

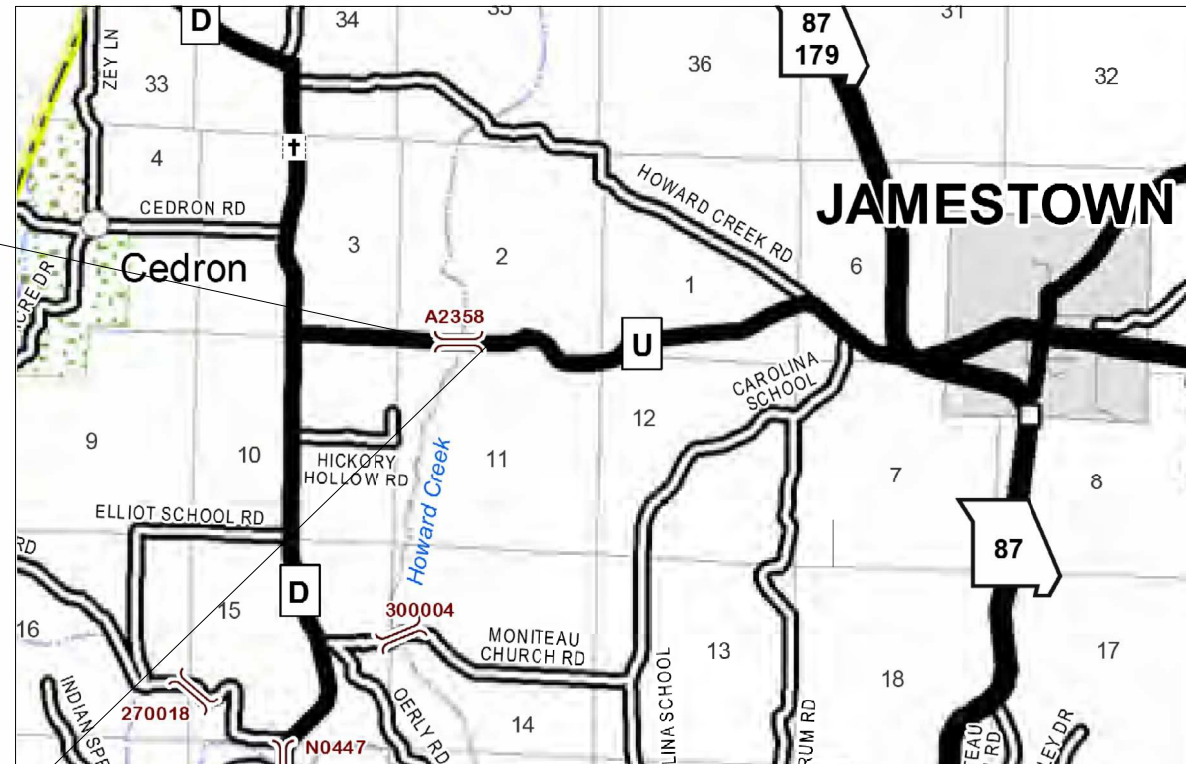
A.A.D.T - 2022 = 388  
A.A.D.T - 2042 = 563  
V = 55 M.P.H  
TRUCK % = 11.5%  
FUNCTIONAL CLASS = MAJOR COLLECTOR

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION  
PLANS FOR PROPOSED STATE HIGHWAY  
MONITEAU COUNTY  
CENTRAL DISTRICT



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

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QUANTITIES (QU) (2 SHEETS)-----	3
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BRIDGE DRAWINGS (B)	
A2358-----	1-11

STATE OF MISSOURI

JASON R.  
VANDERFELTZ

NUMBER  
PE-2003015049

PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN  
SIGNED, SEALED AND DATED  
ELECTRONICALLY.

DATE PREPARED  
9/3/2024

ROUTE U	STATE MO
DISTRICT CD	SHEET NO. 1

COUNTY  
MONITEAU

JOB NO.  
JCD0057

CONTRACT ID.


PROJECT NO.

BRIDGE NO.

[illegible]

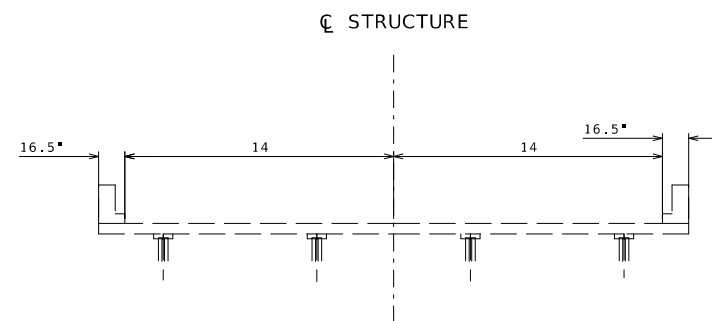
BEGINNING OF PROJECT	STATION 41+67.47
END OF PROJECT	STATION 46+07.78
APPARENT LENGTH	0.083 MILES
EQUATIONS AND EXCEPTIONS:	0 MILES

TOTAL CORRECTIONS	0 MILES
NET LENGTH OF PROJECT	440.31 FEET
STATE LENGTH	0.083 MILES
ESTIMATED DISTURBED ACRES FOR INFORMATION ONLY	0.1 ACRES

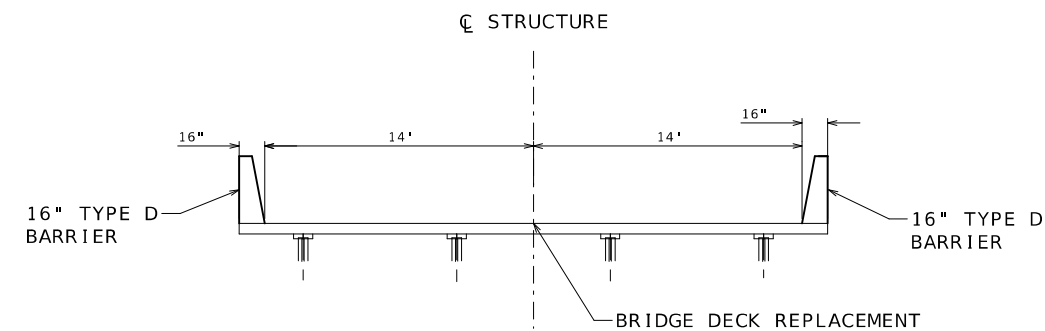


MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

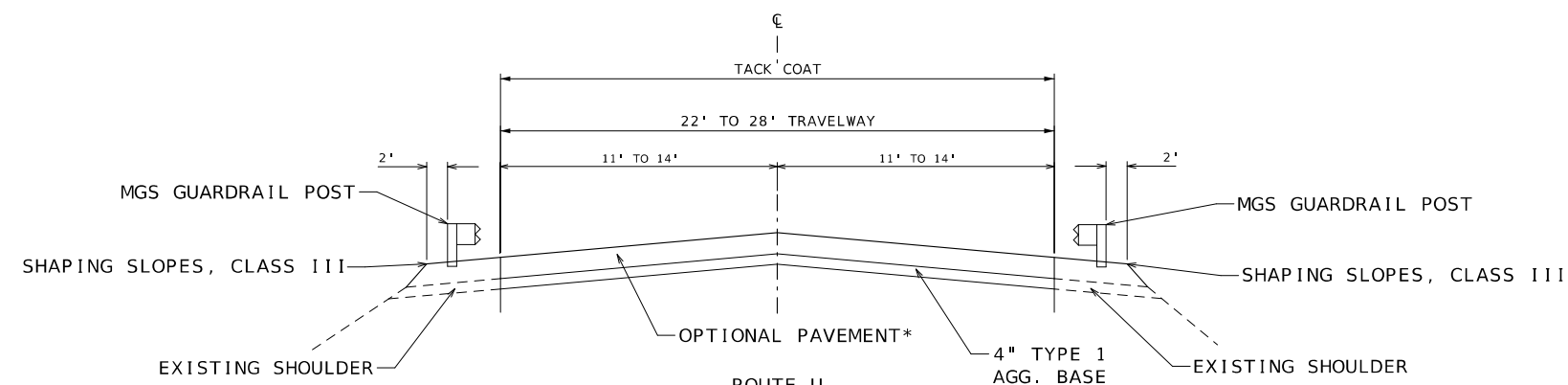
105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)



ROUTE U  
EXIST. TYPICAL BRIDGE SECTION  
BRIDGE #A2358  
STATION 43+10.00 TO STATION 44+70.25



ROUTE U  
PROPOSED TYPICAL BRIDGE SECTION  
BRIDGE #A2358  
STATION 43+10.00 TO STATION 44+70.25



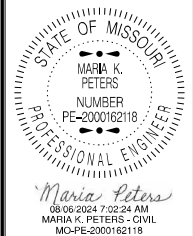
ROUTE U  
ROADWAY TYPICAL SECTION

STA. 42+40.00 TO STA. 42+90.00  
STA. 44+90.25 TO STA. 45+40.25

GUARDRAIL

STA. 42+22.53 TO STA. 43+10.03 (LT)  
STA. 41+92.47 TO STA. 43+09.97 (RT)  
STA. 44+70.28 TO STA. 45+82.78 (LT)  
STA. 44+70.22 TO STA. 45+57.72 (RT)

\*NOTE:PAVEMENT AND SHOULDER OPTIONS CONSIST OF:  
ASPHALT: 2" BIT. PAVEMENT MIX (BP-1) PG64-22 OVER  
8" BIT. PAVEMENT MIX (BASE) PG64-22  
CONCRETE: 8" JPCP



DATE PREPARED  
8/5/2024

ROUTE U	STATE MO
DISTRICT CD	SHEET NO. 2

COUNTY  
MONITEAU

JOB NO.  
JCD0057

CONTRACT ID.
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PROJECT NO.
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BRIDGE NO.

[illegible]MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

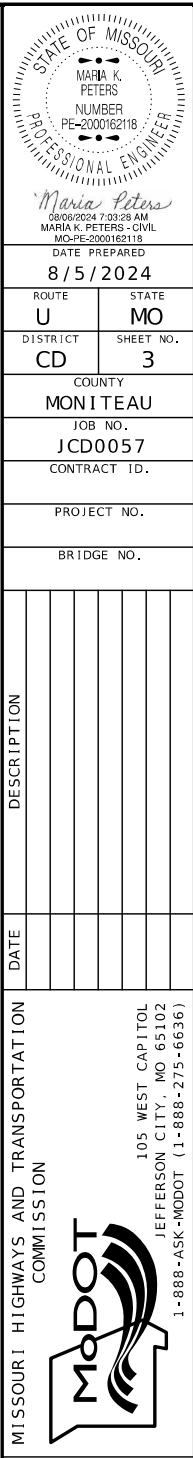
TYPICAL SECTION  
SHEET 1 OF 1



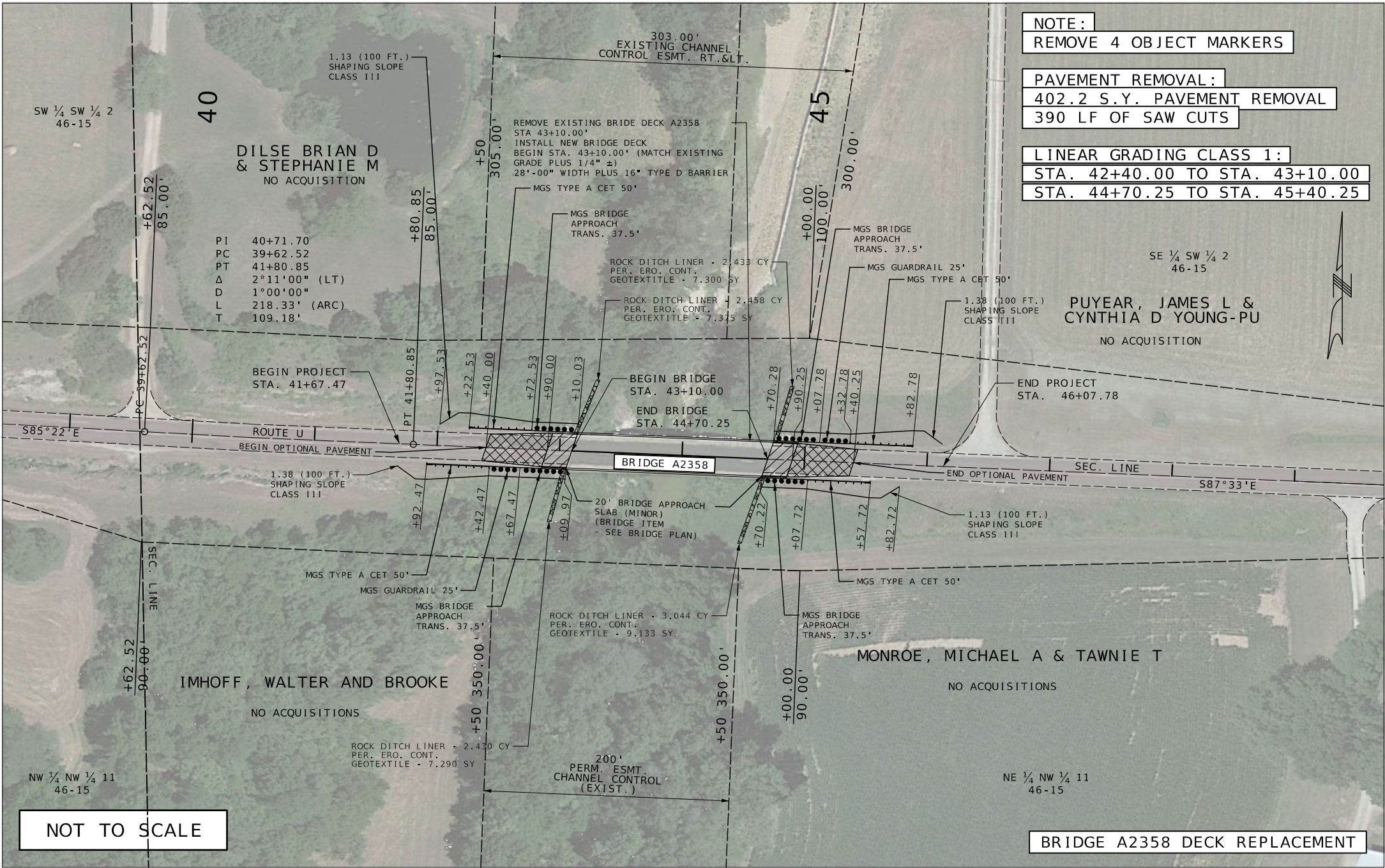
EFFECTIVE: 04-01-2023																								
SIGN	SIZE	AREA	QTY	TOTAL AREA	QTY RELOC	TOTAL RELOC	SIGN NUM.	DESCRIPTION	SIGN	SIZE	AREA	QTY	TOTAL	QTY RELOC	TOTAL RELOC	SIGN NUM.	DESCRIPTION	ITEM	TOTAL	DESCRIPTION				
	IN.	SQ. FT.	EACH	SQ. FT.	EACH	SQ. FT.				IN.	SQ. FT.	EACH	SQ. FT.	EACH	SQ. FT.			NUMBER	QTY					
WARNING SIGNS									GUIDE SIGNS									REGULATORY SIGNS						
WO1-1L	48X48	16.00						TURN (SYMBOL LEFT ARROW)	E05-1	36X48	12.00						GORE EXIT	6122008		IMPACT ATTENUATOR 40 MPH (SAND BARRELS)				
WO1-1R	48X48	16.00						TURN (SYMBOL RIGHT ARROW)	E05-2	48X36	12.00						EXIT OPEN	6122009		IMPACT ATTENUATOR 45 MPH (SAND BARRELS)				
WO1-2L	48X48	16.00						CURVE (SYMBOL LEFT ARROW)	E05-2a	48X36	12.00						EXIT CLOSED	6122010		IMPACT ATTENUATOR 50 MPH (SAND BARRELS)				
WO1-2R	48X48	16.00						CURVE (SYMBOL RIGHT ARROW)	GO20-1	60X24	10.00						ROAD WORK NEXT XX MILES	6122012		IMPACT ATTENUATOR 55 MPH (SAND BARRELS)				
WO1-3L	48X48	16.00						REVERSE TURN (SYMBOL LEFT ARROW)	GO20-2	48X24	8.00						END ROAD WORK	6122014		IMPACT ATTENUATOR 60 MPH (SAND BARRELS)				
WO1-3R	48X48	16.00						REVERSE TURN (SYMBOL RIGHT ARROW)	GO20-4	36X18	4.50						PILOT CAR FOLLOW ME	6122017		IMPACT ATTENUATOR 65 MPH (SAND BARRELS)				
WO1-4L	48X48	16.00						REVERSE CURVE (SYMBOL LEFT ARROW)	GO20-4a	42X30	8.75						PILOT CAR IN USE WAIT & FOLLOW	6122019		IMPACT ATTENUATOR 70 MPH (SAND BARRELS)				
WO1-4R	48X48	16.00						REVERSE CURVE (SYMBOL RIGHT ARROW)	GO20-4a	18X12	1.50						PILOT CAR IN USE WAIT & FOLLOW	6122020		REPLACEMENT SAND BARREL				
WO1-4bL	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL LT ARROWS)	GO20-5aP	36X24	6.00						WORK ZONE (PLAQUE)	6122030		IMPACT ATTENUATOR (RELOCATION)				
WO1-4bR	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL RT ARROWS)	MO4-8a	24X18	3.00						END DETOUR	6123000A		TRUCK OR TRAILER MOUNTED ATTENUATOR (TMA)				
WO1-4cL	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL LT ARROWS)	MO4-9L	48X36	12.00						DETOUR (LEFT ARROW)	6161008		ADVANCED WARNING RAIL SYSTEM				
WO1-4cR	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL RT ARROWS)	MO4-9R	48X36	12.00						DETOUR (RIGHT ARROW)	6161012		BUOYS (BOATS KEEP OUT)				
WO1-6	60X30	12.50						HORIZONTAL ARROW (SYMBOL)	MO4-9P	48X12	4.00						STREET NAME (PLAQUE)	6161013		BUOYS (NO WAKE)				
WO1-6a	72X36	18.00						HORIZ. ARROW (SYMBOL ON PERMANENT BARRICADE)	MO4-10L	48X18	6.00						DETOUR (ARROW LEFT)	6161014		SPECIAL SIGN ASSEMBLY (BOATS KEEP OUT)				
WO1-7	60X30	12.50						DOUBLE HEAD HORIZONTAL ARROW (SYMBOL)	MO4-10R	48X18	6.00						DETOUR (ARROW RIGHT)	6161025	50	CHANNELIZER (TRIM LINE)				
WO1-7a	72X36	18.00						DOUBLE HEAD HORIZ. ARROW (SYMBOL ON PERM. BARR.)	REGULATORY SIGNS								6161030	10	TYPE III MOVEABLE BARRICADE					
WO1-8	18X24	3.00						CHEVRON (SYMBOL)	R1-1	48X48	13.25						STOP	6161033		DIRECTION INDICATOR BARRICADE				
WO1-8a	30X36	7.50						CHEVRON (SYMBOL FOR DIVIDED HIGHWAYS)	R1-2	48TR1	6.93						YIELD	6161040		FLASHING ARROW PANEL				
WO3-1	48X48	16.00						STOP AHEAD (SYMBOL)	R1-2a	36X36	9.00						TO ONCOMING TRAFFIC (PLAQUE)	6161047		TYPE III OBJECT MARKER				
WO3-2	48X48	16.00						YIELD AHEAD (SYMBOL)	R1-3P	30X12	2.50						ALL WAY (PLAQUE)	6161055		SEQUENTIAL FLASHING WARNING LIGHT				
WO3-3	48X48	16.00						SIGNAL AHEAD (SYMBOL)	R2-1	36X48	12.00						SPEED LIMIT XX	6161070		TUBULAR MARKER				
WO3-4	48X48	16.00						BE PREPARED TO STOP	R3-1	48X48	16.00						NO RIGHT TURN (SYMBOL)	6161095		RADAR SPEED ADVISORY SYSTEM				
WO3-5	48X48	16.00						SPEED LIMIT AHEAD	R3-2	48X48	16.00						NO LEFT TURN (SYMBOL)	6161096		CHANGEABLE MESSAGE SIGN, COMMISSION FURNISHED/RETAINED				
WO4-1L	48X48	16.00						MERGE (SYMBOL FROM LEFT)	R3-3	36X36	9.00						NO TURNS	6161098A	2	CHANGEABLE MESSAGE SIGN W/O COMM. INTERFACE - CONTRACTOR FURNISHED/RETAINED				
WO4-1R	48X48	16.00						MERGE (SYMBOL FROM RIGHT)	R3-4	48X48	16.00						NO U-TURN (SYMBOL)	6161099		CHANGEABLE MESSAGE SIGN WITH COMM. INTERFACE - CONTRACTOR FURNISHED/RETAINED				
WO4-1aL	48X48	16.00						MERGE (ARROW SYMBOL)	R3-7L	30X30	6.25						LEFT LANE MUST TURN LEFT	6162000A		WORK ZONE TRAFFIC SIGNAL SYSTEM				
WO4-1aR	48X48	16.00						MERGE (ARROW SYMBOL)	R3-7R	30X30	6.25						RIGHT LANE MUST TURN RIGHT	6162002		TEMPORARY LONG-TERM RUMBLE STRIPS				
WO5-1	48X48	16.00						ROAD/BRIDGE/RAMP NARROWS	R4-1	36X48	12.00						DO NOT PASS	6173600D		TEMPORARY TRAFFIC BARRIER				
WO5-3	48X48	16.00						ONE LANE BRIDGE	R4-2	36X48	12.00						PASS WITH CARE	6174000A		CONTRACTOR FURNISHED/COMMISSION RETAINED				
WO5-5	48X48	16.00						NARROW LANES	R4-8a	36X48	12.00						KEEP LEFT (HORIZONTAL ARROW)	6175010A		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION				
WO6-1	48X48	16.00						DIVIDED HIGHWAY (SYMBOL)	R4-7a	36X48	12.00						KEEP RIGHT (HORIZONTAL ARROW)	6175010B		RELOCATING TEMPORARY TRAFFIC BARRIER				
WO6-2	48X48	16.00						DIVIDED HIGHWAY END (SYMBOL)	R5-1	30X30	6.25						DO NOT ENTER	6176000B		TEMPORARY TRAFFIC BARRIER				
WO6-3	48X48	16.00						TWO WAY TRAFFIC (SYMBOL)	R5-1a	36X24	6.00						WRONG WAY	6177000B		COMMISSION FURNISHED/RETAINED				
WO7-3a	30X24	5.00						NEXT XX MILES (PLAQUE)	R6-1L	54X18	6.75						ONE WAY ARROW (LEFT)	6208064A		TEMP. TRAFFIC BARRIER HEIGHT TRANSITION				
WO8-1	48X48	16.00						BUMP	R6-1R	54X18	6.75						ONE WAY ARROW (RIGHT)	9029400		TEMPORARY RAISED PAVEMENT MARKER				
WO8-2	48X48	16.00						DIP	R6-2L	24X30	5.00						ONE WAY (LEFT)	9029401		TEMPORARY TRAFFIC SIGNALS				
WO8-3	48X48	16.00						PAVEMENT ENDS	R6-2R	24X30	5.00						ONE WAY (RIGHT)			TEMPORARY TRAFFIC SIGNALS AND LIGHTING				
WO8-4	48X48	16.00						SOFT SHOULDER	R9-9	24X12	2.00						SIDEWALK CLOSED							
WO8-5	48X48	16.00						SLIPPERY WHEN WET (SYMBOL)	R9-11L	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW LEFT) CROSS HERE							
WO8-6	48X48	16.00						TRUCK CROSSING (WITH FLAGS)	R9-11R	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW RIGHT) CROSS HERE							
WO8-6c	48X48	16.00						TRUCK ENTRANCE	R10-6	24X36	6.00						STOP HERE ON RED (45° ARROW)							
WO8-7	36X36	9.00						LOOSE GRAVEL	R11-2	48X30	10.00	2	20			29	ROAD CLOSED							
WO8-7a	36X36	9.00						FRESH OIL/LOOSE GRAVEL	R11-3a	60X30	12.50	2	25			55A/55B	ROAD CLOSED 1/2 MILES AHEAD							
WO8-9	48X48	16.00						LOW SHOULDER	R11-4	60X30	12.50						LOCAL TRAFFIC ONLY							
WO8-11	48X48	16.00						UNEVEN LANES	R11-4	60X30	12.50						ROAD CLOSED TO THRU TRAFFIC							
WO8-12	48X48	16.00						NO CENTER LINE	CONST-3A	60X48	20.00						FINE SIGN							
WO8-15	48X48	16.00						GROOVED PAVEMENT	CONST-3X	56X12	4.67						SPEEDING/PASSING (PLATE)							
WO8-15P	30X24	5.00						MOTORCYCLE (PLAQUE)	MISCELLANEOUS SIGNS															
WO8-17	48X48	16.00						SHOULDER DROP-OFF (SYMBOL)	CONST-5	48X36	12.00	2	24				60	POINT OF PRESENCE						
WO8-17P	30X24	5.00						SHOULDER DROP-OFF (PLAQUE)	CONST-5	96X48	32.00							POINT OF PRESENCE						
W10-1	42RND.	9.62						RAILROAD CROSSING	CONST-7	48X24	8.00							RATE OUR WORK ZONE						
WO12-1	24X24	4.00						DOUBLE DOWN ARROW (SYMBOL)	CONST-7	72X36	18.00							RATE OUR WORK ZONE						
WO12-2	48X48	16.00						LOW CLEARANCE (SYMBOL)	CONST-8	48X36	12.00							WORK ZONE NO PHONE ZONE						
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						ROAD/BRIDGE/RAMP WORK AHEAD																
WO20-2	48X48	16.00						DETOUR AHEAD																
WO20-3	48X48	16.00	4	64			20/20A	ROAD CLOSED AHEAD/ 500 FT																
WO20-4	48X48	16.00	2	32				ONE LANE ROAD AHEAD																
WO20-5	48X48	16.00						RIGHT/CENTER/LEFT LANE CLOSED AHEAD																
WO20-5a	48X48	16.00						2 RIGHT/CENTER/LEFT LANES CLOSED AHEAD																
WO20-6a	48X48	16.00						RIGHT/CENTER/LEFT LANE CLOSED																
WO20-7a	48X48	16.00						FLAGGER (SYMBOL, WITH FLAGS)																
WO21-2	36X36	9.00						FRESH OIL	616-10.05 CONSTRUCTION SIGNS			TOTAL 174												
WO21-5	48X48	16.00						SHOULDER WORK AHEAD	616-10.10 RELOCATED SIGNS			TOTAL 0												
WO22-1	48X48	16.00						BLASTING ZONE AHEAD																
WO22-2	42X36	10.50						TURN OFF 2-WAY RADIO AND PHONE																
WO22-3	42X36	10.50						END BLASTING ZONE																
GO22-1	21X15	2.19	4	8.76				WET PAINT (ARROW PIVOTS)																

SUMMARY OF QUANTITIES  
SHEET 2 OF 2

SUMMARY OF QUANTITIES  
SHEET 2 OF 2







DATE PREPARED  
8/5/2024

ROUTE	STATE
U	MO
DISTRICT	SHEET NO.
CD	4

COUNTY  
MONITEAU  
JOB NO.  
JCD0057  
CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

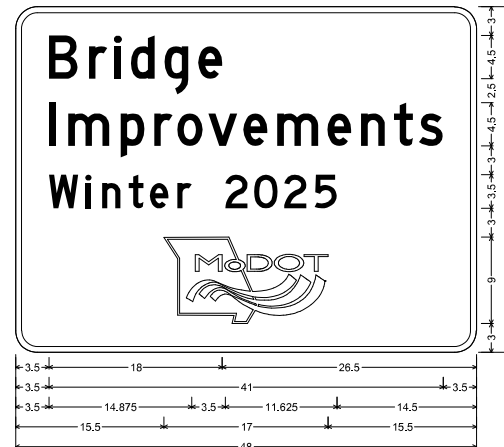
105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)



R11 - 3a



R11-3a



CONST-5-48 SH-FLAT SHEET;  
2.250" Radius, 0.625" Border, White on, Blue;  
"Bridge", D 85% spacing; "Improvements", D 85% spacing; "Winter 2025", D;  
Table of letter and object lefts


B	3.500	r	7.625	l	10.250	d	12.000	g	15.500	e	19.000										
I	3.500	5.500	p	11.000	r	14.500	o	16.875	v	20.125	23.750	m	27.250	e	32.500	n	36.000	t	39.375	42.000	
W	3.500	i	7.250	n	9.000	t	11.750	a	14.000	r	16.875	2	21.875	0	24.875	2	28.000	5	31.125		
15.500																					



CONST-5P-42 SHF-FLAT SHEET FLORESCENT  
1,500" Radius, No border, Yellow  
"Corriged as Proposed" Black, D 65% spacing  
Table of letter and object lists

C	e	m	p	i	e	t	e	d	a	s
1,375	3,625	8,750	8,875	10,875	11,750	13,625	15,125	17,000	20,375	22,125
P	t	o	m	i	s	e	d			
25,625	27,875	29,250	31,250	31,500	35,250	37,125	39,200			

### TRAFFIC CONTROL LEGEND

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



Maria Peters  
08/06/2024 7:04:31 AM  
MARIA K. PETERS - CIVIL

DATE PREPARED  
8/5/2024

ROUTE U	STATE MO
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DISTRICT	SHEET NO.
CD	5

COUNTY  
MONITEAU

JOB NO.  
JCD0057

CONTRACT ID.
--------------

PROJECT NO.
-------------

BRIDGE NO.

[illegible]MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

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

GENERAL NOTES:

- CMS BOARDS PLACED AS APPROVED BY THE ENGINEER.
- CONST-5-48 SIGN IS PLACED IN A VISIBLE AREA WITHIN THE PROJECT LIMITS PROVIDED ITS PLACEMENT DOES NOT DISRUPT A SEQUENCE OF SIGNS.
- ALL DISTANCES AND SPACING OF TRAFFIC CONTROL DEVICES ARE APPROXIMATE AND MAY BE REVISED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
- ANY EXISTING SIGNING THAT CONFLICTS WITH THE TRAFFIC CONTROL SIGNING SHALL BE COMPLETELY COVERED OR REMOVED.

NOT TO SCALE

TRAFFIC CONTROL SHEET  
SHEET 1 OF 3





29



20



20A

STATE OF MISSOURI

MARIA K. PETERS

NUMBER

PE-2000162118

PROFESSIONAL ENGINEER

Maria Peters

08/06/2024 7:05:02 AM

MARIA K. PETERS - CIVIL

MO-PE-2000162118

DATE PREPARED

8/5/2024

ROUTE

U

STATE

MO

DISTRICT

CD

SHEET NO.

6

COUNTY

MONITEAU

JOB NO.

JCD0057

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

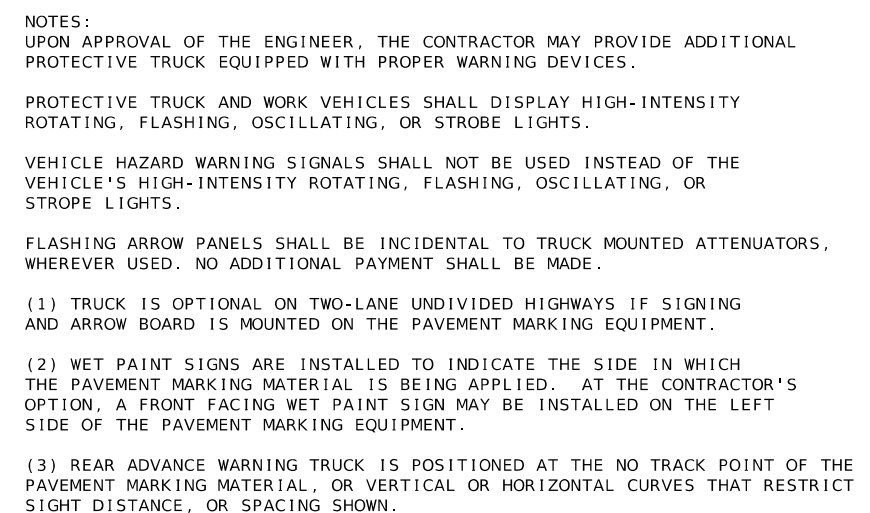
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL

JEFFERSON CITY, MO 65102

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

MoDOT



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DATE PREPARED  
8/5/2024

ROUTE	STATE
U	MO
DISTRICT	SHEET NO.
CD	8

COUNTY  
MONITEAU  
JOB NO.  
JCD0057  
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)

Table Showing S2 Bar Lengths			
Int. Bent No. 2		Int. Bent No. 3	
Span 1	Span 2	Span 2	Span 3
13'-0"	13'-6"	13'-6"	13'-0"

Required Lap Length For Bar Splices **	
Bar Size	Splice Length
4	2'-7"
5	3'-3"
6	3'-10"
7	4'-11"

\*\* Unless otherwise shown.

### General Notes:

#### Design Specifications:

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

#### Design Loading:

H15-44 (1965) (Existing)  
HS20-44 (New Construction)  
35 lb/sf Future Wearing Surface  
Earth - 120 lb/cf, Equivalent Fluid Pressure 30 lb/cf  
Fatigue Stress - Case II

#### Design Unit Stresses:

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

#### Joint Filler:

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

#### Reinforcing Steel:

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

#### Miscellaneous:

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

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

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

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

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

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

Rubblized concrete from the existing bridge deck that qualifies as clean fill may be placed on spill slopes at end bents above ordinary high water line (Roadway item).

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

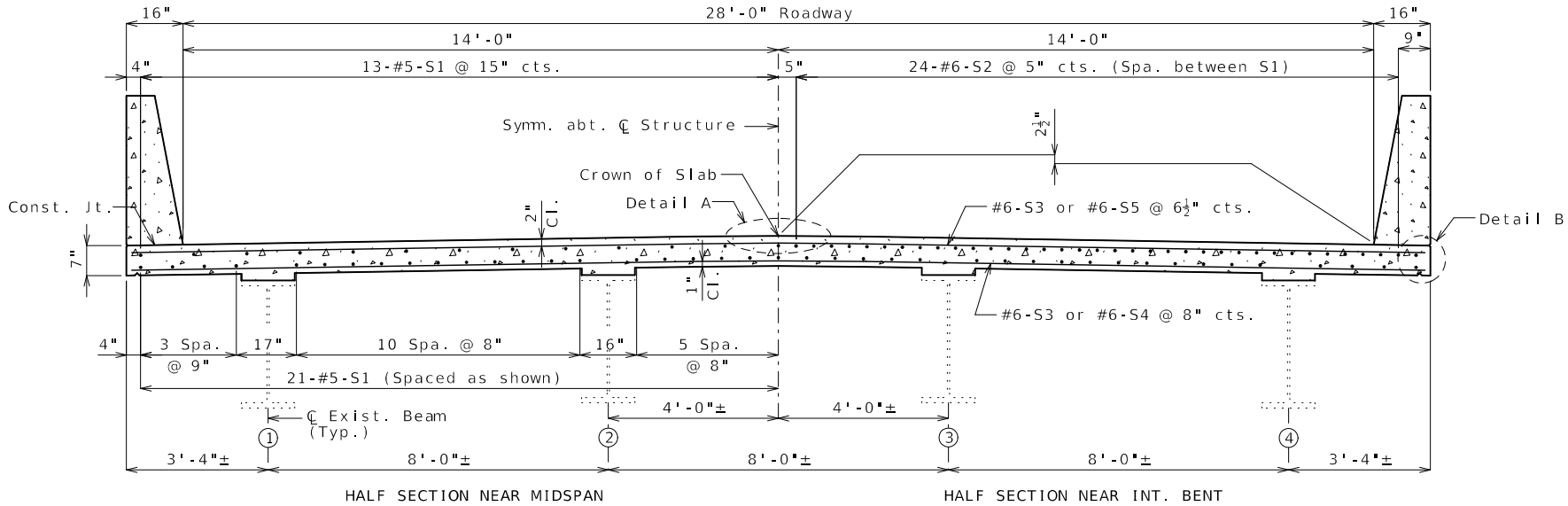
#### Traffic Handling:

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

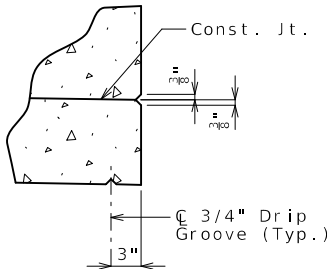
Detailed Apr. 2024  
Checked Jun. 2024

## U.I.P. AND REDECK EXISTING (48'- 62'- 48') CONTINUOUS COMPOSITE WIDE FLANGE BEAM SPANS (SKEW: 10° L.A.)

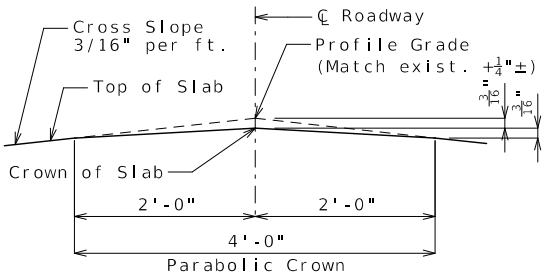
SEC/SUR 2/11    TWP 46N    RGE 15W



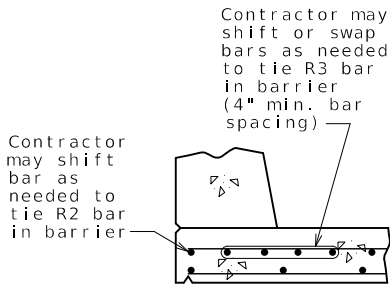
TYPICAL SECTION THRU SLAB



DETAIL B



DETAIL A



OPTIONAL SHIFTING  
TOP BARS AT BARRIER

### Estimated Quantities

Item		Total
Removal of Miscellaneous ACM (Non-Friable)	sq. foot	15
Class 1 Excavation	cu. yard	40
Temporary Shoring	lump sum	1
Removal of Existing Bridge Deck	sq. foot	4920
Partial Removal of Substructure Concrete	lump sum	1
Bridge Approach Slab (Minor)	sq. yard	127
Class B Concrete (Substructure)	cu. yard	19.5
Slab on Steel	sq. yard	547
Type D Barrier	linear foot	353
Substructure Repair (Formed)	sq. foot	80
Protective Coating - Concrete Bents and Piers (Epoxy)	lump sum	1
Slab Drain	each	24
Non-Destructive Testing	linear foot	53
Vertical Drain at End Bents	each	2
Laminated Neoprene Bearing Pad (Tapered)	each	4

With the exception of the Class 1 Excavation noted in the table above at End Bent No. 4, the cost of any required excavation for bridge will be considered completely covered by the contract unit price for other items.

For approximate locations of temporary shoring see Sheet No. 3.

### Estimated Quantities for Slab on Steel

Item		Total
Class B-2 Concrete	cu. yard	118
Reinforcing Steel (Epoxy Coated)	pound	44,020

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

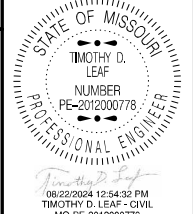
Method of forming the slab shall be in accordance with Sec 703. All hardware for forming the slab to be left in place as a permanent part of the structure shall be coated in accordance with ASTM A123 or ASTM B633 with a thickness Class SC 4 and a finish Type I, II or III.

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

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

### REPAIRS TO BRIDGE: ROUTE U OVER HOWARD CREEK

ROUTE U FROM ROUTE D TO ROUTE 179  
ABOUT 0.8 MILE EAST OF ROUTE D  
BEGINNING STATION 43+10.00± (Match existing)



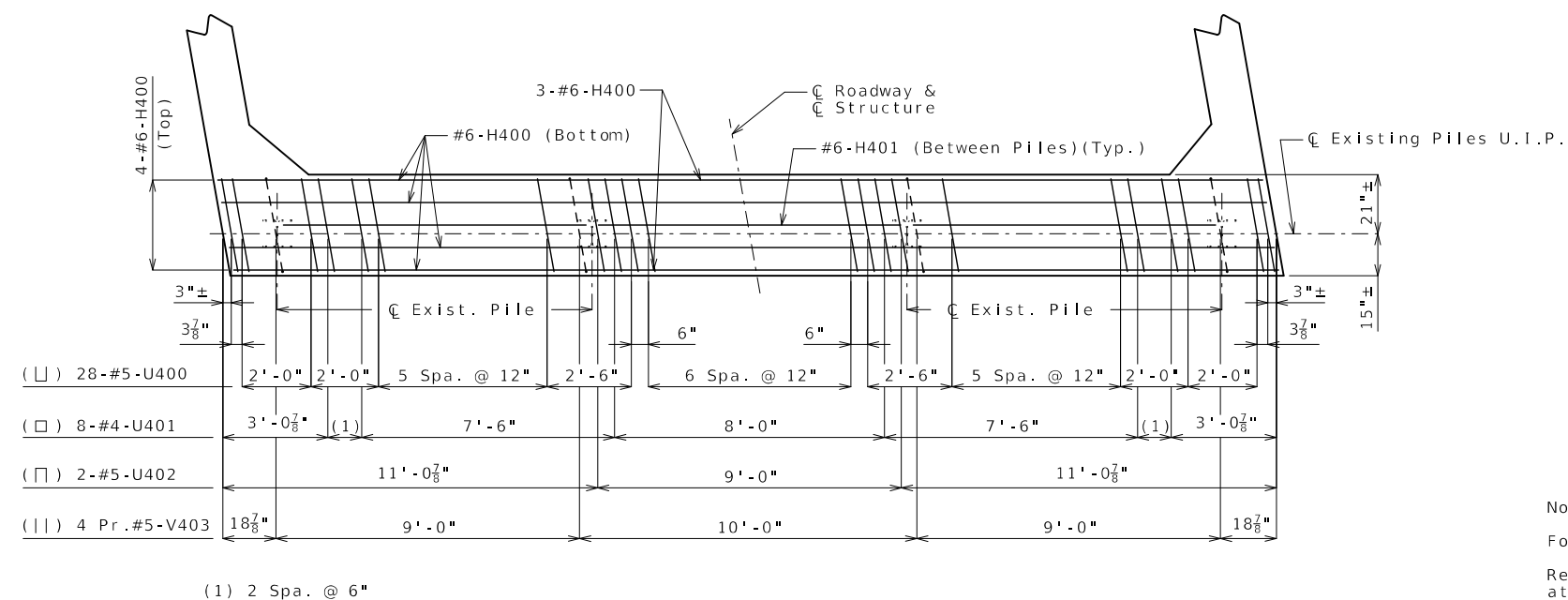
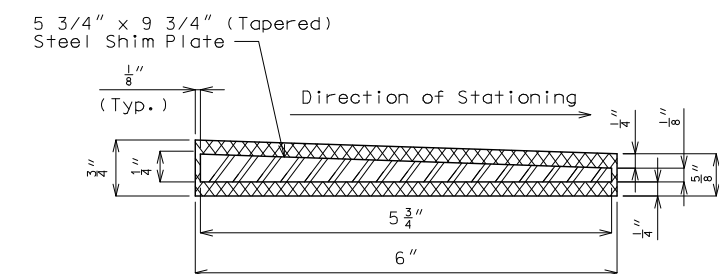
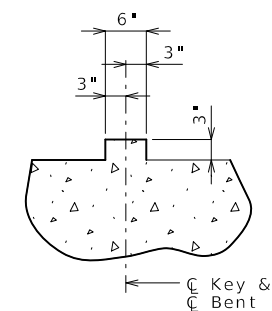
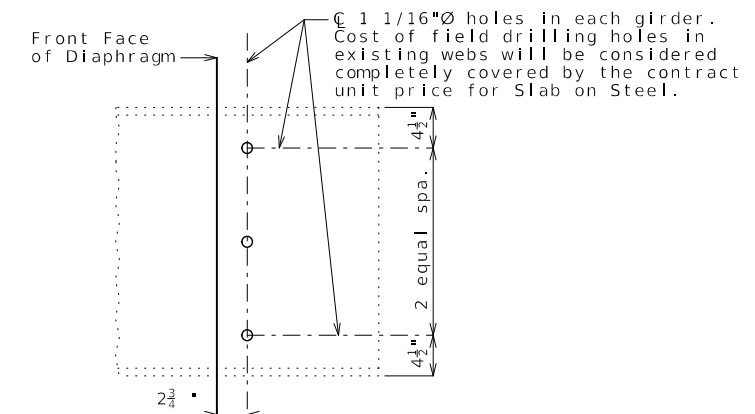
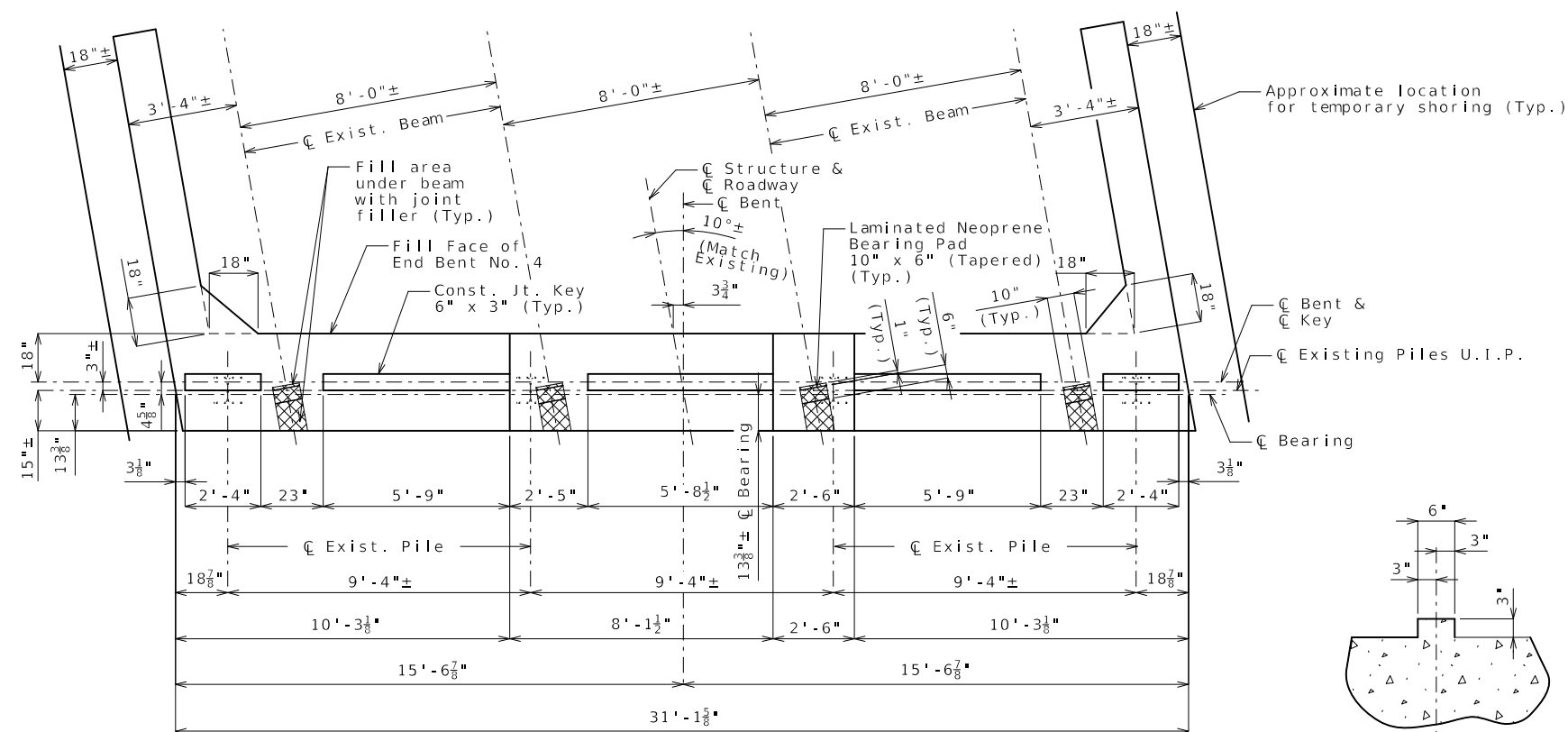
DATE PREPARED 8/22/2024	
ROUTE U	STATE MO
DISTRICT BR	SHEET NO. 1
COUNTY MONITEAU	
JOB NO. JCD0057	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A23581	

DESCRIPTION	DATE								









Substructure Quantity Table for Bent No. 4		
Item		Quantity
Class 1 Excavation	cu. yard	40
Class B Concrete (Substructure)	cu. yard	19.5

These quantities are included in the Estimated Quantities table on Sheet No. 1.

Notes :

For details of End Bent No. 4 not shown, see Sheet No. 4.

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

All U-bars & V-bars in End Bents are to be placed parallel to C Roadway.

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

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



DATE PREPARED  
8/22/2024

8/22/2024	
ROUTE	STATE

U	MO
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DISTRICT RD	SHEET NO. 3
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BR	3
COUNTY	

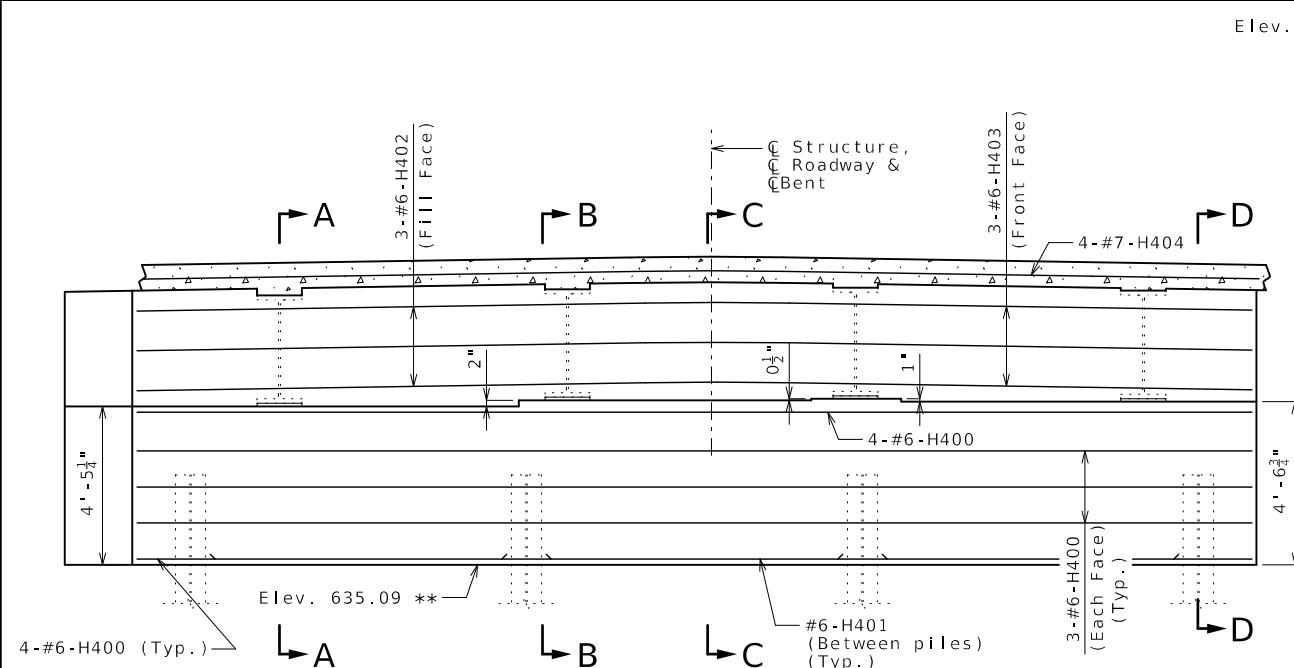
MONITEAU

JOB NO.  
LCD0057

JCD0037  
CONTRACT ID.

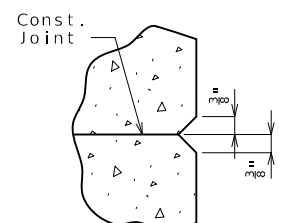
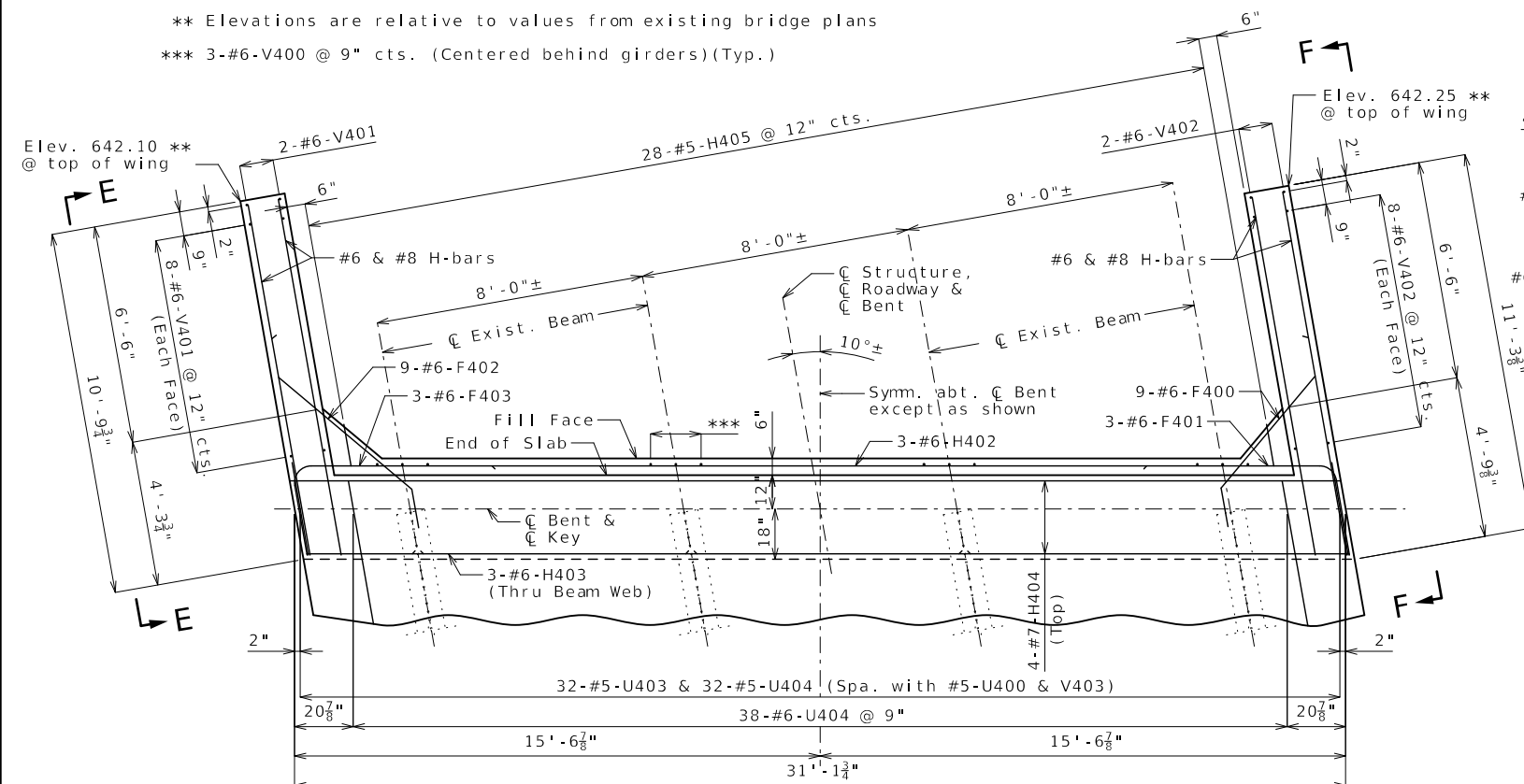
		PROJECT NO.	
		BRIDGE NO. A23581	
DATE			
DESCRIPTION			

MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION



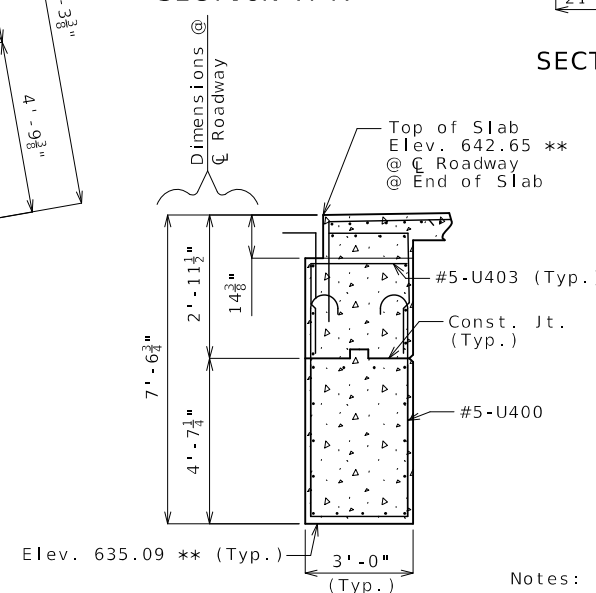
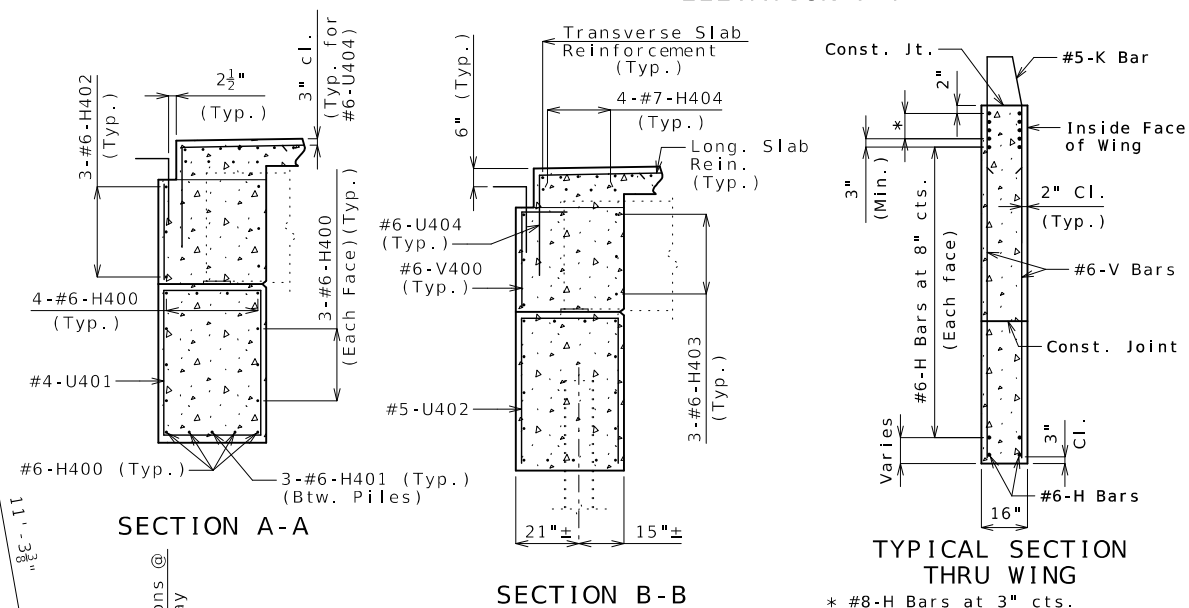
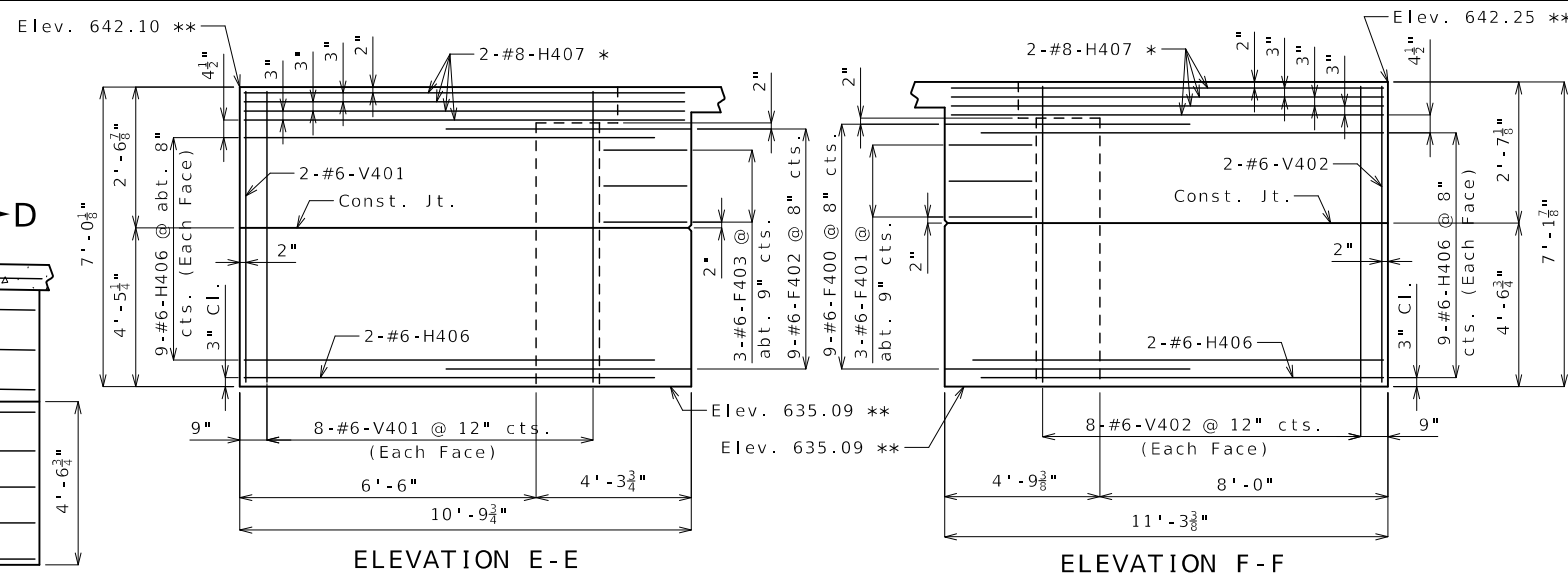
\*\* Elevations are relative to values from existing bridge plans

\*\*\* 3-#6-V400 @ 9" cts. (Centered behind girders)(Typ.)



Note:

The #6-H403 bars are segmented for ease of placement through girder web holes. The total bar length for #6-H403 bars shown in Bill of Reinforcing Steel allows for one lap splice with a length of 3'-10". Actual bar segment lengths to be determined by contractor for ease of installing bars. The contractor may use a mechanical bar splice in lieu of a lap splice. When a mechanical bar splice is used, the actual bar segment length will be determined by the contractor to accommodate manufacturer's recommendations for installation and ease of construction. The cost of furnishing and installing the bar splices will be considered completely covered by the contract unit price for Slab on Steel. No adjustment of the quantity of reinforcing steel will be allowed for the use of mechanical bar splices.



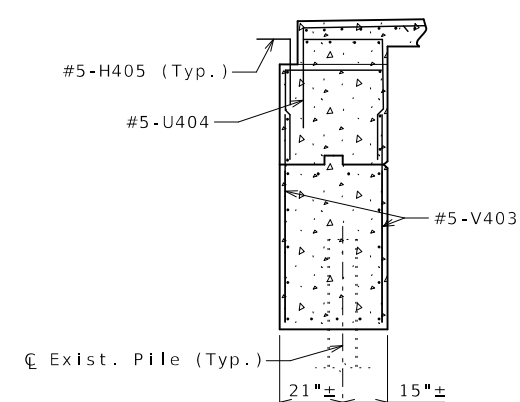
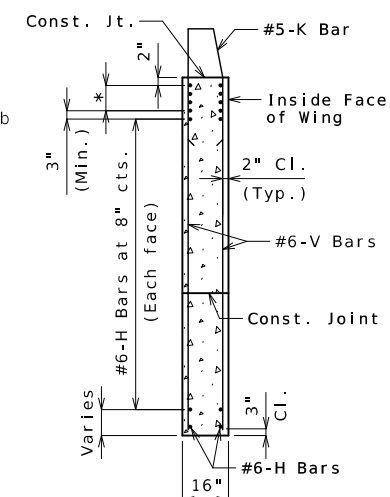
Notes:

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

The #6-F400 & #6-F402 shall be bent in the field to clear existing girders.

For details of End Bent No. 4 not shown, see Sheet No. 3.  
For reinforcement of the barrier, see Sheets No. 7 & 8.

For details of Vertical Drain at End Bents, see Sheet No. 5.



08/22/2024 12:53:43 PM  
TIMOTHY D. LEAF - CIVIL  
MO. RE. 2012000378

DATE PREPARED

8/22/2024

07/22/2021	
ROUTE	STATE

ROUTE	STATE
11	MO

U	MO
DISTRICT	SHEET NO

BB 4

DR	4
COUNTY	

MONITEAU

MONTH LEAD	
JOB NO.	

JOB NO.  
LCD0057

JCD0037

CONTRACT ID.

PROJECT NO.
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PROJECT NO.

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BRIDGE NO.  
A 22521[illegible]

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[illegible]


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

MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

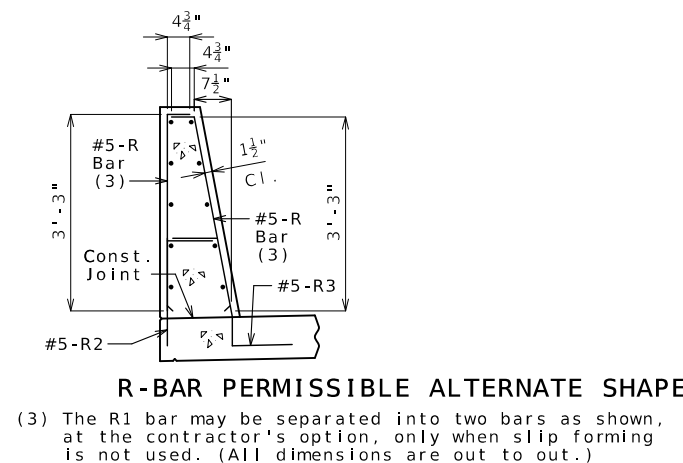
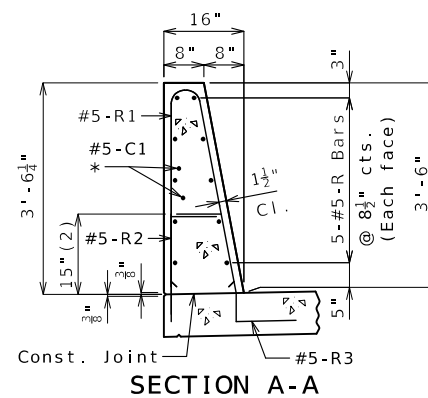
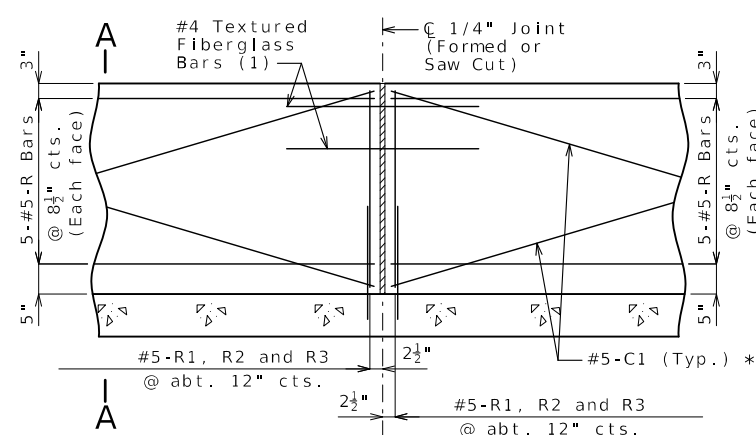
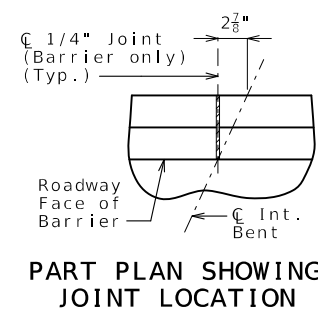
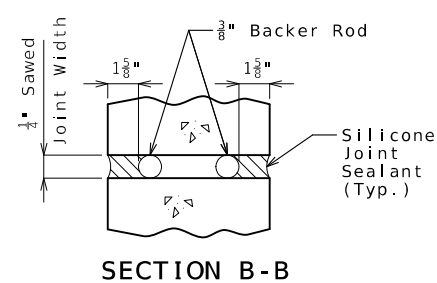
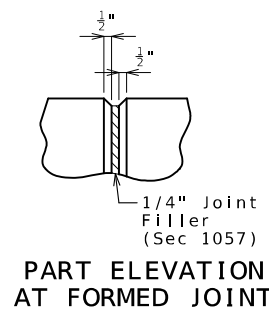
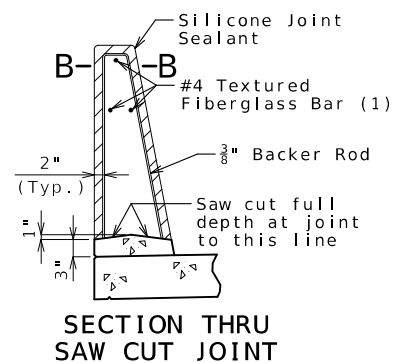
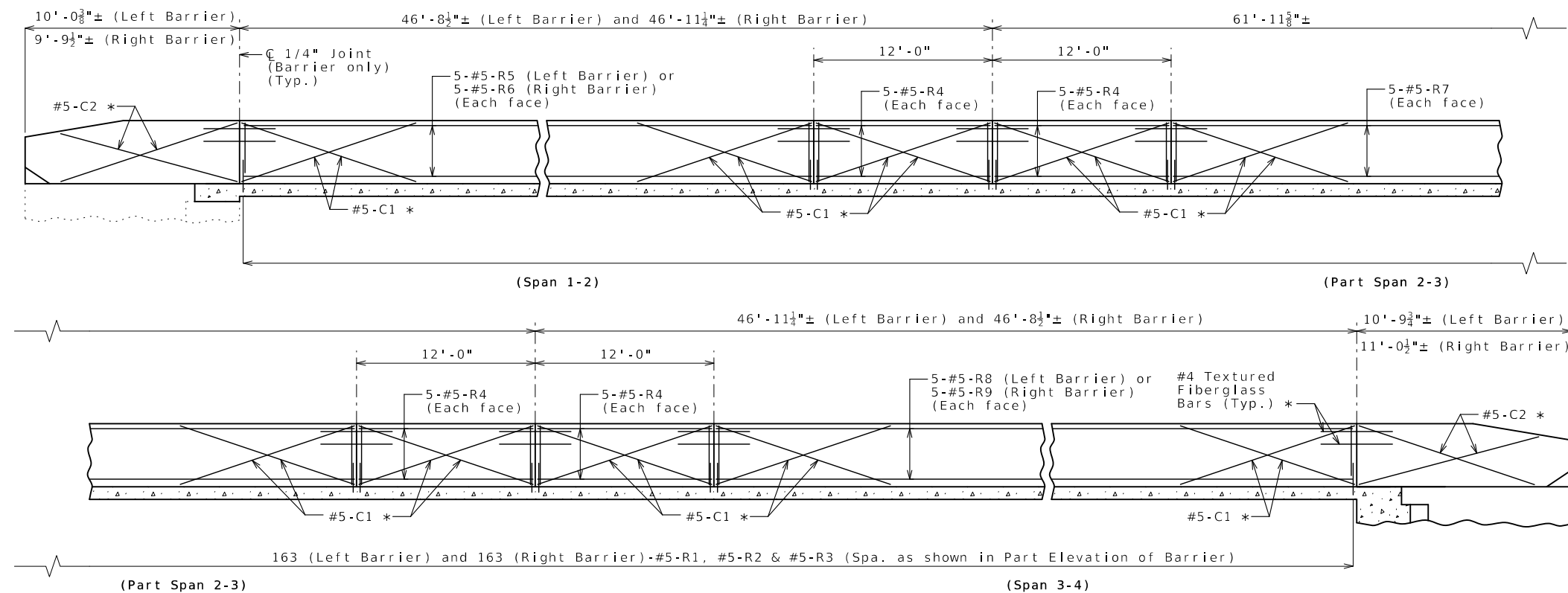
103 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)



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General Notes:

\* Slip-formed option only.

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

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

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

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

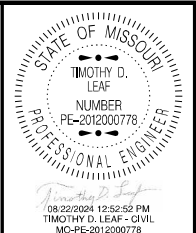
Concrete in barrier shall be Class B-1.

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

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

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

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



DATE PREPARED  
8/22/2024

ROUTE	STATE
11	MO

U	MO
DISTRICT	SHEET NO.
BR	7

COUNTY  
MONITEAU

JOB NO.  
JCD0057

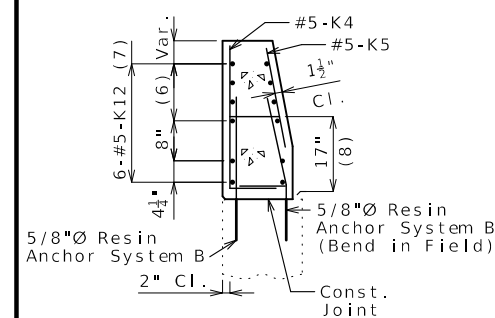
CONTRACT ID.
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PROJECT NO.
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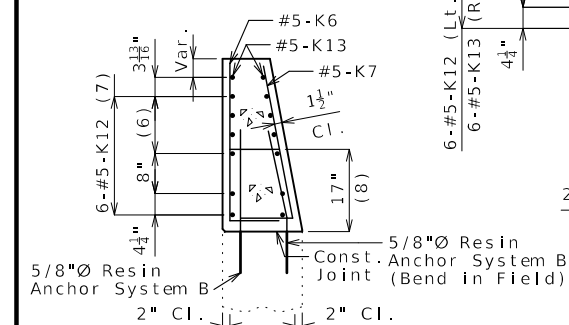
BRIDGE NO.	A23581
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[illegible]MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

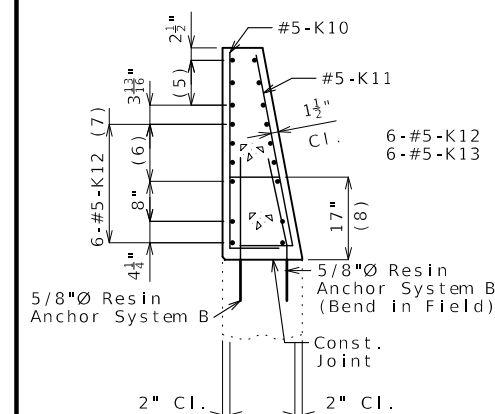
105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)



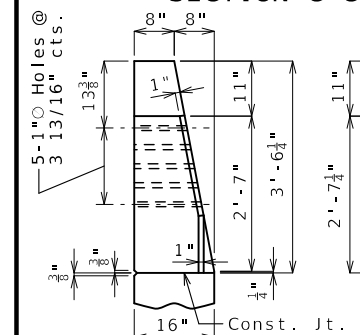
SECTION A-A



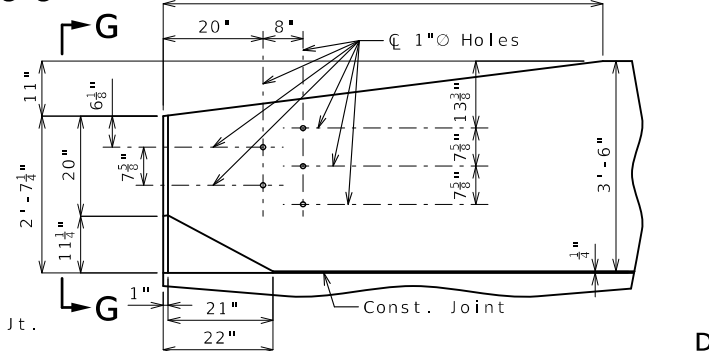
SECTION B - B



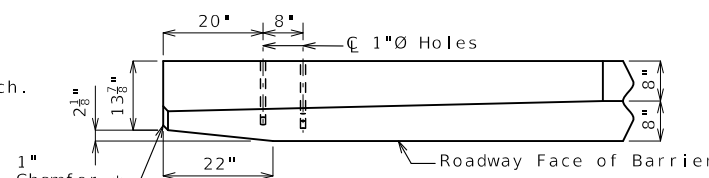
SECTION C-C



ELEVATION G-G

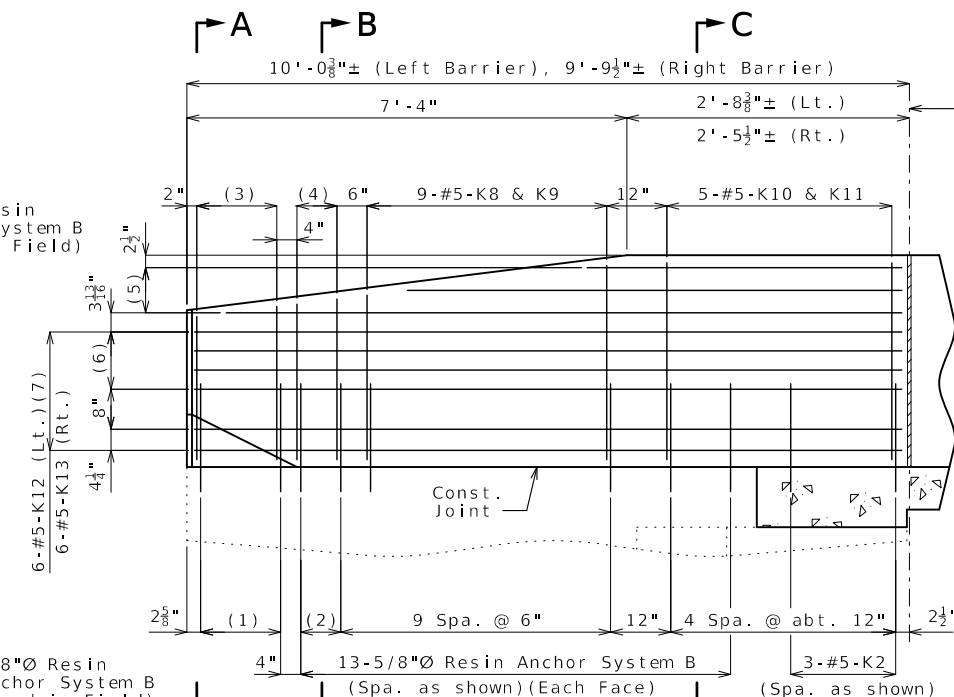


### ELEVATION

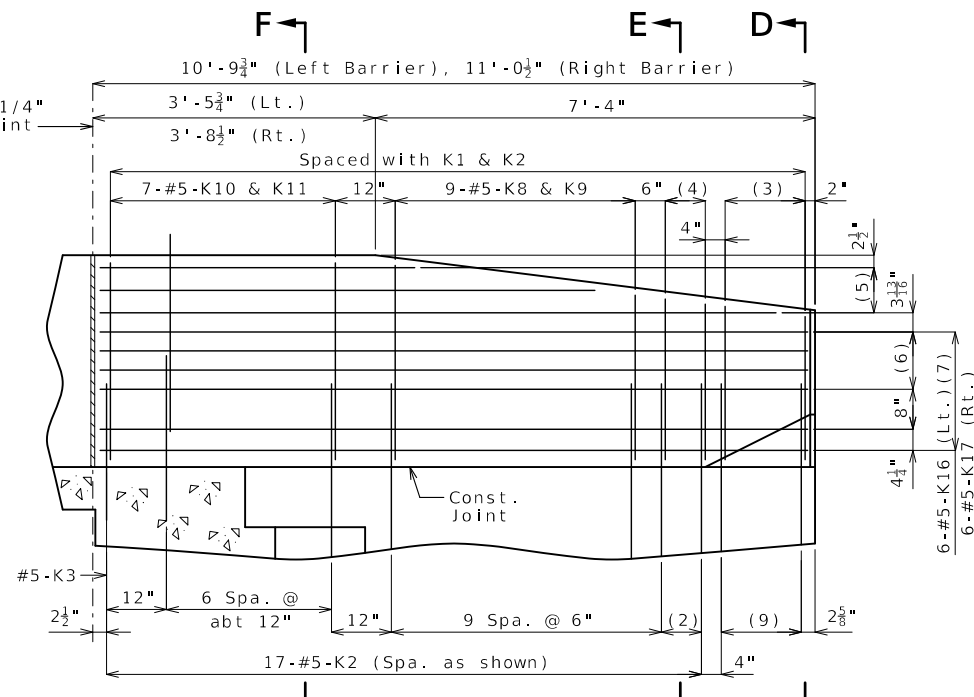


### PLAN

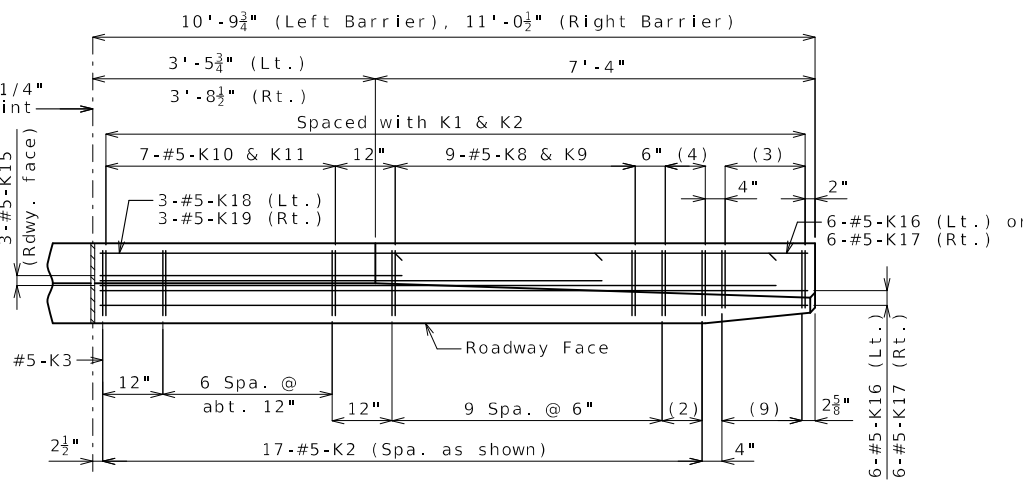
### DETAILS OF GUARD RAIL ATTACHMENT



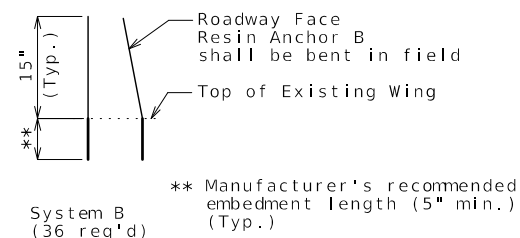
PART ELEVATION



F



## PART PLAN



## DETAIL OF RESIN ANCHOR SYSTEMS

Note: For Resin Anchor notes see Sheet No. 2.

General Notes:

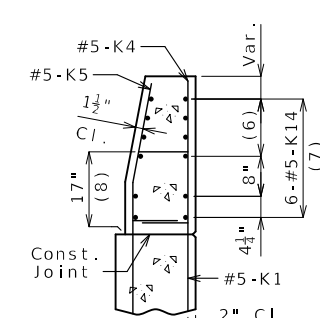
Concrete traffic barrier delineators shall be placed on top of the barrier as shown on Missouri Standard Plan 617.10 and in accordance with Sec 617. Delineators on bridges with two-lane, two-way traffic shall have retroreflective sheeting on both sides. Concrete traffic barrier delineators will be considered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

Reinforcing Steel :

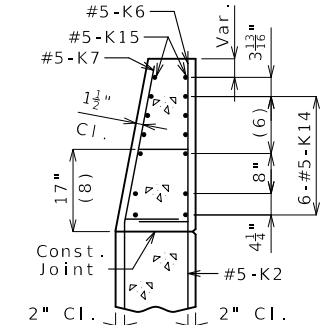
Minimum clearance to reinforcing steel shall be 1 1/2" except as shown for bars embedded into end bent.

### TYPE D BARRIER AT END BENTS

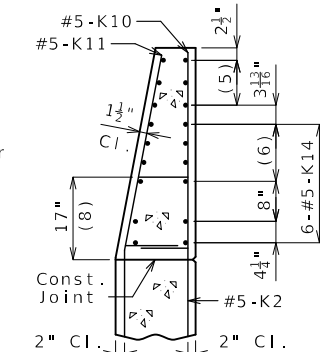
(Left barrier shown, right barrier similar)



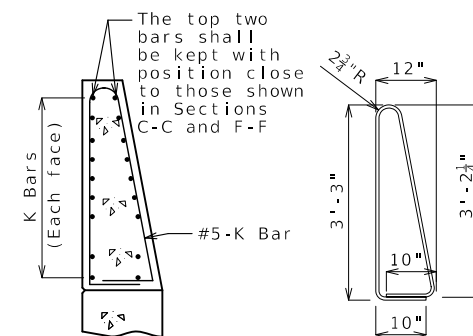
SECTION D-D



SECTION E-E



SECTION F - F

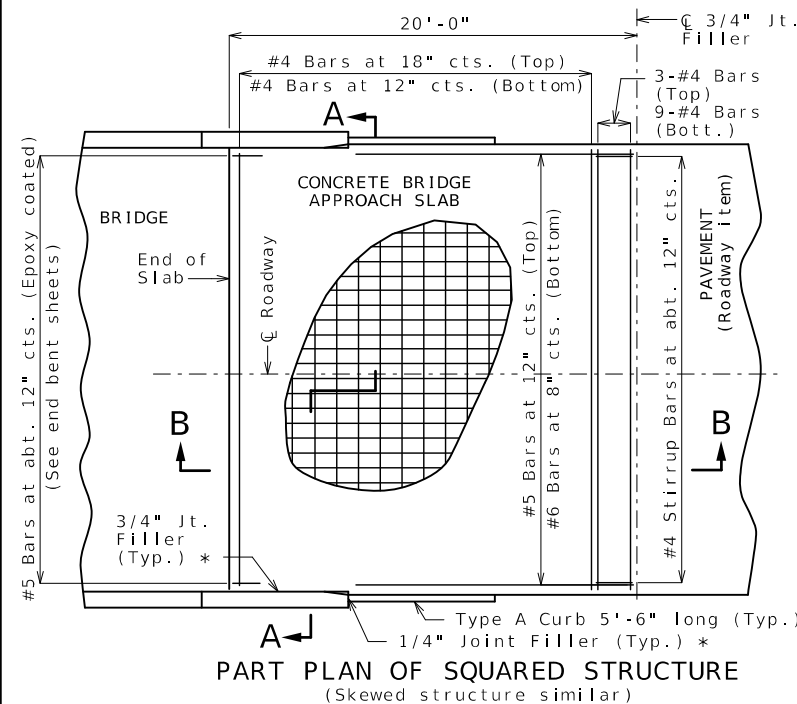


### K10-K11 BAR PERMISSIBLE ALTERNATE SHAPE

(Other K bars not shown for clarity)

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

All dimensions are out to out.









DESIGN DESIGNATION

A.A.D.T - 2022 = 931  
A.A.D.T - 2042 = 1350  
V = 55 M.P.H  
TRUCK % = 8.1%  
FUNCTIONAL CLASS = MAJOR COLLECTOR

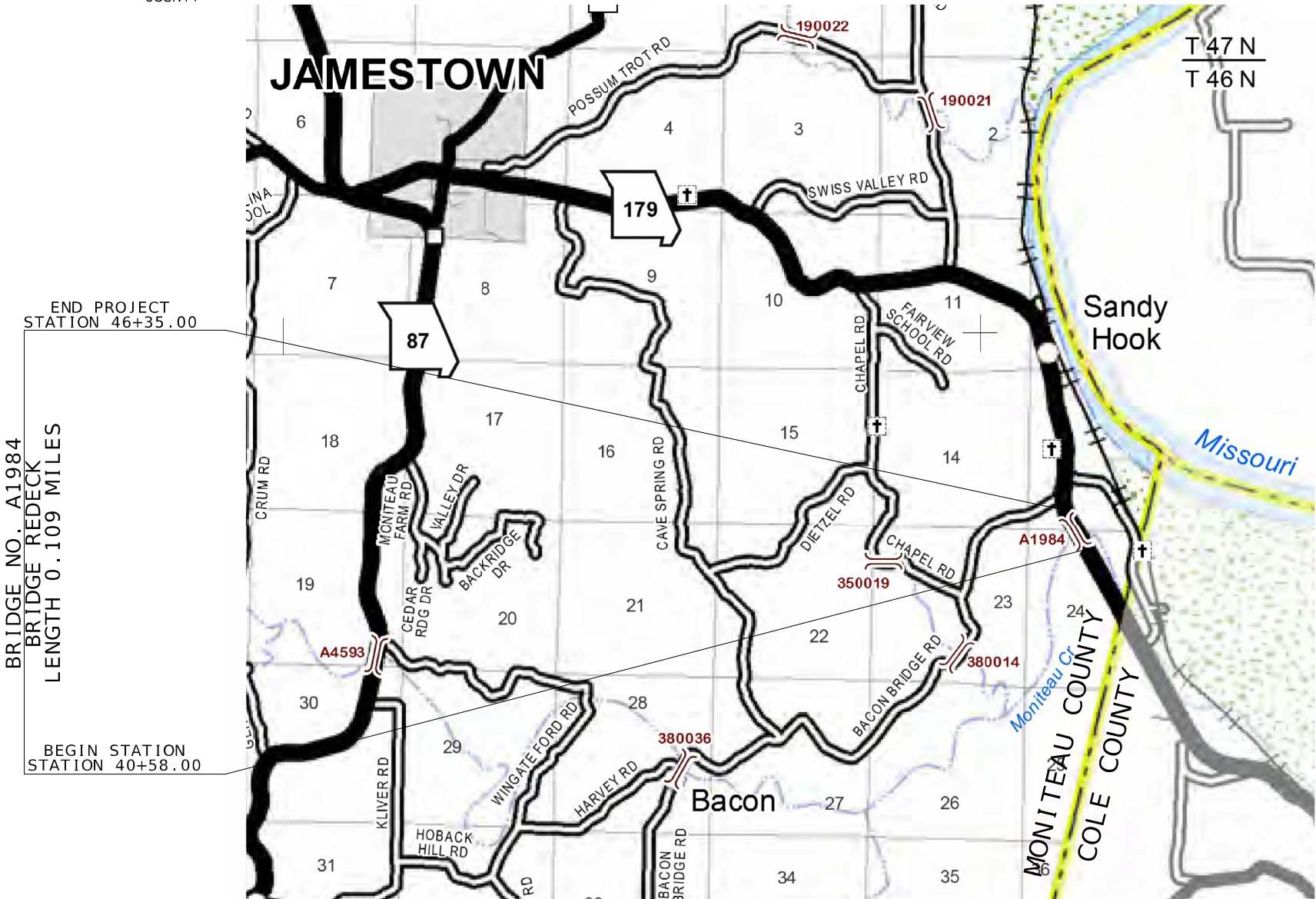
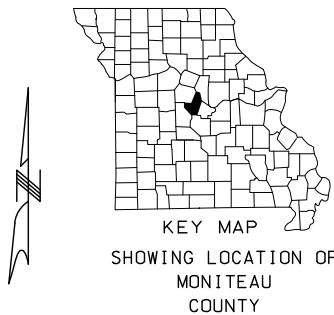
NO NEW R/W REQUIRED

CONVENTIONAL SYMBOLS  
(USED IN PLANS)

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

NOTE: DASHED OR OPEN SYMBOLS INDICATE EXISTING FEATURES

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION  
PLANS FOR PROPOSED STATE HIGHWAY  
MONITEAU COUNTY  
CENTRAL DISTRICT



NOT TO SCALE

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

INDEX OF SHEETS

DESCRIPTION	SHEET NUMBER
TITLE SHEET	1
TYPICAL SECTIONS (TS) (1 SHEETS)---	2
QUANTITIES (QU) (2 SHEETS)-----	3
PLAN-PROFILE (PP)-----	4
TRAFFIC CONTROL SHEETS (TC)-----	5-9
EROSION CONTROL SHEETS (EC)-----	10
BRIDGE DRAWINGS (B)	
A1984-----	1-13



DATE PREPARED  
8/6/2024

ROUTE 179 STATE MO  
DISTRICT CD SHEET NO. 1

COUNTY MONITEAU  
JOB NO. JCD0115  
CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

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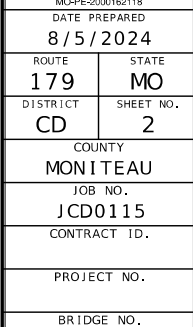
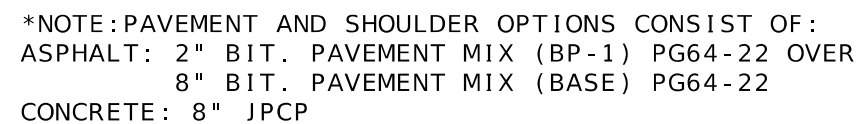
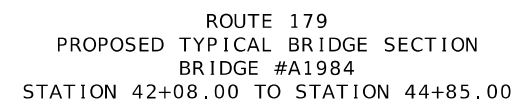
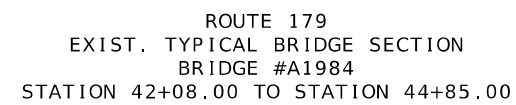
DATE

LENGTH OF PROJECT

BEGINNING OF PROJECT	STATION 40+58.00
END OF PROJECT	STATION 46+35.00
APPARENT LENGTH	0.109 MILES
EQUATIONS AND EXCEPTIONS:	0 MILES

TOTAL CORRECTIONS	0 MILES
NET LENGTH OF PROJECT	577.0 FEET
STATE LENGTH	0.109 MILES
ESTIMATED DISTURBED ACRES	0.1 ACRES
FOR INFORMATION ONLY	



[illegible]

**MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION**

**MoDOT**

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

GUARDRAIL (MIDWEST GUARDRAIL SYSTEM - MASH APPROVED)							
STATION	STATION	LOCATION	MGS BIRDGE APPROACH TRANSITION (NO CURB) EA.	MGS GUARDRAIL LF.	TYPE A CRASHWORTHY END TERMINAL (MASH) EA.	SHAPING SLOPES CLASS III 100 FT.	REMARKS
40+58.00	42+08.00	RTE 179	1	37.5	1	1.5	BRIDGE A1984 - SE CORNER
40+58.00	42+08.00	RTE 179	1	37.5	1	1.5	BRIDGE A1984 - NE CORNER
44+85.00	46+35.00	RTE 179	1	37.5	1	1.5	BRIDGE A1984 - SW CORNER
44+85.00	46+35.00	RTE 179	1	37.5	1	1.5	BRIDGE A1984 - NW CORNER
		TOTALS	4	150	4.0	6	
		USE	4	150	4	6	

MOBILIZATION
TOTAL = 1 LUMP SUM

REMOVAL OF IMPROVEMENTS						
STATION	STATION	LOCATION	GUARDRAIL LF.	OBJECT MARKER EA.	PAVEMENT S.Y.	REMARKS
40+58.00	42+08.00	RTE 179	120.32	1	-	BRIDGE A1984 - SE CORNER
40+58.00	42+08.00	RTE 179	121.55	1	-	BRIDGE A1984 - NE CORNER
44+85.00	46+35.00	RTE 179	125.35	1	-	BRIDGE A1984 - SW CORNER
44+85.00	46+35.00	RTE 179	124.35	1	-	BRIDGE A1984 - NW CORNER
41+38.00	42+08.00	RTE 179	-	-	201.1	22' SAW CUT
44+85.00	45+55.00	RTE 179	-	-	201.1	22' SAW CUT
			1 LUMP SUM			

PAVEMENT MARKING - WATERBORNE PAINT WITH TYPE P BEADS						
APPROX. STATION	APPROX. STATION	LENGTH FT.	LOCATION	4" SOLID YELLOW LF.	4" SOLID WHITE LF.	REMARKS
41+38.00	45+55.00	417	RTE 179	834	834	BRIDGE LENGTH
						AND OPTIONAL PAVEMENT
			TOTAL	834	834	
			USE	834	834	

CONTRACTOR FURNISHED SURVEYING AND STAKING
LUMP SUM = 1

OPTIONAL PAVEMENT (10" HMA OR 8" JPCP)							
STATION	STATION	LOCATION	LENGTH (FT)	WIDTH (FT)	OPTIONAL PAVEMENT AREA (SY)	TYPE 1 AGGREGATE FOR BASE (4 IN. THICK) AREA (SY)	REMARKS
41+38.00	41+88.00	RTE 179	50	VARIES	138.89	138.89	
45+05.00	45+55.00	RTE 179	50	VARIES	138.89	138.89	
				TOTAL	277.78	277.78	
				USE	277.8	278	

PERMANENT EROSION CONTROL							
STATION	STATION	LOCATION	SIDE	FURNISHING TYPE 1 ROCK DITCH LINER CY	PLACING TYPE 1 ROCK DITCH LINER CY	PERMANENT EROSION CONTROL GEOTEXTILE SY	REMARKS
42+05.00	42+08.00	RTE 179	LT	2.850	2.850	8.539	BRIDGE A1984 - SE CORNER
42+05.00	42+08.00	RTE 179	RT	2.305	2.305	6.883	BRIDGE A1984 - NE CORNER
44+85.00	44+88.00	RTE 179	LT	2.805	2.805	8.417	BRIDGE A1984 - SW CORNER
44+85.00	44+88.00	RTE 179	RT	2.517	2.517	7.550	BRIDGE A1984 - NW CORNER
			TOTAL	10.477	10.477	31.389	BASED ON DRAINAGE FUME
			USE	11	11	32	FROM STANDARD PLAN 609.40

LINEAR GRADING, CLASS 1				
STATION	STATION	LOCATION	LINEAR GRADING CLASS 1 (STA)	REMARKS
41+38.00	42+08.00	RTE 179	0.7	FOR OPTIONAL PAVEMENT
44+85.00	45+55.00	RTE 179	0.7	AND BRIDGE APPROACH SLAB
		TOTAL	1.4	
		USE	1.4	

TEMPORARY EROSION CONTROL							
STATION	STATION	LOCATION	SIDE	SILT FENCE LF	SEDIMENT REMOVAL CY	ROCK DITCH CHECK LF	REMARKS
40+46.58	42+27.24	RTE 179	LT	227.41	3.5	21	BRIDGE A1984 - SE CORNER
40+49.28	42+25.91	RTE 179	RT	223.78	3.5	21	BRIDGE A1984 - NE CORNER
44+62.17	46+40.90	RTE 179	LT	233.61	3.5	21	BRIDGE A1984 - SW CORNER
44+57.73	46+51.16	RTE 179	RT	249.10	3.5	21	BRIDGE A1984 - NW CORNER
			TOTAL	933.9	14	84	
			USE	934	14	84	

SEEDING - COOL SEASON MIXTURE				
STATION	STATION	LOCATION	SEED COOL SEASON MIXTURE AC	REMARK
40+58.00	46+35.00	RTE 179	0.4	AS NEEDED
		TOTAL	0.4	
		USE	1 LUMP SUM	

STATE OF MISSOURI

MARIA K. PETERS

NUMBER  
PE-2000162118

PROFESSIONAL ENGINEER

Maria K. Peters

08/05/2024 6:51:28 AM

MARIA K. PETERS - CIVIL

MO-PE-2000162118

DATE PREPARED  
8/5/2024

ROUTE  
179

DISTRICT  
CD

STATE  
MO

SHEET NO.  
3

COUNTY  
MONITEAU

JOB NO.  
JCD0115

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)

MoDOT

EFFECTIVE: 04-01-2023																				
SIGN	SIZE IN.	AREA SQ.FT.	QTY EACH	TOTAL AREA SQ.FT.	QTY RELOC EACH	TOTAL RELOC SQ.FT.	SIGN NUM.									ITEM NUMBER	TOTAL QTY	DESCRIPTION		
WARNING SIGNS								DESCRIPTION												
WO1-1L	48X48	16.00						TURN (SYMBOL LEFT ARROW)	E05-1	36X48	12.00						GORE EXIT	6122008		IMPACT ATTENUATOR 40 MPH (SAND BARRELS)
WO1-1R	48X48	16.00						TURN (SYMBOL RIGHT ARROW)	E05-2	48X36	12.00						EXIT OPEN	6122009		IMPACT ATTENUATOR 45 MPH (SAND BARRELS)
WO1-2L	48X48	16.00						CURVE (SYMBOL LEFT ARROW)	E05-2a	48X36	12.00						EXIT CLOSED	6122010		IMPACT ATTENUATOR 50 MPH (SAND BARRELS)
WO1-2R	48X48	16.00						CURVE (SYMBOL RIGHT ARROW)	GO20-1	60X24	10.00						ROAD WORK NEXT XX MILES	6122012		IMPACT ATTENUATOR 55 MPH (SAND BARRELS)
WO1-3L	48X48	16.00						REVERSE TURN (SYMBOL LEFT ARROW)	GO20-2	48X24	8.00						END ROAD WORK	6122014		IMPACT ATTENUATOR 60 MPH (SAND BARRELS)
WO1-3R	48X48	16.00						REVERSE TURN (SYMBOL RIGHT ARROW)	GO20-4	36X18	4.50						PILOT CAR FOLLOW ME	6122017		IMPACT ATTENUATOR 65 MPH (SAND BARRELS)
WO1-4L	48X48	16.00						REVERSE CURVE (SYMBOL LEFT ARROW)	GO20-4a	42X30	8.75						PILOT CAR IN USE WAIT & FOLLOW	6122019		IMPACT ATTENUATOR 70 MPH (SAND BARRELS)
WO1-4R	48X48	16.00						REVERSE CURVE (SYMBOL RIGHT ARROW)	GO20-4a	18X12	1.50						PILOT CAR IN USE WAIT & FOLLOW	6122020		REPLACEMENT SAND BARREL
WO1-4bL	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL LT ARROWS)	GO20-5aP	36X24	6.00						WORK ZONE (PLAQUE)	6122030		IMPACT ATTENUATOR (RELOCATION)
WO1-4bR	48X48	16.00						DOUBLE ARROW REVERSE CURVE (SYMBOL RT ARROWS)	MO4-8a	24X18	3.00	2	6		52	END DETOUR	6123000A		TRUCK OR TRAILER MOUNTED ATTENUATOR (TMA)	
WO1-4cL	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL LT ARROWS)	MO4-9L	48X36	12.00						DETOUR (LEFT ARROW)	6161008		ADVANCED WARNING RAIL SYSTEM
WO1-4cR	48X48	16.00						TRIPLE ARROW REVERSE CURVE (SYMBOL RT ARROWS)	MO4-9R	48X36	12.00						DETOUR (RIGHT ARROW)	6161012		BUOYS (BOATS KEEP OUT)
WO1-6	60X30	12.50						HORIZONTAL ARROW (SYMBOL)	MO4-9P	48X12	4.00						STREET NAME (PLAQUE)	6161013		BUOYS (NO WAKE)
WO1-6a	72X36	18.00						HORIZ. ARROW (SYMBOL ON PERMANENT BARRICADE)	MO4-10L	48X18	6.00						DETOUR (ARROW LEFT)	6161014		SPECIAL SIGN ASSEMBLY (BOATS KEEP OUT)
WO1-7	60X30	12.50						DOUBLE HEAD HORIZONTAL ARROW (SYMBOL)	MO4-10R	48X18	6.00						DETOUR (ARROW RIGHT)	6161025	50	CHANNELIZER (TRIM LINE)
WO1-7a	72X36	18.00						DOUBLE HEAD HORIZ. ARROW (SYMBOL ON PERM. BARR.)	REGULATORY SIGNS								6161030	10	TYPE III MOVEABLE BARRICADE	
WO1-8	18X24	3.00						CHEVRON (SYMBOL)	R1-1	48X48	13.25						STOP	6161033		DIRECTION INDICATOR BARRICADE
WO1-8a	30X36	7.50						CHEVRON (SYMBOL FOR DIVIDED HIGHWAYS)	R1-2	48TRI.	6.93						YIELD	6161040		FLASHING ARROW PANEL
WO3-1	48X48	16.00						STOP AHEAD (SYMBOL)	R1-2a	36X36	9.00						TO ONCOMING TRAFFIC (PLAQUE)	6161047		TYPE III OBJECT MARKER
WO3-2	48X48	16.00						YIELD AHEAD (SYMBOL)	R1-3P	30X12	2.50						ALL WAY (PLAQUE)	6161055		SEQUENTIAL FLASHING WARNING LIGHT
WO3-3	48X48	16.00						SIGNAL AHEAD (SYMBOL)	R2-1	36X48	12.00						SPEED LIMIT XX	6161070		TUBULAR MARKER
WO3-4	48X48	16.00						BE PREPARED TO STOP	R3-1	48X48	16.00						NO RIGHT TURN (SYMBOL)	6161095		RADAR SPEED ADVISORY SYSTEM
WO3-5	48X48	16.00						SPEED LIMIT AHEAD	R3-2	48X48	16.00						NO LEFT TURN (SYMBOL)			CHANGEABLE MESSAGE SIGN, COMMISSION FURNISHED/RETAINED
WO4-1L	48X48	16.00						MERGE (SYMBOL FROM LEFT)	R3-3	36X36	9.00						NO TURNS	6161096		CHANGEABLE MESSAGE SIGN W/O COMM. INTERFACE - CONTRACTOR FURNISHED/RETAINED
WO4-1R	48X48	16.00						MERGE (SYMBOL FROM RIGHT)	R3-4	48X48	16.00						NO U-TURN (SYMBOL)			CHANGEABLE MESSAGE SIGN WITH COMM. INTERFACE - CONTRACTOR FURNISHED/RETAINED
WO4-1aL	48X48	16.00						MERGE (ARROW SYMBOL)	R3-7L	30X30	6.25						LEFT LANE MUST TURN LEFT	6161098A	2	TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/COMMISSION RETAINED
WO4-1aR	48X48	16.00						MERGE (ARROW SYMBOL)	R3-7R	30X30	6.25						RIGHT LANE MUST TURN RIGHT			TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/COMMISSION RETAINED
WO5-1	48X48	16.00						ROAD/BRIDGE/RAMP NARROWS	R4-1	36X48	12.00						DO NOT PASS	6161099		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/COMMISSION RETAINED
WO5-3	48X48	16.00						ONE LANE BRIDGE	R4-2	36X48	12.00						PASS WITH CARE	6162000A		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/COMMISSION RETAINED
WO5-5	48X48	16.00						NARROW LANES	R4-8a	36X48	12.00						KEEP LEFT (HORIZONTAL ARROW)	6162002		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/COMMISSION RETAINED
WO6-1	48X48	16.00						DIVIDED HIGHWAY (SYMBOL)	R4-7a	36X48	12.00						KEEP RIGHT (HORIZONTAL ARROW)	6173600D		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/COMMISSION RETAINED
WO6-2	48X48	16.00						DIVIDED HIGHWAY END (SYMBOL)	R5-1	30X30	6.25						DO NOT ENTER			TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/COMMISSION RETAINED
WO6-3	48X48	16.00						TWO WAY TRAFFIC (SYMBOL)	R5-1a	36X24	6.00						WRONG WAY	6173602B		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/COMMISSION RETAINED
WO7-3a	30X24	5.00						NEXT XX MILES (PLAQUE)	R6-1L	54X18	6.75						ONE WAY ARROW (LEFT)	6174000A		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/COMMISSION RETAINED
WO8-1	48X48	16.00						BUMP	R6-1R	54X18	6.75						ONE WAY ARROW (RIGHT)	6175010A		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/COMMISSION RETAINED
WO8-2	48X48	16.00						DIP	R6-2L	24X30	5.00						ONE WAY (LEFT)			TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/COMMISSION RETAINED
WO8-3	48X48	16.00						PAVEMENT ENDS	R6-2R	24X30	5.00						ONE WAY (RIGHT)	6176000B		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/COMMISSION RETAINED
WO8-4	48X48	16.00						SOFT SHOULDER	R9-9	24X12	2.00						SIDEWALK CLOSED			TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/COMMISSION RETAINED
WO8-5	48X48	16.00						SLIPPERY WHEN WET (SYMBOL)	R9-11L	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW LEFT) CROSS HERE	6177000B		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/COMMISSION RETAINED
WO8-6	48X48	16.00						TRUCK CROSSING (WITH FLAGS)	R9-11R	24X18	3.00						SIDEWALK CLOSED AHEAD, (ARROW RIGHT) CROSS HERE	6208064A		TEMPORARY TRAFFIC BARRIER CONTRACTOR FURNISHED/COMMISSION RETAINED
WO8-6c	48X48	16.00						TRUCK ENTRANCE	R10-6	24X36	6.00						STOP HERE ON RED (45° ARROW)	9029400		TEMPORARY TRAFFIC SIGNALS
WO8-7	36X36	9.00						LOOSE GRAVEL	R11-2	48X30	10.00	2	20		29	ROAD CLOSED	9029401		TEMPORARY TRAFFIC SIGNALS AND LIGHTING	
WO8-7a	36X36	9.00						FRESH OIL/LOOSE GRAVEL												
WO8-9	48X48	16.00						LOW SHOULDER												
WO8-11	48X48	16.00						UNEVEN LANES												
WO8-12	48X48	16.00						NO CENTER LINE												
WO8-15	48X48	16.00						GROOVED PAVEMENT												
WO8-15P	30X24	5.00						MOTORCYCLE (PLAQUE)												
WO8-17	48X48	16.00						SHOULDER DROP-OFF (SYMBOL)												
WO8-17P	30X24	5.00						SHOULDER DROP-OFF (PLAQUE)												
W10-1	42RND.	9.62						RAILROAD CROSSING												
WO12-1	24X24	4.00						DOUBLE DOWN ARROW (SYMBOL)												







DETOUR

MO4 - 8

NORTH

M3 - 2

M1 - 5a

M6 - 3

50A

DETOUR

MO4 - 8

NORTH

M3 - 2

M1 - 5a

M5 - 1R

50B

DETOUR

MO4 - 8

NORTH

M3 - 2

M1 - 5a

M6 - 1

50C

DETOUR

MO4 - 8

NORTH

M3 - 2

M1 - 5a

M5 - 1L

50D

DETOUR

MO4 - 8

NORTH

M3 - 2

M1 - 5a

M6 - 1

50E

DETOUR

MO4 - 8

SOUTH

M3 - 2

M1 - 5a

M6 - 3

50F

DETOUR

MO4 - 8

SOUTH

M3 - 2

M1 - 5a

M5 - 1R

50G

DETOUR

MO4 - 8

SOUTH

M3 - 2

M1 - 5a

M6 - 1

50H

DETOUR

MO4 - 8

SOUTH

M3 - 2

M1 - 5a

M5 - 1L

50I

DETOUR

MO4 - 8

SOUTH

M3 - 2

M1 - 5a

M6 - 1

50K

ROAD CLOSED

3 MILES AHEAD

LOCAL TRAFFIC ONLY

R11 - 3a

55A

ROAD CLOSED

6 MILES AHEAD

LOCAL TRAFFIC ONLY

R11 - 3a

55B

Completed as Promised

CONST-6P-4J SH-FLAT SHEET FLUORESCENT:  
2,250" Radius, 0.625" Border, White on, Blue;  
"Completed as Promised" Black, D 85% spacing;  
Table of letter and object lefts

B	3,500	f	7,625	i	10,250	d	12,000	g	15,500	e	19,000
l	3,500	m	5,500	p	11,000	r	14,500	o	16,875	v	20,125
e	23,750	m	27,250	e	32,500	n	36,000	t	39,375	s	42,000
W	3,500	i	7,250	n	9,000	t	11,750	e	14,000	r	16,875
2	21,875	0	24,875	2	28,000	5	31,125				
15,500											

ROAD CLOSED AHEAD

WO20 - 3

20

ROAD CLOSED

R11 - 2

29

END DETOUR

MO4 - 8a

52

ROAD CLOSED 500 FT

WO20 - 3

20A

DETOUR AHEAD

WO20 - 2

18

Bridge Improvements  
Winter 2025

CONST-5-48 SH-FLAT SHEET;  
2,250" Radius, 0.625" Border, White on, Blue;  
"Bridge", D 85% spacing; "Improvements", D 85% spacing; "Winter 2025", D;  
Table of letter and object lefts

B	3,500	f	7,625	i	10,250	d	12,000	g	15,500	e	19,000
l	3,500	m	5,500	p	11,000	r	14,500	o	16,875	v	20,125
e	23,750	m	27,250	e	32,500	n	36,000	t	39,375	s	42,000
W	3,500	i	7,250	n	9,000	t	11,750	e	14,000	r	16,875
2	21,875	0	24,875	2	28,000	5	31,125				
15,500											

60

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

Maria Peters  
06/05/2024 6:53:07 AM  
MARIA K. PETERS - CIVIL  
MO-PE-2000162118

DATE PREPARED  
8/5/2024

ROUTE  
179

STATE  
MO

DISTRICT  
CD

SHEET NO.  
5

COUNTY  
MONITEAU

JOB NO.  
JCD0115

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

DATE

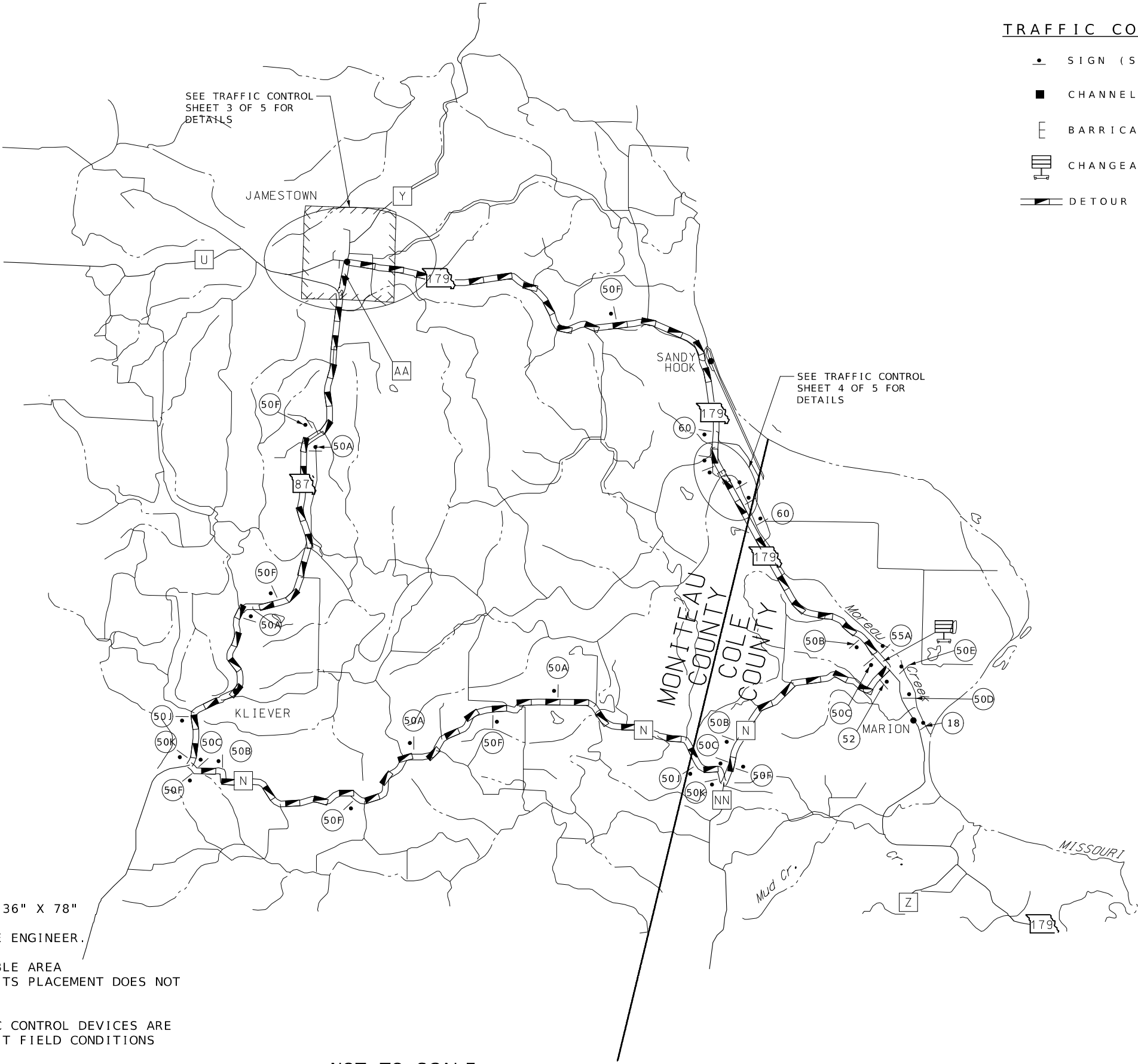
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

GENERAL NOTES:

- NUMBERED ROUTE DETOUR SIGN ASSEMBLY 36" X 78"
- CMS BOARDS PLACED AS APPROVED BY THE ENGINEER.
- CONST-5-48 SIGN IS PLACED IN A VISIBLE AREA WITHIN THE PROJECT LIMITS PROVIDED ITS PLACEMENT DOES NOT DISRUPT A SEQUENCE OF SIGNS.
- ALL DISTANCES AND SPACING OF TRAFFIC CONTROL DEVICES ARE APPROXIMATE AND MAY BE REVISED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
- ANY EXISTING SIGNING THAT CONFLICTS WITH THE TRAFFIC CONTROL SIGNING SHALL BE COMPLETELY COVERED OR REMOVED.

NOT TO SCALE



TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- CHANNELIZER
- E BARRICADE
- CHANGEABLE MESSAGE BOARD
- DETOUR ROUTE



DATE PREPARED  
8/5/2024

ROUTE 179	STATE MO
DISTRICT CD	SHEET NO. 6

COUNTY  
MONITEAU

JOB NO.  
JCD0115

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)

JAMESTOWN DETOUR DETAIL

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- CHANNELIZER
- BARRICADE
- CHANGEABLE MESSAGE BOARD
- DETOUR ROUTE



DATE PREPARED  
8/5/2024

ROUTE 179	STATE MO
DISTRICT CD	SHEET NO. 7

COUNTY  
MONITEAU

JOB NO.  
JCD0115

CONTRACT ID.

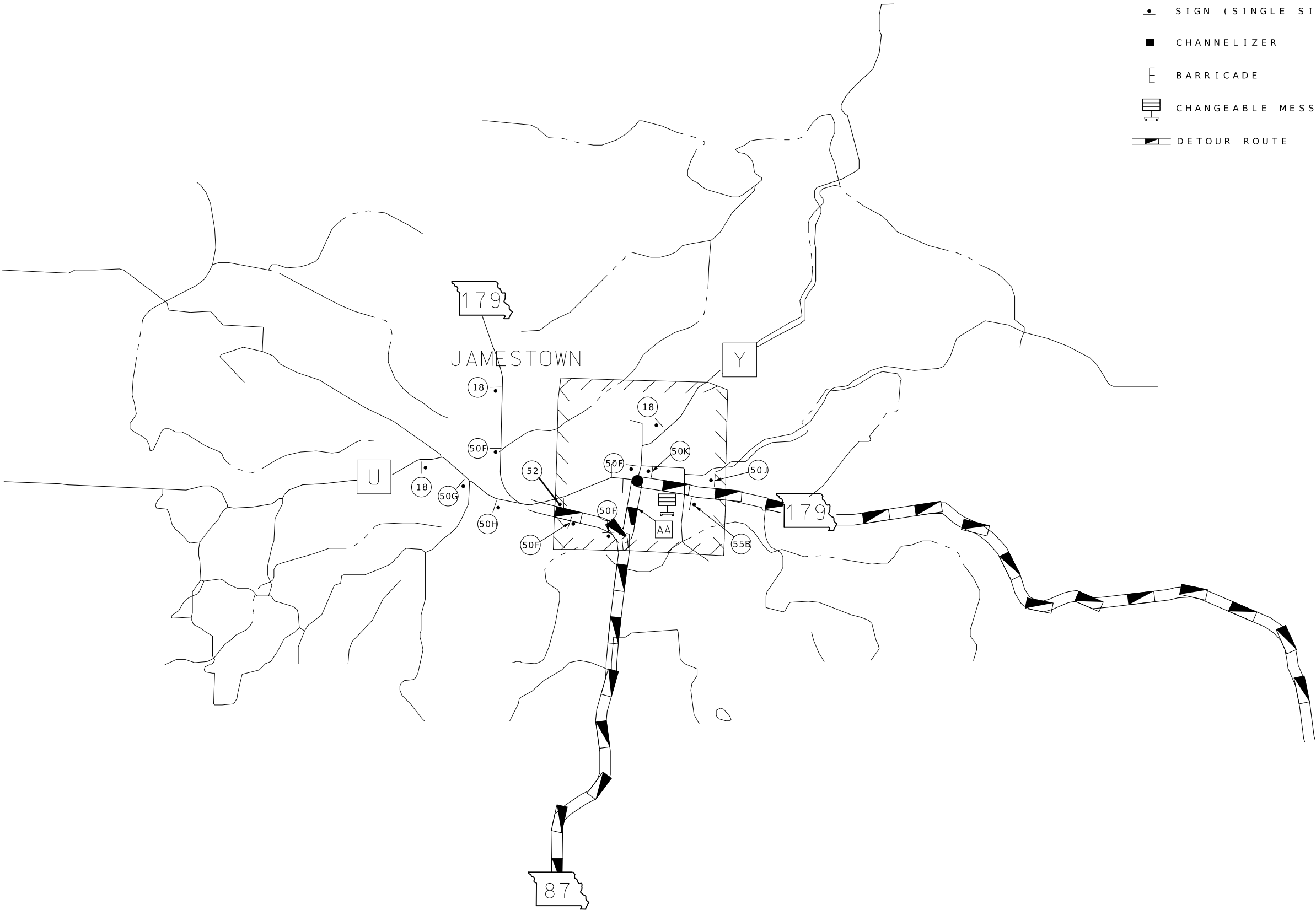
PROJECT NO.

BRIDGE NO.

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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



NOT TO SCALE

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

*Maria Peters*  
08/06/2024 6:54:43 AM  
MARIA K. PETERS - CIVIL  
MO-PE-2000162118

DATE PREPARED  
8/5/2024

ROUTE  
179

STATE  
MO

DISTRICT  
CD

SHEET NO.  
8

COUNTY  
MONITEAU

JOB NO.  
JCD0115

CONTRACT ID.


PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

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



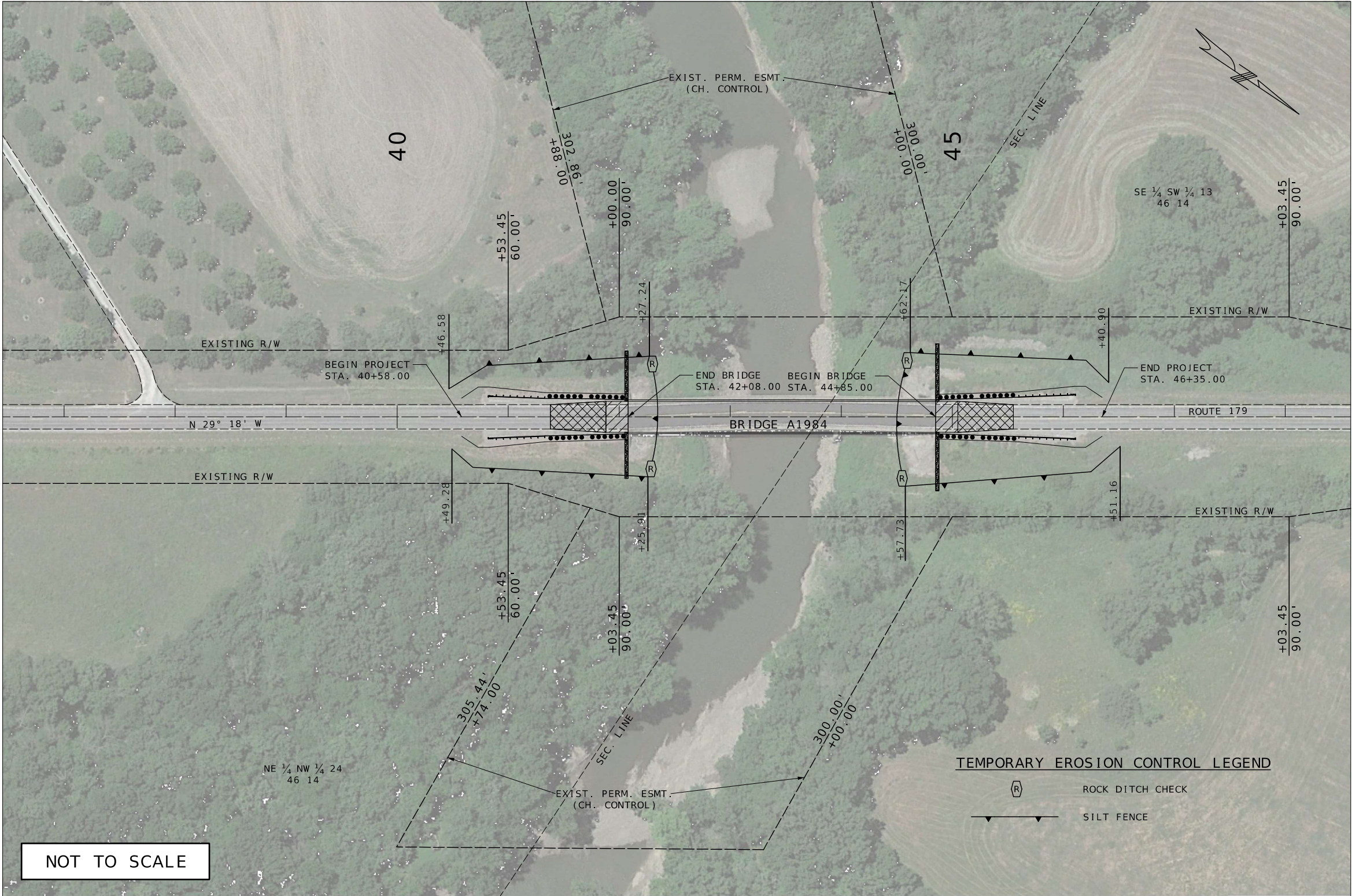




TRAFFIC CONTROL  
SHEET 5 OF 5


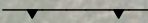
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NOT TO SCALE

TEMPORARY EROSION CONTROL LEGEND

-  ROCK DITCH CHECK
-  SILT FENCE



Maria Peters  
08/05/2024 6:55:53 AM  
MARIA K. PETERS - CIVIL  
MO-PE-2000162118

DATE PREPARED  
8/5/2024

ROUTE 179 STATE MO

DISTRICT CD SHEET NO. 10

COUNTY MONITEAU

JOB NO. JCD0115


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)



Table Showing S2 & S4 Bar Lengths			
Int. Bent No. 2		Int. Bent No. 3	
Span 1	Span 2	Span 2	Span 3
10'-9"	20'-3"	20'-3"	15'-3"

Required Lap Length  
For Bar Splices \*\*

Bar Size	Splice Length
4	2'-7"
5	3'-3"
6	3'-10"
7	4'-11"

\*\* Unless otherwise shown.

General Notes:

Design Specifications:

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

Design Loading:

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

Design Unit Stresses:

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

Joint Filler:

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

Reinforcing Steel:

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

Miscellaneous:

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

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

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

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

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

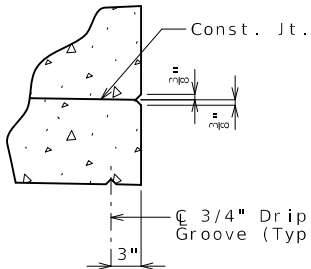
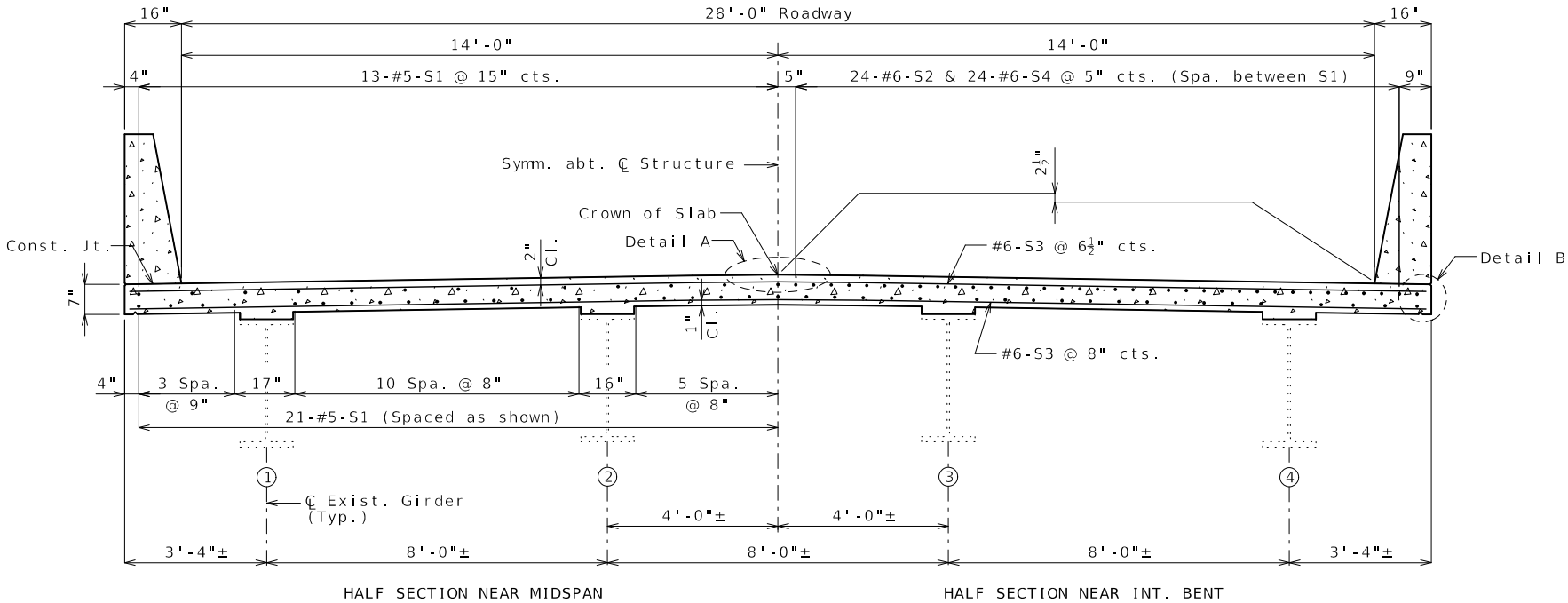
Rubblized concrete from the existing bridge deck that qualifies as clean fill may be placed on spill slopes at end bents above ordinary high water line (Roadway item).

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

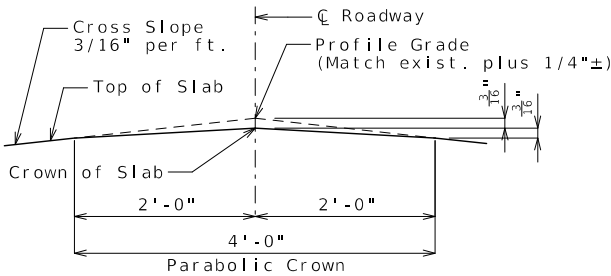
Traffic Handling:

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

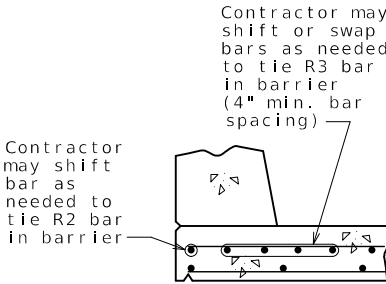
U.I.P. AND REDECK EXISTING (83'- 103.5'- 87.5') CONTINUOUS COMPOSITE PLATE GIRDER SPANS



DETAIL B



DETAIL A



OPTIONAL SHIFTING  
TOP BARS AT BARRIER

TYPICAL SECTION THRU SLAB

Estimated Quantities		
Item		Total
Removal of Miscellaneous ACM (Non-Friable)	sq. foot	25
Removal of Existing Bridge Deck	sq. foot	8,528
Bridge Approach Slab (Minor)	sq. yard	132
Slab on Steel	sq. yard	945
Type D Barrier	linear foot	555
Substructure Repair (Formed)	sq. foot	75
Protective Coating - Concrete Bents and Piers (Epoxy)	lump sum	1
Slab Drain	each	52
Vertical Drain at End Bents	each	2
* Open Cell Foam Joint Seal	linear foot	56

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

\* Concrete Approach Slab only

Estimated Quantities for Slab on Steel		
Item		Total
Class B-2 Concrete	cu. yard	205
Reinforcing Steel (Epoxy Coated)	pound	67,380

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

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

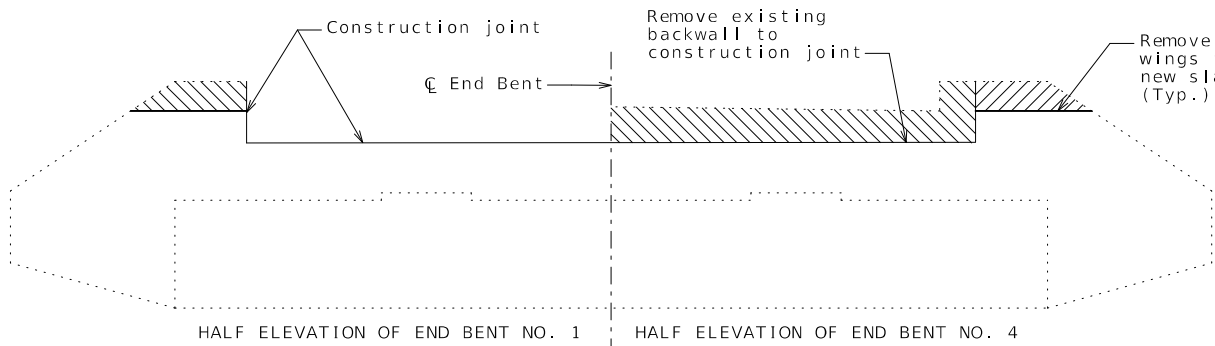
Slab shall be cast-in-place with conventional forms or stay-in-place corrugated steel forms. Precast prestressed panels will not be permitted.

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

REPAIRS TO BRIDGE:  
ROUTE 179 OVER MONITEAU CREEK

ROUTE 179 FROM ROUTE 87 TO ROUTE N  
ABOUT 6.3 MILES SOUTHEAST OF ROUTE 87  
BEGINNING STATION 42+08.00± (MATCH EXISTING)





DETAILS OF CONCRETE REMOVAL AT END BENTS

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

A smooth, level surface shall be provided at Bents No. 1 & 4 removal lines.

General Notes:

Stay-In-Place Forms:

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

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

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

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

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

Pouring and Finishing Slab:

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

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

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

Haunching:

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

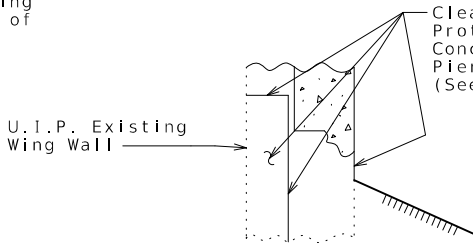
Resin Anchor System:

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

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

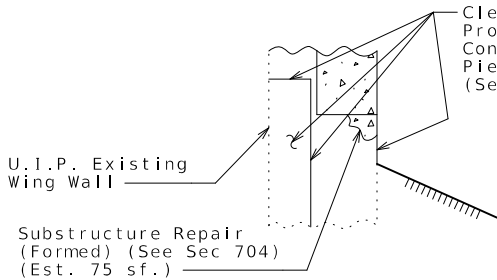
The minimum embedment depth in concrete with f'c = 4,000 psi for the resin anchor systems shall be that required to meet the minimum ultimate pullout strength in accordance with Sec 1039 but shall not be less than 5".

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

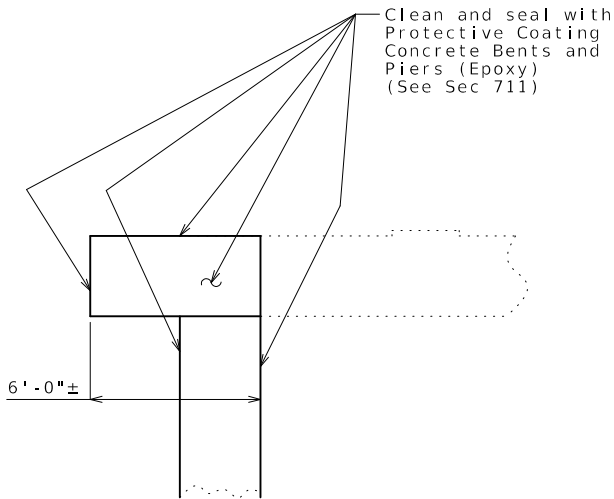


TYPICAL SECTION THRU  
END BENT 1 SHOWING  
PROTECTIVE COATING & REPAIRS

Note: For Details of Substructure Repair (Formed), see Sheets No. 3 thru 6.

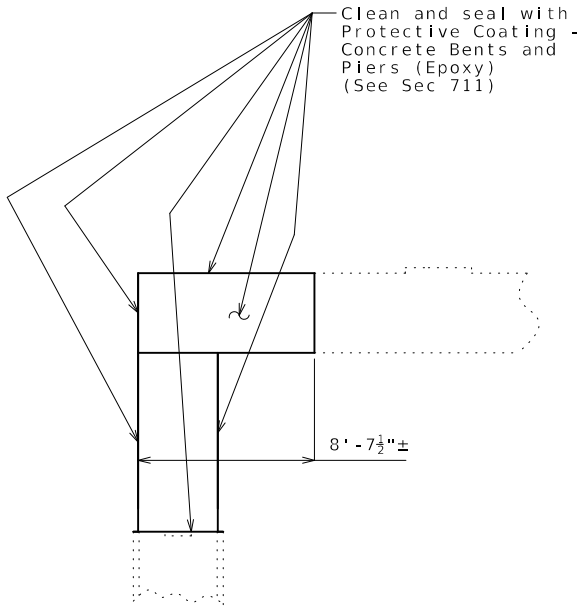


TYPICAL SECTION THRU  
END BENT 4 SHOWING  
PROTECTIVE COATING & REPAIRS



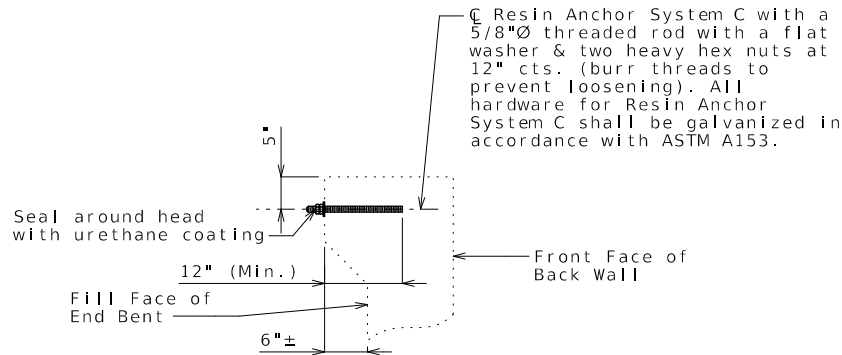
TYPICAL PART ELEVATION OF  
INT. BENT NO. 2 SHOWING  
PROTECTIVE COATING

Left column shown, right column similar



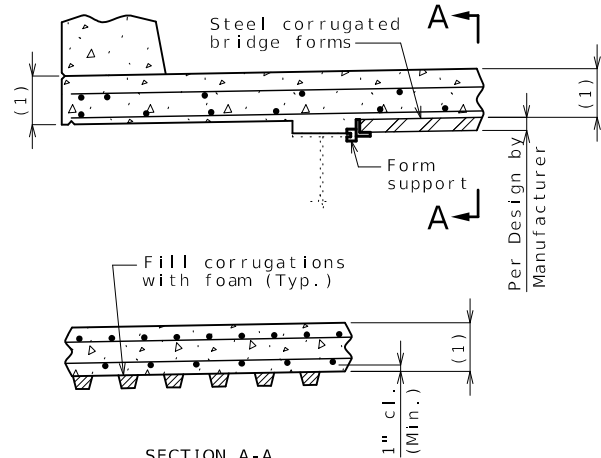
TYPICAL PART ELEVATION OF  
INT. BENT NO. 3 SHOWING  
PROTECTIVE COATING

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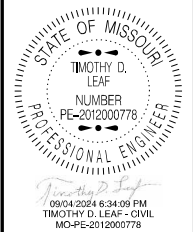


DETAILS OF RESIN ANCHOR SYSTEM  
AT END BENTS NO. 1 & 4

System C  
(54 total rec'd.)



OPTIONAL STAY-IN-PLACE  
FORM DETAILS



DATE PREPARED 9/4/2024	
ROUTE 179	STATE MO
DISTRICT BR	SHEET NO. 2
COUNTY MONITEAU	
JOB NO. JCD0115	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A19843	

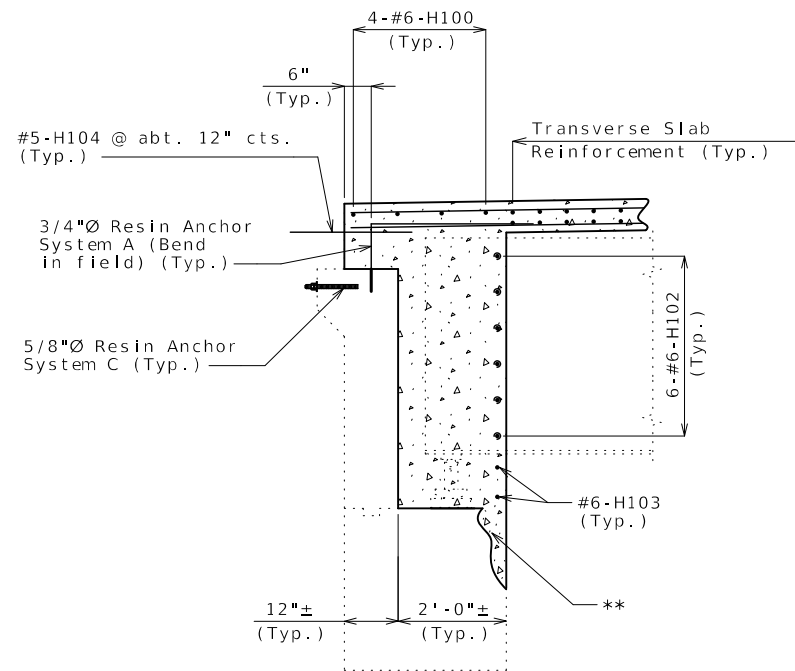
DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

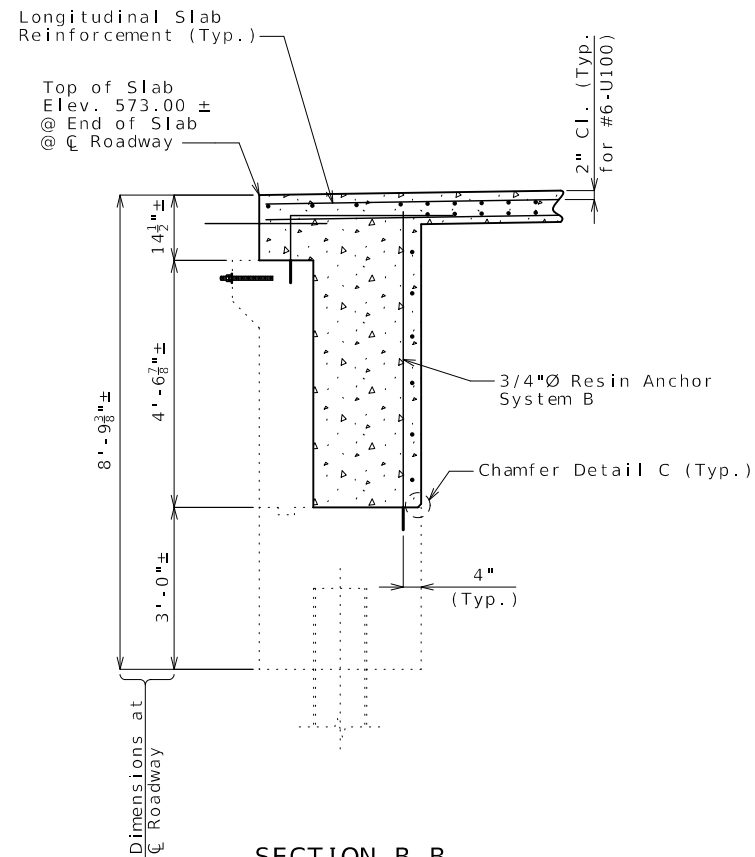
105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

MoDOT

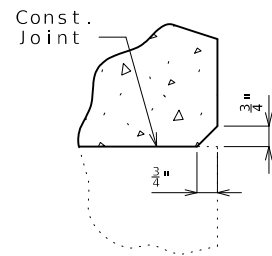




SECTION A-A



SECTION B-B



CHAMFER DETAIL C

Notes:

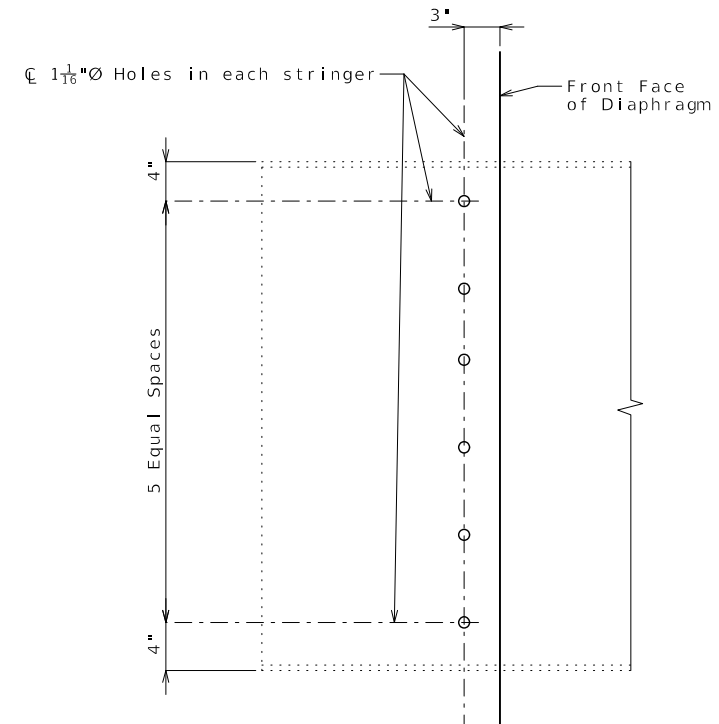
The exposed and accessible surfaces of the existing structural steel and bearings that will be encased in concrete shall be cleaned with a minimum of SSPC-SP-3 surface preparation and coated with a minimum of one coat of gray epoxy-mastic primer (non-aluminum) in accordance with Sec 1081 to produce a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

The H102 bars are segmented for ease of placement through girder web holes. The total bar length for H102 bars shown in Bill of Reinforcing Steel allows for one lap splice with a length of 3'-10". Actual bar segment lengths to be determined by contractor for ease of installing bars. The contractor may use a mechanical bar splice in lieu of a lap splice. When a mechanical bar splice is used, the actual bar segment length will be determined by the contractor to accommodate manufacturer's recommendations for installation and ease of construction. The cost of furnishing and installing the bar splices will be considered completely covered by the contract unit price for Slab on Steel. No adjustment of the quantity of reinforcing steel will be allowed for the use of mechanical bar splices.

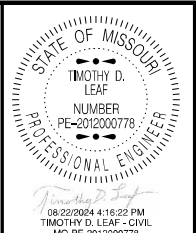
Cost of field drilling holes in existing plate girder webs will be considered completely covered by the contract unit price for Slab on Steel.

For details of Open Cell Foam Joint at end of Approach Slab, not shown, see Sheet No.11.

Work this sheet with Sheet No. 3.



DETAIL OF WEB HOLES



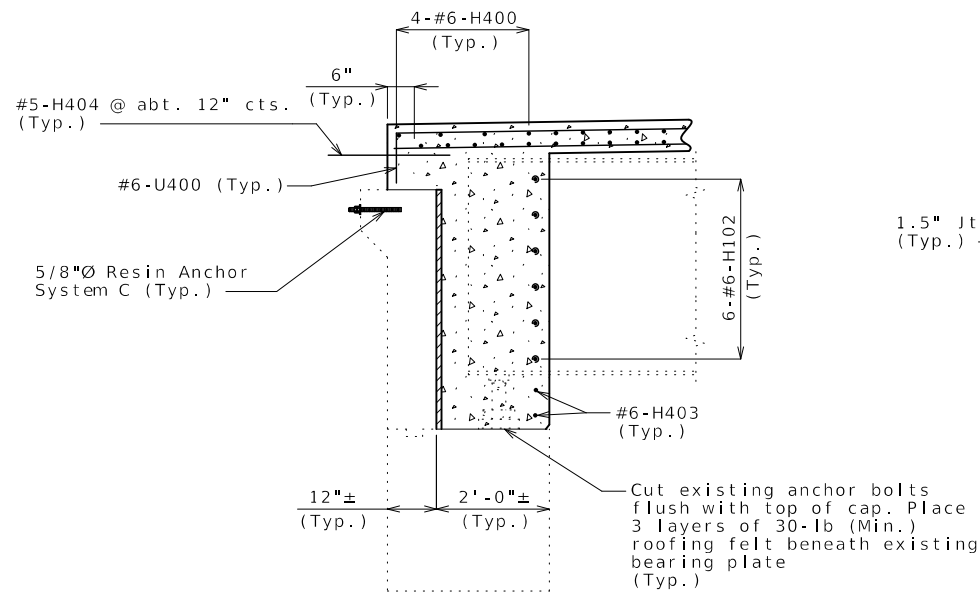
DATE PREPARED 8/22/2024	
ROUTE 179	STATE MO
DISTRICT BR	SHEET NO. 4
COUNTY MONITEAU	
JOB NO. JCD0115	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A19843	

DATE	DESCRIPTION

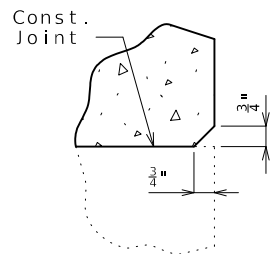
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

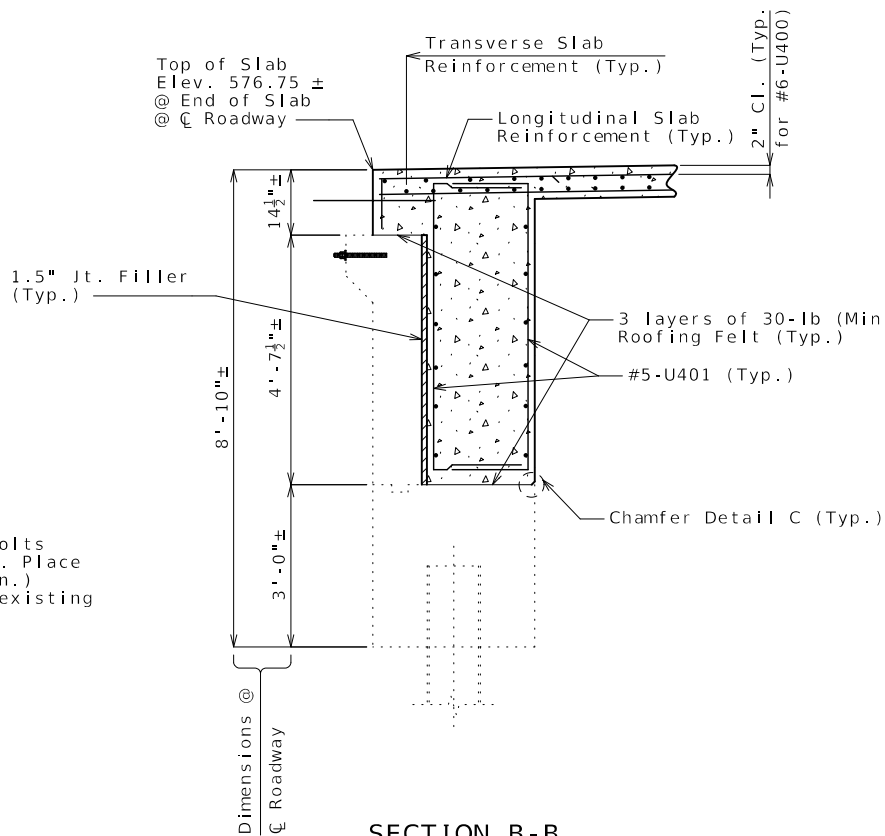




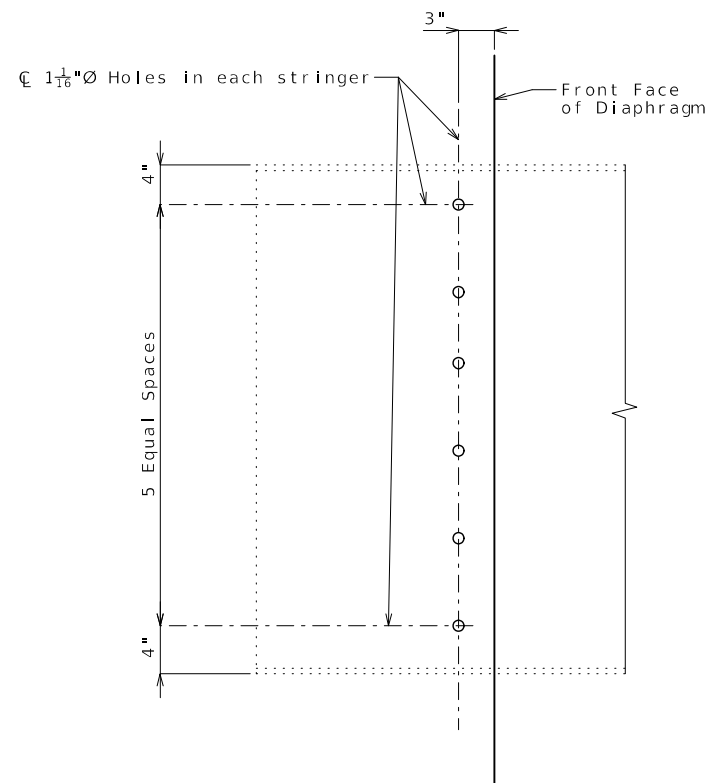
SECTION A-A  
Substructure Repair (Formed)  
not shown for clarity



CHAMFER DETAIL C



SECTION B-B  
Substructure Repair (Formed)  
not shown for clarity



DETAIL OF WEB HOLES

Notes:

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

The H402 bars are segmented for ease of placement through girder web holes. The total bar length for H402 bars shown in Bill of Reinforcing Steel allows for one lap splice with a length of 3'-10". Actual bar segment lengths to be determined by contractor for ease of installing bars. The contractor may use a mechanical bar splice in lieu of a lap splice. When a mechanical bar splice is used, the actual bar segment length will be determined by the contractor to accommodate manufacturer's recommendations for installation and ease of construction. The cost of furnishing and installing the bar splices will be considered completely covered by the contract unit price for Slab on Steel. No adjustment of the quantity of reinforcing steel will be allowed for the use of mechanical bar splices.

For details of Open Cell Foam Joint at end of Approach Slab, not shown, see Sheet No. 11.

Work this sheet with Sheet No. 5.

DETAILS OF END BENT NO. 4

Detailed Mar. 2024  
Checked May 2024

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

Sheet No. 6 of 13

STATE OF MISSOURI

TIMOTHY D. LEAF

NUMBER

PE-2012000778

PROFESSIONAL ENGINEER

08/22/2024 4:10:55 PM

TIMOTHY D. LEAF - CIVIL

MO-PE-2012000778

DATE PREPARED

8/22/2024

ROUTE

179

STATE

MO

DISTRICT

BR

SHEET NO.

6

COUNTY

MONITEAU

JOB NO.

JCD0115

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

A19843

DESCRIPTION

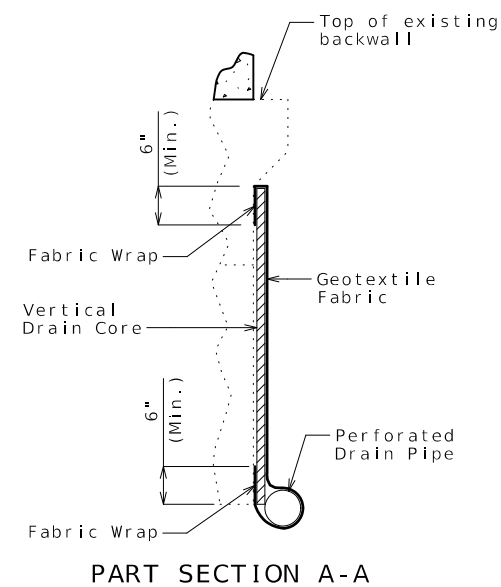
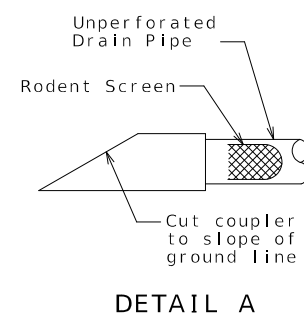
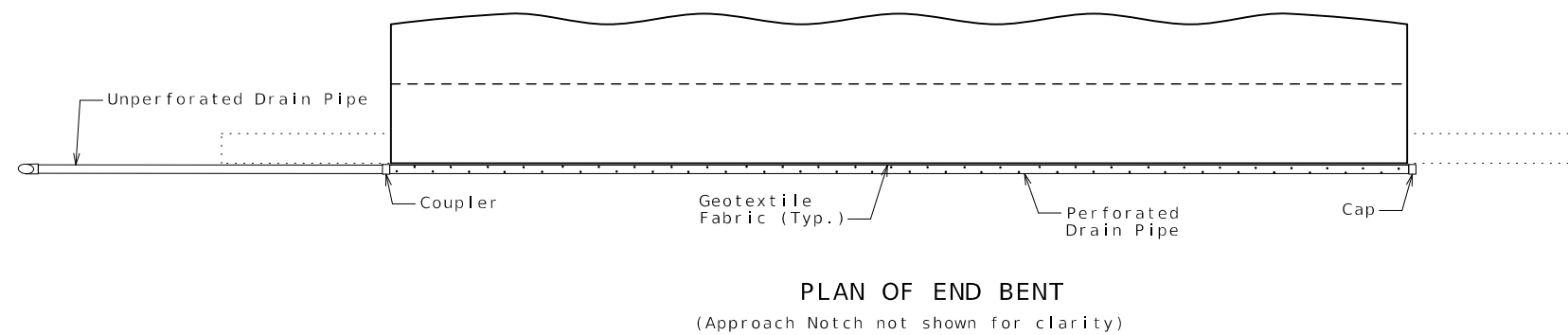
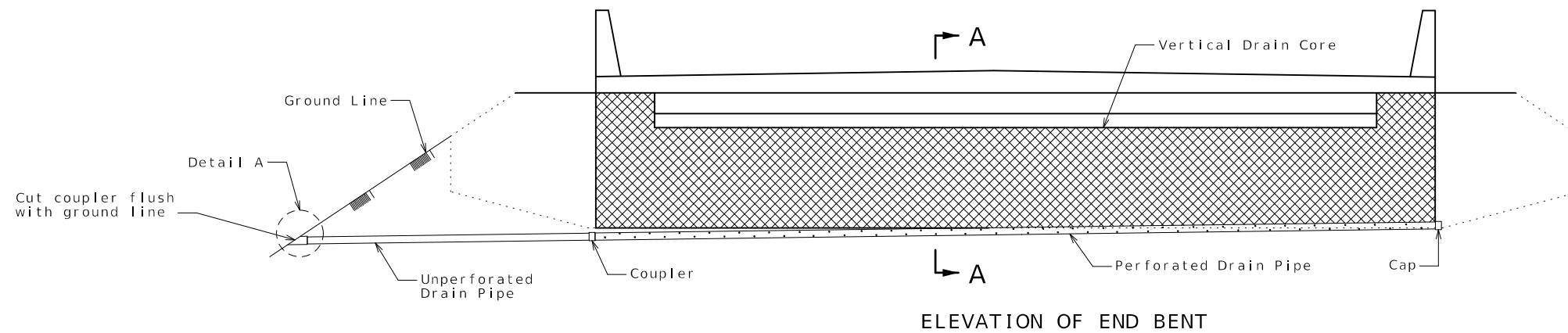
DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL

JEFFERSON CITY, MO 65102

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



General Notes:

All drain pipe shall be sloped 1 to 2 percent.

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

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

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



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MOTHY D. LEAF - CIVIL  
MO BE 2012000778

DATE PREPARED

1/22/2024

DATE	STATE
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79	MO
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PROJECT	SHEET NO.
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7

R	T
COUNTY	

MONITORING

MONTH YEAR

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JOB NO.

JOB NO.  
LCD0115

JCD0113

CONTRACT ID.

PROJECT NO. \_\_\_\_\_

PROJECT NO.

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BRIDGE NO.  
A10042

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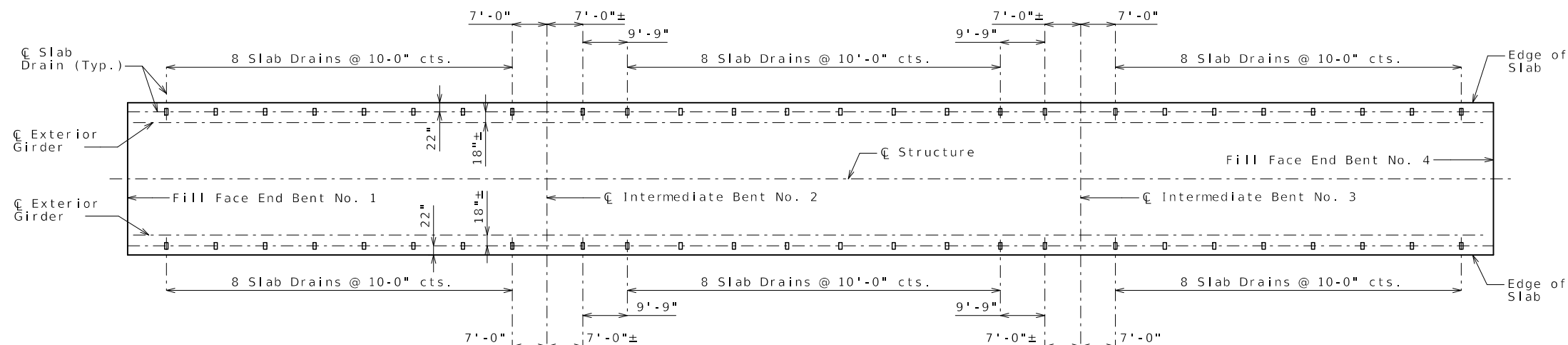
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COMMISSION

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

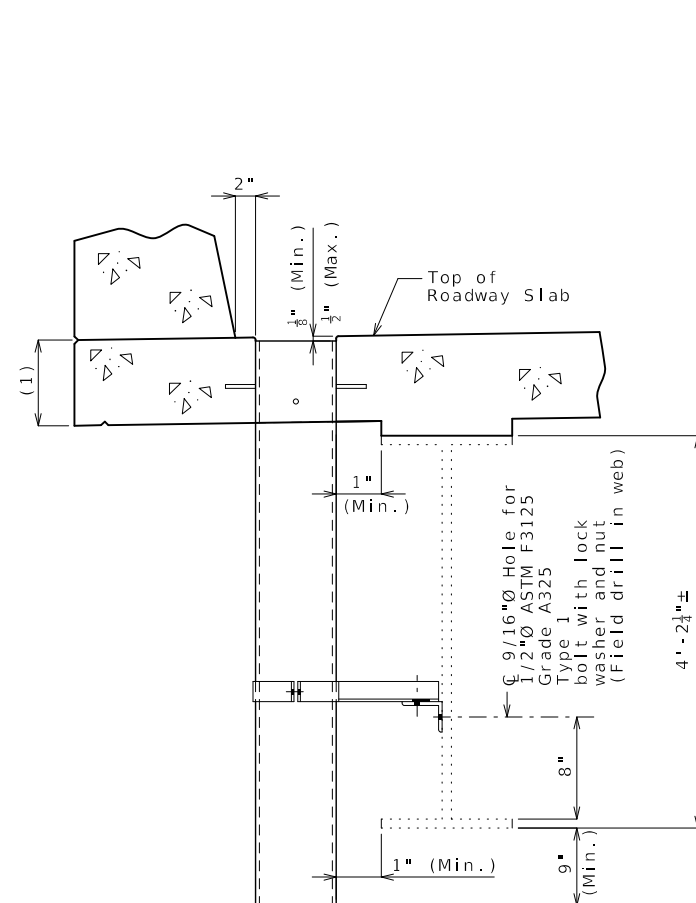
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### VERTICAL DRAIN AT END BENTS

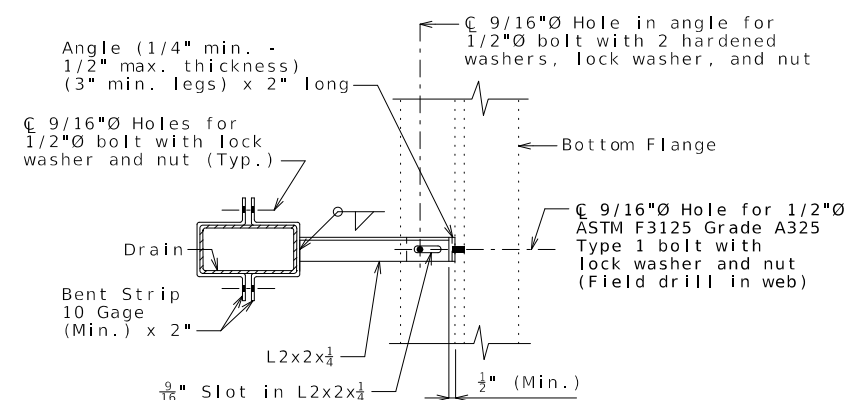
(Squared end bent shown, skewed end bent similar)



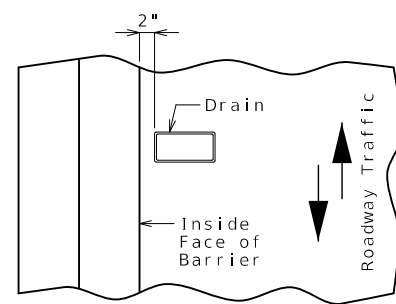
PLAN OF SLAB SHOWING SLAB DRAIN LOCATIONS



PART SECTION NEAR DRAIN

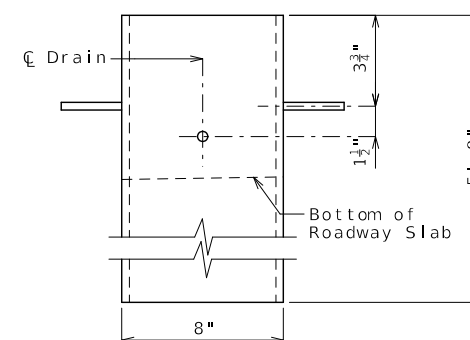


PART SECTION SHOWING BRACKET ASSEMBLY

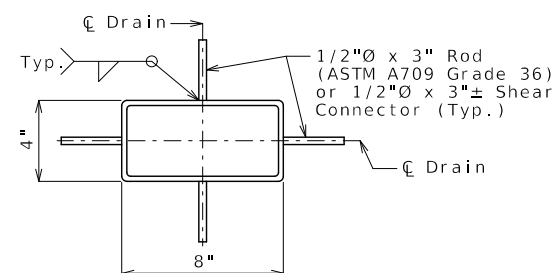


PART PLAN OF SLAB AT DRAIN

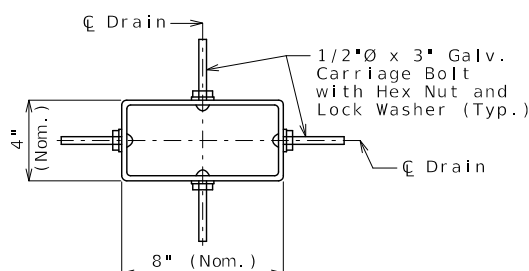
## SLAB DRAINS



ELEVATION OF DRAIN



### PLAN OF STEEL DRAIN OPTION



### PLAN OF FRP DRAIN OPTION

General Notes:

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

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

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

Reinforcing steel shall be shifted to clear drains.

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

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

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

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

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

(1) See front sheet for slab thickness.

Notes for Steel Drain:

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

Outside dimensions of drains are 8" x 4".

The drains shall be galvanized in accordance with ASTM A123.

Notes for FRP Drain:

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

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

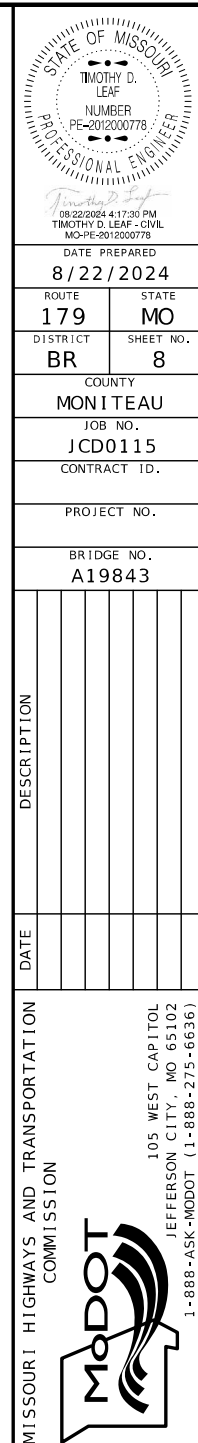
Minimum reinforced wall thickness shall be 1/4 inch.

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

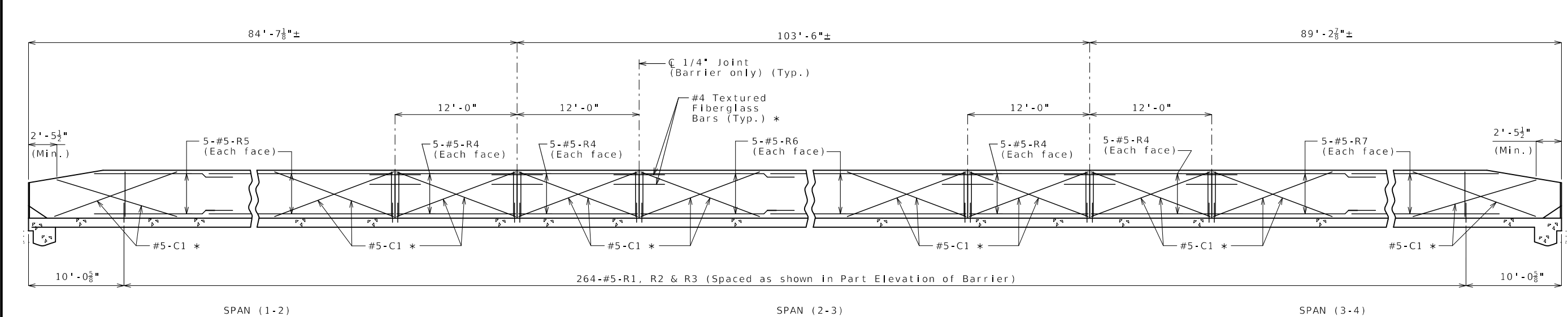
The color of the slab drain shall be gray (Federal Standard 26373). The color shall be uniform throughout the resin and any coating used.

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

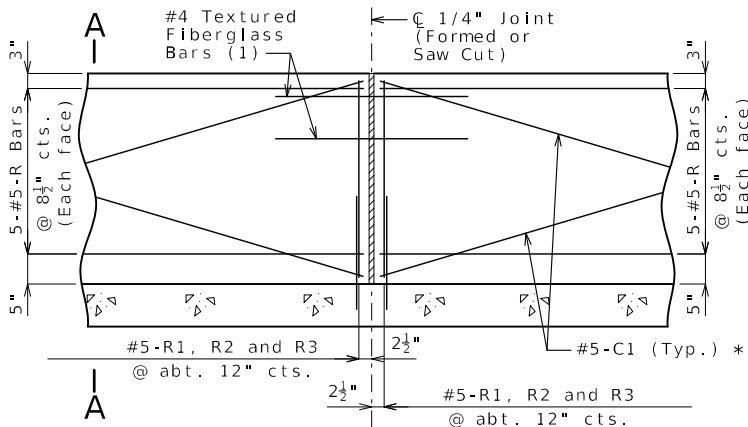
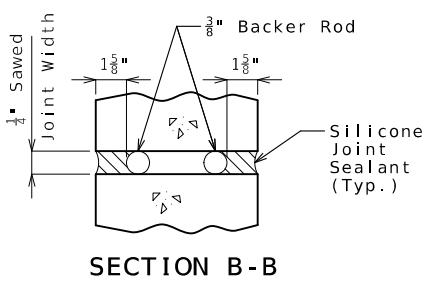
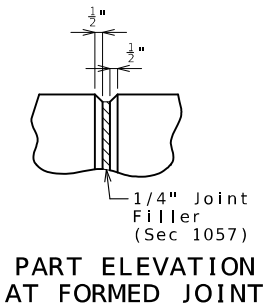
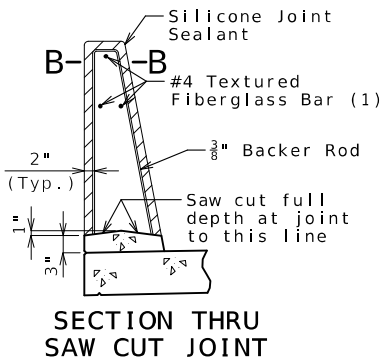
At the contractor's option, drains may be field cut. The method of cutting FRP slab drain shall be recommended by the manufacturer to ensure a smooth, chip free cut.



DATE PREPARED 8/22/2024					
ROUTE 179			STATE MO		
DISTRICT BR			SHEET NO. 8		
COUNTY MONITEAU					
JOB NO. JCD0115					
CONTRACT ID.					
PROJECT NO.					
BRIDGE NO. A19843					
DESCRIPTION					
DATE					

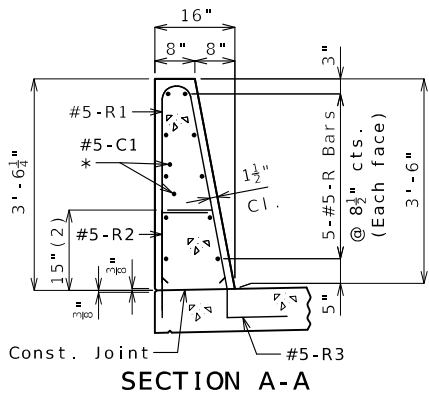


ELEVATION OF BARRIER  
(Left barrier shown, right barrier similar)  
Longitudinal dimensions are horizontal.



PART ELEVATION OF BARRIER

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

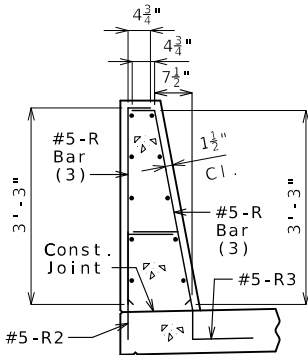


SECTION A-A

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

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

(2) To top of bar



R-BAR PERMISSIBLE ALTERNATE SHAPE

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

General Notes:

\* Slip-formed option only.

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

Top of barrier shall be built parallel to grade and barrier joints normal to grade.

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

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

Concrete in barrier shall be Class B-1.

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

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

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

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

TYPE D BARRIER

Sheet No. 9 of 13

Detailed Mar. 2024  
Checked May 2024

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

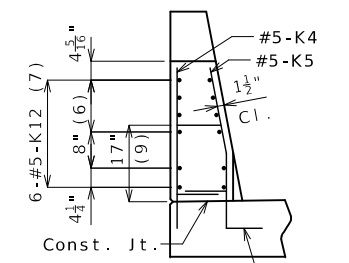
STATE OF MISSOURI  
LEAF  
NUMBER  
PE-2012000778  
PROFESSIONAL ENGINEER  
  
DATE PREPARED  
8/22/2024  
ROUTE  
179  
DISTRICT  
BR  
COUNTY  
MONITEAU  
JOB NO.  
JCD0115  
CONTRACT ID.  
PROJECT NO.  
BRIDGE NO.  
A19843

DESCRIPTION

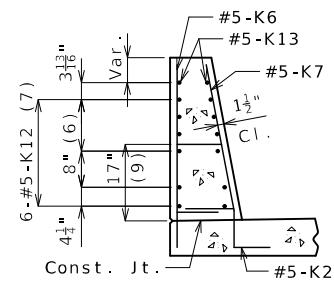
DATE

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

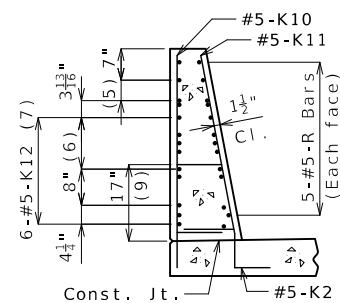




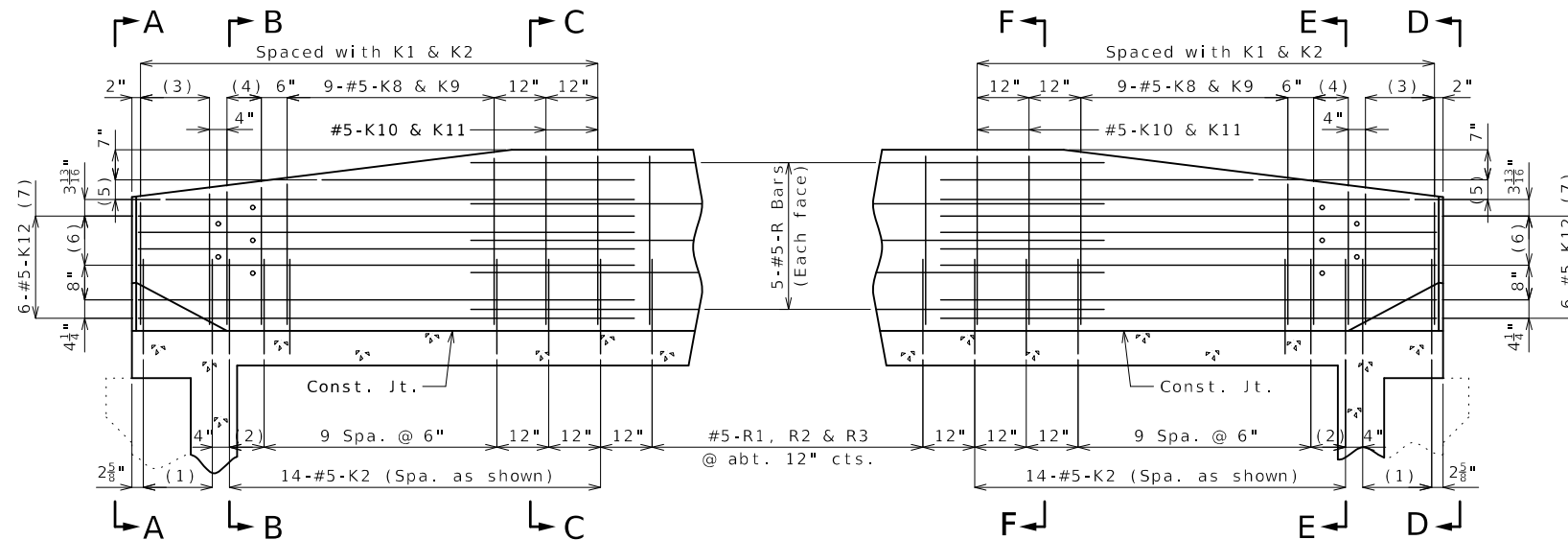
ELEVATION A-A



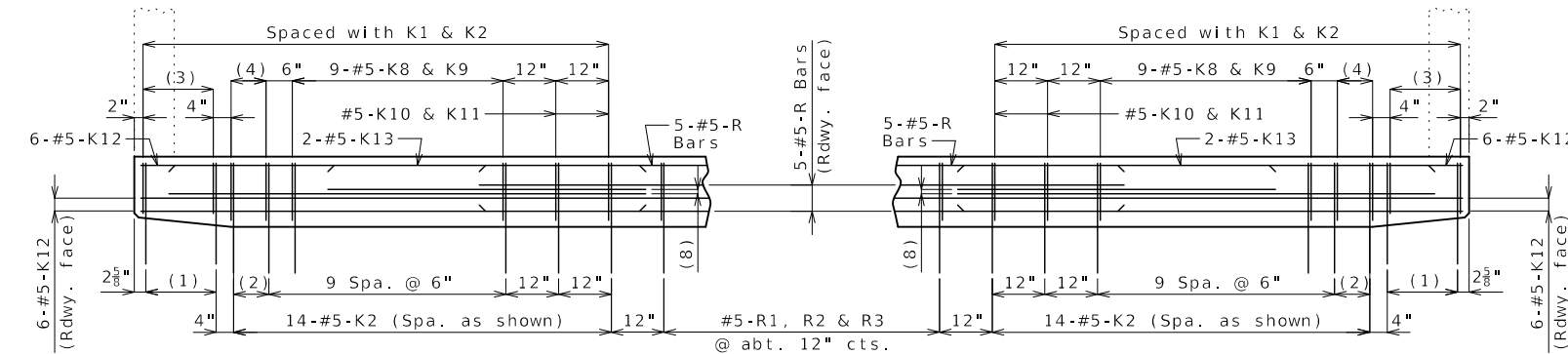
SECTION B-B



SECTION C-C

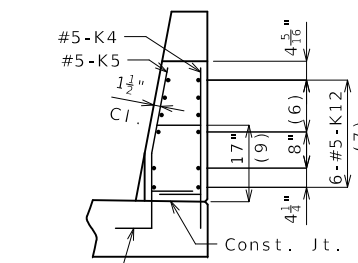


PART ELEVATION

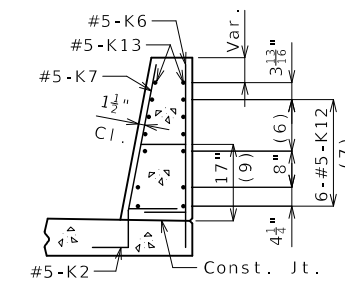


PART PLAN

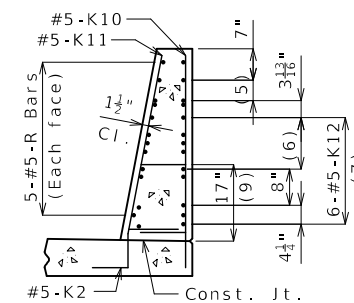
(Top of barrier not shown for clarity.)



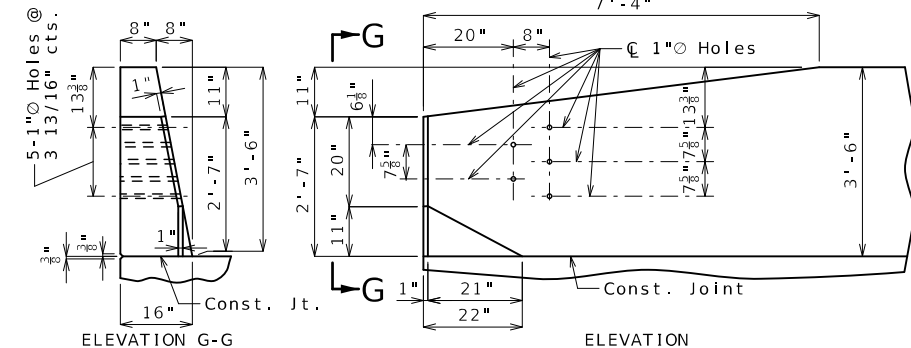
ELEVATION D-D



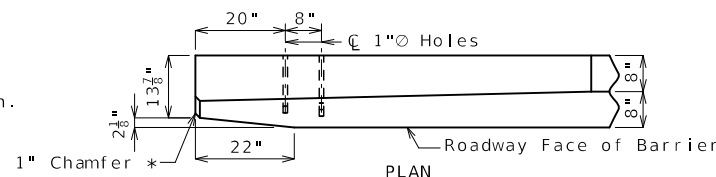
SECTION E-E



SECTION F - F



ELEVATION



## PLAN

### DETAILS OF GUARD RAIL ATTACHMENT

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

1" Chamfer \*  22"

- (1) 5-#5-K1 @ 4" cts.
- (2) 2 spaces @ 4"
- (3) 5-#5-K4 & K5
- (4) 3-#5-K6 & K7
- (5) 2-#5-K13 @  $4\frac{1}{2}$ " cts., each face
- (6) 3 spaces @  $3\frac{13}{16}$ "
- (7) Spaced as shown, each face
- (8) 2-#5-K13 (Roadway face)
- (9) To top of bar

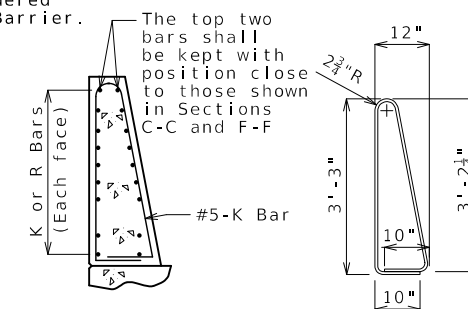
General Notes:

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

Reinforcing Steel:

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

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

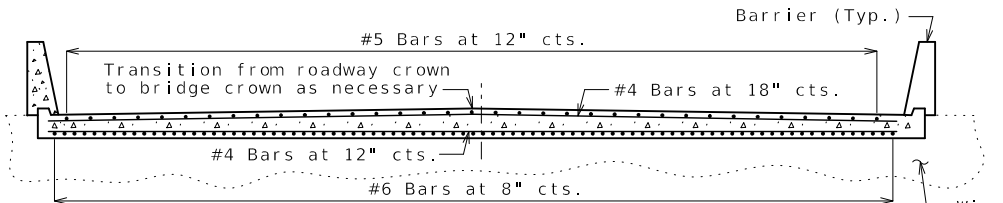
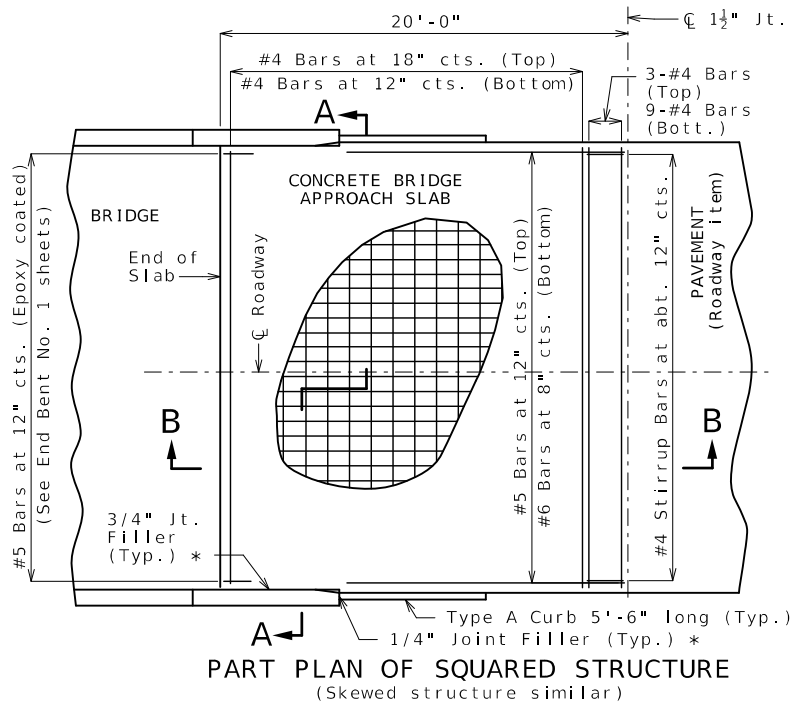


### K10-K11 BAR PERMISSIBLE ALTERNATE SHAPE

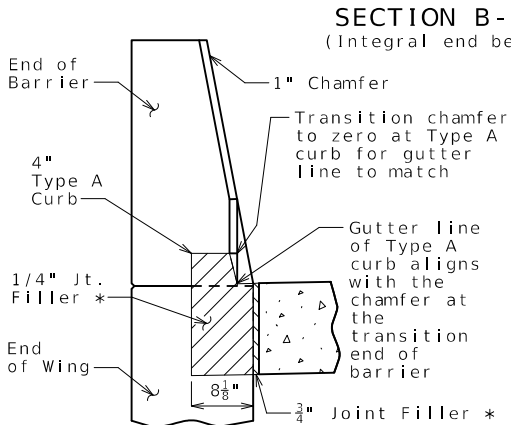
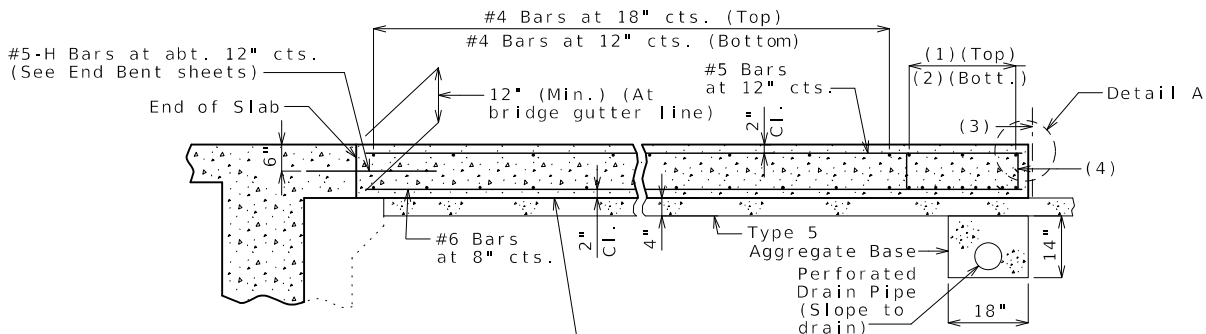
(Other K bars not shown for clarity)

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

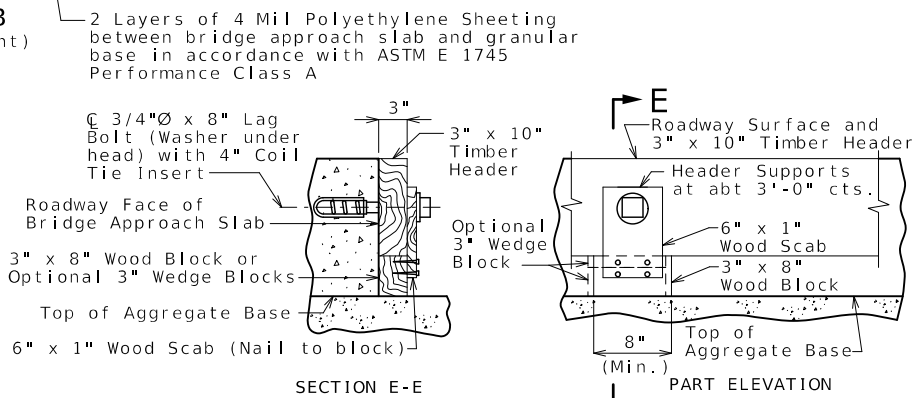
All dimensions are out to out.



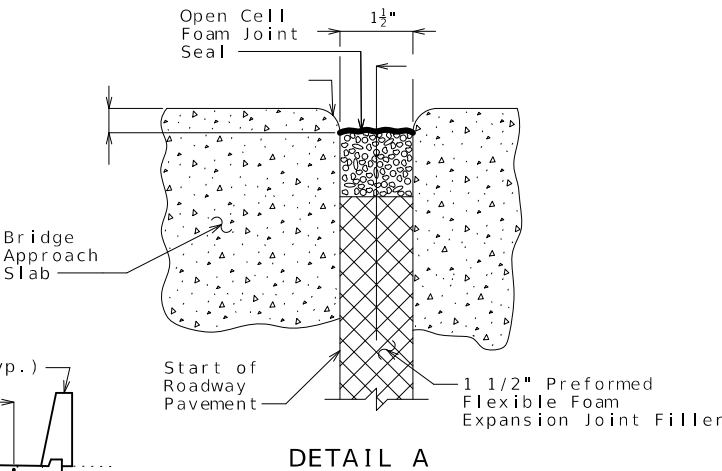
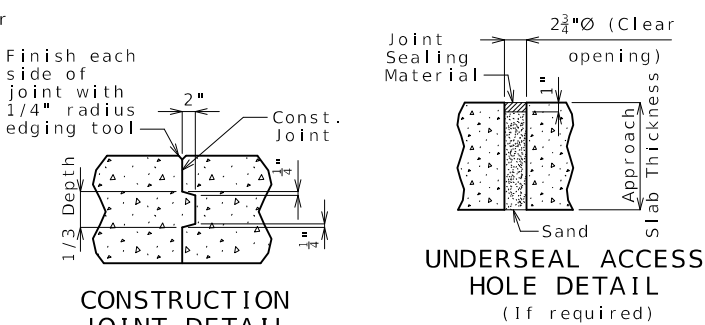
With the approval of the engineer, the contractor may crown the bottom of the approach slab to match the crown of the roadway surface.



SECTION BETWEEN CURB AND BARRIER



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



- (1) 3-#4 Bars
- (2) 9-#4 Bars
- (3)  $\phi$  1 1/2" Jt. Filler
- (4) #4 Stirrup Bars at abt. 12" cts.; 2'-0"x 8" (Min.) out to out; Actual length = 5'-10" (Min.); 90° stirrup hook at bottom; Stirrup height (8") and actual length vary due to crown.

### Notes For Concrete Slab Only:

All concrete for the bridge approach slab shall be in accordance with Sec 503 (f'c = 4,000 psi).

The reinforcing steel in the bridge approach slab shall be epoxy coated Grade 60 with fy = 60,000 psi.

Longitudinal construction joints in bridge approach slab shall be aligned with longitudinal construction joints in bridge slab.

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

The reinforcing steel in the bridge approach slab shall be continuous. The transverse reinforcing steel may be made continuous by providing a minimum lap splice of 23 inches for #4 bars, or by mechanical bar splice.

Mechanical bar splices shall be in accordance with Sec 710.

All joint filler shall be in accordance with Sec 1057 for preformed fiber expansion joint filler except as noted.

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

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

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

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

### General Notes:

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

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

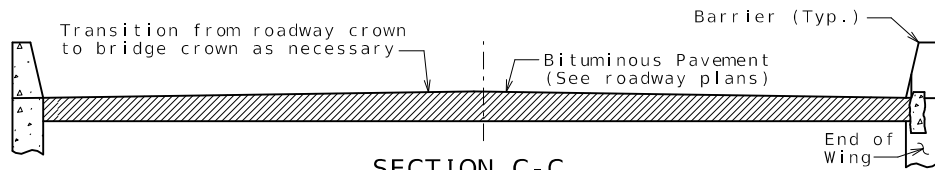
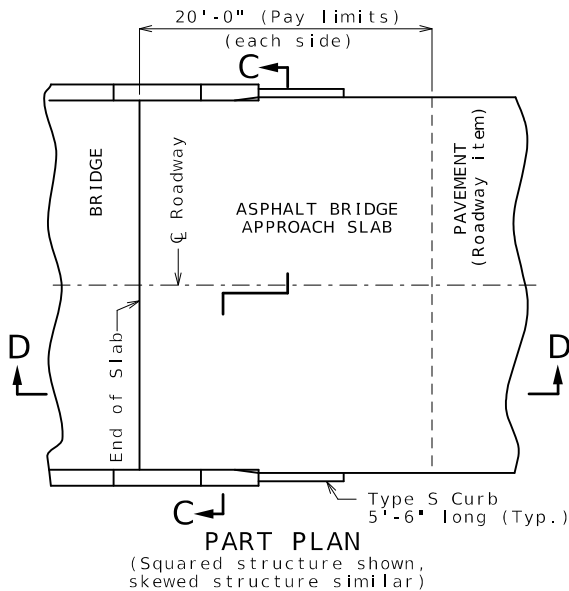
MoDOT Construction personnel will indicate the bridge approach slab used for this structure:

- ☐ Concrete Bridge Approach Slab  
☐ Asphalt Bridge Approach Slab

### Notes For Asphalt Slab Only:

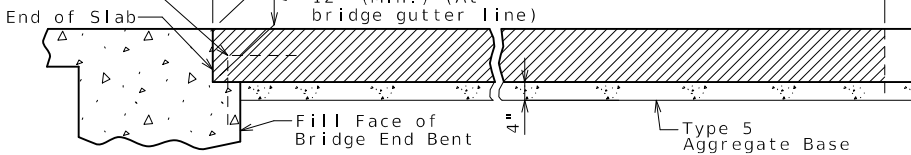
Payment for furnishing all materials, labor and excavation necessary to construct the asphalt bridge approach slab, including tack, curb, and Type 5 aggregate base within the pay limits shown, complete in place, will be considered completely covered by the contract unit price for Bridge Approach Slab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

Application of tack is required between lifts per Sec 403.

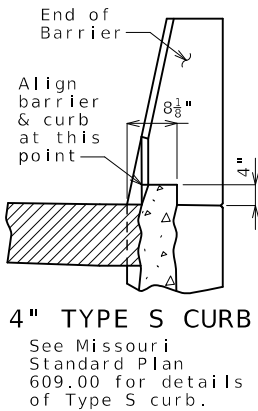


With the approval of the engineer, the contractor may crown the bottom of the approach slab to match the crown of the roadway surface.

DO NOT PLACE (or order) #5 bars as shown on end bent sheets and traced here.



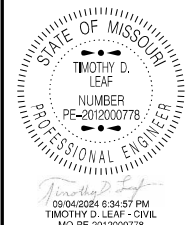
SECTION D-D  
OPTIONAL ASPHALT SLAB (NOT ALLOWED WITH CONCRETE PAVEMENT)



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

## BRIDGE APPROACH SLAB (MINOR)

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



DATE PREPARED  
9/4/2024

ROUTE  
179

STATE  
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JCD0115

CONTRACT ID.

PROJECT NO.

BRIDGE NO.  
A19843

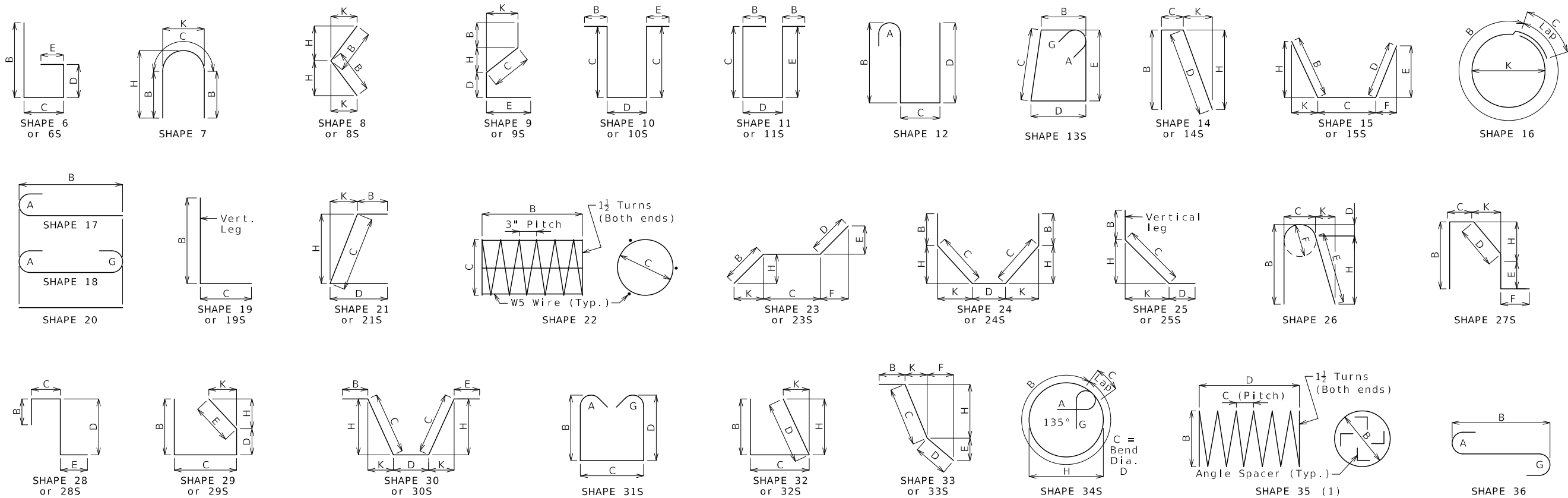
DESCRIPTION

DATE

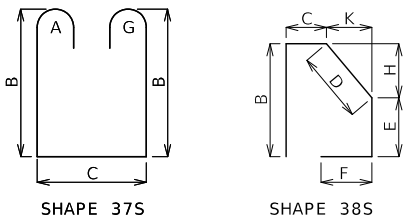
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
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MoDOT



Finished Bend Diameters D and Hook Dimensions						
Standard Pin Bend Shapes						
Size	Case	D	A or G		J	
			90°	180°	180°	
#4	1	3"	8"	6"	4"	
#5	1	3 <sup>3</sup> / <sub>4</sub> "	10"	7"	5"	
#6	1	4 <sup>1</sup> / <sub>2</sub> "	12"	8 <sup>1</sup> / <sub>4</sub> "	6"	
#7	2	5 <sup>1</sup> / <sub>4</sub> "	14"	9 <sup>3</sup> / <sub>4</sub> "	7"	
	3	7"	15"	11 <sup>1</sup> / <sub>2</sub> "	8 <sup>3</sup> / <sub>4</sub> "	
#8	2	6"	16"	11"	8"	
	3	8"	17"	13 <sup>1</sup> / <sub>4</sub> "	10"	
#9	1	9 <sup>1</sup> / <sub>2</sub> "	19 <sup>1</sup> / <sub>2</sub> "	15 <sup>1</sup> / <sub>2</sub> "	11 <sup>3</sup> / <sub>4</sub> "	
#10	1	10 <sup>3</sup> / <sub>4</sub> "	22"	17 <sup>1</sup> / <sub>2</sub> "	13 <sup>1</sup> / <sub>4</sub> "	
#11	1	12"	24 <sup>1</sup> / <sub>2</sub> "	19 <sup>1</sup> / <sub>2</sub> "	14 <sup>7</sup> / <sub>8</sub> "	
#14	1	18 <sup>1</sup> / <sub>4</sub> "	31 <sup>1</sup> / <sub>4</sub> "	27 <sup>1</sup> / <sub>2</sub> "	21 <sup>5</sup> / <sub>8</sub> "	
#18	1	24"	41 <sup>1</sup> / <sub>2</sub> "	36 <sup>1</sup> / <sub>4</sub> "	28 <sup>1</sup> / <sub>2</sub> "	
Stirrup Pin Bend Shapes (S)						
Size	Case	D	A or G			J
			90°	135°	180°	135° 180°
#4	2	2"	4 <sup>1</sup> / <sub>2</sub> "	4 <sup>1</sup> / <sub>2</sub> "	5"	2 <sup>7</sup> / <sub>8</sub> " 3"
	3	3"	5"	5 <sup>1</sup> / <sub>4</sub> "	6"	3" 4"
#5	2	2 <sup>1</sup> / <sub>2</sub> "	5 <sup>3</sup> / <sub>4</sub> "	5 <sup>3</sup> / <sub>4</sub> "	5 <sup>3</sup> / <sub>4</sub> "	3 <sup>3</sup> / <sub>4</sub> " 3 <sup>3</sup> / <sub>4</sub> "
	3	3 <sup>3</sup> / <sub>4</sub> "	6 <sup>3</sup> / <sub>4</sub> "	6 <sup>3</sup> / <sub>4</sub> "	7"	3 <sup>5</sup> / <sub>8</sub> " 5"
#6	1	4 <sup>1</sup> / <sub>2</sub> "	12"	7 <sup>3</sup> / <sub>4</sub> "	8 <sup>1</sup> / <sub>4</sub> "	4 <sup>5</sup> / <sub>8</sub> " 6"
Applicable for all grades of steel.						
Case 1 applies to all reinforcement. Case 2 applies to all reinforcement except for galvanized bars. Case 3 applies to galvanized bars only.						



BENDING DIAGRAMS

All dimensions are out to out.

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

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

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

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

Reinforcing Steel Totals (Pounds)							
Size	Substructure		Superstructure			Entire Bridge	
	Plain	Epoxy	Slab	Barrier	Slip Form	Plain	Epoxy
W5	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	20,758	14,629	501	0	35,888
6	0	0	46,619	0	0	0	46,619
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	67,377	14,629	501	0	82,507

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

BENDING DIAGRAMS AND REINFORCING STEEL TOTALS

STATE OF MISSOURI

TIMOTHY D. LEAF

NUMBER

PE-2012000778

PROFESSIONAL ENGINEER

08/23/2024 4:18:27 PM

TIMOTHY D. LEAF - CIVIL

MO-PE-2012000778

DATE PREPARED

8/22/2024

ROUTE

179

STATE

MO

DISTRICT

BR

SHEET NO.

12

COUNTY

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