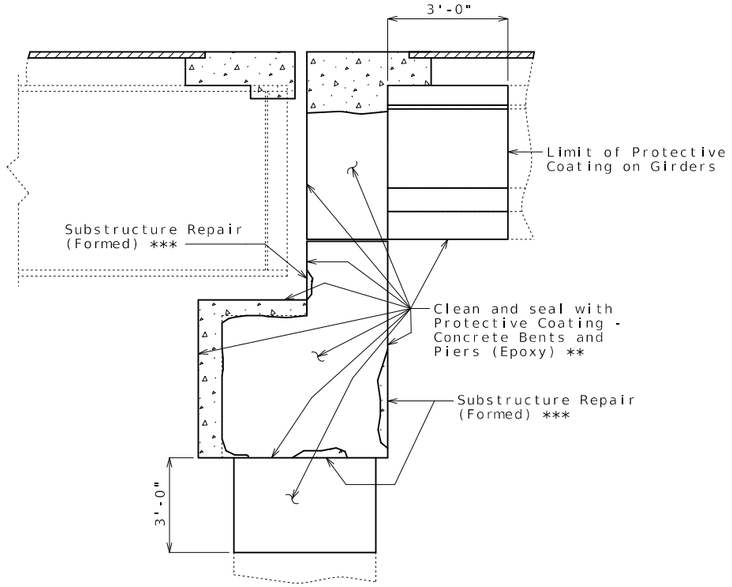
PART ELEVATION SHOWING
PLUGGING OF CURB OUTLETS

Notes:

New concrete wearing surface not shown for clarity.

Cost of labor and materials required to plug existing curb outlets will be considered completely covered by the contract unit price for Plugging Existing Curb Outlets.

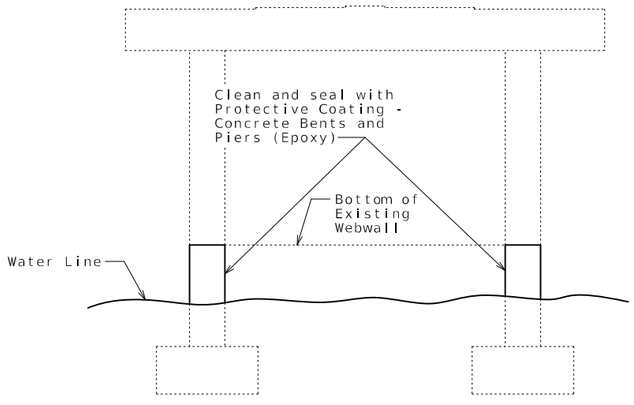
Estimated material required to fill all curb outlets is 3.3 cubic yards (for information only).



PART ELEVATION SHOWING PROTECTIVE COATING AND SUBSTRUCTURE REPAIR AT INT. BENT NO. 4

** Protective coating shall be applied after all substructure repairs are completed and fully cured. See Sheet No. 6 for additional details of substructure repairs.

*** Repairs shall be completed to provide 1 1/2" minimum clearance to existing reinforcing steel.



ELEVATION AT INT. BENTS NO. 2 & 3
SHOWING PROTECTIVE COATING

REHAB DETAILS

Detailed Nov. 2024
Checked Jan. 2025

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

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
03/03/2025 3:02:57 PM
TYLER R. LINDSAY - CIVIL
MO-PE-2019000128

DATE PREPARED 3/3/2025

ROUTE	STATE
43	MO
DISTRICT	SHEET NO.
BR	2

COUNTY JASPER

JOB NO. JSR0073

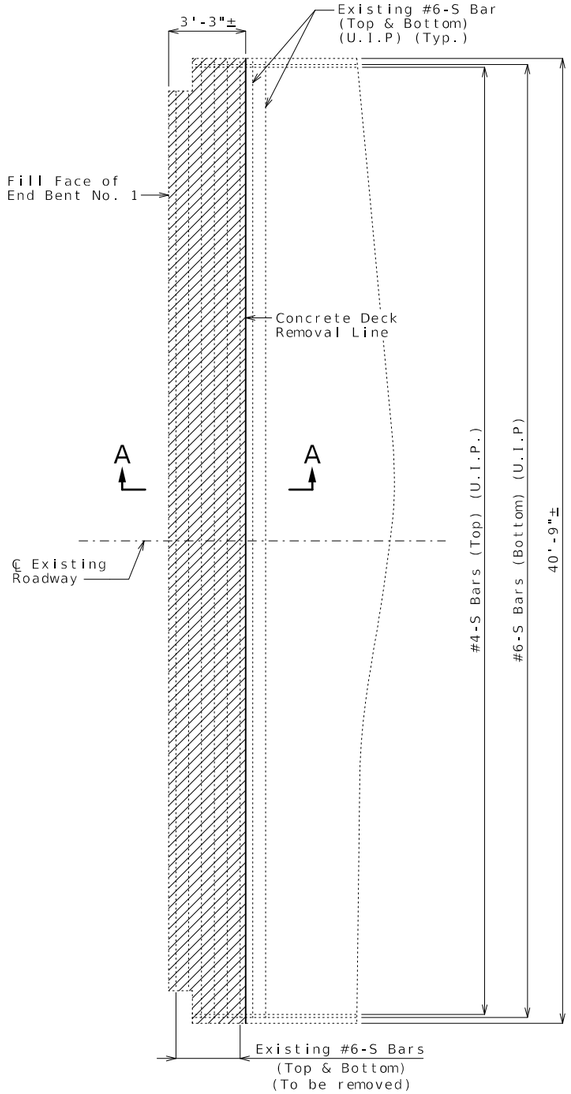
CONTRACT ID.

PROJECT NO.

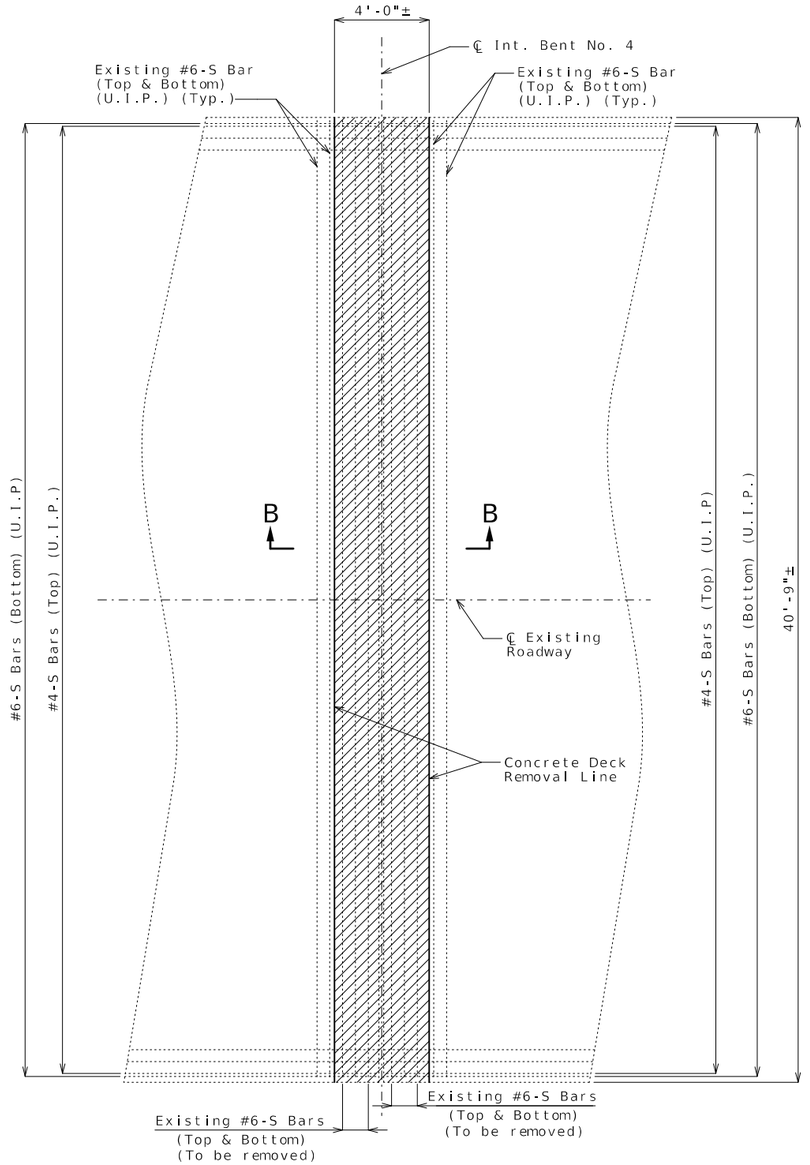
BRIDGE NO. A26912

DESCRIPTION	DATE

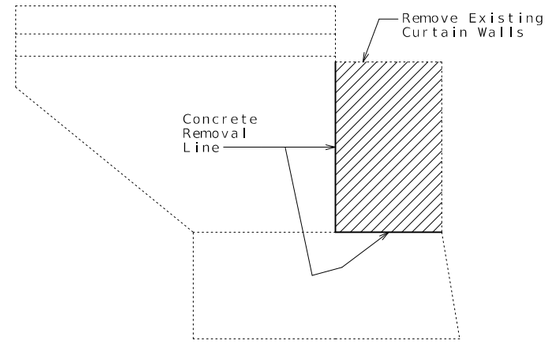
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



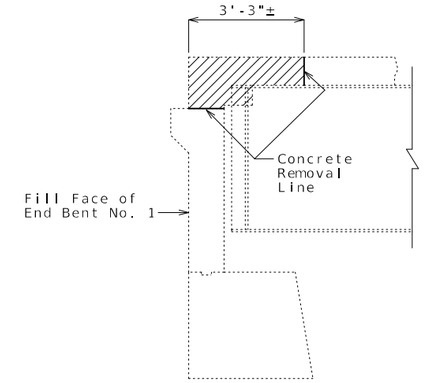
PART PLAN OF SLAB AT END BENT NO. 1
SHOWING LIMITS OF CONCRETE REMOVAL



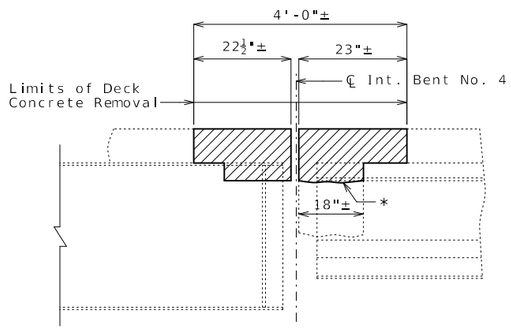
PART PLAN OF SLAB AT INT. BENT NO. 4
SHOWING LIMITS OF CONCRETE REMOVAL



ELEVATION OF END BENT NO. 1 SHOWING
LIMITS OF CONCRETE CURTAIN WALL REMOVAL



SECTION A-A



SECTION B-B

* Remove concrete diaphragm minimum extent necessary to install new expansion device (4" min. below top of girder).

Notes:

The cost of concrete removal at End Bent No. 1 as shown, including curtain walls will be considered completely covered by the contract unit price for Partial Removal of Existing Bridge Deck. Vertical & horizontal curtain wall reinforcement to be cut off one inch below concrete removal surface and the resulting holes shall be filled with a qualified special motar.

A smooth, level surface shall be provided at End Bent No. 1 removal lines.

The cost of concrete removal at Int. Bent No. 4 as shown, including existing expansion device, will be considered completely covered by the contract unit price for Removal of Existing Expansion Joint & Adjacent Concrete.

For details of strip seal expansion joint system at Int. Bent No. 4, see Sheet No. 10.

For details of slab replacement, see Sheets No. 4, 5 & 11.

For details of removal and replacement of curb & parapet not shown, see Sheet No. 12.

Detailed Jan. 2025
Checked Jan. 2025

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

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
03/03/2025 3:02:36 PM
TYLER R LINDSAY - CIVIL
MO-PE-2019000128

DATE PREPARED
3/3/2025

ROUTE	STATE
43	MO
DISTRICT	SHEET NO.
BR	3

COUNTY
JASPER

JOB NO.
JSR0073

CONTRACT ID.

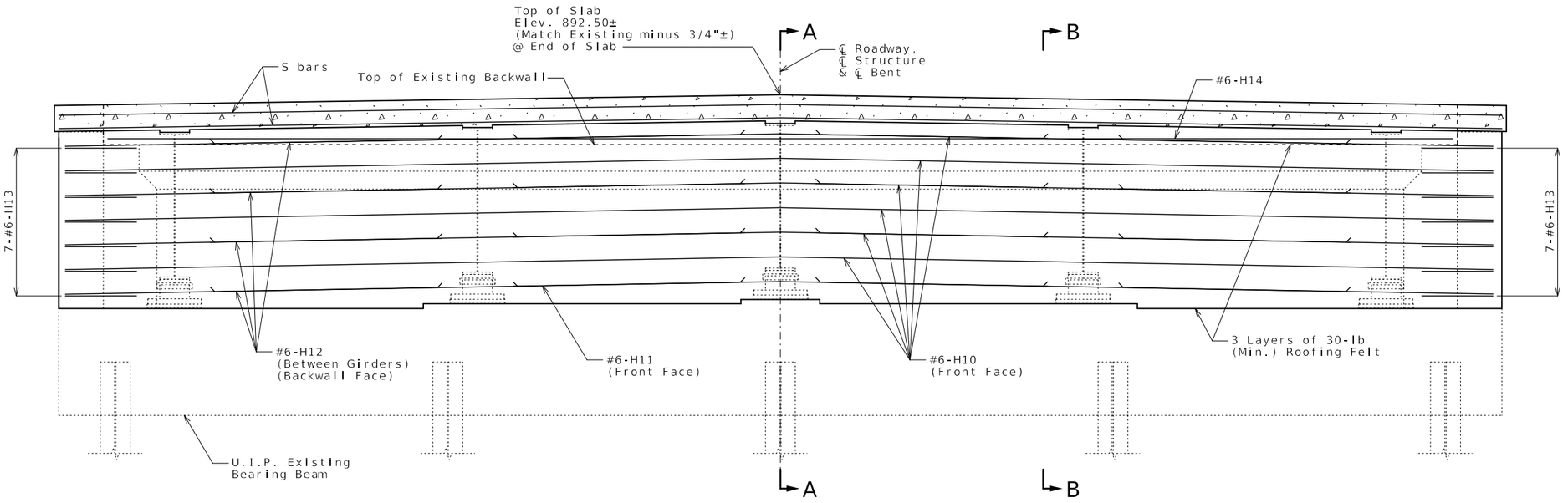
PROJECT NO.

BRIDGE NO.
A26912

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

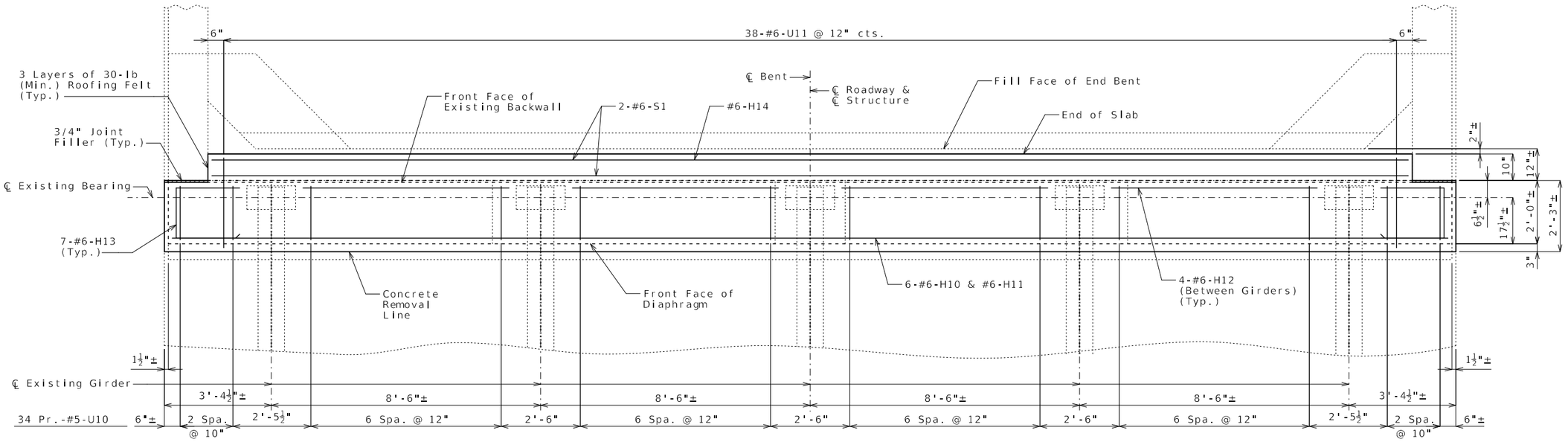
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



SECTION NEAR END BENT

Notes: Existing steel end diaphrams not shown for clarity (leave in place).

Existing S bars not shown for clarity (use in place).



PART PLAN

Notes: Concrete wearing surface not shown for clarity.

S2 bars not shown for clarity

Existing S bars not shown for clarity (use-in-place).

Notes:

For details and reinforcement of barrier, see Sheets No. 12 thru 14.

Work this sheet with Sheet No. 5.

DETAILS OF END BENT NO. 1

Detailed Feb. 2025
Checked Feb. 2025

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

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
03/03/2025 3:02:46 PM
TYLER R LINDSAY - CIVIL
MO-PE-2019000128

DATE PREPARED
3/3/2025

ROUTE	STATE
43	MO
DISTRICT	SHEET NO.
BR	4

COUNTY
JASPER

JOB NO.
JSR0073

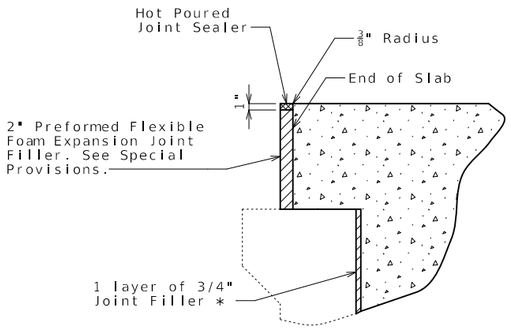
CONTRACT ID.

PROJECT NO.

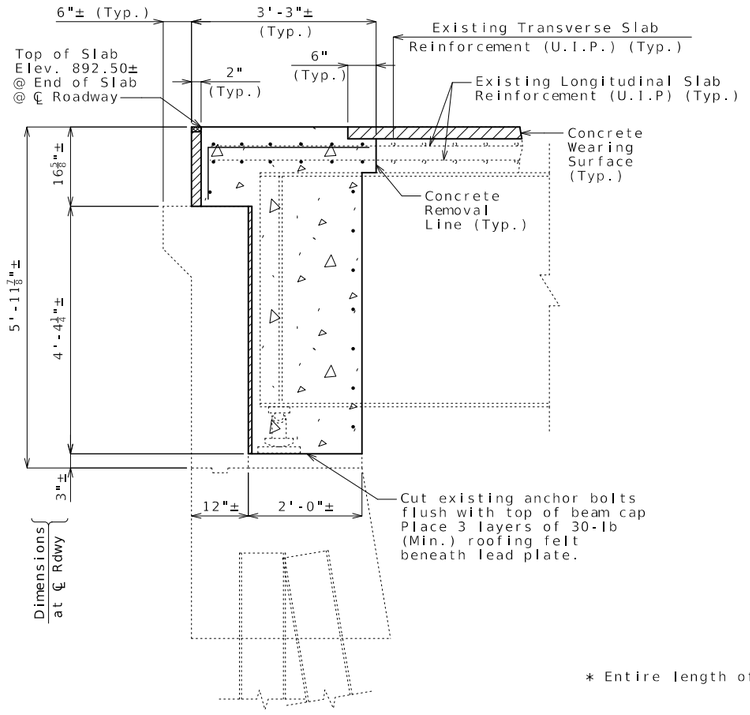
BRIDGE NO.
A26912

DESCRIPTION	DATE

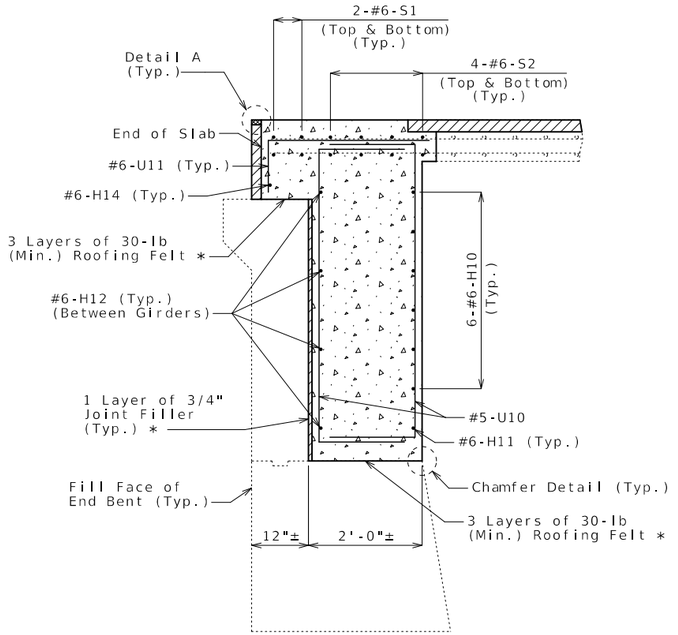
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



DETAIL A

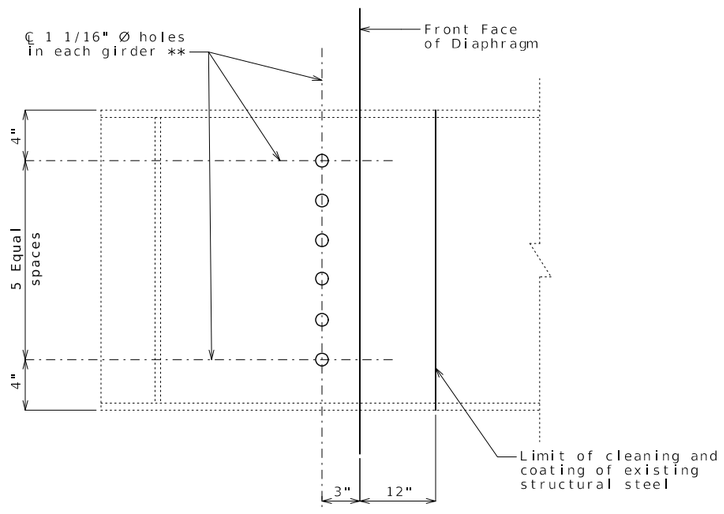


SECTION A-A



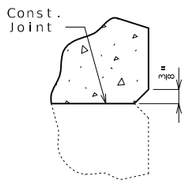
SECTION B-B

* Entire length of diaphragm



DETAIL OF WEB HOLES
AT END BENT

** Cost of field drilling holes in existing girder webs will be considered completely covered by the contract unit price for Class B-2 Concrete.



CHAMFER DETAIL

Notes:

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 prepration and coated with a minimum of one coat of gray epoxy-mastic primer (non-alumunum) in accordance with Sec 1081 to produce a dry film thickness of not less that 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 Class B-2 Concrete.

All concrete, complete in place, shall be Class B-2 and will be considered completely covered by contract unit price for Class B-2 Concrete.

The H10 bars are segmented for ease of placement through girder web holes. The total bar length for H10 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 (Epoxy Coated). No adjustment of the quantity of reinforcing steel will be allowed for the use of mechanical bar splices.

All reinforcement, complete in place, shall be Grade 60 epoxy coated and will be considered completely covered by contract unit price for Reinforcing Steel (Epoxy Coated).

Work this sheet with Sheet No. 4.

DETAILS OF END BENT NO. 1

Detailed Jan. 2025
Checked Feb. 2025

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

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
03/03/2025 3:03:07 PM
TYLER R. LINDSAY - CIVIL
MO-PE-2019000128

DATE PREPARED 3/3/2025

ROUTE	STATE
43	MO
DISTRICT	SHEET NO.
BR	5

COUNTY JASPER

JOB NO. JSR0073

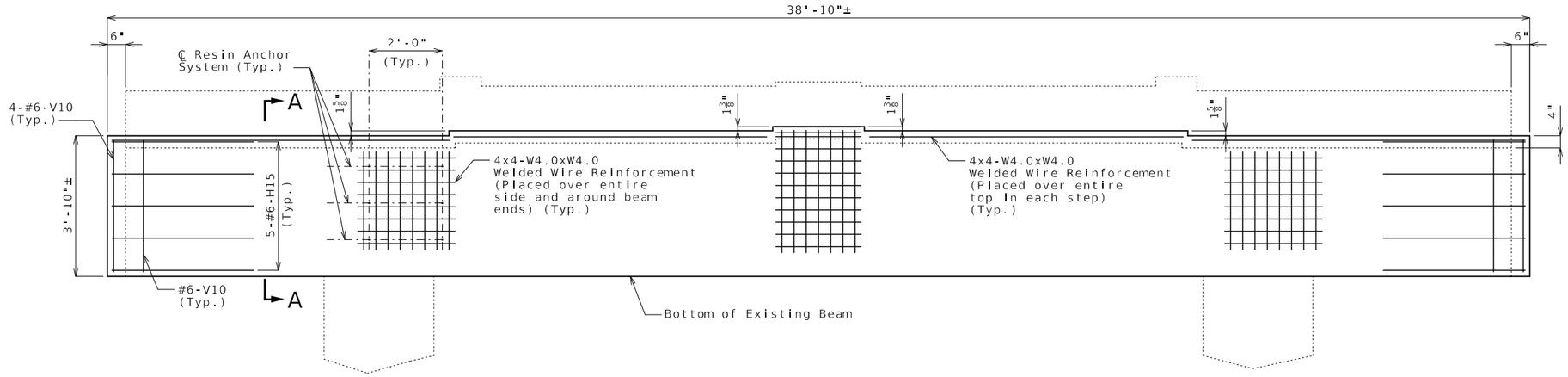
CONTRACT ID.

PROJECT NO.

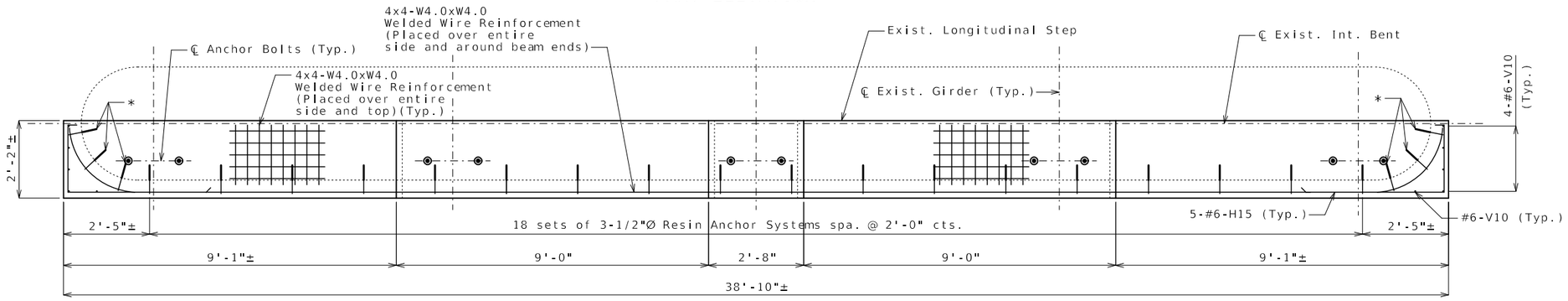
BRIDGE NO. A26912

DESCRIPTION	DATE

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



PART ELEVATION



PLAN

* 3 sets of 3-1/2"Ø Resin Anchor Systems equally spaced around beam ends.

Notes:

All concrete shall be Class B-2.

All bar reinforcement shall be epoxy coated. WWR shall not be epoxy coated.

All deteriorated concrete shall be removed prior to installing new concrete. All reinforcing steel exposed shall have a minimum of one inch beyond the inside edge removed.

Sandblasting shall be required on existing concrete surface that will be in contact with new concrete.

The cost of removing deteriorated concrete and installing new concrete, complete in place, will be considered completely covered by the contract unit price for Class B-2 Concrete.

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

An epoxy coated #4 Grade 60 reinforcing bar shall be substituted for the 1/2" Ø threaded rod.

The cost of furnishing and installing the resin anchor systems, complete in place, will be considered completely covered by the contract unit price for Class B-2 Concrete.

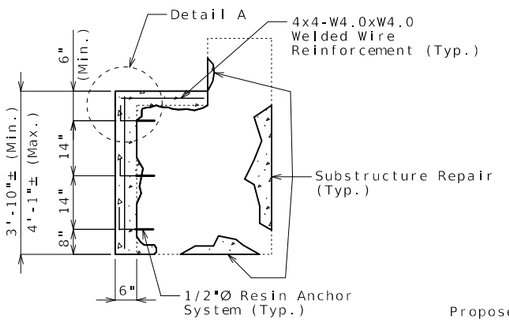
The minimun embedment depth in concrete with f'c = 4,000 psi for the resin anchor system shall be the required to meet the minimum ultimate pullout strength in accordance with Sec 1039 but shall not be less than 5".

The cost of furnishing and installing all bar reinforcing steel as shown, complete in place, will be considered completely covered by the contract unit price for Reinforcing Steel (Epoxy Coated).

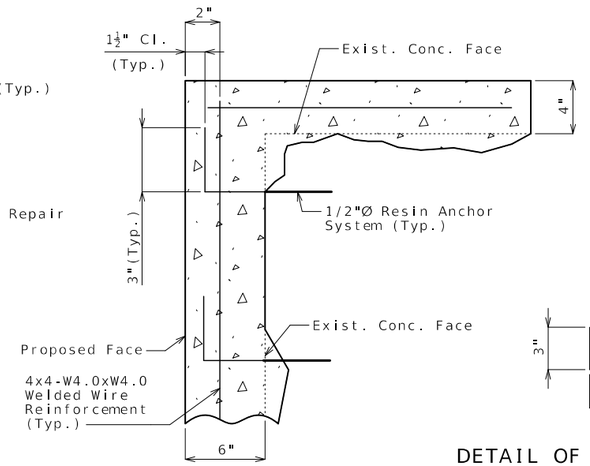
The cost of furnishing and installing approximately 200 pounds of Welded Wire Reinforcement as shown, complete in place, will be considered completely covered by the contract unit price for Class B-2 Concrete.

Concrete encasement shall meet the requirements of Sec 704 for Substructure Repair (Formed). All other applicable sections from Sec 704 shall be required.

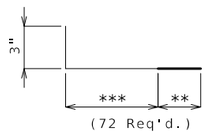
For details of new bearing assembly, location of new anchor bolts, and temporary support loads, see Sheet No. 7.



SECTION A-A



DETAIL A



DETAIL OF RESIN ANCHOR SYSTEM

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

*** 4 1/2" plus repair depth (Field bend)

INTERMEDIATE BENT NO. 4 REPAIR

Detailed Dec. 2024
Checked Jan. 2025

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

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
03/03/2025 3:03:14 PM
TYLER R. LINDSAY - CIVIL
MO-PE-2019000128

DATE PREPARED
3/3/2025

ROUTE	STATE
43	MO
DISTRICT	SHEET NO.
BR	6

COUNTY
JASPER

JOB NO.
JSR0073

CONTRACT ID.

PROJECT NO.

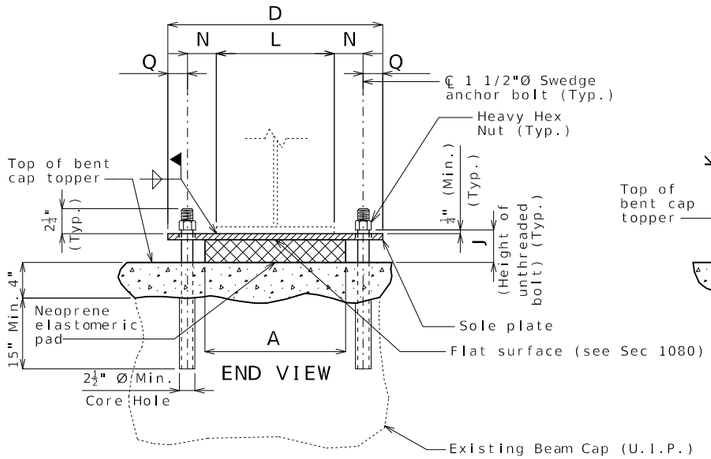
BRIDGE NO.
A26912

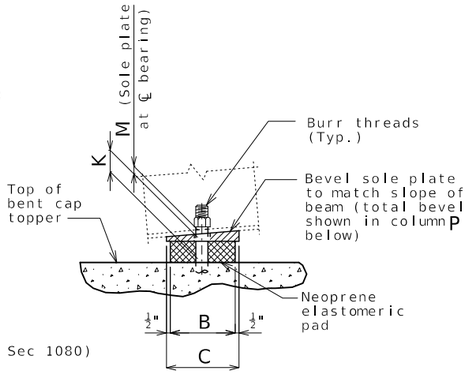
DESCRIPTION

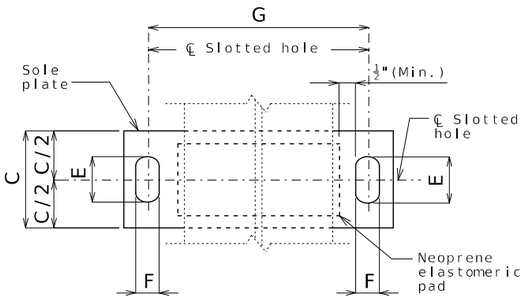
DATE

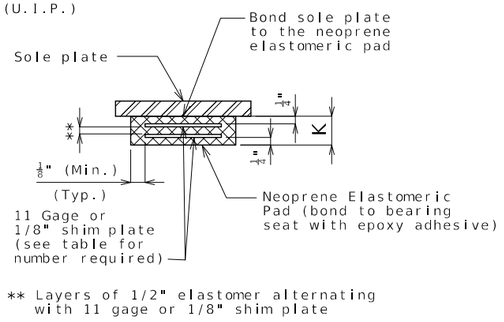
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

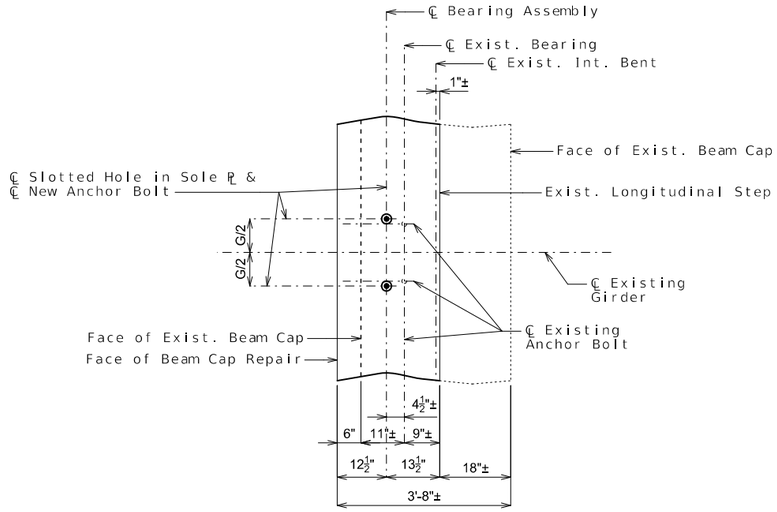
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)







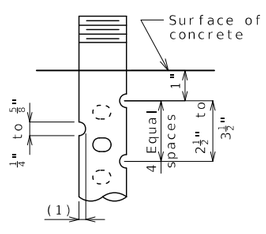




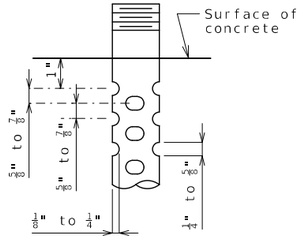
PART PLAN OF EXISTING INT. BENT NO. 4
SHOWING ANCHOR BOLT LOCATION

EXPANSION BEARINGS																
BENT NO.	A	B	C	D	E	F	G	J	K	L	M	N	P	Q	R	NUMBER OF SHIM PLATES *	NUMBER REQUIRED
4 LT	14"	14"	15"	21½"	7¾"	1⅝"	17"	6⅜"	4⅜"	10"	1½"	3½"	0"	2¼"	3/16"	7	5
																TOTAL BEARINGS	5

* The required shim plate shall be placed between layers of elastomer and molded together to form an integral unit.



DETAIL OF 3/4"Ø THRU
2 1/2"Ø ANCHOR BOLTS



OPTIONAL DETAIL OF 1 3/8"Ø
THRU 2 1/2"Ø ANCHOR BOLTS

SWEDGE ANCHOR BOLT DETAILS

(1) ⅛" for ¾"Ø thru 1¼"Ø anchor bolts

⅛" to ¼" for 1⅜"Ø thru 2½"Ø anchor bolts

GENERAL NOTES:

Anchor bolts shall be 1 1/2" Ø ASTM F1554 Grade 55 swedged bolts and shall extend a total of 19" (4" into new concrete and 15" into existing concrete beam cap) with ASTM A563 Grade A Heavy Hex nuts. Actual manufacturer's certified mill test reports(chemical and mechanical) shall be provided. Swedging shall be 1" less than extension into the concrete.

Anchor bolt shall be at the centerline of slotted hole at 60°F. Bearing position shall be adjusted R for each 10° fall or rise in temperature at installation.

Anchor bolts and heavy hex nuts shall be coated with a minimum of two coats of inorganic zinc primer to provide a total dry film thickness of 4 mils minimum, 6 mils maximum, or galvanized in accordance with Sec 1081.

Neoprene Elastomeric Pads shall be 60 Durometer.

Structural steel for sole plate shall be ASTM A709 Grade 50 and shall be coated with a minimum of two coats of inorganic zinc primer to provide a total dry film thickness of 4 mils minimum, 6 mils maximum.

Laminated Neoprene Bearing Pad Assembly shall be in accordance with Sec 716.

Payment for removing existing steel rocker bearings and anchor bolts will be considered completely covered by the contract unit price for Removal of Existing Bearings.

Payment for drilling and grouting new anchor bolts, complete in place, will be considered completely covered by the contract unit price for Laminated Neoprene Bearing Pad Assembly.

Existing anchor bolts shall be removed to 1" below the existing concrete surface or removed completely if required.

Required temporary support load of 45 kips at each bearing is a service load without a factor of saftey. It includes the dead load of the superstructure and a construction load of 50 psf constant load applied to the deck area. Live load is not included in the support load (See Special Provisions).

For details of concrete beam cap repairs required before setting new bearings, see Sheet No. 6.

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
03/03/2025 3:03:26 PM
TYLER R. LINDSAY - CIVIL
MO-PE-2019000128

DATE PREPARED 3/3/2025

ROUTE	STATE
43	MO
DISTRICT	SHEET NO.
BR	7

COUNTY JASPER

JOB NO. JSR0073

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A26912

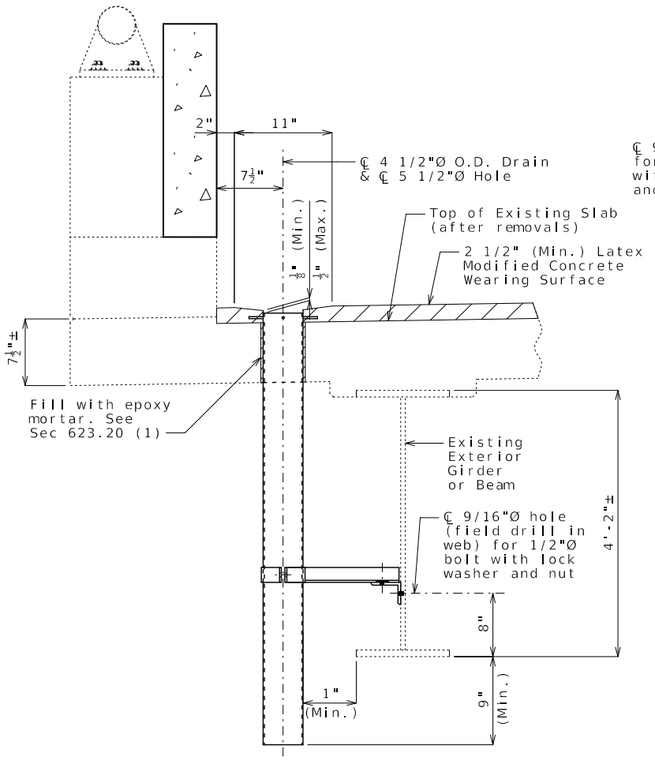
DESCRIPTION	DATE

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

LAMINATED NEOPRENE BEARING PAD ASSEMBLY

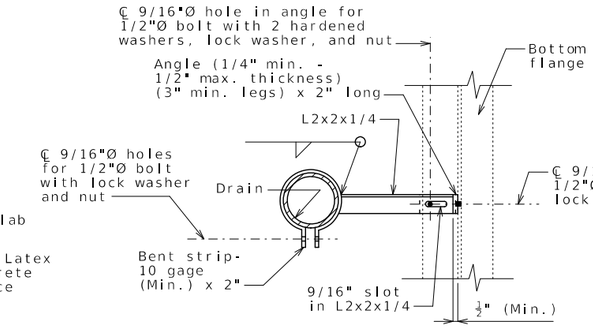
Detailed Dec. 2024
Checked Jan. 2025

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

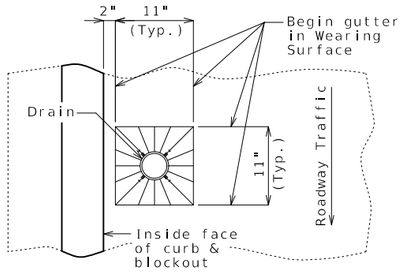


(1) Use backer rod around drain @ bottom of slab and epoxy inject from the top.

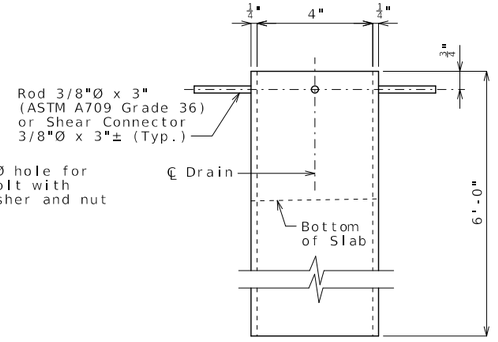
PART SECTION NEAR DRAIN



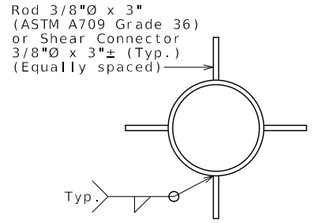
PART SECTION SHOWING BRACKET ASSEMBLY



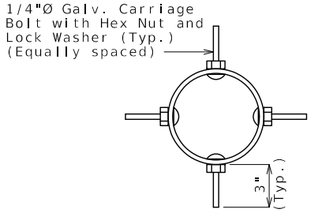
PART PLAN OF SLAB AT DRAIN



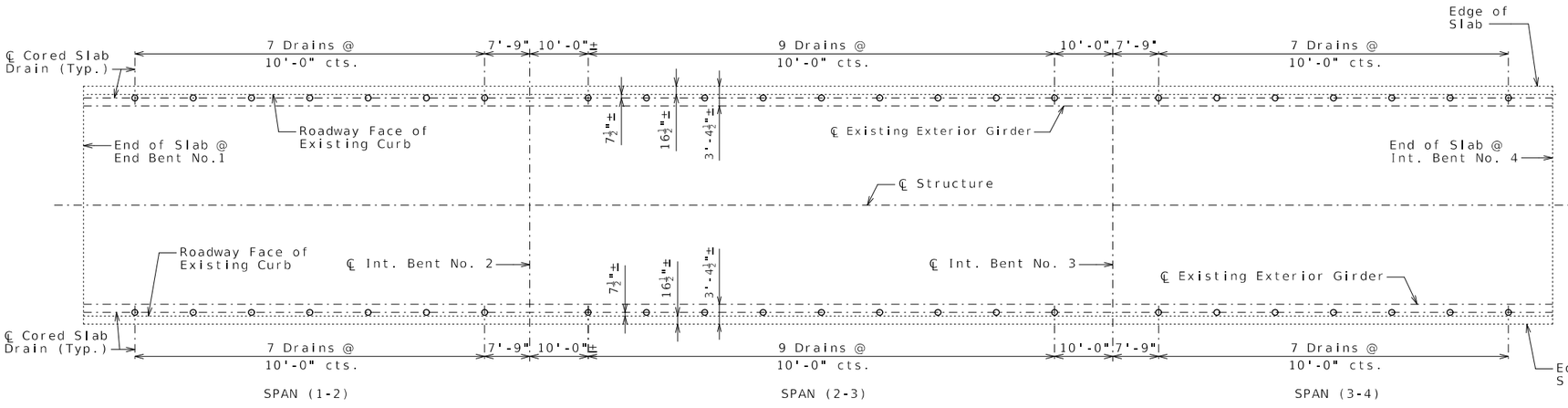
ELEVATION OF DRAIN



PLAN OF DRAIN



PLAN OF OPTIONAL FRP DRAIN



PART PLAN SHOWING CORED SLAB DRAIN LOCATIONS

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.

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 M232 (ASTM A153), Class C.

All 1/2-inch diameter bolts shall be ASTM A307, except as noted.

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

Cost of cored slab drains, complete in place, will be considered completely covered by the contract unit price for Cored Slab Drains per each.

Holes for slab drains shall be cored. Percussion drilling will not be permitted.

Slab drain locations may be shifted the minimum extent necessary to avoid slab reinforcement and to allow for field drilling bolt hole in web of existing girder for bracket assembly attachment.

Cored slab drains shall be placed vertically.

For details of plugging existing curb outlets, see Sheet No. 2.

Notes for Steel Drain:

Slab drains shall be fabricated from 1/4-inch structural steel tubing ASTM A500 or A501.

The drains shall be galvanized in accordance with ASTM A123.

Drains shall be inserted through slab such that damage to galvanized coating is minimized.

Notes for FRP Drain:

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

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. Care shall be taken to avoid damage to exterior coating during installation.

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 drains shall be as recommended by the manufacturer to ensure a smooth, chip-free cut.

CORED SLAB DRAINS FOR SPANS NO. 1, 2 & 3

Detailed Nov. 2024
Checked Jan. 2025

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

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
03/03/2025 3:03:36 PM
TYLER R. LINDSAY - CIVIL
MO-PE-2019000128

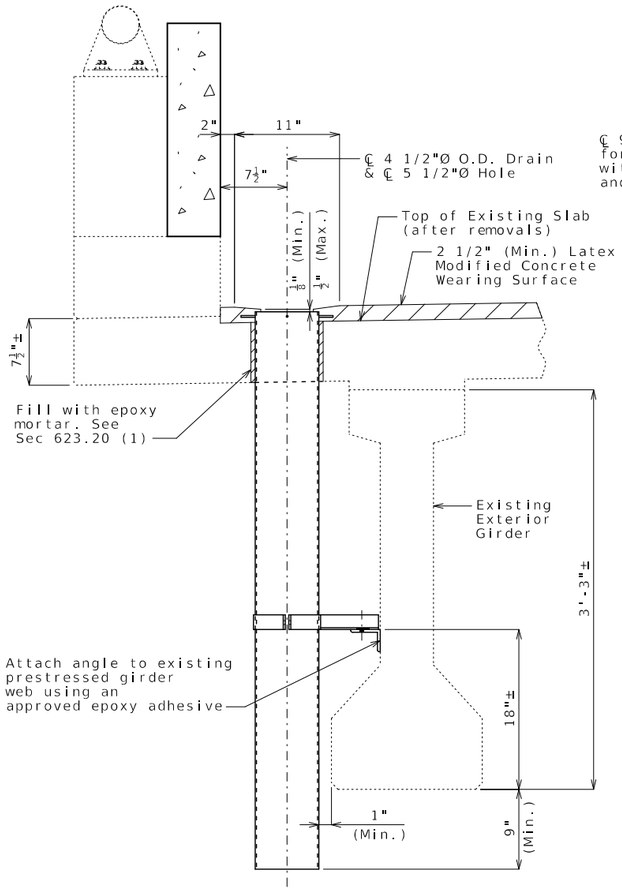
DATE PREPARED 3/3/2025

ROUTE	STATE
43	MO
DISTRICT	SHEET NO.
BR	8

COUNTY JASPER
JOB NO. JSR0073
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A26912

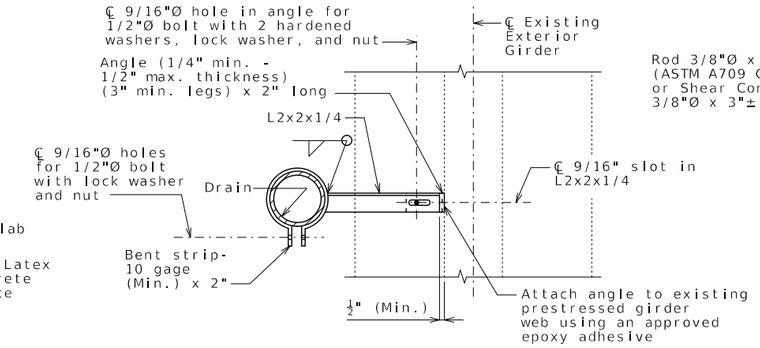
DATE	DESCRIPTION

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

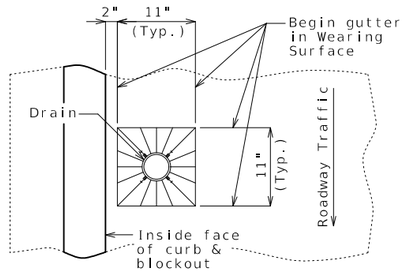


(1) Use backer rod around drain @ bottom of slab and epoxy inject from the top.

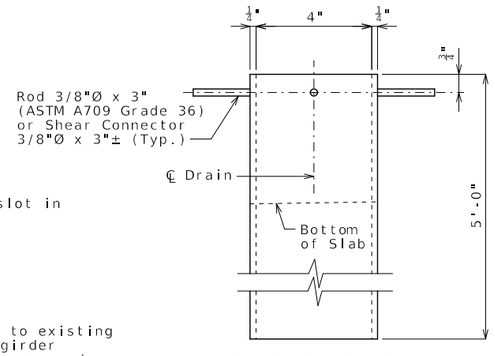
PART SECTION NEAR DRAIN



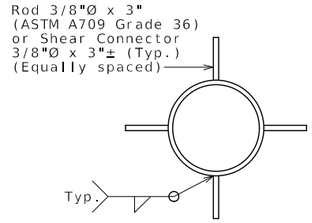
PART SECTION SHOWING BRACKET ASSEMBLY



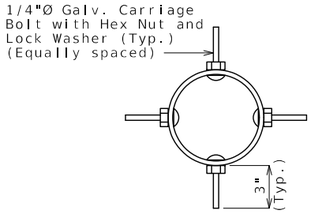
PART PLAN OF SLAB AT DRAIN



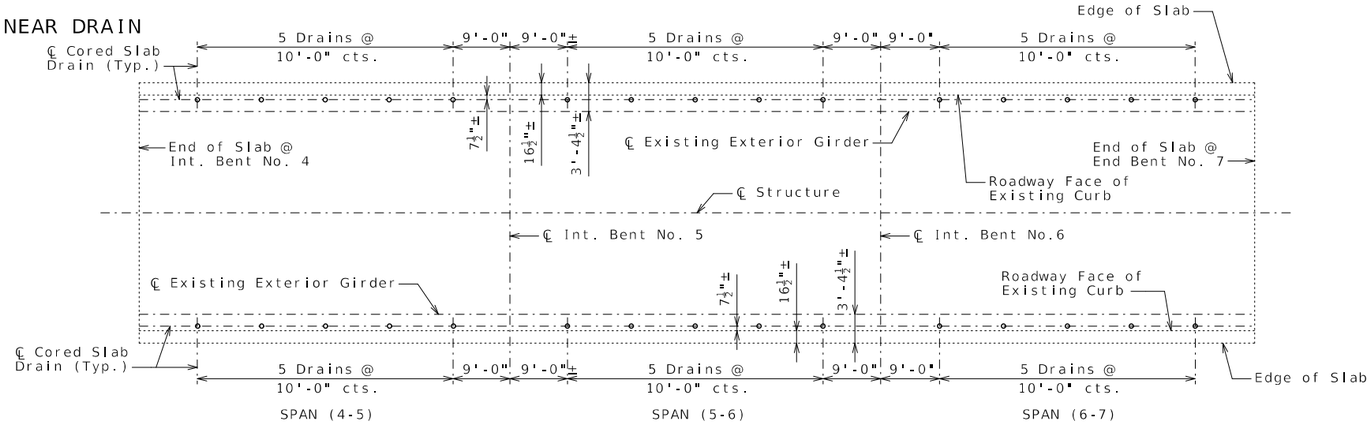
ELEVATION OF DRAIN



PLAN OF DRAIN



PLAN OF OPTIONAL FRP DRAIN



PART PLAN SHOWING CORED SLAB DRAIN LOCATIONS

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.

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 M232 (ASTM A153), Class C.

All 1/2-inch diameter bolts shall be ASTM A307, except as noted.

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

Cost of cored slab drains, complete in place, will be considered completely covered by the contract unit price for Cored Slab Drains per each.

Holes for slab drains shall be cored. Percussion drilling will not be permitted.

Slab drain locations may be shifted the minimum extent necessary to avoid slab reinforcement.

Cored slab drains shall be placed vertically.

For details of plugging existing curb outlets, see Sheet No. 2.

Notes for Steel Drain:

Slab drains shall be fabricated from 1/4-inch structural steel tubing ASTM A500 or A501.

The drains shall be galvanized in accordance with ASTM A123.

Drains shall be inserted through slab such that damage to galvanized coating is minimized.

Notes for FRP Drain:

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

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. Care shall be taken to avoid damage to exterior coating during installation.

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 drains shall be as recommended by the manufacturer to ensure a smooth, chip-free cut.

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
03/03/2025 3:03:56 PM
TYLER R. LINDSAY - CIVIL
MO-PE-2019000128

DATE PREPARED 3/3/2025

ROUTE	STATE
43	MO
DISTRICT	SHEET NO.
BR	9

COUNTY JASPER

JOB NO. JSR0073

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A26912

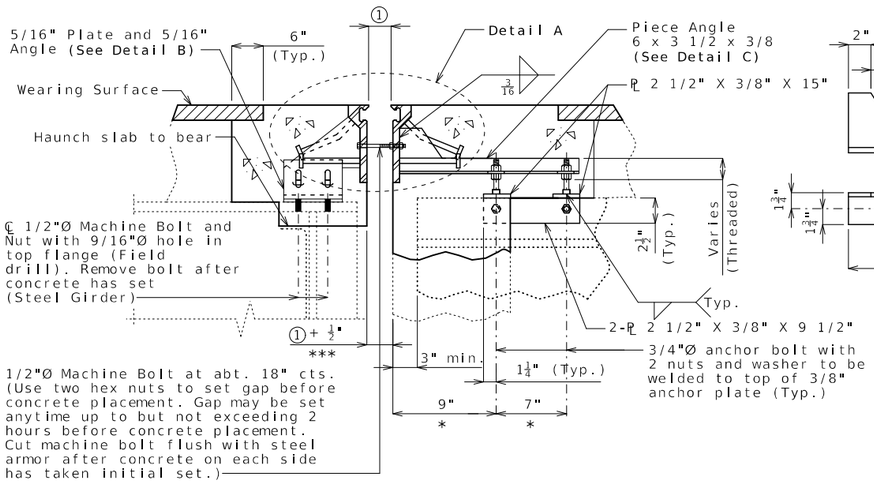
DESCRIPTION | DATE

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

Detailed Nov. 2024
Checked Jan. 2025

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

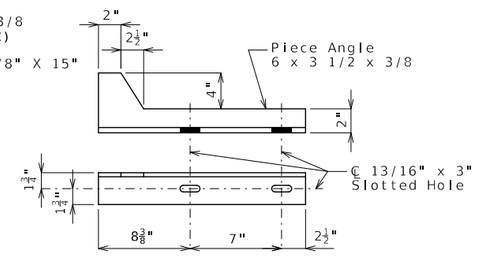
CORED SLAB DRAINS FOR SPANS NO. 4, 5 & 6



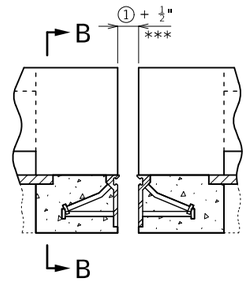
SECTION A-A

Strip seal gland and slab steel not shown for clarity.

* Dimension along ℄ Girder

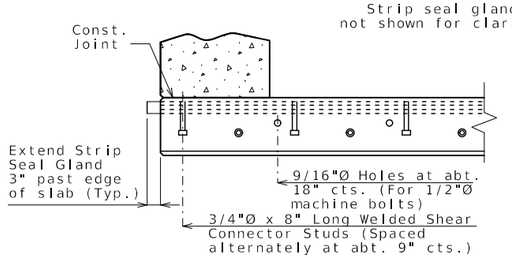


DETAIL C

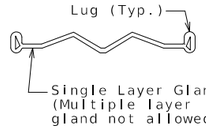


PART ELEVATION OF BARRIER

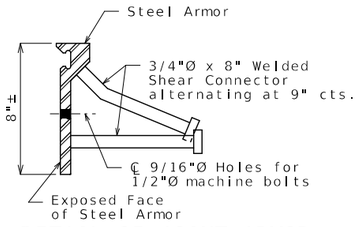
Strip seal gland not shown for clarity.



PART SECTION B-B



DETAIL OF GLAND



DETAIL OF JOINT ARMOR

(P Rail)

GENERAL NOTES:

Expansion joint system shall be fabricated in one section, except for staged construction and when the length is over 50 feet. A complete joint penetration groove welded splice shall be required. Welds shall be ground flush to provide a smooth surface. The expansion joint system shall be fabricated and installed to the crown and grade of the roadway.

The strip seal gland shall be installed in joints in one continuous piece without field splices. Factory splicing will be permitted for joints in excess of 53 feet.

Structural steel for the expansion joint system shall be ASTM A709 Grade 36 except the steel armor may be ASTM A709 Grade 50W. Anchors for the expansion joint system shall be in accordance with Sec 1037. Strip seal expansion joint system shall be in accordance with Sec 717.

Structural steel for the expansion joint system shall be coated with a minimum of two coats of inorganic zinc primer to provide a total dry film thickness of 4 mils minimum, 6 mils maximum, or galvanized in accordance with ASTM A123. Anchors need not be protected from overspray.

Existing reinforcing steel shall be field bent or cut 1" from the vertical leg of the steel armor at the expansion joint system.

Concrete shall be forced under and around steel armor and anchors. Proper consolidation of the concrete shall be achieved by localized internal vibration.

Expansion joint system shall not be set until after new bearings are set.

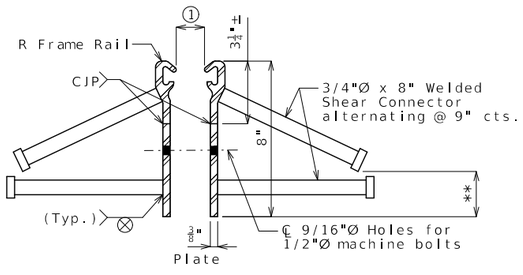
② The installation temperature shall be taken as the actual air temperature averaged over the 24-hour period immediately preceding installation.

③ MoDOT Construction personnel will indicate the strip seal expansion joint system installed.

Steel armor may also be referred to as extrusion or rail.

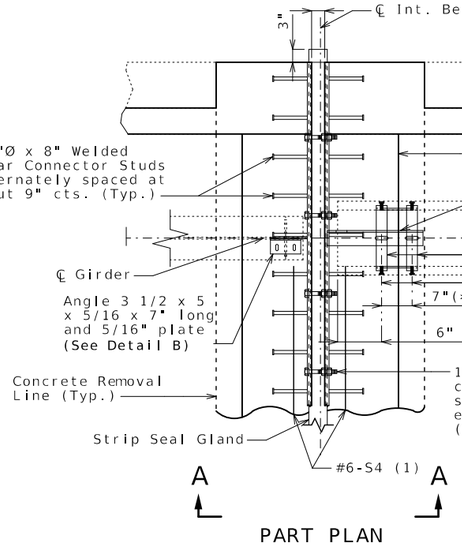
The terms P and R rail are used for identification only, and are not endorsements for any particular manufacturer.

*** Because of variation in armor dimensions, the concrete opening will vary if the optional R rail is used. Dimensions shown are based on the P rail option.



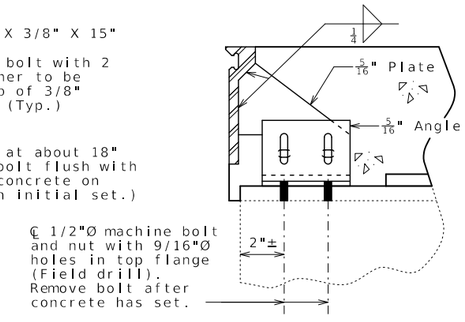
** Bend stud in shop if necessary to maintain 1" min. from bottom of vertical plate.

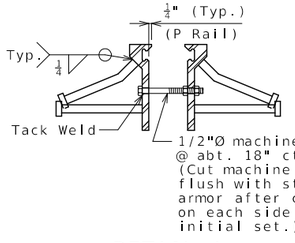
OPTIONAL R RAIL DETAIL



PART PLAN

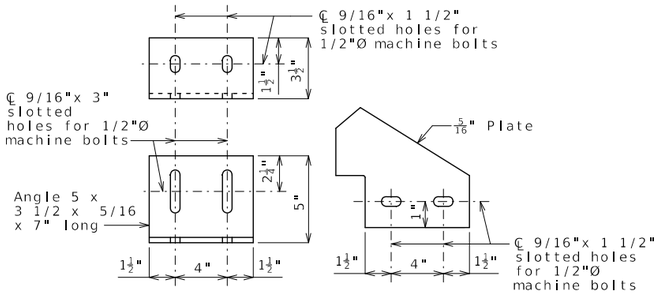
(1) Tied to studs between girders





DETAIL A

(P Rail shown, R Rail similar)



DETAIL B

Table of Allowed Transverse Strip Seal Expansion Joint System

Manufacturer	Strip Seal System (Designated Name)	Movement Parallel to RDWY	① Normal to Joint at RDWY Surface @ Air/Surface Temperature ②						③
			@ 40°F	@ 50°F	@ 60°F	@ 70°F	@ 80°F	@ 90°F	
D S Brown	Strip seal L2-500	2 3/16"	2 7/8"	2 11/16"	2½"	2 5/16"	2⅛"	1⅞"	□
Watson Bowman Acme (Wabo)	Strip seal SE-500	2 3/16"	2 7/8"	2 11/16"	2½"	2 5/16"	2⅛"	1⅞"	□

STRIP SEAL EXPANSION JOINT SYSTEM AT INTERMEDIATE BENT NO. 4

Detailed Nov. 2024
Checked Jan. 2025

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

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
03/03/2025 3:04:06 PM
TYLER R. LINDSAY - CIVIL
MO-PE-2019000128

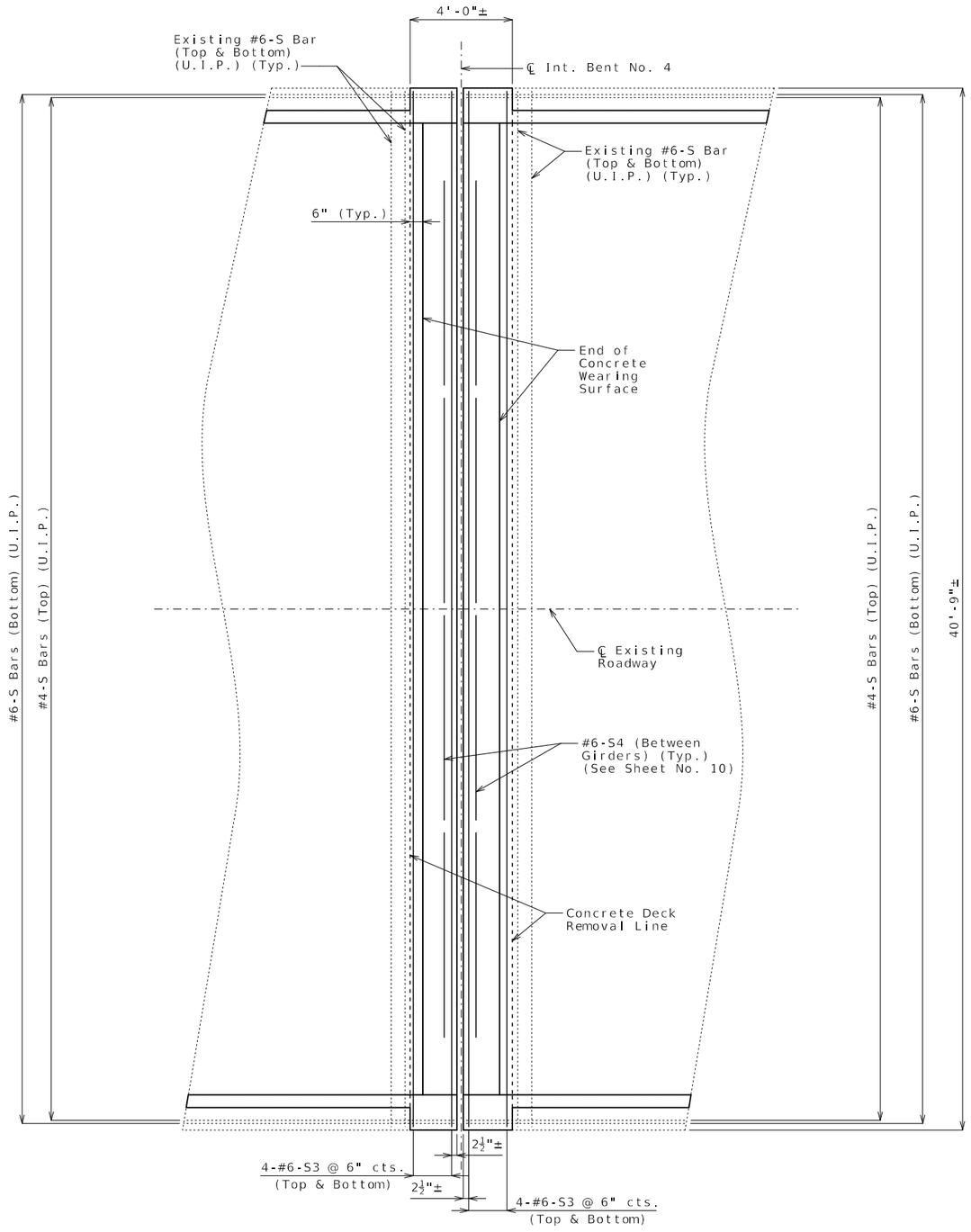
DATE PREPARED: 3/3/2025

ROUTE	STATE
43	MO
DISTRICT	SHEET NO.
BR	10

COUNTY: JASPER
JOB NO.: JSR0073
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A26912

DESCRIPTION	DATE

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



PART PLAN OF SLAB AT
INTERMEDIATE BENT NO. 4

Notes:

Concrete wearing surface not shown for clarity.

Strip seal gland and expansion device not shown for clarity. See Sheet No. 10 for details.

Payment for slab concrete, complete in place, for expansion device replacement will be considered completely covered by the contract unit price for Class B-2 Concrete.

Payment for furnishing and installing reinforcing steel for expansion joint replacement will be considered completely covered by the contract unit price for Reinforcing Steel (Epoxy Coated).

Existing reinforcing steel used in place shall be field bent or cut to clear new expansion joint armor by 1" min.

DETAILS OF CONCRETE & EXPANSION JOINT REPLACEMENT AT INTERMEDIATE BENT NO. 4

Detailed Jan. 2025
Checked Jan. 2025

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

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
03/03/2025 3:04:56 PM
TYLER R LINDSAY - CIVIL
MO-PE-2019000128

DATE PREPARED
3/3/2025

ROUTE	STATE
43	MO
DISTRICT	SHEET NO.
BR	11

COUNTY
JASPER

JOB NO.
JSR0073

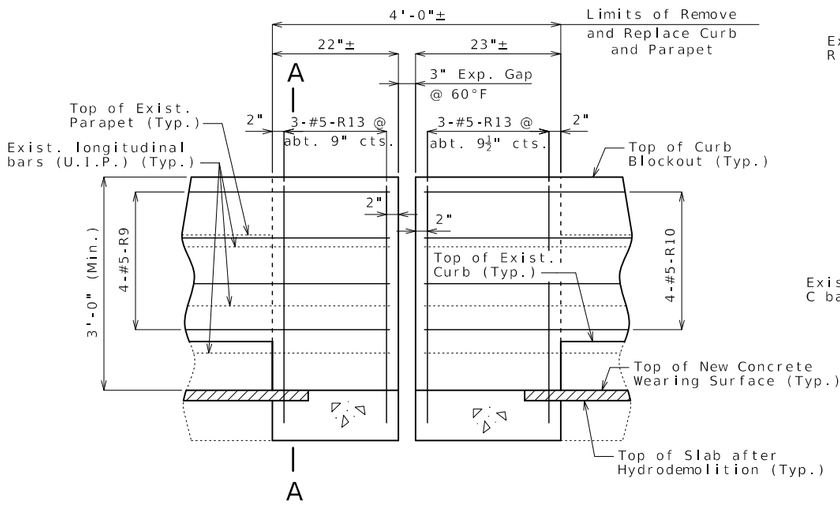
CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A26912

DESCRIPTION	DATE

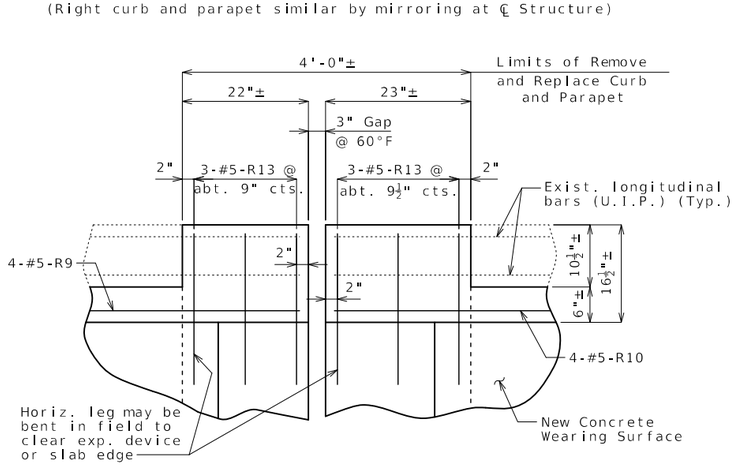
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



PART ELEVATION OF LEFT CURB AT INTERMEDIATE BENT NO. 4

Expansion device armor not shown for clarity.

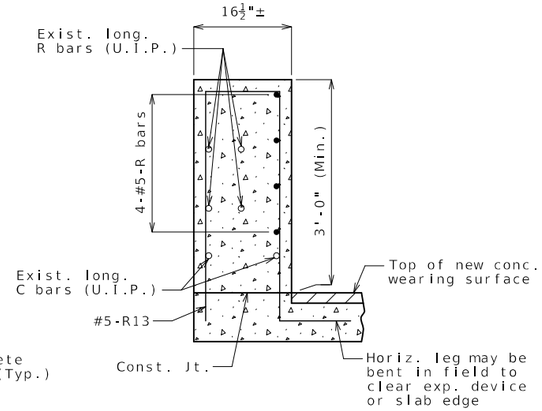
(Right curb and parapet similar by mirroring at ℄ Structure)



PART PLAN OF LEFT CURB AT INT. BENT NO. 4

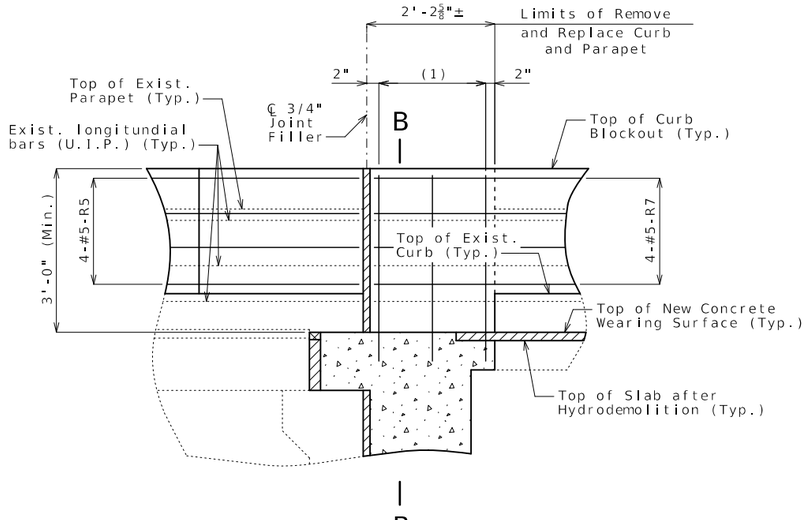
Expansion device armor not shown for clarity.

(Right curb and parapet similar by mirroring at ℄ Structure)



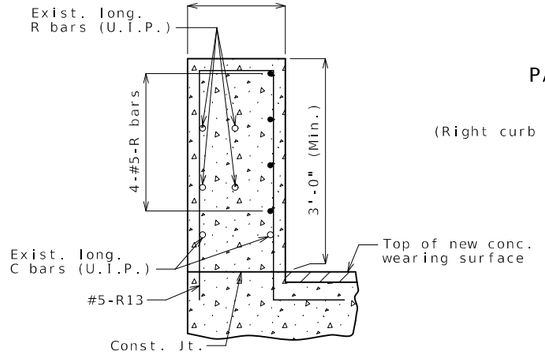
SECTION A-A

(1) 3-#5-R13 @ abt. 11½" cts.



PART ELEVATION OF LEFT CURB AT END BENT NO. 1

(Right curb and parapet similar by mirroring at ℄ Structure)



SECTION B-B

Notes:

Payment for all concrete and reinforcement for curb and parapet replacement adjacent to expansion device work or end bent, complete in place, will be considered completely covered by the contract unit price for Remove and Replace Curb and Parapet.

Rail and rail post near joint work shall be removed to 3" from the edge of the next rail post away from the joint work. Rails shall be capped at new open ends similarly to that shown on existing plans. At the contractor's option, the entire rail may be removed. No additional payment will be made for this option.

Ends of existing longitudinal reinforcement in curb and parapet may be trimmed as necessary to maintain 1 1/2" clearance to end of curb and parapet replacement.

For details of end bent, see Sheets No. 4 & 5.

For details of strip seal expansion joint system at Intermediate Bent No. 4, see Sheet No. 10.

CURB AND PARAPET REPLACEMENT

Detailed Dec. 2024
Checked Jan. 2025

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

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
03/03/2025 3:04:36 PM
TYLER R. LINDSAY - CIVIL
MO-PE-2019000128

DATE PREPARED 3/3/2025

ROUTE	STATE
43	MO
DISTRICT	SHEET NO.
BR	12

COUNTY JASPER

JOB NO. JSR0073

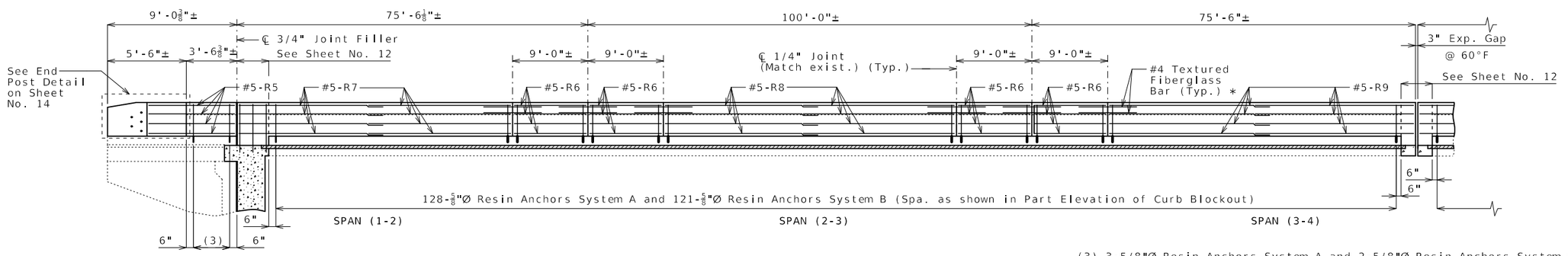
CONTRACT ID.

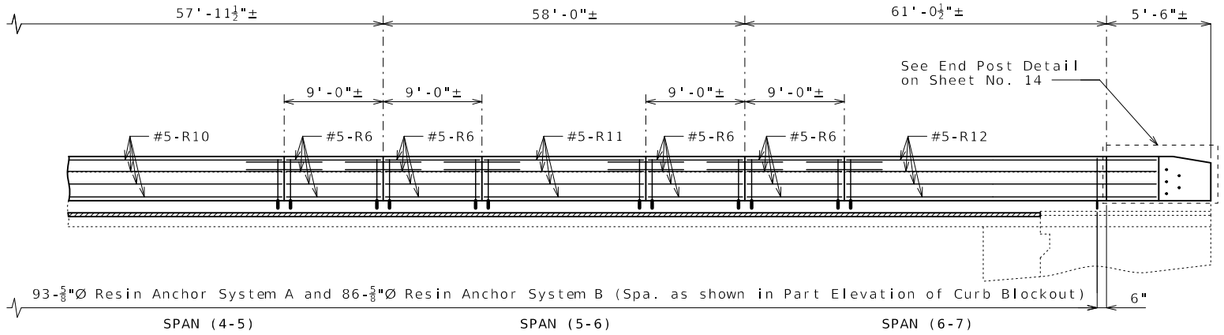
PROJECT NO.

BRIDGE NO. A26912

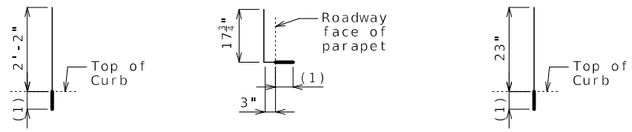
DESCRIPTION	DATE

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



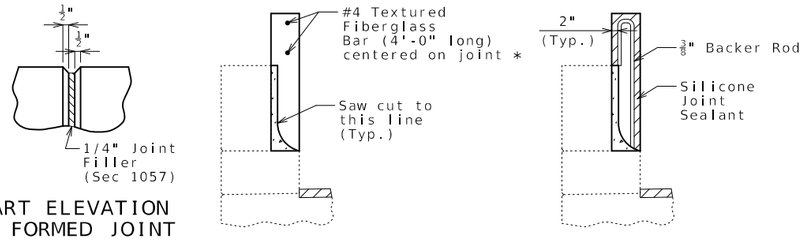


(3) 3-5/8"Ø Resin Anchors System A and 2-5/8"Ø Resin Anchors System B
(Spa. as shown in Part Elevation of Curb Blockout)



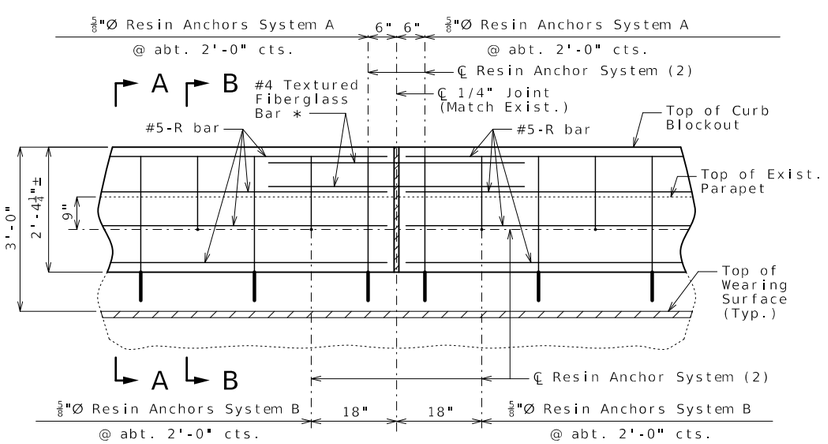
(1) Use manufacturer's embedment length
(5" minimum embedment).

DETAILS OF RESIN ANCHORS



PART ELEVATION AT FORMED JOINT

SECTION THRU SAW CUT JOINT

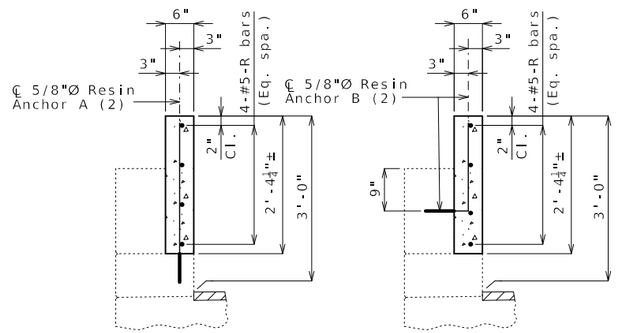


PART ELEVATION OF CURB BLOCKOUT

ELEVATION OF LEFT CURB BLOCKOUT

(Right curb blockout similar)

Longitudinal dimensions are along grade and are taken at top outside edge of parapet.



CURB BLOCKOUT

Notes:

* Slip-formed option only.

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

Bridge rail not shown for clarity.

Concrete in curb blockout shall be Class B-1.

Measurement of curb blockout is to the nearest linear foot, measured at the top outside edge of parapet. (Match existing curb and parapet)

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

Payment for concrete, reinforcement, resin anchor systems and any other work incidental to the curb blockout, complete in place, will be considered completely covered by the contract unit price for Curb Blockout per linear foot.

Cost of any concrete curb or parapet repair will be considered completely covered by the contract unit price for Curb Blockout.

All curb blockout reinforcement shall be epoxy coated.

(2) Shift resin anchors where necessary to clear existing anchor bolts for bridge rail, miss curb outlets (if present) and clear existing reinforcement.

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

Concrete traffic barrier delineators shall be placed on top of the curb blockout similarly as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators on bridges with two-lane, two-way traffic shall have retroflective sheeting on both sides. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for Curb Blockout.

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

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 inches.

An epoxy coated #5 Grade 60 reinforcing bar shall be substituted for the 5/8"Ø threaded rod.

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

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
03/03/2025 3:04:56 PM
TYLER R. LINDSAY - CIVIL
MO-PE-2019000128

DATE PREPARED 3/3/2025

ROUTE	STATE
43	MO
DISTRICT	SHEET NO.
BR	13

COUNTY JASPER

JOB NO. JSR0073

CONTRACT ID.

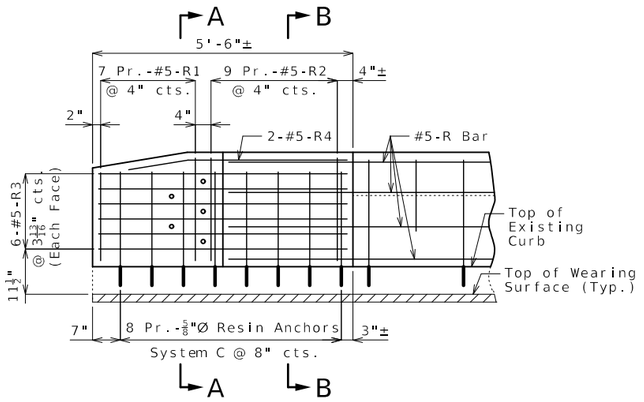
PROJECT NO.

BRIDGE NO. A26912

DESCRIPTION

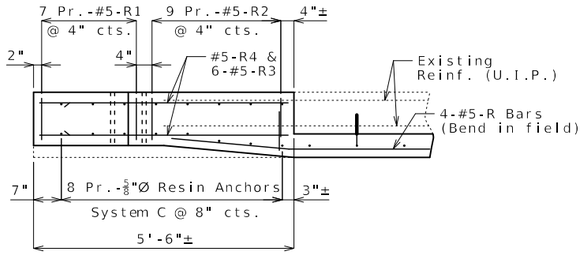
DATE

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



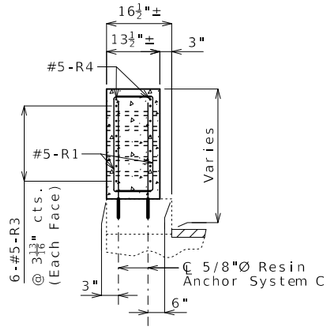
ELEVATION SHOWING REINFORCEMENT

(Right End Post at End Bent No. 7 similar)

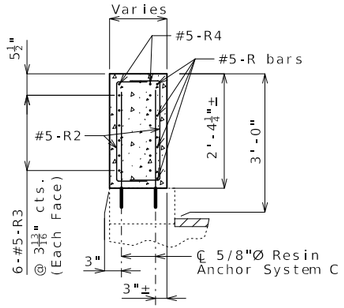


PLAN SHOWING REINFORCEMENT

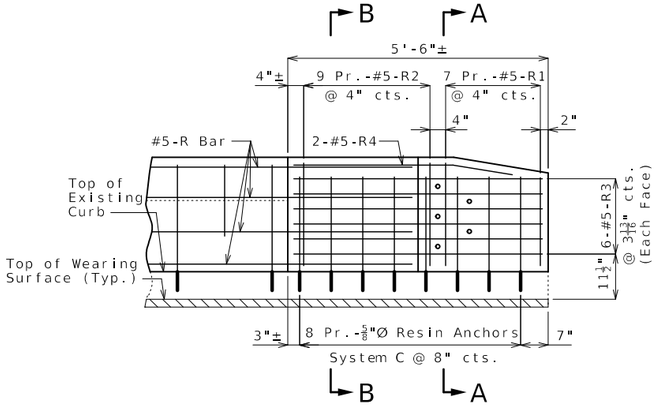
LEFT END POST AT END BENT NO. 1



SECTION A-A

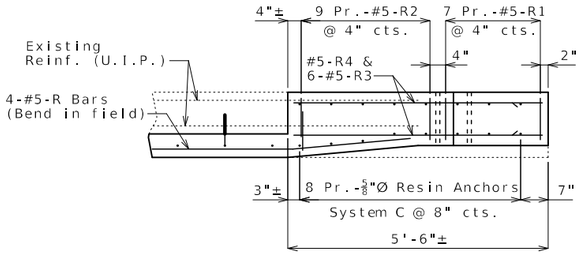


SECTION B-B



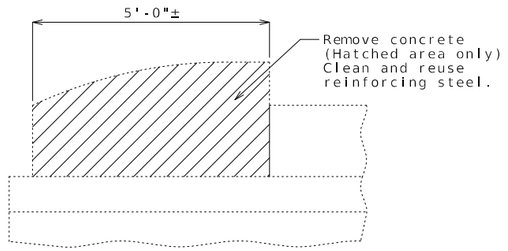
ELEVATION SHOWING REINFORCEMENT

(Right End Post at End Bent No. 1 similar)



PLAN SHOWING REINFORCEMENT

LEFT END POST AT END BENT NO. 7



PART ELEVATION SHOWING END POST CONCRETE REMOVAL

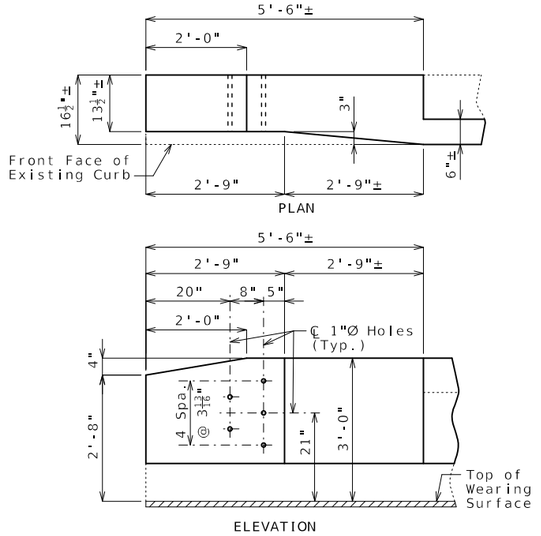
Cost of removing existing end posts will be considered completely covered by the contract unit price for Curb Blockout.

Notes:

Work this sheet with Sheet No. 13.

For details of resin anchors, see Sheet No. 13.

Resin anchors shall be shifted or bent in field to clear one-inch diameter holes by at least 1/2 inch.



DETAILS OF END POST AND GUARD RAIL ATTACHMENT

CURB BLOCKOUT AT END BENTS

Detailed Dec. 2024
Checked Jan. 2025

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

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
03/03/2025 3:05:05 PM
TYLER R LINDSAY - CIVIL
MO-PE-2019000128

DATE PREPARED: 3/3/2025

ROUTE	STATE
43	MO
DISTRICT	SHEET NO.
BR	14

COUNTY: JASPER

JOB NO.: JSR0073

CONTRACT ID.:

PROJECT NO.:

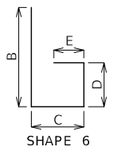
BRIDGE NO.: A26912

DESCRIPTION

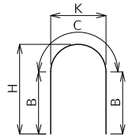
DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

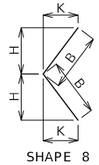
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



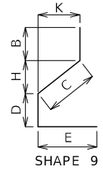
SHAPE 6
or 6S



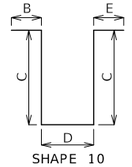
SHAPE 7



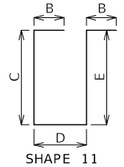
SHAPE 8
or 8S



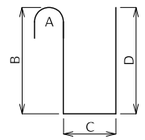
SHAPE 9
or 9S



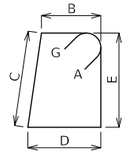
SHAPE 10
or 10S



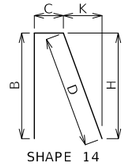
SHAPE 11
or 11S



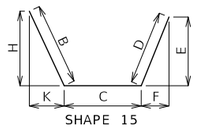
SHAPE 12



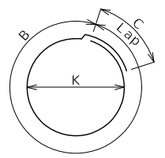
SHAPE 13S



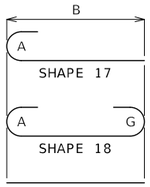
SHAPE 14
or 14S



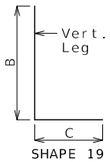
SHAPE 15
or 15S



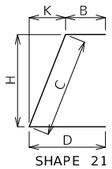
SHAPE 16



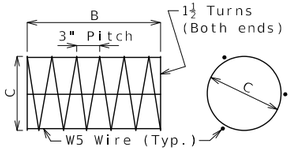
SHAPE 17
SHAPE 18
SHAPE 20



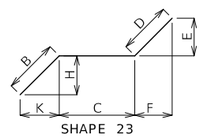
SHAPE 19
or 19S



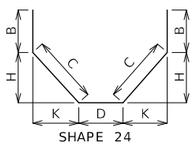
SHAPE 21
or 21S



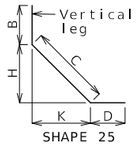
SHAPE 22



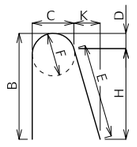
SHAPE 23
or 23S



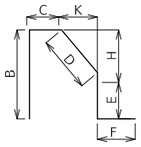
SHAPE 24
or 24S



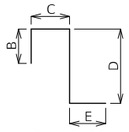
SHAPE 25
or 25S



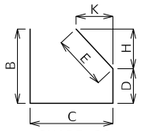
SHAPE 26



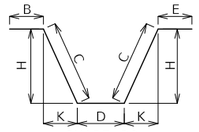
SHAPE 27S



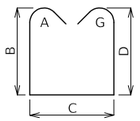
SHAPE 28
or 28S



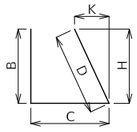
SHAPE 29
or 29S



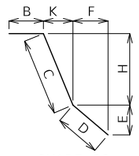
SHAPE 30
or 30S



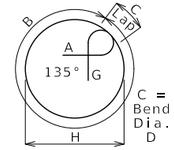
SHAPE 31S



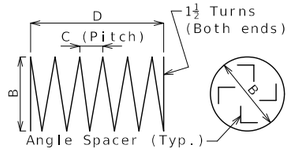
SHAPE 32
or 32S



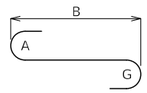
SHAPE 33
or 33S



SHAPE 34S



SHAPE 35 (1)

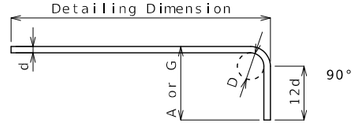


SHAPE 36

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	4½"	12"	8¼"	6"
#7	2	5¼"	14"	9⅜"	7"
	3	7"	15"	11½"	8¾"
#8	2	6"	16"	11"	8"
	3	8"	17"	13¼"	10"
#9	1	9½"	19½"	15½"	11¾"
#10	1	10¾"	22"	17½"	13¼"
#11	1	12"	24½"	19½"	14⅞"
#14	1	18¼"	31¼"	27½"	21⅝"
#18	1	24"	41½"	36¾"	28½"

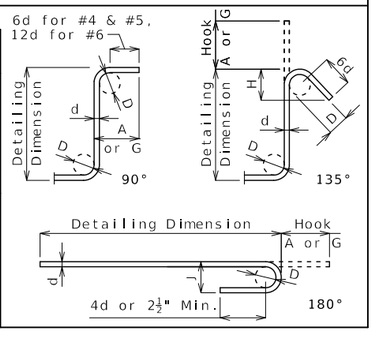


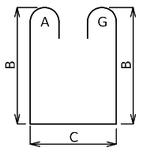
Stirrup Pin Bend Shapes (S)

Size	Case	D	A or G			H	J
			90°	135°	180°	135°	180°
#4	2	2"	4½"	4½"	5"	2⅝"	3"
	3	3"	5"	5¼"	6"	3"	4"
#5	2	2½"	5¾"	5¾"	5¾"	3⅝"	3¾"
	3	3¾"	6¼"	6½"	7"	3⅞"	5"
#6	1	4½"	12"	7¾"	8¼"	4⅜"	6"

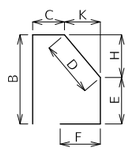
Applicable for all grades of steel.

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	561	4,623	0	0	5,184
	6	0	142	2,753	0	0	0	2,895
	7	0	0	0	0	0	0	0
	8	0	0	0	0	0	0	0
	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	142	3,314	4,623	0	0	8,079

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

BENDING DIAGRAMS AND REINFORCING STEEL TOTALS

Detailed Nov. 2024
Checked Jan. 2025

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

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
03/03/2025 3:05:16 PM
TYLER R. LINDSAY - CIVIL
MO-PE-2019000128

DATE PREPARED: 3/3/2025
ROUTE: 43 | STATE: MO
DISTRICT: BR | SHEET NO.: 15
COUNTY: JASPER
JOB NO.: JSR0073
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A26912

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
		Substructure													
		Int. Bent 4													
10	6 H15	BEAM	E	11S			3.00	22.50	4 0.00				6 2	5 10	88
10	6 V10	BEAM	E	20		3 7.00							3 7	3 7	54
		Superstructure													
		End Bent 1													
6	6 H10	DIAPHRAGM	E	20		44 1.00							44 1	44 1	397
1	6 H11	DIAPHRAGM	E	20		40 3.00							40 3	40 3	60
16	6 H12	DIAPHRAGM	E	20		6 6.00							6 6	6 6	156
14	6 H13	DIAPHRAGM	E	10S			2 0.00	19.00					5 7	5 3	110
1	6 H14	DIAPHRAGM	E	20		37 9.00							37 9	37 9	57
68	5 U10	DIAPHRAGM	E	10S			18.00	5 1.75					8 2	7 11	561
38	6 U11	DIAPHRAGM	E	19S		8.00	2 10.00						3 6	3 4	190
		Slab													
4	6 S1	SLAB	E	20		37 9.00							37 9	37 9	227
8	6 S2	SLAB	E	20		40 6.00							40 6	40 6	487
16	6 S3	SLAB	E	20		40 6.00							40 6	40 6	973
8	6 S4	SLAB	E	20		8 0.00							8 0	8 0	96
		Blockout													
		Blockout													
56	5 R1	BLOCKOUT	E	10S	8		10.50	21.00					3 6	3 3	
		Incr. = 0.625"					10.50	2 1.00					3 10	3 7	200
72	5 R2	BLOCKOUT	E	10S			10.50	2 1.00					3 10	3 7	269
48	5 R3	BLOCKOUT	E	20		5 3.00							5 3	5 3	263
8	5 R4	BLOCKOUT	E	23S		16.25	3 4.00				2.75	16.00	4 8	4 7	38
8	5 R5	BLOCKOUT	E	20		6 0.00							6	6	50
64	5 R6	BLOCKOUT	E	20		8 9.00							8 9	8 9	584
16	5 R7	BLOCKOUT	E	20		34 8.00							34 8	34 8	579
16	5 R8	BLOCKOUT	E	20		42 5.00							42 5	42 5	708
16	5 R9	BLOCKOUT	E	20		34 8.00							34 8	34 8	579
8	5 R10	BLOCKOUT	E	20		48 8.00							48 8	48 8	406
8	5 R11	BLOCKOUT	E	20		39 9.00							39 9	39 9	332
8	5 R12	BLOCKOUT	E	20		54 6.00							54 6	54 6	455
18	5 R13	BLOCKOUT	E	28S		3 4.25	13.50	3 4.25	12.00				8 10	8 6	160

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. 15.

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 Jan. 2025

BILL OF REINFORCING STEEL

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

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
03/03/2025 3:05:36 PM
TYLER R. LINDSAY - CIVIL
MO-PE-2019000128

DATE PREPARED
3/3/2025

ROUTE 43 | STATE MO
DISTRICT BR | SHEET NO. 16
COUNTY JASPER
JOB NO. JSR0073
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A26912

DESCRIPTION | DATE

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

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

PLANS FOR PROPOSED STATE HIGHWAY JASPER COUNTY

DESIGN DESIGNATION

A.A.D.T. - 2025 = 839
A.A.D.T. - 2045 = 1117
D.H.V. = 10.16%
T = 23.02%
V = 55 M.P.H.
D = 47.6%/52.4% (E/W)

FUNCTIONAL CLASSIFICATION - MAJOR COLLECTOR

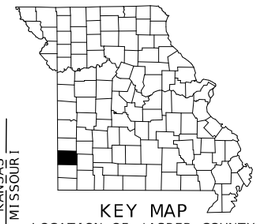
EXISTING NORMAL RIGHT OF WAY

CONVENTIONAL SYMBOLS

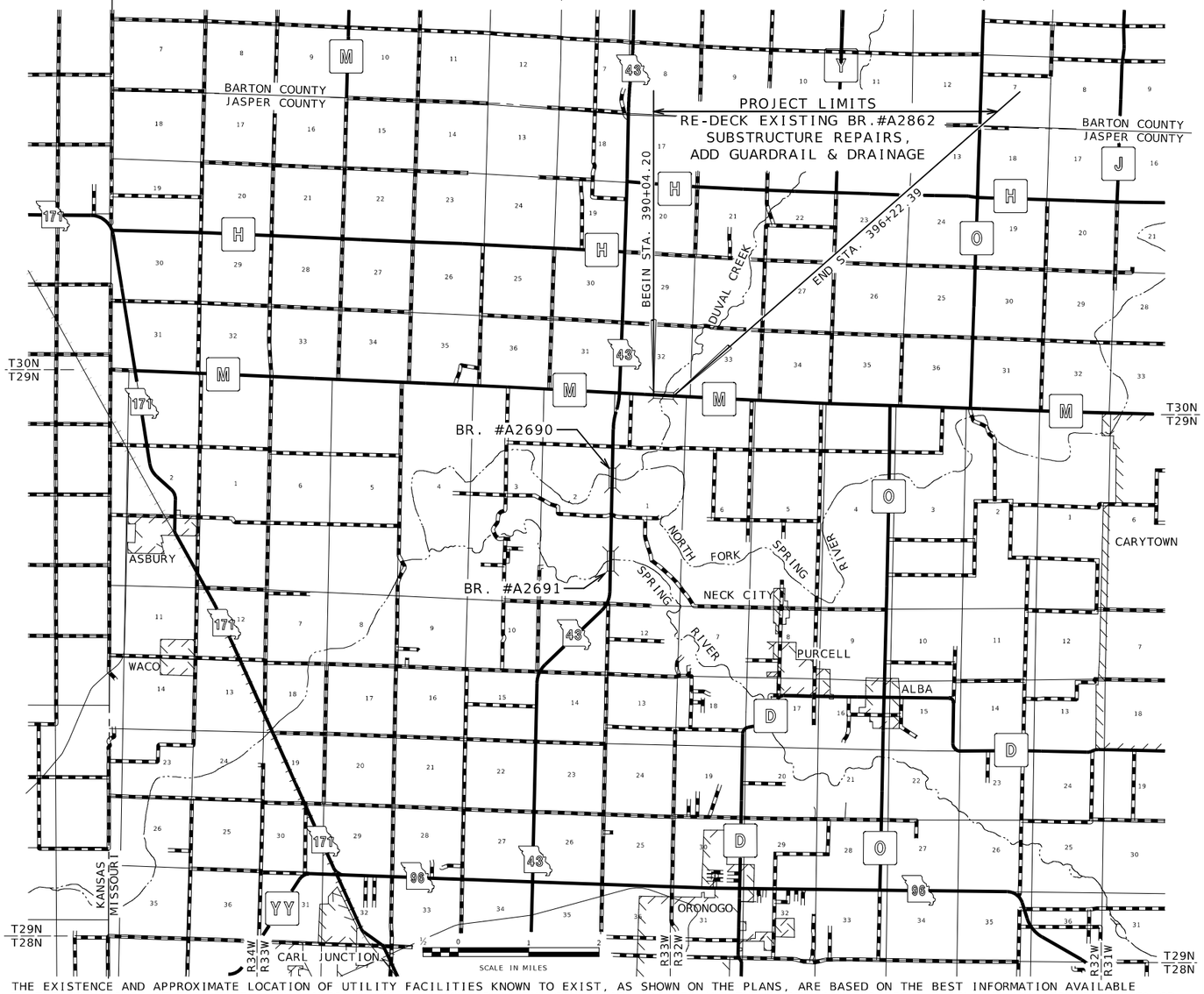
(USED IN PLANS)

	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



KEY MAP
LOCATION OF JASPER COUNTY



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

INDEX OF SHEETS

LENGTH OF PROJECT

BEGINNING OF PROJECT	STA.	390 + 04.20
END OF PROJECT	STA.	396 + 22.39
APPARENT LENGTH		618.19 FEET
EQUATIONS AND EXCEPTIONS:		NONE
TOTAL CORRECTIONS		0.00 FEET
NET LENGTH OF PROJECT		618.19 FEET
STATE LENGTH		0.117 MILES
FOR INFORMATION ONLY ESTIMATED DISTURBED ACRES		0.5 ACRES

STATE OF MISSOURI
CRAIG ALAN SMITZER
NUMBER PE-2003015045
PROFESSIONAL ENGINEER
02/24/2025 10:52:28 AM
CRAIG ALAN SMITZER - CIVIL
MO-PE-2003015045

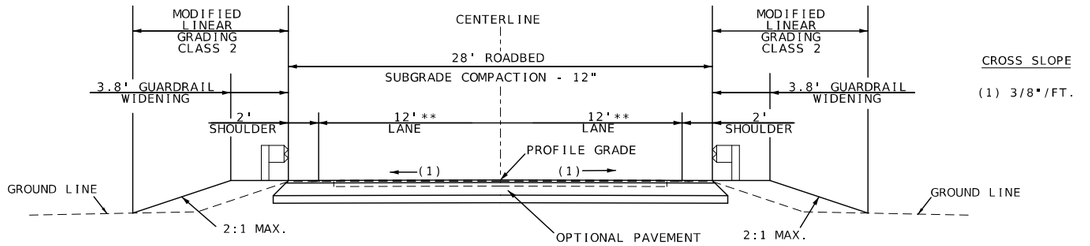
DATE PREPARED: 2/24/2025

ROUTE	STATE
M	MO
DISTRICT	SHEET NO.
SW	1

COUNTY: JASPER
JOB NO.: JSR0074
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)



CROSS SLOPE

(1) 3/8"/FT.

** TRANSITION LANE WIDTH TO MATCH EXISTING PAVEMENT AT STA. 392+20.30 AND STA. 394+56.30

SECTION ON TANGENT

TYPICAL SECTION ROUTE M
STA. 392+20.30 TO STA. 392+70.30
STA. 394+06.30 TO STA. 394+56.30

MATCH EXISTING TYPICAL SECTION
STA. 390+04.20 TO STA. 392+20.30
STA. 392+70.30 TO STA. 394+06.30 (BRIDGE)
STA. 394+56.30 TO STA. 396+22.39

OPTIONAL PAVEMENT		
10" HMA 2" BP-1 w/PG64-22 8" BIT. BASE w/PG64-22 6" TYPE 1 AGGR. BASE	8" PCCP 8" REINF. PCCP 15' JOINTS w/1.25" DOWELS 6" TYPE 1 AGGR. BASE	SHOULDERS FULL DEPTH

TYPICAL SECTION
SHEET 1 OF 1

STATE OF MISSOURI
CRAIG ALAN SWITZER
NUMBER PE-2003015045
PROFESSIONAL ENGINEER
02/18/2025 11:24:58 AM
CRAIG ALAN SWITZER - CIVIL
MO-PE-2003015045

DATE PREPARED
2/13/2025

ROUTE	STATE
M	MO
DISTRICT	SHEET NO.
SW	2

COUNTY
JASPER

JOB NO.
JSR0074

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

STATION	TO	STATION	LOCATION	DESCRIPTION	UNITS	TOTAL	REMARKS
392+20.30	-	392+90.30	ROUTE M - C/L	EX. PAVEMENT & BASE	S.Y.	162	
392+79.20			ROUTE M - RT.	EX. SIGN	EA.	1	
392+89.39			ROUTE M - LT.	EX. SIGN	EA.	1	
393+87.20			ROUTE M - RT.	EX. SIGN	EA.	1	
393+97.39			ROUTE M - LT.	EX. SIGN	EA.	1	
393+86.30	-	394+56.30	ROUTE M - C/L	EX. PAVEMENT & BASE	S.Y.	165	
					LUMP SUM	1	

CONTRACTOR FURNISHED SURVEYING AND STAKING

LUMP SUM = 1

MOBILIZATION

LUMP SUM = 1

SUBGRADE COMPACTION

STATION	TO	STATION	LOCATION	(100FT.)	REMARKS
392+20.30	-	392+90.30	ROUTE M - WEST END BRIDGE	0.7	
393+86.30	-	394+56.30	ROUTE M - EAST END BRIDGE	0.7	
			TOTAL	1.4	
			USE	2	

MODIFIED LINEAR GRADING CLASS 2

STATION	TO	STATION	LOCATION	LENGTH (FT.)	AREA (100FT.)	REMARKS
390+79.20	-	392+79.20	ROUTE M - RT. SIDE	200.00	2	
392+14.39	-	392+89.39	ROUTE M - LT. SIDE	75.00	1	
393+87.20	-	394+62.20	ROUTE M - RT. SIDE	75.00	1	
393+97.39	-	395+47.39	ROUTE M - LT. SIDE	150.00	2	
				TOTAL	6	
				USE	6	

OPTIONAL PAVEMENT

STATION	TO	STATION	LOCATION	LENGTH (FT.)	WIDTH BEGIN (FT.)	END (FT.)	AREA (S.Y.)	6" TYPE 1 AGGR. BASE (S.Y.)	REMARKS
392+20.30	-	392+70.30	ROUTE M - WEST END BR. #A2862	50	24.5	28	145.9	157	
394+06.30	-	394+56.30	ROUTE M - EAST END BR. #A2862	50	28	24.5	146.3	158	
						TOTAL	292.2	315	
						USE	292.2	315	

TYPE A CURB

STATION	TO	STATION	LOCATION	LENGTH (FT.)	REMARKS
392+68.20	-	392+79.20	ROUTE M - RT. SIDE	11.00	SW CORNER BRIDGE
392+78.39	-	392+89.39	ROUTE M - LT. SIDE	11.00	NW CORNER BRIDGE
393+87.20	-	393+98.20	ROUTE M - RT. SIDE	11.00	SE CORNER BRIDGE
393+97.39	-	394+08.39	ROUTE M - LT. SIDE	11.00	NE CORNER BRIDGE
			TOTAL	44.00	
			USE	44	

ROCK FLUME

STATION	LOCATION	LENGTH (FT.)	TYPE 1 ROCK DITCH LINER FURNISHING (C.Y.)	TYPE 1 ROCK DITCH LINER PLACING (C.Y.)	PERMANENT EROSION CONTROL GEOTEXTILE (S.Y.)	REMARKS
392+66.70	ROUTE M - RT. SIDE	30	2.23	2.23	14.47	SW CORNER BRIDGE
392+76.89	ROUTE M - LT. SIDE	38	2.83	2.83	18.32	NW CORNER BRIDGE
393+99.70	ROUTE M - RT. SIDE	30	2.23	2.23	14.47	SE CORNER BRIDGE
394+09.89	ROUTE M - LT. SIDE	25	1.86	1.86	12.06	NE CORNER BRIDGE
		TOTAL	9.15	9.15	59.32	
		USE	9	9	59	

SUMMARY OF QUANTITIES
SHEET 1 OF 3

STATE OF MISSOURI
CRAIG ALAN SWITZER
NUMBER PE-2003015045
PROFESSIONAL ENGINEER
02/18/2025 11:25:07 AM
CRAIG ALAN SWITZER - CIVIL
MO-PE-2003015045

DATE PREPARED
2/13/2025

ROUTE	STATE
M	MO
DISTRICT	SHEET NO.
SW	3

COUNTY
JASPER

JOB NO.
JSR0074

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

STATION	TO	STATION	LOCATION	MGS GUARDRAIL 8' POST 6'3" SPACING (L.F.)	MGS BRIDGE APPROACH TRANSITION, REGULAR (EA.)	MASH TYPE A CRASHWORTHY END TERMINAL (EA.)	REMARKS
390+29.20	-	392+79.20	ROUTE M - RT. SIDE BR. #A2862	162.5	1	1	
391+64.39	-	392+89.39	ROUTE M - LT. SIDE BR. #A2862	37.5	1	1	
393+87.20	-	395+12.20	ROUTE M - RT. SIDE BR. #A2862	37.5	1	1	
393+97.39	-	395+97.39	ROUTE M - LT. SIDE BR. #A2862	112.5	1	1	
			TOTAL	350.0	4	4	
			USE	350.0	4	4	

SEEDING - COOL SEASON MIXTURE

STATION	TO	STATION	LOCATION	SEEDING (ACRES)	MULCHING (ACRES)	REMARKS
389+78.00	-	393+04.00	ROUTE M - RT. SIDE	0.3	0.3	SLOPE WIDENING
391+29.00	-	393+07.00	ROUTE M - LT. SIDE	0.2	0.2	SLOPE WIDENING
393+89.00	-	396+33.00	ROUTE M - LT. SIDE	0.1	0.1	SLOPE WIDENING
393+60.00	-	395+50.00	ROUTE M - RT. SIDE	0.2	0.2	SLOPE WIDENING
			TOTAL	0.8	0.8	
			USE	0.8	0.8	

EROSION CONTROL

STATION	TO	STATION	LOCATION	SILT FENCE (LF)	SEDIMENT REMOVAL (CY)	REMARKS
389+78.00	-	393+04.00	ROUTE M - RT. SIDE	335.0	3.4	FILL SLOPE
391+29.00	-	393+07.00	ROUTE M - LT. SIDE	185.0	1.9	FILL SLOPE
393+89.00	-	396+33.00	ROUTE M - LT. SIDE	248.0	2.5	FILL SLOPE
393+60.00	-	395+50.00	ROUTE M - RT. SIDE	198.0	2.0	FILL SLOPE
			TOTAL	966.0	9.8	
			USE	966	10	

PAVEMENT MARKING

STATION	TO	STATION	LOCATION	STANDARD WATERBORNE PAVEMENT MARKING PAINT, TYPE P BEADS		REMARKS
				4" WHITE (L.F.)	4" YELLOW (L.F.)	
392+20.30	-	394+56.30	ROUTE M - LT. EDGE	236.00		
392+20.30	-	394+56.30	ROUTE M - RT. EDGE	236.00		
392+20.30	-	394+56.30	ROUTE M - C/L		59.00	INTERMITTENT C/L
			TOTAL	472.00	59.00	
			USE	472	59	

SHAPING SLOPES CLASS III

STATION	TO	STATION	LOCATION	LENGTH (FT.)	AREA (100FT.)	REMARKS
390+04.20	-	390+79.20	ROUTE M - RT. SIDE	75.00	1	
391+39.39	-	392+14.39	ROUTE M - LT. SIDE	75.00	1	
394+62.20	-	395+37.20	ROUTE M - RT. SIDE	75.00	1	
395+47.39	-	396+22.39	ROUTE M - LT. SIDE	75.00	1	
			TOTAL		4	
			USE		4	

SUMMARY OF QUANTITIES
SHEET 2 OF 3

STATE OF MISSOURI
CRAIG ALAN SWITZER
NUMBER PE-2003015045
PROFESSIONAL ENGINEER
02/18/2025 11:25:14 AM
CRAIG ALAN SWITZER - CIVIL
MO-PE-2003015045

DATE PREPARED
2/13/2025

ROUTE	STATE
M	MO
DISTRICT	SHEET NO.
SW	3

COUNTY
JASPER

JOB NO.
JSR0074

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						MERGE (SYMBOL FROM RIGHT)
WO4-1aL	48X48	16.00						MERGE (LEFT)
WO4-1aR	48X48	16.00						MERGE (RIGHT)
WO5-1	48X48	16.00						ROAD/BRIDGE/RAMP NARROWS
WO5-3	48X48	16.00						ONE LANE BRIDGE
WO5-5	48X48	16.00						NARROW LANES
WO6-1	48X48	16.00						DIVIDED HIGHWAY (SYMBOL)
WO6-2	48X48	16.00						DIVIDED HIGHWAY END (SYMBOL)
WO6-3	48X48	16.00						TWO WAY TRAFFIC (SYMBOL)
WO7-3a	30X24	5.00						NEXT XX MILES (PLAQUE)
WO8-1	48X48	16.00						BUMP
WO8-2	48X48	16.00						DIP
WO8-3	48X48	16.00						PAVEMENT ENDS
WO8-4	48X48	16.00						SOFT SHOULDER
WO8-5	48X48	16.00						SLIPPERY WHEN WET (SYMBOL)
WO8-6	48X48	16.00						TRUCK CROSSING
WO8-6c	48X48	16.00						TRUCK ENTRANCE
WO8-7	36X36	9.00						LOOSE GRAVEL
WO8-7a	36X36	9.00						FRESH OIL / LOOSE GRAVEL
WO8-9	48X48	16.00						LOW SHOULDER
WO8-11	48X48	16.00						UNEVEN LANES
WO8-12	48X48	16.00						NO CENTER LINE
WO8-15	48X48	16.00						GROOVED PAVEMENT
WO8-15P	30X24	5.00						MOTORCYCLE (PLAQUE)
WO8-17L	48X48	16.00						SHOULDER DROP-OFF (SYMBOL LEFT)
WO8-17R	48X48	16.00						SHOULDER DROP-OFF (SYMBOL RIGHT)
WO8-17P	30X24	5.00						SHOULDER DROP-OFF (PLAQUE)
W10-1	42RND.	9.62						RAILROAD CROSSING
WO12-1	24X24	4.00						DOUBLE DOWN ARROW (SYMBOL)
WO12-2	48X48	16.00						LOW CLEARANCE (SYMBOL)
WO12-2x	24X18	3.00						LOW CLEARANCE (PLAQUE)
WO12-2a	84X24	14.00						OVERHEAD LOW CLEARANCE (FEET AND INCHES)
WO12-4	120X60	50.00						LOW CLEARANCE XX FT XX IN XX MILES AHEAD
WO12-5	120X60	50.00						WIDTH RESTRICTION XX FT XX IN XX MILES AHEAD
WO13-1	30X30	6.25						ADVISORY SPEED (PLAQUE)
WO16-2	30X24	5.00						XXX FEET (PLAQUE)
WO16-3	30X24	5.00						X MILE (PLAQUE)
WO20-1	48X48	16.00						ROAD/BRIDGE/RAMP WORK AHEAD
WO20-2	48X48	16.00	2	32				DETOUR AHEAD
WO20-3	48X48	16.00	5	80				ROAD CLOSED AHEAD
WO20-4	48X48	16.00						ONE LANE ROAD AHEAD
WO20-5	48X48	16.00						RIGHT/CENTER/LEFT LANE CLOSED AHEAD
WO20-5a	48X48	16.00						2 RIGHT/CENTER/LEFT LANES CLOSED AHEAD
WO20-6a	48X48	16.00						RIGHT/CENTER/LEFT LANE CLOSED
WO20-7a	48X48	16.00						FLAGGER (SYMBOL)
WO21-2	36X36	9.00						FRESH OIL
WO21-5	48X48	16.00						SHOULDER WORK / SHOULDER WORK AHEAD
WO22-1	48X48	16.00						BLASTING ZONE AHEAD
WO22-2	42X36	10.50						TURN OFF 2-WAY RADIO AND PHONE
WO22-3	42X36	10.50						END BLASTING ZONE
GO22-1	21X15	2.19						WET PAINT (ARROW PIVOTS)

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN 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						ROAD WORK NEXT XX MILES
GO20-2	48X24	8.00						END ROAD WORK
GO20-4	36X18	4.50						PILOT CAR FOLLOW ME
GO20-4a	42X30	8.75						PILOT CAR IN USE WAIT & FOLLOW
GO20-4a	18X12	1.50						PILOT CAR IN USE WAIT & FOLLOW
GO20-5aP	36X24	6.00						WORK ZONE (PLAQUE)
MO4-8a	24X18	3.00	2	6				END DETOUR
MO4-9L	48X36	12.00						DETOUR (LEFT)
MO4-9R	48X36	12.00						DETOUR (RIGHT)
MO4-9P	48X12	4.00						STREET NAME (PLAQUE)
MO4-10L	48X18	6.00						DETOUR ARROW (LEFT)
MO4-10R	48X18	6.00						DETOUR ARROW (RIGHT)
REGULATORY SIGNS								
R1-1	48X48	13.25						STOP
R1-2	48TRI.	6.93						YIELD
R1-2a	36X36	9.00						TO ONCOMING TRAFFIC (PLAQUE)
R1-3P	30X12	2.50						ALL WAY (PLAQUE)
R2-1	36X48	12.00						SPEED LIMIT XX
R3-1	48X48	16.00						NO RIGHT TURN (SYMBOL)
R3-2	48X48	16.00						NO LEFT TURN (SYMBOL)
R3-3	36X36	9.00						NO TURNS
R3-4	48X48	16.00						NO U-TURN (SYMBOL)
R3-7L	30X30	6.25						LEFT LANE MUST TURN LEFT
R3-7R	30X30	6.25						RIGHT LANE MUST TURN RIGHT
R4-1	36X48	12.00						DO NOT PASS
R4-2	36X48	12.00						PASS WITH CARE
R4-7a	36X48	12.00						KEEP RIGHT (HORIZONTAL ARROW)
R4-8a	36X48	12.00						KEEP LEFT (HORIZONTAL ARROW)
R5-1	30X30	6.25						DO NOT ENTER
R5-1a	36X24	6.00						WRONG WAY
R6-1L	54X18	6.75						ONE WAY ARROW (LEFT)
R6-1R	54X18	6.75						ONE WAY ARROW (RIGHT)
R6-2L	24X30	5.00						ONE WAY (LEFT)
R6-2R	24X30	5.00						ONE WAY (RIGHT)
R9-9	24X12	2.00						SIDEWALK CLOSED
R9-11L	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW LEFT) CROSS HERE
R9-11R	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW RIGHT) CROSS HERE
R10-6	24X36	6.00						STOP HERE ON RED (45^ ARROW)
R11-2	48X30	10.00	2	20				ROAD CLOSED
R11-3a	60X30	12.50	3	37.5				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						POINT OF PRESENCE
CONST-8	48X36	12.00						WORK ZONE NO PHONE ZONE
SPECIAL	36X60	15.00	28	420				DETOUR ROUTE ASSEMBLY
SPECIAL	48X96	32.00	2	64				ROAD CLOSURE XX MILES AHEAD

616-10.05 CONSTRUCTION SIGNS	TOTAL
	660

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		ADVANCED WARNING RAIL SYSTEM
6161012		BUOYS (BOATS KEEP OUT)
6161013		BUOYS (NO WAKE)
6161014		SPECIAL SIGN ASSEMBLY (BOATS KEEP OUT)
6161025		CHANNELIZER (TRIM LINE)
6161030	10	TYPE III MOVEABLE BARRICADE
6161033		DIRECTION INDICATOR BARRICADE
6161040		FLASHING ARROW PANEL
6161047		TYPE III OBJECT MARKER
6161055		SEQUENTIAL FLASHING WARNING LIGHT
6161070		TUBULAR MARKER
6161095		RADAR SPEED ADVISORY SYSTEM
6161096		CHANGEABLE MESSAGE SIGN, COMMISSION FURNISHED/RETAINED
6161098A		CHANGEABLE MESSAGE SIGN W/O COMM. INTERFACE - CONTRACTOR FURNISHED/RETAINED
6161099	6	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

SUMMARY OF QUANTITIES
SHEET 3 OF 3

STATE OF MISSOURI
CRAIG ALAN SWITZER
NUMBER PE-2003015045
PROFESSIONAL ENGINEER
02/18/2025 11:25:20 AM
CRAIG ALAN SWITZER - CIVIL
MO-PE-2003015045

DATE PREPARED: 2/13/2025

ROUTE	STATE
M	MO
DISTRICT	SHEET NO.
SW	3

COUNTY: JASPER
JOB NO.: JSR0074
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

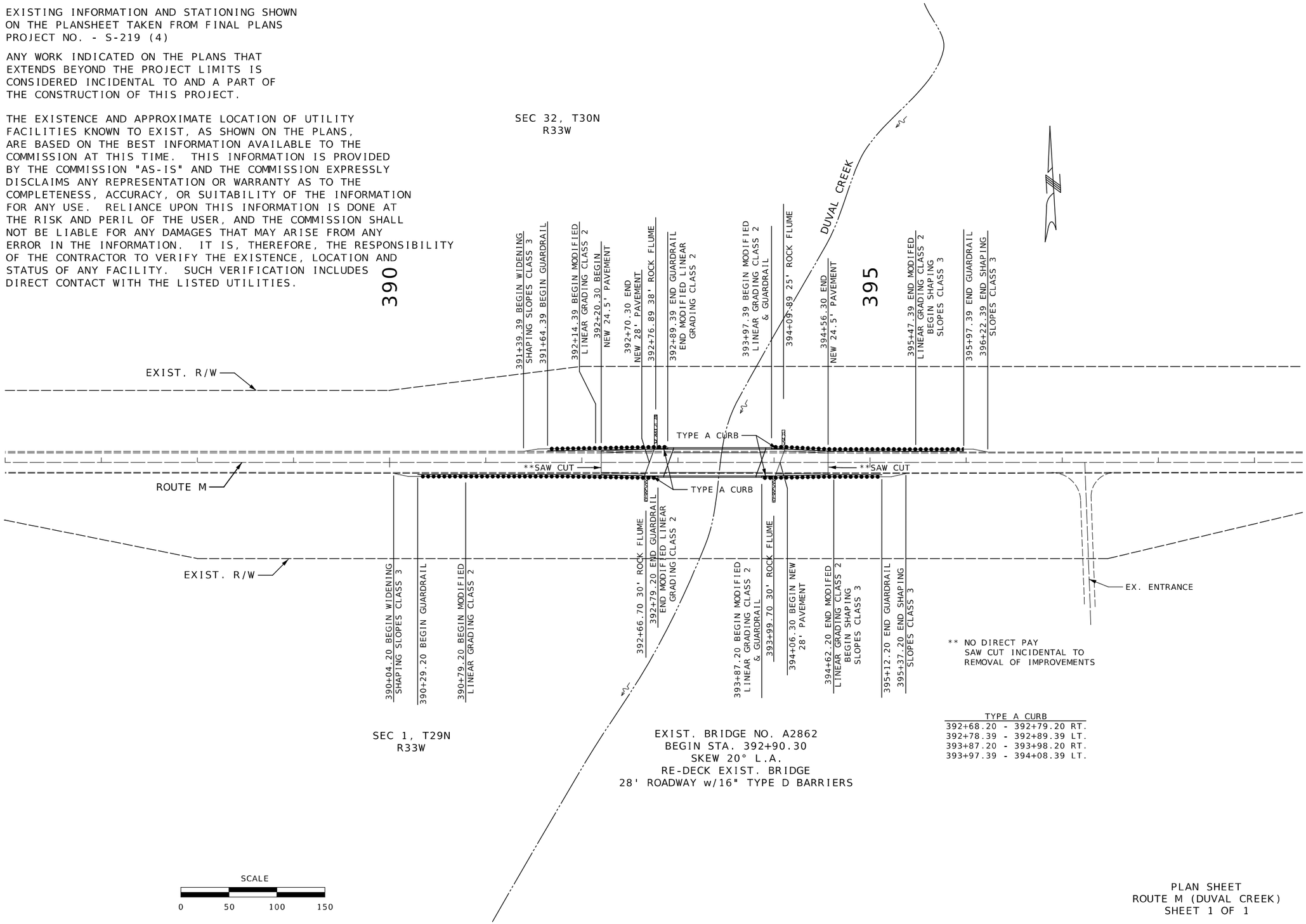
DESCRIPTION | DATE

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

EXISTING INFORMATION AND STATIONING SHOWN ON THE PLANSHEET TAKEN FROM FINAL PLANS PROJECT NO. - S-219 (4)

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.

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.



** NO DIRECT PAY
SAW CUT INCIDENTAL TO
REMOVAL OF IMPROVEMENTS

TYPE A CURB

392+68.20 - 392+79.20 RT.
392+78.39 - 392+89.39 LT.
393+87.20 - 393+98.20 RT.
393+97.39 - 394+08.39 LT.

SEC 1, T29N
R33W

EXIST. BRIDGE NO. A2862
BEGIN STA. 392+90.30
SKEW 20° L.A.
RE-DECK EXIST. BRIDGE
28' ROADWAY w/16" TYPE D BARRIERS

SCALE
0 50 100 150

PLAN SHEET
ROUTE M (DUVAL CREEK)
SHEET 1 OF 1

STATE OF MISSOURI
CRAIG ALAN SWITZER
NUMBER PE-2003015045
PROFESSIONAL ENGINEER
02/18/2025 11:25:29 AM
CRAIG ALAN SWITZER - CIVIL
MO-PE-2003015045

DATE PREPARED
2/13/2025

ROUTE	STATE
M	MO
DISTRICT	SHEET NO.
SW	4

COUNTY
JASPER

JOB NO.
JSR0074

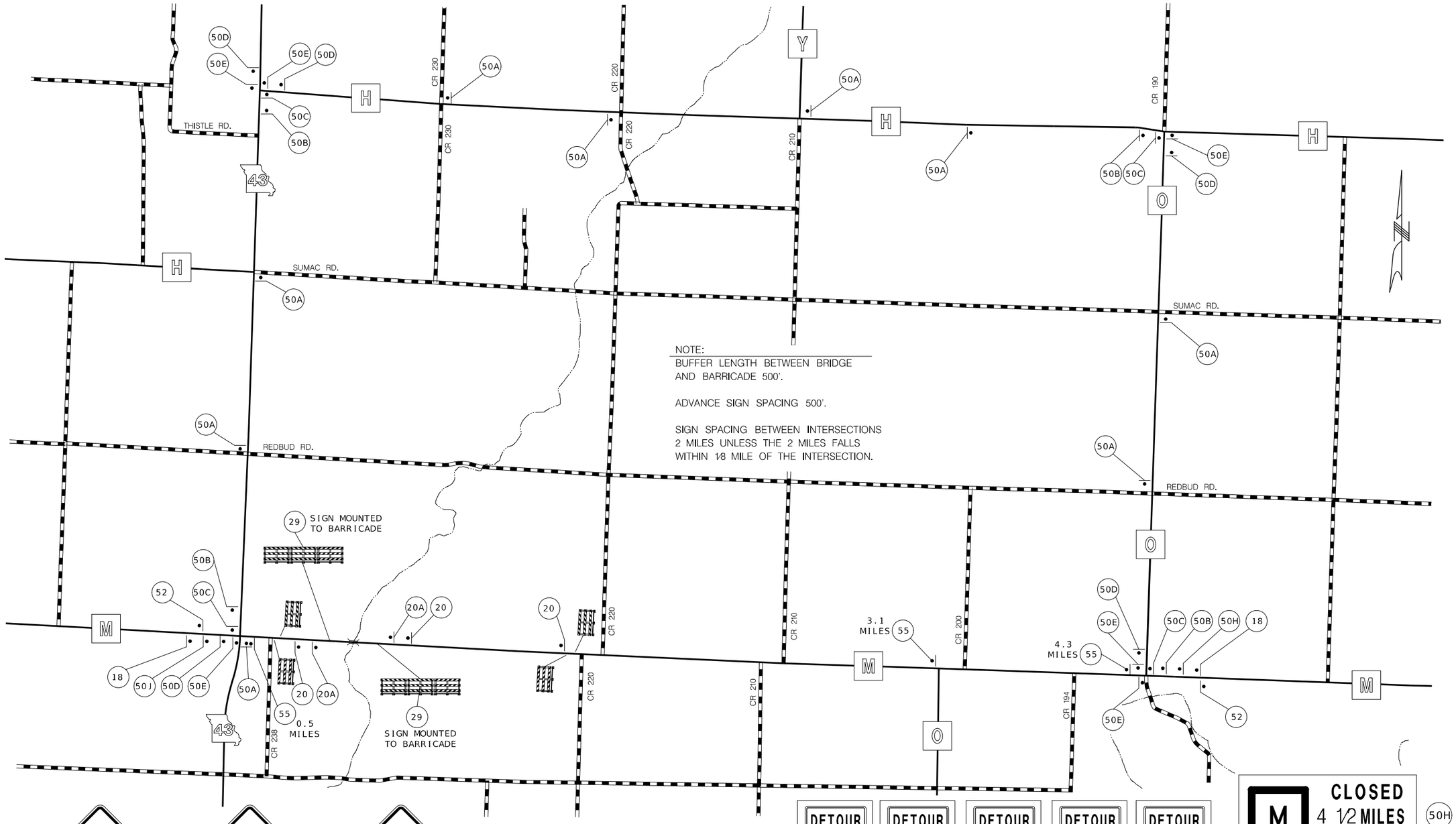
CONTRACT ID.

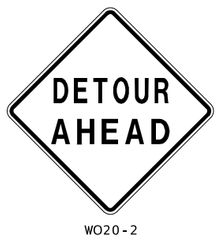
PROJECT NO.

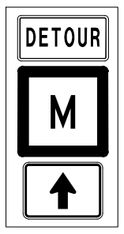
BRIDGE NO.

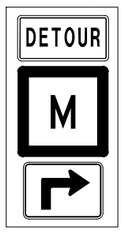
DESCRIPTION	DATE

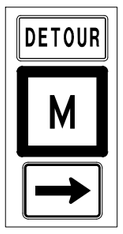
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

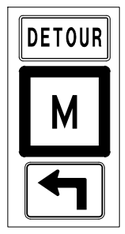


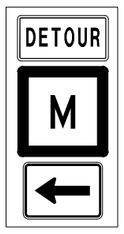


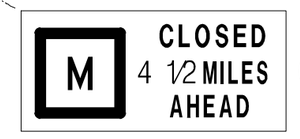












SCALE
NOT TO SCALE

TRAFFIC CONTROL SHEET
SHEET 1 OF 3

STATE OF MISSOURI
CRAIG ALAN SWITZER
NUMBER PE-2003015045
PROFESSIONAL ENGINEER
02/18/2025 11:25:34 AM
CRAIG ALAN SWITZER - CIVIL
MO-PE-2003015045

DATE PREPARED
2/13/2025

ROUTE	STATE
M	MO
DISTRICT	SHEET NO.
SW	5

COUNTY
JASPER

JOB NO.
JSR0074

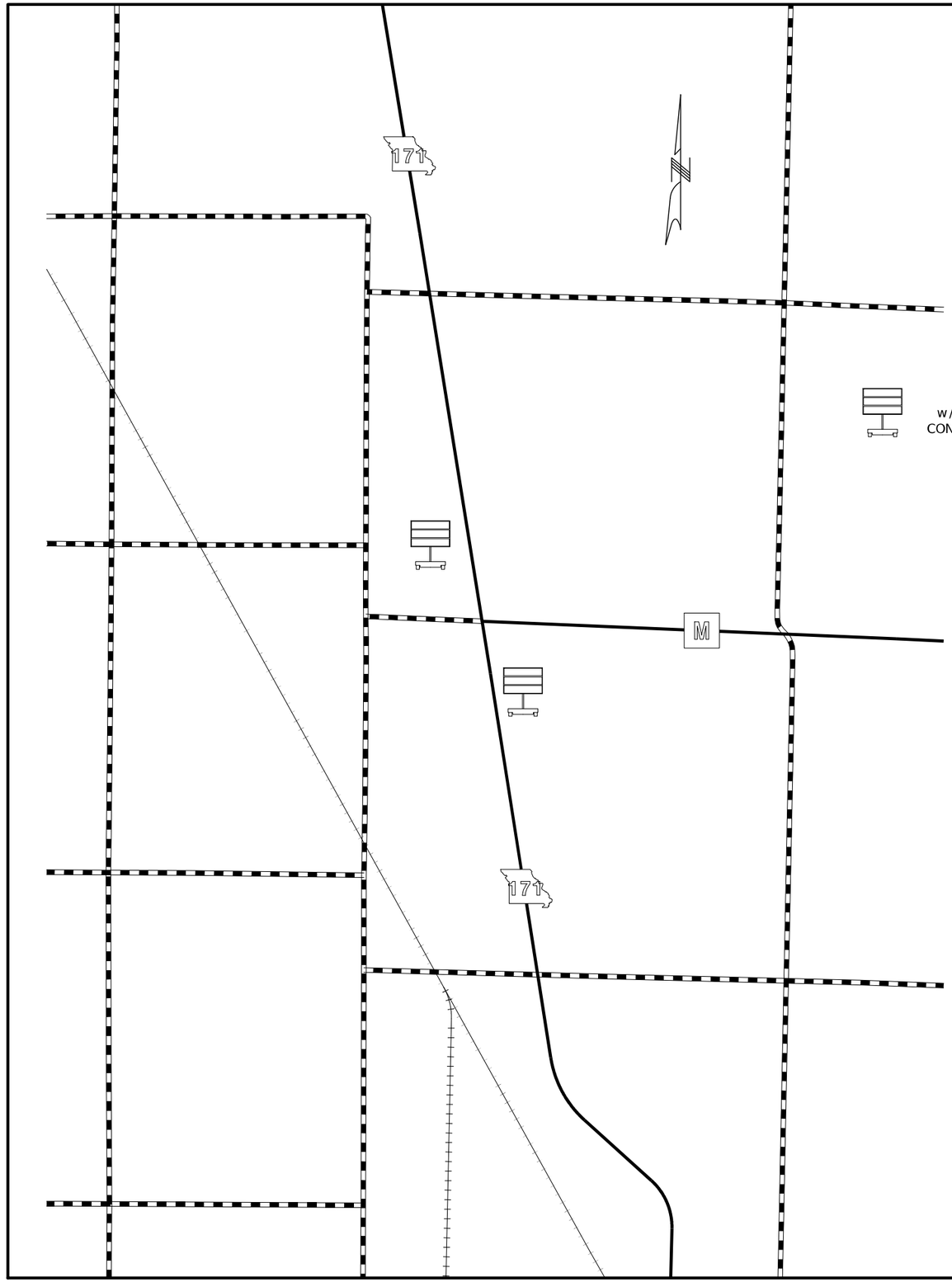
CONTRACT ID.

PROJECT NO.

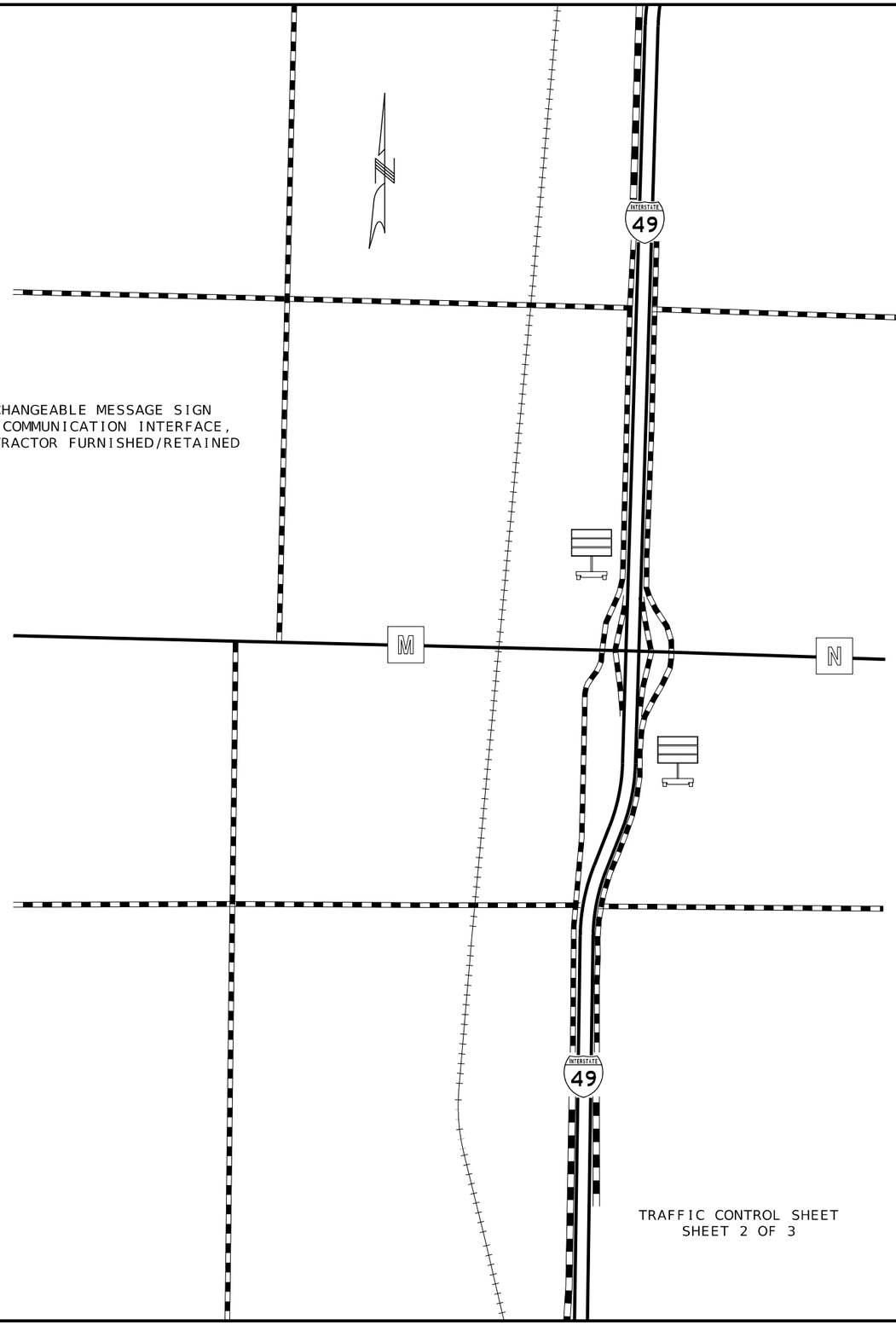
BRIDGE NO.

DESCRIPTION	DATE

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



CHANGEABLE MESSAGE SIGN
w/ COMMUNICATION INTERFACE,
CONTRACTOR FURNISHED/RETAINED



TRAFFIC CONTROL SHEET
SHEET 2 OF 3

STATE OF MISSOURI
CRAIG ALAN SWITZER
NUMBER PE-2003015045
PROFESSIONAL ENGINEER
02/18/2025 11:25:40 AM
CRAIG ALAN SWITZER - CIVIL
MO-PE-2003015045

DATE PREPARED
2/13/2025

ROUTE	STATE
M	MO
DISTRICT	SHEET NO.
SW	6

COUNTY
JASPER

JOB NO.
JSR0074

CONTRACT ID.

PROJECT NO.

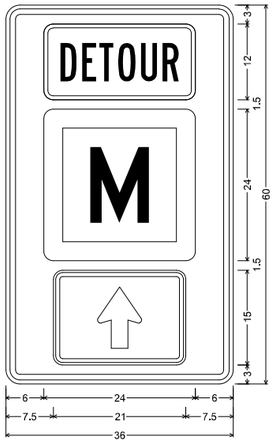
BRIDGE NO.

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

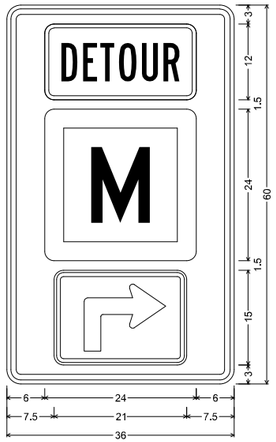
50A



MO4-12 SHF-FLAT SHEET FLUORESCENT;
2.250" Radius, 0.875" Border, 0.625" Indent, Black on, Orange;
Table of letter and object lefts

[object]	6.000
D	6.000
A	7.500

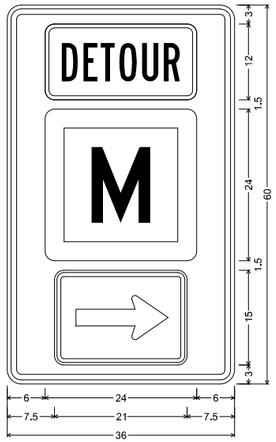
50B



MO4-12 SHF-FLAT SHEET FLUORESCENT;
2.250" Radius, 0.875" Border, 0.625" Indent, Black on, Orange;
Table of letter and object lefts

[object]	6.000
D	6.000
B	7.500

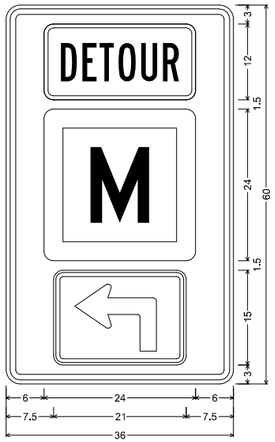
50C



MO4-12 SHF-FLAT SHEET FLUORESCENT;
2.250" Radius, 0.875" Border, 0.625" Indent, Black on, Orange;
Table of letter and object lefts

[object]	6.000
D	6.000
C	7.500

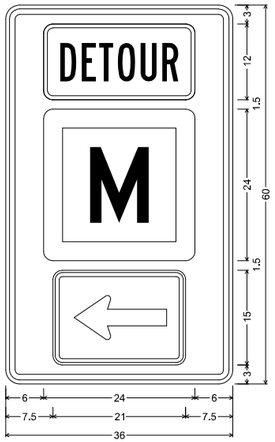
50D



MO4-12 SHF-FLAT SHEET FLUORESCENT;
2.250" Radius, 0.875" Border, 0.625" Indent, Black on, Orange;
Table of letter and object lefts

[object]	6.000
D	6.000
D	7.500

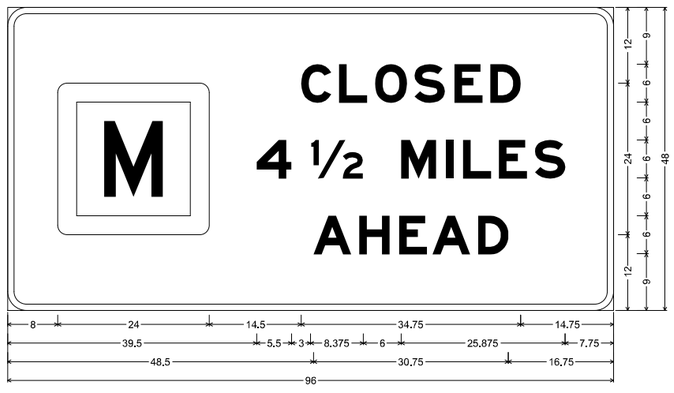
50E



MO4-12 SHF-FLAT SHEET FLUORESCENT;
2.250" Radius, 0.875" Border, 0.625" Indent, Black on, Orange;
Table of letter and object lefts

[object]	6.000
D	6.000
E	7.500

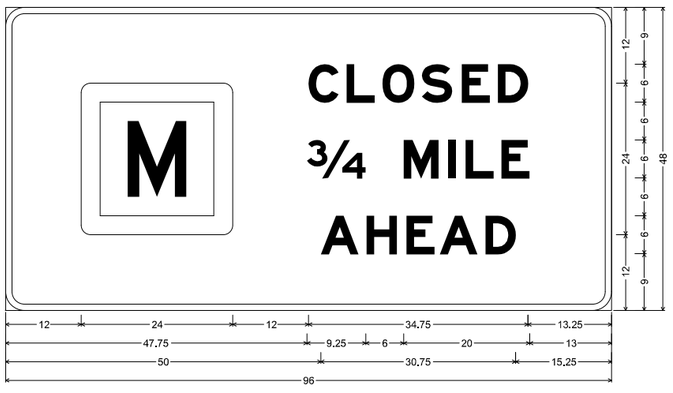
50H



MO4-13 SHF-FLAT SHEET FLUORESCENT;
3.000" Radius, 1.000" Border, Black on, Orange;
"CLOSED", E Mod; "4 ½ MILES", E Mod; "AHEAD", E Mod;
Table of letter and object lefts

[object] 8.000	C 46.500	L 52.500	O 58.250	S 64.500	E 70.750	D 76.500	
4 39.500	½ 48.000	M 62.375	I 69.375	L 72.125	E 77.875	S 83.500	
A 48.500	H 55.625	E 62.000	A 67.250	D 74.500			

50J



MO4-13 SHF-FLAT SHEET FLUORESCENT;
3.000" Radius, 1.000" Border, Black on, Orange;
"CLOSED", E Mod; "¾ MILE", E Mod; "AHEAD", E Mod;
Table of letter and object lefts

[object] 12.000	C 48.000	L 54.000	O 59.750	S 66.000	E 72.250	D 78.000	
¾ 47.750	M 63.000	I 70.125	L 72.875	E 78.500			
A 50.000	H 57.125	E 63.500	A 68.750	D 76.000			

TRAFFIC CONTROL SHEET
SHEET 3 OF 3

STATE OF MISSOURI
CRAIG ALAN SWITZER
NUMBER PE-2003015045
PROFESSIONAL ENGINEER
02:18:2025 11:25:47 AM
CRAIG ALAN SWITZER - CIVIL
MO-PE-2003015045

DATE PREPARED
2/13/2025

ROUTE	STATE
M	MO
DISTRICT	SHEET NO.
SW	7

COUNTY
JASPER

JOB NO.
JSR0074

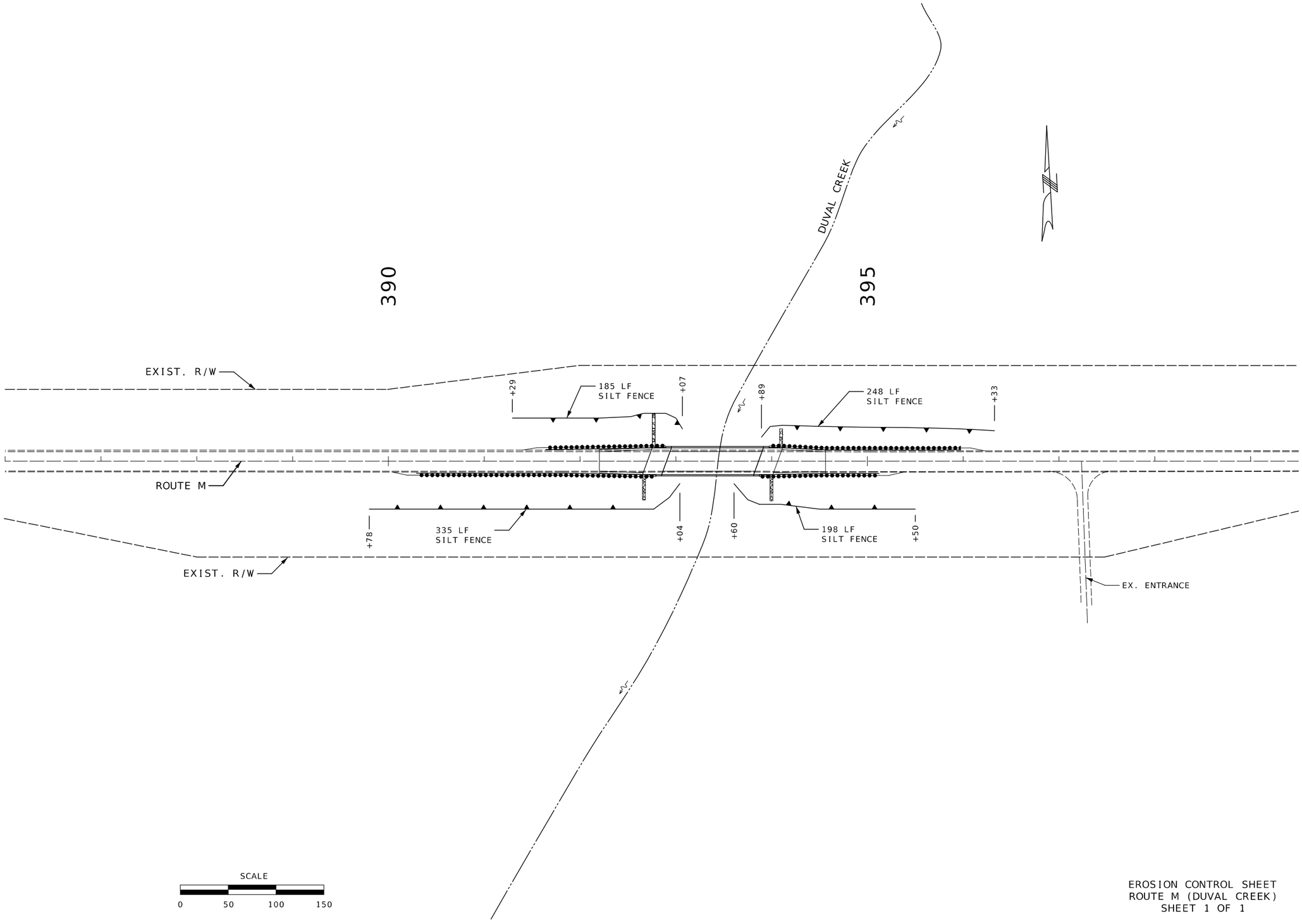
CONTRACT ID.

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)



EROSION CONTROL SHEET
ROUTE M (DUVAL CREEK)
SHEET 1 OF 1

STATE OF MISSOURI
CRAIG ALAN SWITZER
NUMBER PE-2003015045
PROFESSIONAL ENGINEER

02/18/2025 11:25:54 AM
CRAIG ALAN SWITZER - CIVIL
MO-PE-2003015045

DATE PREPARED
2/13/2025

ROUTE	STATE
M	MO
DISTRICT	SHEET NO.
SW	8

COUNTY
JASPER

JOB NO.
JSR0074

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)

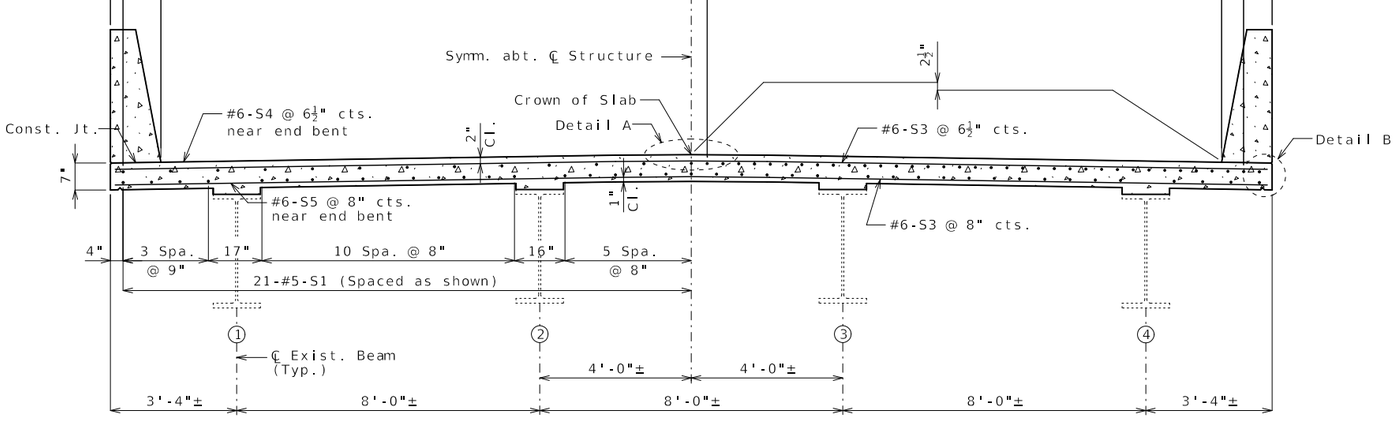
U.I.P. AND REDECK EXISTING (29'- 38'- 29') CONTINUOUS COMPOSITE WIDE FLANGE BEAM SPANS (SKEW: 20° L.A.)

SEC/SUR 32 TWP 30N RGE 32W

Table Showing S2 Bar Lengths			
Int. Bent No. 2		Int. Bent No. 3	
Span 1	Span 2	Span 2	Span 3
12'-0"	12'-0"	12'-0"	12'-0"

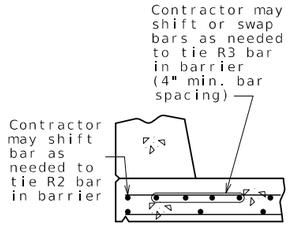
Required Lap Length For Bar Splices **	
Bar Size	Splice Length
4	2'-7"
5	3'-3"
6	3'-10"
7	4'-11"

** Unless otherwise shown.



HALF SECTION NEAR MIDSPAN AND END BENT — HALF SECTION NEAR INT. BENT

TYPICAL SECTION THRU SLAB



OPTIONAL SHIFTING TOP BARS AT BARRIER

General Notes:

Design Specifications:

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

Design Loading:

H15-44 (1969) (Existing)
HS20-44 (New Construction)
35 lb/sf Future Wearing Surface
Earth - 120 lb/cf, Equivalent Fluid Pressure 45 lb/cf
Fatigue Stress - Case III

Design Unit Stresses:

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

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 approach slab surface. (Roadway item)

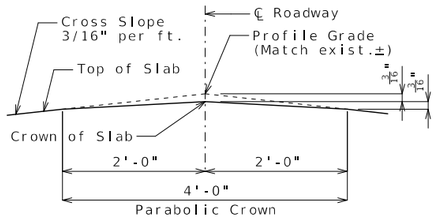
Outline of existing work is indicated by light dashed lines. Heavy lines indicate new work.

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.

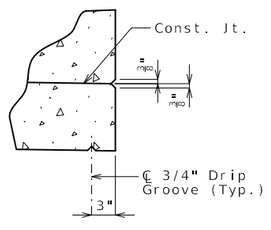
For adjusted girder deflection due to the weight of the new deck and barriers, see Bridge Electronic Deliverables.

Traffic Handling:

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



DETAIL A



DETAIL B

Estimated Quantities		
Item		Total
Class 1 Excavation	cu. yard	80
Temporary Shoring	lump sum	1
Dewatering	lump sum	1
Removal of Existing Bridge Deck	sq. foot	3009
Bridge Approach Slab (Minor)	sq. yard	128
Slab on Steel	sq. yard	333
Type D Barrier	linear foot	221
Fiber Reinforced Polymer Wrap	sq. foot	126
Slab Drain	each	14
Non-Destructive Testing	linear foot	33
Vertical Drain at End Bents	each	2

Estimated Quantities for Slab on Steel		
Item		Total
Class B-2 Concrete	cu. yard	88
Reinforcing Steel (Epoxy Coated)	pound	30,430

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 M OVER DUVAL CREEK

ROUTE M FROM ROUTE 43 TO ROUTE O
ABOUT 0.7 MILE EAST OF ROUTE 43
BEGINNING STATION 392+90.03±

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
02/20/2025 9:10:05 AM
TYLER.R.LINDSAY-CIVIL
MO-PE-2019000128

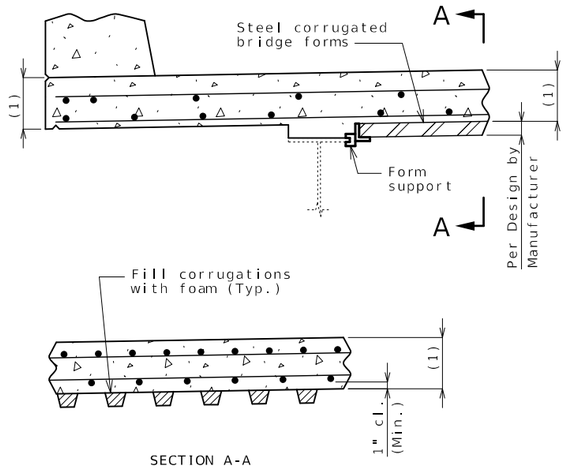
DATE PREPARED 2/20/2025

ROUTE	STATE
M	MO
DISTRICT	SHEET NO.
BR	1

COUNTY JASPER
JOB NO. JSR0074
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A28621

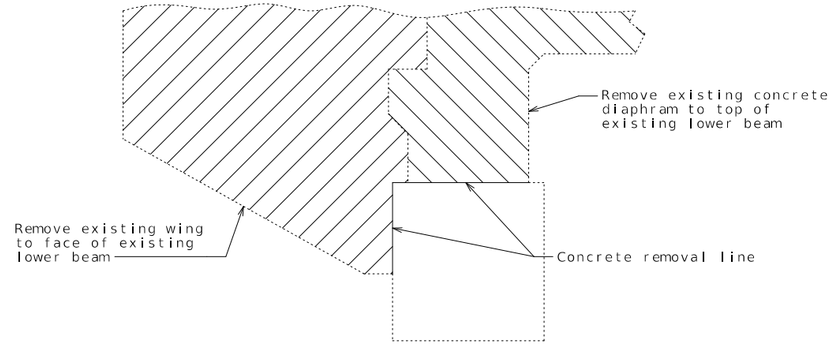
DESCRIPTION | DATE

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



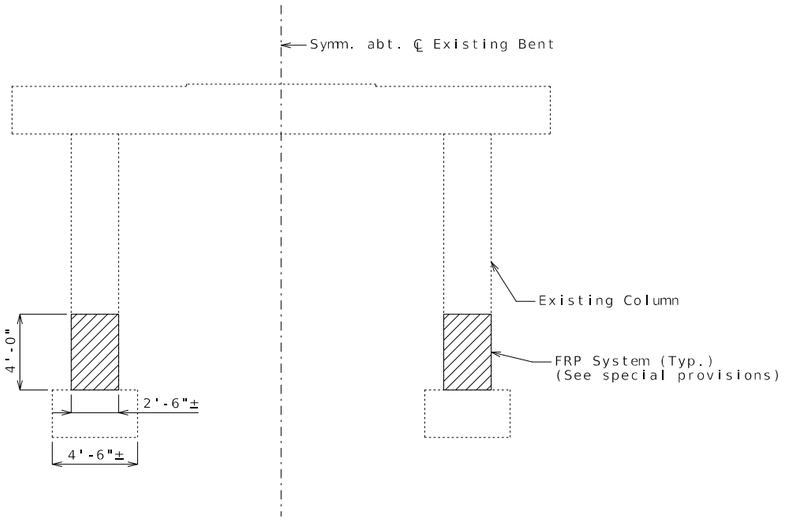
SECTION A-A

OPTIONAL STAY-IN-PLACE FORM DETAILS



ELEVATION OF END BENTS SHOWING CONCRETE REMOVAL

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



ELEVATION SHOWING FRP WRAP AT INT. BENTS NO. 2 & 3

General Notes:

Stay-In-Place Forms:

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

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

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

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

Pouring and Finishing Slab:

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

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

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

Haunching:

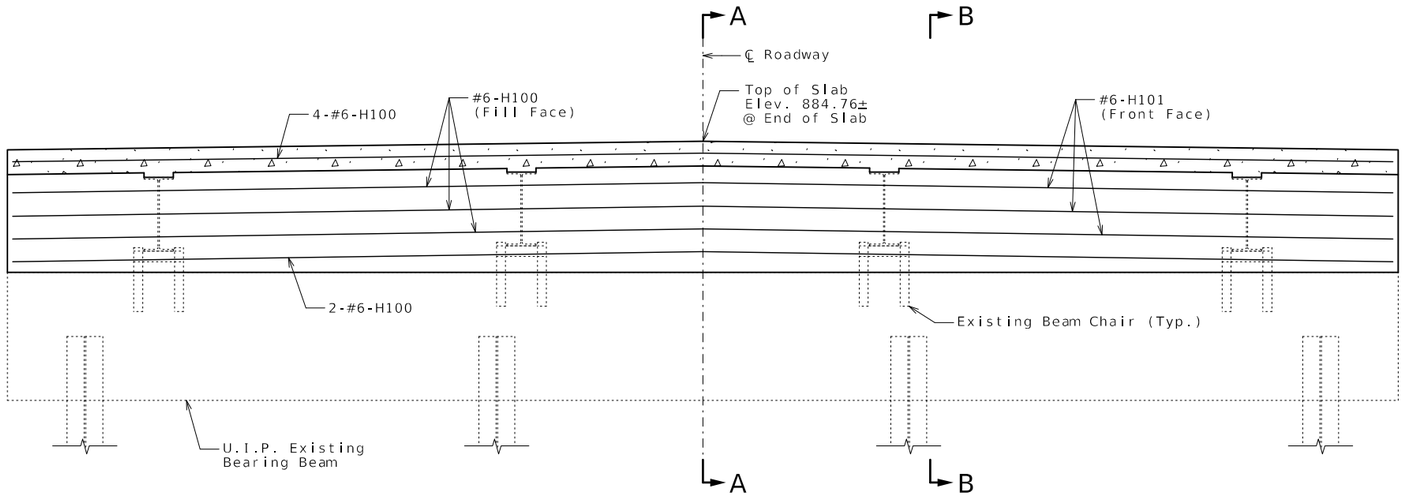
(1) Slab is to be considered a uniform thickness as shown on the plans. Haunching will vary. See front sheet for slab thickness.

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
02/20/2025 9:10:26 AM
TYLER R. LINDSAY - CIVIL
MO-PE-2019000128

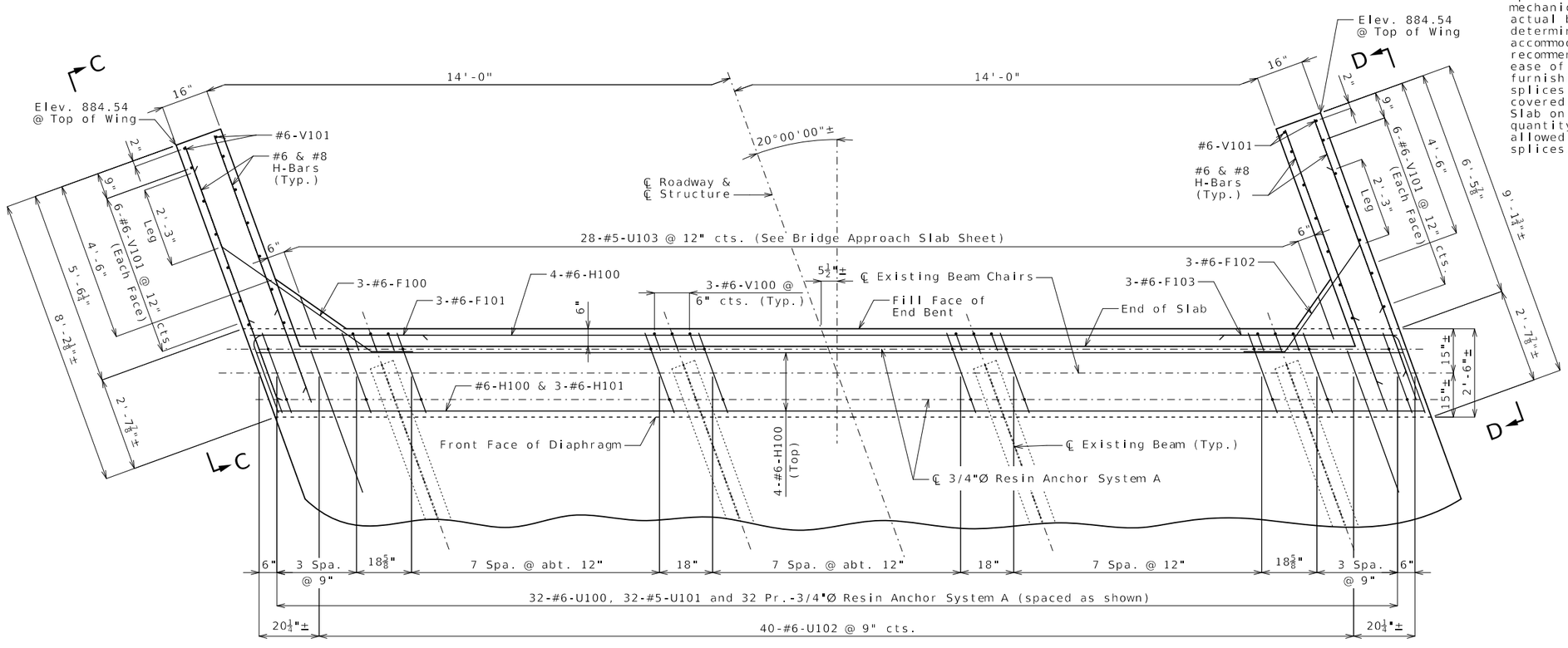
DATE PREPARED: 2/20/2025
ROUTE: M | STATE: MO
DISTRICT: BR | SHEET NO.: 2
COUNTY: JASPER
JOB NO.: JSR0074
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A28621

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
(Resin Anchor System B not shown for clarity)

DETAILS OF END BENTS NO. 1 & 4

Notes:

Work this sheet with Sheet No. 4.

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

For reinforcement of barrier, see Sheet No. 8.

The exposed and accesible surfaces of the existing structural steel and bearings that will be encased in concrete shall be cleaned 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 mils before concrete is poured. The surface prepration and coating for beams shall extend a minimum of one foot outside the face of the beam encasement. Payment for cleaning and coating steel to be encased in concrete will be considered completely covered by the contract unit price for Slab on Steel.

The H101 bars are segmented for ease of placement through beam web holes. The total bar length for H101 bars shown in the 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.

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
02/20/2025 9:10:36 AM
TYLER R. LINDSAY - CIVIL
MO-PE-2019000128

DATE PREPARED
2/20/2025

ROUTE	STATE
M	MO
DISTRICT	SHEET NO.
BR	3

COUNTY
JASPER

JOB NO.
JSR0074

CONTRACT ID.

PROJECT NO.

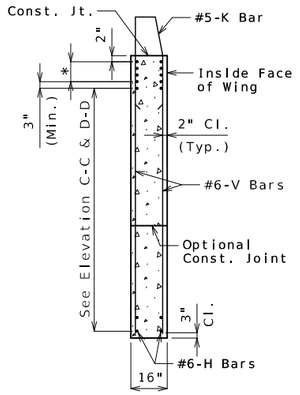
BRIDGE NO.
A28621

DESCRIPTION	DATE

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

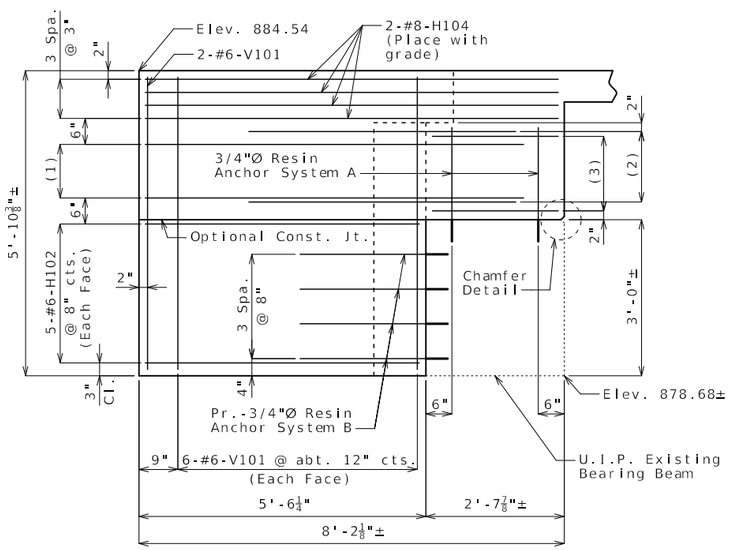
Detailed July 2024
Checked Jan. 2025

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



TYPICAL SECTION THRU WING

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



ELEVATION C-C

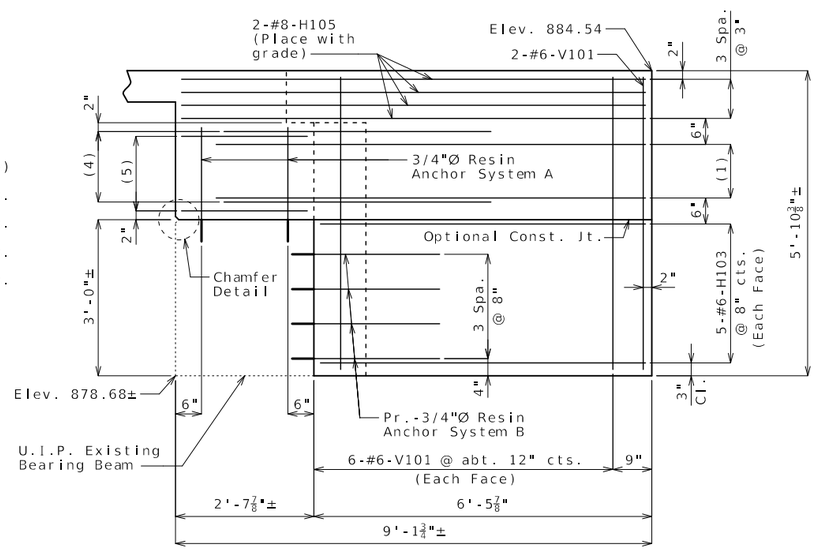
(1) 3-#6-H106 @ abt. 6" cts. (Each Face)

(2) 3-#6-F100 @ 8" cts.

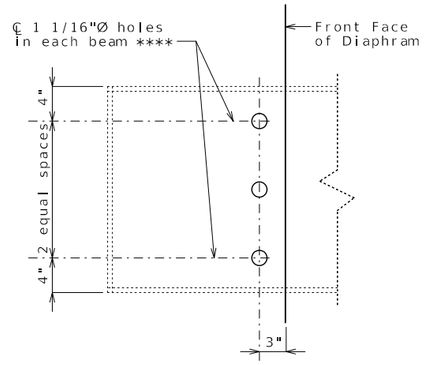
(3) 3-#6-F101 @ 9" cts.

(4) 3-#6-F102 @ 8" cts.

(5) 3-#6-F103 @ 9" cts.

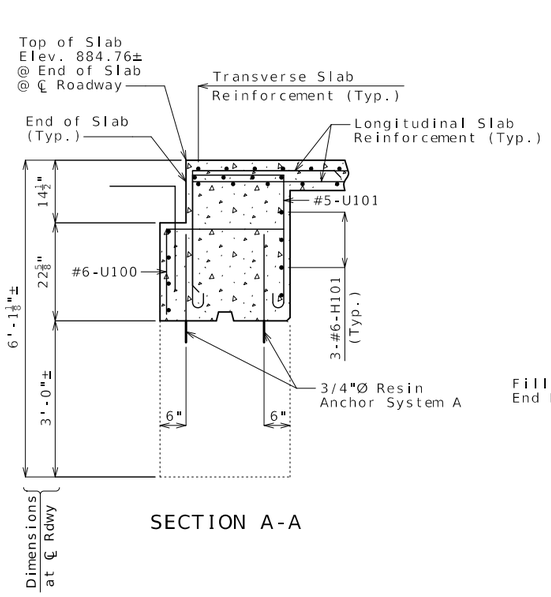


ELEVATION D-D

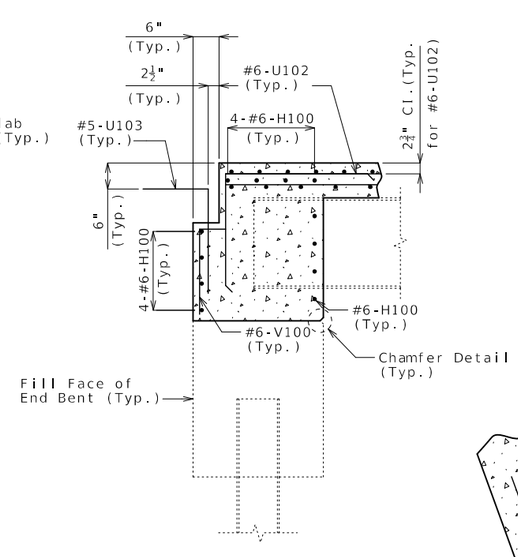


DETAIL OF WEB HOLES AT END BENTS

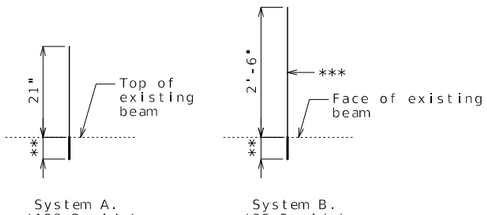
**** Cost of field drilling holes in existing wide flange beam webs will be considered completely covered by the contract unit price for Slab on Steel.



SECTION A-A



SECTION B-B



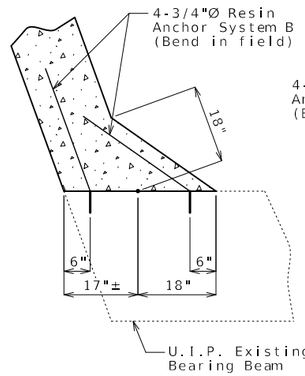
System A. (128 Req'd.)

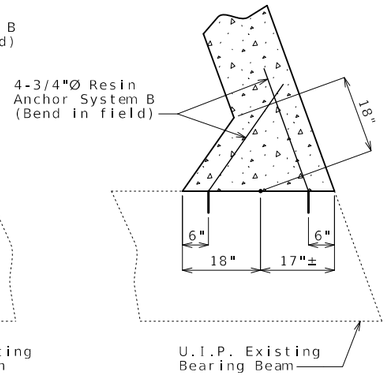
System B. (32 Req'd.)

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

*** Bend in field to maintain 2" Cl. min.

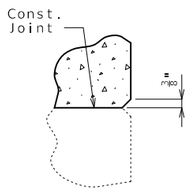
DETAILS OF RESIN ANCHOR SYSTEMS





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

PART SECTIONS SHOWING RESIN ANCHORS IN WINGS



CHAMFER DETAIL

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, complete in place, will be considered completely covered by the contract unit price for Slab on Steel.

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

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

Note:

Work this sheet with Sheet No. 3.

DETAILS OF END BENTS NO. 1 & 4

Detailed July 2024
Checked Jan. 2025

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

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
02/20/2025 9:10:45 AM
TYLER R. LINDSAY - CIVIL
MO-PE-2019000128

DATE PREPARED: 2/20/2025

ROUTE	STATE
M	MO
DISTRICT	SHEET NO.
BR	4

COUNTY: JASPER

JOB NO.: JSR0074

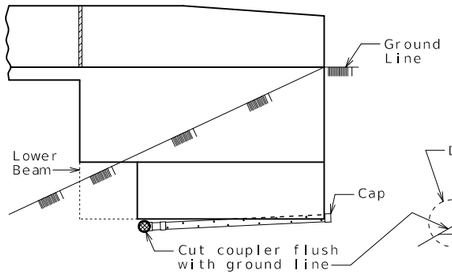
CONTRACT ID.:

PROJECT NO.:

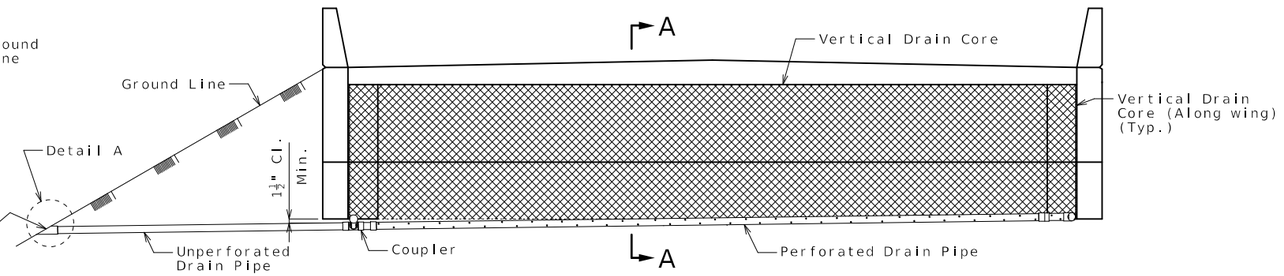
BRIDGE NO.: A28621

DESCRIPTION | DATE

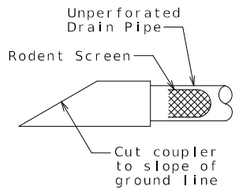
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



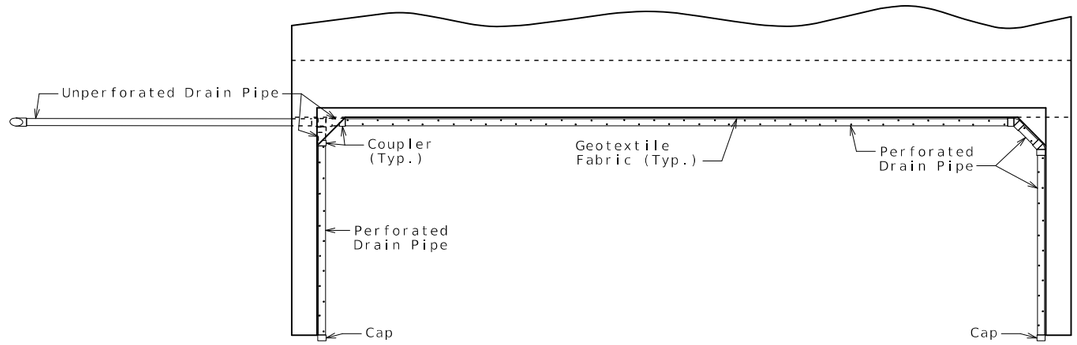
ELEVATION OF WING



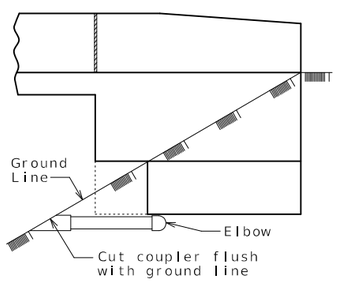
ELEVATION OF END BENT



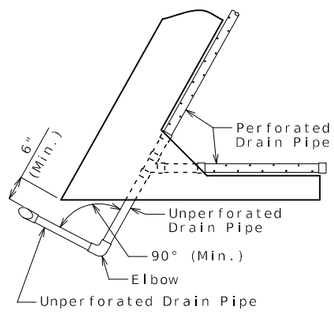
DETAIL A



PLAN OF END BENT



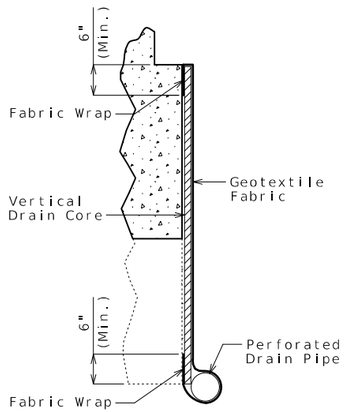
ELEVATION OF WING



PART PLAN

OPTIONAL TURNED DRAIN

(Use only when straight drain is not practical.)



PART SECTION A-A

(Section thru wing similar)

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 July 2024
Checked Jan. 2025

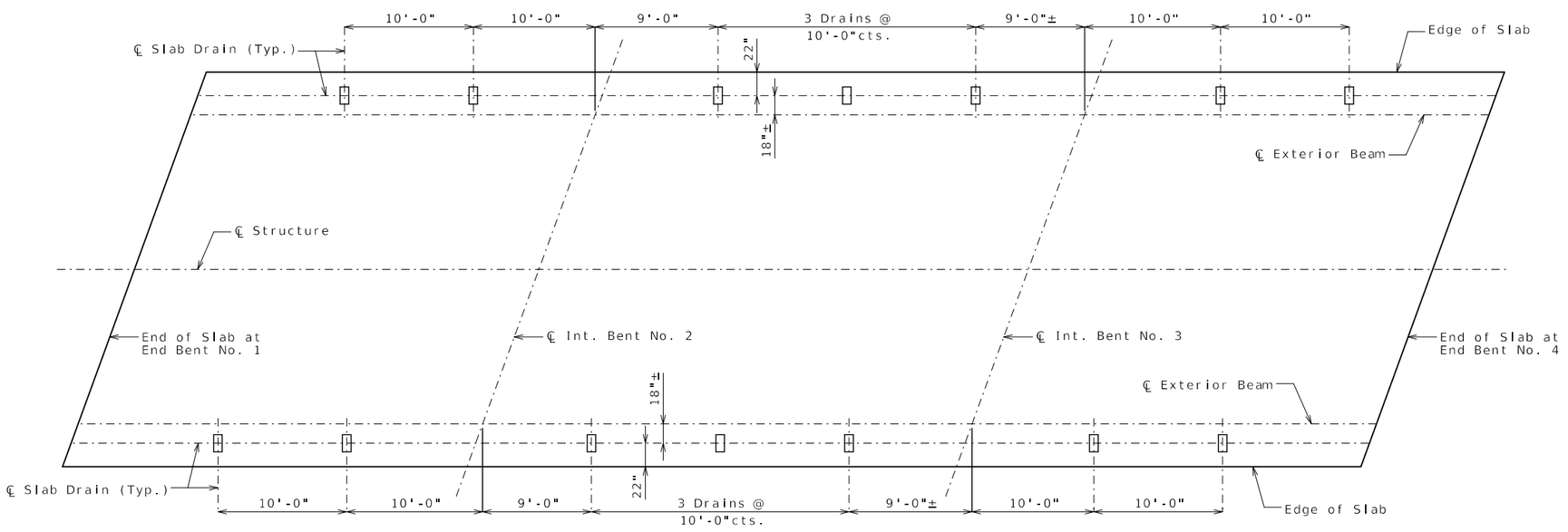
Note: This drawing is not to scale. Follow dimensions.

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
02/20/2025 9:11:16 AM
TYLER R LINDSAY - CIVIL
MO-PE-2019000128

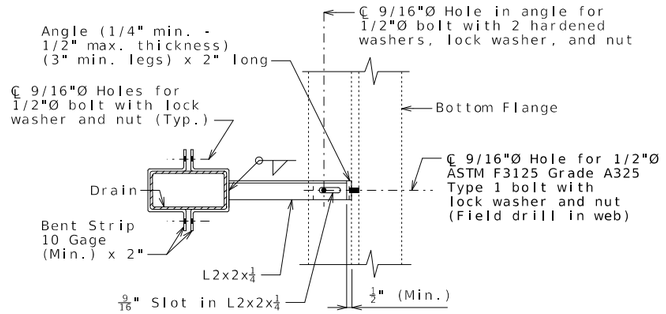
DATE PREPARED: 2/20/2025
ROUTE: M | STATE: MO
DISTRICT: BR | SHEET NO.: 5
COUNTY: JASPER
JOB NO.: JSR0074
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A28621

DESCRIPTION | DATE

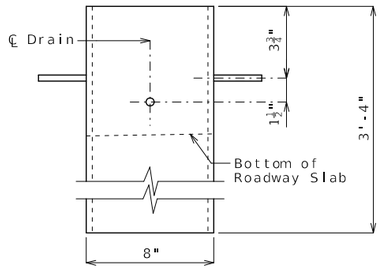
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



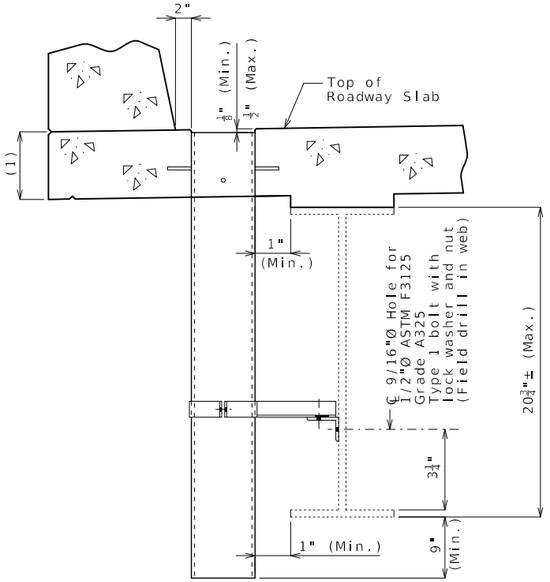
PLAN OF SLAB SHOWING SLAB DRAIN LOCATIONS



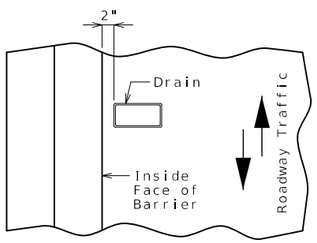
PART SECTION SHOWING BRACKET ASSEMBLY



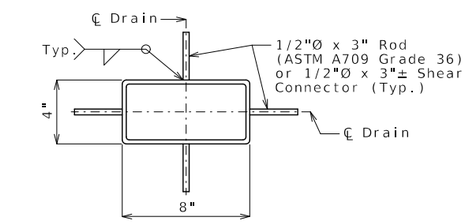
ELEVATION OF DRAIN



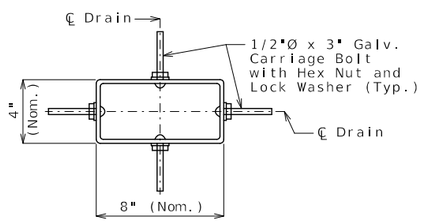
PART SECTION NEAR DRAIN



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.

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
02/20/2025 9:11:26 AM
TYLER R. LINDSAY - CIVIL
MO-PE-2019000128

DATE PREPARED 2/20/2025

ROUTE	STATE
M	MO
DISTRICT	SHEET NO.
BR	6

COUNTY JASPER

JOB NO. JSR0074

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A28621

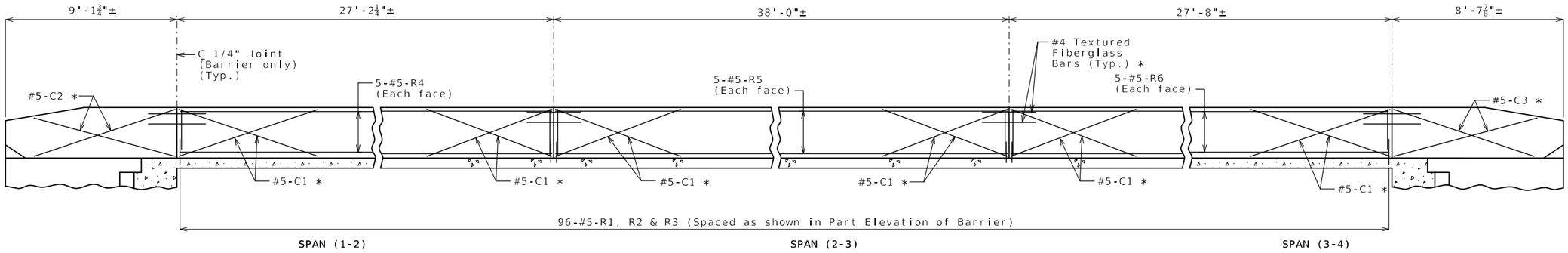
DESCRIPTION	DATE

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

Detailed July 2024
Checked Jan. 2025

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

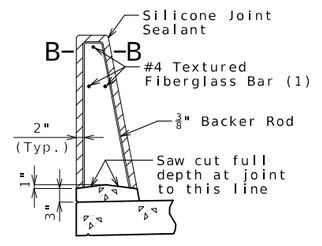
SLAB DRAINS



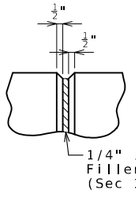
ELEVATION OF BARRIER

(Left barrier shown, right barrier similar)

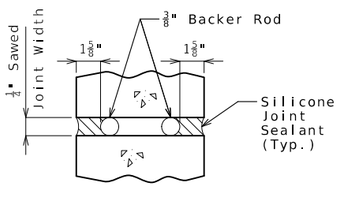
Longitudinal dimensions are horizontal.



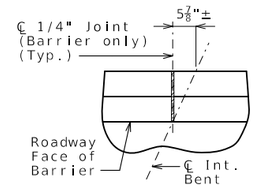
SECTION THRU SAW CUT JOINT



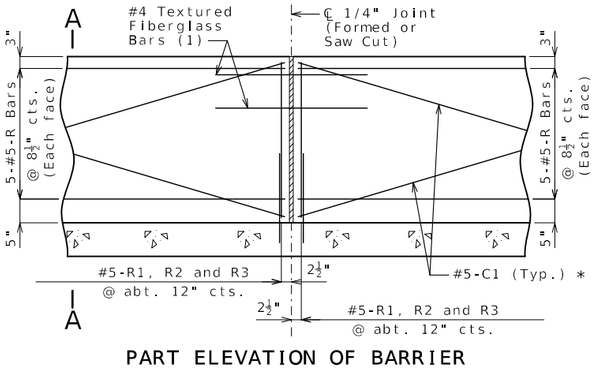
PART ELEVATION AT FORMED JOINT



SECTION B-B

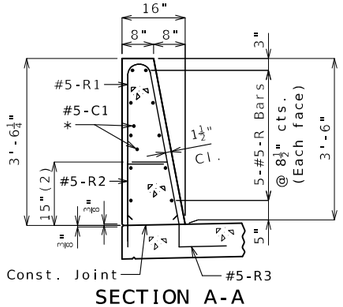


PART PLAN SHOWING JOINT LOCATION



PART ELEVATION OF BARRIER

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

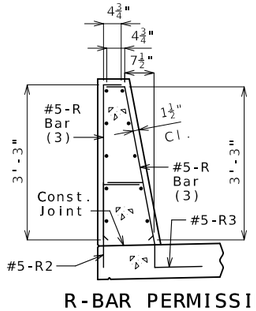


SECTION A-A

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.

TYPE D BARRIER

Detailed July 2024
Checked Jan. 2025

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

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
02/20/2025 9:11:46 AM
TYLER R. LINDSAY - CIVIL
MO-PE-2019000128

DATE PREPARED
2/20/2025

ROUTE	STATE
M	MO
DISTRICT	SHEET NO.
BR	7

COUNTY
JASPER

JOB NO.
JSR0074

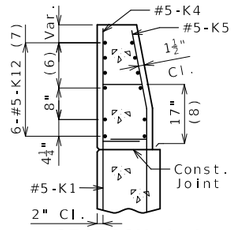
CONTRACT ID.

PROJECT NO.

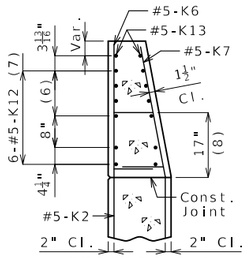
BRIDGE NO.
A28621

DESCRIPTION	DATE

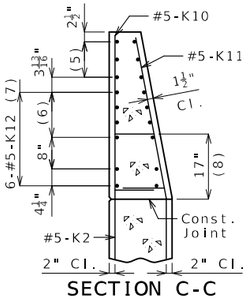
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



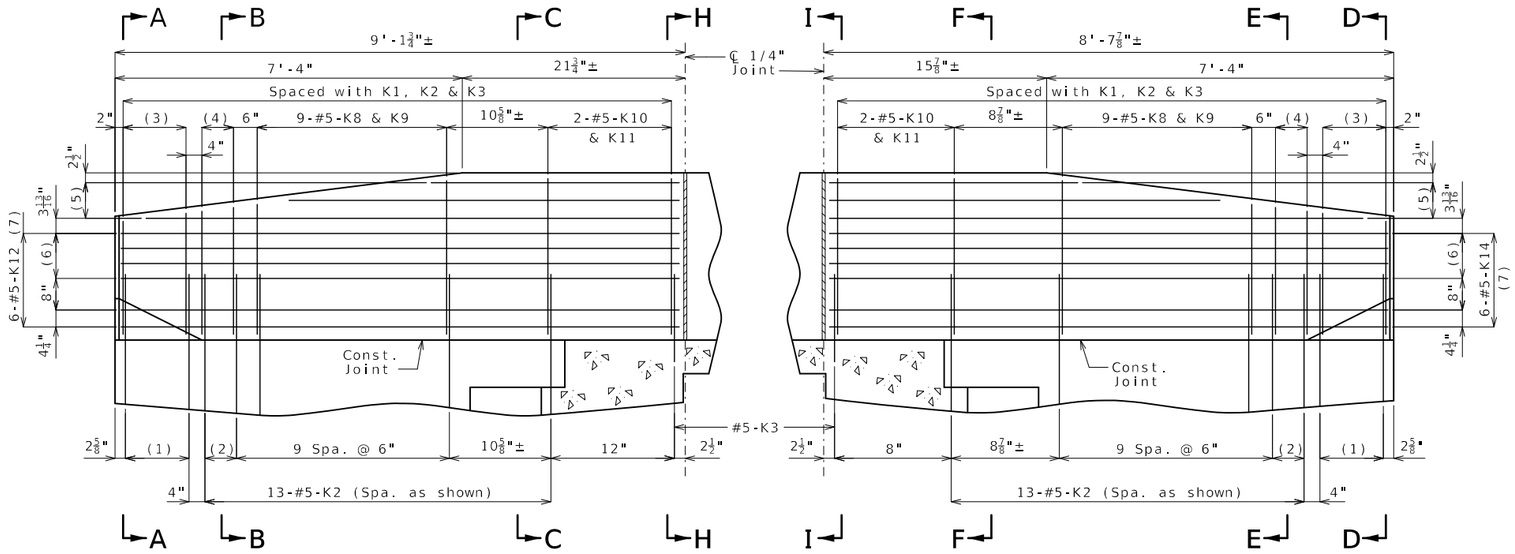
SECTION A-A



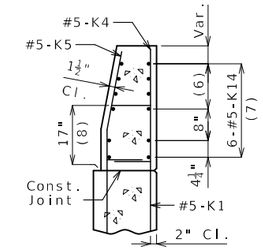
SECTION B-B



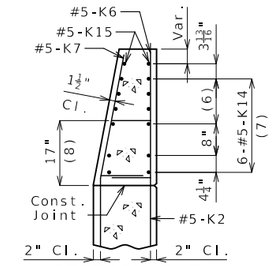
SECTION C-C



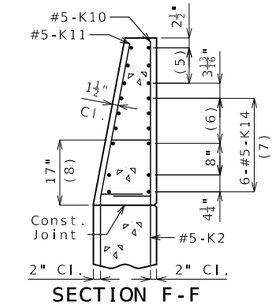
PART ELEVATION



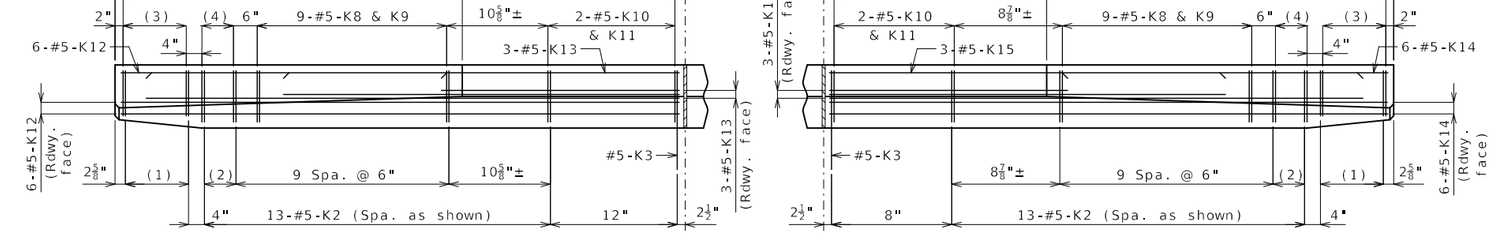
SECTION D-D



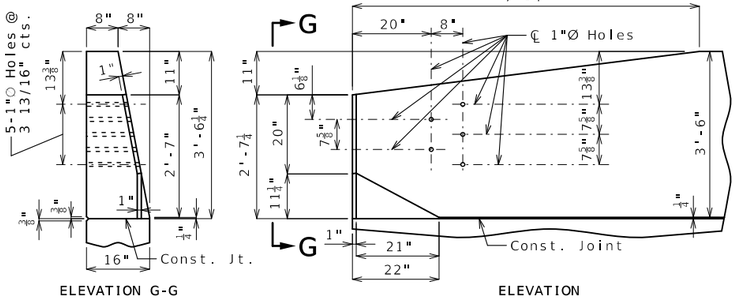
SECTION E-E



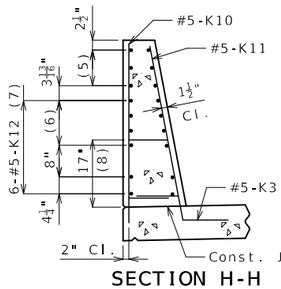
SECTION F-F



PART PLAN

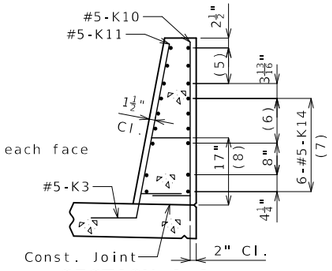


ELEVATION G-G ELEVATION

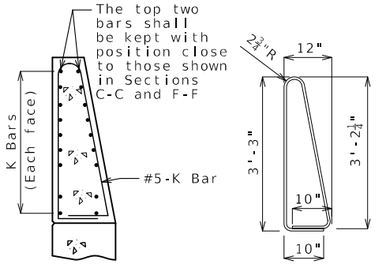


SECTION H-H

(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



SECTION I-I



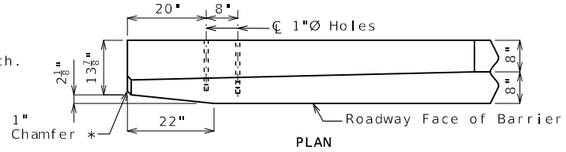
K10-K11 BAR PERMISSIBLE ALTERNATE SHAPE

(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 July 2024
Checked Jan. 2025

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

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
02/20/2025 9:12:05 AM
TYLER R. LINDSAY - CIVIL
MO-PE-2019000128

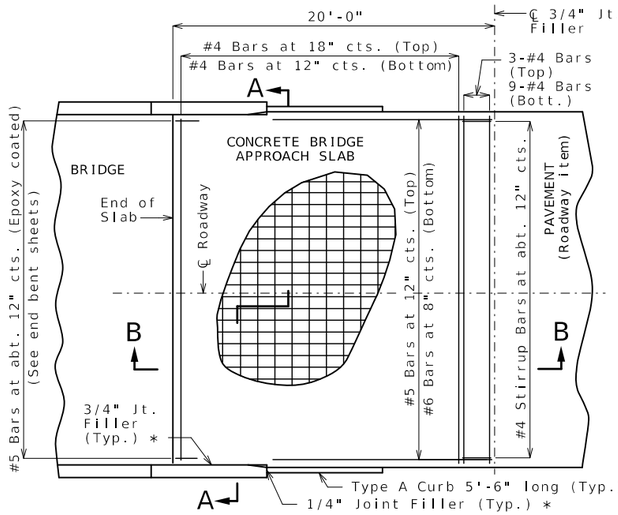
DATE PREPARED 2/20/2025

ROUTE	STATE
M	MO
DISTRICT	SHEET NO.
BR	8

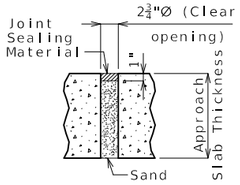
COUNTY JASPER
JOB NO. JSR0074
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A28621

DESCRIPTION | DATE

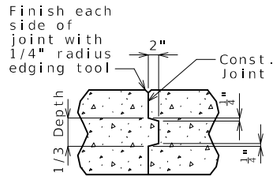
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



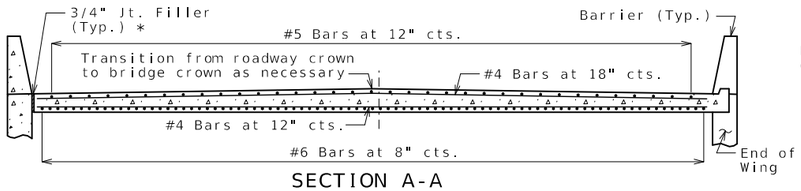
PART PLAN OF SQUARED STRUCTURE
(Skewed structure similar)



UNDERSEAL ACCESS HOLE DETAIL
(If required)

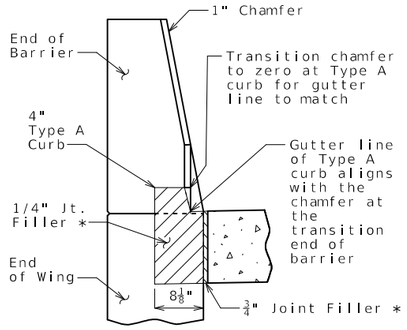


CONSTRUCTION JOINT DETAIL



SECTION A-A

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



SECTION BETWEEN CURB AND BARRIER

Notes For Concrete Slab Only:

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

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

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

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

The reinforcing steel in the bridge approach slab shall be continuous. The transverse reinforcing steel may be made continuous by providing a minimum lap splice of 23 inches for #4 bars, or by mechanical bar splice.

Mechanical bar splices shall be in accordance with Sec 710.

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

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

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

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

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

General Notes:

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

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

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

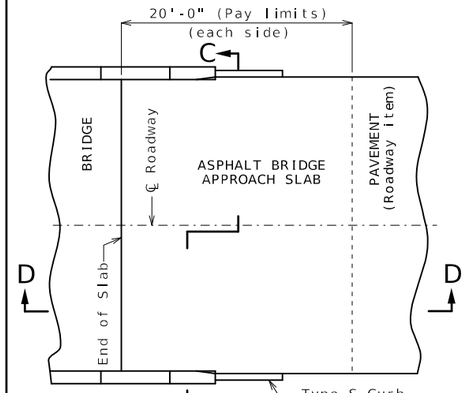
☐ Concrete Bridge Approach Slab

☐ Asphalt Bridge Approach Slab

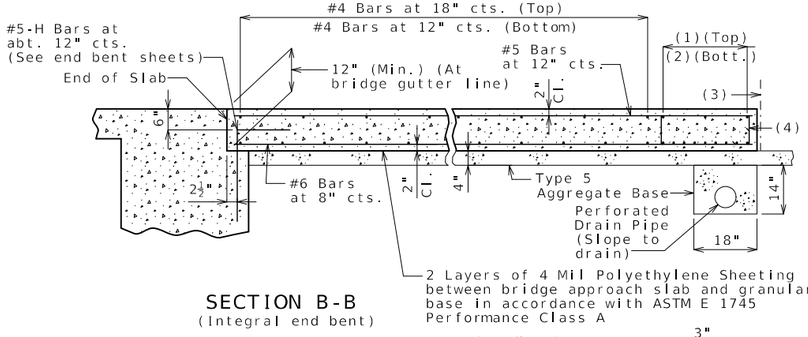
Notes For Asphalt Slab Only:

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

Application of tack is required between lifts per Sec 403.



PART PLAN
(Squared structure shown, skewed structure similar)



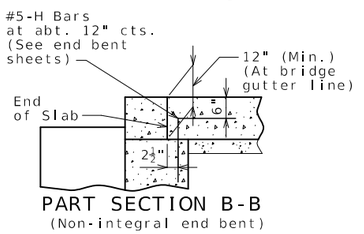
(1) 3-#4 Bars

(2) 9-#4 Bars

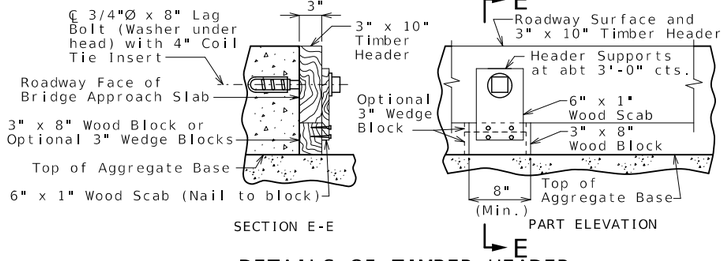
(3) ℄ 3/4" Jt. Filler

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

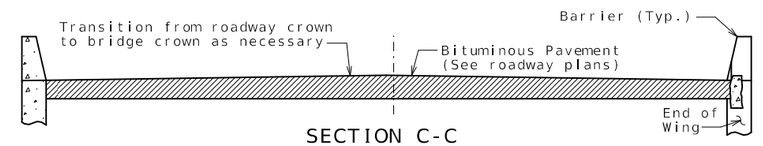
SECTION B-B
(Integral end bent)



PART SECTION B-B
(Non-integral end bent)

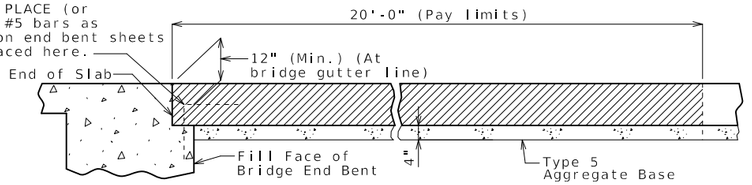


DETAILS OF TIMBER HEADER
Remove timber header when concrete pavement is placed.

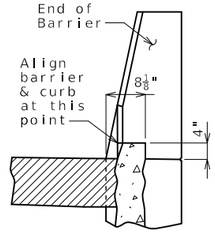


SECTION C-C

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



SECTION D-D



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

OPTIONAL CONCRETE SLAB

OPTIONAL ASPHALT SLAB (NOT ALLOWED WITH CONCRETE PAVEMENT)

BRIDGE APPROACH SLAB (MINOR)

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

Detailed July 2024
Checked Jan. 2025

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

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
02/20/2025 9:12:15 AM
TYLER R. LINDSAY - CIVIL
MO-PE-2019000128

DATE PREPARED 2/20/2025

ROUTE	STATE
M	MO
DISTRICT	SHEET NO.
BR	9

COUNTY JASPER

JOB NO. JSR0074

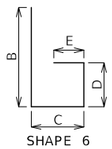
CONTRACT ID.

PROJECT NO.

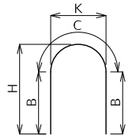
BRIDGE NO. A28621

DESCRIPTION	DATE

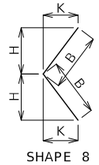
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



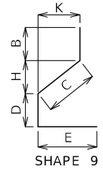
SHAPE 6
or 6S



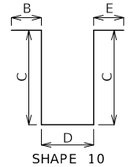
SHAPE 7



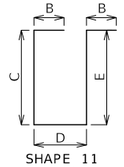
SHAPE 8
or 8S



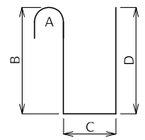
SHAPE 9
or 9S



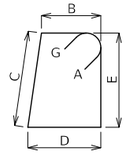
SHAPE 10
or 10S



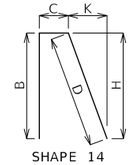
SHAPE 11
or 11S



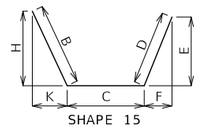
SHAPE 12



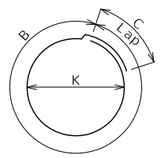
SHAPE 13S



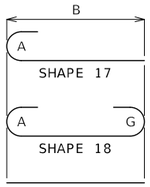
SHAPE 14
or 14S



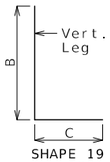
SHAPE 15
or 15S



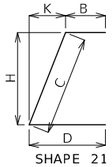
SHAPE 16



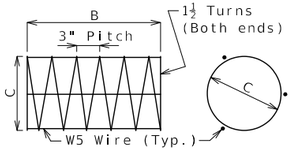
SHAPE 20



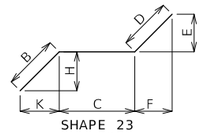
SHAPE 19
or 19S



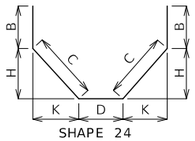
SHAPE 21
or 21S



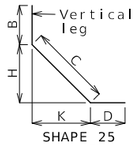
SHAPE 22



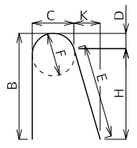
SHAPE 23
or 23S



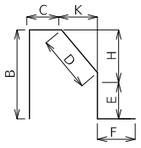
SHAPE 24
or 24S



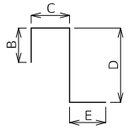
SHAPE 25
or 25S



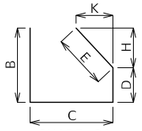
SHAPE 26



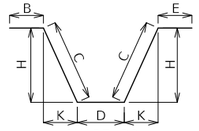
SHAPE 27S



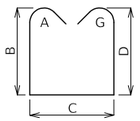
SHAPE 28
or 28S



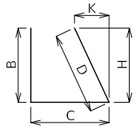
SHAPE 29
or 29S



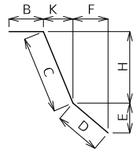
SHAPE 30
or 30S



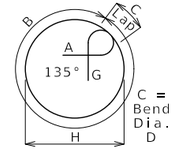
SHAPE 31S



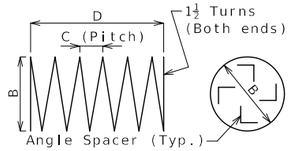
SHAPE 32
or 32S



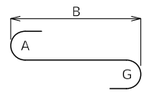
SHAPE 33
or 33S



SHAPE 34S



SHAPE 35 (1)

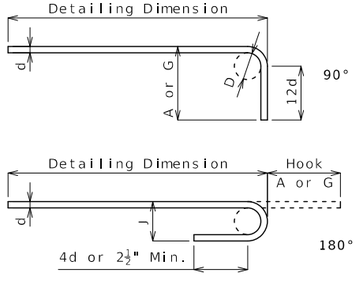


SHAPE 36

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	4½"	12"	8¼"	6"
#7	2	5¼"	14"	9⅜"	7"
	3	7"	15"	11½"	8¾"
#8	2	6"	16"	11"	8"
	3	8"	17"	13¼"	10"
#9	1	9½"	19½"	15½"	11¾"
#10	1	10¾"	22"	17½"	13¼"
#11	1	12"	24½"	19½"	14⅞"
#14	1	18¼"	31¼"	27½"	21⅝"
#18	1	24"	41½"	36¾"	28½"

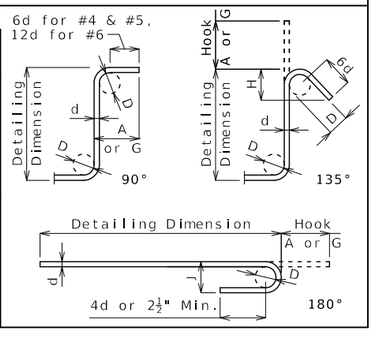


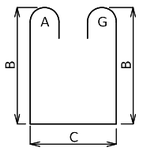
Stirrup Pin Bend Shapes (S)

Size	Case	D	A or G			H	J
			90°	135°	180°	135°	180°
#4	2	2"	4½"	4½"	5"	2⅝"	3"
	3	3"	5"	5¼"	6"	3"	4"
#5	2	2½"	5¾"	5¾"	5¾"	3⅝"	3¾"
	3	3¾"	6¼"	6½"	7"	3⅞"	5"
#6	1	4½"	12"	7¾"	8¼"	4⅝"	6"

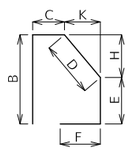
Applicable for all grades of steel.

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





SHAPE 37S



SHAPE 38S

BENDING DIAGRAMS

All dimensions are out to out.

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

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

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

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

Reinforcing Steel Totals (Pounds)

		Substructure		Superstructure			Entire Bridge	
	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	7,616	6,080	352	0	14,048
	6	0	0	22,111	0	0	0	22,111
	7	0	0	0	0	0	0	0
	8	0	0	702	0	0	0	702
	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	30,429	6,080	352	0	36,861

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

BENDING DIAGRAMS AND REINFORCING STEEL TOTALS

Detailed Jan. 2025
Checked Jan. 2025

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

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
02/20/2025 9:12:35 AM
TYLER R. LINDSAY - CIVIL
MO-PE-2019000128

DATE PREPARED
2/20/2025

ROUTE	STATE
M	MO
DISTRICT	SHEET NO.
BR	10

COUNTY
JASPER

JOB NO.
JSR0074

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A28621

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	C	D	E	F	H	K	Nom. Length	Actual Length	Weight
						ft in.	ft in.	ft in.	ft in.	ft in.	ft in.	ft in.	ft in.	ft in.	lb
		Superstructure													
		End Bent 1 & 4													
6	6 F100	WING BRACE	E	15S		2 3.00	5 2.00	14.00	8.00	11.50	15.50	22.00	8 7	8 6	77
6	6 F101	DIAPHRAGM	E	21S			5 0.00	2 3.75			4 8.50	20.50	7 4	7 3	65
6	6 F102	WING BRACE	E	15S		14.00	3 8.25	2 3.00	22.00	15.50	11.50	8.00	7 1	7 0	63
6	6 F103	DIAPHRAGM	E	23S		2 4.00	5 0.00				2 2.25	9.50	7 4	7 1	64
18	6 H100	SLAB & DIAPHRAGM	E	20		32 4.00							32 4	32 4	874
6	6 H101	DIAPHRAGM	E	20		36 3.00							36 3	36 3	327
20	6 H102	WING	E	20		5 4.00							5 4	5 4	160
20	6 H103	WING	E	20		5 9.00							5 9	5 9	173
16	8 H104	WING	E	20		8 0.00							8 0	8 0	342
16	8 H105	WING	E	20		8 5.00							8 5	8 5	360
24	6 H106	WING	E	20		7 8.00							7 8	7 8	276
64	6 U100	DIAPHRAGM	E	19S		19.50	2 4.75						4 0	3 10	368
64	5 U101	DIAPHRAGM	E	37S		2 5.00	22.25						7 8	7 6	501
80	6 U102	DIAPHRAGM	E	19S		2 6.00	4 3.00						6 9	6 7	791
56	5 U103	DIAPHRAGM	E	19S		2 0.00	15.00						3 3	3 2	185
24	6 V100	DIAPHRAGM	E	19S		19.50	6.00						2 2	2 0	72
56	6 V101	WING	E	20		5 7.00							5 7	5 7	470
		Slab													
132	5 S1	SLAB	E	20		50 4.00							50 4	50 4	6,930
96	6 S2	SLAB	E	20		24 0.00							24 0	24 0	3,461
289	6 S3	SLAB	E	20		30 5.00							30 5	30 5	13,203
38	6 S4	SLAB	E	20	2	29 1.00							29 1	29 1	
		Incr. = 17.875"				2 3.00							2 3	2 3	894
32	6 S5	SLAB	E	20	2	29 10.00							29 10	29 10	
		Incr. = 22.000"				2 4.00							2 4	2 4	773
		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
52	5 K2	BARRIER	E	27S		3 8.00	9.25	14.50	2 5.75		14.25	2.75	8 2	7 11	429
4	5 K3	BARRIER	E	27S		21.00	9.25	14.50	6.25	12.00	14.25	2.75	5 3	4 11	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	38S	4			18.50	9.50	8.25	18.00	4.00	3 0	2 11	
		Incr. = 0.500"						20.50	9.50	8.25	20.00	4.50	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	10.00			2 6.00	6.25	3 5	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		2 8.50	10.00			2 7.75	6.75	3 7	3 6	
		Incr. = 0.750"					3 2.50	10.00			3 1.75	7.75	4 1	4 0	141
8	5 K10	BARRIER	E	19S		3 3.00	10.00						4 1	4	33
8	5 K11	BARRIER	E	21S			3 3.00	10.00			3 2.25	7.75	4 1	4 0	33
24	5 K12	BARRIER	E	20		8 10.00							8 10	8 10	221
12	5 K13	BARRIER	E	20	4	8 1.00							8 1	8 1	
		Incr. = 36.000"				2 1.00							2 1	2 1	64
24	5 K14	BARRIER	E	20		8 4.00							8 4	8 4	209
12	5 K15	BARRIER	E	20	4	7 7.00							7 7	7 7	
		Incr. = 36.000"				19.00							1 7	1 7	57
192	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	1,352
192	5 R2	BARRIER	E	19S		19.00	9.50						2 5	2 3	451
192	5 R3	BARRIER	E	27S			9.50	15.25	3.50	12.00	15.00	3.00	3 4	3 2	634
20	5 R4	BARRIER	E	20		26 11.00							26 11	26 11	561
20	5 R5	BARRIER	E	20		37 9.00							37 9	37 9	787
20	5 R6	BARRIER	E	20		27 5.00							27 5	27 5	572
		Slip-Form													
24	5 C1	SLIP FORM	E	20		12 0.00							12	12	300
4	5 C2	SLIP FORM	E	20		6 9.00							6 9	6 9	28

Bill of Reinforcing Steel

No. Req.	Size/ Mark	Location	Codes C	SH	V	Dimensions B	C	D	E	F	H	K	Nom. Length	Actual Length	Weight
						ft in.	ft in.	ft in.	ft in.	ft in.	ft in.	ft in.	ft in.	ft in.	lb
4	5 C3	SLIP FORM	E	20		5 9.00							5 9	5 9	24

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. 10.

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.

BILL OF REINFORCING STEEL

Detailed Jan. 2025
Checked Jan. 2025

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

STATE OF MISSOURI
TYLER R. LINDSAY
NUMBER PE-2019000128
PROFESSIONAL ENGINEER
02/20/2025 9:12:46 AM
TYLER.R.LINDSAY-CIVIL
MO-PE-2019000128

DATE PREPARED
2/20/2025

ROUTE	STATE
M	MO
DISTRICT	SHEET NO.
BR	11

COUNTY
JASPER

JOB NO.
JSR0074

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A28621

DESCRIPTION	DATE

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