DESIGN DESIGNATION

A.A.D.T. - 2024 = 2569
A.A.D.T. - 2044 = 2692
D.H.V. = 11%
T = 10%
V = 55 M.P.H.
D = 50%/50%

FUNCTIONAL CLASSIFICATION- MINOR ARTERIAL MINOR ROADWAY

NO RIGHT OF WAY OR EASEMENTS WILL BE ACQUIRED FOR THIS PROJECT.

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

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

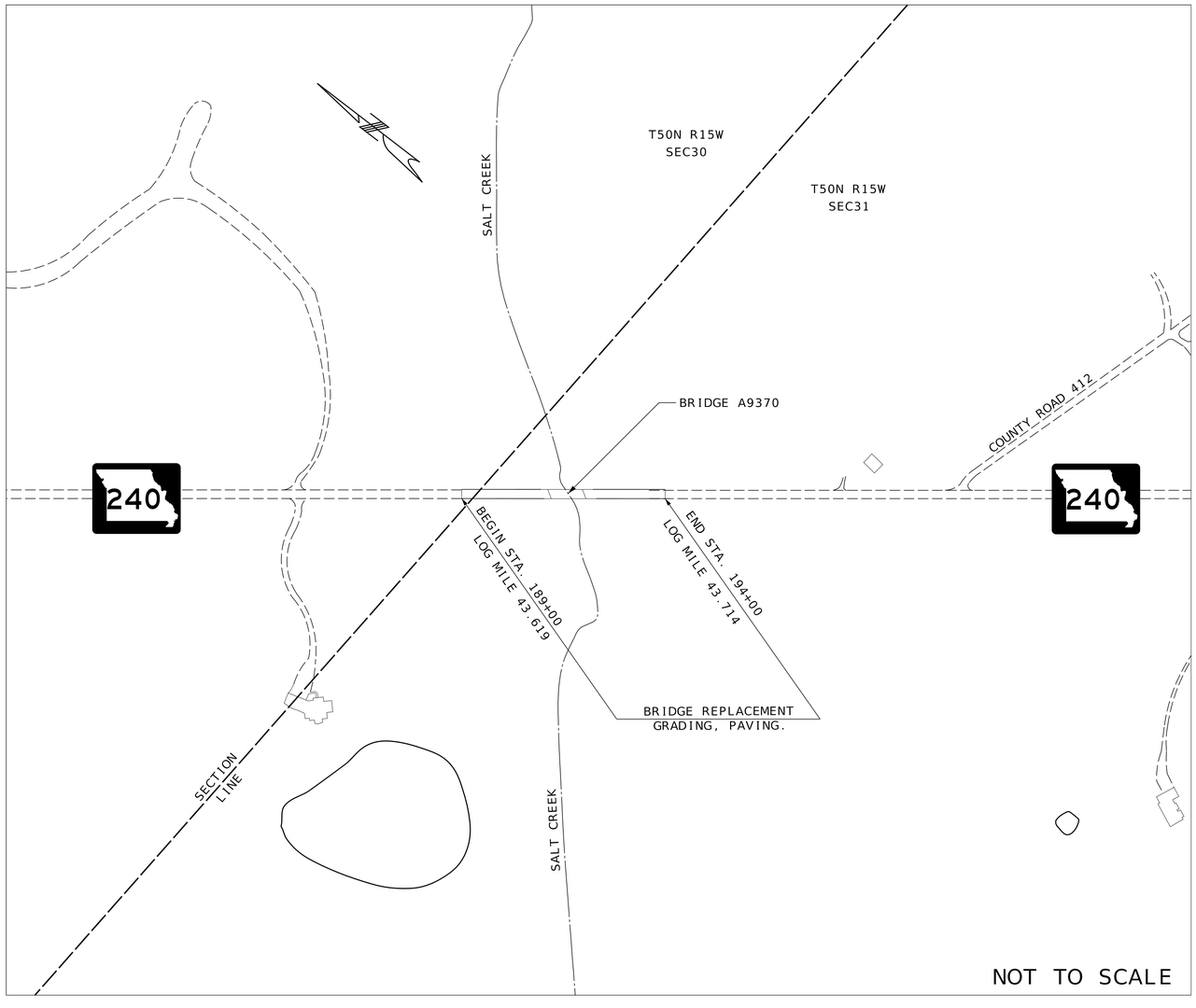
PLANS FOR PROPOSED STATE HIGHWAY

HOWARD COUNTY



KEY MAP
LOCATION OF HOWARD COUNTY

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INDEX OF SHEETS

DESCRIPTION	SHEET NUMBER
TITLE SHEET	1
TYPICAL SECTIONS (TS) (1 SHEETS)	2
QUANTITIES (QU) (3 SHEETS)	3
PLAN-PROFILE (PP)	4-5
REFERENCE-COORDINATE POINTS (RP)	6
TRAFFIC CONTROL SHEETS (TC)	7-14
EROSION CONTROL SHEETS (EC)	15
SIGNING AND PAVEMENT MARKING (PM)	16
CROSS SECTIONS (XS)	1-8
BRIDGE DRAWINGS (B)	
A9370	1-22

LENGTH OF PROJECT

BEGINNING OF PROJECT	STA. 189+00
END OF PROJECT	STA. 194+00
APPARENT LENGTH	500 FEET
EQUATIONS AND EXCEPTIONS:	NONE
TOTAL CORRECTIONS	0 FEET
NET LENGTH OF PROJECT	500 FEET
STATE LENGTH	0.095 MILES
FOR INFORMATION ONLY ESTIMATED DISTURBED ACRES	0.639 ACRES

STATE OF MISSOURI
MARGARET ANN BRUNS NUMBER PE-2010000798
PROFESSIONAL ENGINEER
10/19/2026 5:00:22 PM
Margaret Ann Bruns - Civil
MO PE-2010000798

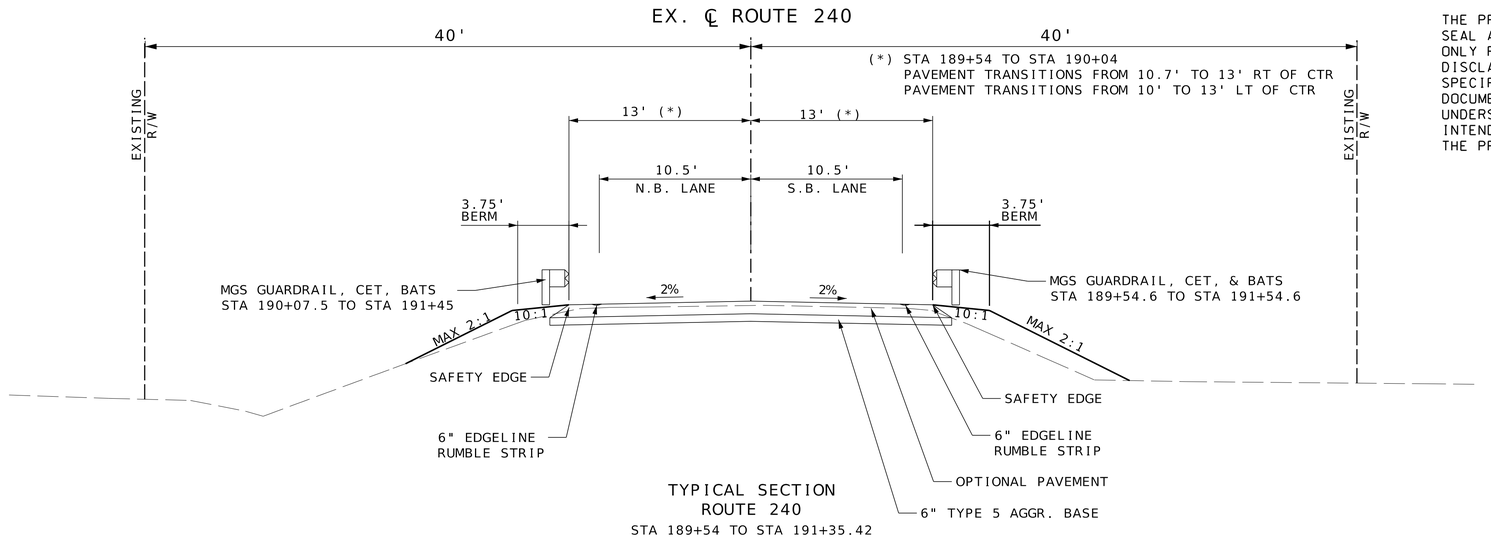
DATE PREPARED: 10/15/2026
ROUTE: 240 | STATE: MO
DISTRICT: CD | SHEET NO.: 1
COUNTY: HOWARD
JOB NO.: JCD0137
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

DESCRIPTION	DATE

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

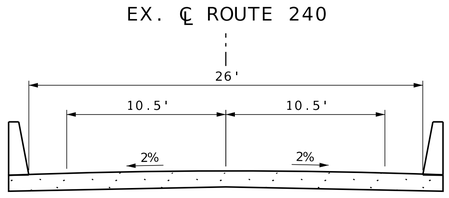
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

EFK•Moen
Civil Engineering Design
1355 North Highway Dr
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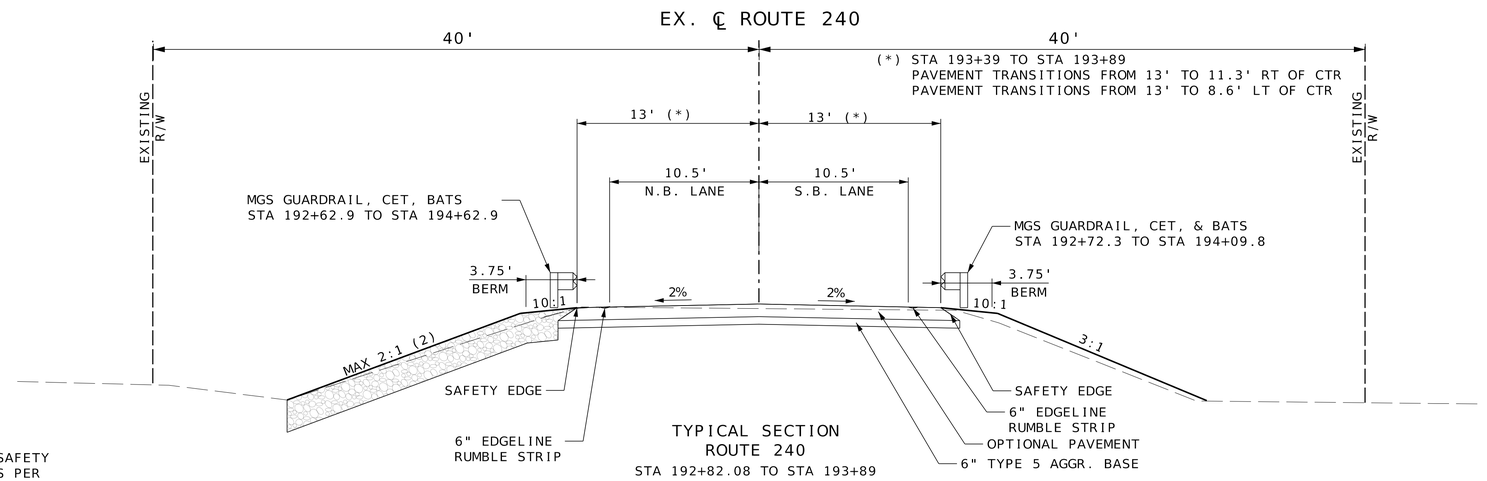


TYPICAL SECTION
ROUTE 240
STA 189+54 TO STA 191+35.42

OPTIONAL PAVEMENT	
ASPHALT OPTION	CONCRETE OPTION
2" BP-1 W/PG 64-22 8" BITUMINOUS BASE W/ PG 64-22	8 IN. CONCRETE PAVEMENT (15 FT. JOINTS AND 1.25" DOWELS)



TYPICAL SECTION
ROUTE 240 BRIDGE
STA 191+35.42 TO STA 192+82.08
(INCLUDES BRIDGE APPROACH SLABS)



TYPICAL SECTION
ROUTE 240
STA 192+82.08 TO STA 193+89

NOTES:
* THE CONTRACTOR SHALL INSTALL SAFETY EDGES AND EDGELINE RUMBLE STRIPS PER STANDARD PLANS

TYPICAL SECTIONS
SHEET 1 OF 1

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MARGARET ANN BRUNS
NUMBER PE-2010000798
PROFESSIONAL ENGINEER

09/28/2026 2:05:42 PM
Margaret Ann Bruns - Civil
MO PE-2010000798

DATE PREPARED
9/28/2026

ROUTE	STATE
240	MO
DISTRICT	SHEET NO.
CD	2

COUNTY
HOWARD

JOB NO.
JCD0137

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

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REMOVAL OF IMPROVEMENTS

SHEET NO.	STA	STA	LOC	ROADWAY	L.F.	S.F.	EACH	DESCRIPTIONS
4	190+61		LT	ROUTE 240			1	SIGNS, POSTS, & FOUNDATIONS
4	190+86		LT	ROUTE 240			1	SIGNS, POSTS, & FOUNDATIONS
4	191+05		LT	ROUTE 240			1	SIGNS, POSTS, & FOUNDATIONS
4	193+09		LT	ROUTE 240			1	SIGNS, POSTS, & FOUNDATIONS
4	193+29		LT	ROUTE 240			1	SIGNS, POSTS, & FOUNDATIONS
4	193+46		LT	ROUTE 240			1	SIGNS, POSTS, & FOUNDATIONS
4	192+58		LT	ROUTE 240			1	SIGNS, POSTS, & FOUNDATIONS
4	191+60		RT	ROUTE 240			1	SIGNS, POSTS, & FOUNDATIONS
4	189+54		LT/RT	ROUTE 240	24			FULL DEPTH SAWCUT
4	193+89		LT/RT	ROUTE 240	24			FULL DEPTH SAWCUT
4	190+63	193+62	LT/RT	ROUTE 240	400			GUARDRAIL REMOVAL
				PAY TOTAL	1 LUMP SUM			

OPTIONAL PAVEMENT

SHEET NO.	ROADWAY	STA	STA	LOC	AREA	OPTIONAL PAVEMENT	REMARKS
					S.F.	S.Y.	
4	ROUTE 240	189+54	191+35	LT/RT	4583.9	509.3	
4	ROUTE 240	192+82	193+89	LT/RT	2628.5	292.1	
					SUBTOTAL	801.4	
					PAY TOTAL	801.4	

AGGREGATE BASE

SHEET NO.	ROADWAY	STA	STA	LOC	AREA	TYPE 5 AGG. FOR BASE 6 INCH THICK	REMARKS
					S.F.	S.Y.	
4	ROUTE 240	189+54	191+35	LT/RT	4583.9	509.3	
4	ROUTE 240	192+82	193+89	LT/RT	2628.5	292.1	
					SUBTOTAL	801	
					PAY TOTAL	801	

CONTRACTOR FURNISHED SURVEYING AND STAKING	1 LUMP SUM
SEEDING AND MULCHING - COOL SEASON GRASSES	1 LUMP SUM
MOBILIZATION	1 LUMP SUM

GUARDRAIL

SHEET NO.	ROADWAY	STA	STA	LOC	MGS BRIDGE APPROACH TRANSITION SECTION (REGULAR/NO CURB)	MGS GUARDRAIL	TYPE A CRASHWORTHY END TERMINAL (MASH)	REMARKS
					EA.	L.F.	EA.	
4	ROUTE 240	189+54.6	191+54.6	RT	1	112.5	1	
4	ROUTE 240	190+07.5	191+45.0	LT	1	50.0	1	
4-5'	ROUTE 240	192+72.3	194+09.8	RT	1	50.0	1	
4-5'	ROUTE 240	192+62.9	194+62.9	LT	1	112.5	1	
				SUBTOTAL	4	325	4	
				PAY TOTAL	4	325	4	

PERMANENT PAVEMENT MARKING

SHEET NO.	ROADWAY	STA	STA	LOC	4 IN. YELLOW CLASS 1 PAVEMENT MARKING (18 MIL) TYPE P BEADS	4 IN. WHITE CLASS 1 PAVEMENT MARKING (18 MIL) TYPE P BEADS	BITUMINOUS SHOULDER RUMBLE STRIP	REMARKS
					L.F.	L.F.	STA	
16	ROUTE 240	189+54	193+89	CTR	109			INTERMITTENT YELLOW
16	ROUTE 240	189+54	193+89	LT/RT		870		EDGE LINE
16	ROUTE 240	189+54	191+31	LT			1.8	RUMBLE STRIP
16	ROUTE 240	189+54	191+39	RT			1.8	RUMBLE STRIP
16	ROUTE 240	192+79	193+89	LT			1.1	RUMBLE STRIP
16	ROUTE 240	192+87	193+89	RT			1.0	RUMBLE STRIP
				SUBTOTAL	109	870	5.7	
				PAY TOTAL	109	870	5.7	

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MARGARET ANN BRUNS
NUMBER PE-2010000798
PROFESSIONAL ENGINEER

09/28/2026 2:05:42 PM
Margaret Ann Bruns - Civil
MO PE-2010000798

DATE PREPARED: 9/28/2026
ROUTE: 240 | STATE: MO
DISTRICT: CD | SHEET NO.: 3
COUNTY: HOWARD
JOB NO.: JCD0137
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

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

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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SUMMARY OF QUANTITIES
SHEET 1 OF 3

TEMPORARY EROSION CONTROL

SHEET NO.	ROADWAY	STA	STA	LOC	SILT FENCE	ALTERNATE DITCH CHECK	SEDIMENT TRAP EXCAVATION	SEDIMENT TRAP ROCK	TYPE C BERM	SEDIMENT REMOVAL	REMARKS
					L.F.	L.F.	C.Y.	C.Y.	L.F.	C.Y	
15	ROUTE 240	189+65	190+40	LT		50				2	
15	ROUTE 240	189+87	190+62	RT		50				2	
15	ROUTE 240	191+73		LT			3.6	3.6		3	
15	ROUTE 240	191+94		RT			3.6	3.6		3	
15	ROUTE 240	192+15		LT			3.6	3.6		3	
15	ROUTE 240	190+44	191+97	LT/RT					326	4	
15	ROUTE 240	192+12	193+74	LT/RT					261	3	
15	ROUTE 240	193+55	194+66	LT		100				4	
15	ROUTE 240	193+73	194+38	RT	163					2	
				SUBTOTAL	163	200	10.8	10.8	587	26	
				PAY TOTAL	163	200	10.8	10.8	587	26	

EARTHWORK

XS SHEET NO	ROADWAY	LOC.	CLASS A EXCAVATION	FILL	COMPACTING EMBANKMENT	COMPACTING IN CUT	REMARKS
			C.Y.	C.Y.	C.Y.	STA.	
1-5	ROUTE 240	LT/RT	454	16	16	1.5	WEST OF BRIDGE
5-9	ROUTE 240	LT/RT	359	202	202	0.5	EAST OF BRIDGE
	SUBTOTALS		813	218	218	2	
	PAY TOTALS		813		218	2	

NOTE: ASSUMING 15% SHRINKAGE AND 10% UNSUITABLE MATERIAL

ROCK BLANKET & DITCH LINER

SHEET NO.	ROADWAY	STA	STA	LOC	FURNISHING TYPE 2 ROCK BLANKET	PLACING TYPE 2 ROCK BLANKET	PERMANENT EROSION CONTROL GEOTEXTILE	REMARKS
					C.Y.	C.Y.	S.Y.	
4	ROUTE 240	191+44	191+44	LT & RT	597.9	597.9	968.7	
5	ROUTE 240	192+66	192+73	LT & RT	314.0	314.0	502.8	
			SUBTOTAL		911.9	911.9	1471.5	
			PAY TOTAL		912	912	1472	

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Margaret Ann Bruns - Civil
MO PE-2010000798

DATE PREPARED
10/15/2026

ROUTE	STATE
240	MO
DISTRICT	SHEET NO.
CD	3

COUNTY
HOWARD

JOB NO.
JCD0137

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DATE	DESCRIPTION

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SUMMARY OF QUANTITIES
SHEET 2 OF 3

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL AREA SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NO.	DESCRIPTION
WARNING SIGNS								
WO1-1L	48X48	16.00						TURN (SYMBOL LEFT)
WO1-1R	48X48	16.00						TURN (SYMBOL RIGHT)
WO1-2L	48X48	16.00						CURVE (SYMBOL LEFT)
WO1-2R	48X48	16.00						CURVE (SYMBOL RIGHT)
WO1-3L	48X48	16.00						REVERSE TURN (SYMBOL LEFT)
WO1-3R	48X48	16.00						REVERSE TURN (SYMBOL RIGHT)
WO1-4L	48X48	16.00						REVERSE CURVE (SYMBOL LEFT)
WO1-4R	48X48	16.00						REVERSE CURVE (SYMBOL RIGHT)
WO1-4bL	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL LEFT)
WO1-4bR	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL RIGHT)
WO1-4cL	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL LEFT)
WO1-4cR	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL RIGHT)
WO1-6	60X30	12.50						HORIZONTAL ARROW (SYMBOL)
WO1-6a	72X36	18.00						HORIZ. ARROW (SYMBOL ON PERMANENT BARRICADE)
WO1-7	60X30	12.50						DOUBLE HEAD HORIZONTAL ARROW (SYMBOL)
WO1-7a	72X36	18.00						DOUBLE HEAD HORIZ. ARROW (SYMBOL ON PERM. BARR.)
WO1-8	18X24	3.00						CHEVRON (SYMBOL)
WO1-8a	30X36	7.50						CHEVRON (SYMBOL FOR DIVIDED HIGHWAYS)
WO3-1	48X48	16.00						STOP AHEAD (SYMBOL)
WO3-2	48X48	16.00						YIELD AHEAD (SYMBOL)
WO3-3	48X48	16.00						SIGNAL AHEAD (SYMBOL)
WO3-4	48X48	16.00						BE PREPARED TO STOP
WO3-5	48X48	16.00						SPEED LIMIT AHEAD
WO4-1L	48X48	16.00						MERGE (SYMBOL FROM LEFT)
WO4-1R	48X48	16.00						MERGE (SYMBOL FROM RIGHT)
WO4-1aL	48X48	16.00						MERGE (LEFT)
WO4-1aR	48X48	16.00						MERGE (RIGHT)
WO5-1	48X48	16.00	2	32.00			43	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	64.00			2	ROAD/BRIDGE/RAMP WORK AHEAD
WO20-2	48X48	16.00	2	32.00			18	DETOUR AHEAD
WO20-3	48X48	16.00	2	32.00			20	ROAD CLOSED AHEAD
WO20-3	48X48	16.00	2	32.00			20A	ROAD CLOSED 500 FT
WO20-5	48X48	16.00						RIGHT/CENTER/LEFT LANE CLOSED AHEAD
WO20-4	48X48	16.00	2	32.00			7	ONE LANE ROAD AHEAD
WO20-6a	48X48	16.00						RIGHT/CENTER/LEFT LANE CLOSED
WO20-7a	48X48	16.00	2	32.00			8	FLAGGER (SYMBOL)
WO21-2	36X36	9.00						FRESH OIL
WO21-5	48X48	16.00	2	32.00			21	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	4	8.76			55	WET PAINT (ARROW PIVOTS)

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NO.	DESCRIPTION
GUIDE SIGNS								
E05-1	36X48	12.00						GORE EXIT
E05-2	48X36	12.00						EXIT OPEN
E05-2a	48X36	12.00						EXIT CLOSED
GO20-1	60X24	10.00						ROAD WORK NEXT XX MILES
GO20-2	48X24	8.00						END ROAD WORK
GO20-4	36X18	4.50						PILOT CAR FOLLOW ME
GO20-4a	42X30	8.75						PILOT CAR IN USE WAIT & FOLLOW
GO20-4a	18X12	1.50						PILOT CAR IN USE WAIT & FOLLOW
GO20-5aP	36X24	6.00	2	12.00			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.	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	48.00			4/25	SPEED LIMIT 45, SPEED LIMIT 55
R3-1	48X48	16.00						NO RIGHT TURN (SYMBOL)
R3-2	48X48	16.00						NO LEFT TURN (SYMBOL)
R3-3	36X36	9.00						NO TURNS
R3-4	48X48	16.00						NO U-TURN (SYMBOL)
R3-7L	30X30	6.25						LEFT LANE MUST TURN LEFT
R3-7R	30X30	6.25						RIGHT LANE MUST TURN RIGHT
R4-1	36X48	12.00						DO NOT PASS
R4-2	36X48	12.00						PASS WITH CARE
R4-7a	36X48	12.00						KEEP RIGHT (HORIZONTAL ARROW)
R4-8a	36X48	12.00						KEEP LEFT (HORIZONTAL ARROW)
R5-1	30X30	6.25						DO NOT ENTER
R5-1a	36X24	6.00						WRONG WAY
R6-1L	54X18	6.75						ONE WAY ARROW (LEFT)
R6-1R	54X18	6.75						ONE WAY ARROW (RIGHT)
R6-2L	24X30	5.00						ONE WAY (LEFT)
R6-2R	24X30	5.00						ONE WAY (RIGHT)
R9-9	24X12	2.00						SIDEWALK CLOSED
R9-11L	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW LEFT) CROSS HERE
R9-11R	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW RIGHT) CROSS HERE
R10-6	24X36	6.00						STOP HERE ON RED (45^ ARROW)
R11-2	48X30	10.00	2	20.00			29	ROAD CLOSED
R11-3a	60X30	12.50	3	37.50			62	ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY
R11-4	60X30	12.50	2	25.00			63	ROAD CLOSED TO THRU TRAFFIC
CONST-3A	60X48	20.00						FINE SIGN
CONST-3X	56X12	4.67						SPEEDING/PASSING (PLATE)
MISCELLANEOUS SIGNS								
CONST-8	48X36	12.00	2	24.00			59	WORK ZONE NO PHONE ZONE
SPECIAL	78X36	19.50	4	78.00			90A	DETOUR RT 240 EAST STR
SPECIAL	78X36	19.50	1	19.50			90C	DETOUR RT 240 EAST ADV. LT
SPECIAL	78X36	19.50	1	19.50			90E	DETOUR RT 240 EAST LT
SPECIAL	78X36	19.50	6	117.00			91A	DETOUR RT 240 WEST STR
SPECIAL	78X36	19.50	1	19.50			91B	DETOUR RT 240 WEST ADV. RT
SPECIAL	78X36	19.50	1	19.50			91D	DETOUR RT 240 WEST RT
CONST-5	48X36	12.00	2	24.00			70	POINT OF PRESENCE
CONST-5P-60	42X6	1.75	1	1.75				COMPLETED AS PROMISED

616-10.05 CONSTRUCTION SIGNS	TOTAL
	769

616-10.10 RELOCATED SIGNS	TOTAL
	*

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ITEM NUMBER	TOTAL QTY	EFFECTIVE: 07-01-2025 DESCRIPTION
6122008		IMPACT ATTENUATOR 40 MPH (SAND BARRELS)
6122009		IMPACT ATTENUATOR 45 MPH (SAND BARRELS)
6122010		IMPACT ATTENUATOR 50 MPH (SAND BARRELS)
6122012		IMPACT ATTENUATOR 55 MPH (SAND BARRELS)
6122014		IMPACT ATTENUATOR 60 MPH (SAND BARRELS)
6122017		IMPACT ATTENUATOR 65 MPH (SAND BARRELS)
6122019		IMPACT ATTENUATOR 70 MPH (SAND BARRELS)
6122020		REPLACEMENT SAND BARREL
6122030		IMPACT ATTENUATOR (RELOCATION)
6122040		WORK ZONE CRASH CUSHION (NARROW)
6122041		WORK ZONE CRASH CUSHION (RELOCATION)
6123001	1**	TRUCK MOUNTED ATTENUATOR (TMA)
6161012		BUOYS (BOATS KEEP OUT)
6161013		BUOYS (NO WAKE)
6161014		SPECIAL SIGN ASSEMBLY (BOATS KEEP OUT)
6161020		CHANNELIZER (DRUM-LIKE)
6161022		CHANNELIZER (CONE)
6161025	150	CHANNELIZER (TRIM-LINE)
6161026		CHANNELIZER (VERTICAL PANEL)
6161030	14	TYPE 3 MOVEABLE BARRICADE
6161033		DIRECTION INDICATOR BARRICADE
6161040		FLASHING ARROW PANEL
6161047		TYPE 3 OBJECT MARKER
6161055		SEQUENTIAL FLASHING WARNING LIGHT
6161070		TUBULAR MARKER
6161095		RADAR SPEED ADVISORY SYSTEM
6161096		CHANGEABLE MESSAGE SIGN, COMMISSION FURNISHED/RETAINED
	2**	CHANGEABLE MESSAGE SIGN WITHOUT COMM. INTERFACE, CONTRACTOR FURNISHED/RETAINED
6161098A		CHANGEABLE MESSAGE SIGN WITH COMM. INTERFACE, CONTRACTOR FURNISHED/RETAINED
6162000A		WORK ZONE TRAFFIC SIGNAL SYSTEM
6162002		TEMPORARY LONG-TERM RUMBLE STRIPS
	75**	TEMPORARY TRAFFIC BARRIER, CONTRACTOR FURNISHED/RETAINED
6173600D		
		TEMP. TRAFFIC BARRIER ANCHORED,
6173700B		CONTRACTOR FURNISHED/RETAINED
		TEMP. TRAFFIC BARRIER STIFFNESS TRANSITION
6173706		CONTRACTOR FURNISHED/RETAINED
		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION,
6174000A		CONTRACTOR FURNISHED/RETAINED
6175010A		RELOCATING TEMPORARY TRAFFIC BARRIER
6175011B		RELOCATING TEMP. TRAFFIC BARRIER ANCHORED
6175013		RELOCATING TEMP. TRAFFIC BARRIER STIFFNESS
6175020A		RELOCATING TEMP. TRAFFIC BARRIER HEIGHT
6208064A		TEMPORARY RAISED PAVEMENT MARKER
9029400		TEMPORARY TRAFFIC SIGNALS
9029401		TEMPORARY TRAFFIC SIGNALS AND LIGHTING

TEMPORARY TRAFFIC CONTROL	1 LUMP SUM

* NO DIRECT PAY WILL BE MADE FOR RELOCATION OF CONSTRUCTION SIGNING OR DEVICES.

** NOT INCLUDED IN LUMP SUM TEMPORARY TRAFFIC CONTROL.

NOTES:
ALL TRAFFIC CONTROL ITEMS INCLUDED IN PAY ITEM 616-99.01 TEMPORARY TRAFFIC CONTROL. LUMP SUM. UNLESS NOTED OTHERWISE IN THE PLANS. THESE QUANTITIES ARE ONLY AN ESTIMATE AND ARE SUBJECT TO CHANGE BASED ON FIELD CONDITIONS.

SIGN QUANTITIES HAVE BEEN ESTIMATED. TEMPORARY TRAFFIC CONTROL SHALL FOLLOW AT A MINIMUM MUTCD STANDARDS. LATEST EDITION.

ALL WARNING SIGNS SHALL HAVE FLORESCENT SHEETING.

SUMMARY OF QUANTITIES
SHEET 3 OF 3

STATE OF MISSOURI
MARGARET ANN BRUNS
NUMBER PE-2010000798
PROFESSIONAL ENGINEER

09/28/2026 2:05:43 PM
Margaret Ann Bruns - Civil
MO PE-2010000798

DATE PREPARED
9/28/2026

ROUTE	STATE
240	MO
DISTRICT	SHEET NO.
CD	3

COUNTY
HOWARD

JOB NO.
JCD0137

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

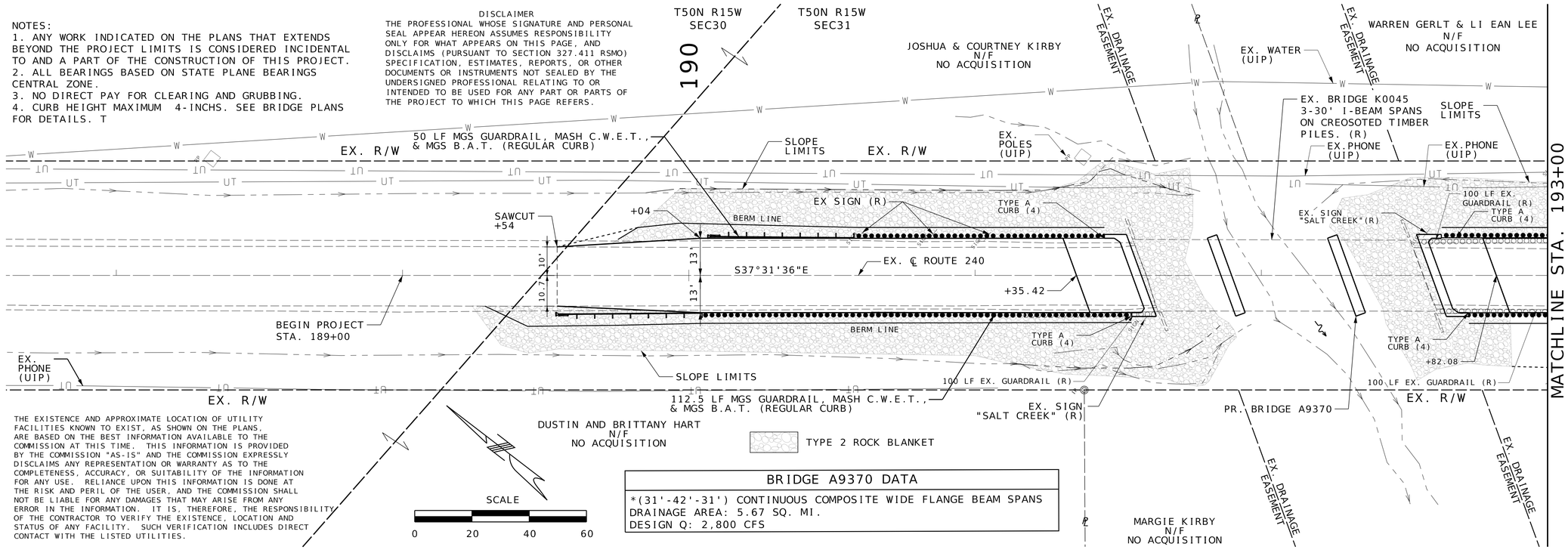
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105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

EFK•Moen
Civil Engineering Design
1355 North Highway Dr
Suite 200
St. Louis, MO 63026
Phone 314-394-3100
Fax 314-394-3199
Missouri Certificate of Authority: 001578

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. ALL BEARINGS BASED ON STATE PLANE BEARINGS CENTRAL ZONE.
3. NO DIRECT PAY FOR CLEARING AND GRUBBING.
4. CURB HEIGHT MAXIMUM 4-INCHS. SEE BRIDGE PLANS FOR DETAILS. T

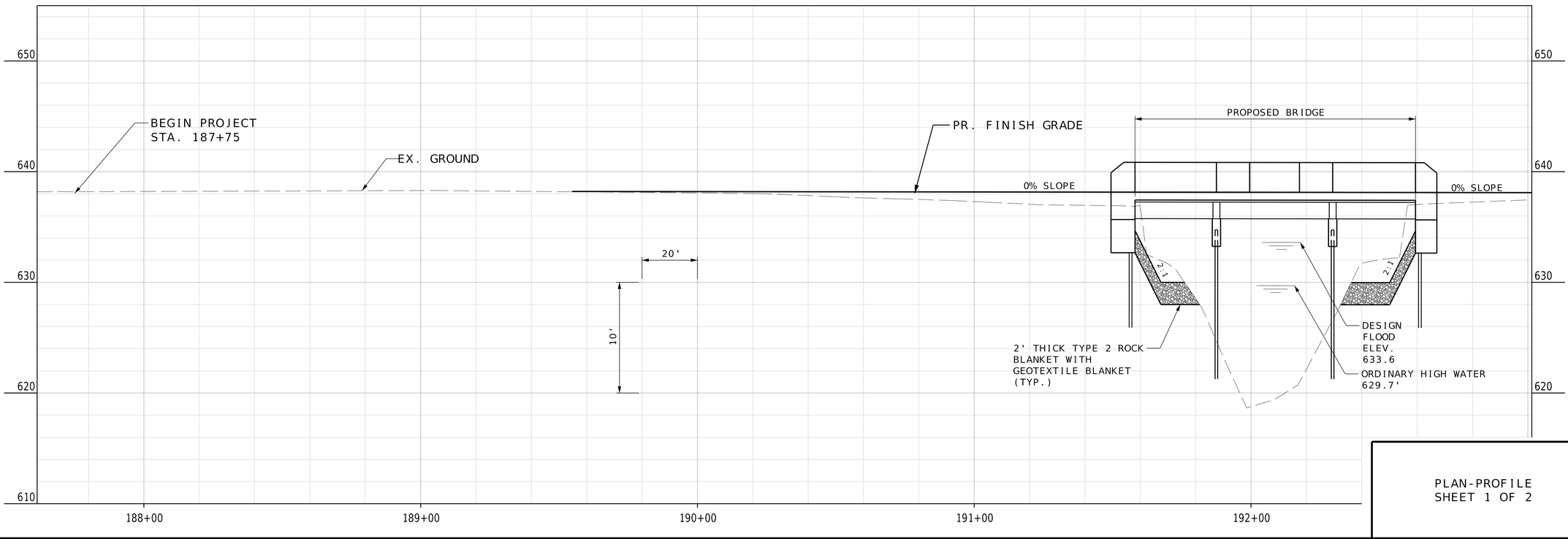
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BRIDGE A9370 DATA

*(31'-42'-31') CONTINUOUS COMPOSITE WIDE FLANGE BEAM SPANS
DRAINAGE AREA: 5.67 SQ. MI.
DESIGN Q: 2,800 CFS



PLAN-PROFILE
SHEET 1 OF 2

STATE OF MISSOURI
MARGARET ANN BRUNS NUMBER PE-2010000798
PROFESSIONAL ENGINEER
09/28/2026 2:35:52 PM
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MO PE-2010000798

DATE PREPARED 9/28/2026

ROUTE	STATE
240	MO
DISTRICT	SHEET NO.
CD	4

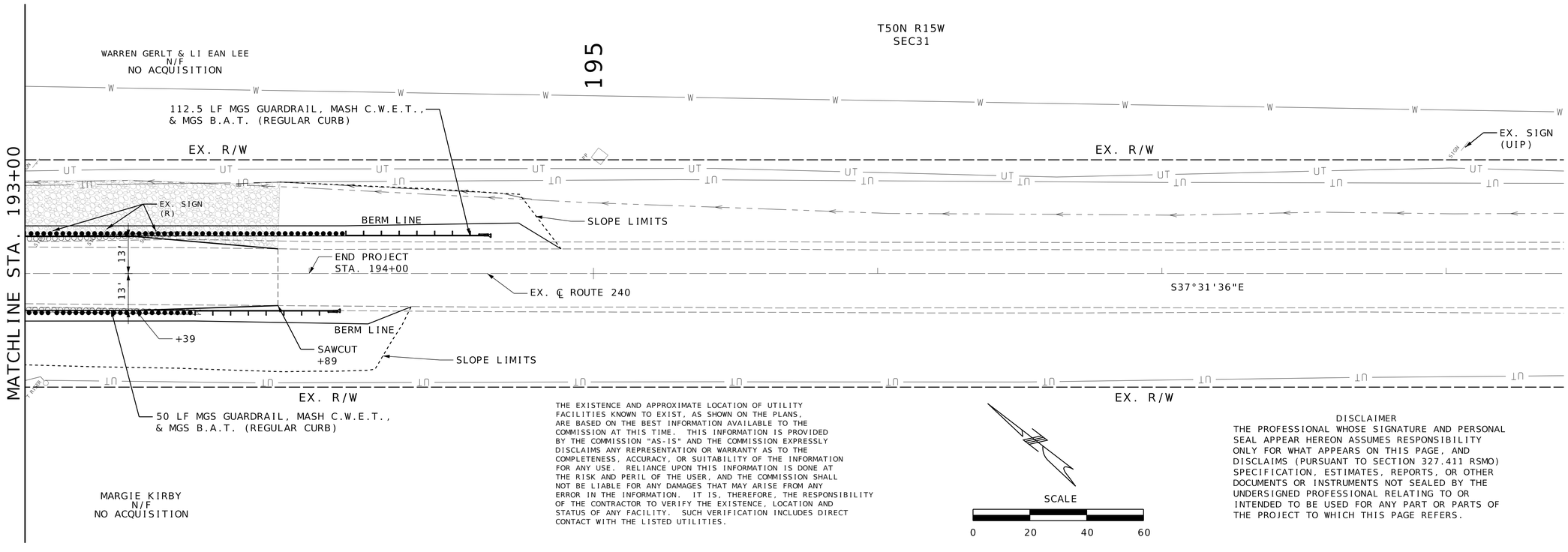
COUNTY: HOWARD
JOB NO.: JCD0137
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

DESCRIPTION	DATE

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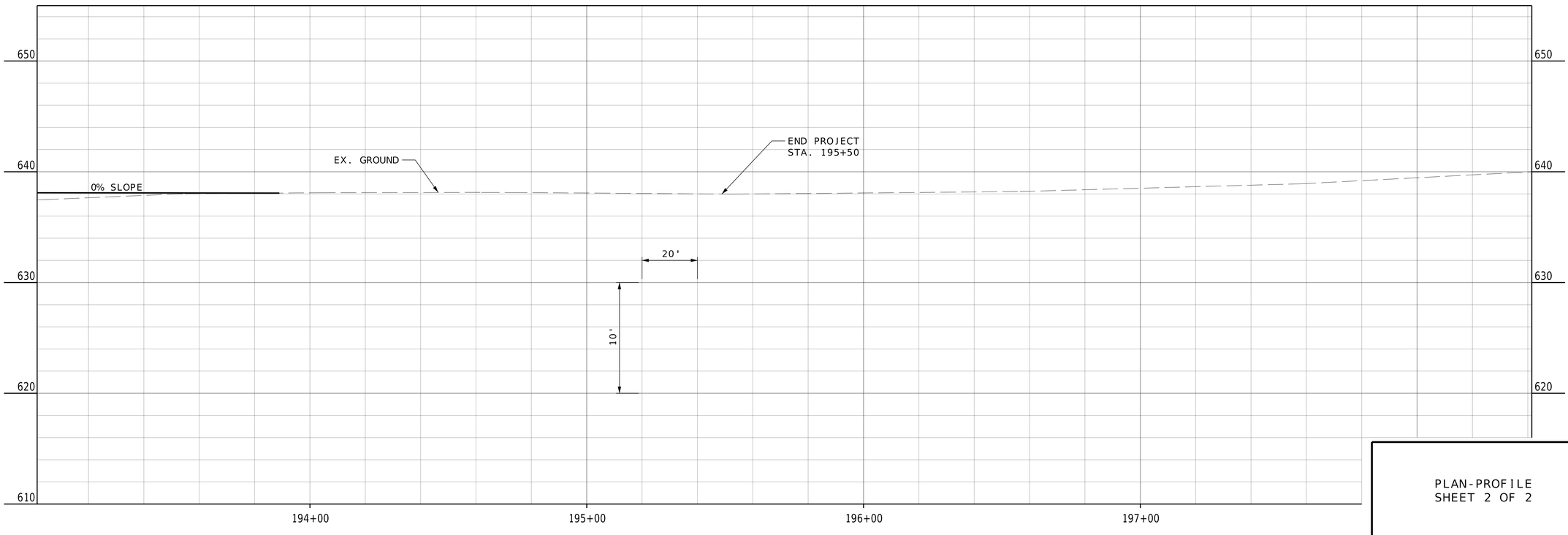
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PLAN-PROFILE
SHEET 2 OF 2

STATE OF MISSOURI
PROFESSIONAL ENGINEER
MARGARET ANN BRUNS
NUMBER PE-2010000798

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Margaret Ann Bruns - Civil
MO PE-2010000798

DATE PREPARED
9/28/2026

ROUTE	STATE
240	MO
DISTRICT	SHEET NO.
CD	5

COUNTY
HOWARD

JOB NO.
JCD0137

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

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

PROJECT COORDINATE INFORMATION	
COORDINATE SYSTEM	MODIFIED MISSOURI STATE PLANE
HORIZONTAL DATUM	NAD 83 (2011) (EPOCH 2010)
VERTICAL DATUM	NAVD 88: GNSS DERIVED
GEOID MODEL	18
ELEVATIONS DETERMINED BY	GNS DERIVED
PROJECT PROJECTION FACTOR	1.00009140

REFERENCE CONTROL INFORMATION	
COORDINATE SYSTEM	MISSOURI COORDINATE SYSTEM OF 1983
CONTROL STATION	MISSOURI CORS
DESIGNATION	MODOT BOONEVILLE CORS ARP
CORS_ID	MOBO
PID	DN6077
LATITUDE	38°55'52.5337" (N)
LONGITUDE	092°46'43.6592" (W)
NORTHING (M)	343837.0270
EASTING (M)	475827.3000
ZONE	CENTRAL
PROJECT AVERAGE GRID FACTOR	0.99990860

EXAMPLE OF PROJECT COORDINATE TO S.P.C.

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

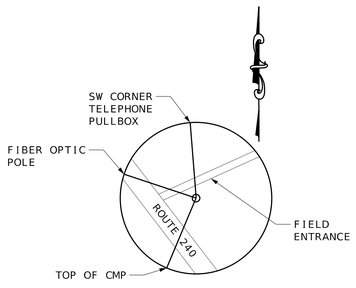
EXAMPLE: CONTROL POINT #803
N 1187621.4360 X 0.9999086 = N 1187512.8874
E 1598268.5760 X 0.9999086 = E 1598122.4943

LINEAR UNIT CONVERSION

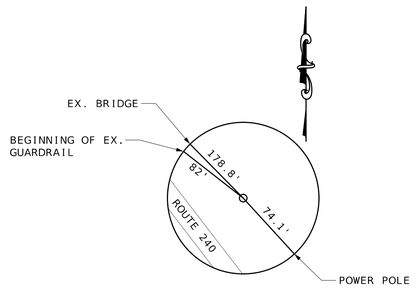
1 METER = 3.280833333 US SURVEY FEET (USFT)

COORDINATE POINT LISTING

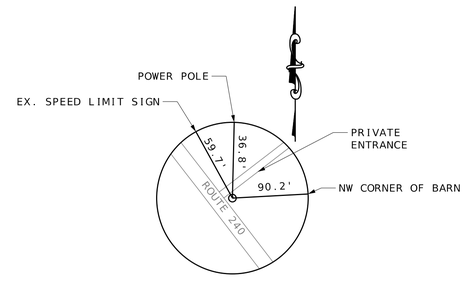
SHEET NO	STATION	LOCATION	OFFSET (USFT)	MODIFIED STATE PLANE (GROUND) NORTHING (US SURVEY FT)	EASTING (US SURVEY FT)	ELEVATION (US SURVEY FT)	DESCRIPTION	GPK POINT ID
PROJECT CONTROL POINTS								
5	184+54.81	ROUTE 240	21.51 LT	1,187,621.4362	1,598,268.5765	640.86	REBAR & CAP BURIED	803
5	194+28.95	ROUTE 240	34.93 LT	1,186,857.0552	1,598,872.5981	633.33	REBAR & CAP BURIED	802
5	199+97.73	ROUTE 240	18.22 LT	1,186,395.7958	1,599,205.8131	641.70	REBAR & CAP BURIED	801
ALIGNMENTS								
4-5	188+00	ROUTE 240	0	1,187,334.581	1,598,461.784	-	POINT OF BEGINNING	-
4-5	196+00	ROUTE 240	0	1,186,700.125	1,598,949.089	-	POINT OF ENDING	-



CONTROL POINT NO. 803
REBAR 7 CAP BURIED 0.20'
21' EAST OF ℄ RTE 240,
706' NORTH OF NORTH END
BRIDGE OVER SALT CREEK



CONTROL POINT NO. 802
REBAR & CAP BURIED 0.20'
36' EAST OF ℄ RTE 240,
176' SOUTH OF SOUTH END OF
BRIDGE OVER SALT CREEK



CONTROL POINT NO. 801
REBAR & CAP BURIED 0.35'
20'E OF ℄ RTE 240,
742' SOUTH OF SOUTH END OF
BRIDGE OVER SALT CREEK

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REFERENCE-COORDINATE POINTS
SHEET 1 OF 1

STATE OF MISSOURI
MARGARET ANN BRUNS
NUMBER PE-2010000798
PROFESSIONAL ENGINEER

09/28/2026 2:05:43 PM
Margaret Ann Bruns - Civil
MO PE-2010000798

DATE PREPARED
9/28/2026

ROUTE	STATE
240	MO
DISTRICT	SHEET NO.
CD	6

COUNTY
HOWARD

JOB NO.
JCD0137

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

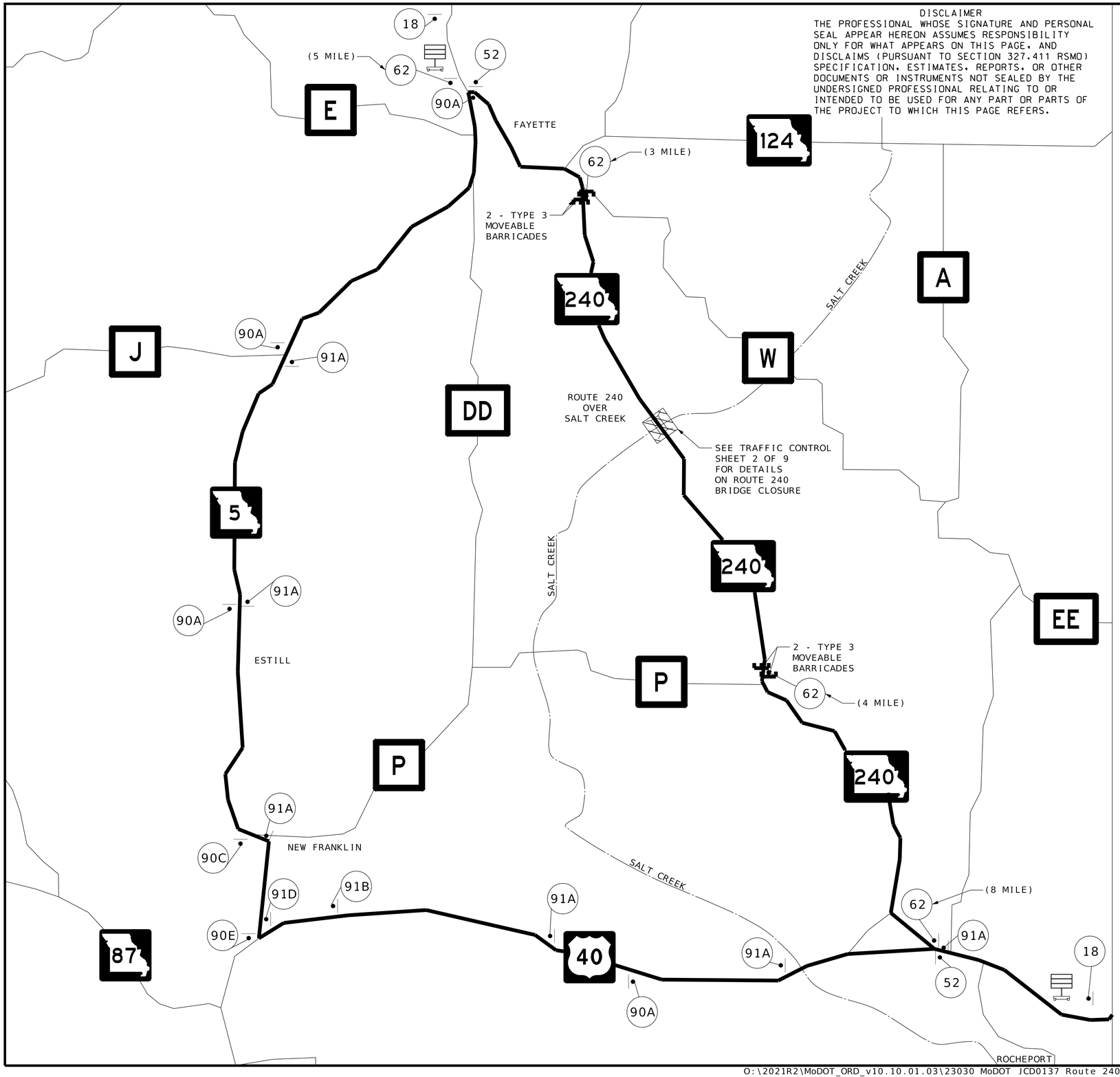
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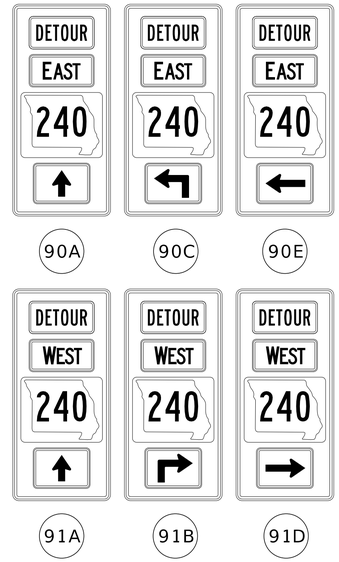
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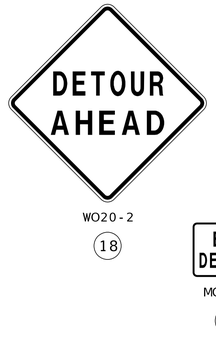
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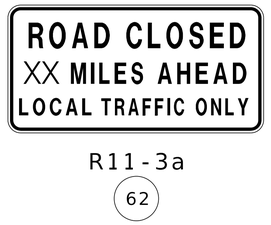
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TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- FLAGGER
- CHANNELIZER (TRIMLINES)
- TYPE 3 MOVEABLE BARRICADE
- CHANGEABLE MESSAGE BOARD
- FLASHING ARROW PANEL
- TMA (TRUCK MOUNTED ATTENUATOR) WITH FLASHING ARROW PANEL

NOT TO SCALE

TRAFFIC CONTROL
SHEET 1 OF 8

STATE OF MISSOURI
MARGARET ANN BRUNS
NUMBER PE-2010000798
PROFESSIONAL ENGINEER

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Margaret Ann Bruns - Civil
MO PE-2010000798

DATE PREPARED
9/28/2026

ROUTE	STATE
240	MO
DISTRICT	SHEET NO.
CD	7

COUNTY
HOWARD

JOB NO.
JCD0137

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

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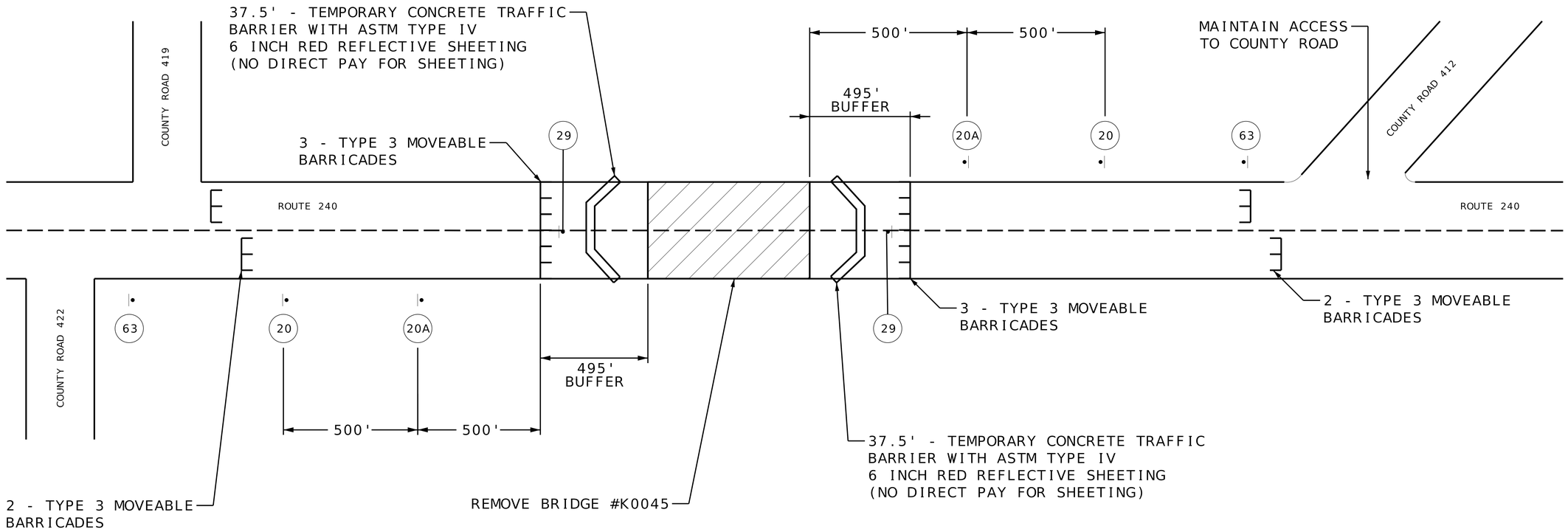
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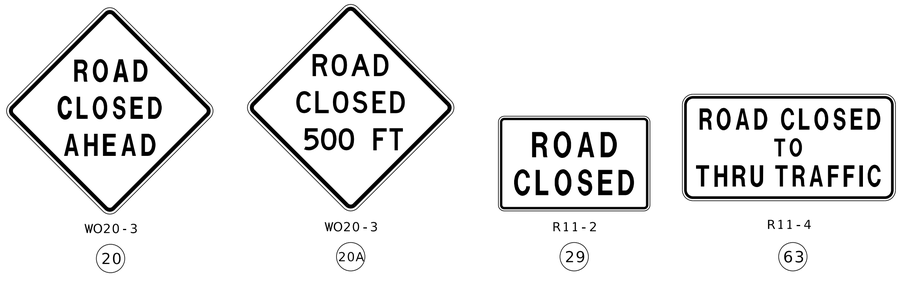
GENERAL NOTES:
1. PLACEMENT OF TRAFFIC CONTROL SIGNS IS APPROXIMATE AND MAY BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
2. SIGN SPACING 500' OR AS DIRECTED BY THE ENGINEER.
3. ANY EXISTING SIGNS THAT CONFLICT WITH THE TRAFFIC CONTROL SIGNING SHALL BE COMPLETELY COVERED OR REMOVED. NO DIRECT PAY.
4. SIGNS ASSOCIATED WITH TYPE III BARRICADE SHALL BE MOUNTED ON POST BEHIND BARRICADE.
5. ALL SIGNS SHOWN ON THIS SHEET ARE NON-PORTABLE AND SHALL REMAIN IN PLACE FOR THE DURATION OF THE PROJECT.

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- FLAGGER
- CHANNELIZER (TRIMLINES)
- TYPE 3 MOVEABLE BARRICADE
- CHANGEABLE MESSAGE BOARD
- WORK AREA
- FLASHING ARROW PANEL
- TMA (TRUCK MOUNTED ATTENUATOR) WITH FLASHING ARROW PANEL

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NOT TO SCALE

TRAFFIC CONTROL
SHEET 2 OF 8

STATE OF MISSOURI
MARGARET ANN BRUNS
NUMBER PE-2010000798
PROFESSIONAL ENGINEER
09/28/2026 2:05:43 PM
Margaret Ann Bruns - Civil
MO PE-2010000798

DATE PREPARED 9/28/2026
ROUTE 240 | STATE MO
DISTRICT CD | SHEET NO. 8
COUNTY HOWARD
JOB NO. JCD0137
CONTRACT ID.
PROJECT NO.
BRIDGE NO.

DESCRIPTION | DATE

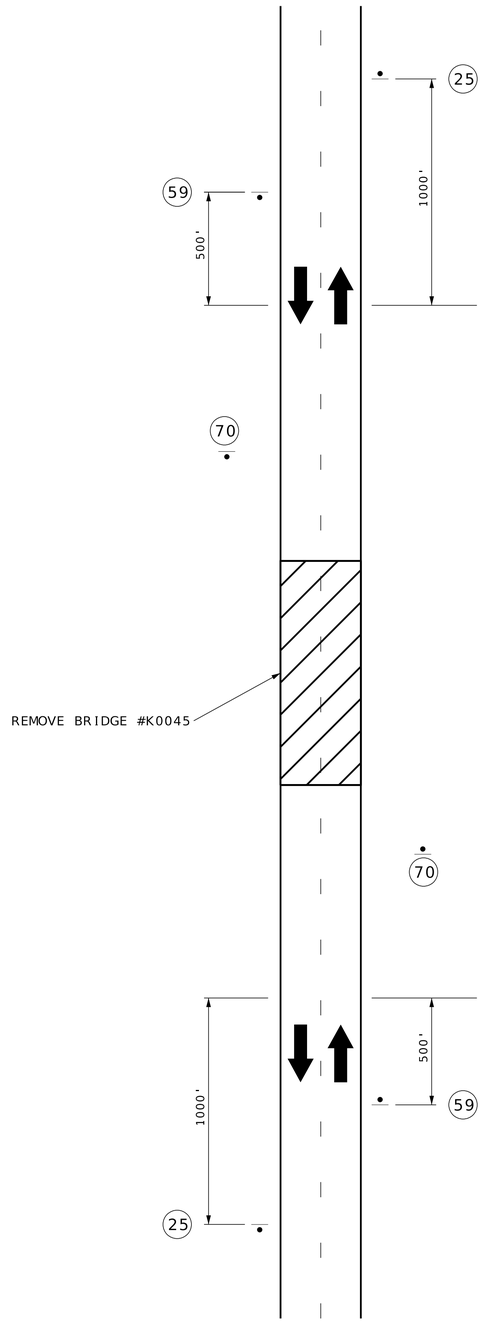
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

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

EFK•Moen
Civil Engineering Design
1355 North Highway Dr
Suite 200
St. Louis, MO 63026
Phone 314-394-3100
Fax 314-394-3199
Missouri Certificate of Authority: 001578

O:\2021R2\MoDOT_ORD_v10.10.01.03\23030 MoDOT JCD0137 Route 240\DGN\Roadway\Final\Plotsheets\008_TC_02_JCD0137_i1.dgn 1:49:33 PM 9/28/2026

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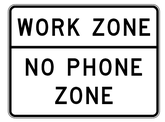
END OF PROJECT LIMITS; END OF WORK ZONE TERMINATION AREA, IF LOCATED BEYOND END OF PROJECT; OR LAST WORK ZONE SIGN, IF LOCATED OUTSIDE PROJECT LIMITS.

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- FLAGGER
- CHANNELIZER (TRIMLINES)
- TYPE 3 MOVEABLE BARRICADE
- CHANGEABLE MESSAGE BOARD
- WORK AREA
- FLASHING ARROW PANEL
- TMA (TRUCK MOUNTED ATTENUATOR) WITH FLASHING ARROW PANEL



R2-1
25



CONST-8
59



CONST-5
70

NOTES:

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.

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

SIGN 70 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 FT BEFORE SIGN 59.

THE "WORK ZONE NO PHONE ZONE" SIGN IS PLACED A MINIMUM OF 500 FEET BEFORE THE PROJECT LIMITS AND/OR THE INITIAL WORK ZONE SIGN.

BEGIN/END OF PROJECT SIGNING

UNDIVIDED HIGHWAY

NOT TO SCALE

TRAFFIC CONTROL
SHEET 3 OF 8

STATE OF MISSOURI
MARGARET ANN BRUNS
NUMBER PE-2010000798
PROFESSIONAL ENGINEER

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MO PE-2010000798

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9/28/2026

ROUTE	STATE
240	MO
DISTRICT	SHEET NO.
CD	9

COUNTY
HOWARD

JOB NO.
JCD0137

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PROJECT NO.

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Sign Spacing, Device Spacing and Channelizing Taper Lengths

SIGN SPACING (S) FOR ADVANCE SIGN SERIES (1) (2)		
SPEED MPH	UNDIVIDED HIGHWAYS	DIVIDED HIGHWAYS
0-35	200	200
40-45	350	500
50-55	500	1000
60-70	1000	SA-1000 SB-1500 SC-2640

LONGITUDINAL BUFFER SPACE (B)	
SPEED MPH	BUFFER SPACE
0-35	250
40-45	360
50-55	495
60-70	730

TAPER LENGTHS AND SPACING OF CHANNELIZING DEVICES					
SPEED MPH	MINIMUM TAPER LENGTHS (L) FOR LANE WIDTHS (W)			MAXIMUM CHANNELIZER SPACING	
	10 FT	11 FT	12 FT	THROUGH TAPER	THROUGH WORK AREA
0-35	205	225	245	35	40
40-45	450	495	540	40	80
50-55	550	605	660	50	80
60-70	700	770	840	60	120

TAPER LENGTH (L):

L = WS FOR 40 MPH OR MORE

$L = \frac{WS^2}{60}$ FOR 35 MPH OR LESS

FOR SHOULDER TAPER USE L/3

WHERE:

L = TAPER LENGTH IN FEET

W = LATERAL SHIFT IN FEET

S = POSTED SPEED IN MPH

NOTES:

DIMENSIONS IN FEET UNLESS OTHERWISE NOTED.

(1) SPACING BETWEEN SIGNS AND SPACING BETWEEN LAST SIGN AND FLAGGER, BEGINNING OF TAPER, OR SIGNED CONDITION

(2) SPACINGS MAY BE ADJUSTED AS NECESSARY TO MEET FIELD CONDITIONS

TRAFFIC CONTROL DEVICES

GENERAL NOTES:

1. SEE STANDARD PLAN 616.10 FOR DETAILS AND ITEMS NOT SHOWN
2. EXISTING SIGNS SHALL BE COVERED DURING WORKING HOURS ONLY IF IN CONFLICT WITH TRAFFIC CONTROL PLANS.
3. NO DIRECT PAYMENT WILL BE MADE FOR RELOCATING, COVERING, UNCOVERING OR REMOVING SIGNS.
4. LOCATE FLASHING ARROW PANEL AT BEGINNING OF TAPER WHEN FEASIBLE, ARROW PANELS ARE ALWAYS LOCATED BEHIND CHANNELIZERS OR CONES.

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- DIRECTION INDICATOR BARRICADE
- CHANNELIZER (TRIMLINES)
- TYPE 3 MOVEABLE BARRICADE
- CHANGEABLE MESSAGE BOARD
- FLASHING ARROW PANEL
- TMA (TRUCK MOUNTED ATTENUATOR) WITH FLASHING ARROW PANEL

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DATE PREPARED: 9/28/2026

ROUTE: 240 | STATE: MO

DISTRICT: CD | SHEET NO.: 10

COUNTY: HOWARD

JOB NO.: JCD0137

CONTRACT ID.:

PROJECT NO.:

BRIDGE NO.:

DESCRIPTION	DATE

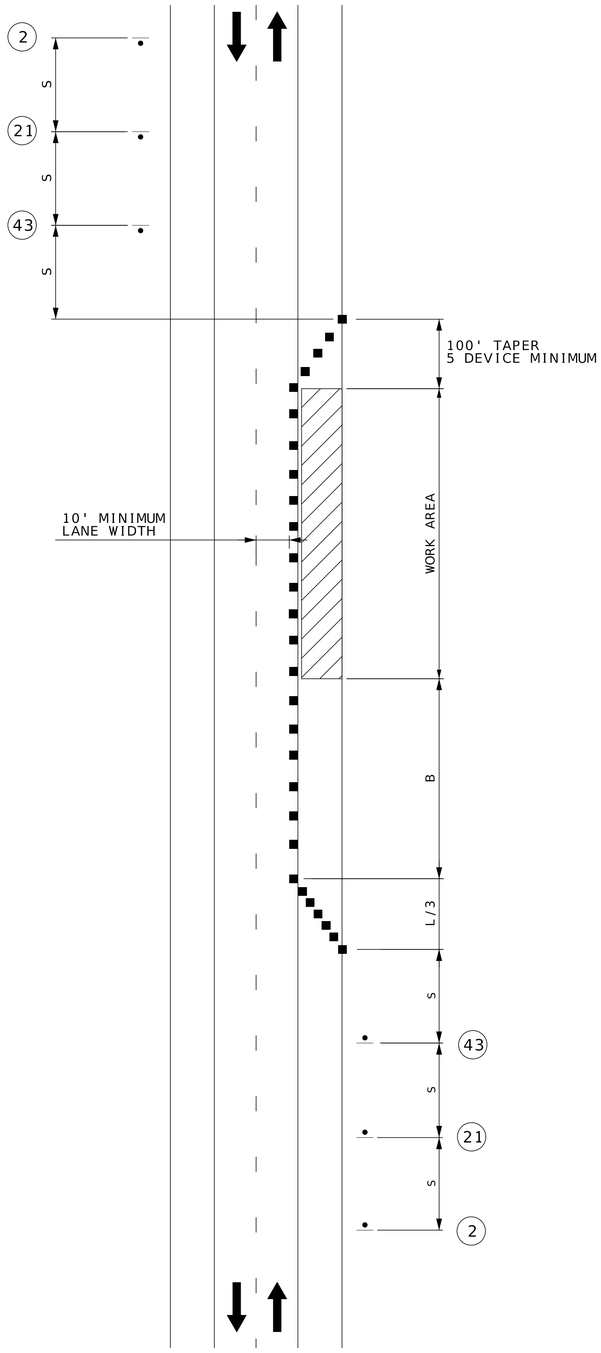
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TRAFFIC CONTROL
SHEET 4 OF 8



SHOULDER WORK

UNDIVIDED HIGHWAY

NOT TO SCALE

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- FLAGGER
- CHANNELIZER (TRIMLINES)
- TYPE 3 MOVEABLE BARRICADE
- CHANGEABLE MESSAGE BOARD
- WORK AREA
- FLASHING ARROW PANEL
- TMA (TRUCK MOUNTED ATTENUATOR) WITH FLASHING ARROW PANEL



WO20-1

(2)



WO21-5

(21)



WO5-1

(43)

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CD	11

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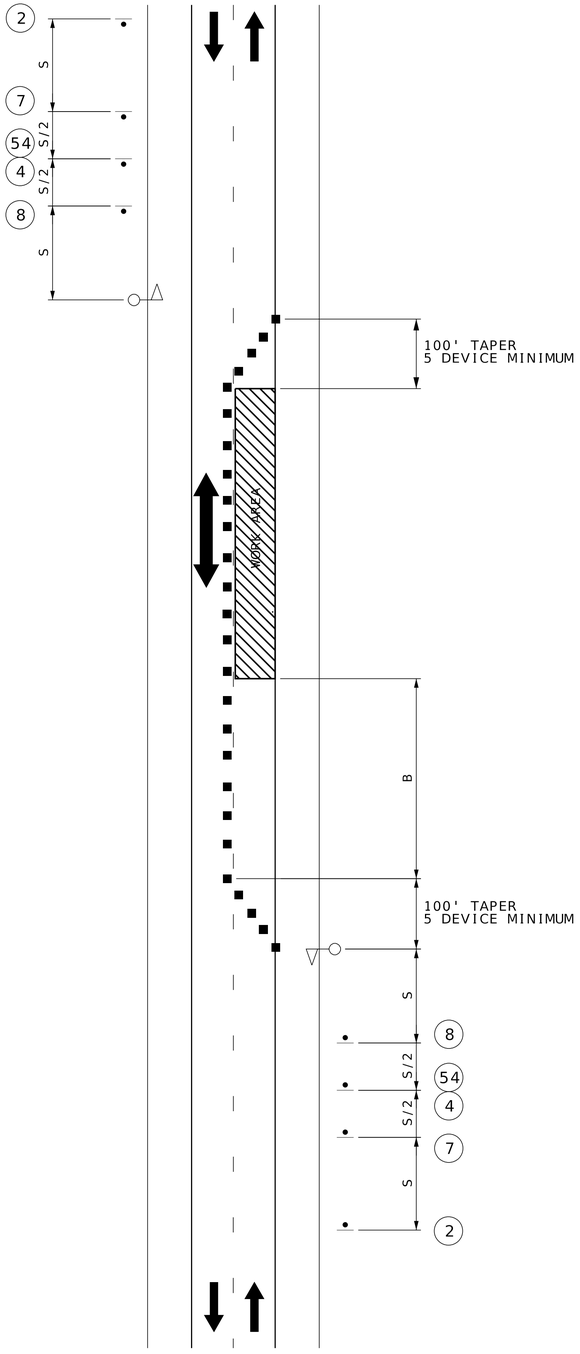
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TRAFFIC CONTROL
SHEET 5 OF 8



LANE CLOSURE
ON TWO-LANE ROAD
USING FLAGGERS

NOT TO SCALE



WO20-1

2



WO20-4

7



WO20-7a

8



GO20-5aP

54



R2-1

4

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- FLAGGER
- CHANNELIZER (TRIMLINES)
- TYPE 3 MOVEABLE BARRICADE
- CHANGEABLE MESSAGE BOARD
- WORK AREA
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ROUTE	STATE
240	MO

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CD	12

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JCD0137

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BRIDGE NO.

DESCRIPTION	DATE

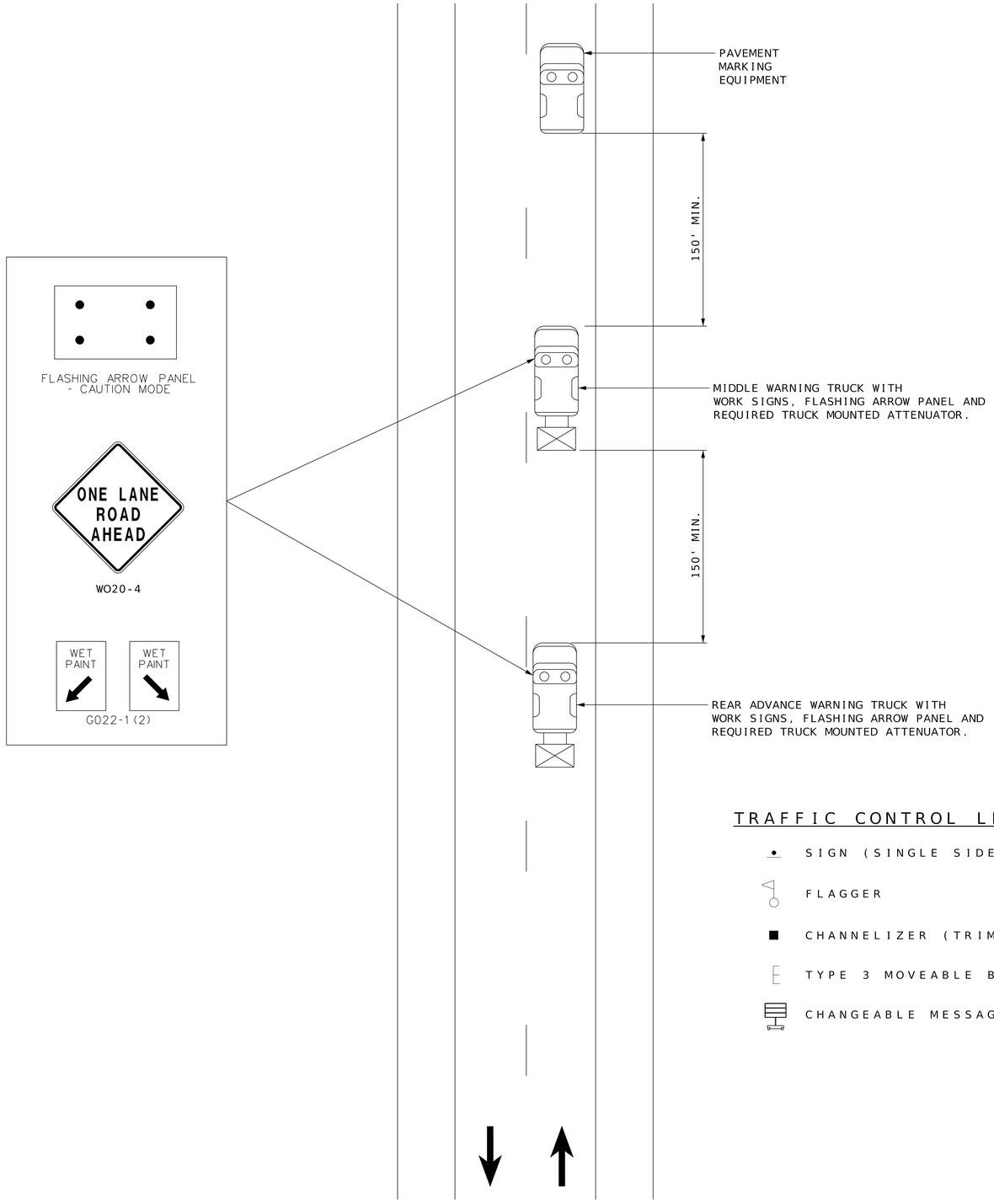
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TRAFFIC CONTROL
SHEET 6 OF 8



TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- FLAGGER
- CHANNELIZER (TRIMLINES)
- TYPE 3 MOVEABLE BARRICADE
- CHANGEABLE MESSAGE BOARD
- WORK AREA
- FLASHING ARROW PANEL
- TMA (TRUCK MOUNTED ATTENUATOR) WITH FLASHING ARROW PANEL

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.

FLASHING ARROW PANELS SHALL, AS A MINIMUM, BE TYPE B, WITH A SIZE OF 60 X 30 INCHES.

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

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Margaret Ann Bruns - Civil
MO PE-2010000798

DATE PREPARED
9/28/2026

ROUTE	STATE
240	MO

DISTRICT	SHEET NO.
CD	13

COUNTY
HOWARD

JOB NO.
JCD0137

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

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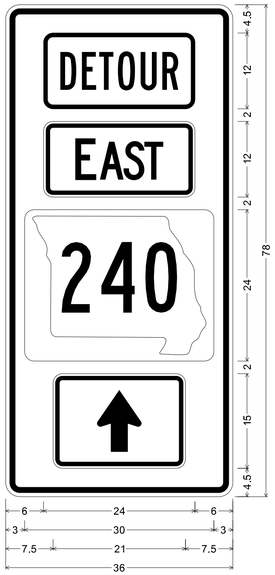
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TRAFFIC CONTROL
SHEET 7 OF 8

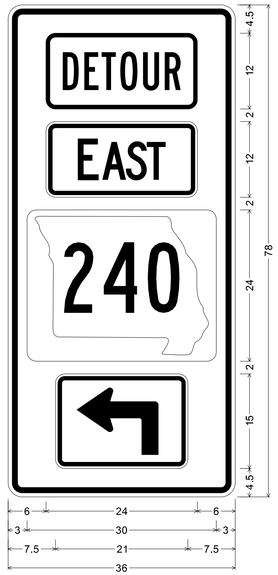
NOT TO SCALE

STRIPING ON TWO-LANE HIGHWAY



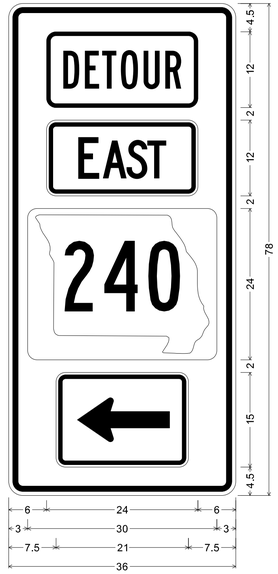
MO4-11 SHF-FLAT SHEET FLUORESCENT;
2.250" Radius, 0.875" Border, 0.625" Indent, Black on Orange;
Table of letter and object lefts

[redacted]	6.000
[redacted]	6.000
[redacted]	3.000
[redacted]	7.500



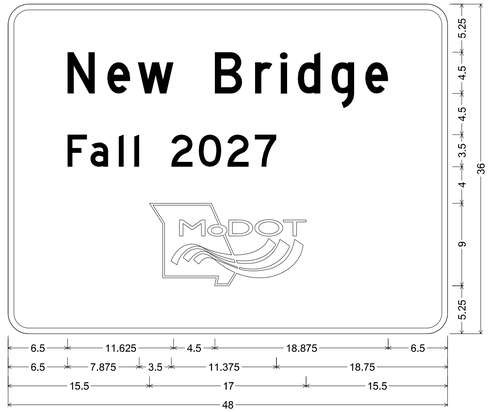
MO4-11 SHF-FLAT SHEET FLUORESCENT;
2.250" Radius, 0.875" Border, 0.625" Indent, Black on Orange;
Table of letter and object lefts

[redacted]	6.000
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[redacted]	7.500



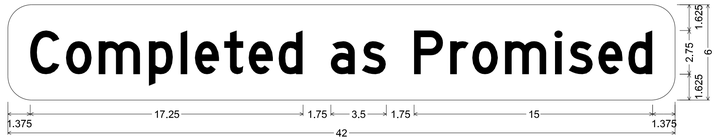
MO4-11 SHF-FLAT SHEET FLUORESCENT;
2.250" Radius, 0.875" Border, 0.625" Indent, Black on Orange;
Table of letter and object lefts

[redacted]	6.000
[redacted]	6.000
[redacted]	3.000
[redacted]	7.500



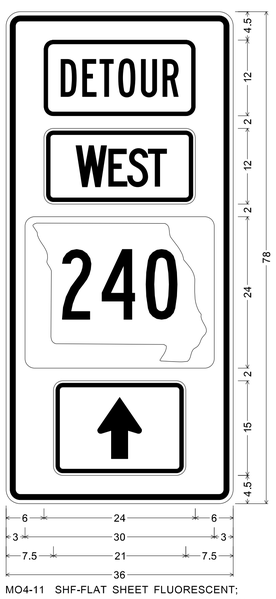
CONST-5 SH-FLAT SHEET;
2.250" Radius, 0.625" Border, White on, Green;
"New", D; "Bridge", D; "Fall 2027", D;
Table of letter and object lefts

N 6.500	e 10.875	w 14.125	B 22.625	r 27.000	i 29.750	d 31.625	g 35.375	e 39.000	
F 6.500	a 9.000	i 12.125	l 13.750	2 17.875	0 20.875	2 24.000	7 27.000		
[redacted] 15.500									



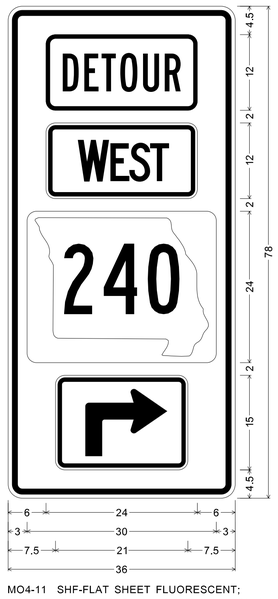
CONST-5P-42 SHF-FLAT SHEET FLUORESCENT;
1.500" Radius, No border, Yellow;
"Completed as Promised" Black, D 65% spacing;
Table of letter and object lefts

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			



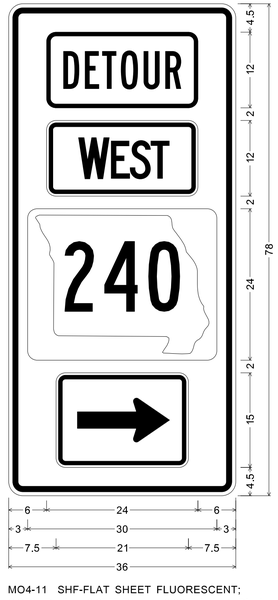
MO4-11 SHF-FLAT SHEET FLUORESCENT;
2.250" Radius, 0.875" Border, 0.625" Indent, Black on Orange;
Table of letter and object lefts

[redacted]	6.000
[redacted]	6.000
[redacted]	3.000
[redacted]	7.500



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2.250" Radius, 0.875" Border, 0.625" Indent, Black on Orange;
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ROUTE	STATE
240	MO
DISTRICT	SHEET NO.
CD	14

COUNTY
HOWARD

JOB NO.
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TRAFFIC CONTROL
SHEET 8 OF 8

TEMPORARY EROSION CONTROL LEGEND

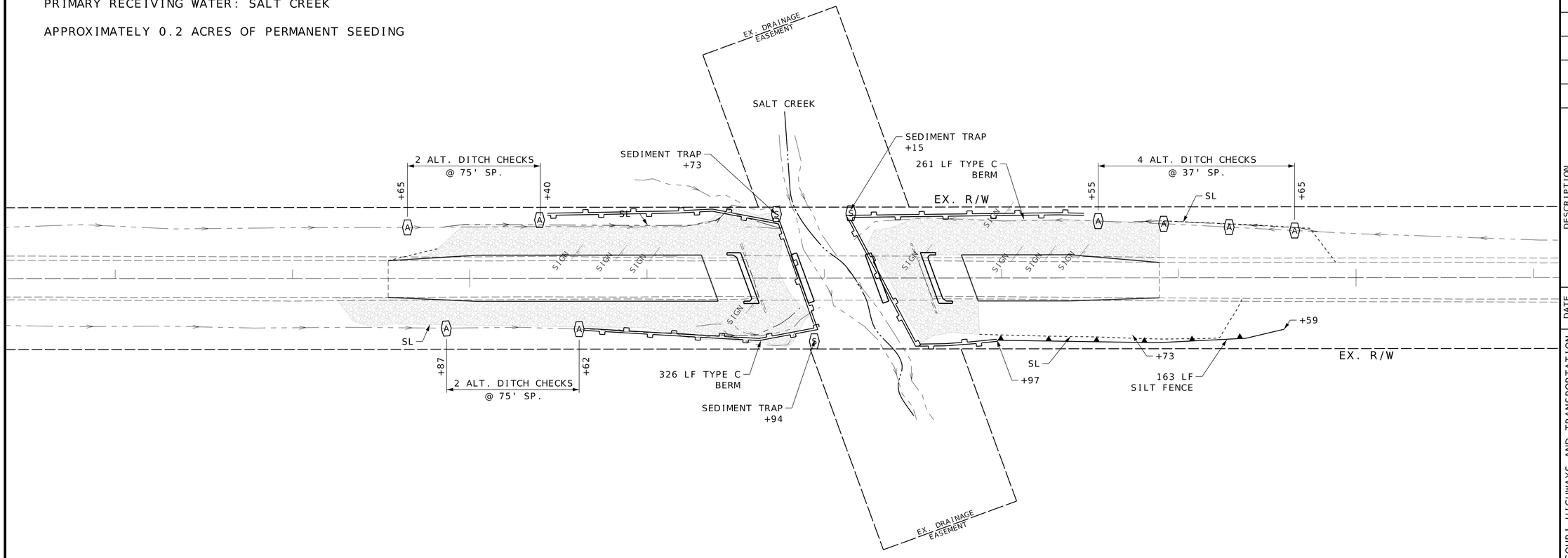
- TEMPORARY BERM TYPE C
- SILT FENCE
- (A) ALTERNATE DITCH CHECK
- (S) SEDIMENT TRAP

PRIMARY RECEIVING WATER: SALT CREEK

APPROXIMATELY 0.2 ACRES OF PERMANENT SEEDING

190

195



SCALE

0 30 60 90

EROSION CONTROL
SHEET 1 OF 1

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DESCRIPTION	DATE

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

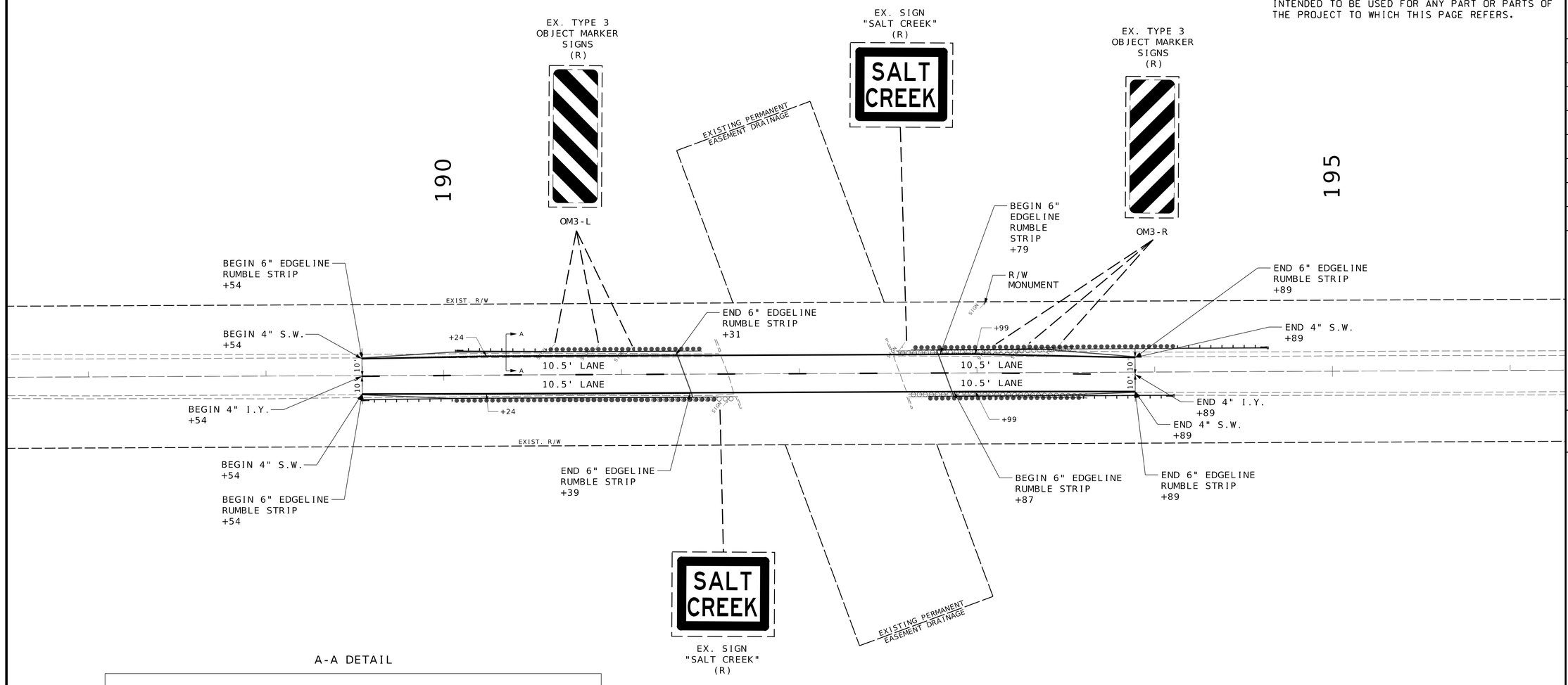
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

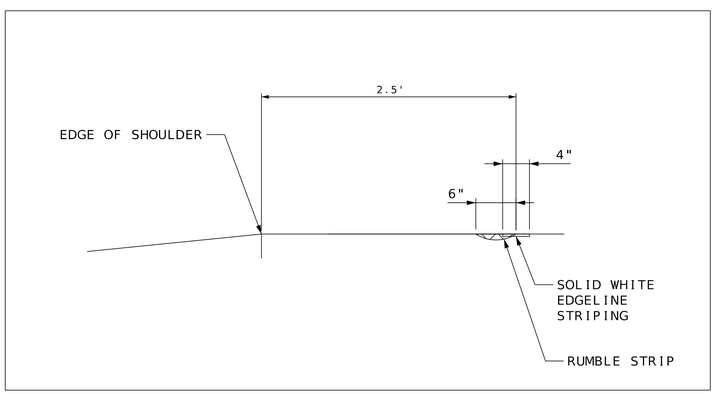
EFK•Moen
Civil Engineering Design
1355 North Highway Dr
Suite 200
St. Louis, MO 63026
Phone 314-394-3100
Fax 314-394-3199
Missouri Certificate of Authority: 001578

O:\2021R2\MoDOT_ORD_v10.10.01.03\23030 MoDOT JCD0137 Route 240\DGN\Roadway\Final\Plotsheets\015_EC_01_JCD0137_i30.dgn 1:50:03 PM 9/28/2026

DISCLAIMER
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A-A DETAIL



PAVEMENT MARKING LEGEND		
4" S.W.	———	4" SOLID WHITE LINE
4" I.Y.	— —	4" INTERMITTENT YELLOW LINE
6" EDGELINE RUMBLE STRIP		

SCALE
0 30 60 90

SIGNING & PAVEMENT MARKING
SHEET 1 OF 1

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

STATE OF MISSOURI
MARGARET ANN BRUNS
NUMBER PE-2010000798
PROFESSIONAL ENGINEER
09/28/2026 2:05:33 PM
Margaret Ann Bruns - Civil
MO PE-2010000798

DATE PREPARED: 9/28/2026
ROUTE: 240 | STATE: MO
DISTRICT: CD | SHEET NO.: 16
COUNTY: HOWARD
JOB NO.: JCD0137
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

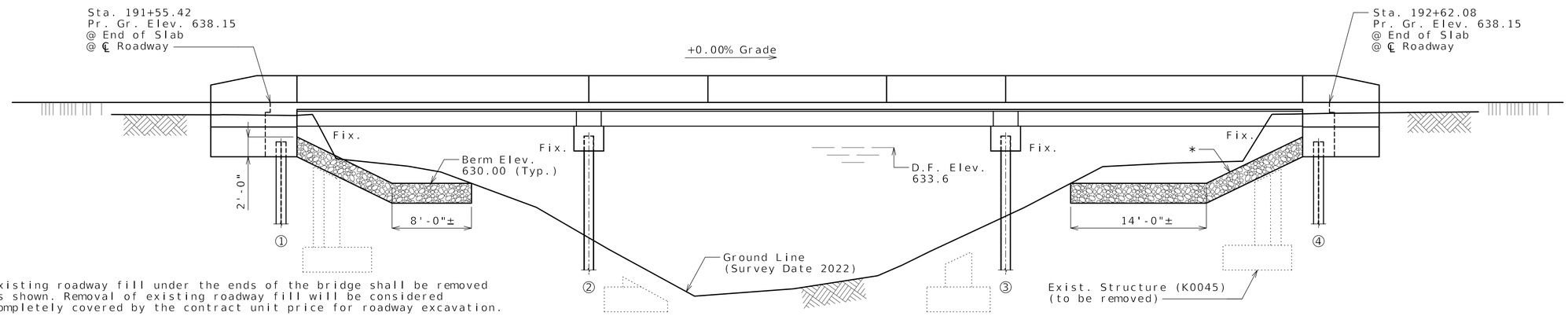
DESCRIPTION	DATE

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

EFK•Moen
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Phone 314-394-3100
Fax 314-394-3199
Missouri Certificate of Authority: 001578

SEC/SUR 31 TWP 50N RGE 15W

(31'-42'-31') SDCL CONTINUOUS COMPOSITE WIDE FLANGE BEAM SPANS

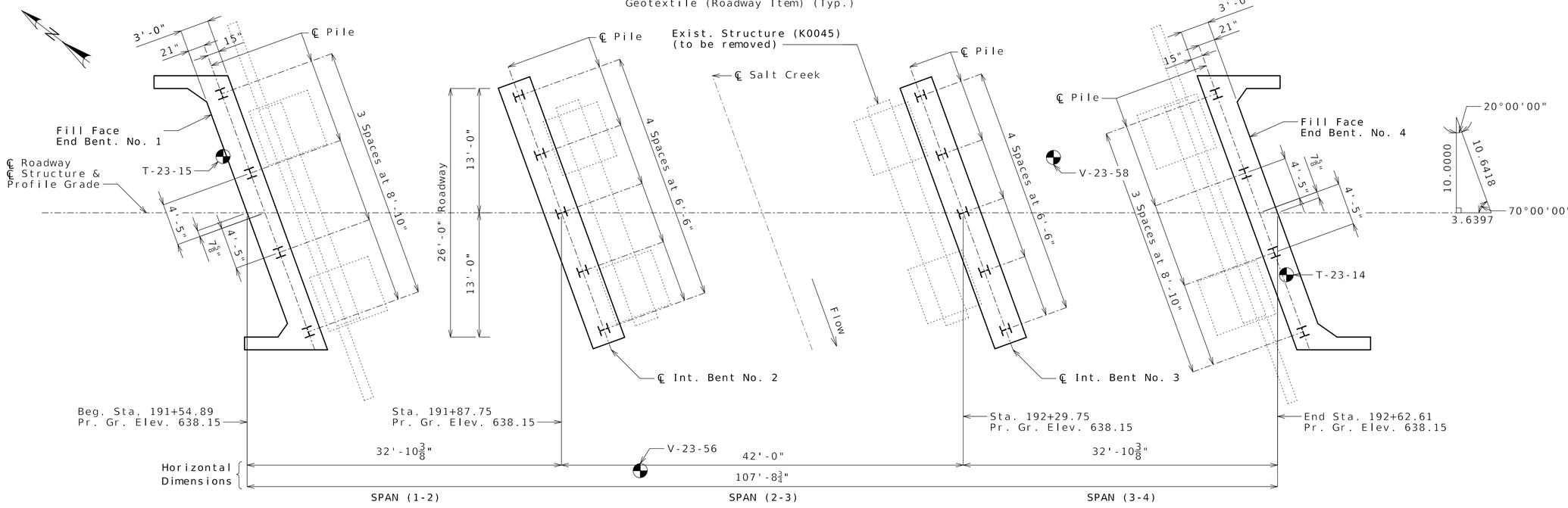


GENERAL ELEVATION

* 2:1 (H:V) Slope with 2'-0" Type 2 Rock Blanket with Permanent Erosion Control Geotextile (Roadway Item) (Typ.)

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

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



PLAN

Indicates location of borings.

Notice and Disclaimer Regarding Boring Log Data

The locations of all subsurface borings for this structure are shown on the plan sheet(s) for this structure. The boring data for all locations indicated, as well as any other boring logs or other factual records of subsurface data and investigations performed by the department for the design of the project, are shown on Sheet(s) No. 22 and may be included in the Electronic Bridge Deliverables. They will also be available from the Project Contact upon written request. No greater significance or weight should be given to the boring data depicted on the plan sheets than is given to the subsurface data available from the district or elsewhere.

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

B.M. 1-22 = 80d NAIL IN UTILITY POLE ON NORTH BANK OF SALT CREEK. 41'± LT., STA. 191+38±, ELEV. 632.69

BRIDGE: ROUTE 240 OVER SALT CREEK

ROUTE 240 FROM ROUTE 124 TO US 40
ABOUT 3.5 MILES SOUTH OF ROUTE 124
BEGINNING STATION 191+54.89

Designed Sep. 2026
Detailed Sep. 2026
Checked Sep. 2026

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

STATE OF MISSOURI
ALEX BENZ
NUMBER PE-2018003121
PROFESSIONAL ENGINEER

Alex C. Benz
09/21/20269:06:17 AM
Alex Benz - Civil
MO PE-2018003121

DATE PREPARED 9/21/2026
ROUTE 240 | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY HOWARD
JOB NO. JCD0137
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9370

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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Estimated Quantities

Item		Substr.	Superstr.	Total
Removal of Miscellaneous ACM (Non-Friable)	sq. foot		58	58
Class 1 Excavation	cu. yard	50		50
Removal of Bridges (K0045)	lump sum			1
Bridge Approach Slab (Minor)	sq. yard		118	118
Galvanized Structural Steel Piles (12 in.)	linear foot	1,160		1,160
Pile Point Reinforcement	each	18		18
Class B Concrete (Substructure)	cu. yard	44.2		44.2
Slab on Steel	sq. yard		340	340
Type D Barrier	linear foot		236	236
Reinforcing Steel (Bridges)	pound	2,530		2,530
Fabricated Structural Low Alloy Steel (I-Beam) A709, Grade 50	pound		36,120	36,120
Slab Drain	each		20	20
Galvanizing Structural Steel	lump sum			1
Vertical Drain at End Bents	each			2
Plain Neoprene Bearing Pad	each		8	8
Laminated Neoprene Bearing Pad	each		16	16

All concrete between the upper and lower construction joint in the end bents is included in the Estimated Quantities for Slab on Steel.

All reinforcement in the end bents is included in the Estimated Quantities for Slab on Steel.

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

All concrete above the intermediate beam cap is included in the Estimated Quantities for Slab on Steel.

Cost of L4x4 ASTM A709 Grade 36 HP pile anchors and 3/4-inch diameter ASTM F3125 Grade A325 Type 1 bolts, complete in place, will be considered completely covered by the unit price for Galvanized Structural Steel Piles (12 in.).

Sheet metal in Intermediate concrete diaphragms is subsidiary to Slab on Steel.

Estimated Quantities for Slab on Steel

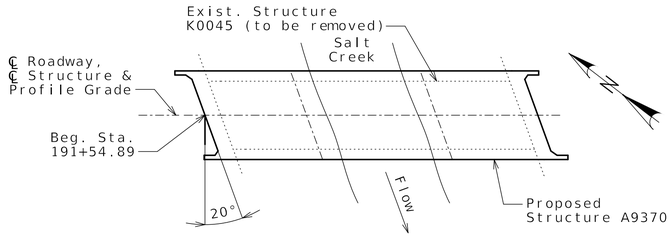
Item		Total
Class B-2 Concrete	cu. yard	104
Reinforcing Steel (Epoxy Coated)	pound	24,350

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 as shown on the plans and in accordance with Sec 703. All hardware for forming the slab to be left in place as a permanent part of the structure shall be coated in accordance with ASTM A123 or ASTM B633 with a thickness class SC 4 and a finish type 1, 11 or 111.

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

Bridge deck surface may be finished with vibratory screed.



LOCATION SKETCH

General Notes:

Design Specifications:
2020 AASHTO LRFD Bridge Design Specifications (9th Ed.)
2023 AASHTO Guide Specifications for LRFD Seismic Bridge Design (3rd Ed.)
Seismic Design Category = B (Seismic Details)
Design earthquake response spectral acceleration coefffiieint at 1.0 second period, S_{D1} = 0.166
Acceleration Coefficient (effective peak ground acceleration coefficient), A_S = 0.108

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

Design Unit Stresses:

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

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

Fabricated Steel Connections:
Field connections shall be made with 3/4-inch diameter ASTM F3125 Grade A325 Type 1 bolts and 13/16-inch diameter holes, except as noted.

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.

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

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

Structural Steel Protective Coatings:
Structural steel shall be galvanized in accordance with ASTM A123 and Sec 1081.

Hydrologic Data

Drainage Area = 5.7 mi^2
Design Flood Frequency = 50 years
Design Flood Discharge = 2,800 cfs
Design Flood (D.F.) Elevation = 633.6
Base Flood (100-year)
Base Flood Elevation = 634.1
Base Flood Discharge = 3,260 cfs
Estimated Backwater = 0.8 ft
Average Velocity thru Opening = 6.8 ft/s
Freeboard (50-year)
Freeboard = 2.6 ft
Roadway Overtopping
Overtopping Flood Discharge > 4,350 cfs
Overtopping Flood Frequency > 500 years
Overtopping Flood Elevation = 634.3

Miscellaneous:
High strength bolts, nuts and washers will be sampled for quality assurance as specified in Sec 106.

Foundation Data

Type	Design Data		1	2	3	4
Load Bearing Pile	Pile Type and Size		HP 12x53	HP 12x53	HP 12x53	HP 12x53
	Number	ea	4	5	5	4
	Approximate Length Per Each	ft	65	63	65	65
	Pile Point Reinforcement	ea	All	All	All	All
	Min. Galvanized Penetration (Elev.)	ft	Full Length	Full Length	Full Length	Full Length
	Pile Driving Verification Method		DF	DF	DF	DF
	Resistance Factor		0.4	0.4	0.4	0.4
	Minimum Nominal Axial Compressive Resistance	kip	313	348	348	313

DF = FHWA-modified Gates Dynamic Pile Formula

Minimum Nominal Axial Compressive Resistance = $\frac{\text{Maximum Factored Loads}}{\text{Resistance Factor}}$

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

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

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

GENERAL NOTES AND QUANTITIES

Detailed Sep. 2026
Checked Sep. 2026

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

STATE OF MISSOURI
ALEX BENZ
NUMBER PE-2018003121
PROFESSIONAL ENGINEER
Alex C. Benz
09/21/20269:06:22 AM
Alex Benz - Civil
MO PE-2018003121

DATE PREPARED
9/21/2026

ROUTE	STATE
240	MO
DISTRICT	SHEET NO.
BR	2

COUNTY
HOWARD

JOB NO.
JCD0137

CONTRACT ID.

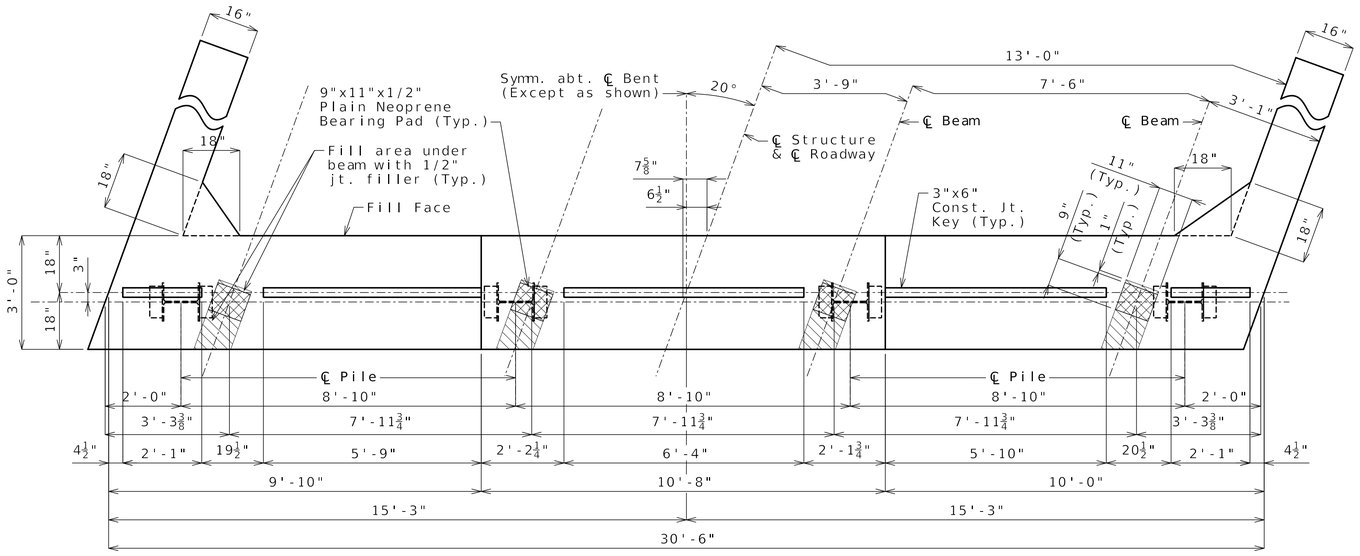
PROJECT NO.

BRIDGE NO.
A9370

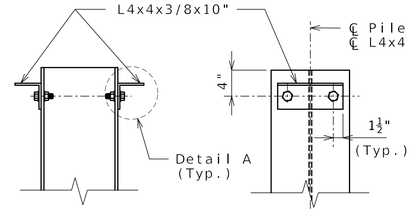
DESCRIPTION	DATE

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

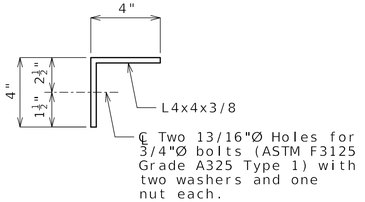
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Civil Engineering Design
1355 N. Highway Dr.
Suite 200
St. Louis, MO 63026
Phone 314-394-3100
Missouri Certificate of Authority: 001578



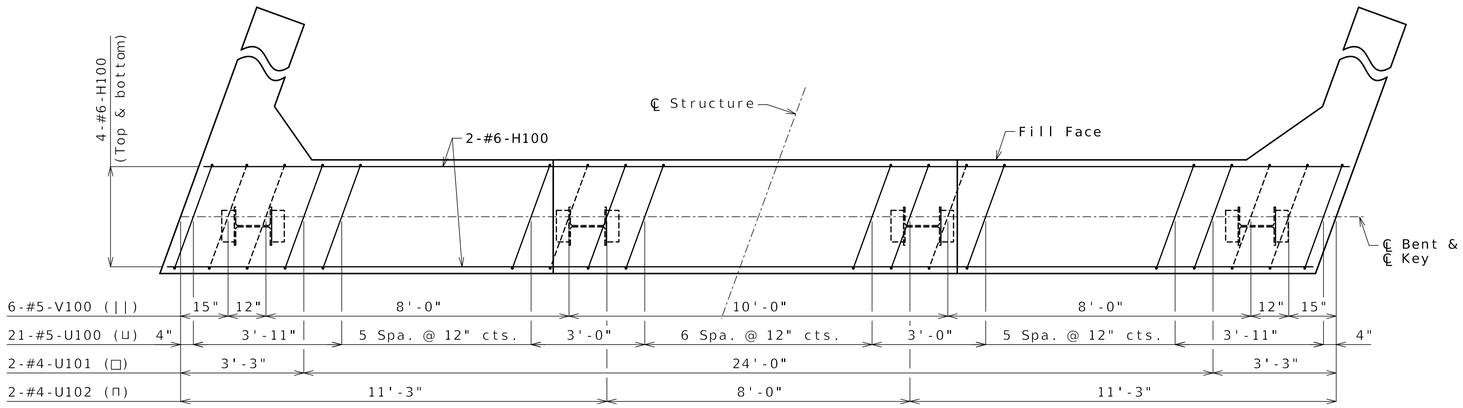
PLAN OF BEAM



DETAILS OF HP PILE ANCHORS

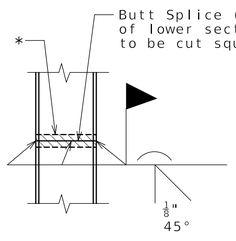


DETAIL A



PLAN OF BEAM SHOWING REINFORCEMENT

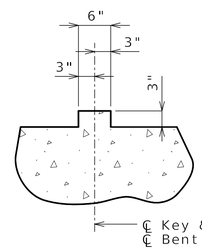
Keys not shown for clarity.



STEEL PILE SPLICE

(If required)

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



SECTION THRU KEY

General Notes:
Work this sheet with Sheets No. 4 & 5.

All U bars and pairs of V bars shall be placed parallel to centerline of roadway.

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

Angles shall be coated with a minimum of two coats of non-aluminum epoxy mastic primer to provide a dry film thickness of 4 mils minimum, 8 mils maximum, or galvanized in accordance with Sec 1081. Bolts, washers and nuts shall be galvanized in accordance with ASTM F2329.

Substructure Quantity Table for Bents No. 1 & 4		
Item		Quantity
Class 1 Excavation	cu. yard	50
Galvanized Structural Steel Piles (12 in.)	linear foot	130
Pile Point Reinforcement	each	8
Class B Concrete (Substructure)	cu. yard	24.4

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

END BENT NO. 1 & 4

Detailed Sep. 2026
Checked Sep. 2026

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

STATE OF MISSOURI
ALEX BENZ
NUMBER PE-2018003121
PROFESSIONAL ENGINEER

Alex C. Benz
09/21/20269:06:22 AM
Alex Benz - Civil
MO PE-2018003121

DATE PREPARED
9/21/2026

ROUTE	STATE
240	MO
DISTRICT	SHEET NO.
BR	3

COUNTY
HOWARD

JOB NO.
JCD0137

CONTRACT ID.

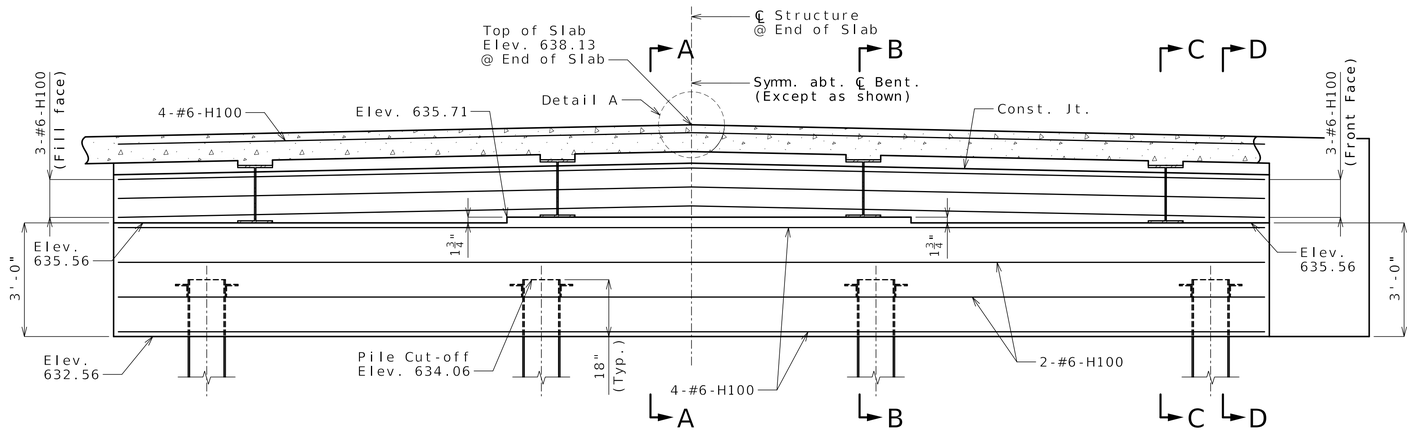
PROJECT NO.

BRIDGE NO.
A9370

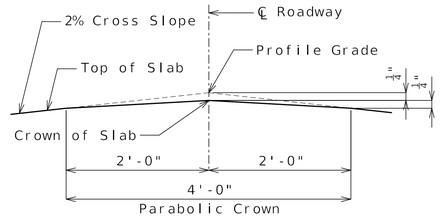
DESCRIPTION	DATE

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

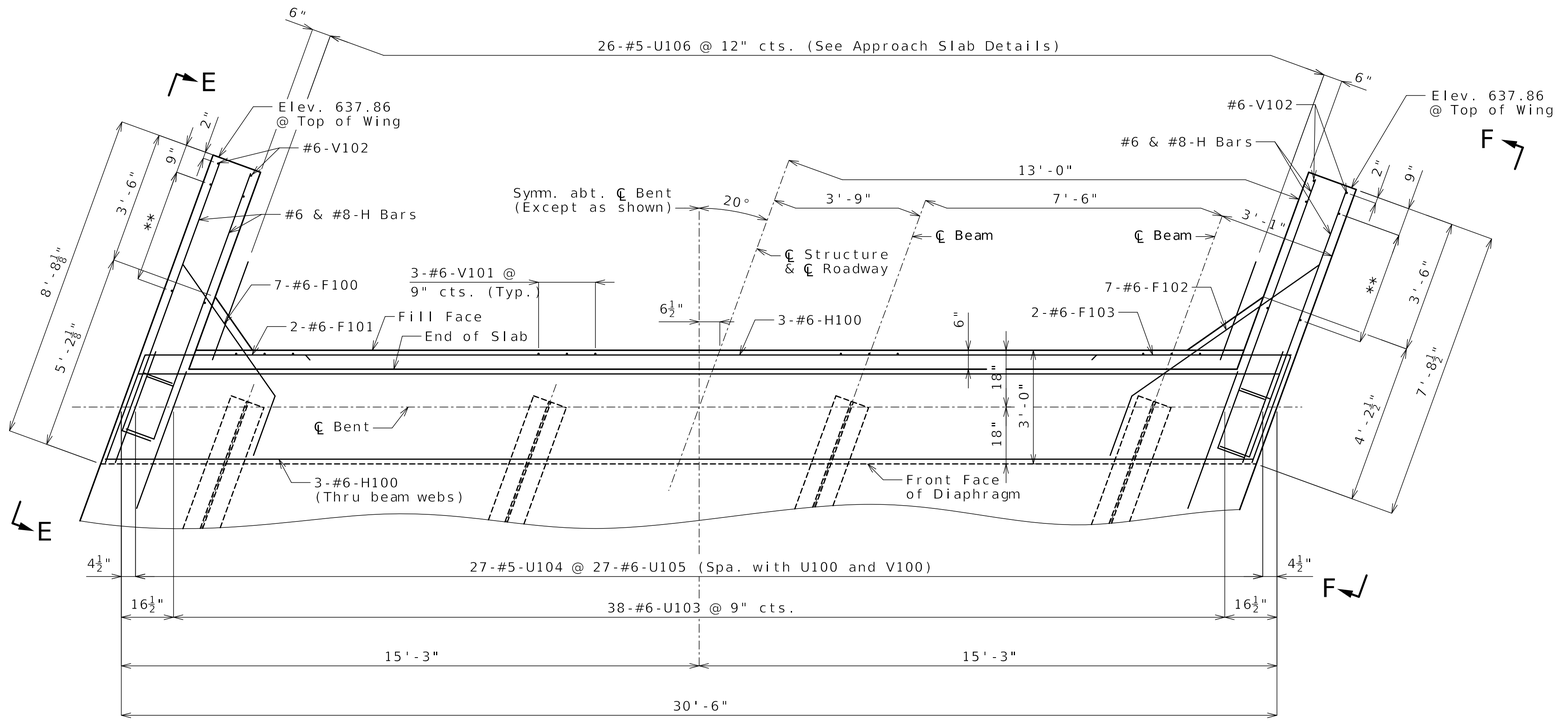
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Suite 200
St. Louis, MO 63026
Phone 314-394-3100
Missouri Certificate of Authority: 001578



SECTION NEAR END BENT



DETAIL A



** 4-#6-V102 @ 12" cts. (Each face)

PART PLAN

General Notes:
Work this sheet with Sheets No. 3 & 5.

For Sections A-A,B-B,C-C & D-D and Elevations E-E & F-F, see Sheet No. 5.

The #6-F100 and #6-F102 bars shall be bent in the field to clear girders.

The U bars shall be placed parallel to centerline or roadway.

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

Concrete diaphragms at the integral end bents shall be poured a minimum of 12 hours before the slab is poured.

For details of vertical drain at end bents, see Sheet No. 6.

For details of bridge approach slab, see Sheet No. 18.

END BENT NO. 1 & 4

Detailed Sep. 2026
Checked Sep. 2026

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STATE OF MISSOURI
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NUMBER PE-2018003121
PROFESSIONAL ENGINEER
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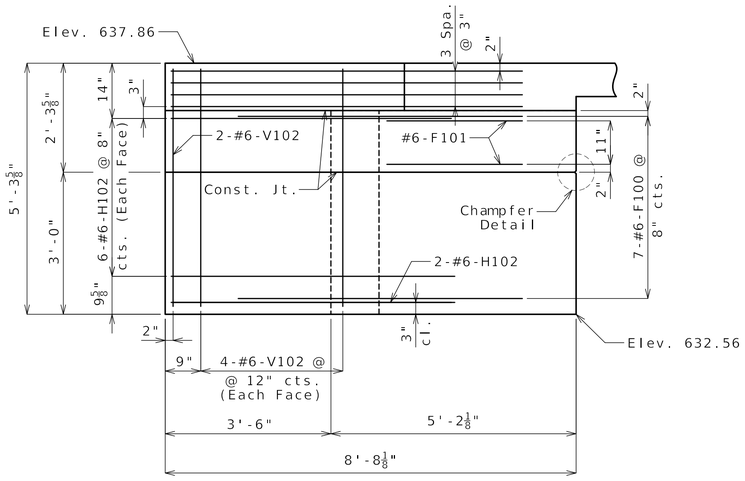
DATE PREPARED
9/21/2026

ROUTE 240 | STATE MO
DISTRICT BR | SHEET NO. 4
COUNTY HOWARD
JOB NO. JCD0137
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9370

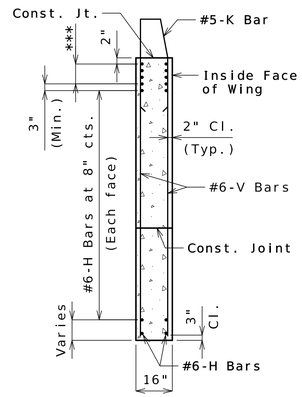
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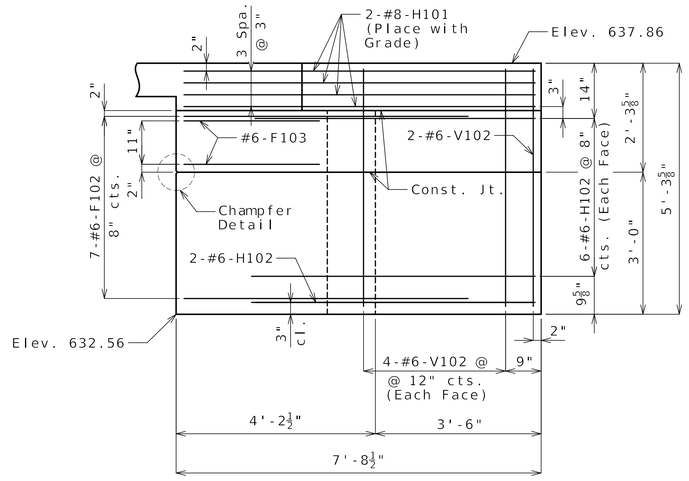


ELEVATION E-E

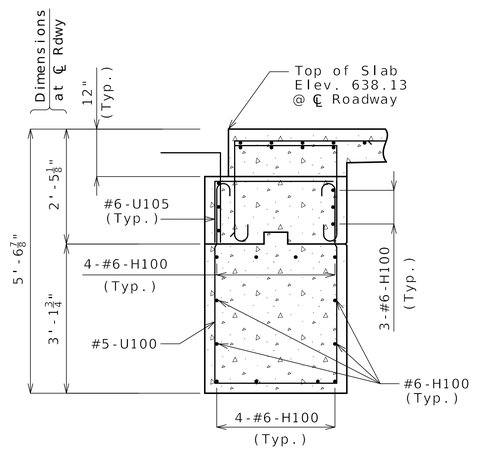


TYPICAL SECTION THRU WING

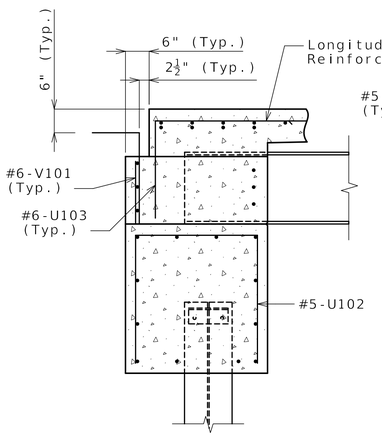
*** #8-H Bars at 3" cts. (Each face)(Place with grade)



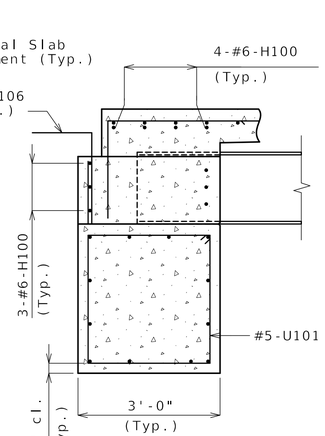
ELEVATION F-F



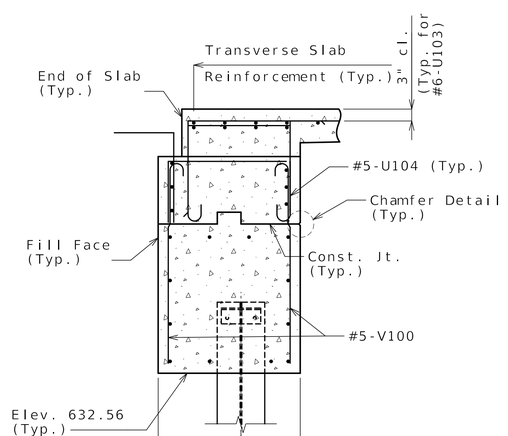
SECTION A-A



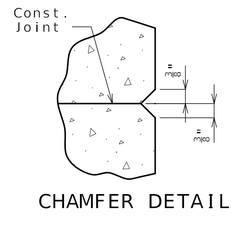
SECTION B-B



SECTION C-C



SECTION D-D



CHAMFER DETAIL

General Notes:

Work this sheet with Sheets No. 3 & 4.

For reinforcement of the barrier, see Sheet No. 17.

END BENT NO. 1 & 4

Detailed Sep. 2026
Checked Sep. 2026

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ALEX BENZ
NUMBER PE-2018003121
PROFESSIONAL ENGINEER
Alex C. Benz
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Alex Benz - Civil
MO PE-2018003121

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ROUTE	STATE
240	MO
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JOB NO. JCD0137

CONTRACT ID.

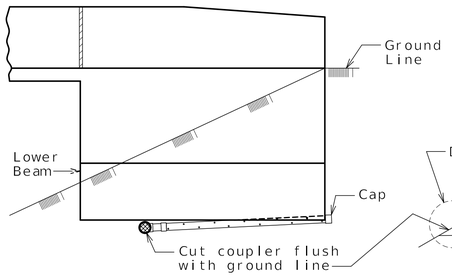
PROJECT NO.

BRIDGE NO. A9370

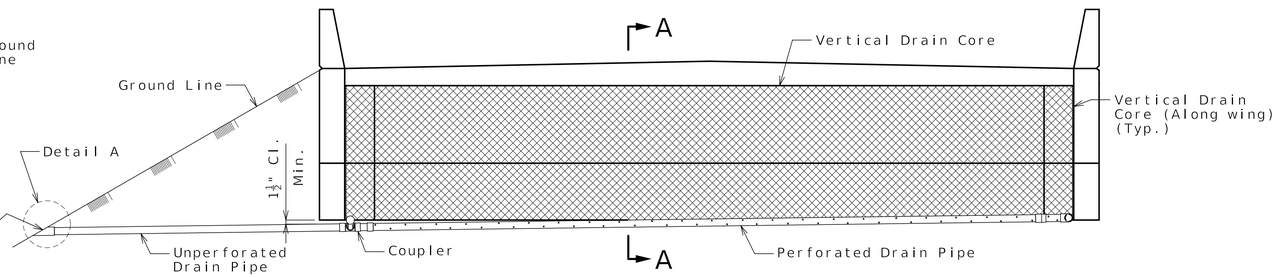
DESCRIPTION	DATE

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JEFFERSON CITY, MO 65102
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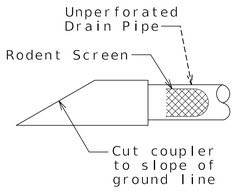
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St. Louis, MO 63026
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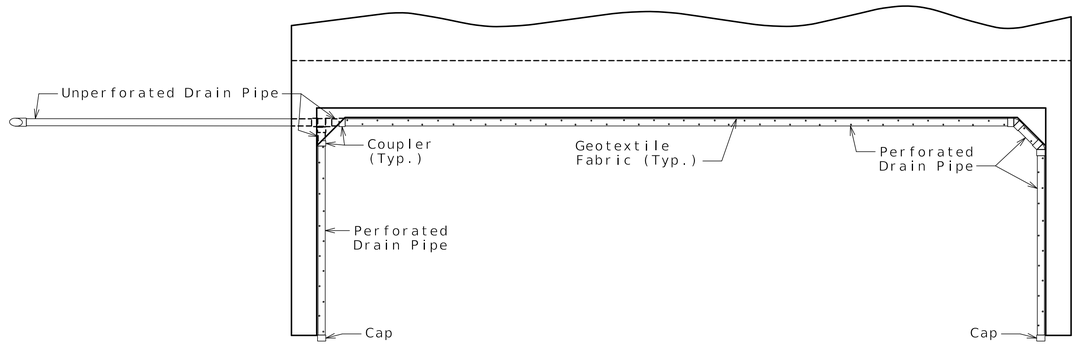
ELEVATION OF WING



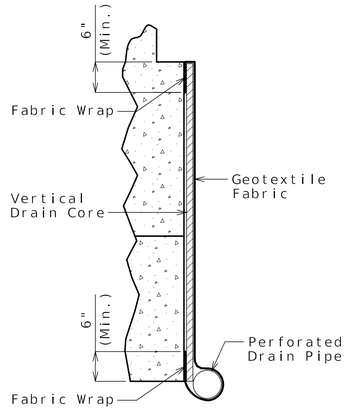
ELEVATION OF END BENT



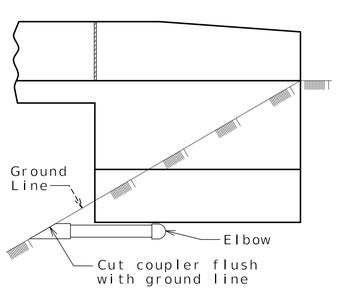
DETAIL A



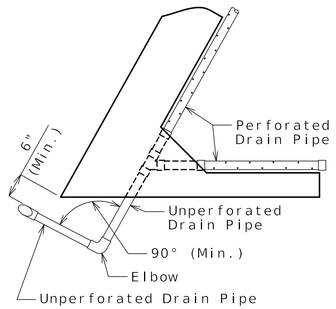
PLAN OF END BENT



PART SECTION A-A
(Section thru wing similar)



ELEVATION OF WING



PART PLAN

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

General Notes:

All drain pipe shall be sloped 1 to 2 percent.

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

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

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

VERTICAL DRAIN AT END BENTS

(Squared end bent shown, skewed end bent similar)

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NUMBER PE-2018003121
PROFESSIONAL ENGINEER
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MO PE-2018003121

DATE PREPARED 9/21/2026

ROUTE	STATE
240	MO
DISTRICT	SHEET NO.
BR	6

COUNTY: HOWARD
JOB NO.: JCD0137
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A9370

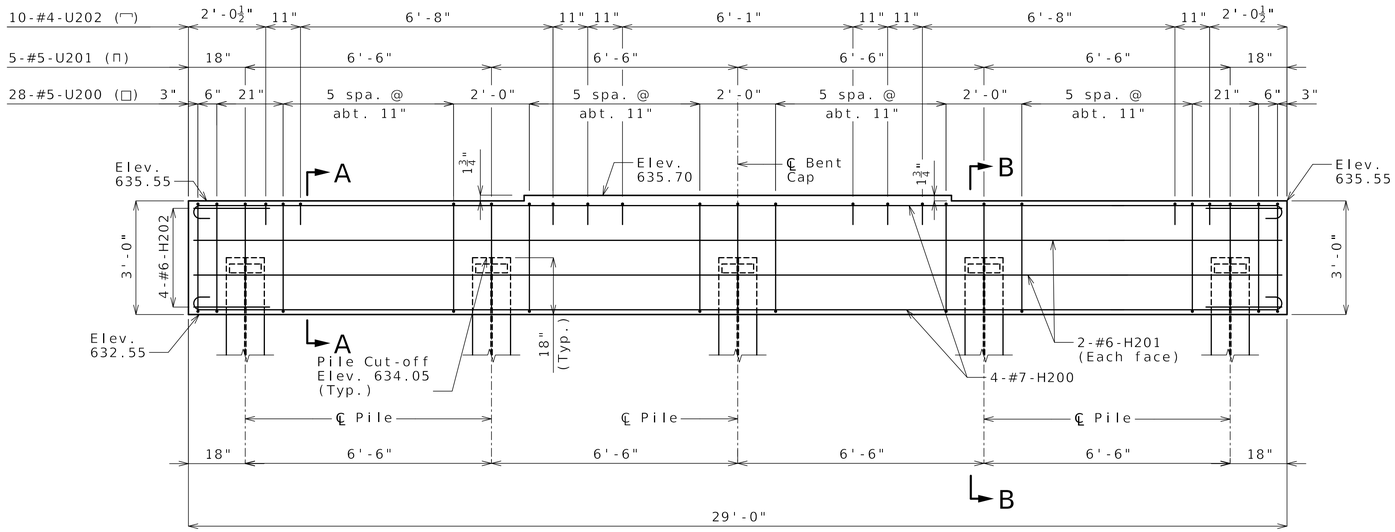
DESCRIPTION	DATE

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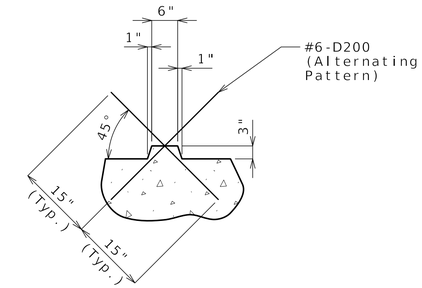
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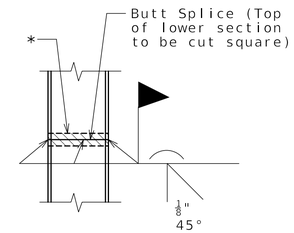
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ELEVATION



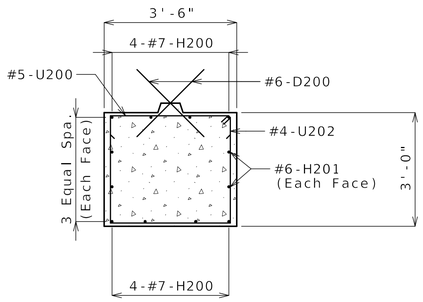
SECTION THRU KEY



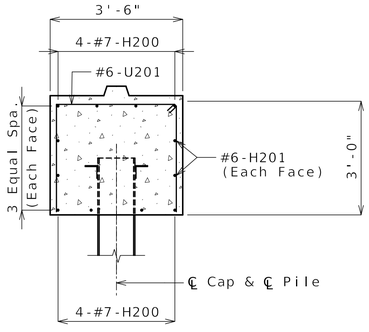
STEEL PILE SPLICE

(If required)

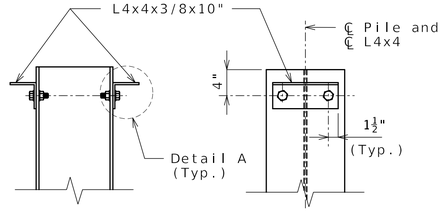
* Galvanizing material shall be omitted or removed one inch clear of weld locations in accordance with Sec 702.



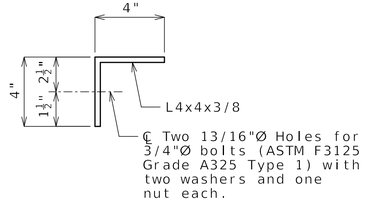
SECTION A-A



SECTION B-B



DETAILS OF HP PILE ANCHORS



DETAIL A

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

Substructure Quantity Table for Bents No. 2 & 3		
Item		Quantity
Galvanized Structural Steel Piles (12 in.)	linear foot	128
Pile Point Reinforcement	each	10
Class B Concrete (Substructure)	cu. yard	19.8
Reinforcing Steel (Bridges)	pound	2,530

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

Notes:

Work this sheet with Sheet No. 8.

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

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

INTERMEDIATE BENT NO. 2 & 3

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Alex Benz - Civil
MO PE-2018003121

DATE PREPARED
9/21/2026

ROUTE	STATE
240	MO
DISTRICT	SHEET NO.
BR	7

COUNTY
HOWARD

JOB NO.
JCD0137

CONTRACT ID.

PROJECT NO.

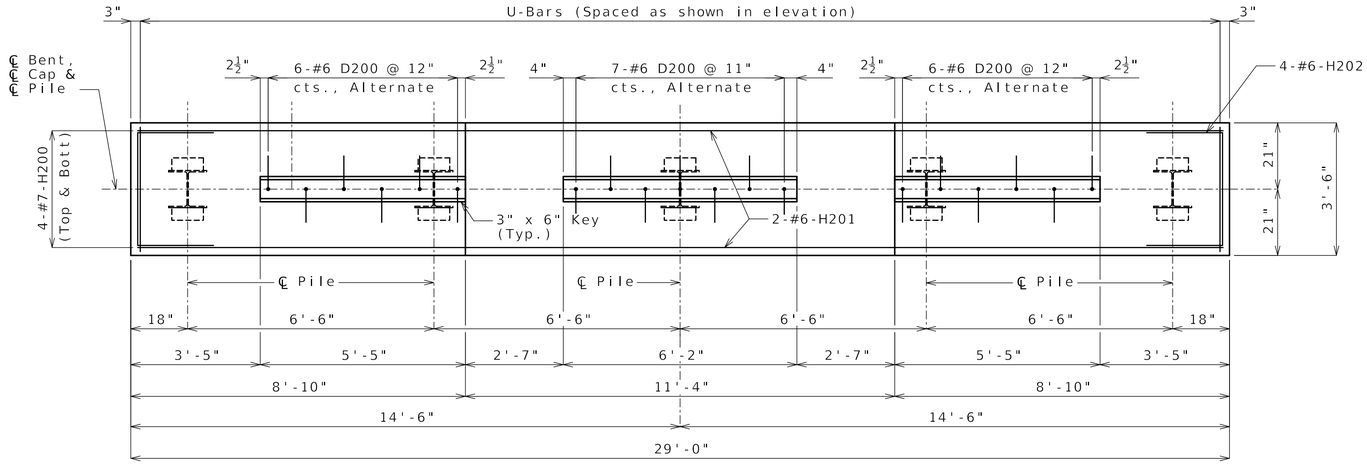
BRIDGE NO.
A9370

DESCRIPTION

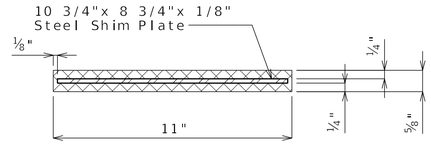
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105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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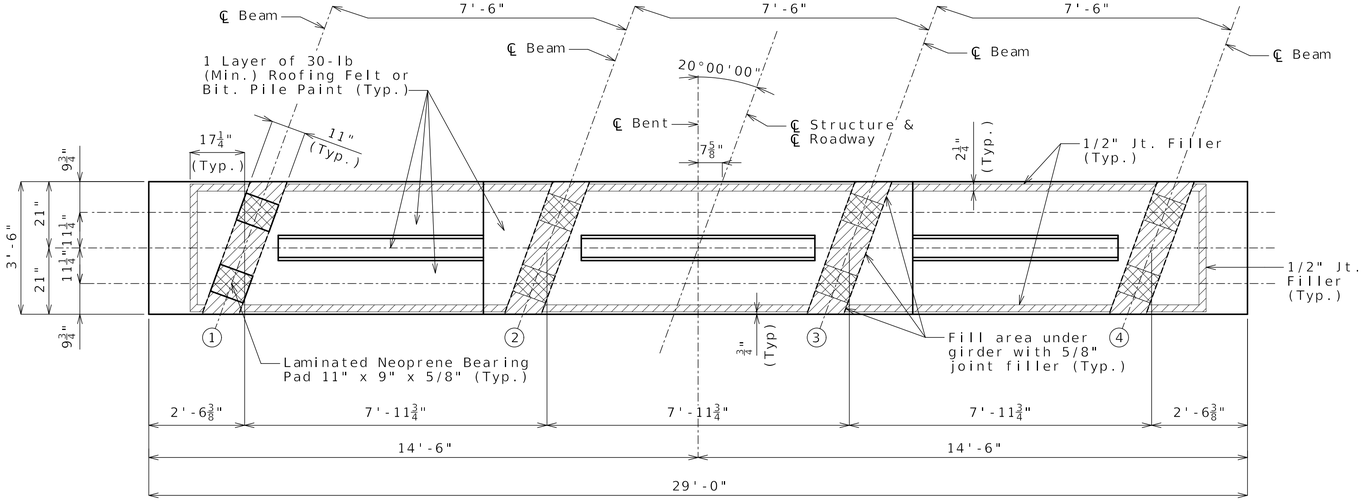
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PLAN OF BEAM SHOWING REINFORCEMENT



TYPICAL SECTION
THRU LAMINATED
NEOPRENE BEARING PAD



PLAN OF BEAM

General Notes:

Work this sheet with Sheet No. 7.

INTERMEDIATE BENT NO. 2 & 3

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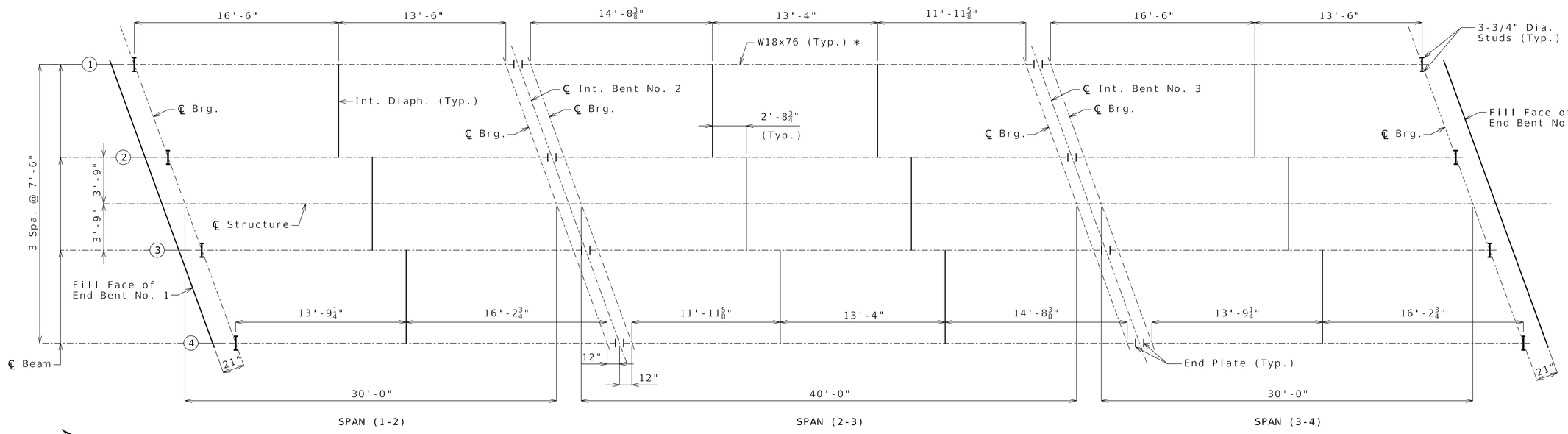
STATE OF MISSOURI
ALEX BENZ
NUMBER PE-2018003121
PROFESSIONAL ENGINEER
Alex C. Benz
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Alex Benz - Civil
MO PE-2018003121

DATE PREPARED 9/21/2026
ROUTE 240
STATE MO
DISTRICT BR
SHEET NO. 8
COUNTY HOWARD
JOB NO. JCD0137
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9370

DESCRIPTION
DATE

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PLAN OF STRUCTURAL STEEL

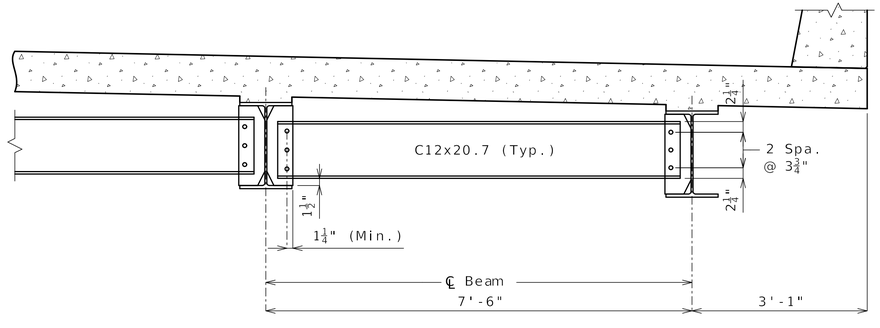
* Notch toughness is required for all wide flange beams.

Notes:

Longitudinal dimensions are horizontal.

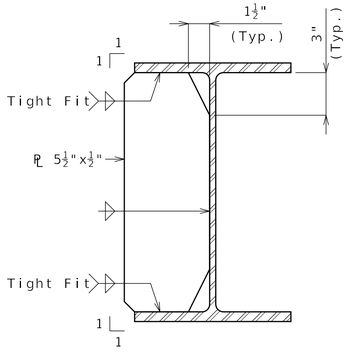
For Elevation of Beams, see Sheet No. 10.

All structural steel shall be ASTM A709 Grade 50 and shall be galvanized in accordance with A123 and Sec 1081. Weight of all structural steel is included in the weight of Fabricated Structural Low Alloy Steel (I-Beam) A709 Grade 50.

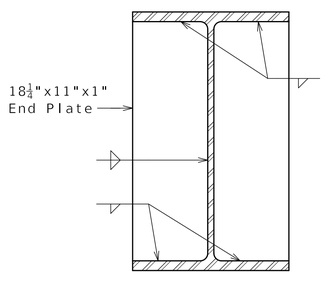


PART SECTION SHOWING INTERMEDIATE DIAPHRAGMS

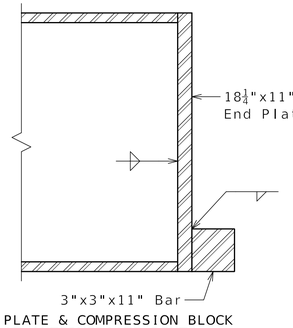
At the contractor's option, holes in the diaphragm plate of non slab bearing diaphragms may be made 3/16" larger than the nominal diameter of the bolt. A hardened washer shall be used under the bolt head and nut when this option is used. Holes in the beam diaphram connection plate stiffener shall be standard size



INTERMEDIATE DIAPHRAGM CONNECTION PLATE



END PLATE AT INTERMEDIATE BENTS



END PLATE & COMPRESSION BLOCK AT INTERMEDIATE BENTS

WELDING DETAILS

STEEL DETAILS

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PROFESSIONAL ENGINEER

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DATE PREPARED: 9/21/2026
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DISTRICT: BR | SHEET NO.: 9
COUNTY: HOWARD
JOB NO.: JCD0137
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A9370

DESCRIPTION | DATE

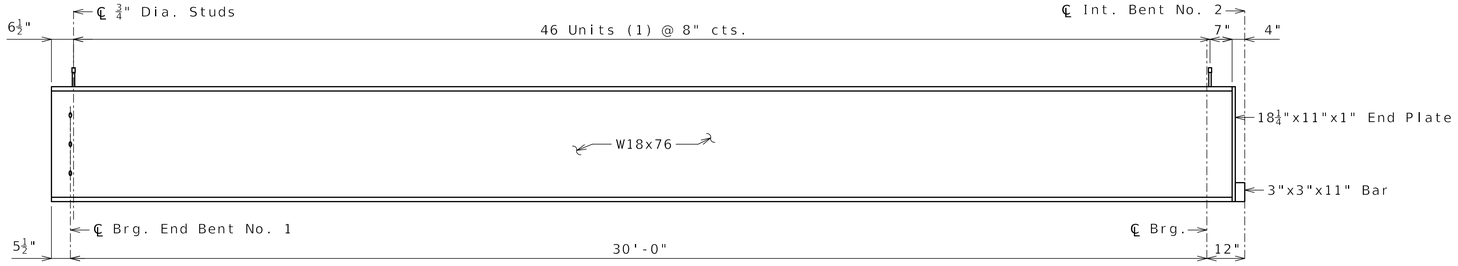
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Note: This drawing is not to scale. Follow dimensions.

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SPAN (1-2) BEAM ELEVATION

Notes:

Notch toughness is required for all wide flange beams.

Shear connectors shall be in accordance with Sec 712, 1037, and 1080.

Longitudinal dimensions shown in the Beam Elevations are horizontal dimensions.

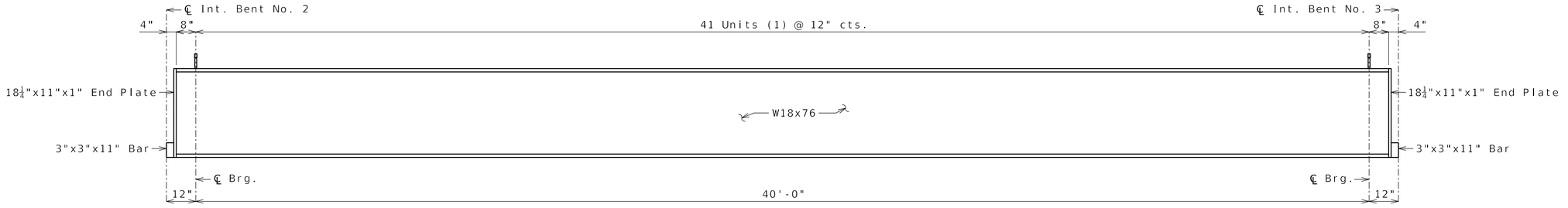
Weight of 1405 pounds of shear connectors included in the weight of Fabricated Structural Low Alloy Steel (I-Beam) A709, Grade 50.

For location of slab drain attachment holes, see Sheet No. 12.

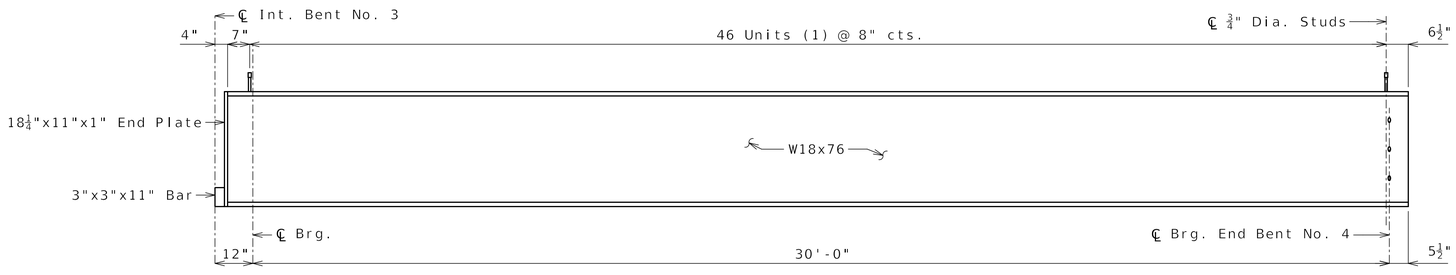
(1) 3 studs per unit

(2) 3 - 1 1/16" Dia. holes at equal spacing

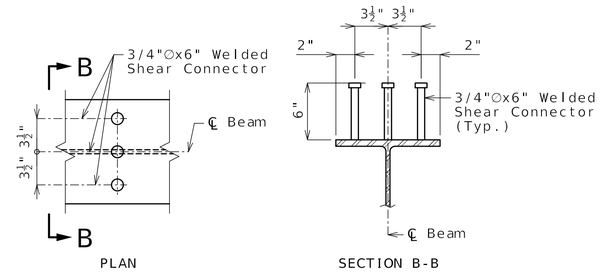
(3) Line perpendicular to the bottom of the bottom flange at the intersection of ℄ Brg. and Point of Rotation.



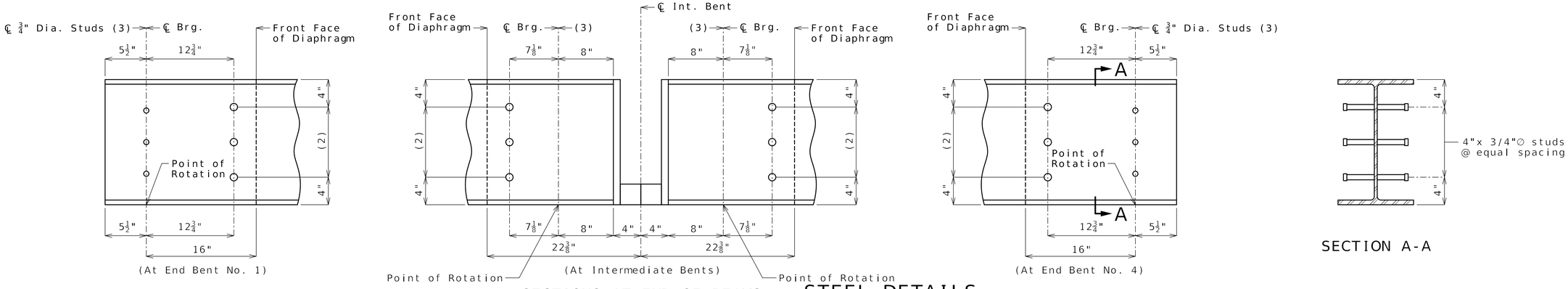
SPAN (2-3) BEAM ELEVATION



SPAN (3-4) BEAM ELEVATION



DETAILS OF SHEAR CONNECTORS



SECTIONS AT END OF BEAMS

STEEL DETAILS

Detailed Sep. 2026
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PROFESSIONAL ENGINEER
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MO PE-2018003121

DATE PREPARED 9/21/2026

ROUTE	STATE
240	MO
DISTRICT	SHEET NO.
BR	10

COUNTY: HOWARD

JOB NO.: JCD0137

CONTRACT ID.:

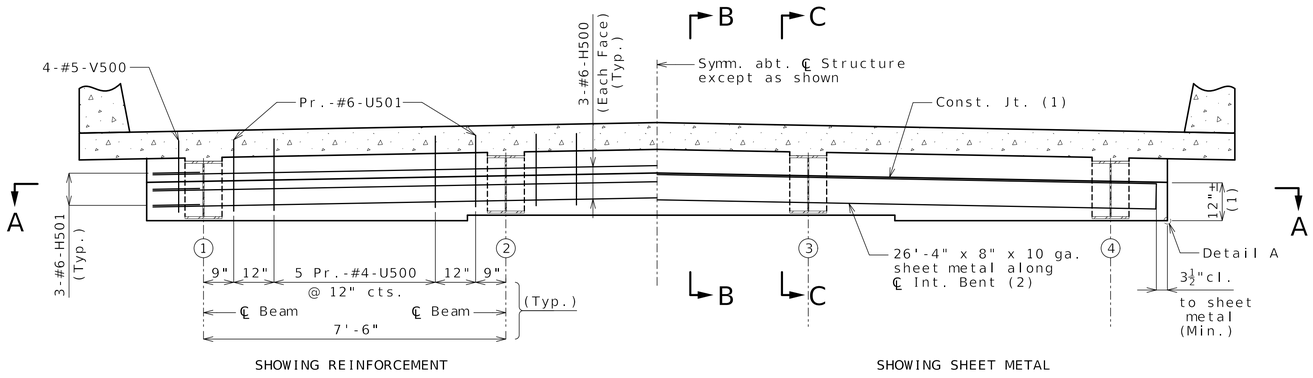
PROJECT NO.:

BRIDGE NO.: A9370

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
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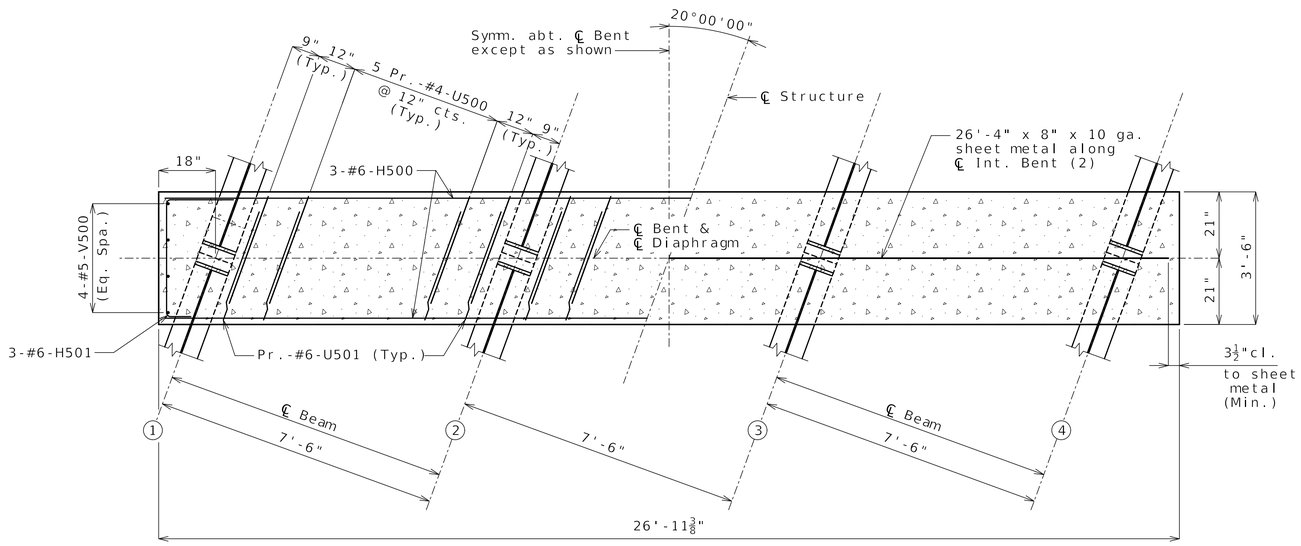


SHOWING REINFORCEMENT SHOWING SHEET METAL

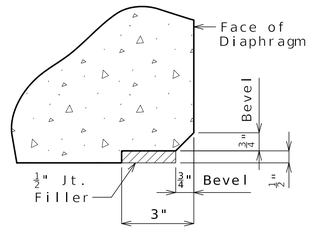
SECTION NEAR INTERMEDIATE BENT

(1) Varies. Match slope of roadway surface.

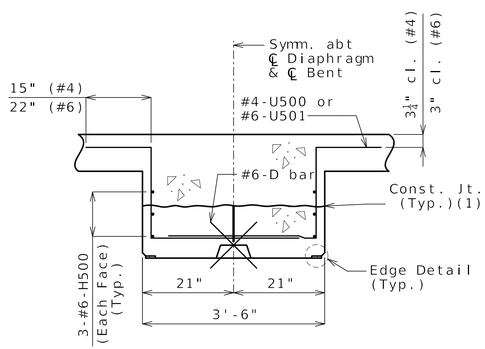
(2) Sheet metal may rest on D bars and/or compression blocks when pouring diaphragm concrete. Sheet metal may be divided into more than one segment for ease of placement.



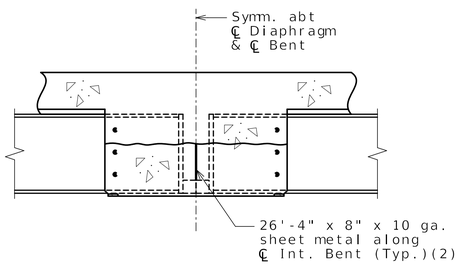
SHOWING REINFORCEMENT SECTION A-A SHOWING SHEET METAL



EDGE DETAIL



SECTION B-B (Normal)



SECTION C-C (Normal)

Notes:

Diaphragms at intermediate bents shall be build vertical.

All U bars in diaphragm shall be placed parallel to centerline of roadway.

All reinforcement in the concrete diaphragm at intermediate bent, except reinforcement embedded in the beam cap, is included in the Estimated Quantities for Slab on Steel.

All concrete above the intermediate bent beam cap is included in the Estimated Quantities for Slab on Steel.

Concrete diaphragm below construction joint shall be poured a minimum of 12 hours before the slab is poured.

Sheet metal in concrete diaphragm shall be Grade 40 and coated in accordance with ASTM 653, coating designation G165. Sheet metal is included in the Estimated Quantities for Slab on Steel.

CONRETE DIAPHRAGM AT INTERMEDIATE BENT NO. 2 AND 3

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DATE PREPARED 9/21/2026

ROUTE 240 | STATE MO

DISTRICT BR | SHEET NO. 11

COUNTY HOWARD

JOB NO. JCD0137

CONTRACT ID.

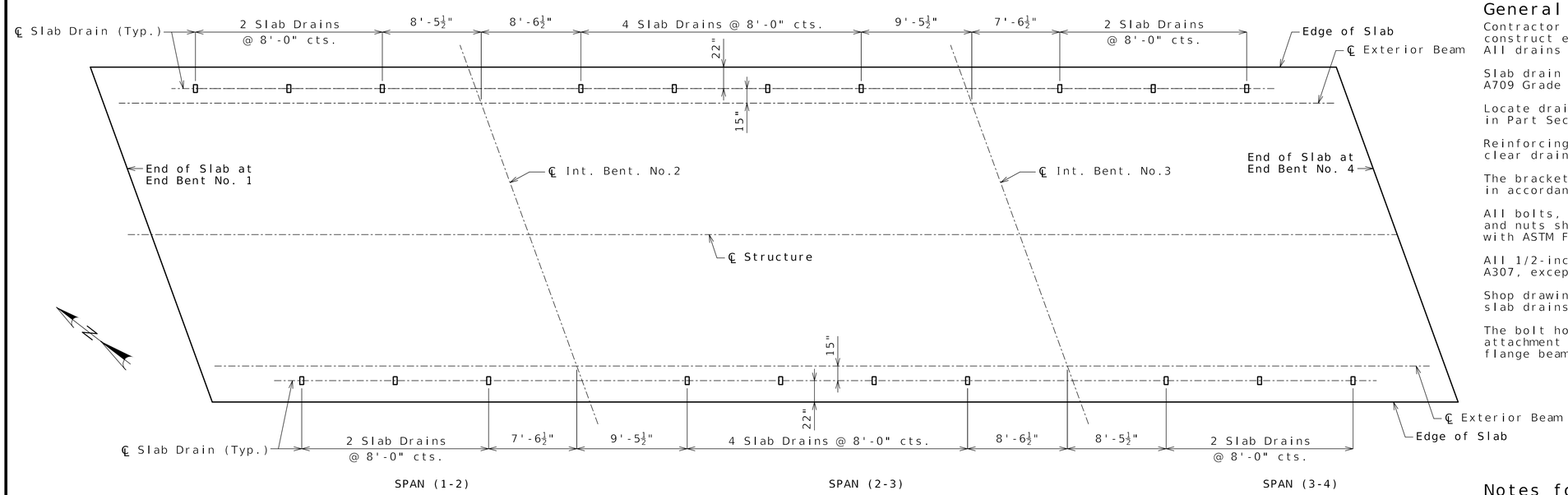
PROJECT NO.

BRIDGE NO. A9370

DESCRIPTION	DATE

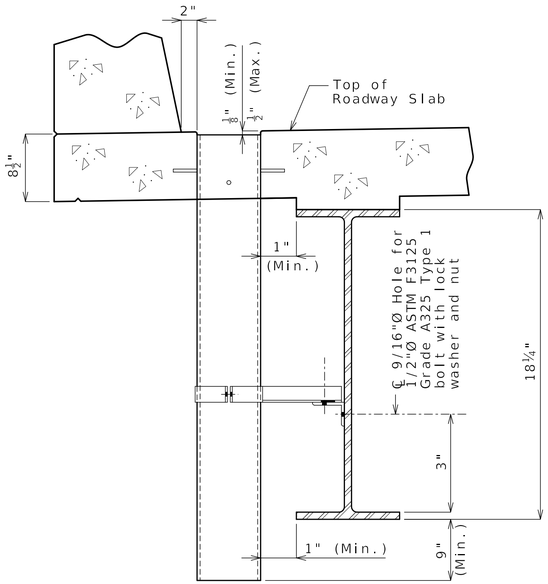
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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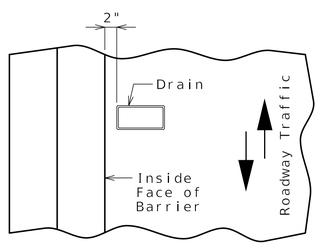


PLAN OF SLAB SHOWING SLAB DRAIN LOCATIONS

PART SECTION SHOWING BRACKET ASSEMBLY



PART SECTION NEAR DRAIN



PART PLAN OF SLAB AT DRAIN

ELEVATION OF DRAIN

PLAN OF STEEL DRAIN OPTION

PLAN OF FRP DRAIN OPTION

SLAB DRAINS

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 ASTM F2329.

All 1/2-inch diameter 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 located on the wide flange beam shop drawings.

Notes for Steel Drain:

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

Outside dimensions of drains are 8" x 4".

The drains shall be galvanized in accordance with ASTM A123.

Notes for FRP Drain:

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

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

Minimum reinforced wall thickness shall be 1/4 inch.

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

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

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

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

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DATE PREPARED 9/21/2026

ROUTE	STATE
240	MO
DISTRICT	SHEET NO.
BR	12

COUNTY HOWARD

JOB NO. JCD0137

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A9370

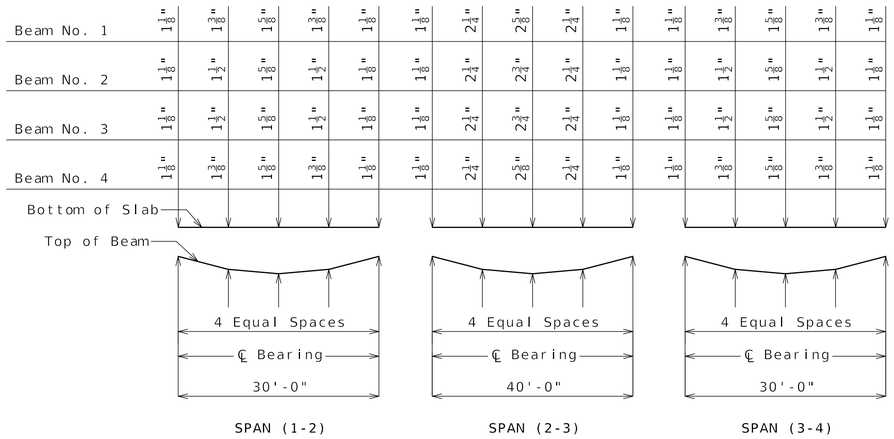
DESCRIPTION | DATE

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

EFK•Moen
Civil Engineering Design
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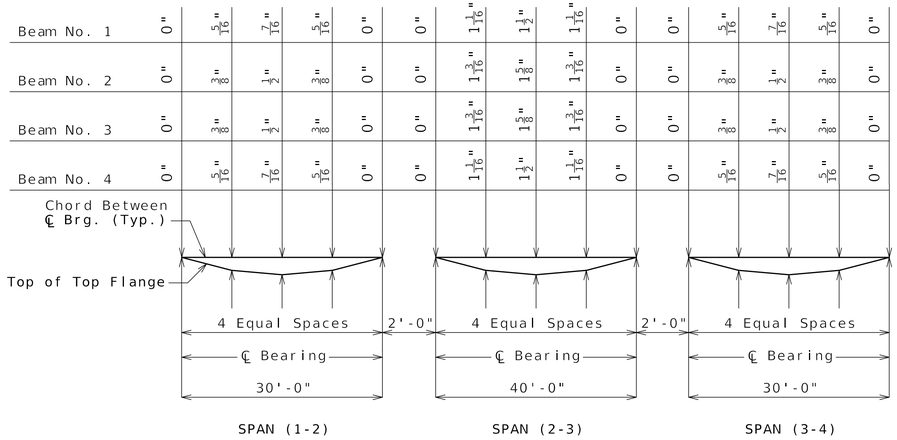
Note: This drawing is not to scale. Follow dimensions.



THEORETICAL SLAB HAUNCHING DIAGRAM (AFTER BARRIER PLACEMENT)

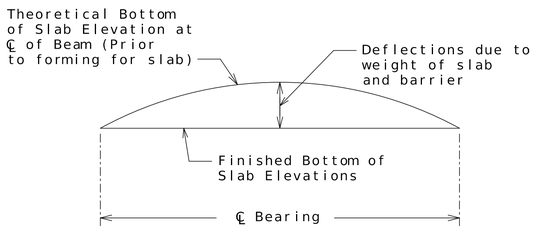
Haunching is estimated based on grade and bent elevations and Dead Load Deflection shown. If elevations or deflections in the field vary, an adjustment of the slab haunches shall be necessary in order to maintain a constant 8 1/2" slab thickness.

Concrete in the slab haunches is included in the Estimated Quantities for Slab on Steel.

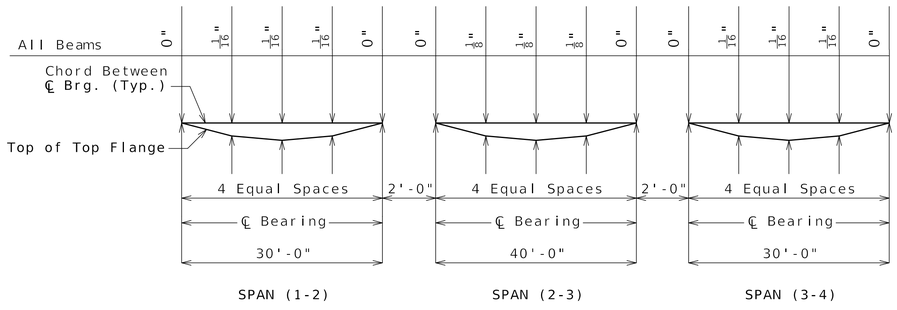


TOTAL DEAD LOAD DEFLECTION

Dead load deflection includes weight of structural steel, concrete slab, and barrier.



TYPICAL SLAB ELEVATIONS DIAGRAM



STEEL DEAD LOAD DEFLECTION

Dead load deflection includes weight of structural steel.

Theoretical Bottom of Slab Elevations at Centerline of Beam (Prior to forming for slab)

Beam Number	Span (1-2) (30'-0" ℄ Brg. - ℄ Brg.)					Span (2-3) (40'-0" ℄ Brg. - ℄ Brg.)					Span (3-4) (30'-0" ℄ Brg. - ℄ Brg.)				
	℄ Brg.	.25	.50	.75	℄ Brg.	℄ Brg.	.25	.50	.75	℄ Brg.	℄ Brg.	.25	.50	.75	℄ Brg.
1	637.22	637.24	637.25	637.24	637.22	637.22	637.30	637.33	637.30	637.22	637.22	637.24	637.25	637.24	637.22
2	637.37	637.39	637.40	637.39	637.37	637.37	637.46	637.49	637.46	637.37	637.37	637.39	637.40	637.39	637.37
3	637.37	637.39	637.40	637.39	637.37	637.37	637.46	637.49	637.46	637.37	637.37	637.39	637.40	637.39	637.37
4	637.22	637.24	637.25	637.24	637.22	637.22	637.30	637.33	637.30	637.22	637.22	637.24	637.25	637.24	637.22

Elevations are based on a constant slab thickness of 8 1/2" and include allowance for theoretical dead load deflections due to weight of slab and barrier.

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COUNTY HOWARD
JOB NO. JCD0137
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9370

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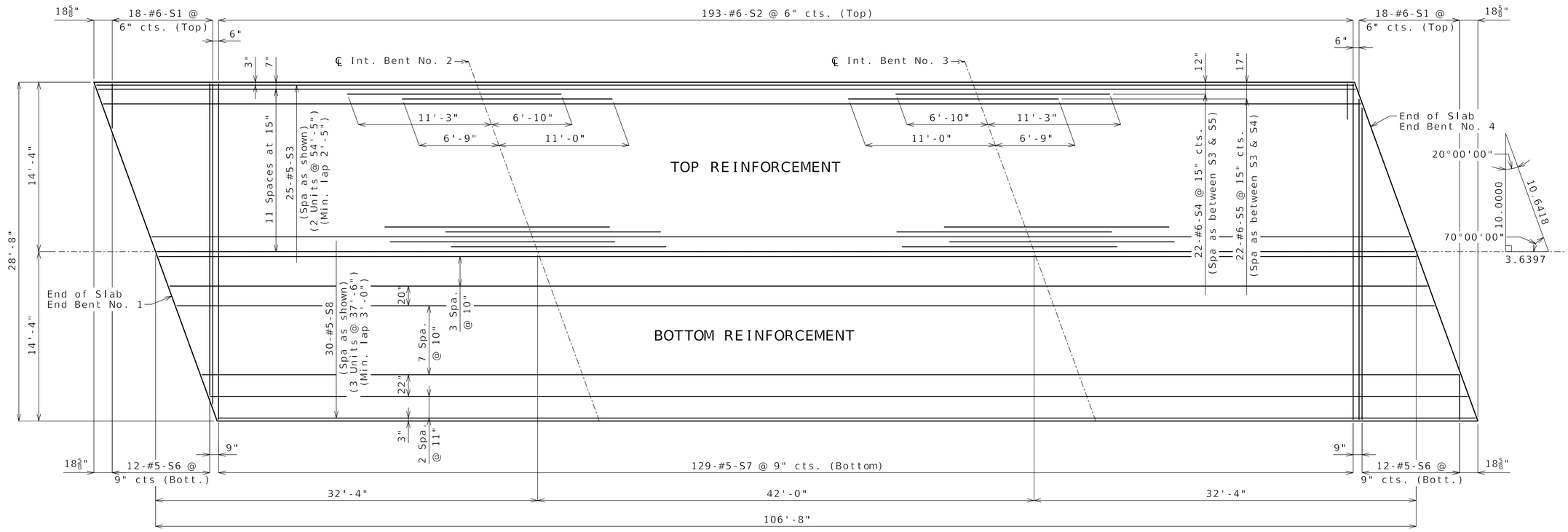
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Checked Sep. 2026

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PLAN OF SLAB SHOWING REINFORCEMENT

Notes:

Longitudinal slab dimensions are measured horizontally.

For Section Thru Slab and Slab Pouring Sequence, see Sheet No. 15.

For details and reinforcement of Type D Barrier not shown, see Sheets No. 16 & 17.

For Theoretical Slab Haunching Diagram, Dead Load Deflections and Theoretical Bottom of Slab Elevations, see Sheet No. 13.

For details and locations of Slab Drains, see Sheet No. 12.

PLAN OF SLAB SHOWING REINFORCEMENT

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9/21/2026

ROUTE	STATE
240	MO
DISTRICT	SHEET NO.
BR	14

COUNTY
HOWARD

JOB NO.
JCD0137

CONTRACT ID.

PROJECT NO.

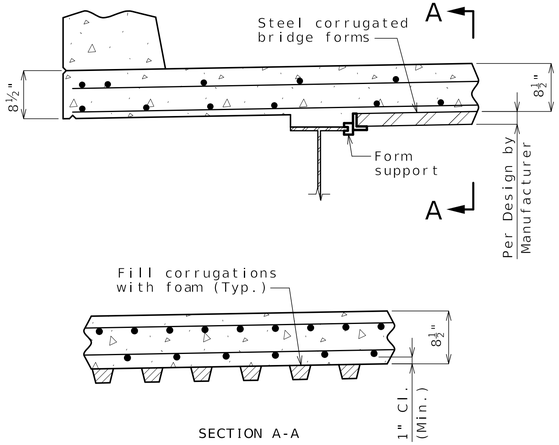
BRIDGE NO.
A9370

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REV.



SECTION A-A

OPTIONAL STAY-IN-PLACE FORM DETAILS

Stay-In-Place Forms:

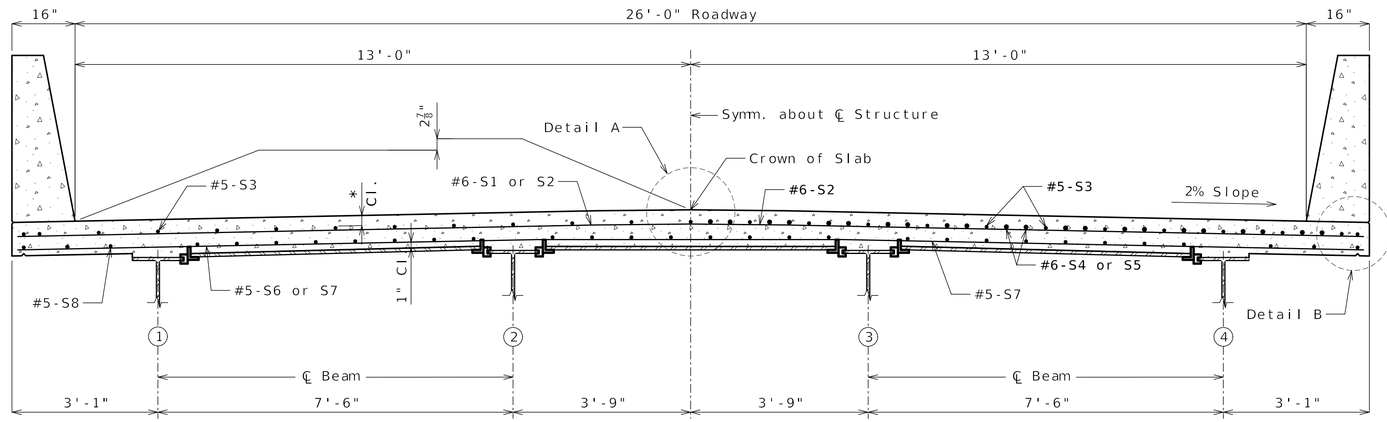
Corrugated steel forms, supports, closure elements and accessories shall be in accordance with grade requirement and coating designation G165 of ASTM A653. Complete shop drawings of the permanent steel deck forms shall be required in accordance with Sec 1080.

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

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

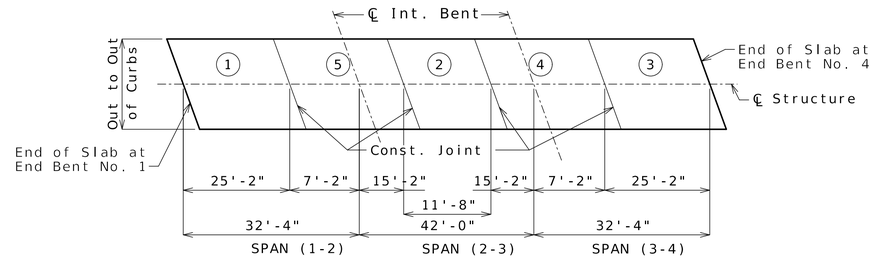
The contractor shall provide a method of preventing the direct contact of the stay-in-place forms and connection components with uncoated weathering steel members that is approved by the engineer.

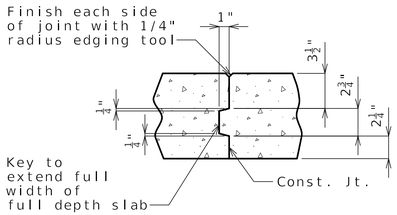


HALF SECTION NEAR MIDSPAN HALF SECTION NEAR INTERMEDIATE BENT

* 3⅛" (#5)
3" (#6)

SECTION THRU SLAB





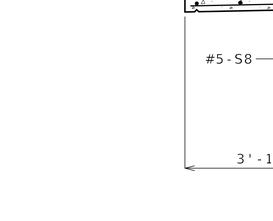
SLAB CONSTRUCTION JOINT

	Sequence of Pours					Min. Rate of Pour Cu. Yds./Hr.	
	Direction					With Retarder	No Retarder
Basic Sequence	1	2	3	4	5	25	25
	Either Direction						
Alternate pours to the basic skip sequence are subject to the approval of the engineer in accordance with Sec 703.							
Alternate A Pours	1		5 + 2		4 + 3	25	25
	End to 5		1 to 4		2 to End		
Alternate B Pours	1 + 5 + 2			4 + 3		25	25
	End to 4			2 to End			
Alternate C Pours	1 + 5 + 2 + 4 + 3					25	25
	End to End						

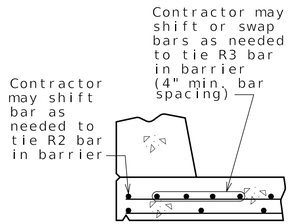
The contractor shall pour and satisfactorily finish the slab pours at the rate given. Retarder, if used, shall be an approved type and retard the set of concrete to 2.5 hours.

SLAB POURING SEQUENCE

DETAIL A



DETAIL B



OPTIONAL SHIFTING TOP BARS AT BARRIER

Notes:

The contractor shall provide bracing necessary for lateral and torsional stability of the beams during construction of the concrete slab and remove bracing after the slab has attained 75% design strength. Contractor shall not weld 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.

For reinforcement of barrier not shown, see Sheet No. 16.

For Theoretical Bottom of Slab Elevations and Theoretical Slab Haunching Diagram, see Sheet No. 13.

For Plan of Slab Showing Reinforcement, see Sheet No. 14.

SLAB DETAILS

Detailed Sep. 2026
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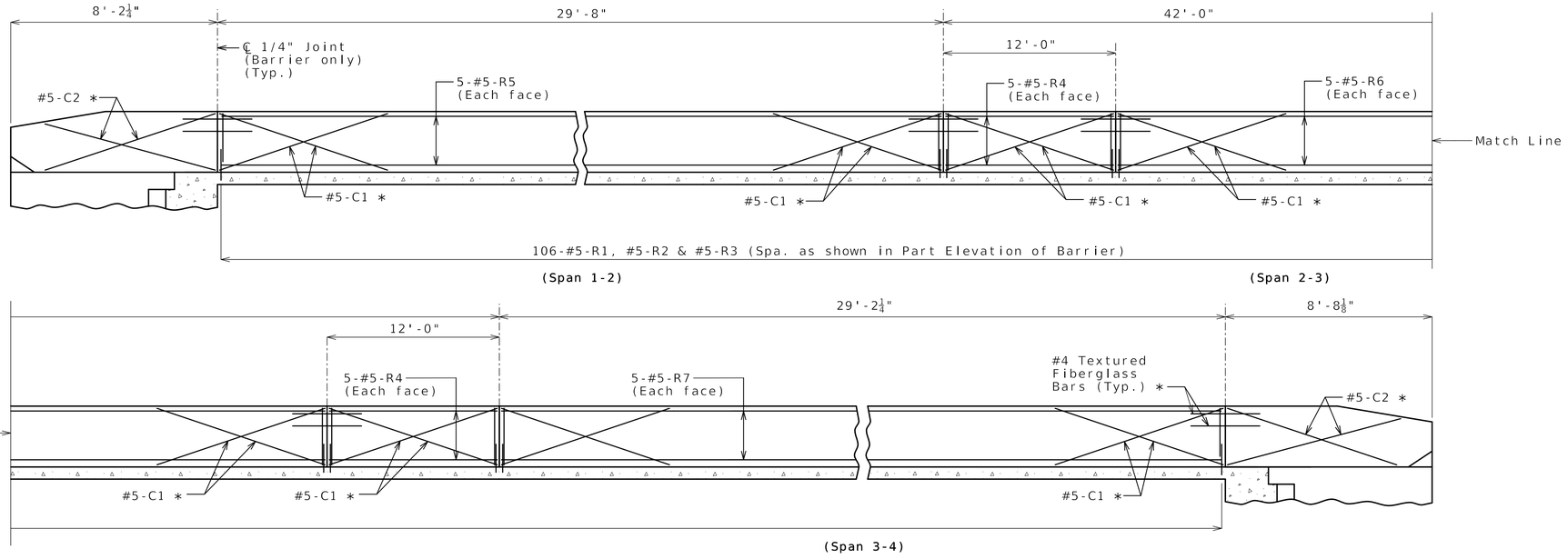
STATE OF MISSOURI
ALEX BENZ
NUMBER PE-2018003121
PROFESSIONAL ENGINEER
Alex C. Benz
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Alex Benz - Civil
MO PE-2018003121

DATE PREPARED 9/21/2026
ROUTE 240 | STATE MO
DISTRICT BR | SHEET NO. 15
COUNTY HOWARD
JOB NO. JCD0137
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9370

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JEFFERSON CITY, MO 65102
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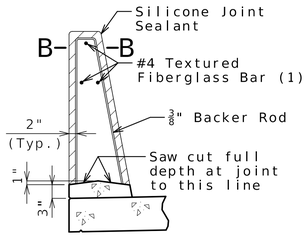
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St. Louis, MO 63026
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Missouri Certificate of Authority: 001578



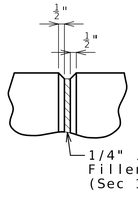
ELEVATION OF BARRIER

(Left barrier shown, right barrier similar)

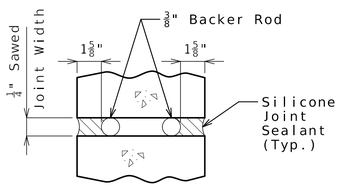
Longitudinal dimensions are horizontal.



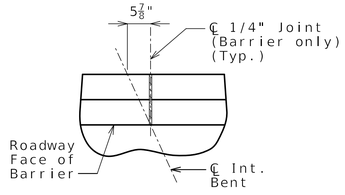
SECTION THRU
SAW CUT JOINT



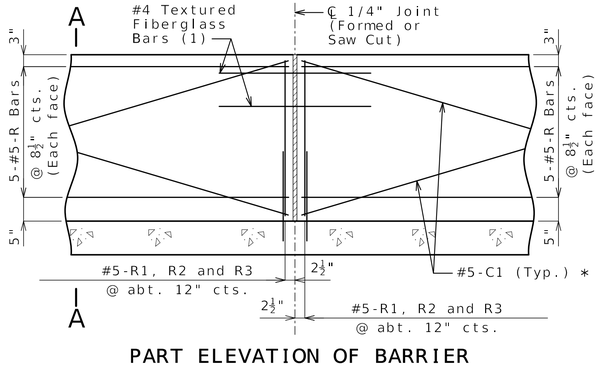
PART ELEVATION
AT FORMED JOINT



SECTION B-B

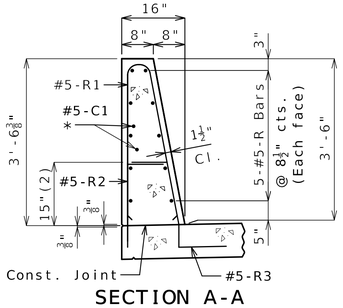


PART PLAN SHOWING
JOINT LOCATION



PART ELEVATION OF BARRIER

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

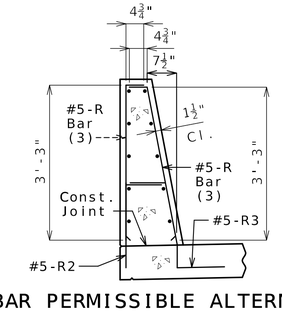


SECTION A-A

Use a minimum lap of 2'-6" for #5 horizontal barrier bars.

The cross-sectional area above the slab is 3.52 square feet.

(2) To top of bar



R-BAR PERMISSIBLE ALTERNATE SHAPE

(3) The R1 bar may be separated into two bars as shown, at the contractor's option, only when slip forming is not used. (All dimensions are out to out.)

General Notes:

* Slip-formed option only.

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

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

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

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

Concrete in barrier shall be Class B-1.

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

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

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

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

TYPE D BARRIER

Detailed Sep. 2026
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ROUTE	STATE
240	MO

DISTRICT	SHEET NO.
BR	16

COUNTY
HOWARD

JOB NO.
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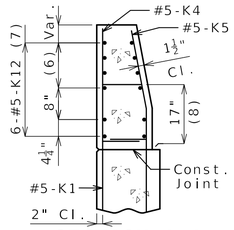
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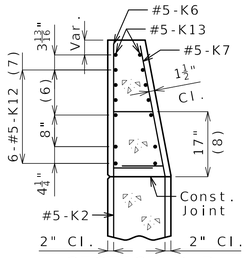
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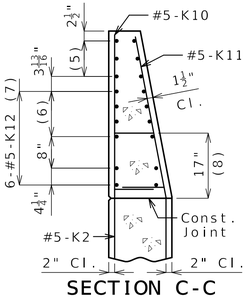
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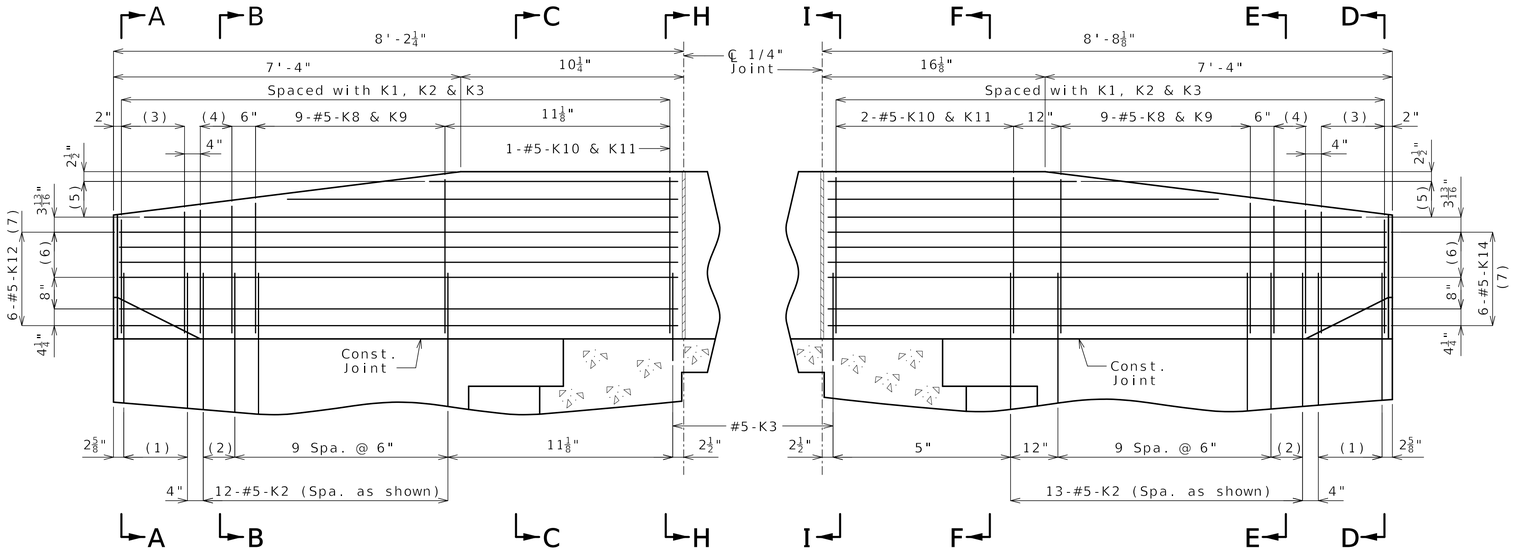
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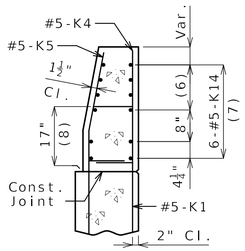
SECTION B-B



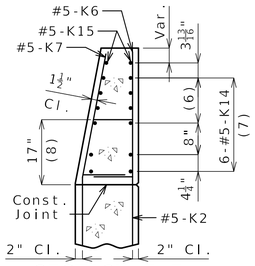
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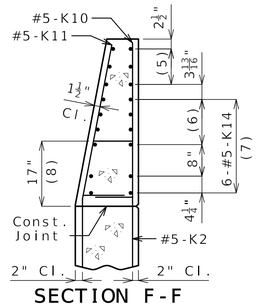
PART ELEVATION



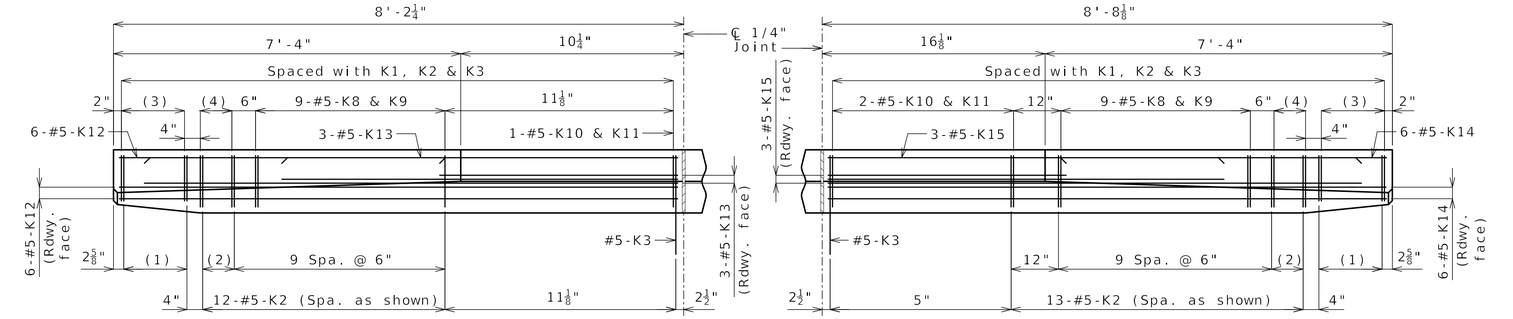
SECTION D-D



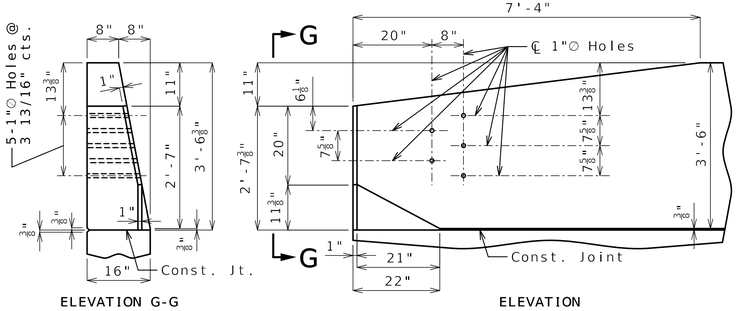
SECTION E-E



SECTION F-F

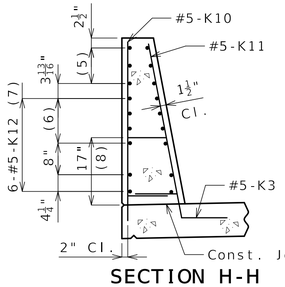


PART PLAN



ELEVATION G-G

ELEVATION



SECTION H-H

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

(2) 2 spaces @ 4"

(3) 5-#5-K4 & K5

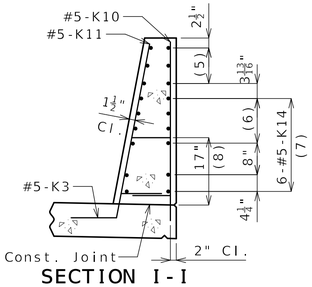
(4) 3-#5-K6 & K7

(5) 3-#5-K13 or K15 @ 4½" cts., each face

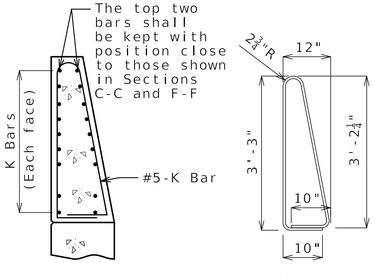
(6) 3 spaces @ 3 13/16"

(7) Spaced as shown, each face

(8) To top of bar



SECTION I-I

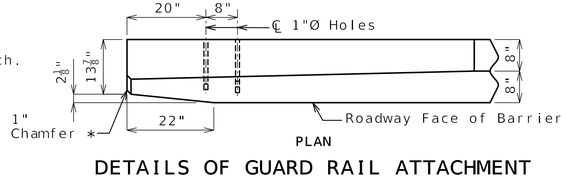


K10-K11 BAR PERMISSIBLE ALTERNATE SHAPE

(Other K bars not shown for clarity)

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

All dimensions are out to out.



PLAN

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

DETAILS OF GUARD RAIL ATTACHMENT

General Notes:

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

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

TYPE D BARRIER AT END BENTS

(Left barrier shown, right barrier similar)

Detailed Sep. 2026
Checked Sep. 2026

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

STATE OF MISSOURI
ALEX BENZ
NUMBER PE-2018003121
PROFESSIONAL ENGINEER
Alex C. Benz
09/21/20269:06:24 AM
Alex Benz - Civil
MO PE-2018003121

DATE PREPARED
9/21/2026

ROUTE	STATE
240	MO
DISTRICT	SHEET NO.
BR	17

COUNTY
HOWARD

JOB NO.
JCD0137

CONTRACT ID.

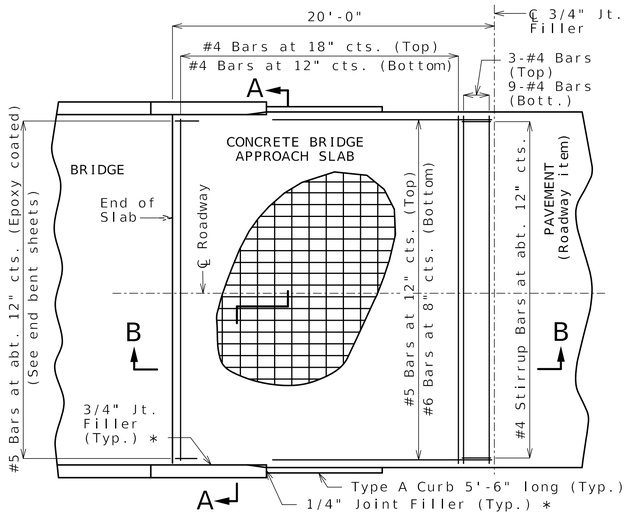
PROJECT NO.

BRIDGE NO.
A9370

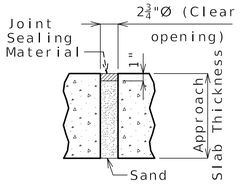
REV.	DESCRIPTION	DATE

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

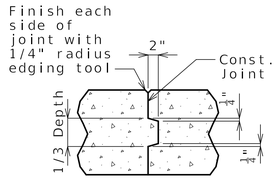
EFK•Moen
Civil Engineering Design
1355 N. Highway Dr.
Suite 200 MO 63026
St. Louis, MO
Phone 314-394-3100
Missouri Certificate of Authority: 001578



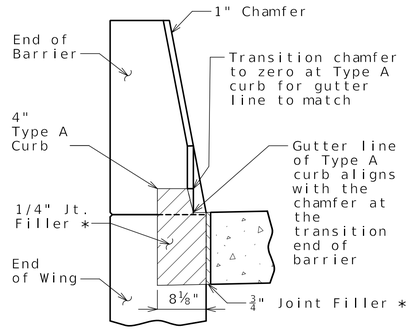
PART PLAN OF SQUARED STRUCTURE
(Skewed structure similar)



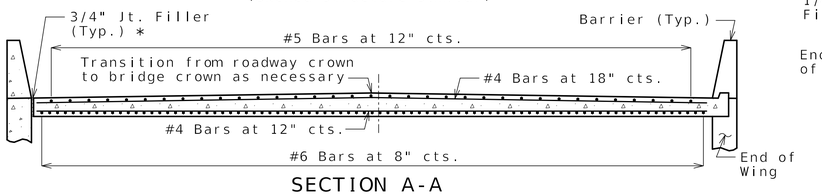
UNDERSEAL ACCESS HOLE DETAIL
(If required)



CONSTRUCTION JOINT DETAIL

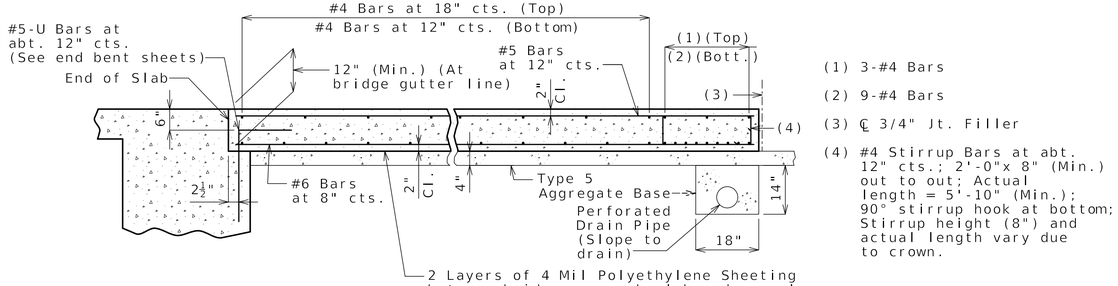


SECTION BETWEEN CURB AND BARRIER



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.



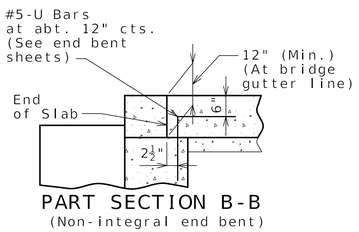
(1) 3-#4 Bars

(2) 9-#4 Bars

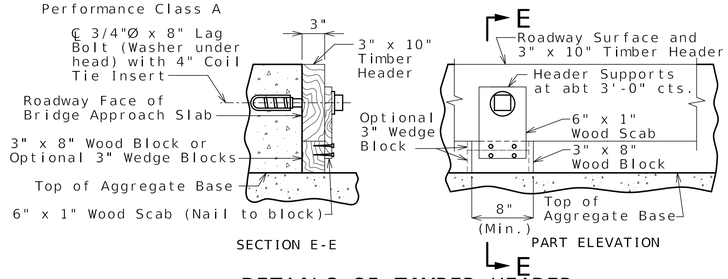
(3) ℄ 3/4" Jt. Filler

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

SECTION B-B
(Integral end bent)



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



SECTION E-E

PART ELEVATION

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

OPTIONAL CONCRETE SLAB

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 26 inches for #4 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.

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

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

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

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

General Notes:

Contractor shall have the option to construct either slab except as noted.

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

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

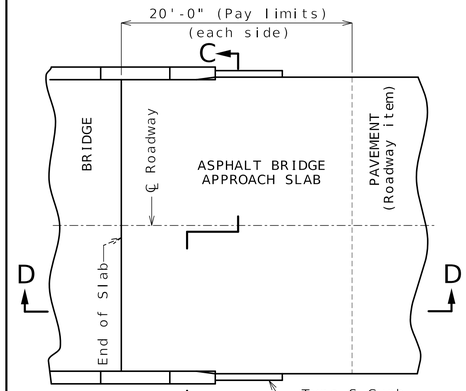
☐ Concrete Bridge Approach Slab

☐ Asphalt Bridge Approach Slab

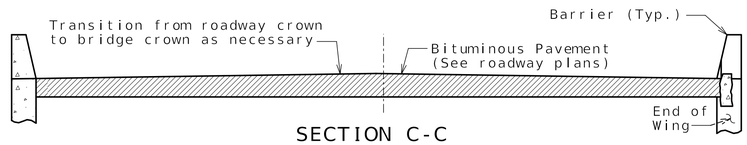
Notes For Asphalt Slab Only:

Payment for furnishing all materials, labor and excavation necessary to construct the asphalt bridge approach slab, including tack, curb, and Type 5 aggregate base within the pay limits shown, complete in place, will be considered completely covered by the contract unit price for Bridge Approach Slab (Minor) per square yard.

Application of tack is required between lifts per Sec 403.

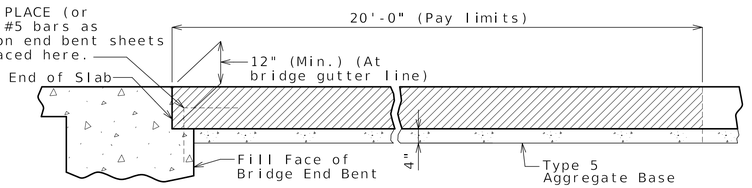


PART PLAN
(Squared structure shown, skewed structure similar)

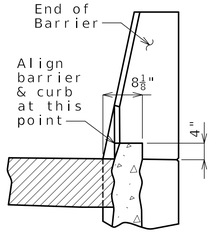


SECTION C-C

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



SECTION D-D



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

OPTIONAL ASPHALT SLAB (NOT ALLOWED WITH CONCRETE PAVEMENT)

BRIDGE APPROACH SLAB (MINOR)

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

Detailed Sep. 2026
Checked Sep. 2026

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

STATE OF MISSOURI
ALEX BENZ
NUMBER PE-2018003121
PROFESSIONAL ENGINEER

Alex C. Benz
09/21/20269:06:24 AM
Alex Benz - Civil
MO PE-2018003121

DATE PREPARED 9/21/2026

ROUTE	STATE
240	MO
DISTRICT	SHEET NO.
BR	18

COUNTY: HOWARD

JOB NO.: JCD0137

CONTRACT ID.:

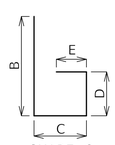
PROJECT NO.:

BRIDGE NO.: A9370

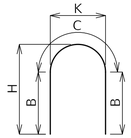
DESCRIPTION	DATE

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

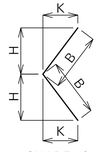
EFK•Moen
Civil Engineering Design
1355 N. Highway Dr.
Suite 200
St. Louis, MO 63026
Phone 314-394-3100
Missouri Certificate of Authority: 001578



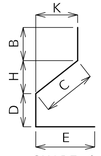
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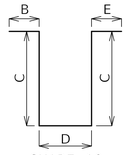
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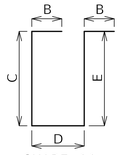
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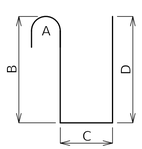
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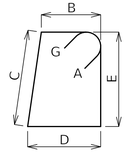
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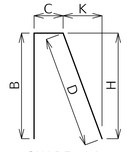
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or 11S



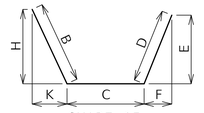
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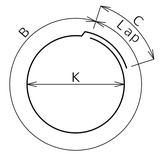
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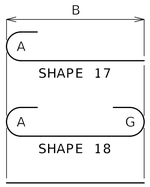
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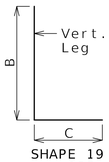
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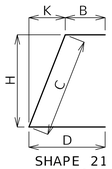
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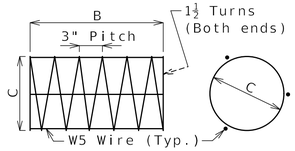
SHAPE 17
SHAPE 18
SHAPE 20



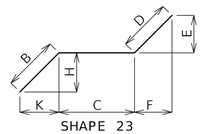
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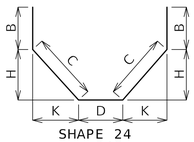
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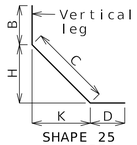
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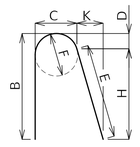
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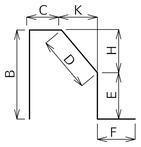
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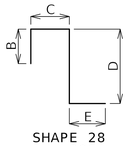
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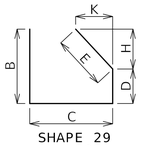
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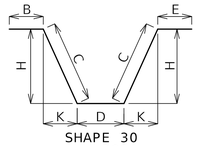
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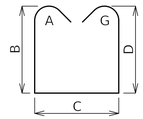
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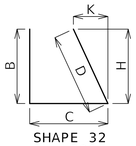
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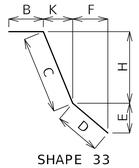
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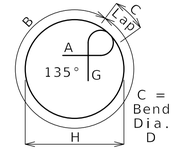
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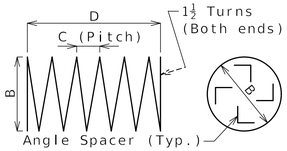
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SHAPE 33
or 33S



SHAPE 34S



SHAPE 35 (1)

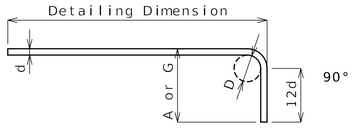


SHAPE 36

Finished Bend Diameters D and Hook Dimensions

Standard Pin Bend Shapes

Size	Case	D	A or G		J
			90°	180°	180°
#4	1	3"	8"	6"	4"
#5	1	3¾"	10"	7"	5"
#6	1	4½"	12"	8¼"	6"
#7	2	5¼"	14"	9⅜"	7"
	3	7"	15"	11½"	8¾"
#8	2	6"	16"	11"	8"
	3	8"	17"	13¼"	10"
#9	1	9½"	19½"	15½"	11¾"
#10	1	10¾"	22"	17½"	13¼"
#11	1	12"	24½"	19½"	14⅞"
#14	1	18¼"	31¼"	27½"	21⅝"
#18	1	24"	41½"	36¾"	28½"

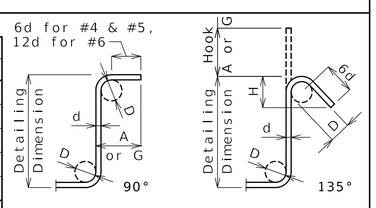


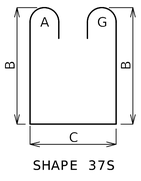
Stirrup Pin Bend Shapes (S)

Size	Case	D	A or G			H	J
			90°	135°	180°	135°	180°
#4	2	2"	4½"	4½"	5"	2⅝"	3"
	3	3"	5"	5¼"	6"	3"	4"
#5	2	2½"	5¾"	5¾"	5¾"	3⅝"	3¾"
	3	3¾"	6¼"	6½"	7"	3⅞"	5"
#6	1	4½"	12"	7¾"	8¼"	4⅝"	6"

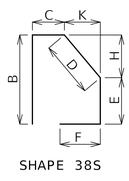
Applicable for all grades of steel.

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





SHAPE 37S



SHAPE 38S

BENDING DIAGRAMS

All dimensions are out to out.

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

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

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

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

Reinforcing Steel Totals (Pounds)

	Size	Substructure		Superstructure				Entire Bridge	
				Slab			Slip		
		Plain	Epoxy	Plain	Epoxy	Barrier	Form	Plain	Epoxy
By Size	W5	0	0	0	0	0	0	0	0
	4	109	0	0	299	0	0	109	299
	5	829	0	0	8190	6208	449	829	18367
	6	603	0	0	15169	0	0	603	15169
	7	989	0	0	0	0	0	989	0
	8	0	0	0	691	0	0	0	691
	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		2,530	0	0	24,349	6,208	449	2,530	34,526

All superstructure reinforcing steel shall be galvanized unless otherwise specified.

BENDING DIAGRAMS AND REINFORCING STEEL TOTALS

Detailed Sep. 2026
Checked Sep. 2026

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

STATE OF MISSOURI
ALEX BENZ
NUMBER PE-2018003121
PROFESSIONAL ENGINEER
Alex C. Benz
09/21/20269:06:24 AM
Alex Benz - Civil
MO PE-2018003121

DATE PREPARED 9/21/2026
ROUTE 240 | STATE MO
DISTRICT BR | SHEET NO. 19
COUNTY HOWARD
JOB NO. JCD0137
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9370

DESCRIPTION | DATE

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

EFK•Moen
Civil Engineering Design
1355 N. Highway Dr.
Suite 200 MO 63026
St. Louis, MO
Phone 314-394-3100
Missouri Certificate of Authority: 001578

Bill of Reinforcing Steel

No. Req.	Size/ Mark	Location	Codes C	SH	V	Dimensions B ft in.	C ft in.	D ft in.	E ft in.	F ft in.	H ft in.	K ft in.	Nom. Length ft in.	Actual Length ft in.	Weight lb
		SUBSTRUCTURE													
		INT. BENT NO. 2 & 3													
38	6 D200	KEY		20		2 6.000							2 6	2 6	143
16	7 H200	BEAM		18		28 8.000							30 3	30 3	989
8	6 H201	BEAM		20		28 8.000							28 8	28 8	344
16	6 H202	BEAM		10 S			12.000	3 1.500					5 2	4 10	116
56	5 U200	BEAM		13 S		3 3.000	2 9.000	3 3.000	2 9.000				12 11	12 8	740
10	5 U201	BEAM		10 S			2 9.000	3 3.000					8 9	8 6	89
40	4 U202	BEAM		10 S			6.000	3 3.000					4 3	4 1	109
		SUPERSTRUCTURE													
		END BENTS 1 & 4													
14	6 F100	WING BRACE	E	23 S		20.000	4 3.000	20.000	16.375	11.500	16.375	11.500	7 7	7 6	158
4	6 F101	DIAPHRAGM	E	21 S		4 3.000	2 11.000				2 8.875	12.125	7 2	7 1	43
14	6 F102	WING BRACE	E	23 S		20.000	6 0.500	20.000	11.500	16.375	11.500	16.375	9 5	9 4	196
4	6 F103	DIAPHRAGM	E	21 S			2 11.000	5 2.000			2 8.875	12.000	8 1	7 8	46
44	6 H100	BM & DIAPH	E	20		30 3.000							30 3	30 3	1999
32	8 H101	WING	E	6		7 6.000	12.000						8 6	8 1	691
32	6 H102	WING	E	6		6 1.000	12.000						7 1	6 9	324
42	5 U100	BEAM	E	37 S		4 0.000	2 11.000						11 11	11 7	507
4	4 U101	BEAM	E	13 S		2 11.000	2 8.000	2 11.000	2 8.000				11 11	11 8	31
4	4 U102	BEAM	E	10 S			2 8.000	2 8.000					8 0	7 10	21
76	6 U103	DIAPHRAGM	E	19 S		1 11.000	4 5.000						6 4	6 2	704
54	5 U104	DIAPHRAGM	E	37 S		1 11.000	2 4.000						7 2	6 10	385
54	6 U105	DIAPHRAGM	E	19 S		11.000	2 11.000						3 10	3 8	297
52	5 U106	DIAPHRAGM	E	19 S		2 0.000	15.000						3 3	3 2	172
12	5 V100	BM & DIAPH	E	17		4 0.000							4 6	4 6	56
24	6 V101	DIAPHRAGM	E	20		11.000							0 11	0 11	33
40	6 V102	WING	E	20		5 0.000							5 0	5 0	300
		INT DIAPHRAGMS													
12	6 H500	DIAPHRAGM	E	20		26 7.000							26 7	26 7	479
12	6 H501	DIAPHRAGM	E	11			21.000	3 1.000	7.750				5 6	5 2	93
60	4 U500	DIAPHRAGM	E	28 S			15.000	20.500	3 5.000				6 5	6 2	247
24	6 U501	DIAPHRAGM	E	28 S			22.000	20.500	3 5.000				7 0	6 8	240
16	5 V500	DIAPHRAGM	E	20		23.000							1 11	1 11	32
		SLAB													
36	6 S1	SLAB	E	20	2	3 9.000							3 9	3 9	834
		INCR=16 1/2 IN				27 1.000							27 1	27 1	
193	6 S2	SLAB	E	20		28 5.000							28 5	28 5	8238
50	5 S3	SLAB	E	20		54 5.000							54 5	54 5	2838
22	6 S4	SLAB	E	20		18 1.000							18 1	18 1	598
22	6 S5	SLAB	E	20		17 9.000							17 9	17 9	587
24	5 S6	SLAB	E	20	2	3 9.000							3 9	3 9	377
		INCR=24 5/8 IN				26 4.000							26 4	26 4	
129	5 S7	SLAB	E	20		28 5.000							28 5	28 5	3823
90	5 S8	SLAB	E	20		37 6.000							37 6	37 6	3520

Bill of Reinforcing Steel

No. Req.	Size/ Mark	Location	Codes C	SH	V	Dimensions B ft in.	C ft in.	D ft in.	E ft in.	F ft in.	H ft in.	K ft in.	Nom. Length ft in.	Actual Length ft in.	Weight lb
		BARRIER													
20	5 K1	BARRIER	E	27 S		3 5.000	9.250	5.375	2 11.750		5.250	1.000	7 7	7 5	155
50	5 K2	BARRIER	E	27 S		3 5.000	9.250	14.500	2 2.750		14.250	2.750	7 8	7 5	387
4	5 K3	BARRIER	E	27 S		22.500	9.250	14.500	7.750	12.000	14.250	2.750	5 6	5 2	22
20	5 K4	BARRIER	E	19 S	4	2 6.250	10.000						3 4	3 3	66
		INCR=0 1/2 IN				2 4.250	10.000						3 2	3 1	
20	5 K5	BARRIER	E	38 S	4			20.500	9.500	8.250	20.000	4.500	3 2	3 0	65
		INCR=0 1/2 IN						18.500	9.500	8.250	18.000	4.000	3 0	2 10	
12	5 K6	BARRIER	E	19 S		2 6.750	10.000						3 5	3 3	41
12	5 K7	BARRIER	E	21 S			2 6.625	10.000			2 6.000	6.250	3 5	3 2	40
36	5 K8	BARRIER	E	19 S	4	3 2.500	10.000						4 0	3 11	116
		INCR=0 3/4 IN				2 8.500	10.000						3 6	3 5	
36	5 K9	BARRIER	E	21 S	4		3 2.500	10.000			3 1.750	7.750	4 0	3 10	142
		INCR=0 3/4 IN					2 8.500	10.000			2 7.750	6.750	3 6	3 5	
6	5 K10	BARRIER	E	19 S		3 3.000	10.000						4 1	4 0	25
6	5 K11	BARRIER	E	21 S			3 3.000	10.000			3 2.250	7.750	4 1	3 10	24
24	5 K12	BARRIER	E	20		7 10.000							7 10	7 10	196
12	5 K13	BARRIER	E	20	4	7 1.000							7 1	7 1	51
		INCR=36IN				1 1.000							1 1	1 1	
24	5 K14	BARRIER	E	20		8 4.000							8 4	8 4	209
12	5 K15	BARRIER	E	20	4	7 7.000							7 7	7 7	57
		INCR=36IN				1 7.000							1 7	1 7	
212	5 R1	BARRIER	E	26		3 3.000	5.500	2.250	3 1.375		3 0.750	6.750	6 11	5 10	1290
212	5 R2	BARRIER	E	19 S		20.500	9.500						2 6	2 5	534
212	5 R3	BARRIER	E	27 S			9.500	15.250	5.000	12.000	15.000	3.000	3 6	3 3	719
40	5 R4	BARRIER	E	20		11 8.000							11 8	11 8	487
20	5 R5	BARRIER	E	20		29 4.000							29 4	29 4	612
20	5 R6	BARRIER	E	20		17 8.000							17 8	17 8	369
20	5 R7	BARRIER	E	20		28 10.000							28 10	28 10	601
		SLIP FORM OPTION													
32	5 C1	BARRIER	E	20		12 0.000							12 0	12 0	401
8	5 C2	BARRIER	E	20		5 9.000							5 9	5 9	48

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. 19.

Reinforcing steel (ASTM A706 Grade 60) fy = 60,000 psi

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 Sep. 2026
Checked Sep. 2026

BILL OF REINFORCING STEEL

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

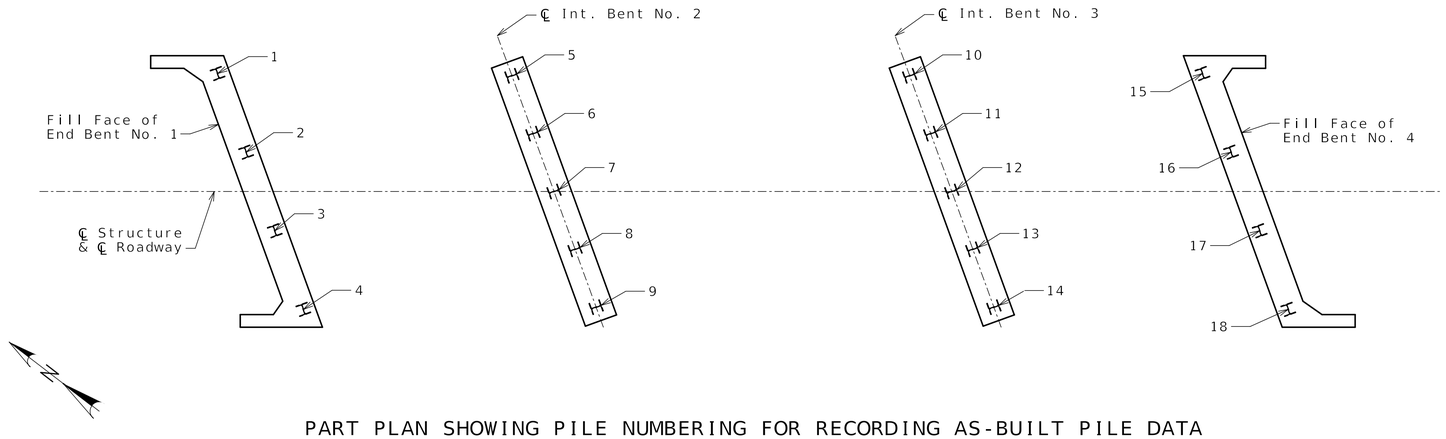
STATE OF MISSOURI
ALEX BENZ
NUMBER PE-2018003121
PROFESSIONAL ENGINEER
Alex C. Benz
09/21/20269:06:24 AM
Alex Benz - Civil
MO PE-2018003121

DATE PREPARED 9/21/2026
ROUTE 240 | STATE MO
DISTRICT BR | SHEET NO. 20
COUNTY HOWARD
JOB NO. JCD0137
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9370

DESCRIPTION | DATE

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

EFK•Moen
Civil Engineering Design
1355 N. Highway Dr.
Suite 200
St. Louis, MO 63026
Phone 314-394-3100
Missouri Certificate of Authority: 001578



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

As-Built Pile Data			
Pile No.	Length in Place (ft)	Computed Nominal Axial Compressive Resistance (kips)	Remarks
			End Bent No. 1
1			
2			
3			
4			
			Int. Bent No. 2
5			
6			
7			
8			
9			

As-Built Pile Data			
Pile No.	Length in Place (ft)	Computed Nominal Axial Compressive Resistance (kips)	Remarks
			Int. Bent No. 3
10			
11			
12			
13			
14			
			End Bent No. 4
15			
16			
17			
18			

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

This sheet to be completed by MoDOT construction personnel.

AS BUILT PILE DATA

Detailed Sep. 2026
Checked Sep. 2026

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

STATE OF MISSOURI
ALEX BENZ
NUMBER PE-2018003121
PROFESSIONAL ENGINEER
Alex C. Benz
09/21/20269:06:24 AM
Alex Benz - Civil
MO PE-2018003121

DATE PREPARED 9/21/2026
ROUTE 240 | STATE MO
DISTRICT BR | SHEET NO. 21
COUNTY HOWARD
JOB NO. JCD0137
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9370

DESCRIPTION | DATE | REV.

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

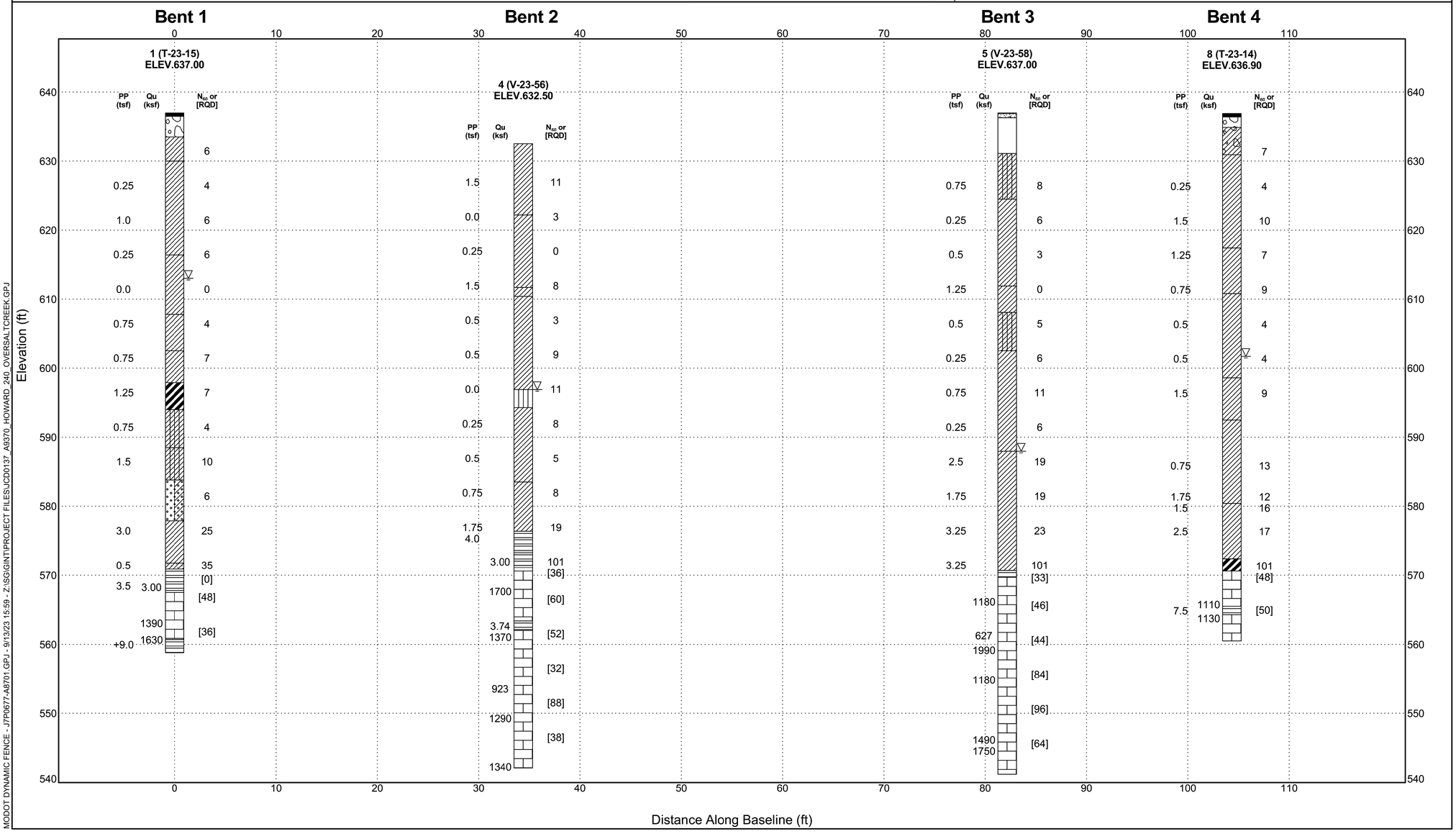
EFK•Moen
Civil Engineering Design
1355 N. Highway Dr.
Suite 200
St. Louis, MO 63026
Phone 314-394-3100
Missouri Certificate of Authority: 001578

Missouri Dept of Transportation

SUBSURFACE DIAGRAM

PROJECT NAME Bridge Replacement
PROJECT LOCATION Over Salt Creek
CLIENT
PROJECT NUMBER JCD0137-A9370

- Asphalt
- USCS Low Plasticity Silty Clay
- USCS Low Plasticity Sandy Clay
- USCS Silt
- USCS Poorly-graded Gravel
- USCS High Plasticity Clay
- Shale
- Concrete
- USCS Low Plasticity Clay
- USCS Well-graded Sand with Clay
- Limestone
- No Core



BORING DATA

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

Detailed Sep. 2026
Checked Sep. 2026

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

Sheet No. 22 of 22

MODOT DYNAMIC FENCE - J7P0677-A8701.GPJ - 9/13/23 15:59 - Z:\SG\GINT\PROJECT FILES\JCD0137_A9370_HOWARD_240_OVERSALTCREEK.GPJ

STATE OF MISSOURI
ALEX BENZ
NUMBER PE-2018003121
PROFESSIONAL ENGINEER

Alex C. Benz
09/21/20269:06:24 AM
Alex Benz - Civil
MO PE-2018003121

DATE PREPARED 9/21/2026
ROUTE 240
STATE MO
DISTRICT BR
SHEET NO. 22
COUNTY HOWARD
JOB NO. JCD0137
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9370

DESCRIPTION | DATE

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

EFK•Moen
Civil Engineering Design
1355 N. Highway Dr.
Suite 200
St. Louis, MO 63026
Phone 314-394-3100
Missouri Certificate of Authority: 001578

O:\2021R2\MoDOT_ORD_v10.10.01.03\23030 MoDOT JCD0137 Route 240\DGN\Bridge\Final\Plotsheets\B_A9370_022_JCD0137_Boring-Data.dgn 9:00:41 AM 9/21/2026

DESIGN DESIGNATION

A.A.D.T. - 2027 = 682
A.A.D.T. - 2057 = 725
PEAK HOUR = 11.34%
T = 6%
V = 55 M.P.H.
D (E/W) = 48.2%/51.8%

FUNCTIONAL CLASSIFICATION = MAJOR COLLECTOR MINOR ROADWAY

NO 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	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

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

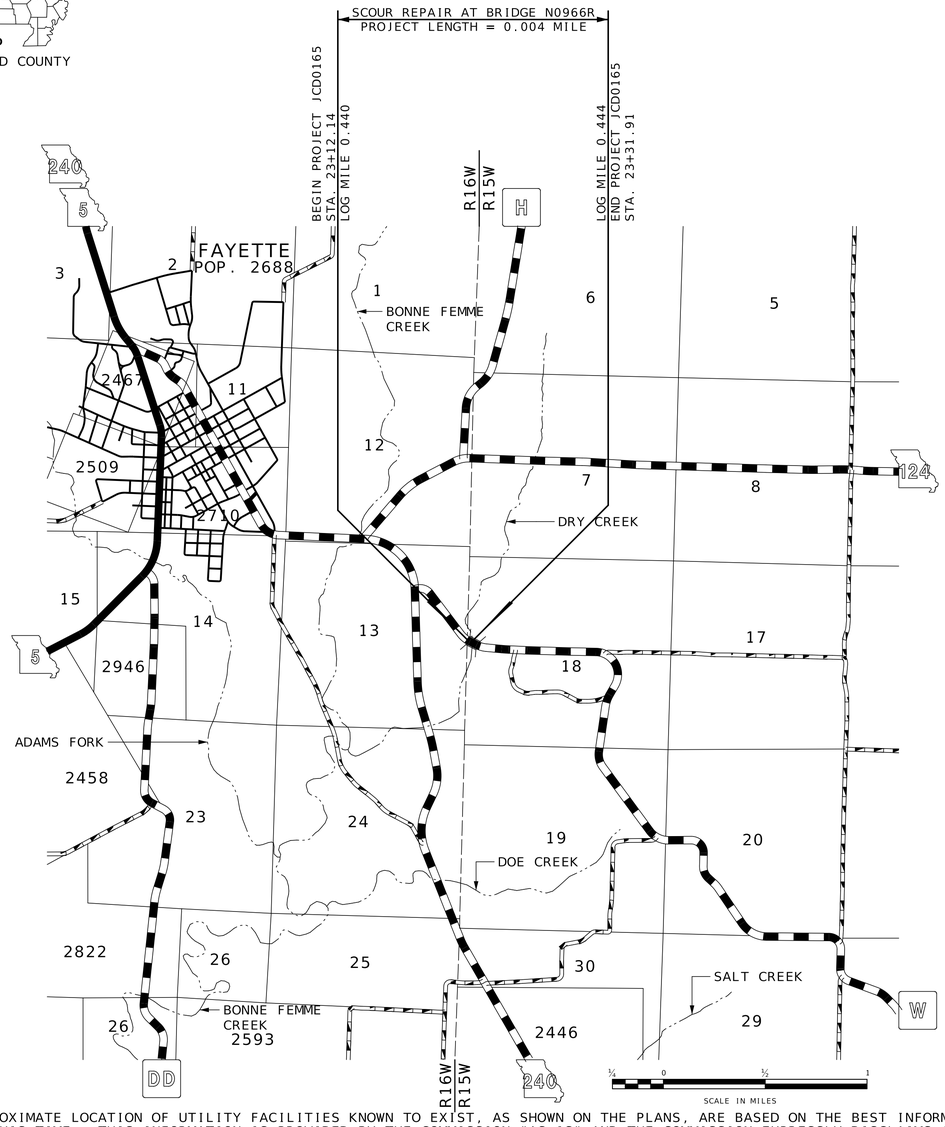
PLANS FOR PROPOSED

STATE HIGHWAY
HOWARD COUNTY
ROUTE W

TOWNSHIP 50 NORTH, RANGE 15 WEST, SECTION 18



KEY MAP
LOCATION OF HOWARD 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

DESCRIPTION	SHEET NUMBER
TITLE SHEET	1
TYPICAL SECTIONS (TS) (1 SHEET)	2
QUANTITIES (QU) (2 SHEETS)	3
PLAN-PROFILE (PP)	4
COORDINATE POINTS (CP)	5
SPECIAL SHEETS (SS)	6-8
TRAFFIC CONTROL SHEETS (TC)	9-10
EROSION CONTROL SHEETS (EC)	11

LENGTH OF PROJECT

BEGINNING OF PROJECT	STA.	23 + 12.14
END OF PROJECT	STA.	23 + 31.91
APPARENT LENGTH		19.77 FEET

EQUATIONS AND EXCEPTIONS:
NONE

TOTAL CORRECTIONS	0.00 FEET
NET LENGTH OF PROJECT	19.77 FEET
STATE LENGTH	0.004 MILES
FOR INFORMATION ONLY ESTIMATED DISTURBED ACRES	0.20 ACRES

STATE OF MISSOURI
PATRICK J. HAKE
NUMBER PE-2010000826
PROFESSIONAL ENGINEER
09/15/2026 9:18:23 AM
PATRICK J. HAKE - CIVIL
MO-PE-2010000826

DATE PREPARED: 9/15/2026

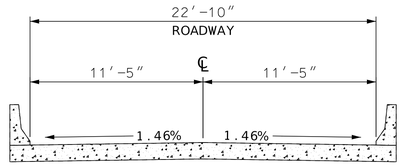
ROUTE	STATE
W	MO
DISTRICT	SHEET NO.
CD	1

COUNTY: HOWARD
JOB NO.: JCD0165
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

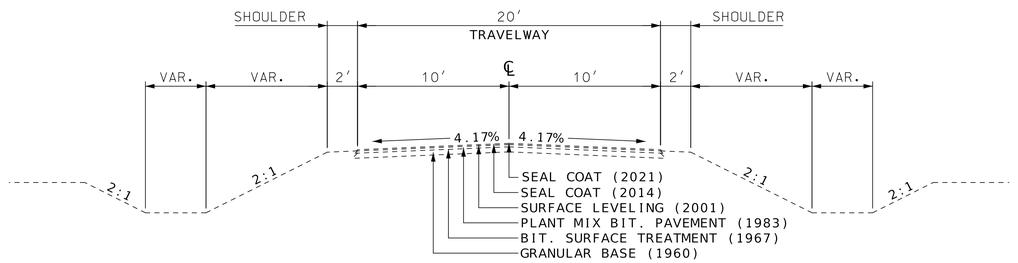
DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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



SECTION ON TANGENT
EXISTING BRIDGE (N0966R) TYPICAL SECTION ROUTE W
STA. 23+08.75 TO STA. 24+01.21



SECTION ON TANGENT
EXISTING TYPICAL SECTION ROUTE W
STA. 21+00.00 TO STA. 23+08.75
STA. 24+01.21 TO STA. 26+00.00

STATE OF MISSOURI
PATRICK J. HAKE
NUMBER PE-2010000826
PROFESSIONAL ENGINEER
09/15/2026 9:19:27 AM
PATRICK J. HAKE - CIVIL
MO-PE-2010000826

DATE PREPARED
9/15/2026

ROUTE	STATE
W	MO
DISTRICT	SHEET NO.
CD	2

COUNTY
HOWARD

JOB NO.
JCD0165

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

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

TYPICAL SECTION SHEET
SHEET 1 OF 1

REMOVAL OF IMPROVEMENTS QUANTITIES

PLAN SHEET NO.	STATION	STATION	LOC.	DESCRIPTION	REMARKS
4 & 6	23+12.00	23+19.00	RTE. W ℄	19 CU.YD.GABION BASKETS	UNDER BRIDGE ALONG WEST STREAM BANK
LUMP SUM 1					

EXCAVATION QUANTITIES

STATION	STATION	LOC.	CLASS 2 EXC. CU.YD.	REMARKS
23+12.14	23+31.91	RTE. W	140.00	ALONG WEST STREAM BANK
		TOTAL	140.00	
		PAY TOTAL	140.0	

ROCK BLANKET QUANTITIES

STATION	STATION	LOC.	FURNISHING TYPE 2 ROCK BLANKET CU.YD.	PLACING TYPE 2 ROCK BLANKET CU.YD.	REMARKS
23+12.14	23+31.91	RTE. W	170.0	170.0	ALONG WEST STREAM BANK
		TOTALS	170.0	170.0	
		PAY TOTALS	170	170	

MOBILIZATION

LUMP SUM 1

SEEDING AND MULCH QUANTITIES

STATION	STATION	LOC.	MULCHING ACRE	SEEDING COOL SEASON GRASSES ACRE
22+00.00	23+00.50	RTE. W LT.	0.08	0.08
22+00.00	23+38.68	RTE. W RT.	0.13	0.13
		TOTALS	*0.21	*0.21
PAY TOTAL LUMP SUM 1				

*QUANTITIES FOR INFORMATIONAL PURPOSE ONLY

TEMPORARY EROSION CONTROL QUANTITIES

STATION	STATION	LOC.	SPACING FT.	SEDIMENT TRAP ROCK CU.YD.	ROCK DITCH CHECK L.F.	SEDIMENT REMOVAL CU.YD.	REMARKS
22+52.00	22+84.00	RTE. W LT.	8		48.8	5.0	5 DITCH CHECKS
22+68.00	23+40.00	RTE. W RT.	24		41.6	4.0	4 DITCH CHECKS
23+52.00		RTE. W RT.		0.62		1.0	
			TOTALS	0.62	90.4	10.0	
			PAY TOTALS	0.6	90	10	

STATE OF MISSOURI
PATRICK J. HAKE
NUMBER PE-2010000826
PROFESSIONAL ENGINEER
09/15/2026 9:18:47 AM
PATRICK.J.HAKE - CIVIL
MO-PE-2010000826

DATE PREPARED: 9/15/2026

ROUTE	STATE
W	MO
DISTRICT	SHEET NO.
CD	3

COUNTY: HOWARD

JOB NO.: JCD0165

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)

SUMMARY OF QUANTITIES

SHEET 1 OF 2

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL AREA SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NO.	DESCRIPTION
WARNING SIGNS								
WO1-1L	48X48	16.00						TURN (SYMBOL LEFT)
WO1-1R	48X48	16.00						TURN (SYMBOL RIGHT)
WO1-2L	48X48	16.00						CURVE (SYMBOL LEFT)
WO1-2R	48X48	16.00						CURVE (SYMBOL RIGHT)
WO1-3L	48X48	16.00						REVERSE TURN (SYMBOL LEFT)
WO1-3R	48X48	16.00						REVERSE TURN (SYMBOL RIGHT)
WO1-4L	48X48	16.00						REVERSE CURVE (SYMBOL LEFT)
WO1-4R	48X48	16.00						REVERSE CURVE (SYMBOL RIGHT)
WO1-4bL	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL LEFT)
WO1-4bR	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL RIGHT)
WO1-4cL	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL LEFT)
WO1-4cR	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL RIGHT)
WO1-6	60X30	12.50						HORIZONTAL ARROW (SYMBOL)
WO1-6a	72X36	18.00						HORIZ. ARROW (SYMBOL ON PERMANENT BARRICADE)
WO1-7	60X30	12.50						DOUBLE HEAD HORIZONTAL ARROW (SYMBOL)
WO1-7a	72X36	18.00						DOUBLE HEAD HORIZ. ARROW (SYMBOL ON PERM. BARR.)
WO1-8	18X24	3.00						CHEVRON (SYMBOL)
WO1-8a	30X36	7.50						CHEVRON (SYMBOL FOR DIVIDED HIGHWAYS)
WO3-1	48X48	16.00						STOP AHEAD (SYMBOL)
WO3-2	48X48	16.00						YIELD AHEAD (SYMBOL)
WO3-3	48X48	16.00						SIGNAL AHEAD (SYMBOL)
WO3-4	48X48	16.00						BE PREPARED TO STOP
WO3-5	48X48	16.00						SPEED LIMIT AHEAD
WO4-1L	48X48	16.00						MERGE (SYMBOL FROM LEFT)
WO4-1R	48X48	16.00						MERGE (SYMBOL FROM RIGHT)
WO4-1aL	48X48	16.00						MERGE (LEFT)
WO4-1aR	48X48	16.00						MERGE (RIGHT)
WO5-1	48X48	16.00						ROAD/BRIDGE/RAMP NARROWS
WO5-3	48X48	16.00						ONE LANE BRIDGE
WO5-5	48X48	16.00						NARROW LANES
WO6-1	48X48	16.00						DIVIDED HIGHWAY (SYMBOL)
WO6-2	48X48	16.00						DIVIDED HIGHWAY END (SYMBOL)
WO6-3	48X48	16.00						TWO WAY TRAFFIC (SYMBOL)
WO7-3a	30X24	5.00						NEXT XX MILES (PLAQUE)
WO8-1	48X48	16.00						BUMP
WO8-2	48X48	16.00						DIP
WO8-3	48X48	16.00						PAVEMENT ENDS
WO8-4	48X48	16.00						SOFT SHOULDER
WO8-5	48X48	16.00						SLIPPERY WHEN WET (SYMBOL)
WO8-6	48X48	16.00						TRUCK CROSSING
WO8-6c	48X48	16.00	2	32.00			9	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	2	32.00			2	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
WO20-5	48X48	16.00						RIGHT/CENTER/LEFT LANE CLOSED AHEAD
WO20-5a	48X48	16.00						2 RIGHT/CENTER/LEFT LANES CLOSED AHEAD
WO20-6a	48X48	16.00						RIGHT/CENTER/LEFT LANE CLOSED
WO20-7a	48X48	16.00	2	32.00			8	FLAGGER (SYMBOL)
WO21-2	36X36	9.00						FRESH OIL
WO21-5	48X48	16.00						SHOULDER WORK / SHOULDER WORK AHEAD
WO22-1	48X48	16.00						BLASTING ZONE AHEAD
WO22-2	42X36	10.50						TURN OFF 2-WAY RADIO AND PHONE
WO22-3	42X36	10.50						END BLASTING ZONE
GO22-1	21X15	2.19						WET PAINT (ARROW PIVOTS)

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NO.	DESCRIPTION
GUIDE SIGNS								
E05-1	36X48	12.00						GORE EXIT
E05-2	48X36	12.00						EXIT OPEN
E05-2a	48X36	12.00						EXIT CLOSED
GO20-1	60X24	10.00						ROAD WORK NEXT XX MILES
GO20-2	48X24	8.00						END ROAD WORK
GO20-4	36X18	4.50						PILOT CAR FOLLOW ME
GO20-4a	42X30	8.75						PILOT CAR IN USE WAIT & FOLLOW
GO20-4a	18X12	1.50						PILOT CAR IN USE WAIT & FOLLOW
GO20-5aP	36X24	6.00						WORK ZONE (PLAQUE)
MO4-8a	24X18	3.00						END DETOUR
MO4-9L	48X36	12.00						DETOUR (LEFT)
MO4-9R	48X36	12.00						DETOUR (RIGHT)
MO4-9P	48X12	4.00						STREET NAME (PLAQUE)
MO4-10L	48X18	6.00						DETOUR ARROW (LEFT)
MO4-10R	48X18	6.00						DETOUR ARROW (RIGHT)
REGULATORY SIGNS								
R1-1	48X48	13.25						STOP
R1-2	48TRI.	6.93						YIELD
R1-2a	36X36	9.00						TO ONCOMING TRAFFIC (PLAQUE)
R1-3P	30X12	2.50						ALL WAY (PLAQUE)
R2-1	36X48	12.00						SPEED LIMIT XX
R3-1	48X48	16.00						NO RIGHT TURN (SYMBOL)
R3-2	48X48	16.00						NO LEFT TURN (SYMBOL)
R3-3	36X36	9.00						NO TURNS
R3-4	48X48	16.00						NO U-TURN (SYMBOL)
R3-7L	30X30	6.25						LEFT LANE MUST TURN LEFT
R3-7R	30X30	6.25						RIGHT LANE MUST TURN RIGHT
R4-1	36X48	12.00						DO NOT PASS
R4-2	36X48	12.00						PASS WITH CARE
R4-7a	36X48	12.00						KEEP RIGHT (HORIZONTAL ARROW)
R4-8a	36X48	12.00						KEEP LEFT (HORIZONTAL ARROW)
R5-1	30X30	6.25						DO NOT ENTER
R5-1a	36X24	6.00						WRONG WAY
R6-1L	54X18	6.75						ONE WAY ARROW (LEFT)
R6-1R	54X18	6.75						ONE WAY ARROW (RIGHT)
R6-2L	24X30	5.00						ONE WAY (LEFT)
R6-2R	24X30	5.00						ONE WAY (RIGHT)
R9-9	24X12	2.00						SIDEWALK CLOSED
R9-11L	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW LEFT) CROSS HERE
R9-11R	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW RIGHT) CROSS HERE
R10-6	24X36	6.00						STOP HERE ON RED (45^ ARROW)
R11-2	48X30	10.00						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						POINT OF PRESENCE
CONST-8	48X36	12.00						WORK ZONE NO PHONE ZONE

616-10.05 CONSTRUCTION SIGNS	TOTAL
	128*

616-10.10 RELOCATED SIGNS	TOTAL

ITEM NUMBER	TOTAL QTY	EFFECTIVE: 07-01-2025 DESCRIPTION
6122008		IMPACT ATTENUATOR 40 MPH (SAND BARRELS)
6122009		IMPACT ATTENUATOR 45 MPH (SAND BARRELS)
6122010		IMPACT ATTENUATOR 50 MPH (SAND BARRELS)
6122012		IMPACT ATTENUATOR 55 MPH (SAND BARRELS)
6122014		IMPACT ATTENUATOR 60 MPH (SAND BARRELS)
6122017		IMPACT ATTENUATOR 65 MPH (SAND BARRELS)
6122019		IMPACT ATTENUATOR 70 MPH (SAND BARRELS)
6122020		REPLACEMENT SAND BARREL
6122030		IMPACT ATTENUATOR (RELOCATION)
6122040		WORK ZONE CRASH CUSHION (NARROW)
6122041		WORK ZONE CRASH CUSHION (RELOCATION)
6123001		TRUCK MOUNTED ATTENUATOR (TMA)
6161012		BUOYS (BOATS KEEP OUT)
6161013		BUOYS (NO WAKE)
6161014		SPECIAL SIGN ASSEMBLY (BOATS KEEP OUT)
6161020		CHANNELIZER (DRUM-LIKE)
6161022		CHANNELIZER (CONE)
6161025	30*	CHANNELIZER (TRIM-LINE)
6161026		CHANNELIZER (VERTICAL PANEL)
6161030		TYPE 3 MOVEABLE BARRICADE
6161033		DIRECTION INDICATOR BARRICADE
6161040		FLASHING ARROW PANEL
6161047		TYPE 3 OBJECT MARKER
6161055		SEQUENTIAL FLASHING WARNING LIGHT
6161070		TUBULAR MARKER
6161095		RADAR SPEED ADVISORY SYSTEM
6161096		CHANGEABLE MESSAGE SIGN, COMMISSION FURNISHED/RETAINED
6161098A		CHANGEABLE MESSAGE SIGN WITHOUT COMM. INTERFACE, CONTRACTOR FURNISHED/RETAINED
6161099		CHANGEABLE MESSAGE SIGN WITH COMM. INTERFACE, CONTRACTOR FURNISHED/RETAINED
6162000A		WORK ZONE TRAFFIC SIGNAL SYSTEM
6162002		TEMPORARY LONG-TERM RUMBLE STRIPS
6173600D		TEMPORARY TRAFFIC BARRIER, CONTRACTOR FURNISHED/RETAINED
6173700B		TEMP. TRAFFIC BARRIER ANCHORED, CONTRACTOR FURNISHED/RETAINED
6173706		TEMP. TRAFFIC BARRIER STIFFNESS TRANSITION CONTRACTOR FURNISHED/RETAINED
6174000A		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION, CONTRACTOR FURNISHED/RETAINED
6175010A		RELOCATING TEMPORARY TRAFFIC BARRIER
6175011B		RELOCATING TEMP. TRAFFIC BARRIER ANCHORED
6175013		RELOCATING TEMP. TRAFFIC BARRIER STIFFNESS
6175020A		RELOCATING TEMP. TRAFFIC BARRIER HEIGHT
6208064A		TEMPORARY RAISED PAVEMENT MARKER
9029400		TEMPORARY TRAFFIC SIGNALS
9029401		TEMPORARY TRAFFIC SIGNALS AND LIGHTING

6169901	1	LUMP SUM TEMPORARY TRAFFIC CONTROL (*ITEM INCLUDED)

STATE OF MISSOURI
PATRICK J. HAKE
NUMBER PE-2010000826
PROFESSIONAL ENGINEER
09/17/2026 11:26:36 AM
PATRICK.J.HAKE - CIVIL
MO-PE-2010000826

DATE PREPARED: 9/17/2026

ROUTE	STATE
W	MO
DISTRICT	SHEET NO.
CD	3

COUNTY: HOWARD

JOB NO.: JCD0165

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)

SUMMARY OF QUANTITIES

SHEET 2 OF 2

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.

ALL BEARINGS BASED ON STATE PLANE BEARINGS CENTRAL ZONE.

P.I. 21+00.02
Δ - 25° LT.
D - 13°00'01.90"
L - 192.30'
T - 97.92'
R - 441.67' (CHORD)

P.I. 26+17.46
Δ - 21°06' LT.
D - 13°
L - 162.31'
T - 82.26'
R - 441.68' (CHORD)

EXIST. PERM. ESM'T.
200' X 300'
(DRAINAGE)

DO NOT DISTURB
WETLANDS RESERVE PROGRAM LAND
SEE JSPs FOR DETAILS.

EXIST. R/W

℄ EXIST. ROUTE W

S 38° 32' 37" E

S 84° 38' 37" E

S 63° 32' 37" E

+00 35' EXIST. R/W

+00 50'

+02.10 50' PC STA. 20+02.10

PT STA. 21+94.40 +94.40 50'

PC STA. 25+35.20 +35.20 50'

PT STA. 27+97.51 +97.51 50'

+00 45'

45'

+02.10 55'

+94.40 55'

+35.20 55'

+97.51 55'

+00 45'

20

25

30

DRY CREEK

STSN

65°

75°

(R)

S.L.

UT

HOUSE

G

BEGIN PROJECT JCD0165
STA. 23+12.14 ROUTE W

STA. 23+08.75 TO STA. 24+01.21
℄ ROUTE W
BRIDGE NO. N0966R SKEW 27°43' R.A.
29'-34'-29' CONT. SLAB SPANS
D.A. = 5.5 mi²

END PROJECT JCD0165
STA. 23+31.91 ROUTE W

EXIST. PERM. ESM'T.
200' X 350'
(DRAINAGE)

SCALE
0 50 100 150

STATE OF MISSOURI
PATRICK J. HAKE
NUMBER PE-2010000826
PROFESSIONAL ENGINEER
09/15/2026 9:18:58 AM
PATRICK.J.HAKE - CIVIL
MO-PE-2010000826

DATE PREPARED
9/15/2026

ROUTE	STATE
W	MO
DISTRICT	SHEET NO.
CD	4

COUNTY
HOWARD

JOB NO.
JCD0165

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)

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

PROJECT COORDINATE INFORMATION

COORDINATE SYSTEM	MODIFIED STATE PLANE (GROUND)
HORIZONTAL DATUM	NAD 83 (2011) EPOCH 2010.0
VERTICAL DATUM	NAVD 88: GNSSS DERIVED
GEOID MODEL	G2018U7
ELEVATIONS DETERMINED BY	DIFFERENTIAL LEVELING
PROJECT PROJECTION FACTOR	1.00009140

REFERENCE CONTROL INFORMATION

COORDINATE SYSTEM	MO COORDINATE SYSTEM OF 1983
CONTROL STATION	MISSOURI CORS
DESIGNATION	MODOT BOONVILLE CORS ARP
CORS_ID	MOBO
PID	DN6077
LATITUDE	38° 55' 52.53367"
LONGITUDE	92° 46' 43.65919"
NORTHING (M)	343,837.027
EASTING (M)	475,827.300
ZONE	2402 (MO-CENTRAL)
PROJECT AVERAGE GRID FACTOR	0.99990860

EXAMPLE OF PROJECT COORDINATE TO S.P.C.

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

EXAMPLE: CONTROL POINT #801
N 1,200,401.5058 X 0.99990860 = N 1,200,291.7891
E 1,596,088.6229 X 0.99990860 = E 1,595,942.7404

LINEAR UNIT CONVERSION

1 METER = 3.280833333 US SURVEY FEET (USFT)

COORDINATE POINT LISTING

SHEET NO	STATION	LOCATION	OFFSET (USFT)	MODIFIED STATE PLANE (GROUND) NORTHING (US SURVEY FT)	EASTING (US SURVEY FT)	ELEVATION (US SURVEY FT)	DESCRIPTION	GPK POINT ID
PROJECT CONTROL POINTS								
4	21+10.32	℄ RTE. W	-18.8	1,200,678.2138	1,595,570.8829	635.160	HORIZONTAL CONTROL POINT 802	
4	23+93.96	℄ RTE. W	-13.35	1,200,541.8403	1,595,815.4839	634.045	VERTICAL CONTROL POINT	
4	26+96.63	℄ RTE. W	21.31	1,200,401.5058	1,596,088.6229	633.870	HORIZONTAL CONTROL POINT 801	
ALIGNMENTS								
	13+92.30	℄ RTE. W	0	1,201,215.9437	1,595,102.2320		POINT OF BEGINNING	
4	20+02.10	℄ RTE. W	0	1,200,738.9985	1,595,482.2048		PC CURVE	
4	21+00.02	℄ RTE. W	10.72	1,200,662.4159	1,595,543.2167		PI CURVE	
4	21+94.40	℄ RTE. W	0	1,200,618.7932	1,595,630.8773		PT CURVE	
4	25+35.20	℄ RTE. W	0	1,200,466.9613	1,595,935.9868		PC CURVE	
4	26+17.46	℄ RTE. W	7.60	1,200,430.3131	1,596,009.6320		PI CURVE	
4	26+97.51	℄ RTE. W	0	1,200,422.6342	1,596,091.5327		PT CURVE - STATION EQUATION BACK	
4	27+25.20	℄ RTE. W	0	1,200,422.6342	1,596,091.5327		STATION EQUATION AHEAD	
	33+00.00	℄ RTE. W	0	1,200,368.9765	1,596,663.8228		POINT OF ENDING	

STATE OF MISSOURI
PATRICK J. HAKE
NUMBER PE-2010000826
PROFESSIONAL ENGINEER
09/15/2026 9:18:29 AM
PATRICK J HAKE - CIVIL
MO-PE-2010000826

DATE PREPARED: 9/15/2026
ROUTE: W | STATE: MO
DISTRICT: CD | SHEET NO.: 5
COUNTY: HOWARD
JOB NO.: JCD0165
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

DESCRIPTION | DATE

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

COORDINATE POINT SHEET
SHEET 1 OF 1

EXIST. PERM. ESM'T.
(DRAINAGE)

DRY CREEK

STA. 23+00.50
OFF 49.37'

STA. 22+81.44
OFF 43.31'

EXIST. R/W

20'

A

B

14.38'

C

S.L.

25°

STA. 23+04.86
OFF 35.67'

STA. 23+18.71
OFF 25.12'

D

2'

4' KEY

E

S.L.

STA. 22+90.23
OFF 15.68'

(R)
GABION
BASKETS

℄ EXIST. ROUTE W

BEGIN PROJECT JCD0165
STA. 23+12.14 ROUTE W

F

S 63° 32' 37" E

END PROJECT JCD0165
STA. 23+31.91 ROUTE W

STA. 23+07.23
OFF 16.14'

H

10'

G

STA. 23+37.00
OFF 9.70'

15'

S.L.

TYPE 2 ROCK BLANKET

STA. 23+07.23
OFF 31.14'

STA. 23+24.04
OFF 31.14'

23

24

50'

55'

DO NOT DISTURB
WETLANDS RESERVE PROGRAM LAND
SEE JSPs FOR DETAILS.

65°

UT

75°

EXIST. PERM. ESM'T.
(DRAINAGE)

SCALE
0 10 20 30

STATE OF MISSOURI
PATRICK J. HAKE
NUMBER PE-2010000826
PROFESSIONAL ENGINEER
09/15/2026 9:18:53 AM
PATRICK.J.HAKE - CIVIL
MO-PE-2010000826

DATE PREPARED
9/15/2026

ROUTE	STATE
W	MO
DISTRICT	SHEET NO.
CD	6

COUNTY
HOWARD

JOB NO.
JCD0165

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

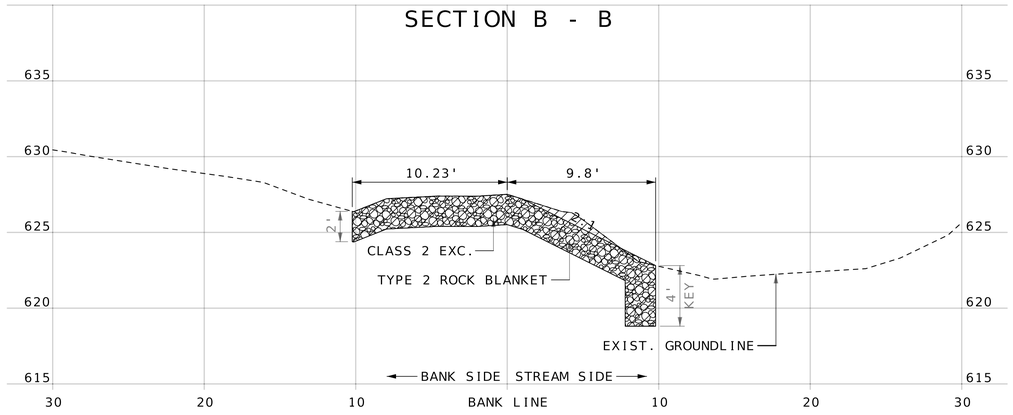
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

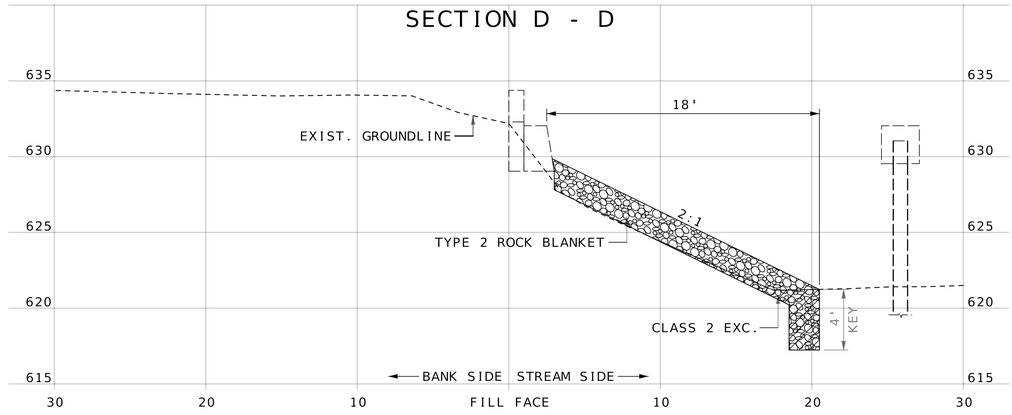
ROCK BLANKET DETAIL

SHEET 1 OF 3
SPECIAL SHEET 1 OF 3

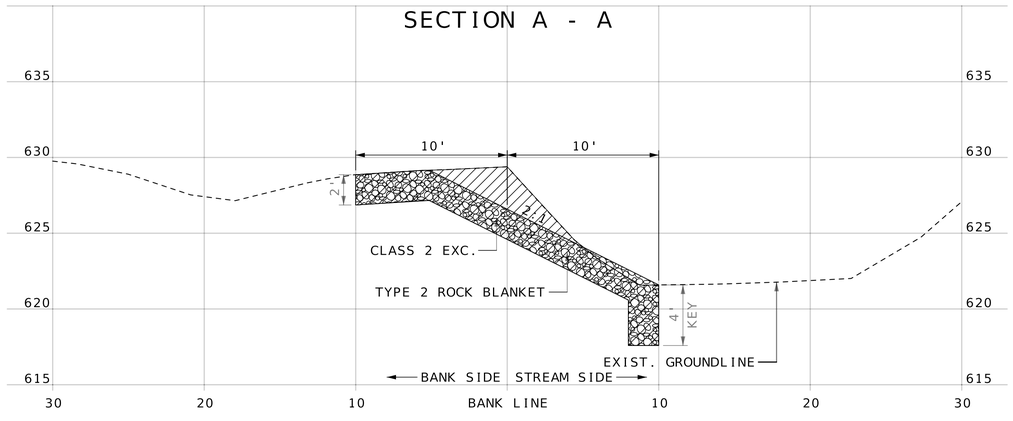
SECTION B - B



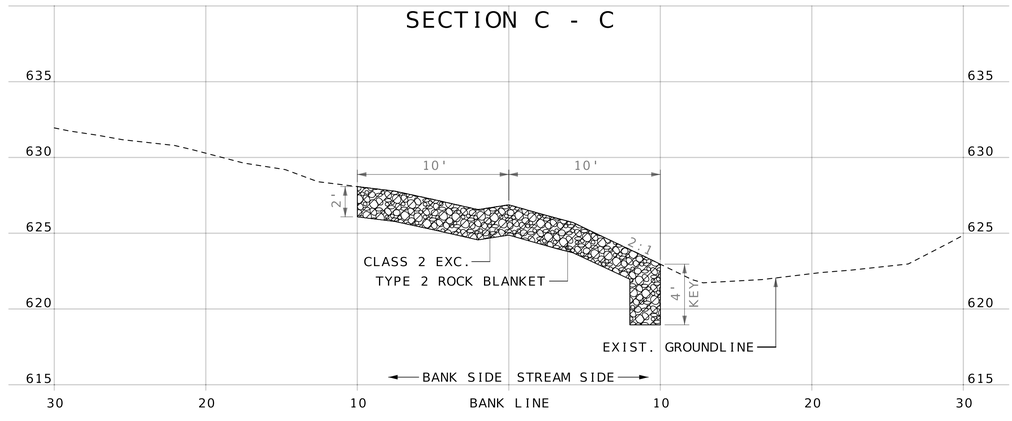
SECTION D - D



SECTION A - A



SECTION C - C



STATE OF MISSOURI
PATRICK J. HAKE
NUMBER PE-2010000826
PROFESSIONAL ENGINEER

09/15/2026 9:18:35 AM
PATRICK J. HAKE - CIVIL
MO-PE-2010000826

DATE PREPARED
9/15/2026

ROUTE	STATE
W	MO
DISTRICT	SHEET NO.
CD	7

COUNTY
HOWARD

JOB NO.
JCD0165

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

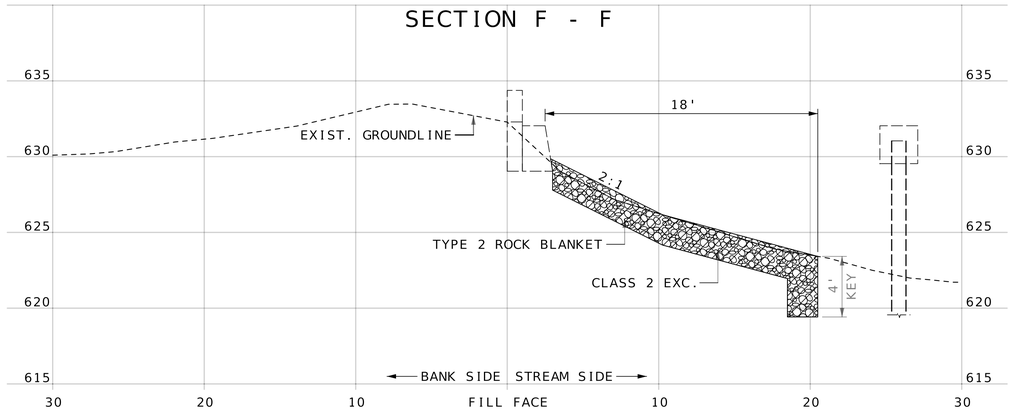
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

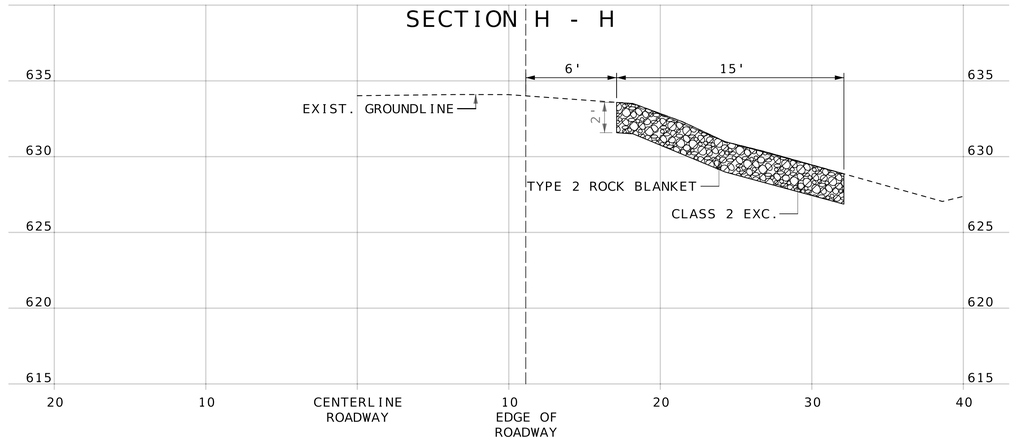
ROCK BLANKET DETAIL

SHEET 2 OF 3
SPECIAL SHEET 2 OF 3

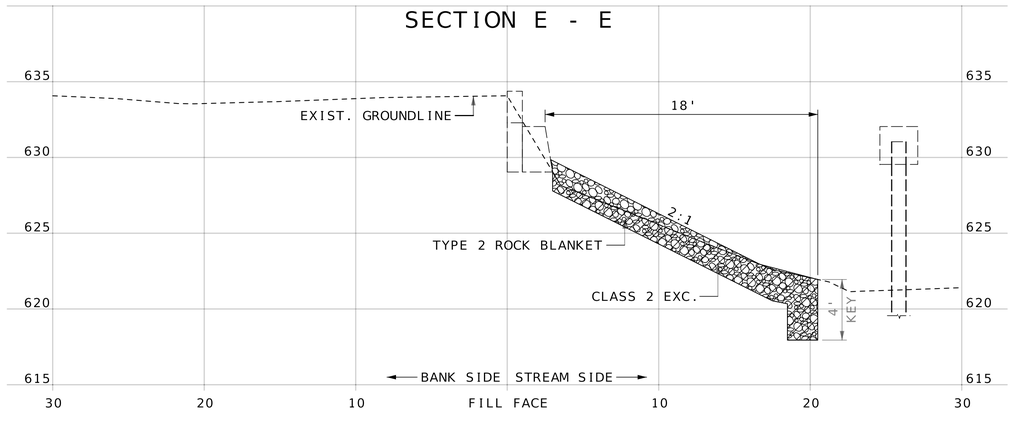
SECTION F - F



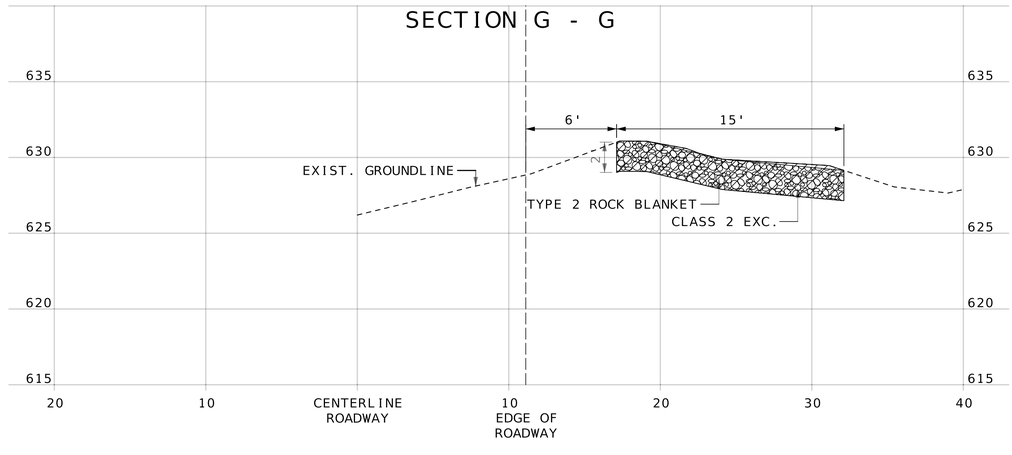
SECTION H - H



SECTION E - E



SECTION G - G



STATE OF MISSOURI
PATRICK J. HAKE
NUMBER PE-2010000826
PROFESSIONAL ENGINEER

09/15/2026 9:18:11 AM
PATRICK.J.HAKE - CIVIL
MO-PE-2010000826

DATE PREPARED
9/15/2026

ROUTE	STATE
W	MO
DISTRICT	SHEET NO.
CD	8

COUNTY
HOWARD

JOB NO.
JCD0165

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

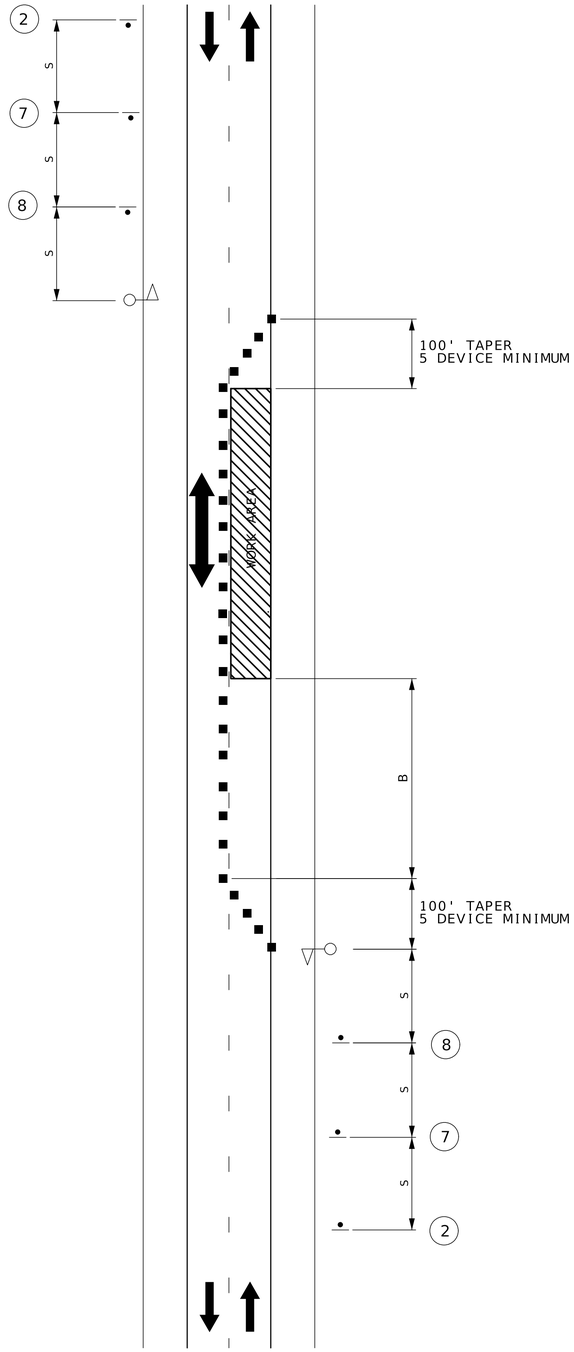
DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

ROCK BLANKET DETAIL

SHEET 3 OF 3
SPECIAL SHEET 3 OF 3



NOTES:

CHANNELIZING DEVICES LOCATED DOWNSTREAM OF THE ONE-LANE, TWO-WAY TAPER ARE OPTIONAL. THESE DEVICES SHOULD BE ELIMINATED WHEN THEIR USE WILL REDUCE THE USABLE LANE WIDTH, INCLUDING ANY ACCEPTABLE SHOULDERS, TO LESS THAN 10 FEET.

IF USED AT NIGHT, THE FLAGGER STATIONS SHALL BE ILLUMINATED WITH AN AVERAGE MAINTAINED INTENSITY OF 0.6 FOOTCANDLES (6.5 LUX.).

TRAFFIC CONTROL LEGEND

- CHANNELIZER
- FLAGGER
- SIGN (SINGLE SIDED)



WO20-1

2



WO20-4

7



WO20-7a

8

SPEED	SIGN SPACING (FT.)		TAPER LENGTH (FT.)		OPTIONAL	CHANNELIZER SPACING (FT.)	
PERMANENT POSTED MPH	UNDIVIDED S	DIVIDED S	SHOULDER (1) T1	LANE (2) T2	BUFFER LENGTH (FT.) B	TAPERS	BUFFER/ WORK AREAS
0-35	200	-	-	-	280	-	40
40-45	350	-	-	-	400	-	80
50-55	500	-	-	-	560	-	80
60-70	1000	-	-	-	840	-	120

1. SHOULDER TAPER LENGTH BASED ON 10 FT. (STANDARD WIDTH) OFFSET. 2. LANE TAPER LENGTH BASED ON 12 FT. (STANDARD LANE WIDTH) OFFSET.

FLAGGER CONTROL
STATIONARY OPERATON
ONE-LANE TWO-WAY OPERATION

NOT TO SCALE

STATE OF MISSOURI
PATRICK J. HAKE
NUMBER PE-2010000826
PROFESSIONAL ENGINEER
09/15/2026 9:19:21 AM
PATRICK.J.HAKE - CIVIL
MO-PE-2010000826

DATE PREPARED
9/15/2026

ROUTE	STATE
W	MO
DISTRICT	SHEET NO.
CD	9

COUNTY
HOWARD

JOB NO.
JCD0165

CONTRACT ID.

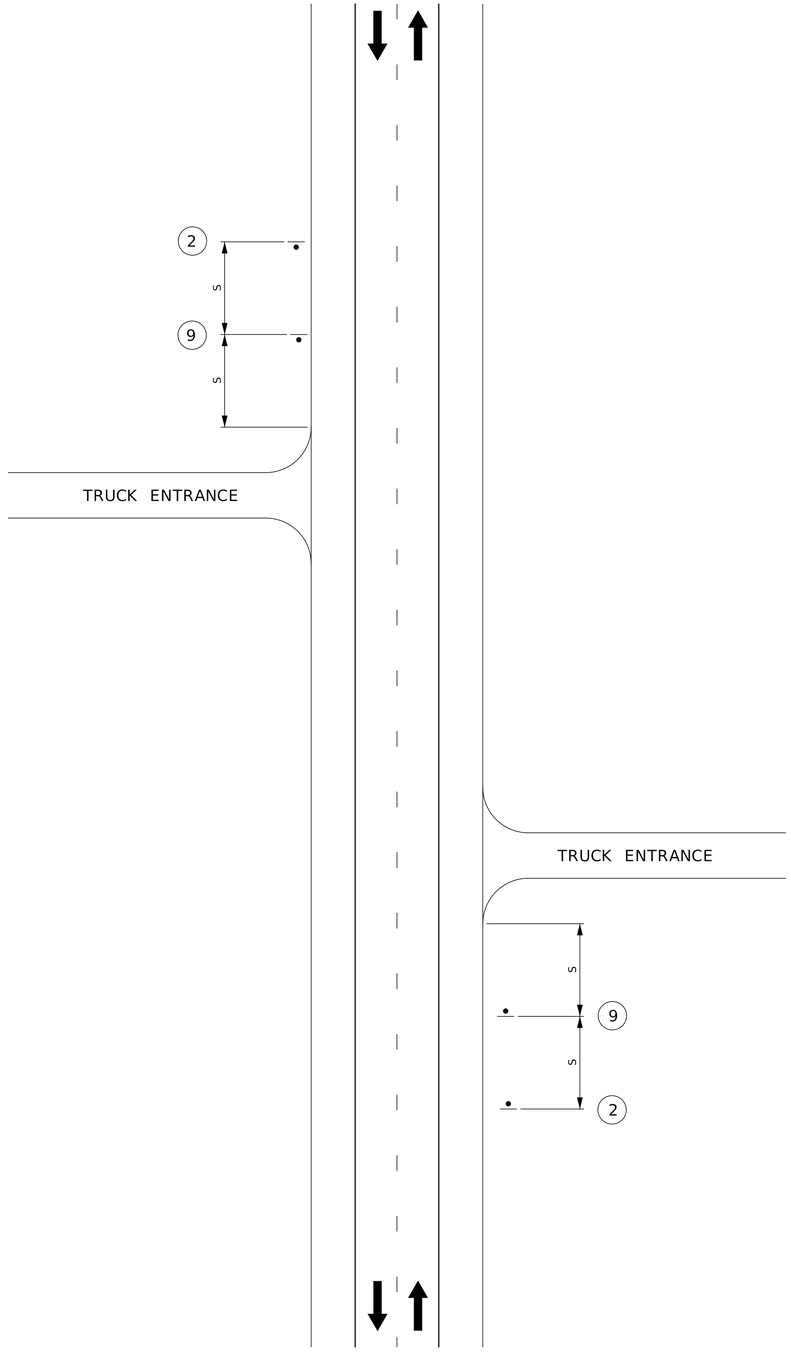
PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

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

TRAFFIC CONTROL PLAN
SHEET 1 OF 2



TRAFFIC CONTROL LEGEND

• SIGN (SINGLE SIDED)



WO20-1

2



WO8-6c

9

SPEED	SIGN SPACING (FT.)
PERMANENT POSTED MPH	UNDIVIDED S
0-35	200
40-45	350
50-55	500
60-70	1000

TRUCK ENTRANCE

NOT TO SCALE

STATE OF MISSOURI
PATRICK J. HAKE
NUMBER PE-2010000826
PROFESSIONAL ENGINEER

09/15/2026 9:18:17 AM
PATRICK J HAKE - CIVIL
MO-PE-2010000826

DATE PREPARED
9/15/2026

ROUTE	STATE
W	MO
DISTRICT	SHEET NO.
CD	10

COUNTY
HOWARD

JOB NO.
JCD0165

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

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

TRAFFIC CONTROL PLAN

SHEET 2 OF 2

TEMPORARY EROSION CONTROL LEGEND

- (R) ROCK DITCH CHECK
- (S) SEDIMENT TRAP

EXIST. PERM. ESM'T. (DRAINAGE)

EXIST. PERM. ESM'T. (DRAINAGE)

DRY CREEK

EXIST. R/W

EXIST. R/W

65°

50'

50'

STA. 22+52

STA. 22+84

OUTFALL 1

23

24

S.L.

℄ EXIST. ROUTE W

S 63° 32' 37" E

55'

55'

OUTFALL 2

STA. 23+52

STA. 23+40

UT

STA. 22+68

EXIST. R/W

EXIST. R/W

75°

EXIST. PERM. ESM'T. (DRAINAGE)

EXIST. PERM. ESM'T. (DRAINAGE)

SCALE

0 10 20 30

STATE OF MISSOURI
PATRICK J. HAKE
NUMBER PE-2010000826
PROFESSIONAL ENGINEER

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PATRICK J. HAKE - CIVIL
MO-PE-2010000826

DATE PREPARED
9/15/2026

ROUTE	STATE
W	MO
DISTRICT	SHEET NO.
CD	11

COUNTY
HOWARD

JOB NO.
JCD0165

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)

EROSION CONTROL

SHEET 1 OF 1