MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

PLANS FOR PROPOSED STATE HIGHWAY

PULASKI COUNTY

DESIGN DESIGNATION

A.A.D.T. - 2021 = 5321
A.A.D.T. - 2041 = 8514
T = 4%
V = 45 M.P.H.

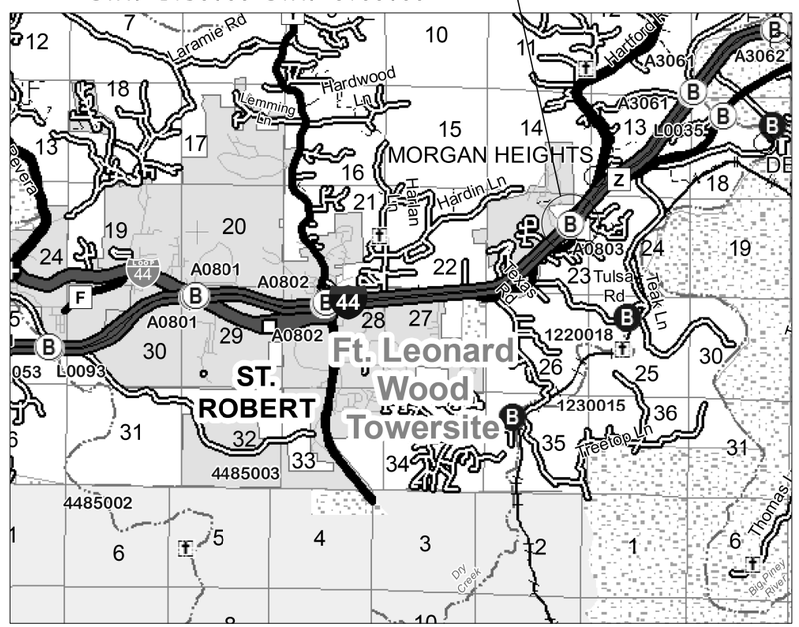
FUNCTIONAL CLASSIFICATION-URBAN MINOR ARTERIAL

NO NEW R/W OR EASEMENTS TO BE ACQUIRED

KEY MAP
LOCATION OF PULASKI COUNTY

NOT TO SCALE

PROJECT LIMITS BR A08034
BRIDGE REHABILITATION,
PAVING, STRIPING, GUARDRAIL
ROUTE 28
STA. 1+50.00-STA. 6+00.00



CONVENTIONAL SYMBOLS
(USED IN PLANS)

	EXISTING	NEW
BUILDINGS AND STRUCTURES		
GUARD RAIL		
GUARD CABLE		
CONCRETE RIGHT-OF-WAY MARKER		
STEEL RIGHT-OF-WAY MARKER		
LOCATION SURVEY MARKER		
UTILITIES		
FIBER OPTICS	—FO—	—FO—
OVERHEAD CABLE TV	—OTV—	—OTV—
UNDERGROUND CABLE TV	—UTV—	—UTV—
OVERHEAD TELEPHONE	—OT—	—OT—
UNDERGROUND TELEPHONE	—UT—	—UT—
OVERHEAD POWER	—OE—	—OE—
UNDERGROUND POWER	—UE—	—UE—
SANITARY SEWER	—S—	—S—
STORM SEWER	—SS—	—SS—
GAS	—G—	—G—
WATER	—W—	—W—
MANHOLE	SAN	
FIRE HYDRANT	HYD	
WATER VALVE	WV	
WATER METER	WM	
DROP INLET	D	
DITCH BLOCK		
GROUND MOUNTED SIGN	SIGN	
LIGHT POLE		
H-FRAME POWER POLE		
TELEPHONE PEDESTAL	PED	
FENCE		
CHAIN LINK	—V—	
WOVEN WIRE	—X—	
GATE POST		
BENCHMARK	BM	

NOTE: DASHED OR OPEN SYMBOLS INDICATE EXISTING FEATURES

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

INDEX OF SHEETS

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A08034	1-4

LENGTH OF PROJECT

BEGINNING OF PROJECT	STA. 1 + 50.00	
END OF PROJECT	STA. 6 + 00.00	
APPARENT LENGTH	450.00	FEET
EQUATIONS AND EXCEPTIONS:		
TOTAL CORRECTIONS	0.00	FEET
NET LENGTH OF PROJECT	450.00	FEET
STATE LENGTH	0.0852	MILES
FOR INFORMATION ONLY ESTIMATED DISTURBED ACRES	0	ACRES

STATE OF MISSOURI
SCOTT MICHAEL MCDONALD
NUMBER PE-2018000240
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 11/01/2024

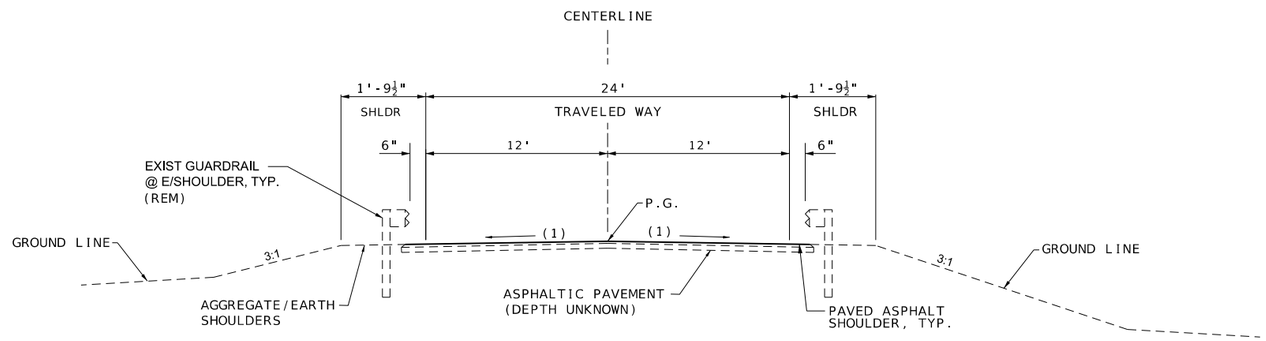
ROUTE	STATE
28	MO
DISTRICT	SHEET NO.
CD	1

COUNTY PULASKI
JOB NO. J5S3480B
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)

VEENSTRA & KIMM INC.
9788 N Ash Avenue Kansas City, Missouri 64157
816-781-6182 816-781-0643 (FAX)
Certificate of Authority No. 2002006347



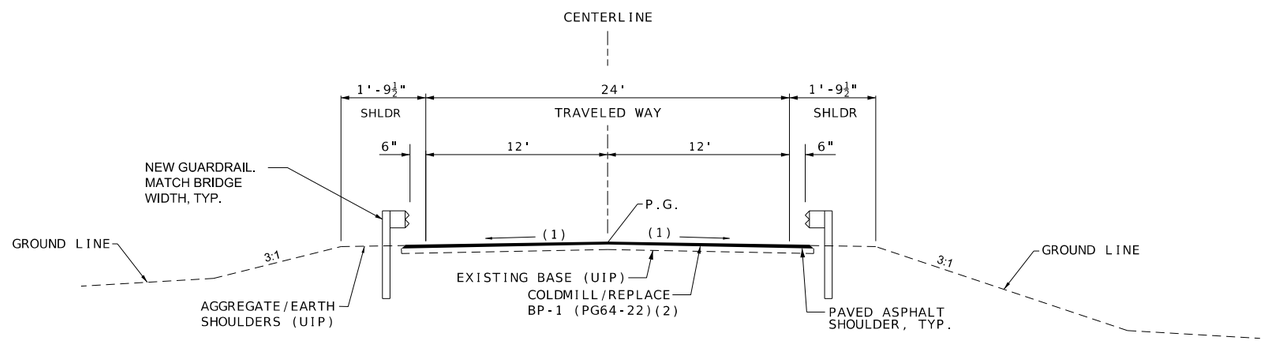
EXISTING SECTION ON TANGENT

TYPICAL SECTION RTE. 28

STA. 2+01.15 TO 5+73.47 (EXCLUDING BRIDGE)

CROSS SLOPE

(1) 2.0% ASSUMED



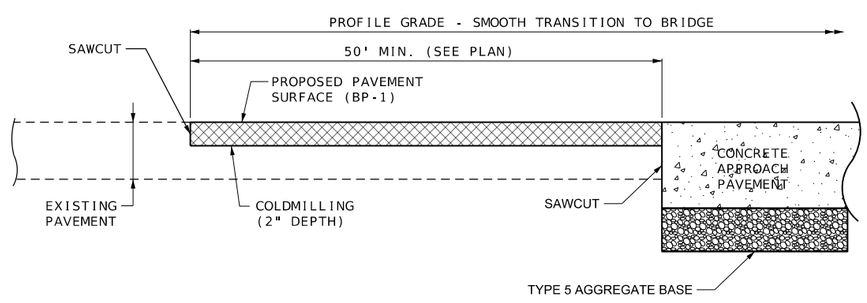
PROPOSED SECTION ON TANGENT

TYPICAL SECTION RTE. 28

STA. 2+01.15TO 5+73.47 (EXCLUDING BRIDGE)

CROSS SLOPE

(1) TRANSITION AS REQUIRED TO BRIDGE
(2) SEE DETAIL BELOW



COLDMILLING DETAIL

ESTIMATE FACTOR

BITUMINOUS PAVEMENT MIXTURE PG 64-22 (BP-1) = 1.948 TON/CY
TACK COAT = 0.10 GAL/SY

TYPICAL SECTIONS
SHEET 1 OF 1

STATE OF MISSOURI
SCOTT MICHAEL MCDONALD
NUMBER
PE-2018000240
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED	
11/01/2024	
ROUTE 28	STATE MO
DISTRICT CD	SHEET NO. 2
COUNTY PULASKI	
JOB NO. J5S3480B	
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)

VEENSTRA & KIMM INC.
9788 N Ash Avenue Kansas City, Missouri 64157
816-781-6182 816-781-0643 (FAX)
Certificate of Authority No. 2002006347

PAVEMENT MARKING - WATERBORNE PAVEMENT MARKING PAINT (TYPE P BEADS)

STATION	LOCATION	LOCATION	4" YELLOW (LF)	4" WHITE (LF)	REMARKS
1+01.15 TO 5+73.47	RTE 28	LT		373.0	SOLID EDGE LINE
1+01.15 TO 5+73.47	RTE 28	℄ ROAD	746.0		DOUBLE SOLID CENTERLINE
1+01.15 TO 5+73.47	RTE 28	RT		373.0	SOLID EDGE LINE
		TOTAL	746.0	746.0	
		USE	746	746	

BITUMINOUS PAVEMENT MIXTURE PG 64-22 (BP-1)

STATION	LOCATION	AREA (SF)	PMBP (TON)	TACK COAT (GAL)	REMARKS
2+01.15 TO 2+51.15	RTE 28	1254.0	15.1	13.9	BP-1 = 1.948 TONS/CY
5+23.47 TO 5+73.47	RTE 28	1254.0	15.1	13.9	TACK = 0.10 GAL/SY
TOTAL			30.2	27.8	
USE			30.2	28	

COLDMILLING BITUMINOUS PAVEMENT FOR REMOVAL OF SURFACING (3 IN. OR LESS)

STATION	LOCATION	SIDE	QUANTITY (SY)	REMARKS
2+01.15 TO 2+51.15	RTE 28	LT & RT	139.5	50' APPROACH PAVEMENT
5+23.47 TO 5+73.47	RTE 28	LT & RT	139.5	50' APPROACH PAVEMENT
TOTAL			279.0	
USE			279	

MGS GUARDRAIL

STATION	LOCATION	SIDE	QUANTITY (LF)	REMARKS
2+00±	RTE 28	LT	112.5	9 SECTIONS @ 12.5'
2+00±	RTE 28	RT	112.5	9 SECTIONS @ 12.5'
5+75±	RTE 28	LT	112.5	9 SECTIONS @ 12.5'
5+75±	RTE 28	RT	112.5	9 SECTIONS @ 12.5'
TOTAL			450.0	
USE			450	

REMOVAL OF IMPROVEMENTS

STATION	LOCATION	SIDE	QUANTITY (LUMP SUM)	REMARKS
2+13 TO 2+86	RTE 28	RT	-	REMOVE EXISTING GUARDRAIL - 70'
4+89 TO 5+86	RTE 28	RT	-	REMOVE EXISTING GURADRAIL - 172'
1+82 TO 2+86	RTE 28	LT	-	REMOVE EXISTING GUARDRAIL - 194'
4+88 TO 5+86	RTE 28	LT	-	REMOVE EXISTING GUARDRAIL - 59'
2+66 TO 2+86	RTE 28	LT & RT	-	REMOVE EXISTING BRIDGE APPROACH SLAB - 56 S.Y.
4+88 TO 5+08	RTE 28	LT & RT	-	REMOVE EXISTING BRIDGE APPROACH SLAB - 56 S.Y.
TOTAL			1	

MGS BRIDGE APROACH TRANSITION SECTION (REGULAR/NO CURB)

STATION	LOCATION	SIDE	QUANTITY (EACH)	REMARKS
2+00±	RTE 28	LT	1	LENGTH = 37.5'
2+00±	RTE 28	RT	1	LENGTH = 37.5'
5+75±	RTE 28	LT	1	LENGTH = 37.5'
5+75±	RTE 28	RT	1	LENGTH = 37.5'
TOTAL			4	

CONCRETE APPROACH PAVEMENT

STATION	LOCATION	SIDE	QUANTITY (SY)	REMARKS
2+51 TO 2+66	RTE 28	LT & RT	41.8	
5+08 TO 5+23	RTE 28	LT & RT	41.8	
TOTAL			83.6	
USE			83.6	

TYPE A CRASHWORTHY END TERMINAL (MASH)

STATION	LOCATION	SIDE	QUANTITY (EACH)	REMARKS
2+00±	RTE 28	LT	1	LENGTH EQUAL 50.8'
5+75±	RTE 28	RT	1	LENGTH EQUAL 50.8'
TOTAL			2	

SHAPING SLOPES-CLASS III

STATION	LOCATION	SIDE	QUANTITY (100LF)	REMARKS
2+13 TO 2+86	RTE 28	RT	1.6	
4+89 TO 5+86	RTE 28	RT	2.0	
1+82 TO 2+86	RTE 28	LT	2.0	
4+88 TO 5+86	RTE 28	LT	1.6	
TOTAL			7.2	
USE			8.0	

MGS END ANCHOR

STATION	LOCATION	SIDE	QUANTITY (EACH)	REMARKS
2+00±	RTE 28	RT	1	
5+75±	RTE 28	LT	1	
TOTAL			2	

MOBILIZATION

LUMP SUM	1

SUMMARY OF QUANTITIES
SHEET 1 OF 2

STATE OF MISSOURI
SCOTT MICHAEL MCDONALD
NUMBER PE-2018000240
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 11/01/2024

ROUTE	STATE
28	MO
DISTRICT	SHEET NO.
CD	3

COUNTY PULASKI

JOB NO. J5S3480B

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)

VEENSTRA & KIMM INC.
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SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL AREA SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NUM.	DESCRIPTION
WARNING SIGNS								
WO1-1L	48X48	16.00						TURN (SYMBOL LEFT)
WO1-1R	48X48	16.00						TURN (SYMBOL RIGHT)
WO1-2L	48X48	16.00						CURVE (SYMBOL LEFT)
WO1-2R	48X48	16.00						CURVE (SYMBOL RIGHT)
WO1-3L	48X48	16.00						REVERSE TURN (SYMBOL LEFT)
WO1-3R	48X48	16.00						REVERSE TURN (SYMBOL RIGHT)
WO1-4L	48X48	16.00						REVERSE CURVE (SYMBOL LEFT)
WO1-4R	48X48	16.00						REVERSE CURVE (SYMBOL RIGHT)
WO1-4bL	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL LEFT)
WO1-4bR	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL RIGHT)
WO1-4cL	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL LEFT)
WO1-4cR	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL RIGHT)
WO1-6	60X30	12.50						HORIZONTAL ARROW (SYMBOL)
WO1-6a	72X36	18.00						HORIZ. ARROW (SYMBOL ON PERMANENT BARRICADE)
WO1-7	60X30	12.50						DOUBLE HEAD HORIZONTAL ARROW (SYMBOL)
WO1-7a	72X36	18.00						DOUBLE HEAD HORIZ. ARROW (SYMBOL ON PERM. BARR.)
WO1-8	18X24	3.00						CHEVRON (SYMBOL)
WO1-8a	30X36	7.50						CHEVRON (SYMBOL FOR DIVIDED HIGHWAYS)
WO3-1	48X48	16.00						STOP AHEAD (SYMBOL)
WO3-2	48X48	16.00						YIELD AHEAD (SYMBOL)
WO3-3	48X48	16.00						SIGNAL AHEAD (SYMBOL)
WO3-4	48X48	16.00						BE PREPARED TO STOP
WO3-5	48X48	16.00						SPEED LIMIT AHEAD
WO4-1L	48X48	16.00						MERGE (SYMBOL FROM LEFT)
WO4-1R	48X48	16.00						MERGE (SYMBOL FROM RIGHT)
WO4-1aL	48X48	16.00	2	32.00			6A	MERGE (LEFT)
WO4-1aR	48X48	16.00	2	32.00			6B	MERGE (RIGHT)
WO5-1	48X48	16.00						ROAD/BRIDGE/RAMP NARROWS
WO5-3	48X48	16.00						ONE LANE BRIDGE
WO5-5	48X48	16.00						NARROW LANES
WO6-1	48X48	16.00						DIVIDED HIGHWAY (SYMBOL)
WO6-2	48X48	16.00						DIVIDED HIGHWAY END (SYMBOL)
WO6-3	48X48	16.00						TWO WAY TRAFFIC (SYMBOL)
WO7-3a	30X24	5.00						NEXT XX MILES (PLAQUE)
WO8-1	48X48	16.00						BUMP
WO8-2	48X48	16.00						DIP
WO8-3	48X48	16.00						PAVEMENT ENDS
WO8-4	48X48	16.00						SOFT SHOULDER
WO8-5	48X48	16.00						SLIPPERY WHEN WET (SYMBOL)
WO8-6	48X48	16.00						TRUCK CROSSING
WO8-6c	48X48	16.00						TRUCK ENTRANCE
WO8-7	36X36	9.00						LOOSE GRAVEL
WO8-7a	36X36	9.00						FRESH OIL / LOOSE GRAVEL
WO8-9	48X48	16.00						LOW SHOULDER
WO8-11	48X48	16.00						UNEVEN LANES
WO8-12	48X48	16.00						NO CENTER LINE
WO8-15	48X48	16.00						GROOVED PAVEMENT
WO8-15P	30X24	5.00						MOTORCYCLE (PLAQUE)
WO8-17L	48X48	16.00						SHOULDER DROP-OFF (SYMBOL LEFT)
WO8-17R	48X48	16.00						SHOULDER DROP-OFF (SYMBOL RIGHT)
WO8-17P	30X24	5.00						SHOULDER DROP-OFF (PLAQUE)
W10-1	42RND.	9.62						RAILROAD CROSSING
WO12-1	24X24	4.00						DOUBLE DOWN ARROW (SYMBOL)
WO12-2	48X48	16.00						LOW CLEARANCE (SYMBOL)
WO12-2x	24X18	3.00						LOW CLEARANCE (PLAQUE)
WO12-2a	84X24	14.00						OVERHEAD LOW CLEARANCE (FEET AND INCHES)
WO12-4	120X60	50.00						LOW CLEARANCE XX FT XX IN XX MILES AHEAD
WO12-5	120X60	50.00						WIDTH RESTRICTION XX FT XX IN XX MILES AHEAD
WO13-1	30X30	6.25						ADVISORY SPEED (PLAQUE)
WO16-2	30X24	5.00						XXX FEET (PLAQUE)
WO16-3	30X24	5.00						X MILE (PLAQUE)
WO20-1	48X48	16.00	10	160.00			2	ROAD/BRIDGE/RAMP WORK AHEAD
WO20-2	48X48	16.00	4	64.00			18	DETOUR AHEAD
WO20-3	48X48	16.00						ROAD CLOSED AHEAD
WO20-4	48X48	16.00	2	32.00			7	ONE LANE ROAD AHEAD
WO20-5	48X48	16.00	4	64.00			5R	RIGHT/CENTER/LEFT LANE CLOSED AHEAD
WO20-5a	48X48	16.00	4	64.00			5L	2 RIGHT/CENTER/LEFT LANES CLOSED AHEAD
WO20-6a	48X48	16.00	2	32.00			6R	RIGHT/CENTER/LEFT LANE CLOSED
WO20-7a	48X48	16.00	2	32.00			6L	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	2	4.38			62	WET PAINT (ARROW PIVOTS)

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NUM.	DESCRIPTION
GUIDE SIGNS								
E05-1	36X48	12.00						GORE EXIT
E05-2	48X36	12.00						EXIT OPEN
E05-2a	48X36	12.00						EXIT CLOSED
GO20-1	60X24	10.00						ROAD WORK NEXT XX MILES
GO20-2	48X24	8.00						END ROAD WORK
GO20-4	36X18	4.50						PILOT CAR FOLLOW ME
GO20-4a	42X30	8.75						PILOT CAR IN USE WAIT & FOLLOW
GO20-4a	18X12	1.50						PILOT CAR IN USE WAIT & FOLLOW
GO20-5aP	36X24	6.00	4	24.00			54	WORK ZONE (PLAQUE)
MO4-8a	24X18	3.00	2	6.00			52	END DETOUR
MO4-9L	48X36	12.00						DETOUR (LEFT)
MO4-9R	48X36	12.00						DETOUR (RIGHT)
MO4-9P	48X12	4.00						STREET NAME (PLAQUE)
MO4-10L	48X18	6.00						DETOUR ARROW (LEFT)
MO4-10R	48X18	6.00	2	12.00			17R	DETOUR ARROW (RIGHT)
REGULATORY SIGNS								
R1-1	48X48	13.25						STOP
R1-2	48TRI.	6.93						YIELD
R1-2a	36X36	9.00						TO ONCOMING TRAFFIC (PLAQUE)
R1-3P	30X12	2.50						ALL WAY (PLAQUE)
R2-1	36X48	12.00	4	24.00			4	SPEED LIMIT 60
R2-1	36X48	12.00	4	24.00			25	SPEED LIMIT 70 (NORMAL SPEED)
R3-2	48X48	16.00						NO LEFT TURN (SYMBOL)
R3-3	36X36	9.00						NO TURNS
R3-4	48X48	16.00						NO U-TURN (SYMBOL)
R3-7L	30X30	6.25						LEFT LANE MUST TURN LEFT
R3-7R	30X30	6.25						RIGHT LANE MUST TURN RIGHT
R4-1	36X48	12.00						DO NOT PASS
R4-2	36X48	12.00						PASS WITH CARE
R4-7a	36X48	12.00						KEEP RIGHT (HORIZONTAL ARROW)
R4-8a	36X48	12.00						KEEP LEFT (HORIZONTAL ARROW)
R5-1	30X30	6.25						DO NOT ENTER
R5-1a	36X24	6.00						WRONG WAY
R6-1L	54X18	6.75						ONE WAY ARROW (LEFT)
R6-1R	54X18	6.75						ONE WAY ARROW (RIGHT)
R6-2L	24X30	5.00						ONE WAY (LEFT)
R6-2R	24X30	5.00						ONE WAY (RIGHT)
R9-9	24X12	2.00						SIDEWALK CLOSED
R9-11L	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW LEFT) CROSS HERE
R9-11R	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW RIGHT) CROSS HERE
R10-6	24X36	6.00						STOP HERE ON RED (45^ ARROW)
R11-2	48X30	10.00	2	20.00			29	ROAD CLOSED
MISCELLANEOUS SIGNS								
CONST-5	48X36	12.00	2	24.00			68	POINT OF PRESENCE
CONST-5	96X48	32.00						POINT OF PRESENCE
CONST-8	48X36	12.00						WORK ZONE NO PHONE ZONE
SPECIAL	42X6	1.75	2	3.50			68	COMPLETED AS PROMISED
SPECIAL	36X78	19.50	2	39.00			50A	DETOUR BLANK SIGNS
SPECIAL	36X78	19.50	1	19.50			50C	DETOUR BLANK SIGNS
SPECIAL	36X78	19.50	2	39.00			50E	DETOUR BLANK SIGNS
SPECIAL	36X78	19.50	2	39.00			50F	DETOUR BLANK SIGNS
SPECIAL	36X78	19.50	2	39.00			50G	DETOUR BLANK SIGNS
SPECIAL	36X78	19.50	2	39.00			50H	DETOUR BLANK SIGNS
SPECIAL	36X78	19.50	1	19.50			50J	DETOUR BLANK SIGNS
SPECIAL	36X78	19.50	2	39.00			50L	DETOUR BLANK SIGNS
SPECIAL	36X78	19.50	2	39.00			50M	DETOUR BLANK SIGNS
SPECIAL	36X78	19.50	2	39.00			50N	DETOUR BLANK SIGNS
SPECIAL	36X78	19.50	2	39.00			50O	DETOUR BLANK SIGNS
SPECIAL	36X78	19.50	1	19.50			50Q	DETOUR BLANK SIGNS
SPECIAL	36X78	19.50	2	39.00			50S	DETOUR BLANK SIGNS
SPECIAL	36X78	19.50	2	39.00			50T	DETOUR BLANK SIGNS
SPECIAL	36X78	19.50	2	39.00			50U	DETOUR BLANK SIGNS
SPECIAL	36X60	15.00	2	39.00			50V	DETOUR BLANK SIGNS
SPECIAL	36X60	15.00	1	15.00			50X	DETOUR BLANK SIGNS
SPECIAL	36X60	15.00	2	30.00			50Z	DETOUR BLANK SIGNS
SPECIAL	36X60	15.00	2	30.00			50AA	DETOUR BLANK SIGNS
SPECIAL	36X60	15.00	2	30.00			50AB	DETOUR BLANK SIGNS
616-10.05 CONSTRUCTION SIGNS				TOTAL 1325				
616-10.10 RELOCATED SIGNS						TOTAL 0		

EFFECTIVE: 07-01-2024

ITEM NUMBER	TOTAL QTY	DESCRIPTION
6122008		IMPACT ATTENUATOR 40 MPH (SAND BARRELS)
6122009		IMPACT ATTENUATOR 45 MPH (SAND BARRELS)
6122010		IMPACT ATTENUATOR 50 MPH (SAND BARRELS)
6122012		IMPACT ATTENUATOR 55 MPH (SAND BARRELS)
6122014		IMPACT ATTENUATOR 60 MPH (SAND BARRELS)
6122017		IMPACT ATTENUATOR 65 MPH (SAND BARRELS)
6122019		IMPACT ATTENUATOR 70 MPH (SAND BARRELS)
6122020		REPLACEMENT SAND BARREL
6122030		IMPACT ATTENUATOR (RELOCATION)
6123001		TRUCK MOUNTED ATTENUATOR (TMA)
6161008		ADVANCED WARNING RAIL SYSTEM
6161012		BUOYS (BOATS KEEP OUT)
6161013		BUOYS (NO WAKE)
6161014		SPECIAL SIGN ASSEMBLY (BOATS KEEP OUT)
6161025	120	CHANNELIZER (TRIM LINE)
6161030	8	TYPE III MOVEABLE BARRICADE
6161033		DIRECTION INDICATOR BARRICADE
6161040	4	FLASHING ARROW PANEL
6161047		TYPE III OBJECT MARKER
6161055	16	SEQUENTIAL FLASHING WARNING LIGHT
6161070		TUBULAR MARKER
6161095		RADAR SPEED ADVISORY SYSTEM
6161096		CHANGEABLE MESSAGE SIGN, COMMISSION FURNISHED/RETAINED
6161098A	2**	CHANGEABLE MESSAGE SIGN WITHOUT COMM. INTERFACE- CONTRACTOR FURNISHED/RETAINED
6161099		CHANGEABLE MESSAGE SIGN WITH COMM. INTERFACE- CONTRACTOR FURNISHED/RETAINED
6162000A		WORK ZONE TRAFFIC SIGNAL SYSTEM
6162002		TEMPORARY LONG-TERM RUMBLE STRIPS
6173600D		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/RETAINED
6173602B		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/COMMISSION RETAINED
6174000A		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION
6175010A		RELOCATING TEMPORARY TRAFFIC BARRIER
6176000B		TEMPORARY TRAFFIC BARRIER COMMISSION FURNISHED/RETAINED
6177000B		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION COMMISSION FURNISHED/RETAINED
6208064A		TEMPORARY RAISED PAVEMENT MARKER
9029400		TEMPORARY TRAFFIC SIGNALS
9029401		TEMPORARY TRAFFIC SIGNALS AND LIGHTING

TEMPORARY TRAFFIC CONTROL	
PAY TOTAL =	1 LUMP SUM

**NOT INCLUDED IN TEMPORARY TRAFFIC CONTROL - 1 LUMP SUM QUANTITY

NOTE:

QUANTITIES FOR TRAFFIC CONTROL WERE ESTIMATED PER THE FOLLOWING CONSTRUCTION SEQUENCE:
1) BRIDGE A08034 CLOSED
2) BELOW BRIDGE A08034, I-44 BOTH INTERIOR LANES CLOSED
3) BELOW BRIDGE A08034, I-44 BOTH EXTERIOR LANES CLOSED

ANY VARIATIONS IN SEQUENCE NOTED MAY RESULT IN ADDITIONS OR CHANGES TO QUANTITIES NOTED. MODIFICATIONS TO SEQUENCE SHALL BE APPROVED BY THE ENGINEER. NO DIRECT PAY FOR ADDITIONS TO THE PAY ITEMS.

ALL TRAFFIC CONTROL ARE INCLUDED IN PAY ITEM 616-99.01, LUMP SUM TEMPORARY TRAFFIC CONTROL UNLESS NOTED OTHERWISE IN THE PLANS. THESE QUANTITIES ARE ONLY AN ESTIMATE & ARE SUBJECT TO CHANGE BASED UPON FIELD CONDITIONS.

STATE OF MISSOURI
SCOTT MICHAEL MCDONALD
NUMBER PE-2018000240
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 11/01/2024

ROUTE	STATE
28	MO
DISTRICT	SHEET NO.
CD	3

COUNTY: PULASKI

JOB NO.: J5S3480B

CONTRACT ID.

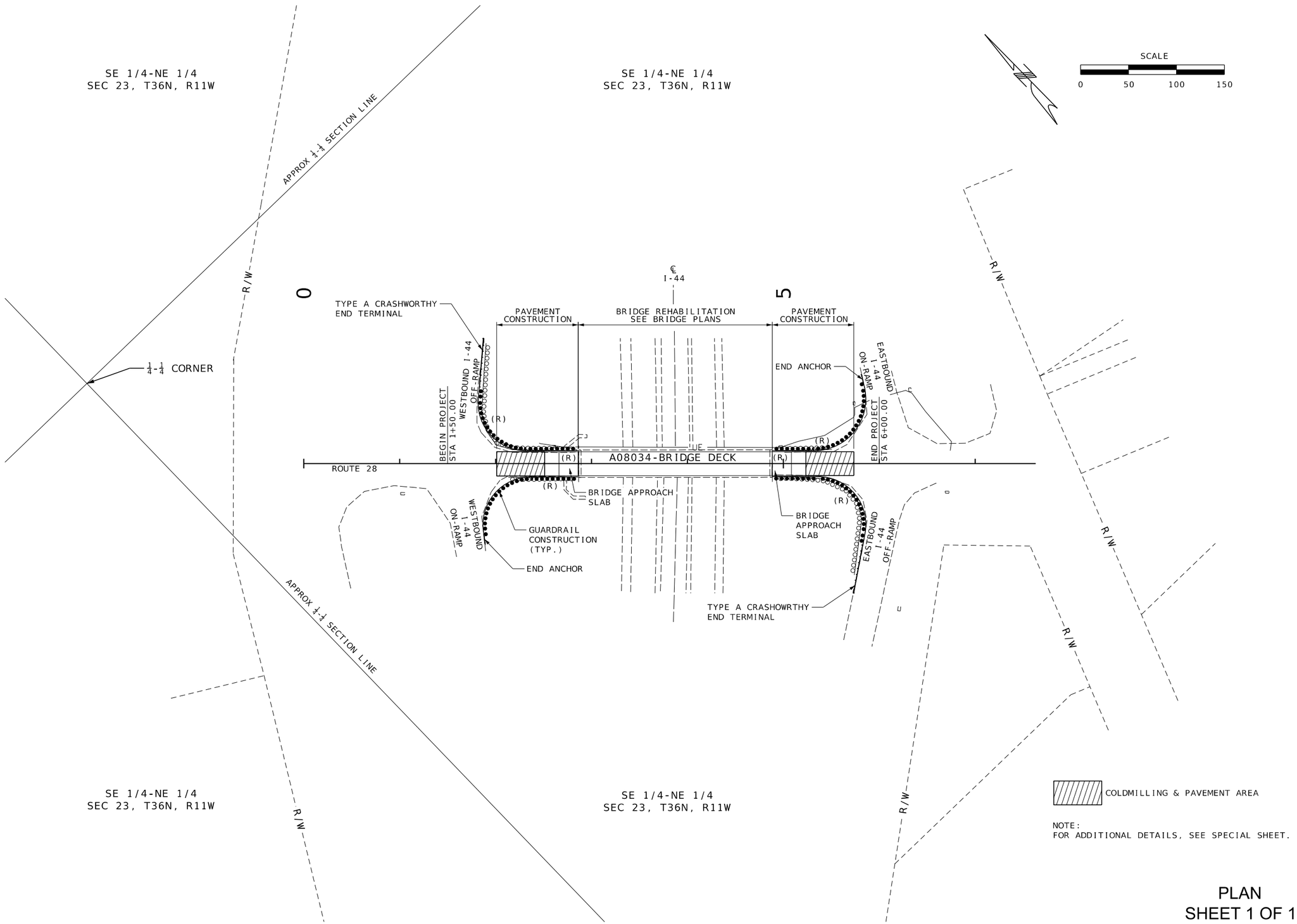
PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

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

VEENSTRA & KIMM INC.
9788 N Ash Avenue
816-781-6182
Kansas City, Missouri 64157
816-781-0643 (FAX)
Certificate of Authority No. 2002006347



NOTE:
FOR ADDITIONAL DETAILS, SEE SPECIAL SHEET.

PLAN
SHEET 1 OF 1

STATE OF MISSOURI
SCOTT MICHAEL MCDONALD
NUMBER PE-2018000240
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED	
11/01/2024	
ROUTE	STATE
28	MO
DISTRICT	SHEET NO.
CD	4
COUNTY	
PULASKI	
JOB NO.	
J5S3480B	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DATE	DESCRIPTION

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

VEENSTRA & KIMM INC.
9788 N Ash Avenue Kansas City, Missouri 64157
816-781-6182 816-781-0643 (FAX)
Certificate of Authority No. 2002006347

SE 1/4-NE 1/4
SEC 23, T36N, R11W

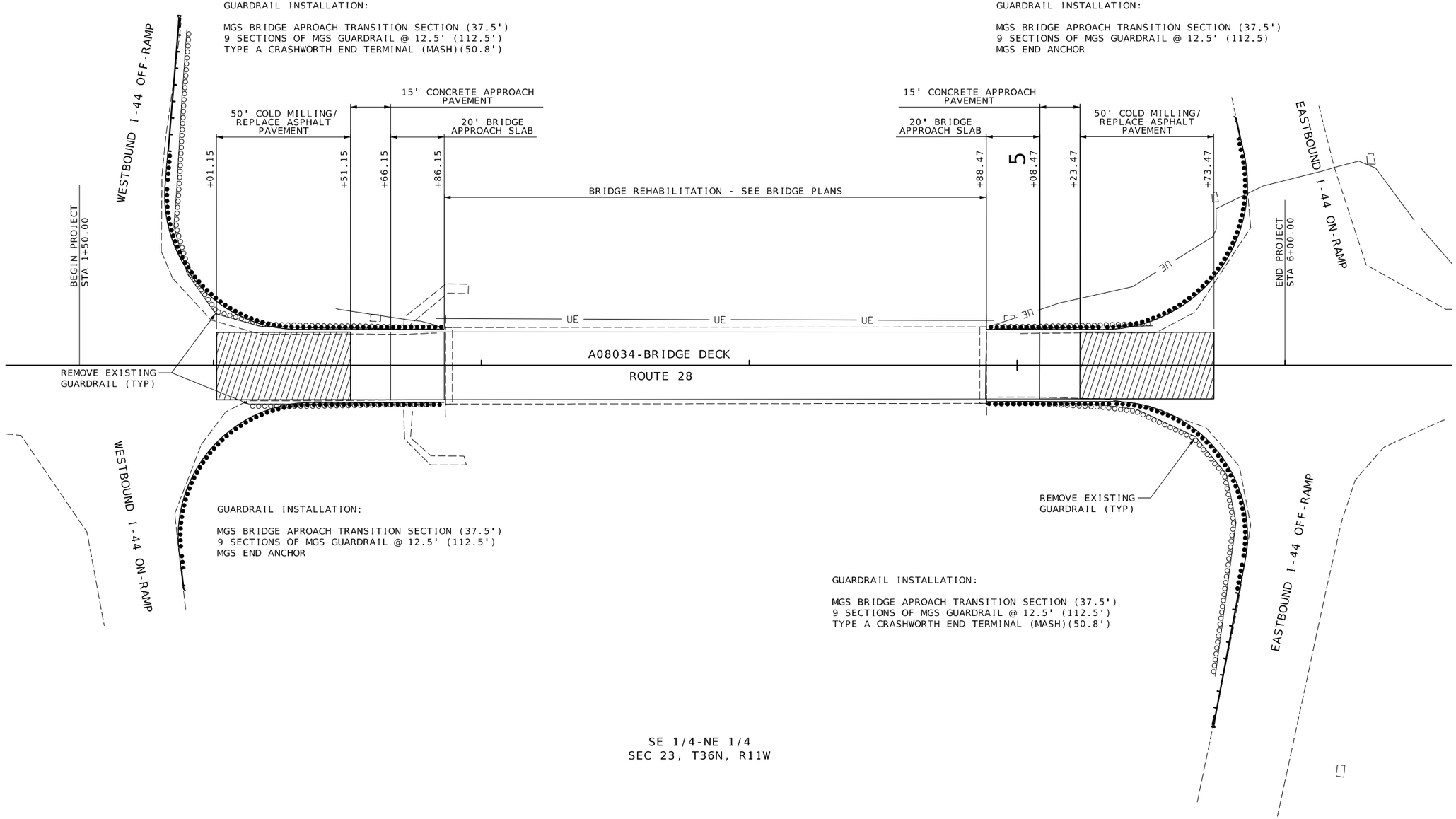
SCALE
0 20 40 60

GUARDRAIL INSTALLATION:

MGS BRIDGE APROACH TRANSITION SECTION (37.5')
9 SECTIONS OF MGS GUARDRAIL @ 12.5' (112.5')
TYPE A CRASHWORTH END TERMINAL (MASH)(50.8')

GUARDRAIL INSTALLATION:

MGS BRIDGE APROACH TRANSITION SECTION (37.5')
9 SECTIONS OF MGS GUARDRAIL @ 12.5' (112.5)
MGS END ANCHOR



SE 1/4-NE 1/4
SEC 23, T36N, R11W

SPECIAL SHEET
SHEET 1 OF 1

STATE OF MISSOURI
SCOTT MICHAEL MCDONALD
NUMBER
PE-2018000240
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED	
11/01/2024	
ROUTE	STATE
28	MO
DISTRICT	SHEET NO.
CD	5
COUNTY	
PULASKI	
JOB NO.	
J5S3480B	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DATE	DESCRIPTION

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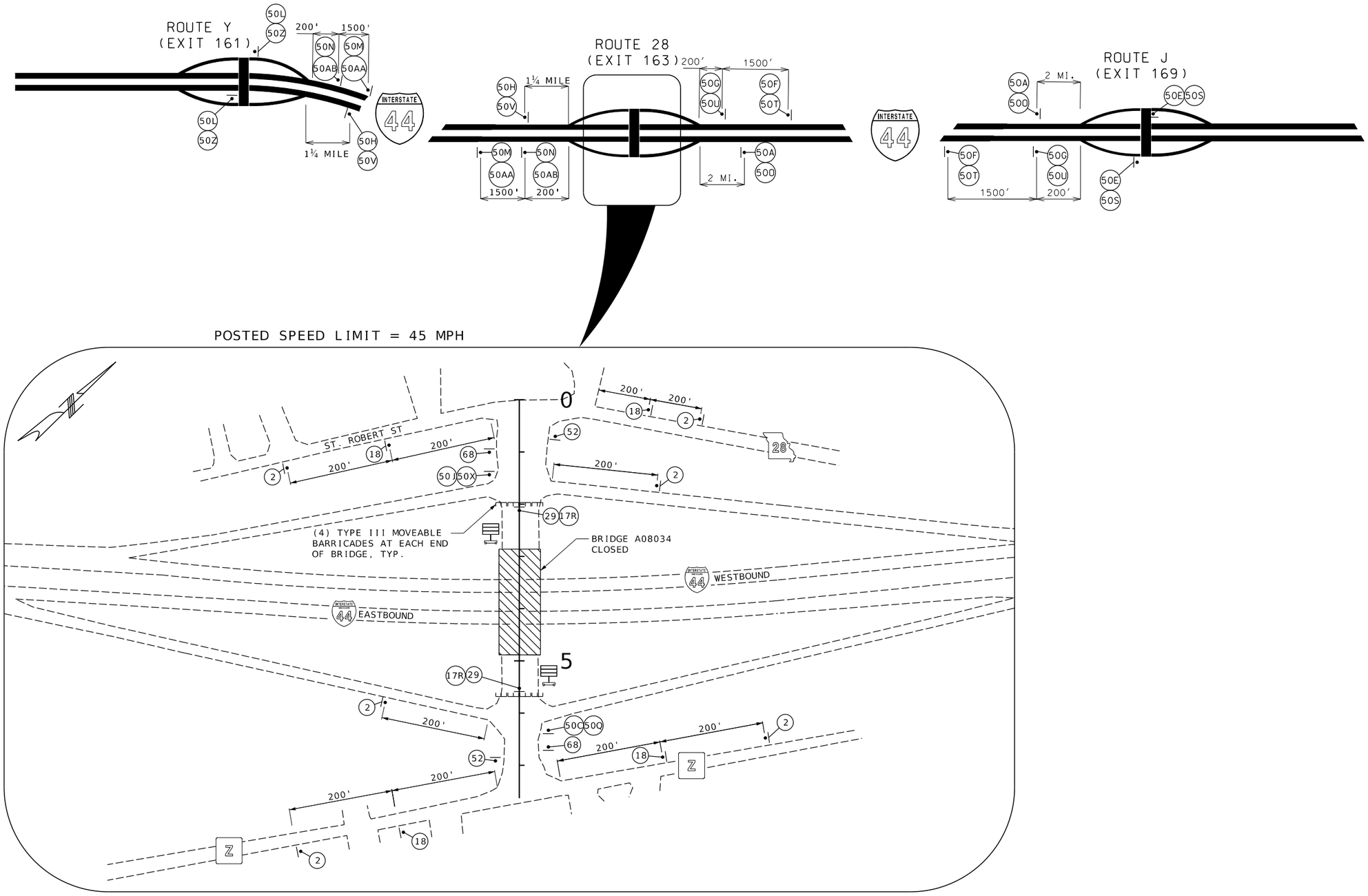

BRIDGE CLOSED

BRIDGE A08034 CLOSED

TRAFFIC CONTROL SHEETS
SHEET 1 OF 5

NOT TO SCALE. FOLLOW DIMENSIONS.

STATE OF MISSOURI
SCOTT MICHAEL MCDONALD
NUMBER PE-2018000240
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED	
11/01/2024	
ROUTE	STATE
28	MO
DISTRICT	SHEET NO.
CD	6

COUNTY: PULASKI

JOB NO.: J5S3480B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DATE	DESCRIPTION

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

VEENSTRA & KIMM INC.
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816-781-6182 816-781-0643 (FAX)
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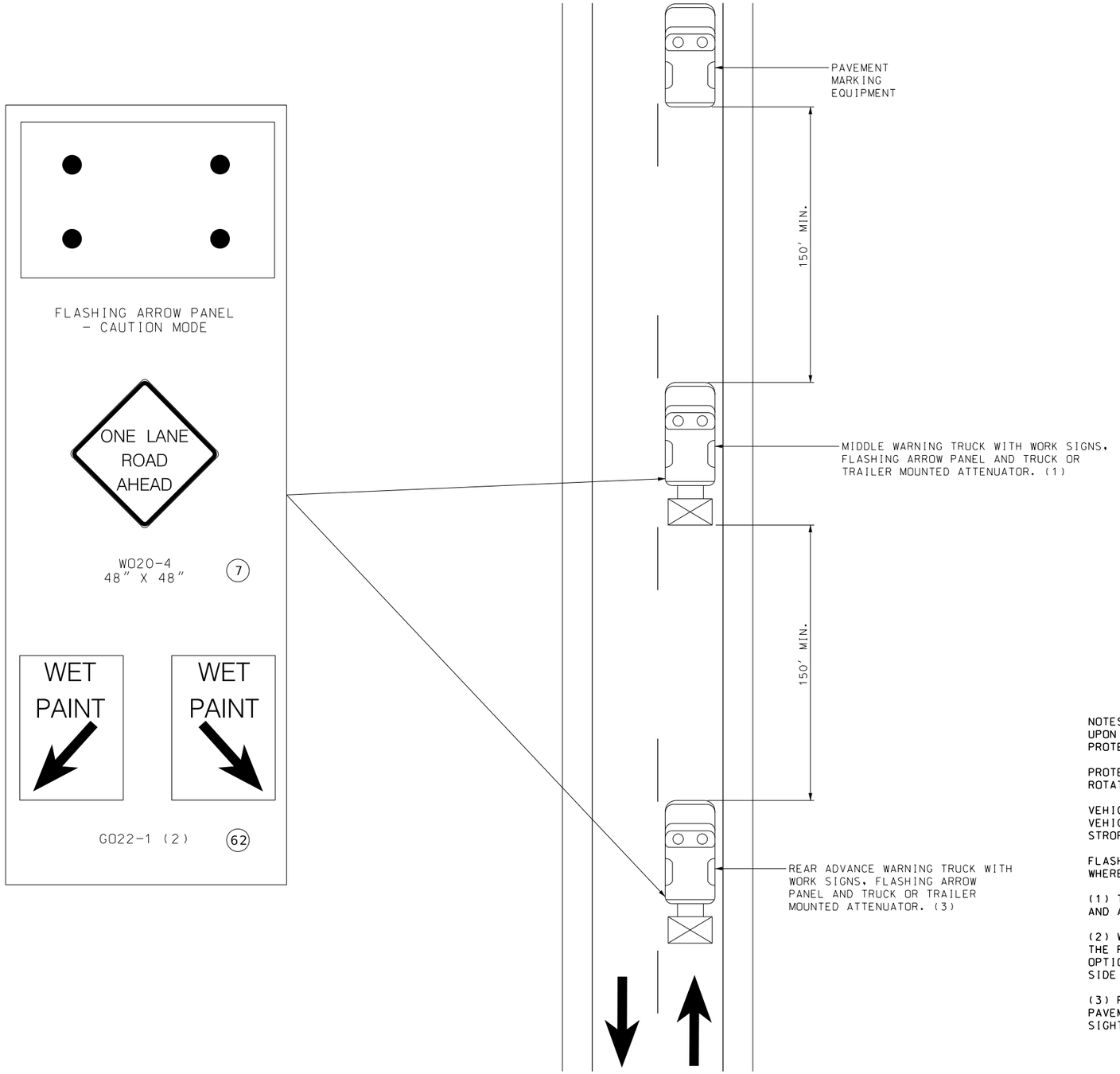

CENTERLINE/EDGELINE STRIPING ON TWO-LANE HIGHWAYS

NOTES:
UPON APPROVAL OF THE ENGINEER, THE CONTRACTOR MAY PROVIDE ADDITIONAL PROTECTIVE TRUCK EQUIPPED WITH PROPER WARNING DEVICES.

PROTECTIVE TRUCK AND WORK VEHICLES SHALL DISPLAY HIGH-INTENSITY ROTATING, FLASHING, OSCILLATING, OR STROBE LIGHTS.

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

FLASHING ARROW PANELS SHALL BE INCIDENTAL TO TRUCK MOUNTED ATTENUATORS, WHEREVER USED. NO ADDITIONAL PAYMENT SHALL BE MADE.

(1) TRUCK IS OPTIONAL ON TWO-LANE UNDIVIDED HIGHWAYS IF SIGNING AND ARROW BOARD IS MOUNTED ON THE PAVEMENT MARKING EQUIPMENT.

(2) WET PAINT SIGNS ARE INSTALLED TO INDICATE THE SIDE IN WHICH THE PAVEMENT MARKING MATERIAL IS BEING APPLIED. AT THE CONTRACTOR'S OPTION, A FRONT FACING WET PAINT SIGN MAY BE INSTALLED ON THE LEFT SIDE OF THE PAVEMENT MARKING EQUIPMENT.

(3) REAR ADVANCE WARNING TRUCK IS POSITIONED AT THE NO TRACK POINT OF THE PAVEMENT MARKING MATERIAL, OR VERTICAL OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE, OR SPACING SHOWN.

TRAFFIC CONTROL SHEETS
SHEET 2 OF 5

STATE OF MISSOURI
SCOTT MICHAEL MCDONALD
NUMBER
PE-2018000240
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED	11/01/2024
ROUTE	28
STATE	MO
DISTRICT	CD
SHEET NO.	7
COUNTY	PULASKI
JOB NO.	J5S3480B
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)

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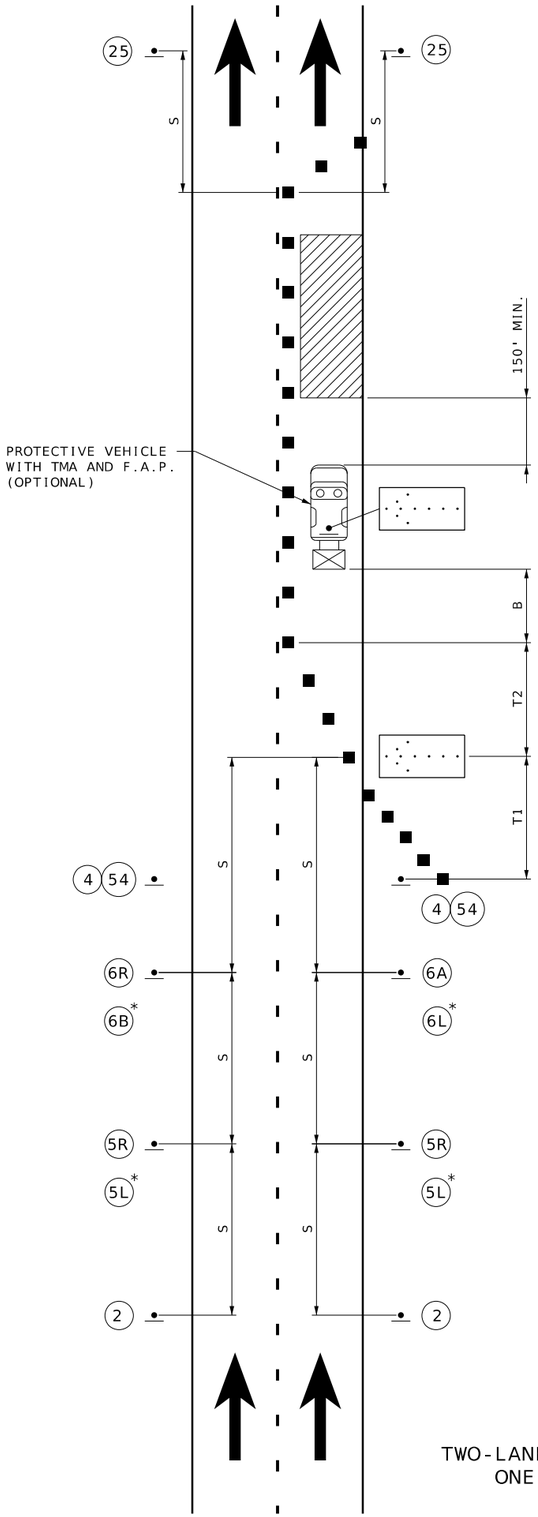
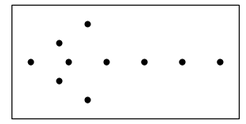
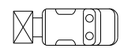




FLASHING ARROW PANNEL
(F.A.P)

CHANNELIZERS



PROTECTIVE VEHICLE WITH
TRAILER MOUNTED ATTENUATOR (TMA)
AND FLASHING ARROW PANNEL (F.A.P.)
(OPTIONAL)

STATIONARY LANE CLOSURE ON A MULTI-LANE HIGHWAY						
SPEED	SIGN SPACING (FT.)	TAPER LENGTH (FT.)		RECOMMENDED	CHANNELIZER SPACING (FT.)	
PERMANENT POSTED (MPH)	UNDIVIDED (S)	SHOULDER (1) (T1)	LANE (2) (T2)	BUFFER LENGTH (FT.) (B)	TAPERS	BUFFER/ WORK AREAS
0-35	200	70	245	250	35	40
40-45	350	150	540	360	40	80
50-55	500	185	660	495	50	80
60-70	1000	235	840	730	60	120
1. SHOULDER TAPER LENGTH BASED ON 10 FT. (STANDARD SHOULDER WIDTH) OFFSET.						
2. LANE TAPER LENGTH BASED ON 12 FT. (STANDARD LANE WIDTH) OFFSET.						

NOTES:

ALL WORK REQUIRING LANE CLOSURES ON I-44 TO BE PERFORMED AT NIGHT.

FOR CLOSURE OF I-44 BELOW EACH BRIDGE, BOTH EXTERIOR LANES SHALL BE CLOSED AT THE SAME TIME AND THEN SWITCHED OVER SO BOTH INTERIOR LANES ARE CLOSED AT THE SAME TIME.

ALL DISTANCES AND SPACING OF TRAFFIC CONTROL DEVICES ARE APPROXIMATE AND MAY BE REVISED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

* RIGHT LANE CLOSURE SHOWN,
LEFT LANE OPPOSITE HAND.
SWITCH SIGNS AS NOTED.

TWO-LANE DIVIDED HIGHWAY
ONE LANE CLOSURE

TYPICAL I-44 CLOSURE FOR
WORK UNDER BRIDGE

TRAFFIC CONTROL SHEETS
SHEET 3 OF 5

STATE OF MISSOURI
SCOTT MICHAEL MCDONALD
NUMBER PE-2018000240
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED
11/01/2024

ROUTE	STATE
28	MO
DISTRICT	SHEET NO.
CD	8

COUNTY
PULASKI

JOB NO.
J5S3480B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DATE	DESCRIPTION

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

VEENSTRA & KIMM INC.
9788 N Ash Avenue Kansas City, Missouri 64157
816-781-6182 816-781-0643 (FAX)
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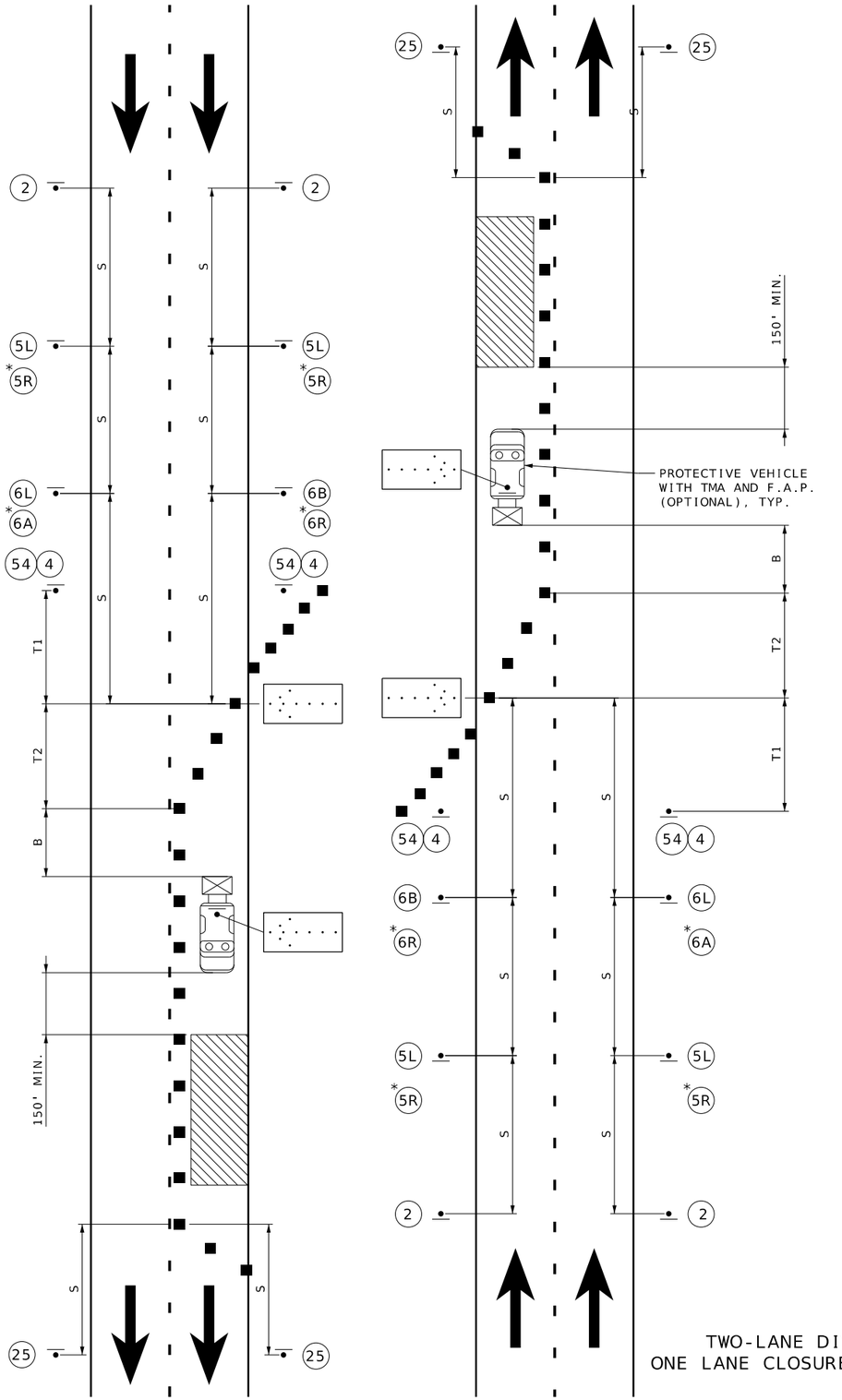

CHANNELIZERS

FLASHING ARROW PANNEL (F.A.P)

PROTECTIVE VEHICLE WITH TRAILER MOUNTED ATTENUATOR (TMA) AND FLASHING ARROW PANNEL (F.A.P.) (OPTIONAL)

STATIONARY LANE CLOSURE ON A MULTI-LANE HIGHWAY						
SPEED	SIGN SPACING (FT.)	TAPER LENGTH (FT.)		RECOMMENDED	CHANNELIZER SPACING (FT.)	
PERMANENT POSTED (MPH)	UNDIVIDED (S)	SHOULDER (1) (T1)	LANE (2) (T2)	BUFFER LENGTH (FT.) (B)	TAPERS	BUFFER/ WORK AREAS
0-35	200	70	245	250	35	40
40-45	350	150	540	360	40	80
50-55	500	185	660	495	50	80
60-70	1000	235	840	730	60	120
1. SHOULDER TAPER LENGTH BASED ON 10 FT. (STANDARD SHOULDER WIDTH) OFFSET. 2. LANE TAPER LENGTH BASED ON 12 FT. (STANDARD LANE WIDTH) OFFSET.						

NOTES:

ALL WORK REQUIRING LANE CLOSURES ON I-44 TO BE PERFORMED AT NIGHT.

FOR CLOSURE OF I-44 BELOW EACH BRIDGE, BOTH EXTERIOR LANES SHALL BE CLOSED AT THE SAME TIME AND THEN SWITCHED OVER SO BOTH INTERIOR LANES ARE CLOSED AT THE SAME TIME.

ALL DISTANCES AND SPACING OF TRAFFIC CONTROL DEVICES ARE APPROXIMATE AND MAY BE REVISED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

* LEFT LANE CLOSURE SHOWN, RIGHT LANE OPPOSITE HAND. SWITCH SIGNS AS NOTED.

TWO-LANE DIVIDED HIGHWAY
ONE LANE CLOSURE (EACH DIRECTION)

TYPICAL I-44 CLOSURE FOR WORK UNDER BRIDGE

TRAFFIC CONTROL SHEETS
SHEET 4 OF 5

STATE OF MISSOURI
SCOTT MICHAEL MCDONALD
NUMBER PE-2018000240
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 11/01/2024

ROUTE	STATE
28	MO
DISTRICT	SHEET NO.
CD	9

COUNTY PULASKI

JOB NO. J5S3480B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DATE	DESCRIPTION

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

VEENSTRA & KIMM INC.
9788 N Ash Avenue Kansas City, Missouri 64157
816-781-6182 816-781-0643 (FAX)
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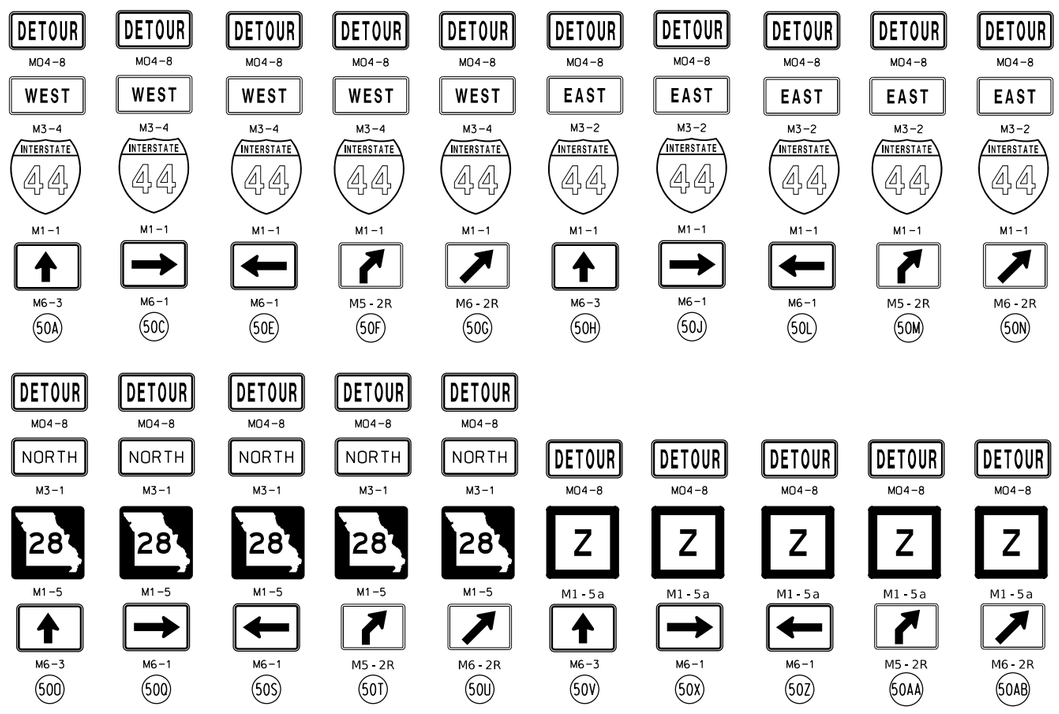
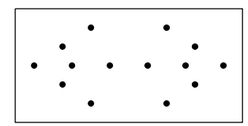
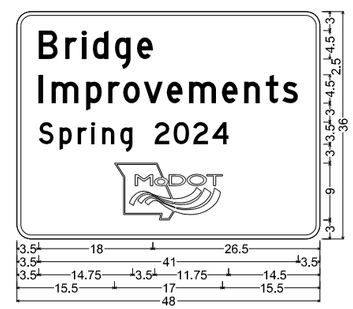
TRAFFIC CONTROL LEGEND

- PROPOSED SIGN (SINGLE SIDED)
- EXISTING SIGN (SINGLE SIDED)
- CHANNELIZER
- BARRICADE
- SEQUENTIAL FLASHING WARNING LIGHT
- WORK AREA





FLASHING ARROW PANNEL
(F.A.P)



CONST-5-48 SH-FLAT SHEET;
2.250" Radius, 0.625" Border, White on, Blue;
"Bridge", D 85% spacing; "Improvements", D 85% spacing; "Spring 2024", D;
Table of letter and object lefts

B 3.500	r 7.625	i 10.250	d 12.000	g 15.500	e 19.000

I 3.500	m 5.500	p 11.000	r 14.500	o 16.875	v 20.125	e 23.750	m 27.250	e 32.500	n 36.000	t 39.375	s 42.000	

S 3.500	p 6.750	r 9.625	i 11.750	n 13.500	g 16.375	2 21.750	0 24.750	2 27.875	4 30.875

15.500

NOTES:

ANY EXISTING WARNING OR REGULATORY SIGNS (NOT SHOWN) THAT INTEREFERE WITH THE TRAFFIC CONTROL SIGNING SHALL BE REMOVED OR COMPLETELY COVERED.

ALL TRAFFIC CONTROL SIGNS ARE TO BE NON-PORTABLE UNLESS NOTED OTHERWISE.

MODIFICATIONS TO EXISTING SIGN LEGENDS MAY INCLUDE REMOVAL, COVERING AND UNCOVERING OF LEGENDS. NO DIRECT PAY WILL BE MADE FOR THE LABOR OR MATERIALS REQUIRED TO MAKE THESE MODIFICATIONS.

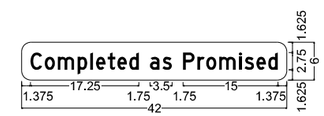
ALL SPACING AND DISTANCES SHOWN ARE APPROXIMATE. DISTANCES MAY BE ADJUSTED BY THE ENGINEER TO ACCOMODATE SPECIFIC FIELD CONDITIONS.

SEE STANDARD PLAN DRAWINGS 616.10, 903.02, AND 903.03 FOR ADDITIONAL DETAILS REGARDING TRAFFIC CONTROL AND HIGHWAY SIGNING.

"POINT OF PRESENCE" SIGN NO. 68 TO BE FURNISHED BY THE CONTRACTOR.

*-NO SIGNS SHALL BE MOUNTED OR ATTACHED TO TYPE III MOVEABLE BARRICADES. SIGN SHALL BE MOUNTED TO SEPARATE, PORTABLE POST(S) DIRECTLY BEHIND THE BARRICADE OR TO NON-PORTABLE POST(S) OFF THE SHOULDER.

ALL RELOCATED TRAFFIC SIGNS ARE TO BE NON-PORTABLE UNLESS NOTED OTHERWISE. EXISTING POST(S) & MOUNTINGS MAY BE USED FOR TEMPORARY SIGN RELOCATIONS.

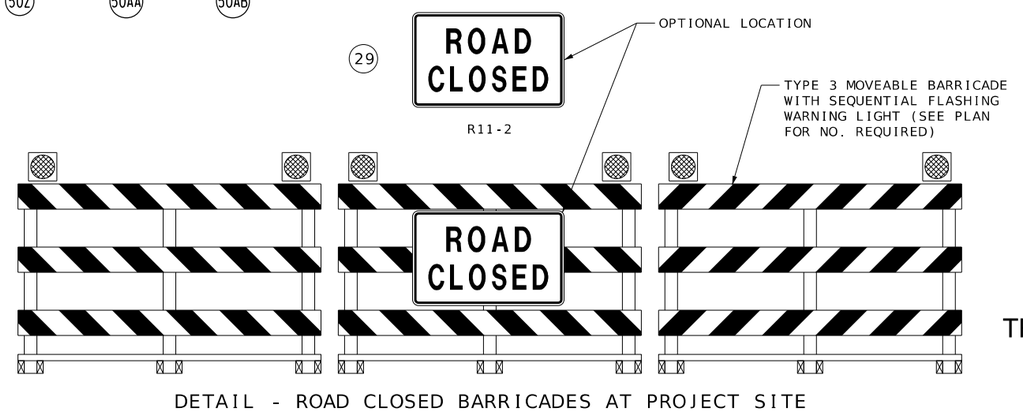


CONST-5P-42 SHF-FLAT SHEET FLUORESCENT;
1.500" Radius, No border, Yellow;
"Completed as Promised" Black, D 65% spacing;
Table of letter and object lefts

C 1.375	o 3.625	m 5.750	p 8.875	l 10.875	e 11.750	t 13.625	e 15.125	d 17.000	a 20.375	s 22.250	

P 25.625	r 27.875	o 29.250	m 31.250	i 34.500	s 35.250	e 37.125	d 39.000	

68 (2 SIGNS)



DETAIL - ROAD CLOSED BARRICADES AT PROJECT SITE

TRAFFIC CONTROL SHEETS
SHEET 5 OF 5

STATE OF MISSOURI
SCOTT MICHAEL MCDONALD
NUMBER PE-2018000240
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED	
11/01/2024	
ROUTE 28	STATE MO
DISTRICT CD	SHEET NO. 10
COUNTY PULASKI	
JOB NO. J5S3480B	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DATE	DESCRIPTION

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

VEENSTRA & KIMM INC.
9788 N Ash Avenue Kansas City, Missouri 64157
816-781-6182 816-781-0643 (FAX)
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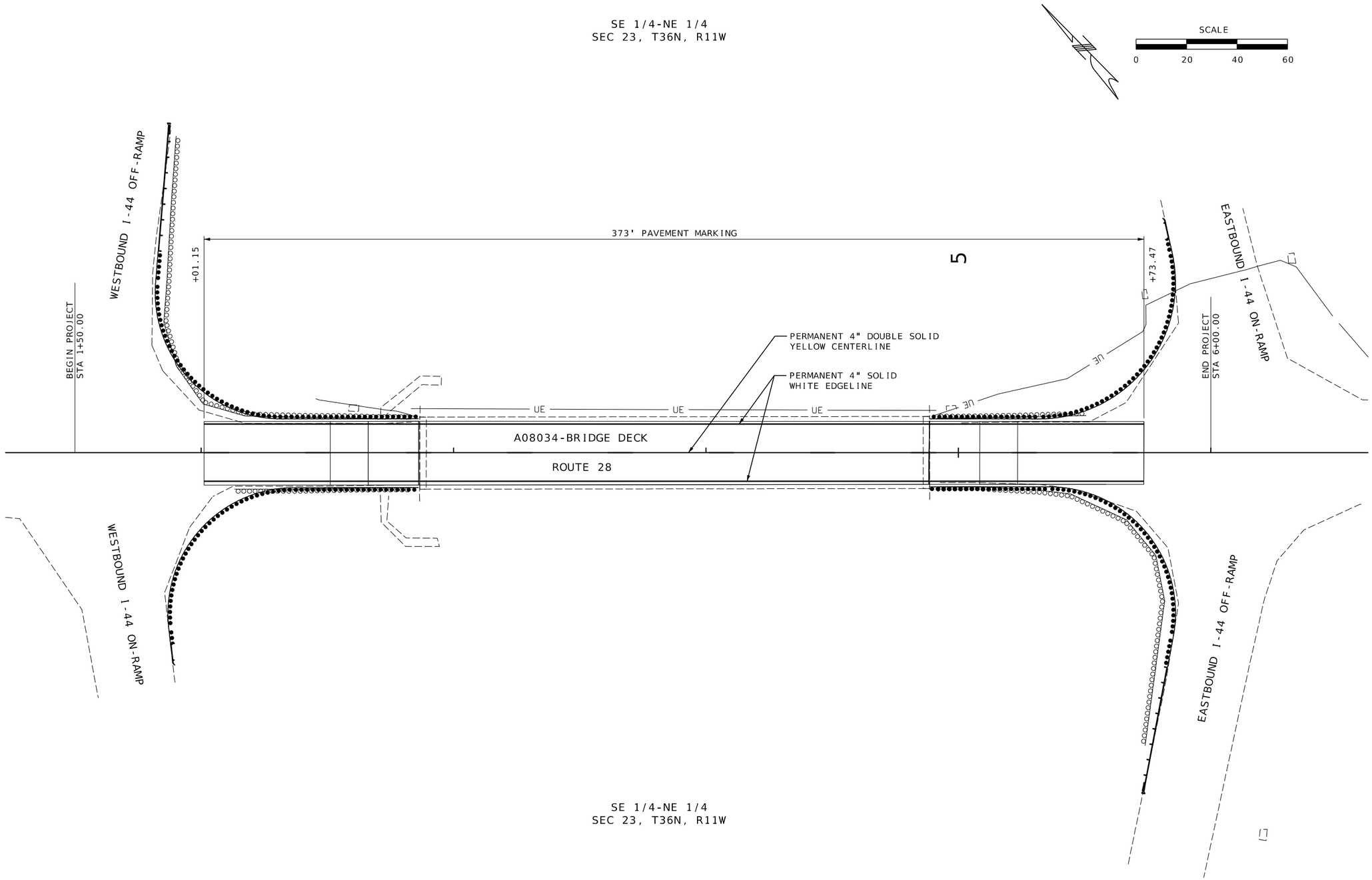

PAVEMENT MARKING
SHEET 1 OF 1

STATE OF MISSOURI
SCOTT MICHAEL MCDONALD
NUMBER
PE-2018000240
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED	11/01/2024
ROUTE	28
STATE	MO
DISTRICT	CD
SHEET NO.	11
COUNTY	PULASKI
JOB NO.	J5S3480B
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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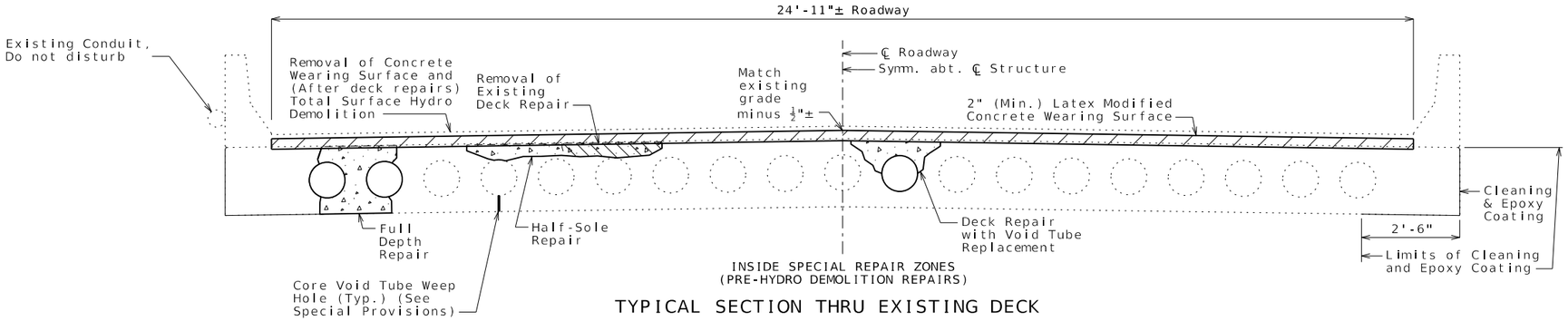
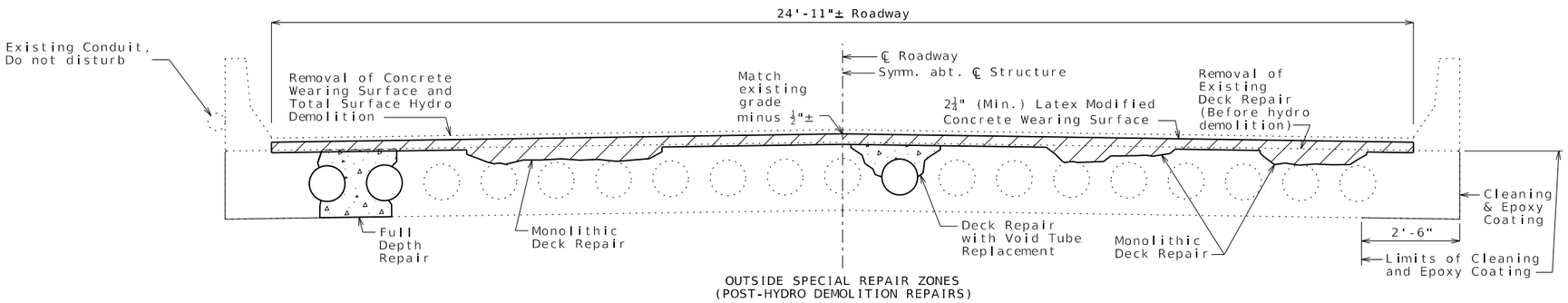
SEC/SUR 23 TWP 36N RGE 11W

U.I.P. AND REHABILITATE EXISTING (42'-56'-56'-46') CONTINUOUS CONCRETE VOIDED SLAB SPANS



TYPICAL SECTION THRU EXISTING DECK



TYPICAL SECTION THRU EXISTING DECK

Estimated Quantities

	Item		Total
	Total Surface Hydro Demolition	sq. yard	562
	Removal of Concrete Wearing Surface	sq. foot	5058
	Removal of Existing Deck Repair	sq. foot	125
	Bridge Approach Slab (Major)	sq. yard	119
*	Supplementary Wearing Surface Material	cu. yard	2
	Latex Modified Concrete Wearing Surface	sq. yard	562
	Diamond Grinding	sq. yard	562
	Half-Sole Repair	sq. foot	800
	Full Depth Repair	sq. foot	50
	Deck Repair with Void Tube Replacement	sq. foot	250
	Cleaning and Epoxy Coating	sq. foot	1809
	Cored Void Tube Weep Holes	each	72
**	Protective Coating - Concrete Bents and Piers (Epoxy)	lump sum	1
	Vertical Drain at End Bents	each	2

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

** Columns (Bottom 10 feet) Bents No. 2, 3, and 4;
Safety Barrier Curbs at the base of Columns.
Estimated Quantity of 1000 sq. foot

Cost of any required excavation for bridge will be considered completely covered by the contract unit price for other items.

General Notes:

Design Specifications:

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

Design Loading:

H15-44 (1961)

Design Unit Stresses:

Class B-1 Concrete (Half-Sole and Full Depth Repair) f'c = 4,000 psi

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 ordering new material.

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

Traffic Handling:

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

REPAIRS TO BRIDGE: ROUTE 28
OVER ROUTE I-44

ROUTE 28 FROM ROUTE Z TO ROUTE PP
ABOUT 0.1 MILE NORTH OF ROUTE Z
BEGINNING STATION 2+86.50± (Match Existing)

Designed Nov. 2023
Detailed Nov. 2023
Checked Nov. 2023

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

STATE OF MISSOURI
SCOTT MICHAEL MCDONALD
NUMBER PE-2018000240
PROFESSIONAL ENGINEER

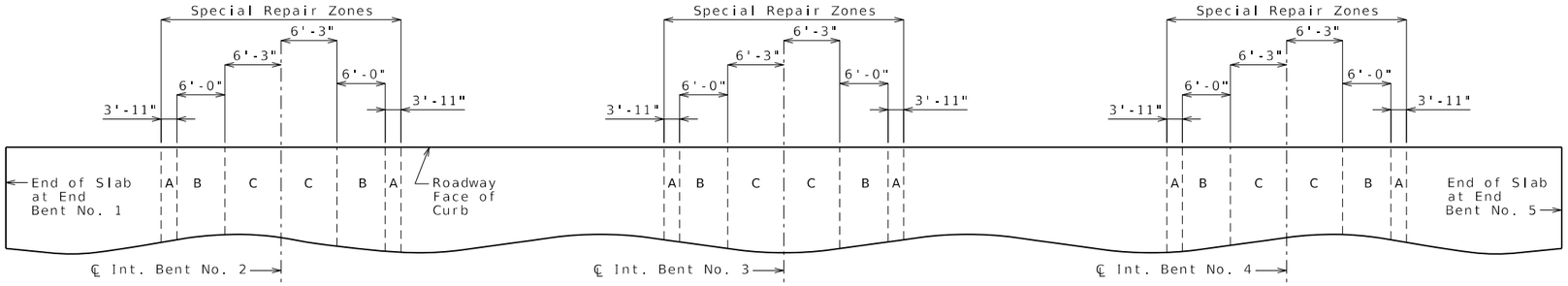
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 11/01/2024
ROUTE 28 | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY PULASKI
JOB NO. J5S3480B
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A08034

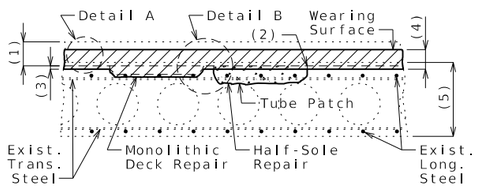
DESCRIPTION
DATE

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

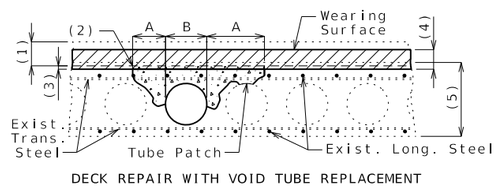
VEENSTRA & KIMM INC.
P.O. Box 236 Liberty, Missouri 64069
816-781-6182 816-781-0643 (FAX)
Certificate of Authority No. 2002006347



PART PLAN OF SLAB SHOWING SPECIAL REPAIR ZONES

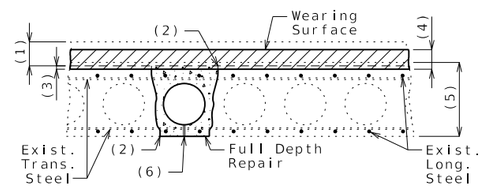


MONOLITHIC AND HALF-SOLE REPAIR



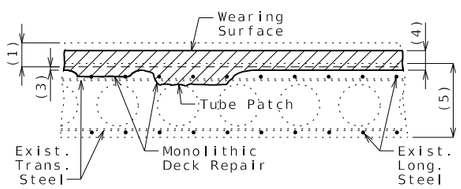
DECK REPAIR WITH VOID TUBE REPLACEMENT

A = Half-Sole Repair
B = Deck Repair with Void Tube Replacement

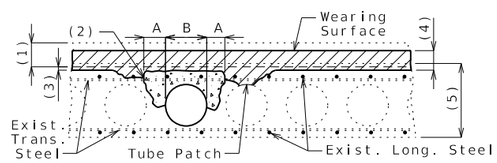


FULL DEPTH REPAIR

DECK REPAIR INSIDE SPECIAL REPAIR ZONES (BEFORE HYDRO DEMOLITION)

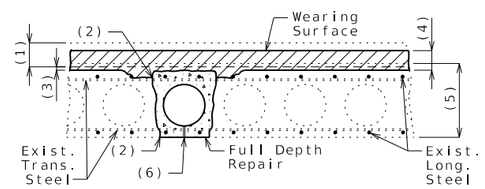


MONOLITHIC DECK REPAIR



DECK REPAIR WITH VOID TUBE REPLACEMENT

A = Half-Sole Repair
B = Deck Repair with Void Tube Replacement



FULL DEPTH REPAIR

DECK REPAIR OUTSIDE SPECIAL REPAIR ZONES (AFTER HYDRO DEMOLITION)

(1) Removal of existing $1\frac{3}{4}$"± Latex Modified Concrete wearing surface plus $\frac{1}{2}$" of existing deck

(2) 1" vertical side shall be established outside the deteriorated area.

(3) Total surface hydro demolition of sound concrete, measured to mortar line:

$\frac{1}{4}$" minimum inside special repair zones

$\frac{1}{2}$" minimum outside special repair zones

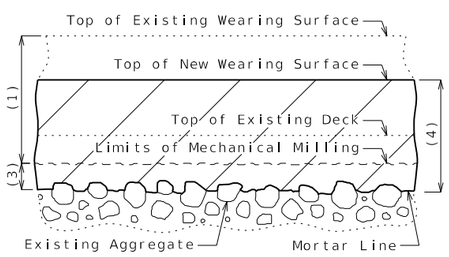
(4) Latex Modified concrete wearing surface:

2" minimum inside special repair zones

$2\frac{1}{4}$" minimum outside special repair zones

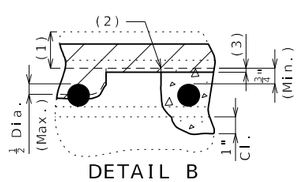
(5) Original depth minus previous scarification

(6) Restore existing weep hole, if encountered.



MILLING AND HYDRO DEMOLITION LIMITS

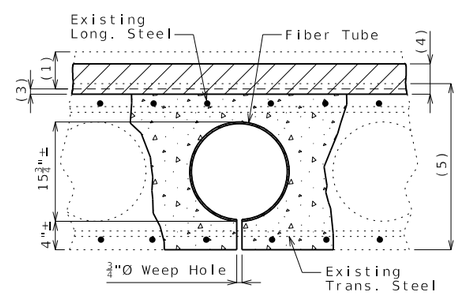
DETAIL A



DETAIL B

Monolithic deck repair shall be used when only half the diameter or less of the top bar is exposed.

Clearance around top bar and around bottom bar at the intersection of top bar shall be required when more than half the diameter of the top bar is exposed.



FIBER VOID TUBE REPLACEMENT

Fiber tubes for producing voids shall have an approximate outside diameter of 15 3/4 inches and a wall thickness of 1/4 inch and shall be anchored to joists carrying the floor form at not more than 4-foot centers.

One 3/4"Ø weep hole shall be provided at 2 inches from each end of each new void.

DECK REPAIR DETAILS

Deck Repair Notes:

Order of Repair:

1. Remove existing wearing surface plus $\frac{1}{2}$" of existing deck.
2. Power wash deck to identify sound and unsound existing deck repair.
3. Inside special repair zones, complete the following repairs:
   a. Removal of existing deck repair
   b. Half-sole repair
   c. Deck repair with void tube replacement
   d. Full depth repair
4. Outside special repair zones, remove existing deck repair.
5. Complete total surface hydro demolition, removing $\frac{1}{4}$" minimum of sound concrete inside special repair zones and removing $\frac{1}{2}$" minimum of sound concrete and all deteriorated concrete outside special repair zones.
6. Sound deck and if needed complete incidental concrete removal.
7. Outside special repair zones, complete the following repairs:
   a. Deck repair with void tube replacement
   b. Full depth repair
8. Place new wearing surface including additional material for areas of monolithic deck repair.

Special Repair Zones:

Deck repair required in the areas designated as special repair zones shall be completed before hydro demolition in alphabetical sequence beginning with Zone A. Zones with the same letter designation may be repaired at the same time. Hydro demolition shall not move forward until the repairs in all special repair zones are completed and properly cured.

Any deck repair in areas not designated as a special repair zone shall be completed after hydro demolition.

Removal and deck repair shall be completed in one special repair zone and concrete shall have attained a compressive strength of 3200 psi before work can be started in the next special repair zone.

If any single repair area does not exceed 4 square feet in size and the total repair area within a special repair zone does not exceed 12 square feet, the special repair zone may be repaired at the same time as an adjacent zone.

Void Repair:

Any damage sustained to the void tube as a result of the contractor's operations shall be patched or replaced as required by the engineer at the contractor's expense.

An exposed void in the deck shall be patched as approved by the engineer in a manner that shall maintain the void area completely free of concrete. Cost of patching an exposed void will be considered completely covered by the contract unit price for Half-Sole Repair inside special repair zones and Monolithic Deck Repair outside special repair zones.

When a deteriorated portion of the void tube is beyond the point of patching as determined by the engineer, the portion of the deteriorated void tube shall be replaced. The void area shall be maintained completely free of concrete. Cutting of the longitudinal reinforcing steel will not be permitted. The fiber tubes for producing the voids shall have an outside diameter with the wall thickness the same as the existing tubes and anchored at not more than the original spacing. Cost of replacing the void tube will be considered completely covered by the contract unit price for Deck Repair with Void Tube Replacement. Measurement will be horizontal projection of the area of exposed tube in plan.

Existing Weep Holes:

The Contractor shall drill out all existing weep holes at the bottom of the existing voided slab. The holes shall be drilled to 7/8 inch diameter and cleaned. Payment for the described work will be considered completely covered by the contract unit price for Cored Void Tube Weep Holes.

STATE OF MISSOURI
SCOTT MICHAEL MCDONALD
NUMBER PE-2018000240
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED	
11/01/2024	
ROUTE 28	STATE MO
DISTRICT BR	SHEET NO. 2
COUNTY PULASKI	
JOB NO. J5S3480B	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A08034	

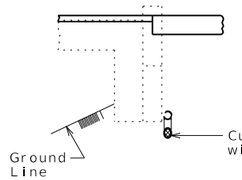
DATE	DESCRIPTION

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

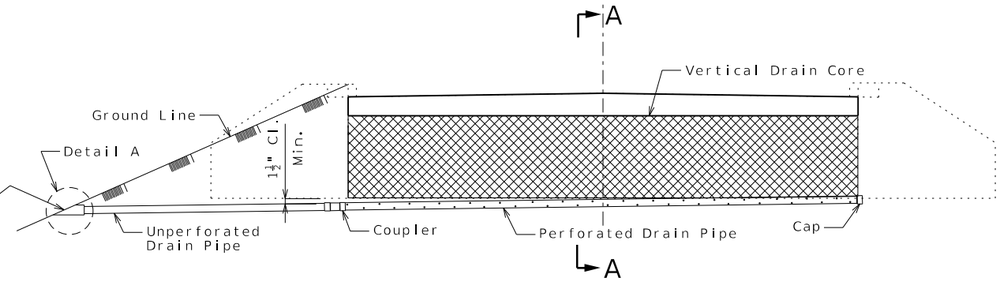
VEENSTRA & KIMM INC.
P.O. Box 236 Liberty, Missouri 64069
816-781-6182 816-781-0643 (FAX)
Certificate of Authority No. 2002006347

Detailed Nov. 2023
Checked Nov. 2023

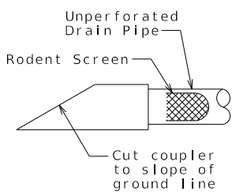
Note: This drawing is not to scale. Follow dimensions.



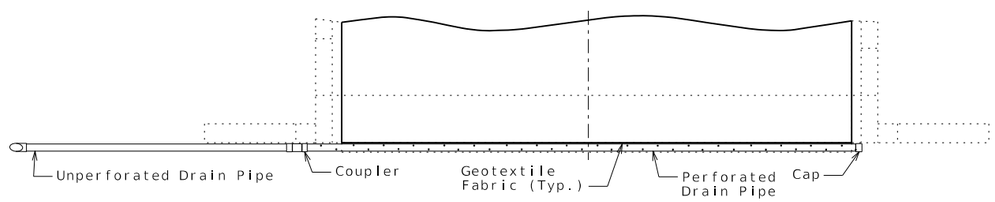
ELEVATION OF WING



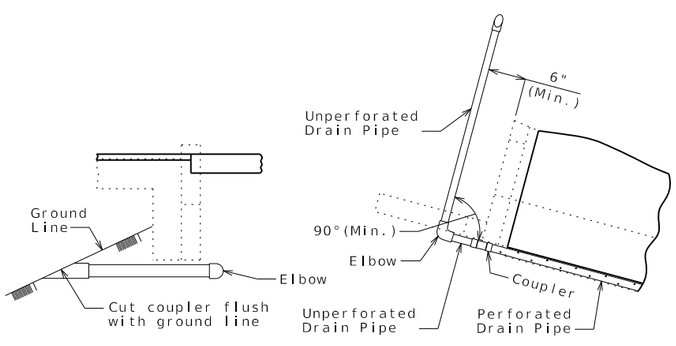
ELEVATION OF END BENT



DETAIL A



PLAN OF END BENT

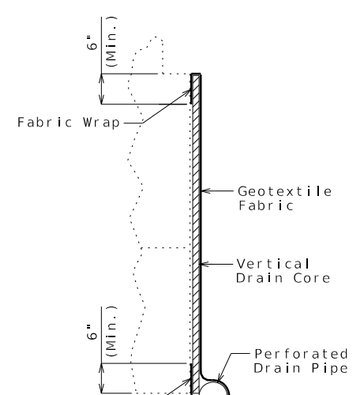


ELEVATION OF WING

PART PLAN

OPTIONAL TURNED DRAIN

(Use only when straight drain is not practical.)



PART SECTION A-A

General Notes:

All drain pipe shall be sloped 1 to 2 percent.

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

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

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

VERTICAL DRAIN AT END BENTS

Detailed Nov. 2023
Checked Nov. 2023

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

STATE OF MISSOURI
SCOTT MICHAEL MCDONALD
NUMBER PE-2018000240
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED	11/01/2024
ROUTE	28
STATE	MO
DISTRICT	BR
SHEET NO.	3
COUNTY	PULASKI
JOB NO.	J5S3480B
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A08034

DATE	DESCRIPTION

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

VEENSTRA & KIMM INC.
P.O. Box 236 Liberty, Missouri 64069
816-781-6182 816-781-0643 (FAX)
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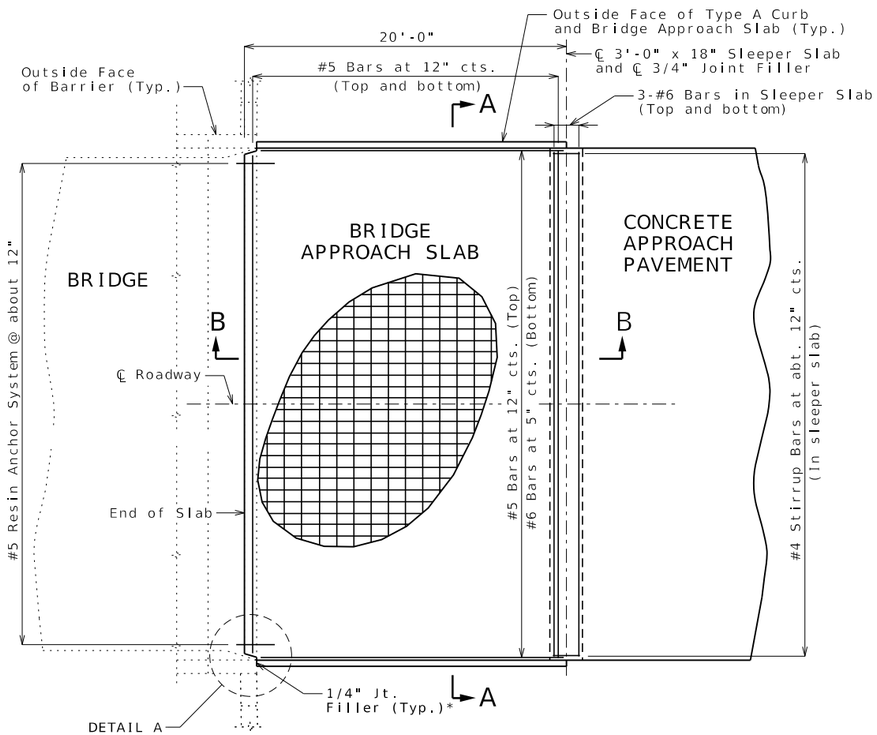
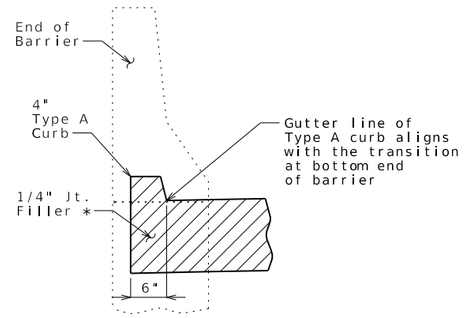
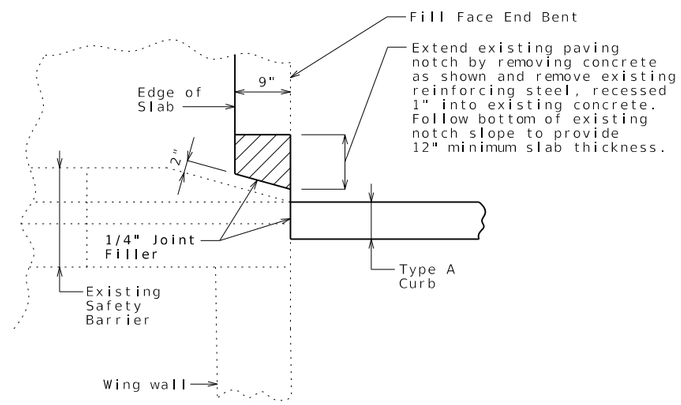


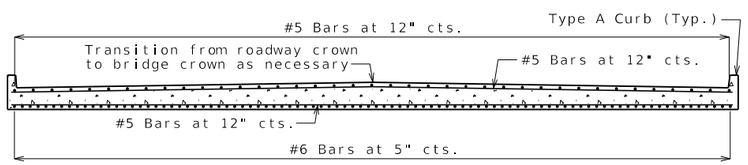
PART PLAN SHOWING REINFORCEMENT



SECTION BETWEEN BARRIER AND CURB



DETAIL A



SECTION A-A

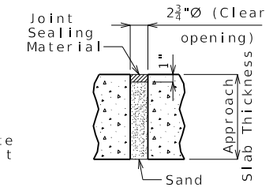
With the approval of the engineer, the contractor may crown the bottom of the approach slab to match the crown of the roadway surface.

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

Cost of furnishing and installing the resin anchor systems, complete in place, will be considered completely covered by the contract unit price for Bridge Approach Slab (Major).

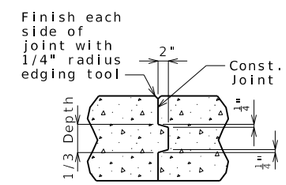
The minimum embedment depth in concrete with f'c = 4000 psi for the resin anchor systems shall be that required to meet the minimum ultimate pullout strength in accordance with Sec 1039 but shall not be less than 5".

An epoxy coated #5 Grade 60 reinforcing bar 20" long shall be substituted for the 5/8" ∅ threaded rod.

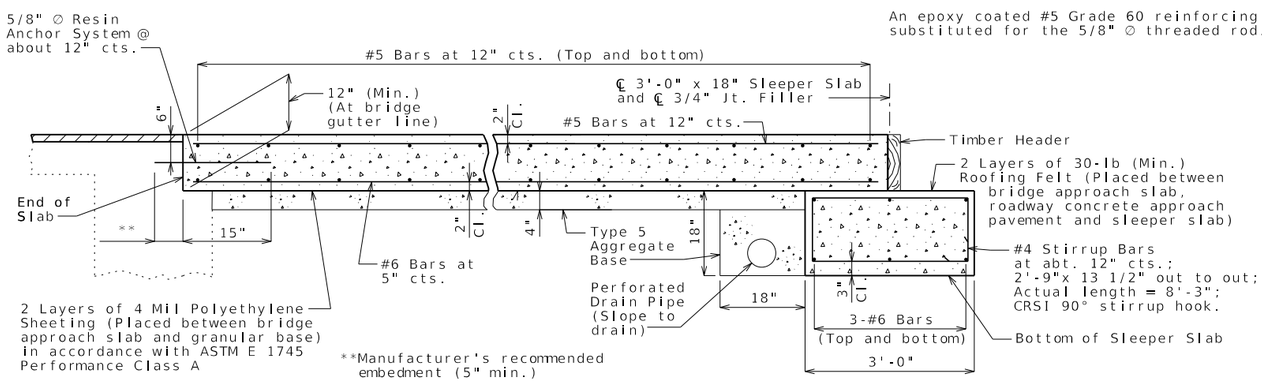


UNDERSEAL ACCESS HOLE DETAIL

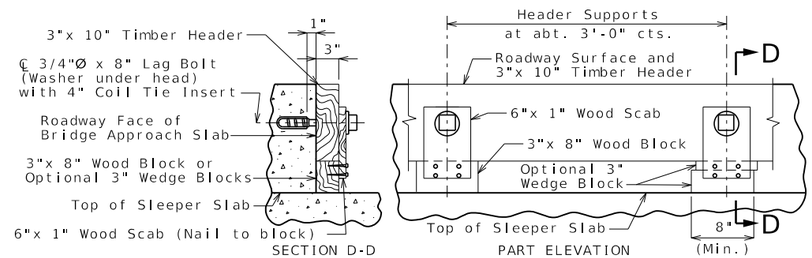
(If required)



CONSTRUCTION JOINT DETAIL



SECTION B-B



DETAILS OF TIMBER HEADER

Remove timber header when concrete pavement is placed.

General Notes:

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

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

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

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

The reinforcing steel in the bridge approach slab and the sleeper slab shall be continuous. The transverse reinforcing steel may be made continuous by providing a minimum lap splice of 29 inches for #5 bars and 44 inches for #6 bars, or by mechanical bar splice.

Mechanical bar splices shall be in accordance with Sec 710.

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

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

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

For concrete approach pavement details, see roadway plans.

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

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

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

STATE OF MISSOURI
SCOTT MICHAEL MCDONALD
NUMBER PE-2018000240
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED	
11/01/2024	
ROUTE 28	STATE MO
DISTRICT BR	SHEET NO. 4
COUNTY PULASKI	
JOB NO. J5S3480B	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A08034	

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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Certificate of Authority No. 2002006347

Detailed Nov. 2023
Checked Nov. 2023

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

BRIDGE APPROACH SLAB (MAJOR)

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

PLANS FOR PROPOSED STATE HIGHWAY

PHELPS COUNTY

SECTION 2, T37N, R8W

DESIGN DESIGNATION

A.A.D.T. - 2023 = 10431
A.A.D.T. - 2043 = 12728
D.H.V. = 7.2%
T = 1.2%
V = 30 M.P.H.
D = 50%/50%

FUNCTIONAL CLASSIFICATION- MINOR ARTERIAL

NO RIGHT OF WAY WILL BE ACQUIRED WITH THIS PROJECT.

DISCLAIMER
THE PROFESSIONAL WHOSE SIGNATURE AND PERSONAL SEAL APPEAR HEREON ASSUMES RESPONSIBILITY ONLY FOR WHAT APPEARS ON THIS PAGE, AND DISCLAIMS (PURSUANT TO SECTION 327.411 RSMO) SPECIFICATION, ESTIMATES, REPORTS, OR OTHER DOCUMENTS OR INSTRUMENTS NOT SEALED BY THE UNDERSIGNED PROFESSIONAL RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE PROJECT TO WHICH THIS PAGE REFERS.

CONVENTIONAL SYMBOLS

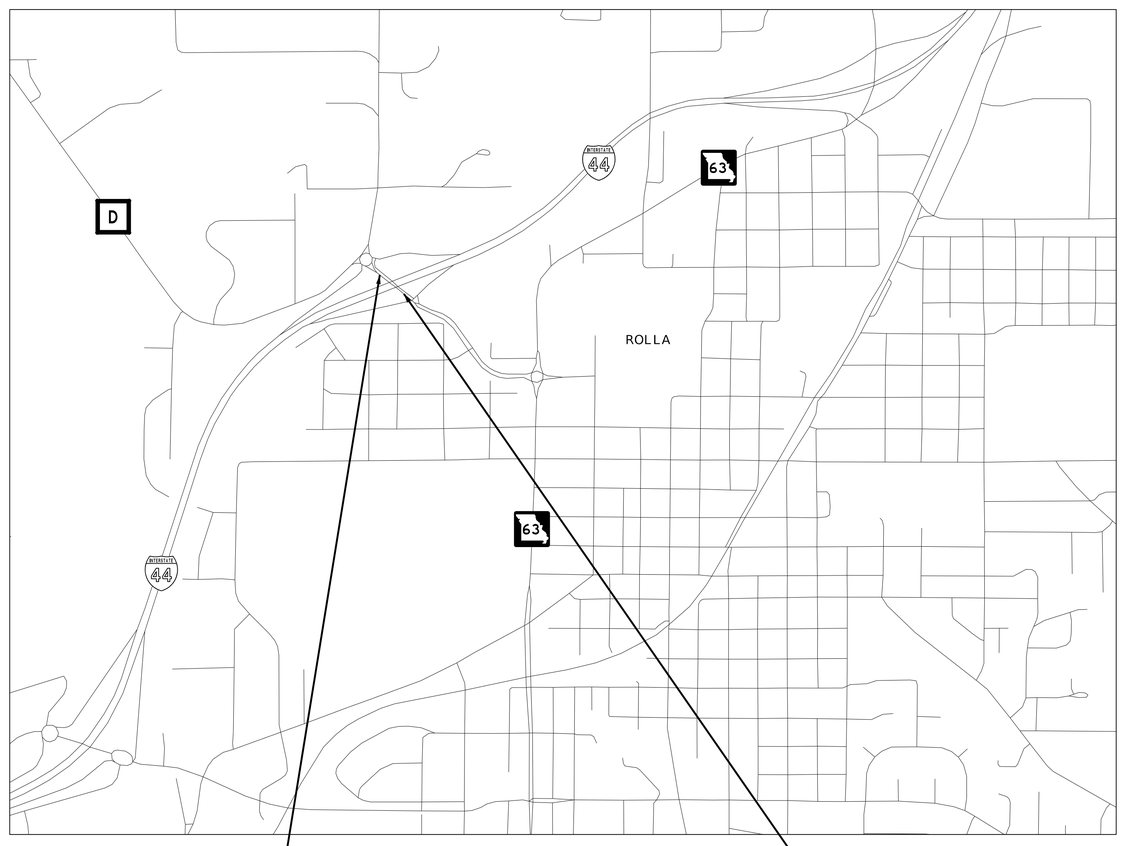
(USED IN PLANS)

	EXISTING	NEW
BUILDINGS AND STRUCTURES		
GUARD RAIL		
GUARD CABLE		
CONCRETE RIGHT-OF-WAY MARKER		
STEEL RIGHT-OF-WAY MARKER		
LOCATION SURVEY MARKER		
UTILITIES		
FIBER OPTICS	FO	FO
OVERHEAD CABLE TV	OTV	OTV
UNDERGROUND CABLE TV	UTV	UTV
OVERHEAD TELEPHONE	OT	OT
UNDERGROUND TELEPHONE	UT	UT
OVERHEAD POWER	OE	OE
UNDERGROUND POWER	UE	UE
SANITARY SEWER	S	S
STORM SEWER	SS	SS
GAS	G	G
WATER	W	W
MANHOLE	SAN	
FIRE HYDRANT	HYD	
WATER VALVE	WV	
WATER METER	WM	
DROP INLET	DI	
DITCH BLOCK		
GROUND MOUNTED SIGN	SIGN	
LIGHT POLE		
H-FRAME POWER POLE		
TELEPHONE PEDESTAL	PED	
FENCE		
CHAIN LINK	V	
WOVEN WIRE	X	
GATE POST		
BENCHMARK	BM	

NOTE: DASHED OR OPEN SYMBOLS INDICATE EXISTING FEATURES

KEY MAP
LOCATION OF PHELPS COUNTY

NOT TO SCALE



BEGIN PROJECT
LIMIT RTE E S
LOG MILE 10.759

PROJECT LIMITS
RTE E OVER I-44 - BRIDGE #A12613

SUBSTRUCTURE REPAIR AND REMOVAL OF CANTILEVER PEDESTRIAN WALKWAY

END PROJECT
LIMIT RTE E S
LOG MILE 10.811

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

INDEX OF SHEETS

DESCRIPTION	SHEET NUMBER
TITLE SHEET	1
QUANTITIES (QU) (1 SHEET)	2
PLAN SHEET (PL)	3
TRAFFIC CONTROL SHEETS (TC)	4-8
BRIDGE DRAWINGS (B)	
A12613	1

LENGTH OF PROJECT

BEGINNING OF PROJECT LOG MILE 10.759
END OF PROJECT LOG MILE 10.811

APPARENT LENGTH 269.28 FEET

EQUATIONS AND EXCEPTIONS:

TOTAL CORRECTIONS 0.00 FEET
NET LENGTH OF PROJECT 269.28 FEET
STATE LENGTH 0.051 MILES

FOR INFORMATION ONLY
ESTIMATED DISTURBED ACRES 0.0 ACRES

STATE OF MISSOURI
ANDREA S. DAVIS
PE-2018021250
PROFESSIONAL ENGINEER

DATE PREPARED	
12/27/2024	
ROUTE: E	STATE: MO
DISTRICT: CD	SHEET NO.: 1
COUNTY: PHELPS	
JOB NO.: J5S3541	
CONTRACT ID.: .	
PROJECT NO.: .	
BRIDGE NO.: .	

DESCRIPTION	DATE
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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
ST. LOUIS, MISSOURI 63141
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

EFFECTIVE: 07-01-2024

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL AREA SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NUM.	DESCRIPTION
WARNING SIGNS								
WO1-1L	48X48	16.00						TURN (SYMBOL LEFT)
WO1-1R	48X48	16.00						TURN (SYMBOL RIGHT)
WO1-2L	48X48	16.00						CURVE (SYMBOL LEFT)
WO1-2R	48X48	16.00						CURVE (SYMBOL RIGHT)
WO1-3L	48X48	16.00						REVERSE TURN (SYMBOL LEFT)
WO1-3R	48X48	16.00						REVERSE TURN (SYMBOL RIGHT)
WO1-4L	48X48	16.00						REVERSE CURVE (SYMBOL LEFT)
WO1-4R	48X48	16.00						REVERSE CURVE (SYMBOL RIGHT)
WO1-4bL	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL LEFT)
WO1-4bR	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL RIGHT)
WO1-4cL	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL LEFT)
WO1-4cR	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL RIGHT)
WO1-6	60X30	12.50						HORIZONTAL ARROW (SYMBOL)
WO1-6a	72X36	18.00						HORIZ. ARROW (SYMBOL ON PERMANENT BARRICADE)
WO1-7	60X30	12.50						DOUBLE HEAD HORIZONTAL ARROW (SYMBOL)
WO1-7a	72X36	18.00						DOUBLE HEAD HORIZ. ARROW (SYMBOL ON PERM. BARR.)
WO1-8	18X24	3.00						CHEVRON (SYMBOL)
WO1-8a	30X36	7.50						CHEVRON (SYMBOL FOR DIVIDED HIGHWAYS)
WO3-1	48X48	16.00						STOP AHEAD (SYMBOL)
WO3-2	48X48	16.00						YIELD AHEAD (SYMBOL)
WO3-3	48X48	16.00						SIGNAL AHEAD (SYMBOL)
WO3-4	48X48	16.00						BE PREPARED TO STOP
WO3-5	48X48	16.00						SPEED LIMIT AHEAD
WO4-1L	48X48	16.00						MERGE (SYMBOL FROM LEFT)
WO4-1R	48X48	16.00						MERGE (SYMBOL FROM RIGHT)
WO4-1aL	48X48	16.00	2	32			6A	MERGE (LEFT)
WO4-1aR	48X48	16.00	2	32			6B	MERGE (RIGHT)
WO5-1	48X48	16.00						ROAD/BRIDGE/RAMP NARROWS
WO5-3	48X48	16.00						ONE LANE BRIDGE
WO5-5	48X48	16.00						NARROW LANES
WO6-1	48X48	16.00						DIVIDED HIGHWAY (SYMBOL)
WO6-2	48X48	16.00						DIVIDED HIGHWAY END (SYMBOL)
WO6-3	48X48	16.00						TWO WAY TRAFFIC (SYMBOL)
WO7-3a	30X24	5.00						NEXT XX MILES (PLAQUE)
WO8-1	48X48	16.00						BUMP
WO8-2	48X48	16.00						DIP
WO8-3	48X48	16.00						PAVEMENT ENDS
WO8-4	48X48	16.00						SOFT SHOULDER
WO8-5	48X48	16.00						SLIPPERY WHEN WET (SYMBOL)
WO8-6	48X48	16.00						TRUCK CROSSING
WO8-6c	48X48	16.00						TRUCK ENTRANCE
WO8-7	36X36	9.00						LOOSE GRAVEL
WO8-7a	36X36	9.00						FRESH OIL / LOOSE GRAVEL
WO8-9	48X48	16.00						LOW SHOULDER
WO8-11	48X48	16.00						UNEVEN LANES
WO8-12	48X48	16.00						NO CENTER LINE
WO8-15	48X48	16.00						GROOVED PAVEMENT
WO8-15P	30X24	5.00						MOTORCYCLE (PLAQUE)
WO8-17L	48X48	16.00						SHOULDER DROP-OFF (SYMBOL LEFT)
WO8-17R	48X48	16.00						SHOULDER DROP-OFF (SYMBOL RIGHT)
WO8-17P	30X24	5.00						SHOULDER DROP-OFF (PLAQUE)
W10-1	42RND.	9.62						RAILROAD CROSSING
WO12-1	24X24	4.00						DOUBLE DOWN ARROW (SYMBOL)
WO12-2	48X48	16.00						LOW CLEARANCE (SYMBOL)
WO12-2x	24X18	3.00						LOW CLEARANCE (PLAQUE)
WO12-2a	84X24	14.00						OVERHEAD LOW CLEARANCE (FEET AND INCHES)
WO12-4	120X60	50.00						LOW CLEARANCE XX FT XX IN XX MILES AHEAD
WO12-5	120X60	50.00						WIDTH RESTRICTION XX FT XX IN XX MILES AHEAD
WO13-1	30X30	6.25						ADVISORY SPEED (PLAQUE)
WO16-2	30X24	5.00						XXX FEET (PLAQUE)
WO16-3	30X24	5.00						X MILE (PLAQUE)
WO20-1	48X48	16.00	5	80			2	ROAD/BRIDGE/RAMP WORK AHEAD
WO20-2	48X48	16.00	2	32			18	DETOUR AHEAD
WO20-3	48X48	16.00	2	32			20	ROAD CLOSED AHEAD
WO20-4	48X48	16.00						ONE LANE ROAD AHEAD
WO20-5	48X48	16.00	4	64			5	RIGHT/CENTER/LEFT LANE CLOSED AHEAD
WO20-5a	48X48	16.00						2 RIGHT/CENTER/LEFT LANES CLOSED AHEAD
WO20-6a	48X48	16.00	2	32			6	RIGHT/CENTER/LEFT LANE CLOSED
WO20-7a	48X48	16.00						FLAGGER (SYMBOL)
WO21-2	36X36	9.00						FRESH OIL
WO21-5	48X48	16.00						SHOULDER WORK / SHOULDER WORK AHEAD
WO22-1	48X48	16.00						BLASTING ZONE AHEAD
WO22-2	42X36	10.50						TURN OFF 2-WAY RADIO AND PHONE
WO22-3	42X36	10.50						END BLASTING ZONE
GO22-1	21X15	2.19						WET PAINT (ARROW PIVOTS)

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NUM.	DESCRIPTION
GUIDE SIGNS								
E05-1	36X48	12.00	2	24			49	GORE EXIT
E05-2	48X36	12.00	2	24			48	EXIT OPEN
E05-2a	48X36	12.00						EXIT CLOSED
GO20-1	60X24	10.00	4	40			1	ROAD WORK NEXT XX MILES
GO20-2	48X24	8.00	5	40			26	END ROAD WORK
GO20-4	36X18	4.50						PILOT CAR FOLLOW ME
GO20-4a	42X30	8.75						PILOT CAR IN USE WAIT & FOLLOW
GO20-4a	18X12	1.50						PILOT CAR IN USE WAIT & FOLLOW
GO20-5aP	36X24	6.00	4	24			54	WORK ZONE (PLAQUE)
MO4-8a	24X18	3.00	1	3			52	END DETOUR
MO4-9L	48X36	12.00						DETOUR (LEFT)
MO4-9R	48X36	12.00						DETOUR (RIGHT)
MO4-9P	48X12	4.00						STREET NAME (PLAQUE)
MO4-10L	48X18	6.00						DETOUR ARROW (LEFT)
MO4-10R	48X18	6.00						DETOUR ARROW (RIGHT)
REGULATORY SIGNS								
R1-1	48X48	13.25						STOP
R1-2	48TRI.	6.93						YIELD
R1-2a	36X36	9.00						TO ONCOMING TRAFFIC (PLAQUE)
R1-3P	30X12	2.50						ALL WAY (PLAQUE)
R2-1	36X48	12.00	4	48			4	SPEED LIMIT 60
R2-1	36X48	12.00	4	48			25	SPEED LIMIT 70
R3-1	48X48	16.00						NO RIGHT TURN (SYMBOL)
R3-2	48X48	16.00	1	16			56	NO LEFT TURN (SYMBOL)
R3-3	36X36	9.00						NO TURNS
R3-4	48X48	16.00						NO U-TURN (SYMBOL)
R3-7L	30X30	6.25						LEFT LANE MUST TURN LEFT
R3-7R	30X30	6.25						RIGHT LANE MUST TURN RIGHT
R4-1	36X48	12.00						DO NOT PASS
R4-2	36X48	12.00						PASS WITH CARE
R4-7a	36X48	12.00						KEEP RIGHT (HORIZONTAL ARROW)
R4-8a	36X48	12.00						KEEP LEFT (HORIZONTAL ARROW)
R5-1	30X30	6.25						DO NOT ENTER
R5-1a	36X24	6.00						WRONG WAY
R6-1L	54X18	6.75						ONE WAY ARROW (LEFT)
R6-1R	54X18	6.75						ONE WAY ARROW (RIGHT)
R6-2L	24X30	5.00						ONE WAY (LEFT)
R6-2R	24X30	5.00						ONE WAY (RIGHT)
R9-9	24X12	2.00						SIDEWALK CLOSED
R9-11L	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW LEFT) CROSS HERE
R9-11R	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW RIGHT) CROSS HERE
R10-6	24X36	6.00						STOP HERE ON RED (45^ ARROW)
R11-2	48X30	10.00	1	10			29	ROAD CLOSED
R11-3a	60X30	12.50						ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY
R11-4	60X30	12.50						ROAD CLOSED TO THRU TRAFFIC
CONST-3A	60X48	20.00	4	80			53	FINE SIGN
CONST-3X	56X12	4.67						SPEEDING/PASSING (PLATE)
MISCELLANEOUS SIGNS								
CONST-5	48X36	12.00						POINT OF PRESENCE
CONST-5	96X48	32.00	2	64			61	POINT OF PRESENCE
CONST-5P	60X8	3.33	2	6.66			61A	POINT OF PRESENCE
CONST-8	48X36	12.00	4	48			55	WORK ZONE NO PHONE ZONE
SPECIAL	36X60	15.00	3	45			50A	DETOUR ASSEMBLY-RTE E STR.
SPECIAL	36X60	15.00	1	15			50B	DETOUR ASSEMBLY-RTE E ADV. RT.
SPECIAL	36X60	15.00	1	15			50C	DETOUR ASSEMBLY-RTE E RT.
SPECIAL	36X60	15.00	1	15			50D	DETOUR ASSEMBLY-RTE E ADV. LT.
SPECIAL	36X60	15.00	2	30			50E	DETOUR ASSEMBLY-RTE E LT.
SPECIAL	36X60	15.00	2	30			50F	DETOUR ASSEMBLY-RTE E VEER RT.

616-10.05 CONSTRUCTION SIGNS	TOTAL	930
616-10.10 RELOCATED SIGNS	TOTAL	0

ITEM NUMBER	TOTAL QTY	DESCRIPTION
6122008		IMPACT ATTENUATOR 40 MPH (SAND BARRELS)
6122009		IMPACT ATTENUATOR 45 MPH (SAND BARRELS)
6122010		IMPACT ATTENUATOR 50 MPH (SAND BARRELS)
6122012		IMPACT ATTENUATOR 55 MPH (SAND BARRELS)
6122014		IMPACT ATTENUATOR 60 MPH (SAND BARRELS)
6122017		IMPACT ATTENUATOR 65 MPH (SAND BARRELS)
6122019		IMPACT ATTENUATOR 70 MPH (SAND BARRELS)
6122020		REPLACEMENT SAND BARREL
6122030		IMPACT ATTENUATOR (RELOCATION)
6123001	1**	TRUCK MOUNTED ATTENUATOR (TMA)
6161008	4	ADVANCED WARNING RAIL SYSTEM
6161012		BUOYS (BOATS KEEP OUT)
6161013		BUOYS (NO WAKE)
6161014		SPECIAL SIGN ASSEMBLY (BOATS KEEP OUT)
6161025	126	CHANNELIZER (TRIM LINE)
6161030	3	TYPE III MOVEABLE BARRICADE
6161033	28	DIRECTION INDICATOR BARRICADE
6161040	4	FLASHING ARROW PANEL
6161047		TYPE III OBJECT MARKER
6161055		SEQUENTIAL FLASHING WARNING LIGHT
6161070		TUBULAR MARKER
6161095		RADAR SPEED ADVISORY SYSTEM
6161096		CHANGEABLE MESSAGE SIGN, COMMISSION FURNISHED/RETAINED
6161098A	2**	CHANGEABLE MESSAGE SIGN W/O COMM. INTERFACE - CONTRACTOR FURNISHED/RETAINED
6161099		CHANGEABLE MESSAGE SIGN WITH COMM. INTERFACE - CONTRACTOR FURNISHED/RETAINED
6162000A		WORK ZONE TRAFFIC SIGNAL SYSTEM
6162002		TEMPORARY LONG-TERM RUMBLE STRIPS
6173600D		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/RETAINED
6173602B		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/COMMISSION RETAINED
6174000A		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION
6175010A		RELOCATING TEMPORARY TRAFFIC BARRIER
6176000B		TEMPORARY TRAFFIC BARRIER COMMISSION FURNISHED/RETAINED
6177000B		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION COMMISSION FURNISHED/RETAINED
6208064A		TEMPORARY RAISED PAVEMENT MARKER
9029400		TEMPORARY TRAFFIC SIGNALS
9029401		TEMPORARY TRAFFIC SIGNALS AND LIGHTING

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

TEMPORARY TRAFFIC CONTROL	
PAY TOTAL =	1 LUMP SUM

MOBILIZATION	
PAY TOTAL =	1 LUMP SUM

SUMMARY OF QUANTITIES
SHEET 1 OF 1

STATE OF MISSOURI
ANDREA S. DAVIS
PE-2018021250
PROFESSIONAL ENGINEER

DATE PREPARED 1/21/2025

ROUTE	STATE
E	MO
DISTRICT	SHEET NO.
CD	2

COUNTY PHELPS

JOB NO. J5S3541

CONTRACT ID. .

PROJECT NO. .

BRIDGE NO. .

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

HR GREEN, INC.
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ST. LOUIS, MISSOURI 63141
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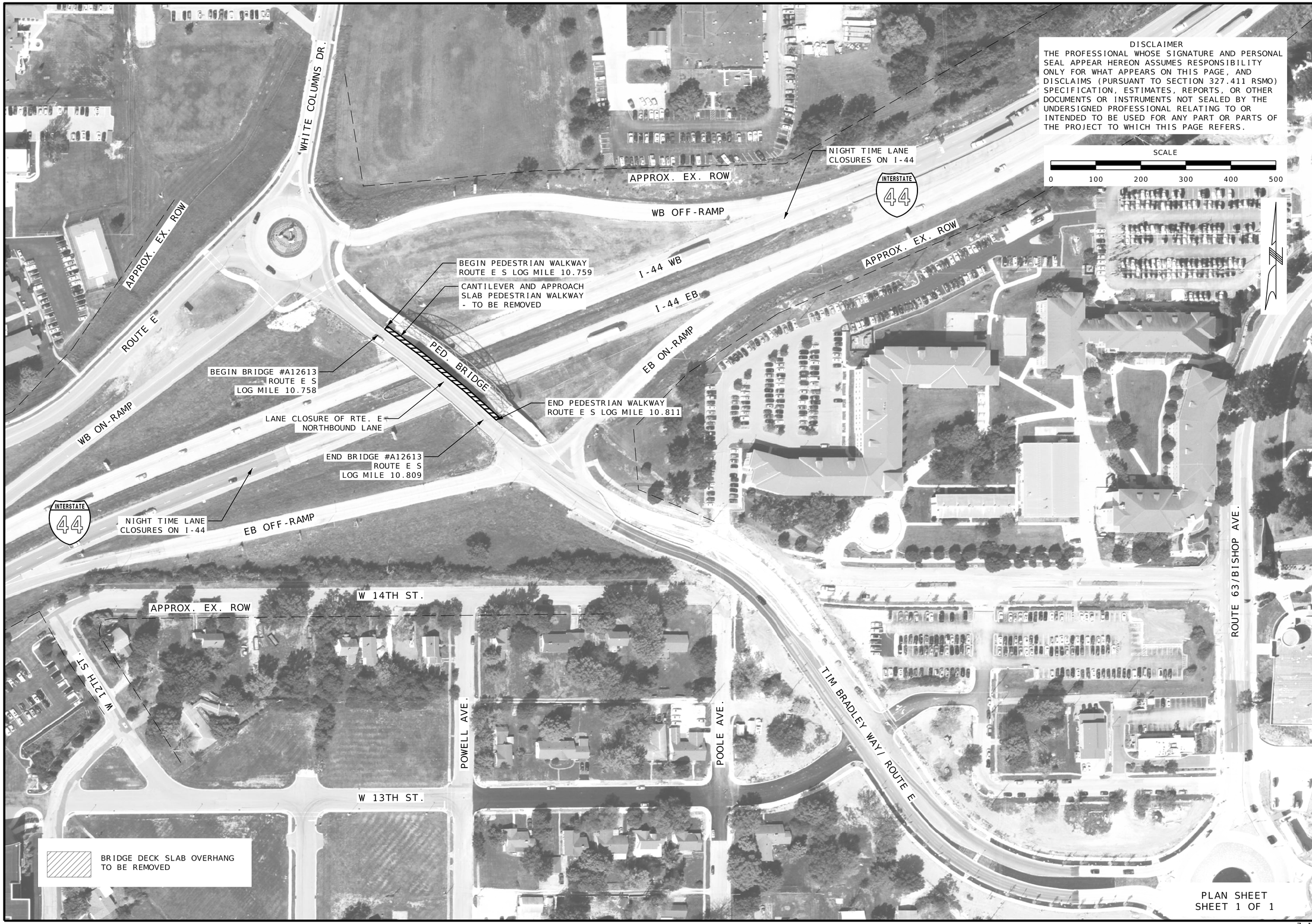

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SCALE
0 100 200 300 400 500

PLAN SHEET
SHEET 1 OF 1

STATE OF MISSOURI
ANDREA S. DAVIS
PE-2018021250
PROFESSIONAL ENGINEER

DATE PREPARED	
12/27/2024	
ROUTE	STATE
E	MO
DISTRICT	SHEET NO.
CD	3
COUNTY	
PHELPS	
JOB NO.	
J5S3541	
CONTRACT ID.	
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PROJECT NO.	
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DESCRIPTION	DATE
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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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7:11:55 AM

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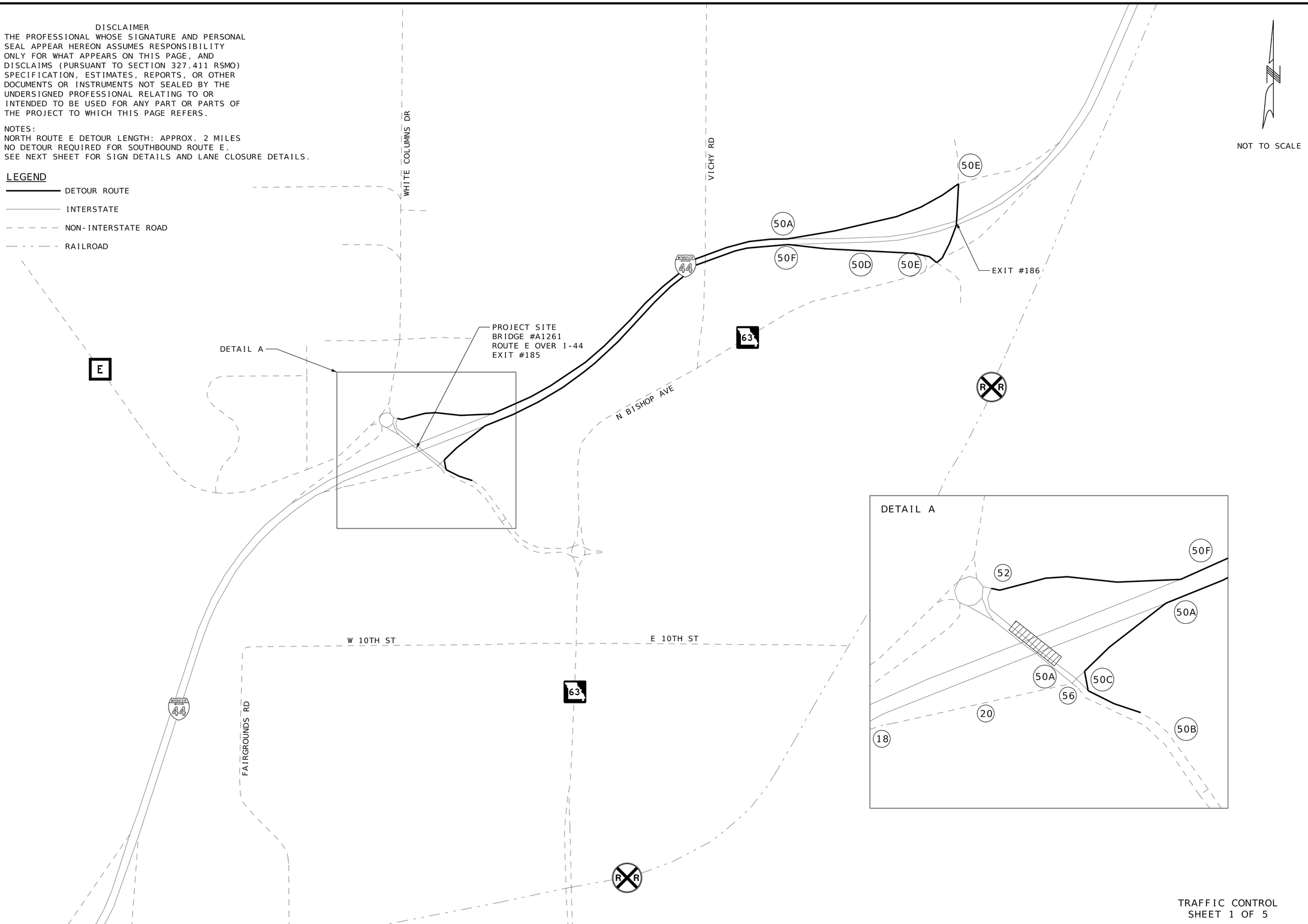
NOTES:
NORTH ROUTE E DETOUR LENGTH: APPROX. 2 MILES
NO DETOUR REQUIRED FOR SOUTHBOUND ROUTE E.
SEE NEXT SHEET FOR SIGN DETAILS AND LANE CLOSURE DETAILS.

LEGEND
- DETOUR ROUTE
- INTERSTATE
- NON-INTERSTATE ROAD
- RAILROAD



TRAFFIC CONTROL
SHEET 1 OF 5

STATE OF MISSOURI
ANDREA S. DAVIS
PE-2018021250
PROFESSIONAL ENGINEER

DATE PREPARED	
12/27/2024	
ROUTE: E	STATE: MO
DISTRICT: CD	SHEET NO.: 4
COUNTY: PHELPS	
JOB NO.: J5S3541	
CONTRACT ID.: .	
PROJECT NO.: .	
BRIDGE NO.: .	

DATE	DESCRIPTION
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HRGreen

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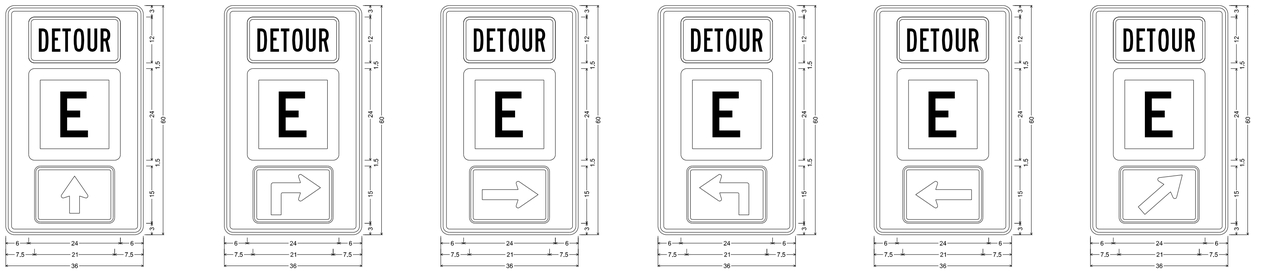
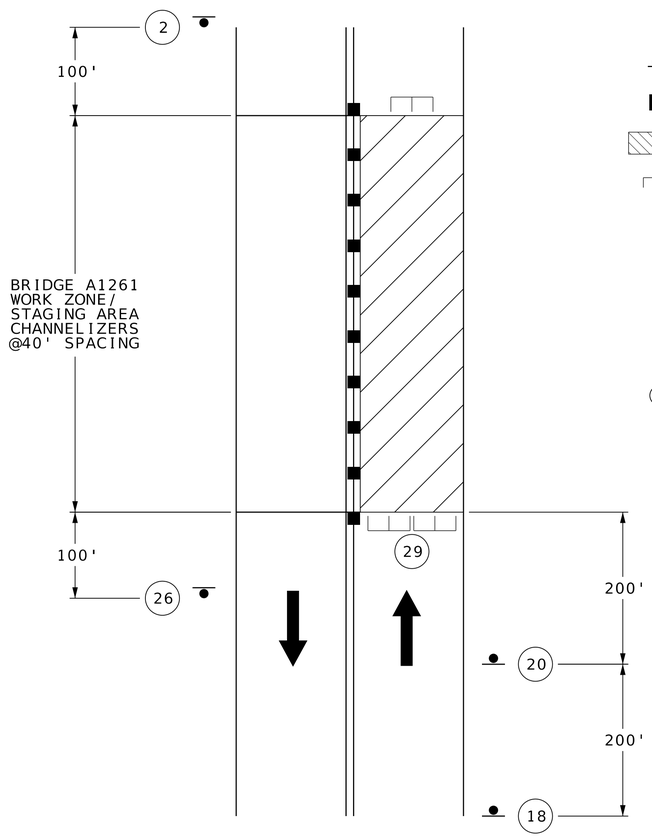


50A 50B 50C 50D 50E 50F

DETOUR FOR ONE TRAVEL-LANE DIRECTION



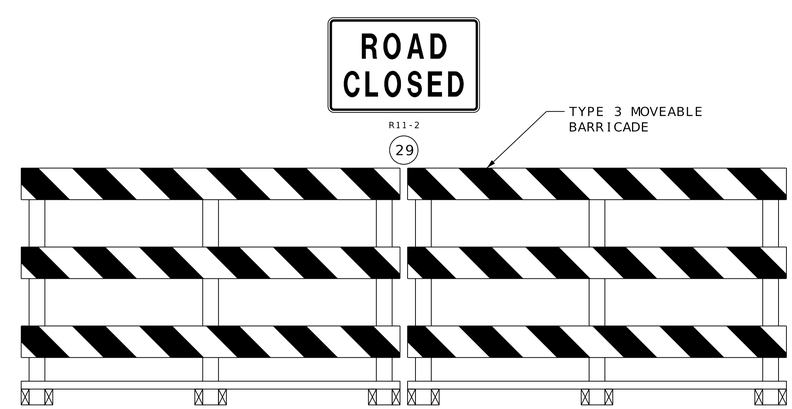
NOT TO SCALE

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- CHANNELIZER (TRIM LINE)
- WORK ZONE/STAGING AREA
- TYPE 3 MOVEABLE BARRICADE

WO20-1 (2) WO20-2 (18) WO20-3 (20)

GO20-2 (26) MO4-8a (52) R3-2 (56)



R11-2 (29)

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GENERAL NOTES:

ANY EXISTING WARNING OR REGULATORY SIGNS (NOT SHOWN) THAT INTERFERE WITH THE TRAFFIC CONTROL SIGNING SHALL BE COMPLETELY COVERED OR REMOVED, NO DIRECT PAY.

ALL TRAFFIC CONTROL SIGNS ARE TO BE NON-PORTABLE UNLESS OTHERWISE NOTED.

SEE STANDARD PLANS 616.10, 903.01 AND 909.03 FOR ADDITIONAL DETAILS REGARDING TRAFFIC CONTROL HIGHWAY SIGNING.

TEMPORARY TRAFFIC CONTROL SIGN AND DEVICE LOCATIONS MAY BE ADJUSTED UPON APPROVAL OF THE ENGINEER. WHERE TRAFFIC BACKUPS ARE EXPECTED BEYOND THE ADVANCED WARNING AREA, ADDITIONAL SIGNING MAY BE NEEDED AS DIRECTED BY THE ENGINEER.

ANY RELOCATION OF SIGNS AND DEVICES FOR TRAFFIC CONTROL DEVICES OR SIGNS SHALL BE CONSIDERED INCIDENTAL. NO DIRECT PAY.

R11-2 SIGN ASSOCIATED WITH THE TYPE 3 MOVEABLE BARRICADES SHALL BE MOUNTED ON POST 7-10 FEET BEHIND THE BARRICADE.

ALL WARNING SIGNS SHALL HAVE FLUORESCENT SHEETING.

TRAFFIC CONTROL
SHEET 2 OF 5

STATE OF MISSOURI
ANDREA S. DAVIS
PE-2018021250
PROFESSIONAL ENGINEER

DATE PREPARED	
12/27/2024	
ROUTE: E	STATE: MO
DISTRICT: CD	SHEET NO.: 5
COUNTY: PHELPS	
JOB NO.: J5S3541	
CONTRACT ID.: .	
PROJECT NO.: .	
BRIDGE NO.: .	

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

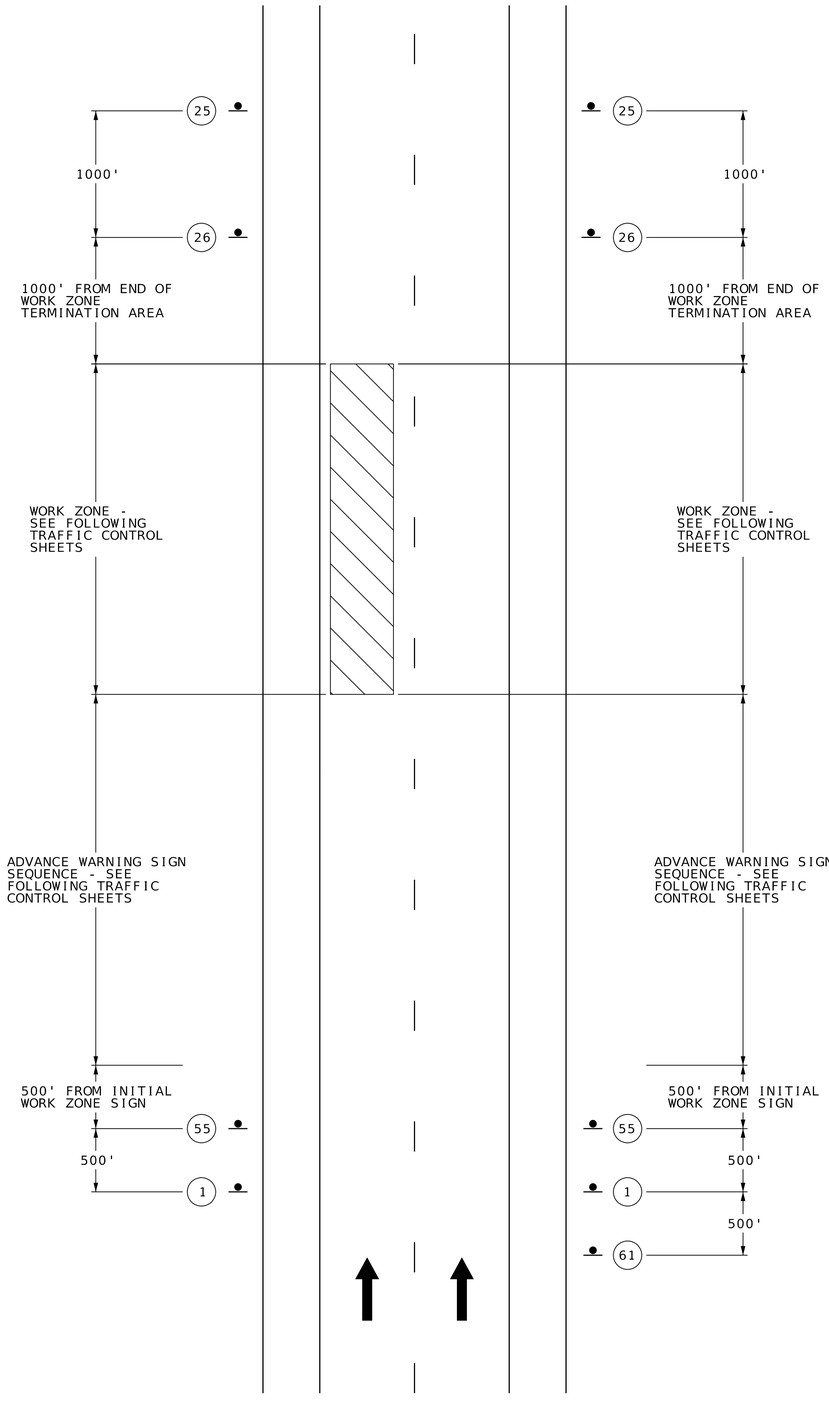
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

HR GREEN, INC.
520 MARYVILLE CENTRE DRIVE,
SUITE 100
ST. LOUIS, MISSOURI 63141
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608

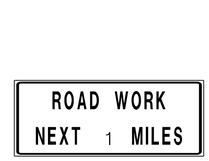
HRGreen

\\hrgreen.com\hrg\Data\2024\2402262\CAD\Roadway\J5S3541_RouteE\Plan_Sheets\05_TC_02_J5S3541_I1.dgn 7:12:14 AM 12/27/2024

BEGIN / END OF PROJECT SIGNING



NOT TO SCALE



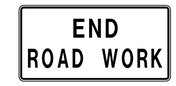
GO20-1

1

R2-1

25

(3)



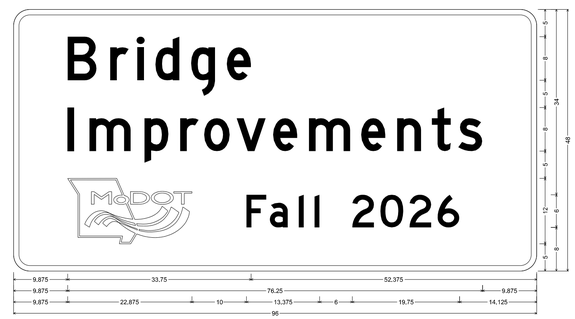
GO20-2

26

CONST-8

55

(2)



CONST-5 SH-FLAT SHEET:
3.000" Radius, 1.000" Border, White on, Blue;
"Bridge", D; "Improvements", D; "Fall 2026", D;
Table of letter and object lefts

B 9.875	r 17.750	i 22.750	d 26.000	g 32.625	o 39.125	
I 9.875	m 14.000	p 24.000	r 30.625	o 35.000	v 41.000	e 47.625	m 54.250	e 63.750	n 70.375	t 78.750	s 81.625
W 9.875	F 42.750	a 47.000	i 52.375	t 55.250	2 62.125	0 67.375	2 72.625	6 77.875			

61

(1)

CONST-5P-60 SHF-FLAT SHEET FLUORESCENT:
1.500" Radius, No border, Yellow;
"Completed as Promised" Black, D 65% spacing;
Table of letter and object lefts

C 1.500	a 4.875	m 7.875	p 12.375	l 15.375	e 16.625	t 19.375	e 21.500	d 24.250	a 29.000	s 31.875	
P 36.625	r 39.875	o 41.875	m 44.875	i 49.500	s 50.750	e 53.500	d 56.250				

61A

NOTES:

SIGN GO20-2 IS USED ON ALL PROJECTS WHERE SIGN GO20-1 IS USED.

OTHER SIGNS SUCH AS DETOUR OR ALTERNATE ROUTE SIGNING MAY BE USED OUTSIDE THE PROJECT LIMITS. SEE ADDITIONAL TRAFFIC CONTROL SHEETS FOR DETOUR SIGNAGE.

ANY EXISTING SIGNING THAT CONFLICTS WITH THE TRAFFIC CONTROL SIGNING SHALL BE COMPLETELY COVERED OR REMOVED.

SIGN SPACING MAY BE ADJUSTED ACCORDING TO FIELD CONDITIONS. WHERE TRAFFIC BACKUPS ARE EXPECTED BEYOND THE ADVANCE WARNING AREA, ADDITIONAL SIGNING MAY BE NEEDED.

(1) CONST-5-96 SIGN IS PLACED IN A VISIBLE AREA WITHIN THE PROJECT LIMITS PROVIDED ITS PLACEMENT DOES NOT DISRUPT A SEQUENCE OF SIGNS. IF A VISIBLE LOCATION WITHIN THE PROJECT LIMITS IS NOT AVAILABLE, THE SIGN MAY BE PLACED 500 FEET BEFORE THE GO20-1 ROAD WORK XX MILES SIGN.

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

(3) SPEED LIMIT SIGNS INDICATING THE NORMAL SPEED LIMIT SHOULD BE INSTALLED AT THE END OF THE REDUCED AREA PROVIDED NO OTHER REDUCTION IS IMPOSED WITHIN THE NEXT ONE-HALF MILE OR NO EXISTING SPEED LIMIT SIGN IS LOCATED WITH THE NEXT ONE-HALF MILE.

TRAFFIC CONTROL LEGEND

SIGN (SINGLE SIDED)

WORK ZONE

DISCLAIMER
THE PROFESSIONAL WHOSE SIGNATURE AND PERSONAL SEAL APPEAR HEREON ASSUMES RESPONSIBILITY ONLY FOR WHAT APPEARS ON THIS PAGE, AND DISCLAIMS (PURSUANT TO SECTION 327.411 RSMO) SPECIFICATION, ESTIMATES, REPORTS, OR OTHER DOCUMENTS OR INSTRUMENTS NOT SEALED BY THE UNDERSIGNED PROFESSIONAL RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE PROJECT TO WHICH THIS PAGE REFERS.

STATE OF MISSOURI
ANDREA S. DAVIS
PE-2018021250
PROFESSIONAL ENGINEER

DATE PREPARED	
12/27/2024	
ROUTE: E	STATE: MO
DISTRICT: CD	SHEET NO.: 6
COUNTY: PHELPS	
JOB NO.: J5S3541	
CONTRACT ID.: .	
PROJECT NO.: .	
BRIDGE NO.: .	

DATE	DESCRIPTION
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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
ST. LOUIS, MISSOURI 63141
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608

TRAFFIC CONTROL
SHEET 3 OF 5

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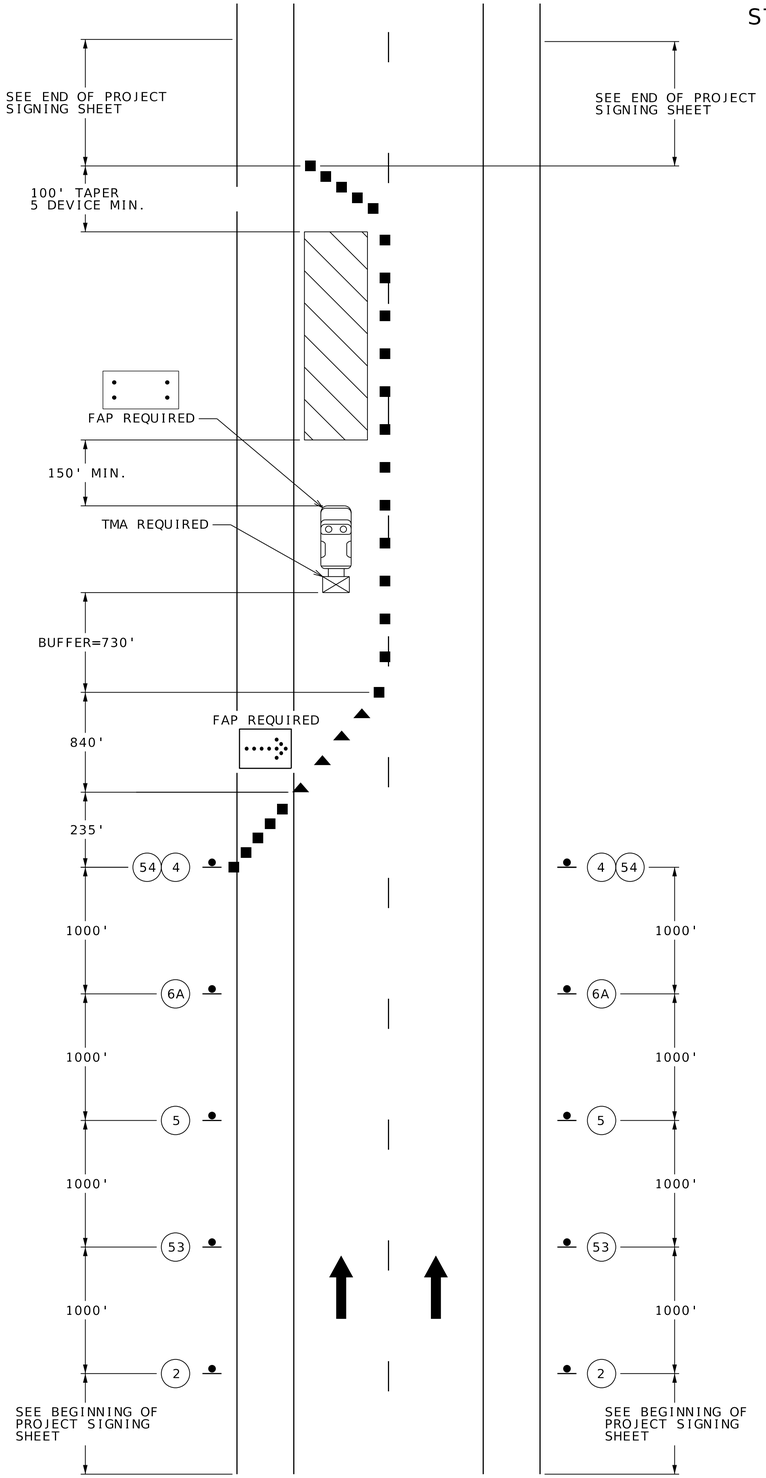
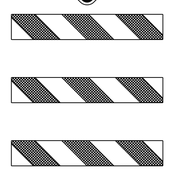
STATIONARY LANE CLOSURE ON A DIVIDED HIGHWAY



NOT TO SCALE



WO20-1 WITH AWRS

2

GO20-5aP

54

R2-1

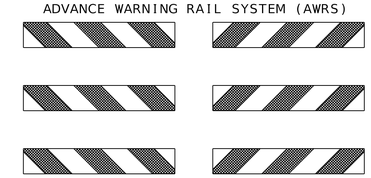
4

WO20-5

5

CENTER LANE
OR
LEFT LANE

ADVANCE WARNING RAIL SYSTEM (AWRS)



LEFT SIDE OF ROAD

RIGHT SIDE OF ROAD

CENTER
OR
LEFT

WO20-6a

6

WO4-1aR

6A

CONST-3A

53

DISCLAIMER

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CHANNELIZER SPACING:

TAPERS: 60'
BUFFER/WORK AREAS: 120'

NOTES:

SEE EPG 616.12 WORK ZONE SPEED LIMITS FOR SPEED LIMIT GUIDELINES.

REDUCED SPEED LIMIT SIGNING SHALL BE REMOVED, COVERED, OR TURNED FROM TRAFFIC WHEN CONDITIONS REQUIRING THE REDUCED SPEED NO LONGER EXIST.

TEMPORARY TRAFFIC BARRIER, IF USED, SHALL COMPLY WITH THE PROVISIONS IN EPG 616.6.85 TEMPORARY TRAFFIC BARRIER AND MUTCD FIGURE 6H-34 LANE CLOSURE WITH A TEMPORARY TRAFFIC BARRIER.

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

REVIEW EPG 616.6.83 WARNING LIGHTS FOR USE OF SEQUENTIAL FLASHING WARNING LIGHTS DURING NIGHTTIME OPERATIONS.

FOR ADVANCE WARNING RAIL SYSTEM, REFER TO EPG 616.6.2.2 ADVANCE WARNING RAIL SYSTEM.

REVIEW EPG 616.6.63 CHANNELIZING DEVICES FOR DIFFERENT TYPES AND GUIDELINES FOR THE DEVICES.

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- ADVANCED WARNING RAIL SYSTEM (AWRS)
- CHANNELIZER (TRIM LINE)
- DIRECTIONAL INDICATOR BARRICADE
- FLASHING ARROW PANEL (FAP)
- PROTECTED VEHICLE WITH TRUCK MOUNTED ATTENUATOR (TMA)
- WORK ZONE

TRAFFIC CONTROL
SHEET 4 OF 5

STATE OF MISSOURI
ANDREA S. DAVIS
PE-2018021250
PROFESSIONAL ENGINEER

DATE PREPARED	
12/27/2024	
ROUTE: E	STATE: MO
DISTRICT: CD	SHEET NO.: 7
COUNTY: PHELPS	
JOB NO.: J5S3541	
CONTRACT ID.: .	
PROJECT NO.: .	
BRIDGE NO.: .	

DATE	DESCRIPTION
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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
ST. LOUIS, MISSOURI 63141
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608

HRGreen

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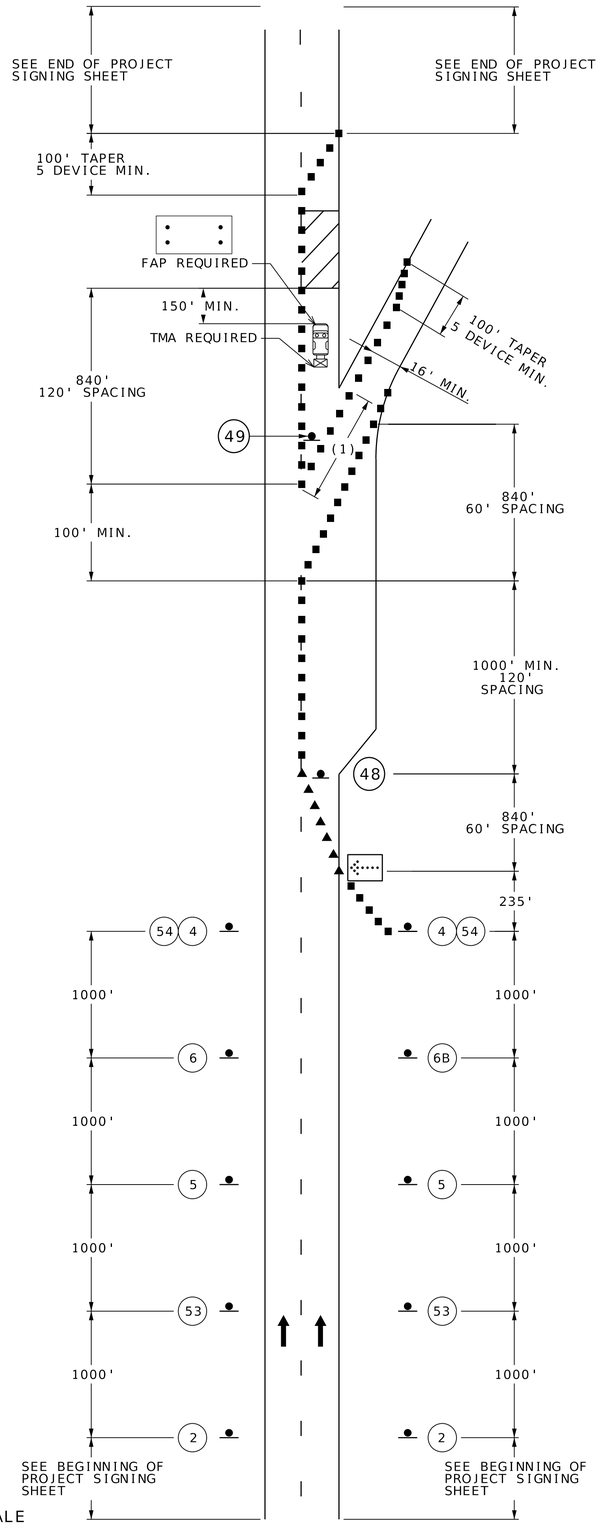
STATIONARY WORK IN VICINITY OF AN EXIT RAMP



NOT TO SCALE

WO20-1 WITH AWRS

2

GO20-5aP

54

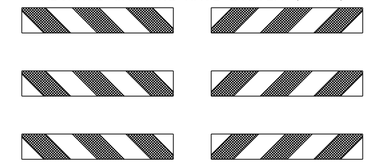
R2-1

4

WO20-5

5

ADVANCE WARNING RAIL SYSTEM (AWRS)



LEFT SIDE OF ROAD

RIGHT SIDE OF ROAD

WO20-6a

6

WO4-1aL

6B

E05-2

48

E05-1

49

CONST-3A

53

CHANNELIZER SPACING:

TAPERS: 60'
BUFFER/WORK AREAS: 120'

NOTES:

SEE PREVIOUS SHEET FOR TRAFFIC CONTROL NOTES.

(1) FIVE DEVICE MINIMUM.

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- ADVANCED WARNING RAIL SYSTEM (AWRS)
- CHANNELIZER (TRIM LINE)
- DIRECTIONAL INDICATOR BARRICADE
- FLASHING ARROW PANEL (FAP)
- PROTECTED VEHICLE WITH TRUCK MOUNTED ATTENUATOR (TMA)
- WORK ZONE

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STATE OF MISSOURI
ANDREA S. DAVIS
PE-2018021250
PROFESSIONAL ENGINEER

DATE PREPARED	
12/27/2024	
ROUTE: E	STATE: MO
DISTRICT: CD	SHEET NO.: 8
COUNTY: PHELPS	
JOB NO.: J5S3541	
CONTRACT ID.: .	
PROJECT NO.: .	
BRIDGE NO.: .	

DATE	DESCRIPTION
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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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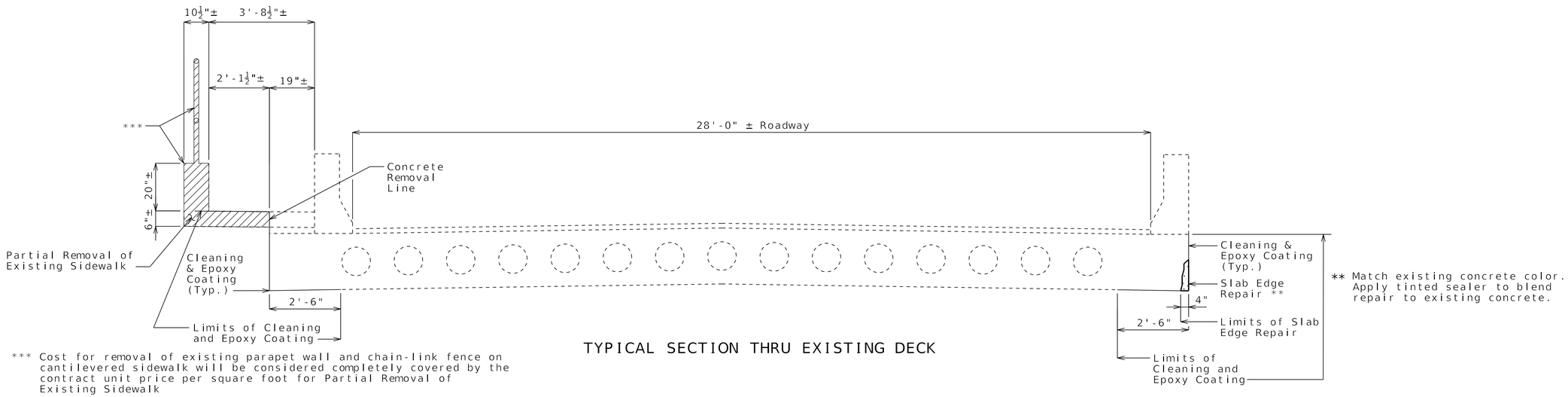
HR GREEN, INC.
520 MARYVILLE CENTRE DRIVE, SUITE 100
ST. LOUIS, MISSOURI 63141
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608

TRAFFIC CONTROL
SHEET 5 OF 5

SEC/SUR 2 TWP 37N RGE 8W

U.I.P. AND REHABILITATE EXISTING (52'-67'-67'-49') CONTINUOUS CONCRETE VOIDED SLAB SPANS (SKEW: 30° L.A.)



*** Cost for removal of existing parapet wall and chain-link fence on cantilevered sidewalk will be considered completely covered by the contract unit price per square foot for Partial Removal of Existing Sidewalk

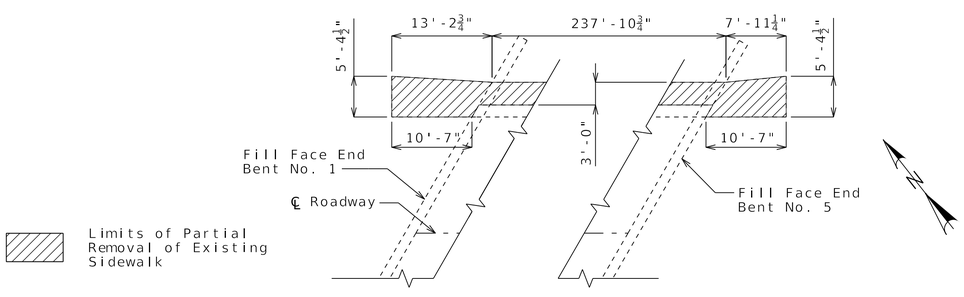
TYPICAL SECTION THRU EXISTING DECK

Estimated Quantities

Item		Total
Partial Removal of Existing Sidewalk	sq. foot	819*
Slab Edge Repair (Bridges)	linear foot	150
Cleaning and Epoxy Coating	sq. foot	2331
Protective Coating - Concrete Bents and Piers (Epoxy)	lump sum	1

* Quantity for Partial Removal of Existing Sidewalk includes removal of sidewalk approach slabs at each end bent.

Cost of any required excavation for bridge will be considered completely covered by the contract unit price for other items.



PARTIAL PLAN VIEW

General Notes:

Design Specifications:

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

Design Loading:

H20-44 (1961)

Concrete Protective Coatings:

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

Miscellaneous:

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.

Existing sidewalk reinforcement shall be cut off one inch below concrete removal surface and the resulting holes shall be filled with a qualified special mortar before epoxy coating.

The following locations shall be cleaned and sealed with Protective Coating - Concrete Bents and Piers (Epoxy):
- All exposed substructure concrete at the end bents
- Exposed concrete columns of all intermediate bents to an elevation 15 feet above existing ground.

Traffic Handling:

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

REPAIRS TO BRIDGE: ROUTE E
OVER ROUTE I-44

ROUTE E FROM ROUTE 63 TO ROUTE Y
ABOUT 0.3 MILE NORTHWEST OF ROUTE 63
BEGINNING STATION 448+66.80 ± (Match Existing)

Detailed Sept. 2024
Checked Sept. 2024

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

STATE OF MISSOURI
KEVIN J. BREHM
PE-2010024490
PROFESSIONAL ENGINEER

DATE PREPARED	
1/10/2025	
ROUTE: E	STATE: MO
DISTRICT: BR	SHEET NO.: 1
COUNTY: PHELPS	
JOB NO.: J5S3541	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.: A12613	

DATE	DESCRIPTION

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
ST. LOUIS, MISSOURI 63141
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

PLANS FOR PROPOSED STATE HIGHWAY

PHELPS COUNTY

SECTION 8, T37N, R9W

DESIGN DESIGNATION

A.A.D.T. - 2023 = 268
A.A.D.T. - 2043 = 327
D.H.V. = 3.4%
T = 3.7%
V = 35 M.P.H.
D = 50%/50%

FUNCTIONAL CLASSIFICATION- LOCAL ROAD

NO RIGHT OF WAY WILL BE ACQUIRED WITH THIS PROJECT.

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CONVENTIONAL SYMBOLS

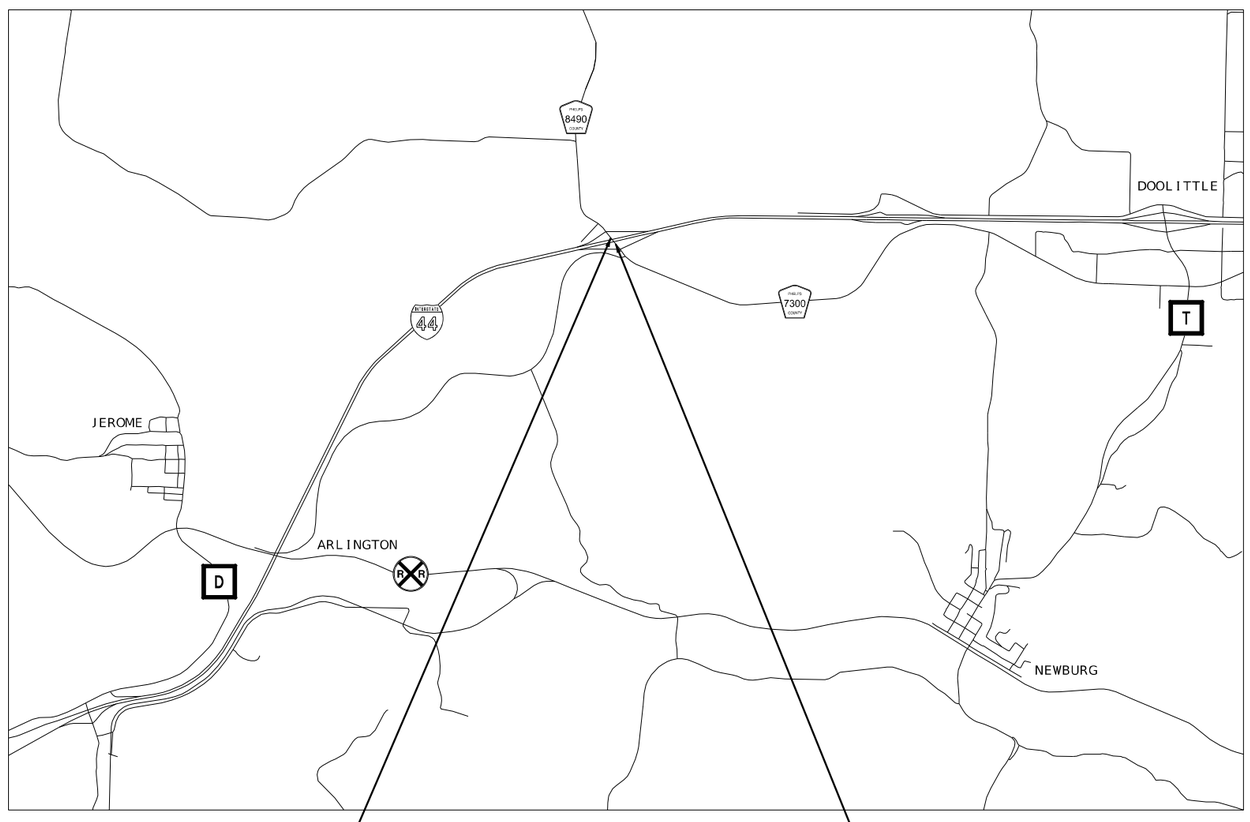
(USED IN PLANS)

	EXISTING	NEW
BUILDINGS AND STRUCTURES		
GUARD RAIL		
GUARD CABLE		
CONCRETE RIGHT-OF-WAY MARKER		
STEEL RIGHT-OF-WAY MARKER		
LOCATION SURVEY MARKER		
UTILITIES		
FIBER OPTICS	FO	FO
OVERHEAD CABLE TV	OTV	OTV
UNDERGROUND CABLE TV	UTV	UTV
OVERHEAD TELEPHONE	OT	OT
UNDERGROUND TELEPHONE	UT	UT
OVERHEAD POWER	OE	OE
UNDERGROUND POWER	UE	UE
SANITARY SEWER	S	S
STORM SEWER	SS	SS
GAS	G	G
WATER	W	W
MANHOLE	SAN	
FIRE HYDRANT	HYD	
WATER VALVE	WV	
WATER METER	WM	
DROP INLET	DI	
DITCH BLOCK		
GROUND MOUNTED SIGN	SIGN	
LIGHT POLE		
H-FRAME POWER POLE		
TELEPHONE PEDESTAL	PED	
FENCE		
CHAIN LINK	V	
WOVEN WIRE	X	
GATE POST		
BENCHMARK	BM	

NOTE: DASHED OR OPEN SYMBOLS INDICATE EXISTING FEATURES

KEY MAP
LOCATION OF PHELPS COUNTY

NOT TO SCALE



BEGIN PROJECT
LIMIT CRD 8490 S
LOG MILE 4.448

PROJECT LIMITS
CRD 8490 OVER I-44 - BRIDGE #A16272

HYDRO DEMO WITH LATEX OVERLAY, CURB BLOCKOUTS, APPROACH SLAB MILL & OVERLAY, GUARDRAIL REPLACEMENT

END PROJECT
LIMIT CRD 8490 S
LOG MILE 4.493

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

INDEX OF SHEETS

DESCRIPTION	SHEET NUMBER
TITLE SHEET	1
TYPICAL SECTIONS (TS) (1 SHEET)	2
QUANTITIES (QU) (2 SHEETS)	3
PLAN SHEET(PL)	4
TRAFFIC CONTROL SHEETS (TC)	5-10
EROSION CONTROL SHEET	11
BRIDGE DRAWINGS (B)	
A16272	1-5

LENGTH OF PROJECT

BEGINNING OF PROJECT	LOG MILE 4.448
END OF PROJECT	LOG MILE 4.493
APPARENT LENGTH	237.60 FEET
EQUATIONS AND EXCEPTIONS:	
TOTAL CORRECTIONS	0.00 FEET
NET LENGTH OF PROJECT	237.60 FEET
STATE LENGTH	0.045 MILES
FOR INFORMATION ONLY ESTIMATED DISTURBED ACRES	0.0 ACRES

STATE OF MISSOURI
ANDREA S. DAVIS
PE-2018021250
PROFESSIONAL ENGINEER

DATE PREPARED	
1/21/2025	
ROUTE	STATE
CR8490	MO
DISTRICT	SHEET NO.
CD	1
COUNTY	
PHELPS	
JOB NO.	
J5S3547	
CONTRACT ID.	
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PROJECT NO.	
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BRIDGE NO.	
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DESCRIPTION	DATE
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HR GREEN, INC.
520 MARYVILLE CENTRE DRIVE,
SUITE 100
ST. LOUIS, MISSOURI 63141
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

APPLICATION RATES:

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

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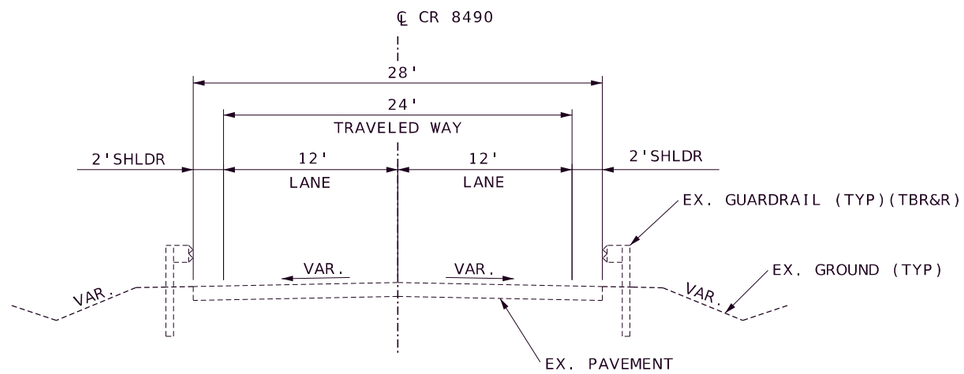
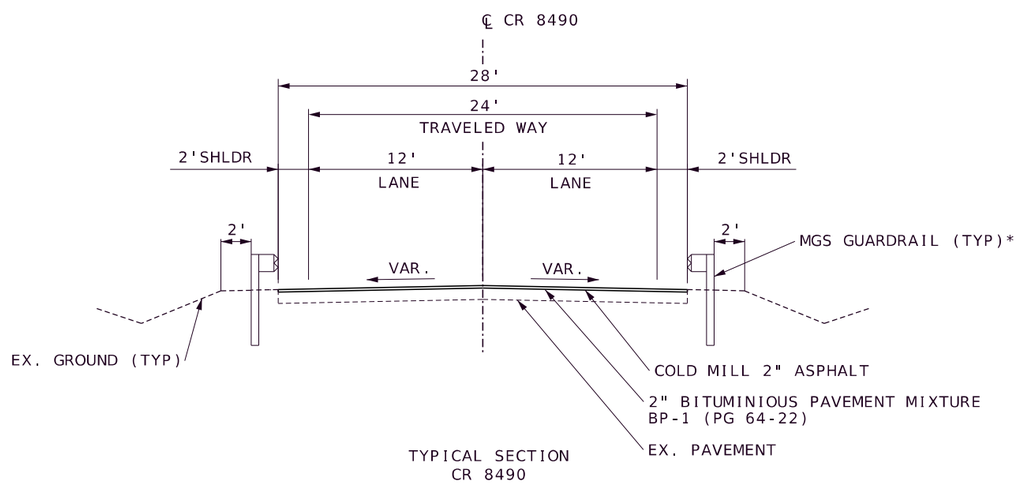


EXISTING TYPICAL SECTION
CR 8490

LOG MILE 4.448 TO LOG MILE 4.493



TYPICAL SECTION
CR 8490

LOG MILE 4.448 TO LOG MILE 4.493

*SEE PLAN SHEET FOR GUARDRAIL STATION RANGES

BRIDGE LIMITS: LOG MILE 4.455 TO LOG MILE 4.487

TYPICAL SECTIONS
SHEET 1 OF 1

STATE OF MISSOURI
ALISON N. GRAVES
NUMBER
PE-2011015778
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED, AND DATED ELECTRONICALLY.

DATE PREPARED	
12/27/2024	
ROUTE	STATE
CR8490	MO
DISTRICT	SHEET NO.
CD	2
COUNTY	
PHELPS	
JOB NO.	
J5S3547	
CONTRACT ID.	
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PROJECT NO.	
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BRIDGE NO.	
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DESCRIPTION	DATE
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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

5220 Oakland Ave.
St. Louis, MO 63110
(314) 863-5570
CIVIL DESIGN, INC.
Missouri State Certificate of Authority #2002006804

REV.

P:\6XXX\66XX-67XX\6765 - MODOT Central Distric Bridge Rehabs over I44\28-Trans\CAD\J5S3547_CR8490_A1627\002_TS_J5S3547_I1.dgn 3:44:38 PM 12/27/2024

REMOVAL OF IMPROVEMENTS

PLAN SHEET	LOG MILE	SIDE	DESCRIPTION	AMOUNT
				LF
4	4.455	LT	GUARDRAIL	86.5
4	4.455	RT	GUARDRAIL	86.5
4	4.487	LT	GUARDRAIL	86.5
4	4.487	RT	GUARDRAIL	86.5
			TOTAL	1 LUMP SUM

MOBILIZATION

TOTAL = 1 LUMP SUM

RESTORE SLOPE

TOTAL = 1 LUMP SUM

PAVEMENT

PLAN SHEET	BEGIN LOG MILE	END LOG MILE	SIDE	BITUMINOUS PAVEMENT MIXTURE PG64-22 (BP-1)	COLDMILLING BITUMINOUS PAVEMENT FOR REMOVAL OF SURFACING (3 IN. THICK OR LESS)	TACK COAT
				SY	SY	SY
4	4.448	4.455	BOTH	105.6	105.6	105.6
4	4.487	4.493	BOTH	105.8	105.8	105.8
			SUBTOTAL	211.4	211.4	211.4
				2" DEPTH		
				X 1.948 TONS/CY		X 0.10 GAL/SY
				TONS	SY	GALLON
			TOTAL	22.9	211	21

UNDILUTED TACK COAT APPLICATION RATES PER EPG TABLE 407.1.4 USED: 0.05 FOR NEW ASPHALT SURFACES, 0.10 FOR COLDMILLED ASPHALT SURFACES

GUARDRAIL

PLAN SHEET	LOG MILE	SIDE	MGS BRIDGE APPR. GUARDRAIL SECTION (REGULAR/NO CURB)	TYPE A CRASHWORTHY END TERMINAL (MASH)	SHAPING SLOPES CLASS III
			EA	EA	100F
4	4.455	LT	1	1	1.2
4	4.455	RT	1	1	1.2
4	4.487	LT	1	1	1.2
4	4.487	RT	1	1	1.2
		TOTAL	4	4	5

PERMANENT PAVEMENT MARKING

PLAN SHEET	BEGIN LOG MILE	END LOG MILE	SIDE	WATERBORNE W/ TYPE P BEADS 4 INCH YELLOW	REMARKS
				LF	
4	4.448	4.493	CENTER	544	DOUBLE SOLID YELLOW
			TOTAL	544	

PERMANENT EROSION CONTROL

PLAN SHEET	LOG MILE	SIDE	FURNISHING TYPE 1 ROCK DITCH LINER	PLACING TYPE 1 ROCK DITCH LINER	PERMANENT EROSION CONTROL GEOTEXTILE
			CY	CY	SY
4	4.455	LT	6	6	26
4	4.455	RT	6	6	26
4	4.487	LT	6	6	26
4	4.487	RT	6	6	26
		TOTAL	24	24	104

TEMPORARY EROSION CONTROL

PLAN SHEET	LOG MILE	SIDE	SILT FENCE	SEDIMENT REMOVAL
			LF	CY
11	4.455	LT	115	1
11	4.455	RT	115	1
11	4.487	LT	105	1
11	4.487	RT	105	1
		TOTAL	440	4

NOTE: SEDIMENT REMOVAL IS BASED ON 1 CY PER DITCH CHECK, 1 CY PER 100 FT OF SILT FENCE

SUMMARY OF QUANTITIES
SHEET 1 OF 2

STATE OF MISSOURI
ALISON N. GRAVES
NUMBER
PE-2011015778
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED, AND DATED ELECTRONICALLY.

DATE PREPARED: 12/27/2024

ROUTE	STATE
CR8490	MO
DISTRICT	SHEET NO.
CD	3

COUNTY: PHELPS

JOB NO.: J5S3547

CONTRACT ID.: .

PROJECT NO.: .

BRIDGE NO.: .

DESCRIPTION	DATE
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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

5220 Oakland Ave.
St. Louis, MO 63110
(314) 863-5570

CIVIL DESIGN, INC.
VISIONS

Missouri State Certificate of Authority #2002006804

EFFECTIVE: 07-01-2024

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL AREA SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NUM.	DESCRIPTION
WARNING SIGNS								
WO1-1L	48X48	16.00						TURN (SYMBOL LEFT)
WO1-1R	48X48	16.00						TURN (SYMBOL RIGHT)
WO1-2L	48X48	16.00						CURVE (SYMBOL LEFT)
WO1-2R	48X48	16.00						CURVE (SYMBOL RIGHT)
WO1-3L	48X48	16.00						REVERSE TURN (SYMBOL LEFT)
WO1-3R	48X48	16.00						REVERSE TURN (SYMBOL RIGHT)
WO1-4L	48X48	16.00						REVERSE CURVE (SYMBOL LEFT)
WO1-4R	48X48	16.00						REVERSE CURVE (SYMBOL RIGHT)
WO1-4bL	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL LEFT)
WO1-4bR	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL RIGHT)
WO1-4cL	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL LEFT)
WO1-4cR	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL RIGHT)
WO1-6	60X30	12.50						HORIZONTAL ARROW (SYMBOL)
WO1-6a	72X36	18.00						HORIZ. ARROW (SYMBOL ON PERMANENT BARRICADE)
WO1-7	60X30	12.50						DOUBLE HEAD HORIZONTAL ARROW (SYMBOL)
WO1-7a	72X36	18.00						DOUBLE HEAD HORIZ. ARROW (SYMBOL ON PERM. BARR.)
WO1-8	18X24	3.00						CHEVRON (SYMBOL)
WO1-8a	30X36	7.50						CHEVRON (SYMBOL FOR DIVIDED HIGHWAYS)
WO3-1	48X48	16.00						STOP AHEAD (SYMBOL)
WO3-2	48X48	16.00						YIELD AHEAD (SYMBOL)
WO3-3	48X48	16.00						SIGNAL AHEAD (SYMBOL)
WO3-4	48X48	16.00						BE PREPARED TO STOP
WO3-5	48X48	16.00						SPEED LIMIT AHEAD
WO4-1L	48X48	16.00						MERGE (SYMBOL FROM LEFT)
WO4-1R	48X48	16.00						MERGE (SYMBOL FROM RIGHT)
WO4-1aL	48X48	16.00	2	32			6A	MERGE (LEFT)
WO4-1aR	48X48	16.00	2	32			6B	MERGE (RIGHT)
WO5-1	48X48	16.00						ROAD/BRIDGE/RAMP NARROWS
WO5-3	48X48	16.00						ONE LANE BRIDGE
WO5-5	48X48	16.00						NARROW LANES
WO6-1	48X48	16.00						DIVIDED HIGHWAY (SYMBOL)
WO6-2	48X48	16.00						DIVIDED HIGHWAY END (SYMBOL)
WO6-3	48X48	16.00						TWO WAY TRAFFIC (SYMBOL)
WO7-3a	30X24	5.00						NEXT XX MILES (PLAQUE)
WO8-1	48X48	16.00						BUMP
WO8-2	48X48	16.00						DIP
WO8-3	48X48	16.00						PAVEMENT ENDS
WO8-4	48X48	16.00						SOFT SHOULDER
WO8-5	48X48	16.00						SLIPPERY WHEN WET (SYMBOL)
WO8-6	48X48	16.00						TRUCK CROSSING
WO8-6c	48X48	16.00						TRUCK ENTRANCE
WO8-7	36X36	9.00						LOOSE GRAVEL
WO8-7a	36X36	9.00						FRESH OIL / LOOSE GRAVEL
WO8-9	48X48	16.00						LOW SHOULDER
WO8-11	48X48	16.00						UNEVEN LANES
WO8-12	48X48	16.00						NO CENTER LINE
WO8-15	48X48	16.00						GROOVED PAVEMENT
WO8-15P	30X24	5.00						MOTORCYCLE (PLAQUE)
WO8-17L	48X48	16.00						SHOULDER DROP-OFF (SYMBOL LEFT)
WO8-17R	48X48	16.00						SHOULDER DROP-OFF (SYMBOL RIGHT)
WO8-17P	30X24	5.00						SHOULDER DROP-OFF (PLAQUE)
W10-1	42RND.	9.62						RAILROAD CROSSING
WO12-1	24X24	4.00						DOUBLE DOWN ARROW (SYMBOL)
WO12-2	48X48	16.00						LOW CLEARANCE (SYMBOL)
WO12-2x	24X18	3.00						LOW CLEARANCE (PLAQUE)
WO12-2a	84X24	14.00						OVERHEAD LOW CLEARANCE (FEET AND INCHES)
WO12-4	120X60	50.00						LOW CLEARANCE XX FT XX IN XX MILES AHEAD
WO12-5	120X60	50.00						WIDTH RESTRICTION XX FT XX IN XX MILES AHEAD
WO13-1	30X30	6.25						ADVISORY SPEED (PLAQUE)
WO16-2	30X24	5.00						XXX FEET (PLAQUE)
WO16-3	30X24	5.00						X MILE (PLAQUE)
WO20-1	48X48	16.00	4	64			2	ROAD/BRIDGE/RAMP WORK AHEAD
WO20-2	48X48	16.00	3	48			18	DETOUR AHEAD
WO20-3	48X48	16.00	3	48			20	ROAD CLOSED AHEAD
WO20-4	48X48	16.00						ONE LANE ROAD AHEAD
WO20-5	48X48	16.00	4	64			5	RIGHT/CENTER/LEFT LANE CLOSED AHEAD
WO20-5a	48X48	16.00						2 RIGHT/CENTER/LEFT LANES CLOSED AHEAD
WO20-6a	48X48	16.00	2	32			6	RIGHT/CENTER/LEFT LANE CLOSED
WO20-7a	48X48	16.00						FLAGGER (SYMBOL)
WO21-2	36X36	9.00						FRESH OIL
WO21-5	48X48	16.00						SHOULDER WORK / SHOULDER WORK AHEAD
WO22-1	48X48	16.00						BLASTING ZONE AHEAD
WO22-2	42X36	10.50						TURN OFF 2-WAY RADIO AND PHONE
WO22-3	42X36	10.50						END BLASTING ZONE
GO22-1	21X15	2.19						WET PAINT (ARROW PIVOTS)

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NUM.	DESCRIPTION
GUIDE SIGNS								
E05-1	36X48	12.00	2	24			49	GORE EXIT
E05-2	48X36	12.00	2	24			48	EXIT OPEN
E05-2a	48X36	12.00						EXIT CLOSED
GO20-1	60X24	10.00	4	40			1	ROAD WORK NEXT 1 MILES
GO20-2	48X24	8.00	4	32			26	END ROAD WORK
GO20-4	36X18	4.50						PILOT CAR FOLLOW ME
GO20-4a	42X30	8.75						PILOT CAR IN USE WAIT & FOLLOW
GO20-4a	18X12	1.50						PILOT CAR IN USE WAIT & FOLLOW
GO20-5aP	36X24	6.00	4	24			54	WORK ZONE (PLAQUE)
MO4-8a	24X18	3.00						END DETOUR
MO4-9L	48X36	12.00						DETOUR (LEFT)
MO4-9R	48X36	12.00						DETOUR (RIGHT)
MO4-9P	48X12	4.00						STREET NAME (PLAQUE)
MO4-10L	48X18	6.00						DETOUR ARROW (LEFT)
MO4-10R	48X18	6.00						DETOUR ARROW (RIGHT)
REGULATORY SIGNS								
R1-1	48X48	13.25						STOP
R1-2	48TRI.	6.93						YIELD
R1-2a	36X36	9.00						TO ONCOMING TRAFFIC (PLAQUE)
R1-3P	30X12	2.50						ALL WAY (PLAQUE)
R2-1	36X48	12.00	4	48			4	SPEED LIMIT 60
R2-1	36X48	12.00	4	48			25	SPEED LIMIT 70
R3-1	48X48	16.00						NO RIGHT TURN (SYMBOL)
R3-2	48X48	16.00						NO LEFT TURN (SYMBOL)
R3-3	36X36	9.00						NO TURNS
R3-4	48X48	16.00						NO U-TURN (SYMBOL)
R3-7L	30X30	6.25						LEFT LANE MUST TURN LEFT
R3-7R	30X30	6.25						RIGHT LANE MUST TURN RIGHT
R4-1	36X48	12.00						DO NOT PASS
R4-2	36X48	12.00						PASS WITH CARE
R4-7a	36X48	12.00						KEEP RIGHT (HORIZONTAL ARROW)
R4-8a	36X48	12.00						KEEP LEFT (HORIZONTAL ARROW)
R5-1	30X30	6.25						DO NOT ENTER
R5-1a	36X24	6.00						WRONG WAY
R6-1L	54X18	6.75						ONE WAY ARROW (LEFT)
R6-1R	54X18	6.75						ONE WAY ARROW (RIGHT)
R6-2L	24X30	5.00						ONE WAY (LEFT)
R6-2R	24X30	5.00						ONE WAY (RIGHT)
R9-9	24X12	2.00						SIDEWALK CLOSED
R9-11L	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW LEFT) CROSS HERE
R9-11R	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW RIGHT) CROSS HERE
R10-6	24X36	6.00						STOP HERE ON RED (45^ ARROW)
R11-2	48X30	10.00	2	20			29	ROAD CLOSED
R11-3a	60X30	12.50						ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY
R11-4	60X30	12.50						ROAD CLOSED TO THRU TRAFFIC
CONST-3A	60X48	20.00	4	80			53	FINE SIGN
CONST-3X	56X12	4.67						SPEEDING/PASSING (PLATE)
MISCELLANEOUS SIGNS								
CONST-5	48X36	12.00						POINT OF PRESENCE
CONST-5	96X48	32.00	2	64			61	POINT OF PRESENCE
CONST-5	60X8	3.33	2	6.66			61A	POINT OF PRESENCE
CONST-8	48X36	12.00	4	48			55	WORK ZONE NO PHONE ZONE
SPECIAL	48X48	16.00	5	80			50A	DETOUR ASSEMBLY-8490 STR.
SPECIAL	48X48	16.00					50B	DETOUR ASSEMBLY-8490 ADV. RT.
SPECIAL	48X48	16.00	1	16			50C	DETOUR ASSEMBLY-8490 RT.
SPECIAL	48X48	16.00	1	16			50D	DETOUR ASSEMBLY-8490 ADV. LT.
SPECIAL	48X48	16.00	2	32			50E	DETOUR ASSEMBLY-8490 LT.
SPECIAL	48X48	16.00	7	112			50F	DETOUR ASSEMBLY-7300 STR.
SPECIAL	48X48	16.00					50G	DETOUR ASSEMBLY-7300 ADV. RT.
SPECIAL	48X48	16.00	1	16			50H	DETOUR ASSEMBLY-7300 RT.
SPECIAL	48X48	16.00	1	16			50I	DETOUR ASSEMBLY-7300 ADV. LT.
SPECIAL	48X48	16.00	3	48			50J	DETOUR ASSEMBLY-7300 LT.
SPECIAL	48X48	16.00	2	32			50K	DETOUR ASSEMBLY-8490 VEER RT.
SPECIAL	48X48	16.00	2	32			50L	DETOUR ASSEMBLY-7300 VEER RT.

	TOTAL
616-10.05 CONSTRUCTION SIGNS	1179
616-10.10 RELOCATED SIGNS	0

ITEM NUMBER	TOTAL QTY	DESCRIPTION
6122008		IMPACT ATTENUATOR 40 MPH (SAND BARRELS)
6122009		IMPACT ATTENUATOR 45 MPH (SAND BARRELS)
6122010		IMPACT ATTENUATOR 50 MPH (SAND BARRELS)
6122012		IMPACT ATTENUATOR 55 MPH (SAND BARRELS)
6122014		IMPACT ATTENUATOR 60 MPH (SAND BARRELS)
6122017		IMPACT ATTENUATOR 65 MPH (SAND BARRELS)
6122019		IMPACT ATTENUATOR 70 MPH (SAND BARRELS)
6122020		REPLACEMENT SAND BARREL
6122030		IMPACT ATTENUATOR (RELOCATION)
6123001	1**	TRUCK MOUNTED ATTENUATOR (TMA)
6161008	4	ADVANCED WARNING RAIL SYSTEM
6161012		BUOYS (BOATS KEEP OUT)
6161013		BUOYS (NO WAKE)
6161014		SPECIAL SIGN ASSEMBLY (BOATS KEEP OUT)
6161025	118	CHANNELIZER (TRIM LINE)
6161030	6	TYPE III MOVEABLE BARRICADE
6161033	28	DIRECTION INDICATOR BARRICADE
6161040	4	FLASHING ARROW PANEL
6161047		TYPE III OBJECT MARKER
6161055		SEQUENTIAL FLASHING WARNING LIGHT
6161070		TUBULAR MARKER
6161095		RADAR SPEED ADVISORY SYSTEM
6161096		CHANGEABLE MESSAGE SIGN, COMMISSION FURNISHED/RETAINED
6161098A	2**	CHANGEABLE MESSAGE SIGN W/O COMM. INTERFACE - CONTRACTOR FURNISHED/RETAINED
6161099		CHANGEABLE MESSAGE SIGN WITH COMM. INTERFACE - CONTRACTOR FURNISHED/RETAINED
6162000A		WORK ZONE TRAFFIC SIGNAL SYSTEM
6162002		TEMPORARY LONG-TERM RUMBLE STRIPS
6173600D		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/RETAINED
6173602B		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/COMMISSION RETAINED
6174000A		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION
6175010A		RELOCATING TEMPORARY TRAFFIC BARRIER
6176000B		TEMPORARY TRAFFIC BARRIER COMMISSION FURNISHED/RETAINED
6177000B		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION COMMISSION FURNISHED/RETAINED
6208064A		TEMPORARY RAISED PAVEMENT MARKER
9029400		TEMPORARY TRAFFIC SIGNALS
9029401		TEMPORARY TRAFFIC SIGNALS AND LIGHTING

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

TEMPORARY TRAFFIC CONTROL	
PAY TOTAL =	1 LUMP SUM

SUMMARY OF QUANTITIES
SHEET 2 OF 2

STATE OF MISSOURI
ANDREA S. DAVIS
PE-2018021250
PROFESSIONAL ENGINEER

DATE PREPARED 1/21/2025
ROUTE CR8490 | STATE MO
DISTRICT CD | SHEET NO. 3
COUNTY PHELPS
JOB NO. J5S3547
CONTRACT ID. .
PROJECT NO. .
BRIDGE NO. .

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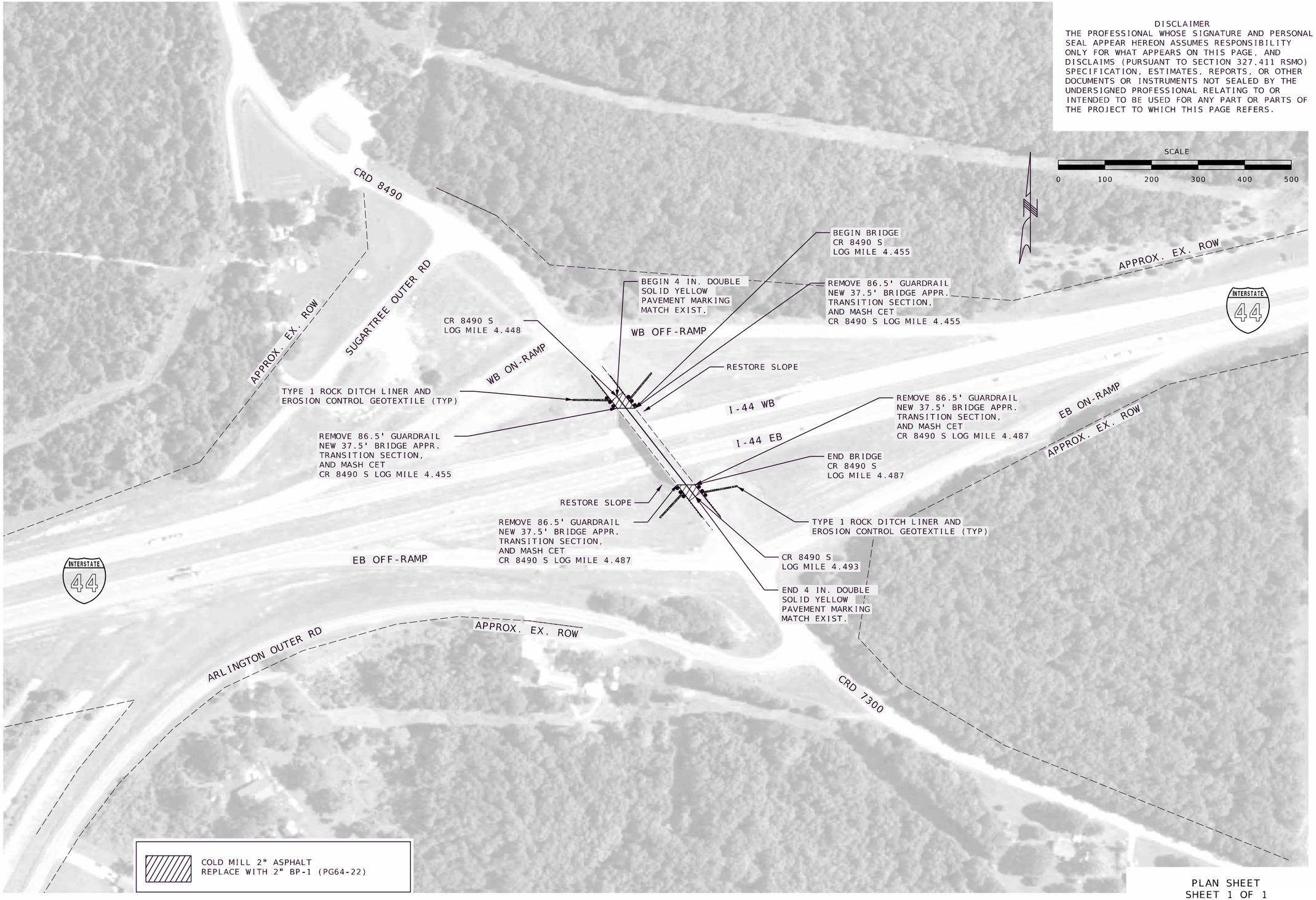
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

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
ST. LOUIS, MISSOURI 63141
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

DISCLAIMER
THE PROFESSIONAL WHOSE SIGNATURE AND PERSONAL SEAL APPEAR HEREON ASSUMES RESPONSIBILITY ONLY FOR WHAT APPEARS ON THIS PAGE, AND DISCLAIMS (PURSUANT TO SECTION 327.411 RSMO) SPECIFICATION, ESTIMATES, REPORTS, OR OTHER DOCUMENTS OR INSTRUMENTS NOT SEALED BY THE UNDERSIGNED PROFESSIONAL RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE PROJECT TO WHICH THIS PAGE REFERS.



PLAN SHEET
SHEET 1 OF 1

STATE OF MISSOURI
ALISON N. GRAVES
NUMBER
PE-2011015778
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED, AND DATED ELECTRONICALLY.

DATE PREPARED	12/27/2024
ROUTE	CR8490
STATE	MO
DISTRICT	CD
SHEET NO.	4
COUNTY	PHELPS
JOB NO.	J5S3547
CONTRACT ID.	.
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DESCRIPTION	DATE
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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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(314) 863-5570
CDI DESIGN INC.
Missouri State Certificate of Authority #2002006804

REV.

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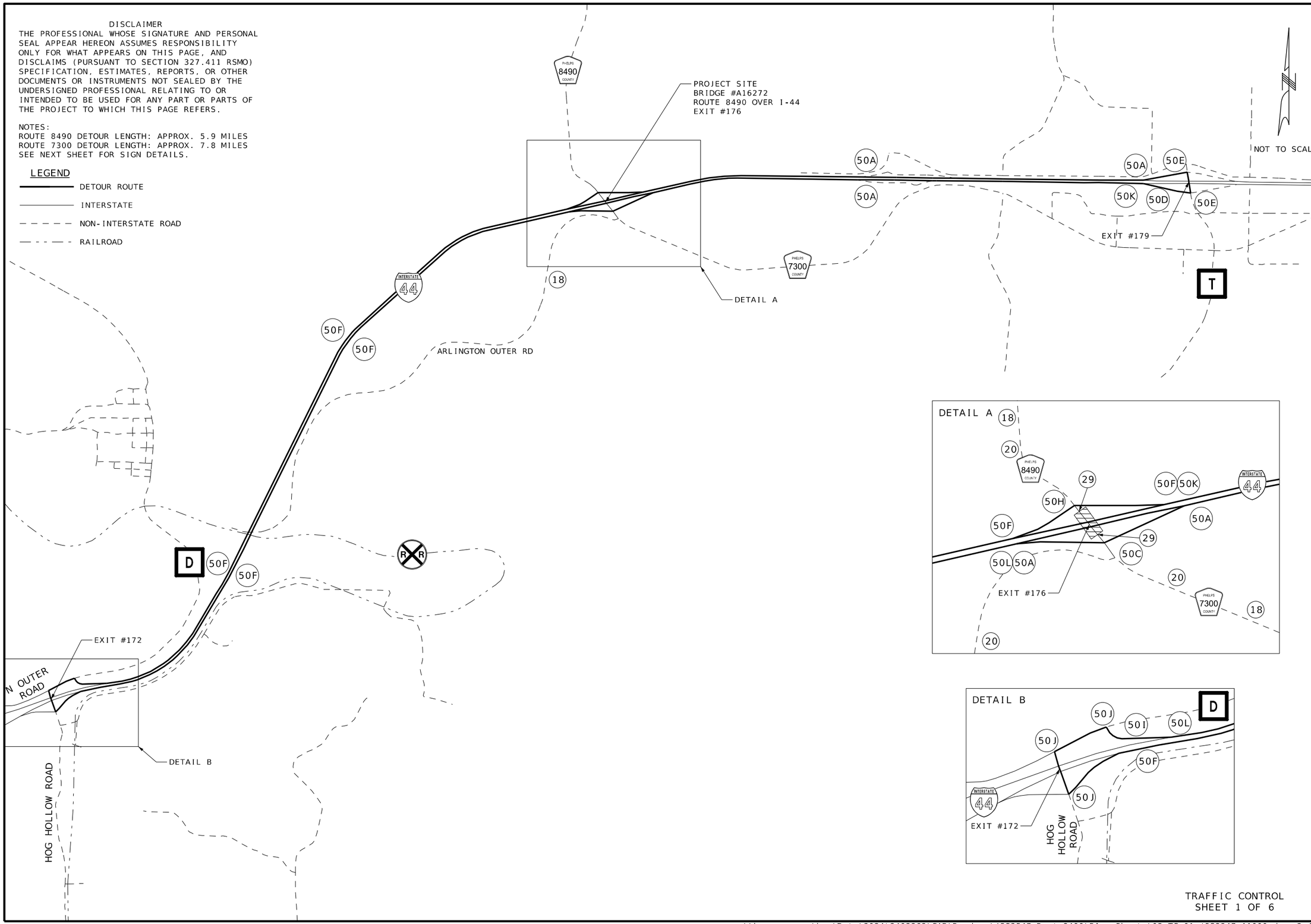
NOTES:
ROUTE 8490 DETOUR LENGTH: APPROX. 5.9 MILES
ROUTE 7300 DETOUR LENGTH: APPROX. 7.8 MILES
SEE NEXT SHEET FOR SIGN DETAILS.

LEGEND
- DETOUR ROUTE
- INTERSTATE
- NON-INTERSTATE ROAD
- RAILROAD



TRAFFIC CONTROL
SHEET 1 OF 6

STATE OF MISSOURI
ANDREA S. DAVIS
PE-2018021250
PROFESSIONAL ENGINEER

DATE PREPARED	
12/18/2024	
ROUTE	STATE
CR8490	MO
DISTRICT	SHEET NO.
CD	5
COUNTY	
PHELPS	
JOB NO.	
J5S3547	
CONTRACT ID.	
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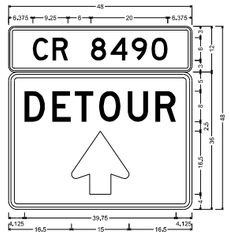
SUITE 100
ST. LOUIS, MISSOURI 63141
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608

HRGreen

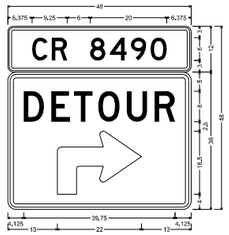


MO49P SHIFLAT SHEET FLUORESCENT:
1,500" Radius, 0,625" Border, 0,375" Indent, Black on, Orange:
"CR 8490", D:

MO49 SHIFLAT SHEET FLUORESCENT:
2,250" Radius, 0,875" Border, 0,625" Indent, Black on, Orange:
"DETOUR", D:
Table of letter and object kefts

C 6,375	R 11,500	B 21,625	A 26,750	9 32,250	O 37,375
D 4,125	E 11,375	T 17,250	O 23,625	U 31,250	R 38,500
16,500					

50A

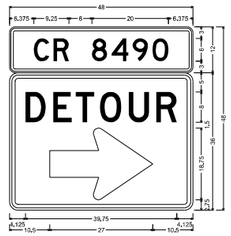


MO49P SHIFLAT SHEET FLUORESCENT:
1,500" Radius, 0,625" Border, 0,375" Indent, Black on, Orange:
"CR 8490", D:

MO49 SHIFLAT SHEET FLUORESCENT:
2,250" Radius, 0,875" Border, 0,625" Indent, Black on, Orange:
"DETOUR", D:
Table of letter and object kefts

C 6,375	R 11,500	B 21,625	A 26,750	9 32,250	O 37,375
D 4,125	E 11,375	T 17,250	O 23,625	U 31,250	R 38,500
13,000					

50B

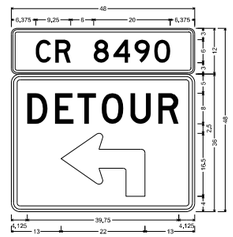


MO49P SHIFLAT SHEET FLUORESCENT:
1,500" Radius, 0,625" Border, 0,375" Indent, Black on, Orange:
"CR 8490", D:

MO49R SHIFLAT SHEET FLUORESCENT:
2,250" Radius, 0,875" Border, 0,625" Indent, Black on, Orange:
"DETOUR", D:
Standard Arrow Custom 27,000" X 18,750" 0°:
Table of letter and object kefts

C 6,375	R 11,500	B 21,625	A 26,750	9 32,250	O 37,375
D 4,125	E 11,375	T 17,250	O 23,625	U 31,250	R 38,500
10,500					

50C

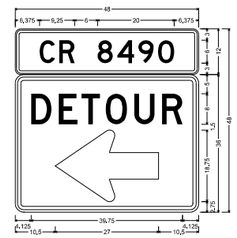


MO49P SHIFLAT SHEET FLUORESCENT:
1,500" Radius, 0,625" Border, 0,375" Indent, Black on, Orange:
"CR 8490", D:

MO49 SHIFLAT SHEET FLUORESCENT:
2,250" Radius, 0,875" Border, 0,625" Indent, Black on, Orange:
"DETOUR", D:
Table of letter and object kefts

C 6,375	R 11,500	B 21,625	A 26,750	9 32,250	O 37,375
D 4,125	E 11,375	T 17,250	O 23,625	U 31,250	R 38,500
13,000					

50D

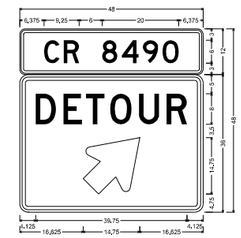


MO49P SHIFLAT SHEET FLUORESCENT:
1,500" Radius, 0,625" Border, 0,375" Indent, Black on, Orange:
"CR 8490", D:

MO49L SHIFLAT SHEET FLUORESCENT:
2,250" Radius, 0,875" Border, 0,625" Indent, Black on, Orange:
"DETOUR", D:
Standard Arrow Custom 27,000" X 18,750" 180°:
Table of letter and object kefts

C 6,375	R 11,500	B 21,625	A 26,750	9 32,250	O 37,375
D 4,125	E 11,375	T 17,250	O 23,625	U 31,250	R 38,500
10,500					

50E

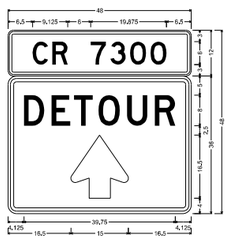


MO49P SHIFLAT SHEET FLUORESCENT:
1,500" Radius, 0,625" Border, 0,375" Indent, Black on, Orange:
"CR 8490", D:

MO49 SHIFLAT SHEET FLUORESCENT:
2,250" Radius, 0,875" Border, 0,625" Indent, Black on, Orange:
"DETOUR", D:
Standard Arrow Custom 18,000" X 15,000" 45°:
Table of letter and object kefts

C 6,375	R 11,500	B 21,625	A 26,750	9 32,250	O 37,375
D 4,125	E 11,375	T 17,250	O 23,625	U 31,250	R 38,500
19,625					

50K

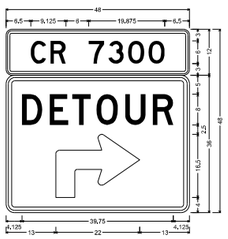


MO49P SHIFLAT SHEET FLUORESCENT:
1,500" Radius, 0,625" Border, 0,375" Indent, Black on, Orange:
"CR 7300", D:

MO49 SHIFLAT SHEET FLUORESCENT:
2,250" Radius, 0,875" Border, 0,625" Indent, Black on, Orange:
"DETOUR", D:
Table of letter and object kefts

C 6,500	R 11,625	7 21,625	3 26,875	O 32,000	O 37,375
D 4,125	E 11,375	T 17,250	O 23,625	U 31,250	R 38,500
16,500					

50F

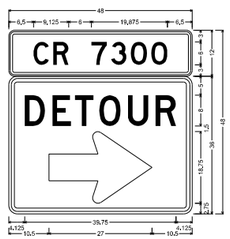


MO49P SHIFLAT SHEET FLUORESCENT:
1,500" Radius, 0,625" Border, 0,375" Indent, Black on, Orange:
"CR 7300", D:

MO49 SHIFLAT SHEET FLUORESCENT:
2,250" Radius, 0,875" Border, 0,625" Indent, Black on, Orange:
"DETOUR", D:
Table of letter and object kefts

C 6,500	R 11,625	7 21,625	3 26,875	O 32,000	O 37,375
D 4,125	E 11,375	T 17,250	O 23,625	U 31,250	R 38,500
13,000					

50G

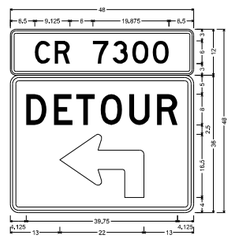


MO49P SHIFLAT SHEET FLUORESCENT:
1,500" Radius, 0,625" Border, 0,375" Indent, Black on, Orange:
"CR 7300", D:

MO49R SHIFLAT SHEET FLUORESCENT:
2,250" Radius, 0,875" Border, 0,625" Indent, Black on, Orange:
"DETOUR", D:
Standard Arrow Custom 27,000" X 18,750" 0°:
Table of letter and object kefts

C 6,500	R 11,625	7 21,625	3 26,875	O 32,000	O 37,375
D 4,125	E 11,375	T 17,250	O 23,625	U 31,250	R 38,500
10,500					

50H

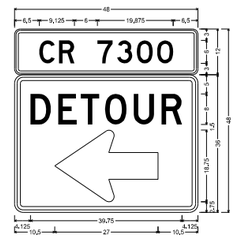


MO49P SHIFLAT SHEET FLUORESCENT:
1,500" Radius, 0,625" Border, 0,375" Indent, Black on, Orange:
"CR 7300", D:

MO49 SHIFLAT SHEET FLUORESCENT:
2,250" Radius, 0,875" Border, 0,625" Indent, Black on, Orange:
"DETOUR", D:
Table of letter and object kefts

C 6,500	R 11,625	7 21,625	3 26,875	O 32,000	O 37,375
D 4,125	E 11,375	T 17,250	O 23,625	U 31,250	R 38,500
13,000					

50I

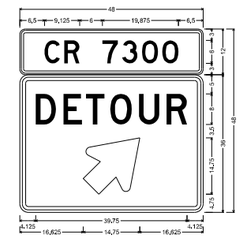


MO49P SHIFLAT SHEET FLUORESCENT:
1,500" Radius, 0,625" Border, 0,375" Indent, Black on, Orange:
"CR 7300", D:

MO49L SHIFLAT SHEET FLUORESCENT:
2,250" Radius, 0,875" Border, 0,625" Indent, Black on, Orange:
"DETOUR", D:
Standard Arrow Custom 27,000" X 18,750" 180°:
Table of letter and object kefts

C 6,500	R 11,625	7 21,625	3 26,875	O 32,000	O 37,375
D 4,125	E 11,375	T 17,250	O 23,625	U 31,250	R 38,500
10,500					

50J



MO49P SHIFLAT SHEET FLUORESCENT:
1,500" Radius, 0,625" Border, 0,375" Indent, Black on, Orange:
"CR 7300", D:

MO49 SHIFLAT SHEET FLUORESCENT:
2,250" Radius, 0,875" Border, 0,625" Indent, Black on, Orange:
"DETOUR", D:
Standard Arrow Custom 18,000" X 15,000" 45°:
Table of letter and object kefts

C 6,500	R 11,625	7 21,625	3 26,875	O 32,000	O 37,375
D 4,125	E 11,375	T 17,250	O 23,625	U 31,250	R 38,500
16,625					

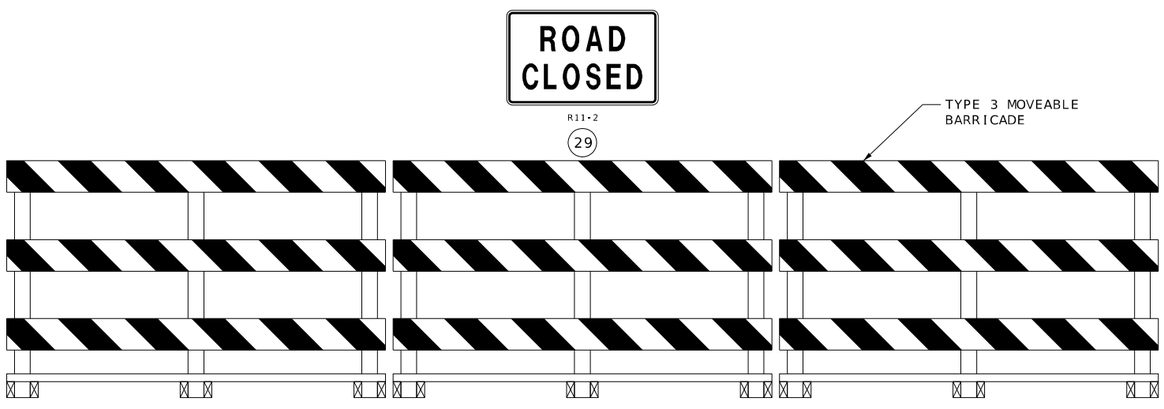
50L

WO20-2

18

WO20-3

20



R11-2

29

DISCLAIMER

THE PROFESSIONAL WHOSE SIGNATURE AND PERSONAL SEAL APPEAR HEREON ASSUMES RESPONSIBILITY ONLY FOR WHAT APPEARS ON THIS PAGE, AND DISCLAIMS (PURSUANT TO SECTION 327.411 RSMO) SPECIFICATION, ESTIMATES, REPORTS, OR OTHER DOCUMENTS OR INSTRUMENTS NOT SEALED BY THE UNDERSIGNED PROFESSIONAL RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE PROJECT TO WHICH THIS PAGE REFERS.

GENERAL NOTES:

ANY EXISTING WARNING OR REGULATORY SIGNS (NOT SHOWN) THAT INTERFERE WITH THE TRAFFIC CONTROL SIGNING SHALL BE COMPLETELY COVERED OR REMOVED, NO DIRECT PAY.

ALL TRAFFIC CONTROL SIGNS ARE TO BE NON-PORTABLE UNLESS OTHERWISE NOTED.

SEE STANDARD PLANS 616.10, 903.01 AND 909.03 FOR ADDITIONAL DETAILS REGARDING TRAFFIC CONTROL HIGHWAY SIGNING.

TEMPORARY TRAFFIC CONTROL SIGN AND DEVICE LOCATIONS MAY BE ADJUSTED UPON APPROVAL OF THE ENGINEER. WHERE TRAFFIC BACKUPS ARE EXPECTED BEYOND THE ADVANCED WARNING AREA, ADDITIONAL SIGNING MAY BE NEEDED AS DIRECTED BY THE ENGINEER.

ANY RELOCATION OF SIGNS AND DEVICES FOR TRAFFIC CONTROL DEVICES OR SIGNS SHALL BE CONSIDERED INCIDENTAL. NO DIRECT PAY.

R11-2 SIGN ASSOCIATED WITH THE TYPE 3 MOVEABLE BARRICADES SHALL BE MOUNTED ON POST 7-10 FEET BEHIND THE BARRICADE.

ALL WARNING SIGNS SHALL HAVE FLUORESCENT SHEETING.

TRAFFIC CONTROL
SHEET 2 OF 6

STATE OF MISSOURI
ANDREA S. DAVIS
PE-2018021250
PROFESSIONAL ENGINEER

DATE PREPARED	
12/18/2024	
ROUTE CR8490	STATE MO
DISTRICT CD	SHEET NO. 6
COUNTY PHELPS	
JOB NO. J5S3547	
CONTRACT ID. .	
PROJECT NO. .	
BRIDGE NO. .	

DATE	DESCRIPTION
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.	.

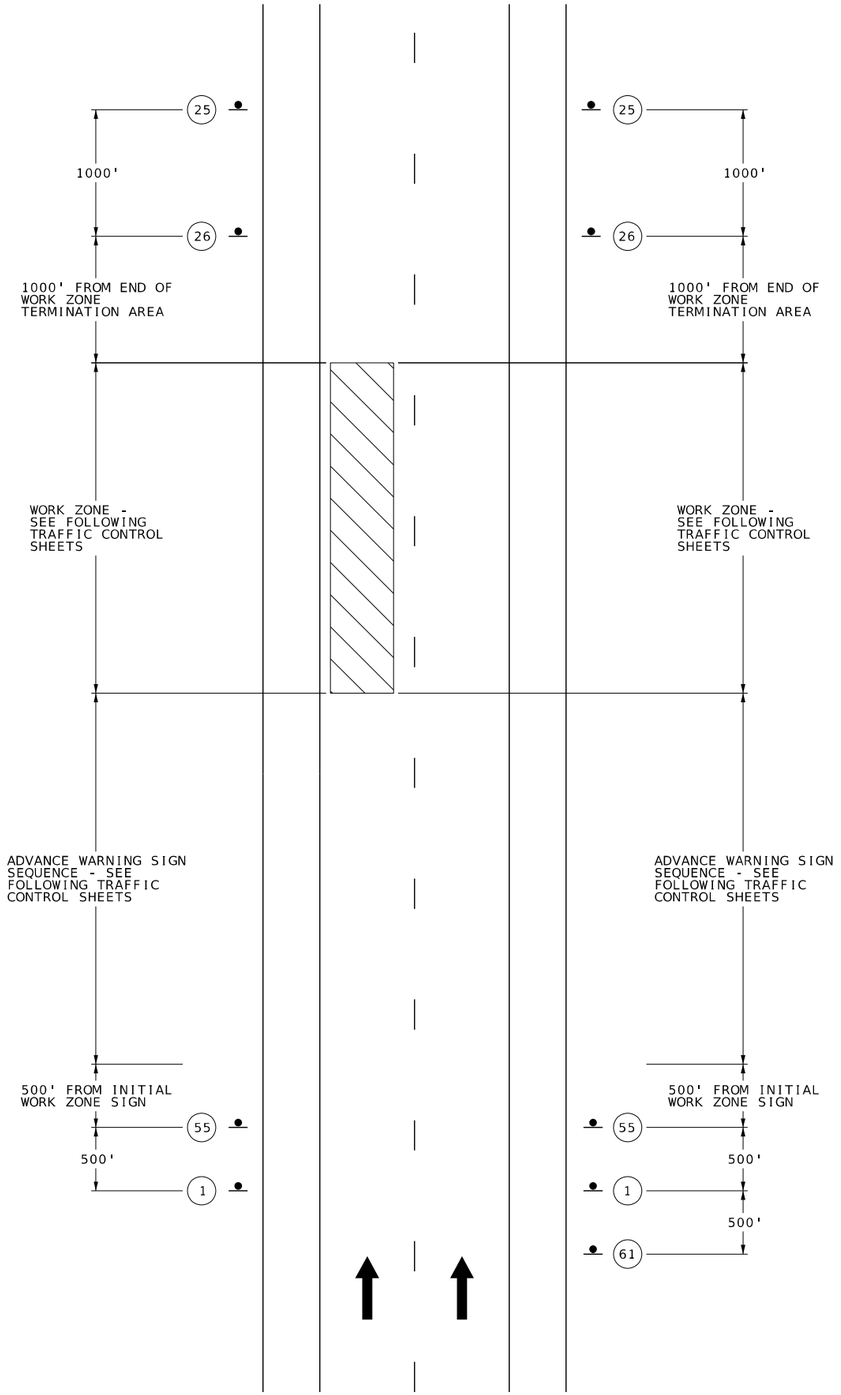
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

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

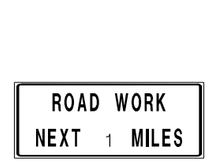
HR GREEN, INC.
520 MARYVILLE CENTRE DRIVE, SUITE 100
ST. LOUIS, MISSOURI 63141
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608

HRGreen

BEGIN / END OF PROJECT SIGNING



NOT TO SCALE



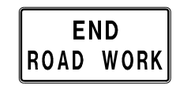
GO20-1

1

R2-1

25

(3)



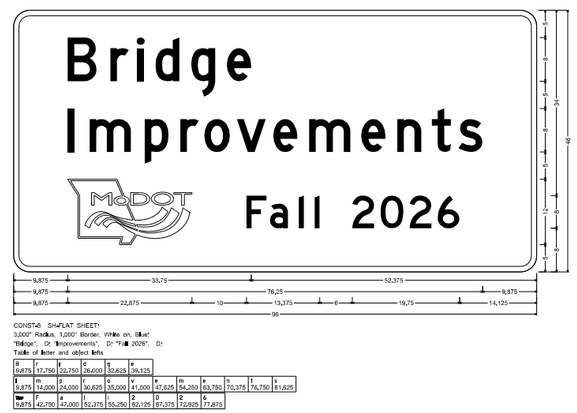
GO20-2

26

CONST-8

55

(2)

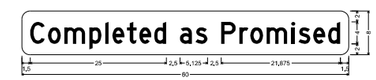


CONST-5 SHEFLAT SHEET:
3,000" Radius, 1,000" Border, White on, Blue:
"Bridge", D: "Improvements", D: "Fall 2026", D:
Table of letter and object bells

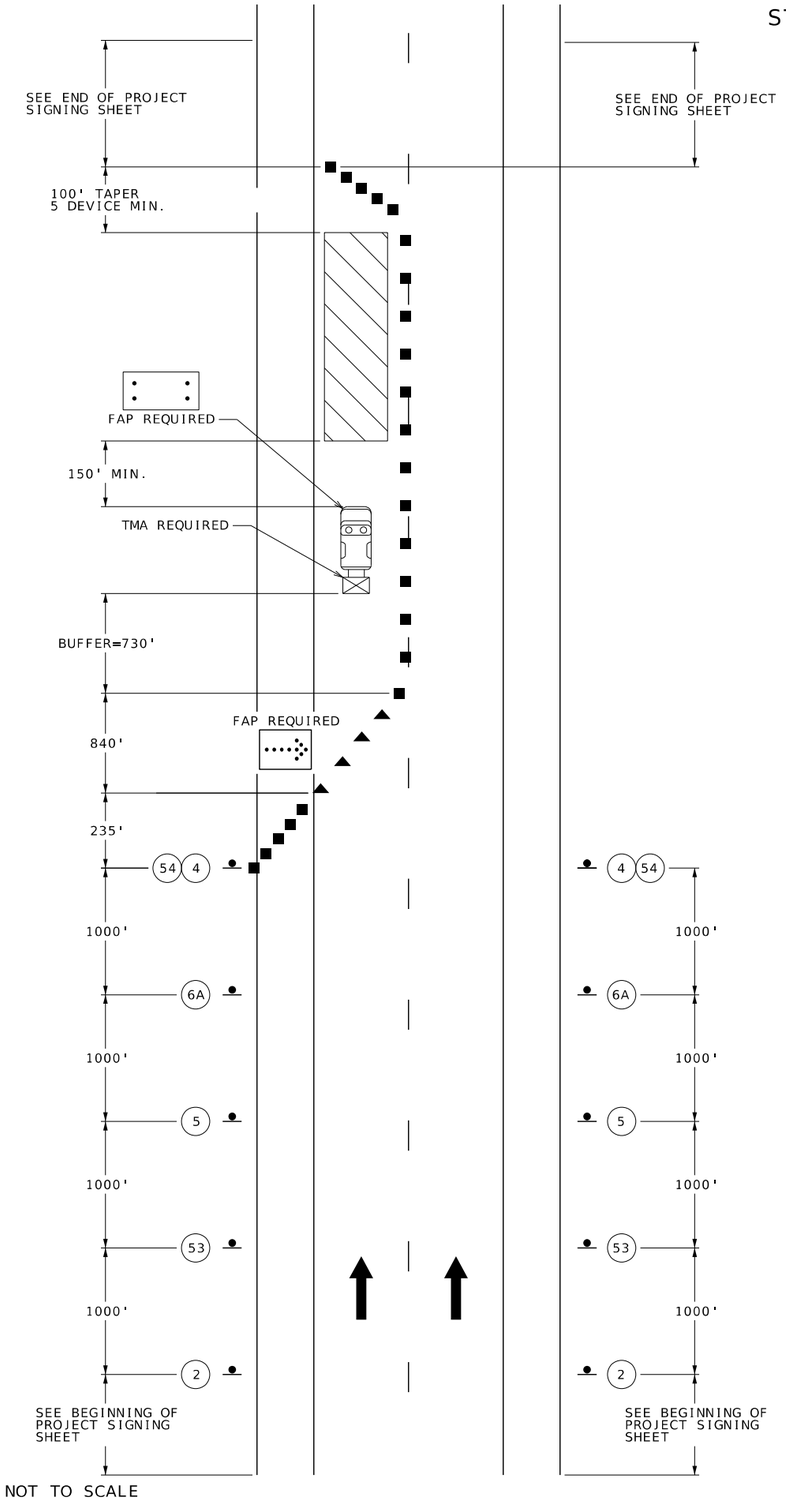
B	r	F	C	g	e												
9,875	17,750	22,750	26,000	32,625	39,125												
I	m	s	r	e	d	e	m	e	n	t	s						
9,875	14,800	24,000	30,625	35,000	41,000	47,625	54,250	63,750	70,375	76,750	81,625						
Bw	F	n	o	g	o	P	r	o	m	i	s	e	d				
9,875	42,750	47,000	52,375	55,250	62,125	67,375	72,625	77,875									

61

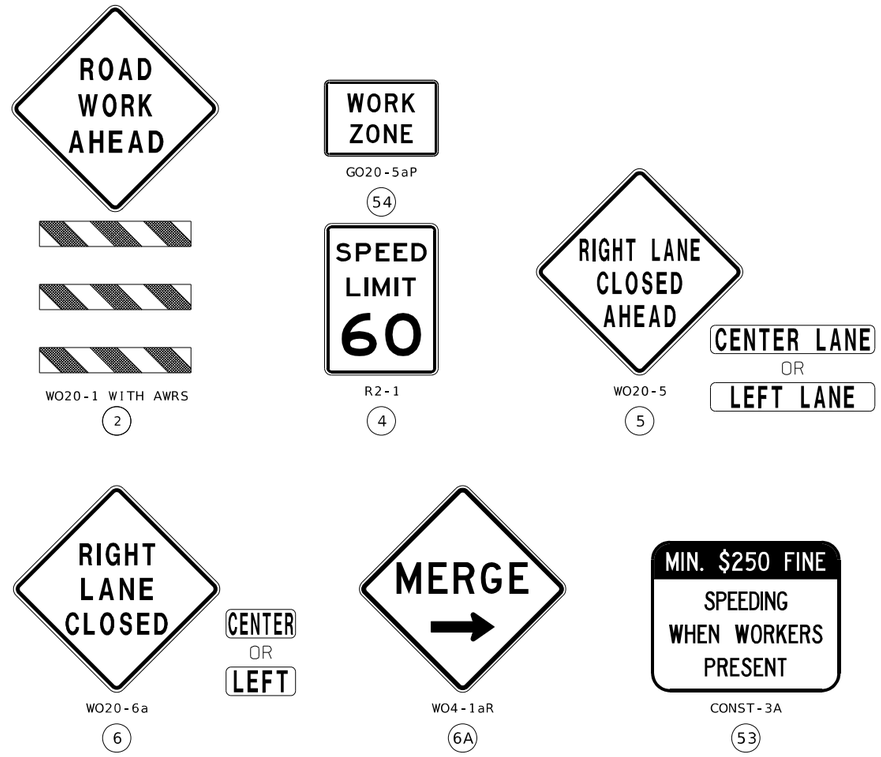
(1)


Completed as Promised
4
2
2
2

STATIONARY LANE CLOSURE ON A DIVIDED HIGHWAY



NOT TO SCALE



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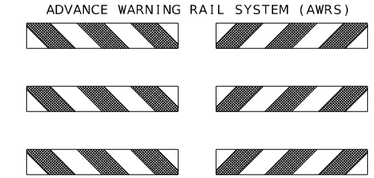
ADVANCE WARNING RAIL SYSTEM (AWRS)



CHANNELIZER SPACING:

TAPERS: 60'
BUFFER/WORK AREAS: 120'

NOTES:

SEE EPG 616.12 WORK ZONE SPEED LIMITS FOR SPEED LIMIT GUIDELINES.

REDUCED SPEED LIMIT SIGNING SHALL BE REMOVED, COVERED, OR TURNED FROM TRAFFIC WHEN CONDITIONS REQUIRING THE REDUCED SPEED NO LONGER EXIST.

TEMPORARY TRAFFIC BARRIER, IF USED, SHALL COMPLY WITH THE PROVISIONS IN EPG 616.6.85 TEMPORARY TRAFFIC BARRIER AND MUTCD FIGURE 6H-34 LANE CLOSURE WITH A TEMPORARY TRAFFIC BARRIER.

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

REVIEW EPG 616.6.83 WARNING LIGHTS FOR USE OF SEQUENTIAL FLASHING WARNING LIGHTS DURING NIGHTTIME OPERATIONS.

FOR ADVANCE WARNING RAIL SYSTEM, REFER TO EPG 616.6.2.2 ADVANCE WARNING RAIL SYSTEM.

REVIEW EPG 616.6.63 CHANNELIZING DEVICES FOR DIFFERENT TYPES AND GUIDELINES FOR THE DEVICES.

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- ADVANCED WARNING RAIL SYSTEM (AWRS)
- CHANNELIZER (TRIM LINE)
- DIRECTIONAL INDICATOR BARRICADE
- FLASHING ARROW PANEL (FAP)
- PROTECTED VEHICLE WITH TRUCK MOUNTED ATTENUATOR (TMA)
- WORK ZONE

TRAFFIC CONTROL
SHEET 4 OF 6

STATE OF MISSOURI
ANDREA S. DAVIS
PE-2018021250
PROFESSIONAL ENGINEER

DATE PREPARED	12/18/2024
ROUTE	CR8490
STATE	MO
DISTRICT	CD
SHEET NO.	8
COUNTY	PHELPS
JOB NO.	J5S3547
CONTRACT ID.	.
PROJECT NO.	.
BRIDGE NO.	.

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

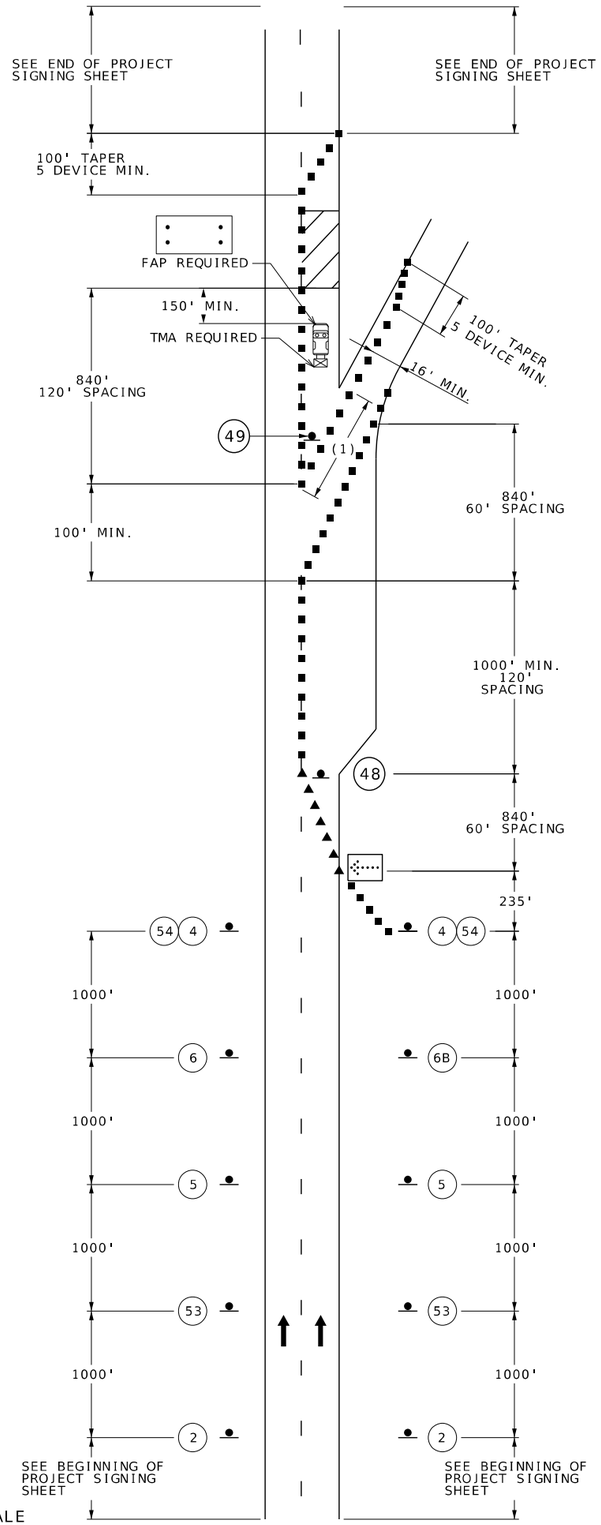
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

HR GREEN, INC.
520 MARYVILLE CENTRE DRIVE, SUITE 100
ST. LOUIS, MISSOURI 63141
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608

HRGreen

\\hrgreen.com\hrg\Data\2024\2402262\CAD\Roadway\J5S3547_Route8490\Plan_Sheets\08_TC_04_J5S3547_I1_I44.dgn 2:45:12 PM 12/18/2024

STATIONARY WORK IN VICINITY OF AN EXIT RAMP



NOT TO SCALE

WO20-1 WITH AWRS

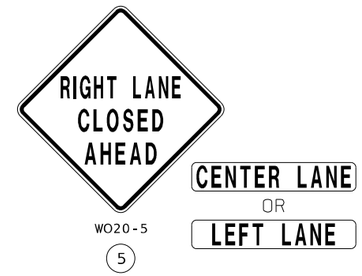
2

GO20-5aP

54

R2-1

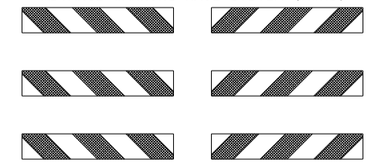
4



WO20-5

5

ADVANCE WARNING RAIL SYSTEM (AWRS)



WO20-6a

6

WO4-1aL

6B

E05-2

48

E05-1

49

CONST-3A

53

CHANNELIZER SPACING:

TAPERS: 60'
BUFFER/WORK AREAS: 120'

NOTES:

SEE PREVIOUS SHEET FOR TRAFFIC CONTROL NOTES.

(1) FIVE DEVICE MINIMUM.

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- ADVANCED WARNING RAIL SYSTEM (AWRS)
- CHANNELIZER (TRIM LINE)
- DIRECTIONAL INDICATOR BARRICADE
- FLASHING ARROW PANEL (FAP)
- PROTECTED VEHICLE WITH TRUCK MOUNTED ATTENUATOR (TMA)
- WORK ZONE

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STATE OF MISSOURI
ANDREA S. DAVIS
PE-2018021250
PROFESSIONAL ENGINEER

DATE PREPARED	
12/18/2024	
ROUTE	STATE
CR8490	MO
DISTRICT	SHEET NO.
CD	9
COUNTY	
PHELPS	
JOB NO.	
J5S3547	
CONTRACT ID.	
.	
PROJECT NO.	
.	
BRIDGE NO.	
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DATE	DESCRIPTION
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IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

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

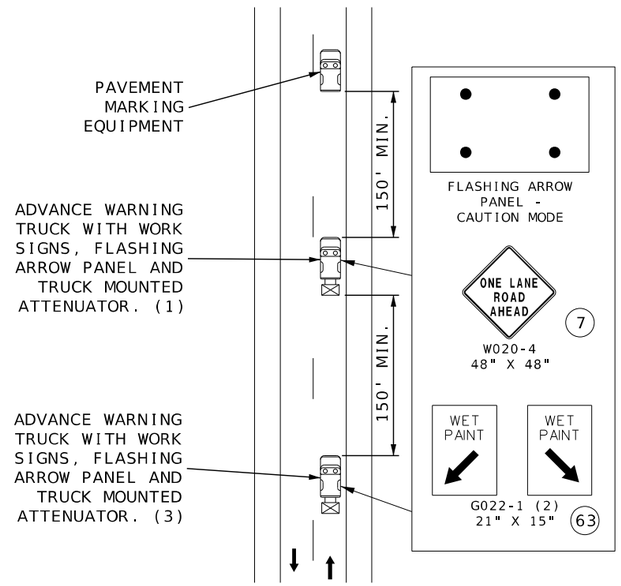
HR GREEN, INC.
520 MARYVILLE CENTRE DRIVE, SUITE 100
ST. LOUIS, MISSOURI 63141
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608

HRGreen

TRAFFIC CONTROL
SHEET 5 OF 6

\\hrgreen.com\hrg\Data\2024\2402262\CAD\Roadway\J5S3547_Route8490\Plan_Sheets\09_TC_05_J5S3547_I1_I44.dgn 2:45:13 PM 12/18/2024

MOVING OPERATION ON HIGHWAY OPEN TO TRAFFIC STRIPING



TWO LANE UNDIVIDED HIGHWAY

NOTES:

UPON APPROVAL OF THE ENGINEER, THE CONTRACTOR MAY PROVIDE ADDITIONAL PROTECTIVE TRUCKS EQUIPPED WITH PROPER WARNING DEVICES.

PROTECTIVE TRUCK AND WORK VEHICLES SHALL DISPLAY HIGH-INTENSITY ROTATING, FLASHING, OSCILLATING, OR STROBE LIGHTS.

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

ADVANCED WARNING TRUCKS, FLASHING ARROW PANELS, TRUCK MOUNTED ATTENUATORS, AND SIGNS ARE INCIDENTAL TO PAVEMENT MARKINGS.

(1) TRUCK IS OPTIONAL ON TWO-LANE UNDIVIDED HIGHWAYS IF SIGNING AND ARROW BOARD IS MOUNTED ON THE PAVEMENT MARKING EQUIPMENT.

(2) WET PAINT SIGNS ARE INSTALLED TO INDICATE THE SIDE IN WHICH THE PAVEMENT MARKING MATERIAL IS BEING APPLIED. AT THE CONTRACTOR'S OPTION, A FRONT FACING WET PAINT SIGN MAY BE INSTALLED ON THE LEFT SIDE OF THE PAVEMENT MARKING EQUIPMENT.

(3) ADVANCE WARNING TRUCK IS POSITIONED AT THE NO TRACK POINT OF THE PAVEMENT MARKING MATERIAL OR SPACING SHOWN, WHICHEVER IS GREATER.

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STATE OF MISSOURI
ANDREA S. DAVIS
PE-2018021250
PROFESSIONAL ENGINEER

DATE PREPARED	
12/18/2024	
ROUTE	STATE
CR8490	MO
DISTRICT	SHEET NO.
CD	1.0
COUNTY	
PHELPS	
JOB NO.	
J5S3547	
CONTRACT ID.	
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PROJECT NO.	
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BRIDGE NO.	
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HR GREEN, INC.
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PHONE: (636) 519.0990
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TRAFFIC CONTROL
SHEET 6 OF 6

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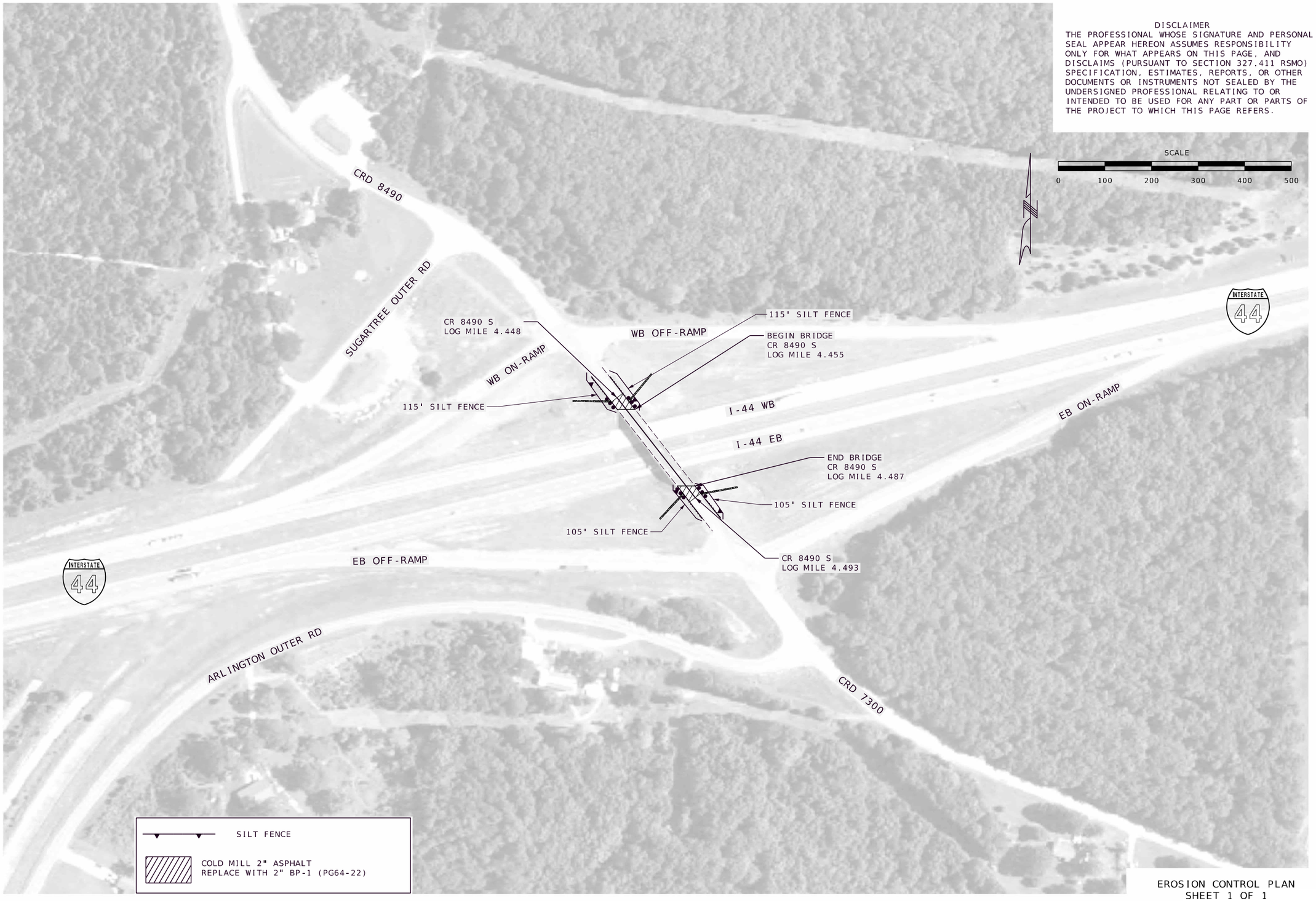

EROSION CONTROL PLAN
SHEET 1 OF 1

STATE OF MISSOURI
ALISON N. GRAVES
NUMBER
PE-2011015778
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED, AND DATED ELECTRONICALLY.

DATE PREPARED	12/27/2024
ROUTE	CR8490
STATE	MO
DISTRICT	CD
SHEET NO.	11
COUNTY	PHELPS
JOB NO.	J5S3547
CONTRACT ID.	.
PROJECT NO.	.
BRIDGE NO.	.

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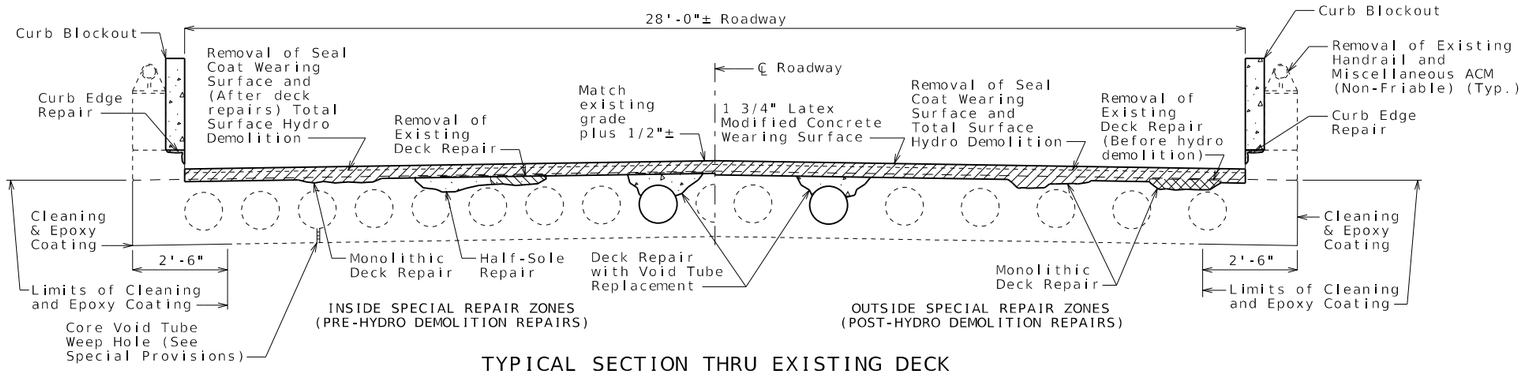
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

5220 Oakland Ave.
St. Louis, MO 63110
(314) 863-5570
CIVIL DESIGN, INC.
Missouri State Certificate of Authority #2002006804

REV.

SEC/SUR 8 TWP 37N RGE 9W

U.I.P. AND REHABILITATE EXISTING (40'-61'-61'-43') CONTINUOUS CONCRETE VOIDED SLAB SPANS (SKEW: 25° L.A.)



TYPICAL SECTION THRU EXISTING DECK

General Notes:

Design Specifications:

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

Design Loading:

H15-44 (1961)

Design Unit Stresses:

Class B-1 Concrete (Curb Blockouts) f'c = 4,000 psi

Class B-2 Concrete (Half-Sole Repairs & Deck Repair with Void Tube Replacement) f'c = 4,000 psi

Reinforcing Steel (ASTM A615 Grade 60) fy = 60,000 psi

Joint Filler:

All joint filler shall be in accordance with Sec 1057 for preformed sponge rubber expansion and partition joint filler, except as noted.

Reinforcing Steel:

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

Concrete Protective Coating:

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

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.

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.

Curb repair and removal of existing handrails will be considered completely covered by the contract unit price for Curb Blockout.

The following locations shall be cleaned and sealed with Protective Coating - Concrete Bents and Piers (Epoxy):
- All exposed substructure concrete at the end bents
- Concrete barriers at the intermediate bents
- Exposed concrete columns of all intermediate bents to an elevation 15 feet above existing ground.

Traffic Handling:

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

Estimated Quantities

	Item		Total
	Removal of Miscellaneous ACM (Non-Friable)	sq. foot	20
	Total Surface Hydro Demolition	sq. yard	646
	Removal of Seal Coat or Polymer Wearing Surface	sq. foot	5817
	Removal of Existing Deck Repair	sq. foot	100
*	Supplementary Wearing Surface Material	cu. yard	5
	Latex Modified Concrete Wearing Surface	sq. yard	646
	Diamond Grinding	sq. yard	646
	Curb Blockout	linear foot	438
	Half-Sole Repair	sq. foot	800
	Deck Repair with Void Tube Replacement	sq. foot	50
	Cleaning and Epoxy Coating	sq. foot	1719
	Cored Void Tube Weep Holes	each	236
	Protective Coating - Concrete Bents and Piers (Epoxy)	lump sum	1

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

REPAIRS TO BRIDGE: COUNTY ROAD 8490
OVER ROUTE I-44

COUNTY ROAD 8490 FROM ROUTE T TO ROUTE C
ABOUT 3.3 MILES WEST OF ROUTE T
BEGINNING STATION 18+97.62± (Match Existing)

Detailed Jun. 2024
Checked Aug. 2024

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

STATE OF MISSOURI
KEVIN J. BREHM
PE-2010024490
PROFESSIONAL ENGINEER

DATE PREPARED	
1/10/2025	
ROUTE CR8490	STATE MO
DISTRICT BR	SHEET NO. 1
COUNTY PHELPS	
JOB NO. J5S3547	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A16272	

DATE	DESCRIPTION

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

HR GREEN, INC.
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ST. LOUIS, MISSOURI 63141
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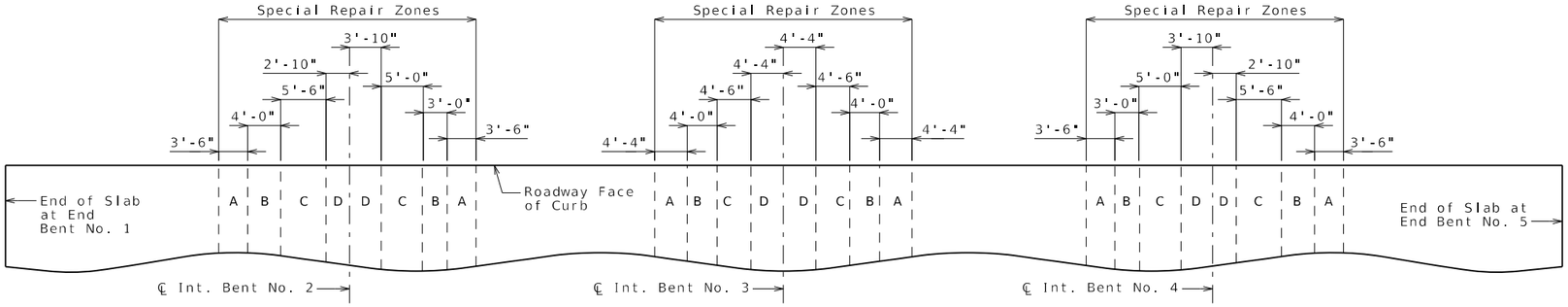
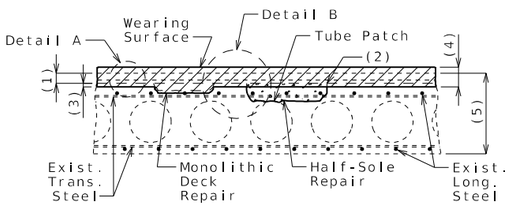
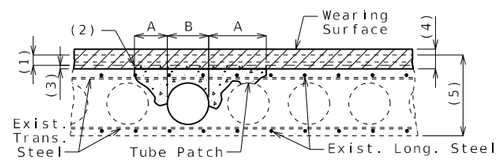


PART PLAN OF SLAB SHOWING SPECIAL REPAIR ZONES



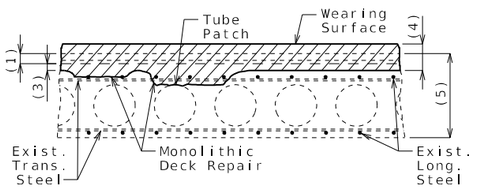
MONOLITHIC AND HALF-SOLE REPAIR



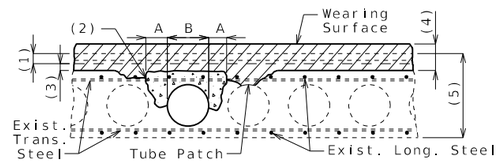
DECK REPAIR WITH VOID TUBE REPLACEMENT

A = Half-Sole Repair
B = Deck Repair with Void Tube Replacement

DECK REPAIR INSIDE SPECIAL REPAIR ZONES (BEFORE HYDRO DEMOLITION)



MONOLITHIC DECK REPAIR



DECK REPAIR WITH VOID TUBE REPLACEMENT

A = Half-Sole Repair
B = Deck Repair with Void Tube Replacement

DECK REPAIR OUTSIDE SPECIAL REPAIR ZONES (AFTER HYDRO DEMOLITION)

(1) Removal of existing 1/2"± seal coat wearing surface plus 1/4" of existing deck

(2) 1" vertical side shall be established outside the deteriorated area.

(3) Total surface hydro demolition of sound concrete, measured to mortar line:

1/4" minimum inside special repair zones

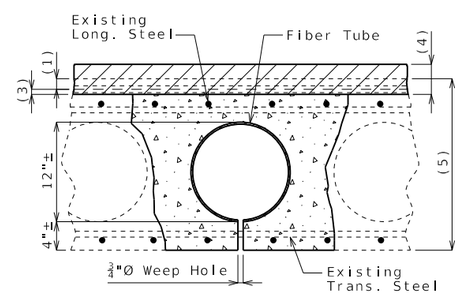
1/2" minimum outside special repair zones

(4) Latex modified concrete wearing surface:

1 1/2" minimum inside special repair zones

1 3/4" minimum outside special repair zones

(5) Original depth



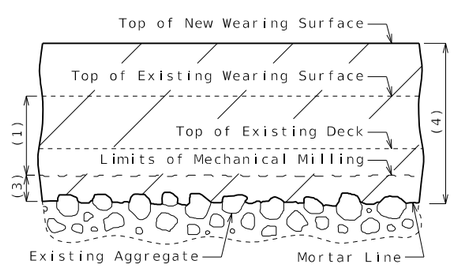
FIBER VOID TUBE REPLACEMENT

Fiber tubes for producing voids shall have an approximate outside diameter of 12 inches and a wall thickness of 1/4 inch and shall be anchored to joists carrying the floor form at not more than 4-foot centers.

One 3/4"Ø weep hole shall be provided at 2 inches from each end of each new void.

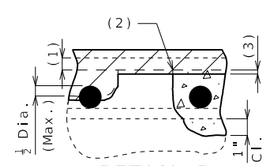
Monolithic deck repair shall be used when only half the diameter or less of the top bar is exposed.

Clearance around top bar and around bottom bar at the intersection of top bar shall be required when more than half the diameter of the top bar is exposed.



MILLING AND HYDRO DEMOLITION LIMITS

DETAIL A



DETAIL B

Deck Repair Notes:

Order of Repair:

1. Remove existing wearing surface plus 1/4" of existing deck.
2. Power wash deck to identify sound and unsound existing deck repair.
3. Inside special repair zones, complete the following repairs:
   a. Removal of existing deck repair
   b. Half-sole repair
   c. Deck repair with void tube replacement
4. Outside special repair zones, remove existing deck repair.
5. Complete total surface hydro demolition, removing 1/4" minimum of sound concrete inside special repair zones and removing 1/2" minimum of sound concrete and all deteriorated concrete outside special repair zones.
6. Sound deck and if needed complete incidental concrete removal.
7. Outside special repair zones, complete deck repairs with void tube replacements.
8. Place new wearing surface including additional material for areas of monolithic deck repair.

Special Repair Zones:

Deck repair required in the areas designated as special repair zones shall be completed before hydro demolition in alphabetical sequence beginning with Zone A. Zones with the same letter designation may be repaired at the same time. Hydro demolition shall not move forward until the repairs in all special repair zones are completed and properly cured.

Any deck repair in areas not designated as a special repair zone shall be completed after hydro demolition.

Removal and deck repair shall be completed in one special repair zone and concrete shall have attained a compressive strength of 3200 psi before work can be started in the next special repair zone.

If any single repair area does not exceed 4 square feet in size and the total repair area within a special repair zone does not exceed 12 square feet, the special repair zone may be repaired at the same time as an adjacent zone.

Void Repair:

Any damage sustained to the void tube as a result of the contractor's operations shall be patched or replaced as required by the engineer at the contractor's expense.

An exposed void in the deck shall be patched as approved by the engineer in a manner that shall maintain the void area completely free of concrete. Cost of patching an exposed void will be considered completely covered by the contract unit price for Half-Sole Repair inside special repair zones and Monolithic Deck Repair outside special repair zones.

When a deteriorated portion of the void tube is beyond the point of patching as determined by the engineer, the portion of the deteriorated void tube shall be replaced. The void area shall be maintained completely free of concrete. Cutting of the longitudinal reinforcing steel will not be permitted. The fiber tubes for producing the voids shall have an outside diameter with the wall thickness the same as the existing tubes and anchored at not more than the original spacing. Cost of replacing the void tube will be considered completely covered by the contract unit price for Deck Repair with Void Tube Replacement. Measurement will be horizontal projection of the area of expose tube in plan.

STATE OF MISSOURI
KEVIN J. BREHM
PE-2010024490
PROFESSIONAL ENGINEER

DATE PREPARED	
1/10/2025	
ROUTE	STATE
CR8490	MO
DISTRICT	SHEET NO.
BR	2
COUNTY	
PHELPS	
JOB NO.	
J5S3547	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	
A16272	

DATE	DESCRIPTION

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
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PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

DECK REPAIR DETAILS

Detailed Aug. 2024
Checked Aug. 2024

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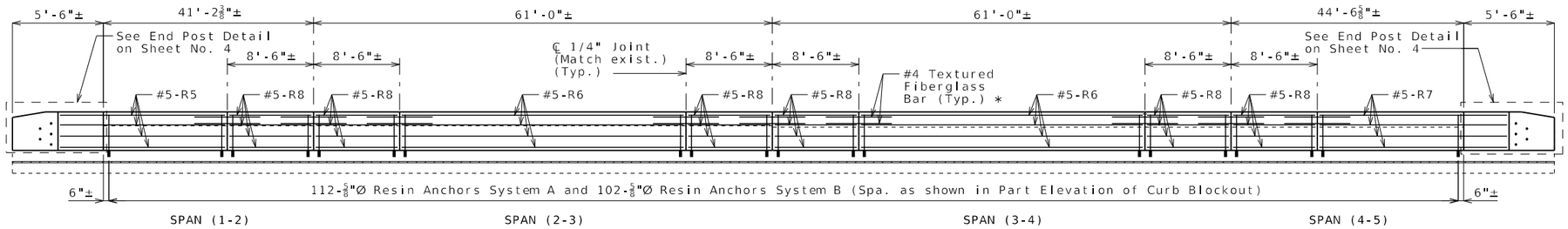
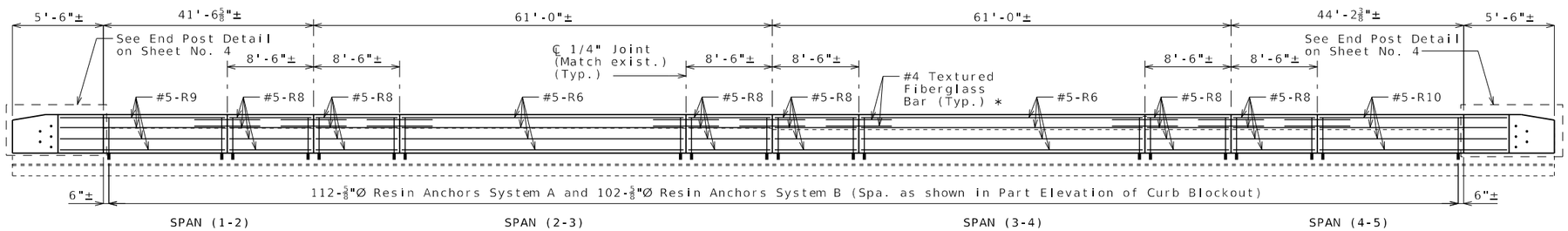


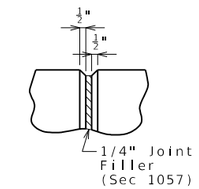
ELEVATION OF LEFT CURB BLOCKOUT

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

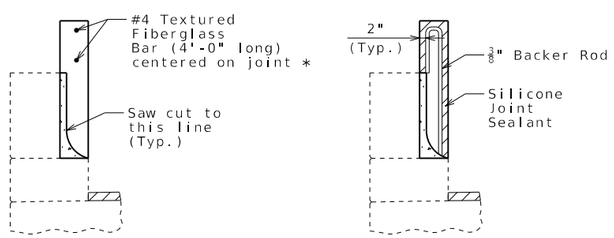


ELEVATION OF RIGHT CURB BLOCKOUT

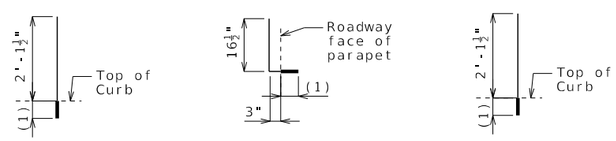
Longitudinal dimensions are along grade and are taken at top outside edge of parapet.



PART ELEVATION AT FORMED JOINT

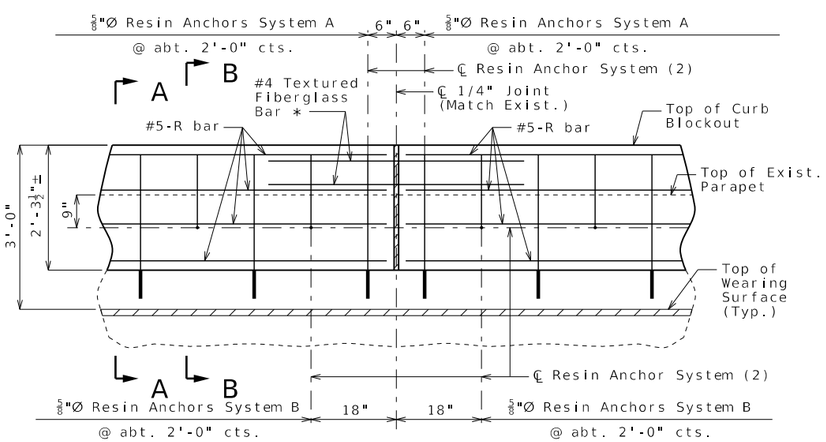


SECTION THRU SAW CUT JOINT

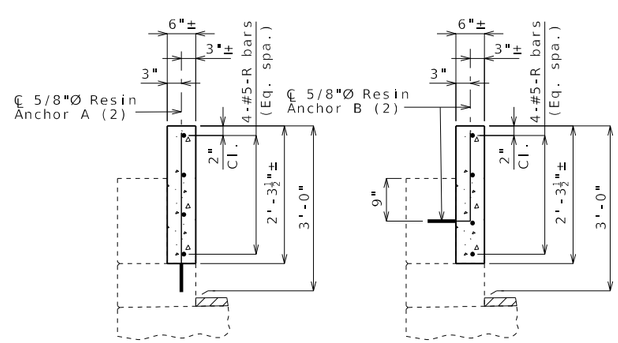


(1) Use manufacturer's embedment length (5" minimum embedment).

DETAILS OF RESIN ANCHORS



PART ELEVATION OF CURB BLOCKOUT



SECTION A-A SECTION B-B

Notes:

* Slip-formed option only.

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

Concrete in curb blockout shall be Class B-1.

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

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

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

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

All curb blockout reinforcement shall be epoxy coated.

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

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

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

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

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

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

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

Detailed Aug. 2024
Checked Aug. 2024

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

CURB BLOCKOUT

Sheet No. 3 of 5

STATE OF MISSOURI — KEVIN J. BREHM PE-2010024490 — PROFESSIONAL ENGINEER

DATE PREPARED	1/10/2025
ROUTE	CR8490
STATE	MO
DISTRICT	BR
SHEET NO.	3
COUNTY	PHELPS
JOB NO.	J5S3547
CONTRACT ID.	
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BRIDGE NO.	A16272

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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520 MARYVILLE CENTRE DRIVE, SUITE 100
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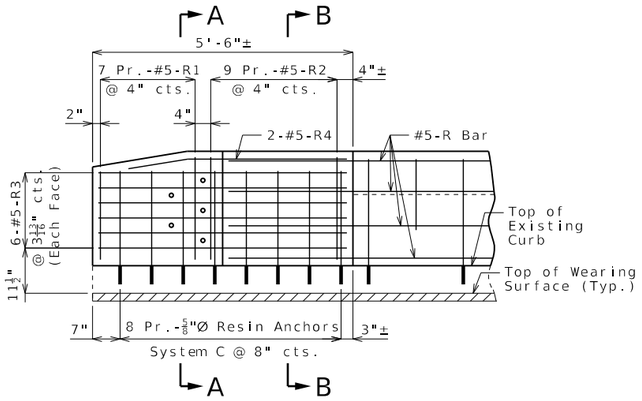
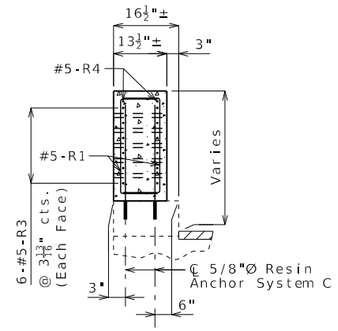
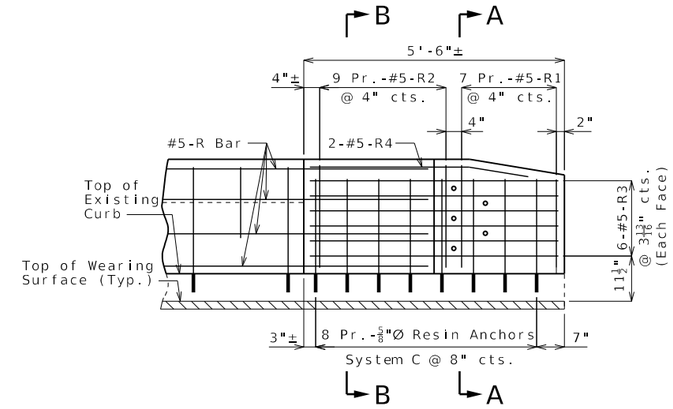


ELEVATION SHOWING REINFORCEMENT

(Right End Post at End Bent No. 5 similar)

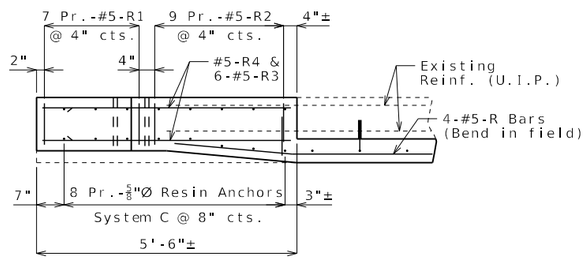


SECTION A-A



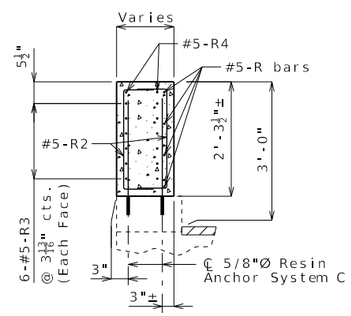
ELEVATION SHOWING REINFORCEMENT

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

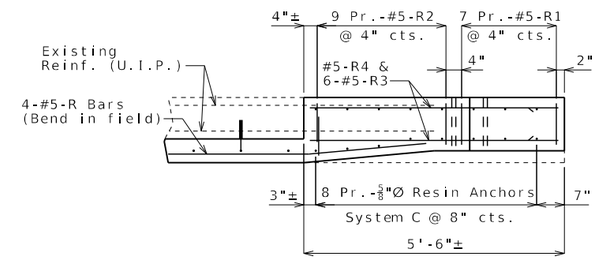


PLAN SHOWING REINFORCEMENT

LEFT END POST AT END BENT NO. 1

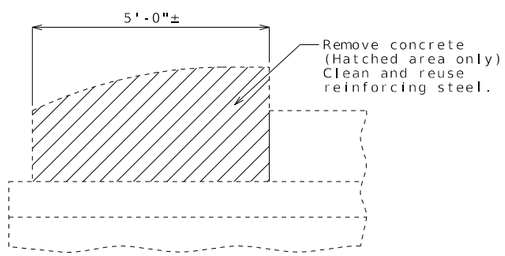


SECTION B-B



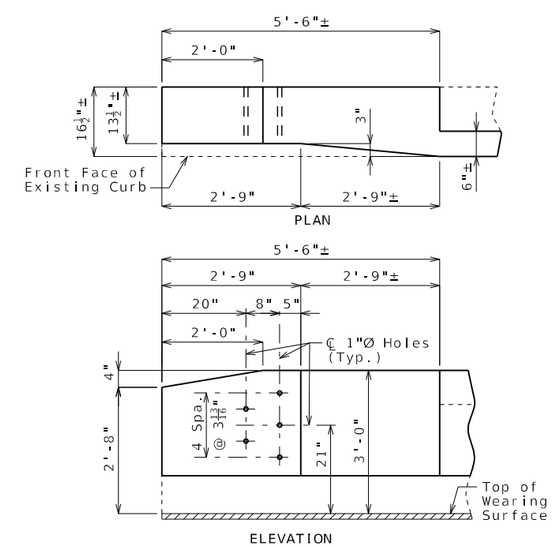
PLAN SHOWING REINFORCEMENT

LEFT END POST AT END BENT NO. 5



PART ELEVATION SHOWING END POST
CONCRETE REMOVAL

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



DETAILS OF END POST AND
GUARD RAIL ATTACHMENT

Notes:

Work this sheet with Sheet No. 3.

For details of resin anchors, see Sheet No. 3.

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

CURB BLOCKOUT AT END BENTS

Detailed Jun. 2024
Checked Aug. 2024

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

STATE OF MISSOURI
KEVIN J. BREHM
PE-2010024490
PROFESSIONAL ENGINEER

DATE PREPARED	1/10/2025
ROUTE	CR8490
STATE	MO
DISTRICT	BR
SHEET NO.	4
COUNTY	PHELPS
JOB NO.	J5S3547
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A16272

DESCRIPTION

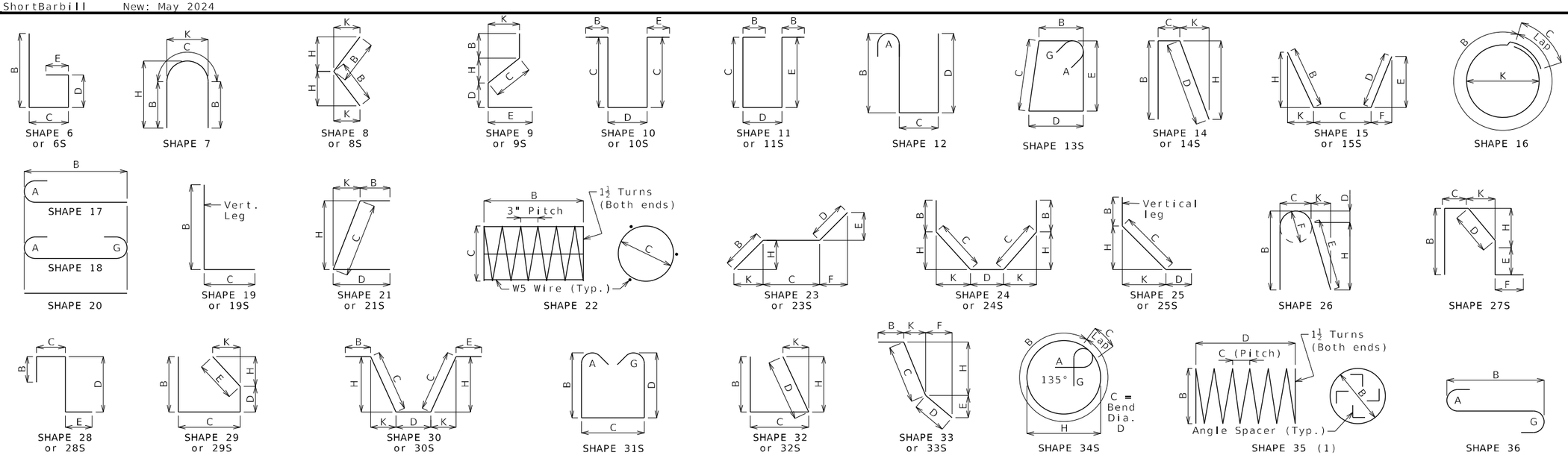
DATE

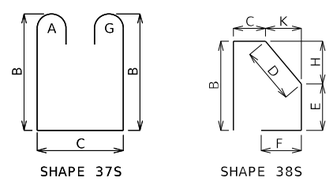
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

HR GREEN, INC.
520 MARYVILLE CENTRE DRIVE,
SUITE 100
ST. LOUIS, MISSOURI 63141
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608

HRGreen

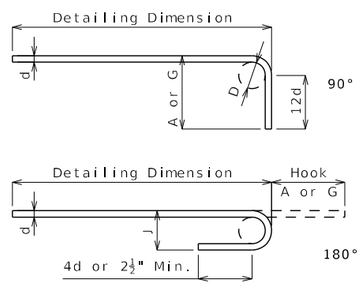




Finished Bend Diameters D and Hook Dimensions

Standard Pin Bend Shapes

Size	Case	D	A or G 90°	A or G 180°	J 180°
#4	1	3"	8"	6"	4"
#5	1	3¾"	10"	7"	5"
#6	1	4½"	12"	8¼"	6"
#7	2	5¼"	14"	9¾"	7"
	3	7"	15"	11½"	8¾"
#8	2	6"	16"	11"	8"
	3	8"	17"	13¼"	10"
#9	1	9½"	19½"	15½"	11¾"
#10	1	10¾"	22"	17½"	13¼"
#11	1	12"	24½"	19½"	14⅞"
#14	1	18¼"	31¼"	27½"	21⅝"
#18	1	24"	41½"	36¼"	28½"

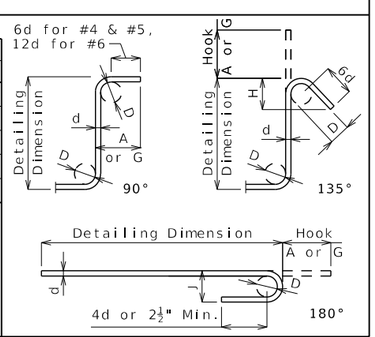


Stirrup Pin Bend Shapes (S)

Size	Case	D	A or G 90°	A or G 135°	A or G 180°	H 135°	J 180°
#4	2	2"	4½"	4½"	5"	2⅞"	3"
	3	3"	5"	5¼"	6"	3"	4"
#5	2	2½"	5¾"	5¾"	5¾"	3⅝"	3¾"
	3	3¾"	6¼"	6½"	7"	3⅞"	5"
#6	1	4½"	12"	7¾"	8¼"	4⅝"	6"

Applicable for all grades of steel.

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



BENDING DIAGRAMS

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 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.

All dimensions are out to out.

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

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

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

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

Reinforcing Steel Totals (Pounds)

Size	Substructure Plain	Substructure Epoxy	Superstructure Slab	Superstructure Barrier	Superstructure Slip Form	Entire Bridge Plain	Entire Bridge Epoxy
5	0	0	0	2535	0	0	2535

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

Bill of Reinforcing Steel

No. Req.	Size/ Mark	Location	Codes C	Codes SH	Codes V	B ft in.	C ft in.	D ft in.	E ft in.	F ft in.	H ft in.	K ft in.	Nom. Length ft in.	Actual Length ft in.	Weight lb
		Curb Blockout													
56	5 R1	BLOCKOUT	E	10S	8		10.50	2 0.50					3 10	3 8	
		INCREMENT =					10.50	20.50					3 6	3 2	200
		0.667 INCH													
72	5 R2	BLOCKOUT	E	10S			10.50	2 0.50					3 10	3 8	275
48	5 R3	BLOCKOUT	E	20		5 3.00							5 3	5 3	263
8	5 R4	BLOCKOUT	E	14S			3 4.25	1 3.25			2.50	1 3.00	4 8	4 8	39
4	5 R5	BLOCKOUT	E	20		35 2.00							35 2	35 2	147
16	5 R6	BLOCKOUT	E	20		43 9.00							43 9	43 9	730
4	5 R7	BLOCKOUT	E	20		38 6.00							38 6	38 6	161
48	5 R8	BLOCKOUT	E	20		8 3.00							8 3	8 3	413
4	5 R9	BLOCKOUT	E	20		35 6.00							35 6	35 6	148
4	5 R10	BLOCKOUT	E	20		38 2.00							38 2	38 2	159

BENDING DIAGRAMS AND REINFORCING STEEL TOTALS

Detailed Aug. 2024
Checked Aug. 2024

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

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
ST. LOUIS, MISSOURI 63141
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608

STATE OF MISSOURI
KEVIN J. BREHM
PE-2010024490
PROFESSIONAL ENGINEER

DATE PREPARED 1/10/2025
ROUTE CR8490
STATE MO
DISTRICT BR
SHEET NO. 5
COUNTY PHELPS
JOB NO. J5S3547
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A16272
DESCRIPTION
DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

PLANS FOR PROPOSED STATE HIGHWAY

PHELPS COUNTY

SECTION 3, T36N, R10W

DESIGN DESIGNATION

A.A.D.T. - 2023 = 1011
A.A.D.T. - 2043 = 1234
D.H.V. = 9.8%
T = 1.2%
V = 55 M.P.H.
D = 50%/50%

FUNCTIONAL CLASSIFICATION- MAJOR COLLECTOR

NO RIGHT OF WAY WILL BE ACQUIRED WITH THIS PROJECT.

DISCLAIMER
THE PROFESSIONAL WHOSE SIGNATURE AND PERSONAL SEAL APPEAR HEREON ASSUMES RESPONSIBILITY ONLY FOR WHAT APPEARS ON THIS PAGE, AND DISCLAIMS (PURSUANT TO SECTION 327.411 RSMO) SPECIFICATION, ESTIMATES, REPORTS, OR OTHER DOCUMENTS OR INSTRUMENTS NOT SEALED BY THE UNDERSIGNED PROFESSIONAL RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE PROJECT TO WHICH THIS PAGE REFERS.

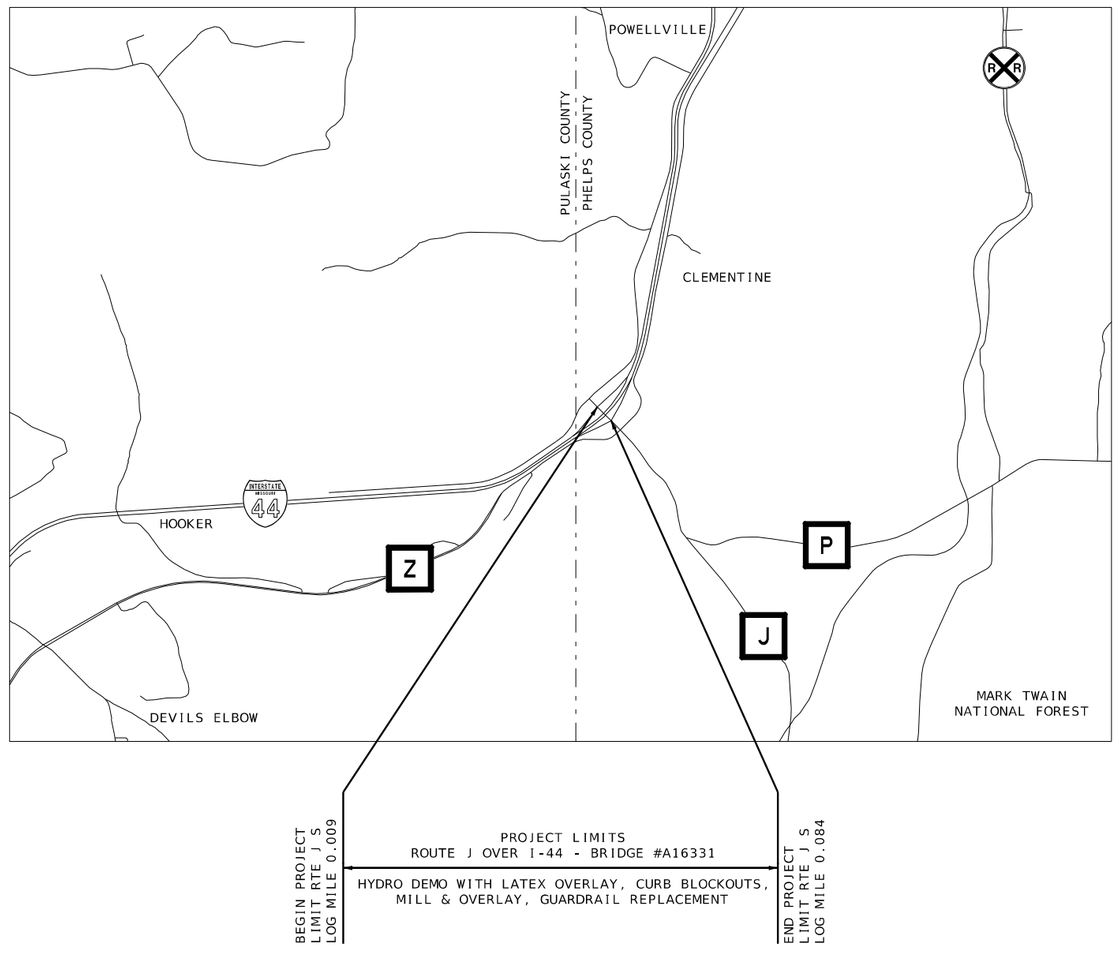
CONVENTIONAL SYMBOLS
(USED IN PLANS)

	EXISTING	NEW
BUILDINGS AND STRUCTURES		
GUARD RAIL		
GUARD CABLE		
CONCRETE RIGHT-OF-WAY MARKER		
STEEL RIGHT-OF-WAY MARKER		
LOCATION SURVEY MARKER		
UTILITIES		
FIBER OPTICS	FO	FO
OVERHEAD CABLE TV	OTV	OTV
UNDERGROUND CABLE TV	UTV	UTV
OVERHEAD TELEPHONE	OT	OT
UNDERGROUND TELEPHONE	UT	UT
OVERHEAD POWER	OE	OE
UNDERGROUND POWER	UE	UE
SANITARY SEWER	S	S
STORM SEWER	SS	SS
GAS	G	G
WATER	W	W
MANHOLE	SAN	
FIRE HYDRANT	HYD	
WATER VALVE	WV	
WATER METER	WM	
DROP INLET	DI	
DITCH BLOCK		
GROUND MOUNTED SIGN	SIGN	
LIGHT POLE		
H-FRAME POWER POLE		
TELEPHONE PEDESTAL	PED	
FENCE		
CHAIN LINK	V	
WOVEN WIRE	X	
GATE POST		
BENCHMARK	BM	

NOTE: DASHED OR OPEN SYMBOLS INDICATE EXISTING FEATURES

KEY MAP
LOCATION OF PHELPS COUNTY

NOT TO SCALE



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

INDEX OF SHEETS

DESCRIPTION	SHEET NUMBER
TITLE SHEET	1
TYPICAL SECTIONS (TS) (1 SHEET)	2
QUANTITIES (QU) (2 SHEETS)	3
PLAN SHEETS (PL)	4
TRAFFIC CONTROL SHEETS (TC)	5-10
EROSION CONTROL SHEET	11
BRIDGE DRAWINGS (B)	
A16331	1-5

LENGTH OF PROJECT

BEGINNING OF PROJECT	LOG MILE 0.009
END OF PROJECT	LOG MILE 0.084
APPARENT LENGTH	396.00 FEET
EQUATIONS AND EXCEPTIONS:	
TOTAL CORRECTIONS	0.0 FEET
NET LENGTH OF PROJECT	396.00 FEET
STATE LENGTH	0.075 MILES
FOR INFORMATION ONLY ESTIMATED DISTURBED ACRES	0.0 ACRES

STATE OF MISSOURI
ANDREA S. DAVIS
PE-2018021250
PROFESSIONAL ENGINEER

DATE PREPARED	1/21/2025
ROUTE: J	STATE: MO
DISTRICT: CD	SHEET NO.: 1
COUNTY	PHELPS
JOB NO.	J5S3548
CONTRACT ID.	.
PROJECT NO.	.
BRIDGE NO.	.

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

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
ST. LOUIS, MISSOURI 63141
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

APPLICATION RATES:

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

DISCLAIMER
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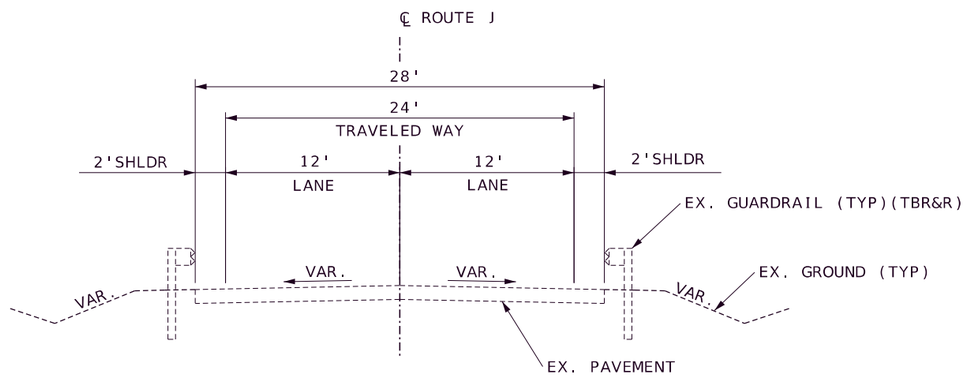
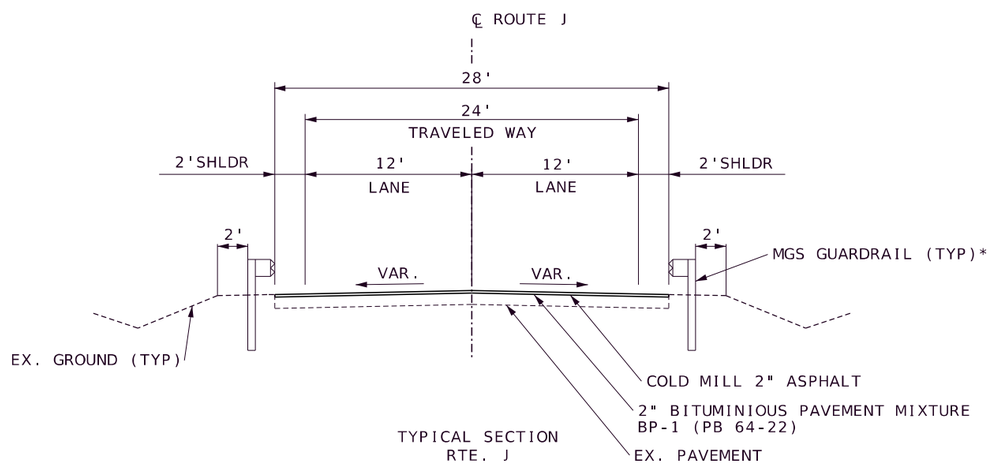


EXISTING TYPICAL SECTION
RTE. J

LOG MILE 0.009 TO LOG MILE 0.084



TYPICAL SECTION
RTE. J

LOG MILE 0.009 TO LOG MILE 0.084

*SEE PLAN SHEET FOR GUARDRAIL STATION RANGES

BRIDGE LIMITS: LOG MILE 0.032 TO LOG MILE 0.065

TYPICAL SECTIONS
SHEET 1 OF 1

STATE OF MISSOURI
ALISON N. GRAVES
NUMBER
PE-2011015778
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED, AND DATED ELECTRONICALLY.

DATE PREPARED	12/27/2024
ROUTE	J
STATE	MO
DISTRICT	CD
SHEET NO.	2
COUNTY	PHELPS
JOB NO.	J5S3548
CONTRACT ID.	.
PROJECT NO.	.
BRIDGE NO.	.

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

5220 Oakland Ave.
St. Louis, MO 63110
(314) 863-5570
CIVIL DESIGN INC.
Missouri State Certificate of Authority #2002006804

REV.

REMOVAL OF IMPROVEMENTS

PLAN SHEET	LOG MILE	SIDE	DESCRIPTION	AMOUNT
				LF
4	0.032	LT	GUARDRAIL	87.5
4	0.032	RT	GUARDRAIL	225.0
4	0.065	LT	GUARDRAIL	87.5
4	0.065	RT	GUARDRAIL	212.5
			TOTAL	1 LUMP SUM

MOBILIZATION

TOTAL = 1 LUMP SUM

RESTORE SLOPE

TOTAL = 1 LUMP SUM

PAVEMENT

PLAN SHEET	BEGIN LOG MILE	END LOG MILE	SIDE	BITUMINOUS PAVEMENT MIXTURE PG64-22 (BP-1)	COLDMILLING BITUMINOUS PAVEMENT FOR REMOVAL OF SURFACING (3 IN. THICK OR LESS)	TACK COAT
				SY	SY	SY
4	0.009	0.032	BOTH	395.7	395.7	395.7
4	0.065	0.084	BOTH	319.7	319.7	319.7
			SUBTOTAL	715.4	715.4	715.4
				2" DEPTH		
				X 1.948 TONS/CY		X 0.10 GAL/SY
				TONS	SY	GALLON
			TOTAL	77.4	715	72

UNDILUTED TACK COAT APPLICATION RATES PER EPG TABLE 407.1.4 USED: 0.05 FOR NEW ASPHALT SURFACES, 0.10 FOR COLDMILLED ASPHALT SURFACES

GUARDRAIL

PLAN SHEET	LOG MILE	SIDE	MGS GUARDRAIL 6 FT. POSTS	MGS BRIDGE APPR. GUARDRAIL SECTION (REGULAR/NO CURB)	TYPE A CRASHWORTHY END TERMINAL (MASH)	SHAPING SLOPES CLASS III
			LF	EA	EA	100F
4	0.032	LT		1	1	1.2
4	0.032	RT		1	1	1.2
4	0.065	LT		1	1	1.2
4	0.065	RT	125	1	1	2.4
		TOTAL	125	4	4	6

NOTE: GUARDRAIL LENGTHS DO NOT INCLUDE LENGTHS FOR END, TERMINAL, ANCHOR OR TRANSITION SECTIONS OR BULLNOSE

PERMANENT PAVEMENT MARKING

PLAN SHEET	BEGIN LOG MILE	END LOG MILE	SIDE	WATERBORNE W/ TYPE P BEADS 4 INCH YELLOW	4 INCH WHITE	REMARKS
				LF	LF	
4	0.009	0.084	CENTER	792		DOUBLE SOLID YELLOW
4	0.009	0.084	RIGHT		396	SOLID WHITE
4	0.009	0.084	LEFT		396	SOLID WHITE
			TOTAL	792	792	

PERMANENT EROSION CONTROL

PLAN SHEET	LOG MILE	SIDE	FURNISHING TYPE 1 ROCK DITCH LINER	PLACING TYPE 1 ROCK DITCH LINER	PERMANENT EROSION CONTROL GEOTEXTILE
			CY	CY	SY
4	0.032	LT	3	3	16
4	0.032	RT	3	3	13
		TOTAL	6	6	29

TEMPORARY EROSION CONTROL

PLAN SHEET	LOG MILE	SIDE	SILT FENCE	SEDIMENT REMOVAL
			LF	CY
11	0.032	LT	105	1
11	0.032	RT	110	1
11	0.065	LT	100	1
11	0.065	RT	200	2
		TOTAL	515	5

NOTE: SEDIMENT REMOVAL IS BASED ON 1 CY PER DITCH CHECK, 1 CY PER 100 FT OF SILT FENCE

SUMMARY OF QUANTITIES
SHEET 1 OF 2

STATE OF MISSOURI
ALISON N. GRAVES
NUMBER
PE-2011015778
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED, AND DATED ELECTRONICALLY.

DATE PREPARED
12/27/2024

ROUTE	STATE
J	MO
DISTRICT	SHEET NO.
CD	3

COUNTY
PHELPS

JOB NO.
J5S3548

CONTRACT ID.
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PROJECT NO.
.

BRIDGE NO.
.

DESCRIPTION	DATE
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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

5220 Oakland Ave.
St. Louis, MO 63110
(314) 863-5570

CIVIL DESIGN, INC.
VISIT EDGE

Missouri State Certificate of Authority #2002006804

EFFECTIVE: 07-01-2024

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL AREA SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NUM.	DESCRIPTION
WARNING SIGNS								
WO1-1L	48X48	16.00						TURN (SYMBOL LEFT)
WO1-1R	48X48	16.00						TURN (SYMBOL RIGHT)
WO1-2L	48X48	16.00						CURVE (SYMBOL LEFT)
WO1-2R	48X48	16.00						CURVE (SYMBOL RIGHT)
WO1-3L	48X48	16.00						REVERSE TURN (SYMBOL LEFT)
WO1-3R	48X48	16.00						REVERSE TURN (SYMBOL RIGHT)
WO1-4L	48X48	16.00						REVERSE CURVE (SYMBOL LEFT)
WO1-4R	48X48	16.00						REVERSE CURVE (SYMBOL RIGHT)
WO1-4bL	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL LEFT)
WO1-4bR	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL RIGHT)
WO1-4cL	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL LEFT)
WO1-4cR	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL RIGHT)
WO1-6	60X30	12.50						HORIZONTAL ARROW (SYMBOL)
WO1-6a	72X36	18.00						HORIZ. ARROW (SYMBOL ON PERMANENT BARRICADE)
WO1-7	60X30	12.50						DOUBLE HEAD HORIZONTAL ARROW (SYMBOL)
WO1-7a	72X36	18.00						DOUBLE HEAD HORIZ. ARROW (SYMBOL ON PERM. BARR.)
WO1-8	18X24	3.00						CHEVRON (SYMBOL)
WO1-8a	30X36	7.50						CHEVRON (SYMBOL FOR DIVIDED HIGHWAYS)
WO3-1	48X48	16.00						STOP AHEAD (SYMBOL)
WO3-2	48X48	16.00						YIELD AHEAD (SYMBOL)
WO3-3	48X48	16.00						SIGNAL AHEAD (SYMBOL)
WO3-4	48X48	16.00						BE PREPARED TO STOP
WO3-5	48X48	16.00						SPEED LIMIT AHEAD
WO4-1L	48X48	16.00						MERGE (SYMBOL FROM LEFT)
WO4-1R	48X48	16.00						MERGE (SYMBOL FROM RIGHT)
WO4-1aL	48X48	16.00	2	32			6A	MERGE (LEFT)
WO4-1aR	48X48	16.00	2	32			6B	MERGE (RIGHT)
WO5-1	48X48	16.00						ROAD/BRIDGE/RAMP NARROWS
WO5-3	48X48	16.00						ONE LANE BRIDGE
WO5-5	48X48	16.00						NARROW LANES
WO6-1	48X48	16.00						DIVIDED HIGHWAY (SYMBOL)
WO6-2	48X48	16.00						DIVIDED HIGHWAY END (SYMBOL)
WO6-3	48X48	16.00						TWO WAY TRAFFIC (SYMBOL)
WO7-3a	30X24	5.00						NEXT XX MILES (PLAQUE)
WO8-1	48X48	16.00						BUMP
WO8-2	48X48	16.00						DIP
WO8-3	48X48	16.00						PAVEMENT ENDS
WO8-4	48X48	16.00						SOFT SHOULDER
WO8-5	48X48	16.00						SLIPPERY WHEN WET (SYMBOL)
WO8-6	48X48	16.00						TRUCK CROSSING
WO8-6c	48X48	16.00						TRUCK ENTRANCE
WO8-7	36X36	9.00						LOOSE GRAVEL
WO8-7a	36X36	9.00						FRESH OIL / LOOSE GRAVEL
WO8-9	48X48	16.00						LOW SHOULDER
WO8-11	48X48	16.00						UNEVEN LANES
WO8-12	48X48	16.00						NO CENTER LINE
WO8-15	48X48	16.00						GROOVED PAVEMENT
WO8-15P	30X24	5.00						MOTORCYCLE (PLAQUE)
WO8-17L	48X48	16.00						SHOULDER DROP-OFF (SYMBOL LEFT)
WO8-17R	48X48	16.00						SHOULDER DROP-OFF (SYMBOL RIGHT)
WO8-17P	30X24	5.00						SHOULDER DROP-OFF (PLAQUE)
W10-1	42RND.	9.62						RAILROAD CROSSING
WO12-1	24X24	4.00						DOUBLE DOWN ARROW (SYMBOL)
WO12-2	48X48	16.00						LOW CLEARANCE (SYMBOL)
WO12-2x	24X18	3.00						LOW CLEARANCE (PLAQUE)
WO12-2a	84X24	14.00						OVERHEAD LOW CLEARANCE (FEET AND INCHES)
WO12-4	120X60	50.00						LOW CLEARANCE XX FT XX IN XX MILES AHEAD
WO12-5	120X60	50.00						WIDTH RESTRICTION XX FT XX IN XX MILES AHEAD
WO13-1	30X30	6.25						ADVISORY SPEED (PLAQUE)
WO16-2	30X24	5.00						XXX FEET (PLAQUE)
WO16-3	30X24	5.00						X MILE (PLAQUE)
WO20-1	48X48	16.00	4	64			2	ROAD/BRIDGE/RAMP WORK AHEAD
WO20-2	48X48	16.00	5	80			18	DETOUR AHEAD
WO20-3	48X48	16.00	6	96			20	ROAD CLOSED AHEAD
WO20-4	48X48	16.00						ONE LANE ROAD AHEAD
WO20-5	48X48	16.00	4	64			5	RIGHT/CENTER/LEFT LANE CLOSED AHEAD
WO20-5a	48X48	16.00						2 RIGHT/CENTER/LEFT LANES CLOSED AHEAD
WO20-6a	48X48	16.00	2	32			6	RIGHT/CENTER/LEFT LANE CLOSED
WO20-7a	48X48	16.00						FLAGGER (SYMBOL)
WO21-2	36X36	9.00						FRESH OIL
WO21-5	48X48	16.00						SHOULDER WORK / SHOULDER WORK AHEAD
WO22-1	48X48	16.00						BLASTING ZONE AHEAD
WO22-2	42X36	10.50						TURN OFF 2-WAY RADIO AND PHONE
WO22-3	42X36	10.50						END BLASTING ZONE
GO22-1	21X15	2.19						WET PAINT (ARROW PIVOTS)

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NUM.	DESCRIPTION
GUIDE SIGNS								
E05-1	36X48	12.00	2	24			49	GORE EXIT
E05-2	48X36	12.00	2	24			48	EXIT OPEN
E05-2a	48X36	12.00						EXIT CLOSED
GO20-1	60X24	10.00	4	40			1	ROAD WORK NEXT XX MILES
GO20-2	48X24	8.00	4	32			26	END ROAD WORK
GO20-4	36X18	4.50						PILOT CAR FOLLOW ME
GO20-4a	42X30	8.75						PILOT CAR IN USE WAIT & FOLLOW
GO20-4a	18X12	1.50						PILOT CAR IN USE WAIT & FOLLOW
GO20-5aP	36X24	6.00	4	24			54	WORK ZONE (PLAQUE)
MO4-8a	24X18	3.00						END DETOUR
MO4-9L	48X36	12.00						DETOUR (LEFT)
MO4-9R	48X36	12.00						DETOUR (RIGHT)
MO4-9P	48X12	4.00						STREET NAME (PLAQUE)
MO4-10L	48X18	6.00						DETOUR ARROW (LEFT)
MO4-10R	48X18	6.00						DETOUR ARROW (RIGHT)
REGULATORY SIGNS								
R1-1	48X48	13.25						STOP
R1-2	48TRI.	6.93						YIELD
R1-2a	36X36	9.00						TO ONCOMING TRAFFIC (PLAQUE)
R1-3P	30X12	2.50						ALL WAY (PLAQUE)
R2-1	36X48	12.00	4	48			4	SPEED LIMIT 60
R2-1	36X48	12.00	4	48			25	SPEED LIMIT 70
R3-1	48X48	16.00						NO RIGHT TURN (SYMBOL)
R3-2	48X48	16.00						NO LEFT TURN (SYMBOL)
R3-3	36X36	9.00						NO TURNS
R3-4	48X48	16.00						NO U-TURN (SYMBOL)
R3-7L	30X30	6.25						LEFT LANE MUST TURN LEFT
R3-7R	30X30	6.25						RIGHT LANE MUST TURN RIGHT
R4-1	36X48	12.00						DO NOT PASS
R4-2	36X48	12.00						PASS WITH CARE
R4-7a	36X48	12.00						KEEP RIGHT (HORIZONTAL ARROW)
R4-8a	36X48	12.00						KEEP LEFT (HORIZONTAL ARROW)
R5-1	30X30	6.25						DO NOT ENTER
R5-1a	36X24	6.00						WRONG WAY
R6-1L	54X18	6.75						ONE WAY ARROW (LEFT)
R6-1R	54X18	6.75						ONE WAY ARROW (RIGHT)
R6-2L	24X30	5.00						ONE WAY (LEFT)
R6-2R	24X30	5.00						ONE WAY (RIGHT)
R9-9	24X12	2.00						SIDEWALK CLOSED
R9-11L	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW LEFT) CROSS HERE
R9-11R	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW RIGHT) CROSS HERE
R10-6	24X36	6.00						STOP HERE ON RED (45^ ARROW)
R11-2	48X30	10.00	2	20			29	ROAD CLOSED
R11-3a	60X30	12.50						ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY
R11-4	60X30	12.50						ROAD CLOSED TO THRU TRAFFIC
CONST-3A	60X48	20.00	4	80			53	FINE SIGN
CONST-3X	56X12	4.67						SPEEDING/PASSING (PLATE)
MISCELLANEOUS SIGNS								
CONST-5	48X36	12.00						POINT OF PRESENCE
CONST-5	96X48	32.00	2	64			61	POINT OF PRESENCE
CONST-5	60X8	3.33	2	6.66			61A	POINT OF PRESENCE
CONST-8	48X36	12.00	4	48			55	WORK ZONE NO PHONE ZONE
SPECIAL	48X48	16.00	7	112			50A	DETOUR ASSEMBLY-N OUT STR.
SPECIAL	48X48	16.00					50B	DETOUR ASSEMBLY-N OUT ADV. RT.
SPECIAL	48X48	16.00	1	16			50C	DETOUR ASSEMBLY-N OUT RT.
SPECIAL	48X48	16.00	1	16			50D	DETOUR ASSEMBLY-N OUT ADV. LT.
SPECIAL	48X48	16.00	2	32			50E	DETOUR ASSEMBLY-N OUT LT.
SPECIAL	36X60	15.00	9	135			50F	DETOUR ASSEMBLY-RTE J STR
SPECIAL	36X60	15.00					50G	DETOUR ASSEMBLY-RTE J ADV. RT.
SPECIAL	36X60	15.00	1	15			50H	DETOUR ASSEMBLY-RTE J RT.
SPECIAL	36X60	15.00	1	15			50I	DETOUR ASSEMBLY-RTE J ADV. LT.
SPECIAL	36X60	15.00	2	30			50J	DETOUR ASSEMBLY-RTE J LT.
SPECIAL	48X48	16.00	1	16			50K	DETOUR ASSEMBLY-N OUT VEER RT.
SPECIAL	36X60	15.00	2	30			50L	DETOUR ASSEMBLY-RTE J VEER RT.

	TOTAL
616-10.05 CONSTRUCTION SIGNS	1276
616-10.10 RELOCATED SIGNS	0

ITEM NUMBER	TOTAL QTY	DESCRIPTION
6122008		IMPACT ATTENUATOR 40 MPH (SAND BARRELS)
6122009		IMPACT ATTENUATOR 45 MPH (SAND BARRELS)
6122010		IMPACT ATTENUATOR 50 MPH (SAND BARRELS)
6122012		IMPACT ATTENUATOR 55 MPH (SAND BARRELS)
6122014		IMPACT ATTENUATOR 60 MPH (SAND BARRELS)
6122017		IMPACT ATTENUATOR 65 MPH (SAND BARRELS)
6122019		IMPACT ATTENUATOR 70 MPH (SAND BARRELS)
6122020		REPLACEMENT SAND BARREL
6122030		IMPACT ATTENUATOR (RELOCATION)
6123001	1**	TRUCK MOUNTED ATTENUATOR (TMA)
6161008	4	ADVANCED WARNING RAIL SYSTEM
6161012		BUOYS (BOATS KEEP OUT)
6161013		BUOYS (NO WAKE)
6161014		SPECIAL SIGN ASSEMBLY (BOATS KEEP OUT)
6161025	118	CHANNELIZER (TRIM LINE)
6161030	6	TYPE III MOVEABLE BARRICADE
6161033	28	DIRECTION INDICATOR BARRICADE
6161040	4	FLASHING ARROW PANEL
6161047		TYPE III OBJECT MARKER
6161055		SEQUENTIAL FLASHING WARNING LIGHT
6161070		TUBULAR MARKER
6161095		RADAR SPEED ADVISORY SYSTEM
6161096		CHANGEABLE MESSAGE SIGN, COMMISSION FURNISHED/RETAINED
6161098A	2**	CHANGEABLE MESSAGE SIGN W/O COMM. INTERFACE - CONTRACTOR FURNISHED/RETAINED
6161099		CHANGEABLE MESSAGE SIGN WITH COMM. INTERFACE - CONTRACTOR FURNISHED/RETAINED
6162000A		WORK ZONE TRAFFIC SIGNAL SYSTEM
6162002		TEMPORARY LONG-TERM RUMBLE STRIPS
6173600D		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/RETAINED
6173602B		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/COMMISSION RETAINED
6174000A		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION
6175010A		RELOCATING TEMPORARY TRAFFIC BARRIER
6176000B		TEMPORARY TRAFFIC BARRIER COMMISSION FURNISHED/RETAINED
6177000B		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION COMMISSION FURNISHED/RETAINED
6208064A		TEMPORARY RAISED PAVEMENT MARKER
9029400		TEMPORARY TRAFFIC SIGNALS
9029401		TEMPORARY TRAFFIC SIGNALS AND LIGHTING

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

TEMPORARY TRAFFIC CONTROL	
PAY TOTAL =	1 LUMP SUM

SUMMARY OF QUANTITIES
SHEET 2 OF 2

STATE OF MISSOURI
ANDREA S. DAVIS
PE-2018021250
PROFESSIONAL ENGINEER

DATE PREPARED 1/21/2025
ROUTE J | STATE MO
DISTRICT CD | SHEET NO. 3
COUNTY PHELPS
JOB NO. J5S3548
CONTRACT ID. .
PROJECT NO. .
BRIDGE NO. .

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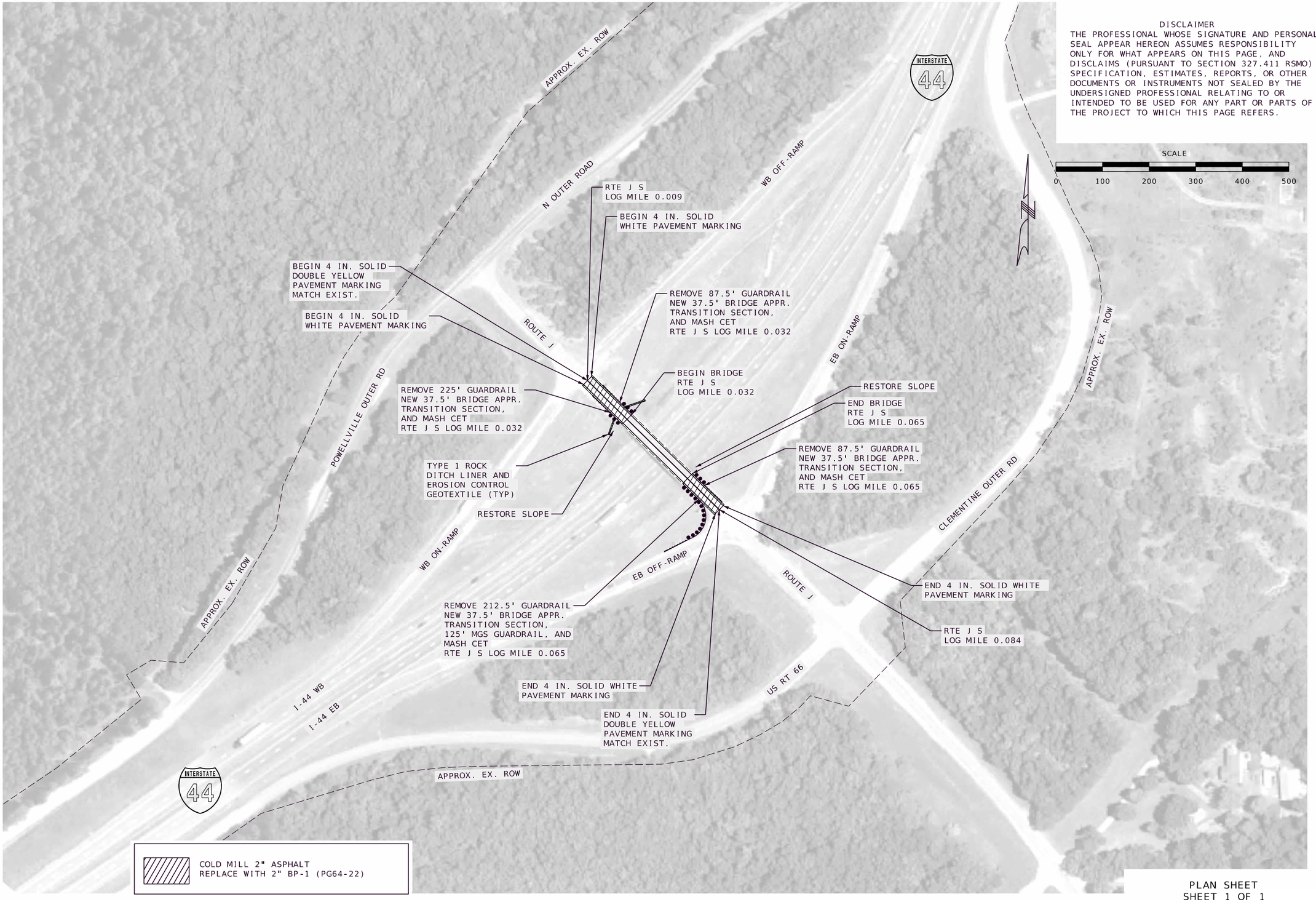
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

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
ST. LOUIS, MISSOURI 63141
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen



DISCLAIMER

THE PROFESSIONAL WHOSE SIGNATURE AND PERSONAL SEAL APPEAR HEREON ASSUMES RESPONSIBILITY ONLY FOR WHAT APPEARS ON THIS PAGE, AND DISCLAIMS (PURSUANT TO SECTION 327.411 RSMO) SPECIFICATION, ESTIMATES, REPORTS, OR OTHER DOCUMENTS OR INSTRUMENTS NOT SEALED BY THE UNDERSIGNED PROFESSIONAL RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE PROJECT TO WHICH THIS PAGE REFERS.

PLAN SHEET
SHEET 1 OF 1

STATE OF MISSOURI
ALISON N. GRAVES
NUMBER PE-2011015778
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED, AND DATED ELECTRONICALLY.

DATE PREPARED	12/27/2024
ROUTE J	STATE MO
DISTRICT CD	SHEET NO. 4
COUNTY	PHELPS
JOB NO.	J5S3548
CONTRACT ID.	.
PROJECT NO.	.
BRIDGE NO.	.

DATE	DESCRIPTION
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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

5220 Oakland Ave.
St. Louis, MO 63110
(314) 863-5570

CIVIL DESIGN, INC.
Missouri State Certificate of Authority #2002006304

REV.

P:\6XXX\66XX-67XX\6765 - MODOT Central Distric Bridge Rehabs over I44\28-Trans\CAD\J5S3548_RTEJ_A1633\004_PL_J5S3548_I100.dgn 3:38:24 PM 12/27/2024

DISCLAIMER
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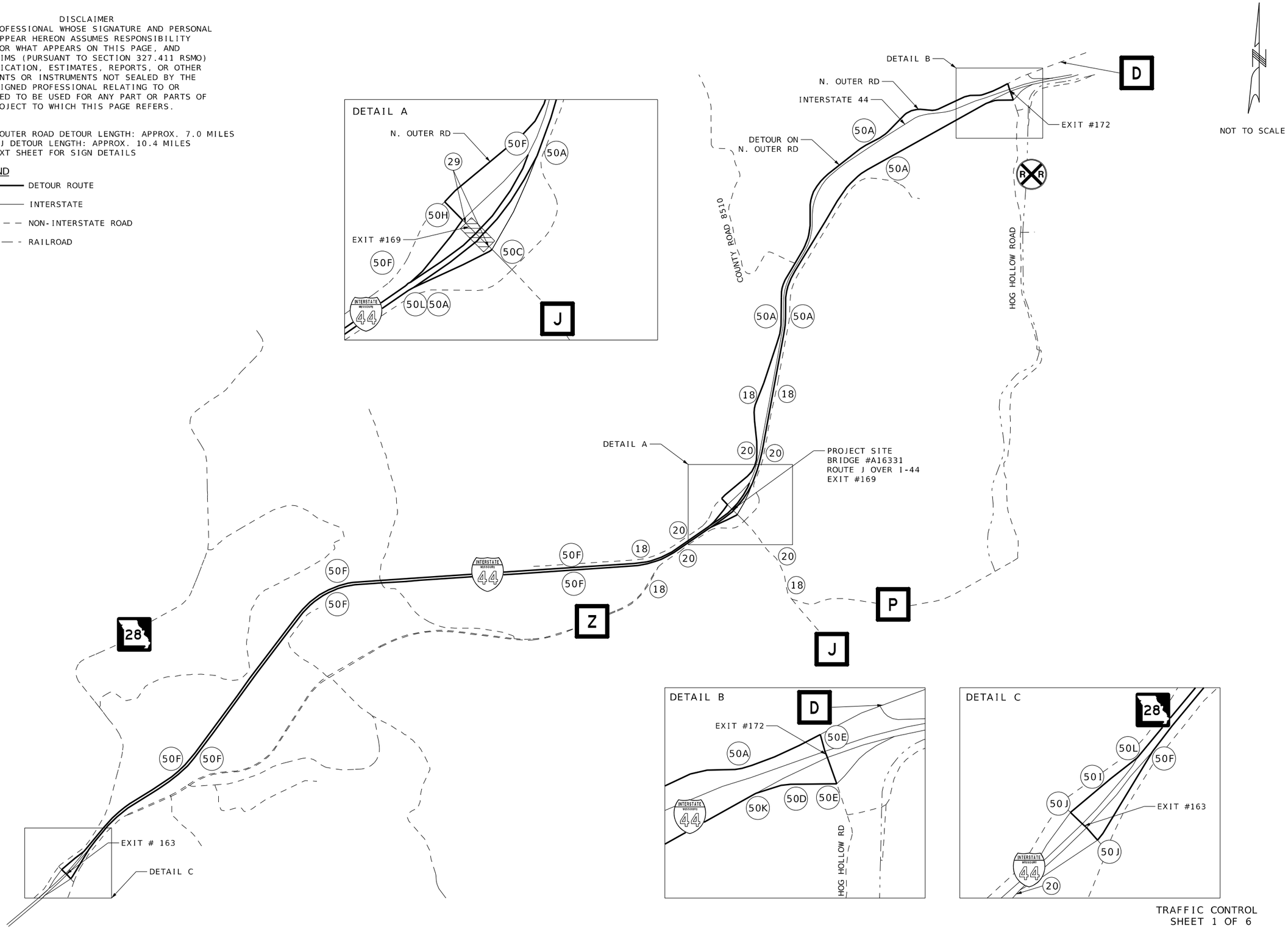
NOTES:
NORTH OUTER ROAD DETOUR LENGTH: APPROX. 7.0 MILES
ROUTE J DETOUR LENGTH: APPROX. 10.4 MILES
SEE NEXT SHEET FOR SIGN DETAILS

LEGEND
- DETOUR ROUTE
- INTERSTATE
- NON-INTERSTATE ROAD
- RAILROAD



TRAFFIC CONTROL
SHEET 1 OF 6

STATE OF MISSOURI
ANDREA S. DAVIS
PE-2018021250
PROFESSIONAL ENGINEER

DATE PREPARED	12/18/2024
ROUTE	J
STATE	MO
DISTRICT	CD
SHEET NO.	5
COUNTY	PHELPS
JOB NO.	J5S3548
CONTRACT ID.	.
PROJECT NO.	.
BRIDGE NO.	.

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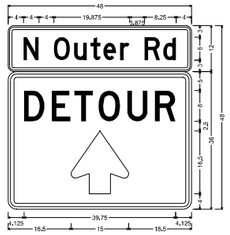
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

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
ST. LOUIS, MISSOURI 63141
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608

HRGreen

\\hrgreen.com\hrg\Data\2024\2402262\CAD\Roadway\J5S3548_RouteJ\Plan_Sheets\05_TC_01_J5S3548_I1000.dgn 11:50:15 AM 12/18/2024

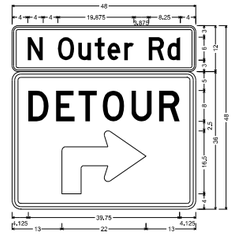


MO4-9P SHF-FLAT SHEET FLUORESCENT:
1,500" Radius, 0,625" Border, 0,375" Indent, Black on, Orange:
"N Outer Rd", D 65% spacing:

MO4-9 SHF-FLAT SHEET FLUORESCENT:
2,250" Radius, 0,875" Border, 0,625" Indent, Black on, Orange:
"DETOUR", D:
Table of letter and object lefts

N 4,000	O 12,000	U 17,250	T 21,500	E 24,875	F 29,250	
R 35,750	E 40,625					
D 4,125	E 11,375	T 17,250	O 23,625	U 31,250	R 38,500	
16,500						

50A

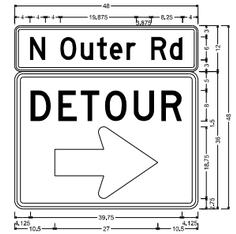


MO4-9P SHF-FLAT SHEET FLUORESCENT:
1,500" Radius, 0,625" Border, 0,375" Indent, Black on, Orange:
"N Outer Rd", D 65% spacing:

MO4-9 SHF-FLAT SHEET FLUORESCENT:
2,250" Radius, 0,875" Border, 0,625" Indent, Black on, Orange:
"DETOUR", D:
Table of letter and object lefts

N 4,000	O 12,000	U 17,250	T 21,500	E 24,875	F 29,250	
R 35,750	E 40,625					
D 4,125	E 11,375	T 17,250	O 23,625	U 31,250	R 38,500	
13,000						

50B



MO4-9P SHF-FLAT SHEET FLUORESCENT:
1,500" Radius, 0,625" Border, 0,375" Indent, Black on, Orange:
"N Outer Rd", D 65% spacing:

MO4-9R SHF-FLAT SHEET FLUORESCENT:
2,250" Radius, 0,875" Border, 0,625" Indent, Black on, Orange:
"DETOUR", D:
Standard Arrow Custom 27,000" X 18,750" 0°:
Table of letter and object lefts

N 4,000	O 12,000	U 17,250	T 21,500	E 24,875	F 29,250	
R 35,750	E 40,625					
D 4,125	E 11,375	T 17,250	O 23,625	U 31,250	R 38,500	
16,500						

50C

MO4-9P SHF-FLAT SHEET FLUORESCENT:
1,500" Radius, 0,625" Border, 0,375" Indent, Black on, Orange:
"N Outer Rd", D 65% spacing:

MO4-9 SHF-FLAT SHEET FLUORESCENT:
2,250" Radius, 0,875" Border, 0,625" Indent, Black on, Orange:
"DETOUR", D:
Table of letter and object lefts

N 4,000	O 12,000	U 17,250	T 21,500	E 24,875	F 29,250	
R 35,750	E 40,625					
D 4,125	E 11,375	T 17,250	O 23,625	U 31,250	R 38,500	
13,000						

50D

MO4-9P SHF-FLAT SHEET FLUORESCENT:
1,500" Radius, 0,625" Border, 0,375" Indent, Black on, Orange:
"N Outer Rd", D 65% spacing:

MO4-9L SHF-FLAT SHEET FLUORESCENT:
2,250" Radius, 0,875" Border, 0,625" Indent, Black on, Orange:
"DETOUR", D:
Standard Arrow Custom 27,000" X 18,750" 180°:
Table of letter and object lefts

N 4,000	O 12,000	U 17,250	T 21,500	E 24,875	F 29,250	
R 35,750	E 40,625					
D 4,125	E 11,375	T 17,250	O 23,625	U 31,250	R 38,500	
10,500						

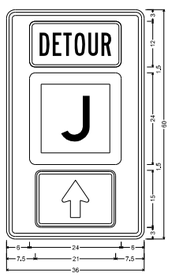
50E

MO4-9P SHF-FLAT SHEET FLUORESCENT:
1,500" Radius, 0,625" Border, 0,375" Indent, Black on, Orange:
"N Outer Rd", D 65% spacing:

MO4-9 SHF-FLAT SHEET FLUORESCENT:
2,250" Radius, 0,875" Border, 0,625" Indent, Black on, Orange:
"DETOUR", D:
Standard Arrow Custom 18,000" X 15,500" 45°:
Table of letter and object lefts

N 4,000	O 12,000	U 17,250	T 21,500	E 24,875	F 29,250	
R 35,750	E 40,625					
D 4,125	E 11,375	T 17,250	O 23,625	U 31,250	R 38,500	
16,625						

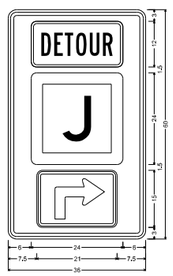
50K



MO4-12 SHF-FLAT SHEET FLUORESCENT:
2,250" Radius, 0,875" Border, 0,625" Indent, Black on, Orange:
Table of letter and object lefts

6,000	
6,000	
7,500	

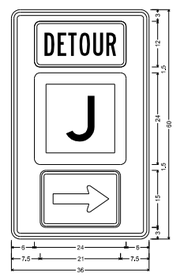
50F



MO4-12 SHF-FLAT SHEET FLUORESCENT:
2,250" Radius, 0,875" Border, 0,625" Indent, Black on, Orange:
Table of letter and object lefts

6,000	
6,000	
7,500	

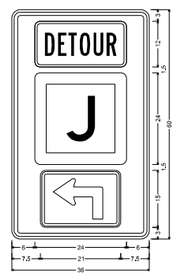
50G



MO4-12 SHF-FLAT SHEET FLUORESCENT:
2,250" Radius, 0,875" Border, 0,625" Indent, Black on, Orange:
Table of letter and object lefts

6,000	
6,000	
7,500	

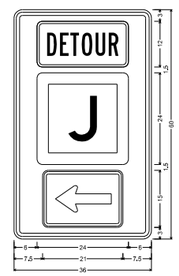
50H



MO4-12 SHF-FLAT SHEET FLUORESCENT:
2,250" Radius, 0,875" Border, 0,625" Indent, Black on, Orange:
Table of letter and object lefts

6,000	
6,000	
7,500	

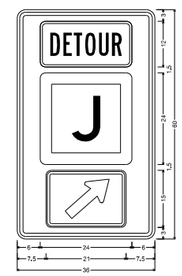
50I



MO4-12 SHF-FLAT SHEET FLUORESCENT:
2,250" Radius, 0,875" Border, 0,625" Indent, Black on, Orange:
Table of letter and object lefts

6,000	
6,000	
7,500	

50J



MO4-12 SHF-FLAT SHEET FLUORESCENT:
2,250" Radius, 0,875" Border, 0,625" Indent, Black on, Orange:
Table of letter and object lefts

6,000	
6,000	
7,500	

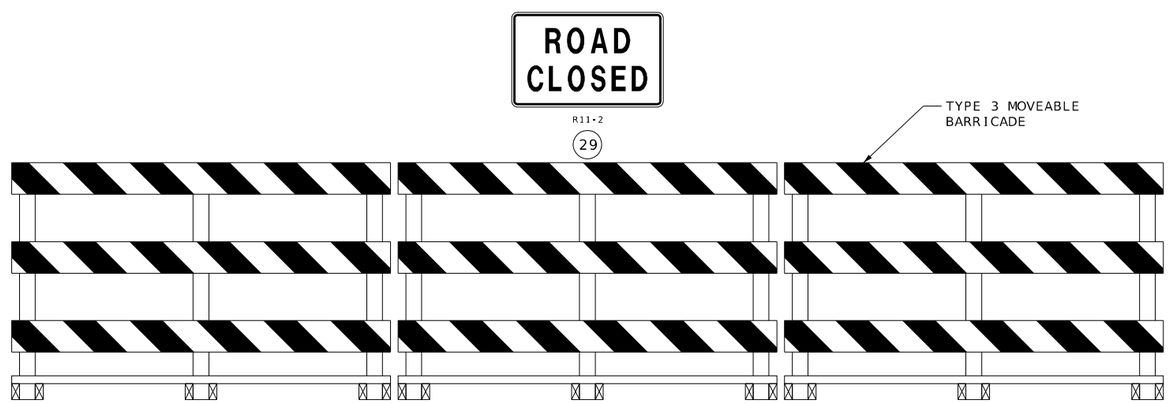
50L

WO20-2

18

WO20-3

20



R11-2

29

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GENERAL NOTES:

ANY EXISTING WARNING OR REGULATORY SIGNS (NOT SHOWN) THAT INTERFERE WITH THE TRAFFIC CONTROL SIGNING SHALL BE COMPLETELY COVERED OR REMOVED, NO DIRECT PAY.

ALL TRAFFIC CONTROL SIGNS ARE TO BE NON-PORTABLE UNLESS OTHERWISE NOTED.

SEE STANDARD PLANS 616.10, 903.01 AND 909.03 FOR ADDITIONAL DETAILS REGARDING TRAFFIC CONTROL HIGHWAY SIGNING.

TEMPORARY TRAFFIC CONTROL SIGN AND DEVICE LOCATIONS MAY BE ADJUSTED UPON APPROVAL OF THE ENGINEER. WHERE TRAFFIC BACKUPS ARE EXPECTED BEYOND THE ADVANCED WARNING AREA, ADDITIONAL SIGNING MAY BE NEEDED AS DIRECTED BY THE ENGINEER.

ANY RELOCATION OF SIGNS AND DEVICES FOR TRAFFIC CONTROL DEVICES OR SIGNS SHALL BE CONSIDERED INCIDENTAL. NO DIRECT PAY.

R11-2 SIGN ASSOCIATED WITH THE TYPE 3 MOVEABLE BARRICADES SHALL BE MOUNTED ON POST 7-10 FEET BEHIND THE BARRICADE.

ALL WARNING SIGNS SHALL HAVE FLUORESCENT SHEETING.

TRAFFIC CONTROL
SHEET 2 OF 6

STATE OF MISSOURI
ANDREA S. DAVIS
PE-2018021250
PROFESSIONAL ENGINEER

DATE PREPARED	
12/18/2024	
ROUTE J	STATE MO
DISTRICT CD	SHEET NO. 6
COUNTY PHELPS	
JOB NO. J5S3548	
CONTRACT ID. .	
PROJECT NO. .	
BRIDGE NO. .	

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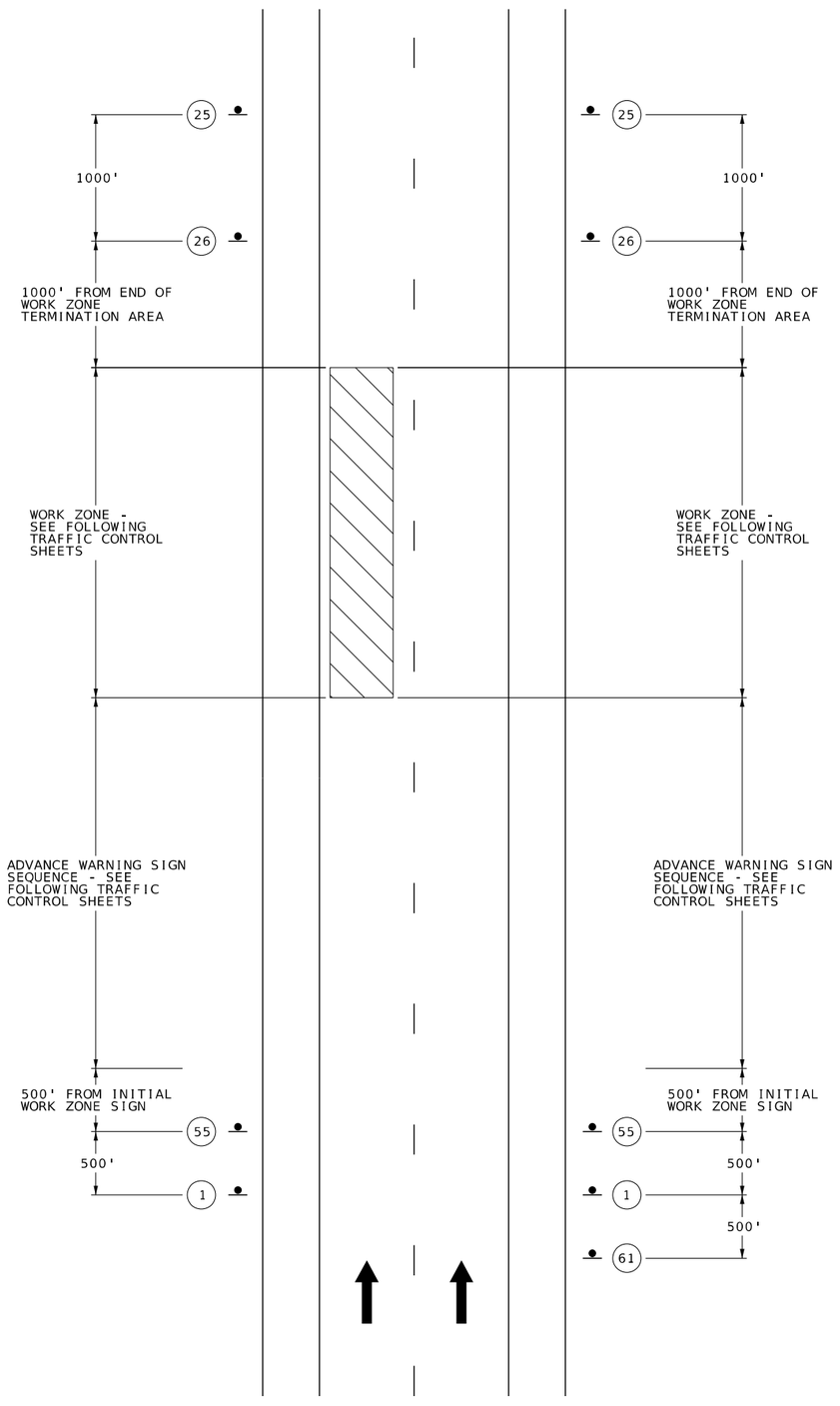
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

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
ST. LOUIS, MISSOURI 63141
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608

HRGreen

BEGIN / END OF PROJECT SIGNING



NOT TO SCALE

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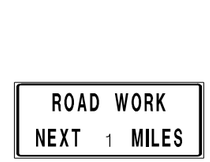
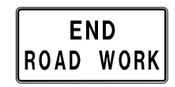


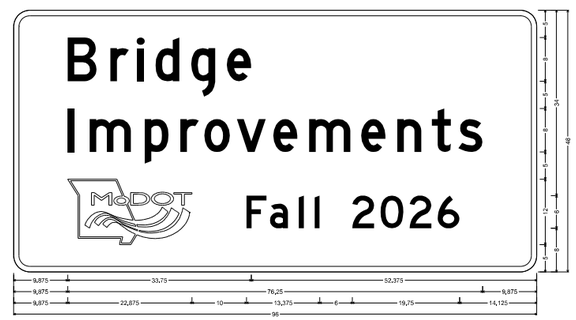
GO20-1
1

R2-1
25
(3)



GO20-2
26

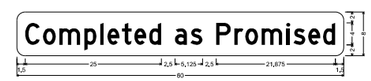
CONST-8
55
(2)



CONST-5 SHEFLAT SHEET:
3,000" Radius, 1,000" Border, White on, Blue:
"Bridge", D: "Improvements", D: "Fall 2026", D:
Table of letter and object bells

B	9,875	r	17,750	F	22,750	C	26,000	g	32,625	e	39,125						
I	9,875	m	14,000	p	24,000	r	30,625	e	35,000	d	41,000	e	47,625	m	54,250	63,750	n 70,375	t 76,750	s 81,625
Dw	9,875	r	42,750	47,000	52,375	55,250	62,125	g	67,375	2	72,625	4	77,875						

61
(1)



CONST-6F-50 SHEFLAT SHEET FLUORESCENT:
1,500" Radius, No border, Yellow:
"Completed as Promised" Black, D 65% spacing:
Table of letter and object bells

C	1,500	a	4,875	m	7,875	a	12,375	l	15,375	e	18,625	l	19,375	p	21,500	d	24,250	a	26,000	y	31,875
P	36,625	r	39,875	o	41,875	m	44,875	s	49,500	e	50,750	d	53,500	56,250							

61A

NOTES:

SIGN GO20-2 IS USED ON ALL PROJECTS WHERE SIGN GO20-1 IS USED.

OTHER SIGNS SUCH AS DETOUR OR ALTERNATE ROUTE SIGNING MAY BE USED OUTSIDE THE PROJECT LIMITS. SEE ADDITIONAL TRAFFIC CONTROL SHEETS FOR DETOUR SIGNAGE.

ANY EXISTING SIGNING THAT CONFLICTS WITH THE TRAFFIC CONTROL SIGNING SHALL BE COMPLETELY COVERED OR REMOVED.

SIGN SPACING MAY BE ADJUSTED ACCORDING TO FIELD CONDITIONS. WHERE TRAFFIC BACKUPS ARE EXPECTED BEYOND THE ADVANCE WARNING AREA, ADDITIONAL SIGNING MAY BE NEEDED.

(1) CONST-5-96 SIGN IS PLACED IN A VISIBLE AREA WITHIN THE PROJECT LIMITS PROVIDED ITS PLACEMENT DOES NOT DISRUPT A SEQUENCE OF SIGNS. IF A VISIBLE LOCATION WITHIN THE PROJECT LIMITS IS NOT AVAILABLE, THE SIGN MAY BE PLACED 500 FEET BEFORE THE GO20-1 ROAD WORK XX MILES SIGN.

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

(3) SPEED LIMIT SIGNS INDICATING THE NORMAL SPEED LIMIT SHOULD BE INSTALLED AT THE END OF THE REDUCED AREA PROVIDED NO OTHER REDUCTION IS IMPOSED WITHIN THE NEXT ONE-HALF MILE OR NO EXISTING SPEED LIMIT SIGN IS LOCATED WITH THE NEXT ONE-HALF MILE.

TRAFFIC CONTROL LEGEND

SIGN (SINGLE SIDED)

WORK ZONE

TRAFFIC CONTROL
SHEET 3 OF 6

STATE OF MISSOURI
ANDREA S. DAVIS
PE-2018021250
PROFESSIONAL ENGINEER

DATE PREPARED	
12/18/2024	
ROUTE: J	STATE: MO
DISTRICT: CD	SHEET NO.: 7
COUNTY: PHELPS	
JOB NO.: J5S3548	
CONTRACT ID.: .	
PROJECT NO.: .	
BRIDGE NO.: .	

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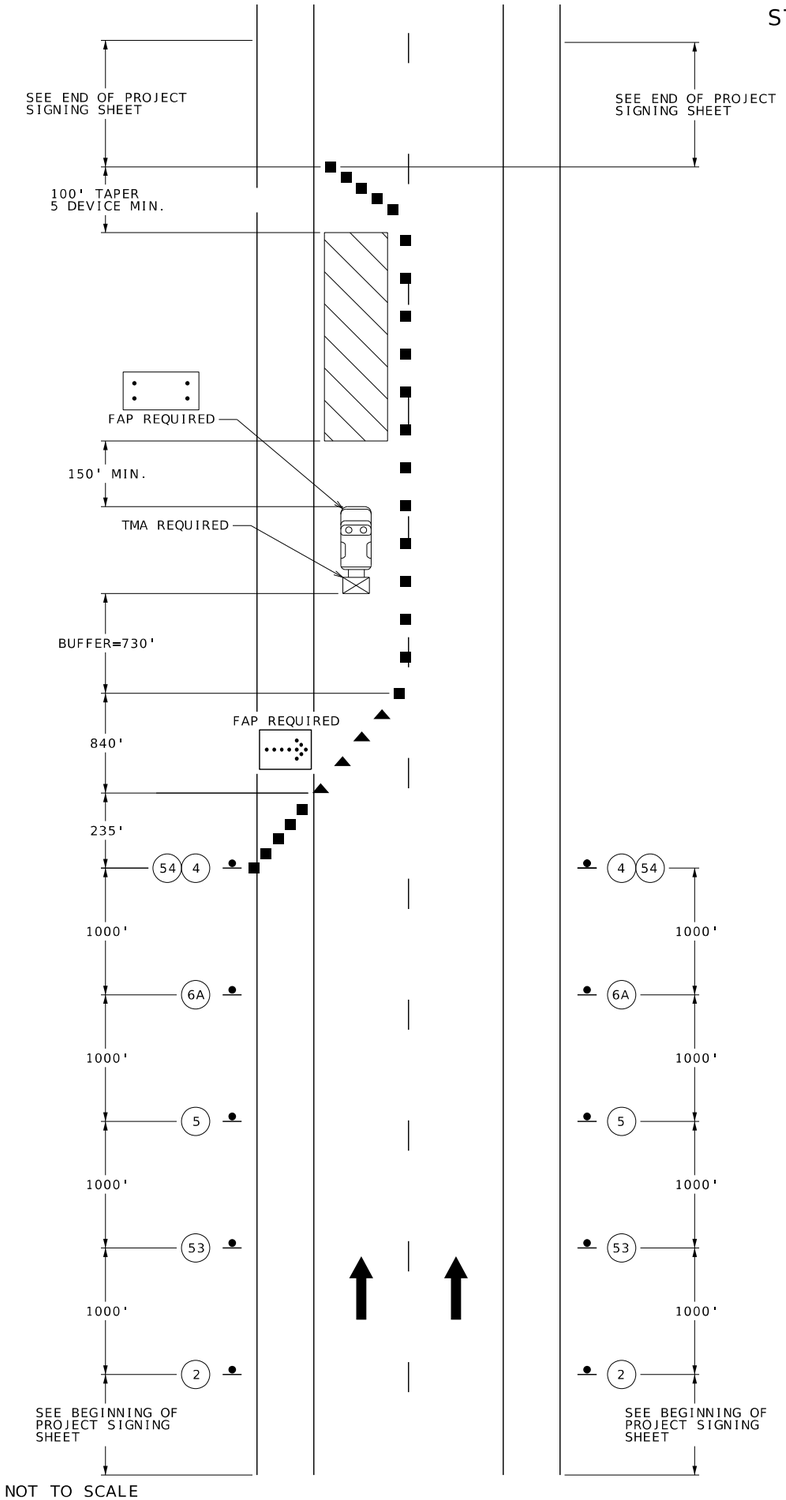
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

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

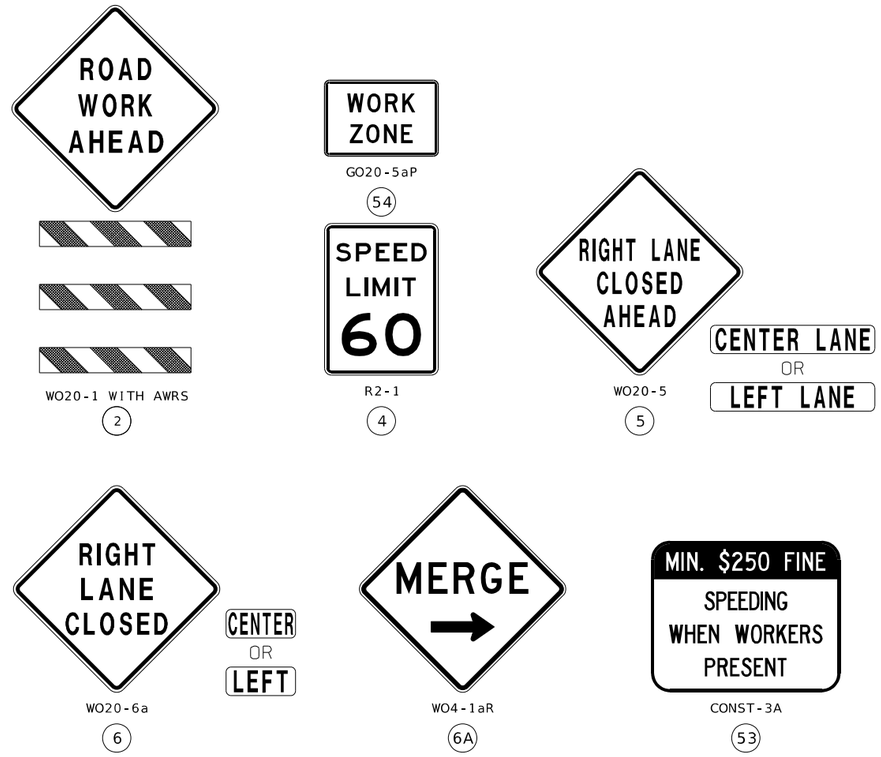
HR GREEN, INC.
520 MARYVILLE CENTRE DRIVE,
SUITE 100
ST. LOUIS, MISSOURI 63141
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608

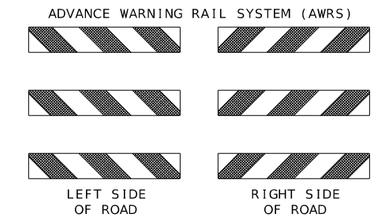
HRGreen

STATIONARY LANE CLOSURE ON A DIVIDED HIGHWAY



NOT TO SCALE





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CHANNELIZER SPACING:

TAPERS: 60'
BUFFER/WORK AREAS: 120'

NOTES:

SEE EPG 616.12 WORK ZONE SPEED LIMITS FOR SPEED LIMIT GUIDELINES.

REDUCED SPEED LIMIT SIGNING SHALL BE REMOVED, COVERED, OR TURNED FROM TRAFFIC WHEN CONDITIONS REQUIRING THE REDUCED SPEED NO LONGER EXIST.

TEMPORARY TRAFFIC BARRIER, IF USED, SHALL COMPLY WITH THE PROVISIONS IN EPG 616.6.85 TEMPORARY TRAFFIC BARRIER AND MUTCD FIGURE 6H-34 LANE CLOSURE WITH A TEMPORARY TRAFFIC BARRIER.

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

REVIEW EPG 616.6.83 WARNING LIGHTS FOR USE OF SEQUENTIAL FLASHING WARNING LIGHTS DURING NIGHTTIME OPERATIONS.

FOR ADVANCE WARNING RAIL SYSTEM, REFER TO EPG 616.6.2.2 ADVANCE WARNING RAIL SYSTEM.

REVIEW EPG 616.6.63 CHANNELIZING DEVICES FOR DIFFERENT TYPES AND GUIDELINES FOR THE DEVICES.

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- ADVANCED WARNING RAIL SYSTEM (AWRS)
- CHANNELIZER (TRIM LINE)
- DIRECTIONAL INDICATOR BARRICADE
- FLASHING ARROW PANEL (FAP)
- PROTECTED VEHICLE WITH TRUCK MOUNTED ATTENUATOR (TMA)
- WORK ZONE

TRAFFIC CONTROL
SHEET 4 OF 6

STATE OF MISSOURI
ANDREA S. DAVIS
PE-2018021250
PROFESSIONAL ENGINEER

DATE PREPARED	12/18/2024
ROUTE	J
STATE	MO
DISTRICT	CD
SHEET NO.	8
COUNTY	PHELPS
JOB NO.	J5S3548
CONTRACT ID.	.
PROJECT NO.	.
BRIDGE NO.	.

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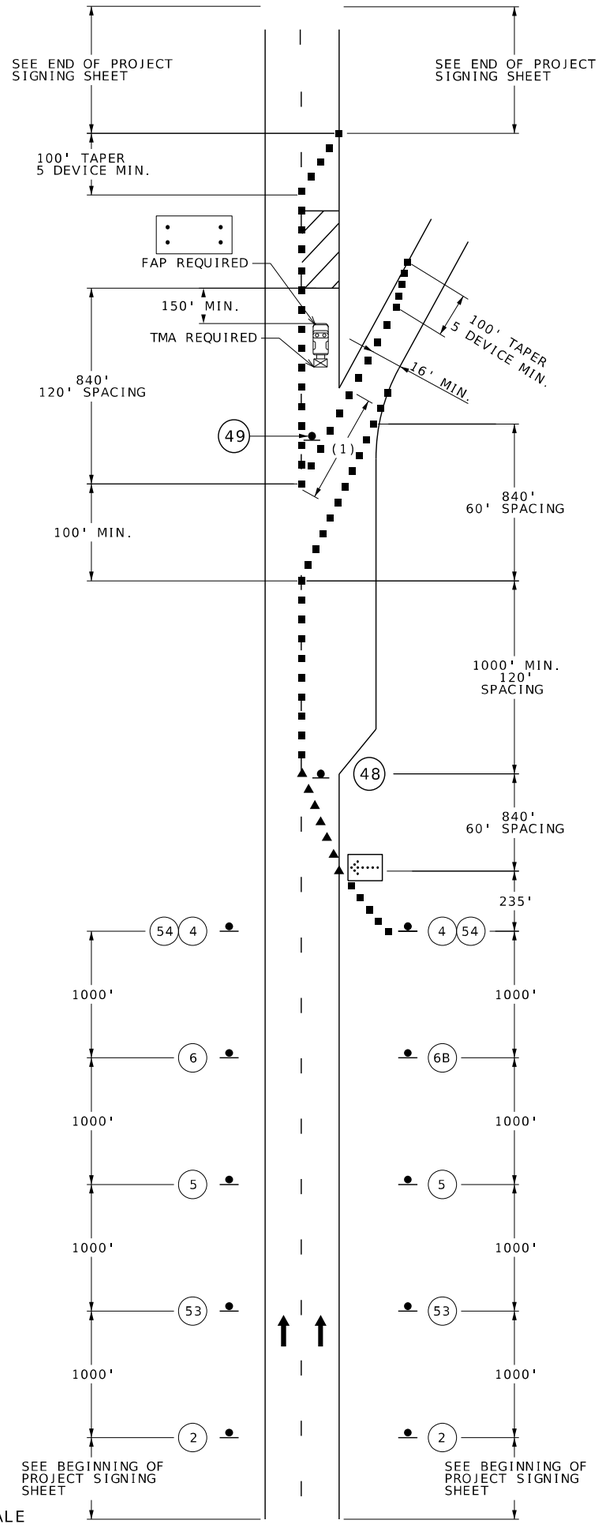
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

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
ST. LOUIS, MISSOURI 63141
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608

HRGreen

STATIONARY WORK IN VICINITY OF AN EXIT RAMP



NOT TO SCALE

WO20-1 WITH AWRS

2

GO20-5aP

54

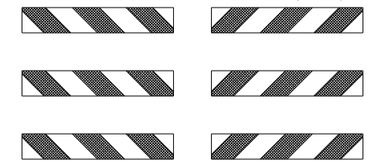
R2-1

4

WO20-5

5

ADVANCE WARNING RAIL SYSTEM (AWRS)



LEFT SIDE OF ROAD

RIGHT SIDE OF ROAD

WO20-6a

6

WO4-1aL

6B

E05-2

48

E05-1

49

CONST-3A

53

CHANNELIZER SPACING:

TAPERS: 60'
BUFFER/WORK AREAS: 120'

NOTES:

SEE PREVIOUS SHEET FOR TRAFFIC CONTROL NOTES.

(1) FIVE DEVICE MINIMUM.

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- ADVANCED WARNING RAIL SYSTEM (AWRS)
- CHANNELIZER (TRIM LINE)
- DIRECTIONAL INDICATOR BARRICADE
- FLASHING ARROW PANEL (FAP)
- PROTECTED VEHICLE WITH TRUCK MOUNTED ATTENUATOR (TMA)
- WORK ZONE

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STATE OF MISSOURI
ANDREA S. DAVIS
PE-2018021250
PROFESSIONAL ENGINEER

DATE PREPARED	
12/18/2024	
ROUTE: J	STATE: MO
DISTRICT: CD	SHEET NO.: 9
COUNTY: PHELPS	
JOB NO.: J5S3548	
CONTRACT ID.: .	
PROJECT NO.: .	
BRIDGE NO.: .	

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

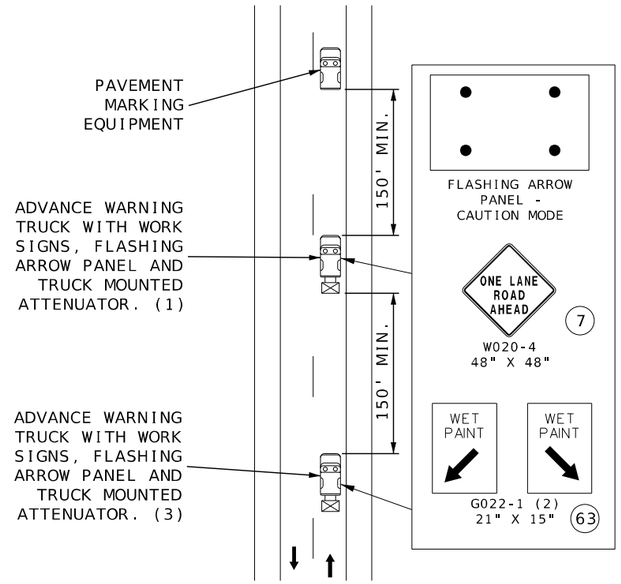
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

HR GREEN, INC.
520 MARYVILLE CENTRE DRIVE, SUITE 100
ST. LOUIS, MISSOURI 63141
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608

TRAFFIC CONTROL
SHEET 5 OF 6

\\hrgreen.com\hrg\Data\2024\2402262\CAD\Roadway\J5S3548_RouteJ\Plan_Sheets\09_TC_05_J5S3548_I1_I44.dgn 11:50:19 AM 12/18/2024

MOVING OPERATION ON HIGHWAY OPEN TO TRAFFIC STRIPING



TWO LANE UNDIVIDED HIGHWAY

NOTES:

UPON APPROVAL OF THE ENGINEER, THE CONTRACTOR MAY PROVIDE ADDITIONAL PROTECTIVE TRUCKS EQUIPPED WITH PROPER WARNING DEVICES.

PROTECTIVE TRUCK AND WORK VEHICLES SHALL DISPLAY HIGH-INTENSITY ROTATING, FLASHING, OSCILLATING, OR STROBE LIGHTS.

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

ADVANCED WARNING TRUCKS, FLASHING ARROW PANELS, TRUCK MOUNTED ATTENUATORS, AND SIGNS ARE INCIDENTAL TO PAVEMENT MARKINGS.

(1) TRUCK IS OPTIONAL ON TWO-LANE UNDIVIDED HIGHWAYS IF SIGNING AND ARROW BOARD IS MOUNTED ON THE PAVEMENT MARKING EQUIPMENT.

(2) WET PAINT SIGNS ARE INSTALLED TO INDICATE THE SIDE IN WHICH THE PAVEMENT MARKING MATERIAL IS BEING APPLIED. AT THE CONTRACTOR'S OPTION, A FRONT FACING WET PAINT SIGN MAY BE INSTALLED ON THE LEFT SIDE OF THE PAVEMENT MARKING EQUIPMENT.

(3) ADVANCE WARNING TRUCK IS POSITIONED AT THE NO TRACK POINT OF THE PAVEMENT MARKING MATERIAL OR SPACING SHOWN, WHICHEVER IS GREATER.

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STATE OF MISSOURI
ANDREA S. DAVIS
PE-2018021250
PROFESSIONAL ENGINEER

DATE PREPARED	
12/18/2024	
ROUTE: J	STATE: MO
DISTRICT: CD	SHEET NO.: 10
COUNTY: PHELPS	
JOB NO.: J5S3548	
CONTRACT ID.: .	
PROJECT NO.: .	
BRIDGE NO.: .	

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

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
ST. LOUIS, MISSOURI 63141
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
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TRAFFIC CONTROL
SHEET 6 OF 6

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EROSION CONTROL PLAN
SHEET 1 OF 1

STATE OF MISSOURI
ALISON N. GRAVES
NUMBER
PE-2011015778
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED, AND DATED ELECTRONICALLY.

DATE PREPARED	12/27/2024
ROUTE J	STATE MO
DISTRICT CD	SHEET NO. 1-1
COUNTY	PHELPS
JOB NO.	J5S3548
CONTRACT ID.	.
PROJECT NO.	.
BRIDGE NO.	.

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

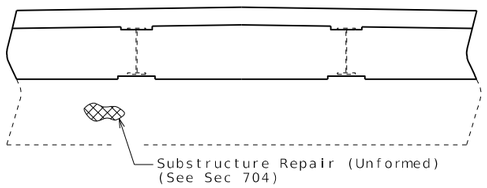
5220 Oakland Ave.
St. Louis, MO 63110
(314) 863-5570
CIVIL DESIGN, INC.
Missouri State Certificate of Authority #2002006804

REV.

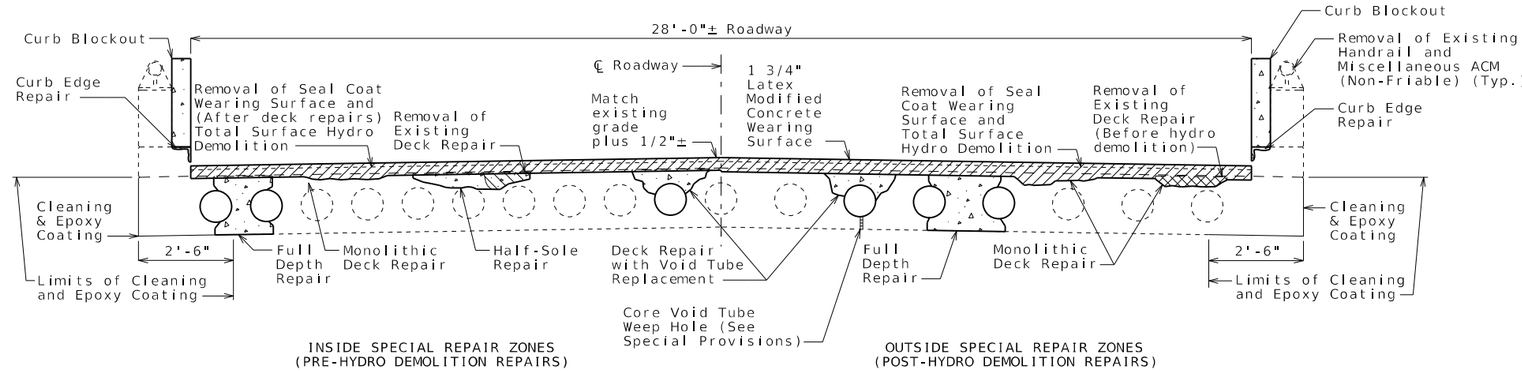
P:\6XXX\66XX-67XX\6765 - MODOT Central Distric Bridge Rehabs over I44\28-Trans\CAD\J5S3548_RTEJ_A1633\011_EC_J5S3548_I100.dgn 3:40:54 PM 12/27/2024

SEC/SUR 3 TWP 36N RGE 10W

U.I.P. AND REHABILITATE EXISTING (33'-54'-54'-43') CONTINUOUS CONCRETE VOIDED SLAB SPANS



DETAILS OF CONCRETE REPAIR AT END BENT 1



TYPICAL SECTION THRU EXISTING DECK

General Notes:

Design Specifications:

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

Design Loading:

H15-44 (1961)

Design Unit Stresses:

Class B-1 Concrete (Curb Blockouts) f'c = 4,000 psi

Class B-2 Concrete (Half-Sole, Full Depth Repairs & Deck Repair with Void Tube Replacement) f'c = 4,000 psi

Reinforcing Steel (ASTM A615 Grade 60) fy = 60,000 psi

Joint Filler:

All joint filler shall be in accordance with Sec 1057 for preformed sponge rubber expansion and partition joint filler, except as noted.

Open Cell Foam Joint:

Open cell foam joint seal size (width and depth) shall be determined by the manufacturer. Manufacturer recommended seal size shall meet the installation gap requirements and skew effect.

The open cell foam joint seal shall be installed according to the manufacturer's recommendations.

Any removals or other incidentals to install the open cell foam joint seal will be considered completely covered by the contract unit price for Open Cell Foam Joint Seal.

Reinforcing Steel:

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

Concrete Protective Coating:

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

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.

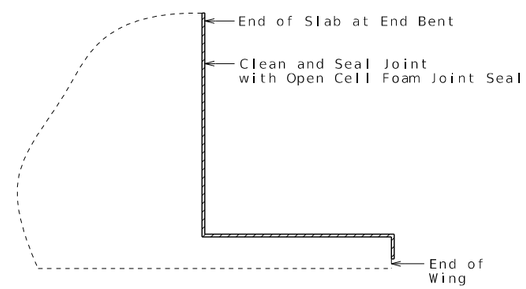
In order to maintain grade and a minimum thickness of wearing surface as shown on plans it may be necessary to use additional quantities of wearing surface at various locations throughout the structure. The cost of furnishing and installing the wearing surface will be considered completely covered in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

Curb repair and removal of existing handrails will be considered completely covered by the contract unit price for Curb Blockout.

The following locations shall be cleaned and sealed with Protective Coating - Concrete Bents and Piers (Epoxy):
- All exposed substructure concrete at the end bents
- Concrete barriers at the intermediate bents
- Exposed concrete columns of all intermediate bents to an elevation 15 feet above existing ground.

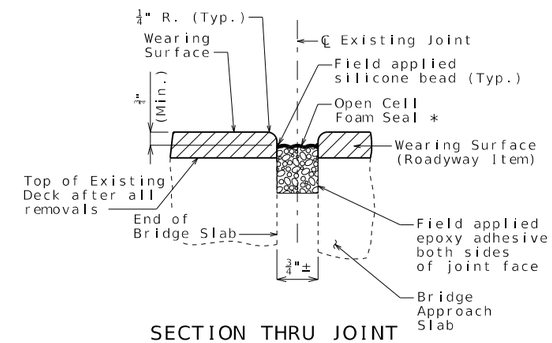
Traffic Handling:

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



CLEAN AND SEAL JOINT AT END BENTS

Right side shown, left side similar.



SECTION THRU JOINT

End of slab shown, section at wing similar.

* Manufacturer's recommended size

Estimated Quantities

	Item		Total
	Removal of Miscellaneous ACM (Non-Friable)	sq. foot	18
	Total Surface Hydro Demolition	sq. yard	580
	Removal of Seal Coat or Polymer Wearing Surface	sq. foot	5222
	Removal of Existing Deck Repair	sq. foot	100
*	Supplementary Wearing Surface Material	cu. yard	5
	Latex Modified Concrete Wearing Surface	sq. yard	580
	Diamond Grinding	sq. yard	580
	Curb Blockout	linear foot	395
	Substructure Repair (Unformed)	sq. foot	40
	Half-Sole Repair	sq. foot	100
	Full Depth Repair	sq. foot	50
	Deck Repair with Void Tube Replacement	sq. foot	50
	Cleaning and Epoxy Coating	sq. foot	1482
	Cored Void Tube Weep Holes	each	258
	Protective Coating - Concrete Bents and Piers (Epoxy)	lump sum	1
	Open Cell Foam Joint Seal	linear foot	76

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

REPAIRS TO BRIDGE: ROUTE J
OVER ROUTE I-44

ROUTE J FROM OUTER ROAD TO ROUTE Z
ABOUT 0.1 MILE NORTHWEST OF ROUTE Z
BEGINNING STATION 9+41.95± (Match Existing)

Detailed Jun. 2024
Checked Aug. 2024

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

STATE OF MISSOURI
KEVIN J. BREHM
PE-2010024490
PROFESSIONAL ENGINEER

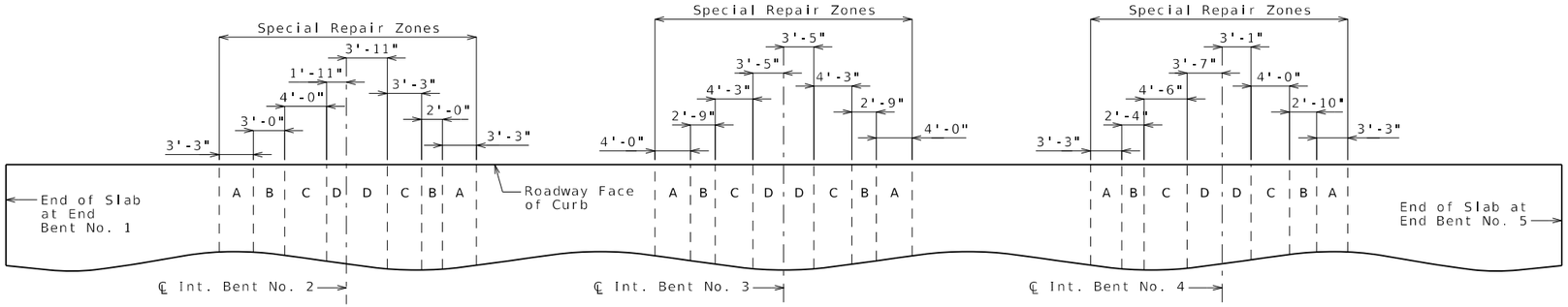
DATE PREPARED	
1/14/2025	
ROUTE J	STATE MO
DISTRICT BR	SHEET NO. 1
COUNTY PHELPS	
JOB NO. J5S3548	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A16331	

DESCRIPTION

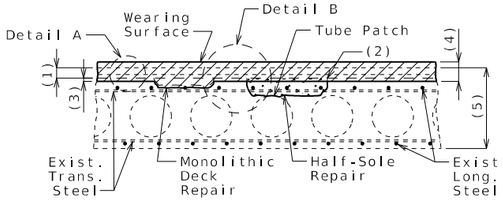
DATE

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

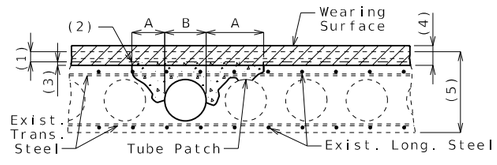
HR GREEN, INC.
520 MARYVILLE CENTRE DRIVE, SUITE 100
ST. LOUIS, MISSOURI 63141
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen



PART PLAN OF SLAB SHOWING SPECIAL REPAIR ZONES

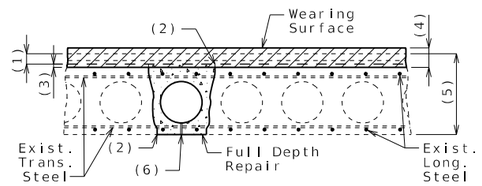


MONOLITHIC AND HALF-SOLE REPAIR



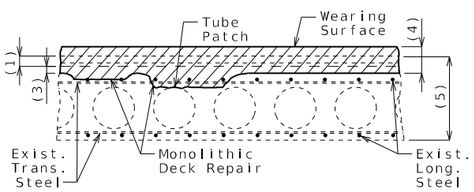
DECK REPAIR WITH VOID TUBE REPLACEMENT

A = Half-Sole Repair
B = Deck Repair with Void Tube Replacement

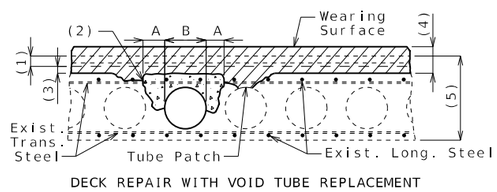


FULL DEPTH REPAIR

DECK REPAIR INSIDE SPECIAL REPAIR ZONES (BEFORE HYDRO DEMOLITION)

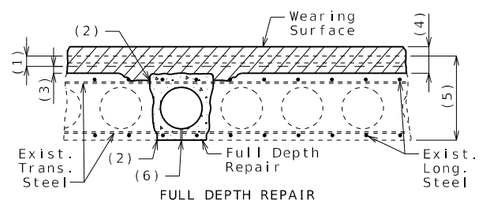


MONOLITHIC DECK REPAIR



DECK REPAIR WITH VOID TUBE REPLACEMENT

A = Half-Sole Repair
B = Deck Repair with Void Tube Replacement



FULL DEPTH REPAIR

DECK REPAIR OUTSIDE SPECIAL REPAIR ZONES (AFTER HYDRO DEMOLITION)

(1) Removal of existing 1/2"± seal coat wearing surface plus 1/4" of existing deck

(2) 1" vertical side shall be established outside the deteriorated area.

(3) Total surface hydro demolition of sound concrete, measured to mortar line:

1/4" minimum inside special repair zones

1/2" minimum outside special repair zones

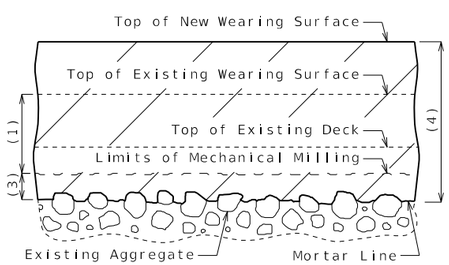
(4) Latex modified concrete wearing surface:

1 1/2" minimum inside special repair zones

1 3/4" minimum outside special repair zones

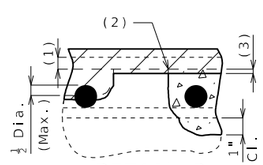
(5) Original depth

(6) Restore existing weep hole, if encountered.



MILLING AND HYDRO DEMOLITION LIMITS

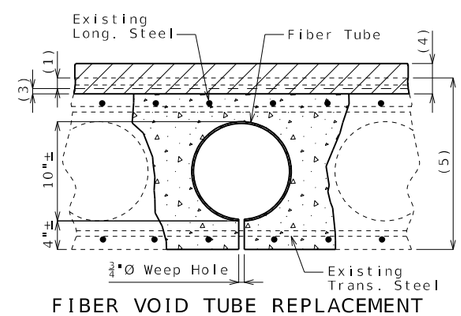
DETAIL A



DETAIL B

Monolithic deck repair shall be used when only half the diameter or less of the top bar is exposed.

Clearance around top bar and around bottom bar at the intersection of top bar shall be required when more than half the diameter of the top bar is exposed.



FIBER VOID TUBE REPLACEMENT

Fiber tubes for producing voids shall have an approximate outside diameter of 10 inches and a wall thickness of 1/4 inch and shall be anchored to joists carrying the floor form at not more than 4-foot centers.

One 3/4"Ø weep hole shall be provided at 2 inches from each end of each new void.

DECK REPAIR DETAILS

Detailed Aug. 2024
Checked Aug. 2024

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

Deck Repair Notes:

Order of Repair:

1. Remove existing wearing surface plus 1/4" of existing deck.
2. Power wash deck to identify sound and unsound existing deck repair.
3. Inside special repair zones, complete the following repairs:
   a. Removal of existing deck repair
   b. Half-sole repair
   c. Deck repair with void tube replacement
   d. Full depth repair
4. Outside special repair zones, remove existing deck repair.
5. Complete total surface hydro demolition, removing 1/4" minimum of sound concrete inside special repair zones and removing 1/2" minimum of sound concrete and all deteriorated concrete outside special repair zones.
6. Sound deck and if needed complete incidental concrete removal.
7. Outside special repair zones, complete the following repairs:
   a. Deck repair with void tube replacement
   b. Full depth repair
8. Place new wearing surface including additional material for areas of monolithic deck repair.

Special Repair Zones:

Deck repair required in the areas designated as special repair zones shall be completed before hydro demolition in alphabetical sequence beginning with Zone A. Zones with the same letter designation may be repaired at the same time. Hydro demolition shall not move forward until the repairs in all special repair zones are completed and properly cured.

Any deck repair in areas not designated as a special repair zone shall be completed after hydro demolition.

Removal and deck repair shall be completed in one special repair zone and concrete shall have attained a compressive strength of 3200 psi before work can be started in the next special repair zone.

If any single repair area does not exceed 4 square feet in size and the total repair area within a special repair zone does not exceed 12 square feet, the special repair zone may be repaired at the same time as an adjacent zone.

Void Repair:

Any damage sustained to the void tube as a result of the contractor's operations shall be patched or replaced as required by the engineer at the contractor's expense.

An exposed void in the deck shall be patched as approved by the engineer in a manner that shall maintain the void area completely free of concrete. Cost of patching an exposed void will be considered completely covered by the contract unit price for Half-Sole Repair inside special repair zones and Monolithic Deck Repair outside special repair zones.

When a deteriorated portion of the void tube is beyond the point of patching as determined by the engineer, the portion of the deteriorated void tube shall be replaced. The void area shall be maintained completely free of concrete. Cutting of the longitudinal reinforcing steel will not be permitted. The fiber tubes for producing the voids shall have an outside diameter with the wall thickness the same as the existing tubes and anchored at not more than the original spacing. Cost of replacing the void tube will be considered completely covered by the contract unit price for Deck Repair with Void Tube Replacement. Measurement will be horizontal projection of the area of expose tube in plan.

STATE OF MISSOURI
KEVIN J. BREHM
PE-2010024490
PROFESSIONAL ENGINEER

DATE PREPARED	
1/10/2025	
ROUTE: J	STATE: MO
DISTRICT: BR	SHEET NO.: 2
COUNTY: PHELPS	
JOB NO.: J5S3548	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.: A16331	

DATE	DESCRIPTION

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
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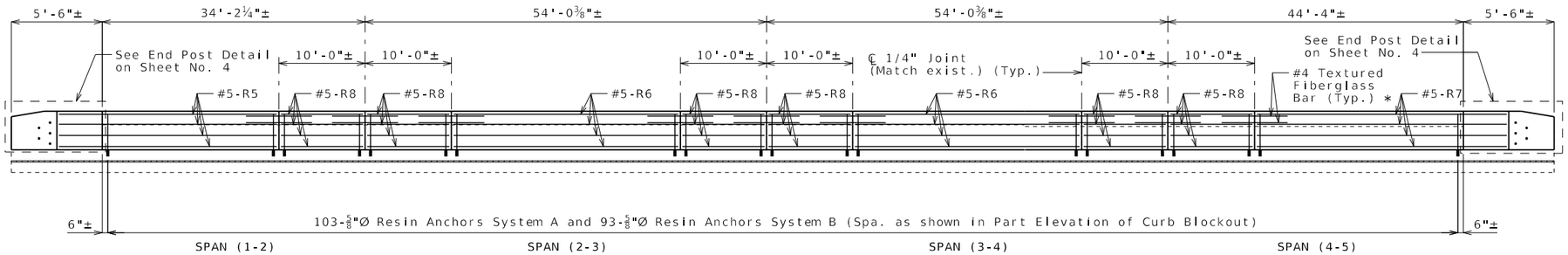
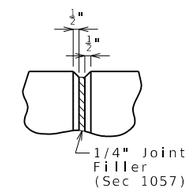
HRGreen



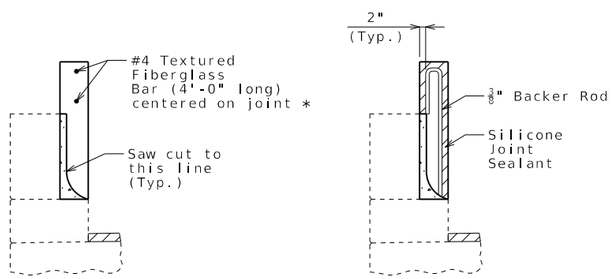
ELEVATION OF LEFT CURB BLOCKOUT

(Right curb blockout similar)

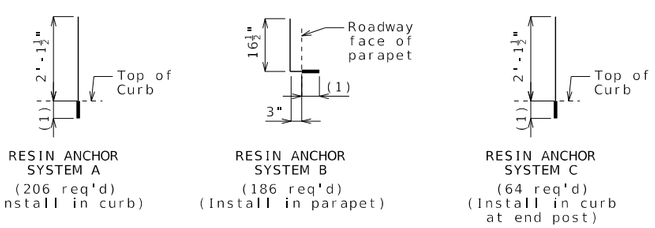
Longitudinal dimensions are along grade and are taken at top outside edge of parapet.



PART ELEVATION AT FORMED JOINT



SECTION THRU SAW CUT JOINT



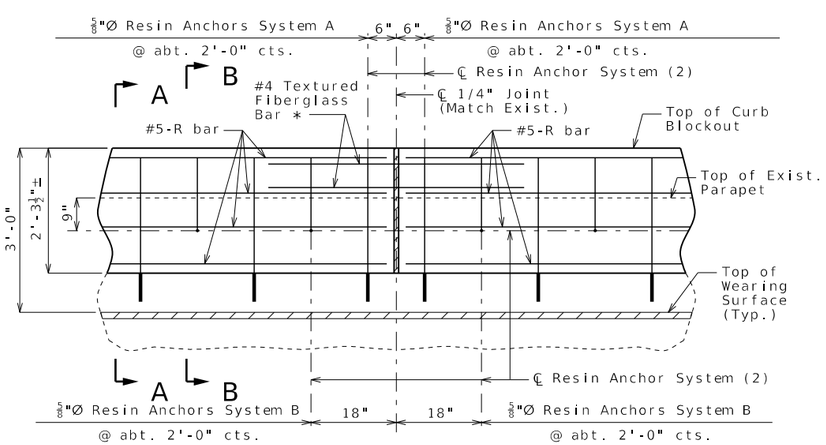
RESIN ANCHOR SYSTEM A (206 req'd) (Install in curb)

RESIN ANCHOR SYSTEM B (186 req'd) (Install in parapet)

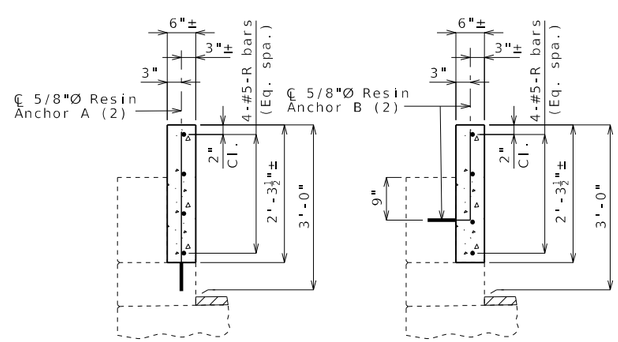
RESIN ANCHOR SYSTEM C (64 req'd) (Install in curb at end post)

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

DETAILS OF RESIN ANCHORS



PART ELEVATION OF CURB BLOCKOUT



SECTION A-A

SECTION B-B

Notes:

* Slip-formed option only.

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

Concrete in curb blockout shall be Class B-1.

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

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

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

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

All curb blockout reinforcement shall be epoxy coated.

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

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

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

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

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

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

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

Detailed Jun. 2024
Checked Aug. 2024

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

CURB BLOCKOUT

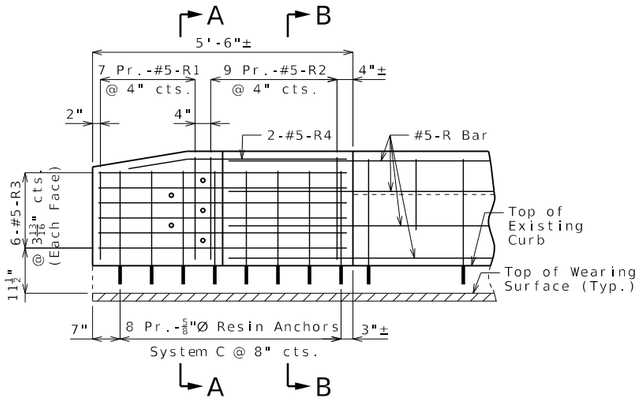
STATE OF MISSOURI
KEVIN J. BREHM
PE-2010024490
PROFESSIONAL ENGINEER

DATE PREPARED	
1/10/2025	
ROUTE: J	STATE: MO
DISTRICT: BR	SHEET NO.: 3
COUNTY: PHELPS	
JOB NO.: J5S3548	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.: A16331	

DATE	DESCRIPTION

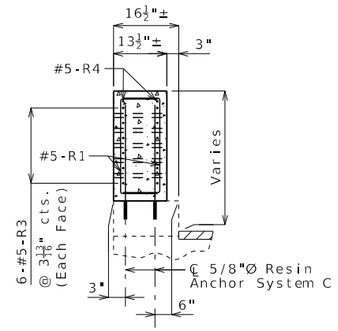
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

HR GREEN, INC.
520 MARYVILLE CENTRE DRIVE, SUITE 100
ST. LOUIS, MISSOURI 63141
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

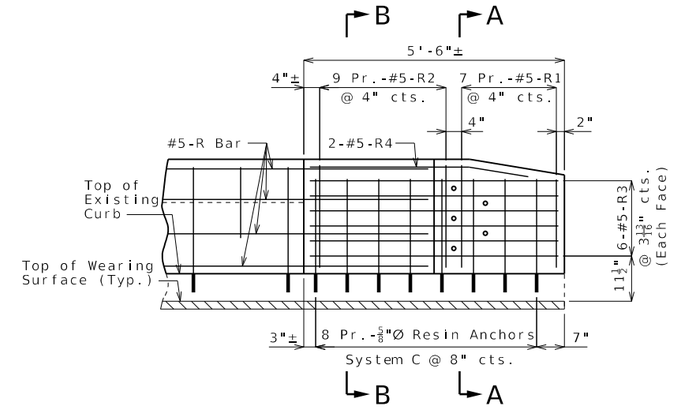


ELEVATION SHOWING REINFORCEMENT

(Right End Post at End Bent No. 5 similar)

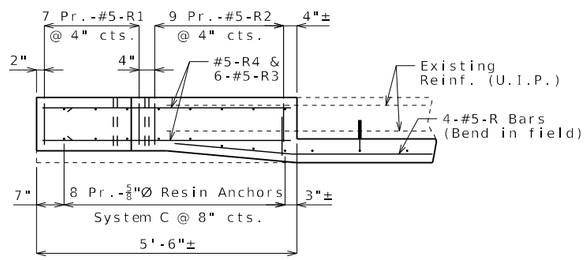


SECTION A-A



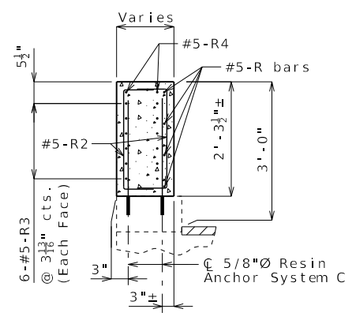
ELEVATION SHOWING REINFORCEMENT

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

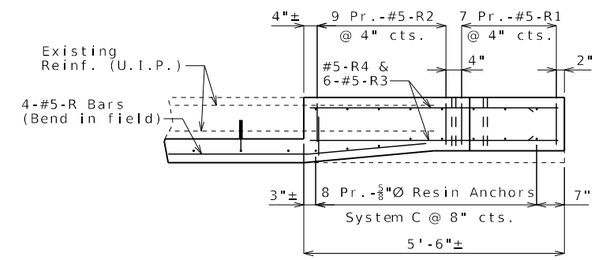


PLAN SHOWING REINFORCEMENT

LEFT END POST AT END BENT NO. 1

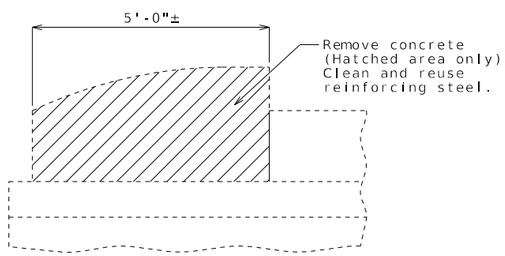


SECTION B-B



PLAN SHOWING REINFORCEMENT

LEFT END POST AT END BENT NO. 5



PART ELEVATION SHOWING END POST
CONCRETE REMOVAL

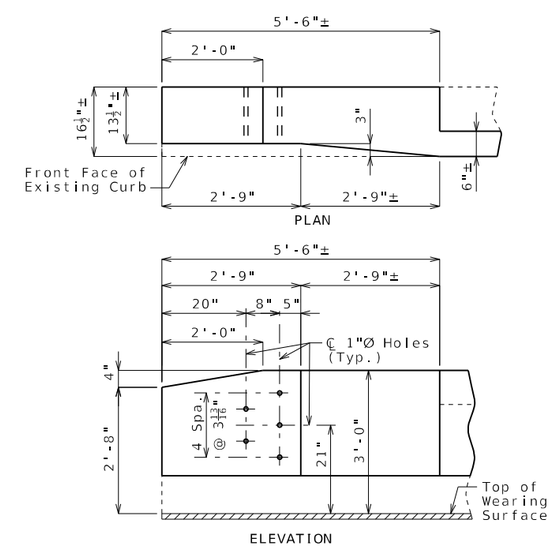
Cost of removing existing end posts will be considered completely covered by the contract unit price for Curb Blockout.

Notes:

Work this sheet with Sheet No. 3.

For details of resin anchors, see Sheet No. 3.

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



DETAILS OF END POST AND
GUARD RAIL ATTACHMENT

CURB BLOCKOUT AT END BENTS

Detailed Jun. 2024
Checked Aug. 2024

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

STATE OF MISSOURI
KEVIN J. BREHM
PE-2010024490
PROFESSIONAL ENGINEER

DATE PREPARED	
1/10/2025	
ROUTE: J	STATE: MO
DISTRICT: BR	SHEET NO.: 4
COUNTY: PHELPS	
JOB NO.: J5S3548	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.: A16331	

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,
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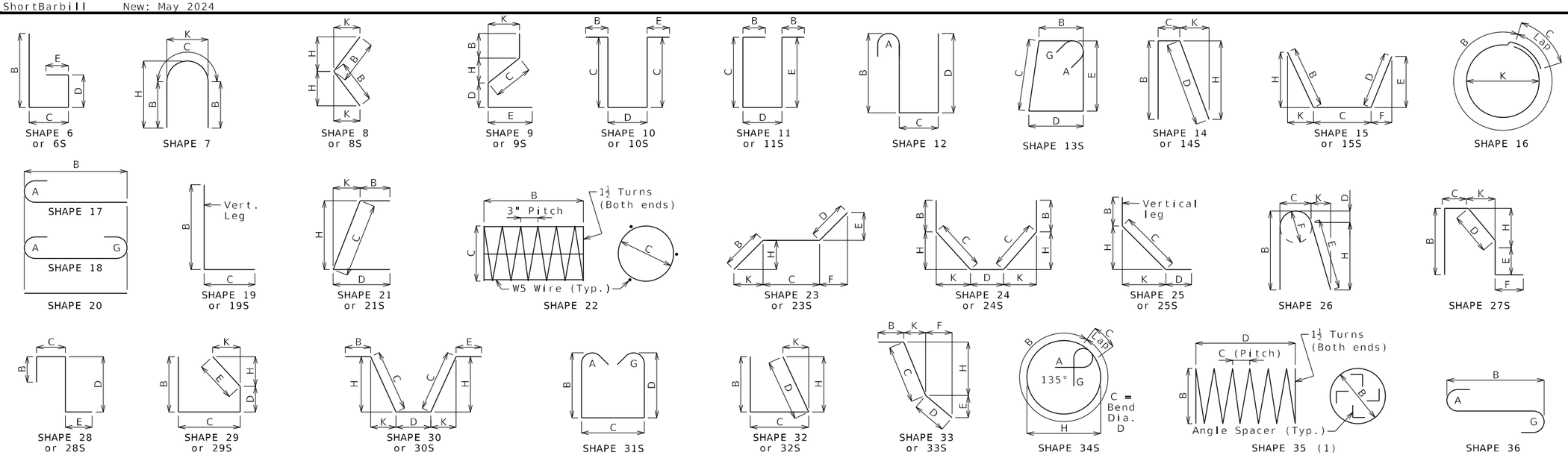
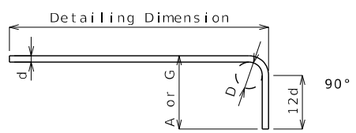
CORPORATE LICENSE #2002006608
HRGreen

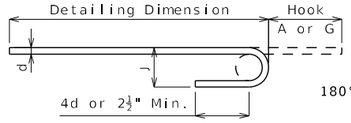


Finished Bend Diameters D and Hook Dimensions

Standard Pin Bend Shapes

Size	Case	D	A or G 90°	A or G 180°	J 180°
#4	1	3"	8"	6"	4"
#5	1	3¾"	10"	7"	5"
#6	1	4½"	12"	8¼"	6"
#7	2	5¼"	14"	9¾"	7"
	3	7"	15"	11½"	8¾"
#8	2	6"	16"	11"	8"
	3	8"	17"	13¼"	10"
#9	1	9½"	19½"	15½"	11¾"
#10	1	10¾"	22"	17½"	13¼"
#11	1	12"	24½"	19½"	14⅞"
#14	1	18¼"	31¼"	27½"	21⅝"
#18	1	24"	41½"	36¼"	28½"



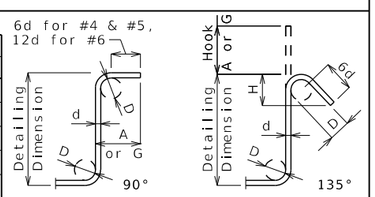


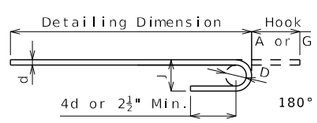
Stirrup Pin Bend Shapes (S)

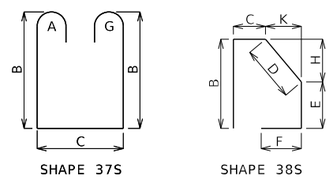
Size	Case	D	A or G 90°	A or G 135°	A or G 180°	H 135°	J 180°
#4	2	2"	4½"	4½"	5"	2⅞"	3"
	3	3"	5"	5¼"	6"	3"	4"
#5	2	2½"	5¾"	5¾"	5¾"	3⅝"	3¾"
	3	3¾"	6¼"	6½"	7"	3⅞"	5"
#6	1	4½"	12"	7¾"	8¼"	4⅝"	6"

Applicable for all grades of steel.

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







BENDING DIAGRAMS

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 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.

All dimensions are out to out.

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

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

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

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

Reinforcing Steel Totals (Pounds)

Size	Substructure Plain	Substructure Epoxy	Superstructure Slab	Superstructure Barrier	Superstructure Slip Form	Entire Bridge Plain	Entire Bridge Epoxy
5	0	0	0	2360	0	0	2360

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

Bill of Reinforcing Steel

No. Req.	Size/ Mark	Location	Codes C	Codes SH	Codes V	B ft in.	C ft in.	D ft in.	E ft in.	F ft in.	H ft in.	K ft in.	Nom. Length ft in.	Actual Length ft in.	Weight lb
		Curb Blockout													
56	5 R1	BLOCKOUT	E	10S	8		10.50	2 0.50					3 10	3 8	
		INCREMENT =					10.50	20.50					3 6	3 3	202
		0.667 INCH													
72	5 R2	BLOCKOUT	E	10S			10.50	2 0.50					3 10	3 8	275
48	5 R3	BLOCKOUT	E	20		5 3.00							5 3	5 3	263
8	5 R4	BLOCKOUT	E	14S			3 4.25	1 3.25			2.50	1 3.00	4 8	4 8	39
8	5 R5	BLOCKOUT	E	20		26 8.00							26 8	26 8	223
16	5 R6	BLOCKOUT	E	20		33 9.00							33 9	33 9	563
8	5 R7	BLOCKOUT	E	20		36 10.00							36 10	36 10	307
48	5 R8	BLOCKOUT	E	20		9 9.00							9 9	9 9	488

BENDING DIAGRAMS AND REINFORCING STEEL TOTALS

Detailed Aug. 2024
Checked Aug. 2024

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

STATE OF MISSOURI
KEVIN J. BREHM
PE-2010024490
PROFESSIONAL ENGINEER

DATE PREPARED 1/10/2025
ROUTE J
STATE MO
DISTRICT BR
SHEET NO. 5
COUNTY PHELPS
JOB NO. J5S3548
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A16331

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
ST. LOUIS, MISSOURI 63141
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

PLANS FOR PROPOSED STATE HIGHWAY

PHELPS COUNTY

SECTION 24, T37N, R10W

DESIGN DESIGNATION

A.A.D.T. - 2023 = 1503
A.A.D.T. - 2043 = 1834
D.H.V. = 10.2%
T = 6.6%
V = 55 M.P.H.
D = 50%/50%

FUNCTIONAL CLASSIFICATION- MAJOR COLLECTOR

NO RIGHT OF WAY WILL BE ACQUIRED WITH THIS PROJECT.

DISCLAIMER
THE PROFESSIONAL WHOSE SIGNATURE AND PERSONAL SEAL APPEAR HEREON ASSUMES RESPONSIBILITY ONLY FOR WHAT APPEARS ON THIS PAGE, AND DISCLAIMS (PURSUANT TO SECTION 327.411 RSMO) SPECIFICATION, ESTIMATES, REPORTS, OR OTHER DOCUMENTS OR INSTRUMENTS NOT SEALED BY THE UNDERSIGNED PROFESSIONAL RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE PROJECT TO WHICH THIS PAGE REFERS.

CONVENTIONAL SYMBOLS

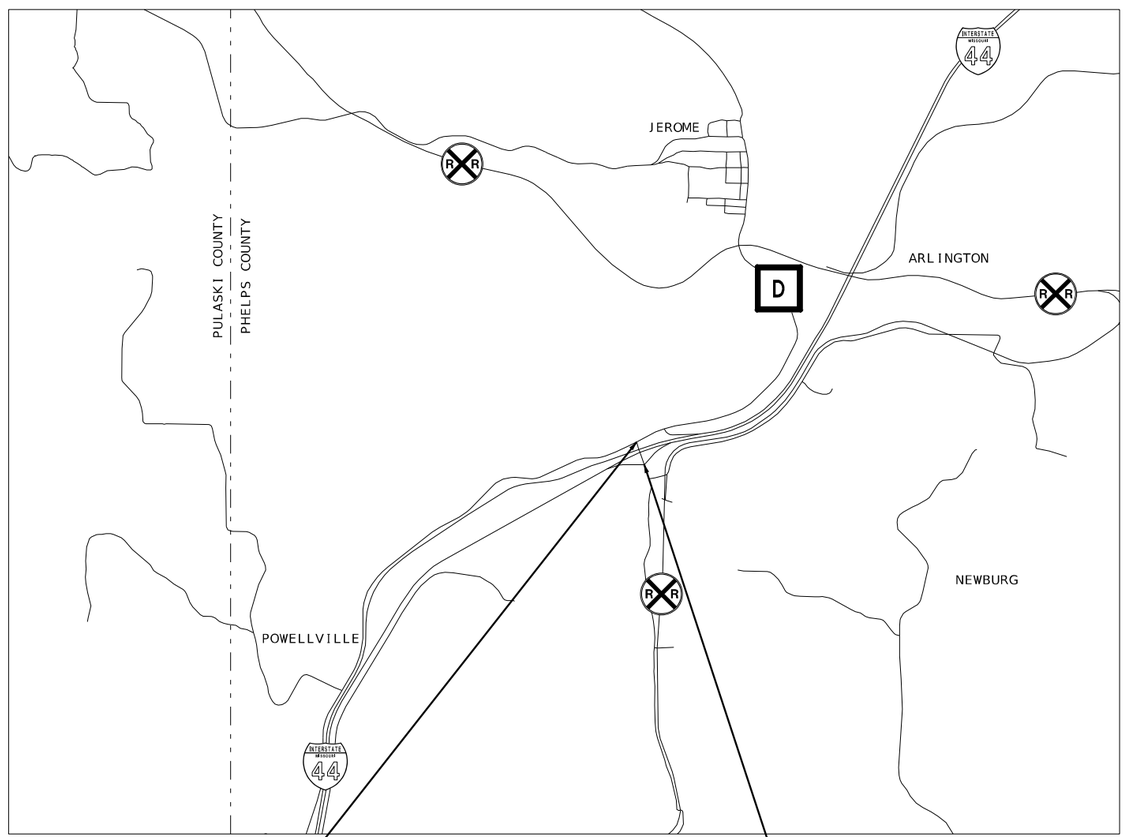
(USED IN PLANS)

	EXISTING	NEW
BUILDINGS AND STRUCTURES		
GUARD RAIL		
GUARD CABLE		
CONCRETE RIGHT-OF-WAY MARKER		
STEEL RIGHT-OF-WAY MARKER		
LOCATION SURVEY MARKER		
UTILITIES		
FIBER OPTICS	—FO—	—FO—
OVERHEAD CABLE TV	-OTV-	-OTV-
UNDERGROUND CABLE TV	-UTV-	-UTV-
OVERHEAD TELEPHONE	—OT—	—OT—
UNDERGROUND TELEPHONE	—UT—	—UT—
OVERHEAD POWER	—OE—	—OE—
UNDERGROUND POWER	—UE—	—UE—
SANITARY SEWER	—S—	—S—
STORM SEWER	—SS—	—SS—
GAS	—G—	—G—
WATER	—W—	—W—
MANHOLE	SAN	
FIRE HYDRANT	HYD	
WATER VALVE	WV	
WATER METER	WM	
DROP INLET	D	
DITCH BLOCK		
GROUND MOUNTED SIGN	SIGN	
LIGHT POLE		
H-FRAME POWER POLE		
TELEPHONE PEDESTAL	PED	
FENCE		
CHAIN LINK	—V—	
WOVEN WIRE	—X—	
GATE POST		
BENCHMARK	BM	

NOTE: DASHED OR OPEN SYMBOLS INDICATE EXISTING FEATURES

KEY MAP
LOCATION OF PHELPS COUNTY

NOT TO SCALE



PROJECT LIMITS
ROUTE D OVER I-44 - BRIDGE #A16342

HYDRO DEMO WITH LATEX OVERLAY, CURB BLOCKOUTS, MILL & OVERLAY, GUARDRAIL REPLACEMENT

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

INDEX OF SHEETS

DESCRIPTION	SHEET NUMBER
TITLE SHEET	1
TYPICAL SECTIONS (TS) (1 SHEET)	2
QUANTITIES (QU) (2 SHEETS)	3
PLAN SHEET (PL)	4
TRAFFIC CONTROL SHEETS (TC)	5-10
EROSION CONTROL SHEET	11
BRIDGE DRAWINGS (B)	
A16342	1-5

LENGTH OF PROJECT

BEGINNING OF PROJECT — LOG MILE 0.011
END OF PROJECT — LOG MILE 0.109

APPARENT LENGTH — 517.4 FEET

EQUATIONS AND EXCEPTIONS:

TOTAL CORRECTIONS	0.0	FEET
NET LENGTH OF PROJECT	517.4	FEET
STATE LENGTH	0.098	MILES
FOR INFORMATION ONLY ESTIMATED DISTURBED ACRES	0.0	ACRES

STATE OF MISSOURI
ANDREA S. DAVIS
PE-2018021250
PROFESSIONAL ENGINEER

DATE PREPARED	
1/21/2025	
ROUTE: D	STATE: MO
DISTRICT: CD	SHEET NO.: 1
COUNTY: PHELPS	
JOB NO.: J5S3549	
CONTRACT ID.: .	
PROJECT NO.: .	
BRIDGE NO.: .	

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

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
ST. LOUIS, MISSOURI 63141
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608

APPLICATION RATES:

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

DISCLAIMER
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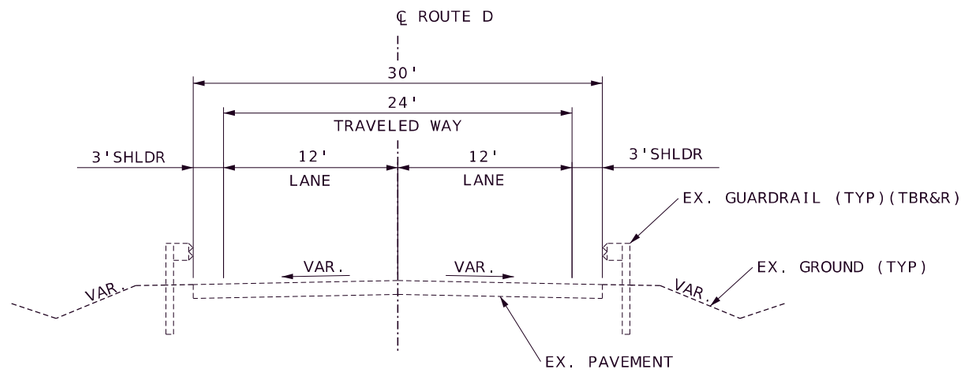
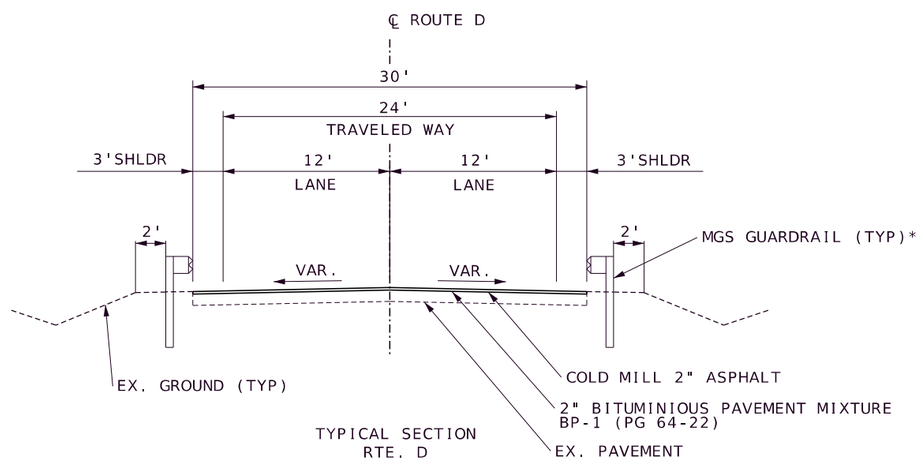


EXISTING TYPICAL SECTION
RTE. D

LOG MILE 0.011 TO LOG MILE 0.109



TYPICAL SECTION
RTE. D

LOG MILE 0.011 TO LOG MILE 0.109

*SEE PLAN SHEET FOR GUARDRAIL STATION RANGES

BRIDGE LIMITS: LOG MILE 0.044 TO LOG MILE 0.087

TYPICAL SECTIONS
SHEET 1 OF 1

STATE OF MISSOURI
ALISON N. GRAVES
NUMBER
PE-2011015778
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED, AND DATED ELECTRONICALLY.

DATE PREPARED	
12/27/2024	
ROUTE	STATE
D	MO
DISTRICT	SHEET NO.
CD	2
COUNTY	
PHELPS	
JOB NO.	
J5S3549	
CONTRACT ID.	
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PROJECT NO.	
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BRIDGE NO.	
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DESCRIPTION	DATE
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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

5220 Oakland Ave.
St. Louis, MO 63110
(314) 863-5570
CIVIL DESIGN INC.
Missouri State Certificate of Authority #2002006804

REV.

P:\6XXX\66XX-67XX\6765 - MODOT Central Distric Bridge Rehabs over I44\28-Trans\CAD\J5S3549_RTED_A1634\002_TS_J5S3549_I1.dgn 1:48:48 PM 12/27/2024

REMOVAL OF IMPROVEMENTS

PLAN SHEET	LOG MILE	SIDE	DESCRIPTION	AMOUNT
				LF
4	0.044	LT	GUARDRAIL	825
4	0.044	RT	GUARDRAIL	575
4	0.087	LT	GUARDRAIL	200
4	0.087	RT	GUARDRAIL	200
			TOTAL	1 LUMP SUM

MOBILIZATION

TOTAL = 1 LUMP SUM

RESTORE SLOPE

TOTAL = 1 LUMP SUM

PAVEMENT

PLAN SHEET	BEGIN LOG MILE	END LOG MILE	SIDE	BITUMINOUS PAVEMENT MIXTURE PG64-22 (BP-1)	COLDMILLING BITUMINOUS PAVEMENT FOR REMOVAL OF SURFACING (3 IN. THICK OR LESS)	TACK COAT
				SY	SY	SY
4	0.011	0.044	LT	607.7	608	608
4	0.087	0.109	RT	691.3	691	691
			SUBTOTAL	1299.0	1299	1299
				2" DEPTH		
				X 1.948 TONS/CY		X 0.10 GAL/SY
				TONS	SY	GALLON
			TOTAL	140.6	1299	130

UNDILUTED TACK COAT APPLICATION RATES PER EPG TABLE 407.1.4 USED: 0.05 FOR NEW ASPHALT SURFACES, 0.10 FOR COLDMILLED ASPHALT SURFACES

GUARDRAIL

PLAN SHEET	LOG MILE	SIDE	MGS GUARDRAIL 6 FT. POSTS	MGS BRIDGE APPR. GUARDRAIL SECTION (REGULAR/NO CURB)	TYPE A CRASHWORTHY END TERMINAL (MASH)	MGS END ANCHOR	SHAPING SLOPES CLASS III
			LF	EA	EA	EA	100F
4	0.044	LT	737.5	1	1	0	8.6
4	0.044	RT	525.0	1	0	1	5.8
4	0.087	LT	112.5	1	1	0	2.3
4	0.087	RT	112.5	1	1	0	2.3
		TOTAL	1488	4	3	1	19

NOTE: GUARDRAIL LENGTHS DO NOT INCLUDE LENGTHS FOR END, TERMINAL, ANCHOR OR TRANSITION SECTIONS OR BULLNOSE

PERMANENT PAVEMENT MARKING

PLAN SHEET	BEGIN LOG MILE	END LOG MILE	SIDE	WATERBORNE W/ TYPE P BEADS 4 INCH YELLOW	WATERBORNE W/ TYPE P BEADS 4 INCH WHITE	REMARKS
				LF	LF	
4	0.011	0.109	CENTER	995		DOUBLE SOLID YELLOW
4	0.011	0.109	RIGHT		427	SOLID WHITE
4	0.011	0.109	LEFT		427	SOLID WHITE
			TOTAL	995	854	

PERMANENT EROSION CONTROL

PLAN SHEET	LOG MILE	SIDE	FURNISHING TYPE 1 ROCK DITCH LINER	PLACING TYPE 1 ROCK DITCH LINER	PERMANENT EROSION CONTROL GEOTEXTILE
			CY	CY	SY
4	0.044	LT	4	4	16
4	0.044	RT	4	4	16
		TOTAL	8	8	32

TEMPORARY EROSION CONTROL

PLAN SHEET	LOG MILE	SIDE	SILT FENCE	SEDIMENT REMOVAL
			LF	CY
11	0.044	LT	780	8
11	0.044	RT	540	6
11	0.087	LT	185	2
11	0.087	RT	190	2
		TOTAL	1695	18

NOTE: SEDIMENT REMOVAL IS BASED ON 1 CY PER DITCH CHECK, 1 CY PER 100 FT OF SILT FENCE

SUMMARY OF QUANTITIES
SHEET 1 OF 2

STATE OF MISSOURI
ALISON N. GRAVES
NUMBER PE-2011015778
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED, AND DATED ELECTRONICALLY.

DATE PREPARED 12/27/2024

ROUTE	STATE
D	MO
DISTRICT	SHEET NO.
CD	3

COUNTY PHELPS

JOB NO. J5S3549

CONTRACT ID. .

PROJECT NO. .

BRIDGE NO. .

DATE	DESCRIPTION
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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

5220 Oakland Ave.
St. Louis, MO 63110
(314) 863-5570

CIVIL DESIGN INC.

Missouri State Certificate of Authority #2002006804

EFFECTIVE: 07-01-2024

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL AREA SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NUM.	DESCRIPTION
WARNING SIGNS								
WO1-1L	48X48	16.00						TURN (SYMBOL LEFT)
WO1-1R	48X48	16.00						TURN (SYMBOL RIGHT)
WO1-2L	48X48	16.00						CURVE (SYMBOL LEFT)
WO1-2R	48X48	16.00						CURVE (SYMBOL RIGHT)
WO1-3L	48X48	16.00						REVERSE TURN (SYMBOL LEFT)
WO1-3R	48X48	16.00						REVERSE TURN (SYMBOL RIGHT)
WO1-4L	48X48	16.00						REVERSE CURVE (SYMBOL LEFT)
WO1-4R	48X48	16.00						REVERSE CURVE (SYMBOL RIGHT)
WO1-4bL	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL LEFT)
WO1-4bR	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL RIGHT)
WO1-4cL	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL LEFT)
WO1-4cR	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL RIGHT)
WO1-6	60X30	12.50						HORIZONTAL ARROW (SYMBOL)
WO1-6a	72X36	18.00						HORIZ. ARROW (SYMBOL ON PERMANENT BARRICADE)
WO1-7	60X30	12.50						DOUBLE HEAD HORIZONTAL ARROW (SYMBOL)
WO1-7a	72X36	18.00						DOUBLE HEAD HORIZ. ARROW (SYMBOL ON PERM. BARR.)
WO1-8	18X24	3.00						CHEVRON (SYMBOL)
WO1-8a	30X36	7.50						CHEVRON (SYMBOL FOR DIVIDED HIGHWAYS)
WO3-1	48X48	16.00						STOP AHEAD (SYMBOL)
WO3-2	48X48	16.00						YIELD AHEAD (SYMBOL)
WO3-3	48X48	16.00						SIGNAL AHEAD (SYMBOL)
WO3-4	48X48	16.00						BE PREPARED TO STOP
WO3-5	48X48	16.00						SPEED LIMIT AHEAD
WO4-1L	48X48	16.00						MERGE (SYMBOL FROM LEFT)
WO4-1R	48X48	16.00						MERGE (SYMBOL FROM RIGHT)
WO4-1aL	48X48	16.00	2	32			6A	MERGE (LEFT)
WO4-1aR	48X48	16.00	2	32			6B	MERGE (RIGHT)
WO5-1	48X48	16.00						ROAD/BRIDGE/RAMP NARROWS
WO5-3	48X48	16.00						ONE LANE BRIDGE
WO5-5	48X48	16.00						NARROW LANES
WO6-1	48X48	16.00						DIVIDED HIGHWAY (SYMBOL)
WO6-2	48X48	16.00						DIVIDED HIGHWAY END (SYMBOL)
WO6-3	48X48	16.00						TWO WAY TRAFFIC (SYMBOL)
WO7-3a	30X24	5.00						NEXT XX MILES (PLAQUE)
WO8-1	48X48	16.00						BUMP
WO8-2	48X48	16.00						DIP
WO8-3	48X48	16.00						PAVEMENT ENDS
WO8-4	48X48	16.00						SOFT SHOULDER
WO8-5	48X48	16.00						SLIPPERY WHEN WET (SYMBOL)
WO8-6	48X48	16.00						TRUCK CROSSING
WO8-6c	48X48	16.00						TRUCK ENTRANCE
WO8-7	36X36	9.00						LOOSE GRAVEL
WO8-7a	36X36	9.00						FRESH OIL / LOOSE GRAVEL
WO8-9	48X48	16.00						LOW SHOULDER
WO8-11	48X48	16.00						UNEVEN LANES
WO8-12	48X48	16.00						NO CENTER LINE
WO8-15	48X48	16.00						GROOVED PAVEMENT
WO8-15P	30X24	5.00						MOTORCYCLE (PLAQUE)
WO8-17L	48X48	16.00						SHOULDER DROP-OFF (SYMBOL LEFT)
WO8-17R	48X48	16.00						SHOULDER DROP-OFF (SYMBOL RIGHT)
WO8-17P	30X24	5.00						SHOULDER DROP-OFF (PLAQUE)
W10-1	42RND.	9.62						RAILROAD CROSSING
WO12-1	24X24	4.00						DOUBLE DOWN ARROW (SYMBOL)
WO12-2	48X48	16.00						LOW CLEARANCE (SYMBOL)
WO12-2x	24X18	3.00						LOW CLEARANCE (PLAQUE)
WO12-2a	84X24	14.00						OVERHEAD LOW CLEARANCE (FEET AND INCHES)
WO12-4	120X60	50.00						LOW CLEARANCE XX FT XX IN XX MILES AHEAD
WO12-5	120X60	50.00						WIDTH RESTRICTION XX FT XX IN XX MILES AHEAD
WO13-1	30X30	6.25						ADVISORY SPEED (PLAQUE)
WO16-2	30X24	5.00						XXX FEET (PLAQUE)
WO16-3	30X24	5.00						X MILE (PLAQUE)
WO20-1	48X48	16.00	4	64			2	ROAD/BRIDGE/RAMP WORK AHEAD
WO20-2	48X48	16.00	4	64			18	DETOUR AHEAD
WO20-3	48X48	16.00	4	64			20	ROAD CLOSED AHEAD
WO20-4	48X48	16.00						ONE LANE ROAD AHEAD
WO20-5	48X48	16.00	4	64			5	RIGHT/CENTER/LEFT LANE CLOSED AHEAD
WO20-5a	48X48	16.00						2 RIGHT/CENTER/LEFT LANES CLOSED AHEAD
WO20-6a	48X48	16.00	2	32			6	RIGHT/CENTER/LEFT LANE CLOSED
WO20-7a	48X48	16.00						FLAGGER (SYMBOL)
WO21-2	36X36	9.00						FRESH OIL
WO21-5	48X48	16.00						SHOULDER WORK / SHOULDER WORK AHEAD
WO22-1	48X48	16.00						BLASTING ZONE AHEAD
WO22-2	42X36	10.50						TURN OFF 2-WAY RADIO AND PHONE
WO22-3	42X36	10.50						END BLASTING ZONE
GO22-1	21X15	2.19						WET PAINT (ARROW PIVOTS)

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NUM.	DESCRIPTION
GUIDE SIGNS								
E05-1	36X48	12.00	2	24			49	GORE EXIT
E05-2	48X36	12.00	2	24			48	EXIT OPEN
E05-2a	48X36	12.00						EXIT CLOSED
GO20-1	60X24	10.00	4	40			1	ROAD WORK NEXT 1 MILES
GO20-2	48X24	8.00	4	32			26	END ROAD WORK
GO20-4	36X18	4.50						PILOT CAR FOLLOW ME
GO20-4a	42X30	8.75						PILOT CAR IN USE WAIT & FOLLOW
GO20-4a	18X12	1.50						PILOT CAR IN USE WAIT & FOLLOW
GO20-5aP	36X24	6.00	4	24			54	WORK ZONE (PLAQUE)
MO4-8a	24X18	3.00						END DETOUR
MO4-9L	48X36	12.00						DETOUR (LEFT)
MO4-9R	48X36	12.00						DETOUR (RIGHT)
MO4-9P	48X12	4.00						STREET NAME (PLAQUE)
MO4-10L	48X18	6.00						DETOUR ARROW (LEFT)
MO4-10R	48X18	6.00						DETOUR ARROW (RIGHT)
REGULATORY SIGNS								
R1-1	48X48	13.25						STOP
R1-2	48TRI.	6.93						YIELD
R1-2a	36X36	9.00						TO ONCOMING TRAFFIC (PLAQUE)
R1-3P	30X12	2.50						ALL WAY (PLAQUE)
R2-1	36X48	12.00	4	48			4	SPEED LIMIT 60
R2-1	36X48	12.00	4	48			25	SPEED LIMIT 70
R3-1	48X48	16.00						NO RIGHT TURN (SYMBOL)
R3-2	48X48	16.00						NO LEFT TURN (SYMBOL)
R3-3	36X36	9.00						NO TURNS
R3-4	48X48	16.00						NO U-TURN (SYMBOL)
R3-7L	30X30	6.25						LEFT LANE MUST TURN LEFT
R3-7R	30X30	6.25						RIGHT LANE MUST TURN RIGHT
R4-1	36X48	12.00						DO NOT PASS
R4-2	36X48	12.00						PASS WITH CARE
R4-7a	36X48	12.00						KEEP RIGHT (HORIZONTAL ARROW)
R4-8a	36X48	12.00						KEEP LEFT (HORIZONTAL ARROW)
R5-1	30X30	6.25						DO NOT ENTER
R5-1a	36X24	6.00						WRONG WAY
R6-1L	54X18	6.75						ONE WAY ARROW (LEFT)
R6-1R	54X18	6.75						ONE WAY ARROW (RIGHT)
R6-2L	24X30	5.00						ONE WAY (LEFT)
R6-2R	24X30	5.00						ONE WAY (RIGHT)
R9-9	24X12	2.00						SIDEWALK CLOSED
R9-11L	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW LEFT) CROSS HERE
R9-11R	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW RIGHT) CROSS HERE
R10-6	24X36	6.00						STOP HERE ON RED (45^ ARROW)
R11-2	48X30	10.00	2	20			29	ROAD CLOSED
R11-3a	60X30	12.50						ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY
R11-4	60X30	12.50						ROAD CLOSED TO THRU TRAFFIC
CONST-3A	60X48	20.00	4	80			53	FINE SIGN
CONST-3X	56X12	4.67						SPEEDING/PASSING (PLATE)
MISCELLANEOUS SIGNS								
CONST-5	48X36	12.00						POINT OF PRESENCE
CONST-5	96X48	32.00	2	64			61	POINT OF PRESENCE
CONST-5	60X8	3.33	2	6.66			61A	POINT OF PRESENCE
CONST-8	48X36	12.00	4	48			55	WORK ZONE NO PHONE ZONE
SPECIAL	36X60	15.00	7	105			50A	DETOUR ASSEMBLY-RTE D STR.
SPECIAL	36X60	15.00					50B	DETOUR ASSEMBLY-RTE D ADV. RT.
SPECIAL	36X60	15.00	1	15			50C	DETOUR ASSEMBLY-RTE D RT.
SPECIAL	36X60	15.00	1	15			50D	DETOUR ASSEMBLY-RTE D ADV. LT.
SPECIAL	36X60	15.00	2	30			50E	DETOUR ASSEMBLY-RTE D LT.
SPECIAL	48X48	16.00	7	112			50F	DETOUR ASSEMBLY-HOG H STR.
SPECIAL	48X48	16.00					50G	DETOUR ASSEMBLY-HOG H ADV. RT.
SPECIAL	48X48	16.00					50H	DETOUR ASSEMBLY-HOG H RT.
SPECIAL	48X48	16.00	1	16			50I	DETOUR ASSEMBLY-HOG H ADV. LT.
SPECIAL	48X48	16.00	2	32			50J	DETOUR ASSEMBLY-HOG H LT.
SPECIAL	36X60	15.00	2	30			50K	DETOUR ASSEMBLY-RTE D VEER RT.
SPECIAL	48X48	16.00	2	32			50L	DETOUR ASSEMBLY-HOG H VEER RT.

616-10.05 CONSTRUCTION SIGNS	TOTAL	1198
616-10.10 RELOCATED SIGNS	TOTAL	0

ITEM NUMBER	TOTAL QTY	DESCRIPTION
6122008		IMPACT ATTENUATOR 40 MPH (SAND BARRELS)
6122009		IMPACT ATTENUATOR 45 MPH (SAND BARRELS)
6122010		IMPACT ATTENUATOR 50 MPH (SAND BARRELS)
6122012		IMPACT ATTENUATOR 55 MPH (SAND BARRELS)
6122014		IMPACT ATTENUATOR 60 MPH (SAND BARRELS)
6122017		IMPACT ATTENUATOR 65 MPH (SAND BARRELS)
6122019		IMPACT ATTENUATOR 70 MPH (SAND BARRELS)
6122020		REPLACEMENT SAND BARREL
6122030		IMPACT ATTENUATOR (RELOCATION)
6123001	1**	TRUCK MOUNTED ATTENUATOR (TMA)
6161008	4	ADVANCED WARNING RAIL SYSTEM
6161012		BUOYS (BOATS KEEP OUT)
6161013		BUOYS (NO WAKE)
6161014		SPECIAL SIGN ASSEMBLY (BOATS KEEP OUT)
6161025	118	CHANNELIZER (TRIM LINE)
6161030	6	TYPE III MOVEABLE BARRICADE
6161033	28	DIRECTION INDICATOR BARRICADE
6161040	4	FLASHING ARROW PANEL
6161047		TYPE III OBJECT MARKER
6161055		SEQUENTIAL FLASHING WARNING LIGHT
6161070		TUBULAR MARKER
6161095		RADAR SPEED ADVISORY SYSTEM
6161096		CHANGEABLE MESSAGE SIGN, COMMISSION FURNISHED/RETAINED
6161098A	2**	CHANGEABLE MESSAGE SIGN W/O COMM. INTERFACE - CONTRACTOR FURNISHED/RETAINED
6161099		CHANGEABLE MESSAGE SIGN WITH COMM. INTERFACE - CONTRACTOR FURNISHED/RETAINED
6162000A		WORK ZONE TRAFFIC SIGNAL SYSTEM
6162002		TEMPORARY LONG-TERM RUMBLE STRIPS
6173600D		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/RETAINED
6173602B		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/COMMISSION RETAINED
6174000A		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION
6175010A		RELOCATING TEMPORARY TRAFFIC BARRIER
6176000B		TEMPORARY TRAFFIC BARRIER COMMISSION FURNISHED/RETAINED
6177000B		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION COMMISSION FURNISHED/RETAINED
6208064A		TEMPORARY RAISED PAVEMENT MARKER
9029400		TEMPORARY TRAFFIC SIGNALS
9029401		TEMPORARY TRAFFIC SIGNALS AND LIGHTING

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

TEMPORARY TRAFFIC CONTROL	
PAY TOTAL =	1 LUMP SUM

SUMMARY OF QUANTITIES
SHEET 2 OF 2

STATE OF MISSOURI
ANDREA S. DAVIS
PE-2018021250
PROFESSIONAL ENGINEER

DATE PREPARED 1/21/2025
ROUTE D | STATE MO
DISTRICT CD | SHEET NO. 3
COUNTY PHELPS
JOB NO. J5S3549
CONTRACT ID. .
PROJECT NO. .
BRIDGE NO. .

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

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
ST. LOUIS, MISSOURI 63141
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

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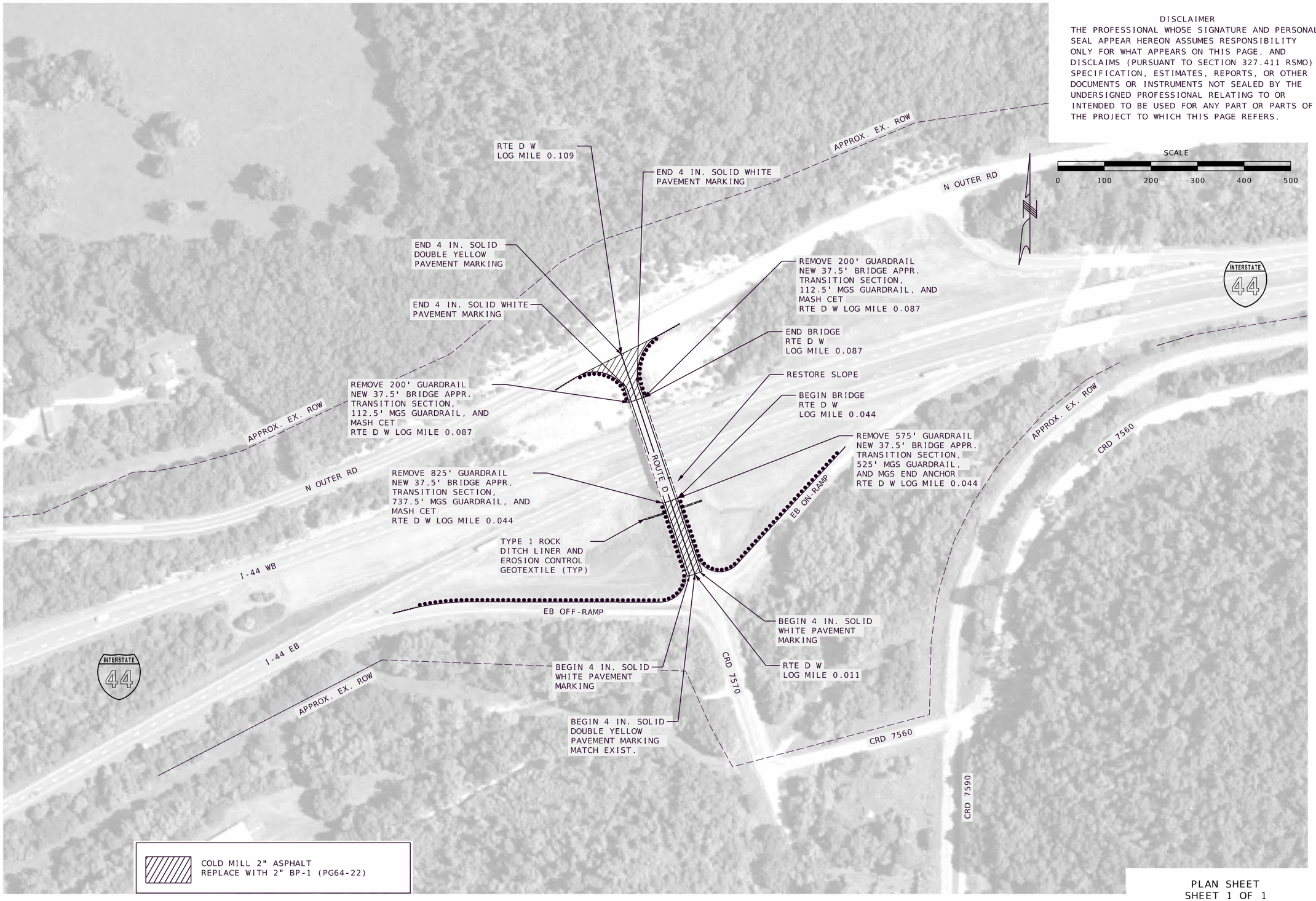

PLAN SHEET
SHEET 1 OF 1

STATE OF MISSOURI
ALISON N. GRAVES
NUMBER
PE-2011015778
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED, AND DATED ELECTRONICALLY.

DATE PREPARED	12/27/2024
ROUTE	D
STATE	MO
DISTRICT	CD
SHEET NO.	4
COUNTY	PHELPS
JOB NO.	J5S3549
CONTRACT ID.	.
PROJECT NO.	.
BRIDGE NO.	.

DATE	DESCRIPTION
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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

5220 Oakland Ave.
St. Louis, MO 63110
(314) 863-5570

CDI CIVIL DESIGN, INC.

Missouri State Certificate of Authority #2002006804

REV.

P:\6XXX\66XX-67XX\6765 - MODOT Central Distric Bridge Rehabs over I44\28-Trans\CAD\J5S3549_RTED_A1634\004_PL_J5S3549_I100.dgn 1:52:14 PM 12/27/2024

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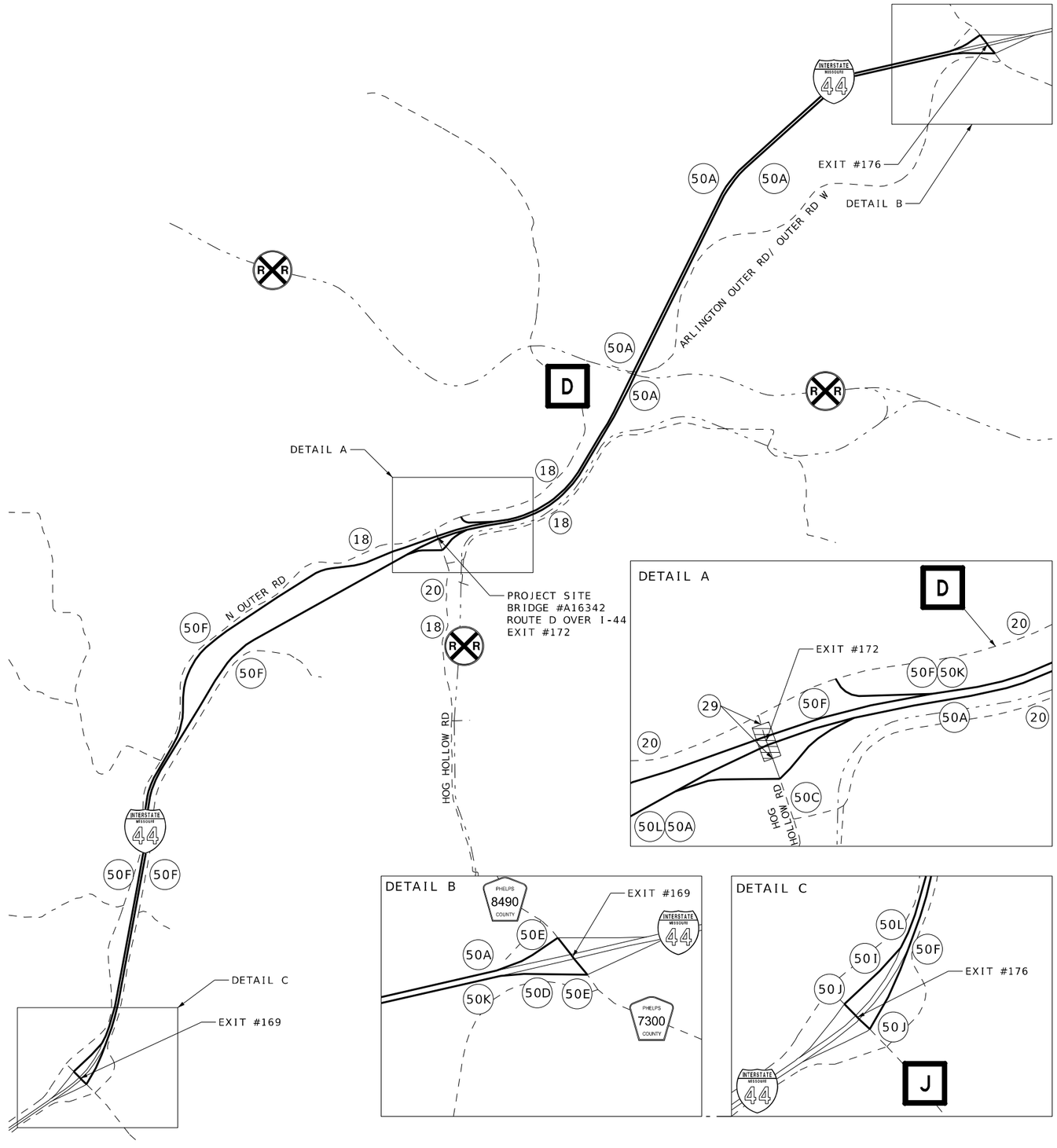
NOTES:
ROUTE D DETOUR LENGTH: APPROX. 8.2 MILES
HOG HOLLOW ROAD DETOUR LENGTH: APPROX. 7.0 MILES
SEE NEXT SHEET FOR SIGN DETAILS

LEGEND
- DETOUR ROUTE
- INTERSTATE
- NON-INTERSTATE ROAD
- RAILROAD



NOT TO SCALE

TRAFFIC CONTROL
SHEET 1 OF 6

STATE OF MISSOURI
ANDREA S. DAVIS
PE-2018021250
PROFESSIONAL ENGINEER

DATE PREPARED	
12/18/2024	
ROUTE D	STATE MO
DISTRICT CD	SHEET NO. 5
COUNTY PHELPS	
JOB NO. J5S3549	
CONTRACT ID. .	
PROJECT NO. .	
BRIDGE NO. .	

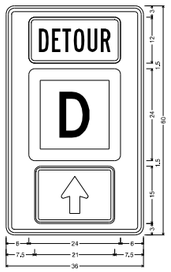
DATE	DESCRIPTION
.	.

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

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

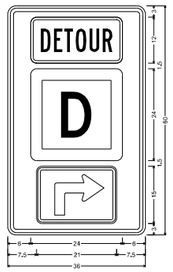
HR GREEN, INC.
520 MARYVILLE CENTRE DRIVE, SUITE 100
ST. LOUIS, MISSOURI 63141
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

\\hrgreen.com\hrg\Data\2024\2402262\CAD\Roadway\J5S3549_RouteD\Plan_Sheets\06_TC_01_J5S3549_I1000.dgn 10:54:08 AM 12/18/2024



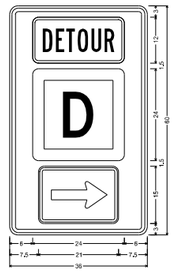
M04-12 SHF-FLAT SHEET FLUORESCENT:
2.250" Radius, 0.875" Border, 0.625" Indent, Black on, Orange:
Table of letter and object Inffs

50A



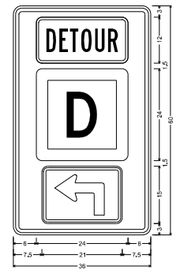
M04-12 SHF-FLAT SHEET FLUORESCENT:
2.250" Radius, 0.875" Border, 0.625" Indent, Black on, Orange:
Table of letter and object Inffs

50B



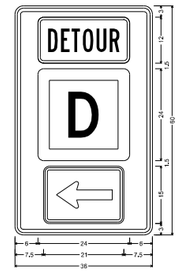
M04-12 SHF-FLAT SHEET FLUORESCENT:
2.250" Radius, 0.875" Border, 0.625" Indent, Black on, Orange:
Table of letter and object Inffs

50C



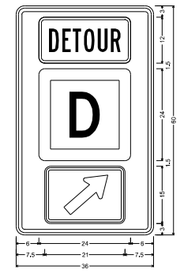
M04-12 SHF-FLAT SHEET FLUORESCENT:
2.250" Radius, 0.875" Border, 0.625" Indent, Black on, Orange:
Table of letter and object Inffs

50D



M04-12 SHF-FLAT SHEET FLUORESCENT:
2.250" Radius, 0.875" Border, 0.625" Indent, Black on, Orange:
Table of letter and object Inffs

50E



M04-12 SHF-FLAT SHEET FLUORESCENT:
2.250" Radius, 0.875" Border, 0.625" Indent, Black on, Orange:
Table of letter and object Inffs

50K

M04-9P SHF-FLAT SHEET FLUORESCENT:
1.500" Radius, 0.625" Border, 0.375" Indent, Black on, Orange:
"Hog Hollow Rd", B 80% spacing:

M04-9 SHF-FLAT SHEET FLUORESCENT:
2.250" Radius, 0.875" Border, 0.625" Indent, Black on, Orange:
"DETOUR", D:
Table of letter and object Inffs

S 3.750	C 7.500	T 10.875			
H 16.625	O 20.375	U 24.125	D 28.125	R 28.000	W 31.375
A 38.250	E 41.750				
D 4.125	E 11.375	T 17.250	O 23.625	U 31.250	R 38.500
16.500					

50F

M04-9P SHF-FLAT SHEET FLUORESCENT:
1.500" Radius, 0.625" Border, 0.375" Indent, Black on, Orange:
"Hog Hollow Rd", B 80% spacing:

M04-9 SHF-FLAT SHEET FLUORESCENT:
2.250" Radius, 0.875" Border, 0.625" Indent, Black on, Orange:
"DETOUR", D:
Table of letter and object Inffs

S 3.750	C 7.500	T 10.875			
H 16.625	O 20.375	U 24.125	D 28.125	R 28.000	W 31.375
A 38.250	E 41.750				
D 4.125	E 11.375	T 17.250	O 23.625	U 31.250	R 38.500
13.000					

50G

M04-9P SHF-FLAT SHEET FLUORESCENT:
1.500" Radius, 0.625" Border, 0.375" Indent, Black on, Orange:
"Hog Hollow Rd", B 80% spacing:

M04-9 SHF-FLAT SHEET FLUORESCENT:
2.250" Radius, 0.875" Border, 0.625" Indent, Black on, Orange:
"DETOUR", D:
Standard Arrow Custom 27.000" X 18.750" 0°:
Table of letter and object Inffs

S 3.750	C 7.500	T 10.875			
H 16.625	O 20.375	U 24.125	D 28.125	R 28.000	W 31.375
A 38.250	E 41.750				
D 4.125	E 11.375	T 17.250	O 23.625	U 31.250	R 38.500
10.500					

50H

M04-9P SHF-FLAT SHEET FLUORESCENT:
1.500" Radius, 0.625" Border, 0.375" Indent, Black on, Orange:
"Hog Hollow Rd", B 80% spacing:

M04-9 SHF-FLAT SHEET FLUORESCENT:
2.250" Radius, 0.875" Border, 0.625" Indent, Black on, Orange:
"DETOUR", D:
Table of letter and object Inffs

S 3.750	C 7.500	T 10.875			
H 16.625	O 20.375	U 24.125	D 28.125	R 28.000	W 31.375
A 38.250	E 41.750				
D 4.125	E 11.375	T 17.250	O 23.625	U 31.250	R 38.500
13.000					

50I

M04-9P SHF-FLAT SHEET FLUORESCENT:
1.500" Radius, 0.625" Border, 0.375" Indent, Black on, Orange:
"Hog Hollow Rd", B 80% spacing:

M04-9 SHF-FLAT SHEET FLUORESCENT:
2.250" Radius, 0.875" Border, 0.625" Indent, Black on, Orange:
"DETOUR", D:
Standard Arrow Custom 27.000" X 18.750" 180°:
Table of letter and object Inffs

S 3.750	C 7.500	T 10.875			
H 16.625	O 20.375	U 24.125	D 28.125	R 28.000	W 31.375
A 38.250	E 41.750				
D 4.125	E 11.375	T 17.250	O 23.625	U 31.250	R 38.500
10.500					

50J

M04-9P SHF-FLAT SHEET FLUORESCENT:
1.500" Radius, 0.625" Border, 0.375" Indent, Black on, Orange:
"Hog Hollow Rd", B 80% spacing:

M04-9 SHF-FLAT SHEET FLUORESCENT:
2.250" Radius, 0.875" Border, 0.625" Indent, Black on, Orange:
"DETOUR", D:
Standard Arrow Custom 18.000" X 15.500" 45°:
Table of letter and object Inffs

S 3.750	C 7.500	T 10.875			
H 16.625	O 20.375	U 24.125	D 28.125	R 28.000	W 31.375
A 38.250	E 41.750				
D 4.125	E 11.375	T 17.250	O 23.625	U 31.250	R 38.500
16.625					

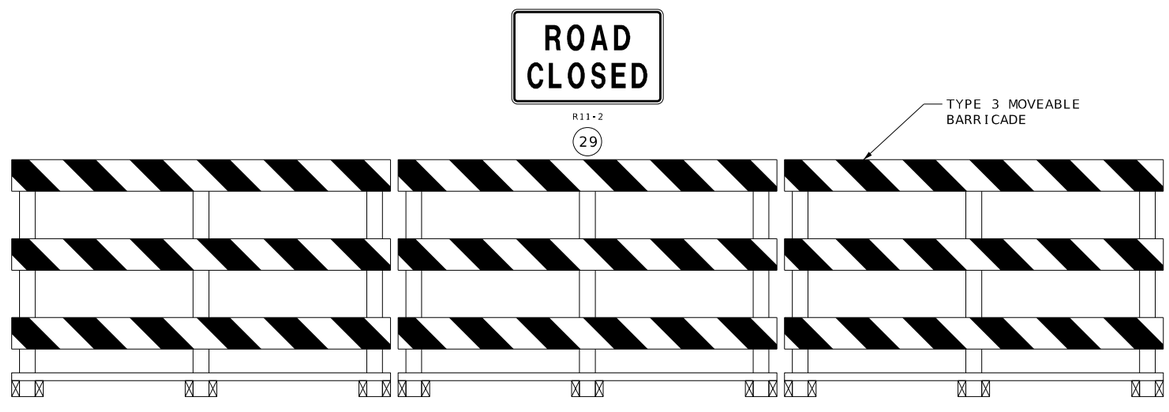
50L

WO20-2

18

WO20-3

20



R11-2

29

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GENERAL NOTES:

ANY EXISTING WARNING OR REGULATORY SIGNS (NOT SHOWN) THAT INTERFERE WITH THE TRAFFIC CONTROL SIGNING SHALL BE COMPLETELY COVERED OR REMOVED, NO DIRECT PAY.

ALL TRAFFIC CONTROL SIGNS ARE TO BE NON-PORTABLE UNLESS OTHERWISE NOTED.

SEE STANDARD PLANS 616.10, 903.01 AND 909.03 FOR ADDITIONAL DETAILS REGARDING TRAFFIC CONTROL HIGHWAY SIGNING.

TEMPORARY TRAFFIC CONTROL SIGN AND DEVICE LOCATIONS MAY BE ADJUSTED UPON APPROVAL OF THE ENGINEER. WHERE TRAFFIC BACKUPS ARE EXPECTED BEYOND THE ADVANCED WARNING AREA, ADDITIONAL SIGNING MAY BE NEEDED AS DIRECTED BY THE ENGINEER.

ANY RELOCATION OF SIGNS AND DEVICES FOR TRAFFIC CONTROL DEVICES OR SIGNS SHALL BE CONSIDERED INCIDENTAL. NO DIRECT PAY.

R11-2 SIGN ASSOCIATED WITH THE TYPE 3 MOVEABLE BARRICADES SHALL BE MOUNTED ON POST 7-10 FEET BEHIND THE BARRICADE.

ALL WARNING SIGNS SHALL HAVE FLUORESCENT SHEETING.

TRAFFIC CONTROL
SHEET 2 OF 6

STATE OF MISSOURI
ANDREA S. DAVIS
PE-2018021250
PROFESSIONAL ENGINEER

DATE PREPARED	
12/18/2024	
ROUTE D	STATE MO
DISTRICT CD	SHEET NO. 6
COUNTY PHELPS	
JOB NO. J5S3549	
CONTRACT ID. .	
PROJECT NO. .	
BRIDGE NO. .	

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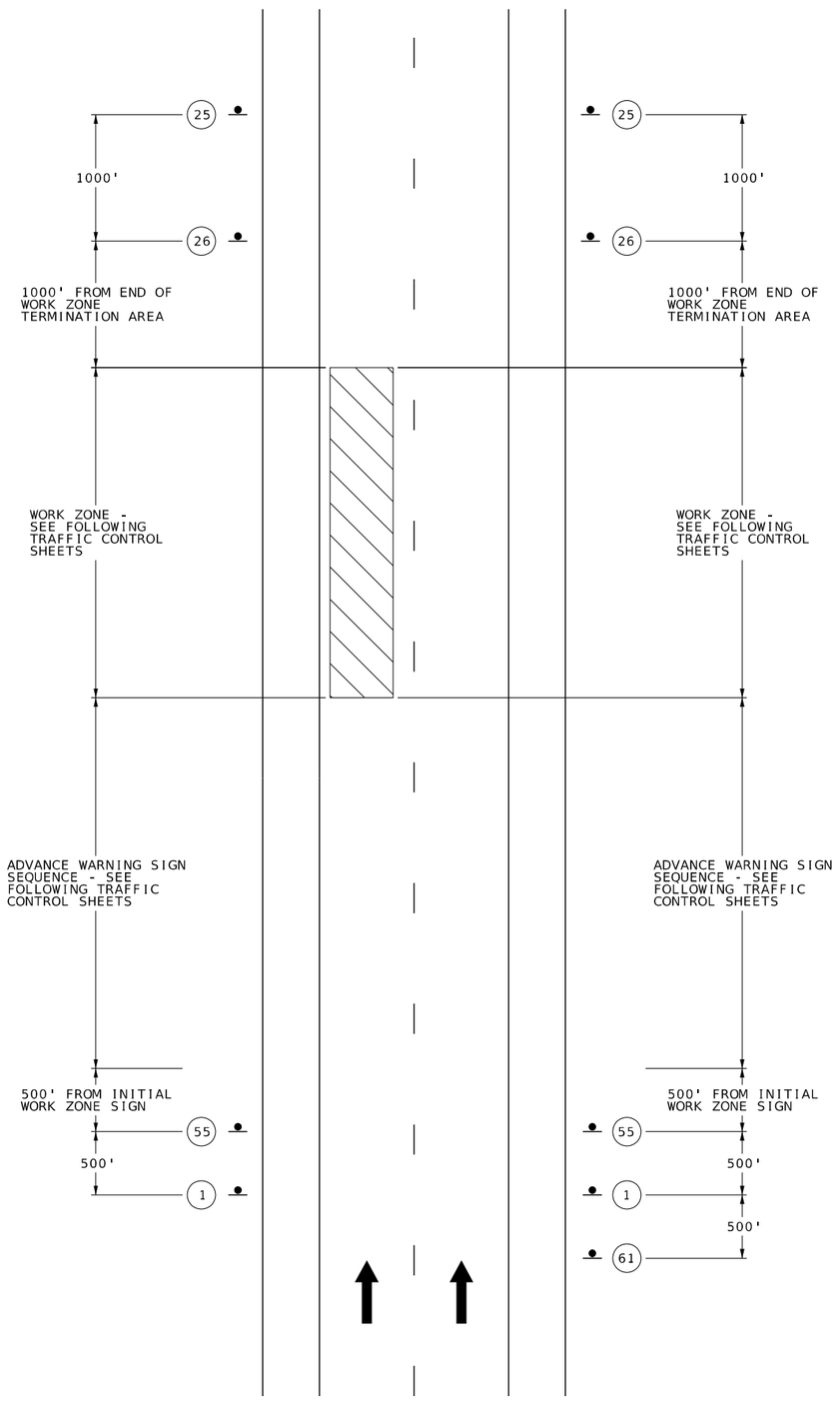
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

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

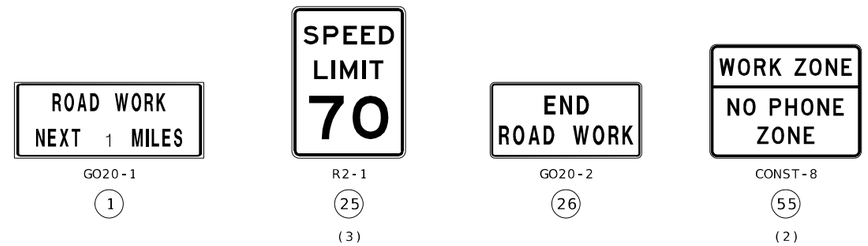
HR GREEN, INC.
520 MARYVILLE CENTRE DRIVE, SUITE 100
ST. LOUIS, MISSOURI 63141
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608

HRGreen

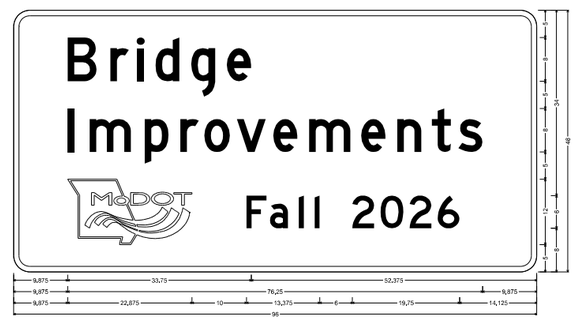
BEGIN / END OF PROJECT SIGNING



NOT TO SCALE



GO20-1 (1) | R2-1 (25) (3) | GO20-2 (26) | CONST-8 (55) (2)



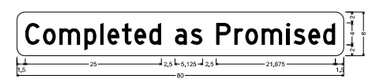
CONST-5 SHEET:
3,000" Radius, 1,000" Border, White on, Blue:
"Bridge", Dr: "Improvements", Dr: "Fall 2026", Dr:
Table of letter and object lefts

B	F	I	C	G	E
9,875	17,750	22,750	26,000	32,625	39,125

I	m	p	r	n	d	e	m	e	h	t	h	s	
9,875	14,000	24,000	30,625	35,000	41,000	47,625	54,250	63,750	70,375	76,750	81,625		
Bw	F	I	n	g	o	P	a	d					
9,875	42,750	47,000	52,375	55,250	62,125	67,375	72,625	77,875					

61

(1)



CONST-6P-60 SHEET FLUORESCENT:
1,500" Radius, No border, Yellow:
"Completed as Promised" Black, D 65% spacing:
Table of letter and object lefts

C	o	m	p	l	e	t	e	d	a	s	P	r	o
1,500	4,875	7,875	12,375	15,375	18,625	19,375	21,500	24,250	29,000	31,875			

P	r	o	m	i	s	e	d				
36,625	39,875	41,875	44,875	48,500	50,750	53,500	56,250				

61A

NOTES:

SIGN GO20-2 IS USED ON ALL PROJECTS WHERE SIGN GO20-1 IS USED.

OTHER SIGNS SUCH AS DETOUR OR ALTERNATE ROUTE SIGNING MAY BE USED OUTSIDE THE PROJECT LIMITS. SEE ADDITIONAL TRAFFIC CONTROL SHEETS FOR DETOUR SIGNAGE.

ANY EXISTING SIGNING THAT CONFLICTS WITH THE TRAFFIC CONTROL SIGNING SHALL BE COMPLETELY COVERED OR REMOVED.

SIGN SPACING MAY BE ADJUSTED ACCORDING TO FIELD CONDITIONS. WHERE TRAFFIC BACKUPS ARE EXPECTED BEYOND THE ADVANCE WARNING AREA, ADDITIONAL SIGNING MAY BE NEEDED.

(1) CONST-5-96 SIGN IS PLACED IN A VISIBLE AREA WITHIN THE PROJECT LIMITS PROVIDED ITS PLACEMENT DOES NOT DISRUPT A SEQUENCE OF SIGNS. IF A VISIBLE LOCATION WITHIN THE PROJECT LIMITS IS NOT AVAILABLE, THE SIGN MAY BE PLACED 500 FEET BEFORE THE GO20-1 ROAD WORK XX MILES SIGN.

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

(3) SPEED LIMIT SIGNS INDICATING THE NORMAL SPEED LIMIT SHOULD BE INSTALLED AT THE END OF THE REDUCED AREA PROVIDED NO OTHER REDUCTION IS IMPOSED WITHIN THE NEXT ONE-HALF MILE OR NO EXISTING SPEED LIMIT SIGN IS LOCATED WITH THE NEXT ONE-HALF MILE.

TRAFFIC CONTROL LEGEND

SIGN (SINGLE SIDED)

WORK ZONE

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STATE OF MISSOURI
ANDREA S. DAVIS
PE-2018021250
PROFESSIONAL ENGINEER

DATE PREPARED	
12/18/2024	
ROUTE: D	STATE: MO
DISTRICT: CD	SHEET NO.: 7
COUNTY: PHELPS	
JOB NO.: J5S3549	
CONTRACT ID.: .	
PROJECT NO.: .	
BRIDGE NO.: .	

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

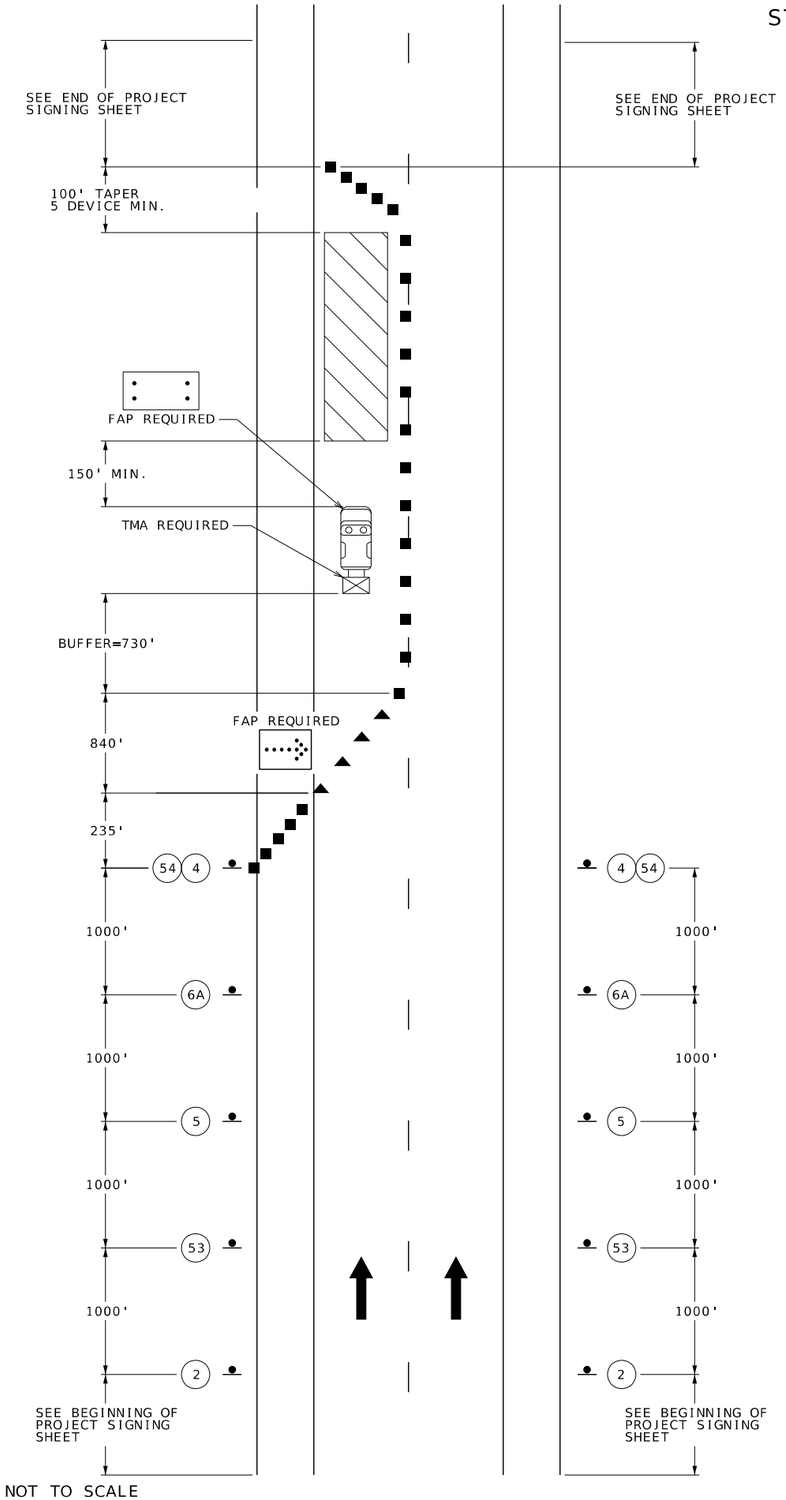
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

HR GREEN, INC.
520 MARYVILLE CENTRE DRIVE, SUITE 100
ST. LOUIS, MISSOURI 63141
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608

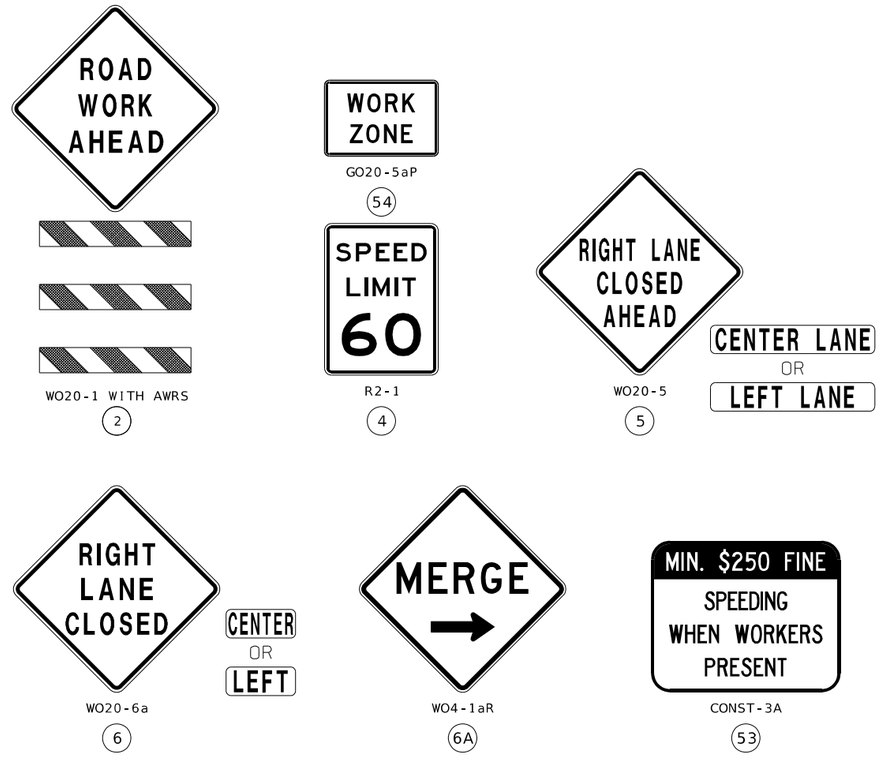
HRGreen

TRAFFIC CONTROL
SHEET 3 OF 6

STATIONARY LANE CLOSURE ON A DIVIDED HIGHWAY



NOT TO SCALE



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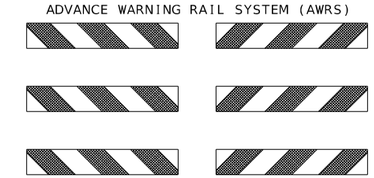
ADVANCE WARNING RAIL SYSTEM (AWRS)



CHANNELIZER SPACING:

TAPERS: 60'
BUFFER/WORK AREAS: 120'

NOTES:

SEE EPG 616.12 WORK ZONE SPEED LIMITS FOR SPEED LIMIT GUIDELINES.

REDUCED SPEED LIMIT SIGNING SHALL BE REMOVED, COVERED, OR TURNED FROM TRAFFIC WHEN CONDITIONS REQUIRING THE REDUCED SPEED NO LONGER EXIST.

TEMPORARY TRAFFIC BARRIER, IF USED, SHALL COMPLY WITH THE PROVISIONS IN EPG 616.6.85 TEMPORARY TRAFFIC BARRIER AND MUTCD FIGURE 6H-34 LANE CLOSURE WITH A TEMPORARY TRAFFIC BARRIER.

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

REVIEW EPG 616.6.83 WARNING LIGHTS FOR USE OF SEQUENTIAL FLASHING WARNING LIGHTS DURING NIGHTTIME OPERATIONS.

FOR ADVANCE WARNING RAIL SYSTEM, REFER TO EPG 616.6.2.2 ADVANCE WARNING RAIL SYSTEM.

REVIEW EPG 616.6.63 CHANNELIZING DEVICES FOR DIFFERENT TYPES AND GUIDELINES FOR THE DEVICES.

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- ADVANCED WARNING RAIL SYSTEM (AWRS)
- CHANNELIZER (TRIM LINE)
- DIRECTIONAL INDICATOR BARRICADE
- FLASHING ARROW PANEL (FAP)
- PROTECTED VEHICLE WITH TRUCK MOUNTED ATTENUATOR (TMA)
- WORK ZONE

TRAFFIC CONTROL
SHEET 4 OF 6

STATE OF MISSOURI
ANDREA S. DAVIS
PE-2018021250
PROFESSIONAL ENGINEER

DATE PREPARED	12/18/2024
ROUTE	D
STATE	MO
DISTRICT	CD
SHEET NO.	8
COUNTY	PHELPS
JOB NO.	J5S3549
CONTRACT ID.	.
PROJECT NO.	.
BRIDGE NO.	.

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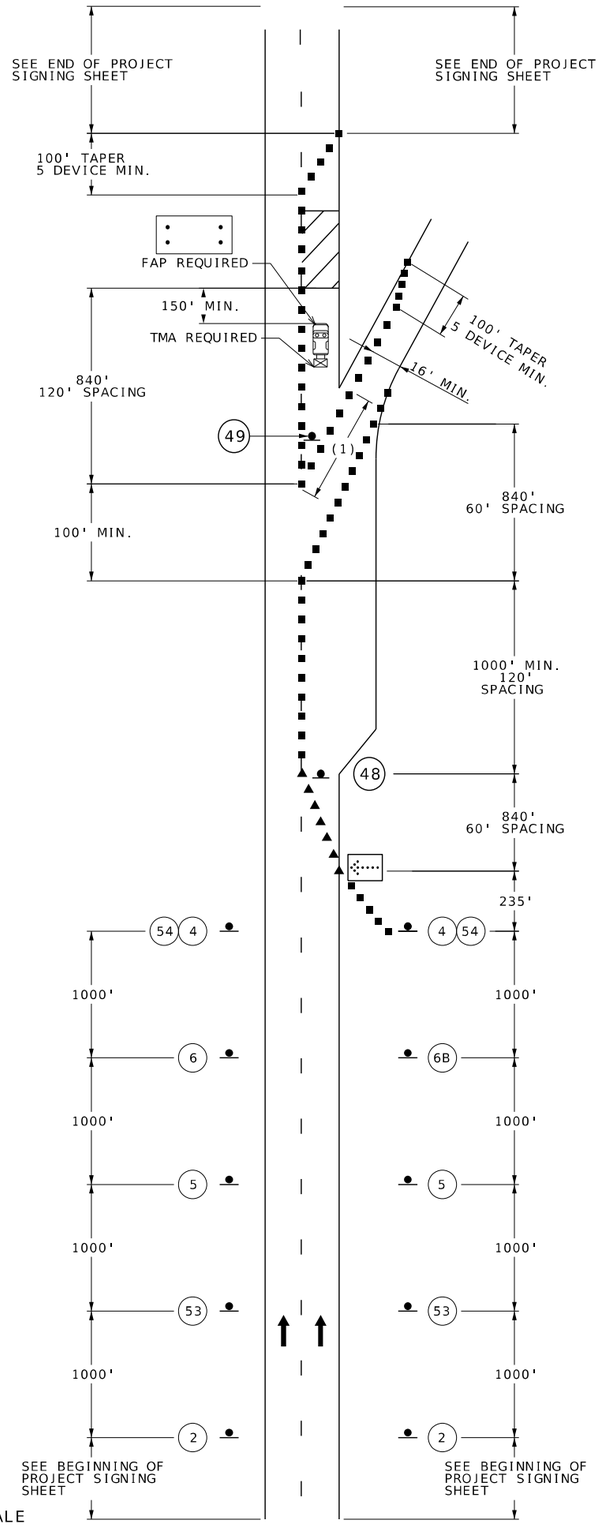
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

HR GREEN, INC.
520 MARYVILLE CENTRE DRIVE, SUITE 100
ST. LOUIS, MISSOURI 63141
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

STATIONARY WORK IN VICINITY OF AN EXIT RAMP



NOT TO SCALE

WO20-1 WITH AWRS

2

GO20-5aP

54

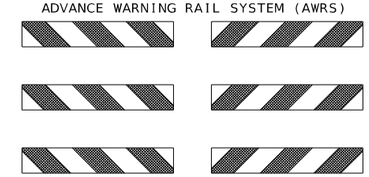
R2-1

4

WO20-5

5

ADVANCE WARNING RAIL SYSTEM (AWRS)



LEFT SIDE OF ROAD

RIGHT SIDE OF ROAD

WO20-6a

6

WO4-1aL

6B

E05-2

48

E05-1

49

CONST-3A

53

CHANNELIZER SPACING:

TAPERS: 60'
BUFFER/WORK AREAS: 120'

NOTES:

SEE PREVIOUS SHEET FOR TRAFFIC CONTROL NOTES.

(1) FIVE DEVICE MINIMUM.

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- ADVANCED WARNING RAIL SYSTEM (AWRS)
- CHANNELIZER (TRIM LINE)
- DIRECTIONAL INDICATOR BARRICADE
- FLASHING ARROW PANEL (FAP)
- PROTECTED VEHICLE WITH TRUCK MOUNTED ATTENUATOR (TMA)
- WORK ZONE

TRAFFIC CONTROL
SHEET 5 OF 6

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STATE OF MISSOURI
ANDREA S. DAVIS
PE-2018021250
PROFESSIONAL ENGINEER

DATE PREPARED	
12/18/2024	
ROUTE: D	STATE: MO
DISTRICT: CD	SHEET NO.: 9
COUNTY: PHELPS	
JOB NO.: J5S3549	
CONTRACT ID.: .	
PROJECT NO.: .	
BRIDGE NO.: .	

DESCRIPTION	DATE
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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
ST. LOUIS, MISSOURI 63141
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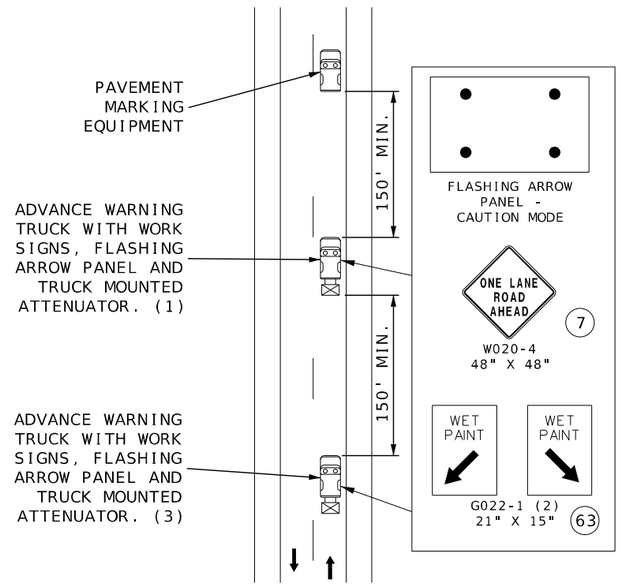
MOVING OPERATION ON HIGHWAY OPEN TO TRAFFIC STRIPING



TWO LANE UNDIVIDED HIGHWAY

NOTES:

UPON APPROVAL OF THE ENGINEER, THE CONTRACTOR MAY PROVIDE ADDITIONAL PROTECTIVE TRUCKS EQUIPPED WITH PROPER WARNING DEVICES.

PROTECTIVE TRUCK AND WORK VEHICLES SHALL DISPLAY HIGH-INTENSITY ROTATING, FLASHING, OSCILLATING, OR STROBE LIGHTS.

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

ADVANCED WARNING TRUCKS, FLASHING ARROW PANELS, TRUCK MOUNTED ATTENUATORS, AND SIGNS ARE INCIDENTAL TO PAVEMENT MARKINGS.

(1) TRUCK IS OPTIONAL ON TWO-LANE UNDIVIDED HIGHWAYS IF SIGNING AND ARROW BOARD IS MOUNTED ON THE PAVEMENT MARKING EQUIPMENT.

(2) WET PAINT SIGNS ARE INSTALLED TO INDICATE THE SIDE IN WHICH THE PAVEMENT MARKING MATERIAL IS BEING APPLIED. AT THE CONTRACTOR'S OPTION, A FRONT FACING WET PAINT SIGN MAY BE INSTALLED ON THE LEFT SIDE OF THE PAVEMENT MARKING EQUIPMENT.

(3) ADVANCE WARNING TRUCK IS POSITIONED AT THE NO TRACK POINT OF THE PAVEMENT MARKING MATERIAL OR SPACING SHOWN, WHICHEVER IS GREATER.

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STATE OF MISSOURI
ANDREA S. DAVIS
PE-2018021250
PROFESSIONAL ENGINEER

DATE PREPARED	12/18/2024
ROUTE	D
STATE	MO
DISTRICT	CD
SHEET NO.	1.0
COUNTY	PHELPS
JOB NO.	J5S3549
CONTRACT ID.	.
PROJECT NO.	.
BRIDGE NO.	.

DATE	DESCRIPTION
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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
ST. LOUIS, MISSOURI 63141
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608

TRAFFIC CONTROL
SHEET 6 OF 6

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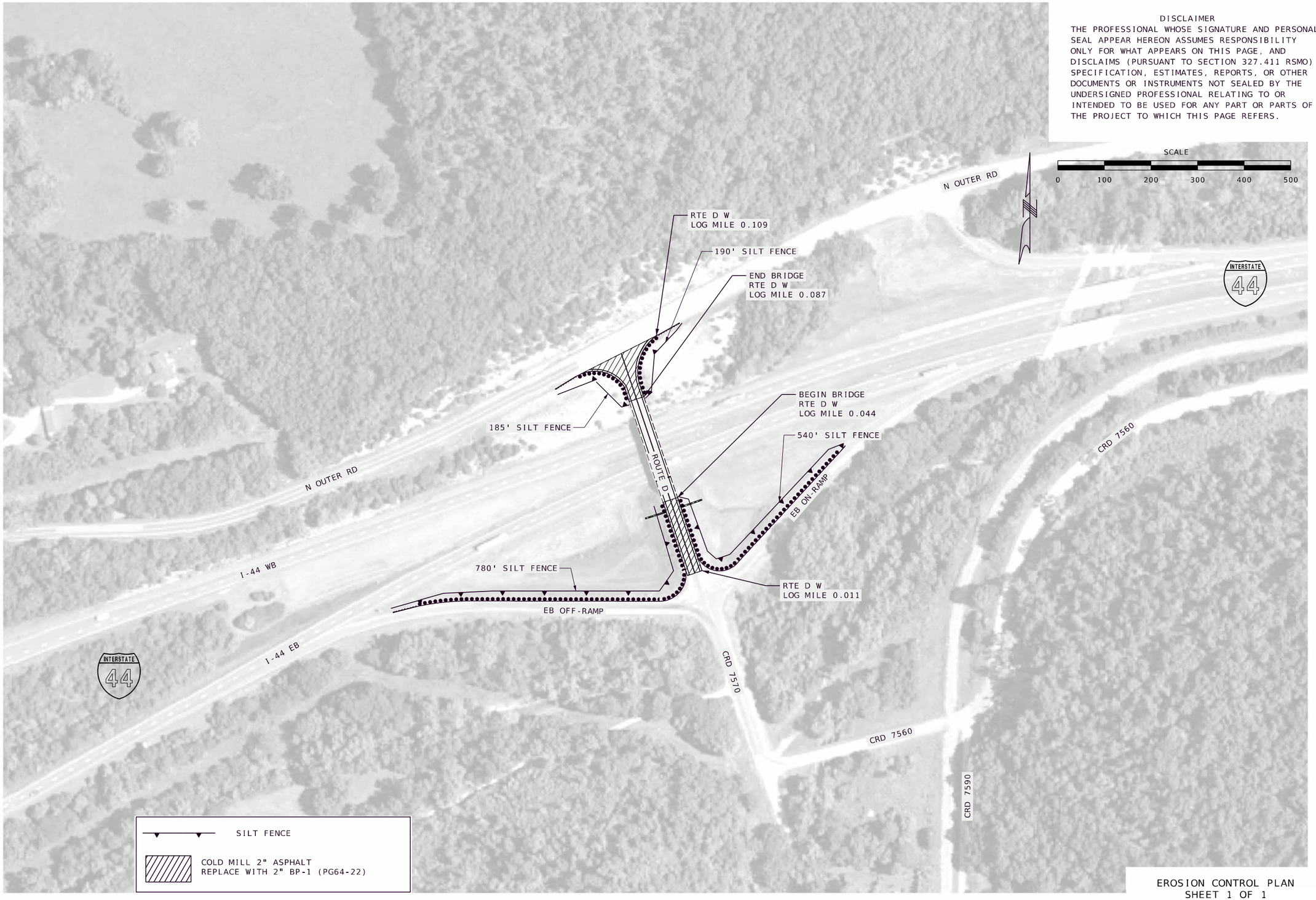

EROSION CONTROL PLAN
SHEET 1 OF 1

STATE OF MISSOURI
ALISON N. GRAVES
NUMBER
PE-2011015778
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED, AND DATED ELECTRONICALLY.

DATE PREPARED	
12/27/2024	
ROUTE	STATE
D	MO
DISTRICT	SHEET NO.
CD	1.1
COUNTY	
PHELPS	
JOB NO.	
J5S3549	
CONTRACT ID.	
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PROJECT NO.	
.	
BRIDGE NO.	
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DESCRIPTION	DATE
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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

MoDOT

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

5220 Oakland Ave.
St. Louis, MO 63110
(314) 863-5570

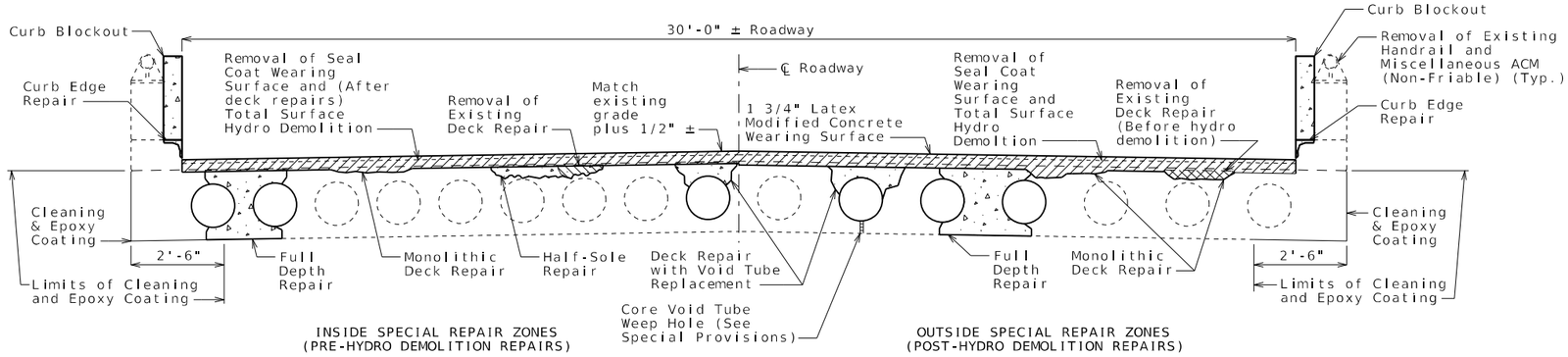
CIVIL DESIGN, INC.
www.cdi.biz
Missouri State Certificate of Authority #2002006804

REV.

P:\6XXX\66XX-67XX\6765 - MODOT Central Distric Bridge Rehabs over I44\28-Trans\CAD\J5S3549_RTED_A1634\011_EC_J5S3549_I100.dgn 1:54:33 PM 12/27/2024

SEC/SUR 24 TWP 37N RGE 10W

U.I.P. AND REHABILITATE EXISTING (37'-62'-62'-37') CONTINUOUS CONCRETE VOIDED SLAB SPANS



TYPICAL SECTION THRU EXISTING DECK

General Notes:

Design Specifications:

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

Design Loading:

H20-44 (1961)

Design Unit Stresses:

Class B-1 Concrete (Curb Blockouts) f'c = 4,000 psi

Class B-2 Concrete (Half-Sole, Full Depth Repairs & Deck Repair with Void Tube Replacement) f'c = 4,000 psi

Reinforcing Steel (ASTM A615 Grade 60) fy = 60,000 psi

Joint Filler:

All joint filler shall be in accordance with Sec 1057 for preformed sponge rubber expansion and partition joint filler, except as noted.

Open Cell Foam Joint:

Open cell foam joint seal size (width and depth) shall be determined by the manufacturer. Manufacturer recommended seal size shall meet the installation gap requirements and skew effect.

The open cell foam joint seal shall be installed according to the manufacturer's recommendations.

Any removals or other incidentals to install the open cell foam joint seal will be considered completely covered by the contract unit price for Open Cell Foam Joint Seal.

Reinforcing Steel:

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

Concrete Protective Coating:

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

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.

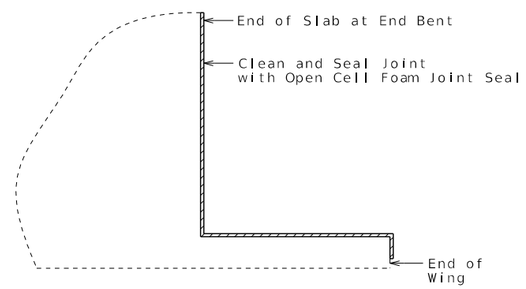
In order to maintain grade and a minimum thickness of wearing surface as shown on plans it may be necessary to use additional quantities of wearing surface at various locations throughout the structure. The cost of furnishing and installing the wearing surface will be considered completely covered in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

Curb repair and removal of existing handrails will be considered completely covered by the contract unit price for Curb Blockout.

The following locations shall be cleaned and sealed with Protective Coating - Concrete Bents and Piers (Epoxy):
- All exposed substructure concrete at the end bents
- Concrete barriers at the intermediate bents
- Exposed concrete columns of all intermediate bents to an elevation 15 feet above existing ground.

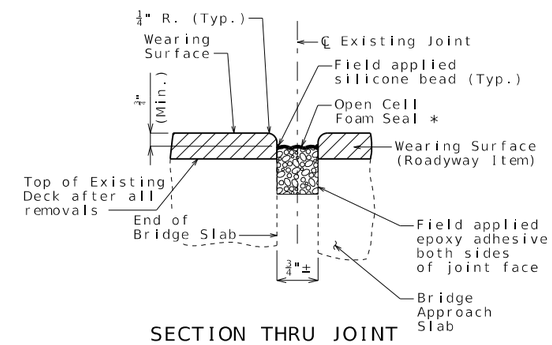
Traffic Handling:

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



CLEAN AND SEAL JOINT AT END BENTS

Right side shown, left side similar.



SECTION THRU JOINT

End of slab shown, section at wing similar.

* Manufacturer's recommended size

Estimated Quantities

	Item		Total
	Removal of Miscellaneous ACM (Non-Friable)	sq. foot	18
	Total Surface Hydro Demolition	sq. yard	668
	Removal of Seal Coat or Polymer Wearing Surface	sq. foot	6015
	Removal of Existing Deck Repair	sq. foot	150
*	Supplementary Wearing Surface Material	cu. yard	10
	Latex Modified Concrete Wearing Surface	sq. yard	668
	Diamond Grinding	sq. yard	668
	Curb Blockout	linear foot	424
	Half-Sole Repair	sq. foot	100
	Full Depth Repair	sq. foot	100
	Deck Repair with Void Tube Replacement	sq. foot	50
	Cleaning and Epoxy Coating	sq. foot	1727
	Cored Void Tube Weep Holes	each	228
	Protective Coating - Concrete Bents and Piers (Epoxy)	lump sum	1
	Open Cell Foam Joint Seal	linear foot	80

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

REPAIRS TO BRIDGE: ROUTE D
OVER ROUTE I-44

ROUTE D FROM ROUTE P TO ROUTE 28
ABOUT 3.3 MILES NORTH OF ROUTE P
BEGINNING STATION 6+40.75 ± (Match Existing)

Detailed May 2024
Checked Aug. 2024

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

STATE OF MISSOURI
KEVIN J. BREHM
PE-2010024490
PROFESSIONAL ENGINEER

DATE PREPARED	
1/14/2025	
ROUTE D	STATE MO
DISTRICT BR	SHEET NO. 1
COUNTY PHELPS	
JOB NO. J5S3549	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A16342	

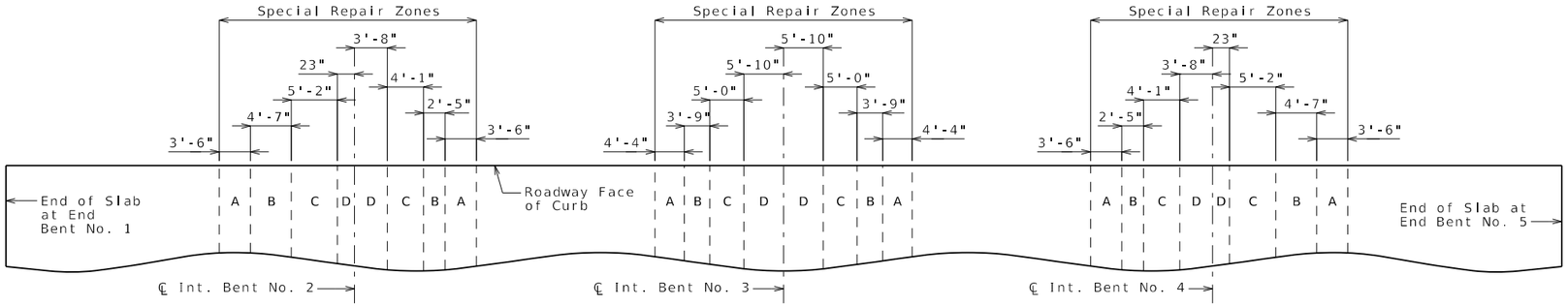
DESCRIPTION

DATE

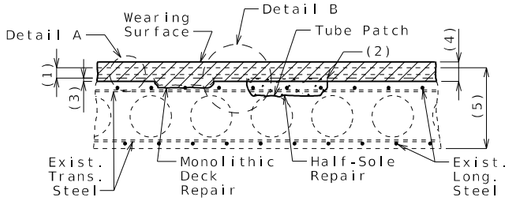
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

HR GREEN, INC.
520 MARYVILLE CENTRE DRIVE, SUITE 100
ST. LOUIS, MISSOURI 63141
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608

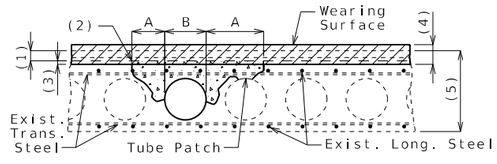
HRGreen



PART PLAN OF SLAB SHOWING SPECIAL REPAIR ZONES

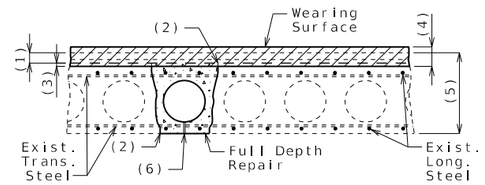


MONOLITHIC AND HALF-SOLE REPAIR



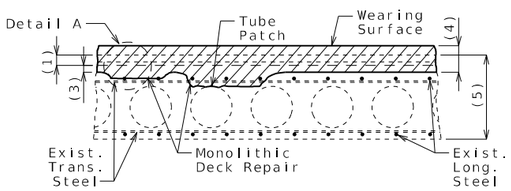
DECK REPAIR WITH VOID TUBE REPLACEMENT

A = Half-Sole Repair
B = Deck Repair with Void Tube Replacement

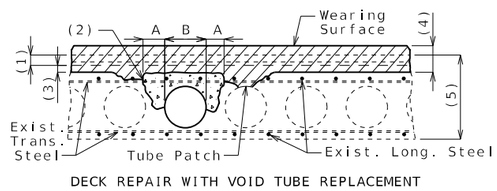


FULL DEPTH REPAIR

DECK REPAIR INSIDE SPECIAL REPAIR ZONES (BEFORE HYDRO DEMOLITION)

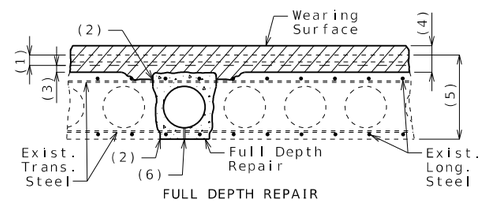


MONOLITHIC DECK REPAIR



DECK REPAIR WITH VOID TUBE REPLACEMENT

A = Half-Sole Repair
B = Deck Repair with Void Tube Replacement



FULL DEPTH REPAIR

DECK REPAIR OUTSIDE SPECIAL REPAIR ZONES (AFTER HYDRO DEMOLITION)

(1) Removal of existing 1/2"± seal coat wearing surface plus 1/4" of existing deck

(2) 1" vertical side shall be established outside the deteriorated area.

(3) Total surface hydro demolition of sound concrete, measured to mortar line:

1/4" minimum inside special repair zones

1/2" minimum outside special repair zones

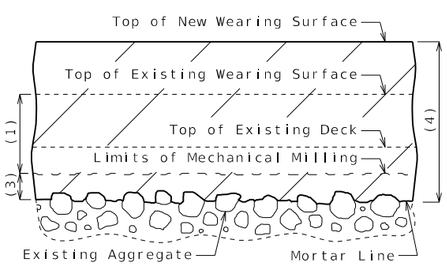
(4) Latex modified concrete wearing surface:

1 1/2" minimum inside special repair zones

1 3/4" minimum outside special repair zones

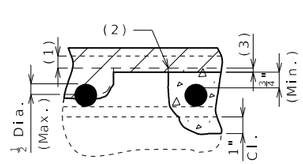
(5) Original depth

(6) Restore existing weep hole, if encountered.



MILLING AND HYDRO DEMOLITION LIMITS

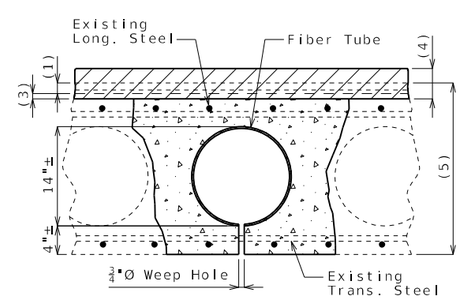
DETAIL A



DETAIL B

Monolithic deck repair shall be used when only half the diameter or less of the top bar is exposed.

Clearance around top bar and around bottom bar at the intersection of top bar shall be required when more than half the diameter of the top bar is exposed.



FIBER VOID TUBE REPLACEMENT

Fiber tubes for producing voids shall have an approximate outside diameter of 14 inches and a wall thickness of 1/4 inch and shall be anchored to joists carrying the floor form at not more than 4-foot centers.

One 3/4"Ø weep hole shall be provided at 2 inches from each end of each new void.

Deck Repair Notes:

Order of Repair:

1. Remove existing wearing surface plus 1/4" of existing deck.
2. Power wash deck to identify sound and unsound existing deck repair.
3. Inside special repair zones, complete the following repairs:
   a. Removal of existing deck repair
   b. Half-sole repair
   c. Deck repair with void tube replacement
   d. Full depth repair
4. Outside special repair zones, remove existing deck repair.
5. Complete total surface hydro demolition, removing 1/4" minimum of sound concrete inside special repair zones and removing 1/2" minimum of sound concrete and all deteriorated concrete outside special repair zones.
6. Sound deck and if needed complete incidental concrete removal.
7. Outside special repair zones, complete the following repairs:
   a. Deck repair with void tube replacement
   b. Full depth repair
8. Place new wearing surface including additional material for areas of monolithic deck repair.

Special Repair Zones:

Deck repair required in the areas designated as special repair zones shall be completed before hydro demolition in alphabetical sequence beginning with Zone A. Zones with the same letter designation may be repaired at the same time. Hydro demolition shall not move forward until the repairs in all special repair zones are completed and properly cured.

Any deck repair in areas not designated as a special repair zone shall be completed after hydro demolition.

Removal and deck repair shall be completed in one special repair zone and concrete shall have attained a compressive strength of 3200 psi before work can be started in the next special repair zone.

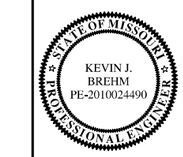
If any single repair area does not exceed 4 square feet in size and the total repair area within a special repair zone does not exceed 12 square feet, the special repair zone may be repaired at the same time as an adjacent zone.

Void Repair:

Any damage sustained to the void tube as a result of the contractor's operations shall be patched or replaced as required by the engineer at the contractor's expense.

An exposed void in the deck shall be patched as approved by the engineer in a manner that shall maintain the void area completely free of concrete. Cost of patching an exposed void will be considered completely covered by the contract unit price for Half-Sole Repair inside special repair zones and Monolithic Deck Repair outside special repair zones.

When a deteriorated portion of the void tube is beyond the point of patching as determined by the engineer, the portion of the deteriorated void tube shall be replaced. The void area shall be maintained completely free of concrete. Cutting of the longitudinal reinforcing steel will not be permitted. The fiber tubes for producing the voids shall have an outside diameter with the wall thickness the same as the existing tubes and anchored at not more than the original spacing. Cost of replacing the void tube will be considered completely covered by the contract unit price for Deck Repair with Void Tube Replacement. Measurement will be horizontal projection of the area of expose tube in plan.



DATE PREPARED	1/10/2025
ROUTE	D
STATE	MO
DISTRICT	BR
SHEET NO.	2
COUNTY	PHELPS
JOB NO.	J5S3549
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A16342

DESCRIPTION

DATE

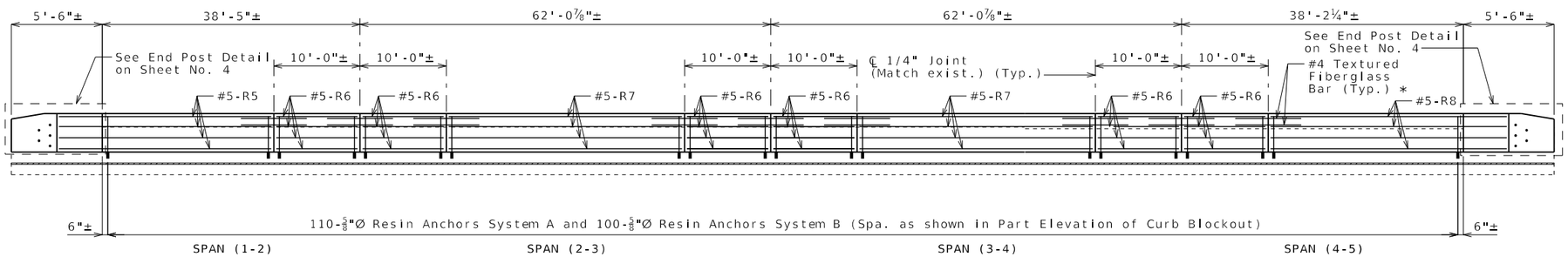
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

HR GREEN, INC.
520 MARYVILLE CENTRE DRIVE, SUITE 100
ST. LOUIS, MISSOURI 63141
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

Detailed Aug. 2024
Checked Aug. 2024

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

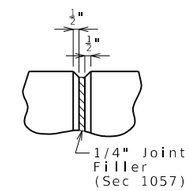
DECK REPAIR DETAILS



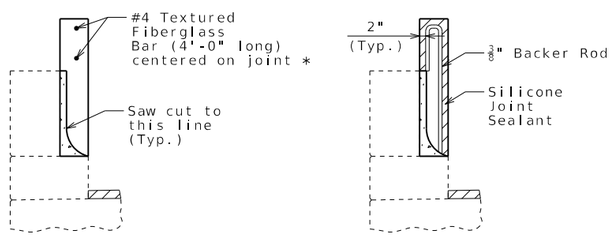
ELEVATION OF LEFT CURB BLOCKOUT

(Right curb blockout similar)

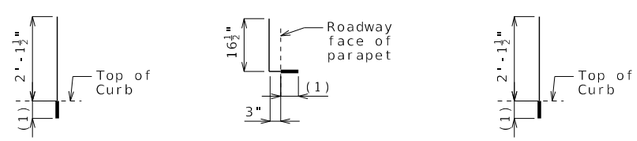
Longitudinal dimensions are along grade and are taken at top outside edge of parapet.



PART ELEVATION AT FORMED JOINT



SECTION THRU SAW CUT JOINT



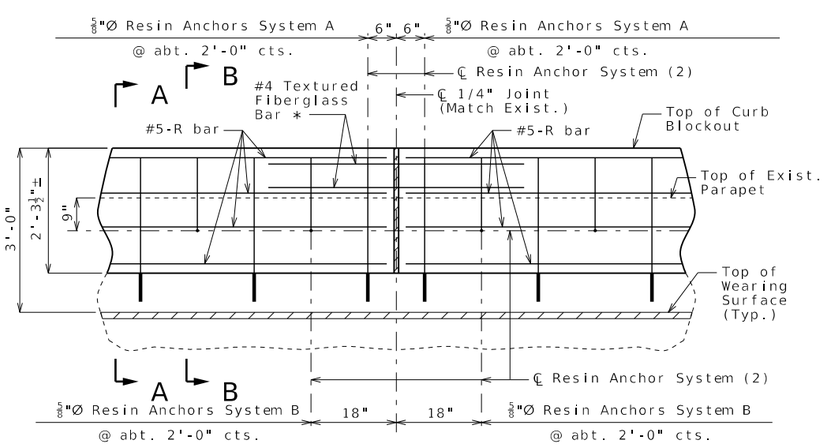
RESIN ANCHOR SYSTEM A
(220 req'd)
(Install in curb)

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

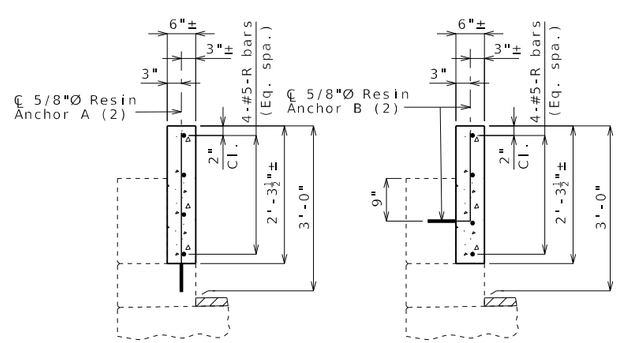
RESIN ANCHOR SYSTEM C
(64 req'd)
(Install in curb at end post)

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

DETAILS OF RESIN ANCHORS



PART ELEVATION OF CURB BLOCKOUT



SECTION A-A

SECTION B-B

Notes:

* Slip-formed option only.

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

Concrete in curb blockout shall be Class B-1.

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

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

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

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

All curb blockout reinforcement shall be epoxy coated.

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

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

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

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

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

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

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

CURB BLOCKOUT

Detailed Jun. 2024
Checked Aug. 2024

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

STATE OF MISSOURI
KEVIN J. BREHM
PE-2010024490
PROFESSIONAL ENGINEER

DATE PREPARED	
1/10/2025	
ROUTE: D	STATE: MO
DISTRICT: BR	SHEET NO.: 3
COUNTY: PHELPS	
JOB NO.: J5S3549	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.: A16342	

DATE	DESCRIPTION

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
ST. LOUIS, MISSOURI 63141
PHONE: (636) 519.0990
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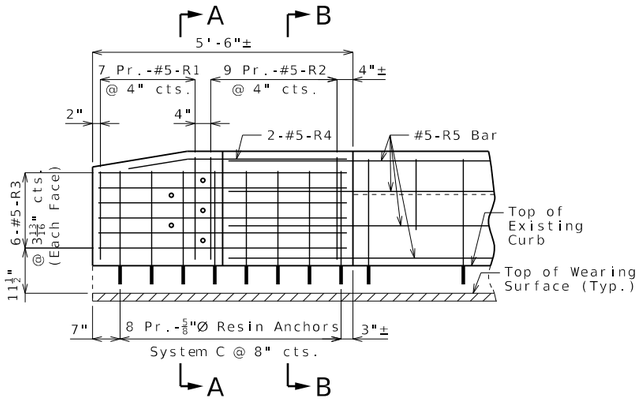
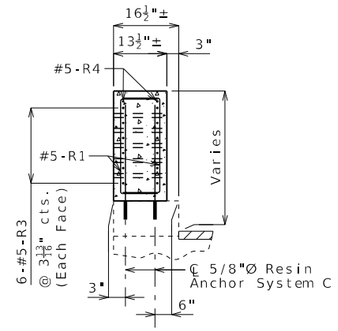
HRGreen

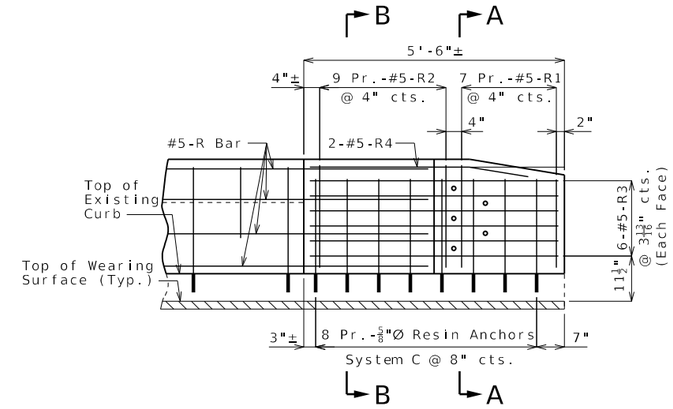


ELEVATION SHOWING REINFORCEMENT

(Right End Post at End Bent No. 5 similar)

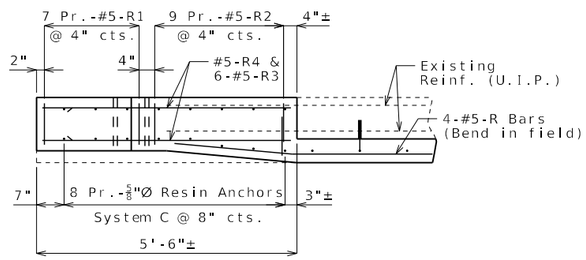


SECTION A-A



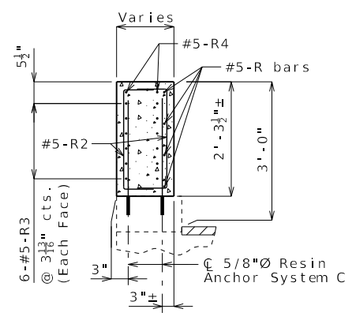
ELEVATION SHOWING REINFORCEMENT

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

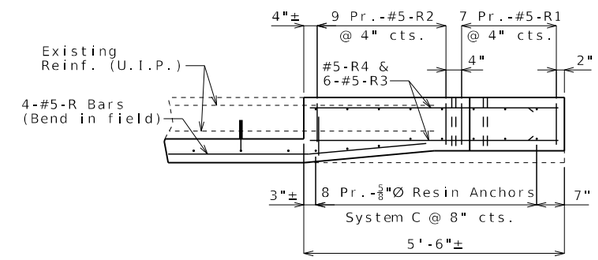


PLAN SHOWING REINFORCEMENT

LEFT END POST AT END BENT NO. 1

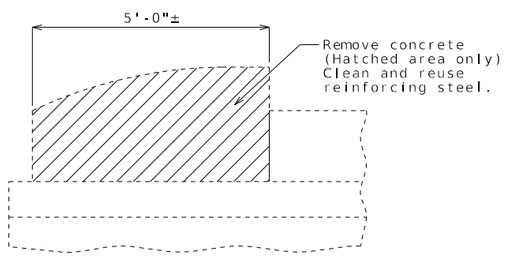


SECTION B-B



PLAN SHOWING REINFORCEMENT

LEFT END POST AT END BENT NO. 5



PART ELEVATION SHOWING END POST
CONCRETE REMOVAL

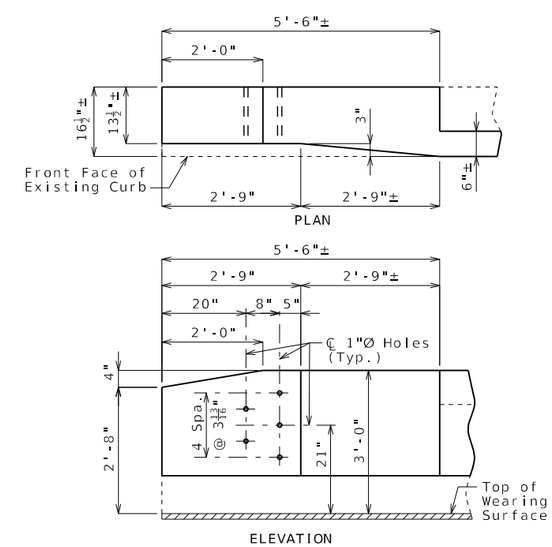
Cost of removing existing end posts will be considered completely covered by the contract unit price for Curb Blockout.

Notes:

Work this sheet with Sheet No. 3.

For details of resin anchors, see Sheet No. 3.

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



DETAILS OF END POST AND
GUARD RAIL ATTACHMENT

CURB BLOCKOUT AT END BENTS

Detailed Aug. 2024
Checked Aug. 2024

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

STATE OF MISSOURI
KEVIN J. BREHM
PE-2010024490
PROFESSIONAL ENGINEER

DATE PREPARED	
1/10/2025	
ROUTE D	STATE MO
DISTRICT BR	SHEET NO. 4
COUNTY PHELPS	
JOB NO. J5S3549	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A16342	

DATE	DESCRIPTION

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
ST. LOUIS, MISSOURI 63141
PHONE: (636) 519.0990
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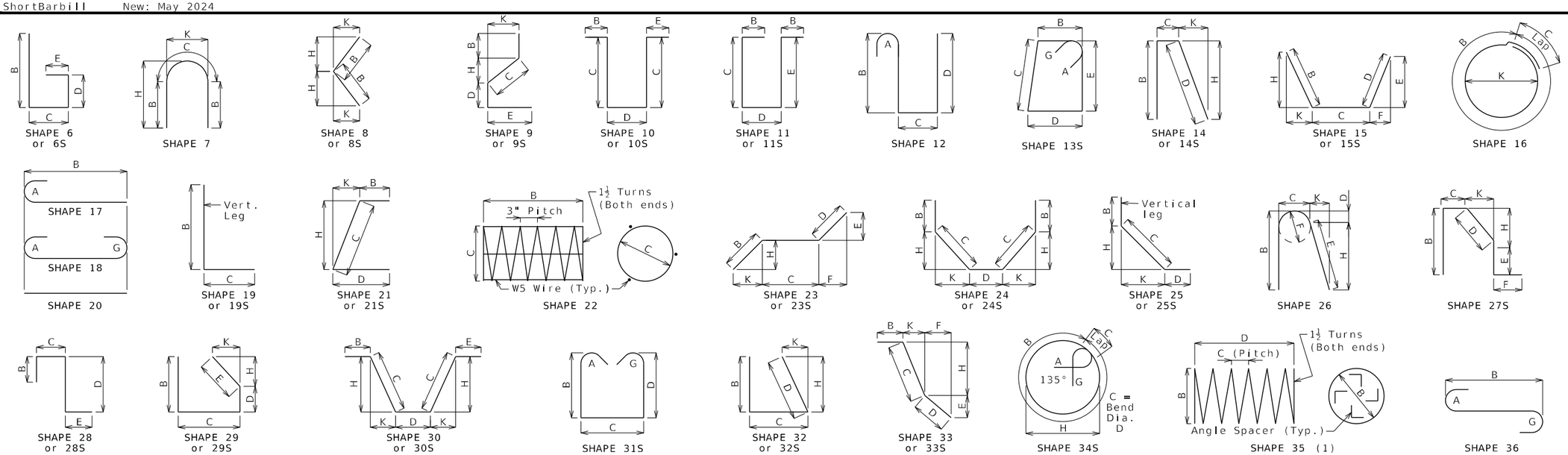
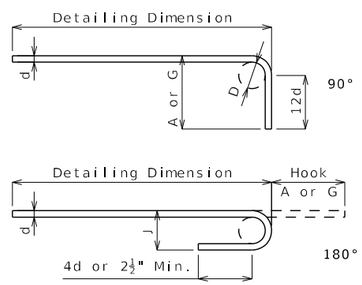
HRGreen



Finished Bend Diameters D and Hook Dimensions

Standard Pin Bend Shapes

Size	Case	D	A or G 90°	A or G 180°	J 180°
#4	1	3"	8"	6"	4"
#5	1	3¾"	10"	7"	5"
#6	1	4½"	12"	8¼"	6"
#7	2	5¼"	14"	9¾"	7"
	3	7"	15"	11½"	8¾"
#8	2	6"	16"	11"	8"
	3	8"	17"	13¼"	10"
#9	1	9½"	19½"	15½"	11¾"
#10	1	10¾"	22"	17½"	13¼"
#11	1	12"	24½"	19½"	14⅞"
#14	1	18¼"	31¼"	27½"	21⅝"
#18	1	24"	41½"	36¼"	28½"

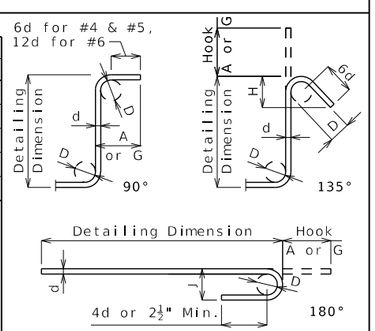


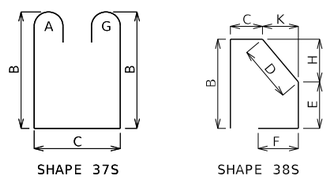
Stirrup Pin Bend Shapes (S)

Size	Case	D	A or G 90°	A or G 135°	A or G 180°	H 135°	J 180°
#4	2	2"	4½"	4½"	5"	2⅞"	3"
	3	3"	5"	5¼"	6"	3"	4"
#5	2	2½"	5¾"	5¾"	5¾"	3⅝"	3¾"
	3	3¾"	6¼"	6½"	7"	3⅞"	5"
#6	1	4½"	12"	7¾"	8¼"	4⅝"	6"

Applicable for all grades of steel.

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





BENDING DIAGRAMS

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 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.

All dimensions are out to out.

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

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

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

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

Reinforcing Steel Totals (Pounds)

Size	Substructure Plain	Substructure Epoxy	Superstructure Slab	Superstructure Barrier	Superstructure Slip Form	Entire Bridge Plain	Entire Bridge Epoxy
5	0	0	0	2477	0	0	2477

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

Bill of Reinforcing Steel

No. Req.	Size/ Mark	Location	Codes C	Codes SH	Codes V	B ft in.	C ft in.	D ft in.	E ft in.	F ft in.	H ft in.	K ft in.	Nom. Length ft in.	Actual Length ft in.	Weight lb
		Curb Blockout													
56	5 R1	BLOCKOUT	E	10S	8		10.50	2 0.50					3 10	3 8	
		INCREMENT =					10.50	20.50					3 6	3 2	200
		0.667 INCH													
72	5 R2	BLOCKOUT	E	10S			10.50	2 0.50					3 10	3 8	275
48	5 R3	BLOCKOUT	E	20		5 3.00							5 3	5 3	263
8	5 R4	BLOCKOUT	E	14S			3 4.25	1 3.25			2.50	1 3.00	4 8	4 8	39
8	5 R5	BLOCKOUT	E	20		30 11.00							30 11	30 11	258
48	5 R6	BLOCKOUT	E	20		9 9.00							9 9	9 9	488
16	5 R7	BLOCKOUT	E	20		41 10.00							41 10	41 10	698
8	5 R8	BLOCKOUT	E	20		30 8.00							30 8	30 8	256

BENDING DIAGRAMS AND REINFORCING STEEL TOTALS

Detailed Aug. 2024
Checked Aug. 2024

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

STATE OF MISSOURI
KEVIN J. BREHM
PE-2010024490
PROFESSIONAL ENGINEER

DATE PREPARED 1/10/2025
ROUTE D | STATE MO
DISTRICT BR | SHEET NO. 5
COUNTY PHELPS
JOB NO. J5S3549
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A16342

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
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PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

PLANS FOR PROPOSED STATE HIGHWAY

PHELPS COUNTY

DESIGN DESIGNATION

A.A.D.T. - 2022 = 12,492
A.A.D.T. - 2042 = 19,987
D.H.V. = 8.9%
T = 7.1%
V = 35 M.P.H.
D = 52.5%

FUNCTIONAL CLASSIFICATION-MINOR ARTERIAL

NO NEW RIGHT OF WAY REQUIRED

CONVENTIONAL SYMBOLS

(USED IN PLANS)

	EXISTING	NEW
BUILDINGS AND STRUCTURES		
GUARD RAIL		
GUARD CABLE		
CONCRETE RIGHT-OF-WAY MARKER		
STEEL RIGHT-OF-WAY MARKER		
LOCATION SURVEY MARKER		
UTILITIES		
FIBER OPTICS	—FO—	—FO—
OVERHEAD CABLE TV	—OTV—	—OTV—
UNDERGROUND CABLE TV	—UTV—	—UTV—
OVERHEAD TELEPHONE	—OT—	—OT—
UNDERGROUND TELEPHONE	—UT—	—UT—
OVERHEAD POWER	—OE—	—OE—
UNDERGROUND POWER	—UE—	—UE—
SANITARY SEWER	—S—	—S—
STORM SEWER	—SS—	—SS—
GAS	—G—	—G—
WATER	—W—	—W—
MANHOLE	SAN	
FIRE HYDRANT	HYD	
WATER VALVE	WV	
WATER METER	WM	
DROP INLET		
DITCH BLOCK		
GROUND MOUNTED SIGN	SIGN	
LIGHT POLE		
H-FRAME POWER POLE		
TELEPHONE PEDESTAL	PED	
FENCE		
CHAIN LINK	—V—	
WOVEN WIRE	—X—	
GATE POST		
BENCHMARK	BM	

NOTE: DASHED OR OPEN SYMBOLS INDICATE EXISTING FEATURES

KEY MAP
LOCATION OF PHELPS COUNTY

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

INDEX OF SHEETS

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A1259	1-7

LENGTH OF PROJECT

BEGINNING OF PROJECT STA. 879+47.81
END OF PROJECT STA. 882+63.66

APPARENT LENGTH 315.85 FEET

EQUATIONS AND EXCEPTIONS: NONE

TOTAL CORRECTIONS 0.00 FEET
NET LENGTH OF PROJECT 315.85 FEET
STATE LENGTH 0.060 MILES

FOR INFORMATION ONLY
ESTIMATED DISTURBED ACRES 0.18 ACRE

STATE OF MISSOURI
ERIC J. REINKEMEYER
NUMBER PE-2006002846
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 1/21/2025

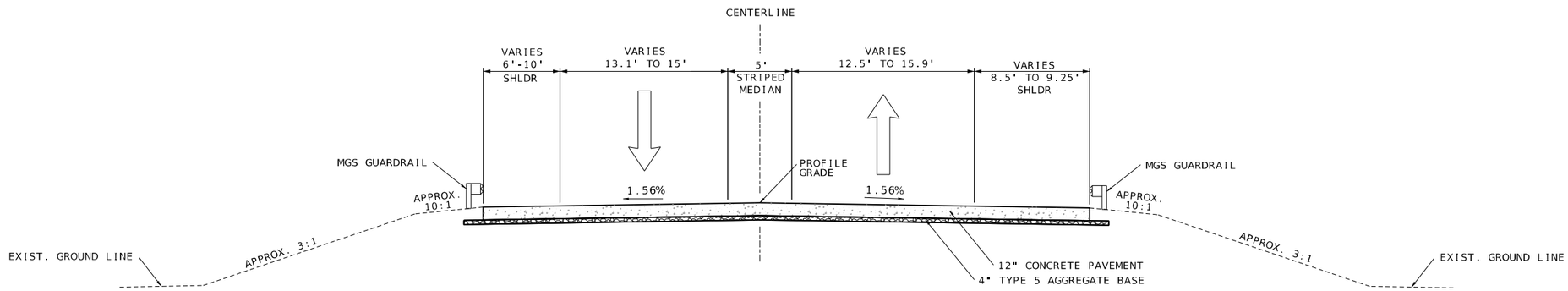
ROUTE	STATE
BL-44	MO
DISTRICT	SHEET NO.
CD	1

COUNTY PHELPS
JOB NO. J5S3563
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)

Hg Consult Inc engineers planners
7733 N. Wallace Ave.: Kansas City, MO 64158: (816)256-5153
Hg CONSULT, INC.
PRO. ENGINEER 2010005873



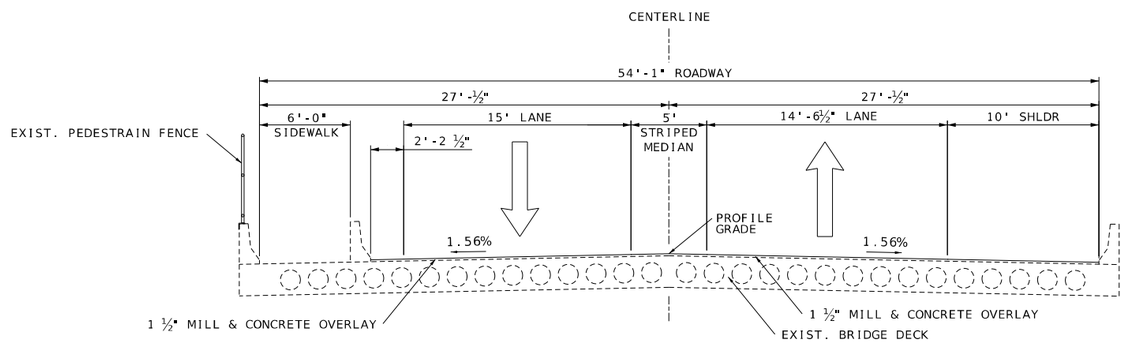
PROPOSED TYPICAL SECTION BL-44

STA. 879+47.81 TO STA. 882+63.66

BRIDGE EXCEPTION STA. 879+87.02 TO STA. 882+25.68

BRIDGE APPROACH SLAB (MINOR) STA. 879+66.84 TO STA. 879+87.02 AND STA. 882+25.68 TO 882+45.69

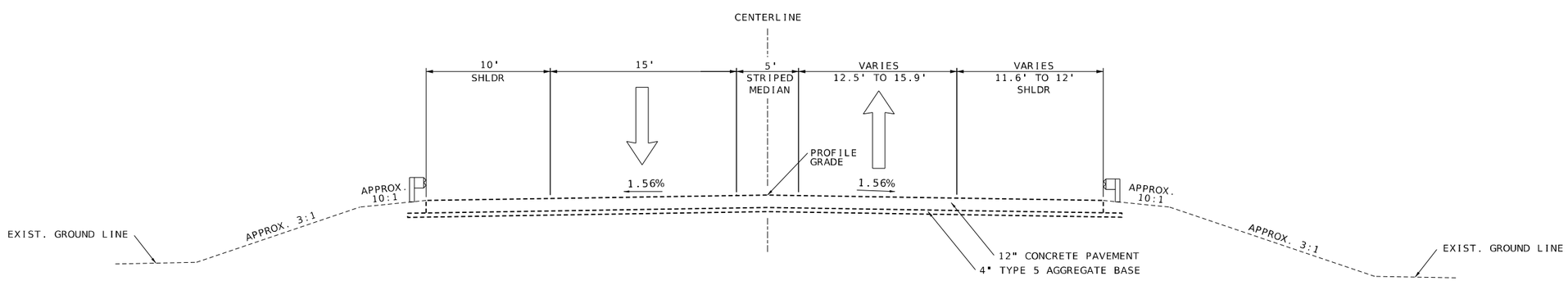
CONCRETE APPROACH PAVEMENT STA. 879+47.81 TO STA. 879+66.84 AND STA. 882+45.69 TO 882+63.66



PROPOSED TYPICAL SECTION BL-44

BRIDGE A1259

STA. 879+87.02 TO STA. 882+25.68



EXISTING TYPICAL SECTION BL-44

STA. 879+47.81 TO STA. 882+63.66

BRIDGE EXCEPTION STA. 879+87.02 TO STA. 882+25.68

TYPICAL SECTIONS
SHEET 1 OF 1

STATE OF MISSOURI
ERIC J. REINKEMEYER
NUMBER PE-2006002846
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED	12/30/2024
ROUTE	BL-44
STATE	MO
DISTRICT	CD
SHEET NO.	2
COUNTY	PHELPS
JOB NO.	J5S3563
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

Hg Consult inc engineers planners
7733 N. Wallace Ave.: Kansas City, MO 64158: (816)256-5153

Hg CONSULT, INC.
PRO. ENGINEER 2010005873

MOBILIZATION
1 LUMP SUM

CLEARING AND GRUBBING
0.18 ACRE
PAY TOTALS: 1 ACRE

CONTRACTOR FURNISHED SURVEYING AND STAKING
1 LUMP SUM

REMOVAL OF IMPROVEMENTS

SHEET	STA	STA	ROUTE	LOCATION	OFFSET	DESCRIPTION	UNITS	QUANTITY
4	878+99.66	879+76.42	BL-44	WEST BRIDGE APPROACH	RIGHT	GUARDRAIL	LF	71
4	879+32.17	879+98.41	BL-44	WEST BRIDGE APPROACH	LEFT	GUARDRAIL	LF	71
4	879+47.81	879+87.02	BL_44	WEST BRIDGE APPROACH	BOTH	PAVEMENT/SHOULDERS	SY	231.0
4	882+14.32	882+81.90	BL-44	EAST BRIDGE APPROACH	RIGHT	GUARDRAIL	LF	71
4	882+25.68	882+63.66	BL-44	EAST BRIDGE APPROACH	BOTH	PAVEMENT/SHOULDERS	SY	213.7
4	882+34.85	883+36.04	BL-44	EAST BRIDGE APPROACH	LEFT	GUARDRAIL	LF	97
								1 LUMP SUM

CONCRETE APPROACH PAVEMENT

SHEET	STA	STA	ROUTE	LOCATION	OFFSET	CONCRETE APPROACH PAVEMENT (1) (SY)
4	879+47.81	879+66.84	BL-44	WEST BRIDGE APPROACH	BOTH	122.0
4	882+45.69	882+63.66	BL-44	EAST BRIDGE APPROACH	BOTH	113.0
					PAY TOTALS:	235.0

(1) PLACEMENT OF 4" TYPE 5 AGGREGATE BASE AND ¾" JOINT FILLER IS INCLUDED IN THE CONTRACT UNIT PRICE FOR CONCRETE APPROACH PAVEMENT

TEMPORARY EROSION CONTROL

SHEET	STA	STA	ROUTE	LOCATION	OFFSET	SILT FENCE (LF)	SEDIMENT REMOVAL (CY)
14	878+10.81	879+89.23	BL-44	WEST BRIDGE APPROACH	RIGHT	179	2
14	878+65.66	880+11.40	BL-44	WEST BRIDGE APPROACH	LEFT	175	2
14	882+00.17	883+48.96	BL-44	EAST BRIDGE APPROACH	RIGHT	171	2
					PAY TOTALS:	525	6

TEMPORARY PAVEMENT MARKING

PHASE	STA	STA	ROUTE	LOCATION	OFFSET	4-IN SOLID WHITE LF	4-IN SOLID YELLOW LF	REMOVAL AFTER PHASE LF
1	878+10	883+59	BL-44	EB	BOTH	553		553
1	878+10	883+59	BL-44	EB	BOTH		551	551
2	878+10	883+71	BL-44	EB	BOTH	585		585
2	878+10	883+59	BL-44	EB	BOTH		560	560
					PAY TOTALS:	1,138	1,111	2,249

SEEDING, COOL SEASON MIX

SHEET	STA	STA	ROUTE	LOCATION	OFFSET	SEEDING (AC)
4	878+11.21	879+73.24	BL-44	WEST BRIDGE APPROACH	RIGHT	0.1
4	878+67.98	879+98.09	BL-44	WEST BRIDGE APPROACH	LEFT	0.1
4	882+13.52	883+50.80	BL-44	EAST BRIDGE APPROACH	RIGHT	0.1
					SUBTOTAL:	0.3
					PAY TOTALS:	1.0

MGS GUARDRAIL

SHEET	STA	STA	ROUTE	LOCATION	OFFSET	MGS GUARDRAIL (LF)	GUARDRAIL TYPE A (LF)	MGS VERTICAL CONCRETE BARRIER TRANSITION (EA)	BRIDGE ANCHOR SECTION, 6.5' POSTS (SAFETY BARRIER CURB) (EA)	ASYMMETRICAL TRANSITION SECTION (6.5' POSTS) (EA)	TYPE A CRASHWORTHY END TERMINAL MASH (EA)	SHAPING SLOPES CLASS III (STA)
4	878+68.44	879+75.96	BL-44	WEST BRIDGE APPROACH	RIGHT		31.5		1	1	1	1
4	879+04.81	879+97.35	BL-44	WEST BRIDGE APPROACH	LEFT	12.5		1			1	1
4	882+15.36	883+10.38	BL-44	EAST BRIDGE APPROACH	RIGHT	12.5		1			1	1
					PAY TOTALS:	25	32	2	1	1	3	3

PAVEMENT MARKING

SHEET	STA	STA	ROUTE	LOCATION	OFFSET	HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT, TYPE L BEADS: 4-IN SOLID WHITE (LF)	4-IN SOLID YELLOW (LF)	24-IN SOLID YELLOW (LF)	24-IN SOLID WHITE (LF)	YIELD LINE TRIANGLES (EA)	REMARKS
14	878+10.00	883+85.00	BL-44	EB	RIGHT	589					DOUBLE YELLOW
14	878+10.00	883+60.00	BL-44	EB	RIGHT		1,108				
14	883+18.60	883+66.78	BL-44	EB	RIGHT				18		HASH MARKS, SPACED @ 25'
14	883+52.00		BL-44	EB	RIGHT					10	
14	879+13.02	883+18.18	BL-44	CTR	CTR			65			HASH MARKS, SPACED @ 50'
14	878+00.00	883+92.00	BL-44	WB	LEFT	628					
14	878+23.00	883+69.00	BL-44	WB	LEFT		1,108				DOUBLE YELLOW
14	878+31.00		BL-44	WB	LEFT					11	
					PAY TOTALS:	1,217	2,216	65	18	21	

SUMMARY OF QUANTITIES
SHEET 1 OF 2

STATE OF MISSOURI
ERIC J. REINKEMEYER
NUMBER PE-2006002846
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 12/30/2024
ROUTE BL-44 | STATE MO
DISTRICT CD | SHEET NO. 3
COUNTY PHELPS
JOB NO. J5S3563
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)

Hg Consult Inc engineers planners
7733 N. Wallace Ave.: Kansas City, MO 64158: (816)256-5153
Hg CONSULT, INC.
PRO. ENGINEER 2010005873

EFFECTIVE: 07-01-2024

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL AREA SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NUM.	DESCRIPTION
WARNING SIGNS								
WO1-1L	48X48	16.00						TURN (SYMBOL LEFT)
WO1-1R	48X48	16.00						TURN (SYMBOL RIGHT)
WO1-2L	48X48	16.00						CURVE (SYMBOL LEFT)
WO1-2R	48X48	16.00						CURVE (SYMBOL RIGHT)
WO1-3L	48X48	16.00						REVERSE TURN (SYMBOL LEFT)
WO1-3R	48X48	16.00						REVERSE TURN (SYMBOL RIGHT)
WO1-4L	48X48	16.00	1	16.00			15(L)	REVERSE CURVE (SYMBOL LEFT)
WO1-4R	48X48	16.00	1	16.00			15(R)	REVERSE CURVE (SYMBOL RIGHT)
WO1-4bL	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL LEFT)
WO1-4bR	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL RIGHT)
WO1-4cL	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL LEFT)
WO1-4cR	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL RIGHT)
WO1-6	60X30	12.50						HORIZONTAL ARROW (SYMBOL)
WO1-6a	72X36	18.00						HORIZ. ARROW (SYMBOL ON PERMANENT BARRICADE)
WO1-7	60X30	12.50						DOUBLE HEAD HORIZONTAL ARROW (SYMBOL)
WO1-7a	72X36	18.00						DOUBLE HEAD HORIZ. ARROW (SYMBOL ON PERM. BARR.)
WO1-8	18X24	3.00						CHEVRON (SYMBOL)
WO1-8a	30X36	7.50						CHEVRON (SYMBOL FOR DIVIDED HIGHWAYS)
WO3-1	48X48	16.00						STOP AHEAD (SYMBOL)
WO3-2	48X48	16.00						YIELD AHEAD (SYMBOL)
WO3-3	48X48	16.00						SIGNAL AHEAD (SYMBOL)
WO3-4	48X48	16.00						BE PREPARED TO STOP
WO3-5	48X48	16.00						SPEED LIMIT AHEAD
WO4-1L	48X48	16.00						MERGE (SYMBOL FROM LEFT)
WO4-1R	48X48	16.00						MERGE (SYMBOL FROM RIGHT)
WO4-1aL	48X48	16.00	1	16.00			6A	MERGE (LEFT)
WO4-1aR	48X48	16.00	2	32.00			6A	MERGE (RIGHT)
WO5-1	48X48	16.00						ROAD/BRIDGE/RAMP NARROWS
WO5-3	48X48	16.00						ONE LANE BRIDGE
WO5-5	48X48	16.00						NARROW LANES
WO6-1	48X48	16.00						DIVIDED HIGHWAY (SYMBOL)
WO6-2	48X48	16.00						DIVIDED HIGHWAY END (SYMBOL)
WO6-3	48X48	16.00						TWO WAY TRAFFIC (SYMBOL)
WO7-3a	30X24	5.00						NEXT XX MILES (PLAQUE)
WO8-1	48X48	16.00						BUMP
WO8-2	48X48	16.00						DIP
WO8-3	48X48	16.00						PAVEMENT ENDS
WO8-4	48X48	16.00						SOFT SHOULDER
WO8-5	48X48	16.00						SLIPPERY WHEN WET (SYMBOL)
WO8-6	48X48	16.00						TRUCK CROSSING
WO8-6c	48X48	16.00						TRUCK ENTRANCE
WO8-7	36X36	9.00						LOOSE GRAVEL
WO8-7a	36X36	9.00						FRESH OIL / LOOSE GRAVEL
WO8-9	48X48	16.00						LOW SHOULDER
WO8-11	48X48	16.00						UNEVEN LANES
WO8-12	48X48	16.00						NO CENTER LINE
WO8-15	48X48	16.00						GROOVED PAVEMENT
WO8-15P	30X24	5.00						MOTORCYCLE (PLAQUE)
WO8-17L	48X48	16.00						SHOULDER DROP-OFF (SYMBOL LEFT)
WO8-17R	48X48	16.00						SHOULDER DROP-OFF (SYMBOL RIGHT)
WO8-17P	30X24	5.00						SHOULDER DROP-OFF (PLAQUE)
W9-3L	48X48	16.00						LANE SPLIT
W10-1	42RND.	9.62						RAILROAD CROSSING
WO12-1	36X36	9.00						DOUBLE DOWN ARROW (SYMBOL)
WO12-2	48X48	16.00						LOW CLEARANCE (SYMBOL)
W012-2x	24X18	3.00						LOW CLEARANCE (PLAQUE)
WO12-2a	84X24	14.00						OVERHEAD LOW CLEARANCE (FEET AND INCHES)
WO12-4	120X60	50.00						LOW CLEARANCE XX FT XX IN XX MILES AHEAD
WO12-5	120X60	50.00						WIDTH RESTRICTION XX FT XX IN XX MILES AHEAD
WO13-1	30X30	6.25	1	6.25			44	ADVISORY SPEED (PLAQUE)
WO16-2	30X24	5.00						XXX FEET (PLAQUE)
WO16-3	30X24	5.00						X MILE (PLAQUE)
WO20-1	48X48	16.00	9	144.00			2	ROAD/BRIDGE/RAMP WORK AHEAD
WO20-2	48X48	16.00	3	48.00			56	DETOUR AHEAD
WO20-3	48X48	16.00						ROAD CLOSED AHEAD
WO20-4	48X48	16.00						ONE LANE ROAD AHEAD
WO20-5	48X48	16.00	4	64.00			5	RIGHT/CENTER/LEFT LANE CLOSED AHEAD
WO20-5a	48X48	16.00						2 RIGHT/CENTER/LEFT LANES CLOSED AHEAD
WO20-6a	48X48	16.00	2	32.00			6	RIGHT/CENTER/LEFT LANE CLOSED
WO20-7a	48X48	16.00						FLAGGER (SYMBOL)
WO21-2	36X36	9.00						FRESH OIL
WO21-5	48X48	16.00						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
W024-1aR	48X48	16.00						DOUBLE REVERSE CURVE, RIGHT, 2 LANE

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL AREA SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NUM.	DESCRIPTION
GUIDE SIGNS								
E05-1	36X48	12.00	1	12.00			49	GORE EXIT
E05-2	48X36	12.00						EXIT OPEN
E05-2a	48X36	12.00						EXIT CLOSED
GO20-1	60X24	10.00	2	20.00			1	ROAD WORK NEXT XX MILES
GO20-2	48X24	8.00	2	16.00			26	END ROAD WORK
GO20-4	36X18	4.50						PILOT CAR FOLLOW ME
GO20-4a	42X30	8.75						PILOT CAR IN USE WAIT & FOLLOW
GO20-4a	18X12	1.50						PILOT CAR IN USE WAIT & FOLLOW
GO20-5aP	36X24	6.00	8	48.00			54	WORK ZONE (PLAQUE)
MO4-8a	24X18	3.00	2	6.00			52	END DETOUR
MO4-9L	48X36	12.00						DETOUR (LEFT)
MO4-9R	48X36	12.00						DETOUR (RIGHT)
MO4-9P	48X12	4.00						STREET NAME (PLAQUE)
MO4-10L	48X18	6.00						DETOUR ARROW (LEFT)
MO4-10R	48X18	6.00						DETOUR ARROW (RIGHT)
REGULATORY SIGNS								
R1-1	48X48	13.25						STOP
R1-2	48TRI.	12.5						YIELD
R1-2a	36X36	9.00						TO ONCOMING TRAFFIC (PLAQUE)
R1-3P	30X12	2.50						ALL WAY (PLAQUE)
R2-1	36X48	12.00	8	96.00			4,25	SPEED LIMIT (4 @ 50),(4 @ 60)
R3-1	48X48	16.00						NO RIGHT TURN (SYMBOL)
R3-2	48X48	16.00						NO LEFT TURN (SYMBOL)
R3-3	36X36	9.00						NO TURNS
R3-4	48X48	16.00						NO U-TURN (SYMBOL)
R3-7L	30X30	6.25						LEFT LANE MUST TURN LEFT
R3-7R	30X30	6.25						RIGHT LANE MUST TURN RIGHT
R4-1	36X48	12.00						DO NOT PASS
R4-2	36X48	12.00						PASS WITH CARE
R4-7a	36X48	12.00						KEEP RIGHT (HORIZONTAL ARROW)
R4-8a	36X48	12.00						KEEP LEFT (HORIZONTAL ARROW)
R5-1	30X30	6.25	1	6.25			60	DO NOT ENTER
R5-1a	36X24	6.00	1	6.00			61	WRONG WAY
R6-1L	54X18	6.75						ONE WAY ARROW (LEFT)
R6-1R	54X18	6.75						ONE WAY ARROW (RIGHT)
R6-2L	24X30	5.00						ONE WAY (LEFT)
R6-2R	24X30	5.00						ONE WAY (RIGHT)
R9-9	24X12	2.00						SIDEWALK CLOSED
R9-11L	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW LEFT) CROSS HERE
R9-11R	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW RIGHT) CROSS HERE
R10-6	24X36	6.00						STOP HERE ON RED (45^ ARROW)
R11-2	48X30	10.00	1	10.00			29	ROAD CLOSED
R11-3a	60X30	12.50						ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY
R11-4	60X30	12.50						ROAD CLOSED TO THRU TRAFFIC
CONST-3A	60X48	20.00						FINE SIGN
CONST-3X	56X12	4.67						SPEEDING/PASSING (PLATE)
MISCELLANEOUS SIGNS								
CONST-5	48X36	12.00						POINT OF PRESENCE
CONST-5	96X48	32.00	2	64.00			SP	POINT OF PRESENCE
CONST-8	48X36	12.00	2	24.00			55	WORK ZONE NO PHONE ZONE
SPECIAL	36X78	19.50	3	58.50			50A	DETOUR BL-44 WEST STRAIGHT
SPECIAL	36X78	19.50	1	19.50			50B	DETOUR BL-44 WEST NEXT RIGHT
SPECIAL	36X78	19.50	2	39.00			50C	DETOUR BL-44 WEST RIGHT
SPECIAL	36X78	19.50	2	39.00			50D	DETOUR BL-44 WEST LEFT
SPECIAL	36X78	19.50	2	39.00			50E	DETOUR BL-44 WEST DIAG. RT.
SPECIAL	138X54	51.75	3	155.25			50F	BL-44 WEST CLOSED AHD. USE DET.
SPECIAL	84x24	14.00	2	28.00			G	CLOSED

616-10.05 CONSTRUCTION SIGNS	TOTAL	1061
616-10.10 RELOCATED SIGNS	TOTAL	**

** NO DIRECT PAY WILL BE MADE FOR RELOCATION OF CONSTRUCTION SIGNING OR DEVICES.

ITEM NUMBER	TOTAL QTY	DESCRIPTION
6122008	2	IMPACT ATTENUATOR 40 MPH (SAND BARRELS)
6122009		IMPACT ATTENUATOR 45 MPH (SAND BARRELS)
6122010		IMPACT ATTENUATOR 50 MPH (SAND BARRELS)
6122012		IMPACT ATTENUATOR 55 MPH (SAND BARRELS)
6122014		IMPACT ATTENUATOR 60 MPH (SAND BARRELS)
6122017		IMPACT ATTENUATOR 65 MPH (SAND BARRELS)
6122019		IMPACT ATTENUATOR 70 MPH (SAND BARRELS)
6122020	5	REPLACEMENT SAND BARREL
6122030	2	IMPACT ATTENUATOR (RELOCATION)
6123001	1*	TRUCK MOUNTED ATTENUATOR (TMA)
6161008	4	ADVANCED WARNING RAIL SYSTEM
6161012		BUOYS (BOATS KEEP OUT)
6161013		BUOYS (NO WAKE)
6161014		SPECIAL SIGN ASSEMBLY (BOATS KEEP OUT)
6161025	77	CHANNELIZER (TRIM LINE)
6161030	4	TYPE III MOVEABLE BARRICADE
6161033	28	DIRECTION INDICATOR BARRICADE
6161040	2	FLASHING ARROW PANEL
6161047		TYPE III OBJECT MARKER
6161055	28	SEQUENTIAL FLASHING WARNING LIGHT
6161070		TUBULAR MARKER
6161095		RADAR SPEED ADVISORY SYSTEM
6161096		CHANGEABLE MESSAGE SIGN, COMMISSION FURNISHED/RETAINED
6161098A	4*	CHANGEABLE MESSAGE SIGN W/O COMM. INTERFACE - CONTRACTOR FURNISHED/RETAINED
6161099		CHANGEABLE MESSAGE SIGN WITH COMM. INTERFACE - CONTRACTOR FURNISHED/RETAINED
6162000A		WORK ZONE TRAFFIC SIGNAL SYSTEM
6162002		TEMPORARY LONG-TERM RUMBLE STRIPS
6173600D	500*	TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/RETAINED
6173602B		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/COMMISSION RETAINED
6174000A		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION
6175010A	400*	RELOCATING TEMPORARY TRAFFIC BARRIER
6176000B		TEMPORARY TRAFFIC BARRIER COMMISSION FURNISHED/RETAINED
6177000B		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION COMMISSION FURNISHED/RETAINED
6208064A		TEMPORARY RAISED PAVEMENT MARKER
9029400		TEMPORARY TRAFFIC SIGNALS
9029401		TEMPORARY TRAFFIC SIGNALS AND LIGHTING
6169901		WORK ZONE INTELLIGENT TRANSPORTATION SYS.
6191000		PAVEMENT EDGE TREATMENT

* NOT INCLUDED IN TEMPORARY TRAFFIC CONTROL - 1 LUMP SUM QUANTITY

ALL TRAFFIC CONTROL ARE INCLUDED IN PAY ITEM 616-99.01, LUMP SUM TEMPORARY TRAFFIC CONTROL UNLESS OTHERWISE IN THE PLANS. THESE QUANTITIES ARE ONLY AN ESTIMATE AND ARE SUBJECT TO CHANGE BASED UPON FIELD CONDITIONS.

TEMPORARY TRAFFIC CONTROL	
PAY TOTAL =	1 LUMP SUM

SUMMARY OF QUANTITIES
SHEET 2 OF 2

STATE OF MISSOURI
ERIC J. REINKEMEYER
NUMBER PE-2006002846
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 1/29/2025

ROUTE	STATE
BL-44	MO
DISTRICT CD	SHEET NO. 3

COUNTY PHELPS

JOB NO. J5S3563

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)

Hg Consult Inc engineers planners
7733 N. Wallace Ave.: Kansas City, MO 64158: (816)256-5153
Hg CONSULT, INC.
PRO. ENGINEER 2010005873

NW COR. BR. A1259
INSTALL 1 TYPE A C.E.T. (MASH), FLARED AT 25:1
INSTALL 12.5' MGS GUARDRAIL, TANGENT
INSTALL 1 MGS VERTICAL CONCRETE BARRIER TRANSITION

SW COR. BR. A1259
INSTALL 1 TYPE A C.E.T. (MASH), FLARED AT 25:1
INSTALL 31.5' GUARDRAIL TYPE A, 31" HEIGHT, CURVED (R=100')
INSTALL BRIDGE ANCHOR SECTION, 6.5' POSTS (SAFETY BARRIER CURB),
W/ ASYMETRICAL TRANSITION SECTION, 6.5' POSTS

SE COR. BR. A1259
INSTALL 1 MGS VERTICAL CONCRETE BARRIER TRANSITION
INSTALL 12.5' MGS GUARDRAIL, TANGENT
INSTALL 1 TYPE A C.E.T. (MASH), FLARED AT 25:1

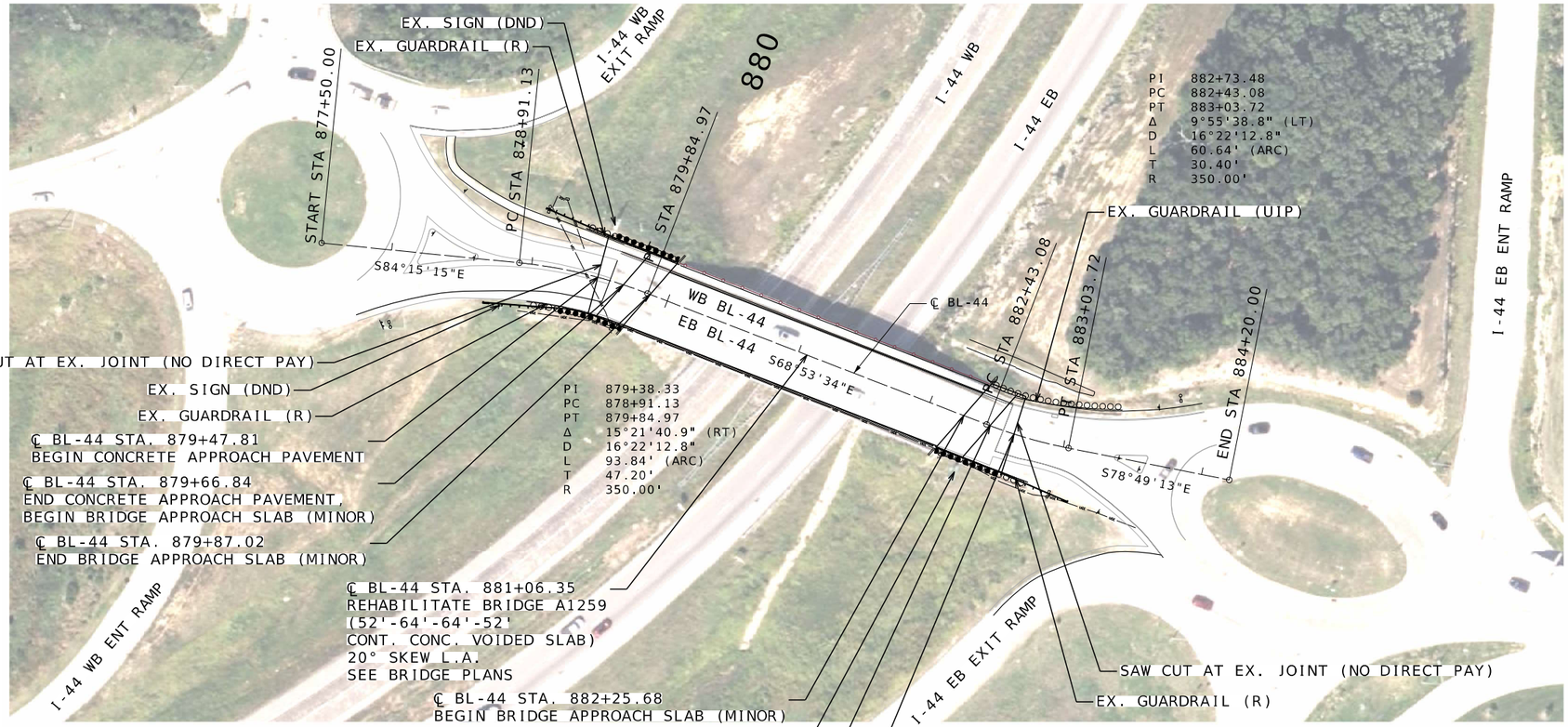
STA. 879+47.81 TO STA 879+66.84 ℄ BL-44
BR. A1259 WEST BRIDGE END
BUILD CONCRETE APPROACH PAVEMENT (122 SY)

STA. 879+66.84 TO STA 879+87.02 ℄ BL-44
BR. A1259 WEST BRIDGE END
BUILD BRIDGE APPROACH SLAB (MINOR) (BRIDGE ITEM) (126 SY)

STA. 882+25.68 TO STA 882+45.69 ℄ BL-44
BR. A1259 EAST BRIDGE END
BUILD BRIDGE APPROACH SLAB (MINOR) (BRIDGE ITEM) (126 SY)

STA. 882+45.69 TO STA 882+63.66 ℄ BL-44
BR. A1259 EAST BRIDGE END
BUILD CONCRETE APPROACH PAVEMENT (113 SY)

SCALE
0 50 100 150



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.

ANY WORK INDICATED ON THE PLANS THAT EXTENDS BEYOND THE PROJECT LIMITS IS CONSIDERED INCIDENTAL TO AND A PART OF THE CONSTRUCTION OF THIS PROJECT.

PLAN
SHEET 1 OF 1

STATE OF MISSOURI
ERIC J. REINKEMEYER
NUMBER PE-2006002846
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED	
12/30/2024	
ROUTE	STATE
BL-44	MO
DISTRICT	SHEET NO.
CD	4
COUNTY	
PHELPS	
JOB NO.	
J5S3563	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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J5S3563 - BRIDGE A1259 TRAFFIC CONTROL PHASING

PHASE 1

CLOSE WB BL-44 BEFORE BRIDGE.

DETOUR WB TRAFFIC VIA I-44 EB TO US-63, NORTH ON US-63 TO I-44 WB, TO BL-44.

MAINTAIN EB BL-44 TRAFFIC IN EB LANE WHILE THE WB SIDE OF THE BRIDGE IS REHABILITATED.

PHASE 2

WB BL-44 REMAINS CLOSED BEFORE BRIDGE.

DETOUR REMAINS FOR WB TRAFFIC VIA I-44 EB TO US-63, NORTH ON US-63 TO I-44 WB, TO BL-44.

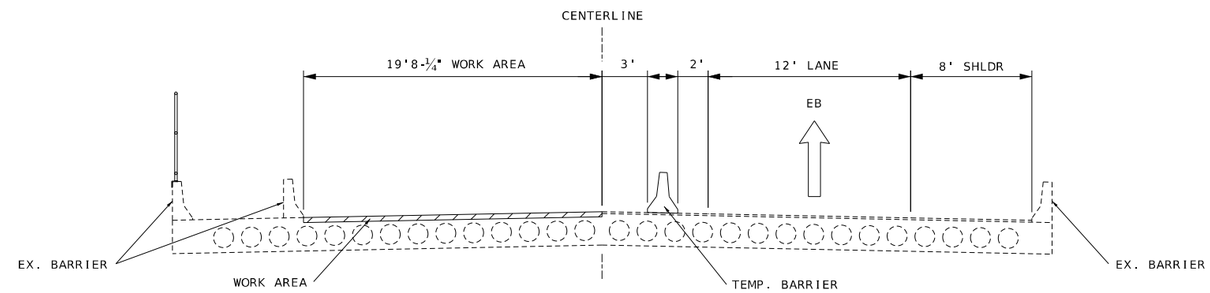
SHIFT EB BL-44 TRAFFIC INTO NEWLY REHABILITATED WB LANE BEFORE BRIDGE TO REHABILITATE EB SIDE. SHIFT TRAFFIC BACK INTO EB LANE AFTER BRIDGE, BEFORE EAST ROUNDABOUT.

PHASE 3

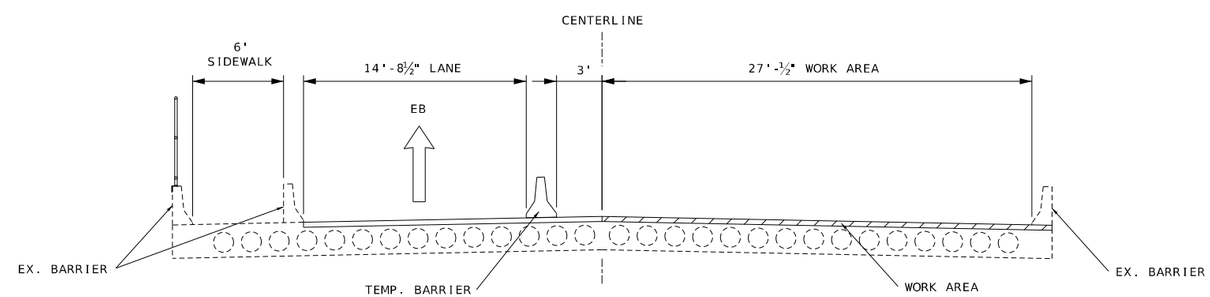
CLOSE I-44 EB AND WB INSIDE LANES AT THE SAME TIME FOR SLAB EDGE REPAIR, SUPERSTRUCTURE REPAIR, AND EPOXY SEALING. (MAY OCCUR INDEPENDENTLY FROM PHASES 1 AND 2.)

PHASE 4

CLOSE I-44 EB AND WB OUTSIDE LANES SEPERATELY FOR SLAB EDGE REPAIR, SUPERSTRUCTURE REPAIR, AND EPOXY SEALING. RAMP ACCESS TO REMAIN OPEN AT ALL TIMES. (MAY OCCUR INDEPENDENTLY FROM PHASES 1 AND 2.)



PHASE 1



PHASE 2

TRAFFIC CONTROL
PHASING PLAN
SHEET 1 OF 9

STATE OF MISSOURI
ERIC J. REINKEMEYER
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PROFESSIONAL ENGINEER

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DATE PREPARED	
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ROUTE	STATE
BL-44	MO
DISTRICT	SHEET NO.
CD	5
COUNTY	
PHELPS	
JOB NO.	
J5S3563	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DESCRIPTION	DATE

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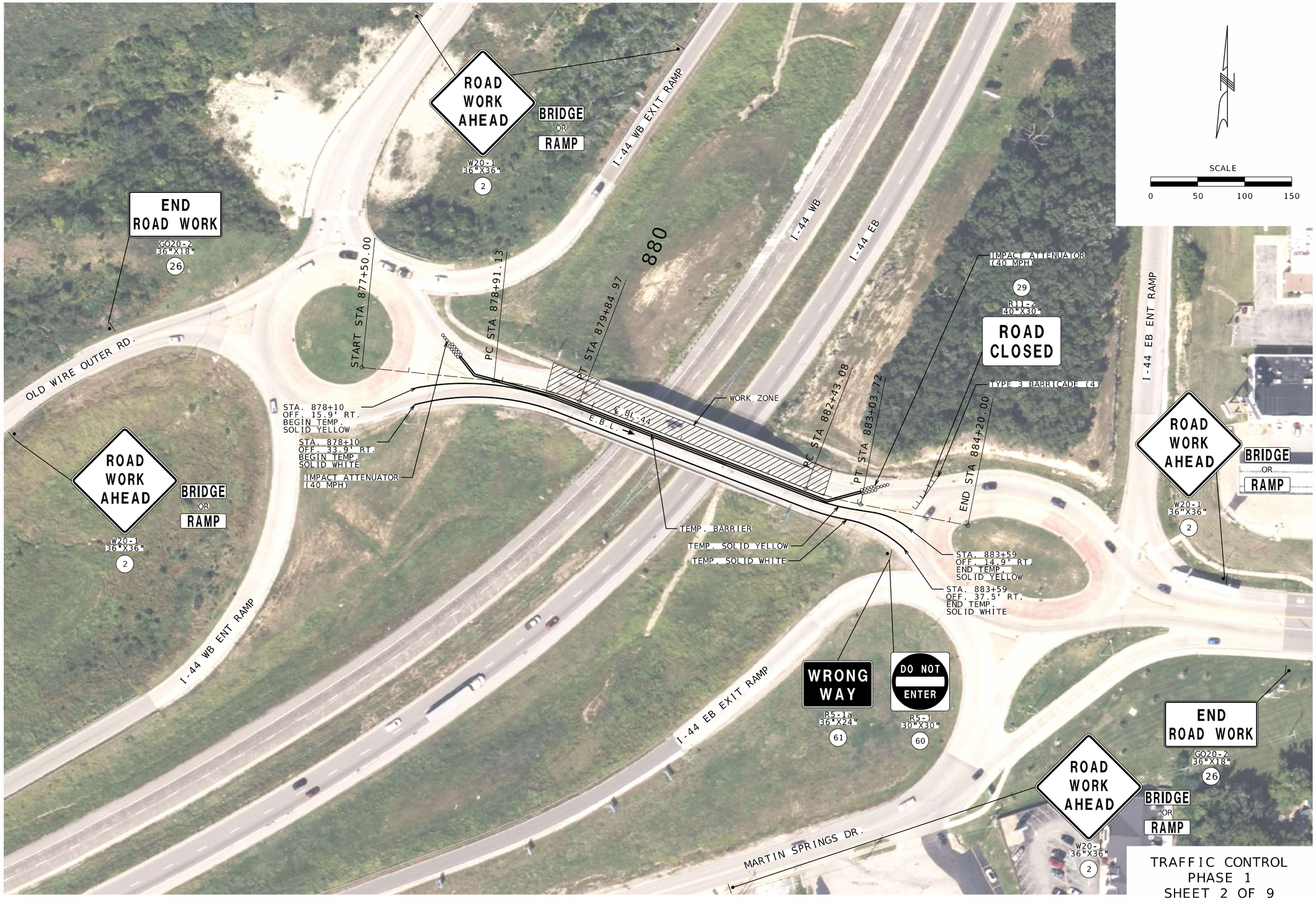

SCALE

0 50 100 150

TRAFFIC CONTROL
PHASE 1
SHEET 2 OF 9

STATE OF MISSOURI
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DATE PREPARED	
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BL-44	MO
DISTRICT	SHEET NO.
CD	6
COUNTY	
PHELPS	
JOB NO.	
J5S3563	
CONTRACT ID.	
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PROJECT NO.	
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BRIDGE NO.	
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DATE	DESCRIPTION

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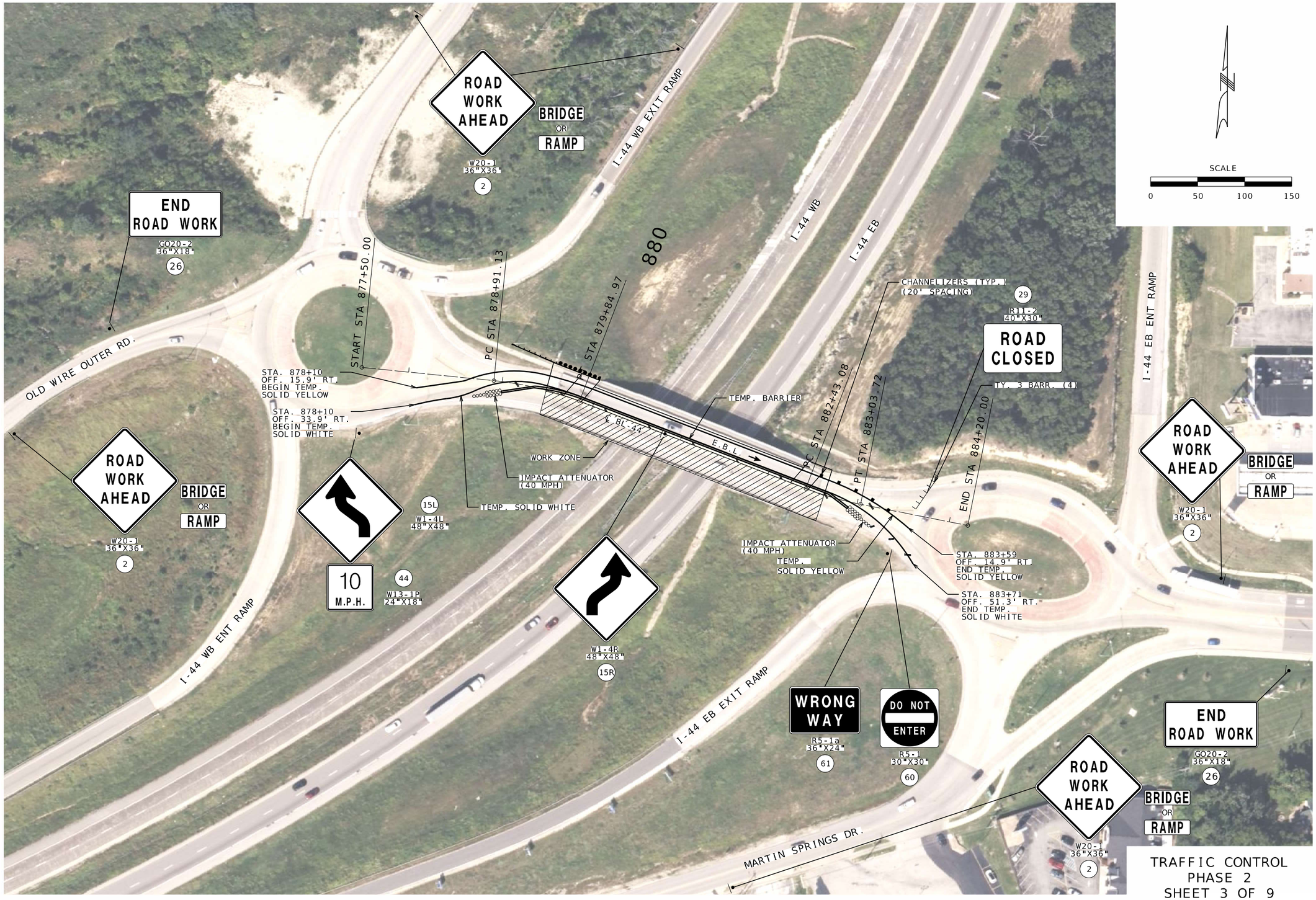

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0 50 100 150

TRAFFIC CONTROL
PHASE 2
SHEET 3 OF 9

STATE OF MISSOURI
ERIC J. REINKEMEYER
NUMBER PE-2006002846
PROFESSIONAL ENGINEER

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DATE PREPARED	
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ROUTE	STATE
BL-44	MO
DISTRICT	SHEET NO.
CD	7
COUNTY	
PHELPS	
JOB NO.	
J5S3563	
CONTRACT ID.	
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PROJECT NO.	
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BRIDGE NO.	
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DATE	DESCRIPTION

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

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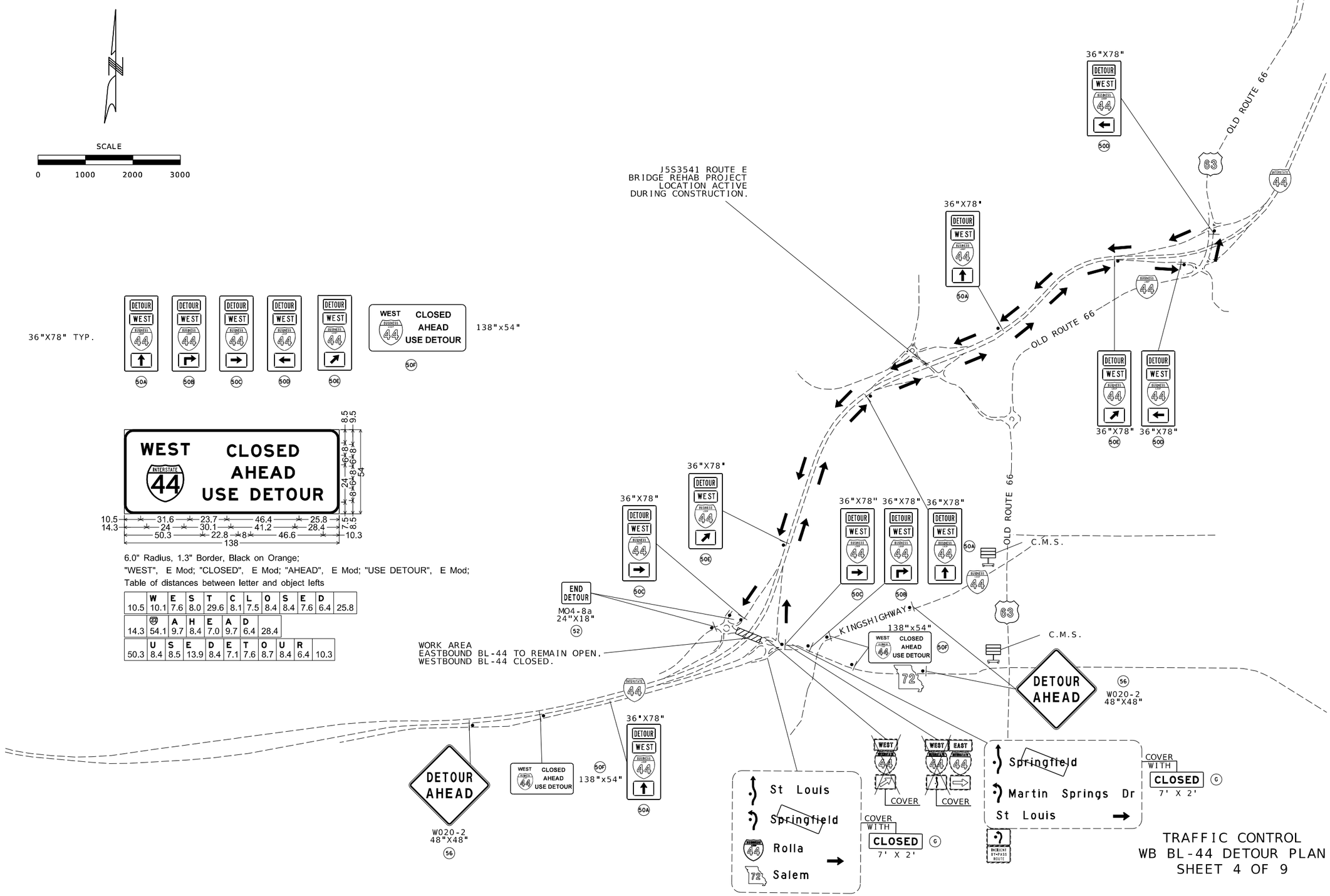

TRAFFIC CONTROL
WB BL-44 DETOUR PLAN
SHEET 4 OF 9

STATE OF MISSOURI
ERIC J. REINKEMEYER
NUMBER PE-2006002846
PROFESSIONAL ENGINEER

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DATE PREPARED	
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ROUTE	STATE
BL-44	MO
DISTRICT	SHEET NO.
CD	8
COUNTY	
PHELPS	
JOB NO.	
J5S3563	
CONTRACT ID.	
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PROJECT NO.	
.	
BRIDGE NO.	
.	

DATE	DESCRIPTION

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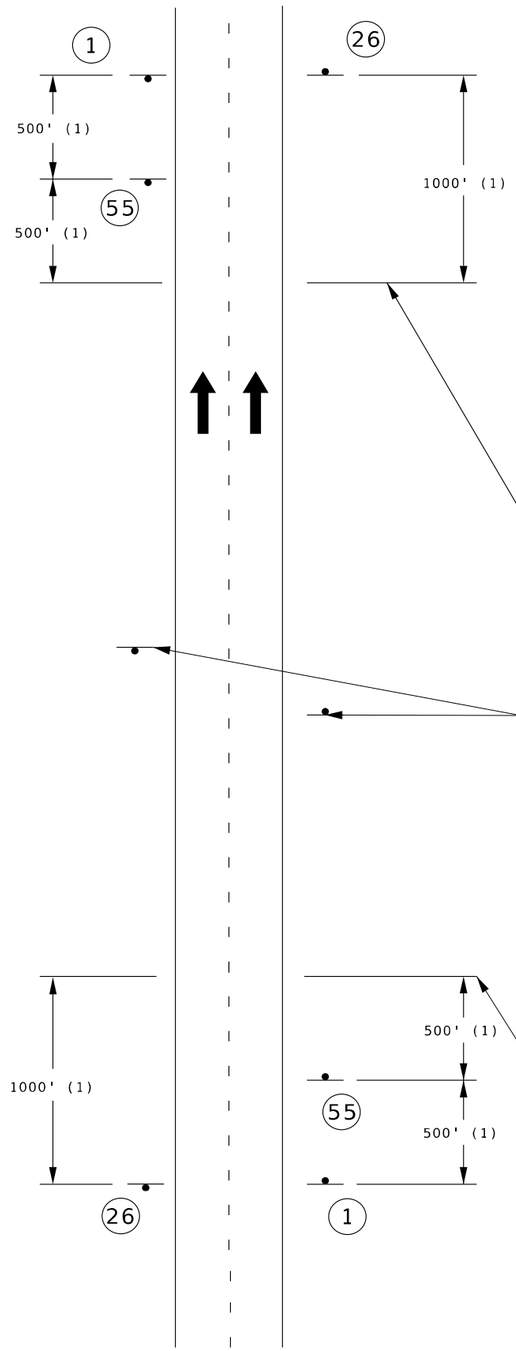


NOTES:

SIGN (1) IS REQUIRED PER EPG 616.2.3.

SIGN (26) IS USED ON ALL PROJECTS WHERE SIGN (1) IS USED.

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

ANY EXISTING SIGNING THAT CONFLICTS WITH THE TRAFFIC CONTROL SIGNING SHALL BE COMPLETELY COVERED OR REMOVED.

(1) DISTANCE MAY BE ADJUSTED ACCORDING TO FIELD CONDITIONS. WHERE TRAFFIC BACKUPS ARE EXPECTED BEYOND THE ADVANCE WARNING AREA, ADDITIONAL SIGNING MAY BE NEEDED.

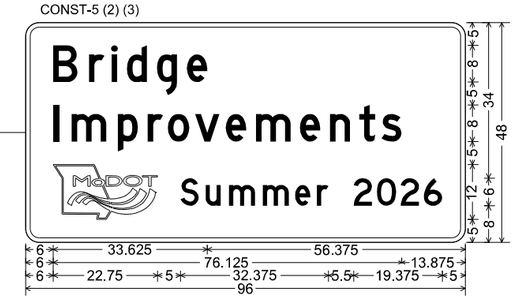
(2) CONST-5 IS PLACED IN A VISIBLE AREA WITHIN THE PROJECT LIMITS PROVIDED ITS PLACEMENT DOES NOT DISRUPT A SEQUENCE OF SIGNS. IF A VISIBLE LOCATION WITHIN THE PROJECT IS NOT AVAILABLE, THE SIGN MAY BE PLACED 500 FEET BEFORE SIGN G0202-1 ROAD WORK NEXT XX MILES.

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

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

END OF PROJECT LIMITS; END OF WORK ZONE TERMINATION AREA, IF LOCATED BEYOND END OF PROJECT; OR LAST WORK ZONE SIGN, IF LOCATED OUTSIDE PROJECT LIMITS.

CONST-5 (2) (3)



CONST-5 SH-FLAT SHEET;
3.000" Radius, 1.000" Border, White on, Blue;
"Bridge", D; "Improvements", D; "Summer 2026", D 90% spacing;
Table of letter and object lefts

B	r	I	d	g	e						
6.000	13.750	18.750	22.125	28.625	35.250						
I	m	p	r	o	v	e	m	e	n	t	s
6.000	10.000	20.125	26.625	31.000	37.000	43.750	50.250	59.875	66.500	72.875	77.625
S	S	u	m	m	e	r	2	0	2	6	
6.000	33.750	39.250	44.375	51.750	58.875	63.625	71.625	76.750	81.875	87.000	

BEGINNING OF PROJECT LIMITS; OR INITIAL WORK ZONE SIGN, IF LOCATED OUTSIDE PROJECT LIMITS.

TWO-LANE UNDIVIDED
BEGIN/END OF PROJECT SIGNING
(FOR USE ON ALL PROJECTS)

TRAFFIC CONTROL
TYPICAL APPLICATIONS
BEGIN/END OF PROJECT SIGNING
SHEET 5 OF 9

STATE OF MISSOURI
ERIC J. REINKEMEYER
NUMBER PE-2006002846
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED	
12/30/2024	
ROUTE	STATE
BL-44	MO
DISTRICT	SHEET NO.
CD	9
COUNTY	
PHELPS	
JOB NO.	
J5S3563	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DATE	DESCRIPTION

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

Hg Consult Inc engineers planners
7733 N. Wallace Ave.: Kansas City, MO 641581 (816)256-5153
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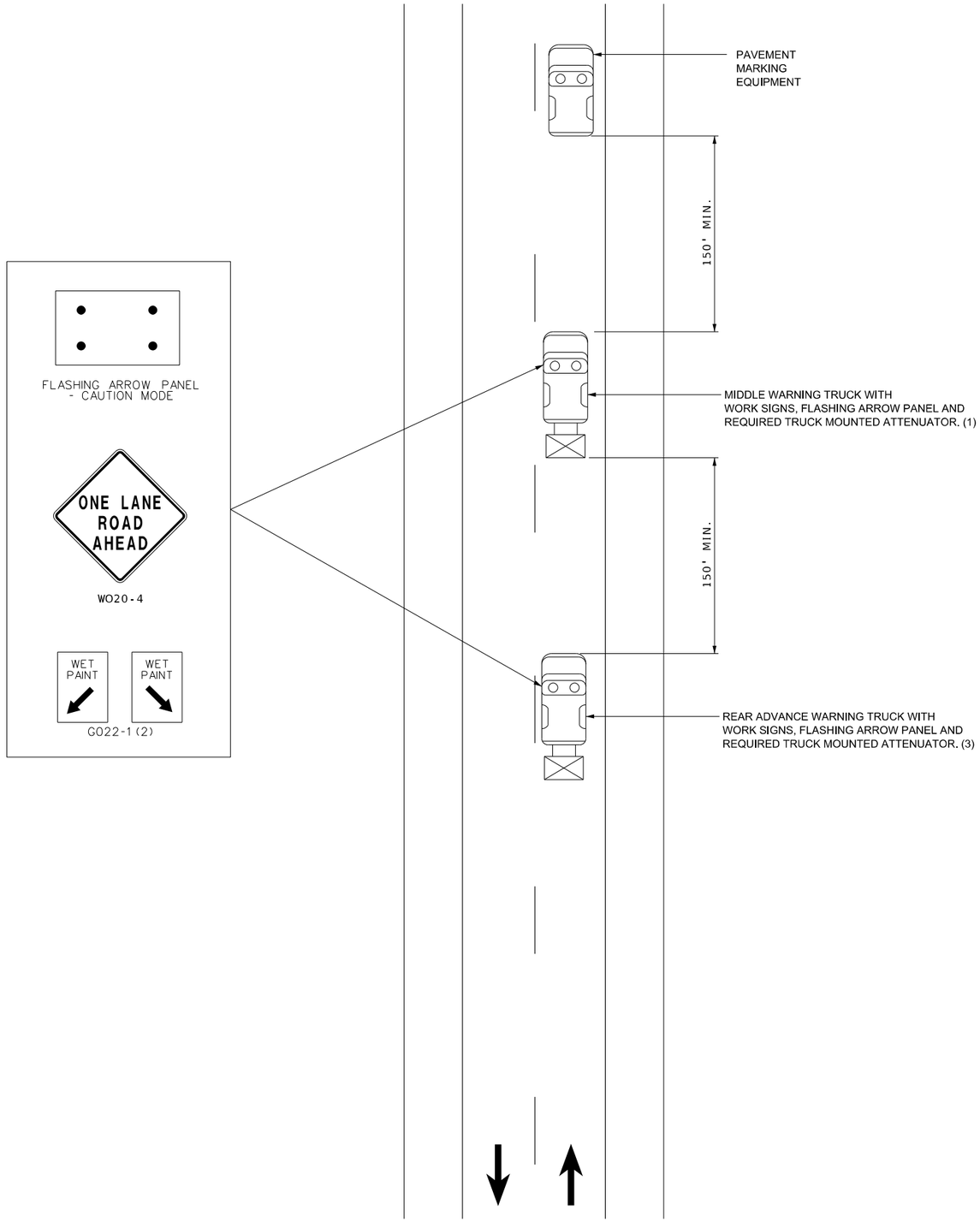
NOT TO SCALE



STRIPING ON TWO-LANE HIGHWAY

NOTES:

UPON APPROVAL OF THE ENGINEER, THE CONTRACTOR MAY PROVIDE ADDITIONAL PROTECTIVE TRUCKS EQUIPPED WITH PROPER WARNING DEVICES.

PROTECTIVE TRUCKS AND WORK VEHICLES SHALL DISPLAY HIGH-INTENSITY ROTATING, FLASHING, OSCILLATING, OR STROBE LIGHTS.

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

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

FLASHING ARROW PANELS SHALL BE INCIDENTAL TO TRUCK MOUNTED ATTENUATORS, WHEREVER USED. NO ADDITIONAL PAYMENT WILL BE MADE.

(1) TRUCK IS OPTIONAL ON TWO-LANE UNDIVIDED HIGHWAYS IF SIGNING AND ARROW BOARD ARE MOUNTED ON THE PAVEMENT MARKING EQUIPMENT.

(2) WET PAINT SIGNS ARE INSTALLED TO INDICATE THE SIDE IN WHICH THE PAVEMENT MARKING MATERIAL IS BEING APPLIED. AT THE CONTRACTOR'S OPTION, A FRONT FACING WET PAINT SIGN MAY BE INSTALLED ON THE LEFT SIDE OF THE PAVEMENT MARKING EQUIPMENT.

(3) REAR WARNING TRUCK IS POSITIONED AT THE NO TRACK POINT OF THE PAVEMENT MARKING MATERIAL, OR VERTICAL OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE, OR SPACING SHOWN, WHICHEVER IS GREATER.

TRAFFIC CONTROL
TYPICAL APPLICATIONS
TWO-LANE STRIPING OPERATIONS
SHEET 6 OF 9

STATE OF MISSOURI
ERIC J. REINKEMEYER
NUMBER PE-2006002846
PROFESSIONAL ENGINEER

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DATE PREPARED	
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ROUTE	STATE
BL-44	MO
DISTRICT	SHEET NO.
CD	10
COUNTY	
PHELPS	
JOB NO.	
J5S3563	
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)

Hg Consult inc engineers planners
7733 N. Wallace Ave.t Kansas City, MO 64158; (816)256-5153
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PRO. ENGINEER 2010005873

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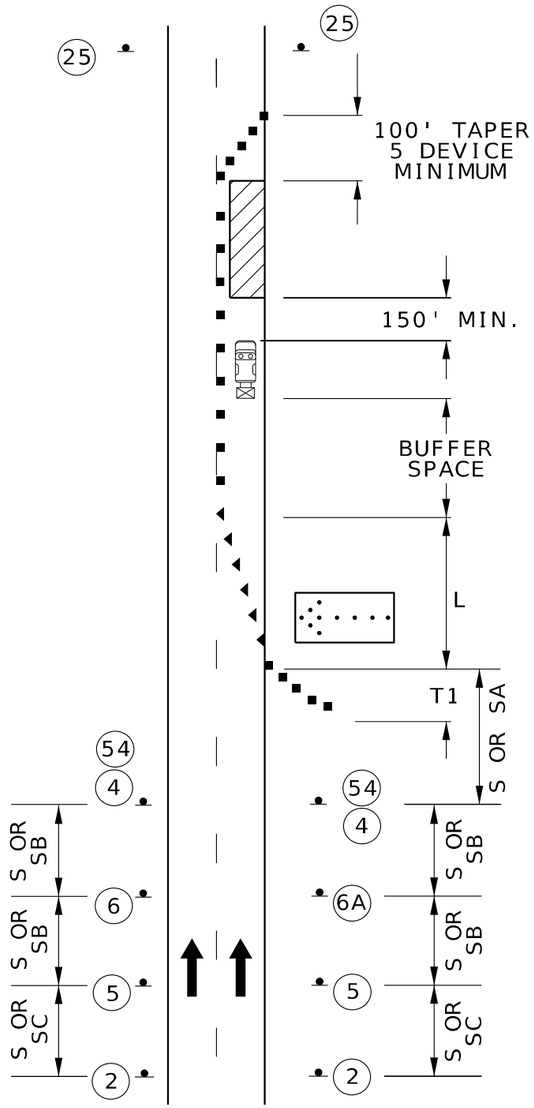


TWO-LANE DIVIDED HIGHWAY

WO25-6

WO20-1

2

WO20-5

5

WO20-6a

6

WO4-1a

6A

R2-1

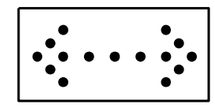
4

R2-1
NORMAL SPEED

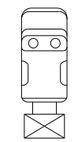
25

GO20-5aP

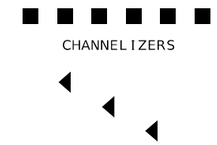
54



FLASHING
ARROW PANEL



TRUCK MOUNTED
ATTENUATOR



CHANNELIZERS

DIRECTIONAL INDICATOR
BARRICADES

NOTES:

SEE TABLE BELOW FOR SIGN SPACING, DEVICE SPACING AND CHANNELIZING TAPER LENGTHS.

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

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

TEMPORARY TRAFFIC BARRIERS, IF USED, SHALL COMPLY WITH THE PROVISIONS IN EPG 616.6.85 TEMPORARY TRAFFIC BARRIER.

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

REVIEW EPG 616.6.83 WARNING LIGHTS WHEN SEQUENTIAL OR WARNING LIGHTS SHOULD BE USED ON NIGHTTIME OPERATIONS.

FOR FLAGS AND ADVANCE WARNING RAIL SYSTEM, REFER TO EPG 616.6.2.2 FLAG AND ADVANCE WARNING RAIL SYSTEM.

REVIEW EPG 616.6.63 CHANNELIZING DEVICES FOR DIFFERENT TYPES AND GUIDELINES FOR THE DEVICES

SPEED (MPH)	SIGN SPACING (FT)		TAPER LENGTH (FT)		OPTIONAL BUFFER LENGTH (FT) (B)	CHANNELIZER SPACING	
	UNDIVIDED (S)	DIVIDED (S)	10' SHOULDER (T1)	12' LANE (L)		TAPERS	BUFFER/WORK AREAS
0-35	-	200'	70'	245'	250'	35'	50'
40	-	500'	90'	320'	305'	40'	100'
45	-	500'	150'	540'	360'	45'	100'
50-55	-	1000'	185'	660'	495'	50'	100'
60-70	SA-1000, SB-1500, & SC-2640		235'	840'	730'	60'	100'

TRAFFIC CONTROL
TYPICAL APPLICATIONS
STATIONARY LANE CLOSURE
SHEET 7 OF 9

STATE OF MISSOURI
ERIC J. REINKEMEYER
NUMBER PE-2006002846
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 12/30/2024

ROUTE	STATE
BL-44	MO
DISTRICT	SHEET NO.
CD	1.1

COUNTY PHELPS

JOB NO. J5S3563

CONTRACT ID. .

PROJECT NO. .

BRIDGE NO. .

DATE	DESCRIPTION

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

Hg Consult Inc engineers planners
7733 N. Wallace Ave.: Kansas City, MO 64158: (816)256-5153
Hg CONSULT, INC.
PRO. ENGINEER 2010005873

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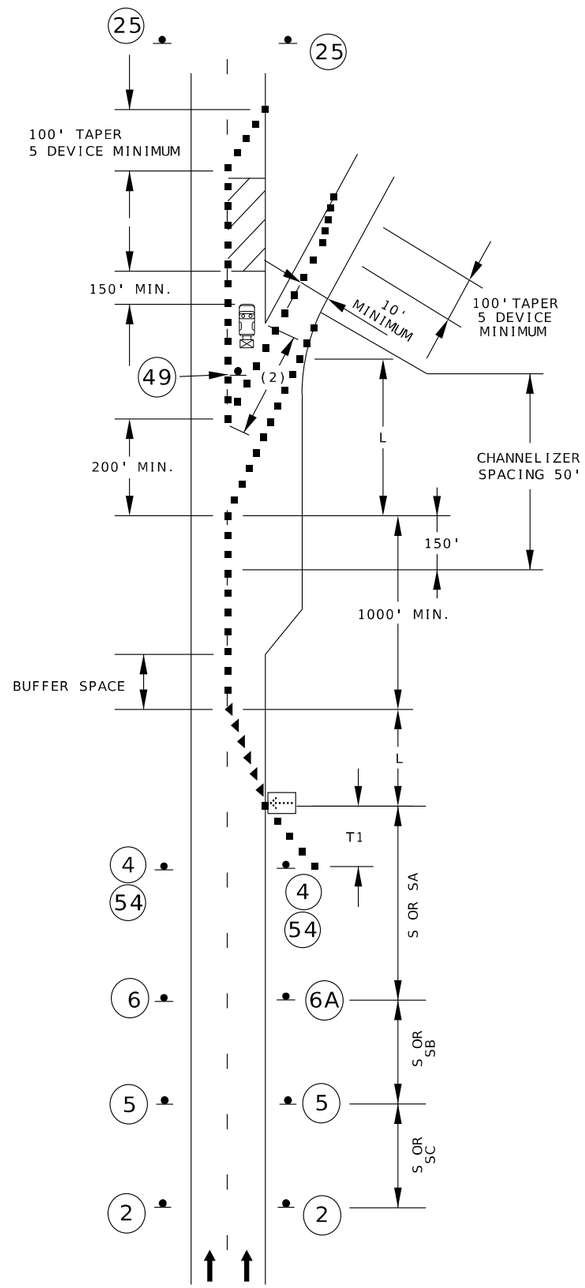
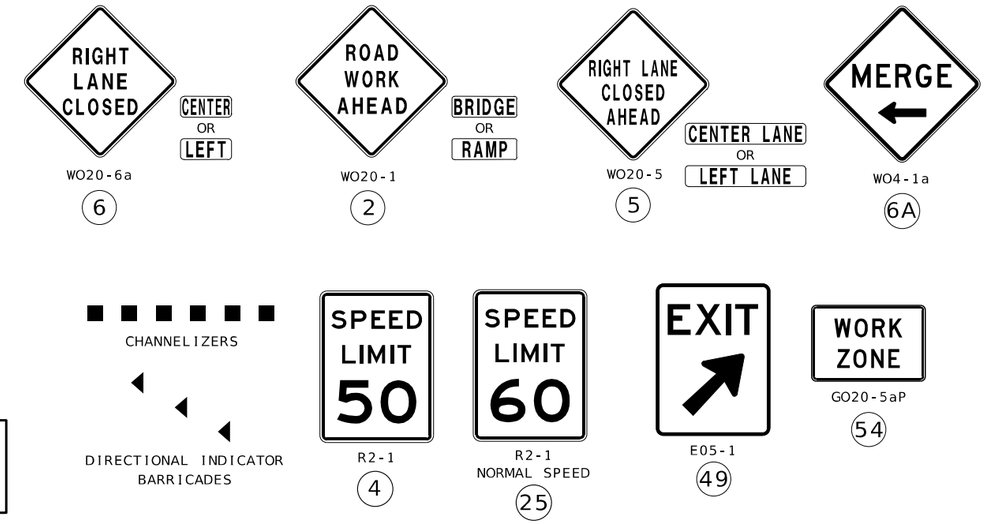


WORK IN THE VICINITY
OF AN EXIT RAMP



NOTES:

SEE TABLE BELOW FOR SIGN SPACING, DEVICE SPACING AND CHANNELIZING TAPER LENGTHS.

REMOVE AND/OR MODIFY EXISTING PAVEMENT MARKING AS NEEDED.

TEMPORARY PAVEMENT MARKING REQUIRED WITH LONG TERM LANE CLOSURES.

FOR NIGHT TIME OPERATIONS, REVIEW EPG 616.6.83 WARNING LIGHTS FOR USE OF SEQUENTIAL LIGHTS.

REVIEW EPG 616.6.63 CHANNELIZING DEVICES FOR DIFFERENT TYPES AND AND GUIDELINES FOR THE DEVICE.

FIVE CHANNELIZER DEVICE MINIMUM.

SPEED (MPH)	SIGN SPACING (FT)		TAPER LENGTH (FT)		OPTIONAL BUFFER LENGTH (FT) (B)	CHANNELIZER SPACING	
	UNDIVIDED (S)	DIVIDED (S)	10' SHOULDER (T1)	12' LANE (L)		TAPERS	BUFFER/WORK AREAS
0-35	-	200'	70'	245'	250'	35'	50'
40	-	500'	90'	320'	305'	40'	100'
45	-	500'	150'	540'	360'	45'	100'
50-55	-	1000'	185'	660'	495'	50'	100'
60-70	SA-1000, SB-1500, & SC-2640		235'	840'	730'	60'	100'

TRAFFIC CONTROL
TYPICAL APPLICATIONS
WORK IN VICINITY
OF EXIT RAMP
SHEET 8 OF 9

STATE OF MISSOURI
ERIC J. REINKEMEYER
NUMBER PE-2006002846
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 12/30/2024

ROUTE	STATE
BL-44	MO
DISTRICT	SHEET NO.
CD	12

COUNTY PHELPS
JOB NO. J5S3563
CONTRACT ID.
PROJECT NO.
BRIDGE NO.

DATE	DESCRIPTION

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

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PRO. ENGINEER 2010005873

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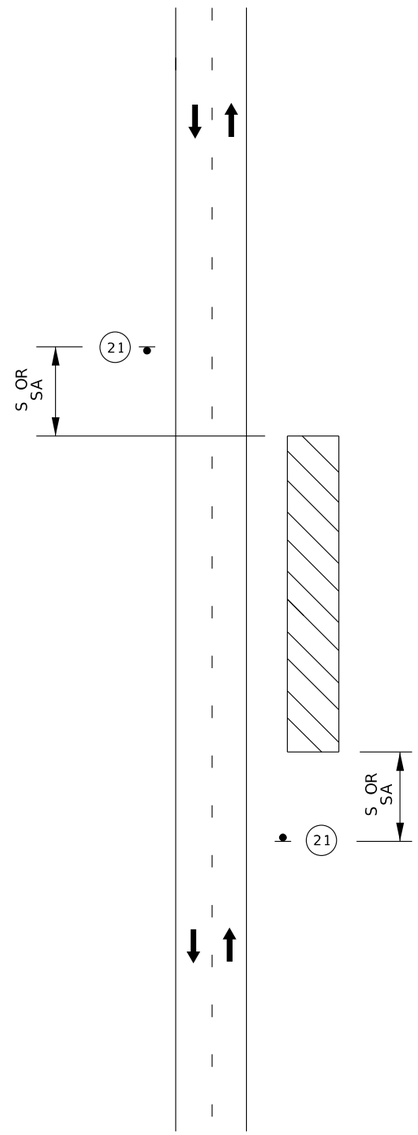


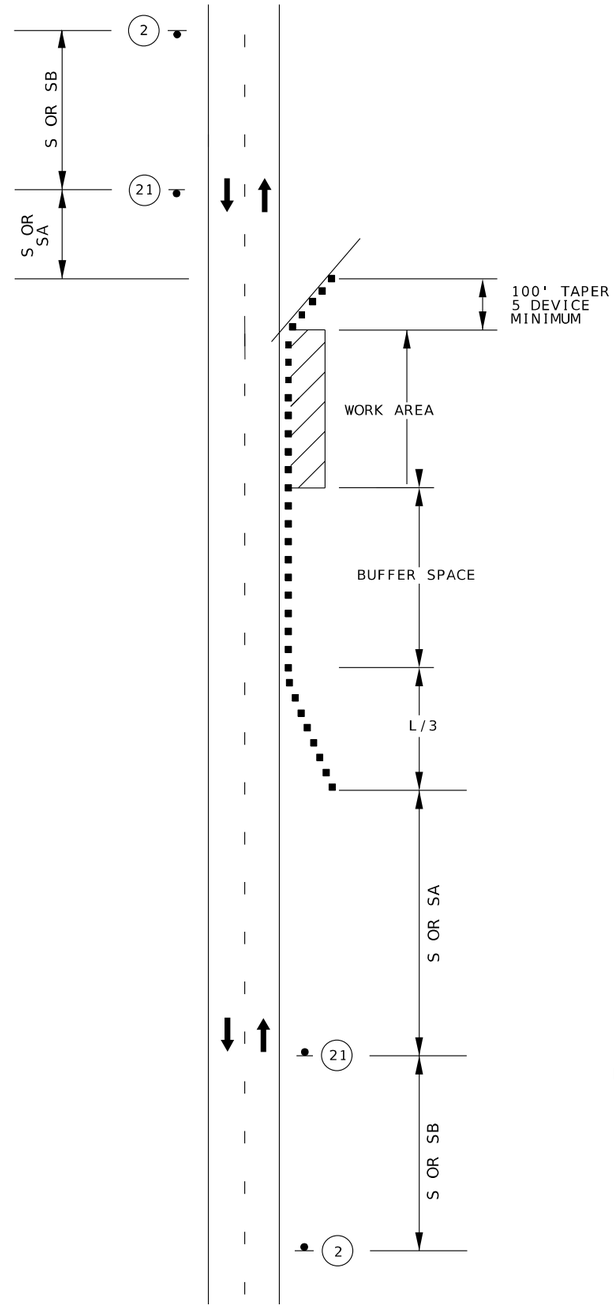
WORK BEYOND SHOULDER

NOTES:

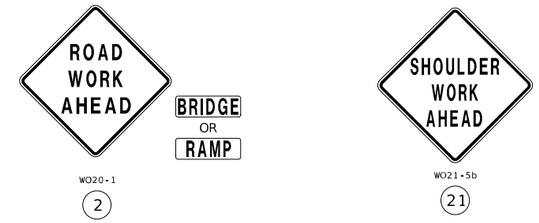
(1). ONLY APPLICABLE WHEN WORK IS WITHIN THE CLEAR ZONE.

(2). PROVIDE SIGNS ON LEFT AND RIGHT SIDE OF DIVIDED HIGHWAYS.

(3). SEE TRAFFIC CONTROL SHEET 7 FOR SIGN SPACING, DEVICE SPACING AND CHANNELIZING TAPER LENGTHS.



SHOULDER WORK WITH NO TRAVELWAY ENCROACHMENT



WO20-1 (2) WO21-5b (21)

NOTES:

(1). SEE TRAFFIC CONTROL SHEET 7 FOR WORK ZONE SPEED LIMIT GUIDELINES.

(2). SEE TRAFFIC CONTROL SHEET 7 FOR SIGN SPACING, DEVICE SPACING AND CHANNELIZING TAPER LENGTHS.

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

(4). PROVIDE SIGNS ON LEFT AND RIGHT SIDE OF DIVIDED HIGHWAYS.

TRAFFIC CONTROL
TYPICAL APPLICATIONS
SHOULDER WORK
SHEET 9 OF 9

STATE OF MISSOURI
ERIC J. REINKEMEYER
NUMBER PE-2006002846
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED	
12/30/2024	
ROUTE	STATE
BL-44	MO
DISTRICT	SHEET NO.
CD	1.3
COUNTY	
PHELPS	
JOB NO.	
J5S3563	
CONTRACT ID.	
.	
PROJECT NO.	
.	
BRIDGE NO.	
.	

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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PRO. ENGINEER 2010005873

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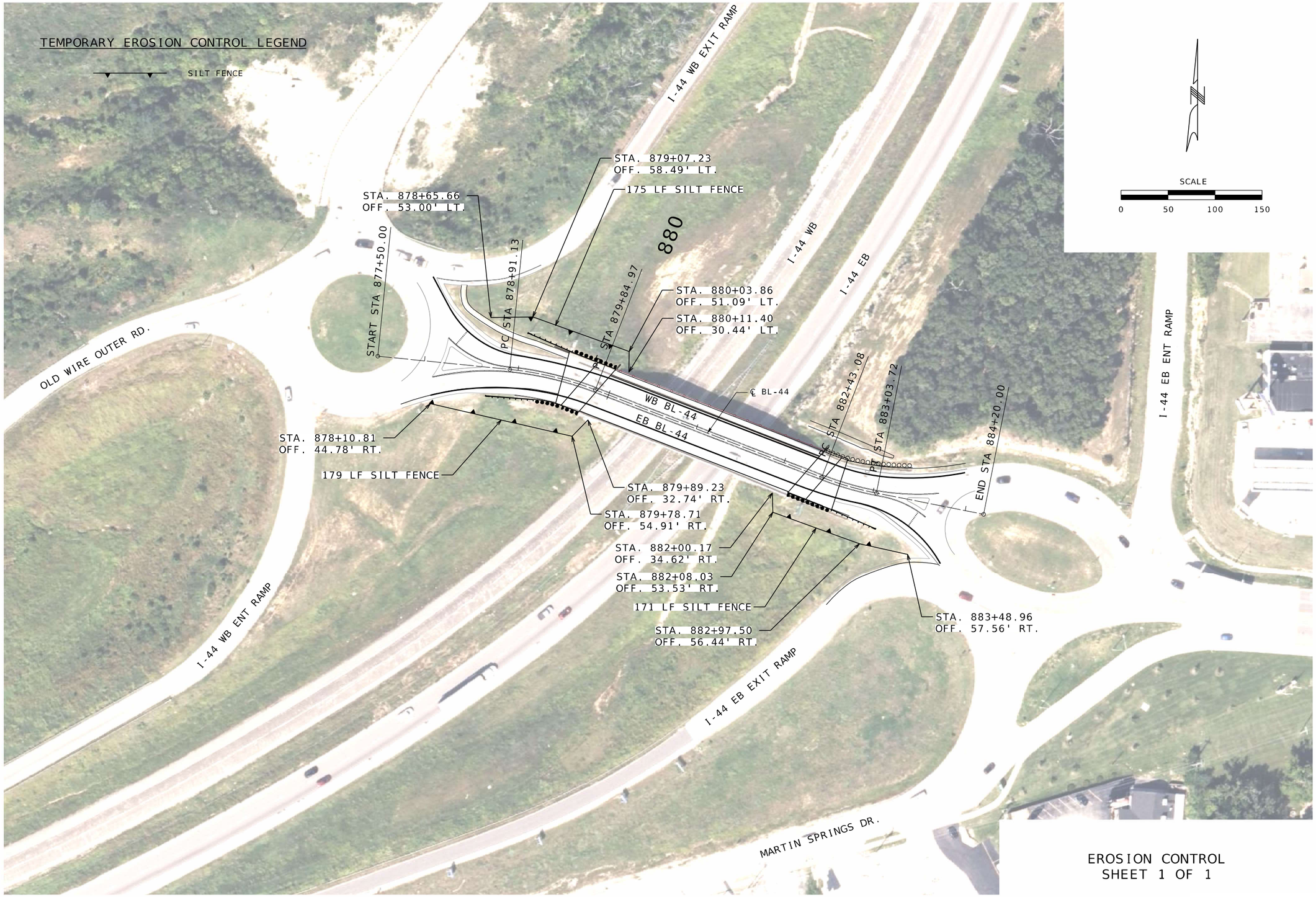

EROSION CONTROL
SHEET 1 OF 1

STATE OF MISSOURI
ERIC J. REINKEMEYER
NUMBER PE-2006002846
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED	
12/30/2024	
ROUTE	STATE
BL-44	MO
DISTRICT	SHEET NO.
CD	14
COUNTY	
PHELPS	
JOB NO.	
J5S3563	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DATE	DESCRIPTION

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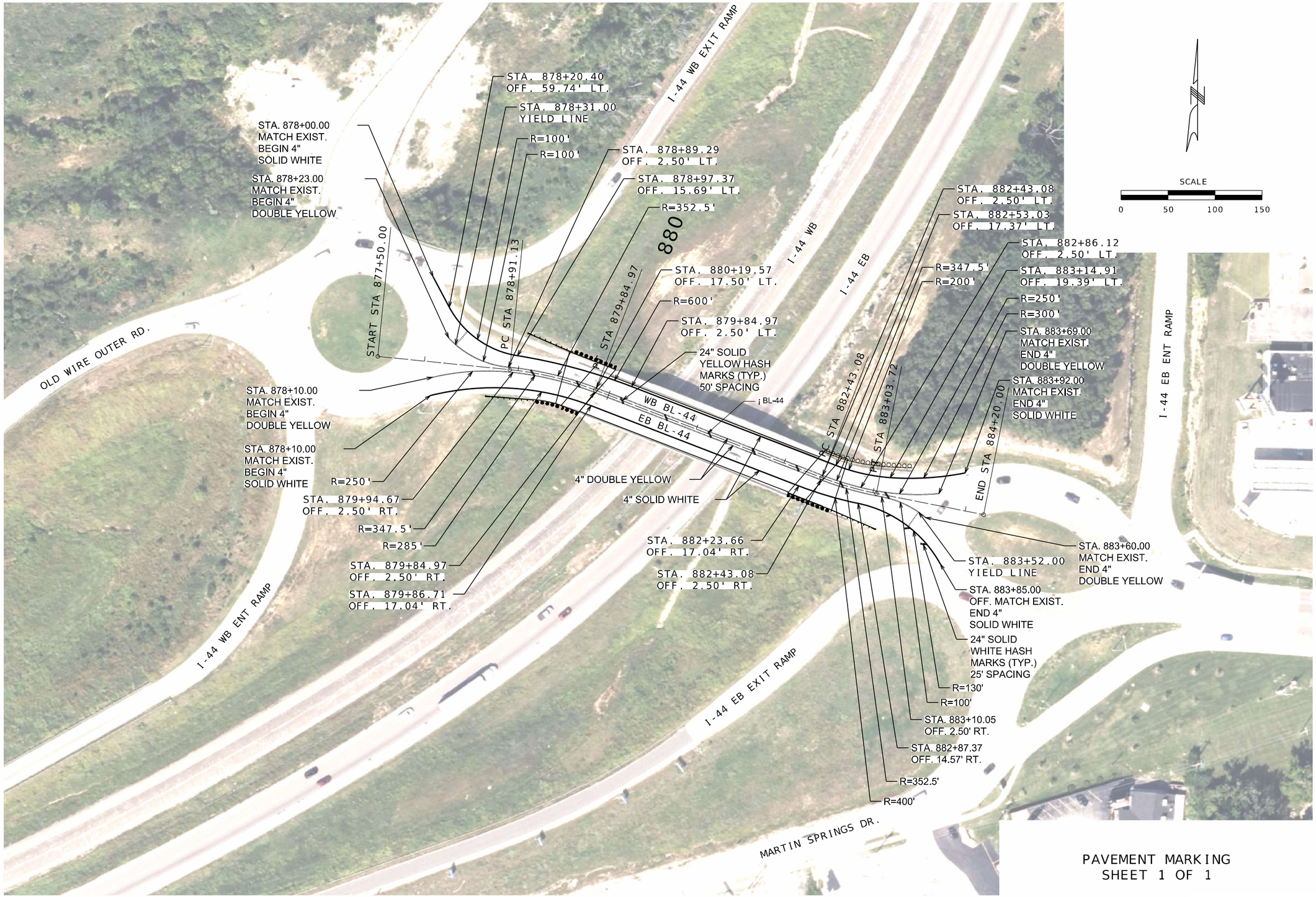

PAVEMENT MARKING
SHEET 1 OF 1

STATE OF MISSOURI
ERIC J. REINKEMEYER
NUMBER PE-2006002846
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED	
12/30/2024	
ROUTE	STATE
BL-44	MO
DISTRICT	SHEET NO.
CD	15
COUNTY	
PHELPS	
JOB NO.	
J5S3563	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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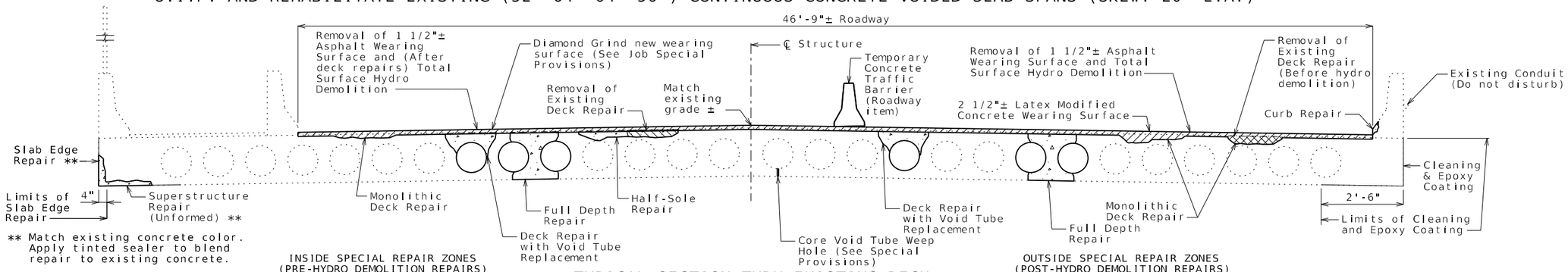
SEC/SUR 10 TWP 37N RGE 8W

U.I.P. AND REHABILITATE EXISTING (52'-64'-64'-56') CONTINUOUS CONCRETE VOIDED SLAB SPANS (SKEW: 20° L.A.)



TYPICAL SECTION THRU EXISTING DECK

General Notes:

Design Specifications:

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

Design Loading:

H20-44 (1961)

Design Unit Stresses:

Class B-1 Concrete (Half-Sole, Full Depth Repairs & Deck Repair with Void Tube Replacement, Barrier Curb Repair and Type B Barrier) f'c = 4,000 psi
Reinforcing Steel (ASTM A615 Grade 60) fy = 60,000 psi

Joint Filler:

All joint filler shall be in accordance with Sec 1057 for preformed sponge rubber expansion and partition joint filler, except as noted.

Reinforcing Steel:

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

Concrete Protective Coating:

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

Miscellaneous:

Roadway surfacing adjacent to bridge approach slab ends shall match new bridge approach slab 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.

Bars bonded in existing concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, existing bars shall extend into new concrete at least 40 diameters for plain bars and 30 diameters for deformed bars, unless otherwise noted.

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

Traffic Handling:

Eastbound traffic will be maintained on structure during construction. Westbound traffic will be detoured using I-44. See roadway plans for traffic control.

Estimated Quantities

	Item		Total
	Total Surface Hydro Demolition	sq. yard	1,240
**	Removal of Asphalt Wearing Surface	sq. foot	11,158
	Removal of Existing Deck Repair	sq. foot	165
	Remove and Replace Barrier Curb	linear foot	5
	Bridge Approach Slab (Minor)	sq. yard	252
*	Supplementary Wearing Surface Material	cu. yard	1
	Latex Modified Concrete Wearing Surface	sq. yard	1,240
	Diamond Grinding	sq. yard	1,240
	Type B Barrier (Tapered)	linear foot	40
	Substructure Repair (Formed)	sq. foot	25
	Substructure Repair (Unformed)	sq. foot	25
	Superstructure Repair (Unformed)	sq. foot	100
	Half-Sole Repair	sq. foot	1,450
	Full Depth Repair	sq. foot	50
	Slab Edge Repair (Bridges)	linear foot	100
	Deck Repair with Void Tube Replacement	sq. foot	50
	Cleaning and Epoxy Coating	sq. foot	2,200
	Cored Void Tube Weep Holes	each	712
	Curb Repair	linear foot	100
	Protective Coating - Concrete Bents and Piers (Epoxy)	lump sum	1

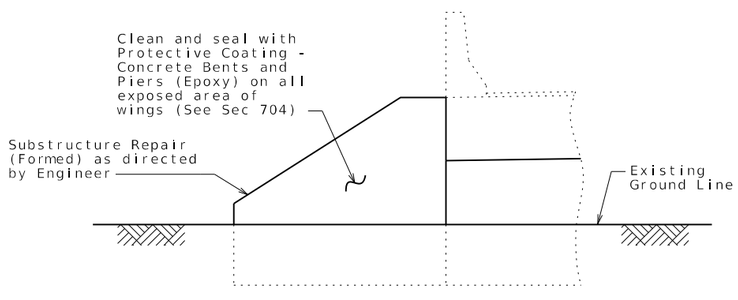
* Supplementary wearing surface material for monolithic deck repair will be paid for at the fixed unit price in accordance with Sec 109.

** Thickness of existing wearing surface has not been field verified. No adjustment will be made to the contract unit price for variations in thickness.

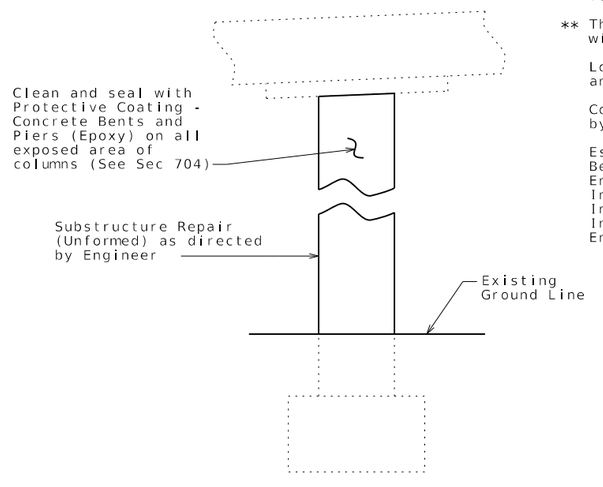
Locations of Substructure Repair (Formed or Unformed) have not been identified and will be determined by the Engineer.

Cost of any required excavation for bridge will be considered completely covered by the contract unit price for other items.

Estimated total quantity of 2,150 sq. ft. of Protective Coating - Concrete Bents and Piers (Epoxy):
End Bent No. 1: 75 sq. ft.
Int. Bent No. 2: 650 sq. ft.
Int. Bent No. 3: 700 sq. ft.
Int. Bent No. 4: 650 sq ft.
End Bent No. 5: 75 sq. ft.



PROTECTIVE COATING AT END BENTS



PROTECTIVE COATING AT INT. BENTS

REPAIRS TO BRIDGE: ROUTE BL-44 (KINGSHIGHWAY) OVER ROUTE I-44

ROUTE BL-44 FROM I-44 TO ROUTE 72
AT I-44
BEGINNING STATION 879+87.02± (Match Existing)

Detailed Nov. 2024
Checked Nov. 2024

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

STATE OF MISSOURI JUSTIN M. DAVIS NUMBER PE-2007020256 PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 1/10/2025
ROUTE BL-44 STATE MO
DISTRICT BR SHEET NO. 1
COUNTY PHELPS
JOB NO. J5S3563
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A12592

DESCRIPTION | DATE

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

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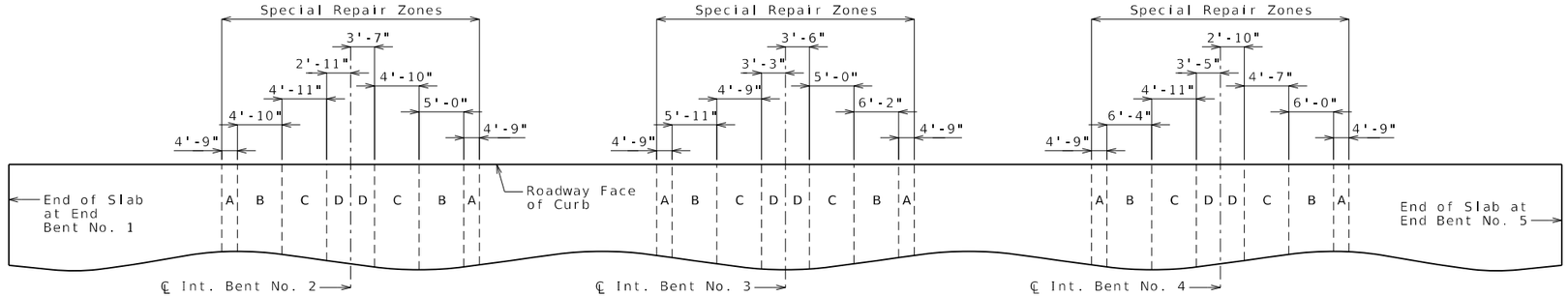
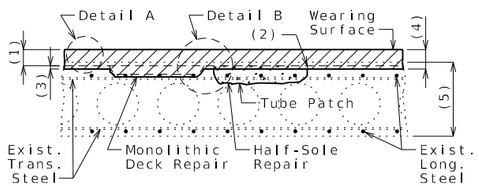
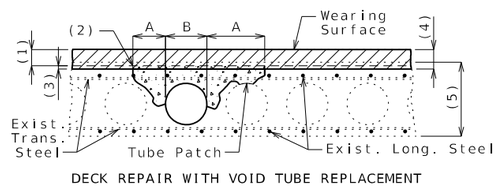


PART PLAN OF SLAB SHOWING SPECIAL REPAIR ZONES

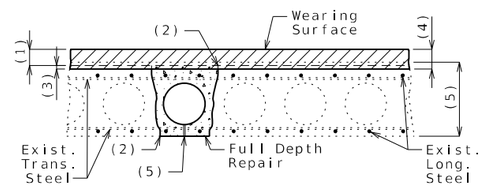


MONOLITHIC AND HALF-SOLE REPAIR



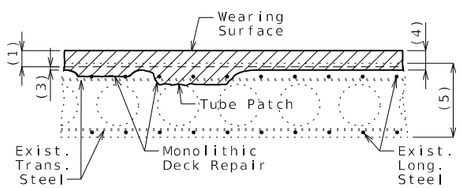
DECK REPAIR WITH VOID TUBE REPLACEMENT

A = Half-Sole Repair
B = Deck Repair with Void Tube Replacement

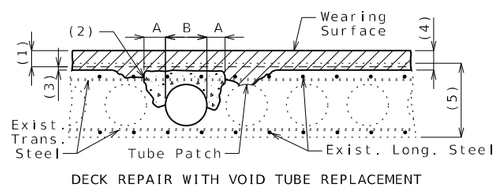


FULL DEPTH REPAIR

DECK REPAIR INSIDE SPECIAL REPAIR ZONES (BEFORE HYDRO DEMOLITION)

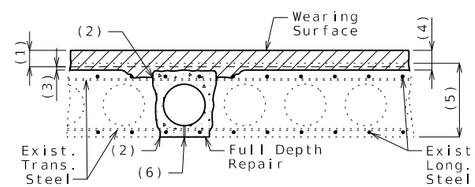


MONOLITHIC DECK REPAIR



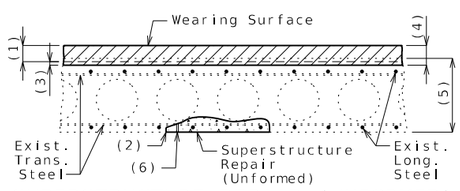
DECK REPAIR WITH VOID TUBE REPLACEMENT

A = Half-Sole Repair
B = Deck Repair with Void Tube Replacement



FULL DEPTH REPAIR

DECK REPAIR OUTSIDE SPECIAL REPAIR ZONES (AFTER HYDRO DEMOLITION)



SUPERSTRUCTURE REPAIR (UNFORMED)

(1) Removal of existing 1 1/2"± asphalt wearing surface plus 1/2" of existing deck

(2) 1" vertical side shall be established outside the deteriorated area.

(3) Total surface hydro demolition of sound concrete, measured to mortar line:

1/4" minimum inside special repair zones

1/2" minimum outside special repair zones

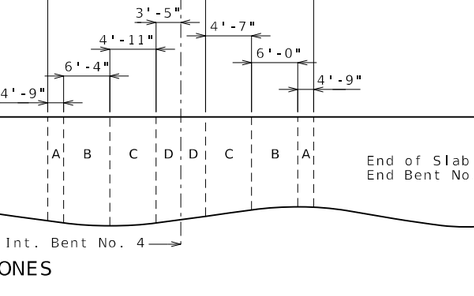
(4) Latex modified concrete wearing surface:

2 1/4" minimum inside special repair zones

2 1/2" minimum outside special repair zones

(5) Original depth

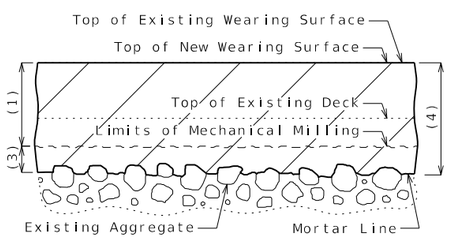
(6) Restore existing weep hole, if encountered.



FIBER VOID TUBE REPLACEMENT

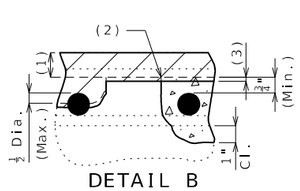
Fiber tubes for producing voids shall have an approximate outside diameter of x inches and a wall thickness of 1/4 inch and shall be anchored to joists carrying the floor form at not more than 4-foot centers.

One 3/4"Ø weep hole shall be provided at 2 inches from each end of each new void.



MILLING AND HYDRO DEMOLITION LIMITS

DETAIL A



DETAIL B

Monolithic deck repair shall be used when only half the diameter or less of the top bar is exposed.

Clearance around top bar and around bottom bar at the intersection of top bar shall be required when more than half the diameter of the top bar is exposed.

Deck Repair Notes:

Order of Repair:

1. Remove existing wearing surface plus 1/2" of existing deck.
2. Power wash deck to identify sound and unsound existing deck repair.
3. Inside special repair zones, complete the following repairs:
   a. Removal of existing deck repair
   b. Half-sole repair
   c. Deck repair with void tube replacement
   d. Full depth repair
4. Outside special repair zones, remove existing deck repair.
5. Complete total surface hydro demolition, removing 1/4" minimum of sound concrete inside special repair zones and removing 1/2" minimum of sound concrete and all deteriorated concrete outside special repair zones.
6. Sound deck and if needed complete incidental concrete removal.
7. Outside special repair zones, complete the following repairs:
   a. Deck repair with void tube replacement
   b. Full depth repair
8. Place new wearing surface including additional material for areas of monolithic deck repair.

Special Repair Zones:

Deck repair required in the areas designated as special repair zones shall be completed before hydro demolition in alphabetical sequence beginning with Zone A. Zones with the same letter designation may be repaired at the same time. Hydro demolition shall not move forward until the repairs in all special repair zones are completed and properly cured.

Any deck repair in areas not designated as a special repair zone shall be completed after hydro demolition.

Removal and deck repair shall be completed in one special repair zone and concrete shall have attained a compressive strength of 3200 psi before work can be started in the next special repair zone.

If any single repair area does not exceed 4 square feet in size and the total repair area within a special repair zone does not exceed 12 square feet, the special repair zone may be repaired at the same time as an adjacent zone.

Void Repair:

Any damage sustained to the void tube as a result of the contractor's operations shall be patched or replaced as required by the engineer at the contractor's expense.

An exposed void in the deck shall be patched as approved by the engineer in a manner that shall maintain the void area completely free of concrete. Cost of patching an exposed void will be considered completely covered by the contract unit price for Half-Sole Repair inside special repair zones and Monolithic Deck Repair outside special repair zones.

When a deteriorated portion of the void tube is beyond the point of patching as determined by the engineer, the portion of the deteriorated void tube shall be replaced. The void area shall be maintained completely free of concrete. Cutting of the longitudinal reinforcing steel will not be permitted. The fiber tubes for producing the voids shall have an outside diameter with the wall thickness the same as the existing tubes and anchored at not more than the original spacing. Cost of replacing the void tube will be considered completely covered by the contract unit price for Deck Repair with Void Tube Replacement. Measurement will be horizontal projection of the area of exposed tube in plan.

DECK REPAIR DETAILS

Detailed Nov. 2024
Checked Nov. 2024

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

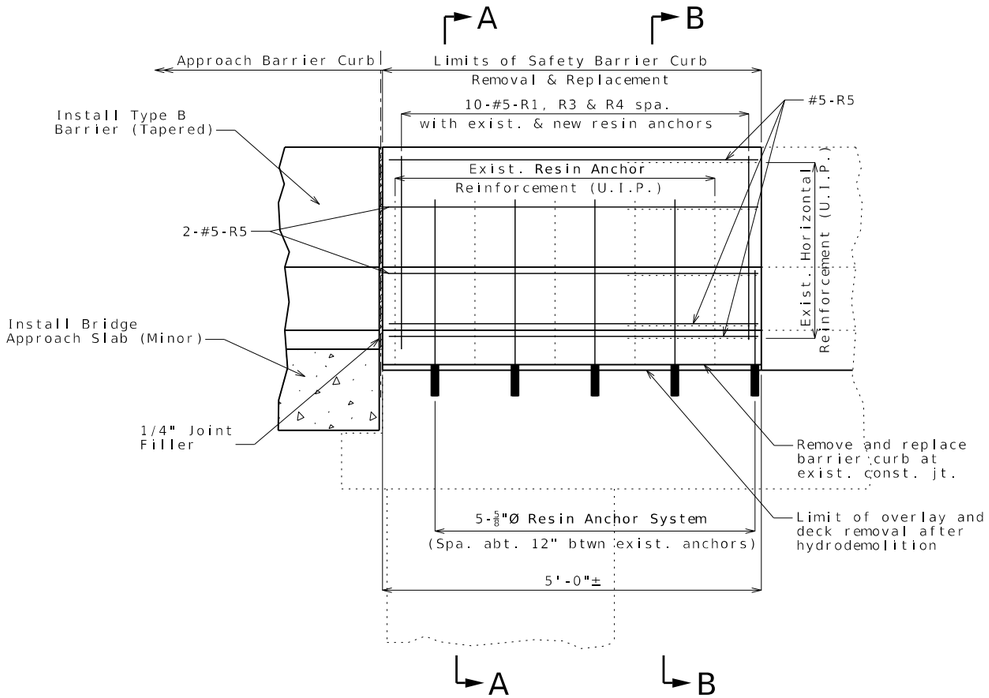
STATE OF MISSOURI JOHN W. DAVIS NUMBER PE-2007020256 PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 1/10/2025
ROUTE BL-44 | STATE MO
DISTRICT BR | SHEET NO. 2
COUNTY PHELPS
JOB NO. J5S3563
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A12592

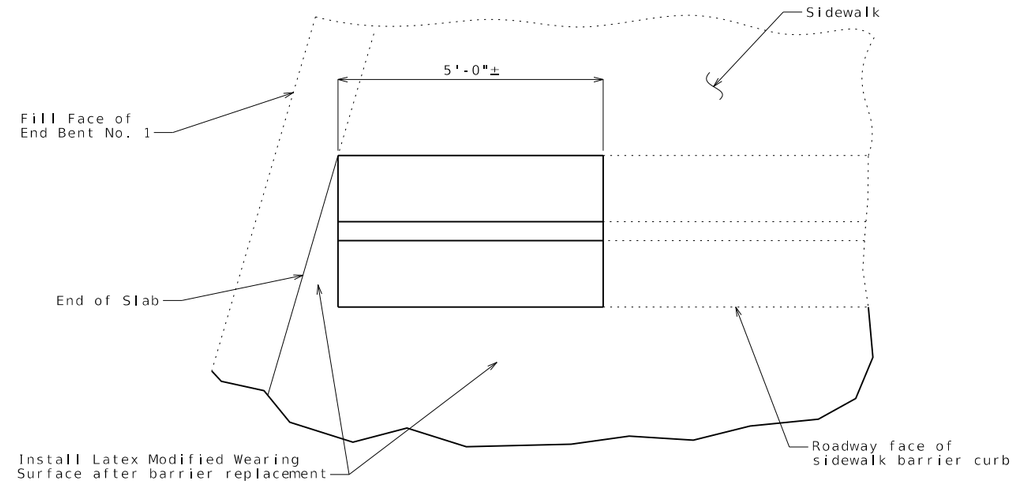
DESCRIPTION | DATE

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

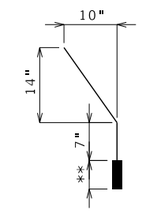
Hg Consult inc engineers planners
7733 N. Wallace Ave.: Kansas City, MO 64158: (816)256-5153
Hg CONSULT, INC.
PRO. ENGINEER 2010005873



PART ELEVATION LEFT SIDE OF ROADWAY
AT END BENT NO. 1 SHOWING BARRIER CURB REINFORCEMENT



PART PLAN LEFT SIDE
OF ROADWAY



DETAILS OF RESIN ANCHOR SYSTEMS

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

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

The minimum embedment depth in concrete with f'c = 3,000 psi for the resin anchor system shall be that required to meet the minimum ultimate pullout strength in accordance with Sec 1039 but shall not be less than 5".

An epoxy coated #5 Grade 60 reinforcing bar R6 shall be substituted for the 5/8"Ø threaded rod.

Notes:

Top of barrier curb shall be built parallel to grade.

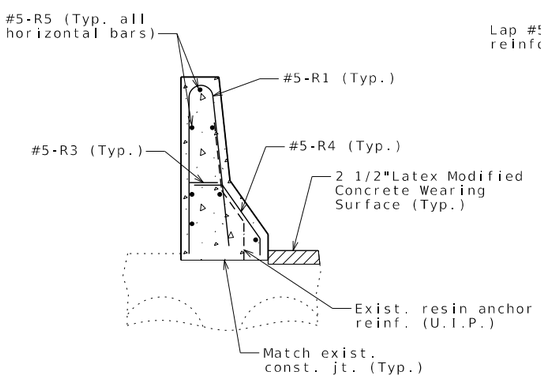
All exposed edges of barrier curb shall have either a 1/2-inch radius or a 3/8-inch bevel, unless otherwise noted.

All exposed edges of new barrier curb shall match existing safety barrier curb.

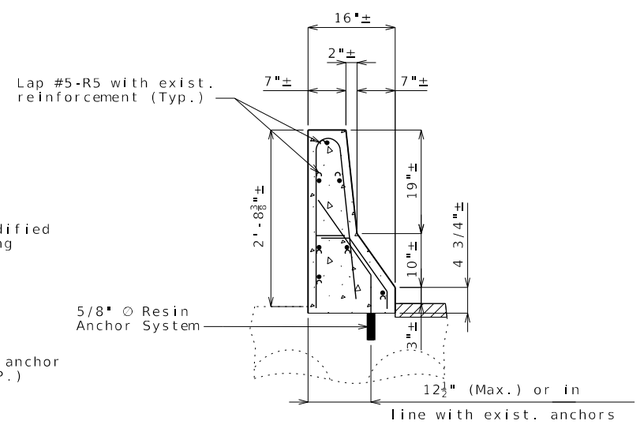
Payment for all concrete and reinforcing steel, complete in place, will be considered completely covered by the contract unit price for Remove and Replace Barrier Curb.

All existing longitudinal and anchor reinforcement in the barrier curb shall be cleaned and reused.

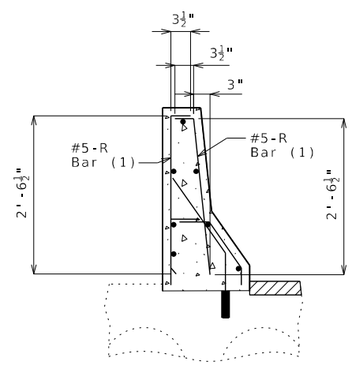
Minimum lap length between existing longitudinal reinforcing steel and #5-R5 is 2'-11".



SECTION A-A



SECTION B-B



R-BAR PERMISSIBLE ALTERNATE SHAPE

(1) The R1 bar may be separated into two bars as shown, at the contractor's option, only when slip forming is not used.
(All dimensions are out to out.)

DETAILS OF SIDEWALK BARRIER CURB AT END BENT NO. 1

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

Sheet No. 3 of 7

Detailed Nov. 2024
Checked Nov. 2024

STATE OF MISSOURI
JUDY M. WANG
NUMBER
PE-2007020256
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

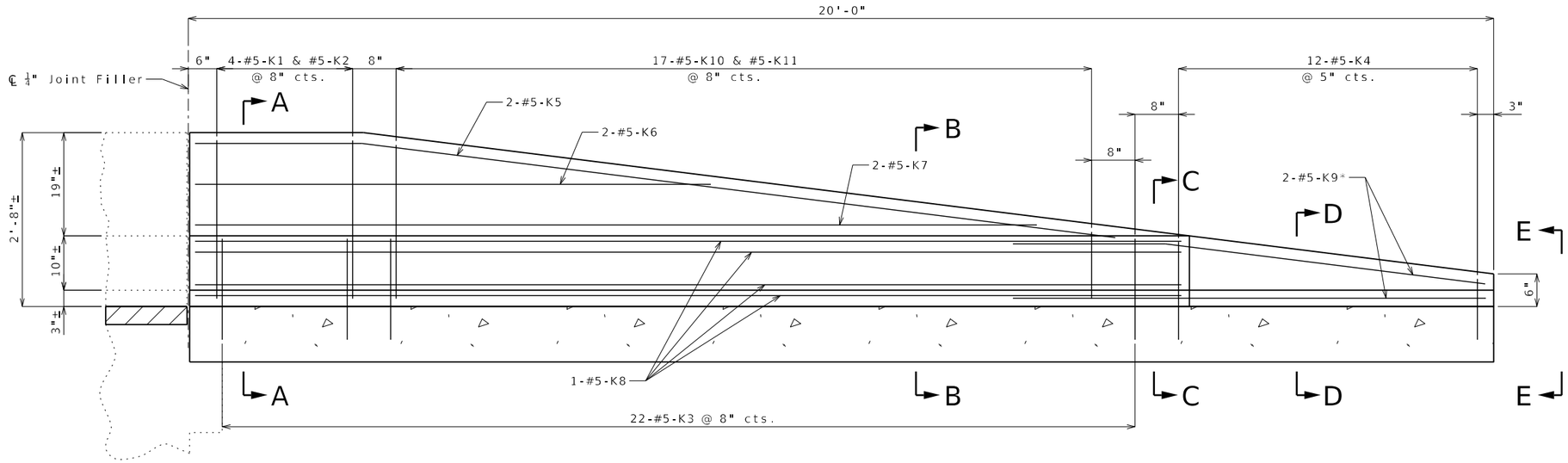
DATE PREPARED	
1/10/2025	
ROUTE	STATE
BL-44	MO
DISTRICT	SHEET NO.
BR	3
COUNTY	
PHELPS	
JOB NO.	
J5S3563	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	
A12592	

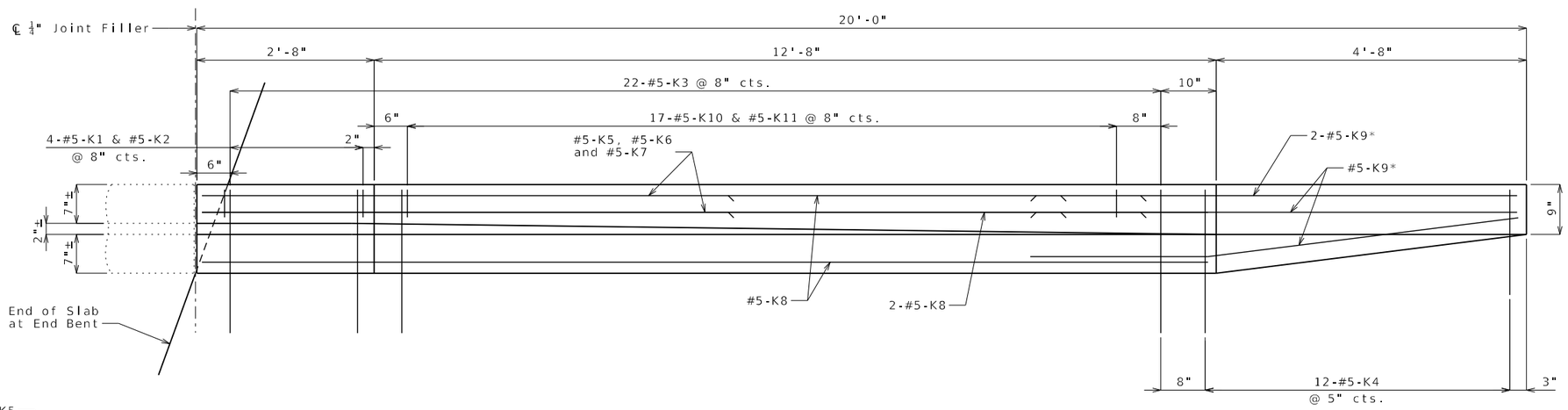
DESCRIPTION	DATE

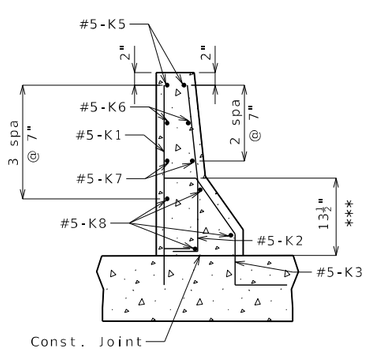
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

Hg Consult inc engineers planners
7733 N. Wallace Ave.: Kansas City, MO 64158: (816)256-5153
Hg CONSULT, INC.
PRO. ENGINEER 2010005873

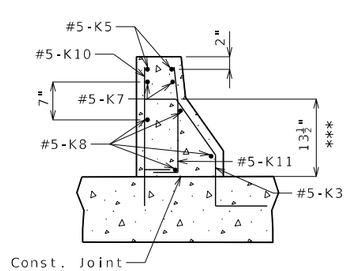
G:\Shared drives\Hg Projects (Yr 2023-2024)\2024\24.037 J5S3563 Bridge Rehab BL-44 (MoDOT)\Civil\Bridge Sheet Files\B_A12592_003_Barrier_Repair.dgn 11:01:53 AM 1/10/2025



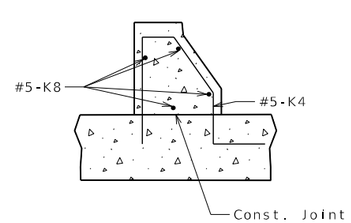




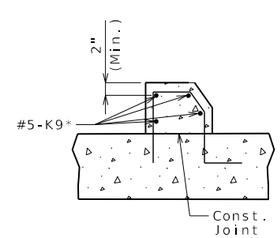
SECTION A-A



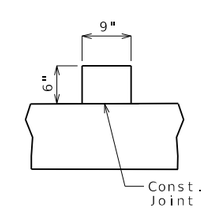
SECTION B-B



SECTION C-C



SECTION D-D



VIEW E-E

Notes:

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

For details of approach slab, see Sheet No. 5.

Barrier dimensions at end of bridge slab shall match existing barrier on bridge.

Use a minimum lap of 2'-7" between K8 and K9 bars.

* Bend #5-K9 in field to fit barrier transition.

Cost of concrete and reinforcing steel, complete in place, will be considered completely covered by the contract unit price for Type B Barrier (Tapered).

TYPE B BARRIER (TAPERED) ON APPROACH SLABS

(End Bent No. 4 barrier shown, End Bent No. 1 barrier similar)

Detailed Nov. 2024
Checked Nov. 2024

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

STATE OF MISSOURI
JUSTIN M. KOEN
NUMBER
PE-2007020255
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED	1/10/2025
ROUTE	BL-44
STATE	MO
DISTRICT	BR
SHEET NO.	4
COUNTY	PHELPS
JOB NO.	J5S3563
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A12592

DESCRIPTION | DATE

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

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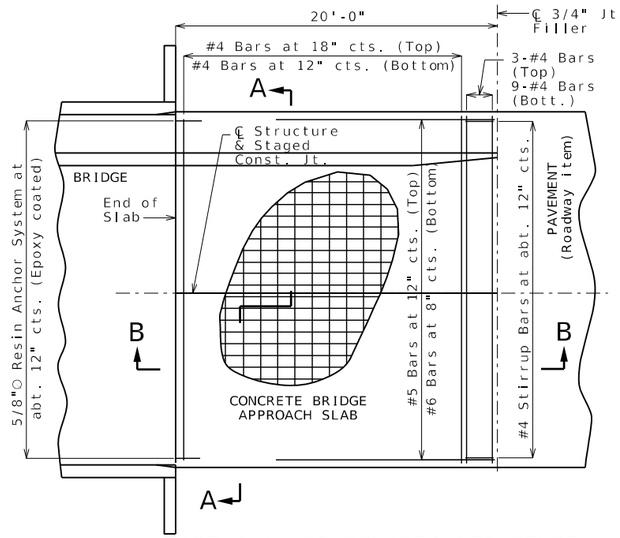
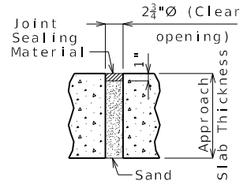
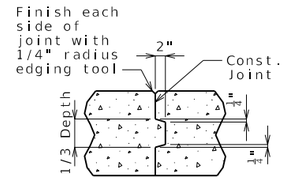
7733 N. Wollace Ave.: Kansas City, MO 64158: (816)256-5153
Hg CONSULT, INC.
PRO. ENGINEER 2010005873



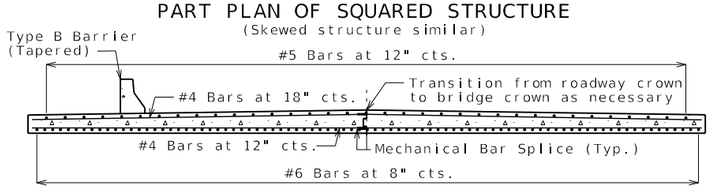
PART PLAN OF SQUARED STRUCTURE
(Skewed structure similar)



UNDERSEAL ACCESS HOLE DETAIL
(If required)

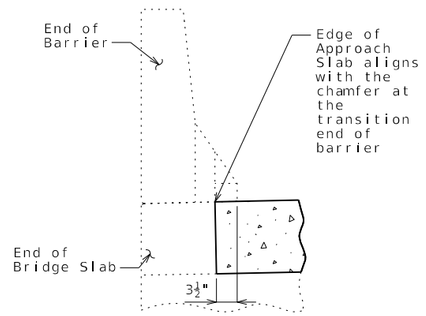


CONSTRUCTION JOINT DETAIL

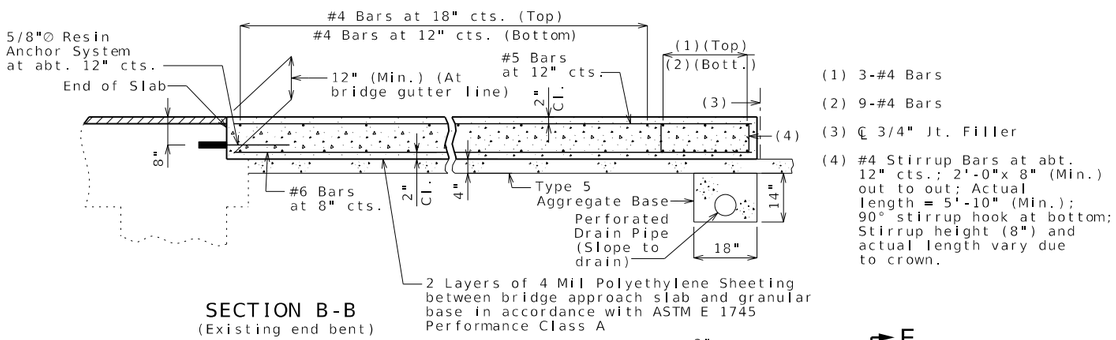


SECTION A-A

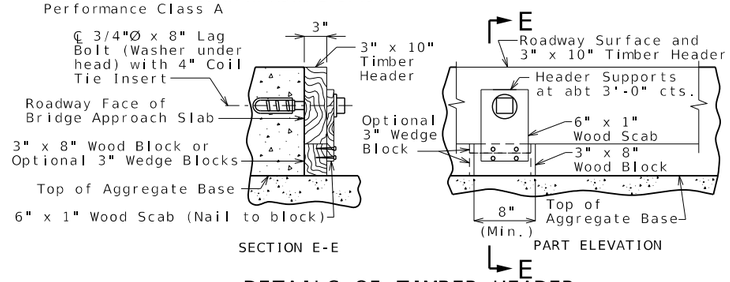
With the approval of the engineer, the contractor may crown the bottom of the approach slab to match the crown of the roadway surface.



SECTION BETWEEN APPROACH AND BARRIER



SECTION B-B
(Existing end bent)



SECTION E-E

PART ELEVATION

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

CONCRETE SLAB

Notes For Concrete Slab Only:

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

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

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

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

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

Mechanical bar splices shall be in accordance with Sec 710. (Estimated 34 splices per slab)

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

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

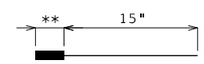
For reinforcement of the Type B Barrier (Tapered), see Sheet No. 4.

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

General Notes:

Contractor shall construct the concrete slab.

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



DETAILS OF RESIN ANCHOR SYSTEMS

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

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

The minimum embedment depth in concrete with f'c = 3,000 psi for the resin anchor system shall be that required to meet the minimum ultimate pullout strength in accordance with Sec 1039 but shall not be less than 5".

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

BRIDGE APPROACH SLAB (MINOR)

Detailed Nov. 2024
Checked Nov. 2024

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

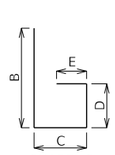
STATE OF MISSOURI
JOHN M. HAYES
NUMBER
PE-2007020256
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED	
1/10/2025	
ROUTE	STATE
BL-44	MO
DISTRICT	SHEET NO.
BR	5
COUNTY	
PHELPS	
JOB NO.	
J5S3563	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	
A12592	

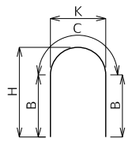
DESCRIPTION	DATE

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

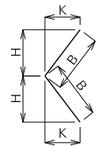
Hg Consult Inc engineers planners
7733 N. Wallace Ave.: Kansas City, MO 64158: (816)256-5153
Hg CONSULT, INC.
PRO. ENGINEER 2010005873



SHAPE 6
or 6S



SHAPE 7



SHAPE 8
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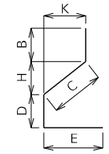

SHAPE 9
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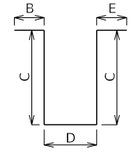

SHAPE 10
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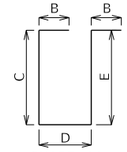

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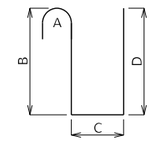
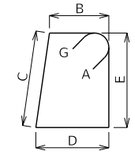
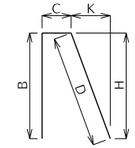


SHAPE 12



SHAPE 13S



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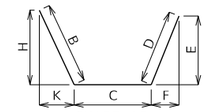

SHAPE 15
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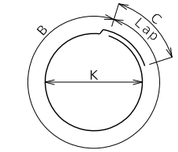

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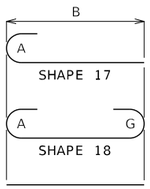
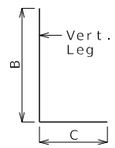


SHAPE 17
SHAPE 18
SHAPE 20



SHAPE 19
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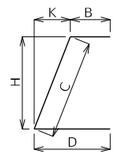
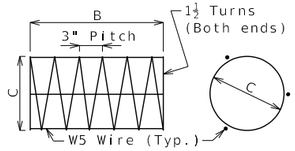


SHAPE 21
or 21S



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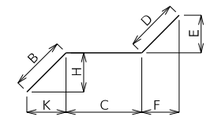
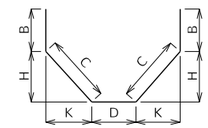
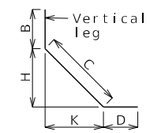


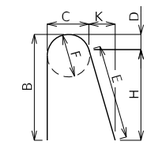
SHAPE 23
or 23S



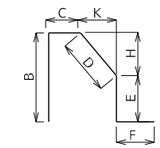
SHAPE 24
or 24S



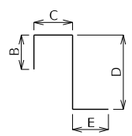
SHAPE 25
or 25S



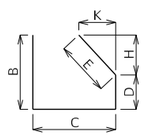
SHAPE 26



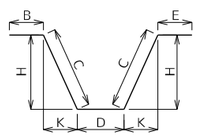
SHAPE 27S



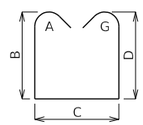
SHAPE 28
or 28S



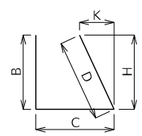
SHAPE 29
or 29S



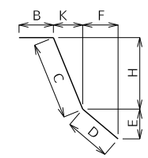
SHAPE 30
or 30S



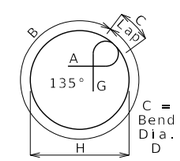
SHAPE 31S



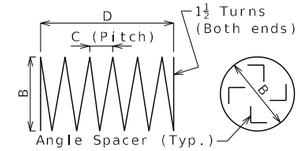
SHAPE 32
or 32S



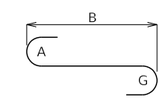
SHAPE 33
or 33S



SHAPE 34S



SHAPE 35 (1)

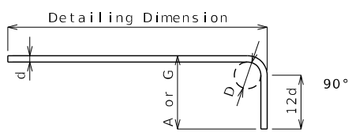


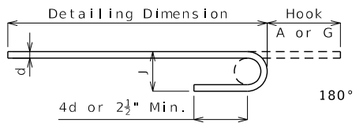
SHAPE 36

Finished Bend Diameters D and Hook Dimensions

Standard Pin Bend Shapes

Size	Case	D	A or G 90°	A or G 180°	J 180°
#4	1	3"	8"	6"	4"
#5	1	3¾"	10"	7"	5"
#6	1	4½"	12"	8¼"	6"
#7	2	5¼"	14"	9¾"	7"
	3	7"	15"	11½"	8¾"
#8	2	6"	16"	11"	8"
	3	8"	17"	13¼"	10"
#9	1	9½"	19½"	15½"	11¾"
#10	1	10¾"	22"	17½"	13¼"
#11	1	12"	24½"	19½"	14⅞"
#14	1	18¼"	31¼"	27½"	21⅝"
#18	1	24"	41½"	36¼"	28½"



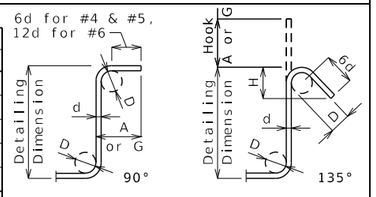


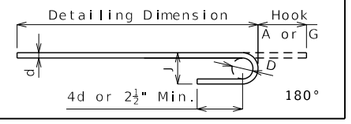
Stirrup Pin Bend Shapes (S)

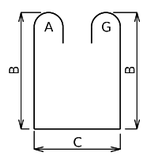
Size	Case	D	A or G 90°	A or G 135°	A or G 180°	H 135°	J 180°
#4	2	2"	4½"	4½"	5"	2⅝"	3"
	3	3"	5"	5¼"	6"	3"	4"
#5	2	2½"	5¾"	5¾"	5¾"	3⅝"	3¾"
	3	3¾"	6¼"	6½"	7"	3⅞"	5"
#6	1	4½"	12"	7¾"	8¼"	4⅜"	6"

Applicable for all grades of steel.

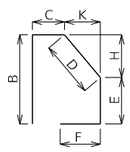
Case 1 applies to all reinforcement. Case 2 applies to all reinforcement except for galvanized bars. Case 3 applies to galvanized bars only.







SHAPE 37S



SHAPE 38S

BENDING DIAGRAMS

All dimensions are out to out.

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

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

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

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

Reinforcing Steel Totals (Pounds)

	Size	Substructure Plain	Substructure Epoxy	Superstructure Slab Plain	Superstructure Slab Epoxy	Superstructure Barrier	Superstructure Slip Form	Entire Bridge Plain	Entire Bridge Epoxy
By Size	W5	0	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0	0
	5	0	0	0	0	952	0	0	952
	6	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0
	8	0	0	0	0	0	0	0	0
	9	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0
	11	0	0	0	0	0	0	0	0
	14	0	0	0	0	0	0	0	0
	18	0	0	0	0	0	0	0	0
By Type		0	0	0	0	952	0	0	952

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

BENDING DIAGRAMS AND REINFORCING STEEL TOTALS

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

Detailed Nov. 2024
Checked Nov. 2024

STATE OF MISSOURI
JOHN M. HAGGE
NUMBER
PE-2007020256
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 1/10/2025

ROUTE	STATE
BL-44	MO
DISTRICT	SHEET NO.
BR	6

COUNTY PHELPS
JOB NO. J5S3563
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A12592

DESCRIPTION
DATE

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

Hg Consult Inc engineers planners
7733 N. Wallace Ave.: Kansas City, MO 64158: (816)256-5153
Hg CONSULT, INC.
PRO. ENGINEER 2010005873

Bill of Reinforcing Steel

No. Req.	Size/ Mark	Location	Codes C	Codes SH	Codes V	Dimensions B ft in.	C ft in.	D ft in.	E ft in.	F ft in.	H ft in.	K ft in.	Nom. Length ft in.	Actual Length ft in.	Weight lb
10	5 R1	Barrier	E	26		2 6.000	4.000	1.750	2 4.500	4.000	2 4.250	3.000	5 1	5 0	52
10	5 R3	Barrier	E	19S		13.000	5.750						1 7	1 6	16
10	5 R4	Barrier	E	27S			5.750	11.625	2.500		9.500	6.750	1 8	1 6	16
7	5 R5	Barrier	E	20		4 9.000							4 9	4 9	35
5	5 R6	Barrier	E	25S		12.000	17.000				14.000	10.000	2 5	2 4	12
8	5 K1	Barrier	E	19S		2 5.000	5.500						2 11	2 9	23
8	5 K2	Barrier	E	38S				17.625	10.750	4.500	17.500	2.500	2 9	2 7	11
44	5 K3	Barrier	E	27S		19.000	5.000	12.250	8.500	12.000	10.000	7.000	4 9	4 5	203
24	5 K4	Barrier	E	27S	2	18.000	5.000	10.875	8.500	12.000	9.000	6.000	4 6	4 3	
						11.000	5.000	0.000	11.000	12.000	0.000	0.000	3 3	3 0	91
4	5 K5	Barrier	E	14			2 6.000	17 3.625			2 2.000	17 2.000	19 10	19 10	83
4	5 K6	Barrier	E	20		7 11.000							7 11	7 11	33
4	5 K7	Barrier	E	20		12 11.000							12 11	12 11	54
8	5 K8	Barrier	E	20		15 0.000							15 0	15 0	125
8	5 K9	Barrier	E	14			2 8.000	4 8.375			7.000	4 8.000	7 4	7 4	61
34	5 K10	Barrier	E	19S	2	2 4.250	5.500						2 10	2 9	
						12.250	5.500						1 6	1 5	72
34	5 K11	Barrier	E	38S	2			16.875	10.750	4.500	16.750	2.375	2 8	2 6	
								0.750	10.750	4.500	0.750	0.125	1 4	1 2	65

Bill of Reinforcing Steel

No. Req.	Size/ Mark	Location	Codes C	Codes SH	Codes V	Dimensions B ft in.	C ft in.	D ft in.	E ft in.	F ft in.	H ft in.	K ft in.	Nom. Length ft in.	Actual Length ft in.	Weight lb

Nominal lengths are based on out to out dimensions shown in bending diagrams and are listed to the nearest inch for fabricator's use. Actual lengths are measured along centerline bar to the nearest inch. Weights are based on actual lengths.

For bending diagrams and steel reinforcing totals, see Sheet No. 6.

All bars shall be Grade 60.

Codes: C = Required coatings, where E = Epoxy Coated and G = Galvanized.

SH = Required shape, see bending diagrams.

V = Sets of varied bars and number of bars of each length. Bar dimensions vary in equal increments between dimensions shown on this line and the following line and the actual length dimension shown on this line and the following line vary by the specified increment.

Detailed Nov. 2024
Checked Nov. 2024

BILL OF REINFORCING STEEL

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

STATE OF MISSOURI
JUSTIN M. VOSS
NUMBER
PE-2007020256
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 1/10/2025

ROUTE	STATE
BL-44	MO
DISTRICT	SHEET NO.
BR	7

COUNTY PHELPS

JOB NO. J5S3563

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