MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
PROPOSED ROADWAY PLANS

OSAGE, MARIES, & GASCONADE COUNTIES

DESIGN DESIGNATION

GASCONADE COUNTY ROUTE 100
A.A.D.T. - 2018 = 869
A.A.D.T. - 2038 = 1129
D.H.V. = 11%
T = 10%
V = 55 MPH
FUNCTIONAL CLASSIFICATION - MAJOR COLLECTOR

MARIES COUNTY ROUTE 42
A.A.D.T. - 2018 = 480
A.A.D.T. - 2038 = 672
D.H.V. = 11%
T = 7%
V = 55 MPH
FUNCTIONAL CLASSIFICATION - MAJOR COLLECTOR

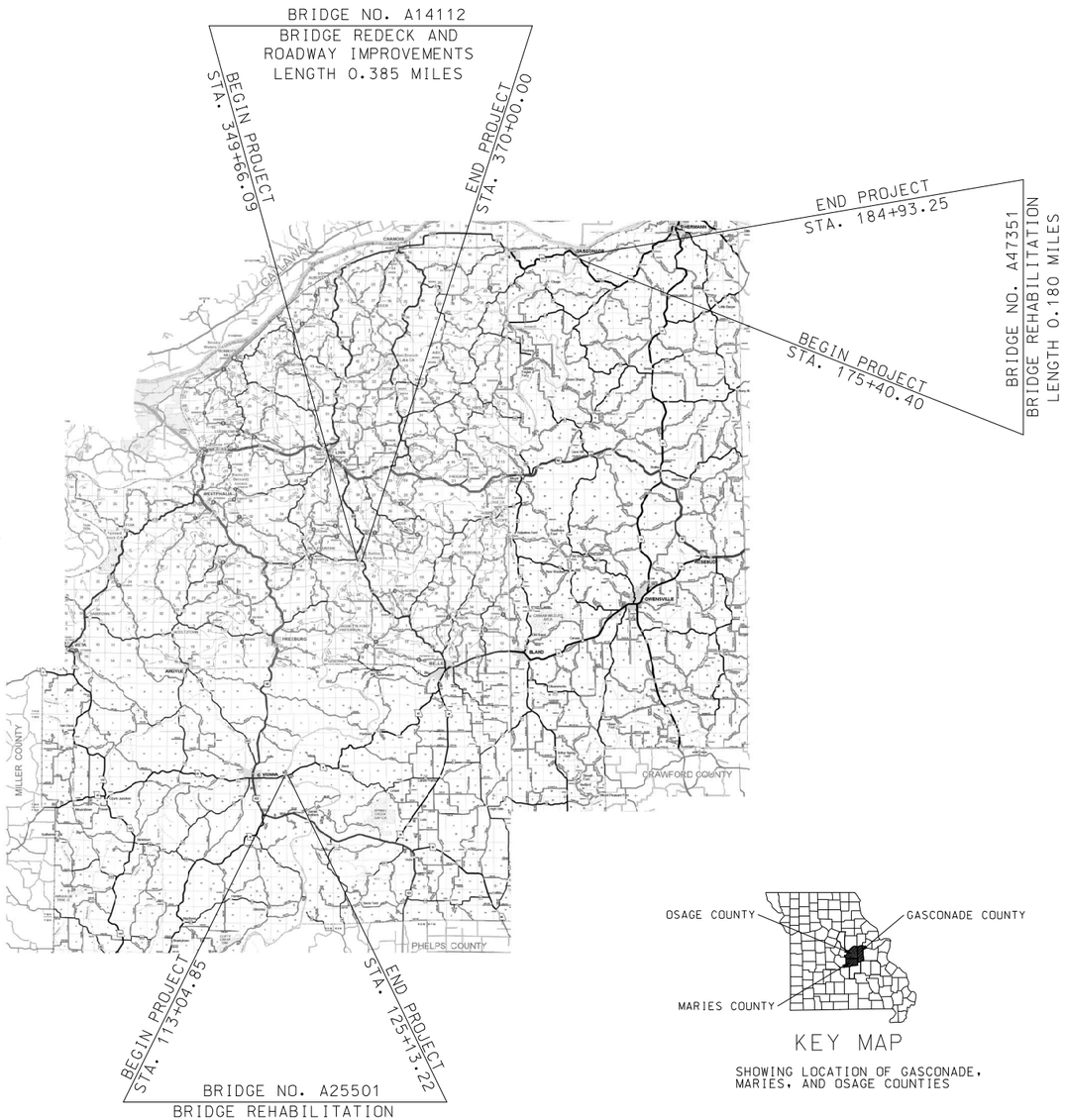
OSAGE COUNTY ROUTE 89
A.A.D.T. - 2018 = 1963
A.A.D.T. - 2038 = 3435
D.H.V. = 11%
T = 9%
V = 55 MPH
FUNCTIONAL CLASSIFICATION - MINOR ARTERIAL

NO ACQUISITION 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	DI	
DITCH BLOCK		
GROUND MOUNTED SIGN	SIGN	
LIGHT POLE		
H-FRAME POWER POLE		
TELEPHONE PEDESTAL	PED	
FENCE		
CHAIN LINK	V	
WOVEN WIRE	X	
GATE POST		
BENCHMARK	BM	

NOTE: DASHED OR OPEN SYMBOLS INDICATE EXISTING FEATURES



NOT TO SCALE

KEY MAP

SHOWING LOCATION OF GASCONADE, MARIES, AND OSAGE COUNTIES

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) (5 SHEETS)	3
PLAN-PROFILE (PP)	4-5
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EROSION CONTROL SHEETS (EC)	15-17
SIGNING (SN)	18-20
BRIDGE DRAWINGS (B)	
A47351	1-3
A25501	1-5
A14112	1-11

LENGTH OF PROJECT

GASCONADE COUNTY ROUTE 100

BEGINNING OF PROJECT	STA.	175+40.40	
END OF PROJECT	STA.	184+93.25	
APPARENT LENGTH		952.85	FEET
EQUATIONS AND EXCEPTIONS:		NONE	

MARIES COUNTY ROUTE 42

BEGINNING OF PROJECT	STA.	113+04.85	
END OF PROJECT	STA.	125+13.22	
APPARENT LENGTH		1208.37	FEET
EQUATIONS AND EXCEPTIONS:		NONE	

OSAGE COUNTY ROUTE 89

BEGINNING OF PROJECT	STA.	349+66.09	
END OF PROJECT	STA.	370+00.00	
APPARENT LENGTH		2033.91	FEET
EQUATIONS AND EXCEPTIONS:		NONE	

TOTAL CORRECTIONS	0.00	FEET
NET LENGTH OF PROJECT	4195.13	FEET
STATE LENGTH	0.795	MILES
ESTIMATED DISTURBED ACRES (FOR INFORMATIONAL PURPOSES ONLY)	2.57	ACRES

STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

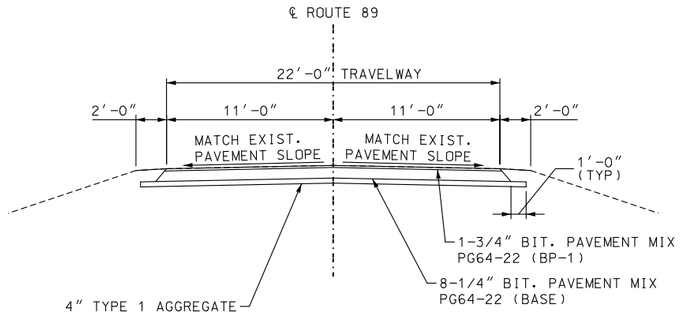
DATE PREPARED 9/27/2021
ROUTE VAR. | STATE MO
DISTRICT CD | SHEET NO. 1
COUNTY VAR.
JOB NO. J5S3284
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A47351, A25501, A14112

DESCRIPTION	DATE

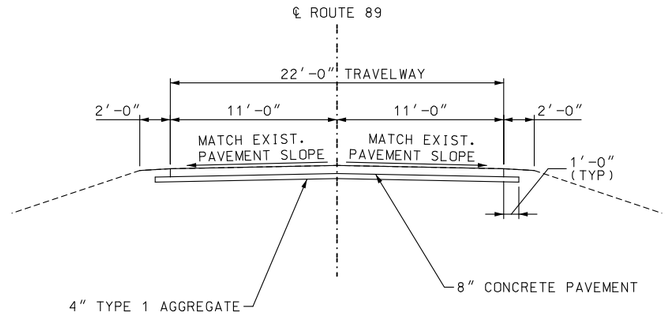
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

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

Bartlett & West
1719 SOUTHRIDGE DR, SUITE 100 - JEFFERSON CITY, MO 65109-4000
PHONE 573-634-3181 - FAX 573-634-7904
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM

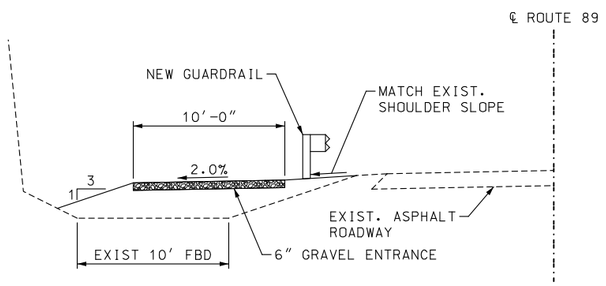


OPTIONAL ASPHALT PAVEMENT
NTS



OPTIONAL CONCRETE PAVEMENT
NTS

ROUTE 89 SECTION ON TANGENT - PROPOSED
STA 359+65.40 - STA 359+85.40
STA 368+18.60 - STA 368+38.60



NEW GRAVEL ENTRANCE
NTS
STA 358+42.51 - STA 359+21.25

STATE OF MISSOURI
STEVEN T. STIRNEMANN
NUMBER PE-2009001102
PROFESSIONAL ENGINEER

DATE
12/12/2020

DATE PREPARED
9/27/2021

ROUTE	STATE
VAR	MO

DISTRICT	SHEET NO.
CD	2

COUNTY
VAR

JOB NO.
J5S3284

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A1411

DESCRIPTION	DATE

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

EDSI
ENGINEERING DESIGN SOURCE, INC.
16141 SWINGLEY RIDGE RD., SUITE 300
CHESTERFIELD, MO 63017
MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY #001523

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

TYPICAL SECTIONS
OSAGE COUNTY ROUTE 89
SHEET 1 OF 1

REMOVAL OF IMPROVEMENTS

ROUTE	STATION	STATION	LOCATION	AMOUNT	DESCRIPTION
42	113+71.00	114+93.50	LT	122.5 LF	EXISTING GUARDRAIL
42	113+96.62	114+93.50	RT	97.5 LF	EXISTING GUARDRAIL
42	114+81.00	-	LT	1 EA	EXISTING OBJECT MARKER SIGN
42	114+81.00	-	RT	1 EA	EXISTING OBJECT MARKER SIGN
42	123+24.58	124+51.50	RT	127 LF	EXISTING GUARDRAIL
42	123+24.58	124+51.48	LT	127 LF	EXISTING GUARDRAIL
42	123+47.00	-	LT	1 EA	EXISTING OBJECT MARKER SIGN
42	123+47.00	-	RT	1 EA	EXISTING OBJECT MARKER SIGN
89	349+67.16	360+05.40	RT	1037 LF	EXISTING GUARDRAIL
89	359+33.65	360+05.40	LT	72 LF	EXISTING GUARDRAIL
89	359+65.40	359+85.40	CL	49 SY	EXISTING PAVMENET REMOVAL FOR OPTIONAL PAVEMENT
89	359+85.40	360+05.40	CL	49 SY	EXISTING PAVMENET REMOVAL FOR APPROACH SLAB
89	367+98.60	368+18.60	CL	49 SY	EXISTING PAVMENET REMOVAL FOR APPROACH SLAB
89	368+18.60	368+38.60	CL	49 SY	EXISTING PAVMENET REMOVAL FOR OPTIONAL PAVEMENT
89	367+98.60	368+97.22	LT	99 LF	EXISTING GUARDRAIL
89	367+98.60	369+09.15	RT	111 LF	EXISTING GUARDRAIL
			PROJECT TOTAL	1 LUMP SUM	

PAVEMENT

ROUTE	STATION	STATION	LOCATION	TYPE 1 AGGREGATE FOR BASE 4" THICK	OPTIONAL PAVEMENT	GRAVEL (A) OR CRUSHED STONE (B) (6 IN THICK)	REMARKS
				SY	SY	SY	
89	358+42.51	359+21.25	LT			95.7	
89	359+65.40	359+85.40	CL	56.5	48.9		
89	368+18.60	368+38.60	CL	56.5	48.9		
			SUBTOTAL	113.0	97.8	95.7	
			PROJECT TOTAL	113	97.8	96	

MGS GUARDRAIL SYSTEM

ROUTE	STATION	STATION	LOCATION	MGS GUARDRAIL (6 FT POSTS)	MGS GUARDRAIL (8 FT POSTS)	TYPE A CRASHWORTHY END TERMINAL (MASH)	MGS BRIDGE APPROACH TRANSITION SECTION (REGULAR/NO CURB)	REMARKS
				LF	LF	EA	EA	
42	113+79.87		LT			1		
42	114+05.47		RT			1		
42	114+31.00	114+56.00	LT	25.0				
42	114+56.00	114+93.50	LT & RT				2	
42	123+24.58	123+62.08	LT & RT				2	
42	123+62.08	123+87.08	RT	25.0				
42	123+87.08		RT			1		
42	123+62.08	124+62.08	LT	100.0				
42	124+62.08		LT			1		
		SUBTOTAL		150.0	0.0	4.0	4.0	
89	349+66.09		RT			1		
89	350+17.47	359+79.97	RT		962.5			
89	358+79.27		LT			1		
89	359+30.40	359+67.90	LT	37.5				
89	359+67.90	360+05.40	LT & RT				2	
89	367+98.60	368+36.10	LT & RT				2	
89	368+36.10	368+61.10	LT	25.0				
89	368+36.10	368+73.60	RT	37.5				
89	368+73.60		RT			1		
89	368+61.10		LT			1		
		SUBTOTAL		100.0	962.5	4.0	4.0	
		PROJECT TOTAL		250.0	963.0	8	8	

MOBILIZATION	
ROUTE	AMOUNT
100	1 LS
42	1 LS
89	1 LS
PROJECT TOTAL = 1 LUMP SUM	

CONTRACTOR FURNISHED SURVEYING AND STAKING	
ROUTE	AMOUNT
100	1 LS
42	1 LS
89	1 LS
PROJECT TOTAL = 1 LUMP SUM	

SUMMARY OF QUANTITIES
SHEET 1 OF 5

STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED SEALED AND DATED ELECTRONICALLY.

DATE PREPARED: 8/11/2021
ROUTE: VAR. | STATE: MO
DISTRICT: CD | SHEET NO.: 3
COUNTY: VAR.
JOB NO.: J5S3284
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A47351, A25501, A14112

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)

Bartlett & West
1719 SOUTHRIDGE DR, SUITE 100 - JEFFERSON CITY, MO 65109-4000
PHONE 573-634-3181 - FAX 573-634-7904
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM

SHAPING SLOPES CLASS III

ROUTE	STATION	STATION	LOCATION	NET LENGTH (LINEAR FT)	CLASS III SLOPES (STA)	REMARKS
42	113+49.87	114+93.00	LT	143.1	1.4	
42	113+75.47	114+93.00	RT	117.5	1.0	EXCLUDES ENTRANCE
42	123+24.58	125+43.22	LT	218.6	2.2	
42	123+24.58	124+68.22	RT	143.6	1.4	EXCLUDES ENTRANCE
			SUBTOTAL		6.0	
89	349+36.09	350+17.47	RT	81.38	0.8	
89	358+74.27	360+05.40	LT	131.13	1.3	EXCLUDES ENTRANCE
89	359+67.90	360+05.40	RT	37.50	0.4	
89	367+98.60	369+26.63	LT	128.03	1.3	EXCLUDES ENTRANCE
89	367+98.60	369+54.73	RT	156.13	1.5	
			SUBTOTAL		5.3	
			PROJECT TOTAL		11.0	

TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES

ROUTE	STATION	STATION	LOCATION	SILT FENCE	SEDIMENT REMOVAL	TYPE C BERM	REMARKS
				LF	CY	LF	
42	113+49.87	115+36.48	LT & RT	368.0	3.7		
42	122+83.71	125+43.22	LT & RT	478.0	4.8		
			SUBTOTAL	846.0	8.5	0.0	
89	349+36.00	359+65.00	RT	1037.0	10.4		
89	358+42.00	359+65.00	LT	115.0	1.2		
89	359+65.00	361+00.00	LT & RT			186.0	
89	367+68.80	368+00.00	LT & RT			94.0	
89	368+00.00	369+33.00	LT	135.0	1.4		
89	368+00.00	369+86.00	RT	192.0	1.9		
			SUBTOTAL	1479.0	14.9	280.0	
			PROJECT TOTAL	2325	23	280	

NOTE: SEDIMENT REMOVAL IS BASED ON 1 CY PER DITCH CHECK 1 CY PER SEDIMENT TRAP AND 1 CY PER 100' OF SILT FENCE.

PAVEMENT MARKING

ROUTE	STATION	STATION	LOCATION	4 IN YELLOW STANDARD WATERBORNE PAVEMENT MARKING PAINT TYPE P BEADS	TEMPORARY PREFORMED REMOVABLE MARKING TAPE 4 IN WHITE	TEMPORARY PREFORMED REMOVABLE MARKING TAPE 24 IN WHITE	PAVEMENT MARKING REMOVAL	REMARKS
				LF	LF	LF	LF	
42	106+09.00	106+09.00	RT			12		STOP BAR
42	106+09.00	115+05.00	CL				896.00	
42	108+45.00	109+45.00	LT		100			
42	108+45.00	109+45.00	RT		100			
42	106+09.00	109+50.00	CL	682				DOUBLE SOLID YELLOW
42	109+50.00	118+17.00	CL	1083				INTERMITTENT/SOLID YELLOW
42	118+17.00	132+09.00	CL	348				INTERMITTENT YELLOW
42	123+12.00	131+97.00	CL				885.00	
42	128+72.00	129+72.00	LT		100			
42	128+72.00	129+72.00	RT		100			
42	131+97.00	131+97.00	LT			12		STOP BAR
			SUBTOTAL	2113	400	12	1781	
89	359+75.00	363+96.00	CL	105				INTERMITTENT YELLOW
89	363+96.00	368+38.00	CL	553				SOLID/INTERMITTENT YELLOW
			SUBTOTAL	658	0	0	0	
			PROJECT TOTAL	2771	400	12	1781	

SUMMARY OF QUANTITIES
SHEET 2 OF 5

STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 8/9/2021
ROUTE VAR. | STATE MO
DISTRICT CD | SHEET NO. 3
COUNTY VAR.
JOB NO. J5S3284
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A47351, A25501, A14112

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)

Bartlett & West
1719 SOUTHRIDGE DR, SUITE 100 - JEFFERSON CITY, MO 65109-4000
PHONE 573-634-3181 - FAX 573-634-7904
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM

EFFECTIVE: 04-01-2021

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL AREA SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NUM.	DESCRIPTION
WARNING SIGNS								
W01-1L	48X48	16.00						TURN (SYMBOL LEFT ARROW)
W01-1R	48X48	16.00						TURN (SYMBOL RIGHT ARROW)
W01-2L	48X48	16.00						CURVE (SYMBOL LEFT ARROW)
W01-2R	48X48	16.00						CURVE (SYMBOL RIGHT ARROW)
W01-3L	48X48	16.00						REVERSE TURN (SYMBOL LEFT ARROW)
W01-3R	48X48	16.00						REVERSE TURN (SYMBOL RIGHT ARROW)
W01-4L	48X48	16.00						REVERSE CURVE (SYMBOL LEFT ARROW)
W01-4R	48X48	16.00						REVERSE CURVE (SYMBOL RIGHT ARROW)
W01-4bL	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL LT ARROWS)
W01-4bR	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL RT ARROWS)
W01-4cL	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL LT ARROWS)
W01-4cR	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL RT ARROWS)
W01-6	60X30	12.50						HORIZONTAL ARROW (SYMBOL)
W01-6a	72X36	18.00						HORIZ. ARROW (SYMBOL ON PERMANENT BARRICADE)
W01-7	60X30	12.50						DOUBLE HEAD HORIZONTAL ARROW (SYMBOL)
W01-7a	72X36	18.00						DOUBLE HEAD HORIZ. ARROW (SYMBOL ON PERM. BARR.)
W01-8	18X24	3.00						CHEVRON (SYMBOL)
W01-8a	30X36	7.50						CHEVRON (SYMBOL FOR DIVIDED HIGHWAYS)
W03-1	48X48	16.00						STOP AHEAD (SYMBOL)
W03-2	48X48	16.00						YIELD AHEAD (SYMBOL)
W03-3	48X48	16.00						SIGNAL AHEAD (SYMBOL)
W03-4	48X48	16.00						BE PREPARED TO STOP
W03-5	48X48	16.00						SPEED LIMIT AHEAD
W04-1L	48X48	16.00						MERGE (SYMBOL FROM LEFT)
W04-1R	48X48	16.00						MERGE (SYMBOL FROM RIGHT)
W04-1aL	48X48	16.00						MERGE (ARROW SYMBOL)
W04-1aR	48X48	16.00						MERGE (ARROW SYMBOL)
W05-1	48X48	16.00						ROAD/BRIDGE/RAMP NARROWS
W05-3	48X48	16.00						ONE LANE BRIDGE
W05-5	48X48	16.00						NARROW LANES
W06-1	48X48	16.00						DIVIDED HIGHWAY (SYMBOL)
W06-2	48X48	16.00						DIVIDED HIGHWAY END (SYMBOL)
W06-3	48X48	16.00						TWO WAY TRAFFIC (SYMBOL)
W07-3a	30X24	5.00						NEXT XX MILES (PLAQUE)
W08-1	48X48	16.00						BUMP
W08-2	48X48	16.00						DIP
W08-3	48X48	16.00						PAVEMENT ENDS
W08-4	48X48	16.00						SOFT SHOULDER
W08-5	48X48	16.00						SLIPPERY WHEN WET (SYMBOL)
W08-6	48X48	16.00						TRUCK CROSSING (WITH FLAGS)
W08-6c	48X48	16.00						TRUCK ENTRANCE
W08-7	36X36	9.00						LOOSE GRAVEL
W08-7a	36X36	9.00						FRESH OIL/LOOSE GRAVEL
W08-9	48X48	16.00						LOW SHOULDER
W08-11	48X48	16.00						UNEVEN LANES
W08-12	48X48	16.00						NO CENTER LINE
W08-15	48X48	16.00						GROOVED PAVEMENT
W08-15P	30X24	5.00						MOTORCYCLE (PLAQUE)
W08-17	48X48	16.00						SHOULDER DROP-OFF (SYMBOL)
W08-17P	30X24	5.00						SHOULDER DROP-OFF (PLAQUE)
W10-1	42RND.	9.62						RAILROAD CROSSING
W012-1	24X24	4.00						DOUBLE DOWN ARROW (SYMBOL)
W012-2	48X48	16.00						LOW CLEARANCE (SYMBOL)
W012-2X	24X18	3.00						LOW CLEARANCE (PLAQUE)
W012-2a	84X24	14.00						OVERHEAD LOW CLEARANCE (FEET AND INCHES)
W012-4	120X60	50.00						LOW CLEARANCE XX FT XX IN XX MILES AHEAD
W012-5	120X60	50.00						WIDTH RESTRICTION XX FT XX IN XX MILES AHEAD
W013-1	30X30	6.25						ADVISORY SPEED (PLAQUE)
W016-2	30X24	5.00						XXX FEET (PLAQUE)
W016-3	30X24	5.00						X MILE (PLAQUE)
W020-1	48X48	16.00	2	32.00			2	ROAD/BRIDGE/RAMP WORK AHEAD
W020-2	48X48	16.00						DETOUR AHEAD
W020-3	48X48	16.00						ROAD CLOSED AHEAD
W020-4	48X48	16.00	2	32.00			7	ONE LANE ROAD AHEAD
W020-5	48X48	16.00						RIGHT/CENTER/LEFT LANE CLOSED AHEAD
W020-5a	48X48	16.00						2 RIGHT/CENTER/LEFT LANES CLOSED AHEAD
W020-6a	48X48	16.00						RIGHT/CENTER/LEFT LANE CLOSED
W020-7a	48X48	16.00	2	32.00			8	FLAGGER (SYMBOL, WITH FLAGS)
W021-2	36X36	9.00						FRESH OIL
W021-5	48X48	16.00						SHOULDER WORK AHEAD
W022-1	48X48	16.00						BLASTING ZONE AHEAD
W022-2	42X36	10.50						TURN OFF 2-WAY RADIO AND PHONE
W022-3	42X36	10.50						END BLASTING ZONE
G022-1	21X15	2.19						WET PAINT (ARROW PIVOTS)

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NUM.	DESCRIPTION
GUIDE SIGNS								
E05-1	36X48	12.00						GORE EXIT
E05-2	48X36	12.00						EXIT OPEN
E05-2a	48X36	12.00						EXIT CLOSED
G020-1	60X24	10.00						ROAD WORK NEXT XX MILES
G020-2	48X24	8.00						END ROAD WORK
G020-4	36X18	4.50						PILOT CAR FOLLOW ME
G020-4a	42X30	8.75						PILOT CAR IN USE WAIT & FOLLOW
G020-4a	18X12	1.50						PILOT CAR IN USE WAIT & FOLLOW
G020-5aP	36X24	6.00						WORK ZONE (PLAQUE)
M04-8a	24X18	3.00						END DETOUR
M04-9L	48X36	12.00						DETOUR (LEFT ARROW)
M04-9R	48X36	12.00						DETOUR (RIGHT ARROW)
M04-9P	48X12	4.00						STREET NAME (PLAQUE)
M04-10L	48X18	6.00						DETOUR (ARROW LEFT)
M04-10R	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
R4-8a	36X48	12.00						KEEP LEFT (HORIZONTAL ARROW)
R4-7a	36X48	12.00						KEEP RIGHT (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	2	64.00			58	POINT OF PRESENCE
CONST-7	48X24	8.00	2	16.00			64	RATE OUR WORK ZONE
CONST-7	72X36	18.00						RATE OUR WORK ZONE
CONST-8	48X36	12.00	2	24.00			65	WORK ZONE NO PHONE ZONE

616-10.05 CONSTRUCTION SIGNS	TOTAL
	200

616-10.10 RELOCATED SIGNS	TOTAL
	0

ITEM NUMBER	TOTAL QTY	DESCRIPTION
6122008		IMPACT ATTENUATOR 40 MPH (SAND BARRELS)
6122009		IMPACT ATTENUATOR 45 MPH (SAND BARRELS)
6122010		IMPACT ATTENUATOR 50 MPH (SAND BARRELS)
6122012		IMPACT ATTENUATOR 55 MPH (SAND BARRELS)
6122014		IMPACT ATTENUATOR 60 MPH (SAND BARRELS)
6122017		IMPACT ATTENUATOR 65 MPH (SAND BARRELS)
6122019		IMPACT ATTENUATOR 70 MPH (SAND BARRELS)
6122020		REPLACEMENT SAND BARREL
6122030		IMPACT ATTENUATOR (RELOCATION)
6123000A		TRUCK OR TRAILER MOUNTED ATTENUATOR (TMA)
6161008	2	ADVANCED WARNING RAIL SYSTEM
6161012	8	BUOYS (BOATS KEEP OUT)
6161013	6	BUOYS (NO WAKE)
6161014	4	SPECIAL SIGN ASSEMBLY (BOATS KEEP OUT)
6161025	30	CHANNELIZER (TRIM LINE)
6161030		TYPE III MOVEABLE BARRICADE
6161033		DIRECTION INDICATOR BARRICADE
6161040		FLASHING ARROW PANEL
6161047		TYPE III OBJECT MARKER
6161051		WARNING LIGHT, TYPE A
6161052		WARNING LIGHT, TYPE B
6161053		WARNING LIGHT, TYPE C
6161055		SEQUENTIAL FLASHING WARNING LIGHT
6161070		TUBULAR MARKER
6161095		RADAR SPEED ADVISORY SYSTEM
6161096		CHANGEABLE MESSAGE SIGN, COMMISSION FURNISHED/RETAINED
6161098A	2	CHANGEABLE MESSAGE SIGN W/O COMM. INTERFACE, CONTRACTOR FURNISHED/RETAINED
6161099		CHANGEABLE MESSAGE SIGN WITH COMM. INTERFACE, CONTRACTOR FURNISHED/RETAINED
6162000A		WORK ZONE TRAFFIC SIGNAL SYSTEM
6162002	4	TEMPORARY LONG-TERM RUMBLE STRIPS
6162004		TEMPORARY SHORT-TERM RUMBLE STRIPS
6173600D		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/RETAINED
6173602B		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/COMMISSION RETAINED
6174000A		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION
6175010A		RELOCATING TEMPORARY TRAFFIC BARRIER
6176000B		TEMPORARY TRAFFIC BARRIER COMMISSION FURNISHED/RETAINED
6177000B		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION COMMISSION FURNISHED/RETAINED
6208064A		TEMPORARY RAISED PAVEMENT MARKER
9029400		TEMPORARY TRAFFIC SIGNALS
9029401		TEMPORARY TRAFFIC SIGNALS AND LIGHTING

SUMMARY OF QUANTITIES
GASCONADE COUNTY ROUTE 100
SHEET 3 OF 5

STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED: 7/12/2021
ROUTE: VAR. | STATE: MO
DISTRICT: CD | SHEET NO.: 3
COUNTY: VAR.
JOB NO.: J5S3284
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A47351

DESCRIPTION	DATE

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

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

Bartlett & West
1719 SOUTHRIDGE DR, SUITE 100 - JEFFERSON CITY, MO 65109-4000
PHONE 573-634-3181 - FAX 573-634-7904
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM

EFFECTIVE: 04-01-2021

WARNING SIGNS

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL AREA SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NUM.	DESCRIPTION
WO1-1L	48X48	16.00						TURN (SYMBOL LEFT ARROW)
WO1-1R	48X48	16.00						TURN (SYMBOL RIGHT ARROW)
WO1-2L	48X48	16.00						CURVE (SYMBOL LEFT ARROW)
WO1-2R	48X48	16.00						CURVE (SYMBOL RIGHT ARROW)
WO1-3L	48X48	16.00						REVERSE TURN (SYMBOL LEFT ARROW)
WO1-3R	48X48	16.00						REVERSE TURN (SYMBOL RIGHT ARROW)
WO1-4L	48X48	16.00						REVERSE CURVE (SYMBOL LEFT ARROW)
WO1-4R	48X48	16.00						REVERSE CURVE (SYMBOL RIGHT ARROW)
WO1-4bL	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL LT ARROWS)
WO1-4bR	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL RT ARROWS)
WO1-4cL	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL LT ARROWS)
WO1-4cR	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL RT ARROWS)
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	2	32.0			12	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 (ARROW SYMBOL)
WO4-1aR	48X48	16.00						MERGE (ARROW SYMBOL)
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)
WO8-17	48X48	16.00						SHOULDER DROP-OFF (SYMBOL)
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	32.0			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	4	64.0			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						FLAGGER (SYMBOL) WITH FLAGS
WO21-2	36X36	9.00						FRESH OIL
WO21-5	48X48	16.00						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			3	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 NUM.	DESCRIPTION
EO5-1	36X48	12.00						GORE EXIT
EO5-2	48X36	12.00						EXIT OPEN
EO5-2a	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	12.0			54	WORK ZONE (PLAQUE)
MO4-8a	24X18	3.00						END DETOUR
MO4-9L	48X36	12.00						DETOUR (LEFT ARROW)
MO4-9R	48X36	12.00						DETOUR (RIGHT ARROW)
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 NUM.	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	2	24.0			4	SPEED LIMIT 45
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
R4-8a	36X48	12.00						KEEP LEFT (HORIZONTAL ARROW)
R4-7a	36X48	12.00						KEEP RIGHT (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	2	12.0			47	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

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NUM.	DESCRIPTION
CONST-5	48X36	12.00						POINT OF PRESENCE
CONST-4	96X48	32.00	2	64.0			58	POINT OF PRESENCE
CONST-7	48X24	8.00	2	16.0			64	RATE OUR WORK ZONE
CONST-7	72X36	18.00						RATE OUR WORK ZONE
CONST-8	48X36	12.00	2	24.0			65	WORK ZONE NO PHONE ZONE
SPECIAL-1	36x78	19.50						DETOUR ROUTE SIGN
SPECIAL-1	36x78	19.50						DETOUR ROUTE SIGN
SPECIAL-1	36x78	19.50						DETOUR ROUTE SIGN
SPECIAL-1	36x78	19.50						DETOUR ROUTE SIGN
SPECIAL-1	36x78	19.50						DETOUR ROUTE SIGN
SPECIAL-1	36x78	19.50						DETOUR ROUTE SIGN
SPECIAL-1	36x78	19.50						DETOUR ROUTE SIGN
SPECIAL-1	36x78	19.50						DETOUR ROUTE SIGN
SPECIAL-1	36x78	19.50						DETOUR ROUTE SIGN
SPECIAL-1	36x78	19.50						DETOUR ROUTE SIGN
WO8-24	48X48	16.00						STEEL PLATE AHEAD
R10-7	24X30	5.00						DO NOT BLOCK INTERSECTION

616-10.05 CONSTRUCTION SIGNS	TOTAL
	289

616-10.10 RELOCATED SIGNS	TOTAL
	0

ITEM NUMBER	TOTAL QTY	DESCRIPTION
6122008		IMPACT ATTENUATOR 40 MPH (SAND BARRELS)
6122009		IMPACT ATTENUATOR 45 MPH (SAND BARRELS)
6122010		IMPACT ATTENUATOR 50 MPH (SAND BARRELS)
6122012	2	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	2	REPLACEMENT SAND BARREL
6122030	2	IMPACT ATTENUATOR (RELOCATION)
6123000A	2	TRUCK OR TRAILER MOUNTED ATTENUATOR (TMA)
6161008		ADVANCED WARNING RAIL SYSTEM
6161012	8	BUOYS (BOATS KEEP OUT)
6161013	6	BUOYS (NO WAKE)
6161014	4	SPECIAL SIGN ASSEMBLY (BOATS KEEP OUT)
6161025	34	CHANNELIZER (TRIM LINE)
6161030		TYPE III MOVEABLE BARRICADE
6161033		DIRECTION INDICATOR BARRICADE
6161040		FLASHING ARROW PANEL
6161047		TYPE III OBJECT MARKER
6161051		WARNING LIGHT, TYPE A
6161052		WARNING LIGHT, TYPE B
6161053		WARNING LIGHT, TYPE C
6161055		SEQUENTIAL FLASHING WARNING LIGHT
6161070		TUBULAR MARKER
6161095		RADAR SPEED ADVISORY SYSTEM
6161096		CHANGEABLE MESSAGE SIGN, COMMISSION FURNISHED/RETAINED
6161098A	2	CHANGEABLE MESSAGE SIGN W/O COMM. INTERFACE, CONTRACTOR FURNISHED/RETAINED
6161099		CHANGEABLE MESSAGE SIGN WITH COMM. INTERFACE, CONTRACTOR FURNISHED/RETAINED
6162000A	1	WORK ZONE TRAFFIC SIGNAL SYSTEM
6162002	4	TEMPORARY LONG-TERM RUMBLE STRIPS
6162004		TEMPORARY SHORT-TERM RUMBLE STRIPS
6173600D	1038	TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/RETAINED
6173602B		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/COMMISSION RETAINED
6174000A		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION
6175010A	1038	RELOCATING TEMPORARY TRAFFIC BARRIER
6176000B		TEMPORARY TRAFFIC BARRIER COMMISSION FURNISHED/RETAINED
6177000B		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION COMMISSION FURNISHED/RETAINED
6208064A		TEMPORARY RAISED PAVEMENT MARKER
9029400		TEMPORARY TRAFFIC SIGNALS
9029401		TEMPORARY TRAFFIC SIGNALS AND LIGHTING

STATE OF MISSOURI
STEVEN T. STIRNEMANN
NUMBER PE-2009001102
PROFESSIONAL ENGINEER

DATE
12/12/2020
DATE PREPARED
8/9/2021

ROUTE	STATE
VAR	MO
DISTRICT	SHEET NO.
CD	3

COUNTY
VAR
JOB NO.
J5S3284
CONTRACT ID.
PROJECT NO.
BRIDGE NO.
A2550

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

EDSI
ENGINEERING DESIGN SOURCE, INC.
16141 SWINGLEY RIDGE RD., SUITE 300
CHESTERFIELD, MO 63017
MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY #001523

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

TRAFFIC CONTROL QUANTITIES
MARIES COUNTY ROUTE 42
SHEET 4 OF 5

N:\E20019 B&W_MoDOT_CD Bridge Bundle 1\07_Roadway for Bridge A2550-Rte 42\Drawings\Output\003_QU_02_J5S3284_A2550_I5.dgn 12:51:00 PM 8/9/2021

EFFECTIVE: 04-01-2021

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL AREA SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NUM.	DESCRIPTION
WARNING SIGNS								
W01-1L	48X48	16.00						TURN (SYMBOL LEFT ARROW)
W01-1R	48X48	16.00						TURN (SYMBOL RIGHT ARROW)
W01-2L	48X48	16.00						CURVE (SYMBOL LEFT ARROW)
W01-2R	48X48	16.00						CURVE (SYMBOL RIGHT ARROW)
W01-3L	48X48	16.00						REVERSE TURN (SYMBOL LEFT ARROW)
W01-3R	48X48	16.00						REVERSE TURN (SYMBOL RIGHT ARROW)
W01-4L	48X48	16.00						REVERSE CURVE (SYMBOL LEFT ARROW)
W01-4R	48X48	16.00						REVERSE CURVE (SYMBOL RIGHT ARROW)
W01-4bL	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL LT ARROWS)
W01-4bR	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL RT ARROWS)
W01-4cL	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL LT ARROWS)
W01-4cR	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL RT ARROWS)
W01-6	60X30	12.50						HORIZONTAL ARROW (SYMBOL)
W01-6a	72X36	18.00						HORIZ. ARROW (SYMBOL ON PERMANENT BARRICADE)
W01-7	60X30	12.50						DOUBLE HEAD HORIZONTAL ARROW (SYMBOL)
W01-7a	72X36	18.00						DOUBLE HEAD HORIZ. ARROW (SYMBOL ON PERM. BARR.)
W01-8	18X24	3.00						CHEVRON (SYMBOL)
W01-8a	30X36	7.50						CHEVRON (SYMBOL FOR DIVIDED HIGHWAYS)
W03-1	48X48	16.00	1	16.0			39	STOP AHEAD (SYMBOL)
W03-2	48X48	16.00						YIELD AHEAD (SYMBOL)
W03-3	48X48	16.00						SIGNAL AHEAD (SYMBOL)
W03-4	48X48	16.00						BE PREPARED TO STOP
W03-5	48X48	16.00						SPEED LIMIT AHEAD
W04-1L	48X48	16.00						MERGE (SYMBOL FROM LEFT)
W04-1R	48X48	16.00						MERGE (SYMBOL FROM RIGHT)
W04-1aL	48X48	16.00						MERGE (ARROW SYMBOL)
W04-1aR	48X48	16.00						MERGE (ARROW SYMBOL)
W05-1	48X48	16.00						ROAD/BRIDGE/RAMP NARROWS
W05-3	48X48	16.00						ONE LANE BRIDGE
W05-5	48X48	16.00						NARROW LANES
W06-1	48X48	16.00						DIVIDED HIGHWAY (SYMBOL)
W06-2	48X48	16.00						DIVIDED HIGHWAY END (SYMBOL)
W06-3	48X48	16.00						TWO WAY TRAFFIC (SYMBOL)
W07-3a	30X24	5.00						NEXT XX MILES (PLAQUE)
W08-1	48X48	16.00						BUMP
W08-2	48X48	16.00						DIP
W08-3	48X48	16.00						PAVEMENT ENDS
W08-4	48X48	16.00						SOFT SHOULDER
W08-5	48X48	16.00						SLIPPERY WHEN WET (SYMBOL)
W08-6	48X48	16.00						TRUCK CROSSING
W08-6c	48X48	16.00						TRUCK ENTRANCE
W08-7	36X36	9.00						LOOSE GRAVEL
W08-7a	36X36	9.00						FRESH OIL/LOOSE GRAVEL
W08-9	48X48	16.00						LOW SHOULDER
W08-11	48X48	16.00						UNEVEN LANES
W08-12	48X48	16.00						NO CENTER LINE
W08-15	48X48	16.00						GROOVED PAVEMENT
W08-15P	30X24	5.00						MOTORCYCLE (PLAQUE)
W08-17	48X48	16.00						SHOULDER DROP-OFF (SYMBOL)
W08-17P	30X24	5.00						SHOULDER DROP-OFF (PLAQUE)
W10-1	42RND.	9.62						RAILROAD CROSSING
W012-1	24X24	4.00						DOUBLE DOWN ARROW (SYMBOL)
W012-2	48X48	16.00						LOW CLEARANCE (SYMBOL)
W012-2X	24X18	3.00						LOW CLEARANCE (PLAQUE)
W012-2a	84X24	14.00						OVERHEAD LOW CLEARANCE (FEET AND INCHES)
W012-4	120X60	50.00						LOW CLEARANCE XX FT XX IN XX MILES AHEAD
W012-5	120X60	50.00						WIDTH RESTRICTION XX FT XX IN XX MILES AHEAD
W013-1	30X30	6.25						ADVISORY SPEED (PLAQUE)
W016-2	30X24	5.00						XXX FEET (PLAQUE)
W016-3	30X24	5.00						X MILE (PLAQUE)
W020-1	48X48	16.00	2	32.0			21	ROAD/BRIDGE/RAMP WORK AHEAD
W020-2	48X48	16.00	4	64.0			18	DETOUR AHEAD
W020-3	48X48	16.00	3	48.0			20	ROAD CLOSED AHEAD
W020-3A	48X48	16.00	1	16.0			57	ROAD CLOSED 500 FT
W020-4	48X48	16.00	2	32.0			22	ONE LANE ROAD AHEAD
W020-5a	48X48	16.00						2 RIGHT/CENTER/LEFT LANES CLOSED AHEAD
W020-6a	48X48	16.00						RIGHT/CENTER/LEFT LANE CLOSED
W020-7a	48X48	16.00	2	32.0			23	FLAGGER (SYMBOL) WITH FLAGS
W021-2	36X36	9.00						FRESH OIL
W021-5	48X48	16.00						SHOULDER WORK AHEAD
W022-1	48X48	16.00						BLASTING ZONE AHEAD
W022-2	42X36	10.50						TURN OFF 2-WAY RADIO AND PHONE
W022-3	42X36	10.50						END BLASTING ZONE
G022-1	21X15	2.19						WET PAINT (ARROW PIVOTS)

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NUM.	DESCRIPTION
GUIDE SIGNS								
E05-1	36X48	12.00						GORE EXIT
E05-2	48X36	12.00						EXIT OPEN
E05-2a	48X36	12.00						EXIT CLOSED
G020-1	60X24	10.00						ROAD WORK NEXT XX MILES
G020-2	48X24	8.00						END ROAD WORK
G020-4	36X18	4.50						PILOT CAR FOLLOW ME
G020-4a	42X30	8.75						PILOT CAR IN USE WAIT & FOLLOW
G020-4a	18X12	1.50						PILOT CAR IN USE WAIT & FOLLOW
G020-5aP	36X24	6.00						WORK ZONE (PLAQUE)
M04-8a	24X18	3.00	2	6.0			52	END DETOUR
M04-9L	48X36	12.00						DETOUR (LEFT ARROW)
M04-9R	48X36	12.00						DETOUR (RIGHT ARROW)
M04-9P	48X12	4.00						STREET NAME (PLAQUE)
M04-10L	48X18	6.00						DETOUR (ARROW LEFT)
M04-10R	48X18	6.00						DETOUR (ARROW RIGHT)
REGULATORY SIGNS								
R1-1	48X48	13.25	1	13.25			41	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
R4-8a	36X48	12.00						KEEP LEFT (HORIZONTAL ARROW)
R4-7a	36X48	12.00						KEEP RIGHT (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	20.0			29	ROAD CLOSED
R11-3a	60X30	12.50						ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY
R11-4	60X30	12.50	2	25.0			63	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-4	96X48	32.00	3	96.0			58	POINT OF PRESENCE
CONST-7	48X24	8.00						RATE OUR WORK ZONE
CONST-7	72X36	18.00						RATE OUR WORK ZONE
CONST-8	48X36	12.00						WORK ZONE NO PHONE ZONE
SPECIAL-50A	36x78	19.50	13	253.5			50A	DETOUR ROUTE SIGN
SPECIAL-50B	36x78	19.50	2	39.0			50B	DETOUR ROUTE SIGN
SPECIAL-50C	36x78	19.50	3	58.5			50C	DETOUR ROUTE SIGN
SPECIAL-50D	36x78	19.50	5	97.5			50D	DETOUR ROUTE SIGN
SPECIAL-50E	36x78	19.50	5	97.5			50E	DETOUR ROUTE SIGN
SPECIAL-50F	36x78	19.50	8	156.0			50F	DETOUR ROUTE SIGN
SPECIAL-50G	36x78	19.50	1	19.50			50G	DETOUR ROUTE SIGN
SPECIAL-50H	36x78	19.50	2	39.0			50H	DETOUR ROUTE SIGN
SPECIAL-50J	36x78	19.50	3	58.5			50J	DETOUR ROUTE SIGN
SPECIAL-50K	36x78	19.50	3	58.5			50K	DETOUR ROUTE SIGN
WO8-24	48X48	16.00						STEEL PLATE AHEAD
R10-7	24X30	5.00						DO NOT BLOCK INTERSECTION
							56A	ROAD CLOSED XX MILES AHEAD
SPECIAL-56	60x30	12.50	4	50.0			56C	WITH ROUTE PLAQUE

616-10.05 CONSTRUCTION SIGNS	TOTAL
	1328

616-10.10 RELOCATED SIGNS	TOTAL

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)
6123000A		TRUCK OR TRAILER MOUNTED ATTENUATOR (TMA)
6161008	4	ADVANCED WARNING RAIL SYSTEM
6161012	8	BUOYS (BOATS KEEP OUT)
6161013	6	BUOYS (NO WAKE)
6161014	4	SPECIAL SIGN ASSEMBLY (BOATS KEEP OUT)
6161025	42	CHANNELIZER (TRIM LINE)
6161030	10	TYPE III MOVEABLE BARRICADE
6161033		DIRECTION INDICATOR BARRICADE
6161040		FLASHING ARROW PANEL
6161047		TYPE III OBJECT MARKER
6161051		WARNING LIGHT, TYPE A
6161052	12	WARNING LIGHT, TYPE B
6161053		WARNING LIGHT, TYPE C
6161055		SEQUENTIAL FLASHING WARNING LIGHT
6161070		TUBULAR MARKER
6161095		RADAR SPEED ADVISORY SYSTEM
6161096		CHANGEABLE MESSAGE SIGN, COMMISSION FURNISHED/RETAINED
6161098A	6	CHANGEABLE MESSAGE SIGN W/O COMM. INTERFACE, CONTRACTOR FURNISHED/RETAINED
6161099		CHANGEABLE MESSAGE SIGN WITH COMM. INTERFACE, CONTRACTOR FURNISHED/RETAINED
6162000A		WORK ZONE TRAFFIC SIGNAL SYSTEM
6162002		TEMPORARY LONG-TERM RUMBLE STRIPS
6162004		TEMPORARY SHORT-TERM RUMBLE STRIPS
6173600D		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/RETAINED
6173602B		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/COMMISSION RETAINED
6174000A		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION
6175010A		RELOCATING TEMPORARY TRAFFIC BARRIER
6176000B		TEMPORARY TRAFFIC BARRIER COMMISSION FURNISHED/RETAINED
6177000B		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION COMMISSION FURNISHED/RETAINED
6208064A		TEMPORARY RAISED PAVEMENT MARKER
9029400		TEMPORARY TRAFFIC SIGNALS
9029401		TEMPORARY TRAFFIC SIGNALS AND LIGHTING

STATE OF MISSOURI
STEVEN T. STIRNEMANN
NUMBER PE-2009001102
PROFESSIONAL ENGINEER

DATE
12/12/2020
DATE PREPARED
8/9/2021

ROUTE	STATE
VAR	MO
DISTRICT	SHEET NO.
CD	3

COUNTY
VAR
JOB NO.
J5S3284
CONTRACT ID.
PROJECT NO.
BRIDGE NO.
A1411

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

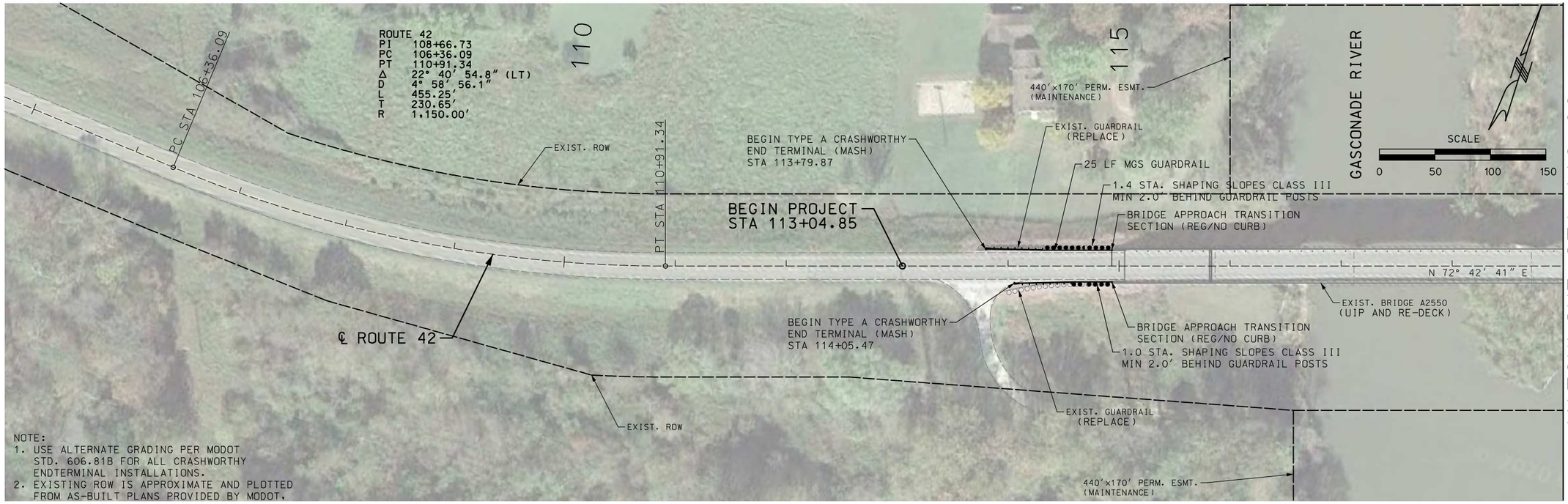
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

EDSI
ENGINEERING DESIGN SOURCE, INC
16141 SWINGLEY RIDGE RD., SUITE 300
CHESTERFIELD, MO 63017
MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY #001523

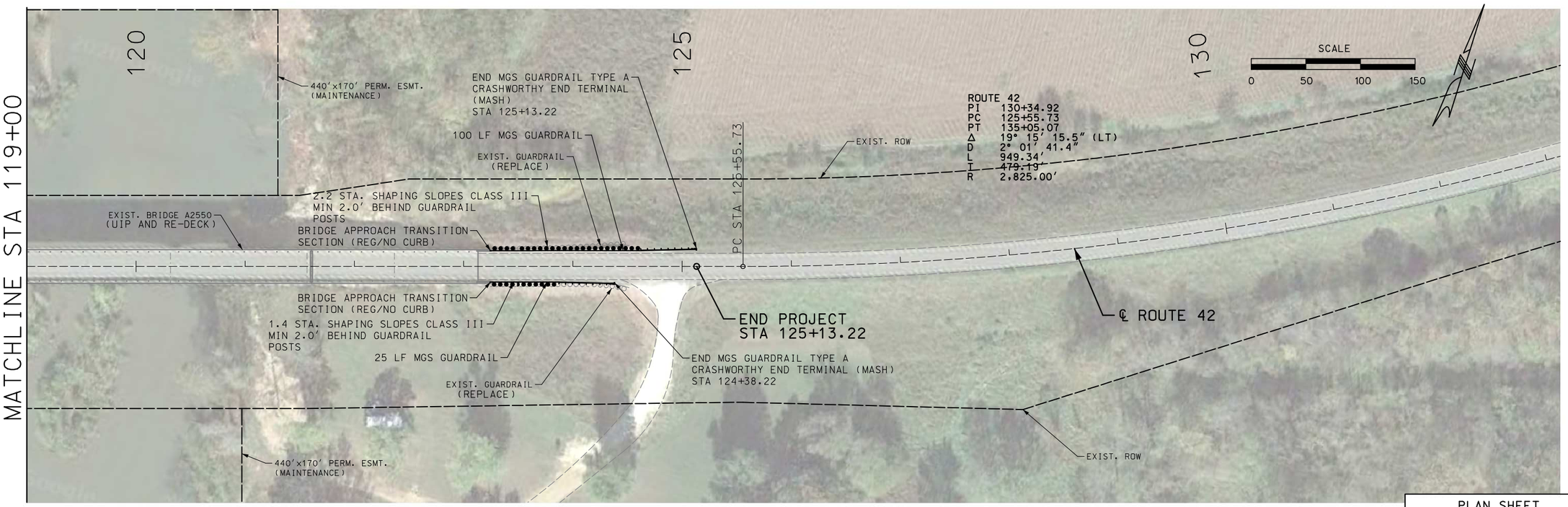
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

TRAFFIC CONTROL QUANTITIES
OSAGE COUNTY ROUTE 89
SHEET 5 OF 5

N:\E20019 B&W_MoDOT_CD Bridge Bundle 1\06_Roadway for Bridge A1411-Rte 89\Drawings\Output\003_QU_02_J5S3284_A14112_I5.dgn 12:51:00 PM 8/9/2021



NOTE:
1. USE ALTERNATE GRADING PER MODOT STD. 606.81B FOR ALL CRASHWORTHY ENDTERMINAL INSTALLATIONS.
2. EXISTING ROW IS APPROXIMATE AND PLOTTED FROM AS-BUILT PLANS PROVIDED BY MODOT, NOT SURVEY INFORMATION.



PLAN SHEET
MARIES COUNTY ROUTE 42
SHEET 1 OF 2

STATE OF MISSOURI
STEVEN T. STIRNEMANN
NUMBER PE-2009001102
PROFESSIONAL ENGINEER

DATE	12/12/2020
DATE PREPARED	8/9/2021
ROUTE	VAR
STATE	MO
DISTRICT	CD
SHEET NO.	4
COUNTY	VAR
JOB NO.	J5S3284
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A2550

DATE | DESCRIPTION

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

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

EDSI
ENGINEERING DESIGN SOURCE, INC.
16141 SWINGLEY RIDGE RD., SUITE 300
CHESTERFIELD, MO 63017
MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY #001523

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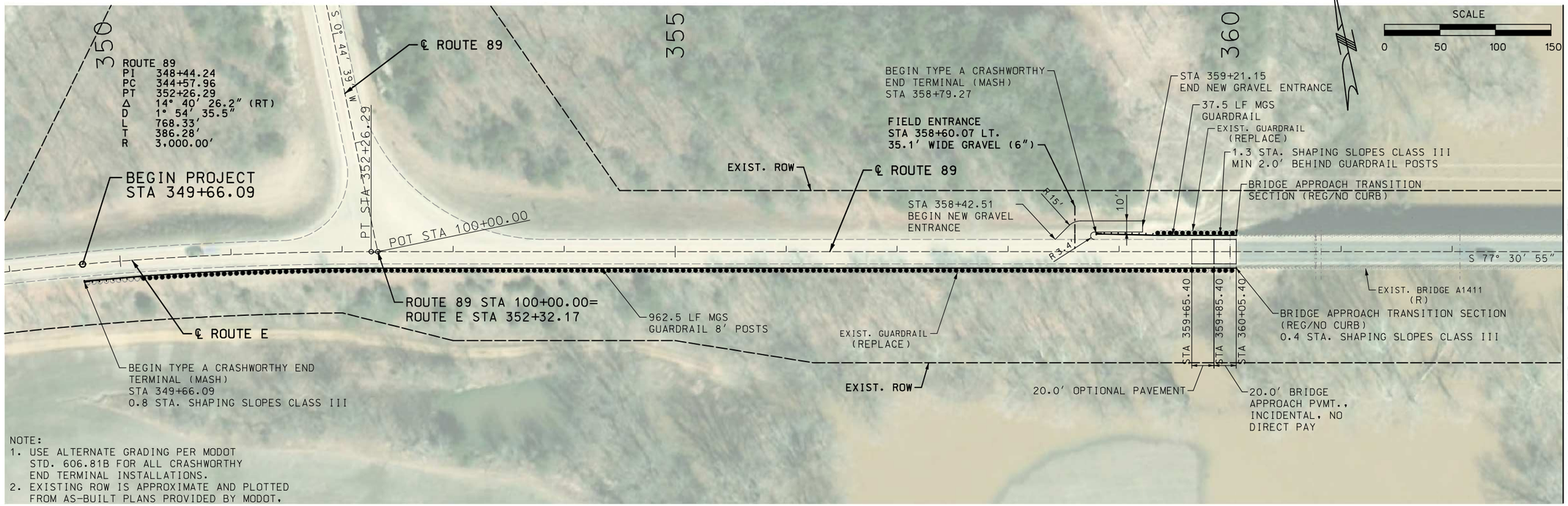

NOTE:
1. USE ALTERNATE GRADING PER MODOT STD. 606.81B FOR ALL CRASHWORTHY END TERMINAL INSTALLATIONS.
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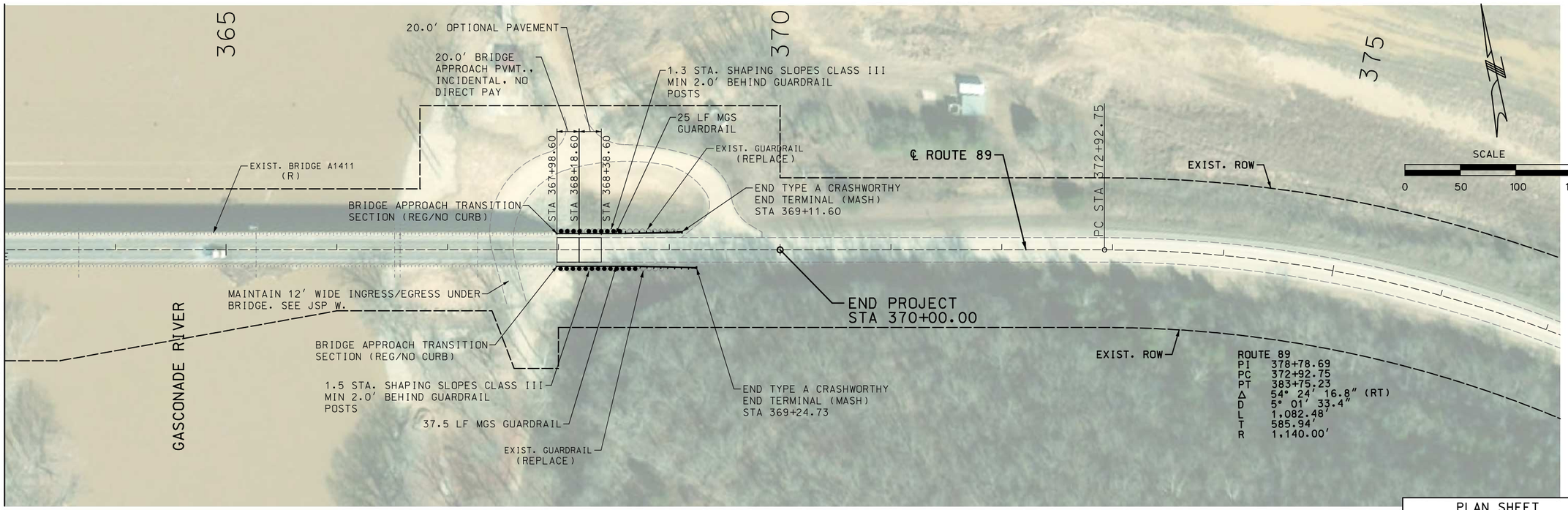

PLAN SHEET
OSAGE COUNTY ROUTE 89
SHEET 2 OF 2

STATE OF MISSOURI
STEVEN T. STIRNEMANN
NUMBER PE-2009001103
PROFESSIONAL ENGINEER

DATE	12/12/2020
DATE PREPARED	8/11/2021
ROUTE	VAR
STATE	MO
DISTRICT	CD
SHEET NO.	5
COUNTY	VAR
JOB NO.	J5S3284
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A1411

DATE | DESCRIPTION

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

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

EDSI
ENGINEERING DESIGN SOURCE, INC.
16141 SWINGLEY RIDGE RD., SUITE 300
CHESTERFIELD, MO 63017
MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY #001523

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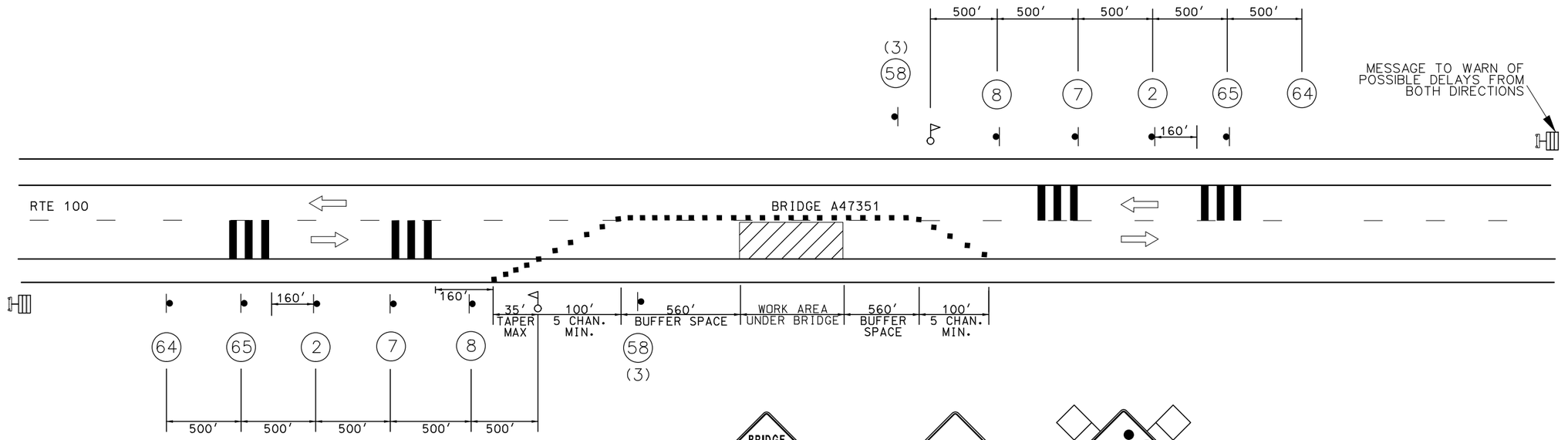
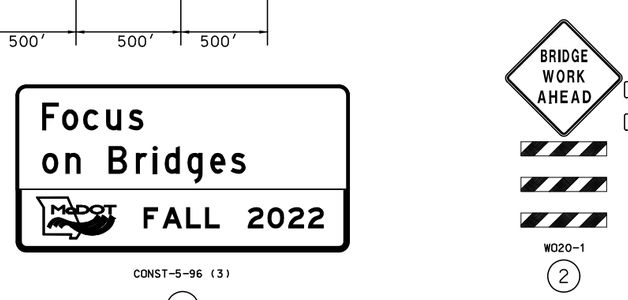
LANE CLOSURE DETAILS





CONST-5-96 (3)

58

W020-1

2

W020-4

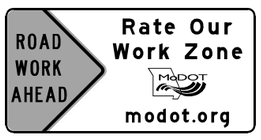
7

W020-7a

8

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- FLAGGER
- CHANNELIZER
- CHANGEABLE MESSAGE BOARD
- TRUCK MOUNTED ATTENUATOR
- TEMPORARY RUMBLE STRIPS
- WORK ZONE



CONST-7-72

64

CONST-8

65

TRAFFIC CONTROL NOTES:

1. FLAGS FOR W020-7a SHALL BE INCLUDED IN THE COST OF THE SIGN.
2. SIGN CONST-7-72 IS PLACED 500′ BEFORE THE BEGINNING OF PROJECT LIMITS OR THE "ROAD WORK AHEAD SIGN" OR "WORK ZONE NO PHONE ZONE" SIGN.
3. SIGN CONST-5-96 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′ BEFORE SIGN CONST-7-72.
4. THE "WORK ZONE NO PHONE ZONE" SIGN IS PLACED A MINIMUM OF 500′ BEFORE THE "ROAD WORK AHEAD" SIGN, OR AS APPROVED BY THE ENGINEER.
5. CMS TO BE PLACED AS APPROVED BY THE ENGINEER.

TAPER LENGTHS AND SPACING OF CHANNELIZING DEVICES				
SPEED MPH (S)	TAPER LENGTHS (L) FOR LATERAL SHIFTS (W) FT		CHANNELIZER SPACING , FT	
	SHOULDER (T1)	LANE (T2)	TAPERS	BUFFER/ WORK AREA
UP TO 35	70	245	35	40
40-45	150	540	40	80
50-55	185	660	50	80
60-70	235	840	60	120

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

LONGITUDINAL BUFFER SPACE	
POSTED SPEED PRIOR TO CONSTRUCTION, MPH	LENGTH, FT. (B)
UP TO 35	280
40-45	400
50-55	560
60-70	840

NOT TO SCALE

TRAFFIC CONTROL
GASCONADE COUNTY ROUTE 100
SHEET 1 OF 9

STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 7/12/2021

ROUTE	STATE
VAR.	MO
DISTRICT	SHEET NO.
CD	6

COUNTY VAR.
JOB NO. J5S3284
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A47351

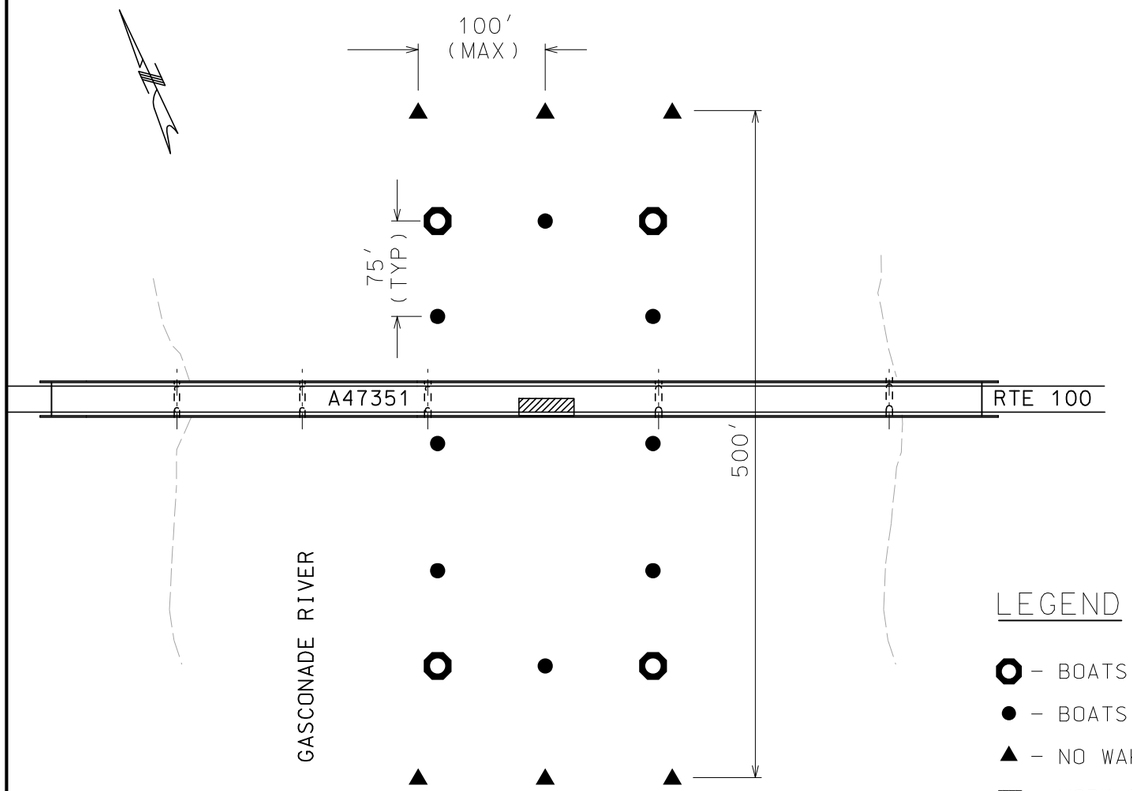
DESCRIPTION	DATE

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)

Bartlett & West
1719 SOUTHRIDGE DR, SUITE 100 - JEFFERSON CITY, MO 65109-4000
PHONE 573-634-3181 - FAX 573-634-7904
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM

TRAFFIC CONTROL
BOAT TRAFFIC



LEGEND

- ⬡ – BOATS KEEP OUT (SIGN)
- ● – BOATS KEEP OUT (BUOY)
- ▲ – NO WAKE (BUOY)
- ▨ – WORK ZONE

GENERAL NOTES:

INFORMATION SHOWN IS SCHEMATIC ONLY. FINAL LOCATION AND NUMBER OF SIGNS AND BUOYS IS SUBJECT TO APPROVAL OF MISSOURI STATE WATER PATROL.

THE DETAILS SHOWN ARE FOR BIDDING PURPOSES ONLY. ALL MATERIALS AND LABOR NECESSARY TO INSTALL AND REMOVE SIGNS SHALL BE INCIDENTAL TO OTHER ITEMS.

THE CONTRACTOR IS RESPONSIBLE FOR BUOY MAINTENANCE THROUGHOUT CONSTRUCTION AND FOR DETERMINING ANTICIPATED WATER LEVELS DURING CONSTRUCTION. EACH SIGN AND BUOY SHALL BE ANCHORED TO BOTTOM OF RIVER.

SIGNS SHALL BE DOUBLE FACED.

EACH SIGN SHALL BE EQUIPPED WITH TWO (2) FLASHING LIGHT UNITS WITH AMBER LENS. FLASHING LIGHT UNITS SHALL BE FURNISHED AND MAINTAINED BY THE CONTRACTOR.

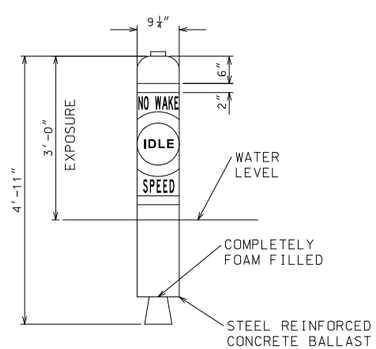
ALL LETTERING TO BE BLACK IN COLOR IN BLOCK FORM.

FOR OTHER INFORMATION, SEE SPECIAL PROVISIONS.

SHEMATIC SHOWN IS FOR ONE NAVIGATIONAL SPAN. FOR WORK ON OTHER SPANS, CONTRACTOR SHALL RELOCATE APPROPRIATE SIGNS AND DEVICES WITH NO DIRECT PAY.

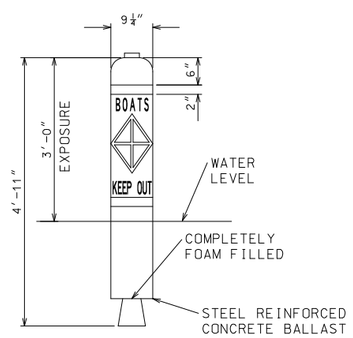
WORK ZONE, SIGNS, AND BUOYS TO BE SHIFTED AS REQUESTED AT NO DIRECT PAY.

COLOR: BACKGROUND – WHITE
LEGEND – BLACK
2″ REFLECTIVE BAND AND SYMBOL – INTERNATIONAL ORANGE



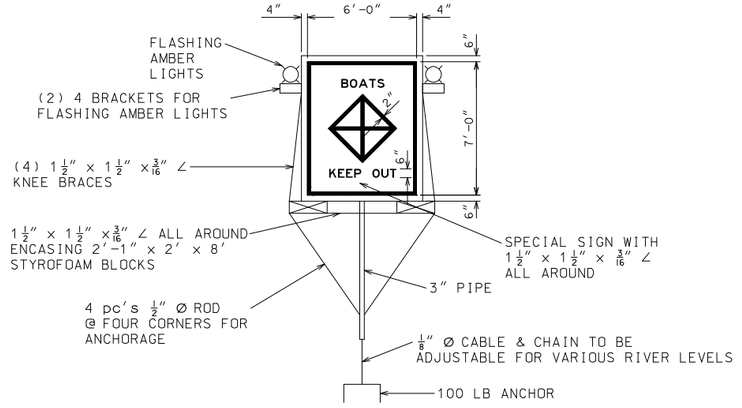
51 LB ANCHOR
TACKLE PERMITTED

RESTRICTED AREA BUOY
("NO WAKE")
(6 REQUIRED – ROADWAY ITEM)



51 LB ANCHOR
TACKLE PERMITTED

CONTROLLED AREA BUOY
("BOATS KEEP OUT")
(8 REQUIRED – ROADWAY ITEM)



SPECIAL SIGN ASSEMBLY
(4 REQUIRED – ROADWAY ITEM)

NOT TO SCALE

TRAFFIC CONTROL
GASCONADE COUNTY ROUTE 100
SHEET 2 OF 9

STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED: 7/12/2021
ROUTE: VAR. | STATE: MO
DISTRICT: CD | SHEET NO.: 7
COUNTY: VAR.
JOB NO.: J5S3284
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A47351

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)

Bartlett & West
1719 SOUTHRIDGE DR, SUITE 100 - JEFFERSON CITY, MO 65109-4000
PHONE 573-634-3181 - FAX 573-634-7904
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM

WO20-1

(2)

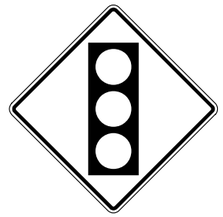
R2-1

(4) ✳

✳ WORK ZONE SPEED LIMIT – 45 MPH
NORMAL SPEED LIMIT – 55 MPH

WO20-4

(7)



WO3-3

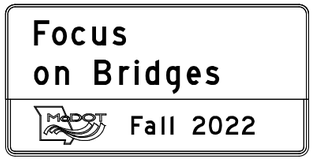
(12)

R10-6L

(47)

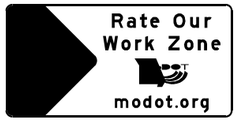
GO20-5aP

(54)



CONST-5-96

(58)

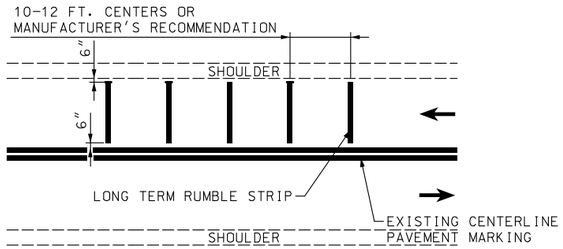


CONST-7-48

(64)

CONST-8-48

(65)



TEMPORARY LONG TERM RUMBLE STRIP DETAIL

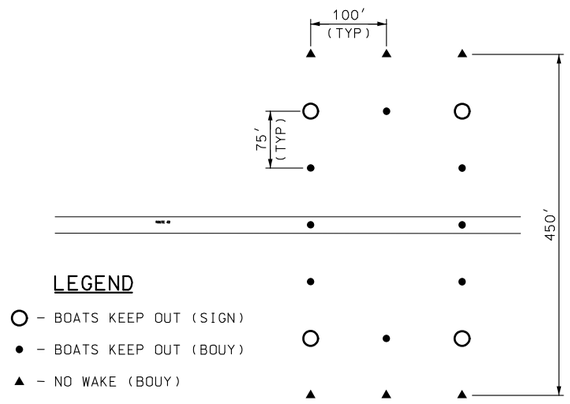
NTS

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- CONE
- CHANNELIZER
- BARRICADE
- CHANGEABLE MESSAGE BOARD

WATERWAY TRAFFIC CONTROL NOTES:

1. INFORMATION SHOWN IS SCHEMATIC ONLY. FINAL LOCATION AND NUMBER OF SIGNS AND BUOYS IS SUBJECT TO APPROVAL OF MISSORI STATE WATER PATROL.
2. THE DETAILS SHOWN ARE FOR BIDDING PURPOSE ONLY. ALL MATERIALS AND LABOR NECESSARY TO INSTALL, RELOCATE AND REMOVE SIGNS SHALL BE INCIDENTAL TO OTHER ITEMS.
3. THE CONTRACTOR IS RESPONSIBLE FOR BUOY MAINTENANCE THROUGHOUT CONSTRUCTION AND FOR DETERMINING ANTICAPED WATER LEVELS DURING CONSTRUCTION. EACH SIGN AND BUOY SHALL BE ANCHORED TO RIVER.
4. SIGNS SHALL BE DOUBLE FACED.
5. EACH SIGN SHALL BE EQUIPPED WITH TWO (2) FLASHING LIGHT UNITS WITH AMBER LENS. FLASHING LIGHT UNITS SHALL BE FURNISHED AND MAINTAINED BY THE CONTRACTOR.
6. FOR OTHER INFORMATION AND LOCATION OF SIGNS AND BUOYS SEE SPECIAL PROVISIONS.
7. COLOR: BACKGROUND – WHITE
   LEGEND – BLACK
   2" REFLECTIVE BAND AND SYMBOL – INTERNATIONAL ORANGE



TYPICAL WATERWAY TRAFFIC CONTROL

NTS

TRAFFIC CONTROL NOTES:

1. TRAFFIC CONTROL SHALL BE MAINTAINED IN ACCORDANCE WITH THE CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
2. TEMPORARY PAVEMENT MARKINGS SHALL BE CONSIDERED AS INCIDENTAL TO THE CONSTRUCTION OF THE PROJECT AND NO DIRECT PAYMENT WILL BE MADE FOR THIS ITEM. PAVEMENT MARKING SHALL BE MAINTAINED IN ACCORDANCE WITH THE MUTCD. INTERIM PAVEMENT MARKINGS MAY BE LEFT IN PLACE FOR SITUATIONS OF TWO WEEKS OR LESS.
3. ANY EXISTING SIGNS WHICH CONFLICT WITH THE TRAFFIC CONTROL PLAN SHALL BE COVERED OR REMOVED.
4. ALL SPACING AND DISTANCES ARE APPROXIMATE AND MAY BE ADJUSTED BY THE ENGINEER TO FIT FIELD CONDITIONS.
5. SIGNING SHOWN SHALL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETE.
6. REFER TO MODOT STANDARD DRAWING 616.10, 619.10, AND 620.10 FOR ADDITIONAL DETAILS AND 903.03 FOR SIGN AND SIGN MOUNTING REQUIREMENTS.
7. CONTRACTOR TO MAINTAIN PUBLIC ACCESS TO ALL BUSINESSES AND STREETS. NO STREET OR ENTRANCE SHALL BE COMPLETELY BLOCKED.
8. CMS PLACEMENT SHALL BE APPROVED BY THE ENGINEER.
9. SIGN CONST-7-72 IS PLACED 500' BEFORE THE BEGINNING OF PROJECT LIMITS OR THE "ROAD WORK AHEAD SIGN" OR "WORK ZONE NO PHONE ZONE" SIGN.
10. SIGN CONST-5-96 IS PLACED IN A VISABLE 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' BEFORE SIGN CONST-7-72.
11. THE "WORK ZONE NO PHONE ZONE" SIGN IS PLACED A MINIMUM OF 500' BEFORE THE ROADWORK AHEAD SIGN, OR AS APPROVED BY THE ENGINEER.

TRAFFIC CONTROL SHEET
MARIES COUNTY ROUTE 42
SHEET 3 OF 9

STATE OF MISSOURI
STEVEN T. STIRNEMANN
NUMBER PE-2009001102
PROFESSIONAL ENGINEER

DATE
12/12/2020

DATE PREPARED
8/9/2021

ROUTE	STATE
VAR	MO
DISTRICT	SHEET NO.
CD	8

COUNTY
VAR

JOB NO.
J5S3284

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A2550

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

EDSI
ENGINEERING DESIGN SOURCE, INC.
16141 SWINGLEY RIDGE RD., SUITE 300
CHESTERFIELD, MO 63017
MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY #001523

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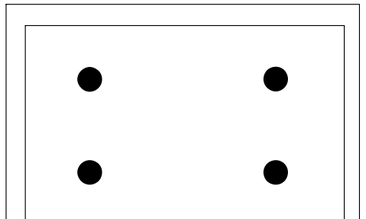
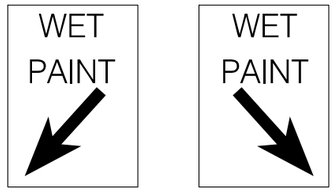
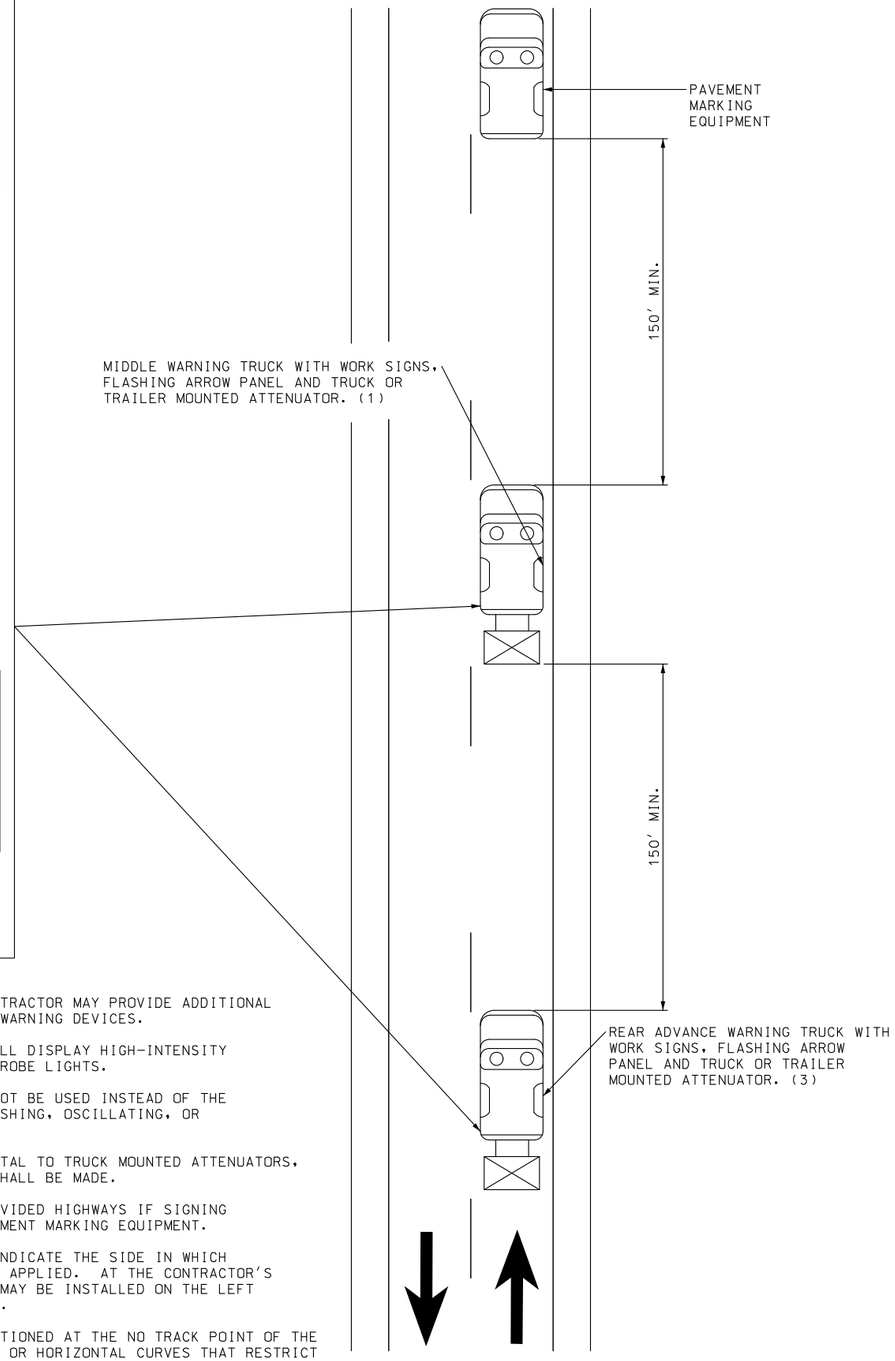


FLASHING ARROW PANEL
– CAUTION MODE

WO20-4
48″ X 48″
(7)



GO22-1 (2)
(3)



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

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

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

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

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

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

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

CENTERLINE/EDGELINE STRIPING ON TWO-LANE HIGHWAYS

www.invarion.com

616.8.10 (TA-10) LANE CLOSURE ON TWO-LANE ROAD USING FLAGGERS - DE/CM

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 shoulder width) offset. 2 Lane taper length based on 12 ft. (standard lane width) offset.

NOTES:

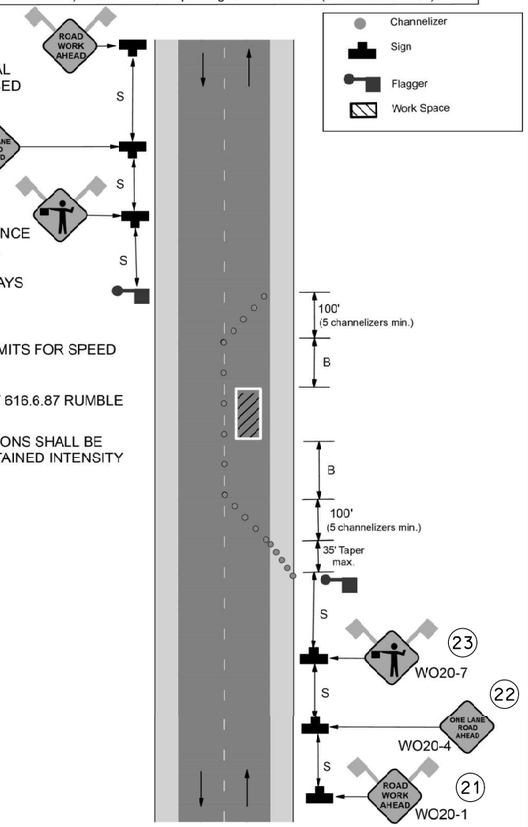
AUTOMATED FLAGGER ASSISTANCE DEVICES (AFAD) AND PORTABLE SIGNAL FLAGGING DEVICES (PSFD) MAY BE USED AS AN ALTERNATIVE FLAGGING OPERATION.

AFAD AND PSFD TYPICAL APPLICATIONS AND CRITERIA ARE LOCATED AT THE FOLLOWING:
EPG 616.8.10A (TA-10A) LANE CLOSURE ON TWO-LANE HIGHWAYS USING AUTOMATED FLAGGER ASSISTANCE DEVICE WITH RED AND AMBER SIGNAL SYSTEM & EPG 616.8.10C (TA-10C) LANE CLOSURE ON TWO-LANE HIGHWAYS USING PORTABLE SIGNAL FLAGGING DEVICE.

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

IF RUMBLE STRIPS ARE USED, REVIEW 616.6.87 RUMBLE STRIPS.

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



TA - 10 1/16

ROUTE 89 – LANE CLOSURE DETAIL

STATE OF MISSOURI
STEVEN T. STIRNEMANN
NUMBER PE-2003001103
PROFESSIONAL ENGINEER

DATE
12/12/2020
DATE PREPARED
8/9/2021

ROUTE	STATE
VAR	MO
DISTRICT	SHEET NO.
CD	9

COUNTY
VAR
JOB NO.
J5S3284
CONTRACT ID.
PROJECT NO.
BRIDGE NO.
A2550 & A1411

DESCRIPTION	DATE

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

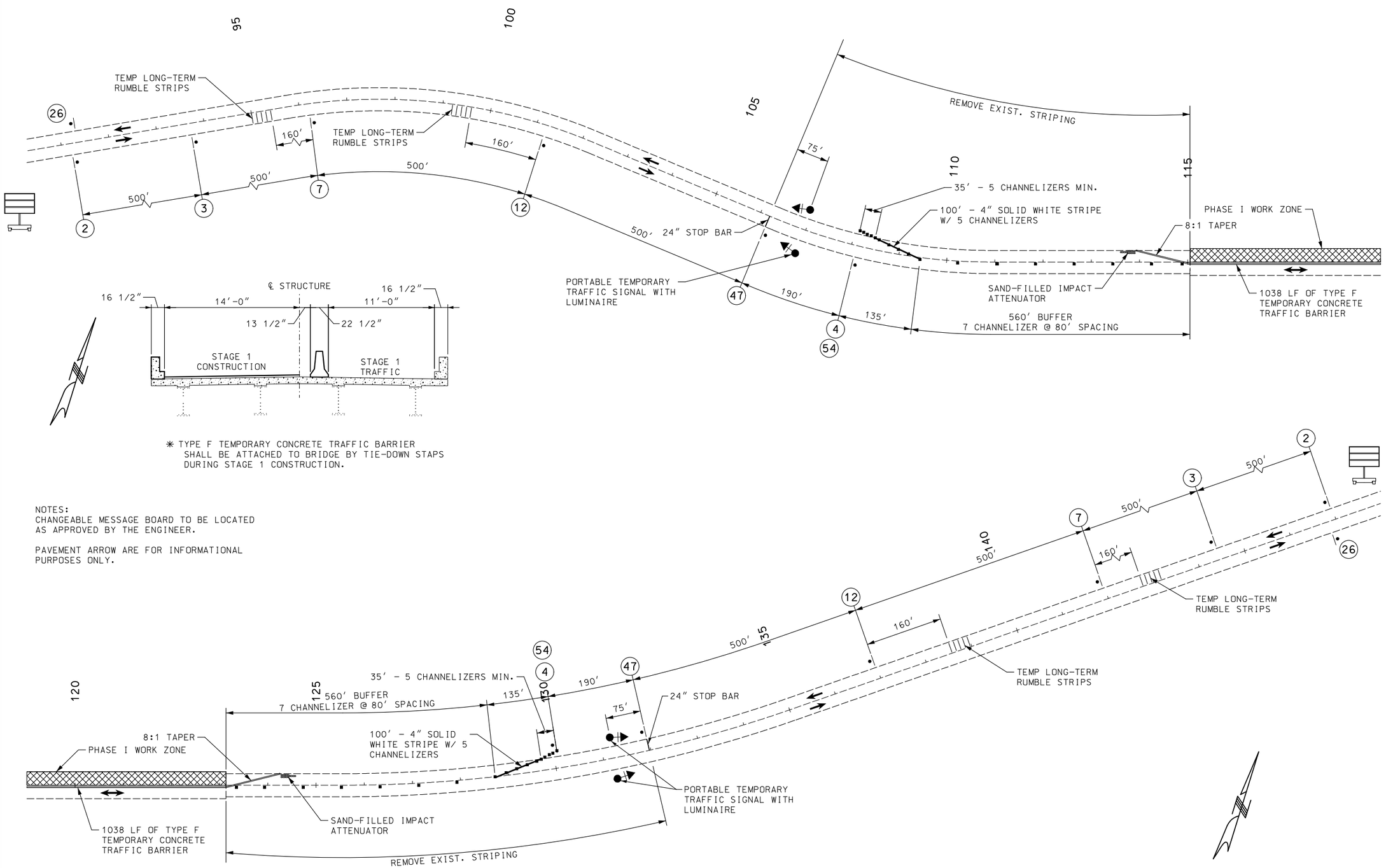
EDSI
ENGINEERING DESIGN SOURCE, INC.
16141 SWINGLEY RIDGE RD., SUITE 300
CHESTERFIELD, MO 63017
MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY #001523

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

TRAFFIC CONTROL SHEET
ROUTE 42 & ROUTE 89
SHEET 4 OF 9

REV.

N:\E20019 B&W_MoDOT_CD Bridge Bundle 1\07_Roadway for Bridge A2550-Rte 42\Drawings\Output\008A_TC_01A_J5S3284_A2550_I5.dgn 12:51:10 PM 8/9/2021



✳ TYPE F TEMPORARY CONCRETE TRAFFIC BARRIER SHALL BE ATTACHED TO BRIDGE BY TIE-DOWN STAPS DURING STAGE 1 CONSTRUCTION.

NOTES:
CHANGEABLE MESSAGE BOARD TO BE LOCATED AS APPROVED BY THE ENGINEER.

PAVEMENT ARROW ARE FOR INFORMATIONAL PURPOSES ONLY.

BRIDGE TRAFFIC CONTROL
N.T.S.

TRAFFIC CONTROL SHEET
MARIES COUNTY ROUTE 42
SHEET 5 OF 9

STATE OF MISSOURI
STEVEN T. STIRNEMANN
NUMBER PE-2009001102
PROFESSIONAL ENGINEER

DATE	12/12/2020
DATE PREPARED	8/9/2021
ROUTE	VAR
STATE	MO
DISTRICT	CD
SHEET NO.	10
COUNTY	VAR
JOB NO.	J5S3284
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A2550

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)

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ENGINEERING DESIGN SOURCE, INC.
16141 SWINGLEY RIDGE RD., SUITE 300
CHESTERFIELD, MO 63017
MISSOURI STATE ENGINEERING COMPANY CERTIFICATE OF AUTHORITY #001523

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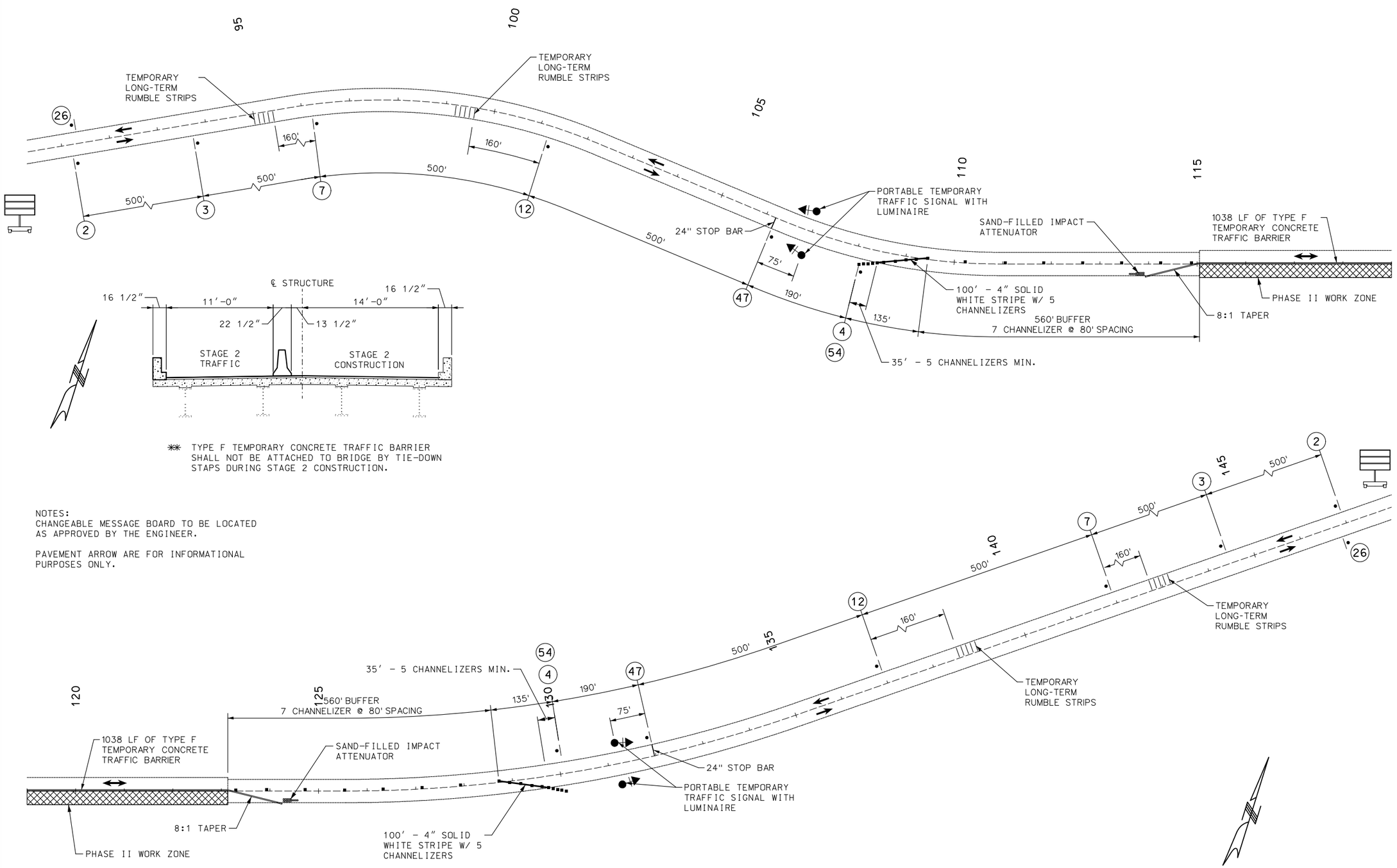

** TYPE F TEMPORARY CONCRETE TRAFFIC BARRIER SHALL NOT BE ATTACHED TO BRIDGE BY TIE-DOWN STAPS DURING STAGE 2 CONSTRUCTION.

NOTES:
CHANGEABLE MESSAGE BOARD TO BE LOCATED AS APPROVED BY THE ENGINEER.

PAVEMENT ARROW ARE FOR INFORMATIONAL PURPOSES ONLY.

BRIDGE TRAFFIC CONTROL
N.T.S.

TRAFFIC CONTROL SHEET
MARIES COUNTY ROUTE 42
SHEET 6 OF 9

STATE OF MISSOURI
STEVEN T. STIRNEMANN
NUMBER PE-2009001102
PROFESSIONAL ENGINEER

DATE	12/12/2020
DATE PREPARED	8/9/2021
ROUTE	VAR
STATE	MO
DISTRICT	CD
SHEET NO.	11
COUNTY	VAR
JOB NO.	J5S3284
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A2550

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)

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ENGINEERING DESIGN SOURCE, INC.
16141 SWINGLEY RIDGE RD., SUITE 300
CHESTERFIELD, MO 63017
MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY #001523

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W020-2

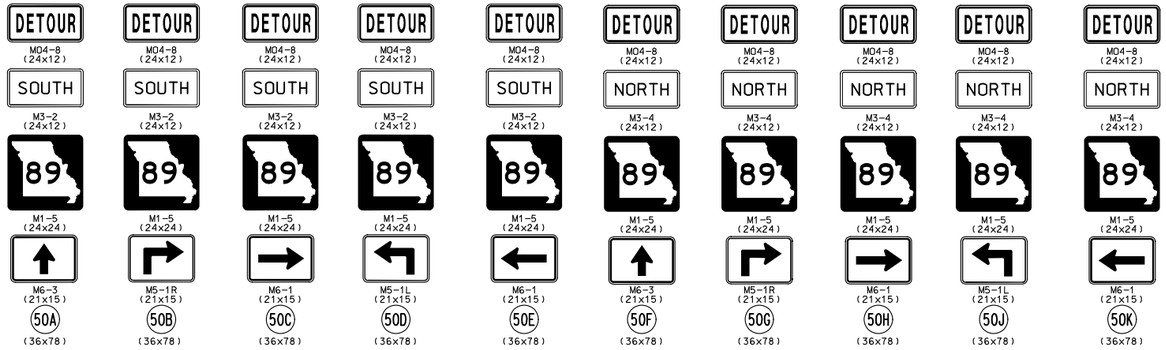
18

W020-3

20

R11-2

29



M04-8a

52

56A

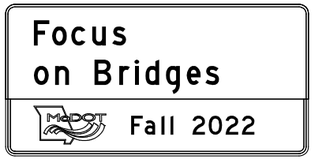
(60X30)

56B

(60X30)

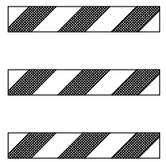
56C

(60X30)



CONST-4-96

58



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R11-4

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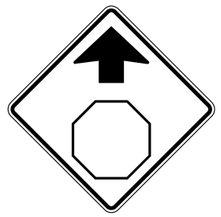


W03-1

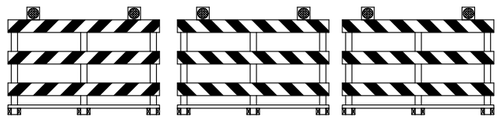
39

R1-1

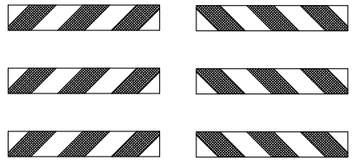
41

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- CONE
- CHANNELIZER
- BARRICADE
- CHANGEABLE MESSAGE BOARD



TYPE III MOVABLE BARRICADE
WITH TYPE B LIGHTS FOR ROAD CLOSURE

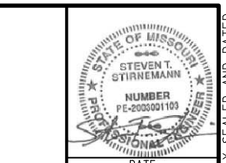


ADVANCED WARNING RAIL SYSTEM
(AWRS)

TRAFFIC CONTROL NOTES:

1. TRAFFIC CONTROL SHALL BE MAINTAINED IN ACCORDANCE WITH THE CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
2. CONTRACTOR SHALL INSPECT AND MAINTAIN ALL SIGNS AND TRAFFIC CONTROL DEVICES DAILY, INCLUDING THE DETOUR ROUTE.
3. ANY EXISTING SIGNS WHICH CONFLICT WITH THE TRAFFIC CONTROL PLAN SHALL BE COVERED OR REMOVED.
4. ALL SPACING AND DISTANCES ARE APPROXIMATE AND MAY BE ADJUSTED BY THE ENGINEER TO FIT FIELD CONDITIONS.
5. SIGNING SHOWN SHALL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETE.
6. REFER TO MODOT STANDARD DRAWING 616.10, 619.10, AND 620.10 FOR ADDITIONAL DETAILS AND 903.03 FOR SIGN AND SIGN MOUNTING REQUIREMENTS.
7. CONTRACTOR TO CONTACT ALL ADJACENT PROPERT OWNERS AND MAINTAIN LOCAL ACCESS DURING CONSTRUCTION.
8. CMS PLACEMENT SHALL BE APPROVED BY THE ENGINEER.
9. SIGN CONST-5-96 IS PLACED 500' BEFORE THE BEGINNING OF PROJECT LIMITS OR THE "ROAD CLOSED AHEAD SIGN" OR "DETOUR AHEAD" SIGN, OR AS APPROVED BY THE ENGINEER.

TRAFFIC CONTROL SHEET
OSAGE COUNTY ROUTE 89
SHEET 7 OF 9



DATE
12/12/2020
DATE PREPARED
8/9/2021

ROUTE	STATE
VAR	MO
DISTRICT	SHEET NO.
CD	12

COUNTY
VAR
JOB NO.
J5S3284
CONTRACT ID.
PROJECT NO.
BRIDGE NO.
A1411

DESCRIPTION | DATE

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

EDSI
ENGINEERING DESIGN SOURCE, INC.
16141 SWINGLEY RIDGE RD., SUITE 300
CHESTERFIELD, MO 63017
MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY #001523

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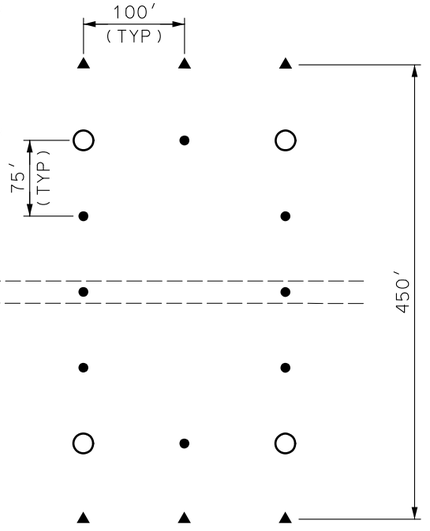
WATERWAY TRAFFIC CONTROL NOTES:

1. INFORMATION SHOWN IS SCHEMATIC ONLY. FINAL LOCATION AND NUMBER OF SIGNS AND BUOYS IS SUBJECT TO APPROVAL OF MISSORI STATE WATER PATROL.
2. THE DETAILS SHOWN ARE FOR BIDDING PURPOSE ONLY. ALL MATERIALS AND LABOR NECESSARY TO INSTALL, RELOCATE AND REMOVE SIGNS SHALL BE INCIDENTAL TO OTHER ITEMS.
3. THE CONTRACTOR IS RESPONSIBLE FOR BUOY MAINTENANCE THROUGHOUT CONSTRUCTION AND FOR DETERMINING ANTICAPED WATER LEVELS DURING CONSTRUCTION. EACH SIGN AND BUOY SHALL BE ANCHORED TO RIVER.
4. SIGNS SHALL BE DOUBLE FACED.
5. EACH SIGN SHALL BE EQUIPPED WITH TWO (2) FLASHING LIGHT UNITS WITH AMBER LENS. FLASHING LIGHT UNITS SHALL BE FURNISHED AND MAINTAINED BY THE CONTRACTOR.
6. FOR OTHER INFORMATION AND LOCATION OF SIGNS AND BUOYS SEE SPECIAL PROVISIONS.
7. COLOR: BACKGROUND – WHITE
   LEGEND – BLACK
   2" REFLECTIVE BAND AND SYMBOL – INTERNATIONAL ORANGE



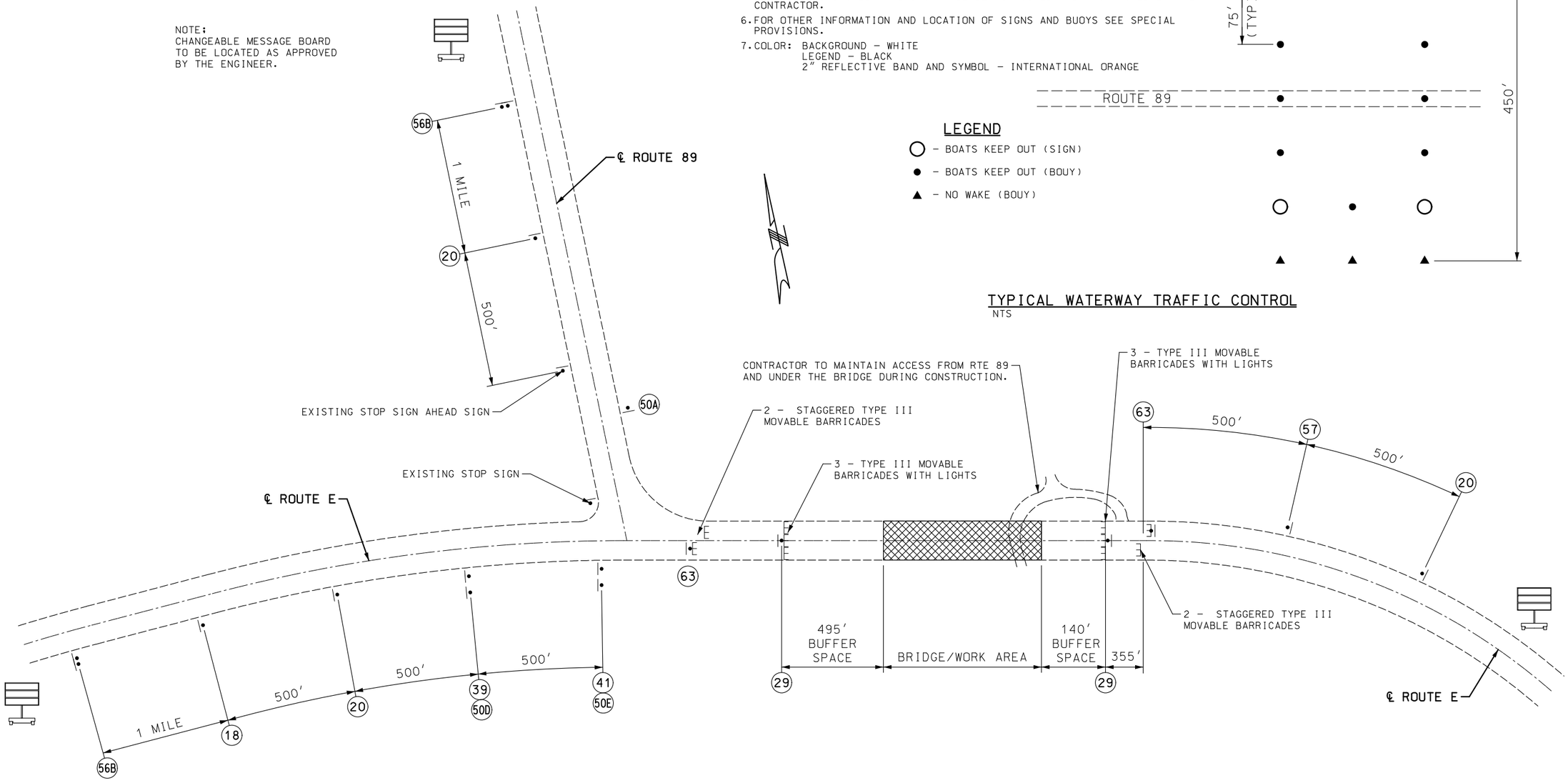
LEGEND

- ○ – BOATS KEEP OUT (SIGN)
- ● – BOATS KEEP OUT (BOUY)
- ▲ – NO WAKE (BOUY)

TYPICAL WATERWAY TRAFFIC CONTROL

NTS

NOTE:
CHANGEABLE MESSAGE BOARD TO BE LOCATED AS APPROVED BY THE ENGINEER.



BRIDGE CLOSURE TRAFFIC CONTROL

NTS

TRAFFIC CONTROL SHEET
OSAGE COUNTY ROUTE 89
SHEET 8 OF 9

STATE OF MISSOURI
STEVEN T. STIRNEMANN
NUMBER PE-2009001102
PROFESSIONAL ENGINEER

DATE: 12/12/2020
DATE PREPARED: 8/9/2021
ROUTE: VAR | STATE: MO
DISTRICT: CD | SHEET NO.: 13
COUNTY: VAR
JOB NO.: J5S3284
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A1411

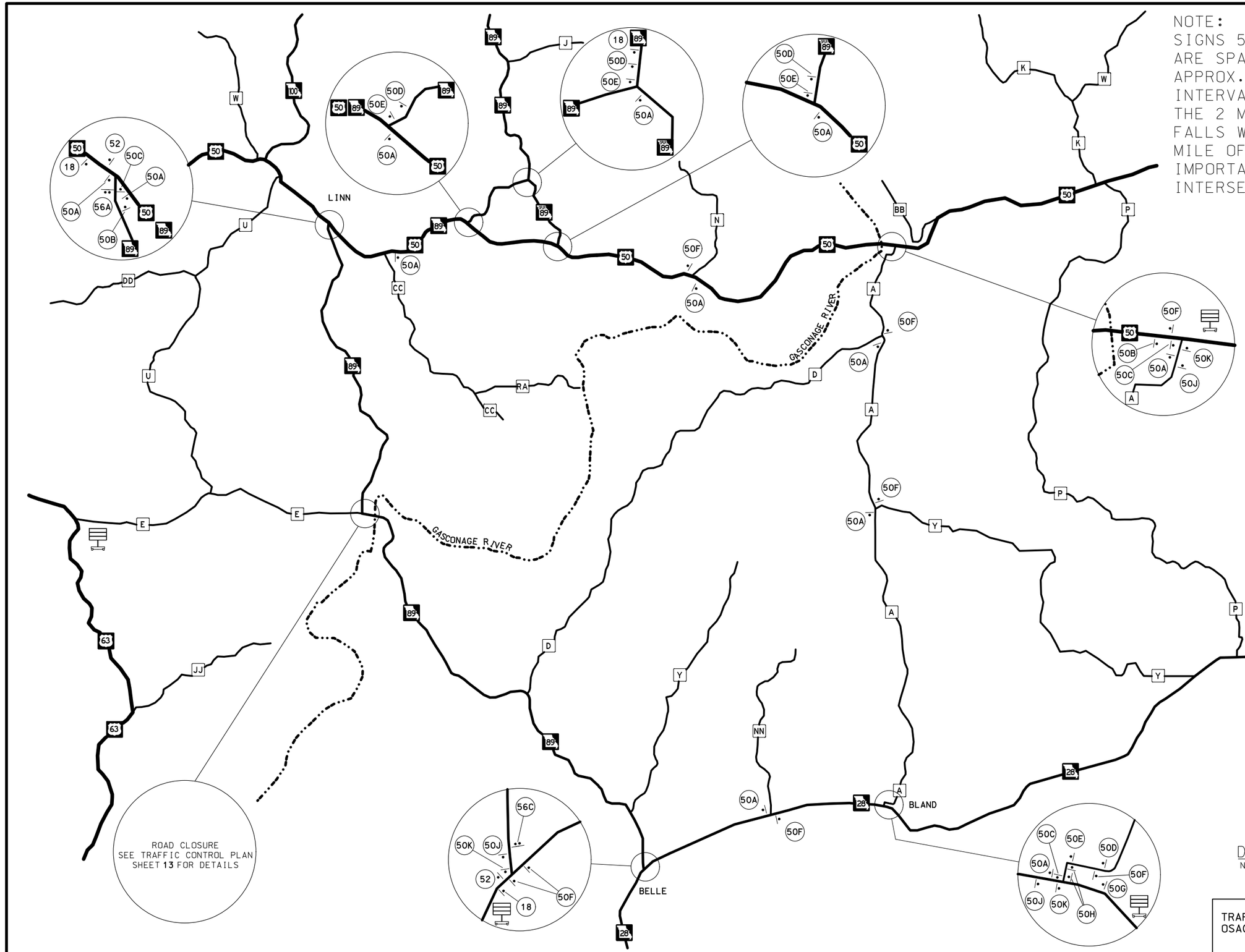
DESCRIPTION | DATE

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

EDSI
ENGINEERING DESIGN SOURCE, INC.
16141 SWINGLEY RIDGE RD., SUITE 300
CHESTERFIELD, MO 63017
MISSOURI STATE ENGINEERING COMPANY CERTIFICATE OF AUTHORITY #001523

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

N:\E20019 B&W_MoDOT_CD Bridge Bundle 1\06_Roadway for Bridge A1411-Rte 89\Drawings\Output\009_TC_02_J5S3284_A14112_l100.dgn 12:51:22 PM 8/9/2021



STATE OF MISSOURI
STEVEN T. STIRNEMANN
NUMBER PE-2009001102
PROFESSIONAL ENGINEER

DATE
12/12/2020

DATE PREPARED
8/9/2021

ROUTE	STATE
VAR	MO
DISTRICT	SHEET NO.
CD	14

COUNTY
VAR

JOB NO.
J5S3284

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A1411

DESCRIPTION	DATE

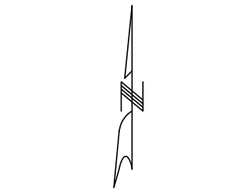
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

EDSI
ENGINEERING DESIGN SOURCE, INC.
16141 SWINGLEY RIDGE RD., SUITE 300
CHESTERFIELD, MO 63017
MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY #001523

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

REV.

N:\E20019 B&W_MoDOT_CD Bridge Bundle 1\06_Roadway for Bridge A1411-Rte 89\Drawings\Output\010_TC_03_J5S3284_A14112_I4000.dgn 12:51:23 PM 8/9/2021



TEMPORARY EROSION CONTROL LEGEND

SILT FENCE

NOTE: SEE STD PLAN 806.10 FOR TEMPORARY EROSION CONTROL DETAILS

EROSION CONTROL
SHEET 1 OF 3

STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 7/12/2021

ROUTE	STATE
VAR.	MO
DISTRICT	SHEET NO.
CD	15

COUNTY VAR.

JOB NO. J5S3284

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A47351

DATE	DESCRIPTION

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

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

Bartlett & West
1719 SOUTHRIDGE DR, SUITE 100 - JEFFERSON CITY, MO 65109-4000
PHONE 573-634-3181 - FAX 573-634-7904
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM

EROSION CONTROL SHEET
MARIES COUNTY ROUTE 42
SHEET 2 OF 3

STATE OF MISSOURI
STEVEN T. STIRNEMANN
NUMBER PE-2009001103
PROFESSIONAL ENGINEER

DATE	12/12/2020
DATE PREPARED	8/9/2021
ROUTE	VAR
STATE	MO
DISTRICT	CD
SHEET NO.	16
COUNTY	VAR
JOB NO.	J5S3284
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A2550

DATE	DESCRIPTION

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

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

EDSI
ENGINEERING DESIGN SOURCE, INC.
16141 SWINGLEY RIDGE RD., SUITE 300
CHESTERFIELD, MO 63017
MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY #001523

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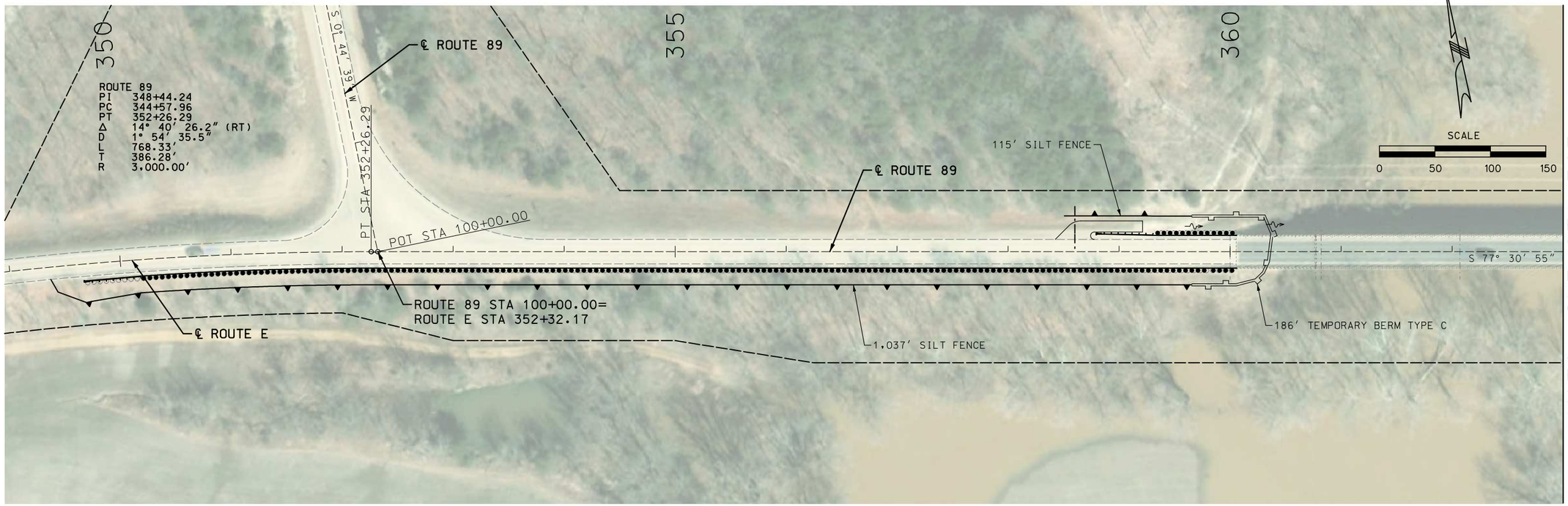
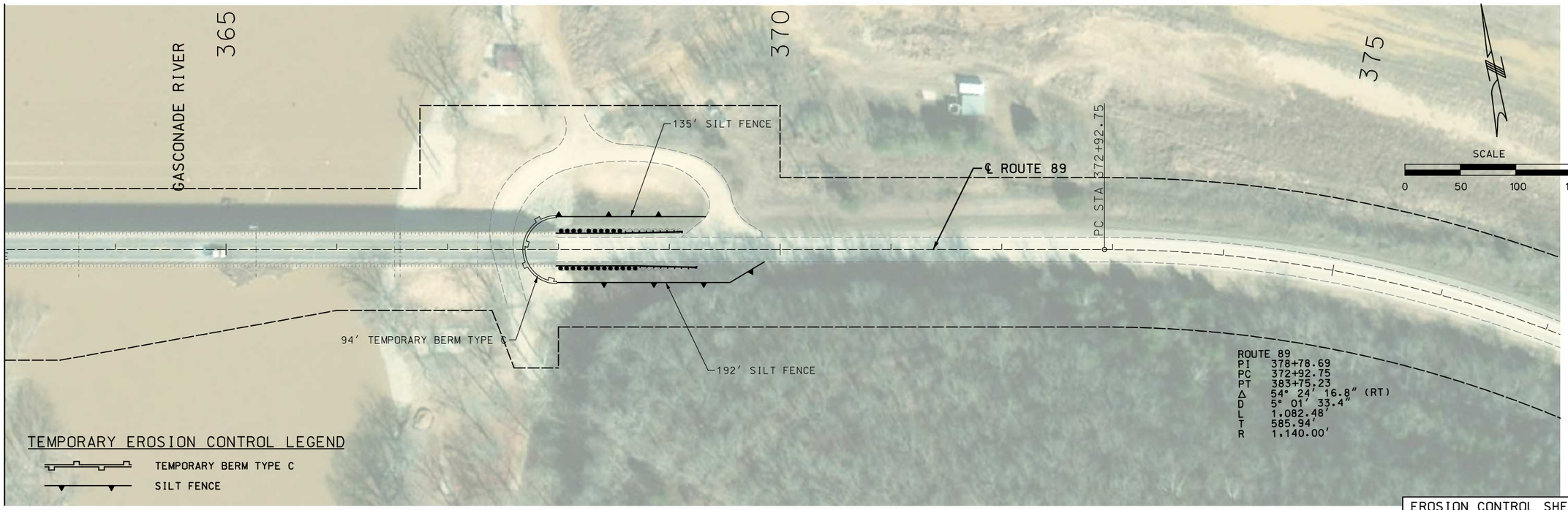




EROSION CONTROL SHEET
OSAGE COUNTY ROUTE 89
SHEET 3 OF 3

STATE OF MISSOURI
STEVEN T. STIRNEMANN
NUMBER PE-2009001103
PROFESSIONAL ENGINEER

DATE 12/12/2020
DATE PREPARED 8/9/2021
ROUTE VAR
STATE MO
DISTRICT CD
SHEET NO. 17
COUNTY VAR
JOB NO. J5S3284
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A1411

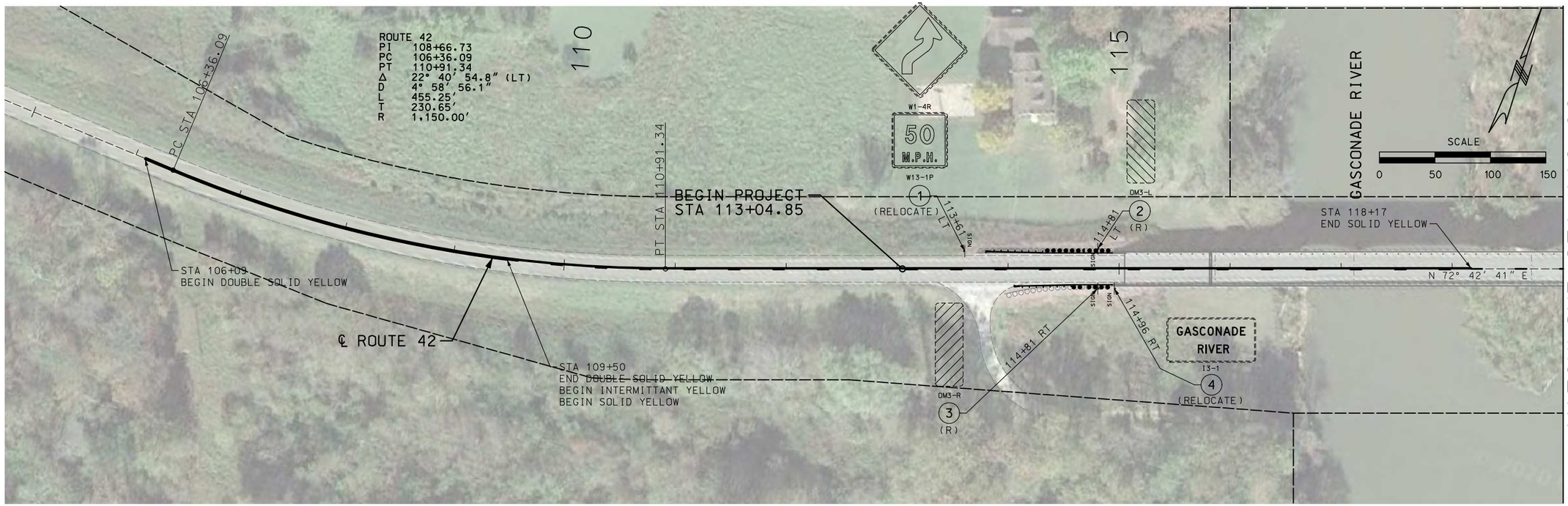
DATE	DESCRIPTION

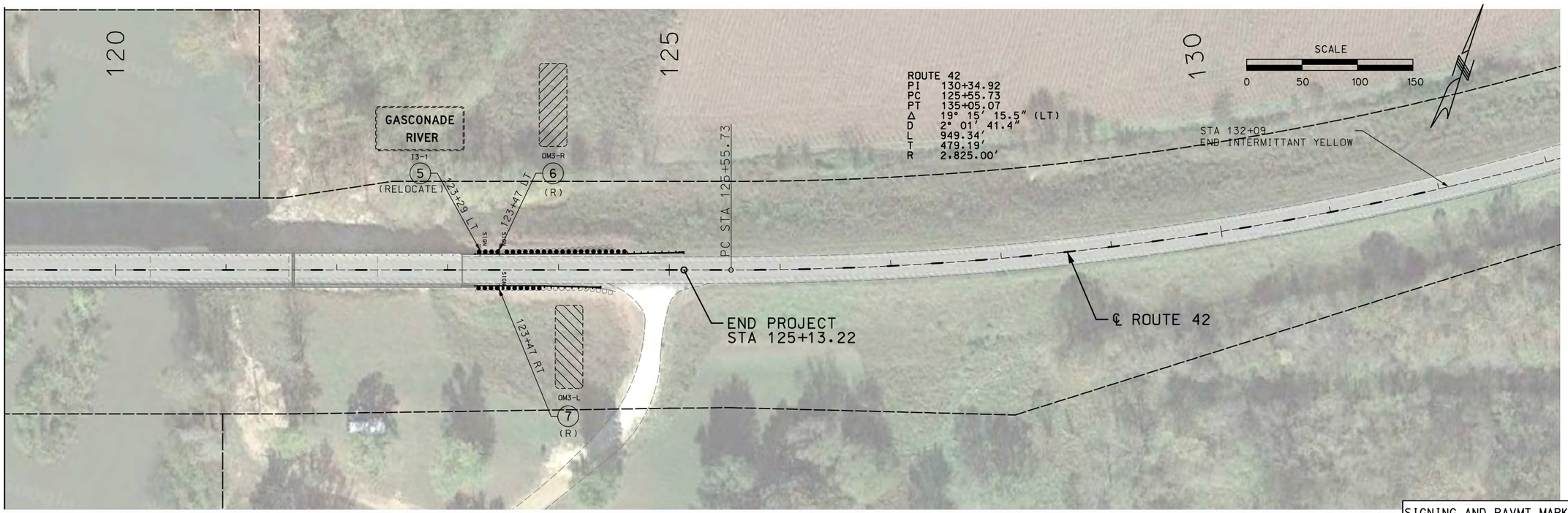
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

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

EDSI
ENGINEERING DESIGN SOURCE, INC.
16141 SWINGLEY RIDGE RD., SUITE 300
CHESTERFIELD, MO 63017
MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY #001523

N:\E20019 B&W_MoDOT_CD Bridge Bundle 1\06_Roadway for Bridge A1411-Rte 89\Drawings\Output\012_EC_01_J5S3284_A14112_150.dgn 12:51:29 PM 8/9/2021





SIGNING AND PAVMT MARKING
MARIES COUNTY ROUTE 42
SHEET 1 OF 2

STATE OF MISSOURI
STEVEN T. STIRNEMANN
NUMBER PE-2009001103
PROFESSIONAL ENGINEER

DATE	12/12/2020
DATE PREPARED	8/9/2021
ROUTE	VAR
STATE	MO
DISTRICT	CD
SHEET NO.	18
COUNTY	VAR
JOB NO.	J5S3284
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A2550

DATE	DESCRIPTION

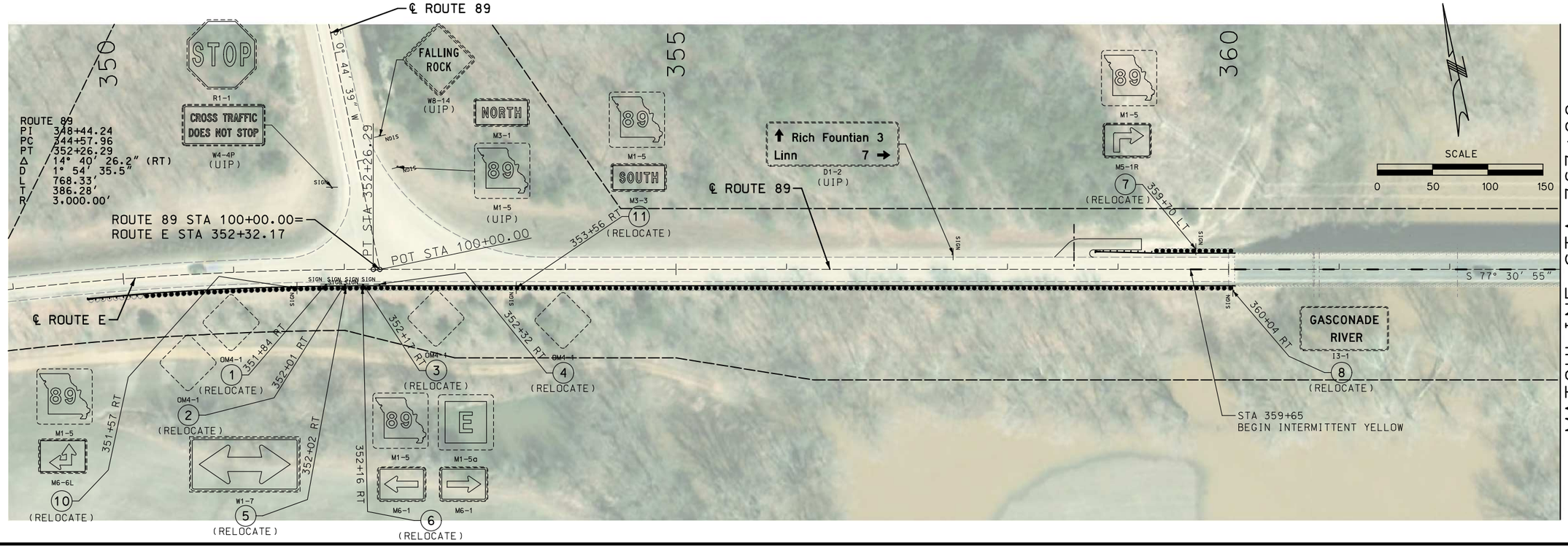
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

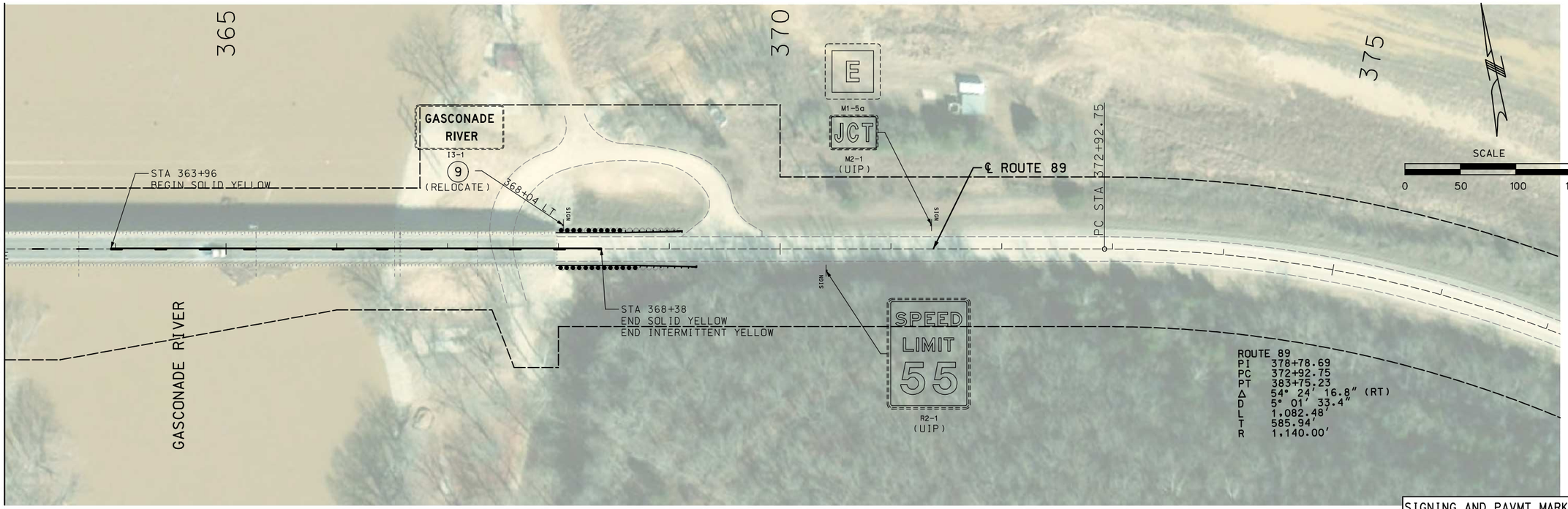
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

EDSI
ENGINEERING DESIGN SOURCE, INC.
16141 SWINGLEY RIDGE RD., SUITE 300
CHESTERFIELD, MO 63017
MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY #001523

N:\E20019 B&W_MoDOT_CD Bridge Bundle 1\07_Roadway for Bridge A2550-Rte 42\Drawings\Output\012_SS_01_J5S3284_A2550_150.dgn 12:51:43 PM 8/9/2021





STEVEN T. STIRNEMANN
NUMBER PE-2009001103
STATE OF MISSOURI
PROFESSIONAL ENGINEER

DATE
12/12/2020
DATE PREPARED
8/9/2021

ROUTE	STATE
VAR	MO
DISTRICT	SHEET NO.
CD	19

COUNTY
VAR
JOB NO.
J5S3284
CONTRACT ID.
PROJECT NO.
BRIDGE NO.
A1411

DATE	DESCRIPTION

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

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

EDSI
ENGINEERING DESIGN SOURCE, INC.
16141 SWINGLEY RIDGE RD., SUITE 300
CHESTERFIELD, MO 63017
MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY #001523

SIGNING AND PAVMT MARKING
OSAGE COUNTY ROUTE 89
SHEET 2 OF 2

N:\E20019 B&W_MoDOT_CD Bridge Bundle 1\06_Roadway for Bridge A1411-Rte 89\Drawings\Output\013_PM_01_J5S3284_A14112_150.dgn 12:51:49 PM 8/9/2021

EFFECTIVE 12-01-2017

SIGNS (902 SIGNAL SIGNS TABULATED ON D-37A SHEET)						PIPE POST ✳					STRUCTURAL STEEL: POSTS ✳						BACKING BARS 2" X 3/8" @ 2.55 LBS PER LIN FT				TOTAL	U CHANNEL POST	PERFORMED SQUARE STEEL TUBE POST: 2 IN							2.5 IN						BREAK-AWAY ASSEMBLY	FOOTINGS		REMARKS AND OTHER REQUIRED ITEMS.
SIGN NO.	SIGN SIZE	STATION	ROUTE	LOCATION	SIGN DTL. SHT. NO.	PIPE SIZE	POST NO.1	POST NO.2	LBS PER FT	TOTAL ITEM NO. 9031220	POST DES NO.	POST NO.1	POST NO.2	POST NO.3	LBS PER FT	TOTAL	NO. EACH	LGTH	TOTAL	TOTAL	ITEM NO. 9031210	ITEM NO. 9031250	POST NO.1	POST NO.2	TOTAL ITEM NO. 9031270A	ANCHOR 7 GA. ITEM NO. 9031273	OMNI 7 GA. ITEM NO. 9031279	ANCHOR 12 GA. ITEM NO. 9031271	OMNI 12 GA. ITEM NO. 9031278	POST NO.1	POST NO.2	TOTAL ITEM NO. 9031280	2.25" INSERT ITEM NO. 9031272	ANCHOR 7 GA. ITEM NO. 9031281	OMNI 7 GA. ITEM NO. 9031282	ITEM NO. 9031241	EMBD ITEM NO. 9031010	BOLT DOWN ITEM NO. 9031020	
						IN.	LF	LF		LBS		LF	LF	LF		LBS		IN.	LF	LBS	LBS	LF	LF	LF												EACH	CU YDS	CU YDS	
1	ASSEMBLY	113+61	42	LT	STD																									13		13			3		0.1		
4	36"x18"	114+96	42	RT	STD																									13		13			3		0.1		
5	36"x18"	123+29	42	LT	STD																									13		13			3		0.1		
1	18"x18"	351+84	89	RT	STD																														3		0.1		
2	18"x18"	352+01	89	RT	STD																														3		0.1		
3	18"x18"	352+17	89	RT	STD																														3		0.1		
4	18"x18"	352+32	89	RT	STD																														3		0.1		
5	48"x24"	352+02	89	LT	STD																														3		0.1		
6	ASSEMBLY	352+16	89	LT	STD																														3		0.1		
7	ASSEMBLY	359+70	89	RT	STD																														3		0.1		
8	42"x18"	360+04	89	RT	STD																														3		0.1		
9	42"x18"	368+04	89	RT	STD																									12		12			3				
10	ASSEMBLY	351+57	89	RT	STD																														3		0.1		
11	ASSEMBLY	353+56	89	RT	STD																														3		0.1		
SUBTOTAL																														51					42		1.4		
TOTAL																														51					42		1.4		

✳ BREAKAWAY ASSEMBLY IS INCIDENTAL FOR PIPE AND STRUCTURAL STEEL POSTS

ROUND PIPE POST AND FOOTING DATA TABLE

NOM. SIZE (IN.)	WEIGHT LBS/FT	WEIGHT LBS/IN	STUB LENGTH	FOOTING DIA.	FOOTING DEPTH	CONCRETE C.Y.
2½	5.79	0.48	4'-3½"	12"	4'-6"	0.13
3	7.58	0.63	4'-3½"	12"	4'-6"	0.13
4	10.79	0.90	5'-3½"	18"	5'-6"	0.36

POST AND FOOTING DATA TABLE

POST DES. NO.	NOM. SIZE	POST WEIGHT LBS/FT	POST WEIGHT LBS/IN	POST STUB LENGTH	FOOTING DIA.	LEVEL GROUND DEPTH	LEVEL GROUND C.Y.	6:1 GRADE DEPTH	6:1 GRADE C.Y.	4:1 GRADE DEPTH	4:1 GRADE C.Y.	3:1 OR 2:1 GRADE DEPTH	3:1 OR 2:1 GRADE C.Y.
1	W6	9.0	0.75	3'-0"	15"	3'-0"	0.14	3'-2"	0.15	3'-3"	0.16	3'-6"	0.17
2	W6	15.0	1.25	4'-0"	24"	4'-0"	0.47	4'-2"	0.50	4'-3"	0.51	4'-6"	0.54
3	W8	18.0	1.50	4'-6"	28"	4'-6"	0.71	4'-8"	0.73	4'-9"	0.74	5'-0"	0.78
4	W10	22.0	1.83	5'-0"	36"	5'-0"	1.31	5'-2"	1.36	5'-3"	1.39	5'-6"	1.45
5	W10	26.0	2.17	5'-0"	36"	5'-0"	1.31	5'-3"	1.37	5'-5"	1.43	5'-9"	1.52
6	W12	35.0	2.92	5'-6"	36"	5'-6"	1.44	5'-9"	1.52	5'-11"	1.56	6'-3"	1.65

D-29

STATE OF MISSOURI
STEVEN T. STIRNEMANN
NUMBER PE-2003001103
PROFESSIONAL ENGINEER

DATE 12/12/2020
DATE PREPARED 8/11/2021
ROUTE VAR | STATE MO
DISTRICT CD | SHEET NO. 20
COUNTY VAR
JOB NO. J5S3284
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A1411/A2550

REV.	DESCRIPTION	DATE

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

EDSI
ENGINEERING DESIGN SOURCE, INC.
16141 SWINGLEY RIDGE RD., SUITE 300
CHESTERFIELD, MO 63017
MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY #001523

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

N:\E20019 B&W_MoDOT_CD Bridge Bundle 1\06_Roadway for Bridge A1411-Rte 89\Drawings\Output\019_SN_01_J5S3284_A1411_l1.dgn 8:09:31 PM 8/11/2021

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
PROPOSED ROADWAY PLANS

OSAGE, MARIES, & GASCONADE COUNTIES

DESIGN DESIGNATION

GASCONADE COUNTY ROUTE 100
A.A.D.T. - 2018 = 869
A.A.D.T. - 2038 = 1129
D.H.V. = 11%
T = 10%
V = 55 MPH
FUNCTIONAL CLASSIFICATION - MAJOR COLLECTOR

MARIES COUNTY ROUTE 42
A.A.D.T. - 2018 = 480
A.A.D.T. - 2038 = 672
D.H.V. = 11%
T = 7%
V = 55 MPH
FUNCTIONAL CLASSIFICATION - MAJOR COLLECTOR

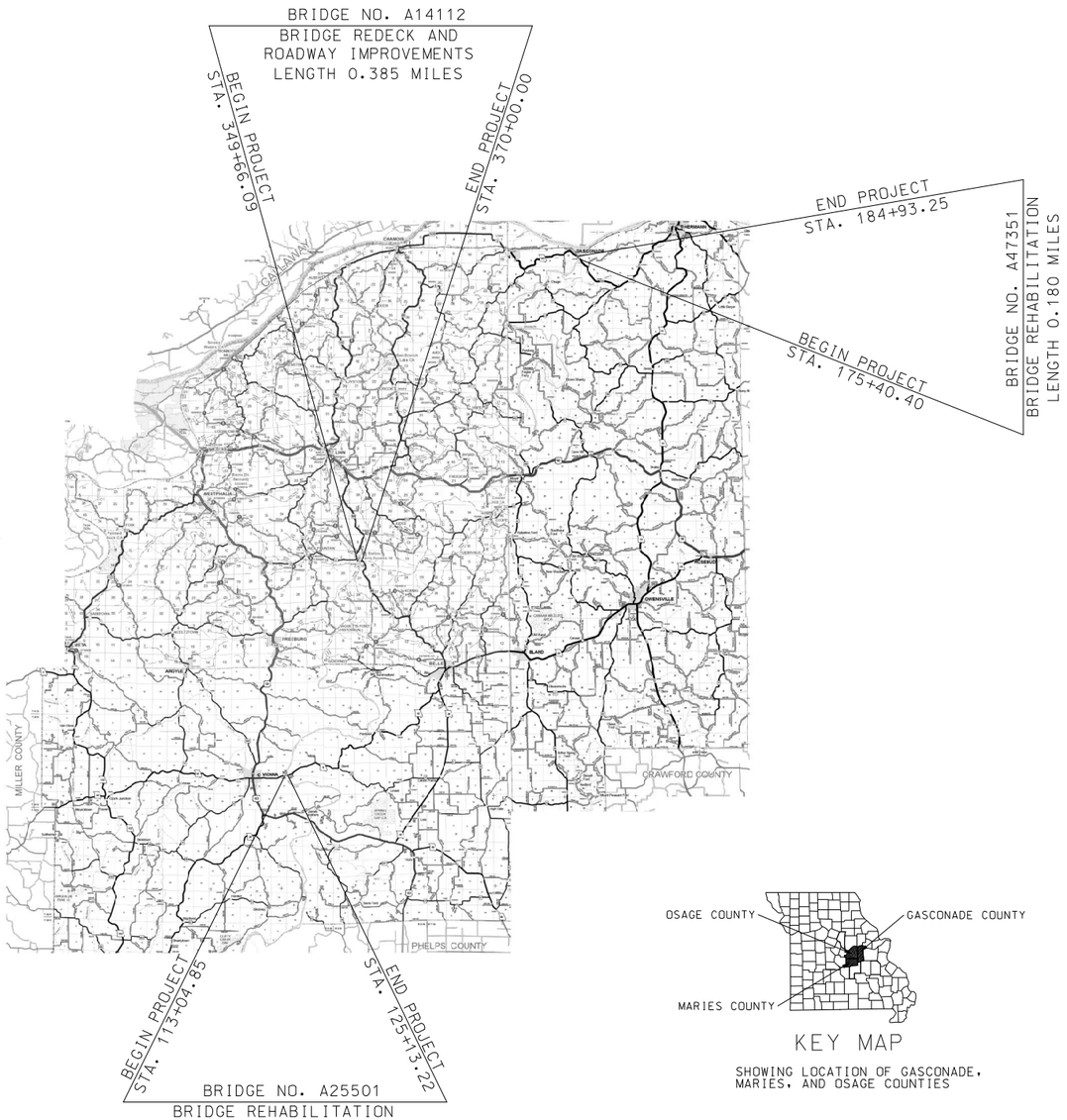
OSAGE COUNTY ROUTE 89
A.A.D.T. - 2018 = 1963
A.A.D.T. - 2038 = 3435
D.H.V. = 11%
T = 9%
V = 55 MPH
FUNCTIONAL CLASSIFICATION - MINOR ARTERIAL

NO ACQUISITION 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	DI	
DITCH BLOCK		
GROUND MOUNTED SIGN	SIGN	
LIGHT POLE		
H-FRAME POWER POLE		
TELEPHONE PEDESTAL	PED	
FENCE		
CHAIN LINK	V	
WOVEN WIRE	X	
GATE POST		
BENCHMARK	BM	

NOTE: DASHED OR OPEN SYMBOLS INDICATE EXISTING FEATURES



NOT TO SCALE

KEY MAP

SHOWING LOCATION OF GASCONADE, MARIES, AND OSAGE COUNTIES

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) (5 SHEETS)	3
PLAN-PROFILE (PP)	4-5
TRAFFIC CONTROL SHEETS (TC)	6-14
EROSION CONTROL SHEETS (EC)	15-17
SIGNING (SN)	18-20
BRIDGE DRAWINGS (B)	
A47351	1-3
A25501	1-5
A14112	1-11

LENGTH OF PROJECT

GASCONADE COUNTY ROUTE 100

BEGINNING OF PROJECT	STA.	175+40.40	
END OF PROJECT	STA.	184+93.25	
APPARENT LENGTH		952.85	FEET
EQUATIONS AND EXCEPTIONS:		NONE	

MARIES COUNTY ROUTE 42

BEGINNING OF PROJECT	STA.	113+04.85	
END OF PROJECT	STA.	125+13.22	
APPARENT LENGTH		1208.37	FEET
EQUATIONS AND EXCEPTIONS:		NONE	

OSAGE COUNTY ROUTE 89

BEGINNING OF PROJECT	STA.	349+66.09	
END OF PROJECT	STA.	370+00.00	
APPARENT LENGTH		2033.91	FEET
EQUATIONS AND EXCEPTIONS:		NONE	

TOTAL CORRECTIONS	0.00	FEET
NET LENGTH OF PROJECT	4195.13	FEET
STATE LENGTH	0.795	MILES
ESTIMATED DISTURBED ACRES (FOR INFORMATIONAL PURPOSES ONLY)	2.57	ACRES

STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

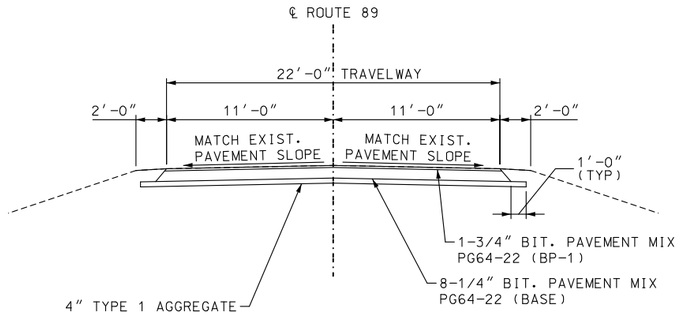
DATE PREPARED 9/27/2021
ROUTE VAR. | STATE MO
DISTRICT CD | SHEET NO. 1
COUNTY VAR.
JOB NO. J5S3284
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A47351, A25501, A14112

DESCRIPTION	DATE

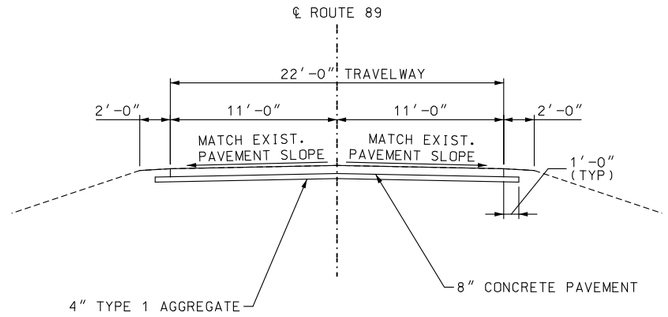
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

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

Bartlett & West
1719 SOUTHRIDGE DR, SUITE 100 - JEFFERSON CITY, MO 65109-4000
PHONE 573-634-3181 - FAX 573-634-7904
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM

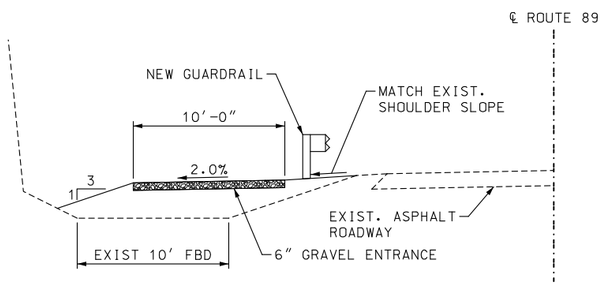


OPTIONAL ASPHALT PAVEMENT
NTS



OPTIONAL CONCRETE PAVEMENT
NTS

ROUTE 89 SECTION ON TANGENT - PROPOSED
STA 359+65.40 - STA 359+85.40
STA 368+18.60 - STA 368+38.60



NEW GRAVEL ENTRANCE
NTS
STA 358+42.51 - STA 359+21.25

STATE OF MISSOURI
STEVEN T. STIRNEMANN
NUMBER PE-2009001102
PROFESSIONAL ENGINEER

DATE
12/12/2020

DATE PREPARED
9/27/2021

ROUTE	STATE
VAR	MO

DISTRICT	SHEET NO.
CD	2

COUNTY
VAR

JOB NO.
J5S3284

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A1411

DESCRIPTION	DATE

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

EDSI
ENGINEERING DESIGN SOURCE, INC.
16141 SWINGLEY RIDGE RD., SUITE 300
CHESTERFIELD, MO 63017
MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY #001523

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

TYPICAL SECTIONS
OSAGE COUNTY ROUTE 89
SHEET 1 OF 1

REMOVAL OF IMPROVEMENTS

ROUTE	STATION	STATION	LOCATION	AMOUNT	DESCRIPTION
42	113+71.00	114+93.50	LT	122.5 LF	EXISTING GUARDRAIL
42	113+96.62	114+93.50	RT	97.5 LF	EXISTING GUARDRAIL
42	114+81.00	-	LT	1 EA	EXISTING OBJECT MARKER SIGN
42	114+81.00	-	RT	1 EA	EXISTING OBJECT MARKER SIGN
42	123+24.58	124+51.50	RT	127 LF	EXISTING GUARDRAIL
42	123+24.58	124+51.48	LT	127 LF	EXISTING GUARDRAIL
42	123+47.00	-	LT	1 EA	EXISTING OBJECT MARKER SIGN
42	123+47.00	-	RT	1 EA	EXISTING OBJECT MARKER SIGN
89	349+67.16	360+05.40	RT	1037 LF	EXISTING GUARDRAIL
89	359+33.65	360+05.40	LT	72 LF	EXISTING GUARDRAIL
89	359+65.40	359+85.40	CL	49 SY	EXISTING PAVMENET REMOVAL FOR OPTIONAL PAVEMENT
89	359+85.40	360+05.40	CL	49 SY	EXISTING PAVMENET REMOVAL FOR APPROACH SLAB
89	367+98.60	368+18.60	CL	49 SY	EXISTING PAVMENET REMOVAL FOR APPROACH SLAB
89	368+18.60	368+38.60	CL	49 SY	EXISTING PAVMENET REMOVAL FOR OPTIONAL PAVEMENT
89	367+98.60	368+97.22	LT	99 LF	EXISTING GUARDRAIL
89	367+98.60	369+09.15	RT	111 LF	EXISTING GUARDRAIL
			PROJECT TOTAL	1 LUMP SUM	

PAVEMENT

ROUTE	STATION	STATION	LOCATION	TYPE 1 AGGREGATE FOR BASE 4" THICK	OPTIONAL PAVEMENT	GRAVEL (A) OR CRUSHED STONE (B) (6 IN THICK)	REMARKS
				SY	SY	SY	
89	358+42.51	359+21.25	LT			95.7	
89	359+65.40	359+85.40	CL	56.5	48.9		
89	368+18.60	368+38.60	CL	56.5	48.9		
			SUBTOTAL	113.0	97.8	95.7	
			PROJECT TOTAL	113	97.8	96	

MGS GUARDRAIL SYSTEM

ROUTE	STATION	STATION	LOCATION	MGS GUARDRAIL (6 FT POSTS)	MGS GUARDRAIL (8 FT POSTS)	TYPE A CRASHWORTHY END TERMINAL (MASH)	MGS BRIDGE APPROACH TRANSITION SECTION (REGULAR/NO CURB)	REMARKS
				LF	LF	EA	EA	
42	113+79.87		LT			1		
42	114+05.47		RT			1		
42	114+31.00	114+56.00	LT	25.0				
42	114+56.00	114+93.50	LT & RT				2	
42	123+24.58	123+62.08	LT & RT				2	
42	123+62.08	123+87.08	RT	25.0				
42	123+87.08		RT			1		
42	123+62.08	124+62.08	LT	100.0				
42	124+62.08		LT			1		
		SUBTOTAL		150.0	0.0	4.0	4.0	
89	349+66.09		RT			1		
89	350+17.47	359+79.97	RT		962.5			
89	358+79.27		LT			1		
89	359+30.40	359+67.90	LT	37.5				
89	359+67.90	360+05.40	LT & RT				2	
89	367+98.60	368+36.10	LT & RT				2	
89	368+36.10	368+61.10	LT	25.0				
89	368+36.10	368+73.60	RT	37.5				
89	368+73.60		RT			1		
89	368+61.10		LT			1		
		SUBTOTAL		100.0	962.5	4.0	4.0	
		PROJECT TOTAL		250.0	963.0	8	8	

MOBILIZATION	
ROUTE	AMOUNT
100	1 LS
42	1 LS
89	1 LS
PROJECT TOTAL = 1 LUMP SUM	

CONTRACTOR FURNISHED SURVEYING AND STAKING	
ROUTE	AMOUNT
100	1 LS
42	1 LS
89	1 LS
PROJECT TOTAL = 1 LUMP SUM	

SUMMARY OF QUANTITIES
SHEET 1 OF 5

STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED SEALED AND DATED ELECTRONICALLY.

DATE PREPARED: 8/11/2021
ROUTE: VAR. | STATE: MO
DISTRICT: CD | SHEET NO.: 3
COUNTY: VAR.
JOB NO.: J5S3284
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A47351, A25501, A14112

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)

Bartlett & West
1719 SOUTHRIDGE DR, SUITE 100 - JEFFERSON CITY, MO 65109-4000
PHONE 573-634-3181 - FAX 573-634-7904
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM

SHAPING SLOPES CLASS III

ROUTE	STATION	STATION	LOCATION	NET LENGTH (LINEAR FT)	CLASS III SLOPES (STA)	REMARKS
42	113+49.87	114+93.00	LT	143.1	1.4	
42	113+75.47	114+93.00	RT	117.5	1.0	EXCLUDES ENTRANCE
42	123+24.58	125+43.22	LT	218.6	2.2	
42	123+24.58	124+68.22	RT	143.6	1.4	EXCLUDES ENTRANCE
			SUBTOTAL		6.0	
89	349+36.09	350+17.47	RT	81.38	0.8	
89	358+74.27	360+05.40	LT	131.13	1.3	EXCLUDES ENTRANCE
89	359+67.90	360+05.40	RT	37.50	0.4	
89	367+98.60	369+26.63	LT	128.03	1.3	EXCLUDES ENTRANCE
89	367+98.60	369+54.73	RT	156.13	1.5	
			SUBTOTAL		5.3	
			PROJECT TOTAL		11.0	

TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES

ROUTE	STATION	STATION	LOCATION	SILT FENCE	SEDIMENT REMOVAL	TYPE C BERM	REMARKS
				LF	CY	LF	
42	113+49.87	115+36.48	LT & RT	368.0	3.7		
42	122+83.71	125+43.22	LT & RT	478.0	4.8		
			SUBTOTAL	846.0	8.5	0.0	
89	349+36.00	359+65.00	RT	1037.0	10.4		
89	358+42.00	359+65.00	LT	115.0	1.2		
89	359+65.00	361+00.00	LT & RT			186.0	
89	367+68.80	368+00.00	LT & RT			94.0	
89	368+00.00	369+33.00	LT	135.0	1.4		
89	368+00.00	369+86.00	RT	192.0	1.9		
			SUBTOTAL	1479.0	14.9	280.0	
			PROJECT TOTAL	2325	23	280	

NOTE: SEDIMENT REMOVAL IS BASED ON 1 CY PER DITCH CHECK 1 CY PER SEDIMENT TRAP AND 1 CY PER 100' OF SILT FENCE.

PAVEMENT MARKING

ROUTE	STATION	STATION	LOCATION	4 IN YELLOW STANDARD WATERBORNE PAVEMENT MARKING PAINT TYPE P BEADS	TEMPORARY PREFORMED REMOVABLE MARKING TAPE 4 IN WHITE	TEMPORARY PREFORMED REMOVABLE MARKING TAPE 24 IN WHITE	PAVEMENT MARKING REMOVAL	REMARKS
				LF	LF	LF	LF	
42	106+09.00	106+09.00	RT			12		STOP BAR
42	106+09.00	115+05.00	CL				896.00	
42	108+45.00	109+45.00	LT		100			
42	108+45.00	109+45.00	RT		100			
42	106+09.00	109+50.00	CL	682				DOUBLE SOLID YELLOW
42	109+50.00	118+17.00	CL	1083				INTERMITTENT/SOLID YELLOW
42	118+17.00	132+09.00	CL	348				INTERMITTENT YELLOW
42	123+12.00	131+97.00	CL				885.00	
42	128+72.00	129+72.00	LT		100			
42	128+72.00	129+72.00	RT		100			
42	131+97.00	131+97.00	LT			12		STOP BAR
			SUBTOTAL	2113	400	12	1781	
89	359+75.00	363+96.00	CL	105				INTERMITTENT YELLOW
89	363+96.00	368+38.00	CL	553				SOLID/INTERMITTENT YELLOW
			SUBTOTAL	658	0	0	0	
			PROJECT TOTAL	2771	400	12	1781	

SUMMARY OF QUANTITIES
SHEET 2 OF 5

STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 8/9/2021
ROUTE VAR. | STATE MO
DISTRICT CD | SHEET NO. 3
COUNTY VAR.
JOB NO. J5S3284
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A47351, A25501, A14112

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)

Bartlett & West
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PHONE 573-634-3181 - FAX 573-634-7904
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM

EFFECTIVE: 04-01-2021

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL AREA SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NUM.	DESCRIPTION
WARNING SIGNS								
W01-1L	48X48	16.00						TURN (SYMBOL LEFT ARROW)
W01-1R	48X48	16.00						TURN (SYMBOL RIGHT ARROW)
W01-2L	48X48	16.00						CURVE (SYMBOL LEFT ARROW)
W01-2R	48X48	16.00						CURVE (SYMBOL RIGHT ARROW)
W01-3L	48X48	16.00						REVERSE TURN (SYMBOL LEFT ARROW)
W01-3R	48X48	16.00						REVERSE TURN (SYMBOL RIGHT ARROW)
W01-4L	48X48	16.00						REVERSE CURVE (SYMBOL LEFT ARROW)
W01-4R	48X48	16.00						REVERSE CURVE (SYMBOL RIGHT ARROW)
W01-4bL	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL LT ARROWS)
W01-4bR	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL RT ARROWS)
W01-4cL	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL LT ARROWS)
W01-4cR	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL RT ARROWS)
W01-6	60X30	12.50						HORIZONTAL ARROW (SYMBOL)
W01-6a	72X36	18.00						HORIZ. ARROW (SYMBOL ON PERMANENT BARRICADE)
W01-7	60X30	12.50						DOUBLE HEAD HORIZONTAL ARROW (SYMBOL)
W01-7a	72X36	18.00						DOUBLE HEAD HORIZ. ARROW (SYMBOL ON PERM. BARR.)
W01-8	18X24	3.00						CHEVRON (SYMBOL)
W01-8a	30X36	7.50						CHEVRON (SYMBOL FOR DIVIDED HIGHWAYS)
W03-1	48X48	16.00						STOP AHEAD (SYMBOL)
W03-2	48X48	16.00						YIELD AHEAD (SYMBOL)
W03-3	48X48	16.00						SIGNAL AHEAD (SYMBOL)
W03-4	48X48	16.00						BE PREPARED TO STOP
W03-5	48X48	16.00						SPEED LIMIT AHEAD
W04-1L	48X48	16.00						MERGE (SYMBOL FROM LEFT)
W04-1R	48X48	16.00						MERGE (SYMBOL FROM RIGHT)
W04-1aL	48X48	16.00						MERGE (ARROW SYMBOL)
W04-1aR	48X48	16.00						MERGE (ARROW SYMBOL)
W05-1	48X48	16.00						ROAD/BRIDGE/RAMP NARROWS
W05-3	48X48	16.00						ONE LANE BRIDGE
W05-5	48X48	16.00						NARROW LANES
W06-1	48X48	16.00						DIVIDED HIGHWAY (SYMBOL)
W06-2	48X48	16.00						DIVIDED HIGHWAY END (SYMBOL)
W06-3	48X48	16.00						TWO WAY TRAFFIC (SYMBOL)
W07-3a	30X24	5.00						NEXT XX MILES (PLAQUE)
W08-1	48X48	16.00						BUMP
W08-2	48X48	16.00						DIP
W08-3	48X48	16.00						PAVEMENT ENDS
W08-4	48X48	16.00						SOFT SHOULDER
W08-5	48X48	16.00						SLIPPERY WHEN WET (SYMBOL)
W08-6	48X48	16.00						TRUCK CROSSING (WITH FLAGS)
W08-6c	48X48	16.00						TRUCK ENTRANCE
W08-7	36X36	9.00						LOOSE GRAVEL
W08-7a	36X36	9.00						FRESH OIL/LOOSE GRAVEL
W08-9	48X48	16.00						LOW SHOULDER
W08-11	48X48	16.00						UNEVEN LANES
W08-12	48X48	16.00						NO CENTER LINE
W08-15	48X48	16.00						GROOVED PAVEMENT
W08-15P	30X24	5.00						MOTORCYCLE (PLAQUE)
W08-17	48X48	16.00						SHOULDER DROP-OFF (SYMBOL)
W08-17P	30X24	5.00						SHOULDER DROP-OFF (PLAQUE)
W10-1	42RND.	9.62						RAILROAD CROSSING
W012-1	24X24	4.00						DOUBLE DOWN ARROW (SYMBOL)
W012-2	48X48	16.00						LOW CLEARANCE (SYMBOL)
W012-2X	24X18	3.00						LOW CLEARANCE (PLAQUE)
W012-2a	84X24	14.00						OVERHEAD LOW CLEARANCE (FEET AND INCHES)
W012-4	120X60	50.00						LOW CLEARANCE XX FT XX IN XX MILES AHEAD
W012-5	120X60	50.00						WIDTH RESTRICTION XX FT XX IN XX MILES AHEAD
W013-1	30X30	6.25						ADVISORY SPEED (PLAQUE)
W016-2	30X24	5.00						XXX FEET (PLAQUE)
W016-3	30X24	5.00						X MILE (PLAQUE)
W020-1	48X48	16.00	2	32.00			2	ROAD/BRIDGE/RAMP WORK AHEAD
W020-2	48X48	16.00						DETOUR AHEAD
W020-3	48X48	16.00						ROAD CLOSED AHEAD
W020-4	48X48	16.00	2	32.00			7	ONE LANE ROAD AHEAD
W020-5	48X48	16.00						RIGHT/CENTER/LEFT LANE CLOSED AHEAD
W020-5a	48X48	16.00						2 RIGHT/CENTER/LEFT LANES CLOSED AHEAD
W020-6a	48X48	16.00						RIGHT/CENTER/LEFT LANE CLOSED
W020-7a	48X48	16.00	2	32.00			8	FLAGGER (SYMBOL, WITH FLAGS)
W021-2	36X36	9.00						FRESH OIL
W021-5	48X48	16.00						SHOULDER WORK AHEAD
W022-1	48X48	16.00						BLASTING ZONE AHEAD
W022-2	42X36	10.50						TURN OFF 2-WAY RADIO AND PHONE
W022-3	42X36	10.50						END BLASTING ZONE
G022-1	21X15	2.19						WET PAINT (ARROW PIVOTS)

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NUM.	DESCRIPTION
GUIDE SIGNS								
E05-1	36X48	12.00						GORE EXIT
E05-2	48X36	12.00						EXIT OPEN
E05-2a	48X36	12.00						EXIT CLOSED
G020-1	60X24	10.00						ROAD WORK NEXT XX MILES
G020-2	48X24	8.00						END ROAD WORK
G020-4	36X18	4.50						PILOT CAR FOLLOW ME
G020-4a	42X30	8.75						PILOT CAR IN USE WAIT & FOLLOW
G020-4a	18X12	1.50						PILOT CAR IN USE WAIT & FOLLOW
G020-5aP	36X24	6.00						WORK ZONE (PLAQUE)
M04-8a	24X18	3.00						END DETOUR
M04-9L	48X36	12.00						DETOUR (LEFT ARROW)
M04-9R	48X36	12.00						DETOUR (RIGHT ARROW)
M04-9P	48X12	4.00						STREET NAME (PLAQUE)
M04-10L	48X18	6.00						DETOUR (ARROW LEFT)
M04-10R	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
R4-8a	36X48	12.00						KEEP LEFT (HORIZONTAL ARROW)
R4-7a	36X48	12.00						KEEP RIGHT (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	2	64.00			58	POINT OF PRESENCE
CONST-7	48X24	8.00	2	16.00			64	RATE OUR WORK ZONE
CONST-7	72X36	18.00						RATE OUR WORK ZONE
CONST-8	48X36	12.00	2	24.00			65	WORK ZONE NO PHONE ZONE

616-10.05 CONSTRUCTION SIGNS	TOTAL
	200

616-10.10 RELOCATED SIGNS	TOTAL
	0

ITEM NUMBER	TOTAL QTY	DESCRIPTION
6122008		IMPACT ATTENUATOR 40 MPH (SAND BARRELS)
6122009		IMPACT ATTENUATOR 45 MPH (SAND BARRELS)
6122010		IMPACT ATTENUATOR 50 MPH (SAND BARRELS)
6122012		IMPACT ATTENUATOR 55 MPH (SAND BARRELS)
6122014		IMPACT ATTENUATOR 60 MPH (SAND BARRELS)
6122017		IMPACT ATTENUATOR 65 MPH (SAND BARRELS)
6122019		IMPACT ATTENUATOR 70 MPH (SAND BARRELS)
6122020		REPLACEMENT SAND BARREL
6122030		IMPACT ATTENUATOR (RELOCATION)
6123000A		TRUCK OR TRAILER MOUNTED ATTENUATOR (TMA)
6161008	2	ADVANCED WARNING RAIL SYSTEM
6161012	8	BUOYS (BOATS KEEP OUT)
6161013	6	BUOYS (NO WAKE)
6161014	4	SPECIAL SIGN ASSEMBLY (BOATS KEEP OUT)
6161025	30	CHANNELIZER (TRIM LINE)
6161030		TYPE III MOVEABLE BARRICADE
6161033		DIRECTION INDICATOR BARRICADE
6161040		FLASHING ARROW PANEL
6161047		TYPE III OBJECT MARKER
6161051		WARNING LIGHT, TYPE A
6161052		WARNING LIGHT, TYPE B
6161053		WARNING LIGHT, TYPE C
6161055		SEQUENTIAL FLASHING WARNING LIGHT
6161070		TUBULAR MARKER
6161095		RADAR SPEED ADVISORY SYSTEM
6161096		CHANGEABLE MESSAGE SIGN, COMMISSION FURNISHED/RETAINED
6161098A	2	CHANGEABLE MESSAGE SIGN W/O COMM. INTERFACE, CONTRACTOR FURNISHED/RETAINED
6161099		CHANGEABLE MESSAGE SIGN WITH COMM. INTERFACE, CONTRACTOR FURNISHED/RETAINED
6162000A		WORK ZONE TRAFFIC SIGNAL SYSTEM
6162002	4	TEMPORARY LONG-TERM RUMBLE STRIPS
6162004		TEMPORARY SHORT-TERM RUMBLE STRIPS
6173600D		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/RETAINED
6173602B		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/COMMISSION RETAINED
6174000A		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION
6175010A		RELOCATING TEMPORARY TRAFFIC BARRIER
6176000B		TEMPORARY TRAFFIC BARRIER COMMISSION FURNISHED/RETAINED
6177000B		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION COMMISSION FURNISHED/RETAINED
6208064A		TEMPORARY RAISED PAVEMENT MARKER
9029400		TEMPORARY TRAFFIC SIGNALS
9029401		TEMPORARY TRAFFIC SIGNALS AND LIGHTING

SUMMARY OF QUANTITIES
GASCONADE COUNTY ROUTE 100
SHEET 3 OF 5

STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED: 7/12/2021
ROUTE: VAR. | STATE: MO
DISTRICT: CD | SHEET NO.: 3
COUNTY: VAR.
JOB NO.: J5S3284
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A47351

DESCRIPTION	DATE

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

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

Bartlett & West
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PHONE 573-634-3181 - FAX 573-634-7904
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM

EFFECTIVE: 04-01-2021

WARNING SIGNS

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL AREA SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NUM.	DESCRIPTION
WO1-1L	48X48	16.00						TURN (SYMBOL LEFT ARROW)
WO1-1R	48X48	16.00						TURN (SYMBOL RIGHT ARROW)
WO1-2L	48X48	16.00						CURVE (SYMBOL LEFT ARROW)
WO1-2R	48X48	16.00						CURVE (SYMBOL RIGHT ARROW)
WO1-3L	48X48	16.00						REVERSE TURN (SYMBOL LEFT ARROW)
WO1-3R	48X48	16.00						REVERSE TURN (SYMBOL RIGHT ARROW)
WO1-4L	48X48	16.00						REVERSE CURVE (SYMBOL LEFT ARROW)
WO1-4R	48X48	16.00						REVERSE CURVE (SYMBOL RIGHT ARROW)
WO1-4bL	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL LT ARROWS)
WO1-4bR	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL RT ARROWS)
WO1-4cL	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL LT ARROWS)
WO1-4cR	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL RT ARROWS)
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	2	32.0			12	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 (ARROW SYMBOL)
WO4-1aR	48X48	16.00						MERGE (ARROW SYMBOL)
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)
WO8-17	48X48	16.00						SHOULDER DROP-OFF (SYMBOL)
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	32.0			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	4	64.0			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						FLAGGER (SYMBOL) WITH FLAGS
WO21-2	36X36	9.00						FRESH OIL
WO21-5	48X48	16.00						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			3	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 NUM.	DESCRIPTION
EO5-1	36X48	12.00						GORE EXIT
EO5-2	48X36	12.00						EXIT OPEN
EO5-2a	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	12.0			54	WORK ZONE (PLAQUE)
MO4-8a	24X18	3.00						END DETOUR
MO4-9L	48X36	12.00						DETOUR (LEFT ARROW)
MO4-9R	48X36	12.00						DETOUR (RIGHT ARROW)
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 NUM.	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	2	24.0			4	SPEED LIMIT 45
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
R4-8a	36X48	12.00						KEEP LEFT (HORIZONTAL ARROW)
R4-7a	36X48	12.00						KEEP RIGHT (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	2	12.0			47	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

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NUM.	DESCRIPTION
CONST-5	48X36	12.00						POINT OF PRESENCE
CONST-4	96X48	32.00	2	64.0			58	POINT OF PRESENCE
CONST-7	48X24	8.00	2	16.0			64	RATE OUR WORK ZONE
CONST-7	72X36	18.00						RATE OUR WORK ZONE
CONST-8	48X36	12.00	2	24.0			65	WORK ZONE NO PHONE ZONE
SPECIAL-1	36x78	19.50						DETOUR ROUTE SIGN
SPECIAL-1	36x78	19.50						DETOUR ROUTE SIGN
SPECIAL-1	36x78	19.50						DETOUR ROUTE SIGN
SPECIAL-1	36x78	19.50						DETOUR ROUTE SIGN
SPECIAL-1	36x78	19.50						DETOUR ROUTE SIGN
SPECIAL-1	36x78	19.50						DETOUR ROUTE SIGN
SPECIAL-1	36x78	19.50						DETOUR ROUTE SIGN
SPECIAL-1	36x78	19.50						DETOUR ROUTE SIGN
SPECIAL-1	36x78	19.50						DETOUR ROUTE SIGN
SPECIAL-1	36x78	19.50						DETOUR ROUTE SIGN
WO8-24	48X48	16.00						STEEL PLATE AHEAD
R10-7	24X30	5.00						DO NOT BLOCK INTERSECTION

616-10.05 CONSTRUCTION SIGNS	TOTAL
	289

616-10.10 RELOCATED SIGNS	TOTAL
	0

ITEM NUMBER	TOTAL QTY	DESCRIPTION
6122008		IMPACT ATTENUATOR 40 MPH (SAND BARRELS)
6122009		IMPACT ATTENUATOR 45 MPH (SAND BARRELS)
6122010		IMPACT ATTENUATOR 50 MPH (SAND BARRELS)
6122012	2	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	2	REPLACEMENT SAND BARREL
6122030	2	IMPACT ATTENUATOR (RELOCATION)
6123000A	2	TRUCK OR TRAILER MOUNTED ATTENUATOR (TMA)
6161008		ADVANCED WARNING RAIL SYSTEM
6161012	8	BUOYS (BOATS KEEP OUT)
6161013	6	BUOYS (NO WAKE)
6161014	4	SPECIAL SIGN ASSEMBLY (BOATS KEEP OUT)
6161025	34	CHANNELIZER (TRIM LINE)
6161030		TYPE III MOVEABLE BARRICADE
6161033		DIRECTION INDICATOR BARRICADE
6161040		FLASHING ARROW PANEL
6161047		TYPE III OBJECT MARKER
6161051		WARNING LIGHT, TYPE A
6161052		WARNING LIGHT, TYPE B
6161053		WARNING LIGHT, TYPE C
6161055		SEQUENTIAL FLASHING WARNING LIGHT
6161070		TUBULAR MARKER
6161095		RADAR SPEED ADVISORY SYSTEM
6161096		CHANGEABLE MESSAGE SIGN, COMMISSION FURNISHED/RETAINED
6161098A	2	CHANGEABLE MESSAGE SIGN W/O COMM. INTERFACE, CONTRACTOR FURNISHED/RETAINED
6161099		CHANGEABLE MESSAGE SIGN WITH COMM. INTERFACE, CONTRACTOR FURNISHED/RETAINED
6162000A	1	WORK ZONE TRAFFIC SIGNAL SYSTEM
6162002	4	TEMPORARY LONG-TERM RUMBLE STRIPS
6162004		TEMPORARY SHORT-TERM RUMBLE STRIPS
6173600D	1038	TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/RETAINED
6173602B		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/COMMISSION RETAINED
6174000A		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION
6175010A	1038	RELOCATING TEMPORARY TRAFFIC BARRIER
6176000B		TEMPORARY TRAFFIC BARRIER COMMISSION FURNISHED/RETAINED
6177000B		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION COMMISSION FURNISHED/RETAINED
6208064A		TEMPORARY RAISED PAVEMENT MARKER
9029400		TEMPORARY TRAFFIC SIGNALS
9029401		TEMPORARY TRAFFIC SIGNALS AND LIGHTING

STATE OF MISSOURI
STEVEN T. STIRNEMANN
NUMBER PE-2009001102
PROFESSIONAL ENGINEER

DATE
12/12/2020
DATE PREPARED
8/9/2021

ROUTE	STATE
VAR	MO
DISTRICT	SHEET NO.
CD	3

COUNTY
VAR
JOB NO.
J5S3284
CONTRACT ID.
PROJECT NO.
BRIDGE NO.
A2550

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

EDSI
ENGINEERING DESIGN SOURCE, INC.
16141 SWINGLEY RIDGE RD., SUITE 300
CHESTERFIELD, MO 63017
MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY #001523

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

TRAFFIC CONTROL QUANTITIES
MARIES COUNTY ROUTE 42
SHEET 4 OF 5

N:\E20019 B&W_MoDOT_CD Bridge Bundle 1\07_Roadway for Bridge A2550-Rte 42\Drawings\Output\003_QU_02_J5S3284_A2550_I5.dgn 12:51:00 PM 8/9/2021

EFFECTIVE: 04-01-2021

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL AREA SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NUM.	DESCRIPTION
WARNING SIGNS								
W01-1L	48X48	16.00						TURN (SYMBOL LEFT ARROW)
W01-1R	48X48	16.00						TURN (SYMBOL RIGHT ARROW)
W01-2L	48X48	16.00						CURVE (SYMBOL LEFT ARROW)
W01-2R	48X48	16.00						CURVE (SYMBOL RIGHT ARROW)
W01-3L	48X48	16.00						REVERSE TURN (SYMBOL LEFT ARROW)
W01-3R	48X48	16.00						REVERSE TURN (SYMBOL RIGHT ARROW)
W01-4L	48X48	16.00						REVERSE CURVE (SYMBOL LEFT ARROW)
W01-4R	48X48	16.00						REVERSE CURVE (SYMBOL RIGHT ARROW)
W01-4bL	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL LT ARROWS)
W01-4bR	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL RT ARROWS)
W01-4cL	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL LT ARROWS)
W01-4cR	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL RT ARROWS)
W01-6	60X30	12.50						HORIZONTAL ARROW (SYMBOL)
W01-6a	72X36	18.00						HORIZ. ARROW (SYMBOL ON PERMANENT BARRICADE)
W01-7	60X30	12.50						DOUBLE HEAD HORIZONTAL ARROW (SYMBOL)
W01-7a	72X36	18.00						DOUBLE HEAD HORIZ. ARROW (SYMBOL ON PERM. BARR.)
W01-8	18X24	3.00						CHEVRON (SYMBOL)
W01-8a	30X36	7.50						CHEVRON (SYMBOL FOR DIVIDED HIGHWAYS)
W03-1	48X48	16.00	1	16.0			39	STOP AHEAD (SYMBOL)
W03-2	48X48	16.00						YIELD AHEAD (SYMBOL)
W03-3	48X48	16.00						SIGNAL AHEAD (SYMBOL)
W03-4	48X48	16.00						BE PREPARED TO STOP
W03-5	48X48	16.00						SPEED LIMIT AHEAD
W04-1L	48X48	16.00						MERGE (SYMBOL FROM LEFT)
W04-1R	48X48	16.00						MERGE (SYMBOL FROM RIGHT)
W04-1aL	48X48	16.00						MERGE (ARROW SYMBOL)
W04-1aR	48X48	16.00						MERGE (ARROW SYMBOL)
W05-1	48X48	16.00						ROAD/BRIDGE/RAMP NARROWS
W05-3	48X48	16.00						ONE LANE BRIDGE
W05-5	48X48	16.00						NARROW LANES
W06-1	48X48	16.00						DIVIDED HIGHWAY (SYMBOL)
W06-2	48X48	16.00						DIVIDED HIGHWAY END (SYMBOL)
W06-3	48X48	16.00						TWO WAY TRAFFIC (SYMBOL)
W07-3a	30X24	5.00						NEXT XX MILES (PLAQUE)
W08-1	48X48	16.00						BUMP
W08-2	48X48	16.00						DIP
W08-3	48X48	16.00						PAVEMENT ENDS
W08-4	48X48	16.00						SOFT SHOULDER
W08-5	48X48	16.00						SLIPPERY WHEN WET (SYMBOL)
W08-6	48X48	16.00						TRUCK CROSSING
W08-6c	48X48	16.00						TRUCK ENTRANCE
W08-7	36X36	9.00						LOOSE GRAVEL
W08-7a	36X36	9.00						FRESH OIL/LOOSE GRAVEL
W08-9	48X48	16.00						LOW SHOULDER
W08-11	48X48	16.00						UNEVEN LANES
W08-12	48X48	16.00						NO CENTER LINE
W08-15	48X48	16.00						GROOVED PAVEMENT
W08-15P	30X24	5.00						MOTORCYCLE (PLAQUE)
W08-17	48X48	16.00						SHOULDER DROP-OFF (SYMBOL)
W08-17P	30X24	5.00						SHOULDER DROP-OFF (PLAQUE)
W10-1	42RND.	9.62						RAILROAD CROSSING
W012-1	24X24	4.00						DOUBLE DOWN ARROW (SYMBOL)
W012-2	48X48	16.00						LOW CLEARANCE (SYMBOL)
W012-2X	24X18	3.00						LOW CLEARANCE (PLAQUE)
W012-2a	84X24	14.00						OVERHEAD LOW CLEARANCE (FEET AND INCHES)
W012-4	120X60	50.00						LOW CLEARANCE XX FT XX IN XX MILES AHEAD
W012-5	120X60	50.00						WIDTH RESTRICTION XX FT XX IN XX MILES AHEAD
W013-1	30X30	6.25						ADVISORY SPEED (PLAQUE)
W016-2	30X24	5.00						XXX FEET (PLAQUE)
W016-3	30X24	5.00						X MILE (PLAQUE)
W020-1	48X48	16.00	2	32.0			21	ROAD/BRIDGE/RAMP WORK AHEAD
W020-2	48X48	16.00	4	64.0			18	DETOUR AHEAD
W020-3	48X48	16.00	3	48.0			20	ROAD CLOSED AHEAD
W020-3A	48X48	16.00	1	16.0			57	ROAD CLOSED 500 FT
W020-4	48X48	16.00	2	32.0			22	ONE LANE ROAD AHEAD
W020-5a	48X48	16.00						2 RIGHT/CENTER/LEFT LANES CLOSED AHEAD
W020-6a	48X48	16.00						RIGHT/CENTER/LEFT LANE CLOSED
W020-7a	48X48	16.00	2	32.0			23	FLAGGER (SYMBOL) WITH FLAGS
W021-2	36X36	9.00						FRESH OIL
W021-5	48X48	16.00						SHOULDER WORK AHEAD
W022-1	48X48	16.00						BLASTING ZONE AHEAD
W022-2	42X36	10.50						TURN OFF 2-WAY RADIO AND PHONE
W022-3	42X36	10.50						END BLASTING ZONE
G022-1	21X15	2.19						WET PAINT (ARROW PIVOTS)

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NUM.	DESCRIPTION
GUIDE SIGNS								
E05-1	36X48	12.00						GORE EXIT
E05-2	48X36	12.00						EXIT OPEN
E05-2a	48X36	12.00						EXIT CLOSED
G020-1	60X24	10.00						ROAD WORK NEXT XX MILES
G020-2	48X24	8.00						END ROAD WORK
G020-4	36X18	4.50						PILOT CAR FOLLOW ME
G020-4a	42X30	8.75						PILOT CAR IN USE WAIT & FOLLOW
G020-4a	18X12	1.50						PILOT CAR IN USE WAIT & FOLLOW
G020-5aP	36X24	6.00						WORK ZONE (PLAQUE)
M04-8a	24X18	3.00	2	6.0			52	END DETOUR
M04-9L	48X36	12.00						DETOUR (LEFT ARROW)
M04-9R	48X36	12.00						DETOUR (RIGHT ARROW)
M04-9P	48X12	4.00						STREET NAME (PLAQUE)
M04-10L	48X18	6.00						DETOUR (ARROW LEFT)
M04-10R	48X18	6.00						DETOUR (ARROW RIGHT)
REGULATORY SIGNS								
R1-1	48X48	13.25	1	13.25			41	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
R4-8a	36X48	12.00						KEEP LEFT (HORIZONTAL ARROW)
R4-7a	36X48	12.00						KEEP RIGHT (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	20.0			29	ROAD CLOSED
R11-3a	60X30	12.50						ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY
R11-4	60X30	12.50	2	25.0			63	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-4	96X48	32.00	3	96.0			58	POINT OF PRESENCE
CONST-7	48X24	8.00						RATE OUR WORK ZONE
CONST-7	72X36	18.00						RATE OUR WORK ZONE
CONST-8	48X36	12.00						WORK ZONE NO PHONE ZONE
SPECIAL-50A	36x78	19.50	13	253.5			50A	DETOUR ROUTE SIGN
SPECIAL-50B	36x78	19.50	2	39.0			50B	DETOUR ROUTE SIGN
SPECIAL-50C	36x78	19.50	3	58.5			50C	DETOUR ROUTE SIGN
SPECIAL-50D	36x78	19.50	5	97.5			50D	DETOUR ROUTE SIGN
SPECIAL-50E	36x78	19.50	5	97.5			50E	DETOUR ROUTE SIGN
SPECIAL-50F	36x78	19.50	8	156.0			50F	DETOUR ROUTE SIGN
SPECIAL-50G	36x78	19.50	1	19.50			50G	DETOUR ROUTE SIGN
SPECIAL-50H	36x78	19.50	2	39.0			50H	DETOUR ROUTE SIGN
SPECIAL-50J	36x78	19.50	3	58.5			50J	DETOUR ROUTE SIGN
SPECIAL-50K	36x78	19.50	3	58.5			50K	DETOUR ROUTE SIGN
WO8-24	48X48	16.00						STEEL PLATE AHEAD
R10-7	24X30	5.00						DO NOT BLOCK INTERSECTION
							56A	ROAD CLOSED XX MILES AHEAD
SPECIAL-56	60x30	12.50	4	50.0			56C	WITH ROUTE PLAQUE

616-10.05 CONSTRUCTION SIGNS	TOTAL
	1328

616-10.10 RELOCATED SIGNS	TOTAL

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)
6123000A		TRUCK OR TRAILER MOUNTED ATTENUATOR (TMA)
6161008	4	ADVANCED WARNING RAIL SYSTEM
6161012	8	BUOYS (BOATS KEEP OUT)
6161013	6	BUOYS (NO WAKE)
6161014	4	SPECIAL SIGN ASSEMBLY (BOATS KEEP OUT)
6161025	42	CHANNELIZER (TRIM LINE)
6161030	10	TYPE III MOVEABLE BARRICADE
6161033		DIRECTION INDICATOR BARRICADE
6161040		FLASHING ARROW PANEL
6161047		TYPE III OBJECT MARKER
6161051		WARNING LIGHT, TYPE A
6161052	12	WARNING LIGHT, TYPE B
6161053		WARNING LIGHT, TYPE C
6161055		SEQUENTIAL FLASHING WARNING LIGHT
6161070		TUBULAR MARKER
6161095		RADAR SPEED ADVISORY SYSTEM
6161096		CHANGEABLE MESSAGE SIGN, COMMISSION FURNISHED/RETAINED
6161098A	6	CHANGEABLE MESSAGE SIGN W/O COMM. INTERFACE, CONTRACTOR FURNISHED/RETAINED
6161099		CHANGEABLE MESSAGE SIGN WITH COMM. INTERFACE, CONTRACTOR FURNISHED/RETAINED
6162000A		WORK ZONE TRAFFIC SIGNAL SYSTEM
6162002		TEMPORARY LONG-TERM RUMBLE STRIPS
6162004		TEMPORARY SHORT-TERM RUMBLE STRIPS
6173600D		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/RETAINED
6173602B		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/COMMISSION RETAINED
6174000A		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION
6175010A		RELOCATING TEMPORARY TRAFFIC BARRIER
6176000B		TEMPORARY TRAFFIC BARRIER COMMISSION FURNISHED/RETAINED
6177000B		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION COMMISSION FURNISHED/RETAINED
6208064A		TEMPORARY RAISED PAVEMENT MARKER
9029400		TEMPORARY TRAFFIC SIGNALS
9029401		TEMPORARY TRAFFIC SIGNALS AND LIGHTING

STATE OF MISSOURI
STEVEN T. STIRNEMANN
NUMBER PE-2009001102
PROFESSIONAL ENGINEER

DATE
12/12/2020
DATE PREPARED
8/9/2021

ROUTE	STATE
VAR	MO
DISTRICT	SHEET NO.
CD	3

COUNTY
VAR
JOB NO.
J5S3284
CONTRACT ID.
PROJECT NO.
BRIDGE NO.
A1411

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

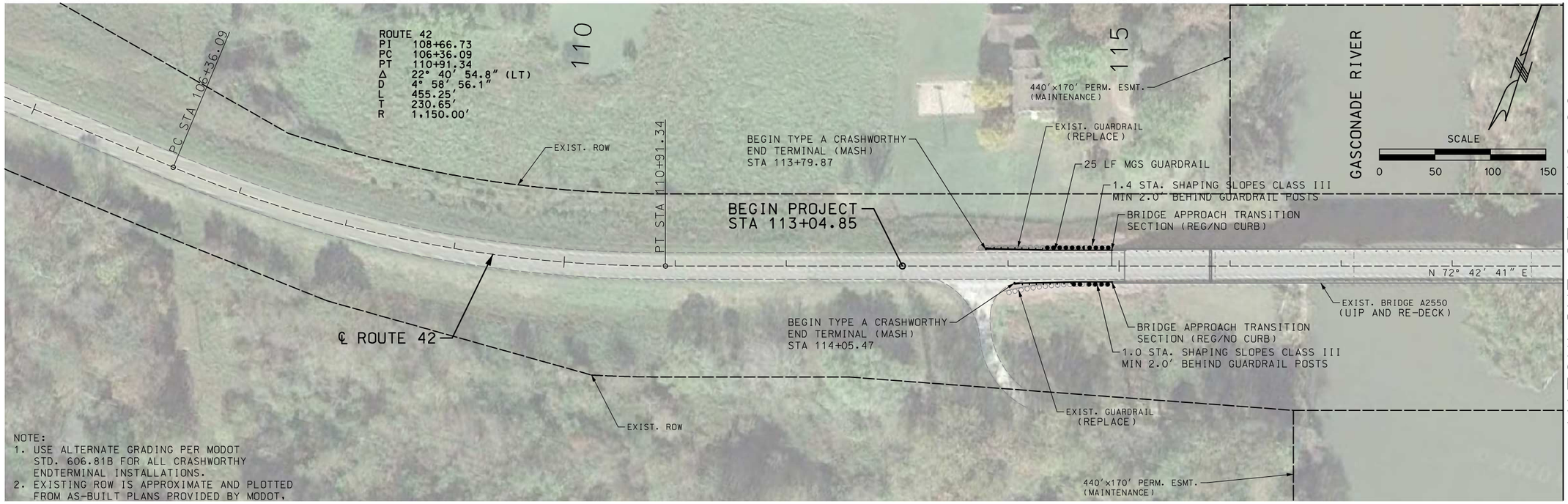
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

EDSI
ENGINEERING DESIGN SOURCE, INC
16141 SWINGLEY RIDGE RD., SUITE 300
CHESTERFIELD, MO 63017
MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY #001523

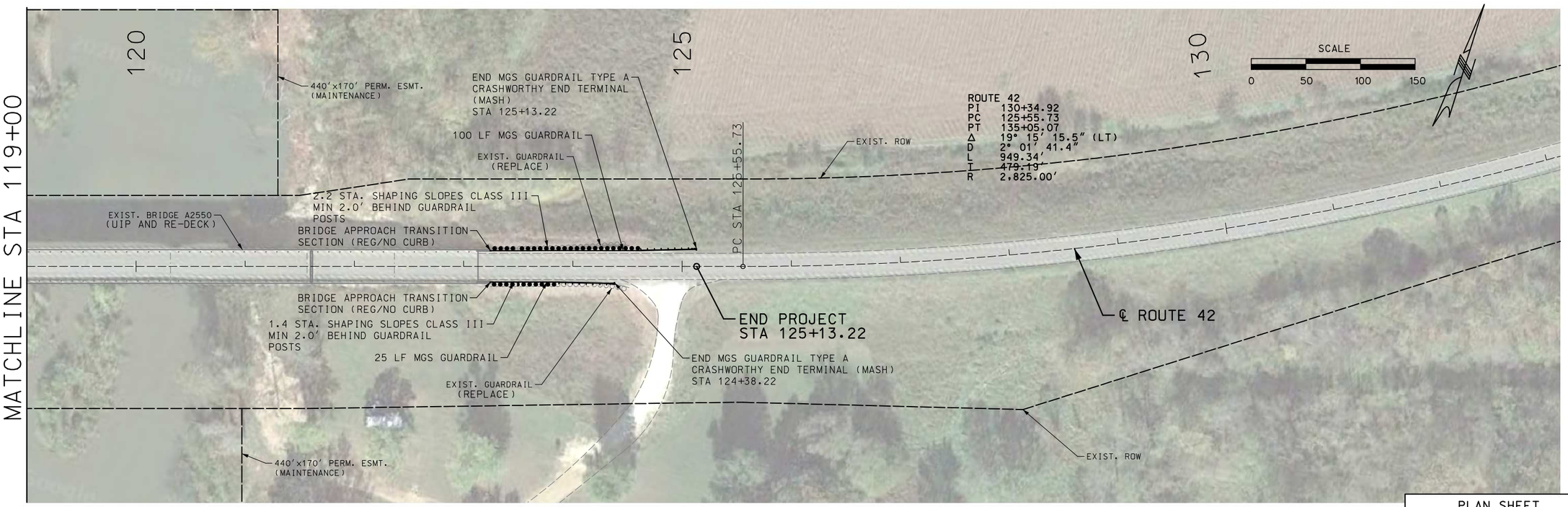
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

TRAFFIC CONTROL QUANTITIES
OSAGE COUNTY ROUTE 89
SHEET 5 OF 5

N:\E20019 B&W_MoDOT_CD Bridge Bundle 1\06_Roadway for Bridge A1411-Rte 89\Drawings\Output\003_QU_02_J5S3284_A14112_I5.dgn 12:51:00 PM 8/9/2021



NOTE:
1. USE ALTERNATE GRADING PER MODOT STD. 606.81B FOR ALL CRASHWORTHY ENDTERMINAL INSTALLATIONS.
2. EXISTING ROW IS APPROXIMATE AND PLOTTED FROM AS-BUILT PLANS PROVIDED BY MODOT, NOT SURVEY INFORMATION.



PLAN SHEET
MARIES COUNTY ROUTE 42
SHEET 1 OF 2

STATE OF MISSOURI
STEVEN T. STIRNEMANN
NUMBER PE-2009001102
PROFESSIONAL ENGINEER

DATE	12/12/2020
DATE PREPARED	8/9/2021
ROUTE	VAR
STATE	MO
DISTRICT	CD
SHEET NO.	4
COUNTY	VAR
JOB NO.	J5S3284
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A2550

DATE | DESCRIPTION

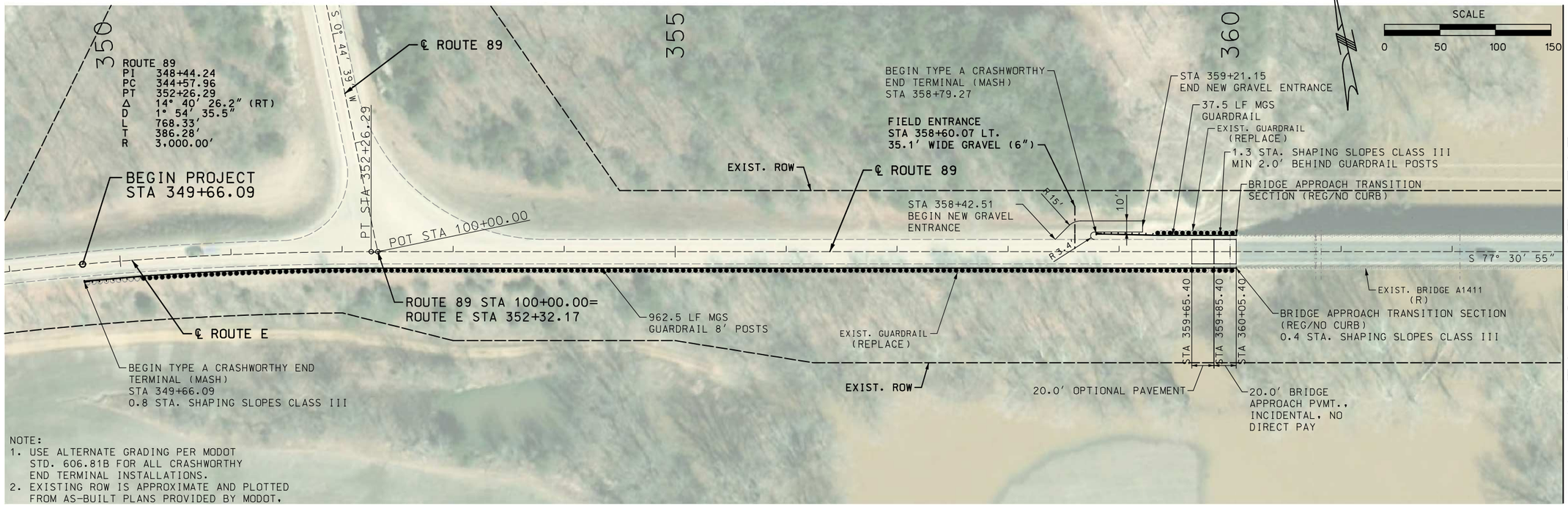
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

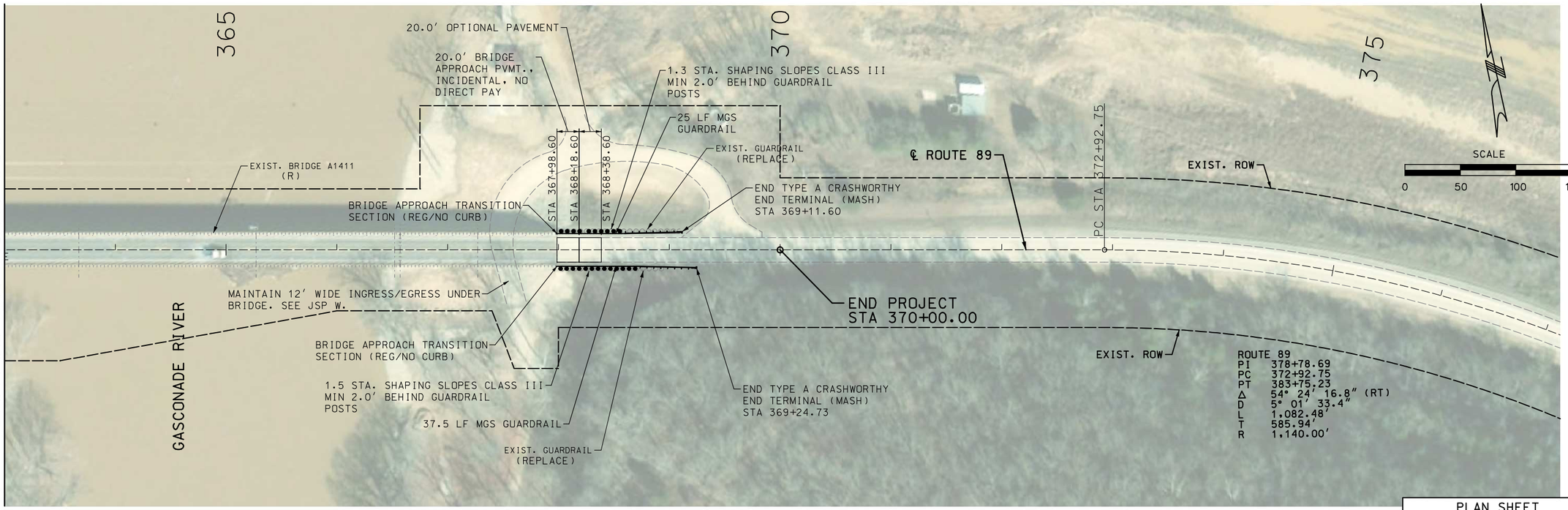
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

EDSI
ENGINEERING DESIGN SOURCE, INC.
16141 SWINGLEY RIDGE RD., SUITE 300
CHESTERFIELD, MO 63017
MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY #001523

N:\E20019 B&W_MoDOT_CD Bridge Bundle 1\07_Roadway for Bridge A2550-Rte 42\Drawings\Output\004_PP_01_J5S3284_A2550_150.dgn 12:51:02 PM 8/9/2021



NOTE:
1. USE ALTERNATE GRADING PER MODOT STD. 606.81B FOR ALL CRASHWORTHY END TERMINAL INSTALLATIONS.
2. EXISTING ROW IS APPROXIMATE AND PLOTTED FROM AS-BUILT PLANS PROVIDED BY MODOT, NOT SURVEY INFORMATION.



PLAN SHEET
OSAGE COUNTY ROUTE 89
SHEET 2 OF 2

STATE OF MISSOURI
STEVEN T. STIRNEMANN
NUMBER PE-2009001103
PROFESSIONAL ENGINEER

DATE	12/12/2020
DATE PREPARED	8/11/2021
ROUTE	VAR
STATE	MO
DISTRICT	CD
SHEET NO.	5
COUNTY	VAR
JOB NO.	J5S3284
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A1411

DATE | DESCRIPTION

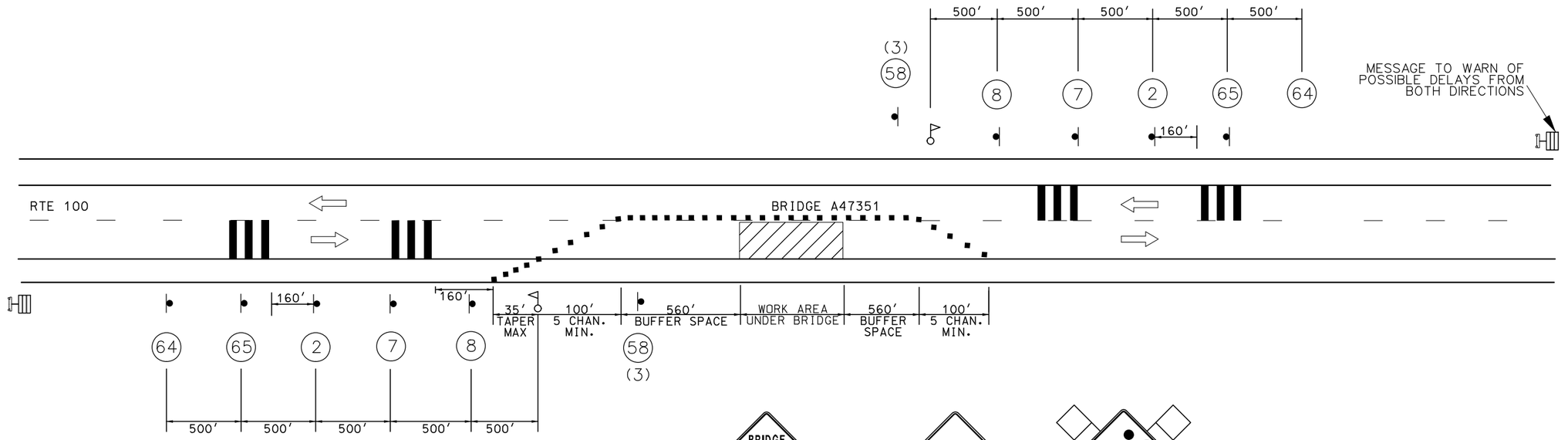
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

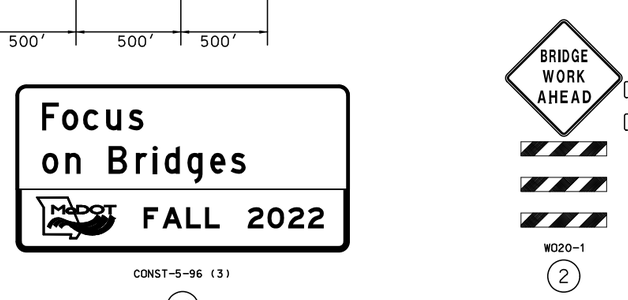
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

EDSI
ENGINEERING DESIGN SOURCE, INC.
16141 SWINGLEY RIDGE RD., SUITE 300
CHESTERFIELD, MO 63017
MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY #001523

N:\E20019 B&W_MoDOT_CD Bridge Bundle 1\06_Roadway for Bridge A1411-Rte 89\Drawings\Output\004_PP_01_J5S3284_A14112_150.dgn 5:22:53 PM 8/11/2021

LANE CLOSURE DETAILS





CONST-5-96 (3)

58

W020-1

2

W020-4

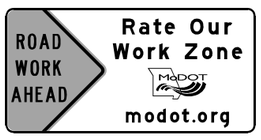
7

W020-7a

8

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- FLAGGER
- CHANNELIZER
- CHANGEABLE MESSAGE BOARD
- TRUCK MOUNTED ATTENUATOR
- TEMPORARY RUMBLE STRIPS
- WORK ZONE



CONST-7-72

64

CONST-8

65

TRAFFIC CONTROL NOTES:

1. FLAGS FOR W020-7a SHALL BE INCLUDED IN THE COST OF THE SIGN.
2. SIGN CONST-7-72 IS PLACED 500′ BEFORE THE BEGINNING OF PROJECT LIMITS OR THE "ROAD WORK AHEAD SIGN" OR "WORK ZONE NO PHONE ZONE" SIGN.
3. SIGN CONST-5-96 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′ BEFORE SIGN CONST-7-72.
4. THE "WORK ZONE NO PHONE ZONE" SIGN IS PLACED A MINIMUM OF 500′ BEFORE THE "ROAD WORK AHEAD" SIGN, OR AS APPROVED BY THE ENGINEER.
5. CMS TO BE PLACED AS APPROVED BY THE ENGINEER.

TAPER LENGTHS AND SPACING OF CHANNELIZING DEVICES				
SPEED MPH (S)	TAPER LENGTHS (L) FOR LATERAL SHIFTS (W) FT		CHANNELIZER SPACING , FT	
	SHOULDER (T1)	LANE (T2)	TAPERS	BUFFER/ WORK AREA
UP TO 35	70	245	35	40
40-45	150	540	40	80
50-55	185	660	50	80
60-70	235	840	60	120

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

LONGITUDINAL BUFFER SPACE	
POSTED SPEED PRIOR TO CONSTRUCTION, MPH	LENGTH, FT. (B)
UP TO 35	280
40-45	400
50-55	560
60-70	840

NOT TO SCALE

TRAFFIC CONTROL
GASCONADE COUNTY ROUTE 100
SHEET 1 OF 9

STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 7/12/2021

ROUTE	STATE
VAR.	MO
DISTRICT	SHEET NO.
CD	6

COUNTY VAR.
JOB NO. J5S3284
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A47351

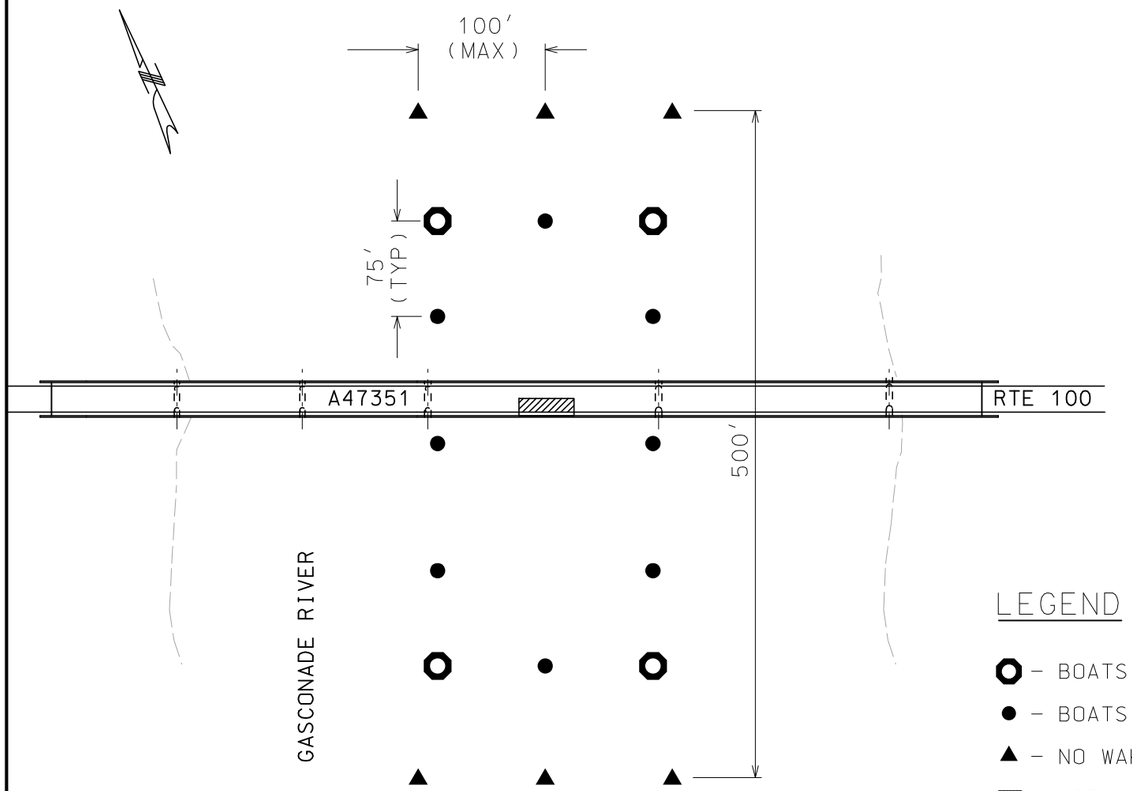
DESCRIPTION	DATE

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)

Bartlett & West
1719 SOUTHRIDGE DR, SUITE 100 - JEFFERSON CITY, MO 65109-4000
PHONE 573-634-3181 - FAX 573-634-7904
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM

TRAFFIC CONTROL
BOAT TRAFFIC



LEGEND

- ⬡ – BOATS KEEP OUT (SIGN)
- ● – BOATS KEEP OUT (BUOY)
- ▲ – NO WAKE (BUOY)
- ▨ – WORK ZONE

GENERAL NOTES:

INFORMATION SHOWN IS SCHEMATIC ONLY. FINAL LOCATION AND NUMBER OF SIGNS AND BUOYS IS SUBJECT TO APPROVAL OF MISSOURI STATE WATER PATROL.

THE DETAILS SHOWN ARE FOR BIDDING PURPOSES ONLY. ALL MATERIALS AND LABOR NECESSARY TO INSTALL AND REMOVE SIGNS SHALL BE INCIDENTAL TO OTHER ITEMS.

THE CONTRACTOR IS RESPONSIBLE FOR BUOY MAINTENANCE THROUGHOUT CONSTRUCTION AND FOR DETERMINING ANTICIPATED WATER LEVELS DURING CONSTRUCTION. EACH SIGN AND BUOY SHALL BE ANCHORED TO BOTTOM OF RIVER.

SIGNS SHALL BE DOUBLE FACED.

EACH SIGN SHALL BE EQUIPPED WITH TWO (2) FLASHING LIGHT UNITS WITH AMBER LENS. FLASHING LIGHT UNITS SHALL BE FURNISHED AND MAINTAINED BY THE CONTRACTOR.

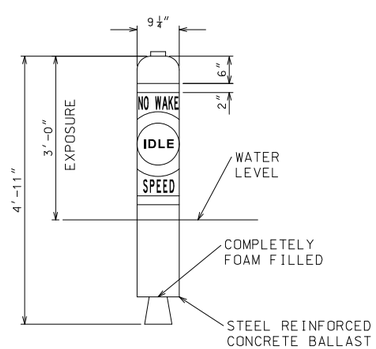
ALL LETTERING TO BE BLACK IN COLOR IN BLOCK FORM.

FOR OTHER INFORMATION, SEE SPECIAL PROVISIONS.

SHEMATIC SHOWN IS FOR ONE NAVIGATIONAL SPAN. FOR WORK ON OTHER SPANS, CONTRACTOR SHALL RELOCATE APPROPRIATE SIGNS AND DEVICES WITH NO DIRECT PAY.

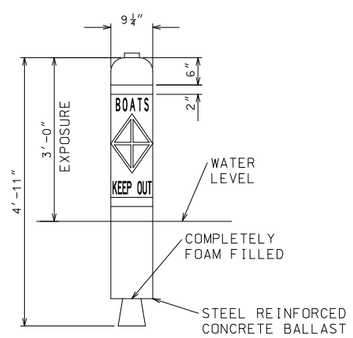
WORK ZONE, SIGNS, AND BUOYS TO BE SHIFTED AS REQUESTED AT NO DIRECT PAY.

COLOR: BACKGROUND – WHITE
LEGEND – BLACK
2″ REFLECTIVE BAND AND SYMBOL – INTERNATIONAL ORANGE



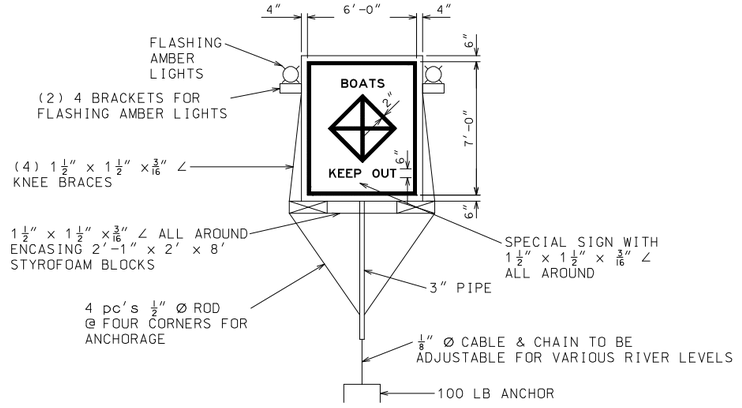
51 LB ANCHOR
TACKLE PERMITTED

RESTRICTED AREA BUOY
("NO WAKE")
(6 REQUIRED – ROADWAY ITEM)



51 LB ANCHOR
TACKLE PERMITTED

CONTROLLED AREA BUOY
("BOATS KEEP OUT")
(8 REQUIRED – ROADWAY ITEM)



SPECIAL SIGN ASSEMBLY
(4 REQUIRED – ROADWAY ITEM)

NOT TO SCALE

TRAFFIC CONTROL
GASCONADE COUNTY ROUTE 100
SHEET 2 OF 9

STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED: 7/12/2021
ROUTE: VAR. | STATE: MO
DISTRICT: CD | SHEET NO.: 7
COUNTY: VAR.
JOB NO.: J5S3284
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A47351

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)

Bartlett & West
1719 SOUTHRIDGE DR, SUITE 100 - JEFFERSON CITY, MO 65109-4000
PHONE 573-634-3181 - FAX 573-634-7904
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM

WO20-1

(2)

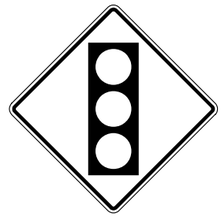
R2-1

(4) ✳

✳ WORK ZONE SPEED LIMIT – 45 MPH
NORMAL SPEED LIMIT – 55 MPH

WO20-4

(7)



WO3-3

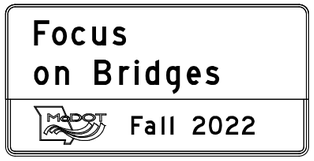
(12)

R10-6L

(47)

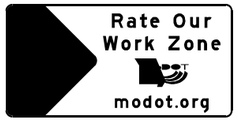
GO20-5aP

(54)



CONST-5-96

(58)

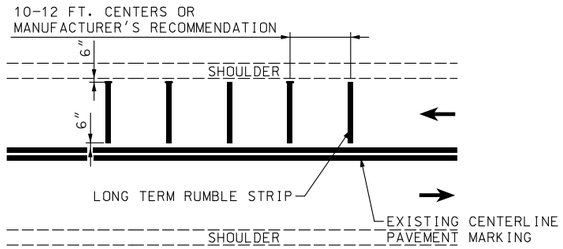


CONST-7-48

(64)

CONST-8-48

(65)



TEMPORARY LONG TERM RUMBLE STRIP DETAIL

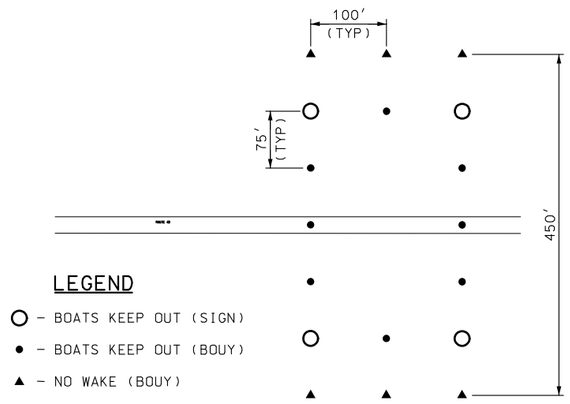
NTS

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- CONE
- CHANNELIZER
- BARRICADE
- CHANGEABLE MESSAGE BOARD

WATERWAY TRAFFIC CONTROL NOTES:

1. INFORMATION SHOWN IS SCHEMATIC ONLY. FINAL LOCATION AND NUMBER OF SIGNS AND BUOYS IS SUBJECT TO APPROVAL OF MISSORI STATE WATER PATROL.
2. THE DETAILS SHOWN ARE FOR BIDDING PURPOSE ONLY. ALL MATERIALS AND LABOR NECESSARY TO INSTALL, RELOCATE AND REMOVE SIGNS SHALL BE INCIDENTAL TO OTHER ITEMS.
3. THE CONTRACTOR IS RESPONSIBLE FOR BUOY MAINTENANCE THROUGHOUT CONSTRUCTION AND FOR DETERMINING ANTICAPED WATER LEVELS DURING CONSTRUCTION. EACH SIGN AND BUOY SHALL BE ANCHORED TO RIVER.
4. SIGNS SHALL BE DOUBLE FACED.
5. EACH SIGN SHALL BE EQUIPPED WITH TWO (2) FLASHING LIGHT UNITS WITH AMBER LENS. FLASHING LIGHT UNITS SHALL BE FURNISHED AND MAINTAINED BY THE CONTRACTOR.
6. FOR OTHER INFORMATION AND LOCATION OF SIGNS AND BUOYS SEE SPECIAL PROVISIONS.
7. COLOR: BACKGROUND – WHITE
   LEGEND – BLACK
   2" REFLECTIVE BAND AND SYMBOL – INTERNATIONAL ORANGE



TYPICAL WATERWAY TRAFFIC CONTROL

NTS

TRAFFIC CONTROL NOTES:

1. TRAFFIC CONTROL SHALL BE MAINTAINED IN ACCORDANCE WITH THE CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
2. TEMPORARY PAVEMENT MARKINGS SHALL BE CONSIDERED AS INCIDENTAL TO THE CONSTRUCTION OF THE PROJECT AND NO DIRECT PAYMENT WILL BE MADE FOR THIS ITEM. PAVEMENT MARKING SHALL BE MAINTAINED IN ACCORDANCE WITH THE MUTCD. INTERIM PAVEMENT MARKINGS MAY BE LEFT IN PLACE FOR SITUATIONS OF TWO WEEKS OR LESS.
3. ANY EXISTING SIGNS WHICH CONFLICT WITH THE TRAFFIC CONTROL PLAN SHALL BE COVERED OR REMOVED.
4. ALL SPACING AND DISTANCES ARE APPROXIMATE AND MAY BE ADJUSTED BY THE ENGINEER TO FIT FIELD CONDITIONS.
5. SIGNING SHOWN SHALL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETE.
6. REFER TO MODOT STANDARD DRAWING 616.10, 619.10, AND 620.10 FOR ADDITIONAL DETAILS AND 903.03 FOR SIGN AND SIGN MOUNTING REQUIREMENTS.
7. CONTRACTOR TO MAINTAIN PUBLIC ACCESS TO ALL BUSINESSES AND STREETS. NO STREET OR ENTRANCE SHALL BE COMPLETELY BLOCKED.
8. CMS PLACEMENT SHALL BE APPROVED BY THE ENGINEER.
9. SIGN CONST-7-72 IS PLACED 500' BEFORE THE BEGINNING OF PROJECT LIMITS OR THE "ROAD WORK AHEAD SIGN" OR "WORK ZONE NO PHONE ZONE" SIGN.
10. SIGN CONST-5-96 IS PLACED IN A VISABLE 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' BEFORE SIGN CONST-7-72.
11. THE "WORK ZONE NO PHONE ZONE" SIGN IS PLACED A MINIMUM OF 500' BEFORE THE ROADWORK AHEAD SIGN, OR AS APPROVED BY THE ENGINEER.

TRAFFIC CONTROL SHEET
MARIES COUNTY ROUTE 42
SHEET 3 OF 9

STATE OF MISSOURI
STEVEN T. STIRNEMANN
NUMBER PE-2009001102
PROFESSIONAL ENGINEER

DATE
12/12/2020

DATE PREPARED
8/9/2021

ROUTE	STATE
VAR	MO
DISTRICT	SHEET NO.
CD	8

COUNTY
VAR

JOB NO.
J5S3284

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A2550

DATE	DESCRIPTION

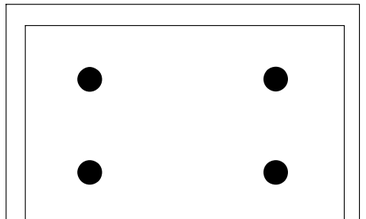
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

EDSI
ENGINEERING DESIGN SOURCE, INC.
16141 SWINGLEY RIDGE RD., SUITE 300
CHESTERFIELD, MO 63017
MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY #001523

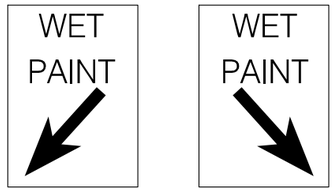
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

N:\E20019 B&W_MoDOT_CD Bridge Bundle 1\07_Roadway for Bridge A2550-Rte 42\Drawings\Output\008_TC_01_J5S3284_A2550_I5.dgn 12:51:10 PM 8/9/2021

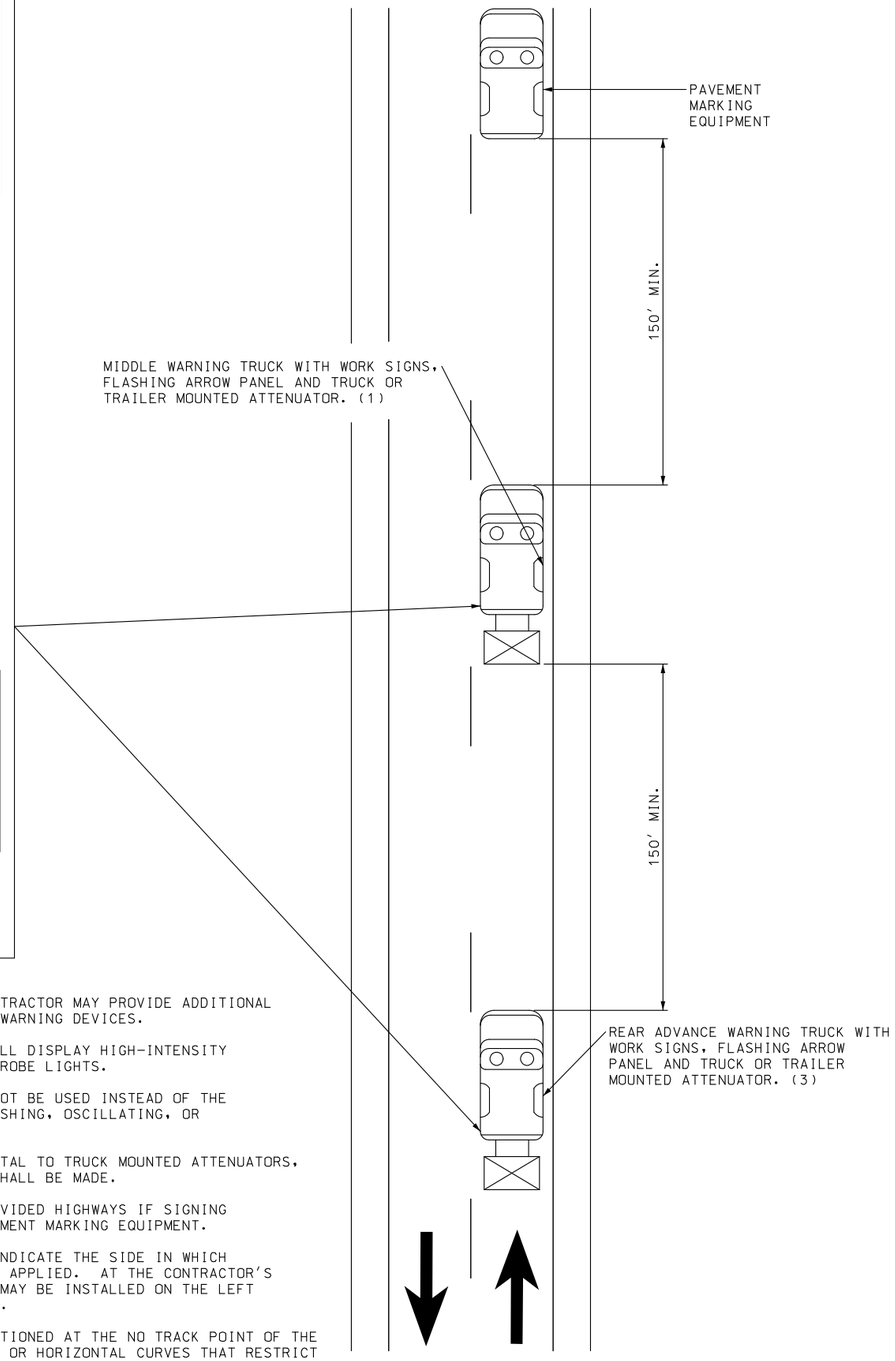


FLASHING ARROW PANEL
– CAUTION MODE

WO20-4
48″ X 48″
(7)



GO22-1 (2)
(3)



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

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

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

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

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

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

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

CENTERLINE/EDGELINE STRIPING ON TWO-LANE HIGHWAYS

www.invarion.com

616.8.10 (TA-10) LANE CLOSURE ON TWO-LANE ROAD USING FLAGGERS - DE/CM

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 shoulder width) offset. 2 Lane taper length based on 12 ft. (standard lane width) offset.

NOTES:

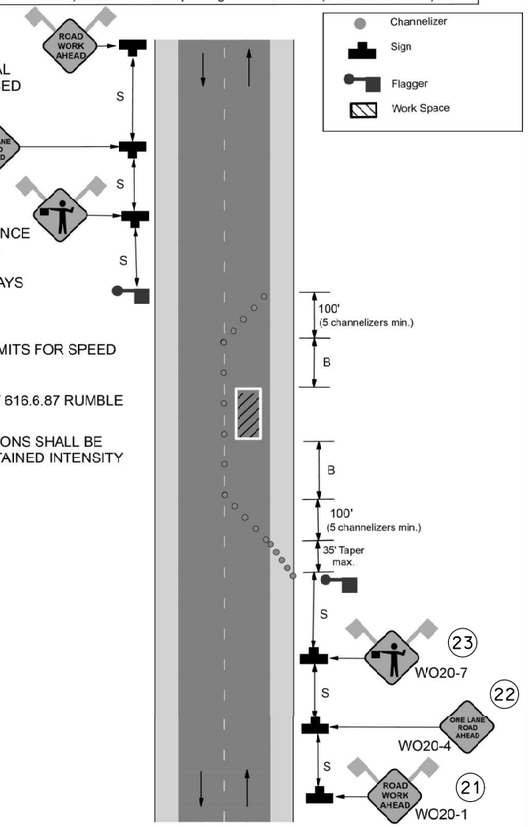
AUTOMATED FLAGGER ASSISTANCE DEVICES (AFAD) AND PORTABLE SIGNAL FLAGGING DEVICES (PSFD) MAY BE USED AS AN ALTERNATIVE FLAGGING OPERATION.

AFAD AND PSFD TYPICAL APPLICATIONS AND CRITERIA ARE LOCATED AT THE FOLLOWING:
EPG 616.8.10A (TA-10A) LANE CLOSURE ON TWO-LANE HIGHWAYS USING AUTOMATED FLAGGER ASSISTANCE DEVICE WITH RED AND AMBER SIGNAL SYSTEM & EPG 616.8.10C (TA-10C) LANE CLOSURE ON TWO-LANE HIGHWAYS USING PORTABLE SIGNAL FLAGGING DEVICE.

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

IF RUMBLE STRIPS ARE USED, REVIEW 616.6.87 RUMBLE STRIPS.

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



TA - 10 1/16

ROUTE 89 – LANE CLOSURE DETAIL

STATE OF MISSOURI
STEVEN T. STIRNEMANN
NUMBER PE-2003001103
PROFESSIONAL ENGINEER

DATE
12/12/2020
DATE PREPARED
8/9/2021

ROUTE	STATE
VAR	MO
DISTRICT	SHEET NO.
CD	9

COUNTY
VAR
JOB NO.
J5S3284
CONTRACT ID.
PROJECT NO.
BRIDGE NO.
A2550 & A1411

DESCRIPTION	DATE

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

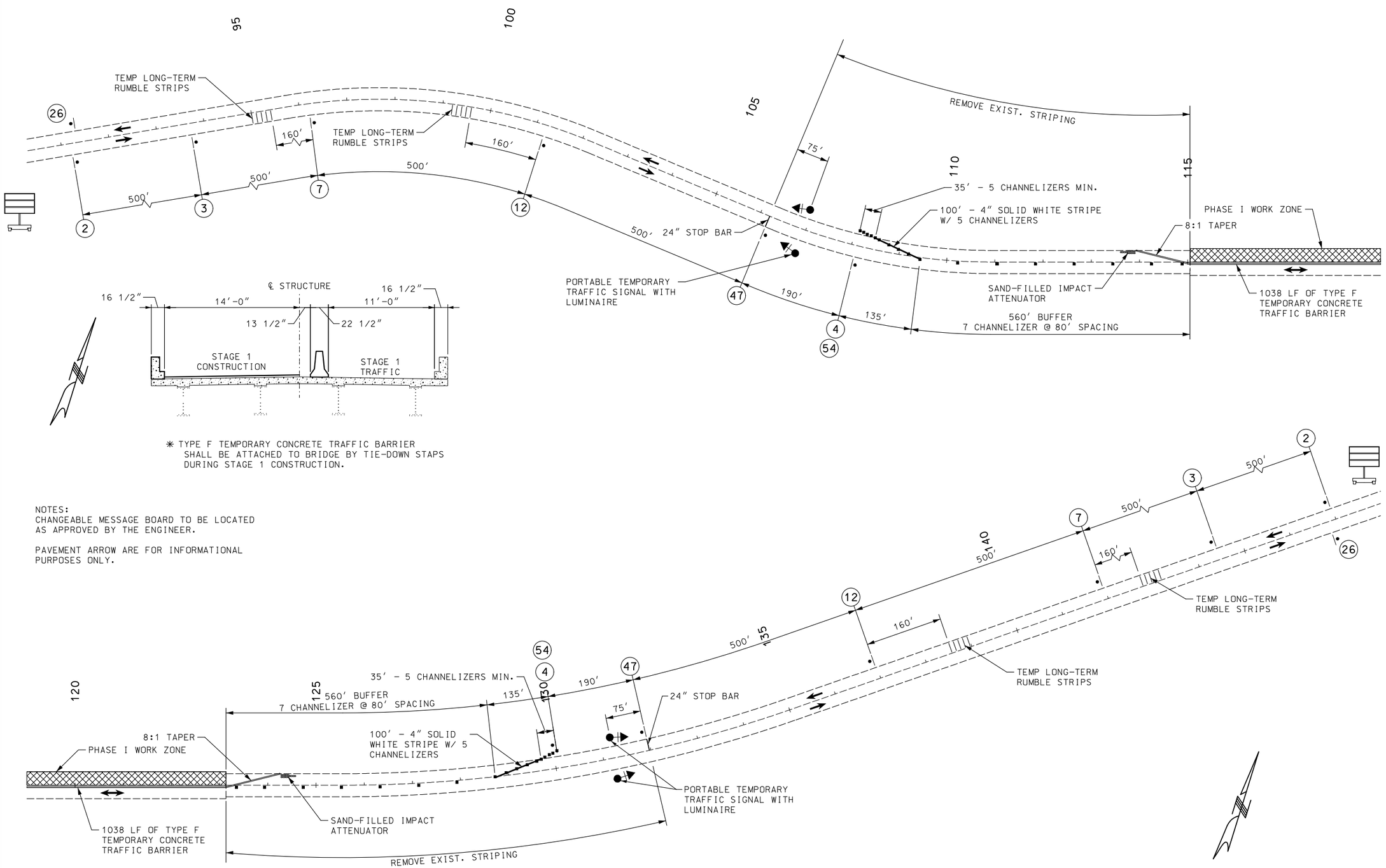
EDSI
ENGINEERING DESIGN SOURCE, INC.
16141 SWINGLEY RIDGE RD., SUITE 300
CHESTERFIELD, MO 63017
MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY #001523

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

TRAFFIC CONTROL SHEET
ROUTE 42 & ROUTE 89
SHEET 4 OF 9

REV.

N:\E20019 B&W_MoDOT_CD Bridge Bundle 1\07_Roadway for Bridge A2550-Rte 42\Drawings\Output\008A_TC_01A_J5S3284_A2550_I5.dgn 12:51:10 PM 8/9/2021



✳ TYPE F TEMPORARY CONCRETE TRAFFIC BARRIER SHALL BE ATTACHED TO BRIDGE BY TIE-DOWN STAPS DURING STAGE 1 CONSTRUCTION.

NOTES:
CHANGEABLE MESSAGE BOARD TO BE LOCATED AS APPROVED BY THE ENGINEER.

PAVEMENT ARROW ARE FOR INFORMATIONAL PURPOSES ONLY.

BRIDGE TRAFFIC CONTROL
N.T.S.

TRAFFIC CONTROL SHEET
MARIES COUNTY ROUTE 42
SHEET 5 OF 9

STATE OF MISSOURI
STEVEN T. STIRNEMANN
NUMBER PE-2009001102
PROFESSIONAL ENGINEER

DATE	12/12/2020
DATE PREPARED	8/9/2021
ROUTE	VAR
STATE	MO
DISTRICT	CD
SHEET NO.	10
COUNTY	VAR
JOB NO.	J5S3284
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A2550

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)

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CHESTERFIELD, MO 63017
MISSOURI STATE ENGINEERING COMPANY CERTIFICATE OF AUTHORITY #001523

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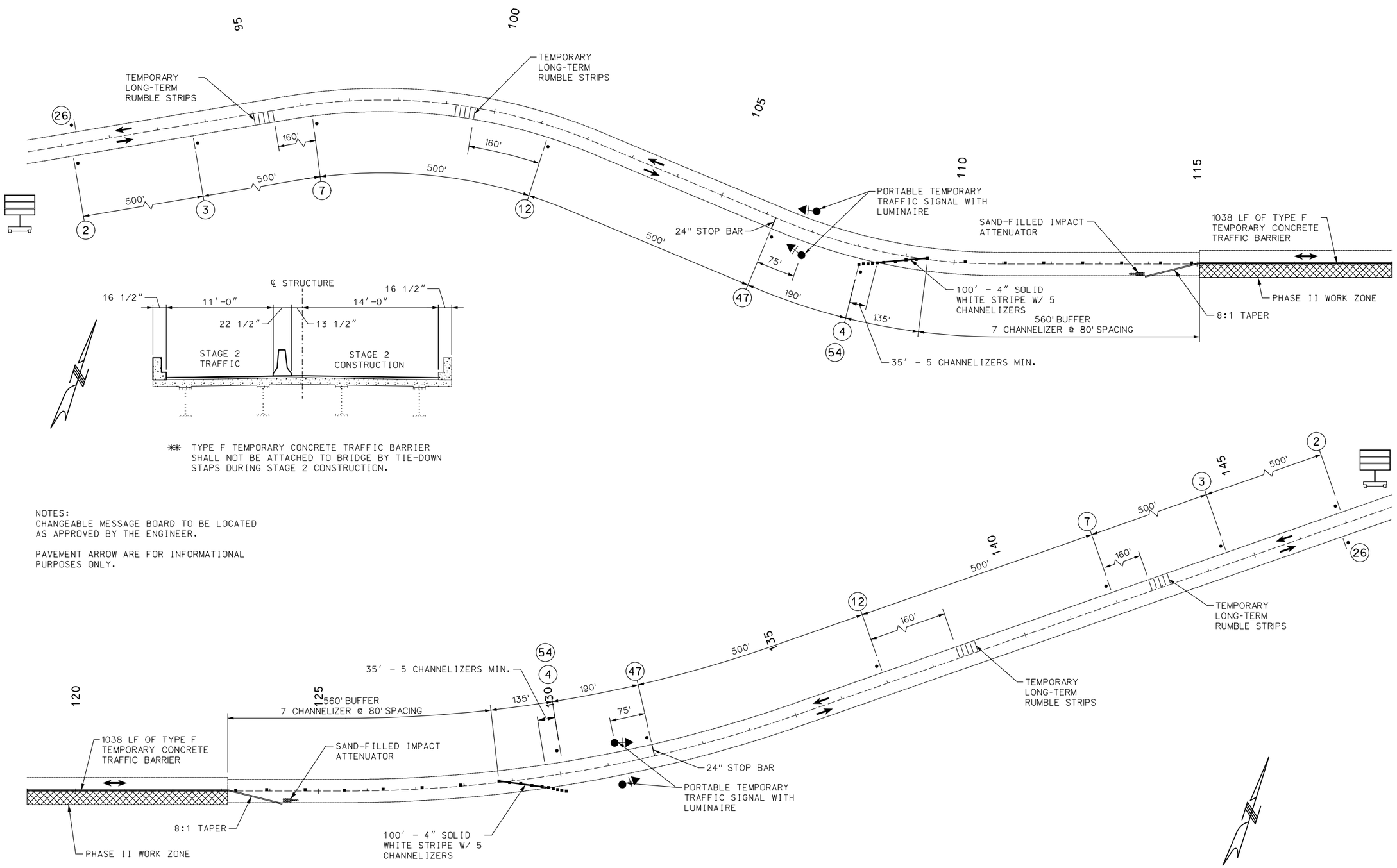

** TYPE F TEMPORARY CONCRETE TRAFFIC BARRIER SHALL NOT BE ATTACHED TO BRIDGE BY TIE-DOWN STAPS DURING STAGE 2 CONSTRUCTION.

NOTES:
CHANGEABLE MESSAGE BOARD TO BE LOCATED AS APPROVED BY THE ENGINEER.

PAVEMENT ARROW ARE FOR INFORMATIONAL PURPOSES ONLY.

BRIDGE TRAFFIC CONTROL
N.T.S.

TRAFFIC CONTROL SHEET
MARIES COUNTY ROUTE 42
SHEET 6 OF 9

STATE OF MISSOURI
STEVEN T. STIRNEMANN
NUMBER PE-2009001102
PROFESSIONAL ENGINEER

DATE	12/12/2020
DATE PREPARED	8/9/2021
ROUTE	VAR
STATE	MO
DISTRICT	CD
SHEET NO.	11
COUNTY	VAR
JOB NO.	J5S3284
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A2550

DESCRIPTION | DATE

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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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W020-2

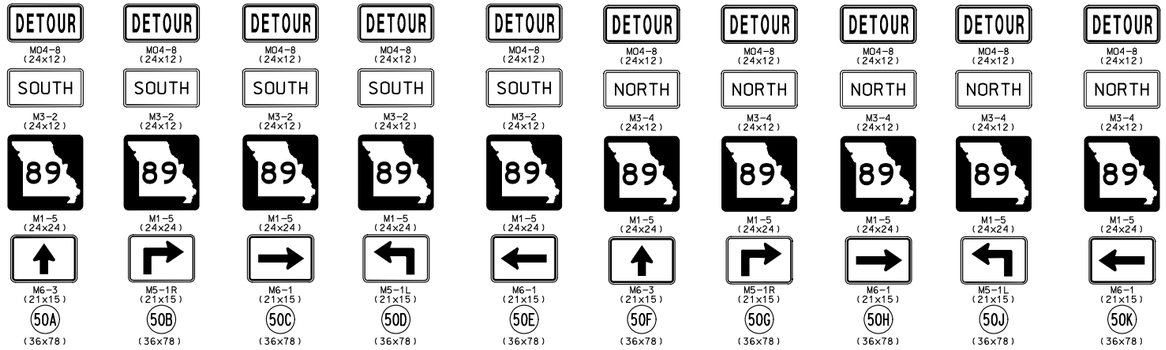
18

W020-3

20

R11-2

29



M04-8a

52

56A

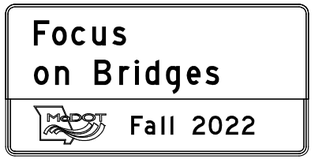
(60X30)

56B

(60X30)

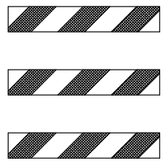
56C

(60X30)



CONST-4-96

58

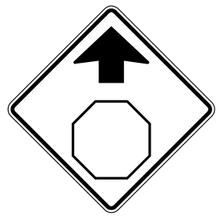


W020-3a

57

R11-4

63



W03-1

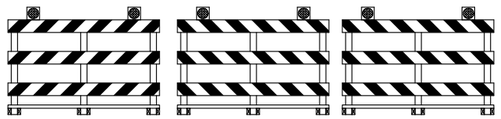
39

R1-1

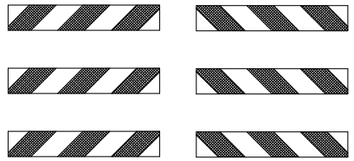
41

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- CONE
- CHANNELIZER
- BARRICADE
- CHANGEABLE MESSAGE BOARD



TYPE III MOVABLE BARRICADE
WITH TYPE B LIGHTS FOR ROAD CLOSURE

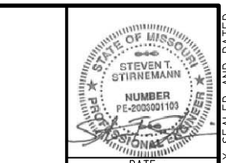


ADVANCED WARNING RAIL SYSTEM
(AWRS)

TRAFFIC CONTROL NOTES:

1. TRAFFIC CONTROL SHALL BE MAINTAINED IN ACCORDANCE WITH THE CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
2. CONTRACTOR SHALL INSPECT AND MAINTAIN ALL SIGNS AND TRAFFIC CONTROL DEVICES DAILY, INCLUDING THE DETOUR ROUTE.
3. ANY EXISTING SIGNS WHICH CONFLICT WITH THE TRAFFIC CONTROL PLAN SHALL BE COVERED OR REMOVED.
4. ALL SPACING AND DISTANCES ARE APPROXIMATE AND MAY BE ADJUSTED BY THE ENGINEER TO FIT FIELD CONDITIONS.
5. SIGNING SHOWN SHALL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETE.
6. REFER TO MODOT STANDARD DRAWING 616.10, 619.10, AND 620.10 FOR ADDITIONAL DETAILS AND 903.03 FOR SIGN AND SIGN MOUNTING REQUIREMENTS.
7. CONTRACTOR TO CONTACT ALL ADJACENT PROPERT OWNERS AND MAINTAIN LOCAL ACCESS DURING CONSTRUCTION.
8. CMS PLACEMENT SHALL BE APPROVED BY THE ENGINEER.
9. SIGN CONST-5-96 IS PLACED 500' BEFORE THE BEGINNING OF PROJECT LIMITS OR THE "ROAD CLOSED AHEAD SIGN" OR "DETOUR AHEAD" SIGN, OR AS APPROVED BY THE ENGINEER.

TRAFFIC CONTROL SHEET
OSAGE COUNTY ROUTE 89
SHEET 7 OF 9



DATE
12/12/2020
DATE PREPARED
8/9/2021

ROUTE	STATE
VAR	MO
DISTRICT	SHEET NO.
CD	12

COUNTY
VAR
JOB NO.
J5S3284
CONTRACT ID.
PROJECT NO.
BRIDGE NO.
A1411

DESCRIPTION | DATE

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

EDSI
ENGINEERING DESIGN SOURCE, INC.
16141 SWINGLEY RIDGE RD., SUITE 300
CHESTERFIELD, MO 63017
MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY #001523

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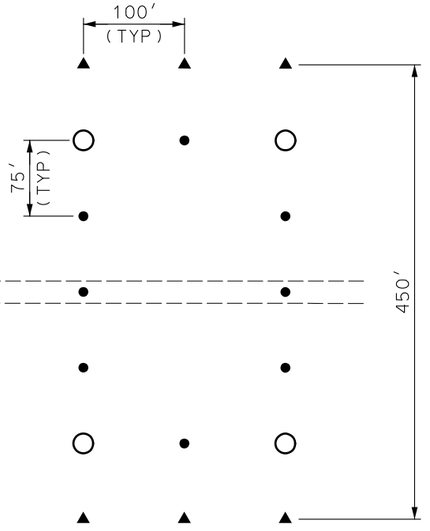
WATERWAY TRAFFIC CONTROL NOTES:

1. INFORMATION SHOWN IS SCHEMATIC ONLY. FINAL LOCATION AND NUMBER OF SIGNS AND BUOYS IS SUBJECT TO APPROVAL OF MISSORI STATE WATER PATROL.
2. THE DETAILS SHOWN ARE FOR BIDDING PURPOSE ONLY. ALL MATERIALS AND LABOR NECESSARY TO INSTALL, RELOCATE AND REMOVE SIGNS SHALL BE INCIDENTAL TO OTHER ITEMS.
3. THE CONTRACTOR IS RESPONSIBLE FOR BUOY MAINTENANCE THROUGHOUT CONSTRUCTION AND FOR DETERMINING ANTICAPED WATER LEVELS DURING CONSTRUCTION. EACH SIGN AND BUOY SHALL BE ANCHORED TO RIVER.
4. SIGNS SHALL BE DOUBLE FACED.
5. EACH SIGN SHALL BE EQUIPPED WITH TWO (2) FLASHING LIGHT UNITS WITH AMBER LENS. FLASHING LIGHT UNITS SHALL BE FURNISHED AND MAINTAINED BY THE CONTRACTOR.
6. FOR OTHER INFORMATION AND LOCATION OF SIGNS AND BUOYS SEE SPECIAL PROVISIONS.
7. COLOR: BACKGROUND – WHITE
   LEGEND – BLACK
   2" REFLECTIVE BAND AND SYMBOL – INTERNATIONAL ORANGE



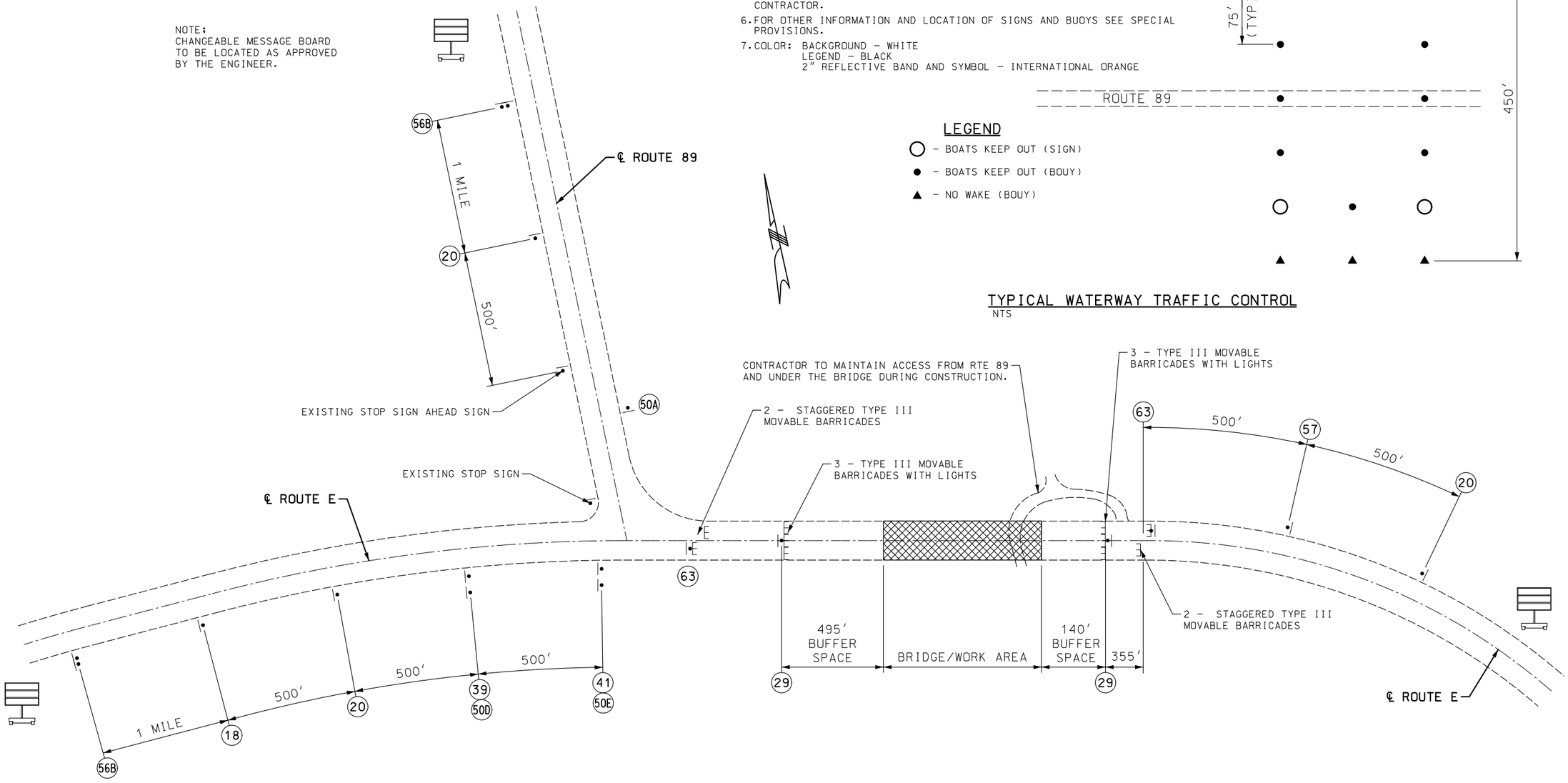
LEGEND

- ○ – BOATS KEEP OUT (SIGN)
- ● – BOATS KEEP OUT (BOUY)
- ▲ – NO WAKE (BOUY)

TYPICAL WATERWAY TRAFFIC CONTROL

NTS

NOTE:
CHANGEABLE MESSAGE BOARD TO BE LOCATED AS APPROVED BY THE ENGINEER.



BRIDGE CLOSURE TRAFFIC CONTROL

NTS

TRAFFIC CONTROL SHEET
OSAGE COUNTY ROUTE 89
SHEET 8 OF 9

STATE OF MISSOURI
STEVEN T. STIRNEMANN
NUMBER PE-2009001102
PROFESSIONAL ENGINEER

DATE: 12/12/2020
DATE PREPARED: 8/9/2021
ROUTE: VAR | STATE: MO
DISTRICT: CD | SHEET NO.: 13
COUNTY: VAR
JOB NO.: J5S3284
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A1411

DESCRIPTION | DATE

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

EDSI
ENGINEERING DESIGN SOURCE, INC.
16141 SWINGLEY RIDGE RD., SUITE 300
CHESTERFIELD, MO 63017
MISSOURI STATE ENGINEERING COMPANY CERTIFICATE OF AUTHORITY #001523

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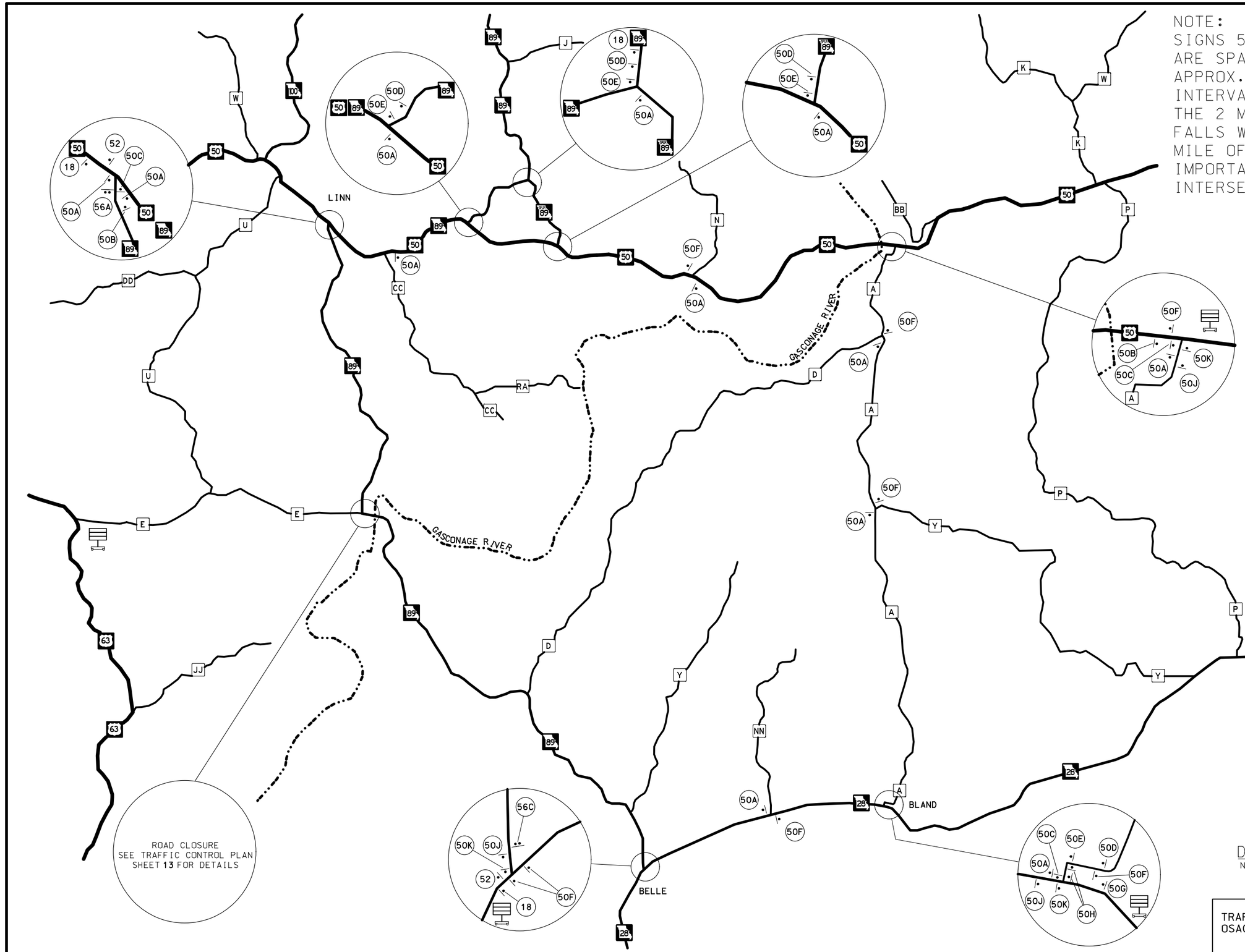

STATE OF MISSOURI
STEVEN T. STIRNEMANN
NUMBER PE-2009001102
PROFESSIONAL ENGINEER

DATE
12/12/2020

DATE PREPARED
8/9/2021

ROUTE	STATE
VAR	MO
DISTRICT	SHEET NO.
CD	14

COUNTY
VAR

JOB NO.
J5S3284

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A1411

DESCRIPTION	DATE

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

EDSI
ENGINEERING DESIGN SOURCE, INC.
16141 SWINGLEY RIDGE RD., SUITE 300
CHESTERFIELD, MO 63017
MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY #001523

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REV.

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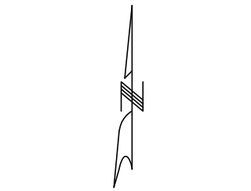

TEMPORARY EROSION CONTROL LEGEND

SILT FENCE

NOTE: SEE STD PLAN 806.10 FOR TEMPORARY EROSION CONTROL DETAILS

EROSION CONTROL
SHEET 1 OF 3

STATE OF MISSOURI
MICHAEL WAYNE DUSENBERG
NUMBER E-26546
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 7/12/2021

ROUTE	STATE
VAR.	MO
DISTRICT	SHEET NO.
CD	15

COUNTY VAR.

JOB NO. J5S3284

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A47351

DATE	DESCRIPTION

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

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

Bartlett & West
1719 SOUTHRIDGE DR, SUITE 100 - JEFFERSON CITY, MO 65109-4000
PHONE 573-634-3181 - FAX 573-634-7904
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM

EROSION CONTROL SHEET
MARIES COUNTY ROUTE 42
SHEET 2 OF 3

STATE OF MISSOURI
STEVEN T. STIRNEMANN
NUMBER PE-2009001103
PROFESSIONAL ENGINEER

DATE	12/12/2020
DATE PREPARED	8/9/2021
ROUTE	VAR
STATE	MO
DISTRICT	CD
SHEET NO.	16
COUNTY	VAR
JOB NO.	J5S3284
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A2550

DATE	DESCRIPTION

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

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

EDSI
ENGINEERING DESIGN SOURCE, INC.
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MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY #001523

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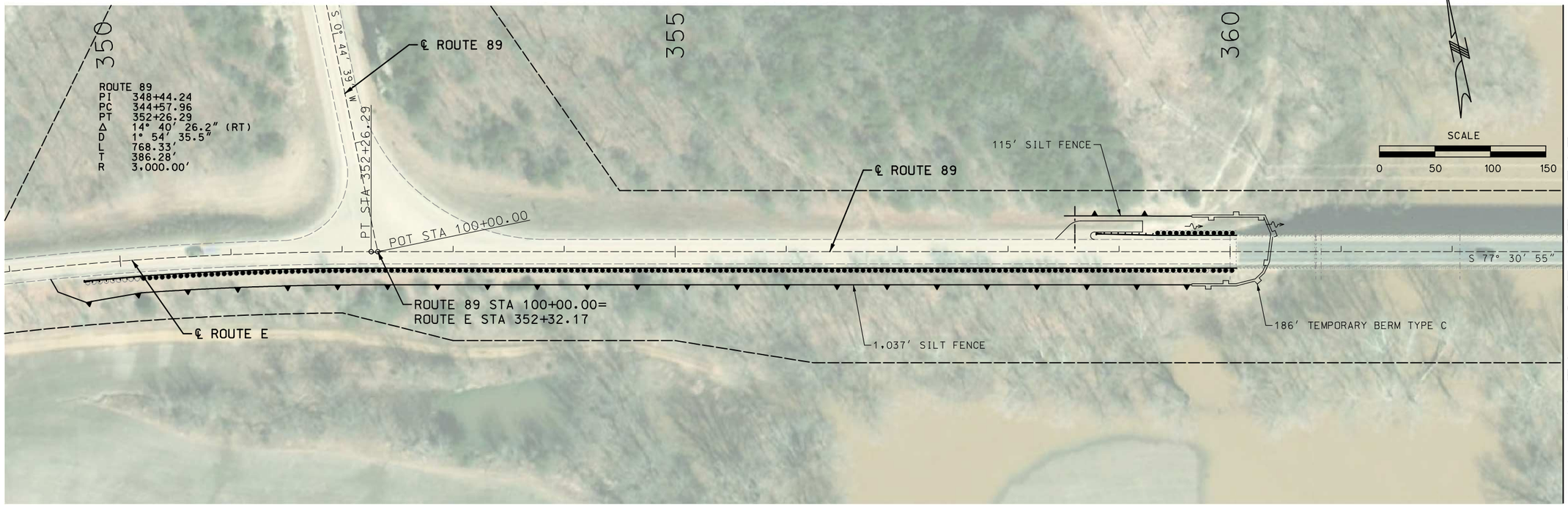

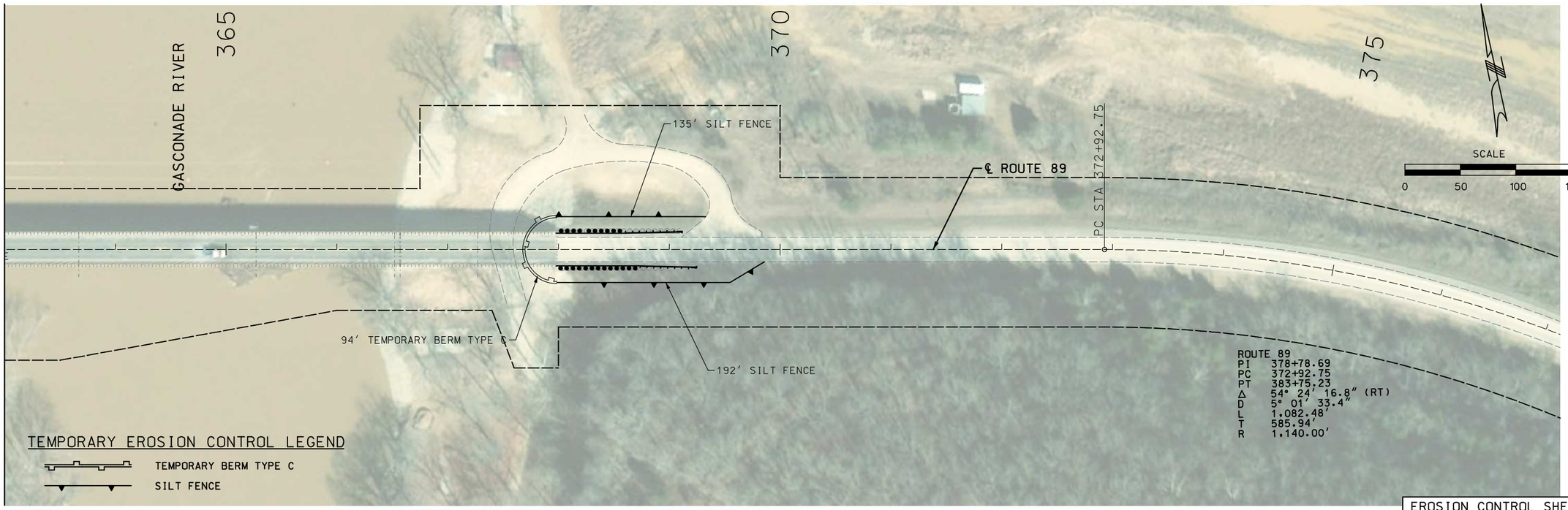

EROSION CONTROL SHEET
OSAGE COUNTY ROUTE 89
SHEET 3 OF 3

STATE OF MISSOURI
STEVEN T. STIRNEMANN
NUMBER PE-2009001103
PROFESSIONAL ENGINEER

DATE 12/12/2020
DATE PREPARED 8/9/2021
ROUTE VAR
STATE MO
DISTRICT CD
SHEET NO. 17
COUNTY VAR
JOB NO. J5S3284
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A1411

DATE	DESCRIPTION

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

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

EDSI
ENGINEERING DESIGN SOURCE, INC.
16141 SWINGLEY RIDGE RD., SUITE 300
CHESTERFIELD, MO 63017
MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY #001523

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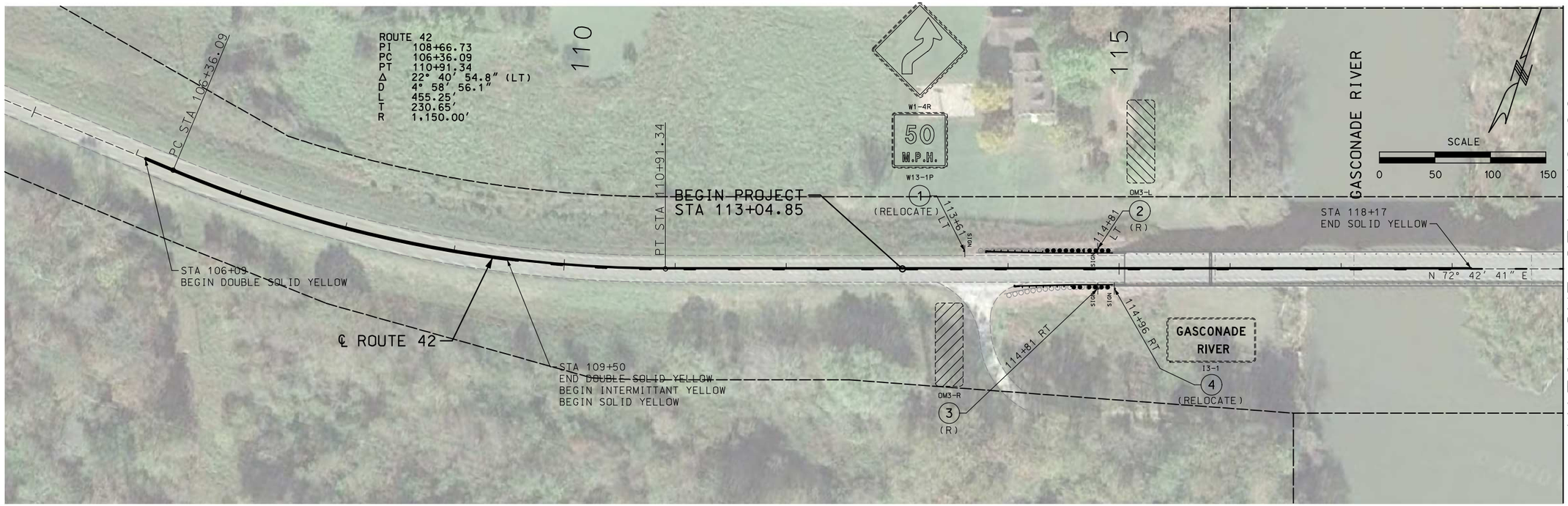

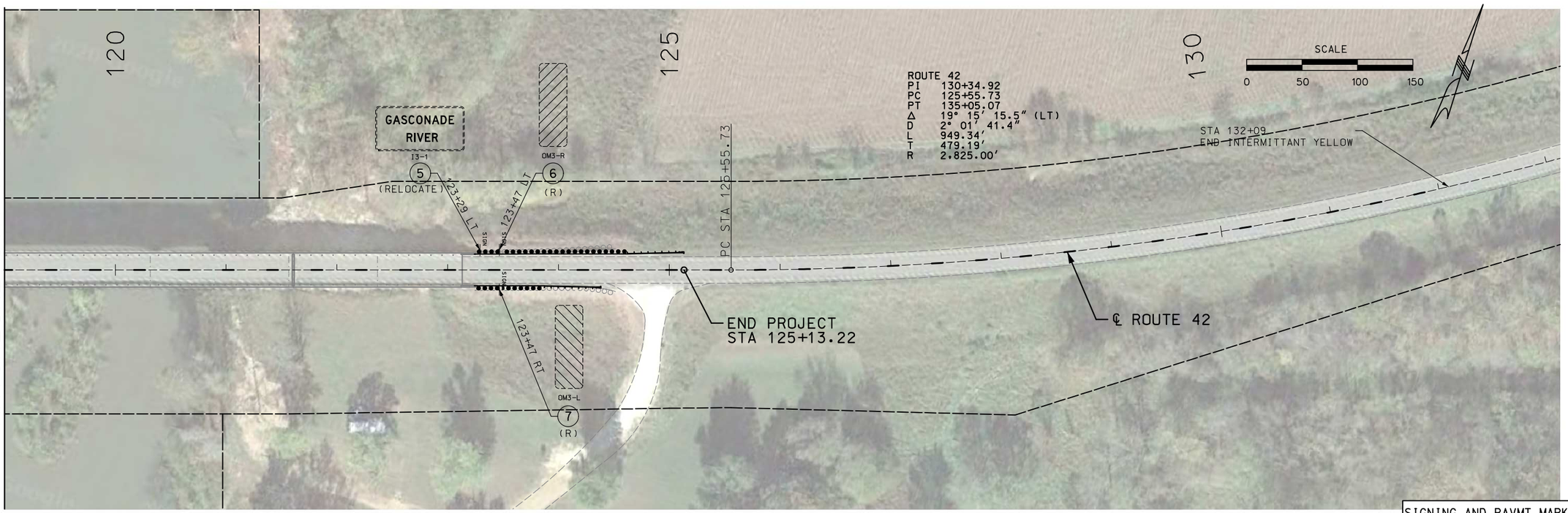

SIGNING AND PAVMT MARKING
MARIES COUNTY ROUTE 42
SHEET 1 OF 2

STATE OF MISSOURI
STEVEN T. STIRNEMANN
NUMBER PE-2009001103
PROFESSIONAL ENGINEER

DATE	12/12/2020
DATE PREPARED	8/9/2021
ROUTE	VAR
STATE	MO
DISTRICT	CD
SHEET NO.	18
COUNTY	VAR
JOB NO.	J5S3284
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A2550

DATE	DESCRIPTION

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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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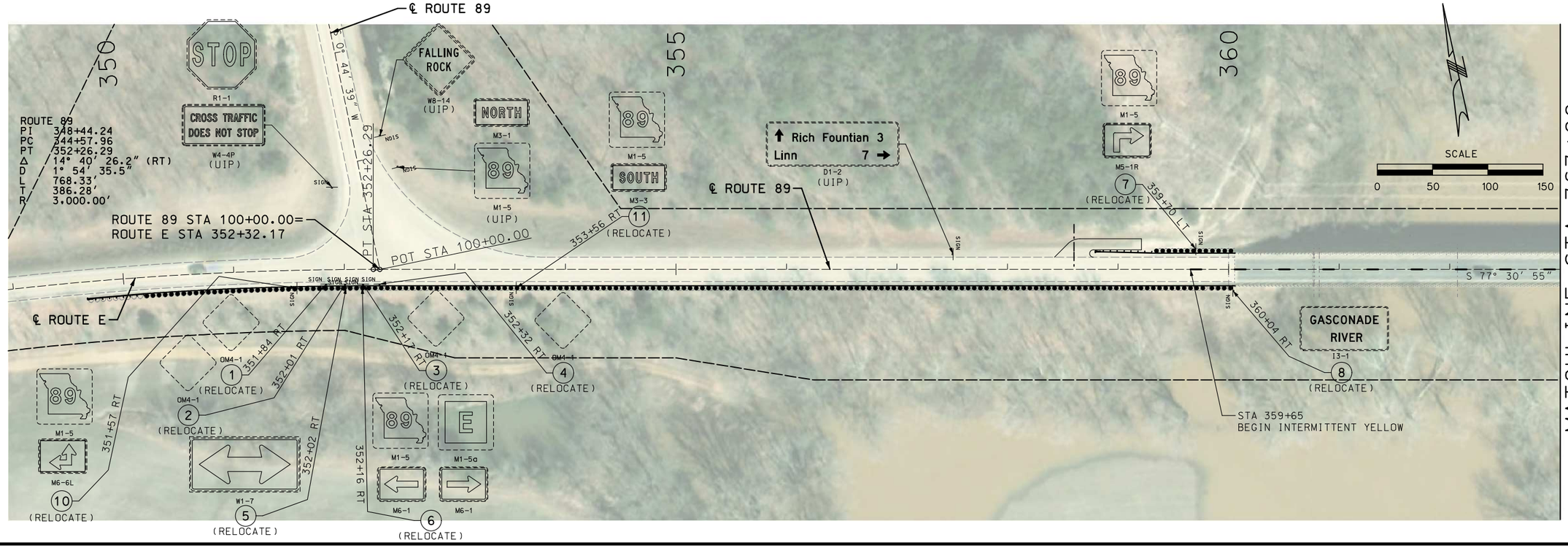

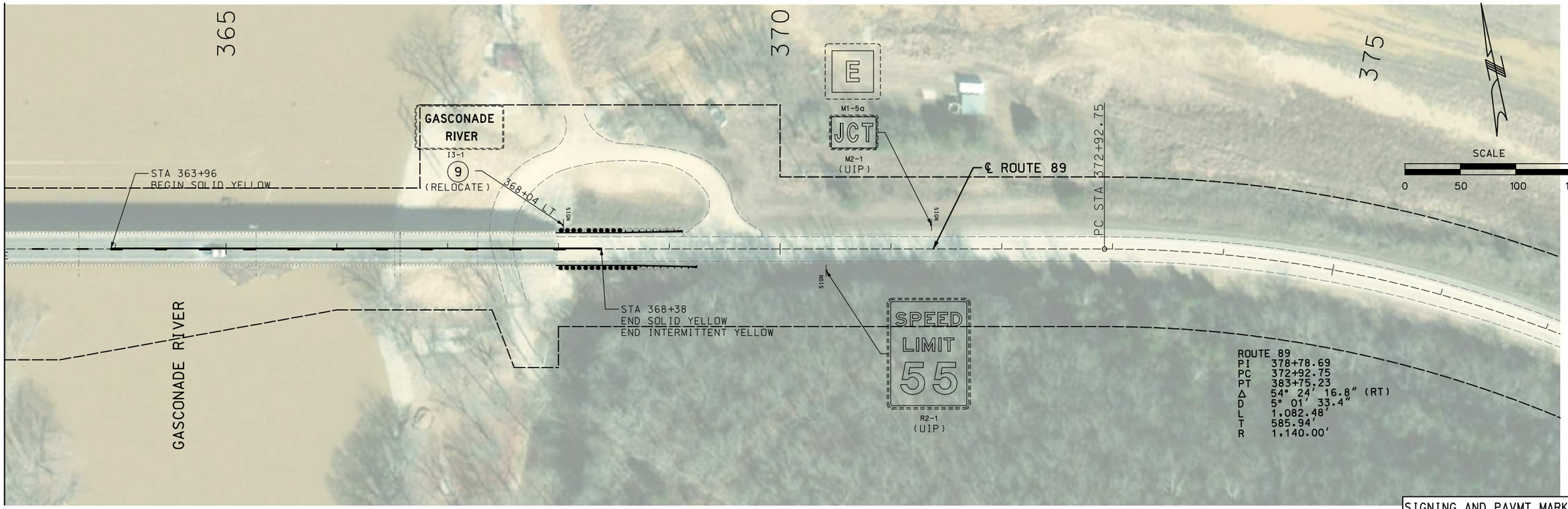

STEVEN T. STIRNEMANN
NUMBER PE-2009001103
STATE OF MISSOURI
PROFESSIONAL ENGINEER

DATE
12/12/2020
DATE PREPARED
8/9/2021

ROUTE	STATE
VAR	MO
DISTRICT	SHEET NO.
CD	19

COUNTY
VAR
JOB NO.
J5S3284
CONTRACT ID.
PROJECT NO.
BRIDGE NO.
A1411

DATE	DESCRIPTION

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

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

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CERTIFICATE OF AUTHORITY #001523

SIGNING AND PAVMT MARKING
OSAGE COUNTY ROUTE 89
SHEET 2 OF 2

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EFFECTIVE 12-01-2017

SIGNS (902 SIGNAL SIGNS TABULATED ON D-37A SHEET)						PIPE POST ✳					STRUCTURAL STEEL: POSTS ✳						BACKING BARS 2" X 3/8" @ 2.55 LBS PER LIN FT				TOTAL	U CHANNEL POST	PERFORMED SQUARE STEEL TUBE POST: 2 IN							2.5 IN						BREAK-AWAY ASSEMBLY	FOOTINGS		REMARKS AND OTHER REQUIRED ITEMS.
SIGN NO.	SIGN SIZE	STATION	ROUTE	LOCATION	SIGN DTL. SHT. NO.	PIPE SIZE	POST NO.1	POST NO.2	LBS PER FT	TOTAL ITEM NO. 9031220	POST DES NO.	POST NO.1	POST NO.2	POST NO.3	LBS PER FT	TOTAL	NO. EACH	LGTH	TOTAL	TOTAL	ITEM NO. 9031210	ITEM NO. 9031250	POST NO.1	POST NO.2	TOTAL ITEM NO. 9031270A	ANCHOR 7 GA. ITEM NO. 9031273	OMNI 7 GA. ITEM NO. 9031279	ANCHOR 12 GA. ITEM NO. 9031271	OMNI 12 GA. ITEM NO. 9031278	POST NO.1	POST NO.2	TOTAL ITEM NO. 9031280	2.25" INSERT ITEM NO. 9031272	ANCHOR 7 GA. ITEM NO. 9031281	OMNI 7 GA. ITEM NO. 9031282	ITEM NO. 9031241	EMBD ITEM NO. 9031010	BOLT DOWN ITEM NO. 9031020	
						IN.	LF	LF		LBS		LF	LF	LF		LBS		IN.	LF	LBS	LBS	LF	LF	LF												EACH	CU YDS	CU YDS	
1	ASSEMBLY	113+61	42	LT	STD																									13		13			3		0.1		
4	36"x18"	114+96	42	RT	STD																									13		13			3		0.1		
5	36"x18"	123+29	42	LT	STD																									13		13			3		0.1		
1	18"x18"	351+84	89	RT	STD																														3		0.1		
2	18"x18"	352+01	89	RT	STD																														3		0.1		
3	18"x18"	352+17	89	RT	STD																														3		0.1		
4	18"x18"	352+32	89	RT	STD																														3		0.1		
5	48"x24"	352+02	89	LT	STD																														3		0.1		
6	ASSEMBLY	352+16	89	LT	STD																														3		0.1		
7	ASSEMBLY	359+70	89	RT	STD																														3		0.1		
8	42"x18"	360+04	89	RT	STD																														3		0.1		
9	42"x18"	368+04	89	RT	STD																									12		12			3				
10	ASSEMBLY	351+57	89	RT	STD																														3		0.1		
11	ASSEMBLY	353+56	89	RT	STD																														3		0.1		
SUBTOTAL																														51					42		1.4		
TOTAL																														51					42		1.4		

✳ BREAKAWAY ASSEMBLY IS INCIDENTAL FOR PIPE AND STRUCTURAL STEEL POSTS

ROUND PIPE POST AND FOOTING DATA TABLE

NOM. SIZE (IN.)	WEIGHT LBS/FT	WEIGHT LBS/IN	STUB LENGTH	FOOTING DIA.	FOOTING DEPTH	CONCRETE C.Y.
2½	5.79	0.48	4'-3½"	12"	4'-6"	0.13
3	7.58	0.63	4'-3½"	12"	4'-6"	0.13
4	10.79	0.90	5'-3½"	18"	5'-6"	0.36

POST AND FOOTING DATA TABLE

POST DES. NO.	NOM. SIZE	POST WEIGHT LBS/FT	POST WEIGHT LBS/IN	POST STUB LENGTH	FOOTING DIA.	LEVEL GROUND DEPTH	LEVEL GROUND C.Y.	6:1 GRADE DEPTH	6:1 GRADE C.Y.	4:1 GRADE DEPTH	4:1 GRADE C.Y.	3:1 OR 2:1 GRADE DEPTH	3:1 OR 2:1 GRADE C.Y.
1	W6	9.0	0.75	3'-0"	15"	3'-0"	0.14	3'-2"	0.15	3'-3"	0.16	3'-6"	0.17
2	W6	15.0	1.25	4'-0"	24"	4'-0"	0.47	4'-2"	0.50	4'-3"	0.51	4'-6"	0.54
3	W8	18.0	1.50	4'-6"	28"	4'-6"	0.71	4'-8"	0.73	4'-9"	0.74	5'-0"	0.78
4	W10	22.0	1.83	5'-0"	36"	5'-0"	1.31	5'-2"	1.36	5'-3"	1.39	5'-6"	1.45
5	W10	26.0	2.17	5'-0"	36"	5'-0"	1.31	5'-3"	1.37	5'-5"	1.43	5'-9"	1.52
6	W12	35.0	2.92	5'-6"	36"	5'-6"	1.44	5'-9"	1.52	5'-11"	1.56	6'-3"	1.65

D-29

STATE OF MISSOURI
STEVEN T. STIRNEMANN
NUMBER PE-2003001103
PROFESSIONAL ENGINEER

DATE 12/12/2020
DATE PREPARED 8/11/2021
ROUTE VAR | STATE MO
DISTRICT CD | SHEET NO. 20
COUNTY VAR
JOB NO. J5S3284
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A1411/A2550

REV.	DESCRIPTION	DATE

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

EDSI
ENGINEERING DESIGN SOURCE, INC.
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CHESTERFIELD, MO 63017
MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY #001523

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U.I.P. AND REDECK EXISTING (71′) SIMPLE COMPOSITE WIDE FLANGE BEAM SPAN, (5′–125′–160′–160′–125′–5′) CONTINUOUS COMPOSITE PLATE GIRDER SPANS, (70′–70′) CONTINUOUS COMPOSITE WIDE FLANGE BEAM SPANS (SKEW: SQUARE)

SEC/SUR 16 TWP 42N RGE 8W

General Notes:

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

Design Loading:
H15-44 (1961) (Existing)
HS20-44 (New Construction)
No Future Wearing Surface
Earth – 120 lb/cf, Equivalent Fluid Pressure 45 lb/cf
Fatigue Stress – Case III

Design Unit Stresses:

Class B-1 Concrete (Barrier)	f′c = 4,000 psi
Class B-2 Concrete (Superstructure, except Barrier)	f′c = 4,000 psi
Reinforcing Steel (Grade 60)	fy = 60,000 psi

Structural Steel for Finger Plate Expansion Device, See Sheet No. 4.

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.

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

Bars bonded in existing concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, existing bars shall extend into new concrete at least 40 diameters for smooth bars and 30 diameters for deformed bars, unless otherwise noted.

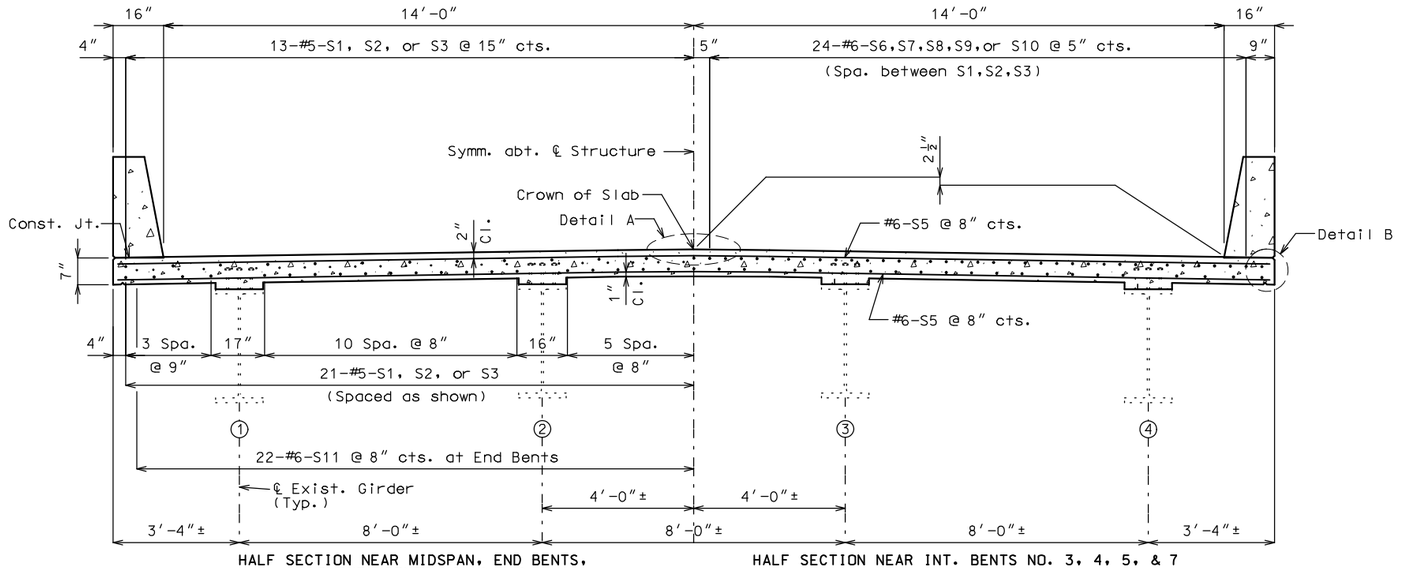
Roadway surfacing adjacent to bridge ends shall match new bridge slab surface. (Roadway item)

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

Contractor shall verify all dimensions in field before ordering new material.

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

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



HALF SECTION NEAR MIDSPAN, END BENTS, AND INT. BENTS NO. 2 & 6

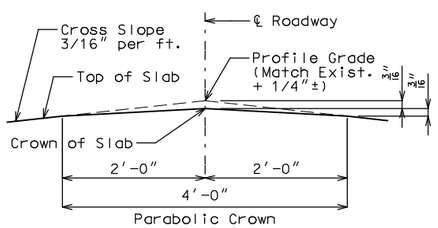
HALF SECTION NEAR INT. BENTS NO. 3, 4, 5, & 7

TYPICAL SECTION THRU SLAB

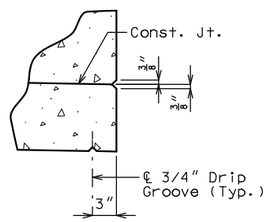
Required Lap Length For Bar Splices ✱✱✱

Bar Size	Splice Length
4	2′-7″
5	3′-3″
6	3′-10″
7	4′-11″

✱✱✱ Unless otherwise shown.



DETAIL A



DETAIL B

Estimated Quantities

	Item		Total
	Removal of Existing Bridge Deck	sq. foot	23,466
	Bridge Approach Slab (Minor)	sq. yard	130
	Slab on Steel	sq. yard	2703
✱	Type H Barrier	linear foot	1586
	Protective Coating – Concrete Bents and Piers (Epoxy)	lump sum	1
	Expansion Device (Finger Plate)	linear foot	56
✱✱	Cleaning, Lubricating and Coating Bearing	each	16
	Slab Drain	each	148
	Surface Preparation for Recoating Structural Steel	sq. foot	1900
	Field application of Inorganic Zinc Primer	sq. foot	1900
	Intermediate Field Coat (System G)	sq. foot	2200
	Finish Field Coat (System G)	sq. foot	2200

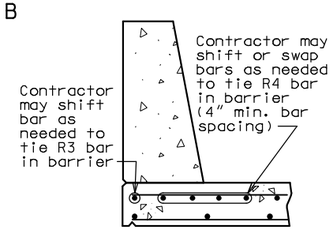
✱ Type H Barrier shall be cast-in-place option or slip-form option.
✱✱ Includes all bearings at End Bents No. 1 & 8 and Int. Bents. No. 2 & 6.

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

Table Showing S6, S7, S8, S9, & S10 Bar Lengths

S6 & S7 ✱✱✱✱		S8 & S9 ✱✱✱✱		S10	
Int. Bents No. 3 & 5		Int. Bent No. 4		Int. Bent No. 7	
Spans (2-3) & (5-6)	Spans (3-4) & (4-5)	Span (3-4)	Span (4-5)	Span (6-7)	Span (7-8)
46′-3″	45′-1″	41′-3″	45′-1″	22′-0″	22′-0″

✱✱✱✱ Bar lengths within spans shown will be achieved by lapping S6 & S7 and S8 & S9 bars. Lap locations shall be alternated across the width of the slab.



OPTIONAL SHIFTING TOP BARS AT BARRIER

Estimated Quantities for Slab on Steel

Item		Total
Class B-2 Concrete	cu. yard	538
Reinforcing Steel (Epoxy Coated)	pound	190,822

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. Payment for stay-in-place corrugated steel forms, conventional forms, all concrete and epoxy coated reinforcing steel will be considered completely covered by the contract unit price for the slab. Variations may be encountered in the estimated quantities but the variations cannot be used for an adjustment in the contract unit price.

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

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

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

REPAIRS TO BRIDGE: ROUTE 89 OVER GASCONADE RIVER

ROUTE 89 FROM ROUTE E TO ROUTE D
ABOUT 0.2 MILES EAST OF ROUTE E
STA. 360+05.40 ±(MATCHING EXISTING)

Designed MAY 2020
Detailed MAY 2020
Checked SEPT 2020

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

THE DESIGN LOADING WAS PROVIDED BY MoDOT AND NOT COMPLETED BY EDSI.

DATE PREPARED 8/5/2021
ROUTE 89 | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY OSAGE
JOB NO. J5S3284
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A14112

DESCRIPTION | DATE

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

EDSI
ENGINEERING DESIGN SOURCE, INC.
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COLUMBIA, MO 65202
TEL: (636) 537-5585
MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY #001523

General Notes:

Stay-In-Place Forms:

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

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

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

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

Pouring and Finishing Slab:

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

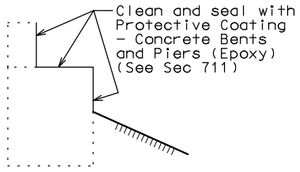
Slab shall be poured upgrade from end to end at a minimum rate of 25 cubic yards per hour. See Sheet No. 4 for Blockout Details at Expansion Devices near Intermediate Bents No. 2 and 6.

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

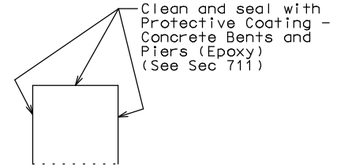
Haunching:

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

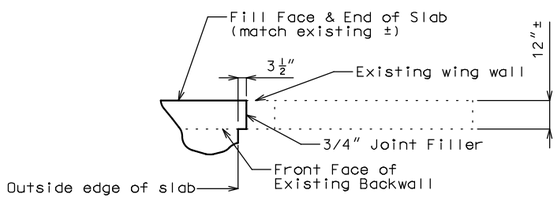
The contractor shall determine dead load defelctions based on field measurements and/or existing bridge plans and these may be adjusted based on the difference between the new and existing dead load weights.



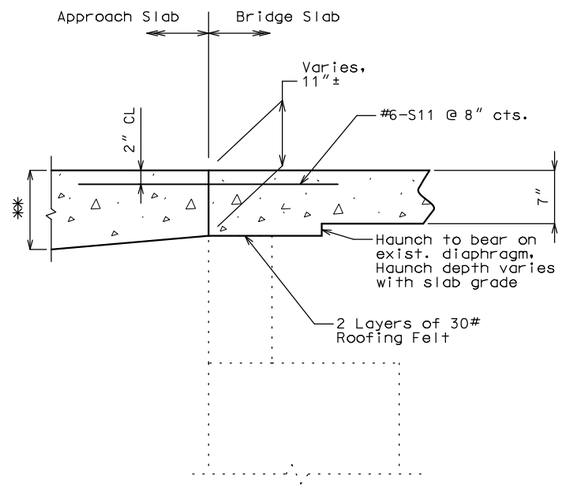
TYPICAL SECTION THRU
END BENTS NO. 1 & 8 SHOWING
PROTECTIVE COATING



TYPICAL SECTION THRU
INT. BENTS NO. 2 & 6 SHOWING
PROTECTIVE COATING

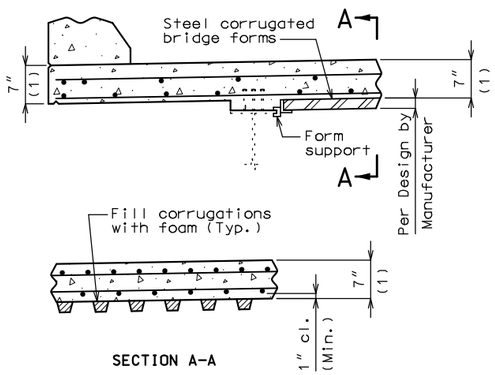


PART PLAN OF SLAB NEAR
END BENTS NO. 1 AND 8



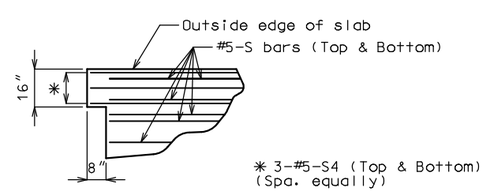
** See Sheet 10 for additional Approach Slab details

PART SECTION THRU
SLAB AT END BENTS
NO. 1 AND 8



SECTION A-A

OPTIONAL STAY-IN-PLACE
FORM DETAILS



PART PLAN OF SLAB NEAR
INT. BENTS NO. 2 AND 6

Detailed MAY 2020
Checked SEPT 2020

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

THIS SHEET HAS BEEN SIGNED, SEALED, AND DATED ELECTRONICALLY

DATE PREPARED	8/5/2021
ROUTE 89	STATE MO
DISTRICT BR	SHEET NO. 2
COUNTY	OSAGE
JOB NO.	J5S3284
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A14112

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

MoDOT

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

EDSI
ENGINEERING DESIGN SOURCE, INC.
16141 SWINGLEY RIDGE RD., SUITE 300
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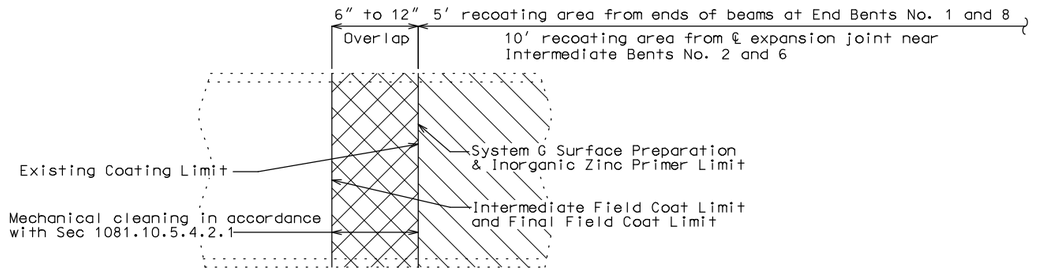
TEL: (636) 537-5585
MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY # 001523



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

Structural Steel Protective Coating:

Protective Coating:

System G in accordance with Sec 1081.

Coating Limits:

All existing structural steel within 5 feet of end of girders at End Bents No. 1 and 8, and 10 feet either side of ℄ joint near Intermediate Bents No. 2 and 6 shall be coated. Within these limits, items to be recoated shall include girders and beams, diaphragms, stiffeners, and miscellaneous structural steel items.

Surface Preparation:

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

Prime Coat:

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

Field Coat:

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

Sec 1081.10.4.5 shall be modified such that the word "RECOATED" is replaced by the word "RECOATED - SYSTEM G - ENDS AND BEAM EXPANSION AREAS ONLY".

Detailed MAY 2020
Checked SEPT 2020

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

THIS SHEET HAS BEEN SIGNED, SEALED, AND DATED ELECTRONICALLY

DATE PREPARED 8/5/2021	
ROUTE 89	STATE MO
DISTRICT BR	SHEET NO. 3
COUNTY OSAGE	
JOB NO. J5S3284	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A14112	

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

MoDOT

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

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ENGINEERING DESIGN SOURCE, INC.
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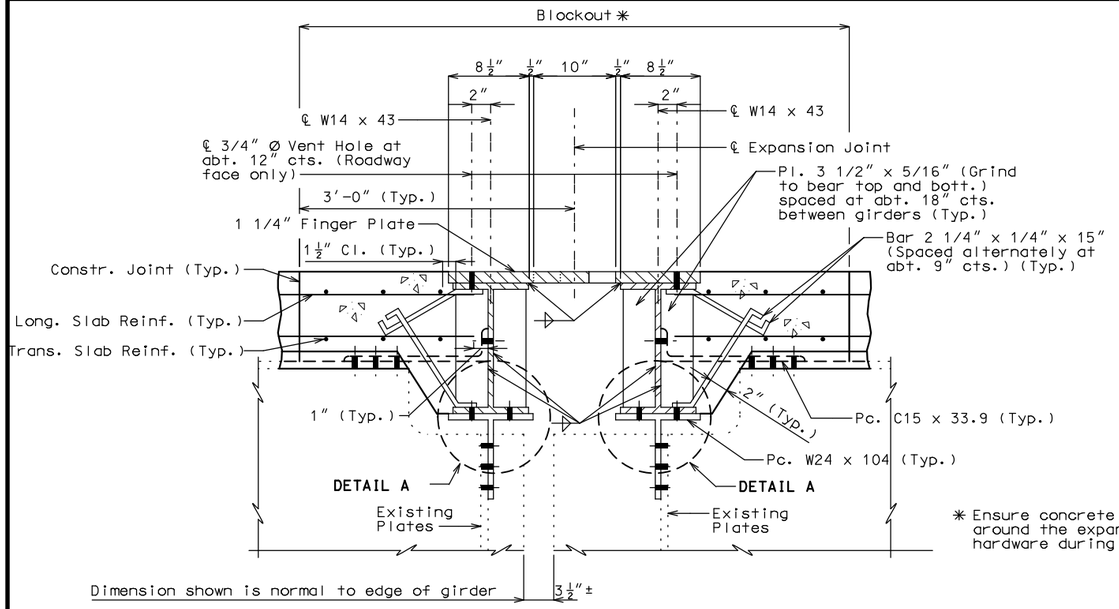
CHESTERFIELD, MO 63017
TEL (636) 537-5585
MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY # 001523

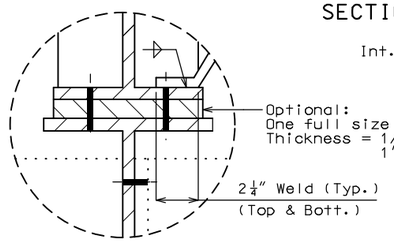
REV.



* Ensure concrete consolidation around the expansion device hardware during blockout pour.

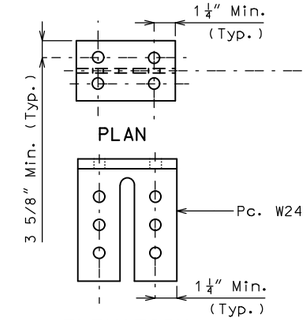
SECTION THRU EXPANSION DEVICE NEAR INT. BENT NO. 2

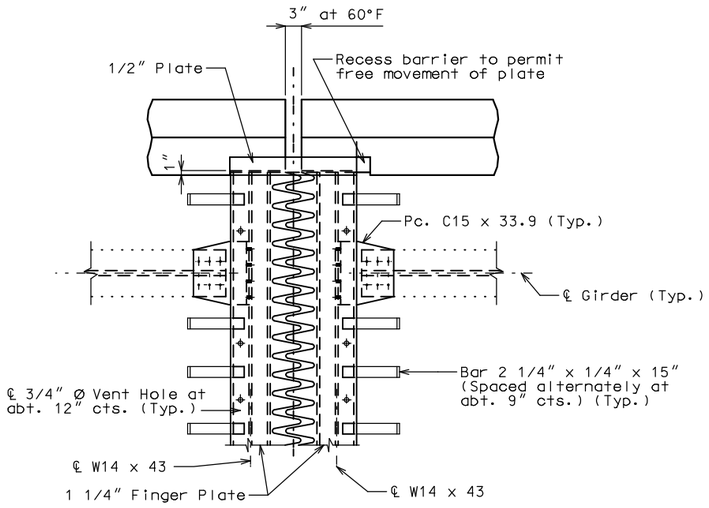
Int. Bent No. 6 similar except opposite hand.



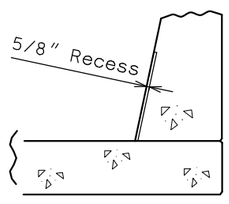
DETAIL A

Note:
Concrete shall be forced under and around finger plate supporting hardware, anchors, angles and bars. Proper consolidation shall be achieved by localized internal vibration.

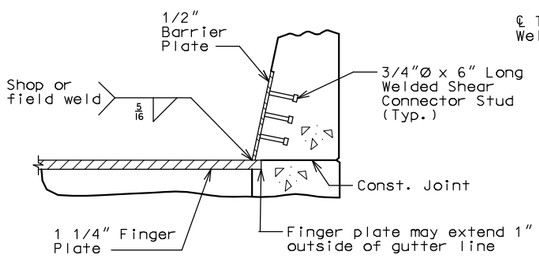




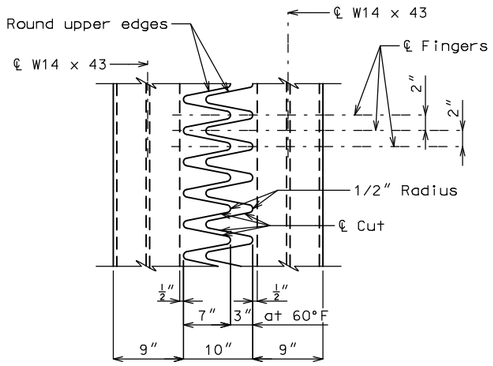
PART PLAN OF EXPANSION DEVICE



SECTION B-B



SECTION A-A



PART PLAN OF FINGER PLATE

GENERAL NOTES:

Finger plate shall be cut with a machine guided gas torch from one plate. The plate from which fingers are cut may be spliced before fingers are cut. The surface of cut shall be perpendicular to the surface of the plate. The cut shall not exceed 1/8" in width. The centerline of cut shall not deviate more than 1/16" from the position of centerline of cut shown. No splicing of finger plate or finger plate assembly will be allowed after fingers are cut. The expansion device shall be fabricated and installed to the crown and grade of the roadway.

Plan dimensions are based on installation at 60°F. The expansion gap and other dimensions shall be increased or decreased 5/16" for each 10° fall or rise in temperature at installation.

Material for the expansion device shall be ASTM A709 Grade 36 structural steel. Anchors for the expansion device shall be in accordance with Sec 1037.

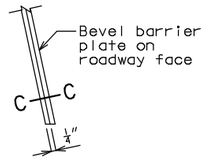
Structural steel for the expansion device and barrier plate shall be coated with a minimum of two coats of inorganic zinc primer 4 mils minimum, 6 mils maximum, or galvanized in accordance with ASTM A123. Anchors need not be protected from overspray.

Payment for furnishing, coating or galvanizing and installing the structural steel for the expansion device will be considered completely covered by the contract unit price for Expansion Device (Finger Plate) per linear foot.

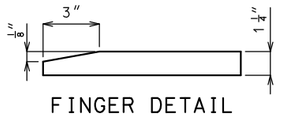
All holes shown for connections to be subpunched 11/16-inch diameter(shop or field drill) and reamed to 13/16-inch diameter in field, except holes in members that will be used as templates may be drilled to 13/16-inch diameter in the shop. For multi-piece connections, only the holes in the template member may be drilled to 13/16-inch diameter in the shop.

Longitudinal reinforcing steel shall be placed so that ends shall not be more than ±1" from the web of W14 x 43 at the expansion device.

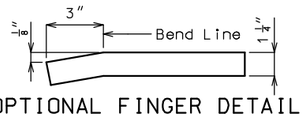
Complete joint penetration welds utilized in the fabrication of the expansion device shall be nondestructively tested by an approved method.



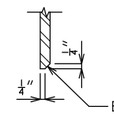
PART ELEVATION AT END OF BARRIER PLATE



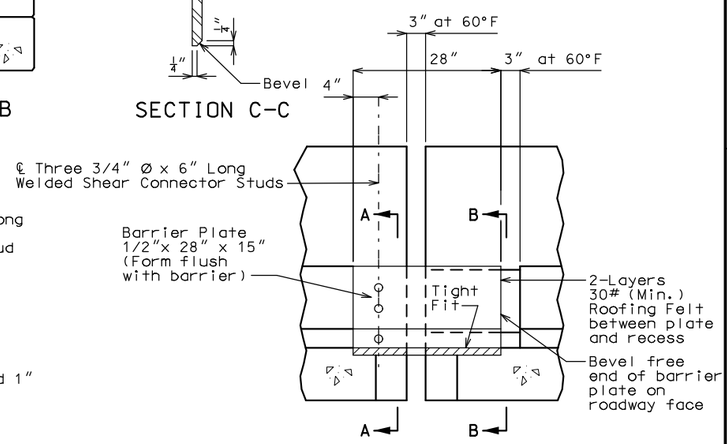
FINGER DETAIL



OPTIONAL FINGER DETAIL



SECTION C-C



ELEVATION OF BARRIER

DETAILS OF FINGER PLATE EXPANSION DEVICE NEAR INT. BENTS NO. 2 & 6

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

Detailed MAY 2020
Checked SEPT 2020

DATE PREPARED 8/5/2021
ROUTE 89 | STATE MO
DISTRICT BR | SHEET NO. 4
COUNTY OSAGE
JOB NO. J5S3284
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A14112

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
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MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY #001523

STATE OF MISSOURI
JEAN MARIE LAKENPER
NUMBER PE-2007013665
PROFESSIONAL ENGINEER
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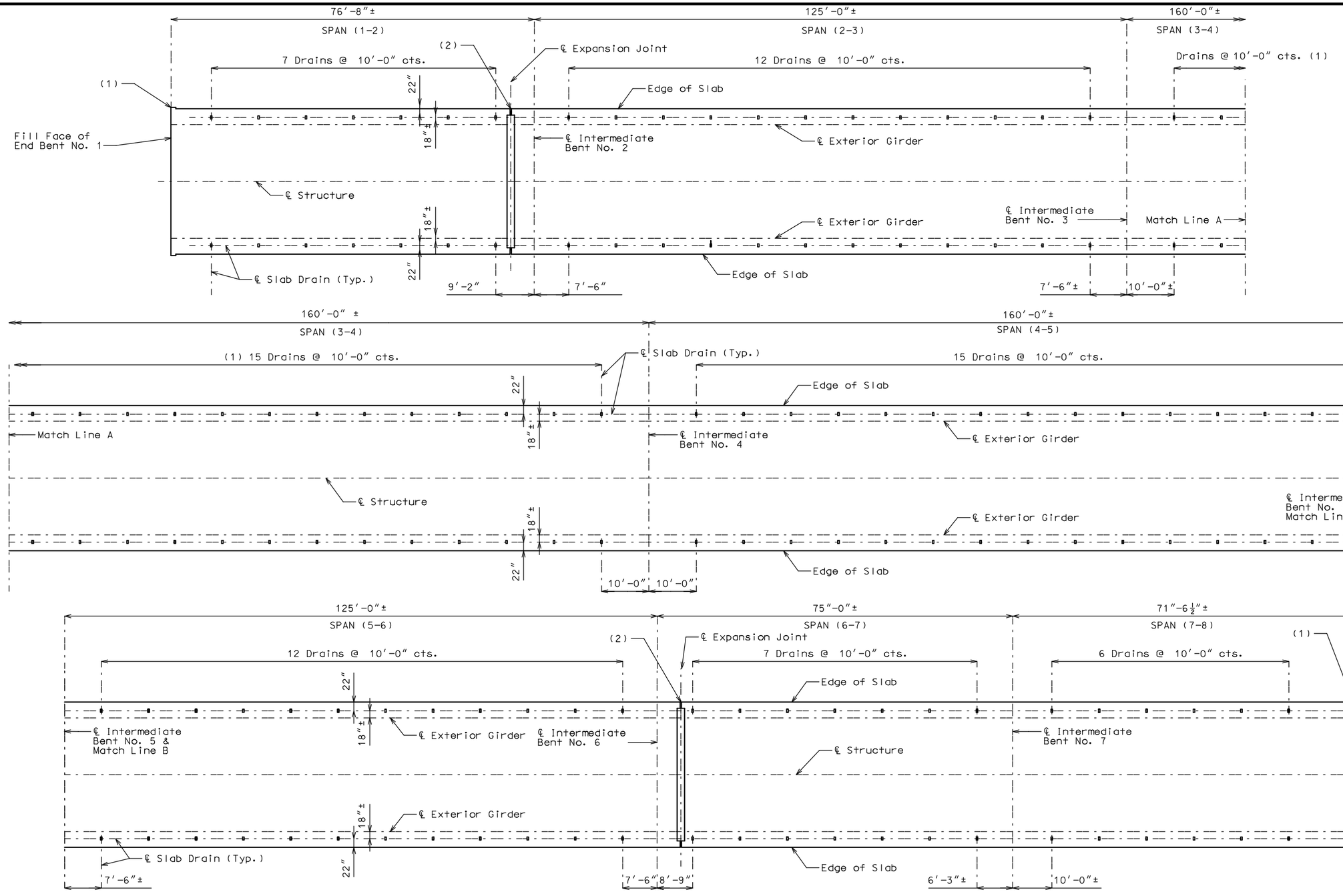

PLAN OF SLAB SHOWING SLAB DRAIN LOCATIONS

(1)-See Sheets No. 1 and 2 for Slab dimensions and additional Details.
(2)-See Sheet Sheet No. 4 for Expansion Device Details.

SLAB DRAIN DETAILS

Detailed MAY 2020
Checked SEPT 2020

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

N:\E20019 B&W_MoDOT_CD Bridge Bundle 1\08_Drawings\B_A14112_05-06_J5S3284_SLAB_DRAINS.dgn 4:42:14 PM 8/5/2021

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DATE PREPARED
8/5/2021

ROUTE	STATE
89	MO
DISTRICT	SHEET NO.
BR	5

COUNTY
OSAGE

JOB NO.
J5S3284

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A14112

DESCRIPTION	DATE

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MISSOURI STATE ENGINEERING COMPANY
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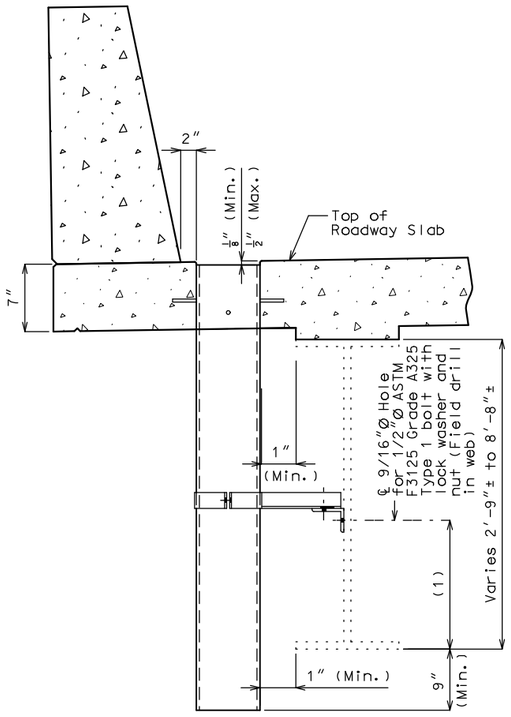
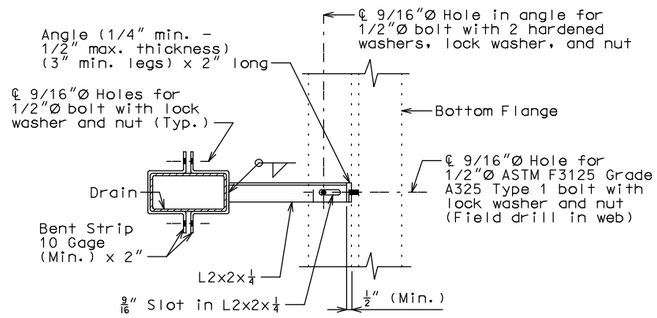
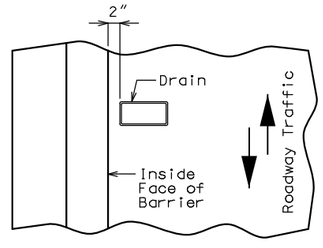


PART SECTION NEAR DRAIN

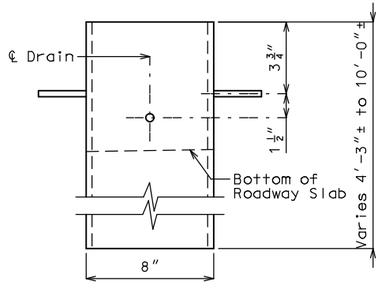
(1)- Use ⅛ of web depth



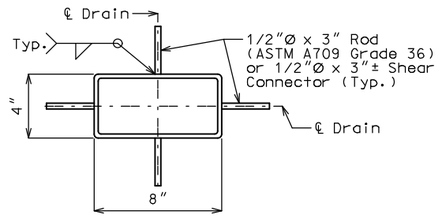
PART SECTION SHOWING BRACKET ASSEMBLY



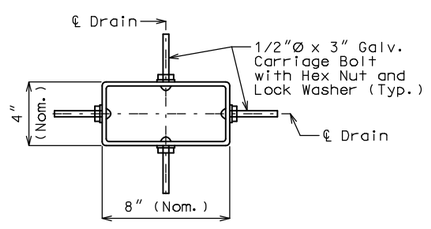
PART PLAN OF SLAB AT DRAIN



ELEVATION OF DRAIN



PLAN OF STEEL DRAIN OPTION



PLAN OF FRP DRAIN OPTION

General Notes:

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

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

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

Reinforcing steel shall be shifted to clear drains.

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

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

All 1½"Ø bolts shall be ASTM A307, except as shown.

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

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

Notes for Steel Drain:

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

Outside dimensions of drains are 8" x 4".

The drains shall be galvanized in accordance with ASTM A123.

Notes for FRP Drain:

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

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

Minimum reinforced wall thickness shall be 1/4 inch.

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

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

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

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

SLAB DRAIN DETAILS

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DATE PREPARED 8/5/2021
ROUTE 89 | STATE MO
DISTRICT BR | SHEET NO. 6
COUNTY OSAGE
JOB NO. J5S3284
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A14112

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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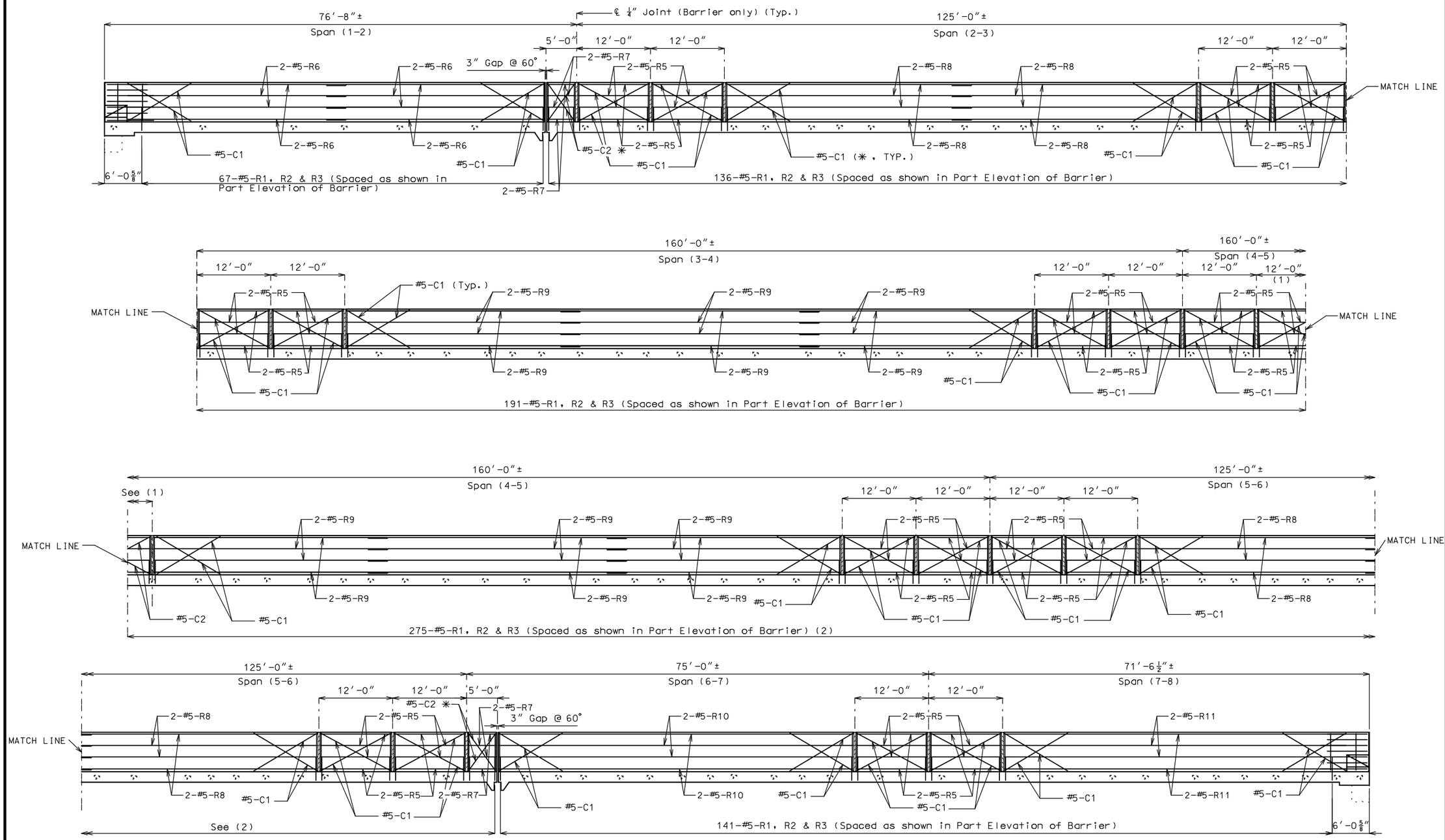
6615 TOWER CIRCLE RD., SUITE 300
CHESTERFIELD, MO 63017
TEL (636) 537-5585
MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY # 001523



TYPE H BARRIER

ELEVATION OF BARRIER

(Left barrier shown, right barrier similar)
Longitudinal dimensions are horizontal.

✱ C1 and C2 bars apply to Slip-Formed Option only

Detailed MAY 2020
Checked SEPT 2020

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

Sheet No. 7 of 11

THIS SHEET HAS BEEN SIGNED, SEALED, AND DATED ELECTRONICALLY

DATE PREPARED	8/5/2021
ROUTE 89	STATE MO
DISTRICT BR	SHEET NO. 7
COUNTY	OSAGE
JOB NO.	J5S3284
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A14112

DESCRIPTION

DATE

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JEFFERSON CITY, MO 65102
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16141 SWINGLEY RIDGE RD., SUITE 300
CHESTERFIELD, MO 63017
TEL: (636) 537-5585
MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY # 001523

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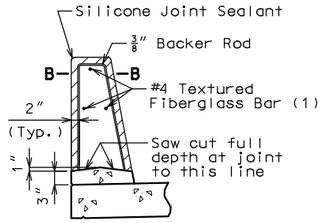
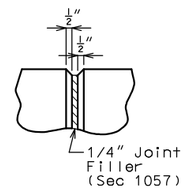
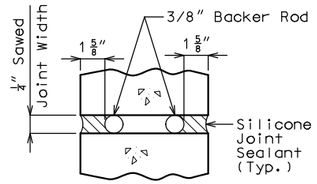


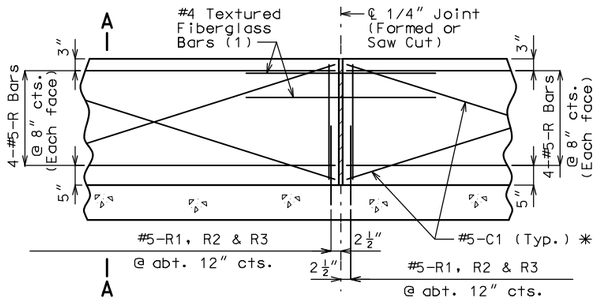
SECTION THRU SAW CUT JOINT



PART ELEVATION AT FORMED JOINT



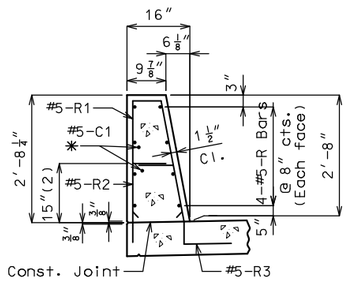
SECTION B-B



PART ELEVATION OF BARRIER

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

✱ Slip-formed option only

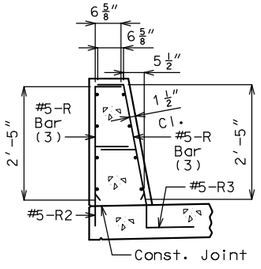


SECTION A-A

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

The cross-sectional area above the slab is 2.89 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.)

TYPE H BARRIER

General Notes:

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 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 H 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 slab to end of slab.

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 H 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.

Plastic waterstop shall not be used with saw cut joints.

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DATE PREPARED 8/5/2021	
ROUTE 89	STATE MO
DISTRICT BR	SHEET NO. 8
COUNTY OSAGE	
JOB NO. J5S3284	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A14112	

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

MoDOT

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

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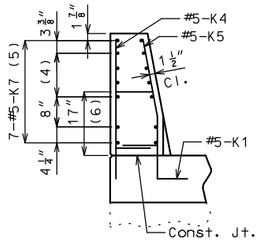
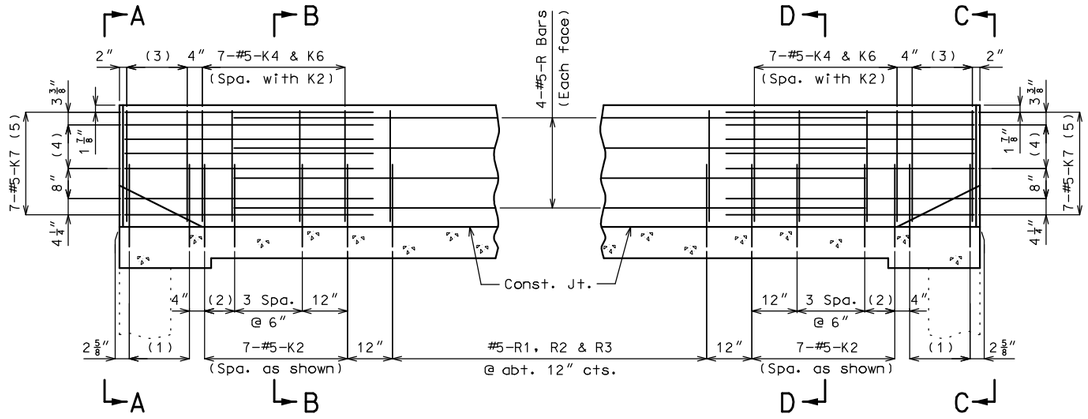
TEL: (636) 537-5585
MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY # 001523

Detailed MAY 2020
Checked SEPT 2020

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



ELEVATION A-A



PART ELEVATION

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

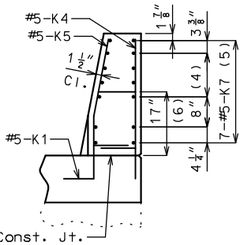
(2) 2 Spaces @ 4"

(3) 5-#5-K4 and 5-#5-K5, spaced with K1

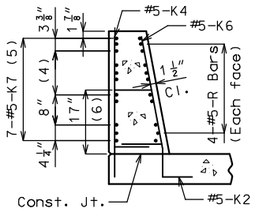
(4) 3 Spaces @ 3 13/16"

(5) Spaced as shown, each face

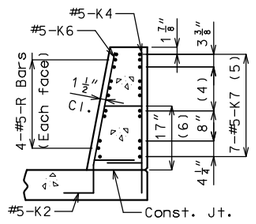
(6) To top of bar



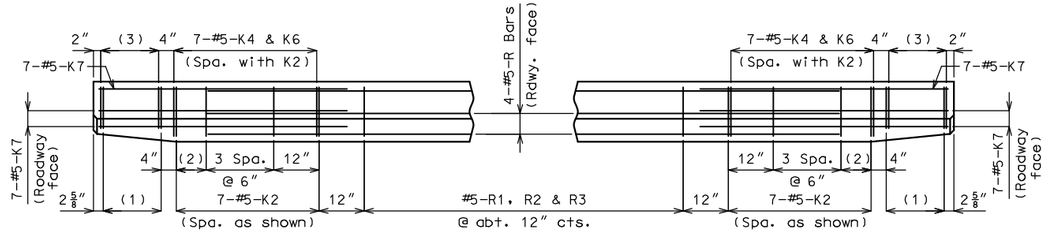
ELEVATION C-C



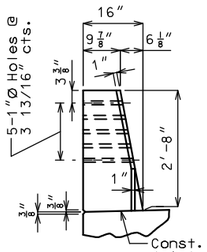
SECTION B-B



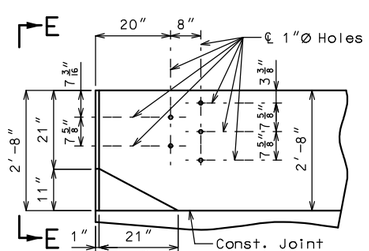
SECTION D-D



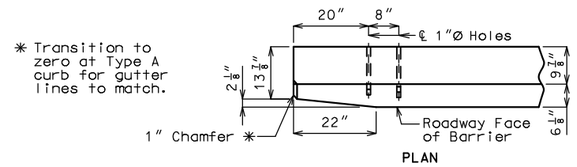
PART PLAN



ELEVATION E-E



ELEVATION



PLAN

DETAILS OF GUARD RAIL ATTACHMENT

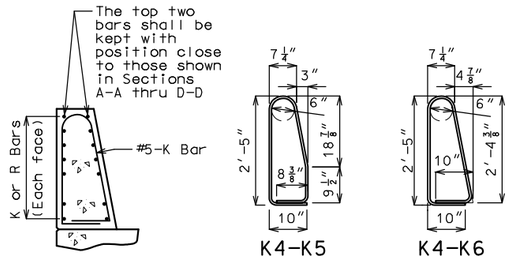
General Notes:

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 H Barrier.

Reinforcing Steel:

Minimum clearance to reinforcing steel shall be 1 1/2".

Use a minimum lap of 3'-1" between K7 bars and R bars.



PERMISSIBLE ALTERNATE SHAPES

(Other K bars not shown for clarity)

The K4-K5 and K4-K6 bar combination may be furnished as one bar as shown, at the contractor's option.

TYPE H BARRIER AT END BENTS

(Left barrier shown, right barrier similar)

Detailed MAY 2020
Checked SEPT 2020

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

JEAN MARIE LaHUMPER NUMBER PE-2007013099 ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED, AND DATED ELECTRONICALLY

DATE PREPARED 8/5/2021

ROUTE	STATE
89	MO
DISTRICT	SHEET NO.
BR	9

COUNTY OSAGE

JOB NO. J5S3284

CONTRACT ID.

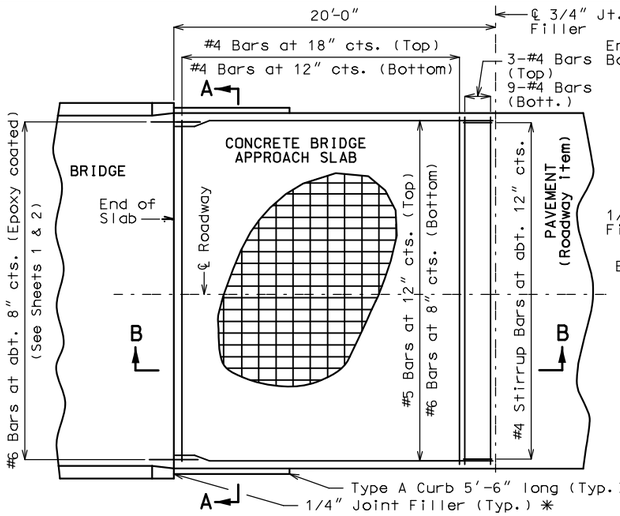
PROJECT NO.

BRIDGE NO. A14112

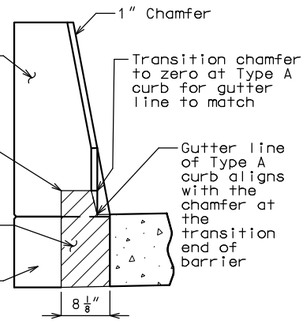
DESCRIPTION | DATE

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

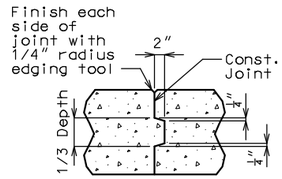
EDSI
ENGINEERING DESIGN SOURCE, INC.
6615 STONERIDGE RD., SUITE 300
(636) 537-5585
TEL (636) 537-5585
MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY #001523



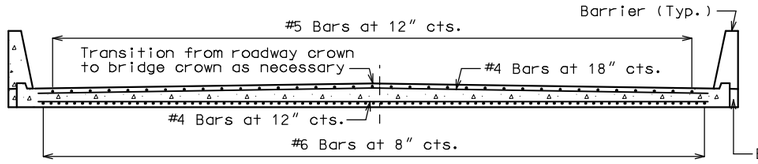
PART PLAN OF SQUARED STRUCTURE



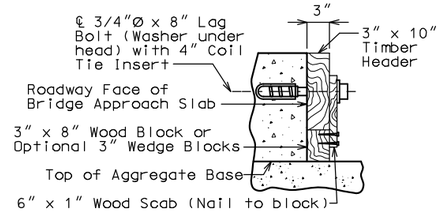
SECTION BETWEEN CURB AND BARRIER



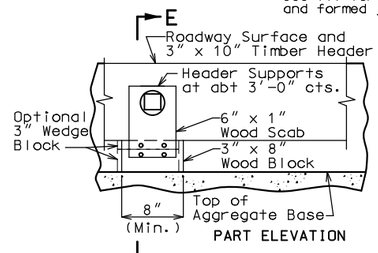
CONSTRUCTION JOINT DETAIL



SECTION A-A



SECTION E-E



PART ELEVATION

DETAILS OF TIMBER HEADER

Remove timber header when concrete pavement is placed.

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 lap splicing the #4 bars 29" 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 Road) per square yard.

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

* Seal joint between vertical face of approach slab and bridge slab 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.

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.

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

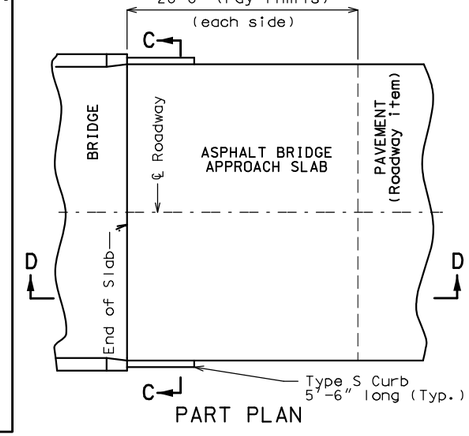
☐ Concrete Bridge Approach Slab

☐ Asphalt Bridge Approach Slab

Notes For Asphalt Slab Only:

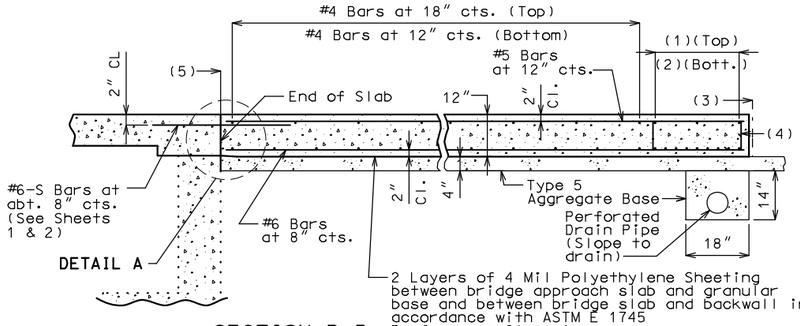
Payment for furnishing all materials, labor and excavation necessary to construct the asphalt bridge approach slab, including tack, curb, underdrain and Type 5 aggregate base within the pay limits shown, complete in place, will be considered completely covered by the contract unit price for Bridge Approach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

Application of tack is required between lifts per Sec 403.



PART PLAN

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 B-B
(Non-Integral end bent)

(1) 3-#4 Bars

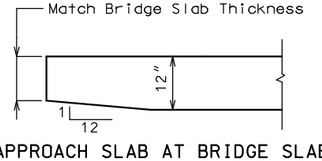
(2) 9-#4 Bars

(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.

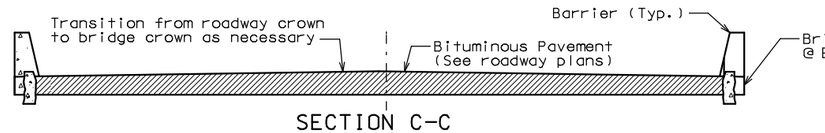
(5) Fill joint between bridge slab and approach slab with approved Methyl Methacrylate (MMA) crack filler per Sec 704.

2 Layers of 4 Mil Polyethylene Sheeting between bridge approach slab and granular base and between bridge slab and backwall in accordance with ASTM E 1745 Performance Class A



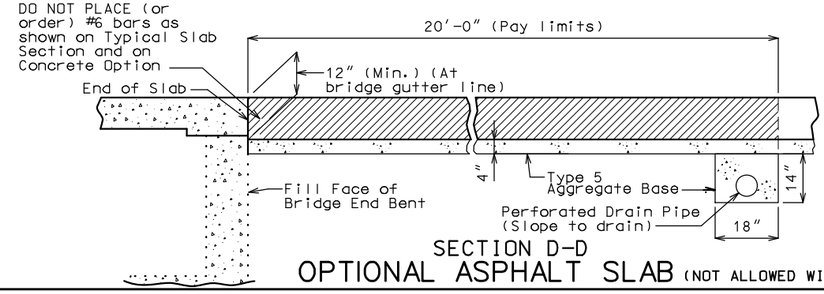
APPROACH SLAB AT BRIDGE SLAB
DETAIL A

OPTIONAL CONCRETE SLAB



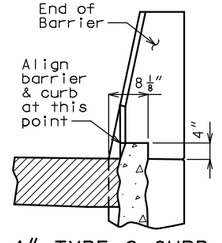
SECTION C-C

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

OPTIONAL ASPHALT SLAB (NOT ALLOWED WITH CONCRETE PAVEMENT)



4" TYPE S CURB

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

BRIDGE APPROACH SLAB (MINOR)

Detailed MAY 2020
Checked SEPT 2020

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

JEAN MARIE LeKEMPER NUMBER PE-2007013699 PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED, AND DATED ELECTRONICALLY

DATE PREPARED 8/5/2021

ROUTE	STATE
89	MO
DISTRICT	SHEET NO.
BR	10

COUNTY OSAGE

JOB NO. J5S3284

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A14112

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

EDSI
ENGINEERING DESIGN SOURCE, INC.
6615 S. MISSOURI RIDGE RD., SUITE 300
CHESTERFIELD, MO 63017
TEL (636) 532-5585
MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY # 001523

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE	MARK NO. MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
			SLAB																									
136	5	S1	SLAB	E	20					36	9													36	9	36	9	5,213
748	5	S2	SLAB	E	20					55	9													55	9	55	9	43,494
204	5	S3	SLAB	E	20					49	0													49	0	49	0	10,426
48	5	S4	SLAB	E	20					4	5													4	5	4	5	221
2366	6	S5	SLAB	E	20					30	5													30	5	30	5	108,093
96	6	S6	SLAB	E	20					46	3													46	3	46	3	6,669
96	6	S7	SLAB	E	20					45	1													45	1	45	1	6,501
48	6	S8	SLAB	E	20					41	3													41	3	41	3	2,974
48	6	S9	SLAB	E	20					45	1													45	1	45	1	3,250
48	6	S10	SLAB	E	20					44	0													44	0	44	0	3,172
88	6	S11	SLAB	E	20					3	8													3	8	3	8	485
			BARRIER																									
20	5	K1	BARRIER	E	27	S					20.75	9	5.25	15	12	5.125	1							5	3	4	11	103
28	5	K2	BARRIER	E	27	S					20.75	9	17.25	3.75	12	17	3.25							5	3	4	11	144
48	5	K4	BARRIER	E	19					2	5	10												3	3	3	1	154
20	5	K5	BARRIER	E	14	S					8.375	9	19.375				4.25		18.875					3	1	3	0	63
28	5	K6	BARRIER	E	19	S						10					2	4.375	6					0	10	0	9	22
56	5	K7	BARRIER	E	20					5	6													5	6	5	6	321
1620	5	R1	BARRIER	E	14					2	5	6.625	2	5.5				2	5	5.5				5	5	5	3	8,871
1620	5	R2	BARRIER	E	19	S					18.75	9.625												2	4	2	3	3,802
1620	5	R3	BARRIER	E	27	S						9.625		15.25	3.75	12	15	2.875						3	5	3	2	5,351
288	5	R5	BARRIER	E	20					11	4													11	4	11	4	3,404
32	5	R6	BARRIER	E	20					38	7													38	7	38	7	1,288
32	5	R7	BARRIER	E	20					4	5													4	5	4	5	147
64	5	R8	BARRIER	E	20					39	9													39	9	39	9	2,653
96	5	R9	BARRIER	E	20					39	2													39	2	39	2	3,922
32	5	R10	BARRIER	E	20					30	0													30	0	30	0	1,001
32	5	R11	BARRIER	E	20					36	0													36	0	36	0	1,202
			SLIP FORM																									
			OPTION ONLY																									
56	5	C1	SLIP FORM	E	20					12	0													12	0	12	0	1602
8	5	C2	SLIP FORM	E	20					5														5	0	5	0	42

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE	MARK NO. MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
			TOTALS																									
	5			E																								
	6			E																								
			TOTAL	E																								
			SLAB ON																									
			STEEL																									
	5			E																								
	6			E																								
			TOTAL	E																								
			BARRIER																									
	5			E																								
			TOTAL	E																								
			SLIP FORM																									
			OPTION																									
	5			E																								
			TOTAL	E																								

SHAPE 6 SHAPE 7 SHAPE 8

SHAPE 9 SHAPE 10 SHAPE 11

SHAPE 12 SHAPE 13

SHAPE 14 SHAPE 15

SHAPE 16 SHAPE 17 SHAPE 18 SHAPE 20 SHAPE 19

SHAPE 21

SHAPE 23 SHAPE 22

SHAPE 24 SHAPE 25

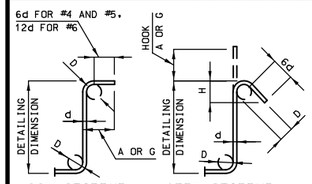
SHAPE 26 SHAPE 27

SHAPE 28 SHAPE 29

SHAPE 30 SHAPE 31 SHAPE 32

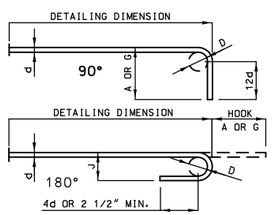
SHAPE 33 SHAPE 34 SHAPE 35 SHAPE 36

BENDING DIAGRAMS



STIRRUP HOOK DIMENSIONS				
GRADES 40 - 50 - 60 KSI				
BAR SIZE	D (IN.)	90° HOOK HOOK A OR G	135° HOOK HOOK A OR G	135° HOOK APPROX. H
#4	2"	4 1/2"	4 1/2"	3"
#5	2 1/2"	6"	5 1/2"	3 3/4"
#6	4 1/2"	12"	8"	4 1/2"

NOTE: UNLESS OTHERWISE NOTED, DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.



END HOOK DIMENSIONS				
		ALL GRADES		
BAR SIZE	D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2 1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3 3/4"	7"	5"	10"
#6	4 1/2"	8"	6"	12"
#7	5 1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9 1/2"	15"	11 3/4"	19"
#10	10 3/4"	17"	13 1/4"	22"
#11	12"	19"	14 3/4"	2'-0"
#14	18 1/4"	2'-3"	21 3/4"	2'-7"

NOTE:
ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEGREE ARE TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEGREE STANDARD HOOKS.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT.
S = STIRRUP.
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
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 (GRADE 60) FY = 60,000 PSI.

Detailed MAY 2020
Checked SEPT 2020

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

DESCRIPTION

DATE

DATE PREPARED
8/5/2021

ROUTE 89 | STATE MO
DISTRICT BR | SHEET NO. 11
COUNTY OSAGE
JOB NO. J5S3284
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A14112

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

EDSI
ENGINEERING DESIGN SOURCE, INC.
(816) 318-0611
1401 STRICKLER RIDGE RD., SUITE 300
JEFFERSON CITY, MO 65017
TEL (636) 537-5585
MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY # 001523

JEAN MARIE LAKENPER NUMBER PE-2007013269 PERSONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

SEC/SUR 22 TWP 40N RGE 9W

U.I.P. AND REHABILITATE EXISTING (75') SIMPLE COMPOSITE PLATE GIRDER SPAN, (5'-125'-160'-160'-125'-5') CONTINUOUS COMPOSITE PLATE GIRDER SPANS, (75'-75') CONTINUOUS COMPOSITE PLATE GIRDER SPANS (SKEW: SQUARE)

General Notes:

Design Specifications:

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

Design Loading:

H15-44 (1965) (Existing), HS20-44 (New Construction)

Design Unit Stresses:

Class B-2 Concrete (Half-Sole and Full Depth Repair) f'c = 4,000 psi
Class B-1 Concrete (Curb Outlet Plugs) f'c = 4,000 psi

Miscellaneous:

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

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

Prior to plugging, the existing curb outlets to be plugged shall be cleaned to remove all foreign matter, dirt, loose material, and water using methods appropriate and similar to those for concrete repair, Sec 704. Disposal of material removed shall be in accordance with Sec 202.3.1. Existing curb outlets shall be plugged with Class B-1 concrete.

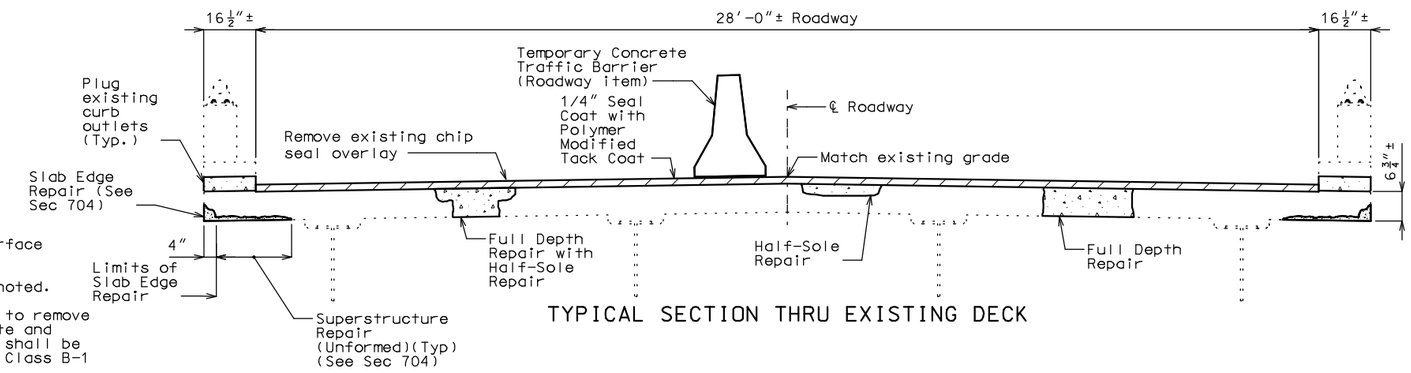
Outline of existing work is indicated by light dashed lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering new material.

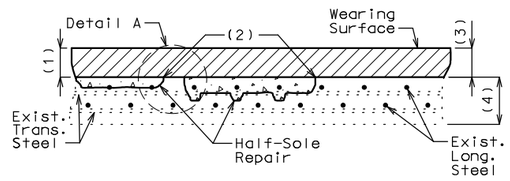
In order to maintain grade and a minimum thickness of wearing surface as shown on plans it may be necessary to use additional quantities of wearing surface at various locations throughout the structure. The cost of furnishing and installing the wearing surface will be considered completely covered in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

Traffic Handling:

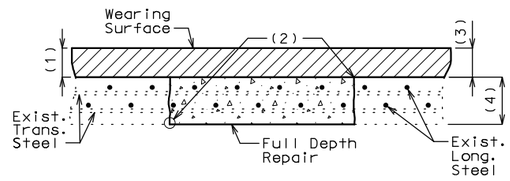
Traffic to be maintained on the structure during construction. See roadway plans for traffic control and Sheet No. 3 for staged construction details.



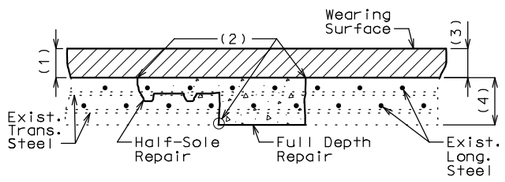
TYPICAL SECTION THRU EXISTING DECK



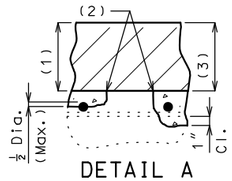
HALF-SOLE REPAIR



FULL DEPTH REPAIR



FULL DEPTH REPAIR WITH HALF-SOLE REPAIR



DETAIL A

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

(1) Removal of existing chip seal overlay

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

(3) 1/4" seal coat with polymer modified tack coat.

(4) Original depth of deck

Estimated Quantities

	Item		Total
✳	Removal of Seal Coat or Polymer Wearing Surface	sq. foot	22,626
	Misc. (Emulsified Asphalt, Seal Coat-W/Polymer Modified Oil)	gal.	1006
	Seal Coat Aggregate, Grade A1	sq. yard	2514
	Class B-1 Concrete	cu. yard	6
✳✳✳✳	Superstructure Repair (Unformed)	sq. foot	35
	Half-Sole Repair	sq. foot	250
	Full Depth Repair	sq. foot	150
✳✳✳	Slab Edge Repair (Bridges)	linear foot	50
	Protective Coating - Concrete Bents and Piers (Urethane)	lump sum	1
✳✳	Cleaning, Lubricating and Coating Bearing	each	24
	Surface Preparation for Recoating Structural Steel	sq. foot	2500
	Field Application of Inorganic Zinc Primer	sq. foot	2500
	Intermediate Field Coat (System G)	sq. foot	2700
	Finish Field Coat (System G)	sq. foot	2700
	Misc. Cored Slab Drain	each	150

✳ Removal of seal coat or polymer shall include removal of existing chip seal overlay and 1/4" of original deck.

✳✳ All bearings at End Bents 1 & 8 and Int. Bents 2 & 6 and cantilever bearings near Int. Bents 2 & 6.

✳✳✳ Slab edge repair shall only be performed where top mat of steel reinforcement in slab and curb reinforcement are exposed.

✳✳✳✳ Superstructure repair shall be performed at join at Int. Bent No. 6.

Designed JUN. 2020
Detailed AUG. 2020
Checked MAY 2021

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

Sheet No. 1 of 5

REPAIRS TO BRIDGE: ROUTE 42 OVER GASCONADE RIVER

ROUTE 42 FROM ROUTE 63 TO ROUTE Z
ABOUT 2.2 MILES EAST OF ROUTE 63
BEG. STA. 115+05.00± (MATCH EXISTING)

THE DESIGN LOADING WAS PROVIDED BY MoDOT AND NOT COMPLETED BY EDSI.

DATE PREPARED 8/5/2021

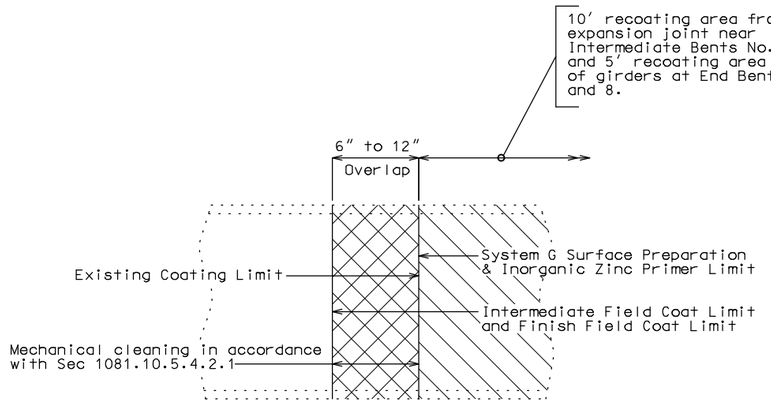
ROUTE	STATE
42	MO
DISTRICT	SHEET NO.
BR	1

COUNTY MARIES
JOB NO. J5S3284
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A25501

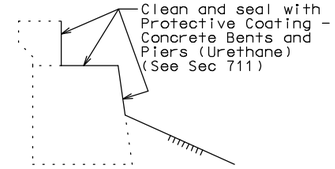
DESCRIPTION | DATE

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

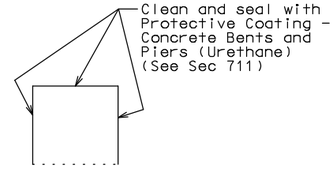
EDSI
ENGINEERING DESIGN SOURCE, INC.
6641 SINGLEY RIDGE RD., SUITE 300
CHESTERFIELD, MO 63017
TEL: (636) 537-2585
MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY #001523



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



TYPICAL SECTION THRU
END BENTS NO. 1 & 8 SHOWING
PROTECTIVE COATING



TYPICAL SECTION THRU
INT. BENTS NO. 2 & 6 SHOWING
PROTECTIVE COATING

Structural Steel Protective Coating:

Protective Coating:

System G in accordance with Sec 1081.

Coating Limits:

All existing structural steel within 5 feet of end of girders at End Bents No. 1 and 8, and 10 feet either side of ℄ joint near Intermediate Bents No. 2 and 6 shall be coated. Within these limits, items to be recoated shall include girders and stringers, diaphragms, stiffeners, and miscellaneous structural steel items.

Surface Preparation:

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

Prime Coat:

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

Field Coat:

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

Sec 1081.10.4.6 shall be modified such that the word "RECOATED" is replaced by the word "RECOATED - SYSTEM G - GIRDER ENDS AND EXPANSION AREAS ONLY, MONTH/YEAR".

STATE OF MISSOURI
JEAN MARIE LeKEMPER
NUMBER PE-2007013883
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED, AND DATED ELECTRONICALLY

DATE PREPARED 8/5/2021
ROUTE 42 | STATE MO
DISTRICT BR | SHEET NO. 2
COUNTY MARIES
JOB NO. J5S3284
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A25501

DESCRIPTION | DATE

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

EDSI
ENGINEERING DESIGN SOURCE, INC.
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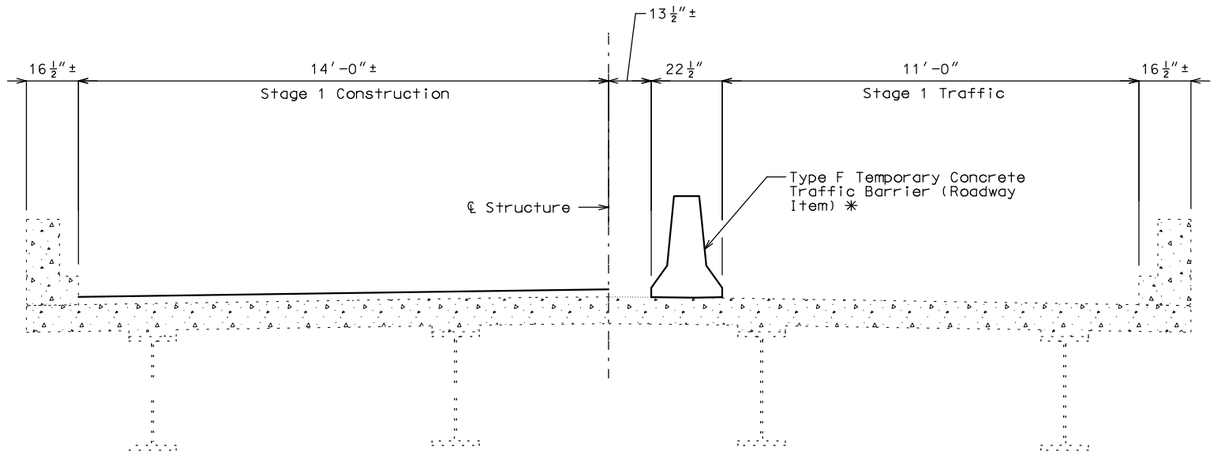
TEL: (636) 537-5585
MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY #001523

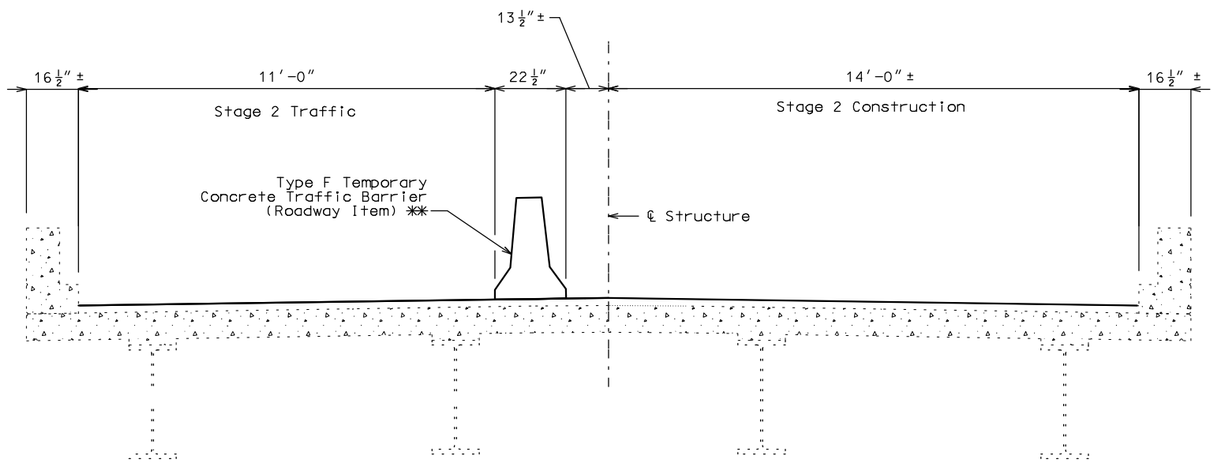
Detailed AUG. 2020
Checked MAY 2021

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



STAGE 1 CONSTRUCTION

✳ Temporary barrier shall be attached to bridge by tie-down straps during Stage 1 Construction



STAGE 2 CONSTRUCTION

✳✳ Temporary barrier shall not be attached to bridge by tie-down straps during Stage 2 Construction

JEAN MARIE LaKEMPER NUMBER PE-2007013383 PROFESSIONAL ENGINEER
STATE OF MISSOURI
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

DATE PREPARED 8/5/2021

ROUTE	STATE
42	MO
DISTRICT	SHEET NO.
BR	3

COUNTY MARIES

JOB NO. J5S3284

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A25501

DESCRIPTION	DATE

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

EDSI
ENGINEERING DESIGN SOURCE, INC.
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MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY #001523

Detailed AUG. 2020
Checked MAY 2021

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

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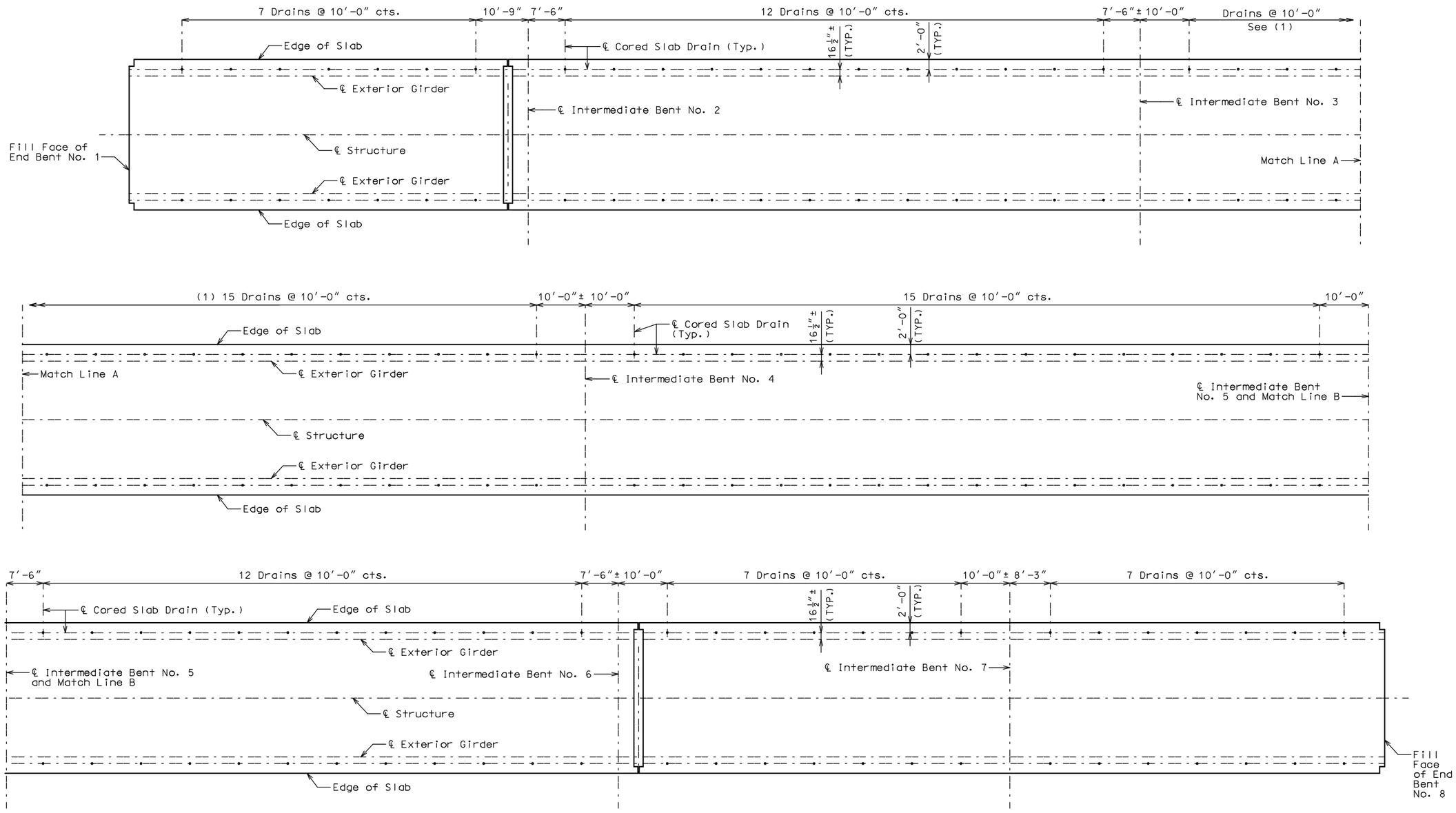

PLAN OF SLAB SHOWING CORED SLAB DRAIN LOCATIONS

CORED SLAB DRAINS

Detailed AUG. 2020
Checked MAY 2021

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

Sheet No. 4 of 5

THIS SHEET HAS BEEN SIGNED, SEALED, AND DATED ELECTRONICALLY

DATE PREPARED	8/5/2021
ROUTE	42
STATE	MO
DISTRICT	BR
SHEET NO.	4
COUNTY	MARIES
JOB NO.	J5S3284
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A25501

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

MoDOT

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

EDSI
ENGINEERING DESIGN SOURCE, INC.
16141 SWINGLEY RIDGE RD., SUITE 300
CHESTERFIELD, MO 63017
TEL: (636) 537-5585
MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY # 001523

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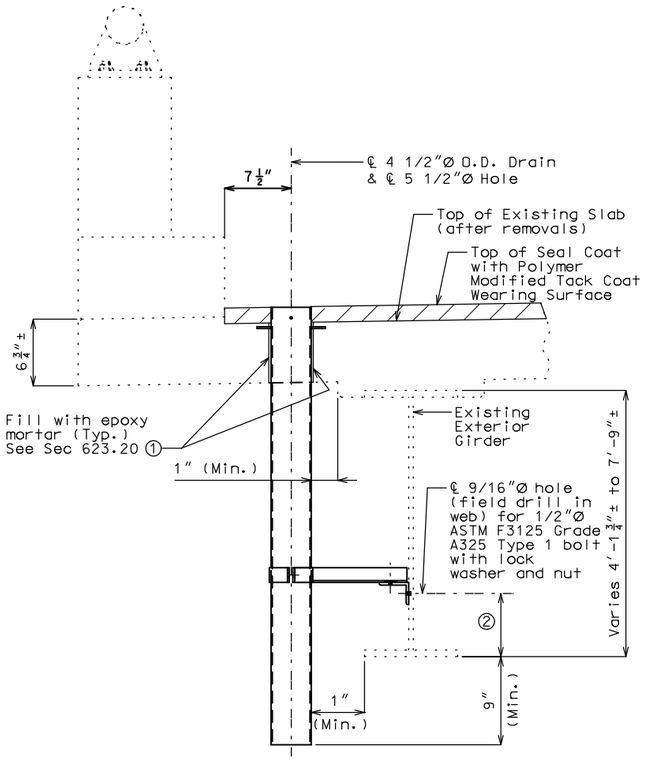
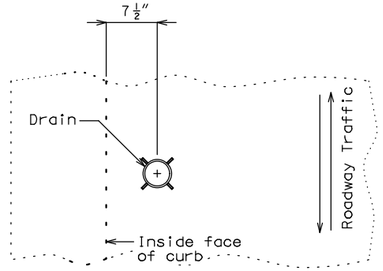
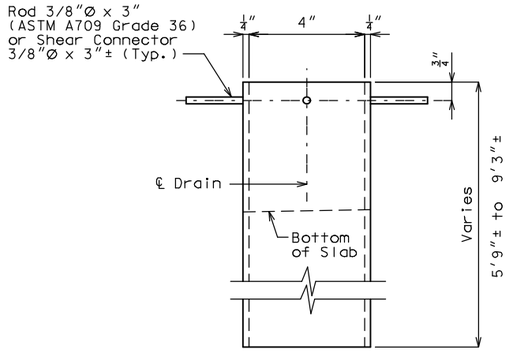


① Use backer rod around drain @ bottom of slab and epoxy inject from the top.
② Use ⅛ WEB DEPTH

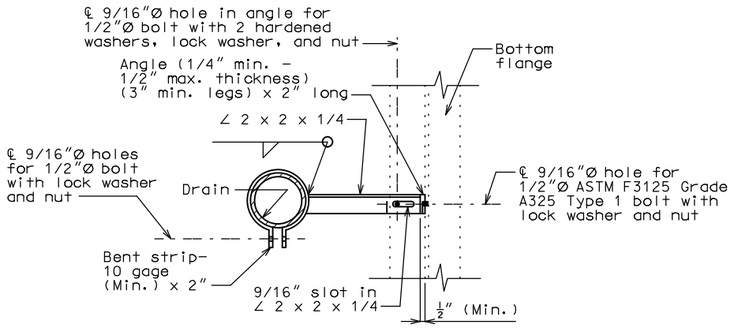
PART SECTION NEAR DRAIN



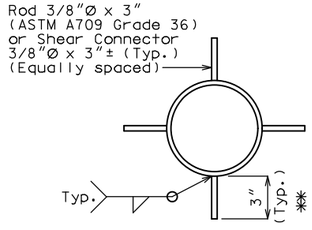
PART PLAN OF SLAB AT DRAIN



ELEVATION OF DRAIN

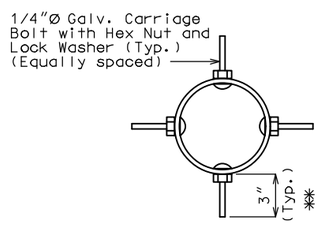


PART SECTION SHOWING
BRACKET ASSEMBLY



PLAN OF DRAIN

✱✱ Notch existing concrete to accept.



PLAN OF OPTIONAL FRP DRAIN

General Notes:

Contractor shall have the option to construct either steel or Fiberglass Reinforced Polymer (FRP) slab drains. All drains shall be of same type.

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

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 A153.

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

Cost of cored slab drains, complete in place, will be considered completely covered by the contract unit price for Cored Slab Drain per each.

Holes for slab drains shall be cored. Percussion drilling will not be permitted.

Slab drain locations may be shifted the minimum extent necessary to avoid slab reinforcement and to allow for field drilling bolt hole in web of existing girder for bracket assembly attachment.

Cored slab drains shall be placed vertically.

For details of plugging existing curb outlets, see Sheet No. 1.

Notes for Steel Drain:

Slab drains may be fabricated from 1/4" structural steel pipe ASTM A500 or A501.

The drains shall be galvanized in accordance with ASTM A123.

Drains shall be inserted through slab such that damage to galvanized coating is minimized.

Notes for FRP Drain:

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

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. Care shall be taken to avoid damage to exterior coating during installation.

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.

STATE OF MISSOURI
JEAN MARIE LaKEMPER
NUMBER PE-2007013389
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED, AND DATED ELECTRONICALLY

DATE PREPARED 8/5/2021
ROUTE 42 | STATE MO
DISTRICT BR | SHEET NO. 5
COUNTY MARIES
JOB NO. J5S3284
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A25501

DESCRIPTION | DATE

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

EDSI
ENGINEERING DESIGN SOURCE, INC.
6641 SINGLETON RIDGE RD., SUITE 300
CAMDENTON, MO 65020
TEL: (636) 537-5585
MISSOURI STATE ENGINEERING COMPANY
CERTIFICATE OF AUTHORITY #001523

CORED SLAB DRAINS

Detailed AUG. 2020
Checked MAY 2021

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

N:\E20019 B&W_MoDOT_CD Bridge Bundle 1\08_Drawings\B_A25501_04-05_J5S3284_SLABDRAINS.dgn 5:24:51 PM 8/5/2021

SEC/SUR 11 TWP 45N RGE 6W

U.I.P. AND REHABILITATE (50'-81.4'-81.4') PRESTRESSED CONCRETE I-GIRDER SPANS (120'-150'-120') CONTINUOUS COMPOSITE PLATE GIRDER SPANS (82'-82')(81.4'-50'-50') PRESTRESSED CONCRETE I-GIRDER SPANS

Estimated Quantities

Item		Total
Fill Voids Under Bent	cu. yard	2
Protective Coating - Concrete Bents and Piers (Urethane)	lump sum	1
Protective Coating - Concrete Bents and Piers (Epoxy)	lump sum	1
Surface Preparation for Recoating Structural Steel	sq. foot	1100
Field Application of Inorganic Zinc Primer	sq. foot	1100
Intermediate Field Coat (System G)	sq. foot	1100
Finish Field Coat (System G)	sq. foot	1100
Surface Preparation for Applying Epoxy-Mastic Primer	lump sum	1
Aluminum Epoxy-Mastic Primer	lump sum	1
Open Cell Foam Joint Seal	linear foot	57

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

General Notes:

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

Structural Steel Protective Coatings:
Protective Coating: System G in accordance with Sec 1081. All existing structural steel within 10'-0" from ℄ Expansion Joint at Intermediate Bents No. 4 & 7 shall be recoated. Within these limits, items to be recoated include girders, diaphragms, stiffeners, bearings and miscellaneous structural steel.

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

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

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

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

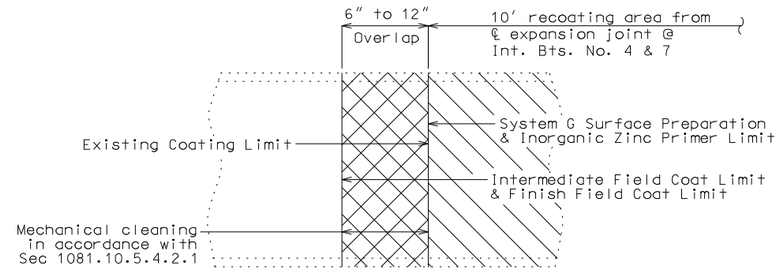
Protective coating for concrete bents and piers (Epoxy) shall be applied as shown on the bridge plans and in accordance with Sec 711.

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

Contractor shall verify all dimensions in field before ordering new material.

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

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



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

REPAIRS TO BRIDGE: ROUTE 100 OVER GASCONADE RIVER

ROUTE 100 FROM ROUTE N TO ROUTE J
ABOUT 3.4 MILES NORTHWEST OF ROUTE J
BEGIN STA. 175+40.40± (MATCH EXIST.) (ROUTE 100)

Detailed June 2021
Checked June 2021

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

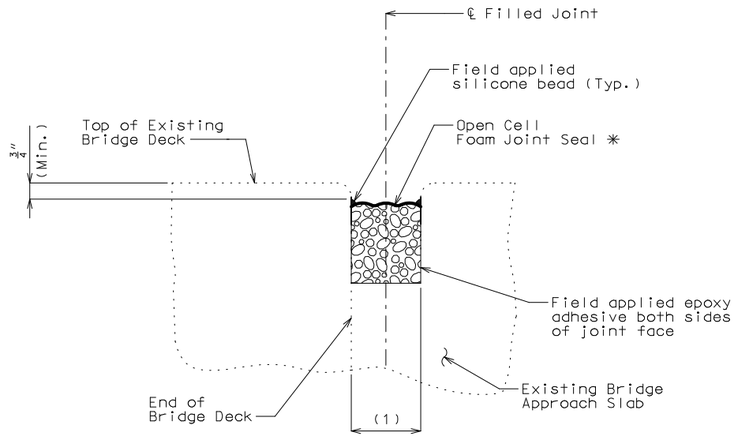
STATE OF MISSOURI
CHRISTOPHER J. CRISWELL
NUMBER PE-028605
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 8/10/2021
ROUTE 100 | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY GASCONADE
JOB NO. J5S3284
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A47351

DESCRIPTION | DATE

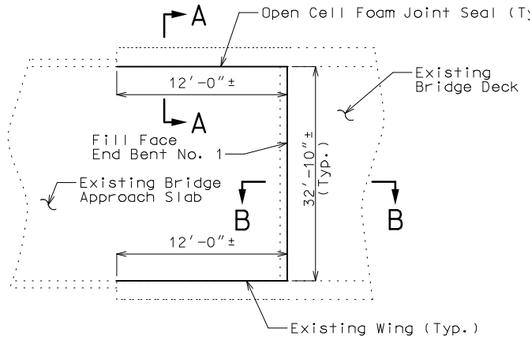
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

Bartlett & West
1719 SOUTHRIDGE DR. SUITE 100 - JEFFERSON CITY, MO 65109-4000
PHONE 573-634-3181
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM

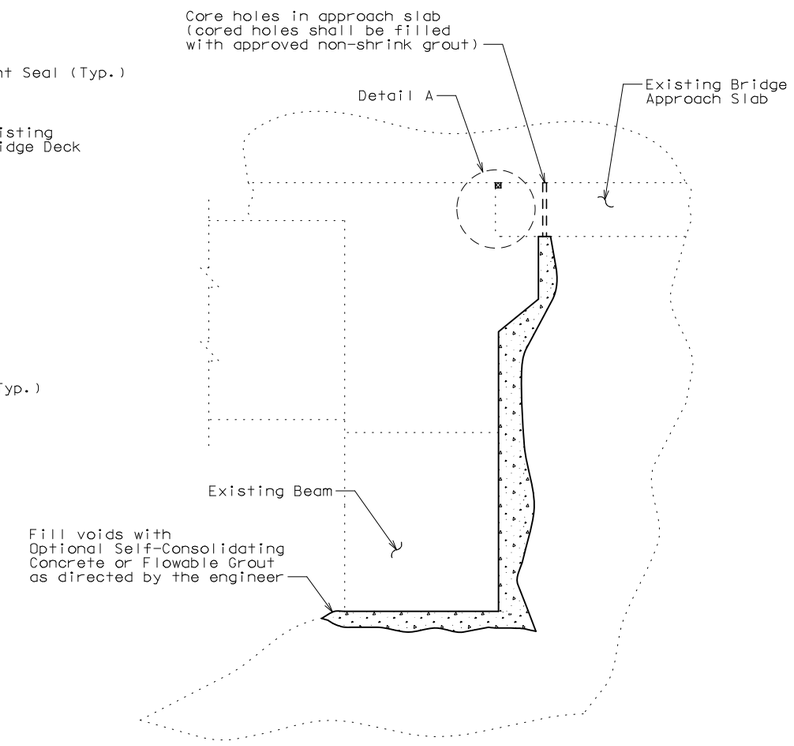


DETAIL A

SKEW = 0°
✳ Manufacturer's recommended size



PART PLAN SHOWING OPEN CELL FOAM JOINT SEAL AT END BENT NO. 1



Notes:

Joint seal between Fill Face of End Bent No. 1 and approach slab shown, joint seal between wings and approach slab similar.

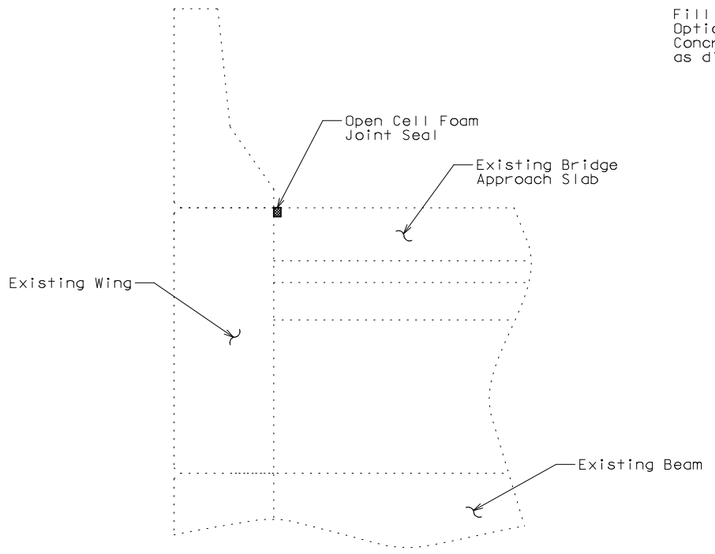
Extend seal full width of approach slab and full length of wings.

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

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

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

Any removals necessary and anything incidental to install Open Cell Foam Joint Seal will be considered completely covered by the contract unit price for Open Cell Foam Joint Seal.



PART SECTION A-A THRU WING SHOWING DETAILS OF OPEN CELL FOAM JOINT SEAL

(Typ. both wings)

Movement Parallel to Rdwy	Movement Normal to Joint	Min. Jt. Width (Normal to Joint)	Max. Jt. Width (Normal to Joint)	(1) Allowed Installation Gap (±) Normal to Joint at Roadway Surface at Air/Surface Temperature				Manufacturer	Seal Name
				@ 40°F	@ 50°F	@ 60°F	@ 70°F		
½"	½"	¾"	1 ¼"	1"	1"	1"	1"		

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

PART SECTION B-B THRU END BENT NO. 1 SHOWING DETAILS OF FILLING VOIDS & OPEN CELL FOAM JOINT SEAL

Notes for Filling Voids:

Voids to be filled will be determined by the engineer.

Before beginning this work, the contractor shall submit to the engineer the method of operation to perform this work.

The contractor shall core holes in the bridge approach slab to fill voids behind and under the end bent.

Voids shall be filled with either self-consolidating concrete or flowable grout at contractor's option. Self-consolidating concrete shall be in accordance with Special Provisions. Flowable grout shall be in accordance with Sec 1066. Contractor shall verify that the consistency of the flowable grout permits the void to be filled without the use of a vibrator and with no segregation.

Any voids remaining after filling through cored holes shall be filled from the front face of the end bent. Voids shall be filled to the satisfaction of the engineer.

Cost of any excavation, coring, filling cored holes with non-shrink grout, self-consolidating concrete or flowable grout, and anything incidental to the work will be considered completely covered by the contract unit price for Fill Voids Under Bent to the nearest cubic yard.

The extent of voids may vary, but the contract unit price shall prevail regardless of the variation.

DETAILS SHOWING OPEN CELL FOAM JOINT SEAL AND FILLING VOIDS

Detailed June 2021
Checked June 2021

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

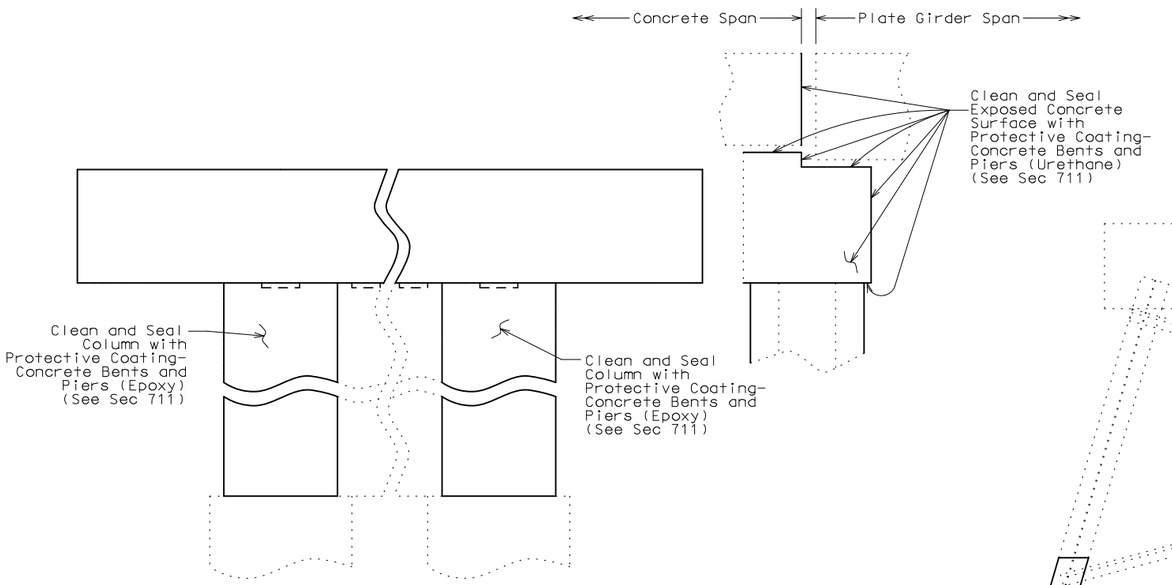
STATE OF MISSOURI
CHRISTOPHER J. CRISWELL
NUMBER PE-026605
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 6/2/2021
ROUTE 100 | STATE MO
DISTRICT BR | SHEET NO. 2
COUNTY GASCONADE
JOB NO. J5S3284
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A47351

DESCRIPTION | DATE

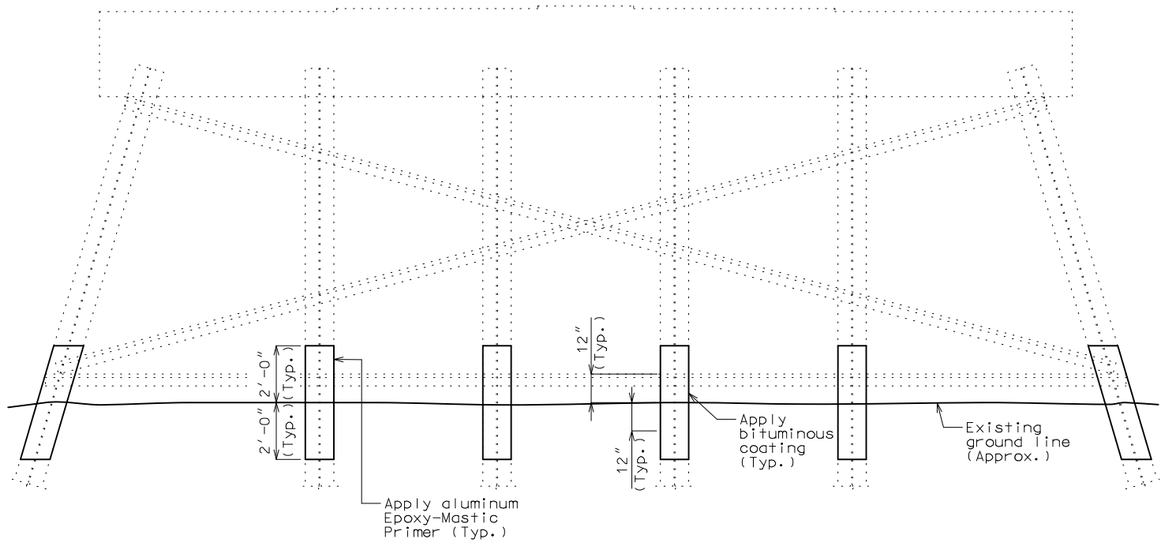
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
MoDOT
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

Bartlett & West
1719 SOUTHRIDGE DR. SUITE 100 - JEFFERSON CITY, MO 65109-4000
PHONE 573-634-3181
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM

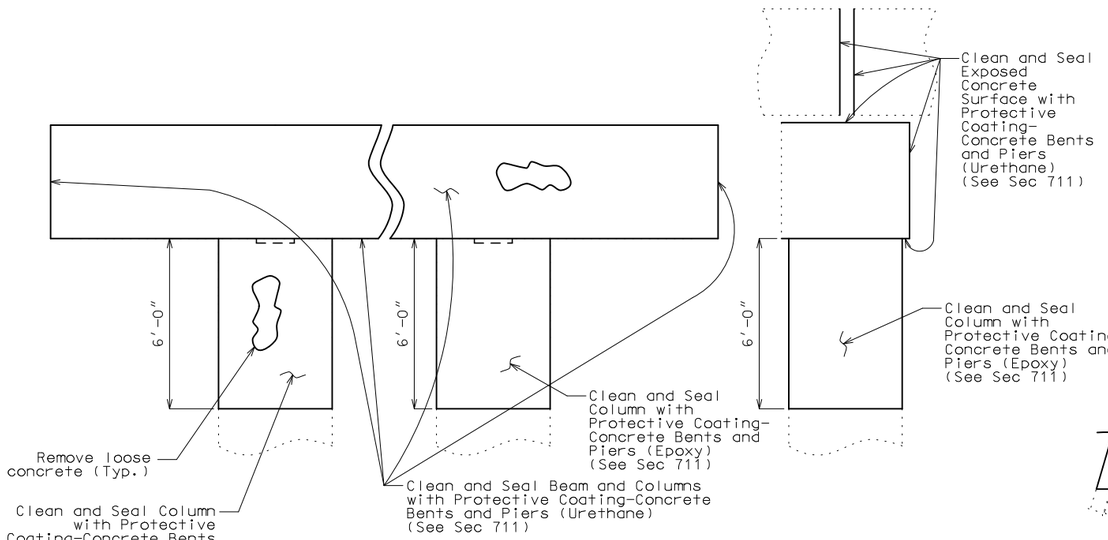


PART ELEVATION OF INT. BENTS NO. 4 AND NO. 7
SHOWING LIMITS OF PROTECTIVE COATING

Note: Bridge deck and finger plate expansion device are not shown for clarity.

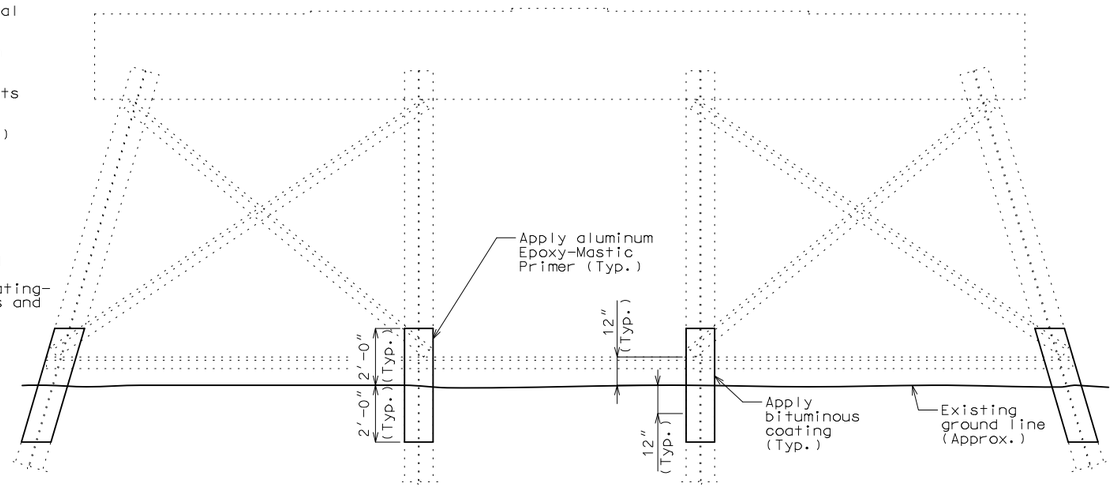


ELEVATION OF INTERMEDIATE BENT NO. 10
SHOWING PROTECTIVE COATING ON EXISTING PILES



PART ELEVATION OF INT. BENT NO. 9
SHOWING LIMITS OF PROTECTIVE COATING

Note: Bridge deck and superstructure are not shown for clarity.



ELEVATION OF INTERMEDIATE BENT NO. 11
SHOWING PROTECTIVE COATING ON EXISTING PILES

Detailed June 2021
Checked June 2021

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

STATE OF MISSOURI
CHRISTOPHER J. CRISWELL
NUMBER PE-026605
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 8/5/2021
ROUTE 100 | STATE MO
DISTRICT BR | SHEET NO. 3
COUNTY GASCONADE
JOB NO. J5S3284
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A47351

DESCRIPTION | DATE

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

Bartlett & West
1719 SOUTHRIDGE DR, SUITE 100 - JEFFERSON CITY, MO 65109-4000
PHONE 573-634-3181
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
WWW.BARTLETTWEST.COM

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
PLANS FOR PROPOSED
STATE HIGHWAY
OSAGE COUNTY

DESIGN DESIGNATION

A.A.D.T. – 2018 = 1,573
A.A.D.T. – 2038 = 2,281
T = 10%
V = 55 M.P.H.

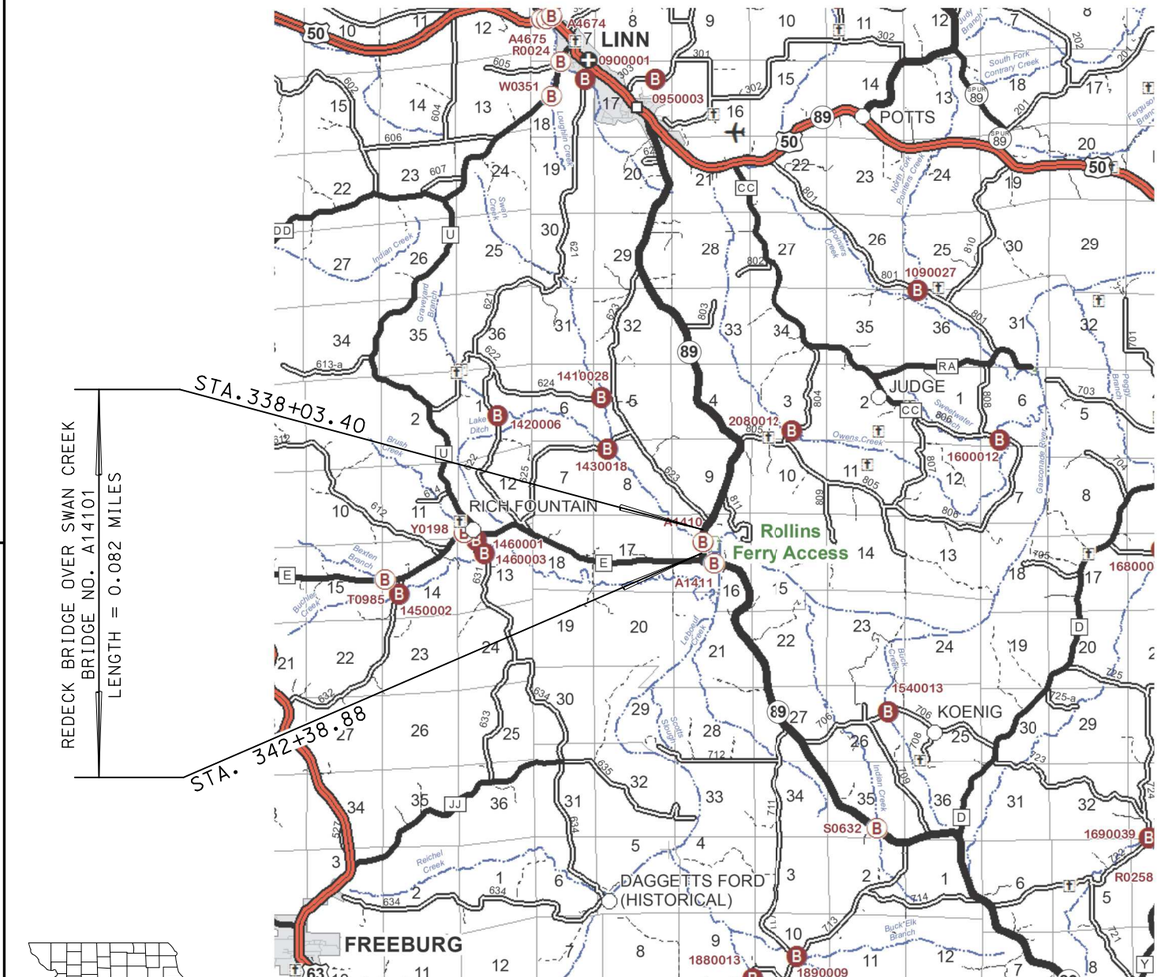
FUNCTIONAL CLASSIFICATION – MAJOR COLLECTOR
MINOR ROADWAY

NO RIGHT OF WAY

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	
(U.I.P.)	USE IN PLACE	

NOTE: DASHED OR OPEN SYMBOLS INDICATE EXISTING FEATURES



KEY MAP
SHOWING LOCATION OF OSAGE 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) (2 SHEETS)	2
QUANTITIES (QU) (2 SHEETS)	3
PLAN-PROFILE (PP)	4
SPECIAL SHEETS (SS)	5
TRAFFIC CONTROL SHEETS (TC)	6-8
EROSION CONTROL SHEETS (EC)	9
BRIDGE DRAWINGS (B)	
A14101	1-9

LENGTH OF PROJECT

BEGINNING OF PROJECT	STA. 338+03.40	
END OF PROJECT	STA. 342+38.88	
APPARENT LENGTH	435.48	FEET

EQUATIONS AND EXCEPTIONS:
NONE

TOTAL CORRECTIONS	0.00	FEET
NET LENGTH OF PROJECT	435.48	FEET
STATE LENGTH	0.082	MILES
FOR INFORMATION ONLY ESTIMATED DISTURBED ACRES	0.15	ACRES

STATE OF MISSOURI
MARIA K. PETERS
NUMBER PE-2000162118
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED: 8/3/2021

ROUTE	STATE
89	MO
DISTRICT	SHEET NO.
CD	1

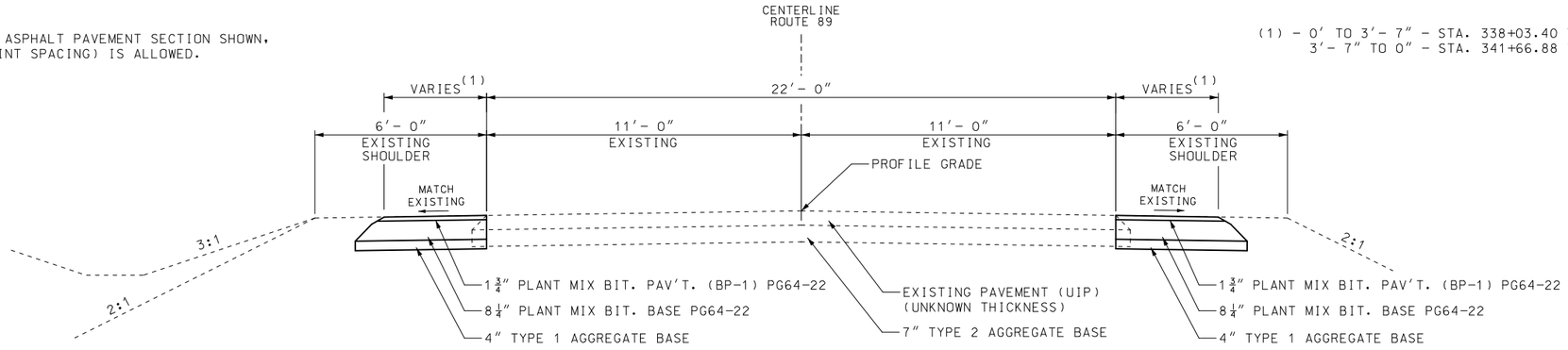
COUNTY: OSAGE
JOB NO.: J5S3344
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A14101

DESCRIPTION	DATE

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

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

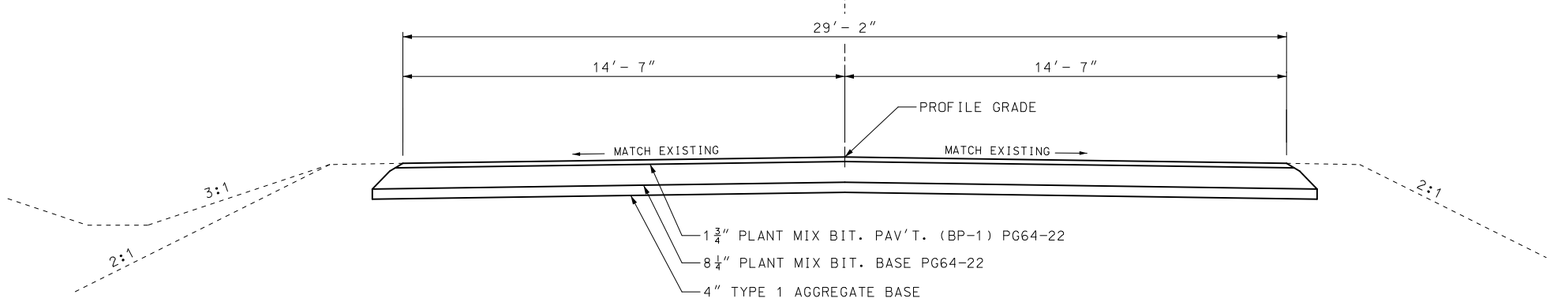
NOTE: IN LIEU OF THE 10" ASPHALT PAVEMENT SECTION SHOWN, AN 8" PCCP (15' JOINT SPACING) IS ALLOWED.



(1) - 0' TO 3'- 7" - STA. 338+03.40 TO STA. 338+75.40
3'- 7" TO 0" - STA. 341+66.88 TO STA. 342+38.88

PROPOSED SECTION ON TANGENT
TYPICAL SECTION RTE. 89
STA. 338+03.40 TO STA. 338+75.40
STA. 341+66.88 TO STA. 342+38.88

NOTE: IN LIEU OF THE 10" ASPHALT PAVEMENT SECTION SHOWN, AN 8" PCCP (15' JOINT SPACING) IS ALLOWED.



PROPOSED SECTION ON TANGENT
TYPICAL SECTION RTE. 89 - ROADWAY APPROACH PAVEMENT
STA. 338+75.40 TO STA. 338+97.20
STA. 341+45.08 TO STA. 341+66.88

NOT TO SCALE

TYPICAL SECTION
SHEET 1 OF 2

STATE OF MISSOURI
MARIA K. PETERS
NUMBER PE-2000162118
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

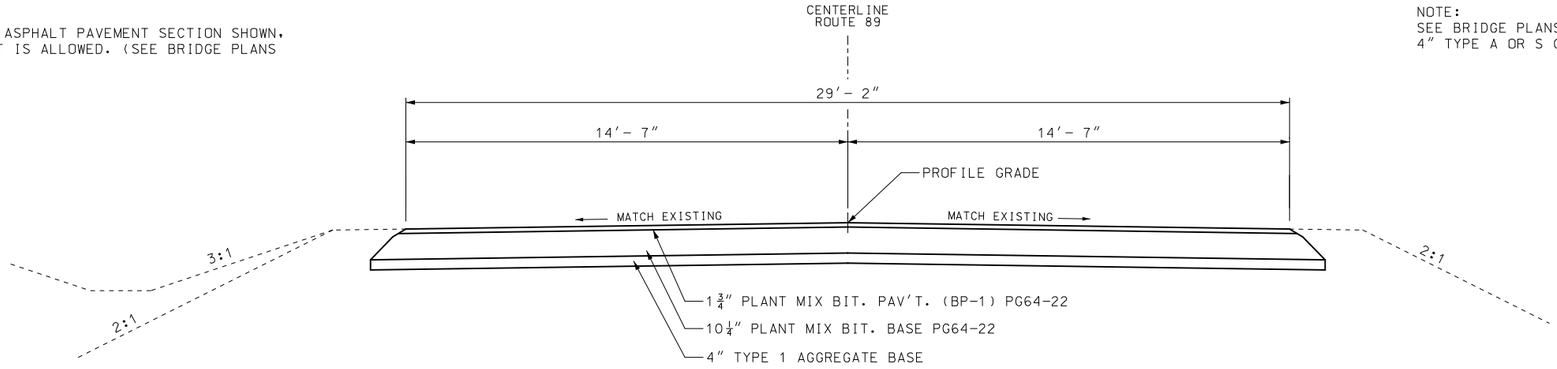
DATE PREPARED 8/3/2021
ROUTE 89 | STATE MO
DISTRICT CD | SHEET NO. 2
COUNTY OSAGE
JOB NO. J5S3344
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A14101

DESCRIPTION | DATE

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

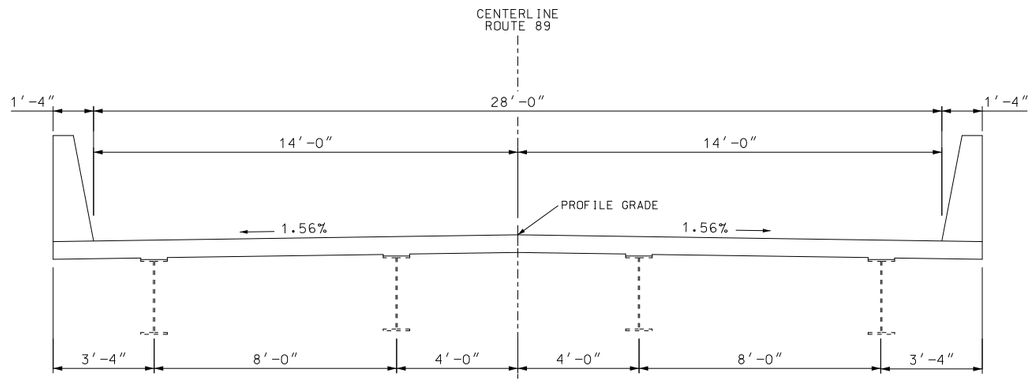
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

NOTE: IN LIEU OF THE 12" ASPHALT PAVEMENT SECTION SHOWN, AN 12" PCC PAVEMENT IS ALLOWED. (SEE BRIDGE PLANS FOR DETAILS).



NOTE:
SEE BRIDGE PLANS FOR DETAILS OF 4" TYPE A OR S CURB AT BRIDGE.

PROPOSED SECTION ON TANGENT
TYPICAL SECTION RTE. 89 - BRIDGE APPROACH SLAB (MINOR ROAD)(BRIDGE ITEM)
STA. 338+97.20 TO STA. 339+17.20
STA. 341+25.08 TO STA. 341+45.08



PROPOSED SECTION ON TANGENT
TYPICAL SECTION RTE. 89 - BR. A14101
STA. 339+17.20 TO STA. 341+25.08

NOT TO SCALE

TYPICAL SECTION
SHEET 2 OF 2

STATE OF MISSOURI
MARIA K. PETERS
NUMBER PE-2000162118
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED: 8/3/2021
ROUTE: 89 | STATE: MO
DISTRICT: CD | SHEET NO.: 2
COUNTY: OSAGE
JOB NO.: J5S3344
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A14101

DESCRIPTION	DATE

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

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

REMOVAL OF IMPROVEMENTS

STATION TO STATION		ITEM	QUANTITY	REMARKS
338+75.40		FULL DEPTH SAW CUT	22 FT.	
338+75.40	339+17.20	EXISTING PAVEMENT	102.2 S.Y.	
339+17.20		OBJECT MARKERS & POSTS	2 SIGNS	AT BRIDGE ENDS
338+19.00	339+10.00	EXISTING GUARDRAIL	91 L.F.	RIGHT SIDE
338+94.00	339+22.00	EXISTING GUARDRAIL	28 L.F.	LEFT SIDE
341+19.00	341+46.00	EXISTING GUARDRAIL	28 L.F.	RIGHT SIDE
341+32.00	344+47.00	EXISTING GUARDRAIL	316 L.F.	LEFT SIDE
341+25.08		OBJECT MARKERS & POSTS	2 SIGNS	AT BRIDGE ENDS
341+25.08	341+66.88	EXISTING PAVEMENT	102.2 S.Y.	
341+66.88		FULL DEPTH SAW CUT	22 FT.	
		TOTAL	1 LUMP SUM	

OPTIONAL PAVEMENT (10" HMA OR 8" PCCP)

STATION TO STATION		LOCATION	LENGTH (FT)	WIDTH (FT)	AREA (SY)	REMARKS
338+03.40	338+75.40	RTE. 89 LT. & RT.	72.0	VAR.	28.64	TAPERS - WIDTH VARIES 0' TO 3.58'
338+75.40	338+97.20	RTE. 89	21.8	29.17	70.65	
341+45.08	341+66.88	RTE. 89	21.8	29.17	70.65	
341+66.88	342+38.88	RTE. 89 LT. & RT.	72.0	VAR.	28.64	TAPERS - WIDTH VARIES 3.58' TO 0'
				TOTAL	198.58	
				USE	198.6	

TYPE 1 AGGREGATE FOR BASE (4 IN. THICK)

STATION TO STATION		LOCATION	LENGTH (FEET)	WIDTH (FT)	AREA (SY)	REMARKS
338+03.40	338+75.40	RTE. 89 LT. & RT.	72.0	VAR.	28.6	TAPERS - WIDTH VARIES 0' TO 3.58'
338+75.40	338+97.20	RTE. 89	21.8	29.17	70.7	
341+45.08	341+66.88	RTE. 89	21.8	29.17	70.7	
341+66.88	342+38.88	RTE. 89 LT. & RT.	72.0	VAR.	28.6	TAPERS - WIDTH VARIES 3.58' TO 0'
				TOTAL	198.6	
				USE	199	

GUARDRAIL

STATION TO STATION		LOCATION	MGS GUARDRAIL (LF)	TYPE A CRASHWORTHY END TERMINAL (MASH) (EA)	MGS BRIDGE TRANSITION SECTION (EA)	SHAPING SLOPES CLASS III (100 FT)	REMARKS
337+85.53	339+11.28	RTE. 89 - RT.	37.5	1	1	1.3	
338+23.58	339+24.33	RTE. 89 - LT.	12.5	1	1	1.0	
341+17.95	342+18.70	RTE. 89 - RT.	12.5	1	1	1.0	
341+31.00	344+56.61	RTE. 89 - LT.	237.5	1	1	3.3	
		TOTAL	300	4	4	6.5	
		USE	300	4	4	7	

PERMANENT PAVEMENT MARKING

STATION TO STATION		LENGTH (FT)	WHITE WATERBORNE 4" SOLID, TYPE P BEADS (LF)	YELLOW WATERBORNE 4 " SOLID, TYPE P BEADS (LF)	REMARKS
338+03.40	342+38.88	435.5	871.0	108.9	MATCH EXISTING - EDGELINE & INT. CENTERLINE
		TOTAL	871.0	108.9	
		USE	871	109	

TYPE 2 ROCK BLANKET

STATION TO STATION		LOCATION	FURNISHING TYPE 2 ROCK BLANKET (CY)	PLACING TYPE 2 ROCK BLANKET (CY)	PERMANENT EROSION CONTROL GEOTEXTILE (SY)	REMARKS
339+17.20	339+27.20	RTE. 89	50.0	50.0	105.4	NORTH END OF BRIDGE A1410
341+15.08	341+25.08	RTE. 89	50.0	50.0	105.4	SOUTH END OF BRIDGE A1410
		TOTAL	100.0	100.0	210.8	
		USE	100	100	211	

EROSION CONTROL

STATION TO STATION		LOCATION	SILT FENCE (LF)	ROCK DITCH CHECK (LF)	SEDIMENT REMOVAL (CY)	REMARKS
338+03.40	339+68.00	RTE. 89 - LT. & RT.	441.0	4.4		
340+71.00	342+38.88	RTE. 89 - LT. & RT.	440.0	4.4		
339+63.00		RTE. 89 - LT.		13	1	IN EXIST. DITCH
340+85.00		RTE. 89 - RT.		14	1	IN EXIST. PAVED DITCH
342+20.00		RTE. 89 - LT.		20	1	IN EXIST. DITCH
		TOTAL	881.0	55.8	3.0	
		USE	881	56	3	

SEEDING AND MULCH

LOCATION	COOL SEASON MIX (AC)	REMARKS
NORTH SIDE - BRIDGE #A14101	0.05	ESTIMATED 10' WIDTH ON EACH SIDE OF ROAD
SOUTH SIDE - BRIDGE #A14101	0.05	ESTIMATED 10' WIDTH ON EACH SIDE OF ROAD
TOTAL	0.10	
USE	1 LUMP SUM	

MOBILIZATION

1 LUMP SUM

TYPE 1 ROCK DITCH LINER

STATION	LOCATION	FURNISHING TYPE 1 ROCK DITCH LINER (CY)	REMARKS
339+16.73	RTE. 89 - LT.	1.3	DRAIN FLUME
339+03.67	RTE. 89 - RT.	1.2	DRAIN FLUME
	TOTAL	2.5	
	USE	3	

SUBGRADING AND SHOULDERING CLASS 1

STATION TO STATION		LOCATION	LENGTH (100 FT)	REMARKS
338+03.40	339+17.20	RTE. 89	1.14	
341+25.08	342+38.88	RTE. 89	1.14	
		TOTAL	2.3	
		USE	2	

SUMMARY OF QUANTITIES
SHEET 1 OF 2

STATE OF MISSOURI
MARIA K. PETERS
NUMBER PE-2000162118
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 8/3/2021
ROUTE 89 | STATE MO
DISTRICT CD | SHEET NO. 3
COUNTY OSAGE
JOB NO. J5S3344
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A14101

DESCRIPTION | DATE

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

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

EFFECTIVE: 04-01-2021

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL AREA SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NUM.	DESCRIPTION
WARNING SIGNS								
W01-1L	48X48	16.00						TURN (SYMBOL LEFT ARROW)
W01-1R	48X48	16.00						TURN (SYMBOL RIGHT ARROW)
W01-2L	48X48	16.00						CURVE (SYMBOL LEFT ARROW)
W01-2R	48X48	16.00						CURVE (SYMBOL RIGHT ARROW)
W01-3L	48X48	16.00						REVERSE TURN (SYMBOL LEFT ARROW)
W01-3R	48X48	16.00						REVERSE TURN (SYMBOL RIGHT ARROW)
W01-4L	48X48	16.00						REVERSE CURVE (SYMBOL LEFT ARROW)
W01-4R	48X48	16.00						REVERSE CURVE (SYMBOL RIGHT ARROW)
W01-4bL	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL LT ARROWS)
W01-4bR	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL RT ARROWS)
W01-4cL	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL LT ARROWS)
W01-4cR	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL RT ARROWS)
W01-6	60X30	12.50						HORIZONTAL ARROW (SYMBOL)
W01-6a	72X36	18.00						HORIZ. ARROW (SYMBOL ON PERMANENT BARRICADE)
W01-7	60X30	12.50						DOUBLE HEAD HORIZONTAL ARROW (SYMBOL)
W01-7a	72X36	18.00						DOUBLE HEAD HORIZ. ARROW (SYMBOL ON PERM. BARR.)
W01-8	18X24	3.00						CHEVRON (SYMBOL)
W01-8a	30X36	7.50						CHEVRON (SYMBOL FOR DIVIDED HIGHWAYS)
W03-1	48X48	16.00						STOP AHEAD (SYMBOL)
W03-2	48X48	16.00						YIELD AHEAD (SYMBOL)
W03-3	48X48	16.00						SIGNAL AHEAD (SYMBOL)
W03-4	48X48	16.00						BE PREPARED TO STOP
W03-5	48X48	16.00						SPEED LIMIT AHEAD
W04-1L	48X48	16.00						MERGE (SYMBOL FROM LEFT)
W04-1R	48X48	16.00						MERGE (SYMBOL FROM RIGHT)
W04-1aL	48X48	16.00						MERGE (ARROW SYMBOL)
W04-1aR	48X48	16.00						MERGE (ARROW SYMBOL)
W05-1	48X48	16.00						ROAD/BRIDGE/RAMP NARROWS
W05-3	48X48	16.00						ONE LANE BRIDGE
W05-5	48X48	16.00						NARROW LANES
W06-1	48X48	16.00						DIVIDED HIGHWAY (SYMBOL)
W06-2	48X48	16.00						DIVIDED HIGHWAY END (SYMBOL)
W06-3	48X48	16.00						TWO WAY TRAFFIC (SYMBOL)
W07-3a	30X24	5.00						NEXT XX MILES (PLAQUE)
W08-1	48X48	16.00						BUMP
W08-2	48X48	16.00						DIP
W08-3	48X48	16.00						PAVEMENT ENDS
W08-4	48X48	16.00						SOFT SHOULDER
W08-5	48X48	16.00						SLIPPERY WHEN WET (SYMBOL)
W08-6	48X48	16.00						TRUCK CROSSING (WITH FLAGS)
W08-6c	48X48	16.00						TRUCK ENTRANCE
W08-7	36X36	9.00						LOOSE GRAVEL
W08-7a	36X36	9.00						FRESH OIL/LOOSE GRAVEL
W08-9	48X48	16.00						LOW SHOULDER
W08-11	48X48	16.00						UNEVEN LANES
W08-12	48X48	16.00						NO CENTER LINE
W08-15	48X48	16.00						GROOVED PAVEMENT
W08-15P	30X24	5.00						MOTORCYCLE (PLAQUE)
W08-17	48X48	16.00						SHOULDER DROP-OFF (SYMBOL)
W08-17P	30X24	5.00						SHOULDER DROP-OFF (PLAQUE)
W10-1	42RND.	9.62						RAILROAD CROSSING
W012-1	24X24	4.00						DOUBLE DOWN ARROW (SYMBOL)
W012-2	48X48	16.00						LOW CLEARANCE (SYMBOL)
W012-2X	24X18	3.00						LOW CLEARANCE (PLAQUE)
W012-2a	84X24	14.00						OVERHEAD LOW CLEARANCE (FEET AND INCHES)
W012-4	120X60	50.00						LOW CLEARANCE XX FT XX IN XX MILES AHEAD
W012-5	120X60	50.00						WIDTH RESTRICTION XX FT XX IN XX MILES AHEAD
W013-1	30X30	6.25						ADVISORY SPEED (PLAQUE)
W016-2	30X24	5.00	2	10		19.21		XXX FEET (PLAQUE) **1-600 FT & 1-1000 FT.**
W016-3	30X24	5.00						X MILE (PLAQUE)
W020-1	48X48	16.00						ROAD/BRIDGE/RAMP WORK AHEAD
W020-2	48X48	16.00	2	32		18		DETOUR AHEAD
W020-3	48X48	16.00	4	64		19,20,21		ROAD CLOSED AHEAD
W020-4	48X48	16.00						ONE LANE ROAD AHEAD
W020-5	48X48	16.00						RIGHT/CENTER/LEFT LANE CLOSED AHEAD
W020-5a	48X48	16.00						2 RIGHT/CENTER/LEFT LANES CLOSED AHEAD
W020-6a	48X48	16.00						RIGHT/CENTER/LEFT LANE CLOSED
W020-7a	48X48	16.00						FLAGGER (SYMBOL, WITH FLAGS)
W021-2	36X36	9.00						FRESH OIL
W021-5	48X48	16.00						SHOULDER WORK AHEAD
W022-1	48X48	16.00						BLASTING ZONE AHEAD
W022-2	42X36	10.50						TURN OFF 2-WAY RADIO AND PHONE
W022-3	42X36	10.50						END BLASTING ZONE
G022-1	21X15	2.19						WET PAINT (ARROW PIVOTS)

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NUM.	DESCRIPTION
GUIDE SIGNS								
E05-1	36X48	12.00						GORE EXIT
E05-2	48X36	12.00						EXIT OPEN
E05-2a	48X36	12.00						EXIT CLOSED
G020-1	60X24	10.00						ROAD WORK NEXT XX MILES
G020-2	48X24	8.00						END ROAD WORK
G020-4	36X18	4.50						PILOT CAR FOLLOW ME
G020-4a	42X30	8.75						PILOT CAR IN USE WAIT & FOLLOW
G020-4a	18X12	1.50						PILOT CAR IN USE WAIT & FOLLOW
G020-5aP	36X24	6.00						WORK ZONE (PLAQUE)
M04-8a	24X18	3.00	2	6			52	END DETOUR
M04-9L	48X36	12.00						DETOUR (LEFT ARROW)
M04-9R	48X36	12.00						DETOUR (RIGHT ARROW)
M04-9P	48X12	4.00						STREET NAME (PLAQUE)
M04-10L	48X18	6.00						DETOUR (ARROW LEFT)
M04-10R	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
R4-8a	36X48	12.00						KEEP LEFT (HORIZONTAL ARROW)
R4-7a	36X48	12.00						KEEP RIGHT (HORIZONTAL ARROW)
R5-1	30X30	6.25						DO NOT ENTER
R5-1a	36X24	6.00						WRONG WAY
R6-1L	54X18	6.75						ONE WAY ARROW (LEFT)
R6-1R	54X18	6.75						ONE WAY ARROW (RIGHT)
R6-2L	24X30	5.00						ONE WAY (LEFT)
R6-2R	24X30	5.00						ONE WAY (RIGHT)
R9-9	24X12	2.00						SIDEWALK CLOSED
R9-11L	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW LEFT) CROSS HERE
R9-11R	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW RIGHT) CROSS HERE
R10-6	24X36	6.00						STOP HERE ON RED (45° ARROW)
R11-2	48X30	10.00	2	20			29	ROAD CLOSED
R11-3a	60X30	12.50	1	12.50			53	ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY **6 MILES**
R11-4	60X30	12.50	1	12.50			54	ROAD CLOSED TO THRU TRAFFIC
CONST-3A	60X48	20.00						FINE SIGN
CONST-3X	56X12	4.67						SPEEDING/PASSING (PLATE)
MISCELLANEOUS SIGNS								
CONST-5	48X36	12.00						POINT OF PRESENCE
CONST-5	96X48	32.00	2	64			22	POINT OF PRESENCE
CONST-7	48X24	8.00						RATE OUR WORK ZONE
CONST-7	72X36	18.00						RATE OUR WORK ZONE
CONST-8	48X36	12.00						WORK ZONE NO PHONE ZONE
	36X78	19.50	13	253.50			50A	DETOUR-SOUTH-89-STRAIGHT
	36X78	19.50	2	39			50B	DETOUR-SOUTH-89-ADVANCE LEFT
	36X78	19.50	2	39			50C	DETOUR-SOUTH-89-LEFT
	36X78	19.50	11	214.50			50D	DETOUR-NORTH-89-STRAIGHT
	36X78	19.50	2	39			50E	DETOUR-NORTH-89-ADVANCE RIGHT
	36X78	19.50	1	19.50			50F	DETOUR-NORTH-89-RIGHT

616-10.05 CONSTRUCTION SIGNS	TOTAL 826
616-10.10 RELOCATED SIGNS	TOTAL 0

ITEM NUMBER	TOTAL QTY	DESCRIPTION
6122008		IMPACT ATTENUATOR 40 MPH (SAND BARRELS)
6122009		IMPACT ATTENUATOR 45 MPH (SAND BARRELS)
6122010		IMPACT ATTENUATOR 50 MPH (SAND BARRELS)
6122012		IMPACT ATTENUATOR 55 MPH (SAND BARRELS)
6122014		IMPACT ATTENUATOR 60 MPH (SAND BARRELS)
6122017		IMPACT ATTENUATOR 65 MPH (SAND BARRELS)
6122019		IMPACT ATTENUATOR 70 MPH (SAND BARRELS)
6122020		REPLACEMENT SAND BARREL
6122030		IMPACT ATTENUATOR (RELOCATION)
6123000A		TRUCK OR TRAILER MOUNTED ATTENUATOR (TMA)
6161008	4	ADVANCED WARNING RAIL SYSTEM
6161012		BUOYS (BOATS KEEP OUT)
6161013		BUOYS (NO WAKE)
6161014		SPECIAL SIGN ASSEMBLY (BOATS KEEP OUT)
6161025		CHANNELIZER (TRIM LINE)
6161030	6	TYPE III MOVEABLE BARRICADE
6161033		DIRECTION INDICATOR BARRICADE
6161040		FLASHING ARROW PANEL
6161047		TYPE III OBJECT MARKER
6161051		WARNING LIGHT, TYPE A
6161052		WARNING LIGHT, TYPE B
6161053		WARNING LIGHT, TYPE C
6161055		SEQUENTIAL FLASHING WARNING LIGHT
6161070		TUBULAR MARKER
6161095		RADAR SPEED ADVISORY SYSTEM
6161096		CHANGEABLE MESSAGE SIGN, COMMISSION FURNISHED/RETAINED
6161098A	4	CHANGEABLE MESSAGE SIGN W/O COMM. INTERFACE, CONTRACTOR FURNISHED/RETAINED
6161099		CHANGEABLE MESSAGE SIGN WITH COMM. INTERFACE, CONTRACTOR FURNISHED/RETAINED
6162000A		WORK ZONE TRAFFIC SIGNAL SYSTEM
6162002		TEMPORARY LONG-TERM RUMBLE STRIPS
6162004		TEMPORARY SHORT-TERM RUMBLE STRIPS
6173600D		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/RETAINED
6173602B		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/COMMISSION RETAINED
6174000A		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION
6175010A		RELOCATING TEMPORARY TRAFFIC BARRIER
6176000B		TEMPORARY TRAFFIC BARRIER COMMISSION FURNISHED/RETAINED
6177000B		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION COMMISSION FURNISHED/RETAINED
6208064A		TEMPORARY RAISED PAVEMENT MARKER
9029400		TEMPORARY TRAFFIC SIGNALS
9029401		TEMPORARY TRAFFIC SIGNALS AND LIGHTING

FOCUS ON BRIDGES
FALL 2022

STATE OF MISSOURI
MARIA K. PETERS
NUMBER PE-2009162118
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 8/3/2021

ROUTE	STATE
89	MO
DISTRICT	SHEET NO.
CD	3

COUNTY: OSAGE
JOB NO.: J5S3344
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A14101

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)

SUMMARY OF QUANTITIES
SHEET 2 OF 2

CURVE EXIST89S1
TOTAL PI 331+01.59
SC 328+40.05
CS 333+34.38
TOTAL Δ 37° 13′ 00.0″ (LT)
D 5° 00′ 00.0″
Lc 494.33′
Ls 250.00′
Ts 511.54′
R 1,145.92′
Θs 6° 15′ 00.0″
Xs 249.70′
Ys 9.08′

EXISTING BRIDGE A1410
REMOVE DECK, CURBS, RAILS & ENDPOSTS.
REMOVE BACKWALL & WINGS AT BENTS 1 & 4.
(SEE BRIDGE PLANS).

EXISTING PERM. ESM'T. (450′ X 225′)

EXISTING PERM. ESM'T. (450′ X 225′)

TYPE 2 ROCK BLANKET
2′ DEPTH – 5′ WIDTH
50 C.Y.

DRAIN FLUME – 1.3 C.Y.
TYPE 1 ROCK DITCH LINER

EXIST. R/W

CS STA 333+34.38

ST STA 335+84.38

CURVE EXIST89S1

S 0° 45′ 08″ W

ROUTE 89

BEGIN PROJECT
STA. 338+03.40

END PROJECT
STA. 342+38.88

EQUATION:
Sta 345+00.63 AH =
Sta 345+00.00 BK

SWAN CREEK

DRAIN FLUME – 1.2 C.Y.
TYPE 1 ROCK DITCH LINER

TYPE 2 ROCK BLANKET
2′ DEPTH – 5′ WIDTH
50 C.Y.

EXISTING PERM. ESM'T. (150′ X 786′ ±)

STA. 339+17.20 SK. 25° L.A
REDECK (62′-80′-62′) CONT.COMP.
I-BEAM SPANS. – ROADWAY WIDTH = 28′
SEE BRIDGE DRAWING A14101

GENERAL NOTES:

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.

BEARINGS SHOWN ARE STATE PLANE CENTRAL ZONE.

SCALE
0 50 100 150

+1.20%

600 590 580 570 560
333 334 335 336 337 338 339 340 341 342 343 344 345 346 347

STATE OF MISSOURI
MARIA K. PETERS
NUMBER PE-2009162118
PROFESSIONAL ENGINEER
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DATE PREPARED
8/3/2021

ROUTE	STATE
89	MO
DISTRICT	SHEET NO.
CD	4

COUNTY
OSAGE

JOB NO.
J5S3344

CONTRACT ID.

PROJECT NO.

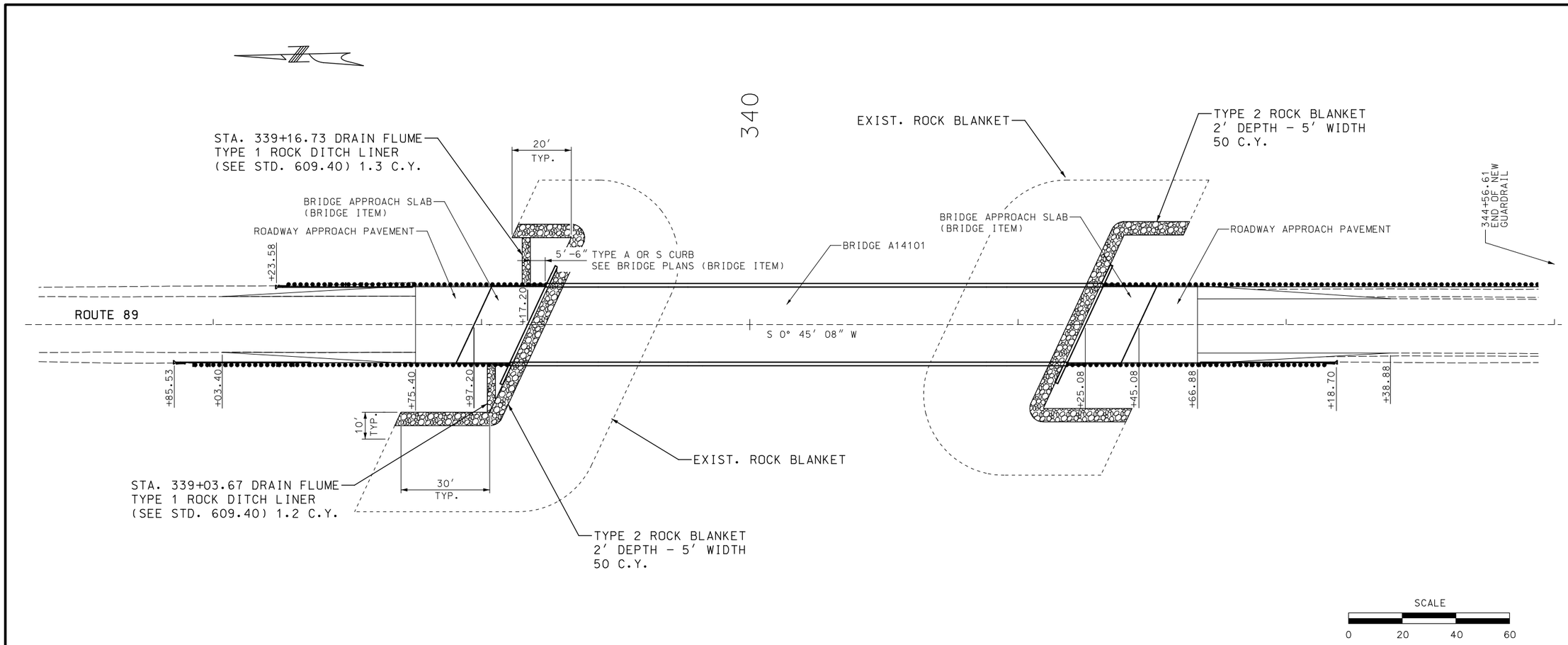
BRIDGE NO.
A14101

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)



STATE OF MISSOURI
MARIA K. PETERS
NUMBER PE-2000162118
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED
8/3/2021

ROUTE	STATE
89	MO
DISTRICT	SHEET NO.
CD	5

COUNTY
OSAGE

JOB NO.
J5S3344

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A14101

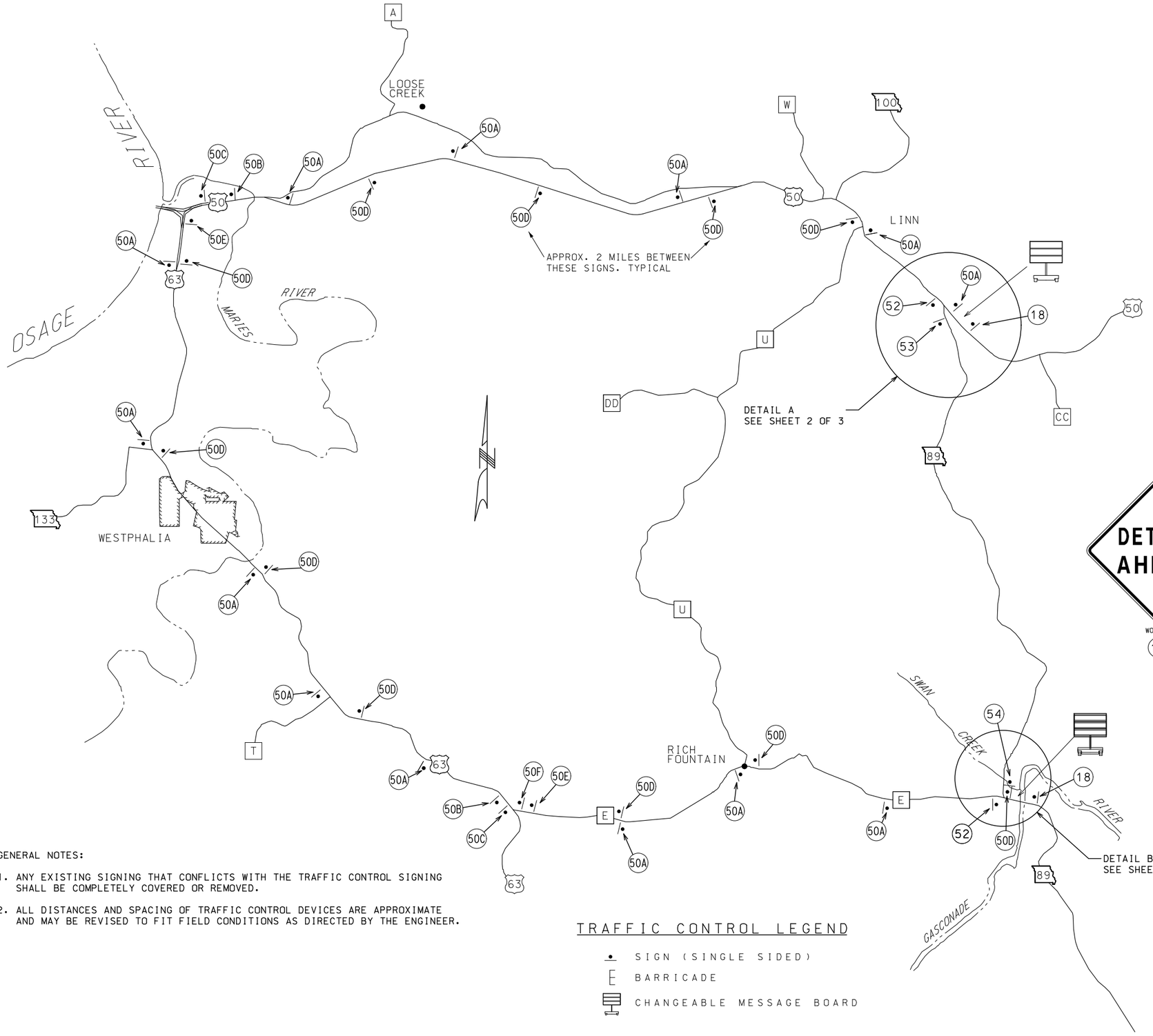
DESCRIPTION	DATE

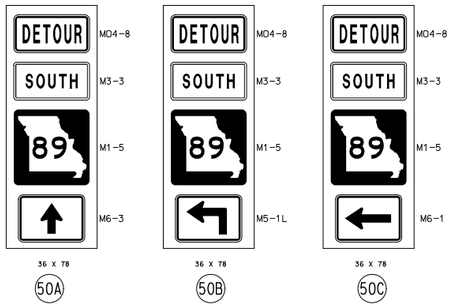
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

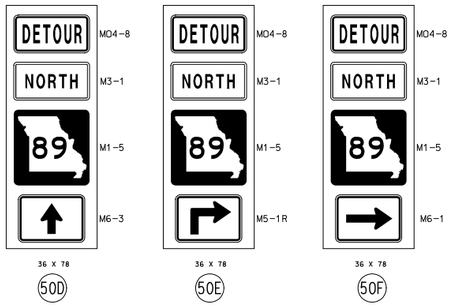
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

SPECIAL SHEET
SHEET 1 OF 1







GENERAL NOTES:

1. ANY EXISTING SIGNING THAT CONFLICTS WITH THE TRAFFIC CONTROL SIGNING SHALL BE COMPLETELY COVERED OR REMOVED.
2. ALL DISTANCES AND SPACING OF TRAFFIC CONTROL DEVICES ARE APPROXIMATE AND MAY BE REVISED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- BARRICADE
- CHANGEABLE MESSAGE BOARD

NOT TO SCALE

TRAFFIC CONTROL
DETOUR
SHEET 1 OF 3

STATE OF MISSOURI
MARIA K. PETERS
NUMBER PE-2009162118
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED
8/3/2021

ROUTE	STATE
89	MO
DISTRICT	SHEET NO.
CD	6

COUNTY
OSAGE

JOB NO.
J5S3344

CONTRACT ID.

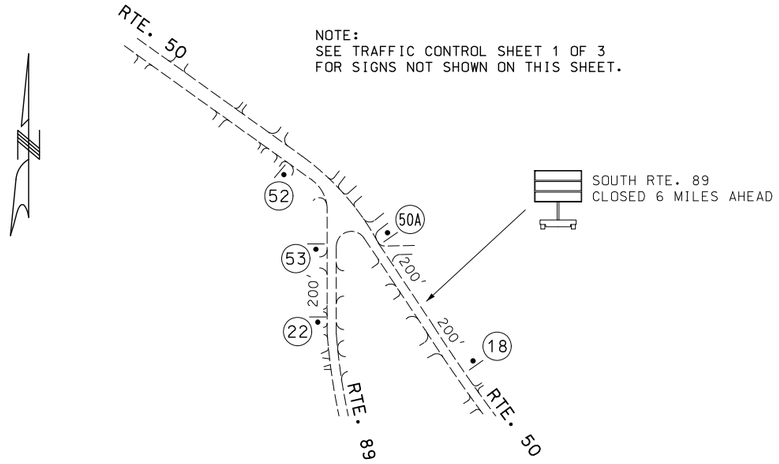
PROJECT NO.

BRIDGE NO.
A14101

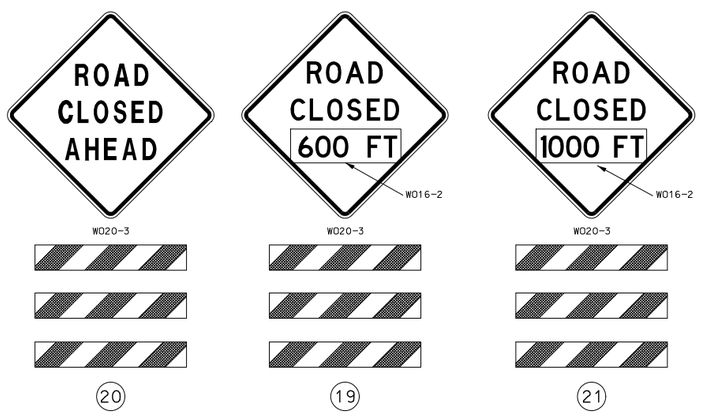
DESCRIPTION	DATE

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

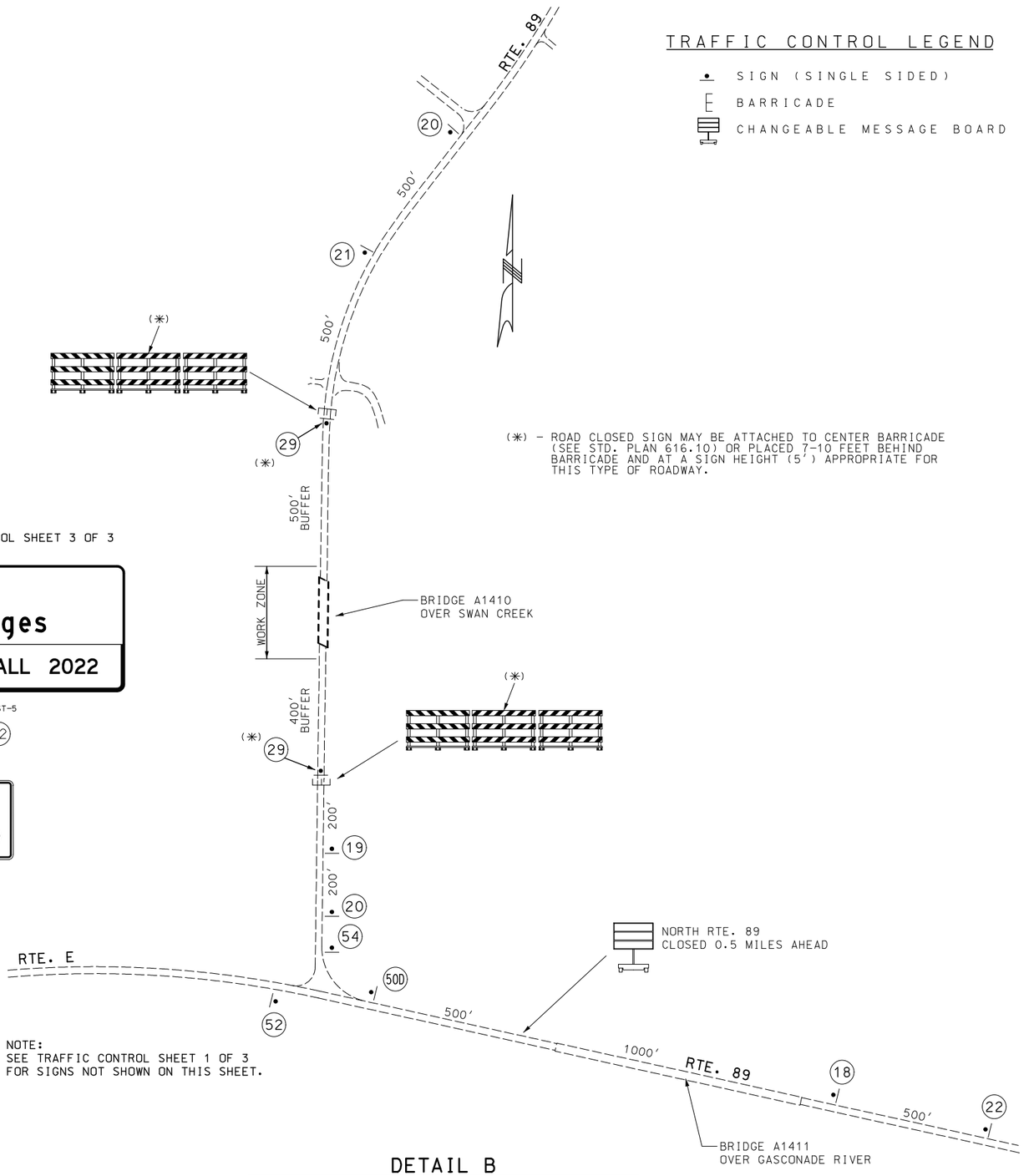
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



DETAIL A



NOTE:
SEE TRAFFIC CONTROL SHEET 3 OF 3
FOR SIGN LAYOUT.



DETAIL B

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- BARRICADE
- CHANGEABLE MESSAGE BOARD

(*) – ROAD CLOSED SIGN MAY BE ATTACHED TO CENTER BARRICADE (SEE STD. PLAN 616.10) OR PLACED 7-10 FEET BEHIND BARRICADE AND AT A SIGN HEIGHT (5') APPROPRIATE FOR THIS TYPE OF ROADWAY.

NOTE:
SEE TRAFFIC CONTROL SHEET 1 OF 3
FOR SIGNS NOT SHOWN ON THIS SHEET.

GENERAL NOTES:

1. ANY EXISTING SIGNING THAT CONFLICTS WITH THE TRAFFIC CONTROL SIGNING SHALL BE COMPLETELY COVERED OR REMOVED.
2. ALL DISTANCES AND SPACING OF TRAFFIC CONTROL DEVICES ARE APPROXIMATE AND MAY BE REVISED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

NOT TO SCALE

TRAFFIC CONTROL DETOUR
SHEET 2 OF 3

STATE OF MISSOURI
MARIA K. PETERS
NUMBER PE-2000162118
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED
8/3/2021

ROUTE	STATE
89	MO
DISTRICT	SHEET NO.
CD	7

COUNTY
OSAGE

JOB NO.
J5S3344

CONTRACT ID.

PROJECT NO.

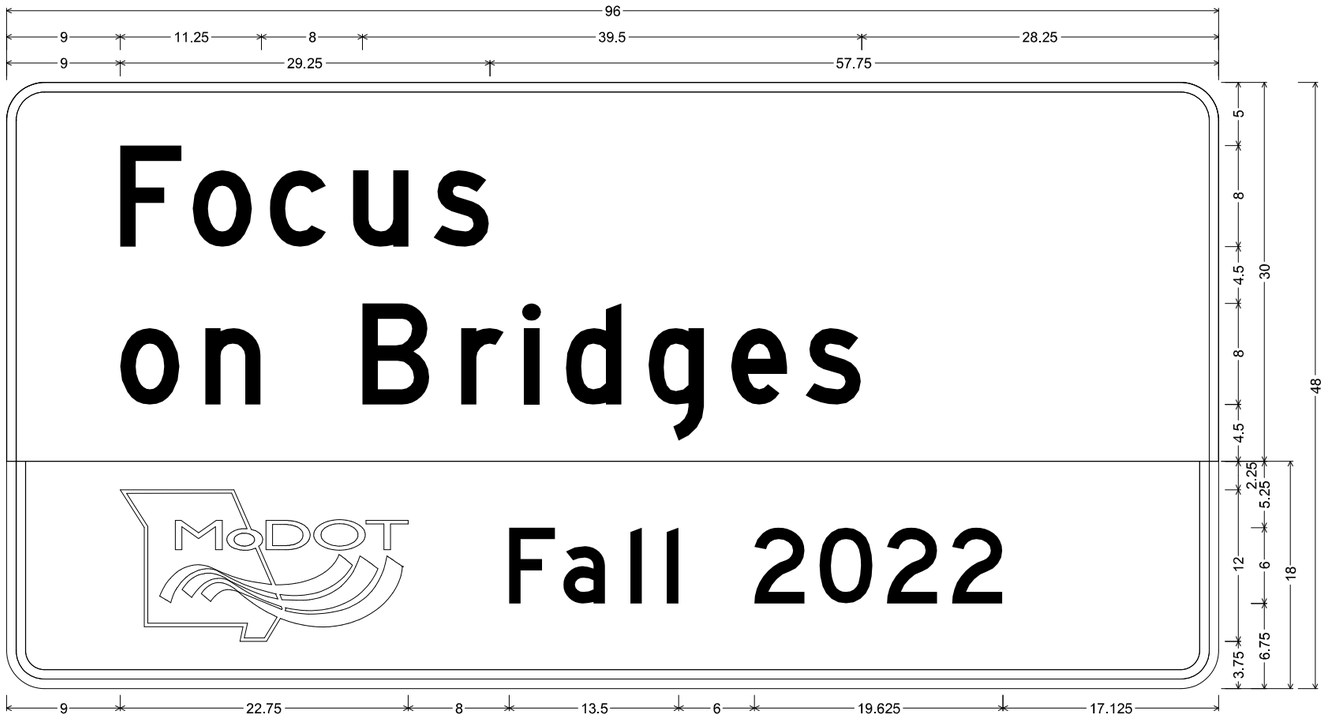
BRIDGE NO.
A14101

DESCRIPTION	DATE

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

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

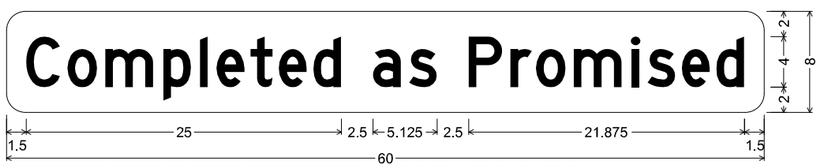
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



CONST-5-96 SH-FLAT SHEET;
3.000" Radius, 0.750" Border, White on, Blue;
"Focus", D; "on Bridges", D; " ", D;

3.000" Radius, 0.750" Border, 0.750" Indent, Blue on, White;
"Fall 2022", D;
Table of letter and object lefts

F	o	c	u	s				
9.000	14.750	20.875	27.500	33.875				
o	n	B	r	i	d	g	e	s
9.000	15.750	28.250	36.000	41.000	44.250	50.875	57.375	63.250
	F	a	l	l	2	0	2	2
9.000	39.750	44.125	49.375	52.250	59.250	64.375	69.750	74.875



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

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

NOT TO SCALE

TRAFFIC CONTROL
DETOUR
SHEET 3 OF 3

STATE OF MISSOURI
MARIA K. PETERS
NUMBER PE-2000162118
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED
8/3/2021

ROUTE	STATE
89	MO
DISTRICT	SHEET NO.
CD	8

COUNTY
OSAGE

JOB NO.
J5S3344

CONTRACT ID.

PROJECT NO.

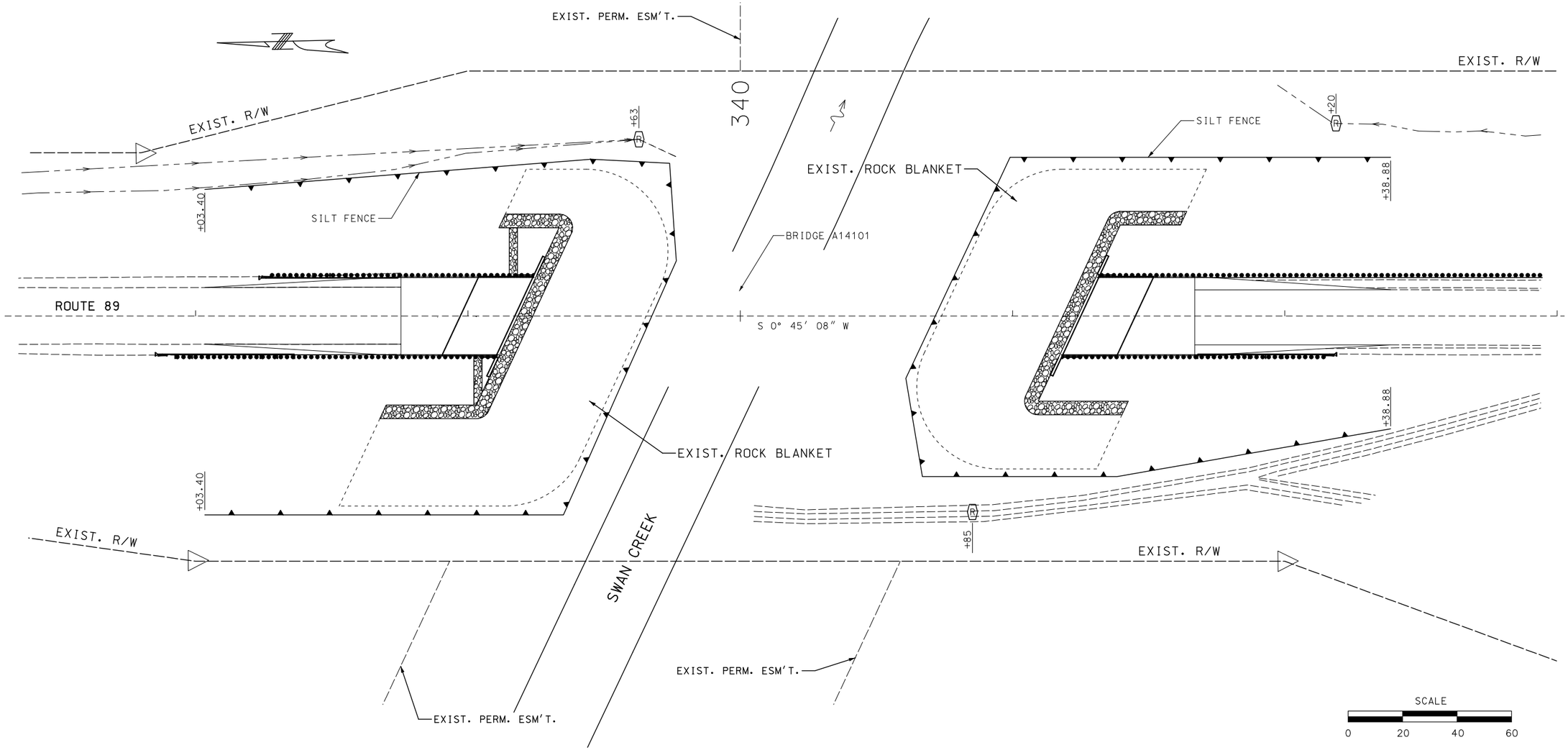
BRIDGE NO.
A14101

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)



TEMPORARY EROSION CONTROL LEGEND

(R) ROCK DITCH CHECK

SILT FENCE

THE PRIMARY RECEIVING WATERS FOR THIS PROJECT IS SWAN CREEK WHICH IS A TRIBUTARY OF THE GASCONADE RIVER.

EROSION CONTROL
SHEET 1 OF 1

STATE OF MISSOURI
MARIA K. PETERS
NUMBER PE-2000162118
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED
8/3/2021

ROUTE	STATE
89	MO
DISTRICT	SHEET NO.
CD	9

COUNTY
OSAGE

JOB NO.
J5S3344

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A14101

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)

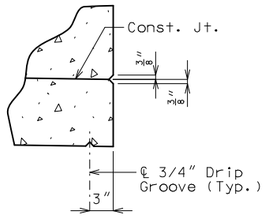
U.I.P. AND REDECK EXISTING (62′- 80′- 62′) CONTINUOUS COMPOSITE WIDE FLANGE BEAM SPANS (SKEW: 25° LA)

SEC/SUR 16 TWP 42N RGE 8W

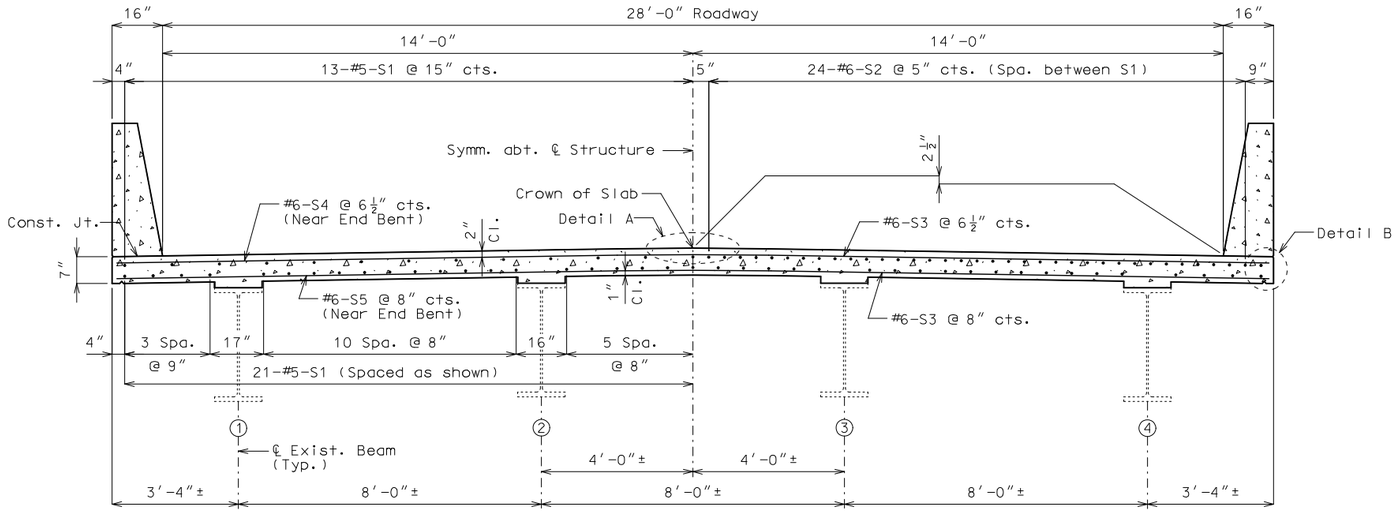
Table Showing S2 Bar Lengths			
Int. Bent No. 2		Int. Bent No. 3	
Span 1	Span 2	Span 2	Span 3
22′-0″	23′-0″	23′-0″	22′-0″

Required Lap Length For Bar Splices ✳✳	
Bar Size	Splice Length
4	2′-7″
5	3′-3″
6	3′-10″
7	4′-11″

✳✳ Unless otherwise shown.



DETAIL B



HALF SECTION NEAR MIDSPAN HALF SECTION NEAR INT. BENT

TYPICAL SECTION THRU SLAB

General Notes:

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

Design Loading:
H15-44 (1961) (Existing)
HS20-44 (New Construction)
35 lb/sf Future Wearing Surface
Earth - 120 lb/cf, Equivalent Fluid Pressure 45 lb/cf
Fatigue Stress - Case III

Design Unit Stresses:

Class B-1 Concrete (Type D Barrier)	f′c = 4,000 psi
Class B-2 Concrete (End Bents & Superstructure, except Type D Barrier)	f′c = 4,000 psi
Reinforcing Steel (Grade 60)	fy = 60,000 psi

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

Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1 1/2″, unless otherwise shown.

Miscellaneous:
Bars bonded in existing concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, existing bars shall extend into new concrete at least 40 diameters for smooth bars and 30 diameters for deformed bars, unless otherwise noted.

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

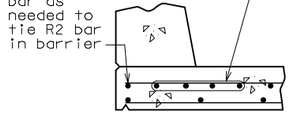
Outline of existing work is indicated by light dashed lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering new material.

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

Rock Blanket:
Rubblized concrete from the existing bridge deck that qualifies as clean fill may be placed on spill slopes at end bents (Roadway item).

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



OPTIONAL SHIFTING TOP BARS AT BARRIER

Estimated Quantities		
Item		Total
Removal of Existing Bridge Deck	sq. foot	6170
Bridge Approach Slab (Minor)	sq. yard	127
Slab on Steel	sq. yard	709
✳ Type D Barrier	linear foot	415
Slab Drain	each	6
Non-Destructive Testing	linear foot	52
Vertical Drain at End Bents	each	2

✳ Type D Barrier shall be cast-in-place option or slip-form option.

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

Non-destructive testing to be performed on top cover plates of all girders (See Special Provisions).

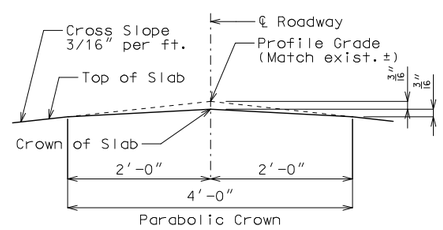
Estimated Quantities for Slab on Steel		
Item		Total
Class B-2 Concrete	cu. yard	172
Reinforcing Steel (Epoxy Coated)	pound	57,960

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

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

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

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



DETAIL A

REPAIRS TO BRIDGE: ROUTE 89 OVER SWAN CREEK

ROUTE 89 FROM ROUTE 50 TO ROUTE E
ABOUT 0.2 MILE NORTH OF ROUTE E
BEGINNING STATION 339+17.20± (MATCH EXISTING)

Detailed Apr. 2021
Checked June 2021

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

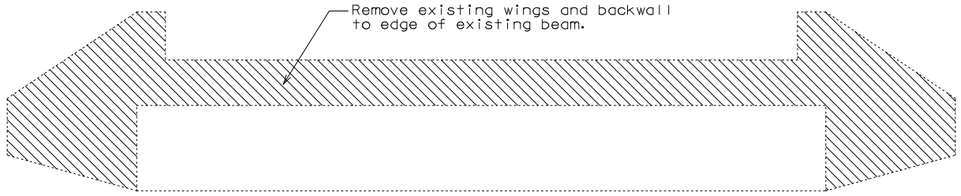
STATE OF MISSOURI
TIMOTHY D. LEAF
NUMBER PE-2012000778
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 8/9/2021
ROUTE 89 | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY OSAGE
JOB NO. J5S3344
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A14101

DESCRIPTION | DATE

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

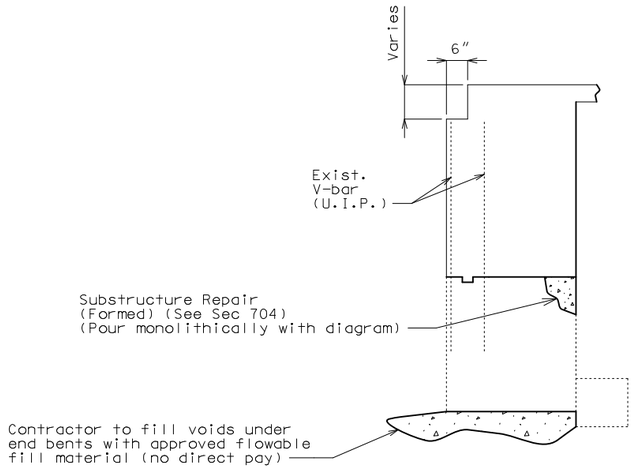
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



DETAILS OF CONCRETE REMOVAL AT END BENTS

The cost of concrete removal as shown will be considered completely covered by the contract unit price for Removal of Existing Bridge Deck.

Vertical backwall and horizontal wingwall reinforcement shall be cleaned and reused.



TYPICAL SECTION THRU END BENTS NO. 1 & 4

General Notes:

Stay-In-Place Forms:

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

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

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

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

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.

Pouring and Finishing Slab:

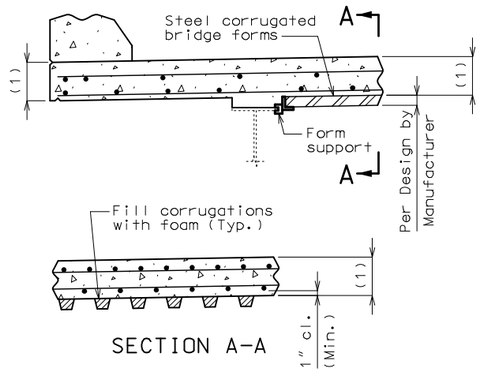
The contractor shall provide bracing necessary for lateral and torsional stability of the beams during construction of the concrete slab and remove the bracing after the slab has attained 75% design strength. Contractor shall not weld on or drill holes in the beams. The cost for furnishing, installing,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

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

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

Haunching:

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



OPTIONAL STAY-IN-PLACE FORM DETAILS

STATE OF MISSOURI
TIMOTHY D. LEAF
NUMBER PE-2012000778
PROFESSIONAL ENGINEER
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DATE PREPARED 8/9/2021

ROUTE	STATE
89	MO
DISTRICT	SHEET NO.
BR	2

COUNTY: OSAGE
JOB NO.: J5S3344
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A14101

DESCRIPTION	DATE

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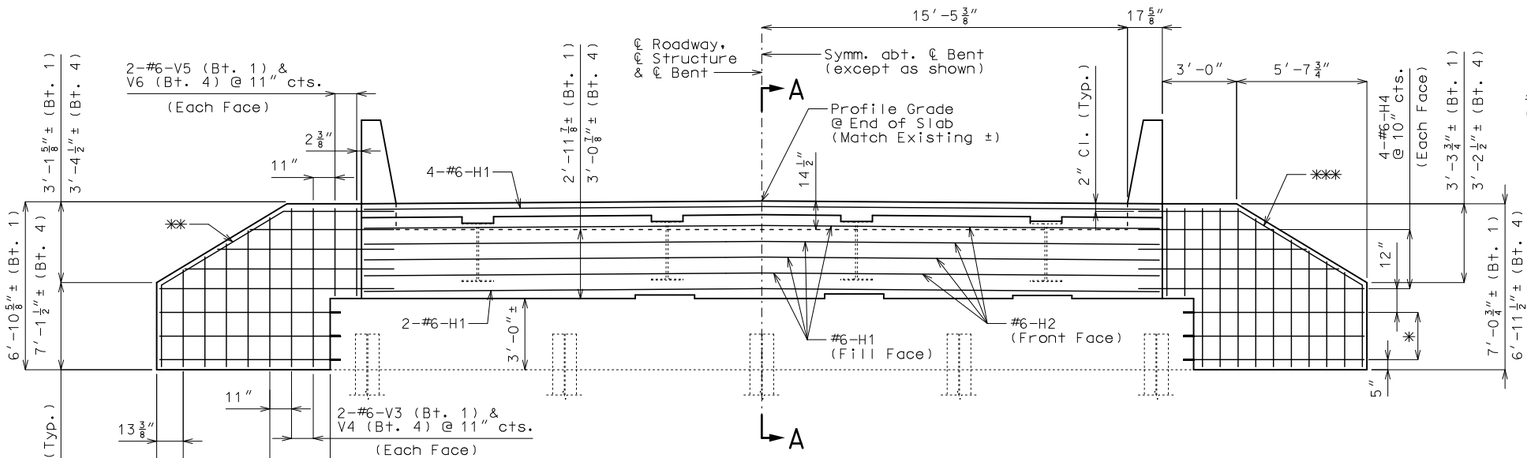
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

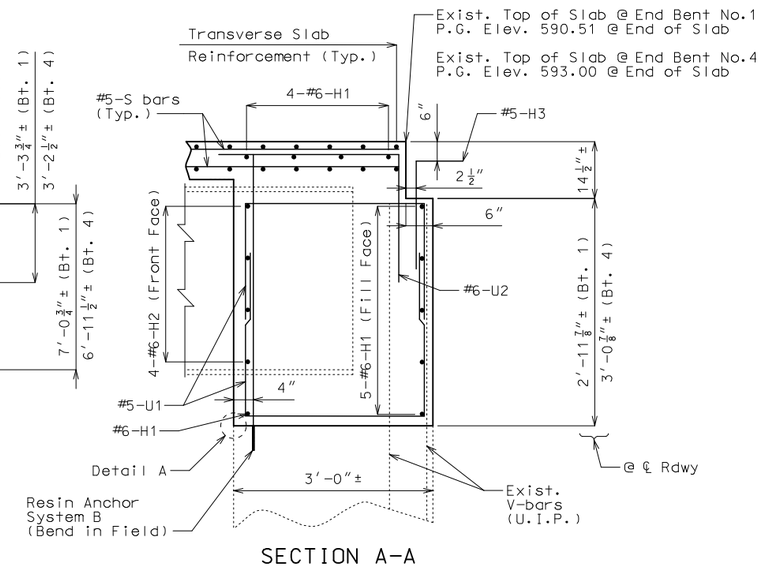


SECTION NEAR END BENTS

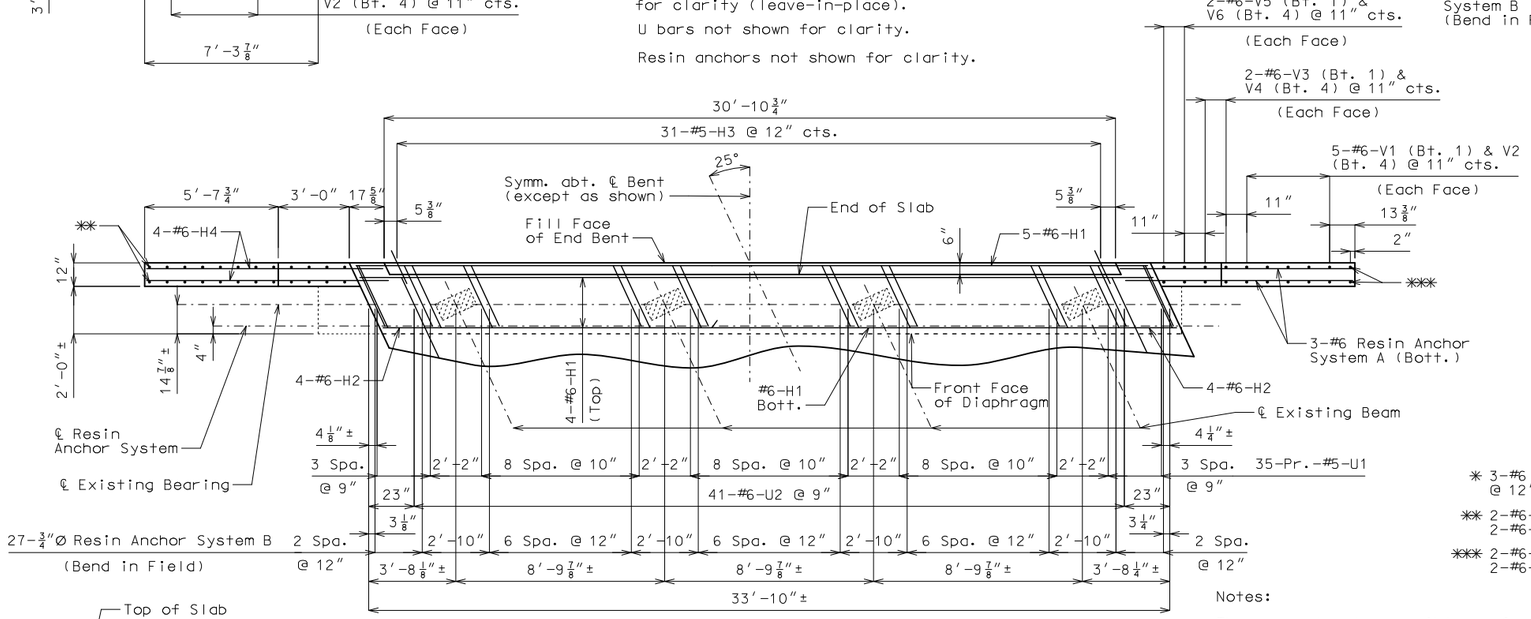
Notes: Existing beam reinforcing steel not shown for clarity (leave-in-place).

U bars not shown for clarity.

Resin anchors not shown for clarity.



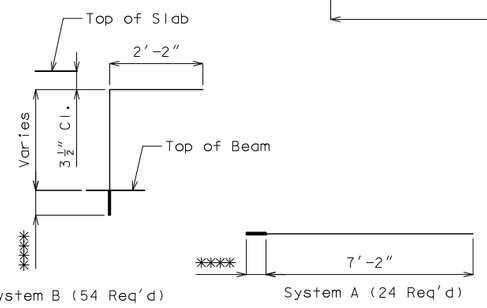
SECTION A-A



PART PLAN

End Bent No. 1 shown (End Bent No. 4 similar)

Note: S bars not shown for clarity.



DETAILS OF RESIN ANCHOR SYSTEMS

**** Manufacturer's recommended embedment length (5" min.)

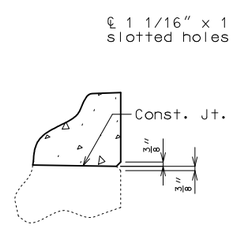
Notes:

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

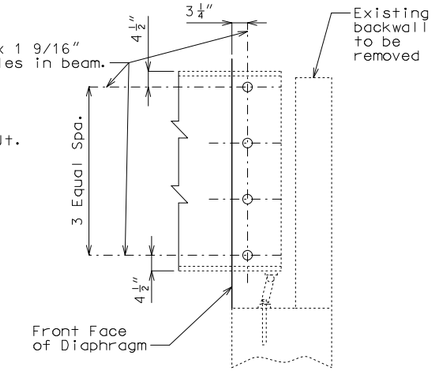
Cost of furnishing and installing the resin anchor systems, complete in place, will be considered completely covered by the contract unit price for Slab on Steel.

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 5" into sound concrete.

An epoxy coated #6 Grade 60 reinforcing bar shall be substituted for the 3/4"Ø threaded rod.



DETAIL A



DETAIL OF WEB HOLES AT END BENT

✳ 3-#6 Resin Anchor System A @ 12" cts. (Each Face)

✳✳ 2-#6-H5 (Bt. 1)
2-#6-H7 (Bt. 4)

✳✳✳ 2-#6-H6 (Bt. 1)
2-#6-H8 (Bt. 4)

Notes:

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

The #6-H2 bars are segmented for ease of placement through girder web holes. The total bar length for H2 bars shown in Bill of Reinforcing Steel allows for one lap splice with a length of 3'-10". Actual bar segment length will be determined by contractor for ease of installing bars. The contractor may use a mechanical bar splice in lieu of a lap splice. When mechanical bar splice is used, the actual bar segment length will be determined by the contractor to accommodate manufacture's recommendations for installation and ease of construction. The cost of furnishing and installing the bar splices will be considered completely covered by the contract unit price for Slab on Steel. No adjustment of the quantity of reinforcing steel will be allowed for the use of mechanical bar splices.

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

H3, U1 & U2 bars shall be placed parallel to centerline of roadway.

All concrete and reinforcement is included in the table of Estimated Quantities for Slab on Steel and will be considered completely covered by the contract unit price for Slab on Steel.

DETAILS OF END BENTS NO. 1 & 4

Detailed Apr. 2020
Checked Mar. 2021

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

STATE OF MISSOURI
TIMOTHY D. LEAF
NUMBER PE-2012000778
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 8/9/2021

ROUTE	STATE
89	MO
DISTRICT	SHEET NO.
BR	3

COUNTY OSAGE

JOB NO. J5S3344

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A14101

DESCRIPTION	DATE

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105 WEST CAPITOL
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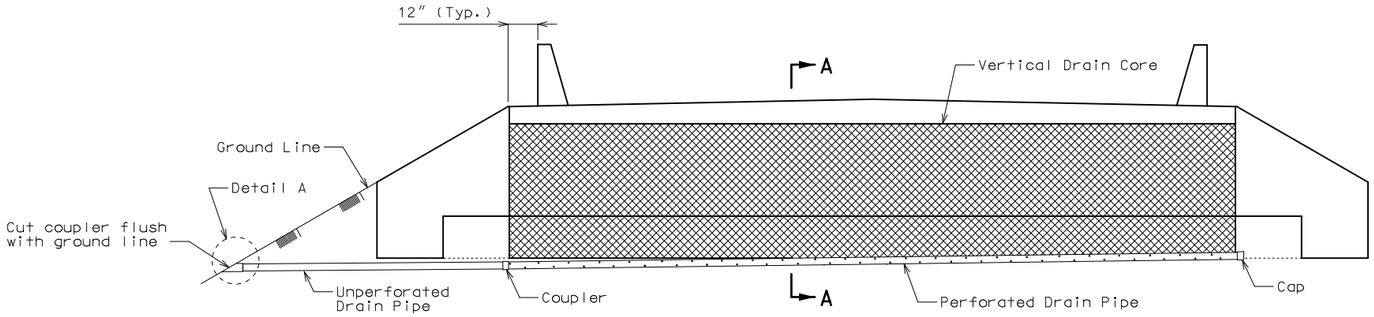
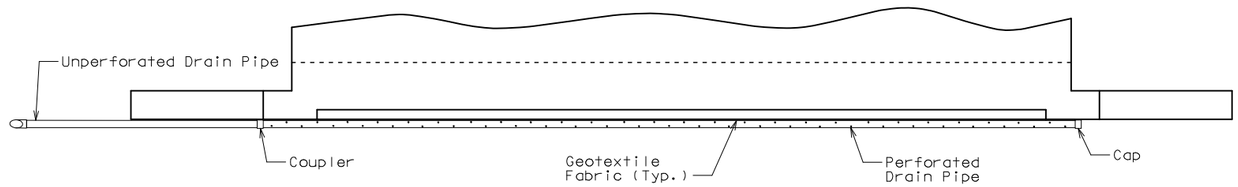
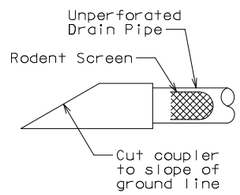


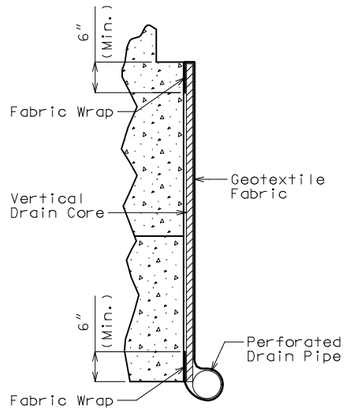
ELEVATION OF END BENT



PLAN OF END BENT



DETAIL A



PART SECTION A-A

General Notes:

All drain pipe shall be sloped 1 to 2 percent.

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

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

Perforated pipe shall be placed at fill face side 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)

Detailed Apr. 2021
Checked June 2021

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

STATE OF MISSOURI
TIMOTHY D. LEAF
NUMBER PE-2012000778
PROFESSIONAL ENGINEER

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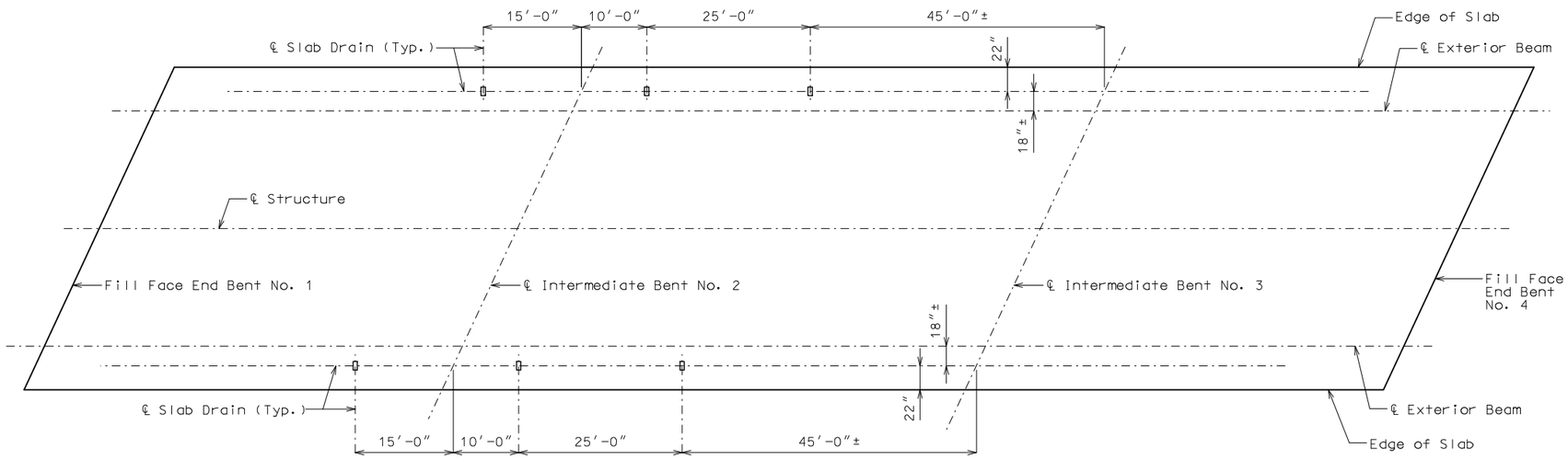
DATE PREPARED 8/9/2021

ROUTE	STATE
89	MO
DISTRICT	SHEET NO.
BR	4

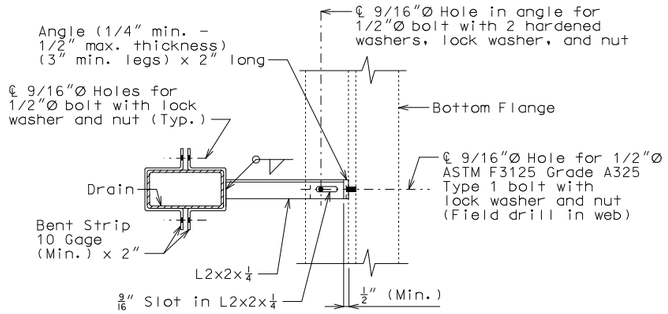
COUNTY: OSAGE
JOB NO.: J5S3344
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A14101

DESCRIPTION	DATE

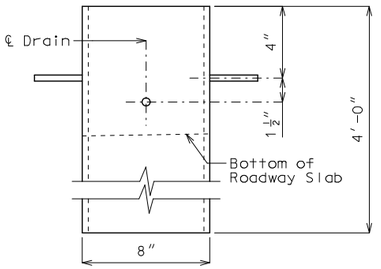
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



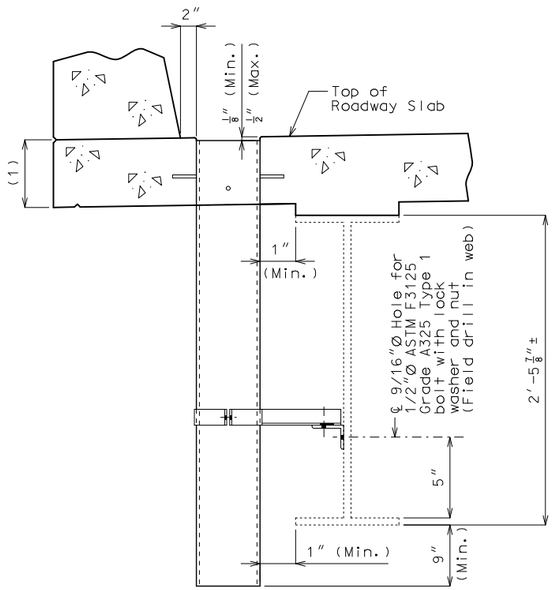
PLAN OF SLAB SHOWING SLAB DRAIN LOCATIONS



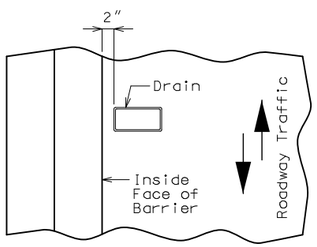
PART SECTION SHOWING BRACKET ASSEMBLY



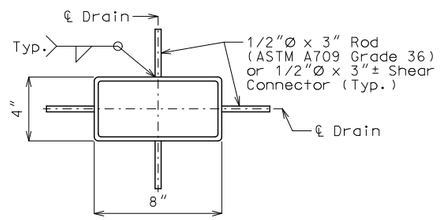
ELEVATION OF DRAIN



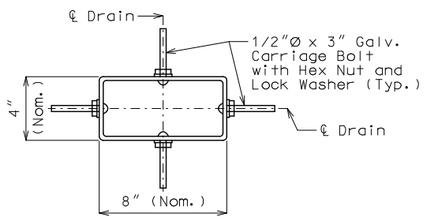
PART SECTION NEAR DRAIN



PART PLAN OF SLAB AT 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 AASHTO M 232 (ASTM A153), Class C.

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

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

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

(1) See front sheet for slab thickness.

Notes for Steel Drain:

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

Outside dimensions of drains are 8″ x 4″.

The drains shall be galvanized in accordance with ASTM A123.

Notes for FRP Drain:

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

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

Minimum reinforced wall thickness shall be 1/4 inch.

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

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

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

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

STATE OF MISSOURI
TIMOTHY D. LEAF
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PROFESSIONAL ENGINEER
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DATE PREPARED 8/9/2021

ROUTE	STATE
89	MO
DISTRICT	SHEET NO.
BR	5

COUNTY OSAGE

JOB NO. J5S3344

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A14101

DESCRIPTION	DATE

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JEFFERSON CITY, MO 65102
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Detailed Apr. 2021
Checked June 2021

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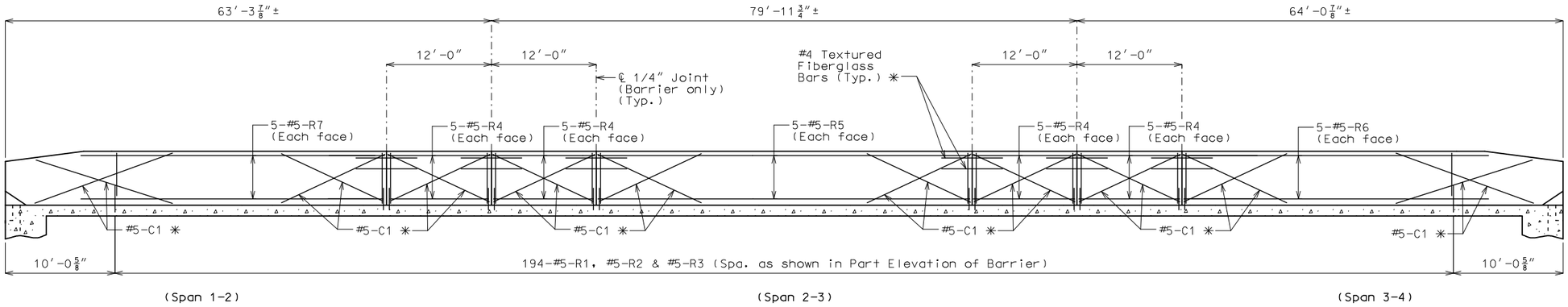
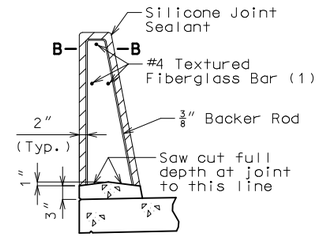
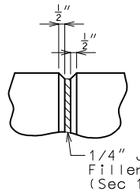


ELEVATION OF BARRIER

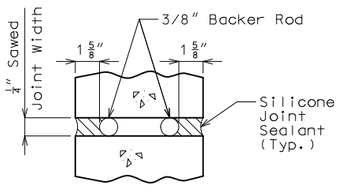
(Left barrier shown, right barrier similar by 180° rotation)
Longitudinal dimensions are horizontal.



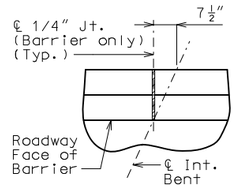
SECTION THRU SAW CUT JOINT



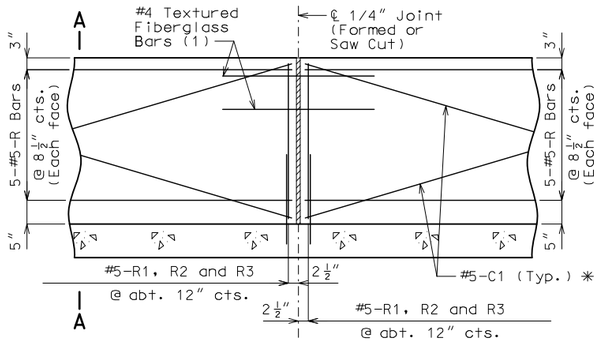
PART ELEVATION AT FORMED JOINT



SECTION B-B

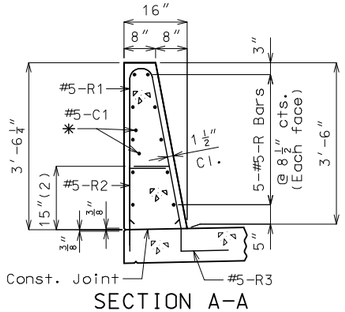


PART PLAN SHOWING JOINT LOCATION



PART ELEVATION OF BARRIER

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

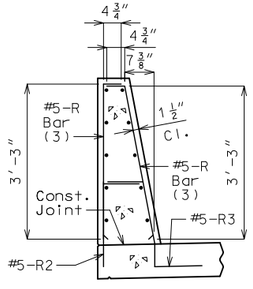


SECTION A-A

Use a minimum lap of 3′-1″ 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 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 slab to end of slab.

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

STATE OF MISSOURI
TIMOTHY D. LEAF
NUMBER PE-2012000778
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

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

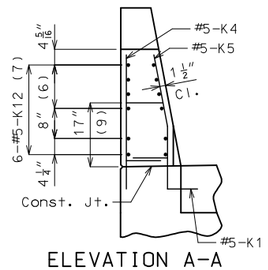
DATE PREPARED 8/9/2021

ROUTE	STATE
89	MO
DISTRICT	SHEET NO.
BR	6

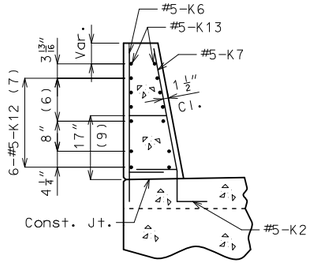
COUNTY: OSAGE
JOB NO.: J5S3344
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A14101

DESCRIPTION	DATE

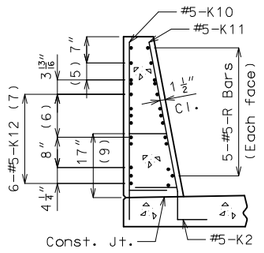
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



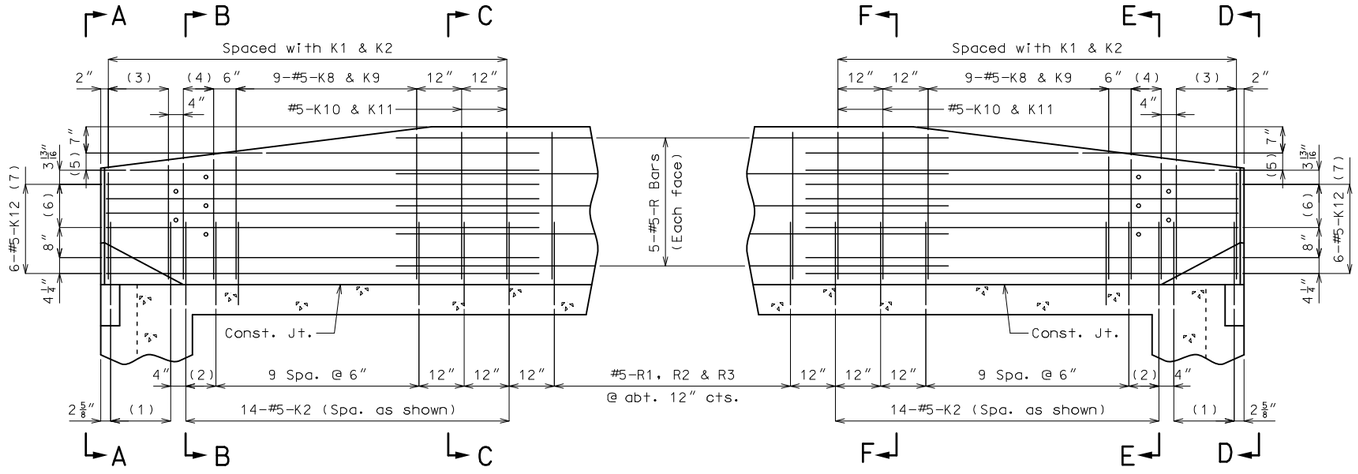
ELEVATION A-A



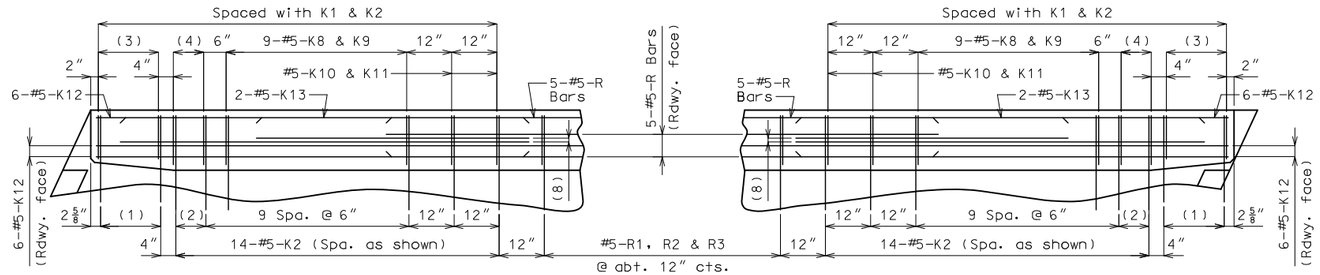
SECTION B-B



SECTION C-C

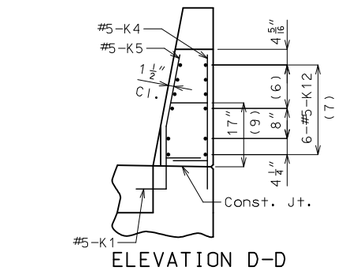


PART ELEVATION

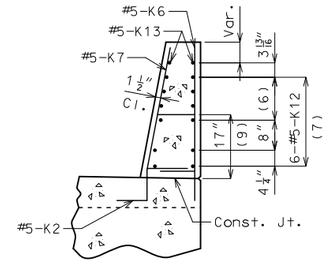


PART PLAN

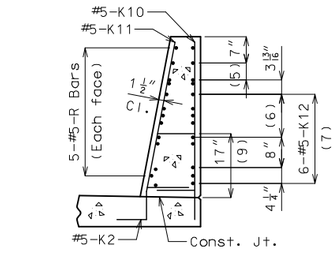
(Top of barrier not shown for clarity.)



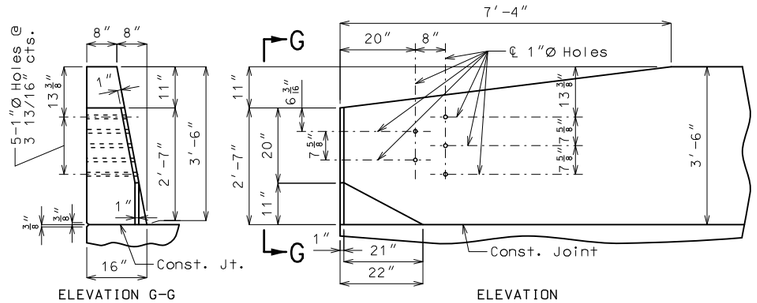
ELEVATION D-D



SECTION E-E



SECTION F-F



DETAILS OF GUARD RAIL ATTACHMENT

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

(2) 2 spaces @ 4"

(3) 5-#5-K4 & K5

(4) 3-#5-K6 & K7

(5) 2-#5-K13 @ 4½" cts., each face

(6) 3 spaces @ 3 13/16"

(7) Spaced as shown, each face

(8) 2-#5-K13 (Roadway face)

(9) To top of bar

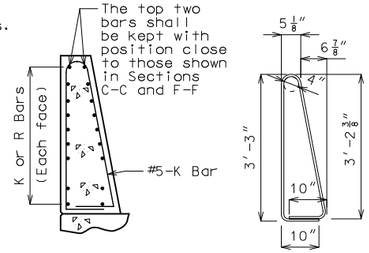
General Notes:

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".

Use a minimum lap of 3'-1" between horizontal K bars and R bars.



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.

TYPE D BARRIER AT END BENTS

(Left barrier shown, right barrier similar)

STATE OF MISSOURI
TIMOTHY D. LEAF
NUMBER PE-2012000778
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

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

DATE PREPARED 8/9/2021

ROUTE	STATE
89	MO
DISTRICT	SHEET NO.
BR	7

COUNTY: OSAGE

JOB NO.: J5S3344

CONTRACT ID.:

PROJECT NO.:

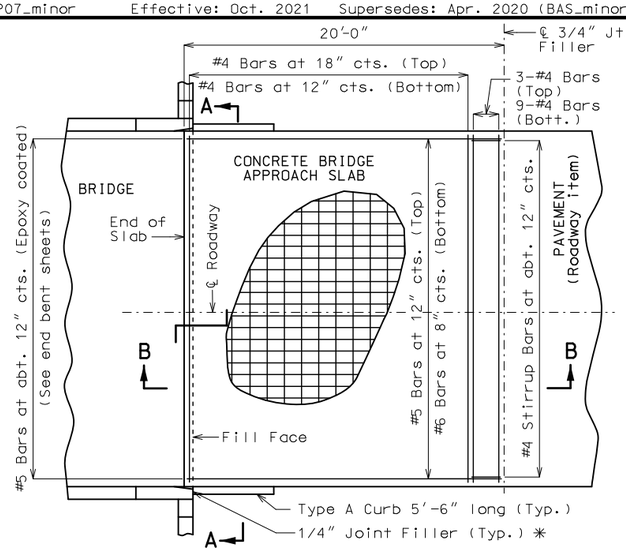
BRIDGE NO.: A14101

DESCRIPTION	DATE

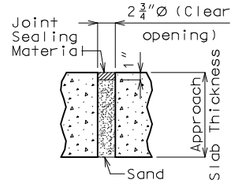
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

Detailed Apr. 2021
Checked June 2021

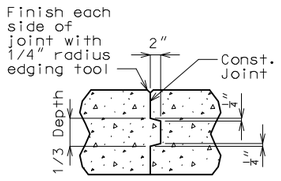
Note: This drawing is not to scale. Follow dimensions.



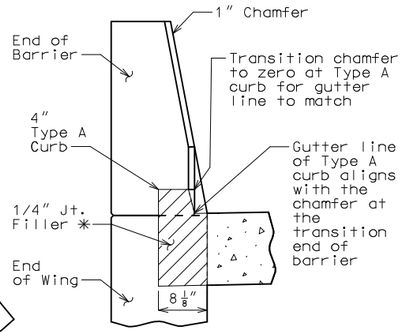
PART PLAN OF SQUARED STRUCTURE
(Skewed structure similar)



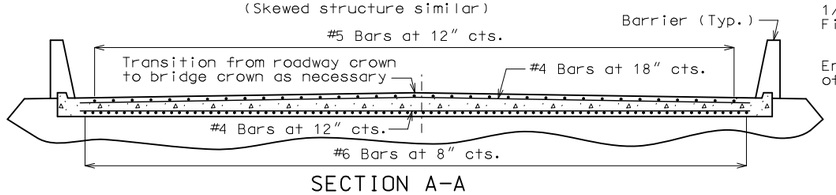
UNDERSEAL ACCESS HOLE DETAIL
(If required)



CONSTRUCTION JOINT DETAIL

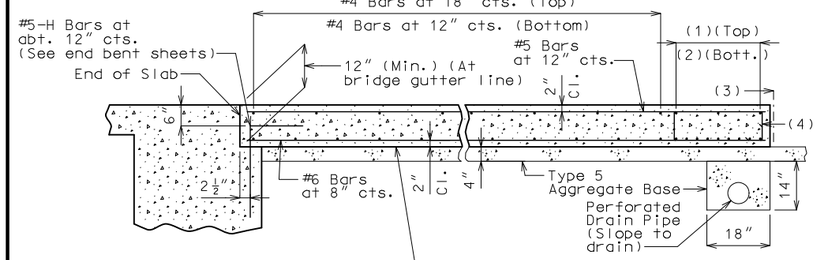


SECTION BETWEEN CURB AND BARRIER



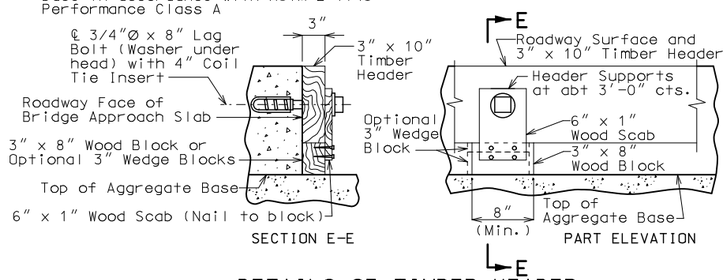
SECTION A-A

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)



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 lap splicing the #4 bars 29" 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 Road) per square yard.

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

* 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.

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.

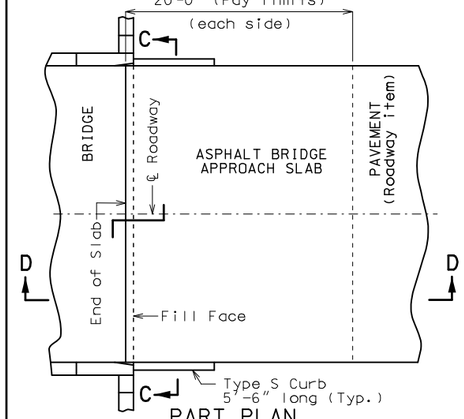
MoDOT Construction personnel will indicate the bridge approach slab used for this structure:

☐ Concrete Bridge Approach Slab
☐ Asphalt Bridge Approach Slab

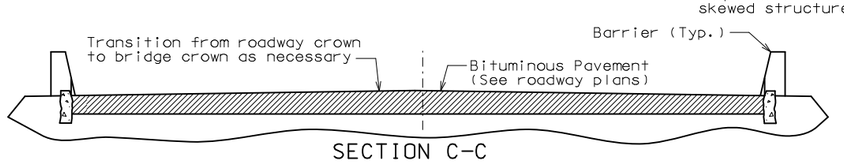
Notes For Asphalt Slab Only:

Payment for furnishing all materials, labor and excavation necessary to construct the asphalt bridge approach slab, including tack, curb, underdrain 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 Road) per square yard.

Application of tack is required between lifts per Sec 403.

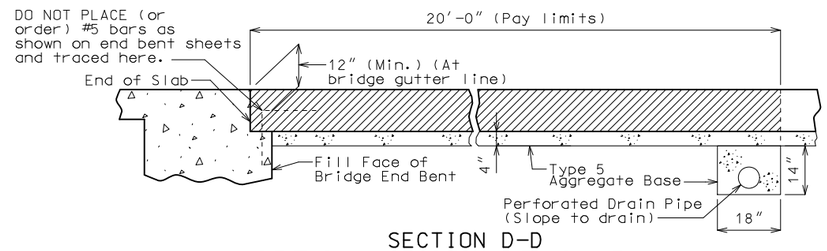


PART PLAN
(Squared structure shown, skewed structure similar)

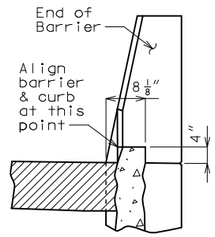


SECTION C-C

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.

STATE OF MISSOURI
TIMOTHY D. LEAF
NUMBER PE-2012000778
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 8/9/2021

ROUTE	STATE
89	MO
DISTRICT	SHEET NO.
BR	8

COUNTY OSAGE
JOB NO. J5S3344
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A14101

DATE	DESCRIPTION

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

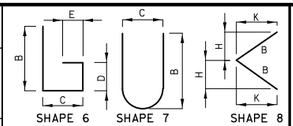
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

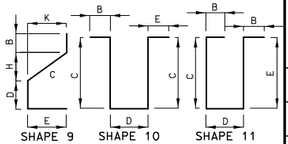
BILL OF REINFORCING STEEL

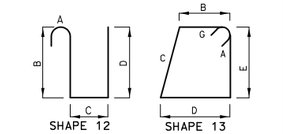
NO. REQ'D.	MARK NO. SIZE	MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
			END BENTS																									
			1 & 4																									
20	6	H1	DIAPHRAGM	E	20					33	6.000													33	6	33	6	1006
8	6	H2	DIAPHRAGM	E	20					37	6.000													37	6	37	6	451
62	6	H3	SLAB	E	19					2	0.000	15	0.000											3	3	3	1	287
32	6	H4	WING	E	20			V	4	7	8.000													7	8	7	8	
			INCREMENT =							11	3.000													11	3	11	3	455
			6.125 INCH																									
2	6	H5	WING	E	25					3	6.625	6	3.625	4	2.000					3	1.000	5	6.000	14	0	13	11	42
2	6	H6	WING	E	25					3	6.625	6	5.250	4	2.000					3	3.125	5	6.625	14	2	14	1	42
2	6	H7	WING	E	25					3	6.625	6	5.625	4	2.000					3	3.750	5	6.625	14	2	14	1	42
2	6	H8	WING	E	25					3	6.625	6	1.250	4	2.000					3	1.875	5	2.750	13	10	13	9	41
20	6	V1	WING	E	20			V	5	4	1.000													4	1	4	1	
			INCREMENT =							6	2.500													6	3	6	3	155
			8.625 INCH																									
20	6	V2	WING	E	20			V	5	4	1.000													4	1	4	1	
			INCREMENT =							6	4.000													6	4	6	4	156
			9.000 INCH																									
8	6	V3	WING	E	20					6	8.000													6	8	6	8	80
8	6	V4	WING	E	20					6	10.000													6	10	6	10	82
8	6	V5	WING	E	20					3	8.000													3	8	3	8	44
8	6	V6	WING	E	20					3	9.000													3	9	3	9	45
140	5	U1	DIAPHRAGM	E	10							2	7.000	3	0.000									8	2	7	11	1156
82	6	U2	DIAPHRAGM	E	19					3	6.000	4	8.000											8	2	8	0	985
			SLAB																									
264	5	S1	SLAB	E	20					54	1.000													54	1	54	1	14892
96	6	S2	SLAB	E	20					45	0.000													45	0	45	0	6489
643	6	S3	SLAB	E	20					30	5.000													30	5	30	5	29376
50	6	S4	SLAB	E	20			V	2	2	0.000													2	0	2	0	
			INCREMENT =							29	10.000													29	10	29	10	1195
			13.875 INCH																									
40	6	S5	SLAB	E	20			V	2	2	1.000													2	1	2	1	
			INCREMENT =							29	3.000													29	3	29	3	941
			17.125 INCH																									
			BARRIER CURB																									
20	5	K1	BARRIER CURB	E	27	S				20	750	9	250	5	250	15	625	12	000	5	125	1	000	5	3	4	11	103
56	5	K2	BARRIER CURB	E	27	S				20	750	9	250	17	250	3	750	12	000	17	000	3	250	5	3	4	11	287
20	5	K4	BARRIER CURB	E	19	S		V	4	2	4.250	10	000											3	2	3	1	
			INCREMENT =							2	6.250	10	000											3	4	3	3	66
			0.500 INCH																									
20	5	K5	BARRIER CURB	E	14	S		V	4	8	375	9	625	18	500					4	000	18	000	3	1	2	11	
			INCREMENT =							8	375	9	625	20	500					4	500	20	000	3	3	3	1	63
			0.500 INCH																									
12	5	K6	BARRIER CURB	E	19	S		V	4	2	6.750	10	000											3	5	3	4	
			INCREMENT =							2	7.750	10	000											3	6	3	5	42
			0.500 INCH																									
12	5	K7	BARRIER CURB	E	21	S		V	4	2	6.750	10	000							2	6.125	6	250	3	5	3	3	
			INCREMENT =							2	7.750	10	000							2	7.125	6	500	3	6	3	4	41
			0.500 INCH																									

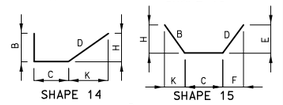
BILL OF REINFORCING STEEL

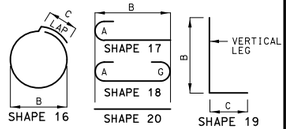
NO. REQ'D.	MARK NO. SIZE	MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
36	5	K8	BARRIER CURB	E	19	S		V	4	2	8.500	10	000											3	7	3	5	
			INCREMENT =							3	2.500	10	000											4	1	3	11	138
			0.750 INCH																									
36	5	K9	BARRIER CURB	E	21	S		V	4	2	8.625	10	000							2	7.875	6	750	3	7	3	5	
			INCREMENT =							3	2.625	10	000							3	1.875	7	750	4	1	3	11	138
			0.750 INCH																									
8	5	K10	BARRIER CURB	E	19	S				3	3.000	10	000											4	1	4	0	33
8	5	K11	BARRIER CURB	E	21	S				3	3.125	10	000							3	2.375	7	875	4	1	3	11	33
48	5	K12	BARRIER CURB	E	20					9	7.000													9	7	9	7	480
16	5	K13	BARRIER CURB	E	20			V	8	8	10.000													8	10	8	10	
			INCREMENT =							5	10.000													5	10	5	10	122
			36.000 INCH																									
388	5	R1	BARRIER CURB	E	26					3	3.000	5	125	3	3.625					3	3.000	7	000	6	9	6	9	2732
388	5	R2	BARRIER CURB	E	19	S				18	750	9	625											2	4	2	3	911
388	5	R3	BARRIER CURB	E	27	S						9	625	15	250	3	750	12	000	15	000	2	875	3	5	3	2	1281
80	5	R4	BARRIER CURB	E	20					11	9.000													11	9	11	9	980
20	5	R5	BARRIER CURB	E	20					55	8.000													55	8	55	8	1161
20	5	R6	BARRIER CURB	E	20					45	3.000													45	3	45	3	944
20	5	R7	BARRIER CURB	E	20					44	7.000													44	7	44	7	930
			SLIP FORM																									
			OPTION																									
40	5	C1	BARRIER CURB	E	20					12	0.000													12	0	12	0	501
			TOTALS																									
	5			E																								27034
	6			E																								41914
			TOTAL																									0
			TOTAL	E																								68948
			Slab on																									
			Girder																									
	5			E																								16048
	6			E																								41914
			TOTAL																									57962
			Safety																									
			Barrier																									
			Curb																									
	5			E																								10986
			TOTAL																									10986

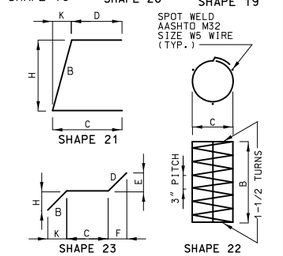


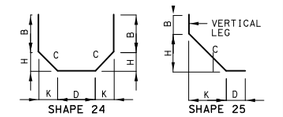


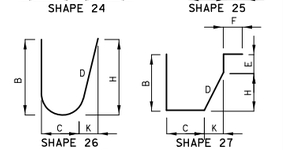


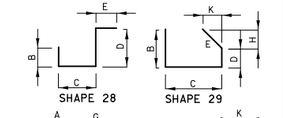


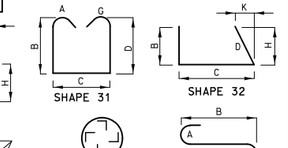


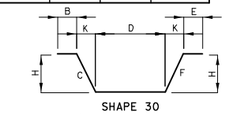


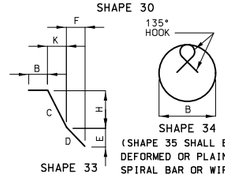


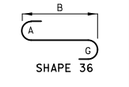




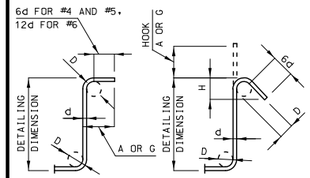






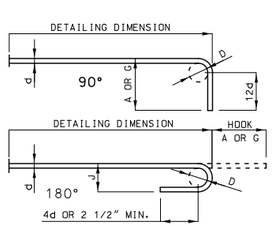


BENDING DIAGRAMS



STIRRUP HOOK DIMENSIONS				
GRADES 40 - 50 - 60 KSI				
BAR SIZE	D (IN.)	90° HOOK	135° HOOK	
		HOOK A OR G	HOOK A OR G	APPROX. H
#4	2"	4 1/2"	4 1/2"	3"
#5	2 1/2"	6"	5 1/2"	3 3/4"
#6	4 1/2"	12"	8"	4 1/2"

NOTE: UNLESS OTHERWISE NOTED, DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.



END HOOK DIMENSIONS				
		ALL GRADES		
BAR SIZE	D (IN.)	180° HOOKS		90° HOOKS
		A OR G	J	A OR G
#3	2 1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3 3/4"	7"	5"	10"
#6	4 1/2"	8"	6"	12"
#7	5 1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9 1/2"	15"	11 3/4"	19"
#10	10 3/4"	17"	13 1/4"	22"
#11	12"	19"	14 3/4"	2'-0"
#14	18 1/4"	2'-3"	21 3/4"	2'-7"

NOTE:
ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEGREE ARE TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEGREE STANDARD HOOKS.

HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

E = EPOXY COATED REINFORCEMENT.
S = STIRRUP.
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.

NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)

ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.

PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.

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 (GRADE 60) FY = 60,000 PSI.

Detailed June 2021
Checked June 2021

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

STATE OF MISSOURI
TIMOTHY D. LEAF
NUMBER PE-2012000778
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 8/9/2021
ROUTE 89 | STATE MO
DISTRICT BR | SHEET NO. 9
COUNTY OSAGE
JOB NO. J5S3344
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A14101

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)