

A.A.D.T. - 2023 = 9,792
A.A.D.T. - 2043 = 15,667
T = 6.6%
V = 30 M.P.H.
D = 75%/ 25%
FUNCTIONAL CLASSIFICATION - MINOR ARTERIAL

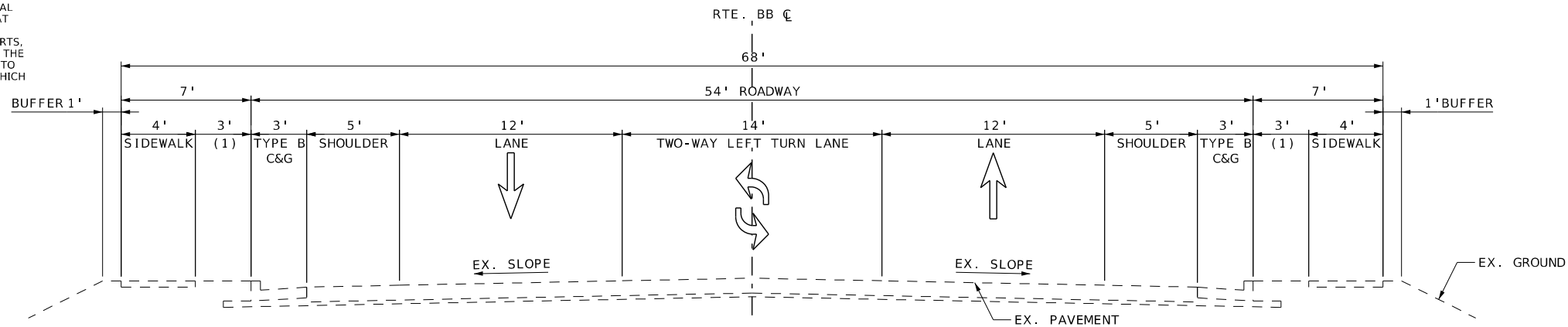
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	EXISTING	NEW
BUILDINGS AND STRUCTURES		
GUARD RAIL		
GUARD CABLE		
CONCRETE RIGHT-OF-WAY MARKER		
STEEL RIGHT-OF-WAY MARKER		
LOCATION SURVEY MARKER		
UTILITIES		
FIBER OPTICS	— FO —	— FO —
OVERHEAD CABLE TV	— OTV —	— OTV —
UNDERGROUND CABLE TV	— 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		
FIRE HYDRANT		
WATER VALVE		
WATER METER		
DROP INLET		
DITCH BLOCK		
GROUND MOUNTED SIGN		
LIGHT POLE		
H-FRAME POWER POLE		
TELEPHONE PEDESTAL		
FENCE		
CHAIN LINK	— V —	— V —
WOVEN WIRE	— X —	— X —
GATE POST		
BENCHMARK		

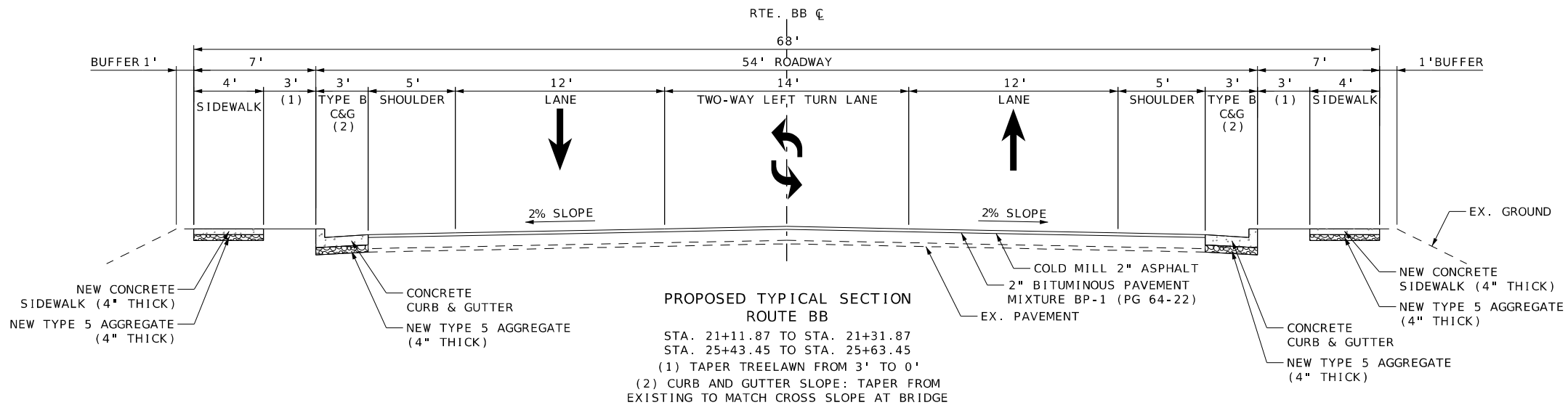
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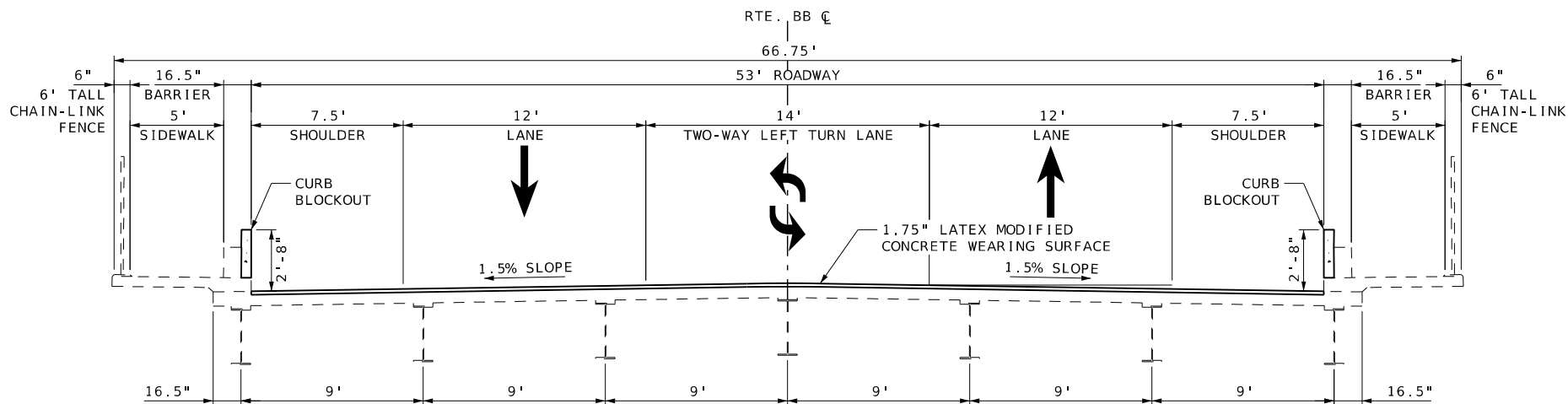
EXISTING TYPICAL SECTION
ROUTE BB

STA. 21+11.87 TO STA. 21+31.87
STA. 25+43.45 TO STA. 25+63.45
(1) TREELAWN VARIES FROM 3' TO 0'



PROPOSED TYPICAL SECTION
ROUTE BB

STA. 21+11.87 TO STA. 21+31.87
STA. 25+43.45 TO STA. 25+63.45
(1) TAPER TREELAWN FROM 3' TO 0'
(2) CURB AND GUTTER SLOPE: TAPER FROM
EXISTING TO MATCH CROSS SLOPE AT BRIDGE



BRIDGE TYPICAL SECTION
ROUTE BB

BRIDGE LIMITS:
STA. 21+31.87 TO STA. 25+43.45

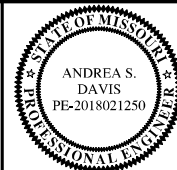
BRIDGE TYPICAL SECTION FOR INFORMATION ONLY
SEE BRIDGE SHEETS

APPLICATION RATES:
BP-1 (PG64-22): 1.948 TON/CUYD COMPACTED MIXTURE
TACK COAT: 0.10 GAL/SQYD

PAVEMENT HISTORY:
CONSTRUCTED: 1975
OVERLAY: 2001

NOT TO SCALE

TYPICAL SECTION
SHEET 1 OF 1



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MO PE-2018021250

DATE PREPARED
10/27/2025

ROUTE BB STATE MO

DISTRICT CD SHEET NO. 2

COUNTY PHELPS

JOB NO. JCD0089

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

MoDOT

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

HR GREEN, INC.
520 MARYVILLE CENTRE DRIVE,
SUITE 100
ST. LOUIS, MISSOURI 63141
PHONE: (636) 519-0990
CORPORATE LICENSE #2002006608

HRGreen

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MOBILIZATION	1 LUMP SUM
CONTRACTOR FURNISHED SURVEYING AND STAKING	1 LUMP SUM
RAILROAD PLAN SUBMITTAL	1 LUMP SUM

REMOVAL OF IMPROVEMENTS							
PLAN SHEET NO.	STA.	STA.	LOC.	EA	SY	LF	DESCRIPTION
4	21+11.87	21+11.87	BOTH			54	SAWCUT ACROSS RTE BB
4	21+11.87	21+31.87	LT			20	CURB & GUTTER
4	21+11.87	21+31.84	LT		11		SIDEWALK
4	21+11.87	21+31.87	RT			20	CURB & GUTTER
4	21+11.87	21+31.93	RT		11		SIDEWALK
4	21+29.92		RT	1			PULLBOX
4	21+30.17		LT	1			PULLBOX
4	25+34.86	25+55.71	RT			21	CURB & GUTTER
4	25+34.61	25+55.59	RT		12		SIDEWALK
4	25+37.20		RT	1			PULLBOX
4	25+51.51	25+71.31	LT			20	CURB & GUTTER
4	25+52.27	25+71.31	LT		12		SIDEWALK
4	25+55.59	25+71.31	BOTH			57	SAWCUT ACROSS RTE BB
4	25+55.78		LT	1			PULLBOX
PAY TOTAL				1 LUMP SUM			

PAVEMENT										
PLAN SHEET NO.	STA.	STA.	LOC.	ROADWAY	AREA	AREA	2" BITUMINOUS PAVEMENT BP-1 W/ PG 64-22 (1.948 TONS/CY) TON	TACK COAT (0.10GAL/SY) GAL	COLDMILLING BITUMINOUS PAVEMENT FOR REMOVAL OF SURFACING (3 IN. THICK OR LESS) (SY)	REMARKS
					SF	SY				
4	21+11.87	21+31.87	LT	RTE BB	480.0	53.3	5.8	5.3	53.3	
4	21+11.87	21+31.87	RT	RTE BB	480.0	53.3	5.8	5.3	53.3	
4	25+43.45	25+63.45	RT	RTE BB	480.0	53.3	5.8	5.3	53.3	
4	25+43.45	25+63.45	LT	RTE BB	480.0	53.3	5.8	5.3	53.3	
SUBTOTAL					23.2		21.2		213.2	
PAY TOTAL					24.0		22		214	

SIDEWALK, ADA & MEDIAN								
PLAN SHEET NO.	STA.	STA.	LOC.	ROADWAY	AREA	CONCRETE SIDEWALK 4 IN. SY	TYPE 5 AGGREGATE FOR BASE (4 IN. THICK) SY	REMARKS
					SF			
4/6	21+06.87	21+31.84	LT	RTE BB	138.4	15.4	15.4	
4/6	21+06.87	21+31.93	RT	RTE BB	136.6	15.2	15.2	
4/6	25+34.61	25+60.59	RT	RTE BB	117.0	13.0	13.0	
4/6	25+52.29	25+76.31	LT	RTE BB	116.9	13.0	13.0	
SUBTOTAL					56.6		56.6	
PAY TOTAL					56.6		*	

* SEE AGGREGATE SUMMARY TABLE

PAVEMENT MARKING									
PLAN SHEET NO.	STA.	STA.	LOC.	ROADWAY	CLASS 1 PAVEMENT MARKING PAINT TYPE P BEADS			PREFORMED THERMOPLASTIC PAVEMENT MARKING LEFT ARROW EACH	REMARKS
					4" SOLID WHITE LF	4" INTERMITTENT YELLOW LF	4" SOLID YELLOW LF		
13	19+27.50	28+08.30	LT	RTE BB	880.8				
13	19+27.50	28+08.30	LT	RTE BB			880.8		
13	19+27.50	28+08.30	LT	RTE BB		220.2			
13	19+27.50	28+08.30	RT	RTE BB		220.2			
13	19+27.20	28+08.30	RT	RTE BB			880.8		
13	19+27.20	27+16.70	RT	RTE BB	789.2				
13	20+15.23		RT	RTE BB				1	
13	23+22.73		-	RTE BB				1	
13	23+52.73		-	RTE BB				1	
SUBTOTAL					1670.0	440.4	1761.6	3	
PAY TOTAL					1670	2202		3	

CURB AND GUTTER						
PLAN SHEET NO.	STA.	STA.	LOC.	CURB & GUTTER TYPE B LF	TYPE 5 AGGREGATE FOR BASE (4 IN. THICK) SY	REMARKS
4/6	21+11.87	21+31.87	LT	20.0	6.7	
4/6	21+11.87	21+31.87	RT	20.0	6.7	
4/6	25+34.61	25+55.59	RT	21.0	7.0	
4/6	25+52.29	25+71.31	LT	20.0	6.7	
SUBTOTAL				81	27.1	
PAY TOTAL				81	*	

* SEE AGGREGATE SUMMARY TABLE

TYPE 5 AGGREGATE BASE	
	TYPE 5 AGGREGATE FOR BASE (4 IN. THICK) SY
BASE UNDER SIDEWALK	56.6
BASE UNDER CURB & GUTTER	27.1
SUBTOTAL	83.7
PAY TOTAL	84



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MO PE-2018021250

DATE PREPARED
10/27/2025

ROUTE BB STATE MO
DISTRICT CD SHEET NO. 3

COUNTY
PHELPS

JOB NO.
JCD0089

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE						



HR GREEN, INC.
520 MARYVILLE CENTRE DRIVE,
SUITE 100
ST. LOUIS, MISSOURI 63141
PHONE: (636) 519-0990
CORPORATE LICENSE #2002006608



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TEMPORARY PAVEMENT MARKING									
PLAN SHEET NO.	STA.	STA.	LOC.	ROADWAY	4 IN. TEMP. PAVMENT MARKING PAINT		PAVEMENT MARKING REMOVAL LF	PAVEMENT MARKING REMOVAL (SYMBOLS) EA	REMARKS
					SOLID WHITE LF	SOLID YELLOW LF			
7	19+27.50	21+31.87	BOTH	RTE BB			920	1	REMOVALS BEFORE PHASE 1
7	21+31.87	25+63.45	LT	RTE BB			971	2	REMOVALS BEFORE PHASE 1
7	25+63.45	28+08.30	BOTH	RTE BB			1010		REMOVALS BEFORE PHASE 1
7	19+27.50	27+16.50	LT	RTE BB	1409	985			PHASE 1
7	19+27.50	21+31.87	LT	RTE BB			613		REMOVALS AFTER PHASE 1
7	25+63.45	27+60.50	LT	RTE BB			437		REMOVALS AFTER PHASE 1
8	19+27.50	28+08.30	RT	RTE BB	1472	1139			PHASE 2
8	19+27.50	28+08.30	RT	RTE BB			2611		REMOVALS AFTER PHASE 2
SUBTOTAL					2881	2124	6562	3	
PAY TOTAL					5005		6562	3	

TEMPORARY EROSION CONTROL							
PLAN SHEET NO.	ROADWAY	STA.	STA.	LOC.	SILT FENCE LF	SEDIMENT REMOVAL CY	REMARKS
12	RTE BB	20+92.35	21+47.36	LT	67	1	
12	RTE BB	20+92.42	51+47.55	RT	68	1	
12	RTE BB	25+19.60	25+77.65	RT	70	1	
12	RTE BB	25+37.15	25+93.45	LT	69	1	
SUBTOTAL					274	4	
PAY TOTAL					274	4	

SEEDING & SOD							
PLAN SHEET NO.	STA.	STA.	ROADWAY	LOC.	AREA SF	TURF TYPE TALL FESCUE SODDING SY	REMARKS
4	21+11.87	21+31.87	RTE BB	LT	38.9	4.3	
4	21+11.87	21+31.87	RTE BB	RT	36.8	4.1	
4	25+34.61	25+55.59	RTE BB	LT	39.2	4.4	
4	25+52.29	25+71.31	RTE BB	RT	36.6	4.1	
SUBTOTAL						16.9	
PAY TOTAL						17	

UTILITY ADJUSTMENTS						
PLAN SHEET NO.	STA.	OFF.	LOC.	ROADWAY	PREFORMED PULLBOX CLASS 1 EA	REMARKS
4	21+29.92	28.5	RT	RTE BB	1	
4	21+30.17	23.5	LT	RTE BB	1	
4	25+37.20	28.6	RT	RTE BB	1	
4	25+55.78	28.8	LT	RTE BB	1	
SUBTOTAL					4	
PAY TOTAL					4	



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ROUTE STATE
BB MO
DISTRICT SHEET NO.
CD 3

COUNTY
PHELPS

JOB NO.
JCD0089


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)

HR GREEN, INC.
520 MARYVILLE CENTRE DRIVE,
SUITE 100 63141
ST. LOUIS, MISSOURI
PHONE: (636) 519-0990
CORPORATE LICENSE #2002006608



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

SIGN	SIZE	AREA	QTY	TOTAL AREA	RELOC	TOTAL RELOC	SIGN	DESCRIPTION	SIGN	SIZE	AREA	QTY	TOTAL	RELOC	TOTAL RELOC	SIGN	DESCRIPTION	ITEM	TOTAL	EFFECTIVE: 07-01-2025					
IN.	SQ. FT.	EACH	SQ. FT.	EACH	SQ. FT.	NO.	IN.		SQ. FT.	EACH	SQ. FT.	EACH	SQ. FT.	NO.	NUMBER	QTY		DESCRIPTION							
WARNING SIGNS									GUIDE SIGNS									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	16.00						TURN (SYMBOL RIGHT)	E05-2	48X36	12.00						EXIT OPEN	6122010		IMPACT ATTENUATOR 50 MPH (SAND BARRELS)					
WO1-2L	48X48	16.00						CURVE (SYMBOL LEFT)	E05-2a	48X36	12.00						EXIT CLOSED	6122012		IMPACT ATTENUATOR 55 MPH (SAND BARRELS)					
WO1-2R	48X48	16.00						CURVE (SYMBOL RIGHT)	GO20-1	60X24	10.00						ROAD WORK NEXT XX MILES	6122014		IMPACT ATTENUATOR 60 MPH (SAND BARRELS)					
WO1-3L	48X48	16.00						REVERSE TURN (SYMBOL LEFT)	GO20-2	48X24	8.00						END ROAD WORK	6122017		IMPACT ATTENUATOR 65 MPH (SAND BARRELS)					
WO1-3R	48X48	16.00						REVERSE TURN (SYMBOL RIGHT)	GO20-4	36X18	4.50						PILOT CAR FOLLOW ME	6122019		IMPACT ATTENUATOR 70 MPH (SAND BARRELS)					
WO1-4L	48X48	16.00	2	32.00	2	32.00	6A	REVERSE CURVE (SYMBOL LEFT)	GO20-4a	42X30	8.75						PILOT CAR IN USE WAIT & FOLLOW	6122020		REPLACEMENT SAND BARREL					
WO1-4R	48X48	16.00	2	32.00	2	32.00	6B	REVERSE CURVE (SYMBOL RIGHT)	GO20-4a	18X12	1.50						PILOT CAR IN USE WAIT & FOLLOW	6122030		IMPACT ATTENUATOR (RELOCATION)					
WO1-4bL	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL LEFT)	GO20-5aP	36X24	6.00						WORK ZONE (PLAQUE)	6122040		WORK ZONE CRASH CUSHION (NARROW)					
WO1-4bR	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL RIGHT)	MO4-8a	24X18	3.00	4	12.00			22	END DETOUR	6122041		WORK ZONE CRASH CUSHION (RELOCATION)					
WO1-4cL	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL LEFT)	MO4-9L	48X36	12.00						DETOUR (LEFT)	6123001		TRUCK MOUNTED ATTENUATOR (TMA)					
WO1-4cR	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL RIGHT)	MO4-9R	48X36	12.00						DETOUR (RIGHT)	6161012		BUOYS (BOATS KEEP OUT)					
WO1-6	60X30	12.50						HORIZONTAL ARROW (SYMBOL)	MO4-9P	48X12	4.00						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.)	REGULATORY SIGNS									6161022		CHANNELIZER (CONE)					
WO1-8	18X24	3.00						CHEVRON (SYMBOL)	R1-1	48X48	13.25						STOP	6161025	57	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	20	TYPE 3 MOVEABLE BARRICADE					
WO3-2	48X48	16.00						YIELD AHEAD (SYMBOL)	R1-3P	30X12	2.50						ALL WAY (PLAQUE)	6161033		DIRECTION INDICATOR BARRICADE					
WO3-3	48X48	16.00						SIGNAL AHEAD (SYMBOL)	R2-1	36X48	12.00						SPEED LIMIT XX	6161040		FLASHING ARROW PANEL					
WO3-4	48X48	16.00						BE PREPARED TO STOP	R3-1	48X48	16.00						NO RIGHT TURN (SYMBOL)	6161047		TYPE 3 OBJECT MARKER					
WO3-5	48X48	16.00						SPEED LIMIT AHEAD	R3-2	48X48	16.00	2	32.00			10	NO LEFT TURN (SYMBOL)	6161055		SEQUENTIAL FLASHING WARNING LIGHT					
WO4-1L	48X48	16.00						MERGE (SYMBOL FROM LEFT)	R3-3	36X36	9.00						NO TURNS	6161070		TUBULAR MARKER					
WO4-1R	48X48	16.00						MERGE (SYMBOL FROM RIGHT)	R3-4	48X48	16.00						NO U-TURN (SYMBOL)	6161095		RADAR SPEED ADVISORY SYSTEM					
WO4-1aL	48X48	16.00						MERGE (LEFT)	R3-7L	30X30	6.25						LEFT LANE MUST TURN LEFT			CHANGEABLE MESSAGE SIGN, COMMISSION FURNISHED/RETAINED					
WO4-1aR	48X48	16.00						MERGE (RIGHT)	R3-7R	30X30	6.25						RIGHT LANE MUST TURN RIGHT	6161096	2**	CHANGEABLE MESSAGE SIGN WITHOUT COMM. INTERFACE, CONTRACTOR FURNISHED/RETAINED					
WO5-1	48X48	16.00	2	32.00	2	32.00	11	ROAD/BRIDGE/RAMP NARROWS	R4-1	36X48	12.00						DO NOT PASS	6161098A		CHANGEABLE MESSAGE SIGN WITHOUT COMM. INTERFACE, CONTRACTOR FURNISHED/RETAINED					
WO5-3	48X48	16.00						ONE LANE BRIDGE	R4-2	36X48	12.00						PASS WITH CARE			CHANGEABLE MESSAGE SIGN WITH COMM. INTERFACE, CONTRACTOR FURNISHED/RETAINED					
WO5-5	48X48	16.00						NARROW LANES	R4-7a	36X48	12.00						KEEP RIGHT (HORIZONTAL ARROW)	6161099		CHANGEABLE MESSAGE SIGN WITH COMM. INTERFACE, CONTRACTOR FURNISHED/RETAINED					
WO6-1	48X48	16.00						DIVIDED HIGHWAY (SYMBOL)	R4-8a	36X48	12.00						KEEP LEFT (HORIZONTAL ARROW)	6162000A		WORK ZONE TRAFFIC SIGNAL SYSTEM					
WO6-2	48X48	16.00						DIVIDED HIGHWAY END (SYMBOL)	R5-1	30X30	6.25						DO NOT ENTER	6162002		TEMPORARY LONG-TERM RUMBLE STRIPS					
WO6-3	48X48	16.00						TWO WAY TRAFFIC (SYMBOL)	R5-1a	36X24	6.00						WRONG WAY			TEMPORARY TRAFFIC BARRIER, CONTRACTOR FURNISHED/RETAINED					
WO7-3a	30X24	5.00						NEXT XX MILES (PLAQUE)	R6-1L	54X18	6.75						ONE WAY ARROW (LEFT)	6173600D	465**	TEMP. TRAFFIC BARRIER ANCHORED, CONTRACTOR FURNISHED/RETAINED					
WO8-1	48X48	16.00						BUMP	R6-1R	54X18	6.75	1	6.75				ONE WAY ARROW (RIGHT)			TEMP. TRAFFIC BARRIER STIFFNESS TRANSITION, CONTRACTOR FURNISHED/RETAINED					
WO8-2	48X48	16.00						DIP	R6-2L	24X30	5.00						ONE WAY (LEFT)	6173700B		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION, CONTRACTOR FURNISHED/RETAINED					
WO8-3	48X48	16.00						PAVEMENT ENDS	R6-2R	24X30	5.00						ONE WAY (RIGHT)			RELOCATING TEMP. TRAFFIC BARRIER ANCHORED					
WO8-4	48X48	16.00						SOFT SHOULDER	R9-9	24X12	2.00	2	4.00	2	4.00	14	SIDEWALK CLOSED	6175010A	465**	RELOCATING TEMP. TRAFFIC BARRIER					
WO8-5	48X48	16.00						SLIPPERY WHEN WET (SYMBOL)	R9-11L	24X18	3.00	1	3.00	1	3.00	12	SIDEWALK CLOSED AHEAD, (ARROW LEFT) CROSS HERE	6175011B		RELOCATING TEMP. TRAFFIC BARRIER ANCHORED					
WO8-6	48X48	16.00						TRUCK CROSSING	R9-11R	24X18	3.00	1	3.00	1	3.00	13	SIDEWALK CLOSED AHEAD, (ARROW RIGHT) CROSS HERE	6175013		RELOCATING TEMP. TRAFFIC BARRIER STIFFNESS					
WO8-6c	48X48	16.00						TRUCK ENTRANCE	R10-6	24X36	6.00						STOP HERE ON RED (45^ ARROW)	6175020A	2**	RELOCATING TEMP. TRAFFIC BARRIER HEIGHT					
WO8-7	36X36	9.00						LOOSE GRAVEL	R11-2	48X30	10.00	4	40.00				ROAD CLOSED	6208064A		TEMPORARY RAISED PAVEMENT MARKER					
WO8-7a	36X36	9.00						FRESH OIL / LOOSE GRAVEL	R11-3a	60X30	12.50						ROAD CLOSED XX MILES AHEAD	9029400		TEMPORARY TRAFFIC SIGNALS					
WO8-9	48X48	16.00						LOW SHOULDER	R11-4	60X30	12.50	4	50.00				LOCAL TRAFFIC ONLY	9029401		TEMPORARY TRAFFIC SIGNALS AND LIGHTING					
WO8-11	48X48	16.00						UNEVEN LANES	CONST-3A	60X48	20.00						FINE SIGN	6169902	4**	ADA COMPLIANT MOVEABLE BARRICADES					
WO8-12	48X48	16.00						NO CENTER LINE	CONST-3X	56X12	4.67						SPEEDING/PASSING (PLATE)			NOTE: SIGN AND DEVICE LOCATIONS WILL BE FIELD VERIFIED AND APPROVED BY THE ENGINEER. ALL TRAFFIC CONTROL IS INCLUDED IN PAY ITEM 616-99.01, LUMP SUM TEMPORARY TRAFFIC CONTROL UNLESS NOTED OTHERWISE IN THE PLANS. THESE QUANTITIES ARE ONLY AN ESTIMATE AND ARE SUBJECT TO CHANGE BASED UPON FIELD CONDITIONS. ** NOT INCLUDED IN LUMP SUM TRAFFIC CONTROL QUANTITY					
WO8-15	48X48	16.00						GROOVED PAVEMENT	MISCELLANEOUS SIGNS																
WO8-15P	30X24	5.00						MOTORCYCLE (PLAQUE)	CONST-5	48X36	12.00	2	24.00				61	POINT OF PRESENCE							
WO8-17L	48X48	16.00						SHOULDER DROP-OFF (SYMBOL LEFT)	CONST-5	96X48	32.00							POINT OF PRESENCE							
WO8-17R	48X48	16.00						SHOULDER DROP-OFF (SYMBOL RIGHT)	CONST-8	48X36	12.00	2	24.00					55	WORK ZONE NO PHONE ZONE						
WO8-17P	30X24	5.00						SHOULDER DROP-OFF (PLAQUE)	CONST-5P	60X8	3.33	2	6.66					61A	POINT OF PRESENCE						
W10-1	42RND.	9.62						RAILROAD CROSSING	SPECIAL	36X60	15.00	5	75.00					50A	DETOUR ASSEMBLY-OAK ST-STR.						
WO12-1	24X24	4.00						DOUBLE DOWN ARROW (SYMBOL)	SPECIAL	36X60	15.00	3	45.00					50B	DETOUR ASSEMBLY-OAK ST-RT.						
WO12-2	48X48	16.00						LOW CLEARANCE (SYMBOL)	SPECIAL	36X60	15.00	3	45.00					50C	DETOUR ASSEMBLY-OAK ST-LT.						
WO12-2x	24X18	3.00						LOW CLEARANCE (PLAQUE)	SPECIAL	36X60	15.00	7	105.00					50D	DETOUR ASSEMBLY-OLIVE ST-STR.						
WO12-2a	84X24	14.00						OVERHEAD LOW CLEARANCE (FEET AND INCHES)	SPECIAL	36X60	15.00	4	60.00					50E	DETOUR ASSEMBLY-OLIVE ST-RT.						
WO12-4	120X60	50.00						LOW CLEARANCE XX FT XX IN XX MILES AHEAD	SPECIAL	36X60	15.00	4	60.00					50F	DETOUR ASSEMBLY-OLIVE ST-LT.						
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	5	80.00	2	32.00	2	ROAD/BRIDGE/RAMP WORK AHEAD																	
WO20-2	48X48	16.00	4	64.00			18	DETOUR AHEAD																	
WO20-3	48X48	16.00	4	64.00			20	ROAD CLOSED AHEAD																	
WO20-4	48X48	16.00						ONE LANE ROAD AHEAD	616-10.05									TOTAL							
WO20-5	48X48	16.00						RIGHT/CENTER/LEFT LANE CLOSED AHEAD	CONSTRUCTION SIGNS									900							
WO20-5a	48X48	16.00						2 RIGHT/CENTER/LEFT LANES CLOSED AHEAD	616-10.10									TOTAL							
WO20-6a	48X48	16.00						RIGHT/CENTER/LEFT LANE CLOSED	RELOCATED SIGNS									138							
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)																	

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HR GREEN, INC.

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1433

HRGreen

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MO PE-2018021250

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10/27/2025

ROUTE BB STATE MO

DISTRICT CD SHEET NO. 3

COUNTY PHELPS

JOB NO. JCD0089

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

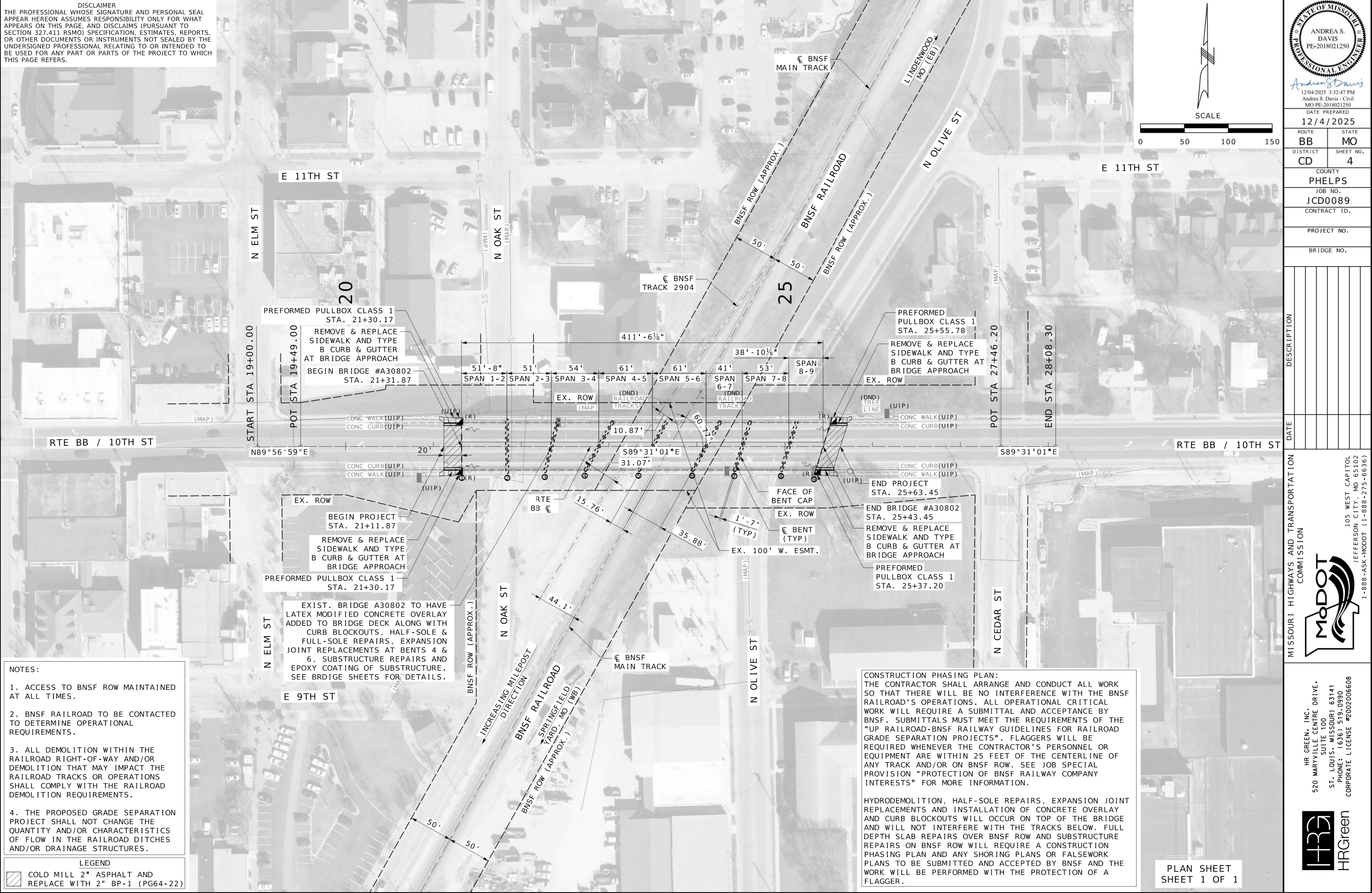
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QUANTITIES SHEET 3 OF 3

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NOTES:

1. ACCESS TO BNSF ROW MAINTAINED AT ALL TIMES.
2. BNSF RAILROAD TO BE CONTACTED TO DETERMINE OPERATIONAL REQUIREMENTS.
3. ALL DEMOLITION WITHIN THE RAILROAD RIGHT-OF-WAY AND/OR DEMOLITION THAT MAY IMPACT THE RAILROAD TRACKS OR OPERATIONS SHALL COMPLY WITH THE RAILROAD DEMOLITION REQUIREMENTS.
4. THE PROPOSED GRADE SEPARATION PROJECT SHALL NOT CHANGE THE QUANTITY AND/OR CHARACTERISTICS OF FLOW IN THE RAILROAD DITCHES AND/OR DRAINAGE STRUCTURES.

LEGEND

COLD MILL 2" ASPHALT AND REPLACE WITH 2" BP-1 (PG64-22)

CONSTRUCTION PHASING PLAN:
THE CONTRACTOR SHALL ARRANGE AND CONDUCT ALL WORK SO THAT THERE WILL BE NO INTERFERENCE WITH THE BNSF RAILROAD'S OPERATIONS. ALL OPERATIONAL CRITICAL WORK WILL REQUIRE A SUBMITTAL AND ACCEPTANCE BY BNSF. SUBMITTALS MUST MEET THE REQUIREMENTS OF THE "UP RAILROAD-BNSF RAILWAY GUIDELINES FOR RAILROAD GRADE SEPARATION PROJECTS". FLAGGERS WILL BE REQUIRED WHENEVER THE CONTRACTOR'S PERSONNEL OR EQUIPMENT ARE WITHIN 25 FEET OF THE CENTERLINE OF ANY TRACK AND/OR ON BNSF ROW. SEE JOB SPECIAL PROVISION "PROTECTION OF BNSF RAILWAY COMPANY INTERESTS" FOR MORE INFORMATION.

HYDRODEMOLITION, HALF-SOLE REPAIRS, EXPANSION JOINT REPLACEMENTS AND INSTALLATION OF CONCRETE OVERLAY AND CURB BLOCKOUTS WILL OCCUR ON TOP OF THE BRIDGE AND WILL NOT INTERFERE WITH THE TRACKS BELOW. FULL DEPTH SLAB REPAIRS OVER BNSF ROW AND SUBSTRUCTURE REPAIRS ON BNSF ROW WILL REQUIRE A CONSTRUCTION PHASING PLAN AND ANY SHORING PLANS OR FALSEWORK PLANS TO BE SUBMITTED AND ACCEPTED BY BNSF AND THE WORK WILL BE PERFORMED WITH THE PROTECTION OF A FLAGGER.

PLAN SHEET
SHEET 1 OF 1



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ROUTE BB STATE MO
DISTRICT CD SHEET NO. 4
COUNTY PHELPS
JOB NO. JCD0089
CONTRACT ID.

PROJECT NO.
BRIDGE NO.

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
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1-888-ASK-MODOT (1-888-275-6636)

HR GREEN, INC.
520 MARYVILLE CENTRE DRIVE,
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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 MULTIPLY THE PROJECT
COORDINATES BY THE AVERAGE GRID FACTOR AS SHOWN
IN THE "REFERENCE CONTROL INFORMATION" PORTION
OF THIS TABLE.

PROJECT COORDINATE INFORMATION

COORDINATE SYSTEM	MO COORDINATE SYSTEM OF 1983		
HORIZONTAL DATUM	NAD83		
VERTICAL DATUM	NAVD88		
GEOID MODEL	GEOID 18		
ELEVATIONS DETERMINED BY	GPS		
PROJECT PROJECTION FACTOR	1.00005180		

REFERENCE CONTROL INFORMATION

COORDINATE SYSTEM	MO COORDINATE SYSTEM OF 1983		
CONTROL STATION	MISSOURI COR		
DESIGNATION	MODOT ST ROBERT CORS ARP		
CORS_ID	MOSR		
PID	DL6906		
LATITUDE	N37°49'14.66174"		
LONGITUDE	W092°09'15.38856"		
NORTHING (M)	220592.8700		
EASTING (M)	530437.7000		
ZONE	CENTRAL		
PROJECT AVERAGE GRID FACTOR	0.99994820		

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 #300
N 771,818.17 X 0.9994820 = N 771,838.187
E 1,851,173.566 X 0.99994820 = E 1,851,077.675

LINEAR UNIT CONVERSION

1 METER = 3.280833333 US SURVEY FEET (USFT)

COORDINATE POINT LISTING								
SHEET NO	STATION	LOCATION	OFFSET (USFT)	MODIFIED STATE PLANE (GROUND)			DESCRIPTION	POINT ID
				NORTHING (US SURVEY FT)	EASTING (US SURVEY FT)	ELEVATION (US SURVEY FT)		
PROJECT CONTROL POINTS								
4	20+94.71	RT	28.2237	771,986.524	1,851,034.829	1,122.33	LARGE NAIL	101
4	23+84.44	RT	66.5005	771,945.806	1,851,324.235	1,109.48	MAG NAIL	102
4	23+84.34	LT	59.3807	772,071.683	1,851,325.196	1,099.96	LARGE NAIL	103
4	22+34.35	RT	135.4038	771,878.170	1,851,173.566	1,101.52	CUT CROSS	300
4	24+89.61	LT	117.1112	772,128.524	1,851,430.941	11,004.93	IRON ROD WITH CAP	301
ALIGNMENT								
ELEMENT	STATION	LENGTH (USFT)	BEARING	NORTHING (US SURVEY FT)	EASTING (US SURVEY FT)		DESCRIPTION	
ALIGNMENT: RTE BB C								
TANGENT	19+00.00			772,015.932	1,850,840.367		START	
TANGENT	19+49.00	49.00	N89°56'59"E	772,015.975	1,850,889.367		HPI	
TANGENT	19+49.00			772,015.975	1,850,889.367		HPI	
TANGENT	27+46.20	797.20	S89°31'01"E	772,009.254	1,851,686.539		HPI	
TANGENT	27+46.20			772,009.254	1,851,686.539		HPI	
TANGENT	28+08.30	62.10	S89°31'01"E	772,008.730	1,851,748.636		END	



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MO PE-2018021250

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10/27/2025

ROUTE	STATE
BB	MO
DISTRICT	SHEET NO.
CD	5

COUNTY
PHELPS

JOB NO.
JCD0089

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION								
DATE								

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION



105 WEST CAPITOL
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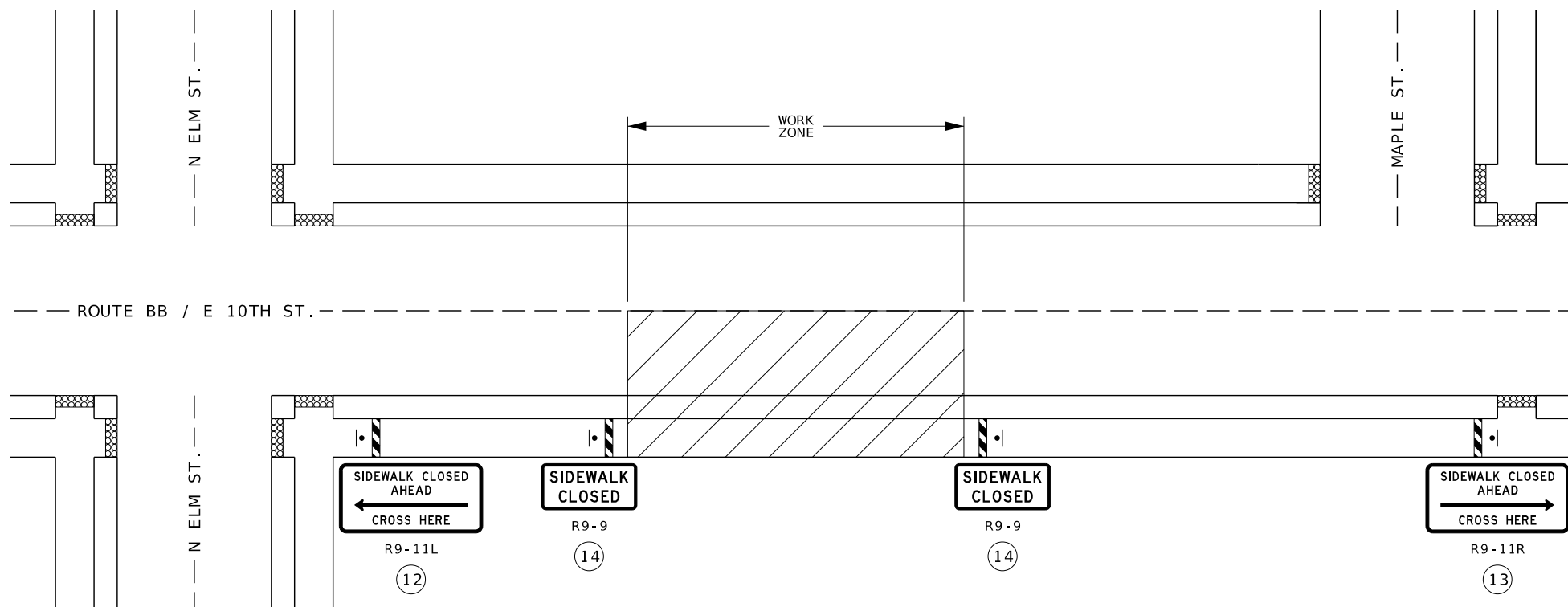
SIDEWALK CLOSURE AND PEDESTRIAN DETOURS

TRAFFIC CONTROL LEGEND

● SIGN (SINGLE SIDED)

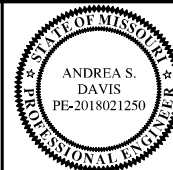
 WORK ZONE

 ADA COMPLIANT TYPE
III BARRICADE



NOT TO SCALE

TRAFFIC CONTROL
SHEET 5 OF 5



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ROUTE	STATE
BB	MO

DISTRICT	SHEET NO
CD	11

COUNTY
PHELPS

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ICD0089

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

DATE _____

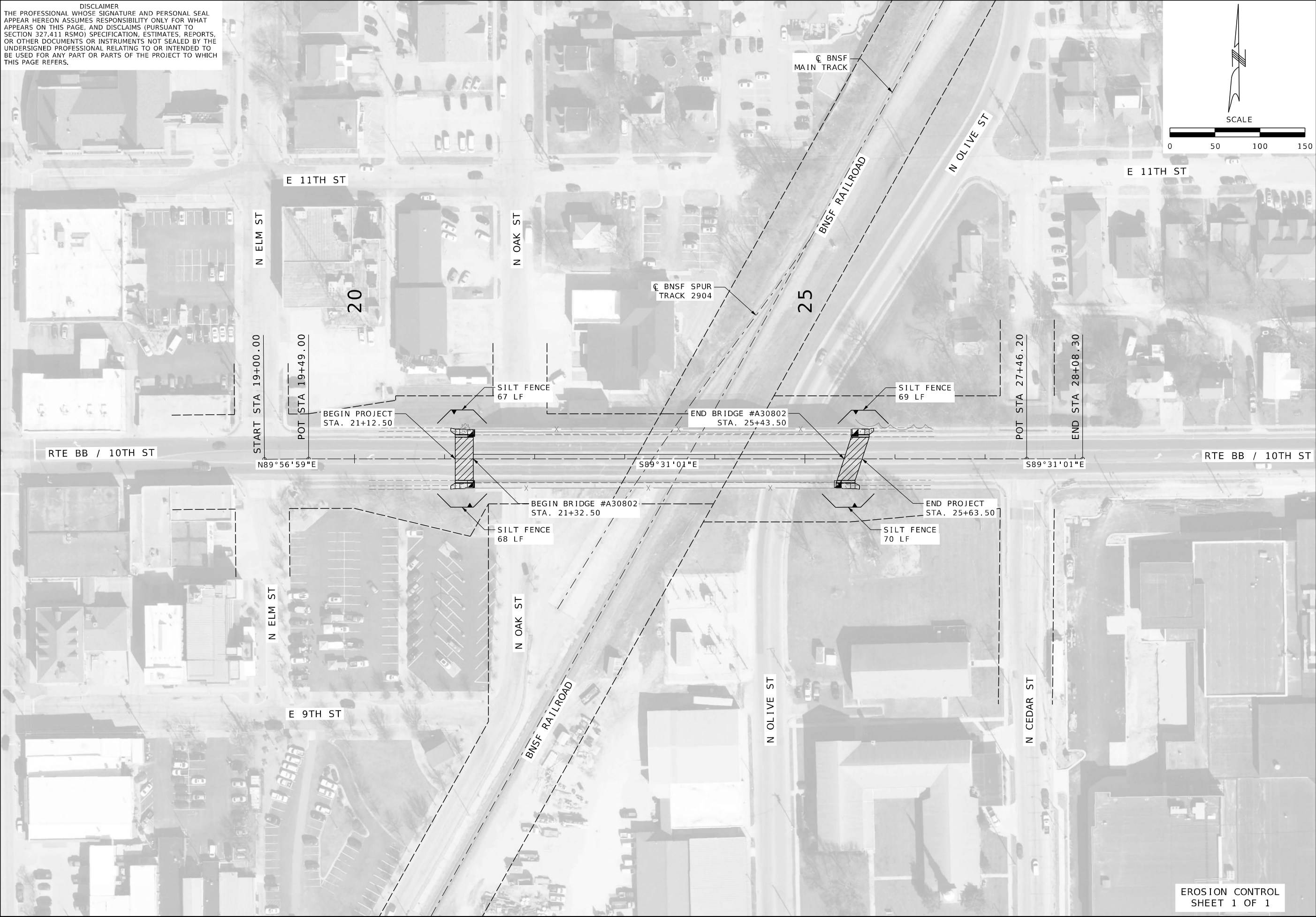
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ANDREA S. DAVIS

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PROFESSIONAL ENGINEER

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ROUTE BB

DISTRICT CD

STATE MO

SHEET NO. 12

COUNTY
PHELPS

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JCD0089

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DATE	DESCRIPTION

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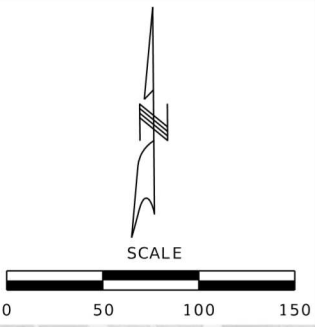
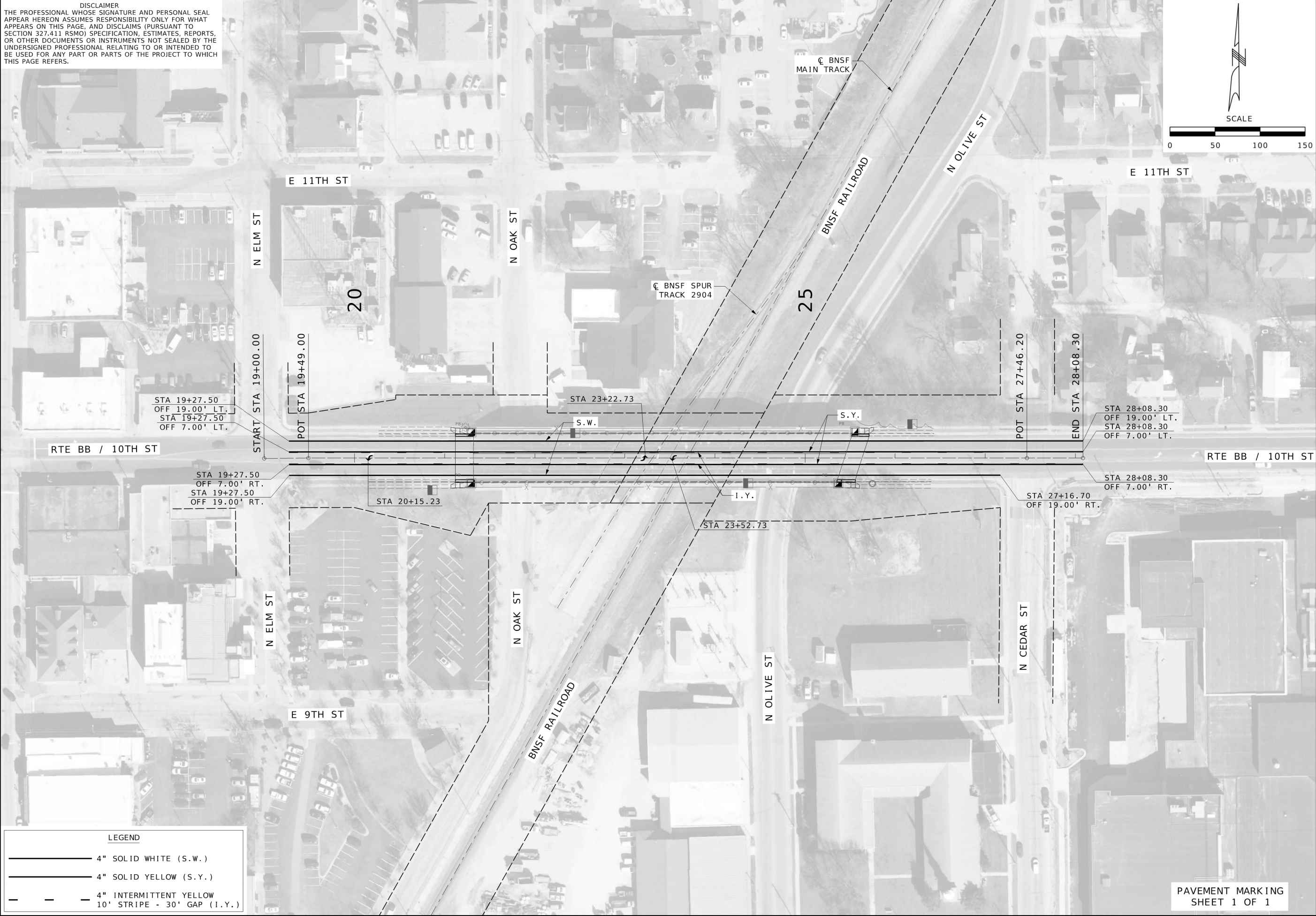
EROSION CONTROL

SHEET 1 OF 1

\\hrgreen.com\hrg\Data\2022\2202603.04\CAD\Roadway\Plan_Sheets\12_EC_01_JCD0089_150.dgn 3:28:15 PM 12/4/2025

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ROUTE BB STATE MO

DISTRICT CD SHEET NO. 13

COUNTY PHELPS

JOB NO. JCD0089

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

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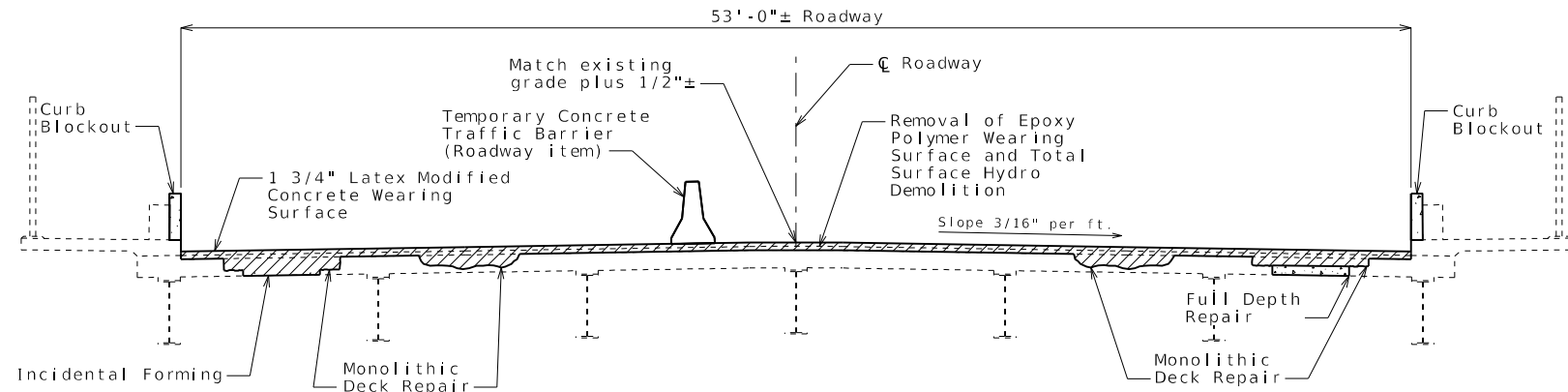
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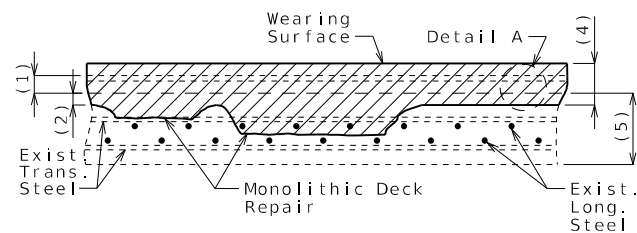


PAVEMENT MARKING
SHEET 1 OF 1

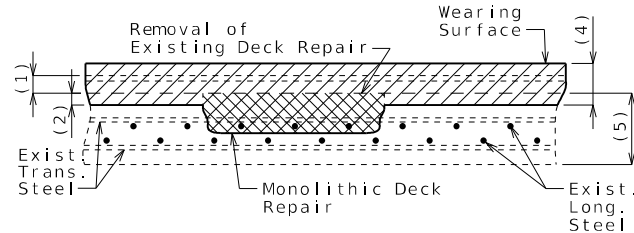
U.I.P. AND REHABILITATE EXISTING (50'-51'-50')(4'-61'-61'-4')(37'-53'-37') CONTINUOUS COMPOSITE WIDE FLANGE BEAM SPANS (SKEW: VARIES)



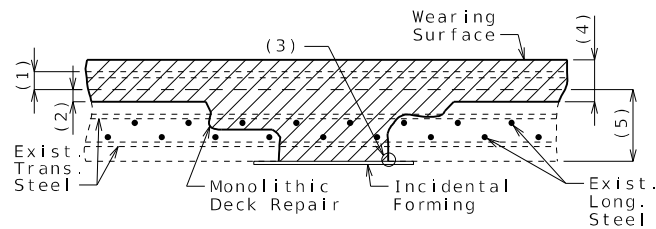
TYPICAL SECTION THRU EXISTING DECK



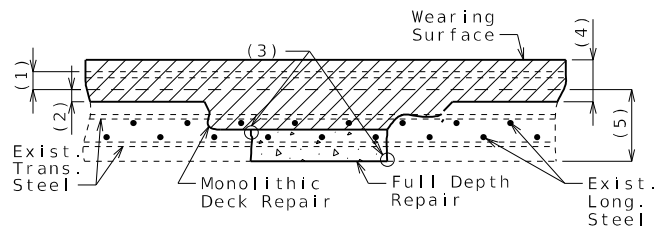
MONOLITHIC DECK REPAIR



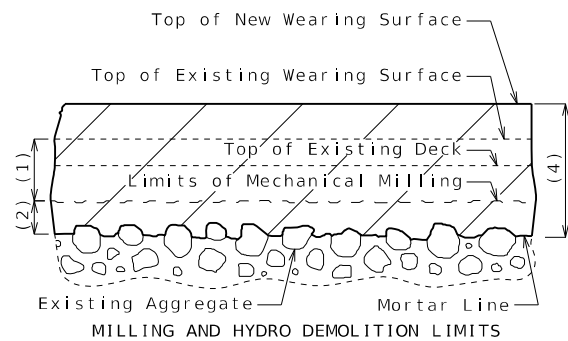
REMOVAL OF EXISTING DECK REPAIR BEFORE HYDRO DEMOLITION



MONOLITHIC DECK REPAIR REQUIRING INCIDENTAL FORMING



MONOLITHIC DECK REPAIR REQUIRING FULL DEPTH REPAIR



DETAIL A

- (1) Removal of existing 1/4"± epoxy polymer wearing surface plus 1/2" of existing deck
- (2) 1/2" minimum total surface hydro demolition of sound concrete, measured to mortar line
- (3) 1" vertical side shall be established outside the deteriorated area.
- (4) 1 3/4" minimum latex modified concrete wearing surface
- (5) Original depth of deck

LATEX MODIFIED CONCRETE DETAILS

Estimated Quantities		
Item		Total
Total Surface Hydro Demolition	sq. yard	2,423
Removal of Seal Coat or Polymer Wearing Surface	sq. foot	21,808
Removal of Existing Deck Repair	sq. foot	150
Removal of Existing Expansion Joint & Adjacent Concrete	linear foot	122
* Supplementary Wearing Surface Material	cu. yard	20
Latex Modified Concrete Wearing Surface	sq. yard	2,423
Diamond Grinding	sq. yard	2,423
Class B-2 Concrete	cu. yard	11.7
Curb Blockout	linear foot	823
Substructure Repair (Formed)	sq. foot	180
Substructure Repair (Unformed)	sq. foot	500
Half-Sole Repair	sq. foot	1,200
Full Depth Repair	sq. foot	300
Reinforcing Steel (Epoxy Coated)	pound	760
Protective Coating - Concrete Bents and Piers (Epoxy)	lump sum	1
Cleaning and Coating Existing Bearings	each	14
Surface Preparation for Recoating Structural Steel	sq. foot	4,200
Field Application of Inorganic Zinc Primer	sq. foot	4,200
Intermediate Field Coat (System G)	sq. foot	4,200
Finish Field Coat (System G)	sq. foot	4,200
Segmental Expansion Joint System	linear foot	122

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

General Notes:

Design Specifications:

2002 AASHTO LFD (17th Ed.) Standard Specifications
Bridge Deck Rating = 5

Design Loading:

HS20-44 (1973)

Design Unit Stresses:

Class B-2 Concrete (Superstructure) f'c = 4,000 psi

Structural Steel Protective Coating:

Protective Coating: System G in accordance with Sec 1081. All existing structural steel 10' each way from joint including bearings at Int. Bents No. 4 & 6 and all bearings at End Bents No. 1 & 9.

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

Prime Coat: The cost of the prime coat will be considered completely covered by the contract unit price per sq. foot for Field Application of Zinc Primer. Tint of the prime coat for System G shall be similar to the color of the field coat to be used.

Field Coats: The color of the field coats shall be Gray (Federal Standard #26373). The cost of the intermediate field coat will be considered completely covered by the contract unit price per sq. foot for Intermediate Field Coat (System G). The cost of the finish field coat will be considered completely covered by the contract unit price per sq. foot for Finish Field Coat (System G).

Miscellaneous:

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

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

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

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

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

Traffic Handling:

Traffic to be maintained on structure during construction. See roadway plans for traffic control.

REPAIRS TO BRIDGE: ROUTE BB OVER CITY STREETS AND BNSF RAILROAD

ROUTE BB FROM ROUTE 63 TO ROUTE 8
ABOUT 0.4 MILES E OF ROUTE 63
BEGINNING STATION 21+32.33± (Match Existing)



DATE PREPARED
11/4/2025

ROUTE BB STATE MO
DISTRICT BR SHEET NO. 1

COUNTY PHELPS
JOB NO. JCD0089

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A30802

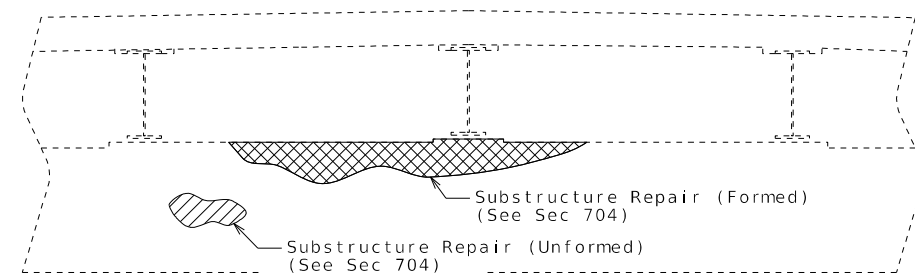
DESCRIPTION	DATE



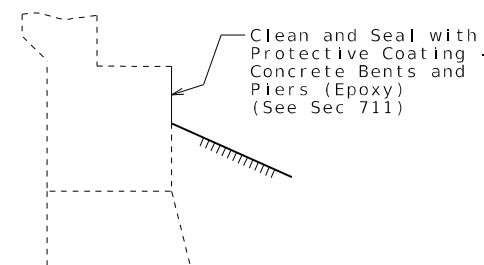
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PHONE: (636) 519-0990
CORPORATE LICENSE #2002006608



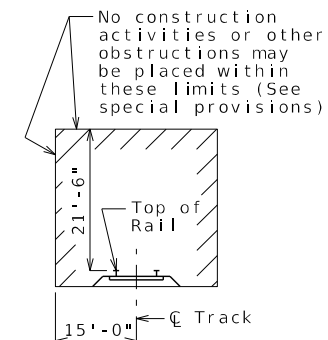
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DETAILS OF CONCRETE REPAIR AT END BENTS NO. 1 & 9

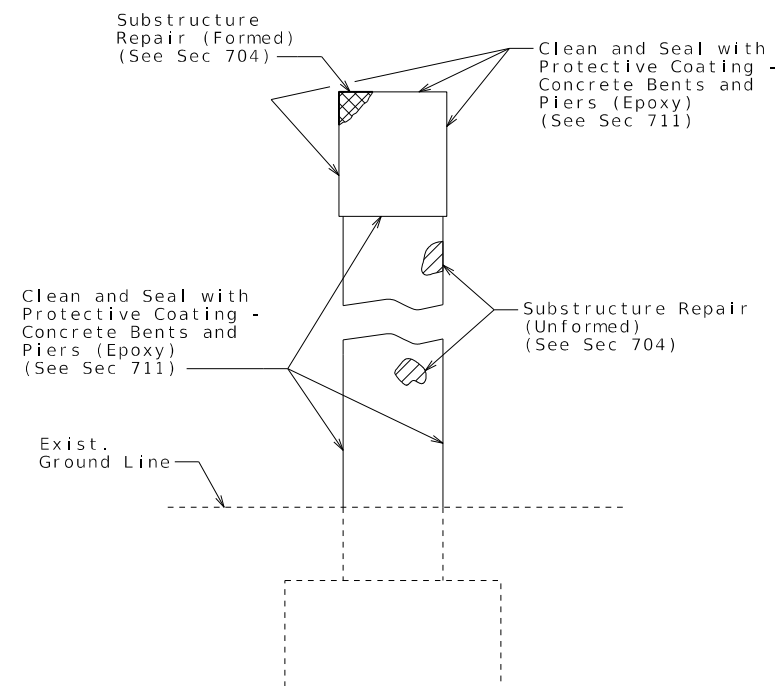


TYPICAL SECTION
THRU END BENTS NO. 1 & 9 SHOWING
PROTECTIVE COATING

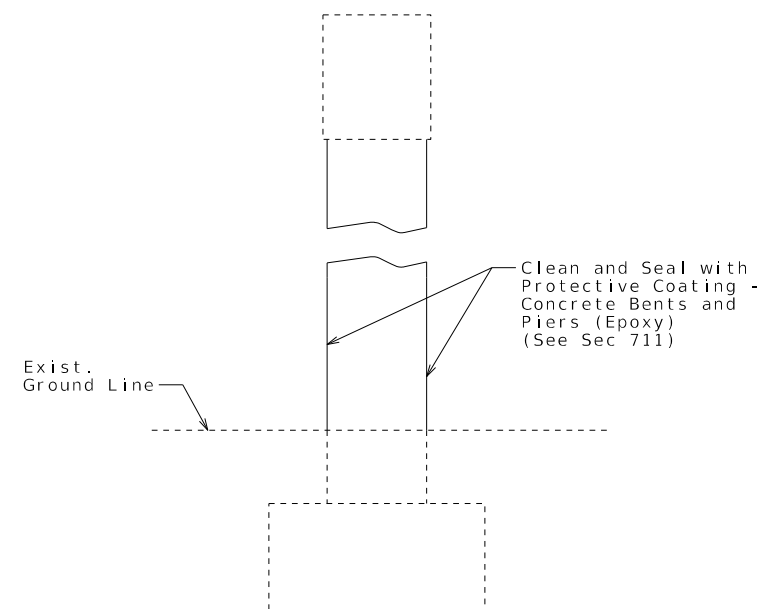


MINIMUM CONSTRUCTION CLEARANCES

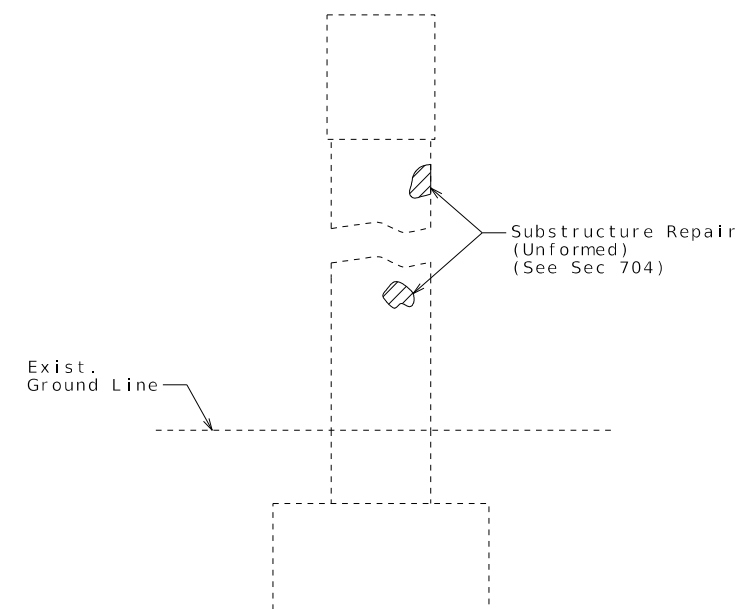
(Normal to railroad)
(Not to scale)



TYPICAL SECTION THRU
INT. BENTS NO. 4 & 6 SHOWING
SUBSTRUCTURE REPAIR &
PROTECTIVE COATING



TYPICAL SECTION THRU
INT. BENTS NO. 2, 7 & 8 SHOWING
PROTECTIVE COATING

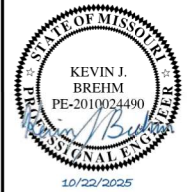


TYPICAL SECTION THRU
INT. BENT NO. 2 SHOWING
SUBSTRUCTURE REPAIR

Notes:

The following locations shall be cleaned and sealed with Protective Coating - Concrete Bents and Piers (Epoxy) in accordance with Sec 711:

- All exposed substructure concrete at End Bents No. 1 & 9 and Intermediate Bents No. 4 & 6
- Columns of Intermediate Bents No. 2, 7 & 8



DATE PREPARED
10/21/2025

ROUTE	STATE
BB	MO

DISTRICT	SHEET NO.
BR	2

COUNTY
PHELPS

JOB NO.
ICD0089

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PROJECT NO.

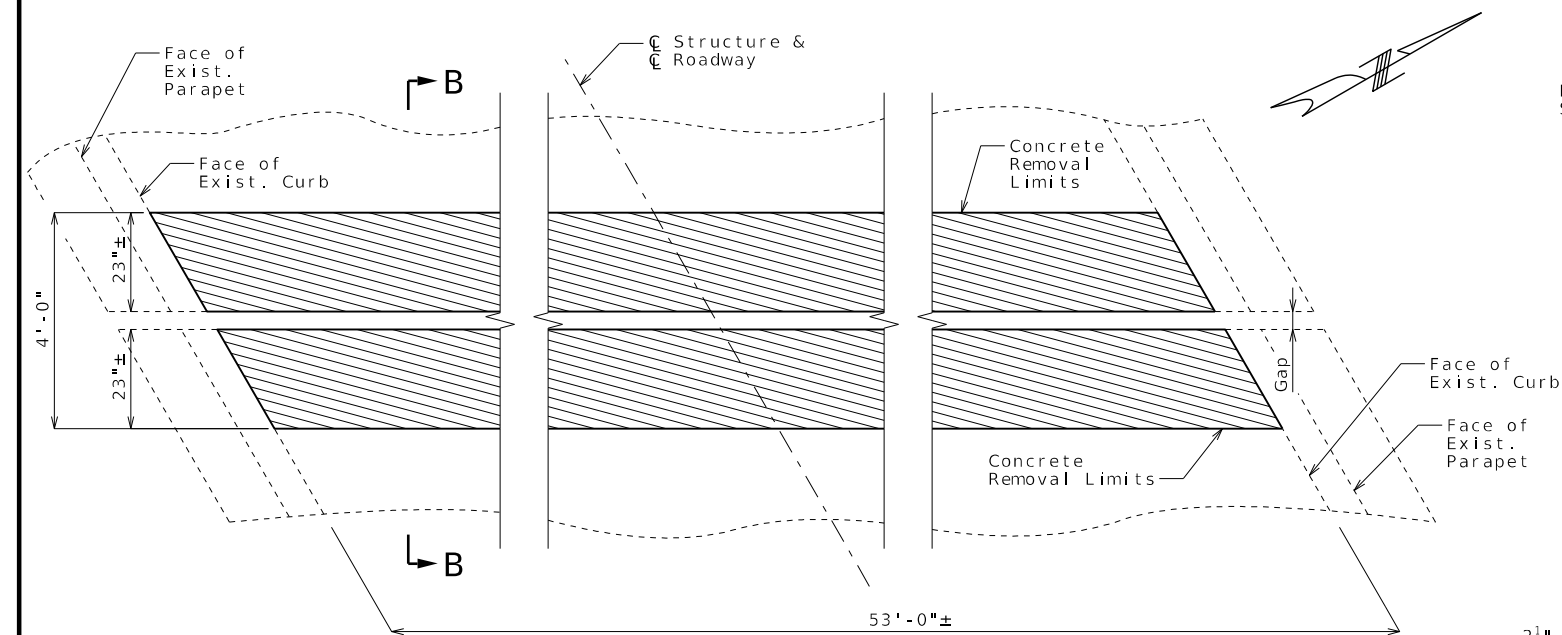
BRIDGE NO.
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COMMISSION

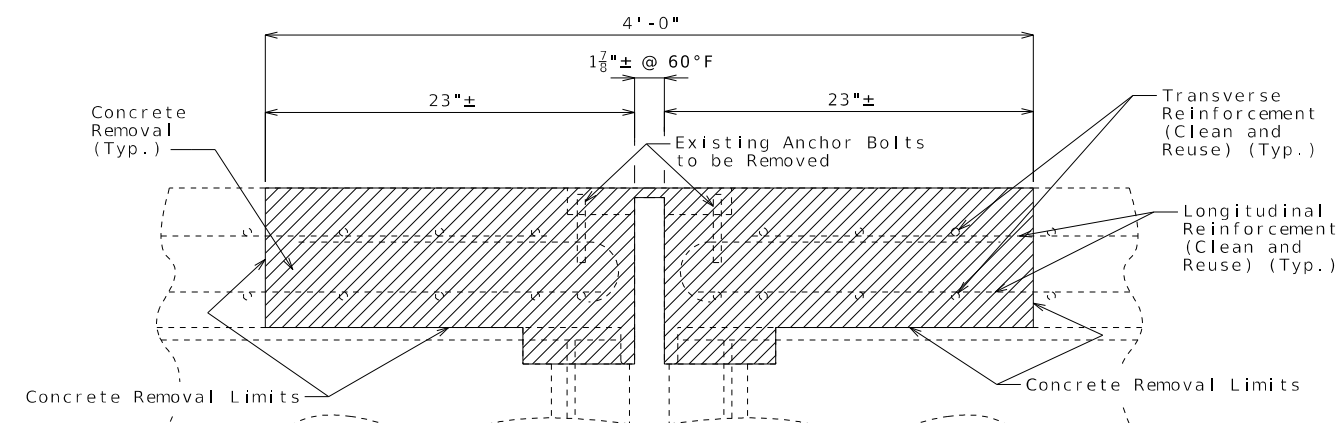
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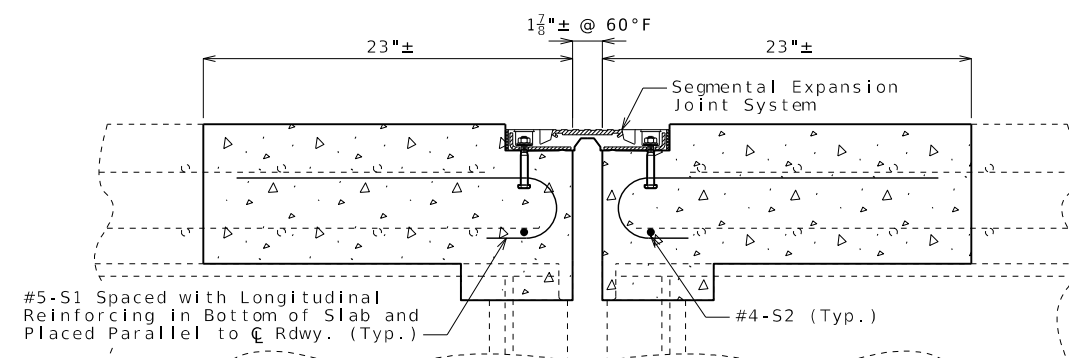
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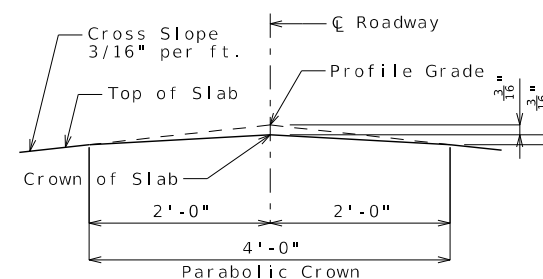
REMOVAL PLAN NEAR INT. BENTS NO. 4 AND 6



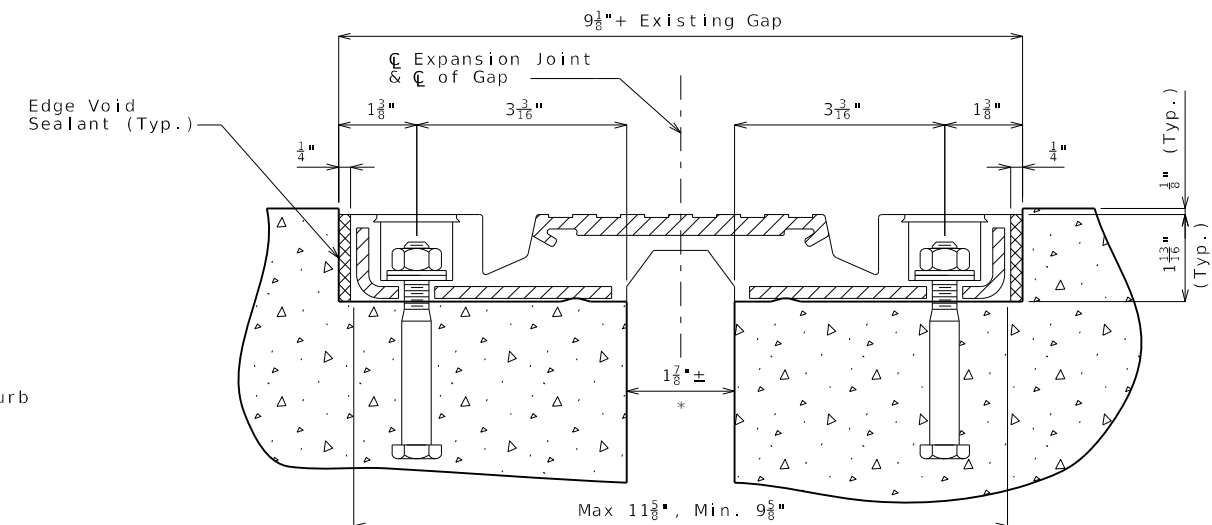
SECTION B - B



SLAB REPLACEMENT DETAIL

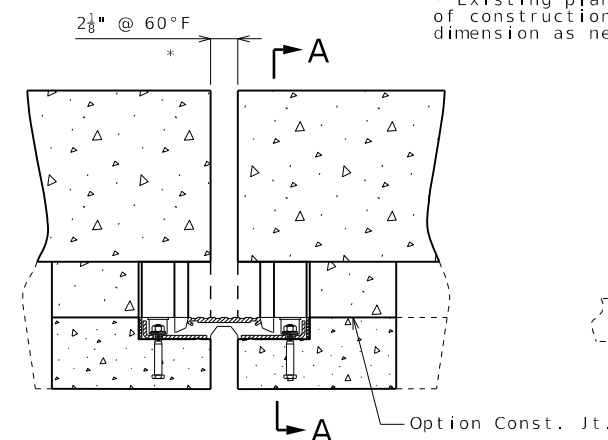


CROWN DETAIL

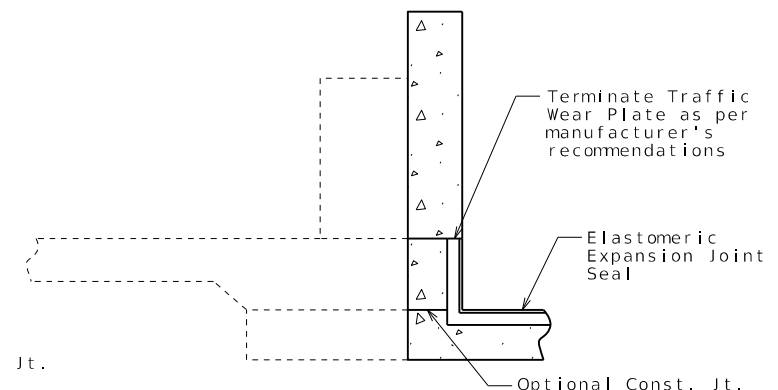


SECTION THRU JOINT

* Existing plans provided 1 7/8" gap at 60°F at time of construction. For replacement joint, adjust gap dimension as needed to match opening in bridge deck.



PART SECTION OF BARRIER



SECTION A-A

Notes:

Remove concrete in accordance with Sec 216.

Removal shall include removal of the existing expansion joint armor and anchorage as detailed and shall be completely covered by the unit price for Removal of Existing Expansion Joint & Adjacent Concrete.

Concrete removal to provide 1" minimum clearance beneath exposed reinforcing to remain.

Existing reinforcing may be replaced with like and in kind in accordance with Sec 216.

Any damage to the existing reinforcing epoxy coating shall be repaired according to Sec 710.

Concrete work shall be in accordance with Sec 704.

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

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

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

Replacement expansion joint shall be a WaboFlex Model SR2A as manufactured by Watson Bowman Acme Corp., Amherst, New York. The new joint is to be installed per manufacturer's recommendations.

The expansion device shall be fabricated to match the crown of the roadway,

All anchor bolts, hardened washers, lock washers and nuts shall be galvanized in accordance with AASHTO M232 (ASTM A153).



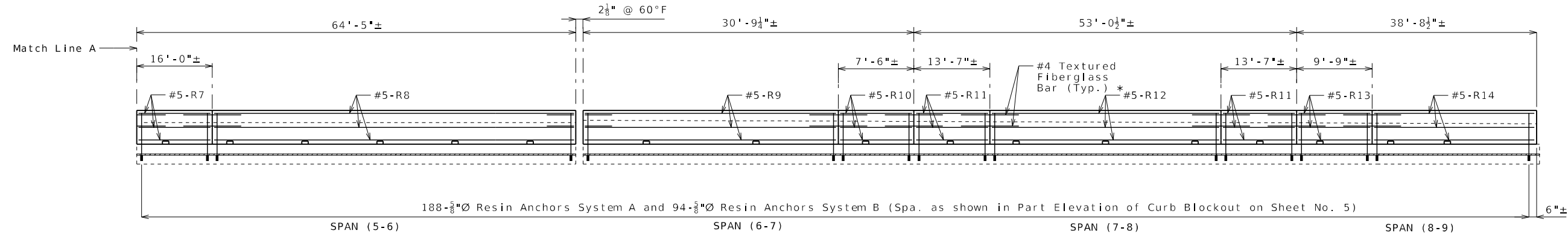
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ROUTE	STATE
BB	MO
DISTRICT	SHEET NO.
BR	3
COUNTY	
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JOB NO.	
JCD0089	
CONTRACT ID.	
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BRIDGE NO.	
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 105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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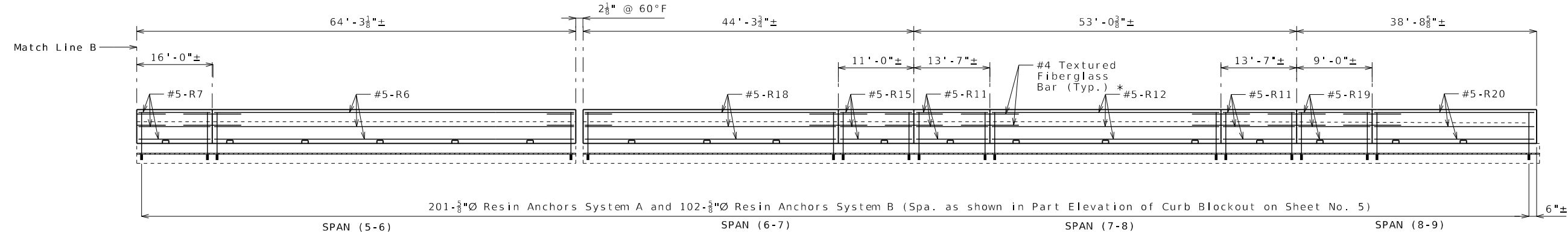
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ELEVATION OF LEFT CURB BLOCKOUT

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



ELEVATION OF RIGHT CURB BLOCKOUT

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

CURB BLOCKOUT

For Curb Blockout notes and anchor system details, see Sheet No. 5.

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

Sheet No. 4 of 7

Detailed Aug. 2025
Checked Aug. 2025



DATE PREPARED
10/21/2025

ROUTE BB	STATE MO
DISTRICT BR	SHEET NO. 4

COUNTY
PHELPS

JOB NO.
JCD0089

CONTRACT ID.

BRIDGE NO.

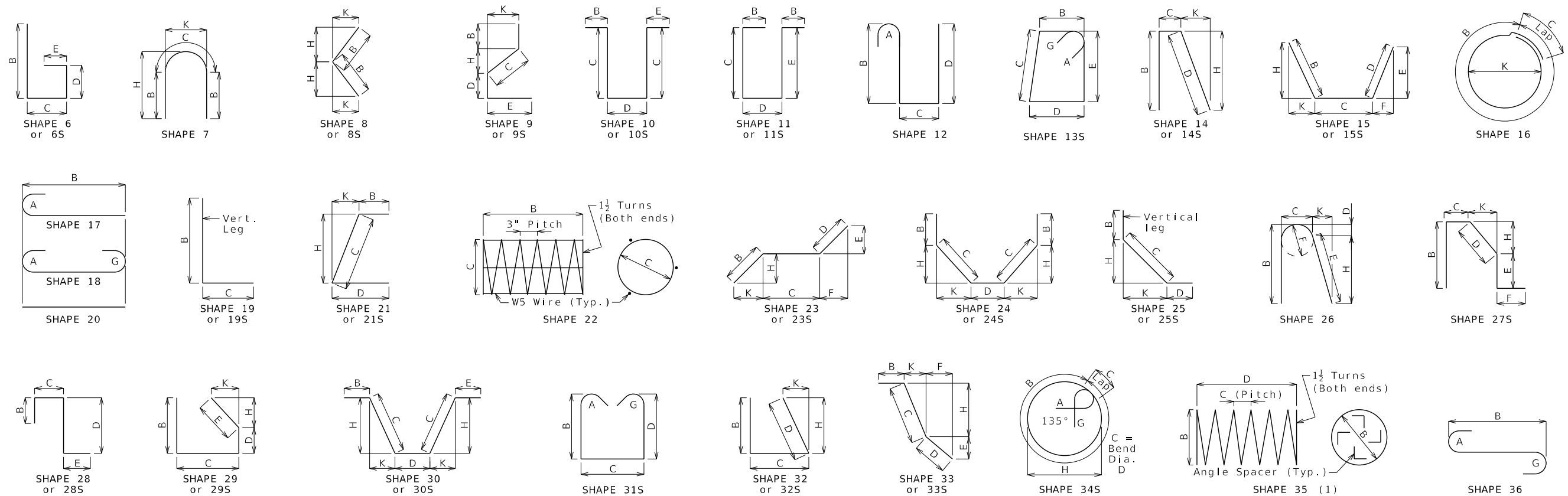
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Finished Bend Dimensions D and Hook Dimensions

Standard Pin Bend Shapes

Size	Case	D	A or G		
			90°	180°	J
#4	1	3"	8"	6"	4"
#5	1	3 $\frac{3}{4}$ "	10"	7"	5"
#6	1	4 $\frac{1}{4}$ "	12"	8 $\frac{1}{2}$ "	6"
#7	2	5 $\frac{1}{4}$ "	14"	9 $\frac{3}{4}$ "	7"
	3	7"	15"	11 $\frac{1}{2}$ "	8 $\frac{3}{4}$ "
#8	2	6"	16"	11"	8"
	3	8"	17"	13 $\frac{1}{4}$ "	10"
#9	1	9 $\frac{1}{2}$ "	19 $\frac{1}{2}$ "	15 $\frac{1}{2}$ "	11 $\frac{3}{4}$ "
#10	1	10 $\frac{3}{4}$ "	22"	17 $\frac{1}{2}$ "	13 $\frac{1}{4}$ "
#11	1	12"	24 $\frac{1}{2}$ "	19 $\frac{1}{2}$ "	14 $\frac{7}{8}$ "
#14	1	18 $\frac{1}{4}$ "	31 $\frac{1}{4}$ "	27 $\frac{1}{2}$ "	21 $\frac{5}{8}$ "
#18	1	24"	41 $\frac{1}{2}$ "	36 $\frac{1}{4}$ "	28 $\frac{1}{2}$ "

This diagram illustrates a 90-degree pin bend. The horizontal leg has a length labeled "Detailing Dimension". The vertical leg has a height labeled "12d". The bend radius is labeled "D". The distance from the end of the horizontal leg to the start of the bend is labeled "A or G". The angle is indicated as 90°.

This diagram illustrates a 180-degree pin bend. The horizontal leg has a length labeled "Detailing Dimension". The U-shaped bend has a width at its base labeled "4d or 2 $\frac{1}{2}$ " Min.". The distance from the end of the horizontal leg to the start of the bend is labeled "A or G". The angle is indicated as 180°.

Stirrup Pin Bend Shapes (S)

Size	Case	D	A or G			H	J
			90°	135°	180°	135°	180°
#4	2	2"	4 $\frac{1}{2}$ "	4 $\frac{1}{2}$ "	5"	2 $\frac{7}{8}$ "	3"
	3	3"	5"	5 $\frac{1}{4}$ "	6"	3"	4"
#5	2	2 $\frac{1}{2}$ "	5 $\frac{3}{4}$ "	5 $\frac{3}{4}$ "	5 $\frac{3}{4}$ "	3 $\frac{3}{8}$ "	3 $\frac{3}{4}$ "
	3	3 $\frac{3}{4}$ "	6 $\frac{1}{4}$ "	6 $\frac{1}{4}$ "	7"	3 $\frac{7}{8}$ "	5"
#6	1	4 $\frac{1}{2}$ "	12"	7 $\frac{3}{4}$ "	8 $\frac{1}{4}$ "	4 $\frac{5}{8}$ "	6"

6d for #4 & #5,
12d for #6

This section contains three diagrams for stirrup pin bends.

1. A 90-degree bend with a vertical leg of height "H", a horizontal leg of length "A or G", and a hook of length "J". The bend radius is "D".

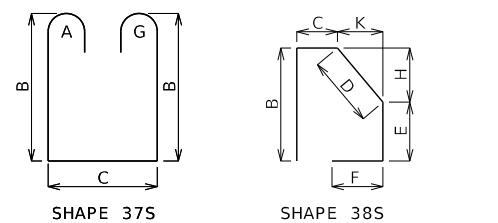
2. A 135-degree bend with a vertical leg of height "H", a horizontal leg of length "A or G", and a hook of length "J". The bend radius is "D".

3. An 180-degree bend with a horizontal leg of length "A or G", a U-shaped bend with width "4d or 2 $\frac{1}{2}$ " Min., and a hook of length "J". The bend radius is "D".
 All diagrams show a detailing dimension across the top horizontal leg.

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.

This diagram shows another view of a 180-degree pin bend. It highlights the "Detailing Dimension" across the top horizontal leg, the "Hook" length "J", and the minimum width at the bottom of the bend, labeled "4d or 2 $\frac{1}{2}$ " Min.". The angle is 180°.



BENDING DIAGRAMS

		Reinforcing Steel Totals (Pounds)			
		Size	Superstructure		Entire Bridge
			Slab	Barrier	
By Size	4	180	0	180	
	5	582	2,535	3,117	
By Type		762	2,535	3,297	

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

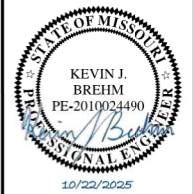
All dimensions are out to out.

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.



DATE PREPARED	
10/21/2025	
ROUTE	STATE
BB	MO
DISTRICT	SHEET NO.
BR	6
COUNTY	
PHELPS	
JOB NO.	
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CONTRACT ID.	
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