

DESIGN DESIGNATION

A.A.D.T. - 2025 = 1927  
A.A.D.T. - 2045 = 2139  
D.H.V. = 58%  
T = 16%  
V = 55 M.P.H.

FUNCTIONAL CLASSIFICATION- MINOR ARTERIAL

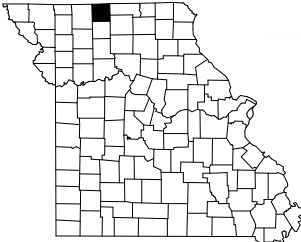
NO RIGHT-OF-WAY  
ACQUISITION

CONVENTIONAL SYMBOLS  
(USED IN PLANS)

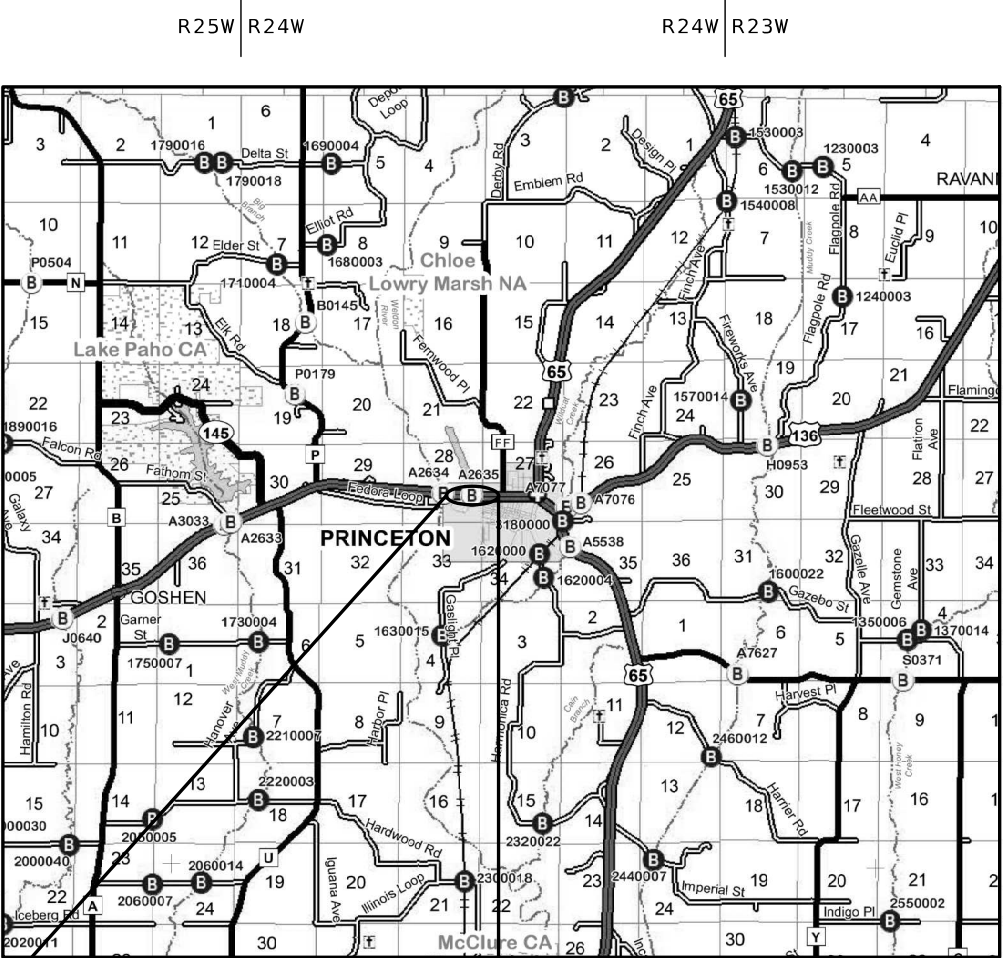
	EXISTING	NEW
BUILDINGS AND STRUCTURES		
GUARD RAIL		
GUARD CABLE		
CONCRETE RIGHT-OF-WAY MARKER		
STEEL RIGHT-OF-WAY MARKER		
LOCATION SURVEY MARKER		
UTILITIES		
FIBER OPTICS	-FO-	-FO-
OVERHEAD CABLE TV	-OTV-	-OTV-
UNDERGROUND CABLE TV	-UTV-	-UTV-
OVERHEAD TELEPHONE	-OT-	-OT-
UNDERGROUND TELEPHONE	-UT-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

NOTE: DASHED OR OPEN SYMBOLS INDICATE  
EXISTING FEATURES

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION  
PLANS FOR PROPOSED  
HIGHWAY ROUTE 136  
MERCER COUNTY



KEY MAP  
LOCATION OF MERCER COUNTY



BEGIN PROJECT  
STA. 654+01.00  
LOG MILE 132.157

BRIDGE DECK REPLACEMENT,  
SHOULDER AND GUARDRAIL IMPROVEMENTS  
PROJECT LENGTH = 0.158 MILES

END PROJECT  
STA. 662+34.00  
LOG MILE 132.315

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) (2 SHEETS)	2
QUANTITIES (QU) (2 SHEETS)	3
PLAN (PL)	4
TRAFFIC CONTROL SHEETS (TC)	5-11

BRIDGE DRAWINGS (B)	
A26351	1-18



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

DATE PREPARED	10/7/2025
ROUTE	STATE
136	MO
DISTRICT	SHEET NO.
NW	1
COUNTY	
MERCER	
JOB NO.	
JNW0049	
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)

LENGTH OF PROJECT

BEGINNING OF PROJECT	STA. 654 + 01.00
END OF PROJECT	STA. 662 + 34.00

APPARENT LENGTH 833.00 FEET

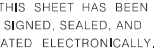
EQUATIONS AND EXCEPTIONS:

TOTAL CORRECTIONS	0 FEET
NET LENGTH OF PROJECT	833.00 FEET
STATE LENGTH	0.158 MILES

FOR INFORMATION ONLY  
ESTIMATED DISTURBED ACRES 0 ACRES

HDR Engineering, Inc.

10450 Holmes Rd.  
Suite 600  
Kansas City, MO 64131  
816-360-2700  
Certificate of Authority: 000856



10/7/2025

DISTRICT	SHEET NO.
NW	2

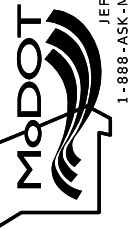
JOB NO.  
JNW0049

CONTRACT ID.

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COMMISSION

COMMISSION



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

HDR Engineering, Inc.

2

816-360-2700  
Certificate of Authority: 000856



EXISTING SECTION ON TANGENT

STA 654+01.00 TO STA 655+61.00

STA 660+74.00 TO STA 662+34.00



STA 654+01.00 TO STA 655+61.00

STA 660+74.00 TO STA 662+34.00

NOT TO SCALE

TYPICAL SECTIONS  
SHEET 1 OF 2



MOBILIZATION	
LUMP SUM =	1

CONTRACTOR FURNISHED SURVEYING & STAKING	
LUMP SUM =	1

REMOVAL OF IMPROVEMENTS						
SHEET NO.	FROM STA	TO STA	ROADWAY	LOCATION	DESCRIPTION	REMARKS
4	654+01.00	655+61.00	ROUTE 136	LT	SAWCUT	160 LF
4	654+01.00	655+61.00	ROUTE 136	RT	SAWCUT	160 LF
4	660+74.00	662+34.00	ROUTE 136	LT	SAWCUT	160 LF
4	660+74.00	662+34.00	ROUTE 136	RT	SAWCUT	160 LF
4	654+01.00	655+61.00	ROUTE 136	LT	SHOULDER PAVEMENT	177.8 SY
4	654+01.00	655+61.00	ROUTE 136	RT	SHOULDER PAVEMENT	177.8 SY
4	660+74.00	662+34.00	ROUTE 136	LT	SHOULDER PAVEMENT	177.8 SY
4	660+74.00	662+34.00	ROUTE 136	RT	SHOULDER PAVEMENT	177.8 SY
LUMP SUM = 1						

NOTE: TABLE IS PROVIDED FOR INFORMATION ONLY. REMOVAL OF IMPROVEMENTS LUMP SUM INCLUDES ITEMS LISTED ON THE TABLE AND ALL OTHER INCIDENTAL REMOVALS WITHIN PLANS NECESSARY TO PERFORM THE PROPOSED WORK.

CONCRETE PAVEMENT							
SHEET NO.	FROM STA	TO STA	ROADWAY	DIRECTION	LOCATION	8" CONC. PAVEMENT SY	6" TYPE 5 AGGREGATE FOR BASE SY
4	654+01.00	655+61.00	ROUTE 136	EASTBOUND	RT	177.8	178
4	654+01.00	655+61.00	ROUTE 136	WESTBOUND	LT	177.8	178
4	660+74.00	662+34.00	ROUTE 136	EASTBOUND	RT	177.8	178
4	660+74.00	662+34.00	ROUTE 136	WESTBOUND	LT	177.8	178
SUBTOTALS						711.2	712
PAY TOTALS						711.2	712

GUARDRAIL								
SHEET NO.	FROM STA	TO STA	ROADWAY	DIRECTION	LOCATION	MGS GUARDRAIL (RESET) LF	TYPE A CET (MASH) (RESET) EA	MGS BRIDGE APPROACH TRANSITION (RESET) EA
4	654+01.00	655+61.00	ROUTE 136	EASTBOUND	RT	75	1	1
4	654+80.00	655+61.00	ROUTE 136	WESTBOUND	LT		1	1
4	660+74.00	661+54.00	ROUTE 136	EASTBOUND	RT		1	1
4	660+74.00	662+34.00	ROUTE 136	WESTBOUND	LT	75	1	1
SUBTOTALS						150	4	4
PAY TOTALS						150	4	4

PERMANENT STRIPING								
SHEET NO.	FROM STA	TO STA	ROADWAY	DIRECTION	LOCATION	4" WHITE CLASS 1 PAVEMENT MARKING PAINT (18-MIL, TYPE P BEADS) SOLID LF	4" YELLOW CLASS 1 PAVEMENT MARKING PAINT (18-MIL, TYPE P BEADS) INTER LF	REMARKS
4	645+75.00	670+68.00	ROUTE 136	EASTBOUND	RT	2493		EXTENTS OF TEMPORARY TRAFFIC CONTROL
4	645+75.00	670+68.00	ROUTE 136	WESTBOUND	LT	2493		EXTENTS OF TEMPORARY TRAFFIC CONTROL
4	645+75.00	670+68.00	ROUTE 136	N/A	CL		623	REPLACE CL TO EXTENTS OF TEMP. 500' DSY
SUBTOTALS						4986	623	
PAY TOTALS						4986	623	

TEMPORARY PAVEMENT MARKING					
SHEET NO.	PHASE	ROADWAY	TEMPORARY REMOVABLE MARKING TAPE		
			4-IN. SOLID WHITE (LF)	24-IN. WHITE (LF)	4-IN. SOLID YELLOW (LF)
6, 7	PHASE 1	ROUTE 136	1870	24	2000
8, 9	PHASE 2	ROUTE 136	1870		
10, 11	PHASE 3	ROUTE 136	1870		
SUBTOTALS			5610	24	2000
PAY TOTALS			5610	24	2000

PAVEMENT MARKING REMOVAL						
SHEET NO.	PHASE	ROADWAY	PAVEMENT MARKING REMOVAL (LF)		REMARKS	
6, 7	PHASE 1	ROUTE 136	4986		EXISTING 4-IN. SOLID WHITE	
6, 7	PHASE 1	ROUTE 136		623	EXISTING 4-IN. INTERMITTENT YELLOW	
6, 7	PHASE 1	ROUTE 136	1870		4-IN. SOLID WHITE	
8, 9	PHASE 2	ROUTE 136	1870		4-IN. SOLID WHITE	
10, 11	PHASE 3	ROUTE 136	1870		4-IN. SOLID WHITE	
6, 7	PHASE 1	ROUTE 136			144	24-IN. SOLID WHITE
6, 7	PHASE 1	ROUTE 136	2000			4-IN. SOLID YELLOW
SUBTOTALS			12596	623	144	
PAY TOTAL			13363			

GRANULAR BACKFILL				
SHEET NO.	ROADWAY	GRAVEL (A) OR CRUSHED STONE (B) TONS	SUBSURFACE DRAINAGE GEOTEXTILE SY	CLASS A EXCAVATION CY
4	ROUTE 136	687	685	370
SUBTOTALS		687	685	370
PAY TOTALS		687	685	370

NOTE: COST OF LABOR, EQUIPMENT, EXCAVATION, AND REMOVAL OF MATERIAL TO PLACE GEOTEXTILE AND GRANULAR BACKFILL PER DETAIL ON TYPICAL SECTIONS SHALL BE INCIDENTAL TO THE BID ITEMS FOR GRANULAR BACKFILL AND GEOTEXTILE FABRIC.

ESTIMATE FACTOR FOR GRAVEL (A) OR CRUSHED STONE (B) IS 1.4 TONS PER CU YD

SUMMARY OF QUANTITIES  
SHEET 1 OF 2

STATE OF MISSOURI

EUGENE LOUIE KUEBER JR.

NUMBER PE-2011000912

PROFESSIONAL ENGINEER

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

DATE PREPARED

10/7/2025

ROUTE

136

STATE

MO

DISTRICT

NW

SHEET NO.

3

COUNTY

MERCER

JOB NO.

JNW0049

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

MoDOT

105 WEST CAPITOL JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

HDR Engineering, Inc.

10450 Holmes Rd. Suite 600 Kansas City, MO 64131 816-360-2700

Certificate of Authority: 000856

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SIGN	SIZE	AREA	QTY	TOTAL	RELOC	RELOC	SIGN	DESCRIPTION	SIGN	SIZE	AREA	QTY	TOTAL	RELOC	RELOC	SIGN	DESCRIPTION	ITEM	TOTAL	EFFECTIVE: 07-01-2025	
IN.	SQ.FT.	EACH	SQ.FT.	EACH	SQ.FT.	NO.	IN.		SQ.FT.	EACH	SQ.FT.	EACH	SQ.FT.	NO.	NUMBER	QTY		DESCRIPTION			
WARNING SIGNS									GUIDE SIGNS									6122008		IMPACT ATTENUATOR 40 MPH (SAND BARRELS)	
WO1-1L	48X48	16.00						TURN (SYMBOL LEFT)	E05-1	36X48	12.00						GORE EXIT	6122009		IMPACT ATTENUATOR 45 MPH (SAND BARRELS)	
WO1-1R	48X48	16.00						TURN (SYMBOL RIGHT)	E05-2	48X36	12.00						EXIT OPEN	6122010		IMPACT ATTENUATOR 50 MPH (SAND BARRELS)	
WO1-2L	48X48	16.00						CURVE (SYMBOL LEFT)	E05-2a	48X36	12.00						EXIT CLOSED	6122012	2	IMPACT ATTENUATOR 55 MPH (SAND BARRELS)	
WO1-2R	48X48	16.00						CURVE (SYMBOL RIGHT)	GO20-1	60X24	10.00	2	20.00			1	ROAD WORK NEXT XX MILES	6122014		IMPACT ATTENUATOR 60 MPH (SAND BARRELS)	
WO1-3L	48X48	16.00						REVERSE TURN (SYMBOL LEFT)	GO20-2	48X24	8.00	2	16.00			26	END ROAD WORK	6122017		IMPACT ATTENUATOR 65 MPH (SAND BARRELS)	
WO1-3R	48X48	16.00						REVERSE TURN (SYMBOL RIGHT)	GO20-4	36X18	4.50						PILOT CAR FOLLOW ME	6122019		IMPACT ATTENUATOR 70 MPH (SAND BARRELS)	
WO1-4L	48X48	16.00						REVERSE CURVE (SYMBOL LEFT)	GO20-4a	42X30	8.75						PILOT CAR IN USE WAIT & FOLLOW	6122020	2	REPLACEMENT SAND BARREL	
WO1-4R	48X48	16.00						REVERSE CURVE (SYMBOL RIGHT)	GO20-4a	118X12	1.50						PILOT CAR IN USE WAIT & FOLLOW	6122030	4	IMPACT ATTENUATOR (RELOCATION)	
WO1-4bL	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL LEFT)	GO20-5aP	36X24	6.00						WORK ZONE (PLAQUE)	6122040		WORK ZONE CRASH CUSHION (NARROW)	
WO1-4bR	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL RIGHT)	MO4-8a	24X18	3.00						END DETOUR	6122041		WORK ZONE CRASH CUSHION (RELOCATION)	
WO1-4cL	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL LEFT)	MO4-9L	48X36	12.00						DETOUR (LEFT)	6123001	2	TRUCK MOUNTED ATTENUATOR (TMA)	
WO1-4cR	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL RIGHT)	MO4-9R	48X36	12.00						DETOUR (RIGHT)	6161012		BUOYS (BOATS KEEP OUT)	
WO1-6	60X30	12.50						HORIZONTAL ARROW (SYMBOL)	MO4-9P	48X12	4.00						STREET NAME (PLAQUE)	6161013		BUOYS (NO WAKE)	
WO1-6a	72X36	18.00						HORIZ. ARROW (SYMBOL ON PERMANENT BARRICADE)	MO4-10L	48X18	6.00						DETOUR ARROW (LEFT)	6161014		SPECIAL SIGN ASSEMBLY (BOATS KEEP OUT)	
WO1-7	60X30	12.50						DOUBLE HEAD HORIZONTAL ARROW (SYMBOL)	MO4-10R	48X18	6.00						DETOUR ARROW (RIGHT)	6161020		CHANNELIZER (DRUM-LIKE)	
WO1-7a	72X36	18.00						DOUBLE HEAD HORIZ. ARROW (SYMBOL ON PERM. BARR.)	REGULATORY SIGNS									6161022		CHANNELIZER (CONE)	
WO1-8	18X24	3.00						CHEVRON (SYMBOL)	R1-1	48X48	13.25						STOP	6161025	20 *	CHANNELIZER (TRIM-LINE)	
WO1-8a	30X36	7.50						CHEVRON (SYMBOL FOR DIVIDED HIGHWAYS)	R1-2	48TRI.	6.93						YIELD	6161026		CHANNELIZER (VERTICAL PANEL)	
WO3-1	48X48	16.00						STOP AHEAD (SYMBOL)	R1-2a	36X36	9.00						TO ONCOMING TRAFFIC (PLAQUE)	6161030	7 *	TYPE 3 MOVEABLE BARRICADE	
WO3-2	48X48	16.00						YIELD AHEAD (SYMBOL)	R1-3P	30X12	2.50						ALL WAY (PLAQUE)	6161033		DIRECTION INDICATOR BARRICADE	
WO3-3	48X48	16.00	2	32.00			12	SIGNAL AHEAD (SYMBOL)	R2-1	36X48	12.00						SPEED LIMIT XX	6161040		FLASHING ARROW PANEL	
WO3-4	48X48	16.00						BE PREPARED TO STOP	R3-1	48X48	16.00	1	16.00			55	NO RIGHT TURN (SYMBOL)	6161047		TYPE 3 OBJECT MARKER	
WO3-5	48X48	16.00						SPEED LIMIT AHEAD	R3-2	48X48	16.00						NO LEFT TURN (SYMBOL)	6161055		SEQUENTIAL FLASHING WARNING LIGHT	
WO4-1L	48X48	16.00						MERGE (SYMBOL FROM LEFT)	R3-3	36X36	9.00						NO TURNS	6161070		TUBULAR MARKER	
WO4-1R	48X48	16.00						MERGE (SYMBOL FROM RIGHT)	R3-4	48X48	16.00						NO U-TURN (SYMBOL)	6161095		RADAR SPEED ADVISORY SYSTEM	
WO4-1aL	48X48	16.00						MERGE (LEFT)	R3-7L	30X30	6.25						LEFT LANE MUST TURN LEFT	6161096		CHANGEABLE MESSAGE SIGN, COMMISSION FURNISHED/RETAINED	
WO4-1aR	48X48	16.00						MERGE (RIGHT)	R3-7R	30X30	6.25						RIGHT LANE MUST TURN RIGHT				
WO5-1	48X48	16.00						ROAD/BRIDGE/RAMP NARROWS	R4-1	36X48	12.00						DO NOT PASS	6161098A	2	CHANGEABLE MESSAGE SIGN WITHOUT COMM. INTERFACE, CONTRACTOR FURNISHED/RETAINED	
WO5-3	48X48	16.00						ONE LANE BRIDGE	R4-2	36X48	12.00						PASS WITH CARE				
WO5-5	48X48	16.00						NARROW LANES	R4-7a	36X48	12.00						KEEP RIGHT (HORIZONTAL ARROW)	6161099		CHANGEABLE MESSAGE SIGN WITH COMM. INTERFACE, CONTRACTOR FURNISHED/RETAINED	
WO6-1	48X48	16.00						DIVIDED HIGHWAY (SYMBOL)	R4-8a	36X48	12.00						KEEP LEFT (HORIZONTAL ARROW)				
WO6-2	48X48	16.00						DIVIDED HIGHWAY END (SYMBOL)	R5-1	30X30	6.25						DO NOT ENTER	6162000A	1	WORK ZONE TRAFFIC SIGNAL SYSTEM	
WO6-3	48X48	16.00						TWO WAY TRAFFIC (SYMBOL)	R5-1a	36X24	6.00						WRONG WAY	6162002	2	TEMPORARY LONG-TERM RUMBLE STRIPS	
WO7-3a	30X24	5.00						NEXT XX MILES (PLAQUE)	R6-1L	54X18	6.75						ONE WAY ARROW (LEFT)	6173600D	1038	TEMPORARY TRAFFIC BARRIER, CONTRACTOR FURNISHED/RETAINED	
WO8-1	48X48	16.00						BUMP	R6-1R	54X18	6.75						ONE WAY ARROW (RIGHT)				
WO8-2	48X48	16.00						DIP	R6-2L	24X30	5.00						ONE WAY (LEFT)	6173700B	538	TEMP. TRAFFIC BARRIER ANCHORED, CONTRACTOR FURNISHED/RETAINED	
WO8-3	48X48	16.00						PAVEMENT ENDS	R6-2R	24X30	5.00						ONE WAY (RIGHT)				
WO8-4	48X48	16.00						SOFT SHOULDER	R9-9	24X12	2.00						SIDEWALK CLOSED	6173706		TEMP. TRAFFIC BARRIER STIFFNESS TRANSITION CONTRACTOR FURNISHED/RETAINED	
WO8-5	48X48	16.00						SLIPPERY WHEN WET (SYMBOL)	R9-11L	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW LEFT) CROSS HERE				
WO8-6	48X48	16.00						TRUCK CROSSING	R9-11R	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW RIGHT) CROSS HERE	6174000A		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION, CONTRACTOR FURNISHED/RETAINED	
WO8-6c	48X48	16.00						TRUCK ENTRANCE	R10-6	24X36	6.00	2	12.00			47	STOP HERE ON RED (45° ARROW)		6175010A	1538	RELOCATING TEMPORARY TRAFFIC BARRIER
WO8-7	36X36	9.00						LOOSE GRAVEL	R11-2	48X30	10.00	3	30.00				ROAD CLOSED	6175011B		RELOCATING TEMP. TRAFFIC BARRIER ANCHORED	
WO8-7a	36X36	9.00						FRESH OIL / LOOSE GRAVEL	R11-3a	60X30	12.50						ROAD CLOSED XX MILES AHEAD	6175013		RELOCATING TEMP. TRAFFIC BARRIER STIFFNESS	
WO8-9	48X48	16.00						LOW SHOULDER	R11-4	60X30	12.50						LOCAL TRAFFIC ONLY	6175020A		RELOCATING TEMP. TRAFFIC BARRIER HEIGHT	
WO8-11	48X48	16.00						UNEVEN LANES	CONST-3A	60X48	20.00						ROAD CLOSED TO THRU TRAFFIC	6208064A		TEMPORARY RAISED PAVEMENT MARKER	
WO8-12	48X48	16.00						NO CENTER LINE	CONST-3X	56X12	4.67						FINE SIGN	9029400		TEMPORARY TRAFFIC SIGNALS	
WO8-15	48X48	16.00						GROOVED PAVEMENT	MISCELLANEOUS SIGNS									6169901	1	LUMP SUM TEMPORARY TRAFFIC CONTROL (* ITEM INCLUDED)	
WO8-15P	30X24	5.00						MOTORCYCLE (PLAQUE)	CONST-5	48X36	12.00						POINT OF PRESENCE				
WO8-17L	48X48	16.00						SHOULDER DROP-OFF (SYMBOL LEFT)	CONST-5-9B	66X48	32.00						POINT OF PRESENCE				
WO8-17R	48X48	16.00						SHOULDER DROP-OFF (SYMBOL RIGHT)	CONST-8	48X36	12.00	2	24.00			59	WORK ZONE NO PHONE ZONE				
WO8-17P	30X24	5.00						SHOULDER DROP-OFF (PLAQUE)	SPECIAL-4	48X48	16.00	2	32.00			61	RUMBLE STRIPS AHEAD				
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	2	12.50			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	5	80.00			5	ROAD/BRIDGE/RAMP WORK AHEAD													
WO20-2	48X48	16.00						DETOUR AHEAD													
WO20-3	48X48	16.00						ROAD CLOSED AHEAD													
WO20-4	48X48	16.00	2	32.00			7	ONE LANE ROAD AHEAD	616-10.05	TOTAL											
WO20-5	48X48	16.00						RIGHT/CENTER/LEFT LANE CLOSED AHEAD	CONSTRUCTION SIGNS			316 *									
WO20-5a	48X48	16.00						2 RIGHT/CENTER/LEFT LANES CLOSED AHEAD	616-10.10			TOTAL									
WO20-6a	48X48	16.00						RIGHT/CENTER/LEFT LANE CLOSED	RELOCATED SIGNS			**									
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													
WO24-1R/L								REVERSE CURVE													
GO22-1	21X15	2.19	4	8.76			60	WET PAINT (ARROW PIVOTS)													

STATE OF MISSOURI  
EUGENE LOUIS KUBER, JR.  
NUMBER  
PE-201000912  
PROFESSIONAL ENGINEER

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

DATE PREPARED  
10/7/2025

ROUTE  
136

STATE  
MO

DISTRICT  
NW

SHEET NO.  
3

COUNTY  
MERCER

JOB NO.  
JNW0049

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)

HDR

HDR Engineering, Inc.  
10450 Holmes Rd.  
Suite 600  
Kansas City, MO 64131  
816-366-2700  
Certificate of Authority: 000856

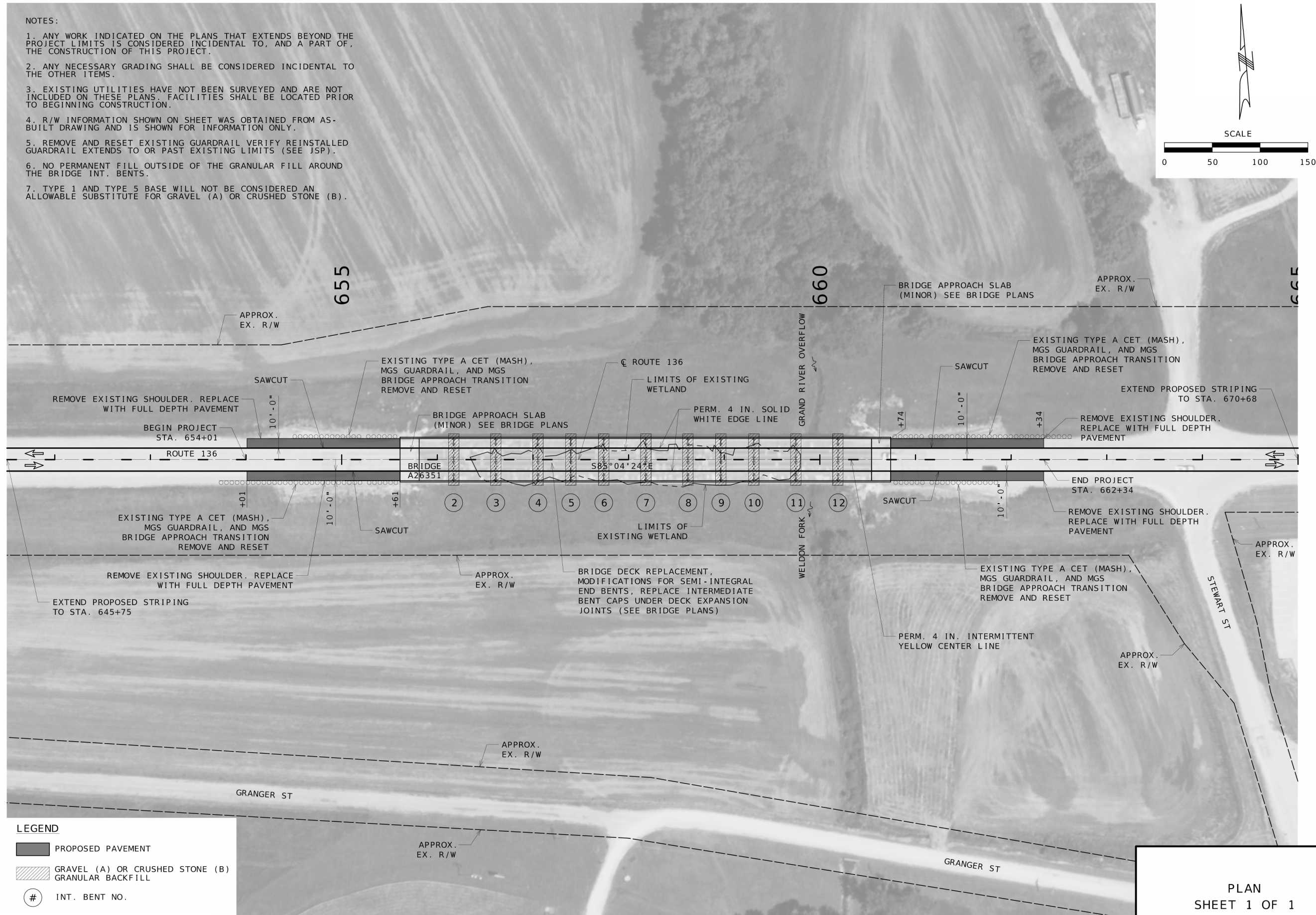
\*\*\* NO DIRECT PAYMENT FOR RELOCATION OF SIGNS COST  
SHALL BE CONSIDERED INCIDENTAL TO BID ITEM 6169901  
\*LUMP SUM TEMPORARY TRAFFIC CONTROL\*

SUMMARY OF QUANTITIES  
SHEET 2 OF 2



NOTES:

1. 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.
2. ANY NECESSARY GRADING SHALL BE CONSIDERED INCIDENTAL TO THE OTHER ITEMS.
3. EXISTING UTILITIES HAVE NOT BEEN SURVEYED AND ARE NOT INCLUDED ON THESE PLANS. FACILITIES SHALL BE LOCATED PRIOR TO BEGINNING CONSTRUCTION.
4. R/W INFORMATION SHOWN ON SHEET WAS OBTAINED FROM AS-BUILT DRAWING AND IS SHOWN FOR INFORMATION ONLY.
5. REMOVE AND RESET EXISTING GUARDRAIL VERIFY REINSTALLED GUARDRAIL EXTENDS TO OR PAST EXISTING LIMITS (SEE JSP).
6. NO PERMANENT FILL OUTSIDE OF THE GRANULAR FILL AROUND THE BRIDGE INT. BENTS.
7. TYPE 1 AND TYPE 5 BASE WILL NOT BE CONSIDERED AN ALLOWABLE SUBSTITUTE FOR GRAVEL (A) OR CRUSHED STONE (B).



LEGEND

- PROPOSED PAVEMENT
- GRAVEL (A) OR CRUSHED STONE (B)  
GRANULAR BACKFILL
- INT. BENT NO.



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ROUTE  
136

STATE  
MO

DISTRICT  
NW

SHEET NO.  
4

COUNTY  
MERCER

JOB NO.  
JNW0049

CONTRACT ID.

PROJECT NO.

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DESCRIPTION

DATE

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PLAN  
SHEET 1 OF 1

NOTES:

1. EXISTING GUIDE, WARNING, AND REGULATORY SIGNS WITHIN THE WORK ZONE SHALL NOT CONFLICT WITH THE CONSTRUCTION SIGNING (SUCH AS SPEED LIMIT, BRIDGE CLEARANCE, ETC.) AND SHALL BE COVERED, REMOVED, OR RELOCATED WITH NO DIRECT PAYMENT. CONSTRUCTION SIGNS SHALL NOT OBSTRUCT EXISTING SIGNS REMAINING IN PLACE.
2. ALL SPACING AND DISTANCES ARE APPROXIMATE. THEY MAY BE ADJUSTED BY THE ENGINEER TO FIT FIELD CONDITIONS.
3. SEE STANDARD PLAN 616.10BF FOR TEMPORARY TRAFFIC CONTROL DEVICES DETAILS.
4. SEE STANDARD PLAN 620.10G FOR TEMPORARY PAVEMENT MARKING DETAILS.
5. CONSTRUCTION SIGNS NOTED AS POST-MOUNTED (POST) SHALL BE MOUNTED PER STANDARD PLAN 616.10BF.
6. THE POSTED SPEED LIMIT IS 55 M.P.H. THE WORK ZONE SPEED LIMIT DURING ACTIVE CONSTRUCTION SHALL BE 45 M.P.H. UNLESS OTHERWISE NOTED IN THE TRAFFIC CONTROL PLAN.
7. CONFLICTING STRIPING SHALL BE REMOVED PRIOR TO GUIDING TRAFFIC THROUGH WORK ZONES. ANY STRIPING WHICH IS DAMAGED DURING A DAYS WORK SHALL BE RE-STRIPED NO LATER THAN THE END OF THE SAME DAY.
8. ALL WARNING SIGNS SHALL HAVE A FLUORESCENT SHEETING.
9. WORDING FOR CHANGEABLE MESSAGE SIGNS SHALL BE AS APPROVED OR DIRECTED BY THE ENGINEER.
10. EXACT LOCATIONS FOR CHANGEABLE MESSAGE SIGNS SHALL BE AS DIRECTED BY THE ENGINEER.
11. MISSOURI ONE CALL (800 DIG RITE) SHALL BE CONTACTED FOR LOCATES (800-344-7483 OR 811) BEFORE BEGINNING ANY EXCAVATION OR BORING ACTIVITIES.
12. UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE NOT BEEN LOCATED AND ARE NOT SHOWN ON THE PLANS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXISTENCE AND PRECISE LOCATION OF ALL FACILITIES AND TO AVOID DAMAGE TO THEM. SEE THE JOB SPECIAL PROVISIONS FOR A LIST OF UTILITY COMPANIES ON OR WITHIN THE VICINITY OF THE PROJECT LIMITS.
13. CONTRACTOR SHALL HAVE TWO LANES OF TRAFFIC OPEN ON ROUTE 136 ON BRIDGE A26351 BY SEPTEMEBER 15, 2026. SEE JSP'S.

SUGGESTED SEQUENCE OF CONSTRUCTION:

PRIOR TO PERFORMING BRIDGE WORK, THE FOLLOWING ACTIVITIES WILL NEED TO OCCUR. TYPICAL APPLICATIONS AS SHOWN ON STANDARD PLAN 616.20E "TEMPORARY TRAFFIC CONTROL PLANS - TWO-LANE ROADWAYS" WILL BE USED TO PERFORM THE WORK FOR TRAFFIC CONTROL:

1. INSTALL ADVANCE SIGNING AND CHANGEABLE MESSAGE SIGNS.
2. PLACE SIGNS AT THE INTERSECTION WITH STEWART ST, GRANGER ST, AND ACCESS ROADS TO THE NORTH.

STAGE 1

1. MAINTAIN ADVANCED SIGNING.
2. INSTALL CONSTRUCTION SIGNING AND TRAFFIC CONTROL DEVICES FOR STAGE 1.
3. REMOVE EXISTING SHOULDER AND REPLACE WITH FULL DEPTH PAVEMENT AS SHOWN IN THE PLANS.
4. ONCE PAVEMENT IS CONSTRUCTED REINSTALL MGS GUARDRAIL.

STAGE 2

1. MAINTAIN ADVANCED SIGNING.
2. INSTALL CONSTRUCTION SIGNING AND TRAFFIC CONTROL DEVICES FOR STAGE 2.
3. COMPLETE STAGE 2 OF THE PROPOSED EASTBOUND BRIDGE IMPROVEMENTS.
4. REMOVE EXISTING SHOULDER AND REPLACE WITH FULL DEPTH PAVEMENT AS SHOWN IN THE PLANS.
5. REINSTALL MGS GUARDRAIL.

STAGE 3

1. MAINTAIN ADVANCED SIGNING.
2. INSTALL CONSTRUCTION SIGNING AND TRAFFIC CONTROL DEVICES FOR STAGE 3.
3. COMPLETE STAGE 3 OF THE PROPOSED WESTBOUND BRIDGE IMPROVEMENTS.
4. REMOVE EXISTING SHOULDER AND REPLACE WITH FULL DEPTH PAVEMENT AS SHOWN IN THE PLANS.
5. REINSTALL MGS GUARDRAIL.
6. INSTALL PROPOSED PAVEMENT MARKINGS.

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION NOTES:

WORK ZONE TRAFFIC SIGNAL SYSTEM SHALL BE INSTALLED AND OPERATED IN ACCORDANCE WITH THE PROVISIONS OF THE 902 SIGNALS. TEMPORARY TRAFFIC CONTROL SIGNALS SHALL MEET THE PHYSICAL DISPLAY AND OPERATIONAL REQUIREMENTS OF CONVENTIONAL TRAFFIC CONTROL SIGNALS.

TRAILER MOUNTED SIGNALS MAY BE USED IN LIEU OF SPAN WIRE SIGNALS.

TEMPORARY TRAFFIC CONTROL SIGNAL TIMING SHALL BE ESTABLISHED BY AUTHORIZED OFFICIALS.

DURATIONS OF RED CLEARANCE INTERVALS SHALL BE ADEQUATE TO CLEAR THE ONE LANE SECTION OF CONFLICTING VEHICLES.

WHEN THE TEMPORARY TRAFFIC CONTROL SIGNAL IS CHANGED TO THE FLASHING MODE, EITHER MANUALLY OR AUTOMATICALLY, RED SIGNAL INDICATIONS SHALL BE FLASHED TO BOTH APPROACHES.

SAFEGUARDS SHALL BE INCORPORATED TO AVOID THE POSSIBILITY OF CONFLICTING SIGNAL INDICATIONS AT EACH END OF THE TTC ZONE.

A TYPE B WARNING LIGHT MAY BE PLACED ON THE ROADWORK AHEAD AND THE ONE LANE ROAD AHEAD SIGNS WHENEVER A NIGHT LANE CLOSURE IS NECESSARY.


IF SIDE ROADS OR DRIVEWAYS OCCUR WITHIN THE LIMITS OF THE STOP BARS, ADDITIONAL INDICATIONS AND PHASING ARE REQUIRED. FURTHERMORE, RIGHT TURNS SHALL BE PROHIBITED FROM THESE ACCESS POINTS DURING THE RED INTERVAL.


IF WORK ZONE IS IN PLACE FOR MORE THAN 3 DAYS, A 12 INCH WIDE STOP BAR SHALL BEINSTALLED. EXISTING CONFLICTING PAVEMENT MARKINGS AND RAISED PAVEMENT MARKERREFLECTORS BETWEEN THE ACTIVITY ARE A AND THE STOP BAR SHOULD BE REMOVED ANDTEMPORARY PAVEMENT MARKINGS INSTALLED. AFTER THE TEMPORARY TRAFFIC CONTROL IS REMOVED, THE STOP BAR AND OTHER TEMPORARY PAVEMENT MARKINGS SHALL BE REMOVEDAND THE PERMANENT PAVEMENT MARKINGS RESTORED WITHIN 14 DAYS.

VEHICLE HAZARD WARNING SIGNALS SHALL NOT BE USED INSTEAD OF THE VEHICLE'S ROTATING LIGHTS OR STROBE LIGHTS.


TRAFFIC CONTROL LEGEND


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SIGN (SINGLE SIDED)
- 


FLASHING ARROW PANEL
- 


CHANNELIZER
- 

DIRECTIONAL INDICATOR BARRICADE
- 

TYPE III MOVEABLE BARRICADE
- 

CHANGEABLE MESSAGE BOARD  
(CONTRACTOR FURNISHED AND RETAINED)
- 


WORK AREA
- 

IMPACT ATTENUATOR
- 

TEMPORARY CONCRETE TRAFFIC BARRIER (TCTB)
- 

TRAFFIC USAGE
- 

DSY DOUBLE SOLID YELLOW



THIS SHEET HAS BEEN  
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DATE PREPARED 10/7/2025	
ROUTE 136	STATE MO
DISTRICT NW	SHEET NO. 5
COUNTY MERCER	
JOB NO. JNW0049	
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)



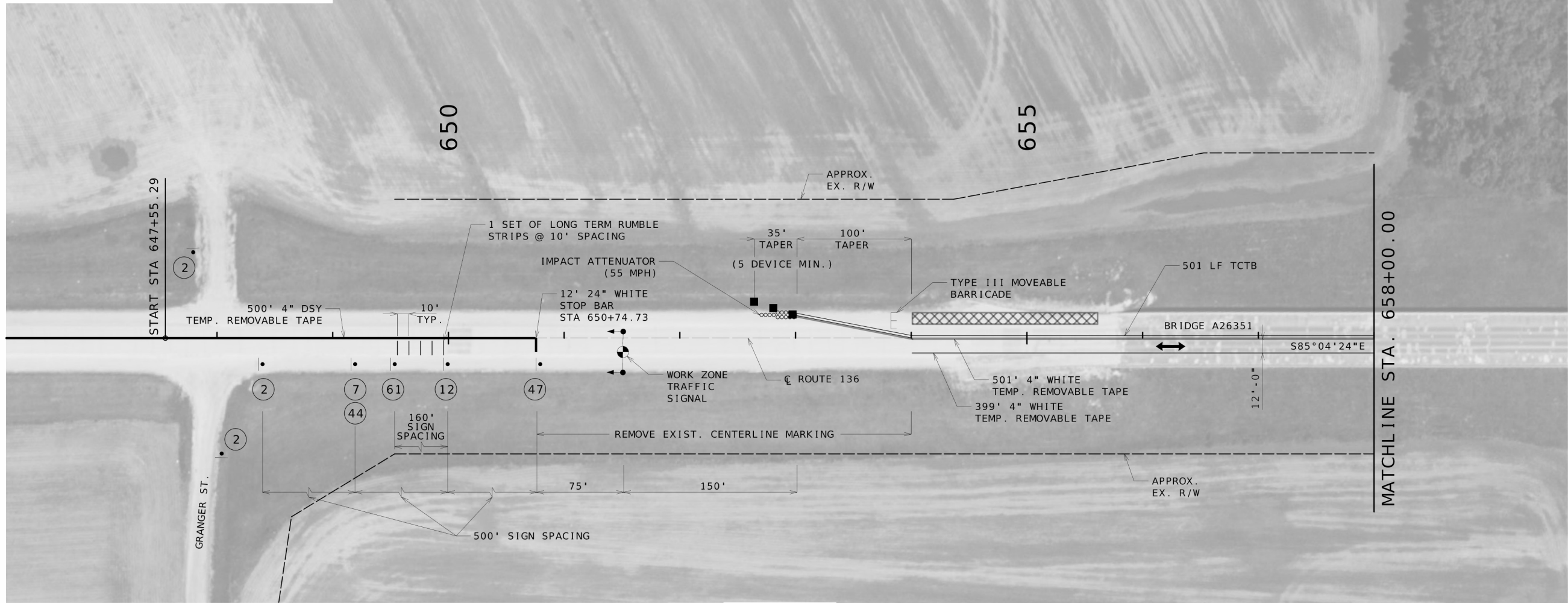
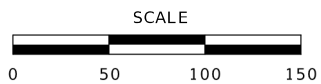
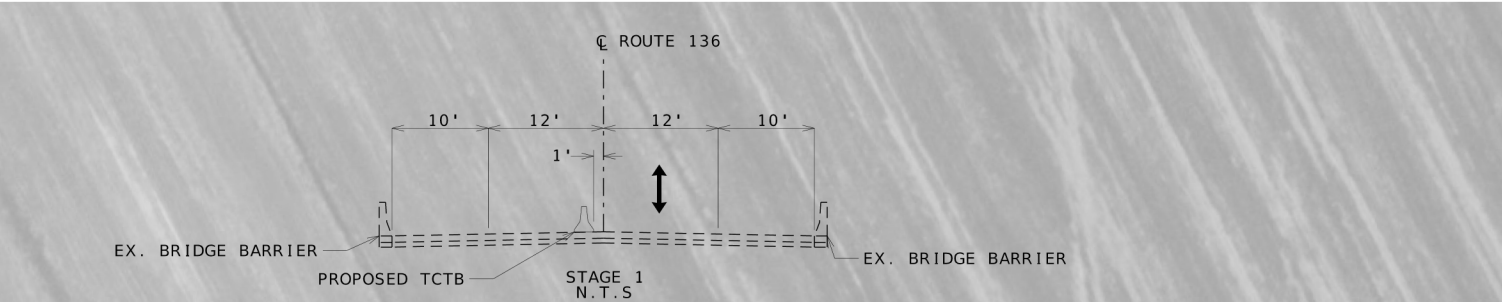
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TRAFFIC CONTROL  
GENERAL NOTES AND LEGEND  
SHEET 1 OF 7



TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- CHANNELIZER
- E BARRICADE
- TEMPORARY CONCRETE TRAFFIC BARRIER (TCTB)
- WORK AREA
- TRAFFIC USAGE
- DSY DOUBLE SOLID YELLOW



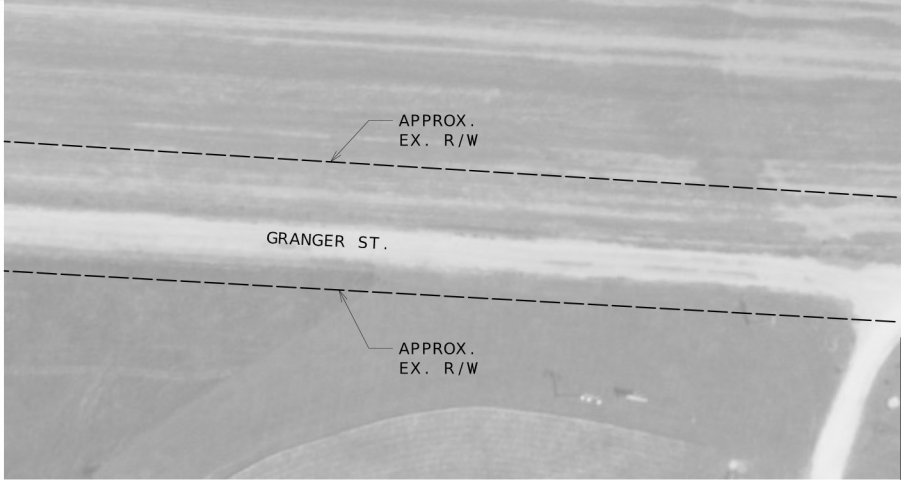
BRIDGE  
WORK  
AHEAD  
WO20-1  
2

ROAD  
OR  
RAMP  
ONE LANE  
ROAD  
AHEAD  
WO20-4  
7  
45  
MPH  
WO13-1  
44

RUMBLE  
STRIPS  
AHEAD  
SPECIAL  
61

WO3-3  
12

STOP  
HERE ON  
RED  
R10-6R  
47



TRAFFIC CONTROL STAGE 1  
SHEET 2 OF 7



THIS SHEET HAS BEEN  
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DATE PREPARED  
10/7/2025

ROUTE 136	STATE MO
DISTRICT NW	SHEET NO. 6

COUNTY  
MERCER  
JOB NO.  
JNW0049  
CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

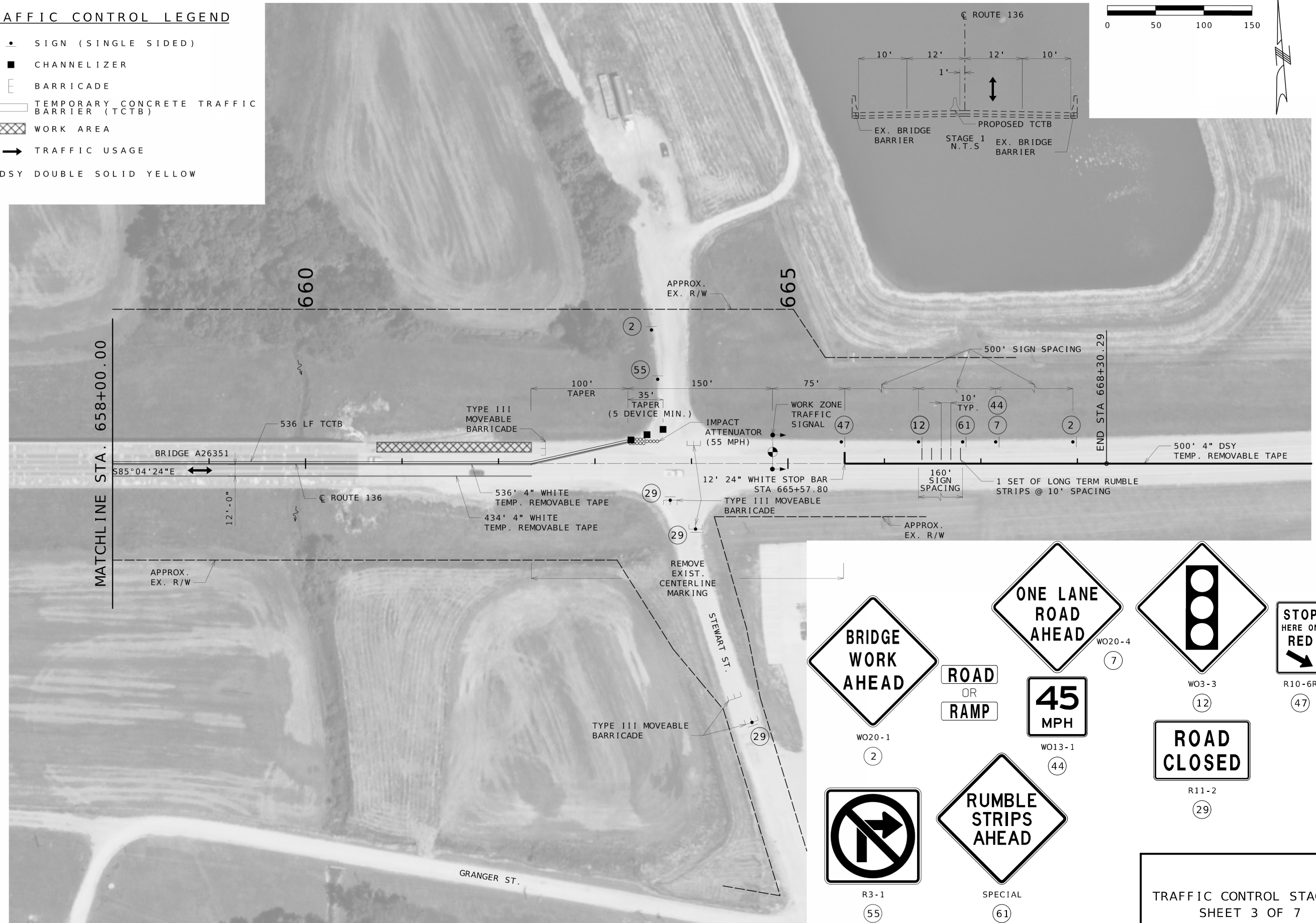
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COMMISSION

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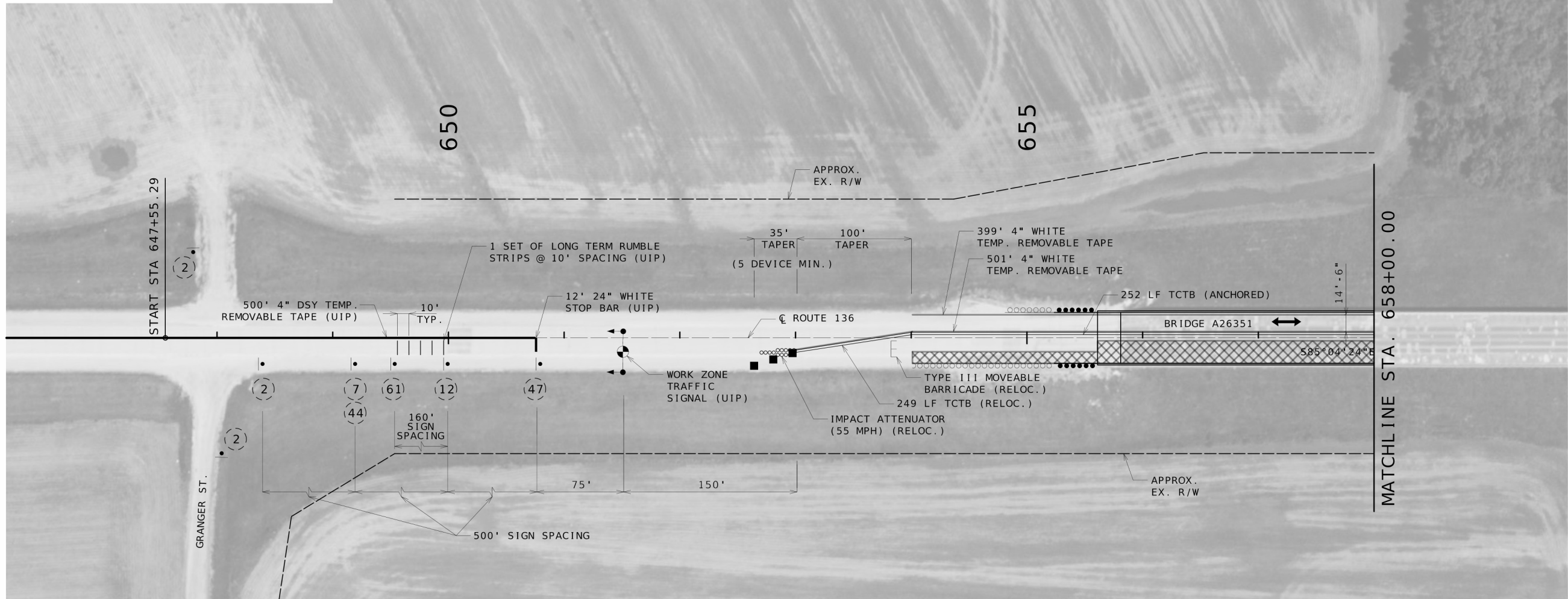
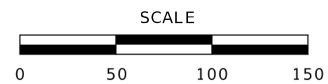
•	SIGN (SINGLE SIDED)
■	CHANNELIZER
E	BARRICADE
TEMPORARY CONCRETE TRAFFIC BARRIER (TCTB)	
WORK AREA	
TRAFFIC USAGE	
DSY	DOUBLE SOLID YELLOW

[illegible]



TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- CHANNELIZER
- E BARRICADE
- TEMPORARY CONCRETE TRAFFIC BARRIER (TCTB)
- WORK AREA
- TRAFFIC USAGE
- (XX) PLACED IN PREVIOUS PHASE
- DSY DOUBLE SOLID YELLOW



BRIDGE WORK AHEAD

WO20-1

(2)

ROAD OR RAMP

ONE LANE ROAD AHEAD

WO20-4

(7)

45 MPH

WO13-1

(44)

RUMBLE STRIPS AHEAD

SPECIAL

(61)

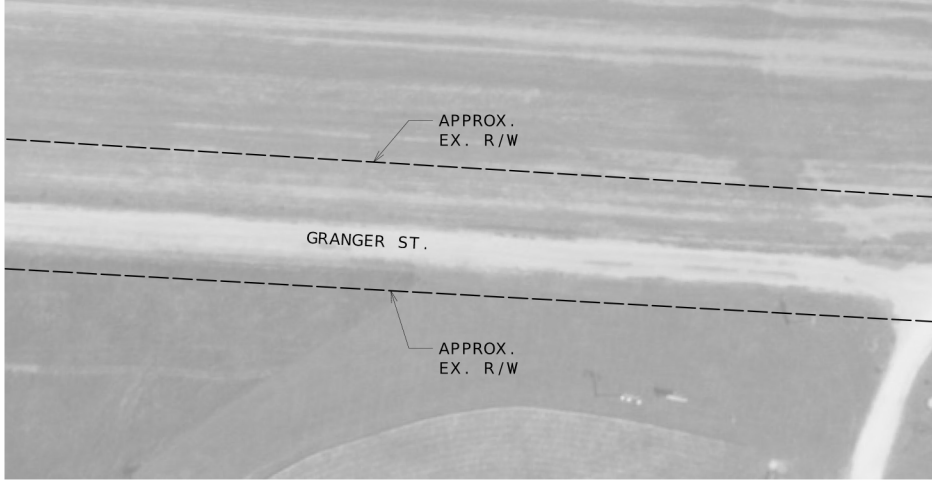
WO3-3

(12)

STOP HERE ON RED

R10-6R

(47)



TRAFFIC CONTROL STAGE 2  
SHEET 4 OF 7



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DATE PREPARED		10/7/2025
ROUTE	STATE	
136	MO	
DISTRICT	SHEET NO.	
NW	8	
COUNTY		MERCER
JOB NO.		JNW0049
CONTRACT ID.		
PROJECT NO.		
BRIDGE NO.		

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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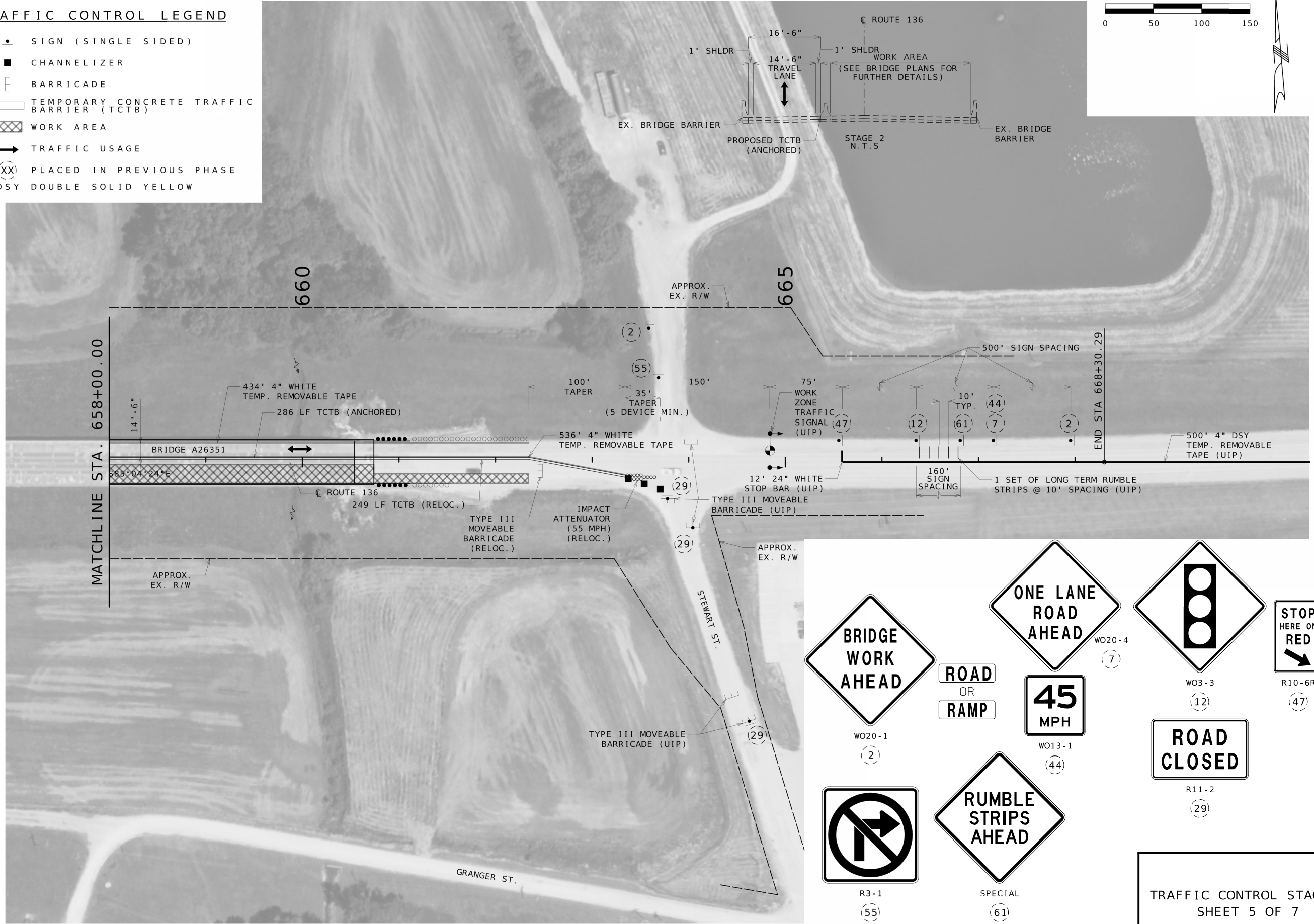
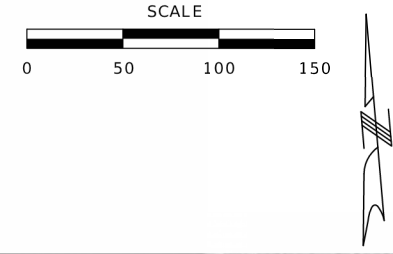
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TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- CHANNELIZER
- [ ] BARRICADE
- TEMPORARY CONCRETE TRAFFIC BARRIER (TCTB)
- ▨ WORK AREA
- ➔ TRAFFIC USAGE
- (XX) PLACED IN PREVIOUS PHASE
- DSY DOUBLE SOLID YELLOW



BRIDGE  
WORK  
AHEAD  
WO20-1  
(2)

ROAD  
OR  
RAMP  
45  
MPH  
WO13-1  
(44)

RUMBLE  
STRIPS  
AHEAD  
SPECIAL  
(61)

ONE LANE  
ROAD  
AHEAD  
WO20-4  
(7)

ROAD  
CLOSED  
R11-2  
(29)

STOP  
HERE ON  
RED  
R10-6R  
(47)

TRAFFIC CONTROL STAGE 2  
SHEET 5 OF 7

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ROUTE 136	STATE MO
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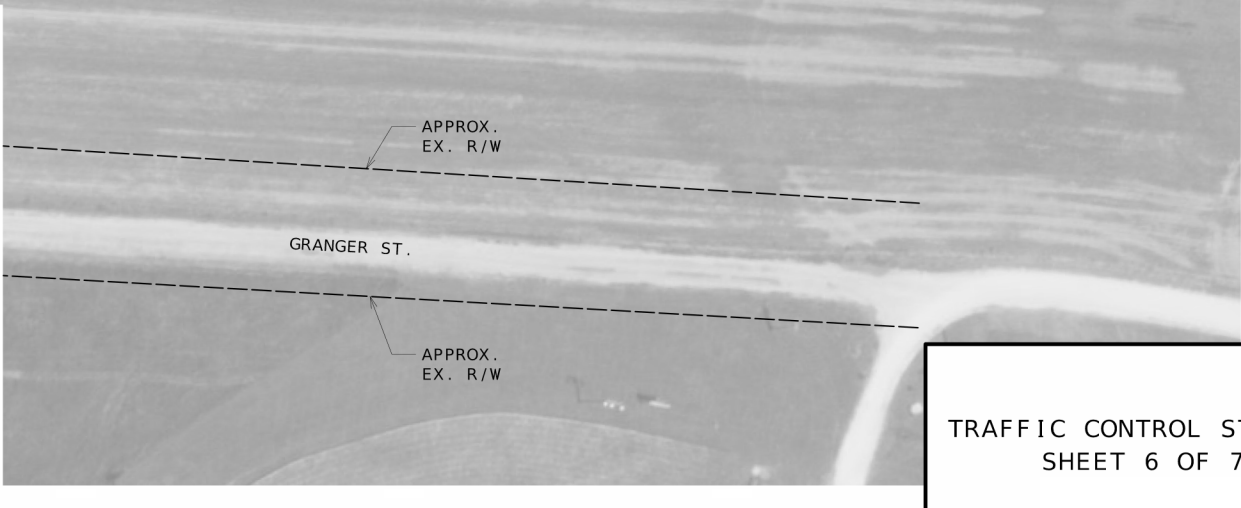
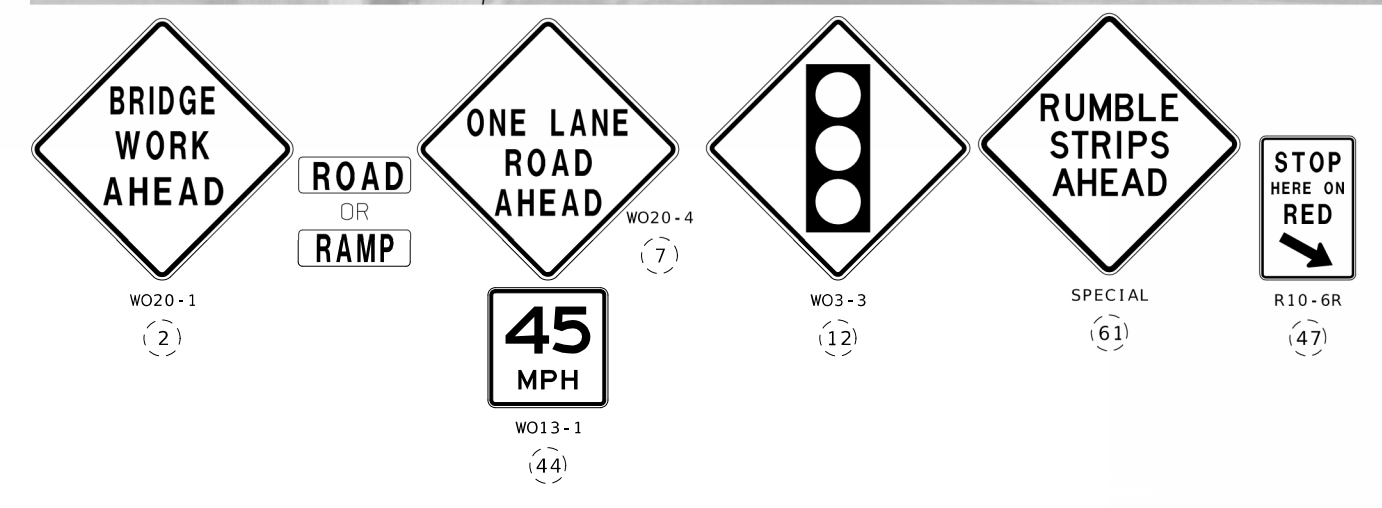
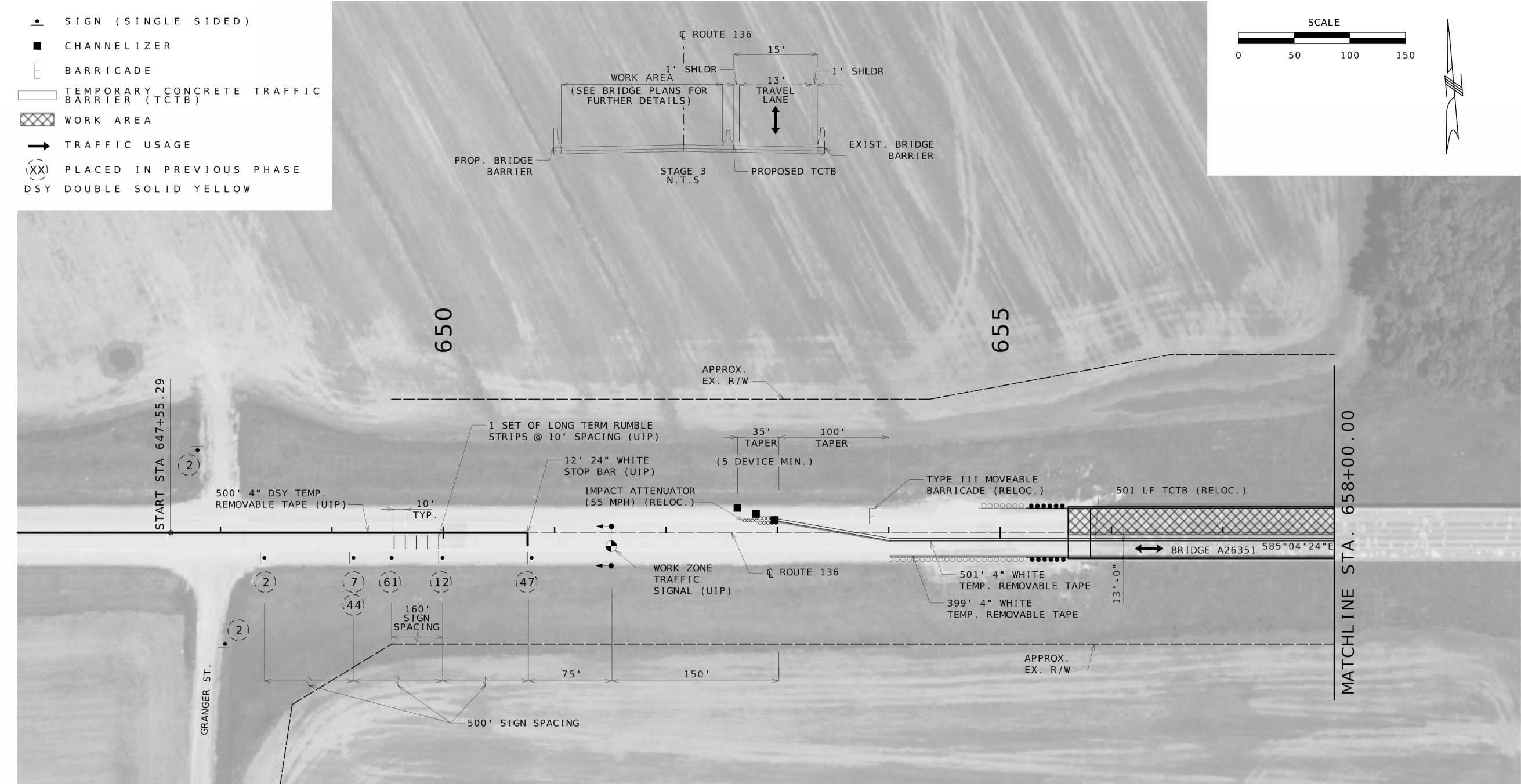
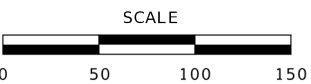
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- CHANNELIZER
- E BARRICADE
- TEMPORARY CONCRETE TRAFFIC BARRIER (TCTB)
- WORK AREA
- TRAFFIC USAGE
- (XX) PLACED IN PREVIOUS PHASE
- DSY DOUBLE SOLID YELLOW



TRAFFIC CONTROL STAGE 3  
SHEET 6 OF 7



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DISTRICT NW	SHEET NO. 10
COUNTY MERCER	
JOB NO. JNW0049	
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BRIDGE NO.	

DESCRIPTION	DATE

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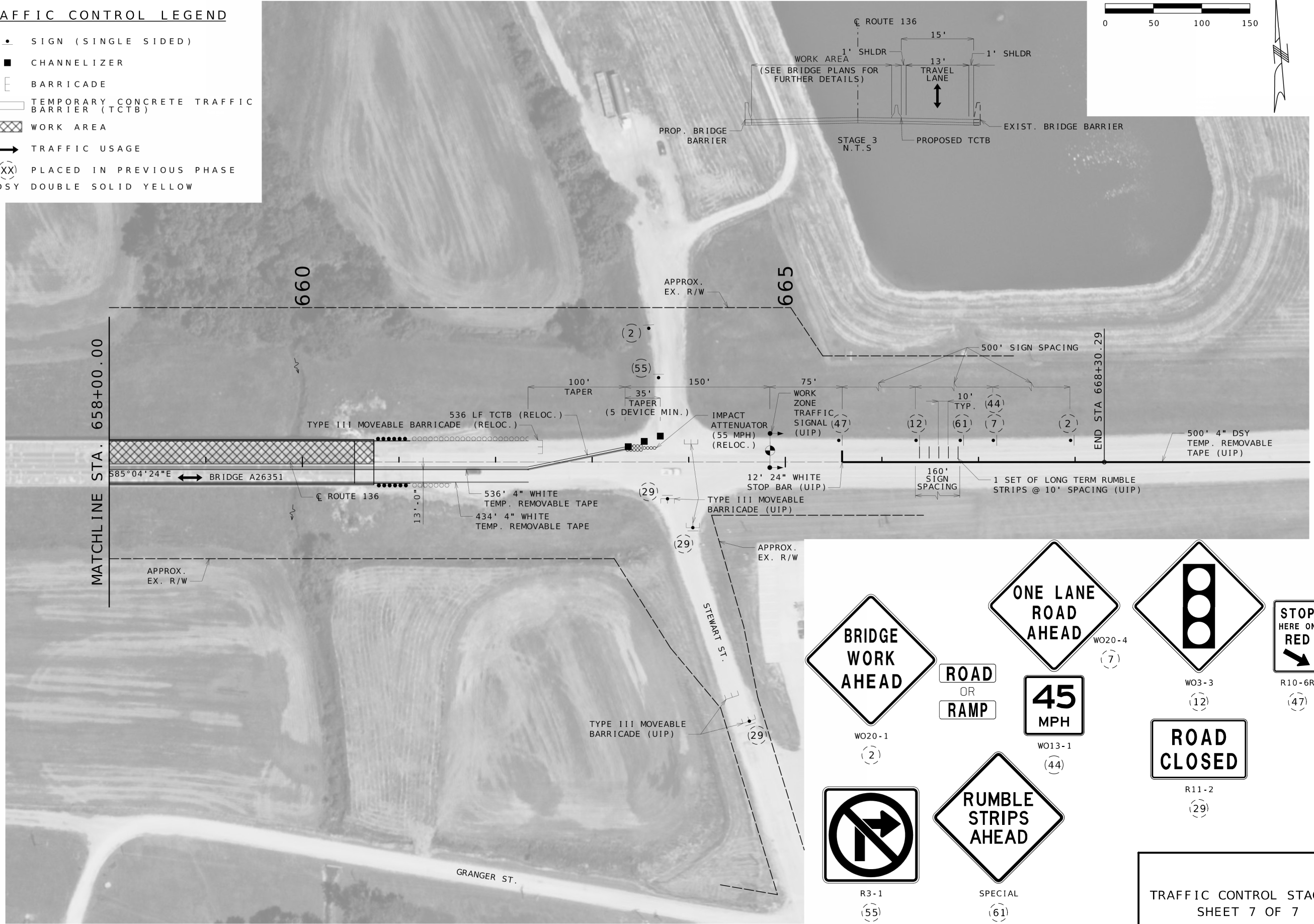
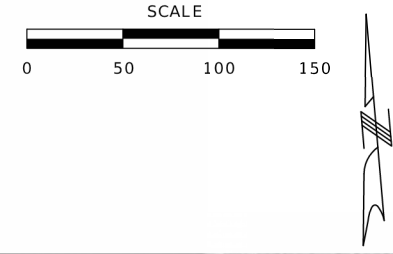
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TRAFFIC CONTROL LEGEND

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- CHANNELIZER
- [ ] BARRICADE
- TEMPORARY CONCRETE TRAFFIC BARRIER (TCTB)
- ▨ WORK AREA
- ➔ TRAFFIC USAGE
- (XX) PLACED IN PREVIOUS PHASE
- DSY DOUBLE SOLID YELLOW



BRIDGE  
WORK  
AHEAD  
WO20-1  
(2)

ROAD  
OR  
RAMP  
R3-1  
(55)

ONE LANE  
ROAD  
AHEAD  
WO20-4  
(7)

45  
MPH  
WO13-1  
(44)

RUMBLE  
STRIPS  
AHEAD  
SPECIAL  
(61)

ROAD  
CLOSED  
R11-2  
(29)

STOP  
HERE ON  
RED  
R10-6R  
(47)

TRAFFIC CONTROL STAGE 3  
SHEET 7 OF 7

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

DATE PREPARED  
10/7/2025

ROUTE 136	STATE MO
DISTRICT NW	SHEET NO. 11
COUNTY MERCER	
JOB NO. JNW0049	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

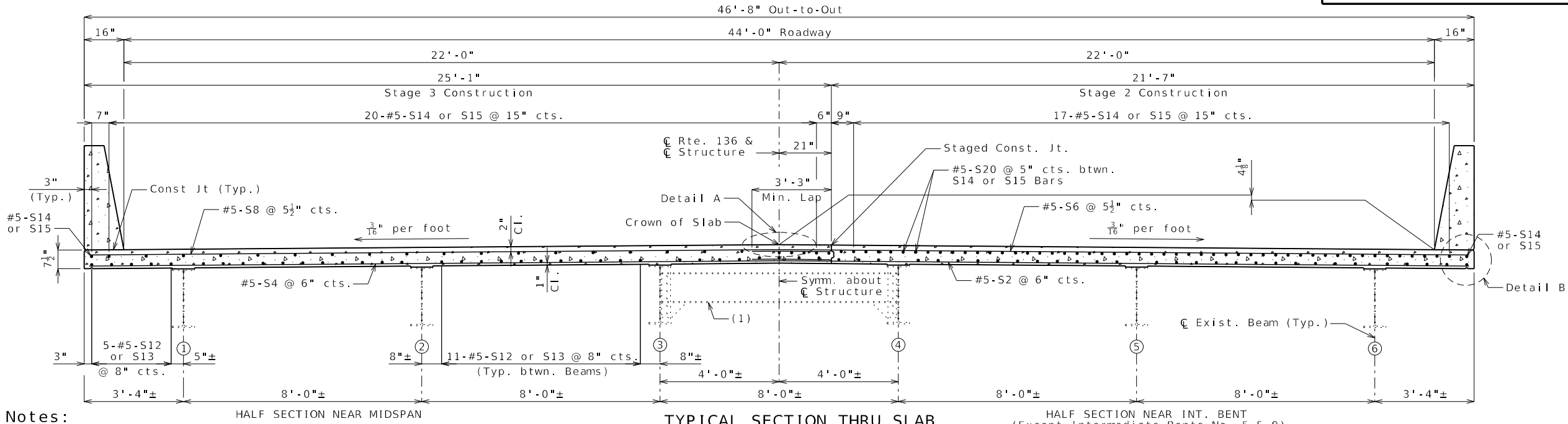
105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

HDR Engineering, Inc.

10450 Holmes Rd.  
Suite 600  
Kansas City, MO 64131  
816-360-2700  
Certificate of Authority: 000856

U.I.P., REDECK AND REHABILITATE EXISTING 3@ (34'-44'-44'-34') CONTINUOUS COMPOSITE WIDE FLANGE BEAM SPANS

SEC/SUR 28 TWP 65N RGE 24W



General Notes:

Design Specifications:

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

Design Loading:

H20-44 (1969) (Existing)  
HS20-44 (New Construction)  
35 lb/sf Future Wearing Surface  
Earth - 120 lb/cf, Equivalent Fluid Pressure 45 lb/cf (Min.)

Design Unit Stresses:

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

Joint Filler:

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

Reinforcing Steel:

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

MBS refers to mechanical bar splices. Mechanical bar splices shall be in accordance with Sec 706 or 710 except that no measurement will be made for mechanical bar splices and they will be considered completely covered by the contract unit price of other items.

Miscellaneous:

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

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

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

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

The area exposed by the removal of concrete and not covered with new concrete shall be coated with an approved qualified special mortar in accordance with Sec 704.

The top of rock blanket shall be flush to the ground line as directed by the engineer (Roadway item).

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

Elevations based on as-built bridge plans (1971) and shall be considered to have ± tolerance.

Longitudinal dimensions are based on the original design plans and shall be considered to have ± tolerance.

All dimensions measuring existing components shall be considered to have ± tolerance.

\* Includes Dewatering as necessary to recoat piles and provide gravel fill around piles as shown in the Roadway Plans. See Special Provision.

TYPICAL SECTION THRU SLAB

(See Sheet No. 11 for details of section at Intermediate Bents No. 5 & 9)

(1) Prior to Stage 2 deck removal, Beams No. 3 and 4 existing bolts on intermediate diaphragms and cross frames that connect beams under different construction staged slab pours shall be removed and replaced with new in-kind high strength bolts installed snug tight and in accordance with Sec 712. The high strength bolts shall be tightened after both adjacent slab pours are completed. Cost will be considered incidental to other pay items.

Traffic Handling:

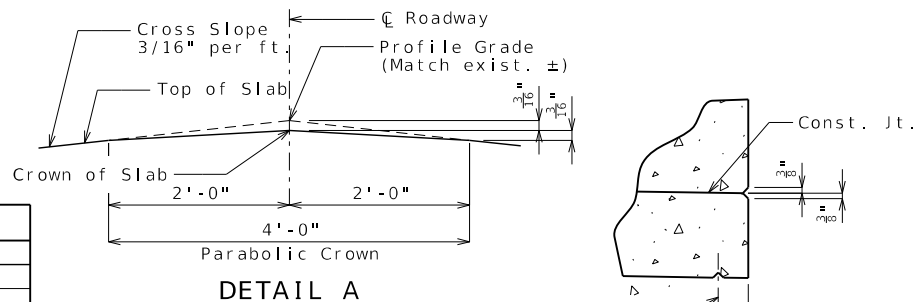
Traffic to be maintained on structure during construction. Stage 1 for Roadway shoulder improvements only (Roadway item), see Roadway Plans. See roadway plans for traffic control and Sheet No. 3 for stage construction details.

Estimated Quantities

Item	Total
Removal of Miscellaneous ACM (Non-Friable)	sq. foot 50
Dewatering	linear foot 1
Removal of Existing Bridge Deck	sq. foot 22,107
Partial Removal of Substructure Concrete	linear foot 1
Temporary Falsework	linear foot 1
Removal of Existing Bearings	each 24
Removal of Existing Approach Slab	sq. foot 1782
Bridge Approach Slab (Minor)	sq. yard 198
Class B Concrete (Substructure)	cu. yard 24.2
Slab on Steel	sq. yard 2453
Type D Barrier	linear foot 978
Reinforcing Steel (Epoxy Coated)	pound 4450
Protective Coating - Concrete Bents and Piers (Epoxy)	linear foot 1
Cleaning and Coating Existing Bearings	each 54
Slab Drain	each 84
Surface Preparation for Applying Epoxy-Mastic Primer	linear foot 1
Surface Preparation for Recoating Structural Steel	sq. foot 1500
Field Application of Organic Zinc Primer	sq. foot 1500
Intermediate Field Coat (System G)	sq. foot 1500
Finish Field Coat (System G)	sq. foot 1500
Aluminum Epoxy-Mastic Primer	linear foot 1
Non-Destructive Testing	linear foot 306
Vertical Drain at End Bents	each 2
Laminated Neoprene Bearing Pad Assembly	each 24
Strip Seal Expansion Joint System	linear foot 94
Open Cell Foam Joint Seal	linear foot 88

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

Backfill material for required excavation at end bents shall be in accordance with Sec 206. Backfill material shall be considered completely covered by the contract unit price for other items.



DETAIL B

Estimated Quantities for Slab on Steel

Item	Total
Class B-2 Concrete	cu. yard 540
Reinforcing Steel (Epoxy Coated)	pound 185,980

The table of Estimated Quantities for Slab on Steel represents the quantities used by the State in preparing the cost estimate for concrete slabs. The area of the concrete slab will be measured to the nearest square yard longitudinally from end of slab to end of slab and transversely from out to out of bridge slab (or with the horizontal dimensions as shown on the plan of slab). Payment for stay-in-place corrugated steel forms, conventional forms, all concrete and epoxy coated reinforcing steel will be considered completely covered by the contract unit price for the slab. Variations may be encountered in the estimated quantities but the variations cannot be used for an adjustment in the contract unit price.

Method of forming the slab shall be in accordance with Sec 703. All hardware for forming the slab to be left in place as a permanent part of the structure shall be coated in accordance with ASTM A123 or ASTM B633 with a thickness Class SC 4 and a finish Type I, II or III.

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

For Optional Stay-In-Place Form Details, see Sheet No. 2.

REPAIRS TO BRIDGE:  
ROUTE 136 OVER GRAND RIVER OVERFLOW

ROUTE 136 FROM ROUTE P TO ROUTE FF  
ABOUT 2.0 MILES EAST OF ROUTE P  
BEGINNING STATION 655+81.00± (MATCH EXISTING)

Detailed August 2025  
Checked August 2025

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

Sheet No. 1 of 18



General Notes (Cont.):

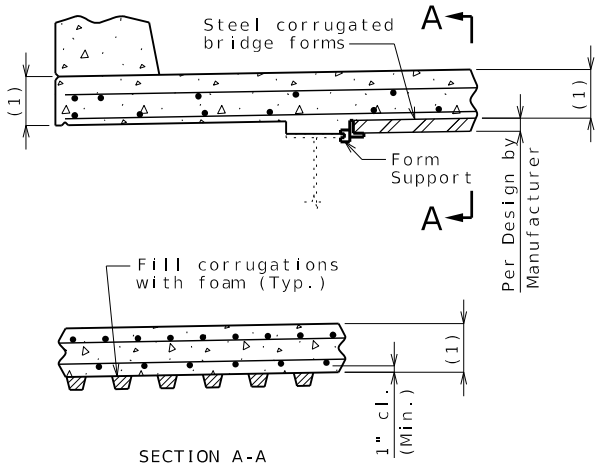
Stay-In-Place Forms:

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

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

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

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



OPTIONAL STAY-IN-PLACE FORM DETAILS

Pouring and Finishing Slab:

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

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

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

Haunching:

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

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

\*\* Unless otherwise shown.

Structural Steel Protective Coating:

Protective Coating: System G in accordance with Sec 1081.

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

Prime Coat: The cost of prime coat will be considered completely covered by the contract unit price per sq. foot for Field Application of Organic Zinc Primer.

Field Coat(s): The color of the field coat(s) shall be Gray (Federal Standard #26373) and shall be applied in accordance with Sec 1081.10.3.4, except that all structural steel shall have the intermediate field coat applied in accordance with Sec 1080.10.3.4.1.1. The cost of the intermediate field coat will be considered completely covered by the contract unit price per sq. foot for Intermediate Field Coat (System G). The cost of the finish field coat will be considered completely covered by the contract unit price per sq. foot for Finish Field Coat (System G).

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

Structural Steel Protective Coating at Int. Bents Existing Bearings:

Protective Coating: System G in accordance with Sec 1081. All existing bearings shall be recoated with System G.

Surface Preparation: Surface preparation of the existing steel shall be in accordance with Sec 1081 for Recoating of Structural Steel (System G, H or I) with organic zinc primer. The cost of surface preparation will be considered completely covered by the contract unit price for Cleaning and Coating Existing Bearings.

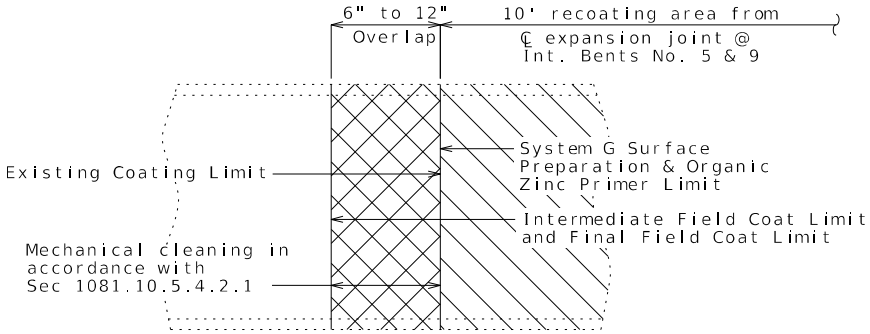
Prime Coat: The cost of the prime coat will be considered completely covered by the contract unit price for Cleaning and Coating Existing Bearings. Tint of the prime coat for System G shall be similar to the color of the field coat to be used.

Field Coat: The color of the finish field coat shall be Gray (Federal Standard #26373). The cost of the intermediate field coat will be considered completely covered by the contract unit price for Cleaning and Coating Existing Bearings. The cost of the finish field coat will be considered completely covered by the contract unit price for Cleaning and Coating Existing Bearings.

Sec 1081.10.4.6 shall be modified such that the word "RECOATED" is replaced by the word "RECOATED - SYSTEM G - BEARINGS ONLY".

Structural Steel Protective Coating Existing Steel Piling:

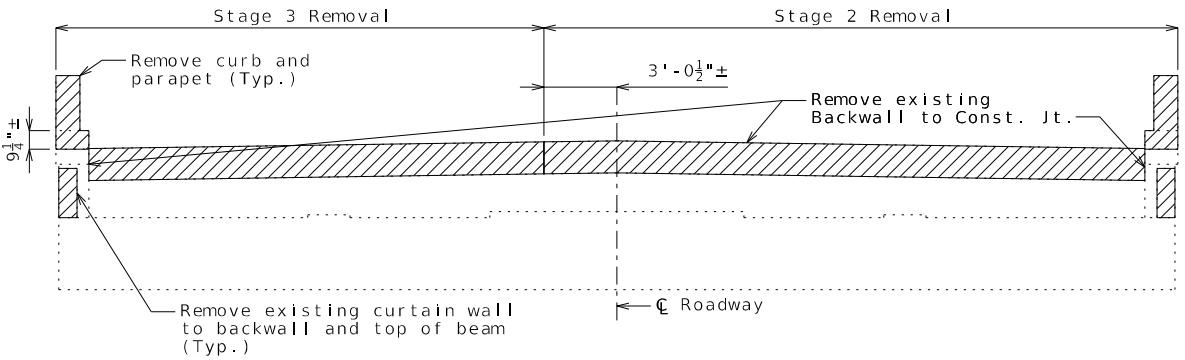
All exposed surfaces of the existing structural steel piles shall be coated with one 6-mil thickness of aluminum epoxy-mastic primer applied over an SSPC-SP3 surface preparation in accordance with Sec 1081. The bituminous coating shall be applied one foot above and one foot below the existing ground line and in accordance with Sec 702. These protective coatings will not be required below the normal low water line. The cost of surface preparation will be considered completely covered by the contract lump sum price for Surface Preparation for Applying Epoxy-Mastic Primer. The cost of the aluminum epoxy-mastic primer and bituminous coating will be considered completely covered by the contract lump sum price for Aluminum Epoxy-Mastic Primer.



PART ELEVATION SHOWING LIMITS OF PAINT OVERLAP  
(Vertical or horizontal paint limit. Horizontal limit shown)

Temporary Falsework:

The temporary falsework, for replacement of Intermediate Bent Caps No. 5 and 9, includes a support reaction of 30 kips at each beam bearing. Bent caps shall be constructed once the existing deck is removed and prior to placement of the new deck. This reaction is a service load without a factor of safety. The reaction is for deadload and does not include the existing or new deck. It includes the dead load of the superstructure and a construction load of 50 psf constant load applied to the deck area. Live load is not included in the support load (See Special Provisions).

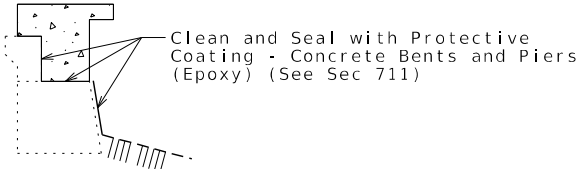


DETAILS OF CONCRETE REMOVAL AT END BENTS NO. 1 & 13

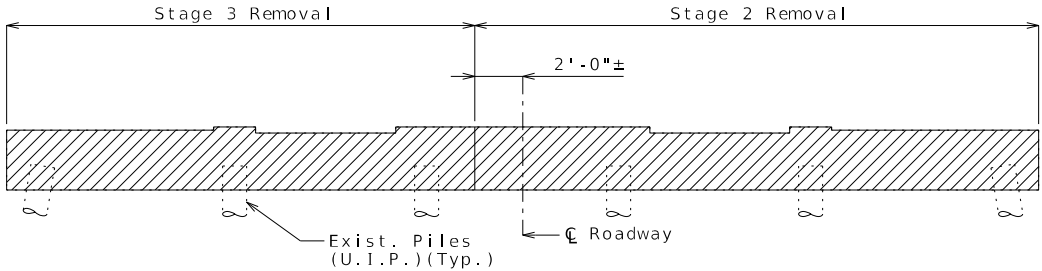
(Looking at Ahead Station at Bent No. 13, Bent No. 1 similar)

The cost of concrete removal as shown will be considered completely covered by the contract unit price for Removal of Existing Bridge Deck. Curtain wall and wingwall reinforcement to be cut off one inch below concrete removal surface and the resulting holes shall be filled with a qualified special mortar.

A smooth, level surface shall be provided at Bents No. 1 & 13 removal lines.



TYPICAL SECTION THRU END BENTS NO. 1 & 13  
SHOWING PROTECTIVE COATING

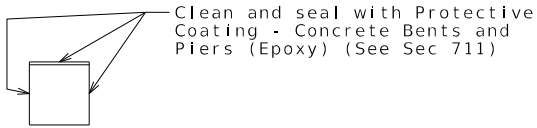


DETAILS OF CONCRETE REMOVAL AT INTERMEDIATE BENTS NO. 5 & 9

(Looking at Ahead Station at Bents No. 5 & 9)

All of the existing piles to remain and be cleaned of all loose concrete. Any reinforcing extending from pile shall also remain.

The cost of concrete removal at Intermediate Bents No. 5 & 9 shall be considered completely covered by the contract lump sum price for Partial Removal of Substructure Concrete.



TYPICAL SECTION THRU INTERMEDIATE BENTS NO. 5 & 9  
SHOWING PROTECTIVE COATING



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10/7/2025

ROUTE

136

DISTRICT

BR

STATE

MO

SHEET NO.

2

COUNTY

MERCER

JOB NO.

JNW0049

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

A26351

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

MoDOT

105 WEST CAPITOL

JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-273-6636)

HDR Engineering, Inc.

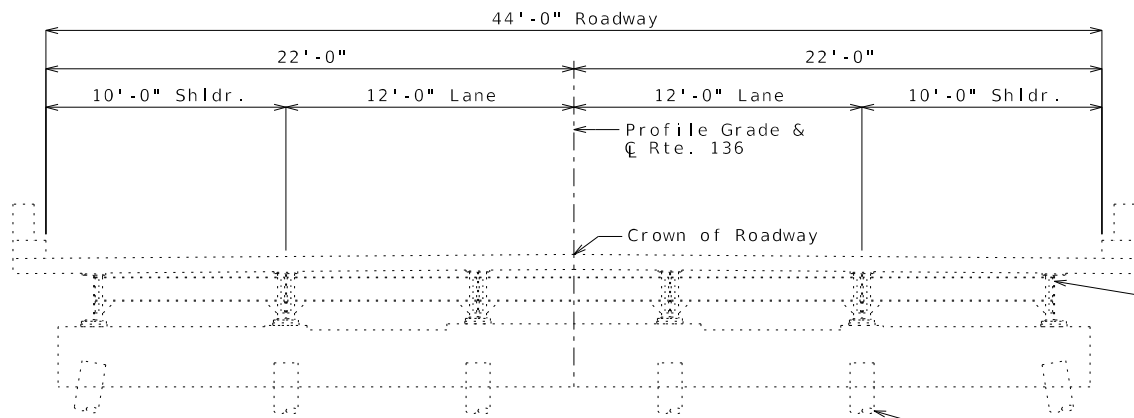
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Suite 600

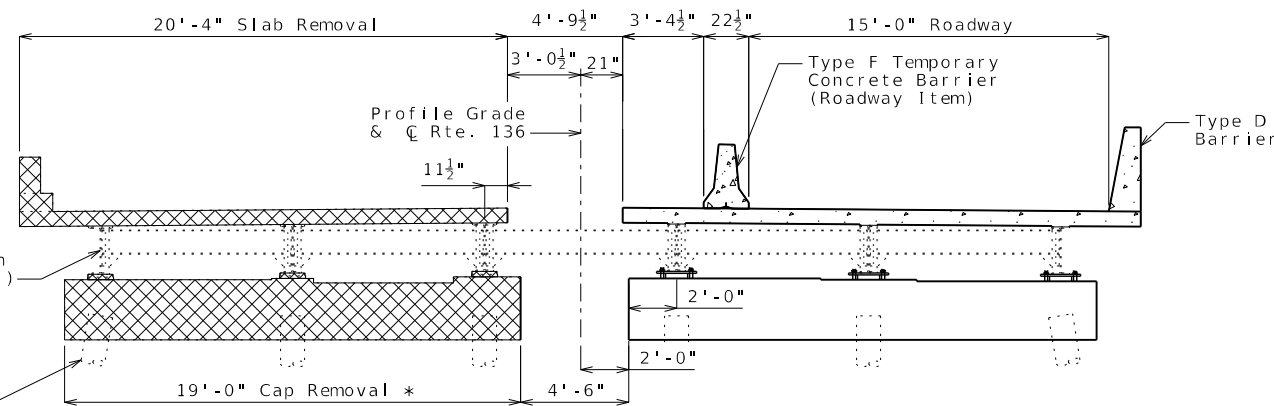
Kansas City, MO 64111

816-360-2700

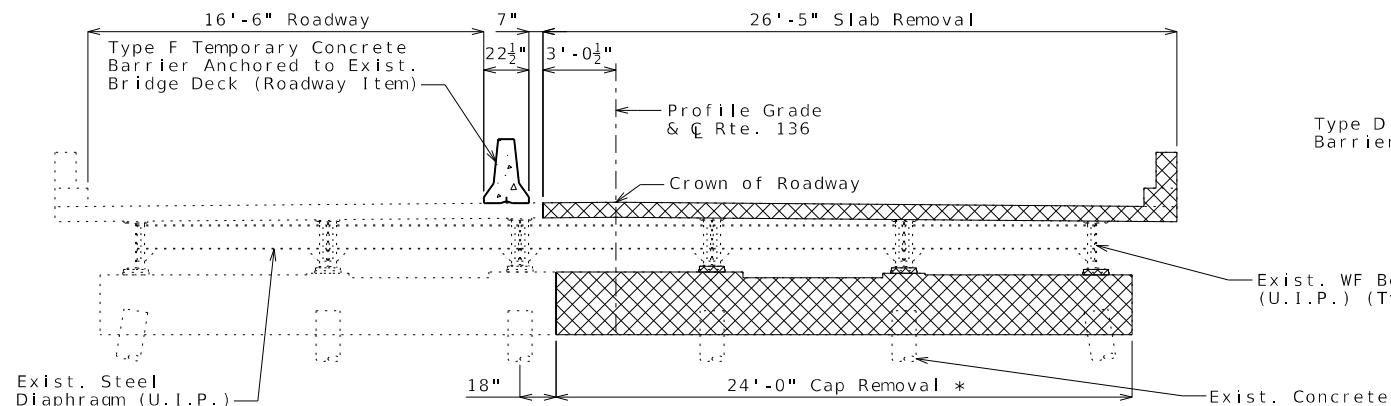
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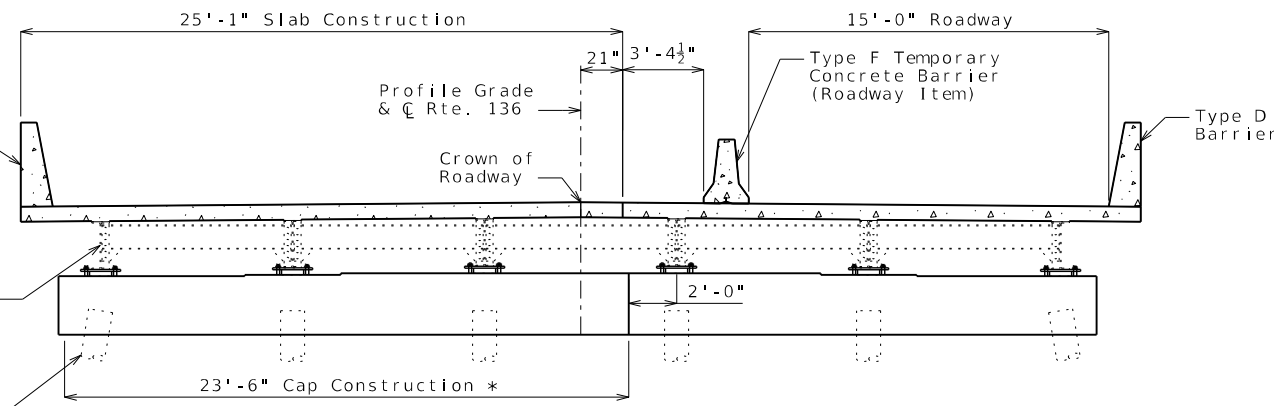
EXISTING TYPICAL SECTION



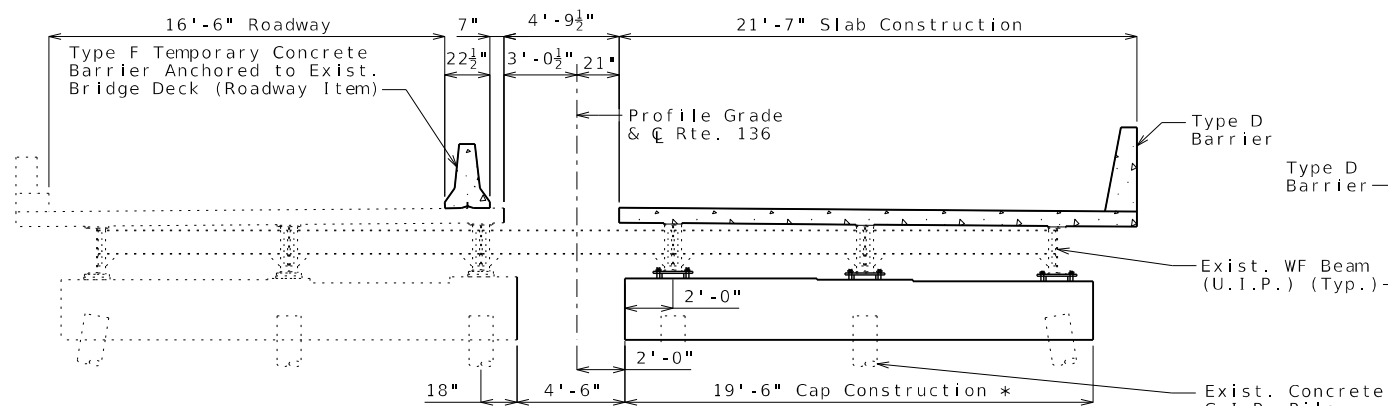
STAGE 3 - REMOVALS



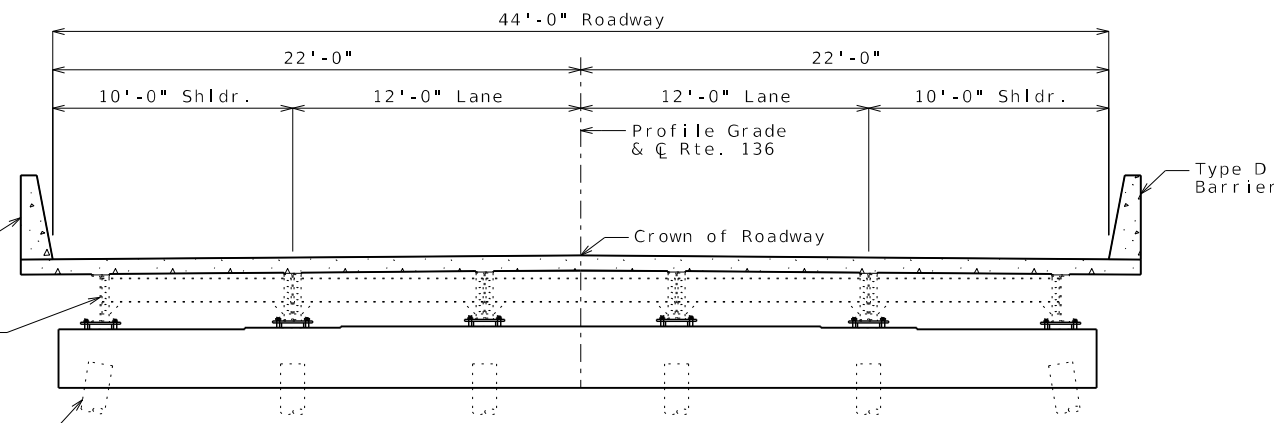
STAGE 2 - REMOVALS



STAGE 3 - CONSTRUCTION



STAGE 2 - CONSTRUCTION



FINAL TYPICAL SECTION

### STAGING AND TYPICAL SECTION (Intermediate Bent Nos. 5 and 9 shown.)

\* Cap removal and construction shown only applicable for Intermediate Bents No. 5 & 9. For all other intermediate bent caps, use in place.

Stage 1 Roadway Shoulder improvements only, see Roadway Plans (Roadway Item).

Detailed August 2025  
Checked August 2025

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

Sheet No. 3 of 18



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10/7/2025

ROUTE 136 STATE MO

DISTRICT BR SHEET NO. 3

COUNTY  
MERCER

JOB NO.  
JNW0049

CONTRACT ID.

PROJECT NO.

BRIDGE NO.  
A26351

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

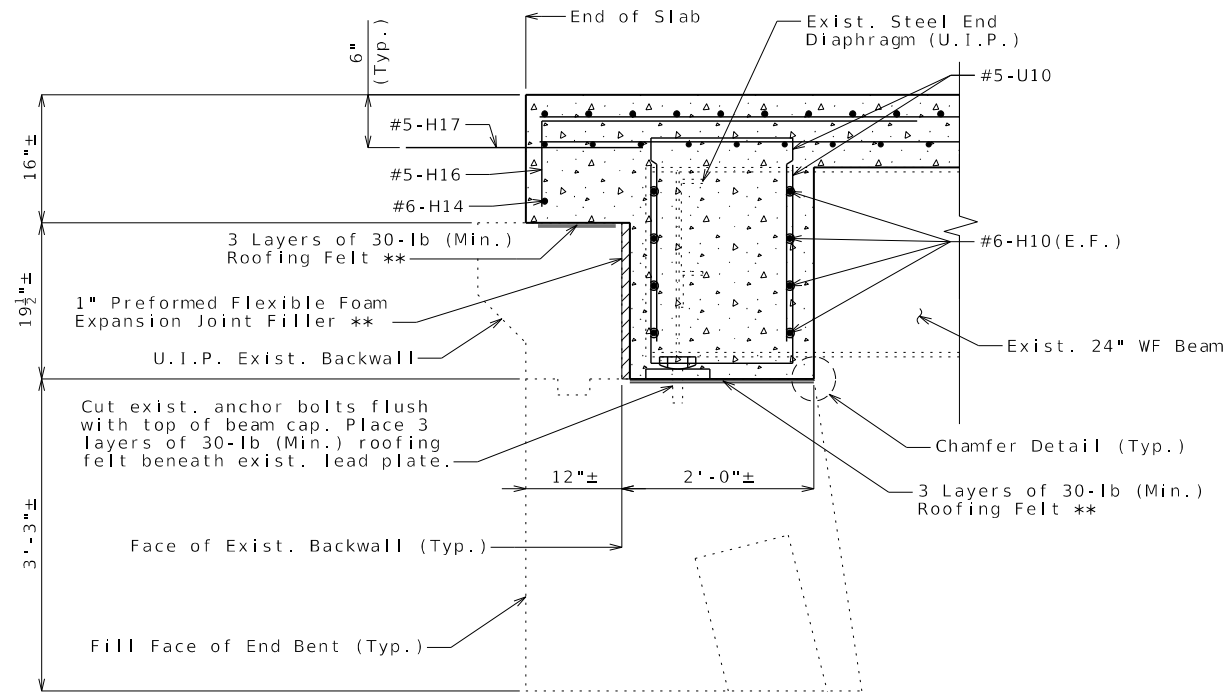
105 WEST CAPITOL  
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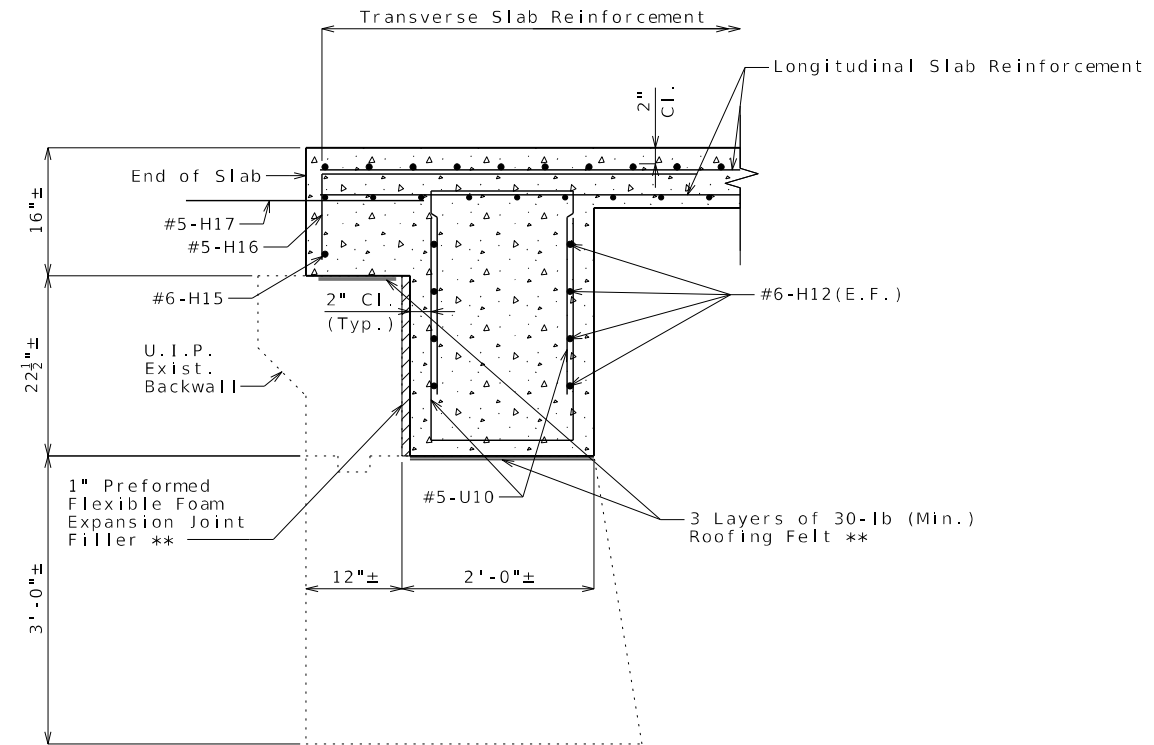
HDR Engineering, Inc.

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Suite 600  
Kansas City, MO 64111  
816-360-2700  
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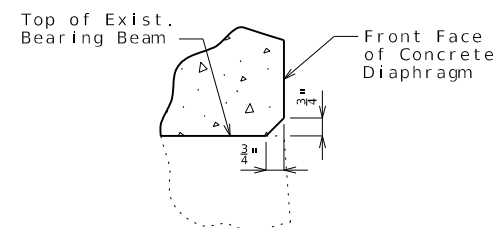




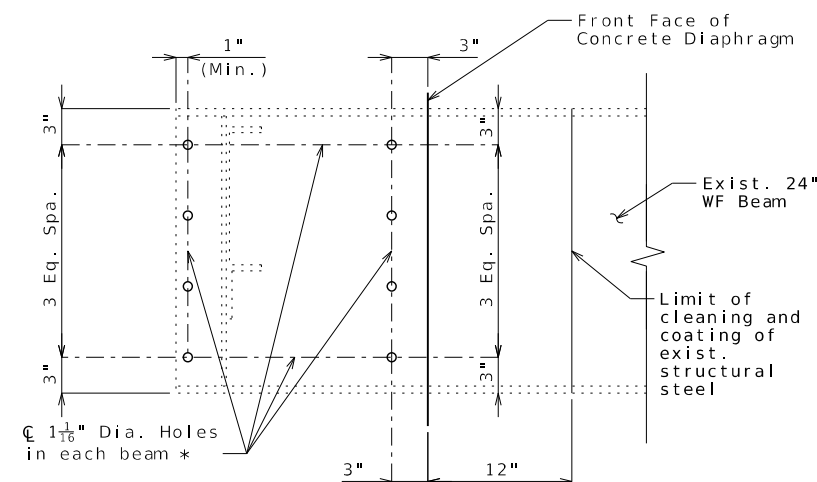
SECTION A-A  
\*\* Entire length of diaphragm



SECTION B-B



CHAMFER DETAIL



DETAIL OF WEB HOLES AT END BENTS

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

#### Notes:

The exposed and accessible surfaces of the existing structural steel and bearings that will be encased in concrete shall be cleaned with a minimum of SSPC-SP-3 surface preparation and coated with a minimum of one coat of gray epoxy-mastic primer (non-aluminum) in accordance with Sec 1081 to produce a dry film thickness of not less than 3 mils before concrete is poured. The surface preparation and coating for beams shall extend a minimum of one foot outside the face of the beam encasement. Payment for cleaning and coating steel to be encased in concrete will be considered completely covered by the contract unit price for Slab on Steel.

The H10 and H12 bars are segmented for ease of placement through beam web holes. The total bar length for H10, H11, H12 & H13 bars shown in Bill of Reinforcing Steel allows for one lap splice. Actual bar segment lengths to be determined by contractor for ease of installing bars. The contractor may use a mechanical bar splice in lieu of lap splice. When a mechanical bar splice is used, the actual bar segment length will be determined by the contractor to accommodate manufacturer's recommendations for installation and ease of construction. The cost of furnishing and installing the bar splices will be considered completely covered by the contract unit price per Slab on Steel. No adjustment of the quantity of reinforcing steel will be allowed for the use of mechanical bar splices.

Cost of cutting existing anchor bolts and placing felt will be considered completely covered by the contract unit price for Slab on Steel.

For location of Sections A-A and B-B, see Sheet No. 4.

E.F. Denotes Each Face.

## DETAILS OF END BENT NO. 1

Detailed August 2025  
Checked August 2025

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

Sheet No. 5 of 18



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10/7/2025

ROUTE 136 STATE MO

DISTRICT BR SHEET NO. 5

COUNTY

MERCER

JOB NO.

JNW0049

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

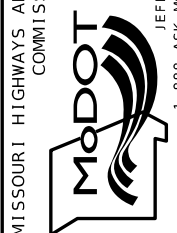
A26351

DESCRIPTION

DATE

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COMMISSION

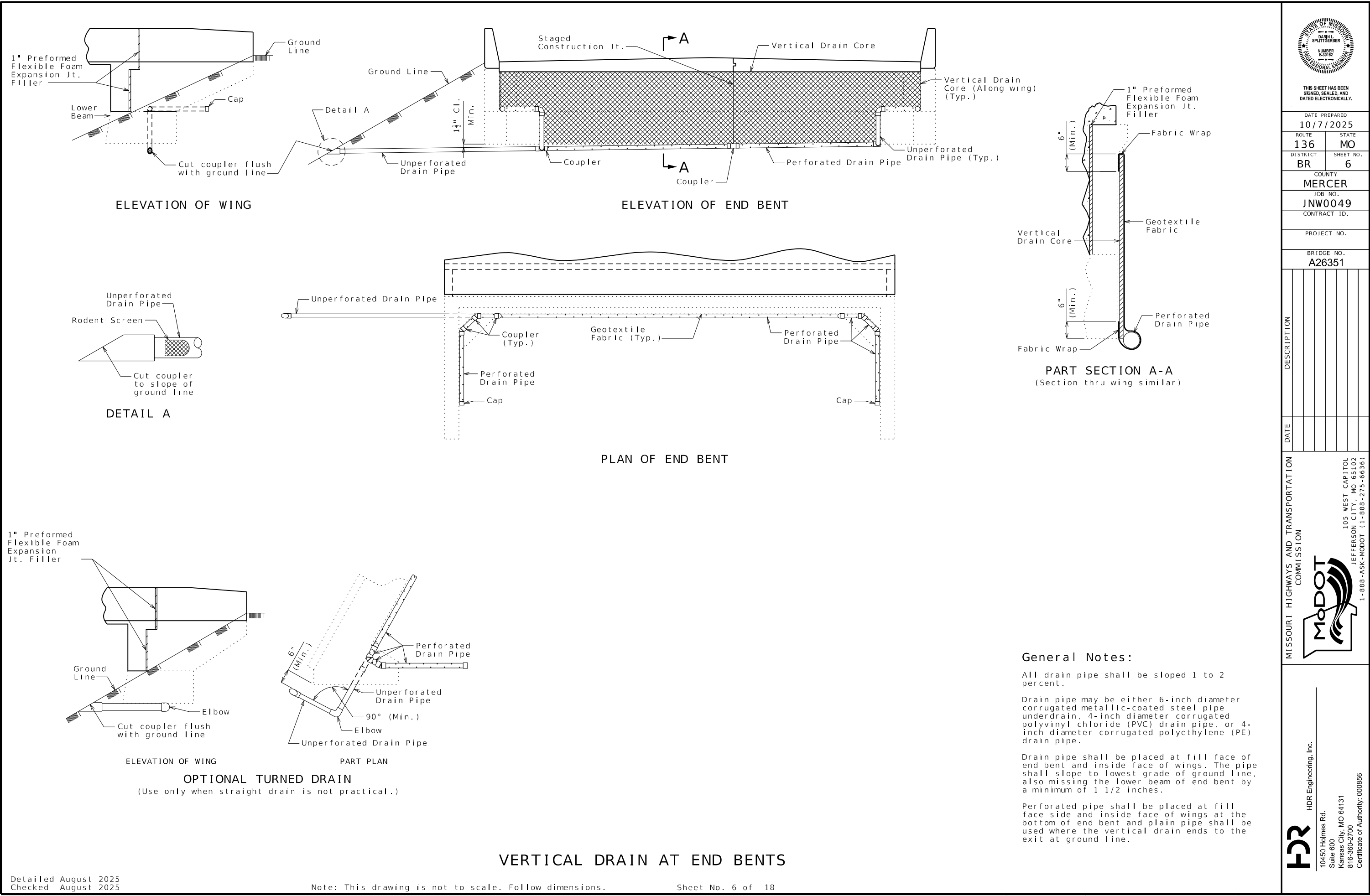
105 WEST CAPITOL  
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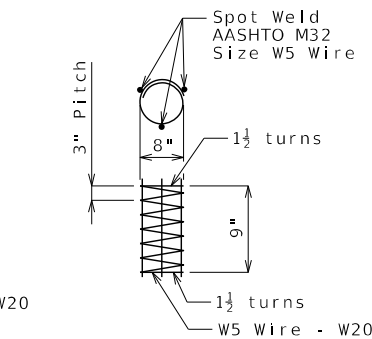
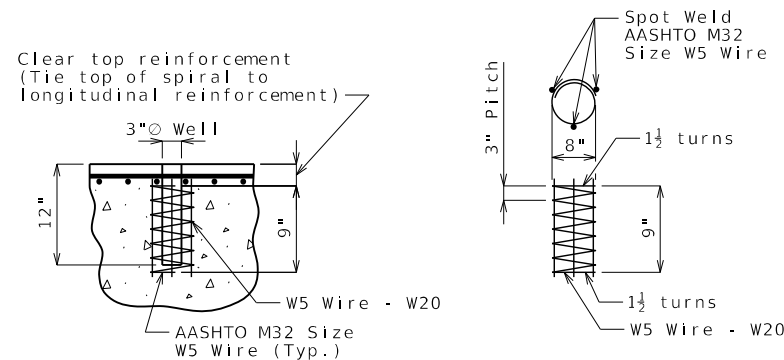
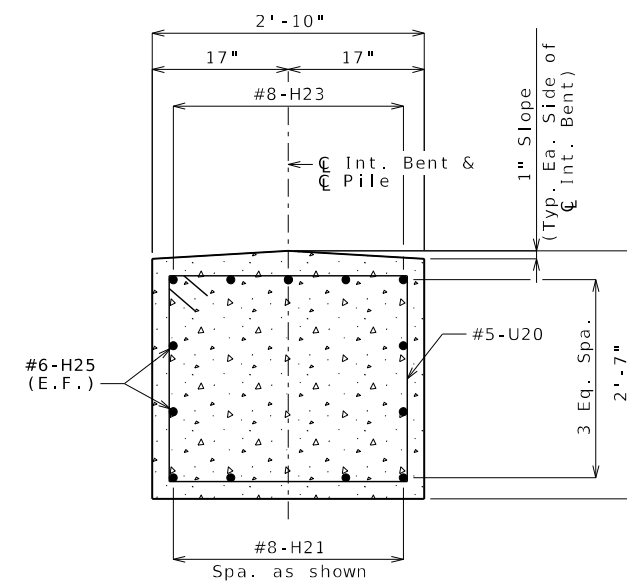
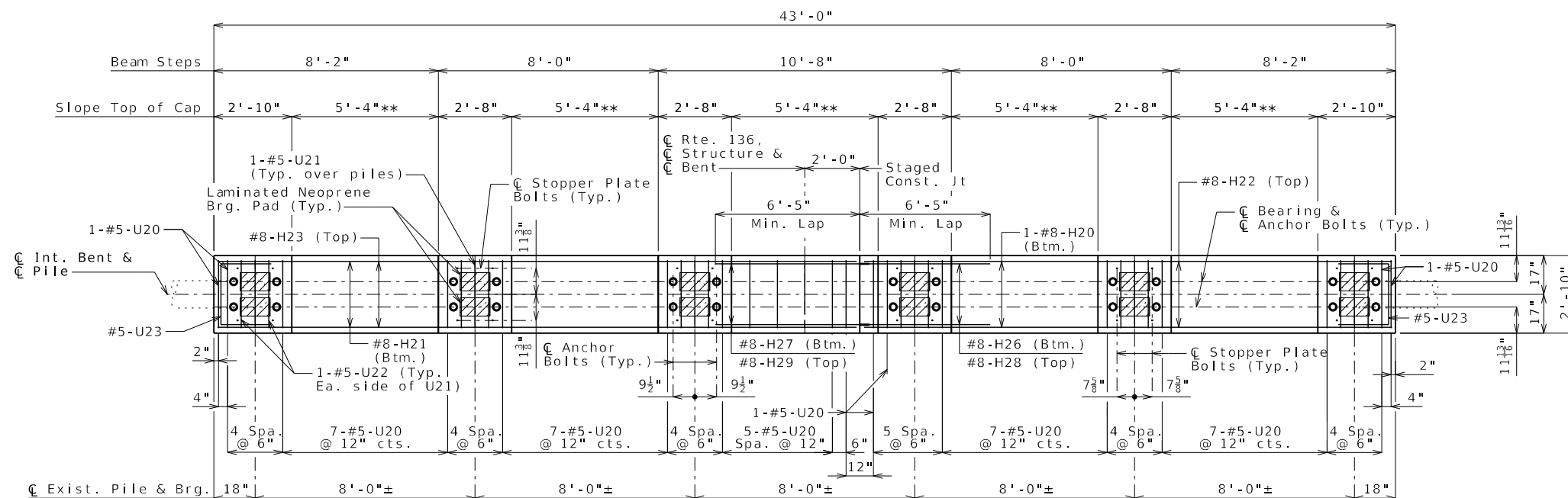
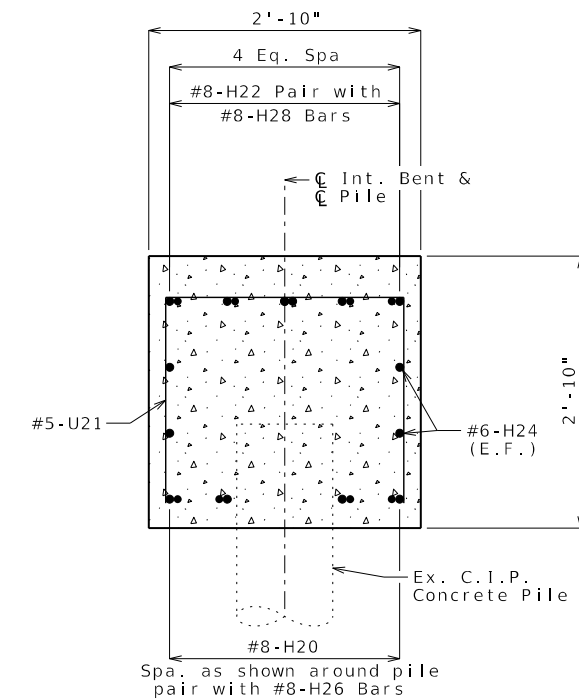
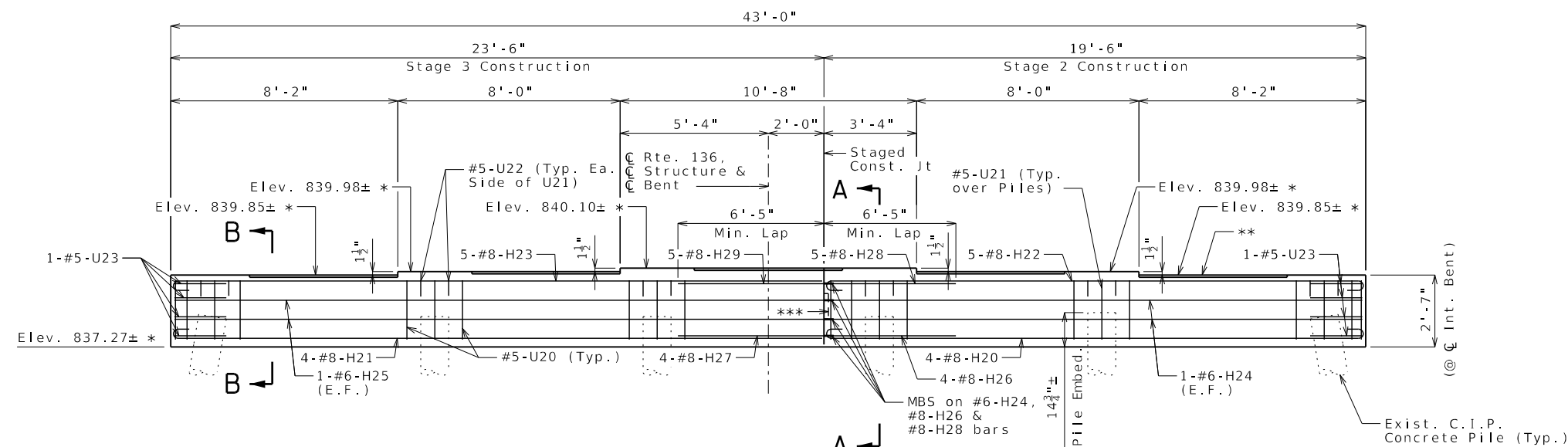
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Suite 600  
Kansas City, MO 64131

816-360-2700  
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### PLAN OF BEAM REINFORCEMENT

### DETAILS OF INTERMEDIATE BENTS NO. 5 & 9

\* Elevations listed are based on as-built plans.  
Contractor to field verify.

\*\* Slope beam cap to drain between bearings.

\*\*\* Long. Const. Jt. w/ 10"x11"x2" Key

Notes:

E.F. denotes Each Face.

For Bearings, Anchor Bolts, and Stopper Plate Details, see Sheet No. 10.

Bar Marks shown are for Int. Bent No. 5, Int. Bent No. 9 bars shall be changed to "30" series bar.

No measurement or direct payment for the cost of furnishing and installing mechanical bar splices.

Reinforcing bar lengths in the Bill of Reinforcing have not been modified in length for the mechanical bar splice.

Reinforcing steel shall be shifted to clear anchor bolt wells by at least 1/2"

MBS denotes mechanical bar splice.

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



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STRICT	SHEET NO
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COUNTY

JOB NO.

CONTRACT ID.

PROJECT NO.

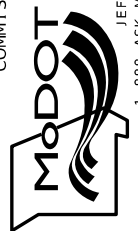
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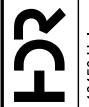
MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

**MoDOT**

105 WEST CAPITOL  
JEFFERSON CITY, MO 65102



HDR Engineering, Inc.



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Suite 600  
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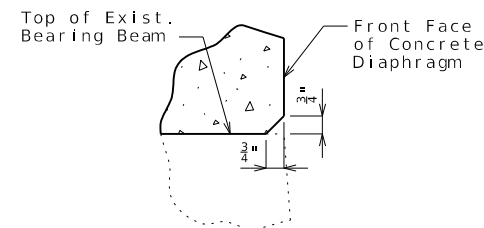
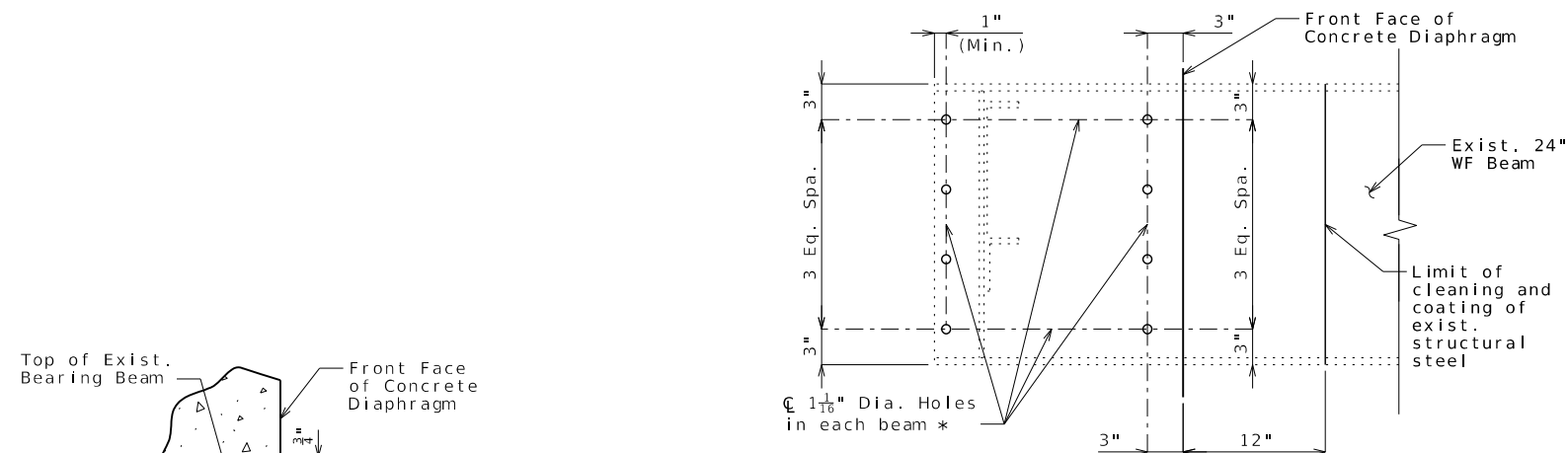
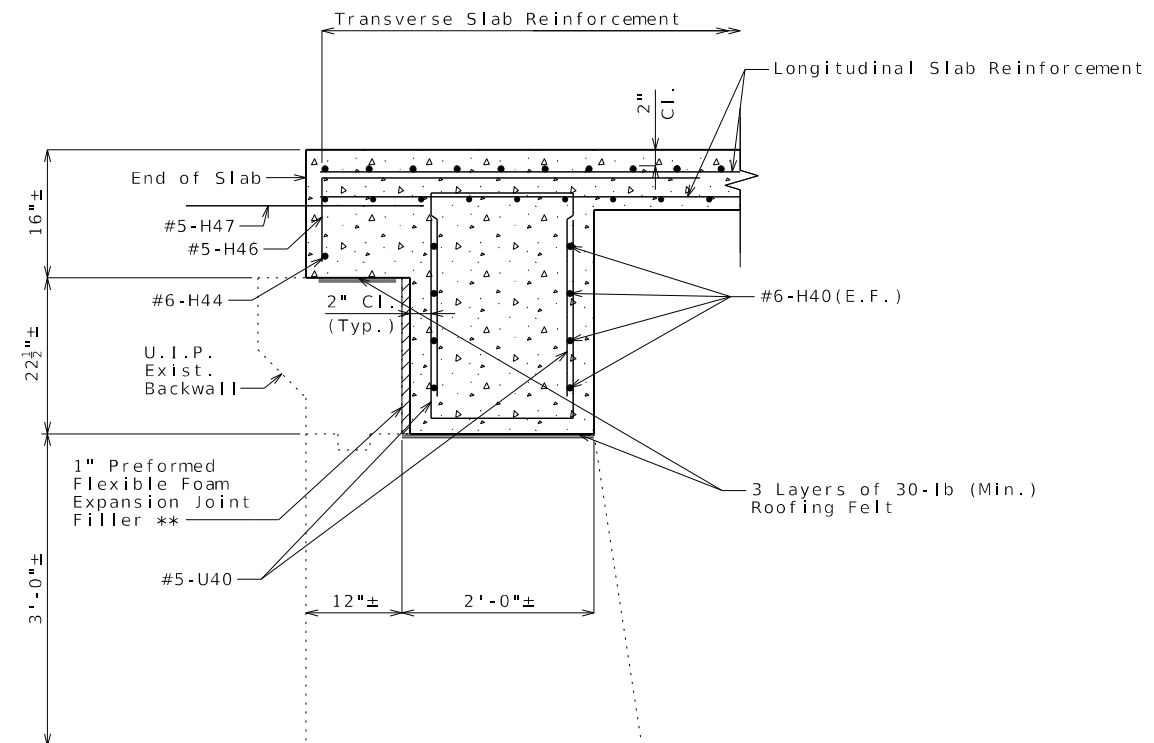
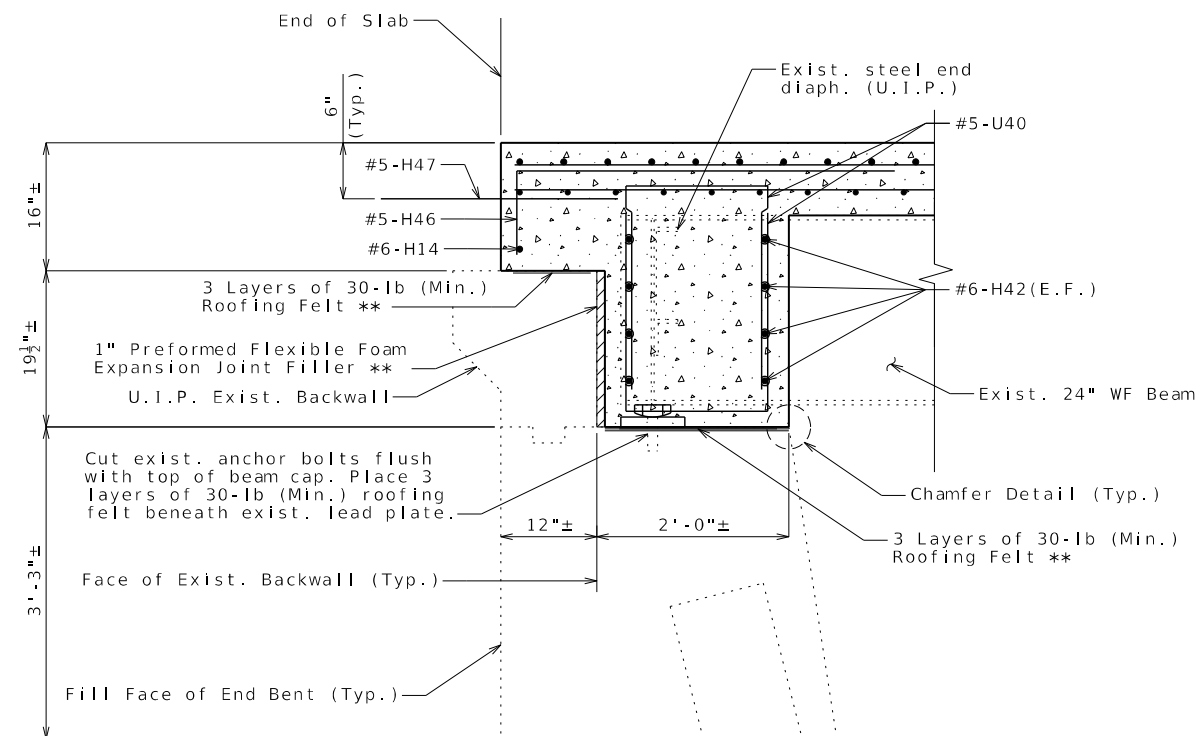
Detailed August 2025  
Checked August 2025

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

Sheet No. 7 of 18

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Notes:

The exposed and accessible surfaces of the existing structural steel and bearings that will be encased in concrete shall be cleaned with a minimum of SSPC-SP-3 surface preparation and coated with a minimum of one coat of gray epoxy-mastic primer (non-aluminum) in accordance with Sec 1081 to produce a dry film thickness of not less than 3 mils before concrete is poured. The surface preparation and coating for beams shall extend a minimum of one foot outside the face of the beam encasement. Payment for cleaning and coating steel to be encased in concrete will be considered completely covered by the contract unit price for Slab on Steel.

The H40 and H42 bars are segmented for ease of placement through beam web holes. The total bar length for H40, H41, H42 & H43 bars shown in Bill of Reinforcing Steel allows for one lap splice. Actual bar segment lengths to be determined by contractor for ease of installing bars. The contractor may use a mechanical bar splice in lieu of lap splice. When a mechanical bar splice is used, the actual bar segment length will be determined by the contractor to accommodate manufacturer's recommendations for installation and ease of construction. The cost of furnishing and installing the bar splices will be considered completely covered by the contract unit price per Slab on Steel. No adjustment of the quantity of reinforcing steel will be allowed for the use of mechanical bar splices.

Cost of cutting existing anchor bolts and placing felt will be considered completely covered by the contract unit price for Slab on Steel.

For location of Sections A-A and B-B, see Sheet No. 8.

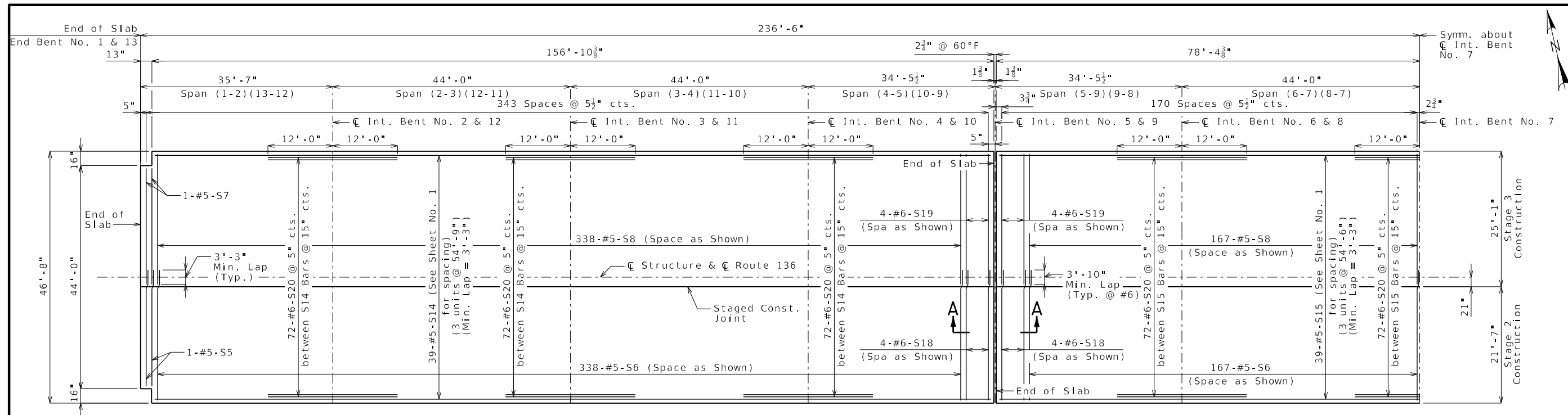
E.F. Denotes Each Face.

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

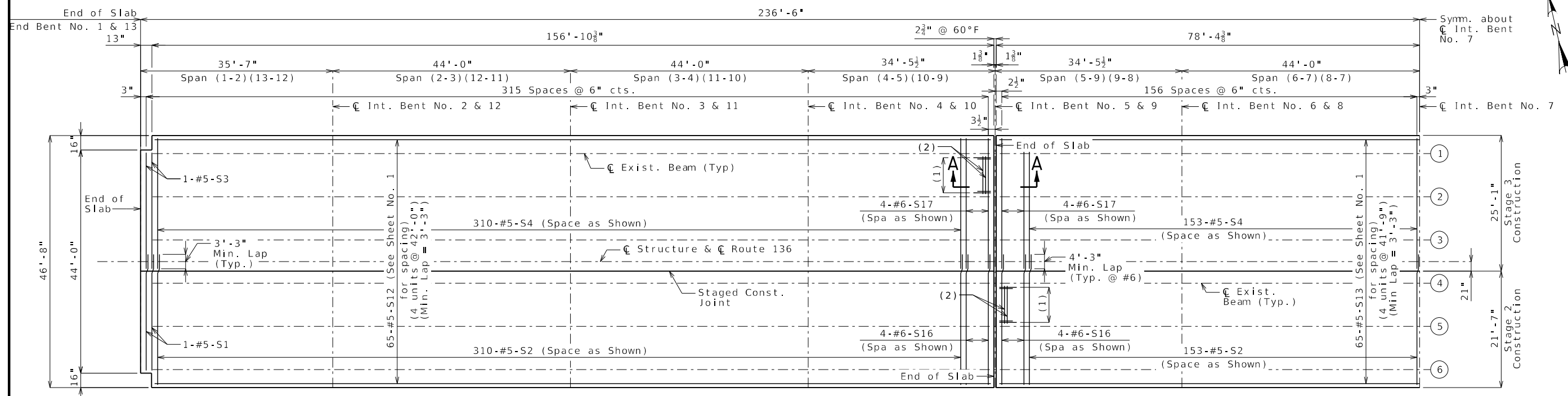
Adjust location of field drilled holes to allow H bars to contact lap at staged construction joint.

### DETAILS OF END BENT NO. 13

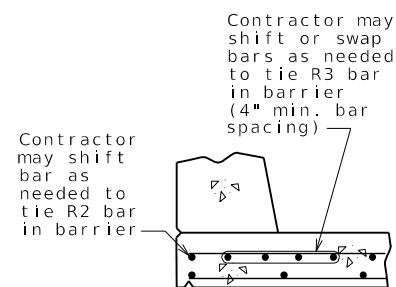




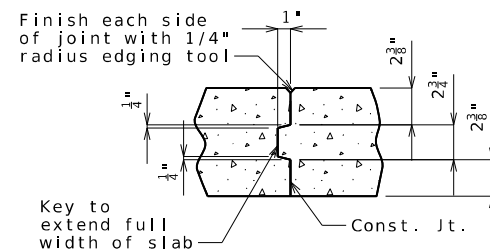
PLAN OF TOP SLAB REINFORCEMENT



PLAN OF BOTTOM SLAB REINFORCEMENT



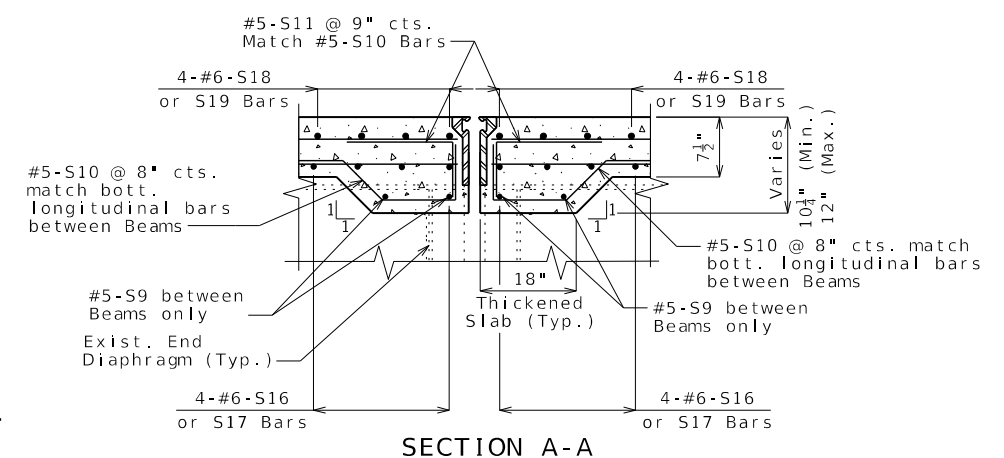
OPTIONAL SHIFTING  
TOP BARS AT BARRIER



SLAB CONSTRUCTION JOINT

- (1) #5-S10 & #5-S11 Bars in pairs to match bottom longitudinal reinforcement at thickened slab at Bents No. 5 and 9 and only between beams.
- (2) 1-#5-S9 btwn. Beams only @ Bents No. 5 & 9

PLAN OF SLAB SHOWING REINFORCEMENT



SECTION A-A

Detailed August 2025  
Checked August 2025

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

Sheet No. 11 of 18

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10/7/2025

ROUTE 136 STATE MO

DISTRICT BR SHEET NO. 11

COUNTY  
MERCER

JOB NO.  
JNW0049

CONTRACT ID.

PROJECT NO.

BRIDGE NO.  
A26351

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

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

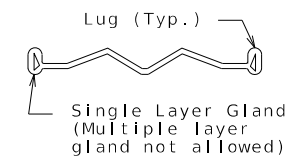
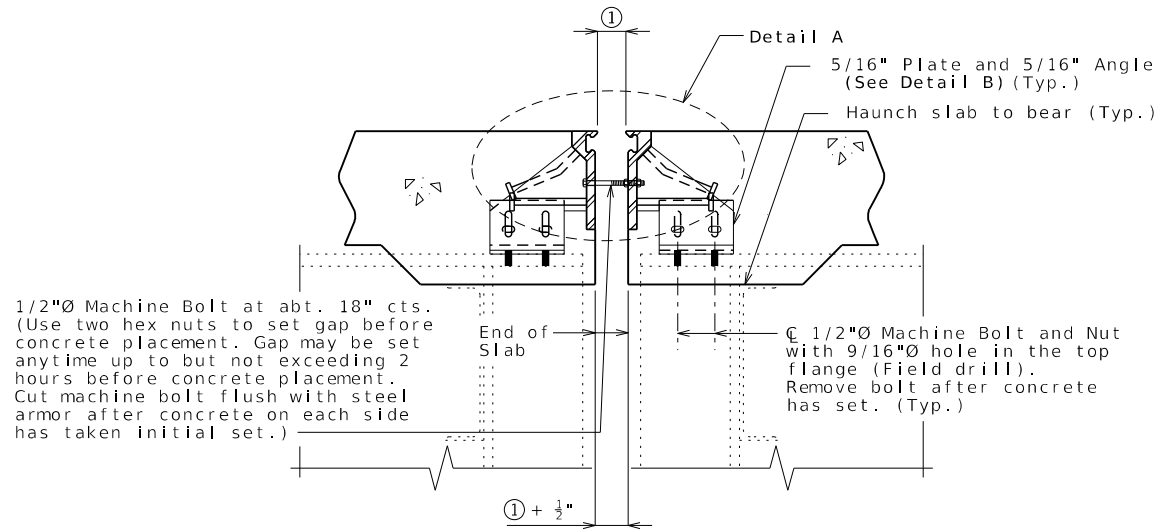


HDR Engineering, Inc.

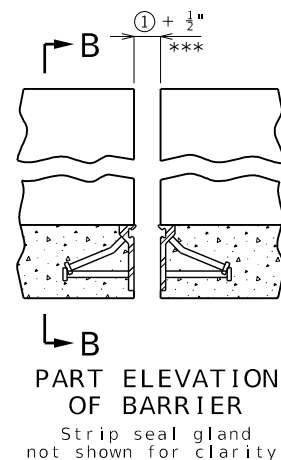


10450 Holmes Rd.  
Suite 600  
Kansas City, MO 64131  
816-360-2700  
Certificate of Authority: 000856



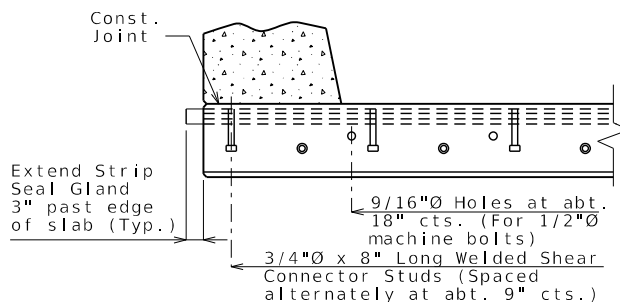


DETAIL OF GLAND

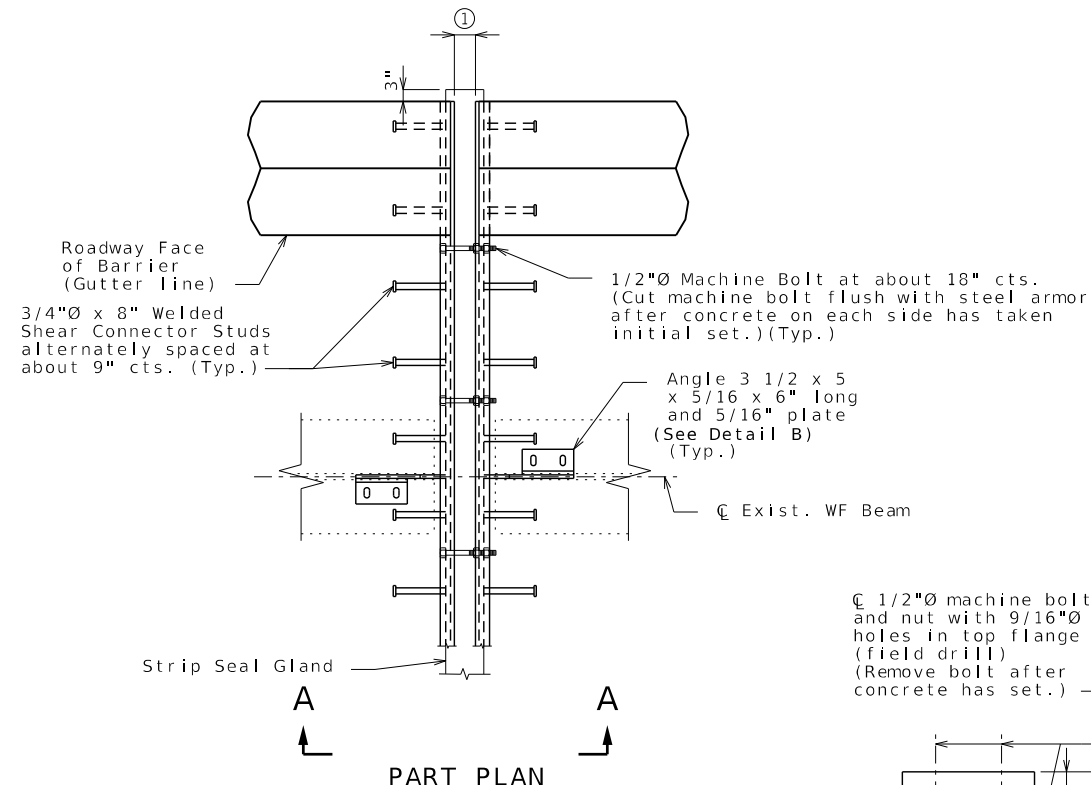


PART ELEVATION OF BARRIER

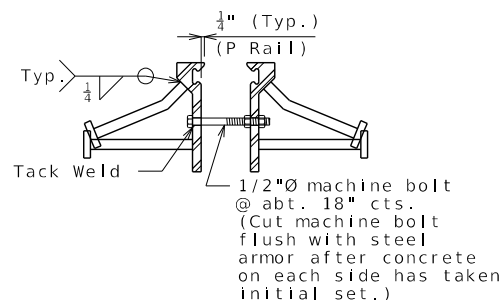
Strip seal gland not shown for clarity.



PART SECTION B-B

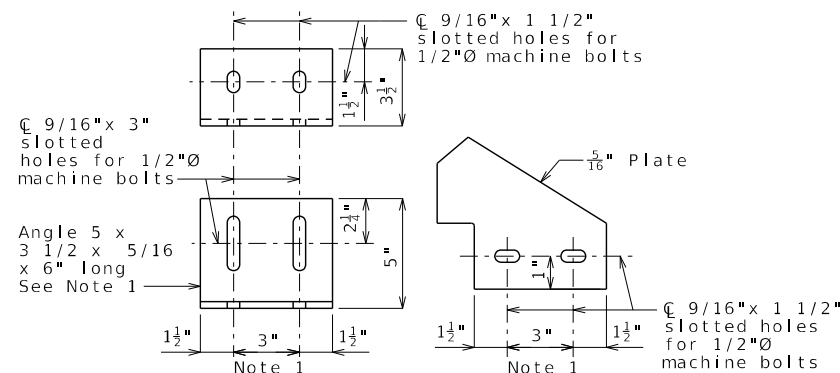


PART PLAN



DETAIL A

(P Rail shown, R Rail similar)



DETAIL B

## STRIP SEAL EXPANSION JOINT AT INTERMEDIATE BENTS NO. 5 & 9

### GENERAL NOTES:

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

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

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

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

Longitudinal reinforcing steel shall be placed so that ends shall be 1" from the vertical leg of the steel armor at the expansion joint system.

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

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

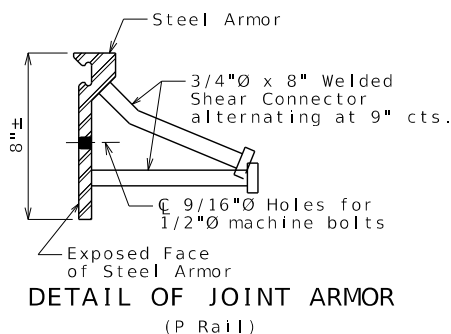
③ MoDOT Construction personnel will indicate the strip seal expansion joint system installed.

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

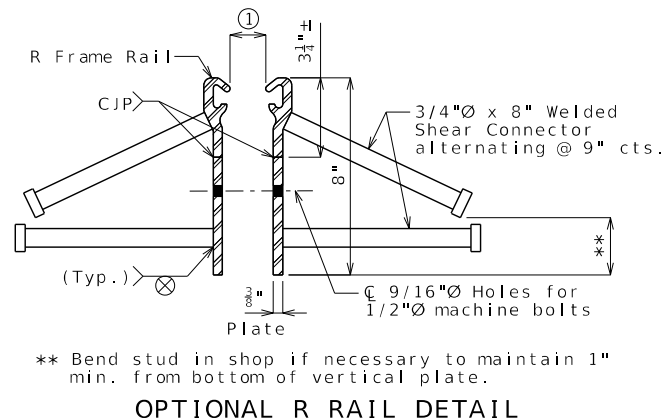
The terms P and R rail are used for identification only, and are not endorsements for any particular manufacturer.

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

Note 1: Contractor to field verify dimension.



DETAIL OF JOINT ARMOR (P Rail)



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

OPTIONAL R RAIL DETAIL

Table of Allowed Transverse Strip Seal Expansion Joint System								
Manufacturer	Strip Seal System (Designated Name)	Movement Parallel to RDWY	① Allowed Installation Gap Normal to Joint at RDWY Surface @ Air/Surface Temperature					
			②					
			@40°F	@50°F	@60°F	@70°F	@80°F	@90°F
D S Brown	Strip seal L2-500	2 3/8"	2 1/2"	2 3/8"	2 1/4"	2 1/8"	1 13/16"	1 11/16"
Watson Bowman Acme (Wabo)	Strip seal SE-400	2 3/8"	2 1/2"	2 3/8"	2 1/4"	2 1/8"	1 13/16"	1 11/16"

Detailed August 2025  
Checked August 2025

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

Sheet No. 12 of 18

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

DATE PREPARED

10/7/2025

ROUTE

136

STATE

MO

DISTRICT

BR

SHEET NO.

12

COUNTY

MERCER

JOB NO.

JNW0049

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

A26351

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL

JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)



HDR Engineering, Inc.

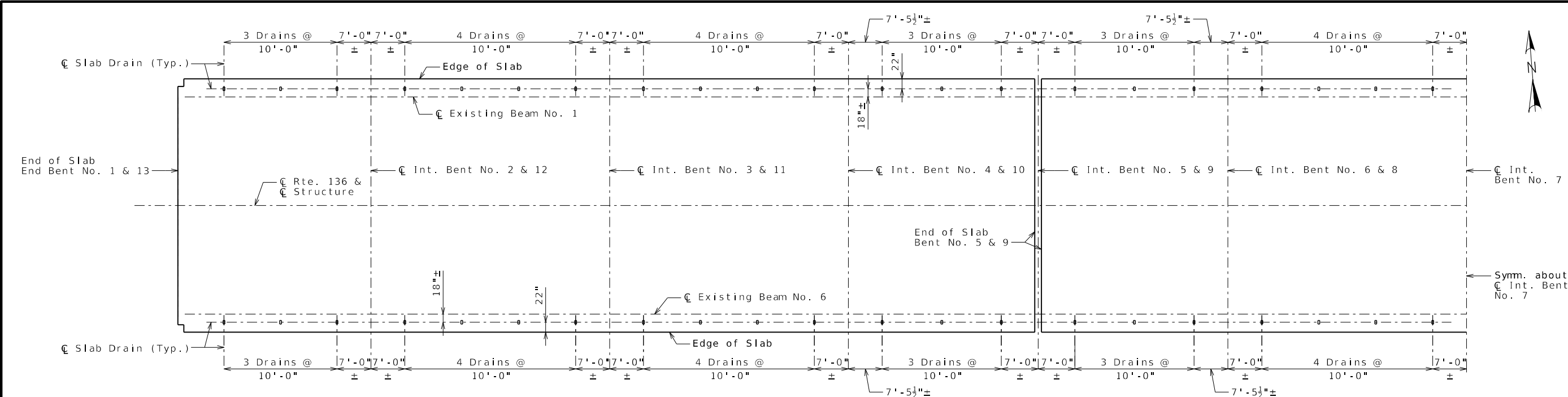
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Suite 600

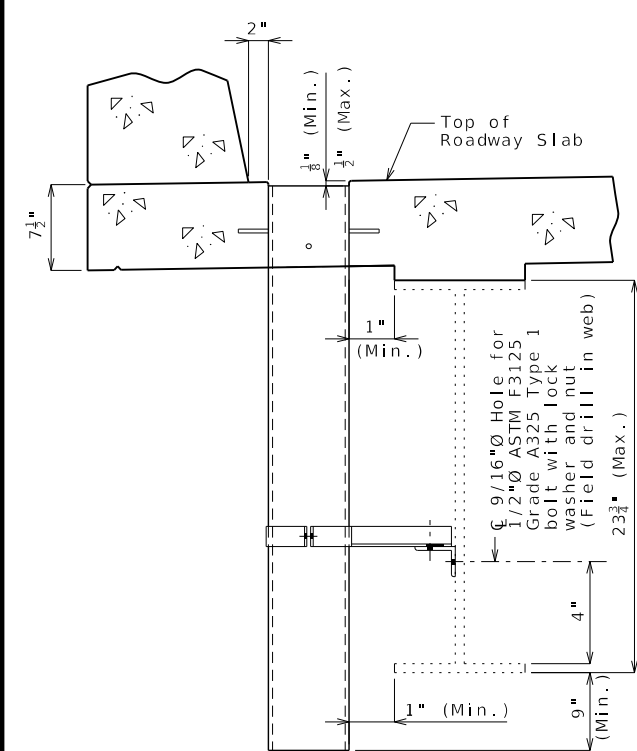
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816-360-2700

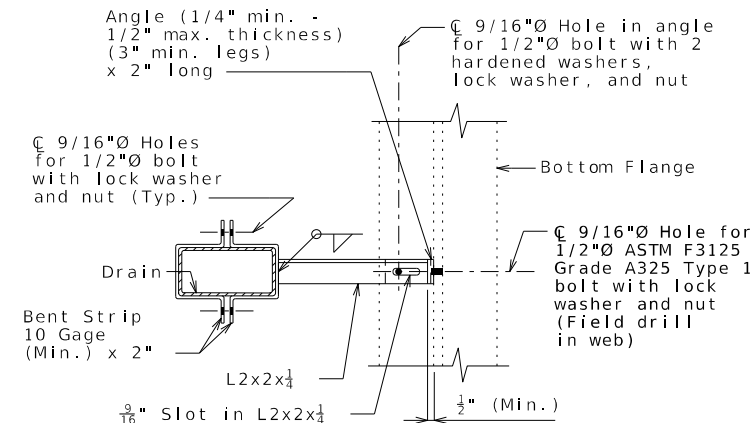
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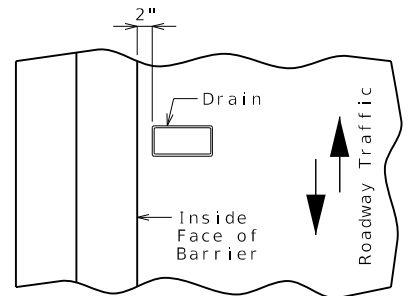
PLAN OF SLAB SHOWING SLAB DRAIN LOCATIONS



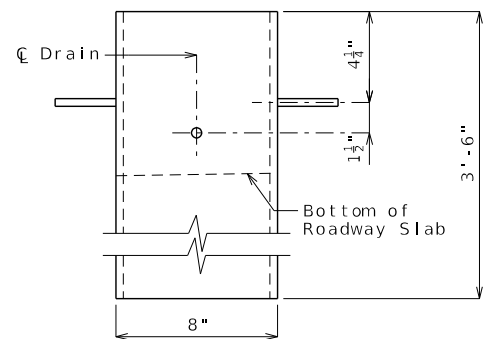
PART SECTION NEAR DRAIN



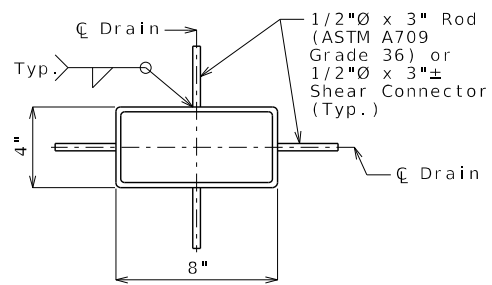
PART SECTION SHOWING BRACKET ASSEMBLY



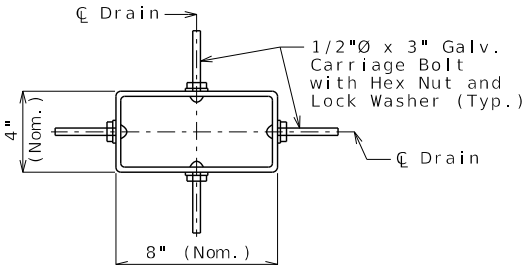
PART PLAN OF SLAB AT DRAIN



ELEVATION OF DRAIN



PLAN OF STEEL DRAIN OPTION



PLAN OF FRP DRAIN OPTION

SLAB DRAIN DETAILS

General Notes:

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

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

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

Reinforcing steel shall be shifted to clear drains.

The bracket assembly shall be galvanized in accordance with ASTM A123.

All bolts, hardened washers, lock washers and nuts shall be galvanized in accordance with AASHTO M 232 (ASTM A153), Class C.

All 1/2" bolts shall be ASTM A307, except as shown.

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

The bolt hole for the bracket assembly attachment shall be shifted to the minimum extent necessary to field drill in the existing web.

Notes for Steel Drain:

Slab drains may be fabricated of either 1/4" welded sheets of ASTM A709 Grade 36 steel or from 1/4" structural steel tubing ASTM A500 or A501.

Outside dimensions of drains are 8" x 4".

The drains shall be galvanized in accordance with ASTM A123.

Notes for FRP Drain:

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

Shape of drains shall be rectangular with outside nominal dimensions of 8" x 4".

Minimum reinforced wall thickness shall be 1/4 inch.

The resin used shall be ultraviolet (UV) resistant and/or have UV inhibitors mixed throughout. Drains may have an exterior coating for additional UV resistance.

The color of the slab drain shall be gray (Federal Standard #26373). The color shall be uniform throughout the resin and any coating used.

The combination of materials used in the manufacture of the drains shall be tested for UV resistance in accordance with ASTM D4329 Cycle A. The representative material shall withstand at least 500 hours of testing with only minor discoloration and without any physical deterioration. The contractor shall furnish the results of the required ultraviolet testing prior to acceptance of the slab drains.

At the contractor's option, drains may be field cut. The method of cutting FRP slab drain shall be recommended by the manufacturer to ensure a smooth, chip free cut.

Detailed August 2025  
Checked August 2025

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

Sheet No. 13 of 18

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DATE PREPARED  
10/7/2025

ROUTE  
136

DISTRICT  
BR

STATE  
MO

SHEET NO.  
13

COUNTY  
MERCER

JOB NO.  
JNW0049

CONTRACT ID.

PROJECT NO.

BRIDGE NO.  
A26351

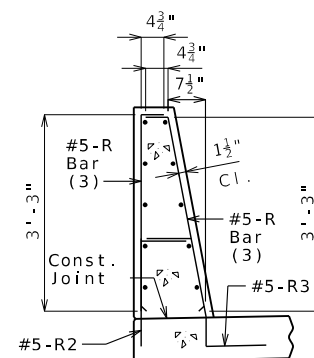
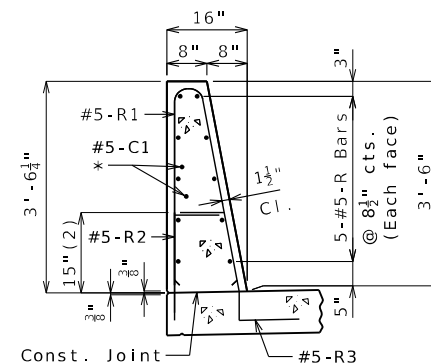
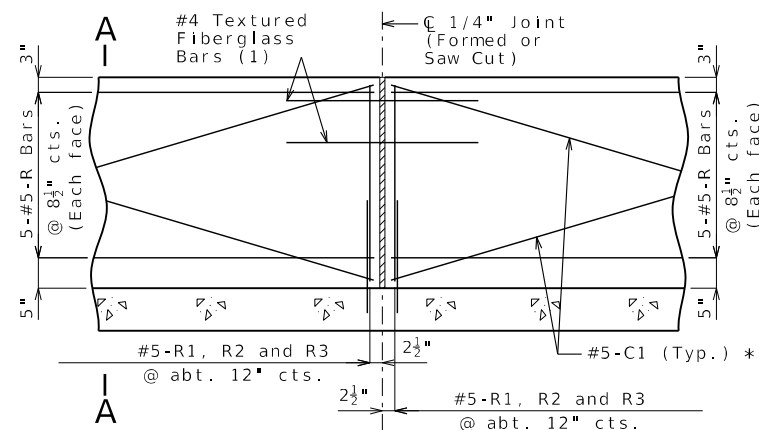
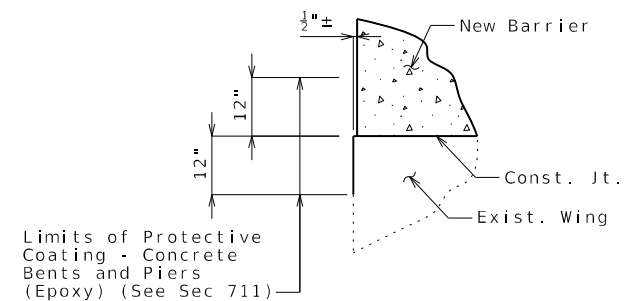
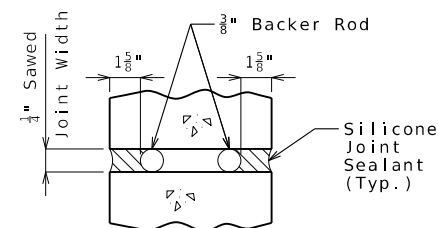
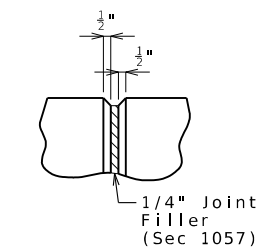
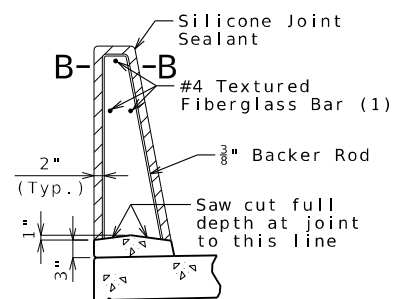
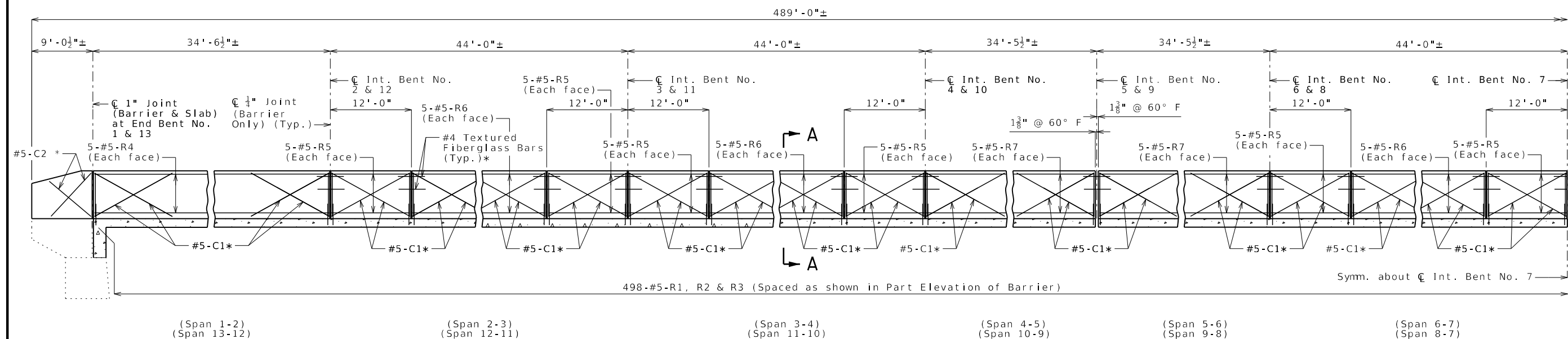
DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

HDR Engineering, Inc.  
10450 Holmes Rd.  
Suite 600  
Kansas City, MO 64131  
816-360-2700  
Certificate of Authority: 000856



General Notes:

\* Slip-formed option only.

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

Top of barrier shall be built parallel to grade and barrier joints (except at end bents) normal to grade.

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

Payment for all concrete and reinforcement, complete in place, will be considered completely covered by the contract unit price for Type D Barrier per linear foot.

Concrete in barrier shall be Class B-1.

Measurement of barrier is to the nearest linear foot for each structure, measured along the outside top of slab from end of wing to end of wing.

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

Joint sealant and backer rods shall be in accordance with Sec 717 for silicone joint sealant for saw cut and formed joints.

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



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ROUTE	STATE
36	MO

STRICT	SHEET NO
BR	14

COUNTY  
MERCER

JOB NO.  
JNW0049

CONTRACT ID.

PROJECT NO.

BRIDGE NO.  
A26351[illegible]MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

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

HDR Engineering, Inc.

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Suite 600

Kansas City, MO 64  
916 360 3700

816-360-2700  
Certificate of Authority

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Detailed August 2025  
Checked August 2025

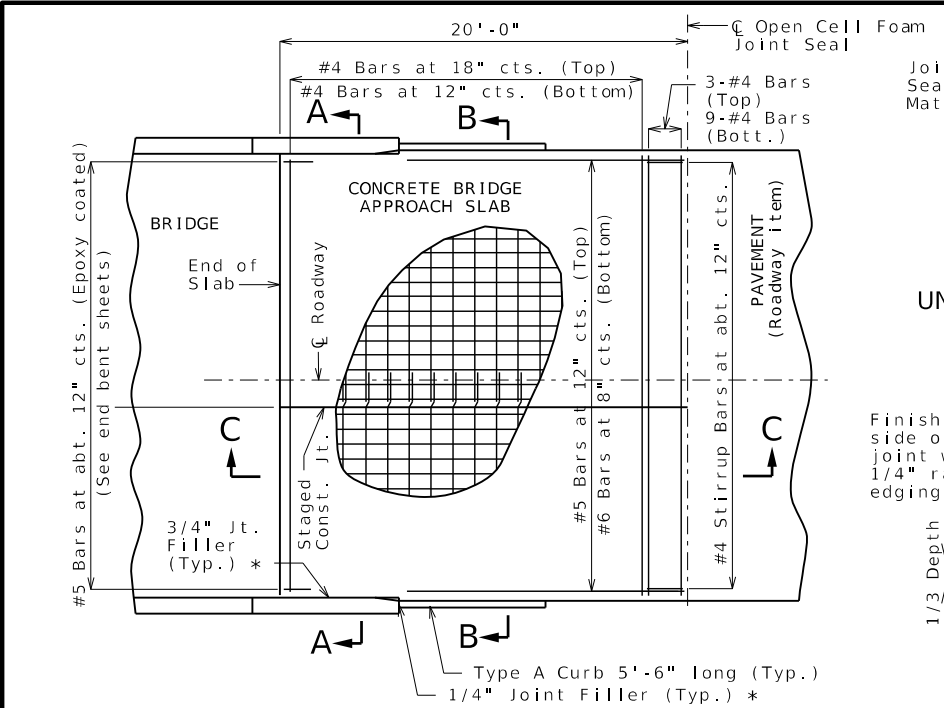
Checked August 2025

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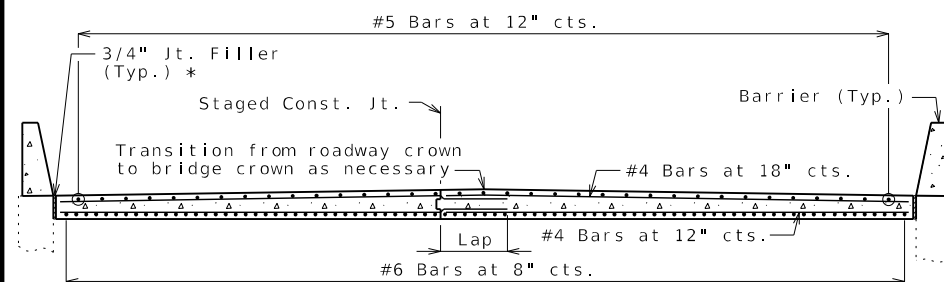
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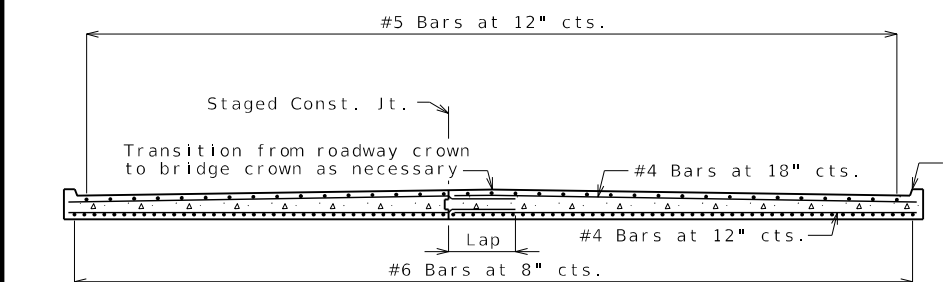




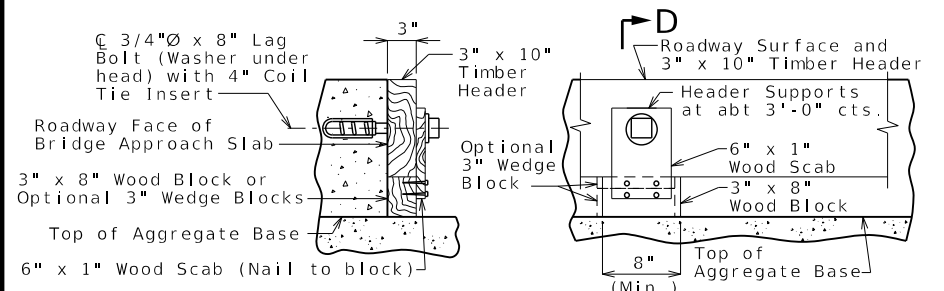
**PART PLAN**  
Approach Slab at End Bent No. 13 shown.  
Bent No.1 similar



**SECTION A-A**



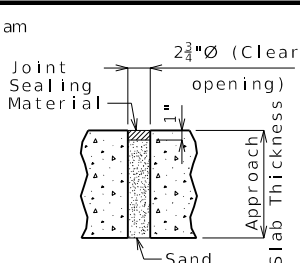
**SECTION B-B**



**SECTION D-D**

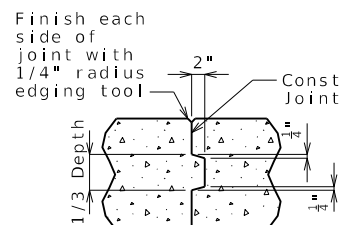
**DETAILS OF TIMBER HEADER**

Remove timber header when concrete pavement is placed.

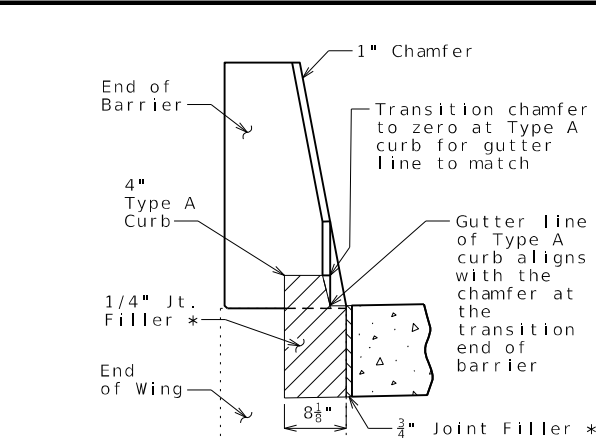


**UNDERSEAL ACCESS HOLE DETAIL**

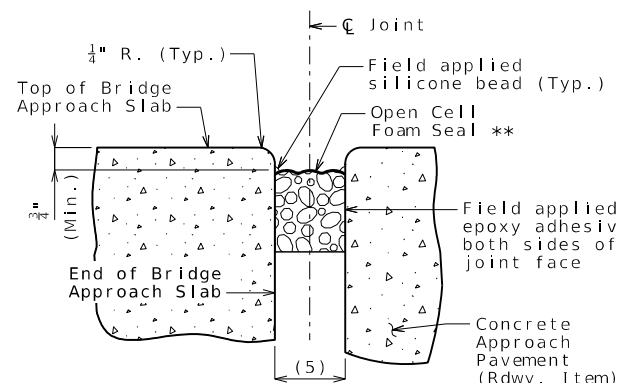
(If required)



**CONSTRUCTION JOINT DETAIL**



**SECTION BETWEEN CURB AND BARRIER**

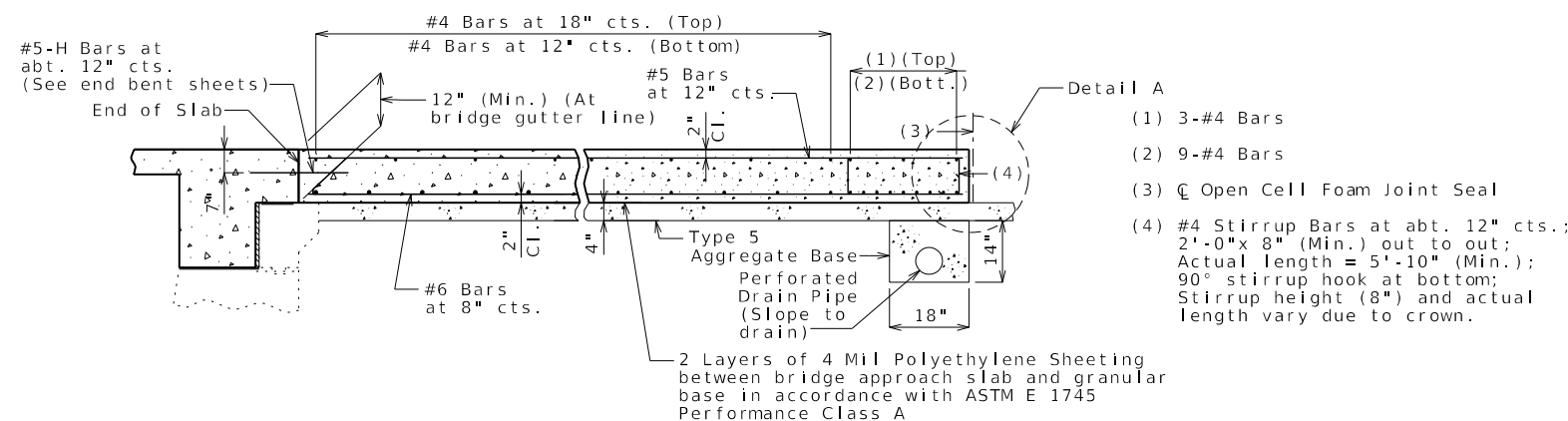


**DETAIL A**

\*\* Manufacturer's recommended size  
Extend seal full width of approach slab.

	Movement Parallel to Rdwy	Movement Normal to Joint	Min. Jt. Width (Normal to Joint)	Max. Jt. Width (Normal to Joint)	(5) Allowed Installation Gap (±) Normal to Joint at Roadway Surface at Air/Surface Temperature				Manufacturer	Seal Name
					@ 40° F	@ 50° F	@ 60° F	@ 70° F		
End Bents No. 1 & 13	1.38"	1.38"	1.45"	2.83"	2 3/16"	2 1/16"	2"	1 11/16"		

MoDOT construction personnel will record the manufacturer and seal name that was used.



**SECTION C-C**

## General Notes:

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.

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 24 inches for #4 bars.

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.

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

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 (Minor) 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.

Removal of Existing Approach Slab shall be in accordance with Job Special Provisions.

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

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

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

(5) Allowed installation gap (±) normal to joint at roadway surface (see table).



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10/7/2025

ROUTE STATE

136 MO

DISTRICT SHEET NO.

BR 16

COUNTY

MERCER

JOB NO.

JNW0049

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

A26351

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

COMMISSION

MoDOT

105 WEST CAPITOL

JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

HDR Engineering, Inc.

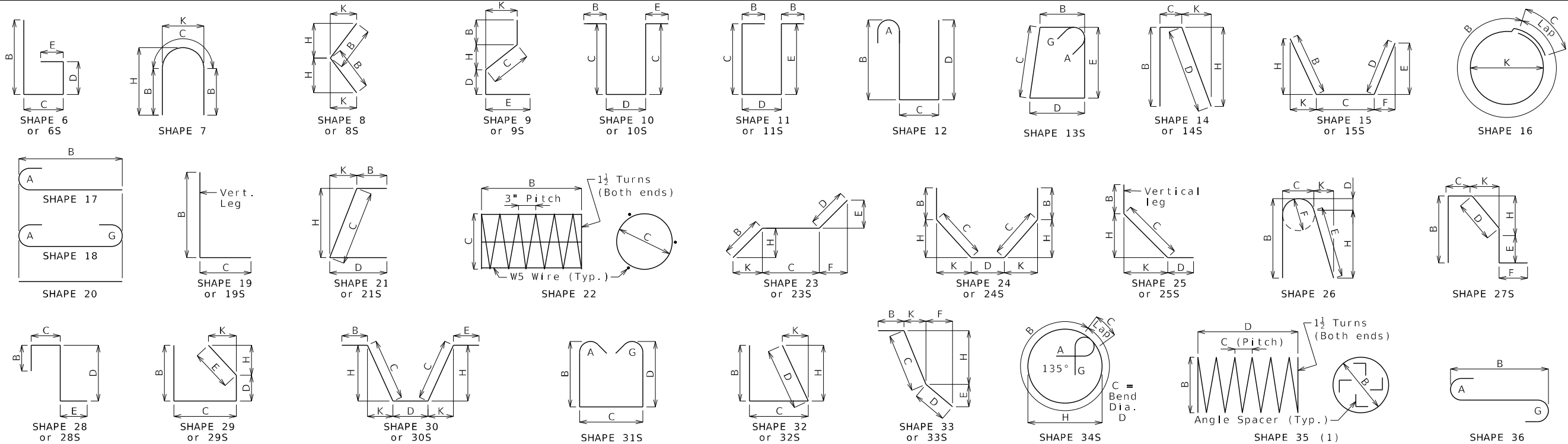
10450 Holmes Rd.

Suite 600

Kansas City, MO 64111

816-360-2700

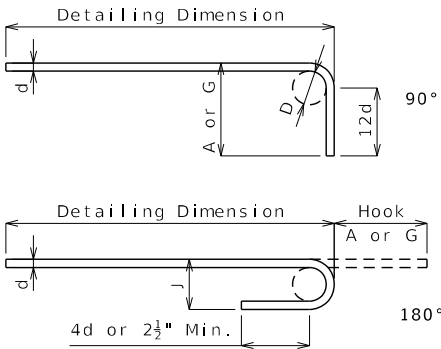
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### Finished Bend Diameters D and Hook Dimensions

#### Standard Pin Bend Shapes

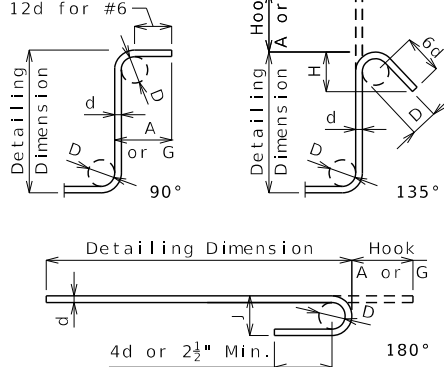
Size	Case	D	A or G			J
			90°	180°	180°	
#4	1	3"	8"	6"	4"	
#5	1	3 $\frac{3}{4}$ "	10"	7"	5"	
#6	1	4 $\frac{1}{2}$ "	12"	8 $\frac{1}{4}$ "	6"	
#7	2	5 $\frac{1}{4}$ "	14"	9 $\frac{3}{4}$ "	7"	
	3	7"	15"	11 $\frac{1}{2}$ "	8 $\frac{3}{4}$ "	
#8	2	6"	16"	11"	8"	
	3	8"	17"	13 $\frac{1}{4}$ "	10"	
#9	1	9 $\frac{1}{2}$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



#### Stirrup Pin Bend Shapes (S)

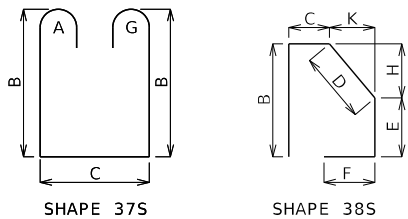
Size	Case	D	A or G			H	J
			90°	135°	180°	135°	180°
#4	2	2"	4 $\frac{1}{2}$ "	4 $\frac{1}{2}$ "	5"	2 $\frac{7}{8}$ "	3"
	3	3"	5"	5 $\frac{1}{4}$ "	6"	3"	4"
#5	2	2 $\frac{3}{4}$ "	5 $\frac{3}{4}$ "	5 $\frac{3}{4}$ "	5 $\frac{3}{4}$ "	3 $\frac{5}{8}$ "	3 $\frac{3}{4}$ "
	3	3 $\frac{3}{4}$ "	6 $\frac{1}{4}$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

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



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

All dimensions are out to out. (1) Shall be a deformed or plain spiral bar or wire.

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.

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)

By Size	Size	Substructure		Superstructure			Entire Bridge	
		Plain	Epoxy	Slab		Type D Barrier	Slip Form	Plain
				Plain	Epoxy			
	W5	0	118	0	0	0	0	0
	4	0	0	0	0	0	0	0
	5	0	1,306	0	158,680	23,705	957	0
	6	0	232	0	27,299	0	0	27,531
	7	0	0	0	0	0	0	0
	8	0	2,794	0	0	0	0	2,794
	9	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0
	11	0	0	0	0	0	0	0
	14	0	0	0	0	0	0	0
	18	0	0	0	0	0	0	0
	By Type	0	4,450	0	185,979	23,705	957	215,091

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



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

DATE PREPARED  
10/7/2025

ROUTE STATE  
136 MO

DISTRICT SHEET NO.  
BR 17

COUNTY  
MERCER

JOB NO.  
JNW0049

CONTRACT ID.

PROJECT NO.

BRIDGE NO.  
A26351

DESCRIPTION

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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 furnished in accordance with the requirements of the American Institute of Steel Construction, Inc. (AISC) Specification for Structural Steel Buildings, 13th Edition, 2005, and the American Concrete Institute (ACI) 308R-02, Building Code Requirements for Reinforcing Steel Bars, 2002.

For bending diagrams and steel reinforcing totals, see Sheet No. 17.

Detailed August 2025  
Checked August 2025

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

**BILL OF REIN**

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.



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