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

DESIGN DESIGNATION

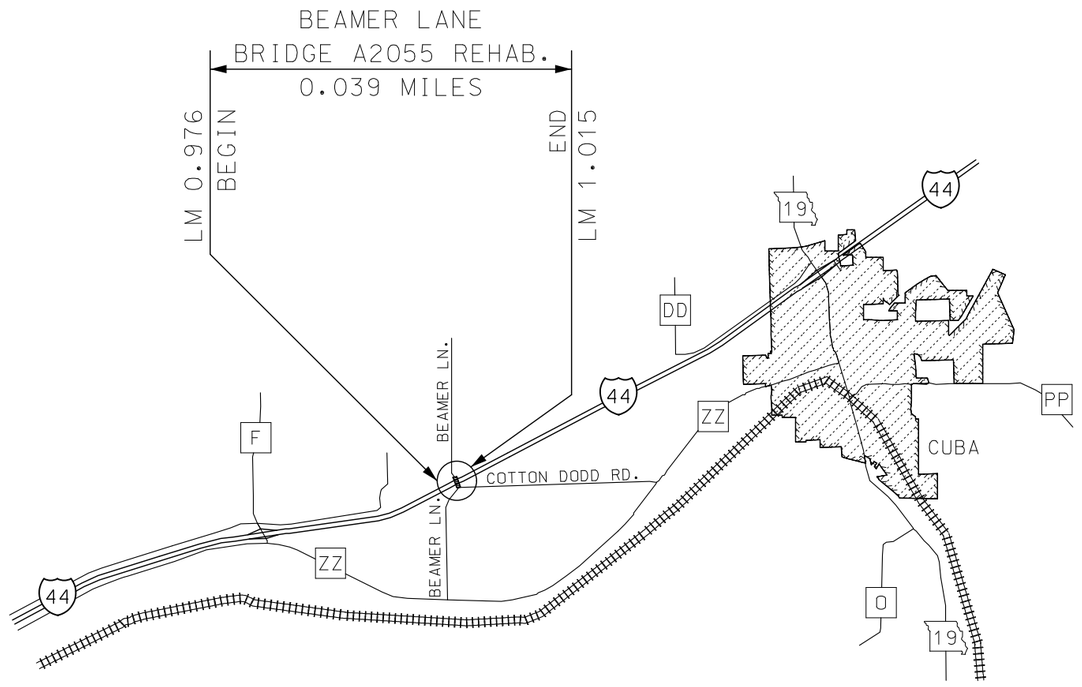
BEAMER LANE

A.A.D.T. – 2025 = 144
A.A.D.T. – 2045 = 171
T = 9.86%
V = 35 M.P.H.

FUNCTIONAL CLASSIFICATION – LOCAL

NO NEW R/W

KEY MAP
LOCATION OF
CRAWFORD COUNTY



NOT TO SCALE

CONVENTIONAL SYMBOLS

(USED IN PLANS)

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

NOTE: DASHED OR OPEN SYMBOLS INDICATE EXISTING FEATURES

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

LENGTH OF PROJECT

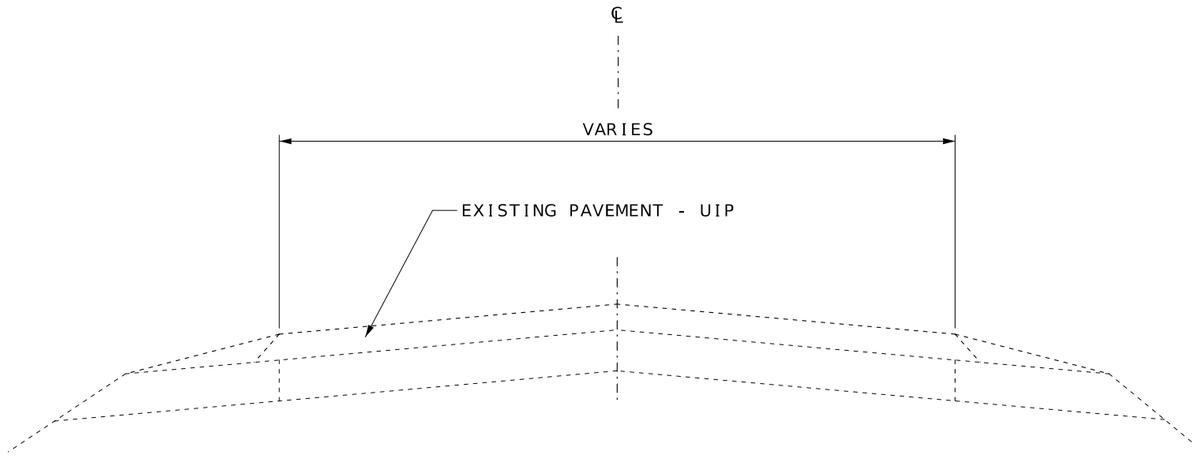
BEGINNING OF PROJECT	LM 0.976
END OF PROJECT	LM 1.015
APPARENT LENGTH	206.50 FEET
EQUATIONS AND EXCEPTIONS:	
NONE	
TOTAL CORRECTIONS	0.000 FEET
NET LENGTH OF PROJECT	206.50 FEET
STATE LENGTH	0.039 MILES

STATE OF MISSOURI
JASON R. VANDERFELTZ
NUMBER PE-2003015049
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED: 12/4/2024
ROUTE: BEAMER LN | STATE: MO
DISTRICT: CD | SHEET NO.: 1
COUNTY: CRAWFORD
JOB NO.: J5S3545
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

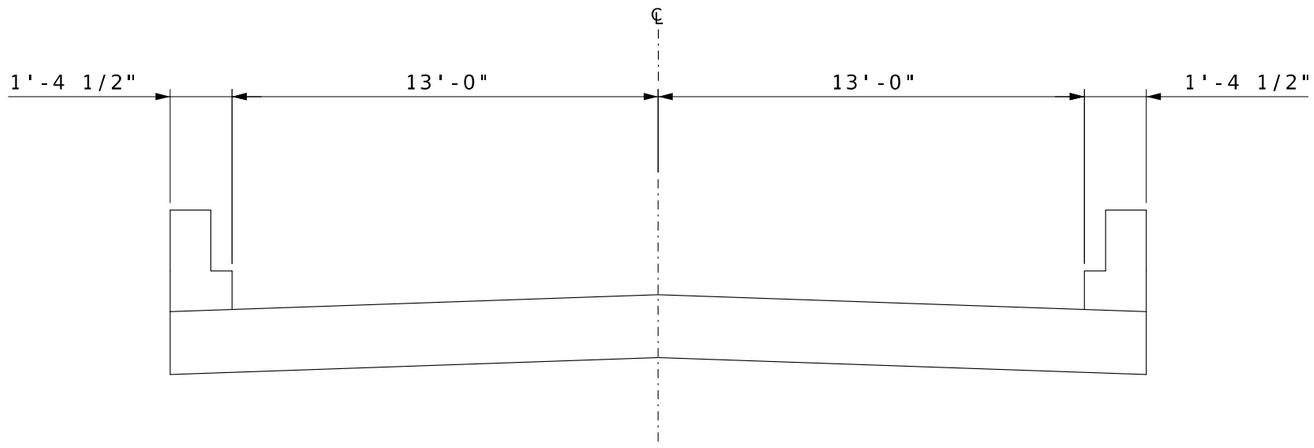
DESCRIPTION	DATE

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



TYPICAL SECTION THROUGH APPROACH PAVEMENT

LOG MILE 0.952 TO 0.976
LOG MILE 1.015 TO 1.105



TYPICAL SECTION THROUGH BRIDGE

LOG MILE 0.976 TO 1.015

TYPICAL SECTION
SHEET 1 OF 1

STATE OF MISSOURI
JASON R. VANDERFELTZ
NUMBER PE-2003015049
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED
12/4/2024

ROUTE	STATE
BEAMER LN	MO
DISTRICT	SHEET NO.
CD	2

COUNTY
CRAWFORD

JOB NO.
J5S3545

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

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

PERMANENT EROSION CONTROL

LOG MILE FROM	LOG MILE TO	LOCATION	FURNISHING TYPE 1 ROCK DITCH LINER CUYD	PLACING TYPE 1 ROCK DITCH LINER CUYD	PERMENANT EROSION CONTROL GEOTEXTILE SQYD	REMARKS
1.015	1.015	BEAMER LN	3.08	3.08	17.80	DRAIN FLUMES AT END OF BRIDGE
		TOTAL	3.08	3.08	17.80	
		USE	3.00	3.00	18.00	

MULCHING AND SEEDING

LOG MILE FROM	LOG MILE TO	LOCATION	LENGTH FT	MULCHING ACRE	SEEDING COOL SEASON MIXTURES ACRE	REMARKS
1.015	1.015	BEAMER LN	37	0.025	0.025	30 FT. ALONG BOTH DRAIN FLUMES AT NORTH END OF BRIDGE
			TOTAL	1 LUMP SUM	1 LUMP SUM	

TEMPORARY EROSION CONTROL

LOG MILE FROM	LOG MILE TO	LOCATION	SEDIMENT REMOVAL CUYD	SILT FENCE LF	ALT. DITCH CHECK LF	REMARKS
1.015	1.015	BEAMER LN	3.15	115.00	20.00	ON LEFT AND RIGHT OF WORK AFTER I-44
		TOTAL	3.15	115	20	
		USE	3	115	20	

MOBILIZATION

1 LUMP SUM

SUMMARY OF QUANTITIES
SHEET 1 OF 2

STATE OF MISSOURI
JASON R. VANDERFELTZ
NUMBER PE-2003015049
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED
12/4/2024

ROUTE: BEAMER LN
STATE: MO
DISTRICT: CD
SHEET NO.: 3
COUNTY: CRAWFORD
JOB NO.: J5S3545
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

DESCRIPTION | DATE

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

EFFECTIVE: 07-01-2024

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL AREA SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NUM.	DESCRIPTION
WARNING SIGNS								
WO1-1L	48X48	16.00						TURN (SYMBOL LEFT)
WO1-1R	48X48	16.00						TURN (SYMBOL RIGHT)
WO1-2L	48X48	16.00						CURVE (SYMBOL LEFT)
WO1-2R	48X48	16.00						CURVE (SYMBOL RIGHT)
WO1-3L	48X48	16.00						REVERSE TURN (SYMBOL LEFT)
WO1-3R	48X48	16.00						REVERSE TURN (SYMBOL RIGHT)
WO1-4L	48X48	16.00						REVERSE CURVE (SYMBOL LEFT)
WO1-4R	48X48	16.00						REVERSE CURVE (SYMBOL RIGHT)
WO1-4bL	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL LEFT)
WO1-4bR	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL RIGHT)
WO1-4cL	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL LEFT)
WO1-4cR	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL RIGHT)
WO1-6	60X30	12.50						HORIZONTAL ARROW (SYMBOL)
WO1-6a	72X36	18.00						HORIZ. ARROW (SYMBOL ON PERMANENT BARRICADE)
WO1-7	60X30	12.50						DOUBLE HEAD HORIZONTAL ARROW (SYMBOL)
WO1-7a	72X36	18.00						DOUBLE HEAD HORIZ. ARROW (SYMBOL ON PERM. BARR.)
WO1-8	18X24	3.00						CHEVRON (SYMBOL)
WO1-8a	30X36	7.50						CHEVRON (SYMBOL FOR DIVIDED HIGHWAYS)
WO3-1	48X48	16.00						STOP AHEAD (SYMBOL)
WO3-2	48X48	16.00						YIELD AHEAD (SYMBOL)
WO3-3	48X48	16.00						SIGNAL AHEAD (SYMBOL)
WO3-4	48X48	16.00						BE PREPARED TO STOP
WO3-5	48X48	16.00						SPEED LIMIT AHEAD
WO4-1L	48X48	16.00						MERGE (SYMBOL FROM LEFT)
WO4-1R	48X48	16.00						MERGE (SYMBOL FROM RIGHT)
WO4-1aL	48X48	16.00	2	32			6A	MERGE (LEFT)
WO4-1aR	48X48	16.00	2	32			6B	MERGE (RIGHT)
WO5-1	48X48	16.00						ROAD/BRIDGE/RAMP NARROWS
WO5-3	48X48	16.00						ONE LANE BRIDGE
WO5-5	48X48	16.00						NARROW LANES
WO6-1	48X48	16.00						DIVIDED HIGHWAY (SYMBOL)
WO6-2	48X48	16.00						DIVIDED HIGHWAY END (SYMBOL)
WO6-3	48X48	16.00						TWO WAY TRAFFIC (SYMBOL)
WO7-3a	30X24	5.00						NEXT XX MILES (PLAQUE)
WO8-1	48X48	16.00						BUMP
WO8-2	48X48	16.00						DIP
WO8-3	48X48	16.00						PAVEMENT ENDS
WO8-4	48X48	16.00						SOFT SHOULDER
WO8-5	48X48	16.00						SLIPPERY WHEN WET (SYMBOL)
WO8-6	48X48	16.00						TRUCK CROSSING
WO8-6c	48X48	16.00						TRUCK ENTRANCE
WO8-7	36X36	9.00						LOOSE GRAVEL
WO8-7a	36X36	9.00						FRESH OIL / LOOSE GRAVEL
WO8-9	48X48	16.00						LOW SHOULDER
WO8-11	48X48	16.00						UNEVEN LANES
WO8-12	48X48	16.00						NO CENTER LINE
WO8-15	48X48	16.00						GROOVED PAVEMENT
WO8-15P	30X24	5.00						MOTORCYCLE (PLAQUE)
WO8-17L	48X48	16.00						SHOULDER DROP-OFF (SYMBOL LEFT)
WO8-17R	48X48	16.00						SHOULDER DROP-OFF (SYMBOL RIGHT)
WO8-17P	30X24	5.00						SHOULDER DROP-OFF (PLAQUE)
W10-1	42RND.	9.62						RAILROAD CROSSING
WO12-1	24X24	4.00						DOUBLE DOWN ARROW (SYMBOL)
WO12-2	48X48	16.00						LOW CLEARANCE (SYMBOL)
WO12-2x	24X18	3.00						LOW CLEARANCE (PLAQUE)
WO12-2a	84X24	14.00						OVERHEAD LOW CLEARANCE (FEET AND INCHES)
WO12-4	120X60	50.00						LOW CLEARANCE XX FT XX IN XX MILES AHEAD
WO12-5	120X60	50.00						WIDTH RESTRICTION XX FT XX IN XX MILES AHEAD
WO13-1	30X30	6.25						ADVISORY SPEED (PLAQUE)
WO16-2	30X24	5.00						XXX FEET (PLAQUE)
WO16-3	30X24	5.00						X MILE (PLAQUE)
WO20-1	48X48	16.00	4	64			2	ROAD/BRIDGE/RAMP WORK AHEAD
WO20-2	48X48	16.00						DETOUR AHEAD
WO20-3	48X48	16.00	2	32			19/20	ROAD CLOSED AHEAD (200 FT.)
WO20-4	48X48	16.00						ONE LANE ROAD AHEAD
WO20-5	48X48	16.00	4	64			5	RIGHT/CENTER/LEFT LANE CLOSED AHEAD
WO20-5a	48X48	16.00						2 RIGHT/CENTER/LEFT LANES CLOSED AHEAD
WO20-6a	48X48	16.00	2	32			6	RIGHT/CENTER/LEFT LANE CLOSED
WO20-7a	48X48	16.00						FLAGGER (SYMBOL)
WO21-2	36X36	9.00						FRESH OIL
WO21-5	48X48	16.00						SHOULDER WORK / SHOULDER WORK AHEAD
WO22-1	48X48	16.00						BLASTING ZONE AHEAD
WO22-2	42X36	10.50						TURN OFF 2-WAY RADIO AND PHONE
WO22-3	42X36	10.50						END BLASTING ZONE
GO22-1	21X15	2.19						WET PAINT (ARROW PIVOTS)

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NUM.	DESCRIPTION
GUIDE SIGNS								
E05-1	36X48	12.00						GORE EXIT
E05-2	48X36	12.00						EXIT OPEN
E05-2a	48X36	12.00						EXIT CLOSED
GO20-1	60X24	10.00						ROAD WORK NEXT XX MILES
GO20-2	48X24	8.00						END ROAD WORK
GO20-4	36X18	4.50						PILOT CAR FOLLOW ME
GO20-4a	42X30	8.75						PILOT CAR IN USE WAIT & FOLLOW
GO20-4a	18X12	1.50						PILOT CAR IN USE WAIT & FOLLOW
GO20-5aP	36X24	6.00	4	24			54	WORK ZONE (PLAQUE)
MO4-8a	24X18	3.00						END DETOUR
MO4-9L	48X36	12.00						DETOUR (LEFT)
MO4-9R	48X36	12.00						DETOUR (RIGHT)
MO4-9P	48X12	4.00						STREET NAME (PLAQUE)
MO4-10L	48X18	6.00						DETOUR ARROW (LEFT)
MO4-10R	48X18	6.00						DETOUR ARROW (RIGHT)
REGULATORY SIGNS								
R1-1	48X48	13.25						STOP
R1-2	48TRI.	6.93						YIELD
R1-2a	36X36	9.00						TO ONCOMING TRAFFIC (PLAQUE)
R1-3P	30X12	2.50						ALL WAY (PLAQUE)
R2-1	36X48	12.00	8	96			4/25	SPEED LIMIT 4@60, 4@70
R3-1	48X48	16.00						NO RIGHT TURN (SYMBOL)
R3-2	48X48	16.00						NO LEFT TURN (SYMBOL)
R3-3	36X36	9.00						NO TURNS
R3-4	48X48	16.00						NO U-TURN (SYMBOL)
R3-7L	30X30	6.25						LEFT LANE MUST TURN LEFT
R3-7R	30X30	6.25						RIGHT LANE MUST TURN RIGHT
R4-1	36X48	12.00						DO NOT PASS
R4-2	36X48	12.00						PASS WITH CARE
R4-7a	36X48	12.00						KEEP RIGHT (HORIZONTAL ARROW)
R4-8a	36X48	12.00						KEEP LEFT (HORIZONTAL ARROW)
R5-1	30X30	6.25						DO NOT ENTER
R5-1a	36X24	6.00						WRONG WAY
R6-1L	54X18	6.75						ONE WAY ARROW (LEFT)
R6-1R	54X18	6.75						ONE WAY ARROW (RIGHT)
R6-2L	24X30	5.00						ONE WAY (LEFT)
R6-2R	24X30	5.00						ONE WAY (RIGHT)
R9-9	24X12	2.00						SIDEWALK CLOSED
R9-11L	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW LEFT) CROSS HERE
R9-11R	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW RIGHT) CROSS HERE
R10-6	24X36	6.00						STOP HERE ON RED (45^ ARROW)
R11-2	48X30	10.00	2	20			29	ROAD CLOSED
R11-3a	60X30	12.50						ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY
R11-4	60X30	12.50	1	12.5			55	ROAD CLOSED TO THRU TRAFFIC
CONST-3A	60X48	20.00						FINE SIGN
CONST-3X	56X12	4.67						SPEEDING/PASSING (PLATE)
MISCELLANEOUS SIGNS								
CONST-5	48X36	12.00						POINT OF PRESENCE
CONST-5	96X48	32.00						POINT OF PRESENCE
CONST-8	48X36	12.00						WORK ZONE NO PHONE ZONE

616-10.05 CONSTRUCTION SIGNS	TOTAL 409
616-10.10 RELOCATED SIGNS	TOTAL 0

ITEM NUMBER	TOTAL QTY	DESCRIPTION
6122008		IMPACT ATTENUATOR 40 MPH (SAND BARRELS)
6122009		IMPACT ATTENUATOR 45 MPH (SAND BARRELS)
6122010		IMPACT ATTENUATOR 50 MPH (SAND BARRELS)
6122012		IMPACT ATTENUATOR 55 MPH (SAND BARRELS)
6122014		IMPACT ATTENUATOR 60 MPH (SAND BARRELS)
6122017		IMPACT ATTENUATOR 65 MPH (SAND BARRELS)
6122019		IMPACT ATTENUATOR 70 MPH (SAND BARRELS)
6122020		REPLACEMENT SAND BARREL
6122030		IMPACT ATTENUATOR (RELOCATION)
6123001		TRUCK MOUNTED ATTENUATOR (TMA)
6161008	2	ADVANCED WARNING RAIL SYSTEM
6161012		BUOYS (BOATS KEEP OUT)
6161013		BUOYS (NO WAKE)
6161014		SPECIAL SIGN ASSEMBLY (BOATS KEEP OUT)
6161025	58	CHANNELIZER (TRIM LINE)
6161030	7	TYPE III MOVEABLE BARRICADE
6161033		DIRECTION INDICATOR BARRICADE
6161040	2	FLASHING ARROW PANEL
6161047		TYPE III OBJECT MARKER
6161055		SEQUENTIAL FLASHING WARNING LIGHT
6161070		TUBULAR MARKER
6161095		RADAR SPEED ADVISORY SYSTEM
6161096		CHANGEABLE MESSAGE SIGN, COMMISSION FURNISHED/RETAINED
	1	CHANGEABLE MESSAGE SIGN W/O COMM.
6161098A		INTERFACE - CONTRACTOR FURNISHED/RETAINED
		CHANGEABLE MESSAGE SIGN WITH COMM.
6161099		INTERFACE - CONTRACTOR FURNISHED/RETAINED
6162000A		WORK ZONE TRAFFIC SIGNAL SYSTEM
6162002		TEMPORARY LONG-TERM RUMBLE STRIPS
		TEMPORARY TRAFFIC BARRIER
6173600D		CONTRACTOR FURNISHED/RETAINED
		TEMPORARY TRAFFIC BARRIER
6173602B		CONTRACTOR FURNISHED/COMMISSION RETAINED
6174000A		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION
6175010A		RELOCATING TEMPORARY TRAFFIC BARRIER
		TEMPORARY TRAFFIC BARRIER
6176000B		COMMISSION FURNISHED/RETAINED
		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION
6177000B		COMMISSION FURNISHED/RETAINED
6208064A		TEMPORARY RAISED PAVEMENT MARKER
9029400		TEMPORARY TRAFFIC SIGNALS
9029401		TEMPORARY TRAFFIC SIGNALS AND LIGHTING

SUMMARY OF QUANTITIES
SHEET 2 OF 2

STATE OF MISSOURI
JASON R. VANDERFELTZ
NUMBER PE-2003015049
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 12/4/2024

ROUTE BEAMER LN | STATE MO

DISTRICT CD | SHEET NO. 3

COUNTY CRAWFORD

JOB NO. J5S3545

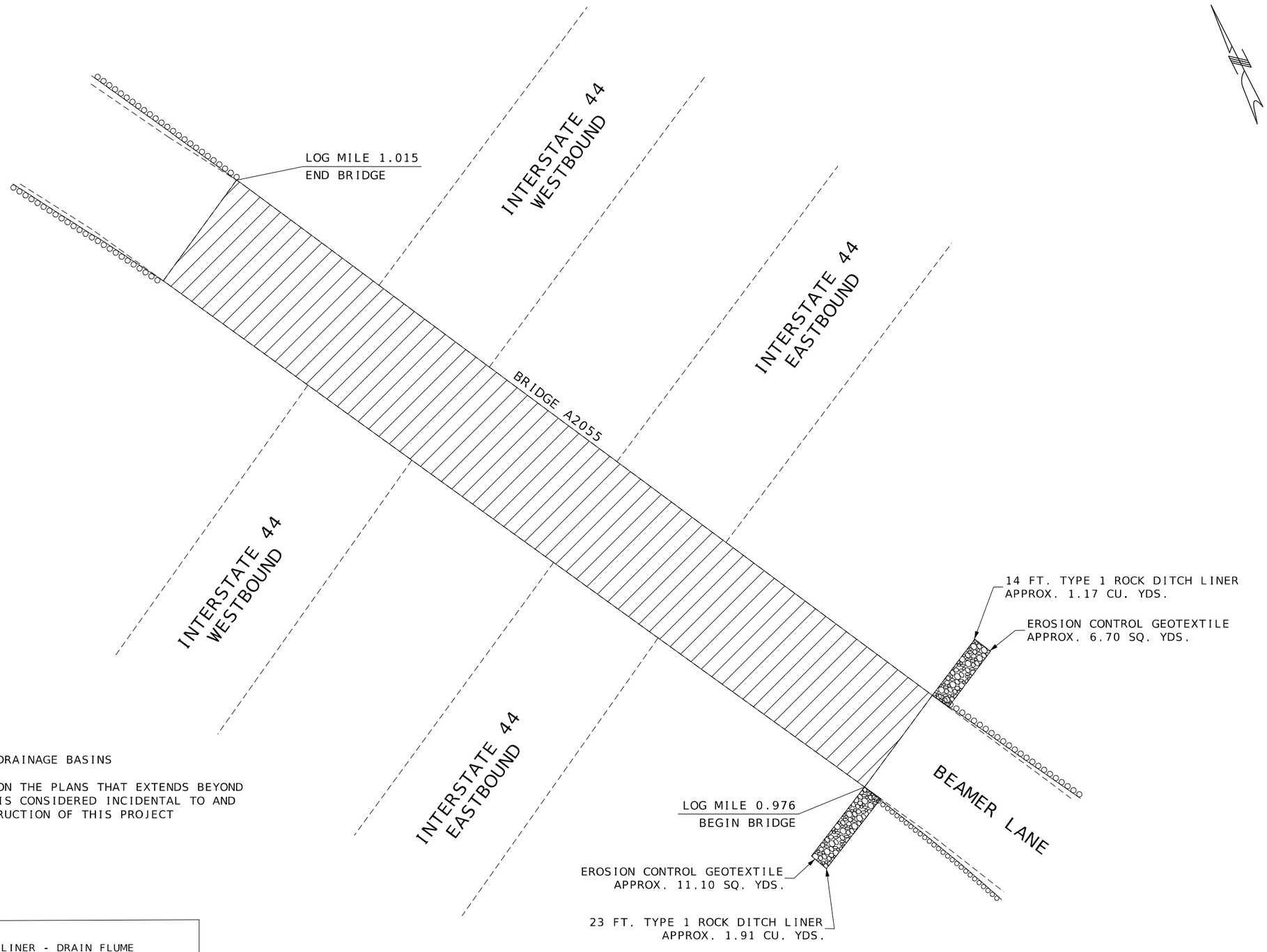
CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DATE	DESCRIPTION

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



NOTES:

CLEAN OUT END BENT DRAINAGE BASINS

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

NOT TO SCALE

TYPE 1 ROCK DITCH LINER - DRAIN FLUME

SEE BRIDGE PLANS FOR WORK DETAILS

BEAMER LANE STATE BRIDGE A2055

SPECIAL SHEET
1 OF 1

STATE OF MISSOURI
JASON R. VANDERFELTZ
NUMBER PE-2003015049
PROFESSIONAL ENGINEER

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DATE PREPARED
12/4/2024

ROUTE	STATE
BEAMER LN	MO
DISTRICT	SHEET NO.
CD	4

COUNTY
CRAWFORD

JOB NO.
J5S3545

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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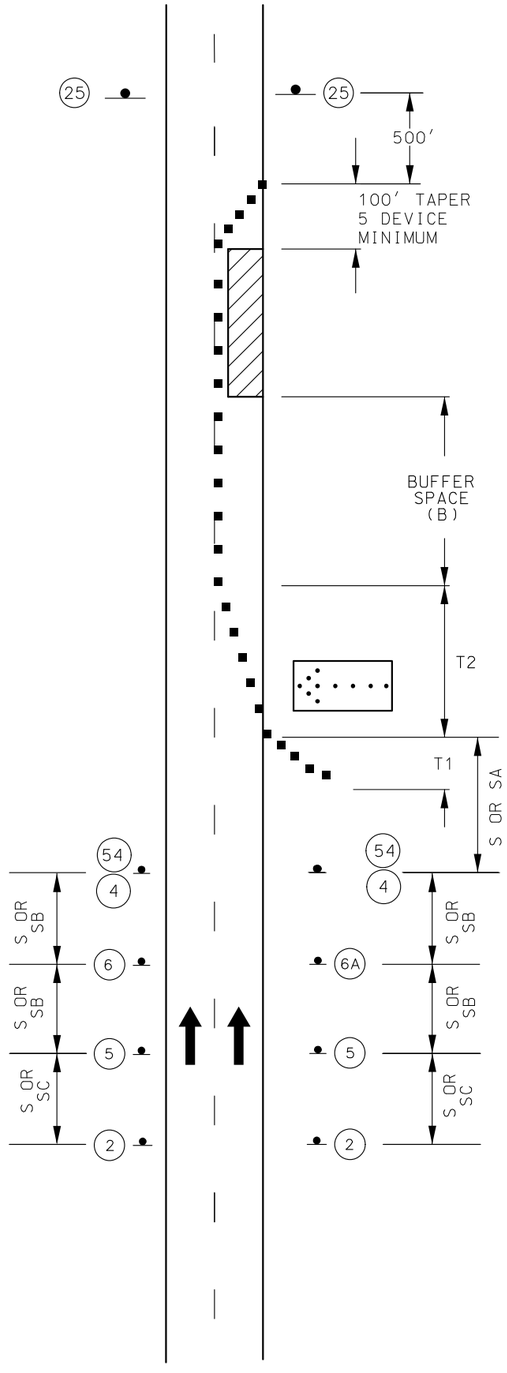
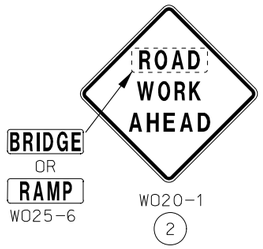
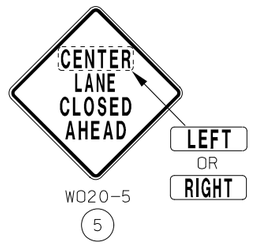


STATIONARY LANE CLOSURE
DIVIDED HIGHWAY



W020-1 W025-6
(2)



W020-5
(5)

W020-6a
(6)

W04-1aL
(6A)

W04-1aR
(6B)

G020-5aP
(54)

R2-1
(4)

R2-1
NORMAL SPEED
(25)

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

TAPER LENGTHS AND SPACING FOR CHANNELIZERS							
PERMANENT POSTED SPEED MPH	MINIMUM LANE TAPER LENGTH (3) (T2)			MINIMUM SHOULDER TAPER LENGTH BASED ON 10' SHOULDER (T1)	BUFFER LENGTH FT. (B)	MAXIMUM CHANNELIZER SPACING	
	10'	11'	12'			THROUGH TAPER	THROUGH WORK AREA
0-35	205'	225'	245'	70'	250'	35'	40'
40-45	450'	495'	540'	150'	360'	40'	80'
50-55	550'	605'	660'	185'	495'	50'	80'
60-70	700'	770'	840'	235'	730'	60'	120'

NOTES:

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

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

(3) TAPER LENGTHS SHOWN INCLUDE LENGTH REQUIRED FOR LANE AND 10' SHOULDER.

THIS INFORMATION ALSO SHALL BE USED WHEN WORK IS BEING PERFORMED IN THE LANE ADJACENT TO THE MEDIAN ON A DIVIDED HIGHWAY. IN THIS CASE, THE LEFT LANE CLOSED SIGNS AND THE CORRESPONDING MERGE OR LANE ENDS SIGN SHALL BE SUBSTITUTED.

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

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

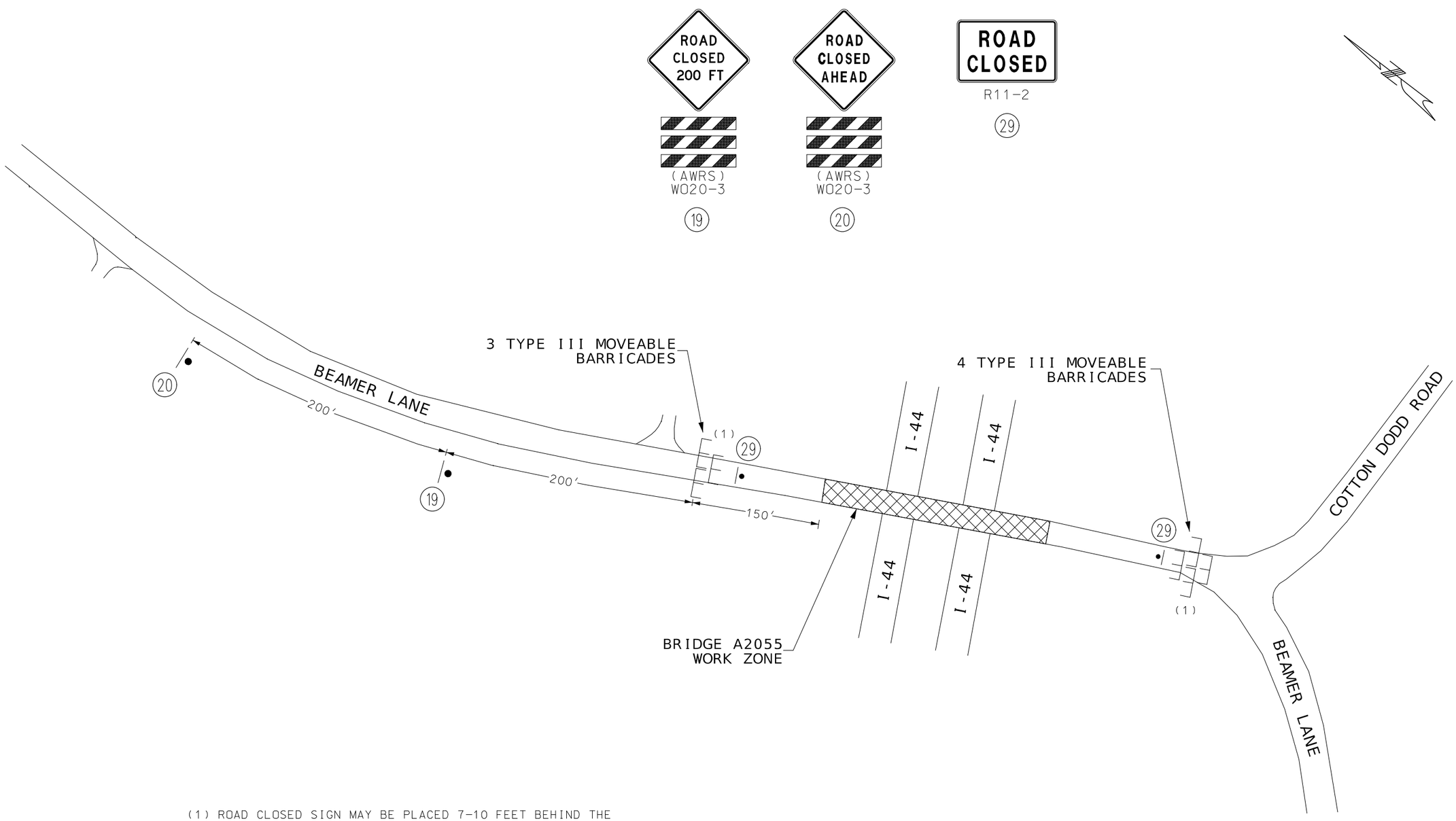
TEMPORARY TRAFFIC CONTROL SHEET
STATIONARY LANE CLOSURE
ON DIVIDED HIGHWAY
SHEET 1 OF 3

STATE OF MISSOURI
JASON R. VANDERFELTZ
NUMBER PE-2003015049
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED: 12/4/2024
ROUTE: BEAMER LN | STATE: MO
DISTRICT: CD | SHEET NO.: 5
COUNTY: CRAWFORD
JOB NO.: J5S3545
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

DESCRIPTION | DATE

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



(1) ROAD CLOSED SIGN MAY BE PLACED 7-10 FEET BEHIND THE BARRICADES AND AT A SIGN HEIGHT APPROPRIATE TO THE TYPE OF ROADWAY. ONE BARRICADE SHOULD BE REQUIRED TO COMPLETELY CLOSE EACH 8-FEET OF PAVEMENT. PAVED SHOULDERS SHALL BE INCLUDED IN THE AREA TO BE CLOSED.

REFER TO STANDARD PLAN 610.10 FOR PLACEMENT OF BARRICADES

TRAFFIC CONTROL SHOULD BE REMOVED AS SOON AS PRACTICAL AFTER CONDITIONS FOR THE CLOSURE NO LONGER EXISTS.

NOT TO SCALE

TYPE OF ROADWAY	SIGN HEIGHT	MAXIMUM WORK ZONE LENGTH (L)
URBAN	1' PORTABLE 7' POST	1 MILE
RURAL UNDIVIDED	1' PORTABLE 5' POST	3 MILES

TEMPORARY TRAFFIC CONTROL SHEET
HIGHWAY CLOSURE
SHEET 2 OF 3

STATE OF MISSOURI
JASON R. VANDERFELTZ
NUMBER PE-2003015049
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED: 12/4/2024
ROUTE: BEAMER LN
STATE: MO
DISTRICT: CD
SHEET NO.: 6
COUNTY: CRAWFORD
JOB NO.: J5S3545
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

NOT TO SCALE

TRAFFIC CONTROL SHEET
SHEET 3 OF 3

STATE OF MISSOURI
JASON R. VANDERFELTZ
NUMBER PE-2003015049
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED
12/4/2024

ROUTE	STATE
BEAMER LN	MO
DISTRICT	SHEET NO.
CD	7

COUNTY
CRAWFORD

JOB NO.
J5S3545

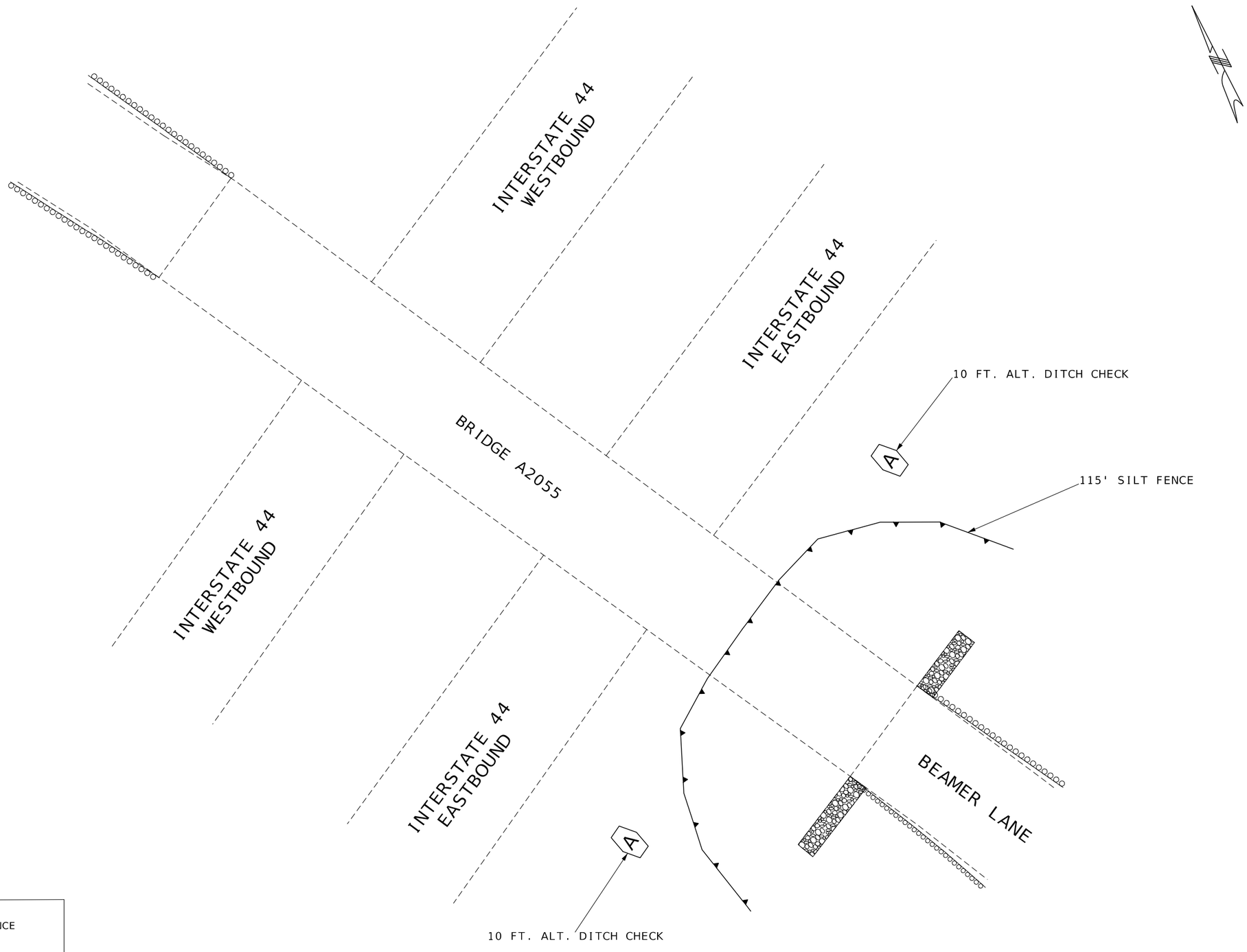
CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

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



NOT TO SCALE

SILT FENCE

A ALT. DITCH CHECK

BEAMER LANE STATE BRIDGE A2055

EROSION CONTROL SHEET
1 OF 1

STATE OF MISSOURI
JASON R. VANDERFELTZ
NUMBER PE-2003015049
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED
12/4/2024

ROUTE	STATE
BEAMER LN	MO
DISTRICT	SHEET NO.
CD	8

COUNTY
CRAWFORD

JOB NO.
J5S3545

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

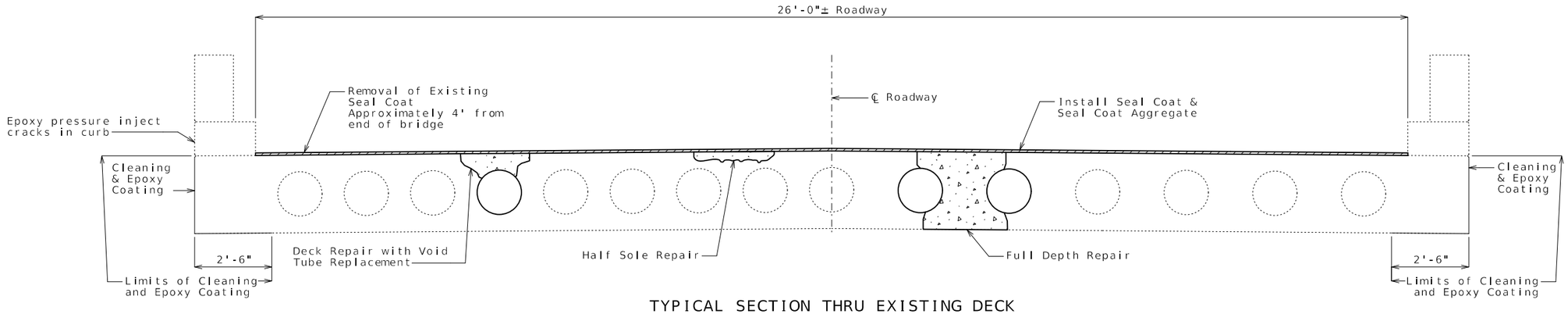
DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

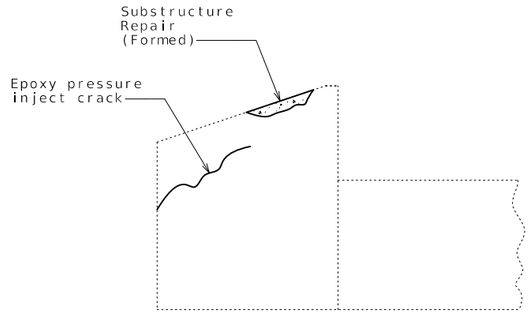
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

SEC/SUR 34 TWP 39N RGE 5W

U.I.P. AND REHABILITATE EXISTING (44'-56'-56'-48') CONTINUOUS CONCRETE VOIDED SLAB SPANS



TYPICAL SECTION THRU EXISTING DECK



PART ELEVATION OF EAST WING
AT END BENT NO. 5

Estimated Quantities

Item		Total
Removal of Seal Coat or Polymer Wearing Surface	sq. foot	80
Emulsified Asphalt, Seal Coat	gallon	239
Seal Coat Aggregate, Grade A1	sq. yard	597
Substructure Repair (Formed)	sq. foot	4
Half-Sole Repair	sq. foot	100
Full Depth Repair	sq. foot	100
Epoxy Pressure Injecting	linear foot	10
Deck Repair with Void Tube Replacement	sq. foot	50
Cleaning and Epoxy Coating	sq. foot	1739

General Notes:

Design Specifications:

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

Design Loading:

H15-44 Modified (1961), HS20-44 (New Construction)

Design Unit Stresses:

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

Miscellaneous:

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

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

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

Traffic Handling:

Structure to be closed during construction. See roadway plans for traffic control.

REPAIRS TO BRIDGE: BEAMER LN OVER ROUTE I-44

ROUTE I-44 FROM ROUTE F TO ROUTE 19
ABOUT 1.6 MILES WEST OF ROUTE F
BEGINNING STATION 8+03.37± (Match Existing)

Detailed Oct. 2024
Checked Dec. 2024

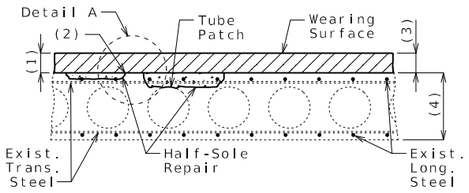
Note: This drawing is not to scale. Follow dimensions.

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
01/11/2025 9:54:29 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

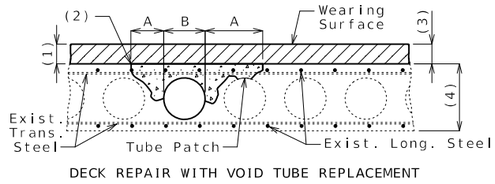
DATE PREPARED 1/10/2025
ROUTE I-44 | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY CRAWFORD
JOB NO. J5S3545
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A20552

DESCRIPTION | DATE

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

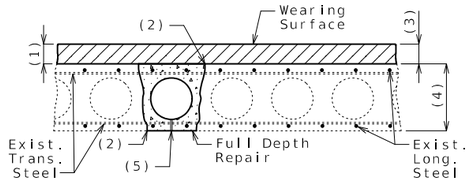


HALF-SOLE REPAIR



DECK REPAIR WITH VOID TUBE REPLACEMENT

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



FULL DEPTH REPAIR

DECK REPAIR

(1) Removal of existing seal coat (last 4' +/- of approx. 75% of deck width - 80 sq.ft. +/-)

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

(3) Install Seal Coat.

(4) Original depth.

(5) Restore existing weep hole, if encountered.

Deck Repair Notes:

Order of Repair:

1. Remove existing seal coat (last 4' +/- of approx. 75% of deck width - 80 sq.ft. +/-)
2. Sound deck to identify areas in need of repair.
3. Outside special repair zones, complete the following repairs:
   a. Half-sole repair
   b. Deck repair with void tube replacement
   c. Full depth repair
4. Inside special repair zones, complete the following repairs:
   a. Half-sole repair
   b. Deck repair with void tube replacement
   c. Full depth repair
5. Place new wearing surface.

Special Repair Zones:

Any deck repair in areas not designated as a special repair zone shall be completed prior to work in Zone A.

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

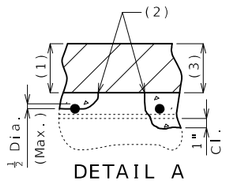
If any single repair area does not exceed 4 square feet in size and the total repair area within a special repair zone does not exceed 12 square feet, the special repair zone may be repaired at the same time as an adjacent zone.

Void Repair:

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

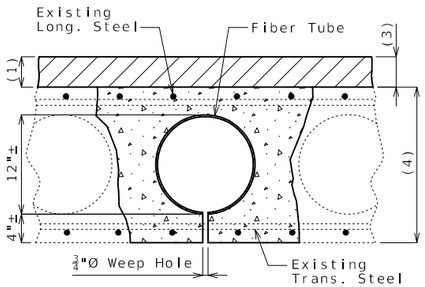
An exposed void in the deck shall be patched as approved by the engineer in a manner that shall maintain the void area completely free of concrete. Cost of patching an exposed void will be considered completely covered by the contract unit price for Half-Sole Repair.

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



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.



FIBER VOID TUBE REPLACEMENT

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

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

DECK REPAIR DETAILS

Detailed Oct. 2024
Checked Dec. 2024

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
Ted Koester
01/11/2025 9:55:13 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED: 1/10/2025
ROUTE: I-44
STATE: MO
DISTRICT: BR
SHEET NO.: 2
COUNTY: CRAWFORD
JOB NO.: J5S3545
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A20552

DESCRIPTION	DATE

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

DESIGN DESIGNATION

A.A.D.T. - 2025 = 2641
A.A.D.T. - 2045 = 3019
T = 11.21%
V = 55 M.P.H.

FUNCTIONAL CLASSIFICATION- MAJOR COLLECTOR

NO NEW R/W

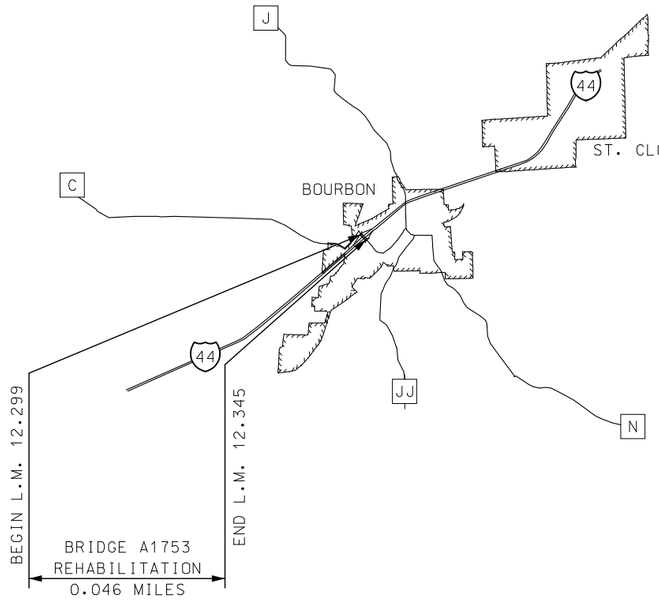
KEY MAP
LOCATION OF CRAWFORD COUNTY

CONVENTIONAL SYMBOLS
(USED IN PLANS)

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

NOTE: DASHED OR OPEN SYMBOLS INDICATE EXISTING FEATURES

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



NOT TO SCALE

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

INDEX OF SHEETS

LENGTH OF PROJECT

BEGINNING OF PROJECT	LOG MILE 12.299
END OF PROJECT	LOG MILE 12.345
APPARENT LENGTH	242.88 FEET

EQUATIONS AND EXCEPTIONS:
NONE

TOTAL CORRECTIONS	0.00 FEET
NET LENGTH OF PROJECT	242.88 FEET
STATE LENGTH	0.046 MILES

STATE OF MISSOURI
JASON R. VANDERFELTZ
NUMBER PE-2003015049
PROFESSIONAL ENGINEER
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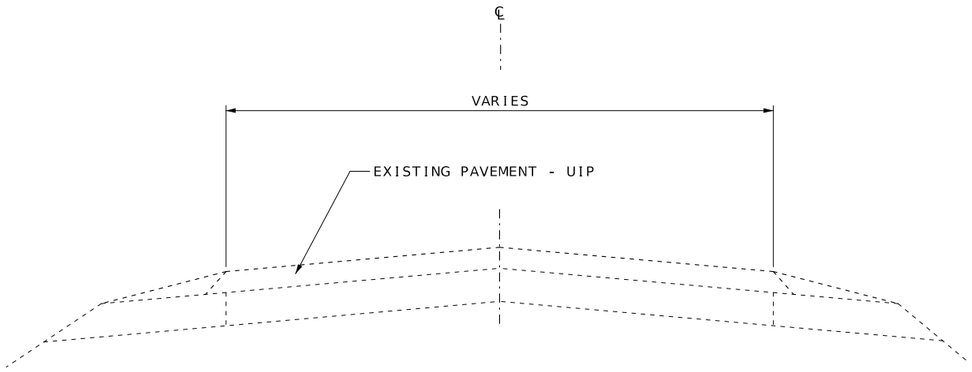
DATE PREPARED
12/9/2024

ROUTE	STATE
C	MO
DISTRICT	SHEET NO.
CD	1

COUNTY
CRAWFORD
JOB NO.
J5S3550
CONTRACT ID.
PROJECT NO.
BRIDGE NO.

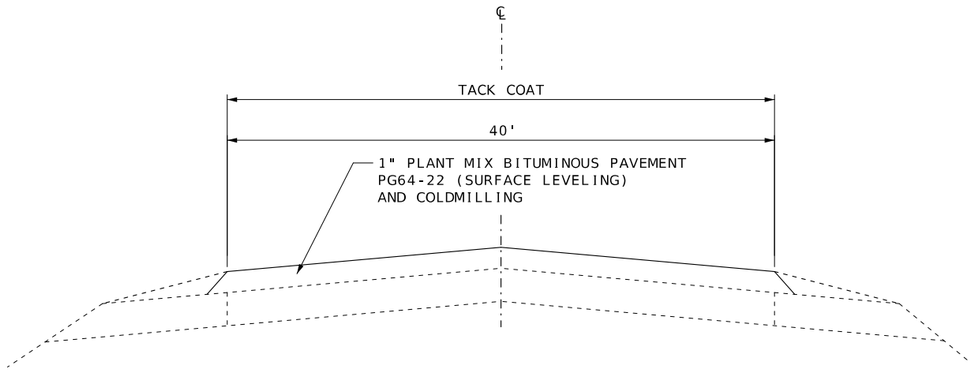
DESCRIPTION	DATE

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



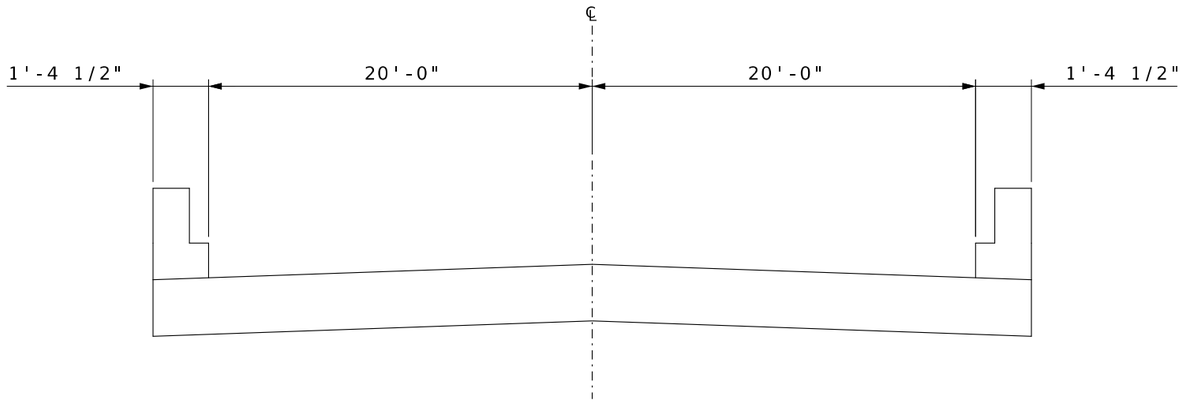
EXISTING TYPICAL SECTION

LOG MILE 12.299 TO 12.345



TYPICAL SECTION THROUGH APPROACH PAVEMENT

LOG MILE 12.299 TO 12.304
LOG MILE 12.340 TO 12.345



TYPICAL SECTION THROUGH BRIDGE

LOG MILE 12.304 TO 12.340

ESTIMATE FACTORS
BITUMINOUS PAVEMENT MIXTURE PG64-22 (SURFACE LEVELING) = 2.000 TONS/CY
TACK (EXIST. ASPHALT SURFACE) = 0.08 GAL/SY
TACK (COLDMILLED ASPHALT) = 0.10 GAL/SY

TYPICAL SECTION
SHEET 1 OF 1

STATE OF MISSOURI
JASON R. VANDERFELTZ
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DATE PREPARED: 12/9/2024

ROUTE	STATE
C	MO
DISTRICT	SHEET NO.
CD	2

COUNTY: CRAWFORD
JOB NO.: J5S3550
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

REMOVAL OF IMPROVEMENTS				
APPROX LOG MILE	LOCATION	ITEM	QTY	REMARKS
12.289	ROUTE C - RT	GUARDRAIL WITH BRIDGE ATTACHMENT	68 LF	STATE BRIDGE A1753
12.289	ROUTE C - LT	GUARDRAIL WITH BRIDGE ATTACHMENT	68 LF	STATE BRIDGE A1753
12.340	ROUTE C - RT	GUARDRAIL WITH BRIDGE ATTACHMENT	364 LF	STATE BRIDGE A1753
12.340	ROUTE C - LT	GUARDRAIL WITH BRIDGE ATTACHMENT	230 LF	STATE BRIDGE A1753
12.304	ROUTE C	CONCRETE SLOPE PROTECTION	203 SQYD	END BENT 1
12.330	ROUTE C	CONCRETE SLOPE PROTECTION	203 SQYD	END BENT 5
TOTAL 1 LUMP SUM				

PAVEMENT								
LOG MILE FROM	LOG MILE TO	LOCATION	LENGTH FT.	WIDTH FT.	AREA SQ. FT.	SURFACE LEVELING PG 64-22 TONS	TACK COAT GAL	REMARKS
12.299	12.304	ROUTE C	25	40	1000	6.17	11.11	ASPHALT PAVEMENT BEFORE BRIDGE A1753
12.340	12.345	ROUTE C	25	40	1000	6.17	11.11	ASPHALT PAVEMENT AFTER BRIDGE A1753
					TOTAL	12.34	22.22	
					USE	12.3	22	

COLDMILLING						
LOG MILE FROM	LOG MILE TO	LOCATION	LENGTH FT	WIDTH FT	COLDMILLING BITUMINOUS PAVEMENT (3" THICK OR LESS) SQYD	REMARKS
12.299	12.304	ROUTE C	25	40	111.11	COLDMILLING BEFORE BRIDGE A1753
12.340	12.345	ROUTE C	25	40	111.11	COLDMILLING AFTER BRIDGE A1753
				TOTAL	222.22	
				USE	222	

PERMANENT EROSION CONTROL						
LOG MILE FROM	LOG MILE TO	LOCATION	FURNISHING TYPE 2 ROCK BLANKET CUYD	PLACING TYPE 2 ROCK BLANKET CUYD	PERMENANT EROSION CONTROL GEOTEXTILE SQYD	REMARKS
12.304	12.310	ROUTE C	135.33	135.33	241.56	ROCK BLANKET AT WEST ABUTMENT
12.330	12.340	ROUTE C	135.33	135.33	241.56	ROCK BLANKET AT EAST ABUTMENT
		TOTAL	270.66	270.66	483.12	
		USE	271	271	483	

MOBILIZATION
1 LUMP SUM

SUMMARY OF QUANTITIES

SHEET 1 OF 3

STATE OF MISSOURI
JASON R. VANDERFELTZ
NUMBER PE-2003015049
PROFESSIONAL ENGINEER

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DATE PREPARED
12/9/2024

ROUTE	STATE
C	MO
DISTRICT	SHEET NO.
CD	3

COUNTY
CRAWFORD

JOB NO.
J5S3550

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

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

GUARDRAIL

LOG MILE FROM	LOG MILE TO	LOCATION	MGS BRIDGE APPROACH TRANS. SECT. (REG./ NO CURB) EA	MGS GUARDRAIL LF	TYPE A CRASHWORTHY END TERMINAL (MASH) EA	MGS END ANCHOR EA	TL-2 BRIDGE APPROACH TRANS. SECT. LS	SHAPING SLOPES CLASS III 100F	REMARKS
12.291	12.304	ROUTE C - LT.					1	1	INCLUDES BRIDGE APPROACH TRANS. SECT. AND END TERMINAL - SEE SPECIAL SHEET 3
12.291	12.304	ROUTE C - RT.					1	1	INCLUDES BRIDGE APPROACH TRANS. SECT. AND END TERMINAL - SEE SPECIAL SHEET 3
12.340	12.359	ROUTE C - LT.	1	387.50		1		5	
12.340	12.359	ROUTE C - RT.	1	362.50	1			5	
		TOTAL	2	750.00	1	1	1 LUMP SUM	12	
		USE	2	750	1	1	1 LUMP SUM	12	

PAVEMENT MARKING

LOG MILE FROM	LOG MILE TO	LOCATION	LENGTH (FT)	STAND. WATERBOURNE PVMT MARK. PAINT, TYPE P BEADS		REMARKS
				4" YELLOW LF	4" WHITE LF	
12.299	12.345	ROUTE C	243	486.0	486.0	WHITE EDGE LINES AND DOUBLE YELLOW CENTERLINE
		TOTAL		486.0	486.0	
		USE		486	486	

MULCHING AND SEEDING

LOG MILE FROM	LOG MILE TO	LOCATION	LENGTH FT	MULCHING ACRE	SEEDING COOL SEASON MIXTURES ACRE	REMARKS
12.304	12.310	ROUTE C	31.68	0.044	0.044	30 FT. ON BOTH SIDES OF ROCK BLANKET AT END BENT 1
12.330	12.340	ROUTE C	52.8	0.073	0.073	30 FT. ON BOTH SIDES OF ROCK BLANKET AT END BENT 5
		TOTAL		1 LUMP SUM	1 LUMP SUM	

DRAINAGE BASIN CLEANOUT

LOG MILE	LOCATION	DRAINAGE BASIN CLEANOUT EA	REMARKS
12.304	ROUTE C	2	BASINS BEFORE START OF BRIDGE
12.340	ROUTE C	2	BASINS AFTER END OF BRIDGE
	TOTAL	4	

TEMPORARY EROSION CONTROL

LOG MILE FROM	LOG MILE TO	LOCATION	SEDIMENT REMOVAL CUYD	SILT FENCE LF	ALT. DITCH CHECK LF	REMARKS
12.304	12.310	ROUTE C	2.96	96.00	20.00	SEE EROSION CONTROL SHEET
12.330	12.340	ROUTE C	3.12	112.00	20.00	SEE EROSION CONTROL SHEET
		TOTAL	6.08	208	40	
		USE	6	208	40	

SUMMARY OF QUANTITIES

SHEET 2 OF 3

STATE OF MISSOURI
JASON R. VANDERFELTZ
NUMBER PE-2003015049
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 12/9/2024

ROUTE	STATE
C	MO
DISTRICT	SHEET NO.
CD	3

COUNTY CRAWFORD

JOB NO. J5S3550

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

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

EFFECTIVE: 07-01-2024

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)
WO1-1R	48X48	16.00						TURN (SYMBOL RIGHT)
WO1-2L	48X48	16.00						CURVE (SYMBOL LEFT)
WO1-2R	48X48	16.00						CURVE (SYMBOL RIGHT)
WO1-3L	48X48	16.00						REVERSE TURN (SYMBOL LEFT)
WO1-3R	48X48	16.00						REVERSE TURN (SYMBOL RIGHT)
WO1-4L	48X48	16.00						REVERSE CURVE (SYMBOL LEFT)
WO1-4R	48X48	16.00						REVERSE CURVE (SYMBOL RIGHT)
WO1-4bL	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL LEFT)
WO1-4bR	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL RIGHT)
WO1-4cL	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL LEFT)
WO1-4cR	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL RIGHT)
WO1-6	60X30	12.50						HORIZONTAL ARROW (SYMBOL)
WO1-6a	72X36	18.00						HORIZ. ARROW (SYMBOL ON PERMANENT BARRICADE)
WO1-7	60X30	12.50						DOUBLE HEAD HORIZONTAL ARROW (SYMBOL)
WO1-7a	72X36	18.00						DOUBLE HEAD HORIZ. ARROW (SYMBOL ON PERM. BARR.)
WO1-8	18X24	3.00						CHEVRON (SYMBOL)
WO1-8a	30X36	7.50						CHEVRON (SYMBOL FOR DIVIDED HIGHWAYS)
WO3-1	48X48	16.00						STOP AHEAD (SYMBOL)
WO3-2	48X48	16.00						YIELD AHEAD (SYMBOL)
WO3-3	48X48	16.00						SIGNAL AHEAD (SYMBOL)
WO3-4	48X48	16.00						BE PREPARED TO STOP
WO3-5	48X48	16.00						SPEED LIMIT AHEAD
WO4-1L	48X48	16.00						MERGE (SYMBOL FROM LEFT)
WO4-1R	48X48	16.00						MERGE (SYMBOL FROM RIGHT)
WO4-1aL	48X48	16.00	2	32			6A	MERGE (LEFT)
WO4-1aR	48X48	16.00	2	32			6B	MERGE (RIGHT)
WO5-1	48X48	16.00	2	32			43	ROAD/BRIDGE/RAMP NARROWS
WO5-3	48X48	16.00						ONE LANE BRIDGE
WO5-5	48X48	16.00						NARROW LANES
WO6-1	48X48	16.00						DIVIDED HIGHWAY (SYMBOL)
WO6-2	48X48	16.00						DIVIDED HIGHWAY END (SYMBOL)
WO6-3	48X48	16.00						TWO WAY TRAFFIC (SYMBOL)
WO7-3a	30X24	5.00						NEXT XX MILES (PLAQUE)
WO8-1	48X48	16.00						BUMP
WO8-2	48X48	16.00						DIP
WO8-3	48X48	16.00						PAVEMENT ENDS
WO8-4	48X48	16.00						SOFT SHOULDER
WO8-5	48X48	16.00						SLIPPERY WHEN WET (SYMBOL)
WO8-6	48X48	16.00						TRUCK CROSSING
WO8-6c	48X48	16.00						TRUCK ENTRANCE
WO8-7	36X36	9.00						LOOSE GRAVEL
WO8-7a	36X36	9.00						FRESH OIL / LOOSE GRAVEL
WO8-9	48X48	16.00						LOW SHOULDER
WO8-11	48X48	16.00						UNEVEN LANES
WO8-12	48X48	16.00						NO CENTER LINE
WO8-15	48X48	16.00						GROOVED PAVEMENT
WO8-15P	30X24	5.00						MOTORCYCLE (PLAQUE)
WO8-17L	48X48	16.00						SHOULDER DROP-OFF (SYMBOL LEFT)
WO8-17R	48X48	16.00						SHOULDER DROP-OFF (SYMBOL RIGHT)
WO8-17P	30X24	5.00						SHOULDER DROP-OFF (PLAQUE)
W10-1	42RND.	9.62						RAILROAD CROSSING
WO12-1	24X24	4.00						DOUBLE DOWN ARROW (SYMBOL)
WO12-2	48X48	16.00						LOW CLEARANCE (SYMBOL)
W012-2x	24X18	3.00						LOW CLEARANCE (PLAQUE)
WO12-2a	84X24	14.00						OVERHEAD LOW CLEARANCE (FEET AND INCHES)
WO12-4	120X60	50.00						LOW CLEARANCE XX FT XX IN XX MILES AHEAD
WO12-5	120X60	50.00						WIDTH RESTRICTION XX FT XX IN XX MILES AHEAD
WO13-1	30X30	6.25						ADVISORY SPEED (PLAQUE)
WO16-2	30X24	5.00						XXX FEET (PLAQUE)
WO16-3	30X24	5.00						X MILE (PLAQUE)
WO20-1	48X48	16.00	4	64			2	ROAD/BRIDGE/RAMP WORK AHEAD
WO20-2	48X48	16.00	2	32			18	DETOUR AHEAD
WO20-3	48X48	16.00	2	32			19/20	ROAD CLOSED AHEAD (350 FT PLAQUE)
WO20-4	48X48	16.00						ONE LANE ROAD AHEAD
WO20-5	48X48	16.00	4	64			5	RIGHT/CENTER/LEFT LANE CLOSED AHEAD
WO20-5a	48X48	16.00						2 RIGHT/CENTER/LEFT LANES CLOSED AHEAD
WO20-6a	48X48	16.00	2	32			6	RIGHT/CENTER/LEFT LANE CLOSED
WO20-7a	48X48	16.00						FLAGGER (SYMBOL)
WO21-2	36X36	9.00						FRESH OIL
WO21-5	48X48	16.00						SHOULDER WORK / SHOULDER WORK AHEAD
WO22-1	48X48	16.00						BLASTING ZONE AHEAD
WO22-2	42X36	10.50						TURN OFF 2-WAY RADIO AND PHONE
WO22-3	42X36	10.50						END BLASTING ZONE
GO22-1	21X15	2.19						WET PAINT (ARROW PIVOTS)

GUIDE SIGNS

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NUM.	DESCRIPTION
E05-1	36X48	12.00	2	24			49	GORE EXIT
E05-2	48X36	12.00						EXIT OPEN
E05-2a	48X36	12.00						EXIT CLOSED
GO20-1	60X24	10.00						ROAD WORK NEXT XX MILES
GO20-2	48X24	8.00						END ROAD WORK
GO20-4	36X18	4.50						PILOT CAR FOLLOW ME
GO20-4a	42X30	8.75						PILOT CAR IN USE WAIT & FOLLOW
GO20-4a	18X12	1.50						PILOT CAR IN USE WAIT & FOLLOW
GO20-5aP	36X24	6.00	4	24			54	WORK ZONE (PLAQUE)
MO4-8a	24X18	3.00	2	6			52	END DETOUR
MO4-9L	48X36	12.00						DETOUR (LEFT)
MO4-9R	48X36	12.00						DETOUR (RIGHT)
MO4-9P	48X12	4.00						STREET NAME (PLAQUE)
MO4-10L	48X18	6.00						DETOUR ARROW (LEFT)
MO4-10R	48X18	6.00						DETOUR ARROW (RIGHT)

REGULATORY SIGNS

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	8	96			4/25	SPEED LIMIT 4@60, 4@70
R3-1	48X48	16.00						NO RIGHT TURN (SYMBOL)
R3-2	48X48	16.00						NO LEFT TURN (SYMBOL)
R3-3	36X36	9.00						NO TURNS
R3-4	48X48	16.00						NO U-TURN (SYMBOL)
R3-7L	30X30	6.25						LEFT LANE MUST TURN LEFT
R3-7R	30X30	6.25						RIGHT LANE MUST TURN RIGHT
R4-1	36X48	12.00						DO NOT PASS
R4-2	36X48	12.00						PASS WITH CARE
R4-7a	36X48	12.00						KEEP RIGHT (HORIZONTAL ARROW)
R4-8a	36X48	12.00						KEEP LEFT (HORIZONTAL ARROW)
R5-1	30X30	6.25						DO NOT ENTER
R5-1a	36X24	6.00						WRONG WAY
R6-1L	54X18	6.75						ONE WAY ARROW (LEFT)
R6-1R	54X18	6.75						ONE WAY ARROW (RIGHT)
R6-2L	24X30	5.00						ONE WAY (LEFT)
R6-2R	24X30	5.00						ONE WAY (RIGHT)
R9-9	24X12	2.00						SIDEWALK CLOSED
R9-11L	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW LEFT) CROSS HERE
R9-11R	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW RIGHT) CROSS HERE
R10-6	24X36	6.00						STOP HERE ON RED (45^ ARROW)
R11-2	48X30	10.00	2	20			29	ROAD CLOSED
R11-3a	60X30	12.50						ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY
R11-4	60X30	12.50	1	12.5			55	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-5	96X48	32.00						POINT OF PRESENCE
CONST-8	48X36	12.00						WORK ZONE NO PHONE ZONE

616-10.05 CONSTRUCTION SIGNS	TOTAL
	503

616-10.10 RELOCATED SIGNS	TOTAL
	0

ITEM NUMBER	TOTAL QTY	DESCRIPTION
6122008		IMPACT ATTENUATOR 40 MPH (SAND BARRELS)
6122009		IMPACT ATTENUATOR 45 MPH (SAND BARRELS)
6122010		IMPACT ATTENUATOR 50 MPH (SAND BARRELS)
6122012		IMPACT ATTENUATOR 55 MPH (SAND BARRELS)
6122014		IMPACT ATTENUATOR 60 MPH (SAND BARRELS)
6122017		IMPACT ATTENUATOR 65 MPH (SAND BARRELS)
6122019		IMPACT ATTENUATOR 70 MPH (SAND BARRELS)
6122020		REPLACEMENT SAND BARREL
6122030		IMPACT ATTENUATOR (RELOCATION)
6123001		TRUCK MOUNTED ATTENUATOR (TMA)
6161008	2	ADVANCED WARNING RAIL SYSTEM
6161012		BUOYS (BOATS KEEP OUT)
6161013		BUOYS (NO WAKE)
6161014		SPECIAL SIGN ASSEMBLY (BOATS KEEP OUT)
6161025	114	CHANNELIZER (TRIM LINE)
6161030	10	TYPE III MOVEABLE BARRICADE
6161033		DIRECTION INDICATOR BARRICADE
6161040	2	FLASHING ARROW PANEL
6161047		TYPE III OBJECT MARKER
6161055		SEQUENTIAL FLASHING WARNING LIGHT
6161070		TUBULAR MARKER
6161095		RADAR SPEED ADVISORY SYSTEM
6161096		CHANGEABLE MESSAGE SIGN, COMMISSION FURNISHED/RETAINED
6161098A	5	CHANGEABLE MESSAGE SIGN W/O COMM. INTERFACE - CONTRACTOR FURNISHED/RETAINED
6161099		CHANGEABLE MESSAGE SIGN WITH COMM. INTERFACE - CONTRACTOR FURNISHED/RETAINED
6162000A		WORK ZONE TRAFFIC SIGNAL SYSTEM
6162002		TEMPORARY LONG-TERM RUMBLE STRIPS
6173600D		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/RETAINED
6173602B		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/COMMISSION RETAINED
6174000A		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION
6175010A		RELOCATING TEMPORARY TRAFFIC BARRIER
6176000B		TEMPORARY TRAFFIC BARRIER COMMISSION FURNISHED/RETAINED
6177000B		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION COMMISSION FURNISHED/RETAINED
6208064A		TEMPORARY RAISED PAVEMENT MARKER
9029400		TEMPORARY TRAFFIC SIGNALS
9029401		TEMPORARY TRAFFIC SIGNALS AND LIGHTING

SUMMARY OF QUANTITIES

SHEET 3 OF 3

STATE OF MISSOURI
JASON R. VANDERFELTZ
NUMBER PE-2003015049
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED: 12/9/2024
ROUTE: C
STATE: MO
DISTRICT: CD
SHEET NO.: 3
COUNTY: CRAWFORD
JOB NO.: J5S3550
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

DATE	DESCRIPTION

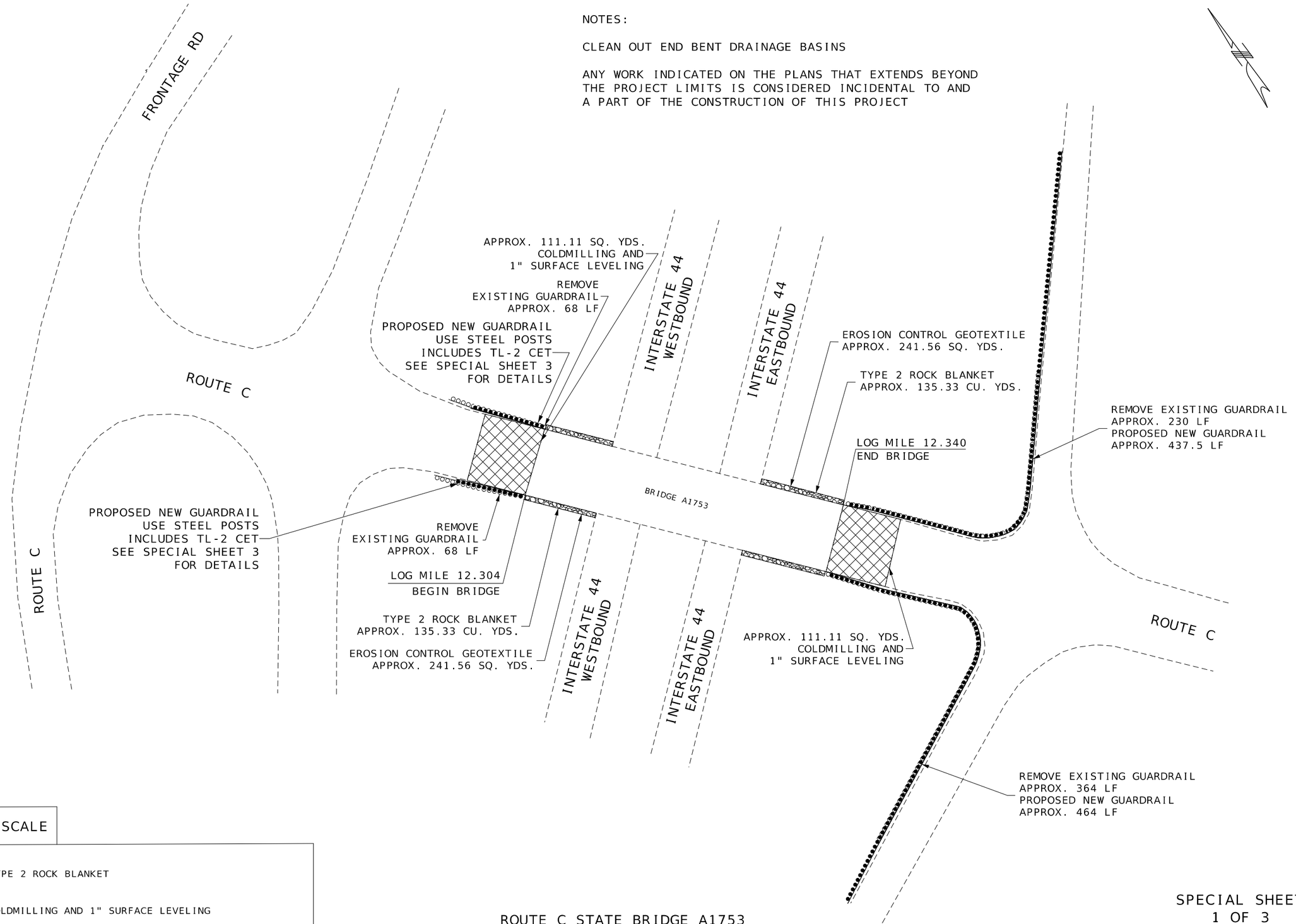
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

NOTES:

CLEAN OUT END BENT DRAINAGE BASINS

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



NOT TO SCALE

TYPE 2 ROCK BLANKET

COLDMILLING AND 1" SURFACE LEVELING

ROUTE C STATE BRIDGE A1753

SPECIAL SHEET
1 OF 3

STATE OF MISSOURI
JASON R. VANDERFELTZ
NUMBER PE-2003015049
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED
12/9/2024

ROUTE	STATE
C	MO
DISTRICT	SHEET NO.
CD	4

COUNTY
CRAWFORD

JOB NO.
J5S3550

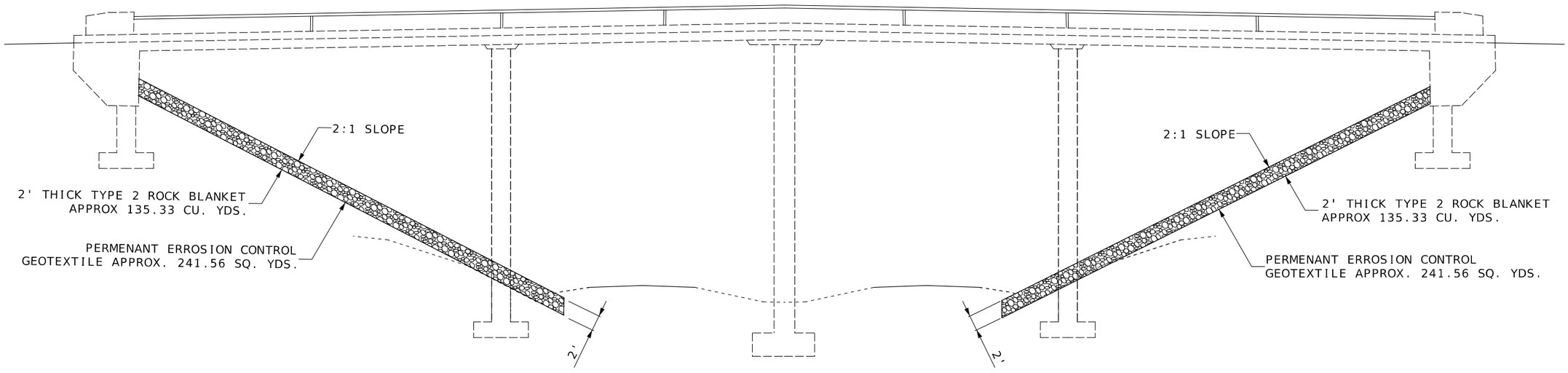
CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

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



NOT TO SCALE

ROUTE C STATE BRIDGE A1753

SPECIAL SHEET
2 OF 3

STATE OF MISSOURI
JASON R. VANDERFELTZ
NUMBER PE-2003015049
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED
12/9/2024

ROUTE	STATE
C	MO
DISTRICT	SHEET NO.
CD	5

COUNTY
CRAWFORD

JOB NO.
J5S3550

CONTRACT ID.

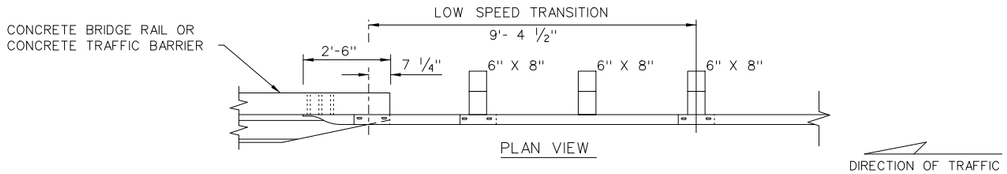
PROJECT NO.

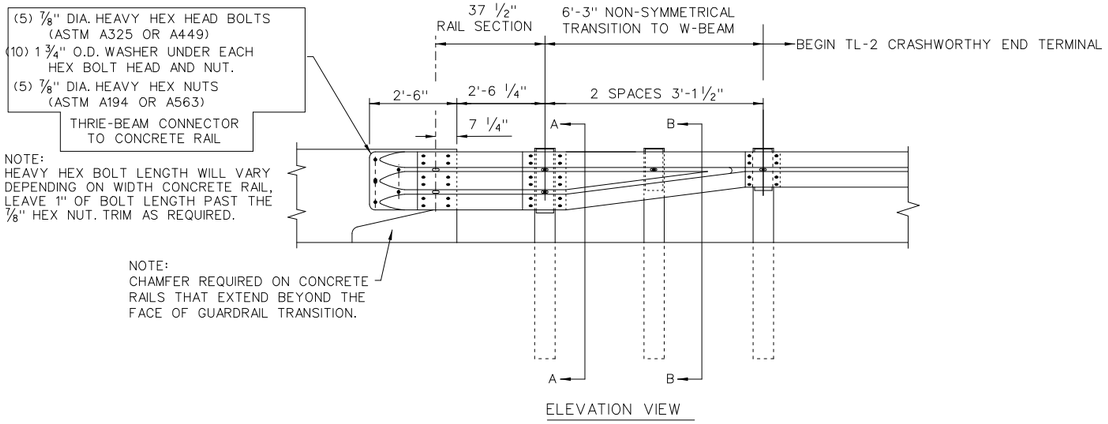
BRIDGE NO.

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

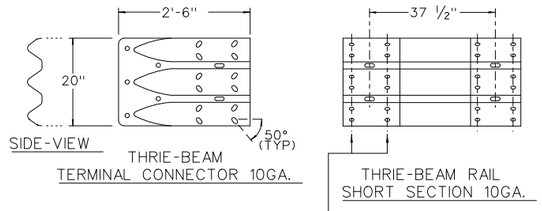
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)





GENERAL NOTES

1. THE TYPE OF POST (RECTANGULAR WOOD POST, OR STEEL POST) WILL BE AS SHOWN IN THE PLANS. THE EXACT POSITION OF TRANSITIONS SHALL BE AS SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER.
2. NO DIRECT PAY FOR FITTINGS (BOLTS, NUTS, AND WASHERS).
3. BUTTON HEAD "POST BOLTS & NUTS" SHALL MEET THE REQUIREMENTS OF (ASTM A307), AND SHALL BE OF SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND 5/8" WASHER AND NOT MORE THAN 1" BEYOND IT. TRIM BOLT LENGTH TO MEET REQUIRED LENGTH.
4. POSTS SHALL NOT BE SET IN CONCRETE, OF ANY DEPTH.



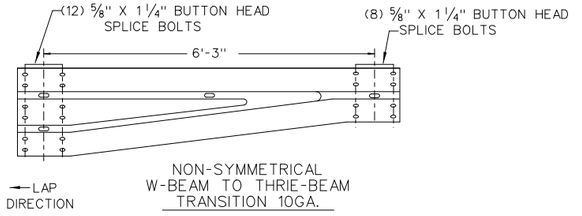
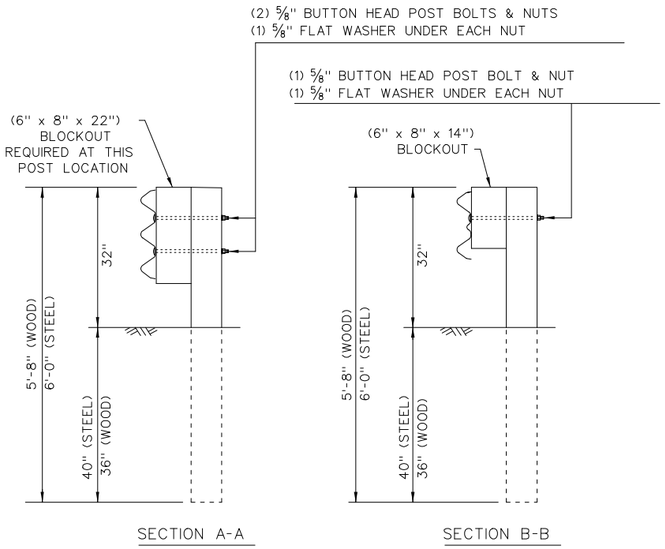
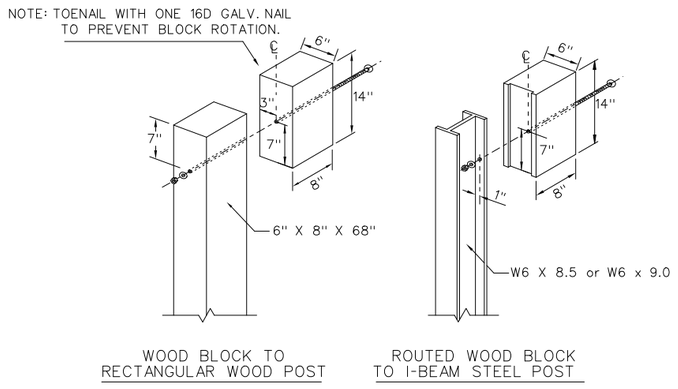


PLATE WASHER INSTRUCTIONS

BRIDGE APPROACH - UPSTREAM: THE SHORT RAIL LAPS OVER THE TERMINAL CONNECTOR. PLATE WASHERS ARE INSTALLED UNDER THE SPLICE NUTS AGAINST INSIDE OF CONNECTOR.

BRIDGE EXIT - DOWNSTREAM: THE TERMINAL CONNECTOR LAPS OVER THE NESTED RAIL. PLATE WASHERS ARE INSTALLED UNDER THE BOLT HEAD AGAINST OUTSIDE OF CONNECTOR.





SPECIAL SHEET
3 OF 3

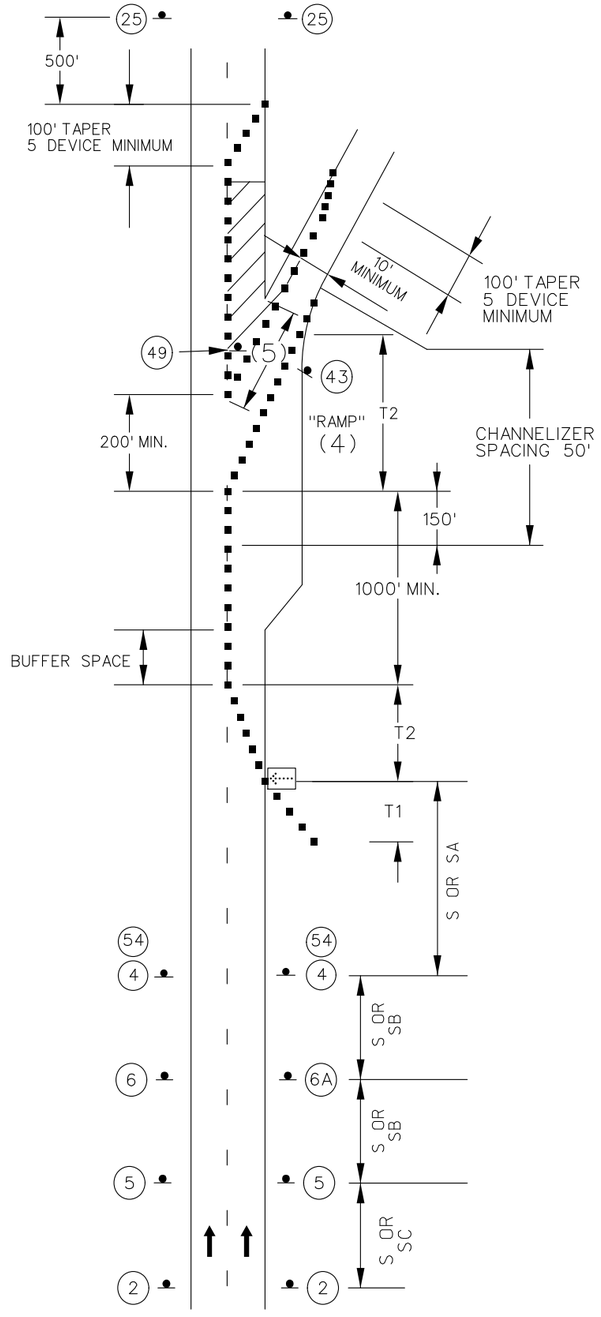
TL-2 BRIDGE APPROACH TRANSITION SECTION

STATE OF MISSOURI
JASON R. VANDERFELTZ
NUMBER PE-2003015049
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED: 12/9/2024
ROUTE: C | STATE: MO
DISTRICT: CD | SHEET NO.: 6
COUNTY: CRAWFORD
JOB NO.: J5S3550
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

DESCRIPTION | DATE

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



WORK IN THE VICINITY
OF A EXIT RAMP AREAS

CENTER
OR
LEFT

W020-6a
6

BRIDGE
OR
RAMP

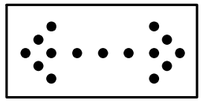
W020-1
2

CENTER LANE
OR
LEFT LANE

W020-5
5

W04-1a
6A

R2-1
NORMAL SPEED
25



FLASHING
ARROW PANEL

CHANNELIZERS

BRIDGE
OR
RAMP

W05-1
43

E05-1
49

G020-5aP
54

R2-1
4

TAPER LENGTHS AND SPACING FOR CHANNELIZERS							
PERMANENT POSTED SPEED MPH	MINIMUM LANE TAPER LENGTH (3) (T2)			MINIMUM SHOULDER TAPER LENGTH BASED ON 10′ SHOULDER (T1)	BUFFER LENGTH FT. (B)	MAXIMUM CHANNELIZER SPACING	
	10′	11′	12′			THROUGH TAPER	THROUGH WORK AREA
0-35	205′	225′	245′	70′	250′	35′	40′
40-45	450′	495′	540′	150′	360′	40′	80′
50-55	550′	605′	660′	185′	495′	50′	80′
60-70	700′	770′	840′	235′	730′	60′	120′

NOTES:

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

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

(3) TAPER LENGTHS SHOWN INCLUDE LENGTH REQUIRED FOR LANE AND 10′ SHOULDER.

(4). SIGN (43) REQUIRED WHEN RAMP WIDTH IS REDUCED.

(5). FIVE CHANNELIZER DEVICE MINIMUM.

REMOVE AND/OR MODIFY EXISTING PAVEMENT MARKING AS NEEDED.

THIS INFORMATION ALSO SHALL BE USED WHEN WORK IS BEING PERFORMED IN THE LANE ADJACENT TO THE MEDIAN ON A DIVIDED HIGHWAY. IN THIS CASE, THE LEFT LANE CLOSED SIGNS AND THE CORRESPONDING MERGE OR LANE ENDS SIGN SHALL BE SUBSTITUTED.

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

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

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

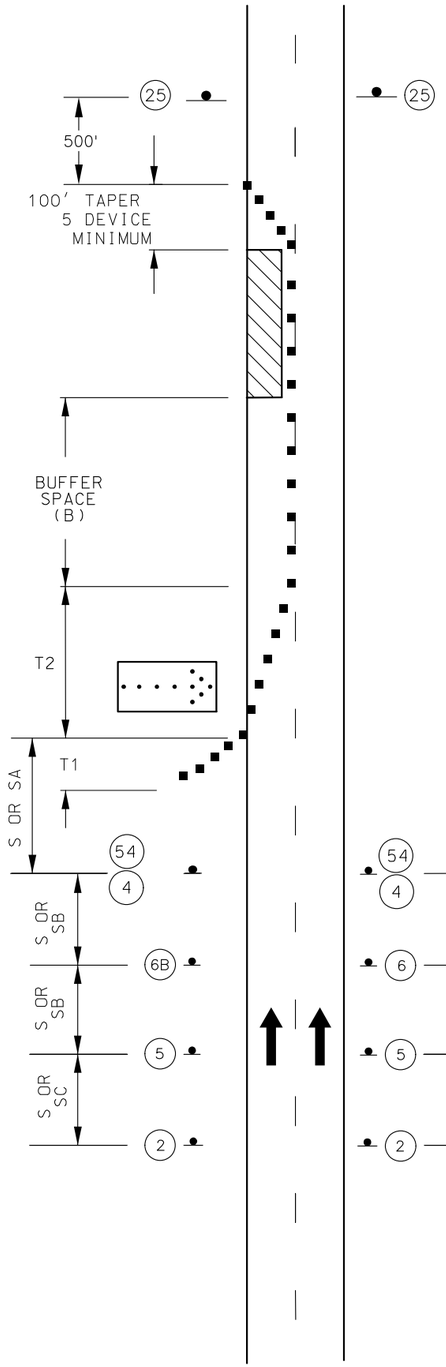
TEMPORARY TRAFFIC CONTROL SHEET
WORK IN VICINITY
OF EXIT RAMP
SHEET 1 OF 3

STATE OF MISSOURI
JASON R. VANDERFELTZ
NUMBER PE-2003015049
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 12/9/2024
ROUTE C | STATE MO
DISTRICT CD | SHEET NO. 7
COUNTY CRAWFORD
JOB NO. J5S3550
CONTRACT ID.
PROJECT NO.
BRIDGE NO.

DESCRIPTION | DATE

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



STATIONARY LANE CLOSURE
DIVIDED HIGHWAY

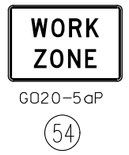
W020-1 (2)
W025-6

W020-5 (5)

W020-6a (6)

W04-1aL (6A)

W04-1aR (6B)



G020-5aP (54)

R2-1 (4)

R2-1
NORMAL SPEED (25)

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

TAPER LENGTHS AND SPACING FOR CHANNELIZERS							
PERMANENT POSTED SPEED MPH	MINIMUM LANE TAPER LENGTH (3) (T2)			MINIMUM SHOULDER TAPER LENGTH BASED ON 10' SHOULDER (T1)	BUFFER LENGTH FT. (B)	MAXIMUM CHANNELIZER SPACING	
	10'	11'	12'			THROUGH TAPER	THROUGH WORK AREA
0-35	205'	225'	245'	70'	250'	35'	40'
40-45	450'	495'	540'	150'	360'	40'	80'
50-55	550'	605'	660'	185'	495'	50'	80'
60-70	700'	770'	840'	235'	730'	60'	120'

NOTES:

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

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

(3) TAPER LENGTHS SHOWN INCLUDE LENGTH REQUIRED FOR LANE AND 10' SHOULDER.

THIS INFORMATION ALSO SHALL BE USED WHEN WORK IS BEING PERFORMED IN THE LANE ON A DIVIDED HIGHWAY. IN THIS CASE, THE RIGHT LANE CLOSED SIGNS AND THE CORRESPONDING MERGE OR LANE ENDS SIGN SHALL BE SUBSTITUTED.

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

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

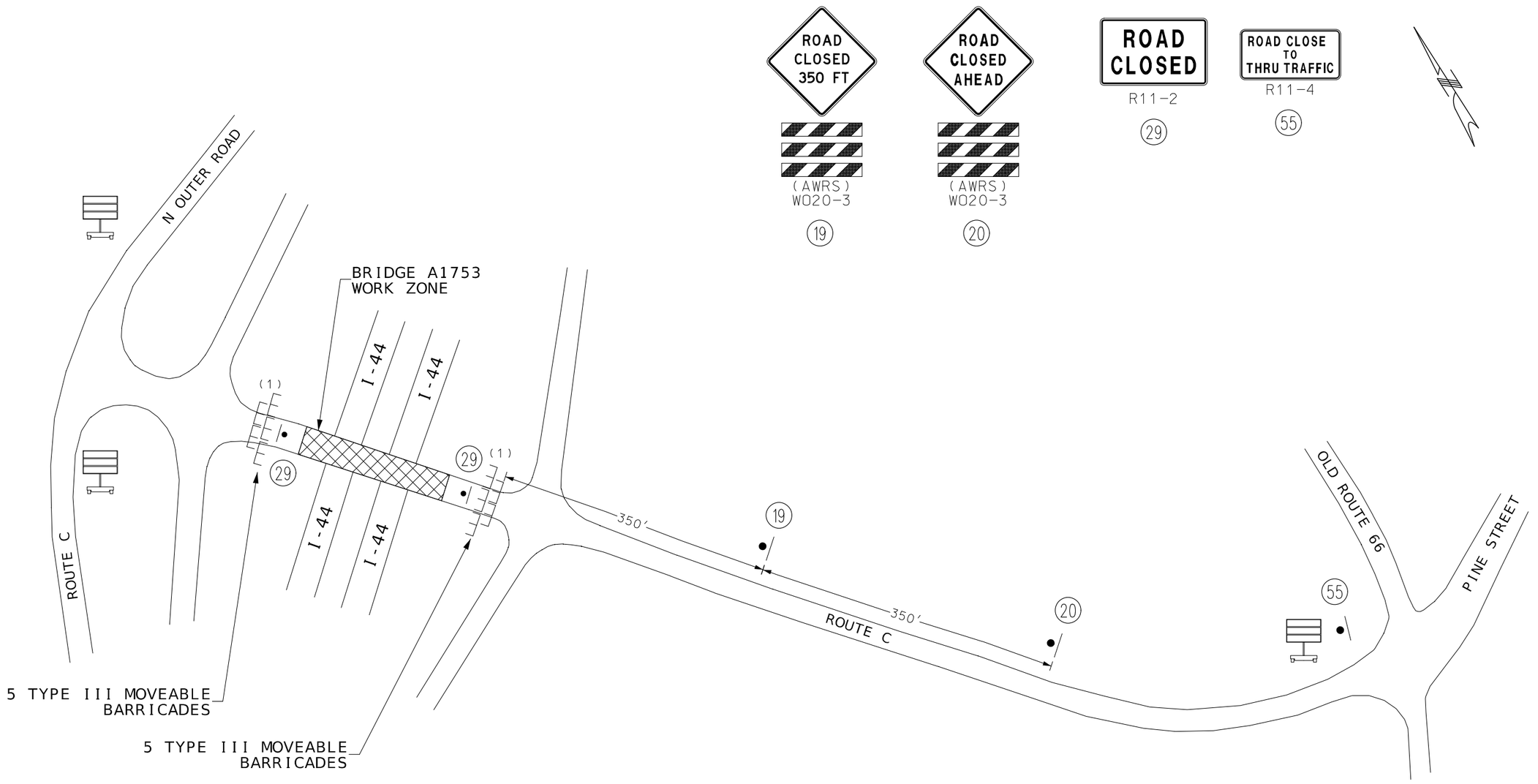
TEMPORARY TRAFFIC CONTROL SHEET
STATIONARY LANE CLOSURE
ON DIVIDED HIGHWAY
SHEET 2 OF 3

STATE OF MISSOURI
JASON R. VANDERFELTZ
NUMBER PE-2003015049
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 12/9/2024
ROUTE C | STATE MO
DISTRICT CD | SHEET NO. 8
COUNTY CRAWFORD
JOB NO. J5S3550
CONTRACT ID.
PROJECT NO.
BRIDGE NO.

DESCRIPTION | DATE

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



(1) ROAD CLOSED SIGN MAY BE PLACED 7-10 FEET BEHIND THE BARRICADES AND AT A SIGN HEIGHT APPROPRIATE TO THE TYPE OF ROADWAY. ONE BARRICADE SHOULD BE REQUIRED TO COMPLETELY CLOSE EACH 8-FEET OF PAVEMENT. PAVED SHOULDERS SHALL BE INCLUDED IN THE AREA TO BE CLOSED.

REFER TO STANDARD PLAN 610.10 FOR PLACEMENT OF BARRICADES

TRAFFIC CONTROL SHOULD BE REMOVED AS SOON AS PRACTICAL AFTER CONDITIONS FOR THE CLOSURE NO LONGER EXISTS.

TYPE OF ROADWAY	SIGN HEIGHT	MAXIMUM WORK ZONE LENGTH (L)
URBAN	1' PORTABLE 7' POST	1 MILE
RURAL UNDIVIDED	1' PORTABLE 5' POST	3 MILES

NOT TO SCALE

TEMPORARY TRAFFIC CONTROL SHEET
HIGHWAY CLOSURE
SHEET 3 OF 3

STATE OF MISSOURI
JASON R. VANDERFELTZ
NUMBER PE-2003015049
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

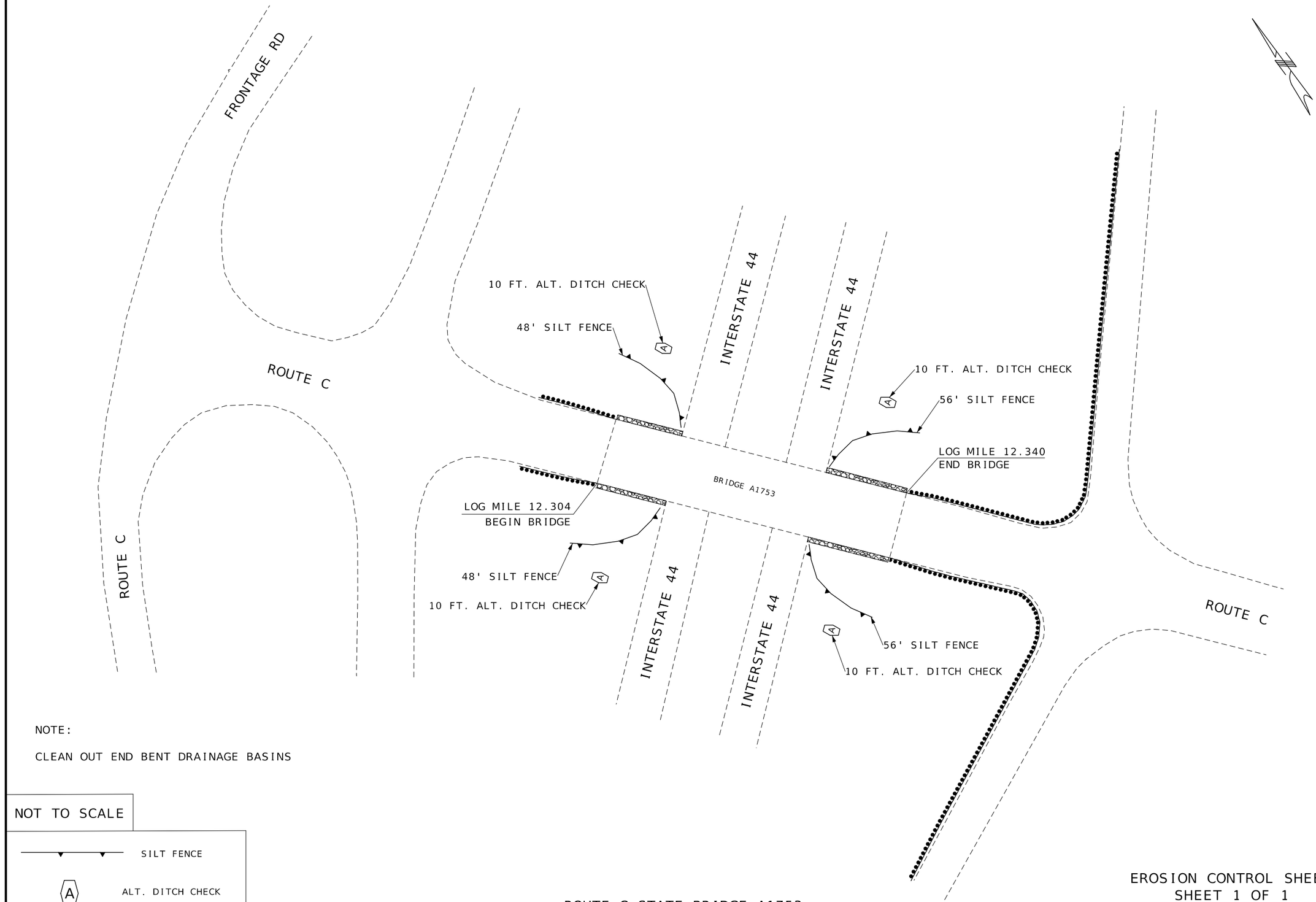
DATE PREPARED 12/9/2024

ROUTE	STATE
C	MO
DISTRICT	SHEET NO.
CD	9

COUNTY: CRAWFORD
JOB NO.: J5S3550
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

DESCRIPTION	DATE

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



NOTE:

CLEAN OUT END BENT DRAINAGE BASINS

NOT TO SCALE

SILT FENCE

A ALT. DITCH CHECK

ROUTE C STATE BRIDGE A1753

EROSION CONTROL SHEET
SHEET 1 OF 1

STATE OF MISSOURI
JASON R. VANDERFELTZ
NUMBER PE-2003015049
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED
12/9/2024

ROUTE	STATE
C	MO
DISTRICT	SHEET NO.
CD	10

COUNTY
CRAWFORD

JOB NO.
J5S3550

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

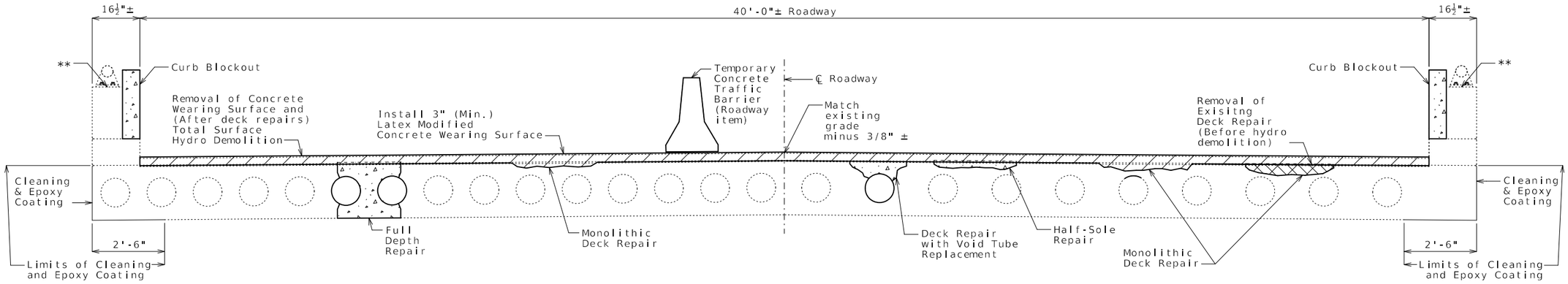
DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

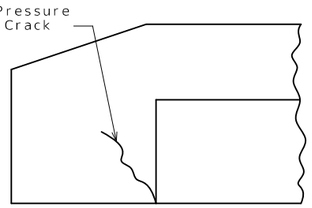
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

SEC/SUR 34 TWP 40N RGE 3W

U.I.P AND REHABILITATE EXISTING (34'-60'-60'-34') CONTINUOUS CONCRETE VOIDED SLAB SPANS



TYPICAL SECTION THRU EXISTING DECK



PART ELEVATION AT END BENT NO. 1

Optional Construction Methods	
Construction Method	Method Used (✓)
Alternate A	
Alternate B	

MoDOT construction personnal will complete column labeled "Method Used ( )".

For additional details of Construction Method A, see Sheet No. 2

For details of Construction Method B, see Sheet No. 3

Estimated Quantities		
Item		Total
Total Surface Hydro Demolition	sq. yard	847
Removal of Concrete Wearing Surface	sq. foot	7620
Removal of Existing Deck Repair	sq. foot	850
Latex Modified Concrete Wearing Surface	sq. yard	847
Diamond Grinding	sq. yard	847
Curb Blockout	linear foot	403
Full Depth Repair	sq. foot	50
Epoxy Pressure Injecting	linear foot	10
Deck Repair with Void Tube Replacement	sq. foot	100
Cleaning and Epoxy Coating	sq. foot	1515
Alternate A		
* Supplementary Wearing Surface Material (Alternate A)	cu. yard	8
Half-Sole Repair (Alternate A)	sq. foot	100
Alternate B		
* Supplementary Wearing Surface Material (Alternate B)	cu. yard	11

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

General Notes:

Design Specifications:

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

Design Loading:

H20-44 (1965), HS20-44 (New Construction)

Design Unit Stresses:

Class B-1 Concrete (Curb Blockout, Half-Sole, Full Depth Repair & Deck Repair with Void Tube Replacement) f'c = 4,000 psi
Reinforcing Steel (ASTM A615 Grade 60) fy = 60,000 psi

Miscellaneous:

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

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

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

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.

** Asbestos (Friability Category II NF) has been detected in the insulation compund between the top of the existing concrete parapet and the base of the existing handrail and posts. The Contractor will be required to use an Abatement Contractor during the removal. No direct payment will be made for removal of the handrail and posts, or for asbestos abatement. The described work will be considered completely covered by the contract unit price for other items in the contract.

Traffic Handling:

Traffic to be maintained on structure during construction.
See roadway plan for traffic control.

REPAIRS TO BRIDGE: ROUTE C OVER ROUTE I-44

ROUTE C FROM ROUTE P TO ROUTE N
ABOUT 0.6 MILE W OF ROUTE N
BEGINNING STATION 9+0.4.75± (Match Existing)

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
Ted Koester
07/11/2025 9:57:09 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED 1/10/2025

ROUTE	STATE
I-44	MO
DISTRICT	SHEET NO.
BR	1

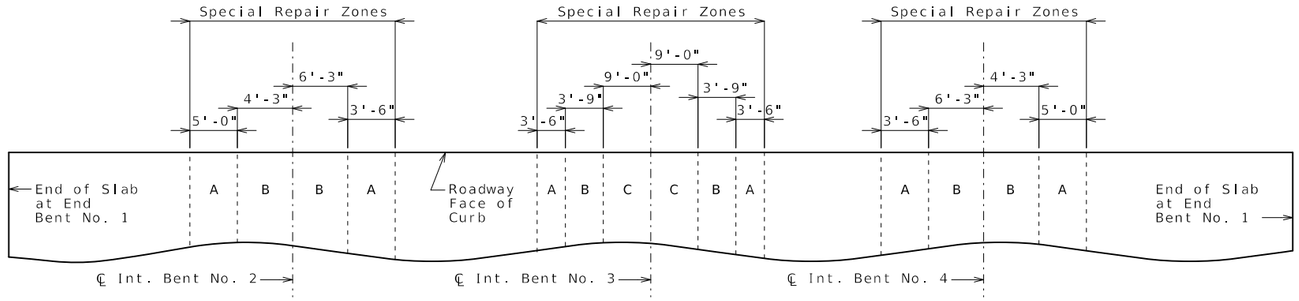
COUNTY CRAWFORD
JOB NO. J5S3550
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A17532

DESCRIPTION | DATE

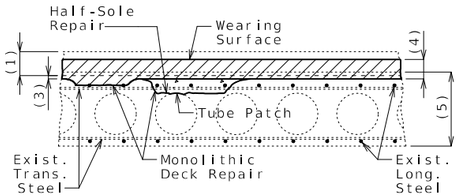
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

Detailed Oct. 2024
Checked Jan. 2025

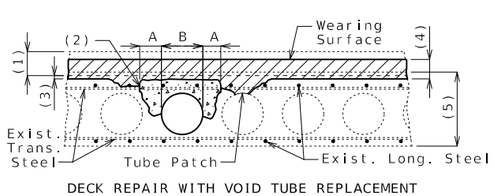
Note: This drawing is not to scale. Follow dimensions.



PART PLAN OF SLAB SHOWING SPECIAL REPAIR ZONES

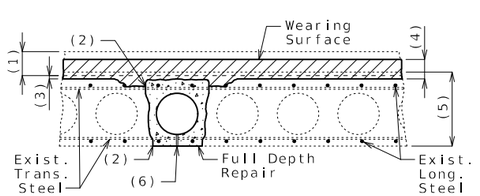


MONOLITHIC DECK REPAIR



DECK REPAIR WITH VOID TUBE REPLACEMENT

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



FULL DEPTH REPAIR

DECK REPAIR (AFTER HYDRO DEMOLITION)

(1) Removal of existing 3/8"± Seal Coat and 2"± Low Slump Concrete Wearing Surface plus 1/2" of existing deck

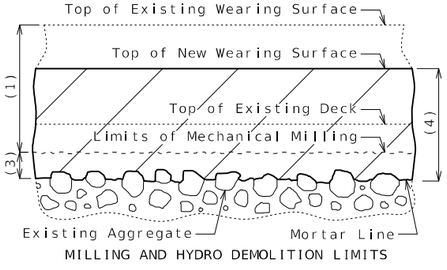
(2) 1" vertical side shall be established outside the deteriorated area.

(3) Total surface hydro demolition of sound concrete, measured to mortar line:
1/4" minimum inside special repair zones
1/2" minimum outside special repair zones

(4) 3" minimum Latex Modified concrete wearing surface:
2 3/4" minimum inside special repair zones
3" minimum outside special repair zones

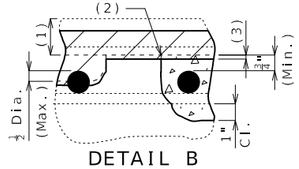
(5) Original depth minus previous scarification

(6) Restore existing weep hole, if encountered.



MILLING AND HYDRO DEMOLITION LIMITS

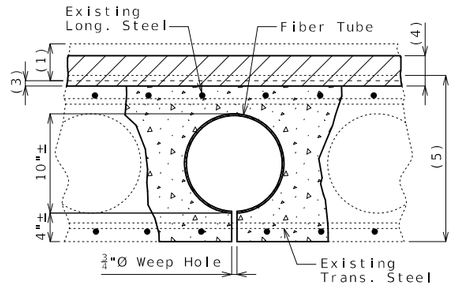
DETAIL A



DETAIL B

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

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



FIBER VOID TUBE REPLACEMENT

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

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

Deck Repair Notes:

Order of Repair:

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

Special Repair Zones:

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

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

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

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

Void Repair:

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

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

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
Ted Koester
01/11/2025 9:57:52 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED: 1/10/2025
ROUTE: I-44 | STATE: MO
DISTRICT: BR | SHEET NO.: 2
COUNTY: CRAWFORD
JOB NO.: J5S3550
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A17532

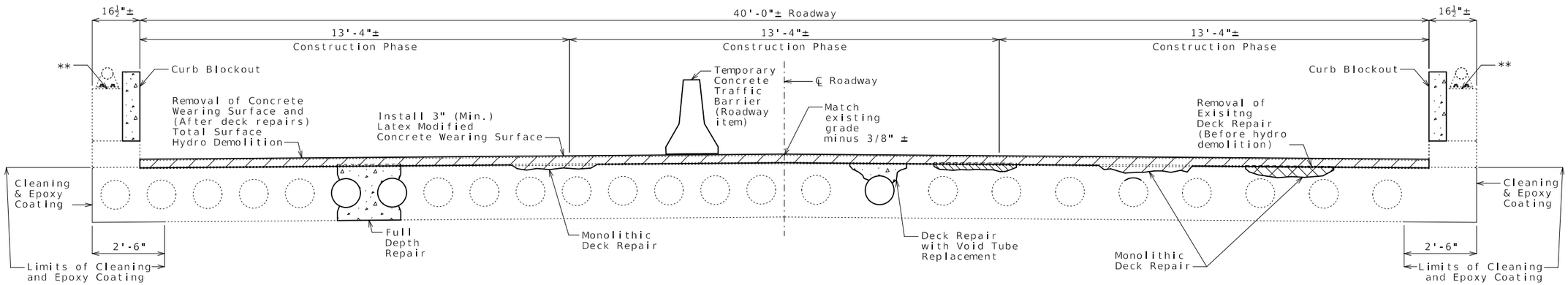
DESCRIPTION | DATE

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

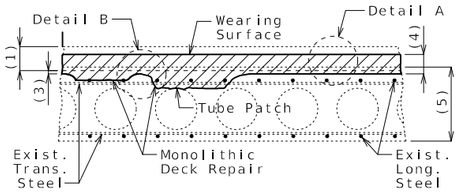
DECK REPAIR DETAILS (ALTERNATE A)

Detailed Oct. 2024
Checked Jan. 2024

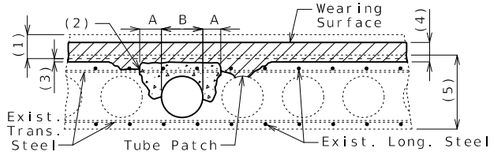
Note: This drawing is not to scale. Follow dimensions.



TYPICAL SECTION THRU EXISTING DECK



MONOLITHIC DECK REPAIR



DECK REPAIR WITH VOID TUBE REPLACEMENT

A = Half-Sole Repair
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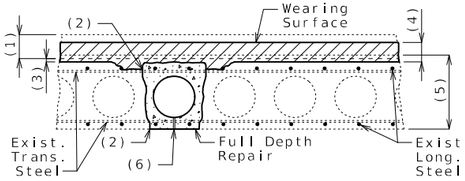


FULL DEPTH REPAIR

DECK REPAIR (AFTER HYDRO DEMOLITION)

(1) Removal of existing 3/8"± Seal Coat and 2"± Low Slump Concrete Wearing Surface plus 1/2" of existing deck

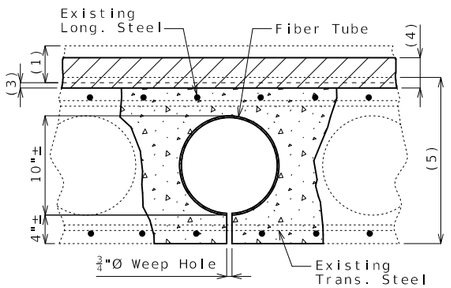
(2) 1" vertical side shall be established outside the deteriorated area.

(3) Total surface hydro demolition 1/2" minimum of sound concrete, measured to mortar line.

(4) 3" minimum Latex Modified concrete wearing surface

(5) Original depth minus previous scarification

(6) Restore existing weep hole, if encountered.



FIBER VOID TUBE REPLACEMENT

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

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

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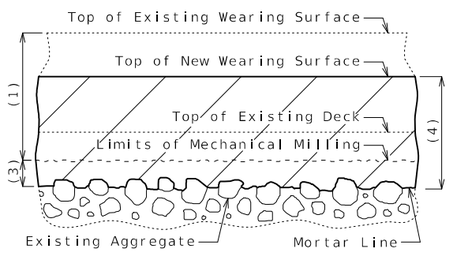
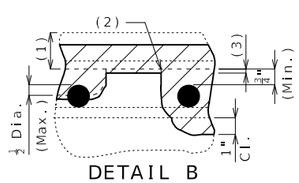


MILLING AND HYDRO DEMOLITION LIMITS

DETAIL A



DETAIL B

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

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

DECK REPAIR DETAILS (ALTERNATE B)

Detailed Oct. 2024
Checked Jan. 2025

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
01/11/2025 9:58:49 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

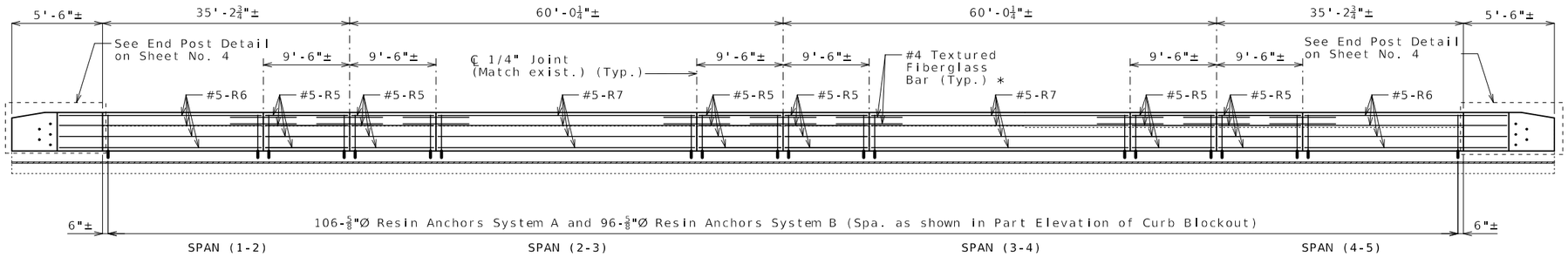
DATE PREPARED 1/10/2025

ROUTE	STATE
I-44	MO
DISTRICT	SHEET NO.
BR	3

COUNTY: CRAWFORD
JOB NO.: J5S3550
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A17532

DESCRIPTION | DATE

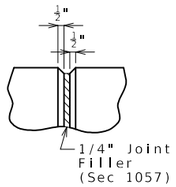
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



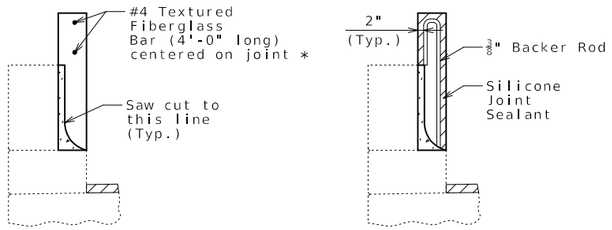
ELEVATION OF LEFT CURB BLOCKOUT

(Right curb blockout similar)

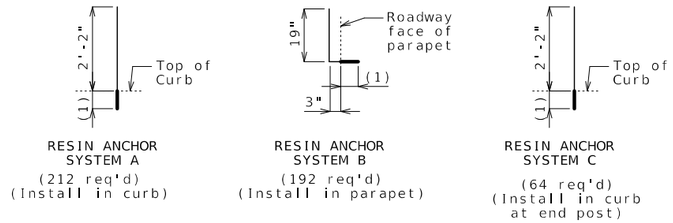
Longitudinal dimensions are along grade and are taken at top outside edge of parapet.



PART ELEVATION AT FORMED JOINT

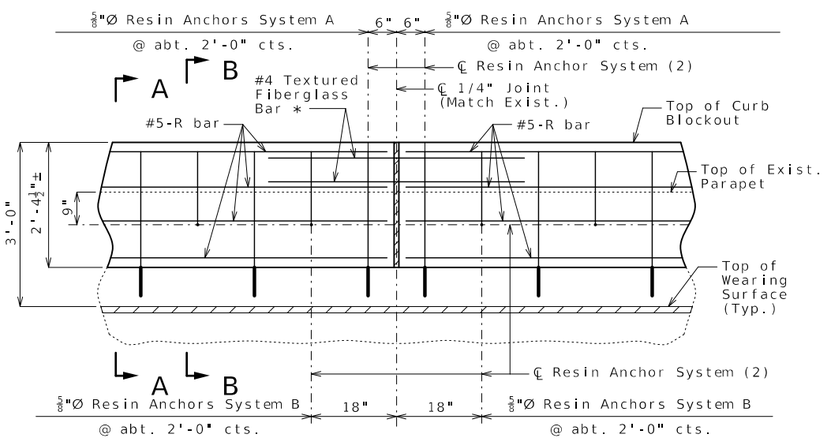


SECTION THRU SAW CUT JOINT

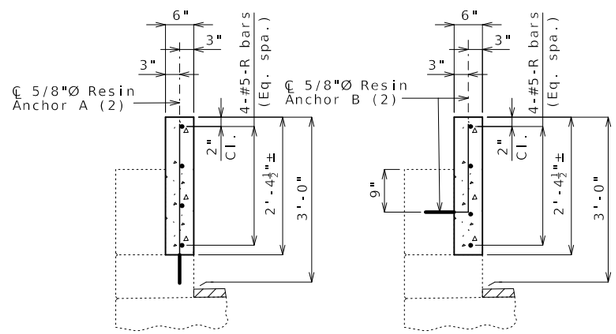


(1) Use manufacturer's embedment length (5" minimum embedment).

DETAILS OF RESIN ANCHORS



PART ELEVATION OF CURB BLOCKOUT



CURB BLOCKOUT

Notes:

* Slip-formed option only.

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

Bridge rail not shown for clarity.

Concrete in curb blockout shall be Class B-1.

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

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

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

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

All curb blockout reinforcement shall be epoxy coated.

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

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

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

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

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

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

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
Ted Koester
01/11/2025 9:59:48 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED 1/10/2025

ROUTE	STATE
I-44	MO
DISTRICT	SHEET NO.
BR	4

COUNTY CRAWFORD

JOB NO. J5S3550

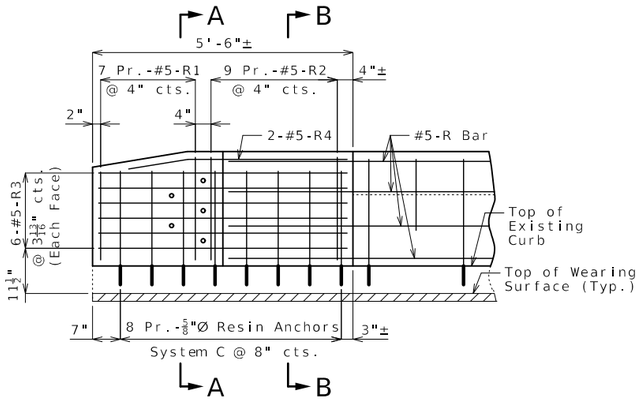
CONTRACT ID.

PROJECT NO.

BRIDGE NO. A17532

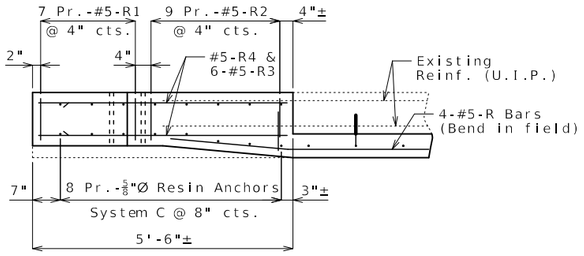
DATE	DESCRIPTION

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



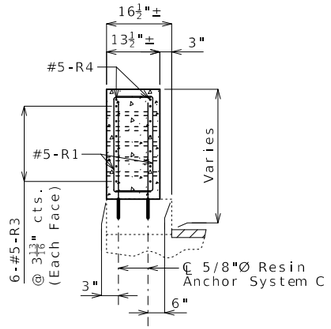
ELEVATION SHOWING REINFORCEMENT

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

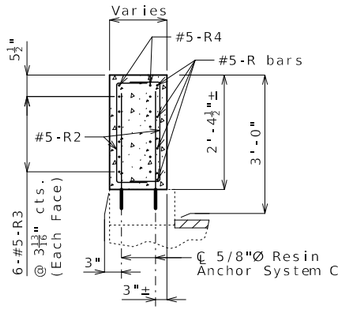


PLAN SHOWING REINFORCEMENT

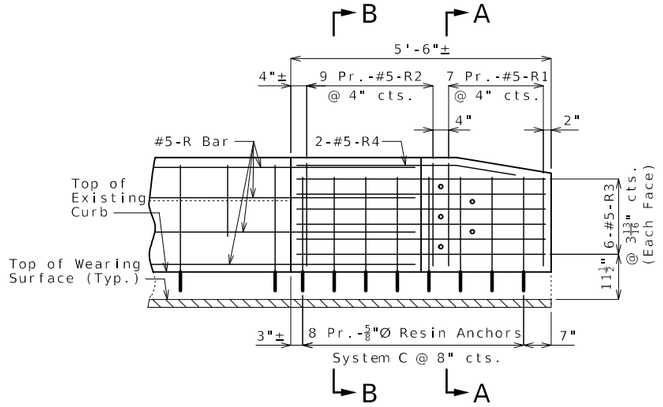
LEFT END POST AT END BENT NO. 1



SECTION A-A

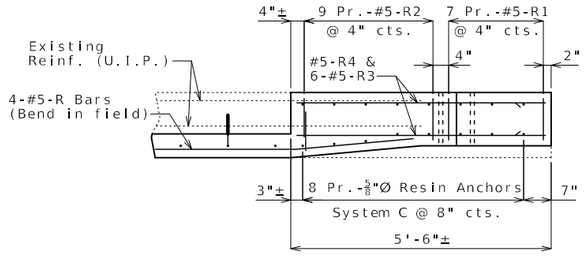


SECTION B-B



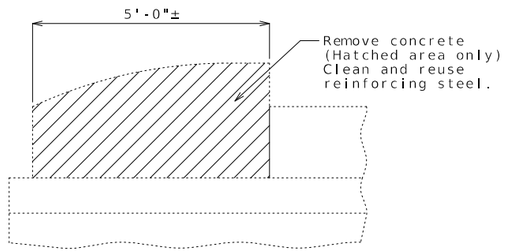
ELEVATION SHOWING REINFORCEMENT

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



PLAN SHOWING REINFORCEMENT

LEFT END POST AT END BENT NO. 5



PART ELEVATION SHOWING END POST CONCRETE REMOVAL

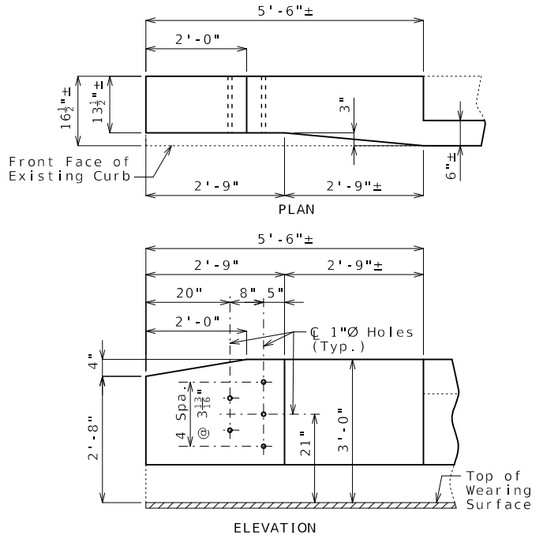
Cost of removing existing end posts will be considered completely covered by the contract unit price for Curb Blockout.

Notes:

Work this sheet with Sheet No. 4.

For details of resin anchors, see Sheet No. 4.

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



DETAILS OF END POST AND GUARD RAIL ATTACHMENT

CURB BLOCKOUT AT END BENTS

Detailed Oct. 2024
Checked Jan. 2025

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
Ted Koester
07/11/2025 10:00:30 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED
1/10/2025

ROUTE	STATE
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BR	5

COUNTY
CRAWFORD

JOB NO.
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PROJECT NO.

BRIDGE NO.
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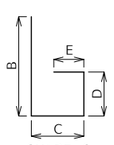
DESCRIPTION

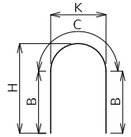
DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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



SHAPE 6
or 6S



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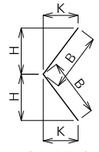

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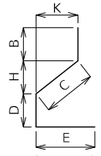

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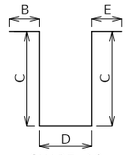
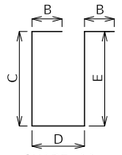
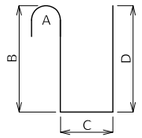


SHAPE 10
or 10S



SHAPE 11
or 11S



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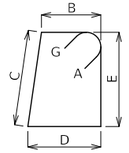

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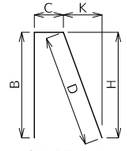

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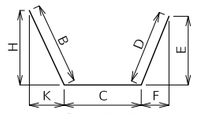
or 14S



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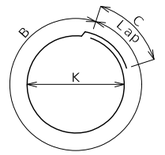

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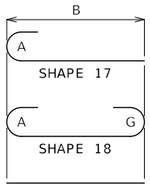
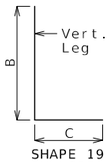


SHAPE 17
SHAPE 18
SHAPE 20



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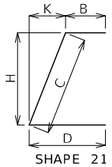

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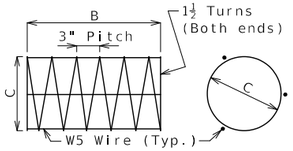

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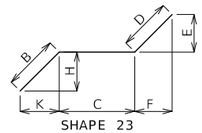

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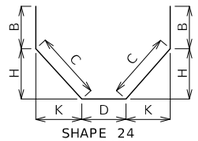
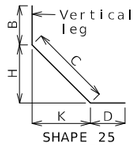
or 23S



SHAPE 24
or 24S



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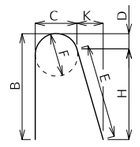
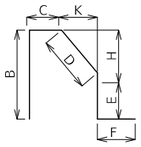


SHAPE 26



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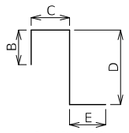

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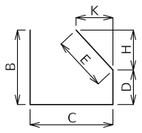

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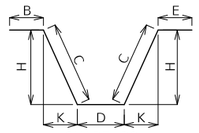

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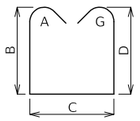

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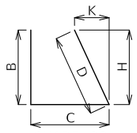

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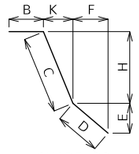

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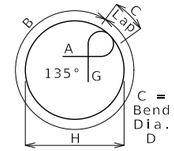
or 33S



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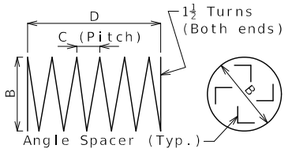
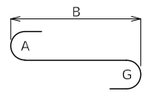


SHAPE 35 (1)

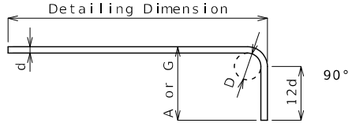


SHAPE 36

Finished Bend Diameters D and Hook Dimensions

Standard Pin Bend Shapes

Size	Case	D	A or G		J
			90°	180°	180°
#4	1	3"	8"	6"	4"
#5	1	3¾"	10"	7"	5"
#6	1	4½"	12"	8¼"	6"
#7	2	5¼"	14"	9¾"	7"
	3	7"	15"	11½"	8¾"
#8	2	6"	16"	11"	8"
	3	8"	17"	13¼"	10"
#9	1	9½"	19½"	15½"	11¾"
#10	1	10¾"	22"	17½"	13¼"
#11	1	12"	24½"	19½"	14⅞"
#14	1	18¼"	31¼"	27½"	21⅝"
#18	1	24"	41½"	36¾"	28½"

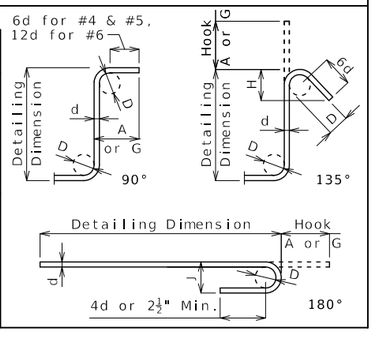


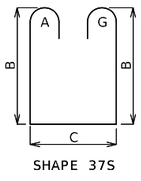
Stirrup Pin Bend Shapes (S)

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

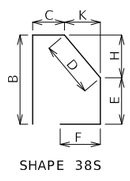
Applicable for all grades of steel.

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





SHAPE 37S



SHAPE 38S

BENDING DIAGRAMS

All dimensions are out to out.

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

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

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

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

Reinforcing Steel Totals (Pounds)

		Substructure		Superstructure			Entire Bridge	
	Size	Plain	Epoxy	Slab	Barrier	Slip Form	Plain	Epoxy
By Size	W5	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0
	5	0	0	0	2,649	0	0	2,649
	6	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0
	8	0	0	0	0	0	0	0
	9	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0
	11	0	0	0	0	0	0	0
	14	0	0	0	0	0	0	0
	18	0	0	0	0	0	0	0
By Type		0	0	0	2,649	0	0	2,649

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
01/11/2025 10:01:06 AM
TED S. KOESTER - CIVIL
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DATE PREPARED
1/10/2025

ROUTE	STATE
I-44	MO
DISTRICT	SHEET NO.
BR	6

COUNTY
CRAWFORD

JOB NO.
J5S3550

CONTRACT ID.

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

BENDING DIAGRAMS AND REINFORCING STEEL TOTALS

Detailed Oct. 2024
Checked Jan. 2025

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

Bill of Reinforcing Steel

No. Req.	Size/ Mark	Location	Codes C	SH	V	Dimensions B ft in.	C ft in.	D ft in.	E ft in.	F ft in.	H ft in.	K ft in.	Nom. Length ft in.	Actual Length ft in.	Weight lb
		Curb Blockout													
56	5 R1	BLOCKOUT	E	10S	2		10.50	21.00					3 6	3 3	
		Incr. = 0.125"					10.50	2 0.00					3 9	3 6	197
72	5 R2	BLOCKOUT	E	10S		7.63	2 1.13	7.63					5 6	5 2	388
48	5 R3	BLOCKOUT	E	20		5 3.00							5 3	5 3	263
8	5 R4	BLOCKOUT	E	23		2.50	3 4.38				2.50		3 7	3 4	28
48	5 R5	BLOCKOUT	E	20		9 3.00							9 3	9 3	463
16	5 R6	BLOCKOUT	E	20		28 2.75							28 3	28 3	471
16	5 R7	BLOCKOUT	E	20		50 3.25							50 3	50 3	839

Bill of Reinforcing Steel

No. Req.	Size/ Mark	Location	Codes C	SH	V	Dimensions B ft in.	C ft in.	D ft in.	E ft in.	F ft in.	H ft in.	K ft in.	Nom. Length ft in.	Actual Length ft in.	Weight lb

Nominal lengths are based on out to out dimensions shown in bending diagrams and are listed to the nearest inch for fabricator's use. Actual lengths are measured along centerline bar to the nearest inch. Weights are based on actual lengths.

For bending diagrams and steel reinforcing totals, see Sheet No. 6.

All bars shall be Grade 60.

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

SH = Required shape, see bending diagrams.

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

Detailed Oct. 2024
Checked Jan. 2025

BILL OF REINFORCING STEEL

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
Ted Koester
01/11/2025 10:01:45 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED
1/10/2025

ROUTE I-44 | STATE MO
DISTRICT BR | SHEET NO. 7
COUNTY CRAWFORD
JOB NO. J5S3550
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A17532

DESCRIPTION | DATE

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

DESIGN DESIGNATION

ROUTE FF

A.A.D.T. – 2025 = 1273
A.A.D.T. – 2045 = 2574
T = 10.92%
V = 55 M.P.H.

FUNCTIONAL CLASSIFICATION – MAJOR COLLECTOR

NO NEW R/W

KEY MAP
LOCATION OF
CRAWFORD COUNTY

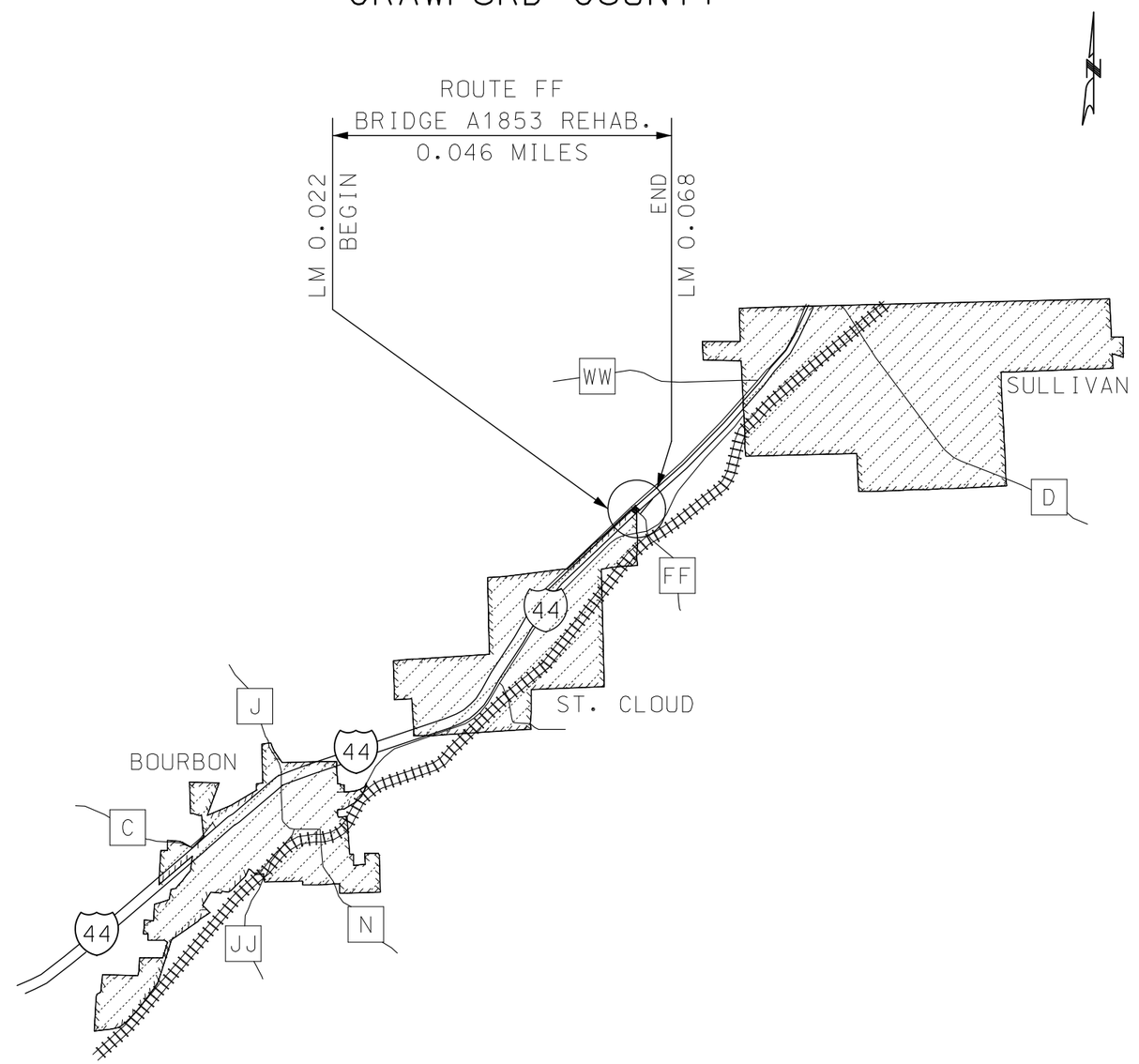
CONVENTIONAL SYMBOLS

(USED IN PLANS)

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

NOTE: DASHED OR OPEN SYMBOLS INDICATE EXISTING FEATURES

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



NOT TO SCALE

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

INDEX OF SHEETS

LENGTH OF PROJECT

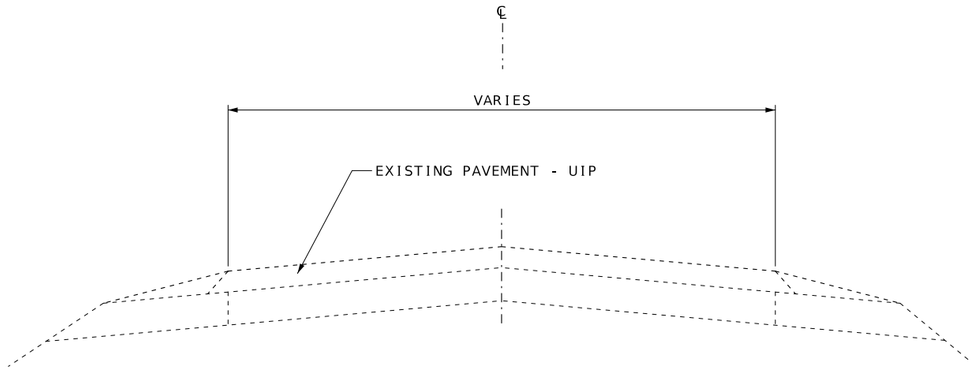
BEGINNING OF PROJECT	LM 0.022
END OF PROJECT	LM 0.068
APPARENT LENGTH	242.88 FEET
EQUATIONS AND EXCEPTIONS:	
NONE	
TOTAL CORRECTIONS	0.000 FEET
NET LENGTH OF PROJECT	242.88 FEET
STATE LENGTH	0.046 MILES

STATE OF MISSOURI
JASON R. VANDERFELTZ
NUMBER PE-2003015049
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED: 12/9/2024
ROUTE: FF | STATE: MO
DISTRICT: CD | SHEET NO.: 1
COUNTY: CRAWFORD
JOB NO.: J5S3579
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

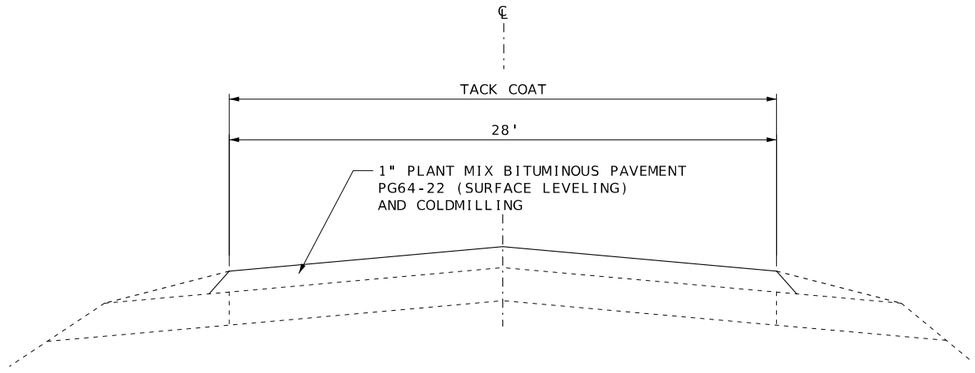
DESCRIPTION	DATE

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



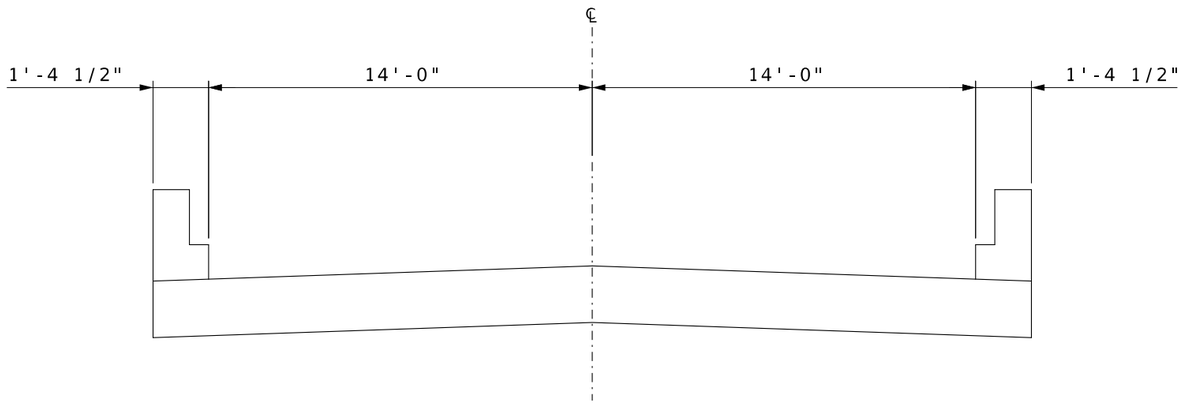
EXISTING TYPICAL SECTION

LOG MILE 0.022 TO 0.027
LOG MILE 0.063 TO 0.068



TYPICAL SECTION THROUGH APPROACH PAVEMENT

LOG MILE 0.022 TO 0.027
LOG MILE 0.063 TO 0.068



TYPICAL SECTION THROUGH BRIDGE

LOG MILE 0.027 TO 0.063

ESTIMATE FACTORS
BITUMINOUS PAVEMENT MIXTURE PG64-22 (SURFACE LEVELING) = 2.000 TONS/CY
TACK (EXIST. ASPHALT SURFACE) = 0.08 GAL/SY
TACK (COLDMILLED ASPHALT) = 0.10 GAL/SY

TYPICAL SECTION
SHEET 1 OF 1

STATE OF MISSOURI
JASON R. VANDERFELTZ
NUMBER PE-2003015049
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED: 12/9/2024
ROUTE: FF | STATE: MO
DISTRICT: CD | SHEET NO.: 2
COUNTY: CRAWFORD
JOB NO.: J5S3579
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

REMOVAL OF IMPROVEMENTS

APPROX LOG MILE	LOCATION	ITEM	QTY	REMARKS
0.027	ROUTE FF - RT	GUARDRAIL WITH BRIDGE ATTACHMENT	68 LF	STATE BRIDGE A1853
0.027	ROUTE FF - LT	GUARDRAIL WITH BRIDGE ATTACHMENT	72 LF	STATE BRIDGE A1853
0.063	ROUTE FF - RT	GUARDRAIL WITH BRIDGE ATTACHMENT	75 LF	STATE BRIDGE A1853
0.063	ROUTE FF - LT	GUARDRAIL WITH BRIDGE ATTACHMENT	73 LF	STATE BRIDGE A1853
0.027	ROUTE FF	CONCRETE SLOPE PROTECTION	147 SQYD	END BENT 1
0.063	ROUTE FF	CONCRETE SLOPE PROTECTION	144 SQYD	END BENT 5
		TOTAL 1 LUMP SUM		

MOBILIZATION

1 LUMP SUM

PAVEMENT

LOG MILE FROM	LOG MILE TO	LOCATION	LENGTH FT.	WIDTH FT.	AREA SQ. FT.	SURFACE LEVELING PG 64-22 TONS	TACK COAT GAL	REMARKS
0.022	0.027	ROUTE FF	25	28	700	4.32	7.78	ASPHALT PAVEMENT BEFORE BRIDGE A1853
0.063	0.068	ROUTE FF	25	28	700	4.32	7.78	ASPHALT PAVEMENT AFTER BRIDGE A1853
					TOTAL	8.64	15.56	
					USE	8.6	16	

COLDMILLING

LOG MILE FROM	LOG MILE TO	LOCATION	LENGTH FT	WIDTH FT	COLDMILLING BITUMINOUS PAVEMENT (3" THICK OR LESS) SQYD	REMARKS
0.022	0.027	ROUTE FF	25	28	77.78	COLDMILLING BEFORE BRIDGE A1853
0.063	0.068	ROUTE FF	25	28	77.78	COLDMILLING AFTER BRIDGE A1853
				TOTAL	155.56	
				USE	156	

PERMANENT EROSION CONTROL

LOG MILE FROM	LOG MILE TO	LOCATION	FURNISHING TYPE 2 ROCK BLANKET CUYD	PLACING TYPE 2 ROCK BLANKET CUYD	PERMENANT EROSION CONTROL GEOTEXTILE SQYD	REMARKS
0.027	0.027	ROUTE FF	94.72	94.72	128.20	ROCK BLANKET AT END BENT 1
0.063	0.063	ROUTE FF	94.72	94.72	128.20	ROCK BLANKET AT END BENT 5
		TOTAL	189.44	189.44	256.4	
		USE	189	189	256	

SUMMARY OF QUANTITIES

SHEET 1 OF 3

STATE OF MISSOURI
JASON R. VANDERFELTZ
NUMBER PE-2003015049
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED: 12/9/2024

ROUTE	STATE
FF	MO

DISTRICT	SHEET NO.
CD	3

COUNTY: CRAWFORD

JOB NO.: J5S3579

CONTRACT ID.:

PROJECT NO.:

BRIDGE NO.:

DESCRIPTION	DATE

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

GUARDRAIL

LOG MILE FROM	LOG MILE TO	LOCATION	MGS BRIDGE APPROACH TRANS. SECT. (REG./ NO CURB) EA	TYPE A CRASHWORTHY END TERMINAL (MASH) EA	TL-2 BRIDGE APPROACH TRANS. SECT. LS	SHAPING SLOPES CLASS III 100F	REMARKS
0.016	0.027	ROUTE FF - LT.			1	1	INCLUDES BRIDGE APPROACH TRANS. SECT. AND END TERMINAL - SEE SPECIAL SHEET 3
0.016	0.027	ROUTE FF - RT.			1	1	INCLUDES BRIDGE APPROACH TRANS. SECT. AND END TERMINAL - SEE SPECIAL SHEET 3
0.063	0.080	ROUTE FF - LT.	1	1		1	
0.063	0.080	ROUTE FF - RT.	1	1		1	
		TOTAL	2.00	2.00	1 LUMP SUM	4.00	
		USE	2	2	1 LUMP SUM	4	

PAVEMENT MARKING

LOG MILE FROM	LOG MILE TO	LOCATION	LENGTH (FT)	STAND. WATERBOURNE PVMT MARK. PAINT, TYPE P BEADS		REMARKS
				4" YELLOW LF	4" WHITE LF	
0.022	0.068	ROUTE FF	243	486.0	486.0	WHITE EDGELINES AND DOUBLE YELLOW CENTERLINE
			TOTAL	486.0	486.0	
			USE	486	486	

MULCHING AND SEEDING

LOG MILE FROM	LOG MILE TO	LOCATION	LENGTH FT	MULCHING ACRE	SEEDING COOL SEASON MIXTURES ACRE	REMARKS
0.022	0.027	ROUTE FF	26.4	0.058	0.058	30 FT. ON BOTH SIDES OF ROCK BLANKET
0.063	0.069	ROUTE FF	31.68	0.058	0.058	30 FT. ON BOTH SIDES OF ROCK BLANKET
		TOTAL		1 LUMP SUM	1 LUMP SUM	

DRAINAGE BASIN CLEANOUT

LOG MILE	LOCATION	DRAINAGE BASIN CLEANOUT EA	REMARKS
0.027	ROUTE FF	2	BASINS BEFORE START OF BRIDGE
0.063	ROUTE FF	2	BASINS AFTER END OF BRIDGE
	TOTAL	4	

TEMPORARY EROSION CONTROL

LOG MILE FROM	LOG MILE TO	LOCATION	SEDIMENT REMOVAL CUYD	SILT FENCE LF	ALT. DITCH CHECK LF	REMARKS
0.027	0.027	ROUTE FF	2.9	90.00	20.00	SEE EROSION CONTROL SHEET
0.063	0.063	ROUTE FF	3.12	112.00	20.00	SEE EROSION CONTROL SHEET
		TOTAL	6.02	202	40	
		USE	6	202	40	

SUMMARY OF QUANTITIES
SHEET 2 OF 3

STATE OF MISSOURI
JASON R. VANDERFELTZ
NUMBER PE-2003015049
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 12/9/2024
ROUTE FF | STATE MO
DISTRICT CD | SHEET NO. 3
COUNTY CRAWFORD
JOB NO. J5S3579
CONTRACT ID.
PROJECT NO.
BRIDGE NO.

DESCRIPTION | DATE

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

EFFECTIVE: 07-01-2024

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)
WO1-1R	48X48	16.00						TURN (SYMBOL RIGHT)
WO1-2L	48X48	16.00						CURVE (SYMBOL LEFT)
WO1-2R	48X48	16.00						CURVE (SYMBOL RIGHT)
WO1-3L	48X48	16.00						REVERSE TURN (SYMBOL LEFT)
WO1-3R	48X48	16.00						REVERSE TURN (SYMBOL RIGHT)
WO1-4L	48X48	16.00						REVERSE CURVE (SYMBOL LEFT)
WO1-4R	48X48	16.00						REVERSE CURVE (SYMBOL RIGHT)
WO1-4bL	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL LEFT)
WO1-4bR	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL RIGHT)
WO1-4cL	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL LEFT)
WO1-4cR	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL RIGHT)
WO1-6	60X30	12.50						HORIZONTAL ARROW (SYMBOL)
WO1-6a	72X36	18.00						HORIZ. ARROW (SYMBOL ON PERMANENT BARRICADE)
WO1-7	60X30	12.50						DOUBLE HEAD HORIZONTAL ARROW (SYMBOL)
WO1-7a	72X36	18.00						DOUBLE HEAD HORIZ. ARROW (SYMBOL ON PERM. BARR.)
WO1-8	18X24	3.00						CHEVRON (SYMBOL)
WO1-8a	30X36	7.50						CHEVRON (SYMBOL FOR DIVIDED HIGHWAYS)
WO3-1	48X48	16.00						STOP AHEAD (SYMBOL)
WO3-2	48X48	16.00						YIELD AHEAD (SYMBOL)
WO3-3	48X48	16.00						SIGNAL AHEAD (SYMBOL)
WO3-4	48X48	16.00						BE PREPARED TO STOP
WO3-5	48X48	16.00						SPEED LIMIT AHEAD
WO4-1L	48X48	16.00						MERGE (SYMBOL FROM LEFT)
WO4-1R	48X48	16.00						MERGE (SYMBOL FROM RIGHT)
WO4-1aL	48X48	16.00	2	32			6A	MERGE (LEFT)
WO4-1aR	48X48	16.00	2	32			6B	MERGE (RIGHT)
WO5-1	48X48	16.00						ROAD/BRIDGE/RAMP NARROWS
WO5-3	48X48	16.00						ONE LANE BRIDGE
WO5-5	48X48	16.00						NARROW LANES
WO6-1	48X48	16.00						DIVIDED HIGHWAY (SYMBOL)
WO6-2	48X48	16.00						DIVIDED HIGHWAY END (SYMBOL)
WO6-3	48X48	16.00						TWO WAY TRAFFIC (SYMBOL)
WO7-3a	30X24	5.00						NEXT XX MILES (PLAQUE)
WO8-1	48X48	16.00						BUMP
WO8-2	48X48	16.00						DIP
WO8-3	48X48	16.00						PAVEMENT ENDS
WO8-4	48X48	16.00						SOFT SHOULDER
WO8-5	48X48	16.00						SLIPPERY WHEN WET (SYMBOL)
WO8-6	48X48	16.00						TRUCK CROSSING
WO8-6c	48X48	16.00						TRUCK ENTRANCE
WO8-7	36X36	9.00						LOOSE GRAVEL
WO8-7a	36X36	9.00						FRESH OIL / LOOSE GRAVEL
WO8-9	48X48	16.00						LOW SHOULDER
WO8-11	48X48	16.00						UNEVEN LANES
WO8-12	48X48	16.00						NO CENTER LINE
WO8-15	48X48	16.00						GROOVED PAVEMENT
WO8-15P	30X24	5.00						MOTORCYCLE (PLAQUE)
WO8-17L	48X48	16.00						SHOULDER DROP-OFF (SYMBOL LEFT)
WO8-17R	48X48	16.00						SHOULDER DROP-OFF (SYMBOL RIGHT)
WO8-17P	30X24	5.00						SHOULDER DROP-OFF (PLAQUE)
W10-1	42RND.	9.62						RAILROAD CROSSING
WO12-1	24X24	4.00						DOUBLE DOWN ARROW (SYMBOL)
WO12-2	48X48	16.00						LOW CLEARANCE (SYMBOL)
WO12-2x	24X18	3.00						LOW CLEARANCE (PLAQUE)
WO12-2a	84X24	14.00						OVERHEAD LOW CLEARANCE (FEET AND INCHES)
WO12-4	120X60	50.00						LOW CLEARANCE XX FT XX IN XX MILES AHEAD
WO12-5	120X60	50.00						WIDTH RESTRICTION XX FT XX IN XX MILES AHEAD
WO13-1	30X30	6.25						ADVISORY SPEED (PLAQUE)
WO16-2	30X24	5.00						XXX FEET (PLAQUE)
WO16-3	30X24	5.00						X MILE (PLAQUE)
WO20-1	48X48	16.00	4	64			2	ROAD/BRIDGE/RAMP WORK AHEAD
WO20-2	48X48	16.00						DETOUR AHEAD
WO20-3	48X48	16.00	1	16			20	ROAD CLOSED AHEAD
WO20-4	48X48	16.00						ONE LANE ROAD AHEAD
WO20-5	48X48	16.00	4	64			5	RIGHT/CENTER/LEFT LANE CLOSED AHEAD
WO20-5a	48X48	16.00						2 RIGHT/CENTER/LEFT LANES CLOSED AHEAD
WO20-6a	48X48	16.00	2	32			6	RIGHT/CENTER/LEFT LANE CLOSED
WO20-7a	48X48	16.00						FLAGGER (SYMBOL)
WO21-2	36X36	9.00						FRESH OIL
WO21-5	48X48	16.00						SHOULDER WORK / SHOULDER WORK AHEAD
WO22-1	48X48	16.00						BLASTING ZONE AHEAD
WO22-2	42X36	10.50						TURN OFF 2-WAY RADIO AND PHONE
WO22-3	42X36	10.50						END BLASTING ZONE
GO22-1	21X15	2.19						WET PAINT (ARROW PIVOTS)

GUIDE SIGNS

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NUM.	DESCRIPTION
E05-1	36X48	12.00						GORE EXIT
E05-2	48X36	12.00						EXIT OPEN
E05-2a	48X36	12.00						EXIT CLOSED
GO20-1	60X24	10.00						ROAD WORK NEXT XX MILES
GO20-2	48X24	8.00						END ROAD WORK
GO20-4	36X18	4.50						PILOT CAR FOLLOW ME
GO20-4a	42X30	8.75						PILOT CAR IN USE WAIT & FOLLOW
GO20-4a	18X12	1.50						PILOT CAR IN USE WAIT & FOLLOW
GO20-5aP	36X24	6.00	4	24			54	WORK ZONE (PLAQUE)
MO4-8a	24X18	3.00						END DETOUR
MO4-9L	48X36	12.00						DETOUR (LEFT)
MO4-9R	48X36	12.00						DETOUR (RIGHT)
MO4-9P	48X12	4.00						STREET NAME (PLAQUE)
MO4-10L	48X18	6.00						DETOUR ARROW (LEFT)
MO4-10R	48X18	6.00						DETOUR ARROW (RIGHT)

REGULATORY SIGNS

SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN 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	8	96			4/25	SPEED LIMIT 4@60, 4@70
R3-1	48X48	16.00						NO RIGHT TURN (SYMBOL)
R3-2	48X48	16.00						NO LEFT TURN (SYMBOL)
R3-3	36X36	9.00						NO TURNS
R3-4	48X48	16.00						NO U-TURN (SYMBOL)
R3-7L	30X30	6.25						LEFT LANE MUST TURN LEFT
R3-7R	30X30	6.25						RIGHT LANE MUST TURN RIGHT
R4-1	36X48	12.00						DO NOT PASS
R4-2	36X48	12.00						PASS WITH CARE
R4-7a	36X48	12.00						KEEP RIGHT (HORIZONTAL ARROW)
R4-8a	36X48	12.00						KEEP LEFT (HORIZONTAL ARROW)
R5-1	30X30	6.25						DO NOT ENTER
R5-1a	36X24	6.00						WRONG WAY
R6-1L	54X18	6.75						ONE WAY ARROW (LEFT)
R6-1R	54X18	6.75						ONE WAY ARROW (RIGHT)
R6-2L	24X30	5.00						ONE WAY (LEFT)
R6-2R	24X30	5.00						ONE WAY (RIGHT)
R9-9	24X12	2.00						SIDEWALK CLOSED
R9-11L	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW LEFT) CROSS HERE
R9-11R	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW RIGHT) CROSS HERE
R10-6	24X36	6.00						STOP HERE ON RED (45^ ARROW)
R11-2	48X30	10.00	2	20			29	ROAD CLOSED
R11-3a	60X30	12.50						ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY
R11-4	60X30	12.50	1	12.5			55	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-5	96X48	32.00						POINT OF PRESENCE
CONST-8	48X36	12.00						WORK ZONE NO PHONE ZONE

616-10.05 CONSTRUCTION SIGNS	TOTAL
	393

616-10.10 RELOCATED SIGNS	TOTAL
	0

ITEM NUMBER	TOTAL QTY	DESCRIPTION
6122008		IMPACT ATTENUATOR 40 MPH (SAND BARRELS)
6122009		IMPACT ATTENUATOR 45 MPH (SAND BARRELS)
6122010		IMPACT ATTENUATOR 50 MPH (SAND BARRELS)
6122012		IMPACT ATTENUATOR 55 MPH (SAND BARRELS)
6122014		IMPACT ATTENUATOR 60 MPH (SAND BARRELS)
6122017		IMPACT ATTENUATOR 65 MPH (SAND BARRELS)
6122019		IMPACT ATTENUATOR 70 MPH (SAND BARRELS)
6122020		REPLACEMENT SAND BARREL
6122030		IMPACT ATTENUATOR (RELOCATION)
6123001		TRUCK MOUNTED ATTENUATOR (TMA)
6161008	1	ADVANCED WARNING RAIL SYSTEM
6161012		BUOYS (BOATS KEEP OUT)
6161013		BUOYS (NO WAKE)
6161014		SPECIAL SIGN ASSEMBLY (BOATS KEEP OUT)
6161025	58	CHANNELIZER (TRIM LINE)
6161030	8	TYPE III MOVEABLE BARRICADE
6161033		DIRECTION INDICATOR BARRICADE
6161040	2	FLASHING ARROW PANEL
6161047		TYPE III OBJECT MARKER
6161055		SEQUENTIAL FLASHING WARNING LIGHT
6161070		TUBULAR MARKER
6161095		RADAR SPEED ADVISORY SYSTEM
6161096		CHANGEABLE MESSAGE SIGN, COMMISSION FURNISHED/RETAINED
	3	CHANGEABLE MESSAGE SIGN W/O COMM.
6161098A		INTERFACE - CONTRACTOR FURNISHED/RETAINED
6161099		CHANGEABLE MESSAGE SIGN WITH COMM. INTERFACE - CONTRACTOR FURNISHED/RETAINED
6162000A		WORK ZONE TRAFFIC SIGNAL SYSTEM
6162002		TEMPORARY LONG-TERM RUMBLE STRIPS
6173600D		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/RETAINED
6173602B		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/COMMISSION RETAINED
6174000A		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION
6175010A		RELOCATING TEMPORARY TRAFFIC BARRIER
6176000B		TEMPORARY TRAFFIC BARRIER COMMISSION FURNISHED/RETAINED
6177000B		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION COMMISSION FURNISHED/RETAINED
6208064A		TEMPORARY RAISED PAVEMENT MARKER
9029400		TEMPORARY TRAFFIC SIGNALS
9029401		TEMPORARY TRAFFIC SIGNALS AND LIGHTING

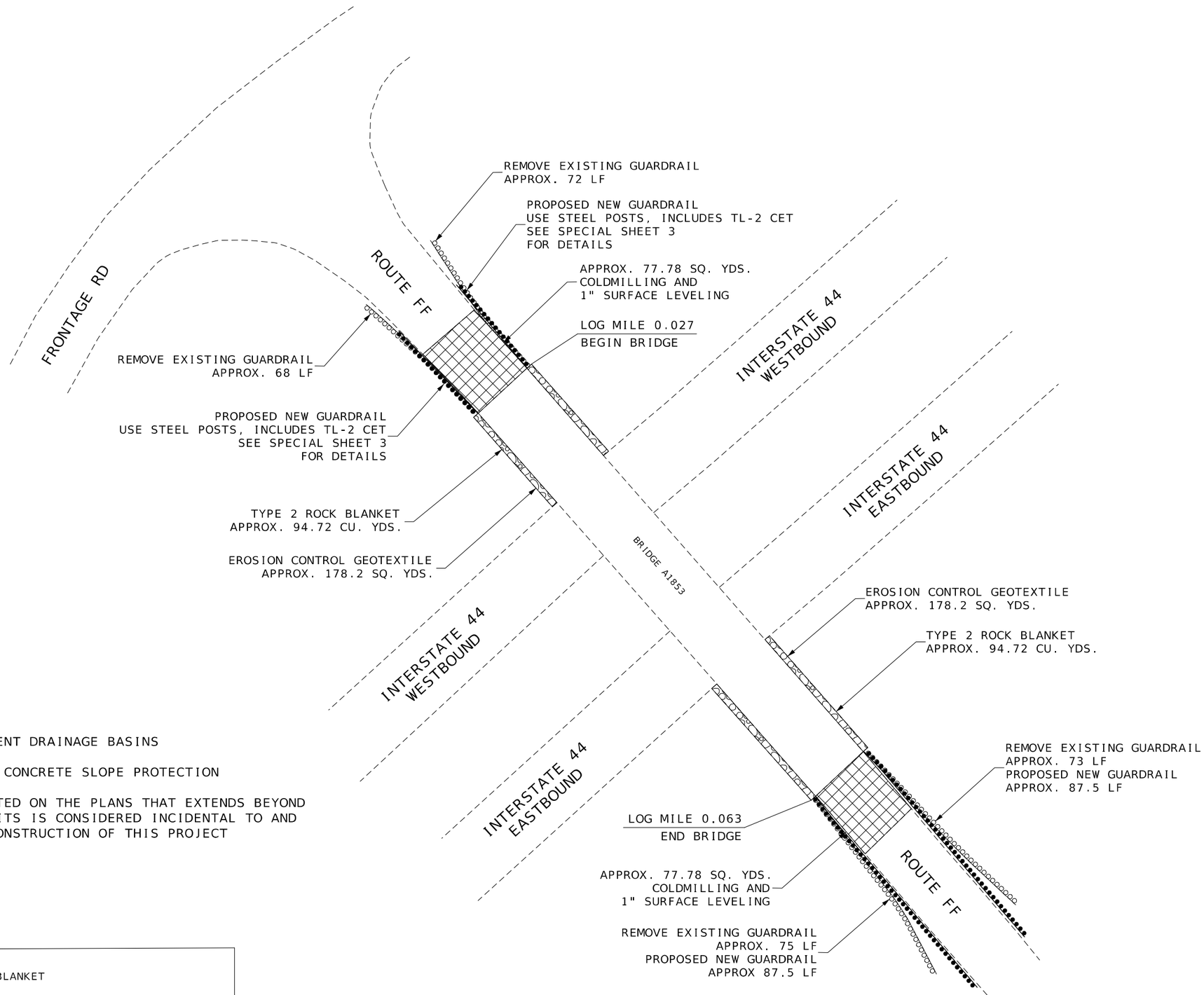
SUMMARY OF QUANTITIES
SHEET 3 OF 3

STATE OF MISSOURI
JASON R. VANDERFELTZ
NUMBER PE-2003015049
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED: 12/9/2024
ROUTE: FF | STATE: MO
DISTRICT: CD | SHEET NO.: 3
COUNTY: CRAWFORD
JOB NO.: J5S3579
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

DESCRIPTION | DATE

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



NOTES:

CLEAN OUT END BENT DRAINAGE BASINS

REMOVE EXISTING CONCRETE SLOPE PROTECTION

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

NOT TO SCALE

TYPE 2 ROCK BLANKET

COLDMILLING AND 1" SURFACE LEVELING

ROUTE FF STATE BRIDGE A1853

SPECIAL SHEET
1 OF 3

STATE OF MISSOURI
JASON R. VANDERFELTZ
NUMBER PE-2003015049
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED
12/9/2024

ROUTE	STATE
FF	MO
DISTRICT	SHEET NO.
CD	4

COUNTY
CRAWFORD

JOB NO.
J5S3579

CONTRACT ID.

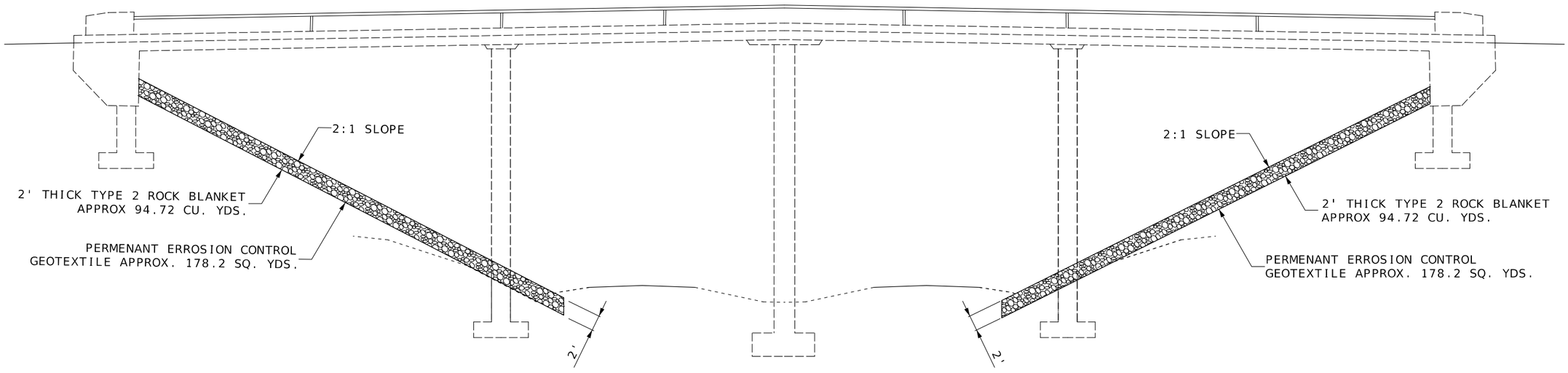
PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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



NOT TO SCALE

ROUTE FF STATE BRIDGE A1853

SPECIAL SHEET
2 OF 3

STATE OF MISSOURI
JASON R. VANDERFELTZ
NUMBER PE-2003015049
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED
12/9/2024

ROUTE	STATE
FF	MO
DISTRICT	SHEET NO.
CD	5

COUNTY
CRAWFORD

JOB NO.
J5S3579

CONTRACT ID.

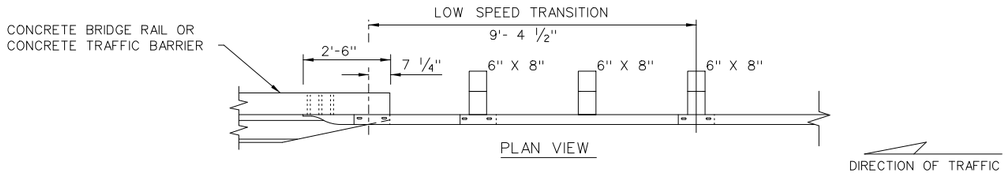
PROJECT NO.

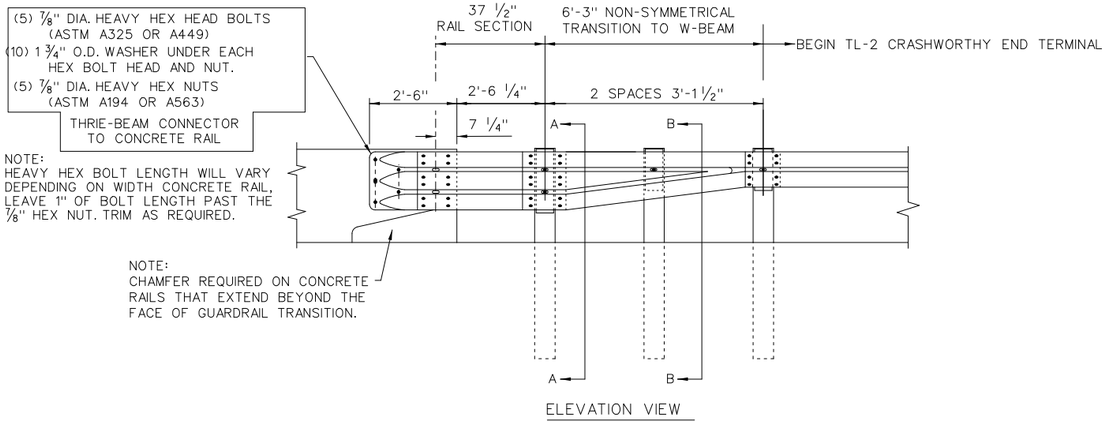
BRIDGE NO.

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

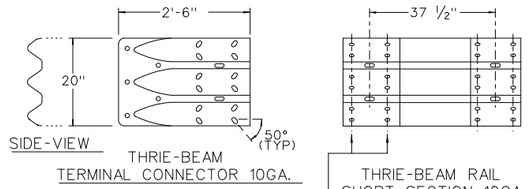
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)





GENERAL NOTES

1. THE TYPE OF POST (RECTANGULAR WOOD POST, OR STEEL POST) WILL BE AS SHOWN IN THE PLANS. THE EXACT POSITION OF TRANSITIONS SHALL BE AS SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER.
2. NO DIRECT PAY FOR FITTINGS (BOLTS, NUTS, AND WASHERS).
3. BUTTON HEAD "POST BOLTS & NUTS" SHALL MEET THE REQUIREMENTS OF (ASTM A307), AND SHALL BE OF SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND 5/8" WASHER AND NOT MORE THAN 1" BEYOND IT. TRIM BOLT LENGTH TO MEET REQUIRED LENGTH.
4. POSTS SHALL NOT BE SET IN CONCRETE, OF ANY DEPTH.



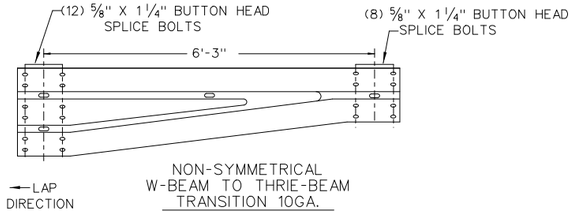
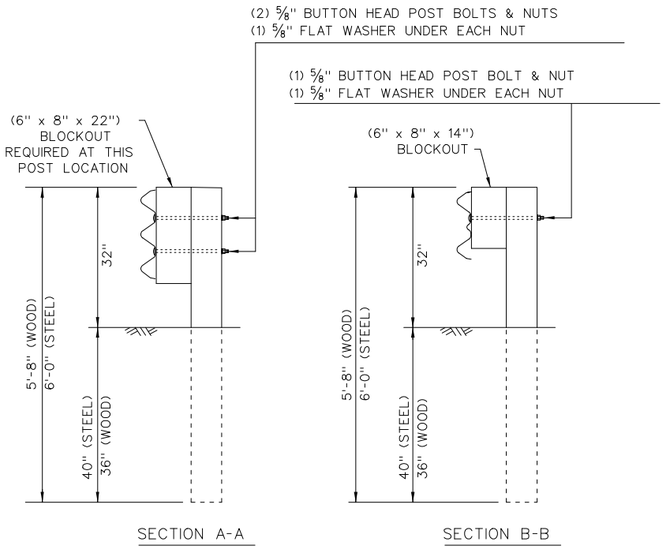
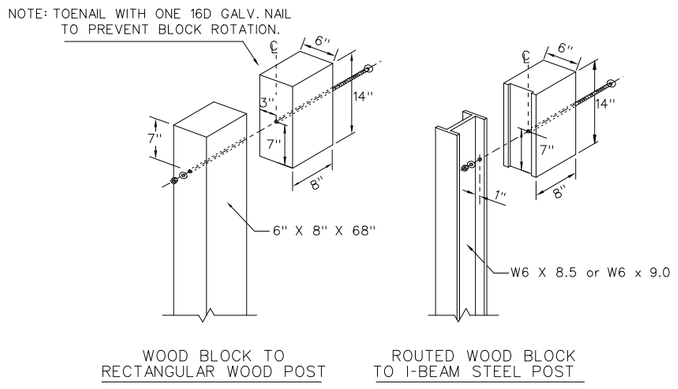


PLATE WASHER INSTRUCTIONS

BRIDGE APPROACH - UPSTREAM: THE SHORT RAIL LAPS OVER THE TERMINAL CONNECTOR. PLATE WASHERS ARE INSTALLED UNDER THE SPLICE NUTS AGAINST INSIDE OF CONNECTOR.

BRIDGE EXIT - DOWNSTREAM: THE TERMINAL CONNECTOR LAPS OVER THE NESTED RAIL. PLATE WASHERS ARE INSTALLED UNDER THE BOLT HEAD AGAINST OUTSIDE OF CONNECTOR.





SPECIAL SHEET
3 OF 3

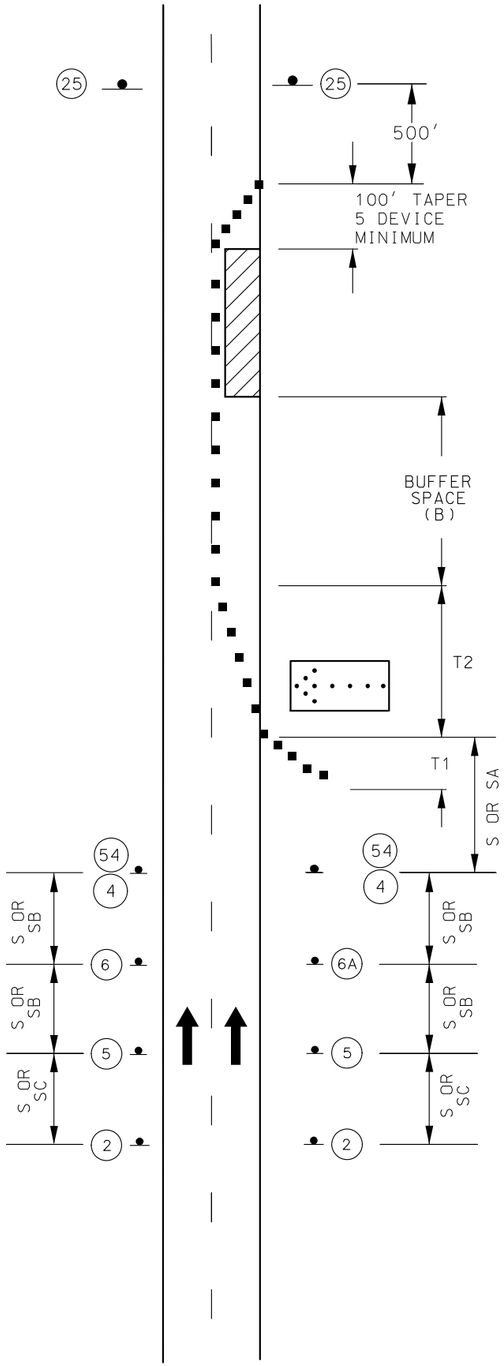
TL-2 BRIDGE APPROACH TRANSITION SECTION

STATE OF MISSOURI
JASON R. VANDERFELTZ
NUMBER PE-2003015049
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED: 12/9/2024
ROUTE: FF | STATE: MO
DISTRICT: CD | SHEET NO.: 6
COUNTY: CRAWFORD
JOB NO.: J5S3579
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

DESCRIPTION | DATE

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



STATIONARY LANE CLOSURE
DIVIDED HIGHWAY

W020-1
(2)

W020-5
(5)

W020-6a
(6)

W04-1aL
(6A)

W04-1aR
(6B)

G020-5aP
(54)

R2-1
(4)

R2-1
NORMAL SPEED
(25)

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

TAPER LENGTHS AND SPACING FOR CHANNELIZERS

PERMANENT POSTED SPEED MPH	MINIMUM LANE TAPER LENGTH (3) (T2)			MINIMUM SHOULDER TAPER LENGTH BASED ON 10′ SHOULDER (T1)	BUFFER LENGTH FT. (B)	MAXIMUM CHANNELIZER SPACING	
	10′	11′	12′			THROUGH TAPER	THROUGH WORK AREA
0-35	205′	225′	245′	70′	250′	35′	40′
40-45	450′	495′	540′	150′	360′	40′	80′
50-55	550′	605′	660′	185′	495′	50′	80′
60-70	700′	770′	840′	235′	730′	60′	120′

NOTES:

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

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

(3) TAPER LENGTHS SHOWN INCLUDE LENGTH REQUIRED FOR LANE AND 10′ SHOULDER.

THIS INFORMATION ALSO SHALL BE USED WHEN WORK IS BEING PERFORMED IN THE LANE ADJACENT TO THE MEDIAN ON A DIVIDED HIGHWAY. IN THIS CASE, THE LEFT LANE CLOSED SIGNS AND THE CORRESPONDING MERGE OR LANE ENDS SIGN SHALL BE SUBSTITUTED.

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

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

TEMPORARY TRAFFIC CONTROL SHEET
STATIONARY LANE CLOSURE
ON DIVIDED HIGHWAY
SHEET 1 OF 2

STATE OF MISSOURI
JASON R. VANDERFELTZ
NUMBER PE-2003015049
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED
12/9/2024

ROUTE	STATE
FF	MO
DISTRICT	SHEET NO.
CD	7

COUNTY
CRAWFORD

JOB NO.
J5S3579

CONTRACT ID.

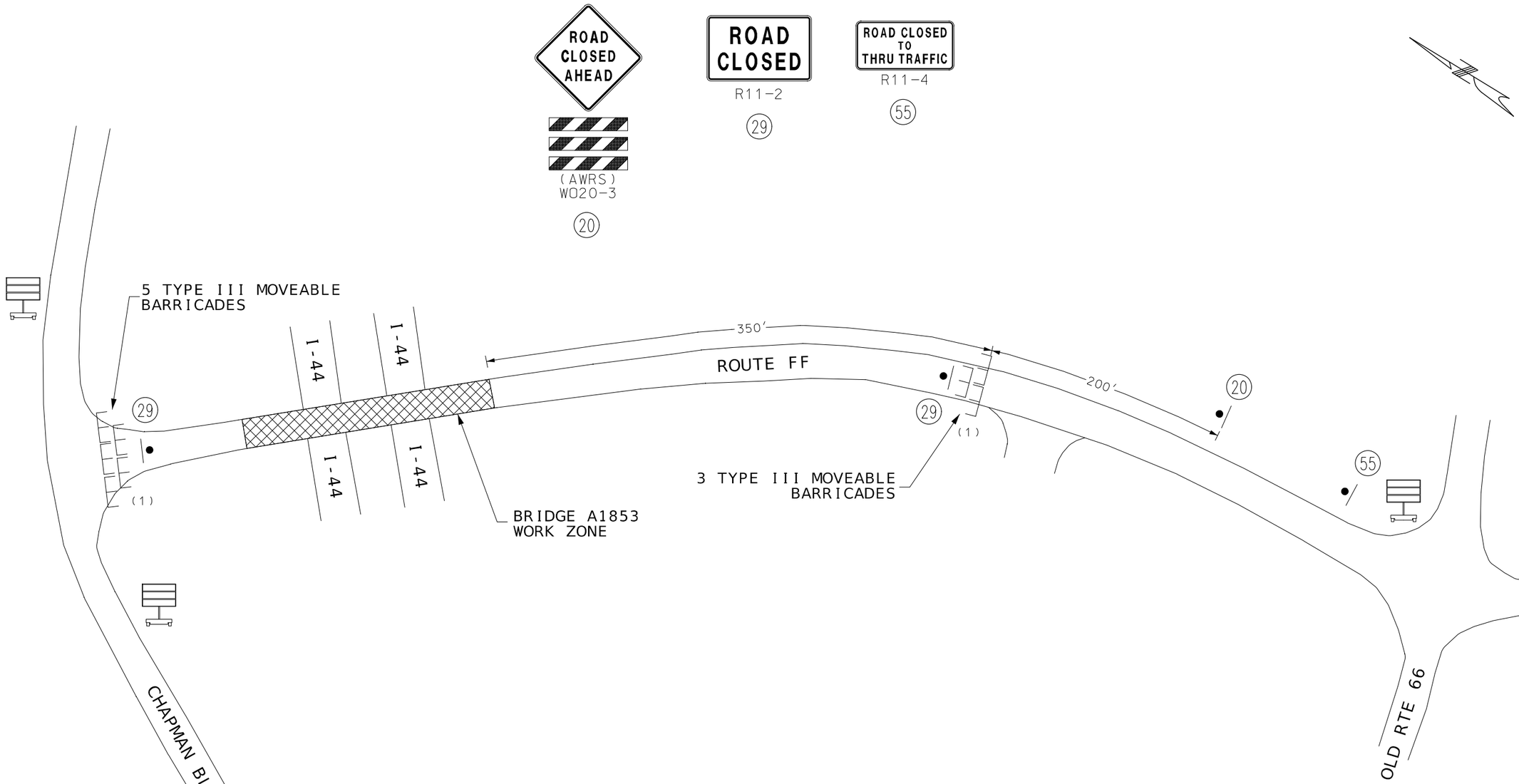
PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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



TYPE OF ROADWAY	SIGN HEIGHT	MAXIMUM WORK ZONE LENGTH (L)
URBAN	1' PORTABLE 7' POST	1 MILE
RURAL UNDIVIDED	1' PORTABLE 5' POST	3 MILES

(1) ROAD CLOSED SIGN MAY BE PLACED 7-10 FEET BEHIND THE BARRICADES AND AT A SIGN HEIGHT APPROPRIATE TO THE TYPE OF ROADWAY. ONE BARRICADE SHOULD BE REQUIRED TO COMPLETELY CLOSE EACH 8-FEET OF PAVEMENT. PAVED SHOULDERS SHALL BE INCLUDED IN THE AREA TO BE CLOSED.

REFER TO STANDARD PLAN 610.10 FOR PLACEMENT OF BARRICADES

TRAFFIC CONTROL SHOULD BE REMOVED AS SOON AS PRACTICAL AFTER CONDITIONS FOR THE CLOSURE NO LONGER EXISTS.

NOT TO SCALE

TEMPORARY TRAFFIC CONTROL SHEET
HIGHWAY CLOSURE
SHEET 2 OF 2

STATE OF MISSOURI
JASON R. VANDERFELTZ
NUMBER PE-2003015049
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

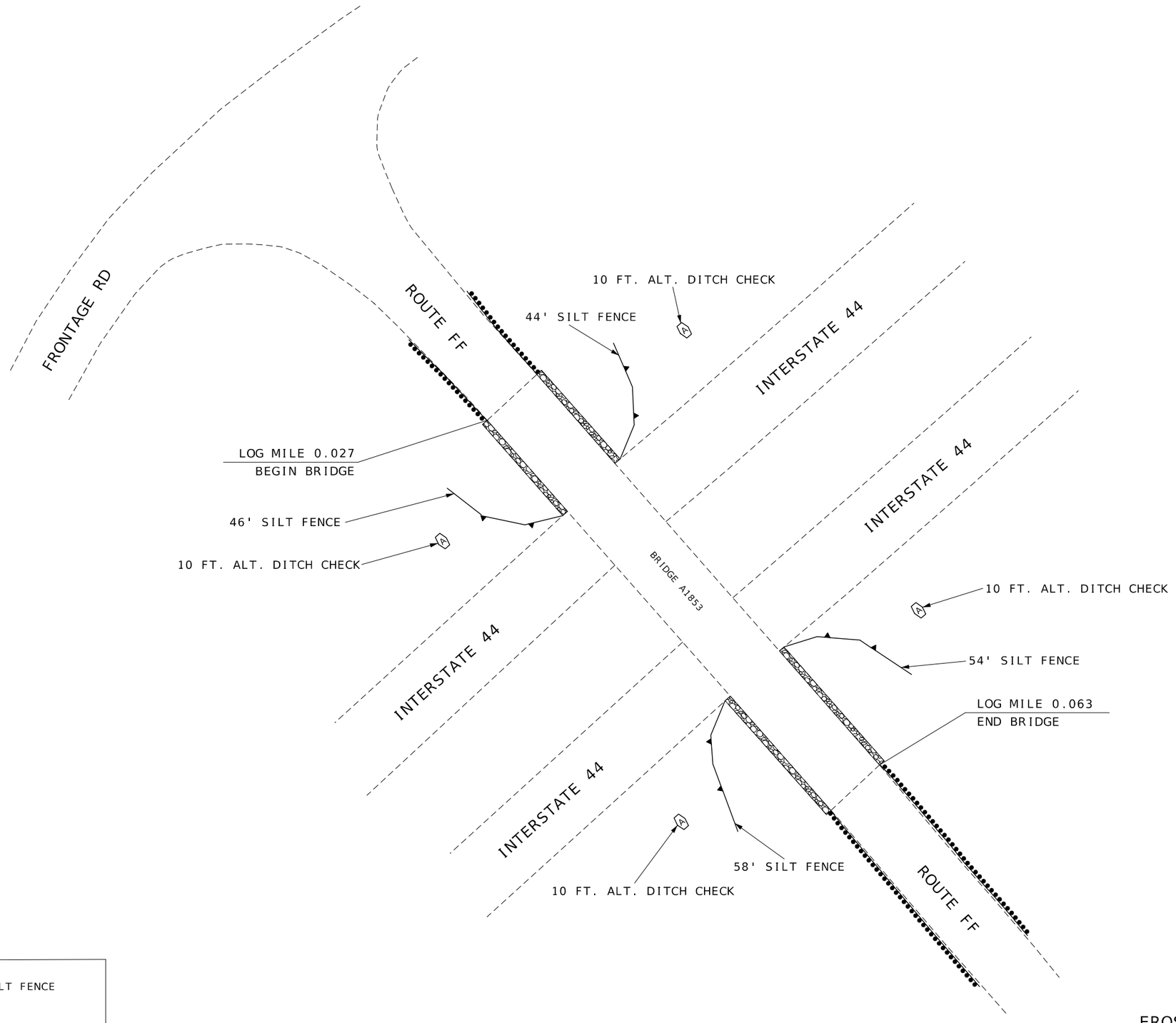
DATE PREPARED: 12/9/2024

ROUTE	STATE
FF	MO
DISTRICT	SHEET NO.
CD	8

COUNTY: CRAWFORD
JOB NO.: J5S3579
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

DESCRIPTION	DATE

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



NOT TO SCALE

SILT FENCE

A — ALT. DITCH CHECK

ROUTE FF STATE BRIDGE A1853

EROSION CONTROL SHEET
SHEET 1 OF 1

STATE OF MISSOURI
JASON R. VANDERFELTZ
NUMBER PE-2003015049
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

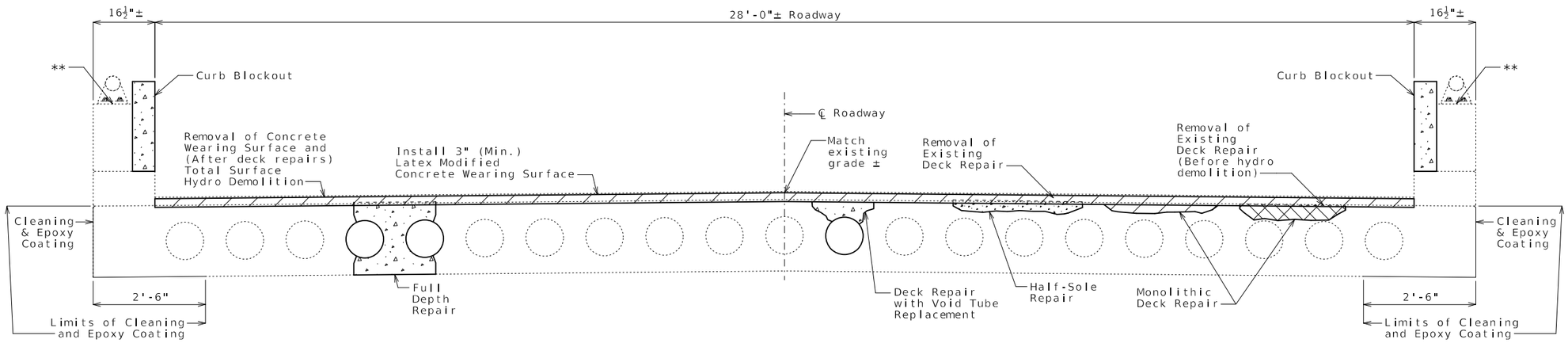
DATE PREPARED	12/9/2024
ROUTE	FF
STATE	MO
DISTRICT	CD
SHEET NO.	9
COUNTY	CRAWFORD
JOB NO.	J5S3579
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DESCRIPTION | DATE

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

SEC/SUR 19 TWP 40N RGE 2W

U.I.P. AND REHABILITATE EXISTING (33'-60'-60'-33') CONTINUOUS CONCRETE VOIDED SLAB SPANS



TYPICAL SECTION THRU EXISTING DECK

Optional Construction Methods	
Construction Method	Method Used (✓)
Alternate C	
Alternate D	

MoDOT construction personnal will complete column labeled "Method Used ( )".

For additional details of Construction Method C, see Sheet No. 2

For details of Construction Method D, see Sheet No. 3

Estimated Quantities			
	Item		Total
	Total Surface Hydro Demolition	sq. yard	586
	Removal of Concrete Wearing Surface	sq. foot	5274
	Removal of Existing Deck Repair	sq. foot	51
	Latex Modified Concrete Wearing Surface	sq. yard	586
	Diamond Grinding	sq. yard	586
	Curb Blockout	linear foot	377
	Full Depth Repair	sq. foot	50
	Deck Repair with Void Tube Replacement	sq. foot	50
	Cleaning and Epoxy Coating	sq. foot	2540
	Alternate C		
*	Supplementary Wearing Surface Material (Alternate C)	cu. yard	4
	Half-Sole Repair (Alternate C)	sq. foot	50
	Alternate D		
*	Supplementary Wearing Surface Material (Alternate D)	cu. yard	5

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

General Notes:

Design Specifications:

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

Design Loading:

H20-44 (1965), HS20-44 (New Construction)

Design Unit Stresses:

Class B-1 Concrete (Curb Blockout, Half-Sole, Full Depth Repair & Deck Repair with Void Tube Replacement) f'c = 4,000 psi
Reinforcing Steel (ASTM A615 Grade 60) fy = 60,000 psi

Miscellaneous:

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

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

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

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.

** Asbestos (Friability Category II NF) has been detected in the insulation compund between the top of the existing concrete parapet and the base of the existing handrail and posts. The Contractor will be required to use an Abatement Contractor during the removal. No direct payment will be made for removal of the handrail and posts, or for asbestos abatement. The described work will be considered completely covered by the contract unit price for other items in the contract.

Traffic Handling:

Traffic to be maintained on structure during construction. See roadway plan for traffic control.

REPAIRS TO BRIDGE: ROUTE FF OVER ROUTE I-44

ROUTE FF FROM CHAPMAN BLVD. TO END OF STATE MAINTENANCE
ABOUT 1.2 MILES SOUTHWEST OF ROUTE WW
BEGINNING STATION 9±05.75 (Match Existing)

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
Ted Koester
07/15/2025 11:17:25 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED 1/15/2025

ROUTE	STATE
FF	MO
DISTRICT	SHEET NO.
BR	1

COUNTY CRAWFORD

JOB NO. J5S3579

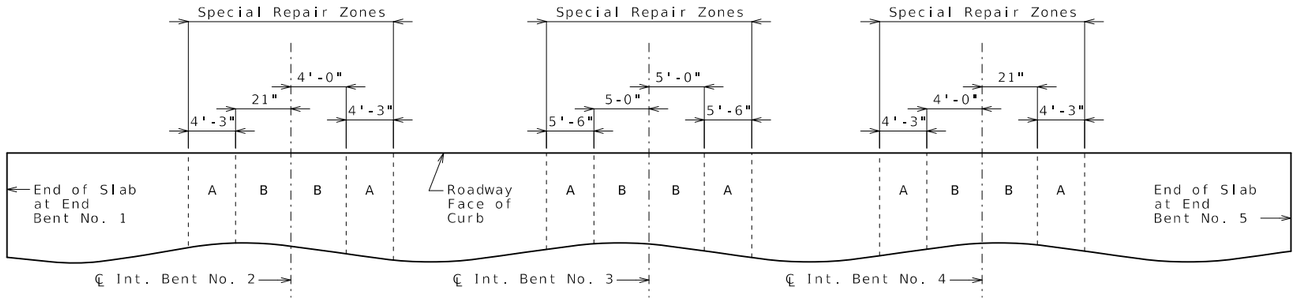
CONTRACT ID.

PROJECT NO.

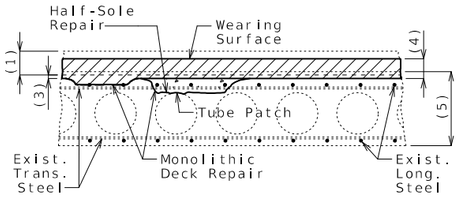
BRIDGE NO. A18532

DESCRIPTION	DATE

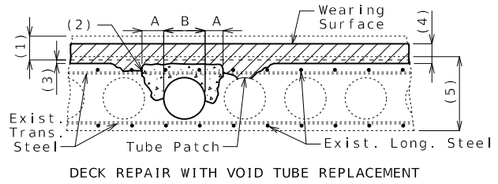
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



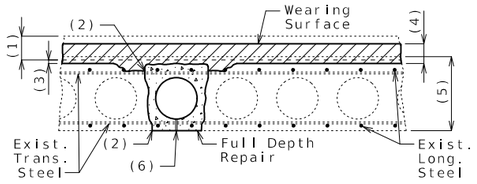
PART PLAN OF SLAB SHOWING SPECIAL REPAIR ZONES



MONOLITHIC DECK REPAIR



DECK REPAIR WITH VOID TUBE REPLACEMENT
A = Half-Sole Repair
B = Deck Repair with Void Tube Replacement



FULL DEPTH REPAIR

DECK REPAIR (AFTER HYDRO DEMOLITION)

(1) Removal of existing chip seal and 2"± Low Slump wearing surface plus 1/2" of existing deck

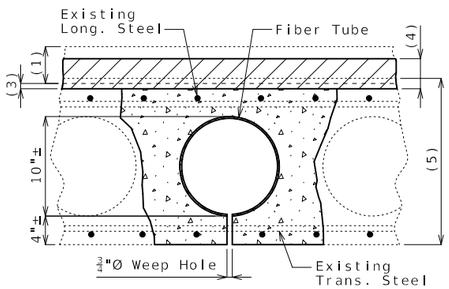
(2) 1" vertical side shall be established outside the deteriorated area.

(3) Total surface hydro demolition 1/2" minimum of sound concrete, and all unsound concrete.
1/4" minimum inside special repair zones
1/2" minimum outside special repair zone

(4) 3" minimum Latex Modified concrete wearing surface
2 3/4" minimum inside special repair zones
3" minimum outside special repair zones

(5) Original depth minus previous scarification

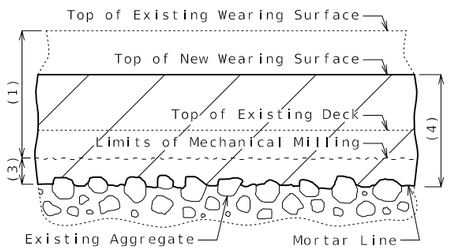
(6) Restore existing weep hole, if encountered.



FIBER VOID TUBE REPLACEMENT

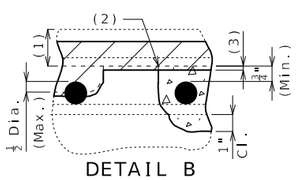
Fiber tubes for producing voids shall have an approximate outside diameter of 10 inches and a wall thickness of 1/4 inch and shall be anchored to joists carrying the floor form at not more than 4-foot centers.

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



MILLING AND HYDRO DEMOLITION LIMITS

DETAIL A



DETAIL B

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

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

Deck Repair Notes:

Order of Repair:

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

Special Repair Zones:

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

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

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

Void Repair:

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

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

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
07/15/2025 11:47:21 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED: 1/15/2025
ROUTE: FF | STATE: MO
DISTRICT: BR | SHEET NO.: 2
COUNTY: CRAWFORD
JOB NO.: J5S3579
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A18532

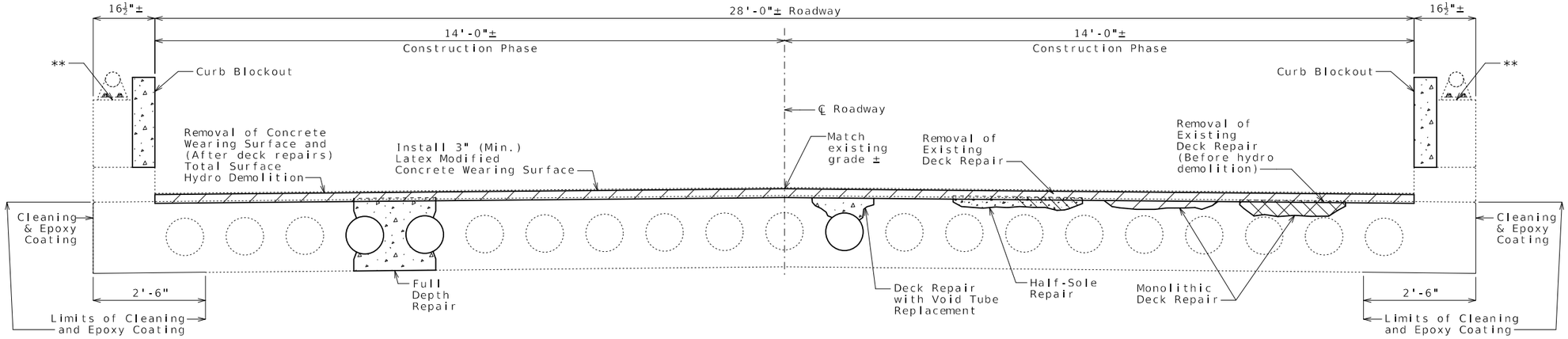
DESCRIPTION | DATE

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

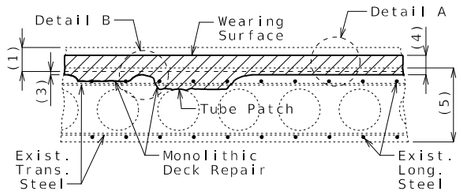
DECK REPAIR DETAILS (ALTERNATE C)

Detailed Sept. 2024
Checked Jan. 2025

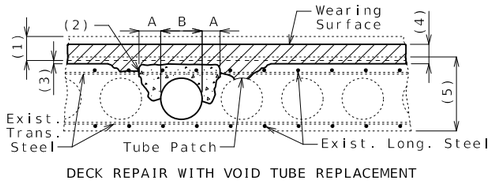
Note: This drawing is not to scale. Follow dimensions.



TYPICAL SECTION THRU EXISTING DECK

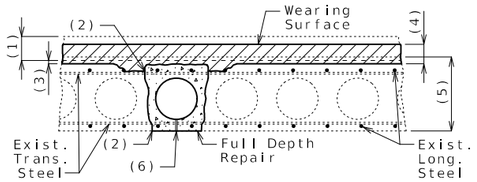


MONOLITHIC DECK REPAIR



DECK REPAIR WITH VOID TUBE REPLACEMENT

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



FULL DEPTH REPAIR

DECK REPAIR (AFTER HYDRO DEMOLITION)

(1) Removal of existing chip seal and 2"± Low Slump wearing surface plus 1/2" of existing deck

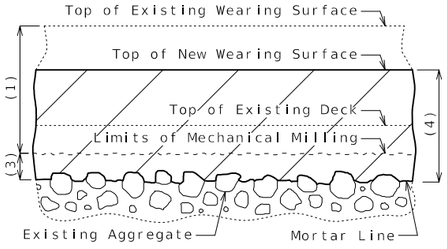
(2) 1" vertical side shall be established outside the deteriorated area.

(3) Total surface hydro demolition 1/2" minimum of sound concrete, and all unsound concrete.

(4) 3" minimum Latex Modified concrete wearing surface

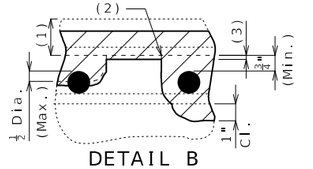
(5) Original depth minus previous scarification

(6) Restore existing weep hole, if encountered.



MILLING AND HYDRO DEMOLITION LIMITS

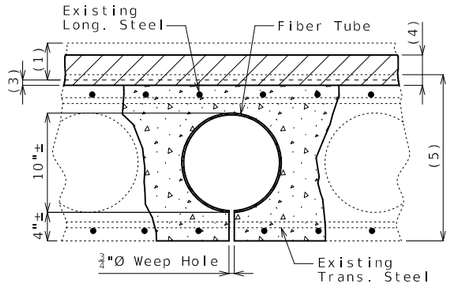
DETAIL A



DETAIL B

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

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



FIBER VOID TUBE REPLACEMENT

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

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

Deck Repair Notes:

Order of Repair:

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

Void Repair:

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

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

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

DECK REPAIR DETAILS (ALTERNATE D)

Detailed Sept. 2024
Checked Jan. 2025

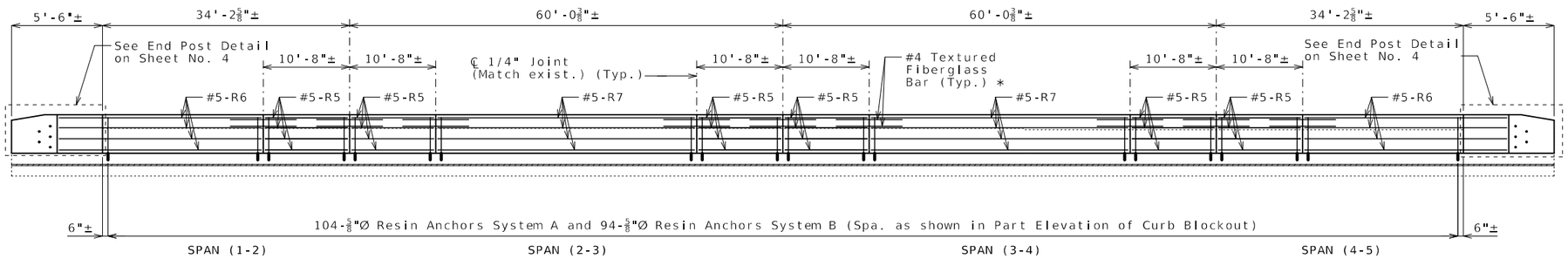
Note: This drawing is not to scale. Follow dimensions.

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
01/15/2025 11:18:18 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED 1/15/2025
ROUTE FF | STATE MO
DISTRICT BR | SHEET NO. 3
COUNTY CRAWFORD
JOB NO. J5S3579
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A18532

DESCRIPTION | DATE

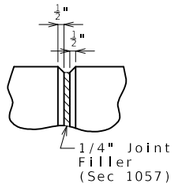
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



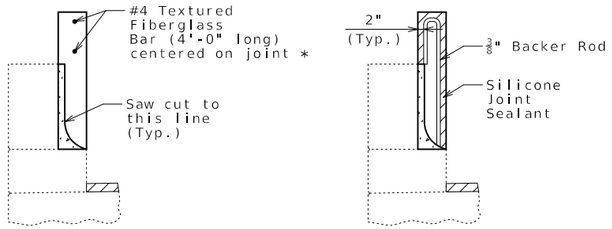
ELEVATION OF LEFT CURB BLOCKOUT

(Right curb blockout similar)

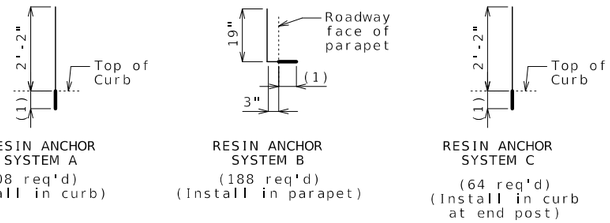
Longitudinal dimensions are along grade and are taken at top outside edge of parapet.



PART ELEVATION AT FORMED JOINT



SECTION THRU SAW CUT JOINT



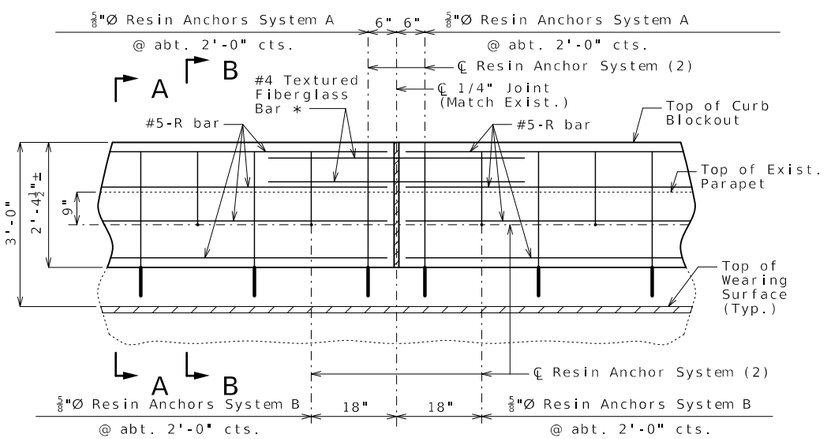
RESIN ANCHOR SYSTEM A
(208 req'd)
(Install in curb)

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

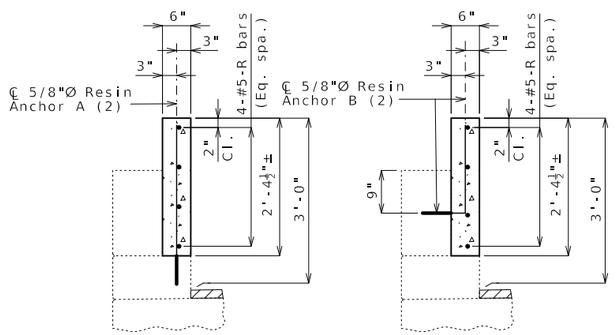
RESIN ANCHOR SYSTEM C
(64 req'd)
(Install in curb at end post)

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

DETAILS OF RESIN ANCHORS



PART ELEVATION OF CURB BLOCKOUT



SECTION A-A

SECTION B-B

CURB BLOCKOUT

Notes:

* Slip-formed option only.

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

Bridge rail not shown for clarity.

Concrete in curb blockout shall be Class B-1.

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

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

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

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

All curb blockout reinforcement shall be epoxy coated.

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

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

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

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

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

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

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

STATE OF MISSOURI
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01/11/2025 10:04:22 AM
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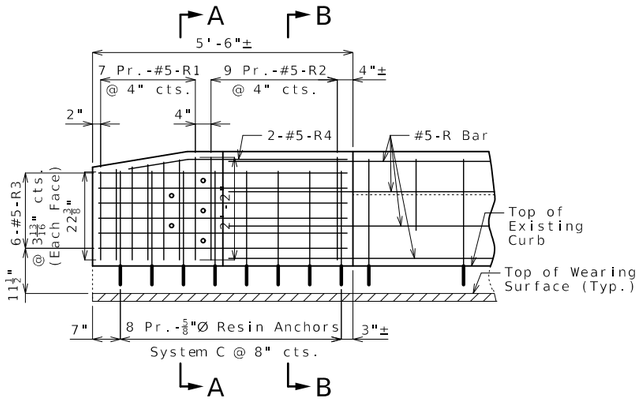
DATE PREPARED 1/10/2025

ROUTE	STATE
FF	MO
DISTRICT	SHEET NO.
BR	4

COUNTY: CRAWFORD
JOB NO.: J5S3579
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A18532

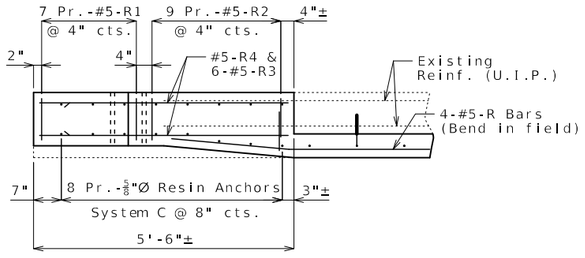
DESCRIPTION | DATE

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



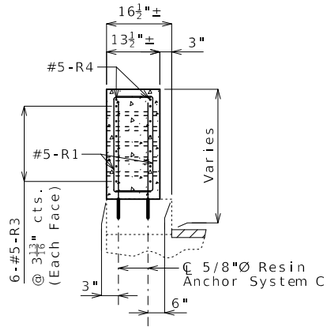
ELEVATION SHOWING REINFORCEMENT

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

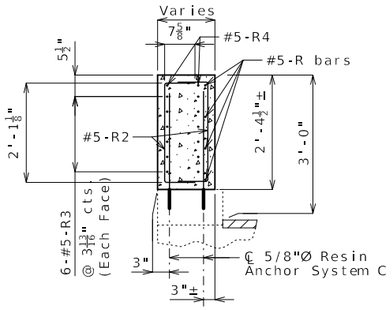


PLAN SHOWING REINFORCEMENT

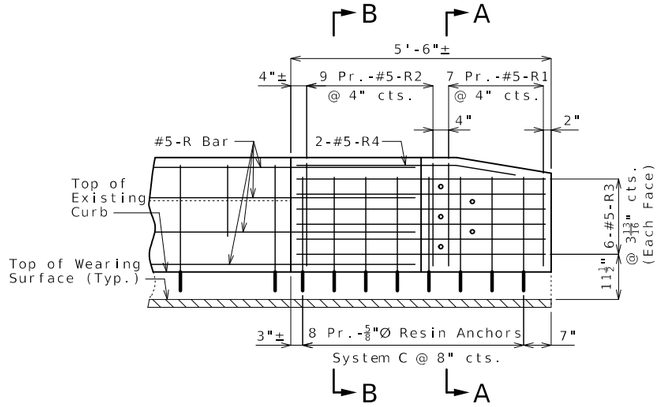
LEFT END POST AT END BENT NO. 1



SECTION A-A

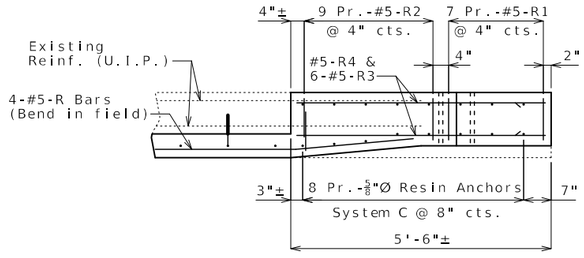


SECTION B-B



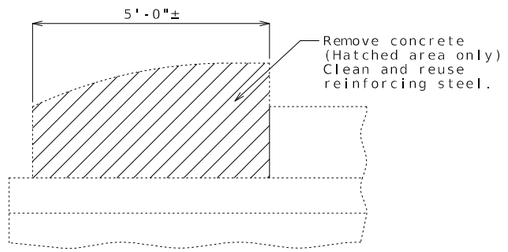
ELEVATION SHOWING REINFORCEMENT

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



PLAN SHOWING REINFORCEMENT

LEFT END POST AT END BENT NO. 5



PART ELEVATION SHOWING END POST CONCRETE REMOVAL

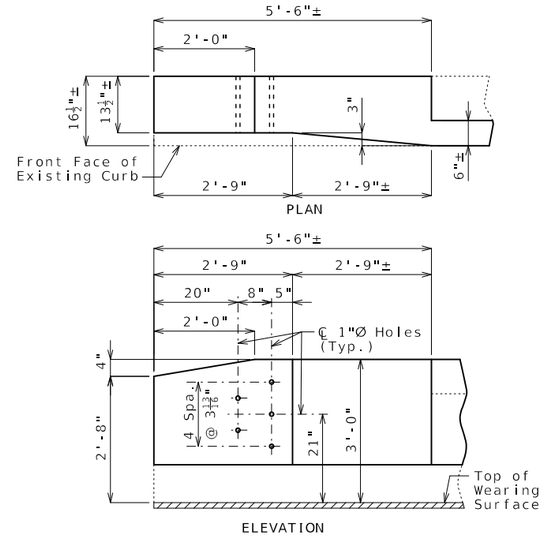
Cost of removing existing end posts will be considered completely covered by the contract unit price for Curb Blockout.

Notes:

Work this sheet with Sheet No. 4.

For details of resin anchors, see Sheet No. 4.

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



DETAILS OF END POST AND GUARD RAIL ATTACHMENT

CURB BLOCKOUT AT END BENTS

Detailed Sept. 2024
Checked Jan. 2025

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
Ted Koester
01/11/2025 10:05:02 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

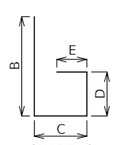
DATE PREPARED: 1/10/2025

ROUTE	STATE
FF	MO
DISTRICT	SHEET NO.
BR	5

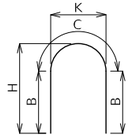
COUNTY: CRAWFORD
JOB NO.: J5S3579
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A18532

DESCRIPTION | DATE

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



SHAPE 6
or 6S



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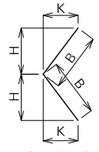

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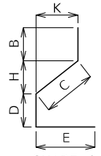

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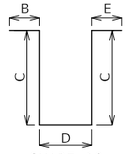

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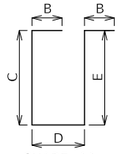

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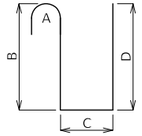

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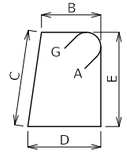

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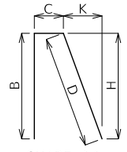

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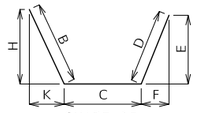

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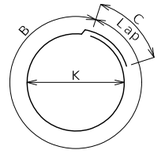

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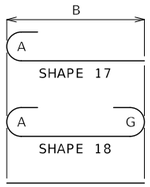
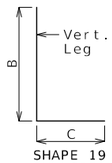


SHAPE 17
SHAPE 18
SHAPE 20



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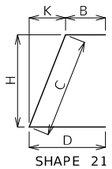

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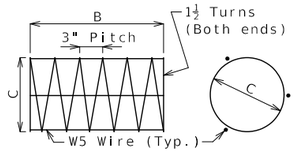

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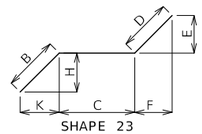

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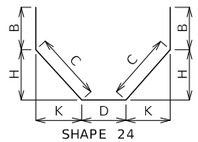
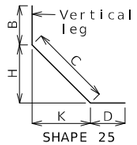
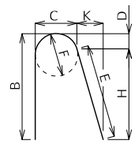


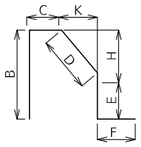
SHAPE 24
or 24S



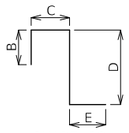
SHAPE 25
or 25S



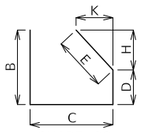
SHAPE 26



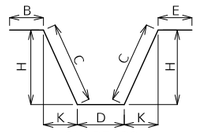
SHAPE 27S



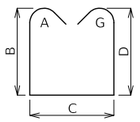
SHAPE 28
or 28S



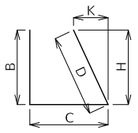
SHAPE 29
or 29S



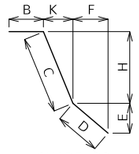
SHAPE 30
or 30S



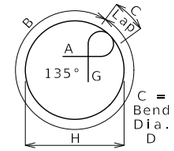
SHAPE 31S



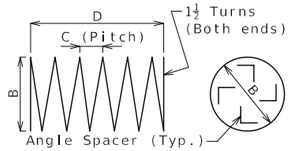
SHAPE 32
or 32S



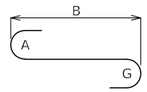
SHAPE 33
or 33S



SHAPE 34S



SHAPE 35 (1)

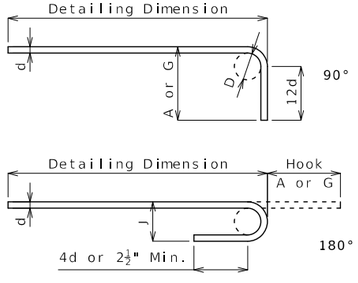


SHAPE 36

Finished Bend Diameters D and Hook Dimensions

Standard Pin Bend Shapes

Size	Case	D	A or G		J
			90°	180°	180°
#4	1	3"	8"	6"	4"
#5	1	3¾"	10"	7"	5"
#6	1	4½"	12"	8¼"	6"
#7	2	5¼"	14"	9¾"	7"
	3	7"	15"	11½"	8¾"
#8	2	6"	16"	11"	8"
	3	8"	17"	13¼"	10"
#9	1	9½"	19¼"	15½"	11¾"
#10	1	10¾"	22"	17½"	13¼"
#11	1	12"	24½"	19½"	14⅞"
#14	1	18¼"	31¼"	27½"	21⅝"
#18	1	24"	41½"	36¾"	28½"

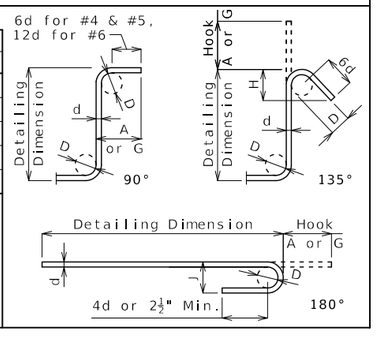


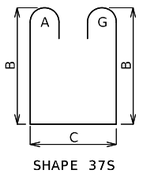
Stirrup Pin Bend Shapes (S)

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

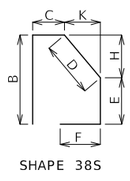
Applicable for all grades of steel.

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





SHAPE 37S



SHAPE 38S

BENDING DIAGRAMS

All dimensions are out to out.

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

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

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

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

Reinforcing Steel Totals (Pounds)

		Substructure		Superstructure			Entire Bridge	
	Size	Plain	Epoxy	Slab	Barrier	Slip Form	Plain	Epoxy
By Size	W5	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0
	5	0	0	0	2,652	0	0	2,652
	6	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0
	8	0	0	0	0	0	0	0
	9	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0
	11	0	0	0	0	0	0	0
	14	0	0	0	0	0	0	0
	18	0	0	0	0	0	0	0
By Type		0	0	0	2,652	0	0	2,652

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
Ted Koester
07/11/2025 10:05:35 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED
1/10/2025

ROUTE	STATE
FF	MO
DISTRICT	SHEET NO.
BR	6

COUNTY
CRAWFORD

JOB NO.
J5S3579

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A18532

DESCRIPTION	DATE

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

BENDING DIAGRAMS AND REINFORCING STEEL TOTALS

Detailed June 2024
Checked Jan. 2025

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

Bill of Reinforcing Steel

No. Req.	Size/ Mark	Location	Codes C	SH	V	Dimensions B ft in.	C ft in.	D ft in.	E ft in.	F ft in.	H ft in.	K ft in.	Nom. Length ft in.	Actual Length ft in.	Weight lb
		Curb Blockout													
56	5 R1	BLOCKOUT	E	10S	8		10.50	21.00					3 6	3 3	
		Incr. = 0.500"					10.50	2 0.00					3 9	3 6	197
72	5 R2	BLOCKOUT	E	10S		7.63	2 1.13	7.63					5 6	5 2	388
48	5 R3	BLOCKOUT	E	20		5 3.00							5 3	5 3	263
8	5 R4	BLOCKOUT	E	23		2.50	3 4.38				2.50		3 7	3 4	28
48	5 R5	BLOCKOUT	E	20		10 5.00							10 5	10 5	522
16	5 R6	BLOCKOUT	E	20		26 0.62							26 1	26 1	435
16	5 R7	BLOCKOUT	E	20		49 1.38							49 1	49 1	819

Bill of Reinforcing Steel

No. Req.	Size/ Mark	Location	Codes C	SH	V	Dimensions B ft in.	C ft in.	D ft in.	E ft in.	F ft in.	H ft in.	K ft in.	Nom. Length ft in.	Actual Length ft in.	Weight lb

Nominal lengths are based on out to out dimensions shown in bending diagrams and are listed to the nearest inch for fabricator's use. Actual lengths are measured along centerline bar to the nearest inch. Weights are based on actual lengths.

For bending diagrams and steel reinforcing totals, see Sheet No. 6.

All bars shall be Grade 60.

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

SH = Required shape, see bending diagrams.

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

Detailed June 2024
Checked Jan. 2025

BILL OF REINFORCING STEEL

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

STATE OF MISSOURI
TED S. KOESTER
NUMBER PE-2013000591
PROFESSIONAL ENGINEER
07/11/2025 10:06:08 AM
TED S. KOESTER - CIVIL
MO-PE-2013000591

DATE PREPARED
1/10/2025

ROUTE FF | STATE MO

DISTRICT BR | SHEET NO. 7

COUNTY
CRAWFORD

JOB NO.
J5S3579

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A18532

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
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