DESIGN DESIGNATION

A.A.D.T. - 2026 = 602 A.A.D.T. - 2046 = 692D.H.V. = 10.79% V = 55 M.P.H. D = 49.4%/50.6%

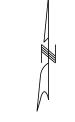
FUNCTIONAL CLASSIFICATION- RURAL MAJOR COLLECTOR

NO NEW R/W

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION FINAL PLANS FOR PROPOSED

STATE HIGHWAY N

STE. GENEVIEVE COUNTY



NOT TO SCALE

CONVENTIONAL SYMBOLS

	EXISTING	NEW
BUILDINGS AND STRUCTURES GUARD RAIL GUARD CABLE CONCRETE RIGHT-OF-WAY MARKER STEEL RIGHT-OF-WAY MARKER LOCATION SURVEY MARKER	0000	••••
UTILITIES FIBER OPTICS OVERHEAD CABLE TV UNDERGROUND CABLE TV OVERHEAD TELEPHONE UNDERGROUND TELEPHONE OVERHEAD POWER UNDERGROUND POWER SANITARY SEWER STORM SEWER GAS WATER	- FO - OTV - UTV - OT - UT - OT - UT - OE - UE - S - G - UT - OF - UT - OT	- FO - OTV - UTV - OT - OE - S - S - G - W
MANHOLE	NAZ DYH)
FIRE HYDRANT	wv	J
WATER VALVE	,,, MW	€
WATER METER	D	€
DROP INLET	Ï	
DITCH BLOCK	=	=
GROUND MOUNTED SIGN	SIGN	-
LIGHT POLE		
H-FRAME POWER POLE		
TELEPHONE PEDESTAL FENCE CHAIN LINK WOVEN WIRE GATE POST	PED	/ //
BENCHMARK	(≥	9

NOTE: DASHED OR OPEN SYMBOLS INDICATE EXISTING FEATURES

SHOWING LOCATION OF COUNTY

T36N R9E AUX VASES 2068 OZORA

US SURVEY 3060

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.

PROJECT LIMITS REPLACE EX BR# P0631

INDEX OF SHEETS

DESCRIPTION	SHEET NUMBER
TITLE SHEET	1
TYPICAL SECTIONS (TS) (1 SHEET)	2
QUANTITIES (QU) (3 SHEETS)	3
PLAN-PROFILE (PP)	4
REF/COORD POINTS (RC/CP)	5 - 6
SPECIAL SHEETS (SS)	7
TRAFFIC CONTROL SHEETS (TC)	8 - 9
EROSION CONTROL SHEETS (EC)	10
BRIDGE DRAWINGS (B)	
A9409	1-31
CROSS-SECTIONS (XS)	1 - 4

DATE PREPARED 7 / 21 / 2025								
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DESCRIPTION								
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LENGTH OF PROJECT

BEGINNING OF PROJECT	STA. 431+35
END OF PROJECT	STA. 435+90
APPARENT LENGTH	455 FEET
EQUATIONS AND EXCEPTIONS:	

0 FEET 455 FEET 0.086 MILES 1.09 ACRES

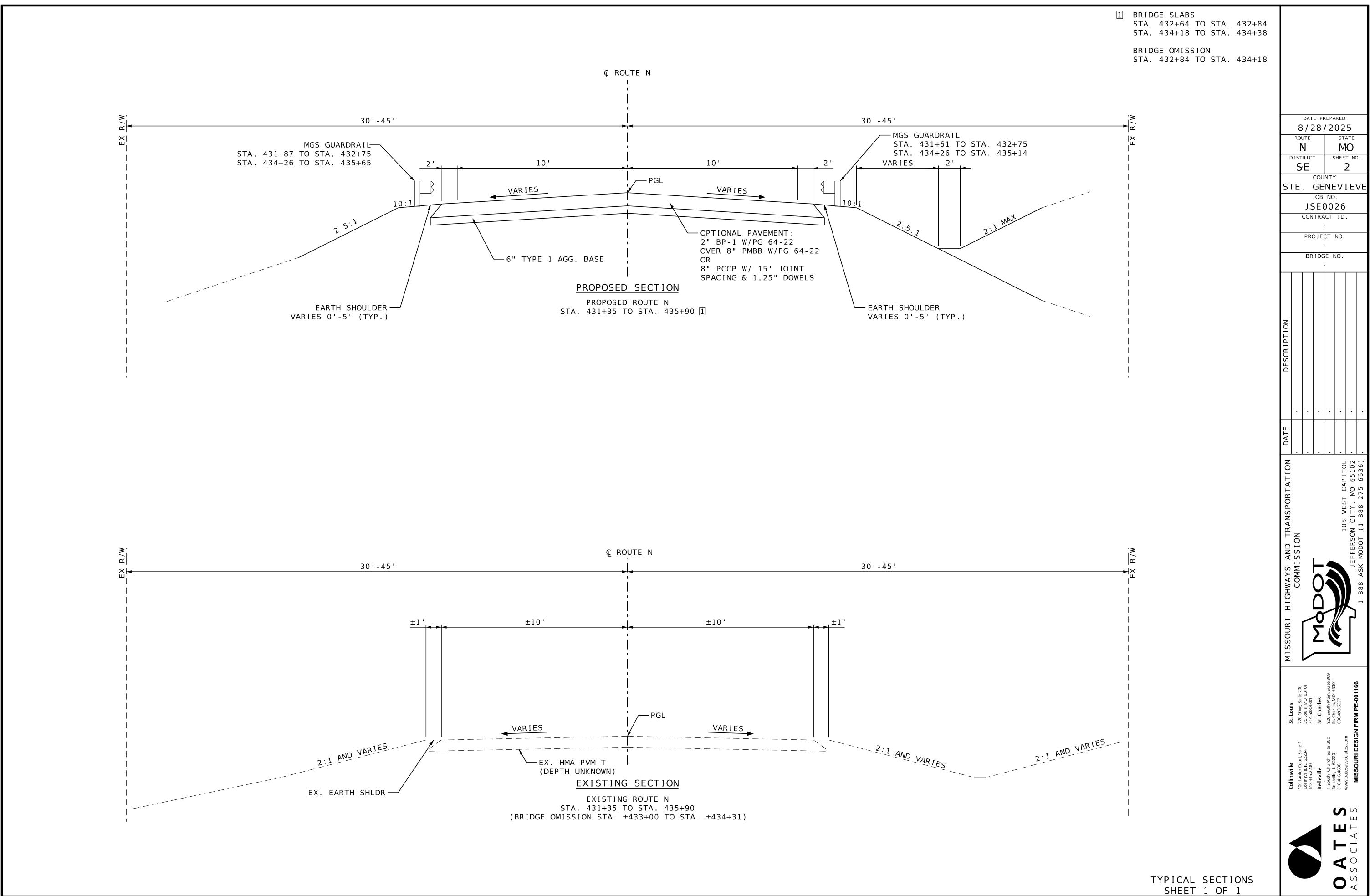
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TOTAL CORRECTIONS

STATE LENGTH

NET LENGTH OF PROJECT

FOR INFORMATION ONLY ESTIMATED DISTURBED ACRES



	REMOVAL OF IMPROVEMENTS									
SHEET	STATION	STATION	OFFSET	LENGTH	AREA (SQYD)	EACH	REMARKS			
4	431+60		LT/RT	72			SAWCUT			
4	431+60	433+00	LT/RT		313		PAVEMENT			
4	430+55		RT			1	SIGN (YIELD)			
4	432+60		LT			1	SIGN (OBJECT MARKER)			
4	432+60		RT			1	SIGN (OBJECT MARKER)			
4	432+80		LT			1	SIGN (OBJECT MARKER)			
4	432+80		RT			1	SIGN (OBJECT MARKER)			
4	432+99		LT			1	SIGN (OBJECT MARKER)			
4	433+00		RT			1	SIGN (OBJECT MARKER)			
4	434+21	435+65	LT/RT		283		PAVEMENT			
4	434+31		RT			1	SIGN (OBJECT MARKER)			
4	434+32		LT			1	SIGN (OBJECT MARKER)			
4	434+51		RT			1	SIGN (OBJECT MARKER)			
4	434+51		LT			1	SIGN (OBJECT MARKER)			
4	434+71		RT			1	SIGN (OBJECT MARKER)			
4	434+71		LT			1	SIGN (OBJECT MARKER)			
4	435+65		LT/RT	20			SAWCUT			
		•	SUBTOTAL	92	596	13				
			PAY TOTAL		1 LUMP SUM					

	PAVEMENT AND BASE								
SHEET	STATION STATION OFFSI		OFFSET	TYPE 1 AGGREGATE FOR BASE (6 IN. THICK)	BITUMINOUS PAVEMENT MIXTURE PG64-22, (BP-1)	OPTIONAL PAVEMENT	TACK COAT	MODIFIED COLDMILLING (DEPTH TRANSITIONS)	REMARKS
				(SQYD)	(TONS)	(SQYD)	(GAL)	(SQYD)	
4	431+35	431+77	LT/RT		11.8		11	109	
4	431+60	432+63	LT/RT	299		276.0			
4	434+38	435+65	LT/RT	367		338.7			
4	435+65	435+90	LT/RT		5.7		5	52	
			SUBTOTAL	666	17.5	614.7	16	161	
			PAY TOTAL	666	17.5	614.7	16	161	

PAVEMENT NOTES:

1. SEE TYPICAL SECTIONS FOR OPTIONAL PAVEMENT DESIGN.

2. APPLICATION RATES: BP-1 = 1.948 TON/CUYD

TACK COAT = 0.10 GAL/SQYD

				EARTHWOR	K		
SHEET	STATION	STATION	ESTIMATED CUT	WASTE (+) OR		REMARKS	
			(NOTE 1) (CUYD)	(NOTE 1) (CUYD)	(NOTE 1) (CUYD)	(STA)	
XS 1 - XS 2	431+35	432+63.5	115	143	-28	1.5	SOUTH SIDE OF BR#A940
XS 2 - XS 4	434+38	435+90	161	400	-239	1.7	NORTH SIDE OF BR#A9409
		SUBTOTAL	276	543	-267	3.2	
		PAY TOTAL	0	0	0	3.2	

					ROCK BLANKET			
SHEET	STATION	STATION	OFFSET	FURNISHING TYPE 2 ROCK BLANKET	PLACING TYPE 2 ROCK BLANKET	ROCK BLANKET EXCAVATION (NOTES 2 & 3)	PERMANENT EROSION CONTROL GEOTEXTILE	REMARKS
				(CUYD)	(CUYD)	(CUYD)	(SQYD)	
9	432+64	433+23	LT/RT	307.9	307.9	307.9	461.9	SOUTH BRIDGE CONE
9	433+99	434+38	LT/RT	209.6	209.6	209.6	314.4	NORTH BRIDGE CONE
			SUBTOTAL	517.5	517.5	517.5	776.3	
			PAY TOTAL	518	518	0	776	

ROCK BLANKET NOTES:

1. ROCK QUANTITY MAY BE OBTAINED FROM REMOVED BRIDGE DECK IF BROKEN OR CRUSHED TO MEET SPECIFICATION WITH NO EXPOSED REBAR OR ASPHALT MATERIAL.

2. THE EXCAVATION QUANTITY SHOWN IS FOR INFORMATION ONLY. THE COST TO EXCAVATE THE SOIL FOR THE PLACEMENT OF THE ROCK BLANKET IS INCLUDED IN THE

COST FOR PLACING TYPE 2 ROCK BLANKET.

3. THE EXCAVATION QUANTITY FOR ROCK BLANKET IS NOT INCLUDED IN THE EARTHWORK QUANTITIES. THE SUITABILITY OF THE MATERIAL FOR USE AS FILL MUST BE APPROVED BY THE ENGINEER.

MOBILIZATION

PAY TOTAL = 1 LUMP SUM

CONTRACTOR FURNISHED SURVEYING AND STAKING

PAY TOTAL = 1 LUMP SUM



SUMMARY OF QUANTITIES SHEET 1 OF 3

PERMANENT PAVEMENT MARKING								
SHEET	T STATION STATION OFFSET		4 IN. WHITE CLASS 1 PAVEMENT MARKING PAINT (18-MIL, TYPE P BEADS)	NT MARKING PAINT PAVEMENT MARKING PAINT				
				(LF)	(LF)			
N/A	431+35	435+90	CL		910	DOUBLE SOLID CENTERLINE		
N/A	431+35	435+90	LT	455		SOLID EDGE LINE		
N/A	431+35	435+90	RT	455		SOLID EDGE LINE		
			SUBTOTAL	910	910			
			PAY TOTAL	910	910			

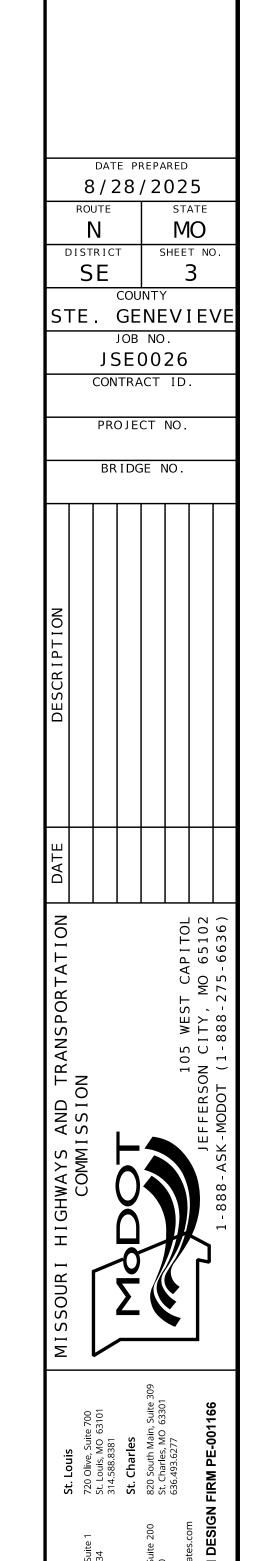
SEEDING AND MULCHING								
SHEET	STATION	STATION	OFFSET	MULCHING	SEEDING - COOL SEASON GRASSES	TEMPORARY SEEDING	REMARKS	
				(ACRE)	(ACRE)	(ACRE)		
4	431+35	432+64	RT	0.12	0.06	0.06		
4	431+72	432+64	LT	0.08	0.04	0.04		
4	434+38	435+90	RT	0.20	0.10	0.10		
4	434+38	435+90	LT	0.14	0.07	0.07		
			SUBTOTAL	0.54	0.27	0.27		
			PAY TOTAL	2	1	1		

					EROSION CO	NTROL				
SHEET	STATION	STATION	OFFSET	ROCK DITCH CHECK	SEDIMENT REMOVAL	SILT FENCE	TYPE C BERM	TYPE 2D EROSION CONTROL BLANKET	REMARKS	
				(LF)	(CUYD)	(LF)	(LF)	(SQYD)		
9	431+35	432+64	RT					319.2		
9	431+35	432+65	RT	35	5.0			<u> </u>		
9	431+35	433+23	RT		1.9	190.0				
9	431+72	432+64	LT					185.1		
9	431+72	433+23	LT		1.5	152.8				
9	432+64	433+23	LT/RT				193.6		SOUTH BRIDGE SLO	
9	433+99	434+38	LT/RT				158.6		NORTH BRIDGE SL	
9	433+99	435+78	LT		1.8	183.3				
9	433+99	435+90	RT		2.0	195.2				
9	434+30	435+90	RT	14	2.0					
9	434+38	435+90	RT					543.4		
9	434+38	435+90	LT					381.6		
			SUBTOTAL	49	14.2	721.3	352.2	1429.3		
			PAY TOTAL	49	14	721	352	1429		

1. SEDIMENT REMOVAL QUANTITY ASSUMES 1 CYPER 100 LF OF SILT FENCE AND 1 CYPER DITCH CHECK.
--

GUARDRAIL								
SHEET	STATION	STATION	OFFSET	MGS BRIDGE APPROACH TRANSITION SECTION (REGULAR/NO CURB) TYPE A CRASHWORTHY TERMINAL (MASH)		MGS GUARDRAIL	REMARKS	
				(EA)	(EA)	(LF)		
4	431+61	432+75	RT	1	1	25	SE CORNER BR#A9409	
4	431+87	432+75	LT	1	1		SW CORNER BR#A9409	
4	434+26	435+65	LT	1	1	50	NW CORNER BR#A9409	
4	434+26	435+14	RT	1	1		NE CORNER BR#A9409	
	•		SUBTOTAL	4	4	75		
			PAY TOTAL	4	4	75		

POROUS BACKFILL								
SHEET STATION STATION		OFFSET	POROUS BACKFILL	REMARKS				
				(CUYD)				
6	432+78	432+83	LT/RT	26.7	ASSUMED 5'x6'x24'			
6	434+18	434+23	LT/RT	26.7	ASSUMED 5'x6'x24'			
	•	•	SUBTOTAL	53.4				
			PAY TOTAL	53				



SUMMARY OF QUANTITIES SHEET 2 OF 3

												_				T	п		_
				TOTA	L QTY	TOTAL								' '	TOTAL				EFFECTIVE: 07-01-2025
SIGN	SIZE	AREA	QTY	ARE.	A RELOC	RELOC	SIGN		SIGN	SIZE	AREA	QTY	TOTAL	RELOC	RELOC SIGN		ITEM	TOTAL	
	IN.	SQ.FT.	EACH	SQ.F	Γ. EACH	SQ.FT.	NO.	DESCRIPTION		IN.	SQ.FT.	EACH	SQ.FT.	EACH	SQ.FT. NO.	DESCRIPTION	NUMBER	QTY	DESCRIPTION
		•		WA	RNING S	IGNS			1				GU	DE SI	GNS		6122008	·	IMPACT ATTENUATOR 40 MPH (SAND BARRELS)
WO1-1L	48X48	16.00						TURN (SYMBOL LEFT)	E05-1	36X48	12.00					GORE EXIT	6122009		IMPACT ATTENUATOR 45 MPH (SAND BARRELS)
WO1 - 1R	48X48							TURN (SYMBOL RIGHT)	E05-2	48X36						EXIT OPEN	6122010		IMPACT ATTENUATOR 50 MPH (SAND BARRELS)
WO1 - 2L	48X48		+					CURVE (SYMBOL LEFT)	E05-2a	48X36						EXIT CLOSED	6122012		IMPACT ATTENUATOR 55 MPH (SAND BARRELS)
WO1 - 2R	48X48							CURVE (SYMBOL RIGHT)	GO20-1	60X24						ROAD WORK NEXT XX MILES	6122014		IMPACT ATTENUATOR 60 MPH (SAND BARRELS)
WO1 - 3L	48X48							REVERSE TURN (SYMBOL LEFT)	GO20 - 2	48X24						END ROAD WORK	6122017		IMPACT ATTENUATOR 65 MPH (SAND BARRELS)
WO1 - 3R	48X48							REVERSE TURN (SYMBOL RIGHT)	GO20-4	36X18						PILOT CAR FOLLOW ME	6122019		IMPACT ATTENUATOR 70 MPH (SAND BARRELS)
WO1-3K	48X48							REVERSE CURVE (SYMBOL LEFT)	GO20-4a							PILOT CAR FOLLOW ME PILOT CAR IN USE WAIT & FOLLOW	6122020		REPLACEMENT SAND BARREL
									1			-					l — — — — — — — — — — — — — — — — — — —		
WO1 - 4R	48X48							REVERSE CURVE (SYMBOL RIGHT)	GO20 - 4a	_		-				PILOT CAR IN USE WAIT & FOLLOW	6122030		IMPACT ATTENUATOR (RELOCATION)
WO1 - 4bL	48X48							DOUBLE ARROW REVERSE CURVE (SYMBOL LEFT)	GO20 - 5 a F							WORK ZONE (PLAQUE)	6122040		WORK ZONE CRASH CUSHION (NARROW)
WO1 - 4bR	48X48							DOUBLE ARROW REVERSE CURVE (SYMBOL RIGHT)	MO4-8a	24X18		2	6.00		52	END DETOUR	6122041		WORK ZONE CRASH CUSHION (RELOCATION)
WO1-4cL	48X48							TRIPLE ARROW REVERSE CURVE (SYMBOL LEFT)	MO4 - 9L	48X36						DETOUR (LEFT)	6123001		TRUCK MOUNTED ATTENUATOR (TMA)
WO1-4cR	48X48							TRIPLE ARROW REVERSE CURVE (SYMBOL RIGHT)	MO4 - 9R	48X36						DETOUR (RIGHT)	6161012		BUOYS (BOATS KEEP OUT)
WO1-6	60X30							HORIZONTAL ARROW (SYMBOL)	MO4 - 9P	48X12						STREET NAME (PLAQUE)	6161013		BUOYS (NO WAKE)
WO1-6a	72X36	18.00						HORIZ. ARROW (SYMBOL ON PERMANENT BARRICADE)	MO4 - 10L	48X18	6.00					DETOUR ARROW (LEFT)	6161014		SPECIAL SIGN ASSEMBLY (BOATS KEEP OUT)
WO1-7	60X30	12.50						DOUBLE HEAD HORIZONTAL ARROW (SYMBOL)	MO4 - 10R	48X18	6.00					DETOUR ARROW (RIGHT)	6161020		CHANNELIZER (DRUM-LIKE)
WO1-7a	72X36	18.00						DOUBLE HEAD HORIZ. ARROW (SYMBOL ON PERM. BARR.)					REGUL	ATORY	SIGNS		6161022		CHANNELIZER (CONE)
WO1-8	18X24	3.00						CHEVRON (SYMBOL)	R1-1	48X48	13.25					STOP	6161025	20	CHANNELIZER (TRIM-LINE)
WO1-8a	30X36	7.50						CHEVRON (SYMBOL FOR DIVIDED HIGHWAYS)	R1-2	48TRI.	6.93					YIELD	6161026		CHANNELIZER (VERTICAL PANEL)
WO3 - 1	48X48	16.00						STOP AHEAD (SYMBOL)	R1-2a	36X36	9.00					TO ONCOMING TRAFFIC (PLAQUE)	6161030	13	TYPE 3 MOVEABLE BARRICADE
WO3 - 2	48X48							YIELD AHEAD (SYMBOL)	R1-3P	30X12						ALL WAY (PLAQUE)	6161033		DIRECTION INDICATOR BARRICADE
WO3 - 3	48X48							SIGNAL AHEAD (SYMBOL)	R2 - 1	_	12.00	1				SPEED LIMIT XX	6161040		FLASHING ARROW PANEL
WO3 - 4	48X48		1					BE PREPARED TO STOP	R3 - 1	_						NO RIGHT TURN (SYMBOL)	6161047		TYPE 3 OBJECT MARKER
WO3 - 5	48X48		+					SPEED LIMIT AHEAD	R3 - 2	48X48						NO LEFT TURN (SYMBOL)	6161055		SEQUENTIAL FLASHING WARNING LIGHT
WO4 - 1L	48X48				+			MERGE (SYMBOL FROM LEFT)	R3-3	36X36						NO TURNS	6161033		TUBULAR MARKER
WO4 - 1L WO4 - 1R	48X48		1		+	+ -		MERGE (SYMBOL FROM RIGHT)	R3-4			_				NO U-TURN (SYMBOL)	6161070		RADAR SPEED ADVISORY SYSTEM
																	0101093		
WO4 - 1 aL	48X48							MERGE (LEFT)	R3 - 7L	30X30		_				LEFT LANE MUST TURN LEFT	6161006		CHANGEABLE MESSAGE SIGN,
WO4 - 1 aR	48X48							MERGE (RIGHT)	R3 - 7R	30X30						RIGHT LANE MUST TURN RIGHT	6161096		COMMISSION FURNISHED/RETAINED
WO5 - 1	48X48							ROAD/BRIDGE/RAMP NARROWS	R4-1	36X48						DO NOT PASS			CHANGEABLE MESSAGE SIGN WITHOUT COMM.
WO5 - 3	48X48							ONE LANE BRIDGE	R4-2	36X48		_				PASS WITH CARE	6161098A	4	INTERFACE, CONTRACTOR FURNISHED/RETAINED
WO5 - 5	48X48							NARROW LANES	R4-7a	36X48						KEEP RIGHT (HORIZONTAL ARROW)			CHANGEABLE MESSAGE SIGN WITH COMM.
WO6 - 1	48X48	16.00						DIVIDED HIGHWAY (SYMBOL)	R4-8a	36X48	12.00					KEEP LEFT (HORIZONTAL ARROW)	6161099		INTERFACE, CONTRACTOR FURNISHED/RETAINED
WO6 - 2	48X48	16.00						DIVIDED HIGHWAY END (SYMBOL)	R5 - 1	30X30	6.25					DO NOT ENTER	6162000A		WORK ZONE TRAFFIC SIGNAL SYSTEM
WO6 - 3	48X48	16.00						TWO WAY TRAFFIC (SYMBOL)	R5-1a	36X24	6.00					WRONG WAY	6162002		TEMPORARY LONG-TERM RUMBLE STRIPS
WO7-3a	30X24	5.00						NEXT XX MILES (PLAQUE)	R6-1L	54X18	6.75					ONE WAY ARROW (LEFT)			TEMPORARY TRAFFIC BARRIER,
WO8 - 1	48X48	16.00						BUMP	R6-1R	54X18	6.75					ONE WAY ARROW (RIGHT)	6173600D		CONTRACTOR FURNISHED/RETAINED
WO8 - 2	48X48	16.00						DIP	R6-2L	24X30	5.00					ONE WAY (LEFT)			TEMP. TRAFFIC BARRIER ANCHORED,
WO8 - 3	48X48	16.00						PAVEMENT ENDS	R6-2R	24X30	5.00					ONE WAY (RIGHT)	6173700B		CONTRACTOR FURNISHED/RETAINED
WO8 - 4	48X48							SOFT SHOULDER	R9-9	24X12						SIDEWALK CLOSED			TEMP. TRAFFIC BARRIER STIFFNESS TRANSITION
WO8 - 5	48X48							SLIPPERY WHEN WET (SYMBOL)	1							SIDEWALK CLOSED AHEAD,	6173706		CONTRACTOR FURNISHED/RETAINED
WO8 - 6	48X48							TRUCK CROSSING	R9-11L	24X18	3 00					(ARROW LEFT) CROSS HERE	10173700		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION,
WO8 - 6 c	48X48							TRUCK ENTRANCE	1		0.00					SIDEWALK CLOSED AHEAD,	6174000A		CONTRACTOR FURNISHED/RETAINED
WO8 - 7	36X36							LOOSE GRAVEL	R9-11R	24X18	3 00					(ARROW RIGHT) CROSS HERE	6175010A		RELOCATING TEMPORARY TRAFFIC BARRIER
WO8 - 7a	36X36							FRESH OIL / LOOSE GRAVEL	R10-6	24X36						STOP HERE ON RED (45^ ARROW)	6175010A		RELOCATING TEMP. TRAFFIC BARRIER ANCHORED
WO8 - 9	48X48							LOW SHOULDER	R11-2			-	20.00		29	ROAD CLOSED	61750118		RELOCATING TEMP. TRAFFIC BARRIER STIFFNESS
									K11-2	46830	10.00	2	20.00		29				
WO8 - 11	48X48		-		+	+ -		UNEVEN LANES	∥ ,,, ,,	60736	12 50	_	25 00			ROAD CLOSED XX MILES AHEAD	6175020A		RELOCATING TEMP. TRAFFIC BARRIER HEIGHT
WO8 - 12	48X48		-					NO CENTER LINE	R11-3a		12.50		25.00		55	LOCAL TRAFFIC ONLY (1 MI, 2 MI)	6208064A		TEMPORARY RAISED PAVEMENT MARKER
WO8 - 15	48X48		1					GROOVED PAVEMENT	R11-4	60X30						ROAD CLOSED TO THRU TRAFFIC	9029400		TEMPORARY TRAFFIC SIGNALS
WO8 - 15P	30X24	5.00	1					MOTORCYCLE (PLAQUE)		60X48		-				FINE SIGN	9029401		TEMPORARY TRAFFIC SIGNALS AND LIGHTING
WO8 - 17L	48X48		1					SHOULDER DROP-OFF (SYMBOL LEFT)	CONST - 3>	56X12	4.67			L		SPEEDING/PASSING (PLATE)	ļ		
		16.00						SHOULDER DROP-OFF (SYMBOL RIGHT)	<u> </u>				ISCELL	ANEOU	S SIGNS				
WO8 - 17P								SHOULDER DROP-OFF (PLAQUE)		48X36						POINT OF PRESENCE			
W10-1		9.62						RAILROAD CROSSING	CONST - 5							POINT OF PRESENCE			
WO12-1	24X24	4.00						DOUBLE DOWN ARROW (SYMBOL)	CONST - 8	48X36	12.00					WORK ZONE NO PHONE ZONE			
WO12-2	48X48	16.00						LOW CLEARANCE (SYMBOL)	SPECIAL	96X48	32.00	1	32.00		56	ROUTE N CLOSED 1 MILES AHEAD			
W012-2x	24X18	3.00					_	LOW CLEARANCE (PLAQUE)	M1 - 5a	24X12	2.00	17	34.00		17	STATE ROUTE N			
WO12-2a	84X24	14.00						OVERHEAD LOW CLEARANCE (FEET AND INCHES)	M5 - 1	21X15			8.80		17A,17B	ADVANCE STRAIGHT ARROW			
WO12-4								LOW CLEARANCE XX FT XX IN XX MILES AHEAD	MO4 - 8	24X12						DETOUR			
WO12-5								WIDTH RESTRICTION XX FT XX IN XX MILES AHEAD	M5 - 1L	21X15			11.00			ADVANCE TURN ARROW (90° LEFT)			
WO13-1		6.25						ADVISORY SPEED (PLAQUE)	M5 - 1R	21X15						ADVANCE TURN ARROW (90° RIGHT)			
WO16-2		5.00	_					XXX FEET (PLAQUE)	-	21X15			6.60			LEFT TURN ARROW			
WO16 - 3		5.00	1					X MILE (PLAQUE)		21X15			6.60			RIGHT TURN ARROW			
WO20-1		16.00	+			+ -		ROAD/BRIDGE/RAMP WORK AHEAD	M3 - 1	24X12			18.00		177 170	CARDINAL DIRECTION NORTH			
WO20-1		16.00		32.0	0		18	DETOUR AHEAD	4	24X12			16.00		1/1	CARDINAL DIRECTION NORTH			
		16.00	_								2.00	1 0			17F;17H	CULPTIME DIVECTION 30011	I		
WO20-3				64.0	<u> </u>	+ -	20	ROAD CLOSED AHEAD (AHEAD-2, 500 FT-2)	616-10			ıc	TOTAL	1					
WO20-4		16.00						ONE LANE ROAD AHEAD	CONSTR		1 21GN	12	319	<u> </u>		NO DIRECT PAY FOR RELOCATING			
WO20-5		16.00	+					RIGHT/CENTER/LEFT LANE CLOSED AHEAD	616-10		CNC					TEMPORARY TRAFFIC CONTROL			
WO20-5a			_					2 RIGHT/CENTER/LEFT LANES CLOSED AHEAD	RELOCA	IED SI	GN5				* *	DEVICES			
WO20-6a	_	16.00						RIGHT/CENTER/LEFT LANE CLOSED	1										
WO20-7a		16.00	_					FLAGGER (SYMBOL)	1										
WO21-2	36X36							FRESH OIL	1										
WO21-5	48X48	16.00						SHOULDER WORK / SHOULDER WORK AHEAD	_										
WO22-1	48X48	16.00						BLASTING ZONE AHEAD	1										

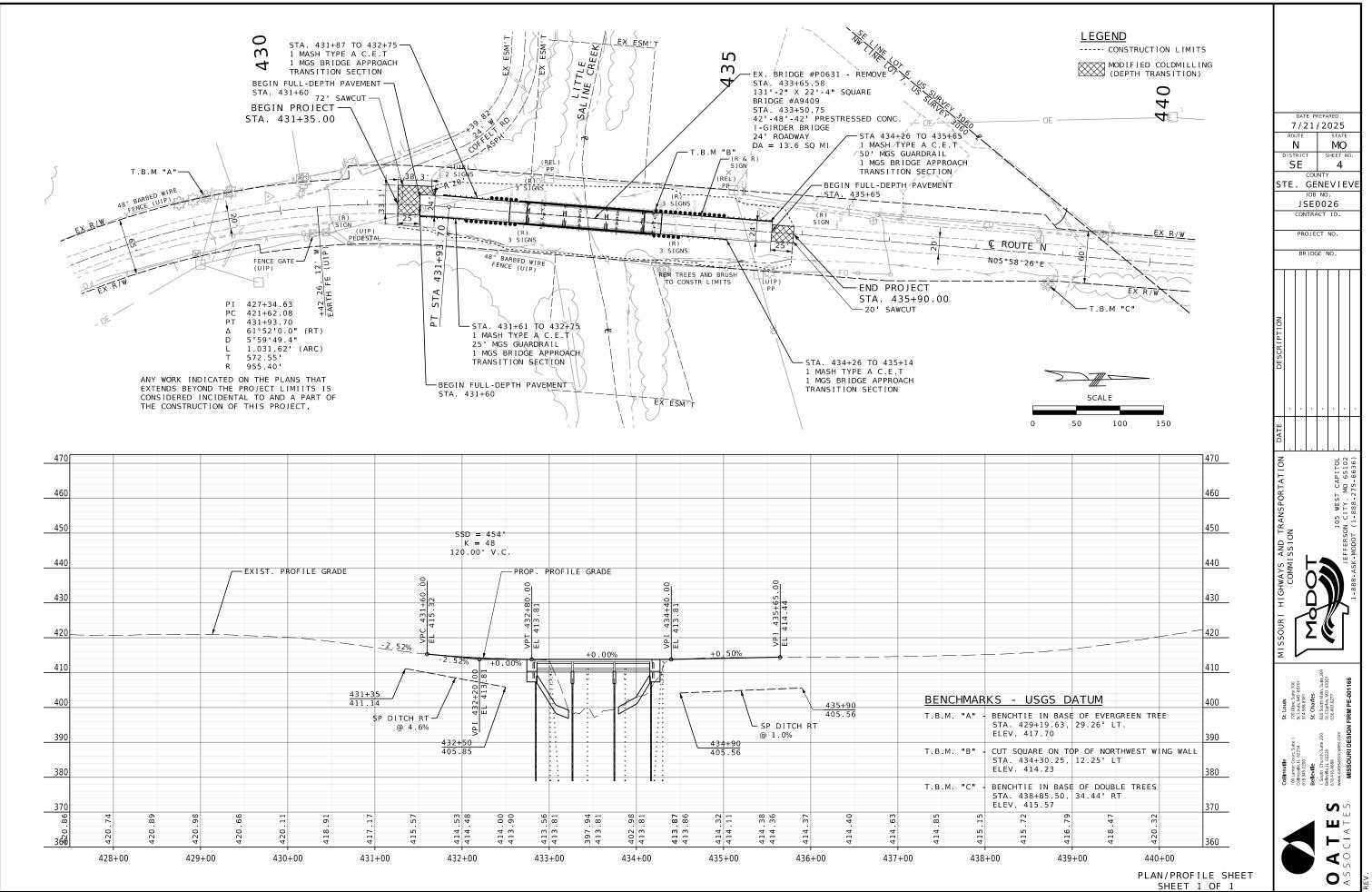
BLASTING ZONE AHEAD

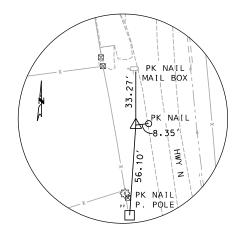
WO22-1 48X48 16.00 WO22-2 42X36 10.50

WO22-3 42X36 10.50 GO22-1 21X15 2.19

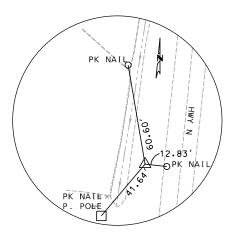
TURN OFF 2-WAY RADIO AND PHONE END BLASTING ZONE
WET PAINT (ARROW PIVOTS)

7/21/2025 N МО SHEET NO. SE STE. GENEVIEVE JOB NO.
JSE0026
CONTRACT ID. PROJECT NO. BRIDGE NO. **O** <

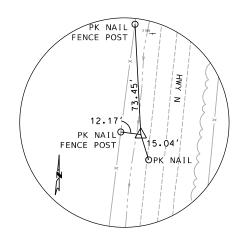




CONTROL POINT #1
SET IRON ROD WITH ALUMINUM CAP
17' ± EAST OF CL OF ROUTE N & 310' ±
SOUTH OF SOUTH END OF BRIDGE PO631
N: 732900.8132
E: 955401.0428
ELEV: 419.29



CONTROL POINT #2
SET IRON ROD WITH ALUMINUM CAP
120' ± NORTH OF THE NORTH END OF BRIDGE
P0631 & 20' ± WEST OF THE CL OF ROUTE N
N: 733466.8583
E: 955434.6209
ELEV: 409.77



CONTROL POINT #3

SET IRON ROD WITH ALUMINUM CAP

14' ± NORTH OF THE CL OF THE ENTRANCE

TO LITTLE SALINE SPORTSMAN CLUB

N: 734042.2980

E: 955500.3461

ELEV: 423.612

HORIZONTAL AND VERTICAL CONTROL STATEMENT

STATE PLANE COORDINATES ON THIS PROJECT WERE ESTABLISHED UTILIZING THE MISSOURI HIGHWAYS AND TRANSPORTATION COMISSION GLOBAL NAVIGATION SATELLITE REAL TIME NETWORK FOR CONTINUOUSLY OPERATING REFERENCE STATIONS DURING APRIL, 2024 AND ARE BASED ON THE MISSOURI COORDIANTE SYSTEM OF 1983, EAST ZONE. THE AVERAGE COMBINED PROJECT GRID FACTOR IS 0.9999393592

COORDINATE BASE ARE MODIFIED MISSOURI STATE PLANE COORDINATES AND WERE ESTABLISHED BY APPLYING THE INVERSE OF THE PROJECT GRID FACTOR (1.0000606445) ABOUT THE ORIGIN (0.0)

VERTICAL DATUM IS NAVD 88 AS BROADCAST WITH THE MODOT GNSS NETWORK

5 SE STE. GEN<u>EVIEV</u>I JSE0026 CONTRACT ID. PROJECT NO. BRIDGE NO.

O

7/21/2025

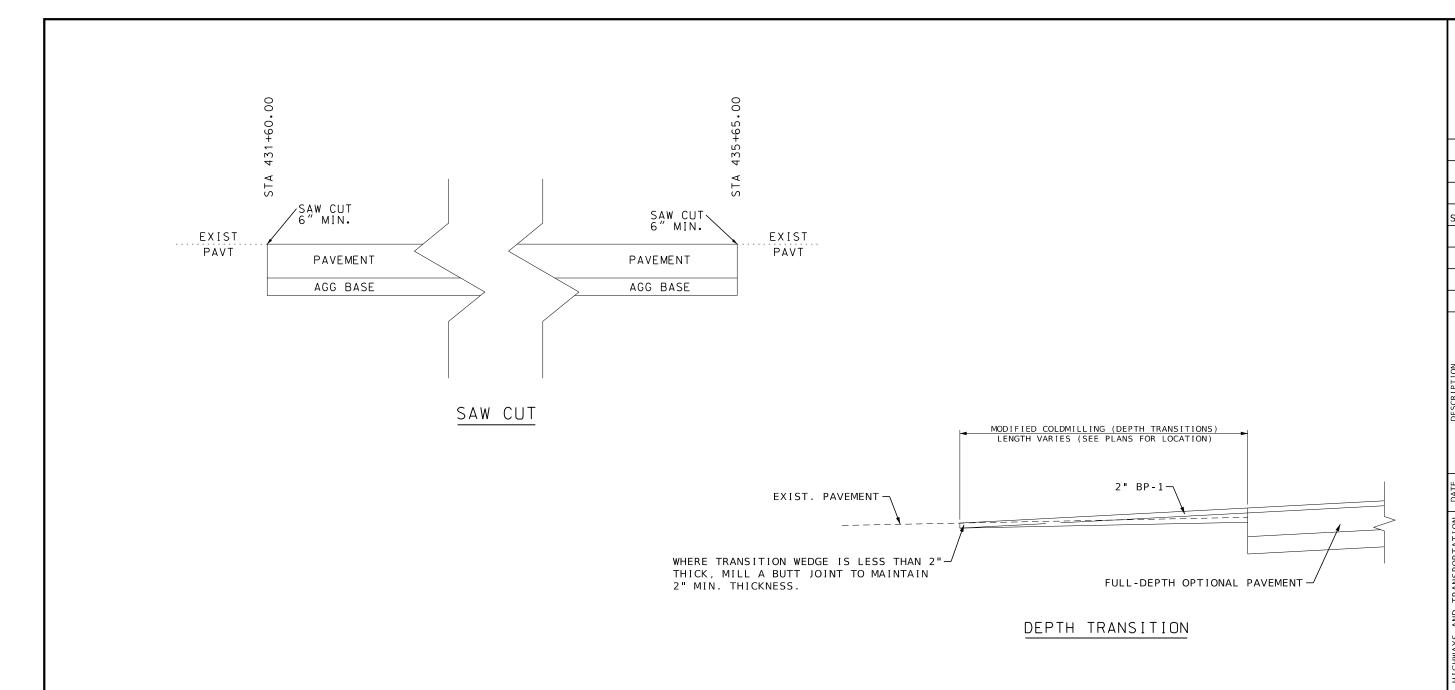
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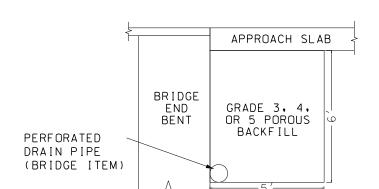
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COORDINATE POINTS SHEET SHEET 1 OF 2

	· · · · · · · · · · · · · · · · · · ·					
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 COORDI	NATE INFORMATION					
COORDINATE SYSTEM	MOD. MO STATE PLANE (GROUND)					
HORIZONTAL DATUM	NAD-83					
VERTICAL DATUM	NAVD-88					
GEOID MODEL	GEOID 18					
ELEVATIONS DETERMINED BY	GPS AND DIFFERENTIAL LEVELING					
PROJECT PROJECTIO	N FACTOR 1.0000606445					
REFERENCE CONT	ROL INFORMATION					
COORDINATE SYSTEM	COORDINATE SYSTEM OF 1983					
CONTROL STATION	MODOT VRS					
DESIGNATION M	OPT STE GENE CORS ARP					
CORS_ID M	10SG					
	N4502					
LATITUDE N	l37°56'14.95574"					
LONG I TUDE W	/090°08'08.71530"					
NORTHING (M) 2	:33556.654					
EASTING (M) 2	82017.657					
ZONE 2	401 (MO-EAST)					
PROJECT AVERAGE G	RID FACTOR 0.99991912					
EXAMPLE OF PRO	JECT 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 N 732900.8132 X 0 E 955407.0428 X 0	POINT #_1_ 99991912_ = N 732841.54 99991912_ = E 955329.77					
LINEAR UNIT CONVERSION						
1 METER = 3.280833333 US SURVEY FEET (USFT)						

					COORDINATE	POINT LISTING					
				MODIFIE	ED STATE PLANE				$\exists I$		
			OFFSET	NORTH I NG	EASTING	ELEVATION		GPK			
SHEET NO	STATION	LOCATION	(USFT)	(US SURVEY FT)	(US SURVEY FT)	(US SURVEY FT)	DESCRIPTION	POINT ID		ATE PRE	EPARED 2025
PROJECT CO	ONTROL POINTS								ROU		STATE
5	429+88.30	RTE N	17.81 LT	732900.8132	955401.0428	419.29	SET IRON ROD WITH ALUMINUM CAP	CP#1	N		MO
5	435+52.55	RTE N	20.92 LT	733466.8583	955434.6209	409.77	SET IRON ROD WITH ALUMINUM CAP	CP#2	DISTR SI	ICT E	SHEET NO. 6
5	441+31.70	RTE N	15.44 LT	734042.2980	955500.3461	423.612	SET IRON ROD WITH ALUMINUM CAP	CP#3		COUN	ITY
									STE.	GEN	NEVIEVE
										JOB I	√0.
										ONTRAC	
										PROJEC	Γ NO.
									$\neg \vdash$	BRIDGE	NO.
									\neg I		
AL I GNMENTS	5	•	•	•	•	<u> </u>		<u>'</u>	$\neg \sqcap \sqcap$		
	421+62.08	RTE N	CL	732217.285	955832.561		PC CURVE #1		$\neg \sqcap \sqcap$		
	427+34.63	RTE N	CL	732538.338	955358.495		PI CURVE #1		$- _{z} $		
	431+93.69	RTE N	CL	733107.779	955418.083		PT CURVE #1				
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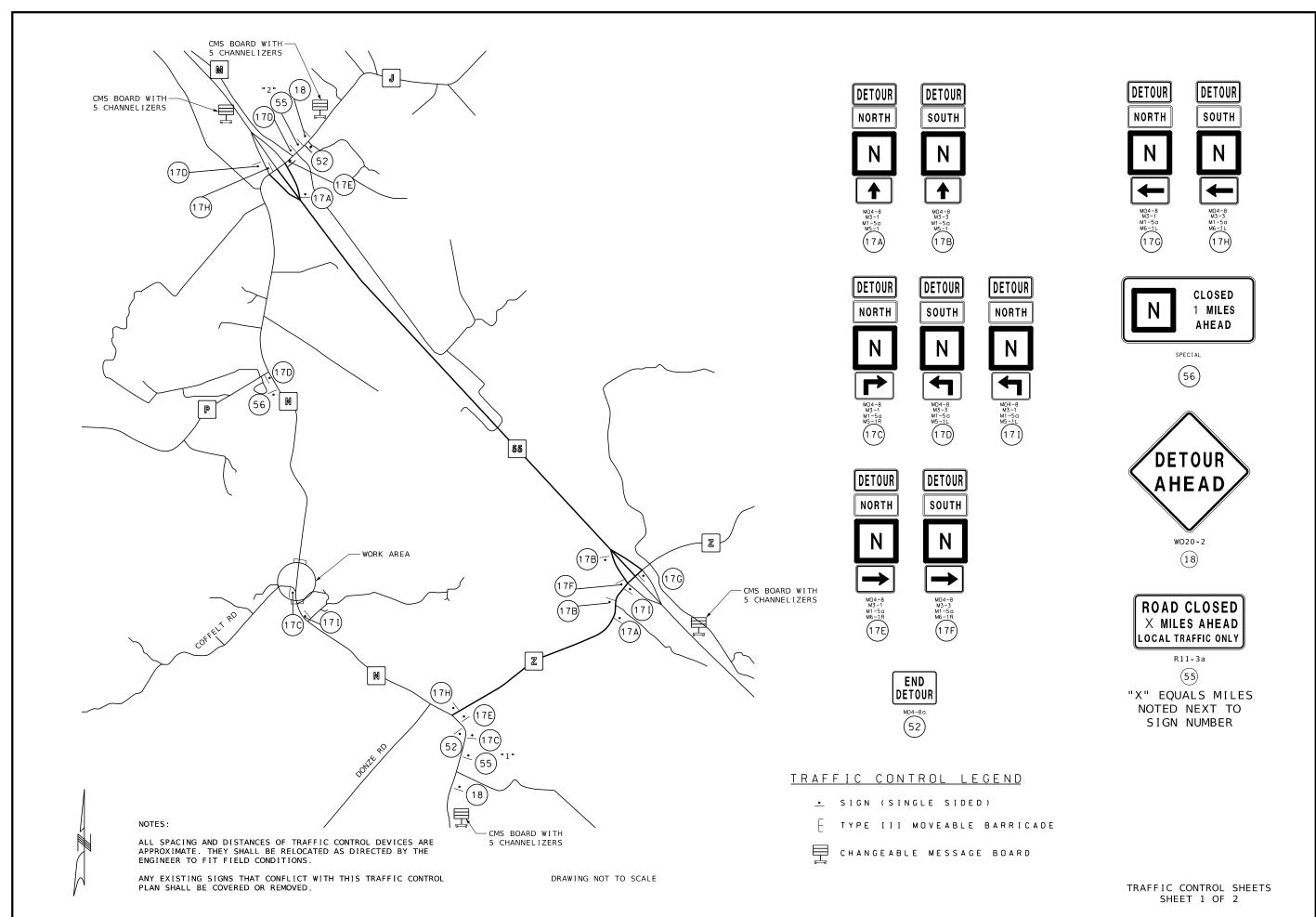




POROUS BACKFILL

SPECIAL SHEETS SHEET 1 OF 1





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JSE0026

PROJECT NO.

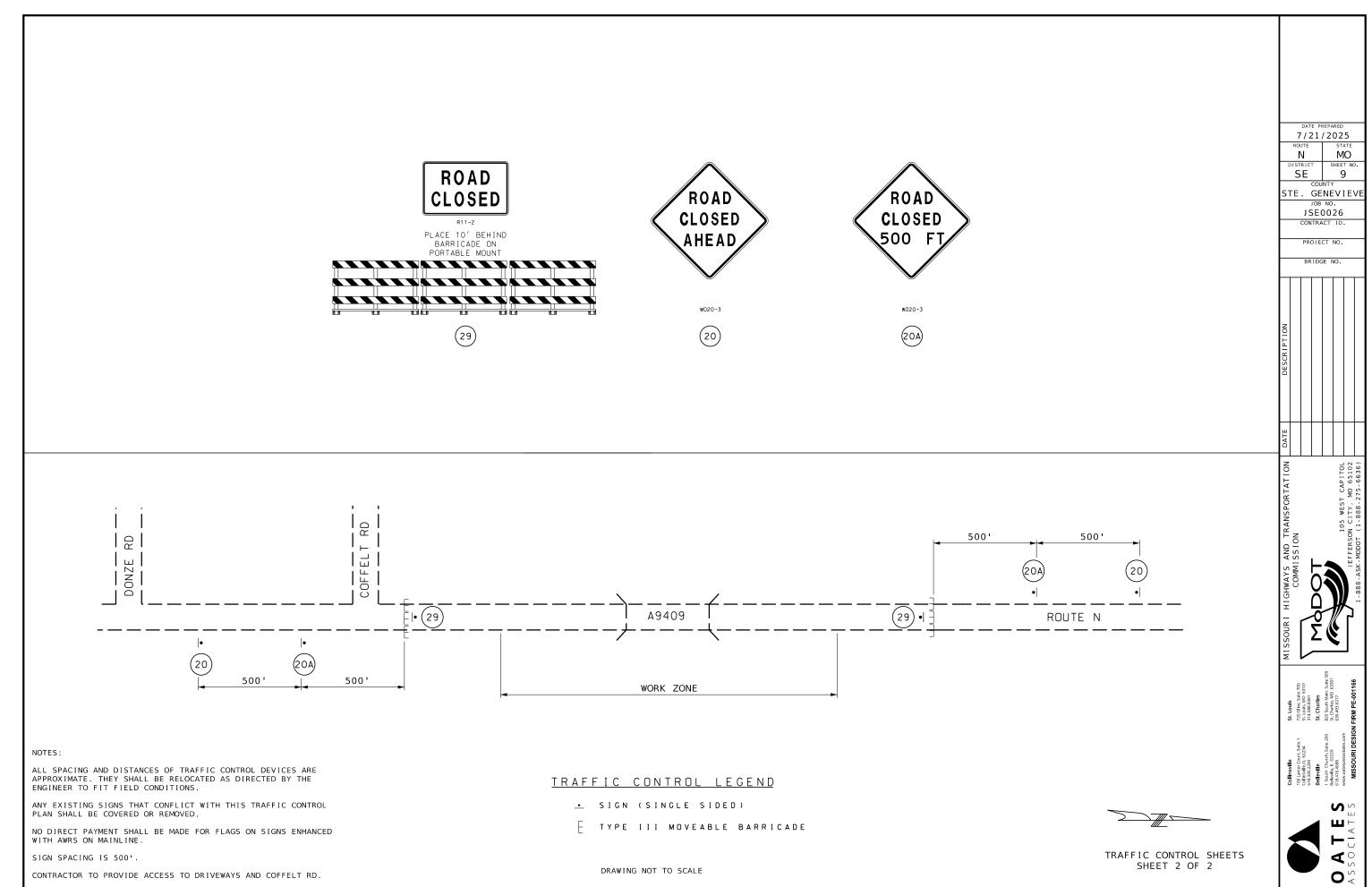
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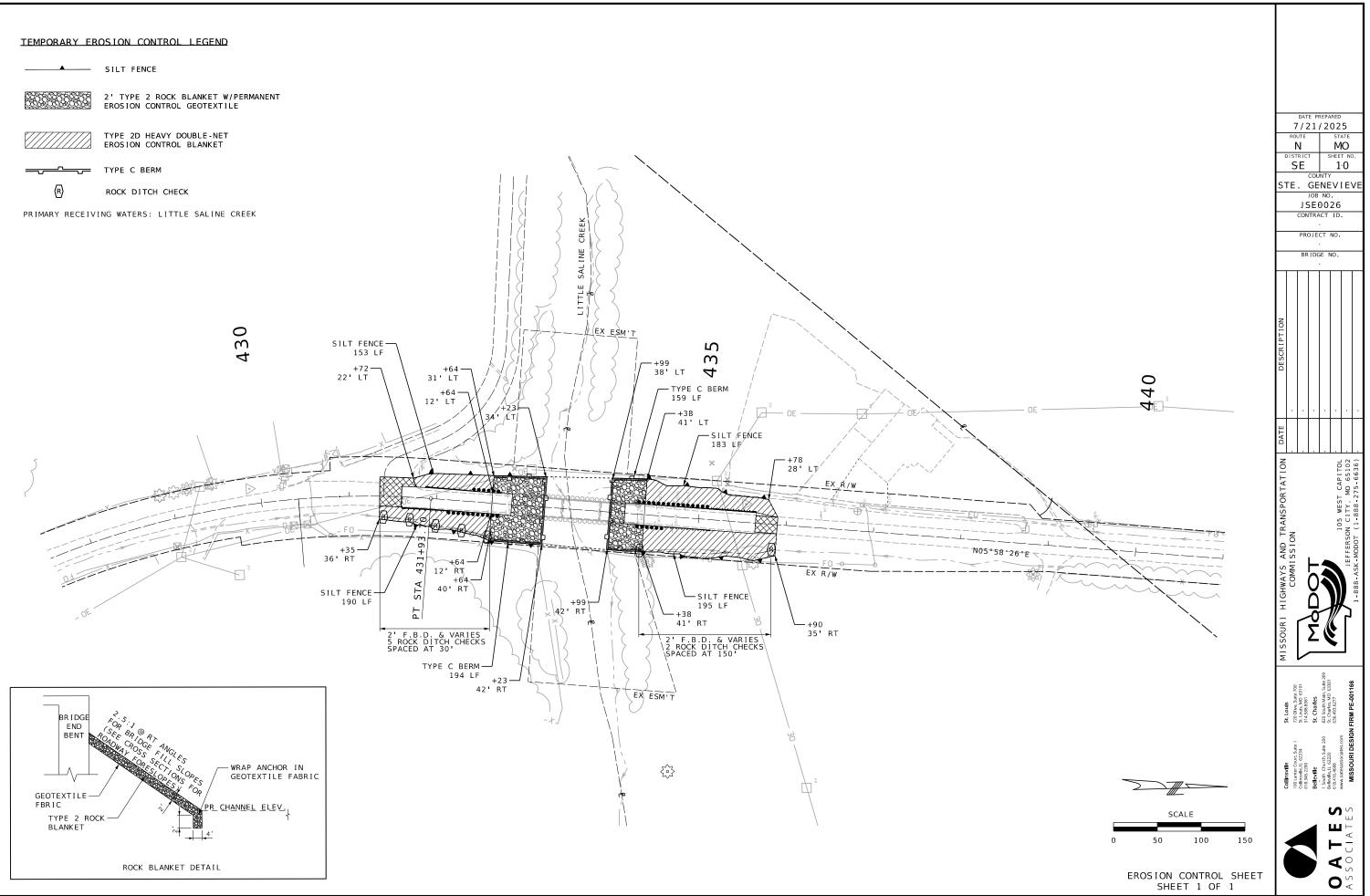
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PLAN

Sheet No. 1 of 31

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

Designed Nov. 2024 Detailed Nov. 2024

Checked Jan. 2025

BRIDGE: ROUTE N OVER LITTLE SALINE CREEK

ROUTE N FROM ROUTE Z TO ROUTE P

BEGINNING STATION 432+83.00

ABOUT 1.0 MILES NORTH OF ROUTE Z

Estimated Quantities								
I t em		Substr.	Superstr.	Total				
Class 1 Excavation	cu. yard	65		65				
Removal of Bridges (P0631)	lump sum			1				
Bridge Approach Slab (Minor)	sq. yard		107	107				
Galvanized Structural Steel Piles (12 in.)	linear foot	196		196				
Galvanized Structural Steel Piles (14 in.)	linear foot	345		345				
Pre-Bore for Piling	linear foot	250		250				
Pile Point Reinforcement	each	18		18				
Class B Concrete (Substructure)	cu. yard	39.4		39.4				
Slab on Concrete I-Girder	sq. yard		399	399				
Type H Barrier	linear foot		306	306				
Type 2 (32 in.), Prestressed Concrete I-Girde	r linear foot		527	527				
Reinforcing Steel (Bridges)	pound	2780		2780				
Fabricated Structural Carbon Steel (Misc.)	pound	900		900				
Slab Drain	each		26	26				
Vertical Drain at End Bents	each			2				
Plain Neoprene Bearing Pad	each		24	24				

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

All reinforcement in the end bents is included in the Estimated Quantities for Slab on Concrete 1-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 I-Girder.

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

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 prices for Galvanized Structural Steel Piles (12 in.) and Galvanized Structural Steel Piles (14 in.).

The cost of furnishing and installing steel sway bracing on piles at the intermediate bents will be considered completely covered by the contract unit price for Fabricated Structural Carbon Steel (Misc.).

Cost of cleaning and galvanizing of bracing at intermediate bents will be considered completely covered by the contract unit price for other items.

General Notes:

Design Specifications: 2020 AASHTO LRFD Bridge Design Specifications (9th Ed.) 2023 AASHTO Guide Specifications for LRFD Seismic Bridge Design (3rd Ed.) Seismic Design Category = C (Seismic Details) Design earthquake response spectral acceleration coefficient at 1.0 second period, SD1 = 0.206g Acceleration Coefficient (effective peak ground acceleration coefficient), As = 0.317g

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) Class B-2 Concrete (Superstructure, except Prestressed f'c = 3,000 psif'c = 4,000 psiGirders and Barrier) Class B-1 Concrete (Barrier) Reinforcing Steel (ASTM A706 Grade 60) Structural Carbon Steel (ASTM A709 Grade 36) f'c = 4,000 psi f'c = 4,000 psi fy = 60,000 psi fy = 36,000 psiStructural Steel HP Pile (ASTM A709 Grade 50S)

For precast prestressed panel stresses, see Sheet No. 17. For prestressed girder stresses, see Sheets No. 14 and 15.

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

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.

Minimum clearance between galvanized piles and uncoated (plain) reinforcing steel including bar supports shall be 1 1/2". Nylon, PVC, or polyethylene spacers shall be used to maintain clearance. Nylon cable ties shall be used to bind the spacers to the reinforcement.

Traffic Handling:

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

Miscellaneous:

MoDOT Construction personnel will indicate the type of joint filler option used under the precast panels for this structure:

□ Constant Joint Filler □ Variable Joint Filler

Detailed Nov. 2024 Checked Jan. 2025

Estimated Quantities for Slab on Concrete I-Girder	
I t em	Total
Class B-2 Concrete cu. yard	103

Reinforcing Steel (Epoxy Coated) pound	1 26,790
The table of Estimated Quantities for Slab on Concrete State in preparing the cost estimate for concrete slabs to the nearest square yard longitudinally from end of s out of bridge slab (or with the horizontal dimensions a prestressed panels, conventional forms, all concrete an considered completely covered by the contract unit pric the estimated quantities but the variations cannot be u	. The area of the concrete slab will be measured lab to end of slab and transversely from out to s shown on the plan of slab). Payment for d epoxy coated reinforcing steel will be for the slab. Variations may be encountered in

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.

Class B-2 Concrete quantity is based on minimum top flange thickness and minimum joint material thickness.

The prestressed panel quantities are not included in the table of Estimated Quanities for Slab and Concrete I Girder

	Foundation Data								
			Bent Number						
Type	Design Data	1	2	3	4				
	Pile Type and Size	HP 12x53	HP 14x73	HP 14x73	HP 12x53				
	Number ea	4	5	5	4				
	Approximate Length Per Each ft	23	31	38	26				
	Pile Point Reinforcement ea	AII	AII	AII	AII				
	Min. Galvanized Penetration (Elev.) ft	Full Length	Full Length	Full Length	Full Length				
Bearing Pile	Est. Max. Scour Depth 100-yr (Elev.) ft	-	393	393	-				
FILE	Minimum Tip Penetration (Elev.) ft	390	377	370	393				
	Criteria for Min. Tip Penetration	Min. Embed	Lateral Stab.	Other	Min. Embed				
	Pile Driving Verification Method ft	DF	DF	DF	DF				
	Resistance Factor	0.4	0.4	0.4	0.4				
	Minimum Nominal Axial Compressive Resistance kig	368	550	550	368				

DF = FHWA-modified Gates Dynamic Formula

Load Bearing Piles:

Minimum Nominal Axial Compressive Resistance = Maximum Factored Loads

Prebore for piles at Bents No. 2 and 3 to elevations 377.4 and 370.3, respectively.

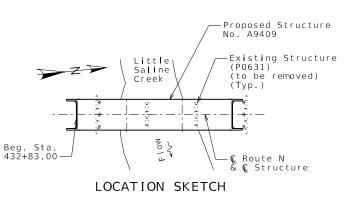
Piles at Bents No. 2 and 3 to be set-in-rock at the specified elevations and tapped with the pile driving hammer to ensure the piles are seated on rock. Rock socket diameters to be 24 inches. Piles shall be encased in Class B concrete within the rock socket.

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

All pile shall be galvanized down to the minimum galvanized penetration (elevation).

The contractor shall make every effort to achieve the minimum galvanized penetration (elevation)shown on the plans for all piles. Deviations in penetration less than 5 feet of the minimum will be considered acceptable provided the contractor makes the nessesary corrections to ensure the minumum penetration is achieved on subsequent piles.

Hydrologic Data
Drainage Area = 14 mi²
Design Flood Frequency = 50 years
Design Flood Discharge = 5200 cfs
Design Flood (D.F.) Elevation = 409.5
Base Flood (100-year)
Base Flood Elevation = 410.2
Base Flood Discharge = 6100 cfs
Estimated Backwater = 0.6 ft
Average Velocity thru Opening = 7.3 ft/s
Freeboard (50-year)
Freeboard = 1.1 ft
Roadway Overtopping
Overtopping Flood Discharge = N/A
Overtopping Flood Frequency = > 500 years
500-year Flood Elevation = 412.4



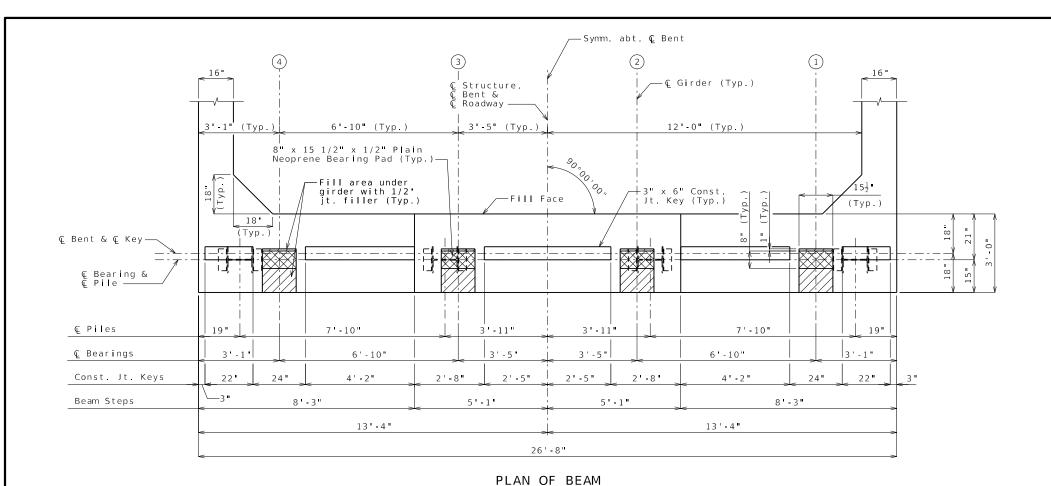


5/1/25 Ν MO SHEET NO BR 2

STE. GENEVIEV JSE0026

PROJECT NO.

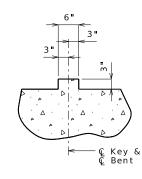
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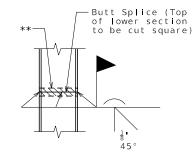
© Structure, © Bent & © Roadway —

6'-4"

9'-2"



SECTION THRU KEY



STEEL PILE SPLICE (If required)

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



NUMBER E-20020031

5/1/25

STE. GENEVIEV

JSE0026

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BR





2-#6-H100 2-#6-H100 4 Spa. @ 12" 2'-10" 4 Spa. @ 12" 3'-9" 6" 3"

PLAN OF BEAM SHOWING REINFORCEMENT

7'-4"

23 ' - 2 "

Keys not shown for clarity.

DETAILS OF END BENT NO. 1

9'-2"

6 - 4"

Detailed Nov. 2024 Checked Jan. 2025

© Bent & © Key−

(山) 19-#5-U100

(□) 12-#4-U101

(□) 4-#4-U102

21"

(f1) 2 Pr.-#5-V100

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

END BENT NO. 1

Sheet No. 3 of 31

2 - 4 "

21"

NOTES:

* 3 Spa. @ 6"

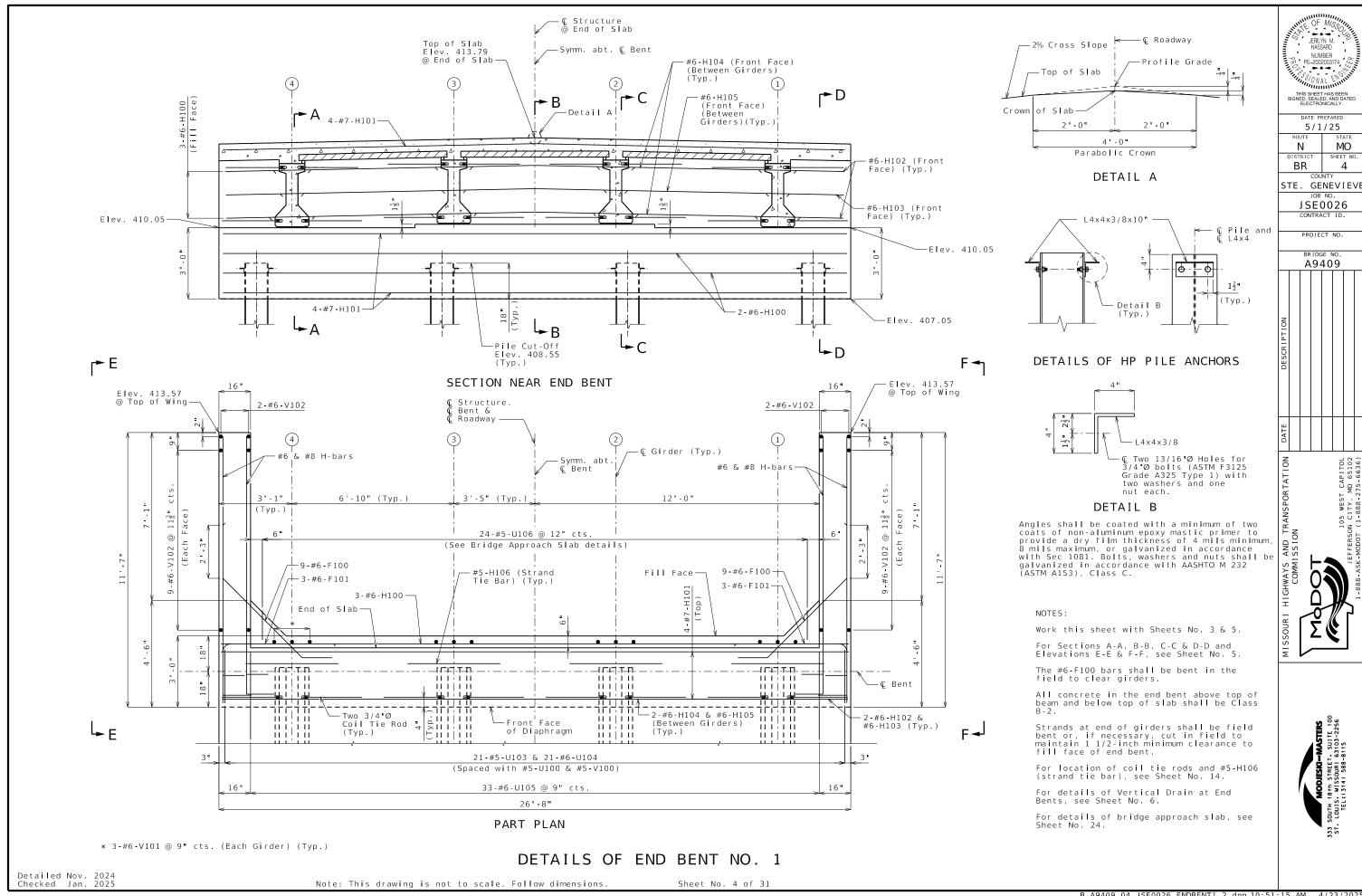
Work this sheet with Sheets No. 4 & 5.

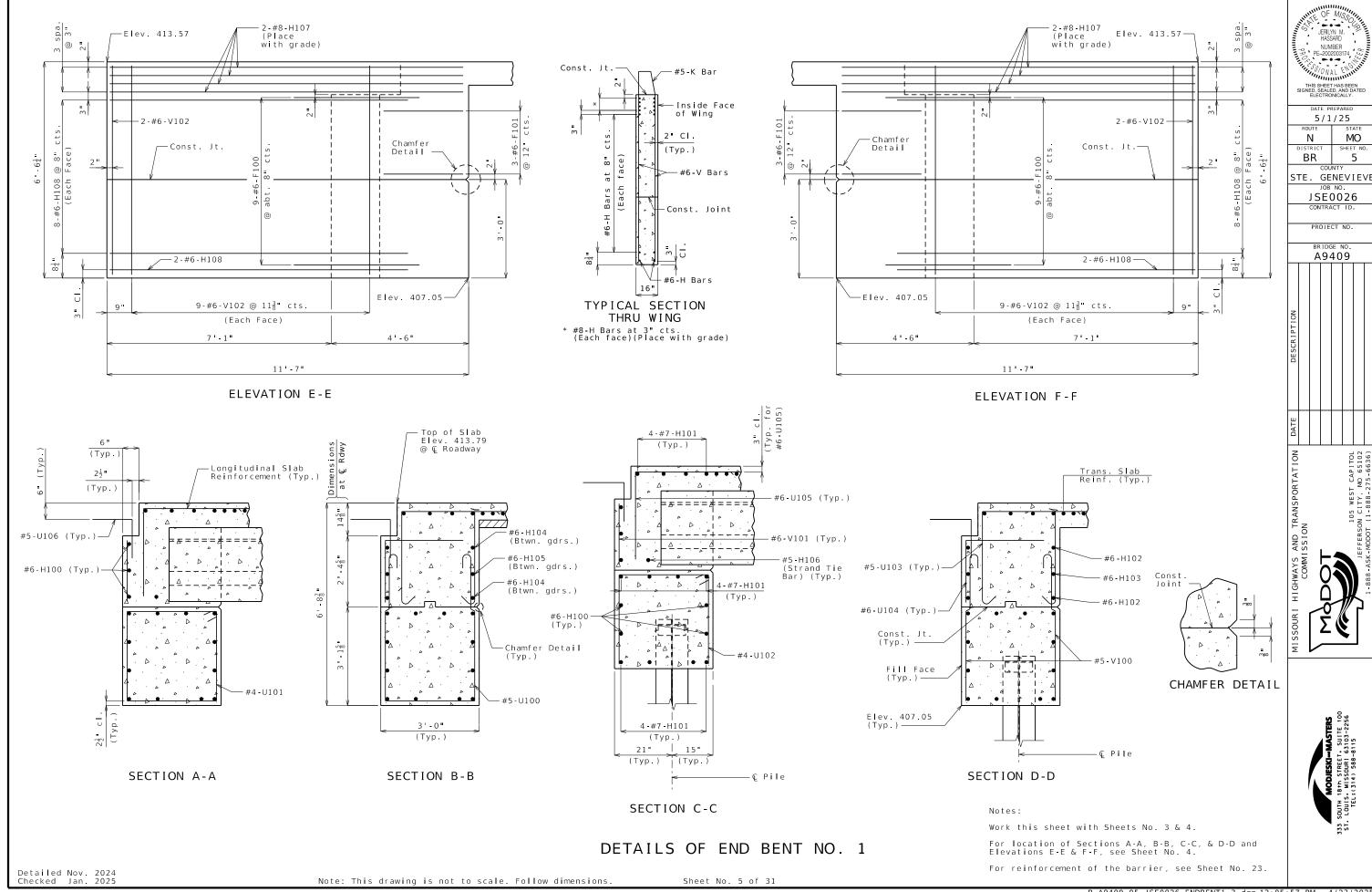
Reinforcing steel shall be shifted to clear piles. U bars shall clear piles by at least 1 1/2 inches.

For details of Vertical Drain at End Bents, see Sheet No. 6.

Substructure Quantity Table	for Bent N	lo. 1
I t em		Quantity
Class 1 Excavation	cu. yard	60
Galvanized Structural Steel Pile (12 in.)	linear foot	92
Pile Point Reinforcement	each	4
Class B Concrete (Substructure)	cu. yard	10.4

These quantities are included in the Estimated Quantities table on Sheet No. 2.





ELEVATION OF WING

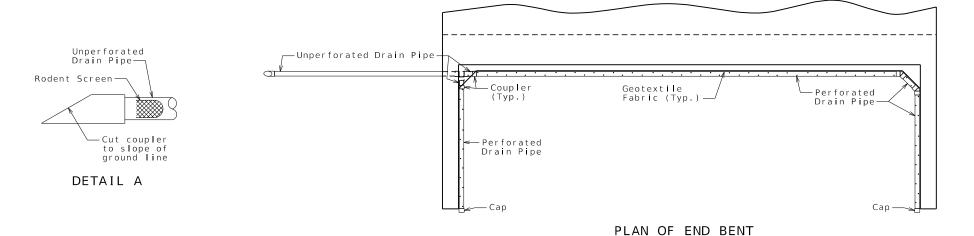
Detailed Nov. 2024 Checked Jan. 2025

-Cut coupler flush

with ground line-

ELEVATION OF END BENT

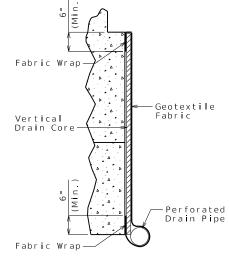
Perforated Drain Pipe



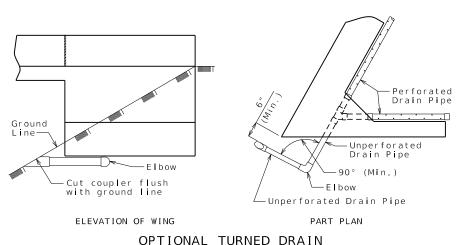
— Coupler

- Unperforated

Drain Pipe



PART SECTION A-A (Section thru wing similar)



(Use only when straight drain is not practical.)

VERTICAL DRAIN AT END BENTS

(Squared end bent shown, skewed end bent similar)

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

Sheet No. 6 of 31

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.

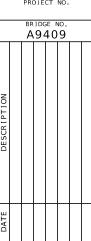
Perforated pipe shall be placed at fill face side and inside face of wings at the bottom of end bent and plain pipe shall be used where the vertical drain ends to the exit at ground line.

NUMBER E-20020031

5/1/25 N MO SHEET NO BR 6

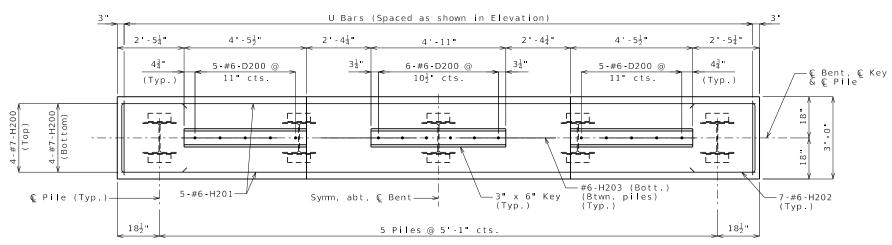
STE. GENEVIEV JSE0026

PROJECT NO.

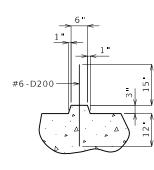




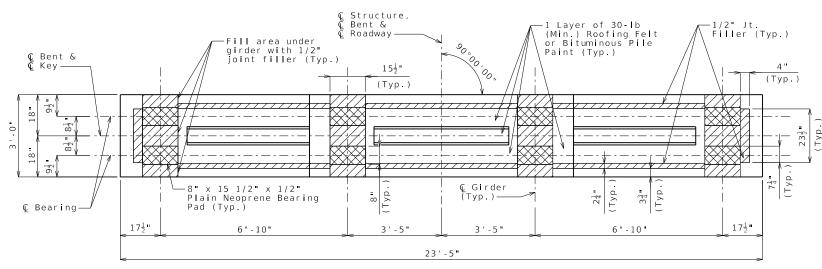




PLAN OF BEAM SHOWING REINFORCEMENT



SECTION THRU KEY



PLAN OF BEAM

Substructure Quantity Table	for Bent N	o. 2
I t em		Quantity
Galvanized Structural Steel Pile (14 in.)	linear foot	155
Pre-Bore for Piling	linear foot	105
Pile Point Reinforcement	each	5
Class B Concrete (Substructure)	cu. yard	9.3
Reinforcing Steel (Bridges)	pound	1390
Fabricated Structural Carbon Steel (Misc.)	pound	450

DETAILS OF INTERMEDIATE BENT NO. 2

Work this sheet with Sheet No. 8.

Substructure Quantity Table	for Bent N	o. 2
I t em		Quantity
Galvanized Structural Steel Pile (14 in.)	linear foot	155
Pre-Bore for Piling	linear foot	105
Pile Point Reinforcement	each	5
Class B Concrete (Substructure)	cu. yard	9.3
Reinforcing Steel (Bridges)	pound	1390
Fabricated Structural Carbon Steel (Misc.)	pound	450

These quantities are included in the Estimated Quantities table on Sheet No. 2.

JERILYN M. HASSARD NUMBER E-20020031

5/1/25

STE. GENEVIEV JSE0026

PROJECT NO.

A9409

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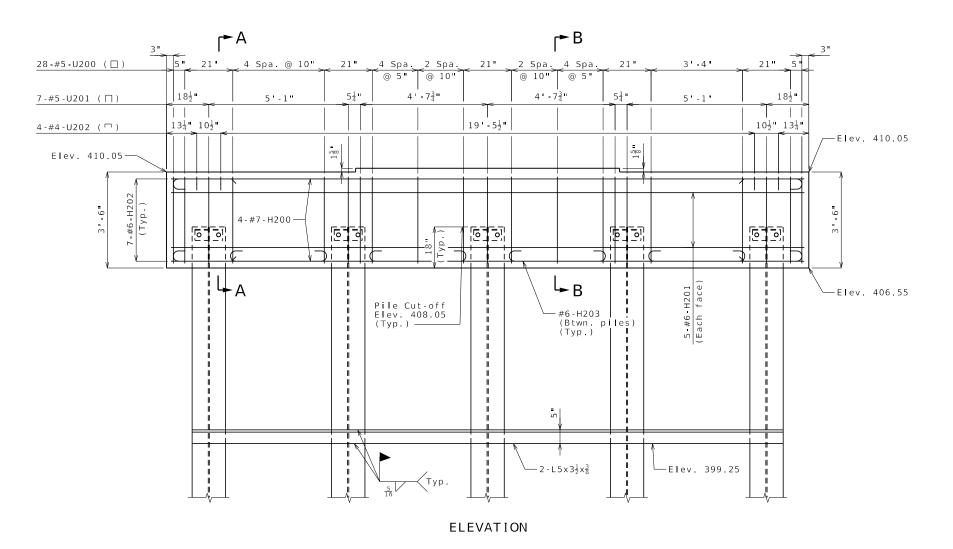
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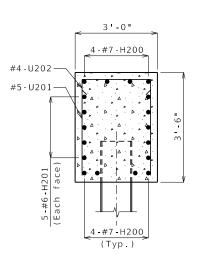
BR

Detailed Nov. 2024 Checked Jan. 2025

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

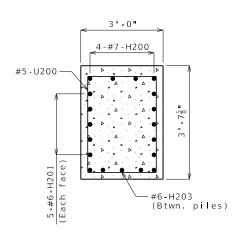
Sheet No. 7 of 31





SECTION A-A

Detailed Nov. 2024 Checked Jan. 2025



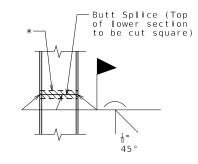
SECTION B-B

DETAILS OF INTERMEDIATE BENT NO. 2

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

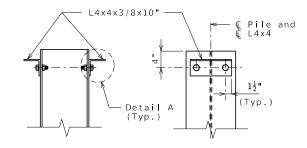




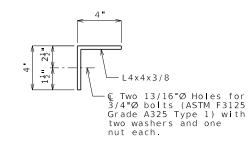
STEEL PILE SPLICE

(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

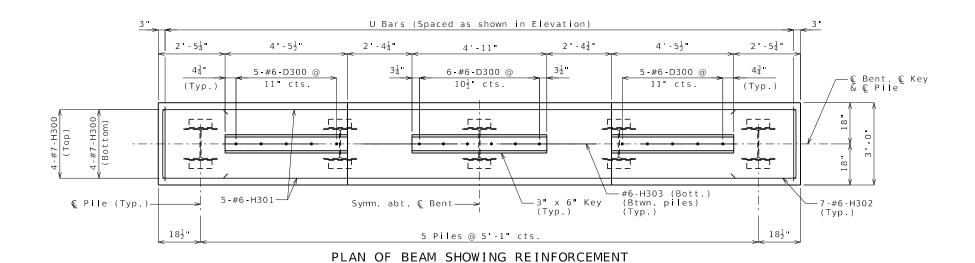
Note: Work this sheet with Sheet No. 7.

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.



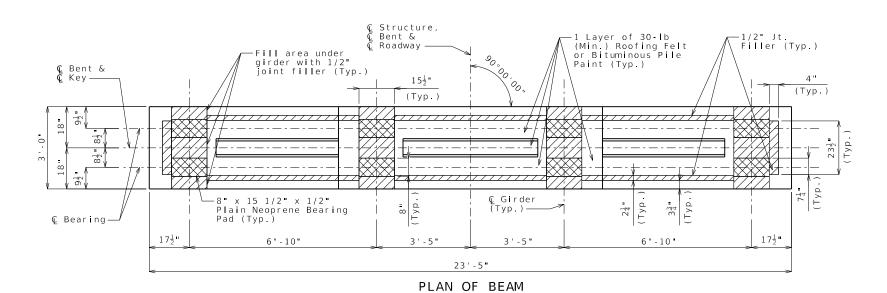






#6-D300

SECTION THRU KEY



Substructure Quantity Table	for Bent N	o. 3
I t em		Quantity
Galvanized Structural Steel Pile (14 in.)	linear foot	190
Pre-Bore for Piling	linear foot	145
Pile Point Reinforcement	each	5
Class B Concrete (Substructure)	cu. yard	9.3
Reinforcing Steel (Bridges)	pound	1390
Fabricated Structural Carbon Steel (Misc.)	pound	450

These quantities are included in the Estimated Quantities table on Sheet No. 2.

Work this sheet with Sheet No. 10.

Substructure Quantity Table	for Bent N	lo. 3
I t em		Quantity
Galvanized Structural Steel Pile (14 in.)	linear foot	190
Pre-Bore for Piling	linear foot	145
Pile Point Reinforcement	each	5
Class B Concrete (Substructure)	cu. yard	9.3
Reinforcing Steel (Bridges)	pound	1390
Fabricated Structural Carbon Steel (Misc.)	pound	450

DETAILS OF INTERMEDIATE BENT NO. 3

Detailed Nov. 2024 Checked Jan. 2025

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

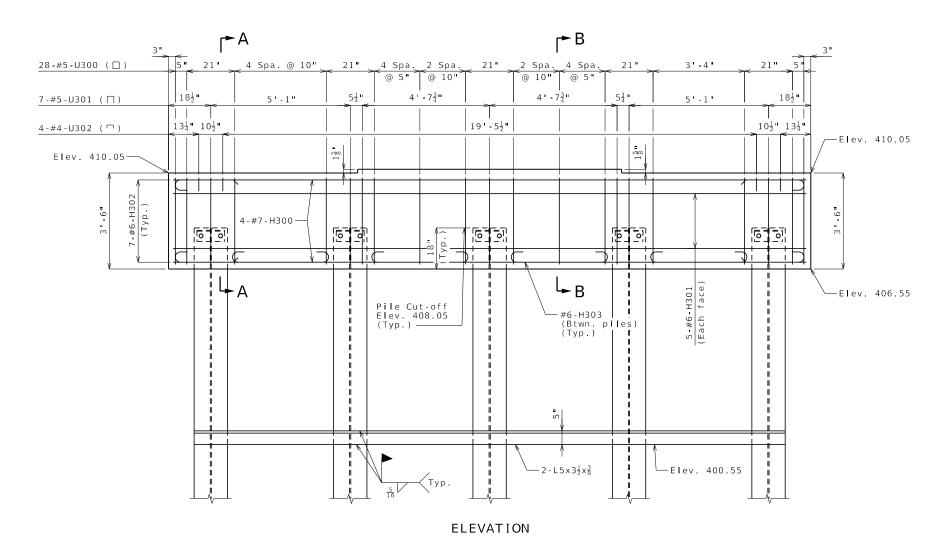
Sheet No. 9 of 31

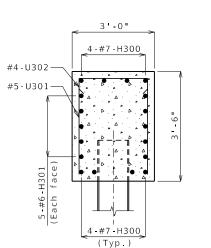
B_A9409_09_JSE0026_INTBENT3_1.dgn 12:15:09 PM 7/9/2025

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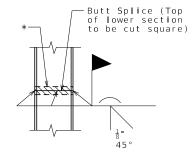
SECTION A-A

#5-U300

#5-U300

#6-H303
(Btwn. piles)

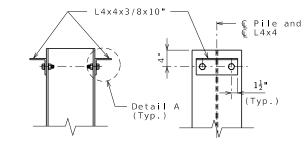
SECTION B-B



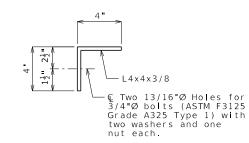
STEEL PILE SPLICE

(If required)

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

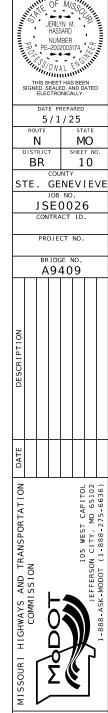


DETAILS OF HP PILE ANCHORS



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.





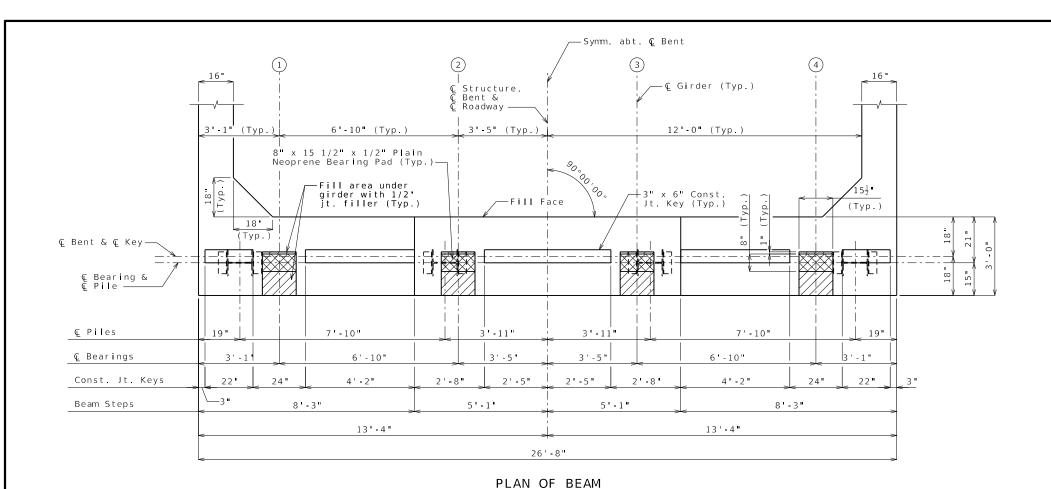
Note: Work this sheet with Sheet No. 9.

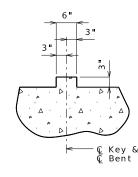
DETAILS OF INTERMEDIATE BENT NO. 3

Detailed Nov. 2024 Checked Jan. 2025

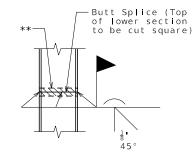
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 10 of 31





SECTION THRU KEY



STEEL PILE SPLICE (If required)

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



NUMBER E-20020031

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Ç Structure, Ç Bent & Roadway -2-#6-H400 © Bent & © Key− (山) 19-#5-U400 4 Spa. @ 12" 4 Spa. @ 12" 2 - 10 | 4 Spa. @ 12" (□) 12-#4-U401 6'-4" 2 - 4 " 6 - 4" 9'-2" 9'-2" (n) 4-#4-U402 7'-4" (f1) 2 Pr.-#5-V400 21" 21" 23'-2"

PLAN OF BEAM SHOWING REINFORCEMENT

Keys not shown for clarity.

DETAILS OF END BENT NO. 4

Detailed Nov. 2024 Checked Jan. 2025 Note: This drawing is not to scale. Follow dimensions.

Sheet No. 11 of 31

NOTES:

* 3 Spa. @ 6"

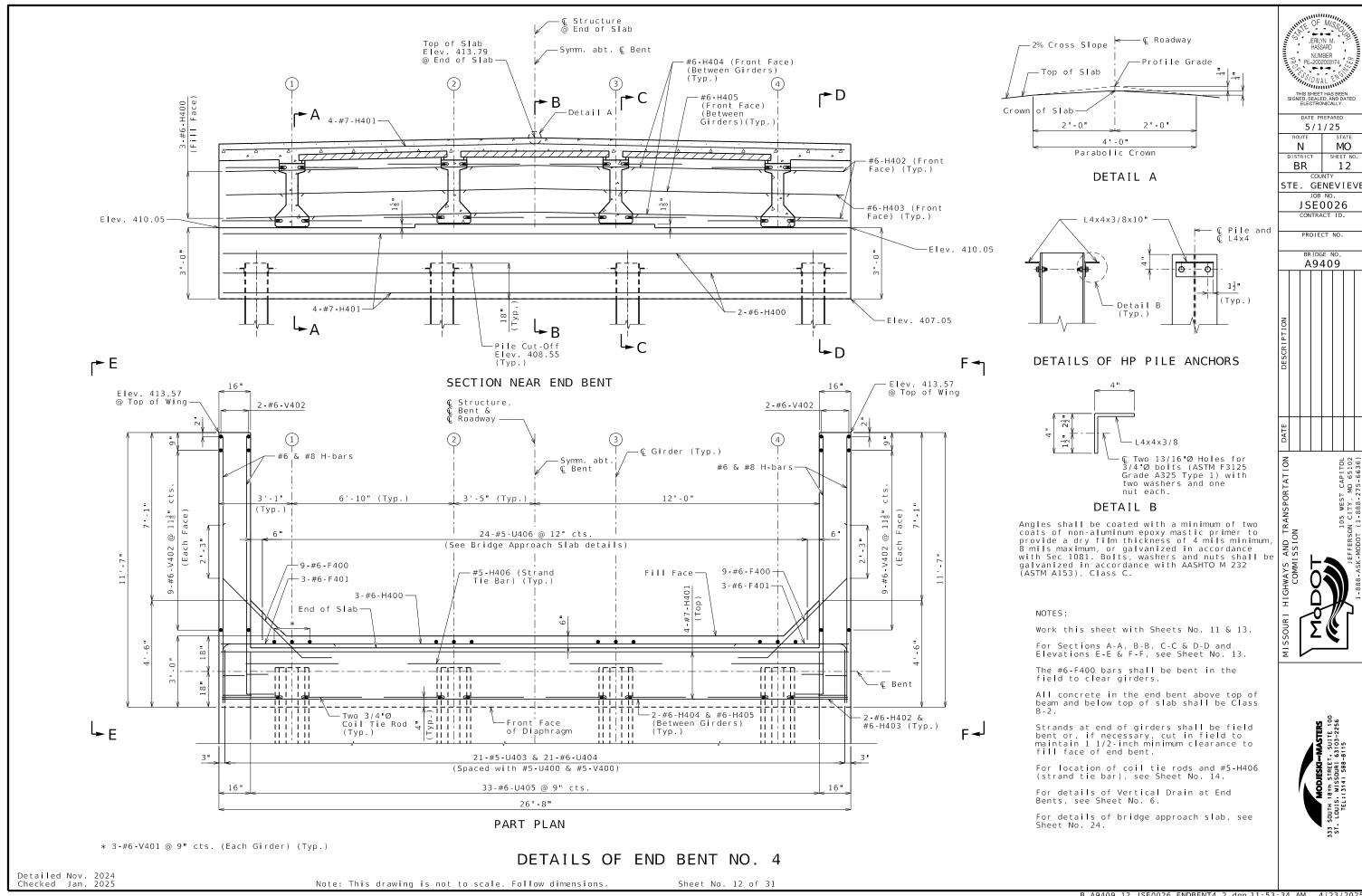
Work this sheet with Sheets No. 12 & 13.

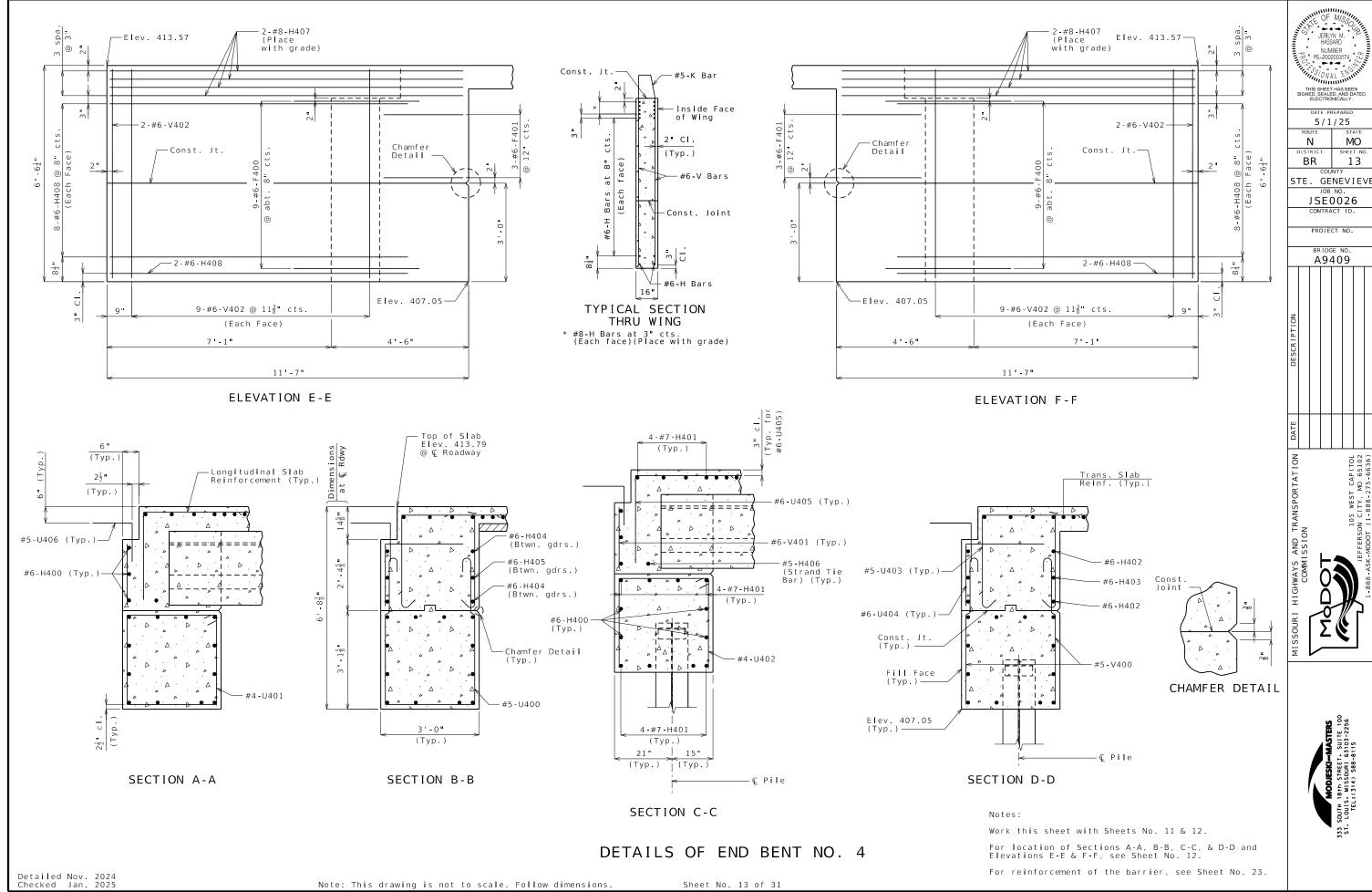
Reinforcing steel shall be shifted to clear piles. U bars shall clear piles by at least 1 1/2 inches.

For details of Vertical Drain at End Bents, see Sheet No. 6.

Substructure Quantity Table	for Bent N	o. 4
I t em		Quantity
Class 1 Excavation	cu. yard	5
Galvanized Structural Steel Pile (12 in.)	linear foot	104
Pile Point Reinforcement	each	4
Class B Concrete (Substructure)	cu. yard	10.4

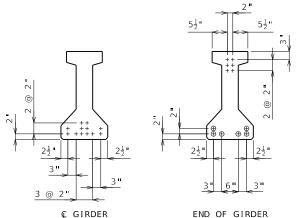
These quantities are included in the Estimated Quantities table on Sheet No. 2. $\,$





17"

DIMENSIONS



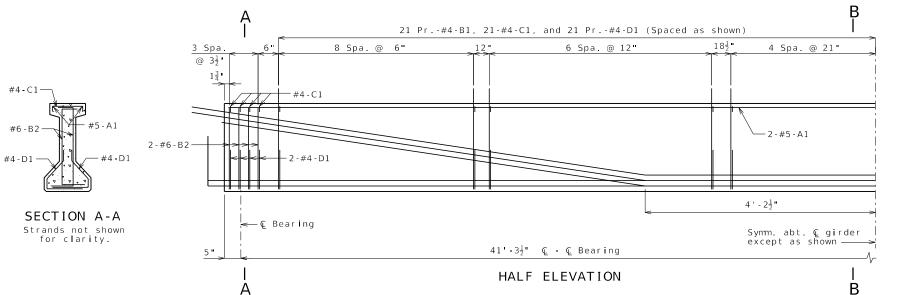
Cut top 2 rows of strands with a 12" projection and bend in shop 2'-6" (Typ.) (Cut any remaining top strands within 1" of end of girder) (Typ.) 6" (Typ. 3" (Min. -Cut and shop bend with 2'-6" projection (Cut any remaining #5 Strand Tie Bar (Typ.) bottom strands within 1" of end of girder) (Typ.) (Norma L to girders)

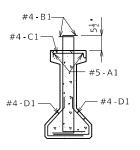
END BENT INTERMEDIATE BENT

END OF GIRDER STRAND ARRANGEMENT

+ Indicates O Indicates cut & shop bend with 2'-6" projection. prestressing strand.

STRANDS AT GIRDER ENDS





SECTION B-B Strands not shown for clarity.

#4-B1

B1 BAR

PERMISSIBLE

ALTERNATE

SHAPE

General Notes:

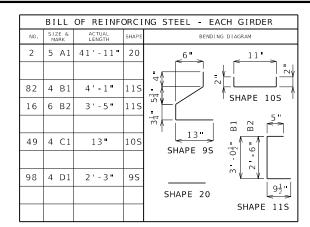
Use 12 strands, 1/2"Ø Grade 270, with an initial prestress force of 372 kips.

Pretensioned members shall be in accordance

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

For location of coil inserts at slab drains, see Sheet No. 18.

For location of coil ties at concrete bent diaphragms, see Sheets No. 4, 12 & 16.



All dimensions are out to out.

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

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

Minimum clearance to reinforcing shall be one inch.

All 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.

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PROJECT NO.

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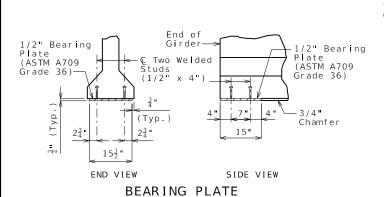
BR



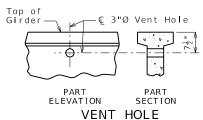
Concrete for prestressed girders shall be Class A-1 with f'c = 6000 psi and f'ci = 4500

Exterior and interior girders are the same except: coil ties and coil inserts for slab

For Girder Camber Diagram, see Sheet No. 19.



Detailed Nov. 2024 Checked Jan. 2025



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

CLOSED DIAPHRAGMS AND INTEGRAL BENTS COIL TIES Exclude coil tie at exterior face

of exterior girders except at integral end bents. * 2'-3" at exterior face of exterior girders at end bents

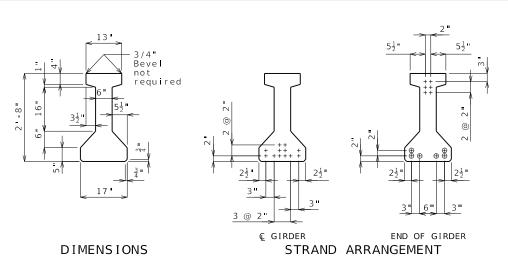
I-GIRDERS - SPANS (1-2) AND (3-4)

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

Sheet No. 14 of 31

·Ç 3/4"Ø (Min.) Coil Tie Rods

2'-6" long *



+ Indicates

prestressing strand.

Cut top 2 rows of strands with a 12" projection and bend in shop (Cut any remaining top strands within 1" of end of girder) (Typ.)

6" (Typ.)

6" (Typ.)

3" (Min.)

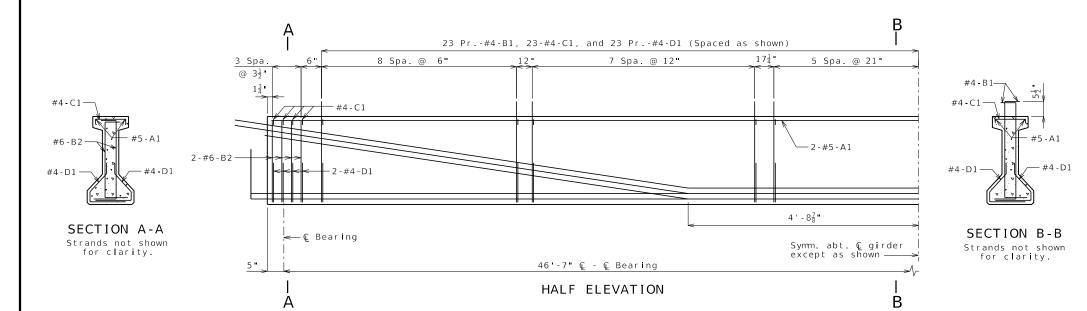
6" (Typ.)

Bar (Typ.)

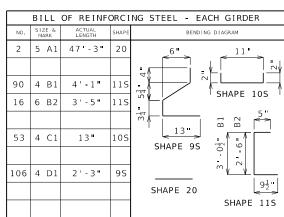
bottom strands within 1" (Normal to girders)

INTERMEDIATE BENT

BENT INTERMEDIATE BENT STRANDS AT GIRDER ENDS



O Indicates cut & shop bend with 2'-6" projection.



All dimensions are out to out.

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

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

Minimum clearance to reinforcing shall be one inch.

All 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.

General Notes:

Concrete for prestressed girders shall be Class A-1 with f'c = 6000 psi and f'ci = 4500

Use 12 strands, 1/2"Ø Grade 270, with an initial prestress force of 372 kips.

Pretensioned members shall be in accordance with Sec 1029.

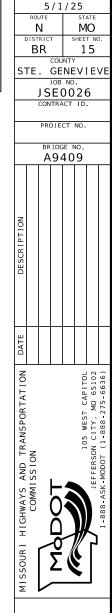
Fabricator shall be responsible for location and design of lifting devices.

Exterior and interior girders are the same except: coil ties and coil inserts for slab drains.

For Girder Camber Diagram, see Sheet No. 19.

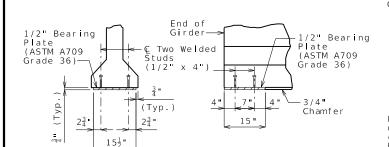
For location of coil inserts at slab drains, see Sheet No. $18\,.$

For location of coil ties at concrete bent diaphragms, see Sheet No. 16.



NUMBER





BEARING PLATE

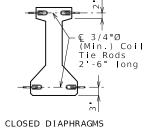
SIDE VIEW

Top of Girder © 3"Ø Vent Hole

PART PART SECTION

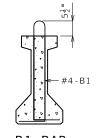
VENT HOLE

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



COIL TIES

Exclude coil tie at exterior face of exterior girders.



B1 BAR PERMISSIBLE ALTERNATE SHAPE

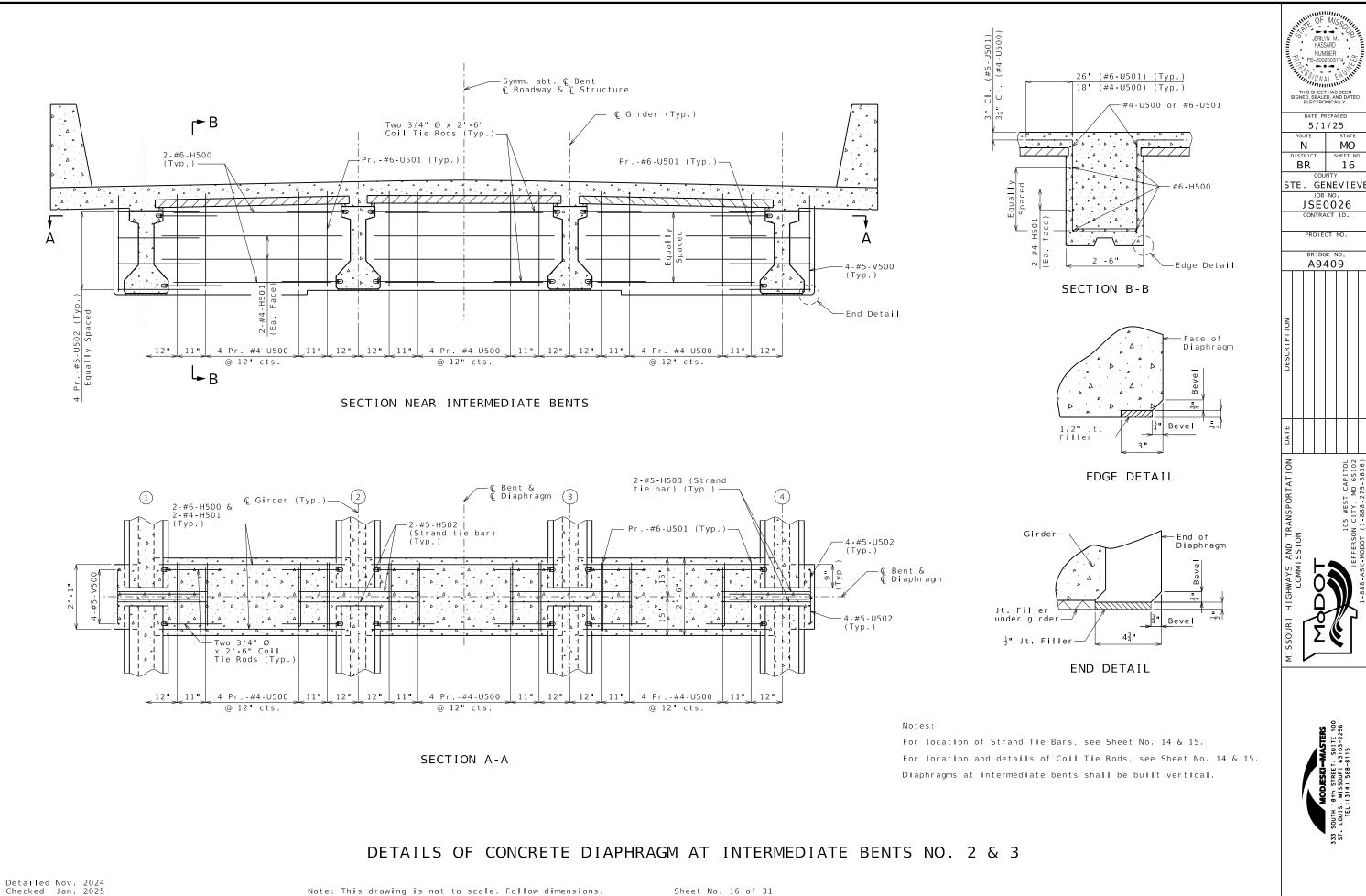
Detailed Nov. 2024 Checked Jan. 2025

END VIEW

I-GIRDERS - SPAN (2-3)

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

Sheet No. 15 of 31



1 (Min.)

M. M.

<u>∞</u> B-

(10)

#3-P2 at abt

6" cts. at top

Panel Width

*** 3" (Min.), 6" (Max.)

PLAN OF OPTIONAL TRUNCATED END PANEL

 $1\frac{1}{2}$ " (Min.)

3" (Max.)

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B+ $1\frac{1}{2}$ " (Min.) 1¹" (Min.) (10) -3" (Max.) 3" (Max.) #3-P2 at abt 6" cts. at top Panel Width PLAN OF SOUARED PANEL

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

-Prevent excessive grout leak (Typ.) -Int. Bent Front Face

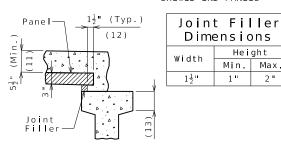
SKEWED END PANELS

Height

Min. Max.

1 "

2 "



SECTION A-A

Reference Notes:

Plan of Panel Placement:

of End Bent

(1) S-bars shown are bottom steel in slab between panels and used with squared and truncated end panels only.

(2) Extend S-bars 18 inches beyond the front face of end bents and int. bents for squared and truncated end panels only.

(3) Extend S-bars 9 inches beyond edge of girder (Typ.).

(4) End panels shall be dimensioned 1/2" min. to 1 1/2" max. from the inside face of diaphragm.

(5) For truncated end panels, use a min. of #5-S bars at 6" crossings in openings, or min. 4x4-W7×W7.

Plans of Panels:

(6) For end panels only, P1 bars shall be 2'-0" in length and embedded 12". P1 bars will not be required for panels at squared integral end bents.

(7) #3-P2 bars near edge of panel at bottom

(8) Use #3-P3 bars if panel is skewed 45° or greater.

(9) Any strand 2'-0" or shorter shall have a #4 reinforcing bar on each side of it, centered between strands. Strands 2'-0" or shorter may then be debonded at the fabricator's option.

(10) Optional 1/2" x 45° Chamfer one or both

PRESTRESSED PANELS

(11) Slab thickness over prestressed panels (11) Stab thickness over prestressed paners varies due to girder camber. In order to maintain minimum slab thickness, it may be necessary to raise the grade uniformly throughout the structure. No payment will be made for additional labor or materials required for necessary grade adius tment.

(12) Contractor shall ensure proper consolidation under and between panels.

(13) At the contractor's option, the variation in slab thickness over prestressed panels may be eliminated or reduced by increasing and varying the girder top flange thickness. Dimensions shall be shown on the shop drawings.

Sheet No. 17 of 31

General Notes:

Prestressed Panels:

Concrete for prestressed panels shall be Class A-1 with f'c = 6,000 psi, f'ci = 4,000 psi.

The top surface of all panels shall receive a scored finish with a depth of scoring of 1/8" perpendicular to the prestressing strands in the panels.

Prestressing tendons shall be high-tensile strength, uncoated, seven-wire, low-relaxation strands for prestressed concrete in accordance with AASHTO M 203 Grade 270, with nominal diameter of strand = 3/8" and nominal area = 0.085 sq.in. and minimum ultimate strength = 22.95 kips (270 ksi). Larger strands may be used with the same spacing and initial tension.

Initial prestressing force = 17.2 kips/strand.

The method and sequence of releasing the strands shall be shown on the shop drawings.

Suitable anchorage devices for lifting panels may be cast in panels, provided the devices are shown on the shop drawings and approved by the engineer. Panel lengths shall be determined by the contractor and shown on the shop drawings.

When squared end panels are used at skewed bents, the skewed portion shall be cast full depth. No separate payment will be made for additional concrete and reinforcing required.

Support from diaphraum forms is required under the optional skewed end until cast-in-place concrete has reached 3,000 psi compressive strength.

Prestressed panels shall be brought to saturated surface-dry (SSD) condition just prior to the deck pour. There shall be no free standing water on the panels or in the area to be cast.

The prestressed panel quantities are not included in the table of estimated quantities for the slab.

Reinforcing Steel: 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.

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

If U1 bars interfere with placement of slab steel, U1 loops may be bent over, as necessary, to clear slab steel.

Deformed welded wire reinforcement (WWR) providing a minimum area of reinforcing perpendicular to strands of 0.22 sq in./ft, with spacing parallel to strands sufficient to ensure proper handling, may be used in lieu of the #3-P2 bars shown. Wire diameter shall not be larger than 0.375 inch. The above alternative reinforcement criteria may be used in lieu of the #3-P3 bars, when required, and placed over a width not less than 2 feet.

The following reinforcing steel shall be tied securely to the strands with the following maximum spacing in each direction: #3-P2 bars at 16 inches. WWR at 24 inches.

The #3-U1 bars shall be tied securely to #3-P2 bars, to WWR or to strands (when placed between P1 bars) at about 3-foot centers.

Minimum reinforcement steel length shall be 2'-0".

All reinforcement other than prestressing strands shall be epoxy

Precast panels may be in contact with stirrup reinforcing in

S-bars are not listed in the bill of reinforcing.

Cost of S-bars will be considered completely covered by the contract unit price for the slab.

Joint filler shall be preformed fiber expansion joint material in accordance with Sec 1057 or expanded or extruded polystyrene bedding material in accordance with Sec 1073.

Use Slab Haunching Diagram on Sheet No. 19 for determining thickness of joint filler within the limits noted in the table of Joint Filler Dimensions.

Thicker material may be used on one or both sides of the girder to reduce cast-in-place concrete thickness to within tolerances.

The same thickness of preformed fiber expansion joint material shall be used under any one edge of any panel except at locations where top flange thickness may be stepped. The maximum change in thickness between adjacent panels shall be 1/2 inch. The polystyrene bedding material may be cut with a transition to match haunch height above top of flange.

Joint filler shall be glued to the girder. When thickness exceeds 1 1/2 inches, the joint filler shall be glued top and bottom. The glue used shall be the type recommended by the joint filler

Edges of panels shall be uniformly seated on the joint filler before slab reinforcement is placed.



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PROJECT NO.

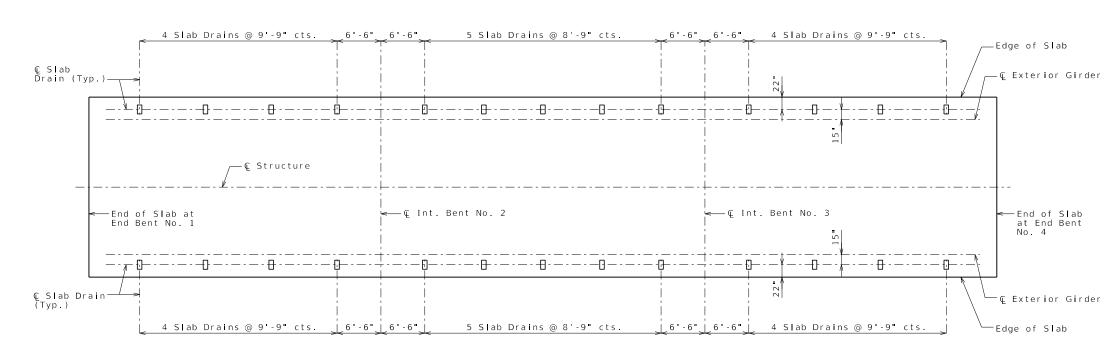
A9409

SOUTH 18+h STREET, SUITE 100 LOUIS, MISSOURI 63103-2256 TEL:(314) 588-8115

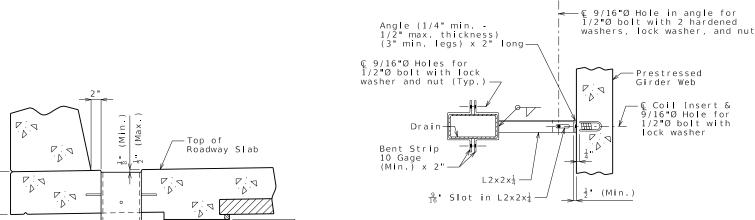
1" (Min.)

PART SECTION NEAR DRAIN

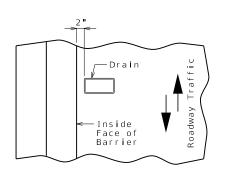
Detailed Nov. 2024



PLAN OF SLAB SHOWING SLAB DRAIN LOCATIONS



PART SECTION SHOWING BRACKET ASSEMBLY



PART PLAN OF SLAB AT DRAIN

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

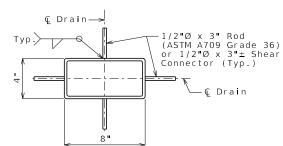


Sheet No. 18 of 31

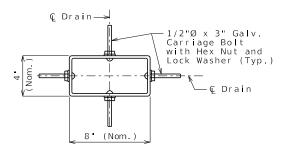
PLAN OF FRP DRAIN OPTION

© Drain

ELEVATION OF DRAIN



PLAN OF STEEL 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 pullout 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.



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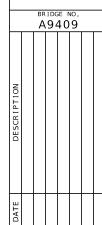
ROUTE STATE
N MO

DISTRICT SHEET NO.
BR 18

STE. GENEVIEVE

JSE0026

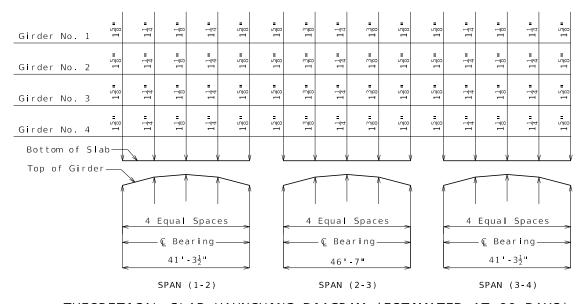
PROJECT NO.



ISSOURI HIGHWAYS AND TRANSPORTATIO
COMMISSION

105 WEST CAPITO
LEFERSON CITY, M0 6510
1-888-ASK-MODOT (1-888-275-6636





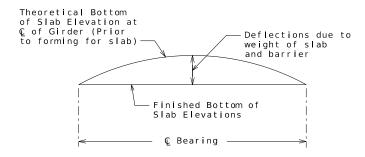
THEORETICAL SLAB HAUNCHING DIAGRAM (ESTIMATED AT 90 DAYS)

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.

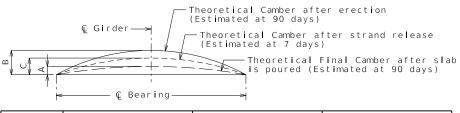
Concrete in the slab haunches is included in the Estimated Quantities for Slab on Concrete I-Girder.

	Theoretical Bottom of Slab Elevations at Centerline of Girder (Prior to forming for slab) (Estimated at 90 days)														
Girder	Girder Span (1-2) (41'- 3½" © Brg © Brg.) Span (2-3) (46'- 7" © Brg © Brg.) Span (3-4) (41'- 3½" © Brg © Brg.												Brg.)		
Number	€ Brg.	. 25	.50	.75	€ Brg.	€ Brg.	. 25	. 50	.75	€ Brg.	€ Brg.	. 25	.50	. 75	€ Brg.
1	412.90	412.92	412.92	412.91	412.90	412.90	412.93	412.94	412.93	412.90	412.90	412.91	412.92	412.92	412.90
2 413.03 413.05 413.06 413.05 413.03 413.03 413.06 413.08 413.06 413.06									413.03	413.03	413.05	413.06	413.05	413.03	
3	413.03	413.05	413.06	413.05	413.03	413.03	413.06	413.08	413.06	413.03	413.03	413.05	413.06	413.05	413.03
4	412.90	412.92	412.92	412.91	412.90	412.90	412.93	412.94	412.93	412.90	412.90	412.91	412.92	412.92	412.90

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 precast panel) and barrier.



TYPICAL SLAB ELEVATIONS DIAGRAM



Girder	SI	oan (1-2	:)	Sı	oan (2-3	3)	Span (3-4)			
Girder	Α	В	С	Α	ВС		A B		С	
Exterior	1/2 m	<u>3</u> II	5 	38	7 11	3	1/2 m	3 =	<u>5</u> 	
Interior	1 ··	4	°	30.	8	4	1 m	4		

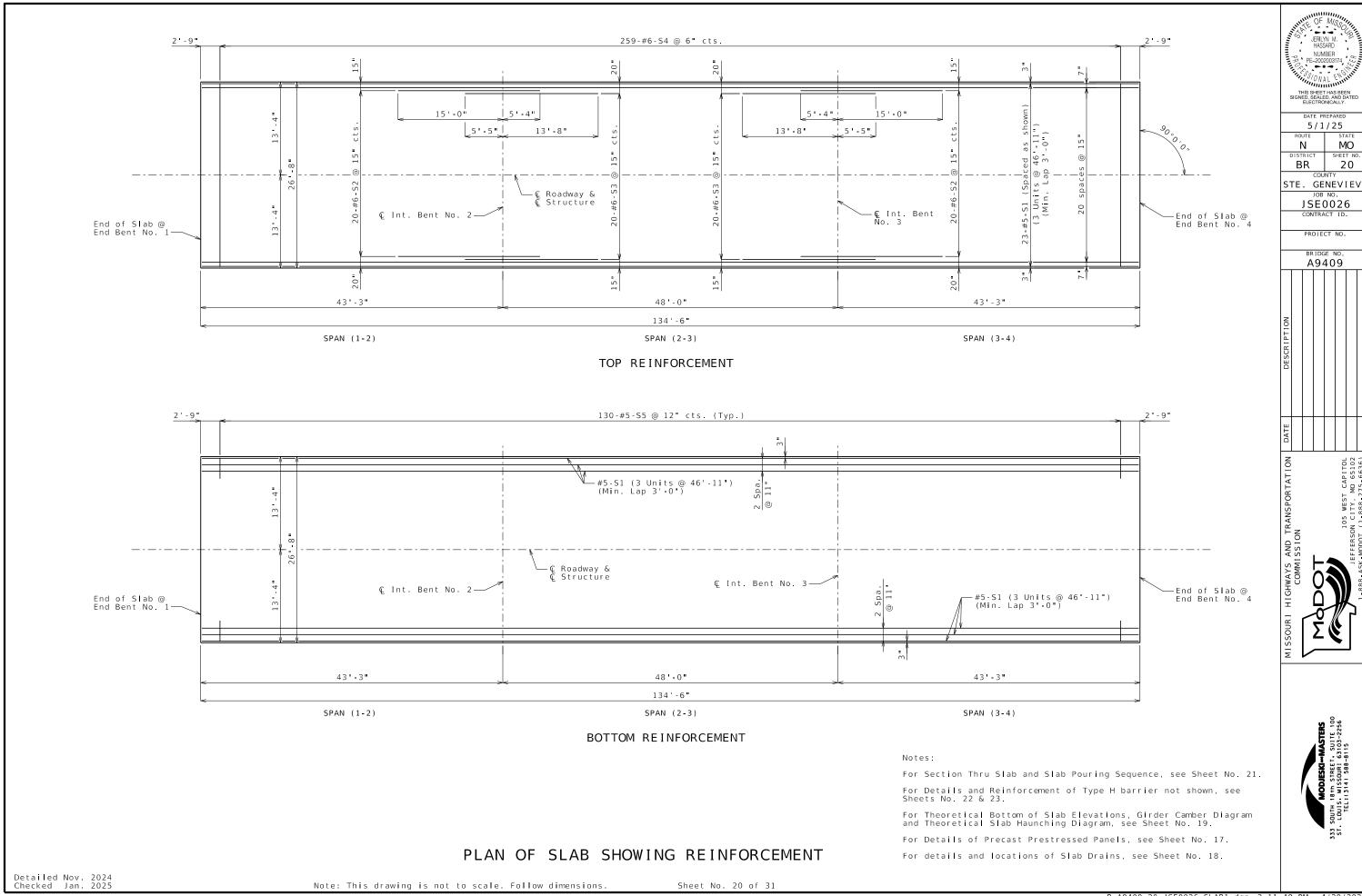
GIRDER CAMBER DIAGRAM

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

 $0.25 \text{ pt.} = 0.7125 \times 0.5 \text{ pt.}$





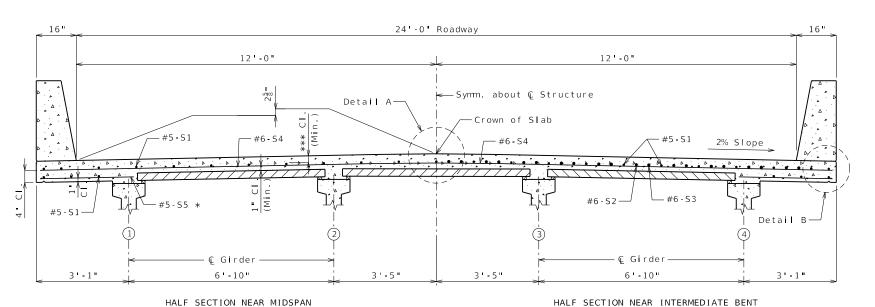


OPTIONAL SHIFTING TOP BARS AT BARRIER

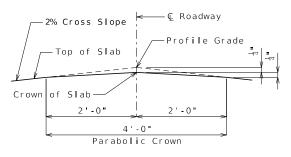
(1)

29'-3"

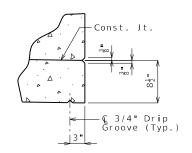
Out to Out of Curbs



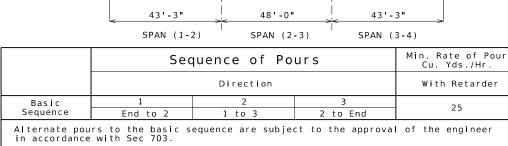
SECTION THRU SLAB



DETAIL A



DETAIL B



(2)

14'-0"

Const. Joint

39'-0"

-Ç Bent—

(3)

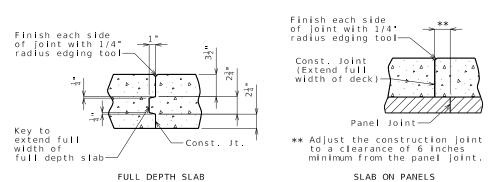
9'-0"

in accordance	with Sec 703.		_
Alternate A	1 + 2	3	25
Pours	End to 3	2 to End	25
Alternate B	1 + 2 + 3	25	
Pours	End to End] 23

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



SLAB CONSTRUCTION JOINT

Notes

For details of precast prestressed panels, see Sheet No. 17.

For reinforcement of barrier not shown, see Sheets No. 22 & 23.

For Theoretical Bottom of Slab Elevations, Girder Camber Diagram and Theoretical Slab Haunching Diagram, see Sheet No. 19.

For Plan of Slab Showing Reinforcement, see Sheet No. 20.

SLAB DETAILS

Detailed Nov. 2024 Checked Jan. 2025

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

Sheet No. 21 of 31

NUMBER E-20020031

5/1/25

STE. GENEVIEV

JSE0026

PROJECT NO.

A9409

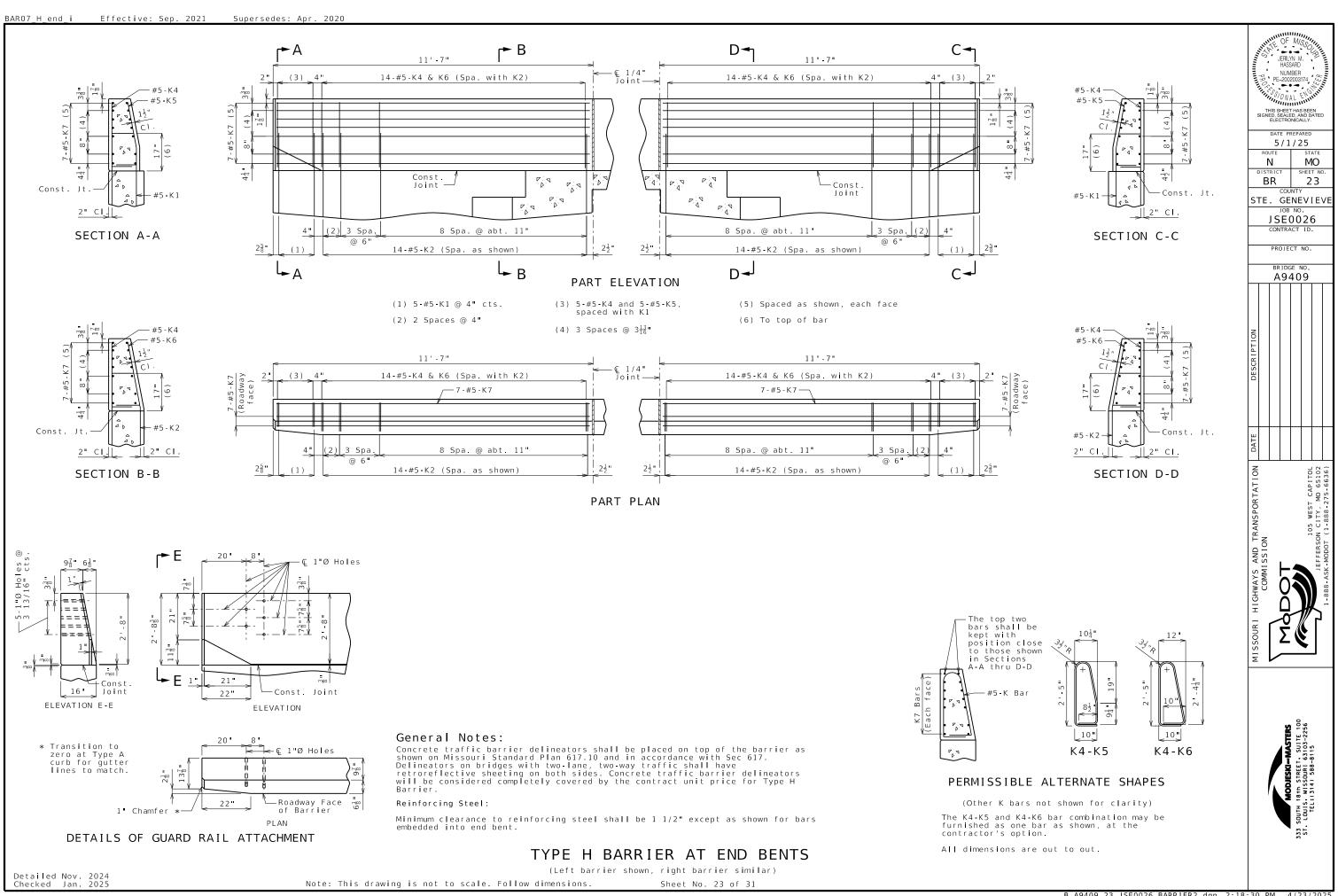
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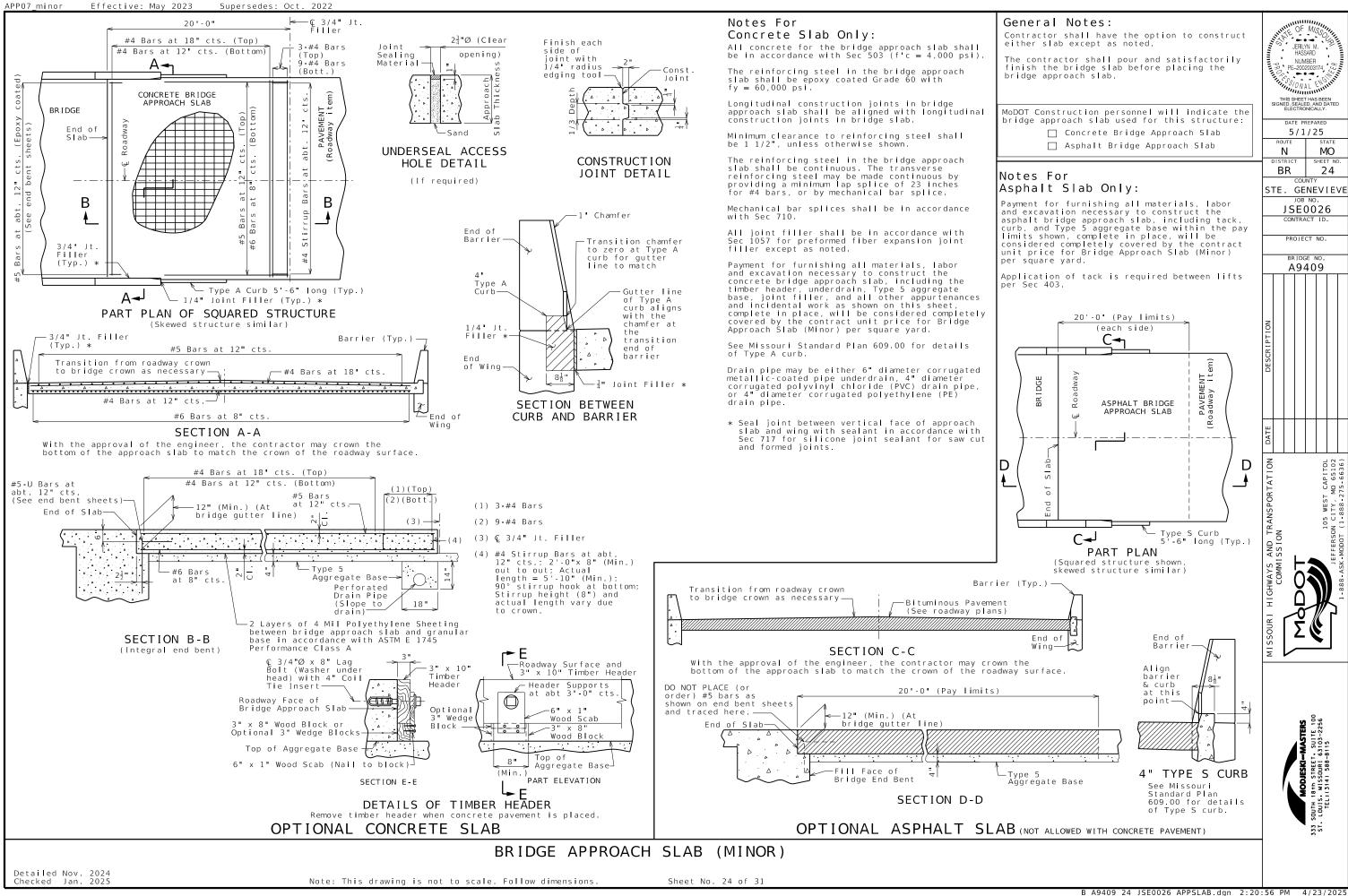
21

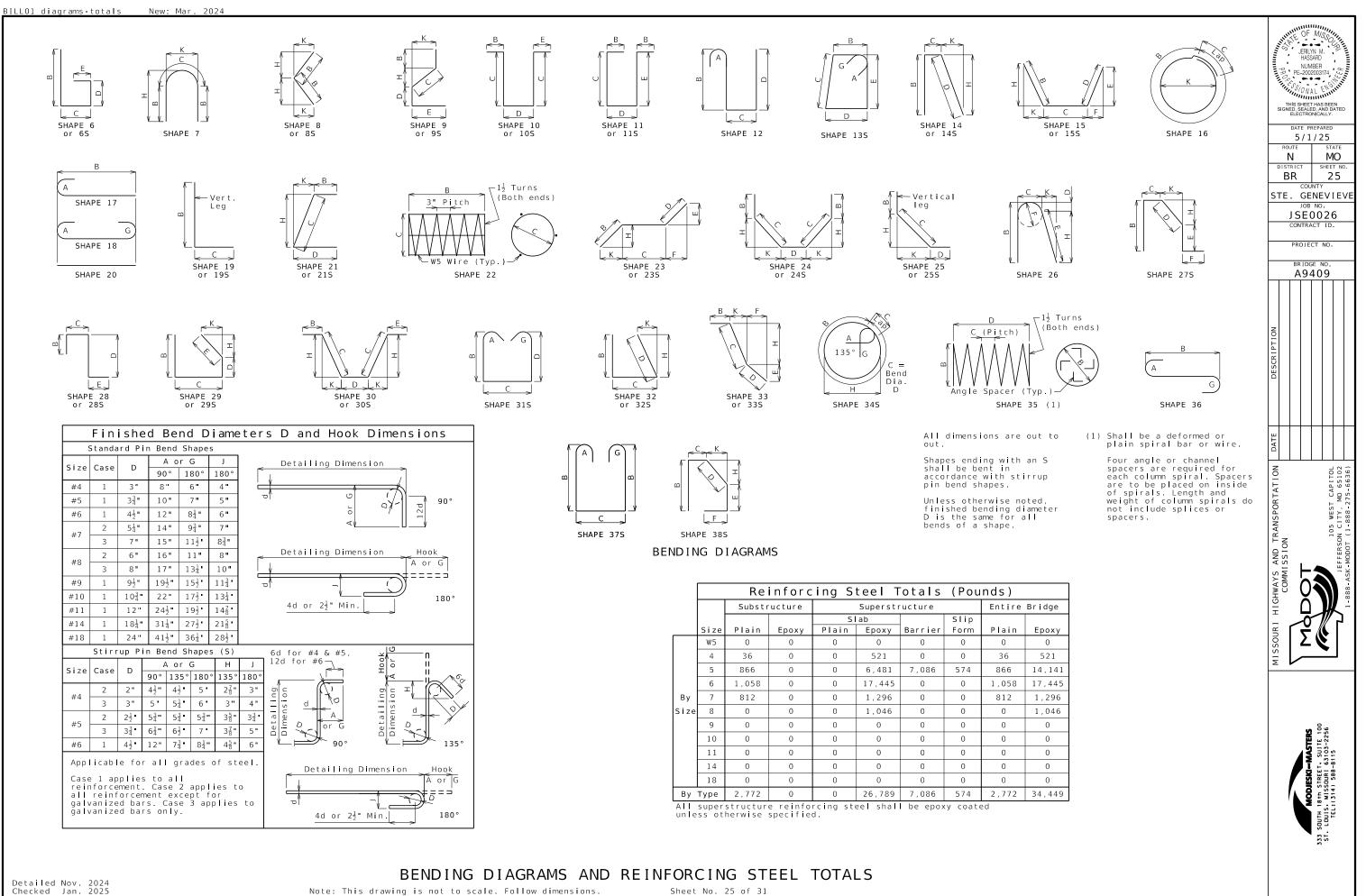
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BR

Detailed Nov. 2024 Checked Jan. 2025







BILLO3 data tables New: Mar. 2024

	Bill of Reinforcing Steel						Bill of Reinforcing Steel						minimum Of	F M/Service								
					[Dimension	ıs		Nom.	Actua	a I						Dimensions		Nom. Actual			
No.	Size/		Codes	В	C D	Е	F H	K	Length	Lengt	th Weight	No.	Size/		Codes	B C D	E F	Н	K Length Length	Weight	E , JERI	NILYN M
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		oths are based on		•	'	hendina	diagrams and are	•		•			•	•		Codes: C = Required co	atings where F =	Ennxy Coa	ated and G = Galvanized		\	₹

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.

All bars shall be Grade 60.

Codes: C = Required coatings, where E = Epoxy Coated and <math>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.

For bending diagrams and steel reinforcing totals, see Sheet No. 25.

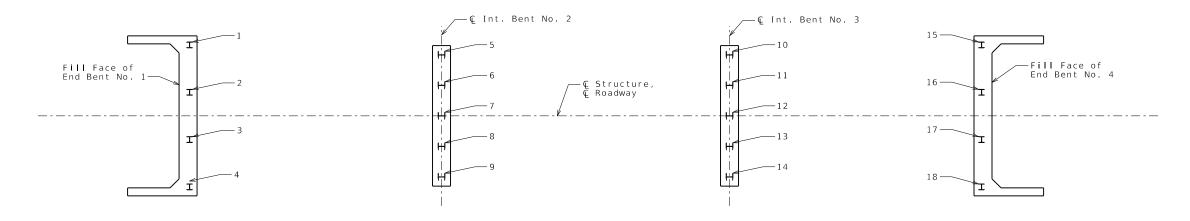
Detailed Nov. 2024 Checked Jan. 2025

BILL OF REINFORCING STEEL

B_A9409_26_JSE0026_BARBILL.dgn 2:31:36 PM 4/23/2025

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

Sheet No. 26 of 31



PART PLAN SHOWING PILE NUMBERING FOR RECORDING AS-BUILT PILE DATA

			As-Built Pile Data
Pile No.	Length in Place (ft)	Computed Nominal Axial Compressive Resistance (kips)	R ema r k s
			End Bent No. 1
1			
2			
3			
4			
			Int. Bent No. 2
5			
_			
6			
7			
<u> </u>			
8			
H			
9			

			As-Built Pile Data
Pile No.	Length in Place (ft)	Compressive	R ema r k s
	. ,	, ,	Int. Bent No. 3
10			
11			
12			
13			
14			
1.5			End Bent No. 4
15			
16			
16			
17			
18			

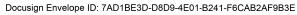
AS-BUILT PILE DATA

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.

Detailed Nov. 2024 Checked Jan. 2025 JERILYN M HASSARD NUMBER E-20020031

5/1/25





SCI ENGINEERING, INC. 130 Point West Boulevard St. Charles, Missouri 63301 636-949-8200 www.sciengineering.com

BORING LOG LEGEND AND NOMENCLATURE

Depth is in feet below ground surface. Elevation is in feet mean sea level, site datum, or as otherwise noted.

Sample Type

- SS Split-spoon sample, disturbed, obtained by driving a 2-inch-O.D. split-spoon sampler (ASTM D 1586).
- **NX** Diamond core bit, nominal 2-inch-diameter rock sample (ASTM D 2113).
- Thin-walled (Shelby) tube sample, relatively undisturbed, obtained by pushing a 3-inch-diameter,
- Continuous sample tube system, relatively undisturbed, obtained by split-barrel sampler in conjunction with auger advancement.
- Shear vane, field test to determine strength of cohesive soil by pushing or driving a 2-inch-diameter vane, and then shearing by torquing soil in existing and remolded states (ASTM D 2573).
- Bag sample, disturbed, obtained from cuttings.

Recovery is expressed as a ratio of the length recovered to the total length pushed, driven, cored.

Blows Numbers indicate blows per 6 inches of split-spoon sampler penetration when driven with a 140pound hammer falling freely 30 inches. The number of total blows obtained for the second and third 6-inch increments is the N value (Standard Penetration Test or SPT) in blows per foot (ASTM D 1586). Practical refusal is considered to be 50 or more blows without achieving 6 inches of penetration and is expressed as a ratio of 50 to actual penetration, e.g., 50/2 (50 blows for 2 inches).

For analysis, the N value is used when obtained by a cathead and rope system. When obtained by an automatic hammer, the N value may be increased by a factor of 1.3.

Vane Shear Strength is expressed as the peak strength (existing state) / the residual strength (remolded

Description indicates soil constituents and other classification characteristics (ASTM D 2488) and the Unified Soil Classification (ASTM D 2487). Secondary soil constituents (expressed as a percentage) are described as follows:

> Trace 5-15 With >15-30

Stratigraphic Breaks may be observed or interpreted and are indicated by a dashed line. Transition between described materials may be gradual.

Laboratory Test Results

- Natural moisture content (ASTM D 2216) in percent.
- Dry density in pounds per cubic foot (pcf).
- Hand penetrometer value of apparently intact cohesive sample in kips per square foot (ksf).
- Unconfined compressive strength (ASTM D 2166) in kips per square foot (ksf).
- Liquid and Plastic Limits (ASTM D 4318) in percent.

RQD (Rock Quality Designation) is the ratio between the total length of core segments 4 inches or more in length and the total length of core drilled. RQD (expressed as a percentage) indicates insitu rock quality as follows:

> Excellent 90 to 100 Good 75 to 90 50 to 75 Fair 25 to 50 Very Poor 0 to 25



SCI ENGINEERING, INC. 130 Point West Boulevard St. Charles, Missouri 63301 636-949-8200 www.sciengineering.com

ROCK CORE DESCRIPTIONS

Descriptions of rock core are defined as follows:

Hardness

Very Soft Easily indented with the thumb. Soft Able to be scratched with a fingernail. Moderately Hard Easily scratched with a knife. Hard Difficult to scratch with a knife. Very Hard Cannot be scratched with a knife.

Crystallinity

Aphanitic (Micritic) Crystals cannot be distinguished with the naked eye. Very Finely Crystalline Crystals are barely discernible with the naked eye. Finely Crystalline Crystals are easily discernible with the naked eye. Medium Črvstalline Crystals are medium size; up to 1/8 inch in diameter. Coarsely Crystalline Crystals are 1/8 inch to ¼ inch in diameter. Very Coarsely Crystalline Crystals are larger than ¼ inch in diameter.

Mass Bedding

Parting Thinner than 0.02 feet (< 0.60 cm). 0.02 to 0.2 feet (0.60 to 6.1 cm). Band Thin Bed 0.2 to 0.5 feet (6.1 to 15.2 cm). Medium Bed 0.5 to 1.0 feet (15.2 to 30.5 cm). Thick Bed 1.0 to 2.0 feet (30.2 to 61.0 cm). Thicker than 2.0 feet (> 61.0 cm). Massive

Weathering

No visible signs of decomposition or discoloration. Fresh Slightly Weathered Slight discoloration inward from open fractures.

Moderately Weathered Discoloration throughout, some loss of strength, texture intact. Highly Weathered

Specimens easily broken by hand, texture indistinct.

Voids

Usually not discernible with the naked eye. Dense

Pit (Pitted) Discernible to ¼ inch.

Vug (Vuggy) ¼ inch to diameter of the core. Cavity Larger than 6 inches in diameter.

Geologic Definitions

Argillaceous A term applied to all rocks or substances composed of clay minerals or having a notable portion (> 30 percent) clay in composition.

Fissility A property of splitting along closely spaced parallel planes.

Calcareous A term applied to rocks containing calcium carbonate.



5/1/25 N MO BR 28

STE. GENEVIEV JSE0026

PROJECT NO.

A9409



Job No.: <u>JSE0026 (SCI No. 2024-0652.13)</u>

Design: A9409

Station: 433+19

Elevation: 413.9

Requested Station: 433+32

Requested Offset: 7' or 13' LT

Offset: 3' LT

Bent: Interior Bent #2

Missouri Department of Transportation Construction and Materials

BORING NO. B-101 Page 1 of 1

Job No.: <u>JSE0026 (SCI No. 2024-0652.13)</u> Skew: 0 Design: A9409 Bent: End Bent #1 Station: 432+92 Offset: 7' RT Elevation: 413.7 Requested Station: 432+90 Requested Easting: N/A Requested Offset: 11' LT

Requested Elevation:

County: St. Genevieve Location: St. Mary Operator: Midwest Drilling, Inc. Logged By: Ian Aubuchon Northing: 955436.82 Date of Work: 08/05/24 Easting: 733205.71 Depth to Water: 13.0 Requested Northing: N/A Depth Hole Open: 28.0

Time Change: 0 Equipment: CME 750 ,Split-Spoon Sampler, Shelby Tube

Location Note: Drilled on the northbound lane

Drill No.: 255648 Hammer Efficiency: 93.7% Drilling Method: Continuous Flight Auger epth (ft) ¥afi (≆) Description 0.0-0.3' 4" ASPHALTIC CONCRETE MC = 11.9% 0.3-8.0' (FILL) Brown and gray, SANDY LEAN 39 (12) CLAY, with crushed rock, trace crushed asphalt, sand is fine- to coarse-grained 3.0' No crushed asphalt MC = 15.9% 3-4-5 (14) 17 PP < 0.25 tsf MC = 10.0% 3-3-3 28 (9) Qu Test Results UCS = 0.800 ksf 8.0-12.0' (CL-ML) Brown, GRAVELLY SILTY 405 LL = 20 PL = 15 CLAY, with fine- to coarse-grained sand, gravel is fine to coarse $\gamma_{\text{moist}} = 130.6$ 12.0-22.0' (SP) Brown, GRAVELLY SAND, fineto coarse-grained, with lean clay, gravel is fine to Sieve Analysis Sieve # % Passing 3/4-inch 100.0 4-4-5 61 (14) 1/2-inch 86.8 3/8-inch 83.1 #4 66.2 #10 46 0 395 #40 20.4 4-4-4 (12) 22 #60 11 7 #100 9.0 #200 6.8 22.0-28.0' (CL) Brown, GRAVELLY LEAN CLAY, gravel is fine to coarse, with fine- to MC = 15.9% coarse-grained sand 5-4-5 (14) 28 Refusal at 28.0 feet Bottom of borehole at 28.0 feet.

 N_{∞} = (Em/60)Nm N_{∞} - 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 State Plane Coordinate Zone: Missouri East Coordinate Proj. Factor: 1.0000606445 Coordinate Datum: NAD 1983 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-201 Page 1 of 2

County: St. Genevieve Route: N **Skew**: 0 Location: St. Mary Logged By: Ian Aubuchon Operator: Midwest Drilling, Inc. Northing: 955430.13 Date of Work: 08/05/24 Easting: <u>733232.87</u> Depth to Water: None Depth Hole Open: 46.5 Requested Northing: N/A Requested Easting: N/A Time Change: 0

Equipment: CME 750 ,Split-Spoon Sampler, NQ

Reque	sted Elev	ation: Location N	Location Note: _Drilled near the center of sounthbound lane thorugh the bridge deck										
Drill N	lo.: 2556	48 Hammer Ef	ficiency:	93.	7%	D	rilling Method: _	Hollow Stem Auger					
O Depth	Graphic	Description	Elevation (ft)	Sample Type	REC % (RQD %)	Blow Counts (N ₆₀)	Shear Data	Field Tests	Index Tests				
		0.0-0.5' 6" CONCRETE 0.5-13.0' AIR	410										
		13.0-16.0' 36" WATER 16.0-24.0' (GC) Brown, CLAYEY GRAVEL, fine clay is lean	400										
		24.0-31.5' (SC) Gray, CLAYEY SAND, fine- to coarse-grained, with fine to coarse gravel, clay is lean	390	XXX	6 56	2-5-5 (15) 3-4-5 (14) 2-1-2 (5)							
10	7,7	30.3' PERCENT PASSING THE NUMBER 200 SIEVE: 35.3% 31.5-46.5' DOLOMITE: Dark gray, moderately hard, micritic, thick bedding, slightly weathered, dense	385		72 100 (70)	1-1-3 (6)	Qu Test Results UCS = 413 ksf						

N_{so} = (Em/60)Nm N_{so} - 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 State Plane Coordinate Zone: Missouri East Coordinate Datum: NAD 1983 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.

BORING DATA

Note: For locations of borings, see Sheet No. 1.

Detailed Nov. 2024 Checked Jan. 2025

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

Sheet No. 29 of 31

B_A9409_29_JSE0026_BORING1_dgn 3:59:32 PM 4/23/2025

Coordinate Proj. Factor: _1.0000606445

NUMBER 5/1/25 Ν MO BR 29 STE. GENEVIEV

JSE0026

PROJECT NO.

A9409

Docusign Envelope ID: 7AD1BE3D-D8D9-4E01-B241-F6CAB2AF9B3E

BORING NO. B-301 Missouri Department of Transportation Page 1 of 2 **Construction and Materials** Job No.: <u>JSE0026 (SCI No. 2024-0652.13)</u> County: St. Genevieve Location: St. Mary Design: A9409 Skew: 0 Bent: Interior Bent #3 Logged By: Ian Aubuchon Operator: Midwest Drilling, Inc. Station: 434+2 Date of Work: 08/07/24 Northing: <u>955434.36</u> Offset: 7'LT Easting: _733316.75 Depth to Water: 13 Elevation: 413.9 Requested Northing: N/A Depth Hole Open: 48.0 Requested Station: 433+80 Requested Easting: N/A Time Change: 0 Requested Offset: 7' or 13' LT Equipment: CME 750 ,Split-Spoon Sampler, NQ Requested Elevation: **Location Note:** Drilled near the edge of the southbound lane through the bridge deck Drill No.: 255648 Hammer Efficiency: 93.7% Drilling Method: Hollow Stem Auger 0.0-0.5' 6" CONCRETE 0.5-13.0' AIR 410

Depth (#) 405 13.0-15.0' WATER 15.0-27.0' (GC) Brown, CLAYEY GRAVEL, fine, clay is lean 3-4-5 (14) 17 22 (12) 2-2-2 (6) 56 24.3' PERCENT PASSING THE NUMBER 200 SIEVE: 32.2% 27.0-32.0' (CL-ML) Gray, SANDY SILTY CLAY, trace fine gravel 1-2-2 72 PP = 1.00 tsf PL = 14 MC = 21.8% 32.0-33.0' WEAK ROCK, likely limestone 33.0-40.0' LIMESTONE: Light gray, moderately hard, micritic, medium bedding, fractured

N₅₀ = (Em/60)Nm N₅₀ - Corrected N value for standard 60% SPT efficiency; Em - Measured hammer efficiency in percent; Nm - Observed N-value (1) = Assumed, (2) = Actual

Coordinate Zone: Missouri East

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Coordinate Units: U.S. Survey Feet

NUMBER

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JSE0026

PROJECT NO.

A9409

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BORING DATA

Note: For locations of borings, see Sheet No. 1.

Sheet No. 30 of 31

Coordinate System: Modified State Plane

Coordinate Datum: NAD 1983

Detailed Nov. 2024 Checked Jan. 2025

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

Coordinate Proj. Factor: 1.0000606445

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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.

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		25000 (001N)				and M	laterials			Page 1 of 1	
		SE0026 (SCI No. 2024-0652.13)	County: St.					Route: N			
Desig								Location: St. Mary		•	
		Bent #4 84+55	Logged By: _ Northing: 9					Operator: Midwes Date of Work: 08/			
		.T	Easting: 73								
			Requested N					Depth to Water: 13.0 Depth Hole Open: 31.0			
		414.0 Station: 434+22									
-		Offset: 7' or 13' LT	Requested Easting: N/A Time Change: 0 Equipment: CME 750 ,Split-Spoon Sampler, Shelby Tube								
-			Location Note: Drilled near the center of the southbound lane								
Requested Elevation: Drill No.: 255648			Hammer Effic				Series of the 30t	Drilling Method: (Continuous Flight	Auger	
Drill No.: <u>255648</u>			riaminici Em	l	. <u>-00.</u>	1 70		Drining Method: _	Sortina das i ligiti:	7 tager	
O Depth (ft)	Graphic	Description		Elevation (ft)	Sample Type	REC % (RQD %)	Blow Counts (N ₆₀)	Shear Data	Field Tests	Index Tests	
	XXXX	─ 、0.0-0.3' 4" ASPHALTIC CONCRE	TE ,								
		0.3-5.5' (FILL) Brown and gray, S CLAY, with fine to coarse gravel, coarse-grained				88		Qu Test Results UCS = 5.40 ksf MC = 11.9%		LL = 26 PL = 20	
 5				410	X	33	10-9-7 (24)	y _{moist} = 129 pcf	PP = 1.00 tsf	MC = 15.9%	
 		5.5-8.0' (SP) Brown, PCORLY G fine- to coarse-grained	RADED SAND,	-	X	44	4-4-3 (11)				
10		8.0-12.0' (CL) Brown, SANDY LE fine to coarse gravel, sand is fine- coarse-grained	AN CLAY, few to	405	X	39	5-5-6 (17)			LL = 49 PL = 22 MC = 8.9%	
 	· ()	□ 12.0-22.0' (SP) Brown, GRAVELI to coarse-grained, with lean clay, coarse	12.0-22.0' (SP) Brown, GRAVELLY SAND, fine- to coarse-grained, with lean clay, gravel is fine to				45.5			Sieve Analysis	
15	\$ 0 ° C	coarse		-		39	4-5-5 (15)			Sieve # % Passing 1/2-inch 100.0 3/8-inch 92.2 #4 65.3 #10 45.2	
 20			395		100	3-3-4 (11)			#20 33.8 #40 21.8 #60 12.0 #100 9.3 #140 8.5 #200 8.0		
- 		22.0-31.0' (GC) Gray, CLAYEY G	SRAVEL, fine to	† - † -							

4-4-4

(12)

(12)

100

39

Missouri Department of Transportation

N₅₀ = (Em/60)Nm N₅₀ - 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 State Plane
 Coordinate Zone:
 Missouri East

 Coordinate Datum:
 NAD 1983
 Coordinate Units:
 U.S. Survey Feet

coarse, with fine- to coarse-grained sand, clay is

24.3' PERCENT PASSING THE NUMBER 200

Refusal at 31.0 feet. Bottom of borehole at 31.0 feet

SIEVE: 12.9%

= * 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.

BORING DATA

Note: For locations of borings, see Sheet No. 1.

Detailed Nov. 2024 Checked Jan. 2025

Coordinate Datum: NAD 1983

Note: This drawing is not to scale. Follow dimensions. Sheet No. 31 of 31

B_A9409_31_JSE0026_BORING3.dgn 4:06:28 PM 4/23/2025

Coordinate Proj. Factor: 1.0000606445

NUMBER 5/1/25 Ν MO BR 31 STE. GENEVIEV JSE0026 PROJECT NO. A9409

BORING NO. B-401



MODJESKI-MASTE 333 SOUTH 18th STREET. SUITE 5T. LOUIS. MISSOURI 588-8115