DESIGN DESIGNATION

A.A.D.T. - 2025 =	1,710
A.A.D.T. - 2045 =	2,087
T =	13.93%
V =	55 M.P.H.
PEAK HOUR =	11.86%
DIRECTIONAL DISTRIBUTION =	47.6%/52.4%
FUNCTIONAL CLASSIFICATION -	MAJOR COLLECTOR

RIGHT OF WAY

RIGHT OF WAY LIMITS FOR THIS PROJECT EXTEND FROM STA. 273+20 TO 280+00, A DISTANCE OF 0.129 MILES

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	

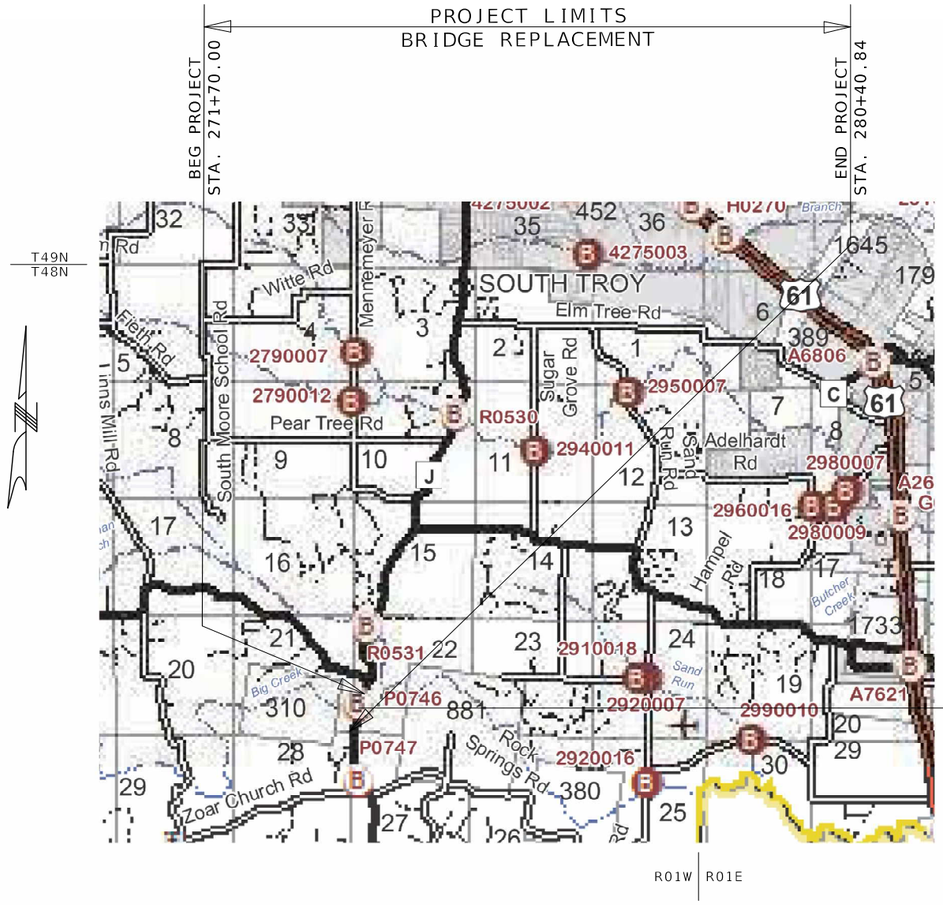
NOTE: DASHED OR OPEN SYMBOLS INDICATE EXISTING FEATURES

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

PLANS FOR PROPOSED STATE HIGHWAY LINCOLN COUNTY ROUTE J

T48N, R01W

KEY MAP
LOCATION OF LINCOLN 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. 271+70.00
END OF PROJECT	STA. 280+40.84
APPARENT LENGTH	870.84 FEET
EQUATIONS AND EXCEPTIONS:	
272+59.29 BK = 272+50.00 AH	+9.29'
TOTAL CORRECTIONS	9.29 FEET
NET LENGTH OF PROJECT	880.13 FEET
STATE LENGTH	0.167 MILES
FOR INFORMATION ONLY ESTIMATED DISTURBED ACRES	0.60 ACRES

STATE OF MISSOURI
CHRISTOPHER S. KNAPP
NUMBER PE-2005023325
PROFESSIONAL ENGINEER
09/29/2025 12:37:54 PM
CHRISTOPHER S. KNAPP - CIVIL
MO-PE-2005023325

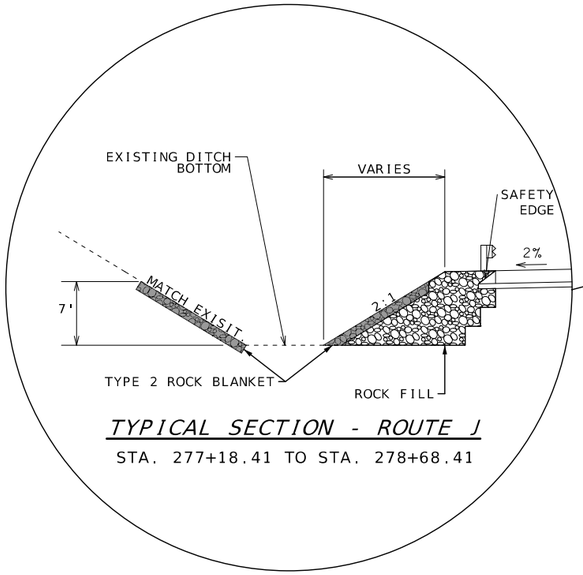
DATE PREPARED: 9/29/2025

ROUTE	STATE
J	MO
DISTRICT	SHEET NO.
NE	1

COUNTY: LINCOLN
JOB NO.: JNE0051
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

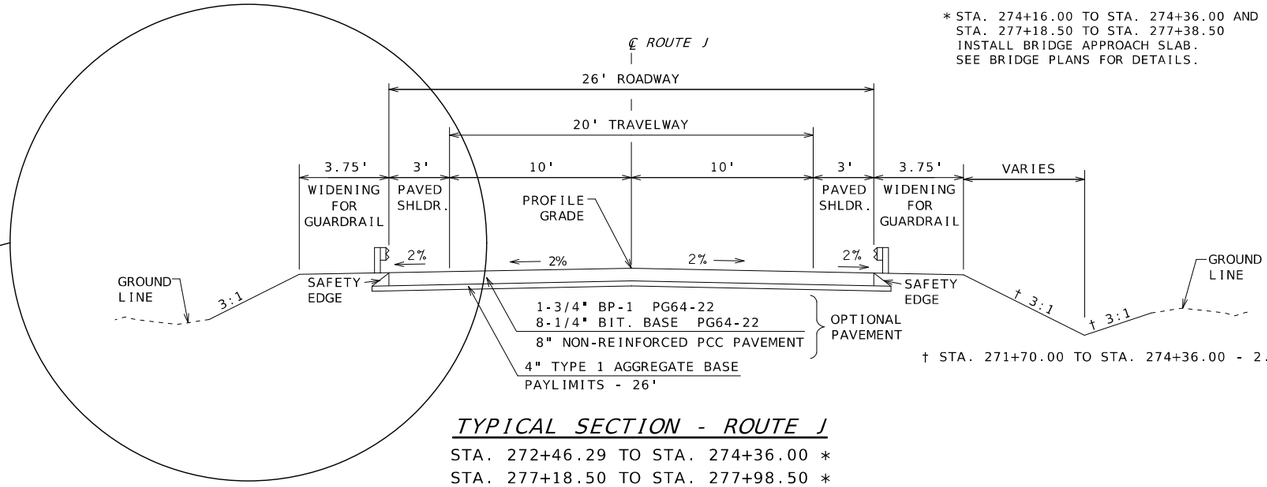
DESCRIPTION	DATE

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



TYPICAL SECTION - ROUTE J

STA. 277+18.41 TO STA. 278+68.41

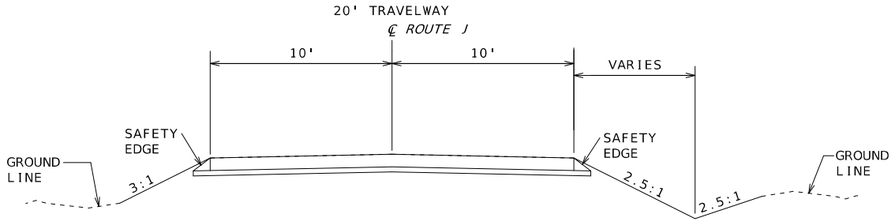


* STA. 274+16.00 TO STA. 274+36.00 AND STA. 277+18.50 TO STA. 277+38.50 INSTALL BRIDGE APPROACH SLAB. SEE BRIDGE PLANS FOR DETAILS.

TYPICAL SECTION - ROUTE J

STA. 272+46.29 TO STA. 274+36.00 *
STA. 277+18.50 TO STA. 277+98.50 *

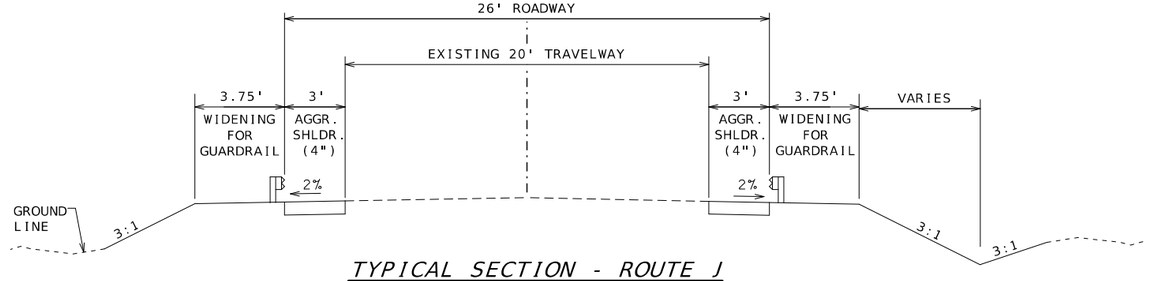
† STA. 271+70.00 TO STA. 274+36.00 - 2.5:1



TYPICAL SECTION - ROUTE J

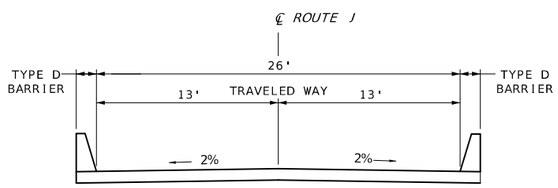
STA. 271+70.00 TO STA. 272+46.29 †

† GUARDRAIL SHOULDER WIDENING
20:1 TAPER FROM 26'-20'
FROM GUARDRAIL END TERMINAL



TYPICAL SECTION - ROUTE J

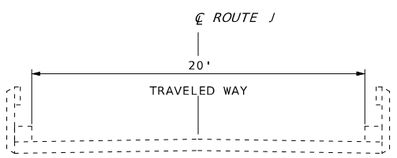
STA. 277+98.50 TO STA. 280+40.84



PROPOSED TYPICAL SECTION

BRIDGE #A9480

STA. 274+36.00 TO STA. 277+18.50



EXISTING TYPICAL SECTION

BRIDGE #P0746

STA. 274+45.00 TO STA. 277+08.38

STATE OF MISSOURI
CHRISTOPHER S. KNAPP
NUMBER PE-2005023325
PROFESSIONAL ENGINEER
09/29/2025 12:38:51 PM
CHRISTOPHER S. KNAPP - CIVIL
MO-PE-2005023325

DATE PREPARED: 9/29/2025

ROUTE	STATE
J	MO
DISTRICT	SHEET NO.
NE	2

COUNTY: LINCOLN

JOB NO.: JNE0051

CONTRACT ID.:

PROJECT NO.:

BRIDGE NO.:

DESCRIPTION	DATE

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

TYPICAL SECTION
SHEET 1 OF 1
NOT TO SCALE

REMOVAL OF IMPROVEMENTS

SHEET	STATION	STATION	LOCATION	QUANTITY UNITS	REMARKS
11	271+70.00	277+98.50	RTE J	9 EACH	REMOVE OBJECT MARKER SIGNS AND POSTS AT 4 BRIDGE CORNERS
11	274+14.65		RTE J	1 EACH	REMOVE REVERSE CURVE RIGHT ARROR WITH ADVISORY SPEED SIGNS, POSTS, AND ANCHORS
11	272+32.55		RTE J	2 EACH	REMOVE SIDE ROAD WITH ADVISORY SPEED SIGNS, POST, AND ANCHORS (BOTH SIDES)
11	271+70.00	277+98.50	RTE J	40.89 LIN. FT.	SAW CUT AT BEGIN AND END OF NEW PAVEMENT
11	271+70.00	274+36.00	RTE J	632 SQ.YD.	REMOVE EXISTING PAVEMENT ON THE NORTH END OF THE BRIDGE
11	277+18.50	277+98.50	RTE J	179 SQ.YD.	REMOVE EXISTING PAVEMENT ON THE SOUTH END OF THE BRIDGE
11	LM 5.352		RTE J	1 EACH	REMOVE WEIGHT LIMIT SIGNS, POSTS, AND ANCHORS (SBL)
11	LM 5.911		RTE J	1 EACH	REMOVE WEIGHT LIMIT SIGNS, POSTS, AND ANCHORS (NBL)
11	LM 6.101		RTE J	1 EACH	REMOVE WEIGHT LIMIT SIGNS, POSTS, AND ANCHORS (NBL)
	277+00.00	280+00.00	RTE J	300 STA.	REMOVE EXISTING DRIFT FROM STREAM (LT)
11	273+09.29		RTE J	52 LIN. FT.	REMOVE 18" CMP PIPE
11	272+44.00	274+41.00	RTE J	207 LIN. FT.	REMOVE FENCE AND POSTS
			TOTAL	1 LUMP SUM	

EARTHWORK

SHEET	STATION	STATION	LOCATION	CLASS A EXCAVATION C.Y.	COMPACTING EMBANKMENT C.Y.	EMBANKMENT IN PLACE C.Y.	FURNISHING ROCK FILL C.Y.	PLACING ROCK FILL C.Y.	REMARKS
4	271+70.00	274+35.50	RTE J	1619	177	-	-	-	NORTH END OF BRIDGE
4	277+19.00	280+40.84	RTE J	2374	627	-	-	-	SOUTH END OF BRIDGE
4	277+19.00	279+50.00	RTE J	-	-	-	2154.0	2154.0	SE BR. CORNER ROCK FILL
			TOTALS	3993	804	0	2154	2154	

NOTE: QUANTITIES INCLUDE BRIDGE END SPILL SLOPES AND EXCAVATION FOR ROCK BLANKET.

SUBGRADE COMPACTION (6 INCH DEPTH)

SHEET	STATION	STATION	LOCATION	LENGTH 100 FT.	REMARKS
4	271+70.00	274+36.00	RTE J	3.00	SUBGRADE PREPARATION FOR PAVEMENT NORTH END OF BRIDGE
4	277+18.50	277+98.50	RTE J	1.00	SUBGRADE PREPARATION FOR PAVEMENT SOUTH END OF BRIDGE
			TOTAL	4.00	

OPTIONAL PAVEMENT AND 4" TYPE 1 AGGREGATE BASE

SHEET	STATION	STATION	LOCATION	LENGTH FT.	WIDTH FT.	OPTIONAL PAVEMENT S.Y.	TYPE 1 AGG. FOR BASE (4") S.Y.	REMARKS
4	271+70.00	274+16.00	RTE J	255.29	VAR.	737.50	737.50	NORTH END PAVEMENT
4	277+38.50	277+98.50	RTE J	60.00	VAR.	154.65	154.65	SOUTH END PAVEMENT
					TOTAL	892.15	892.15	
					USE	892.2	893.0	

PIPE

SHEET	STATION	LOCATION	SKEW	GROUP A 18" PIPE L.F.	18 " GROUP A FLARED END SECTION EACH	CLASS 3 EXCAVATION C.Y.	REMARKS
4	273+35.00	CONSTRUCTION CL RTE J	41.55°	52	2	36	NEW 18" GROUP A PIPE WITH FES
			TOTAL	52	2	36	

ROCK BLANKET

SHEET	LOCATION	LENGTH FT.	DEPTH FT.	AREA SF	FURNISHING TYPE 2 ROCK BLANKET CY	PLACING TYPE 2 ROCK BLANKET CY	PERMANENT EROSION CONTROL GEOTEXTILE SY	REMARKS
7	RTE J	VAR.	2	3046	225.6	225.6	338.4	NORTH ROCK BLANKET
7	RTE J	VAR.	2	3593	266.1	266.1	399.2	SOUTH ROCK BLANKET
7	RTE J	VAR.	2	1288	95.4	95.4	143.1	SOUTH ROCK BLANKET BACKSLOPE
				TOTAL	587.1	587.1	880.7	
				USE	588.0	588.0	881	

STATE OF MISSOURI
CHRISTOPHER S. KNAPP
NUMBER PE-2005023325
PROFESSIONAL ENGINEER
09/29/2025 12:39:45 PM
CHRISTOPHER S. KNAPP - CIVIL
MO-PE-2005023325

DATE PREPARED: 9/29/2025

ROUTE	STATE
J	MO
DISTRICT	SHEET NO.
NE	3

COUNTY: LINCOLN

JOB NO.: JNE0051

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)

QUANTITIES SHEET 1 OF 3

GUARDRAIL

SHEET	STATION	STATION	MGS GUARDRAIL L.F.	MASH BRIDGE APPROACH TRANSITION SECTION (REGULAR/NO CURB) EACH	TYPE A CRASHWORTHY END TERMINAL (MASH) EACH	REMARKS
7	272+87.00	274+24.50	50.00	1	1	NE QUANDRANT OF BRIDGE
7	271+99.50	274+24.50	137.50	1	1	NW QUANDRANT OF BRIDGE
7	277+33.00	280+08.00	187.50	1	1	SE QUANDRANT OF BRIDGE
7	277+33.00	278+70.50	50.00	1	1	SW QUANDRANT OF BRIDGE
		TOTALS	425	4	4	

MOBILIZATION

QUANTITY = 1 LUMP SUM

CONTRACTOR FURNISHED SURVEYING AND STAKING

QUANTITY = 1 LUMP SUM

STANDARD SIGN ASSEMBLIES

SIGN NO.	STATION OR LOG MILE	LOCATION	SIGN, TYPE, DESIGNATION, SIZE & NUMBER OF EACH						
			SHR2L-1	SHR2L-1	SHR2L-1				
			W1-4R 36x36	W13-1P 24x18	 W2-2 36X36				
1	274+00.00	LT	1	1					
2	272+32.55	LT		1	1				
3	272+32.55	RT		1	1				
		TOTALS	1	3	2				

SIGN SUMMARY

EFFECTIVE: 10-01-2016

STANDARD OR SPECIAL SIGN DESIGNATION	SIGN DTL. SHT. NO.	NO. EACH	SIGN SIZE	TYPE & SQUARE FEET			
				FLAT SHEET SH ITEM NO. 9035004A	FLAT SHEET FLUORESCENT SHF* ITEM NO. 9035069A	STRUCTURAL ST ITEM NO. 9035011A	STRUCTURAL FLUORESCENT STF* ITEM NO. 9035071A
W1-4R		1	36 x 36		9.00		
W13-1P		3	24 x 18		9.00		
W2-2		2	36 x 36		18.00		
			TOTALS		36		

*ORANGE, YELLOW AND YELLOW-GREEN

SIGNS

902 SIGNAL SIGNS TABULATED ON D-37A SHEET

CONCRETE FOOTINGS EMBEDDED

PERFORATED SQUARE STEEL TUBE 2-INCH POST

EFFECTIVE: 07-01-2024

SIGN NO.	SIGN SIZE	STATION OR LOG MILE	HORIZ CLEAR IF NOT STD	LOCATION	SIGN DTL SHT NO.	CONCRETE FOOTINGS EMBEDDED ITEM NO. 9031010	POST NO.1	POST NO.2	TOTAL ITEM NO. 9031270A	ANCHORS DRIVEN 12 GA. ITEM NO. 9031271A	ANCHORS DRIVEN 7 GA. ITEM NO. 9031273A	ANCHORS CONCRETE 7 GA. ITEM NO. 9031274	REMARKS AND OTHER REQUIRED ITEMS
						CY	LF	LF	LF	EACH	EACH	EACH	
1	ASSY	274+00.00		RTE J-LT			16	0	16	1			
2	ASSY	272+32.55		RTE J-LT			16	0	16	1			
3	ASSY	272+32.55		RTE J-RT			16	0	16	1			
				SUBTOTAL					48	3			
				TOTAL					48	3			

TEMPORARY EROSION CONTROL

SHEET	SILT FENCE L.F.	ROCK DITCH CHECK L.F.	SEDIMENT TRAP C.Y.	TYPE C BERM L.F.	SEDIMENT REMOVAL C.Y.	REMARKS
10	271	210	0.5	415	17	ADJUST FOR FIELD CONDITIONS
TOTAL	271	210	0.5	415	17	
SEDIMENT REMOVAL ESTIMATED AT 1 CY PER DITCH CHECK AND 1 CY PER 100' OF SILT FENCE						
NOTE: EROSION CONTROL BLANKET TO BE USED WITH PERMANENT SEEDING AT THE LOCATIONS SHOWN ON THE PLANS.						

GRAVEL A OR CRUSHED STONE B - AGGREGATE SHOULDER

SHEET	STATION	STATION	WIDTH FT.	LENGTH FT.	AREA SF	GRAVEL A OR CRUSHED STONE B TONS	REMARKS
7	272+61.50	274+24.50	4.5	163	733.5	12.68	NE AGG. SHOULDER
7	271+65.50	274+24.50	4.5	259	1165.5	20.14	NW AGG. SHOULDER
7	277+33.00	280+51.00	4.5	318	1431.0	24.73	SE AGG. SHOULDER
7	277+33.00	279+52.00	4.5	219	985.5	17.03	SW AGG. SHOULDER
					TOTAL	74.6	
					USE	75.0	
NOTE: 1.4 TONS/CY FACTOR USED. 4" DEPTH OF ROCK ASSUMED							

CLEARING AND GRUBBING

SHEET	STATION	STATION	ROUTE	LOCATION	UNITS	REMARKS
4	272+03.76	274+44.47	J	RIGHT	14	NORTHWEST END OF BRIDGE
4	276+55.33	280+10.86	J	LEFT	22	SOUTHEAST END OF BRIDGE
4	276+29.42	279+57.66	J	RIGHT	16	SOUTHWEST END OF BRIGE
				SUBTOTAL	52	
				TOTAL	0.6 ACRE	
PAY ITEM IS PER ACRE				USE	1 ACRE	

CLASS 1 PAVEMENT MARKING

SHEET	STATION	STATION	CLASS 1 MARKING PAINT WITH TYPE P BEADS 4" YELLOW L.F.	CLASS 1 MARKING PAINT WITH TYPE P BEADS 4" WHITE L.F.	REMARKS
7	271+70.00	279+00.00	924	-	SOLID NBL INTERMITTENT STRIPE SBL CENTERLINE MARKING
7	279+00.00	280+40.84	35	-	INTERMITTENT STRIPE CENTERLINE MARKING
7	271+70.00	280+40.84	-	880	NBL EDGELINE
7	271+70.00	280+40.84	-	880	SBL EDGELINE
		TOTALS	959	1760	

MISCELLANEOUS SEEDING AND MULCHING

0.53 ACRES	ESTIMATED PERMANENT SEEDING
0.53 ACRES	ESTIMATED TEMPORARY SEEDING
TOTAL	1 LUMP SUM
NOTE: SEEDING ACRES FOR INFORMATION ONLY.	

STATE OF MISSOURI
CHRISTOPHER S. KNAPP
NUMBER PE-2005023325
PROFESSIONAL ENGINEER
09-29-2025 1:32:14 PM
CHRISTOPHER S. KNAPP - CIVIL
MO-PE-2005023325

DATE PREPARED: 9/29/2025

ROUTE	STATE
J	MO
DISTRICT	SHEET NO.
NE	3

COUNTY: LINCOLN
JOB NO.: JNE0051
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)

QUANTITIES SHEET
2 OF 3

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL AREA SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NO.	DESCRIPTION
WARNING SIGNS								
WO1-1L	48X48	16.00						TURN (SYMBOL LEFT)
WO1-1R	48X48	16.00						TURN (SYMBOL RIGHT)
WO1-2L	48X48	16.00						CURVE (SYMBOL LEFT)
WO1-2R	48X48	16.00						CURVE (SYMBOL RIGHT)
WO1-3L	48X48	16.00						REVERSE TURN (SYMBOL LEFT)
WO1-3R	48X48	16.00						REVERSE TURN (SYMBOL RIGHT)
WO1-4L	48X48	16.00						REVERSE CURVE (SYMBOL LEFT)
WO1-4R	48X48	16.00						REVERSE CURVE (SYMBOL RIGHT)
WO1-4bL	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL LEFT)
WO1-4bR	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL RIGHT)
WO1-4cL	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL LEFT)
WO1-4cR	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL RIGHT)
WO1-6	60X30	12.50						HORIZONTAL ARROW (SYMBOL)
WO1-6a	72X36	18.00						HORIZ. ARROW (SYMBOL ON PERMANENT BARRICADE)
WO1-7	60X30	12.50						DOUBLE HEAD HORIZONTAL ARROW (SYMBOL)
WO1-7a	72X36	18.00						DOUBLE HEAD HORIZ. ARROW (SYMBOL ON PERM. BARR.)
WO1-8	18X24	3.00						CHEVRON (SYMBOL)
WO1-8a	30X36	7.50						CHEVRON (SYMBOL FOR DIVIDED HIGHWAYS)
WO3-1	48X48	16.00						STOP AHEAD (SYMBOL)
WO3-2	48X48	16.00						YIELD AHEAD (SYMBOL)
WO3-3	48X48	16.00						SIGNAL AHEAD (SYMBOL)
WO3-4	48X48	16.00						BE PREPARED TO STOP
WO3-5	48X48	16.00						SPEED LIMIT AHEAD
WO4-1L	48X48	16.00						MERGE (SYMBOL FROM LEFT)
WO4-1R	48X48	16.00						MERGE (SYMBOL FROM RIGHT)
WO4-1aL	48X48	16.00						MERGE (LEFT)
WO4-1aR	48X48	16.00						MERGE (RIGHT)
WO5-1	48X48	16.00						ROAD/BRIDGE/RAMP NARROWS
WO5-3	48X48	16.00						ONE LANE BRIDGE
WO5-5	48X48	16.00						NARROW LANES
WO6-1	48X48	16.00						DIVIDED HIGHWAY (SYMBOL)
WO6-2	48X48	16.00						DIVIDED HIGHWAY END (SYMBOL)
WO6-3	48X48	16.00						TWO WAY TRAFFIC (SYMBOL)
WO7-3a	30X24	5.00						NEXT XX MILES (PLAQUE)
WO8-1	48X48	16.00						BUMP
WO8-2	48X48	16.00						DIP
WO8-3	48X48	16.00						PAVEMENT ENDS
WO8-4	48X48	16.00						SOFT SHOULDER
WO8-5	48X48	16.00						SLIPPERY WHEN WET (SYMBOL)
WO8-6	48X48	16.00						TRUCK CROSSING
WO8-6c	48X48	16.00						TRUCK ENTRANCE
WO8-7	36X36	9.00						LOOSE GRAVEL
WO8-7a	36X36	9.00						FRESH OIL / LOOSE GRAVEL
WO8-9	48X48	16.00						LOW SHOULDER
WO8-11	48X48	16.00						UNEVEN LANES
WO8-12	48X48	16.00						NO CENTER LINE
WO8-15	48X48	16.00						GROOVED PAVEMENT
WO8-15P	30X24	5.00						MOTORCYCLE (PLAQUE)
WO8-17L	48X48	16.00						SHOULDER DROP-OFF (SYMBOL LEFT)
WO8-17R	48X48	16.00						SHOULDER DROP-OFF (SYMBOL RIGHT)
WO8-17P	30X24	5.00						SHOULDER DROP-OFF (PLAQUE)
W10-1	42RND.	9.62						RAILROAD CROSSING
WO12-1	24X24	4.00						DOUBLE DOWN ARROW (SYMBOL)
WO12-2	48X48	16.00						LOW CLEARANCE (SYMBOL)
WO12-2x	24X18	3.00						LOW CLEARANCE (PLAQUE)
WO12-2a	84X24	14.00						OVERHEAD LOW CLEARANCE (FEET AND INCHES)
WO12-4	120X60	50.00						LOW CLEARANCE XX FT XX IN XX MILES AHEAD
WO12-5	120X60	50.00						WIDTH RESTRICTION XX FT XX IN XX MILES AHEAD
WO13-1	30X30	6.25						ADVISORY SPEED (PLAQUE)
WO16-2	30X24	5.00						XXX FEET (PLAQUE)
WO16-3	30X24	5.00						X MILE (PLAQUE)
WO20-1	48X48	16.00						ROAD/BRIDGE/RAMP WORK AHEAD
WO20-2	48X48	16.00	2	32.00			18	DETOUR AHEAD
WO20-3	48X48	16.00	4	64.00			20A/B	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 NO.	DESCRIPTION
GUIDE SIGNS								
E05-1	36X48	12.00						GORE EXIT
E05-2	48X36	12.00						EXIT OPEN
E05-2a	48X36	12.00						EXIT CLOSED
GO20-1	60X24	10.00						ROAD WORK NEXT XX MILES
GO20-2	48X24	8.00						END ROAD WORK
GO20-4	36X18	4.50						PILOT CAR FOLLOW ME
GO20-4a	42X30	8.75						PILOT CAR IN USE WAIT & FOLLOW
GO20-4a	18X12	1.50						PILOT CAR IN USE WAIT & FOLLOW
GO20-5aP	36X24	6.00						WORK ZONE (PLAQUE)
MO4-8a	24X18	3.00	2	6.00			52	END DETOUR
MO4-9L	48X36	12.00						DETOUR (LEFT)
MO4-9R	48X36	12.00						DETOUR (RIGHT)
MO4-9P	48X12	4.00						STREET NAME (PLAQUE)
MO4-10L	48X18	6.00						DETOUR ARROW (LEFT)
MO4-10R	48X18	6.00						DETOUR ARROW (RIGHT)
REGULATORY SIGNS								
R1-1	48X48	13.25						STOP
R1-2	48TRI.	6.93						YIELD
R1-2a	36X36	9.00						TO ONCOMING TRAFFIC (PLAQUE)
R1-3P	30X12	2.50						ALL WAY (PLAQUE)
R2-1	36X48	12.00						SPEED LIMIT 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	20.00			29	ROAD CLOSED
R11-3a	60X30	12.50	1	12.50			55	ROAD CLOSED 1 MILES AHEAD LOCAL TRAFFIC ONLY
R11-4	60X30	12.50	1	12.50			61	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	44	660.00			50A-E	DETOUR SIGN TREE

616-10.05 CONSTRUCTION SIGNS	TOTAL
	807

616-10.10 RELOCATED SIGNS	TOTAL

ITEM NUMBER	TOTAL QTY	EFFECTIVE: 07-01-2025 DESCRIPTION
6122008		IMPACT ATTENUATOR 40 MPH (SAND BARRELS)
6122009		IMPACT ATTENUATOR 45 MPH (SAND BARRELS)
6122010		IMPACT ATTENUATOR 50 MPH (SAND BARRELS)
6122012		IMPACT ATTENUATOR 55 MPH (SAND BARRELS)
6122014		IMPACT ATTENUATOR 60 MPH (SAND BARRELS)
6122017		IMPACT ATTENUATOR 65 MPH (SAND BARRELS)
6122019		IMPACT ATTENUATOR 70 MPH (SAND BARRELS)
6122020		REPLACEMENT SAND BARREL
6122030		IMPACT ATTENUATOR (RELOCATION)
6122040		WORK ZONE CRASH CUSHION (NARROW)
6122041		WORK ZONE CRASH CUSHION (RELOCATION)
6123001		TRUCK MOUNTED ATTENUATOR (TMA)
6161012		BUOYS (BOATS KEEP OUT)
6161013		BUOYS (NO WAKE)
6161014		SPECIAL SIGN ASSEMBLY (BOATS KEEP OUT)
6161020		CHANNELIZER (DRUM-LIKE)
6161022		CHANNELIZER (CONE)
6161025		CHANNELIZER (TRIM-LINE)
6161026		CHANNELIZER (VERTICAL PANEL)
6161030	10	TYPE 3 MOVEABLE BARRICADE
6161033		DIRECTION INDICATOR BARRICADE
6161040		FLASHING ARROW PANEL
6161047		TYPE 3 OBJECT MARKER
6161055		SEQUENTIAL FLASHING WARNING LIGHT
6161070		TUBULAR MARKER
6161095		RADAR SPEED ADVISORY SYSTEM
6161096		CHANGEABLE MESSAGE SIGN, COMMISSION FURNISHED/RETAINED
6161098A	2	CHANGEABLE MESSAGE SIGN WITHOUT COMM. INTERFACE, CONTRACTOR FURNISHED/RETAINED
6161099		CHANGEABLE MESSAGE SIGN WITH COMM. INTERFACE, CONTRACTOR FURNISHED/RETAINED
6162000A		WORK ZONE TRAFFIC SIGNAL SYSTEM
6162002		TEMPORARY LONG-TERM RUMBLE STRIPS
6173600D		TEMPORARY TRAFFIC BARRIER, CONTRACTOR FURNISHED/RETAINED
6173700B		TEMP. TRAFFIC BARRIER ANCHORED, CONTRACTOR FURNISHED/RETAINED
6173706		TEMP. TRAFFIC BARRIER STIFFNESS TRANSITION CONTRACTOR FURNISHED/RETAINED
6174000A		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION, CONTRACTOR FURNISHED/RETAINED
6175010A		RELOCATING TEMPORARY TRAFFIC BARRIER
6175011B		RELOCATING TEMP. TRAFFIC BARRIER ANCHORED
6175013		RELOCATING TEMP. TRAFFIC BARRIER STIFFNESS
6175020A		RELOCATING TEMP. TRAFFIC BARRIER HEIGHT
6208064A		TEMPORARY RAISED PAVEMENT MARKER
9029400		TEMPORARY TRAFFIC SIGNALS
9029401		TEMPORARY TRAFFIC SIGNALS AND LIGHTING

STATE OF MISSOURI
CHRISTOPHER S. KNAPP
NUMBER PE-2005023325
PROFESSIONAL ENGINEER
09/29/2025 12:41:01 PM
CHRISTOPHER S. KNAPP - CIVIL
MO-PE-2005023325

DATE PREPARED: 9/29/2025

ROUTE	STATE
J	MO

DISTRICT	SHEET NO.
NE	3

COUNTY: LINCOLN

JOB NO.: JNE0051

CONTRACT ID.:

PROJECT NO.:

BRIDGE NO.:

DESCRIPTION

DATE

DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

MoDOT

QUANTITIES SHEET
3 OF 3

GENERAL NOTES:

ALL BEARINGS BASED ON MODIFIED STATE PLANE EAST ZONE COORDINATES.

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.

RIGHT OF WAY LIMITS FOR THIS PROJECT EXTEND FROM STA. 273+20.00 TO STA. 280+00.00, A DISTANCE OF 0.129 MILES

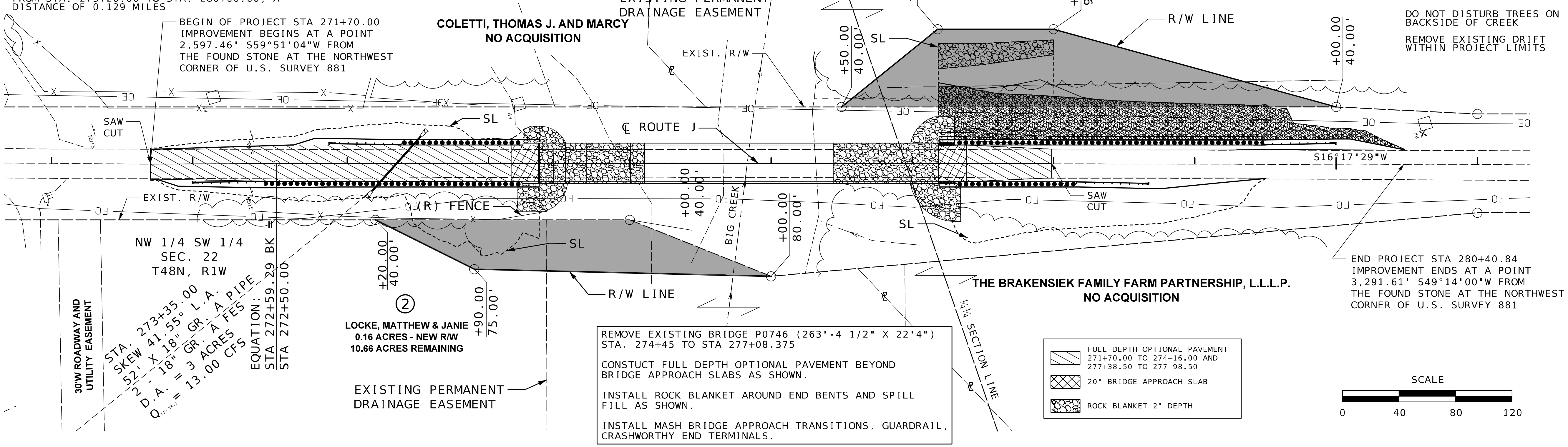
BRIDGE NO. A9480
STA. 274+36.00 TO STA. 277+18.50+/- ℄ ROUTE J
(80'-120'-80') PRESTRESSED CONCRETE NU-GIRDER SPANS.
26' WIDTH (SYMMETRICAL) PLUS 16" TYPE D BARRIER EACH SIDE
TANGENT ALIGNMENT, NO SKEW, HL-93 LOADING
D.A. 61.1 SQ.MI.

EVERSMEYER FAMILY RESIDENCE TRUST
0.27 ACRES - NEW R/W
73.97 ACRES REMAINING

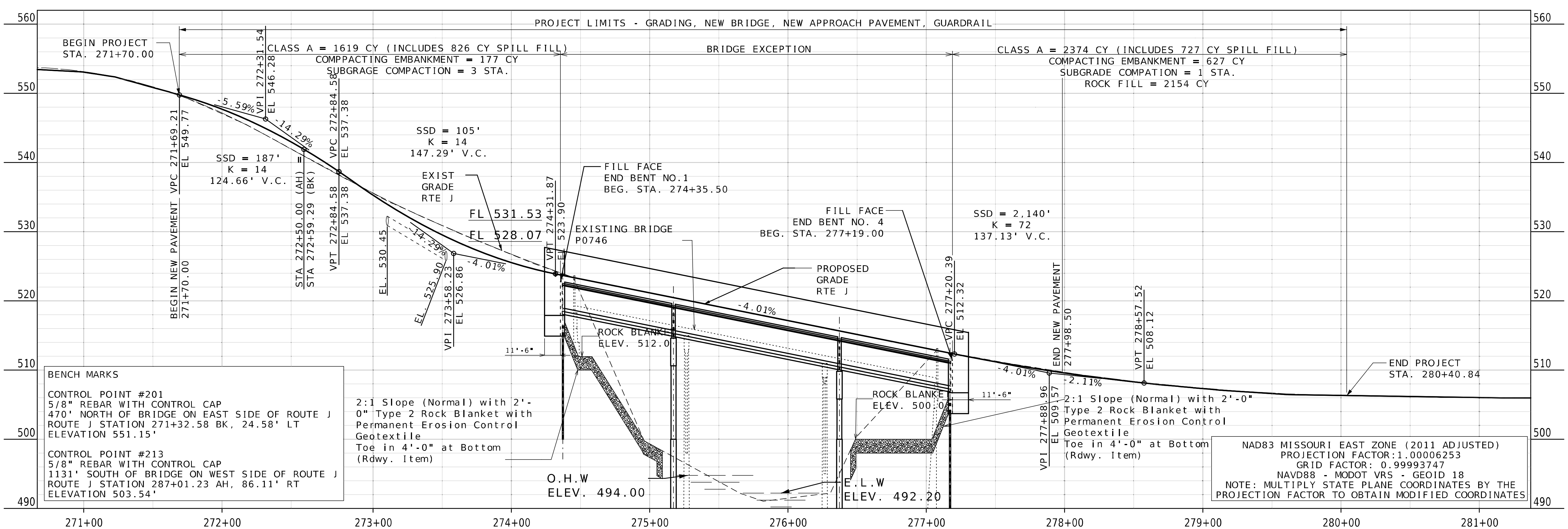
NOTE:

DO NOT DISTURB TREES ON BACKSIDE OF CREEK

REMOVE EXISTING DRIFT WITHIN PROJECT LIMITS



EXISTING PERMANENT DRAINAGE EASEMENT
275
280
①
SW 1/4 SW 1/4
SEC. 22
T48N, R1W
BEGIN OF PROJECT STA 271+70.00
IMPROVEMENT BEGINS AT A POINT
2,597.46' S59°51'04"W FROM
THE FOUND STONE AT THE NORTHWEST
CORNER OF U.S. SURVEY 881
COLETTI, THOMAS J. AND MARCY
NO ACQUISITION
EXIST. R/W
SL
R/W LINE
+18.00 95.00'
+00.00 95.00'
+50.00 40.00'
+00.00 40.00'
SAW CUT
℄ ROUTE J
(R) FENCE
BIG CREEK
+00.00 80.00'
+20.00 40.00'
+90.00 75.00'
S16°17'29"W
NW 1/4 SW 1/4
SEC. 22
T48N, R1W
30'W ROADWAY AND UTILITY EASEMENT
STA. 273+35.00
SKEW 41.55° L.A.
52' X 18" GR. A PIPE
2 - 18" GR. A FES
D.A. = 3 ACRES
Q(25 YR.) = 13.00 CFS
EQUATION:
STA 272+59.29 BK
STA 272+50.00
②
LOCKE, MATTHEW & JANIE
0.16 ACRES - NEW R/W
10.66 ACRES REMAINING
THE BRAKENSIEK FAMILY FARM PARTNERSHIP, L.L.L.P.
NO ACQUISITION
1/4 1/4 SECTION LINE
END PROJECT STA 280+40.84
IMPROVEMENT ENDS AT A POINT
3,291.61' S49°14'00"W FROM
THE FOUND STONE AT THE NORTHWEST
CORNER OF U.S. SURVEY 881
REMOVE EXISTING BRIDGE P0746 (263'-4 1/2" X 22'4")
STA. 274+45 TO STA 277+08.375
CONSTUCT FULL DEPTH OPTIONAL PAVEMENT BEYOND BRIDGE APPROACH SLABS AS SHOWN.
INSTALL ROCK BLANKET AROUND END BENTS AND SPILL FILL AS SHOWN.
INSTALL MASH BRIDGE APPROACH TRANSITIONS, GUARDRAIL, CRASHWORTHY END TERMINALS.
▨ FULL DEPTH OPTIONAL PAVEMENT 271+70.00 TO 274+16.00 AND 277+38.50 TO 277+98.50
▦ 20' BRIDGE APPROACH SLAB
▩ ROCK BLANKET 2' DEPTH
SCALE
0 40 80 120



PROJECT LIMITS - GRADING, NEW BRIDGE, NEW APPROACH PAVEMENT, GUARDRAIL
CLASS A = 1619 CY (INCLUDES 826 CY SPILL FILL)
COMPPACTING EMBANKMENT = 177 CY
SUBGRAGE COMPACTION = 3 STA.
BRIDGE EXCEPTION
CLASS A = 2374 CY (INCLUDES 727 CY SPILL FILL)
COMPACTING EMBANKMENT = 627 CY
SUBGRADE COMPATION = 1 STA.
ROCK FILL = 2154 CY
BEGIN PROJECT
STA. 271+70.00
BEGIN NEW PAVEMENT 271+70.00
VPC 271+69.21 EL 549.77
VPI 272+31.54 EL 546.28
-5.59%
-14.29%
SSD = 187'
K = 14
124.66' V.C.
STA 272+50.00 (AH) = STA 272+59.29 (BK)
VPC 272+84.58 EL 537.38
VPT 272+84.58 EL 537.38
SSD = 105'
K = 14
147.29' V.C.
EXIST GRADE RTE J
FL 531.53
FL 528.07
EL. 530.45
EL. 525.90
VPI 273+58.23 EL 526.86
-4.01%
VPT 274+31.87 EL 523.90
FILL FACE
END BENT NO.1
BEG. STA. 274+35.50
EXISTING BRIDGE
P0746
PROPOSED GRADE RTE J
FILL FACE
END BENT NO. 4
BEG. STA. 277+19.00
SSD = 2,140'
K = 72
137.13' V.C.
11'-6"
ROCK BLANKET ELEV. 512.0
ROCK BLANKET ELEV. 500.0
VPC 277+20.39 EL 512.32
END NEW PAVEMENT 277+98.50
VPI 277+88.96 EL 509.57
-2.11%
VPT 278+57.52 EL 508.12
END PROJECT
STA. 280+40.84
2:1 Slope (Normal) with 2'-0" Type 2 Rock Blanket with Permanent Erosion Control Geotextile Toe in 4'-0" at Bottom (Rdwy. Item)
O.H.W ELEV. 494.00
E.L.W ELEV. 492.20
560 550 540 530 520 510 500 490
271+00 272+00 273+00 274+00 275+00 276+00 277+00 278+00 279+00 280+00 281+00

BENCH MARKS

CONTROL POINT #201
5/8" REBAR WITH CONTROL CAP
470' NORTH OF BRIDGE ON EAST SIDE OF ROUTE J
ROUTE J STATION 271+32.58 BK, 24.58' LT
ELEVATION 551.15'

CONTROL POINT #213
5/8" REBAR WITH CONTROL CAP
1131' SOUTH OF BRIDGE ON WEST SIDE OF ROUTE J
ROUTE J STATION 287+01.23 AH, 86.11' RT
ELEVATION 503.54'

NAD83 MISSOURI EAST ZONE (2011 ADJUSTED)
PROJECTION FACTOR:1.00006253
GRID FACTOR: 0.99993747
NAVD88 - MODOT VRS - GEOID 18
NOTE: MULTIPLY STATE PLANE COORDINATES BY THE PROJECTION FACTOR TO OBTAIN MODIFIED COORDINATES

STATE OF MISSOURI
CHRISTOPHER S. KNAPP
NUMBER PE-2005023325
PROFESSIONAL ENGINEER
[illegible]
09/29/2025 12:41:52 PM
CHRISTOPHER S. KNAPP - CIVIL
MO-PE-2005023325

DATE PREPARED	9/29/2025
ROUTE J	STATE MO
DISTRICT NE	SHEET NO. 4
COUNTY	LINCOLN
JOB NO.	JNE0051
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-PROFILE
SHEET 1 OF 1

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

PROJECT COORDINATE INFORMATION	
COORDINATE SYSTEM	MODIFIED STATE PLANE
HORIZONTAL DATUM	NAD 83(2011) EPOCH 2010
VERTICAL DATUM	NAVD 88: GNSS
GEOID MODEL	18
ELEVATIONS DETERMINED BY	DIFFERENTIAL LEVELING/GPS-MODOT VRS
PROJECT PROJECTION FACTOR	1.000062530

REFERENCE CONTROL INFORMATION	
COORDINATE SYSTEM	MISSOURI COORDINATE SYSTEM OF 1983
CONTROL STATION	MISSOURI CORPS
DESIGNATION	MODOT WARRENTON CORPS ARP
CORS_ID	MOWR
PID	DL6157
LATITUDE	38 48 52.70169 N
LONGITUDE	091 09 40.92390 W
NORTHING (M)	331062.3840
EASTING (M)	192562.4610
ZONE	EAST
PROJECT AVERAGE GRID FACTOR	0.99993747

EXAMPLE OF PROJECT COORDINATE TO S.P.C.

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

EXAMPLE: CONTROL POINT #201
N 1119479.3401 X 0.99993747 = N 1119409.3390
E 674530.3807 X 0.99993747 = E 674488.2023

LINEAR UNIT CONVERSION

1 METER = 3.280833333 US SURVEY FEET (USFT)

COORDINATE POINT LISTING

SHEET NO	STATION	LOCATION	OFFSET (USFT)	MODIFIED STATE PLANE (GROUND) NORTHING (US SURVEY FT)	EASTING (US SURVEY FT)	ELEVATION (US SURVEY FT)	DESCRIPTION	GPK POINT ID
PROJECT CONTROL POINTS								
6	271+32.58	CL RTE J	24.82' LT	1,119,479.3401	674,530.3807	551.1543	5/8" REBAR W/ CONTROL CAP	201
6	268+88.72	CL RTE J	27.65' LT	1,119,702.2384	674,613.9019	546.9272	5/8" REBAR W/ CONTROL CAP	205
6	287+01.23	CL RTE J	86.11' RT	1,117,995.8090	673,981.4891	503.5428	5/8" REBAR W/ CONTROL CAP	213
6	291+22.67	CL RTE J	30.90' LT	1,117,560.7918	673,985.1257	508.8507	5/8" REBAR W/ CONTROL CAP	209
ALIGNMENTS								
4	271+70.00	CL RTE J	-	1,119,450.3223	674,496.2896	549.7752	BEG PROJECT	-
4	271+70.00	CL RTE J	-	1,119,450.3223	674,496.2896	549.7752	BEGIN NEW PAVEMENT	-
4	274+16.00	CL RTE J	-	1,119,205.2823	674,424.6748	524.6249	BEGIN BRIDGE APPROACH SLAB	-
4	277+38.50	CL RTE J	-	1,118,895.7315	674,334.2063	511.6178	END BRIDGE APPROACH SLAB	-
4	277+98.50	CL RTE J	-	1,118,838.1407	674,317.3749	509.6109	END NEW PAVEMENT	-
4	280+40.84	CL RTE J	-	1,118,598.4673	674,247.3285	506.2872	END OF PROJECT	-
4	271+69.21	CL RTE J	-	1,119,451.0806	674,496.5112	549.77	VPC	-
4	272+31.54	CL RTE J	-	11,193,391.2533	674,479.0263	546.28	VPI	-
4	272+84.58	CL RTE J	-	1,119,340.3430	674,464.1473	537.38	VPT/VPC	-
4	273+58.23	CL RTE J	-	1,119,269.6502	674,443.4868	526.86	VPI	-
4	274+31.87	CL RTE J	-	1,119,198.9671	674,422.8292	523.90	VPT/VPC	-
4	277+20.39	CL RTE J	-	1,118,922.0319	674,341.8927	512.32	VPC	-
4	277+88.96	CL RTE J	-	1,118,856.2152	674,322.6573	509.57	VPI	-
4	278+57.52	CL RTE J	-	1,118,790.4080	674,303.4247	508.12	VPT	-

STATE OF MISSOURI
CHRISTOPHER S. KNAPP
NUMBER PE-2005023325
PROFESSIONAL ENGINEER
03/28/2025 12:43:09 PM
CHRISTOPHER S. KNAPP - CIVIL
MO-PE-2005023325

DATE PREPARED: 9/29/2025

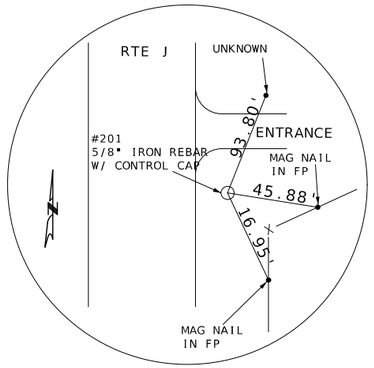
ROUTE	STATE
J	MO
DISTRICT	SHEET NO.
NE	5

COUNTY: LINCOLN
JOB NO.: JNE0051
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

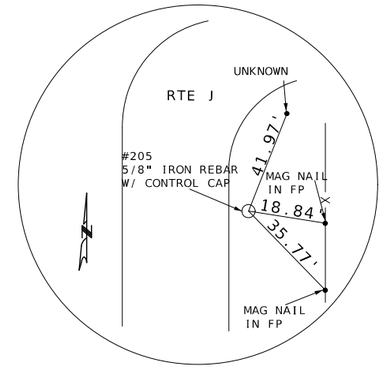
DESCRIPTION	DATE

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

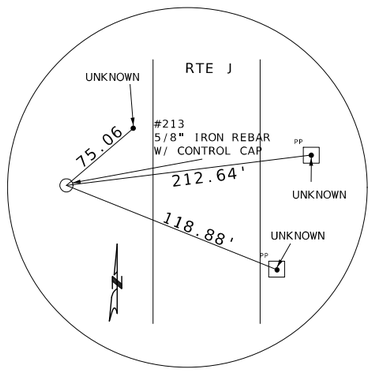
COORDINATE POINTS
SHEET 1 OF 1



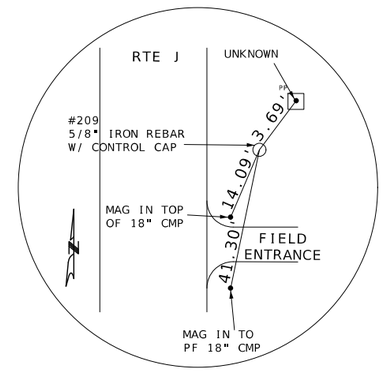
CP #201
STA. 271+32.58 - 24.82' LT
N = 1,119,479.3401
E = 674,530.3807
ELEV. = 551.1543'



CP #205
STA. 268+88.72 - 27.65' LT
N = 1,119,702.2384
E = 674,613.9019
ELEV. = 546.9272'



CP #213
STA. 287+01.46 - 86.11' RT
N = 1,117,995.8090
E = 673,981.4891
ELEV. = 503.5428'



CP #209
STA. 291+22.67 - 30.90' LT
N = 1,117,560.7918
E = 673,985.1257
ELEV. = 508.8507'

STATE OF MISSOURI
CHRISTOPHER S. KNAPP
NUMBER PE-2005023325
PROFESSIONAL ENGINEER
09/29/2025 12:44:12 PM
CHRISTOPHER S. KNAPP - CIVIL
MO-PE-2005023325

DATE PREPARED
9/29/2025

ROUTE	STATE
J	MO
DISTRICT	SHEET NO.
NE	6

COUNTY
LINCOLN

JOB NO.
JNE0051

CONTRACT ID.

PROJECT NO.

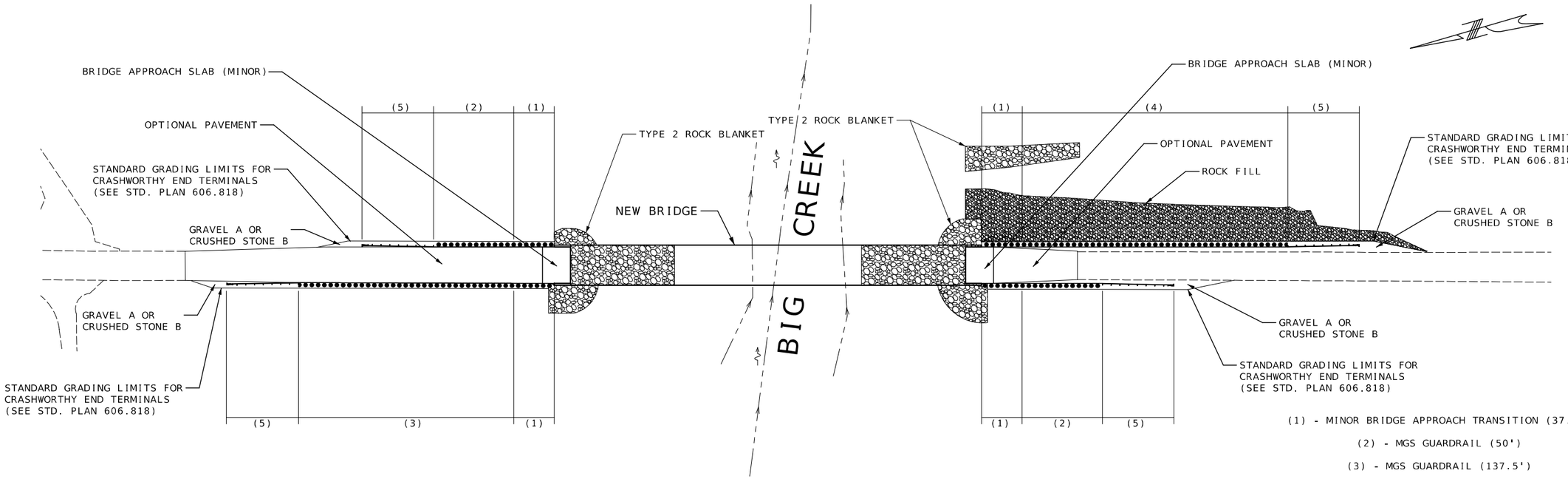
BRIDGE NO.

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

REFERENCE POINTS
SHEET 1 OF 1



GUARDRAIL AND ROCK BLANKET

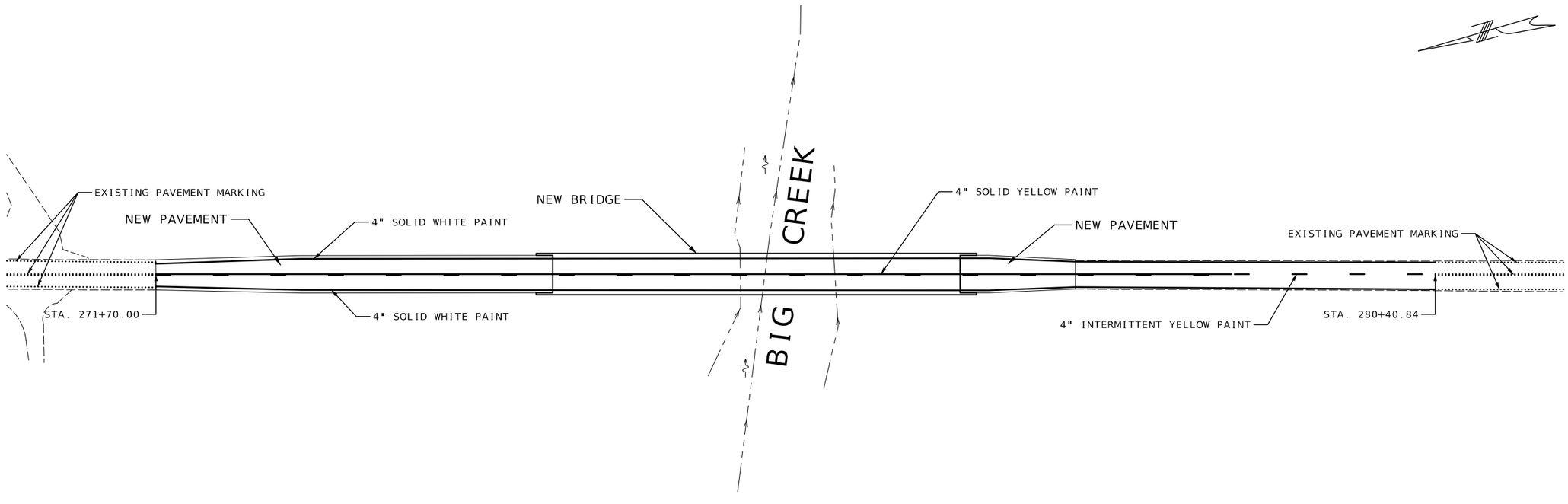
(1) - MINOR BRIDGE APPROACH TRANSITION (37.5')

(2) - MGS GUARDRAIL (50')

(3) - MGS GUARDRAIL (137.5')

(4) - MGS GUARDRAIL (187.5')

(5) - MASH CRASHWORTHY END TERMINAL (50')



PAVEMENT MARKING

STATE OF MISSOURI
CHRISTOPHER S. KNAPP
NUMBER PE-2005023325
PROFESSIONAL ENGINEER
09/29/2025 12:45:22 PM
CHRISTOPHER S. KNAPP - CIVIL
MO-PE-2005023325

DATE PREPARED
9/29/2025

ROUTE	STATE
J	MO
DISTRICT	SHEET NO.
NE	7

COUNTY
LINCOLN

JOB NO.
JNE0051

CONTRACT ID.

PROJECT NO.

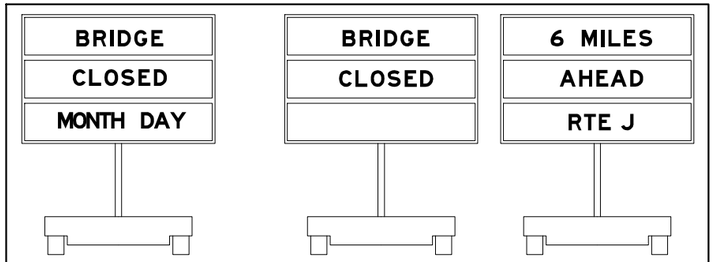
BRIDGE NO.

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

SPECIAL SHEET
GUARDRAIL
ROCK BLANKET
PAVEMENT MARKING
1 OF 1



PRE-CLOSURE
CMS BOARDS AT BRIDGE
(TO BE RELOCATED)

POST-CLOSURE
RELOCATED CMS BOARDS, MAINTAIN
FOR THE DURATION OF THE CLOSURE

CMS BOARD MESSAGES
TO BE DETERMINED AND
APPROVED BY ENGINEER

R11-2

29

R11-4

61

R11-3a

55

WO20-3

20A

WO20-3

20B

NOTES:

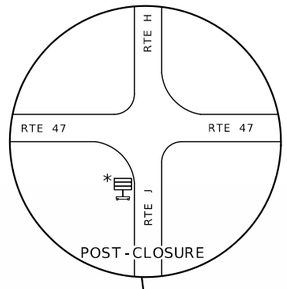
PLACE ALL SIGNS AND DEVICES AS SHOWN. ADJUST SPACING AND LOCATION AS NEEDED FOR FIELD CONDITIONS, AS DIRECTED BY THE ENGINEER.

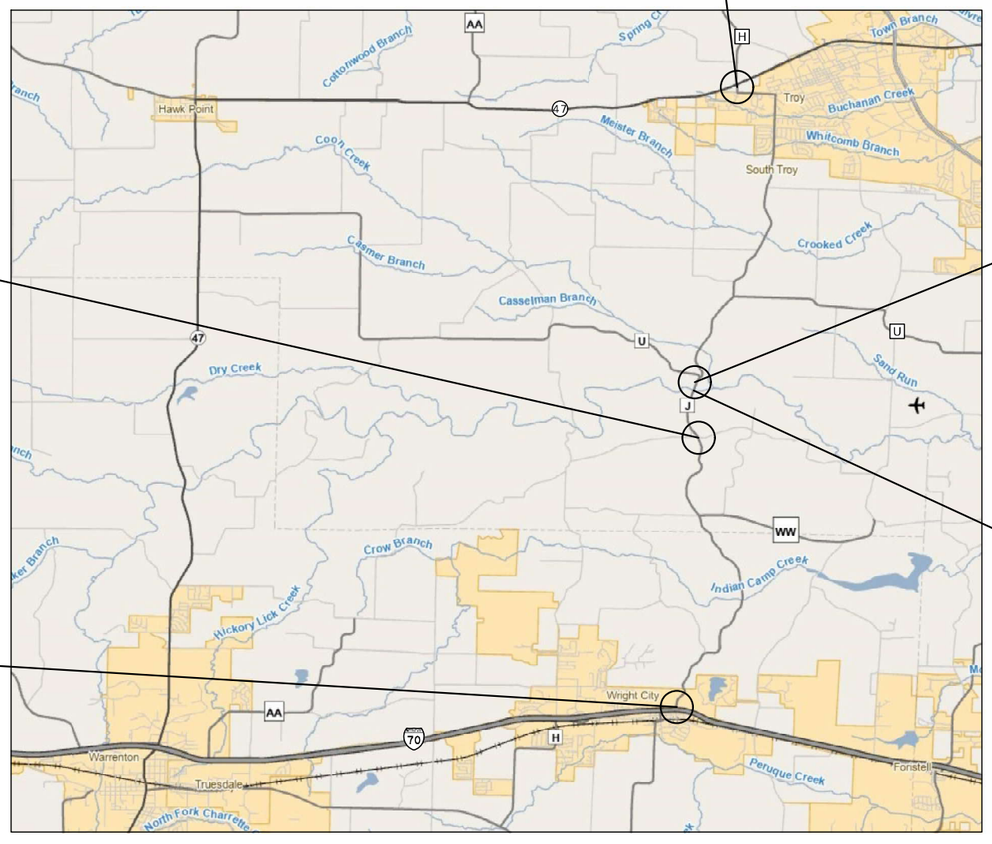
* LOCATE SIGNS 100' FROM INTERSECTION UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER.

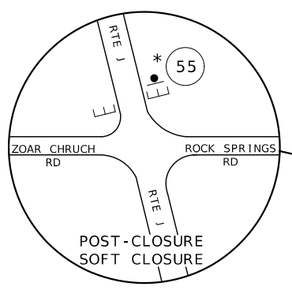
USE IN PLACE ALL SIGNS WHICH DO NOT CONFLICT WITH THIS PLAN. COVER OR REMOVE CONFLICTING SIGNS.

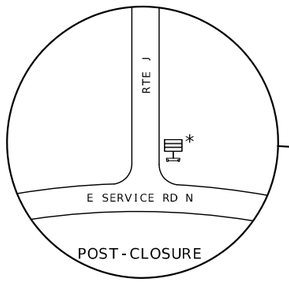
PLACE CMS BOARDS AS SHOWN AT LEAST TWO WEEKS IN ADVANCE OF THE ROAD CLOSURE.

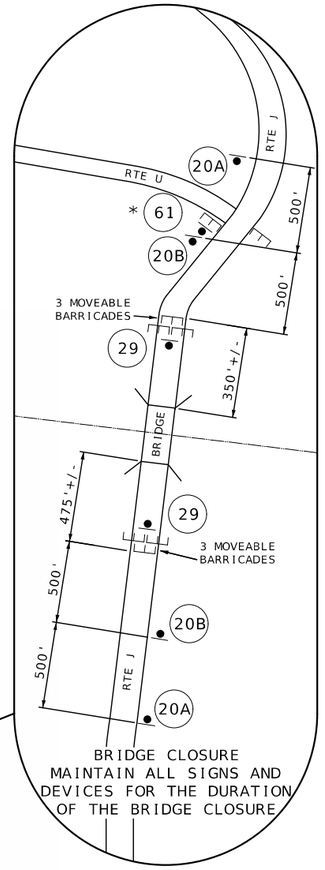
AT THE TIME OF CLOSURE, RELOCATE CMS BOARDS TO ROUTE 47 AND N SERVICE RD AND UPDATE SIGNS TO READ AS SHOWN.





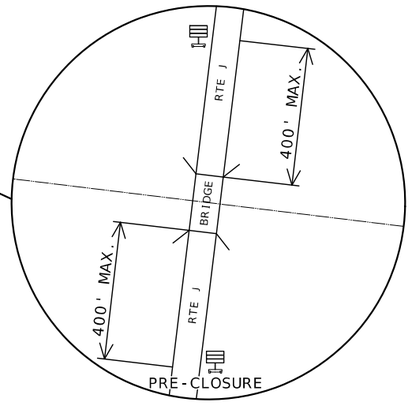






TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- TYPE III MOVABLE BARRICADE
- CMS BOARD



STATE OF MISSOURI
CHRISTOPHER S. KNAPP
NUMBER PE-2005023325
PROFESSIONAL ENGINEER
09/29/2025 12:46:15 PM
CHRISTOPHER S. KNAPP - CIVIL
MO-PE-2005023325

DATE PREPARED
9/29/2025

ROUTE	STATE
J	MO
DISTRICT	SHEET NO.
NE	8

COUNTY
LINCOLN

JOB NO.
JNE0051

CONTRACT ID.

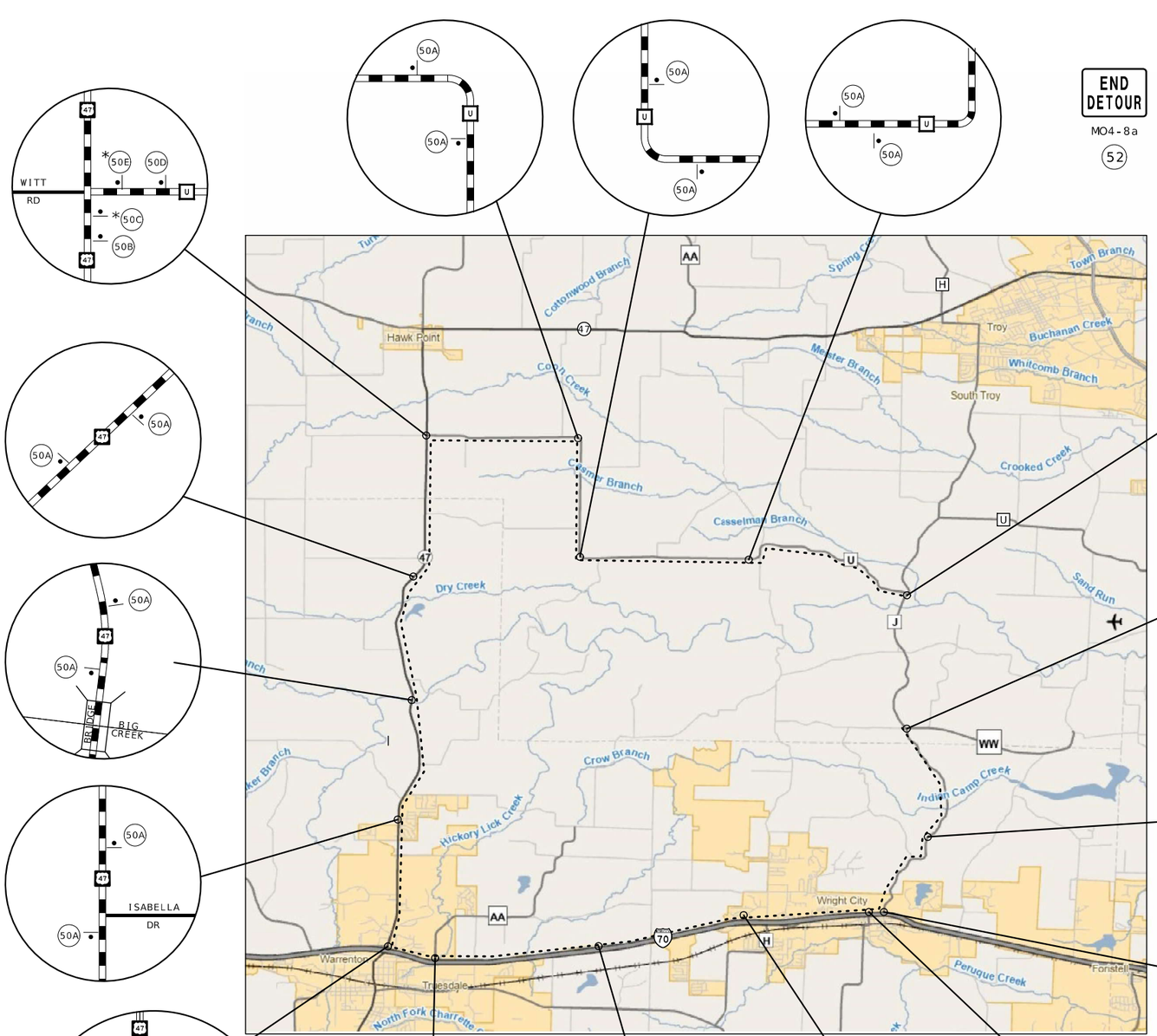
PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

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

TRAFFIC CONTROL
SHEET 1 OF 2



DETOUR	DETOUR	DETOUR	DETOUR	DETOUR
MO4-8	MO4-8	MO4-8	MO4-8	MO4-8
J	J	J	J	J
M1-5a	M1-5a	M1-5a	M1-5a	M1-5a
M6-3	M5-1R	M6-1	M5-1L	M6-1
50A	50B	50C	50D	50E
(24)	(4)	(6)	(4)	(6)

NOTES:

PLACE ALL SIGNS AND DEVICES AS SHOWN. ADJUST SPACING AND LOCATION AS NEEDED FOR FIELD CONDITIONS, AS DIRECTED BY THE ENGINEER.

* LOCATE SIGNS 100' FROM INTERSECTION UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER.

USE IN PLACE ALL SIGNS WHICH DO NOT CONFLICT WITH THIS PLAN. COVER OR REMOVE CONFLICTING SIGNS.

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- TYPE III MOVABLE BARRICADE
- DETOUR ROUTE

STATE OF MISSOURI
CHRISTOPHER S. KNAPP
NUMBER PE-2005023325
PROFESSIONAL ENGINEER
05/29/2025 12:47:15 PM
CHRISTOPHER S. KNAPP - CIVIL
MO-PE-2005023325

DATE PREPARED
9/29/2025

ROUTE	STATE
J	MO
DISTRICT	SHEET NO.
NE	9

COUNTY
LINCOLN

JOB NO.
JNE0051

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

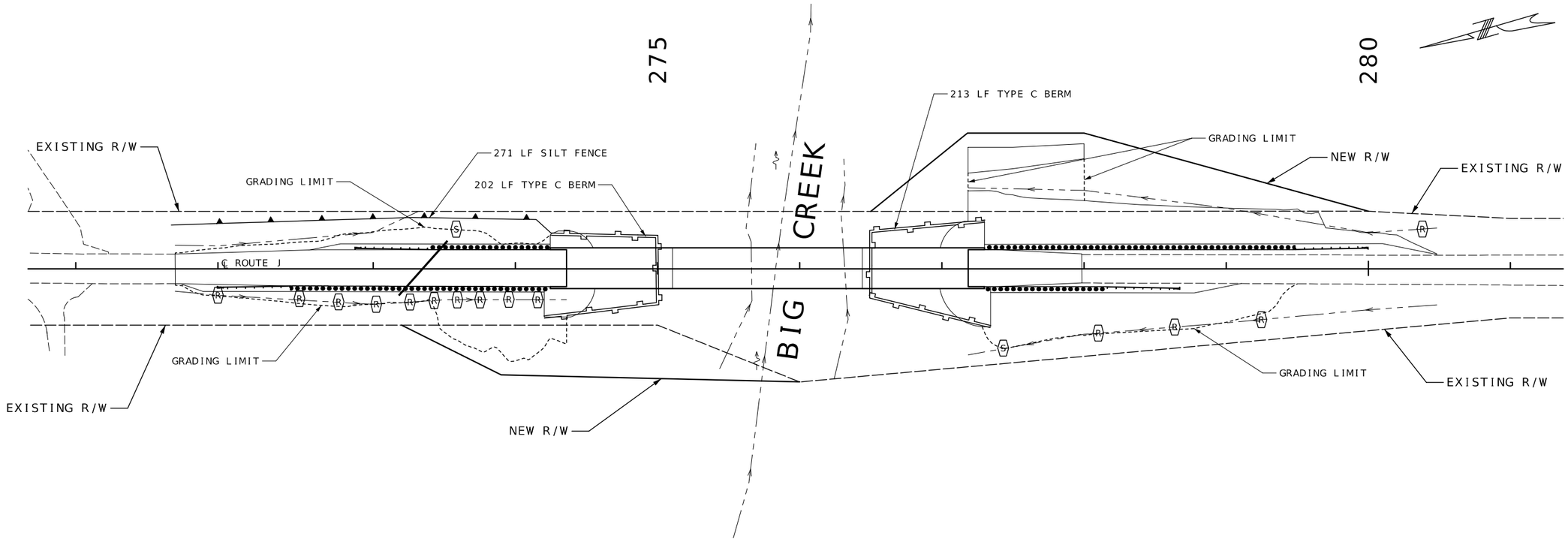
DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

MoDOT

TRAFFIC CONTROL
SHEET 2 OF 2



EROSION CONTROL

GENERAL NOTES:

CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN, AND REMOVE EROSION CONTROL DEVICES IN ACCORDANCE WITH MISSOURI STANDARD SEPCIFICATIONS FOR HIGHWAY CONSTRUCTION SECTION 806. ALL WORK TO BE IN ACCORDANCE WITH THE MISSOURI STATE OPERATING PERMIT FOR LAND DISTURBANCE AND THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP). REFER TO MODOT ENGINEERING POLICY GUIDE (EPG).

INSTALLATION OF TEMPORARY EROSION CONTROL MEASURES SHALL COINCIDE WITH CLEARING AND GRUBBING OPERATIONS AND PRIOR TO ANY GRADING OPERATION.

LOCATE DEVICES AS SHOWN OR ADJUST TO SITE CONDITIONS AS DIRECTED BY THE ENGINEER.

IF SITE CONDITIONS DUE TO CONTRACTOR OPERATIONS DIFFER FROM THE TEMPORARY EROSION CONTROL PLAN, ADDITIONAL BEST MANAGEMENT PRECTICES(BMP) SHALL BE APPLIED AS APPROVED BY THE ENGINEER. ADDITIONAL TEMPORARY MEASURES SHALL BE USED TO CORRECT CONDITIONS THAT DEVELOP DURING CONSTRUCTION WHICH WERE NOT FORESEEN DURING THE DESIGN STAGE.

ALL PERMANENT EROSION CONTROL FEATURES SHALL BE INCORPORATED INTO THE PROJECT AT THE EARLIEST PRACTICAL TIME.

FIELD NOTES:

TEMPORARY EROSION CONTROL LEGEND

- TEMPORARY BERM TYPE C
- SILT FENCE
- (R) ROCK DITCH CHECK
- (S) SEDIMENT TRAP

STATE OF MISSOURI
CHRISTOPHER S. KNAPP
NUMBER PE-2005023325
PROFESSIONAL ENGINEER
09/29/2025 12:48:14 PM
CHRISTOPHER S. KNAPP - CIVIL
MO-PE-2005023325

DATE PREPARED: 9/29/2025

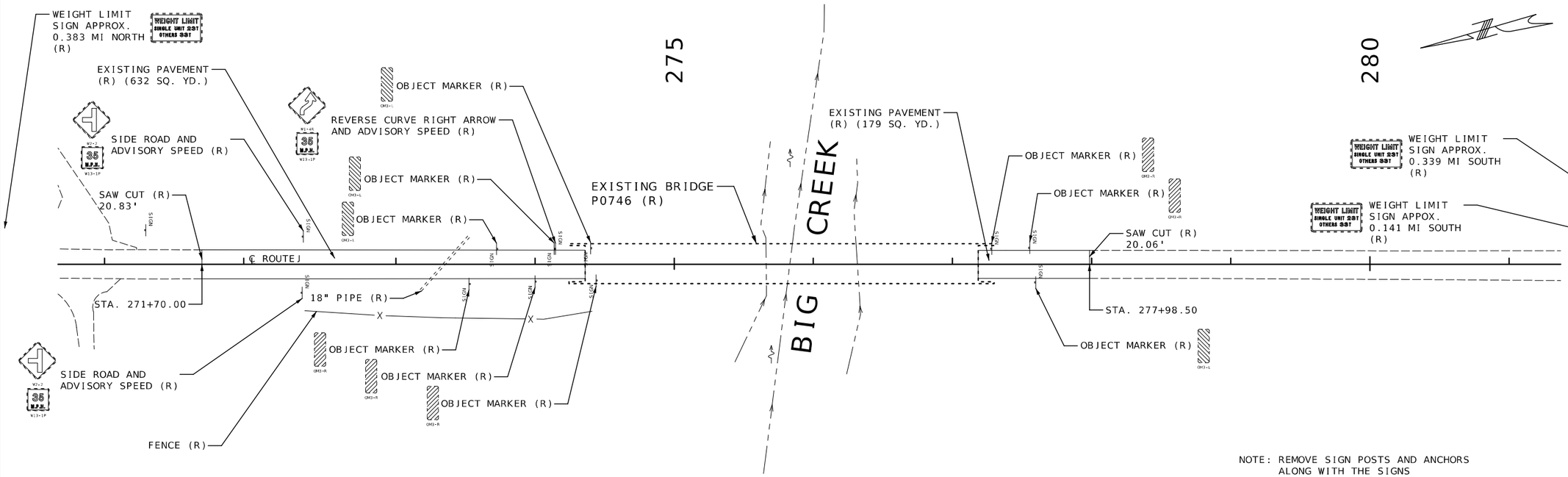
ROUTE	STATE
J	MO
DISTRICT	SHEET NO.
NE	10

COUNTY: LINCOLN
JOB NO.: JNE0051
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

DESCRIPTION	DATE

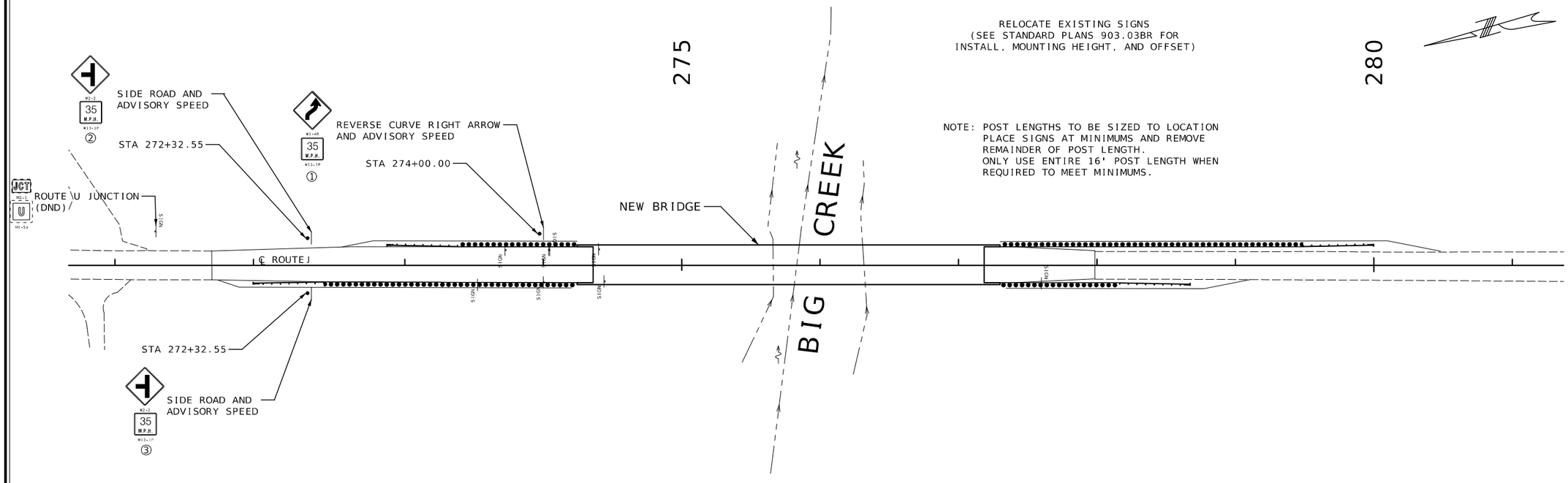
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

TEMPORARY EROSION CONTROL PLAN
SHEET 1 OF 1



NOTE: REMOVE SIGN POSTS AND ANCHORS ALONG WITH THE SIGNS

REMOVALS



RELOCATE EXISTING SIGNS
(SEE STANDARD PLANS 903.03BR FOR INSTALL, MOUNTING HEIGHT, AND OFFSET)

NOTE: POST LENGTHS TO BE SIZED TO LOCATION
PLACE SIGNS AT MINIMUMS AND REMOVE REMAINDER OF POST LENGTH.
ONLY USE ENTIRE 16' POST LENGTH WHEN REQUIRED TO MEET MINIMUMS.

SIGN LOCATIONS

STATE OF MISSOURI
CHRISTOPHER S. KNAPP
NUMBER PE-2005023325
PROFESSIONAL ENGINEER
09/29/2025 12:49:00 PM
CHRISTOPHER S. KNAPP - CIVIL
MO-PE-2005023325

DATE PREPARED
9/29/2025

ROUTE	STATE
J	MO
DISTRICT	SHEET NO.
NE	11

COUNTY
LINCOLN

JOB NO.
JNE0051

CONTRACT ID.

PROJECT NO.

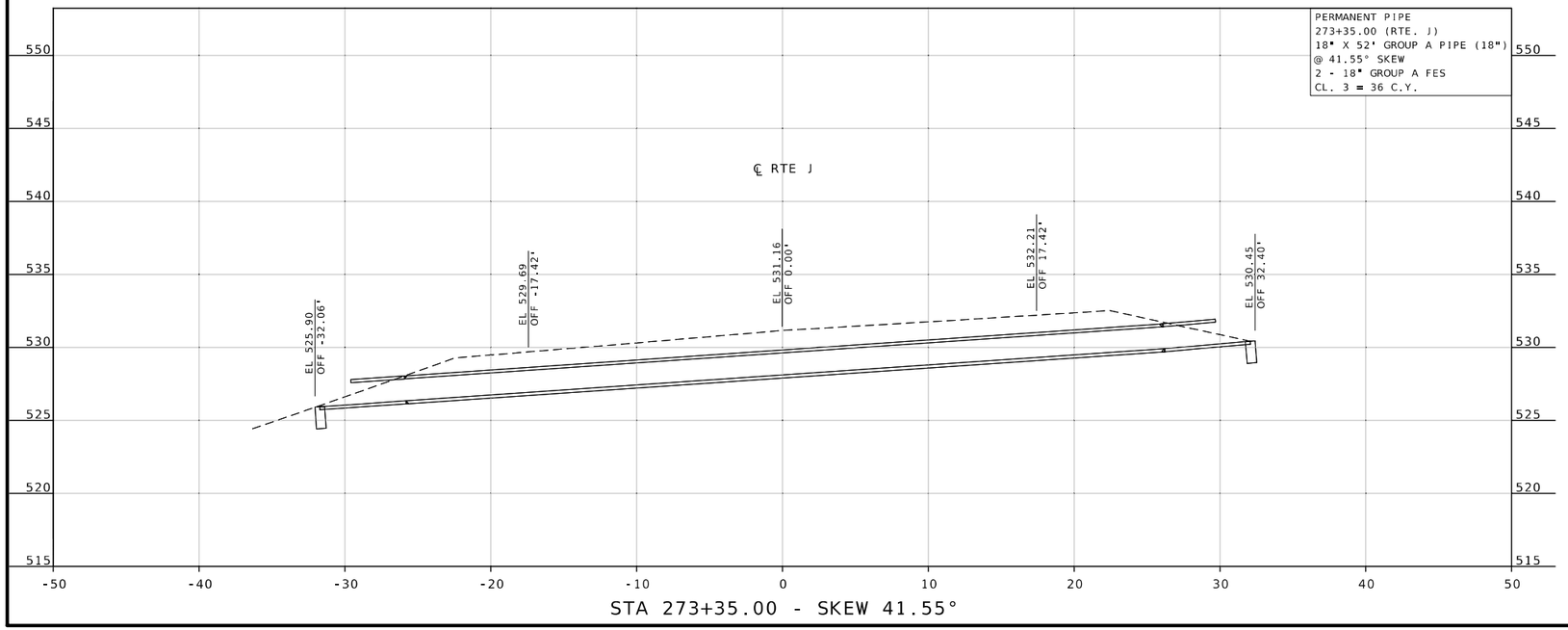
BRIDGE NO.

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

SIGN SHEET
REMOVALS
1 OF 1



STA 273+35.00 - SKEW 41.55°

STATE OF MISSOURI
CHRISTOPHER S. KNAPP
NUMBER PE-2005023325
PROFESSIONAL ENGINEER

09/29/2025 12:49:44 PM
CHRISTOPHER S. KNAPP - CIVIL
MO-PE-2005023325

DATE PREPARED
9/29/2025

ROUTE	STATE
J	MO

DISTRICT	SHEET NO.
NE	12

COUNTY
LINCOLN

JOB NO.
JNE0051

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

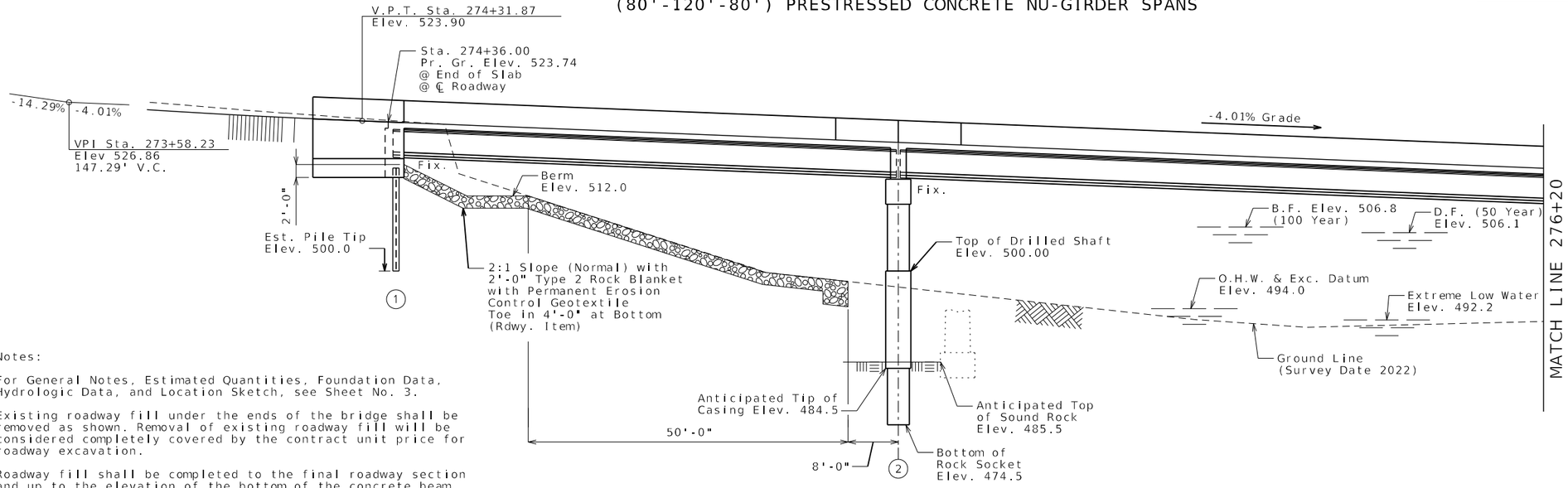
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

CULVERT SECTION SHEET
SHEET 1 OF 1

SEC/SUR 22 TWP 48N RGE 1W

(80'-120'-80') PRESTRESSED CONCRETE NU-GIRDER SPANS



PART GENERAL ELEVATION

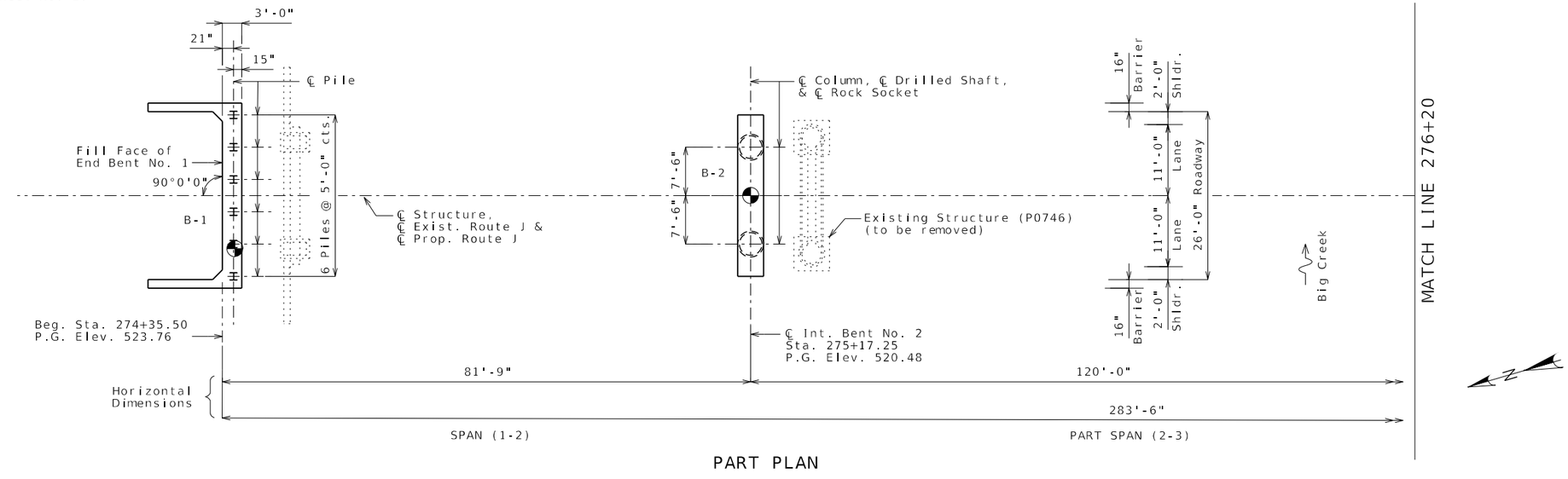
Notes:

For General Notes, Estimated Quantities, Foundation Data, Hydrologic Data, and Location Sketch, see Sheet No. 3.

Existing roadway fill under the ends of the bridge shall be removed as shown. Removal of existing roadway fill will be considered completely covered by the contract unit price for roadway excavation.

Roadway fill shall be completed to the final roadway section and up to the elevation of the bottom of the concrete beam within the limits of the structure and for not less than 25 feet in back of the fill face of the end bents before any piles are driven for any bents falling within the embankment section.

Work this Sheet with Sheet No. 2.



PART PLAN

"⌖" Indicates location of borings.

Notice and Disclaimer Regarding Boring Log Data

The locations of all subsurface borings for this structure are shown on the plan sheet(s) for this structure. The boring data for all locations indicated, as well as any other boring logs or other factual records of subsurface data and investigations performed by the department for the design of the project, are shown on Sheets No. 32 thru 35 and may be included in the Electronic Bridge Deliverables. They will also be available from the Project Contact upon written request. No greater significance or weight should be given to the boring data depicted on the plan sheets than is given to the subsurface data available from the district or elsewhere.

The Commission does not represent or warrant that any such boring data accurately depicts the conditions to be encountered in constructing this project. A contractor assumes all risks it may encounter in basing its bid prices, time or schedule of performance on the boring data depicted here or those available from the district, or on any other documentation not expressly warranted, which the contractor may obtain from the Commission.

B.M. 1
CP #201: 5/8" I.R. W/CONTROL CAP
STA. 271+32.58 OFFSET 24.58' LT.
ELEV. 551.15

B.M. 2
CP #205: 5/8" I.R. W/CONTROL CAP
STA. 368+88.51 OFFSET 27.65' LT.
ELEV. 546.93

BRIDGE: ROUTE J OVER BIG CREEK

ROUTE J FROM ROUTE U TO ROUTE WW
ABOUT 0.20 MILES SOUTH OF ROUTE U
BEGINNING STATION 274+35.50

Designed Sept. 2024
Detailed Sept. 2024
Checked Sept. 2024

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

STATE OF MISSOURI
DAVID BURDICK
NUMBER E-24015
REGISTERED PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

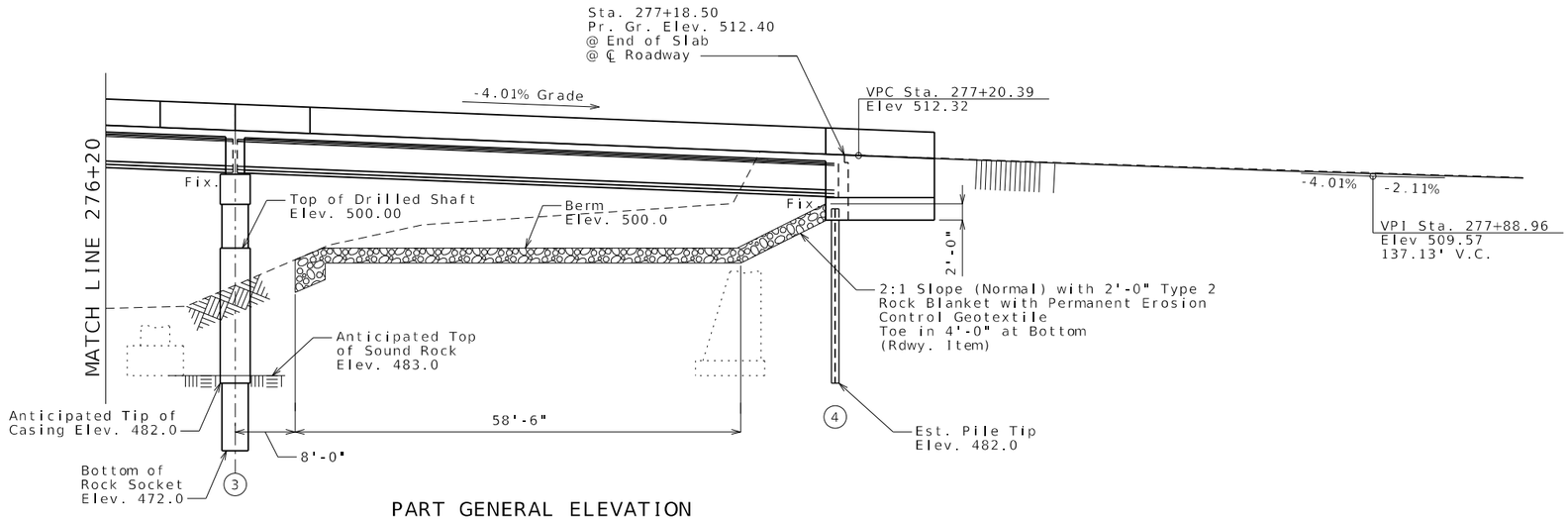
DATE PREPARED 4/3/2025
ROUTE J | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY LINCOLN
JOB NO. JNE0051
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9480

DESCRIPTION | DATE

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

CDG ENGINEERS
One Campbell Plaza
St. Louis, Missouri 63139
T. 314 781 7770
F. 314 781 9075
Missouri State Certificate of Authority # 1721

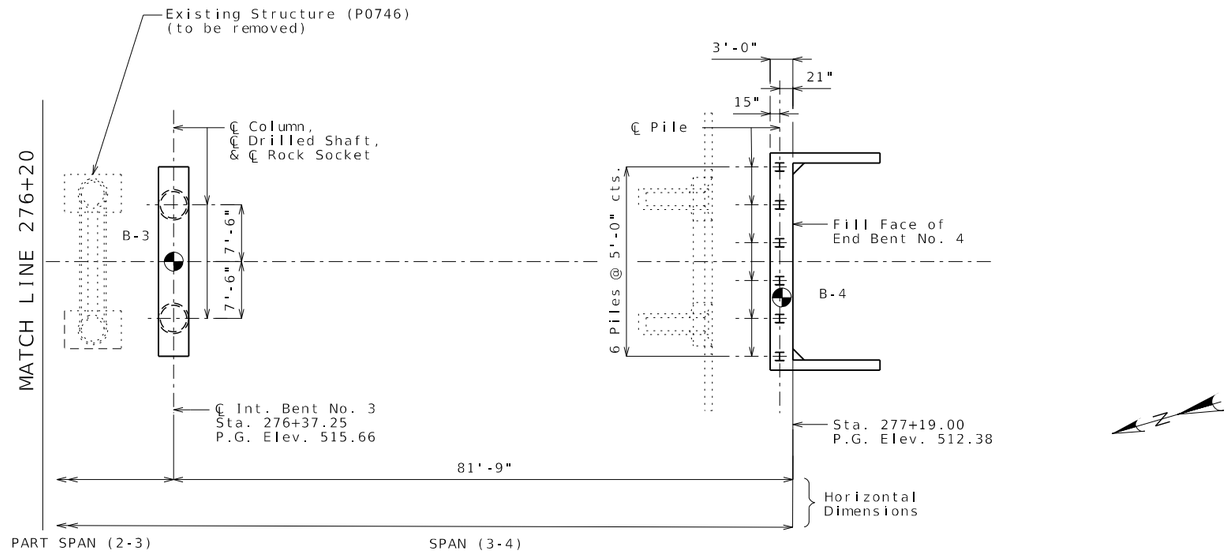
SEC/SUR 22 TWP 48N RGE 1W



PART GENERAL ELEVATION

Notes:

Work this Sheet with Sheet No. 1.



PART PLAN

"◓" Indicates location of borings.

Designed Sept. 2024
Detailed Sept. 2024
Checked Sept. 2024

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

STATE OF MISSOURI
DAVID BURDICK
NUMBER E-24015
REGISTERED PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

DATE PREPARED 4/3/2025

ROUTE	STATE
J	MO
DISTRICT	SHEET NO.
BR	2

COUNTY LINCOLN

JOB NO. JNE0051

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A9480

DESCRIPTION	DATE

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

CDG ENGINEERS
One Campbell Plaza
St. Louis, Missouri 63139
T. 314 781 7770
F. 314 781 9075
Missouri State Certificate of Authority #1721

Estimated Quantities

Item		Substr.	Superstr.	Total
Removal of Miscellaneous ACM (Non-Friable)	sq. foot			4
Class 1 Excavation	cu. yard	80		80
Removal of Bridges (P0746)	lump sum			1
Bridge Approach Slab (Minor)	sq. yard			117
Drilled Shafts (4 ft. 0 in. Dia.)	linear foot	63		63
Rock Sockets (3 ft. 6 in. Dia.)	linear foot	44		44
Video Camera Inspection	each	4		4
Foundation Inspection Holes	linear foot	84		84
Sonic Logging Testing	each	4		4
Galvanized Structural Steel Piles (14 in.)	linear foot	246		246
Pre-Bore for Piling	linear foot	96		96
Pile Point Reinforcement	each	12		12
Class B Concrete (Substructure)	cu. yard	26.8		26.8
Class B-1 Concrete (Substructure)	cu. yard	48.0		48.0
Type D Barrier	linear foot		613	613
Slab on Concrete NU-Girder	sq. yard		900	900
NU 53, Prestressed Concrete NU-Girder	linear foot		840	840
Reinforcing Steel (Bridges)	pound	20,250		20,250
Steel Intermediate Diaphragm for P/S Concrete Girders	each		8	8
Slab Drain	each		28	28
Vertical Drain at End Bents	each			2
Laminated Neoprene Bearing Pad (Tapered)	each		18	18

Cost of L4x4 ASTM A709 Grade 36 HP pile anchors and 3/4-inch diameter ASTM F3125 Grade A325 Type 1 bolts, complete in place, will be considered completely covered by the contract unit price for Galvanized Structural Steel Piles (14 in.).

All concrete above the construction joint in the end bents is included in the Estimated Quantities for Slab on Concrete NU-Girder.

All reinforcement in the end bents is included in the Estimated Quantities for Slab on Concrete NU-Girder.

All reinforcement in the intermediate bent concrete diaphragms except reinforcement embedded in the beam cap is included in the Estimated Quantities for Slab on Concrete NU-Girder.

All concrete above the intermediate beam cap is included in the Estimated Quantities for Slab on Concrete NU-Girder.

Foundation Data

Type	Design Data		Bent Number 1	2	3	4
Load Bearing Pile	Pile Type and Size		HP 14x73	—	—	HP 14x73
	Number	ea	6	—	—	6
	Approximate Length Per Each	ft	17	—	—	24
	Pile Point Reinforcement	ea	All	—	—	All
	Min. Galvanized Penetration (Elev.)	ft	Full Length	—	—	Full Length
	Pile Driving Verification Method		DF	—	—	DF
	Resistance Factor		0.4	—	—	0.4
	Minimum Nominal Axial Compressive Resistance	kip	397	—	—	397
Rock Socket	Number	ea	—	2	2	—
	Layer 1 Foundation Material		—	Limestone	Limestone	—
	Layer 1 Elevation Range	ft	—	481.5-465.5	479.0-463.0	—
	Layer 1 Minimum Nominal Axial Compressive Resistance (Side Resistance)	ksf	—	10.3	10.4	—
	Minimum Nominal Axial Compressive Resistance (Tip Resistance)	ksf	—	—	—	—

Load Bearing Piles:
DF = FHWA - Modified Gates Dynamic Pile Formula

Minimum Nominal Axial Compressive Resistance = Maximum Factored Loads/Resistance Factor

Rock Socket (Drilled Shafts):
Minimum Nominal Axial Compressive Resistance (Side Resistance) = Maximum Factored Loads/Resistance Factor.

Thickness of permanent steel casing shall be in accordance with Sec 701.

Sonic logging testing shall be performed on all drilled shafts and rock sockets.

Prebore for piles at Bent No. 1 to Elevation 500.0.

Pile point reinforcement need not be galvanized, Shop drawings will not be required for pile point reinforcement.

HP piles are anticipated to be driven to refusal on rock. Review all borings for depth of rock and restrict driving as appropriate to comply with hard rock driving criteria in accordance with Sec 702. When pile refusal on rock occurs, as approved by the engineer, the minimum nominal axial compressive resistance is verified and no additional pile driving verification method is required.

General Notes:

Design Specifications:
2020 AASHTO LRFD Bridge Design Specifications (9th Ed.)
2011 AASHTO Guide Specifications for LRFD Seismic Bridge Design (2nd Ed.) and 2014 Interim Revisions (Seismic Details)
Seismic Design Category = B (Seismic Details Only)
Design earthquake response spectral acceleration coefficient at 1.0 second period, S_{D1} = 0.171
Acceleration Coefficient (effective peak ground acceleration coefficient). A_S = 0.143

Design Loading:
Vehicular = HL-93
Future Wearing Surface = 35 lb/sf
Earth = 120 lb/cf., Equivalent Fluid Pressure = 45 lb/cf.
Superstructure: Simply-Supported, Non-Composite for dead load.
Continuous Composite for live load.

Design Unit Stresses:

Class B Concrete (Substructure)	f'c = 3,000 psi
Class B-1 Concrete (Substructure)	f'c = 4,000 psi
Class B-2 Concrete (Drilled Shafts & Rock Sockets)	f'c = 4,000 psi
Class B-2 Concrete (Superstructure, except Prestressed Girders and Barrier	f'c = 4,000 psi
Class B-1 Concrete (Barrier)	f'c = 4,000 psi
Reinforcing Steel (ASTM A706 Grade 60)	fy = 60,000 psi
Structural Steel HP Pile (ASTM A709 Grade 50)	fy = 50,000 psi

For prestressed girder stresses, see Sheets No. 16 thru 19.

Estimated Quantities for Slab on Concrete NU-Girder

Item		Total
Class B-2 Concrete	cu. yard	286
Reinforcing Steel (Epoxy Coated)	pound	82,580

The table of Estimated Quantities for Slab on Concrete NU-Girder 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 as shown on the plans and in accordance with Sec 703. All hardware for forming the slab to be left in place as a permanent part of the structure shall be coated in accordance with ASTM A123 or ASTM B633 with a thickness class SC 4 and a finish type I, II or III.

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

General Notes (Cont'd):

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 shown.

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

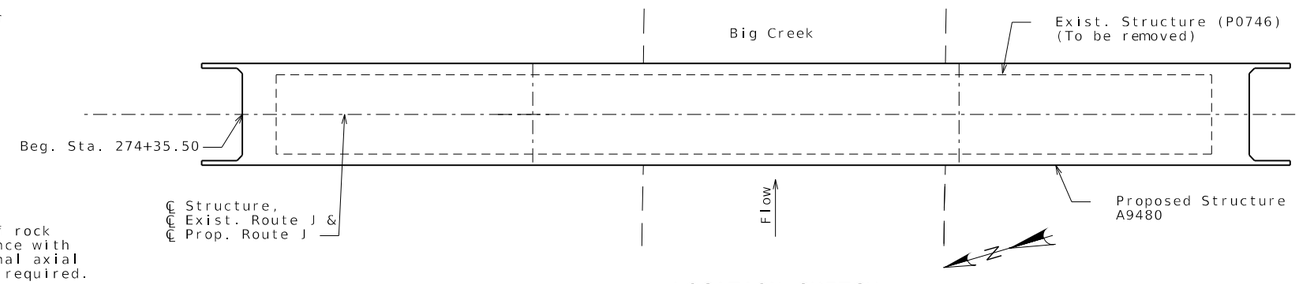
Miscellaneous:
Outline of existing work is indicated by light dashed lines. Heavy lines indicate new work.

Hydrologic Data

Drainage Area = 61 mi2
Design Flood Frequency = 50 years
Design Flood Discharge = 9,420 cfs
Design Flood (D.F.) Elevation = 506.1
Base Flood (100-year)
Base Flood Elevation = 506.8
Base Flood Discharge = 10,900 cfs
Estimated Backwater = 0.1 ft
Average Velocity thru Opening = 2.8 ft/s
Freeboard (50-year)
Freeboard = 2.9 ft
Roadway Overtopping
Overtopping Flood Discharge ≈ 9,420 cfs
Overtopping Flood Frequency ≈ 50 years
Overtopping Flood Elevation = 506(±)ft

Form sheets shall not rest directly on the top of girder 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 girder 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 girder loading.



LOCATION SKETCH

STATE OF MISSOURI
DAVID BURDICK
NUMBER E-24015
REGISTERED PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED IN ELECTRONICALLY

DATE PREPARED 4/3/2025
ROUTE J | STATE MO
DISTRICT BR | SHEET NO. 3
COUNTY LINCOLN
JOB NO. JNE0051
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9480

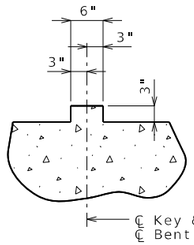
DESCRIPTION | DATE

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

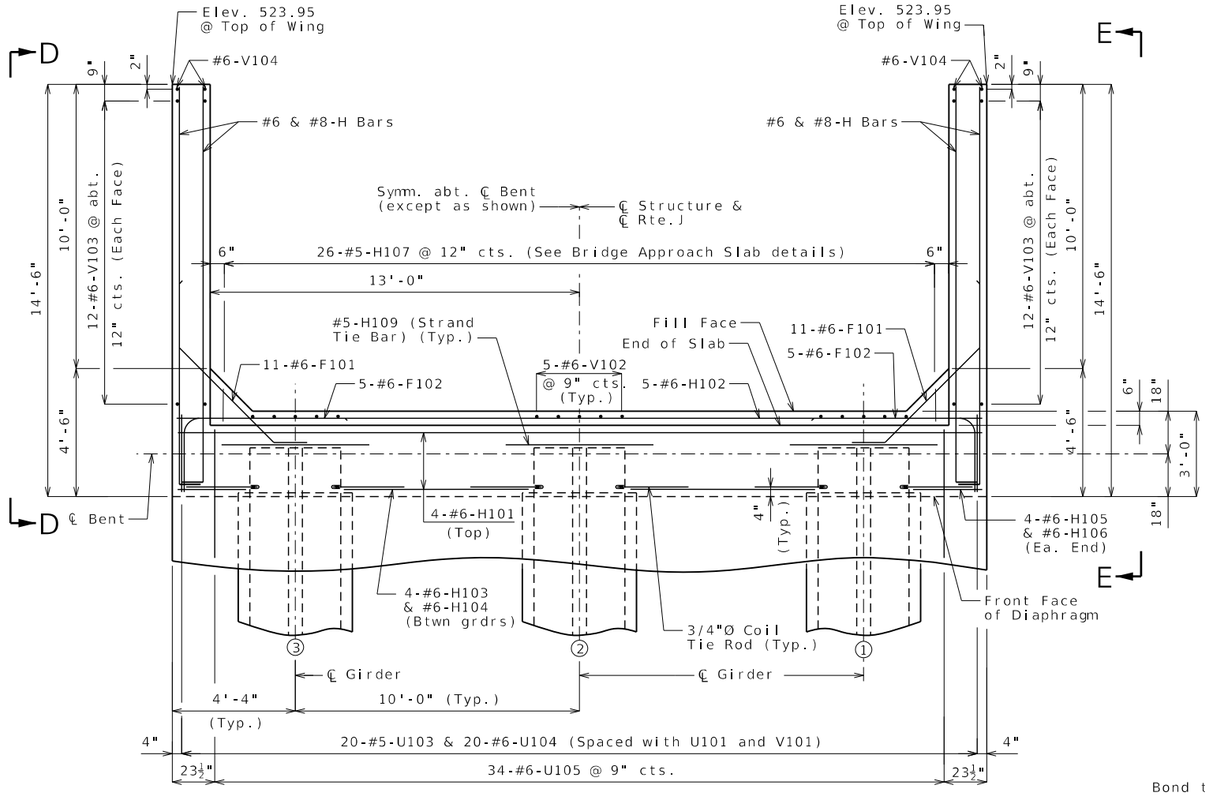
CDG ENGINEERS
One Campbell Plaza
St. Louis, Missouri 63139
T. 314 781 7770
F. 314 781 9075
Missouri State Certificate of Authority # 1721

Detailed Sept. 2024
Checked Sept. 2024

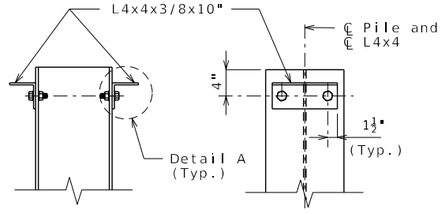
Note: This drawing is not to scale. Follow dimensions.



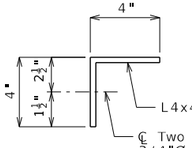
SECTION THRU KEY



PART PLAN

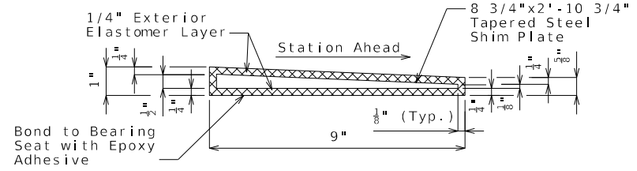


DETAILS OF HP PILE ANCHORS

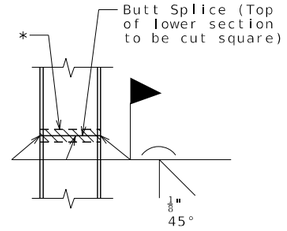


DETAIL A

Angles shall be coated with a minimum of two coats of non-aluminum epoxy mastic primer to provide a dry film thickness of 4 mils minimum, 8 mils maximum, or galvanized in accordance with Sec 1081. Bolts, washers and nuts shall be galvanized in accordance with AASHTO M 232 (ASTM A153), Class C.



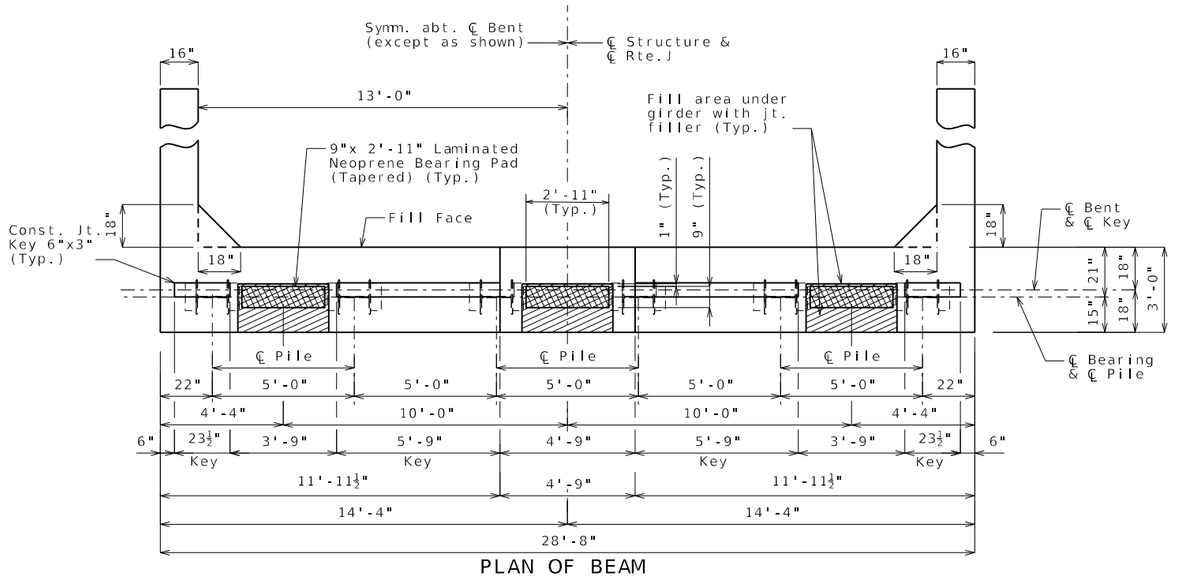
SECTION THRU LAMIMNATED
NEOPRENE BEARING
PAD (TAPERED)



STEEL PILE SPLICE

(If required)

* Galvanizing material shall be omitted or removed one inch clear of weld locations in accordance with Sec 702.



PLAN OF BEAM

General Notes:

Work this sheet with Sheets No. 5 & 6.

For Elevations D-D & E-E, see Sheet No. 6.

DETAILS OF END BENT NO. 1

Detailed Sept. 2024
Checked Sept. 2024

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

Sheet No. 4 of 35

STATE OF MISSOURI
DAVID BURDICK
NUMBER E-24015
REGISTERED PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

DATE PREPARED 4/3/2025

ROUTE	STATE
J	MO
DISTRICT	SHEET NO.
BR	4

COUNTY: LINCOLN

JOB NO.: JNE0051

CONTRACT ID.:

PROJECT NO.:

BRIDGE NO.: A9480

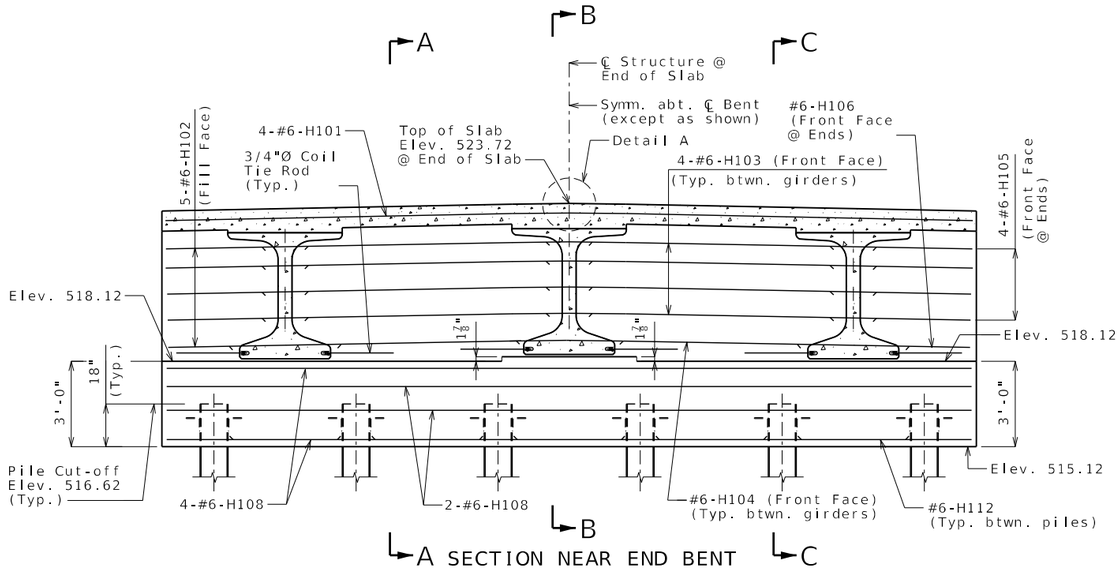
DESCRIPTION	DATE

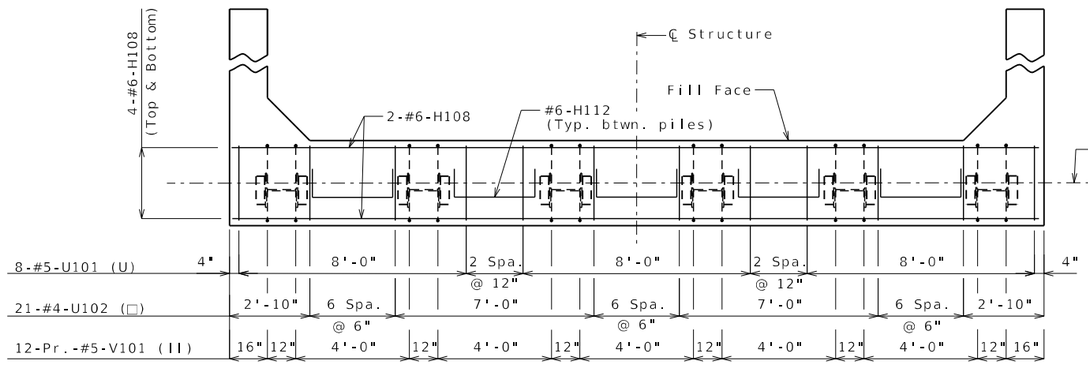
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

CDG ENGINEERS
One Campbell Plaza
St. Louis, Missouri 63139
T. 314 781 7770
F. 314 781 9075
Missouri State Certificate of Authority # 1721

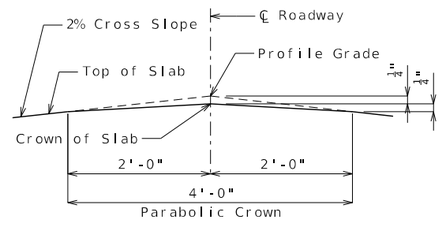
B_A9480_004_JNE0051_End Bent 1_1.dgn 10:04:18 AM 4/3/2025





PLAN OF BEAM SHOWING REINFORCEMENT

Note: Keys and steps not shown for clarity.



DETAIL A

DETAILS OF END BENT NO. 1

General Notes:

Work this sheet with Sheets No. 4 & 6.

Strands at end of girders shall be field bent or, if necessary, cut in field to maintain 1 1/2" minimum clearance to fill face of end bent.

The #6-F101 bars shall be bent in the field to clear girders.

For location of Coil Tie Rods and #5-H109 (Strand Tie Bar), see Sheets No. 16 & 17.

For details of Vertical Drain at End Bents, see Sheet No. 7.

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

All U-bars, Pairs V-bars and #5-H107 shall be placed parallel to ℄ Roadway.

All vertical reinforcing bars in the substructure beams or caps shall be field adjusted to clear piles by at least 1 1/2".

For Sections A-A, B-B & C-C, see Sheet No. 6.

For reinforcement of the Type D Barrier, see Sheet No. 26.

For details of Bridge Approach Slab, see Sheet No. 27.

Substructure Quantity Table for Bent No. 1

Item		Quantity
Class 1 Excavation	cu. yard	40
Galvanized Structural Steel Piles (14 in.)	linear foot	102
Pre-bore for Piling	linear foot	96
Pile Point Reinforcement	each	6
Class B Concrete (Substructure)	cu. yard	13.4

These quantities are included in the Estimated Quantities table on Sheet No. 3.

Detailed Sept. 2024
Checked Sept. 2024

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

STATE OF MISSOURI
DAVID BURDICK
NUMBER E-24015
REGISTERED PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

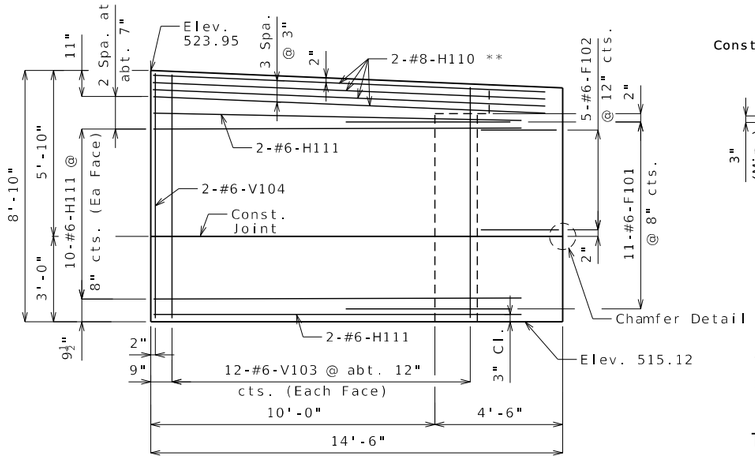
DATE PREPARED 4/3/2025

ROUTE	STATE
J	MO
DISTRICT	SHEET NO.
BR	5

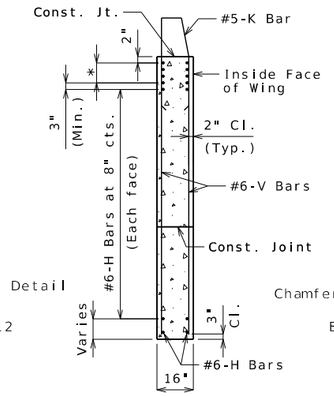
COUNTY LINCOLN
JOB NO. JNE0051
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9480

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)
MoDOT
CDG ENGINEERS
One Campbell Plaza
St. Louis, Missouri 63139
T. 314 781 7770
F. 314 781 9075
Missouri State Certificate of Authority # 1721

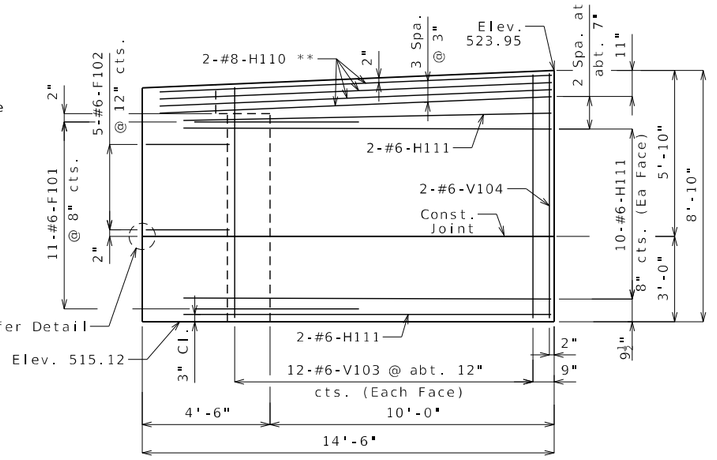


ELEVATION D-D

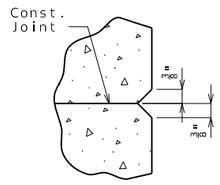


TYPICAL SECTION THRU WING

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



ELEVATION E-E



CHAMFER DETAIL

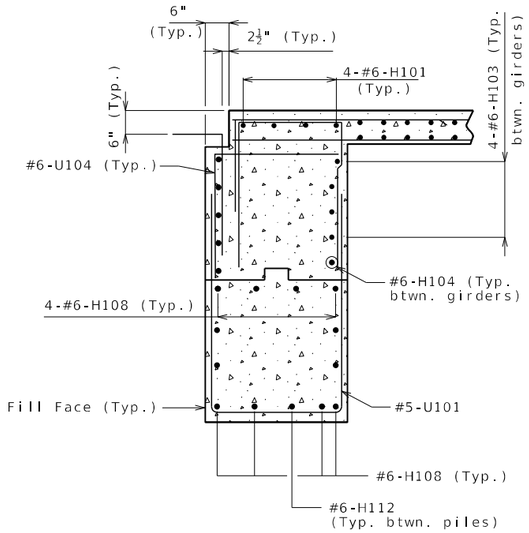
** Place with grade

General Notes:

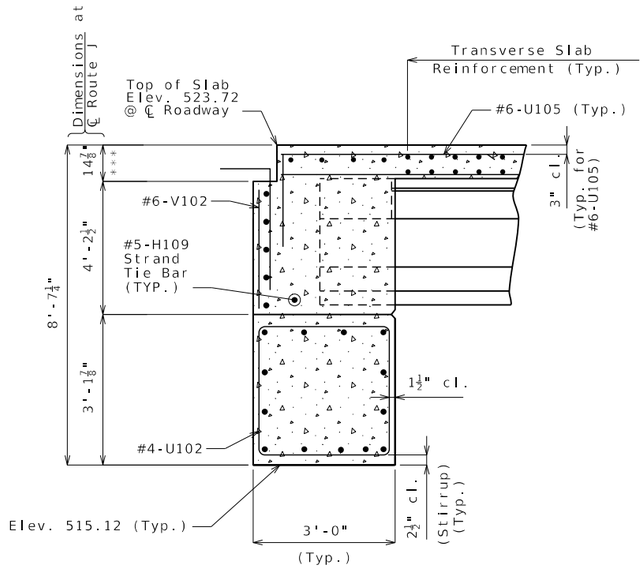
Work this sheet with Sheets No. 4 & 5.

For location of Elevations D-D & E-E, see Sheet No. 4.

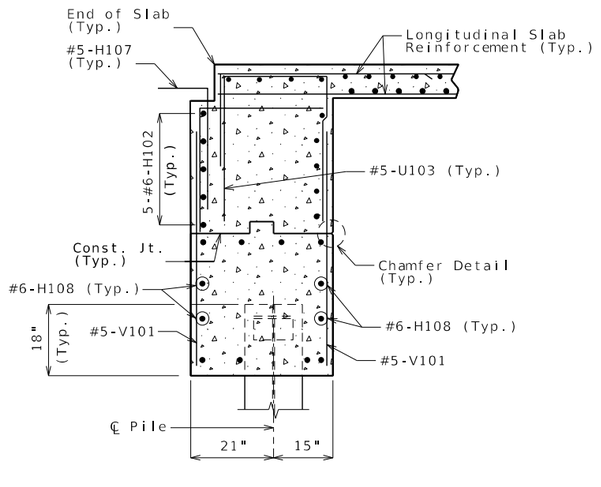
For location of Sections A-A, B-B,& C-C, see Sheet No. 5.



SECTION A-A



SECTION B-B



SECTION C-C

*** 12" (Min.) at gutter line

DETAILS OF END BENT NO. 1

Detailed Sept. 2024
Checked Sept. 2024

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

STATE OF MISSOURI
DAVID BURDICK
NUMBER E-24015
REGISTERED PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

DATE PREPARED 4/3/2025

ROUTE	STATE
J	MO
DISTRICT	SHEET NO.
BR	6

COUNTY LINCOLN

JOB NO. JNE0051

CONTRACT ID.

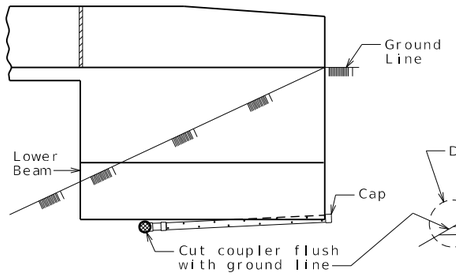
PROJECT NO.

BRIDGE NO. A9480

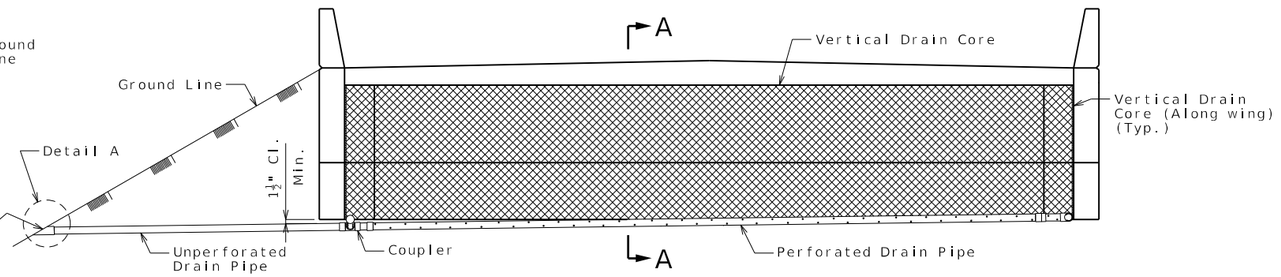
DESCRIPTION | DATE

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

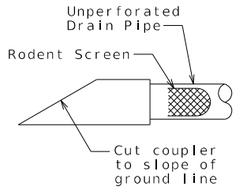
CDG ENGINEERS
One Campbell Plaza
St. Louis, Missouri 63139
T. 314 781 7770
F. 314 781 9075
Missouri State Certificate of Authority # 1721



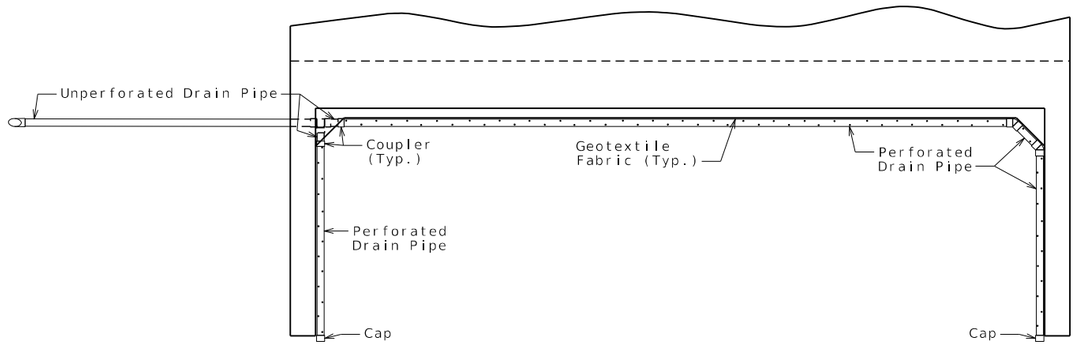
ELEVATION OF WING



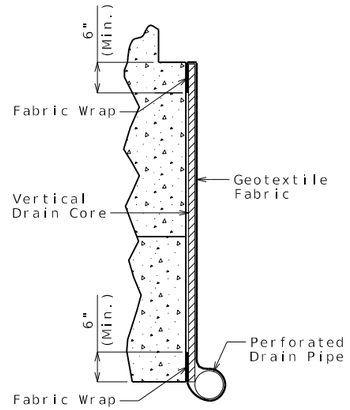
ELEVATION OF END BENT



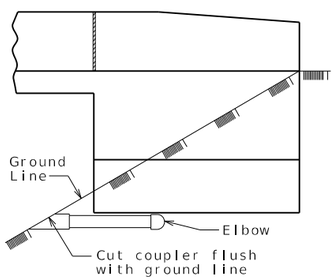
DETAIL A



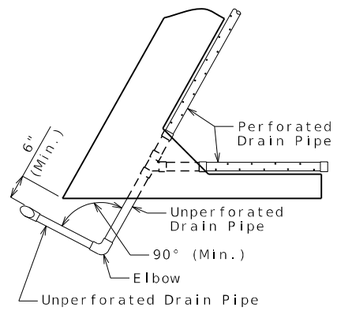
PLAN OF END BENT



PART SECTION A-A
(Section thru wing similar)



ELEVATION OF WING



PART PLAN

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

General Notes:

All drain pipe shall be sloped 1 to 2 percent.

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

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

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

VERTICAL DRAIN AT END BENTS

(Squared end bent shown, skewed end bent similar)

Detailed Sept. 2024
Checked Sept. 2024

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

STATE OF MISSOURI
DAVID BURDICK
NUMBER E-24015
REGISTERED PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

DATE PREPARED 4/3/2025

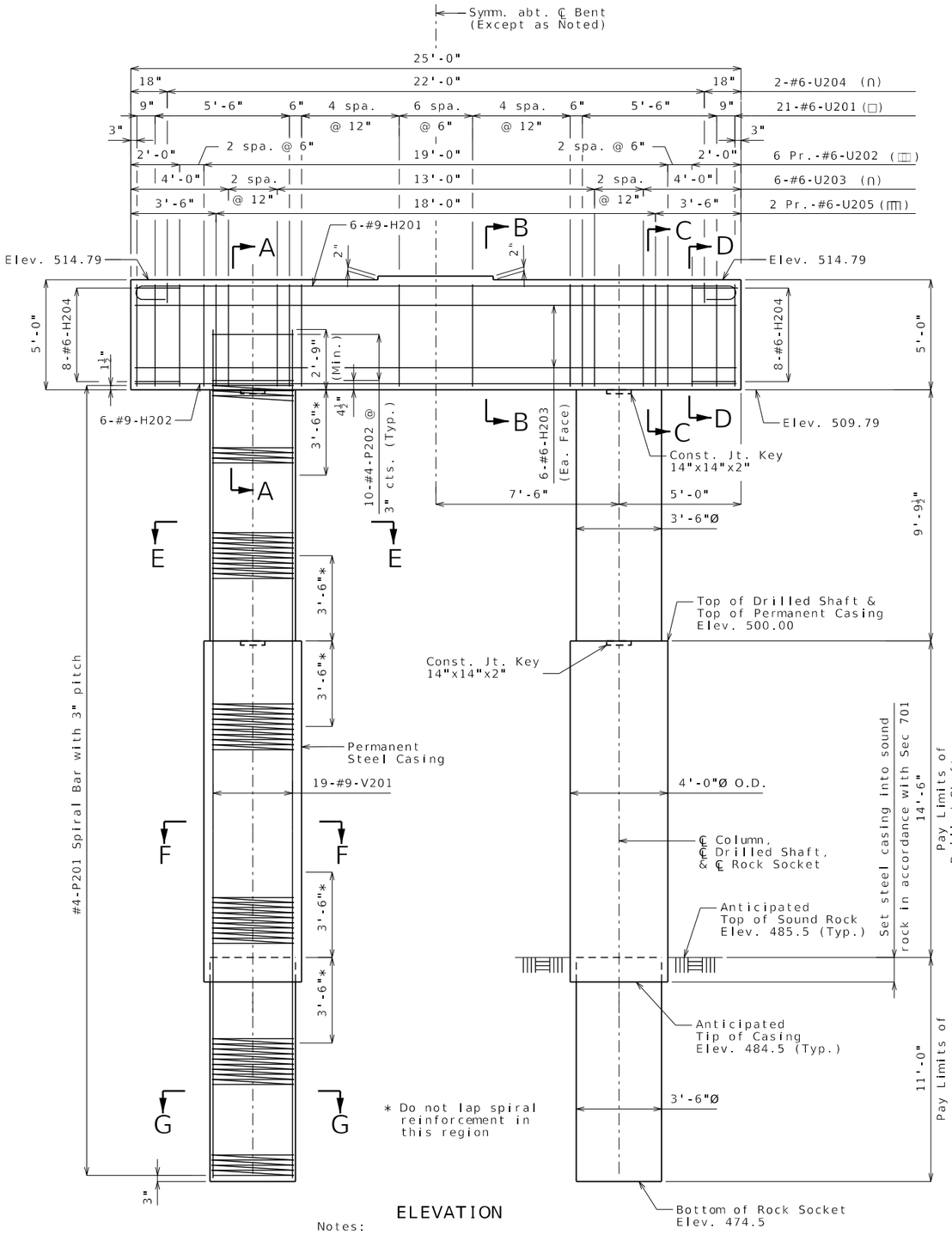
ROUTE	STATE
J	MO
DISTRICT	SHEET NO.
BR	7

COUNTY LINCOLN
JOB NO. JNE0051
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9480

DESCRIPTION | DATE

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

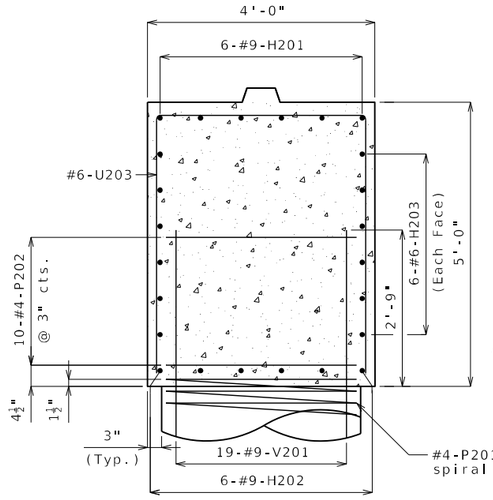
CDG ENGINEERS
One Campbell Plaza
St. Louis, Missouri 63139
T. 314 781 7770
F. 314 781 9075
Missouri State Certificate of Authority # 1721



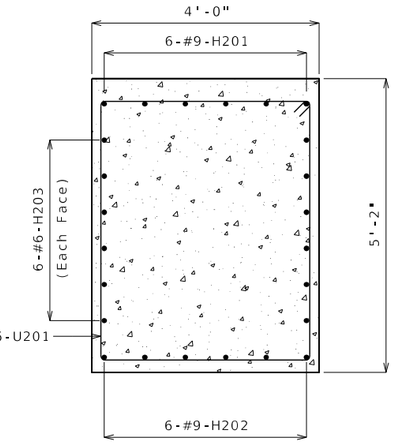
ELEVATION

Notes:

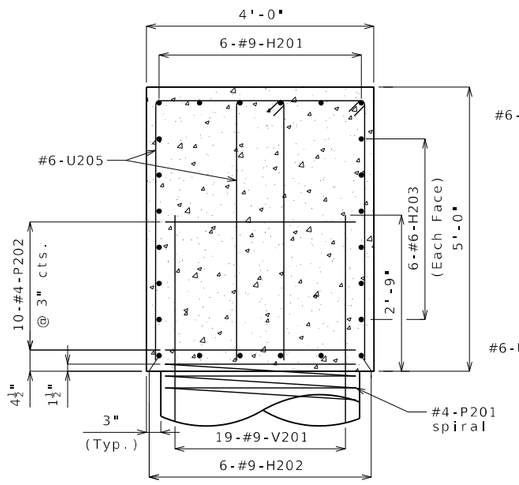
Beam keys not shown for clarity.



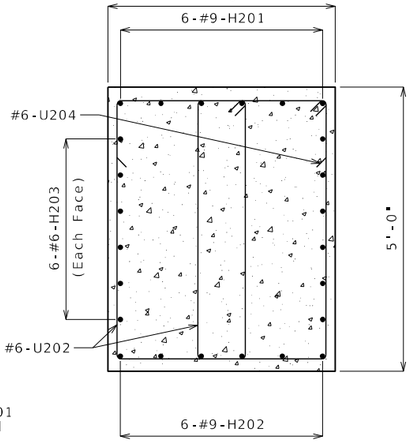
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

General Notes:

An additional 4 feet has been added to V-bar lengths and an additional 4 feet of height has been added to the P301 Spirals quantities, if required, for possible change in drilled shaft or rock socket length. The additional V-bar length shall be cut off or included in the reinforcement lap if not required. The additional P-Spirals shall be cut off if not required.

Sonic logging testing shall be performed on all drilled shafts and rock sockets.

Thickness of the permanent steel casing shall be in accordance with Sec 701.

The tip of casing shall not extend into the rock socket elevation range reported in the Foundation Data table without approval by the engineer.

All reinforcement in drilled shafts and rock sockets is included in the Substructure Quantities.

The cost of any required excavation to the top of the drilled shafts will be considered completely covered by the contract unit price for other items.

For steps 2" or more, use 2-1/4" x 1/2" joint filler up vertical face.

Work this sheet with Sheet No. 9.

For Sections E-E, F-F and G-G, see Sheet No. 9.

For Substructure Quantity Table, see Sheet No. 9.

DETAILS OF INTERMEDIATE BENT NO. 2

Detailed Sept. 2024
Checked Sept. 2024

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

DAVID BURDICK
NUMBER E-24015
REGISTERED PROFESSIONAL ENGINEER
STATE OF MISSOURI
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

DATE PREPARED
4/3/2025

ROUTE	STATE
J	MO
DISTRICT	SHEET NO.
BR	8

COUNTY
LINCOLN

JOB NO.
JNE0051

CONTRACT ID.

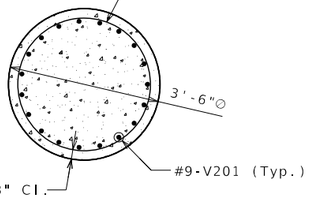
PROJECT NO.

BRIDGE NO.
A9480

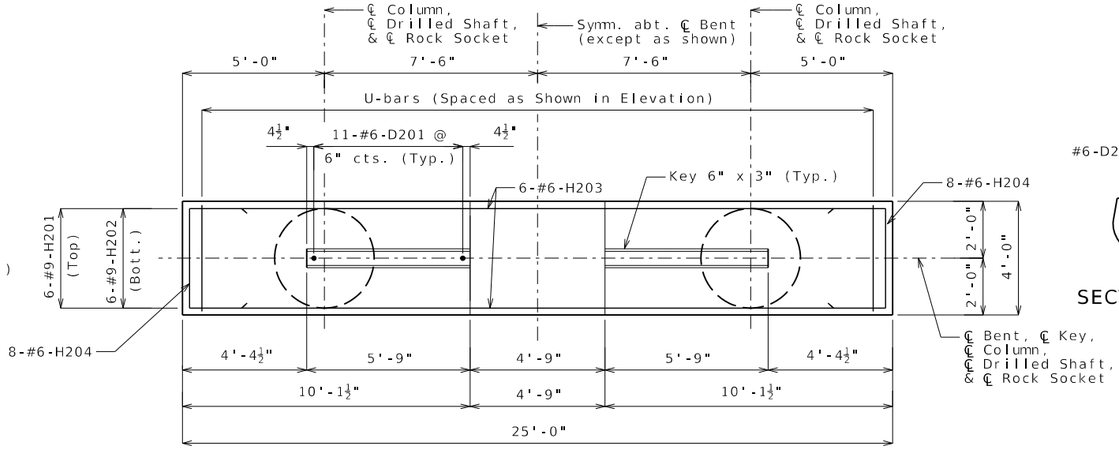
DESCRIPTION	DATE

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

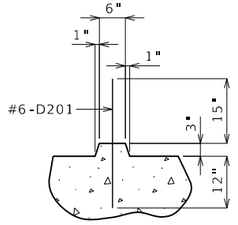
CDG ENGINEERS
One Campbell Plaza
St. Louis, Missouri 63139
T. 314 781 7770
F. 314 781 9075
Missouri State Certificate of Authority # 1721



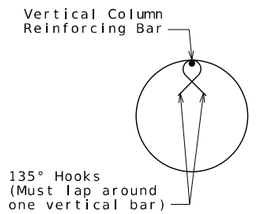
SECTION E-E
(Column)



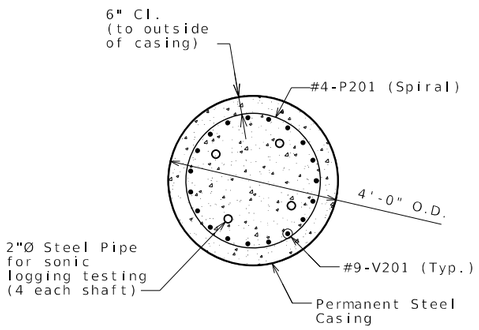
PLAN SHOWING REINFORCEMENT



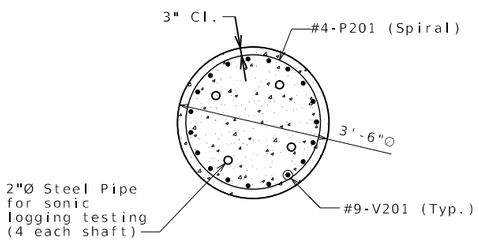
SECTION THRU KEY



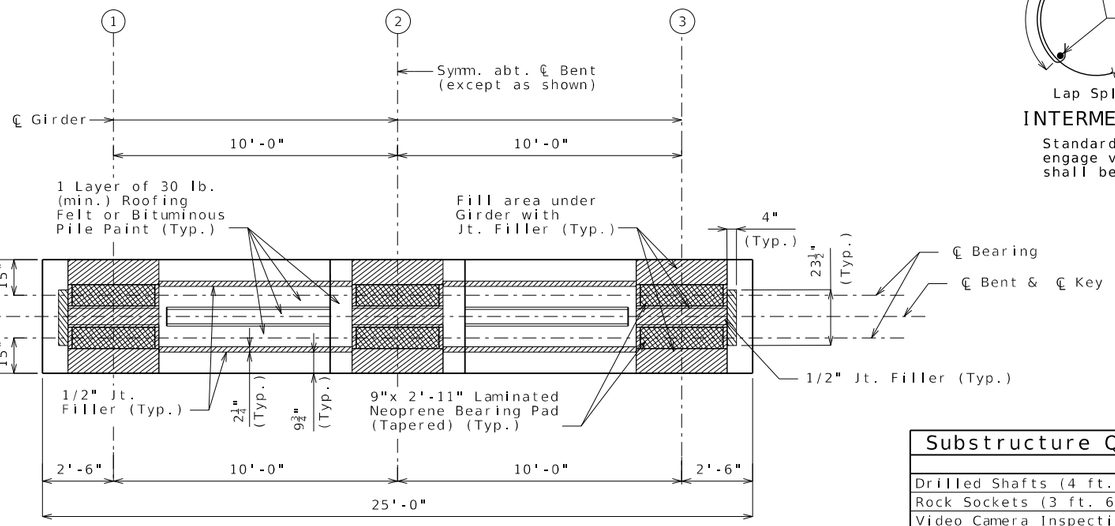
SEISMIC STIRRUP BAR



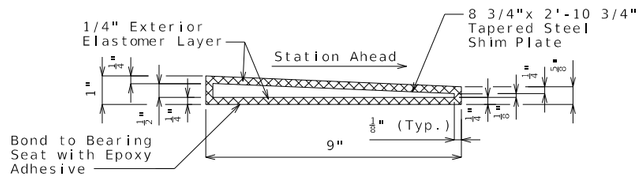
SECTION F-F
(Drilled Shaft)



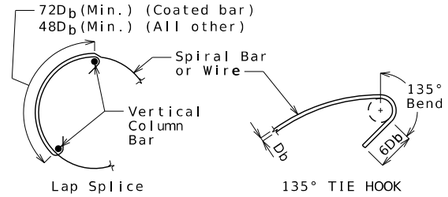
SECTION G-G
(Rock Socket)



PLAN OF BEAM



SECTION THRU LAMIMNATED NEOPRENE BEARING PAD (TAPERED)



Lap Splice — 135° TIE HOOK

INTERMEDIATE SPLICE OF SPIRALS

Standard 135-degree tie hooks that engage vertical column reinforcing bars shall be provided at each end of splice.

Substructure Quantity Table for Bent No. 2		
Item		Quantity
Drilled Shafts (4 ft. 0 in. Dia.)	linear foot	29.0
Rock Sockets (3 ft. 6 in. Dia.)	linear foot	22.0
Video Camera Inspection	each	2
Foundation Inspection Holes	linear foot	42.0
Sonic Logging Testing	each	2
Class B-1 Concrete (Substructure)	cu. yard	25.7
Reinforcing Steel (Bridges)	pound	10,330

Note: These quantities are included in the estimated quantities table on Sheet No. 3.

Notes:

Work this sheet with Sheet No. 8.

For Prestressed Girder Layout and Bearing Alignment, see Sheet No. 15.

DETAILS OF INTERMEDIATE BENT NO. 2

Detailed Sept. 2024
Checked Sept. 2024

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

STATE OF MISSOURI
DAVID BURDICK
NUMBER E-24015
REGISTERED PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

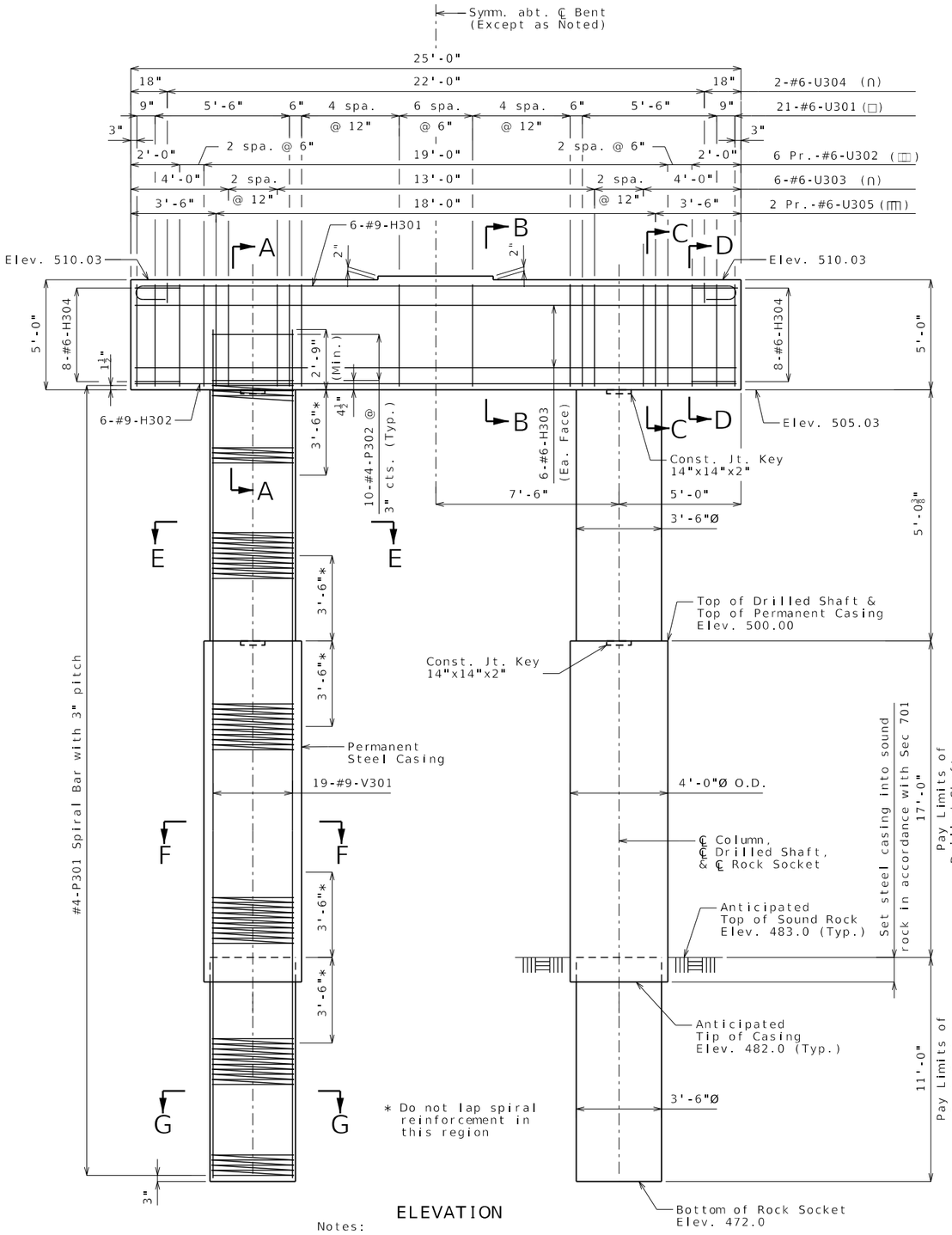
DATE PREPARED 4/3/2025
ROUTE J | STATE MO
DISTRICT BR | SHEET NO. 9
COUNTY LINCOLN
JOB NO. JNE0051
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9480

DESCRIPTION | DATE

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

CDG ENGINEERS
One Campbell Plaza
St. Louis, Missouri 63139
T. 314 781 7770
F. 314 781 9075
Missouri State Certificate of Authority # 1721

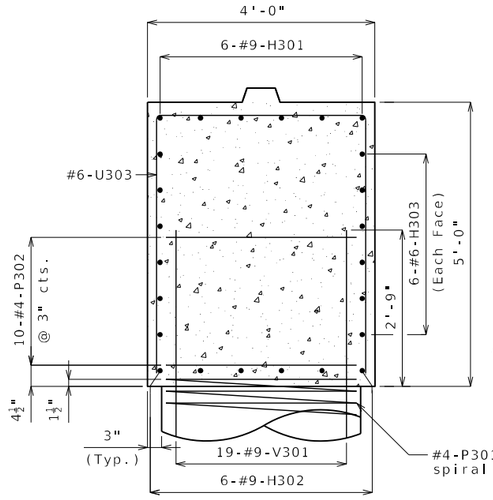
B_A9480_009_JNE0051_Int_Bent 2_2.dgn 10:04:26 AM 4/3/2025



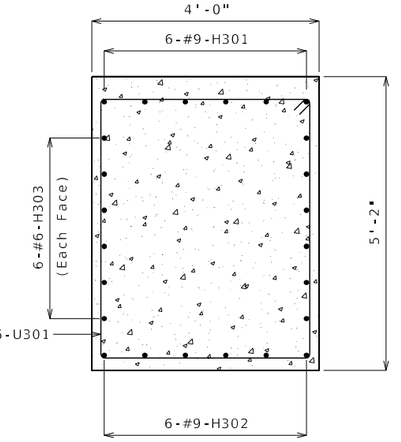
ELEVATION

Notes:

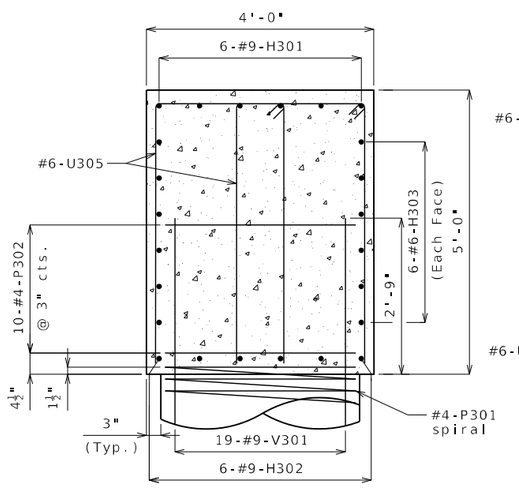
Beam keys not shown for clarity.



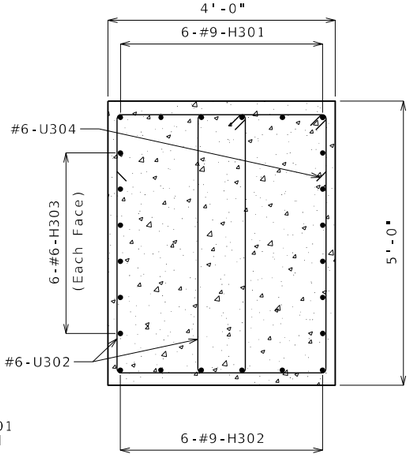
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

General Notes:

An additional 4 feet has been added to V-bar lengths and an additional 4 feet of height has been added to the P301 Spirals quantities, if required, for possible change in drilled shaft or rock socket length. The additional V-bar length shall be cut off or included in the reinforcement lap if not required. The additional P-Spirals shall be cut off if not required.

Sonic logging testing shall be performed on all drilled shafts and rock sockets.

Thickness of the permanent steel casing shall be in accordance with Sec 701.

The tip of casing shall not extend into the rock socket elevation range reported in the Foundation Data table without approval by the engineer.

All reinforcement in drilled shafts and rock sockets is included in the Substructure Quantities.

The cost of any required excavation to the top of the drilled shafts will be considered completely covered by the contract unit price for other items.

For steps 2" or more, use 2-1/4" x 1/2" joint filler up vertical face.

Work this sheet with Sheet No. 11.

For Sections E-E, F-F and G-G, see Sheet No. 11.

For Substructure Quantity Table, see Sheet No. 11.

DETAILS OF INTERMEDIATE BENT NO. 3

Detailed Sept. 2024
Checked Sept. 2024

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

STATE OF MISSOURI
DAVID BURDICK
NUMBER E-24015
REGISTERED PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

DATE PREPARED
4/3/2025

ROUTE	STATE
J	MO
DISTRICT	SHEET NO.
BR	10

COUNTY
LINCOLN

JOB NO.
JNE0051

CONTRACT ID.

PROJECT NO.

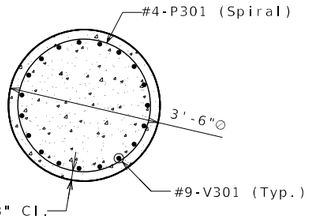
BRIDGE NO.
A9480

DESCRIPTION

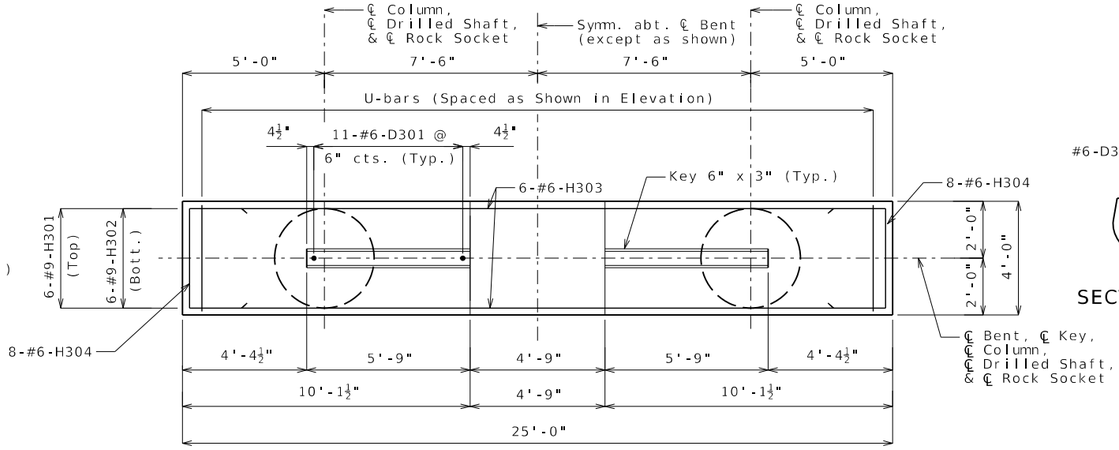
DATE

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

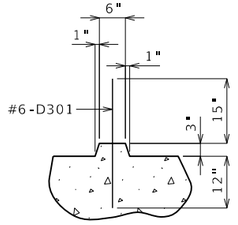
CDG ENGINEERS
One Campbell Plaza
St. Louis, Missouri 63139
T. 314 781 7770
F. 314 781 9075
Missouri State Certificate of Authority # 1721



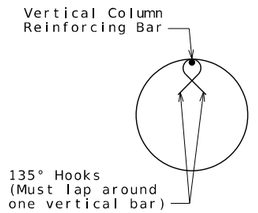
SECTION E-E
(Column)



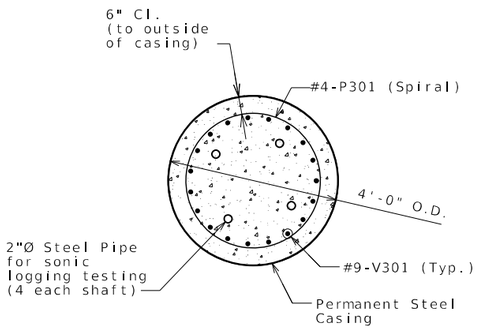
PLAN SHOWING REINFORCEMENT



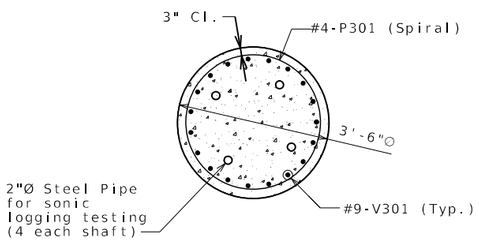
SECTION THRU KEY



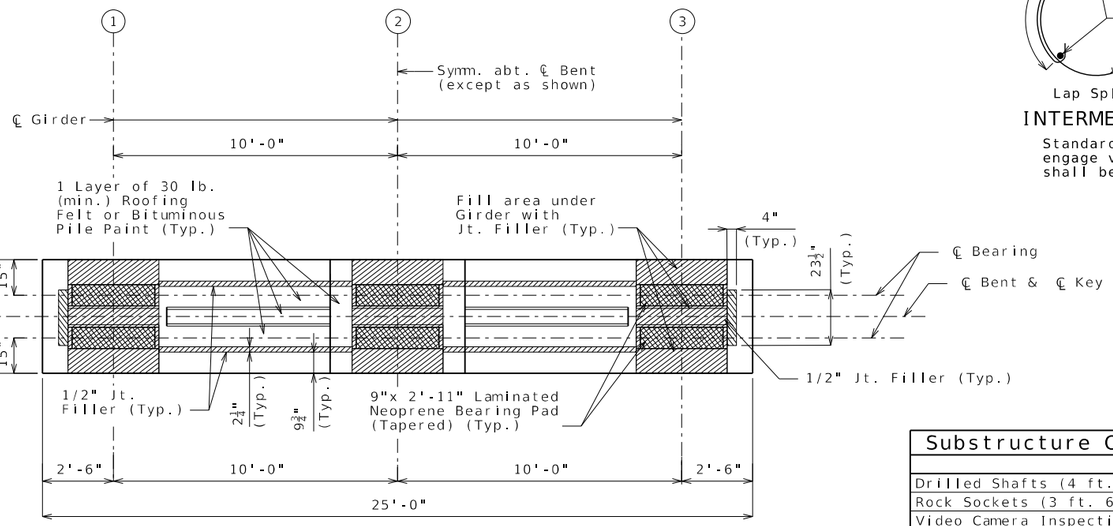
SEISMIC STIRRUP BAR



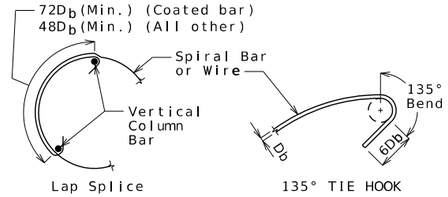
SECTION F-F
(Drilled Shaft)



SECTION G-G
(Rock Socket)

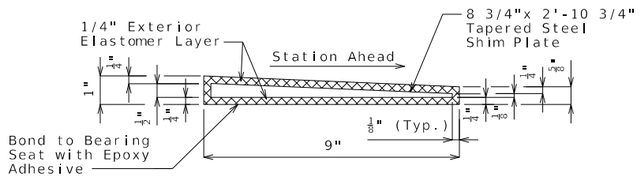


PLAN OF BEAM



INTERMEDIATE SPLICE OF SPIRALS

Standard 135-degree tie hooks that engage vertical column reinforcing bars shall be provided at each end of splice.



SECTION THRU LAMIMNATED NEOPRENE BEARING PAD (TAPERED)

Substructure Quantity Table for Bent No. 3		
Item		Quantity
Drilled Shafts (4 ft. 0 in. Dia.)	linear foot	34.0
Rock Sockets (3 ft. 6 in. Dia.)	linear foot	22.0
Video Camera Inspection	each	2
Foundation Inspection Holes	linear foot	42.0
Sonic Logging Testing	each	2
Class B-1 Concrete (Substructure)	cu. yard	22.3
Reinforcing Steel (Bridges)	pound	9,920

Note: These quantities are included in the estimated quantities table on Sheet No. 3.

Notes:

Work this sheet with Sheet No. 10.

For Prestressed Girder Layout and Bearing Alignment, see Sheet No. 15.

DETAILS OF INTERMEDIATE BENT NO. 3

Detailed Sept. 2024
Checked Sept. 2024

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

STATE OF MISSOURI
DAVID BURDICK
NUMBER E-24015
REGISTERED PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

DATE PREPARED 4/3/2025

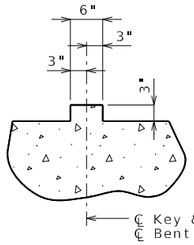
ROUTE	STATE
J	MO
DISTRICT	SHEET NO.
BR	11

COUNTY: LINCOLN
JOB NO.: JNE0051
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A9480

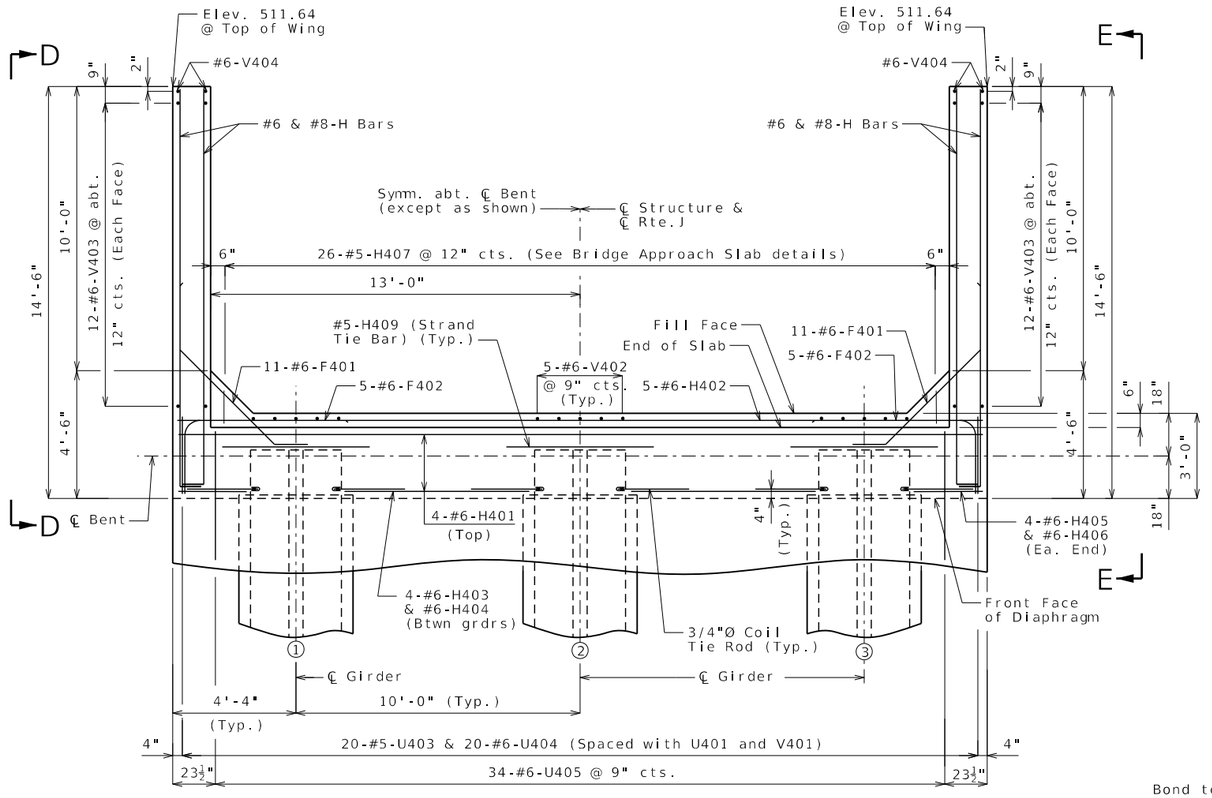
DESCRIPTION | DATE

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

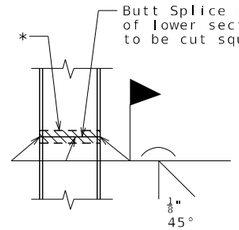
CDG ENGINEERS
One Campbell Plaza
St. Louis, Missouri 63139
T. 314 781 7770
F. 314 781 9075
Missouri State Certificate of Authority # 1721



SECTION THRU KEY



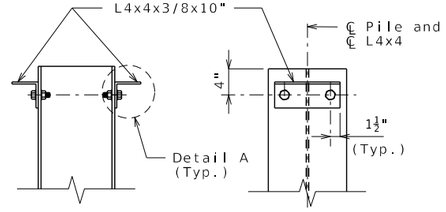
PART PLAN



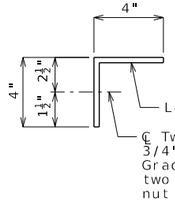
STEEL PILE SPLICE

(If required)

* Galvanizing material shall be omitted or removed one inch clear of weld locations in accordance with Sec 702.

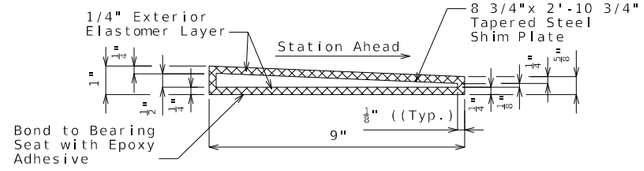


DETAILS OF HP PILE ANCHORS

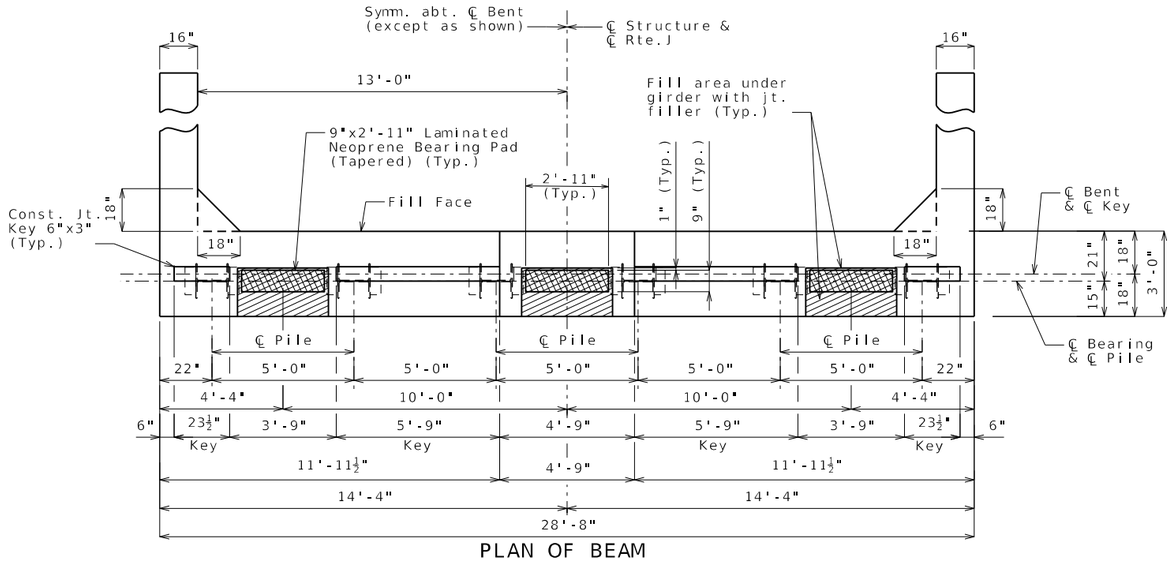


DETAIL A

Angles shall be coated with a minimum of two coats of non-aluminum epoxy mastic primer to provide a dry film thickness of 4 mils minimum, 8 mils maximum, or galvanized in accordance with Sec 1081. Bolts, washers and nuts shall be galvanized in accordance with AASHTO M 232 (ASTM A153), Class C.



SECTION THRU LAMIMNATED NEOPRENE BEARING PAD (TAPERED)



PLAN OF BEAM

General Notes:

Work this sheet with Sheets No. 13 & 14.

For Elevations D-D & E-E, see Sheet No. 14.

DETAILS OF END BENT NO. 4

Detailed Sept. 2024
Checked Sept. 2024

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

DATE PREPARED 4/3/2025

ROUTE	STATE
J	MO
DISTRICT	SHEET NO.
BR	12

COUNTY: LINCOLN

JOB NO.: JNE0051

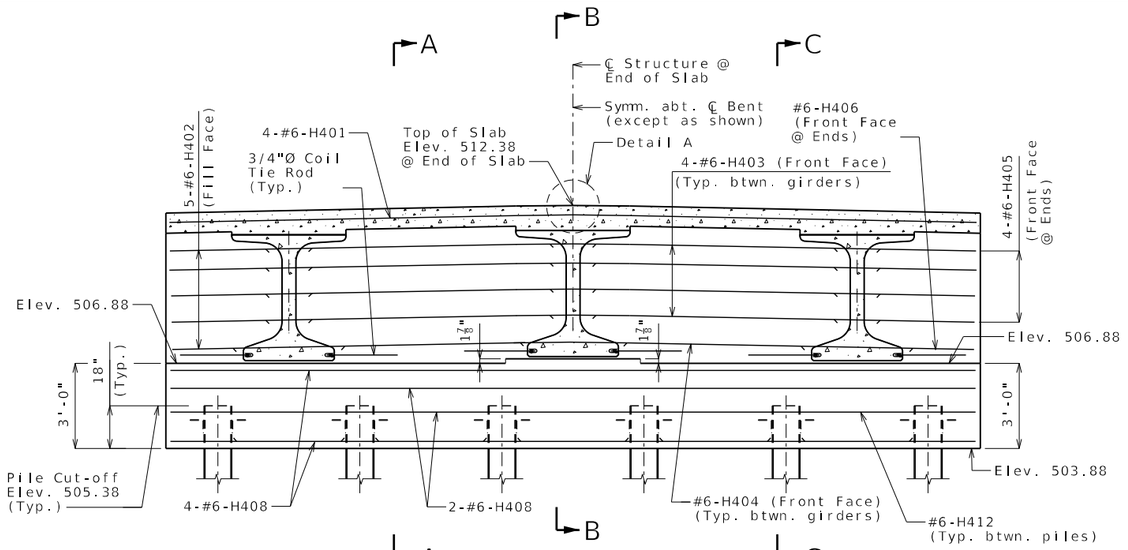
CONTRACT ID.:

PROJECT NO.:

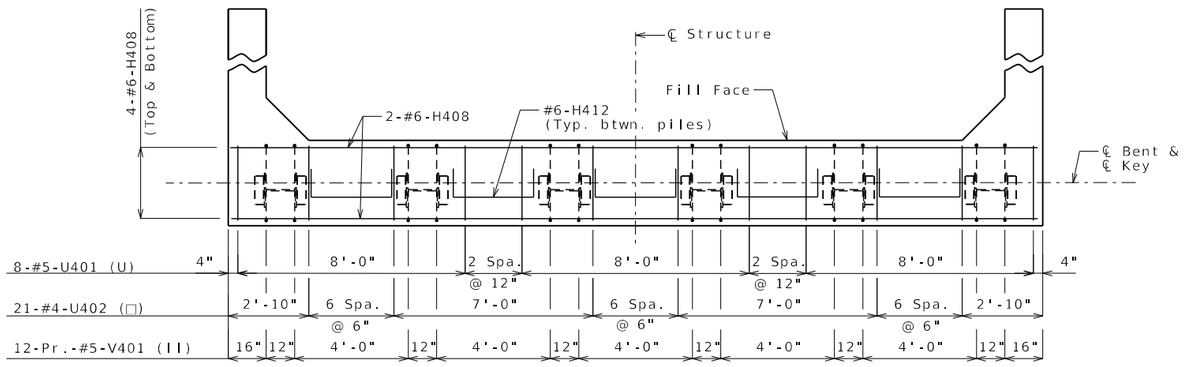
BRIDGE NO.: A9480

DESCRIPTION | DATE

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

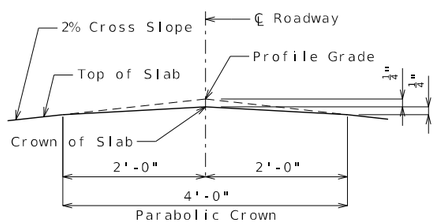


A SECTION NEAR END BENT



PLAN OF BEAM SHOWING REINFORCEMENT

Note: Keys and steps not shown for clarity.



DETAIL A

General Notes:

Work this sheet with Sheets No. 12 & 14.

Strands at end of girders shall be field bent or, if necessary, cut in field to maintain 1 1/2" minimum clearance to fill face of end bent.

The #6-F401 bars shall be bent in the field to clear girders.

For location of Coil Tie Rods and #5-H409 (Strand Tie Bar), see Sheets No. 16 & 17.

For details of Vertical Drain at End Bents, see Sheet No. 7.

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

All U-bars, Pairs V-bars and #5-H407 shall be placed parallel to ℄ Roadway.

All vertical reinforcing bars in the substructure beams or caps shall be field adjusted to clear piles by at least 1 1/2".

For Sections A-A, B-B & C-C, see Sheet No. 14.

For reinforcement of the Type D Barrier, see Sheet No. 26.

For details of Bridge Approach Slab, see Sheet No. 27.

Substructure Quantity Table for Bent No. 4		
Item		Quantity
Class 1 Excavation	cu. yard	40
Galvanized Structural Steel Pile (14 in.)	linear foot	144
Pile Point Reinforcement	each	6
Class B Concrete (Substructure)	cu. yard	13.4

These quantities are included in the Estimated Quantities table on Sheet No. 3.

DETAILS OF END BENT NO. 4

Detailed Sept. 2024
Checked Sept. 2024

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

STATE OF MISSOURI
DAVID BURDICK
NUMBER E-24015
REGISTERED PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

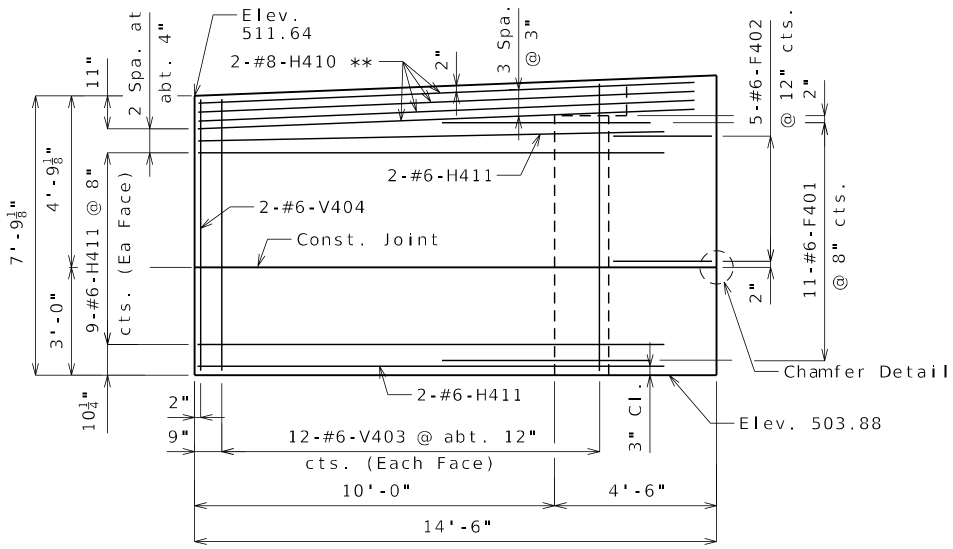
DATE PREPARED 4/3/2025

ROUTE	STATE
J	MO
DISTRICT	SHEET NO.
BR	13

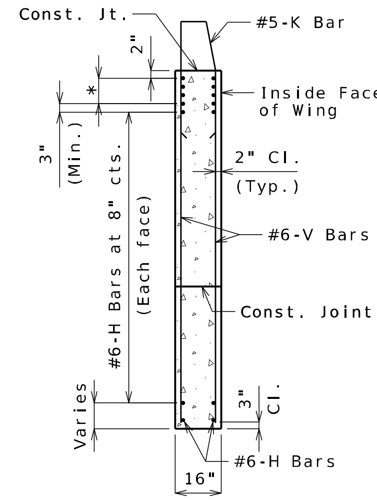
COUNTY: LINCOLN
JOB NO.: JNE0051
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A9480

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)
CDG ENGINEERS
One Campbell Plaza
St. Louis, Missouri 63139
T. 314 781 7770
F. 314 781 9075
Missouri State Certificate of Authority # 1721



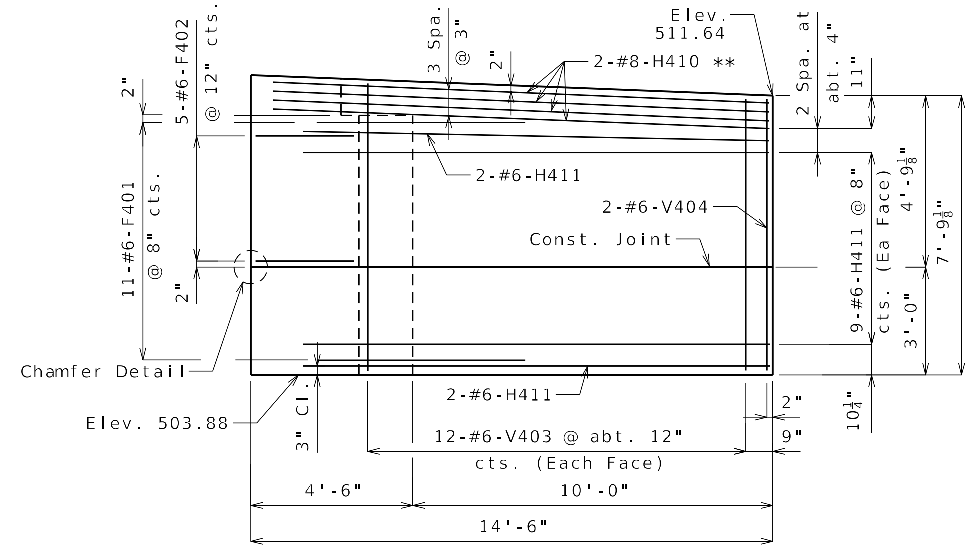
ELEVATION D-D



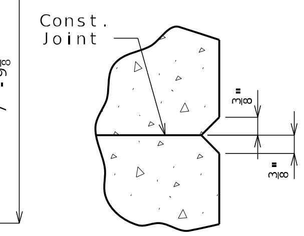
TYPICAL SECTION THRU WING

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

** Place with grade



ELEVATION E-E



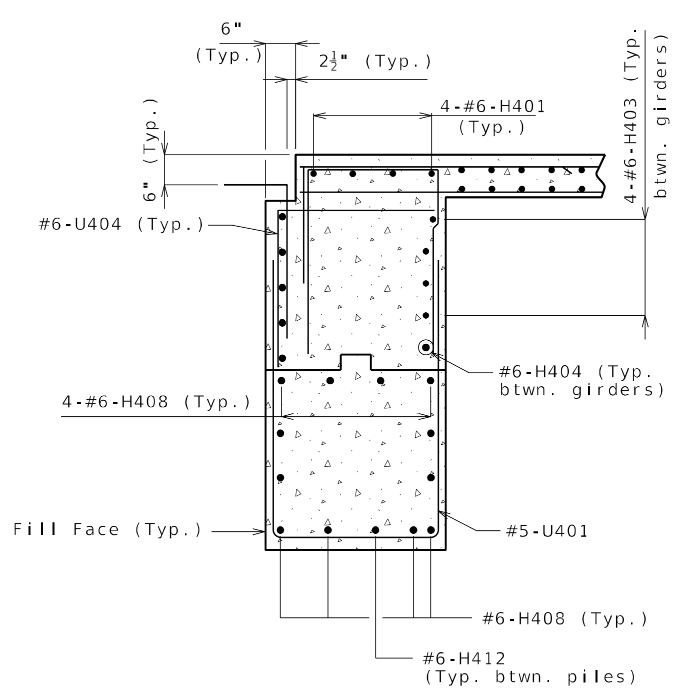
CHAMFER DETAIL

General Notes:

Work this sheet with Sheets No. 12 & 13.

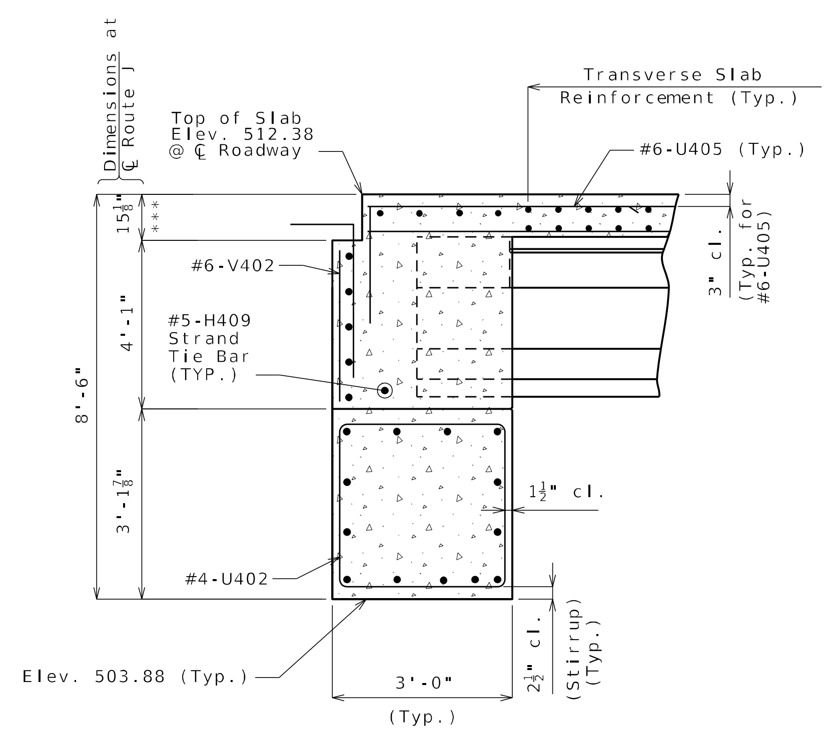
For location of Elevations D-D & E-E, see Sheet No. 12.

For location of Sections A-A, B-B,& C-C, see Sheet No. 13.

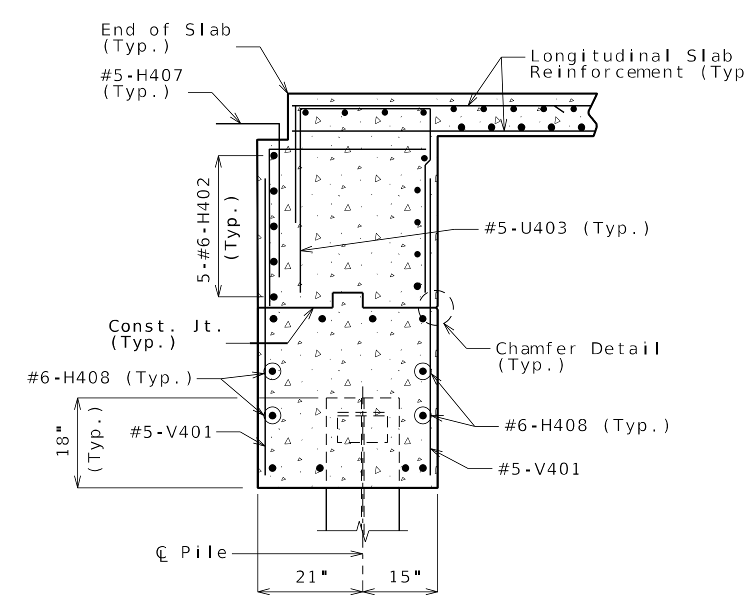


SECTION A-A

*** 12" (Min.) at gutter line



SECTION B-B



SECTION C-C

DETAILS OF END BENT NO. 4

Detailed Sept. 2024
Checked Sept. 2024

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

STATE OF MISSOURI
DAVID BURDICK
NUMBER E-24015
REGISTERED PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

DATE PREPARED	
4/3/2025	
ROUTE J	STATE MO
DISTRICT BR	SHEET NO. 14
COUNTY LINCOLN	
JOB NO. JNE0051	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A9480	

DESCRIPTION

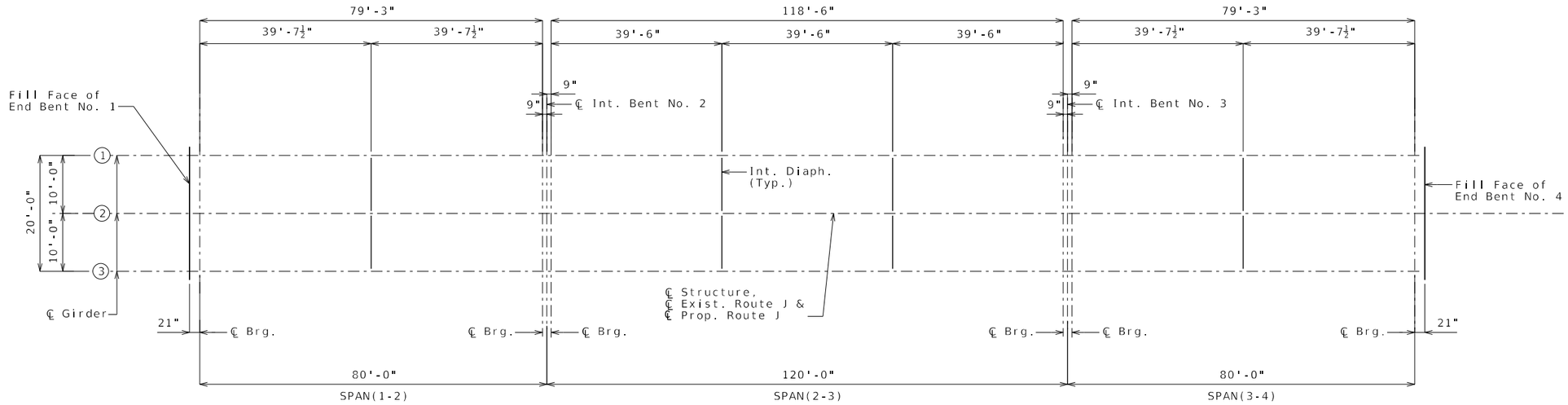
DATE

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

CDG ENGINEERS
One Campbell Plaza
St. Louis, Missouri 63139
Missouri State Certificate of Authority # 1721
T. 314 781 7770
F. 314 781 9075

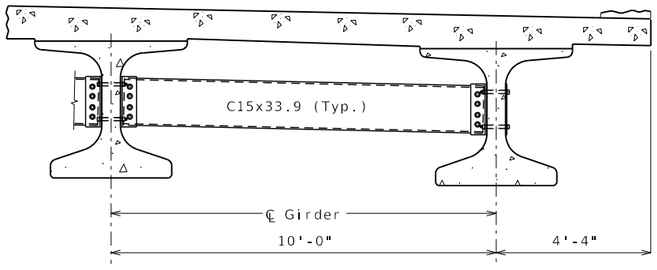
REV.

B_A9480_014_JNE0051_End_Bent 4_3.dgn 10:04:33 AM 4/3/2025

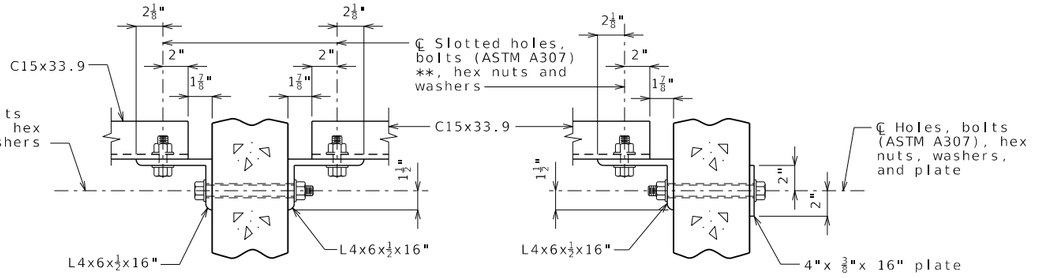


PLAN SHOWING LOCATION OF STEEL INTERMEDIATE DIAPHRAGMS

Longitudinal dimensions are horizontal.

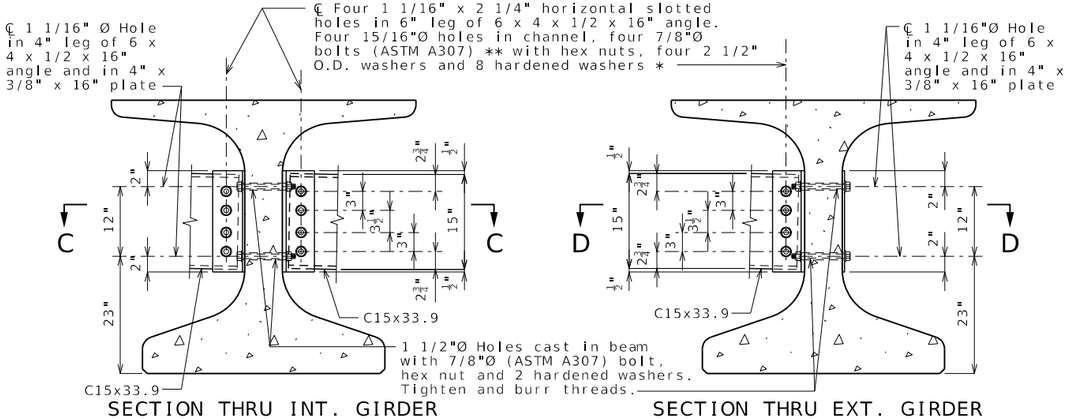


PART SECTION SHOWING INTERMEDIATE DIAPHRAGMS



SECTION C-C

SECTION D-D



SECTION THRU INT. GIRDER AT DIAPHRAGM

SECTION THRU EXT. GIRDER AT DIAPHRAGM

STEEL DIAPHRAGM NOTES:

* In lieu of 2 1/2" outside diameter washers, contractor may substitute a 3/16" (Min. thickness) plate with four 15/16" Ø holes and one hardened washer per bolt.

** Bolts shall be tightened to provide a tension of one-half that specified in Sec 712 for high strength bolt installation. ASTM F3125 Grade A325 Type 1 bolts may be substituted for and installed in accordance with the requirements for the specified ASTM A307 bolts.

All diaphragm materials including bolts, nuts, and washers shall be galvanized.

Fabricated structural steel shall be ASTM A709 Grade 36 except as noted.

Payment for furnishing and installing steel intermediate diaphragms will considered completely covered by the contract unit price for Steel Intermediate Diaphragm for P/S Concrete Girders.

Shop drawings will not be required for steel intermediate diaphragms and angle connections.

STEEL INTERMEDIATE DIAPHRAGMS

Detailed Sept. 2024
Checked Sept. 2024

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

STATE OF MISSOURI
DAVID BURDICK
NUMBER E-24015
REGISTERED PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

DATE PREPARED: 4/3/2025
ROUTE: J | STATE: MO
DISTRICT: BR | SHEET NO.: 15
COUNTY: LINCOLN
JOB NO.: JNE0051
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A9480

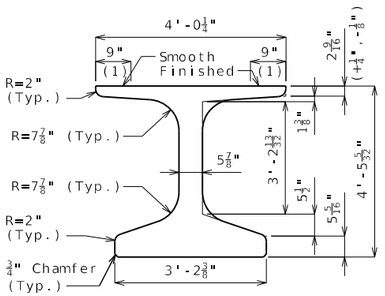
DESCRIPTION	DATE

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

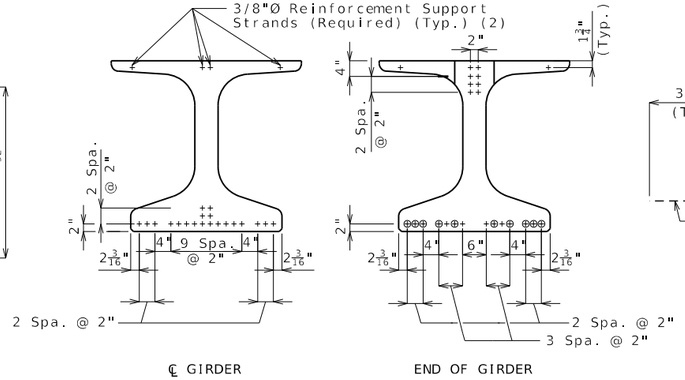
CDG ENGINEERS
One Campbell Plaza
St. Louis, Missouri 63139
T. 314 781 7770
F. 314 781 9075
Missouri State Certificate of Authority #1721

(1) Fabricator shall apply a bond breaker to this region.

(2) Outer strands tensioned to 2.02 kips/strand and inner strands to 8 kips/strand. Placed symmetrical about ℄ Girder. May be moved laterally in pairs.



DIMENSIONS

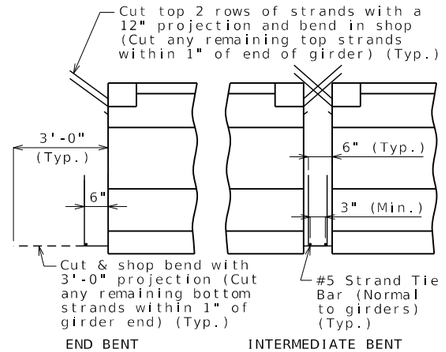


℄ GIRDER END OF GIRDER

STRAND ARRANGEMENT

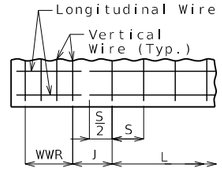
\+ Indicates prestressing strand.

o Indicates cut & shop bend with 3'-0" projection.



END BENT INTERMEDIATE BENT

STRANDS AT GIRDER ENDS



WELDED WIRE PLACEMENT

S = Vertical wire spacing

L = Length of WWR mats

J = Distance between WWR mats

Bill of Reinforcing Steel

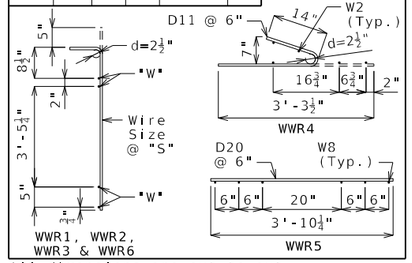
Bars Each Girder				
No.	Size/Mark		Length	Shape
102	3	G1	2'-10"	8
2	4	G3	3'-10"	20
2	4	G4	2'-3"	20
2	4	G5	2'-8"	20

Welded Wire Each Girder					
Mark	Size	S	W	L	J
WWR1	D31	4"	W12	3'-0"	5¼"
WWR2	D31	6"	W12	5'-6"	6"
WWR3	D31	9"	W12	28'-6"	4½"
WWR6	D31	2"	W12	16"	3⅜"

Bending Diagrams

16" 16" 6"
Shape 8

Shape 20



WWR1, WWR2, WWR3 & WWR6

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.

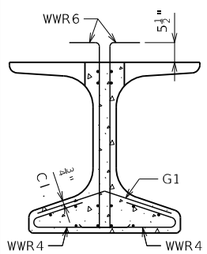
Actual bar lengths are measured along centerline of bar to the nearest inch.

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

All bar reinforcement shall be Grade 60.

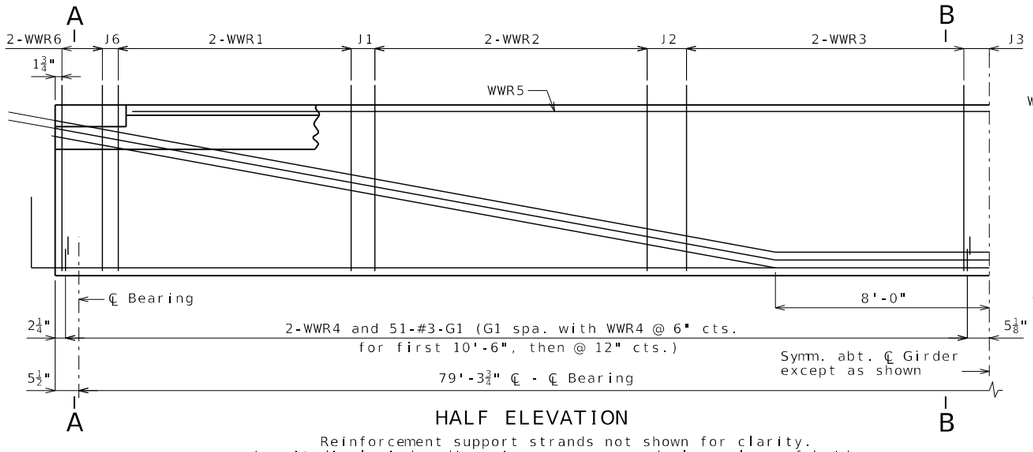
WWR shall not be epoxy coated.

G4 and G5 not required for interior girders. Half no. of G3, G4, and G5 not required for ext. girders of end spans.



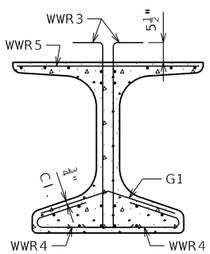
SECTION A-A

Strands not shown for clarity.



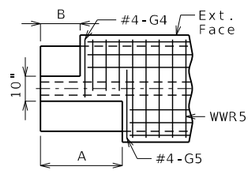
HALF ELEVATION

Reinforcement support strands not shown for clarity.
Longitudinal girder dimensions are measured along slope of bridge.

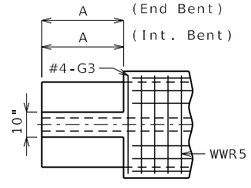


SECTION B-B

Strands not shown for clarity.



LEFT EXTERIOR GIRDER AT INTERMEDIATE BENT
Rotate 180° for right ext.



INTERIOR GIRDER AT ALL BENTS & EXTERIOR GIRDER AT END BENT

TOP FLANGE BLOCKOUT

General Notes:

Concrete for prestressed beams shall be Class A-1 with f'c = 8000 psi and f'ci = 6500 psi.

Use 20 strands, 0.6"Ø Grade 270, with an initial prestress force of 879 kips.

Pretensioned members shall be in accordance with Sec 1029.

Fabricator shall be responsible for location and design of lifting devices.

Exterior and interior girders are the same except: coil ties, top flange blockout, application of bond breaker, coil inserts for slab drains, holes for steel intermediate diaphragms.

For Girder Camber Diagram, see Sheet No. 22.

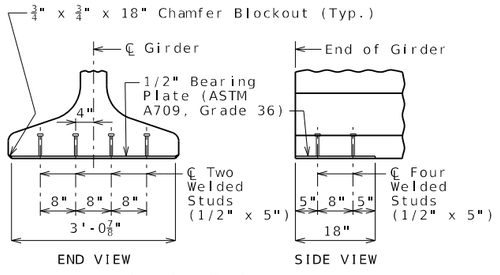
The 1 1/2"Ø holes shall be cast in the web for steel intermediate diaphragms. Drilling is not allowed. For location of holes and details of steel intermediate diaphragms, see Sheet No. 15.

For location of coil inserts at slab drains, see Sheet No. 21.

For location of coil ties at concrete diaphragms and integral bents, see Sheets No. 4, 12 and 20.

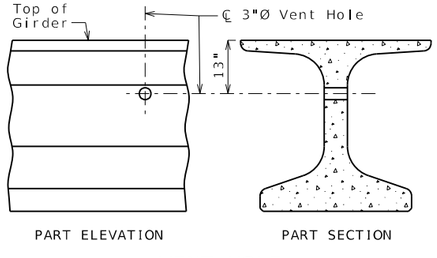
Alternate bar reinforcing steel details are provided and may be used. The same type of reinforcing steel shall be used for all girders in all spans.

BLOCKOUT DIMENSIONS				
	Bent No. 1	Bent No. 2	Bent No. 3	Bent No. 4
A	16⅛"	12⅛"	7⅛"	21⅛"
B	—	9⅜"	5⅜"	—



END VIEW SIDE VIEW

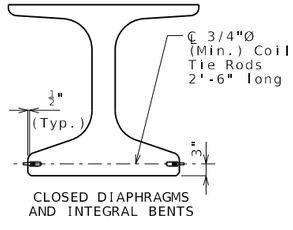
BEARING PLATE



PART ELEVATION PART SECTION

VENT HOLE

Place vent holes at or near upgrade 1/3 point of girders and clear reinforcing steel or strands by 1 1/2" minimum and steel intermediate diaphragm bolt connections by 6" minimum.



CLOSED DIAPHRAGMS AND INTEGRAL BENTS

COIL TIES

Exclude coil tie at exterior face of exterior girders except at integral end bents.

NU-GIRDERS - SPANS (1-2) AND (3-4)

Detailed Sept. 2024
Checked Sept. 2024

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

DAVID BURDICK NUMBER E-24015 REGISTERED PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

DATE PREPARED 4/3/2025
ROUTE J STATE MO
DISTRICT BR SHEET NO. 16
COUNTY LINCOLN
JOB NO. JNE0051
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9480

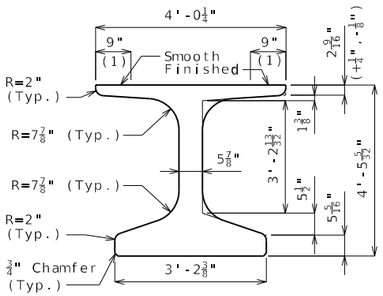
DESCRIPTION DATE REV.

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

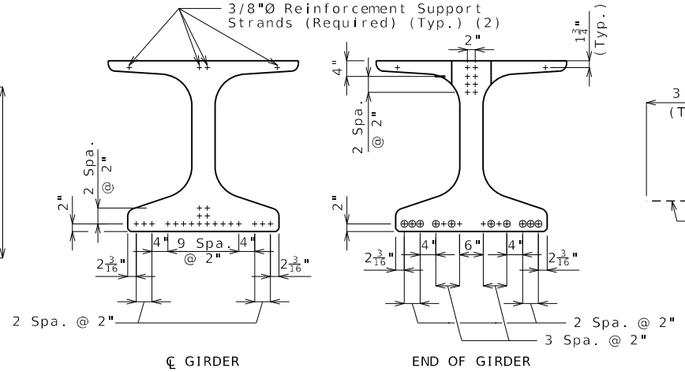
CDG ENGINEERS
One Campbell Plaza
St. Louis, Missouri 63139
T. 314 781 7770
F. 314 781 9075
Missouri State Certificate of Authority # 1721

(1) Fabricator shall apply a bond breaker to this region.

(2) Outer strands tensioned to 2.02 kips/strand and inner strands to 8 kips/strand. Placed symmetrical about ℄ Girder. May be moved laterally in pairs.

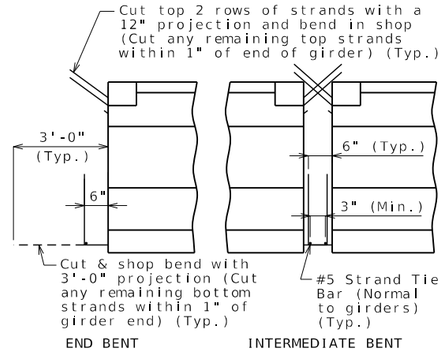


DIMENSIONS



℄ GIRDER END OF GIRDER

STRAND ARRANGEMENT

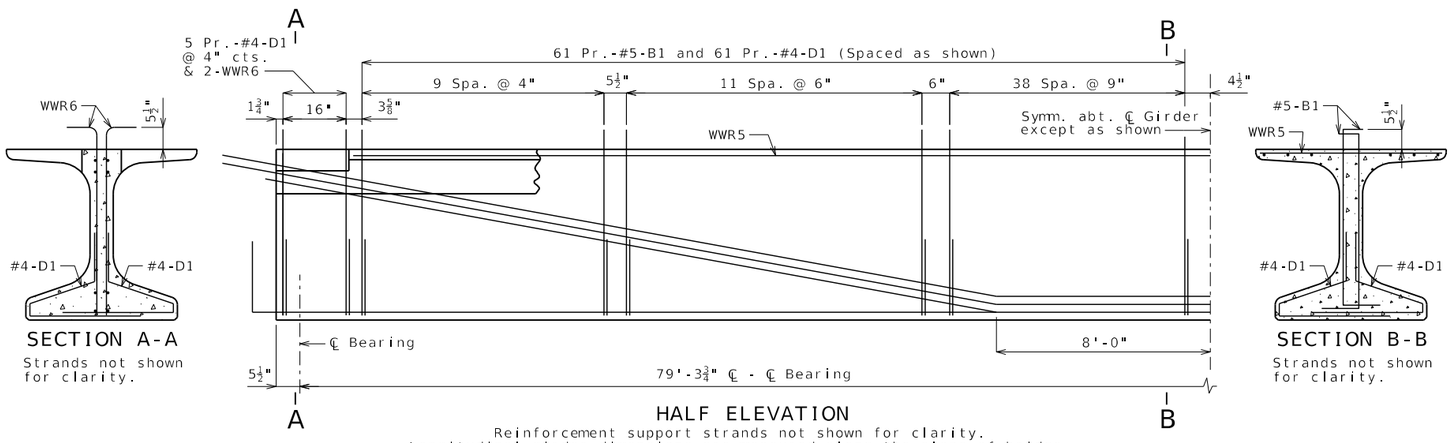


END BENT INTERMEDIATE BENT

STRANDS AT GIRDER ENDS

+ Indicates prestressing strand.

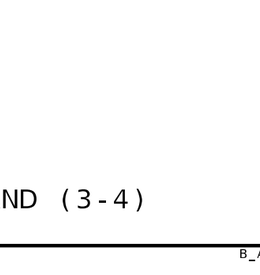
o Indicates cut & shop bend with 3'-0" projection.



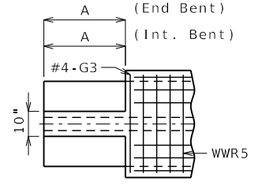
SECTION A-A
Strands not shown for clarity.

HALF ELEVATION
Reinforcement support strands not shown for clarity.
Longitudinal girder dimensions are measured along the slope of bridge.

SECTION B-B
Strands not shown for clarity.



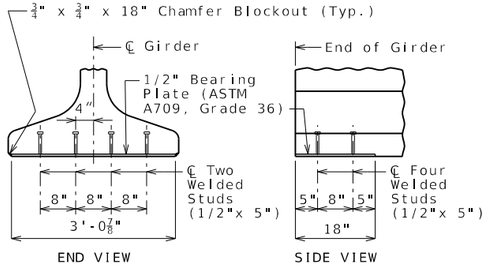
LEFT EXTERIOR GIRDER AT INTERMEDIATE BENT
Rotate 180° for right ext.



INTERIOR GIRDER AT ALL BENTS & EXTERIOR GIRDER AT END BENT

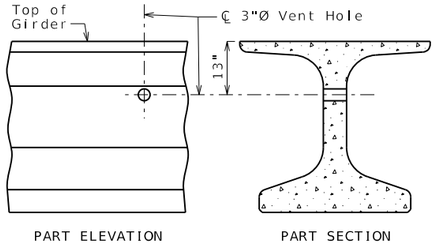
TOP FLANGE BLOCKOUT

BLOCKOUT DIMENSIONS				
	Bent No. 1	Bent No. 2	Bent No. 3	Bent No. 4
A	16⅞"	12⅜"	7⅛"	21⅛"
B	—	9⅝"	5⅝"	—



END VIEW SIDE VIEW

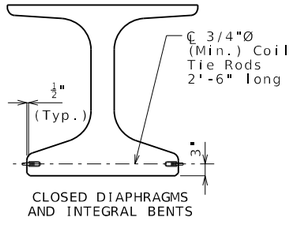
BEARING PLATE



PART ELEVATION PART SECTION

VENT HOLE

Place vent holes at or near upgrade 1/3 point of girders and clear reinforcing steel or strands by 1 1/2" minimum and steel intermediate diaphragm bolt connections by 6" minimum.



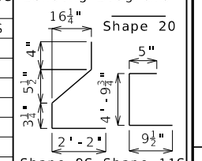
CLOSED DIAPHRAGMS AND INTEGRAL BENTS

COIL TIES

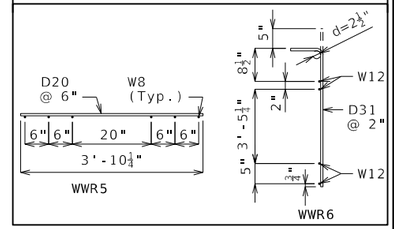
Exclude coil tie at exterior face of exterior girders except at integral end bents.

Bill of Reinforcing Steel - Each Girder			
No.	Size/ Mark	Length	Shape
244	5 B1	5'-10"	11S
264	4 D1	4'-0"	9S
2	4 G3	3'-10"	20
2	4 G4	2'-3"	20
2	4 G5	2'-8"	20

Bending Diagrams



Welded Wire Reinforcement - Each Girder



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

Minimum clearance to reinforcing shall be one inch.

All bar reinforcement shall be Grade 60.

The two D1 bars may be furnished as one bar at the fabricator's option.

All B1 bars shall be epoxy coated.

G4 and G5 not required for interior girders. Half no. of G3, G4, and G5 not required for ext. girders of end spans.

General Notes:

Concrete for prestressed girders shall be Class A-1 with f'c = 8000 psi and f'ci = 6500 psi.

Use 20 strands, 0.6"Ø Grade 270, with an initial prestress force of 879 kips.

Pretensioned members shall be in accordance with Sec 1029.

Fabricator shall be responsible for location and design of lifting devices.

Exterior and interior girders are the same except: coil ties, top flange blockout, application of bond breaker, coil inserts for slab drains, holes for steel intermediate diaphragms.

For Girder Camber Diagram, see Sheet No. 22.

The 1 1/2"Ø holes shall be cast in the web for steel intermediate diaphragms. Drilling is not allowed. For location of holes and details of steel intermediate diaphragms,see Sheet No. 15.

For location of coil inserts at slab drains, see Sheet No. 21.

For location of coil ties at concrete diaphragms and integral bents, see Sheets No. 4, 12 and 20.

Alternate bar reinforcing steel details are provided and may be used. The same type of reinforcing steel shall be used for all girders in all spans.

STATE OF MISSOURI
DAVID BURDICK
NUMBER E-24015
REGISTERED PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

DATE PREPARED 4/3/2025

ROUTE	STATE
J	MO
DISTRICT	SHEET NO.
BR	17

COUNTY LINCOLN

JOB NO. JNE0051

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A9480

DESCRIPTION	DATE	REV.

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

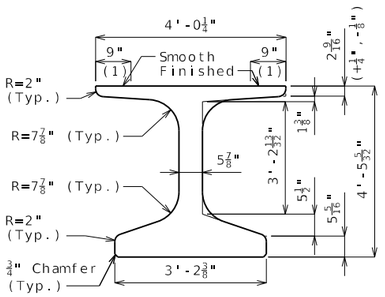
CDG ENGINEERS
One Campbell Plaza
St. Louis, Missouri 63139
T. 314 781 7770
F. 314 781 9075
Missouri State Certificate of Authority # 1721

Detailed Sept. 2024
Checked Sept. 2024

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

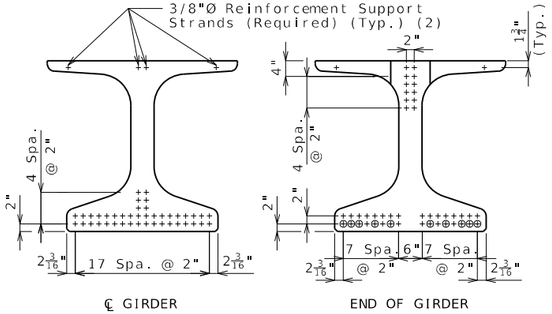
NU-GIRDERS (ALTERNATE REINFORCEMENT) - SPANS (1-2) AND (3-4)

(1) Fabricator shall apply a bond breaker to this region.



DIMENSIONS

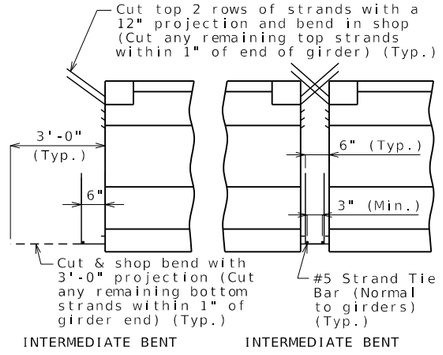
(2) Outer strands tensioned to 2.02 kips/strand and inner strands to 8 kips/strand. Placed symmetrical about ℄ Girder. May be moved laterally in pairs.



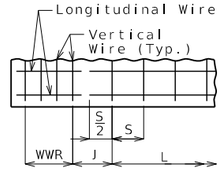
STRAND ARRANGEMENT

+ Indicates prestressing strand.

o Indicates cut & shop bend with 3'-0" projection.



STRANDS AT GIRDER ENDS



WELDED WIRE PLACEMENT

S = Vertical wire spacing

L = Length of WWR mats

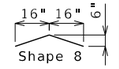
J = Distance between WWR mats

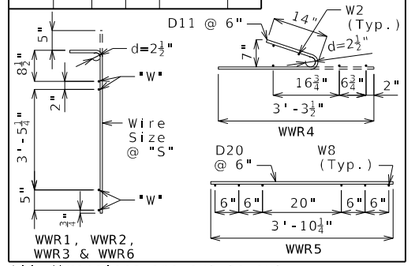
Bill of Reinforcing Steel

Bars Each Girder				
No.	Size/Mark		Length	Shape
144	3	G1	2'-10"	8
2	4	G3	3'-10"	20
2	4	G4	2'-3"	20
2	4	G5	2'-8"	20

Welded Wire Each Girder					
Mark	Size	S	W	L	J
WWR1	D31	4"	W12	3'-0"	5¼"
WWR2	D31	6"	W12	5'-6"	7¼"
WWR3	D31	9"	W12	48'-0"	4½"
WWR6	D31	2"	W12	16"	±3⅜"

Bending Diagrams





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.

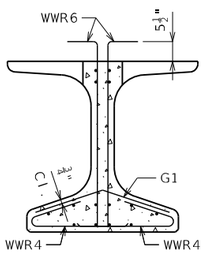
Actual bar lengths are measured along centerline of bar to the nearest inch.

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

All bar reinforcement shall be Grade 60.

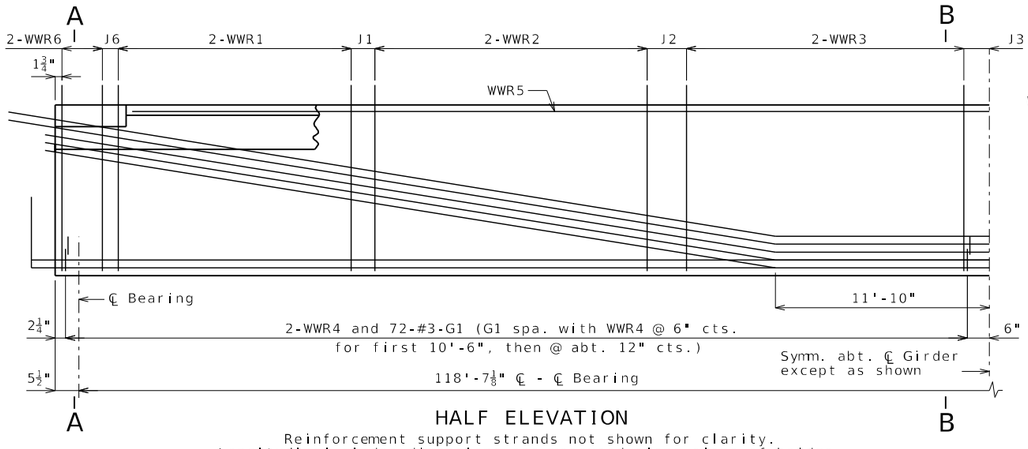
WWR shall not be epoxy coated.

G4 and G5 not required for interior girders. G3, and G5 not required for ext. girders of intermediate spans.



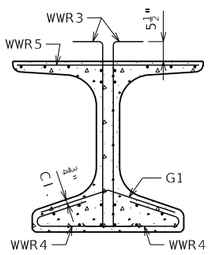
SECTION A-A

Strands not shown for clarity.



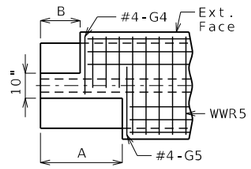
HALF ELEVATION

Reinforcement support strands not shown for clarity.
Longitudinal girder dimensions are measured along slope of bridge.



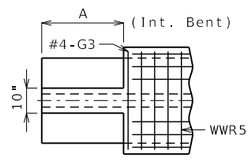
SECTION B-B

Strands not shown for clarity.



LEFT EXTERIOR GIRDER AT INTERMEDIATE BENT

Rotate 180° for right ext.



INTERIOR GIRDER AT ALL BENTS

TOP FLANGE BLOCKOUT

General Notes:

Concrete for prestressed beams shall be Class A-1 with f'c = 8000 psi and f'ci = 6500 psi.

Use 42 strands, 0.6"Ø Grade 270, with an initial prestress force of 1846 kips.

Pretensioned members shall be in accordance with Sec 1029.

Fabricator shall be responsible for location and design of lifting devices.

Exterior and interior girders are the same except: coil ties, top flange blockout, application of bond breaker, coil inserts for slab drains, holes for steel intermediate diaphragms.

For Girder Camber Diagram, see Sheet No. 22.

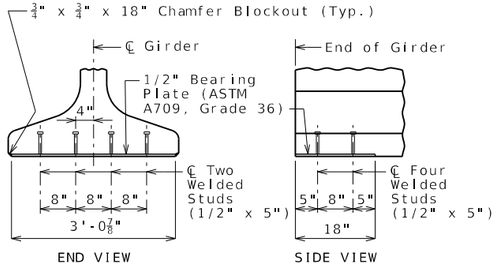
The 1 1/2"Ø holes shall be cast in the web for steel intermediate diaphragms. Drilling is not allowed. For location of holes and details of steel intermediate diaphragms, see Sheet No. 15.

For location of coil inserts at slab drains, see Sheet No. 21.

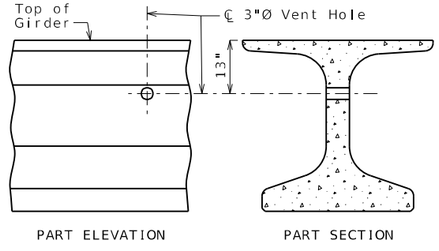
For location of coil ties at concrete diaphragms see Sheets No. 20.

Alternate bar reinforcing steel details are provided and may be used. The same type of reinforcing steel shall be used for all girders in all spans.

BLOCKOUT DIMENSIONS		
	Bent No. 2	Bent No. 3
A	7⅞"	12⅜"
B	5⅜"	9⅜"

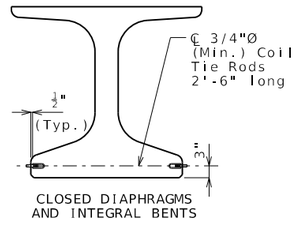


BEARING PLATE



VENT HOLE

Place vent holes at or near upgrade 1/3 point of girders and clear reinforcing steel or strands by 1 1/2" minimum and steel intermediate diaphragm bolt connections by 6" minimum.



COIL TIES

Exclude coil tie at exterior face of exterior girders.

NU-GIRDERS - SPAN (2-3)

Detailed Sept. 2024
Checked Sept. 2024

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

STATE OF MISSOURI
DAVID BURDICK
NUMBER E-24015
REGISTERED PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

DATE PREPARED 4/3/2025

ROUTE J | STATE MO

DISTRICT BR | SHEET NO. 18

COUNTY LINCOLN

JOB NO. JNE0051

CONTRACT ID.

PROJECT NO.

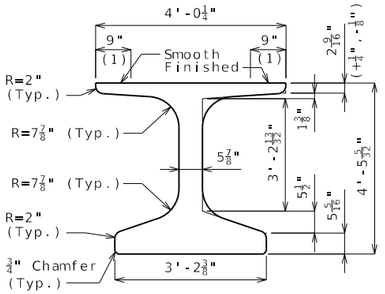
BRIDGE NO. A9480

DESCRIPTION | DATE | REV.

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

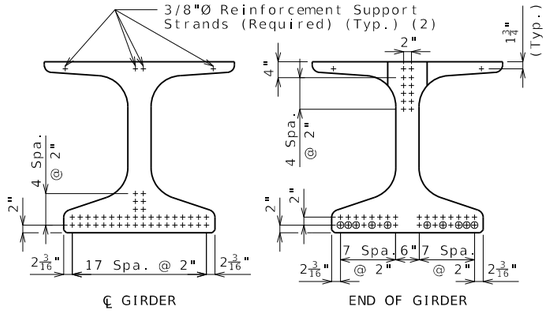
CDG ENGINEERS
One Campbell Plaza
St. Louis, Missouri 63139
T. 314 781 7770
F. 314 781 9075
Missouri State Certificate of Authority # 1721

(1) Fabricator shall apply a bond breaker to this region.



DIMENSIONS

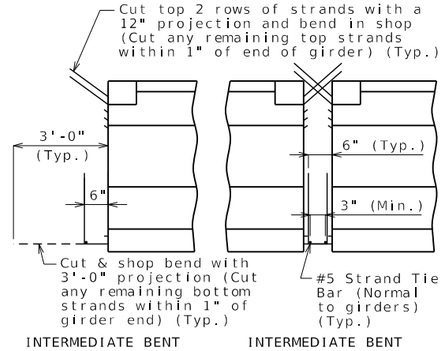
(2) Outer strands tensioned to 2.02 kips/strand and inner strands to 8 kips/strand. Placed symmetrical about ℄ Girder. May be moved laterally in pairs.



STRAND ARRANGEMENT

+ Indicates prestressing strand.

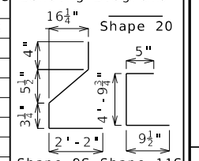
o Indicates cut & shop bend with 3'-0" projection.



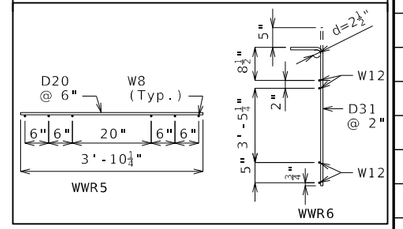
STRANDS AT GIRDER ENDS

Bill of Reinforcing Steel - Each Girder			
No.	Size/ Mark	Length	Shape
348	5 B1	5'-10"	11S
368	4 D1	4'-0"	9S
2	4 G3	3'-10"	20
2	4 G4	2'-3"	20
2	4 G5	2'-8"	20

Bending Diagrams



Welded Wire Reinforcement - Each Girder



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

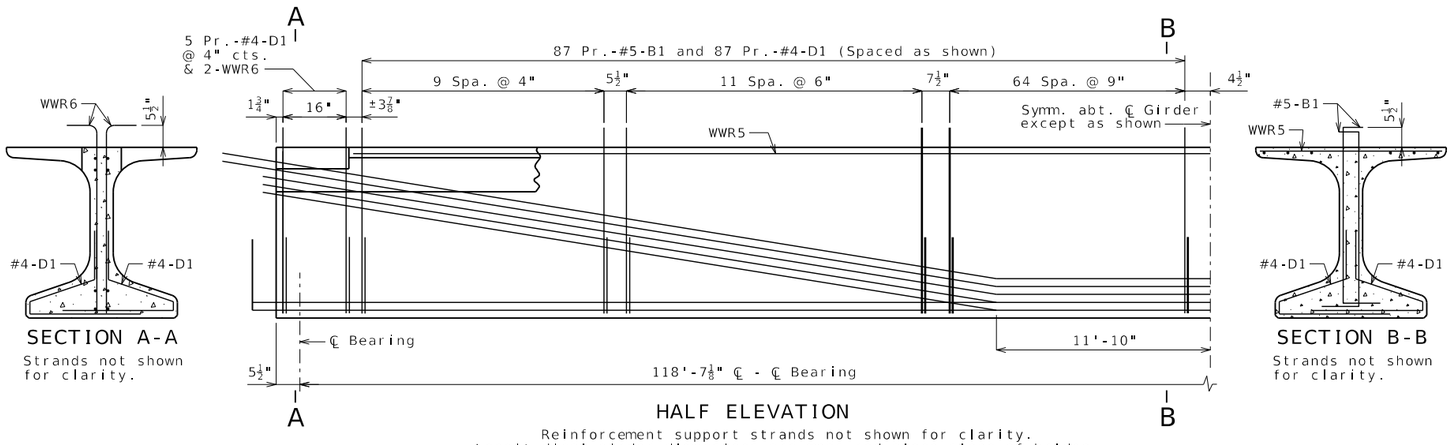
Minimum clearance to reinforcing shall be one inch.

All bar reinforcement shall be Grade 60.

The two D1 bars may be furnished as one bar at the fabricator's option.

All B1 bars shall be epoxy coated.

G4 and G5 not required for interior girders. G3 and G5 not required for exterior girders of intermediate spans.

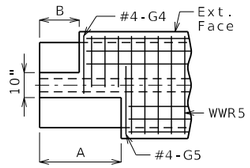


SECTION A-A
Strands not shown for clarity.

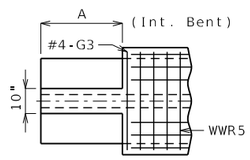
HALF ELEVATION

SECTION B-B
Strands not shown for clarity.

Reinforcement support strands not shown for clarity.
Longitudinal girder dimensions are measured along slope of bridge.



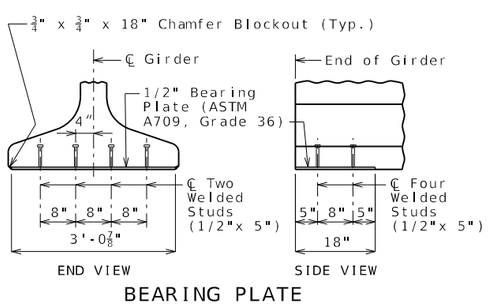
LEFT EXTERIOR GIRDER AT INTERMEDIATE BENT
Rotate 180° for right ext.



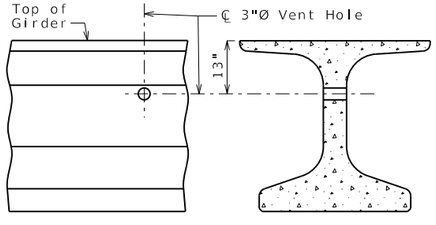
INTERIOR GIRDER AT ALL BENTS

TOP FLANGE BLOCKOUT

BLOCKOUT DIMENSIONS		
	Bent No. 2	Bent No. 3
A	7⅞"	12⅛"
B	5⅜"	9⅝"

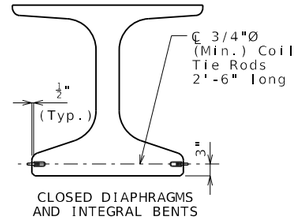


BEARING PLATE



VENT HOLE

Place vent holes at or near upgrade 1/3 point of girders and clear reinforcing steel or strands by 1 1/2" minimum and steel intermediate diaphragm bolt connections by 6" minimum.



CLOSED DIAPHRAGMS AND INTEGRAL BENTS

COIL TIES

Exclude coil tie at exterior face of exterior girders.

General Notes:

Concrete for prestressed girders shall be Class A-1 with f'c = 8000 psi and f'ci = 6500 psi.

Use 42 strands, 0.6"Ø Grade 270, with an initial prestress force of 1846 kips.

Pretensioned members shall be in accordance with Sec 1029.

Fabricator shall be responsible for location and design of lifting devices.

Exterior and interior girders are the same except: coil ties, top flange blockout, application of bond breaker, coil inserts for slab drains, holes for steel intermediate diaphragms.

For Girder Camber Diagram, see Sheet No. 22.

The 1 1/2"Ø holes shall be cast in the web for steel intermediate diaphragms. Drilling is not allowed. For location of holes and details of steel intermediate diaphragms, see Sheet No. 15.

For location of coil inserts at slab drains, see Sheet No. 21.

For location of coil ties at concrete diaphragms see Sheet No. 20.

Alternate bar reinforcing steel details are provided and may be used. The same type of reinforcing steel shall be used for all girders in all spans.

NU-GIRDERS (ALTERNATE REINFORCEMENT) - SPAN (2-3)

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

Detailed Sept. 2024
Checked Sept. 2024

STATE OF MISSOURI
DAVID BURDICK
NUMBER E-24015
REGISTERED PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

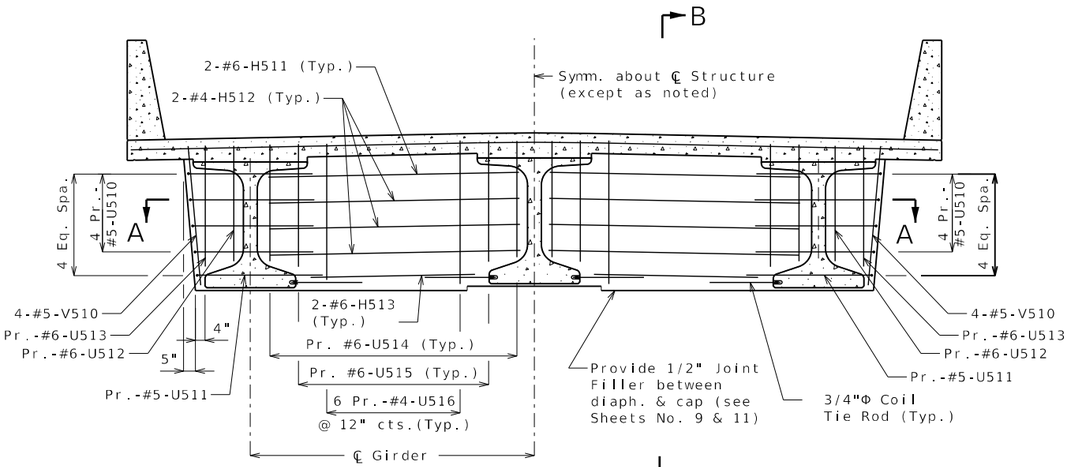
DATE PREPARED 4/3/2025

ROUTE J | STATE MO
DISTRICT BR | SHEET NO. 19
COUNTY LINCOLN
JOB NO. JNE0051
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9480

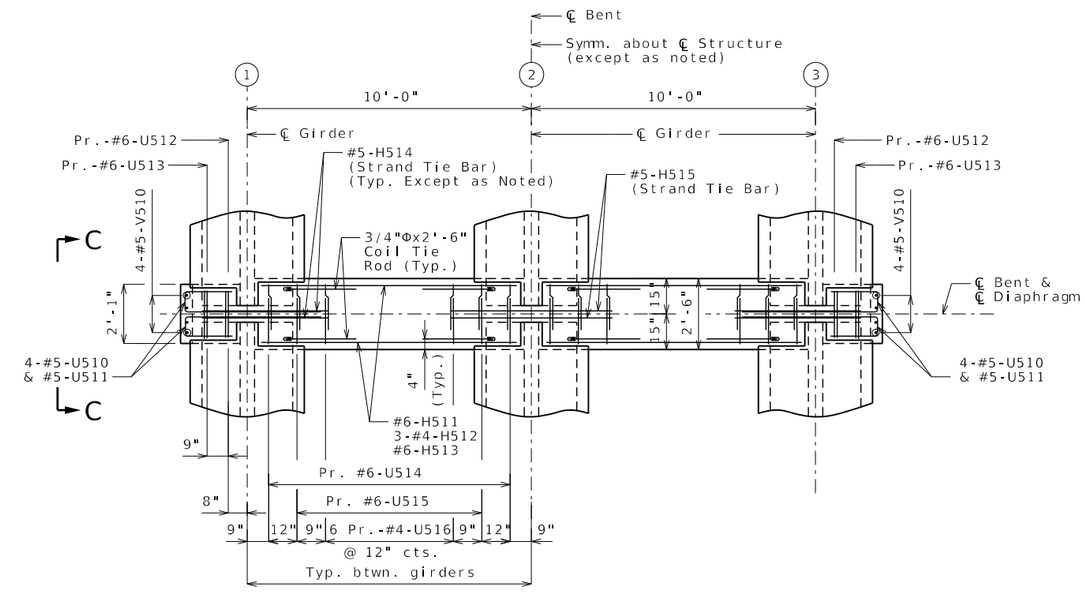
DESCRIPTION | DATE | REV.

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

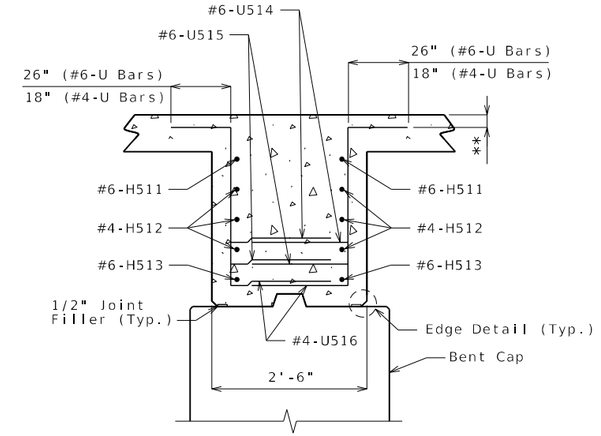
CDG ENGINEERS
One Campbell Plaza
St. Louis, Missouri 63139
T. 314 781 7770
F. 314 781 9075
Missouri State Certificate of Authority # 1721



SECTION NEAR INTERMEDIATE BENT
Normal to ℄ Structure

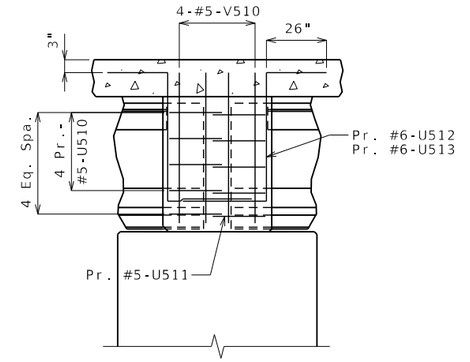


SECTION A-A

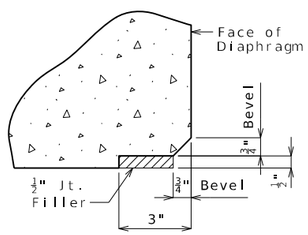


SECTION B-B

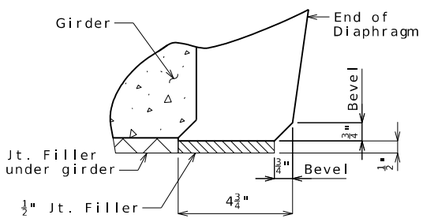
** 3" cl. (#6-U Bars)
3¼" cl. (#4-U Bars)



ELEVATION C-C



EDGE DETAIL



END DETAIL

Notes:

Diaphragms at intermediate bents shall be built vertical.

For location of Strand Tie Bars and Coil Tie Rods, see Sheets No. 16 thru 19.

All U bars in diaphragms shall be placed parllel to ℄ Roadway.

DETAILS OF CONCRETE DIAPHRAGM AT INTERMEDIATE BENTS NO. 2 & 3

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

Detailed Sept. 2024
Checked Sept. 2024

B_A9480_020_JNE0051_Int Bent Dia.dgn 10:04:43 AM 4/3/2025

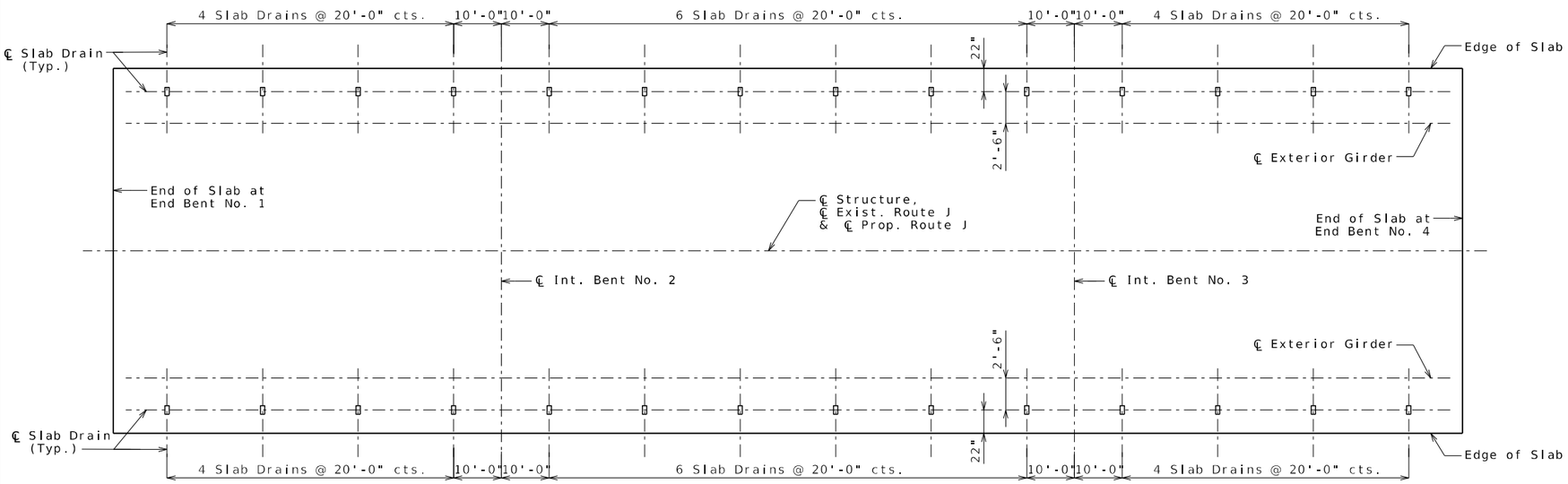
STATE OF MISSOURI
DAVID BURDICK
NUMBER E-24015
REGISTERED PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

DATE PREPARED 4/3/2025
ROUTE J | STATE MO
DISTRICT BR | SHEET NO. 20
COUNTY LINCOLN
JOB NO. JNE0051
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9480

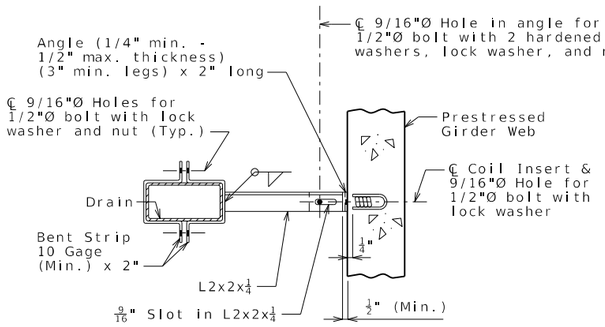
DESCRIPTION | DATE

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

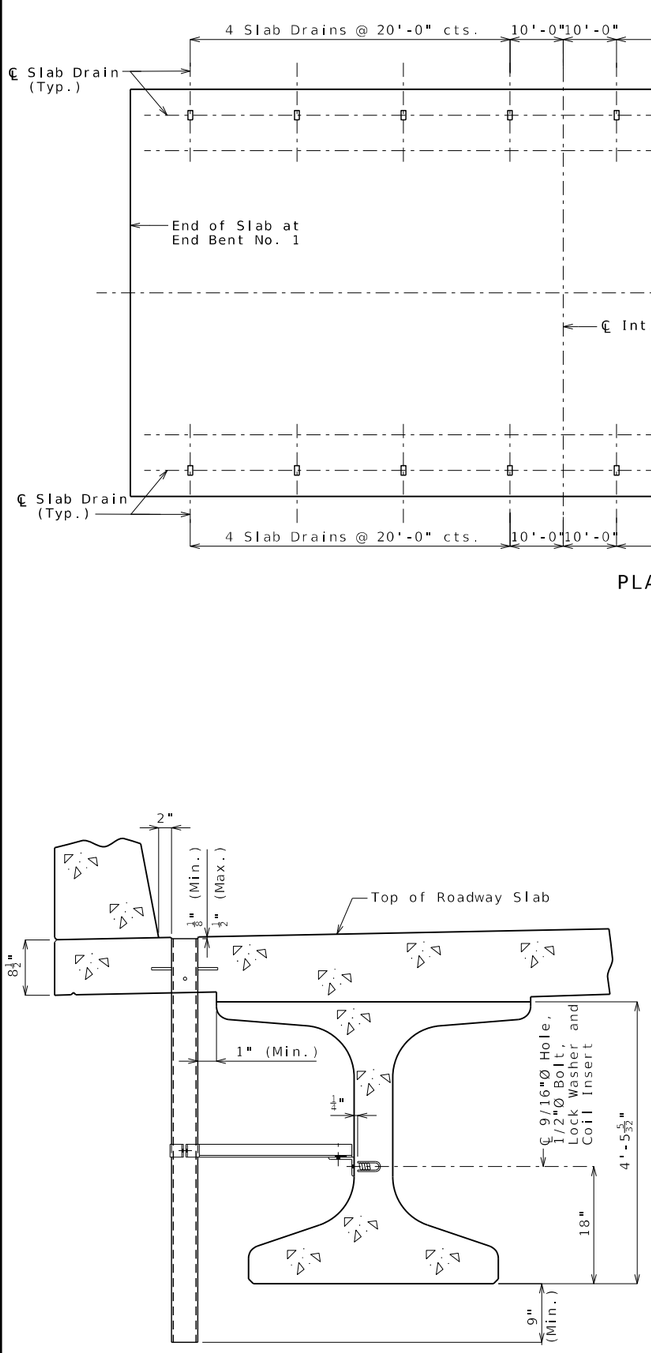
CDG ENGINEERS
One Campbell Plaza
St. Louis, Missouri 63139
T. 314 781 7770
F. 314 781 9075
Missouri State Certificate of Authority # 1721



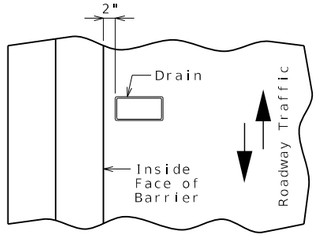
PLAN OF SLAB SHOWING SLAB DRAIN LOCATIONS



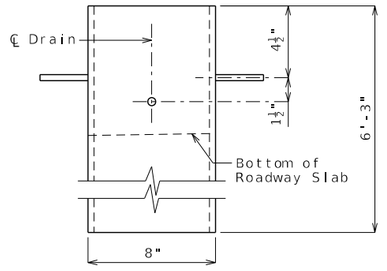
PART SECTION SHOWING BRACKET ASSEMBLY



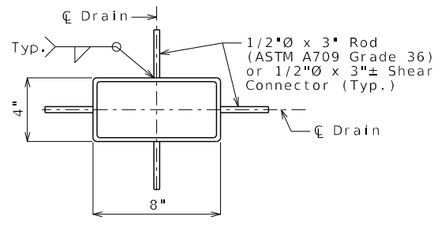
PART SECTION NEAR DRAIN



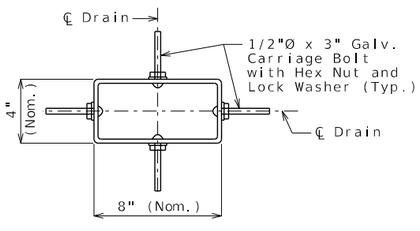
PART PLAN OF SLAB AT DRAIN



ELEVATION OF DRAIN



PLAN OF STEEL DRAIN OPTION



PLAN OF FRP DRAIN OPTION

General Notes:

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

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

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

Reinforcing steel shall be shifted to clear drains.

The coil inserts and 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.

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

The coil insert required for the bracket assembly attachment shall be located on the prestressed girder shop drawings.

Coil inserts shall have a concrete pull-out strength (ultimate load) of at least 2,500 pounds in 5,000 psi concrete.

The bolt required to attach the slab drain bracket assembly to the prestressed girder web shall be supplied by the prestressed girder fabricator.

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 as recommended by the manufacturer to ensure a smooth, chip free cut.

STATE OF MISSOURI
DAVID BURDICK
NUMBER E-24015
REGISTERED PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

DATE PREPARED 4/3/2025

ROUTE	STATE
J	MO
DISTRICT	SHEET NO.
BR	21

COUNTY LINCOLN
JOB NO. JNE0051
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9480

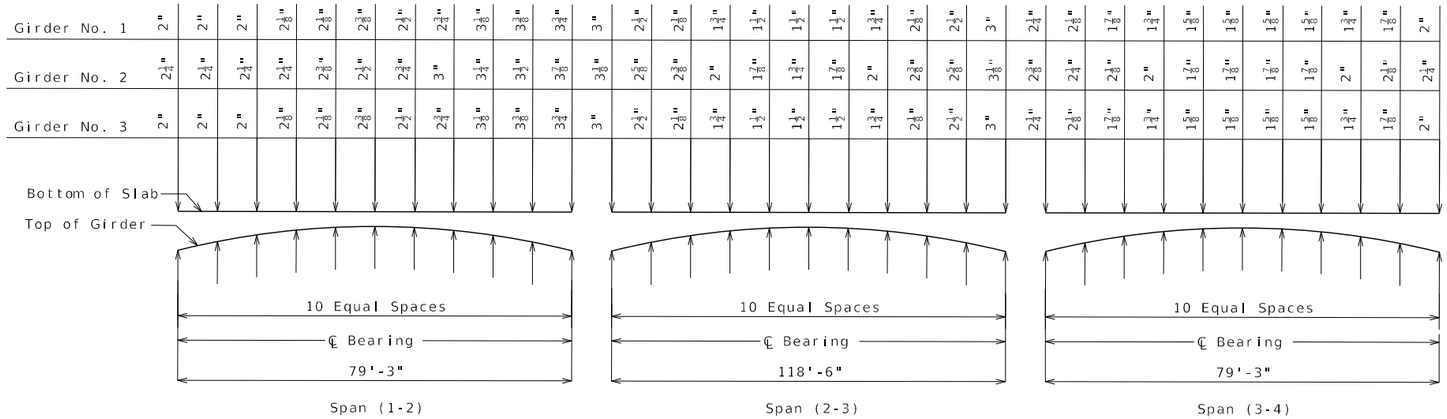
DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)
MoDOT
CDG ENGINEERS
One Campbell Plaza
St. Louis, Missouri 63139
T. 314 781 7770
F. 314 781 9075
Missouri State Certificate of Authority # 1721

SLAB DRAINS

Detailed Sept. 2024
Checked Sept. 2024

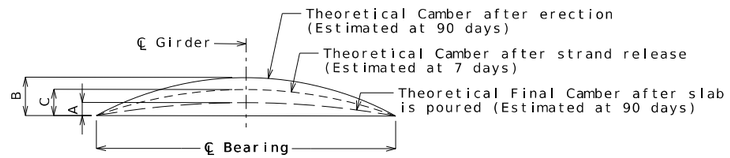
Note: This drawing is not to scale. Follow dimensions.



THEORETICAL SLAB HAUNCHING DIAGRAM (ESTIMATED AT 90 DAYS)

If girder camber is different from that shown in the camber diagram, in order to maintain minimum slab thickness, an adjustment of the slab haunches, an increase in slab thickness or a raise in grade uniformly throughout the structure shall be necessary. No payment will be made for additional labor or materials required for variation in haunching, slab thickness or grade adjustment.

Concrete in the slab haunches is included in the Estimated Quantities for Slab on Concrete NU-Girder .

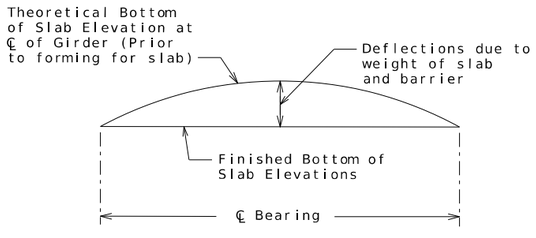


Girder	Span (1-2)			Span (2-3)			Span (3-4)		
	A	B	C	A	B	C	A	B	C
Exterior	$\frac{1}{2}$"	$1\frac{1}{8}$"	$\frac{5}{8}$"	$1\frac{1}{2}$"	$4\frac{7}{8}$"	$2\frac{3}{4}$"	$\frac{1}{2}$"	$1\frac{1}{8}$"	$\frac{5}{8}$"
Interior	$\frac{1}{2}$"			$1\frac{3}{8}$"			$\frac{1}{2}$"		

GIRDER CAMBER DIAGRAM

Conversion Factors for Girder Camber (Estimated at 90 days):

0.1 pt. = 0.314 x 0.5 pt.
0.2 pt. = 0.593 x 0.5 pt.
0.3 pt. = 0.813 x 0.5 pt.
0.4 pt. = 0.952 x 0.5 pt.



TYPICAL SLAB ELEVATIONS DIAGRAM

Theoretical Bottom of Slab Elevations at Centerline of Girder (Prior to forming for slab) (Estimated at 90 days)

Girder Number	Span (1-2) (79'-3" ℄ Brg. - ℄ Brg.)										
	℄ Brg.	.10	.20	.30	.40	.50	.60	.70	.80	.90	℄ Brg.
1	522.78	522.48	522.18	521.87	521.56	521.24	520.92	520.60	520.27	519.93	519.60
2	522.96	522.66	522.36	522.05	521.74	521.43	521.11	520.78	520.45	520.11	519.78
3	522.78	522.48	522.18	521.87	521.56	521.24	520.92	520.60	520.27	519.93	519.60

Girder Number	Span (2-3) (118'-6" ℄ Brg. - ℄ Brg.)										
	℄ Brg.	.10	.20	.30	.40	.50	.60	.70	.80	.90	℄ Brg.
1	519.54	519.15	518.76	518.34	517.91	517.44	516.95	516.44	515.90	515.35	514.78
2	519.72	519.34	518.94	518.53	518.10	517.64	517.15	516.63	516.09	515.53	514.96
3	519.54	519.15	518.76	518.34	517.91	517.44	516.95	516.44	515.90	515.35	514.78

Girder Number	Span (3-4) (79'-3" ℄ Brg. - ℄ Brg.)										
	℄ Brg.	.10	.20	.30	.40	.50	.60	.70	.80	.90	℄ Brg.
1	514.72	514.42	514.12	513.81	513.50	513.19	512.87	512.54	512.21	511.88	511.54
2	514.90	514.60	514.30	513.99	513.68	513.37	513.05	512.72	512.39	512.06	511.72
3	514.72	514.42	514.12	513.81	513.50	513.19	512.87	512.54	512.21	511.88	511.54

Elevations are based on a constant slab thickness of 8 1/2" and include allowance for theoretical dead load deflections due to weight of slab (including stay-in-place metal forms) and barrier.

Detailed Sept. 2024
Checked Sept. 2024

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

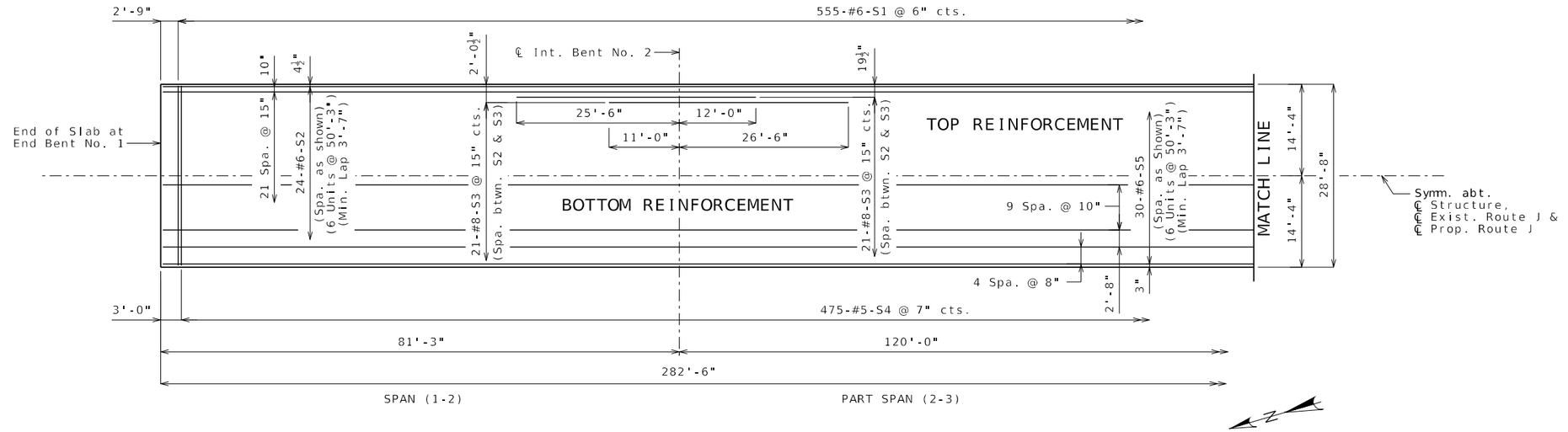
STATE OF MISSOURI
DAVID BURDICK
NUMBER E-24015
REGISTERED PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

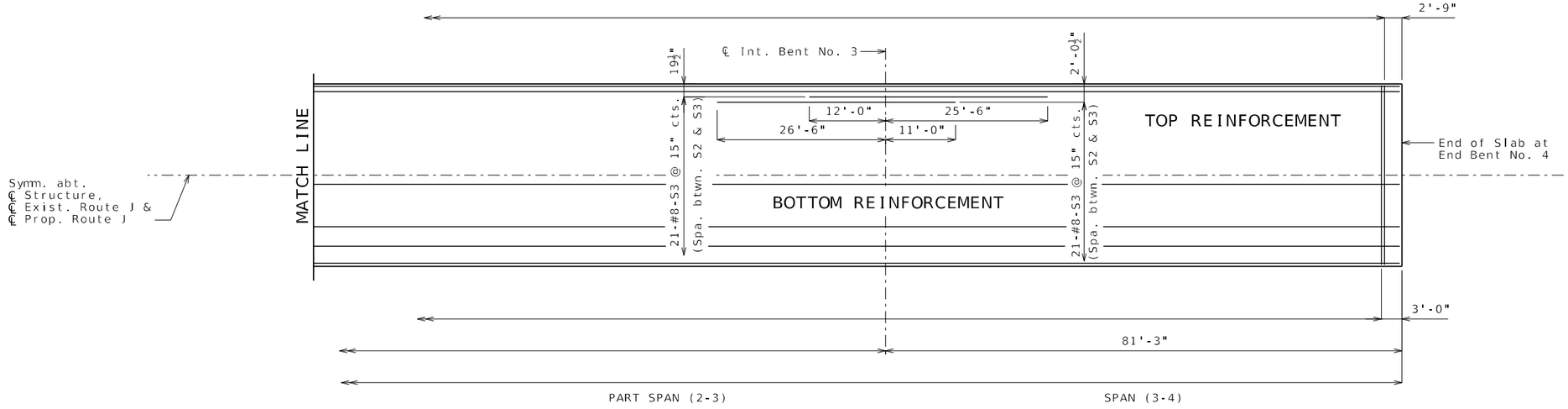
DATE PREPARED 4/3/2025
ROUTE J | STATE MO
DISTRICT BR | SHEET NO. 22
COUNTY LINCOLN
JOB NO. JNE0051
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9480

DESCRIPTION | DATE | REV.

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

CDG ENGINEERS
One Campbell Plaza
St. Louis, Missouri 63139
T. 314 781 7770
F. 314 781 9075
Missouri State Certificate of Authority # 1721





General Notes:
Longitudinal slab dimensions are measured horizontally.

For Section Thru Slab, see Sheet No. 24.

For details and reinforcement of Type D Barrier not shown, see Sheet No. 25.

For Theoretical Slab Haunching Diagram, and Theoretical Bottom of Slab Elevation, see Sheet No. 22.

For Slab Pouring Sequence, see Sheet No. 24.

For details and location of Slab Drains, see Sheet No. 21.

Shift slab reinforcement in field to avoid conflict with slab drains.

PLAN OF SLAB SHOWING REINFORCEMENT

Detailed Sept. 2024
Checked Sept. 2024

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

STATE OF MISSOURI
DAVID BURDICK
NUMBER E-24015
REGISTERED PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

DATE PREPARED 4/3/2025

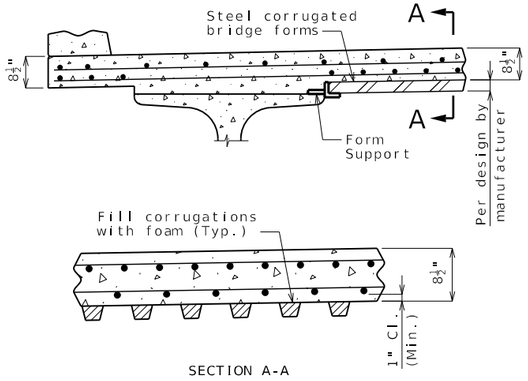
ROUTE	STATE
J	MO
DISTRICT	SHEET NO.
BR	23

COUNTY: LINCOLN
JOB NO.: JNE0051
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A9480

DATE	DESCRIPTION

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

CDG ENGINEERS
One Campbell Plaza
St. Louis, Missouri 63139
T. 314 781 7770
F. 314 781 9075
Missouri State Certificate of Authority # 1721



SECTION A-A

STAY-IN-PLACE FORM DETAILS

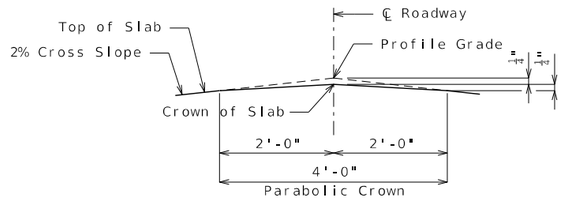
Stay-In-Place Forms:

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.

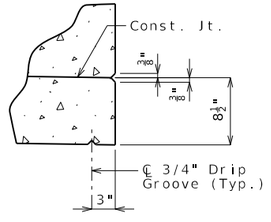
Corrugations of stay-in-place forms shall be filled with an expanded polystyrene material. The polystyrene material shall be placed in the forms with an adhesive in accordance with the manufacturer's recommendations.

Form sheets shall not rest directly on the top of girder 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. Drilling holes in the girder 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.

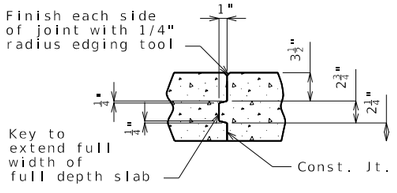
The design of stay-in-place corrugated steel forms is per manufacturer which shall be in accordance with Sec 703 for false work and forms. Maximum actual weight of corrugated steel forms allowed shall be 4 psf assumed for girder loading.



DETAIL A

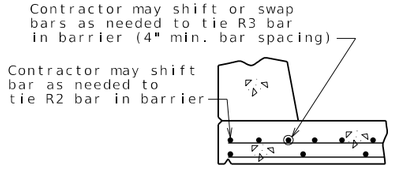


DETAIL B



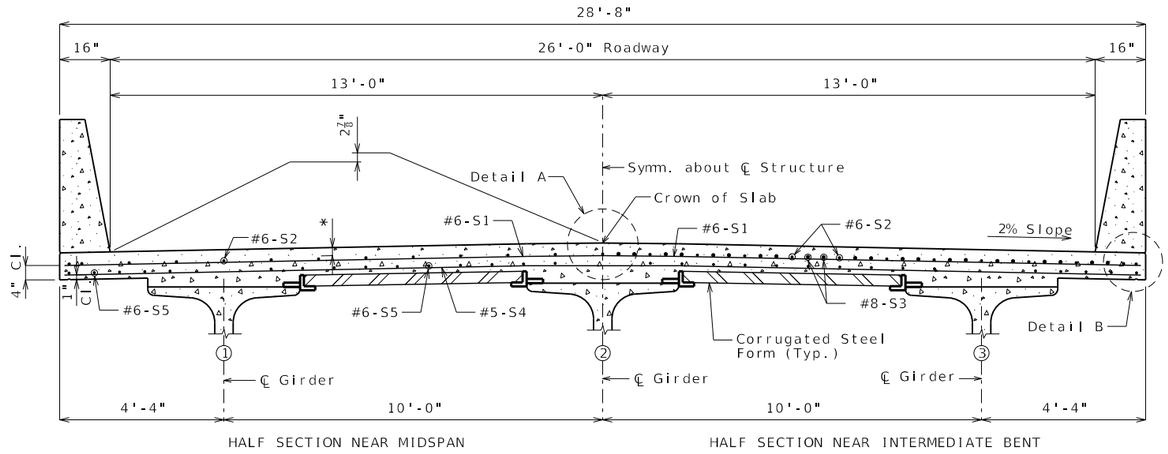
FULL DEPTH SLAB

SLAB CONSTRUCTION JOINT



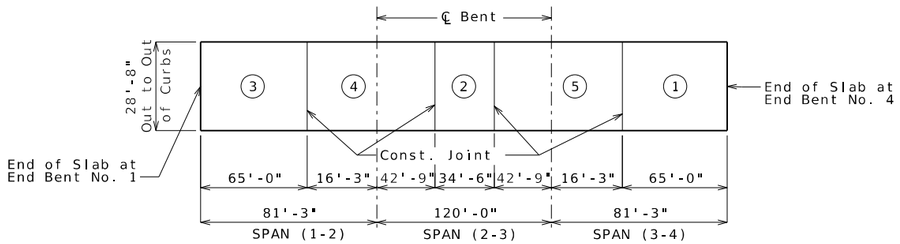
OPTIONAL SHIFTING TOP BARS AT BARRIER

* 3" Cl. #6 bars
2 3/4" Cl. #8 bars



HALF SECTION NEAR MIDSPAN HALF SECTION NEAR INTERMEDIATE BENT

SECTION THRU SLAB



	Sequence of Pours					Min. Rate of Pour Cu. Yds./Hr.
	Direction					With Retarder
Basic Sequence	1	2	3	4	5	25
	Either Direction					
Alternate pours to the basic skip sequence are subject to the approval of the engineer in accordance with Sec 703.						
Alternate A Pours	1	5 + 2		4 + 3		28
	End to 5	1 to 4		2 to End		
Alternate B Pours	1 + 5 + 2			4 + 3		28
	End to 4			2 to End		
Alternate C Pours	1 + 5 + 2 + 4 + 3					28
	End to End					

The contractor shall furnish an approved retarder to retard the set of the concrete to 2.5 hours and shall pour and satisfactorily finish the slab pours at the rate given.

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

SLAB POURING SEQUENCE

Notes:

For reinforcement of Type D Barrier Curb not shown, see Sheet No. 25.

For Theoretical Bottom of Slab Elevations, Girder Camber Diagram, Theoretical Slab Haunching Diagram, see Sheet No. 22.

For Plan of Slab Showing Reinforcement, see Sheet No. 23.

For details and location of Slab Drains, see Sheet No. 21.

SLAB DETAILS

STATE OF MISSOURI
DAVID BURDICK
NUMBER E-24015
REGISTERED PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

DATE PREPARED 4/3/2025

ROUTE	STATE
J	MO
DISTRICT	SHEET NO.
BR	24

COUNTY LINCOLN

JOB NO. JNE0051

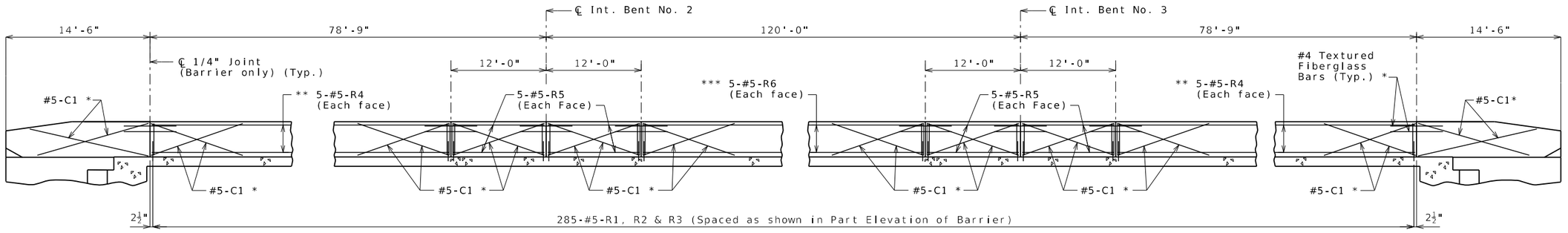
CONTRACT ID.

PROJECT NO.

BRIDGE NO. A9480

DESCRIPTION | DATE

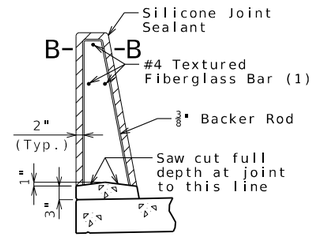
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)
CDG ENGINEERS
One Campbell Plaza
St. Louis, Missouri 63139
T. 314 781 7770
F. 314 781 9075
Missouri State Certificate of Authority # 1721



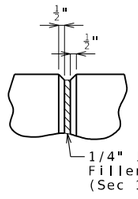
ELEVATION OF BARRIER

** 2 units @ 35'-0"
*** 2 units @ 49'-6"

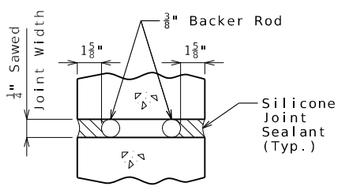
(Left barrier shown, right barrier similar)
Longitudinal dimensions are horizontal.



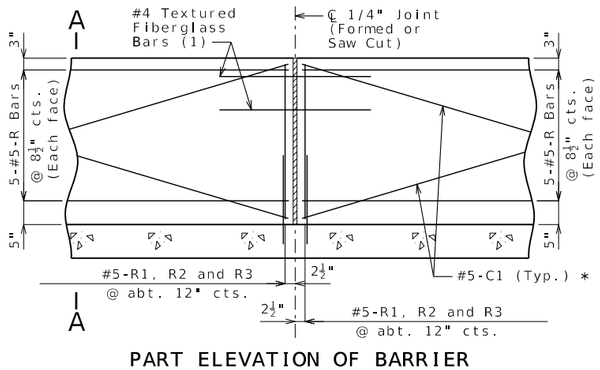
SECTION THRU SAW CUT JOINT



PART ELEVATION AT FORMED JOINT

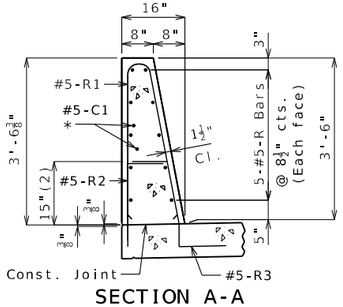


SECTION B-B



PART ELEVATION OF BARRIER

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

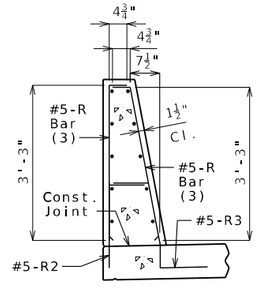


SECTION A-A

Use a minimum lap of 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 Sept. 2024
Checked Sept. 2024

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

STATE OF MISSOURI
DAVID BURDICK
NUMBER E-24015
REGISTERED PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

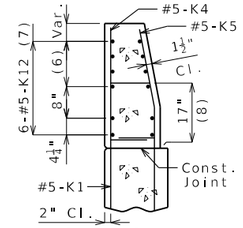
DATE PREPARED 4/3/2025

ROUTE	STATE
J	MO
DISTRICT	SHEET NO.
BR	25

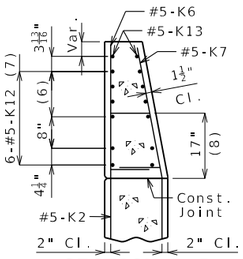
COUNTY: LINCOLN
JOB NO.: JNE0051
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A9480

DESCRIPTION	DATE

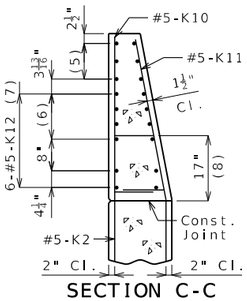
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)
MoDOT
CDG ENGINEERS
One Campbell Plaza
St. Louis, Missouri 63139
T. 314 781 7770
F. 314 781 9075
Missouri State Certificate of Authority # 1721



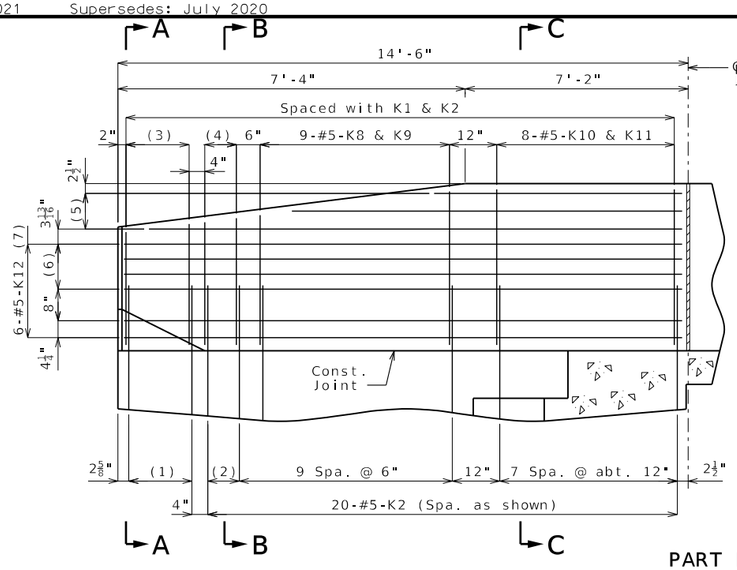
SECTION A-A

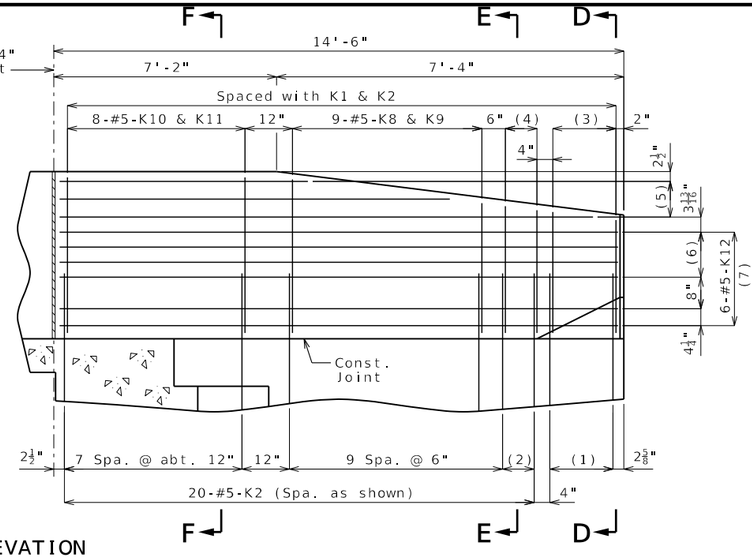


SECTION B-B

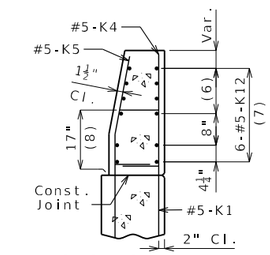


SECTION C-C

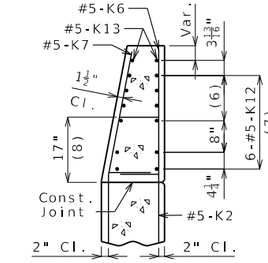




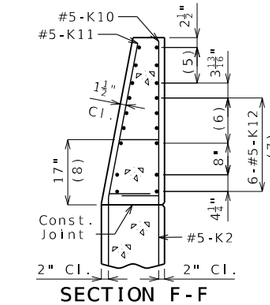
PART ELEVATION



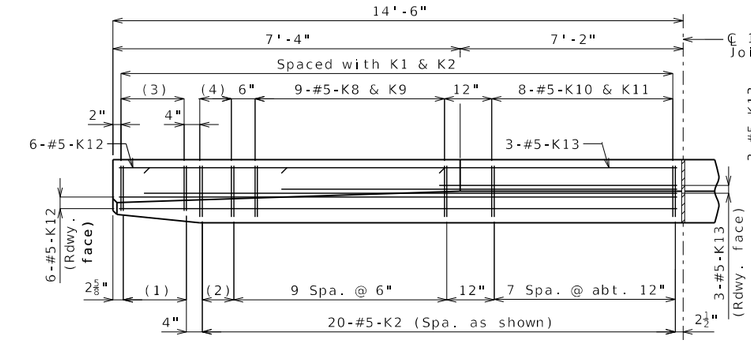
SECTION D-D

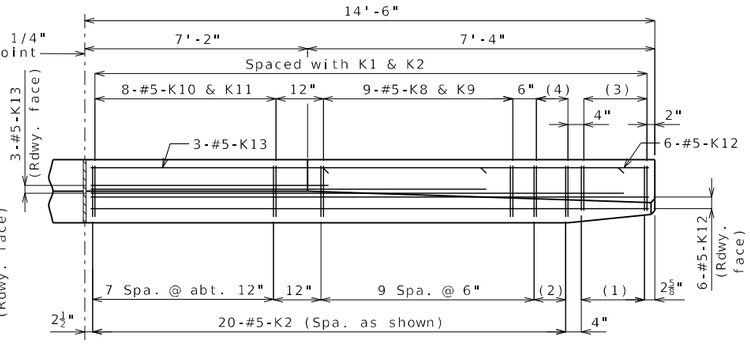


SECTION E-E

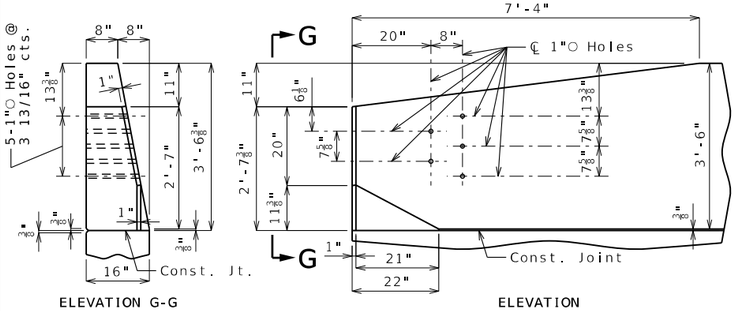


SECTION F-F





PART PLAN



ELEVATION G-G ELEVATION

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

(2) 2 spaces @ 4"

(3) 5-#5-K4 & K5

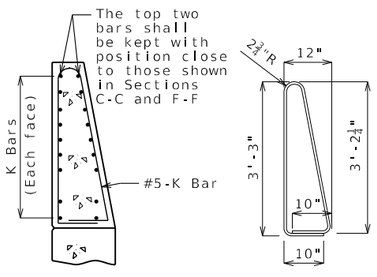
(4) 3-#5-K6 & K7

(5) 3-#5-K13 @ 4½" cts., each face

(6) 3 spaces @ 3 13/16"

(7) Spaced as shown, each face

(8) To top of bar



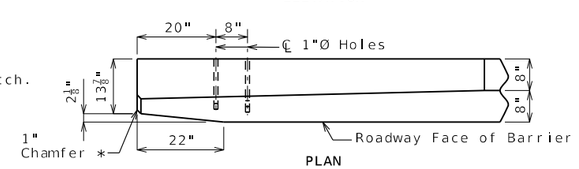
K10-K11 BAR PERMISSIBLE ALTERNATE SHAPE

(Other K bars not shown for clarity)

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

All dimensions are out to out.

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



PLAN

DETAILS OF GUARD RAIL ATTACHMENT

General Notes:

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

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

TYPE D BARRIER AT END BENTS

(Left barrier shown, right barrier similar)

Detailed Sept. 2024
Checked Sept. 2024

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

STATE OF MISSOURI
DAVID BURDICK
NUMBER E-24015
REGISTERED PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

DATE PREPARED 4/3/2025

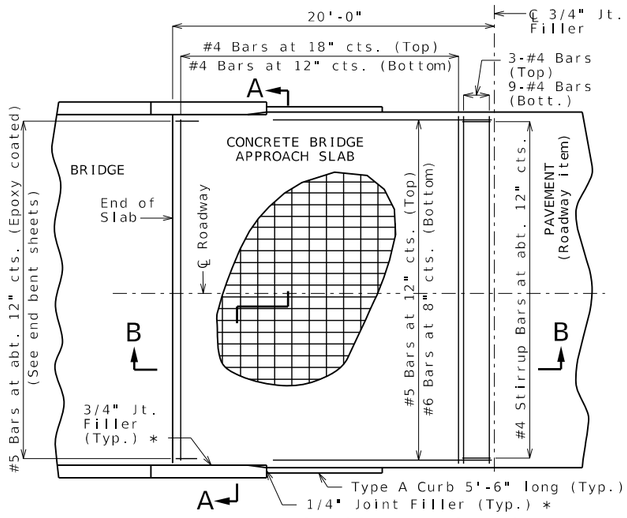
ROUTE	STATE
J	MO
DISTRICT	SHEET NO.
BR	26

COUNTY: LINCOLN
JOB NO.: JNE0051
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A9480

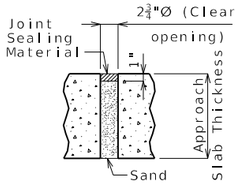
DESCRIPTION | DATE

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

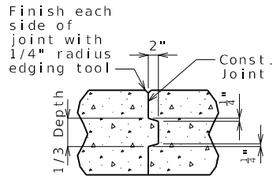
CDG ENGINEERS
One Campbell Plaza
St. Louis, Missouri 63139
T. 314 781 7770
F. 314 781 9075
Missouri State Certificate of Authority # 1721



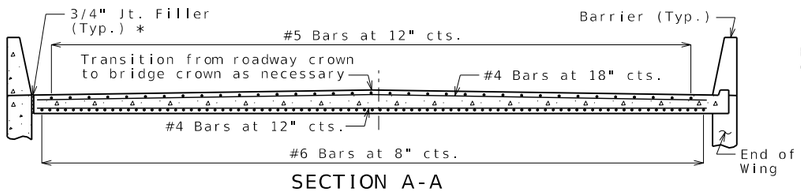
PART PLAN OF SQUARED STRUCTURE
(Skewed structure similar)



UNDERSEAL ACCESS HOLE DETAIL
(If required)

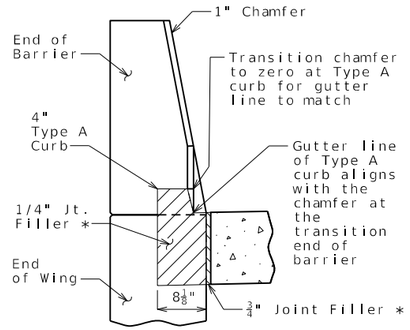


CONSTRUCTION JOINT DETAIL



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.

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.

Mechanical bar splices shall be in accordance with Sec 710.

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.

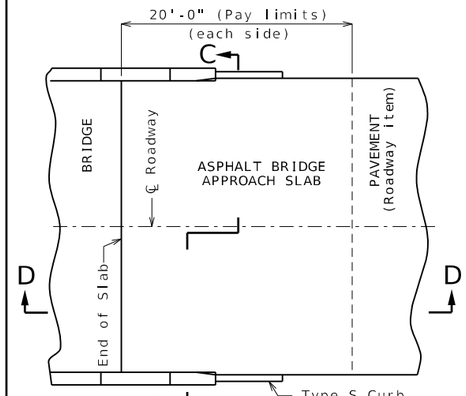
MoDOT Construction personnel will indicate the bridge approach slab used for this structure:

☐ Concrete Bridge Approach Slab
☐ Asphalt Bridge Approach Slab

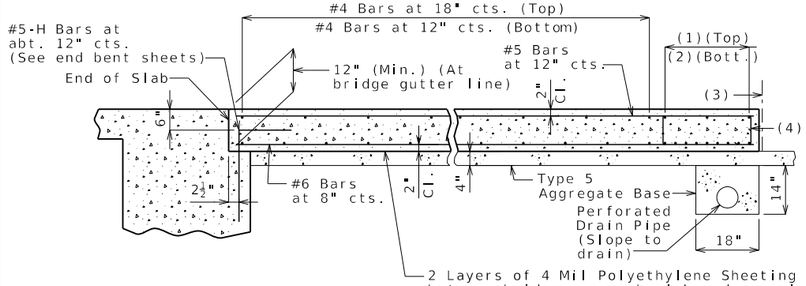
Notes For Asphalt Slab Only:

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.

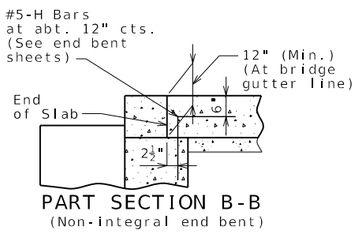


PART PLAN
(Squared structure shown, skewed structure similar)

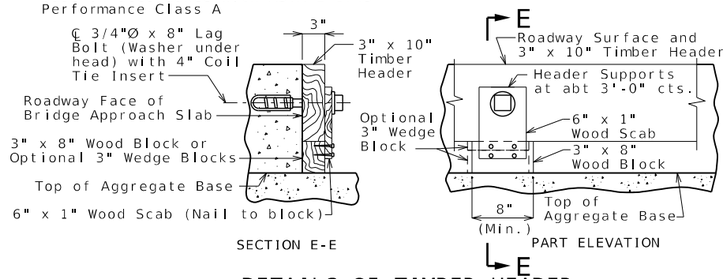


(1) 3-#4 Bars
(2) 9-#4 Bars
(3) ℄ 3/4" Jt. Filler
(4) #4 Stirrup Bars at abt. 12" cts.; 2'-0"x 8" (Min.) out to out; Actual length = 5'-10" (Min.); 90° stirrup hook at bottom; Stirrup height (8") and actual length vary due to crown.

SECTION B-B
(Integral end bent)



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

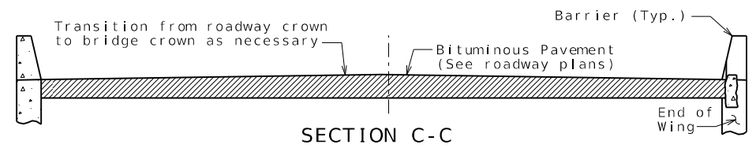


SECTION E-E

PART ELEVATION

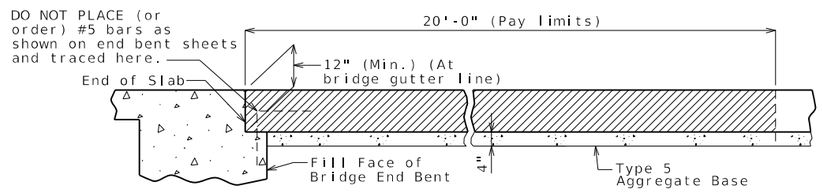
DETAILS OF TIMBER HEADER
Remove timber header when concrete pavement is placed.

OPTIONAL CONCRETE SLAB

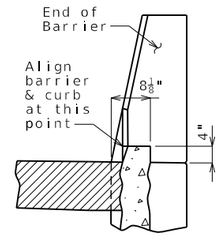


SECTION C-C

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



SECTION D-D



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

OPTIONAL ASPHALT SLAB (NOT ALLOWED WITH CONCRETE PAVEMENT)

BRIDGE APPROACH SLAB (MINOR)

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

Detailed Sept. 2024
Checked Sept. 2024

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

DAVID BURDICK NUMBER E-24015 REGISTERED PROFESSIONAL ENGINEER STATE OF MISSOURI
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

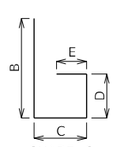
DATE PREPARED 4/3/2025

ROUTE	STATE
J	MO
DISTRICT	SHEET NO.
BR	27

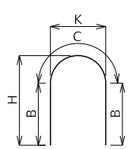
COUNTY LINCOLN
JOB NO. JNE0051
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9480

DESCRIPTION | DATE | REV.

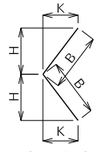
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)
CDG ENGINEERS
One Campbell Plaza
St. Louis, Missouri 63139
T. 314 781 7770
F. 314 781 9075
Missouri State Certificate of Authority #1721



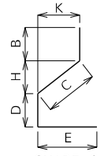
SHAPE 6
or 6S



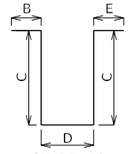
SHAPE 7



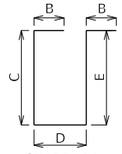
SHAPE 8
or 8S



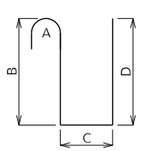
SHAPE 9
or 9S



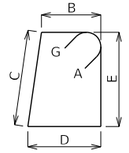
SHAPE 10
or 10S



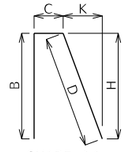
SHAPE 11
or 11S



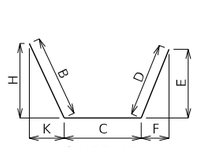
SHAPE 12



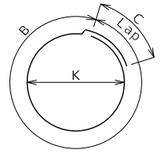
SHAPE 13S



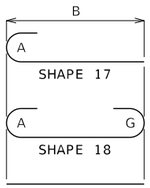
SHAPE 14
or 14S



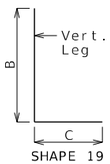
SHAPE 15
or 15S



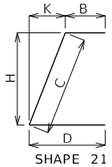
SHAPE 16



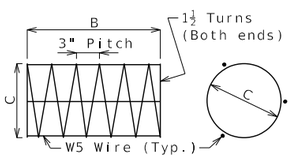
SHAPE 17
SHAPE 18
SHAPE 20



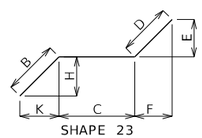
SHAPE 19
or 19S



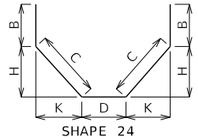
SHAPE 21
or 21S



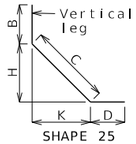
SHAPE 22



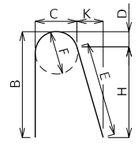
SHAPE 23
or 23S



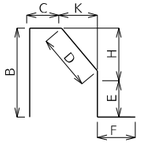
SHAPE 24
or 24S



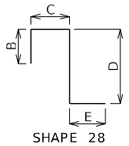
SHAPE 25
or 25S



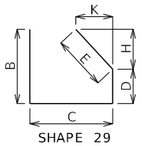
SHAPE 26



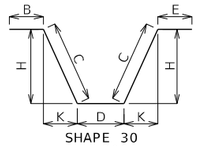
SHAPE 27S



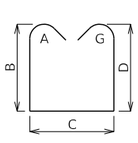
SHAPE 28
or 28S



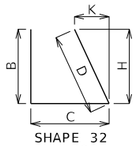
SHAPE 29
or 29S



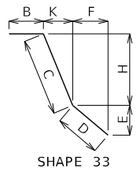
SHAPE 30
or 30S



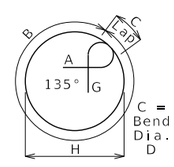
SHAPE 31S



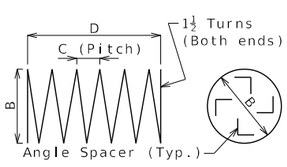
SHAPE 32
or 32S



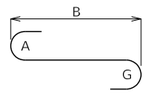
SHAPE 33
or 33S



SHAPE 34S



SHAPE 35 (1)

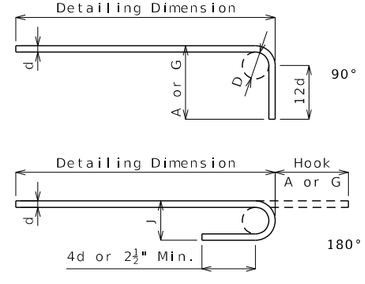


SHAPE 36

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"

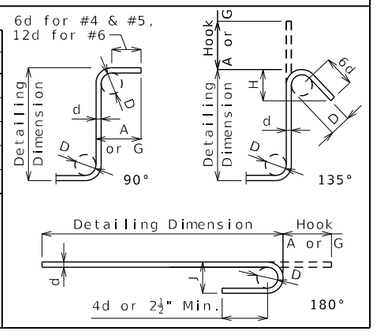


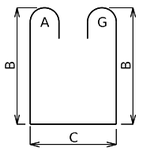
Stirrup Pin Bend Shapes (S)

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"	3⅝"	5"
#6	1	4½"	12"	7¾"	8¼"	4⅜"	6"

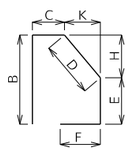
Applicable for all grades of steel.

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)

	Size	Substructure		Superstructure				Entire Bridge	
				Slab					
		Plain	Epoxy	Plain	Epoxy	Barrier	Slip Form	Plain	Epoxy
By Size	W5	0	0	0	0	0	0	0	0
	4	4187	0	0	729	0	0	4187	729
	5	0	0	0	15694	15960	601	0	32255
	6	3390	0	0	56439	0	0	3390	56439
	7	0	0	0	0	0	0	0	0
	8	0	0	0	9713	0	0	0	9713
	9	12677	0	0	0	0	0	12677	0
	10	0	0	0	0	0	0	0	0
	11	0	0	0	0	0	0	0	0
	14	0	0	0	0	0	0	0	0
	18	0	0	0	0	0	0	0	0
By Type		20254	0	0	82575	15960	601	20254	99136

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

BENDING DIAGRAMS AND REINFORCING STEEL TOTALS

Detailed Sept. 2024
Checked Sept. 2024

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

STATE OF MISSOURI
DAVID BURDICK
NUMBER E-24015
REGISTERED PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

DATE PREPARED 4/3/2025

ROUTE	STATE
J	MO
DISTRICT	SHEET NO.
BR	28

COUNTY: LINCOLN
JOB NO.: JNE0051
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A9480

DESCRIPTION	DATE

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

CDG ENGINEERS
One Campbell Plaza
St. Louis, Missouri 63139
T. 314 781 7770
F. 314 781 9075
Missouri State Certificate of Authority #1721

Bill of Reinforcing Steel

No Req	Size / Mark	Location	Codes C	SH	V	Dimensions B ft	B in	C ft	C in	D ft	D in	E ft	E in	F ft	F in	H ft	H in	K ft	K in	Nom. Length ft	Nom. Length in	Actual Length ft	Actual Length in	Weight lb
		SUBSTRUCTURE																						
		INT. BENT 2																						
22	6 D201	BEAM		20		2	6.000													2	6	2	6	83
6	9 H201	BEAM		18		24	9.000													27	4	27	4	558
6	9 H202	BEAM		20		24	9.000													24	9	24	9	505
12	6 H203	BEAM		20		24	9.000													24	9	24	9	446
16	6 H204	BEAM		10	S			12.000		3	7.000									5	7	5	3	126
2	4 P201	SHAFT & COLUMN		35		3	0.000	3.000		39	2.000									1505	4	1505	4	2011
20	4 P202	BEAM		34	S	9	5.000	3.000								3	0.000			10	5	10	5	139
21	6 U201	BEAM		13	S	3	9.000	4	9.000	3	9.000	4	9.000							18	4	17	10	562
12	6 U202	BEAM		13	S	2	6.000	4	9.000	2	6.000	4	9.000							15	10	15	4	276
6	6 U203	BEAM		10	S			4	9.000	3	9.000									13	3	12	11	116
2	6 U204	BEAM		10	S			12.000		3	9.000									5	9	5	5	16
4	6 U205	BEAM		10	S			4	9.000	2	6.000									12	0	11	8	70
38	9 V201	SHAFT & COLUMN		20		42	0.000													42	0	42	0	5426
		INT. BENT 3																						
22	6 D301	BEAM		20		2	6.000													2	6	2	6	83
6	9 H301	BEAM		18		24	9.000													27	4	27	4	558
6	9 H302	BEAM		20		24	9.000													24	9	24	9	505
12	6 H303	BEAM		20		24	9.000													24	9	24	9	446
16	6 H304	BEAM		10	S			12.000		3	7.000									5	7	5	3	126
2	4 P301	SHAFT & COLUMN		35		3	0.000	3.000		36	11.000									1420	6	1420	6	1898
20	4 P302	BEAM		34	S	9	5.000	3.000								3	0.000			10	5	10	5	139
21	6 U301	BEAM		13	S	3	9.000	4	9.000	3	9.000	4	9.000							18	4	17	10	562
12	6 U302	BEAM		13	S	2	6.000	4	9.000	2	6.000	4	9.000							15	10	15	4	276
6	6 U303	BEAM		10	S			4	9.000	3	9.000									13	3	12	11	116
2	6 U304	BEAM		10	S			12.000		3	9.000									5	9	5	5	16
4	6 U305	BEAM		10	S			4	9.000	2	6.000									12	0	11	8	70
38	9 V301	SHAFT & COLUMN		20		39	8.000													39	8	39	8	5125
		SUPERSTRUCTURE																						
		END BENT 1																						
22	6 F101	WING	E	15	S	2	3.000	4	8.000	2	3.000	19.125		19.125		19.125		19.125		9	2	9	1	300
10	6 F102	DIAPHRAGM	E	6	S	6	0.000	2	7.000											8	7	8	5	126
4	6 H101	SLAB	E	20		28	5.000													28	5	28	5	171
5	6 H102	DIAPHRAGM	E	20		28	5.000													28	5	28	5	213
8	6 H103	DIAPHRAGM	E	20		9	0.000													9	0	9	0	108
2	6 H104	DIAPHRAGM	E	20		6	3.000													6	3	6	3	19
8	6 H105	DIAPHRAGM	E	20		3	8.000													3	8	3	8	44
2	6 H106	DIAPHRAGM	E	20		2	3.000													2	3	2	3	7
26	5 H107	DIAPHRAGM	E	19		2	0.000	15.000												3	3	3	1	84
12	6 H108	BEAM	E	20		28	5.000													28	5	28	5	512
3	5 H109	STRAND TIE	E	20		5	9.000													5	9	5	9	18
16	8 H110	WING	E	6		14	2.000	16.000												15	6	15	3	651
48	6 H111	WING	E	6		13	4.000	12.000												14	4	14	2	1021
5	6 H112	BEAM	E	10	S			12.000		3	7.000									5	7	5	4	40

Bill of Reinforcing Steel

No Req	Size / Mark	Location	Codes C	SH	V	Dimensions B ft	B in	C ft	C in	D ft	D in	E ft	E in	F ft	F in	H ft	H in	K ft	K in	Nom. Length ft	Nom. Length in	Actual Length ft	Actual Length in	Weight lb
		END BENT 1																						
		(CONT'D)																						
8	5 U101	BEAM	E	10	S			6	3.000	2	9.000									15	3	15	0	125
21	4 U102	BEAM	E	13	S	2	9.000	2	8.000	2	9.000	2	8.000							11	7	11	4	159
20	5 U103	DIAPHRAGM	E	10	S			4	9.000	2	3.000									11	9	11	6	240
20	6 U104	DIAPHRAGM	E	19	S	3	7.000	2	9.000											6	4	6	2	185
34	6 U105	DIAPHRAGM	E	19	S	3	2.000	4	6.000											7	8	7	6	383
24	5 V101	BEAM	E	20		6	3.000													6	3	6	3	156
15	6 V102	DIAPHRAGM	E	20		3	10.000													3	10	3	10	86
48	6 V103	WING	E	20	2	8	0.000													8	0	8	0	
		INCR. = 0.5"	E	20	2	8	5.000													8	5	8	5	592
4	6 V104	WING	E	20		8	6.000													8	6	8	6	51
		END BENT 4																						
22	6 F401	WING	E	15	S	2	3.000	4	8.000	2	3.000	19.125		19.125		19.125		19.125		9	2	9	1	300
10	6 F402	DIAPHRAGM	E	6	S	6	0.000	2	7.000											8	7	8	5	126
4	6 H401	SLAB	E	20		28	5.000													28	5	28	5	171
5	6 H402	DIAPHRAGM	E	20		28	5.000													28	5	28	5	213
8	6 H403	DIAPHRAGM	E	20		9	0.000													9	0	9	0	108
2	6 H404	DIAPHRAGM	E	20		6	3.000													6	3	6	3	19
8	6 H405	DIAPHRAGM	E	20		3	8.000													3	8	3	8	44
2	6 H406	DIAPHRAGM	E	20		2	3.000													2	3	2	3	7
26	5 H407	DIAPHRAGM	E	19		2	0.000	15.000												3	3	3	1	84
12	6 H408	BEAM	E	20		28	5.000													28	5	28	5	512
3	5 H409	STRAND TIE	E	20		5	9.000													5	9	5	9	18
16	8 H410	WING	E	6		14	2.000	16.000												15	6	15	3	651
44	6 H411	WING	E	6		13	4.000	12.000												14	4	14	2	936
5	6 H412	BEAM	E	10	S			12.000		3	7.000									5	7	5	4	40
		DIAPHRAGMS AT																						
		INT. BENTS																						
8	6 H511	DIAPHRAGM	E	20		8	10.000													8	10	8	10	106
24	4 H512	DIAPHRAGM	E	20		9	0.000													9	0	9	0	144
8	6 H513	DIAPHRAGM	E	20		6	3.000													6	3	6	3	75
8	5 H514	STRAND TIE	E	20		4	9.000													4	9	4	9	40
4	5 H515	STRAND TIE	E	20		5	9.000													5	9	5	9	24
32	5 U510	DIAPHRAGM	E	6	S	4	5.000	13.000		16.000										6	10	6	7	220
8	5 U511	DIAPHRAGM	E	6	S	4	5.000	13.000												5	6	5	5	45
8	6 U512	DIAPHRAGM	E	28	S			22.000		4	1.000	2	2.000							8	1	7	9	93
8	6 U513	DIAPHRAGM	E	28	S			22.000		4	6.000	2	2.000							8	6	8	2	98
16	6 U514	DIAPHRAGM	E	28	S			2	3.000	4	1.000	2	2.000							8	6	8	2	196
16	6 U515	DIAPHRAGM	E	28	S			2	3.000	4	6.000	2	2.000							8	11	8	7	206
48	4 U516	DIAPHRAGM	E	28	S			2	3.000	4	9.000		18.000							8	6	8	4	267
16	5 V510	DIAPHRAGM	E	20		4	11.000													4	11	4	11	82

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. 28.

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 Sept. 2024
Checked Sept. 2024

BILL OF REINFORCING STEEL

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

STATE OF MISSOURI
DAVID BURDICK
NUMBER E-24015
REGISTERED PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

DATE PREPARED 4/3/2025
ROUTE J | STATE MO
DISTRICT NE | SHEET NO. 29
COUNTY LINCOLN
JOB NO. JNE0051
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9480

DESCRIPTION | DATE

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

CDG ENGINEERS
One Campbell Plaza
St. Louis, Missouri 63139
T. 314 781 7770
F. 314 781 9075
Missouri State Certificate of Authority # 1721

Bill of Reinforcing Steel

No Req	Size / Mark	Location	Codes C	SH	V	Dimensions B ft in	C ft in	D ft in	E ft in	F ft in	H ft in	K ft in	Nom. Length ft in	Actual Length ft in	Weight lb
		SLAB													
555	6 S1	SLAB	E	20		28 4.000							28 4	28 4	23619
144	6 S2	SLAB	E	20		50 3.000							50 3	50 3	10868
84	8 S3	SLAB	E	20		37 6.000							37 6	37 6	8411
475	5 S4	SLAB	E	20		28 4.000							28 4	28 4	14037
180	6 S5	SLAB	E	20		50 3.000							50 3	50 3	13586
		TYPE D BARRIER													
20	5 K1	BARRIER	E	27	S	3 8.000	9.250	5.375	3 2.750		5.250	1.000	8 1	7 11	165
80	5 K2	BARRIER	E	27	S	3 8.000	9.250	14.500	2 5.750		14.250	2.750	8 2	7 11	661
20	5 K4	BARRIER	E	19	S 2	2 4.250	10.000						3 2	3 1	
		INCR. = 0.5"	E	19	S 2	2 6.250	10.000						3 4	3 3	66
20	5 K5	BARRIER	E	38	S 2			18.500	9.500	8.250	18.000	4.000	3 0	2 11	
		INCR. = 0.5"	E	38	S 2			20.500	9.500	8.250	20.000	4.500	3 2	3 1	63
12	5 K6	BARRIER	E	19	S	2 6.750	10.000						3 5	3 3	41
12	5 K7	BARRIER	E	21	S		2 6.625	10.000			2 6.000	6.250	3 5	3 3	41
36	5 K8	BARRIER	E	19	S 2	2 8.500	10.000						3 6	3 5	
		INCR. = 0.75"	E	19	S 2	3 2.500	10.000						4 0	3 11	138
36	5 K9	BARRIER	E	21	S 2		2 8.500	10.000			2 7.750	6.750	3 6	3 5	
		INCR. = 0.75"	E	21	S 2		3 2.500	10.000			3 1.750	7.750	4 0	3 11	138
32	5 K10	BARRIER	E	19	S	3 3.000	10.000						4 1	4 0	134
32	5 K11	BARRIER	E	21	S		3 3.000	10.000			3 2.250	7.750	4 1	4 0	134
48	5 K12	BARRIER	E	20		14 4.000							14 4	14 4	718
24	5 K13	BARRIER	E	20	2	7 7.000							7 7	7 7	
		INCR. = 36"	E	20	2	13 7.000							13 7	13 7	265
570	5 R1	BARRIER	E	26		3 3.000	5.500	2.250	3 1.375	5.500	3 0.750	6.750	6 10	6 10	4062
570	5 R2	BARRIER	E	19	S	20.500	9.500						2 6	2 5	1437
570	5 R3	BARRIER	E	27	S		9.500	15.250	5.000	12.000	15.000	3.000	3 6	3 3	1932
80	5 R4	BARRIER	E	20		35 0.000							35 0	35 0	2920
80	5 R5	BARRIER	E	20		11 9.000							11 9	11 9	980
40	5 R6	BARRIER	E	20		49 6.000							49 6	49 6	2065
		SLIP FORM													
48	5 C1	SLIP FORM	E	20		12 0.000							12 0	12 0	601

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. 28.

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 Sept. 2024
Checked Sept. 2024

BILL OF REINFORCING STEEL

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

STATE OF MISSOURI
DAVID BURDICK
NUMBER E-24015
REGISTERED PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

DATE PREPARED 4/3/2025

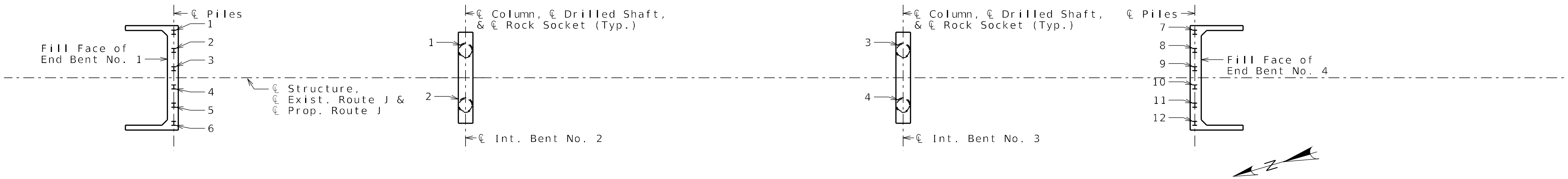
ROUTE	STATE
J	MO
DISTRICT	SHEET NO.
BR	30

COUNTY LINCOLN
JOB NO. JNE0051
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9480

DESCRIPTION | DATE

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

CDG ENGINEERS
One Campbell Plaza
St. Louis, Missouri 63139
T. 314 781 7770
F. 314 781 9075
Missouri State Certificate of Authority # 4721



PART PLAN SHOWING PILE & DRILLED SHAFT NUMBERING FOR RECORDING AS-BUILT PILE DATA & AS-BUILT DRILLED SHAFT DATA

As-Built Pile Data

Pile No.	Length in Place (ft)	Computed Nominal Axial Compressive Resistance (kips)	Remarks
			End Bent No. 1
1			
2			
3			
4			
5			
6			
			End Bent No. 4
7			
8			
9			
10			
11			
12			

As-Built Drilled Shaft Data

Shaft No.	Top of Sound Rock (Elev.)	Tip of Casing (Elev.)	Bottom of Rock Socket (Elev.)	Remarks
				Intermediate Bent No. 2
1				
2				
				Intermediate Bent No. 3
3				
4				

Note:
Indicate in remarks column:
A. Pile type and grade
B. Batter
C. Driven to practical refusal

This sheet to be completed by MoDOT construction personnel.

Note:

This sheet to be completed by MoDOT construction personnel.

AS-BUILT PILE AND DRILLED SHAFT DATA

Detailed Sept. 2024
Checked Sept. 2024

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

STATE OF MISSOURI
DAVID BURDICK
NUMBER E-24015
REGISTERED PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

DATE PREPARED 4/3/2025
ROUTE J | STATE MO
DISTRICT BR | SHEET NO. 31
COUNTY LINCOLN
JOB NO. JNE0051
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9480

DESCRIPTION
DATE

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

CDG ENGINEERS
One Campbell Plaza
St. Louis, Missouri 63139
T. 314 781 7770
F. 314 781 9075
Missouri State Certificate of Authority # 1721

B_A9480_031_JNE0051_Pile Data.dgn 10:06:33 AM 4/3/2025

Missouri Department of Transportation
Construction and Materials

BORING NO. B-1
Page 1 of 1

Job No.: NE 0051 **County:** Lincoln **Route:** J
Design: A9480 **Skew:** - **Location:** over Big Creek
Bent: 1 **Logged By:** EER (UES) **Operator:** KA (UES)
Station: 274+37.46 **Northing:** 1119186.9934 **Date of Work:** 05/14/24-05/15/24
Offset: 8.22' Rt. **Easting:** 674410.7673 **Depth to Water:**
Elevation: 526.0 **Requested Northing:** 1119187.1294 **Depth Hole Open:**
Requested Station: 274+37.25 **Requested Easting:** 674411.0348 **Time Change:**
Requested Offset: 8' Rt. **Equipment:** CME 55HTX ,Split-Spoon Sampler, NQ2
Requested Elevation: **Location Note:**
Drill No.: S/N 314225 **Hammer Efficiency:** 80% **Drilling Method:** Hollow Stem Auger

Depth (ft)	Description	Elevation (ft)	Sample Type	REC % (RQD %)	Blow Counts (N_{60})	Shear Data	Field Tests	Index Tests
0	0.0-0.4' ASPHALT - 5 inches 0.4-0.8' GRANNULAR BASE - 5 inches 0.9-3.0' FILL: brown and red clay, chert and weathered limestone gravel	525						
	3.0-5.9' Weak, brown, finely crystalline, thin to medium bedded, highly to moderately weathered LIMESTONE			75	50/0.3'			
5	5.9-6.3' Core Loss - 5 inches 6.3-6.9' Weathered LIMESTONE cont. 6.9-8.1' Strong, gray and brown, finely to medium crystalline, thin to medium bedded, unweathered LIMESTONE 8.1-8.7' Core Loss - 6 inches 8.7-11.4' LIMESTONE cont.	520		82 (62)		Qu Test Results UCS = 1850 ksf γ_{moist} = 164.5 pcf		
10	11.4-11.9' Core Loss - 5 inches 11.9-15.4' LIMESTONE cont.	515		92 (68)		Qu Test Results UCS = 1600 ksf γ_{moist} = 166.2 pcf		
15	14.9' 2-inch Clay Seam 15.4-16.3' Medium stiff, brown FAT CLAY - CH 16.3-17.7' LIMESTONE cont. 17.7-18.2' Core Loss - 6 inches 18.2-25.4' LIMESTONE cont.	510		90 (50)		Qu Test Results UCS = 1310 ksf γ_{moist} = 162.8 pcf	PP = 2.50 tsf	MC = 22.6%
20		505		100 (92)				
25	23.7' 3-inch Clay Seam Refusal at 5.4 feet. Bottom of borehole at 25.4 feet.							

N_{60} = (Em/60)Nm N_{60} - Corrected N value for standard 60% SPT efficiency, Em - Measured hammer efficiency in percent, Nm - Observed N-value, (1) = Assumed, (2) = Actual

Coordinate System: Modified U.S. State Plane 1983 **Coordinate Zone:** Missouri East **Coordinate Proj. Factor:** 1.00006253
Coordinate Datum: NAD 83 (CONUS) **Coordinate Units:** U.S. Survey Feet

* Persons using this information are cautioned that the materials shown are determined by the equipment noted and accuracy of the "log of materials" is limited thereby and by judgement of the operator. THIS INFORMATION IS FOR DESIGN PURPOSES ONLY.

LETTER BOREHOLE - MODOT_20151118.GDT - 6/25/24 07:27 - S:\PROJECTS\044\J044917.01-MODOT - ROUTE J OVER BIG CREEK\DATA\LAB\J044917.01 RTE. J OVER BIG CREEK.GPJ

Missouri Department of Transportation
Construction and Materials

BORING NO. B-2
Page 1 of 2

Job No.: NE 0051 **County:** Lincoln **Route:** J
Design: A9480 **Skew:** - **Location:** over Big Creek
Bent: 2 **Logged By:** DWJ (UES) **Operator:** HDA (UES)
Station: 275+17.25 **Northing:** 1119108.0975 **Date of Work:** 05/14/24-05/15/24
Offset: No Offset **Easting:** 674396.2718 **Depth to Water:** 34.0
Elevation: 521.3 **Requested Northing:** 1119108.0974 **Depth Hole Open:**
Requested Station: 275+17.25 **Requested Easting:** 674396.2718 **Time Change:**
Requested Offset: - **Equipment:** CME 55 TD-5 ,Split-Spoon Sampler, NQ2
Requested Elevation: **Location Note:** Drilled through bridge deck, ground surface 23.7 feet from bridge deck
Drill No.: S/N 388255 **Hammer Efficiency:** 82% **Drilling Method:** Hollow Stem Auger

Depth (ft)	Description	Elevation (ft)	Sample Type	REC % (RQD %)	Blow Counts (N_{60})	Shear Data	Field Tests	Index Tests
0	0.0-0.3' ASPHALT - 3 inches 0.3-0.6' CONCRETE - 4.5 inches 0.6-23.7' Air	520						
5		515						
10		510						
15		505						
20		500						
25	23.7-30.7' Medium dense, brown, POORLY-GRADED SAND, some silt and clay - SP	495		89	4-3-5 (11)			Sieve Analysis Sieve # % Passing #200 27.8
30	30.7-35.7' Dense, brown, WELL-GRADED GRAVEL, some sand and trace silt and clay - GW	490		33	14-15-16 (42)			Sieve Analysis Sieve # % Passing 1" 100.0 3/4" 77.5 1/2" 56.6
35								

N_{60} = (Em/60)Nm N_{60} - Corrected N value for standard 60% SPT efficiency, Em - Measured hammer efficiency in percent, Nm - Observed N-value, (1) = Assumed, (2) = Actual

Coordinate System: Modified U.S. State Plane 1983 **Coordinate Zone:** Missouri East **Coordinate Proj. Factor:** 1.00006253
Coordinate Datum: NAD 83 (CONUS) **Coordinate Units:** U.S. Survey Feet

* Persons using this information are cautioned that the materials shown are determined by the equipment noted and accuracy of the "log of materials" is limited thereby and by judgement of the operator. THIS INFORMATION IS FOR DESIGN PURPOSES ONLY.

LETTER BOREHOLE - MODOT_20151118.GDT - 6/25/24 07:27 - S:\PROJECTS\044\J044917.01-MODOT - ROUTE J OVER BIG CREEK\DATA\LAB\J044917.01 RTE. J OVER BIG CREEK.GPJ

STATE OF MISSOURI
DAVID BURDICK
NUMBER E-24015
REGISTERED PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

DATE PREPARED 4/3/2025
ROUTE J | STATE MO
DISTRICT BR | SHEET NO. 32
COUNTY LINCOLN
JOB NO. JNE0051
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9480

DESCRIPTION | DATE

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

CDG ENGINEERS
One Campbell Plaza
St. Louis, Missouri 63139
T. 314 781 7770
F. 314 781 9075
Missouri State Certificate of Authority # 1721

BORING DATA

Note: For locations of borings, see Sheets No. 1 & 2.

Detailed Sept. 2024
Checked Sept. 2024

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

Missouri Department of Transportation
Construction and Materials

BORING NO. B-2
Page 2 of 2

Job No.: NE 0051 **County:** Lincoln **Route:** J
Design: A9480 **Skew:** - **Location:** over Big Creek
Bent: 2 **Logged By:** DWJ (UES) **Operator:** HDA (UES)
Station: 275+17.25 **Northing:** 1119108.0975 **Date of Work:** 05/14/24-05/15/24
Offset: No Offset **Easting:** 674396.2718 **Depth to Water:** 34.0
Elevation: 521.3 **Requested Northing:** 1119108.0974 **Depth Hole Open:**
Requested Station: 275+17.25 **Requested Easting:** 674396.2718 **Time Change:**
Requested Offset: - **Equipment:** CME 55 TD-5 ,Split-Spoon Sampler, NQ2
Requested Elevation: **Location Note:** Drilled through bridge deck, ground surface 23.7 feet from bridge deck.
Drill No.: S/N 388255 **Hammer Efficiency:** 82% **Drilling Method:** Hollow Stem Auger

Depth (ft)	Graphic	Description	Elevation (ft)	Sample Type	REC % (RQD %)	Blow Counts (N_{60})	Shear Data	Field Tests	Index Tests
40		35.7-65.7' Strong, gray, finely to very finely crystalline, thin to thick bedded, unweathered LIMESTONE	485		100 (94)				3/8" 43.9 #4 23.6 #10 12.4 #20 7.0 #40 4.9 #60 3.7 #100 2.6 #140 2.0 #200 1.4
45			480		100 (98)		Qu Test Results UCS = 1030 ksf γ_{moist} = 167.1 pcf		
50			475		100 (100)		Qu Test Results UCS = 878 ksf γ_{moist} = 161.4 pcf		
55			470		100 (100)		Qu Test Results UCS = 1370 ksf γ_{moist} = 161.3 pcf		
60		56.7' Very strong to bottom of borehole.	465		100 (100)		Qu Test Results UCS = 1160 ksf γ_{moist} = 161.6 pcf		
65		Refusal at 35.7 feet. Bottom of borehole at 65.7 feet.	460		100 (100)		Qu Test Results UCS = 2430 ksf γ_{moist} = 168.2 pcf		
					100 (100)				

N_{60} = (Em/60)Nm N_{60} - Corrected N value for standard 60% SPT efficiency; Em - Measured hammer efficiency in percent; Nm - Observed N-value; (1) = Assumed, (2) = Actual

Coordinate System: Modified U.S. State Plane 1983 **Coordinate Zone:** Missouri East **Coordinate Proj. Factor:** 1.00006253
Coordinate Datum: NAD 83 (CONUS) **Coordinate Units:** U.S. Survey Feet

* Persons using this information are cautioned that the materials shown are determined by the equipment noted and accuracy of the "log of materials" is limited thereby and by judgement of the operator. THIS INFORMATION IS FOR DESIGN PURPOSES ONLY.

Missouri Department of Transportation
Construction and Materials

BORING NO. B-3
Page 1 of 2

Job No.: NE 0051 **County:** Lincoln **Route:** J
Design: A9480 **Skew:** - **Location:** over Big Creek
Bent: 3 **Logged By:** DWJ (UES) **Operator:** HDA (UES)
Station: 276+37.25 **Northing:** 1118992.9153 **Date of Work:** 05/15/24-05/16/24
Offset: No Offset **Easting:** 674362.6091 **Depth to Water:** 23.0
Elevation: 515.7 **Requested Northing:** 1118992.9157 **Depth Hole Open:**
Requested Station: 276+37.25 **Requested Easting:** 674362.6091 **Time Change:**
Requested Offset: - **Equipment:** CME 55 TD-5 ,Split-Spoon Sampler, NQ2
Requested Elevation: **Location Note:** Drilled through bridge deck, ground surface 20.8 feet from bridge deck.
Drill No.: S/N 388255 **Hammer Efficiency:** 82% **Drilling Method:** Hollow Stem Auger

Depth (ft)	Graphic	Description	Elevation (ft)	Sample Type	REC % (RQD %)	Blow Counts (N_{60})	Shear Data	Field Tests	Index Tests
0		0.0-0.2' ASPHALT - 2 inches 0.2-0.5' CONCRETE - 4 inches 0.5-20.8' Air	515						
5			510						
10			505						
15			500						
20		20.8-28.8' Medium dense, brown, POORLY-GRADED SAND and gravel, trace clay and silt - SP	495		44	4-5-6 (15)			
25			490						
30		28.8-32.8' Brown, WELL-GRADED GRAVEL, some sand and trace silt and clay - GW	485						

N_{60} = (Em/60)Nm N_{60} - Corrected N value for standard 60% SPT efficiency; Em - Measured hammer efficiency in percent; Nm - Observed N-value; (1) = Assumed, (2) = Actual

Coordinate System: Modified U.S. State Plane 1983 **Coordinate Zone:** Missouri East **Coordinate Proj. Factor:** 1.00006253
Coordinate Datum: NAD 83 (CONUS) **Coordinate Units:** U.S. Survey Feet

* Persons using this information are cautioned that the materials shown are determined by the equipment noted and accuracy of the "log of materials" is limited thereby and by judgement of the operator. THIS INFORMATION IS FOR DESIGN PURPOSES ONLY.

LETTER BOREHOLE - MODOT_20151118.GDT - 6/25/24 07:27 - S:\PROJECTS\0044\J044917.01-MODOT - ROUTE J OVER BIG CREEK\DATA\LAB\J044917.01 RTE. J OVER BIG CREEK.GPJ

STATE OF MISSOURI
DAVID BURDICK NUMBER E-24015
REGISTERED PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

DATE PREPARED 4/3/2025
ROUTE J | STATE MO
DISTRICT BR | SHEET NO. 33
COUNTY LINCOLN
JOB NO. JNE0051
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9480

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)
CDG ENGINEERS
One Campbell Plaza
St. Louis, Missouri 63139
T. 314 781 7770
F. 314 781 9075
Missouri State Certificate of Authority # 1721

BORING DATA

Note: For locations of borings, see Sheets No. 1 & 2.

Detailed Sept. 2024
Checked Sept. 2024

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

B_A9480_033_JNE0051_Soil Boring Data 2.dgn 10:07:04 AM 4/3/2025

Missouri Department of Transportation
Construction and Materials

BORING NO. B-3
Page 2 of 2

Job No.: NE 0051 **County:** Lincoln **Route:** J
Design: A9480 **Skew:** - **Location:** over Big Creek
Bent: 3 **Logged By:** DWJ (UES) **Operator:** HDA (UES)
Station: 276+37.25 **Northing:** 1118992.9153 **Date of Work:** 05/15/24-05/16/24
Offset: No Offset **Easting:** 674362.6091 **Depth to Water:** 23.0
Elevation: 515.7 **Requested Northing:** 1118992.9157 **Depth Hole Open:**
Requested Station: 276+37.25 **Requested Easting:** 674362.6091 **Time Change:**
Requested Offset: - **Equipment:** CME 55 TD-5 ,Split-Spoon Sampler, NQ2
Requested Elevation: **Location Note:** Drilled through bridge deck, ground surface 20.8 feet from bridge deck
Drill No.: S/N 388255 **Hammer Efficiency:** 82% **Drilling Method:** Hollow Stem Auger

Depth (ft)	Graphic	Description	Elevation (ft)	Sample Type	REC % (RQD %)	Blow Counts (N_{60})	Shear Data	Field Tests	Index Tests
35		32.8-62.8' Medium strong to strong, gray, finely to very finely crystalline, thin to thick bedded, unweathered LIMESTONE	480		100 (83)				
40			475		100 (92)		Qu Test Results UCS = 1880 ksf γ_{moist} = 159.1 pcf		
45			470		100 (98)		Qu Test Results UCS = 780 ksf γ_{moist} = 161.3 pcf		
50			465		100 (97)		Qu Test Results UCS = 1210 ksf γ_{moist} = 160.7 pcf		
55			460		100 (97)		Qu Test Results UCS = 1760 ksf γ_{moist} = 159.7 pcf		
60		Refusal at 32.8 feet. Bottom of borehole at 62.8 feet.	455		100 (95)		Qu Test Results UCS = 1270 ksf γ_{moist} = 158 pcf		
					100 (94)				

N_{60} = (Em/60)Nm N_{60} - Corrected N value for standard 60% SPT efficiency; Em - Measured hammer efficiency in percent; Nm - Observed N-value; (1) = Assumed, (2) = Actual

Coordinate System: Modified U.S. State Plane 1983 **Coordinate Zone:** Missouri East **Coordinate Proj. Factor:** 1.00006253
Coordinate Datum: NAD 83 (CONUS) **Coordinate Units:** U.S. Survey Feet

* Persons using this information are cautioned that the materials shown are determined by the equipment noted and accuracy of the "log of materials" is limited thereby and by judgement of the operator. THIS INFORMATION IS FOR DESIGN PURPOSES ONLY.

LETTER BOREHOLE - MODOT_20151118.GDT - 6/25/24 07:27 - S:\PROJECTS\J044J0044917.01-MODOT - ROUTE J OVER BIG CREEK\DATA\LAB\J044917.01 RTE. J OVER BIG CREEK.GPJ

Missouri Department of Transportation
Construction and Materials

BORING NO. B-4
Page 1 of 2

Job No.: NE 0051 **County:** Lincoln **Route:** J
Design: A9480 **Skew:** - **Location:** over Big Creek
Bent: 4 **Logged By:** EER (UES) **Operator:** KA (UES)
Station: 277+17.56 **Northing:** 1118917.1575 **Date of Work:** 05/13/24-05/14/24
Offset: 4.73' Rt. **Easting:** 674335.5406 **Depth to Water:** 22.5
Elevation: 511.9 **Requested Northing:** 1118913.8837 **Depth Hole Open:**
Requested Station: 277+17.25 **Requested Easting:** 674347.8461 **Time Change:**
Requested Offset: 8' Lt. **Equipment:** CME 55HTX ,Shelby Tube, Split-Spoon Sampler, NQ2
Requested Elevation: **Location Note:**
Drill No.: S/N 314225 **Hammer Efficiency:** 80% **Drilling Method:** Hollow Stem Auger and Mud Rotary

Depth (ft)	Graphic	Description	Elevation (ft)	Sample Type	REC % (RQD %)	Blow Counts (N_{60})	Shear Data	Field Tests	Index Tests
0		0.0-0.4' ASPHALT - 5 inches							
		0.4-0.8' GRANNULAR BASE - 5 inches							
		0.9-12.0' FILL: brown and red clay, chert and weathered limestone gravel	510		28	7-12-10 (29)		PP = 1.50 tsf	MC = 7.2%
5					44	4-3-4 (9)		PP = 1.50 tsf	MC = 11.7%
			505		63		MC = 19.86% γ_{moist} = 126.57 pcf	PP = 2.00 tsf	LL = 33 PL = 19
10					67	2-5-8 (17)		PP = 3.00 tsf	LL = 29 PL = 18 MC = 18.8%
		12.0-16.0' Loose, brown, POORLY-GRADED SAND, some clay and silt - SP	500						
15					78	1-2-2 (5)			MC = 13.9% Sieve Analysis Sieve # % Passing #200 32.5
		16.0-23.0' Medium dense, brown, POORLY-GRADED GRAVEL and sand, trace silt and clay - GP	495		0				
20					53	7-10-9 (25)			Sieve Analysis Sieve # % Passing 1½" 100.0 1" 90.6 3/4" 85.4 1/2" 70.4 3/8" 59.2 #4 46.7 #10 36.6 #20 29.0 #40 20.6 #60 13.7 #100 9.5 #140 8.4 #200 7.1
			490						
25		23.0-29.3' Medium dense, brown, POORLY-GRADED SAND and gravel, trace clay and silt - SP			22	3-7-5 (16)			Sieve Analysis Sieve # % Passing 1½" 100.0 1" 84.7 3/4" 76.0 1/2" 67.9 3/8" 61.6
			485						

N_{60} = (Em/60)Nm N_{60} - Corrected N value for standard 60% SPT efficiency; Em - Measured hammer efficiency in percent; Nm - Observed N-value; (1) = Assumed, (2) = Actual

Coordinate System: Modified U.S. State Plane 1983 **Coordinate Zone:** Missouri East **Coordinate Proj. Factor:** 1.00006253
Coordinate Datum: NAD 83 (CONUS) **Coordinate Units:** U.S. Survey Feet

* Persons using this information are cautioned that the materials shown are determined by the equipment noted and accuracy of the "log of materials" is limited thereby and by judgement of the operator. THIS INFORMATION IS FOR DESIGN PURPOSES ONLY.

LETTER BOREHOLE - MODOT_20151118.GDT - 6/25/24 07:27 - S:\PROJECTS\J044J0044917.01-MODOT - ROUTE J OVER BIG CREEK\DATA\LAB\J044917.01 RTE. J OVER BIG CREEK.GPJ

BORING DATA

Note: For locations of borings, see Sheets No. 1 & 2.

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

Sheet No. 34 of 35

Detailed Sept. 2024
Checked Sept. 2024

STATE OF MISSOURI
DAVID BURDICK
NUMBER E-24015
REGISTERED PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

DATE PREPARED 4/3/2025
ROUTE J | STATE MO
DISTRICT BR | SHEET NO. 34
COUNTY LINCOLN
JOB NO. JNE0051
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9480

DESCRIPTION | DATE

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

CDG ENGINEERS
One Campbell Plaza
St. Louis, Missouri 63139
T. 314 781 7770
F. 314 781 9075
Missouri State Certificate of Authority # 1721

Missouri Department of Transportation
Construction and Materials

BORING NO. B-4
Page 2 of 2

Job No.: NE 0051 **County:** Lincoln **Route:** J
Design: A9480 **Skew:** - **Location:** over Big Creek
Bent: 4 **Logged By:** EER (UES) **Operator:** KA (UES)
Station: 277+17.56 **Northing:** 1118917.1575 **Date of Work:** 05/13/24-05/14/24
Offset: 4.73' Rt. **Easting:** 674335.5406 **Depth to Water:** 22.5
Elevation: 511.9 **Requested Northing:** 1118913.8837 **Depth Hole Open:**
Requested Station: 277+17.25 **Requested Easting:** 674347.8461 **Time Change:**
Requested Offset: 8' Lt. **Equipment:** CME 55HTX ,Shelby Tube, Split-Spoon Sampler, NQ2
Requested Elevation: **Location Note:**
Drill No.: S/N 314225 **Hammer Efficiency:** 80% **Drilling Method:** Hollow Stem Auger and Mud Rotary

Depth (ft)	Graphic	Description	Elevation (ft)	Sample Type	REC % (RQD %)	Blow Counts (N_{60})	Shear Data	Field Tests	Index Tests
30		29.3-44.0' Strong, gray, finely to very finely crystalline, thin to thick bedded, unweathered LIMESTONE	480		100 (77)		Qu Test Results UCS = 1690 ksf γ_{moist} = 162.2 pcf		#4 57.4 #10 53.4 #20 47.4 #40 26.2 #60 10.0 #100 7.0 #140 6.3 #200 5.9
35			475		100 (100)		Qu Test Results UCS = 1770 ksf γ_{moist} = 163.2 pcf		
40			470		100 (93)				
		Refusal at 29.3 feet. Bottom of borehole at 44.3 feet.							

N_{60} = (Em/60)Nm N_{60} - Corrected N value for standard 60% SPT efficiency; Em - Measured hammer efficiency in percent; Nm - Observed N-value; (1) = Assumed, (2) = Actual

Coordinate System: Modified U.S. State Plane 1983 **Coordinate Zone:** Missouri East **Coordinate Proj. Factor:** 1.00006253
Coordinate Datum: NAD 83 (CONUS) **Coordinate Units:** U.S. Survey Feet

* Persons using this information are cautioned that the materials shown are determined by the equipment noted and accuracy of the "log of materials" is limited thereby and by judgement of the operator. THIS INFORMATION IS FOR DESIGN PURPOSES ONLY.

LETTER BOREHOLE - MODOT_20151118.GDT - 6/25/24 07:27 - S:\PROJECTS\J044\J044917.01-MODOT - ROUTE J OVER BIG CREEK\DATA\LAB\J044917.01 RTE. J OVER BIG CREEK.GPJ

BORING DATA

Note: For locations of borings, see Sheets No. 1 & 2.

Detailed Sept. 2024
Checked Sept. 2024

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

STATE OF MISSOURI
DAVID BURDICK
NUMBER E-24015
REGISTERED PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

DATE PREPARED 4/3/2025
ROUTE J | STATE MO
DISTRICT BR | SHEET NO. 35
COUNTY LINCOLN
JOB NO. JNE0051
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9480

DESCRIPTION | DATE

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

CDG ENGINEERS
One Campbell Plaza
St. Louis, Missouri 63139
T. 314 781 7770
F. 314 781 9075
Missouri State Certificate of Authority # 1721