DESIGN DESIGNATION

A.A.D.T. - 2026 = 3373
A.A.D.T. - 2046 = 3882
D.H.V. = 10%
T = 6.4%
V = 55 M.P.H.
D = 51%

FUNCTIONAL CLASSIFICATION- MINOR ARTERIAL
MINOR ROUTE

NORMAL RIGHT OF WAY
TO 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

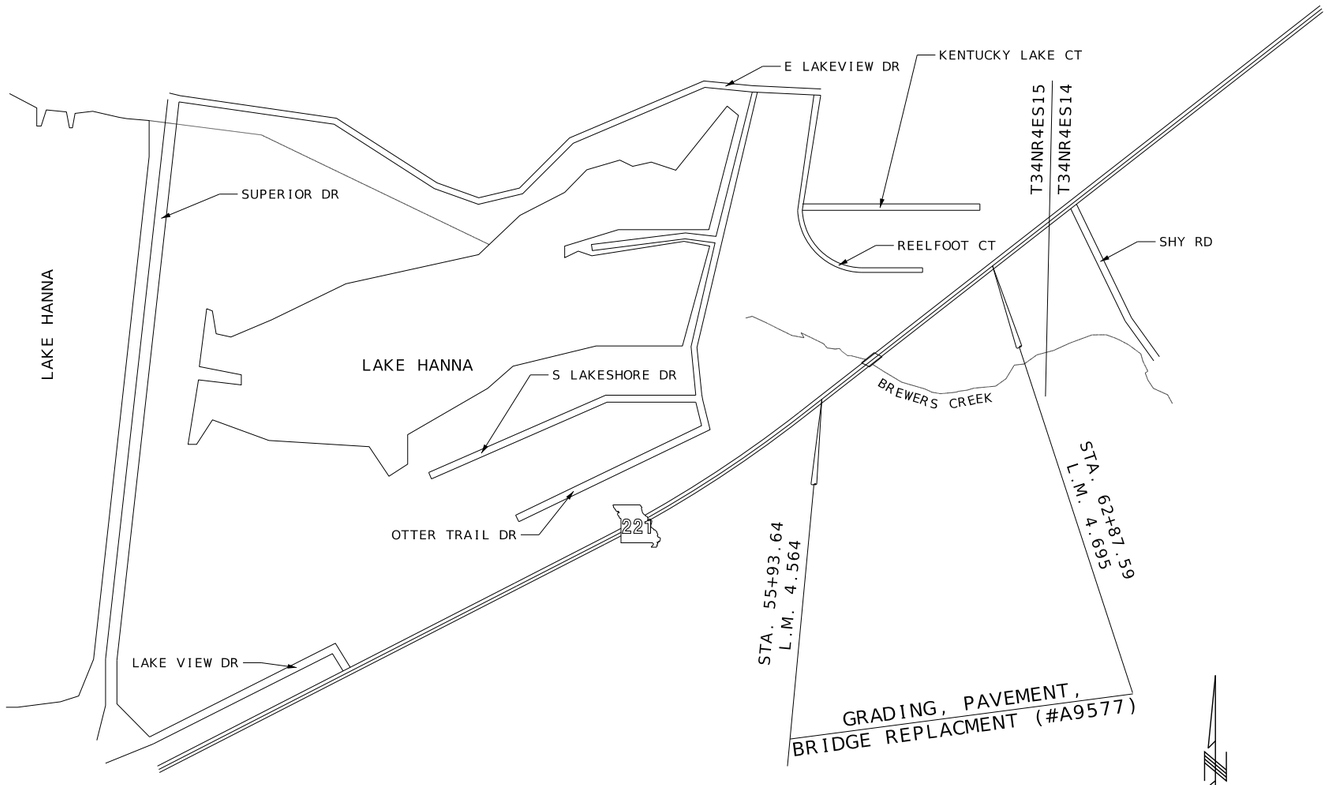
PLANS FOR PROPOSED
STATE HIGHWAY

ST FRANCOIS COUNTY

T34N R4E S15



KEY MAP
LOCATION OF ST. FRANCOIS COUNTY



NOT TO SCALE

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

INDEX OF SHEETS

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CROSS SECTIONS (XS)	1-24
BRIDGE DRAWINGS (B)	
A9577	1-6

LENGTH OF PROJECT

BEGINNING OF PROJECT	STA. 55+93.64	
END OF PROJECT	STA. 62+87.58	
APPARENT LENGTH	693.96	FEET
EQUATIONS AND EXCEPTIONS:	NONE	
TOTAL CORRECTIONS	0.00	FEET
NET LENGTH OF PROJECT	693.96	FEET
STATE LENGTH	0.131	MILES
FOR INFORMATION ONLY ESTIMATED DISTURBED ACRES	0.60	ACRES

STATE OF MISSOURI
NICHOLAS MICHAEL CORRENTI
NUMBER PE-2010000809
PROFESSIONAL ENGINEER
09/24/2026 5:22:57 PM
Nicholas Michael Correnti - Civil
MO PE-2010000809

DATE PREPARED
9/24/2026

ROUTE	STATE
221	MO
DISTRICT	SHEET NO.
SE	1

COUNTY
ST. FRANCOIS

JOB NO.
J9S3853

CONTRACT ID.

PROJECT NO.

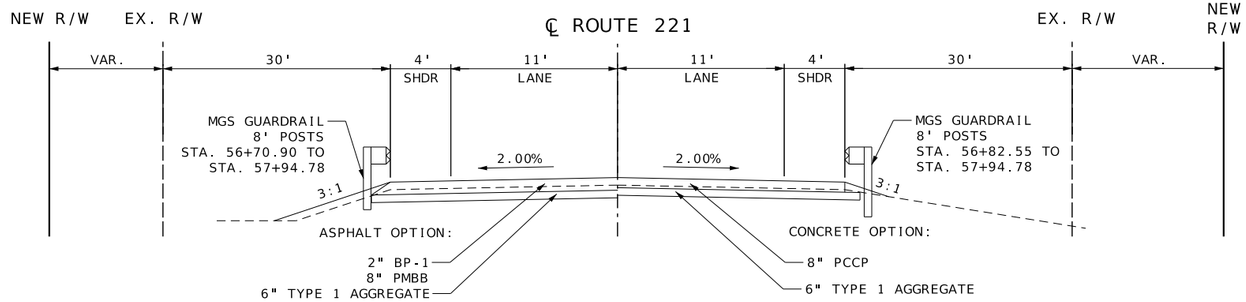
BRIDGE NO.

DESCRIPTION	DATE

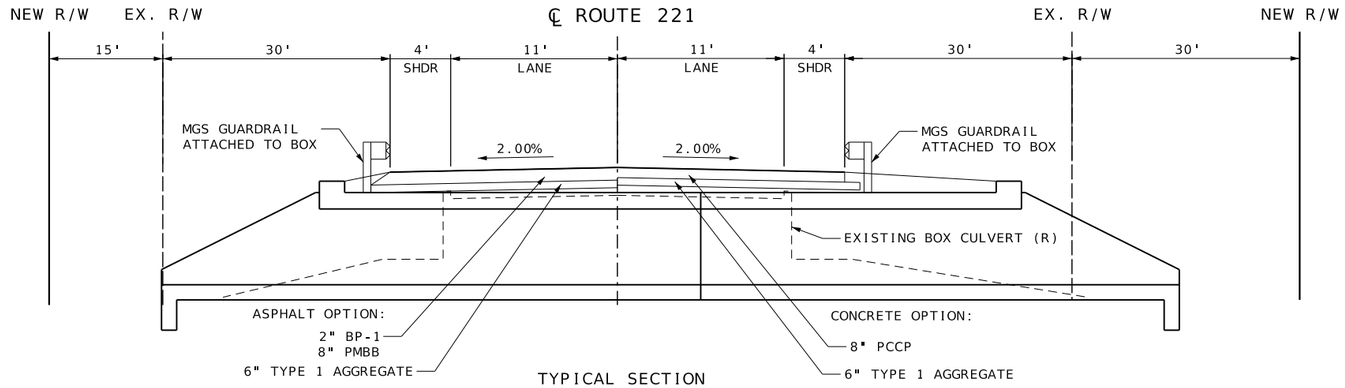
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

EFK•Moen
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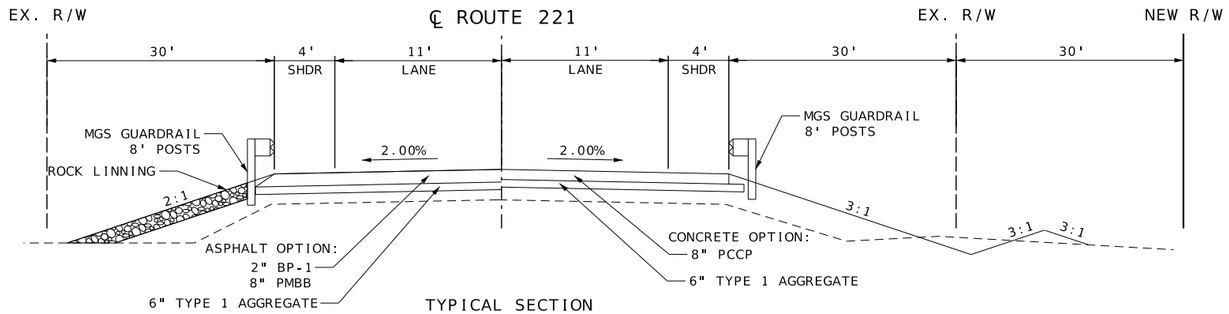
OPTIONAL PAVEMENT	
ASPHALT OPTION	CONCRETE OPTION
2" BP-1 W/PG 64-22 OVER 8" PMBB W/ PG 64-22	8 IN. CONCRETE PAVEMENT (15 FT. JOINTS AND 1.25" DOWELS)



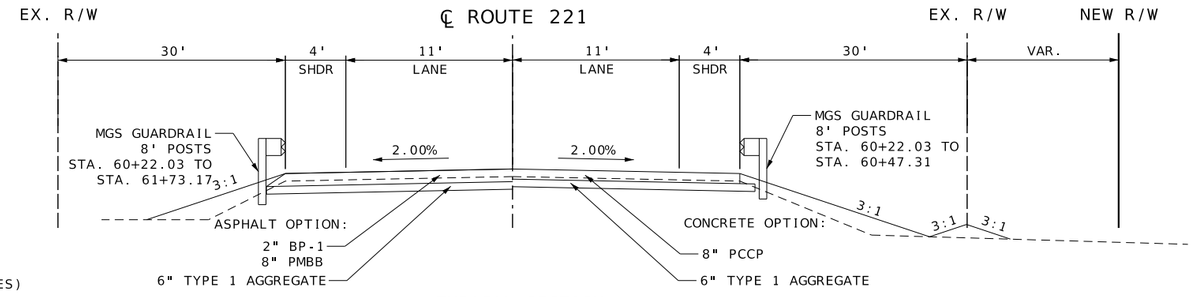
TYPICAL SECTION
ROUTE 221
STA 55+93.64 TO STA 57+94.78



TYPICAL SECTION
ROUTE 221 AT BRIDGE #A9577
STA 57+94.78 TO STA 58+35.94



TYPICAL SECTION
ROUTE 221
STA. 58+35.94 TO STA. 60+22.03



TYPICAL SECTION
ROUTE 221
STA. 60+22.03 TO STA. 62+87.59

APPLICATION RATES:

BP-1 PG64-22: 1.948 TON/CY

BIT. BASE PG64-22: 1.943 TON/CY

TACK: 0.05 GAL/SY (NEW ASPHALT)

TACK: 0.08 GAL/SY (EXISTING ASPHALT OR CONCRETE SURFACES)

TACK: 0.10 GAL/SY (COLDMILLED ASPHALTOR CONCRETE SURFACES)

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Nicholas Michael Correnti - Civil
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DATE PREPARED
9/24/2026

ROUTE	STATE
221	MO
DISTRICT	SHEET NO.
SE	2

COUNTY
ST. FRANCOIS

JOB NO.
J9S3853

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)

EFK•Moen
Civil Engineering Design
1355 N. Highway Drive
Suite 200
St. Louis, MO 63026
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TYPICAL SECTIONS
SHEET 1 OF 1

REMOVAL OF IMPROVEMENTS

SHEET NO	STA	STA	LOC	ROADWAY	L.F.	S.F.	EACH	DESCRIPTIONS
4	57+68		LT	ROUTE 221			1	SIGNS, POSTS, & FOOTINGS: OBJECT MARKER
4	57+82		RT	ROUTE 221			1	SIGNS, POSTS, & FOOTINGS: OBJECT MARKER
4	57+96		RT	ROUTE 221			1	SIGNS, POSTS, & FOOTINGS: OBJECT MARKER
4	58+35		LT	ROUTE 221			1	SIGNS, POSTS, & FOOTINGS: OBJECT MARKER
4	58+43		RT	ROUTE 221			1	SIGNS, POSTS, & FOOTINGS: OBJECT MARKER
4	59+89		LT	ROUTE 221			1	SIGNS, POSTS, & FOOTINGS: OBJECT MARKER
4	59+90		LT	ROUTE 221			1	SIGNS, POSTS, & FOOTINGS: OBJECT MARKER
4	58+74	57+27	RT	ROUTE 221			1	TREE
4	57+10		LT	ROUTE 221	17			4' WIRE FENCE
4	55+93			ROUTE 221	30			FULL DEPTH SAWCUT
4	62+87			ROUTE 221	30			FULL DEPTH SAWCUT
4	55+93	62+87		ROUTE 221		20812		PAVEMENT REMOVAL
4	56+34	56+75		ROUTE 221	41			15" PIPE
4	56+51	56+69		ROUTE 221	18			8" PIPE
4	60+94	61+38		ROUTE 221	43			15" PIPE
13	55+40	63+41	LT/RT	ROUTE 221		4338		TEMP. PAVEMENT FOR TRAFFIC CONTROL
				PAY TOTAL	1 LUMP SUM			

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GRAVEL OR CRUSHED STONE

PLAN SHEET NO	ROADWAY	STA	STA	LOC	GRAVEL (A) OR CRUSHED STONE (B)
					S.Y.
4	ROUTE 221	56+36	56+73	RT	76
4	ROUTE 221	60+93	61+32	RT	83
				SUBTOTAL	159
				PAY TOTAL	159

NOTE: THERE ARE PAVED APPROACH QUANTITIES FOR POST-CONSTRUCTION

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

TRAFFIC CONTROL EARTHWORK

XS SHEET NO	ROADWAY	LOC	CLASS A EXCAVATION	FILL	COMPACTING EMBANKMENT	EMBANKMENT IN PLACE	SUBGRADE COMPACTION 6-INCH DEPTH	REMARKS
			C.Y.	C.Y.	C.Y.	C.Y.	100FT	
7-12	ROUTE 221	LT/RT	210.3	1034.2	157.7	876.5	8.0	STAGE 1
13-18	ROUTE 221	LT/RT	226.6	434.6	170.0	264.6	8.0	STAGE 2
19-24	ROUTE 221	LT/RT	283.9	286.8	212.9	73.9		STAGE 3
		SUBTOTAL	721		541	1215	16	
		PAY TOTAL	721		541	1215	16	

NOTE: ASSUMING 25% SHRINKAGE

SUMMARY OF QUANTITIES
SHEET 1 OF 5

STATE OF MISSOURI
NICHOLAS MICHAEL CORRENTI
NUMBER PE-2010000809
PROFESSIONAL ENGINEER
09/24/2026 5:23:13 PM
Nicholas Michael Correnti - Civil
MO PE-2010000809

DATE PREPARED 9/24/2026
ROUTE 221 | STATE MO
DISTRICT SE | SHEET NO. 3
COUNTY ST. FRANCOIS
JOB NO. J9S3853
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)

EFK•Moen
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O:\2022R3\MoDOT_ORD_v10.12.02.04\24044 Oates MoDOT J9S3853 Route 221\DGN\Roadway\Final\Plotsheets\003_QU_01-04_J9S3853_i1_Summary of Quantities.dgn 2:23:25 PM 9/24/2026

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PAVEMENT & BASE

SHEET NO	ROADWAY	STA	STA	LOC	OPTIONAL PAVEMENT	TYPE 1 AGGREGATE FOR BASE 6 - INCH	PAVED APPROACH 7 - INCH	TYPE 1 AGGREGATE FOR BASE 4 - INCH	REMARKS
					S.Y.	S.Y.	S.Y.	S.Y.	
4	ROUTE 221	56+36	56+73	RT			33	33	
4	ROUTE 221	60+93	61+32	RT			32	32	
4	ROUTE 221	55+40	63+41	LT/RT	940	940			STAGE 1 CONSTRUCTION
4	ROUTE 222	55+94	62+88	LT/RT	1432	1432			STAGE 2 CONSTRUCTION
15-17	ROUTE 221	55+68	63+14	LT/RT	482	482			TEMPORARY PAVEMENT
			SUBTOTAL		2854	2854	65	65	
			PAY TOTAL		2854	2854	65	65	

MAILBOX POSTS

PLAN SHEET NO	ROADWAY	STA	LOC	WOOD POST 4" x 4"
				L.F.
4	ROUTE 221	56+74	RT	8
4	ROUTE 221	60+97	RT	8
		SUBTOTAL		16
		PAY TOTAL		16

ROCK LINING

SHEET NO	ROADWAY	STA	STA	LOC	ROCK LINING	PERMANENT EROSION CONTROL GEOTEXTILE
					C.Y.	S.Y.
4	RTE 221	57+65	60+22	LT/RT	240.0	360.0
			PAY TOTAL		240	360

DRAINAGE

SHEET NO	ROADWAY	STA	STA	LOC	12 - INCH PIPE GROUP C	15 - INCH PIPE GROUP C	12 - INCH GROUP C FLARED END SECTION	15 - INCH GROUP C FLARED END SECTION	CLASS 3 EXCAVATION	REMARKS
					L.F.	L.F.	EA.	EA.	C.Y.	
4	ROUTE 221	56+34	56+90	RT		56		2	3	
4	ROUTE 221	56+49	56+75	RT	27		2		1	
4	ROUTE 221	60+89	61+38	RT		48		2	2	
			SUBTOTAL		27	104	2	4	6	
			PAY TOTAL		27	104	2	4	6	

SUMMARY OF QUANTITIES
SHEET 2 OF 5

STATE OF MISSOURI
NICHOLAS MICHAEL CORRENTI
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09/24/2026 5:23:13 PM
Nicholas Michael Correnti - Civil
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ROUTE 221 | STATE MO
DISTRICT SE | SHEET NO. 3
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PAVEMENT MARKING

PM SHEET NO	ROADWAY	STA	STA	LOC	CLASS 1 PAVEMENT MARKING PAINT 18-MIL, TYPE P BEADS		REMARKS
					4 IN. SOLID YELLOW	4 IN. SOLID WHITE	
					L.F.	L.F.	
16	ROUTE 221	52+83	66+18	LT/RT	2671	2671	
			SUBTOTAL		2671	2671	
			PAY TOTAL		2671	2671	

TEMPORARY PAVEMENT MARKING

SHEET NO	ROADWAY	STA	STA	LOC	4 - INCH TEMPORARY PAVEMENT MARKING PAINT	TEMPORARY REMOVABLE MARKING TAPE 24 - INCH WHITE	TEMPORARY REMOVABLE MARKING TAPE 12 - INCH WHITE	PAVEMENT MARKING REMOVAL	PAVEMENT MARKING REMOVAL (SYMBOLS)	REMARKS
					L.F.	L.F.	L.F.	L.F.	EA.	
13-14	ROUTE 221	54+09	64+53					3590		REMOVAL OF EXISTING MARKINGS
13-14	ROUTE 221	54+09	64+53		1045					STAGE 1
13-14	ROUTE 221	54+09	64+53					1045		STAGE 1 TEMP. PAINT REMOVAL
13-14	ROUTE 221	55+80	60+72		1771					STAGE 2
13-14	ROUTE 221	55+80	60+72					1771		STAGE 2 TEMP. PAINT REMOVAL
13-14	ROUTE 221	52+84		RT			12			
13-14	ROUTE 221	56+45		RT		24				
13-14	ROUTE 221	61+02		RT		24				
13-14	ROUTE 221	64+76		RT			12			
13-14	ROUTE 221	66+17		RT			12			
13-14	ROUTE 221	52+84	66+17	RT					5	REMOVE STOP BARS
			SUBTOTAL		2816	48	36	6406	5	
			PAY TOTAL		2816	48	36	6406	5	

RUMBLE STRIPS

PM SHEET NO	ROADWAY	STA	STA	LOC	12" BITUMINOUS EDGELINE RUMBLE STRIP	12" BITUMINOUS CENTERLINE RUMBLE STRIP	REMARKS
					STA	STA	
1	ROUTE 221	55+94	62+88	LT	6.94		
1	ROUTE 221	55+94	62+88	CL		6.94	
1	ROUTE 221	57+27	59+63	RT	2.36		
1	ROUTE 221	61+83	63+41	RT	1.04		
			SUBTOTAL		10.88	6.94	
			PAY TOTAL		10.9	6.9	

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SUMMARY OF QUANTITIES
SHEET 3 OF 5

EROSION CONTROL

SHEET NO	ROADWAY	STA	STA	LOC	SILT FENCE	ALTERNATE DITCH CHECK	ROCK DITCH CHECK	TYPE C BERM	SEDIMENT REMOVAL	REMARKS
					L.F.	L.F.	L.F.	L.F.	C.Y.	
18-19	ROUTE 221	55+79	57+79	LT	200				2.0	STAGE 1 / STAGE 2
18	ROUTE 221	55+87	56+21	RT		16			3	STAGE 1
18-19	ROUTE 221	56+39	56+48	RT	28				0.3	STAGE 1 / STAGE 2
18	ROUTE 221	56+73		RT		4			1	STAGE 1
18	ROUTE 221	56+80	57+84	RT		32			8	STAGE 1
18	ROUTE 221	57+87	58+53	RT				106	10.6	STAGE 1 / STAGE 2
18-19	ROUTE 221	58+25	62+91	LT	467				4.7	STAGE 1 / STAGE 2
18	ROUTE 221	58+92	60+91	RT		20			5	STAGE 1
18-19	ROUTE 221	61+14	61+54	RT	45				0.5	STAGE 1 / STAGE 2
18	ROUTE 221	61+51	63+01	RT		16			4	STAGE 1
19	ROUTE 221	55+86	56+25	RT		20			4	STAGE 2
19	ROUTE 221	56+82		RT		5			1	STAGE 2
19	ROUTE 221	56+96	57+76	RT		5	40		5	STAGE 2
19	ROUTE 221	59+83	60+83	RT		6	12		2	STAGE 2
19	ROUTE 221	61+51	62+51	RT		15			3	STAGE 2
			SUBTOTAL		740	139	52	106	54.1	
			PAY TOTAL		740	139	52	106	54	

GUARDRAIL

SHEET NO	ROADWAY	STA	STA	LOC	MGS GUARDRAIL 8' POST	TYPE A CRASHWORTHY END TERMINAL (MASH)	REMARKS
					L.F.	EA	
4	ROUTE 221	56+71	57+22	LT		1	
4	ROUTE 221	57+22	57+85	LT	62.5		
4	ROUTE 221	57+85	58+35	LT	**		ATTACHED TO BOX CULVERT
4	ROUTE 221	58+35	61+22	LT	287.5		
4	ROUTE 221	61+22	61+73	LT		1	
4	ROUTE 221	56+85	57+34	RT		1	
4	ROUTE 221	57+34	57+96	RT	62.5		
4	ROUTE 221	57+96	58+46	RT	**		ATTACHED TO BOX CULVERT
4	ROUTE 221	58+46	59+96	RT	150		
4	ROUTE 221	59+96	60+47	RT		1	
**SEE BRIDGE SHEETS			SUBTOTAL		563	4	
			PAY TOTAL		563	4	

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SUMMARY OF QUANTITIES
SHEET 4 OF 5

WARNING SIGNS

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL AREA SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NO.	DESCRIPTION
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	2	25.00			16	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	5	80.00			12	SIGNAL AHEAD (SYMBOL)
WO3-4	48X48	16.00						BE PREPARED TO STOP
WO3-5	48X48	16.00	2	32.00			3	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						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	6	96.00			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	5	80.00			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	3	48.00			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
WO24-1L	48X48	16.00	2	32.00			91L	LANE SHIFT ARROW LEFT
WO24-1R	48X49	17.00	1	17.00			91R	LANE SHIFT ARROW RIGHT
GO22-1	21X15	2.19	10	21.90			55	WET PAINT (ARROW PIVOTS)

GUIDE SIGNS

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NO.	DESCRIPTION
E05-1	36X48	12.00						GORE EXIT
E05-2	48X36	12.00						EXIT OPEN
E05-2a	48X36	12.00						EXIT CLOSED
GO20-1	60X24	10.00						ROAD WORK NEXT XX MILES
GO20-2	48X24	8.00						END ROAD WORK
GO20-4	36X18	4.50						PILOT CAR FOLLOW ME
GO20-4a	42X30	8.75						PILOT CAR IN USE WAIT & FOLLOW
GO20-4a	18X12	1.50						PILOT CAR IN USE WAIT & FOLLOW
GO20-5aP	36X24	6.00	4	24.00			54	WORK ZONE (PLAQUE)
MO4-8a	24X18	3.00						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

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NO.	DESCRIPTION
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 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	8	48.00			47	STOP HERE ON RED (45^ ARROW)
R11-2	48X30	10.00	2	20.00			29	ROAD CLOSED
R11-3a	60X30	12.50						ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY
R11-4	60X30	12.50						ROAD CLOSED TO THRU TRAFFIC
CONST-3A	60X48	20.00						FINE SIGN
CONST-3X	56X12	4.67						SPEEDING/PASSING (PLATE)

MISCELLANEOUS SIGNS

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NO.	DESCRIPTION
CONST-5	48X36	12.00						POINT OF PRESENCE
CONST-5	96X48	32.00						POINT OF PRESENCE
CONST-8	48X36	12.00	2	24.00			62	WORK ZONE NO PHONE ZONE
R10-11A	36X48	12.00	5	60.00			65	NO TURN ON RED
SPECIAL	48X48	16.00	2	32.00			90	RUMBLE STRIPS AHEAD

616-10.05 CONSTRUCTION SIGNS	TOTAL 688
616-10.10 RELOCATED SIGNS	TOTAL *

DISCLAIMER

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

EFFECTIVE: 07-01-2025

ITEM NUMBER	TOTAL QTY	DESCRIPTION
6122008		IMPACT ATTENUATOR 40 MPH (SAND BARRELS)
6122009		IMPACT ATTENUATOR 45 MPH (SAND BARRELS)
6122010		IMPACT ATTENUATOR 50 MPH (SAND BARRELS)
6122012		IMPACT ATTENUATOR 55 MPH (SAND BARRELS)
6122014		IMPACT ATTENUATOR 60 MPH (SAND BARRELS)
6122017		IMPACT ATTENUATOR 65 MPH (SAND BARRELS)
6122019		IMPACT ATTENUATOR 70 MPH (SAND BARRELS)
6122020		REPLACEMENT SAND BARREL
6122030		IMPACT ATTENUATOR (RELOCATION)
6122040	8**	WORK ZONE CRASH CUSHION (NARROW)
6122041	4**	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	50	CHANNELIZER (TRIM-LINE)
6161026		CHANNELIZER (VERTICAL PANEL)
6161030	10	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	5**	CHANGEABLE MESSAGE SIGN WITHOUT COMM. INTERFACE, CONTRACTOR FURNISHED/RETAINED
6161099		CHANGEABLE MESSAGE SIGN WITH COMM. INTERFACE, CONTRACTOR FURNISHED/RETAINED
6169902	1**	WORK ZONE TRAFFIC SIGNAL SYSTEM
6162002	2**	TEMPORARY LONG-TERM RUMBLE STRIPS
6173600D	325**	TEMPORARY TRAFFIC BARRIER, CONTRACTOR FURNISHED/RETAINED
6173700B	825**	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	563**	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 5 of 5

STATE OF MISSOURI
NICHOLAS MICHAEL CORRENTI
NUMBER PE-2010000809
PROFESSIONAL ENGINEER
11/02/2026 3:17:08 PM
Nicholas Michael Correnti - Civil
MO PE-2010000809

DATE PREPARED
11/2/2026

ROUTE	STATE
221	MO
DISTRICT	SHEET NO.
SE	3

COUNTY
ST. FRANCOIS

JOB NO.
J9S3853

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)

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

PI 52+69.04
PC 49+58.10
PT 55+78.10
Δ 10°51'0.0" (LT)
D 1°45'0.0"
L 620.02' (CHORD)
T 310.94'
R 3,274.15'

STA. 56+71 TO STA. 61+73
350' MGS GUARDRAIL
(EXCLUDING BOX)
2 TYPE A MASH C.E.T.

EX. PERM DRAINAGE ESMT.

BREWERS CREEK

55

60

PT STA 55+78.10

END STA 64+79.50

EX. SIGN (R)
NEW R/W

ROCK LINING
EX. SIGN (R)
FENCE (R)
SLOPE LIMITS

EX. R/W
℄ RTE. 221

FENCE (UIP)
EX. R/W

OTTER TAIL DRIVE (40' WIDE)

REELFOOT COURT (40' WIDE)

BEAVER LAKE

CHRIS SEYER N/F NO ACQUISITION

LAKE HANNA PLAT 15 PB. 16, PG. 270

DAVID & PAT BOLLINGER N/F NO ACQUISITION

LOT 3 LOT 2 LOT 1

SOUTHERN BOUNDARY OF LAKE HANNA PLAT 15 PER PLAT BOOK 16 PAGE 270

LAKE HANNA ASSOCIATION INC. N/F

LAKE HANNA PROPERTIES INC. N/F NO ACQUISITION

LOT 38 LOT 37 LOT 36 LOT 35 LOT 34 LOT 33 LOT 32 LOT 17 LOT 16

OSCAR LACHANCE N/F NO ACQUISITION

LAKE HANNA PLAT 24 PB. 16 PG. 448

ROBBY & KARI NOLL N/F NO ACQUISITION

LAURA R. SAYERS N/F NO ACQUISITION

MAIL BOX (R&R)

ROCK LINING

EX. SIGN (R)

SLOPE LIMITS

N57°01'02"E
POWER POLE (UIP)

MAILBOX (R&R)

END FULL DEPTH SHOULDER
STA. 63+41

ABANDONED

OE

BOBBY & JEANNINE G. USHER N/F NO ACQUISITION

EX. R/W
FENCE (UIP)

POWER POLE (UIP)

15" EX CCP (R)
NEW 15" GROUP C PIPE

8" EX CMP (R)
NEW 12" GROUP C PIPE

SLOPE LIMITS

EX. SIGN (R)

ROCK LINING

EX. BRIDGE #Y0935 (R)

PR. BRIDGE #A9577
TIE STA. 58+15.34

TEMP. CONST. ESMT.

EX. ASPHALT PAVED APPROACH (20' W) AND GRAVEL DRIVEWAY
STA. 56+57
EX. GRADE -11.3%
PR. GRADE -10.0%

BEGIN FULL DEPTH SHOULDER
STA. 55+40

BEGIN PROJECT
STA. 55+93.64
(MATCH EX.)

TREES (DND)
SLOPE LIMITS

STA. 56+83 TO STA. 60+47
212.5' MGS GUARDRAIL
(EXCLUDING BOX)
2 TYPE A MASH C.E.T.

NEW R/W

TREE (R)

ROCK LINING

PAMELA R. HUBER N/F

EX. PERM. DRAINAGE ESMT.

15" EX CCP (R)
NEW 15" GROUP C PIPE

EX. ASPHALT PAVED APPROACH (20' W) AND GRAVEL DRIVEWAY
STA. 61+12
EX. GRADE -6.6%
PR. GRADE -6.6%

TEMP. CONST. ESMT.

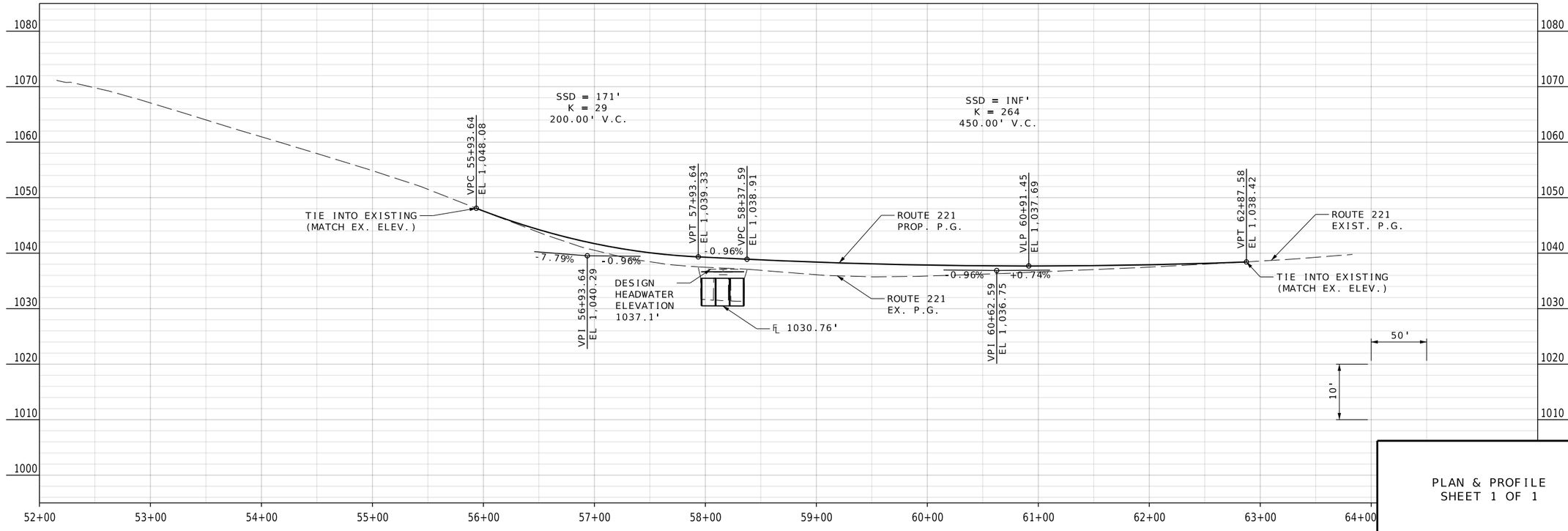
END PROJECT
STA. 62+87.58
(MATCH EX.)

LINDA & ROBERT J. CONELL & YVONNE D. COLE N/F NO ACQUISITION

SCALE
0 50 100 150

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

ANY WORK INDICATED ON THE PLANS THAT EXTENDS BEYOND THE PROJECT LIMITS IS CONSIDERED INCIDENTAL TO AND A PART OF THE CONSTRUCTION OF THIS PROJECT.



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STATE OF MISSOURI
NICHOLAS MICHAEL CORRENTI
NUMBER PE-2010000809
PROFESSIONAL ENGINEER

09/24/2026 5:23:13 PM
Nicholas Michael Correnti - Civil
MO PE-2010000809

DATE PREPARED
9/24/2026

ROUTE	STATE
221	MO
DISTRICT	SHEET NO.
SE	4

COUNTY
ST. FRANCOIS

JOB NO.
J9S3853

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)

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

PLAN & PROFILE
SHEET 1 OF 1

O:\2022R3\MoDOT_ORD_v10.12.02.04\24044 Oates MoDOT J9S3853 Route 221\DGN\Roadway\Final\Plotsheets\004_PP_J9S3853_i50.dgn 2:23:30 PM 9/24/2026

CERTIFIED LAND CORNER — NOT TO SCALE

BEGIN PROJECT STA. 55+93.86

END PROJECT STA. 62+87.59

℄ RTE 221

N11°01'04"W 2970.49'

S00°21'30"E 3342.74'

FOUND ALUMINUM MONUMENT AT THE CORNER OF SECTION 14, 15, 22 AND 23, TOWNSHIP 34 NORTH, RANGE 4 EAST OF THE FIFTH P.M. AS PER DOCUMENT # 600-31905.

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STATE OF MISSOURI — NICHOLAS MICHAEL CORRENTI — NUMBER PE-2010000809 — PROFESSIONAL ENGINEER

09/24/2026 5:23:13 PM
Nicholas Michael Correnti - Civil
MO PE-2010000809

DATE PREPARED: 9/24/2026

ROUTE	STATE
221	MO
DISTRICT	SHEET NO.
SE	5

COUNTY: ST. FRANCOIS

JOB NO.: J9S3853

CONTRACT ID.:

PROJECT NO.:

BRIDGE NO.:

DESCRIPTION	DATE

PI 52+69.04
PC 49+58.10
PT 55+78.10
Δ 10°51'0.0" (LT)
D 1°45'0.0"
L 620.02' (CHORD)
T 310.94'
R 3,274.15'

FOR INFORMATION ONLY

SE 1/4 NE 1/4 SECTION 15-T34N-4E

1 — LAKE HANNA ASSOCIATION INC. N/F
2,274 S.F. (0.052 ACRES) NEW R/W
5.79 ACRES REMAINING

1 — LAKE HANNA ASSOCIATION INC. N/F

EX. PERMANENT DRAINAGE EASEMENT

PERMANENT DRAINAGE EASEMENT

LAKE HANNA PROPERTIES INC. N/F
NO ACQUISITION

LOT 38

5' UTIL ESMT. (PB. 16, PG., 448)

OSCAR LACHANCE N/F
NO ACQUISITION

LOT 36

FENCE (UIP)

EX. R/W

SLOPE LIMITS

℄ RTE. 221

BEGIN PROJECT STA 55+93.86

PT STA 55+78.10

+55.00 -30.00'

N41°23'49"E 81.39'

FENCE (R)

NEW R/W

+35.00 -45.00'

+43.05 -44.33'

N52°01'02"E 100.00'

+50.78 -30.00'

S52°01'02"W 195.79'

EX. ASPHALT PAVED APPROACH (20' W) AND GRAVEL DRIVEWAY
STA. 56+57
EX. GRADE -11.3%
PR. GRADE -10.0%

EX. SIGN (R)

STATE HIGHWAY 221

N52°01'02"E

MAILBOX (R&R)

POWER POLE (UIP)

N52°01'02"E 530.00'

TREE (DND)

+37.50 30.00'

+90.00 34.80'

S65°30'48"W 107.98'

+37.50 56.00'

+90.00 56.00'

+70.00 30.00'

+95.00 60.00'

S52°01'02"W 255.00'

NEW TEMP. CONST. EASEMENT

15" EX CCP (R) REPLACE WITH NEW 15" GROUP C PIPE

S52°01'02"W 52.50'

8" EX CMP (R) REPLACE WITH NEW 12" GROUP C PIPE

NEW TEMP. CONST. EASEMENT AREA 1 (SOUTH)

SE 1/4 NE 1/4 SECTION 15-T34N-4E

2 — PAMELA R. HUBER N/F

EX. PERMANENT DRAINAGE EASEMENT

2 — PAMELA R. HUBER N/F

11,775 S.F. (0.27 ACRES) NEW R/W
1,317 S.F. (0.030 ACRES) TEMP. CONST. EASEMENT - AREA 1 (SOUTH)
254 S.F. (0.006 ACRES) TEMP. CONST. EASEMENT - AREA 2 (NORTH)
6.05 ACRES REMAINING

MATCHLINE STA. 59+40.00

SCALE 0 20 40 60

BEARINGS AND DISTANCES			
PARCEL NUMBER	REF. LETTER	BEARING	DISTANCE
2	A	N52°01'02"E	32.50'
2	B	N65°30'48"E	20.57'
2	C	S37°58'58"E	21.20'
2	D	N37°58'58"W	26.00'
1	E	N56°46'51"E	8.08'
1	F	S66°21'11"E	16.29'

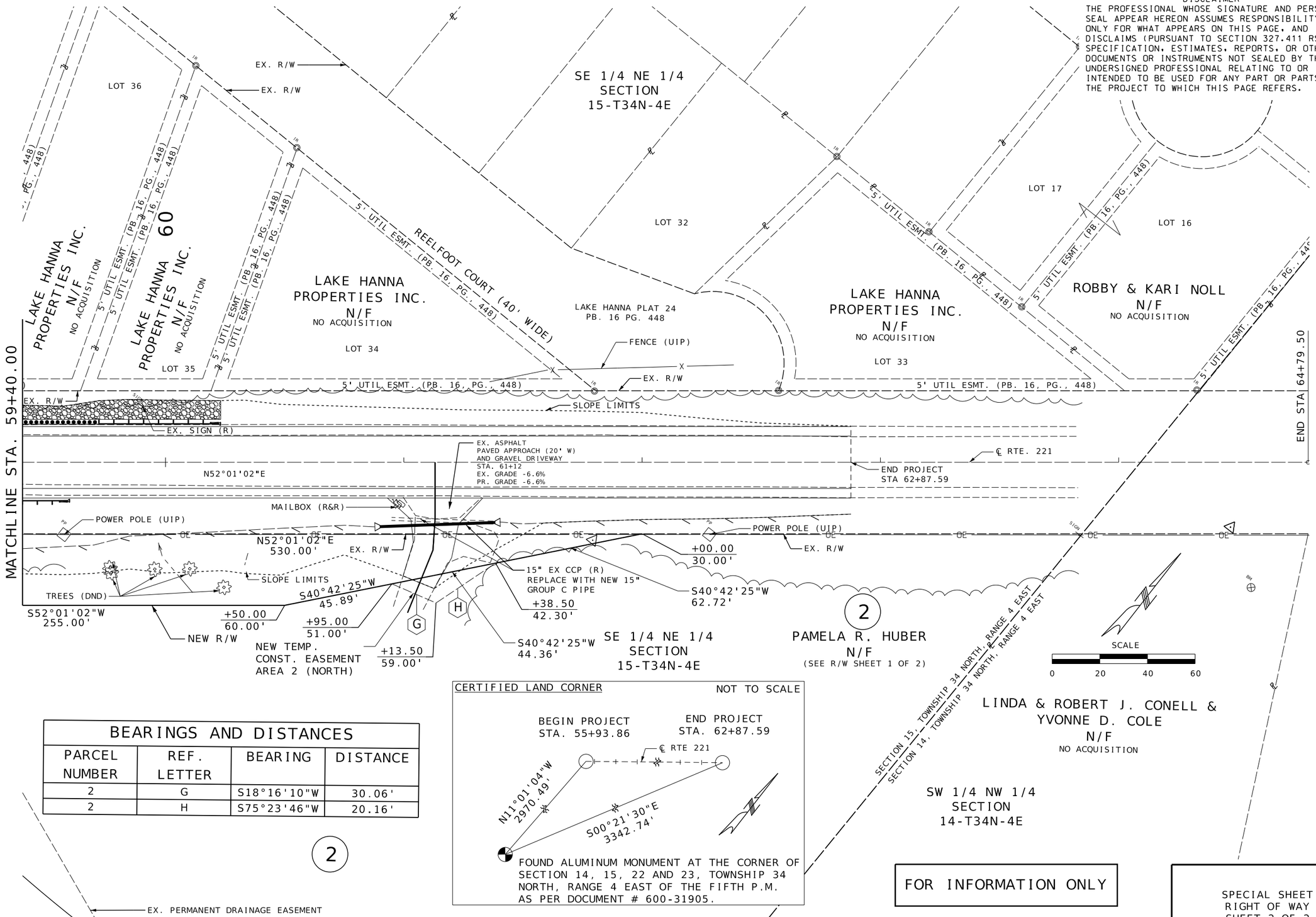
SPECIAL SHEET
RIGHT OF WAY
SHEET 1 OF 2

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 Drive
Suite 200
St. Louis, MO 63026
Phone 314-394-3100
Fax 314-394-3199
Missouri Certificate of Authority: 001578

FOR INFORMATION ONLY

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BEARINGS AND DISTANCES			
PARCEL NUMBER	REF. LETTER	BEARING	DISTANCE
2	G	S18°16'10"W	30.06'
2	H	S75°23'46"W	20.16'

CERTIFIED LAND CORNER — NOT TO SCALE

FOUND ALUMINUM MONUMENT AT THE CORNER OF SECTION 14, 15, 22 AND 23, TOWNSHIP 34 NORTH, RANGE 4 EAST OF THE FIFTH P.M. AS PER DOCUMENT # 600-31905.

FOR INFORMATION ONLY

SPECIAL SHEET
RIGHT OF WAY
SHEET 2 OF 2

STATE OF MISSOURI
NICHOLAS MICHAEL CORRENTI
NUMBER PE-2010000809
PROFESSIONAL ENGINEER
09/24/2026 5:23:13 PM
Nicholas Michael Correnti - Civil
MO PE-2010000809

DATE PREPARED
9/24/2026

ROUTE	STATE
221	MO
DISTRICT	SHEET NO.
SE	6

COUNTY
ST. FRANCOIS

JOB NO.
J9S3853

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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O:\2022R3\MoDOT_ORD_v10.12.02.04\24044 Oates MoDOT J9S3853 Route 221\DGN\Roadway\Final\Plotsheets\006_SS_02_J9S3853_i20.dgn 2:23:33 PM 9/24/2026

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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 STATE PLANE
HORIZONTAL DATUM	NAD 1983
VERTICAL DATUM	NAVD 88
GEOID MODEL	GEOD 18US
ELEVATIONS DETERMINED BY	MODOT GNSS
PROJECT PROJECTION FACTOR	1.000111124

REFERENCE CONTROL INFORMATION

COORDINATE SYSTEM	
CONTROL STATION	
DESIGNATION	MOBW
CORS_ID	
PID	
LATITUDE	N37°42'17.74183"
LONGITUDE	W90°44'38.61639"
NORTHING (M)	681466.317
EASTING (M)	749602.874
ZONE	EAST
PROJECT AVERAGE GRID FACTOR	0.99988889

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

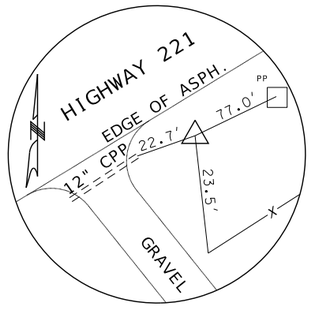
EXAMPLE: CONTROL POINT #100
N 661336.795 X 0.99988889 = N 661263.3139
E 798457.311 X 0.99988889 = E 798368.5944

LINEAR UNIT CONVERSION

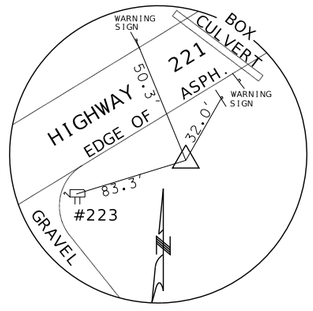
1 METER = 3.280833333 US SURVEY FEET (USFT)

COORDINATE POINT LISTING

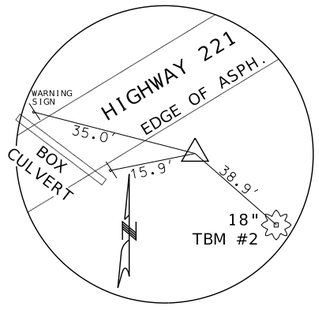
SHEET NO	STATION	LOCATION	OFFSET (USFT)	MODIFIED STATE PLANE (GROUND) NORTHING (US SURVEY FT)	EASTING (US SURVEY FT)	ELEVATION (US SURVEY FT)	DESCRIPTION	GPK POINT ID
PROJECT CONTROL POINTS								
	51+74.80	ROUTE 221	30.23	661,336.80	798,457.31	1,074.21	IRON ROD W/ CAP	CP 100
	57+57.58	ROUTE 221	33.69	661,673.88	798,935.84	1,035.35	IRON ROD W/ CAP	CP 101
	58+59.00	ROUTE 221	12.83	661,753.52	799,003.43	1,035.93	IRON ROD W/ CAP	CP 102
	64+46.91	ROUTE 221	27.2	662,104.00	799,475.67	1,037.60	IRON ROD W/ CAP	CP 103
ALIGNMENTS								
	47+00.00	ROUTE 221	CL	661,139.89	798,022.62		BEGIN STATION	
	49+58.10	ROUTE 221	CL	661,257.60	798,252.32		PC	
	55+78.10	ROUTE 221	CL	661,590.76	798,774.13		PT	
	64+79.50	ROUTE 221	CL	662,145.50	799,484.61		END STATION	



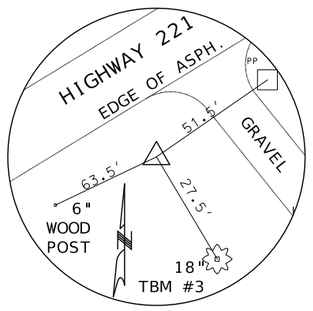
CONTROL POINT NO. 100
IRON ROD W/CAP
N: 661336.795
E: 798457.311
EL: 1074.21



CONTROL POINT NO. 101
IRON ROD W/CAP
N: 661673.882
E: 798935.837
EL: 1035.35



CONTROL POINT NO. 102
IRON ROD W/CAP
N: 661753.519
E: 799003.430
EL: 1035.93



CONTROL POINT NO. 103
IRON ROD W/CAP
N: 662104.005
E: 799475.666
EL: 1037.59

REFERENCE/COORDINATE POINTS
SHEET 1 OF 1

STATE OF MISSOURI
NICHOLAS MICHAEL CORRENTI
NUMBER PE-2010000809
PROFESSIONAL ENGINEER
09/24/2026 5:23:13 PM
Nicholas Michael Correnti - Civil
MO PE-2010000809

DATE PREPARED
9/24/2026

ROUTE	STATE
221	MO
DISTRICT	SHEET NO.
SE	7

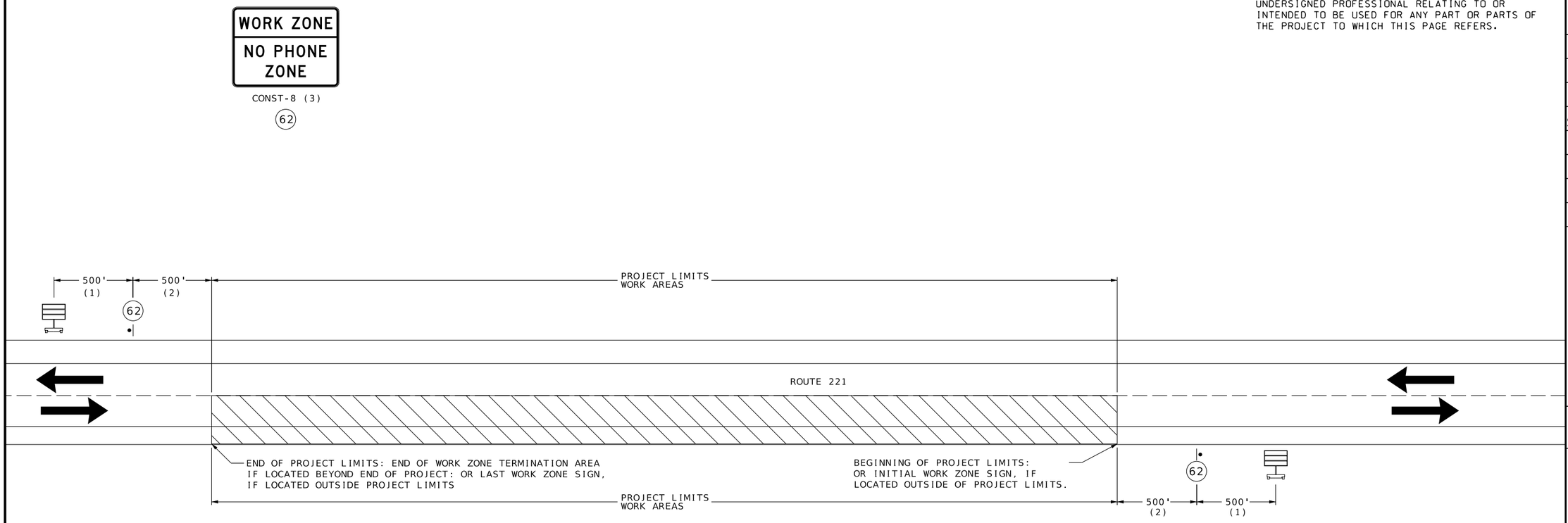
COUNTY
ST. FRANCOIS
JOB NO.
J9S3853
CONTRACT ID.
PROJECT NO.
BRIDGE NO.

DESCRIPTION	DATE

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

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NOTES:

THE CONTRACTOR SHALL COVER OR REMOVE ANY EXISTING SIGNING OR PAVEMENT MARKING THAT CONFLICTS WITH THE TEMPORARY TRAFFIC CONTROL SIGNING AND DEVICES.

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

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

LEGEND

CHANGEABLE MESSAGE SIGN

SIGN

WORK AREA

BEGIN-END OF PROJECT SIGNING

NOT TO SCALE

TRAFFIC CONTROL
SHEET 1 OF 10

STATE OF MISSOURI
NICHOLAS MICHAEL CORRENTI
NUMBER PE-2010000809
PROFESSIONAL ENGINEER

09/24/2026 5:23:14 PM
Nicholas Michael Correnti - Civil
MO PE-2010000809

DATE PREPARED
9/24/2026

ROUTE	STATE
221	MO
DISTRICT	SHEET NO.
SE	8

COUNTY
ST. FRANCOIS

JOB NO.
J9S3853

CONTRACT ID.

PROJECT NO.

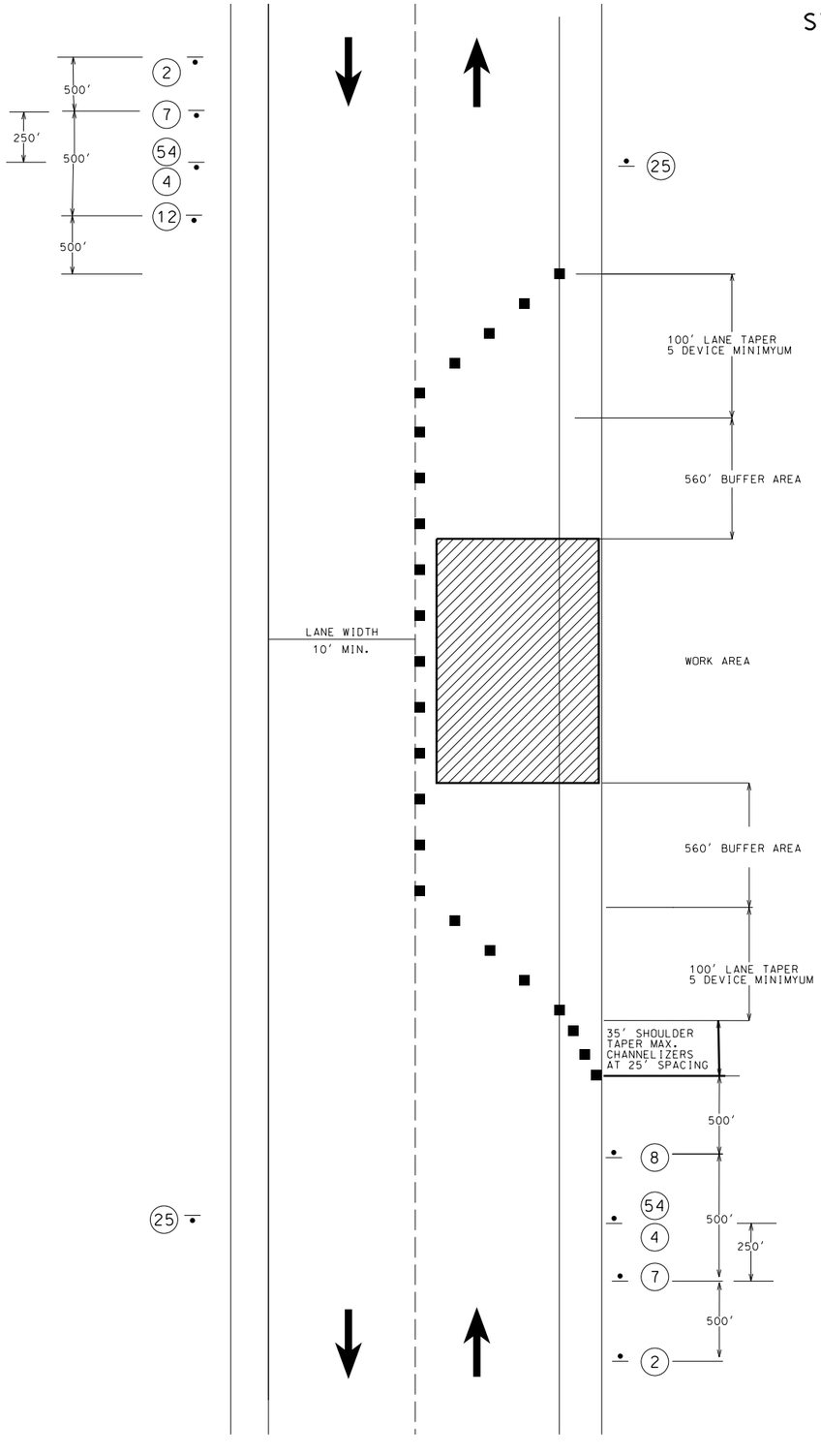
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STATIONARY LANE CLOSURE USING FLAGGERS ON TWO-LANE ROAD





W020-1
(2)



W020-4
(7)



W020-7a
(8)



R2-1
(4)



(NORMAL SPEED)
R2-1
(25)



GO20-5aP
(54)

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- CHANNELIZER
- WORK AREA

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NOTES:

THE CONTRACTOR SHALL MAKE ADJUSTMENTS TO WORK ZONE TO FIT ACTUAL FIELD CONDITIONS.

NOT TO SCALE

TRAFFIC CONTROL
SHEET 2 OF 10

STATE OF MISSOURI
NICHOLAS MICHAEL CORRENTI
NUMBER PE-2010000809
PROFESSIONAL ENGINEER
09/24/2026 5:23:14 PM
Nicholas Michael Correnti - Civil
MO PE-2010000809

DATE PREPARED
9/24/2026

ROUTE	STATE
221	MO
DISTRICT	SHEET NO.
SE	9

COUNTY
ST. FRANCOIS

JOB NO.
J9S3853

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

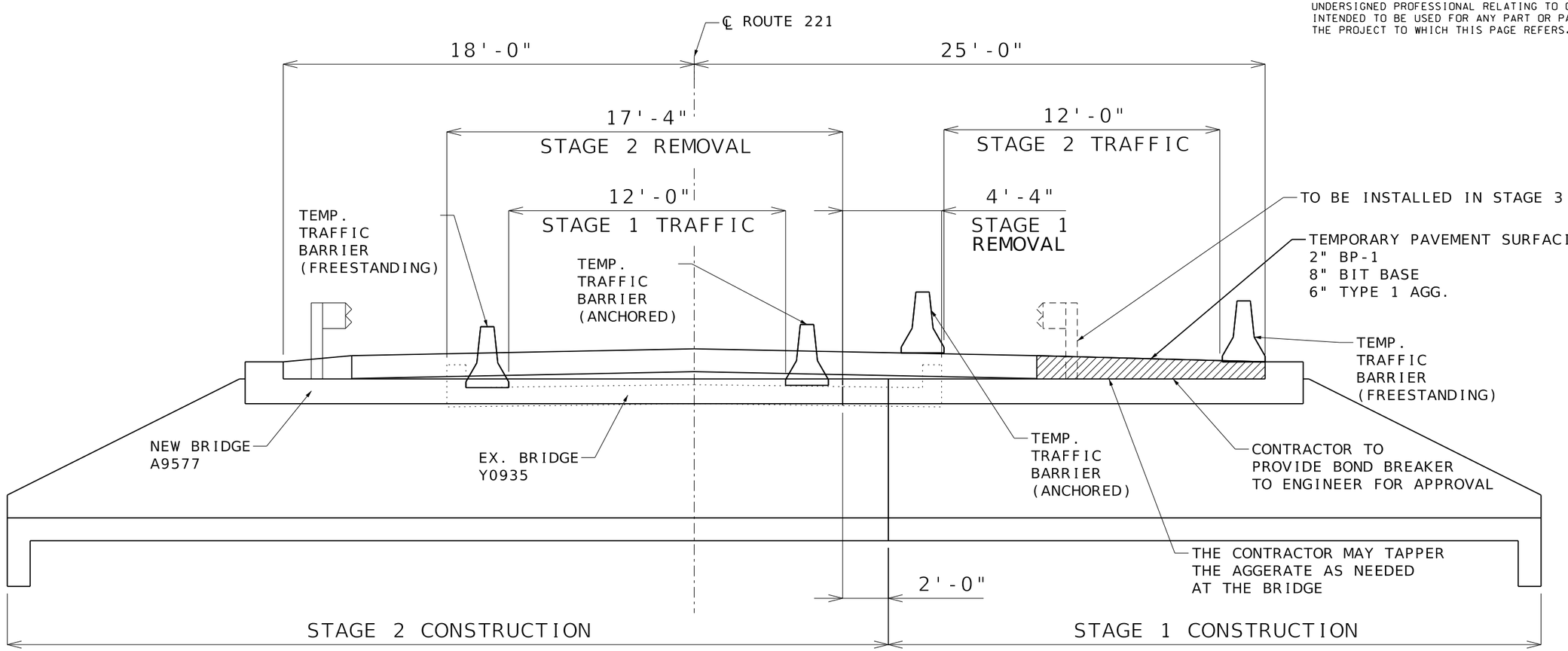
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REMOVE NORTHERN PORTION OF BOX CULVERT STRUCTURE. CONSTRUCT NEW BOX CULVERT AND NEW PAVEMENT.

SAWCUT AND REMOVE SOUTHERN PORTION OF BOX CULVERT STRUCTURE. CONSTRUCT NEW BOX CULVERT, ALONG WITH PERMANENT AND TEMPORARY PAVEMENTS.

STAGING TYPICAL

SECTION THRU BOX CULVERT - LOOKING NORTHBOUND

STAGE 3 CONSTRUCTION:
REMOVE TEMPORARY PAVEMENT SURFACING, BACKFILL, AND FINISHING WORK; INSTALL NB GUARDRAIL; AND FINAL PAVEMENT MARKING TO PERMANENT TRAFFIC PATTERN.

TRAFFIC MAY BE SWITCHED ONTO ROADWAY BUILT DURING STAGE 2 CONSTRUCTION PHASE, OR FLAGGER OPERATION MAY BE USED.

NOT TO SCALE

TRAFFIC CONTROL
SHEET 3 OF 10

STATE OF MISSOURI
NICHOLAS MICHAEL CORRENTI
NUMBER PE-2010000809
PROFESSIONAL ENGINEER
09/24/2026 5:23:14 PM
Nicholas Michael Correnti - Civil
MO PE-2010000809

DATE PREPARED
9/24/2026

ROUTE	STATE
221	MO
DISTRICT	SHEET NO.
SE	10

COUNTY
ST. FRANCOIS

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DESCRIPTION	DATE

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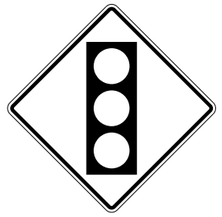
STATIONARY LANE CLOSURE USING TRAFFIC CONTROL SIGNALS ON TWO-LANE ROAD



W020-1 (2)



W020-4 (7)


W03-3 (12)



W03-5 (3)



SPECIAL (90)



R2-1 (4)



(NORMAL SPEED) R2-1 (25)



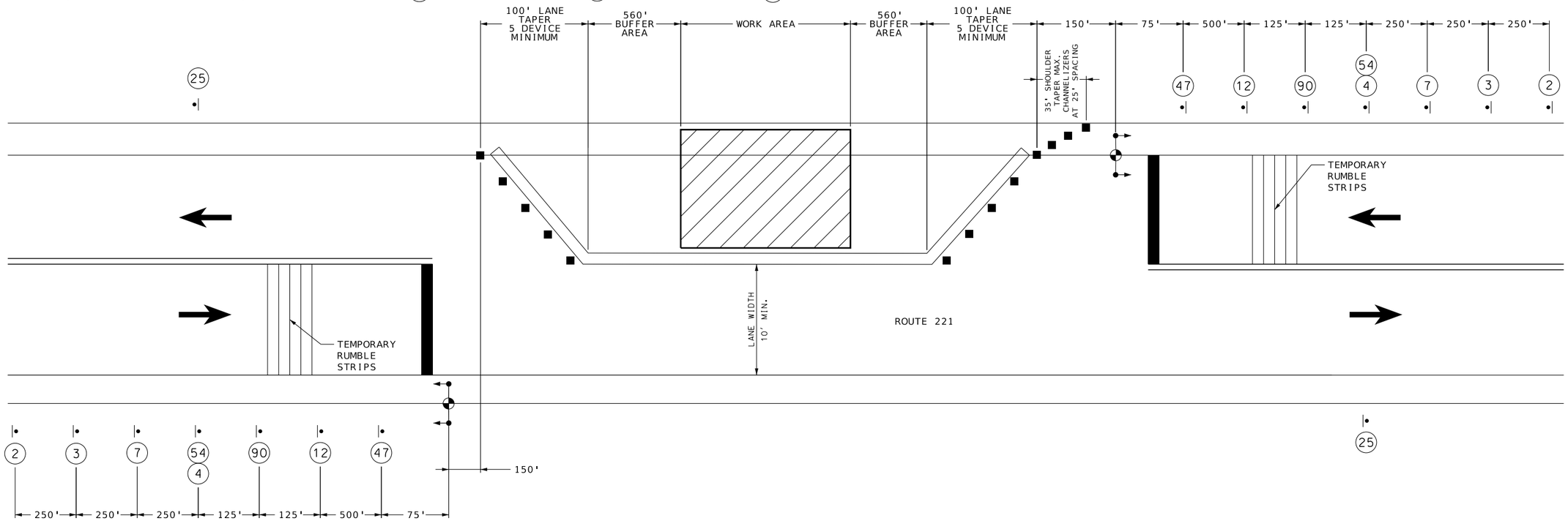
G020-5aP (54)



R10-6L (47)

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NOTES:

REMOVE EXISTING CENTER LINE MARKING AND PAINT A DOUBLE YELLOW CENTERLINE 500′ MIN APPROACHING THE 24″ WHITE STOP BAR.

FOR SIDEROADS AND DRIVEWAYS LOCATED WITHIN THE LIMITS OF THE STOP BARS, ADDITIONAL INDICATIONS AND PHASES WILL BE REQUIRED. RIGHT TURN SHALL BE PROHIBITED FROM THESE ACCESS POINTS DURING THE RED INTERVAL.

FLARE BARRIER TO EDGE LINE AND USE APPROVED EDGE TREATMENT. UPON THE DISCRETION OF THE SUPERVISOR OR ENGINEER. THE END TREATMENT MAY BE LOCATED WITHIN THE ROADWAY IF THERE IS NOT ENOUGH WIDTH TO GET EQUIPMENT OR VEHICLES INTO THE WORK AREA. BARRIER FLARE RATE IS 8:1.

THE CONTRACTOR SHALL MAKE ADJUSTMENTS TO WORK ZONE TO FIT ACTUAL FIELD CONDITIONS.

ANY EXISTING SIGNS THAT ARE IN CONFLICT WITH WORK ZONE SIGNAGE AND DEVICES SHALL BE COVERED OR REMOVED.

SEE TRAFFIC CONTROL SHEETS 5 THROUGH 10 FOR ADDITIONAL INFORMATION.

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- CHANNELIZER
- TYPE III MOVEABLE BARRIER
- 24″ WHITE STOP BAR
- WORK SPACE
- PORTABLE TRAFFIC SIGNAL AND LUMINARE

NOT TO SCALE

TRAFFIC CONTROL
SHEET 4 OF 10

STATE OF MISSOURI
NICHOLAS MICHAEL CORRENTI
NUMBER PE-2010000809
PROFESSIONAL ENGINEER

09/24/2026 5:23:14 PM
Nicholas Michael Correnti - Civil
MO PE-2010000809

DATE PREPARED
9/24/2026

ROUTE	STATE
221	MO
DISTRICT	SHEET NO.
SE	11

COUNTY
ST. FRANCOIS

JOB NO.
J9S3853

CONTRACT ID.

PROJECT NO.

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DESCRIPTION	DATE

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

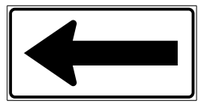
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R10-6L

47



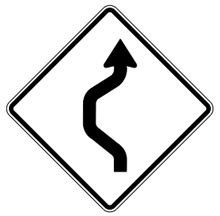
WO1-6

16



R11-2

29



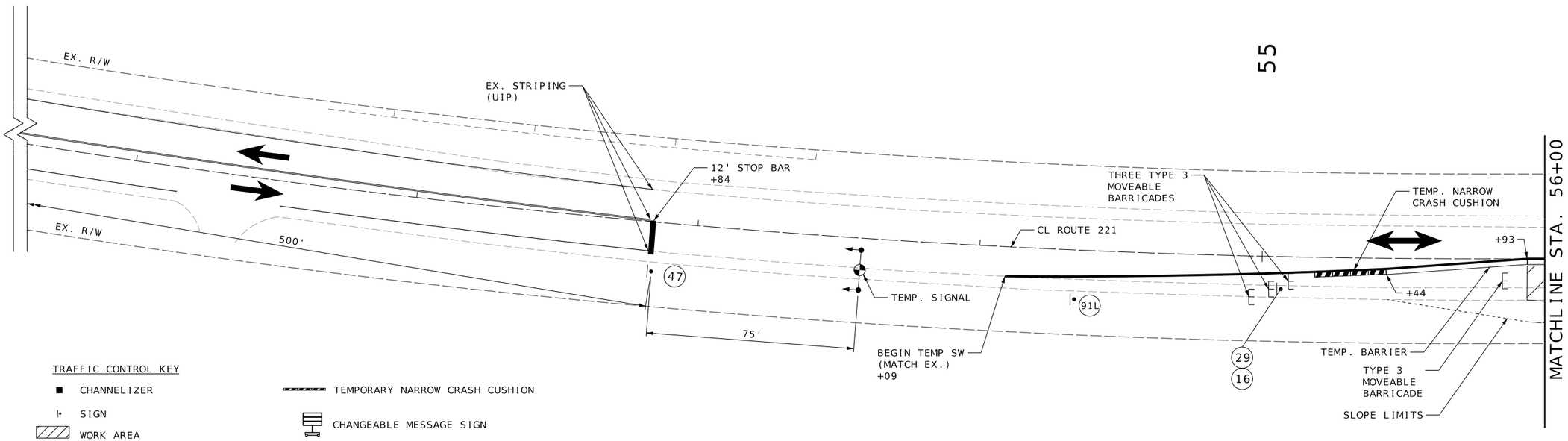
WO24-1L

91L

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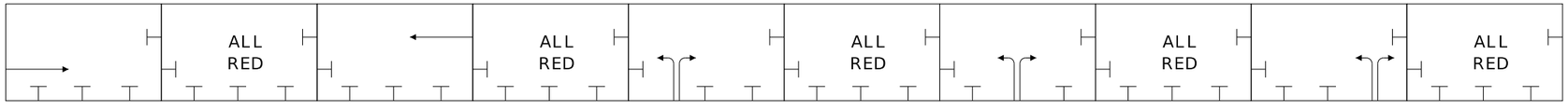
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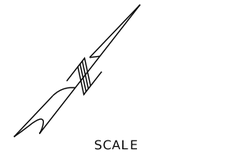
SEE TRAFFIC CONTROL DETAILS SHEET 4 FOR DETAILS



TRAFFIC CONTROL KEY

- CHANNELIZER
- SIGN
- WORK AREA
- TYPE 3 MOVEABLE BARRICADE
- IMPACT ATTENUATORS
- TEMPORARY NARROW CRASH CUSHION
- CHANGEABLE MESSAGE SIGN
- TRAVEL DIRECTION
- TEMP. LONG-TERM RUMBLE STRIPS





TRAFFIC CONTROL
SHEET 5 OF 10

STAGE 1
SHEET 1 OF 3

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Civil Engineering Design
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DATE | DESCRIPTION

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PROFESSIONAL ENGINEER
09/24/2026 5:23:14 PM
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MO PE-2010000809

DATE PREPARED
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ROUTE	STATE
221	MO
DISTRICT	SHEET NO.
SE	12

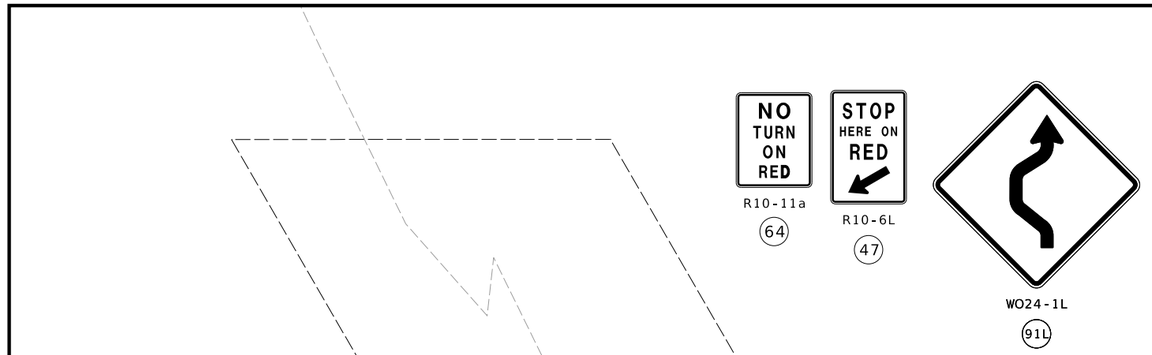
COUNTY
ST. FRANCOIS

JOB NO.
J9S3853

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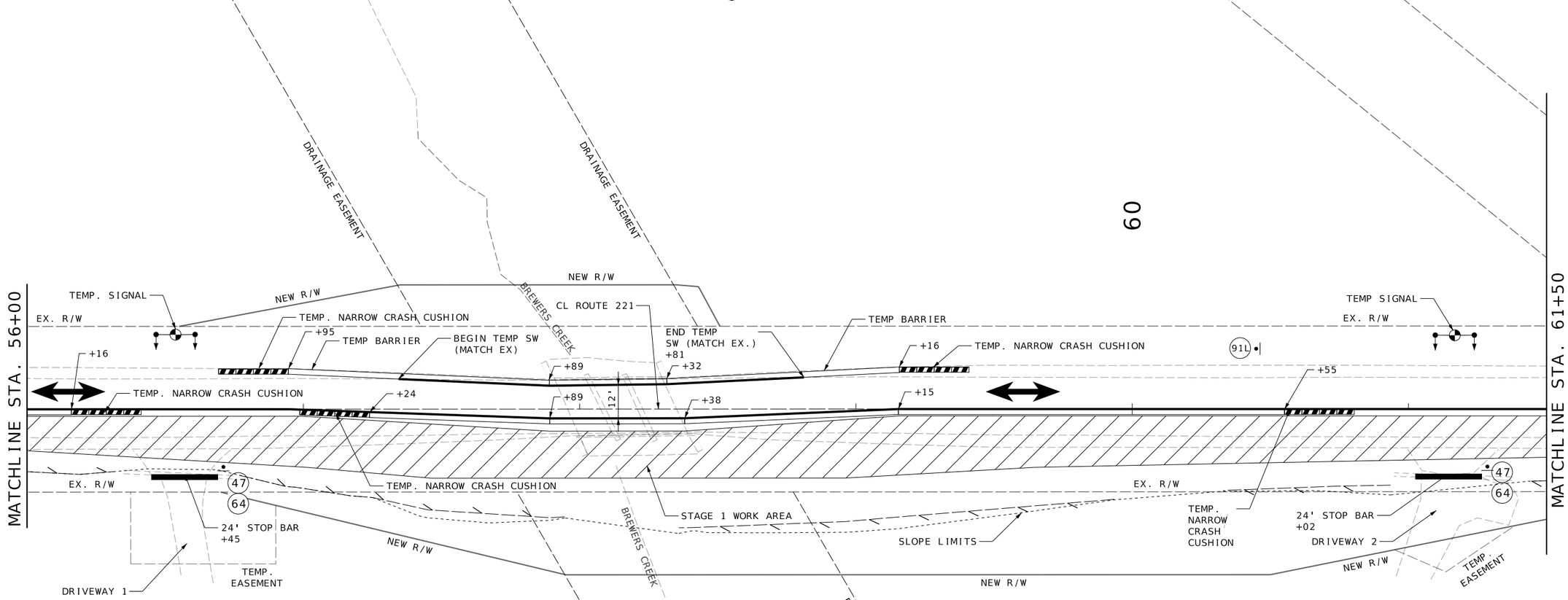
PROJECT NO.

BRIDGE NO.



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TRAFFIC CONTROL KEY

- CHANNELIZER
- SIGN
- WORK AREA
- TYPE 3 MOVEABLE BARRICADE
- IMPACT ATTENUATORS
- TEMPORARY NARROW CRASH CUSHION
- CHANGEABLE MESSAGE SIGN
- TRAVEL DIRECTION
- TEMP. LONG-TERM RUMBLE STRIPS

NOTE:
1. CONSTRUCTION ACROSS DRIVEWAY SHALL BE STAGED BY THE CONTRACTOR TO MAINTAIN ACCESS THROUGHOUT.

2. MAINTAIN 12' MINIMUM LANE WIDTH THRU TEMPORARY ONE LANE 2-WAY SEGMENT.

SCALE
0 20 40 60

TRAFFIC CONTROL
SHEET 6 OF 10

STAGE 1
SHEET 2 OF 3

STATE OF MISSOURI
NICHOLAS MICHAEL CORRENTI
NUMBER PE-2010000809
PROFESSIONAL ENGINEER

09/24/2026 5:23:14 PM
Nicholas Michael Correnti - Civil
MO PE-2010000809

DATE PREPARED
9/24/2026

ROUTE	STATE
221	MO
DISTRICT	SHEET NO.
SE	13

COUNTY
ST. FRANCOIS

JOB NO.
J9S3853

CONTRACT ID.

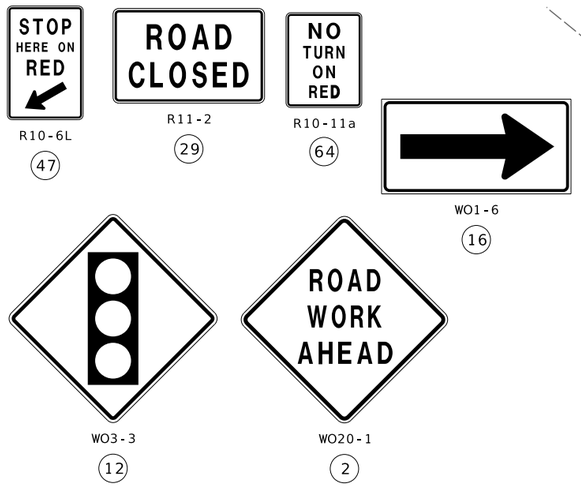
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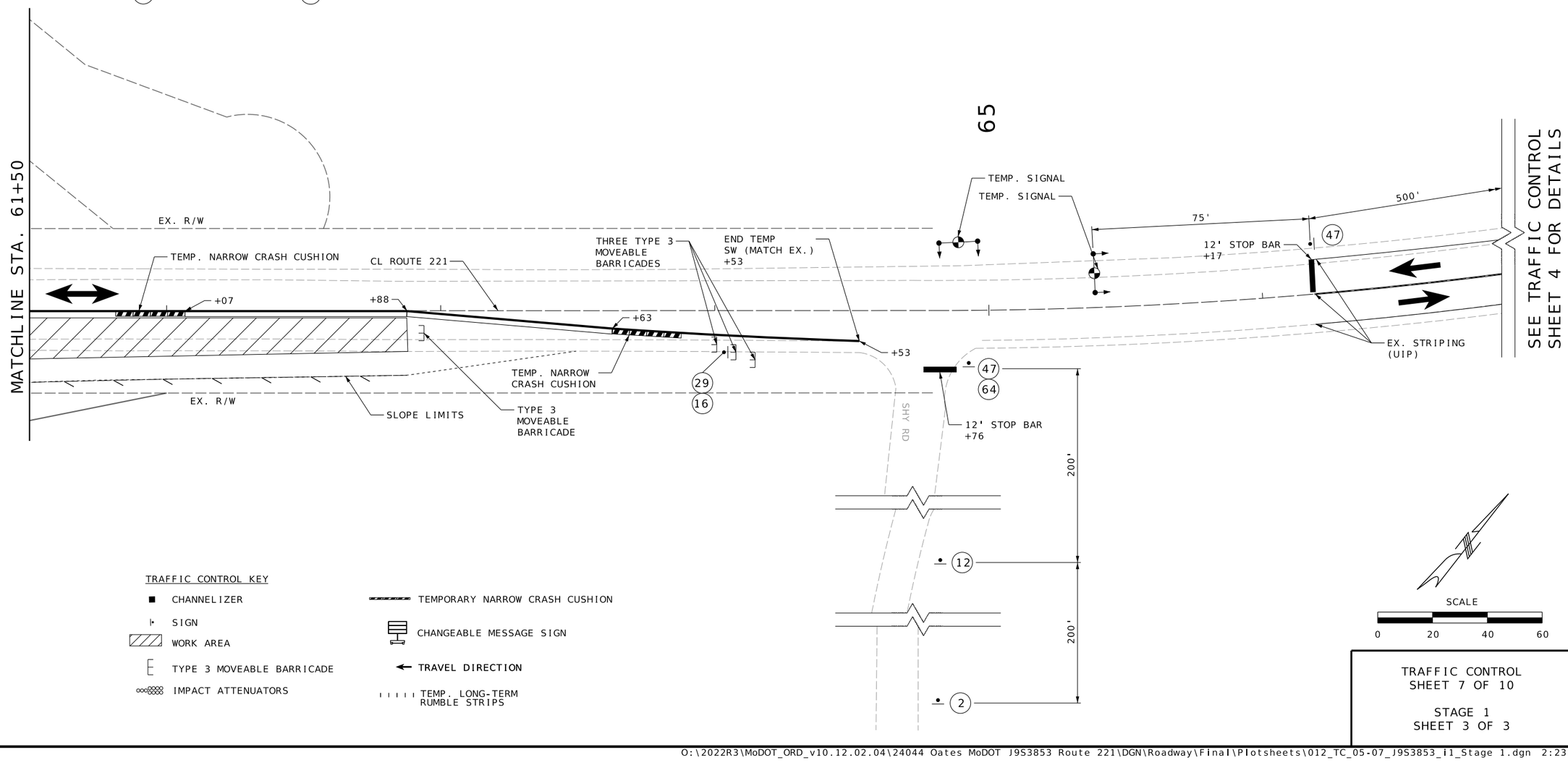
BRIDGE NO.

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 Drive
Suite 200
St. Louis, MO 63026
Phone 314-394-3100
Fax 314-394-3199
Missouri Certificate of Authority: 001578





TRAFFIC CONTROL KEY

- CHANNELIZER
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SCALE
0 20 40 60

TRAFFIC CONTROL
SHEET 7 OF 10

STAGE 1
SHEET 3 OF 3

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221	MO
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SE	14

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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

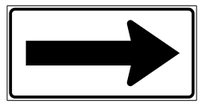
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R10-6L

(47)



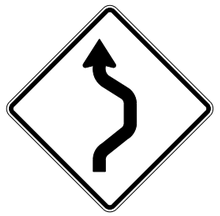
WO1-6

(16)



R11-2

(29)



WO24-1R

(91R)

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DATE PREPARED
9/24/2026

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221	MO
DISTRICT	SHEET NO.
SE	15

COUNTY
ST. FRANCOIS

JOB NO.
J9S3853

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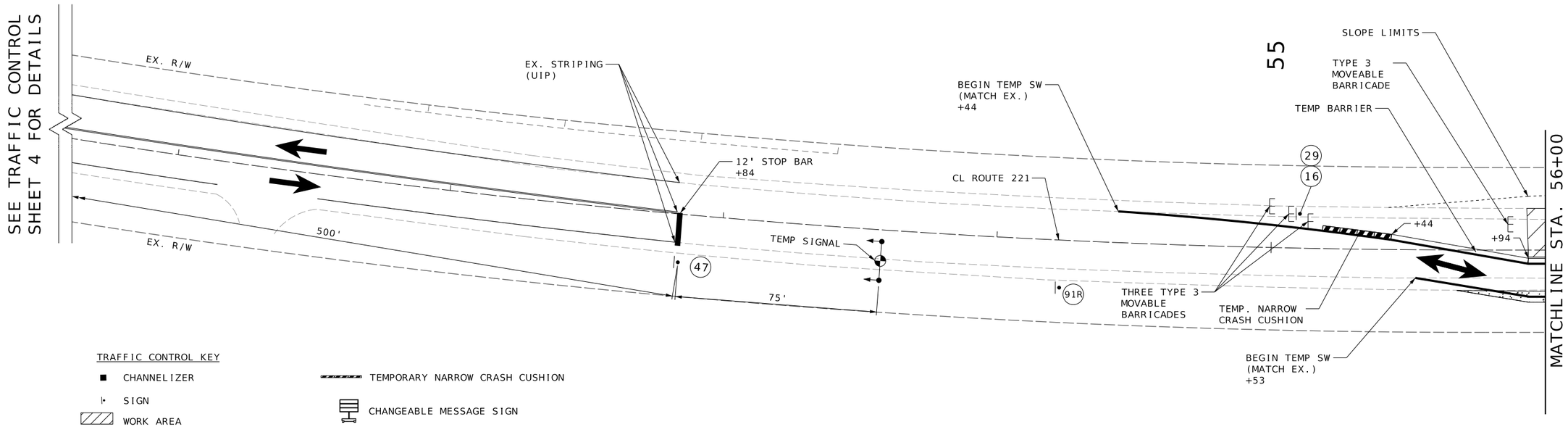
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SEE TRAFFIC CONTROL DETAILS SHEET 4 FOR DETAILS

55



TRAFFIC CONTROL KEY

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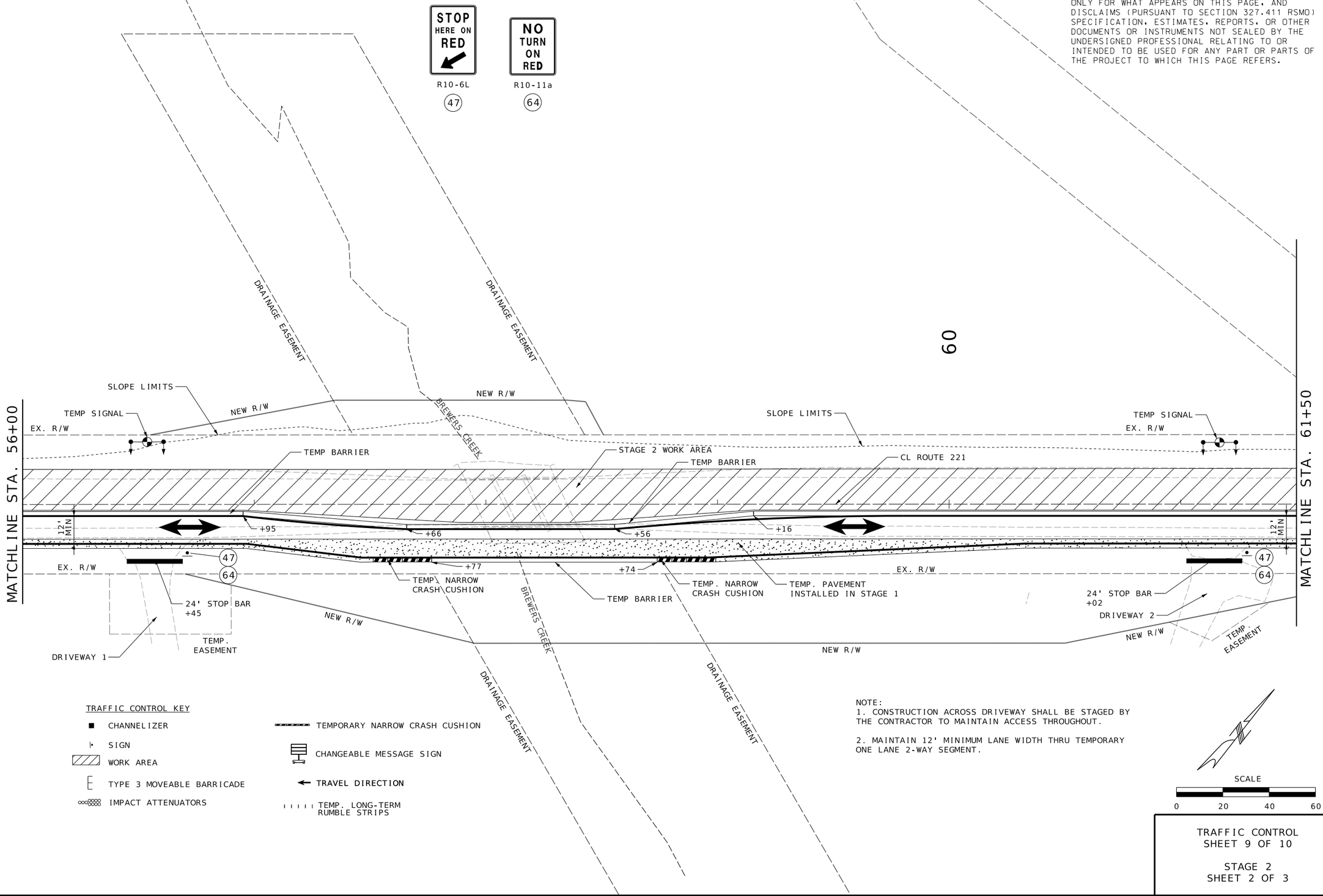
SCALE

0 20 40 60

TRAFFIC CONTROL
SHEET 8 OF 10

STAGE 2
SHEET 1 OF 3

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SCALE
0 20 40 60

TRAFFIC CONTROL
SHEET 9 OF 10

STAGE 2
SHEET 2 OF 3

STATE OF MISSOURI
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PROFESSIONAL ENGINEER
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Nicholas Michael Correnti - Civil
MO PE-2010000809

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9/24/2026

ROUTE	STATE
221	MO
DISTRICT	SHEET NO.
SE	16

COUNTY
ST. FRANCOIS

JOB NO.
J9S3853

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PROJECT NO.

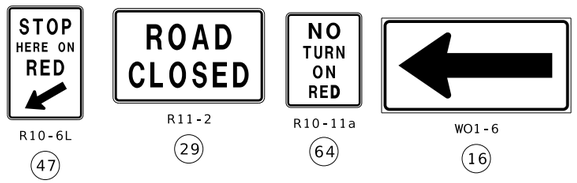
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R10-6L

(47)

R11-2

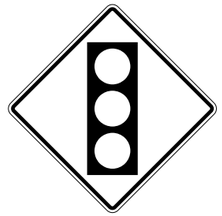
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R10-11a

(64)

WO1-6

(16)



WO3-3

(12)



WO20-1

(2)



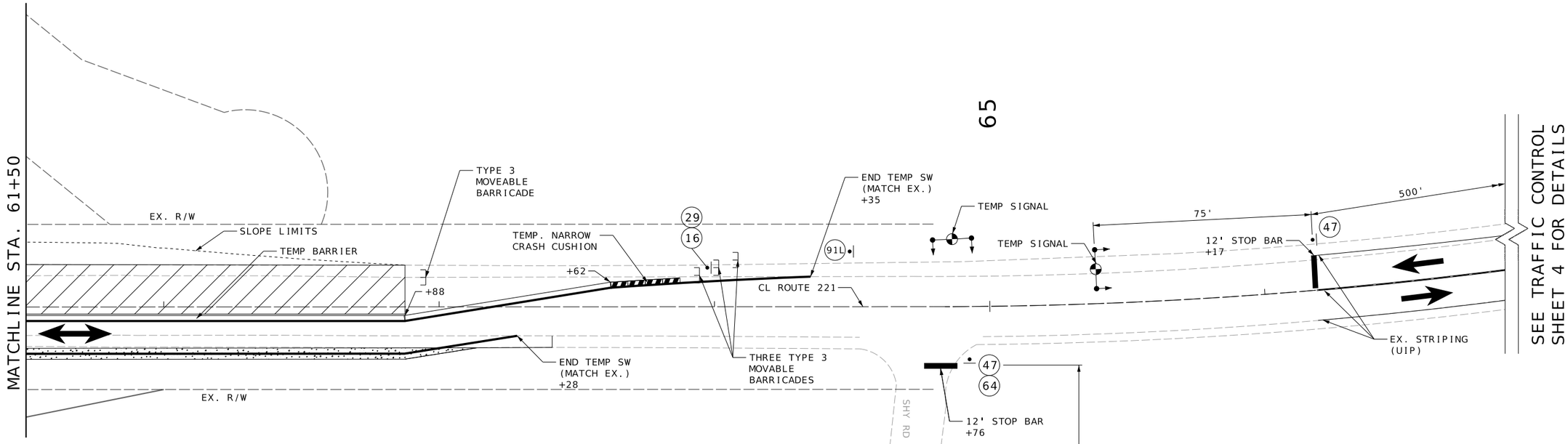
WO24-1L

(91L)

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65



SEE TRAFFIC CONTROL
SHEET 4 FOR DETAILS

TRAFFIC CONTROL KEY

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- SIGN
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SCALE

0 20 40 60

TRAFFIC CONTROL
SHEET 10 OF 10

STAGE 2
SHEET 3 OF 3

STATE OF MISSOURI
NICHOLAS MICHAEL CORRENTI
NUMBER PE-2010000809
PROFESSIONAL ENGINEER

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Nicholas Michael Correnti - Civil
MO PE-2010000809

DATE PREPARED
9/24/2026

ROUTE	STATE
221	MO
DISTRICT	SHEET NO.
SE	17

COUNTY
ST. FRANCOIS

JOB NO.
J9S3853

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

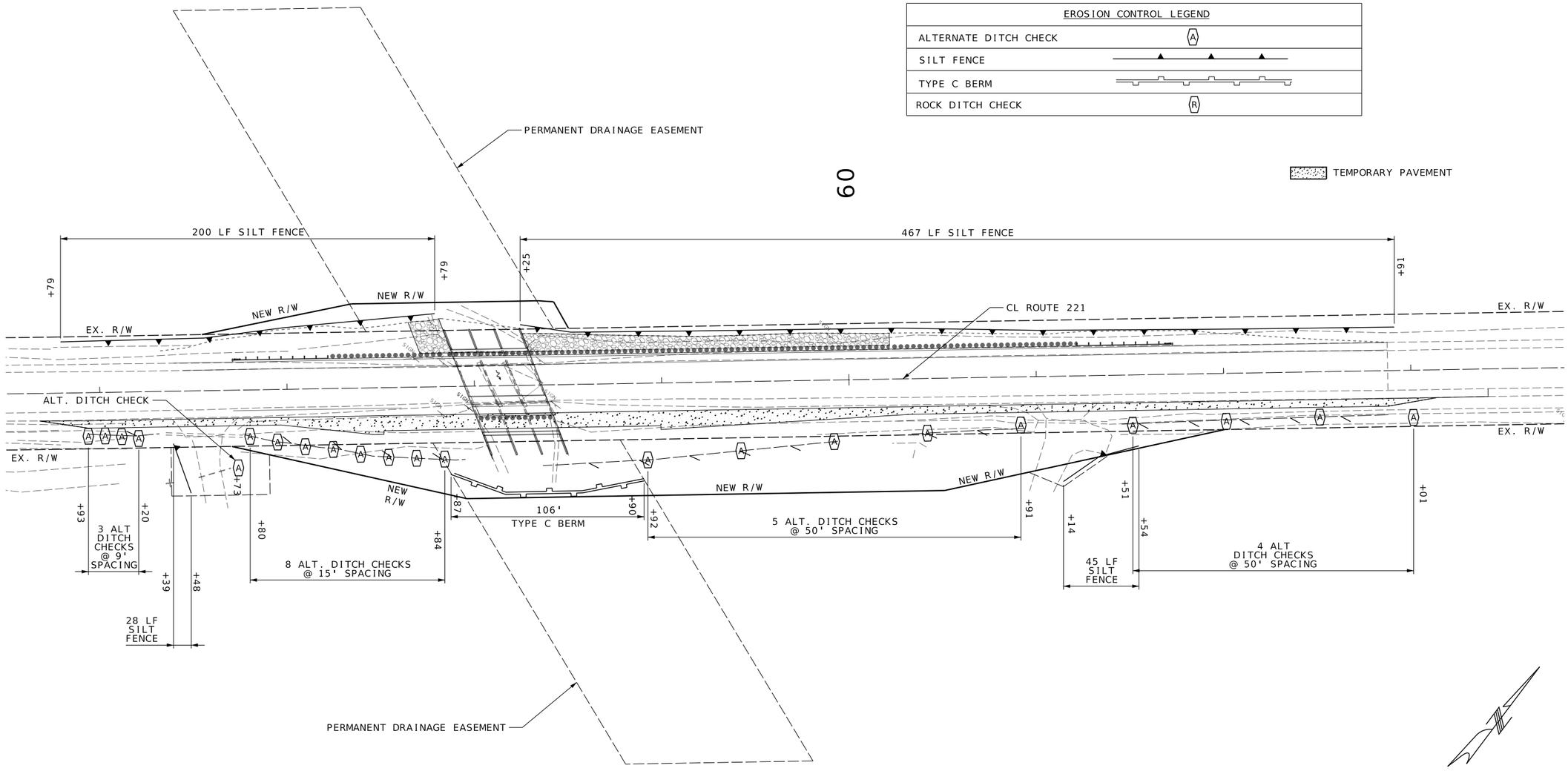
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PRIMARY RECEIVING WATERS: BREWERS CREEK

STAGE 1 CONSTRUCTION

EROSION CONTROL LEGEND	
ALTERNATE DITCH CHECK	(A)
SILT FENCE	
TYPE C BERM	
ROCK DITCH CHECK	(R)



SCALE
0 30 60 90

EROSION CONTROL
SHEET 1 OF 2

STAGE 1

STATE OF MISSOURI
NICHOLAS MICHAEL CORRENTI
NUMBER PE-2010000809
PROFESSIONAL ENGINEER
11/02/2026 4:53:48 PM
Nicholas Michael Correnti - Civil
MO PE-2010000809

DATE PREPARED
11/2/2026

ROUTE	STATE
221	MO
DISTRICT	SHEET NO.
SE	18

COUNTY
ST. FRANCOIS

JOB NO.
J9S3853

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION | DATE

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

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NICHOLAS MICHAEL CORRENTI
NUMBER PE-2010000809
PROFESSIONAL ENGINEER

09/24/2026 5:23:14 PM
Nicholas Michael Correnti - Civil
MO PE-2010000809

DATE PREPARED
9/24/2026

ROUTE	STATE
221	MO
DISTRICT	SHEET NO.
SE	19

COUNTY
ST. FRANCOIS

JOB NO.
J9S3853

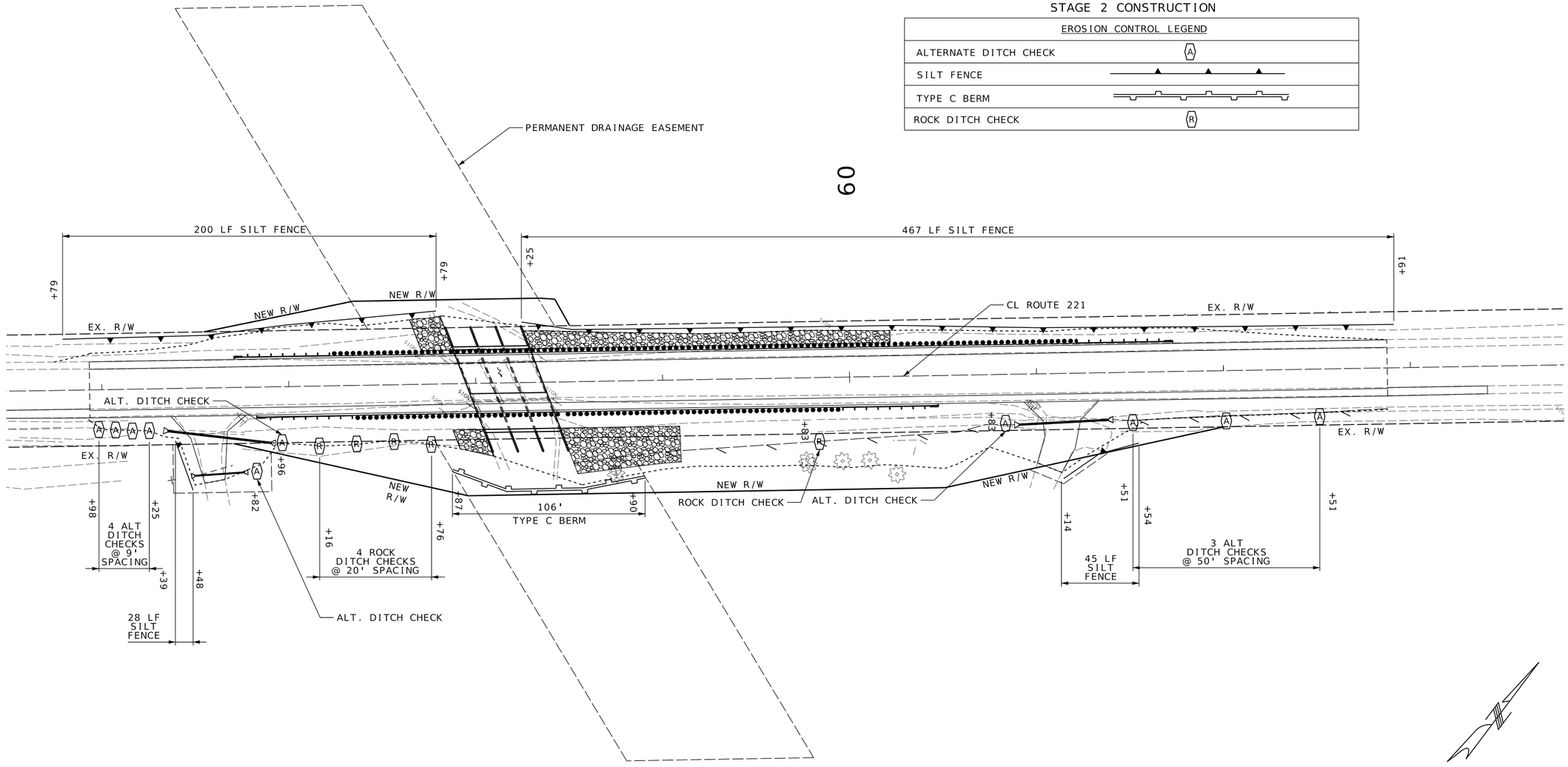
CONTRACT ID.

PROJECT NO.

BRIDGE NO.

STAGE 2 CONSTRUCTION

EROSION CONTROL LEGEND	
ALTERNATE DITCH CHECK	(A)
SILT FENCE	
TYPE C BERM	
ROCK DITCH CHECK	(R)



SCALE
0 30 60 90

EROSION CONTROL
SHEET 2 OF 2

STAGE 2

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
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1-888-ASK-MODOT (1-888-275-6636)

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PI 52+69.04
PC 49+58.10
PT 55+78.10
Δ 10°51'0.0" (LT)
D 1°45'0.0"
L 620.02' (CHORD)
T 310.94'
R 3,274.15'

55

PT STA 55+78.10

BEGIN 4" DSY
MATCH EXISTING
+83

BEGIN 4" SW
MATCH EXISTING
+83

BEGIN 12" EDGELINE
RUMBLE STRIPS
MATCH EXISTING
+94

BEGIN 12" CENTERLINE
RUMBLE STRIPS
MATCH EXISTING
+94

11' LANE
11' LANE
11' LANE
11' LANE

OM3-L
OM3-R
EXISTING TYPE III
OBJECT MARKER
SIGNS & POSTS (R)

BREWERS CREEK

℄ RTE. 221

BEGIN 12" EDGELINE
RUMBLE STRIPS
+27

OM3-R
OM3-L
EXISTING TYPE III OBJECT
MARKER SIGNS & POSTS (R)

MATCHLINE STA. 59+50

PAVEMENT MARKING LEGEND

4" SW	SOLID WHITE
4" DSY	DOUBLE SOLID YELLOW

SCALE
0 30 60 90

60

65

MATCHLINE STA. 59+50

SIGN POST (R)

℄ RTE. 221
N52°01'02"E

11' LANE
11' LANE

END 12" EDGELINE
RUMBLE STRIPS
MATCH EXISTING
+88

END 12" CENTERLINE
RUMBLE STRIPS
MATCH EXISTING
+88

END STA 64+79.50

END 4" DSY
MATCH EXISTING
+18

END 4" SW
MATCH EXISTING
+18

11' LANE
11' LANE

END 12" EDGELINE
RUMBLE STRIPS
+63

BEGIN 12" EDGELINE
RUMBLE STRIPS
+83

END 12" EDGELINE
RUMBLE STRIPS
MATCH EXISTING
+41

SHY RD

SCALE
0 30 60 90

PAVEMENT MARKING
& SIGNING
SHEET 1 OF 1

STATE OF MISSOURI
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ROUTE	STATE
221	MO
DISTRICT	SHEET NO.
SE	20

COUNTY
ST. FRANCOIS

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J9S3853

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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

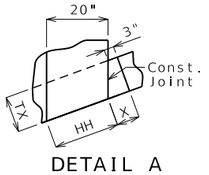
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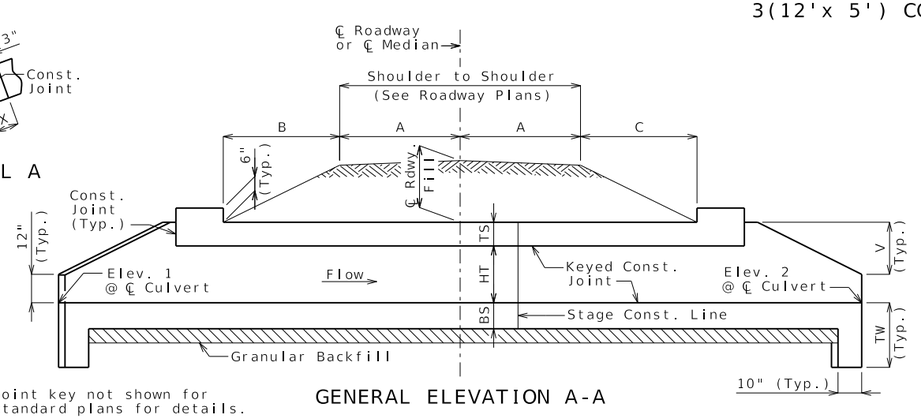
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3(12'x 5') CONCRETE BOX CULVERT

SEC/SUR 15 TWP 34N RGE 4E



DETAIL A

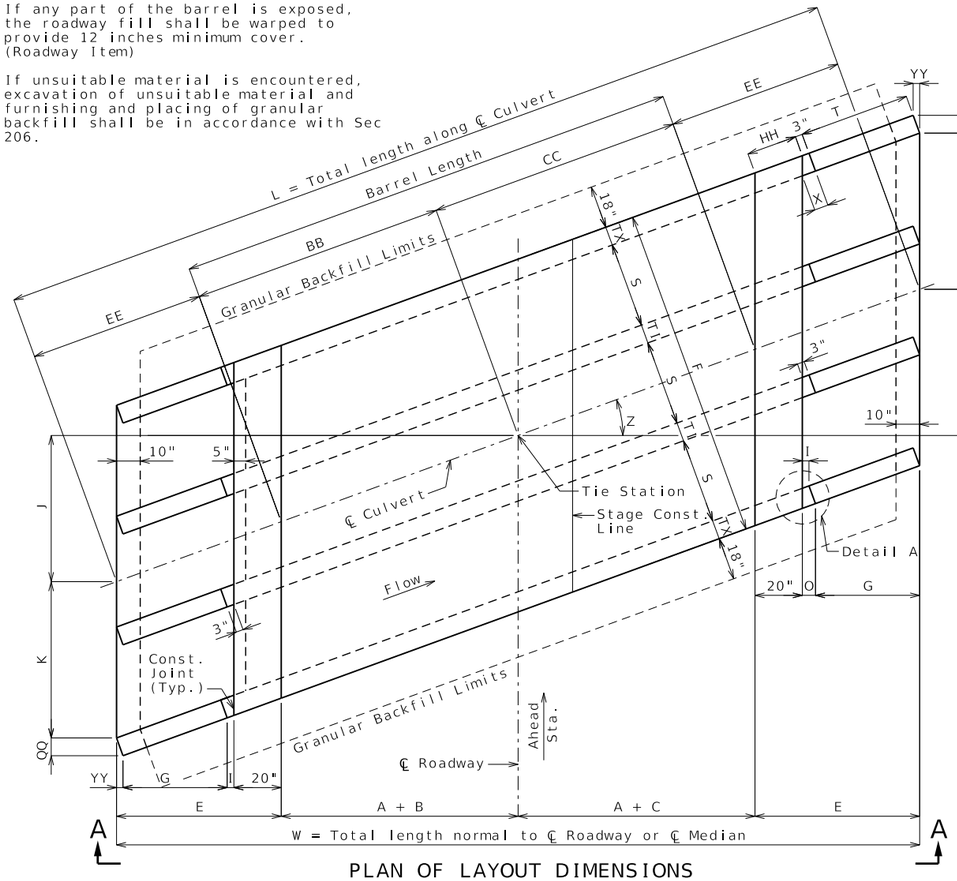


GENERAL ELEVATION A-A

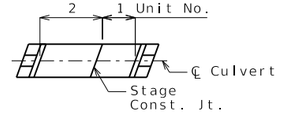
Construction joint key not shown for clarity, see standard plans for details.

If any part of the barrel is exposed, the roadway fill shall be warped to provide 12 inches minimum cover. (Roadway Item)

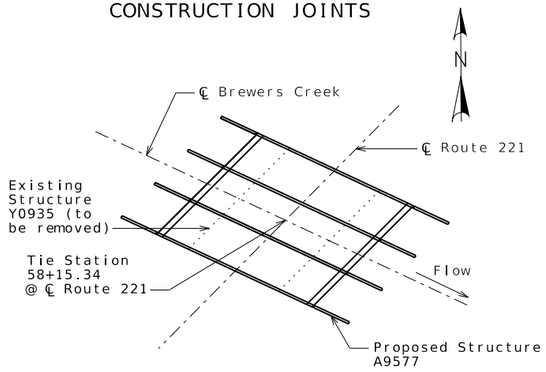
If unsuitable material is encountered, excavation of unsuitable material and furnishing and placing of granular backfill shall be in accordance with Sec 206.



PLAN OF LAYOUT DIMENSIONS



PLAN OF STAGE CONSTRUCTION JOINTS



LOCATION SKETCH

Layout Dimensions

Var.	Equation	Dim.	Var.	Equation	Dim.	Var.	Equation	Dim.
S	- - -	12'-0"	F	3S + 2TX + 2TI	38'-8"	W	2A + B + C + 2E	67'-11⅛"
HT	- - -	5'-0"	G	2V	10'-4"	X	3" + TX(tan Z)	5⅞"
TS	- - -	14"	H	(A + C + E)(tan Z)	13'-7⅝"	Z	Skew Angle	20°
BS	- - -	9"	I	3"(cos Z)	2⅞"	BB	(A + B)(sec Z)	19'-1⅞"
TX	- - -	8"	J	(A + B + E)(tan Z)	11'-1"	CC	(A + C)(sec Z)	26'-7¼"
TI	- - -	8"	K	(3S/2 + TI)(sec Z)	19'-10⅜"	EE	E(sec Z)	13'-3⅛"
A	- - -	15'-0"	L	2EE + BB + CC	72'-3⅜"	HH	20"(sec Z)	21¼"
B	- - -	3'-0"	O	I + YY	5½"	QQ	TX(cos Z)	7½"
C	- - -	10'-0"	T	G(sec Z)	11'-0"	YY	TX(sin Z)	2¾"
E	G + O + 20"	12'-5½"	V	HT + TS - 12"	5'-2"	TW	Max{3'-4" or (BS + 12")}	3'-4"

Hydrologic Data

Drainage Area = 2.4 mi^2
Design Flood Frequency = 50 years
Design Flood Discharge = 1390 cfs
Design Flood (D.F.) Elevation = 1036.9
Base Flood (100-year)
Base Flood Elevation = 1037.1
Base Flood Discharge = 1540 cfs
Estimated Backwater = 0.3 ft
Outlet Velocity = 3.4 ft/s
Roadway Overtopping
Overtopping Flood Discharge = 1220 cfs
Overtopping Flood Frequency = 25 years
Overtopping Flood Elevation = 1035.6

Elevations

Upstream (Elev. 1) = 1031.36
Downstream (Elev. 2) = 1030.76
Pr. Gr. at Tie Sta. = 1038.78

Fill Heights

℄ Rdwy at ℄ Culvert = 1.5 ft
Design (All units) = 1.0 ft

Dimensions are based on end units.
Fill heights are measured from the top of top slab to the top of earth fill or roadway.

Estimated Quantities

			Final
Class 4 Excavation	cu. yard	130	
Temporary Shoring	lump sum	1	
Dewatering	lump sum	1	
Removal of Bridges	lump sum	1	
Class B-1 Concrete (Culverts-Bridge)	cu. yard	201.8	
Reinforcing Steel (Culverts-Bridge)	pound	28,830	
Bridge Guardrail (W-Beam)	linear foot	82	

General Notes:

Design Specifications:
2010 AASHTO LRFD Bridge Design Specifications and 2010 Interim Revisions

Design Loading:
Vehicular = HL-93 minus lane load, Earth = 120 lb/cf
Equivalent Fluid Pressure = 30 lb/cf (min.), 60 lb/cf (max.)

Design Unit Stresses:
Class B-1 Concrete (Box Culvert) f'c = 4,000 psi
Reinforcing Steel (ASTM A615 Grade 60) fy = 60,000 psi

Standard Plans:
703.37, 703.84, 703.86, 703.87

Miscellaneous:
MoDOT Construction personnel will indicate the type of box culvert constructed:
☐ Precast Concrete Box used
☐ Cast-in-Place Concrete Box used

When alternate precast concrete box sections are used, the minimum distance from inside face of headwalls to precast sections measured along the shortest wall shall be 3 feet. Reinforcement and dimensions for wings and headwalls shall be in accordance with Missouri Standard Plans.

Channel bottom shall be graded within the right of way for transition of channel bed to culvert openings. Channel banks shall be tapered to match culvert openings. (Roadway Item)

Traffic Handling:
Traffic to be maintained on existing structure. See roadway plans for traffic control.

Top Slab Reinforcement													Bottom Slab Reinforcement										Wall Reinforcement				
A1 Bars		J3 Bars				H1 Bars				H2 Bars				A2 Bars		J4 Bars				H3 Bars				B1 Bars		B2 Bars		
Sz.	Spa.	Sz.	Spa.	C1	K2	Sz.	Spa.	C5	Q8	Sz.	Spa.	C6	Q9	Sz.	Spa.	Sz.	Spa.	C4	K3	Sz.	Spa.	C7	Q10	Sz.	Spa.	Sz.	Spa.	G1
5	6	4	6	59.1	30.0	5	12	114.5	86.5	5	12	31.0	34.0	5	7.5	6	7	54.6	77	6	6.5	53.0	56.0	5	12	5	12	12

Substitute table for tables shown on Standard Plan 703.87

B.M. CP-102 - N: 661752.1190 E: 799001.0051
Elev. 1035.929

CULVERT-BRIDGE: ROUTE 221 OVER BREWERS CREEK

ROUTE 221 FROM ROUTE 21 TO ROUTE NN
ABOUT 4.4 MILES EAST OF ROUTE 21
TIE STA. 58+15.34

Detailed May 2025
Checked May 2025

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

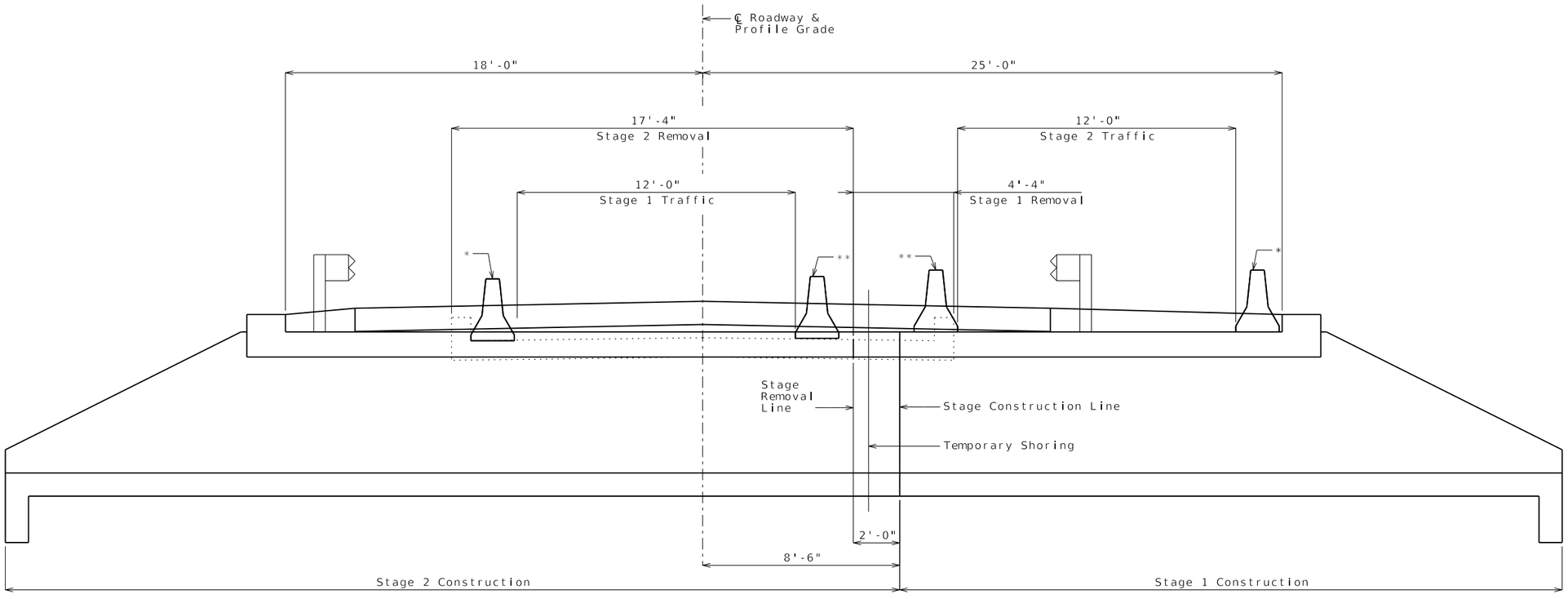
STATE OF MISSOURI
CHRIS LINNEMAN
NUMBER PE-2002016690
PROFESSIONAL ENGINEER
07/27/2025 11:27:55 AM
Chris Linneman - Civil
MO PE-2002016690

DATE PREPARED 7/27/2025
ROUTE 221 | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY ST. FRANCOIS
JOB NO. J9S3853
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9577

DESCRIPTION | 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
13523 Barrett Parkway Dr
Suite 250
St. Louis, MO 63021
Phone 314-394-3100
Fax 314-394-3199
Missouri Certificate of Authority: 001578



* Temporary Concrete Barrier (Roadway Item)(Freestanding)

** Temporary Concrete Barrier (Roadway Item)(pinned to concrete slab)

TYPICAL SECTION THRU ROADWAY SHOWING STAGE CONSTRUCTION

Detailed May 2025
Checked May 2025

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

STATE OF MISSOURI
CHRIS LINNEMAN
NUMBER PE-2002016690
PROFESSIONAL ENGINEER
07/27/2025 11:27:43 AM
Chris Linneman - Civil
MO PE-2002016690

DATE PREPARED 7/27/2025

ROUTE	STATE
221	MO

DISTRICT	SHEET NO.
BR	2

COUNTY ST. FRANCOIS

JOB NO. J9S3853

CONTRACT ID.

PROJECT NO.

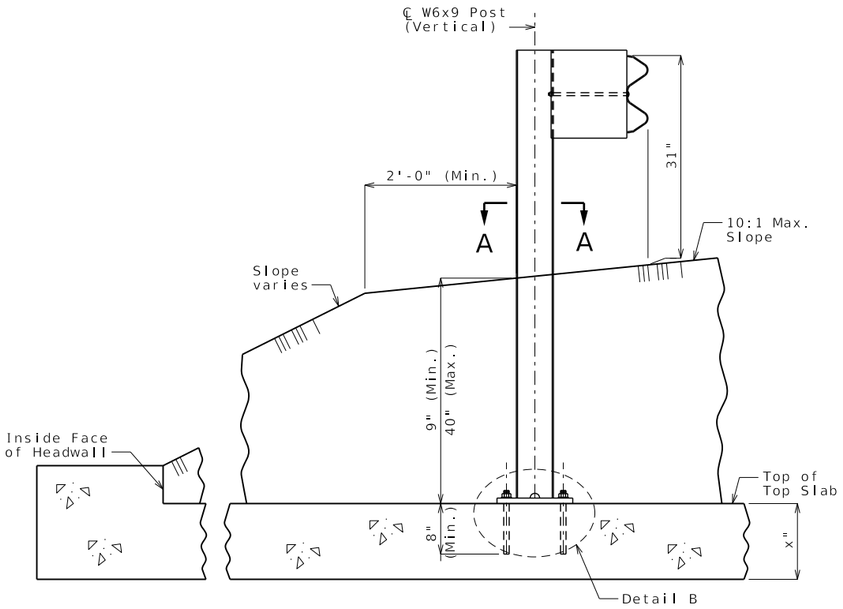
BRIDGE NO. A9577

DESCRIPTION

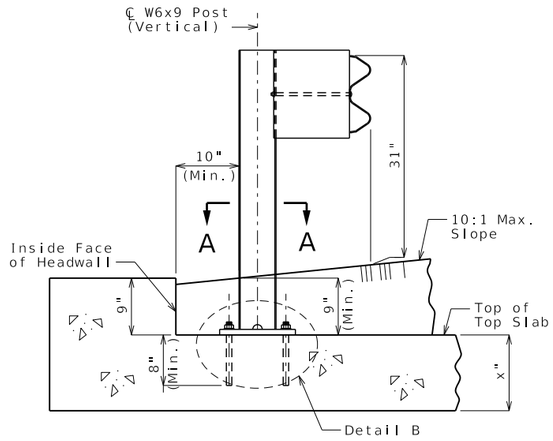
REV.

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

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PART SECTION THRU TOP SLAB
SHOWING RAIL POST ATTACHMENT
(Far from headwall)



PART SECTION THRU TOP SLAB
SHOWING RAIL POST ATTACHMENT
(Close to headwall)

General Notes:

Furnishing and installing posts and guardrail on culvert as shown on this sheet will be considered completely covered by the contract unit price for Bridge Guardrail (W-Beam).

Furnishing and installing posts and guardrail on culvert shall be in accordance with Sec 606 except as shown.

Rail posts shall be seated on 1/16-inch elastomeric pads having the same dimensions as the post base plate. Such pads may be any elastomeric material, plain or fibered, having hardness (durometer) of 50 or above, as certified by the manufacturer. Additional pads or half pads may be used in shimming for alignment. Post heights shown will increase by the thickness of the pad.

Posts and base plates shall be fabricated from ASTM A709 Grade 36 steel and galvanized.

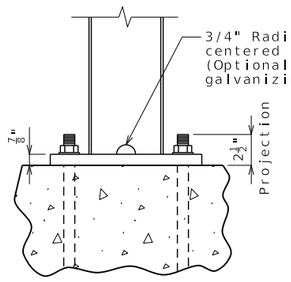
Fabrication of structural steel shall be in accordance with Sec 1080.

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

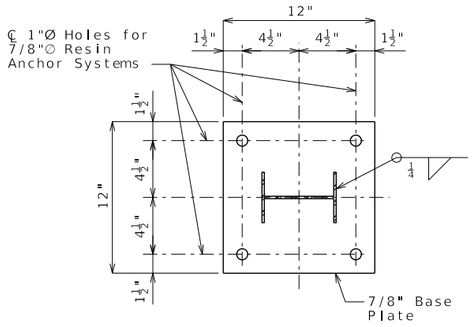
Cost of furnishing and installing the resin anchor systems, complete in place, will be considered completely covered by the contract unit price for Bridge Guardrail (W-beam).

The minimum embedment depth in concrete with f'c = 4,000 psi for the resin anchor systems shall be that required to meet the minimum ultimate pullout strength in accordance with Sec 1039 but shall not be less than 8 inches.

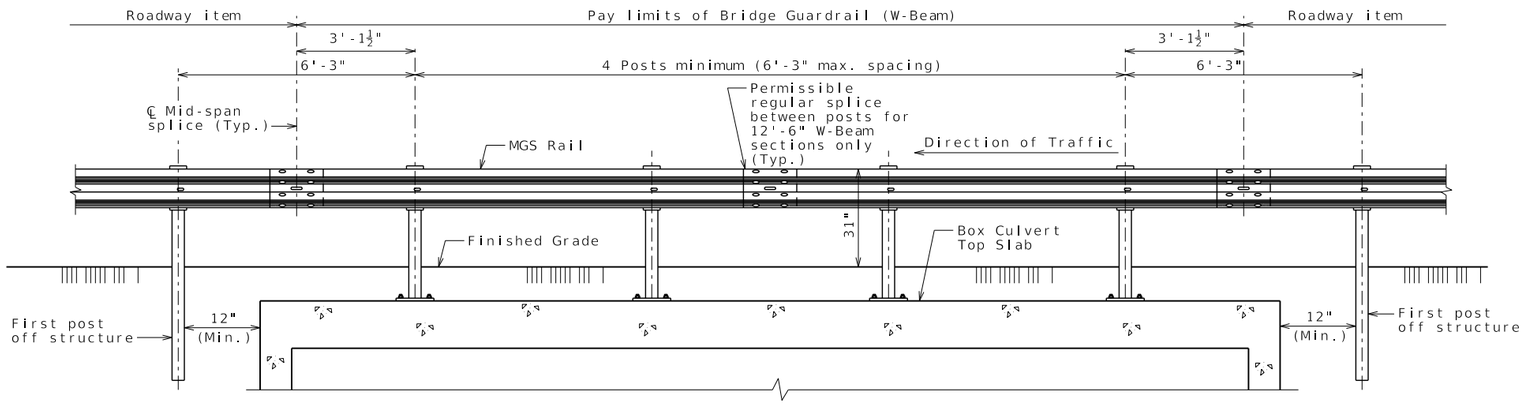
See Missouri Standard Plans drawing 606.50 for details not shown.



DETAIL B



SECTION A-A



TYPICAL ELEVATION

MIDWEST GUARDRAIL SYSTEM (MGS) ON BOX CULVERT

Detailed May 2025
Checked May 2025

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

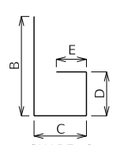
STATE OF MISSOURI
CHRIS LINNEMAN
NUMBER PE-2002016690
PROFESSIONAL ENGINEER
07/27/2025 11:27:29 AM
Chris Linneman - Civil
MO PE-2002016690

DATE PREPARED 7/27/2025
ROUTE 221 | STATE MO
DISTRICT BR | SHEET NO. 3
COUNTY ST. FRANCOIS
JOB NO. J9S3853
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9577

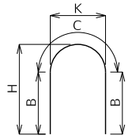
DESCRIPTION | REV.

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

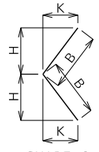
EFK•Moen
Civil Engineering Design
13523 Barrett Parkway Dr
Suite 250
St Louis, MO 63021
Phone 314-394-3100
Fax 314-394-3199
Missouri Certificate of Authority: 001578



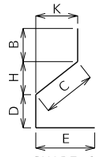
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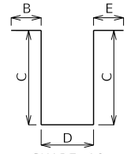
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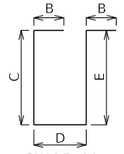
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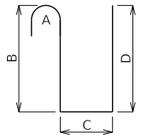
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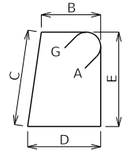
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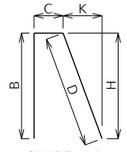
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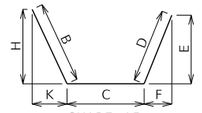
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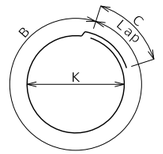
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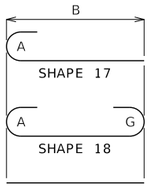
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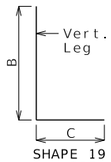
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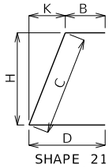
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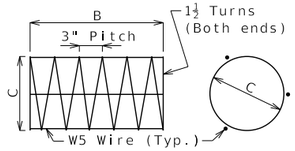
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SHAPE 18
SHAPE 20



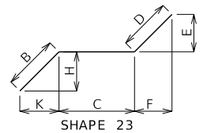
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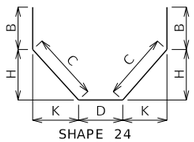
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or 21S



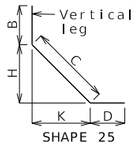
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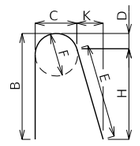
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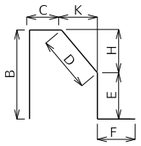
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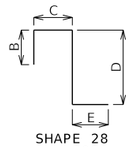
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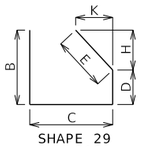
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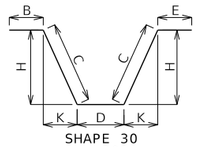
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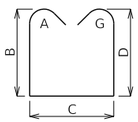
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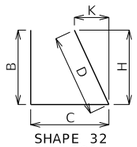
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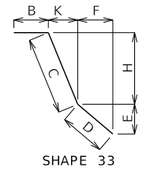
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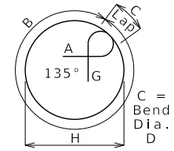
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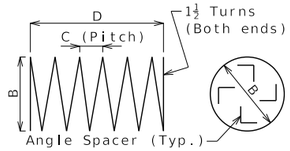
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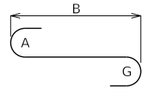
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SHAPE 34S



SHAPE 35 (1)

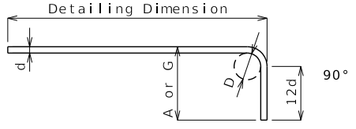


SHAPE 36

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"	9¾"	7"
	3	7"	15"	11½"	8¾"
#8	2	6"	16"	11"	8"
	3	8"	17"	13¼"	10"
#9	1	9½"	19½"	15½"	11¾"
#10	1	10¾"	22"	17½"	13¼"
#11	1	12"	24½"	19½"	14⅞"
#14	1	18¼"	31¼"	27½"	21⅝"
#18	1	24"	41½"	36¼"	28½"

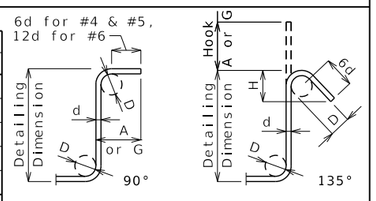


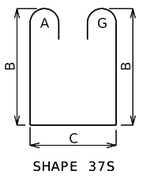
Stirrup Pin Bend Shapes (S)

Size	Case	D	A or G			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"

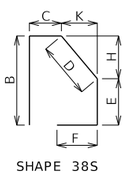
Applicable for all grades of steel.

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					
		Plain	Epoxy	Plain	Epoxy	Barrier	Slip Form	Plain	Epoxy
By Size	W5								
	4	0	0	0	0	0	0	6124	0
	5	0	0	0	0	0	0	13700	0
	6	0	0	0	0	0	0	6510	0
	7	0	0	0	0	0	0	1020	0
	8	0	0	0	0	0	0	1478	0
	9	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0
	11	0	0	0	0	0	0	0	0
	14	0	0	0	0	0	0	0	0
	18	0	0	0	0	0	0	0	0
By Type		0	0	0	0	0	0	28,832	0

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

BENDING DIAGRAMS AND REINFORCING STEEL TOTALS

Detailed May 2025
Checked May 2025

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

Sheet No. 4 of 6

STATE OF MISSOURI
CHRIS LINNEMAN
NUMBER PE-2002016690
PROFESSIONAL ENGINEER
07/27/2025 11:27:15 AM
Chris Linneman - Civil
MO PE-2002016690

DATE PREPARED 7/27/2025
ROUTE 221 | STATE MO
DISTRICT BR | SHEET NO. 4
COUNTY ST. FRANCOIS
JOB NO. J9S3853
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9577

DESCRIPTION

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
13523 Barrett Parkway Dr
Suite 250
St. Louis, MO 63021
Phone 314-394-3100
Fax 314-394-3199
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
		STAGE 1													
10	5 A1	TOP SLAB		20		38 4.000							38 4	38 4	400
27	5 A2	BTM SLB		20		38 4.000							38 4	38 4	1080
50	5 A3	TOP SLAB		20	2	37 4.000							37 4	37 4	1086
		INCR=16 1/2 IN				4 4.000							4 4	4 4	
42	5 A4	BTM SLAB		20	2	37 2.000							37 2	37 2	876
		INCR=20 5/8 IN				2 10.000							2 10	2 10	
80	5 B1	INT WALL		10			12.00	6 6.00					8 6	8 3	688
40	5 B2	EXT WALL		10			12.00	6.00 6.00					8 6	8 3	344
2	8 D1	HEADWALL		20		40 10.000							40 10	40 10	218
4	8 D2	HEADWALL		20		8 0.000							8 0	8 0	85
16	5 E1	WING		20		4 0.000							4 0	4 0	67
66	4 F10	TOP SLAB		20		19 0.000							19 0	19 0	838
33	4 F11	BTM SLAB		20		30 6.000							30 6	30 6	672
10	4 F12	BTM SLAB		20		30 6.000							30 6	30 6	204
24	4 F13	WALLS		20	6	28 1.000							28 1	28 1	394
		INCR=28IN				21 1.000							21 1	21 1	
4	4 F24	EXT WALL		20	2	23 5.000							23 5	23 5	59
		INCR=28IN				21 1.000							21 1	21 1	
44	5 G1	INT WING		20	4	6 8.000							6 8	6 8	199
		INCR=5 5/8 IN				2 0.000							2 0	2 0	
22	5 G2	EXT WING		20	2	6 8.000							6 8	6 8	99
		INCR=5 5/8 IN				2 0.000							2 0	2 0	
26	5 H1	TOP SLAB		20		16 9.000							16 9	16 9	454
42	5 H2	TOP SLAB		20		5 5.000							5 5	5 5	237
122	6 H3	BTM SLAB		20		9 1.000							9 1	9 1	1664
4	8 H10	HEADWALL		20		40 10.000							40 10	40 10	436
16	7 J1	WING		20		15 7.000							15 7	15 7	510
70	4 J3	TOP CORNER		19		2 6.000	4 11.10						7 5	7 4	343
60	6 J4	BTM CORNER		19		6 5.000	4 6.60						11 0	10 10	976
42	5 R3	HEADWALL		10	S		17.00	17.00					4 3	4 0	175

This bar list is based on the Missouri Standard Plans. This bar list is for quantity estimation purposes only and shall be verified or modified by the contractor.

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
		STAGE 2													
30	5 A1	TOP SLAB		20		38 4.000							38 4	38 4	1199
43	5 A2	BTM SLAB		20		38 4.000							38 4	38 4	1719
50	5 A3	TOP SLAB		20	2	37 4.000							37 4	37 4	1086
		INCR=16 1/2 IN				4 4.000							4 4	4 4	
42	5 A4	BTM SLAB		20	2	37 2.000							37 2	37 2	876
		INCR=20 5/8 IN				2 10.000							2 10	2 10	
120	5 B1	INT WALL		10			12.000	6 6.000					8 6	8 3	1033
60	5 B2	EXT WALL		10			12.000	6 6.000					8 6	8 3	516
2	8 D1	HEADWALL		20		40 10.000							40 10	40 10	218
4	8 D2	HEADWALL		20		8 0.000							8 0	8 0	85
16	5 E1	WING		20		4 0.000							4 0	4 0	67
66	4 F20	TOP SLAB		20		29 1.000							29 1	29 1	1282
33	4 F21	BTM SLAB		20		41 1.000							41 1	41 1	906
10	4 F22	BTM SLAB		20		41 1.000							41 1	41 1	274
24	4 F23	WALLS		20	6	36 1.000							36 1	36 1	522
		INCR=28IN		20		29 1.000							29 1	29 1	
4	4 F24	EXT WALL		20	2	31 5.000							31 5	31 5	81
		INCR=28IN				29 1.000							29 1	29 1	
44	5 G1	INT WING		20	4	6 8.000							6 8	6 8	199
		INCR=5 5/8 IN				2 0.000							2 0	2 0	
22	5 G2	EXT WING		20	2	6 8.000							6 8	6 8	99
		INCR=5 5/8 IN				2 0.000							2 0	2 0	
48	5 H1	TOP SLAB		20		16 9.000							16 9	16 9	839
64	5 H2	TOP SLAB		20		5 5.000							5 5	5 5	362
162	6 H3	BTM SLAB		20		9 1.000							9 1	9 1	2210
4	8 H10	HEADWALL		20		40 10.000							40 10	40 10	436
16	7 J1	WING		20		15 7.000							15 7	15 7	510
112	4 J3	TOP CORNER		19		2 6.000	4 11.100						7 5	7 4	549
102	6 J4	BTM CORNER		19		6 5.000	4 6.600						11 0	10 10	1660
42	5 R1	HEADWALL	S	27		17.000	12.000	5.875	2 3.000		4.125	4.125	5 2	5 0	219
42	5 R2	HEADWALL	S	10			10.500	17.000					3 2	2 11	128

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. 4.

All bars shall be Grade 60.

Codes: C = Required coatings, where E = Epoxy Coated and G = Galvanized.

SH = Required shape, see bending diagrams.

V = Sets of varied bars and number of bars of each length. Bar dimensions vary in equal increments between dimensions shown on this line and the following line and the actual length dimension shown on this line and the following line vary by the specified increment.

Detailed May 2025
Checked May 2025

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

BILL OF REINFORCING STEEL

Sheet No. 5 of 6

STATE OF MISSOURI
CHRIS LINNEMAN
NUMBER PE-2002016690
PROFESSIONAL ENGINEER

07/27/2025 11:27:03 AM
Chris Linneman - Civil
MO PE-2002016690

DATE PREPARED
7/27/2025

ROUTE 221 | STATE MO
DISTRICT BR | SHEET NO. 5
COUNTY ST. FRANCOIS
JOB NO. J9S3853
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9577

DESCRIPTION

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
13523 Barrett Parkway Dr
Suite 250
St Louis, MO 63021
Phone 314-394-3100
Fax 314-394-3199
Missouri Certificate of Authority: 001578

Docusign Envelope ID: 0AADAABF-9BC1-4FDB-88F2-5A978297EB63

Missouri Department of Transportation
Construction and Materials

BORING NO. B-1
Page 1 of 1

Job No.: J9S3853 (SCI No. 2024-0652.14) **County:** St. Francois **Route:** 114
Design: N/A **Skew:** N/A **Location:** 0.12 miles SW of Rte 221/Shy Rd
Bent: N/A **Logged By:** Ian Aubuchon **Operator:** Midwest Drilling, Inc.
Station: 57+33 **Northing:** 661621.73 **Date of Work:** 08/26/24
Offset: 7' LT **Easting:** 798804.16 **Depth to Water:** None
Elevation: 1038.5 **Requested Northing:** N/A **Depth Hole Open:** 16.5
Requested Station: N/A **Requested Easting:** N/A **Time Change:**
Requested Offset: N/A **Equipment:** CME 750 ,Split-Spoon Sampler, NQ
Requested Elevation: **Location Note:** Near SW Approach
Drill No.: 255648 **Hammer Efficiency:** 90.7% **Drilling Method:** Continuous Flight Auger

Depth (ft)	Graphic	Description	Elevation (ft)	Sample Type	REC % (RQD %)	Blow Counts (N_{60})	Shear Data	Field Tests	Index Tests
0		0.0-0.5' 6" ASPHALTIC CONCRETE							
		0.5-3.0' (FILL) Brown, LEAN CLAY, trace crushed rock, trace fine- to coarse-grained sand			39	3-3-3 (9)			LL = 29 PL = 18 MC = 17.1%
		3.0-8.0' (CL) Brown, LEAN CLAY, with fine- to coarse-grained sand, trace fine gravel	1035		33	3-3-5 (12)			MC = 10.3%
5		5.5' Few fine to coarse gravel			33	6-8-11 (29)			MC = 9.6%
		8.0-10.5' (SC) Brown, CLAYEY SAND WITH GRAVEL fine- to coarse-grained, gravel is fine to coarse, clay is lean	1030		27	18-20-50/0.3'			Sieve Analysis Sieve# % Passing 1/2-inch 100.0 3/8-inch 77.2 #4 59.0 #10 46.2 #20 35.5 #40 28.4 #60 25.1 #100 22.8 #140 21.6 #200 20.5
10		10.5-16.5' RHYOLITE: Very hard, aphanitic to finely crystalline, moderately weathered			54 (0)				
			1025		89 (11)				
15		Refusal at 10.5 feet. Bottom of borehole at 16.5 feet.			100 (100)		Qu Test Results UCS = 599 ksf MC = 0% γ_{moist} = 164.3 pcf		

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

Coordinate System: U.S. State Plane 1983 **Coordinate Zone:** Missouri East **Coordinate Proj. Factor:** 1.000000
Coordinate Datum: NAD 1983 **Coordinate Units:** U.S. Survey Feet

* Persons using this information are cautioned that the materials shown are determined by the equipment noted and accuracy of the "log of materials" is limited thereby and by judgement of the operator. THIS INFORMATION IS FOR DESIGN PURPOSES ONLY.

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Missouri Department of Transportation
Construction and Materials

BORING NO. B-2
Page 1 of 1

Job No.: J9S3853 (SCI No. 2024-0652.14) **County:** St. Francois **Route:** 114
Design: N/A **Skew:** N/A **Location:** 0.12 miles SW of Rte 221/Shy Rd
Bent: N/A **Logged By:** Ian Aubuchon **Operator:** Midwest Drilling, Inc.
Station: 58+71 **Northing:** 661690.86 **Date of Work:** 08/26/24
Offset: 13' RT **Easting:** 798925.29 **Depth to Water:** 8.5
Elevation: 1036.3 **Requested Northing:** N/A **Depth Hole Open:** 19.0
Requested Station: N/A **Requested Easting:** N/A **Time Change:**
Requested Offset: N/A **Equipment:** CME 750 ,Split-Spoon Sampler, NQ
Requested Elevation: **Location Note:** Near NE Approach
Drill No.: 255648 **Hammer Efficiency:** 90.7% **Drilling Method:** Continuous Flight Auger

Depth (ft)	Graphic	Description	Elevation (ft)	Sample Type	REC % (RQD %)	Blow Counts (N_{60})	Shear Data	Field Tests	Index Tests
0		0.0-0.5' 6" ASPHALTIC CONCRETE							
		0.5-5.5' (FILL) Brown, LEAN CLAY, with crushed rock, trace brick	1035		72	4-6-11 (26)			MC = 11.6%
5					33	3-4-5 (14)			LL = 28 PL = 19 MC = 9.2%
		5.5-9.0' (GC) Brown, CLAYEY GRAVEL WITH SAND, fine to coarse, sand is fine- to coarse-grained, clay is lean	1030		22	6-8-10 (27)			Sieve Analysis Sieve# % Passing 1/2-inch 100.0 3/8-inch 36.7 #4 35.1 #10 30.5 #20 25.2 #40 21.3 #60 19.3 #100 17.9 #140 17.1 #200 16.3
10		9.0-19.0' RHYOLITE: Very hard, aphanitic to finely crystalline, moderately weathered			100	50/0.3'			
			1025		100 (0)				
15		Refusal at 9.0 feet. Bottom of borehole at 19.0 feet.	1020		63 (0)				

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

Coordinate System: U.S. State Plane 1983 **Coordinate Zone:** Missouri East **Coordinate Proj. Factor:** 1.000000
Coordinate Datum: NAD 1983 **Coordinate Units:** U.S. Survey Feet

* Persons using this information are cautioned that the materials shown are determined by the equipment noted and accuracy of the "log of materials" is limited thereby and by judgement of the operator. THIS INFORMATION IS FOR DESIGN PURPOSES ONLY.

LETTER BOREHOLE - MODOT 20150728.GDT - 10/23/24 15:49 - N:\LABORATORY\ACTIVE GINT PROJECTS\2024-0652.14 MODOT BREWERS CREEK.GPJ

STATE OF MISSOURI
CHRIS LINNEMAN
NUMBER PE-2002016690
PROFESSIONAL ENGINEER
07/27/2025 11:26:50 AM
Chris Linneman - Civil
MO PE-2002016690

DATE PREPARED 7/27/2025
ROUTE 221 | STATE MO
DISTRICT BR | SHEET NO. 6
COUNTY ST. FRANCOIS
JOB NO. J9S3853
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9577
DESCRIPTION

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
13523 Barrett Parkway Dr
Suite 250
St. Louis, MO 63021
Phone 314-394-3100
Fax 314-394-3199
Missouri Certificate of Authority: 001578

REV.

BORING DATA

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

Detailed May 2025
Checked May 2025

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